

NEARBY RED DWARFS & THEIR DANCE PARTNERS: CHARACTERIZING MORE THAN
2000 SINGLE & MULTIPLE M DWARFS NEAR THE SUN

by

JENNIFER GWYN WINTERS

Under the Direction of Todd J. Henry, PhD

ABSTRACT

This dissertation presents the results of a study to (1) determine the census of the nearby southern M dwarf stellar population via three types of distances and (2) determine the multiplicity rate of nearby M dwarfs using two different search methodologies.

The first part of this work reports three types of distance calculations (photographic, photometric, and trigonometric) for 1748 southern M dwarfs. Distances were estimated for 500 red dwarfs using photographic plate *BRI* magnitudes from SuperCOSMOS, while estimates were made for 667 stars using CCD *VRI* magnitudes. Both *BRI* and *VRI* were combined with 2MASS infrared *JHK* magnitudes. Distances for an additional 581 red

dwarfs were derived from trigonometric parallaxes, 124 of which were measured for the first time during this work.

For the second portion of this thesis, an all-sky sample of 1122 M dwarfs, known via trigonometric parallaxes to lie within 25 pc of the Sun, was surveyed for stellar companions at separations of $2''$ to $600''$. I -band images using primarily the CTIO/SMARTS 0.9m and the Lowell 42in telescopes were obtained in order to search these systems for companions at separations of $2''$ to $180''$. A complementary reconnaissance of wider companions to $600''$ was also done via blinking SuperCOSMOS BRI images.

We find a stellar multiplicity fraction of $27.4 \pm 1.3\%$ for M dwarfs. Using this new gauge of M dwarf multiplicity near the end of the stellar main sequence, we calculate a multiplicity fraction of 30.1% for stellar systems of all types, implying that most systems are single. We find a peak in the separation distribution of the companions at 26 AU, i.e., distances on the scale of our Solar System, with a weak trend of smaller projected separations for lower mass primaries. A hint that M dwarf multiplicity may be a function of age/composition was revealed, with faster moving (and generally older) systems being multiple slightly less often. We calculate that at least 16% of M dwarf mass is made up of the stellar companions of multiple systems. Finally, we show that the mass function for M dwarfs increases to the end of the main sequence.

INDEX WORDS: astronomy, binaries, parallaxes, solar neighborhood, stars: low-mass, stars: statistics, stars: distances

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JENNIFER GWYN WINTERS

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by

JENNIFER GWYN WINTERS

Committee Chair: Todd J. Henry, PhD

Committee: David Charbonneau

Douglas R. Gies

Gary Hastings

Sebastièn Lèpine

Harold A. McAlister

Electronic Version Approved: Russel J. White

Office of Graduate Studies

College of Arts and Sciences

Georgia State University

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DEDICATION

I dedicate this work to Todd Henry, the best cheerleader anyone could ever have. I would *really* not be here without you. If I had not been lucky enough to have enrolled in your Astronomy 1010 class, it is very likely that my life would have taken a different path, and I would not be writing this dedication.

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LIST OF ABBREVIATIONS

2MASS	2 Micron All Sky Survey. An all sky survey in the infrared bands J , H , and K_s .
AO	Adaptive Optics. A system for correcting the effect of atmospheric disturbance to obtain sharper images.
AU	Astronomical Unit. The mean radius of Earth's orbit, equivalent to 149,603,500 km.
CCD	Charge-Coupled Device. The most common imaging device for modern optical astronomy.
CTIO	Cerro Tololo Inter-American Observatory. The NOAO southern hemisphere observatory in Chile.
CTIOPI	Cerro Tololo Inter-American Observatory Parallax Investigation. A large astrometric program run by the RECONS group on CTIO's 0.9m telescope.
FGS	Fine Guidance Sensors. An optical interferometer on board HST that is used for acquiring and keeping the telescope's position with respect to guide stars. As a science instrument, it can be used to probe stellar multiplicity by producing an interferogram of the science target.
FWHM	Full Width at Half Maximum.
HIP	<i>HIPPARCOS</i> . ESA's HIgh Precision PARallax Collecting Satellite mission.
HST	<i>Hubble Space Telescope</i> . NASA's multi-purpose space telescope capable of

high resolution imaging in infrared, visible, and ultraviolet light.

HR Hertzprung–Russell (Diagram). A diagram where temperature is plotted against luminosity for a stellar population. The Hertzprung–Russell Diagram is one of the most basic tools of stellar astronomy.

IDL Interactive Data Language. A computer language useful for scientific data analysis.

IMF Initial Mass Function. The rate of (sub)stellar formation as a function of mass.

IRAF Image Reduction and Analysis Facility. A versatile computer environment for processing astronomical images developed by NOAO.

LF Luminosity Function. The space density of objects as a function of luminosity. Absolute magnitude or spectral types are often used as proxies for luminosity in the Luminosity Function.

MF Mass Function. The space density of objects as a function of the object’s mass.

$M_{\odot}$ Solar Mass. 1.99×10^{30} kg.

PSF Point Spread Function. The pattern of light from an unresolved point source formed in an astronomical light detector.

RECONS

REsearch Consortium On Nearby Stars. A research group led by Todd Henry that aims to discover and characterize the population of the solar neighborhood.

RV Radial Velocity. The component of an object's velocity along the line of sight to that object. Measured through spectroscopic Doppler shift.

YPC The Yale Parallax Catalog. A compendium of trigonometric parallaxes that were published before 1995.

CHAPTER 1

WHAT HAS GONE BEFORE

For millenia, humankind has gazed skyward. Arguably the most famous astronomical site, Stonehenge, dates back to the 30th century BC. Yet, even the brightest M dwarf star, the most populous type of star in the Galaxy, is too faint to detect with the human eye, and thus the existence of these objects smaller and less massive than the Sun did not even enter into the realm of possibility of ancient astronomers.

There is great interest in developing a comprehensive list of nearby M dwarfs for studies of the Milky Way’s stellar population, both as astrophysically compelling individual objects and as prime targets for exoplanet and SETI search lists. Because these stars are ubiquitous, it is critical to assess their properties — their luminosity distribution, their mass distribution, their multiplicity — in order to understand how they affect the local Universe.

This treatise was motivated both by a desire to understand the multiplicity statistics of the M dwarfs in the solar neighborhood, i.e., how many have companions, and to investigate how the higher order multiples compare to simple binaries. However, before a systematic companion search could be undertaken, it was vital to identify potential nearby M dwarfs and to determine their distances in order to highlight which objects do indeed lie nearby and should be included in the search. For the purposes of this thesis, we define ‘nearby’ to be within 25 parsecs (pc) of the Sun, as discussed in §1.2.

Over the past ~ 50 years, much work has gone into discovering M dwarfs and measuring their distances. The most accurate distances are derived from trigonometric parallax, but

photometric distance estimates from both photographic and CCD photometry give an initial idea of which objects are likely to be found nearby. Part of the work presented here includes calculations of photometric distances for 1167 southern M dwarfs, as well as measurements of trigonometric parallaxes for 124 of these southern M dwarfs in order to determine the current membership statistics of the historically neglected southern sky (more details in §1.3). As there are far fewer parallaxes of objects known to be within 25 pc than there are known M dwarfs, the most time-effective sequence of events to define the sample for the multiplicity project was to first determine what objects lie within 25 pc via a trigonometric parallax and then impose color and magnitude cuts on that collection of stars to isolate the M dwarfs.

Fortuitously, the REsearch Consortium On Nearby Stars (RECONS) 25 Parsec Database (discussed in Chapter 4, §4.2), which has as its primary criterion for target inclusion that an object have a high quality published trigonometric parallax, was being designed concurrently with this project. Thus, the starting sample was extracted from this list of systems. In addition, because RECONS has an ongoing parallax program in the southern hemisphere, the Cerro Tololo Inter-American Parallax Investigation (CTIOPI), there were many nearby red dwarfs from that program that would likely have parallaxes published by the time this project reached completion. Those targets were added in order to bolster the size and breadth of the sample. Astrometric information for those objects is presented in Chapter 4, (§4.1).

Because of the telescope facilities available and the author's photometry background, a study to identify M dwarfs photometrically was considered appropriate. However, many objects lacked good quality *VRI* photometry in the literature, and those data had to be

obtained during the course of the multiplicity campaign. After all of the astrometric and photometric data were in hand, a final cut for the multiplicity portion of the project was imposed, and the search was conducted. The sample of southern M dwarfs is presented in Chapter 3. New parallax measurements are described in Chapter 4. Chapter 5 details the multiplicity study, with the analysis presented in Chapter 6. Detection limits and biases are discussed in Chapter 7, and conclusions given in Chapter 8.

1.1 M Dwarf Definition

M dwarfs are the least massive main sequence stars (i.e., those stars that produce energy by fusing hydrogen into helium), with masses $\sim 0.075 < M/M_{\odot} < 0.67$ (Benedict et al. (in prep) and the RECONS 25 Parsec Database), effective temperatures $2400\text{K} < T_{eff} < 3900\text{ K}$, and luminosities $0.02 < L/L_{\odot} < 0.6\%$ (Tarter et al. 2007). These low-mass, faint, cool, red stars are the most numerous stars in the Universe, making up at least 75% of all stars in the solar neighborhood (Henry et al. 2006), and can be identified either through their spectra or from their photometric colors. The observational parameters, i.e., the color and absolute magnitude limits, that correspond to main sequence M dwarfs with the above masses are $3.7 < (V - K) < 9.5$ and $8.8 < M_V < 20.0$. These values were determined based on the boundaries of the RECONS 25 Parsec Database sample's (see §2.2.1) main sequence when plotted on an observational HR Diagram, with M_V and $(V - K)$ used as proxies for luminosity and temperature.

1.2 The Solar Neighborhood Definition

The definition of the Solar Neighborhood differs depending upon which type of star is under consideration and upon what distance horizon-based volume would encompass a meaningful sample size for that type of star (Binney & Tremaine 2008). For massive stars, the Solar Neighborhood extends to about a kiloparsec (Binney & Tremaine 2008), but because low-mass red dwarfs are the most populous type of star (Henry et al. 2006), a volume that extends to a distance of 25 pc from the Solar System is ample for a statistically significant sample size. Therefore, much of this treatise will focus on the population of red dwarfs within that distance horizon.

1.2.1 *Catalogs of Nearby Stars (Gliese & Jahreiss)*

Nearby star studies began in earnest with the compilation of the first 20 pc compendium by Gliese (1957), with later updates expanding to 25 pc (Gliese 1969; Gliese & Jahreiß 1979). The Third Catalogue of Nearby Stars (CNS91) (Gliese & Jahreiß 1991), the last available printed version of the catalog, reports the known 25 pc sample as of that date, with all objects having a trigonometric, photometric, or spectroscopic parallax. It contains ~ 3800 stars and is based on an unpublished preliminary version of the *General Catalogue of Trigonometric Parallaxes*, 4th ed. by van Altena et al. (1995). In fact, only 1649 systems with trigonometric parallax are listed in CNS91, with 1569 of those found within 25 pc. Many more nearby stars remained to be discovered.

1.3 Previous Nearby Star Searches

Historically, proper motion searches have been very successful at identifying nearby stars, as most nearby stars' proper motions (their angular motions across the sky) are large and therefore easily discernible. These types of searches are accomplished by comparing — or 'blinking' — images of the same parts of the sky taken years apart to see if any objects are moving in the frames. Because most stars are very far away, their proper motions will not be significant, and they will not appear to move from year to year, or even decade to decade.

A star's proper motion μ is directly proportional to its parallax π or inversely proportional to its distance, which means that nearby stars *typically* have large proper motions and stars found at large distances have small proper motions. The relation between proper motion and parallax is given by:

$$\mu = \frac{\pi \cdot v_{tan}}{4.74} \quad (1.1)$$

where v_{tan} is the tangential velocity in kilometers per second, μ is the proper motion in arcseconds per year, and π is the parallax in arcseconds.

However, stars' velocities increase with age due to interactions with giant molecular clouds and other stars, and as some red dwarfs are among the population of the oldest stars, they tend to have higher proper motions on average. Old, red subdwarfs have some of the highest proper motions of all (Jao et al. 2005, 2011) because they are very members of the Galactic halo that happen to be passing through the solar neighborhood. In contrast, young

red dwarfs have very small proper motions (Riedel 2012), and are usually members of moving groups that happen to be located nearby.

Here we outline the most significant proper motion surveys of the past 65 years. This list is by no means exhaustive, but it includes the largest, most productive efforts.

1.3.1 1950-1980 - Luyten & Giclas

The first generation of sky searches for intrinsically faint, nearby stars included the work of Willem Luyten and Henry Giclas (Luyten 1979a,b, 1980a,b; Giclas et al. 1971, 1978), fierce rivals in the arena of high proper motion (HPM) objects during the second half of the twentieth century. Both astronomers made invaluable contributions to the field of nearby stars, documented in their catalogs and between which there is significant overlap.

The Luyten Half-Second (LHS) Catalog (Luyten 1979a) has a lower proper motion cut-off of $0''.50 \text{ yr}^{-1}$ and contains 3602 objects. Most of the objects found in the LHS Catalog were discovered via the Palomar and the Bruce Proper Motion Surveys. The Palomar Survey targeted objects as faint as $m_{pg} \sim 21.1$ and $m_R \sim 19.4$ at declinations north of -33° , while the Bruce Survey covered objects as faint as $m_{pg} \sim 16.0$ in the remainder of the southern hemisphere, where m_{pg} indicates the photographic visual magnitude and the m_R denotes the photographic magnitude at red wavelengths. The New Luyten Two-Tenths (NLTT) Catalog (Luyten 1979b) was a continuation of the LHS Catalog, and contains 58,845 objects with proper motions greater than $0''.18 \text{ yr}^{-1}$.

Images of the entire northern sky and one-quarter of the southern sky were taken at Lowell Observatory as part of the effort to search for distant planets in our Solar System,

after the serendipitous discovery of the now re-classified dwarf planet Pluto. Henry Giclas took second epoch images to compare to those taken during the ‘Pluto Search’ 25 years earlier in order to determine the proper motions of huge numbers of stars with $8 < m_{pg} \lesssim 16.5$. The project began in 1957 and spanned nearly 20 years. The northern survey ($\delta > 0^\circ$) contains 8991 objects that had proper motions greater than $0''.26 \text{ yr}^{-1}$ (Giclas et al. 1971). The southern survey (stars with $0 < \delta < -40^\circ$) contains 2758 objects with $\mu > 0''.20 \text{ yr}^{-1}$ (Giclas et al. 1978).

1.3.2 1980-2000 - Wroblewski, Torres, Costa, Ruiz

The Wroblewski-Torres-Costa (WTC) Survey (Wroblewski & Torres 1989, 1990, 1991, 1992, 1994, 1995, 1996, 1997, 1998; Wroblewski & Costa 1999, 2000, 2001) was one of the first to focus on the undersampled southern hemisphere. First epoch observations were taken of 164 $5^\circ \times 5^\circ$ fields in 1969 and 1970 with the Maksutov Astrograph operated by the University of Chile, which had a limiting magnitude of $m_{pg} \sim 20$. Second epoch observations to identify objects with proper motions greater than $0''.15 \text{ yr}^{-1}$ with a similar limiting magnitude were begun in 1985 and continued for 26 years, resulting in 2495 new HPM objects.

The Calan-ESO Proper Motion Survey (Ruiz et al. 1993, 2001) utilized plates taken with the ESO Schmidt telescope at La Silla during the ESO survey, which targeted 17 $5^\circ \times 5^\circ$ fields away from the Galactic plane. These southern hemisphere observations had limiting magnitudes of $m_R \sim 20.5$ and 19.5 for the 1993 and 2001 publications, respectively, and resulted in 883 discoveries, many of which had proper motions below the NLTT Catalog limit of $0''.18 \text{ yr}^{-1}$.

1.3.3 >2000 - *Scholz, Pokorny, SIPS, Lépine*

Scholz and collaborators conducted a proper motion search in the southern hemisphere using plates taken at the UK Schmidt telescope that had been scanned using the Automatic Plate Measuring (APM) machine. Forty $6^\circ \times 6^\circ$ fields were searched for HPM objects with proper motions between $0''.3$ and $1''.0 \text{ yr}^{-1}$ with limiting B_J and R_{59F} plate magnitudes of ~ 22.5 and ~ 21 , respectively. The number of new detections from this collaboration is 124 (Scholz et al. 2000; Lodieu et al. 2002; Scholz et al. 2002a,b; Hambaryan et al. 2004; Scholz & Meusinger 2002; Scholz et al. 2004a,b).

The Liverpool-Edinburgh High Proper Motion (LEHPM) Survey used digitized scans of photographic plates from the SuperCOSMOS Sky Survey (SSS) to identify HPM objects in the southern hemisphere, south of declinations -20° . The SSS includes scans of ESO and UK Schmidt plates in the B_J , R_{ESO} , R_{59F} , and I_{IVN} filters. For this survey, only the two R -bands, with similar limiting magnitudes of ~ 19.5 , were used for detecting objects with proper motions greater than $0''.18 \text{ yr}^{-1}$. 11,289 objects were found, but no cross-referencing appears to have been done, so it is unclear how many of these are new detections (Pokorny et al. 2003, 2004).

The Southern Infrared Proper Motion Survey (SIPS) also used the scans from the SSS to search for very red (brighter than $J = 16$) objects in the southern sky, after first trawling the Two Micron All Sky Survey (2MASS) database to identify objects in the region of interest with infrared colors indicative of mid-M to late-T type dwarfs. The first part of the survey that targeted objects with proper motions in excess of $0''.5 \text{ yr}^{-1}$ detected 68 new objects,

while the second part of the survey that targeted objects with proper motions larger than $0''.1 \text{ yr}^{-1}$ identified 5583 new objects (Deacon et al. 2005a; Deacon & Hambly 2007).

The most comprehensive recent survey in the north is the Lépine-Shara Proper Motion (LSPM) Survey (Lépine & Shara 2005), with a limiting magnitude of $V \sim 21$. The survey utilizes the software *SUPERBLINK*, developed by Sébastien Lépine, which aligns images from two different epochs of Digitized Sky Survey (DSS) plates and then subtracts one from the other, so that objects that have moved from one epoch to the other remain. The search identified 61,977 HPM objects with $\mu > 0''.15 \text{ yr}^{-1}$, most of which are recoveries of Luyten and Giclas stars, and has an estimated completeness of better than 99% and 90% at high ($|b| > 15^\circ$) and low ($|b| \leq 15^\circ$) Galactic latitudes, respectively. A total of 201 new objects with proper motions greater than the LHS limit of $0''.50 \text{ yr}^{-1}$ were discovered, mostly in the crowded fields near the Galactic plane, where this technique yields the highest returns of new objects. This catalog supercedes both the LHS and NLTT catalogs for objects in the northern hemisphere. A more limited search in the southern hemisphere revealed 252 new stars with $0''.45 \text{ yr}^{-1} < \mu < 2''.0 \text{ yr}^{-1}$ (Lépine 2005, 2008).

1.3.4 >2000 - RECONS & the SCR Search

The RECONS group has had great success discovering nearby stars via the proper motion method using the SSS plate scans (Hambly et al. 2004). In short, astrometric and photographic information was used from the four available photographic plates taken with the B_J , R_{ESO} , R_{59F} , and I_{IVN} filters in searching almost the entire southern sky. A few fields were skipped due to limited epoch spreads between plates or crowding near the Galac-

tic plane or the Magellanic Clouds. Seven papers (Hambly et al. 2004; Henry et al. 2004; Subasavage et al. 2005a,b; Finch et al. 2007; Boyd et al. 2011a,b) report the discoveries from the searches conducted for objects with $\mu \geq 0''.18 \text{ yr}^{-1}$ and with $R < 18.0$. To date, 6650 new red dwarfs (named SCR for SuperCOSMOS-RECONS) have been discovered via this work, with 155 of these objects estimated to lie within 25 pc. The characterization of these nearby SCR red dwarf discoveries, as well as the measurements of trigonometric parallaxes for these SCR stars, are part of the work presented here and will be discussed further in Chapters 3 and 4.

Publications to-date resulting from the work in this thesis include Winters et al. (2011) and Winters et al. (2015), with at least two more expected.

CHAPTER 2

TELESCOPES UTILIZED

During the course of this thesis project, data were obtained at four different telescopes: the Hall 42in telescope at Lowell Observatory and the USNO 40in telescope, both in Flagstaff, AZ, and the CTIO/SMARTS 0.9m and 1.0m telescopes in Chile. Astrometry data were acquired at all four telescopes, while relative and absolute photometry data were gathered at the Lowell 42in and CTIO 0.9m telescopes. We outline the technical details of each instrument below, with a summary listed in Table 2.1.

Table 2.1: Telescopes Utilized

Telescope	FOV	pixel scale	# nights	# objects
Lowell 42in	$22.3' \times 22.3'$	$0''.327 \text{ px}^{-1}$	21	509
USNO 40in	$22.9' \times 22.9'$	$0''.670 \text{ px}^{-1}$	N/A	22
CTIO 0.9m	$13.6' \times 13.6'$	$0''.401 \text{ px}^{-1}$	16	444
CTIO 1.0m	$19.6' \times 19.6'$	$0''.289 \text{ px}^{-1}$	8	148

2.1 The Northern Hemisphere

2.1.1 Lowell 42in

Over the course of twenty-one nights, 509 targets were observed at Lowell, as noted in Table 2.1. With a CCD size of 4096×4112 pixels and pixel scale of $0''.327 \text{ px}^{-1}$, the resulting field of view was $22.3'$ square.

I -band images at the Hall 42in telescope at Lowell Observatory suffer from fringing, the

major cause of which is night sky emission from atmospheric OH molecules, which has to be removed for reliable absolute photometry results. This effect sometimes occurs with back-illuminated CCD's at optical wavelengths longer than ~ 700 nm where the light is reflected several times between the internal front and back surfaces of the CCD, creating constructive and destructive interference patterns, or fringing (Howell 2000, 2012). The removal of this fringing pattern was not as vital for companion detection as it was for the measuring of accurate absolute photometry, but it was nevertheless removed for all I -band data taken at the Lowell 42in telescope.

In order to remove these fringes, I -band science frames from multiple nights with a minimum of saturated stars in the frame were selected, boxcar smoothed, and then average-combined into a fringe map. This fringe map was then subtracted from all I -band images using a modified IDL code originally crafted by Snodgrass & Carry (2013). This code uses the intensity of user-selected pairs of dark and light regions of the fringe map to calculate the scaling factor by which the fringe map must be increased or decreased before its subtraction from the science image. The fringe map and an example of the images before and after the fringe subtraction are shown in Figure 2.1. Figure 2.2 shows the variation in background counts over the same region of the image, before and after the fringes were subtracted. A region of the image where the fringing was most intense near the bottom middle of Figure 2.1(b) was selected for the line plot shown and is therefore the most extreme case. As evident in the figures, the variation of ~ 40 counts is halved to a variation of ~ 20 counts after the fringes are subtracted, illustrating that the technique is effective, but not 100% perfect.

However, comparisons of photometry of ten targets taken at the Lowell 42in with results from the CTIO 0.9m (see Table 7.1, §7.2) and results from the literature show agreement, with an mean absolute deviation of 0.03 mag.

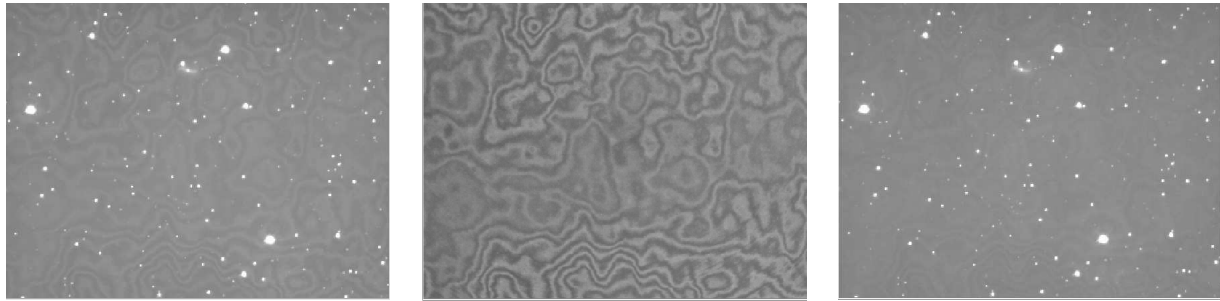


Figure 2.1 *left:* (a) The central portion of an image before the fringing was subtracted. *middle:* (b) The fringe map created and used to scale and subtract the fringe pattern from all I -band data taken at the Lowell 42in telescope. *right:* (c) The image after the fringing pattern was scaled and subtracted.

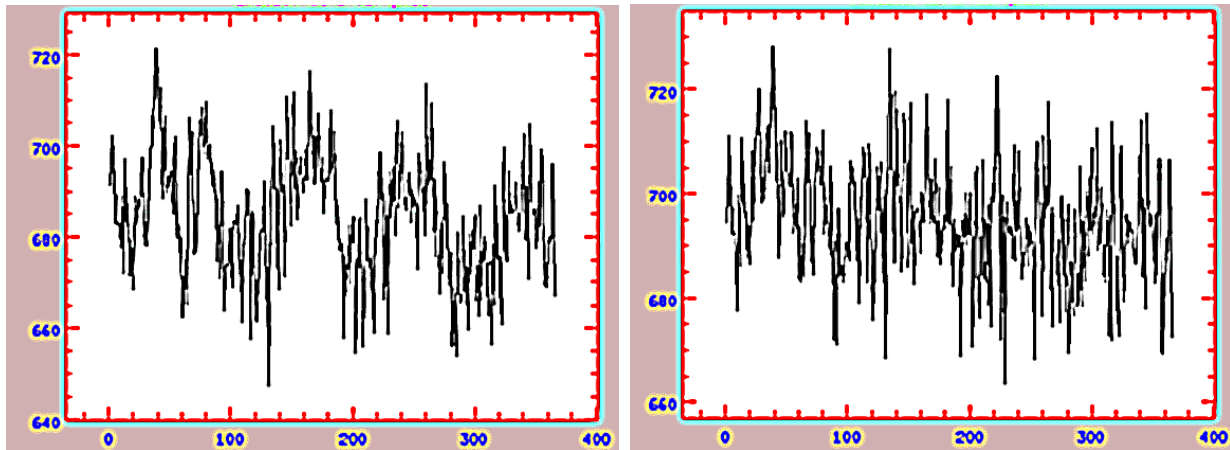


Figure 2.2 *left:* (a) A line plot of the background counts, before the fringing was subtracted. *right:* (b) A line plot of the same area as on the left, after the fringing was subtracted.

While being re-aluminized in December 2012, the mirror was dropped and damaged. The cardboard mask that was installed as a temporary fix resulted in a PSF flare. After inquiries to the technical staff were made, a better mask was installed that slightly improved the PSF.

Fourteen nights of data were gathered after this mishap, during which astrometry data for 51 objects were taken.

2.1.2 USNO 40in

RECONS team member John Subasavage at the United States Naval Observatory, Flagstaff, AZ Station, graciously took astrometry observations for 22 targets on the 40in located there, as noted in Table 2.1. He delivered these data already flat-fielded and bias subtracted. The CCD size of 2048×2048 pixels and pixel scale of $0''.670 \text{ px}^{-1}$ result in a $22.9'$ square field of view.

2.2 The Southern Hemisphere

2.2.1 CTIO 0.9m

A substantial portion of the data reported in this thesis were gathered at the CTIO/SMARTS 0.9m telescope. Most of the absolute photometry reported in Chapter 3, the new parallax data reported in Chapter 4 §4.1, and much of the astrometry data for the I -band imaging portion of the multiplicity project were obtained at the 0.9m telescope. Consistently exceptional seeing and weather conditions make this site superior to any other used. 442 targets were observed on this telescope over the course of sixteen nights, as noted in Table 2.1. The CCD size of 2048×2046 pixels and a pixel scale of $0''.401 \text{ px}^{-1}$ result in a field of view of $13.6' \times 13.6'$.

2.2.2 CTIO 1.0m

Eight nights of data were acquired at the CTIO/SMARTS 1.0m telescope, as noted in Table 2.1, during which data for 148 targets were gathered. The CCD has dimensions of 4064×4064 pixels with a pixel scale of $0''.289 \text{ px}^{-1}$, resulting in a $19.6'$ square field of view. The CCD on this telescope, like that on the Lowell 42in, also suffers from fringing in the I -band. This effect was removed in a similar fashion.

CHAPTER 3

SOUTHERN M DWARFS IN THE SOLAR NEIGHBORHOOD

Determining distances to celestial objects is one of the fundamental challenges in astronomy. In particular, distance determinations to nearby objects are of vital importance, as our solar neighbors set the standards for the primary rung in the cosmic distance ladder. The optimal tool for accomplishing this is trigonometric parallax. But because of observing time and resource constraints, photometric distance estimates are useful in deciding which targets are the best candidates for the limited slots available in traditional parallax programs — or in the near future, which stars are worthy of special attention among the billions of sources that will be unearthed from sky surveys such as *Gaia* and the Large Synoptic Survey Telescope (LSST).

Both in addition to and in combination with proper motion surveys (discussed in §1.3), optical photometry has historically been used to identify and characterize nearby stars. Important work in the late twentieth century included the efforts of Bessel (1990); Bessell (1991)¹, and Weis (1984, 1986, 1987, 1988, 1991a,b, 1993, 1994, 1996, 1999). More recent surveys include that of the SAAO group (Kilkenny & Cousins 1995; Kilkenny et al. 1998, 2007; Koen et al. 2002, 2010; Reid et al. 2001, 2002, 2003a, 2004). The photometric work outlined here and presented in Winters et al. (2015) is a continuation in that tradition.

¹We note that Bessel (1990) is the same author as Bessell (1991), but the name was misspelled by the journal. ‘Bessell’ is the correct name.

Table 3.1: Distance Types for Southern M Dwarfs

Type of Distance	<25 pc	Total
photographic	500	500
photometric	462	667
trigonometric	442	581
TOTAL	1404	1748

The collection of stars presented here includes 1748 southern ($\delta \leq 0^\circ$) M dwarf systems with three different types of distance calculations (photographic, photometric, and trigonometric) that were reported in Winters et al. (2015) in an assessment of the completeness of the population of nearby southern M dwarfs. We refer to any collection of stars and their gravitationally bound companion brown dwarfs and/or exoplanets as a system, including single M dwarfs not currently known to have any companions. Systems that contain a white dwarf component have been omitted from the sample presented here, as the white dwarf was initially the brighter and more massive primary component. The M dwarfs analyzed in this chapter are defined by having $3.50 \leq (V_J - K_s) \leq 9.27$, corresponding to spectral types $\sim$ M0.0V to M9.5V, where the red cut-off has been defined by Henry et al. (2004). The breakdown of the sample is listed in Table 3.1. This group of stars is a combination of objects with existing high quality parallaxes, objects for which we have measured photometry as part of our southern astrometry/photometry program, discoveries made during our SuperCOSMOS-RECONS (SCR) proper motion searches for new nearby southern stars, and known objects that were recovered during the SCR searches. The previously identified M dwarfs were objects discovered during the proper motion surveys by Luyten, Giclas, and

others described in §1.3. To eliminate any red giants that may slip into this sample and to be consistent with the proper motion cut-off of Luyten, we limit the targets presented in this chapter to those with proper motions, μ , greater than $0''.18 \text{ yr}^{-1}$.

This work is focused on the southern hemisphere for two reasons: (1) the southern sky has been historically less explored (as described in Chapter 1), and (2) our telescope resources are located in the south in order to resolve the incompleteness of the southern M dwarf population. We do not address the census of northern M dwarfs in this work.

Each system has at least one of three different distance determinations, listed in Table 3.4, with the best distance (i.e., the one with the smallest error) either photographic (*pltdist* — from plate $B_J R_{59F} I_{IVN}$ photometry + 2MASS JHK_s , 500 systems), photometric (*ccddist* — from CCD $V_J R_{KC} I_{KC}$ photometry + 2MASS JHK_s , 667)², or trigonometric (*trgdist* — from parallax, 581). We acknowledge that both *pltdists* and *ccddists* are distance estimates that are photometric in nature. Photometric distance estimates calculated using optical plate BRI magnitudes, in combination with infrared JHK magnitudes are referred to as *pltdist* (discussed in §3.1.3). Photometric distance estimates calculated using optical CCD VRI magnitudes, in combination with infrared JHK magnitudes are referred to as *ccddist* (discussed in §3.1.5). Distances derived from trigonometric parallaxes (discussed in §3.2) are referred to as *trgdist*. Most of the systems presented here have more than one type of distance measurement. For example, a system with a trigonometric parallax published by the RECONS group is likely to also have a *ccddist* and a *pltdist* because we first estimated its

²Hereafter, $B_J R_{59F} I_{IVN}$ will be referred to as BRI , JHK_s will be referred to as JHK , and $V_J R_{KC} I_{KC}$ will be referred to as VRI .

distance photometrically from SuperCOSMOS plates, then measured *VRI* photometry to yield a more accurate *ccddist*, then observed the system for a parallax measurement, which provides *trgdist*. We rank the quality of the distances by the errors associated with each method: *pltdists* from photographic photometry rank third (errors at least 26%), *ccddists* from *VRI* photometry rank second (errors at least 15%), and *trgdist*s derived from accurate trigonometric parallaxes are the best available (errors <5%).

Since the publication of Winters et al. (2015), *VRI* has been measured for additional objects that previously only had distances based on plate photometry, enabling estimates of *ccddists*, and trigonometric parallaxes have been measured for objects that previously had only photometric distances. Therefore, the numbers have shifted slightly from those presented in that paper. These updates are included in Tables 3.2, 3.3, 3.4 and their longer versions in the appendices. However, the analysis from Winters et al. (2015) presented in this chapter remains the same and has not been updated.

3.1 Photometric Parallaxes

3.1.1 $B_J R_{59F} I_{IVN}$ *Photographic Plate Photometry*

BRI plate magnitudes from SuperCOSMOS are given in Table 3.2 for all but a few southern systems and are rounded to the nearest hundredth of a magnitude.³ Errors are typically 0.3 mags for magnitudes fainter than 15, with larger errors for brighter objects due to systematic errors (Hambly et al. 2001). Derived *pltdists* in Table 3.4 for SCR discoveries

³The wavelength ranges for the B_J , R_{59F} , and I_{IVN} filters are 3950-5400Å, 5900-6900Å, and 7150-9000Å, respectively (Morgan 1995). The plate R_{59F} magnitude is the second, more recent R epoch measurement of the two available in the SuperCOSMOS Sky Survey.

have been previously presented in papers from the RECONS group (references listed in Chapter 1 §1.3.4), but we provide *BRI* and new *pltdists* here for 1457 previously known southern objects. Additional SuperCOSMOS queries were recently done in an effort to provide as many *pltdists* as possible for statistical comparisons for the southern systems. Due to an improved SuperCOSMOS photometric calibration,⁴ some magnitudes will be slightly different from those reported in previous papers by the RECONS group; the values presented here are preferred. In some cases, a match was not found because very red objects were not always recovered from the *B* plate, because of very high proper motion, or because of source mergers or corruption. All matches were visually confirmed and were double-checked using the SuperCOSMOS proper motions and *BRI* magnitudes.

3.1.2 JHK_s Photometry from 2MASS

Infrared *JHK* photometry has been extracted from 2MASS (Skrutskie et al. 2006) for all systems and is rounded to the nearest hundredth magnitude in Table 3.2. All stars' *JHK* magnitudes have been confirmed by eye using the stars' proper motions to confirm the objects. The same 2MASS photometry has been used for both the *pltdists* and the *ccddists* presented here. Errors are typically less than 50 millimagnitudes (mmag). Exceptions with larger errors are indicated in Table 3.2 with a superscript *a*.

⁴The recommended access point for the current version of the photometrically calibrated SuperCOSMOS data is the SuperCOSMOS Science Archive, found at <http://surveys.roe.ac.uk/ssa>. Details of the photometric calibration procedure are available in the online documentation at <http://surveys.roe.ac.uk/ssa/dboverview.html#mags>.

3.1.3 Photographic Plate Distance Estimates

The *pltdist* estimates are calculated by combining SuperCOSMOS *BRI* photometry with 2MASS infrared photometry via a suite of 15 color- M_K relations for main sequence stars using *BRIJHK*, as described in Hambly et al. (2004). The four relations M_K vs. $(B - R)$, $(J - H)$, $(J - K)$, and $(H - K)$ have limited spans in color through the M dwarf sequence and are thus omitted. The *pltdist* estimate is considered reliable if the remaining 11 relations are applicable, i.e., if a star's color falls within the range covered by the calibrations for single, main sequence stars. However, if a target star is blended with another source on one plate, up to five relations may drop out of the suite, yielding a less reliable *pltdist* based on 6–10 relations. We consider six relations to be the minimum number acceptable for a *pltdist* because at least two of the three *BRI* magnitudes, combined with three 2MASS measurements, provide optical/infrared colors consistent with those of normal main sequence stars. A few stars have *pltdists* derived using fewer than six relations because plate magnitudes were extracted and distances estimated after it was known that *VRI* photometry and/or trigonometric parallaxes were available. Thus, the new extractions of SuperCOSMOS data simply augment the sample and provide as many distances as possible for comparisons. The representative metallicity of stars that these relations are valid for are average main sequence red dwarfs in the disk of the Galaxy; thus, distance estimates for subdwarfs and young stars will be overestimated and underestimated, respectively.

As described in Hambly et al. (2004), to estimate the reliability of the *pltdists* generated from the suite of relations, single, main sequence, M dwarfs with known *trgdists* placing

them within 10 pc were run back through the relations to derive representative errors. The mean absolute deviation between the *pltdists* and *trgdists* were found to be 26%. In Table 3.4 we list the total errors that include this typical value combined in quadrature with the standard deviation of the up to 11 individual distances computed for a given star. Objects with equal magnitude companions included in unresolved photometry will have distance estimates placing them too close by a factor of 1.4. Light from fainter companions will decrease this offset, whereas light from additional unresolved companions will increase this offset.

3.1.4 $V_J R_{KC} I_{KC}$ CCD Photometry

VRI photometry was measured for 799 of the systems presented here. These measurements were the outcome of our astrometry/photometry program at the CTIO/SMARTS 0.9m and were made between 1999 and 2015.

All of the new *VRI* data, given in Table 3.2, were reduced using IRAF and are on the Johnson-Kron-Cousins system.⁵ Calibration frames taken at the beginnings of nights were used for typical bias subtraction and dome flat-fielding. Standard star fields from Graham (1982), Bessel (1990), and/or Landolt (1992, 2007, 2013) were observed multiple times each night to derive transformation equations and extinction curves. In order to match those used by Landolt, apertures 14'' in diameter were used to determine the stellar fluxes, except in cases where close contaminating sources needed to be deblended. In these cases, smaller

⁵The central wavelengths for the $V_J(\text{old})$, $V_J(\text{new})$, R_{KC} , and I_{KC} filters are 5438Å, 5475Å, 6425Å, and 8075Å, respectively. See Jao et al. (2011) for a discussion of the nearly identical $V_J(\text{old})$ and $V_J(\text{new})$ filters, which are photometrically indistinguishable for M dwarfs at a level of $\lesssim 10$ mmag.

apertures were used and aperture corrections were applied. As outlined in Winters et al. (2011), photometric errors are typically 30 mmag for the V -band and 20 mmag for both the R - and I -bands. Further details about the data reduction procedures, transformation equations, etc., can be found in Jao et al. (2005), Winters et al. (2011), and Winters et al. (2015).

An additional 369 primaries were found to have high quality optical photometry available from the literature, primarily from Bessell, Weis, and the SAAO group. The R and I photometric values from Weis have been transformed to the Johnson-Kron-Cousins (JKC) system via the color relations given in Bessell & Weis (1987) so that all VRI values in Table 3.2 are on the same photometric system. SOAR/SOI (SOAR Optical Imager) photometry for a few dozen of the faintest objects from Dieterich et al. (2014) has also been converted to the JKC system using methods described in that paper.

3.1.5 CCD Photometric Distance Estimates

The *ccddists* in Table 3.4 are determined using a method similar to that used for the *pltdists*. As described in Henry et al. (2004), the difference is that more accurate CCD VRI magnitudes obtained at CTIO were used instead of plate magnitudes from SuperCOSMOS, in combination with 2MASS JHK to determine the suite of color- M_K relations. Again, the maximum number of possible relations from the combination of $VRIJHK$ magnitudes is 15, but in this case 12 relations yield useful results, as the color spreads in M_K vs. $(J - H)$, $(J - K)$, and $(H - K)$ are limited and these relations are omitted from the suite. Stars with VRI from the literature rather than from our observing program, had *ccddists* calcu-

lated using the same relation suite. All photometry is on the JKC system, and therefore the resulting *ccddists* are all generated in a uniform fashion. The representative metallicity of stars that these relations are valid for are average main sequence red dwarfs in the disk of the Galaxy; thus, distance estimates for subdwarfs and young stars will be overestimated and underestimated, respectively.

Similar to the *pltdists*, stars with all 12 relations have *ccddists* we deem reliable (assuming the stars are single and on the main sequence), and those with 7–11 relations we deem suspect because at least one magnitude and up to five relations have dropped out of the suite. Similarly, some stars in Table 3.4 have *ccddists* with fewer than seven relations because *VRI* photometry was gathered and distances estimated after it was known that trigonometric parallaxes were available. Thus, inclusion of *VRI* data simply augments the sample and provides as many distances as possible for statistical comparisons. As described in Henry et al. (2004), to estimate the reliability of the *ccddists* generated from the suite of relations, single, main sequence M dwarfs with known *trgdists* placing them within 10 pc were run back through the relations to derive representative errors. The mean offsets between the *ccddists* and *trgdists* were found to be 15%. In Table 3.4 are listed the total errors that include this typical value combined in quadrature with the standard deviation of the up to 12 individual distances computed for a given star. As mentioned in §3.1.3, objects with equal magnitude companions included in unresolved photometry will have distance estimates placing them too close by a factor of 1.4. Light from fainter companions will decrease this offset, whereas light from additional unresolved companions will increase this offset.

Figure 3.1 shows the sky distribution of the southern systems with best distances that are photometric; no parallax measurements exist for these systems. Systems within 25 pc are indicated as solid points, while those beyond 25 pc are shown as open points.

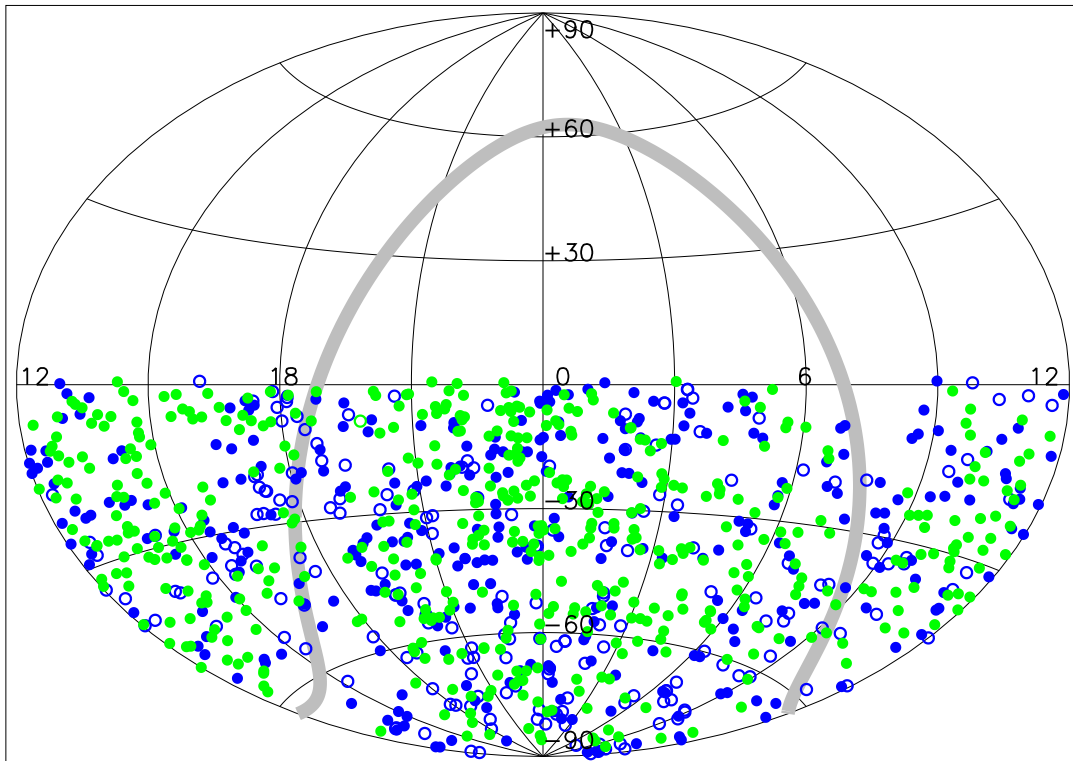


Figure 3.1 The 1167 southern systems with best distances estimated from photometry, i.e., those for which no parallax exists. Solid points indicate those systems that lie within 25 pc, blue for the 462 systems with *ccdists* and green for the 500 systems with *pltdists*; open points indicate the 205 systems with *ccdists* that are greater than 25 pc. The Galactic plane is noted in gray.

Table 3.2 provides the observed photometry data for the first ten of all systems presented in this thesis that lie within 25 pc and those that lie beyond 25 pc. The entire table can be found in Appendix I in Table A.1. Included are the names of the M dwarfs, the number of known components in each system, the sky coordinates (J2000.0), SuperCOSMOS *BRI* plate

magnitudes, VRI and the number of observations or references to literature photometry, 2MASS JHK magnitudes, an asterisk indicating if the object is included in the multiplicity sample (detailed further in Chapter 5), the ΔV between a companion and its primary, the deblended V (described in §6.3.1), and the estimated mass (described in §6.3.2). Components of multiple systems are noted with a capital letter after the name in the first column. If the names of the components are different, the letters identifying which is the primary and which is the secondary are placed within parenthesis (e.g., LHS1104(A) and LHS1105(B)). If the line of data is for a component other than the primary of the system, a ‘0’ is listed in column 2. The number in parentheses next to the number of components indicates the number of objects included in the VRI photometry. For example, the notation ‘0(1)’ indicates that listed is separate photometry data for a companion in a multiple system. Brown dwarf companions are included here and noted by a ‘BD’ next to the ‘0’ in column 2. If any of the assumptions or conversions of ΔV outlined in Chapter 6 §6.3.1 were made, the ΔV and the resulting V and mass estimate are noted in italics.

Table A.1 is divided into the 1986 systems within 25 pc (top) and the 361 systems beyond 25 pc (bottom). An additional 599 systems are listed here. 558 of these are northern M dwarf systems with trigonometric parallaxes placing them within 25 pc that are part of the multiplicity survey discussed in Chapter 5, while the remaining 24 are other southern M dwarf systems with trigonometric parallaxes with proper motions smaller than the lower limit of the sample analyzed in Winters et al. (2015). A ‘ J ’ next to a magnitude indicates that light from a close companion has resulted in blended photometry; however, the photometry

of any pair that has a $\Delta V > 3$ will not be noted as joint, as a companion with a ΔV that large only contributes 7% of the luminosity of the system and the ΔV s may not be very well defined at differences that large. We note that no detailed information regarding multiple systems is given for those beyond 25 pc nor those not part of the multiplicity sample.

Table 3.2: Photometry Data

Name	# obj	RA	DEC	B_J	R_{59F}	I_{IVN}	V_J	R_{KC}	I_{KC}	# nts/ref	J	H	K_s	Mult	ΔV	V_{db}	Mass
(1)	(2)	(hh:mm:ss)	(dd:mm:ss)	(mag)	(mag)	(mag)	(mag)	(mag)	(mag)	(11)	(mag)	(mag)	(mag)	(15)	(mag)	(mag)	($M_\odot$)
Within 25 pc																	
2MA0000-1245	1	00 00 28.7	-12 45 16	...	19.26	15.88	20.78	18.71	16.27	/40	13.20	12.45	11.97	...	...	...	...
LTT09844	1	00 00 46.9	-35 10 06	13.48	11.30	10.21	...	...	...	...	9.12	8.48	8.28	...	...	...	...
GJ1001B	0BD	00 04 34.8	-40 44 06	...	...	...	22.77J	19.00J	16.66J	2/1	13.11J	12.06J	11.40J	*	...	...	...
GJ1001C	0BD	00 04 34.8	-40 44 06	...	...	...	...	...	...	...	...	...	...	*	...	...	...
GJ1001A	3(1)	00 04 36.5	-40 44 03	14.21	11.83	10.06	12.83	11.62	10.08	/40	8.60	8.04	7.74	*	...	12.86	0.248
G158-025	1	00 04 40.3	-09 52 42	14.47	12.52	10.92	...	...	...	...	9.77	9.10	8.82	...	...	...	...
SIP0004-2058	1	00 04 41.5	-20 58 30	21.86	18.85	15.65	19.94	17.81	15.36	/40	12.40	11.83	11.40	...	...	...	...
GJ0001	1	00 05 24.4	-37 21 27	10.10	7.91	6.28	8.54	7.57	6.41	/2	5.33	4.83 ^b	4.52	*	...	8.53	0.457
LP644-034	1	00 05 34.9	-06 07 07	13.85	11.75	9.92	...	...	...	...	9.26	8.65	8.41	...	...	...	...
LP644-039	1	00 06 13.1	-02 32 11	15.38	13.34	10.91	14.62	13.42	11.84	/24	10.22	9.60	9.30	...	...	...	...
Beyond 25 pc																	
GJ1293	1	00 01 25.8	-16 56 55	11.48	9.08	8.46	10.73	9.88	9.04	/40	8.02	7.41	7.22	...	...	...	...
L290-032	1	00 02 27.1	-46 01 44	13.47	11.44	9.90	...	...	...	...	9.18	8.52	8.34	...	...	...	...
LHS0105	1	00 09 17.3	-19 42 32	16.88	14.88	12.53	15.52	14.18	12.46	/40	10.88	10.33	10.07	...	...	...	...
LTT00074	1	00 11 04.6	-05 47 02	11.48	9.61	8.21	10.86	9.96	9.04	/35	7.98	7.31	7.12	...	...	...	...
LTT00095	1	00 13 29.1	-36 49 44	12.26	9.69	8.47	...	...	...	...	7.80	7.18	6.96	...	...	...	...
LHS1048	1	00 15 33.5	-35 11 48	15.77	13.80	12.10	14.53	13.47	12.09	/40	10.80	10.26	10.06	...	...	...	...
SCR0015-6957	1	00 15 52.5	-69 57 21	14.58	12.54	10.91	13.54	12.52	11.18	/40	9.89	9.24	9.01	...	...	...	...
LHS0109	1	00 17 40.0	-10 46 17	15.03	12.93	12.00	13.88	12.97	12.10	/40	11.05	10.56	10.37	...	...	...	...
LEHPM1-0439	1	00 18 19.4	-82 07 15	16.92	14.76	12.62	15.78	14.63	13.03	/40	11.68	11.12	10.86	...	...	...	...
L086-093	1	00 18 34.6	-68 46 60	12.33	10.05	9.21	11.32	10.43	9.57	/25	8.58	7.97	7.72	...	...	...	...

^a2MASS magnitude error greater than 0.05 mags.

A 'J' next to a photometry value indicates that the magnitude is blended due to one or more close companions.

References: (1) this work; (2) Bessel (1990); (3) Bessell (1991); (4) Costa & Méndez (2003); (5) Costa et al. (2005); (6) Costa et al. (2006); (7) Dahn et al. (1982); (8) Dahn et al. (2002); (9) Dieterich et al. (2014); (10) Harrington & Dahn (1980); (11) Harrington et al. (1993); (12) Henry et al. (2004); (13) Henry et al. (2006); (14) Høg et al. (2000); (15) Jao et al. (2005); (16) Jao et al. (2011); (17) Jao et al. (2014); (18) Kilkenney et al. (2007); (19) Koen et al. (2002); (20) Koen et al. (2010); (21) Lèpine et al. (2009); (22) Patterson et al. (1998); (23) Reid et al. (2002); (24) Reid et al. (2003b); (25) Reid et al. (2004); (26) Riedel et al. (2010); (27) Riedel et al. (2014); (28) Weis & Uppgren (1982); (29) Weis (1984); (30) Weis (1986); (31) Weis (1987); (32) Weis (1988); (33) Weis (1991a); (34) Weis (1991b); (35) Weis (1993); (36) Weis (1994); (37) Weis (1996); (38) Weis (1999); (39) Winters et al. (2011); (40) Winters et al. (2015).

3.2 Trigonometric Parallaxes

There are two primary sources of trigonometric parallax data currently available. The *General Catalogue of Trigonometric Stellar Parallaxes, Fourth Edition* (van Altena et al. 1995), often called the Yale Parallax Catalogue (hereafter YPC), is a valuable compendium of ground-based parallaxes published up to 1995 and includes about half of the nearby M dwarf parallaxes measured to date, notable among which are from parallax programs at Allegheny, Mt. Stromlo, McCormick, Sproul, Van Vleck, Yale, and Yerkes. The *Hipparcos* mission (initial release by Perryman et al. (1997), and the updated results by van Leeuwen (2007); hereafter HIP) updated many of those parallaxes, and contributed about one hundred-fifty new measurements for bright ($V \lesssim 12.5$) nearby M dwarfs. About one hundred other M dwarf systems have parallaxes available from other publications. The RECONS (REsearch Consortium On Nearby Stars) group has measured a substantial number of parallaxes to nearby stars, adding 148 M dwarf systems to the 25 pc census via new measurements (Jao et al. 2005, 2011, 2014; Costa et al. 2005, 2006; Henry et al. 2006; Subasavage et al. 2009; Riedel et al. 2010, 2011, 2014; von Braun et al. 2011; Mamajek et al. 2013; Dieterich et al. 2014), published in *The Solar Neighborhood* series of papers (hereafter TSN) in *The Astronomical Journal*.

In total, we list the parallax data for the 1342 M dwarf primaries in Tables 3.3 and B.1. The 1180 in the top section of these tables lie within 25 pc, 1122 of which comprise the sample targeted in the multiplicity search described in Chapter 5. The other 58 systems closer than 25 pc either did not have colors and absolute magnitudes that met the updated

M dwarf definition (described in Chapter 5), §5.1, or their parallaxes were finalized after the multiplicity search was already complete.

The 162 M dwarf systems in the lower section of Tables 3.3 and B.1 lie beyond 25 pc. Included in that 162 are 48 systems that have parallaxes < 40 mas measured by RECONS — these were anticipated to be closer than 25 pc because of their *pltdists* and/or *ccddists*, but are now known to lie beyond 25 pc.

For all known southern systems without parallaxes, a search of YPC and HIP was carried out in the event that a parallax < 40 mas already existed. A $30'$ search radius for YPC and a $5'$ search radius for HIP were used in sweeps for objects to compensate for high proper motions as well as poor coordinates, the latter being particularly important for the YPC. Possible matches were then confirmed or refuted by comparing identifiers, proper motions, and V magnitudes. Seven percent (114 systems) of the entire sample of 1749 southern M dwarfs in this chapter were discovered to have parallaxes < 40 mas in YPC and/or HIP. No other systematic literature search for stars with published parallaxes beyond 25 pc has yet been done beyond those using YPC and HIP.

Table 3.3 provides the astrometry data for the first ten M dwarf primaries in each section (< 25 pc and > 25 pc) with trigonometric parallaxes presented in this thesis as a guide, including the names of the M dwarf, the number of known components in each system, coordinates (J2000.0), proper motion magnitudes and position angles with references, the weighted means of the published trigonometric parallaxes and the errors, the number of parallaxes included in the weighted mean and references, and an asterisk indicating if the

object is included in the multiplicity sample. The table is divided into the 1180 systems within 25 pc (top) and the 162 systems beyond 25 pc (bottom). All proper motions are from SuperCOSMOS, except where noted.⁶ Proper motions with the reference ‘RECONS (in prep)’ indicate SuperCOSMOS proper motions that will be published in the RECONS 25 Parsec Database, and parallaxes with that same reference indicate that they will be published in a future paper by a member of the RECONS team. The complete Table B.1 can be found in Appendix II, where the astrometry data for all primaries in this entire thesis that have parallaxes are listed.

Table 3.3: Astrometry Data

Name	# obj	RA	DEC	μ	P.A.	ref	π	σ_π	# π	ref	Mult
		(hh:mm:ss)	(dd:mm:ss)	($''/\text{yr}^{-1}$)	(deg)		(mas)	(mas)			
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
Within 25 pc											
GJ1001	3	00 04 36.5	−40 44 03	1.636	159.7	70	79.87	3.75	2	25,66	*
GJ0001	1	00 05 24.4	−37 21 27	6.106	112.5	27	230.32	0.90	2	66,67	*
LHS1019	1	00 06 19.2	−65 50 26	0.564	158.7	70	59.85	2.64	1	67	*
GJ1002	1	00 06 43.2	−07 32 17	2.041	204.0	37	213.00	3.60	1	66	*
GJ1003	1	00 07 26.7	+29 14 33	1.890	127.0	36	53.50	2.50	1	66	*
LHS1022	1	00 07 59.1	+08 00 19	0.546	222.0	36	44.00	6.30	1	66	*
L217-028	1	00 08 17.4	−57 05 53	0.370	264.0	38	75.17	2.11	1	1	*
HIP000687	1	00 08 27.2	+17 25 27	0.110	233.8	27	45.98	1.93	1	67	*
G131-026	2	00 08 54.0	+20 50 18	0.251	194.4	51	54.13	1.35	1	51	*
GJ0007	1	00 09 04.3	−27 07 20	0.715	079.7	70	43.61	2.56	2	66,67	*
Beyond 25 pc											
GJ1293	1	00 01 25.8	−16 56 55	0.386	132.8	70	31.13	2.21	1	67	
L290-032	1	00 02 27.1	−46 01 44	0.212	096.9	70	26.06	4.35	1	67	
LTT00074	1	00 11 04.6	−05 47 02	0.276	089.1	70	38.78	2.09	2	66,67	
LTT00095	1	00 13 29.1	−36 49 44	0.349	211.6	70	35.48	2.30	1	67	
LHS0109	1	00 17 40.0	−10 46 17	1.051	180.0	70	28.40	3.50	1	66	
LP644-095	1	00 19 12.4	−03 03 13	0.237	183.6	70	32.31	2.26	1	67	
LHS0110	2	00 19 37.0	−28 09 46	1.388	192.2	70	33.75 ^a	1.20	2	30,30	
LEHPM1-0494	2	00 21 05.9	−42 44 43	0.253	086.5	15	38.42 ^a	1.44	2	15,15	
LTT00207	1	00 23 47.3	−36 51 41	0.187	252.2	70	24.89	1.59	1	67	
SCR0027-0806	1	00 27 45.4	−08 06 05	0.184	122.3	70	24.89	1.24	1	1	

^aThe weighted mean parallax includes the parallax of both the primary and the secondary components.

^bThe HIP parallax is markedly different from that published in YPC and has an error of ~ 45 mas.

⁶Some of the proper motion values from the SuperCOSMOS Sky Survey for SCR objects presented here differ slightly from those in the original discovery papers. For the new values, a more comprehensive method has been used that provides multiple measurements of proper motion between various plate pairs, while before only a single value was available that incorporated all plates into the solution simultaneously. The proper motions provided here are those that yield consistent values among multiple determinations and are preferred.

2MA0000-1245	00 00 28.7	-12 45 16	22.2	7.6	7	23.1	4.0	11	...	...	...	23.1	ccd
LTT09844	00 00 46.9	-35 10 06	23.5	7.4	11	...	...	...	...	...	...	23.5	plt
GJ1001	00 04 36.5	-40 44 03	11.2	3.4	11	12.5	1.9	12	12.5	0.6	2	12.5	trg
G158-025	00 04 40.3	-09 52 42	24.5	7.4	11	...	...	...	...	...	...	24.5	plt
SIP0004-2058	00 04 41.5	-20 58 30	14.9	6.8	10	18.6	3.0	11	...	...	...	18.6	ccd
GJ0001	00 05 24.4	-37 21 27	3.7	1.0	11	5.6	0.9	11	4.3	0.0	2	4.3	trg
LP644-034	00 05 34.9	-06 07 07	23.0	6.2	11	...	...	...	...	...	...	23.0	plt
LP644-039	00 06 13.1	-02 32 11	27.3	9.2	11	21.9	3.9	12	...	...	...	21.9	ccd
LHS1019	00 06 19.2	-65 50 26	16.1	4.6	11	16.6	2.6	12	16.7	0.7	1	16.7	trg
GJ1002	00 06 43.2	-07 32 17	6.8	2.1	11	5.4	1.0	12	4.7	0.1	1	4.7	trg
Beyond 25 pc													
GJ1293	00 01 25.8	-16 56 55	16.5	4.6	4	24.8	4.1	9	32.1	2.3	1	32.1	trg
L290-032	00 02 27.1	-46 01 44	24.5	6.6	11	...	...	...	38.4	6.6	1	38.4	trg
LHS0105	00 09 17.3	-19 42 32	25.9	7.9	11	29.1	5.1	12	...	...	...	29.1	ccd
LTT00074	00 11 04.6	-05 47 02	16.6	4.6	9	21.0	3.6	10	25.8	1.4	2	25.8	trg
LTT00095	00 13 29.1	-36 49 44	13.5	3.7	11	...	...	...	28.2	1.8	1	28.2	trg
LHS1048	00 15 33.5	-35 11 48	40.6	12.1	11	52.6	8.5	12	...	...	...	52.6	ccd
SCR0015-6957	00 15 52.5	-69 57 21	28.1	7.8	11	31.8	5.3	12	...	...	...	31.8	ccd
LHS0109	00 17 40.0	-10 46 17	{71.7}	22.1	11	{103.1}	17.1	9	35.2	4.4	1	35.2	trg
LEHPM1-0439	00 18 19.4	-82 07 15	55.3	15.7	11	58.8	11.0	12	...	...	...	58.8	ccd
L086-093	00 18 34.6	-68 46 60	22.6	6.6	11	30.3	4.9	9	...	...	...	30.3	ccd

3.3 Distance Comparisons

It is worthwhile to compare the distances from the different methods discussed. As this chapter is drawn from the work that was presented in Winters et al. (2015), only comparisons of the southern systems are given.

Figure 3.2 shows a comparison of the *pltdists* and *ccddists* for the 739 southern stars that have both *BRI* and *VRI* photometry placing them within 25 pc. Only those objects thought to be single have been plotted. Error bars on individual points are omitted for clarity, but can be found for individual systems in Table 3.4. As described above (§3.1.3 and §3.1.5), the errors typical to the technique are 26% and 15% for *pltdists* and *ccddists*, respectively. The total errors are typically 32% in *pltdist* and 16% in *ccddist* and include the aforementioned errors added in quadrature to the standard deviations of the individual estimates for each star. Because estimates from individual relations in the suites are usually quite consistent,

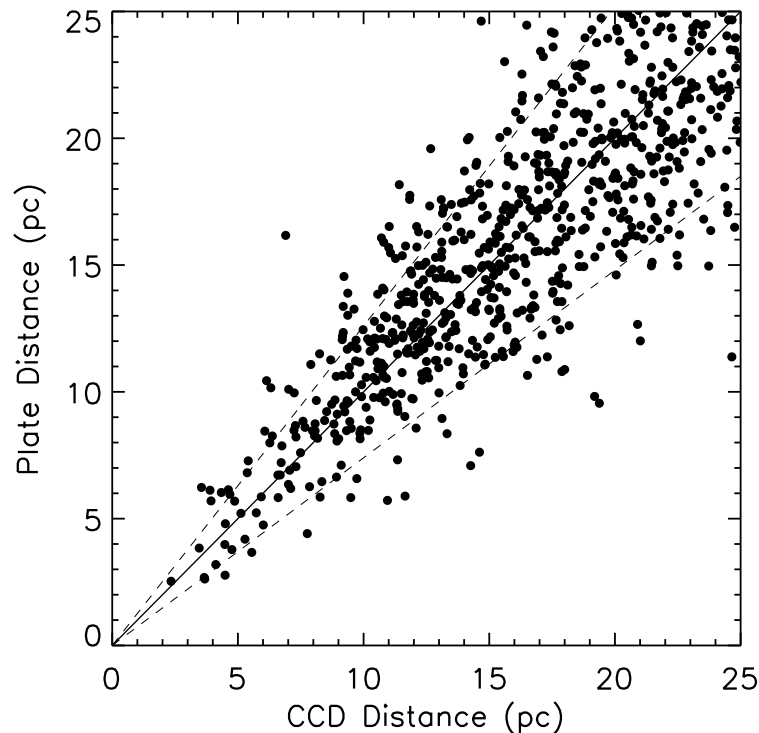


Figure 3.2 Distance comparisons of estimates using photographic plate photometry (*pltdist*) vs. CCD photometry (*ccddist*) for the systems closer than 25 pc that have both *BRI* and *VRI* photometry. Known unresolved multiples with blended photometry were not included. The diagonal line represents 1:1 correspondence in distances, while the dashed lines indicate the 26% errors associated with the plate distance estimates.

the total errors are dominated by the adopted values for systematic errors. The dominant cause of the distance discrepancies is poor plate photometry compared to CCD photometry, as can be seen in a few extreme cases in Figure 3.2.

Figures 3.3 (343 systems) and 3.4 (337 systems) compare the *pltdists* and *ccddists*, respectively, to the available *trgdists* placing southern systems within 25 pc, again using only known single objects. The average offsets are 24% for the *pltdists* and 17% for the *ccddists*, consistent with the 26% and 15% reported in Hambly et al. (2004) and Henry et al. (2004),

respectively. The inherent spreads around the one-to-one lines in each plot have three causes: (1) errors in the photometry and parallaxes used to derive the relations and for the stars targeted here, (2) unresolved systems, and (3) cosmic scatter due to differences in stellar ages, compositions, and perhaps magnetic properties among the stars that are not taken into account by the color-magnitude relations. *BRI* photometry errors dominate the *pltdist* vs. *trgdist* offsets, while cosmic scatter dominates the *ccddist* vs. *trgdist* offsets because the *VRI* photometry and parallax errors are each only a few percent. The reduced scatter in Figure 3.4 again illustrates the value of obtaining accurate photometry, as the scatter has been reduced significantly (from 24% to 12%). The distances are more often underestimated than overestimated, a result of the presence of unknown unresolved multiples and unknown young objects in the sample.

3.3.1 *M Dwarfs, M Subdwarfs and M Giants*

Before outlining the population results of this study of southern M dwarfs, we must first verify that stars included in the final sample are, indeed, M dwarfs based on the photometry and parallaxes now available. Although our sample for the nearby M dwarf characterization study has been selected to include only southern stars with proper motions in excess of $\mu = 0''.18 \text{ yr}^{-1}$, a few giants might be included that have extraordinary space velocities, or more likely, have erroneous proper motions. For stars without parallaxes, we use several color-color diagrams to separate dwarfs from interloping giants — an example is shown in Figure 3.5, which plots $(J - H)$ vs. $(R - K)$.

A small supplementary set of 23 giants, confirmed through a literature search, not in the

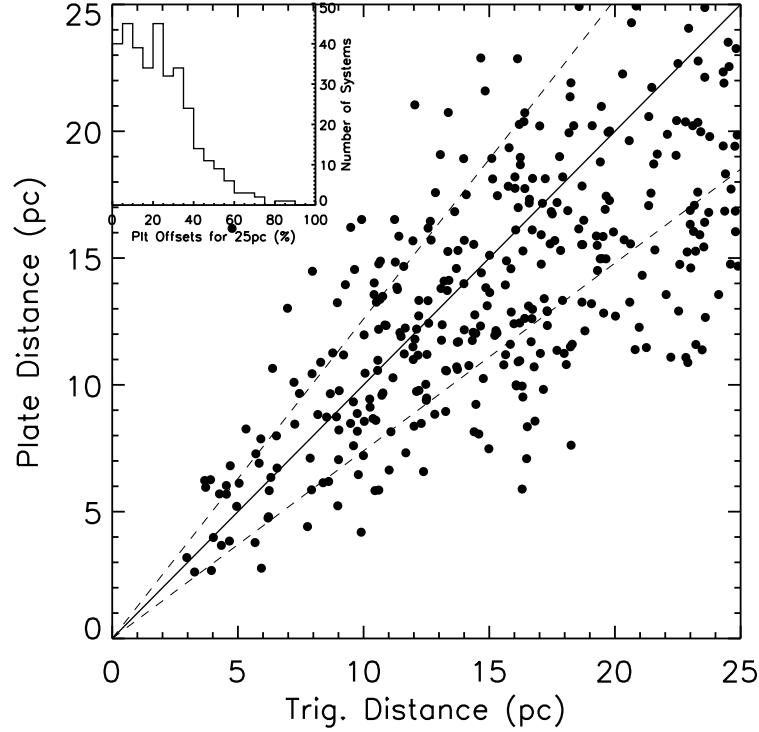


Figure 3.3 Distance comparisons of estimates from photographic plate photometry (*pltdist*) vs. distances measured using trigonometric parallaxes (*trgdist*) for the systems closer than 25 pc. Known unresolved multiples with blended photometry were not included. The diagonal line represents 1:1 correspondence in distances, while the dashed lines indicate the 26% errors associated with the plate distance estimates. The inset histogram indicates the distribution of the distance offsets between the *pltdist* and *trgdist*. For this sample, the absolute mean offset is 24%, consistent with the 26% systematic error determined in Hambly et al. (2004).

M dwarf sample discussed here is included for comparison. These giants have been observed at the 0.9m using the same instrument configuration as for the dwarfs. Only those objects with 2MASS magnitude quality codes of AAA⁷ are used in Figure 3.5. While there appears to be some blending of giants and dwarfs in the early M section of the plot, near $(R - K) \sim 2.5$ -3.5 and $(J - H) \sim 0.7$ -0.8, it is unlikely that any of the presumed dwarfs with only

⁷AAA indicates measurements where the signal-to-noise ratio was > 10 and where the cmsig error was < 0.10857 (Skrutskie et al. 2006).

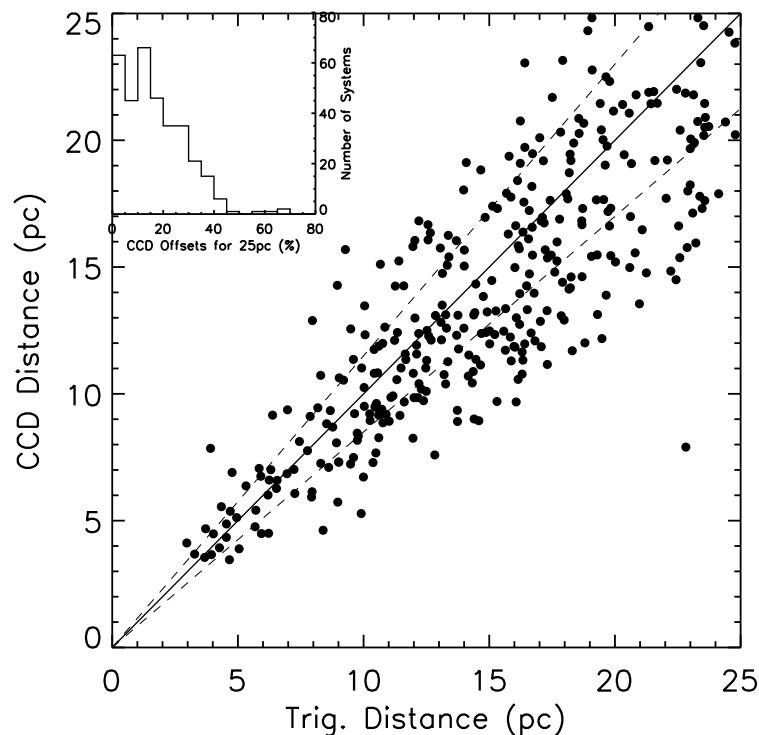


Figure 3.4 Distance comparisons of estimates from CCD photometry (*ccddist*) vs. distances measured using trigonometric parallaxes (*trgdist*) for the systems closer than 25 pc. Known unresolved multiples with blended photometry were not included. The diagonal line represents 1:1 correspondence in distances, while the dashed lines indicate the 15% errors associated with the CCD distance estimates. Note the reduced scatter compared to the similar *pltdist* plot shown in Figure 3.3, indicating the improvement in the photometry. The inset histogram indicates the distribution of the distance offsets between the *pltdist* and *trgdist*. For this sample, the absolute mean offset is 17%, consistent with the 15% systematic error determined by Henry et al. (2004). The outlier with *trgdist* = 22.8 pc and *ccddist* = 7.9 pc is the known young object GJ0871.1A.

a photometric distance estimate in that region will be giants, given the proper motion limit of this sample. It is notable that the giants separate very cleanly from the dwarfs redward of $(R - K) \sim 4$. The *VRIJHK* photometry data for these comparison giants are listed in Table 3.5. The *JHK* photometry for XMen has high errors on its *JHK* photometry due to its brightness and is not included, but the *VRI* is listed.

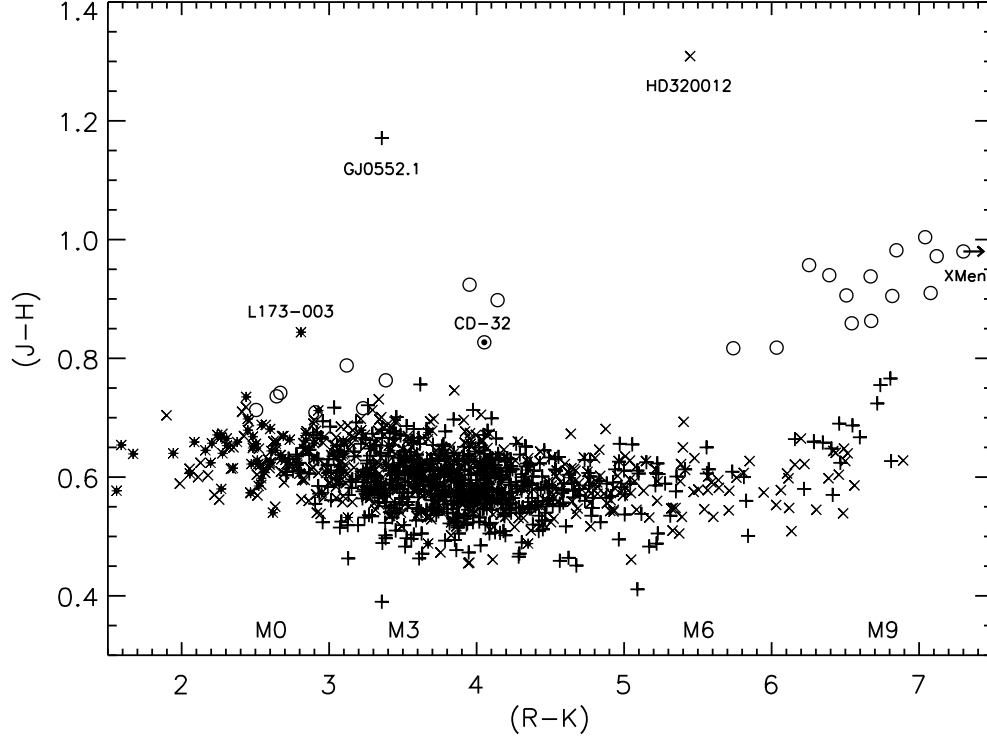


Figure 3.5 Color-color diagram showing $(J-H)$ vs. $(R-K)$ for all presumed single M dwarfs in the sample. Known unresolved multiples with blended photometry were not included. Colors that use plate R magnitudes are shown as x's, while those that use CCD R magnitudes are plotted as plusses. Plate R photometry is used to calculate colors for the objects for which a published parallax, but no CCD VRI photometry, exists and are noted as asterisks with a solid center. For comparison, a few known giants are denoted by open circles. The object CD-32 16735 is plotted as a solid dot surrounded by an open circle, as it is surely a giant, given its preliminary parallax. The giant X Men is too red for the $(R-K)$ color cut-off of this plot, but has been indicated with an arrow. Corresponding spectral type estimates are given along the bottom.

Table 3.5: Comparison Photometry for Giants

Name	RA (hh:mm:ss)	DEC (dd:mm:ss)	V_J (mag)	R_{KC} (mag)	I_{KC} (mag)	# nts	J (mag)	H (mag)	K_s (mag)
TT SCL	00 16 54.6	-30 13 52	11.81	10.89	10.18	2	8.92	8.21	7.98
XMen	03 32 29.7	-76 26 55	14.88	11.53	8.77	2	...	...	...
AF ERI	04 20 19.5	-10 24 26	13.18	10.99	8.75	2	5.80	4.94	4.45
HD270965	05 00 40.4	-71 57 53	11.38	10.62	9.94	2	8.91	8.17	7.98
DEN0515-2200	05 15 36.6	-22 00 10	13.37	12.27	10.81	2	9.32	8.42	8.13
HD269328	05 17 07.5	-70 56 38	10.41	9.70	9.04	1	8.05	7.33	7.20
SCR0629-2101	06 29 20.2	-21 01 30	15.37	12.98	10.84	1	7.82	6.91	6.47
SCR0656-2918	06 56 15.9	-29 18 03	13.89	11.72	9.45	1	6.37	5.51	5.05
SCR0703-3507	07 03 49.6	-35 07 44	15.34	12.80	10.61	1	7.35	6.37	5.95

SCR0705-3534	07 05 47.4	-35 34 26	13.95	11.70	9.39	1	6.03	5.12	4.62
SCR0833-6107	08 33 27.7	-61 07 58	13.02	11.90	10.72	1	9.63	8.87	8.52
SCR1048-7739	10 48 26.7	-77 39 19	11.47	10.53	9.64	1	8.26	7.54	7.30
SCR1317-4643	13 17 56.5	-46 43 54	13.96	12.12	10.02	1	7.57	6.75	6.38
SCR1358-4910	13 58 43.6	-49 10 52	16.14	13.91	11.62	1	8.61	7.67	7.24
SCR1440-7837	14 40 37.4	-78 37 11	10.75	9.88	9.01	1	7.71	6.92	6.76
SCR1534-7237	15 34 02.5	-72 37 11	16.03	13.94	11.71	1	8.90	7.96	7.55
SCR1544-1805	15 44 45.0	-18 05 07	13.54	11.36	9.09	1	5.96	5.05	4.54
HIP082725	16 54 32.5	-62 24 14	11.55	10.82	10.12	1	9.06	8.32	8.15
SCR2000-0837	20 00 58.3	-08 37 28	14.49	12.08	9.73	1	6.46	5.46	5.04
V506AQL	20 02 50.8	-04 32 56	13.18	10.99	8.74	1	6.14	5.18	4.74
SCR2038-0409	20 38 45.5	-04 09 27	16.44	14.01	11.65	2	8.27	7.30	6.89
2MA2108-2120	21 08 33.1	-21 20 52	14.15	12.12	9.90	2	7.31	6.49	6.09
CD-32 16735	21 47 02.7	-32 24 40	9.22	8.11	6.70	3	5.24	4.41	4.06
LEHPM2-0438	23 50 08.3	-86 51 02	11.63	10.49	9.17	2	7.69	6.77	6.54

Four stars in this diagram are worthy of note. We followed the initially very interesting target CD-32 16735 on our parallax program due to its excitingly nearby *pltdist* (2.5 pc) and *ccddist* (2.3 pc). However, the preliminary parallax we have measured is -4.69 ± 3.88 mas, essentially zero within the errors. Thus, this object is most certainly a giant, which is confirmed by its position in Figure 3.5. Both L173-003 and GJ0552.1 are likely unresolved binaries with odd colors from an inspection of their SuperCOSMOS images (as equal luminosity binaries will appear normal on a color-color plot). A comparison of the two available distances for L173-003 also indicates that it is an unresolved binary, as its *pltdist* (23.4 pc) is an underestimate of the true *trgdist* (47.9 pc). GJ0552.1 also has two distances available for comparison; however they are both photometric estimates that agree within the errors: *pltdist* = 13.2 ± 5.3 versus *ccddist* = 16.3 ± 3.9 . Finally, HD320012 has only a *pltdist*, but has large *H* and *K* magnitude errors.

For roughly one-third of the 1748 southern systems that have a published parallax, confirming that they are red dwarfs is straightforward using an empirical HR diagram. An example HR Diagram, using M_V vs. $(V - K)$, is shown in Figure 3.6. The M dwarf sequence

is well-defined, and there is a noticeable population of cool subdwarfs below the main sequence having $(V - K) = 3.5\text{--}4.5$. As is evident from this diagram, none of the southern stars with trigonometric parallaxes fall in the region where known giants are found, so we are confident that at least among the stars with parallaxes, there are no giants. There are some objects in this sample of southern M dwarfs that have a published trigonometric parallax, for which reliable CCD VRI photometry does not yet exist. Those objects have been included on the Color-Color Diagram in Figure 3.5 using the plate R magnitude, instead of here on Figure 3.6. We thus conclude that 1747 of the 1748 stars assembled here are main sequence stars.

In Figure 3.7 we show a reduced proper motion diagram (see the discussion in Boyd et al. (2011b)) to confirm the subdwarfs identified in Figure 3.6 and to find additional subdwarf candidates in the sample that do not have parallaxes. Note that because subdwarfs are found below the main sequence (contrary to the positions of young and multiple objects above the main sequence), their distances will be *overestimated* rather than underestimated. Distances for these southern subdwarfs have been enclosed in curly brackets in Table 3.4 to highlight this effect. Of these 24 candidates, 21 have parallaxes, three do not, and 18 are confirmed subdwarfs (LHS2852 is buried in the mass of clustered points). There are half a dozen stars along the dwarf-subdwarf boundary of plot 3.7 that are worth noting. While LHS3528, LHS0284, and LHS0323 all appear in (or on the border of) the subdwarf region of Figure 3.7, they have been shown spectroscopically to be dwarfs (Hawley et al. 1996; Jao et al. 2011). LHS0110 and SSS1444-2019 have both been identified as candidates

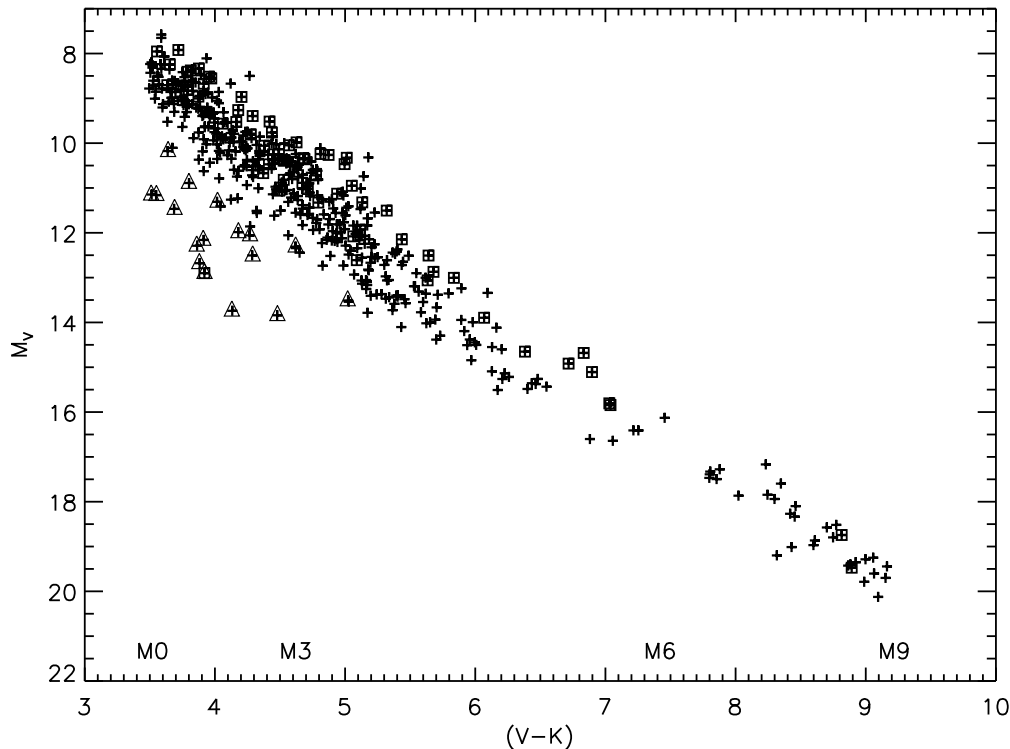


Figure 3.6 An observational HR diagram for all M dwarf systems in the sample that have trigonometric parallaxes, as well as V and K magnitudes, using M_V and $(V - K)$ as proxies for luminosity and temperature, respectively. Known multiples with blended photometry are enclosed in open squares. A set of a few dozen subdwarfs is evident below the main sequence. Spectroscopically confirmed subdwarfs have been enclosed in triangles, with references given in Table 6.5. Corresponding spectral type estimates are given along the bottom.

by others (Jao et al. 2011; Schilbach et al. 2009).

Figure 3.8 outlines the population density of the southern M dwarfs within 25 pc, using the $(V - K)$ color versus distance in ten equal volume shells to 25 pc.⁸ We expect a uniform volume density to the 25 pc horizon, and that is now the case for red dwarfs with types earlier than $\sim M4$. Although recent work by RECONS (Dieterich et al. 2014) has bolstered the number of the closest and reddest objects on this plot, the sample shows a classic

⁸For those ~ 500 targets that lack a V_J magnitude, one has been estimated using the polynomial given in Winters et al. (2015).

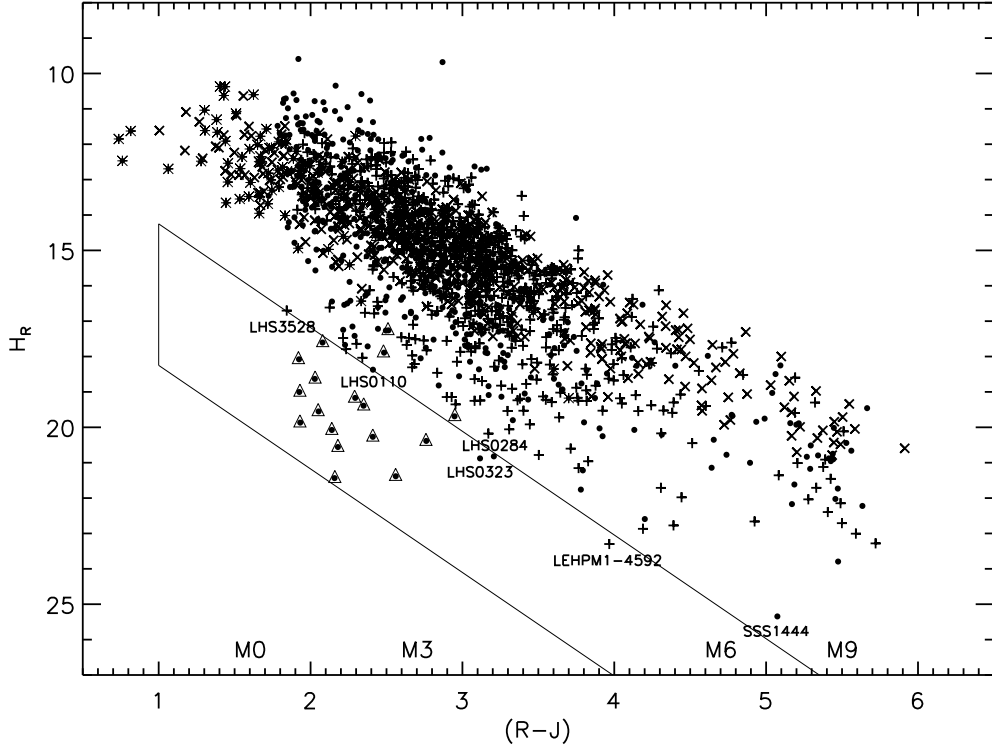


Figure 3.7 A reduced proper motion diagram is shown, which is used to separate the dwarfs from the subdwarfs in the entire sample, based on the proper motions of the objects. The region of interest is outlined, as in Boyd et al. (2011b). The y-axis is $H_R = R + 5 + 5 \log(\mu)$ and the x-axis is the $(R - J)$ color. Primaries with *trgdists* are plotted as solid dots, those with *cddists* are plusses, and those with *pltdists* are x's. Objects that have a published parallax, but no CCD photometry have been indicated as asterisks with solid centers. Spectroscopically confirmed subdwarfs have been enclosed in triangles, three of which fall outside the indicated subdwarf region. Three additional objects are shown inside the outlined subdwarf region: LHS0284, LHS0323, and LEHPM1-4592, although both LHS0284 and LHS0323 have been shown to be dwarfs (Jao et al. (2011)). Corresponding spectral type estimates are given along the bottom.

observational bias for redder, intrinsically fainter stars that are underrepresented at larger distances. There are several reasons for the non-uniform distribution, including: (1) The reddest dwarfs with types later than M6 have simply been missed in various search efforts, including our SCR trawls, due to their intrinsic faintness. (2) Some of the currently known

25 pc members are hidden multiples — resolution of these multiples would move the points to larger distances if they have been placed in Figure 3.8 using *pltdist* or *ccddist*. (3) Some systems are likely among the ~ 80 southern red dwarfs within 25 pc predicted to have $\mu < 0''.18 \text{ yr}^{-1}$ by Riedel (2012). These have been excluded due to our proper motion cut-off. In fact, we currently have ~ 40 stars on our parallax program with $\mu < 0''.18 \text{ yr}^{-1}$ having preliminary parallaxes larger than 40 mas. (4) Finally, some red dwarfs are lurking in the Galactic plane, which has traditionally been avoided due to crowded fields, although this deficit is not likely to be significantly distance-dependent.

We can assess the incompleteness of the current sample by assuming that the 19 southern systems with M dwarf primaries found within 5 pc (Henry 2014) represent a complete sample and that the stellar density is constant to 25 pc. If so, we expect 2375 such systems within 25 pc in the southern sky. The histogram in Figure 3.9 plots the cumulative number of expected systems at distances to 25 pc as a solid line, with the dotted lines representing the Poisson errors. Here, we have propagated the 23% error on the 19 systems within 5 pc to 25 pc, corresponding to an error of 546 systems in 2375. The histogram of systems outlined for the trigonometric sample is the starting point for systems we consider reliably within 25 pc. The histograms for the CCD and plate additions include only those systems with best distances that are “clean”, i.e., those that are for single stars based on current information, and that are not subdwarfs. These histograms are presumably overestimates, as a fraction of the included systems are as yet undiscovered close multiples with blended photometry whose plate and CCD distances are underestimates. We do not expect these overestimates

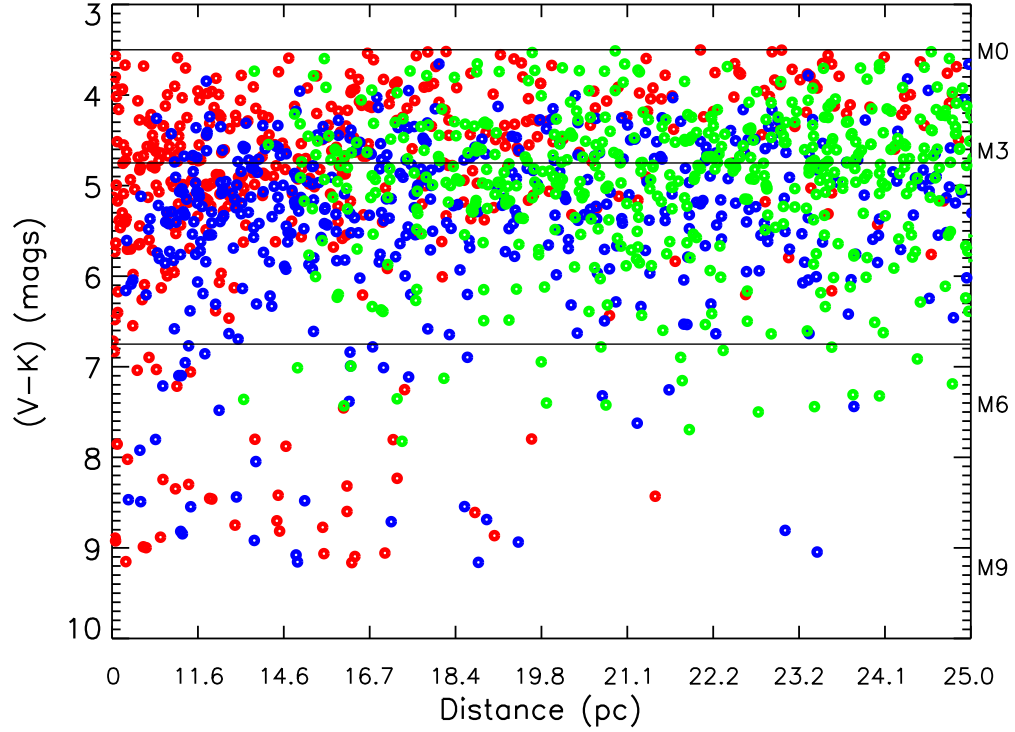


Figure 3.8 The density of M dwarf systems in the southern sky is plotted using $(V - K)$ vs. distance in 10 equal-volume shells to 25 pc. Red points indicate systems with *trgdists*, blue points indicate those with *cddists*, and green points indicate those with *pltdists*. Corresponding spectral type estimates are given along the right. For those 507 objects without a CCD V magnitude, one has been estimated using the equation in Winters et al. (2015). The horizontal lines highlight masses of 0.60, 0.30, and 0.10 $M_{\odot}$ from top to bottom.

to be extreme, in part because some of the known close multiple systems purposely removed to clean the sample will remain within 25 pc.

Based on the number of southern red dwarfs found within a 5 pc volume and assuming a constant stellar density, it is estimated that ~ 5000 red dwarf systems reside within 25 pc in the entire sky (Winters et al. 2015), but only ~ 1100 have high quality distances from published trigonometric parallaxes, as outlined in Chapters 5 and 6. Figure 3.9 illustrates that there are still ~ 500 -1500 that have yet to be identified in the southern sky alone or

have their trigonometric parallaxes measured.

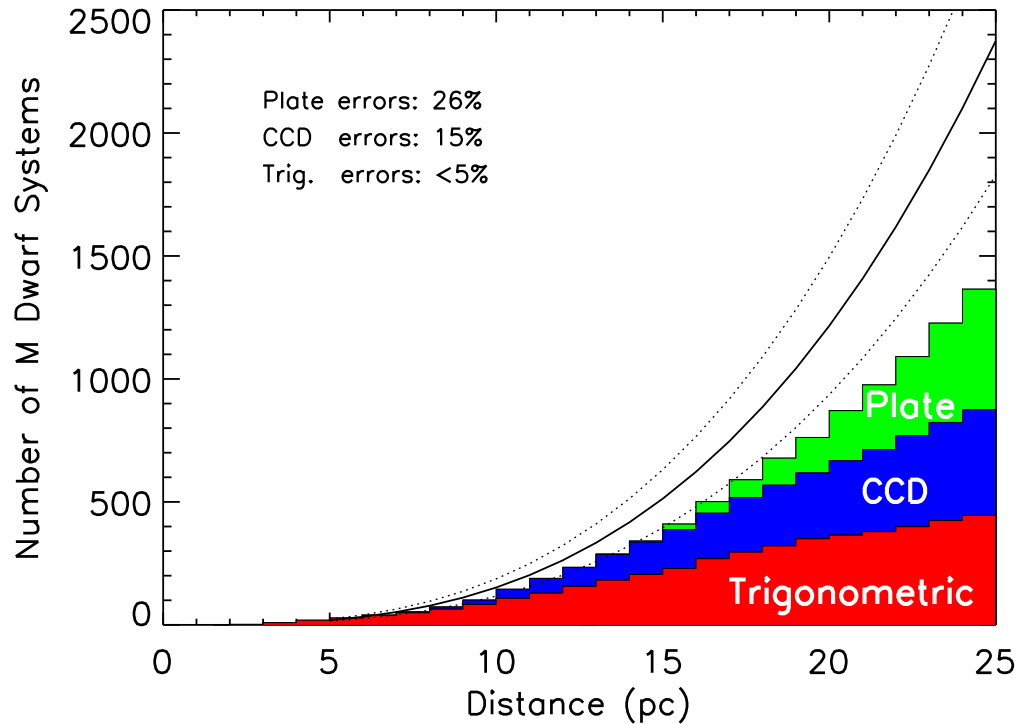


Figure 3.9 The cumulative numbers of southern single M dwarf systems known via the three distance techniques are shown using histograms. Those objects with trigonometric distances are indicated in red, those with photometric distances based on *VRI* CCD photometry are in blue, and those with photometric distances based on *BRI* plate photometry are in green. The solid black curve indicates the expected number within that distance horizon based on the 19 southern M dwarf systems known to lie within 5 pc with accurate trigonometric parallaxes and assuming a uniform density to 25 pc. The dotted lines indicate the extrapolated 23% Poisson errors based on those 19 systems.

Thus, we have presented the current status of the nearby population of southern M dwarf primaries, with a focus on those nearer than 25 pc. In Chapter 5, we will describe an all-sky search for companions to nearby M dwarfs, of which some of these southern systems are included, in order to more thoroughly characterize the red dwarfs found within 25 pc.

CHAPTER 4

PARALLAXES IN THE SOLAR NEIGHBORHOOD

Trigonometric parallax is one of the most time-intensive, but most accurate, methods of distance determination and is most reliable for nearby stars. However, many of these neighbors, particularly the M dwarfs, remain hidden due to their intrinsic faintness and cause us to have an incomplete understanding of local stellar populations. As a part of the work presented here, new parallaxes were measured to nearby M dwarf systems in an effort to fine-tune the census of these ubiquitous stars.

4.1 New RECONS Parallaxes from CTIOPI

Part of the effort of this thesis to characterize the nearby M dwarfs included measuring new parallaxes for 124 M dwarf systems (130 total parallaxes). Of these, 59 were new M dwarf systems discovered during the SCR searches (described in §1.3.4), while an additional 65 previously known M dwarf systems were suspected via photometry to be nearby with $0''.180 < \mu < 0''.499 \text{ yr}^{-1}$. Here we present these new parallaxes.

Each potential nearby star is carefully scrutinized before it is targeted for trigonometric parallax measurement as part of the Cerro Tololo Inter-American Observatory Parallax Investigation (CTIOPI) program, as the parallax measuring process is lengthy (> 2 years) and expensive. First, the target has to be observable from CTIO, so it must be south of $\delta = +30^\circ$. Second, if an object's *pltdist* places it within 30 pc, the object is targeted for *VRI* photometry measurements. If the *ccddist* for the object is found to be < 20 pc, it is targeted

for parallax¹.

Here we outline the method used for parallax observations. The central quarter of the 2048×2048 Tektronix CCD camera on the CTIO/SMARTS 0.9m with a pixel (px) scale of $0''.401 \text{ px}^{-1}$ is used for both astrometric and photometric observations, resulting in a $6''.8 \times 6''.8$ square field of view. Parallax frames are taken using either V_J (old), V_J (new)², R_{KC} , or I_{KC} filters, depending on the brightness of the science target. The magnitudes of the targets in their observed parallax filters are $7.94 < VRI < 18.63$. Brighter targets were observed at V , while fainter objects were observed with the I filter. Typically, three to five frames were taken each night (depending on the exposure time) within 30 minutes of the science target's meridian transit to minimize corrections required for differential color refraction. Exposure times ranged from 20 to 1200 seconds, depending on the magnitudes of the science stars, the reference field stars, and sky conditions. All data were taken between 1999 and 2015. Bias and dome flat frames were taken nightly to enable calibration of the science images. All data have been bias-subtracted and flat-fielded following the procedures outlined in Jao et al. (2005).

As discussed extensively in Jao et al. (2005) and Henry et al. (2006), our data reduction processes disentangle the proper motions and parallactic shifts that contribute to the paths traced on the sky by the science targets. In short, (1) SExtractor (Bertin & Arnouts 1996) was used to measure the centroids of the science and reference stars, (2) a six-constant

¹Resource constraints limit the number of objects that can be targeted; thus only those thought to be closer than 20 pc are measured for parallax.

²Between 2005 March and 2009 September, the V_J (new) filter was used in lieu of the V_J (old) filter and was found to be slightly inferior, astrometrically. See Jao et al. (2011) for a more thorough discussion. Of the targets presented here, 41 were observed in the V filter.

plate model was defined to determine plate constants in order to rotate each frame so that the reference stars are aligned from frame to frame, (3) the reference stars were initially assumed to have zero mean parallax and proper motion, (4) least-square equations were then solved for multi-epoch images, and (5) the relative parallax was corrected to absolute parallax via the photometric distance estimates of the reference stars. The final parallax error is a combination of many factors, including (1) the quality of the reference star frame (brightness, distribution), (2) the accuracy of the (x, y) centroids, including any ellipticity caused by a close component, (3) the total number of parallax images, (4) the time span of the available frame series, (5) the parallax factor coverage, (6) the differential color refraction (DCR) corrections, and (7) the correction from relative to final absolute parallax. The parallax factor coverage is a measure of how many frames were obtained for the ‘morning’ and ‘evening’ halves of the parallax ellipse of each star. The DCR corrections are needed because the parallax star and the reference stars do not have identical colors; therefore, their positions shift relative to each other as a result of refraction by the Earth’s atmosphere.

In order to be considered publishable by the group, three criteria generally needed to be met: (1) the object had to have been observed for at least two years in order to separate the star’s motion into proper motion and parallax; (2) within that two-year period, 30 ‘morning’ and 30 ‘evening’ frames had to have been acquired, covering each half of the RA portion of the parallax ellipse; and (3) the parallax error must be less than 3 mas; (4) *VRI* photometry had to have been obtained for the science and reference stars. The smallest coverage of the objects presented here is 2.32 years for WT 1928, while the longest is 14.97 years for both

LTT 6288AB and LTT 7434AB. The smallest error on the parallaxes reported here is 0.59 mas for SCR 1931-0306, while the largest is 3.51 mas for L 088-043. In the case of L 088-043, the reference field is weak, with only six reference stars, and the integrations are short (the average integration time for the 83 frames is ~ 31 seconds), so that the effects of seeing have not been smoothed, thereby causing poor centroiding.

Of the new parallaxes measured for the 124 systems, 97 systems were found to be within 25 pc. Thirteen exhibit astrometric perturbations caused by unseen companions. New astrometry information is presented in Table 4.1: the name of the system (column 1), its J2000.0 coordinates (2) & (3), the filter in which the parallax was measured (4), the number of seasons N_{sea} covered (5), the number of frames N_{fr} acquired for each star (6), the time interval covered by the data sequence (7), the number of years of coverage (8), the number of reference stars N_{ref} used in each frame (9), the relative parallax π_{rel} (10), the correction to the parallax π_{cor} (needed because the reference stars are not at an infinite distance) (11), and the absolute parallax π_{abs} (12), all with their associated errors. This information is followed by the proper motion magnitude (13) and position angle (14) measured east from north, with their errors, and the tangential velocity (15). The absolute parallax data for these objects are also included in Tables 3.3 and B.1. The expression N_{sea} indicates the number of seasons observed, where 2 – 3 months of observations count as one season. The letter ‘c’ indicates a continuous set of observations where multiple nights of data were taken in each season, whereas an ‘s’ indicates scattered observations when some seasons have only a single night of observations.

Table 4.1: New Astrometry Data

Name	RA	DEC	fil	N _{sea}	N _{fr}	coverage	T	N _{ref}	π_{rel}	π_{cor}	π_{abs}	μ	P.A.	V _{tan}
(1)	(hh:mm:ss)	(dd:mm:ss)	(4)	(5)	(6)	(7)	(yr)	(9)	(mas)	(mas)	(mas)	(mas yr ⁻¹)	(deg)	(km s ⁻¹)
(2)	(3)						(8)		(10)	(11)	(12)	(13)	(14)	(15)
Within 25 pc														
LTT00057	00 08 17.37	-57 05 52.9	V	8s	68	2000.50-2008.00	7.25	7	73.66 ± 2.10	1.51 ± 0.21	75.17 ± 2.11	385.4 ± 0.07	263.1 ± 0.17	24.3
LEHPM1-0255	00 09 45.06	-42 01 39.6	V	4c	51	2009.75-2012.94	3.20	6	52.12 ± 1.49	1.14 ± 0.22	53.26 ± 1.51	254.8 ± 0.14	091.4 ± 0.44	22.7
LP349-025AB	00 27 55.99	+22 19 32.3	I	11s	94	2003.51-2014.94	11.43	7	63.23 ± 1.50	1.45 ± 0.14	64.68 ± 1.51	429.9 ± 0.03	112.4 ± 0.08	31.5
L087-002	00 57 12.48	-64 15 24.0	V	5s	70	2008.86-2012.87	4.01	7	55.57 ± 1.38	0.68 ± 0.05	56.25 ± 1.38	385.8 ± 0.12	061.6 ± 0.33	32.5
LP707-016	01 10 17.53	-11 51 17.6	V	5s	56	2010.97-2014.93	3.96	6	53.42 ± 1.47	0.52 ± 0.07	53.94 ± 1.47	230.0 ± 0.14	120.6 ± 0.66	20.2
SCR0111-4908	01 11 47.52	-49 08 08.9	R	5s	59	2007.82-2014.92	7.09	8	52.96 ± 1.39	1.30 ± 0.10	54.26 ± 1.39	540.6 ± 0.10	215.0 ± 0.21	47.2
DEN0113-5429	01 13 16.41	-54 29 13.8	R	10s	80	1999.91-2014.80	14.89	9	58.84 ± 1.09	1.61 ± 0.18	60.45 ± 1.10	391.2 ± 0.02	072.3 ± 0.05	30.7
LEHPM1-1882	01 47 42.55	-48 36 05.7	R	12s	87	2004.74-2015.54	10.80	6	73.50 ± 1.62	0.92 ± 0.08	74.42 ± 1.62	363.7 ± 0.05	144.0 ± 0.15	23.2
L088-043	01 53 37.08	-66 53 34.1	R	7s	79	2005.71-2011.89	6.18	6	72.47 ± 3.50	2.97 ± 0.24	75.44 ± 3.51	424.2 ± 0.14	066.1 ± 0.36	26.7
L225-057	02 34 21.21	-53 05 36.8	V	7s	61	2003.95-2010.97	7.02	8	50.09 ± 1.82	0.85 ± 0.17	50.94 ± 1.83	403.7 ± 0.08	145.2 ± 0.23	37.6
SCR0246-7024	02 46 02.25	-70 24 06.3	R	9s	66	2006.87-2014.91	8.05	7	79.22 ± 1.27	0.96 ± 0.08	80.18 ± 1.27	225.4 ± 0.05	116.7 ± 0.26	13.3
LP831-045AB	03 14 18.18	-23 09 29.5	V	12s	83	2003.95-2014.65	10.70	8	62.48 ± 1.35	1.53 ± 0.14	64.01 ± 1.36	368.9 ± 0.04	062.7 ± 0.13	27.3
LP831-068	03 16 47.81	-21 25 25.9	V	5s	65	2010.96-2014.94	3.99	7	52.07 ± 2.27	1.39 ± 0.59	53.46 ± 2.35	285.2 ± 0.13	059.8 ± 0.52	25.3
SCR0420-7005	04 20 12.55	-70 05 58.7	I	7s	72	2003.94-2011.15	7.21	7	59.67 ± 0.85	2.42 ± 0.23	62.09 ± 0.88	659.5 ± 0.04	021.7 ± 0.07	50.4
LP775-031	04 35 16.14	-16 06 57.2	I	5c	59	2003.95-2007.80	3.85	8	96.33 ± 1.21	0.82 ± 0.13	97.15 ± 1.22	355.4 ± 0.10	027.0 ± 0.31	17.3
LTT02043A	04 36 40.85	-27 21 18.3	V	5s	49	2000.96-2007.91	4.19	5	41.07 ± 2.48	0.95 ± 0.09	42.02 ± 2.48	343.1 ± 0.13	237.7 ± 0.41	38.7
LP715-039	04 38 37.16	-11 30 14.8	V	4c	70	2010.96-2013.92	2.96	7	49.25 ± 2.13	1.70 ± 0.20	50.95 ± 2.14	360.7 ± 0.23	228.7 ± 0.73	33.6
SCR0509-4325	05 09 43.85	-43 25 17.4	I	6s	71	2008.86-2015.05	6.20	8	44.79 ± 1.82	1.74 ± 0.11	46.53 ± 1.82	227.2 ± 0.14	324.2 ± 0.69	23.1
SCR0517-4252	05 17 21.43	-42 52 47.3	V	5s	64	2011.17-2014.92	3.76	9	46.31 ± 1.55	1.29 ± 0.21	47.60 ± 1.56	183.7 ± 0.14	011.2 ± 0.73	18.3
LHS5109	05 36 00.07	-07 38 58.5	V	4c	60	2011.73-2014.80	3.06	11	66.36 ± 1.65	1.07 ± 0.19	67.43 ± 1.66	479.4 ± 0.18	013.6 ± 0.37	33.7
SCR0631-8811	06 31 31.04	-88 11 36.6	I	5c	87	2003.94-2013.10	9.16	6	61.32 ± 2.27	2.65 ± 0.19	63.97 ± 2.28	498.0 ± 0.06	350.4 ± 0.11	36.9
SCR0640-0552	06 40 13.99	-05 52 23.3	V	9c	122	2004.91-2012.82	7.90	10	83.20 ± 2.96	2.55 ± 0.26	85.75 ± 2.97	590.5 ± 0.10	170.0 ± 0.16	32.6
SCR0642-6707	06 42 27.17	-67 07 19.8	I	7s	86	2006.87-2015.07	8.20	8	71.67 ± 1.04	1.35 ± 0.08	73.02 ± 1.04	818.7 ± 0.08	122.1 ± 0.10	53.1
LTT02631	06 43 40.67	-26 24 40.9	R	6s	114	2000.88-2014.16	13.29	10	54.38 ± 0.99	1.05 ± 0.04	55.43 ± 0.99	463.3 ± 0.03	224.7 ± 0.08	39.6
LP382-056A	06 57 11.74	-43 24 51.1	V	4c	62	2010.96-2014.15	3.19	12	47.00 ± 2.05	1.28 ± 0.11	48.28 ± 2.05	255.2 ± 0.21	162.8 ± 0.81	25.1
LP382-056B	06 57 11.74	-43 24 51.1	V	4c	62	2010.96-2014.15	3.19	12	46.58 ± 2.13	1.28 ± 0.11	47.86 ± 2.13	22.0 ± 0.21	159.6 ± 1.00	21.8
SCR0702-6102AB	07 02 50.34	-61 02 47.6	I	12c	184	2003.84-2014.93	11.09	10	58.14 ± 1.42	1.29 ± 0.15	59.43 ± 1.43	785.9 ± 0.03	042.2 ± 0.05	62.7
APM0089	07 09 37.66	-57 03 42.3	R	4c	102	2000.14-2003.13	3.00	9	57.55 ± 1.06	1.55 ± 0.18	59.10 ± 1.08	464.8 ± 0.13	046.2 ± 0.33	37.3
SCR0713-0511	07 13 11.23	-05 11 48.6	V	8s	71	2004.97-2012.89	7.92	11	89.66 ± 1.64	1.20 ± 0.07	90.86 ± 1.64	304.5 ± 0.10	184.1 ± 0.29	15.9
SCR0717-0501	07 17 17.09	-05 01 03.6	I	8s	90	2004.18-2013.11	8.93	9	91.33 ± 1.69	1.35 ± 0.10	92.68 ± 1.69	574.1 ± 0.05	132.8 ± 0.10	29.4
G088-019AB	07 17 29.94	+19 34 16.7	R	6c	73	2003.94-2009.02	5.08	8	51.97 ± 2.38	0.71 ± 0.11	52.68 ± 2.38	416.6 ± 0.14	230.6 ± 0.37	37.5
LTT02816	07 20 52.04	-62 10 11.8	I	5c	58	2009.09-2012.89	3.81	8	87.85 ± 2.56	0.95 ± 0.18	88.80 ± 2.57	338.9 ± 0.24	303.5 ± 0.80	18.1
SCR0723-8015AB	07 23 59.65	-80 15 17.8	I	7s	86	2003.07-2014.04	10.97	8	61.60 ± 1.90	1.10 ± 0.15	62.70 ± 1.91	814.6 ± 0.05	329.2 ± 0.06	61.6
SCR0736-3024	07 36 56.68	-30 24 16.4	R	6s	82	2006.87-2015.07	8.20	12	73.96 ± 1.03	1.36 ± 0.15	75.32 ± 1.04	429.7 ± 0.07	148.5 ± 0.18	27.0
L528-016	07 38 09.69	-31 12 19.1	V	4s	63	2011.96-2015.22	3.26	8	65.97 ± 1.31	1.04 ± 0.20	67.01 ± 1.33	265.7 ± 0.16	320.6 ± 0.69	18.8
SCR0754-3809	07 54 54.84	-38 09 37.8	I	8s	73	2004.97-2011.96	6.98	9	77.74 ± 1.55	1.39 ± 0.22	79.13 ± 1.57	372.0 ± 0.07	349.8 ± 0.16	22.3
SCR0805-5912	08 05 46.17	-59 12 50.4	I	6c	55	2003.94-2009.08	5.14	10	59.96 ± 1.90	1.75 ± 0.20	61.71 ± 1.91	632.7 ± 0.10	155.1 ± 0.17	48.6
SCR0838-5855AB	08 38 02.24	-58 55 58.7	I	7s	96	2005.90-2014.28	8.38	10	90.52 ± 0.81	1.17 ± 0.08	91.69 ± 0.81	331.7 ± 0.03	195.5 ± 0.09	17.1
SCR0853-3924	08 53 28.65	-39 24 41.0	V	5c	65	2011.16-2014.95	3.79	11	57.76 ± 1.23	0.85 ± 0.11	58.61 ± 1.23	376.2 ± 0.09	265.7 ± 0.22	30.4
SCR0914-4134	09 14 17.42	-41 34 37.9	I	9s	94	2007.18-2015.07	7.89	11	82.29 ± 1.41	1.27 ± 0.15	83.56 ± 1.42	759.9 ± 0.06	314.7 ± 0.08	43.1
L749-034	09 16 20.65	-18 37 32.9	V	7s	73	2004.17-2009.94	5.76	9	75.60 ± 2.36	2.00 ± 0.16	77.60 ± 2.37	321.7 ± 0.12	296.0 ± 0.41	19.6
LP788-001AB	09 31 22.27	-17 17 42.6	I	5s	65	2008.14-2015.31	7.17	10	74.27 ± 1.44	0.83 ± 0.06	75.10 ± 1.44	359.5 ± 0.11	246.1 ± 0.34	22.7
LP728-070	09 50 40.54	-13 48 38.6	V	6s	59	2009.32-2013.95	4.63	10	49.66 ± 1.86	1.48 ± 0.13	51.14 ± 1.86	190.7 ± 0.13	122.8 ± 0.74	17.7
LTT03790A	10 19 51.26	-41 48 46.1	V	5s	62	2001.27-2005.10	3.91	7	42.38 ± 2.69	2.15 ± 0.22	44.53 ± 2.70	446.1 ± 0.11	190.4 ± 0.19	47.5
LTT03790B	10 19 53.66	-41 49 01.6	V	5s	62	2001.27-2005.10	3.91	7	44.48 ± 2.60	2.15 ± 0.22	46.63 ± 2.61	44.2 ± 0.11	190.5 ± 0.26	44.9
LTT03896	10 37 45.32	-27 46 38.7	R	7s	91	2004.99-2015.40	10.41	7	66.25 ± 1.35	1.32 ± 0.12	67.57 ± 1.36	335.5 ± 0.03	320.7 ± 0.10	23.5
LEHPM2-2758	10 38 47.82	-86 32 44.1	R	10s	94	2005.14-2015.29	10.15	8	73.86 ± 2.58	1.45 ± 0.20	75.31 ± 2.59	244.7 ± 0.07	226.9 ± 0.32	15.4
LP848-050AB	10 42 41.36	-24 16 04.9	R	6s	75	2010.16-2015.38	5.22	13	84.58 ± 2.23	0.49 ± 0.05	85.07 ± 2.23	215.5 ± 0.11	011.3 ± 0.47	12.0
SCR1157-0149	11 57 45.55	-01 49 02.6	I	8s	70	2004.18-2012.28	8.10	10	49.57 ± 1.51	1.19 ± 0.13	50.76 ± 1.52	459.9 ± 0.06	118.6 ± 0.14	42.9
SCR1206-3500	12 06 58.52	-35 00 52.0	I	5s	58	2011.16-2015.24	4.08	8	40.74 ± 1.41	1.70 ± 0.21	42.44 ± 1.43	398.4 ± 0.08	227.4 ± 0.23	44.5
SCR1214-4603	12 14 39.98	-46 03 14.3	I	4c	50	2008.13-2011.50	3.37	9	64.92 ± 0.93	1.58 ± 0.09	66.50 ± 0.93	764.6 ± 0.07	251.8 ± 0.10	54.5
NLTT30359	12 20 33.77	-82 25 57.8	V	10s	123	2006.21-2015.39	9.19	7	78.67 ± 2.57	7.40 ± 0.62	86.07 ± 2.64	275.5 ± 0.07	007.7 ± 0.23	15.2
SCR1230-3411AB	12 30 01.75	-34 11 24.1	R	7s	62	2008.07-2014.44	6.36	8	51.94 ± 1.52	0.86 ± 0.14	52.80 ± 1.53	517.8 ± 0.09	237.2 ± 0.20	46.5
LHS5226	12 44 00.73	-11 10 30.3	V	6s	57	2009.32-2015.29	5.97	8	70.45 ± 1.69	1.83 ± 0.16	72.28 ± 1.70	503.6 ± 0.09	253.6 ± 0.18	33.0
SCR1245-5506	12 45 52.53	-55 06 50.2	I	6s	55	2004.17-2009.08	4.91	5	97.82 ± 1.35	1.34 ± 0.12	99.16 ± 1.36	384.3 ± 0.08	111.4 ± 0.21	18.4
SCR1247-0525	12 47 14.73	-05 25 13.2	I	7s	67	2004.18-2011.42	7.24	9	48.53 ± 1.06	1.46 ± 0.09	49.99 ± 1.06	742.7 ± 0.05	320.3 ± 0.07	70.4
SCR1343-4002	13 43 41.48	-40 02 29.3	I	4c	75	2011.15-2014.43	3.28	9	57.46 ± 0.99	1.35 ± 0.09	58.81 ± 0.99	228.5 ± 0.10	114.2 ± 0.45	18.4
SCR1420-7516	14 20 36.84	-75 16 05.9	I	6s	64	2009.24-2015.24	5.99	10	40.05 ± 1.80	3.07 ± 0.27	43.12 ± 1.82	142.7 ± 0.13	249.4 ± 0.96	15.7
LHS2935	14 32 08.51	+08 11 31.3	R	7s	74	2000.14-2009.32	9.19	10	77.14 ± 0.99	0.24 ± 0.02	77.38 ± 0.99	471.3 ± 0.04	272.1 ± 0.08	28.9

SCR1444-3426	14 44 06.56	-34 26 47.2	R	4c	59	2011.16-2014.27	3.11	10	64.33 ± 1.00	1.02 ± 0.11	65.35 ± 1.01	442.0 ± 0.10	190.9 ± 0.21	32.1
G151-037	15 15 43.71	-07 25 21.0	V	6s	59	2010.50-2015.30	4.80	11	58.19 ± 1.06	1.01 ± 0.33	59.20 ± 1.11	294.2 ± 0.09	210.3 ± 0.35	23.6
NLTT40317	15 30 52.02	-68 01 17.5	I	5s	56	2011.50-2015.22	3.72	11	56.16 ± 1.61	2.17 ± 0.21	58.33 ± 1.62	193.3 ± 0.17	090.9 ± 0.67	15.7
L408-123AB	15 45 41.62	-43 30 29.0	R	14s	166	2000.58-2015.55	14.97	9	50.05 ± 0.95	1.77 ± 0.13	51.82 ± 0.96	455.3 ± 0.03	217.0 ± 0.07	41.6
LHS3124	15 51 21.80	+29 31 06.3	V	7s	67	2001.43-2009.32	7.89	9	52.64 ± 1.89	0.54 ± 0.04	53.18 ± 1.89	493.9 ± 0.07	206.5 ± 0.17	44.0
SCR1601-3421	16 01 55.68	-34 21 56.8	I	4s	31	2009.32-2014.16	4.84	10	46.09 ± 1.39	...	...	632.1 ± 0.15	119.2 ± 0.27	65.0
SCR1626-3812AB	16 26 51.69	-38 12 32.6	I	5s	51	2010.20-2014.67	4.48	14	71.70 ± 1.26	1.50 ± 0.50	73.20 ± 1.36	381.1 ± 0.11	228.8 ± 0.33	24.1
SCR1630-3633A	16 30 27.23	-36 33 56.1	I	4s	31	2008.21-2013.53	5.32	12	63.41 ± 2.23	2.69 ± 0.58	66.10 ± 2.30	441.0 ± 0.22	248.8 ± 0.52	31.6
SCR1630-3633B	16 30 27.23	-36 33 56.1	I	4s	31	2008.21-2013.53	5.32	12	62.27 ± 2.13	2.69 ± 0.58	64.96 ± 2.21	45.4 ± 0.21	248.8 ± 0.49	33.1
SCR1636-4041	16 36 57.58	-40 41 08.8	R	5s	53	2010.40-2014.45	4.05	16	44.23 ± 1.26	2.12 ± 0.72	46.35 ± 1.45	290.1 ± 0.13	193.1 ± 0.42	29.7
SCR1647-6509	16 47 55.15	-65 09 11.6	I	9s	101	2004.18-2015.22	11.04	10	65.69 ± 1.00	1.00 ± 0.07	66.69 ± 1.00	368.9 ± 0.03	103.9 ± 0.08	26.2
SCR1656-2046	16 56 33.61	-20 46 37.4	I	4c	46	2012.41-2015.21	2.80	10	60.22 ± 1.08	1.57 ± 0.17	61.79 ± 1.09	270.7 ± 0.11	225.2 ± 0.46	20.8
G139-003AB	16 58 25.25	+13 58 10.8	R	5s	60	2003.53-2007.42	3.90	8	69.45 ± 2.06	1.45 ± 0.11	70.90 ± 2.06	400.3 ± 0.19	275.6 ± 0.42	26.8
SCR1659-6958	16 59 28.14	-69 58 18.3	I	5c	63	2003.24-2007.55	4.31	9	47.26 ± 0.88	1.60 ± 0.13	48.86 ± 0.89	686.1 ± 0.09	213.1 ± 0.14	66.6
SCR1728-0143	17 28 11.06	-01 43 57.0	I	4c	56	2011.50-2014.44	2.93	11	40.57 ± 2.33	...	...	192.3 ± 0.25	147.9 ± 1.45	22.5
L204-148	17 38 32.51	-58 32 34.4	R	5s	60	2011.50-2015.56	4.06	9	61.68 ± 1.28	1.31 ± 0.19	62.99 ± 1.29	327.9 ± 0.09	175.7 ± 0.24	24.7
LTT07077	17 46 29.35	-08 42 36.5	V	5c	61	2011.50-2015.31	3.81	10	74.48 ± 1.52	2.70 ± 0.78	77.18 ± 1.71	425.4 ± 0.16	185.8 ± 0.33	26.1
SCR1746-3214AB	17 46 40.66	-32 14 04.4	I	4c	50	2011.50-2014.43	2.93	11	85.04 ± 1.30	1.50 ± 0.50	86.54 ± 1.39	232.1 ± 0.14	062.3 ± 0.66	12.4
LTT07138	17 57 14.23	-41 59 29.2	V	4c	87	2000.57-2003.26	2.69	9	56.11 ± 1.13	2.21 ± 0.13	58.32 ± 1.14	372.3 ± 0.14	190.4 ± 0.36	30.3
L043-072	18 11 15.30	-78 59 22.7	V	6s	51	2009.75-2015.31	5.56	9	87.63 ± 1.98	1.64 ± 0.15	89.27 ± 1.99	325.4 ± 0.13	010.6 ± 0.36	17.3
SCR1826-6542	18 26 46.83	-65 42 39.9	I	6s	79	2005.71-2013.67	7.96	8	65.16 ± 0.77	1.20 ± 0.07	66.36 ± 0.77	306.4 ± 0.04	178.9 ± 0.10	21.9
LTT07341	18 30 12.00	-58 16 27.7	V	4c	63	2011.50-2015.42	3.92	9	67.84 ± 2.64	1.15 ± 0.18	68.99 ± 2.65	436.8 ± 0.22	182.8 ± 0.44	30.0
G141-021	18 36 19.24	+13 36 26.4	R	6c	85	2003.52-2012.58	9.06	7	82.65 ± 1.93	3.46 ± 0.57	86.11 ± 2.01	338.8 ± 0.08	034.0 ± 0.26	18.7
SCR1841-4347	18 41 09.81	-43 47 32.8	I	7s	61	2007.55-2013.38	5.83	7	81.08 ± 0.66	1.17 ± 0.09	82.25 ± 0.67	798.2 ± 0.04	264.7 ± 0.05	46.0
LTT07419B	18 43 12.38	-33 22 31.3	V	5s	54	2000.75-2011.25	10.85	9	63.78 ± 2.68	2.32 ± 0.19	66.10 ± 2.69	39.4 ± 0.07	202.2 ± 0.20	28.2
LTT07419A	18 43 12.51	-33 22 46.2	V	5s	54	2000.75-2011.25	10.85	9	64.94 ± 2.49	2.32 ± 0.19	67.26 ± 2.50	389.9 ± 0.07	199.8 ± 0.18	27.5
LTT07434AB	18 45 57.47	-28 55 53.2	V	9s	79	2000.58-2015.54	14.97	10	58.23 ± 1.31	2.93 ± 0.28	61.16 ± 1.34	409.6 ± 0.02	135.0 ± 0.06	31.7
SIP1848-8214	18 48 51.11	-82 14 42.0	I	7s	62	2009.63-2015.41	5.79	10	55.38 ± 1.56	1.14 ± 0.07	56.52 ± 1.56	268.7 ± 0.07	190.1 ± 0.24	22.5
SCR1855-6914	18 55 47.89	-69 14 15.1	I	6s	82	2003.51-2013.66	10.15	7	85.19 ± 0.65	1.25 ± 0.04	86.44 ± 0.65	826.3 ± 0.03	147.1 ± 0.03	45.3
LHS5348AB	19 27 52.69	-28 11 15.4	I	5s	73	2011.50-2015.41	3.91	8	76.66 ± 1.31	1.99 ± 0.15	78.65 ± 1.32	475.0 ± 0.09	170.8 ± 0.17	28.6
SCR1931-0306	19 31 04.61	-03 06 18.0	I	9s	109	2004.58-2013.65	9.08	8	54.89 ± 0.55	2.30 ± 0.20	57.19 ± 0.59	523.9 ± 0.01	023.4 ± 0.03	43.4
SCR2016-7531	20 16 11.25	-75 31 04.5	I	8s	81	2007.74-2014.44	6.70	9	65.27 ± 1.44	1.33 ± 0.12	66.60 ± 1.44	258.8 ± 0.08	079.8 ± 0.30	18.4
LEHPM2-1265AB	20 33 01.87	-49 03 10.6	R	8s	106	2008.64-2015.54	6.91	10	58.46 ± 1.16	1.28 ± 0.20	59.74 ± 1.18	241.1 ± 0.06	153.9 ± 0.26	19.1
SCR2105-5503	21 05 13.78	-55 03 56.3	R	6s	53	2008.71-2014.80	6.09	11	66.84 ± 1.47	0.96 ± 0.06	67.80 ± 1.47	327.5 ± 0.10	172.9 ± 0.28	22.9
SCR2122-4314	21 22 16.92	-43 14 05.0	V	5s	66	2008.70-2013.51	4.81	12	47.27 ± 1.66	1.50 ± 0.23	48.77 ± 1.68	223.8 ± 0.15	190.7 ± 0.63	21.8
LTT08526	21 28 18.29	-22 18 32.3	V	4c	79	2000.58-2003.77	3.19	6	50.44 ± 1.51	1.39 ± 0.10	51.83 ± 1.51	314.4 ± 0.14	221.0 ± 0.50	28.8
SCR2130-7710	21 30 07.00	-77 10 37.5	I	4c	55	2011.50-2014.79	3.29	10	46.84 ± 1.30	0.77 ± 0.06	47.61 ± 1.30	568.6 ± 0.12	117.0 ± 0.24	56.6
L002-077	21 46 42.71	-85 43 04.6	R	5s	65	2011.77-2015.42	3.65	9	62.12 ± 1.86	1.28 ± 0.21	63.40 ± 1.87	297.5 ± 0.19	128.6 ± 0.72	22.2
LTT09123B	22 38 24.67	-29 21 14.1	V	7s	105	2000.57-2012.81	12.24	5	85.70 ± 1.06	0.53 ± 0.06	86.23 ± 1.06	260.5 ± 0.02	183.0 ± 0.07	14.3
SCR2303-4650	23 03 35.61	-46 50 47.0	V	6s	88	2009.63-2014.82	5.19	9	62.59 ± 1.27	0.56 ± 0.06	63.15 ± 1.27	189.8 ± 0.07	263.1 ± 0.33	14.2
SCR2307-8452	23 07 19.67	-84 52 03.9	I	3c	75	2011.50-2014.80	3.30	7	64.62 ± 1.95	1.22 ± 0.12	65.84 ± 1.95	602.9 ± 0.19	096.9 ± 0.29	43.4
L085-031	23 53 25.21	-70 56 41.1	I	7s	89	2006.53-2014.45	7.92	7	79.44 ± 2.49	1.38 ± 0.21	80.82 ± 2.50	312.8 ± 0.08	084.9 ± 0.24	18.3
LTT09828AB	23 59 44.83	-44 05 00.1	V	13s	124	2000.58-2015.54	14.96	5	63.94 ± 2.48	0.93 ± 0.15	64.87 ± 2.48	258.5 ± 0.04	352.5 ± 0.15	18.9
Beyond 25 pc														
SCR0027-0806	00 27 45.36	-08 06 04.7	I	5s	59	2008.85-2014.94	6.09	9	23.39 ± 1.24	1.50 ± 0.10	24.89 ± 1.24	118.5 ± 0.09	118.6 ± 0.80	22.6
LP705-065	00 35 38.07	-10 04 18.7	V	6s	60	2010.97-2015.54	4.57	7	31.34 ± 1.47	1.38 ± 0.08	32.72 ± 1.47	210.6 ± 0.12	254.3 ± 0.56	30.5
SCR0129-8556	01 29 20.84	-85 56 11.0	I	6s	55	2003.95-2008.70	4.75	10	30.71 ± 2.47	1.81 ± 0.17	32.52 ± 2.48	434.7 ± 0.15	138.1 ± 0.39	63.4
G274-138A	02 02 17.53	-26 33 51.4	I	7x	56	2000.57-2011.89	11.32	6	33.05 ± 1.29	1.91 ± 0.20	34.96 ± 1.31	340.5 ± 0.04	143.6 ± 0.14	46.2
G274-138B	02 02 17.53	-26 33 51.4	I	7x	56	2000.57-2011.89	11.32	6	32.66 ± 1.29	1.91 ± 0.20	34.57 ± 1.31	336.0 ± 0.04	143.7 ± 0.14	46.1
SCR0211-0354	02 11 51.67	-03 54 02.5	R	4c	46	2011.73-2014.92	3.19	9	29.17 ± 1.89	1.21 ± 0.13	30.38 ± 1.89	152.2 ± 0.15	185.4 ± 0.88	23.7
SCR0327-3634	03 27 46.79	-36 34 40.4	V	4c	56	2011.77-2015.08	3.31	9	37.57 ± 1.62	0.56 ± 0.07	38.13 ± 1.62	183.0 ± 0.16	249.0 ± 0.90	22.8
LTT02043B	04 36 39.83	-27 22 06.0	V	5s	49	2000.96-2007.91	4.19	5	38.03 ± 2.59	0.95 ± 0.09	38.98 ± 2.59	34.1 ± 0.13	237.8 ± 0.43	41.5
SCR0644-4223A	06 44 32.09	-42 23 45.2	I	6s	33	2008.85-2013.78	4.93	11	29.98 ± 2.79	2.13 ± 0.16	32.11 ± 2.79	183.6 ± 0.27	162.2 ± 1.46	27.1
SCR0644-4223B	06 44 32.09	-42 23 45.2	I	6s	33	2008.85-2013.78	4.93	11	33.01 ± 3.05	2.13 ± 0.16	35.14 ± 3.05	171.4 ± 0.29	165.2 ± 1.65	23.1
SCR0724-3125	07 24 21.23	-31 25 57.7	I	5s	64	2011.23-2015.05	3.82	10	24.84 ± 1.44	1.15 ± 0.08	25.99 ± 1.44	135.2 ± 0.11	290.9 ± 0.85	24.7
SCR0733-4406	07 33 42.67	-44 06 12.5	I	5s	64	2011.23-2014.95	3.71	10	22.45 ± 0.73	0.60 ± 0.04	23.05 ± 0.73	279.4 ± 0.06	165.3 ± 0.23	57.4
SCR0829-3709	08 29 41.29	-37 09 34.7	R	5c	63	2011.16-2015.08	3.93	11	38.26 ± 0.87	1.68 ± 0.23	39.94 ± 0.90	344.4 ± 0.06	304.2 ± 0.21	40.9
LP904-036	10 36 28.43	-28 27 15.4	V	6s	62	2010.02-2015.22	5.20	8	35.88 ± 1.51	1.10 ± 0.21	36.98 ± 1.52	215.2 ± 0.13	269.6 ± 0.48	27.6
CE440-087	11 47 50.65	-28 49 44.7	I	5s	50	2001.14-2005.40	4.26	7	15.74 ± 1.18	0.69 ± 0.06	16.43 ± 1.18	386.2 ± 0.09	242.8 ± 0.26	111.4
CE440-139	12 03 28.04	-29 23 00.3	R	4c	46	2000.06-2014.44	14.38	11	37.18 ± 1.20	0.46 ± 0.06	37.64 ± 1.20	314.0 ± 0.02	313.7 ± 0.08	39.5
WT1928	12 08 06.86	-32 06 36.1	V	3c	49	2000.14-2002.46	2.32	10	16.92 ± 1.21	0.84 ± 0.05	17.76 ± 1.21	373.8 ± 0.19	261.1 ± 0.47	99.8
SCR1240-8116	12 40 56.02	-81 16 31.0	R	7s	62	2003.25-2011.16	7.92	9	29.56 ± 2.21	2.78 ± 0.72	32.34 ± 2.32	492.7 ± 0.10	280.4 ± 0.19	72.2
LHS5231	12 59 18.24	-00 10 33.4	V	6s	65	2009.32-2015.30	5.98	8	32.31 ± 1.73	2.10 ± 0.30	34.41 ± 1.76	470.4 ± 0.12	161.2 ± 0.27	64.8
WT1962AB	12 59 51.26	-07 30 35.3	I	8s	91	2000.25-2011.50	11.37	9	27.62 ± 1.31	0.75 ± 0.12	28.37 ± 1.32	446.6 ± 0.03	295.4 ± 0.07	74.6
SCR1441-7338	14 41 14.42	-73 38 41.4	I	6s	62	2006.22-2014.44	8.22	10	38.82 ± 0.93	1.00 ± 0.16	39.82 ±			

SCR1901-0737	19 01 32.37	-07 37 24.3	I	6s	62	2010.66-2015.41	4.75	9	37.73 ± 0.95	1.66 ± 0.11	39.39 ± 0.96	157.7 ± 0.06	231.5 ± 0.44	19.0
SCR1901-3106	19 01 59.16	-31 06 45.0	I	6s	60	2010.66-2015.42	4.76	9	19.06 ± 1.17	2.66 ± 0.18	21.72 ± 1.18	196.8 ± 0.07	136.6 ± 0.41	43.0
SCR2025-1534	20 25 08.55	-15 34 16.1	R	4s	54	2011.77-2014.80	3.03	12	26.49 ± 1.43	1.06 ± 0.14	27.55 ± 1.44	173.8 ± 0.15	178.9 ± 0.71	29.9
LP567-063	20 34 31.14	-32 30 59.9	R	7s	73	2008.73-2014.44	5.71	10	35.75 ± 1.78	1.44 ± 0.13	37.19 ± 1.78	204.9 ± 0.10	169.5 ± 0.46	26.1
NLTT50324	21 02 24.95	-60 31 36.1	V	6s	60	2006.37-2011.42	5.06	8	30.60 ± 1.84	0.14 ± 0.02	30.74 ± 1.84	217.4 ± 0.10	136.0 ± 0.55	33.5
LHS3615	21 03 21.66	-50 22 52.4	R	6x	86	2000.58-2009.55	8.97	6	38.43 ± 1.25	1.20 ± 0.10	39.63 ± 1.25	479.3 ± 0.08	142.0 ± 0.20	57.3

4.1.1 Notes for Interesting Systems with New Parallaxes

LP349-025AB (0027+22 19) This star has a perturbation in both axes, evident in over ten years of data, with an orbit that may have just recently wrapped.

LEHPM1-1882AB (0147-4836) This star has a possible perturbation.

LP831-045AB (0314-2309) This system has a perturbation, resulting in a ~ 6 year period for the pair.

LTT02043AB (0436-2721) While one component lies within 25 pc (A has $\pi = 42.02 \pm 2.48$ mas), and the other beyond (B has $\pi = 38.98 \pm 2.59$ mas), the weighted mean of this system with $\rho \sim 15$, $\theta = 298$ is 40.57 ± 1.79 , placing it within 25 pc.

SCR0702-6102AB (0702-6102) This object shows evidence of a short period perturbation.

SCR0723-8015AB (0723-8015) This star has a large perturbation in both axes, but the orbit has not yet wrapped, with this data set spanning more than twelve years.

SCR0838-5855AB (0838-5855) This star shows evidence for a perturbation in both axes, although it is slightly larger in the RA axis than in the Dec axis. The eight years of data indicate that the orbit may wrap soon.

LP788-001AB (0931-1717) This system has a perturbation and has been observed regularly since December 2011.

LP848-050AB (1042-2416) This object has a perturbation, but the orbit shows no signs of wrapping in the current data set.

SCR1230-3411AB (1230-3411) A perturbation is evident in both the Right Ascension

and Declination axes. The *trigdist* is 18.7 pc vs. the *ccddist* of 11.7 pc, confirmation of the perturbation.

WT1962AB (1259-0730) A long-term trend is evident, but the companion is likely low mass (not equal mass/brightness) because the *ccddist* ~ 45 pc, compared to *trigdist* ~ 38 pc.

L408-123AB (1545-4330) This object has a perturbation in both axes, with an orbit that has wrapped for a period of ~ 10 yr.

SCR1626-3812 (1626-3812) Because this field is in the direction of the Galactic center, the initial correction from the relative parallax to the absolute parallax for this object was 3.23 ± 1.29 mas due to reddening of the reference stars. We have adopted a generic correction of 1.50 ± 0.50 mas.

SCR1731-2452 (1731-2452) Because this field is in the direction of the Galactic center, the initial correction from the relative parallax to the absolute parallax for this object was 4.97 ± 2.82 mas due to reddening of the reference stars. We have adopted a generic correction of 1.50 ± 0.50 mas.

SCR1746-3214 (1746-3214) Because this field is in the direction of the Galactic center, the initial correction from the relative parallax to the absolute parallax for this object was 3.48 ± 1.64 mas due to reddening of the reference stars. We have adopted a generic correction of 1.50 ± 0.50 mas.

LTT07434AB (1845-2855) This object has a perturbation, but the orbit shows no sign of wrapping, even with 15 years of time coverage.

LHS5348AB (1927-2811) The elongation of the star due to a companion found at $\sim 1''$ is obvious in frames with exceptional seeing.

LEHPM2-1265AB (2033-4903) This system has a perturbation, resulting in a ~ 5 year period for the pair.

LTT09828AB (2359-4405) This system has a perturbation, resulting in a ~ 11 year period for the pair that appears to have recently wrapped.

The nightly mean astrometric residual plots in Right Ascension and Declination for stars with perturbations are shown in Figures 4.1, 4.2, and 4.3. The astrometric signatures of each system’s proper motion and parallax have been removed. A star without a perturbation would have residuals very close to the ‘0’ line, but these stars all show non-linear trends. The magnitude of most perturbations are typically less than ~ 20 mas, but a few stars, such as LP 848-050AB, LTT 7434AB, and LTT 9828AB show evidence of larger perturbations.

The author would like to express her gratitude to Andrew Sevrinsky for his help with the parallax reductions and notes in this section, most especially for the non-SCR stars.

4.2 RECONS 25 Parsec Database

The RECONS group consists of stellar cartographers, obsessed with characterizing the nearby population of stars. While previous work has reported the census of the 5 pc sample (Henry 2015) and 10 pc sample (Henry et al., in prep), we are expanding our knowledge of the nearest stars to 25 pc. This 25 pc horizon limit is adopted because it is the canonical distance limit of the Catalogue of Nearby Stars (discussed in §1.2.1) and ultimately should

include ~ 5000 stellar systems — a robust sample that can be used to understand the stellar population in the solar neighborhood. Development of a catalog listing all stellar systems located within 25 pc has been underway for the past few years. The RECONS 25 Parsec Database is a listing of all stars, brown dwarfs, and planets thought to be located within 25 pc, with distances determined only via accurate trigonometric parallaxes. Its design, primarily by Wei-Chun Jao, has been a massive undertaking that has spanned at least five years, and the compilation of the data included is due to the efforts of many RECONS members.

The first criterion for inclusion is that each system must have a published trigonometric parallax of ≥ 40 mas, with an error ≤ 10 mas. Included in the database is a wealth of information on each system: coordinates, proper motions, the weighted mean of the parallaxes available for each system, *UBVRIJHK* photometry, spectral types in many cases, and alternate names. Additionally noted are the details of multiple systems: the number of components known to be members of the system, the separations and position angles for those components, the year and method of detection, and the delta-magnitude measurement and filter in which the relative photometry data were obtained. References are given in almost all cases. All data have been judged for quality, with only carefully vetted publications selected for inclusion. The current version, as of 02 October 2015, includes 2827 systems containing 3797 stars, brown dwarfs, and planets, and we anticipate releasing it to the astronomical community in the very near future.

A total of 1180 of the 2347 M dwarf systems presented here have *trgdists* placing them within 25 pc; their parallaxes and resulting distances are listed in the top sections of Tables

3.3 and 3.4, respectively. In some cases, multiple parallaxes from different sources are available for the same system; for these systems, the weighted mean parallax and error are listed. These systems were extracted from the new RECONS 25 Parsec Database 1 January 2012, with new parallaxes measured by RECONS added as they became available.

Figure 4.4 illustrates the distribution on the sky of all 1342 systems in this thesis with trigonometric parallaxes, with those within and beyond 25 pc noted. The noticeably higher density of M dwarfs with parallaxes in the southern hemisphere is due to RECONS' work being focused in that part of the sky.

We have thus described the new parallaxes measured as part of this dissertation work, as well as the RECONS 25 Parsec Database. In the next chapter, we will detail the multiplicity survey of those M dwarfs with trigonometric parallaxes placing them within 25 pc.

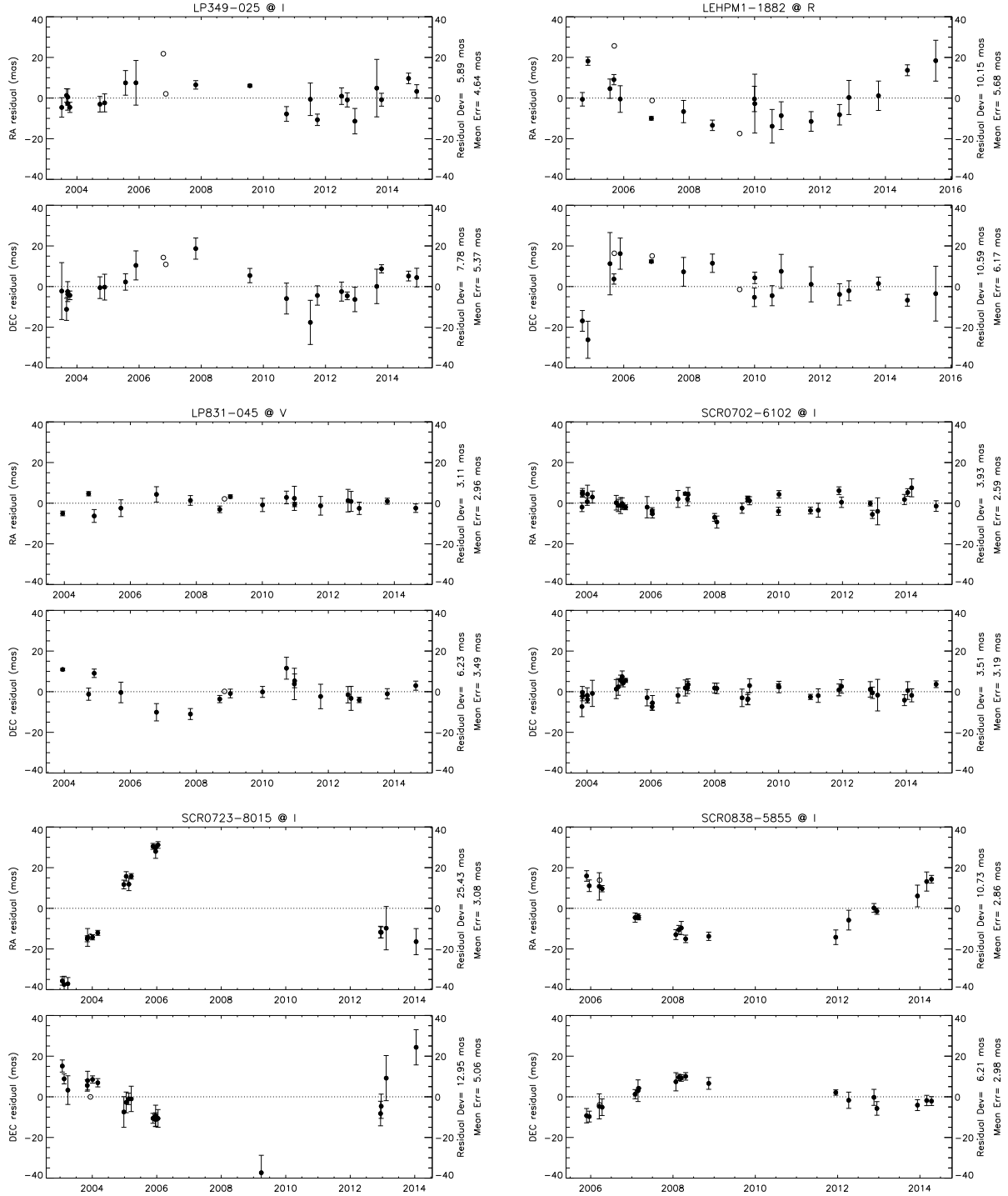


Figure 4.1 Nightly mean astrometric residual plots in Right Ascension and Declination for LP 349-025AB, LEHPM 1-1882, LP 831-045AB, SCR 0702-6102AB, SCR 0723-8015AB, and SCR 0838-5855AB. The astrometric signatures of each system's proper motion and parallax have been removed.

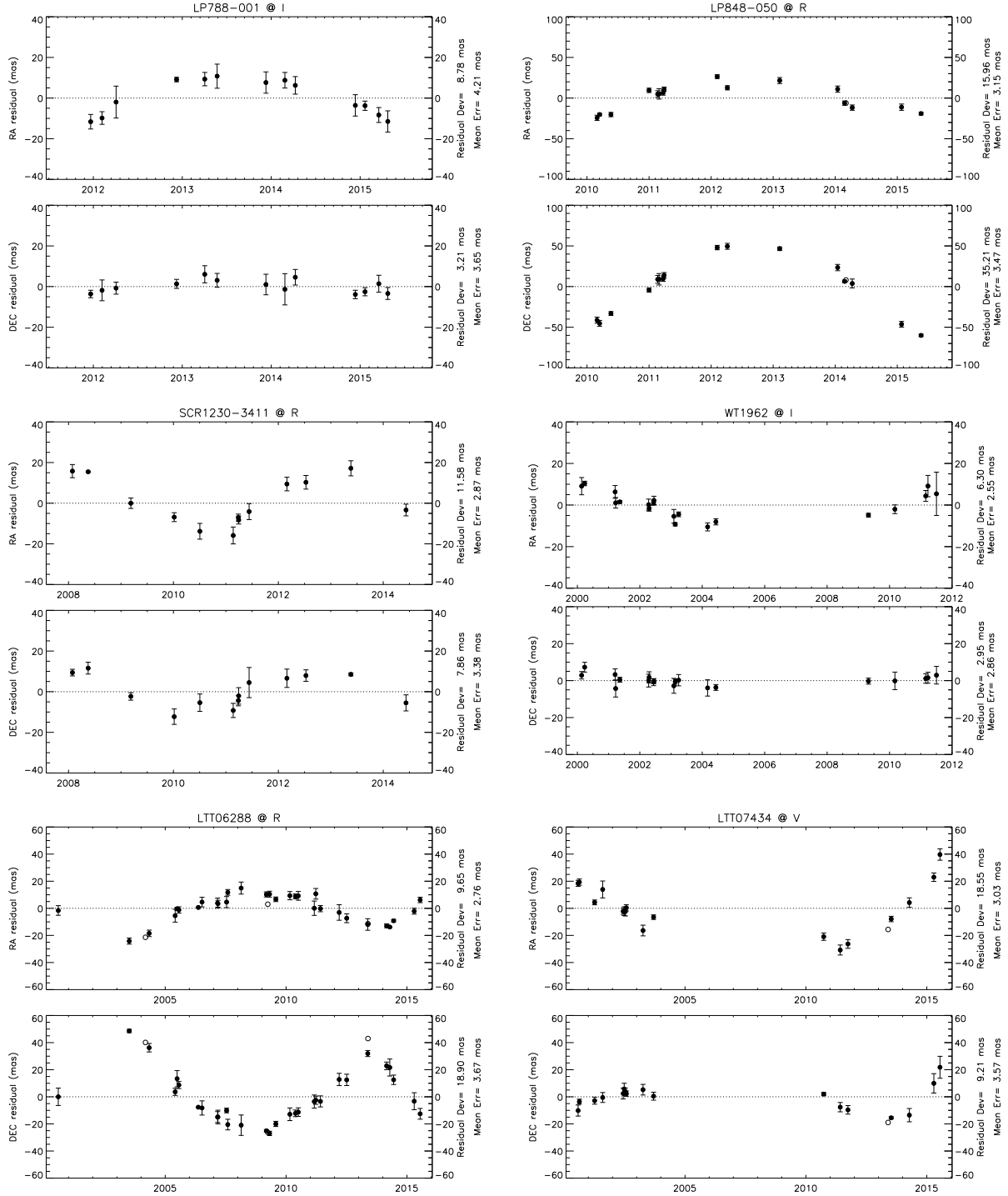


Figure 4.2 Nightly mean astrometric residual plots in Right Ascension and Declination for LP 788-001AB, LP 848-050AB, SCR 1230-3411AB, WT 1962AB, L 408-123AB, and LTT 7434AB. The astrometric signatures of each system's proper motion and parallax have been removed.

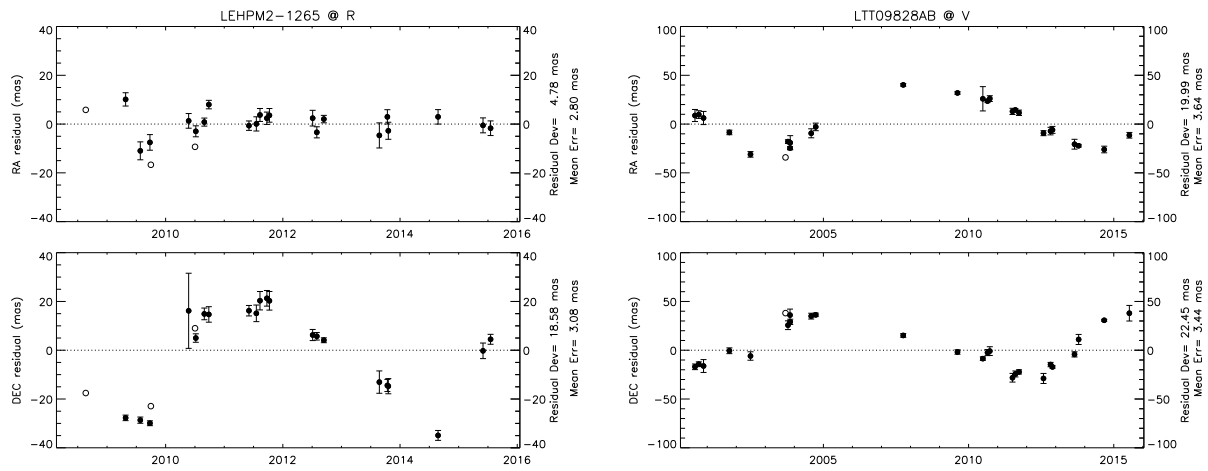


Figure 4.3 Nightly mean astrometric residual plots in Right Ascension and Declination for LEHPM 2-1265AB and LTT 9828AB. The astrometric signatures of each system's proper motion and parallax have been removed.

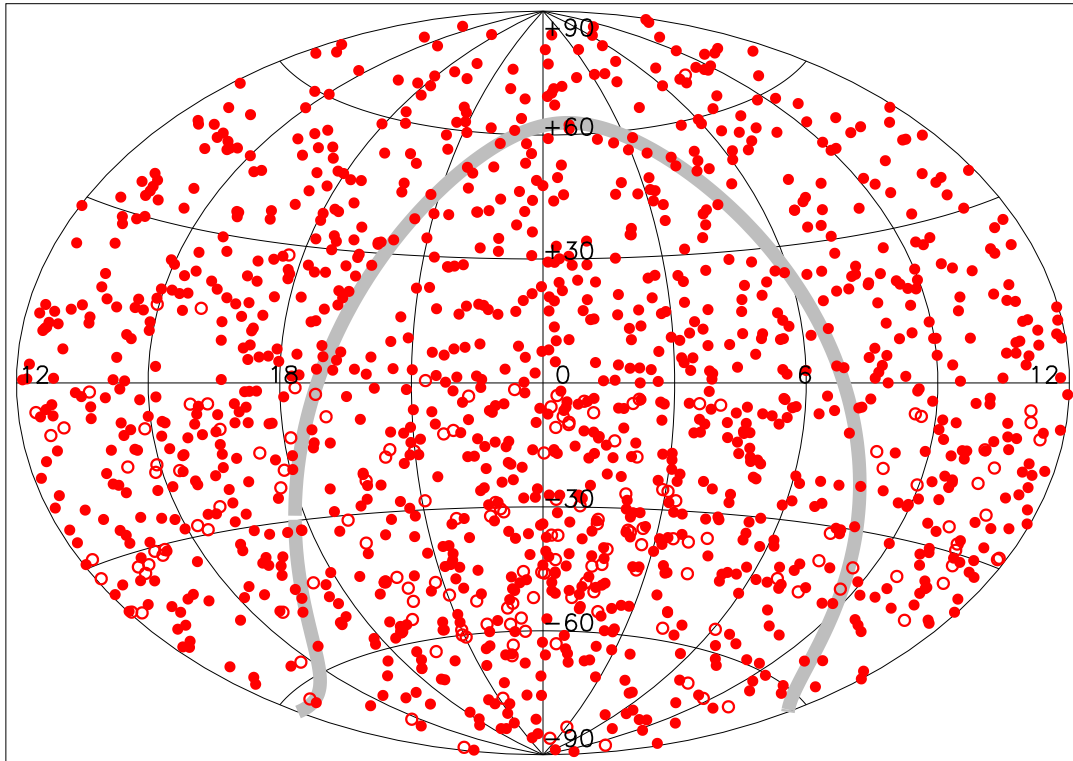


Figure 4.4 The sky distribution of the 1342 systems with trigonometric parallaxes studied in this thesis. Solid points indicate the 1180 systems with trigonometric distances that place them within 25 pc; open points indicate the 162 that lie beyond 25 pc. The gray line indicates the Galactic plane.

CHAPTER 5

M DWARF MULTIPLICITY STUDY

5.1 Outline of the M Dwarf Multiplicity Study

Much like people, stars arrange themselves in various configurations – singles, doubles, multiples, clusters, and great aggregations known as galaxies. Each of these collections is different, depending on the proximity of the members and the shared history and composition of the stars involved. Stellar multiples and their properties (e.g., separations, mass ratio distributions, etc.) provide fundamental clues about the nature of star formation, the distribution of baryonic mass in the Universe, and the evolution of stellar systems over time. How stars are parceled into singles, doubles, and higher order multiples also provides clues about the angular momentum distribution in stellar systems and constraints on whether or not planets may be found (Raghavan et al. 2010; Winn & Fabrycky 2015). Of all the populations in the Galaxy, the nearest stars provide the fundamental framework upon which stellar astrophysics is based because they contain the most easily studied representatives of their kinds. Because red dwarfs dominate the nearby stellar population, accounting for roughly 75% of all stars (Henry et al. 2006), they are an important sample to study in order to understand stellar multiplicity.

Here we describe a search for stellar companions to M dwarfs. Because spectral type M is effectively the end of the stellar main sequence, the companions revealed in this search are M dwarfs as well. For those M dwarf primaries¹ with parallaxes that place them within

¹We refer to any collection of stars and their companion brown dwarfs and/or exoplanets as a system, including single M dwarfs not currently known to have any companions. Systems that contained a white

25 pc, an all-sky multiplicity search for stellar components at separations of $2''$ to $600''$ was undertaken. By obtaining I -band images using the CTIO/SMARTS 0.9m and 1.0m in the south and the Lowell 42in and USNO 40in in the north, the environs of these systems were probed for companions at separations of $2''$ to $10''$. A complementary reconnaissance of wider companions out to $600''$ was also done via the blinking of SuperCOSMOS BRI images. An indirect method based on photometry was used to infer the presence of nearly equal magnitude companions at separations less than $\sim 2''$. Finally, various subsets of the sample were searched for companions at sub-arcsecond separations using astrometry, HST's FGS, *HIPPARCOS* flags, and speckle interferometry.

The observational parameters used to select M dwarfs with masses $0.075 < M_{\odot} < 0.67$ (from the mass-luminosity relation in Benedict et al. in prep) correspond to:

- $8.8 < M_V < 20.0$
- $3.7 < (V - K) < 9.5$
- An initial constraint of $(I - K) < 4.5$ was used for faint objects with no reliable V available until one was measured.
- Membership in the sample is based on the parallax of the system with the requirements of $\pi \geq 40$ mas and $\sigma_{\pi} \leq 10$ mas, and it is assumed that the proper motion information is the same for all components of any multiple system.

The color and absolute magnitude limits were determined at the K-M dwarf boundary by creating an HR Diagram from the RECONS 25 Parsec Database. Spectral types from

dwarf component were excluded from the sample, as the white dwarf was previously the brighter and more massive primary.

RECONS' work, Gray et al. (2003), Reid et al. (1995), and Hawley et al. (1996) were plotted versus $(V - K)$ and M_V . Because spectral types can be imprecise, there was overlap between the M and K types; so, boundaries were chosen to split the types at carefully defined $(V - K)$ and M_V values. A similar method was followed for the L-M dwarf transition using results from Dahn et al. (2002). These procedures resulted in the limits noted above. We note that these updated limits for M dwarfs are slightly different from those listed in Chapter 3 and are preferred.

Imposing these color, absolute magnitude, and distance criteria result in a sample of 1122 red dwarf primaries, as of January 1, 2012. Table 5.1 lists the various sources of the parallax measurements used in the multiplicity study, the largest number (742) being from the YPC and HIP (discussed in §3.2). The next largest collection of parallaxes measured for the nearby M dwarfs is from the RECONS team, contributing 305 in both published and unpublished measurements. As described in §4.1, part of the work presented here includes new parallax measurements of 124 nearby M dwarf systems, with the remaining 17 to be published by other members of the group². Finally, other astrometry groups have contributed parallaxes for an additional 76 nearby red dwarfs.

RECONS' work in the southern hemisphere, both discovering stars via the proper motion searches detailed in §1.3.4 and measuring their parallaxes, makes possible a balanced all-sky survey of M dwarfs for the first time, as the southern hemisphere has historically been under-sampled. Because all 1122 systems have accurate parallaxes, biases inherent to photometrically-selected samples are ameliorated. **This is the largest, most compre-**

²Continuing observations will increase this number.

hensive study ever done of the multiplicity of the most common stars in the Galaxy.

Table 5.1: Parallax Sources for Multiplicity Search

Reference	# of Targets	# of Targets	Notes
	NORTH	SOUTH	
YPC + HIP	472	270	Within 25.0 pc from Compendia
RECONS - published	21	143	Already in Literature
RECONS - unpublished	10	131	Additions Soon
Literature (1995-2012)	55	21	Additions from Others
TOTAL	558	565	

Figure 5.1 illustrates the luminosity (LF) and mass functions (MF) for the survey sample. These histograms indicate how many of the sample objects are found within each bin of either absolute V magnitude or mass. One caveat is that no primaries with joint photometry due to unresolved companions have yet been deblended. After deblending, as discussed in §6.3, the distributions for both histograms will shift to the right, to lower masses. The full results are shown and discussed in §8.2.3.

The LF (Figure 5.1(a)) for the sample has been further divided by factors of two in mass, as noted by the vertical lines, where the absolute magnitudes that correspond to the mass divisions of 0.6, 0.3, and 0.15 $M_{\odot}$ are $M_V = 9.25$, 11.80, and 13.86, respectively. These divisions will be explored in the analysis of the results presented in Chapter 6. It is noteworthy that the bin with the most number of primaries is made up of the brightest and most massive objects, which have historically been more easily targeted for parallax measurements.

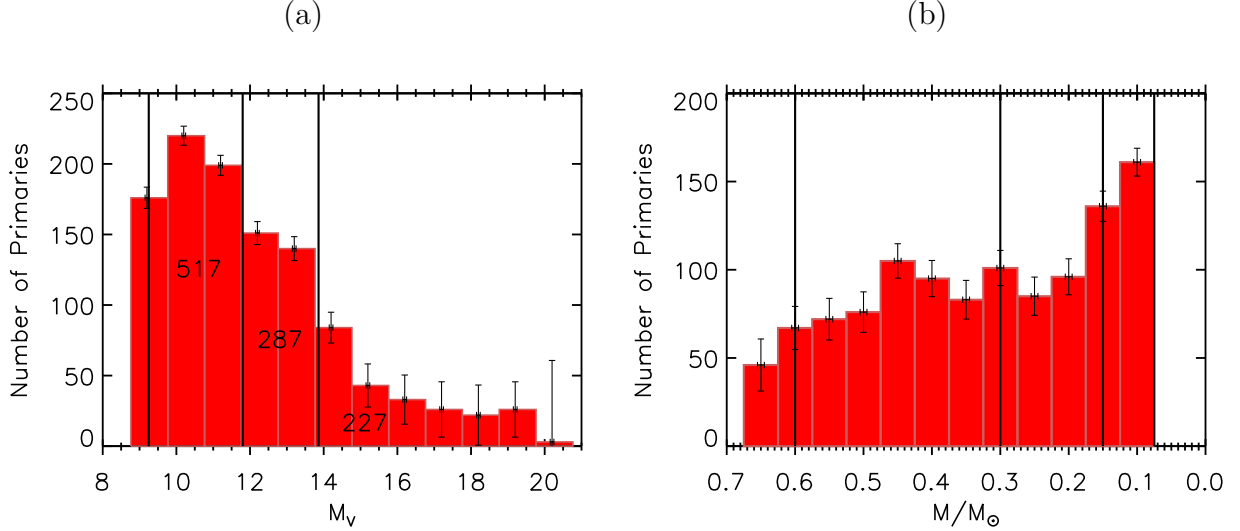


Figure 5.1 The luminosity and mass functions for the primaries in the multiplicity sample. (a) A histogram indicating the M_V distribution, i.e., the luminosity function. (b) A histogram indicating how many primaries are contained within each mass bin, i.e., the mass function. The vertical lines highlight bins that are factors of two in mass (0.075, 0.15, 0.30, and 0.60 $M_\odot$). We note that the numbers do not total 1122, as 92 primaries more massive than 0.6 $M_\odot$ were excluded from the most massive subset.

To derive the MF, masses were estimated from M_V using the comprehensive mass-luminosity relations in Benedict et al. (in prep), discussed further in §6.3. The resulting mass function that includes the 1122 red dwarf primary masses, spanning 0.075 — 0.67 $M_\odot$ and $M_V = 8.8$ — 20.0 mags, is shown in Figure 5.1(b). The peak at the faint (right) end is due partly to RECONS’ work and that of other teams interested in very low mass stars and brown dwarfs. Stars with parallaxes from the MEarth northern survey (Dittmann et al. 2014) were not included in the multiplicity sample, as they were only available after the sample list had been frozen (1 January, 2012), but those results will fill in this histogram somewhat. Even before deblending the joint photometry of the close multiples in the sample from which the masses are estimated and including the contribution from companions, **it is important to note that the mass function increases to lower masses at the end**

of the main sequence.

5.2 Previous M Dwarf Multiplicity Studies

Companion searches have been done for M dwarfs during the past few decades, but until recently, most of the surveys have had on the order of 100 targets. Table 5.2 lists these previous efforts, with the survey presented in this work listed at the bottom for comparison. With samples of this size, our statistical understanding of the distribution of companions is quite weak. The exceptions are the efforts led by Saurav Dhital (Dhital et al. 2010) and Markus Janson (Janson et al. 2012, 2014b), which were available only after the author’s project was begun and underway. Dhital et al. (2010) studied mid-K to mid-M dwarfs from the Sloan Digital Sky Survey that were not nearby and found primarily wide multiple systems, including white dwarf components in their analysis. Only a fraction of the M dwarfs studied by Janson et al. (2012, 2014b) had trigonometric distances available, leading to a sample that was not volume-limited. Considering the large percentage of all stars that M dwarfs comprise, a study with a large sample (i.e., more than 1000 systems) was vital in order to arrive at a conclusive understanding of how many red dwarfs systems are multiple and in order to perform statistical analyses of the results and on subsamples based on primary mass, metallicity, etc. For example, using the Binomial Distribution for error analysis,

$$\sigma^2 = \frac{np(1-p)}{n^2}, \quad (5.1)$$

where σ is the error, n is the number of objects in the sample, and p is the multiplicity rate,

it is possible to calculate errors and to determine the reliability of the result. An expected multiplicity fraction of 30% on samples of 10, 100, and 1000 stars, respectively, yields errors of 14.5%, 4.6%, and 1.4%, thus illustrating the importance of studying a large collection of M dwarfs.

Table 5.2: Previous M Dwarf Multiplicity Studies - Techniques

Reference	# of Stars	Technique	Search Region
Skrutskie et al. (1989)	55	Infrared Imaging	2 — 14''
Henry & McCarthy (1990)	27	Infrared Speckle	0.2 — 5''
Henry (1991)	74	Infrared Speckle	0.2 — 5''
Fischer & Marcy (1992)	28-62	Various	various
Simons et al. (1996)	63	Infrared Imaging	10 — 240''
Delfosse et al. (1999a)	127	Radial Velocities	<1.0''
Law et al. (2006)	32	Lucky Imaging	0.1 — 1.5''
Endl et al. (2006)	90	Radial Velocities	<1.0''
Law et al. (2008)	77	Lucky Imaging	0.1 — 1.5''
Bergfors et al. (2010)	124	Lucky Imaging	0.2 — 5''
Dhital et al. (2010)	1342	Sloan Archive Search	7 — 180''
Law et al. (2010)	36	Adaptive Optics	0.1 — 1.5''
Dieterich et al. (2012)	126	HST-NICMOS	0.2 — 7.5''
Janson et al. (2012)	701	Lucky Imaging	0.08 — 6''
Janson et al. (2014b)	286	Lucky Imaging	0.1 — 5''
Ward-Duong et al. (2015)	245	Infrared AO	10 — 10,000 AU
Winters (this survey)	1122	Various	0 — 600''

5.3 Wide-Field Blinking Search

All 1122 systems were blinked for common proper motion (CPM) companions. A wide companion would have a similar proper motion to its primary and would thus appear to

move in the same direction at the same speed across the sky. As most nearby stars have high proper motion (as discussed in §1.3), this method is quite effective for these targets. Archival SuperCOMOS *BRI* photographic plate images $10' \times 10'$ were blinked using the Aladin interface of the Centre de Données astronomiques de Strasbourg (CDS) using a script written by Adric Riedel to detect companions at separations greater than $\sim 5''$. These plates were taken from 1974 — 2002 and provide up to 28 years of temporal resolution; however, for 168 stars, a small proper motion and/or an epoch spread of less than 5 years resulted in undetectable motion. In these cases, the *I*–band images gathered during the direct imaging survey (see §5.4 below) will be blinked with the SuperCOSMOS *I*–band image (see §8.5 in Chapter 8). In the 18 cases where a POSS-I image was available (for $-20.5^\circ < \text{Dec} < +05^\circ$), those images were used, especially for the objects with relatively low proper motions ($\mu < 0''.18 \text{ yr}^{-1}$) because the time baseline reaches back to 1950. The use of the recent images taken for the present study from 2010 — 2014 provides an even larger temporal baseline than using SuperCOSMOS and/or POSS-I. Information for the images blinked is given in Table 5.3, taken from Morgan (1995), Subasavage (2007), and the UK Schmidt webpage³.

Table 5.3: Blinking Survey Information

Filter	Epoch Span	Decl. Range	Mag. Limit	$\Delta\lambda$
B_J (IIIaJ)	1974 - 1994	all-sky	~ 20.5	3950 - 5400 Å
R_{59F} (IIIaF)	1984 - 2001	all-sky	~ 21.5	5900 - 6900 Å
I_{IVN} (IVN)	1978 - 2002	all-sky	~ 19.5	6700 - 9000 Å
E_{POSS-I} (103aE)	1950 - 1957	$-20.5^\circ < \text{Dec} < +05^\circ$	~ 19.5	6200 - 6700 Å
I_{KC}	2010 - 2014	all sky	~ 17.5	7150 - 9000 Å

³found here: <http://www.roe.ac.uk/ifa/wfau/ukstu/telescope.html>

5.4 CCD Imaging Search

Each M dwarf primary was observed at one of four telescopes (listed in Table 2.1) with integrations of 3, 30, and 300 seconds in order to reveal stellar companions at separations ~ 2 to $10''$. The short 3-second exposure would reveal any close equal magnitude companions, while the long 300-second exposure would reveal faint companions to masses at the end of the main sequence. The 30-second exposure was taken to bridge the intermediate phase space. The images were unbinned in order to achieve the best astrometry possible. Table 2.1 lists the technical and observational information for each telescope used for this portion of the search. Johnson-Kron-Cousins filters were used at all sites; the I -band was used for the astrometry observations, while V , R , and I were used for absolute and relative photometry measurements. Figure 5.2 shows the distribution of the I -band magnitudes of the red dwarfs surveyed. One new companion was detected during this portion of the survey: a nearly equal-magnitude companion to GJ0084.1B.

Absolute photometry for 67 objects was acquired at the Lowell 42in during the course of the multiplicity study in order to characterize the systems. The same observational procedures for obtaining absolute photometry detailed in Chapter 3, §3.1.4 were followed. The results are included in Tables 3.2 and A.1. Absolute photometry for the southern M dwarf primaries is discussed in Chapter 3.

While the author took the majority of the observations, other RECONS members partic-

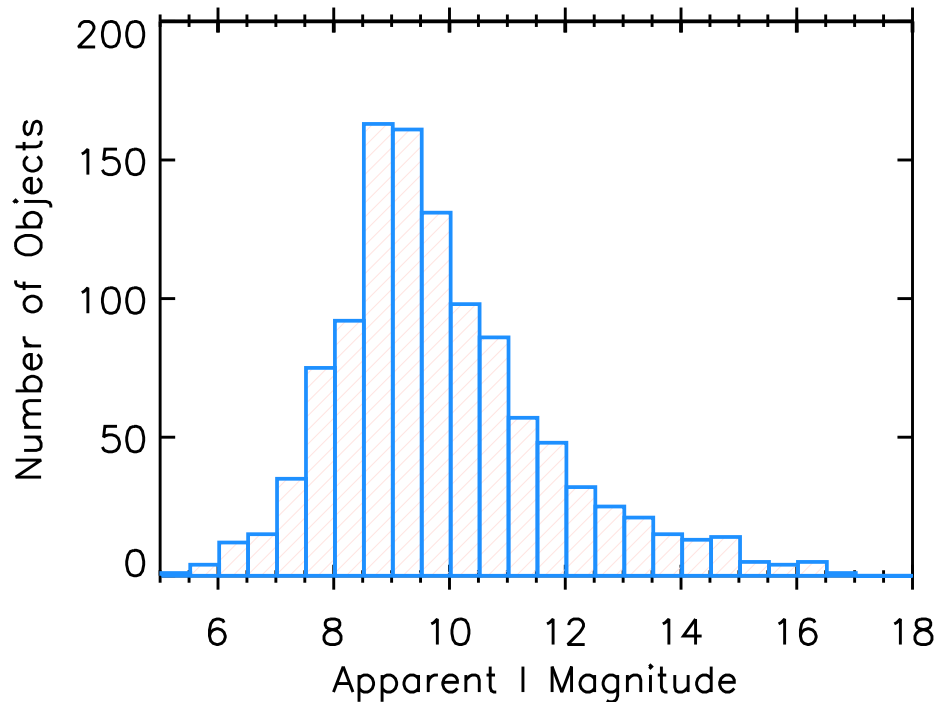


Figure 5.2 The distribution of the multiplicity sample in the I -band. Most of the targets are bright in the I -band, with 85% brighter than $I = 12$.

ipated in the data acquisition, especially Joey Chatelain, making this project a collaborative effort. We would often switch between observing programs, depending on the weather and seeing conditions so as not to lose valuable telescope time.

Figure 5.3 shows the distribution on the sky of the entire sample investigated for multiplicity. The different colors indicate the different telescopes used during the imaging campaign. Seeing conditions better than $2''$ were attained for all but one star — GJ0507, with some stars being observed multiple times. The histogram in Figure 7.1 illustrates the seeing conditions experienced at the four different telescopes.

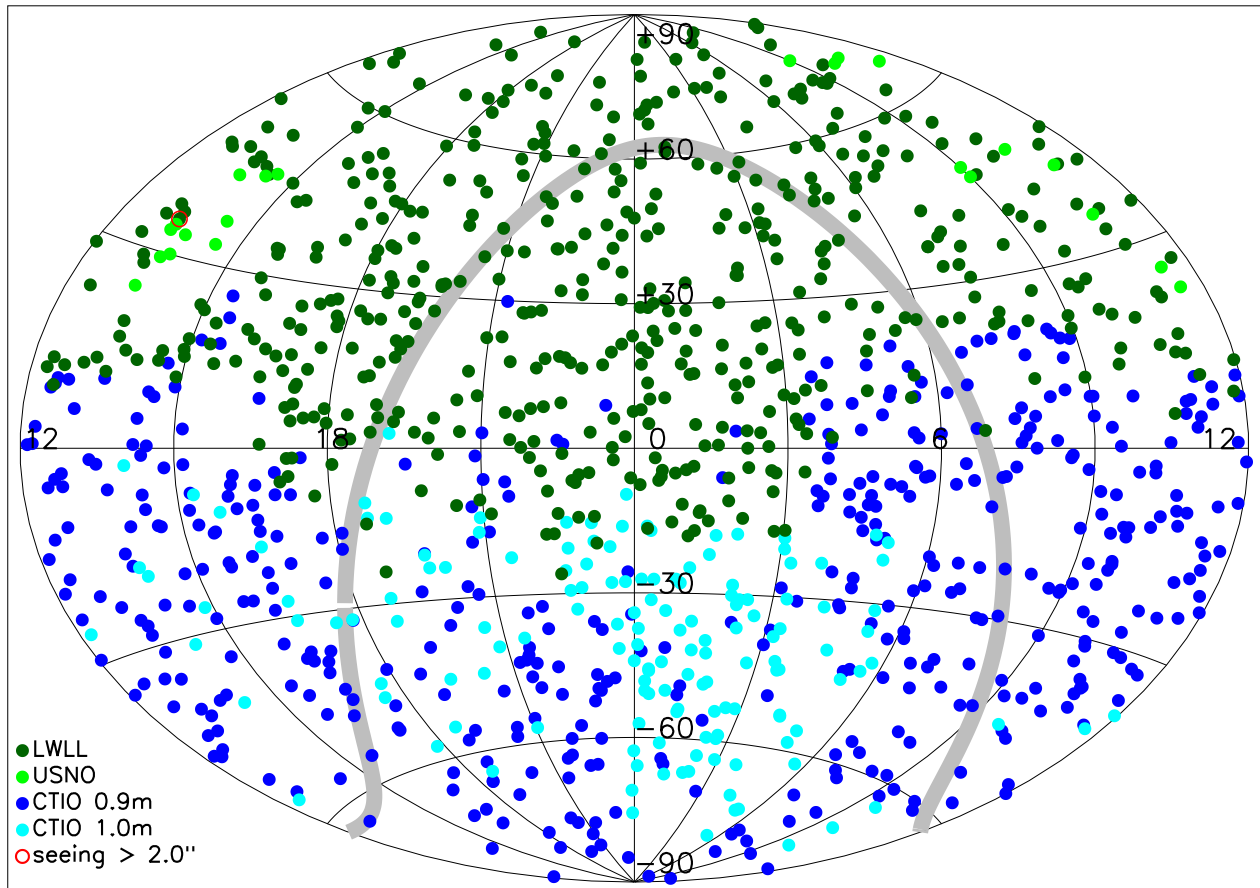


Figure 5.3 The distribution on the sky of all 1122 M dwarfs examined for multiplicity. Different colors indicate the different telescopes that were utilized.

5.5 Sub-Arcsecond Separation Search

In addition to the imaging and blinking campaigns, investigations for companions at smaller separations were possible using a variety of techniques. Because *VRI* was available for all but ten northern ($\delta > +30^\circ$) targets in the sample, photometric techniques based on overluminosity of the red dwarf in question, as discussed in §5.5.1, were used to probe almost the entire sample. Other methods for detections of companions at sub-arcsecond

separations were used for various subsets of the entire sample, including revealing astrometric perturbations on stars with RECONS parallaxes, observations of M dwarfs with the Fine Guidance Sensor (FGS) on the *Hubble Space Telescope* (HST), and the existence of data reduction flags for those objects with *HIPPARCOS* parallaxes.

5.5.1 Overluminosity via Photometry

5.5.1.1 Elevation above the Main Sequence

The existence of very accurate parallaxes and V and K magnitudes for the sample allows the plotting of an observational HR Diagram (see Figure 5.4), where M_V and the $(V - K)$ color are used as proxies for luminosity and temperature. Unresolved equal magnitude binaries would be overluminous and would plot above the main sequence, as would any young systems. There is a clear elevation of known multiples with separations $< 5''$ ⁴ and a few young objects above the sequence of presumed singles. Subdwarfs are located below and to the left of the singles, as they are old, metal-poor and underluminous stars⁵. Ten candidate multiples were identified by eye with this technique and are listed in Table 6.2. They are also marked in Figure 5.4.

⁴This $5''$ separation appears to be the boundary where photometry for multiple systems from the literature — specifically from Bessell and Weis — becomes blended. For photometry from the SAAO group, the separation is closer to $10''$ because they use large apertures.

⁵The known young and subdwarf members are listed in Tables 6.4 and 6.5, along with their identifying characteristics.

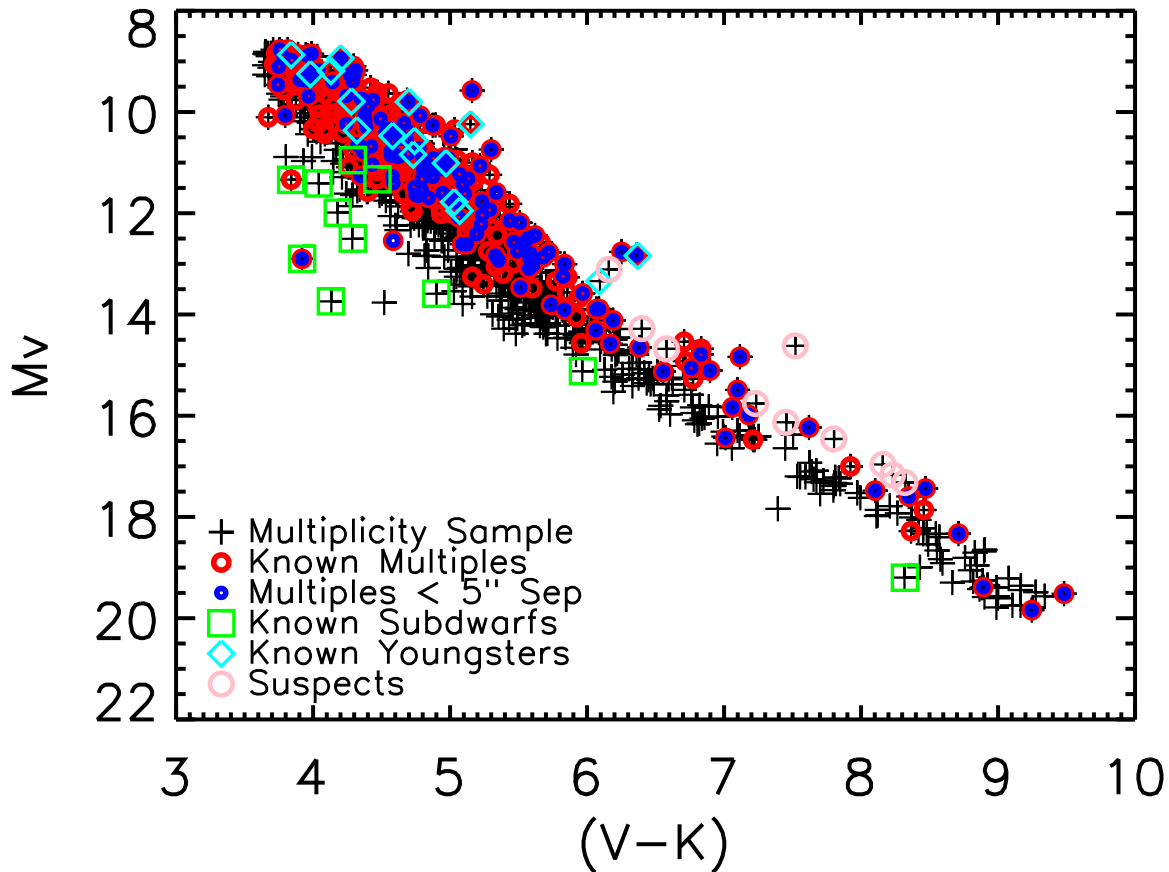


Figure 5.4 Color-Magnitude Diagram for the Multiplicity Sample, with M_V plotted versus the $(V - K)$ color. The sample is plotted in black plusses, with known multiple systems for which separate photometry exists for each component indicated with red circles. Known close multiples with blended photometry are noted in royal blue circles. Known subdwarfs are shown in open green squares, while known young objects are noted with open cyan diamonds. Stars suspected to be unresolved multiples due to their elevated position on the main sequence are noted in open pink circles. Note the elevation of the known multiples with close, unresolved companions.

5.5.1.2 Trigonometric & CCD Distance Mismatches

Because both 2MASS and VRI photometry were available (or newly measured, in the case of VRI) for almost the entire sample, photometric distances were estimated in order to

make comparisons to the true trigonometric distances available from the parallaxes (as seen in Figure 3.4 in Chapter 3). This allowed suspected multiples to be highlighted that would otherwise have been missed due to the lower separation limit ($2''$) of our main imaging survey.

Unresolved equal magnitude multiples would be overluminous, and comparisons of the *ccddist* to the *trigdist* would result in the *ccddist* being closer by up to a factor of 1.414. As shown, for example, by Carroll & Ostlie (2006), the relation between a star's flux F , the energy received at a distance d , and its intrinsic luminosity L is

$$F = \frac{L}{4\pi d^2} . \quad (5.2)$$

The ratio between the fluxes of two objects is then

$$\frac{F_1}{F_2} = \frac{\frac{L_1}{4\pi d_1^2}}{\frac{L_2}{4\pi d_2^2}} . \quad (5.3)$$

However, if one object is actually an equal magnitude binary, then $L_1 = 2L_2$ and the equation becomes

$$\frac{F_1}{F_2} = \frac{\frac{2L_2}{4\pi d_1^2}}{\frac{L_2}{4\pi d_2^2}}, \quad (5.4)$$

which simplifies to

$$\frac{F_1}{F_2} = \frac{2d_2^2}{d_1^2} . \quad (5.5)$$

Rearranging further leads to

$$d_1 = d_2 \cdot \left(\frac{2F_2}{F_1} \right)^{1/2}. \quad (5.6)$$

But, if the measured fluxes from the single and the unresolved double are the same, then $F_1 = F_2$, resulting in

$$\mathbf{d}_1 = 2^{1/2} \mathbf{d}_2 = 1.414 \mathbf{d}_2, \quad (5.7)$$

showing how an equal magnitude binary will appear to be 1.414 times closer than another single object of the same apparent flux.

With this method, 64 candidate multiples were revealed with *cddists* at least exactly 1.414 times closer than their *trigdist*s. Of these, 37 were already known to have a very close companion, verifying the technique. The other 27 are new candidates, one of which has been confirmed by follow-up observations already. One of these 27 (GJ 207.1) was noted by Reiners et al. (2012) to be a possible spectroscopic binary, and another (LP423-031) was identified as being elevated above the main sequence on the HR diagram. These are listed in Table 6.2.

5.5.2 RECONS Perturbations

A total of 313 stars in the sample have had a parallax measured by RECONS, with the temporal coverage for some of these objects spanning up to sixteen years. The presence of an unequal mass component causes a perturbation in the photocenter of the system that is

evident in the residuals after solving for both the proper motion and parallax. This is the case for 35 of the systems, which are listed in the table of confirmed companions (Table 6.1). We consider these 35 to be confirmed stellar companions. This is the only technique used in this companion search that may have revealed brown dwarf companions.

5.5.3 Hubble Space Telescope’s Fine Guidance Sensors

Some stars with astrometric perturbations found through the RECONS parallax program were consequently targeted using *Hubble Space Telescope’s* Fine Guidance Sensors (*HST*-FGS) with the F583W filter. *HST’s* FGS consists of two large field of view white light interferometers that have the ability to track the position of a light source to one mas precision. They can also obtain sub-mas sampling of an object by obtaining its interferogram, enabling detection of close multiple star systems down to ~ 8 mas (Nelán 2015). *HST’s* FGS was used in the transfer function scan mode (TRANS) to produce usually 20 - 80 **S** curves (indicative of the fringe visibility function) that are then cross-correlated and co-added, resulting in a high signal-to-noise ratio transfer function. Data reductions use **S** curves of confirmed single stars of matching color to deconvolve multiple systems. Four of the twelve systems targeted with FGS were found to harbor a companion and are listed in the table of confirmed companions (Table 6.1).

5.5.4 HIPPARCOS Flags

All 459 objects in the multiplicity sample with *HIPPARCOS* parallaxes were searched for the possibility of an entry in the Double and Multiple Systems Annex (DMSA) (Lindgren et al.

1997) in the original *HIPPARCOS* Catalog that might indicate the presence of a companion. We note that 136 of these 459 have a parallax only by *HIPPARCOS*. The remaining 323 stars with a *HIPPARCOS* parallax also have a parallax measurement from another source. Various flags exist in the DMSA that confirm or infer the presence of a companion. They are as follows:

- C - component solutions where both components are resolved and each have an individual parallax;
- G - acceleration solutions, i.e., due to variable proper motions, which could be due to an unseen companion;
- O - orbits from astrometric binaries;
- V - Variability-Induced Movers (VIM), where the variability of an unresolved companion causes the photocenter of the system to move or be perturbed;
- X - stochastic solutions, for which no astrometric parameters could be determined and which may indicate that the star is actually a short-period astrometric binary.

Most of the AFGK systems observed by *HIPPARCOS* with flags in the DMSA have been further examined or re-analyzed by Pourbaix et al. (2003, 2004), Platais et al. (2003), Jancart et al. (2005), and Frankowski et al. (2007); however, few of the M dwarf systems seemed to have been investigated. We found that flags existed for 31 systems in the survey, which are listed in Table 6.2.

Listed in Table 5.4 are the statistics for which methods were used to search which portions of the sample for companions. We note that the number of detections includes confirmations

of previously reported multiples.

Table 5.4: Companion Search Technique Statistics

Separation	Searched (#)	Searched (%)	Detected (#)
10 — 600''	972	87	64
2 — 10''	1122	100	44
< 2''			
Distance Mismatches	1112	99	37
HR Diagram Elevation	1112	99	10
RECONS Perturbations	313	28	35
<i>HIPPARCOS</i> Flag	459	41	31
HST-FGS	12	1	4

5.6 Literature Search

Finally, a literature search was carried out by looking up all 1122 primaries in *SIMBAD* and then using the available bibliography tool to search for additional companions. It is acknowledged that *SIMBAD* is sometimes incomplete, but the author feels that the majority of publications reporting companions were consulted. Papers that were scrutinized in great detail include those that reported high resolution radial velocities (typically for planet searches), parallax papers that might report perturbations, high resolution imaging results, speckle interferometry papers, and other multiplicity papers.

Extensive use of the Washington Double Star Catalogue (WDS), maintained by Brian Mason⁶, was made in targeting publications with information on multiple systems. Two drawbacks of the WDS are that not all companions are actual physical members of the system

⁶A back-up copy is housed at Georgia State University.

with which they are listed and that the companion must be resolved. Thus, spectroscopic binaries are not listed in the WDS, and care had to be taken when determining the number of companions in the system. However, information pertaining to a star in the WDS was usually only accessed after it was already known that the system was multiple and how many components were present in the system, so this was not really troublesome. In fact, the WDS sometimes had references to publications that reported information for a system that *SIMBAD* had not listed.

CHAPTER 6

MULTIPLICITY STUDY RESULTS & ANALYSIS

6.1 Multiplicity Results

Here we report the results of the multiplicity study of the nearby M dwarfs described in Chapter 5. In the interest of clarity, it is important to first define a few terms. *Component* refers to any member of a multiple system. The *primary* is either a single star or the most massive (or brightest in the V -band) component in the system, and *companion* is used throughout to refer to a member of a multiple system that is less massive (or fainter, again in the V -band) than the primary star. The multiplicity and companion fraction will also be discussed at length. The *Multiplicity fraction* is the percentage of all systems that are multiple, regardless of whether the system is double, triple or higher order. For example, discovering that a member of a binary system is actually a binary itself would make the system a triple, but would not affect the multiplicity fraction. The *companion fraction* is the number of companions per primary in the sample, so higher order multiples have an effect on this fraction, as they add a companion to the statistics.

The higher order systems complicate the analysis. Usually these systems are hierarchical, so should the companions be studied in relation to the primary in the system or in relation to the primary of the sub-system of which they are a member? In this study, we analyze all companions in relation to the primary of the system, even if they are members of sub-binaries or -triples.

Companions that were confirmed through any of the search campaigns outlined in Chap-

ter 5 or through the literature search are reported (§6.1.1), followed by a discussion of suspected new multiple systems identified in this survey (§6.1.2) and companion candidates that were subsequently dismissed (§6.1.3). We then describe the treatment of brown dwarf substellar companions (§6.1.4), followed by an analysis of the higher-order multiple systems (§6.1.5). A correction to the initial multiplicity fraction is presented in §6.2. The techniques used to deblend the V magnitudes of close multiples are detailed, followed by a description of the the mass-luminosity relation used to estimate masses (§6.3). Potential correlations between multiplicity rate and mass and tangential velocity are explored (§6.4, §6.5). Finally, we end this chapter with notes on individual systems (§6.7).

6.1.1 Confirmed Companions

Of the 1122 M dwarfs searched, there are 262 multiple systems with 306 new and confirmed *stellar* companions to their primaries, resulting in an initial uncorrected multiplicity fraction of $23.4 \pm 1.3\%$ and an uncorrected stellar companion fraction of $27.3 \pm 1.3\%$. The ratio of singles to higher order systems is 861:224:34:2:2 for singles:doubles:triples:quadruples:quintuples. In percentages, this translates to 76.6:19.9:3.0:0.2:0.2%. For comparison, the statistics for solar-type stars (including brown dwarf companions) are 56:33:8:3% (Raghavan et al. 2010) for singles:doubles:triples:higher-order systems.

Information for all multiple systems (including those containing brown dwarf/substellar components) is presented in Table 6.1, with $n-1$ lines for each system, where n is the total number of components in the system. For example, a quadruple system will have three lines of information that describe the system. The name is followed by the number of components

in the system and the configuration map of the components detailed in that line of the Table. If the line of data pertains to higher order systems containing component configurations for sub-systems (e.g., ‘BC’ of a triple system), the number of components noted will be ‘0’, as the full membership of the system will already have been noted in the line of data containing the ‘A’ component. These data are followed by epoch J2000.0 coordinates, then the angular separation (ρ) in arcseconds, the position angle (θ) in degrees measured East of North, the year of the measurement, the code for the technique used to identify the component, and the reference. We assign a separation of $<2''$ for all spectroscopic binaries (unless more information is available) and to indicate that a companion has been detected, but not yet resolved. We note that where orbit determinations from the literature are reported, the semi-major axis a is listed instead of ρ , where available. If a was not reported, then it was calculated from the period and the estimated masses of the components in question. Next is listed the delta-magnitude (Δmag) between the components indicated by the configuration map, the filter used to measure this Δmag , and the reference for this photometry data. An asterisk next to the Δmag filter of ‘V’ indicates that the photometry is from photographic plates.

The codes for the identifying techniques are as follows:

- AO det — detection using adaptive optics;
- astdet — astrometric detection of a perturbation;
- astorb — orbit from astrometry;
- HSTACS — detection using Hubble Space Telescope’s Advanced Camera for Surveys;

- HSTFGS — detection using Hubble Space Telescope’s Fine Guidance Sensor;
- HSTNIC — detection with Hubble Space Telescope’s NICMOS;
- HSTWPC — detection with Hubble Space Telescope’s Wide Field Planetary Camera

2;

- lkydet — detection with lucky imaging;
- lkyorb — orbit measured from lucky imaging;
- radorb — orbit from radial velocity measurements;
- radvel — detection using radial velocity, but no type of ‘SB’ indicated;
- SB (1, 2, 2O, 3) — spectroscopic binary, either single-, double-, double with an orbit,

or triple-lined;

- spkdet — detection using speckle interferometry;
- spkorb — orbit determined from speckle interferometry measurements;
- visdet — visual detection;
- visorb — orbit determined from visual detections.

In many cases, there are multiple separation and Δmag measurements available in the literature from different groups using different techniques. An exhaustive list of these results is beyond the scope of the work presented here. Only the most recent known result for each system is listed here. In some cases, the separation, position angle, and Δmag are not available.

Table 6.1: Multiplicity Information for Sample

Name	#	Obj	Map	RA (hh:mm:ss)	DEC (dd:mm:ss)	ρ ($''$)	θ (deg)	Year	Technique	Ref	Δmag (mag)	Filter	Ref
GJ1001	0	BC		00 04 34.8	−40 44 06	0.087	048	2003	HSTACS	39	0.10	110	39
GJ1001	3	A-BC		00 04 36.0	−40 44 02	18.2	259	2003	visdet	39	9.91	V	1
G131-026	2	AB		00 08 54.0	+20 50 18	0.111	170	2001	AO det	12	0.46	H	12
GJ0011	2	AB		00 13 15.8	+69 19 36	0.859	089	2012	lkydet	59	0.69	i'	59

LTT17095	2	AB	00 13 38.7	+80 39 56	12.78	126	2001	visdet	100	3.63	V	1
GJ1005	2	AB	00 15 28.1	-16 08 01	0.329	234	2002	HSTNIC	29	2.42	V	8
2MA0015-1636	2	AB	00 15 58.1	-16 36 57	0.105	090	2011	AO det	17	0.06	H	17
L290-072	2	AB	00 16 01.9	-48 15 39	<2	...	2009	SB1	113	...	...	...
GJ1006	2	AB	00 16 14.6	+19 51 37	25.09	059	1999	visdet	100	0.94	V	110
GJ0015	2	AB	00 18 23.0	+44 01 24	35.15	064	1999	visdet	100	2.97	V	1
GJ1010	2	AB	00 23 28.8	+77 11 21	11.18	063	2001	visdet	100	2.79	V	110
GJ2005	0	BC	00 24 44.0	-27 08 24	0.238	255	2008	astdet	65	0.35	K	70
GJ2005	3	A-BC	00 24 44.0	-27 08 24	1.571	027	2008	astdet	65	0.61	K	70
LP349-025	2	AB	00 27 56.0	+22 19 33	0.107	007	2004	AO det	34	0.38	H	34
GJ0022	3	AC-B	00 32 29.4	+67 14 08	4.0	173	2002	visdet	112	1.57	V _T	51
GJ0022	0	AC	00 32 29.4	+67 14 08	0.3703	222	2014	spkdet	55	3.08	V	8
GR*0050	3	AC-B	00 32 53.1	-04 34 07	0.508	183	2012	lkyorb	58	3.17	i'	57
GR*0050	0	AC	00 32 53.1	-04 34 07	0.213	017	2012	lkyorb	58	...	...	...
LHS1104	2	AB	00 35 52.8	+52 41 45	24.74	008	1999	visdet	100	2.56	V	110
LTT10301	2	AB	00 50 33.2	+24 49 00	1.305	319	2008	lkydet	9	0.94	i'	9
GJ0049	2	AB	01 02 38.8	+62 20 42	294.9	...	1999	visdet	102	4.22	V	110
GJ1026	2	AB	01 03 14.1	+20 05 52	2.7	028	1979	visdet	73	1.29	H _p	72
GJ0054	2	AB	01 10 22.0	-67 26 42	0.13	283	2003	HSTFGS	39	1.03	V	39
LP467-016	2	AB	01 11 25.4	+15 26 21	0.409	147	2000	AO det	12	0.69	K _s	12
LHS1212	2	AB	01 11 57.0	+04 54 50	63.55	146	2001	visdet	100	1.02	V	110
LHS1240	2	AB	01 22 43.2	+00 31 07	2.5	070	1977	visorb	41	1.00	V	41
GJ0065	2	AB	01 39 01.7	-17 57 01	1.653	103	2002	HSTNIC	29	0.45	V	8
GJ1041	3	A-BC	01 59 12.4	+03 31 09	4.07	055	2008	visdet	98	1.09	V	1
GJ1041	0	BC	01 59 12.4	+03 31 09	<2	...	2008	SB2	97	...	...	...
LP030-055	2	AB	02 01 54.0	+73 32 32	0.437	259	2012	lkydet	59	1.25	i'	59
GJ0084	2	AB	02 05 04.8	-17 36 52	0.443	103	2003	HSTFGS	39	3.59	H	12
GJ0084.1	0	BC	02 05 21.2	-28 04 36	1.5	...	2011	visdet	1	...	...	...
GJ0084.1	3	A-BC	02 05 23.6	-28 04 11	58.12	014	1999	visdet	100	1.89	V	10
LTT01133	3	AB	02 11 02.2	-35 40 14	3.4	143	1999	visdet	100	1.5	V	1
LTT01133	0	AB-C	02 11 03.1	-35 40 03	13.6	041	1999	visdet	100	0.0	V	1
LHS1377	2	AB	02 16 41.2	-30 59 18	105.53	312	2000	visdet	100	1.07	V	87
GJ1046	2	AB	02 19 10.0	-36 46 41	0.03	orb	2008	SB1	66	...	...	...
GJ1047	0	AB-C	02 21 01.9	+36 52 47	31.025	233	2000	visdet	67	0.98	V	110
GJ1047	3	AB	02 21 04.7	+36 53 02	1	009	1966	visdet	90	0.0	V	90
L225-057	2	AB	02 34 21.0	-53 05 35	<2	...	...	SB2	15	...	...	...
LP993-115	3	A-BC	02 45 14.3	-43 44 10	44.55	061	2000	visdet	60	0.31	V	60
LP993-115	0	BC	02 45 14.3	-43 44 10	0.257	215	2008	lkydet	9	0.87	i'	9
LTT17413	2	AB	02 45 39.6	+44 56 55	18.08	066	1999	visdet	100	...	...	...
GJ0119	2	AB	02 56 34.4	+55 26 14	16.88	021	1999	visdet	100	1.17	V	110
LTT01445	0	BC	03 01 51.0	-16 35 31	1.344	138	2003	HSTNIC	29	0.9	V	50
LTT01445	3	A-BC	03 01 51.0	-16 35 31	7.706	315	2003	HSTNIC	29	0.3	V	60
GJ1054	0	AC	03 07 55.7	-28 13 11	<2	...	1994	SB2	38	...	...	...
GJ1054	3	AC-B	03 07 55.7	-28 13 11	66.69	208	1999	visdet	100	2.85	V	109
GJ0125	2	AB	03 09 30.7	+45 43 57	0.393	023	1991	astdet	72	2.17	H _p	72
LP831-045	2	AB	03 14 18.0	-23 09 31	<2	...	2015	astdet	1	...	...	...
LHS1521	0	AB-C	03 15 29.4	+57 51 33	1164.1	198	...	visdet	19	4.9	V	110
GJ0130.1	3	AB	03 16 13.8	+58 10 02	4.92	8	1999	visdet	100	0.40	V _T	51
LTT17492	2	AB	03 17 12.2	+45 22 22	0.07	172	2005	astdet	84	1.24	J	84
SIP0320-0446	2	AB	03 20 28.3	-04 46 36	<0.33	...	2007	SB1	14	...	...	...
GJ0140	3	AB	03 24 06.4	+23 47 06	2.247	347	1991	astdet	72	1.27	H _p	72
GJ0140	0	AB-C	03 24 12.8	+23 46 19	99	117	2012	visdet	21	1.42	V	109
LP532-081	3	AB	03 25 41.7	+05 51 54	0.275	069	2012	lkydet	59	1.63	i'	59
LP532-081	0	AB-C	03 25 41.7	+05 51 54	2.01	210	2012	lkydet	59	0.17	i'	59
LHS1582	2	AB	03 43 22.0	-09 33 50	0.0184	...	2009	astorb	91	...	...	...
LP833-014	2	AB	03 52 23.1	-22 52 57	1.86	339	1991	astdet	72	0.08	H _p	72
LHS1610	2	AB	03 52 41.0	+17 01 04	<2	...	...	SB2	15	...	...	...
LP031-301	3	A-BC	04 05 57.0	+71 16 38	5.3	240	2006	visdet	71	0.50	K _s	100
LP031-302	0	BC	04 05 58.0	+71 16 41	0.7	245	2006	visdet	71	0.85	V	71
LHS1630	2	AB	04 07 20.0	-24 29 13	0.61	072	2002	AO det	12	0.34	K _s	12
GJ0164	2	AB	04 12 58.8	+52 36 42	0.07	orb	2004	astdet	83	1.72	K _s	77
GJ0165	2	AB	04 13 08.2	+50 31 21	1.219	155	1983	spkdet	80	0.0	V*	46
GJ2033	2	AB	04 16 41.6	-12 33 23	2.4	089	1991	visdet	72	1.1	H _p	72
LHS0189	2	AB	04 25 38.0	-06 52 37	2.81	281	2006	visdet	61	2.1	V	61
2MA0429-3123	2	AB	04 29 18.4	-31 23 56	0.531	299	2003	AO det	100	1.2	J	99
LP715-051	2	AB	04 31 09.0	-13 30 52	0.20	167	1991	astdet	72	1.2	H _p	72
LP775-031	2	AB	04 35 16.1	-16 06 57	<2	...	...	SB2	88	...	...	...
L591-042	2	AB	04 36 40.9	-27 21 18	49.58	196	2001	visdet	60	0.31	V	60
LTT11472	2	AB	04 38 12.6	+28 13 00	0.54	299	2002	AO det	12	0.42	K _s	12
HIP021765	2	AB	04 40 29.2	-09 11 46	0.877	293	1983	spkdet	36	0.1	V	3
2MA0446-1116	2	AB	04 46 51.8	-11 16 47	1.59	279	2010	astdet	98	1.93	I	98
GJ2036	2	AB	04 53 31.2	-55 51 37	7.74	315	2000	visdet	100	1.08	V	1
LP476-207	3	AC-B	05 01 58.8	+09 58 59	0.97	180	1997	SB2	26	0.9	K	26
LP476-207	0	AC	05 01 58.8	+09 58 59	0.012	orb	1998	SB2	26	...	...	...
GJ0184	2	AB	05 03 23.9	+53 07 42	5.58	279	2014	AO det	106	4.81	K _s	105
BD-21 01074	0	BC	05 06 49.5	-21 35 04	0.76	148	2008	HSTFGS	92	1.0	V	92
BD-21 01074	3	A-BC	05 06 49.9	-21 35 08	8.22	311	2002	visdet	60	0.72	V	60
LP015-315	2	AB	05 08 18.0	+75 38 15	0.191	212	211	lkydet	59	1.00	i'	59
GJ0190	2	AB	05 08 35.0	-18 10 19	0.1232	039	2010	spkdet	42	0.20	I	42
L1672-014	2	AB	05 10 19.3	+48 50 05	1.97	118	1987	astdet	44	0.08	V*	47
LHS1749	2	AB	05 16 00.0	-72 14 12	2.86	139	2001	visdet	60	2.98	V	60
L449-001	2	AB	05 17 23.6	-35 21 45	0.047	333	2008	HSTFGS	92	1.01	V	92
LP717-036	2	AB	05 25 41.6	-09 09 12	0.616	059	2008	lkydet	9	0.53	i'	9
GJ1080	2	AB	05 28 14.6	+02 58 14	<2	...	2007	SB2	62	0	V	62
GJ2043	2	AB	05 29 27.0	+15 34 38	14.96	298	1999	visdet	100	4.5	V	1
GJ0206	2	AB	05 32 14.6	+09 49 14	<0.017	orb	2009	SB2	97	...	...	...
GJ1081	2	AB	05 33 19.1	+44 48 59	0.04	...	...	astdet	64	1.67	V	49

SCR0533-4257	2	AB	05 33 28.0	-42 57 20	<2	...	...	HSTFGS	85	...	...	...
GJ1083	2	AB	05 40 25.7	+24 48 08	0.472	337	2012	lkydet	59	0.98	i'	59
G192-011	2	AB	05 59 37.7	+58 35 34	161.32	120	1999	visdet	100	3.32	V	108
LHS0214	2	AB	06 00 49.0	+68 09 24	56.19	197	1999	visdet	100	0.38	V	110
CD-35 02722	2	AB	06 09 19.2	-35 49 30	3.137	243	2010	AO det	105	5.77	J	104
GJ0229	2	AB	06 10 34.6	-21 51 52	7.627	164	1997	HSTNIC	29	9.63	110	29
GJ0228	2	AB	06 10 54.8	+10 19 05	2.6	016	1980	astdet	48	1.5	V*	48
GJ0234	2	AB	06 29 23.4	-02 48 50	1.359	037	2004	spkdet	4	3.08	V	8
SCR0630-7643	2	AB	06 30 46.0	-76 43 09	1.0	034	2005	visdet	111	0.2	V	50
L032-009	2	AB	06 33 43.3	-75 37 48	22.40	036	1999	visdet	100	1.00	V	1
G108-021	2	AB	06 42 09.5	+03 35 41	50.13	040	2000	visdet	100	1.27	V	108
LHS1864	2	AB	06 43 50.9	+51 07 03	1.765	271	2011	AO det	17	0.67	K _s	17
GJ2050	2	AB	06 44 45.6	+71 53 15	0.633	068	2007	spkdet	52	3.40	698	52
LHS0221	2	AB	06 54 04.2	+60 52 18	0.284	290	2007	spkdet	52	1.61	V	8
GJ0257	2	AB	06 57 46.6	-44 17 28	0.560	280	1998	HSTNIC	29	0.00	222	29
SCR0702-6102	2	AB	07 02 49.7	-61 02 52	<2	...	2015	astdet	1	...	...	...
LHS0224	2	AB	07 04 01.1	+52 41 12	0.16	330	2003	HSTNIC	39	0.29	V	39
GJ0263	2	AB	07 04 17.7	-10 30 31	0.110	287	1999	AO det	12	0.46	H	12
LHS0225	2	AB	07 04 45.0	-38 36 07	2.45	270	2001	visdet	60	0.1	V	60
GJ0268	2	AB	07 10 01.8	+38 31 46	0.011	orb	1998	SB2	26	...	...	...
LHS1901	2	AB	07 11 11.0	+43 29 58	0.174	220	2005	AO det	81	0.14	H	81
GJ0268.3	2	AB	07 16 19.7	+27 08 33	0.054	124	2000	AO det	12	0.57	H	12
SCR0723-8015	2	AB	07 24 00.8	-80 15 22	<2	...	2015	astdet	1	...	...	...
GJ0273	2	AB	07 27 24.5	+05 13 32	0.17	327	2003	AO det	106	1.07	H	105
GJ2060	0	AB-C	07 28 51.2	-30 15 53	67.2	180	2005	visdet	2	4.06	V	1
GJ2060	3	AB	07 28 51.3	-30 14 48	0.485	170	2008	lkydet	9	1.50	i'	9
GJ0277	3	AC-B	07 31 57.7	+36 13 09	37.87	353	1998	visdet	100	1.2	V	109
GJ0277	0	AC	07 31 57.7	+36 13 09	0.684	195	2000	AO det	12	2.02	K	12
LTT17993	2	AB	07 36 25.0	+07 04 43	0.7	300	1996	spkdet	50	0.0	K	49
2MA0746+2000	2	AB	07 46 43.0	+20 00 32	0.22	015	2000	HSTWPC	86	0.62	814	86
LHS1955	2	AB	07 54 54.0	-29 20 56	0.8081	104	2001	astdet	91	0.5	R	91
LHS1976	2	AB	08 03 19.5	+52 50 38	0.1609	125	2010	spkdet	53	0.32	692	53
LHS2010	2	AB	08 27 11.0	-44 59 21	0.914	279	2008	lkydet	63	1.74	I	63
GJ0308	2	AB	08 28 22.1	+35 00 59	0.56	231	2008	lkydet	63	0.11	I	63
GJ2069	0	BD	08 31 37.4	+19 23 50	0.549	219	2000	AO det	12	0.52	K	12
GJ2069	0	AC	08 31 37.5	+19 23 39	0.003	orb	1998	SB2	26	...	...	...
GJ2069	5	ACE-BD	08 31 37.5	+19 23 39	10.17	348	1999	visdet	100	1.44	V	1
GJ2069	0	AC-E	08 31 37.5	+19 23 39	0.682	158	2000	AO det	12	3.20	K	12
SCR0838-5855	2	AB	08 38 02.3	-58 55 57	<2	...	2015	astdet	1	...	...	...
GJ2072	2	AB	08 44 23.1	-44 28 21	0.37	280	1991	astdet	72	0.90	H _p	72
GJ0326	2	AB	08 54 05.2	-13 07 38	0.9	170	1985	astdet	48	0.0	V*	31
LHS2071	2	AB	08 55 20.0	-23 52 15	0.0212	...	2009	astdet	91	...	...	...
GJ0330	2	AB	08 57 04.6	+11 38 49	0.799	233	1991	astdet	72	1.82	H _p	72
GJ1116	2	AB	08 58 12.2	+19 45 47	1.498	103	1998	HSTNIC	29	0.6	i'	69
LTT12352	3	AC-B	08 58 56.0	+08 28 26	0.62	095	1997	AO det	26	0.5	K	26
LTT12352	0	AC	08 58 56.0	+08 28 26	0.007	orb	1998	SB2	26	...	...	...
GJ0333.2	2	AB	09 00 48.5	+05 14 41	29.42	114	2000	visdet	100	0.30	V	10
GJ0338	2	AB	09 14 22.7	+52 41 11	17.05	092	1999	visdet	100	0.09	V _T	51
LHS6167	2	AB	09 15 36.4	-10 35 47	0.123	176	2012	lkydet	59	1.43	i'	59
GJ1122	2	AB	09 19 18.5	+38 31 19	7.49	188	2000	visdet	100	0.15	V	108
GJ0347	2	AB	09 28 53.3	-07 22 15	35.60	084	1999	visdet	100	2.94	V	10
GJ0352	2	AB	09 31 19.4	-13 29 18	0.6691	306	2010	spkdet	42	0.3	I	42
GJ0360	2	AB	09 42 34.8	+70 02 02	88.68	077	1999	visdet	100	0.66	V	110
LP462-119	2	AB	09 45 40.0	-39 02 26	0.51	029	1991	astdet	72	0.54	H _p	72
GJ0372	2	AB	09 53 11.7	-03 41 24	0.02	orb	1995	radvel	40	0.95	V	40
GJ0375	2	AB	09 58 34.3	-46 25 30	0.002	orb	2007	SB2	28	0	...	28
LHS5166	2	AB	10 04 38.8	-33 35 11	12.12	142	1999	visdet	100	3.90	K _s	100
GJ0381	2	AB	10 12 04.7	-02 41 05	0.18	...	1997	AO det	26	0.95	K	26
TWA022	2	AB	10 17 27.0	-53 54 27	0.1	orb	2007	AO det	16	0.46	K _s	16
L392-039	2	AB	10 19 51.0	-41 48 48	30.91	120	2001	visdet	60	1.53	V	60
GJ0389	2	AB	10 22 24.6	-60 10 37	8.90	019	2000	visdet	100	1.91	V	10
2MA1036+1521	0	BC	10 36 44.8	+15 21 39	0.189	...	2006	AO det	23	...	...	...
2MA1036+1521	3	A-BC	10 36 44.8	+15 21 39	0.96	160	2010	astdet	98	1.7	I	98
LP465-084	2	AB	10 39 44.3	-37 55 13	1.32	139	1991	astdet	72	1.63	H _p	72
GJ1135	2	AB	10 41 09.3	-36 53 43	1.08	166	1991	astdet	72	2.65	H _p	72
GJ1136	2	AB	10 41 51.8	-36 38 00	17.11	303	1997	visdet	72	1.44	V	1
LP848-050	2	AB	10 42 41.3	-24 16 04	<2	...	2015	astdet	1	...	...	...
WT1827	2	AB	10 43 02.0	-09 12 40	0.5	...	...	spkdet	1	...	...	...
GJ1138	2	AB	10 49 45.6	+35 32 50	0.303	056	2000	AO det	12	1.89	K _s	12
GJ1141	2	AB	11 02 21.0	+16 30 45	18.69	282	2001	visdet	100	0.13	V	108
GJ0412	2	AB	11 05 28.5	+43 31 36	31.4	126	2000	visdet	93	5.67	V	10
GJ0414.1	2	AB	11 11 19.4	+43 25 02	3.76	078	1976	visdet	41	0.35	V	41
GJ0424	2	AB	11 20 04.8	+65 50 47	0.132	334	2004	spkdet	30	3.70	800	30
LHS2397a	2	AB	11 21 47.8	-13 13 08	0.207	152	2002	AO det	35	4.42	I	35
LHS2405	2	AB	11 25 28.2	+78 15 44	72.95	328	1999	visdet	100	0.48	V	110
GJ0433	2	AB	11 35 26.9	-32 32 23	0.0043	orb	1997	astorb	72	...	...	...
LP793-033	2	AB	11 45 34.4	-20 21 12	15.40	061	1999	visdet	100	6.16	V	1
GJ0455	2	AB	12 02 19.5	+28 35 33	0.003	orb	1996	SB2	37	0.0	V	37
L758-108	2	AB	12 11 11.7	-19 57 38	85.1	121	1998	visdet	100	0.94	V	1
GJ0458	2	AB	12 12 20.8	+54 29 08	14.66	010	1999	visdet	100	3.54	V	109
GJ1154	2	AB	12 14 16.6	+00 37 26	<2	...	...	SB2	15	...	...	...
GJ1155	2	AB	12 16 51.8	+02 58 02	2.736	178	2006	spkdet	78	2.00	V*	43
LTT17123	2	AB	12 23 33.1	+67 11 17	0.59	035	2007	astdet	72	0.26	H _p	72
GJ0469	2	AB	12 28 57.5	+08 25 31	0.19	016	2009	spkdet	54	1.59	V	49
LHS2567	2	AB	12 29 54.2	-05 27 24	8.062	061	2009	visdet	91	1.13	V	1
SCR1230-3411	2	AB	12 30 01.8	-34 11 24	<2	...	2015	astdet	1	...	...	...
GJ0473	2	AB	12 33 16.3	+09 01 16	0.18	197	1991	astdet	46	0.38	V	8

GJ0477	2	AB	12 35 58.4	-45 56 20	<2	...	2009	radvel	113	...	...	...
GJ0487	3	AC-B	12 49 02.7	+66 06 36	0.23	240	1997	SB3	26	0.7	K	26
GJ0487	0	AC	12 49 02.7	+66 06 36	0.022	orb	1998	SB3	26	...	...	...
DEN1250-2121	2	AB	12 50 52.2	-21 21 09	<2	...	2015	astdet	1	...	...	...
GJ0490	0	BC	12 57 39.3	+35 13 19	0.171	310	2011	AO det	17	0.06	K _s	17
GJ0490	4	AD-BC	12 57 40.2	+35 13 30	16.11	226	1998	visdet	100	2.52	V	109
GJ0490	0	AD	12 57 40.2	+35 13 30	0.106	310	2011	AO det	17	1.91	K _s	17
GJ0494	0	AB-C	13 00 41.7	+12 21 15	103	orb	2000	astdet	95	11.3	K	95
GJ0494	3	AB	13 00 46.5	+12 22 32	0.475	082	2000	AO det	12	4.41	K _s	12
G164-042	3	AB	13 05 29.8	+37 08 10	0.468	orb	2009	spkdet	54	0.81	562	54
G164-049	0	AB-C	13 11 24.2	+37 24 37	4342.8	...	...	visdet	74	...	...	...
NLTT33370	2	AB	13 14 20.0	+13 20 01	0.13	046	2005	spkdet	68	0.93	i'	68
GJ0507	3	AC-B	13 19 33.5	+35 06 36	17.73	130	1999	visdet	100	2.64	V	1
GJ0507	0	AC	13 19 33.5	+35 06 36	0.073	183	2006	spkdet	5	...	...	...
L977-016	2	AB	13 20 24.9	-01 39 27	199.73	248	1999	visorb	100	1.87	V	1
LHS2739	2	AB	13 27 19.7	-31 10 39	0.544	334	2005	AO det	23	0.17	K _s	23
GJ0512	2	AB	13 28 21.0	-02 21 37	8.48	052	1999	visdet	100	2.27	V	10
LP323-158	2	AB	13 31 46.6	+29 16 36	0.174	253	2000	AO det	12	0.16	K _s	12
GJ0516	2	AB	13 32 44.6	+16 48 39	2.33	051	2012	spkdet	22	0.27	V	22
GJ0521	2	AB	13 39 24.1	+46 11 11	0.447	016	2008	lkydet	63	...	...	...
LHS2789	2	AB	13 44 27.6	+51 41 04	1.05	051	1968	visorb	103	0.40	V	103
GJ0537	2	AB	14 02 32.2	+46 20 02	2.96	orb	1999	visorb	100	0.22	V _T	51
WT0460	2	AB	14 11 59.0	-41 32 21	0.511	213	2005	AO det	81	2.47	H	81
LHS2875	3	AB	14 12 11.0	-00 35 04	0.615	172	2010	spkdet	107	0.50	V	106
LHS2876	0	AB-C	14 12 12.1	-00 35 16	20.9	125	2000	visdet	20	3.54	K _s	100
GJ1183	2	AB	14 27 56.0	-00 22 36	12.92	022	2000	visdet	100	0.07	V	108
LT14363	2	AB	14 42 21.5	+66 03 20	3.041	114	1998	HSTNIC	39	4.9	z	39
GJ0563.2	2	AB	14 49 32.6	-26 06 20	26.79	244	1998	visdet	100	0.39	V	10
GJ0568	2	AB	14 53 51.4	+23 33 20	0.9591	092	2014	spkdet	55	1.36	692	55
GJ0569	3	A-BC	14 54 29.2	+16 06 03	5.0	025	1999	AO det	75	6.70	I	33
GJ0569	0	BC	14 54 29.2	+16 06 03	0.06	268	2010	AO det	33	0.62	I	33
LHS3001	2	AB	14 56 27.2	+17 55 00	12.7	046	2001	visdet	60	2.87	V	1
GJ0572	2	AB	15 00 55.5	+45 25 34	0.425	342	1991	astdet	72	3.03	I	63
LHS3056	2	AB	15 19 11.8	-12 45 06	<2	...	...	SB	15	...	...	...
LHS3075	2	AB	15 29 46.7	+42 52 13	0.570	009	2012	lkydet	59	1.56	i'	59
GJ0589	2	AB	15 35 20.5	+17 42 47	17.74	351	1999	visdet	100	2.60	V	10
GJ1194	2	AB	15 40 03.5	+43 29 40	4.75	151	1999	visdet	100	...	...	...
GJ0597	2	AB	15 41 16.5	+75 59 34	0.0745	orb	1990	astdet	47	1:	V*	47
GJ0595	2	AB	15 42 06.5	-19 28 18	0.02	orb	2000	radorb	82	...	...	...
L408-123	2	AB	15 45 37.0	-43 31 42	<2	...	2015	astdet	1	...	...	...
SCR1546-5534	2	AB	15 46 41.8	-55 34 47	<2	...	2015	astdet	1	...	...	...
LHS3117	2	AB	15 47 24.6	-10 53 47	<2	...	2008	radvel	113	...	...	...
LHS3122	2	AB	15 49 32.9	+34 49 36	0.209	085	2011	AO det	17	1.46	H	17
LHS3129	2	AB	15 53 08.7	+34 44 39	26.54	172	2000	visdet	100	1.41	V	110
GJ0618	2	AB	16 20 03.5	-37 31 44	5.574	227	1998	HSTNIC	29	3.55	V	10
GJ0623	2	AB	16 24 09.3	+48 21 10	0.238	orb	2006	astorb	76	5.28	V	8
GJ2121	2	AB	16 30 13.0	-14 39 49	0.431	218	2008	lkydet	63	...	...	...
SCR1630-3633	2	AB	16 30 27.2	-36 33 56	2.0	247	2015	visdet	1	...	...	...
GJ2122	2	AB	16 45 17.0	-38 48 30	0.6	...	2015	astdet	1	...	...	...
GJ0643	0	ABD-C	16 55 25.0	-08 19 21	72.18	313	1999	visdet	100	2.77	V	10
GJ0644	0	BD	16 55 28.0	-08 20 11	<0.258	...	...	SB3	79	...	...	...
GJ0644	5	A-BD	16 55 28.0	-08 20 11	0.258	151	1998	HSTNIC	29	0.43	222	29
GJ0644	0	ABD-E	16 55 35.0	-08 23 40	220.81	155	1999	visdet	100	7.77	V	11
G139-003	2	AB	16 58 25.0	+13 58 06	0.822	294	2008	spkdet	52	0.48	754	52
GJ1210	2	AB	17 07 40.8	+07 22 07	0.3807	066	2010	spkdet	53	0.92	562	53
UPM1710-5300	2	AB	17 10 44.3	-53 00 25	1.2	...	2014	visdet	1	...	...	...
GJ0660	2	AB	17 11 52.2	-01 51 06	0.891	009	2006	spkdet	5	1.3	I	63
GJ0661	2	AB	17 12 07.9	+45 39 57	0.647	188	2002	HSTNIC	29	0.28	222	29
GJ0660.1	2	AB	17 12 51.2	-05 07 31	6.08	353	2009	visdet	94	4	J	94
GJ1212	2	AB	17 13 40.4	-08 26 14	<2	...	...	SB	89	...	...	...
GJ1215	0	BC	17 17 42.9	+11 39 45	<2	...	2015	astdet	1	...	...	...
GJ1215	3	AB	17 17 42.9	+11 39 45	<2	...	2015	astdet	1	...	...	...
HIP084652	2	AB	17 18 21.7	-01 46 53	0.367	148	2006	spkdet	5	...	...	...
GJ0669	2	AB	17 19 54.2	+26 30 03	16.64	269	1999	visdet	100	1.57	V	108
GJ0682	2	AB	17 37 03.6	-44 19 09	0.17	190	2005	AO det	106	1.01	H	105
L1422-016	3	A-BC	17 39 30.7	+27 45 44	56.60	021	2000	visdet	100	1.60	V	108
L1422-015	0	BC	17 39 32.2	+27 46 37	0.299	318	2008	lkydet	63	1.18	I	63
G140-009	2	AB	17 43 00.8	+05 47 21	0.346	131	2010	spkdet	53	1.71	692	53
GJ0694.2	2	AB	17 45 33.5	+46 51 19	0.720	058	2008	lkydet	63	3.01	I	63
GJ2130	3	A-BC	17 46 12.7	-32 06 09	21.23	088	2001	visdet	60	1.00	V	50
GJ2130	0	BC	17 46 14.4	-32 06 08	<2	...	...	SB2	85	...	...	...
LHS3343	2	AB	17 57 50.9	+46 35 19	196.987	131	1999	visdet	100	8.46	K _s	100
G154-043	2	AB	18 03 36.0	-18 58 50	<2	...	2015	astdet	1	...	...	...
G182-037	2	AB	18 04 17.5	+35 57 25	0.297	339	2008	lkydet	63	...	...	...
LHS0462	2	AB	18 18 02.7	+38 45 19	9.74	280	1998	visdet	100	1.66	V	110
GJ0720	2	AB	18 35 18.3	+45 44 38	112.10	056	1998	visdet	100	3.16	V	110
GJ2138	2	AB	18 38 44.7	-14 29 26	0.107	358	1991	astdet	72	0.05	H _p	72
GJ1230	0	AC	18 41 09.4	+24 47 15	0.005	...	...	SB2	26	...	...	...
GJ1230	3	AC-B	18 41 09.4	+24 47 15	5.20	006	2000	visdet	100	2.56	V	1
GJ0725	2	AB	18 42 46.6	+59 37 49	12.62	172	2000	visdet	100	0.79	V	110
LT07419	2	AB	18 43 12.5	-33 22 46	14.90	354	2001	visdet	60	5.99	V	1
SCR1845-6357	2	AB	18 45 02.0	-63 57 47	1.17	170	2005	AO det	13	4.19	H	13
LT07434	2	AB	18 45 57.5	-28 55 53	<2	...	...	SB2	15	...	...	...
GJ0735	2	AB	18 55 27.4	+08 24 09	0.002	orb	1988	SB2	32	0.16	V	32
GJ0745	2	AB	19 07 05.5	+20 53 17	114.14	110	2000	visdet	100	0.02	V	110
GJ0747	2	AB	19 07 43.0	+32 32 41	0.234	087	2002	HSTNIC	29	0.03	222	29
GJ0748	2	AB	19 12 14.6	+02 53 11	0.149	orb	1997	HSTFGS	7	1.83	V	7

LHS3445	2	AB	19 14 39.1	+19 19 03	40.70	179	1997	visdet	100	1.69	V	110
GJ0752	2	AB	19 16 55.2	+05 10 08	75.21	152	2000	visdet	100	8.10	V	10
LHS5348	2	AB	19 27 52.6	-28 11 15	1	...	2015	visdet	1	...	...	...
LP869-026	2	AB	19 44 53.7	-23 37 59	0.828	353	2005	AO det	81	0.08	K'	81
GJ0766	2	AB	19 45 45.5	+27 07 32	1.10	orb	1990	astdet	45	0.5	V*	45
LTT15769	2	AB	19 45 49.7	+32 23 13	12.765	339	1991	astdet	72	2.26	H _p	72
GJ0767	2	AB	19 46 24.3	+32 00 57	5.1	134	1998	visdet	100	0.77	V _T	51
LHS3489	2	AB	19 50 04.4	+32 35 22	0.222	345	2012	lkydet	59	1.38	i'	59
2MA1951-3510	2	AB	19 51 35.8	-35 10 37	<2	...	2015	visdet	1	...	...	...
GJ1245	3	AC-B	19 53 54.4	+44 24 54	6.964	083	1998	HSTNIC	29	0.60	V	110
GJ1245	0	AC	19 53 54.5	+44 24 53	0.594	270	1998	HSTNIC	29	3.29	V	49
GJ0774	2	AB	20 04 02.8	-65 36 48	17.53	280	2000	visdet	100	1.48	V	10
GJ0781.1	2	AB	20 07 44.9	-31 45 14	41.95	291	1999	visdet	100	0.29	V	10
GJ1250	2	AB	20 08 17.9	+33 18 13	<2	...	2015	spkdet	1	...	...	...
GJ0791.2	2	AB	20 29 48.3	+09 41 20	0.109	orb	1997	HSTFGS	6	3.27	V	6
GJ0792	2	AB	20 31 25.6	+38 33 44	0.118	252	2012	lkydet	59	1.49	i'	59
GJ0802	3	AC-B	20 43 19.3	+55 20 53	0.085	020	2007	astdet	56	4.85	K	56
GJ0802	0	AC	20 43 19.3	+55 20 53 *	<2	...	2007	SB2	56	...	...	...
GJ0810	3	AC-B	20 55 37.0	-14 02 08	107.12	185	2001	visdet	60	2.13	V	60
GJ0810	0	AC	20 55 37.0	-14 02 08	0.044	050	2009	AO det	85	...	...	...
GJ0815	0	AC	21 00 05.3	+40 04 13	0.001	orb	...	SB2O	32	...	...	...
GJ0815	3	AC-B	21 00 05.3	+40 04 13	0.685	039	2012	lkydet	59	1.86	i'	59
USN2101+0307	2	AB	21 01 04.8	+03 07 04	<2	...	2015	astdet	1	...	...	...
LHS0064	2	AB	21 07 46.5	+59 41 13	<2	...	2000	SB	25	...	...	...
L1433-004	0	AC-B	21 16 03.8	+29 51 46	26.215	259	1998	visdet	100	0.81	V	108
LTT16240	3	AC	21 16 05.8	+29 51 51	0.049	048	2011	AO det	17	0.34	H	17
GJ0829	2	AB	21 29 36.8	+17 38 35	0.025	orb	1998	SB2	26	...	...	...
GJ0831	2	AB	21 31 18.6	-09 47 26	0.504	orb	2000	SB2	96	2.10	V	49
LHS3686	2	AB	21 33 50.2	+01 46 15	5.14	002	1998	visdet	100	0.53	V	1
GJ0835	2	AB	21 38 00.3	+27 43 25	0.17	109	1991	astdet	72	3.35	I	63
LTT16329	2	AB	21 39 54.3	+27 36 43	0.184	338	2008	spkdet	52	1.66	698	52
GJ1263	2	AB	21 46 43.0	-00 10 09	32	253	2009	visdet	18	9.8	J	18
LHS3738	0	A-BC	21 58 49.0	-32 26 25	113.1	354	2009	visdet	91	1.06	V	1
LHS3739	3	A-BC	21 58 50.0	-32 28 17	113.1	354	2009	visdet	91	1.06	V	1
GJ0844	2	AB	22 01 49.0	+16 28 02	0.356	232	2008	spkdet	54	0.31	550	54
GJ0852	0	BC	22 17 18.7	-08 48 19	0.97	317	2008	lkydet	9	1.18	K	12
GJ0852	3	A-BC	22 17 19.8	-08 48 31	7.77	213	1999	visdet	100	1.02	V	110
GJ0856	2	AB	22 23 29.1	+32 27 33	1.77	199	1991	astdet	72	0.4	V _T	51
GJ0860	2	AB	22 27 59.4	+57 41 45	3.184	100	1998	astdet	29	1.47	V _T	51
LP876-026	2	AB	22 28 23.4	-25 54 07	3.3	210	1999	visdet	100	1.03	V _T	51
GJ0864	2	AB	22 36 09.6	-00 50 30	0.653	237	2008	lkydet	63	3.43	I	63
L645-074	2	AB	22 38 23.0	-29 21 00	14.57	136	2002	visdet	60	1.71	V	60
GJ0865	2	AB	22 38 29.7	-65 22 42	0.77	016	1991	astdet	72	0.13	V _T	51
GJ0866	0	AC	22 38 37.2	-15 17 07	0.008	orb	1999	radvel	27	2.0	V	27
GJ0866	3	AC-B	22 38 37.2	-15 17 07	0.346	orb	1999	radvel	27	0.4	V	49
GJ0867	0	BD	22 38 45.3	-20 36 52	<2	...	2012	SB1	24	...	...	...
GJ0867	0	AC	22 38 45.5	-20 37 16	0.005	...	...	SB2	101	...	...	...
GJ0867	4	AC-BD	22 38 45.5	-20 37 16	24.52	351	1992	visdet	104	2.36	V	10
GJ0871.1	2	AB	22 44 57.9	-33 15 01	35.86	133	1999	visdet	100	1.28	V	1
L718-070	2	AB	23 00 33.4	-23 57 10	74.54	144	1998	visdet	100	0.04	V	108
GJ0887	2	AB	23 05 52.0	-35 51 11	0.07	267	2003	AO det	106	1.21	H	105
GJ2154	2	AB	23 14 16.6	-19 38 39	7.25	199	1999	visdet	100	3.34	V	1
G190-027	0	BC	23 29 25.2	+41 27 48	0.078	269	2011	AO det	17	0.43	H	17
G190-028	3	A-BC	23 29 26.2	+41 28 20	17.67	214	2000	visdet	100	0.53	V	108
GJ1284	2	AB	23 30 13.4	-20 23 27	<2	...	...	SB2	38	...	...	...
GJ0896	2	AB	23 31 52.2	+19 56 14	5.351	088	2004	astdet	29	2.12	V	1
LHS4009	2	AB	23 45 31.0	-16 10 20	0.067	250	2005	AO det	81	0.14	K'	81
LHS4016	2	AB	23 48 36.0	-27 39 38	<0.006	orb	2007	SB2	97	...	...	...
LEHPM1-6333	2	AB	23 51 50.4	-25 37 36	<2	...	2015	astdet	1	...	...	...
GJ0912	2	AB	23 55 39.7	-06 08 33	<2	...	2015	spkdet	1	...	...	...
LTT09828	2	AB	23 59 44.8	-44 05 00	<2	...	2015	astdet	1	...	...	...

References: (1) this work; (2) Allen & Reid (2008); (3) Al-Shukri et al. (1996); (4) Balega et al. (2007); (5) Balega et al. (2013); (6) Benedict et al. (2000); (7) Benedict et al. (2001); (8) Benedict et al., in prep; (9) Bergfors et al. (2010); (10) Bessel (1990); (11) Bessell (1991); (12) Beuzit et al. (2004); (13) Biller et al. (2006); (14) Blake et al. (2008); (15) Bonfils et al. (2013); (16) Bonnefoy et al. (2009); (17) Bowler et al. (2015); (18) Burningham et al. (2009); (19) Caballero (2009); (20) Chanamé & Gould (2004); (21) Cortes-Contreras et al. (2014); (22) Cvetković et al. (2015); (23) Daemgen et al. (2007); (24) Davison et al. (2014); (25) Dawson & De Robertis (2005); (26) Delfosse et al. (1999a); (27) Delfosse et al. (1999b); (28) Díaz et al. (2007); (29) Dieterich et al. (2012); (30) Docobo et al. (2006); (31) Doyle & Butler (1990); (32) Duquennoy & Mayor (1988); (33) Femenía et al. (2011); (34) Forveille et al. (2005); (35) Freed et al. (2003); (36) Fu et al. (1997); (37) Gizis (1998); (38) Gizis et al. (2002); (39) Golimowski et al. (2004); (40) Harlow (1996); (41) Harrington et al. (1985); (42) Hartkopf et al. (2012); (43) Heintz (1985); (44) Heintz (1990); (45) Heintz (1991); (46) Heintz (1992); (47) Heintz (1993); (48) Heintz (1994); (49) Henry et al. (1999); (50) Henry et al. (2006); (51) Høg et al. (2000); (52) Horch et al. (2010); (53) Horch et al. (2011a); (54) Horch et al. (2012); (55) Horch et al. (2015); (56) Ireland et al. (2008); (57) Janson et al. (2012); (58) Janson et al. (2014b); (59) Janson et al. (2014a); (60) Jao et al. (2003); (61) Jao et al. (2009); (62) Jenkins et al. (2009); (63) Jódar et al. (2013); (64) Kafatos et al. (1986); (65) Köhler et al. (2012); (66) Kürster et al. (2009); (67) Lampens et al. (2007); (68) Law et al. (2006); (69) Law et al. (2008); (70) Leinert et al. (1994); (71) Lépine et al. (2009); (72) Lindegren et al. (1997); (73) Luyten (1979a); (74) Makarov et al. (2008); (75) Martín et al. (2000); (76) Martinache et al. (2007); (77) Martinache et al. (2009); (78) Mason et al. (2009); (79) Mazeh et al. (2001); (80) McAlister et al. (1987); (81) Montagnier et al. (2006); (82) Nidever et al. (2002); (83) Pravdo et al. (2004); (84) Pravdo et al. (2006); (85) RECONS, in prep; (86) Reid et al. (2001); (87) Reid et al. (2002); (88) Reiners & Basri (2010); (89) Reiners et al. (2012); (90) Riddle et al. (1971); (91) Riedel et al. (2010); (92) Riedel et al. (2014); (93) Salim & Gould (2003); (94) Schneider et al. (2011); (95) Scholz (2010); (96) Ségransan et al. (2000); (97) Shkolnik et al. (2010); (98) Shkolnik et al. (2012); (99) Siegler et al. (2005); (100) Skrutskie et al. (2006); (101) Tokovinin et al. (2010); (102) Tokovinin & Lépine (2012); (103) van Biesbroeck (1974); (104) van Dessel & Sinachopoulos (1993); (105) Wahhaj et al. (2011); (106) Ward-Duong et al. (2015); (107) Washington Double Star Catalogue, unpublished detection by Brian Mason; (108) Weis (1991b); (109) Weis (1993); (110) Weis (1996); (111) Winters et al. (2011); (112) Woitas et al. (2003); (113) Zechmeister et al. (2009).

Figure 6.1 illustrates the results from this multiplicity project to date, with the projected separations of the 21 new, 288 confirmed, and 87 suspected companions from their primaries shown. Of note is the peak in the separation distribution at 26 AU, highlighting that **most companions are found at separations on the scale of our Solar System, i.e., 10 – 100 AU**. This distribution peaks at slightly larger projected separations than the one presented in Janson et al. (2012) for early-type M dwarfs (6 – 32 AU), but their sample was of multiples with angular separations $0''.08 - 6''$ at inferred distances out to 52 pc, while this study surveyed angular separations to $600''$ out to 25 pc. We note that the sample that they used to construct their Figure 6 (to which we are comparing) contained 85 multiples (91 pairs — from 79 binaries and six triples), compared to our 306 pairs. The distribution peak that we find is at much larger separations than the 5.3 AU peak reported for stars $0.1 \lesssim M/M_{\odot} \lesssim 0.5$ by Duchêne & Kraus (2013). The distribution peak we report here for the nearby M dwarf multiples is $\sim$ one-half the peak separation for the nearby solar-type stars (~ 51 AU) found by Raghavan et al. (2010). Also noteworthy is that 38 of the confirmed and new, plus all of the suspected systems' projected separations are upper limits due to unresolved systems for which separations of $1''$ were adopted, so the distribution will shift leftward to smaller actual separations. Incorporating the correction of 1.26 from Fischer & Marcy (1992) for those systems for which no orbital information is known (all but 22 of the systems presented here), would shift the distribution slightly to larger projected separations.

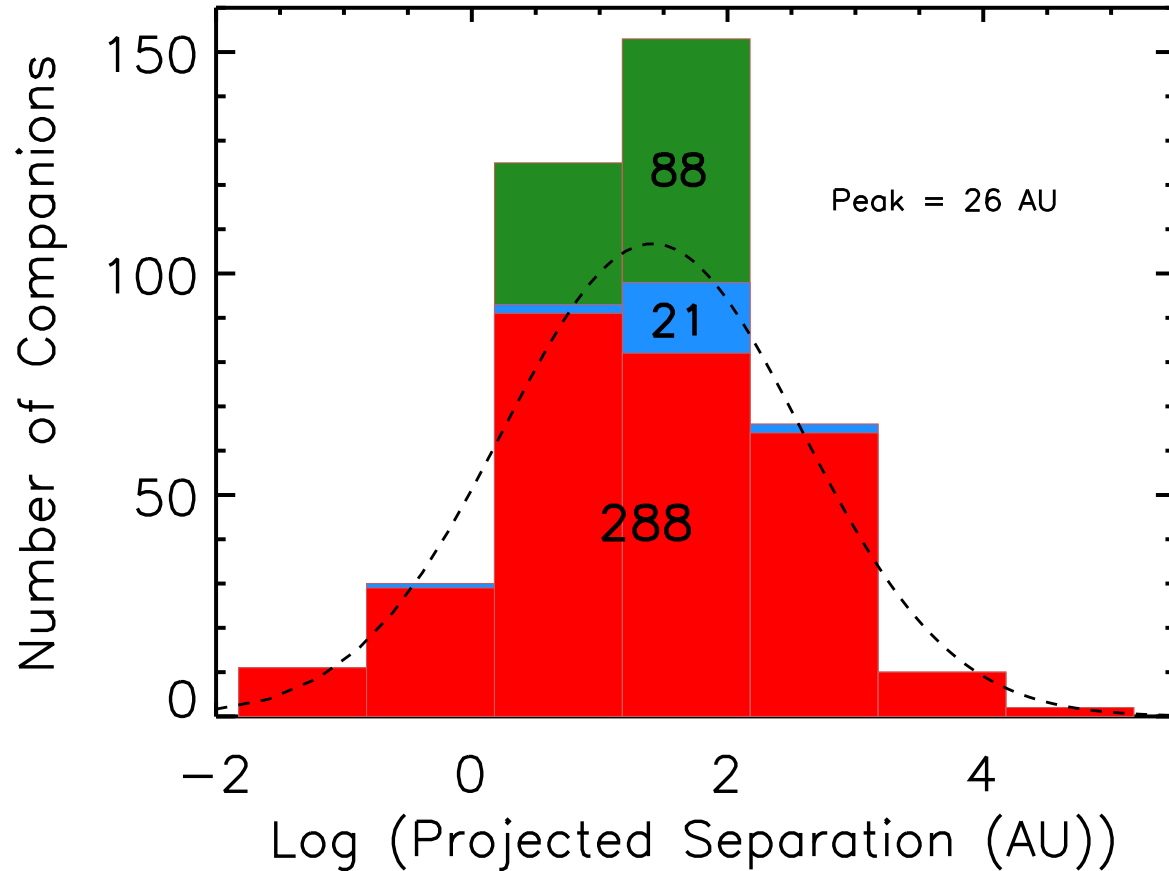


Figure 6.1 A histogram of the distribution of the projected separations of all companions from their red dwarf primaries, in log form for clarity. The 288 confirmed, 21 new, and 88 suspected companions are indicated. A Gaussian curve has been fit to the distribution of confirmed and new (but not suspected) companions and has a peak at 26 AU, with σ corresponding to 1.8 – 380 AU (log-projected separation = 1.41 ± 1.17).

6.1.2 Suspected Multiples

Eighty-five singles (38 of which have been noted, but not confirmed by others) suspected to be binaries were revealed through the course of this survey, two of which (GJ 912 and GJ 1250) have so far been confirmed with follow-up observations, which are continuing. An additional

five binaries are suspected to be triples, rounding out to 88 the total suspected systems with candidate companions. These do not include the two new confirmed multiples that are listed in Table 6.1. These are listed in Table 6.2 with the suspected number of components followed by a question mark to indicate the system’s suspect status, coordinates, a code for the reason they were flagged and the reference. A single letter refers to the *HIPPARCOS* code (30 objects, most of them with the ‘X’ code, referring to a stochastic solution which might indicate that the object is an astrometric binary; see Table note for descriptions.), ‘pb?’ refers to a possible perturbation of the object’s parallax due to the presence of an unseen unequal mass companion revealed during the reduction of its CTIOPI parallax (14 objects), ‘possSB’ indicates a possible spectroscopic binary noted from the literature, ‘ol’ represents ‘overluminosity’ and means that object’s *ccddist* is at least a factor of 1.4 closer than its *trigdist* (46 targets, at least one of which — G080-021 — is thought to be young due to the presence of Lithium in its spectrum), and ‘elev’ means that the object is elevated above the main sequence in the Color-Magnitude Diagram in Figure 5.4 (ten objects, none of which are known to be young). A few systems had more than one indication that they were multiple, e.g., an object with a perturbation might also have a distance mismatch. We note that none of those systems suspected to be multiple have been included in any of the analyses that follow. A number of primaries that were suspected to be multiple due to an underestimated *ccddist* were found through the literature search to have already been resolved by others and have been included in the analyses as confirmed companions.

Table 6.2: Suspected Multiple Systems

System	#	RA	DEC	Flag	Reference
GJ1006	3?	00 16 14.6	+19 51 37	dist	this work
HIP006365	2?	01 21 45.3	-46 42 51	X	Lindgren et al. (1997)
LHS1288	2?	01 42 55.7	-42 12 12	X	Lindgren et al. (1997)
L294-092	2?	01 47 42.1	-48 35 59	pb?	this work
GJ0082	2?	01 59 23.5	+58 31 16	dist	this work
LHS1347	2?	02 09 36.1	-14 21 32	dist	this work
GJ0091	2?	02 13 53.6	-32 02 28	X	Lindgren et al. (1997)
GJ0109	2?	02 44 15.5	+25 31 24	V	Lindgren et al. (1997)
GJ0134	2?	03 18 07.5	+38 15 07	dist	this work
GJ0143.3	2?	03 31 47.1	+14 19 17	X	Lindgren et al. (1997)
G080-021	2?	03 47 23.3	-01 58 19	dist	this work, young?
GJ0157.1	2?	03 59 56.8	+26 05 41	dist	this work
LTT11399	2?	04 19 59.6	+36 29 11	X	Lindgren et al. (1997)
GJ0192	2?	05 12 42.2	+19 39 56	X	Lindgren et al. (1997)
GJ0207.1	2?	05 33 44.8	+01 56 43	possSB	Reiners et al. (2012)
GJ0220	2?	05 53 14.1	+24 15 32	dist	this work
SCR0631-8811	2?	06 31 31.7	-88 11 38	elev	this work
GJ0238	2?	06 33 49.9	-58 31 42	dist	this work
LP381-004	2?	06 36 18.2	-40 00 23	G	Lindgren et al. (1997)
GJ0275.1	2?	07 32 02.0	+68 37 15	dist	this work
GJ0285	2?	07 44 40.1	+03 33 08	dist	this work
LP423-031	2?	07 52 24.0	+16 12 15	dist/elev	this work
GJ1105	2?	07 58 12.7	+41 18 13	X	Lindgren et al. (1997)
LHS2029	2?	08 37 07.9	+15 07 45	X	Lindgren et al. (1997)
GJ0317	2?	08 40 55.7	-23 28 00	dist	this work
LHS0259	2?	09 00 52.1	+48 25 25	elev	this work
SCR0914-4134	2?	09 14 17.4	-41 34 37	elev	this work
LHS2122	2?	09 16 25.0	-62 04 16	dist	this work
GJ0341	2?	09 21 37.6	-60 16 55	possSB	Reiners et al. (2012)
GJ0360	3?	09 42 34.8	+70 02 02	dist	this work
GJ0367	2?	09 44 29.8	-45 46 35	X	Lindgren et al. (1997)
G161-071	2?	09 44 54.2	-12 20 54	elev	this work
GJ0369	2?	09 51 09.6	-12 19 47	X	Lindgren et al. (1997)
GJ0373	2?	09 56 08.6	+62 47 18	possSB	Reiners et al. (2012)
GJ1136	2?	10 41 51.8	-36 38 00	X	Lindgren et al. (1997)
LHS2317	2?	10 50 26.5	+33 05 19	dist	this work
GJ0402	2?	10 50 52.0	+06 48 29	X	Lindgren et al. (1997)
GJ0431	2?	11 31 46.5	-41 02 47	dist	this work
GJ1148	2?	11 41 44.6	+42 45 07	dist	this work
GJ0443	2?	11 46 42.9	-14 00 51	dist	this work
LHS2520	2?	12 10 05.0	-15 04 16	dist	this work
GJ0465	2?	12 24 52.0	-18 14 32	astdet	Heintz (1986)
GJ0480	2?	12 38 52.4	+11 41 46	dist	this work

LHS2633	2?	12	47	00.9	+46	37	33	dist	this work
WT0392	2?	13	13	09.0	-41	30	39	dist	this work
GJ0507.1	2?	13	19	40.1	+33	20	47	X	Lindegren et al. (1997)
GJ0540	2?	14	08	12.9	+80	35	50	X	Lindegren et al. (1997)
2MA1507-2000	2?	15	07	27.7	-20	00	43	elev	this work
HIP075187	2?	15	21	52.9	+20	58	39	dist	this work
G202-016	2?	15	49	36.2	+51	02	57	G	Lindegren et al. (1997)
LHS3129	3?	15	53	08.7	+34	44	39	dist	this work
GJ0620	2?	16	23	07.6	-24	42	35	G	Lindegren et al. (1997)
GJ1203	2?	16	32	45.1	+12	36	45	X	Lindegren et al. (1997)
LP069-457	2?	16	40	14.7	+67	36	32	dist	this work
LTT14949	2?	16	40	48.9	+36	19	00	X	Lindegren et al. (1997)
HIP083405	2?	17	02	49.5	-06	04	06	X	Lindegren et al. (1997)
GJ0669	3?	17	19	54.2	+26	30	03	dist	this work
LP044-162	2?	17	57	15.0	+70	42	01	elev	this work
LP334-011	2?	18	09	40.7	+31	52	12	X	Lindegren et al. (1997)
SCR1826-6542	2?	18	26	46.8	-65	42	38	elev	this work
LP044-334	2?	18	40	02.0	+72	40	54	dist	this work
GJ0723	2?	18	40	17.8	-10	27	54	X	Lindegren et al. (1997)
HIP092451	2?	18	50	26.6	-62	03	03	possSB	Reiners et al. (2012)
LHS3443	2?	19	13	07.0	-39	01	53	dist	this work
LHS3445	3?	19	14	39.1	+19	19	03	dist	this work
GJ0756	2?	19	21	51.4	+28	39	58	X	Lindegren et al. (1997)
LEHPM2-0783	2?	20	19	49.8	-58	16	40	elev	this work
GJ0791	2?	20	27	41.6	-27	44	51	X	Lindegren et al. (1997)
GJ1254	2?	20	33	40.3	+61	45	14	dist	this work
LHS3564	2?	20	34	43.0	+03	20	51	X	Lindegren et al. (1997)
GJ0811.1	2?	20	56	46.6	-10	26	54	X	Lindegren et al. (1997)
L117-123	2?	21	20	09.8	-67	39	05	X	Lindegren et al. (1997)
HIP106803	2?	21	37	55.6	-63	42	42	X	Lindegren et al. (1997)
LTT18537	2?	21	44	12.9	+06	38	29	dist	this work
LTT16412	2?	21	57	26.2	+08	08	13	dist	this work
LHS3748	2?	22	03	27.1	-50	38	38	X	Lindegren et al. (1997)
GJ0849	2?	22	09	40.3	-04	38	26	dist	this work
G214-014	2?	22	11	16.9	+41	00	54	X	Lindegren et al. (1997)
GJ0851	2?	22	11	30.0	+18	25	34	dist	this work
GJ1271	2?	22	42	38.7	+17	40	09	dist	this work
GJ0875.1	2?	22	51	53.5	+31	45	15	dist	this work
GJ0876	2?	22	53	16.7	-14	15	49	dist	this work
LHS0543	2?	23	21	37.4	+17	17	25	dist	this work
LHS0543a	2?	23	25	47.5	+53	08	25	dist	this work
GJ0899	2?	23	34	03.3	+00	10	46	X	Lindegren et al. (1997)
GJ1290	2?	23	44	23.3	+21	36	14	dist	this work
LHS4021	2?	23	50	31.0	-09	33	32	dist	this work

LTT17066	2? 23 58 32.6 +07 38 31	dist	this work

Flag Description: **pb?** means a possible astrometric detection of a perturbation; **elev** means that the object is elevated above the main sequence in the HR Diagram in Figure 5.4 due to overluminosity; **dist** means that the *ccddist* is at least 1.414 times closer than the *trigdist* due to the object’s overluminosity; **possSB** means that the object has been noted as a possible spectroscopic binary by Reiners et al. (2012). The the single letters are *HIPPARCOS* flags as follows: *G* is an acceleration solution where a component might be causing a variation in the proper motion; *V* is for Variability-Induced Movers, where one component in an unresolved binary could be causing the photocenter of the system to be perturbed; *X* is for a stochastic solution, where no reliable astrometric parameters could be determined, and which may be astrometric binaries.

6.1.3 *Eliminated Companions*

Candidate CPM companions were also detected during the blinking campaign, but after further investigation were found either to be at larger distances than the star in question or to have different proper motions, with $\Delta\mu \geq 25 \text{ mas yr}^{-1}$ and/or with $\Delta\theta \geq 15^\circ$, as defined in Boyd et al. (2011b).

6.1.4 *Substellar Companions*

Because this study focuses on the *stellar* companions to M dwarfs, it was important to determine which companions were stellar and which were *substellar*. Dieterich et al. (2014) have shown that the boundary between stars and brown dwarfs is near the L2.0 spectral type, but we do not yet know exactly to which mass this spectral type corresponds. As mentioned in Chapter 5, $M_V = 20.0$ and $(V - K) = 9.5$ were used to define the end of the M dwarfs, but from analysis of the main sequence in the HR diagram created from stars in the RECONS 25 Parsec Database (discussed in §5.1), $M_V = 21.5$ and $(V - K) = 10.3$ likely correspond to the end of the stellar main sequence. As the lowest mass M dwarf with an accurate mass from

Benedict et al. (2015) is GJ1245C, with a mass of $0.076 \pm 0.001 M_{\odot}$, a mass of $0.075 M_{\odot}$ was chosen to define the stellar/substellar boundary for this work. The seventeen brown dwarf companions to fifteen M dwarf primaries are noted in Tables 3.2 and A.1 with a ‘BD’ for the component in the object column (column 2). These brown dwarfs were identified in the literature search. Although this work is not an attempt to detect brown dwarf companions, we note that the fraction of M dwarf primaries with known brown dwarf companions is only $1.3 \pm 0.3\%$. This is **much** lower than the stellar multiplicity rate, considering the stellar and brown dwarf companions detected to date. While more brown dwarf companions will undoubtedly be found in the future, they are much rarer than stellar companions. We note that astrometric detection via a perturbation is the only technique used in this survey that was sensitive to brown dwarf companions, and only a handful (GJ1001BC, SCR1845-6357B, GJ1215BC) were found. We do not address planetary companions in this work.

6.1.5 Higher Order Multiple Systems

It is worthwhile to consider the configuration of the higher order systems. Are most of the components all very close to each other? Or, is there a hierarchical configuration that is preferred? We calculate that the ratio of higher order multiple systems to the binary systems is 17.0%, while the percentage of the entire sample made up of the higher order systems is 3.4%.

There are thirty-nine triple systems in the population of M dwarfs studied. Three of these (GJ1001, GJ0569, GJ1215) have only substellar companions and are not considered in the analysis of the multiple systems. Two of these triples (GJ0494, GJ0802) have both a

stellar and a substellar companion, making them effectively binaries and reducing the number of stellar triple systems to thirty-four. The remaining triples are primarily hierarchical in nature, being composed of a close double with $\rho < 2''$ plus a more distant single. Only eight of the triples (GJ2005ABC, GIC0050ABC, LP476-207ABC, LTT12352ABC, 2MA1036+1521ABC, GJ0487ABC, GJ0815ABC, and GJ0866ABC) are close, where none of the components are separated by more than $2''$ from each other or the primary.

The two quadruple systems (GJ0490ABCD and GJ0867ABCD) are each made up of two close ($\rho < 2''$) binaries separated from each other by more than $10''$. The two quintuple systems (GJ2069ABDCE and GJ0644ABCDE) have quite a different configuration from each other. GJ2069ABDCE is made up of a close ($\rho < 2''$) triple with a close ($\rho < 2''$) binary pair located $\sim 10''$ away. GJ0644 also contains a close ($\rho < 2''$) triple, but the other two components are both singles found arcminutes away. None of the quadruple or quintuple systems contain a substellar component.

6.2 Corrections to the Multiplicity Fraction

Because this survey was not uniformly sensitive to systems with companions at $\rho \leq 2''$, a correction had to be made in order to determine a final multiplicity value. The RECONS group now thinks that we know at least 90% of all the red dwarf primaries within 10 pc, so if it is possible to show that most of the systems within 10 pc have been targeted by some kind of high resolution technique, a correction based on the stellar multiplicity fraction of those objects with close companions could be determined. To evaluate the thoroughness of

companion searches for M dwarfs within 10 pc, a literature search for high resolution studies of the 10 pc members was performed. It was found that all but two systems either already had a close companion (at $\rho < 2''$) or had been observed with high resolution techniques, i.e., high resolution radial velocity programs, HST, speckle interferometry, lucky imaging, or astrometry.

These results are presented in Table 6.3 with the primary name, the technique and instrument used, the detection (period or separation) limit of that instrument, and the reference for the paper where those results are presented. The codes used for the technique are as follows: ‘AO’ for adaptive optics; ‘astr’ for astrometry; ‘img’ for imaging; ‘intf’ for interferometry; ‘lky’ for lucky imaging; ‘RV’ for radial velocity; and ‘spkl’ for speckle interferometry. If a companion with $\rho < 2''$ is known to exist, the code ‘comp det’ for ‘companion detected’ (stellar or substellar) is noted and no further information is listed. Because 186 of the 188 M dwarfs within 10 pc have been searched, we conclude that we can use the 10 pc sample to correct for unresolved companions at separations $< 2''$ from 10 — 25 pc.

The codes for the instruments used are:

- CSHELL — a long-slit spectrograph on NASA’s Infrared Telescope Facility;
- CTIOPI — the RECONS group’s long-term astrometry program;
- HJS — Harlan J. Smith 2.7m telescope;
- HARPS — High Accuracy Radial Velocity Planet Searcher on ESO’s 3.6m telescope;
- HIRES — High Resolution Echelle Spectrometer on the Keck-I 10m telescope;
- HSTFGS — *Hubble Space Telescope’s* Fine Guidance Sensor;

- HSTNIC — *Hubble Space Telescope's* NICMOS instrument;
- KECK — one of the Keck 10m telescopes;
- LKYCM — LuckyCam, a lucky imaging instrument;
- NIRSPEC — the Near Infrared Spectrometer on the Keck-II 10m telescope;
- UVES — the Ultraviolet and Visual Eschelle Spectrograph on the 8.2 VLT;
- VLT — the Very Large Telescope.

Table 6.3: High Resolution Studies of 10 Parsec M Dwarfs

Name	Technique	Instrument	Detection Limit	Reference
GJ0001	RV	HARPS	$\Delta t < 6$ yr	Bonfils et al. (2013)
GJ1002	RV	HARPS	$\Delta t < 6$ yr	Bonfils et al. (2013)
LSPM0011+5908	...	...	...	...
GJ1005	img	HSTNIC	comp det	Dieterich et al. (2012)
GJ0015	RV	HJS	$\Delta t < 2680$ d	Endl et al. (2006)
GJ2005	spkl		comp det	Leinert et al. (1994)
GJ0048	RV	HIRES	$a < 15$ AU	Montet et al. (2014)
GJ0049	RV	HIRES	$a < 15$ AU	Montet et al. (2014)
LP647-013	img	KECK	$a > 0''.3$	Koerner et al. (1999)
GJ0054		HSTFGS	comp det	Golimowski et al. (2004)
GJ0054.1	RV	HARPS	$\Delta t < 6$ yr	Bonfils et al. (2013)
GJ0065	img	HSTNIC	comp det	Dieterich et al. (2012)
LP991-084	intf	HSTFGS		RECONS, in prep
LHS1302	img	HSTNIC	$a > 0''.2$	Dieterich et al. (2012)
GJ0083.1	RV	HIRES	$a < 15$ AU	Montet et al. (2014)
L173-019	intf	HSTFGS		RECONS, in prep
LHS1326	img	HSTNIC	$a > 0''.2$	Dieterich et al. (2012)
GJ0084		HSTFGS	comp det	Golimowski et al. (2004)
LHS1339	img	HSTNIC	$a > 0''.2$	Dieterich et al. (2012)
LHS1375	img	HSTNIC	$a > 0''.2$	Dieterich et al. (2012)
GJ0102	RV	CSHELL	$P < 100$ d	Davison et al. (2015)
APM0237-5928	img	HSTNIC	$a > 0''.2$	Dieterich et al. (2012)
GJ0109	RV	HIRES	$a < 15$ AU	Montet et al. (2014)
SO0253+1652	RV	NIRSPEC		Tanner et al. (2012)
LTT01445	RV	HARPS	$\Delta t < 6$ yr	Bonfils et al. (2013)
GJ1057	RV	HARPS	$\Delta t < 6$ yr	Bonfils et al. (2013)
LSPM0330+5413	lky	LKYCM	$0.1 - 2''$	Law et al. (2008)
LEHPM1-3396	RV	UVES	$a > 0.03$ AU	Barnes et al. (2014)
GJ1061	RV	HARPS	$\Delta t < 6$ yr	Bonfils et al. (2013)

GJ1065	RV	HARPS	$\Delta t < 6$ yr	Bonfils et al. (2013)
LHS1610	RV	HARPS	comp det	Bonfils et al. (2013)
GJ1068	RV	HARPS	$\Delta t < 6$ yr	Bonfils et al. (2013)
LP655-048	RV	HIRES	$a < 0''.861$	Shkolnik et al. (2009)
GJ0176	RV	HARPS	$\Delta t < 6$ yr	Bonfils et al. (2013)
LHS1723	RV	HARPS	$\Delta t < 6$ yr	Bonfils et al. (2013)
LHS1731	RV	HARPS	$\Delta t < 6$ yr	Bonfils et al. (2013)
G097-015	astr	CTIOPI		RECONS, in prep
GJ0190	spkl		comp det	Hartkopf et al. (2012)
LSPM0510+2714	...	...	...	...
GJ0191	RV	HARPS	$\Delta t < 6$ yr	Bonfils et al. (2013)
GJ0203	RV	HARPS	$\Delta t < 6$ yr	Bonfils et al. (2013)
GJ0205	RV	HARPS	$\Delta t < 6$ yr	Bonfils et al. (2013)
GJ0213	RV	HARPS	$\Delta t < 6$ yr	Bonfils et al. (2013)
G099-049	img	HSTNIC	$a > 0''.2$	Dieterich et al. (2012)
LHS1805	RV	HIRES	$a < 15$ AU	Montet et al. (2014)
LHS1809	img	HSTNIC	$a > 0''.2$	Dieterich et al. (2012)
APCOL	RV	HIRES		Riedel et al. (2010)
GJ0226	RV	HIRES	$a < 15$ AU	Montet et al. (2014)
GJ0229	RV	HARPS	$\Delta t < 6$ yr	Bonfils et al. (2013)
GJ0232	img	HSTNIC	$a > 0''.2$	Dieterich et al. (2012)
GJ0234	spkl		comp det	Balega et al. (2007)
SCR0630-7643	img		comp det	Winters et al. (2011)
L032-009	RV	HARPS	$\Delta t < 6$ yr	Bonfils et al. (2013)
GJ0239	spkl		21 mas	Balega et al. (2007)
GJ0251	RV	HIRES	$a < 15$ AU	Montet et al. (2014)
GJ0257	img	HSTNIC	comp det	Dieterich et al. (2012)
GJ1093	img	HSTNIC	$a > 0''.2$	Dieterich et al. (2012)
LHS0224	img	HSTNIC	comp det	Dieterich et al. (2012)
GJ0268			comp det	Delfosse et al. (1999a)
GJ0273	RV	HARPS	$\Delta t < 6$ yr	Bonfils et al. (2013)
LTT17993	intf	HSTFGS	comp det	Henry et al. (2006)
SCR0740-4257	intf	HSTFGS		RECONS, in prep
GJ0285	RV	HARPS	$\Delta t < 6$ yr	Bonfils et al. (2013)
GJ1103	img	HSTNIC	$a > 0''.2$	Dieterich et al. (2012)
GJ1105	img	HSTNIC	$a > 0''.2$	Dieterich et al. (2012)
GJ0299	RV	HARPS	$\Delta t < 6$ yr	Bonfils et al. (2013)
GJ0300	RV	HARPS	$\Delta t < 6$ yr	Bonfils et al. (2013)
GJ2066	RV	HARPS	$\Delta t < 6$ yr	Bonfils et al. (2013)
GJ1111	RV	HIRES	$a < 6$ AU	Basri & Reiners (2006)
LHS0252	lky	LKYCM	$0.1 - 2''$	Law et al. (2008)
LHS2065	RV	HIRES	$a < 6$ AU	Basri & Reiners (2006)
GJ1116	img	HSTNIC	comp det	Dieterich et al. (2012)
LTT12352			comp det	Delfosse et al. (1999a)
LHS2090	img	HSTNIC	$a > 0''.2$	Dieterich et al. (2012)

GJ0338	img	HSTNIC	$a > 0''.2$	Dieterich et al. (2012)
LHS6167	AO		comp det	Montagnier et al. (2006)
GJ1123	RV	HARPS	$\Delta t < 6$ yr	Bonfils et al. (2013)
GJ1125	RV	HARPS	$\Delta t < 6$ yr	Bonfils et al. (2013)
GJ0357	RV	HARPS	$\Delta t < 6$ yr	Bonfils et al. (2013)
GJ0358	RV	HARPS	$\Delta t < 6$ yr	Bonfils et al. (2013)
GJ1128	img	HSTNIC	$a > 0''.2$	Dieterich et al. (2012)
GJ0367	RV	HARPS	$\Delta t < 6$ yr	Bonfils et al. (2013)
LHS2206	img	HSTNIC	$a > 0''.2$	Dieterich et al. (2012)
GJ0382	RV	HARPS	$\Delta t < 6$ yr	Bonfils et al. (2013)
GJ0388	RV	HARPS	$\Delta t < 6$ yr	Bonfils et al. (2013)
GJ0393	RV	HARPS	$\Delta t < 6$ yr	Bonfils et al. (2013)
LHS0288	RV	HARPS	$\Delta t < 6$ yr	Bonfils et al. (2013)
DEN1048-3956	RV	HIRES	$a < 6$ AU	Basri & Reiners (2006)
LHS0292	RV	HIRES	$a < 6$ AU	Basri & Reiners (2006)
GJ1138	img	HSTNIC	comp det	Dieterich et al. (2012)
GJ0402	RV	HARPS	$\Delta t < 6$ yr	Bonfils et al. (2013)
GJ0406	RV	HIRES	$a < 15$ AU	Montet et al. (2014)
GJ0408	img	HSTNIC	$a > 0''.2$	Dieterich et al. (2012)
GJ0411	RV	HIRES	$a < 15$ AU	Montet et al. (2014)
GJ0412	RV	HJS	$\Delta t < 1826$ d	Endl et al. (2006)
GJ0424	RV	HIRES	$a < 15$ AU	Montet et al. (2014)
GJ0433	RV	HARPS	comp det	Bonfils et al. (2013)
SCR1138-7721	intf	HSTFGS		RECONS, in prep
SIP1141-3624	intf	HSTFGS		RECONS, in prep
GJ0445	RV	HIRES	$a < 15$ AU	Montet et al. (2014)
GJ0447	RV	HARPS	$\Delta t < 6$ yr	Bonfils et al. (2013)
GJ1151	img	HSTNIC	$a > 0''.2$	Dieterich et al. (2012)
GJ0450	RV	HIRES	$a < 15$ AU	Montet et al. (2014)
RX1159-5247	astr	CTIOPI		RECONS, in prep
GJ1154	RV	HARPS	$\Delta t < 6$ yr	Bonfils et al. (2013)
GJ1156	RV	NIRSPEC		Rodler et al. (2012)
GJ0465	RV	HARPS	$\Delta t < 6$ yr	Bonfils et al. (2013)
GJ0473			comp det	Heintz (1992)
GJ0479	RV	HARPS	$\Delta t < 6$ yr	Bonfils et al. (2013)
LHS0337	RV	HARPS	$\Delta t < 6$ yr	Bonfils et al. (2013)
GJ0480.1	RV	HARPS	$\Delta t < 6$ yr	Bonfils et al. (2013)
GJ0486	RV	HARPS	$\Delta t < 6$ yr	Bonfils et al. (2013)
SIP1259-4336	astr	CTIOPI		RECONS, in prep
GJ0493.1	RV	CSHELL	$P < 100$ d	Davison et al. (2015)
GJ0514	RV	HARPS	$\Delta t < 6$ yr	Bonfils et al. (2013)
LHS2784	img	HSTNIC	$a > 0''.2$	Dieterich et al. (2012)
GJ0526	RV	HARPS	$\Delta t < 6$ yr	Bonfils et al. (2013)
WT0460	AO		comp det	Montagnier et al. (2006)
LHS2930	img	HSTNIC	$a > 0''.2$	Dieterich et al. (2012)

GJ0555	RV	HARPS	$\Delta t < 6$ yr	Bonfils et al. (2013)
GJ0569	RV	HARPS	$\Delta t < 6$ yr	Bonfils et al. (2013)
LHS3003	RV	HIRES	$a < 6$ AU	Basri & Reiners (2006)
GJ0581	RV	HARPS	$\Delta t < 6$ yr	Bonfils et al. (2013)
GJ0588	RV	HARPS	$\Delta t < 6$ yr	Bonfils et al. (2013)
SCR1546-5534	astr		comp det	Henry et al., in prep
GJ0609	RV	CSHELL	$P < 100$ d	Davison et al. (2015)
GJ0618	RV	HARPS	$\Delta t < 6$ yr	Bonfils et al. (2013)
GJ0623			comp det	Martinache et al. (2007)
GJ0625	RV	HIRES	$a < 15$ AU	Montet et al. (2014)
GJ0628	RV	HARPS	$\Delta t < 6$ yr	Bonfils et al. (2013)
GJ0644	RV	HARPS	comp det	Bonfils et al. (2013)
GJ1207	RV	CSHELL	$P < 100$ d	Davison et al. (2015)
LHS3262	img	HSTNIC	$a > 0''.2$	Dieterich et al. (2012)
GJ0661	img	HSTNIC	comp det	Dieterich et al. (2012)
GJ0674	RV	HARPS	$\Delta t < 6$ yr	Bonfils et al. (2013)
GJ0678.1	RV	HARPS	$\Delta t < 6$ yr	Bonfils et al. (2013)
GJ0680	RV	HARPS	$\Delta t < 6$ yr	Bonfils et al. (2013)
GJ0687	RV	HIRES	$a < 15$ AU	Montet et al. (2014)
GJ0682	RV	HARPS	$\Delta t < 6$ yr	Bonfils et al. (2013)
GJ0686	RV	HARPS	$\Delta t < 6$ yr	Bonfils et al. (2013)
GJ0694	RV	HIRES	$a < 15$ AU	Montet et al. (2014)
GJ0693	RV	HARPS	$\Delta t < 6$ yr	Bonfils et al. (2013)
BARNARDS	RV	HARPS	$\Delta t < 6$ yr	Bonfils et al. (2013)
GJ0701	RV	HARPS	$\Delta t < 6$ yr	Bonfils et al. (2013)
GJ1224	RV	HARPS	$\Delta t < 6$ yr	Bonfils et al. (2013)
LHS3376	img	HSTNIC	$a > 0''.2$	Dieterich et al. (2012)
GJ1227	img	HSTNIC	$a > 0''.2$	Dieterich et al. (2012)
2MA1835+3259	RV	NIRSPEC		Tanner et al. (2012)
GJ1230	img	HSTNIC	$a > 0''.2$	Dieterich et al. (2012)
GJ0725	RV	NIRSPEC	$P < 30$ d	Bailey et al. (2012)
LHS5341	astr	CTIOPI		RECONS, in prep
SCR1845-6357	AO	VLT	comp det	Biller et al. (2006)
GJ0729	RV	HARPS	$\Delta t < 6$ yr	Bonfils et al. (2013)
GJ0745	RV	HIRES	$a < 15$ AU	Montet et al. (2014)
GJ0747	img	HSTNIC	comp det	Dieterich et al. (2012)
GJ0752	RV	HARPS	$\Delta t < 6$ yr	Bonfils et al. (2013)
GJ0754	RV	HARPS	$\Delta t < 6$ yr	Bonfils et al. (2013)
GJ1235	RV	CSHELL	$P < 100$ d	Davison et al. (2015)
GJ1245	img	HSTNIC	$a > 0''.2$	Dieterich et al. (2012)
GJ0784	img	HSTNIC	$a > 0''.2$	Dieterich et al. (2012)
GJ1253	img	HSTNIC	$a > 0''.2$	Dieterich et al. (2012)
GJ0791.2		HSTFGS	comp det	Benedict et al. (2000)
GJ0793	RV	HIRES	$a < 15$ AU	Montet et al. (2014)
GJ1256	RV	HARPS	$\Delta t < 6$ yr	Bonfils et al. (2013)

SCR2049-4012	astr	CTIOPI		RECONS, in prep
LP816-060	RV	HARPS	$\Delta t < 6$ yr	Bonfils et al. (2013)
GJ0809	RV	HIRES	$a < 15$ AU	Montet et al. (2014)
GJ0829			comp det	Delfosse et al. (1999a)
GJ0831			comp det	Ségransan et al. (2000)
GJ0832	RV	HARPS	$\Delta t < 6$ yr	Bonfils et al. (2013)
G188-038	RV	CSHELL	$P < 100$ d	Davison et al. (2015)
LHS3746	RV	HARPS	$\Delta t < 6$ yr	Bonfils et al. (2013)
GJ0849	RV	HARPS	$\Delta t < 6$ yr	Bonfils et al. (2013)
LHS3799	RV	HARPS	$\Delta t < 6$ yr	Bonfils et al. (2013)
GJ0860	img	HSTNIC	$a > 0''.2$	Dieterich et al. (2012)
GJ0866			comp det	Delfosse et al. (1999a)
GJ0867	RV	CSHELL	$P < 100$ d	Davison et al. (2014)
GJ0873	RV	NIRSPEC	$P < 30$ d	Bailey et al. (2012)
GJ0876	RV	HARPS	$\Delta t < 6$ yr	Bonfils et al. (2013)
GJ0877	RV	HARPS	$\Delta t < 6$ yr	Bonfils et al. (2013)
GJ0880	RV	HARPS	$\Delta t < 6$ yr	Bonfils et al. (2013)
GJ0887	RV	HARPS	$\Delta t < 6$ yr	Bonfils et al. (2013)
GJ0896	img	HSTNIC	$a > 0''.2$	Dieterich et al. (2012)
GJ1286	img	HSTNIC	$a > 0''.2$	Dieterich et al. (2012)
GJ0905	RV	HIRES	$a < 15$ AU	Montet et al. (2014)
GJ1289	img	HSTNIC	$a > 0''.2$	Dieterich et al. (2012)
GJ0908	RV	HARPS	$\Delta t < 6$ yr	Bonfils et al. (2013)
L026-027	RV	HARPS	$\Delta t < 6$ yr	Bonfils et al. (2013)

Figure 6.2 presents a graph of the running *stellar* multiplicity at different angular separations as a function of distance for the entire 25 pc multiplicity survey. In the cases of the ten binary systems containing a substellar companion, the system was considered single for the purpose of the multiplicity calculation. For the five triple systems containing substellar companions, the three that had two substellar companions were considered single, while the two systems that had both an M dwarf and a substellar companion were still considered multiple. For higher order multiple systems with more than one companion, the smallest separation between the primary and the companion was chosen to mitigate the likely incompleteness at small ρ . The most striking feature is that most stellar companions to red dwarfs are found at

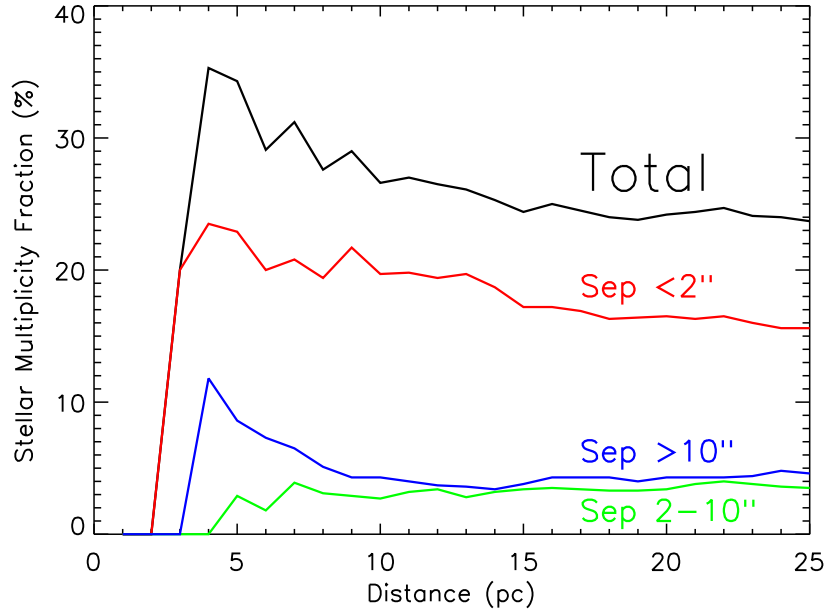


Figure 6.2 Plotted is the running multiplicity fraction at different angular separations, subdivided into ρ less than $2''$, $\rho = 2 - 10''$, and ρ greater than $10''$. The fractions for separations greater than $2''$ remain fairly constant from 10 to 25 pc, while the fraction for separations smaller than $2''$ decreases from $\sim 20\%$ at 13 pc to $\sim 15.5\%$ at 25 pc, indicating that a correction is needed. Neither suspected nor substellar companions are included in this graph, and for multiple systems with more than one companion, the companion with the smallest separation from its primary was used.

observable separations less than $2''$. Thus, it is not surprising that the two main campaigns for detecting companions undertaken here yielded few new objects. It is evident that the two bins of systems with companions at separations greater than $2''$ are fairly constant from 10 to 25 pc, indicating that there are not significant numbers of overlooked companions at large separations from their primaries. The multiplicity fractions for companions with angular separations $2'' - 10''$ and $> 10''$ are 3.5% and 4.6%, respectively. However, the curve for companions with separations smaller than $2''$ decreases from $\sim 20\%$ at 13 pc to $\sim 15.5\%$ at 25 pc, indicating that more close multiples remain to be found within the outer volume.

Many of these are presumably the candidates discussed in §6.1.2 and listed in Table §6.2. A correction must be made for these missing close multiples. By taking the multiplicity fraction for $\rho < 2''$ at 10 pc ($37/188 = 19.7 \pm 2.9\%$) and comparing it to the actual fraction at 25 pc ($175/1122 = 15.6 \pm 1.1\%$), a correction of 4.1% was determined. Adding this 4.1% to the initial total multiplicity fraction ($23.3 \pm 1.3\%$) gives a corrected total multiplicity fraction of $27.4 \pm 1.3\%$. We can also add this correction to the companion fraction for a corrected rate of $31.3 \pm 1.3\%$.

We note that a few of the stars suspected to be multiple are located within 10 pc. If they are found to have a companion, the correction will change, but only slightly.

For comparison, Figure 6.3 shows the cumulative multiplicity of the M dwarf primaries as a function of distance, subdivided by separation in AU. The same criteria in Figure 6.2 were used in creating this plot: no substellar companions were included and the smallest separation between the primary and its companion was used in the cases of higher order systems. Of note are the similarities between the three smaller and three larger separation curves. The three curves indicating the smaller separations (< 0.1 AU, $0.1 - 1$ AU, $1 - 10$ AU) display similar behavior: they exhibit peaks at distances less than 10 pc and then decline. The three curves indicating the larger separations ($10 - 100$ AU, $100 - 1000$ AU, > 1000 AU) are alike in that they all begin to increase at distances of ~ 10 pc. The result is that the curves illustrating the extremes of the projected separations all cross each other (purple and red, orange and blue, and cyan and green), effectively averaging each other out.

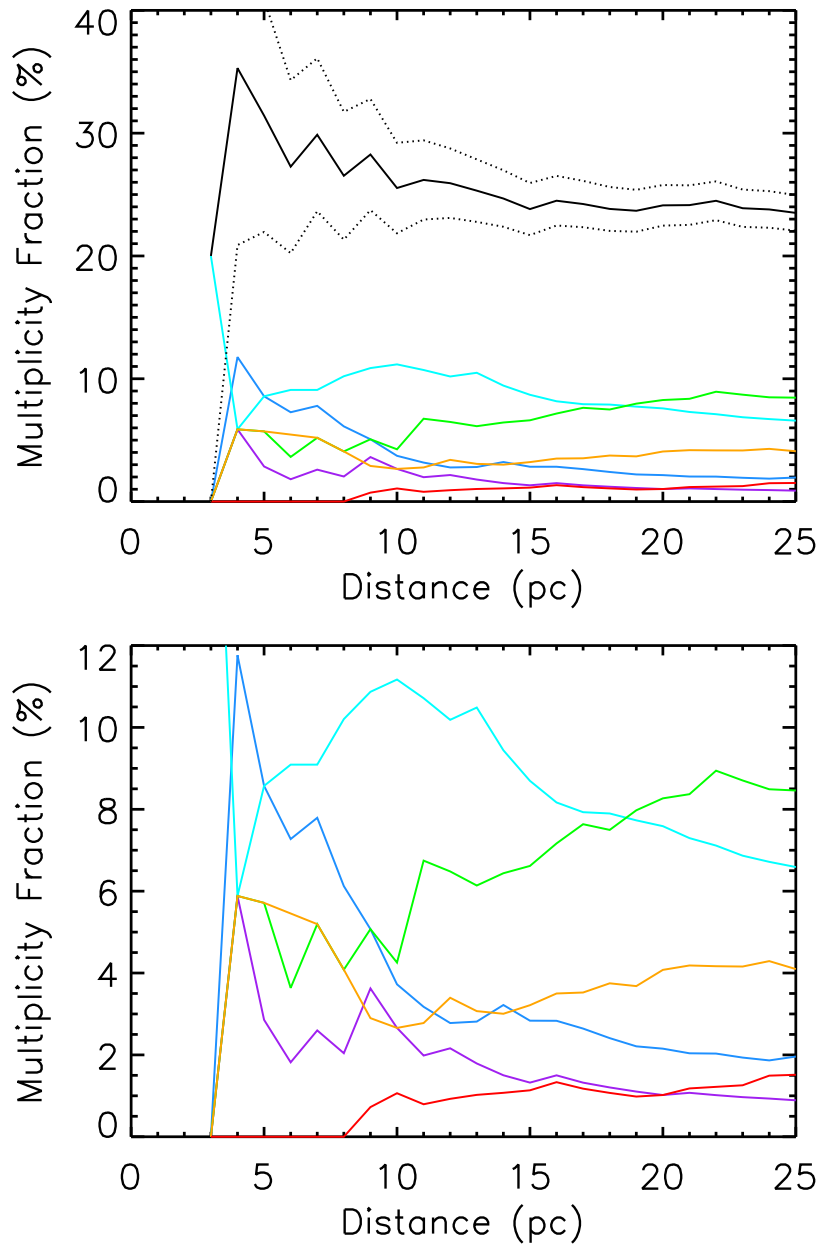


Figure 6.3 (top) The cumulative separations in AU for the pairs in the multiplicity sample as a function of distance for deblended companions (no corrections applied). The black line indicates the total multiplicity; the dotted lines are the Poisson errors. The purple line indicates the cumulative multiplicity of those systems with projected separations < 0.1 AU, the blue line indicates projected separations $0.1 - 1$ AU, the cyan line indicates projected separations $1 - 10$ AU, the green line indicates projected separations $10 - 100$ AU, the orange line indicates projected separations $100 - 1000$ AU, and the red line indicates projected separations > 1000 AU. (bottom) A zoomed-in view of the subdivisions.

6.3 Determining Masses

In order to perform any quantitative analysis of the multiplicity results related to stellar mass, a conversion from M_V to mass was necessary. But first, the deblending of the V magnitudes of systems with close separations ($\sim 1 - 5''$) via Point Spread Function (PSF) photometry was necessary in order to be able to estimate masses for each individual member of a system. For those stars with companions too close for PSF photometry, estimates of the Δm s had to be made based on the information available in the literature.

6.3.1 Deblending Photometry

For those systems with companions at separations too small (typically $1 - 5''$) for effective aperture correction photometry, Point Spread Function (PSF) photometry was performed on frames acquired in Arizona and Chile during the imaging program in order to measure ΔV for each system. Individual V magnitudes were then calculated and used to estimate masses for each component in the multiple systems.

A script provided by Wei-Chun Jao was modified to determine ΔV for the multiples with small separations. In short, the contribution from the sky background was calculated from a ‘blank’ part of the image. The region around the close pair being analyzed was then cropped, as we were only interested in the relevant pair, and the background subtracted. A Moffat curve was fit to the PSF of the primary, the flux determined from the total counts, and then the primary was subtracted from the image. Care was taken to minimize the residual counts from the primary. Gaussian and Lorentzian curves were also tested, but it was found

that the Moffat curve fit the shape of the PSF best. A Moffat curve was then fit to the secondary component's PSF and the flux calculated from the counts. The ratio of the fluxes then yielded the ΔV .

For the many close multiples with Δmags reported in the literature that were not in the V -band, the relations reported in Riedel et al. (2014) were used to convert ΔR_{KC} , ΔI_{KC} , $\Delta r'$, $\Delta i'$, or 2MASS ΔJ , ΔH , or ΔK filters to ΔV_J . Delta-magnitudes from the *HIPPARCOS* H_p and *Tycho-2* V_T filters were considered to be equivalent to V_J , as were any visual Δmags reported in the literature, e.g., those from any binary papers before ~ 1995 that used photographic plates. For *HST* data, the 110 and 222 filters were considered equivalent to J and K . For results using the Differential Speckle Survey Instrument (DSSI) (Horch et al. 2009) reported in Horch et al. (2011a, 2012, 2015), $\Delta 692$ was assumed to be ΔR , and $\Delta 562$ was assumed to be ΔV . Horch et al. (2009) states that the 692 and 562 nm DSSI filters' central wavelengths are close to those of the Johnson $UBVRI$ system. For observations on the RIT-Yale Tip-tilt Speckle Imager (RYTSI) (Meyer et al. 2006) reported in Horch et al. (2010, 2012), $\Delta 550$ were assumed to be ΔV , $\Delta 698$ were assumed to be ΔR , and $\Delta 754$ nm measurements were assumed to mimic ΔI . The $\Delta 814$ measurements reported in Reid et al. (2001) was assumed to be ΔI .

Systems with unknown magnitude differences between the components (i.e., typically those systems with separations $< 1''$) required estimates of the Δmag , which were made as follows: (1) SB2s were assigned $\Delta\text{mag} = 0$, (2) SB1s were assigned $\Delta\text{mag} = 1$, and (3) unresolved astrometric detections were assigned $\Delta\text{mag} = 2$. These estimates were all done for

the filter in which the observations were done or reported; e.g., an object with a perturbation that was being observed in the I -band by our group at the CTIO/SMARTS 0.9m was noted as having a $\Delta I = 2$, which was then converted to ΔV . For results reported in the literature, the waveband in which the observations were made was used and then converted to ΔV . As discussed in §8.5.1.2, future efforts with DSSI will target systems without ΔV measurements to refine the fluxes of components. The ΔV and deblended V magnitudes for the individual components of multiple systems are given in Tables 3.2 and A.1, with the estimate in italics if the aforementioned assumptions were made. This is the case for roughly half of the pairs. We note that this method of estimating ΔV is imperfect, and propose future work using DSSI to constrain these assumptions, as outlined in Chapter 8, §8.5.1.2.

For close triples ($\rho < 4''$), the pair with the widest separation were deblended first using the ΔV that corresponded to the wide ρ to calculate the deblended V magnitude for the single and the resulting pair. Then the ΔV relevant to the remaining pair was used to calculate individual V magnitudes for the components of the closest pair.

6.3.2 *Estimating Masses*

A rigorous analysis of the mass-luminosity relation for red dwarfs from Benedict et al. (in prep) using extensive HST-FGS and radial velocity data sets was used to estimate masses for the red dwarfs. It is given here:

$$M_V = y_0 + A_1 \exp \left\{ \frac{-(M - x_0)}{\tau_1} \right\} + A_2 \exp \left\{ \frac{-(M - x_0)}{\tau_2} \right\}, \quad (6.1)$$

where y_0 is 3.89, the coefficients A_1 and A_2 are 4.26 and 10.58, respectively, M is the mass, x_0 is 0.0762, and τ_1 and τ_2 are 0.03 and 0.77, respectively. This relation is relevant for M dwarfs, based on measured masses with average errors of $0.005 M_\odot$ and a scatter of $0.017 M_\odot$.

To estimate the masses, a range of masses was input to create an output list of M_V . The massive end of the M dwarf spectral sequence at $M_V = 8.8$ was found to correspond to $0.67 M_\odot$, while the least massive M dwarf with $M_V = 20.0$ was chosen to have a mass of $0.075 M_\odot$, only slightly lower than the lowest mass M dwarf in Benedict et al. (in prep.), GJ1245C with mass $= 0.076 \pm 0.001 M_\odot$. Masses were assigned to each M dwarf in the sample based on its M_V from the output grid.

For pairs with ΔV s larger than 3.0, and the mass of the primary was calculated as if it were single, as a companion with that ΔV only contributes 7% of the luminosity of the system; the ΔV s may not be very well defined at differences that large and would not affect the mass estimate significantly. The ΔV was then simply added to the V magnitude of the primary and the mass estimated for the companion, unless the companion was known to be a brown dwarf. A comparison of twenty-nine of the measured masses reported in Benedict et al. (in prep) to masses estimated for the same red dwarfs in the survey yields a mean absolute deviation of 10.5%. This difference is due almost entirely to cosmic scatter, as discussed in §3.3. Mass estimates for all components are listed in Tables 3.2 and A.1.

As mentioned above, all companions were analyzed in relation to the primary of the system. Thus, the 34 triples equate to 68 pairs of objects, the two quadruple systems to six

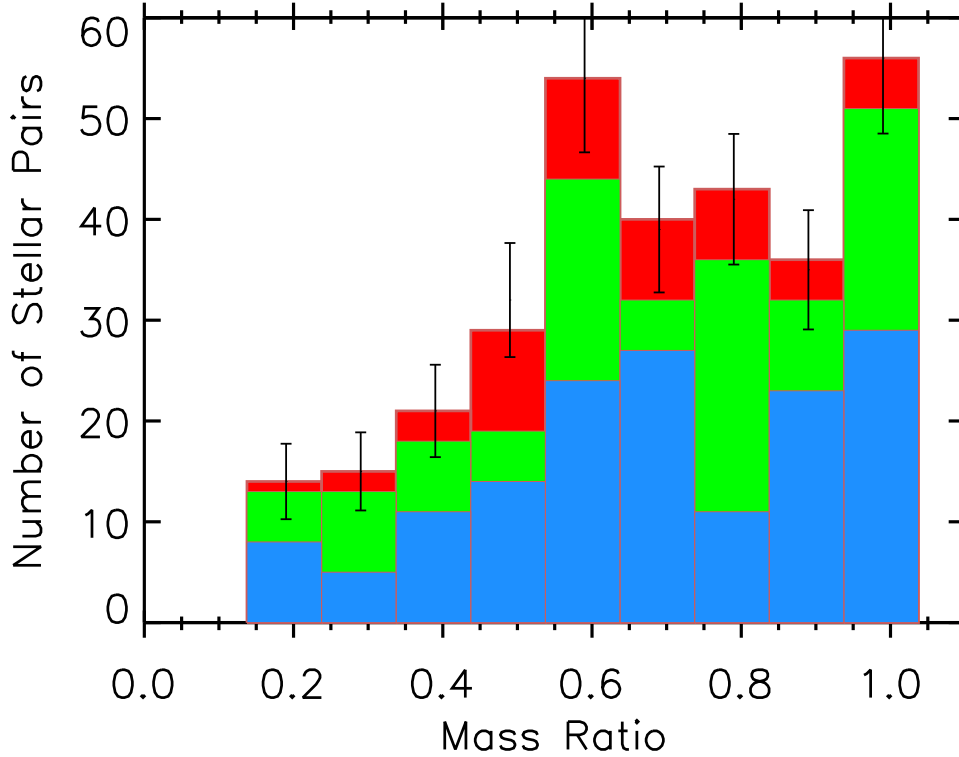


Figure 6.4 A histogram of the distribution of the ratios of all 306 stellar companions' masses to their primaries (M_2/M_1 , M_3/M_1 , etc.) in the multiplicity sample. In blue are plotted those objects for which no conversion or assumption to ΔV was made, green indicates a conversion to ΔV from another filter, and red indicates that an assumption was made regarding the Δmag . The error bars are the Poisson errors on each mass ratio bin.

pairs, and the two quintuple systems to eight pairs. In the instances where Δmags reported in the literature for hierarchical systems was other than with respect to the 'A' component, these data had to be calculated by first deblending the pair in question, calculating individual magnitudes, estimating individual masses, and then calculating the mass ratio in relation to the primary. Figure 6.4 shows the distribution of the mass ratios ($q = M_{\text{comp}}/M_{\text{pri}}$) for the 306 pairs in the sample. Those objects reported in the literature in V are shown in blue. Plotted in green are those pairs for which a conversion from a Δmag other than

ΔV was made, and plotted in red are the pairs for which an assumption had to be made about the Δmag between the two components, e.g., unresolved spectroscopic binaries and astrometric perturbations. The peak at $q = 0.6$ may not be real and could be the result of the assumptions and/or conversions (as described in §6.3.1) that had to be made in order to arrive at ΔV for all the pairs, although Janson et al. (2012) show a similar feature for their sample of M0 — M5 primaries with angular separations $0''.08$ — $6''.0$ in Figure 5 of that paper. The error bars calculated from Poisson statistics for each mass ratio bin show that the distribution might very well be uniform at $q > 0.55$, with the incompleteness at lower mass ratios being partially due to the currently known 15 brown dwarf companions being excluded from the analysis. We also show in §6.4 that primaries with masses 0.075 — 0.30 likely have companions that have eluded detection. These missing companions might fill in parts of the lower mass ratio portion of the graph.

An important question relating to the star formation process can be addressed by this survey. Is there a relationship between the masses of the primary stars and the components' separations from their primary stars? Figure 6.5 presents the log of the projected separation (in AU) of the 306 components from their primaries as a function of primary mass. There seems to be a lack of very close companions to the more massive targets at separations 0.01 — 1 AU. It is possible that the very close companions exist but have not yet been detected for the more massive primaries. M dwarfs have only recently been targeted by radial velocity searches for planets, so perhaps detections have been made, but just not yet reported.

A weak trend of decreasing projected separation with decreasing primary mass is also

seen, hinting that lower mass red dwarfs may not be massive enough to keep companions at larger distances. The two outliers at projected separations greater than 10,000 AU are very wide companions that are each part of hierarchical triple systems: G164-042C and GJ0130.1C. Both objects are separated from their primaries by thousands of arcseconds, the largest angular separations in the sample.

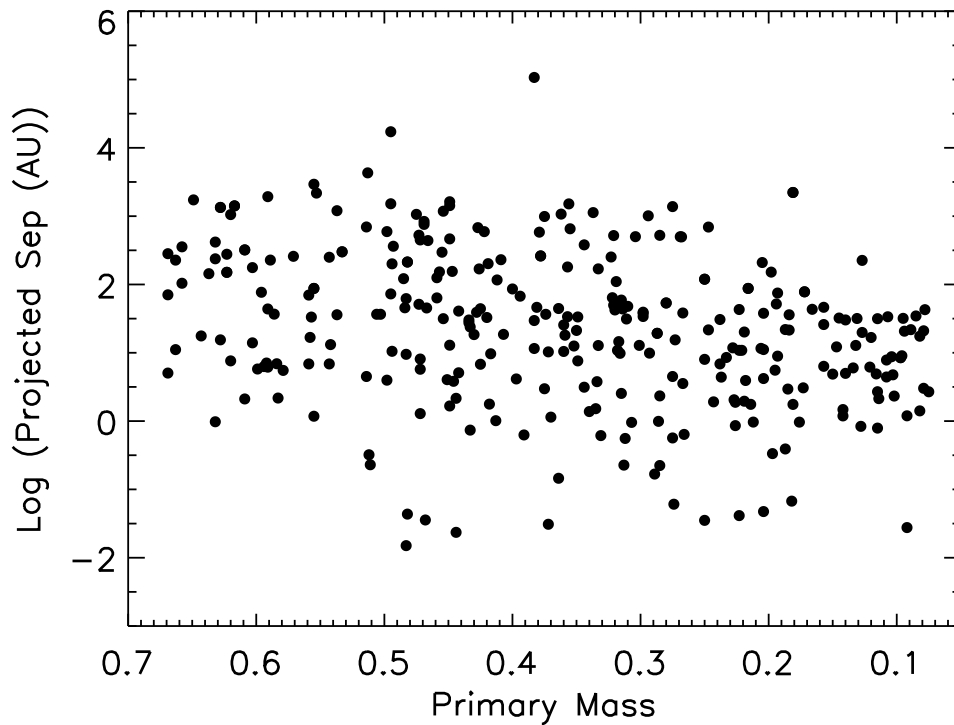


Figure 6.5 The log of the projected separation in AU as a function of primary mass for the 306 pairs. The more massive M dwarf primaries seem to lack companions at very close separations, and a weak trend of decreasing projected separation with primary mass is seen. The two outliers at very large projected separations from their primaries are G164-042C and GJ0130.1C, both with angular separations from their primaries in the thousands of arcseconds.

Another puzzle of star formation can be investigated by this survey. Is there a preferred

companion mass for these objects that form as members of red dwarf systems? Figure 6.6 shows the mass ratio of all 306 pairs in the sample, as a function of primary mass. In this sample, there do not seem to be any M0 + M9.5 pairs, as the mass ratio of the least massive M dwarf (defined by this sample to $0.075 M_{\odot}$) to the most massive M dwarf ($0.67 M_{\odot}$, by the mass-luminosity relation discussed in §6.3.2) is 0.11, and there are no data points in that region of the plot. Primaries with masses $0.45 - 0.60 M_{\odot}$ appear to have companions with a wide variety of masses, but as the mass of the primary decreases, the mass ratio increases to unity. We expect this because we have set a hard limit on companion masses by only including stellar companions, and there is a decreasing amount of mass phase space available as the primary's mass approaches this stellar boundary.

As noted in §6.1.4, brown dwarf companions have been excluded from the analysis. However, the percentage of M dwarfs with known brown dwarf companions is 1.3%, a fraction too low to fill in the open region on the graph where low mass primaries have no secondaries at large mass ratios. We note that this fraction is consistent with the number of solar-type stars with brown dwarf companions in the sample studied by Raghavan et al. (2010): $7/454 = 1.5\%$.

Another possibility presents itself. Given that there are larger numbers of smaller stars compared to more massive stars, why is the multiplicity rate so low for M dwarfs (27%) compared to G dwarfs (46%)? One might wonder why the multiplicity fraction for M dwarfs is not 100%. Is there some other process at work? It is possible that M dwarfs simply do not have enough mass to retain their companions, and thus they lose the lowest mass objects.

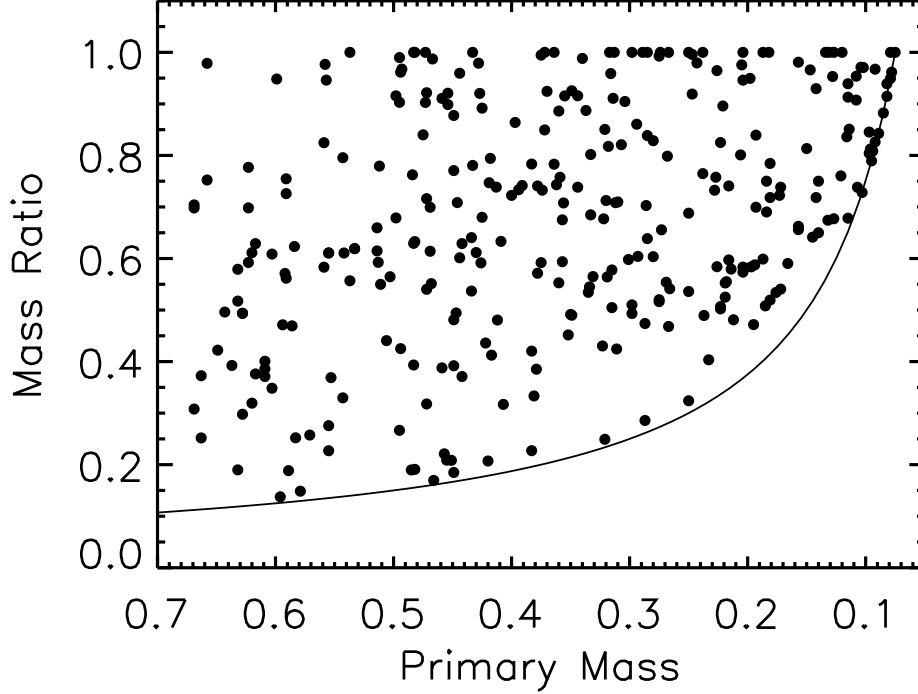


Figure 6.6 The mass ratio of multiples as a function of primary mass. A trend of mass ratios increasing to unity for low mass primaries is noted. The solid line indicates the mass ratio boundary relative to the lowest mass star considered here for this survey, with $M = 0.075 M_{\odot}$.

We propose pursuing this intriguing topic in the future by imposing the same mass ratio range studied in this survey ($0.075 M_{\odot} - 0.67 M_{\odot}$ equates to $q = 0.11 M_{\odot}$) on the sample of solar-type stars studied in Raghavan et al. (2010), which would correspond to masses $0.13 M_{\odot} - 1.2 M_{\odot}$ with a matching lower limit of $q = 0.11 M_{\odot}$. We will then re-create Figure 6.6 for the solar-type sample and create histograms, binned by tenths of a solar mass for the M dwarf sample and by two-tenths of a solar mass for the solar-type sample to compare the mass ratio distributions for each bin. An additional probe would be to create comparison

curves of the normalized cumulative mass ratios for the two G and M dwarf samples as functions of mass ratio for the same mass ratio range described above. This would enable a better understanding of the mass ratio distributions for each population of stars and provide hints as to what fuels the multiplicity rate for those samples.

6.4 M Dwarf Multiplicity as a Function of Mass

It is known that the multiplicity rate decreases with the mass of the primary star (Duchêne & Kraus 2013). Because the survey presented here is so robust, it is possible to analyze the multiplicity rates of subsets of the M dwarf population as a function of primary mass. Figure 6.7 subdivides the sample into bins of mass that differ by factors of two. It is evident that the largest mass bin has a markedly higher multiplicity fraction ($27.8 \pm 2.3\%$) than the two smaller mass bins ($20.8 \pm 2.6\%$ and $15.8 \pm 2.6\%$ for the mid- and low-mass bins, respectively). In all three subsamples, no corrections have been applied for undetected companions. This agrees with Figure 3 in Janson et al. (2012) and Figure 7 in Janson et al. (2014b), although their sample only extends to spectral type M6, so they do not address our lowest mass bin. It also appears that multiple systems are missing from the lowest mass bin at distances 18 to 25 pc, as that curve drops within that distance range. These missing multiples are likely due to that population being more difficult to study, due to their low luminosities.

Figure 6.8 shows the mass ratio distributions for the sample subsets by mass. The slight rises in the largest and smallest mass sub-samples leads to the more compelling upward trend in Figure ???. A spike at mass ratios $\sim 0.5 - 0.6$ is evident in both the large and medium

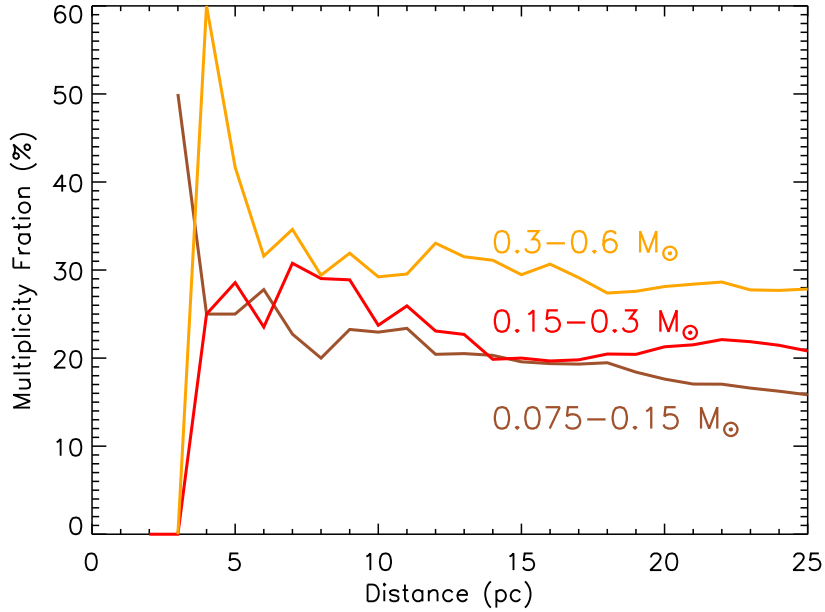


Figure 6.7 Cumulative stellar multiplicity fraction by primary mass. Shown are the running multiplicity fractions of the three mass subsets, with the masses of the primaries calculated from deblended photometry: primary masses $0.30 - 0.60 M_{\odot}$ represented by the orange line, with an uncorrected multiplicity rate of $27.8 \pm 2.3\%$; primary masses $0.15 - 0.30 M_{\odot}$ shown by the red line with an uncorrected multiplicity fraction of $20.8 \pm 2.6\%$; and primary masses $0.075 - 0.15 M_{\odot}$ shown by the brown line, with an uncorrected multiplicity rate of $15.8 \pm 2.6\%$. The largest mass bin has a markedly higher multiplicity fraction than the two smaller mass bins. It appears likely that multiple systems are missing from the lowest mass bin at distances 18 to 25 pc, as the curve decreases at those distances. Neither suspected nor substellar companions are included.

mass sub-samples and may be due to the estimates of ΔV , as mentioned in the discussion of Figure 6.3.2, although Janson et al. (2012) show a similar feature for their sample of M0 – M5 primaries with angular separations $0''.08 - 6''.0$ in Figure 5 of that paper. The axes were kept the same scale between plots in order to underline the changes with decreasing primary mass. The number of multiples decreases as a function of primary mass, and the mass ratio range decreases as the primary mass decreases, in part due to less mass availability for a

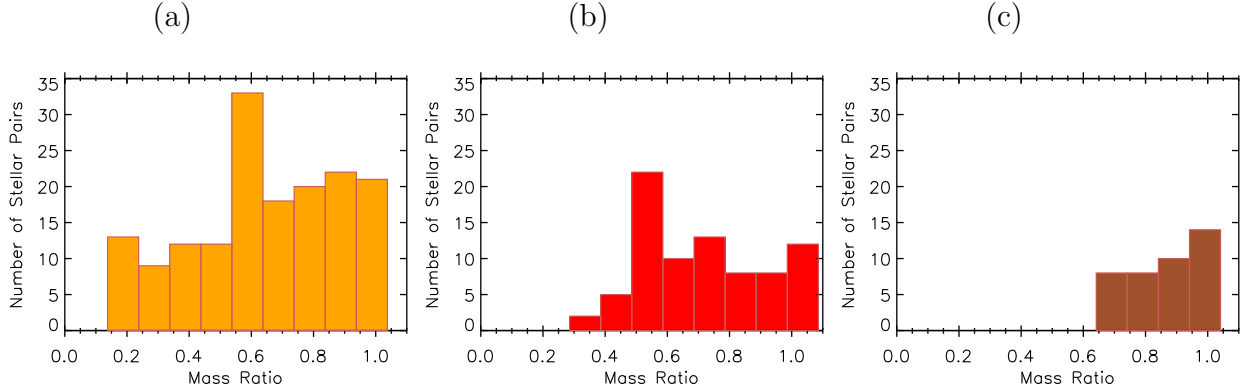


Figure 6.8 Mass ratio distributions for the primary mass sub-samples: (a) mass ratios for primaries with masses $0.30 - 0.60 M_{\odot}$ are represented in orange; (b) mass ratios for primaries with masses $0.15 - 0.30 M_{\odot}$ are shown in red; (c) mass ratios for primaries with masses $0.075 - 0.15 M_{\odot}$ are shown in brown. The axes are the same for all three plots to highlight the differences between each mass subsample. The distributions for the largest and smallest mass subsets increase toward equal mass ratios, with the range of mass ratios shrinking as a function of decreasing primary mass.

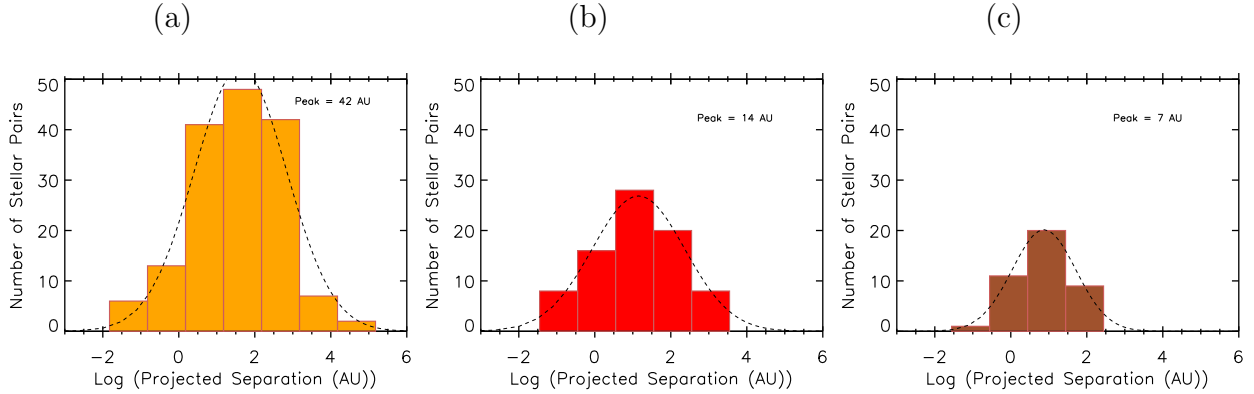


Figure 6.9 Log-separation distributions for the mass sub-samples: (a) the distribution of the projected separations of the subset of masses $0.30 - 0.60 M_{\odot}$ peak at 42 AU with $\sigma = 1.22$; (b) the distribution of the projected separations of the subset of masses $0.15 - 0.30 M_{\odot}$ peak at 14 AU with $\sigma = 1.22$; (c) the distribution of the projected separations of the subset of masses $0.075 - 0.15 M_{\odot}$ peak at 7 AU with $\sigma = 0.84$. The axes are the same for all three plots to highlight the differences between each mass subsample.

stellar companion. No substellar or suspected companions are included in these figures.

Figure 6.9 shows the log-projected separation distributions for the sample subsets by mass. Again, the axes are the same scale between plots. As mentioned, the number of

multiples decreases as a function of primary mass, and it is evident that the distribution peaks move to smaller separations as a function of decreasing primary mass, as noted in Figure 6.5. Again, comparison of our distribution peak for the mid-mass sub-sample, which corresponds most closely to the mid-M sample surveyed in Janson et al. (2014b), shows a peak at slightly larger projected separations (14 AU) than the peak reported in that paper (3 – 10 AU). No substellar or suspected companions are included in these figures.

6.5 M Dwarf Multiplicity as a Function of Tangential Velocity

Because it is known that the tangential velocity of a star increases with age due to gravitational kicks from objects in the Milky Way (usually from Giant Molecular Clouds), cool subdwarfs will generally have larger ($> 100 \text{ km s}^{-1}$) tangential velocities than young stars ($< 30 \text{ km s}^{-1}$). Thus, it is interesting to investigate multiplicity as a function of tangential velocity, which we can use as a proxy for age. Is there any trend? Figure 6.10 shows the tangential velocity distribution of the multiplicity sample, using the v_{tan} of the primary (or single) component. There appear to be more multiple systems at v_{tan} less than $\sim 50 \text{ km s}^{-1}$ than at larger v_{tan} . We can quantify this by naively dividing the sample in half (at $\sim 42 \text{ km s}^{-1}$) and calculating the multiplicity rate for each half. This exercise yields a multiplicity fraction of $26.7 \pm 2.2\%$ (151/566) for the half of the sample with $v_{tan} < 42 \text{ km s}^{-1}$, compared to $20.1 \pm 1.9\%$ (112/556) for the half with $v_{tan} > 42 \text{ km s}^{-1}$, hinting that **objects with lower tangential velocity may be more likely to be multiple.**

Perhaps systems that experience more encounters are less able to hold on to their com-

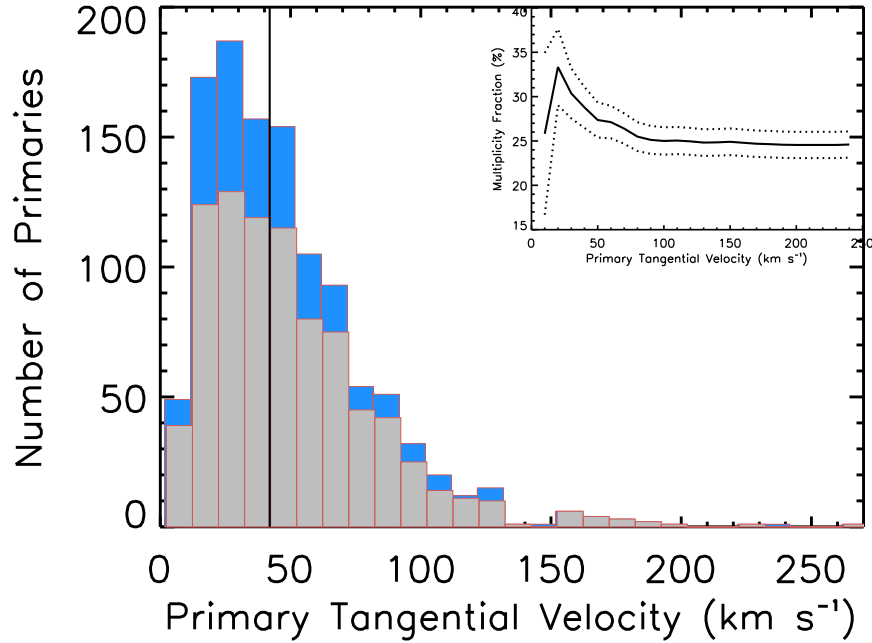


Figure 6.10 Histogram of primary tangential velocity. The tangential velocity of the primary (or single) component in each system is plotted in gray, with multiple systems indicated in blue. The inset graph at the top right is the running multiplicity fraction as a function of v_{tan} , indicating that slower moving objects tend to have companions slightly more often.

panions and thus lose a few along the way. The inset graph at the top right of Figure 6.10 gives the running multiplicity fraction as a function of v_{tan} , showing a small rise in the number of multiple systems at lower v_{tan} .

6.5.1 Young Stellar Objects

Within the solar neighborhood are young moving groups that have contributed members to the multiplicity sample. Within the studied collection are sixteen known young M dwarfs, nine of which are known to be multiple, yielding a multiplicity fraction of $56.3 \pm 18.8\%$.

However, this result is not statistically robust due to the small number of objects with which it was calculated. Presented in Table 6.4 are these known nearby young red dwarfs, with their astrometric data duplicated from Table B.1. In addition, the tangential velocity v_{tan} is listed, along with the youth indicators, and the moving group with which they are associated (Riedel et al., in prep). The youth indicators are as follows: BF — a bona fide and well-known member of a moving group; Li — the presence of Lithium; ol — over-luminous. Any member of a multiple system where one component exhibits any of these indicators is also assumed to be young, as in the case of GJ0871.1AB.

Table 6.4: Young Members

Name	# obj	RA	DEC	μ (" yr ⁻¹)	P.A. (deg)	ref	v_{tan} (km s ⁻¹)	youth indicator	Moving Group
LTT10301AB	2	00 50 33.2	+24 49 00	0.199	101.4	3	11	ol	Argus
G080-021	1	03 47 23.3	-01 58 19	0.330	145.8	3	25	Li	AB Dor
2MA0414-0906	1	04 14 17.3	-09 06 54	0.168	325.2	2	19	Li	none
LP776-025	1	04 52 24.4	-16 49 21	0.243	150.7	1	19	ol	AB Dor
GJ2036AB	2	04 53 31.2	-55 51 37	0.153	061.6	3	8	BF	AB Dor
LP717-036AB	2	05 25 41.6	-09 09 12	0.208	164.2	4	20	ol	AB Dor
APCOL	1	06 04 52.1	-34 33 40	0.330	003.6	4	13	Li	Argus
CD-35 2722AB	2	06 09 19.2	-35 49 30	0.060	184.4	2	6	BF	AB Dor
GJ2060ABC	3	07 28 51.3	-30 14 48	0.185	224.7	3	14	BF	AB Dor
GJ0382	1	10 12 17.6	-03 44 44	0.287	211.7	3	11	ol	AB Dor
TWA022AB	2	10 17 27.0	-53 54 27	0.149	264.4	4	15	Li	Beta Pic
GJ0393	1	10 28 55.6	+00 50 28	0.947	219.6	3	32	ol	AB Dor
GJ0490ABCD	4	12 57 40.2	+35 13 30	0.318	236.3	3	30	BF	Tuc-Hor
GJ0856AB	2	22 23 29.1	+32 27 33	0.329	130.2	3	24	Li	AB Dor
GJ0871.1AB	2	22 44 57.9	-33 15 01	0.220	123.0	3	24	(Li)	Beta Pic
HIP114066	1	23 06 04.8	+63 55 34	0.181	108.9	3	21	Li	AB Dor

References: (1) Høg et al. (2000); (2) Shkolnik et al. (2012); (3) van Leeuwen (2007); (4) Winters et al. (2015). The youth indicators are as follows: BF — a bona fide and well-known member of a moving group; Li — the presence of Lithium; ol — over-luminous.

6.5.2 Old, Cool Subdwarfs

There are very few old halo members, also known as subdwarfs, that happen to be passing through the solar neighborhood. The objects have been identified either spectroscopically or stand out on the Reduced Proper Motion Diagram shown in Figure 3.7 in Chapter 3. Out of the eleven confirmed subdwarf members with trigonometric parallaxes found within 25 pc, only three are multiple systems, resulting in a multiplicity fraction of $27.3 \pm 15.7\%$, which is very similar to that of the M dwarf population as a whole. As with the young stars, with such a small number of objects, this result is not statistically robust. These objects are identified in Table 6.5. In addition to the astrometric data for each system that have been duplicated from Table B.1, the calculated tangential velocities v_{tan} and spectral types from the literature are listed.

Table 6.5: Subdwarf Members

Name	# obj	RA	DEC	μ (" yr ⁻¹)	P.A. ref (deg)	v_{tan} (km s ⁻¹)	Spectral Type	ref
LHS1490	1	03 02 06.36	-39 50 51.9	0.859	221.3	8	57	M5.0 VI 4
GJ1062	1	03 38 15.70	-11 29 13.5	3.033	152.0	7	230	M2.5 VI 3
LHS0189AB	2	04 25 38.35	-06 52 37.0	1.204	145.7	2	105	M3.0 VIJ 4
LHS0272	1	09 43 46.16	-17 47 06.2	1.439	279.2	5	92	M3.0 VI 3
GJ0455AB	2	12 02 18.08	+28 35 14.2	0.791	268.0	7	76	M3.5 VIJ 3
LHS2852	1	14 02 46.66	-24 31 49.6	0.506	315.6	8	41	M2.0 VI 3
LHS0375	1	14 31 38.25	-25 25 32.9	1.386	269.0	7	158	M4.0 VI 3
SSSPMJ1444-2019	1	14 44 20.33	-20 19 25.5	3.507	236.0	6	270	M9.0 VI: 6
GJ2116	1	15 43 18.33	-20 15 32.9	1.173	195.3	8	119	M2.0 VI 1
LHS3409	1	18 45 52.24	+52 27 40.6	0.843	298.0	7	81	M4.5 VI 3
LHS0064AB	2	21 07 55.39	+59 43 19.4	2.098	209.0	7	238	M1.5 VIJ 3

References: (1) Bidelman (1985); (2) Costa et al. (2006); (3) Gizis (1997); (4) Jao et al. (2008); (5) Jao et al. (2011); (6) Schilbach et al. (2009); (7) van Altena et al. (1995); (8) Winters et al. (2015).

6.6 Summary of Results

To conclude this analysis of the multiplicity survey, we report 21 new and 88 suspected companions to M dwarfs within 25 pc. We find a corrected multiplicity fraction of $27.4 \pm 1.3\%$ for M dwarfs, with the distribution of the projected separations of the companions peaking at 26 AU, i.e., the scale of the outer Solar System. We calculate the uncorrected multiplicity fractions for the three angular separation regimes ($< 2''$, $2 - 10''$, and $> 10''$) to be $15.6 \pm 1.2\%$, $3.5 \pm 0.6\%$, and $4.6 \pm 0.6\%$. A weak trend of decreasing projected separation with primary mass was found. We find the uncorrected multiplicity fraction of the three mass subsets ($0.30 - 0.60 M/M_\odot$, $0.15 - 0.30 M/M_\odot$, and $0.075 - 0.15 M/M_\odot$) to be $27.8 \pm 2.3\%$, $20.8 \pm 2.6\%$, and $15.8 \pm 2.6\%$, with a hint that multiple systems have yet to be discovered for the two lower mass bins. The mass ratios for the mass sub-samples show weak rises that lead to a more compelling rise to equal mass ratios for the entire M dwarf multiplicity sample. Analysis of the tangential velocities of the primaries reveals a possible relation between multiplicity and tangential velocity, indicating that older, faster moving M dwarfs tend to have fewer companions as a population than their younger counterparts.

6.7 Notes on Individual Systems

There are some systems that require more detail than that given in Table 6.1, typically those that constitute more than two components or that are particularly interesting. These are listed here with the first four digits of RA and Decl.

GJ 1001ABC (0004-4044) Both the B and C components of this system are substellar (Dieterich et al. 2012).

GJ 1003 (0007+2914) Gliese & Jahreiss (1988) claim that GJ1003 and GJ1034 are members of the same system. They are separated by $\sim 16^\circ$, with $\mu = 1''.89 \text{ yr}^{-1}$, $\theta = 127^\circ$ for GJ1003 and $\mu = 1''.84 \text{ yr}^{-1}$, $\theta = 112^\circ$ for GJ1034, with $\pi = 53.5 \pm 2.5 \text{ mas}$ and $48.9 \pm 4.5 \text{ mas}$, respectively. While their proper motions and distances are similar, this would be the widest separation of any multiple system in the sample, with a projected separation of 5.6 pc. We do not link these two stars as a binary.

GJ 2005ABC (0024-2708) This system is a triple, not a quadruple. The D component reported in Henry et al. (1999) is not real (private communication from TJH).

GJ 0109 (0244+2531) This object is tagged as a VIM (Variability-Induced Mover) in the *HIPPARCOS* catalog, which could imply duplicity. However, Pourbaix et al. (2003) have shown this to be an incorrect tag in their re-analysis and re-calculation of the $(V - I)$ colors.

GJ 165AB (0413+5031) Allen et al. (2007) refer to GL 165B as an L4 dwarf; however, this is likely either a mistake or a typo for GD 165B. Kirkpatrick & McCarthy (1994) discuss both Gl 65B and GD 165B, so perhaps that is the source of the confusion. GD 165B is reported as a bona fide brown dwarf by Kirkpatrick & McCarthy (1994), but its coordinates are $\alpha = 14:24:39.09$, $\delta = +09:17:10.4$, so it is not the same object as GJ 165B. GJ 165AB seems, from a comment in Heintz (1992) to be a possibly equal magnitude binary. McAlister et al. (1987) provide separation information from speckle observations, but do not

provide any Δmag information.

LTT 11399 (0419+3629) Both Worley (1961) and Worley (1962) claim that this is a binary with a separation of $6''.4$ at 226° . Closer inspection and backtracking of its proper motion indicate that the alleged component is a background star. Balega et al. (2007) looked at this star with speckle but were unable to resolve it. It is marked as having a stochastic solution in Lindegren et al. (1997).

GJ 289 (0748+2022) Marcy & Benitz (1989) mention that Gl289 (GJ 289) is an SB2, but this is actually a typo for GJ0829, which is an SB2. GJ 289 is single.

GJ 1103 (0751-0000) Reiners et al. (2012) cite Delfosse et al. (1998) for GJ1103(A) being an SB. However, Delfosse et al. (1998) only exclude GJ1103 from their sample due to it being a binary. They do not claim that it is an SB. In the LHS Catalog, also known as LHS1951 is advertised to have a companion LHS1952 with a separation of $3''$ at $\theta = 78^\circ$, with component magnitudes of $m_R = 13.0$ and 15.5 , and $m_{pg} = 15.0$ and 17.5 . Krupa Ghanda looked for the companion in September 2006 by examining (a) our own astrometry frames, in which the seeing was sometimes $1''.2$ or better, and (b) blinking POSS plates via Aladin. No companion was found. We conclude that GJ 1103 is single.

GJ 1155AB (1216+0258) This object was previously thought to have a white dwarf companion, but Gianninas et al. (2011) report that the white dwarf is actually a misclassified M dwarf. It was also not spectroscopically confirmed in a survey of SDSS objects by Kleinman et al. (2004).

GJ 465 (1224-1814) Heintz (1986) notes this object may yet be a long-term binary.

GJ 1167 (1309+2859) Jahreiß et al. (2008) note that the B component has $\mu = 0''.292$ yr^{-1} , $\theta = 234.9^\circ$. He also devotes an entire section to the B component and states that the two stars are not physically associated, as the photometric distance for B is 190 pc while the trigonometric distance for A is 12 pc. We calculate the *ccddist* for A to be 14.2 pc. Janson et al. (2012) note that A is single in their survey. Gliese & Jahreiß (1979) note it as AB, but the given proper motions are exactly the same. In notes to that object, however, they give the proper motion data as from Luyten ($0''.38$ yr^{-1} and 240°) and G164-47 ($0''.48$ yr^{-1} and 235°). We conclude that GJ 1167‘B’ is not a CPM companion to GJ 1167A and that GJ 1167 is a single system.

GJ 687 (1736+6820) Montet et al. (2014) cite Jenkins et al. (2009) for the M3.5 companion that they note in their Table 2. But the spectral type of the *primary* is M3.5. Jenkins et al. (2009) do not note any additional information about a companion.

The WDS lists GJ 687 as the B component to an F5 star, but the parallax for the F5 star is 11.20 mas (i.e., 89 pc) (van Leeuwen 2007) which places this object at a much larger distance than the M dwarf ($\pi = 220.47$, corresponding to 4.5 pc). It appears that the ‘A’ component, the F5 star (at $\alpha = 17:36:42$, $\delta = +68:22:59$, compared to $\alpha = 17:36:25.9$, $\delta = +68:20:20$ for GJ 687) is the SB, for which the measurement by McAlister et al. (1987) pertains. Tokovinin (1992) notes GJ 687 as both an astrometric and speckle binary in the table in that paper named ‘Long-period spectroscopic binaries’. But this, too, is likely for the F dwarf. The companion is deemed to be optical, and presumably GJ 687 is single.

LTT 15769 (1945+3223) This system is listed as double in the *HIPPARCOS* DMSA

(Lindgren et al. 1997) with $\rho = 12''.76$, $\theta = 339^\circ$ with a quality code of ‘D’, meaning an uncertain solution. Blinking of the system with SuperCOSMOS images having an epoch difference of five years reveals the motion of the primary, but not that of the bright ‘secondary’ with a ΔH_p of 2.3 mag. We thus refute this companion and deem the system ‘single.’

GJ 912 (2355-0608) This object had a code of ‘X’ from Lindgren et al. (1997) and has been confirmed as double with observations from DSSI.

CHAPTER 7

MULTIPLCITY STUDY BIASES & DETECTION LIMITS

An attempt is made here to recognize the biases present in the population studied and to understand their influences on the survey outcome. This is followed by discussion of detection limits in an effort to quantify the inherently human element present in searches done *by eye*.

7.1 Observational Biases & Selection Effects

All astronomical samples are subject to biases, even those having the benefit of a rich dataset, as does this study. While it is not straightforward, or even possible, to correct for them all, it is important to identify them in order to interpret the outcome of the survey. Those biases known to have affected the survey include (1) a Malmquist bias, (2) missing primaries, particularly from the lowest mass bin, (3) selection effects from imposed parallax error limits, (4) companions at intermediate ρ with large Δm s, and (5) close, unresolved companions at ρ smaller than the sensitivities probed. Each is discussed below, but only the final bias discussed is explicitly corrected in this work.

7.1.1 *Malmquist Bias*

In the most easily defined sample, one that is magnitude-limited, the brightest stars within a magnitude limit m are found within a larger volume than the fainter stars within the same magnitude limit. Therefore, the more luminous stars within that sample are over-represented. This is known as the *Malmquist Bias*. One criterion for an object's inclusion in the current sample of 1122 stars is that it have a trigonometric parallax in order to create

a volume-limited collection of M dwarfs. Because brighter objects are generally targeted for parallax measurements before fainter objects for which measurements are more difficult, 85% of the sample is made up of bright stars ($I < 12.00$), introducing an implicit Malmquist bias. As unresolved multiple systems are usually over-luminous, this survey's outcomes are biased toward a larger multiplicity fraction.

7.1.2 Missing Faint Primaries

As will be shown in Chapter 8, there is mass missing within 25 pc in the form of M dwarf primaries, the largest incomplete subsample being the lowest mass bin ($0.075 - 0.15 M_{\odot}$). We can make a conservative estimate for how many of these low mass primaries are missing by assuming that the 61 of these low mass systems found within 10 pc is complete. Extrapolating that value to 25 pc, assuming a constant stellar density, gives us an expected number of 953 systems, of which 240 are currently known, implying that 713 systems are missing from that low mass bin of M dwarfs. That bin also has the smallest (uncorrected) multiplicity fraction: 15.8%, (see §6.4), yielding 113 missing multiples. If we add those 713 systems to the current known sample of 1122, those 113 multiples amount to 6.1% that would be missing from that much larger collection of M dwarfs. However, the current uncorrected multiplicity rate of 23.4% would decrease to 14.4% with the sample increase of $1122 + 701 = 1823$ M dwarf primaries before the addition of the 6.1% from the faint primaries.

7.1.3 *Parallax Error Limits*

Because we have required the error on the published trigonometric parallax to be ≤ 10 mas in order to limit the sample to members that are reliably within 25 pc, it is possible that binaries were missed, as perturbations on the parallax due to an unseen companion can increase the parallax error. This is the case for 45 M dwarf systems with YPC or HIP parallaxes that were eliminated from the sample. If all 45 were included to the sample, the sample size would increase to 1167, and if all were found to be multiple, the multiplicity fraction would increase by 3.9%.

This bias only exists for parallaxes from the YPC or those measured by HIP, about two-thirds of the M dwarf primaries studied. The parallaxes measured as a result of our own astrometry program CTIOPI, $\sim$ one-third of the sample, would not factor into this negative bias, as all these data were examined and perturbations flagged. We remind the reader that all parallaxes measured by the RECONS team have data spanning a minimum, and usually more, than two years, enabling the detection of perturbations. In addition, one of the criteria for publication of a parallax from our group is that the parallax error must be 3 mas, a factor of three less than the 10 mas error in question.

7.1.4 *Faint Companions*

This study was not sensitive to companions with large Δ mags at separations $\sim 1 - 2''$, as we show in §7.2. The ΔM_I for the M dwarf sequence from M0 to M9.5 spans almost nine magnitudes, with M_I varying from 6.78 — 15.32 mag. While the long exposure I -band

images obtained during the direct imaging campaign would likely reveal fainter companions at $\rho \sim 2 - 5''$, the saturation of most of the observed stars creates a CCD bleed along columns in the direction in which the CCDs read out. Those faint companions located within $\sim 1 - 2''$ of their primaries, but at an orientation 0 or 180° would be overwhelmed by the CCD bleed of the saturated star to even larger separations and not be detected. This effect would decrease the expected multiplicity fraction very slightly.

7.1.5 Close Companions

Another bias that has already been discussed in §6.2 is that this study was not uniformly sensitive to ‘close’ companions found at separations smaller than $\sim 2''$, so these unresolved multiples will have been missed, resulting in a smaller multiplicity fraction. This effect is believed to be the most significant sample bias encountered and has been addressed by studying the nearly completely searched 10 pc sample. As detailed in §6.2, we have determined that a correction of 4.1% is needed for the stars between 10 — 25 pc.

If we multiply this 4.1% by the number of M dwarf systems in the sample found at distances 10 — 25 pc (934 systems), the number of close multiples missing from the sample amount to 38. However, we have identified 91 candidate multiple systems, 83 of which are currently believed to be single; the other eight are already known to have a companion at a large angular separation. An additional eight of these 83 candidates have parallaxes placing them within 10 pc, leaving 75 suspected close multiples at distances 10 — 25 pc. If these eight candidates within 10 pc are found to be multiple, they would need to be added to the currently known 37 (of 188) M dwarf systems known have companions at angular

separations $< 2''$, and the correction factor would increase to 8.3%. The number of close multiples missing at distances 10 — 25 pc would then increase to 78, a number very close to the 75 candidates that have already been identified.

7.2 Consistency Between Telescopes

Because this was an all-sky survey, multiple telescopes with different CCDs were used to gather both astrometric and photometric data. Here, comparisons are made between the instrument specifications from the various sites to determine whether the astrometry data are consistent. Photometry results from the 42in are then compared to those from the 0.9m and from the literature to determine whether they are in agreement.

7.2.1 *Astrometry*

The four telescopes used for the imaging campaign are one-meter class telescopes^a and have CCD cameras that provide similar pixel scales. As listed in Table 2.1, the CTIO/SMARTS 0.9m has pixels $0''.401$ in size, the CTIO/SMARTS 1.0m has $0''.289$ pixels, Lowell’s 42in has $0''.327$ pixels, and the USNO 40in has $0''.67$ pixels. While the 0.9m has a slightly larger pixel scale than the 1.0m and the 42in, the seeing was typically better at that site, allowing for better resolution, as shown in Figure 7.1. Only 22 (fewer than 2% of the survey) were observed at the USNO 40in, so we do not consider the coarser pixel scale to affect the overall survey in any significant way. Therefore, it was felt that overall, the data from the four telescopes used was of similar quality and that the results could be combined without

^aLowell Observatory’s 42in Hall telescope mirror is 1.1m; the USNO 40in telescope’s mirror is 1.0m.

modification. We note that all data were acquired without binning pixels.

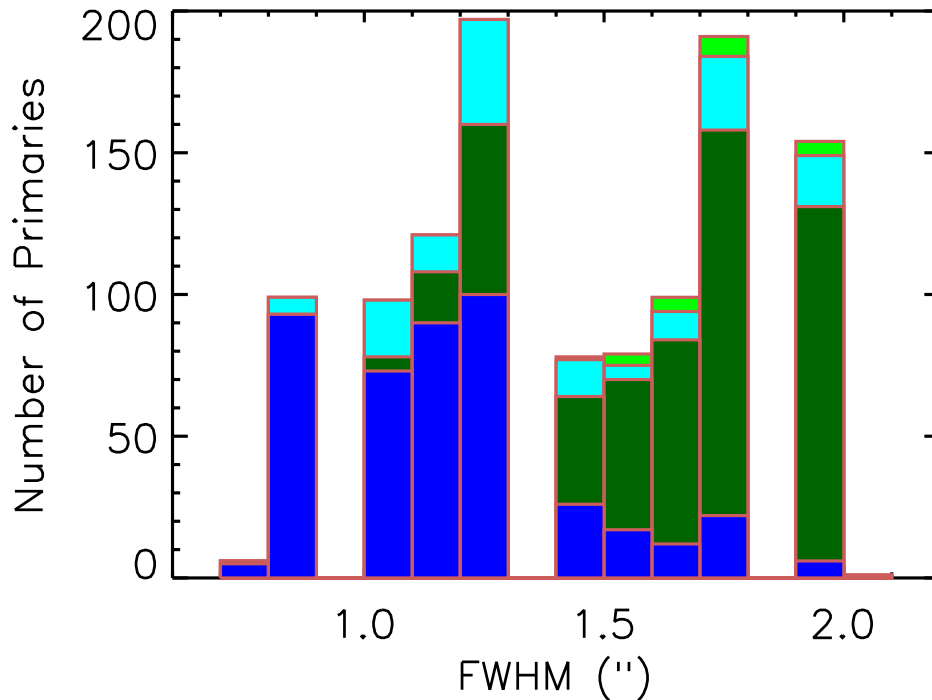


Figure 7.1 The seeing conditions experienced for the observations of the multiplicity sample in the I -band at each of the telescopes used. The four different telescopes are symbolized by the different colors: royal blue for the CTIO/SMARTS 0.9m, dark green for the Lowell 42in, cyan for the CTIO/SMARTS 1.0m, and bright green for the USNO 40in.

7.2.2 Photometry

The long history of published absolute photometry from the CTIO/SMARTS 0.9m as a by-product of the astrometry program (Winters et al. 2011, 2015, and citations in §3.2) is a testament to the quality of the data obtained with that telescope and instrument set-up. But it is important to ensure that the photometric data from the 42in and the 0.9m agree. Four targets were observed for photometry at both locations. Results match to 0.06 mag, except

for the R -band magnitude of GJ1167, as shown in Table 7.1, which can be attributed to a possible flare event observed at the time of observation at the 42in, as the V and I magnitudes are consistent. This object is in fact included in a flare star catalog of UV Cet-type variables (Gershberg et al. 1999). An additional six targets had published high quality photometry from the literature to which results from the Lowell 42in were compared^b. The photometry matches to within 0.08 mags for all six objects. As described in Winters et al. (2015), our typical 1σ errors are 0.03 mag, so the comparison of data presented here have differences of 2σ or less in 28 of the 30 cases shown in Table 7.1. No absolute photometry data were obtained from either the SMARTS/CTIO 1.0m or the USNO 40in telescopes.

Table 7.1: Overlapping Photometry Data

Name	$(V - K)$	V_J	R_{KC}	I_{KC}	# obs	tel/ref
2MA0738+2400	4.86	12.98	11.81	10.35	1	42in
		12.98	11.83	10.35	2	0.9m
G043-002	4.76	13.23	12.08	10.67	1	42in
		13.24	12.07	10.66	2	0.9m
2MA1113+1025	5.34	14.55	13.27	11.63	1	42in
		14.50	13.21	11.59	2	0.9m
GJ1167	5.59	14.16	12.67	11.10	1	42in
		14.20	12.82	11.11	1	0.9m
LTT17095A	4.22	11.12	10.12	9.00	1	42in
		11.11	10.11	8.94	...	Weis (1993)
GJ0015B	5.12	11.07	9.82	8.34	2	42in
		11.06	9.83	8.26	...	Weis (1996)
GJ0507AC	3.96	9.52	8.56	7.55	1	42in
		9.52	8.58	7.55	...	Weis (1996)
GJ0507B	4.64	12.15	11.06	9.66	1	42in
		12.12	11.03	9.65	...	Weis (1996)
GJ0617A	3.64	8.59	7.68	6.85	1	42in
		8.60	7.72	6.86	...	Weis (1996)
GJ0617B	4.67	10.74	9.67	8.29	1	42in
		10.71	9.63	8.25	...	Weis (1994)

^bWe note again that all photometry from the literature has been converted to the JKC system, where applicable.

7.3 Detection Limits

It is a difficult but important task to quantify the subjectivity contributed by human analysis. Outlined here are the detection limits for both the blinking and imaging campaigns, where an effort is made to account for the human element of the searches.

7.3.1 *Blinking Search*

The common proper motion (CPM) search had two elements that needed to be evaluated in order to confidently identify objects moving with the primary star in question: companion brightness and magnitude of each system's proper motion.

As archival SuperCOSMOS plates were used for the blinking campaign, it is important to determine which companions would have been bright enough to be detected on the plates during this part of the search. A companion would have to have been detectable on at least two of the three plates in order to notice its proper motion, so any companion would need to be brighter than the magnitude limits given in Table 5.3. As the search is for *stellar* companions, it is only necessary to be able to detect a companion as faint as the faintest object in the sample, effectively an M9.5 V at 25 pc.

The faintest target in the sample in both the V - and R -bands, RG0050.5-2722, has $V = 21.54$, $R = 19.19$, and $I = 16.70$. The B magnitude for this object will therefore be much fainter than the ~ 20.5 faintness limit of the B plate, and thus RG0050.5-2722 was not found on the B plate; however, it was identified on both the R and I plates, as its R and I magnitudes are both brighter than the limits of those plates. Ten other objects are too

faint to be seen on the B plate, but as is the case with RG0050.5-2722, all are bright enough for detection on the R and I plates. The faintest target in the I -band is DEN0909-0658, with $I = 17.18$, well within the magnitude limits of the SuperCOSMOS I plate. (This star is slightly bluer than RG0050.5-2722, and thus its V magnitude is slightly brighter.)

As the sample has no lower limit to the proper motion, the epoch spread between the plates needed to be large enough to detect the primary star moving in order to then notice a companion moving in tandem with it. Fifty-eight of the objects studied have μ less than Luyten's historical cut-off of $0''.18 \text{ yr}^{-1}$; the slowest has $\mu = 0''.03 \text{ yr}^{-1}$. In order to detect this slowest object moving by $1''.5$, the epoch spread would need to be 50 years. The three main SuperCOSMOS plates used provide coverage of only up to 28 years, so in eighteen cases, the POSS-I plate was used for primaries with Declination $-20 < \delta < +5^\circ$. This extended the epoch spread by eight to twenty-four years, enabling the movement of these eighteen objects to be perceived. As noted in the histogram of μ shown in Figure 7.2, these 58 slower-moving objects with $\mu < 0''.18 \text{ yr}^{-1}$ make up only $\sim 5\%$ of the sample.

The motions of an additional 150 primaries were not able to confidently be detected due to the epoch spread of the plates being less than 5 years. These will be compared to the I -band images taken during the imaging portion of the survey in the near future. Because this is the CPM part of the survey, these companions would have angular separations greater than $10''$, the separation subset that has a multiplicity rate of 4.6% (as discussed in §6.2 and shown in Figure 6.2). Currently, it is possible that seven CPM companions were missed due to this small epoch spread.

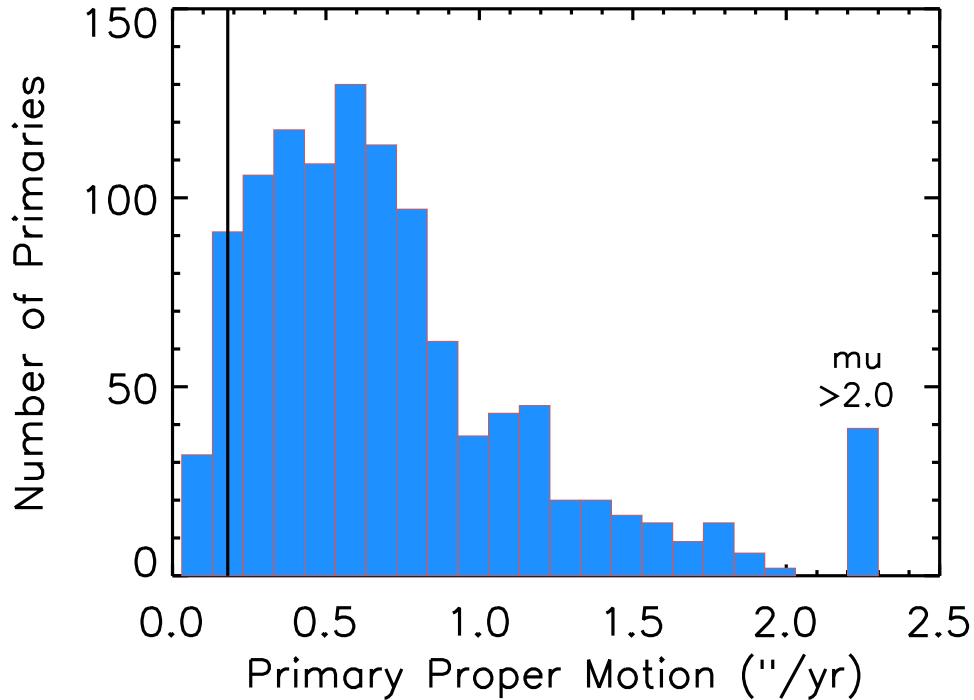


Figure 7.2 Histogram of the proper motion of the primary (or single) component in each system is plotted, with the vertical line indicating $\mu = 0''.18 \text{ yr}^{-1}$, the canonical lower proper motion limit of Luyten.

7.3.2 Imaging Search

A study of the detection limits of the imaging campaign was done for objects with a range of I magnitudes at $\rho = 1\text{--}5''$ and at $\Delta\text{mags} = 0$ up to 10 in one-magnitude increments for different seeing conditions at the two main telescopes where the bulk of the data were acquired: the CTIO/SMARTS 0.9m and the Lowell 42in.

Because the apparent I -band magnitudes for the stars in the multiplicity sample range from 5.32 — 17.18 (see Figure 5.2), objects with I -band magnitudes of 8, 12, and 16 were selected for investigation. Only 88 primaries (7.8% of the sample) have $I < 8$, so it was not

felt necessary to create a separate set of simulations around these brighter stars. These stars are listed in Table 7.2 with their I magnitudes, the FWHM at which they were observed and at which telescope, and any relevant notes.

As noted above, the faintest primary in the I –band found in the sample is DEN0909-0658 ($I = 17.18$), with $\pi = 42.5$ mas (corresponding to 23.5 pc), $(V - K) = 8.9$, and $M_V = 19.58$, all parameters that place it at the boundary of the sample in both distance and spectral type. Therefore, Δ mags of up to 10 magnitudes were probed in order to determine if a companion with $I = 18$ could be detected within 1 — 5'' of a primary with $I = 8$.

Table 7.2: Stars Used for Detection Limit Study

Star	I (mag)	FWHM (arcsec)	Telescope	Note
GJ0285	8.24	0.8	0.9m	
LP848-050AB	12.47J	0.8	0.9m	$\rho_{AB} < 2''$
SIP1632-0631	15.56	0.8	0.9m	
L032-009A	8.04	1.0	0.9m	$\rho_{AB} = 22''.40$
SCR0754-3809	11.98	1.0	0.9m	
BRI1222-1221	15.59	1.0	0.9m	
GJ0709	8.41	1.0	42in	
GJ1231	12.08	1.0	42in	
Reference Star	16 (scaled)	1.0	42in	
GJ2060AB	7.83J	1.5	0.9m	$\rho_{AB} = 0''.485$
2MA2053-0133	12.46	1.5	0.9m	
Reference Star	16 (scaled)	1.5	0.9m	
GJ0109	8.10	1.5	42in	
LHS1378	12.09	1.5	42in	
2MA0352+0210	16.12	1.5	42in	
Reference Star	8 (scaled)	1.8	0.9m	
SCR2307-8452	12.00	1.8	0.9m	
Reference Star	16 (scaled)	1.8	0.9m	
GJ0134	8.21	1.8	42in	
LHS1375	12.01	1.8	42in	
SIP0320-0446AB	16.37	1.8	42in	$\rho_{AB} < 0''.33$
GJ0720A	8.02	2.0	42in	$\rho_{AB} = 112''.10$
LHS3005	11.99	2.0	42in	
2MA1731+2721	15.50	2.0	42in	

Each of the stars was analyzed in seeing conditions of $1''.0$, $1''.5$, and $1''.8$, but because the seeing at CTIO is typically better than that at Anderson Mesa, where the Lowell 42in is located, we were able to push to $0''.8$ for the CTIO 0.9m, but had to extend to $2''.0$ for the Lowell 42in. These test stars were verified to have no known detectable companions within the $1 - 5''$ radii explored in this part of the project. We note that LP848-050AB has an astrometric perturbation due to an unresolved companion, but that at FWHM of $0.8''$, the two stars were still not resolved. As the imaging search probes separations $1 - 5''$, we argue that using this star does not affect the detection limit analysis. The other binaries used all either had larger or smaller separations than the $1 - 5''$ regions explored.

The *IDL shift* task was used to shift and add the science star as a proxy for an embedded companion, scaled by a factor of 2.512 for each magnitude difference. In cases where the science star was saturated in the frame, a reference star was selected from the shorter exposure taken in similar seeing in which the science star was not saturated. Its relative magnitude difference was calculated so that it could be scaled to the desired brightness in the longer exposure, and then it was embedded for the analysis. In all cases, the background sky counts were subtracted before any scaling was done.

Eighth magnitude targets were searched using the 3-second exposure to probe $\Delta I = 0$, 1, 2, 3, using the 30-second exposure for $\Delta I = 4$, 5, and using the 300-second exposure for $\Delta I = 6$, 7, 8, 9, 10. Similarly, twelfth magnitude objects were probed at $\Delta I = 0$, 1, 2, 3 using the 30-second exposure and at $\Delta I = 4$, 5 with the 300-second frame. Finally, the

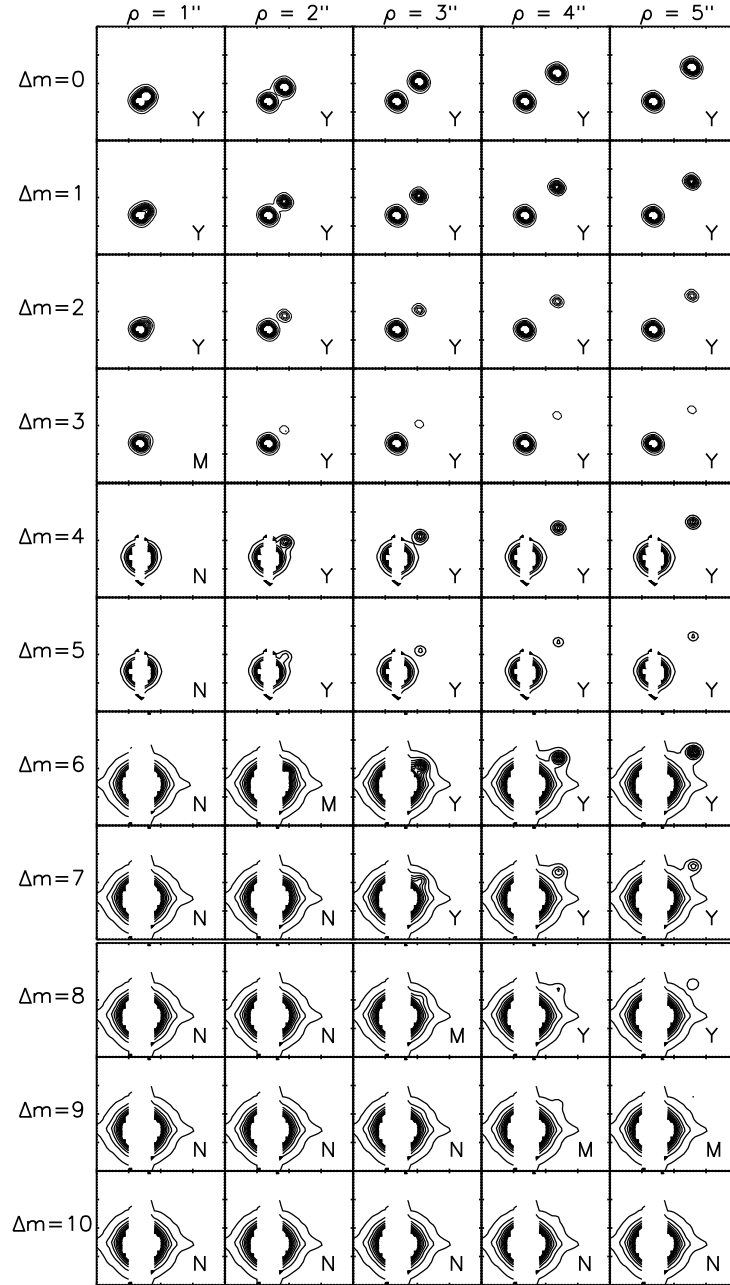


Figure 7.3 Detection Limits for the CTIO/SMARTS 0.9m: Contour plots for L032-009A, with $I = 8.04$ in $1''.0$ seeing conditions for an embedded companion at $\rho = 1\text{--}5''$ with $\Delta m_{\text{ags}} = 0\text{--}10$. The Y, N, and M labels indicate *yes*, *no*, or *maybe* for whether or not the embedded companion is detectable. The 3-second exposure was used for $\Delta m_{\text{ags}} = 0\text{--}3$, the 30-second exposure was used for $\Delta m_{\text{ags}} = 4\text{--}5$, and the 300-second exposure was used for $\Delta m_{\text{ags}} = 6\text{--}10$. Thirty-five simulated companions were detected, five were possibly detected, while fifteen were not detected.

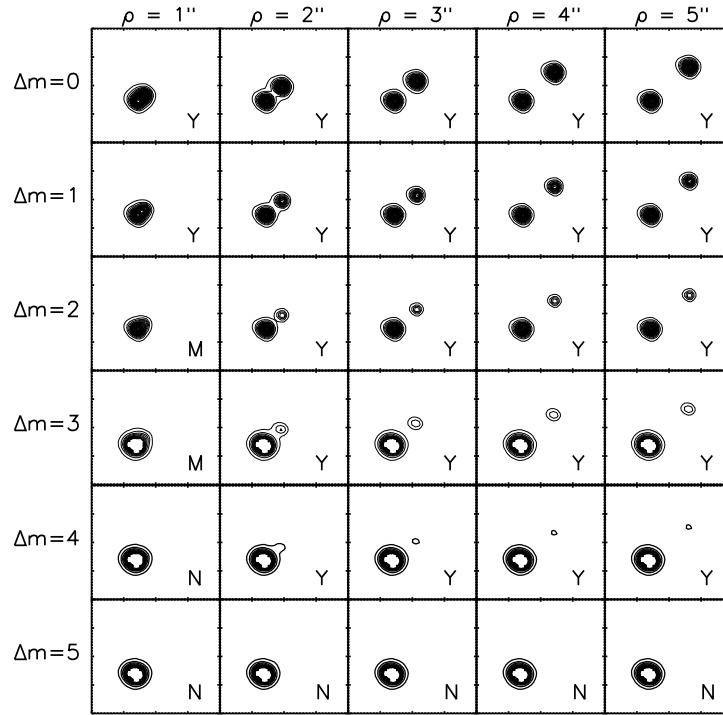


Figure 7.4 Detection Limits for the CTIO/SMARTS 0.9m: Contour plots for SCR0754-3809, with $I = 11.98$ at $1''.0$ seeing conditions for an embedded companion at $\rho = 1-5''$ with $\Delta m = 0-5$. The Y, N, and M labels indicate *yes*, *no*, or *maybe* for whether or not the embedded companion is detectable. The 30-second exposure was used for $\Delta m = 0, 1, 2$, and the 300-second exposure was used for $\Delta m = 3, 4, 5$. Twenty-two simulated companions were detected, two were possibly detected, while six were undetectable.

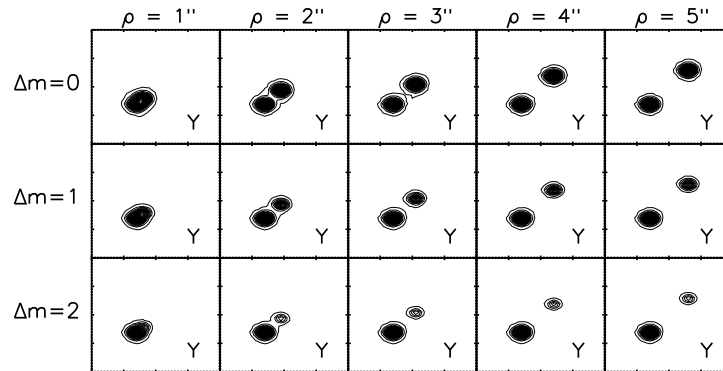


Figure 7.5 Detection Limits for the CTIO/SMARTS 0.9m: Contour plots for BRI1222-1221, with $I = 15.59$ at $1''.0$ seeing conditions for an embedded companion at $\rho = 1-5''$ with $\Delta m = 0-2$. The Y, N, and M labels indicate *yes*, *no*, or *maybe* for whether or not the embedded companion is detectable. The 300-second exposure was used. Fifteen out of fifteen simulated companions were detected.

300-second exposure was used to explore the regions around the sixteenth magnitude objects for evidence of a stellar companion at $\Delta I = 0, 1, 2$. The images were examined in *IRAF* using both the contour and radial plot features; however, only contour plots are presented here. We note that the radial plots are often more sensitive.

Example contour plots for seeing conditions of $1''.0$ at the CTIO/SMARTS 0.9m telescope are shown in Figures 7.3, 7.4, and 7.5. The ‘Y’, ‘N’, or ‘M’ labels in each plot indicate *yes*, *no*, or *maybe* for whether or not the companion was detectable by eye at the separation, magnitude, and seeing conditions explored. In most cases, a companion would have been detected. As can be seen, the science star is saturated in the frames used for ΔI greater than 4. The companion can be detected in 72 of 100 simulated situations, possibly detected in seven more cases, and not detected in twenty-one cases. The conditions where the companion remains undetected are at small ρ , at $\Delta I >$ than ~ 4 , and at all ρ for $\Delta I = 10$. We note that use of the radial plots will sometimes permit detection of an object that was not visible in the contour plot. Also, comparison of any elongated stars’ contour plots to contour plots of other stars in the frame allow judgement calls of whether or not the star in question is multiple.

All 800 contour plots made with *IDL* are presented in Appendix IV. As noted in §7.1.4, the ΔI for the M dwarf sequence is slightly less than nine magnitudes, so ΔI s of ten would be detections of brown dwarf companions. There were no companions detected with $\Delta I = 10$ around the brighter stars in the simulations. These simulations emphasize that this survey was not sensitive to brown dwarf companions at separations $1 - 5''$ around the very bright

M dwarfs in the sample. Because this search was for stellar companions, we can then ignore the $\Delta I = 10$ results for our summary of detection sensitivity, reducing the total contour plot number to 760. We will not consider the non-detections in the $\Delta I = 10$ simulations in our summary or in 7.3.

Table 7.3 presents a summary of the results of the detections of the embedded companions, with the fake companions being detected 68% of the time, possibly being detected in 9% of the simulations, and not detected in 23% of the simulations. For the simulations of bright stars ($I = 8$), 57% of the embedded companions were detected. For the stars with $I = 12$, the simulated companions were detected in 66% of the cases tested. For the faint stars ($I = 16$), the embedded companions were detected in 89% of the cases tested. At $\rho = 1''$, the embedded companion was detected in 27% of cases, possibly detected in 20% of cases, and not detected 53% of cases. However, we do not claim high sensitivity at separations this small. The detections are better in simulations at larger ρ . For $\rho = 2''$, the percentages are 68%, 1%, and 22% for the ‘yes’, ‘maybe’, and ‘no’ cases, respectively. They are 80%, 8%, and 13% for the test cases for $\rho = 3''$, 83%, 5%, 13% for the simulations for $\rho = 4''$, and 83%, 3%, 14% for the cases where $\rho = 5''$.

Table 7.3: Detection Limit Summary

Seeing Conditions	Yes	Maybe	No
CTIO 0.9m			
FWHM = 0".8	75	5	15
$I = 8$ mag	36	5	9
$I = 12$ mag	24	...	6
$I = 16$ mag	15	...	...
FWHM = 1".0	72	7	16
$I = 8$ mag	35	5	10

$I = 12$ mag	22	2	6
$I = 16$ mag	15	...	...
FWHM = $1''.5$	65	11	19
$I = 8$ mag	33	5	12
$I = 12$ mag	20	3	7
$I = 16$ mag	12	3	...
FWHM = $1''.8$	58	10	27
$I = 8$ mag	28	4	18
$I = 12$ mag	18	3	9
$I = 16$ mag	12	3	...
TOTAL - CTIO 0.9m	270	33	77
Lowell 42in			
FWHM = $1''.0$	70	4	21
$I = 8$ mag	34	4	12
$I = 12$ mag	21	...	9
$I = 16$ mag	15	...	...
FWHM = $1''.5$	64	10	21
$I = 8$ mag	33	6	11
$I = 12$ mag	17	3	10
$I = 16$ mag	14	1	...
FWHM = $1''.8$	60	11	24
$I = 8$ mag	29	6	15
$I = 12$ mag	19	2	9
$I = 16$ mag	12	3	...
FWHM = $2''.0$	54	12	29
$I = 8$ mag	24	9	17
$I = 12$ mag	18	2	10
$I = 16$ mag	12	1	2
TOTAL - Lowell 42in	248	37	95
TOTAL	518	70	172

Figure 7.6 illustrates the detection limits of the survey. Four companions have angular separations outside the range of the plot, but well within the $600''$ sensitivity of the searches. We note that the largest ΔI detected was ~ 6.4 (GJ0184B), while the largest angular separation detected was $295''$ (GJ0049B).

To summarize, biases that affect the survey's results have been noted, including the

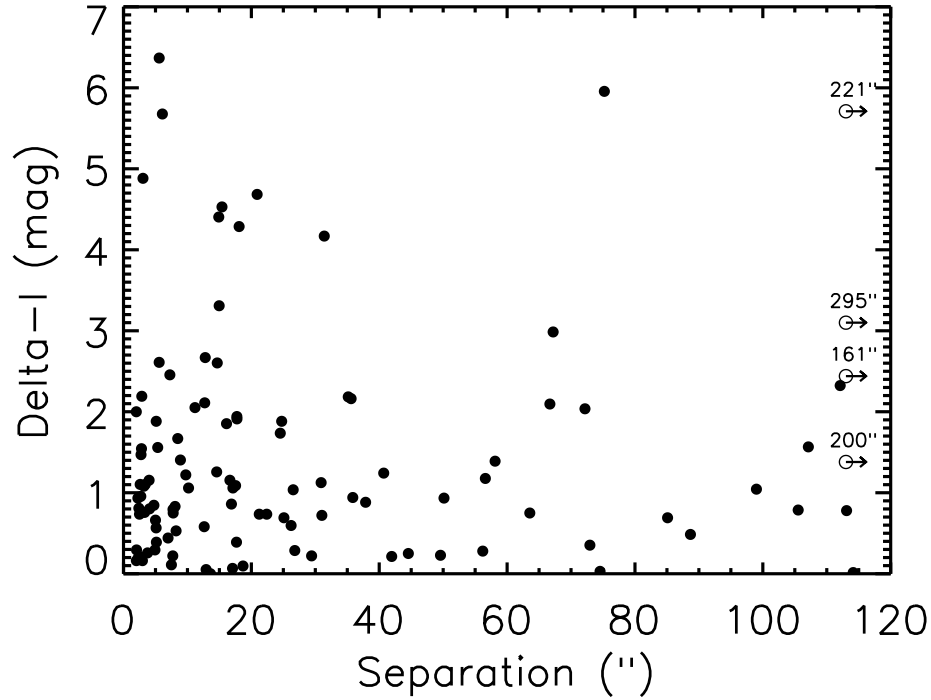


Figure 7.6 ρ vs. ΔI is plotted to show the observational limits of the survey. The solid points indicate companions that were detected during the two main campaigns (imaging and blinking). The open circles with arrows indicate companions that have lie outside the range of the plot: L977-016B with $\rho = 200''$ and $\Delta I = 1.38$, G192-011B with $\rho = 161''$ and $\Delta I = 2.44$, GJ0049B with $\rho = 295''$ and $\Delta I = 3.10$, and GJ0644E with $\rho = 221''$ and $\Delta I = 5.71$.

ubiquitous Malmquist bias, missing low mass primaries, user-imposed parallax criteria limits, as well as faint companions at small separations. An attempt has also been made to mitigate the human error factor that contributes to searches *by eye*. As we have shown, in at least two-thirds of the cases tested, a companion within the separation and Δmag limits probed would have been discernible from images alone — additional close companions have been recovered via high resolution imaging techniques, astrometric perturbations, and literature searches.

CHAPTER 8

CONCLUSIONS

8.1 The Big Picture

It is important to put the results from this survey in perspective. Comparisons to the results from other M dwarf multiplicity surveys will be made here, as well as to surveys of more massive stars. The missing mass problem will be then be addressed, including a discussion of how both missing primaries and unresolved companions affect the red dwarf mass function. We will assess the current status of the nearby M dwarf population, along with its relevance to those conducting planet searches. Finally, directions for future work will be outlined.

8.1.1 Comparison to Other M Dwarf Surveys

As noted in Chapter 5, previous surveys have been done to determine M dwarf multiplicity, but most have studied samples on the order of a hundred stars. We reproduce in Table 8.1 the listing of those efforts outlined in Chapter 5, Table 5.2, with the addition of the multiplicity rate reported by each survey. In the notes column, we provide information related to each particular study that indicates whether a direct comparison is possible or even relevant.

Table 8.1: Previous M Dwarf Multiplicity Studies - Multiplicity Rates

Reference	#	Mult.	Notes
Skrutskie et al. (1989)	55	...	multiplicity not reported
Henry & McCarthy (1990)	27	34 ± 9	
Henry (1991)	74	20 ± 5	
Fischer & Marcy (1992)	28-62	42 ± 9	varied sample
Simons et al. (1996)	63	40	
Delfosse et al. (1999a)	127	...	multiplicity not reported
Law et al. (2006)	32	7^{+7}_{-3}	M5 - M8
Endl et al. (2006)	90	...	Jovian search
Law et al. (2008)	77	$13.6^{+6.5}_{-4}$	late-type M's
Bergfors et al. (2010)	124	32 ± 6	young M0 - M6
Dhital et al. (2010)	1342	...	wide binary search
Law et al. (2010)	36	...	wide binary search
Dieterich et al. (2012)	126	...	brown dwarf search
Janson et al. (2012)	701	27 ± 3	young M0 - M5
Janson et al. (2014b)	286	21-27	> M5
Ward-Duong et al. (2015)	245	23.5 ± 3.2	K7 - M6
this work	1122	27.8 ± 1.3	all trig. distances

At first glance, it is evident that the multiplicity fractions reported by others varies over a large range, from 7% to 42%. However, it is necessary to probe deeper to understand the limitations of each survey.

Some of the surveys (Skrutskie et al. 1989; Delfosse et al. 1999a) did not report a multiplicity fraction in their results, so they will not be addressed. Others explored the regions around M dwarfs in search of different types of objects (brown dwarfs or exoplanets) or at different separation regimes and are thus not relevant to the present comparison. Dhital et al. (2010) and Law et al. (2010) explored only the wide binary fraction, while other searches

were for substellar objects, brown dwarfs in the case of Dieterich et al. (2012) and Jovian mass planets in the case of Endl et al. (2006). While these searches for substellar objects can be considered lower limits for the types of companions found around M dwarfs, we note that stellar companions are not always reported. Law et al. (2006, 2008) probed different sample sizes of late-type M dwarfs using the same technique and report multiplicity rates that are different by a factor of two, but still within their large errors. We note that the multiplicity rate calculated here for the lowest mass bin of M dwarfs agrees with that reported in Law et al. (2008).

A number of the other samples for M dwarf multiplicity determination were volume-limited. Henry & McCarthy (1990) searched the 5 pc sample of M dwarfs, while Henry (1991) and Simons et al. (1996) extended the volume searched to 8 pc. Fischer & Marcy (1992) searched a varied sample of M dwarfs within 20 pc. The samples of Bergfors et al. (2010); Janson et al. (2012), and Janson et al. (2014b) were all within 52 pc, but had mostly photometric parallaxes. The only other sizeable survey that is volume-limited and has trigonometric parallaxes available is that of Ward-Duong et al. (2015); however, their sample does not include any late M dwarfs.

We find that our multiplicity fraction result agrees with most of the more recent surveys (Bergfors et al. 2010; Janson et al. 2012, 2014b; Ward-Duong et al. 2015) (32%, 27%, 21 — 27%, 24%, respectively). Our results also agree with the earlier studies of Henry & McCarthy (1990) and Henry (1991) (34% and 20%) within the errors, but are smaller than the studies of Fischer & Marcy (1992) and Simons et al. (1996) (42% and 40%). It is likely that some

of the earlier works simply did not have enough targets from which to calculate accurate results with low statistical errors.

We find a somewhat larger multiplicity fraction than that of Ward-Duong et al. (2015), who had a volume-limited sample of late-K to mid-M dwarfs, all with trigonometric parallaxes, although results agree within the error bars. We note that the fraction that they report should be larger, as (a) it includes the more massive M dwarfs, which have a higher multiplicity rate, (b) it samples well the smaller separations, which dominate the multiplicity rate, and (c) their stars were all closer (distances $< 15\text{pc}$) and therefore their sample should be more complete.

The answer lies in the fact that they used parallaxes only from *HIPPARCOS* (van Leeuwen 2007). Examination of the sample studied here reveals an additional 308 M dwarfs with parallaxes from sources other than van Leeuwen (2007) that place them within 15 pc, 247 of which are within the color-limits of their sample ($3.65 < (V - K) \lesssim 6.8$)^a. Of course, unearthing every parallax to every nearby M dwarf is no trivial task. It is much simpler to use one source for trigonometric distances. But the benefit of access to the RECONS 25 pc Database for creation of the sample presented here is emphasized.

Due to all of the targets in our multiplicity sample having accurate trigonometric parallaxes, the study presented here has a number of advantages over ones conducted by others. All of the targets considered were reliably known to be within 25 pc. Because we measured *VRI* photometry for all targets lacking it, we were able to use data all on the same photometric system, combined with the existing parallaxes, to calculate M_V and thus, estimate

^aThis red limit has been estimated from the color-color diagram in their paper, as it is not specified.

masses. Most other surveys were forced to use less accurate types of distances to draw conclusions from their data. We were also able to calculate projected separations that were more accurate than those of others. Our survey was comprehensive in two search regimes, while also able to infer the presence of candidate companions using other methods.

8.1.2 Comparison to More Massive Stars

Listed in Table 8.2 are the multiplicity statistics for stars of other main sequence spectral types. While brown dwarfs are not main sequence objects, they have been included for comparison. The percentage of stars that they comprise has been purposely left blank, as they are not stars, and in fact the size of the brown dwarf population is not well constrained. As previously mentioned, the multiplicity rate decreases with primary mass. The thorough study presented here provides an anchor for the statistics at the low end of the stellar main sequence, enabling a complete picture of stellar multiplicity.

Table 8.2: Multiplicity of Main Sequence Stars

Spectral Type	% of Stars	Ref	Mult. Fraction	Comp. Fraction	Mult Ref
O	<0.1	2	>80	130	5
B	0.1	2	70	100	3
A	0.6	2	70	100	3
F	3.3	2	50	75	6
G	7.8	2	46	75	6
K	10.2	2	~40	56	6
M	75.0	4	27	31	1
L,T	...		22	22	3

References: (1) this work; (2) Binney & Merrifield (1998); (3) Duchêne & Kraus (2013); (4) Henry et al. (2006); (5) Mason et al. (2009); (6) Raghavan et al. (2010).

Solar-type FGK stars are the ones with which we are most familiar, as they make up $\sim 21\%$ of all stars (Binney & Merrifield 1998). More massive stars of types OBA are even more rare, accounting for less than 1% of all stars (Binney & Merrifield 1998). Table 8.2 gives the multiplicity fraction of dwarf stars by spectral type, along with the percentages of all stars made up by that spectral type. The K dwarf multiplicity fraction is the most uncertain, with no comprehensive multiplicity search having yet been done for that spectral type. While the multiplicity fraction decreases as a function of primary mass, it is evident that the number of stars increases with decreasing mass, which is why the large study reported here is so important.

Table 8.3: Multiplicity Example

Spectral Type	% of Stars	# of Stars	Mult. Fraction	# Mult
O	0.003	30	80	24
B	0.1	1,000	70	700
A	0.6	6,000	70	4,200
F	3.3	33,000	50	16,500
G	7.8	78,000	46	35,880
K	10.2	102,000	40	40,800
M	75.0	750,000	27	202,500
	97.0	970,030	31.0	300,604

From this now complete picture of stellar multiplicity, we can determine the multiplicity fraction of all star systems. Consider one million stars. Table 8.3 duplicates the percentages of stars for each main sequence spectral type and the multiplicity fraction for each of those spectral types from Table 8.2. In addition, however, is listed the number of stars within

one million that each spectral type would contribute and how many of those would be multiple. The extra three percent of stars not shown in the second column are made up of giants, supergiants, and white dwarfs (Binney & Merrifield 1998). Based on the numbers presented, we can conclude that the multiplicity fraction of all main sequence star systems is 31.0%, and that therefore, **most stellar systems are single.**

8.2 Missing Mass Within 25 pc

Due to their low luminosities, the M dwarfs suffer from incompleteness as a population, even in the solar neighborhood. This can have a critical effect on determinations of the Initial Mass Function (IMF), the relative number of stars per mass bin. As shown for the southern M dwarfs in Figure 3.9, it is anticipated that hundreds, perhaps thousands, of red dwarfs still remain to be discovered within 25 pc. With the multiplicity sample, it is possible to assess what portions of the known total red dwarf mass each sub-population of primaries and their components comprise. We can then infer how much ‘missing mass’ can be attributed to missing primaries and hidden companions in the sample, and then estimate which of these elusive solar neighborhood members are most likely to be yet undetected and how they might affect the IMF.

8.2.1 *Missing Primaries*

First, it is important to discuss the density of the nearby stellar system population, as defined by the primary stars. Population density diagrams provide a gauge of the uniformity of systems within a volume stretching to 25 pc, as shown in Figure 8.1, where M_V , a proxy for

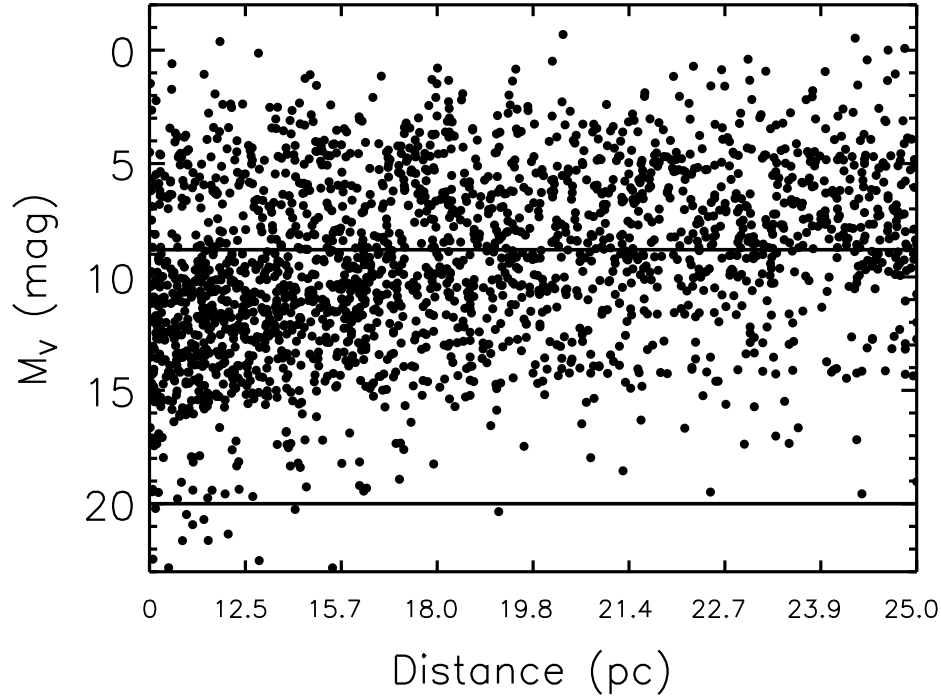


Figure 8.1 Population density plot for the entire 25 pc sample. Illustrated is the constant stellar density to 25 pc for brighter and more massive objects in the solar neighborhood from $M_V = 0 - 8.8$. The horizontal lines outline the M dwarf region at $M_V = 8.8 - 20$.

mass, is plotted versus distance in eight equal volume shells. It is evident that the density of the more massive ($M_V = 0 - 8.8$ mags) stellar members of the solar neighborhood is constant to 25 pc. Thus, a constant density for the M dwarfs can be assumed as well.

With the expectation that the nearby M dwarf population should be uniformly distributed to 25 pc, we can turn our attention to the state of the current census. Figures 8.2 (a) and (b) are population density diagrams for the M dwarf sample within 25 pc, where mass is plotted versus distance in eight equal volume shells to 25 pc for the primaries alone (a) and all M dwarfs (b) in the multiplicity project. Primaries have been noted in red, the companions in

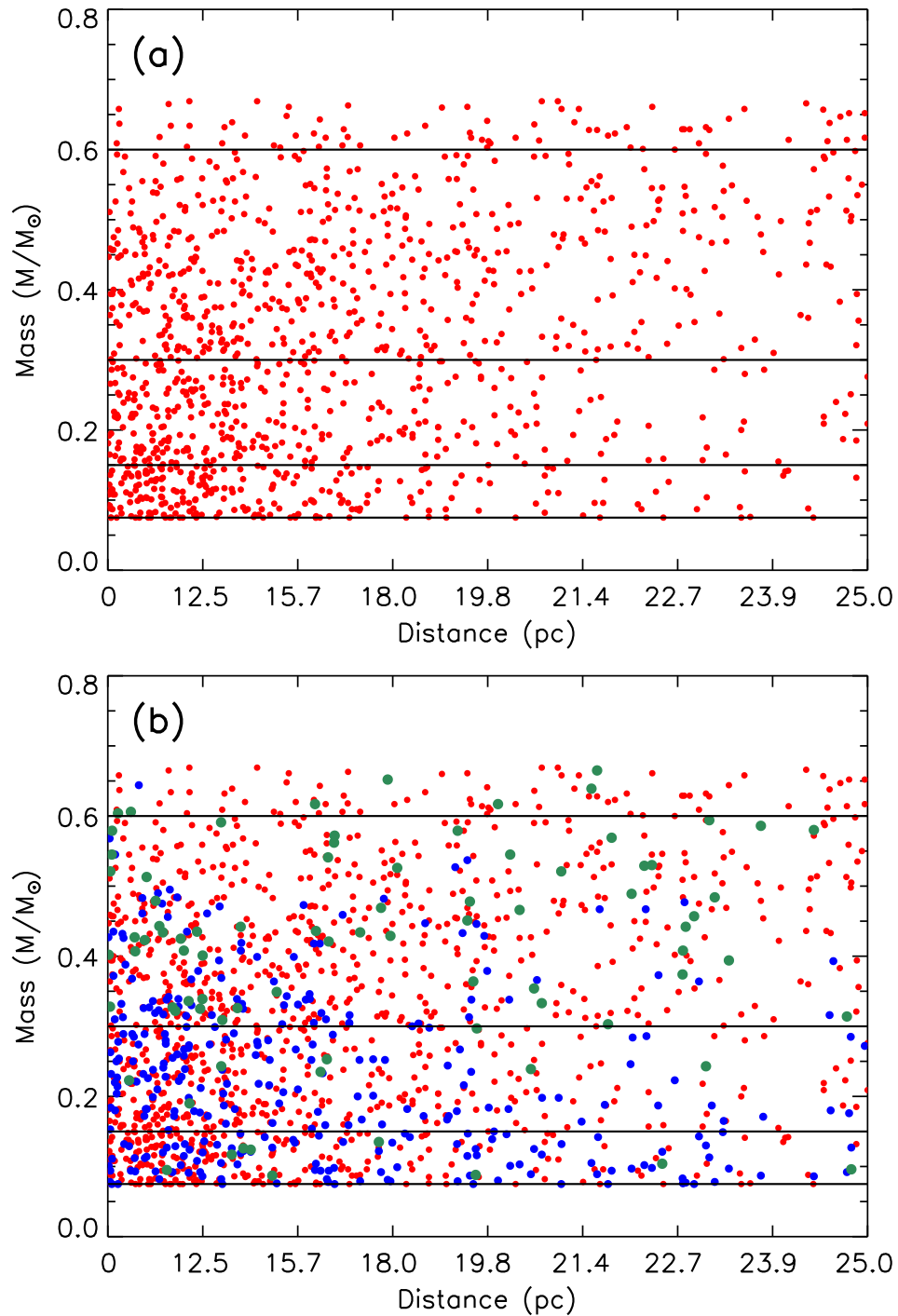


Figure 8.2 Population density diagrams. (a) A population density diagram for the 1122 M dwarf primaries in the multiplicity sample with masses estimated from deblended photometry. (b) A population density diagram for the 1431 M dwarf components in the multiplicity sample with masses estimated from deblended photometry. Primaries are plotted in red; companions in blue, suspected new companions in green. The horizontal lines divide the sample into subsamples that span factors of two in mass.

blue, and the suspected companions in green. The horizontal lines indicate the subsamples of M dwarfs at masses $0.075 - 0.15 M_{\odot}$, $0.15 - 0.30 M_{\odot}$, and $0.30 - 0.60 M_{\odot}$ (divisions by factors of two in mass) that have been analyzed. It is evident that the closer primaries are more uniformly distributed, but that beyond ~ 15 pc, the density drops, indicating that both primaries, particularly those in the lowest mass regions, and secondaries are missing at further distances. The missing secondaries were revealed previously in the cumulative multiplicity fraction (Figure 6.2).

Next, we can analyze the collection of M dwarfs by mass subset to determine which of the subsamples are most incomplete and at what distances their numbers begin to diverge from expected values. Figure 8.3 illustrates cumulative curves of the numbers of M dwarf primaries in each mass bin (1048 with masses less than $0.6 M_{\odot}$) *currently* found within 25 pc as a function of increasing distance. Mass estimates are calculated from deblended photometry. The solid curves represent the numbers of actual red dwarf primaries in each mass bin. The dashed lines are the expected numbers of primaries, based on the number found either within (a) 5 pc or (b) 10 pc and extrapolated to 25 pc. The dotted lines are the Poisson error limits calculated from the number of objects either within (a) 5 pc or (b) 10 pc. Orange indicates the bin of the largest mass objects ($0.30 - 0.60 M_{\odot}$), red shows the mid-mass bin ($0.15 - 0.30 M_{\odot}$), and brown is for the lowest mass bin ($0.075 - 0.15 M_{\odot}$).

Let us consider Figure 8.3(b) first. The curves of known stars and predicted stars appear to be the same up to distances of 15, 13, and 11 pc, respectively for the large, medium, and small mass bins. The sample of most massive stars (the orange curve) appears most

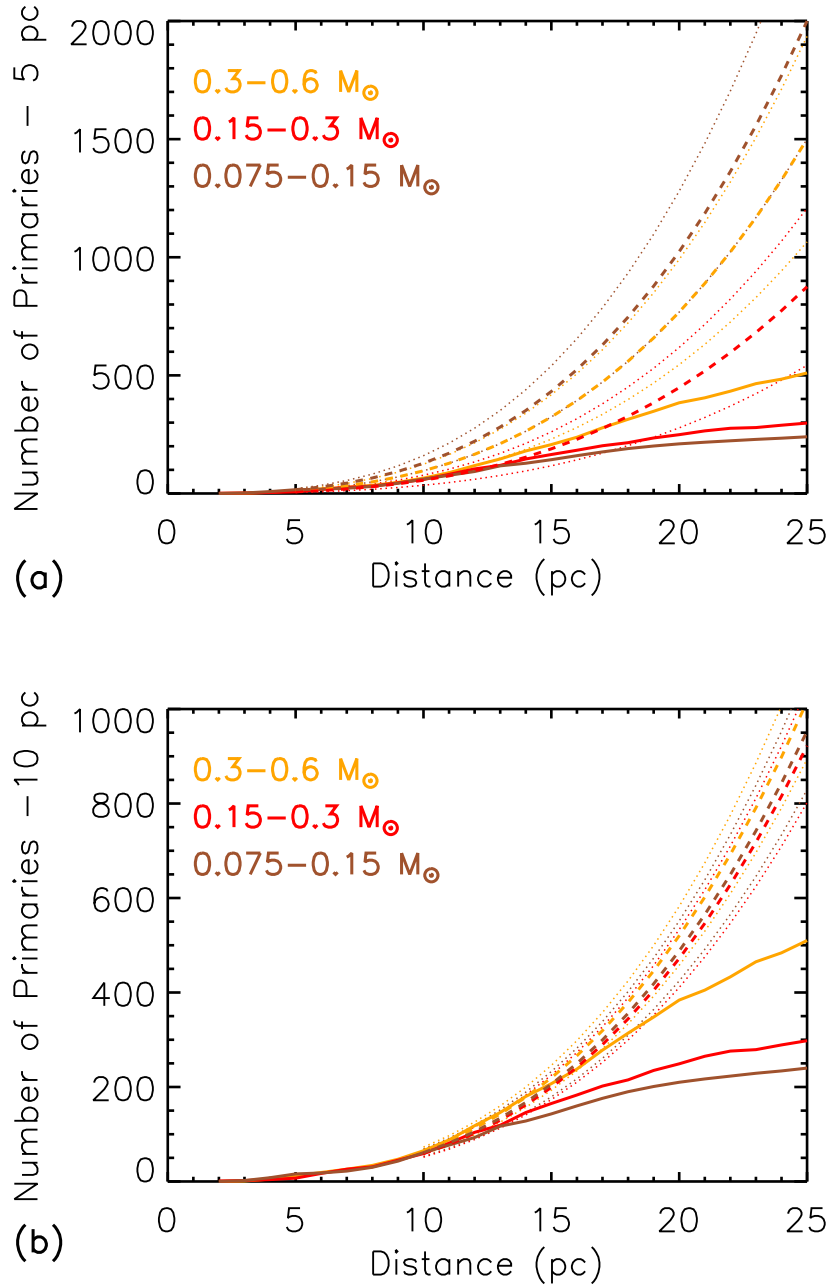


Figure 8.3 Cumulative censuses of M dwarf primaries in the multiplicity study. Masses have been estimated from the deblended photometry of M dwarf primaries. The solid lines represent the cumulative known numbers of M dwarf primaries in each mass bin. The dashed lines indicate the expected number of primaries in each mass bin extrapolated to 25 pc from the number known to lie within (a) 5 pc or (b) 10 pc, and assuming a constant stellar density. The dotted lines are the upper and lower Poisson error limits.

complete, while the sample of least massive stars (the brown curve) is the most incomplete at 25 pc, which is expected. The errors on the extrapolated values are satisfyingly small, due to a reasonable number of objects within the three mass bins at 10 pc (65, 59, and 61 for the largest, medium, and lowest mass bins, respectively). But these numbers are all very similar, and an impression is given that each bin therefore makes up an equal percentage of the M dwarf population. But this is not what is expected, judging from the trend presented in Table 8.2 of increasing numbers of objects with decreasing mass. There is no reason to expect that the situation would change suddenly in the M dwarf regime. We expect that the lowest mass bin of M dwarfs will be the most populous, hinting that more objects in the mid- and lowest mass bins remain to be found even within 10 pc.

Let us now inspect Figure 8.3(a). For now, we assume that we know all stars within 5 pc, even though the number of objects found in each mass bin is small: 12, 7, and 16 for the large, medium, and small subsamples, respectively. Admittedly these are very small numbers of stars. Surprisingly, the medium mass bin appears complete to ~ 13 pc, while the curves for the largest and lowest mass objects already diverge from the expected curves at ~ 6 pc. But the expected incompleteness of the lowest mass subsample is revealed. All of the curves we expect to shift upward to larger percentages of the sample once more M dwarfs are discovered and/or have parallaxes measured.

8.2.2 Current Census of M Dwarf Primaries

Here we assess the current status of M dwarf primaries in the solar neighborhood. Recent results from the MEarth survey (Dittmann et al. 2014) have added new parallaxes for 653

northern M dwarf systems within 25 pc. We show the updated statistics in Table 8.4 for M dwarfs within 25 pc with three different methods of distance determinations. We note that all red dwarfs with photometric distances (*pltdists* and *ccddists*) in this table were studied in this thesis, as were all those with *trgdists* aside from the 653 from Dittmann et al. (2014).

It is evident that great strides are being made toward identifying members of the nearby M dwarf population and determining their distances. Upcoming results from *Gaia* should make large contributions to this effort. Ultimately, we expect there to be ~ 5000 M dwarf primaries within 25 pc.

Table 8.4: Current 25 pc M Dwarf Statistics

Type of Distance	North	South	All-Sky
<i>pltdists</i>	...	500	500
<i>ccddists</i>	...	462	462
<i>trgdists</i>	558	564	1122
MEarth (<i>trgdists</i>)	653	...	653
TOTAL	1211	1526	2737

8.2.3 Mass Contributions from Primaries and Hidden Companions

It is now interesting to consider the contributions to the Galactic mass budget by M dwarfs. How much mass is found in the primaries and how much do companions add to the M dwarf mass budget? How much mass may be hidden from unresolved binaries?

Before deblending any of the photometry from which masses are estimated, a naive totaling of the mass of all primaries yields $368 M_{\odot}$. However, of the 266 primaries in the sample of multiples, 195 have 204 companions located at angular separations of less than

2'', resulting in 'joint', or blended, V magnitudes for the primaries, for which an accounting must be made.

The total mass of the 195 blended primaries is $69 M_{\odot}$; after deblending this decreases to $64 M_{\odot}$, with all the primaries now estimated to contain $364 M_{\odot}$. But, the deblended companions have now added $45 M_{\odot}$ to the M dwarf mass, indicating that an additional 12% of M dwarf mass was hidden as unresolved stars.

The total mass of all companions at all separations is $71 M_{\odot}$, bringing the total mass in M dwarfs known within 25 pc to $435 M_{\odot}$. This means that **16% ($71 M_{\odot}/435 M_{\odot}$) of M dwarf mass is found in companions, with unresolved companions contributing 63% ($45 M_{\odot}/71 M_{\odot}$) of the companion mass and donating 10% ($45 M_{\odot}/435 M_{\odot}$) to the total mass budget of M dwarfs.** This is not quite surprising, as in Figure 6.2 in §6.2, it was shown that the majority of companions are found at $\rho < 2''$. However, the quantification is illuminating.

8.2.4 The Luminosity and Mass Functions

It is worthwhile to return to the luminosity and mass functions initially presented in Chapter 5. Shown in Figure 8.4 are the deblended luminosity functions for (a) the primaries only and (b) all M dwarf components in the multiplicity survey. Primaries are indicated in red, while the companions are shown in blue. The V magnitude has been deblended in both histograms before the calculation of M_V and subsequently, mass. The vertical lines at $M_V = 9.25$, 11.80, and 13.86 further divide the sample into smaller mass bins corresponding to 0.60, 0.30, and $0.15 M_{\odot}$ for analysis. Again, note that the brighter (and more massive) M dwarf primaries

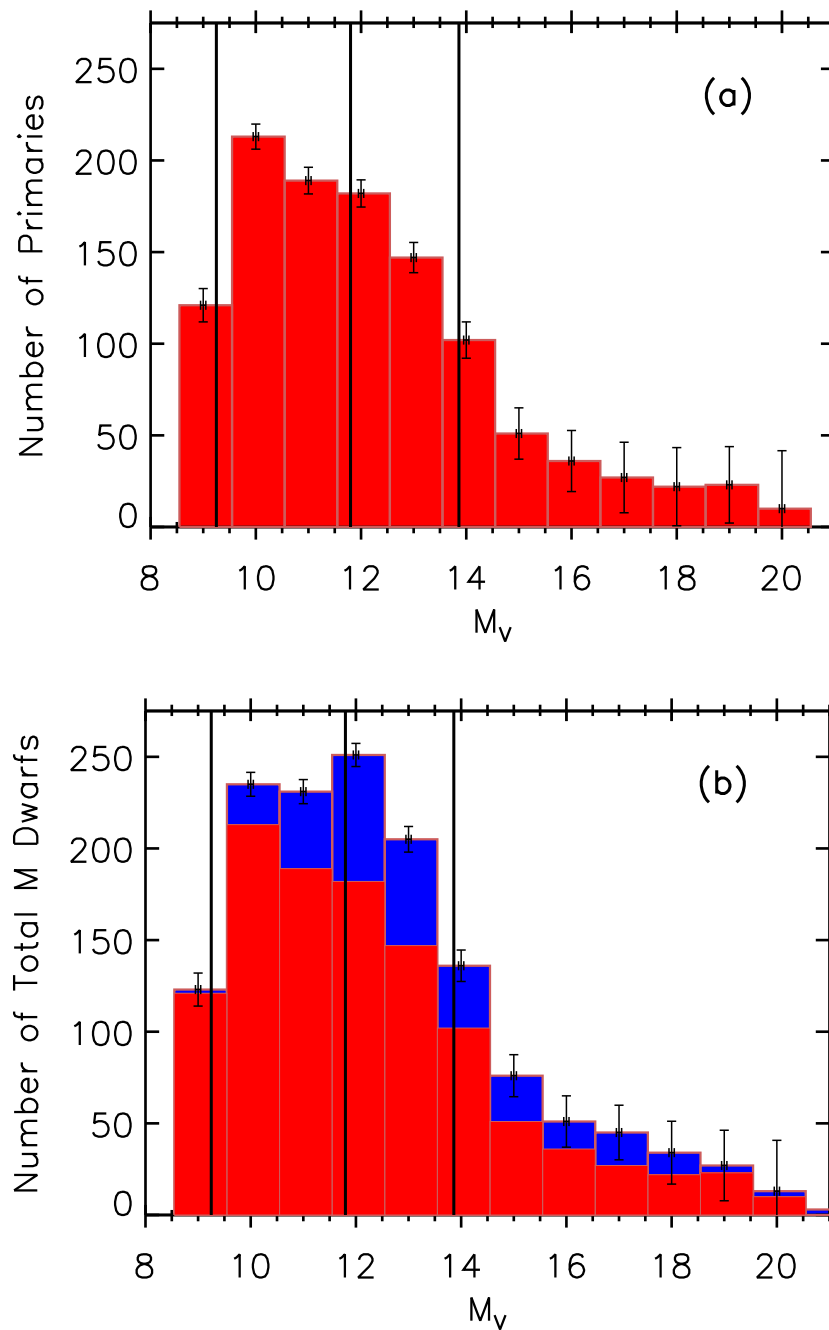


Figure 8.4 Deblended Luminosity Function. (a) The luminosity function for the 1122 M dwarf primaries in the multiplicity survey with M_V calculated from deblended photometry. (b) The luminosity function for all 1431 M dwarfs in the multiplicity survey, including both primaries and their M dwarf companions. Primaries are plotted in red; companions in blue. The scales are the same for both plots to emphasize the contributions of the companions. Errors in the y-direction are the Poisson errors per bin; errors in the x-direction are ~ 0.05 mags. The vertical lines denote the subdivisions by mass explored throughout the study.

have more companions, which is expected from the trend of decreasing multiplicity fraction by primary mass, as shown in Figure 6.7 in §6.4.

The mass functions provide a wealth of information. Figure 8.5 shows (a) the MF for the 1122 primaries and (b) the MF for all 1431 M dwarf components in the survey. In Figure 8.5(a), there is a gentle, but steady rise to the end of the stellar main sequence, what we have defined to be $0.075 M_{\odot}$. This feature becomes quite dramatic in Figure 8.5(b), with the addition of the 308 companions, as they are all lower masses than their primaries, by definition. Comparison of the LF and MF for the M dwarf primaries within 25 pc to the LF and MF of the more complete sample of M dwarf primaries within 10 pc in Figure 8.6 indicate that the increase of the mass function to the end of the main sequence is a real phenomenon.

The current thought on the IMF in the low-mass star regime is that there is a peak at $\sim 0.2\text{--}0.3 M_{\odot}$ (Bastian et al. 2010) in the log-normal distribution. However, we have shown that **the M dwarf MF increases to the end of the main sequence** in a normal distribution for both the 10 and 25 pc M dwarf population. Given that missing systems are preferentially of low mass, the MF will ultimately be even steeper than shown.

8.3 Main Results

Here we summarize the most important results from this survey of M dwarf multiplicity. We find that:

- most M dwarf systems are single (§6.1.1);

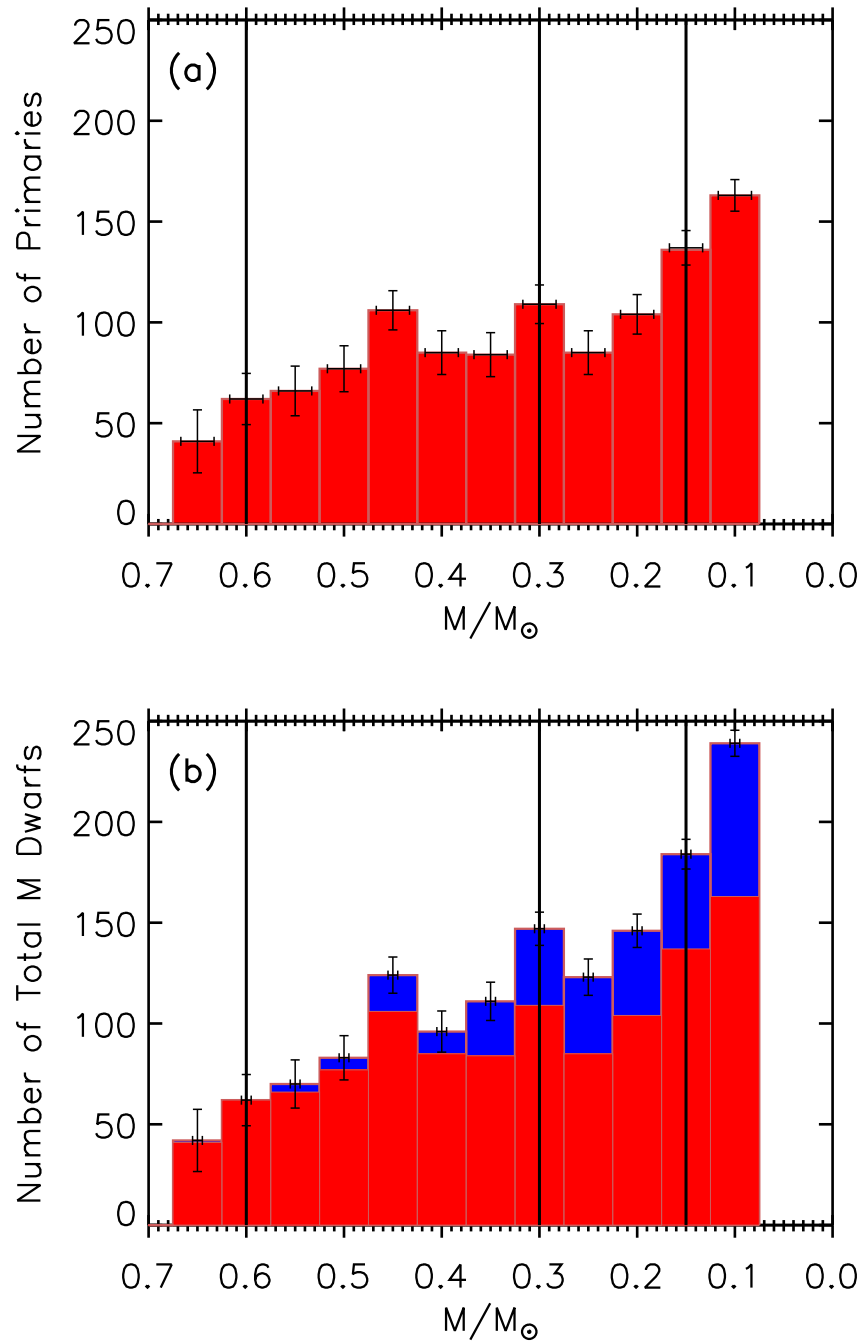


Figure 8.5 Deblended Mass Function. (a) The mass function for the 1122 M dwarf primaries in the multiplicity survey with masses estimated from deblended photometry. (b) The mass function for all 1431 M dwarfs in the multiplicity survey, including both primaries and their companions. Primaries are plotted in red; companions in blue. The scales are the same for both plots to emphasize the contributions from the companions. Errors in the y-direction are the Poisson errors per bin; errors in the x-direction are the $0.017 M_{\odot}$ reported in Benedict et al., in prep.

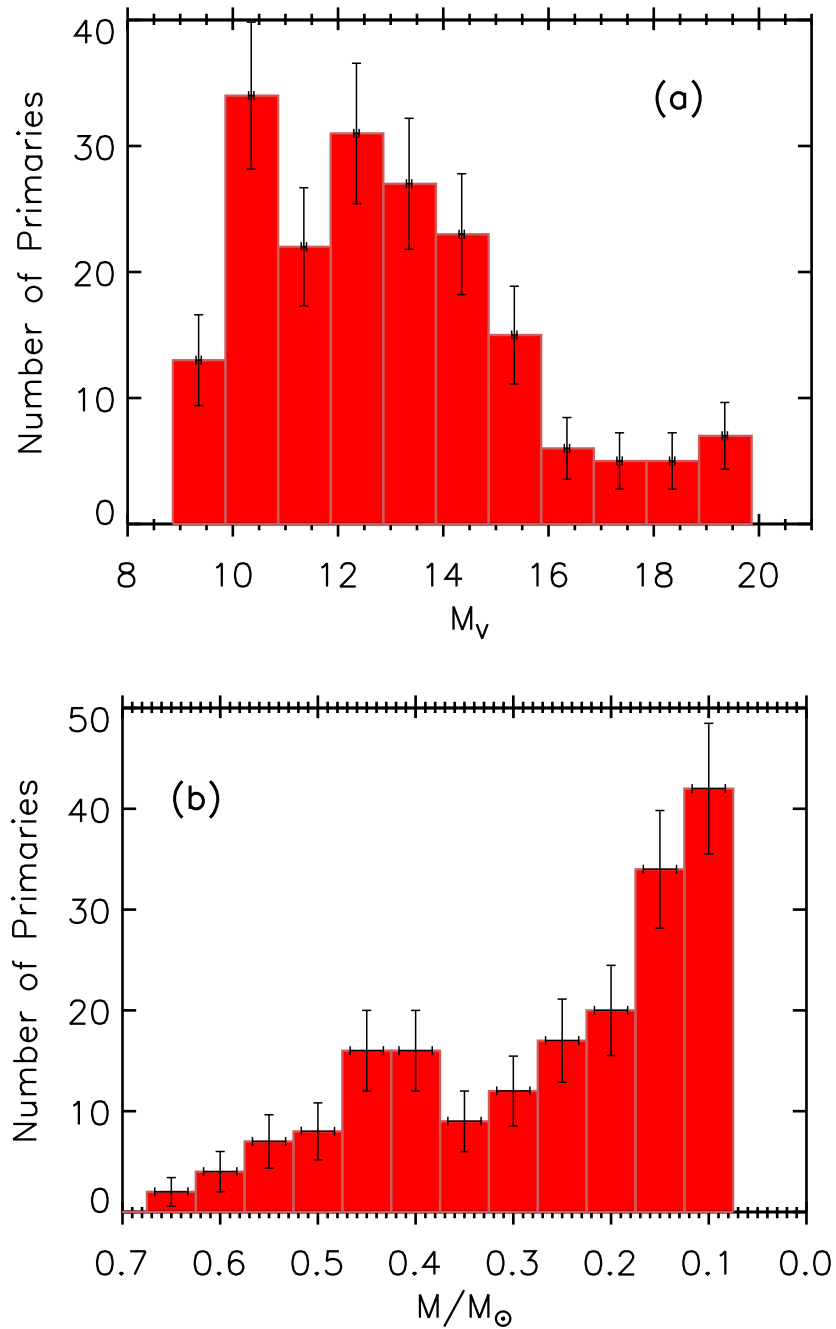


Figure 8.6 Deblended luminosity and mass functions for the 10 pc sample. (a) The luminosity function for the 188 M dwarf primaries within 10 pc in the multiplicity survey with M_V calculated from deblended photometry. Errors in the y-direction are the Poisson errors per bin; errors in the x-direction are ~ 0.05 mags. (b) The mass function for the 188 M dwarf primaries within 10 pc in the multiplicity survey with masses estimated from deblended photometry. Errors in the y-direction are the Poisson errors per bin; errors in the x-direction are the $0.017 M_\odot$ reported in Benedict et al., in prep.

- most stellar systems are single (§8.1.2);
- most companions to M dwarfs are found at angular separations $< 2''$ (Figure 6.2);
- most companions to M dwarfs found to-date are at separations 10 — 100 AU (Figure 6.1);
- the mass ratio distribution between companions and their primaries increases to unity (Figure 6.4);
- a weak trend exists of smaller projected separations for lower mass primaries (Figure 6.5);
- M dwarf multiplicity may be a function of tangential velocity (§6.5);
- at least 10% of M dwarf mass is hidden in unresolved multiple systems (§8.2.3);
- the mass function for M dwarfs increases to the end of the main sequence (§8.2.4).

8.4 M Dwarf Multiples and Planetary Companions

While it was noted in Chapter 6 that no detailed discussion of planetary companions would be included here, we would be remiss for making no mention of them. There is much recent interest in exoplanet explorations around M dwarfs because the stars are ubiquitous, with the nearby population numbering in the thousands, providing ample opportunity for discoveries. They are also less variable at optical wavelengths than previously thought (Hosey et al. 2015) and thereby potentially hospitable to life on orbiting planets. It is interesting to note that five of the M dwarf primaries that are suspected to be unresolved multiples due to overluminosity are known to harbor at least one planet.

Determining the multiplicity of these host star planets is vital for understanding the radii of the planets discovered via the transit method, as finding Earth-sized planets is the holy

grail for planet searches. Ciardi et al. (2015) have shown that the radius of a known planet can be underesimated by a factor of 1.5, on average, without a high resolution image to confirm that its host star is, in fact, single and uncontaminated by any nearby background stars.

Recent work has indicated that planets are $4.5 - 2.6$ times less likely to be present in circumstellar binaries (i.e., where the planet orbits one of the stellar members) at separations of $10 - 100$ AU, respectively, from their host stars (Wang et al. 2014). However, it appears that the sample of 56 Kepler planet host stars studied did not include any M dwarfs, as the effective temperatures for their objects are larger than at least 4700 K. Therefore, it is still unknown how the multiplicity of M stars affects the formation of planets in those systems. Regardless, this work has shown that even if planets are *less* likely to form in a multiple system with a red dwarf primary, fewer than $\sim$ one-third of the numerous existing M dwarf systems are eliminated from consideration because most are single stars.

8.5 What Is Yet to Come

While the multiplicity survey presented here was comprehensive for companions to M dwarfs with separations $2 - 600''$, much work remains to be done. Here we describe future work that involves investigation of the separation space $<2''$, including imaging and radial velocity work, and further exploration of the star formation processes responsible for the creation of multiple systems.

8.5.1 Sub-Arcsecond Follow-Up Observations

8.5.1.1 Robo-AO

Robo-AO data exist for roughly half of the sample as a result of a collaboration with Nick Law. Robo-AO (Baranec et al. 2013), is an adaptive optics system used on the Palomar 60in telescope that has the ability to resolve close systems with separations down to $0.1''$. Due to Palomar's location and the faintness limitations of the instrument, the targets had to have been north of $\delta = -13$ and be brighter than $V = 16$. Therefore, $\sim 56\%$ of the M dwarf primaries in the multiplicity sample with trigonometric parallaxes, in addition to many known of their known companions with separations $> 10''$, have been observed. Continuing work with these data will likely reveal some of the missing companions with small separations from their primaries.

8.5.1.2 Speckle Interferometry with DSSI

Follow-up observations of suspected multiple systems are currently being done with the Differential Speckle Survey Instrument (DSSI), built by Elliott Horch at Southern Connecticut State University. DSSI (Horch et al. 2009) is a state-of-the-art high resolution speckle camera that has the ability to obtain separation, Δmag , and color information for close companions. Two bandpasses are imaged simultaneously, so the color of any detected companion is measured in a single observation. An added benefit of the dual nature of DSSI is that gathering simultaneous speckle clouds enables the ability to distinguish between residual atmospheric dispersion and duplicity due to elongated speckles (Horch et al. 2011b). This camera has

been a visitor instrument on both Gemini-North’s 8m and Lowell Observatory’s 4.3m Discovery Channel telescopes and is scheduled to be on Gemini-South in semester 2016A, thereby enabling all-sky follow-up of most of the M dwarf sample presented here. The high resolution capabilities of this instrument allow it to resolve binaries as close as ~ 5 mas, one-quarter of Gemini’s diffraction limit, corresponding to 0.13 AU even at 25 pc. DSSI’s highest resolution field of view of $2.8''$ is being used for these follow-up observations. Two of the suspected multiple systems have already been confirmed with DSSI: GJ 912 and GJ 1250.

We will also take advantage of our access to DSSI to refine the assumptions of ΔV made in Chapter 6, §6.3.1 by observing known systems with perturbations of differing magnitudes, as well as known spectroscopic binaries.

8.5.2 Radial Velocities

We showed in Chapter 6 Figure 6.10 that a relation may exist between multiplicity and tangential velocity. As tangential velocity is a proxy for age, which is intertwined with composition, this tentative result warrants further investigation. This relation can be confirmed by calculating 3-D space motions using radial velocities (RV’s), many of which can be harvested from the literature, in conjunction with the proper motions that are already available. *Gaia* will measure RV’s for stars with $V \leq 12$, but the remaining 57% of the sample with $V > 12$ will require a concerted observational effort from the ground.

8.5.3 Interactions Between Binaries

The hint at a decrease in multiplicity with v_{tan} , and consequently with age, encourages further exploration of what mechanisms might influence this possible trend. Future work will investigate whether there is any interaction between the components of these systems. Are they gravitationally bound to each other? If so, how likely is it that they will remain a pair over time? That is, over time are binaries disrupted because of interactions with other components of our Galaxy?

8.5.4 G Dwarf Mass Ratio Comparison

As outlined in Chapter 6 §6.3.2, more work will be done in an attempt to understand the star formation processes that result in multiple systems by comparing the sample of solar-type stars studied by Raghavan et al. (2010) to the results presented here. Specifically, the same range in mass ratios for multiple systems will be further investigated in relation to their primary stars.

8.6 Concluding Thoughts

M dwarfs are bewitching. They are the most populous type of star, yet many that are suspected to be nearby remain to be identified. *Gaia* will soon identify and provide trigonometric parallaxes for most of these hidden close M dwarfs, including any that might lie within 10 pc. I welcome this new era of astronomy, where accurate distances to large numbers of M dwarfs will be so readily available, allowing further exploration of this ubiquitous population of stars. Of particular interest is exactly where the mass function turns over at the end of

the stellar main sequence and what clues to star-brown dwarf-planet formation this provides.

In the next decade, the Large Synoptic Survey Telescope (LSST) and the James Webb Space Telescope (JWST) will facilitate even more M dwarf science as we reach further into the Cosmos, well beyond 25 pc for even the faintest red dwarfs.

An instrument that would enable unprecedented science is an infrared version of DSSI that would help constrain the multiplicity statistics of the faintest M dwarfs at separations not possible with current technologies. The only contender, the Gemini Planet Imager (GPI), is able to directly image planets down to 0.2 - 1'', not quite the current DSSI's resolution capability of ~ 5 mas.

I look forward to being bewitched for decades to come.

For my part I know nothing with any certainty, but the sight of the stars makes me dream.

- Vincent Van Gogh

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APPENDIX A

PHOTOMETRY DATA

This appendix provides the photometry and mass estimate for all components of the 2347 M dwarf systems presented in this thesis. Included in the table is the name of the M dwarf (1), the number of known components in the system (2), coordinates (J2000.0) (3, 4), SuperCOSMOS *BRI* plate magnitudes (5, 6, 7), *VRI* magnitudes (8, 9, 10) and the number of observations and/or reference (11), and the 2MASS *JHK* magnitudes (12, 13, 14). Components of multiple systems are noted with a capital letter after the name in the first column. If the names of the components are different, the letters identifying which is the primary and which is the secondary are placed within parenthesis (e.g., LHS1104(A) and LHS1105(B)). If the star is a companion in a multiple system, a ‘0’ is given in column (2). The number in parentheses next to the number of components indicates the number of objects included in the *VRI* photometry. For example, the notation ‘0(1)’ indicates that listed is separate photometry data for a companion in a multiple system. Brown dwarf companions are included here and noted by a ‘BD’ next to the ‘0’ in column 2.

Next is listed an asterisk (15) indicating if the object is included in the multiplicity sample, the ΔV between a companion and its primary (16), the deblended *V* magnitude (17), and the estimated mass (18). If any type of assumption or conversion was made regarding the ΔV , it, the V_{db} , and the mass estimate are shown in italics. If the ΔV is larger than 3, the magnitude of the primary was treated as single. All *VRI* magnitudes are on the Johnson-Kron-Cousins system, except for one object — XXX — for which a Tycho *B*

magnitude, necessary for the conversion, was not available. All masses are estimated from the absolute V magnitude, which has been calculated from the deblended V magnitude for each star.

The table is divided into the 1986 systems within 25 pc (top) and the 361 systems beyond 25 pc (bottom). 'J' next to a magnitude indicates that light from a close companion has resulted in blended photometry. We note that no detailed information regarding multiple systems is given for those not part of the multiplicity sample or those beyond 25 pc.

Table A.1: Photometry Data

Name	# obj	RA	DEC	B_J	R_{59F}	I_{JVN}	V_J	R_{KC}	I_{KC}	# nts/ref	J	H	K_s	Mult	ΔV	V_{db}	Mass
(1)	(2)	(3)	(4)	(mag)	(mag)	(mag)	(mag)	(mag)	(mag)	(11)	(mag)	(mag)	(mag)	(15)	(mag)	(mag)	($M_\odot$)
Within 25 pc																	
2MA0000-1245	1	00 00 28.7	-12 45 16	...	19.26	15.88	20.78	18.71	16.27	/40	13.20	12.45	11.97	...	...	...	...
LTT09844	1	00 00 46.9	-35 10 06	13.48	11.30	10.21	...	...	...	...	9.12	8.48	8.28	...	...	...	...
GJ1001B	0BD	00 04 34.8	-40 44 06	...	...	...	22.77J	19.00J	16.66J	2/1	13.11J	12.06J	11.40J	*	...	...	...
GJ1001C	0BD	00 04 34.8	-40 44 06	...	...	...	...	...	...	...	...	...	...	*	...	...	...
GJ1001A	3(1)	00 04 36.5	-40 44 03	14.21	11.83	10.06	12.83	11.62	10.08	/40	8.60	8.04	7.74	*	...	12.86	0.248
G158-025	1	00 04 40.3	-09 52 42	14.47	12.52	10.92	...	...	...	...	9.77	9.10	8.82	...	...	...	...
SIP0004-2058	1	00 04 41.5	-20 58 30	21.86	18.85	15.65	19.94	17.81	15.36	/40	12.40	11.83	11.40	...	...	...	...
GJ0001	1	00 05 24.4	-37 21 27	10.10	7.91	6.28	8.54	7.57	6.41	/2	5.33	4.83 ^a	4.52	*	...	8.53	0.457
LP644-034	1	00 05 34.9	-06 07 07	13.85	11.75	9.92	...	...	...	...	9.26	8.65	8.41	...	...	...	...
LP644-039	1	00 06 13.1	-02 32 11	15.38	13.34	10.91	14.62	13.42	11.84	/24	10.22	9.60	9.30	...	...	...	...
LHS1019	1	00 06 19.2	-65 50 26	13.13	10.92	8.98	12.17	11.11	9.78	/20	8.48	7.84	7.63	*	...	12.17	0.376
GJ1002	1	00 06 43.2	-07 32 17	15.04	12.34	9.88	13.84	12.21	10.21	/40	8.32	7.79	7.44	*	...	13.77	0.110
GJ1003	1	00 07 26.7	+29 14 33	...	...	...	14.16	13.01	11.54	/37	10.22	9.74	9.46	*	...	14.16	0.212
LHS1022	1	00 07 59.1	+08 00 19	...	...	...	13.09	12.02	10.65	/37	9.39	8.91	8.65	*	...	13.09	0.349
L217-028	1	00 08 17.4	-57 05 53	12.20	10.22	9.30	12.13	11.00	9.57	/40	8.21	7.63	7.40	*	...	12.13	0.329
HIP000687	1	00 08 27.2	+17 25 27	...	...	...	10.80	9.88	8.93	/35	7.81	7.17	6.98	*	...	10.80	0.620
G131-026B	0	00 08 54.0	+20 50 18	...	...	...	...	...	...	...	...	...	...	*	0.80	14.74	0.172
G131-026A	2	00 08 54.0	+20 50 18	...	...	...	13.52J	12.19J	10.50J	3/1	8.87J	8.26J	8.01J	*	...	13.94	0.227
GJ0007	1	00 09 04.3	-27 07 20	12.52	10.13	9.11	11.69	10.74	9.79	/2	8.66	8.14	7.86	*	...	11.69	0.513
LP644-094	1	00 09 13.5	-04 08 02	12.60	10.75	9.04	12.03	11.01	9.80	/25	8.58	7.98	7.73	...	...	...	...
BPM46052	1	00 09 20.0	-21 14 41	13.50	11.75	9.89	...	...	...	...	8.76	8.16	7.94	...	...	...	...
LEHPM1-0254	1	00 09 43.3	-41 17 36	17.24	15.01	12.89	...	...	...	...	10.92	10.38	10.08	...	...	...	...
LEHPM1-0255	1	00 09 45.1	-42 01 40	15.17	13.01	10.68	13.62	12.35	10.66	/40	9.07	8.45	8.22	*	...	13.62	0.258
LSPM0011+5908	1	00 11 32.0	+59 08 40	...	...	...	15.63	13.95	11.91	1/1	9.95	9.39	9.09	*	...	15.63	0.104
L217-009	1	00 11 49.1	-55 21 52	13.99	11.93	11.04	...	...	...	...	9.33	8.72	8.50	...	...	...	...
GJ0011B	0	00 13 15.8	+69 19 36	...	...	...	...	...	...	...	...	...	...	*	0.88	13.72	0.272
GJ0011A	2	00 13 15.8	+69 19 36	...	...	...	12.44J	11.33J	9.92J	/37	8.56J	7.98J	7.75J	*	...	12.84	0.359
LTT17095A	2	00 13 38.7	+80 39 56	...	...	...	11.12	10.12	9.00	1/1	7.76	7.13	6.90	*	...	11.12	0.543
LTT17095B	0	00 13 43.1	+80 39 49	...	...	...	14.75	13.93	12.55	1/1	10.94	10.37	10.06	*	3.63	14.75	0.179
GJ1005B	0	00 15 28.1	-16 08 01	...	...	...	...	...	...	...	...	...	...	*	2.38	13.97	0.115
GJ1005A	2	00 15 28.1	-16 08 02	12.24J	9.96J	8.07J	11.48J	10.27J	8.70J	/40	7.22J	6.71J	6.39J	*	...	11.59	0.219
GJ0012	1	00 15 49.0	+13 33 22	...	...	...	12.610	11.459	10.044	/2	8.62	8.07	7.81	*	...	12.61	0.255
LHS1051	2(1)	00 15 51.5	-67 59 52	12.01	9.72	8.57	10.90	9.94	8.91	/40	7.80	7.21	6.95	...	...	...	...
2MA0015-1636B	0	00 15 58.1	-16 36 57	...	...	...	...	...	...	...	...	...	...	*	0.10	14.00	0.218
2MA0015-1636A	2	00 15 58.1	-16 36 57	...	...	...	13.20J	11.93J	10.30J	2/1	8.74J	8.19J	7.91J	*	...	13.90	0.226
L290-072B	0	00 16 01.9	-48 15 39	...	...	...	...	...	...	...	...	...	...	*	1.00	12.91	0.369
L290-072A	2	00 16 02.0	-48 15 39	12.08J	9.85J	8.58J	11.55J	10.51J	9.24J	/20	7.97J	7.36J	7.11J	*	...	11.91	0.484
GJ1006A	2(1)	00 16 14.6	+19 51 37	...	...	...	12.26	11.05	9.46	/37	7.88	7.32	7.09	*	...	12.26	0.344
GJ1006B	0(1)	00 16 16.1	+19 51 52	...	...	...	13.20	11.99	10.40	/37	8.89	8.34	8.10	*	0.94	13.20	0.254
L218-009	1	00 16 36.6	-50 16 09	13.01	10.54	9.26	12.35	11.34	10.14	/20	8.97	8.33	8.17	*	...	12.35	0.425
GJ1007	1	00 16 56.3	+05 07 27	...	...	...	13.79	12.55	10.91	/37	9.40	8.87 ^a	8.59	*	...	13.79	0.231
SCR0017-3219	1	00 17 15.7	-32 19 54	16.80	14.59	12.48	15.45	14.11	12.39	/39	10.64	10.08	9.73	...	...	...	...
LHS1054	1	00 17 20.3	+29 10 58	...	...	...	11.52	10.52	9.35	/37	8.15	7.50	7.24	*	...	11.52	0.534
LP704-074	1	00 17 28.2	-08 44 23	13.63	11.64	10.05	...	...	...	...	9.16	8.60	8.36	...	...	...	...
LTT00139	1	00 17 40.7	-01 22 41	13.96	11.92	10.26	12.89	11.84	10.50	/24	9.24	8.57	8.36	...	...	...	...
GJ0016	1	00 18 16.5	+10 12 10	...	...	...	10.910	9.917	8.781	/2	7.56	6.92 ^a	6.74	*	...	10.91	0.522
GJ0015A	2(1)	00 18 23.0	+44 01 24	...	...	...	8.09	7.10	6.07	2/1	5.25 ^a	4.48 ^a	4.02	*	...	8.10	0.459
GJ0015B	0(1)	00 18 26.0	+44 01 42	...	...	...	11.07	9.82	8.34	2/1	6.79	6.19	5.95	*	2.97	11.07	0.178
LTT00151	1	00 18 44.8	-34 50 15	14.14	11.92	10.49	12.91	11.84	10.45	1/1	9.02	8.39	8.16	...	...	...	...
GJ2003	1	00 20 08.3	-17 03 41	...	...	...	11.68	10.70	9.64	2/1	8.55	7.91	7.70	*	...	11.68	0.518
LP825-035	1	00 20 23.2	-23 46 05	20.19	17.84	14.83	18.92	16.99	14.73	1/1	12.35	11.72	11.34	...	...	...	...
LHS0112	1	00 20 29.4	+33 05 06	...	...	...	16.09	14.41	12.36	/37	10.28	9.69	9.33	*	...	16.09	0.107
L170-007	1	00 20 41.5	-53 40 54	14.54	12.40	10.68	...	...	...	...	9.68	9.10	8.81	...	...	...	...
GJ0017.1	1	00 21 19.6	-45 44 47	11.37	8.87	7.88	10.40	9.46	8.50	/2	7.41	6.81	6.54	*	...	10.40	0.606
LHS5004a	1	00 21 37.3	-46 05 33	13.18	10.60	9.16	12.24	11.14	9.73	/20	8.33	7.73	7.45	*	...	12.24	0.403
LTT00180	1	00 21 39.4	-09 00 25	15.07	12.95	11.25	13.94	12.76	11.24	/24	9.71	9.15	8.87	...	...	...	...
G158-066	1	00 21 53.4	-09 38 03	14.04	12.02	10.64	...	...	...	...	9.46	8.78 ^a	8.57	...	...	...	...
L086-082	1	00 21 54.9	-68 31 26	12.38	9.76	8.86	11.13	10.21	9.26	/25	8.23	7.59	7.35	...	...	...	...
GJ1009	1	00 21 56.1	-31 24 22	12.19	9.90	8.85	11.13	10.12	8.92	/20	7.67	7.05	6.79	*	...	11.13	0.517

L026-099	1	00 22 27.1	-79 09 59	12.18	10.21	8.68	...	...	...	...	8.45	7.84	7.62	...	...	...
LHS1064	1	00 23 18.5	-50 53 38	13.10	10.94	9.30	11.89	10.84	9.56	/20	8.26	7.64	7.38	*	...	11.89 0.453
GJ1011	1	00 23 27.1	+24 18 20	...	...	...	14.27	...	...	/10	9.75J	9.17J	8.87J	*	...	14.23 0.187
GJ1010A	2(1)	00 23 28.8	+77 11 21	...	...	...	11.31	10.32	9.19	/37	8.04	7.39	7.19	*	...	11.31 0.494
GJ1010B	0(1)	00 23 31.7	+77 11 27	...	...	...	14.10	12.90	11.37	/37	9.93	9.36	9.11	*	2.79	14.10 0.210
NLT001261	1	00 24 24.9	-01 58 28	...	...	...	19.88	17.46	15.12	2/1	11.99	11.08	10.54	*	...	19.88 0.075
LTT00214	1	00 24 25.2	-12 17 25	12.82	10.66	9.28	12.25	11.23	10.02	/24	8.83	8.21	7.98	...	...	...
LHS1068	1	00 24 38.4	+30 02 19	...	...	...	14.56	13.23	11.48	/37	9.78	9.22	8.89	*	...	14.56 0.186
GJ2005B	0	00 24 44.0	-27 08 24	...	...	...	...	...	...	...	...	...	...	*	1.58	17.34 0.082
GJ2005C	0	00 24 44.0	-27 08 24	...	...	...	...	...	...	...	...	...	...	*	2.21	17.97 0.078
GJ2005A	3	00 24 44.2	-27 08 24	17.03J	14.42J	11.46J	15.28J	13.52J	11.37J	/40	9.25J	8.55J	8.24J	*	...	15.76 0.097
LTT00220	1	00 25 04.3	-36 46 18	13.80	11.53	10.13	12.48	11.38	10.00	/40	8.65	8.04	7.83	...	...	...
GJ0021	1	00 26 52.7	+70 08 32	...	...	...	10.53	9.58	8.55	/35	7.41	6.74	6.57	*	...	10.53 0.573
G217-051	1	00 27 04.0	+49 41 04	...	...	...	14.25	12.98	11.36	/32	9.73	9.16	8.85	*	...	14.25 0.227
LP349-025B	0	00 27 56.0	+22 19 33	...	...	...	...	...	...	...	...	...	...	*	0.66	19.17 0.077
LP349-025A	2	00 27 56.0	+22 19 33	...	...	...	18.04J	15.82J	13.37J	3/1	10.61J	9.97J	9.57J	*	...	18.51 0.082
LTT00250	2(1)	00 28 05.0	-23 00 37	15.12	13.11	11.31	...	...	...	...	9.93	9.27	9.07	...	...	...
GJ1012	1	00 28 39.5	-06 39 49	13.20	11.26	8.54	12.17	11.01	9.50	/37	8.04	7.50 ^a	7.19	*	...	12.17 0.325
LEHPM1-0640	1	00 28 54.8	-27 33 34	16.65	14.56	12.47	...	...	...	...	10.76	10.15	9.90	...	...	...
LTT17138	1	00 28 57.7	-02 26 59	14.27	12.23	10.10	...	...	...	...	9.53	8.92	8.67	...	...	...
LTT00266	1	00 29 58.7	-24 38 27	13.93	11.49	10.28	...	...	...	...	9.16	8.56	8.28	...	...	...
L050-078	1	00 31 04.3	-72 01 06	15.25	13.21	11.41	13.69	12.47	10.90	/25	9.37	8.75	8.45	...	...	...
GJ1013	1	00 31 35.4	-05 52 13	13.77	11.59	9.59	12.73	11.59	10.14	/37	8.76	8.22	7.95	*	...	12.73 0.311
GJ0022B	0	00 32 29.4	+67 14 08	...	...	...	...	...	...	...	7.17 ^a	6.54 ^a	6.38 ^a	*	1.57	12.08 0.278
GJ0022C	0	00 32 29.4	+67 14 08	...	...	...	...	...	...	...	...	...	...	*	3.08	13.59 0.164
GJ0022A	3	00 32 29.4	+67 14 08	...	...	...	10.28J	9.24J	7.98J	/37	6.84J	6.27J	6.04J	*	...	10.51 0.442
GR*0050B	0	00 32 53.1	-04 34 07	...	...	...	...	...	...	...	...	...	...	*	2.56	16.63 0.116
GR*0050C	0	00 32 53.1	-04 34 07	...	...	...	...	...	...	...	...	...	...	*	4.06	18.13 0.094
GR*0050A	3	00 32 53.2	-04 34 07	15.32J	13.16J	10.86J	13.97J	12.68J	11.00J	/40	9.28J	8.62J	8.35J	*	...	14.07 0.233
L291-115	1	00 33 13.5	-47 33 17	16.96	14.62	11.97	15.80	14.26	12.34	1/1	10.45	9.83	9.54	...	...	...
LHS1099	1	00 34 07.5	-23 03 19	14.98	12.65	11.23	...	...	...	...	9.89	9.28	9.03	...	...	...
LTT00307	1	00 34 39.0	-02 25 00	13.26	10.91	9.74	11.95	10.95	9.79	/24	8.57	7.95	7.69	...	...	...
LHS1101	1	00 34 44.1	+71 11 31	...	...	...	13.53	12.37	10.88	/37	9.47	8.88	8.67	*	...	13.53 0.276
LP645-053	1	00 35 44.1	-05 41 11	17.35	15.09	12.74	16.02	14.52	12.61	1/1	10.67	10.07	9.71	...	...	...
LHS1104(A)	2(1)	00 35 52.8	+52 41 45	...	...	...	12.54	11.49	10.20	/37	8.93	8.35	8.10	*	...	12.54 0.422
LHS1105(B)	0(1)	00 35 53.7	+52 41 37	...	...	...	15.10	13.83	12.19	/37	10.63	10.08	9.79	*	2.56	15.10 0.184
GJ1014	1	00 36 00.4	+10 28 08	...	...	...	15.32	13.88	12.02	/37	10.22	9.66	9.37	*	...	15.32 0.134
G172-013	1	00 36 06.7	+45 30 49	...	...	...	11.71	10.67	9.42	/38	8.17	7.58	7.36	*	...	11.71 0.509
LP881-239	1	00 37 35.8	-27 08 31	15.57	13.50	11.12	14.32	13.13	11.58	/25	10.03	9.46	9.18	...	...	...
LTT00338	1	00 38 33.4	-11 16 03	13.63	11.61	10.36	...	...	...	...	9.35	8.68	8.44	...	...	...
GJ0026	1	00 38 59.0	+30 36 59	...	...	...	11.08	10.03	8.75	/37	7.45	6.86	6.61	*	...	11.08 0.427
GJ0027.1	1	00 39 58.8	-44 15 12	12.29	9.87	8.92	11.39	10.44	9.36	/2	8.23	7.61	7.39	*	...	11.39 0.572
LTT00349	1	00 39 59.4	-12 11 43	13.61	11.53	9.86	...	...	...	...	9.14	8.58	8.23	...	...	...
GJ1016	1	00 41 30.5	-33 37 32	10.99	8.86	8.14	10.53	9.62	8.74	/20	7.71	7.10	6.88	*	...	10.53 0.624
LHS1134	1	00 43 26.0	-41 17 34	14.26	12.09	9.82	13.00	11.75	10.11	/40	8.57	8.03	7.71	*	...	13.00 0.205
GJ1019	1	00 43 35.6	+28 26 41	...	...	...	14.51	13.33	11.80	/37	10.39	9.88	9.67	*	...	14.51 0.192
LEHPM1-0927	1	00 44 38.0	-78 45 09	18.87	16.59	13.10	...	...	...	...	11.37	10.74	10.37	...	...	...
LHS1140	1	00 44 59.3	-15 16 18	14.98	12.48	10.03	14.18	12.88	11.19	/40	9.61	9.09	8.82	*	...	14.18 0.176
LP989-200	1	00 46 16.3	-40 17 54	14.58	12.49	10.76	...	...	...	...	9.64	9.05	8.77	...	...	...
LP646-016	1	00 47 18.0	-06 28 38	15.32	13.37	11.43	...	...	...	...	10.07	9.50	9.21	...	...	...
LTT00453	1	00 48 13.4	-05 08 08	13.32	10.86	9.89	12.04	11.04	9.94	/40	8.77	8.18	7.93	*	...	12.03 0.479
LTT00464	1	00 49 01.7	-50 08 42	11.39	9.58	7.83	10.73	9.80	8.86	/20	7.80	7.16	6.95	*	...	10.73 0.628
GJ1022	1	00 49 29.1	-61 02 33	13.10	10.78	9.19	12.17	11.12	9.86	/16	8.63	8.09	7.84	*	...	12.17 0.427
LTT10301B	0	00 50 33.2	+24 49 00	...	...	...	...	...	...	...	...	...	...	*	1.20	13.66 0.179
LTT10301A	2	00 50 33.2	+24 49 00	...	...	...	12.15J	10.96J	9.42J	/20	7.95J	7.35J	7.12J	*	...	12.46 0.273
RG0050-2722	1	00 52 54.6	-27 05 56	...	...	...	21.54	19.14	16.68	2/1	13.61	12.98	12.54	*	...	21.54 0.075
GJ1024	1	00 56 38.4	+17 27 35	...	...	...	13.71	12.47	10.88	/37	9.29	8.66	8.37	*	...	13.71 0.239
LTT00534	1	00 56 50.4	-11 35 20	11.28	9.52	8.10	11.12	10.19	9.25	/20	8.23	7.60 ^a	7.36	*	...	11.12 0.614
L087-002	1	00 57 12.5	-64 15 24	13.57	11.28	9.64	12.40	11.28	9.81	/40	8.40	7.82	7.60	*	...	12.40 0.366
GJ0046	1	00 58 27.9	-27 51 25	13.39	11.69	9.31	11.77	10.65	9.17	/2	7.76	7.20 ^a	6.89	*	...	11.77 0.349
LTT00556	1	00 58 52.8	-28 13 52	15.39	13.61	11.65	...	...	...	...	9.95	9.35	9.07	...	...	...
GJ1025	1	01 00 56.1	-04 26 57	14.46	12.02	10.21	13.35	12.08	10.52	/15	9.04	8.49	8.22	*	...	13.36 0.193
LEP0100-7904	1	01 00 56.4	-79 04 25	13.70	11.70	9.98	12.46	11.41	10.08	/40	8.80	8.17	7.88	...	...	...
GJ0047	1	01 01 20.0	+61 21 57	...	...	...	10.85	9.81	8.56	/37	7.27	6.71	6.48	*	...	10.85 0.422
LTT00573	1	01 01 24.7	-01 05 59	14.67	12.40	10.45	13.39	12.21	10.62	/24	9.27	8.63	8.37	...	...	...
L171-012	1	01 01 57.9	-55 23 46	15.34	13.33	11.24	...	...	...	...	10.01	9.47	9.17	...	...	...

GJ0048	1	01 02 32.2	+71 40 47	...	...	...	9.98	8.92	7.55	/37	6.30	5.70	5.45	*	...	9.98	0.450
GJ0049(A)	2(1)	01 02 38.8	+62 20 42	...	...	...	9.56	8.58	7.44	/37	6.23	5.58	5.37	*	...	9.56	0.555
LHS0132	1	01 02 51.1	-37 37 44	19.82	17.24	13.81	18.53	16.30	13.88	/9	11.13	10.48	10.07	*	...	18.49	0.081
LEHPM1-1188	1	01 03 12.0	-53 51 43	19.91	17.40	14.64	...	...	...	...	12.21	11.55	11.20	*	...	...	...
GJ1026B	0	01 03 14.1	+20 05 52	...	...	...	...	...	...	...	...	...	...	*	1.30	12.99	0.289
GJ1026A	2	01 03 14.1	+20 05 52	...	...	...	11.40J	10.31J	8.97J	/37	7.67J	7.09J	6.83J	*	...	11.69	0.425
GJ0051(B)	0(1)	01 03 19.8	+62 21 56	...	...	...	13.78	12.35	10.42	/37	8.61	8.01	7.72	*	4.22	13.78	0.153
LT00597	1	01 03 54.8	-26 20 05	14.28	12.07	10.44	...	...	...	...	9.40	8.85	8.56	*	...	...	...
L087-010	1	01 04 07.0	-65 22 27	15.20	12.89	10.74	13.98	12.63	10.95	/40	9.40	8.84	8.53	*	...	13.98	0.162
G269-089	1	01 04 28.9	-38 27 49	14.09	12.13	10.05	...	...	...	...	9.00	8.36	8.14	*	...	...	...
GJ1028	1	01 04 53.8	-18 07 29	15.51	13.33	10.85	14.45	12.99	11.13	/37	9.39	8.75	8.45	*	...	14.45	0.130
GJ1029	1	01 05 37.6	+28 29 34	...	...	...	14.79	13.29	11.37	/37	9.49	8.88	8.55	*	...	14.79	0.135
LT00622	1	01 06 27.1	-02 10 35	14.16	12.28	10.52	...	...	...	...	9.59	8.93	8.71	*	...	...	...
GJ1030	1	01 06 41.5	+15 16 22	...	...	...	11.44	10.43	9.25	/32	8.01	7.37	7.16	*	...	11.44	0.531
GJ0052.2	1	01 07 49.6	+34 12 54	...	...	...	13.37	12.33	11.05	/37	9.84	9.31	9.08	*	...	13.37	0.316
GJ1031	1	01 08 18.3	-28 48 21	14.55	12.18	10.22	...	...	...	...	9.09	8.54	8.23	*	...	...	...
G271-001	1	01 08 50.4	-03 40 34	14.51	12.63	10.58	...	...	...	...	9.52	8.89	8.62	*	...	...	...
SSS0109-5101	1	01 09 01.5	-51 00 50	21.19	18.31	14.78	20.17	17.55	15.11	/40	12.23	11.54	11.09	*	...	20.17	0.075
GJ1032	1	01 09 12.5	-24 41 21	13.19	11.06	9.52	12.25	11.17	9.80	/20	8.45	7.84	7.61	*	...	12.25	0.441
GJ2021	1	01 09 18.7	-24 30 24	15.78	13.47	11.37	...	...	...	...	9.94	9.39	9.07	*	...	...	...
LP647-013	1	01 09 51.2	-03 43 26	21.10	17.94	14.77	19.31	17.14	14.88	/40	11.69	10.93	10.43	*	...	19.31	0.075
LP707-016	1	01 10 17.5	-11 51 18	13.00	10.87	8.68	12.70	11.50	10.02	/40	8.63	7.93	7.66	*	...	...	...
GJ0054B	0	01 10 22.0	-67 26 42	...	...	...	...	...	...	...	...	...	...	*	1.03	11.21	0.305
GJ0054A	2	01 10 22.9	-67 26 42	11.64J	8.38J	7.77J	9.82J	8.70J	7.32J	/13	6.00J	5.41J	5.13J	*	...	10.18	0.413
LP467-016B	0	01 11 25.4	+15 26 21	...	...	...	...	...	...	...	...	...	...	*	1.24	16.00	0.135
LP467-016A	2	01 11 25.4	+15 26 21	...	...	...	14.46J	12.95J	11.03J	2/1	9.08J	8.51J	8.21J	*	...	14.76	0.193
SCR0111-4908	1	01 11 47.5	-49 08 09	18.93	16.50	13.01	17.72	15.92	13.75	/39	11.54	11.00	10.61	*	...	17.72	0.096
LHS1212(A)	2(1)	01 11 57.0	+04 54 50	...	...	...	12.88	11.73	10.27	/37	8.80	8.24	7.95	*	...	12.88	0.294
LHS1213(B)	0(1)	01 11 58.0	+04 54 12	...	...	...	13.90	12.67	11.10	/37	9.64	9.08	8.81	*	1.02	13.32	0.253
GJ0054.1	1	01 12 30.7	-16 59 56	13.08	10.56	8.52	12.15	10.72	8.94	/40	7.26	6.75	6.42	*	...	12.10	0.136
LEHPM1-1343	1	01 13 16.4	-54 29 14	15.39	13.45	10.99	14.16	12.85	11.17	/40	9.57	8.98	8.68	*	...	14.16	0.193
SCR0113-7603	1	01 13 31.5	-76 03 09	17.68	15.23	13.05	16.07	14.62	12.83	/39	11.03	10.47	10.13	*	...	...	...
LHS1217	1	01 14 08.6	-36 56 43	15.11	12.99	11.23	...	...	...	...	9.63	9.07	8.81	*	...	...	...
L221-060	1	01 14 34.2	-53 56 32	12.21	9.95	8.60	11.08	10.09	8.99	/20	7.81	7.24	6.97	*	...	11.08	0.502
LP938-144	1	01 14 36.7	-34 34 51	17.13	15.03	12.86	...	...	...	...	10.96	10.36	10.07	*	...	...	...
LP938-149	1	01 15 29.8	-33 25 52	17.14	14.99	12.69	...	...	...	...	10.95	10.37	10.06	*	...	...	...
GJ1034	1	01 16 29.2	+24 19 27	...	...	...	15.00	13.78	12.15	/37	10.71	10.17	9.91	*	...	15.00	0.172
GJ1036	1	01 17 15.4	-35 42 57	12.68	10.18	9.09	11.28	10.26	9.05	/20	7.85	7.18 ^a	6.94	*	...	11.28	0.471
L797-030	1	01 17 15.7	-13 15 48	11.33	9.09	7.63	10.79	9.84	8.86	/20	7.76	7.17	6.91	*	...	10.79	0.644
GJ0056.1	1	01 18 16.0	-12 53 59	12.33	9.97	8.49	11.79	10.78	9.55	/2	8.36	7.74	7.55	*	...	11.79	0.490
LT00734	1	01 19 51.1	-27 26 39	15.47	13.11	11.32	...	...	...	...	9.98	9.36	9.10	*	...	...	...
GJ1035	1	01 19 52.2	+84 09 33	...	...	...	14.75	13.38	11.59	/37	9.86	9.31	9.03	*	...	14.75	0.144
GJ0057	1	01 21 34.6	-41 39 23	11.06	9.33	7.97	10.12	9.25	8.38	/2	7.36	6.76	6.58	*	...	11.53	0.448
HIP006365	1	01 21 45.3	-46 42 51	...	...	...	11.40	10.43	9.31	/20	8.17	7.54	7.29	*	...	11.40	0.545
LT00755	1	01 22 23.1	-33 12 51	11.67	9.33	8.93	...	...	...	...	7.79	7.18	6.98	*	...	...	...
LHS1241(B)	0	01 22 43.2	+00 31 07	...	...	...	...	...	...	...	...	...	...	*	1.00	14.99	0.138
LHS1240(A)	2	01 22 43.2	+00 31 07	...	...	...	13.63J	12.33J	10.64J	/37	9.20J	8.45J	8.30J	*	...	13.99	0.184
L797-023	1	01 23 18.0	-12 56 23	13.74	11.34	9.67	12.99	11.88	10.49	/40	9.18	8.63 ^a	8.35	*	...	...	...
LT00774	1	01 23 24.8	-30 45 34	13.05	10.86	9.86	...	...	...	...	8.62	8.03	7.82	*	...	...	...
SCR0124-0027	1	01 24 31.3	-00 27 56	19.46	16.93	13.94	18.38	16.48	14.37	/40	12.11	11.51	11.13	*	...	...	...
LEHPM1-1550	1	01 26 43.1	-54 43 30	17.27	15.10	12.74	...	...	...	...	10.87	10.24	9.95	*	...	...	...
SCR0128-1458	1	01 28 39.5	-14 58 04	...	...	...	13.60	12.33	10.67	3/1	9.06	8.56 ^a	8.20	*	...	13.60	0.203
LT00818	1	01 30 05.1	-25 45 08	12.76	10.68	9.38	...	...	...	...	8.66	7.97	7.79	*	...	...	...
LHS0142	1	01 32 26.2	-21 54 19	11.64	9.51	8.11	11.18	10.18	9.08	/40	7.98	7.35	7.10	*	...	11.16	0.516
LP768-113	1	01 33 58.0	-17 38 24	13.56	11.27	9.35	13.04	11.85	10.31	/40	8.84	8.24	7.97	*	...	...	...
SCR0135-6127	1	01 35 53.7	-61 27 11	15.01	12.83	10.96	14.32	13.11	11.57	/39	10.06	9.53	9.24	*	...	...	...
LP883-537	1	01 36 08.7	-26 52 16	14.28	12.08	10.25	13.22	12.10	10.62	/40	9.22	8.60	8.41	*	...	...	...
LP648-020	1	01 36 55.2	-06 47 38	14.87	12.54	10.40	...	...	...	...	9.71	9.14	8.86	*	...	...	...
LHS1268	1	01 37 20.8	-49 11 44	11.35	9.23	8.27	10.39	9.48	8.56	/20	7.50	6.85	6.62	*	...	...	...
SCR0137-4148	1	01 37 23.5	-41 48 56	16.91	14.55	12.24	15.33	13.99	12.30	/39	10.68	10.07	9.78	*	...	...	...
SCR0138-6029	1	01 38 01.1	-60 29 56	17.46	15.17	12.44	16.61	15.07	13.16	/40	11.19	10.66	10.29	*	...	...	...
LHS1272	1	01 38 29.9	+00 39 05	...	...	...	11.58	10.58	9.39	/37	8.19	7.61	7.32	*	...	11.58	0.493
GJ0065A	2	01 39 01.5	-17 57 02	12.78J	10.42J	7.58J	12.06J	10.40J	8.35J	/3	6.28J	5.69J	5.34J	*	...	12.68	0.108
GJ0065B	0	01 39 01.7	-17 57 01	...	...	...	...	...	...	...	...	...	...	*	0.29	12.97	0.103
L294-078	1	01 39 11.5	-48 17 50	15.17	13.11	11.10	...	...	...	...	9.82	9.18	8.95	*	...	...	...
LP991-084	1	01 39 21.7	-39 36 09	15.85	13.64	10.79	14.48	12.97	11.06	/40	9.21	8.63	8.27	*	...	14.48	0.122

SCR0139-5927	1	01 39 39.8	-59 27 56	12.81	10.81	9.50	...	...	...	...	8.51	7.85	7.66	...	...	...
LHS1288	1	01 42 55.7	-42 12 12	...	...	...	11.17	10.26	9.29	2/1	8.24	7.62 ^a	7.40	*	...	11.17 0.572
GJ0070	1	01 43 20.1	+04 19 18	...	...	...	10.920	9.884	8.610	/2	7.37	6.81	6.52	*	...	10.92 0.423
SCR0143-0602	1	01 43 45.1	-06 02 40	...	...	...	13.01	11.80	10.25	2/1	8.77	8.17	7.91	*	...	13.01 0.327
GJ0073	1	01 44 58.5	+16 20 39	...	...	...	14.120	12.830	11.200	/2	9.58	9.01	8.71	*	...	14.12 0.194
WT0050	1	01 46 29.4	-53 39 33	15.53	13.31	10.90	14.18	12.81	11.08	/40	9.46	8.85 ^a	8.61	...	...	...
L870-044	1	01 46 36.8	-08 38 58	13.87	11.68	10.25	12.99	11.82	10.30	/38	8.83	8.24	7.99	...	...	...
L294-092	1	01 47 42.6	-48 36 06	13.83	11.53	9.61	12.42	11.23	9.72	/40	8.25	7.69	7.45	*	...	12.42 0.309
L1303-013	1	01 48 03.9	+21 12 24	...	...	...	12.16	11.10	9.79	/38	8.51	7.90	7.64	*	...	12.16 0.426
L173-039	1	01 48 26.0	-56 58 42	13.09	11.14	9.30	11.76	10.73	9.47	/40	8.22	7.55 ^a	7.32	...	...	...
L052-022	1	01 48 26.2	-70 58 29	12.67	10.49	8.71	...	...	...	...	8.81	8.25	7.97	...	...	...
2MA0149+2956	1	01 49 09.0	+29 56 13	...	...	...	21.25	18.94	16.81	/8	13.45	12.58	11.98	*	...	21.25 0.075
SCR0149-8038	1	01 49 42.7	-80 38 28	18.42	16.36	13.84	17.14	15.60	13.69	/40	11.68	11.11	10.72	...	...	...
LP940-020	1	01 49 43.5	-33 19 20	17.00	14.85	12.39	...	...	...	...	10.92	10.32	10.01	...	...	...
LP940-021	1	01 50 13.3	-37 41 52	15.80	13.49	11.41	14.47	13.23	11.64	/39	10.11	9.54	9.24	...	...	...
LHS1300	1	01 50 20.1	-49 36 40	14.87	12.77	11.08	...	...	...	...	9.84	9.26	8.99	...	...	...
LHS5043	1	01 50 53.3	-34 24 39	15.05	12.93	11.31	...	...	...	...	9.96	9.35	9.07	...	...	...
LHS1302	1	01 51 04.1	-06 07 05	15.22	12.76	10.25	14.49	13.00	11.17	/27	9.41	8.84	8.55	*	...	14.49 0.129
GJ0078	1	01 51 48.7	-10 48 13	12.57	10.51	9.33	11.80	10.81	9.59	/2	8.38	7.85	7.63	*	...	11.80 0.410
GJ0079	1	01 52 49.2	-22 26 06	10.03	7.70	6.34	8.88	7.98	7.08	/2	6.06	5.41	5.18	...	...	...
LHS5045	1	01 52 51.6	-48 05 41	15.22	12.94	10.65	13.79	12.48	10.80	/40	9.17	8.60 ^a	8.24	*	...	13.79 0.189
LTT01010	1	01 53 11.4	-21 05 43	12.15	10.03	8.68	11.42	10.42	9.26	/25	8.07	7.42 ^a	7.14	...	...	...
L088-043	1	01 53 37.1	-66 53 34	12.40	10.39	8.54	11.68	10.60	9.24	/40	7.91	7.29	6.99	*	...	11.68 0.375
LHS1311	1	01 53 50.6	-10 32 14	16.58	14.47	11.75	15.43	14.03	12.22	/37	10.45	9.93	9.65	...	...	...
LP768-670	1	01 54 08.0	-15 36 22	15.23	12.82	10.68	14.42	13.13	11.44	/25	9.81	9.22	8.90	...	...	...
L223-077	1	01 55 13.2	-53 06 31	16.65	14.61	12.23	...	...	...	...	10.54	9.98	9.73	...	...	...
GJ1041C	0	01 59 12.4	+03 31 09	...	...	...	...	...	...	...	...	...	...	*	1.84	13.07 0.339
GJ1041B	0(2)	01 59 12.4	+03 31 09	...	...	...	12.32J	11.19J	9.79J	1/1	8.00J ^a	7.38J ^a	7.12J	*	1.84	13.07 0.339
GJ1041A	3(1)	01 59 12.4	+03 31 09	...	...	...	11.23	10.28	9.29	1/1	7.91 ^a	7.22 ^a	7.07	*	...	11.23 0.555
GJ0082	1	01 59 23.5	+58 31 16	...	...	...	12.21	10.99	9.38	/38	7.79	7.22 ^a	6.96	*	...	12.21 0.303
GJ0083.1	1	02 00 13.0	+13 03 07	...	...	...	12.310	10.945	9.206	/2	7.51	6.97	6.65	*	...	12.31 0.142
L173-019	1	02 00 38.3	-55 58 04	...	...	...	11.90	10.70	9.15	3/1	7.63	7.09	6.77	*	...	11.90 0.251
LHS1325	1	02 00 47.3	-10 21 21	15.18	12.96	10.99	...	...	...	...	9.89	9.35	9.09	...	...	...
LP709-018	1	02 01 43.9	-10 17 29	15.61	13.37	11.42	...	...	...	...	10.03	9.47	9.19	...	...	...
LP030-055B	0	02 01 54.0	+73 32 32	...	...	...	...	...	...	...	...	...	...	*	1.60	16.02 0.105
LP030-055A	2	02 01 54.0	+73 32 32	...	...	...	14.20J	12.75J	10.94J	1/1	9.25J	8.67J	8.37J	*	...	14.42 0.140
LHS1326	1	02 02 13.8	+10 20 11	...	...	...	15.70	13.99	11.91	3/1	9.84	9.25	8.93	*	...	15.70 0.102
L655-017	1	02 03 20.8	-21 13 43	11.28	9.34	7.38	11.21	10.18	8.90	/34	7.61	7.03	6.77	...	...	...
LHS1332	1	02 04 27.5	-01 52 57	14.76	12.68	10.74	13.77	12.59	11.04	/37	9.59	9.09	8.80	...	...	...
GJ0084B	0	02 05 04.8	-17 36 52	...	...	...	...	...	...	...	...	...	...	*	6.21	16.40 0.094
GJ0084A	2	02 05 04.9	-17 36 53	10.39J	8.35J	6.54J	10.19J	9.14J	7.84J	/2	6.54J	5.90J	5.66J	*	...	10.19 0.451
GJ0084.1C	0	02 05 21.2	-28 04 36	...	...	...	...	...	...	...	...	...	...	*	2.64	13.52 0.310
GJ0084.1B	0(2)	02 05 21.2	-28 04 36	...	...	...	12.77J	11.68J	10.18J	/2	8.80J	8.26J	8.04J	*	2.64	13.52 0.310
GJ0084.1A	3(1)	02 05 23.7	-28 04 11	11.93	9.92	8.64	10.88	10.00	9.04	/2	7.99	7.35 ^a	7.16	*	...	10.88 0.628
LHS1339	1	02 05 48.6	-30 10 36	13.34	11.02	9.42	12.18	11.07	9.69	/40	8.37	7.87	7.56	*	...	12.17 0.251
GJ0084.2	1	02 06 57.2	+45 11 04	...	...	...	10.29	9.39	8.51	/37	7.40	6.80	6.60	*	...	10.29 0.661
GJ0085	1	02 07 23.3	-66 34 12	12.18	9.79	8.45	11.49	10.49	9.31	/40	8.13	7.61	7.36	*	...	11.51 0.362
LHS1347	1	02 09 36.1	-14 21 33	12.38	9.36	8.42	11.81	10.75	9.46	/37	8.12	7.50	7.26	*	...	11.81 0.457
LP709-043	1	02 10 03.7	-08 53 00	13.89	11.72	9.86	13.05	11.91	10.40	/23	8.95	8.34 ^a	8.08	...	...	...
SCR0210-6622	1	02 10 45.1	-66 22 27	16.86	14.60	12.15	15.94	14.56	12.77	/40	10.97	10.43	10.09	...	...	...
LTT01133B	0(1)	02 11 02.2	-35 40 14	...	...	...	11.81	10.81	9.62	1/1	7.61	7.00 ^a	6.67 ^a	*	1.46	11.81 0.471
LTT01133A	3(1)	02 11 02.2	-35 40 14	...	...	...	10.35	9.46	8.59	1/1	7.35	6.73 ^a	6.54	*	...	10.35 0.669
LTT01133C	0(1)	02 11 03.1	-35 40 03	...	...	...	11.84	10.81	9.60	1/1	8.42	7.83 ^a	7.56	*	1.49	11.84 0.467
LHS1351	1	02 11 18.0	-63 13 41	12.99	10.60	9.14	12.23	11.15	9.82	/26	8.54	7.98	7.73	*	...	12.23 0.330
GJ0087	1	02 12 20.9	+03 34 32	...	...	...	10.040	9.097	7.989	/2	6.83	6.32	6.08	*	...	10.04 0.505
LHS1354	2	02 12 29.2	-08 04 10	12.70J	10.91J	9.84J	11.99J	11.06J	9.86J	/37	8.65J	8.07J	7.83J	...	...	...
LHS1358	1	02 12 54.0	+00 00 16	...	...	...	13.58	12.31	10.66	2/1	9.06	8.52	8.17	*	...	13.58 0.224
LHS1356	1	02 12 58.8	-73 45 50	13.84	11.68	10.09	...	...	...	...	9.24	8.56	8.34	...	...	...
L296-105	1	02 13 53.0	-49 23 14	14.34	12.07	10.34	...	...	...	...	9.43	8.76	8.53	...	...	...
GJ0091	1	02 13 53.6	-32 02 29	10.96	9.10	7.30	10.31	9.32	8.15	/2	6.96	6.33	6.09	*	...	10.31 0.521
LHS1363	1	02 14 12.6	-03 57 44	17.28	14.96	11.96	16.44	14.71	12.62	/40	10.48	9.86	9.49	*	...	16.44 0.101
LP885-034	1	02 14 18.6	-30 33 47	13.38	11.69	9.68	...	...	...	...	8.82	8.24 ^a	7.96	...	...	...
GJ1045	1	02 14 59.4	+17 25 09	...	...	...	14.44	13.19	11.58	/37	9.97	9.38	9.10	*	...	14.44 0.206
LHS1367	1	02 15 08.1	-30 40 01	20.23	17.68	14.03	18.98	16.70	14.23	/40	11.62	10.95	10.54	...	...	...
StKM1-249	1	02 15 20.0	-13 00 58	12.48	10.44	9.23	...	...	...	...	8.63	8.00	7.77	...	...	...
LHS1373	1	02 15 48.9	-12 40 27	13.84	11.83	9.90	13.00	11.89	10.46	/37	9.05	8.47 ^a	8.17	...	...	...

LP829-041	1	02 16 21.4	-22 00 49	18.14	15.72	12.74	...	...	...	...	11.31	10.76	10.40	...	...	...
LHS1375	1	02 16 31.5	+13 35 37	...	...	...	15.81	14.13	12.01	4/1	9.87	9.31	8.98	*	...	15.80 0.099
SCR0216-5257	1	02 16 32.0	-52 57 47	16.20	14.11	11.99	15.23	13.95	12.28	/40	10.62	9.96	9.68	...	...	...
LHS1376(B)	0(1)	02 16 41.2	-30 59 18	...	...	...	13.10	11.88	10.26	/23	8.78	8.19	7.89	*	1.07	13.10 0.252
LHS1377(A)	2(1)	02 16 41.2	-30 59 18	12.71	10.79	8.54	12.03	10.87	9.38	/40	7.99	7.32	7.13	*	...	12.03 0.356
LHS1378	1	02 17 12.9	+35 26 19	...	...	...	15.90	14.19	12.09	/37	9.98	9.35	9.01	*	...	15.90 0.104
WT0084	1	02 17 28.5	-59 22 44	17.19	14.66	11.50	15.67	14.19	12.25	/5	10.44	9.87	9.54	*	...	15.67 0.116
GJ0093	1	02 17 34.2	-53 59 20	12.16	9.64	8.88	11.40	10.50	9.51	/2	8.47	7.83	7.65	*	...	11.40 0.546
L174-034	1	02 18 17.9	-55 07 33	14.37	12.27	10.40	...	...	...	...	9.48	8.91	8.64	...	...	...
GJ0094	1	02 18 59.4	+35 21 00	...	...	...	12.55	11.43	9.96	/37	8.66	8.14	7.90	*	...	12.55 0.349
GJ1046B	0BD	02 19 10.0	-36 46 41	...	...	...	...	...	...	...	...	...	...	*	...	...
GJ1046A	2(1)	02 19 10.1	-36 46 41	12.41	10.11	8.65	11.56	10.52	9.19	/40	7.92	7.32 ^a	7.03	*	...	11.60 0.398
GJ1047C	0(1)	02 21 01.9	+36 52 47	...	...	...	14.29	13.11	11.63	/37	10.21	9.66	9.41	*	0.23	14.29 0.227
GJ1047B	0	02 21 04.7	+36 53 02	...	...	...	...	...	...	...	...	...	...	*	0.00	14.06 0.246
GJ1047A	3(2)	02 21 04.7	+36 53 02	...	...	...	13.31J	12.17J	10.72J	/37	9.37J	8.78J	8.56J	*	...	14.06 0.247
GJ0096	1	02 22 14.6	+47 52 48	...	...	...	9.40	8.46	7.51	2/1	6.38	5.77	5.55	*	...	9.40 0.634
LP710-008	1	02 22 17.8	-13 11 06	14.87	12.86	10.87	...	...	...	...	9.83	9.23	8.96	...	...	...
LP941-057	1	02 22 18.3	-36 51 52	17.45	15.20	12.57	...	...	...	...	11.06	10.47	10.13	...	...	...
L440-002	1	02 22 25.6	-34 33 18	12.11	9.73	8.68	...	...	...	...	8.36	7.76	7.56	...	...	...
LP829-051	1	02 23 24.0	-23 18 25	15.34	13.14	10.70	14.21	12.98	11.38	/23	9.86	9.31	9.01	...	...	...
L296-061	1	02 24 26.6	-47 10 24	14.00	11.29	9.74	...	...	...	...	8.96	8.37	8.18	...	...	...
LP885-059	1	02 26 32.8	-29 30 56	12.50	10.89	9.16	...	...	...	...	8.94	8.26	8.05	...	...	...
L513-008	1	02 27 30.4	-30 54 36	11.45	9.30	7.78	10.89	9.93	8.88	/20	7.76	7.11	6.93	*	...	10.89 0.590
LHS1407	1	02 28 05.5	+03 10 05	...	...	...	17.61	15.84	13.76	1/1	11.67	11.12	10.79	*	...	17.61 0.104
LP941-090	1	02 28 07.7	-36 28 20	14.88	12.77	10.56	...	...	...	...	9.72	9.14	8.87	...	...	...
LHS1412	1	02 30 34.9	-15 43 25	13.94	11.91	10.19	...	...	...	...	9.28	8.65	8.42	...	...	...
GJ0101	1	02 31 27.7	+57 22 43	...	...	...	13.22	12.07	10.58	/37	9.22	8.64 ^a	8.42	*	...	13.22 0.298
LP650-158	1	02 31 33.3	-03 56 23	...	10.51	9.30	12.43	11.43	10.25	/25	8.95	8.31 ^a	8.08	...	...	...
GJ0102	1	02 33 37.2	+24 55 38	...	...	...	12.98	11.71	10.07	/37	8.47	7.91	7.63	*	...	12.98 0.195
L225-057B	0	02 34 21.0	-53 05 35	...	...	...	...	...	...	...	...	...	...	*	0.00	13.28 0.298
L225-057A	2	02 34 21.2	-53 05 37	13.57J	11.09J	9.28J	12.53J	11.32J	9.76J	/40	8.23J	7.61J	7.31J	*	...	13.28 0.298
GJ0103	2	02 34 22.6	-43 47 47	9.59J	6.85J	6.92J	8.84J	7.96J	7.00J	/2	5.80J	5.13J	4.89J	...	...	...
GJ0104	1	02 35 53.3	+20 13 11	...	...	...	10.66	9.65	8.44	/35	7.21	6.57	6.33	*	...	10.66 0.502
APM0237-5928	1	02 36 32.5	-59 28 06	15.29	12.70	9.96	14.47	12.96	11.08	/13	9.28	8.70	8.34	*	...	14.47 0.128
LHS1426	1	02 37 32.1	+00 21 12	...	...	...	15.16	13.81	12.14	1/1	10.55	9.97	9.69	*	...	15.16 0.185
L174-028	1	02 37 52.8	-58 45 11	12.92	11.03	8.73	12.44	11.27	9.78	/40	8.36	7.79	7.51	*	...	12.46 0.322
LEHPM1-2662	1	02 38 49.1	-39 16 37	16.47	14.21	11.89	...	...	...	...	10.62	9.98	9.70	...	...	...
LT1717400	1	02 39 17.35	+07 28 17	...	...	...	14.27	13.03	11.43	/30	9.88	9.34	9.03	*	...	14.27 0.212
GJ1050	1	02 39 50.7	-34 07 58	12.59	10.38	8.57	11.76	10.68	9.35	/40	8.06	7.54	7.31	*	...	11.79 0.315
G075-035	1	02 41 15.1	-04 32 18	14.50	12.23	10.02	13.79	12.48	10.77	/40	9.20	8.58 ^a	8.25	*	...	13.79 0.171
LHS1434	1	02 42 56.3	-38 56 12	14.25	12.13	10.36	13.04	11.96	10.56	/40	9.24	8.64	8.38	...	...	...
GJ1051	1	02 43 53.2	-08 49 46	11.94	10.25	8.49	11.91	10.95	9.83	/20	8.69	8.10	7.92	*	...	11.91 0.505
GJ0109	1	02 44 15.5	+25 31 24	...	...	...	10.57	9.48	8.10	/37	6.75	6.20	5.96	*	...	10.57 0.364
LP993-115B	0	02 45 14.3	-43 44 10	...	...	...	12.69J	11.37J	9.67J	3/1	8.14J	7.55J	7.27J	*	0.64	13.02 0.214
LP993-115C	0	02 45 14.3	-43 44 10	...	...	...	...	...	...	...	...	...	...	*	1.75	14.13 0.149
LP993-115A	3(1)	02 45 14.3	-43 44 11	12.98	10.79	8.22	12.38	11.17	9.61	/27	8.06	7.53	7.20	*	...	12.38 0.268
LP711-005	1	02 45 18.5	-13 56 24	14.16	12.04	10.01	...	...	...	...	9.45	8.81	8.59	...	...	...
LT1717413A	2(1)	02 45 39.6	+44 56 55	...	...	...	10.85	9.93	8.95	/31	7.82	7.17	6.98	*	...	10.85 0.632
LT1717413B	0(1)	02 45 41.2	+44 57 03	...	...	...	...	...	...	...	11.17	10.59	10.22	*	5.83	16.68 0.120
SCR0246-7024	1	02 46 02.3	-70 24 06	15.71	13.33	10.71	14.86	13.44	11.61	/39	9.84	9.33	9.02	*	...	14.86 0.132
LHS0017	1	02 46 14.9	-04 59 21	17.23	15.04	12.10	16.36	14.75	12.76	/40	10.97	10.50	10.15	*	...	16.33 0.112
LHS1443	1	02 46 34.7	+16 25 10	...	...	...	16.99	15.16	12.97	2/1	10.97	10.52	10.19	*	...	16.99 0.098
LT1701349	1	02 46 42.9	-23 05 12	11.20	8.99	8.03	10.24	9.36	8.54	/20	7.56	6.93	6.74	...	...	...
LP771-021	1	02 48 41.0	-16 51 22	21.23	18.52	15.02	20.02	17.71	15.32	/9	12.55	11.87	11.42	*	...	20.31 0.075
GJ0114.1	1	02 50 09.8	-53 08 20	11.57	9.05	7.82	10.72	9.73	8.55	/2	7.35	6.75	6.50	*	...	10.72 0.483
LEHPM1-2816	1	02 50 23.0	-21 04 45	13.79	11.78	9.96	...	...	...	...	9.32	8.72	8.51	...	...	...
GJ0118	1	02 52 22.2	-63 40 48	12.17	9.80	8.23	11.38	10.32	8.99	/2	7.67	7.12	6.83	*	...	11.38 0.377
LEHPM1-2855	1	02 52 29.3	-24 17 19	13.40	11.60	9.45	...	...	...	...	9.05	8.37	8.17	...	...	...
SO0253+1652	1	02 53 00.0	+16 52 52	...	...	...	15.14	13.03	10.65	3/1	8.39	7.88	7.59	*	...	15.14 0.088
L012-006	1	02 53 17.0	-80 31 20	15.14	13.10	11.12	14.10	12.92	11.42	/40	10.00	9.40	9.09	...	...	...
L127-058	1	02 53 46.9	-61 35 19	13.16	11.03	9.48	...	...	...	...	8.57	7.95	7.70	...	...	...
LP831-001	1	02 54 39.5	-22 15 59	13.68	11.58	9.57	...	...	...	...	8.98	8.44	8.17	...	...	...
LHS1471	1	02 55 14.5	-51 40 21	15.35	13.25	11.13	...	...	...	...	9.94	9.37	9.08	...	...	...
GJ0119B	0(1)	02 56 34.4	+55 26 14	...	...	...	11.65	10.62	9.31	/37	8.01	7.41	7.20	*	1.17	11.65 0.495
GJ0119A	2(1)	02 56 34.4	+55 26 14	...	...	...	10.48	9.56	8.56	/37	7.43	6.80	6.59	*	...	10.48 0.658
GJ0120	1	02 57 31.0	+10 47 25	...	...	...	13.060	11.945	10.519	/2	9.16	8.66	8.43	*	...	13.06 0.325

LHS1481	1	02 58 10.2	-12 53 06	13.71	11.25	10.00	12.69	11.58	10.23	/40	8.95	8.45	8.20	...	...	...
LTT01445C	0	03 01 51.0	-16 35 31	...	...	...	...	...	...	...	...	...	...	*	0.62	11.84 0.467
LTT01445B	0(2)	03 01 51.0	-16 35 36	...	...	...	11.37J	10.13J	8.58J	4/1	7.29J	6.77J	6.50J	*	0.54	11.76 0.232
LTT01445A	3(1)	03 01 51.0	-16 35 31	11.03J	8.55J	6.82J	11.22	10.07	8.66	/13	7.11	6.56	6.29	*	...	11.22 0.280
LHS1490	1	03 02 06.4	-39 50 52	17.18	14.49	11.93	15.87	14.35	12.44	/40	10.71	10.18	9.89	*	...	15.85 0.115
G075-060	1	03 02 09.8	-00 44 43	14.28	12.33	10.68	...	...	...	...	9.53	8.94	8.71	...	...	...
APM0302-6952	1	03 02 30.8	-69 52 03	15.09	13.02	10.97	...	...	...	...	9.69	9.18	8.91	...	...	...
GJ0121.1	1	03 02 38.1	-18 09 59	12.30	10.70	8.46	11.80	10.76	9.46	/2	8.21	7.59	7.34	*	...	11.80 0.454
LEHPM1-3019	1	03 03 00.7	-55 24 53	16.27	14.04	11.70	...	...	...	...	10.45	9.93	9.60	...	...	...
LP711-044	2(1)	03 03 47.9	-12 51 19	14.46	12.11	10.52	13.37	12.22	10.73	/33	9.28	8.66	8.37	...	...	...
LHS1491	1	03 04 04.5	-20 22 43	13.56	11.80	9.49	12.84	11.65	10.13	/26	8.63	8.02	7.75	*	...	12.84 0.283
LEHPM1-3070	1	03 06 11.6	-36 47 53	20.55	17.79	13.76	19.38	16.98	14.49	/9	11.69	11.07	10.63	*	...	19.39 0.076
GJ1054B	0(1)	03 07 53.4	-28 14 10	...	...	...	13.09	11.85	10.87	/35	9.35	8.78	8.52	*	2.10	13.09 0.299
GJ1054C	0	03 07 55.7	-28 13 11	...	...	...	...	...	...	...	...	...	...	*	0.00	10.99 0.537
GJ1054A	3(2)	03 07 55.8	-28 13 11	10.11J	8.05J	6.82J	10.24J	9.35J	8.38J	/35	7.24J	6.58J	6.37J	*	...	10.99 0.537
LHS1499	1	03 08 28.2	+43 01 40	...	...	...	14.79	13.62	12.17	3/1	10.75	10.20	9.95	*	...	14.79 0.209
GJ1055	1	03 09 00.2	+10 01 26	...	...	...	14.85	13.44	11.62	/37	9.93	9.33	9.07	*	...	14.85 0.130
LP994-114	1	03 09 22.2	-39 11 03	13.56	11.96	9.99	...	...	...	...	9.00	8.37	8.15	...	...	...
GJ0125B	0	03 09 30.7	+45 43 57	...	...	...	...	...	...	...	...	...	...	*	2.17	12.46 0.332
GJ0125A	2	03 09 30.7	+45 43 57	...	...	...	10.15J	9.16J	7.97J	/37	6.73J	6.08J	5.84J	*	...	10.29 0.591
LP831-035	1	03 10 03.1	-23 41 31	14.35	12.31	10.14	...	...	...	...	9.41	8.78	8.57	...	...	...
LHS1512	1	03 10 15.4	+05 54 31	...	...	...	11.90	10.86	9.60	/37	8.36	7.75	7.53	*	...	11.90 0.409
GJ1053	1	03 10 58.3	+73 46 20	...	...	...	14.61	13.27	11.45	/37	9.85	9.41	9.08	*	...	14.61 0.138
LTT01505	1	03 11 36.7	-04 16 37	13.75	11.76	9.72	13.38	12.21	10.71	/23	9.33	8.72	8.46	...	...	...
GJ0130	1	03 12 29.8	-38 05 20	...	10.39	8.76	11.43	10.40	9.18	/2	8.03	7.42	7.19	*	...	11.43 0.390
GJ1057	1	03 13 22.9	+04 46 29	...	...	...	13.86	12.44	10.59	/37	8.78	8.21	7.83	*	...	13.86 0.138
LP831-045B	0	03 14 18.0	-23 09 31	...	...	...	...	...	...	...	...	...	...	*	2.72	15.38 0.132
LP831-045A	2	03 14 18.2	-23 09 30	13.29J	11.09J	9.37J	12.58J	11.42J	9.93J	/40	8.49J	7.88J	7.63J	*	...	12.66 0.311
StKM1-350	1	03 14 36.7	-09 40 03	11.80	9.97	8.67	11.63	10.67	9.62	/34	8.53	7.91	7.68	...	...	...
LTT11051	1	03 14 47.7	+48 30 51	...	...	...	11.42	10.45	9.37	2/1	8.17	7.64	7.41	*	...	11.43 0.508
LHS1521(C)	0(1)	03 15 29.4	+57 51 33	...	...	...	15.24	13.81	12.63	/37	11.12	10.53	10.27	*	4.36	15.24 0.132
GJ0130.1A	3(2)	03 16 13.8	+58 10 02	...	...	...	10.31J	9.30J	8.08J	/37	7.34	6.76 ^a	6.57	*	...	10.88 0.495
GJ0130.1B	0	03 16 14.0	+58 10 08	...	...	...	...	...	...	...	7.50	6.84	6.64	*	0.40	11.28 0.447
LP831-068	1	03 16 47.8	-21 25 26	11.55	9.90	7.97	11.04	10.01	8.79	/40	7.61	6.95	6.69	...	...	...
LP994-091	1	03 17 03.0	-42 14 33	14.62	12.63	10.46	...	...	...	...	9.70	9.13	8.85	...	...	...
LTT17492B	0	03 17 12.2	+45 22 22	...	...	...	...	...	...	...	...	...	...	*	2.07	13.61 0.255
LTT17492A	2	03 17 12.2	+45 22 22	...	...	...	12.39J	11.26J	9.82J	/32	8.42J	7.87J	7.59J	*	...	11.54 0.472
LHS1525	1	03 17 45.2	+25 15 06	...	...	...	11.78	10.78	9.63	/20	8.49	7.92	7.67	*	...	11.78 0.485
LP887-070	1	03 18 04.0	-30 24 12	11.69	9.68	7.87	11.00	10.05	9.05	/20	7.99	7.36	7.12	*	...	11.00 0.609
GJ0134	1	03 18 07.5	+38 15 07	...	...	...	10.28	9.31	8.21	/37	7.02	6.37	6.16	*	...	10.28 0.604
LP994-096	1	03 18 45.5	-40 51 34	12.96	11.03	8.85	12.10	10.99	9.61	/40	8.29	7.71	7.39	...	...	...
LTT01577	1	03 18 58.3	-36 23 35	12.12	9.66	8.20	11.88	10.82	9.51	/20	8.21	7.63 ^a	7.40	*	...	11.88 0.455
LTT01578	1	03 19 29.2	-30 59 44	15.00	12.80	10.30	14.00	12.78	11.18	/23	9.65	9.06	8.78	...	...	...
2MA0320-0446B	0BD	03 20 28.3	-04 46 36	...	...	...	...	...	...	...	...	...	...	*	...	...
2MA0320-0446A	2(1)	03 20 28.4	-04 46 37	...	19.84	16.56	21.18	18.85	16.37	/40	13.26	12.54	12.13	*	...	21.18 0.075
L127-124	1	03 20 51.8	-63 51 53	14.29	11.95	9.49	...	...	...	...	9.13	8.54	8.20	...	...	...
DEN0320-5520	1	03 20 58.9	-55 20 16	19.39	17.24	14.24	...	...	...	...	12.07	11.45	11.08	...	...	...
LP412-031	1	03 20 59.0	+18 54 22	...	...	...	19.21	16.98	14.70	/8	11.76	11.07	10.64	*	...	19.21 0.078
GJ0133	1	03 21 21.7	+79 58 02	...	...	...	11.21	10.18	8.99	/38	7.70	7.12	6.89	*	...	11.21 0.441
LTT17505	1	03 21 46.9	-06 40 24	12.54	10.39	8.92	11.32	10.29	9.07	/40	7.86	7.28	6.98	...	...	...
GJ1058	1	03 22 05.5	+02 55 46	...	...	...	14.78	13.50	11.82	/37	10.31	9.81	9.51	*	...	14.78 0.160
GJ1059	1	03 23 04.8	+41 59 53	...	...	...	15.31	13.90	12.05	/37	10.39	9.86	9.60	*	...	15.31 0.132
LP832-007	1	03 23 06.7	-24 13 28	15.00	12.91	10.83	...	...	...	...	9.87	9.24	8.99	...	...	...
LTT11117	1	03 23 20.6	+11 41 11	...	...	...	12.19	11.09	9.70	/37	8.39	7.81	7.56	*	...	12.19 0.395
GJ0140B	0	03 24 06.4	+23 47 06	...	...	...	...	...	...	...	...	...	...	*	1.27	12.03 0.429
GJ0140A	3(2)	03 24 06.4	+23 47 06	...	...	...	10.47J	9.49J	8.34J	/35	7.13J	6.49J	6.27J	*	...	10.76 0.591
GJ0140C	0(1)	03 24 12.8	+23 46 19	...	...	...	11.89	10.72	9.71	/35	8.28	7.68	7.46	*	1.13	11.89 0.446
DEN0324-7727	1	03 24 26.9	-77 27 05	19.88	17.56	14.39	...	...	...	...	12.10	11.46	11.05	...	...	...
LTT01628	1	03 25 39.7	-42 59 12	11.96	9.85	8.61	11.25	10.33	9.35	/20	8.30	7.73	7.48	*	...	11.25 0.577
LP532-081B	0	03 25 41.7	+05 51 54	...	...	...	...	...	...	...	...	...	...	*	2.09	17.59 0.104
LP532-081C	0	03 25 41.7	+05 51 54	...	...	...	...	...	...	...	...	...	...	*	0.07	15.57 0.154
LP532-081A	3	03 25 41.7	+05 51 54	...	...	...	14.70J	13.31J	11.49J	/37	9.95J	9.33J	9.12J	*	...	15.50 0.157
L055-011	1	03 28 08.4	-70 01 41	14.08	12.04	10.40	...	...	...	...	9.41	8.81	8.59	...	...	...
GJ0143.1	1	03 29 19.8	-11 40 42	10.17	8.03	7.28	9.95	9.10	8.27	/2	7.30	6.65	6.45	...	...	...
LSPM0330+5413	1	03 30 49.0	+54 13 55	...	...	...	15.89	14.21	12.16	1/1	10.17	9.60	9.28	*	...	15.89 0.101
LP888-018	1	03 31 30.3	-30 42 39	19.91	17.26	13.55	18.81	16.55	14.10	/40	11.36	10.70	10.26	*	...	18.81 0.079

GJ0143.3	1	03 31 47.1	+14 19 17	...	...	...	12.27	11.23	9.96	/37	8.70	8.15	7.91	*	...	12.27	0.408
GJ0145	1	03 32 55.8	-44 42 07	11.80	9.97	8.02	11.47	10.40	9.06	/2	7.74	7.21	6.91	*	...	11.47	0.349
LEHPM1-3396	1	03 34 12.2	-49 53 32	20.50	17.54	13.92	19.38	16.85	14.39	/40	11.38	10.82	10.39	*	...	19.38	0.075
LHS0176	1	03 35 38.6	-08 29 23	17.04	14.66	11.60	15.92	14.30	12.31	/16	10.38	9.80	9.46	*	...	15.92	0.110
GJ1061	1	03 35 59.7	-44 30 45	13.51	11.20	8.37	13.09	11.45	9.47	/40	7.52	7.02	6.61	*	...	13.09	0.112
LHS1567	1	03 36 06.7	-40 59 54	13.76	11.95	9.79	...	...	...	...	9.29	8.64	8.39	*	...	...	...
LSPM0336+3118	1	03 36 09.0	+31 18 40	...	...	...	13.98	12.63	10.90	1/1	9.19	8.60	8.32	*	...	13.98	0.168
LEHPM1-3427	1	03 36 47.6	-55 45 08	15.17	13.05	10.79	...	...	...	...	9.86	9.31	9.01	*	...	...	...
LHS1572	2	03 38 10.0	-68 56 46	12.92J	10.62J	9.20J	11.95J	10.86J	9.52J	/40	8.21J	7.60J	7.37J	*	...	...	...
GJ1062	1	03 38 15.7	-11 29 14	13.92	11.55	9.84	13.01	11.98	10.81	/37	9.63	9.11	8.83	*	...	13.01	0.282
L228-092	1	03 38 55.9	-52 34 11	15.67	13.18	10.90	...	...	...	...	9.69	9.11	8.80	*	...	...	...
LP944-020	1	03 39 35.3	-35 25 44	20.24	17.02	13.29	18.70	16.39	14.01	/9	10.73	10.02	9.55	*	...	...	...
L128-007	1	03 40 08.9	-60 35 59	13.35	11.10	9.67	...	...	...	...	9.00	8.43	8.13	*	...	...	...
LHS0178	1	03 42 29.4	+12 31 33	...	...	...	12.87	11.89	10.78	2/1	9.60	9.11	8.88	*	...	12.87	0.394
SCR0342-6407	1	03 42 57.4	-64 07 57	17.17	15.13	12.34	16.01	14.65	12.89	/16	11.32	10.89	10.58	*	...	16.01	0.141
LHS1582B	0	03 43 22.0	-09 33 50	...	...	...	...	...	...	...	...	...	...	*	2.12	16.95	0.112
LHS1582A	2	03 43 22.1	-09 33 51	15.73J	13.37J	10.95J	14.69J	13.33J	11.60J	/26	9.80J	9.18J	8.85J	*	...	14.83	0.187
LP944-038	2	03 44 47.9	-38 20 13	13.03J	10.78J	9.42J	...	...	...	...	8.59	8.02	7.79	*	...	...	...
LHS1590	1	03 46 45.4	-11 17 42	13.25	10.91	9.44	12.70	11.64	10.31	/37	9.00	8.46	8.19	*	...	...	...
LHS1593	1	03 47 23.2	+08 40 44	...	...	...	14.48	13.16	11.44	/37	9.85	9.27	9.02	*	...	14.48	0.145
G080-021	1	03 47 23.4	-01 58 20	12.28	10.04	8.52	11.51	10.44	9.11	/23	7.80	7.17 ^a	6.93	*	...	11.51	0.442
GJ0155.1	1	03 47 58.1	+02 47 16	...	...	...	11.020	10.069	9.053	/2	7.96	7.38 ^a	7.11	*	...	11.02	0.517
LHS1596	1	03 48 33.3	+73 33 18	...	...	...	11.32	10.33	9.20	/37	7.99	7.36	7.17	*	...	11.32	0.469
LEHPM1-3548	1	03 50 05.5	-39 22 32	13.06	10.95	9.76	...	...	...	...	8.94	8.31	8.05	*	...	...	...
GJ1065	1	03 50 44.3	-06 05 42	13.37	11.19	9.11	12.82	11.60	10.04	/40	8.57	8.00 ^a	7.75	*	...	12.80	0.205
LHS1604	1	03 51 00.0	-00 52 45	19.22	16.68	13.44	18.11	16.08	13.80	/9	11.30	10.61	10.23	*	...	18.07	0.087
2MA0352+0210	1	03 52 10.8	+02 10 48	...	...	...	21.05	18.68	16.20	1/1	13.08	12.41	11.96	*	...	21.06	0.075
LP833-014B	0(1)	03 52 23.1	-22 52 57	...	...	...	12.24	11.13	10.06	1/1	...	...	...	*	0.05	12.24	0.461
LP833-014A	2(1)	03 52 23.1	-22 52 56	12.31J	10.24J	8.86J	12.19	11.27	10.04	1/1	8.13J	7.53J	7.30J	*	...	12.19	0.467
LHS1610B	0	03 52 41.0	+17 01 04	...	...	...	...	...	...	...	...	...	...	*	0.00	14.54	0.127
LHS1610A	2	03 52 41.0	+17 01 04	...	...	...	13.79J	12.42J	10.67J	/37	8.93J	8.38J	8.05J	*	...	14.54	0.127
LEHPM1-3582	1	03 57 49.1	-37 54 04	12.85	10.84	9.53	...	...	...	...	8.53	7.89	7.66	*	...	...	...
GJ0157.1	1	03 59 56.8	+26 05 41	...	...	...	12.62	11.51	10.08	/37	8.71	8.08	7.82	*	...	12.62	0.401
LP833-023	1	04 00 28.6	-25 52 52	14.32	12.30	10.27	...	...	...	...	9.42	8.89	8.61	*	...	...	...
LP031-301A	3(1)	04 05 57.0	+71 16 38	...	...	...	13.97	12.72	11.11	1/1	9.53	8.89	8.69	*	...	13.97	0.216
LP031-302C	0	04 05 58.0	+71 16 41	...	...	...	...	...	...	...	...	...	...	*	1.73	15.70	0.129
LP031-302B	0(2)	04 05 58.0	+71 16 41	...	...	...	14.44J	13.48J	11.92J	1/1	10.10J	9.37J ^a	9.20J	*	0.88	14.85	0.160
LHS1630B	0	04 07 20.0	-24 29 13	...	...	...	...	...	...	...	...	...	...	*	0.61	13.48	0.260
LHS1630A	2	04 07 20.5	-24 29 14	13.22J	11.12J	9.22J	12.38J	11.22J	9.68J	/26	8.24J	7.68J	7.44J	*	...	12.87	0.318
GJ0162	1	04 08 37.4	+33 38 13	...	...	...	10.20	9.25	8.21	/37	7.02	6.40	6.18	*	...	10.20	0.556
LP889-037	1	04 08 55.6	-31 28 54	15.47	13.29	10.87	14.56	13.21	11.48	/40	9.78	9.16	8.82	*	...	14.56	0.162
GJ0163	1	04 09 15.7	-53 22 25	12.69	10.04	8.66	11.84	10.76	9.34	/2	7.95	7.43	7.14	*	...	11.84	0.387
GJ1068	1	04 10 28.1	-53 36 08	...	12.11	9.81	13.60	12.18	10.42	/40	8.75	8.21	7.90	*	...	13.60	0.132
LP714-037	1	04 10 48.1	-12 51 43	17.40	14.93	12.13	...	...	...	...	11.01	10.37	9.92	*	...	...	...
LHS1638	1	04 12 20.3	+64 43 36	...	...	...	13.73	12.44	10.77	/37	9.16	8.58	8.29	*	...	13.73	0.174
LHS1641	1	04 12 43.1	-22 50 39	14.44	12.47	10.57	...	...	...	...	9.57	8.96	8.71	*	...	...	...
LHS1639	1	04 12 47.5	-53 52 04	14.65	12.58	10.45	...	...	...	...	9.51	8.92	8.68	*	...	...	...
GJ0164B	0	04 12 58.8	+52 36 42	...	...	...	...	...	...	...	...	...	...	*	3.10	16.60	0.102
GJ0164A	2	04 12 58.8	+52 36 42	...	...	...	13.50J	12.19J	10.47J	/37	8.77J	8.25J	7.92J	*	...	13.50	0.212
GJ0165B	0	04 13 08.2	+50 31 21	...	...	...	...	...	...	...	...	...	...	*	0.00	14.42	0.187
GJ0165A	2	04 13 08.2	+50 31 21	...	...	...	13.67J	12.40J	10.74J	/38	9.26J	8.75J	8.47J	*	...	14.42	0.187
G160-054	1	04 13 45.9	-05 09 05	14.75	12.70	10.29	14.21	12.95	11.28	/24	9.72	9.11	8.82	*	...	...	...
2MA0414-0906	1	04 14 17.3	-09 06 54	...	...	...	13.83	12.62	11.09	1/1	9.63	9.06	8.76	*	...	13.83	0.286
GJ2033B	0(1)	04 16 41.6	-12 33 23	...	...	...	12.32	11.27	9.98	1/1	...	...	...	*	1.04	12.32	0.419
GJ2033A	2(1)	04 16 41.7	-12 33 23	11.87J	9.80J	8.31J	11.28	10.26	9.18	1/1	7.57J	6.98J	6.73J	*	...	11.28	0.547
G007-034	1	04 17 18.4	+08 49 20	...	...	...	13.84	12.50	10.75	3/1	9.03	8.48	8.18	*	...	13.84	0.187
LEHPM1-3719	1	04 17 34.6	-48 34 39	16.74	14.25	11.25	...	...	...	...	10.28	9.71	9.34	*	...	...	...
LHS1654	1	04 18 04.7	-49 01 30	13.81	11.68	9.70	...	...	...	...	9.30	8.70	8.47	*	...	...	...
LP834-013	1	04 18 06.5	-24 06 24	17.12	14.83	12.29	...	...	...	...	10.92	10.34	10.02	*	...	...	...
LP834-015	1	04 18 40.1	-25 07 09	16.32	13.99	11.70	...	...	...	...	10.37	9.78	9.48	*	...	...	...
LTT11399	1	04 19 59.6	+36 29 11	...	...	...	11.52	10.53	9.43	2/1	8.23	7.61	7.41	*	...	11.52	0.541
SCR0420-7005	1	04 20 12.6	-70 05 59	18.18	15.68	12.58	17.09	15.35	13.25	/39	11.19	10.59	10.25	*	...	17.09	0.100
LHS1665	1	04 22 12.5	-57 26 01	12.53	9.75	8.47	...	...	...	...	8.08	7.50	7.21	*	...	...	...
GJ1070	1	04 22 33.5	+39 00 44	...	...	...	15.30	13.95	12.17	/37	10.47	9.94	9.67	*	...	15.30	0.147
LHS1668	1	04 24 56.2	-40 02 48	15.03	12.62	10.38	14.10	12.77	11.07	/25	9.53	8.99	8.67	*	...	...	...
LHS0190(B)	0	04 25 38.0	-06 52 37	...	...	...	...	...	...	...	...	...	...	*	2.10	16.48	0.114

LHS0189(A)	2	04 25 38.4	-06 52 37	14.55J	12.30J	10.81J	14.23J	13.17J	11.91J	/40	11.14J	10.66J ^a	10.31J	*	...	14.38	0.194
LHS0191	1	04 26 20.1	+03 35 43	...	...	...	18.510	16.240	13.960	/3	11.62	11.07	10.69	*	...	18.51	0.087
LHS5094	1	04 26 32.6	-30 48 02	15.06	12.99	10.53	14.17	12.73	10.99	/40	9.30	8.72	8.41	*	...	14.17	0.164
LEHPM2-1698	1	04 27 05.8	-40 26 40	15.65	13.45	11.21	...	...	...	...	10.15	9.53	9.25	...	...	...	...
L178-101	1	04 27 36.2	-59 21 16	14.21	12.09	10.31	...	...	...	...	9.30	8.70	8.44	...	...	...	...
L130-037	1	04 28 05.7	-62 09 25	14.15	12.06	9.96	13.06	11.88	10.36	/40	8.94	8.34 ^a	8.01	...	...	...	...
2MA0429-3123B	0	04 29 18.4	-31 23 56	...	...	...	...	...	...	...	...	...	...	*	2.00	19.55	0.078
2MA0429-3123A	2	04 29 18.4	-31 23 56	...	...	...	17.39J	15.50J	13.32J	3/1	10.87J	10.21J	9.77J	*	...	17.55	0.096
GJ0170	1	04 30 25.2	+39 51 00	...	...	...	13.93	12.58	10.81	/37	9.11	8.53	8.25	*	...	13.93	0.151
LP715-051B	0	04 31 09.0	-13 30 52	...	...	...	...	...	...	...	...	...	...	*	1.20	13.05	0.316
LP715-051A	2	04 31 09.0	-13 30 53	12.53J	10.33J	8.85J	11.54J	10.49J	9.21J	/20	7.96J	7.30J	7.05J	*	...	11.85	0.446
LHS1678	1	04 32 42.6	-39 47 12	13.44	10.90	9.69	12.48	11.46	10.26	/40	9.02	8.50	8.26	*	...	12.48	0.380
SCR0433-0211	1	04 33 31.5	-02 11 01	18.01	15.87	12.88	17.16	15.47	13.45	/40	11.48	10.95	10.63	...	...	...	...
L231-032	1	04 33 39.7	-51 57 22	13.46	11.35	9.76	...	...	...	...	9.10	8.53 ^a	8.25	...	...	...	...
LP775-031B	0	04 35 16.1	-16 06 57	...	...	...	...	...	...	...	...	...	...	*	0.00	18.45	0.079
LP775-031A	2	04 35 16.1	-16 06 57	18.85J	16.37J	12.34J	17.70J	15.50J	13.06J	/40	10.41J	9.78J	9.35J	*	...	18.45	0.079
LP834-032	1	04 35 36.2	-25 27 35	13.21	10.98	8.83	12.44	11.26	9.73	/40	8.24	7.65	7.41	*	...	12.44	0.357
L951-054	1	04 36 26.8	-03 43 56	14.86	12.75	10.56	...	...	...	...	9.69	9.07	8.81	...	...	...	...
L591-043B	0(1)	04 36 40.9	-27 21 18	...	...	...	12.56	11.47	10.10	2/1	8.78	7.17	7.88	*	0.31	12.56	0.418
L591-042A	2(1)	04 36 40.9	-27 21 18	12.95	10.94	9.19	12.25	11.20	9.88	/40	8.61	7.98	7.73	*	...	12.25	0.454
LHS1686	1	04 36 41.5	+11 13 35	...	...	...	14.30	13.12	11.57	/37	10.09	9.55	9.30	*	...	14.30	0.251
GJ0173	1	04 37 41.9	-11 02 20	11.48	9.29	7.76	10.34	9.34	8.16	/2	6.94	6.33	6.09	*	...	10.34	0.484
LP655-043	1	04 38 02.5	-05 56 13	15.54	13.42	10.80	14.44	13.14	11.41	/23	9.73	9.14	8.82	...	...	...	...
LTT11472B	0	04 38 12.6	+28 13 00	...	...	...	...	...	...	...	...	...	...	*	0.76	13.76	0.182
LTT11472A	2	04 38 12.6	+28 13 00	...	...	...	12.56J	11.31J	9.70J	3/1	8.17J	7.62J	7.33J	*	...	13.00	0.238
LP715-039	1	04 38 37.2	-11 30 15	13.76	11.63	9.89	12.69	11.54	10.09	/40	8.67	8.11	7.82	...	...	...	...
LHS1690	1	04 39 32.0	+16 15 43	...	...	...	15.57	13.97	12.01	2/1	10.14	9.53	9.19	*	...	15.57	0.112
LP655-048	1	04 40 23.3	-05 30 08	18.85	16.49	13.17	17.79	15.72	13.36	/27	10.66	9.99	9.55	*	...	17.81	0.082
HIP021765B	0	04 40 29.2	-09 11 46	...	...	...	...	...	...	...	...	...	...	*	0.10	11.06	0.545
HIP021765A	2	04 40 29.2	-09 11 46	...	...	...	10.26J	9.30J	8.25J	/20	7.13J	6.52J	6.27J	*	...	10.96	0.558
GJ0176	1	04 42 55.7	+18 57 29	...	...	...	9.98	8.96	7.73	/37	6.46	5.82	5.61	*	...	9.98	0.475
LP891-006	1	04 43 11.8	-32 26 42	15.63	13.40	11.52	...	...	...	...	10.25	9.58	9.33	...	...	...	...
UPM0444-3749	1	04 44 50.2	-37 49 41	15.44	13.15	10.98	14.55	13.26	11.61	/40	10.08	9.49	9.18	...	...	...	...
LHS0197	1	04 46 23.8	+48 44 18	...	...	...	17.29	15.58	13.50	2/1	11.56	11.05	10.76	*	...	17.29	0.103
LP656-009	1	04 46 24.4	-02 49 08	12.68	10.27	9.15	11.91	10.93	9.84	/23	8.68	8.09	7.86	...	...	...	...
2MA0446-1116B	0	04 46 51.8	-11 16 47	...	...	...	...	...	...	...	...	...	...	*	2.62	14.96	0.161
2MA0446-1116A	2	04 46 51.8	-11 16 47	...	...	...	12.25J	11.05J	9.57J	2/1	8.14J	7.56J	7.29J	*	...	12.34	0.383
LP835-018	1	04 48 01.0	-26 03 01	16.93	14.71	12.10	...	...	...	...	10.77	10.26	9.94	...	...	...	...
L736-001	1	04 49 32.8	-14 47 23	10.95	8.87	7.57	10.87	9.97	9.08	2/1	8.05	7.41	7.20	*	...	10.87	0.652
GJ1072	1	04 50 50.9	+22 07 22	...	...	...	15.20	13.71	11.83	/37	9.90	9.31	8.98	*	...	15.20	0.130
APM0452-5819	1	04 51 37.3	-58 18 52	19.39	17.19	13.98	18.51	16.43	14.14	/5	11.69	11.09	10.71	*	...	18.51	0.087
LP716-010	1	04 52 04.0	-10 58 22	17.32	15.20	12.42	16.24	14.61	12.60	/40	10.50	9.97	9.61	...	...	...	...
GJ0179	1	04 52 05.7	+06 28 35	...	...	...	11.980	10.825	9.333	/2	7.81	7.21	6.94	*	...	11.98	0.328
LP776-025	1	04 52 24.4	-16 49 22	...	9.72	7.33	11.63	10.53	9.12	/40	7.74	7.15	6.89	*	...	11.63	0.430
GJ1073	1	04 52 34.6	+40 42 24	...	...	...	13.44	12.21	10.58	/37	9.07	8.55	8.31	*	...	13.44	0.206
GJ2036B	0(1)	04 53 30.5	-55 51 32	...	...	...	12.12	10.94	9.32	2/1	7.80	7.24	6.89	*	1.08	12.15	0.289
GJ2036A	2(1)	04 53 31.2	-55 51 37	...	...	...	11.07	9.99	8.57	2/1	7.20	6.62 ^a	6.34	*	...	11.07	0.400
GJ0180	1	04 53 50.0	-17 46 24	12.22	9.80	8.41	10.91	9.89	8.69	/2	7.41	6.86	6.60	*	...	10.91	0.440
G084-025	1	04 57 58.6	-05 06 17	15.84	13.50	11.04	...	...	...	...	10.13	9.58	9.29	...	...	...	...
GJ1074	1	04 58 45.9	+50 56 37	...	...	...	10.98	10.04	9.02	/37	7.90	7.27	7.04	*	...	10.98	0.558
LP891-046	1	04 59 24.4	-30 55 58	16.11	13.65	11.13	14.95	13.65	11.94	/24	10.23	9.63	9.35	...	...	...	...
L131-012	1	04 59 32.3	-61 53 04	13.55	11.29	9.47	...	...	...	...	8.70	8.09	7.81	...	...	...	...
LHS1723	1	05 01 57.4	-06 56 47	13.00	10.57	8.48	12.20	10.86	9.18	/40	7.62	7.07	6.74	*	...	12.20	0.163
LP476-207B	0	05 01 58.8	+09 58 59	...	...	...	...	...	...	...	...	...	...	*	0.87	13.37	0.338
LP476-207C	0	05 01 58.8	+09 58 59	...	...	...	...	...	...	...	...	...	...	*	0.00	12.50	0.433
LP476-207A	3	05 01 58.8	+09 58 59	...	...	...	11.53J	10.33J	8.74J	2/1	7.21J	6.66J	6.37J	*	...	12.50	0.433
GJ0185	2	05 02 28.4	-21 15 24	9.32J	6.82J	5.81J	8.28J	7.37J	6.47J	/40	5.45J	4.85J	4.60J	...	...	...	...
LHS1731	1	05 03 20.1	-17 22 25	12.70	9.61	7.42	11.74	10.60	9.17	/40	7.82	7.24	6.94	*	...	11.69	0.295
GJ0184B	0	05 03 23.9	+53 07 42	...	...	...	...	...	...	...	...	...	...	*	8.66	18.64	0.082
GJ0184A	2(1)	05 03 23.9	+53 07 42	...	...	...	9.98	9.08	8.12	/37	7.00	6.41	6.17	*	...	9.98	0.596
G097-015	1	05 04 15.0	+11 03 24	...	...	...	13.76	12.43	10.74	3/1	9.14	8.61	8.31	*	...	13.76	0.150
LP716-035	1	05 05 11.8	-12 00 29	13.83	11.55	9.66	12.97	11.51	10.35	/25	9.10	8.50	8.25	...	...	...	...
BD-21 01074C	0	05 06 49.5	-21 35 04	...	...	...	...	...	...	...	...	...	...	*	2.03	12.44	0.368
BD-21 01074B	0(2)	05 06 49.5	-21 35 04	...	...	...	11.08J	9.92J	8.45J	4	7.05J	6.39J	6.12J	*	1.03	11.44	0.484
BD-21 01074A	3(1)	05 06 49.9	-21 35 08	...	...	...	10.41	9.40	8.25	3/1	7.00	6.39	6.11	*	...	10.41	0.623
L057-064	1	05 08 09.1	-73 26 50	13.98	11.80	11.26	...	...	...	...	9.44	8.83	8.58	...	...	...	...

LP837-019	1	05 44 57.0	-21 36 56	12.78	10.73	9.17	12.31	11.24	9.93	/23	8.65	8.06	7.82	...	...	...
LP837-020	1	05 44 57.9	-24 56 10	17.01	14.81	12.41	...	...	...	...	10.76	10.13	9.85	...	...	...
LHS1785	1	05 47 09.1	-05 12 11	15.78	13.83	11.10	14.58	13.29	11.62	/40	10.04	9.51	9.18	*	...	14.62 0.168
GJ0218	1	05 47 40.6	-36 19 43	11.33	9.06	7.84	10.74	9.77	8.62	/2	7.41	6.81	6.62	*	...	10.74 0.516
WT2440	1	05 47 50.2	-34 19 14	12.53	10.34	8.87	...	...	...	...	8.50	7.95 ^a	7.71	...	...	...
L307-012	1	05 48 45.2	-45 55 42	12.36	10.18	9.03	...	...	...	...	8.68	8.03	7.85	...	...	...
LHS1793	1	05 52 29.2	-55 06 43	14.03	11.81	10.22	...	...	...	...	9.22	8.61	8.38	...	...	...
GJ0220	1	05 53 14.1	+24 15 32	...	...	...	10.84	9.85	8.72	/37	7.49	6.83	6.63	*	...	10.84 0.579
L379-017	1	05 53 40.1	-42 41 44	14.29	12.00	10.07	...	...	...	...	9.45	8.89	8.60	...	...	...
LP837-037	1	05 53 55.4	-22 46 58	18.99	16.65	13.57	...	...	...	...	11.62	11.05	10.70	...	...	...
LP837-053	1	05 55 43.2	-26 51 23	11.96	9.78	7.76	10.82	9.78	8.47	/20	7.18	6.48	6.29	*	...	10.82 0.499
LHS5112	2	05 56 56.2	-46 55 54	11.63J	9.56J	8.23J	10.58J	9.66J	8.72J	/20	7.64J	7.00J	6.79J	...	...	...
UPM0559-5225	1	05 59 33.2	-52 25 05	14.67	12.54	10.57	13.66	12.49	11.00	/40	9.63	8.95	8.70	...	...	...
G192-011(A)	2(1)	05 59 37.7	+58 35 34	...	...	...	10.24	9.29	8.22	/33	7.07	6.42	6.21	*	3.32	10.24 0.553
G192-012(B)	0(1)	05 59 55.7	+58 34 16	...	...	...	13.56	12.28	10.62	/33	9.03	8.46	8.18	*	...	13.56 0.204
LTT17897	1	06 00 03.0	+02 42 23	...	...	...	11.31	10.04	8.43	5/1	6.91	6.31	6.04	*	...	11.31 0.219
LHS0214(A)	2(1)	06 00 49.0	+68 09 24	...	...	...	12.94	11.80	10.33	/37	8.92	8.35	8.08	*	...	12.94 0.337
LHS0213(B)	0(1)	06 00 54.0	+68 08 00	...	...	...	13.32	12.16	10.65	/37	9.18	8.59	8.33	*	0.38	13.32 0.299
LHS1805	1	06 01 11.0	+59 35 01	...	...	...	11.71	10.52	8.99	/37	7.47	6.95	6.64	*	...	11.71 0.253
LHS1807	1	06 02 22.6	-20 19 44	14.47	12.28	10.22	13.26	12.10	10.62	/26	9.22	8.67	8.37	*	...	13.26 0.235
LHS1809	1	06 02 29.6	+49 50 58	...	...	...	14.53	13.04	11.15	/37	9.35	8.77	8.44	*	...	14.53 0.124
LHS1810	1	06 02 54.2	-09 15 04	17.86	15.75	12.59	...	...	...	...	10.98	10.40	10.03	...	...	...
APCOL	1	06 04 52.2	-34 33 36	13.78	11.70	9.03	12.96	11.49	9.60	/27	7.74	7.18	6.87	*	...	12.96 0.176
LP838-016	1	06 07 43.7	-25 44 42	12.58	10.33	8.48	11.88	10.78	9.37	/23	8.02	7.50 ^a	7.17	*	...	11.88 0.319
LEHPM2-3528	1	06 07 58.1	-61 15 11	15.75	13.43	11.13	14.57	13.26	11.57	/39	9.98	9.38	9.10	...	...	...
LHS1823	1	06 08 16.4	-32 16 46	14.26	12.06	10.12	...	...	...	...	9.01	8.50	8.20	...	...	...
CD-35 02722B	0BD	06 09 19.2	-35 49 30	...	...	...	...	...	...	...	...	...	...	*	...	...
CD-35 02722A	2(1)	06 09 19.2	-35 49 30	...	...	...	11.03	10.08	9.05	2/1	7.92	7.28	7.05	*	...	11.03 0.600
GJ0226	1	06 10 19.8	+82 06 24	...	...	...	10.49	9.45	8.17	/37	6.87	6.30	6.06	*	...	10.49 0.423
GJ0229A	2(1)	06 10 34.6	-21 51 53	8.94	7.37	4.72	8.10	7.15	6.08	/40	5.10	4.39 ^a	4.17 ^a	*	...	8.10 0.593
GJ0229B	0BD	06 10 34.8	-21 52 00	...	...	...	...	...	...	...	...	...	...	*	...	...
GJ1088	1	06 10 52.9	-43 24 18	13.20	10.95	9.05	12.28	11.11	9.61	/26	8.17	7.58 ^a	7.31	*	...	12.28 0.283
GJ0228B	0	06 10 54.8	+10 19 05	...	...	...	...	...	...	...	...	...	...	*	1.50	12.16 0.278
GJ0228A	2	06 10 54.8	+10 19 05	...	...	...	10.42J	9.39J	8.08J	/37	6.80J	6.31J	6.03J	*	...	10.66 0.434
L308-038	1	06 12 36.7	-47 29 33	13.34	11.05	9.47	...	...	...	...	8.85	8.23	7.98	...	...	...
SCR0613-3437	2	06 13 57.3	-34 37 02	16.06J	14.09J	11.46J	15.32J	13.87J	12.05J	/40	10.61J	10.06J ^a	9.53J	...	...	...
G192-022	1	06 14 02.4	+51 40 08	...	...	...	12.86	11.72	10.27	/32	8.86	8.36	8.12	*	...	12.86 0.272
GJ0231.3	1	06 19 20.8	-06 39 22	13.58	11.33	9.17	13.06	11.92	10.50	/2	9.12	8.54	8.24	*	...	13.06 0.260
L308-057	1	06 21 06.7	-49 05 38	14.41	11.94	9.55	...	...	...	...	9.16	8.63 ^a	8.35	...	...	...
UPM0621-6111	1	06 21 45.7	-61 11 13	16.11	14.26	12.03	14.95	13.68	12.06	/40	10.43	9.79	9.53	...	...	...
SCR0622-4956	1	06 22 36.1	-49 56 29	17.40	15.16	12.45	16.30	14.88	13.05	/40	11.20	10.62	10.29	...	...	...
2MA0623-3435	1	06 23 08.8	-34 35 53	13.66	11.72	9.89	...	...	...	...	9.24	8.69	8.38	...	...	...
GJ0232	1	06 24 41.3	+23 25 59	...	...	...	13.06	11.82	10.18	/37	8.66	8.16 ^a	7.91	*	...	13.06 0.169
LHS1848	1	06 25 53.5	+56 09 42	...	...	...	14.62	13.37	11.77	/37	10.26	9.65	9.36	*	...	14.62 0.206
GJ0234B	0	06 29 23.4	-02 48 50	...	...	...	...	...	...	...	...	...	...	*	3.08	14.85 0.092
GJ0234A	2	06 29 23.5	-02 48 51	11.46J	8.58J	7.19J	11.12J	9.78J	8.04J	/40	6.38J	5.75J	5.49J	*	...	11.09 0.195
SCR0630-7643B	0	06 30 46.0	-76 43 09	...	...	...	...	...	...	...	...	...	...	*	0.20	15.68 0.101
SCR0630-7643A	2	06 30 46.6	-76 43 09	15.78J	13.56J	10.74J	14.82J	13.08J	11.00J	/39	8.89J	8.28J	7.92J	*	...	15.48 0.104
SCR0631-8811	1	06 31 31.0	-88 11 37	16.96	14.67	11.46	15.65	14.05	12.04	/39	10.04	9.46	9.07	*	...	15.65 0.124
GJ0237	2	06 31 51.1	-43 32 03	11.42J	9.19J	8.04J	10.58J	9.64J	8.65J	/2	7.63	7.00	6.79	...	...	...
LHS1852	1	06 32 22.0	-69 57 44	14.02	11.75	9.97	12.97	11.89	10.53	/40	9.23	8.61	8.38	...	...	...
L032-009(A)	2(1)	06 33 43.3	-75 37 48	11.30	8.81	8.14	10.44	9.37	8.04	/40	6.73	6.15	5.86	*	...	10.44 0.419
L032-008(B)	0(1)	06 33 46.8	-75 37 30	...	...	...	11.44	10.29	8.82	3/1	7.41	6.85	6.56	*	1.00	11.44 0.313
GJ0238	1	06 33 50.0	-58 31 43	12.54	10.10	8.84	11.66	10.61	9.27	/2	7.90	7.31	7.03	*	...	11.66 0.429
LTT02591	1	06 34 18.6	-31 52 23	14.02	11.76	9.98	...	...	...	...	9.20	8.58	8.29	...	...	...
SCR0634-5403	1	06 34 36.9	-54 03 13	17.18	14.89	12.29	15.98	14.56	12.79	/40	11.07	10.45	10.13	...	...	...
LHS1857	1	06 36 07.6	+11 36 05	...	...	...	14.24	13.00	11.34	/37	9.79	9.31	8.99	*	...	14.24 0.203
LP381-004	1	06 36 18.3	-40 00 24	11.52	9.50	8.91	10.59	9.66	8.72	/20	7.62	7.08	6.79	*	...	10.59 0.617
GJ0239	1	06 37 10.8	+17 33 53	...	...	...	9.64	8.72	7.78	/37	6.67	6.03	5.86	*	...	9.64 0.539
LP720-031	1	06 38 35.3	-14 04 58	15.43	13.13	11.52	...	...	...	...	10.02	9.43	9.14	...	...	...
LP780-032	1	06 39 37.4	-21 01 33	13.26	11.04	9.02	12.77	11.55	9.99	/40	8.51	7.91	7.65	*	...	12.77 0.299
L182-007	1	06 39 37.6	-55 36 35	10.48	8.30	7.18	9.81	8.88	7.93	/20	6.86	6.28	6.03	*	...	9.81 0.609
LP453-031	1	06 39 41.1	-36 59 03	12.53	10.29	9.20	11.90	10.86	9.58	/25	8.30	7.63	7.42	...	...	...
LP780-023	1	06 40 08.6	-16 27 26	13.95	11.69	9.68	12.94	11.83	10.43	/25	9.12	8.51	8.22	...	...	...
SCR0640-0552	1	06 40 14.0	-05 52 23	11.23	8.79	7.59	10.22	9.22	8.03	/39	6.84	6.21	5.96	*	...	10.22 0.513
G108-021(A)	2(1)	06 42 09.5	+03 35 41	...	...	...	12.06	10.96	9.55	/33	8.17	7.62	7.33	*	...	12.06 0.285

LP780-026	1	06 42 10.8	-15 43 15	13.90	11.76	10.13	...	...	...	...	9.38	8.72	8.51	...	...	...
G108-022(B)	0(1)	06 42 13.3	+03 35 31	...	...	...	13.33	12.16	10.61	/33	9.11	8.61	8.28	*	1.27	13.33 0.182
SCR0642-6707	1	06 42 27.2	-67 07 20	17.00	14.69	11.61	16.01	14.43	12.42	/39	10.62	10.15	9.81	*	...	16.01 0.111
L059-002	1	06 43 29.8	-70 03 21	13.95	11.51	9.75	12.92	11.76	10.29	/39	8.85	8.28	7.97	...	...	...
L597-018	1	06 43 40.7	-26 24 41	13.84	11.45	9.77	12.92	11.76	10.31	/40	8.91	8.43 ^a	8.13	*	...	12.90 0.314
LHS1864B	0	06 43 50.9	+51 07 03	...	...	...	...	...	...	...	...	...	...	*	1.21	13.86 0.241
LHS1864A	2	06 43 50.9	+51 07 03	...	...	...	12.34J	11.21J	9.77J	/37	8.36J	7.81J	7.55J	*	...	12.65 0.357
GJ2050B	0	06 44 45.6	+71 53 15	...	...	...	...	...	...	...	...	...	...	*	3.60	14.55 0.210
GJ2050A	2	06 44 45.6	+71 53 15	...	...	...	10.95	10.02	9.00	/37	7.85	7.25	7.00	*	...	10.95 0.603
LTT11918	1	06 47 18.9	+23 46 44	...	...	...	12.64	11.71	10.68	/31	9.54	8.92	8.71	*	...	12.64 0.386
GJ1091	1	06 48 49.2	+37 08 37	...	...	...	13.34	12.33	11.07	/38	9.81	9.18	8.95	*	...	13.34 0.323
GJ1092	1	06 49 05.5	+37 06 51	...	...	...	13.78	12.58	11.00	/37	9.56	9.05	8.77	*	...	13.78 0.187
SCR0650-2135	1	06 50 26.6	-21 35 58	18.18	16.10	13.06	17.18	15.49	13.49	/40	11.51	10.89	10.55	...	...	...
LHS1873	1	06 50 59.5	-09 10 50	13.73	11.51	9.19	13.31	12.20	10.76	/25	9.40	8.83 ^a	8.56	...	...	...
G108-036	1	06 51 59.02	+03 12 55	...	...	...	13.00	11.88	10.49	2/1	9.14	8.57 ^a	8.32	*	...	13.00 0.354
DEN0652-2534	1	06 52 19.8	-25 34 50	...	19.14	15.96	20.58	18.32	15.97	/40	12.76	12.02	11.52	*	...	20.77 0.075
L059-054	1	06 52 37.8	-73 58 16	13.79	11.75	10.08	...	...	...	...	9.14	8.56 ^a	8.29	...	...	...
LHS0221B	0	06 54 04.2	+60 52 18	...	...	...	...	...	...	...	...	...	...	*	1.61	12.78 0.222
LHS0221A	2	06 54 04.2	+60 52 18	...	...	...	10.95J	9.86J	8.47J	/37	7.13J	6.60J	6.35J	*	...	11.17 0.375
GJ0251	1	06 54 48.9	+33 16 05	...	...	...	10.02	8.90	7.49	/37	6.10	5.53	5.28	*	...	10.02 0.354
LP721-012	1	06 56 00.9	-38 24 17	13.28	11.00	9.36	...	...	...	...	9.06	8.42	8.17	...	...	...
LP661-013	1	06 56 19.0	-08 35 46	14.98	12.74	10.26	13.97	12.76	11.17	/25	9.63	9.07	8.76	...	...	...
LHS1882	1	06 56 22.7	+54 57 38	...	...	...	12.47	11.45	10.25	/37	9.00	8.49	8.26	*	...	12.47 0.352
LP382-056	2	06 57 11.7	-43 24 51	11.58J	9.41J	8.01J	11.17J	10.12J	8.87J	/40	7.59J	6.98J	6.76J	...	...	...
GJ0257B	0	06 57 46.6	-44 17 28	...	...	...	...	...	...	...	...	...	...	*	0.02	11.61 0.273
GJ0257A	2	06 57 46.6	-44 17 28	11.27J	9.12J	7.22J	10.85J	9.72J	8.32J	/19	6.88J	6.37J	6.06J	*	...	11.59 0.275
WT0204	1	06 58 18.9	-39 32 16	13.78	11.42	9.44	13.18	12.02	10.60	/40	9.23	8.64 ^a	8.35	...	...	...
GJ1093	1	06 59 28.8	+19 20 56	...	...	...	14.94	13.25	11.24	4/1	9.16	8.55	8.23	*	...	14.94 0.108
SCR0659-5622	1	06 59 40.8	-56 22 47	15.80	13.48	11.19	14.81	13.50	11.85	/40	10.35	9.77	9.49	...	...	...
WT1539	1	07 00 09.5	-28 47 02	11.83	9.46	9.07	...	...	...	...	7.94	7.33 ^a	7.12	...	...	...
SCR0701-1437	1	07 01 36.6	-14 37 18	17.71	15.57	12.68	16.36	14.90	13.05	/40	11.25	10.67	10.32	...	...	...
WT0207	1	07 02 36.6	-40 06 28	16.07	13.88	11.38	15.13	13.90	12.26	/40	10.74	10.26	9.96	*	...	15.13 0.187
SCR0702-6102B	0	07 02 49.7	-61 02 52	...	...	...	...	...	...	...	...	...	...	*	2.72	19.43 0.079
SCR0702-6102A	2	07 02 50.4	-61 02 48	17.50J	15.11J	11.73J	16.62J	14.75J	12.49J	/39	10.36J	9.85J	9.52J	*	...	16.71 0.107
LHS0224B	0	07 04 01.1	+52 41 12	...	...	...	...	...	...	...	...	...	...	*	0.29	14.20 0.132
LHS0224A	2	07 04 01.1	+52 41 12	...	...	...	13.29J	11.94J	10.15J	/37	8.54J	8.09J	7.78J	*	...	13.91 0.142
GJ0263B	0	07 04 17.7	-10 30 31	...	...	...	...	...	...	...	...	...	...	*	0.80	12.52 0.332
GJ0263A	2	07 04 17.7	-10 30 32	...	...	7.83J	11.30J	10.18J	8.74J	/2	7.31J	6.69J	6.43J	*	...	11.72 0.418
GJ0258	1	07 04 25.9	+68 17 19	...	...	...	11.96	10.87	9.50	/38	8.17	7.59	7.27	*	...	11.96 0.373
LHS0225B	0	07 04 45.0	-38 36 07	...	...	...	13.03	11.99	10.63	...	...	...	...	*	0.29	13.21 0.286
LHS0225A	2	07 04 45.8	-38 36 08	12.59J	10.47J	8.66J	12.88	11.85	10.51	/15	8.61	8.07	7.87	*	...	12.92 0.314
LEHPM2-0449	1	07 05 09.3	-80 29 50	15.07	13.41	11.21	...	...	...	...	9.95	9.32	9.06	...	...	...
GJ2055	1	07 07 22.9	-21 27 27	11.80	9.26	8.73	11.08	10.09	8.87	/20	7.63	7.03	6.80	*	...	11.08 0.513
LTT11972	1	07 07 50.4	+67 12 04	...	...	...	11.18	10.20	9.08	/35	7.87	7.27	7.03	*	...	11.18 0.505
ESO207-061	1	07 07 53.3	-49 00 50	...	19.55	16.15	21.20	18.70	16.24	/40	13.23	12.54	12.11	...	...	...
LP840-016	1	07 08 07.0	-22 48 47	12.36	10.03	8.37	11.42	10.42	9.27	/25	8.09	7.51	7.27	...	...	...
APM0710-5704	1	07 09 37.7	-57 03 42	14.49	12.17	9.88	13.64	12.36	10.73	/40	9.25	8.63 ^a	8.30	*	...	13.62 0.238
GJ0268B	0	07 10 01.8	+38 31 46	...	...	...	...	...	...	...	...	...	...	*	0.00	12.17 0.182
GJ0268A	2	07 10 01.8	+38 31 46	...	...	...	11.48J	10.16J	8.45J	/37	6.73J	6.15J	5.85J	*	...	12.17 0.182
LHS1901B	0	07 11 11.0	+43 29 58	...	...	...	...	...	...	...	...	...	...	*	0.24	16.78 0.099
LHS1901A	2	07 11 11.0	+43 29 58	...	...	...	15.90J	...	11.92J	/21	9.98J	9.47J	9.13J	*	...	16.54 0.102
LHS1906	1	07 12 54.1	-52 20 06	13.48	11.22	9.65	...	...	...	...	8.88	8.32	8.06	...	...	...
SCR0713-0511	1	07 13 11.2	-05 11 49	11.76	9.31	8.84	11.13	10.08	8.86	/39	7.65	7.08	6.82	*	...	11.13 0.391
LHS1909	1	07 15 49.0	-83 00 19	12.12	10.51	8.92	...	...	...	...	8.42	7.77	7.55	...	...	...
GJ1096	1	07 16 18.0	+33 09 10	...	...	...	14.48	...	...	/10	9.76	9.18	8.88	*	...	14.45 0.163
GJ0268.3B	0	07 16 19.7	+27 08 33	...	...	...	...	...	...	...	...	...	...	*	0.99	12.23 0.290
GJ0268.3A	2	07 16 19.7	+27 08 33	...	...	...	10.87J	9.77J	8.39J	/35	7.01J	6.44J	6.19J	*	...	11.24 0.391
SCR0717-0501	1	07 17 17.1	-05 01 04	13.86	11.34	8.83	13.29	12.02	10.39	/39	8.87	8.35 ^a	8.05	*	...	13.29 0.189
LTT17957	1	07 17 32.2	+19 33 53	...	...	...	12.79	11.69	10.32	/29	9.02	8.43	8.16	*	...	12.93 0.350
LTT12003	1	07 18 08.1	+39 16 29	...	...	...	10.34	9.39	8.36	/32	7.21	6.59	6.37	*	...	10.34 0.561
LEHPM2-4145	1	07 18 14.0	-52 29 30	12.35	9.93	9.27	...	...	...	...	8.66	8.04 ^a	7.80	...	...	...
L383-019	1	07 20 30.2	-40 55 33	12.41	10.12	8.89	...	...	...	...	8.46	7.86	7.61	...	...	...
L136-037	1	07 20 52.0	-62 10 12	13.15	11.03	8.98	12.33	11.18	9.74	/40	8.38	7.84 ^a	7.52	*	...	12.35 0.273
LP527-012	1	07 21 54.4	-31 04 37	14.15	11.62	9.61	...	...	...	...	9.37	8.76 ^a	8.54	...	...	...
LHS1914	1	07 22 41.1	+30 39 37	...	...	...	13.38	12.27	10.80	/37	9.51	8.92	8.69	*	...	13.38 0.329
L136-001	1	07 23 20.8	-60 06 13	12.96	10.81	9.11	...	...	...	...	8.59	8.03	7.76	...	...	...

SCR0723-8015A	2	07 23 59.7	-80 15 18	18.68J	16.44J	13.27J	17.45J	15.61J	13.41J	/40	11.30J	10.82J	10.44J	*	...	17.54	0.095
SCR0723-8015B	0	07 24 00.8	-80 15 22	...	...	...	...	...	...	...	...	...	...	*	2.72	20.26	0.075
L383-082	1	07 25 35.6	-42 38 57	14.69	12.39	10.53	...	...	...	...	9.54	9.00	8.68	...	...	...	...
GJ0273B	0	07 27 24.5	+05 13 32	...	...	...	...	...	...	...	...	...	...	*	1.85	11.89	0.144
GJ0273A	2	07 27 24.5	+05 13 32	...	...	...	9.86J	8.68J	7.14J	/37	5.71J	5.22J ^a	4.86J	*	...	10.04	0.266
LTT12020	1	07 27 28.6	+22 02 37	...	...	...	11.25	10.26	9.09	/31	7.82	7.17	6.95	*	...	11.25	0.522
GJ1097	1	07 28 45.5	-03 17 53	12.06	9.67	8.84	11.43	10.33	8.93	/37	7.54	6.98	6.70	*	...	11.43	0.373
GJ2060C	0(1)	07 28 51.2	-30 15 53	...	...	...	13.98	12.62	10.88	1/1	8.90	8.37 ^a	8.06	*	3.89	13.98	0.198
GJ2060B	0	07 28 51.3	-30 14 48	...	...	...	...	...	...	...	...	...	...	*	1.92	12.01	0.379
GJ2060A	3(2)	07 28 51.4	-30 14 49	10.55J	8.14J	7.43J	9.92J	8.95J	7.83J	/20	6.62J	5.97J	5.72J	*	...	10.09	0.620
LHS1922	1	07 30 39.3	-44 24 01	11.16	9.20	7.75	...	...	...	...	7.52	6.87	6.68	...	...	...	...
SCR0731-4807	1	07 31 08.1	-48 07 33	17.72	15.59	13.00	16.74	15.19	13.29	/40	11.32	10.77	10.41	...	...	...	...
GJ0277B	0(1)	07 31 57.3	+36 13 47	...	...	...	11.79	10.41	9.19	/35	7.57	6.99	6.76	*	1.20	11.79	0.338
GJ0277C	0	07 31 57.7	+36 13 09	...	...	...	...	...	...	...	...	...	...	*	3.64	14.23	0.150
GJ0277A	3(1)	07 31 57.7	+36 13 09	...	...	...	10.59	9.51	8.15	/36	6.77	6.18	5.93	*	...	10.59	0.472
GJ0275.1	1	07 32 02.0	+68 37 15	...	...	...	10.89	9.95	8.89	/35	7.75	7.09	6.86	*	...	10.89	0.652
LHS1923	1	07 32 11.0	+57 55 35	...	...	...	18.09	...	...	...	11.92	11.38	11.09	*	...	18.09	0.096
SCR0733-2749	1	07 33 26.8	-27 49 04	17.37	14.96	12.05	16.03	14.56	12.73	/40	11.01	10.43	10.08	...	...	...	...
LHS0231	1	07 33 56.1	+22 23 02	...	...	...	16.36	14.99	13.20	2/1	11.61	11.12	10.88	*	...	16.36	0.132
GJ1099	1	07 34 17.6	+00 59 09	...	...	...	11.91	10.84	9.52	/37	8.26	7.67	7.43	*	...	11.91	0.373
GJ0277.1	1	07 34 27.4	+62 56 29	...	...	...	10.49	9.54	8.51	/35	7.34	6.78	6.56	*	...	10.94	0.430
HIP036915	1	07 35 21.8	+54 50 59	...	...	...	11.29	10.25	9.00	/35	7.77	7.22	6.96	*	...	11.29	0.410
LHS1932	1	07 36 12.0	-51 55 21	13.25	11.05	9.27	12.48	11.36	9.92	/26	8.55	8.04	7.76	*	...	12.48	0.336
LTT17993B	0	07 36 25.0	+07 04 43	...	...	...	...	...	...	...	...	...	...	*	0.00	13.99	0.134
LTT17993A	2	07 36 25.0	+07 04 43	...	...	...	13.25J	11.81J	9.97J	4/1	8.18J	7.61J	7.28J	*	...	13.99	0.134
SCR0736-3024	1	07 36 56.7	-30 24 16	14.76	12.06	9.46	13.64	12.41	10.83	/39	9.36	8.79	8.50	*	...	13.64	0.196
L528-016	1	07 38 09.7	-31 12 19	12.84	10.22	8.73	11.89	10.80	9.48	/40	8.18	7.56	7.30	...	...	...	...
2MA0738+2400	1	07 38 29.52	+24 00 08	...	...	...	12.98	11.82	10.35	3/1	8.93	8.35	8.12	*	...	12.98	0.320
LHS1935	1	07 38 41.0	-21 13 28	12.08	9.85	8.26	11.72	10.62	9.23	/37	7.85	7.33	7.06	*	...	11.72	0.322
GJ0281	1	07 39 23.0	+02 11 01	...	...	...	9.580	8.688	7.796	/2	6.77	6.09	5.87	*	...	9.58	0.669
SCR0740-4257	1	07 40 11.8	-42 57 40	14.52	12.37	9.99	13.81	12.36	10.50	/39	8.68	8.09	7.77	*	...	13.81	0.134
GJ0285	1	07 44 40.1	+03 33 08	...	...	...	11.190	9.920	8.240	/2	6.58	6.01	5.70	*	...	11.19	0.253
2MA0746+2000B	0	07 46 43.0	+20 00 32	...	...	...	...	...	...	...	...	...	...	*	0.84	21.20	0.075
2MA0746+2000A	2	07 46 43.0	+20 00 32	...	...	...	19.95J	17.41J	15.05J	3/1	11.76J	11.01J	10.47J	*	...	20.36	0.075
GJ0289	1	07 48 16.3	+20 22 05	...	...	...	11.45	10.47	9.34	/37	8.12	7.61	7.40	*	...	10.45	0.428
L034-026	1	07 49 12.7	-76 42 07	11.38	9.33	7.50	11.31	10.19	8.79	/27	7.41	6.86	6.58	*	...	11.31	0.363
GJ1103	1	07 51 54.7	-00 00 13	14.16	11.79	9.44	13.26	11.89	10.19	/40	8.50	7.94 ^a	7.66	*	...	14.72	0.156
LHS1950	1	07 51 54.9	+05 32 13	...	...	...	14.72	13.37	11.62	/37	9.97	9.40	9.09	*	...	13.22	0.167
LP423-031	1	07 52 24.0	+16 12 15	...	...	...	17.04	15.32	13.21	2/1	10.88	10.20	9.85	*	...	17.08	0.104
LHS1955B	0	07 54 54.0	-29 20 56	...	...	...	...	...	...	...	...	...	...	*	0.53	13.84	0.184
SCR0754-3809	1	07 54 54.8	-38 09 38	16.90	14.68	11.75	15.46	13.91	11.98	/39	10.01	9.42	9.08	*	...	15.46	0.119
LHS1955A	2	07 54 54.8	-29 20 56	13.19J	10.75J	8.72J	12.79J	11.52J	9.89J	/26	8.31J	7.69J	7.35J	*	...	13.31	0.223
GJ1101	1	07 55 49.9	+83 23 19	...	...	...	13.13	11.90	10.29	/37	8.74	8.14	7.91	*	...	13.13	0.224
LHS1957	1	07 56 53.9	-45 38 14	13.08	10.86	8.87	12.28	11.27	10.02	/40	8.76	8.23	8.00	...	...	...	...
2MA0757+1201	1	07 57 27.16	+12 01 27	...	...	...	12.70	11.63	10.32	2/1	9.06	8.44	8.20	*	...	12.70	0.393
SCR0757-7114	1	07 57 32.5	-71 14 53	...	...	...	12.46	11.28	9.77	3/1	8.32	7.75	7.42	*	...	12.46	0.411
GJ1105	1	07 58 12.7	+41 18 13	...	...	...	11.98	10.78	9.25	/37	7.73	7.13	6.88	*	...	11.98	0.243
LHS5132	1	08 00 51.3	-57 30 34	15.13	12.95	11.06	...	...	...	...	9.91	9.35	9.05	...	...	...	...
LHS1976B	0	08 03 19.5	+52 50 38	...	...	...	...	...	...	...	...	...	...	*	0.34	12.32	0.456
LHS1976A	2	08 03 19.5	+52 50 38	...	...	...	11.38J	10.40J	9.26J	/37	8.06J	7.48J	7.24J	*	...	11.98	0.498
SCR0803-1939	2	08 03 26.9	-19 39 28	15.19J	12.66J	10.02J	14.26J	13.04J	11.48J	/40	10.02J	9.45J	9.16J	...	...	...	...
LHS1978	1	08 04 25.8	-83 13 59	13.33	11.28	9.69	...	...	...	...	8.97	8.35 ^a	8.11	...	...	...	...
SCR0805-5912	1	08 05 46.2	-59 12 50	15.76	13.76	11.33	14.69	13.38	11.68	/39	10.07	9.52	9.22	*	...	14.69	0.160
L1321-040	1	08 09 30.9	+21 54 17	...	...	...	11.80	10.79	9.59	/31	8.33	7.72	7.51	*	...	11.80	0.492
GJ0298	1	08 09 58.1	-52 58 05	12.89	10.61	8.87	11.81	10.73	9.34	/2	7.99	7.44	7.14	*	...	11.81	0.416
GJ0299	1	08 11 58.0	+08 46 23	...	...	...	12.82	11.56	9.91	/37	8.42	7.93	7.66	*	...	12.82	0.159
GJ0300	1	08 12 40.9	-21 33 07	12.79	9.57	8.07	12.15	10.85	9.22	/13	7.60	6.96	6.71	*	...	12.16	0.223
SCR0812-4504	1	08 12 44.3	-45 04 34	18.70	16.66	13.29	17.54	15.87	13.82	/40	11.73	11.23	10.91	...	...	...	...
GJ0301	2	08 13 08.5	-13 55 01	10.31J	8.29J	7.10J	9.37J	8.50J	7.66J	/20	6.64J	6.04J	5.82J	...	...	...	...
L242-075	1	08 13 26.1	-53 17 38	12.99	10.82	9.73	...	...	...	...	8.54	7.99	7.73	...	...	...	...
LHS1992	1	08 13 42.6	-76 07 49	12.00	9.92	8.35	11.86	10.79	9.46	/40	8.16	7.60 ^a	7.30	...	...	...	...
LP843-016	1	08 14 22.6	-25 42 19	11.87	9.71	8.35	11.55	10.55	9.34	/25	8.11	7.47	7.20	...	...	...	...
GJ2066	1	08 16 07.9	+01 18 09	...	...	...	10.11	9.08	7.86	/34	6.63	6.04	5.77	*	...	10.11	0.461
LP386-035	1	08 16 37.5	-42 12 26	12.43	10.15	9.07	...	...	...	...	8.76	8.08	7.88	...	...	...	...
L098-059	1	08 18 07.6	-68 18 47	12.71	10.44	8.97	11.71	10.61	9.25	/40	7.93	7.36	7.10	*	...	11.71	0.321
LHS0246	1	08 25 49.7	+69 02 11	...	...	...	15.78	14.10	12.09	1/1	10.08	9.50	9.16	*	...	15.78	0.113

SCR0827-2526	1	08 27 07.0	-25 26 54	14.91	12.29	10.12	13.90	12.66	11.10	/40	9.65	9.09	8.78	...	...	...
LHS2010B	0	08 27 11.0	-44 59 21	...	...	...	...	...	...	...	...	...	...	*	2.37	14.35 0.159
LHS2010A	2	08 27 11.8	-44 59 21	12.47J	9.89J	7.62J	11.86J	10.70J	9.19J	/26	7.75J	7.15J	6.87J	*	...	11.98 0.352
GJ1110	1	08 28 11.4	+20 07 48	...	...	...	13.12	12.05	10.69	/37	9.40	8.87	8.68	*	...	13.12 0.340
GJ0308B	0	08 28 22.1	+35 00 59	...	...	...	...	...	...	...	...	...	...	*	0.15	11.56 0.475
GJ0308A	2	08 28 22.1	+35 00 59	...	...	...	10.73J	9.80J	8.81J	/37	7.63J	7.05J	6.83J	*	...	11.41 0.494
GJ1111	1	08 29 49.5	+26 46 34	...	...	...	14.900	12.898	10.639	/2	8.24	7.62	7.26	*	...	14.90 0.089
LHS2021	1	08 30 32.0	+09 47 15	...	...	...	19.17	16.99	14.66	4/1	11.89	11.17	10.76	*	...	19.21 0.080
LHS2024	1	08 31 23.5	-10 29 54	15.71	13.08	10.32	15.06	13.62	11.84	/40	10.07	9.49	9.14	...	...	...
GJ2069D	0	08 31 37.4	+19 23 50	...	...	...	...	...	...	...	...	...	...	*	2.00	14.69 0.134
GJ2069B	0(2)	08 31 37.4	+19 23 50	...	...	...	13.37J	12.03J	10.30J	3/1	8.63J	8.05J	7.72J	*	1.06	13.75 0.172
GJ2069C	0	08 31 37.5	+19 23 39	...	...	...	...	...	...	...	...	...	...	*	0.00	12.69 0.250
GJ2069E	0	08 31 37.5	+19 23 39	...	...	...	...	...	...	...	...	...	...	*	5.76	18.45 0.081
GJ2069A	5(3)	08 31 37.5	+19 23 39	...	...	...	11.93J	10.70J	9.10J	3/1	7.51J	6.89J	6.60J	*	...	12.69 0.250
LHS2026	1	08 32 30.5	-01 34 39	19.83	17.07	13.68	18.94	16.69	14.32	/3	12.04	11.48	11.14	*	...	18.94 0.085
GJ2070	1	08 34 25.9	-01 08 40	13.74	11.70	9.83	12.74	11.59	10.15	2/1	8.81	8.32	8.03	*	...	12.74 0.275
SCR0835-3400	1	08 35 31.7	-34 00 37	15.31	12.76	10.25	14.26	12.99	11.39	/40	9.90	9.37	9.08	...	...	...
LHS0250	1	08 35 38.4	+68 03 21	...	...	...	11.640	10.573	9.196	/2	7.86	7.29	7.05	*	...	11.64 0.375
LHS2029	1	08 37 07.9	+15 07 45	...	...	...	11.79	10.74	9.42	/37	8.12	7.57	7.32	*	...	11.79 0.443
SCR0837-2819	1	08 37 20.4	-28 19 58	17.05	14.60	11.95	15.59	14.18	12.43	/40	10.73	10.19	9.89	...	...	...
LP844-004	1	08 37 33.9	-22 32 32	16.34	14.09	12.01	15.15	13.82	12.14	/40	10.50	9.94	9.64	...	...	...
SCR0838-5855A	2	08 38 02.2	-58 55 59	18.44J	16.11J	12.44J	17.19J	15.08J	12.78J	/40	10.31J	9.71J	9.27J	*	...	17.28 0.089
SCR0838-5855B	0	08 38 02.3	-58 55 57	...	...	...	...	...	...	...	...	...	...	*	2.72	20.00 0.075
SCR0838-5302	1	08 38 13.2	-53 02 12	21.75	17.81	15.23	18.89	17.01	14.81	/40	12.50	11.85	11.45	...	...	...
LTT03201	1	08 38 54.5	-09 33 59	12.33	10.02	8.59	11.80	10.80	9.59	/23	8.36	7.68	7.44	...	...	...
SCR0840-4044	1	08 40 01.7	-40 44 31	17.19	15.24	12.50	16.29	14.81	12.97	/40	11.19	10.64	10.25	...	...	...
GJ0316.1	1	08 40 29.7	+18 24 09	...	...	...	17.67	15.72	13.44	2/1	11.05	10.42	10.05	*	...	17.67 0.090
LHS2038	1	08 40 55.3	+67 39 15	...	...	...	14.66	13.41	11.83	/37	10.29	9.72	9.41	*	...	14.66 0.219
GJ0317	1	08 40 59.2	-23 27 23	12.74	10.27	8.44	12.01	10.84	9.37	/40	7.93	7.32 ^a	7.03	*	...	12.00 0.374
LHS0252	1	08 41 17.6	+59 28 22	...	...	...	15.05	13.48	11.49	/37	9.62	9.00	8.67	*	...	15.05 0.116
G114-014	1	08 42 23.2	-04 53 55	13.91	11.65	10.30	12.86	11.76	10.37	/23	9.05	8.54 ^a	8.19	...	...	...
GJ2072B	0	08 44 23.1	-44 28 21	...	...	...	...	...	...	...	...	...	...	*	0.90	11.90 0.432
GJ2072A	2	08 44 23.1	-44 28 21	...	...	...	10.61J	9.62J	8.42J	/20	7.21J	6.57J	6.31J	*	...	11.00 0.543
LP786-005	1	08 47 17.6	-20 58 20	13.84	11.91	10.52	...	...	...	...	9.44	8.75	8.56	...	...	...
L388-106	2(1)	08 48 23.2	-44 12 26	14.60	12.33	10.36	...	...	...	...	9.69	9.05	8.79	...	...	...
LEHPM2-0870	1	08 48 59.1	-80 35 02	16.30	14.23	11.86	...	...	...	...	10.42	9.79	9.50	...	...	...
GJ1114	1	08 51 43.8	+18 07 29	...	...	...	11.55	10.57	9.44	/37	8.28	7.72	7.53	*	...	11.55 0.451
SCR0852-6608	1	08 52 50.0	-66 08 47	17.81	15.50	12.88	16.41	14.93	13.11	/40	11.34	10.73	10.39	...	...	...
SCR0853-3924	1	08 53 28.7	-39 24 41	13.21	10.86	8.34	12.32	11.22	9.87	/40	8.51	7.94	7.72	*	...	12.30 0.367
LHS2065	1	08 53 36.2	-03 29 32	20.08	17.27	13.92	18.94	16.74	14.46	/9	11.21	10.47	9.94	*	...	18.74 0.075
L532-012	1	08 54 02.4	-30 51 37	14.36	12.16	9.91	13.44	12.16	10.55	/40	9.01	8.39	8.09	...	...	...
GJ0326B	0	08 54 05.2	-13 07 38	...	...	...	...	...	...	...	...	...	...	*	0.00	12.68 0.317
GJ0326A	2	08 54 05.3	-13 07 31	12.75J	10.40J	8.77J	11.93J	10.81J	9.42J	/37	8.05J	7.53J	7.26J	*	...	12.68 0.317
LHS2071B	0	08 55 20.0	-23 52 15	...	...	...	...	...	...	...	...	...	...	*	2.12	16.14 0.115
LHS2071A	2	08 55 20.3	-23 52 15	14.92J	12.56J	10.35J	13.88J	12.55J	10.82J	/26	9.11J	8.54J	8.20J	*	...	14.02 0.197
L139-024	1	08 56 06.6	-61 57 44	14.27	12.33	10.94	...	...	...	...	9.48	8.95 ^a	8.67	...	...	...
LP844-033	1	08 56 17.6	-23 26 57	17.17	14.75	11.93	15.98	14.43	12.55	/6	10.70	10.13	9.82	*	...	15.98 0.141
GJ0330B	0	08 57 04.6	+11 38 49	...	...	...	...	...	...	...	...	...	...	*	1.82	12.58 0.331
GJ0330A	2	08 57 04.6	+11 38 49	...	...	...	10.57J	9.59J	8.52J	/2	7.31J	6.78J	6.49J	*	...	10.76 0.542
GJ1116B	0	08 58 12.2	+19 45 47	...	...	...	...	...	...	...	...	...	...	*	0.77	14.85 0.098
GJ1116A	2	08 58 12.2	+19 45 47	...	...	...	13.65J	11.97J	9.85J	/37	7.79J	7.24J	6.89J	*	...	14.08 0.108
LP606-030	1	08 58 43.3	-00 41 47	18.64	16.32	15.20	17.40	15.77	13.75	/40	11.72	11.15	10.76	...	...	...
LTT12352B	0	08 58 56.0	+08 28 26	...	...	...	...	...	...	...	...	...	...	*	0.15	12.21 0.459
LTT12352C	0	08 58 56.0	+08 28 26	...	...	...	...	...	...	...	...	...	...	*	0.00	12.06 0.204
LTT12352A	3	08 58 56.0	+08 28 26	...	...	...	10.92J	9.67J	8.05J	/13	6.51J	5.97J	5.69J	*	...	12.06 0.204
GJ1118	1	08 59 05.3	-31 13 27	14.78	12.46	10.41	13.79	12.56	10.95	/15	9.41	8.86	8.59	*	...	13.79 0.233
LHS2088	1	09 00 14.8	+72 57 40	...	...	...	14.34	13.02	11.34	1/1	9.73	9.24	8.98	*	...	14.34 0.160
LHS2090	1	09 00 23.0	+21 50 04	...	...	...	16.11	14.12	11.84	3/1	9.44	8.84	8.44	*	...	16.11 0.089
GJ1119	1	09 00 32.5	+46 35 11	...	...	...	13.32	12.01	10.29	/37	8.60	8.03	7.74	*	...	13.32 0.181
GJ0333.2A	2(1)	09 00 48.5	+05 14 41	...	...	...	12.42	11.37	10.00	/2	8.61	8.01	7.82	*	...	12.42 0.427
GJ0333.2B	0(1)	09 00 50.3	+05 14 29	...	...	...	12.72	11.68	10.27	/2	8.85	8.32 ^a	8.03	*	0.30	12.72 0.393
LHS0259	1	09 00 52.1	+48 25 25	...	...	...	15.720	14.578	13.072	/2	10.08	9.55	9.32	*	...	15.72 0.135
2MA0901-6526	1	09 01 31.7	-65 26 40	16.27	14.22	11.47	15.04	13.63	11.85	/40	10.14	9.59	9.28	...	...	...
L063-046	1	09 01 39.0	-72 40 17	13.61	11.53	9.50	12.41	11.37	10.09	/40	8.82	8.24	7.99	...	...	...
LHS2094	1	09 02 19.8	+08 28 06	...	...	...	11.77	10.72	9.41	/37	8.15	7.53	7.31	*	...	11.77 0.460
LP060-179	1	09 02 51.0	+68 03 18	...	...	...	12.65	11.47	9.92	/32	8.45	7.99	7.71	*	...	12.65 0.254

LTT03347	1	09 04 02.3	-25 04 10	13.38	11.31	9.84	...	...	...	...	9.15	8.56	8.31	...	...	...
L244-024	1	09 05 17.9	-51 02 36	14.67	12.57	10.55	...	...	...	...	9.50	8.88 ^a	8.64	...	...	...
SCR0905-0841	1	09 05 43.3	-08 41 58	16.90	14.64	12.30	15.88	14.45	12.65	/40	10.83	10.24	9.96	...	...	...
GJ0334	1	09 06 45.4	-08 48 25	10.24	8.13	7.05	9.50	8.59	7.68	/2	6.64	5.98	5.76	...	...	...
LHS2106	1	09 07 02.8	-22 08 50	15.11	12.72	10.18	14.21	12.87	11.13	/26	9.53	9.00	8.65	*	...	0.177
SCR0907-3533	1	09 07 17.1	-35 33 03	14.39	12.85	10.60	13.89	12.73	11.28	/40	9.85	9.28	8.96	...	...	...
L460-139	1	09 09 14.9	-39 59 32	13.51	11.30	9.50	...	...	...	...	9.15	8.54	8.32	...	...	...
GJ1121	1	09 09 24.0	+40 06 05	...	...	...	14.53	13.27	11.66	/37	10.14	9.62	9.31	*	...	0.212
DEN0909-0658	1	09 09 57.3	-06 58 19	...	...	...	21.44	19.47	17.18	1/1	13.89	13.09	12.54	*	...	0.075
GJ0336.1	1	09 11 30.8	+46 37 01	...	...	...	10.94	10.02	9.04	/35	7.90	7.26	7.06	*	...	0.638
SCR0914-4134	1	09 14 17.4	-41 34 38	16.33	13.69	10.98	15.01	13.57	11.72	/39	9.98	9.42	9.12	*	...	0.126
GJ0338B	0(1)	09 14 22.7	+52 41 11	...	...	...	7.88	...	...	/14	4.89	3.99 ^a	3.99	*	0.09	0.644
GJ0338A	2(1)	09 14 22.7	+52 41 11	...	...	...	7.60	...	...	/14	4.78 ^a	4.04 ^a	4.14	*	...	0.658
LHS6167B	0	09 15 36.4	-10 35 47	...	...	...	...	...	...	...	...	...	...	*	1.83	0.102
LHS6167A	2	09 15 36.4	-10 35 47	14.86J	12.40J	9.79J	13.82J	12.32J	10.42J	/40	8.61J	8.07J	7.73J	*	...	0.142
L749-034	1	09 16 20.7	-18 37 33	11.06	8.89	7.56	10.73	9.72	8.54	/40	7.35	6.76	6.49	*	...	0.477
LHS2122	1	09 16 26.0	-62 04 16	13.36	10.83	9.09	12.57	11.43	9.94	/26	8.47	7.83	7.55	*	...	0.339
LTT03416	1	09 16 44.0	-24 47 43	12.55	10.31	9.04	...	...	...	...	8.70	8.05	7.83	...	...	...
GJ1123	1	09 17 05.3	-77 49 23	14.17	12.15	9.88	13.16	11.86	10.16	/15	8.33	7.77	7.45	*	...	0.173
LHS0265	1	09 17 45.3	+58 24 13	...	...	...	15.12	13.75	11.96	/37	10.26	9.70	9.40	*	...	0.138
GJ1122A	2(1)	09 19 18.5	+38 31 19	...	...	...	14.52	13.21	11.52	/33	9.92	9.38	9.06	*	...	0.198
GJ1122B	0(1)	09 19 19.0	+38 31 23	...	...	...	14.67	13.35	11.65	/33	10.05	9.44	9.15	*	0.15	0.188
G161-013	1	09 20 11.1	-01 10 17	14.88	12.74	11.00	...	...	...	...	9.88	9.13	8.89	...	...	...
LHS0266	1	09 20 21.1	+26 43 43	...	...	...	15.60	14.29	12.59	2/1	11.07	10.57	10.29	*	...	0.145
LEP0920-4922	1	09 20 26.0	-49 22 35	17.88	16.67	13.68	...	...	...	...	11.33	10.82	10.53	...	...	...
LHS0267	1	09 20 58.1	+03 20 59	...	...	...	13.32	12.18	10.70	2/1	9.36	8.80	8.52	*	...	0.259
SIP0921-2104	1	09 21 14.1	-21 04 44	22.26	19.07	16.03	20.85	18.50	16.17	/40	12.78	12.15	11.69	...	...	...
GJ0341	1	09 21 37.6	-60 16 55	10.22	6.98	8.29	9.49	8.55	7.54	/2	6.44	5.79	5.59	*	...	0.580
LP902-060	1	09 23 32.4	-33 32 56	12.83	10.46	9.77	...	...	...	...	8.89	8.17	8.02	...	...	...
LP389-001	2(1)	09 24 17.3	-40 05 45	11.35	9.45	8.15	...	...	...	...	7.85	7.16	6.99	...	...	...
L822-019	1	09 28 41.6	-12 09 56	13.06	10.75	9.48	12.23	11.23	9.05	/23	8.84	8.20 ^a	7.95	...	...	...
GJ0347A	2(1)	09 28 53.3	-07 22 16	12.40	10.27	9.03	12.10	11.05	9.72	/2	8.45	7.89	7.63	*	...	0.379
GJ0347B	0(1)	09 28 55.7	-07 22 11	...	...	...	15.04	13.72	11.99	/2	10.37	9.84	9.54	*	2.94	0.146
WT1637	1	09 29 03.8	-24 29 04	18.28	15.94	12.73	...	...	...	...	10.84	10.29	9.91	...	...	...
LHS0269	1	09 29 11.0	+25 58 09	...	...	...	16.41	14.81	12.84	1/1	10.91	10.31	9.96	*	...	0.114
GJ1125	1	09 30 44.6	+00 19 22	...	...	...	11.72	10.58	9.12	/37	7.70	7.18	6.87	*	...	0.306
GJ0352B	0	09 31 19.4	-13 29 18	...	...	...	...	...	...	...	...	...	...	*	0.41	0.379
GJ0352A	2	09 31 19.4	-13 29 19	9.76J	7.46J	5.74J	10.08J	9.03J	7.69J	/2	6.36J	5.76J	5.51J	*	...	0.425
LP788-001	1	09 31 22.3	-17 17 43	18.99	16.74	13.14	17.55	15.63	13.38	/40	11.07	10.47	10.07	...	...	...
GJ0353	1	09 31 56.3	+36 19 12	...	...	...	10.22	9.28	8.28	/37	7.12	6.57 ^a	6.30	*	...	0.568
LP846-015	1	09 34 27.9	-26 43 27	15.36	12.94	10.71	...	...	...	...	9.47	8.94	8.62	...	...	...
LTT03532	1	09 35 54.4	-33 43 51	14.14	11.94	10.16	...	...	...	...	9.39	8.82	8.58	...	...	...
GJ0357	1	09 36 01.6	-21 39 39	11.27	10.49	7.49	10.92	9.86	8.57	/40	7.34	6.74	6.48	*	...	0.369
2MA0936-2610	1	09 36 57.8	-26 10 11	...	...	...	13.11	11.86	10.31	2/1	8.86	8.28	7.96	*	...	0.304
G117-034	1	09 39 24.2	+31 45 17	...	...	...	11.92n	...	...	/14	8.49	7.89	7.68	*	...	0.498
SCR0939-4300	1	09 39 44.7	-43 00 27	14.05	12.14	10.30	13.57	12.42	10.93	/40	9.50	8.87	8.64	...	...	...
GJ0358	1	09 39 46.4	-41 04 03	11.33	9.07	7.78	10.78	9.66	8.27	/40	6.90	6.32	6.06	*	...	0.402
GJ0359	1	09 41 02.1	+22 01 28	...	...	...	14.24	12.93	11.20	/37	9.63	9.09	8.81	*	...	0.156
GJ0361	1	09 41 10.3	+13 12 34	...	...	...	10.40	9.39	8.20	/37	6.97	6.37	6.13	*	...	0.483
LTT03553	1	09 41 21.2	-20 34 41	13.55	11.18	9.50	12.56	11.52	10.23	/23	8.98	8.28	8.06	...	...	...
G161-066	1	09 42 12.8	-07 01 46	14.93	12.60	10.47	...	...	...	...	9.75	9.22	8.92	...	...	...
GJ0363	1	09 42 17.9	+55 58 31	...	...	...	12.50	11.34	9.82	/37	8.37	7.81	7.53	*	...	0.323
GJ0360(A)	2(1)	09 42 34.8	+70 02 02	...	...	...	10.58	9.53	8.24	/37	6.92	6.33	6.08	*	...	0.475
LHS2177	1	09 42 35.7	-19 14 05	12.69	10.15	8.66	11.96	10.90	9.60	/37	8.30	7.72	7.50	*	...	0.386
GJ1128	1	09 42 46.4	-68 53 06	13.76	11.24	9.02	12.74	11.39	9.65	/15	7.95	7.39 ^a	7.04	*	...	0.159
LHS5156	1	09 42 49.6	-63 37 56	14.06	11.69	9.30	13.30	11.98	10.28	/26	8.62	8.10	7.77	*	...	0.185
GJ0362(B)	0(1)	09 42 51.7	+70 02 21	...	...	...	11.24	10.12	8.71	/37	7.33	6.73	6.47	*	0.66	0.399
LHS0272	1	09 43 46.2	-17 47 06	14.09	11.61	10.01	13.16	12.10	10.87	/16	9.62	9.12	8.87	*	...	0.237
LHS2181	1	09 43 55.6	+26 58 08	...	...	...	12.05	10.92	9.46	/37	8.04	7.46	7.19	*	...	0.348
WT0244	1	09 44 23.7	-73 58 38	16.24	14.08	11.49	15.17	13.80	12.02	/26	10.23	9.71	9.38	*	...	0.175
GJ0367	1	09 44 29.8	-45 46 36	10.28	8.66	7.81	10.12	9.10	7.86	/40	6.63	6.05	5.78	*	...	0.478
GJ1129	1	09 44 47.3	-18 12 49	13.31	10.18	8.56	12.46	11.24	9.67	/16	8.12	7.54	7.26	*	...	0.252
G161-071	1	09 44 54.2	-12 20 54	14.54	11.90	9.32	13.76	12.26	10.36	/40	8.50	7.92	7.60	*	...	0.190
LP462-119B	0	09 45 40.0	-39 02 26	...	...	...	...	...	...	...	...	...	...	*	0.54	0.316
LP462-119A	2	09 45 40.1	-39 02 27	12.54J	10.30J	8.92J	12.11J	10.99J	9.64J	2/1	8.37J	7.78J	7.52J	*	...	0.372
WT2458	1	09 45 58.4	-32 53 30	15.31	12.89	10.43	14.04	12.66	10.89	/40	9.20	8.60	8.28	...	...	...

LHS2186	1	09 46 09.3	-04 25 43	15.19	12.78	10.38	...	...	...	...	9.69	9.15	8.83	...	...	...
GJ0366	1	09 46 48.4	+76 02 38	...	...	...	10.64	9.69	8.58	/37	7.44	6.84	6.63	*	...	10.64 0.549
G043-002	1	09 48 50.2	+15 38 44	...	...	...	13.24	12.07	10.66	3/1	9.30	8.73	8.47	*	...	13.23 0.280
LHS2195	1	09 49 22.2	+08 06 45	...	...	...	19.76	17.66	15.20	1/1	12.31	11.63	11.21	*	...	19.76 0.077
GJ2075	2	09 49 27.8	-55 20 09	10.76	8.60	7.47	10.28J	9.34J	8.33J	/20	7.25J	6.57J	6.37J	...	...	...
LTT03613	1	09 50 40.5	-13 48 39	13.25	10.93	8.85	12.71	11.52	9.99	/40	8.58	7.97	7.72	*	...	12.71 0.356
LTT03612	1	09 50 48.3	-09 07 10	13.90	11.65	9.67	...	...	...	...	9.26	8.66	8.38	...	...	...
GJ0369	1	09 51 09.6	-12 19 48	10.49	8.37	6.93	10.06	9.13	8.11	/2	6.99	6.40	6.15	*	...	10.06 0.586
LTT03616	1	09 51 23.3	-17 44 24	12.45	10.10	8.67	11.84	10.83	9.55	/23	8.30	7.74	7.49	...	...	...
GJ0372B	0	09 53 11.7	-03 41 24	...	...	...	...	...	...	...	...	...	...	*	0.95	11.88 0.399
GJ0372A	2	09 53 11.8	-03 41 25	11.28J	8.96J	7.78J	10.55J	9.53J	8.29J	/2	7.00J	6.41J	6.13J	*	...	10.93 0.512
GJ1130	2(1)	09 53 28.1	-31 45 08	11.06	8.79	8.00	10.15	9.29	8.43	/40	7.40	6.77	6.57	...	...	...
LTT03629	1	09 53 30.3	-31 28 12	13.53	11.59	10.05	...	...	...	...	9.14	8.55	8.32	...	...	...
LHS2206	1	09 53 55.0	+20 56 46	...	...	...	14.02	12.63	10.85	3/1	9.21	8.60	8.33	*	...	14.02 0.138
LP847-048	1	09 55 23.9	-27 15 41	12.56	10.20	8.43	12.08	10.90	9.44	/40	8.03	7.43	7.14	*	...	12.08 0.299
GJ0373	1	09 56 08.6	+62 47 18	...	...	...	8.97	8.07	7.13	/37	6.03	5.37	5.20	*	...	8.97 0.665
GJ0375B	0	09 58 34.3	-46 25 30	...	...	...	...	...	...	...	...	...	...	*	0.00	12.04 0.372
GJ0375A	2	09 58 34.3	-46 25 30	12.15J	10.07J	8.55J	11.27J	10.11J	8.59J	/40	7.13J	6.52J	6.26J	*	...	12.04 0.372
GJ0377	1	10 01 10.7	-30 23 25	12.51	9.91	8.54	11.44	10.36	8.98	/20	7.60	6.99 ^a	6.70	*	...	11.44 0.449
LP463-104	1	10 01 23.8	-38 50 25	12.47	10.16	8.62	...	...	...	...	8.33	7.74 ^a	7.46	...	...	...
GJ0378	1	10 02 21.7	+48 05 19	...	...	...	10.10	9.18	8.13	/37	6.95	6.36	6.16	*	...	10.10 0.606
LHS5166(A)	2(1)	10 04 38.7	-33 35 10	15.39	13.01	10.90	14.36	13.08	11.41	/40	9.85	9.30	9.03	*	...	14.36 0.194
2MAW1004-3335(B)	0BD	10 04 39.3	-33 35 19	...	...	...	...	...	...	...	14.48	13.49	12.92	*	...	...
LP903-021	1	10 04 50.6	-31 05 28	13.08	10.61	9.31	12.00	10.97	9.75	/20	8.46	7.86 ^a	7.62	*	...	12.00 0.475
L319-147	1	10 06 08.7	-49 49 38	13.06	10.97	9.19	...	...	...	...	8.89	8.33	8.10	...	...	...
LP789-023	1	10 06 31.9	-16 53 26	20.10	17.41	13.83	...	...	...	...	12.04	11.39	10.99	...	...	...
LHS2220	1	10 06 43.8	+41 42 52	...	...	...	11.33	10.39	9.38	/37	8.21	7.62	7.40	*	...	11.33 0.531
L016-059	2	10 07 09.9	-82 50 16	12.94J	10.93J	9.17J	...	...	...	...	8.52J	8.14J ^a	7.74J ^a	...	...	...
GJ1131	1	10 07 59.4	+69 14 46	...	...	...	14.35	13.11	11.55	/37	10.10	9.58	9.30	*	...	14.35 0.191
LP729-033	1	10 08 01.1	-14 36 27	16.83	14.68	12.04	...	...	...	...	10.60	10.02	9.67	...	...	...
LHS2224	1	10 09 24.6	+51 15 39	...	...	...	13.48	12.27	10.71	/37	9.30	8.71	8.52	*	...	13.48 0.208
LP903-035	1	10 10 46.8	-30 46 49	14.27	12.21	10.50	...	...	...	...	9.48	8.86	8.59	...	...	...
WT1757	1	10 11 45.0	-24 25 34	12.13	10.00	8.96	...	...	...	...	8.17	7.50	7.32	...	...	...
GJ0381B	0	10 12 04.7	-02 41 05	...	...	...	...	...	...	...	...	...	...	*	1.71	12.55 0.267
GJ0381A	2	10 12 04.7	-02 41 05	11.89J	9.40J	7.74J	10.64J	9.59J	8.32J	/2	7.02J	6.47J	6.19J	*	...	10.84 0.444
GJ0382	1	10 12 17.7	-03 44 44	10.12	7.61	6.58	9.29	8.28	7.11	/2	5.89	5.26	5.02	*	...	9.29 0.526
LHS2233	1	10 12 59.6	-35 43 59	13.95	11.77	10.19	13.02	11.86	10.47	/4	9.22	8.58	8.36	...	...	...
GJ1132	1	10 14 51.8	-47 09 24	13.95	11.93	9.57	13.49	12.26	10.69	/15	9.25	8.67	8.32	*	...	13.49 0.191
G162-037	1	10 16 35.7	-11 56 48	15.10	13.14	11.28	...	...	...	...	9.96	9.40	9.13	...	...	...
GJ0386	1	10 16 46.0	-11 57 42	12.08	9.71	8.53	10.51	9.46	8.14	/2	7.32	6.71	6.45	*	...	10.51 0.512
TWA022B	0	10 17 27.0	-53 54 27	...	...	...	...	...	...	...	...	...	...	*	0.83	15.30 0.142
TWA022A	2	10 17 27.0	-53 54 27	...	...	...	14.05J	12.47J	10.52J	2/1	8.55J	8.09J	7.69J	*	...	14.47 0.181
LP790-002	2(1)	10 18 13.9	-20 28 41	14.90	12.73	10.28	13.95	12.58	10.81	/40	9.00	8.42	8.15	...	...	...
LTT03780	1	10 18 35.2	-11 43 00	13.88	12.02	10.40	13.07	11.94	10.44	/23	9.01	8.44 ^a	8.20	...	...	...
GJ0388	1	10 19 36.2	+19 52 11	...	...	...	9.29	8.17	6.78	3/1	5.45	4.84	4.59	*	...	9.29 0.400
LP392-039B	0(1)	10 19 51.0	-41 48 48	...	...	...	13.17	12.00	10.49	2/1	9.06	8.54	8.29	*	1.53	13.17 0.339
LP392-039A	2(1)	10 19 51.3	-41 48 46	12.43	10.16	8.68	11.64	10.66	9.52	/40	8.36	7.72	7.49	*	...	11.64 0.514
WT2473	1	10 21 12.1	-37 05 44	14.53	12.47	10.30	...	...	...	...	9.39	8.75	8.47	...	...	...
GJ0389A	2(1)	10 22 24.6	-60 10 38	10.92J	8.34J	7.27J	10.72	9.82	8.80	/2	7.71	7.08	6.85	*	...	10.72 0.603
GJ0389B	0(1)	10 22 25.0	-60 10 29	...	...	...	12.63	11.50	10.12	/2	8.71	8.20 ^a	7.90	*	1.91	12.63 0.367
L101-009	1	10 22 46.1	-66 02 26	14.77	12.79	10.51	...	...	...	...	9.55	8.98	8.72	...	...	...
L142-086	1	10 24 07.0	-63 59 55	11.55	8.98	...	10.62	9.67	8.66	/40	7.54	6.85	6.66	...	...	...
GJ0390	1	10 25 10.8	-10 13 43	11.31	8.97	7.82	10.17	9.19	8.10	/2	6.90	6.26	6.03	*	...	10.17 0.535
LTT03835	2	10 26 38.3	-16 51 19	12.28J	10.18J	8.36J	...	...	...	...	8.55J	7.90J	7.69J	...	...	...
LHS2268	1	10 28 31.2	+48 14 10	...	...	...	13.25	12.06	10.52	/37	9.06	8.47	8.23	*	...	13.25 0.316
GJ0393	1	10 28 55.6	+00 50 28	...	...	...	9.630	8.615	7.393	/2	6.18	5.61	5.31	*	...	9.63 0.455
LTT03855	1	10 30 50.8	-35 46 39	12.15	9.74	8.46	11.24	10.28	9.26	2/1	8.19	7.49	7.29	*	...	11.24 0.596
LTT03538	1	10 31 08.5	-41 27 49	14.42	11.96	10.04	...	...	...	...	9.43	8.85	8.61	...	...	...
LP904-068	1	10 33 39.1	-29 00 32	13.91	11.62	10.12	...	...	...	...	9.16	8.49	8.24	...	...	...
LEHPM2-4342	1	10 34 24.7	-28 19 19	13.36	11.18	9.52	...	...	...	...	8.69	8.06	7.79	...	...	...
LTT03877	1	10 35 01.1	-09 24 39	12.69	10.37	9.01	12.11	11.02	9.63	/23	8.28	7.68 ^a	7.39	...	...	...
LHS0283	1	10 35 06.5	+69 26 16	...	...	...	11.950	10.833	9.331	/2	7.90	7.39	7.16	*	...	11.95 0.345
GJ0398	1	10 36 01.8	+05 07 06	...	...	...	12.69	11.48	9.92	2/1	8.46	7.88	7.60	*	...	12.69 0.291
2MA1036+1521B	0	10 36 44.8	+15 21 39	...	...	...	...	...	...	...	...	...	...	*	2.31	15.76 0.136
2MA1036+1521C	0	10 36 44.8	+15 21 39	...	...	...	...	...	...	...	...	...	...	*	5.91	19.36 0.082
2MA1036+1521A	3	10 36 44.8	+15 21 39	...	...	...	13.33J	12.01J	10.34J	1/1	8.75J	8.18J	7.90J	*	...	13.45 0.287

LP904-038	1	10 37 41.6	-29 31 04	14.44	12.45	11.02	...	...	...	...	9.64	9.07	8.82	...	...	...
LTT03896	1	10 37 45.3	-27 46 39	14.30	12.02	9.94	13.14	11.84	10.19	/40	8.60	8.04 ^a	7.72	*	...	13.14 0.255
LEHPM2-2758	1	10 38 47.8	-86 32 44	14.08	13.04	10.31	13.24	12.02	10.46	/40	8.97	8.40	8.11	*	...	13.24 0.227
GJ0399	1	10 39 40.6	-06 55 26	11.51	9.49	7.73	11.31	10.27	8.99	/2	7.66	7.05 ^a	6.82	*	...	11.31 0.457
LP465-084B	0	10 39 44.3	-37 55 13	...	...	...	...	...	...	...	...	...	...	*	1.63	12.93 0.263
LP465-084A	2	10 39 44.4	-37 55 14	12.23J	9.85J	8.52J	11.06J	9.94J	8.54J	/40	7.21J	6.63J	6.38J	*	...	11.30 0.430
WT0309	1	10 40 47.5	-44 45 53	14.56	12.20	10.24	...	...	...	...	9.50	8.84	8.66	...	...	...
GJ1135B	0	10 41 09.3	-36 53 43	...	...	...	...	...	...	...	...	...	...	*	2.65	12.68 0.319
GJ1135A	2	10 41 09.3	-36 53 44	10.86J	8.64J	7.36J	9.94J	9.00J	7.98J	/20	6.91J	6.22J	5.99J	*	...	10.03 0.643
GJ1134	1	10 41 37.9	+37 36 39	...	...	...	12.98	11.72	10.07	/37	8.49	8.01	7.71	*	...	12.98 0.204
LP904-051	1	10 41 44.0	-31 11 55	17.48	15.20	12.73	...	...	...	...	11.04	10.45	10.16	...	...	...
GJ1136B	0(1)	10 41 51.7	-36 38 07	...	...	...	11.59	10.57	9.30	2/1	8.09	7.45	7.22	*	1.44	11.58 0.435
GJ1136A	2(1)	10 41 51.8	-36 38 00	...	...	...	10.15	9.25	8.31	2/1	7.23	6.64	6.39	*	...	10.14 0.623
LP848-050B	0	10 42 41.3	-24 16 04	...	...	...	...	...	...	...	...	...	...	*	2.12	18.81 0.076
LP848-050A	2	10 42 41.4	-24 16 05	17.68J	15.34J	12.09J	16.55J	14.57J	12.47J	/40	10.28J	9.67J	9.34J	*	...	16.69 0.094
WT1827B	0	10 43 02.0	-09 12 40	...	...	...	...	...	...	...	...	...	...	*	2.00	17.27 0.092
WT1827A	2	10 43 02.8	-09 12 41	16.00J	13.80J	10.85J	15.11J	13.57J	11.59J	/40	9.67J	9.10J	8.73J	*	...	15.27 0.121
LTT03936	1	10 44 09.5	-26 37 44	13.79	11.54	10.13	...	...	...	...	9.08	8.48	8.25	...	...	...
LHS0288	1	10 44 21.0	-61 12 35	...	...	...	13.920	12.330	10.310	/3	8.49	8.05	7.73	*	...	13.92 0.108
LP905-056	1	10 45 16.7	-30 48 27	12.54	10.08	8.65	11.22	10.21	9.03	/20	7.82	7.22	6.99	*	...	11.22 0.440
LP849-006	1	10 45 51.8	-23 09 01	16.27	13.95	11.43	...	...	...	...	10.04	9.49	9.18	...	...	...
LP905-017	1	10 47 11.2	-32 15 06	13.66	11.41	10.30	...	...	...	...	9.17	8.51	8.26	...	...	...
LHS2310	1	10 47 38.7	-79 27 46	14.64	12.71	10.69	13.45	12.19	10.60	/40	9.05	8.49	8.14	...	...	...
L037-012	1	10 48 01.0	-76 34 16	15.31	13.45	11.95	...	...	...	...	9.98	9.43	9.14	...	...	...
DEN1048-3956	1	10 48 12.6	-39 56 07	18.75	15.93	12.10	17.37	14.98	12.47	/40	9.54	8.91	8.45	*	...	17.37 0.075
LHS0292	1	10 48 14.6	-11 20 10	16.83	14.17	10.40	15.78	13.63	11.25	/9	8.86	8.26	7.93	*	...	15.60 0.087
LHS2314	1	10 49 01.8	+05 01 59	...	...	...	19.13	17.10	14.90	2/1	12.54	11.97	11.60	*	...	19.13 0.088
GJ1138B	0	10 49 45.6	+35 32 50	...	...	...	...	...	...	...	...	...	...	*	3.40	16.53 0.094
GJ1138A	2(1)	10 49 45.6	+35 32 50	...	...	...	13.13	11.85	10.16	/2	8.54	8.04	7.74	*	...	13.13 0.185
LHS2317	1	10 50 26.5	+33 05 19	...	...	...	13.07	11.90	10.37	/37	8.90	8.26	8.01	*	...	13.07 0.354
GJ0402	1	10 50 52.0	+06 48 29	...	...	...	11.650	10.430	8.848	/2	7.32	6.71 ^a	6.37	*	...	11.65 0.239
GJ0403	1	10 52 04.0	+13 59 51	...	...	...	12.72	11.54	10.06	3/1	8.61	8.06	7.80	*	...	12.71 0.260
LHS5179	1	10 53 02.2	-15 05 03	15.11	12.99	11.32	13.94	12.80	11.31	/23	9.87	9.29	8.99	...	...	...
2MA1054-8505	1	10 54 11.0	-85 05 02	21.40	19.13	15.99	20.59	18.12	15.64	/40	12.70	12.07	11.65	...	...	...
LTT04004	1	10 54 42.0	-07 18 33	14.09	11.98	9.89	13.26	12.03	10.42	/40	8.88	8.25	7.97	...	...	...
LHS2328	1	10 55 34.5	-09 21 26	14.12	11.97	9.59	13.55	12.37	10.86	/26	9.42	8.87	8.61	*	...	13.55 0.262
LHS2329	1	10 55 40.1	-52 10 15	13.47	11.31	9.88	...	...	...	...	9.13	8.52	8.22	...	...	...
GJ0406	1	10 56 28.9	+07 00 53	...	...	...	13.530	11.674	9.497	/2	7.09	6.48	6.08	*	...	13.53 0.093
LP731-028	1	10 56 38.9	-15 52 54	12.97	10.77	9.09	11.82	10.74	9.39	/40	8.07	7.47	7.23	...	...	...
LTT04030	1	10 58 34.2	-05 54 09	14.08	11.95	10.08	...	...	...	...	9.20	8.60	8.33	...	...	...
LHS2335	1	10 58 35.1	-31 08 38	12.62	10.32	9.29	11.93	10.90	9.63	/26	8.36	7.76	7.47	*	...	11.93 0.444
LHS2337	1	10 59 04.8	+30 14 55	...	...	...	15.43	14.03	12.28	1/1	10.54	9.94	9.65	*	...	15.43 0.157
GJ0408	1	11 00 04.2	+22 49 58	...	...	...	10.02	8.96	7.63	/36	6.31	5.76	5.50 ^a	*	...	10.02 0.394
LHS0296	1	11 01 23.2	+02 59 46	...	...	...	14.06	12.82	11.21	/37	9.71	9.23	8.91	*	...	14.06 0.176
GJ1141B	0(1)	11 02 21	+16 30 45	...	...	...	11.62	10.63	9.51	/35	8.35	7.73	7.51	*	...	11.62 0.477
GJ1141A	2(1)	11 02 21.0	+16 30 45	...	...	...	11.49	10.52	9.44	/35	8.27	7.69	7.44	*	0.13	11.49 0.493
GJ0410	1	11 02 38.3	+21 58 01	...	...	...	9.57	8.64	7.63	/20	6.52	5.90	5.69	*	...	9.57 0.604
GJ0411	1	11 03 20.1	+35 58 11	...	...	...	7.46	...	...	/11	4.20 ^a	3.64 ^a	3.25 ^a	*	...	7.46 0.447
LP491-051	1	11 03 21.25	+13 37 57	...	...	...	12.96	11.75	10.25	2/1	8.76	8.18	7.91	*	...	12.96 0.279
LP791-023	1	11 04 25.2	-17 48 09	16.89	14.67	12.34	...	...	...	...	10.83	10.19	9.87	...	...	...
L066-047	2(1)	11 04 33.5	-72 57 10	11.95	10.21	9.34	...	...	...	...	8.47	7.85 ^a	7.61	...	...	...
UPM1104-6232	1	11 04 33.8	-62 32 35	16.42	14.09	11.48	15.20	13.77	11.96	/40	10.26	9.68	9.36	...	...	...
LP849-051	1	11 05 06.9	-22 12 52	17.25	15.04	12.32	...	...	...	...	10.70	10.14	9.82	...	...	...
GJ0412A	2(1)	11 05 28.5	+43 31 36	...	...	...	8.77	7.79	6.73	/37	5.54	5.00	4.77	*	...	8.77 0.457
GJ0412B	0(1)	11 05 31.3	+43 31 17	...	...	...	14.44	12.77	10.68	/2	8.74	8.18	7.84	*	5.67	14.44 0.101
LHS2348	1	11 05 43.1	+10 14 09	...	...	...	12.37	11.28	9.92	/37	8.64	8.05 ^a	7.80	*	...	12.37 0.393
LHS2351	1	11 06 20.0	+04 28 17	...	...	...	19.45	17.26	14.84	2/1	12.33	11.72	11.33	*	...	19.45 0.082
LP731-047	1	11 06 56.9	-12 44 03	19.70	16.91	13.37	...	...	...	...	11.79	11.19	10.79	...	...	...
L754-040	1	11 07 27.7	-19 17 30	11.24	9.14	7.90	10.38	9.46	8.52	/20	7.45	6.85 ^a	6.62	*	...	10.38 0.634
L017-069	1	11 07 58.2	-83 51 23	14.08	12.25	10.81	12.68	11.62	10.31	/40	9.06	8.45	8.18	...	...	...
GJ0413.1	1	11 09 31.3	-24 35 55	11.12	8.81	7.68	10.44	9.42	8.19	/2	6.95	6.36	6.10	*	...	10.44 0.463
LHS2360	1	11 10 00.5	-74 36 15	15.03	13.14	11.16	13.57	12.43	10.78	/40	9.24	8.61 ^a	8.35	...	...	...
SCR1110-3608	1	11 10 29.0	-36 08 25	17.20	15.07	12.72	15.76	14.38	12.64	/39	10.93	10.34	10.00	...	...	...
GJ0414.1B	0	11 11 19.4	+43 25 02	...	...	...	...	...	...	...	...	...	...	*	0.35	11.82 0.418
GJ0414.1A	2	11 11 19.4	+43 25 02	...	...	...	10.88J	9.82J	8.48J	/37	7.33J	6.74J	6.53J	*	...	11.47 0.459
2MA1113+1025	1	11 13 00.6	+10 25 05	...	...	...	14.52	13.23	11.60	3/1	10.03	9.49	9.20	*	...	14.54 0.218

GJ0422	1	11 16 00.2	-57 32 52	11.16	9.53	8.05	11.64	10.57	9.17	/2	7.81	7.30 ^a	7.04	*	...	11.64	0.369
L611-120	1	11 16 06.8	-30 10 41	11.23	8.97	7.89	...	...	...	...	7.66	7.02	6.81	...	...	...	...
LP850-015	1	11 16 18.7	-25 49 22	16.57	14.53	12.26	...	...	...	...	10.65	10.00	9.69	...	...	...	...
GJ1144	1	11 16 22.2	-14 41 36	10.18	8.09	7.12	9.98	9.10	7.40	/23	7.28	6.65	6.46	...	...	...	...
LHS2386	1	11 16 36.7	-44 07 50	15.37	13.16	11.07	...	...	...	...	9.92	9.30	9.05	...	...	...	...
LHS2385	1	11 16 37.6	-27 57 19	14.81	12.57	10.33	...	...	...	...	9.36	8.91	8.62	...	...	...	...
LP732-015	1	11 17 06.5	-11 22 25	14.52	12.35	10.31	...	...	...	...	9.62	8.95	8.73	...	...	...	...
GJ1145	1	11 17 07.5	-27 48 49	10.74	8.46	7.51	9.76	8.88	8.07	/20	7.06	6.42	6.20	...	...	...	...
LP792-053	1	11 19 22.8	-19 00 30	15.37	12.96	11.00	...	...	...	...	9.93	9.43	9.14	...	...	...	...
LHS2395	1	11 19 31.0	+46 41 43	...	...	...	15.78	14.10	12.02	/37	10.09	9.53	9.20	*	...	15.78	0.105
L467-021	1	11 19 41.1	-36 15 20	14.63	12.47	10.88	...	...	...	...	9.64	9.06	8.82	...	...	...	...
LP792-014	1	11 19 48.2	-16 32 38	16.71	14.46	11.70	...	...	...	...	10.65	10.05	9.79	...	...	...	...
GJ0424B	0	11 20 04.8	+65 50 47	...	...	...	...	...	...	...	...	...	...	*	5.03	14.35	0.126
GJ0424A	2	11 20 04.8	+65 50 47	...	...	...	9.32J	8.42J	7.44J	/37	6.31J	5.73J	5.53J	*	...	9.32	0.555
LP792-016	1	11 20 46.5	-19 39 07	13.83	11.61	9.88	12.87	11.78	10.40	/23	9.08	8.47 ^a	8.21	...	...	...	...
LP792-017	1	11 20 59.9	-17 01 49	12.32	10.30	8.64	12.19	11.15	9.85	/23	8.59	7.92	7.70	...	...	...	...
GJ1146	1	11 21 38.5	+06 08 26	...	...	...	13.57	12.49	11.10	/37	9.77	9.26	8.97	*	...	13.57	0.259
LHS2397aB	0	11 21 47.8	-13 13 08	...	...	...	...	...	...	...	...	...	...	*	6.01	25.56	0.075
LHS2397aA	2(1)	11 21 49.2	-13 13 09	20.71	17.95	14.67	19.55	17.27	14.90	/9	11.93	11.23	10.74	*	...	19.55	0.076
LHS2400	1	11 22 42.5	-32 05 40	17.27	15.43	12.43	16.37	14.82	12.91	/6	11.04	10.52	10.17	*	...	16.37	0.126
LHS0302	1	11 23 08.2	+25 53 37	...	...	...	15.14	13.77	11.98	/37	10.29	9.75	9.46	*	...	15.14	0.147
GJ2085	1	11 23 44.5	+08 33 48	...	...	...	11.19	10.22	9.14	/20	7.99	7.40	7.16	*	...	11.19	0.562
LHS2401	1	11 23 57.3	-18 21 49	14.03	11.82	10.01	13.10	11.97	10.54	/26	9.17	8.59	8.32	*	...	13.10	0.302
SCR1124-3900	1	11 24 23.2	-39 00 43	15.67	13.65	11.37	14.29	13.05	11.47	/40	10.00	9.45	9.10	...	...	...	...
LHS2404B	0(1)	11 25 17.1	+78 16 44	...	...	...	12.63	11.61	10.33	/37	9.05	8.56	8.29	*	0.48	12.63	0.394
LHS2405A	2(1)	11 25 28.2	+78 15 44	...	...	...	12.15	11.16	9.92	/37	8.73	8.17	7.93	*	...	12.15	0.449
SCR1125-3834	1	11 25 37.3	-38 34 43	16.04	13.80	11.66	14.57	13.29	11.67	/39	10.09	9.51	9.19	...	...	...	...
LP792-060	1	11 26 50.8	-18 44 59	15.51	13.27	11.13	14.50	13.32	11.74	/24	10.11	9.47	9.17	...	...	...	...
LT04244	1	11 30 06.9	-30 42 44	13.92	11.54	9.47	...	...	...	...	9.31	8.66	8.40	...	...	...	...
LP672-042	1	11 30 41.8	-08 05 43	12.41	10.31	8.44	12.06	10.90	9.46	/40	8.03	7.46	7.15	*	...	12.01	0.339
LHS0306	1	11 31 08.4	-14 57 21	15.11	12.62	10.18	14.19	12.81	11.05	/40	9.36	8.76	8.50	*	...	14.19	0.147
GJ0430.1	1	11 31 43.3	+22 40 01	...	...	...	10.27	9.33	8.29	/20	7.17	6.55	6.32	*	...	10.27	0.598
GJ0431	1	11 31 46.5	-41 02 47	12.53	9.74	8.30	11.52	10.36	8.87	/2	7.37	6.77	6.51	*	...	11.52	0.336
L540-090	1	11 32 18.4	-35 26 14	14.27	12.76	10.96	...	...	...	...	9.46	8.81	8.57	...	...	...	...
LP792-033	1	11 32 19.0	-16 58 07	11.60	9.50	8.44	11.42	10.48	9.42	/23	8.28	7.68	7.47	*	...	11.42	0.547
L324-051	1	11 32 22.0	-46 28 30	13.13	11.14	10.49	12.20	11.13	9.83	/40	8.55	7.95	7.70	...	...	...	...
LP850-047	1	11 33 01.9	-23 11 08	13.96	11.53	10.44	...	...	...	...	9.33	8.71	8.47	...	...	...	...
LHS2427	1	11 34 38.0	-23 52 15	12.38	9.75	9.33	11.17	10.22	9.21	/37	8.09	7.48	7.26	*	...	11.17	0.512
L066-086	1	11 34 59.7	-74 36 09	12.48	10.41	9.37	11.04	10.08	9.00	/40	7.84	7.20	7.01	...	...	...	...
GJ0433B	0	11 35 26.9	-32 32 23	...	...	...	...	...	...	...	...	...	...	*	2.00	12.00	0.258
GJ0433A	2	11 35 27.0	-32 32 24	10.01J	7.88J	6.76J	9.84J	8.84J	7.69J	/2	6.47J	5.86J	5.62J	*	...	10.00	0.468
LP851-027	2	11 36 57.1	-23 29 48	13.64J	11.47J	9.68J	12.90J	11.79J	10.36J	/25	9.35J	8.43J	8.27J	...	...	...	...
SCR1138-7721	1	11 38 16.8	-77 21 49	16.45	14.12	11.46	14.78	13.20	11.24	/39	9.40	8.89	8.52	*	...	14.78	0.114
GJ1147	1	11 38 25.0	-41 22 33	14.84	12.48	10.49	13.72	12.49	10.91	/26	9.44	8.86	8.54	*	...	13.72	0.211
LP673-025	1	11 40 18.0	-08 11 27	13.27	11.27	9.86	...	...	...	...	9.08	8.44 ^a	8.20	...	...	...	...
SIP1141-3624	1	11 41 21.5	-36 24 35	14.23	12.19	10.11	13.10	11.79	10.10	/40	8.49	7.97	7.70	*	...	13.10	0.171
GJ1148	1	11 41 44.6	+42 45 07	...	...	...	11.92	10.73	9.17	/37	7.61	7.07	6.82	*	...	11.92	0.314
GJ0436	1	11 42 11.0	+26 42 23	...	...	...	10.65	9.58	8.24	/37	6.90	6.32	6.07	*	...	10.65	0.423
UPM1142-6440	1	11 42 29.9	-64 40 34	16.07	14.08	11.42	15.21	13.84	12.06	/40	10.39	9.85	9.48	...	...	...	...
GJ0438	1	11 43 19.8	-51 50 26	10.62	7.89	7.12	10.35	9.36	8.27	/26	7.14	6.58	6.32	*	...	10.37	0.475
SCR1144-4302	1	11 44 24.9	-43 02 54	19.60	17.50	14.39	18.82	16.61	14.41	/40	12.17	11.56	11.20	...	...	...	...
LP793-033(A)	2(1)	11 45 34.5	-20 21 12	12.64	10.57	9.38	11.78	10.76	9.53	/40	8.31	7.71	7.44	*	...	11.78	0.455
SIP1145-4055	1	11 45 35.4	-40 55 59	15.41	13.13	10.75	...	...	...	...	9.70	9.10	8.79	...	...	...	...
LP793-034(B)	0(1)	11 45 35.4	-20 21 05	...	...	...	17.94	16.06	13.86	3/1	11.73	11.12	10.78	*	6.16	17.94	0.095
GJ0443	1	11 46 42.9	-14 00 52	12.06	9.84	8.45	11.69	10.64	9.28	/2	7.97	7.28	7.07	*	...	11.69	0.469
GJ0445	1	11 47 41.3	+78 41 28	...	...	...	10.79	9.63	8.13	/37	6.72	6.22	5.95	*	...	10.79	0.267
GJ0447	1	11 47 44.4	+00 48 16	...	...	...	11.160	9.850	8.172	/2	6.51	5.95	5.65	*	...	11.16	0.165
SCR1147-5504	1	11 47 52.5	-55 04 12	14.96	12.23	10.25	13.72	12.54	11.06	/39	9.67	9.08	8.81	...	...	...	...
LHS2460	1	11 48 19.4	-11 17 14	13.80	11.92	9.84	12.99	11.89	10.47	/23	9.03	8.43 ^a	8.17	...	...	...	...
G010-052	1	11 48 35.49	+07 41 40	...	...	...	13.65	12.46	10.91	1/1	9.48	8.88	8.60	*	...	13.65	0.275
GJ1151	1	11 50 57.7	+48 22 39	...	...	...	13.24	11.91	10.18	/37	8.49	7.95	7.64	*	...	13.24	0.158
GJ0450	1	11 51 07.3	+35 16 19	...	...	...	9.77	8.79	7.67	1/1	6.42	5.83	5.61	*	...	9.77	0.487
LP613-062	1	11 51 55.3	-01 31 32	16.57	14.19	11.59	15.64	14.23	12.39	/24	10.54	9.99	9.64	...	...	...	...
LT04404	1	11 51 55.4	-27 29 10	12.37	10.23	8.77	...	...	...	...	8.50	7.88 ^a	7.67	...	...	...	...
LP961-051	1	11 52 35.6	-35 09 43	13.89	11.72	10.17	...	...	...	...	9.39	8.69	8.50	...	...	...	...
LHS0317	1	11 53 12.4	-31 23 56	14.65	12.55	10.25	13.65	12.42	10.80	/40	9.31	8.78	8.56	...	...	...	...

GJ0452	1	11 53 16.1	-07 22 28	12.38	10.84	8.75	11.86	10.83	9.55	/2	8.30	7.70	7.45	*	...	11.86	0.442
LHS2471	1	11 53 54.2	+06 59 06	...	...	...	18.110	16.000	14.150	/3	11.26	10.66	10.26	*	...	18.11	0.087
GJ0452.1	1	11 54 08.0	+09 48 12	...	...	...	12.810	11.605	10.116	/2	8.70	8.19	7.87	*	...	12.81	0.233
LP961-053	1	11 54 18.4	-37 33 10	12.48	10.31	9.19	...	...	...	...	8.48	7.88	7.62	*	...	...	...
LP851-346	1	11 55 42.9	-22 24 59	19.35	16.83	13.20	18.18	15.97	13.50	/9	10.93	10.30	9.88	*	...	18.25	0.081
LHS2476	1	11 55 44.3	-18 54 32	15.24	13.09	10.91	14.25	13.04	11.48	/37	9.97	9.40	9.09	*	...	...	...
GJ2086	1	11 55 49.2	-38 16 49	12.90	10.81	9.59	11.96	10.98	9.91	/20	8.77	8.18	7.95	*	...	11.96	0.495
LHS2482	1	11 57 32.8	+11 49 39	...	...	...	11.84	10.82	9.64	2/1	8.43	7.79	7.57	*	...	11.84	0.511
SCR1157-0149	1	11 57 45.6	-01 49 03	17.29	15.13	12.62	15.99	14.54	12.68	/39	10.91	10.35	10.02	*	...	15.99	0.129
LP851-399	1	11 57 53.5	-23 49 01	15.76	13.55	11.31	14.77	13.51	11.84	/25	10.22	9.62	9.36	*	...	...	...
RXJ1159-5247	1	11 59 27.4	-52 47 19	21.00	17.64	13.74	19.14	16.92	14.49	/40	11.43	10.76	10.32	*	...	19.14	0.075
L325-274	1	12 00 22.9	-49 31 14	13.07	10.71	8.83	...	...	...	...	8.68	8.08	7.87	*	...	...	...
LHS5205	2	12 00 36.9	-13 49 36	13.18J	11.19J	9.28J	12.74J	11.59J	10.11J	/34	8.85	8.22	7.93	*	...	...	...
L829-010	2	12 01 40.8	-12 13 54	13.10J	11.16J	9.54J	12.34J	11.30J	9.96J	/34	8.69	8.10	7.87	*	...	...	...
GJ2088	2	12 02 13.2	-38 00 29	11.46J	9.17J	8.12J	10.52J	9.60J	8.65J	/20	7.61J	6.95J	6.78J	*	...	...	...
LP794-013	1	12 02 16.9	-16 22 04	14.02	11.97	10.21	...	...	...	...	9.28	8.65	8.38	*	...	...	...
GJ0455B	0	12 02 19.5	+28 35 33	...	...	...	...	...	...	...	...	...	...	*	0.00	13.61	0.274
GJ0455A	2	12 02 19.5	+28 35 33	...	...	...	12.86J	11.74J	10.37J	/37	9.13J	8.61J	8.39J	*	...	13.61	0.274
SIP1203-4023	1	12 03 51.3	-40 23 42	16.15	14.08	11.63	...	...	...	...	10.24	9.69	9.40	*	...	...	...
LHS2506	1	12 03 58.3	-33 01 27	14.94	12.70	10.62	...	...	...	...	9.53	9.07	8.74	*	...	...	...
LP852-005	2(1)	12 05 12.9	-25 33 54	13.89	11.71	10.04	13.10	12.02	10.65	/23	9.27	8.66	8.40	*	...	...	...
L397-071	1	12 06 39.1	-44 27 54	13.46	11.37	9.51	...	...	...	...	8.68	8.08	7.83	*	...	...	...
SCR1206-3500	1	12 06 58.5	-35 00 52	15.55	13.46	11.19	14.67	13.35	11.66	/39	10.01	9.40	9.13	*	...	14.67	0.212
GJ0456	1	12 08 22.2	-00 28 58	12.34	9.92	9.37	11.28	10.38	9.50	/37	8.40	7.81	7.59	*	...	11.24	0.598
LP734-030	1	12 08 47.1	-10 16 00	13.39	11.39	9.63	12.65	11.60	10.27	/23	8.96	8.30	8.04	*	...	...	...
SCR1209-3815	1	12 09 23.6	-38 15 43	16.38	14.15	11.82	15.05	13.69	11.95	/40	10.33	9.75	9.45	*	...	...	...
LP908-025	1	12 09 54.1	-29 20 16	16.15	14.12	11.62	14.72	13.49	11.85	/24	10.22	9.64	9.34	*	...	...	...
LHS2520	1	12 10 05.6	-15 04 17	12.89	10.76	8.82	12.09	10.88	9.30	/26	7.77	7.14	6.86	*	...	12.09	0.325
LHS2521	1	12 10 11.6	-31 58 24	17.87	15.69	13.00	...	...	...	...	11.11	10.53	10.22	*	...	...	...
LP734-034	1	12 10 28.4	-13 10 24	14.66	12.52	10.46	13.83	12.52	10.85	/40	9.29	8.68	8.41	*	...	...	...
SCR1210-2213	2	12 10 42.2	-22 13 09	13.56J	11.41J	9.92J	13.05J	11.91J	10.43J	/40	9.03	8.66	8.37	*	...	...	...
L758-108(A)	2(1)	12 11 11.8	-19 57 38	12.50	10.32	8.72	11.68	10.59	9.22	/33	7.90	7.36	7.04	*	...	11.69	0.362
L758-107(B)	0(1)	12 11 17.0	-19 58 21	...	...	...	12.63	11.47	9.98	2/1	8.60	8.01	7.74	*	0.94	12.63	0.269
GJ0458B	0(1)	12 12 20.8	+54 29 08	...	...	...	13.33	12.15	10.63	/35	6.88	6.25	6.06	*	3.54	13.33	0.247
GJ0458A	2(1)	12 12 20.8	+54 29 08	...	...	...	9.79	8.91	8.00	/35	6.88	6.25	6.06	*	...	9.79	0.661
LP852-057	1	12 13 32.9	-25 55 25	12.24	10.09	8.98	11.47	10.51	9.49	/20	8.38	7.74	7.55	*	...	11.47	0.549
SCR1214-2345	1	12 14 08.6	-23 45 17	...	...	...	13.96	12.57	10.78	2/1	10.32	9.75	9.44	*	...	13.96	0.154
GJ1154B	0	12 14 16.6	+00 37 26	...	...	...	...	...	...	...	...	...	...	*	0.00	14.48	0.120
GJ1154A	2	12 14 16.6	+00 37 26	...	...	...	13.73J	12.30J	10.47J	/37	8.46J	7.86J	7.54J	*	...	14.48	0.120
SCR1214-4603	1	12 14 40.0	-46 03 14	16.80	14.53	11.60	15.66	14.14	12.23	/39	10.32	9.75	9.44	*	...	15.66	0.122
GJ1155B	0	12 16 51.8	+02 58 02	...	...	...	...	...	...	...	...	...	...	*	2.00	15.32	0.159
GJ1155A	2	12 16 51.8	+02 58 02	...	...	...	13.16J	12.08J	10.64J	/37	9.23J	8.67J	8.42J	*	...	13.32	0.315
SCR1217-7810	1	12 17 26.9	-78 10 46	17.55	15.69	13.15	16.43	14.92	13.05	/39	11.20	10.64	10.36	*	...	...	...
LP674-104	1	12 18 34.9	-06 25 23	14.89	12.72	10.74	...	...	...	...	9.55	8.97	8.71	*	...	...	...
GJ1156	1	12 18 59.4	+11 07 34	...	...	...	13.80	12.31	10.35	/37	8.53	7.88	7.57	*	...	13.80	0.124
LP052-034	1	12 19 48.8	-23 32 05	16.58	14.36	11.69	...	...	...	...	10.49	9.90	9.58	*	...	...	...
LP794-053	1	12 20 05.1	-18 13 00	16.77	14.40	11.94	...	...	...	...	10.56	9.99	9.62	*	...	...	...
L018-022	1	12 20 33.8	-82 25 58	12.89	10.74	9.10	11.96	10.76	9.20	/40	7.70	7.14	6.84	*	...	11.96	0.317
L038-047	1	12 22 06.8	-78 38 27	13.08	10.97	9.36	12.13	11.04	9.69	/40	8.36	7.75	7.48	*	...	...	...
GJ0463	1	12 23 00.1	+64 01 51	...	...	...	11.59	10.56	9.23	/37	7.94	7.34	7.12	*	...	11.59	0.463
GJ1157	1	12 23 01.4	-46 37 09	14.39	12.19	9.94	13.59	12.35	10.71	/26	9.17	8.63	8.36	*	...	13.59	0.231
LTT17123B	0	12 23 33.1	+67 11 17	...	...	...	...	...	...	...	...	...	...	*	0.26	12.12	0.323
LTT17123A	2	12 23 33.1	+67 11 17	...	...	...	11.23J	10.17J	8.87J	/32	7.60J	7.09J	6.81J	*	...	11.86	0.349
2MA1223-4606	2	12 23 38.6	-46 06 20	14.94J	12.43J	10.89J	...	...	...	...	9.53J	8.94J	8.70J	*	...	...	...
GJ0464	1	12 23 53.5	+12 34 48	...	...	...	10.390	9.485	8.587	/2	7.48	6.86	6.63	*	...	10.39	0.669
LHS0325a	1	12 23 56.2	-27 57 46	19.35	17.15	14.15	18.39	16.42	14.20	/12	11.98	11.40	11.07	*	...	...	...
SCR1224-5339	1	12 24 24.4	-53 39 09	16.52	14.04	11.50	15.31	13.95	12.19	/39	10.51	9.93	9.65	*	...	...	...
GJ0465	1	12 24 52.2	-12 38 36	12.14	9.92	8.30	11.27	10.23	8.97	/40	7.73	7.25	6.95	*	...	20.52	0.075
BRI1222-1222	1	12 24 52.5	-18 14 32	21.83	18.58	15.26	20.41	18.01	15.60	/9	12.57	11.82	11.35	*	...	11.29	0.327
LHS2557	1	12 25 32.0	-15 59 42	15.77	13.65	11.21	15.19	13.76	11.85	/24	9.95	9.36	9.00	*	...	...	...
LP735-048	1	12 26 44.1	-12 29 18	12.82	10.54	8.85	12.59	11.49	10.08	/23	8.87	8.12	7.87	*	...	...	...
LP852-050	1	12 27 02.2	-25 45 01	16.92	14.75	12.25	...	...	...	...	10.84	10.27	9.93	*	...	...	...
LP735-011	2	12 28 53.0	-10 39 51	10.88J	8.87J	7.35J	10.97J	9.93J	8.67J	/40	7.65	7.19 ^a	6.79	*	...	...	...
GJ0469B	0	12 28 57.5	+08 25 31	...	...	...	...	...	...	...	...	...	...	*	1.59	13.87	0.182
GJ0469A	2	12 28 57.5	+08 25 31	...	...	...	12.05J	10.85J	9.30J	3/1	7.84J	7.20J ^a	6.96J	*	...	12.28	0.315
LP377-100	1	12 29 27.1	+22 59 47	...	...	...	14.18	12.95	11.36	/31	9.82	9.27	9.00	*	...	14.18	0.225

GJ1158	1	12 29 34.5	-55 59 37	14.53	12.41	10.30	13.26	12.02	10.41	/16	8.89	8.35	8.07	*	...	13.26	0.223
LHS2567(A)	2(1)	12 29 54.2	-05 27 24	12.75J	10.73J	8.72J	13.08	11.87	10.33	/26	8.82	8.27 ^a	7.96	*	...	13.08	0.333
LHS2568(B)	0(1)	12 29 54.7	-05 27 20	...	...	...	14.21	12.96	11.37	3/1	9.79	9.24	8.92	*	1.13	14.21	0.228
SCR1230-3411B	0	12 30 01.8	-34 11 24	...	...	...	...	...	...	...	...	...	...	*	2.12	16.42	0.117
SCR1230-3411A	2	12 30 01.8	-34 11 24	15.29J	13.18J	10.92J	14.16J	12.81J	11.07J	/39	9.34J	8.77J ^a	8.44J	*	...	14.30	0.204
L194-073	1	12 30 16.6	-57 37 20	14.93	12.83	11.00	...	...	...	...	9.69	9.03	8.79	...	...	...	...
L327-030	1	12 30 44.9	-46 22 43	12.04	9.85	8.63	...	...	...	...	8.37	7.72	7.49	...	...	...	...
GJ0471	1	12 31 15.8	+08 48 38	...	...	...	9.660	8.760	7.850	/2	6.78	6.09	5.89	*	...	9.66	0.639
LP735-016	1	12 32 44.5	-15 30 55	18.14	15.85	13.47	...	...	...	...	11.38	10.85	10.46	...	...	...	...
GJ0473B	0	12 33 16.3	+09 01 16	...	...	...	...	...	...	...	...	...	...	*	0.38	13.71	0.108
GJ0473A	2	12 33 16.3	+09 01 16	...	...	...	12.75J	11.44J	9.74J	/13	7.00J	6.40J	6.04J	*	...	13.33	0.115
L327-121	1	12 33 33.1	-48 26 11	13.07	10.94	8.99	12.05	10.90	9.43	/40	8.01	7.38	7.14	...	...	...	...
LP735-019	1	12 34 44.5	-10 47 41	15.12	12.88	11.10	...	...	...	...	9.92	9.31	9.05	...	...	...	...
GJ0476	1	12 35 00.7	+09 49 42	...	...	...	11.410	10.410	9.196	/2	8.00	7.37	7.15	*	...	11.41	0.487
GJ0477B	0	12 35 58.4	-45 56 20	...	...	...	...	...	...	...	...	...	...	*	2.00	13.28	0.284
GJ0477A	2	12 35 58.4	-45 56 21	11.62J	9.64J	8.01J	11.12J	10.12J	8.93J	/2	7.67J	7.03J	6.84J	*	...	11.28	0.503
LP795-038	1	12 37 21.6	-20 52 36	14.05	11.78	9.83	13.28	12.10	10.54	/23	8.97	8.32	8.09	...	...	...	...
LHS5221	1	12 37 21.7	-32 00 37	16.17	13.84	11.10	...	...	...	...	10.17	9.61	9.29	...	...	...	...
GJ0479	1	12 37 52.2	-52 00 06	11.57	9.31	7.53	10.66	9.57	8.21	/40	6.86	6.29	6.02	*	...	10.67	0.409
2MA1238-2703	1	12 38 37.1	-27 03 35	13.44	11.34	9.79	...	...	...	...	8.73	8.08	7.84	...	...	...	...
GJ1162	1	12 38 47.3	-04 19 17	14.59	11.99	10.07	13.56	12.37	10.82	/23	9.33	8.76	8.46	*	...	13.56	0.273
LHS0337	1	12 38 49.1	-38 22 54	13.67	11.44	9.08	12.75	11.44	9.74	/13	8.17	7.76 ^a	7.39	*	...	12.75	0.156
LP735-024	1	12 38 52.2	-10 02 40	15.26	13.07	11.13	...	...	...	...	9.98	9.43	9.13	...	...	...	...
GJ0480	1	12 38 52.4	+11 41 46	...	...	...	11.510	10.406	8.983	/2	7.58	6.94	6.69	*	...	11.51	0.407
G123-049	1	12 39 04.7	+47 02 23	...	...	...	12.14	11.10	9.84	/32	8.65	7.99	7.79	*	...	12.14	0.444
CE258	1	12 39 17.5	-34 27 25	15.83	13.67	11.87	...	...	...	...	10.30	9.75	9.48	...	...	...	...
LHS2597	1	12 39 36.4	-26 58 11	16.68	14.28	11.42	...	...	...	...	10.04	9.58	9.23	...	...	...	...
GJ0480.1	1	12 40 46.3	-43 33 59	13.10	10.57	8.79	12.24	11.06	9.58	/40	8.22	7.70	7.41	*	...	12.24	0.218
SCR1241-4655	1	12 41 03.3	-46 55 23	12.84	10.44	9.07	12.14	11.12	9.89	/40	8.68	8.09 ^a	7.81	...	...	...	...
LHS5224	1	12 41 26.6	-56 42 00	13.22	11.37	9.87	...	...	...	...	8.97	8.27	8.02	...	...	...	...
LHS2608	1	12 42 19.7	-71 38 20	14.03	12.42	10.50	...	...	...	...	9.17	8.54 ^a	8.22	...	...	...	...
LP796-001	1	12 43 58.9	-16 14 35	15.85	13.66	11.23	...	...	...	...	9.78	9.20	8.90	...	...	...	...
LHS5226	1	12 44 00.7	-11 10 30	15.40	13.22	10.94	14.19	12.85	11.13	/40	9.52	8.97	8.67	*	...	14.19	0.167
LP736-031	1	12 44 31.0	-11 42 15	15.33	13.31	11.19	...	...	...	...	9.93	9.38	9.07	...	...	...	...
LTT04866	1	12 44 37.6	-41 55 38	12.19	9.89	8.94	...	...	...	...	8.45	7.88	7.67	...	...	...	...
SCR1245-5506	1	12 45 52.5	-55 06 50	14.84	12.82	10.34	13.66	12.32	10.61	/39	8.99	8.43	8.12	*	...	13.66	0.160
LHS2632	1	12 46 51.0	+31 47 57	...	...	...	18.91	16.89	14.67	1/1	12.23	11.58	11.21	*	...	18.91	0.085
LP796-006	1	12 46 59.8	-19 02 30	13.08	10.94	9.60	...	...	...	...	8.73	8.05	7.81	...	...	...	...
LHS2633	1	12 47 00.9	+46 37 33	...	...	...	11.76	10.71	9.39	/37	8.10	7.47	7.22	*	...	11.76	0.479
LHS2634	1	12 47 09.8	-03 34 18	13.36	11.02	9.60	12.60	11.51	10.11	/40	8.77	8.16	7.89	*	...	12.60	0.392
LP853-034	1	12 47 10.0	-22 22 37	13.30	10.97	9.53	12.29	11.25	9.99	/23	8.69	8.10	7.84	...	...	...	...
SCR1247-0525	1	12 47 14.7	-05 25 13	15.90	13.38	10.92	14.78	13.45	11.73	/40	10.13	9.62	9.29	*	...	14.78	0.180
LHS5228	1	12 47 46.9	-08 36 17	12.98	10.78	9.73	...	...	...	...	8.85	8.22	8.00	...	...	...	...
GJ0486	1	12 47 56.6	+09 45 05	...	...	...	11.390	10.217	8.680	/2	7.20	6.67	6.36	*	...	11.39	0.302
GJ0487B	0	12 49 02.7	+66 06 36	...	...	...	...	...	...	...	6.88	6.30	6.07	*	0.51	12.51	0.239
GJ0487C	0	12 49 02.7	+66 06 36	...	...	...	...	...	...	...	6.88	6.30	6.07	*	0.00	12.00	0.285
GJ0487A	3	12 49 02.7	+66 06 36	...	...	...	10.95J	9.79J	8.35J	1/1	6.88J	6.30J	6.07J	*	...	12.00	0.285
GJ0488	1	12 50 43.6	-00 46 05	9.24	7.40	6.26	8.47	7.59	6.75	/19	5.75	5.22 ^a	4.88	...	...	...	...
DEN1250-2121	1	12 50 52.7	-21 21 14	19.40	16.95	13.34	18.36	16.15	13.78	/9	11.16	10.55	10.13	*	...	18.36	0.088
LP909-045	1	12 52 16.8	-32 27 08	12.88	10.92	9.71	...	...	...	...	8.87	8.18	8.02	...	...	...	...
LTT04925	1	12 53 19.4	-05 19 53	13.71	11.52	9.94	...	...	...	...	8.92	8.37	8.12	...	...	...	...
L256-005	1	12 53 47.8	-50 49 35	13.57	11.85	10.22	...	...	...	...	9.19	8.57	8.35	...	...	...	...
LHS2651	1	12 55 57.4	+50 55 22	...	...	...	14.42	13.25	11.77	/37	10.38	9.88	9.61	*	...	14.42	0.209
LP736-015	1	12 56 02.1	-12 57 22	18.86	16.35	12.56	...	...	...	...	11.02	10.47	10.04	...	...	...	...
LP854-003	1	12 56 13.3	-22 04 59	13.04	10.79	9.28	12.54	11.47	10.16	/23	8.87	8.33	8.05	...	...	...	...
GJ0490B	0	12 57 39.3	+35 13 19	...	...	...	13.20J	11.74J	10.48J	/35	8.87J	8.28J	8.02J	*	3.22	13.90	0.244
GJ0490C	0	12 57 39.3	+35 13 19	...	...	...	...	...	...	...	...	...	...	*	3.33	14.01	0.235
GJ0490D	0	12 57 40.2	+35 13 30	...	...	...	...	...	...	...	...	...	...	*	3.44	14.12	0.226
GJ0490A	4(1)	12 57 40.2	+35 13 30	...	...	...	10.68	9.73	8.66	/35	7.40	6.73	6.55	*	...	10.68	0.609
SIP1259-4336	1	12 59 04.8	-43 36 25	19.02	16.71	12.80	18.01	15.74	13.29	/40	10.53	9.95	9.52	*	...	18.01	0.077
LP854-057	1	12 59 41.7	-26 50 16	14.85	12.69	10.78	...	...	...	...	9.64	9.07	8.78	...	...	...	...
LTT04969	1	13 00 04.0	-05 37 48	13.42	11.07	9.62	12.57	11.45	10.01	/23	8.66	8.04	7.78	...	...	...	...
HIP063480	1	13 00 25.8	-34 36 24	...	...	...	10.63	9.69	8.70	/20	7.60	6.98	6.72	*	...	10.63	0.614
GJ0493.1	1	13 00 33.5	+05 41 08	...	...	...	13.410	12.051	10.286	/2	8.55	7.97	7.66	*	...	13.41	0.150
GJ0494C	0BD	13 00 41.7	+12 21 15	...	...	...	...	...	...	...	16.69	17.01	16.90 ^a	*	...	...	...
L256-025	1	13 00 43.3	-52 09 41	13.03	11.02	9.64	...	...	...	...	8.77	8.13	7.94	...	...	...	...

GJ0521A	2	13 39 24.1	+46 11 11	...	...	...	10.25J	9.31J	8.24J	1/1	7.05J	6.51J	6.28J	*	...	10.34	0.527
GJ0521.1	1	13 40 07.1	-04 11 10	10.41	8.13	7.51	9.63	8.76	7.92	/2	6.90	6.25 ^a	6.04	...	...	...	...
GJ1174	1	13 40 08.8	+43 46 38	...	...	...	12.76	11.57	10.05	/37	8.60	8.04	7.79	*	...	12.76	0.305
LHS2777	1	13 40 18.0	+47 12 30	...	...	...	15.42	14.09	12.38	1/1	10.69	10.15	9.86	*	...	15.42	0.159
LTT05298	1	13 40 45.5	-31 10 15	13.91	11.59	10.30	...	...	...	...	9.15	8.46	8.22	...	...	...	...
LHS0358	1	13 41 10.4	+30 01 53	...	...	...	15.87	14.53	12.82	1/1	11.18	10.74	10.48	*	...	15.87	0.135
LHS2783	1	13 42 09.9	-16 00 23	13.57	11.55	9.59	13.42	12.14	10.52	/40	8.97	8.39	8.09	*	...	13.42	0.274
LHS2784	1	13 42 43.2	+33 17 24	...	...	...	11.97	10.79	9.27	/37	7.79	7.21	6.98	*	...	11.97	0.267
SCR1343-4002	1	13 43 41.5	-40 02 29	16.44	14.05	11.37	15.07	13.69	11.89	/40	10.14	9.61	9.25	*	...	15.07	0.148
LP855-060	1	13 44 20.9	-26 18 35	14.51	12.48	10.42	...	...	...	...	9.15	8.61 ^a	8.29	...	...	...	...
LHS2789B	0	13 44 27.6	+51 41 04	...	...	...	...	...	...	...	...	...	...	*	0.40	13.54	0.319
LHS2789A	2	13 44 27.6	+51 41 04	...	...	...	12.57J	11.52J	10.27J	/37	8.99J	8.48J	8.25J	*	...	13.14	0.360
LP798-029	1	13 44 37.1	-19 54 44	14.72	12.71	10.71	...	...	...	...	9.56	8.97	8.72	...	...	...	...
GJ0524	1	13 44 48.8	-54 07 18	13.72	11.15	9.11	12.46	11.40	10.12	/2	8.86	8.30	8.07	...	...	...	...
GJ0526	1	13 45 43.7	+14 53 29	...	...	...	8.46	7.50	6.39	/37	5.18	4.78 ^a	4.42	*	...	8.46	0.526
LHS2794	1	13 45 50.7	-17 58 06	13.02	10.43	8.88	11.86	10.69	9.19	/37	7.75	7.19	6.90	*	...	11.86	0.299
LP911-056	1	13 46 46.0	-31 49 26	18.78	16.52	13.17	...	...	...	...	10.98	10.44	10.04	...	...	...	...
LHS2804	1	13 48 40.8	-05 17 08	15.89	13.67	11.53	...	...	...	...	10.33	9.70	9.40	...	...	...	...
UPM1349-4228	1	13 49 01.0	-42 31 10	14.73	13.76	13.35	13.27	12.16	10.78	/40	9.45	8.86	8.62	...	...	...	...
L039-039	1	13 49 02.5	-79 25 54	12.48	10.24	8.79	11.70	10.70	9.52	/40	8.34	7.69 ^a	7.39	...	...	...	...
L691-021	2(1)	13 50 23.8	-21 37 20	14.83	12.80	10.68	13.61	12.41	10.90	/33	9.46	8.86	8.63	...	...	...	...
LHS2813	1	13 51 21.8	-53 32 46	14.28	12.00	10.00	12.84	11.73	10.32	/40	8.93	8.38	8.12	...	...	...	...
LP798-049	1	13 51 57.1	-17 58 49	17.11	15.14	12.82	...	...	...	...	10.82	10.21	9.93	...	...	...	...
LP798-051	1	13 52 53.5	-18 20 17	12.76	10.67	9.31	11.80	10.80	9.65	/23	8.46	7.87	7.61	*	...	11.80	0.504
LHS2822	1	13 53 55.6	-20 14 43	13.65	11.45	9.80	...	...	...	...	9.03	8.46	8.21	...	...	...	...
2MA1354-7121	1	13 54 53.9	-71 21 48	12.60	10.67	8.75	12.28	11.19	9.86	/40	8.55	7.92	7.67	...	...	...	...
GJ1181	2	13 55 02.6	-29 05 26	10.72J	8.65J	7.49J	9.52J	8.60J	7.64J	/20	6.52J	5.84J	5.64J	...	...	...	...
L070-053	1	13 55 28.0	-73 29 41	11.98	10.27	9.17	11.36	10.40	9.30	/40	8.18	7.58	7.35	...	...	...	...
LTT05425	1	13 55 35.1	-07 23 17	13.31	11.23	9.61	...	...	...	...	8.81	8.23	7.95	...	...	...	...
LHS2826	1	13 56 20.6	-28 03 50	16.26	14.23	12.03	15.26	13.87	12.14	/6	10.48	9.88	9.57	...	...	...	...
LP475-052	2(1)	13 57 14.0	-38 32 28	13.39	11.24	9.80	...	...	...	...	9.18	8.52	8.27	...	...	...	...
SSS1358-3938	1	13 58 05.4	-39 37 55	15.14	12.63	10.27	14.04	12.80	11.20	/40	9.72	9.23	8.95	*	...	14.04	0.153
LP739-002	1	13 58 16.2	-12 02 59	14.94	12.78	10.48	14.46	13.10	11.39	/40	9.73	9.17	8.89	*	...	14.46	0.189
LP739-003	1	13 58 19.6	-13 16 25	14.64	12.39	10.23	13.96	12.71	11.08	/23	9.49	8.93	8.65	...	...	...	...
LHS2836	1	13 59 10.4	-19 50 04	13.98	11.69	9.52	12.88	11.60	9.90	/27	8.33	7.76 ^a	7.45	*	...	12.88	0.219
SIP1400-4109	1	14 00 49.7	-41 09 54	16.24	13.96	11.44	...	...	...	...	10.29	9.71	9.45	...	...	...	...
GJ0536	1	14 01 03.2	-02 39 18	10.06	7.95	6.29	9.68	8.73	7.65	/2	6.52	5.94	5.68	*	...	9.71	0.538
HIP068570	1	14 02 19.6	+13 41 22	...	...	...	10.66	9.76	8.74	/35	7.56	6.89	6.71	*	...	10.66	0.612
LHS2848	1	14 02 28.9	-21 00 37	14.32	12.21	10.33	13.19	12.04	10.56	/37	9.16	8.60	8.25	...	...	...	...
GJ0537B	0	14 02 32.2	+46 20 02	...	...	...	...	...	...	...	...	...	...	*	0.22	10.04	0.527
GJ0537A	2	14 02 32.2	+46 20 02	...	...	...	9.17J	8.20J	7.15J	/37	6.27J ^a	5.65J	5.39J	*	...	9.82	0.557
LHS2852	1	14 02 46.7	-24 31 50	13.32	10.53	9.55	12.13	11.08	9.85	/40	8.64	8.10	7.84	*	...	12.13	0.388
LP912-046	1	14 04 03.2	-30 00 47	14.53	12.60	10.80	...	...	...	...	9.46	8.83	8.62	...	...	...	...
L106-015	1	14 04 08.2	-66 14 38	14.01	11.98	10.61	11.59	10.51	9.14	/40	7.78	7.15	6.92	...	...	...	...
LP912-048	1	14 05 36.9	-32 08 39	16.88	14.68	12.45	...	...	...	...	10.70	10.02	9.80	...	...	...	...
LP679-084	1	14 06 39.3	-05 43 29	14.80	12.72	10.50	...	...	...	...	9.57	8.96	8.68	...	...	...	...
GJ0540	1	14 08 12.9	+80 35 50	...	...	...	10.35	9.40	8.34	/37	7.18	6.53	6.33	*	...	10.35	0.606
LHS2866	1	14 08 16.9	+75 51 14	...	...	...	11.59	10.61	9.52	/37	8.35	7.79	7.56	*	...	11.59	0.550
LP912-052	1	14 08 41.0	-28 01 04	16.76	14.63	12.50	...	...	...	...	10.78	10.19	9.87	...	...	...	...
LTT05526	1	14 09 36.5	-41 22 28	15.12	13.08	11.09	...	...	...	...	9.83	9.26	8.99	...	...	...	...
L548-010	1	14 10 57.5	-31 17 25	12.06	9.93	8.43	10.83	9.85	8.73	/20	7.55	6.94	6.69	*	...	10.83	0.537
WT0460B	0	14 11 59.0	-41 32 21	...	...	...	...	...	...	...	...	...	...	*	4.27	19.92	0.075
WT0460A	2(1)	14 11 59.9	-41 32 21	16.85	13.97	11.59	15.65	13.91	11.80	/40	9.67	9.04	8.62	*	...	15.65	0.104
LHS2875B	0	14 12 11.0	-00 35 04	...	...	...	...	...	...	...	...	...	...	*	0.50	14.07	0.273
LHS2875A	3(2)	14 12 11.0	-00 35 04	13.31J	11.33J	9.61J	13.04J	11.96J	10.62J	/3	9.35J	8.79J	8.55J	*	...	13.57	0.321
LHS2876C	0(1)	14 12 12.1	-00 35 16	...	...	...	20.14	18.07	15.70	/3	13.09	12.53	12.09	*	6.57	20.14	0.080
GJ0540.2	1	14 13 04.9	-12 01 27	14.89	12.61	10.45	13.89	12.52	10.79	/40	9.04	8.45	8.16	...	...	...	...
GJ2106	1	14 13 12.9	-56 44 32	11.47	9.36	8.91	10.19	9.21	8.11	/20	6.95	6.39	6.14	*	...	10.19	0.518
LHS2884	1	14 15 11.8	+45 00 40	...	...	...	11.86	10.78	9.38	/37	8.01	7.47	7.23	*	...	11.86	0.404
GJ1182	1	14 15 30.2	+04 38 44	...	...	...	14.30	12.95	11.09	/37	9.43	8.94	8.62	*	...	14.30	0.163
LP739-036	1	14 15 46.4	-13 29 34	13.13	10.98	9.47	...	...	...	...	8.96	8.34	8.11	...	...	...	...
L404-216	1	14 16 47.5	-44 53 21	12.63	10.34	8.37	...	...	...	...	8.33	7.71	7.45	...	...	...	...
GJ0541.2	1	14 17 24.3	+45 26 40	...	...	...	10.25	9.36	8.48	/35	7.39	6.78	6.60	*	...	10.25	0.660
L404-010	1	14 17 25.9	-40 18 15	13.48	11.30	9.71	...	...	...	...	8.63	8.09	7.81	...	...	...	...
LP619-064	1	14 17 59.1	-00 31 29	13.86	11.99	10.23	...	...	...	...	9.04	8.50	8.28	...	...	...	...
GJ0543	1	14 19 11.0	-07 18 12	14.01	11.53	9.82	13.48	12.39	10.99	/2	9.67	9.23	8.92	*	...	13.48	0.276

GJ0545	1	14 20 07.4	-09 37 13	13.94	11.48	9.94	12.84	11.69	10.15	/15	8.74	8.19	7.98	*	...	12.96	0.260
SCR1420-7516	1	14 20 36.8	-75 16 06	14.23	12.68	10.45	13.78	12.55	10.95	/39	9.44	8.91	8.63	*	...	13.78	0.286
LHS0370	1	14 20 53.0	+36 57 16	...	...	...	16.15	14.70	12.85	1/1	11.05	10.55	10.25	*	...	16.15	0.124
LHS2899	1	14 21 15.1	-01 07 20	14.30	12.20	10.20	13.12	11.92	10.39	/26	8.95	8.39	8.09	*	...	13.12	0.237
LP913-013	1	14 21 49.0	-31 54 35	14.31	12.12	10.26	12.85	11.79	10.47	/23	9.14	8.58	8.31	...	...	...	...
GJ2107	1	14 23 06.4	-68 22 58	11.20	8.98	8.82	10.21	9.33	8.46	/40	7.42	6.82	6.56	...	...	...	...
LHS2906	1	14 23 07.8	-22 17 09	16.13	14.13	12.00	14.98	13.70	12.03	/40	10.40	9.79	9.50	...	...	...	...
LHS2913	1	14 24 55.9	+08 53 15	...	...	...	12.23	11.11	9.71	/37	8.42	7.80	7.59	*	...	12.23	0.326
LP800-058	1	14 25 13.3	-16 24 56	18.46	16.06	13.13	...	...	...	...	11.48	10.90	10.49	...	...	...	...
LP740-010	1	14 25 34.1	-11 48 52	14.41	12.22	10.48	...	...	...	...	9.35	8.70	8.39	...	...	...	...
LP620-012	1	14 26 36.8	-01 15 23	14.97	12.92	11.17	...	...	...	...	9.84	9.27	9.01	...	...	...	...
GJ1183A	2(1)	14 27 56.1	-00 22 31	15.32	12.93	11.22	13.95	12.65	10.93	/33	9.31	8.70	8.40	*	...	13.95	0.205
GJ1183B	0(1)	14 27 57.0	-00 22 24	...	...	...	14.02	12.71	10.98	/33	9.35	8.76	8.46	*	0.07	14.02	0.200
LHS2919	1	14 28 04.0	+13 56 13	...	...	...	17.62	15.61	13.33	1/1	11.01	10.39	10.03	*	...	17.62	0.088
LHS2921	1	14 28 27.7	+45 54 29	...	...	...	17.03	15.37	13.37	1/1	11.34	10.75	10.43	*	...	17.03	0.112
LHS2924	1	14 28 42.0	+33 10 03	...	...	...	19.74	...	15.300	/3	11.99	11.23	10.74	*	...	19.74	0.075
GJ0550.3	1	14 29 18.6	-46 27 50	11.20	8.76	8.06	10.35	9.49	8.61	/2	7.64	7.01 ^a	6.79	...	...	...	...
GJ0552	1	14 29 29.7	+15 31 57	...	...	...	10.68	9.67	8.46	/37	7.23	6.61	6.39	*	...	10.68	0.508
LP913-027	1	14 29 49.2	-29 32 14	13.27	11.12	9.67	...	...	...	...	8.94	8.34 ^a	8.10	...	...	...	...
LHS2930	1	14 30 33.7	+59 43 14	...	...	...	17.90	...	13.30	/3	10.79	10.14	9.79	*	...	17.90	0.081
GJ0553	1	14 30 47.7	-08 38 47	10.03	7.58	6.98	9.38	8.51	7.67	/2	6.62	6.01	5.77	...	...	...	...
GJ0552.1	1	14 30 58.9	-54 06 05	12.80	10.78	9.68	11.66	10.63	9.36	/2	8.60	7.43	7.27	...	...	...	...
GJ0553.1	1	14 31 01.2	-12 17 46	12.58	9.89	8.66	11.95	10.79	9.30	/2	7.80	7.26	6.96	*	...	11.95	0.304
LP740-020	1	14 31 15.6	-13 18 25	17.52	15.14	12.52	...	...	...	...	11.10	10.47	10.10	...	...	...	...
LHS0375	1	14 31 38.3	-25 25 33	16.79	14.83	13.07	15.64	14.56	13.35	/40	12.15	11.67	11.51	*	...	15.64	0.155
SIP1432-3326	2	14 32 04.8	-33 26 26	16.47J	14.33J	12.12J	...	...	...	...	10.37J	9.85J	9.53J	...	...	...	...
LHS2935	1	14 32 08.0	+08 11 30	...	...	...	15.68	14.08	12.09	3/1	10.11	9.53	9.17	*	...	15.68	0.115
LP913-077	1	14 32 18.0	-33 20 59	15.25	13.13	11.08	...	...	...	...	9.69	9.11	8.81	...	...	...	...
LP857-051	1	14 33 12.2	-22 12 31	14.56	12.31	10.71	...	...	...	...	9.68	9.05	8.80	...	...	...	...
LHS5273	1	14 34 04.9	-18 24 11	15.39	13.05	10.67	...	...	...	...	9.58	9.03	8.71	...	...	...	...
GJ0555	1	14 34 16.8	-12 31 10	12.43	10.16	8.23	11.34	10.06	8.44	/40	6.84	6.26	5.94	*	...	11.32	0.250
LP913-046	1	14 36 18.1	-30 57 33	14.22	12.08	10.48	...	...	...	...	9.54	8.93	8.69	...	...	...	...
LP620-047	1	14 38 39.4	-02 57 24	15.01	12.88	11.05	...	...	...	...	9.86	9.30	9.03	...	...	...	...
L333-199	1	14 40 20.8	-48 36 59	12.88	10.55	9.38	...	...	...	...	8.33	7.71	7.47	...	...	...	...
LP914-006	1	14 40 22.1	-27 52 42	14.72	12.55	10.66	13.58	12.44	10.97	/23	9.57	9.03	8.75	...	...	...	...
2MA1440+1339	1	14 40 22.9	+13 39 22	...	...	...	18.99	17.05	14.80	2/1	12.40	11.71	11.34	*	...	18.99	0.087
LT05828	1	14 41 09.9	-08 59 20	14.72	12.60	10.75	...	...	...	...	9.35	8.76	8.51	...	...	...	...
LP680-049	1	14 41 15.3	-06 59 09	14.48	12.44	10.84	...	...	...	...	9.48	8.94	8.68	...	...	...	...
LT05831	3	14 41 35.8	-09 46 39	13.53J	11.44J	10.02J	...	...	...	...	8.67J	8.05J	7.82J	...	...	...	...
LTT14363B	0	14 42 21.5	+66 03 20	...	...	...	...	...	...	...	...	...	...	*	6.64	17.47	0.087
LTT14363A	2(1)	14 42 21.5	+66 03 20	...	...	...	10.83	9.80	8.58	/35	7.31	6.73	6.49	*	...	10.83	0.420
SCR1444-3426	1	14 44 06.6	-34 26 47	15.01	12.49	10.47	14.17	12.89	11.26	/39	9.74	9.18	8.88	*	...	14.15	0.182
LP858-020	1	14 44 15.0	-27 17 26	17.08	14.95	12.64	...	...	...	...	10.89	10.32	10.04	...	...	...	...
SSS1444-2019	1	14 44 20.3	-20 19 26	21.16	18.47	14.95	20.25	17.62	14.95	/40	12.55	12.14	11.93	*	...	20.25	0.075
GJ1185	1	14 47 55.2	-03 09 36	14.39	12.28	10.70	13.33	12.28	10.99	/37	9.78	9.28	9.06	*	...	13.33	0.295
GJ0563.2B	0(1)	14 49 31.7	-26 06 42	...	...	...	12.07	11.08	9.92	/2	8.66	8.13	7.89	*	0.39	12.07	0.427
GJ0563.2A	2(1)	14 49 33.2	-26 06 20	13.13	11.04	10.13	11.68	10.70	9.62	/2	8.44	7.86	7.64	*	...	11.68	0.508
SIP1452-3458	1	14 52 52.9	-34 58 47	17.72	15.21	12.26	...	...	...	...	11.05	10.48	10.16	...	...	...	...
GJ1186	1	14 53 37.2	+11 34 13	...	...	...	15.35	13.98	12.22	1/1	10.58	9.97	9.65	*	...	15.35	0.145
GJ0568B	0	14 53 51.4	+23 33 20	...	...	...	...	...	...	...	...	...	...	*	1.44	13.38	0.177
GJ0568A	2	14 53 51.4	+23 33 20	...	...	...	11.68J	10.49J	8.94J	/37	7.44J	6.83J	6.57J	*	...	11.94	0.293
LP801-025	1	14 54 10.4	-20 41 29	16.34	14.04	11.43	...	...	...	...	10.26	9.67	9.35	...	...	...	...
GJ0569B	0BD	14 54 29.2	+16 06 03	...	...	...	...	...	...	...	...	...	...	*	...	...	...
GJ0569C	0BD	14 54 29.2	+16 06 03	...	...	...	...	...	...	...	...	...	...	*	...	...	...
GJ0569A	3(1)	14 54 29.2	+16 06 03	...	...	...	10.15	9.12	7.87	/20	6.63	5.99	5.77	*	...	10.15	0.479
LHS2999	1	14 54 53.4	+09 56 36	...	...	...	11.29	10.38	9.35	/37	8.22	7.62 ^a	7.39	*	...	11.29	0.587
LT05930	1	14 54 58.3	-11 23 21	13.85	11.87	10.02	...	...	...	...	9.07	8.37	8.18	...	...	...	...
SCR1456-7239	1	14 56 02.3	-72 39 41	16.50	14.22	11.99	15.36	13.99	12.28	/39	10.62	10.06	9.74	...	...	...	...
LHS3001(A)	2(1)	14 56 27.2	+17 55 00	...	...	...	15.81	14.35	12.52	2/1	10.74	10.15	9.85	*	...	15.81	0.127
LHS3002(B)	0(1)	14 56 27.8	+17 55 09	...	...	...	18.68	16.65	14.42	2/1	11.98	11.30	10.92	*	2.87	18.68	0.086
LP406-203	1	14 56 37.7	-44 56 28	14.12	11.82	9.72	...	...	...	...	9.38	8.74	8.49	...	...	...	...
LHS3003	1	14 56 38.3	-28 09 49	18.37	16.07	11.99	16.95	14.90	12.50	/9	9.97	9.32	8.93	*	...	17.05	0.081
LHS3005	1	14 57 20.6	+14 58 55	...	...	...	14.83	13.55	11.99	1/1	10.48	9.90	9.66	*	...	14.83	0.209
LP681-091	1	14 57 33.3	-06 19 49	11.83	10.12	8.73	11.47	10.59	9.73	/35	8.65	8.00	7.84	...	...	...	...
GJ1187	1	14 57 53.7	+56 39 24	...	...	...	15.53	13.99	12.00	/37	10.21	9.64	9.27	*	...	15.53	0.112
SCR1459-4210	1	14 59 57.4	-42 10 09	16.34	14.54	12.31	15.39	14.07	12.37	/40	10.68	10.12	9.87	...	...	...	...

SCR1551-3554	1	15 51 12.2	-35 54 48	15.94	14.26	12.39	14.48	13.24	11.66	/40	10.12	9.49	9.19	...	...	...
LHS3124	1	15 51 21.0	+29 31 06	...	...	...	13.03	11.87	10.39	2/1	8.96	8.38	8.15	*	...	13.03 0.314
LHS5303	1	15 52 44.6	-26 23 14	17.59	15.48	12.31	16.53	14.66	12.49	/9	10.26	9.68	9.32	*	...	16.53 0.096
LHS3129(A)	2(1)	15 53 08.7	+34 44 39	...	...	...	11.76	10.68	9.32	/37	8.00	7.34 ^a	7.09	*	...	11.76 0.498
LHS3130(B)	0(1)	15 53 08.8	+34 44 20	...	...	...	13.17	12.01	10.50	/37	8.99	8.42	8.18	*	1.41	13.17 0.338
LP860-046	1	15 53 57.1	-23 11 53	18.25	16.19	13.59	...	...	...	...	11.55	10.95	10.62	...	...	...
LP409-071	1	15 54 00.8	-43 03 10	12.42	9.76	9.15	...	...	...	...	8.75	8.05	7.86	...	...	...
LP683-049	1	15 54 50.4	-05 21 47	16.05	14.02	11.83	...	...	...	...	10.33	9.71	9.38	...	...	...
LHS3132	1	15 55 05.2	+33 50 55	...	...	...	15.99	14.62	12.88	1/1	11.20	10.78	10.50	*	...	15.99 0.142
LTT06368	1	15 58 27.8	-06 51 45	12.96	10.62	9.17	...	...	...	...	8.68	8.12	7.81	...	...	...
LHS3142	1	15 59 51.0	+14 59 50	...	...	...	14.05	12.90	11.46	1/1	10.07	9.56	9.32	*	...	14.05 0.276
GJ0606	1	15 59 53.4	-08 15 11	11.01	8.81	7.51	10.49	9.51	8.39	/2	7.19	6.60	6.34	*	...	10.49 0.526
SCR1601-3421	1	16 01 55.7	-34 21 57	17.05	15.75	13.28	16.18	14.71	12.86	/39	10.96	10.33	9.98	*	...	16.18 0.129
GJ0609	1	16 02 50.9	+20 35 21	...	...	...	12.570	11.329	9.734	/2	8.13	7.65	7.37	*	...	12.57 0.230
LHS3149	1	16 04 20.0	-06 16 46	16.50	14.41	11.68	15.65	14.12	12.28	1/1	10.45	9.88	9.55	*	...	15.65 0.128
LP917-019	2(1)	16 04 23.2	-33 03 40	11.32	9.03	8.89	10.08	9.22	8.41	/20	7.38	6.75	6.56	...	...	...
GJ1197	1	16 07 15.5	+26 49 49	...	...	...	13.30	12.22	10.87	1/1	9.62	9.03	8.80	*	...	13.30 0.319
2MA1607-0442	1	16 07 31.2	-04 42 10	20.98	18.24	14.87	19.49	17.19	14.78	/9	11.90	11.19	10.72	*	...	19.62 0.077
GJ1198	1	16 08 15.0	-10 26 14	15.57	13.72	11.38	14.69	13.43	11.78	/40	10.26	9.75	9.53	*	...	14.69 0.193
SCR1608-2913	2	16 08 45.5	-29 13 06	13.61J	11.65J	9.91J	13.66J	12.49J	11.02J	/40	9.68J ^a	9.15J ^a	8.51	...	...	...
HIP079126	1	16 09 03.1	+52 56 37	...	...	...	10.19	9.27	8.31	/35	7.19	6.53	6.33	*	...	10.19 0.629
LP481-066	1	16 09 13.0	-38 04 33	14.51	12.96	11.84	...	...	...	...	9.45	8.81	8.52	...	...	...
SCR1609-3431	1	16 09 46.2	-34 31 07	18.48	16.61	13.99	17.20	15.59	13.56	/40	11.58	10.99	10.67	...	...	...
LP684-033	1	16 10 58.4	-06 31 33	18.33	16.13	12.95	...	...	...	...	11.35	10.75	10.37	...	...	...
LHS3165	1	16 12 07.1	-40 48 45	13.81	12.07	11.17	...	...	...	...	9.22	8.60	8.38	...	...	...
LP804-027	1	16 12 41.8	-18 52 32	12.13	10.77	8.87	11.37	10.29	8.92	/20	7.56	6.86	6.59	*	...	11.37 0.429
LHS3167	1	16 13 05.9	-70 09 08	14.58	12.44	10.10	13.71	12.45	10.82	/26	9.26	8.74 ^a	8.39	*	...	13.71 0.227
LHS3169	1	16 14 21.9	-28 30 37	14.01	12.01	10.30	12.95	11.80	10.29	/26	8.92	8.36	8.11	*	...	12.95 0.321
GJ1200	1	16 14 28.7	+19 06 04	...	...	...	12.87	11.77	10.32	1/1	8.99	8.48	8.26	*	...	12.87 0.319
GJ0618B	0(1)	16 20 03.2	-37 31 49	...	...	...	14.15	12.74	10.92	/2	8.34 ^a	8.04 ^a	7.77 ^a	*	3.55	14.15 0.127
GJ0618A	2(1)	16 20 03.5	-37 31 45	11.51J	10.05J	9.71J	10.62	9.46	8.11	/40	6.79	6.22	5.95	*	...	10.60 0.381
LP917-025	1	16 20 37.6	-30 39 41	12.89	10.88	9.80	11.96	10.98	9.81	/25	8.61	8.01	7.80	...	...	...
LP805-001	1	16 20 41.9	-20 05 14	15.02	13.56	12.04	13.68	12.44	10.84	/40	9.36	8.75	8.42	...	...	...
LP625-004	2(1)	16 21 26.3	-01 47 02	14.56	12.54	10.87	...	...	...	...	9.71	9.10	8.89	...	...	...
GJ0618.4	1	16 22 41.0	-48 39 20	12.89	10.94	9.18	11.84	10.85	9.70	/2	8.48	7.87	7.64	*	...	11.84 0.504
LEP1623-6905	1	16 23 02.8	-69 05 37	17.72	14.82	12.70	16.78	15.14	13.13	/40	11.38	10.86	10.54	...	...	...
GJ0620	1	16 23 07.6	-24 42 35	11.47	10.62	9.90	10.22	9.30	8.34	/2	7.26	6.59	6.39	*	...	10.22 0.617
GJ0623B	0	16 24 09.3	+48 21 10	...	...	...	...	...	...	...	...	...	...	*	5.28	15.56 0.100
GJ0623A	2(1)	16 24 09.3	+48 21 10	...	...	...	10.28	9.25	7.94	/37	6.64	6.14	5.92	*	...	10.28 0.407
LTT06556	1	16 25 01.5	-12 15 26	13.48	11.61	9.94	12.87	11.82	10.50	/23	9.19	8.51	8.30	...	...	...
GJ0622	1	16 25 13.0	-21 56 14	11.73	9.80	9.15	10.41	9.50	8.63	/2	7.55	6.92	6.73	*	...	10.41 0.617
GJ0625	1	16 25 24.6	+54 18 14	...	...	...	10.11	9.07	7.88	1/1	6.61	6.06	5.83	*	...	10.11 0.378
LHS3197	1	16 26 48.1	-17 23 34	14.91	12.74	10.22	14.30	12.93	11.16	/26	9.55	9.00	8.68	*	...	14.30 0.198
SCR1626-3812	1	16 26 51.7	-38 12 33	17.46	15.82	13.15	15.75	14.23	12.29	/40	10.37	9.80	9.44	*	...	15.75 0.116
GJ2120	1	16 27 33.2	-10 00 29	11.30	9.11	8.40	10.85	9.89	8.84	/20	7.69	7.04	6.83	*	...	10.85 0.629
GJ2121B	0	16 30 13.0	-14 39 49	...	...	...	...	...	...	...	...	...	...	*	2.72	15.16 0.172
GJ2121A	2	16 30 13.1	-14 39 50	12.37J	10.60J	9.02J	12.35J	11.25J	9.83J	/37	8.42J	7.92J	7.60J	*	...	12.44 0.417
GJ0628	1	16 30 18.1	-12 39 45	10.07	8.04	5.99	10.07	8.89	7.37	/40	5.95	5.37	5.08	*	...	10.10 0.286
SCR1630-3633B	0	16 30 27.2	-36 33 56	...	...	...	...	...	...	...	...	...	...	*	2.72	17.76 0.091
SCR1630-3633A	2	16 30 27.2	-36 33 56	15.94J	14.39J	11.88J	14.95J	13.47J	11.59J	/39	10.04J	9.50J	9.03J	*	...	15.04 0.140
GJ1202	1	16 31 35.1	+17 33 49	...	...	...	12.82	11.69	10.28	1/1	8.93	8.43	8.18	*	...	12.83 0.333
GJ1203	1	16 32 45.1	+12 36 45	...	...	...	12.16	11.12	9.77	/20	8.43	7.90	7.68	*	...	12.16 0.394
2MA1632-0631	1	16 32 58.8	-06 31 48	21.71	19.50	15.88	20.23	18.01	15.58	/9	12.74	12.05	11.62	*	...	20.20 0.076
L339-020	1	16 34 43.8	-46 01 31	12.05	10.08	9.20	...	...	...	...	8.38	7.69	7.51	...	...	...
L483-080	1	16 34 59.0	-38 34 34	14.22	12.55	11.45	...	...	...	...	9.37	8.70	8.46	...	...	...
LHS3218	1	16 35 24.6	-27 18 55	15.64	13.79	11.79	14.18	12.93	11.28	/26	9.78	9.27	9.00	*	...	14.18 0.209
UPM1635-5202	1	16 35 37.2	-52 02 01	16.73	14.73	12.22	15.58	14.09	12.18	/40	10.41	9.80	9.56	...	...	...
LHS0423	1	16 35 40.4	-30 51 20	13.14	11.35	10.00	12.66	11.58	10.16	/40	8.89	8.36	8.08	*	...	12.66 0.360
GJ1204	1	16 36 05.3	+08 48 34	...	...	...	13.81	12.56	10.92	/37	9.42	8.80	8.51	*	...	13.81 0.206
LP685-036	1	16 36 06.0	-04 40 13	17.27	15.27	12.96	...	...	...	...	11.05	10.51	10.18	...	...	...
SCR1636-4041	1	16 36 57.6	-40 41 09	14.69	12.89	10.93	13.47	12.26	10.70	/40	9.20	8.57	8.31	*	...	13.47 0.300
L555-115	1	16 36 58.4	-33 46 51	13.96	12.09	10.49	...	...	...	...	9.12	8.48 ^a	8.25	...	...	...
SCR1639-4652	1	16 39 25.8	-46 53 00	14.46	12.44	10.46	13.28	12.12	10.67	/40	9.30	8.69	8.43	...	...	...
LHS5319	1	16 39 30.2	+50 34 03	...	...	...	11.83	10.87	9.81	/34	8.63	8.12	7.86	*	...	11.83 0.473
LP625-034	1	16 40 05.7	+00 42 05	...	...	...	13.70	12.39	10.72	/29	9.12	8.59	8.21	*	...	13.70 0.169
LP069-457	1	16 40 14.7	+67 36 32	...	...	...	15.65	14.00	11.95	/31	9.85	9.29	8.95	*	...	15.65 0.117

GJ0633	1	16 40 45.3	-45 59 59	13.90	11.28	9.85	12.67	11.56	10.20	/26	8.89	8.31	8.05	*	...	12.65	0.327
LTT14949	1	16 40 48.9	+36 19 00	...	...	...	11.50	10.49	9.31	/34	8.07	7.42	7.20	*	...	11.50	0.489
GJ0634	1	16 41 28.3	-43 59 11	12.56	10.28	9.08	11.58	10.57	9.38	/2	8.14	7.62	7.33	*	...	11.58	0.454
LP686-002	1	16 43 55.9	-07 26 10	12.05	9.97	9.40	...	...	...	...	8.54	7.98 ^a	7.71	...	...	...	...
2MA1643-7530	1	16 43 57.7	-75 30 21	12.14	10.54	9.54	...	...	...	...	8.43	7.81	7.57	...	...	...	...
GJ2122B	0	16 45 17.0	-38 48 30	...	...	...	...	...	...	...	...	...	...	*	2.00	11.83	0.326
GJ2122A	2	16 45 17.0	-38 48 30	...	...	...	9.68J	8.73J	7.69J	3/1	6.57J	5.94J	5.72J	*	...	9.83	0.559
2MA1645-1319	1	16 45 22.1	-13 19 52	...	18.80	15.97	20.30	17.95	15.67	/40	12.45	11.69	11.15	...	...	...	...
LHS3240	1	16 46 13.7	+16 28 40	...	...	...	11.65	10.60	9.27	/20	7.95	7.29	7.09	*	...	11.65	0.423
LHS3241	1	16 46 31.0	+34 34 56	...	...	...	16.81	14.93	12.75	1/1	10.53	9.97	9.61	*	...	16.81	0.096
LP806-004	2(1)	16 47 35.6	-19 44 27	12.92	10.97	9.65	12.04	11.04	9.87	/23	8.64	8.04 ^a	7.79	...	...	...	...
LP154-205	1	16 47 55.2	-65 09 12	15.11	12.73	10.70	13.98	12.73	11.16	/40	9.70	9.17	8.88	*	...	13.97	0.189
GJ0637	1	16 48 24.5	-72 58 34	12.20	10.33	9.49	11.35	10.37	9.26	/2	8.04	7.48	7.22	*	...	11.35	0.456
LP806-008	1	16 48 46.0	-15 44 20	11.66	10.30	8.55	10.94	9.97	8.84	/34	7.66	7.00	6.77	*	...	10.94	0.546
LHS3246	1	16 50 53.8	-04 50 35	14.22	12.20	10.43	13.45	12.30	10.81	/37	9.47	8.92 ^a	8.68	...	...	...	...
G169-029	1	16 50 57.0	+22 26 48	...	...	...	14.08	12.69	10.91	3/1	9.14	8.57	8.31	*	...	14.08	0.144
GJ0643(E)	0(1)	16 55 25.0	-08 19 21	...	...	...	11.80	10.59	9.05	/2	7.56	7.06 ^a	6.72	*	2.34	11.80	0.216
GJ0644B	0	16 55 28.0	-08 20 11	...	...	...	...	...	...	...	...	...	...	*	0.93	10.39	0.346
GJ0644D	0	16 55 28.0	-08 20 11	...	...	...	...	...	...	...	...	...	...	*	0.93	10.39	0.346
GJ0644A	5(3)	16 55 28.8	-08 20 11	9.61J	8.51J	5.49J	9.03J	7.94J	6.57J	/2	5.27J	4.78J	4.40J	*	...	9.46	0.449
GJ0644C	0(1)	16 55 35.0	-08 23 40	...	...	...	16.80	14.60	12.18	/3	9.78	9.20	8.82	*	7.34	16.80	0.083
LTT06745	1	16 55 38.0	-32 04 04	10.94	9.10	8.52	9.57	8.70	7.90	/20	6.92	6.25	6.05	...	...	...	...
SCR1656-2046	1	16 56 33.6	-20 46 37	18.65	16.39	13.66	17.36	15.58	13.42	/40	11.30	10.71	10.37	*	...	17.36	0.097
GJ0645	1	16 56 45.1	-37 03 39	12.94	11.53	10.73	11.44	10.46	9.34	/2	8.17	7.57	7.34	*	...	11.44	0.466
SCR1656-4238	1	16 56 49.8	-42 38 48	14.42	11.96	10.32	13.33	12.23	10.82	/40	9.52	8.86	8.61	...	...	...	...
GJ1207	1	16 57 05.7	-04 20 56	13.66	10.08	9.70	12.25	11.00	9.43	/27	7.97	7.44 ^a	7.12	*	...	12.24	0.233
GJ0649	1	16 58 08.8	+25 44 39	...	...	...	9.69	8.72	7.64	/37	6.45	5.87	5.62	*	...	9.69	0.547
G139-003B	0	16 58 25.0	+13 58 06	...	...	...	...	...	...	...	...	...	...	*	0.65	14.29	0.165
G139-003A	2	16 58 25.0	+13 58 06	...	...	...	13.16J	11.90J	10.31J	3/1	8.80J	8.28J	7.97J	*	...	13.64	0.206
SCR1659-6958	1	16 59 28.1	-69 58 18	15.93	14.30	11.63	15.36	13.93	12.15	/40	10.54	10.00	9.70	*	...	15.36	0.152
LP746-041	1	17 00 42.2	-09 25 35	16.61	15.46	12.15	...	...	...	...	10.79	10.20	9.87	...	...	...	...
HIP083405	1	17 02 49.5	-06 04 06	...	...	...	10.85	9.92	8.92	/34	7.80	7.16	6.95	*	...	10.85	0.562
LHS3262	1	17 03 25.4	+51 25 21	...	...	...	13.54	12.21	10.48	/37	8.77	8.19	7.92	*	...	13.54	0.159
GJ1209	1	17 04 22.3	+16 55 56	...	...	...	12.30	11.22	9.89	/37	8.57	8.07	7.80	*	...	12.30	0.369
LEHPM2-1755	1	17 06 50.0	-82 11 42	15.47	13.30	11.34	...	...	...	...	10.13	9.56	9.28	...	...	...	...
GJ0655	1	17 07 07.4	+21 33 14	...	...	...	11.62	10.54	9.20	/32	7.88	7.29	7.04	*	...	11.62	0.395
BD-06 04552	1	17 07 34.8	-06 27 26	14.22	12.71	11.28	...	...	...	...	9.57	8.90	8.71	...	...	...	...
GJ1210	0	17 07 40.8	+07 22 07	...	...	...	...	...	...	...	...	...	...	*	0.92	15.33	0.122
GJ1210	2	17 07 40.8	+07 22 07	...	...	...	14.02J	12.64J	10.88J	/37	9.28J	8.65J	8.42J	*	...	14.41	0.150
NLTT44215	1	17 08 23.8	-18 27 58	15.07	12.88	12.35	...	...	...	...	9.88	9.24	9.16	...	...	...	...
UPM1710-5300B	0	17 10 44.3	-53 00 25	...	...	...	...	...	...	...	...	...	...	*	3.72	15.45	0.129
UPM1710-5300A	2	17 10 44.3	-53 00 25	12.47J	10.03J	7.99J	11.73J	10.63J	9.29J	/40	8.00J	7.41J	7.16J	*	...	11.73	0.407
L268-067	1	17 10 59.2	-52 30 56	10.38	8.15	6.51	10.02	9.06	8.00	/20	6.87	6.23	6.03	*	...	10.02	0.559
LTT15087	1	17 11 34.7	+38 26 33	...	...	...	11.61	10.48	9.02	/31	7.63	7.04	6.80	*	...	11.61	0.360
GJ0660B	0	17 11 52.2	-01 51 06	...	...	...	...	...	...	...	...	...	...	*	1.77	13.33	0.199
GJ0660A	2	17 11 52.3	-01 51 06	11.86J	10.42J	8.37J	11.37J	10.25J	8.82J	/2	7.46J	6.92J	6.66J	*	...	11.56	0.360
LP919-015	1	17 12 01.2	-27 46 02	15.15	13.52	12.30	13.40	12.29	10.85	/40	9.51	8.91	8.66	...	...	...	...
SIP1712-0323	1	17 12 04.3	-03 23 30	19.10	17.29	14.48	18.02	16.21	13.99	/40	11.61	10.99	10.64	...	...	...	...
GJ0661B	0	17 12 07.9	+45 39 57	...	...	...	...	...	...	...	...	...	...	*	0.50	10.40	0.343
GJ0661A	2	17 12 07.9	+45 39 57	...	...	...	9.37J	8.31J	6.91J	/37	5.55J	5.07J	4.83J	*	...	9.90	0.397
GJ0660.1B	0	17 12 51.2	-05 07 25	...	...	...	...	...	...	...	13.05	12.57	12.23	*	7.72	19.33	0.083
GJ0660.1A	2(1)	17 12 51.3	-05 07 32	12.58	10.44	9.87	11.61	10.70	9.75	/2	8.66	8.07	7.94	*	...	11.61	0.487
LP413-057	1	17 13 09.6	-41 28 28	13.60	11.48	10.32	...	...	...	...	9.03	8.43 ^a	8.17	...	...	...	...
GJ1212B	0	17 13 40.4	-08 26 14	...	...	...	...	...	...	...	...	...	...	*	1.00	13.39	0.274
GJ1212A	2	17 13 40.5	-08 25 15	13.07J	10.69J	9.65J	12.03J	10.93J	9.53J	/20	8.12J	7.51J	7.25J	*	...	12.39	0.374
GJ1214	1	17 15 18.9	+04 57 50	...	...	...	14.68	13.31	11.59	/37	9.75	9.09	8.78	*	...	14.68	0.141
LTT06876	1	17 15 54.9	-02 50 10	12.49	10.59	10.25	...	...	...	...	8.79	8.13	7.97	...	...	...	...
L1205-067	1	17 16 00.6	+11 03 27	...	...	...	10.85	9.88	8.79	/30	7.63	7.02	6.82	*	...	10.85	0.551
LP687-017	1	17 16 20.7	-05 23 51	13.70	12.28	10.76	12.49	11.39	10.02	/40	8.70	8.09	7.83	...	...	...	...
GJ2128	1	17 16 40.9	+08 03 30	...	...	...	11.49	10.45	9.18	/30	7.93	7.39	7.11	*	...	11.49	0.425
GJ1215	0BD	17 17 42.9	+11 39 45	...	...	...	...	...	...	...	...	...	...	*	...	...	...
GJ1215	0BD	17 17 42.9	+11 39 45	...	...	...	...	...	...	...	...	...	...	*	...	...	...
GJ1215	3(1)	17 17 42.9	+11 39 45	...	...	...	15.10	13.62	11.77	/37	9.82	9.26	8.93	*	...	15.10	0.127
L845-016	2(1)	17 17 45.3	-11 48 54	14.14	12.53	10.23	12.92	11.81	10.38	/33	8.82	8.11	7.83	...	...	...	...
HIP084652B	0	17 18 21.7	-01 46 53	...	...	...	...	...	...	...	...	...	...	*	2.12	12.85	0.338
HIP084652A	2	17 18 21.7	-01 46 53	...	...	...	10.59J	9.67J	8.72J	/35	7.55J	6.92J	6.72J	*	...	10.73	0.592

LP687-045	1	17 18 29.1	-07 39 15	15.13	13.56	12.13	...	...	...	...	9.89	9.37	9.05	...	...	...
GJ0671	1	17 19 52.7	+41 42 49	...	...	...	11.41	10.34	9.01	/37	7.71	7.13	6.92	*	...	0.389
GJ0669B	0(1)	17 19 53.0	+26 30 03	...	...	...	12.99	11.68	9.94	/33	8.23	7.64	7.35	*	1.57	0.212
GJ0669A	2(1)	17 19 54.2	+26 30 03	...	...	...	11.42	10.25	8.75	/33	7.27	6.71	6.42	*	...	0.357
GJ1216	1	17 20 46.3	+49 15 20	...	...	...	14.530	13.294	11.704	/2	10.12	9.64	9.38	*	...	0.174
OUT1720-1725	1	17 20 52.4	-17 25 40	14.69	13.33	11.63	14.20	12.97	11.38	/40	9.79	9.19	8.92	...	...	...
GJ0672.1	1	17 23 49.2	-32 15 16	13.43	11.12	9.92	11.64	10.67	9.55	/2	8.38	7.82	7.52	*	...	0.527
L989-038	1	17 24 16.9	-04 21 52	13.30	11.86	10.80	12.13	11.08	9.77	/40	8.52	7.91	7.66	...	...	...
SCR1726-8433	1	17 26 22.9	-84 33 08	15.42	13.31	11.16	14.25	13.00	11.41	/39	9.87	9.33	9.02	...	...	...
GJ1219	1	17 27 39.9	+14 29 02	...	...	...	13.73	12.60	11.11	2/1	9.69	9.22	8.96	*	...	0.260
GJ1218	1	17 28 07.3	-62 27 14	13.97	11.93	9.84	12.74	11.54	9.96	/40	8.42	7.85 ^a	7.57	*	...	0.312
SCR1728-0143	1	17 28 11.1	-01 43 57	15.61	13.93	11.99	14.42	13.15	11.51	/40	9.89	9.32	9.01	*	...	0.240
GJ0674	1	17 28 39.9	-46 53 43	9.43	7.02	4.90	9.37	8.28	6.97	/40	5.71	5.15	4.86	*	...	0.374
LHS3295	1	17 29 27.3	-80 08 57	13.49	11.39	9.64	12.18	11.02	9.53	/26	8.09	7.52	7.30	*	...	0.311
GJ0676	2(1)	17 30 11.2	-51 38 13	10.96	9.26	8.63	9.59	8.68	7.76	/20	6.71	6.08	5.83	...	...	...
GJ0678.1	1	17 30 22.7	+05 32 54	...	...	...	9.300	8.370	7.402	/2	6.24	5.65	5.42	*	...	0.591
SCR1731-2452	1	17 31 03.8	-24 52 44	14.76	13.40	13.00	13.23	12.08	10.64	/40	9.27	8.61	8.38	*	...	0.356
GJ1220	1	17 31 07.4	+82 05 53	...	...	...	14.13	12.84	11.11	/37	9.57	9.02	8.73	*	...	0.173
LP920-019	1	17 31 20.9	-27 39 20	13.18	11.91	11.95	...	...	...	...	9.08	8.45	8.30	...	...	...
2MA1731+2721	1	17 31 29.7	+27 21 23	...	...	...	19.58	17.75	15.50	2/1	12.09	11.39	10.91	*	...	0.075
SIP1731-7851	1	17 31 44.9	-78 51 26	18.83	16.78	14.17	...	...	...	...	11.61	11.01	10.68	...	...	...
UPM1732-4736	1	17 32 21.9	-47 36 58	14.88	12.77	11.00	13.98	12.72	11.12	/40	9.59	8.98	8.68	...	...	...
LP688-003	1	17 34 08.7	-08 49 52	17.13	15.43	13.24	...	...	...	...	10.91	10.40	10.06	...	...	...
HD320012	1	17 34 15.4	-35 19 54	16.63	15.28	14.42	...	...	...	...	11.76	10.45 ^a	9.83 ^a	...	...	...
GJ0680	1	17 35 13.6	-48 40 51	11.32	9.36	7.95	10.17	9.13	7.89	/2	6.67	6.08	5.83	*	...	0.472
L112-088	1	17 36 14.6	-67 56 06	15.38	13.26	11.17	...	...	...	...	10.04	9.45	9.17	...	...	...
GJ0687	1	17 36 25.9	+68 20 20	...	...	...	9.17J	8.08J	6.67J	/37	5.34	4.77	4.55	*	...	0.394
GJ0682B	0	17 37 03.6	-44 19 09	...	...	...	...	...	...	...	...	...	...	*	1.75	0.132
GJ0682A	2	17 37 03.7	-44 19 09	11.19J	8.99J	7.47J	10.99J	9.75J	8.15J	/40	6.54J	5.92J	5.61J	*	...	0.226
GJ0686	1	17 37 53.3	+18 35 30	...	...	...	9.61	8.64	7.57	/37	6.36	5.79	5.57	*	...	0.489
LP920-069	2(1)	17 38 03.6	-30 00 57	12.44	10.18	9.33	...	...	...	...	8.12	7.46	7.27	...	...	...
L204-148	1	17 38 32.5	-58 32 34	13.69	11.32	9.15	12.52	11.38	9.91	/40	8.48	7.93	7.67	...	...	...
SCR1738-5942	1	17 38 41.0	-59 42 24	16.57	14.21	11.93	14.95	13.65	11.96	/39	10.38	9.83	9.58	...	...	...
L1422-016A	3(1)	17 39 30.7	+27 45 44	...	...	...	11.12	10.20	9.22	/33	8.10	7.47	7.26	*	...	0.617
L1422-015C	0	17 39 32.2	+27 46 37	...	...	...	...	...	...	...	...	...	...	*	3.42	0.232
L1422-015B	0(2)	17 39 32.2	+27 46 37	...	...	...	12.72J	11.61J	10.18J	/33	8.83J	8.16J	7.97J	*	1.82	0.388
LHS3315	1	17 42 10.8	-08 49 00	14.72	13.41	12.02	13.66	12.48	11.12	2/1	9.81	9.32	9.07	*	...	0.301
GJ0690.1	1	17 42 32.3	-16 38 25	14.02	14.25	10.81	13.00	11.96	10.68	/2	9.44	8.93	8.68	*	...	0.324
G140-009B	0	17 43 00.8	+05 47 21	...	...	...	...	...	...	...	...	...	...	*	1.81	0.364
G140-009A	2	17 43 00.8	+05 47 21	...	...	...	10.67J	9.70J	8.62J	/30	7.44J	6.80J	6.63J	*	...	0.584
GJ0694	1	17 43 55.9	+43 22 43	...	...	...	10.45	9.39	8.10	/37	6.81	6.22	5.96	*	...	0.432
LP921-012	1	17 44 17.4	-29 15 48	13.77	11.96	11.31	...	...	...	...	9.86	9.12	8.63	...	...	...
LT07069	1	17 45 07.4	-08 00 45	12.45	10.79	9.73	...	...	...	...	8.57	7.92	7.76	...	...	...
GJ0694.2B	0	17 45 33.5	+46 51 19	...	...	...	...	...	...	...	...	...	...	*	4.09	0.187
GJ0694.2A	2(1)	17 45 33.5	+46 51 19	...	...	...	10.72	9.80	8.80	/35	7.64	7.00	6.80	*	...	0.628
L270-064	1	17 45 43.7	-52 47 38	14.66	12.48	10.69	...	...	...	...	9.71	9.12	8.89	...	...	...
LHS3324	1	17 46 05.8	+24 39 31	...	...	...	12.68	11.57	10.14	/37	8.81	8.31	8.06	*	...	0.295
GJ2130A	3(1)	17 46 12.8	-32 06 09	...	...	...	10.50	9.49	8.34	/13	7.11	6.53	6.25	*	...	0.533
GJ2130C	0	17 46 14.4	-32 06 08	...	...	...	...	...	...	...	...	...	...	*	1.76	0.330
GJ2130B	0(2)	17 46 14.4	-32 06 08	...	...	...	11.51J	10.34J	8.86J	/13	7.46J	6.86J	6.59J	*	1.76	0.330
G154-016	1	17 46 23.3	-18 07 09	15.44	13.66	12.53	...	...	...	...	9.94	9.27	9.02	...	...	...
LT07077	1	17 46 29.4	-08 42 37	13.68	12.18	9.92	12.72	11.44	9.78	/40	8.20	7.69	7.35	...	...	...
GJ0693	1	17 46 34.2	-57 19 09	11.70	9.43	8.37	10.77	9.62	8.20	/40	6.86	6.30	6.02	*	...	0.288
SCR1746-3214	1	17 46 40.7	-32 14 04	17.94	15.89	12.71	16.15	14.47	12.40	/40	10.35	9.74	9.38	*	...	0.103
G020-014	1	17 47 10.2	-01 29 55	14.83	12.93	11.18	...	...	...	...	9.62	9.03	8.76	...	...	...
LHS3332	1	17 49 56.1	+22 40 56	...	...	...	18.68	16.78	14.50	1/1	12.17	11.67	11.29	*	...	0.075
LHS3333	1	17 50 13.9	+23 46 16	...	...	...	13.50	12.33	10.80	1/1	9.32	8.63	8.45	*	...	0.304
GJ1222	1	17 54 17.1	+07 22 45	...	...	...	13.12	11.93	10.35	/37	8.77	8.25 ^a	7.97	*	...	0.280
LHS3339	1	17 55 36.2	+58 25 04	...	...	...	18.06	16.18	13.97	1/1	11.82	11.23	10.88	*	...	0.096
L415-082	1	17 57 14.2	-41 59 29	11.24	8.96	7.89	11.28	10.30	9.17	/40	7.96	7.37	7.14	*	...	0.485
LP044-162	1	17 57 15.0	+70 42 01	...	...	...	18.72	16.48	14.04	1/1	11.45	10.84	10.40	*	...	0.087
L271-081	1	17 57 22.6	-52 29 07	14.55	12.10	10.62	...	...	...	...	9.44	8.93 ^a	8.61	...	...	...
BARNARDS	1	17 57 48.5	+04 41 36	...	...	...	9.570	8.354	6.786	/2	5.24	4.83	4.52	*	...	0.181
LHS3343	0BD	17 57 50.9	+46 35 19	...	...	...	...	...	...	...	...	...	...	*	...	...
LHS3343	2(1)	17 57 50.9	+46 35 19	...	...	...	11.68	10.58	9.18	/37	7.85	7.25	7.00	*	...	0.392
LP749-016	1	17 59 58.7	-13 23 44	13.37	11.82	11.07	...	...	...	...	9.27	8.64	8.49	...	...	...

GJ1223	1	18 02 46.3	+37 31 03	...	...	...	14.80	13.40	11.56	/37	9.72	9.19	8.89	*	...	14.80	0.132
G154-043B	0	18 03 36.0	-18 58 50	...	...	...	...	...	...	...	...	...	...	*	2.12	16.39	0.103
G154-043A	2	18 03 36.1	-18 58 51	15.98J	13.80J	11.95J	14.13J	12.72J	10.90J	/40	9.13J	8.53J	8.28J	*	...	14.27	0.157
G182-037B	0	18 04 17.5	+35 57 25	...	...	...	...	...	...	...	...	...	...	*	2.72	13.64	0.280
G182-037A	2	18 04 17.5	+35 57 25	...	...	...	10.83J	9.89J	8.84J	/34	7.73J	7.05J	6.87J	*	...	10.92	0.594
GJ0701	1	18 05 07.6	-03 01 53	10.68	8.18	9.56	9.37	8.38	7.30	/2	6.16	5.57	5.31	*	...	9.37	0.509
SCR1805-2042	1	18 05 15.1	-20 42 28	16.84	15.08	12.96	15.21	13.85	12.21	/40	10.58	9.95	9.62	...	...	...	...
GJ1224	1	18 07 32.9	-15 57 47	15.41	13.07	10.98	13.48	12.08	10.31	/27	8.64	8.09	7.83	*	...	13.61	0.138
LP334-011	1	18 09 40.7	+31 52 12	...	...	...	11.41	10.44	9.40	1/1	8.23	7.66	7.43	*	...	11.41	0.530
LEP1809-0219	1	18 09 43.7	-02 19 35	16.63	15.95	12.94	15.10	13.72	11.95	/40	10.12	9.61	9.27	...	...	...	...
G154-048	1	18 10 11.0	-15 25 48	16.10	14.59	12.95	...	...	...	...	10.49	9.95	9.66	...	...	...	...
L043-072	2	18 11 15.3	-78 59 23	13.74J	11.29J	9.64J	12.57J	11.23J	9.50J	/40	7.84J	7.33J	6.96J	...	...	...	...
LP629-020	1	18 11 23.4	-02 17 50	15.07	13.75	14.01	...	...	...	...	10.23	9.72	9.50	...	...	...	...
LP390-016	1	18 13 06.57	+26 01 51	...	...	...	13.32	12.10	10.48	/31	8.90	8.31	8.07	*	...	13.32	0.268
LHS3370	1	18 13 52.9	-77 08 21	16.49	14.40	12.40	15.38	14.11	12.55	/6	11.13	10.62	10.35	*	...	15.38	0.165
LTT07246	1	18 15 12.4	-19 24 07	11.93	10.15	7.48	10.88	9.88	8.73	/40	7.32	6.72	6.45	...	...	...	...
LTT15403	1	18 15 43.5	+18 56 19	...	...	...	10.84	9.90	8.92	/30	7.76	7.17	6.96	*	...	10.84	0.629
GJ0708.3	1	18 16 18.2	+01 31 27	...	...	...	12.510	11.422	10.092	/2	8.74	8.19 ^a	7.89	*	...	12.51	0.340
GJ0709	1	18 16 31.0	+45 33 28	...	...	...	10.28	9.36	8.41	/35	7.26	6.66	6.46	*	...	10.28	0.618
GJ1225	1	18 17 15.0	+68 33 19	...	...	...	15.39	14.06	12.37	/37	10.78	10.28	10.04	*	...	15.39	0.143
LHS0462(A)	2(1)	18 18 02.7	+38 45 19	...	...	...	11.88	10.78	9.42	/37	8.04	7.49	7.22	*	...	11.88	0.319
LHS0461(B)	0(1)	18 18 03.5	+38 46 36	...	...	...	13.54	12.29	10.71	/37	9.20	8.63	8.37	*	1.66	13.54	0.180
LHS3376	1	18 19 02.8	+66 11 07	...	...	...	13.49	12.15	10.45	/37	8.74	8.26	7.95	*	...	13.49	0.138
LHS3378	1	18 19 17.0	-77 02 50	15.11	13.17	11.42	...	...	...	...	9.81	9.35	9.06	...	...	...	...
LP690-011	1	18 19 59.6	-06 17 32	15.11	13.98	12.78	...	...	...	...	10.15	9.54	9.31	...	...	...	...
GJ0712	1	18 22 06.7	+06 20 38	...	...	...	12.600	11.483	10.027	/2	8.67	8.13	7.94	*	...	12.60	0.301
GJ1227	1	18 22 27.1	+62 03 02	...	...	...	13.460	12.118	10.352	/2	8.64	8.05	7.74	*	...	13.46	0.149
LTT15449	1	18 25 04.7	+24 38 04	...	...	...	10.79	9.87	8.94	/31	7.90 ^a	7.17	6.98	*	...	10.79	0.623
LHS3385	1	18 25 31.9	+38 21 12	...	...	...	11.27	10.35	9.39	/37	8.29	7.66	7.49	*	...	11.27	0.590
LP630-081	1	18 26 17.0	+01 46 21	...	...	...	14.90	13.52	11.79	2/1	10.04	9.47	9.17	*	...	14.90	0.165
WT0562	1	18 26 19.8	-65 47 41	16.82	14.49	11.97	15.36	13.93	12.13	/26	10.35	9.81	9.45	*	...	15.36	0.138
SCR1826-6542	1	18 26 46.8	-65 42 40	18.68	16.44	12.91	17.35	15.28	12.96	/39	10.57	9.96	9.55	*	...	17.35	0.095
GJ0714	1	18 30 12.0	-58 16 28	10.91	8.30	7.45	9.81	8.89	7.93	/40	6.87	6.24	5.96	...	...	...	...
GJ0720B	0(1)	18 35 18.3	+45 44 38	...	...	...	13.02	11.84	10.33	/37	6.88	6.26	6.08	*	3.16	13.02	0.274
GJ0720A	2(1)	18 35 18.3	+45 44 38	...	...	...	9.86	8.95	8.02	/37	6.88	6.26	6.08	*	...	9.86	0.648
2MA1835+3259	1	18 35 38.0	+32 59 54	...	...	...	18.16	15.84	13.38	1/1	10.27	9.62	9.17	*	...	18.16	0.075
G141-021	1	18 36 19.0	+13 36 30	...	...	...	12.45	11.23	9.69	3/1	8.19	7.61	7.37	*	...	12.45	0.269
L489-068	1	18 38 30.3	-39 04 31	14.57	12.17	10.37	...	...	...	...	9.54	8.96	8.69	...	...	...	...
GJ2138B	0	18 38 44.7	-14 29 26	...	...	...	...	...	...	...	...	...	...	*	0.04	11.99	0.336
GJ2138A	2	18 38 44.8	-14 29 26	12.66J	10.84J	8.87J	11.22J	10.18J	8.93J	/20	7.66J	7.06J	6.85J	*	...	11.95	0.340
LP335-012	1	18 39 33.0	+29 52 17	...	...	...	18.00	15.89	13.47	1/1	11.01	10.38	10.01	*	...	18.00	0.084
LP044-334	1	18 40 02.0	+72 40 54	...	...	...	17.51	15.57	13.31	1/1	10.97	10.38	10.01	*	...	17.51	0.096
GJ0723	1	18 40 17.8	-10 27 55	12.53	9.50	8.42	11.47	10.46	9.38	/2	8.26	7.69	7.46	*	...	11.47	0.526
Wolf1467	1	18 40 50.2	-08 04 59	14.78	12.83	11.51	...	...	...	...	9.56	9.05	8.74	...	...	...	...
GJ0724	1	18 40 57.3	-13 22 47	12.14	10.21	9.21	10.62	9.63	8.56	/2	7.40	6.73 ^a	6.55	*	...	10.62	0.561
GJ1230C	0	18 41 09.4	+24 47 15	...	...	...	...	...	...	...	...	...	...	*	2.56	14.82	0.113
GJ1230A	3(2)	18 41 09.4	+24 47 15	...	...	...	12.16J	10.82J	9.08J	/37	7.53J	6.91J	6.62J	*	...	12.26	0.223
SCR1841-4347	1	18 41 09.8	-43 47 33	17.65	15.19	12.32	16.46	14.72	12.59	/39	10.48	9.94	9.60	*	...	16.46	0.100
GJ1230B	0(1)	18 41 09.8	+24 47 20	...	...	...	14.88	13.28	11.34	3/1	8.86 ^a	8.03 ^a	7.77 ^a	*	2.62	14.88	0.112
LTT15513	1	18 41 59.0	+31 49 49	...	...	...	11.27	10.19	8.87	/31	7.52	6.98	6.72	*	...	11.27	0.383
G141-029	1	18 42 45.0	+13 54 24	...	...	...	12.84	11.57	9.94	3/1	8.36	7.81	7.55	*	...	12.84	0.227
GJ0725A	2(1)	18 42 46.6	+59 37 49	...	...	...	8.90	7.83	6.47	/37	5.19	4.74	4.43	*	...	8.90	0.364
GJ0725B	0(1)	18 42 46.9	+59 37 36	...	...	...	9.69	8.57	7.13	/37	5.72	5.20	5.00	*	0.79	9.69	0.285
LHS5341	1	18 43 07.0	-54 36 48	13.89	11.91	9.91	12.97	11.68	10.03	/40	8.42	7.79	7.49	*	...	12.97	0.195
LTT07419(A)	2(1)	18 43 12.5	-33 22 46	10.34	8.34	7.32	10.25	9.30	8.28	/40	7.19	6.54	6.33	*	...	10.25	0.589
CE507(B)	0(1)	18 43 12.7	-33 22 26	...	...	...	16.24	14.66	12.67	2/1	10.73	10.14	9.83	*	5.99	16.24	0.111
LHS3406	1	18 43 21.7	+40 40 54	...	...	...	18.28	16.27	13.94	/8	11.31	10.69	10.31	*	...	18.28	0.085
SCR1845-6357B	0BD	18 45 02.0	-63 57 47	...	...	...	...	...	...	...	15.55 ^a	15.28 ^a	15.11 ^a	*	...	...	...
SCR1845-6357A	2(1)	18 45 05.3	-63 57 48	...	16.33	12.53	17.40	15.00	12.46	/39	9.54	8.97	8.51	*	...	17.40	0.075
LHS3409	1	18 45 44.0	+52 28 20	...	...	...	15.13	13.92	12.38	/37	10.97	10.49	10.23	*	...	15.13	0.162
LTT07434B	0	18 45 57.5	-28 55 53	...	...	...	...	...	...	...	...	...	...	*	0.00	13.41	0.238
LTT07434A	2	18 45 57.5	-28 55 53	14.84J	13.47J	12.31J	12.68J	11.49J	9.94J	/40	8.41J	7.90J	7.60J	*	...	13.41	0.238
SCR1847-1922	1	18 47 16.7	-19 22 21	15.36	13.08	10.94	14.35	13.11	11.48	/39	9.91	9.38	9.09	...	...	...	...
LTT07452	1	18 48 01.3	-14 34 51	13.55	11.93	10.04	12.08	11.00	9.67	/40	8.38	7.83	7.56	...	...	...	...
SCR1848-6855	2	18 48 21.0	-68 55 34	17.99J	16.07J	13.97J	16.86J	15.68J	13.83J	/17	11.89J	11.40J	11.10J	...	...	...	...
LHS3411	1	18 48 38.7	-61 35 26	13.80	11.79	10.01	...	...	...	...	9.05	8.45	8.17	...	...	...	...

L345-091	2	18 48 41.4	-46 47 08	12.54J	10.82J	9.29J	11.60J	10.50J	9.12J	/40	7.83J	7.24J	6.99J	...	...	...
SIP1848-8214	1	18 48 51.1	-82 14 42	19.69	17.54	14.37	18.55	16.33	14.00	/40	11.48	10.92	10.50	...	...	...
LP691-015	1	18 49 06.4	-03 15 18	15.80	14.40	11.85	14.23	12.91	11.22	/40	9.61	8.98	8.70	...	...	...
GJ0729	1	18 49 49.4	-23 50 11	11.55	10.70	8.15	10.50	9.26	7.68	/40	6.22	5.66	5.37	*	...	10.44 0.192
LHS3413	1	18 49 51.2	-57 26 49	13.75	11.44	9.04	12.68	11.44	9.88	/26	8.32	7.70	7.46	*	...	12.68 0.258
2MA1849-0134	1	18 49 55.4	-01 34 09	14.29	12.76	11.38	...	...	...	...	9.78	9.11	8.84	...	...	...
GJ0730	1	18 50 00.8	+03 05 17	...	...	...	10.740	9.782	8.789	/2	7.72	7.08	6.86	*	...	10.74 0.613
HIP092451	1	18 50 26.6	-62 03 03	...	...	...	...	9.73	8.69	/20	7.56	6.98	6.70	*	...	10.70 0.545
GJ0731	1	18 51 51.1	+16 34 59	...	...	...	10.150	9.216	8.280	/2	7.16	6.53	6.32	*	...	10.15 0.603
LHS3418	1	18 52 00.2	-60 46 11	14.47	12.21	10.20	...	...	...	...	9.31	8.72	8.46	...	...	...
L489-043	1	18 52 25.3	-37 30 36	13.05	10.95	8.75	12.71	11.49	9.86	/40	8.38	7.86	7.56	...	...	...
GJ0732	2(1)	18 53 39.9	-38 36 45	12.90	11.07	9.41	12.66	11.45	9.87	/40	8.40	7.82	7.59	...	...	...
L077-046	1	18 55 14.7	-71 15 03	15.76	13.77	11.26	...	...	...	...	10.08	9.47	9.22	...	...	...
GJ0735B	0	18 55 27.4	+08 24 09	...	...	...	...	...	...	...	...	...	...	*	0.16	10.96 0.426
GJ0735A	2	18 55 27.4	+08 24 09	...	...	...	10.12J	9.02J	7.66J	/2	6.31J	5.68J	5.43J	*	...	8.90 0.364
SCR1855-6914	1	18 55 47.9	-69 14 15	18.01	15.63	12.20	16.61	14.79	12.66	/39	10.47	9.88	9.51	*	...	16.61 0.097
SCR1856-4704	2	18 56 38.4	-47 04 58	16.29J	13.93J	11.65J	14.85J	13.55J	11.87J	/39	10.29J	9.75J	9.45J	...	...	...
SCR1856-4011	3(2)	18 57 01.1	-40 11 51	14.67J	12.98J	10.56J	14.44J	13.07J	11.31J	/40	9.86	9.74 ^a	9.08	...	...	...
GJ0737	2	18 57 30.6	-55 59 30	10.10J	7.75J	6.51J	8.84J	7.90J	6.92J	/20	5.87J	5.25J ^a	5.03J	...	...	...
GJ0740	1	18 58 00.1	+05 54 29	...	...	...	9.210	8.279	7.309	/2	6.24	5.59	5.36	*	...	9.21 0.634
GJ0739	1	18 59 07.5	-48 16 28	11.92	9.93	8.81	11.14	10.10	8.80	/20	7.52	6.93	6.70	*	...	11.14 0.453
L159-126	1	18 59 40.7	-63 27 22	13.97	11.83	9.68	...	...	...	...	8.89	8.42	8.08	...	...	...
GJ0741	1	19 03 16.7	-13 34 05	14.62	14.01	11.43	14.78	13.63	12.08	/2	10.38	9.80	9.54	*	...	14.78 0.173
SCR1904-2406	1	19 04 21.8	-24 06 16	15.63	13.53	11.59	14.53	13.27	11.64	/40	10.12	9.55	9.27	...	...	...
L274-159	1	19 05 20.3	-54 34 43	14.42	12.46	10.73	...	...	...	...	9.41	8.71	8.55	...	...	...
GJ0745A	2(1)	19 07 05.5	+20 53 17	...	...	...	10.76	9.74	8.53	/37	7.28	6.75 ^a	6.52	*	...	10.76 0.375
GJ0745B	0(1)	19 07 13.2	+20 52 37	...	...	...	10.78	9.75	8.55	/37	7.30	6.73 ^a	6.52	*	0.02	10.78 0.373
GJ0747B	0	19 07 43.0	+32 32 41	...	...	...	...	...	...	...	...	...	...	*	0.05	12.04 0.238
GJ0747A	2	19 07 43.0	+32 32 41	...	...	...	11.26J	10.10J	8.65J	/37	7.24J	6.67J	6.42J	*	...	11.99 0.243
GJ1231	1	19 08 15.8	+26 35 06	...	...	...	15.14	13.79	12.08	/37	10.36	9.76	9.47	*	...	15.14 0.147
L490-020	1	19 08 22.1	-37 05 28	14.75	12.79	10.92	...	...	...	...	9.76	9.19	8.93	...	...	...
GJ1232	1	19 09 50.9	+17 40 06	...	...	...	13.50	12.18	10.47	/37	8.82	8.20	7.90	*	...	13.50 0.174
SIP1910-4132	3(1)	19 10 34.6	-41 33 45	15.17	12.93	11.00	...	...	...	...	9.85	9.25	9.03	...	...	...
L346-096	1	19 11 04.1	-47 39 14	15.90	13.77	11.35	...	...	...	...	10.11	9.51	9.23	...	...	...
GJ0748B	0	19 12 14.6	+02 53 11	...	...	...	...	...	...	...	...	...	...	*	1.81	13.32 0.179
GJ0748A	2	19 12 14.6	+02 53 11	...	...	...	11.31J	9.99J	8.52J	/2	7.09J	6.57J	6.29J	*	...	11.49 0.335
GJ0747.4	1	19 12 25.3	-55 52 08	12.21	10.12	9.07	11.30	10.34	9.35	/2	8.22	7.61	7.38	*	...	11.30 0.546
G207-022	1	19 12 30.4	+35 33 35	...	...	...	12.02	10.96	9.69	/31	8.40	7.82	7.61	*	...	12.02 0.399
WIS1912-3615	1	19 12 39.3	-36 14 57	14.44	12.16	10.09	13.91	12.64	11.00	/40	9.52	9.01 ^a	8.77	...	...	...
SCR1913-2312	1	19 13 06.1	-23 12 05	17.89	15.81	13.40	17.01	15.43	13.43	/40	11.43	10.87	10.52	...	...	...
LHS3443	1	19 13 08.0	-39 01 54	13.30	11.68	9.70	12.39	11.27	9.85	/26	8.47	7.92	7.66	*	...	12.39 0.402
LHS3445(A)	2(1)	19 14 39.1	+19 19 03	...	...	...	11.59	10.49	9.03	/37	7.58	7.03	6.81	*	...	11.59 0.469
LHS3446(B)	0(1)	19 14 39.3	+19 18 22	...	...	...	13.28	12.11	10.57	/37	9.10	8.56	8.34	*	1.69	13.28 0.288
LP868-019	1	19 16 35.6	-25 38 42	14.75	12.67	10.83	...	...	...	...	9.70	9.10	8.85	...	...	...
GJ0750	2	19 16 42.9	-45 53 22	10.29J	7.95J	7.13J	9.36J	8.43J	7.48J	/20	6.45J	5.77J	5.57J	...	...	...
GJ0752A	2(1)	19 16 55.2	+05 10 08	...	...	...	9.10	8.07	6.78	/2	5.58	4.93	4.67	*	...	9.10 0.466
GJ0752B	0(1)	19 16 58.0	+05 09 02	...	...	...	17.20	15.10	12.84	/2	9.91	9.23	8.77	*	8.10	17.20 0.079
SCR1918-4554	1	19 18 29.5	-45 54 30	17.89	15.29	12.57	16.58	15.03	13.07	/40	11.21	10.65	10.30	...	...	...
L160-005	1	19 19 41.2	-59 55 20	14.90	12.61	10.29	...	...	...	...	9.45	8.89	8.61	...	...	...
GJ0754	1	19 20 48.0	-45 33 30	13.12	10.96	8.83	12.25	10.94	9.25	/40	7.66	7.13	6.85	*	...	12.23 0.174
LHS0475	1	19 20 54.3	-82 33 16	13.74	11.83	10.14	12.69	11.51	10.00	/16	8.56	8.00	7.69	*	...	12.69 0.255
GJ1235	1	19 21 38.7	+20 52 03	...	...	...	13.37	12.09	10.44	/37	8.80	8.22	7.94	*	...	13.37 0.174
GJ0756	1	19 21 51.4	+28 39 58	...	...	...	11.86	10.97	9.84	1/1	8.35	7.75	7.55	*	...	11.86 0.529
GJ1236	1	19 22 02.0	+07 02 31	...	...	...	12.40	11.27	9.86	/37	8.52	7.94	7.69	*	...	12.40 0.259
SCR1922-3503	1	19 22 05.6	-35 03 45	15.82	13.26	11.28	14.90	13.59	11.91	/40	10.29	9.78	9.47	...	...	...
LHS3459	1	19 22 40.0	+29 25 15	...	...	...	15.35	14.05	12.34	/37	10.75	10.24	9.97	*	...	15.35 0.156
SCR1924-0931	1	19 24 11.0	-09 31 34	14.76	12.72	10.81	13.89	12.73	11.21	/40	9.83	9.20	8.93	...	...	...
GJ1238	1	19 24 16.3	+75 33 12	...	...	...	15.38	13.81	11.84	/37	9.91	9.28	8.96	*	...	15.38 0.114
G185-023	1	19 26 02.0	+24 26 17	...	...	...	14.51	12.98	11.41	1/1	9.63	9.03	8.73	*	...	14.51 0.204
SCR1927-0409	1	19 27 13.0	-04 09 49	16.47	14.77	12.47	15.38	14.01	12.23	/40	10.56	9.94	9.68	...	...	...
LHS5348B	0	19 27 52.6	-28 11 15	...	...	...	...	...	...	...	...	...	...	*	2.72	17.66 0.089
LHS5348A	2	19 27 52.7	-28 11 15	15.79J	13.55J	11.01J	14.85J	13.36J	11.46J	/40	9.69J	9.11J	8.79J	*	...	14.94 0.132
L045-006	1	19 29 38.3	-74 44 42	12.91	10.73	9.96	11.80	10.78	9.53	/40	8.29	7.73	7.45	...	...	...
L078-093	1	19 31 01.4	-73 37 06	13.52	12.20	10.71	...	...	...	...	9.18	8.51	8.24	...	...	...
SCR1931-0306	1	19 31 04.6	-03 06 18	17.67	15.77	12.93	16.81	15.11	13.11	/39	11.15	10.56	10.23	*	...	16.81 0.107
L348-141	1	19 31 53.2	-48 33 54	16.50	14.34	11.76	...	...	...	...	10.63	10.02	9.72	...	...	...

SCR1932-5005	1	19 32 48.6	-50 05 39	16.87	14.51	11.99	15.47	14.14	12.42	/39	10.75	10.11	9.85	...	...	...
L275-026	1	19 34 03.9	-52 25 14	13.92	11.56	9.38	12.83	11.68	10.19	/40	8.77	8.16	7.92	...	...	...
LHS3472	1	19 34 57.6	+53 15 06	...	...	...	12.20	11.12	9.81	/37	8.55	7.97	7.68 ^a	*	...	12.20 0.331
LTT18490	1	19 39 32.8	+71 52 19	...	...	...	10.98	10.06	9.09	/34	8.02	7.38	7.19	*	...	10.98 0.601
LP869-042	1	19 39 36.2	-26 45 07	11.58	9.64	8.69	10.48	9.56	8.58	/20	7.50	6.83	6.65	...	...	...
GJ1242	1	19 41 54.2	+03 09 16	...	...	...	12.98	11.95	10.77	1/1	9.30	8.76	8.52	*	...	12.98 0.366
LP869-019	1	19 42 00.7	-21 04 06	14.01	12.08	9.93	13.22	11.93	10.28	/40	8.69	8.08	7.82	*	...	13.22 0.294
SCR1942-2045	1	19 42 12.8	-20 45 48	...	...	...	14.29	12.98	11.25	2/1	9.60	9.03	8.76	*	...	14.29 0.178
L420-142	1	19 42 53.3	-44 06 28	14.32	12.14	10.14	...	...	...	...	9.43	8.85	8.59	...	...	...
2MA1943-3722	1	19 43 24.7	-37 22 11	14.43	12.28	10.17	...	...	...	...	9.20	8.49	8.25	...	...	...
LP925-037	1	19 43 51.8	-32 24 04	12.38	10.53	9.23	11.87	10.87	9.65	/40	8.12	7.53	7.29	...	...	...
LP869-026B	0	19 44 53.7	-23 37 59	...	...	...	...	...	...	...	...	...	...	*	0.14	14.91 0.142
LP869-026A	2	19 44 53.8	-23 37 59	15.24J	13.19J	10.71J	14.09J	12.65J	10.85J	/40	9.17J	8.57J	8.27J	*	...	14.77 0.147
GJ0766B	0	19 45 45.5	+27 07 32	...	...	...	...	...	...	...	...	...	...	*	0.92	13.66 0.167
GJ0766A	2	19 45 45.5	+27 07 32	...	...	...	12.37J	11.13J	9.52J	/37	8.00J	7.41J	7.14J	*	...	12.76 0.228
LTT15769	1	19 45 49.7	+32 23 13	...	...	...	10.86	9.89	8.76	/31	7.57	7.03	6.77	*	...	10.86 0.447
GJ0767B	0	19 46 24.0	+32 01 01	...	...	...	...	...	...	...	7.32	6.64 ^a	6.48	*	0.77	10.99 0.461
GJ0767A	2	19 46 24.3	+32 00 57	...	...	...	9.79J	8.81J	7.67J	/37	6.88	6.22	6.04	*	...	10.22 0.559
LHS3484	1	19 47 04.5	-71 05 33	14.86	12.74	10.75	13.88	12.70	11.19	/26	9.79	9.22	8.98	...	...	...
SCR1947-7646	1	19 47 14.7	-76 46 55	17.58	15.78	13.35	16.80	15.25	13.31	/40	11.39	10.78	10.49	...	...	...
WT2180	1	19 48 22.7	-08 22 52	17.91	15.70	12.93	16.64	14.97	13.04	/8	11.12	10.54	10.19	*	...	16.64 0.112
LHS3489B	0	19 50 04.4	+32 35 22	...	...	...	...	...	...	...	...	...	...	*	1.77	14.38 0.182
LHS3489A	2	19 50 04.4	+32 35 22	...	...	...	12.42J	11.34J	9.98J	/37	8.65J	8.05J	7.84J	*	...	12.61 0.334
GJ1243	1	19 51 09.3	+46 29 00	...	...	...	12.83	11.63	10.09	/29	8.59	8.05	7.77	*	...	12.83 0.241
2MA1951-3510B	0	19 51 35.8	-35 10 37	...	...	...	...	...	...	...	...	...	...	*	1.36	14.72 0.172
2MA1951-3510A	2	19 51 35.9	-35 10 38	13.97J	11.57J	9.49J	13.06J	11.75J	10.08J	/40	8.58J	8.04J	7.74J	*	...	13.36 0.184
2MA1951-4025	1	19 51 36.0	-40 25 21	14.49	12.38	10.27	...	...	...	...	9.58	8.98	8.71	...	...	...
LP870-054	1	19 52 41.6	-24 46 02	14.16	12.27	10.86	...	...	...	...	9.51	8.93	8.69	...	...	...
GJ1245A	3(2)	19 53 54.4	+44 24 54	...	...	...	13.41J	11.81J	9.80J	/37	7.79J	7.19J	6.85J	*	...	13.41 0.115
GJ1245C	0	19 53 54.5	+44 24 53	...	...	...	...	...	...	...	...	...	...	*	3.29	16.70 0.078
GJ1245B	0(1)	19 53 55.1	+44 24 55	...	...	...	14.01	12.36	10.28	/37	8.28	7.73	7.39	*	0.60	14.01 0.105
L160-159	1	19 54 04.1	-64 38 10	15.21	13.16	11.18	...	...	...	...	9.96	9.34	9.09	...	...	...
LP926-055	1	19 54 24.9	-31 47 60	14.28	12.15	10.38	...	...	...	...	9.10	8.57	8.32	...	...	...
LHS3499	1	19 55 52.8	+51 16 22	...	...	...	11.86	10.90	9.81	/37	8.66	8.07	7.85	*	...	11.86 0.513
LEHPM2-4639	1	19 56 06.6	-54 42 54	13.80	11.73	9.37	...	...	...	...	9.16	8.48	8.34	...	...	...
LP754-008	1	19 57 52.0	-10 53 05	15.06	13.29	10.98	14.35	13.06	11.38	/24	9.73	9.17	8.84	...	...	...
LHS3505	1	19 58 13.5	+02 01 25	...	...	...	11.97	10.92	9.64	/37	8.37	7.82	7.56	*	...	11.97 0.384
SCR1959-3631	1	19 59 21.0	-36 31 04	11.58	9.44	8.40	11.07	10.19	9.31	/39	8.24	7.62	7.41	...	...	...
SCR1959-6236	1	19 59 33.6	-62 36 13	17.48	15.36	12.68	16.27	14.82	12.96	/39	11.07	10.49	10.23	...	...	...
DEN2002-5425	1	20 02 13.4	-54 25 56	19.39	17.21	13.86	...	...	...	...	11.62	11.04	10.64	...	...	...
GJ1248	1	20 03 51.0	+05 59 44	...	...	...	12.11	11.07	9.85	/37	8.63	8.08	7.87	*	...	12.11 0.319
LHS3514	1	20 03 58.9	-08 07 47	14.73	12.70	10.76	13.54	12.31	10.71	/40	9.18	8.58 ^a	8.29	...	...	...
GJ0774B	0(1)	20 04 01.9	-65 35 57	...	...	...	12.83	11.71	10.24	/2	8.87	8.38	8.13	*	1.48	12.83 0.259
GJ0774A	2(1)	20 04 04.7	-65 36 01	12.35	...	...	11.35	10.34	9.06	/2	7.80	7.28	7.06	*	...	11.35 0.409
LHS3516	1	20 04 06.8	-31 41 48	15.43	13.60	11.26	...	...	...	...	9.91	9.31	9.03	...	...	...
LP870-065	1	20 04 30.8	-23 42 02	13.97	12.02	10.00	13.02	11.75	10.09	/40	8.56	8.01	7.70	*	...	13.02 0.308
GJ0781.1A	2(1)	20 07 45.0	-31 45 14	13.54	11.37	9.39	12.22	11.12	9.73	/2	8.27	7.68	7.40	*	...	12.22 0.355
GJ0781.1B	0(1)	20 07 48.0	-31 45 28	...	...	...	12.51	11.28	9.70	/2	8.37	7.83	7.59	*	0.29	12.51 0.325
LEHPM2-0064	1	20 07 55.2	-42 05 15	15.70	13.39	10.75	14.30	12.96	11.20	/40	9.52	8.96 ^a	8.61	...	...	...
LTT07959	1	20 07 57.6	-01 32 28	14.32	12.36	10.56	...	...	...	...	9.59	8.99	8.75	...	...	...
LHS3525	1	20 08 07.5	-52 44 25	14.36	12.28	10.43	...	...	...	...	9.46	8.76	8.57	...	...	...
GJ1250B	0	20 08 17.9	+33 18 13	...	...	...	...	...	...	...	...	...	...	*	2.72	17.91 0.098
GJ1250A	2	20 08 17.9	+33 18 13	...	...	...	14.93J	13.52J	11.71J	2/1	9.96J	9.40J	9.08J	*	...	15.19 0.166
WT0682	1	20 08 23.8	-55 21 26	15.46	13.90	12.11	...	...	...	...	10.24	9.67	9.38	...	...	...
2MA2009-0113	1	20 09 18.2	-01 13 38	15.36	13.09	10.62	14.47	12.98	11.16	/27	9.40	8.83	8.51	*	...	14.47 0.132
L349-063	1	20 09 51.6	-47 31 34	15.53	13.36	11.12	...	...	...	...	9.93	9.31	9.01	...	...	...
LTT07991	1	20 11 06.7	-02 30 10	14.73	12.96	11.17	...	...	...	...	9.62	9.01	8.80	...	...	...
GJ0784	1	20 13 53.4	-45 09 51	8.82	6.21	5.21	7.95	7.04	6.13	/2	5.12	4.53 ^a	4.28	*	...	7.97 0.637
LP754-031	1	20 13 59.5	-11 14 55	13.11	11.22	9.72	...	...	...	...	9.07	8.48	8.22	...	...	...
LHS3534	1	20 14 15.3	-54 49 15	14.76	12.69	10.78	...	...	...	...	9.75	9.18	8.92	...	...	...
L209-071	1	20 15 22.7	-56 45 54	13.83	11.68	9.52	12.85	11.68	10.15	/40	8.68	8.03	7.77	...	...	...
SCR2016-7531	1	20 16 11.3	-75 31 05	17.07	14.75	12.25	15.84	14.28	12.35	/39	10.47	9.86	9.51	*	...	15.84 0.118
SCR2018-3635	1	20 18 06.5	-36 35 28	16.31	14.07	11.47	14.63	13.38	11.75	/39	10.21	9.67	9.44	...	...	...
LP814-065	1	20 18 14.6	-20 12 48	14.32	12.18	10.27	...	...	...	...	9.46	8.84	8.58	...	...	...
LEHPM2-0783	1	20 19 49.8	-58 16 43	18.64	16.35	12.87	17.17	15.28	13.03	/27	10.66	10.10	9.72	*	...	17.17 0.099
LP927-008	1	20 20 43.6	-28 06 07	14.65	12.48	10.48	13.96	12.73	11.15	/40	9.63	8.97	8.72	...	...	...

2MA2022-3653	1	20 22 01.8	-36 53 02	16.98	14.84	12.49	...	...	...	...	10.71	10.14	9.86	...	...	...
GJ0788.1	1	20 22 41.9	-58 17 09	11.67	9.66	8.52	10.57	9.67	8.81	/2	7.82	7.18	6.97	...	...	...
SCR2025-2259	1	20 25 18.9	-22 59 06	15.26	13.26	11.40	14.22	13.03	11.48	/39	10.00	9.48	9.16	...	...	...
SCR2025-3545	1	20 25 30.0	-35 45 46	15.93	13.55	11.32	14.37	13.11	11.53	/40	9.98	9.39	9.04	...	...	...
SCR2025-4207	1	20 25 41.3	-42 07 31	13.86	11.73	9.63	13.16	12.08	10.72	/40	9.41	8.73	8.51	...	...	...
LP927-017	1	20 25 51.6	-26 57 19	14.24	12.07	10.61	...	...	...	...	9.49	8.83	8.63	...	...	...
GJ1253	1	20 26 05.3	+58 34 23	...	...	...	14.04	12.64	10.86	/37	9.03	8.48 ^a	8.10	*	...	14.04 0.138
LEHPM2-0285	1	20 27 07.1	-44 21 29	15.38	13.25	11.00	...	...	...	...	10.08	9.48	9.16	...	...	...
L210-011	1	20 27 37.3	-54 52 59	13.82	11.64	9.86	...	...	...	...	8.77	8.16	7.92	...	...	...
GJ0791	1	20 27 41.7	-27 44 52	12.02	10.03	8.21	11.47	10.40	9.04	/2	7.71	7.08	6.86	*	...	11.47 0.425
GJ1252	1	20 27 42.1	-56 27 25	13.01	11.07	9.49	12.20	11.19	9.93	/15	8.70	8.16	7.92	*	...	12.20 0.413
GJ1251	1	20 28 03.7	-76 40 16	14.90	12.93	10.73	13.88	12.58	10.91	/40	9.36	8.88	8.60	*	...	13.88 0.174
L755-019	1	20 28 43.6	-11 28 31	13.22	10.97	8.28	12.47	11.31	9.81	/27	8.39	7.76	7.50	*	...	12.47 0.372
L080-175	1	20 29 06.9	-74 21 12	13.68	11.73	10.26	...	...	...	...	9.40	8.69	8.44	...	...	...
GJ0791.2B	0	20 29 48.3	+09 41 20	...	...	...	...	...	...	...	...	...	...	*	3.27	16.35 0.094
GJ0791.2A	2(1)	20 29 48.3	+09 41 20	...	...	...	13.08	11.73	9.98	/2	8.23	7.67	7.31	*	...	13.08 0.176
GJ0793	1	20 30 32.0	+65 26 58	...	...	...	10.56	9.47	8.11	/37	6.74	6.14	5.93	*	...	10.56 0.378
GJ0792B	0	20 31 25.6	+38 33 44	...	...	...	...	...	...	...	...	...	...	*	1.91	15.56 0.124
GJ0792A	2	20 31 25.6	+38 33 44	...	...	...	13.48J	12.24J	10.67J	/37	9.19J	8.63J	8.36J	*	...	13.65 0.214
LEHPM2-1265B	0	20 33 01.9	-49 03 11	...	...	...	...	...	...	...	...	...	...	*	2.12	17.45 0.097
LEHPM2-1265A	2	20 33 01.9	-49 03 11	16.57J	14.17J	11.34J	15.33J	13.84J	11.98J	/40	10.11J	9.52J	9.19J	*	...	15.33 0.138
LP755-027	1	20 33 32.3	-09 59 05	14.82	12.67	10.98	...	...	...	...	9.88	9.25	8.96	...	...	...
GJ1254	1	20 33 40.3	+61 45 14	...	...	...	12.54	11.35	9.79	/37	8.29	7.66 ^a	7.40	*	...	12.54 0.326
LHS3564	1	20 34 43.0	+03 20 51	...	...	...	11.92	10.89	9.61	/37	8.45	7.91	7.63	*	...	11.92 0.466
L162-190	1	20 34 52.9	-63 47 46	14.34	12.03	10.15	...	...	...	...	9.37	8.76	8.51	...	...	...
SCR2036-3607	1	20 36 08.3	-36 07 12	...	...	...	11.66	10.59	9.27	2/1	8.03	7.42	7.17	*	...	11.66 0.423
LHS3566	1	20 39 23.8	-29 26 35	18.95	16.50	13.68	17.62	15.67	13.64	/5	11.36	10.74	10.37	*	...	17.62 0.096
SCR2040-5501	1	20 40 12.4	-55 01 26	16.61	14.39	12.15	15.22	13.91	12.22	/39	10.56	10.02	9.69	...	...	...
GJ1256	1	20 40 33.9	+15 29 59	...	...	...	13.45	12.10	10.38	/37	8.64	8.08	7.75	*	...	13.45 0.167
L567-074	1	20 42 43.4	-32 55 18	11.79	9.76	8.29	...	...	...	...	8.23	7.56	7.33	...	...	...
LP695-372	1	20 42 45.2	-05 00 19	18.87	16.60	13.35	...	...	...	...	11.45	10.87	10.54	...	...	...
GJ0800	1	20 42 57.2	-18 55 06	11.72	9.77	8.02	10.80	9.86	8.76	/2	7.56	6.95	6.74	*	...	10.80 0.563
GJ0802C	0	20 43 19.3	+55 20 53	...	...	...	...	...	...	...	...	...	...	*	0.00	15.44 0.131
GJ0802B	0BD	20 43 19.3	+55 20 53	...	...	...	...	...	...	...	...	...	...	*	...	...
GJ0802A	3(2)	20 43 19.3	+55 20 53	...	...	...	14.69J	13.26J	11.36J	/37	9.56J	9.06J	8.75J	*	...	15.44 0.131
G262-026	1	20 43 41.3	+64 16 54	...	...	...	11.38	10.45	9.49	/38	8.40	7.82	7.61	*	...	11.38 0.530
GJ0806	1	20 45 04.1	+44 29 56	...	...	...	10.77	9.76	8.58	/37	7.33	6.77	6.53	*	...	10.77 0.459
GJ0803	3(1)	20 45 09.5	-31 20 27	9.82	7.68	5.96	8.65	7.68	6.61	/40	5.44	4.83	4.53	...	...	...
LHS3580	1	20 45 45.4	-29 27 29	14.54	12.38	10.38	...	...	...	...	9.38	8.75	8.51	...	...	...
LHS3583	1	20 46 37.1	-81 43 14	12.58	10.06	8.71	11.50	10.39	9.02	/26	7.69	7.12	6.83	*	...	11.50 0.342
LP756-003	1	20 46 43.6	-11 48 13	14.61	12.41	10.20	13.80	12.52	10.88	/40	9.35	8.73	8.44	*	...	13.80 0.242
LHS3585	1	20 47 22.6	-25 47 07	14.59	12.38	10.64	...	...	...	...	9.65	9.05	8.78	...	...	...
SCR2049-4012	1	20 49 10.0	-40 12 06	...	...	...	13.53	12.12	10.31	3/1	8.60	8.02	7.70	*	...	13.53 0.156
SIP2049-1716	1	20 49 52.7	-17 16 08	18.72	17.26	14.00	...	...	...	...	11.81	11.21	10.81	...	...	...
LEP2050-3424	1	20 50 16.2	-34 24 43	14.34	12.13	9.54	13.74	12.31	10.55	/40	8.82	8.27	8.00	...	...	...
GJ0808	1	20 51 41.6	-79 18 40	13.06	10.81	9.43	11.81	10.82	9.64	/16	8.46	7.91	7.66	*	...	11.83 0.426
LP816-060	1	20 52 33.0	-16 58 29	12.42	9.62	7.56	11.50	10.25	8.64	/40	7.09	6.52	6.20	*	...	11.46 0.222
2MA2053-0133	1	20 53 09.1	-01 33 04	...	...	11.29	15.80	14.34	12.45	/40	10.66	10.11	9.79	*	...	15.79 0.127
LP636-019	1	20 53 14.7	-02 21 22	13.75	11.23	9.23	...	...	...	...	9.33	8.71	8.45	...	...	...
GJ0809	1	20 53 19.7	+62 09 15	...	...	...	8.56	7.62	6.59	/37	5.43	4.92 ^a	4.62	*	...	8.56 0.590
LEHPM1-3996	1	20 53 28.0	-73 08 10	13.84	11.67	10.02	...	...	...	...	9.13	8.58	8.35	...	...	...
LHS3593	1	20 53 33.2	+10 36 37	...	...	...	13.97	12.67	11.01	/37	9.35	8.75	8.48	*	...	13.97 0.181
LEHPM2-5514	1	20 54 15.0	-53 29 56	13.14	10.92	9.69	...	...	...	...	8.86	8.22	8.05	...	...	...
GJ0810C	0	20 55 37.0	-14 02 08	...	...	...	...	...	...	...	...	...	...	*	2.00	14.62 0.142
GJ0810B	0(1)	20 55 37.1	-14 03 55	...	...	...	14.61	13.25	11.46	/2	9.72	9.22	8.92	*	1.99	14.61 0.143
GJ0810A	3(2)	20 55 37.8	-14 02 08	13.56J	11.65J	9.55J	12.48J	11.23J	9.62J	/16	8.12J	7.64J	7.37J	*	...	12.62 0.275
LP636-060	1	20 56 04.1	-02 12 20	14.57	12.48	10.68	...	...	...	...	9.59	9.03	8.74	...	...	...
LP872-027	1	20 56 27.2	-24 00 13	16.33	14.15	11.60	15.16	13.79	12.00	/24	10.25	9.69	9.38	...	...	...
GJ0811.1	1	20 56 46.6	-10 26 55	12.10	9.85	7.98	11.50	10.44	9.11	/2	7.77	7.14	6.88	*	...	11.50 0.436
GJ0813	1	20 57 25.3	+22 21 45	...	...	...	12.00	10.96	9.68	/37	8.41	7.87 ^a	7.64	*	...	12.00 0.348
LTT16135	1	20 58 41.9	+34 16 27	...	...	...	11.06	10.14	9.18	/38	8.07	7.43	7.25	*	...	11.06 0.614
GJ0815B	0	21 00 05.3	+40 04 13	...	...	...	...	...	...	...	...	...	...	*	1.63	12.64 0.304
GJ0815C	0	21 00 05.3	+40 04 13	...	...	...	...	...	...	...	...	...	...	*	0.00	11.01 0.483
GJ0815A	3	21 00 05.3	+40 04 13	...	...	...	10.15J	9.15J	7.97J	/37	6.67J	6.09J	5.88J	*	...	11.01 0.483
L424-030	1	21 00 54.9	-41 31 44	14.95	12.57	10.25	...	...	...	...	9.49	8.84	8.60	...	...	...
APM2101-4125	1	21 01 03.8	-41 14 33	15.64	13.34	11.03	...	...	...	...	9.97	9.38	9.09	...	...	...

GJ1263A	2(1)	21 46 42.7	-00 10 24	13.68	11.57	9.49	12.64	11.43	9.87	/37	8.36	7.83	7.49	*	...	12.64	0.258
LP874-062	1	21 46 45.5	-21 17 47	14.71	12.52	10.45	13.66	12.43	10.82	/24	9.29	8.71	8.38		...	...	...
LTT16369	1	21 46 56.0	+46 38 06	...	...	...	13.36	12.18	10.62	/32	9.09	8.48	8.21	*	...	13.36	0.257
LP698-042	1	21 47 17.5	-04 44 41	14.88	12.35	10.05	...	...	...	...	9.42	8.84	8.50		...	...	...
LHS3711	1	21 47 53.7	+50 15 16	...	...	...	13.33	12.18	10.68	/37	9.31	8.77 ^a	8.56	*	...	13.33	0.312
LHS3713	1	21 48 14.3	+27 54 56	...	...	...	11.99	10.97	9.73	/37	8.51	7.93	7.69	*	...	11.99	0.418
LP818-034	1	21 48 53.0	-19 47 27	16.09	13.77	11.40	14.85	13.55	11.82	/24	10.13	9.51	9.21		...	...	...
GJ1264	2	21 49 05.9	-72 06 08	10.74J	8.62J	7.38J	9.62J	8.68J	7.64J	/20	6.54J	5.84J	5.65J		...	...	...
L427-034	2	21 49 11.4	-41 33 30	12.19J	9.94J	8.20J	11.55J	10.39J	9.02J	/40	7.75J	7.17J	6.88J		...	...	...
LHS3719	1	21 49 25.9	-63 06 52	13.32	11.41	9.69	12.56	11.45	10.08	/26	8.74	8.12	7.89	*	...	12.56	0.334
WT0818	1	21 49 44.8	-41 38 33	14.58	12.36	10.29	13.56	12.36	10.85	/40	9.39	8.87	8.54		...	...	...
LP638-050	1	21 51 27.0	-01 27 14	18.15	15.93	13.09	...	...	...	...	11.28	10.74	10.39		...	...	...
SCR2154-4754	1	21 54 02.5	-47 54 02	16.46	14.32	12.00	15.43	14.07	12.37	/40	10.71	10.13	9.84		...	...	...
LP818-054	1	21 55 02.2	-20 14 27	15.34	13.10	11.07	...	...	...	...	9.98	9.44	9.10		...	...	...
LP983-034	1	21 55 48.4	-33 13 15	13.30	11.25	9.40	...	...	...	...	8.60	7.98	7.70		...	...	...
LP758-062	1	21 56 19.8	-10 20 17	15.67	13.66	11.33	14.59	13.27	11.52	/24	9.93	9.39	9.09		...	...	...
LHS0516	1	21 56 55.3	-01 54 09	15.28	13.36	11.08	14.65	13.29	11.52	/37	9.88	9.32	9.03	*	...	14.65	0.144
LP759-006	1	21 57 12.7	-09 03 27	16.34	14.24	11.88	15.11	13.73	11.94	/24	10.14	9.51	9.24		...	...	...
LTT16412	1	21 57 26.2	+08 08 13	...	...	...	11.03	10.06	8.91	/20	7.72	7.12	6.85	*	...	11.03	0.579
LHS3735	1	21 57 39.3	-09 28 13	16.19	14.12	12.02	14.84	13.60	11.98	/37	10.45	9.82	9.54		...	...	...
GJ0842.2	1	21 58 24.5	+75 35 20	...	...	...	10.57	9.66	8.69	/35	7.60	6.93	6.73	*	...	10.57	0.636
LSPM2158+6117	1	21 58 35.0	+61 17 06	...	...	...	17.23	15.57	13.35	1/1	11.29	10.79	10.45	*	...	17.23	0.100
LHS3738(C)	0	21 58 49.0	-32 26 25	...	...	...	...	...	...	...	...	...	...	*	3.32	18.04	0.094
LHS3738(B)	0(2)	21 58 49.0	-32 26 25	...	...	...	15.78J	14.29J	12.46J	3/1	10.65J	10.09J	9.76J	*	1.20	15.92	0.130
LHS3739(A)	3(1)	21 58 50.2	-32 28 18	15.67	13.38	11.07	14.72	13.45	11.88	/26	10.39	9.83	9.56	*	...	14.72	0.181
GJ0842	1	21 59 34.7	-59 45 10	10.57	8.56	7.02	9.74	8.78	7.75	/2	6.61	5.99	5.76	*	...	9.74	0.587
G188-038	1	22 01 13.1	+28 18 24	...	...	...	11.99	10.76	9.17	/31	7.64	7.04	6.78	*	...	11.99	0.260
GJ0844B	0	22 01 49.0	+16 28 02	...	...	...	...	...	...	...	...	...	...	*	0.31	11.57	0.435
GJ0844A	2	22 01 49.0	+16 28 02	...	...	...	10.65J	9.61J	8.33J	/20	7.01J	6.42J	6.18J	*	...	11.26	0.472
GJ0843	1	22 02 00.8	-19 28 59	12.82	10.23	8.84	12.03	10.89	9.45	/2	8.05	7.50 ^a	7.19		...	...	...
GJ0846	1	22 02 10.2	+01 24 00	...	...	...	9.170	8.238	7.268	/2	6.20	5.56 ^a	5.32	*	...	9.17	0.618
LP759-017	1	22 02 11.3	-11 09 46	20.11	17.87	14.88	...	...	...	...	12.36	11.71	11.37		...	...	...
LHS3746	1	22 02 29.4	-37 04 51	12.42	10.35	8.20	11.76	10.56	9.04	/13	7.60	7.02	6.72	*	...	11.76	0.245
LTT18559	1	22 02 31.3	-00 17 10	15.24	13.15	10.82	...	...	...	...	10.02	9.40	9.11		...	...	...
LP875-009	1	22 03 20.0	-25 21 52	13.72	11.16	9.86	...	...	...	...	9.03	8.49	8.25		...	...	...
LHS3748	1	22 03 27.1	-50 38 38	13.44	11.27	9.64	12.10	11.08	9.86	/20	8.63	8.04	7.81	*	...	12.10	0.427
LP759-025	1	22 05 35.7	-11 04 29	18.93	16.53	13.76	...	...	...	...	11.66	11.05	10.72		...	...	...
LTT08848	2(1)	22 05 51.3	-11 54 51	11.32	9.11	7.95	10.15	9.25	8.33	/34	7.22	6.60	6.40		...	...	...
LHS3756	1	22 05 54.4	-38 16 06	13.18	10.98	9.27	...	...	...	...	8.80	8.26	8.04		...	...	...
LP699-032	1	22 06 09.6	-07 23 36	17.45	15.17	12.49	...	...	...	...	10.67	10.06	9.76		...	...	...
WT0870	1	22 06 40.7	-44 58 07	15.66	13.36	10.95	14.43	13.10	11.40	/26	9.76	9.18	8.89	*	...	14.43	0.185
L283-001	1	22 06 57.2	-49 49 42	14.42	12.33	10.48	...	...	...	...	9.34	8.72	8.45		...	...	...
LP983-102	1	22 07 53.9	-37 04 24	13.96	11.71	9.97	...	...	...	...	9.27	8.69	8.43		...	...	...
LP1032-066	1	22 08 16.2	-42 42 59	13.71	11.60	10.11	12.68	11.62	10.32	/24	9.05	8.47	8.19		...	...	...
LTT08875	1	22 08 32.4	-08 24 52	14.15	11.96	10.41	...	...	...	...	9.23	8.57	8.37		...	...	...
L024-098	1	22 08 38.6	-83 03 29	13.41	11.47	10.15	...	...	...	...	9.04	8.47	8.22		...	...	...
GJ0849	1	22 09 40.3	-04 38 27	11.64	9.21	7.55	10.38	9.27	7.87	/40	6.51	5.90	5.59	*	...	10.39	0.423
G214-012	1	22 09 45.5	+41 02 21	...	...	...	12.60	11.51	10.10	1/1	8.76	8.12	7.87	*	...	12.60	0.402
LEHPM1-4416	1	22 10 13.2	-71 46 07	15.90	13.68	11.32	14.53	13.20	11.54	/40	9.98	9.42	9.11		...	...	...
LTT08900	1	22 11 13.5	-02 32 37	13.38	11.36	10.10	...	...	...	...	8.69	8.14 ^a	7.82		...	...	...
G214-014	1	22 11 16.9	+41 00 54	...	...	...	11.11	10.21	9.31	/31	8.23	7.64	7.44	*	...	11.11	0.594
GJ0851	1	22 11 30.0	+18 25 34	...	...	...	10.23	9.21	7.97	/35	6.73	6.04	5.82	*	...	10.23	0.513
LTT08905	1	22 11 56.9	-07 42 57	13.77	11.66	10.24	...	...	...	...	9.24	8.58	8.36		...	...	...
LHS3773	1	22 12 35.9	+08 33 11	...	...	...	11.97	10.90	9.55	/37	8.28	7.68	7.47	*	...	11.97	0.388
LTT08914	2(1)	22 13 28.8	-14 44 54	14.21	12.49	10.60	13.34	12.22	10.79	/38	9.45	8.82 ^a	8.53		...	...	...
GJ1265	1	22 13 42.9	-17 41 09	14.57	12.40	9.96	13.57	12.27	10.58	/37	8.96	8.42	8.12	*	...	13.57	0.168
WT0887	1	22 13 50.5	-63 42 10	18.28	15.79	12.59	...	...	...	...	10.92	10.30	9.94		...	...	...
LP875-068	1	22 14 38.4	-21 41 53	11.37	8.65	8.05	10.38	9.50	8.61	/40	7.54	6.90	6.72		...	...	...
GJ1266	1	22 16 20.2	+70 56 40	...	...	...	12.12	11.13	9.96	/37	8.75	8.27	8.02	*	...	12.12	0.450
GJ0852C	0	22 17 18.7	-08 48 19	...	...	...	...	...	...	...	...	...	...	*	3.28	16.69	0.093
GJ0852B	0(2)	22 17 18.7	-08 48 19	...	...	...	14.43J	13.04J	11.20J	/37	9.46J	8.84J	8.53J	*	1.16	14.57	0.127
LP984-001	1	22 17 19.0	-34 44 03	16.75	14.16	11.67	15.48	13.94	12.02	/40	10.15	9.53	9.17		...	...	...
GJ0852A	3(1)	22 17 19.2	-08 48 13	13.25	10.94	8.96	13.48	12.18	10.54	/2	9.02	8.49 ^a	8.17	*	...	13.41	0.172
LHS3789	1	22 17 53.3	-36 11 20	15.38	13.07	11.09	...	...	...	...	9.93	9.36	9.09		...	...	...
LHS3793	1	22 19 23.7	-28 23 21	15.79	13.64	11.40	...	...	...	...	10.17	9.64	9.36		...	...	...
LP931-042	1	22 20 24.7	-27 05 52	13.63	11.49	10.49	...	...	...	...	9.25	8.58	8.44		...	...	...

L119-033	1	22 21 42.9	-65 31 33	...	...	...	12.03	10.99	9.72	/20	8.45	7.88	7.64	*	...	12.03	0.418
LHS5384	1	22 21 49.7	-42 09 03	15.94	13.74	11.56	14.74	13.46	11.81	/24	10.21	9.64	9.35	...	...	...	...
LP931-048	1	22 21 53.4	-31 31 23	14.56	12.46	10.58	...	...	...	...	9.48	8.89	8.60	...	...	...	...
LEHPM1-4635	1	22 22 43.5	-72 15 44	16.17	13.99	11.64	...	...	...	...	10.38	9.79	9.51	...	...	...	...
LHS3799	1	22 23 07.0	-17 36 26	14.23	11.76	9.27	13.30	11.87	10.04	/27	8.24	7.64	7.32	*	...	13.26	0.148
LP931-053	1	22 23 14.0	-27 23 58	14.15	12.00	10.57	...	...	...	...	9.13	8.60	8.33	...	...	...	...
GJ0856B	0	22 23 29.1	+32 27 33	...	...	...	...	...	...	...	...	...	...	*	0.40	11.72	0.408
GJ0856A	2	22 23 29.1	+32 27 33	...	...	...	10.75J	9.65J	8.25J	/35	6.90J	6.28J	6.05J	*	...	11.32	0.454
GJ0855	1	22 23 33.3	-57 13 14	11.65	9.39	7.97	10.72	9.77	8.72	/2	7.60	6.96	6.73	*	...	10.72	0.590
LP931-057	2	22 23 46.3	-28 06 50	14.70J	12.69J	10.66J	...	...	...	...	9.65J	9.05J	8.83J	...	...	...	...
GJ1268	1	22 24 55.9	+52 00 19	...	...	...	14.94	...	...	/10	10.16	9.60	9.30	*	...	14.93	0.148
LP1033-011	1	22 24 56.7	-38 31 10	12.95	11.04	9.64	...	...	...	...	9.00	8.33	8.13	...	...	...	...
LHS3804	1	22 25 05.1	-47 52 47	13.16	11.20	9.07	12.51	11.31	9.82	/25	8.34	7.73	7.43	...	...	...	...
LEHPM1-4728	1	22 27 27.1	-35 00 51	14.81	12.67	10.77	...	...	...	...	9.77	9.16	8.88	...	...	...	...
GJ0860B	0	22 27 59.4	+57 41 45	...	...	...	...	...	...	...	...	...	...	*	1.47	11.29	0.180
GJ0860A	2	22 27 59.4	+57 41 45	...	...	...	9.57J	8.41J	6.93J	/37	5.58J	5.04J	4.78J	*	...	9.82	0.301
LP876-025(B)	0	22 28 23.4	-25 54 07	...	...	...	...	...	...	...	8.36	7.70	7.51 ^a	*	1.03	13.47	0.289
LP876-026(A)	2	22 28 23.4	-25 54 08	13.02J	10.85J	9.00J	12.08J	10.93J	9.46J	/20	8.34 ^a	7.58	7.45 ^a	*	...	12.44	0.394
LT16590	1	22 28 45.9	+18 55 54	...	...	...	10.74	9.84	8.91	/35	7.82	7.17	6.98	*	...	10.74	0.632
LHS0523	1	22 28 54.4	-13 25 19	18.19	15.78	12.64	16.90	14.90	12.56	/3	10.77	10.22	9.84	*	...	16.90	0.093
LP640-074	1	22 29 05.8	+01 39 48	...	...	...	10.50	9.58	8.65	/20	7.62	6.96	6.75	*	...	10.50	0.658
GJ1270	1	22 29 49.0	+41 28 49	...	...	...	13.24	12.01	10.40	/37	8.85	8.33	8.04	*	...	13.24	0.233
LEHPM1-4771	1	22 30 09.5	-53 44 56	15.81	13.57	11.20	14.47	13.09	11.30	/40	9.54	8.96	8.63	...	...	...	...
SCR2230-5244	1	22 30 28.0	-52 44 29	19.02	16.34	14.13	17.37	15.91	13.88	/39	11.85	11.24	10.91	...	...	...	...
GJ0863	1	22 33 02.2	+09 22 40	...	...	...	10.38	9.42	8.35	/37	7.21	6.60	6.36	*	...	10.38	0.530
LP876-034	1	22 34 00.5	-25 14 33	12.64	10.44	8.84	11.29	10.23	8.98	/40	7.73	7.14	6.88	*	...	11.26	0.471
L166-044	1	22 34 04.6	-61 07 41	16.18	14.01	11.73	...	...	...	...	10.14	9.60	9.34	...	...	...	...
LHS0526	1	22 34 53.7	-01 04 58	15.96	13.78	10.90	14.83	13.56	11.91	/37	10.39	9.78	9.52	*	...	14.83	0.200
LT109084	1	22 35 04.9	-42 17 48	14.40	12.30	10.34	13.34	12.12	10.56	/40	9.10	8.47	8.21	...	...	...	...
LP460-044	1	22 35 49.0	+18 40 30	...	...	...	19.18	17.16	14.88	3/1	12.39	11.77	11.37	*	...	19.09	0.087
GJ0864B	0	22 36 09.6	-00 50 30	...	...	...	...	...	...	...	...	...	...	*	4.66	14.65	0.167
GJ0864A	2(1)	22 36 09.7	-00 50 30	10.15	8.10	6.88	9.99	9.09	8.12	/2	7.04	6.37	6.16	*	...	9.99	0.663
L645-074B	0(1)	22 38 23.0	-29 21 00	...	...	...	12.64	11.46	9.96	5/1	8.57	7.99	7.70	*	1.71	12.64	0.252
L645-074A	2(1)	22 38 24.7	-29 21 14	11.71	8.52	7.55	10.93	9.89	8.64	/40	7.41	6.81	6.57	*	...	10.93	0.426
GJ0865B	0	22 38 29.7	-65 22 42	...	...	...	...	...	...	...	...	...	...	*	0.13	12.30	0.303
GJ0865A	2	22 38 29.8	-65 22 42	12.12J	10.25J	8.01J	11.48J	10.30J	8.77J	/2	7.27J	6.72J	6.43J	*	...	12.17	0.316
GJ0866A	3	22 38 33.6	-15 17 59	13.01J	10.60J	7.19J	12.37J	10.70J	8.64J	/3	6.55J	5.95J	5.54J	*	...	14.50	0.092
GJ0866B	0	22 38 37.2	-15 17 07	...	...	...	...	...	...	...	...	...	...	*	0.24	14.74	0.089
GJ0866C	0	22 38 37.2	-15 17 07	...	...	...	...	...	...	...	...	...	...	*	2.00	16.50	0.076
GJ0867B	0	22 38 45.3	-20 36 52	...	...	...	11.45	10.29	8.78	/2	7.34	6.82 ^a	6.49	*	1.61	11.45	0.305
GJ0867D	0	22 38 45.3	-20 36 52	...	...	...	...	...	...	...	...	...	...	*	...	...	...
GJ0867C	0	22 38 45.5	-20 37 16	...	...	...	...	...	...	...	...	...	...	*	0.00	9.84	0.482
GJ0867A	4(1)	22 38 45.6	-20 37 16	10.36	...	...	9.09	8.08	6.88	/2	5.67	5.11	4.80	*	...	9.84	0.482
L083-030	1	22 40 42.9	-71 31 11	11.96	10.09	8.96	...	...	...	...	8.18	7.55 ^a	7.36	...	...	...	...
LHS3844	1	22 41 58.1	-69 10 08	16.38	14.14	11.62	...	...	...	...	10.05	9.48	9.15	...	...	...	...
LEHPM1-5031	1	22 41 59.4	-75 00 33	17.27	14.77	12.07	...	...	...	...	10.43	9.90	9.60	...	...	...	...
L166-003	1	22 42 00.1	-59 15 13	15.34	13.44	11.25	...	...	...	...	9.83	9.28	9.01	...	...	...	...
GJ1271	1	22 42 38.7	+17 40 09	...	...	...	11.76	10.71	9.38	/37	8.06	7.38	7.18	*	...	11.76	0.451
LP820-060	1	22 43 02.0	-20 07 18	14.96	12.81	11.08	...	...	...	...	9.70	9.12	8.86	...	...	...	...
LP876-008	1	22 43 23.1	-24 24 52	16.28	14.12	11.77	...	...	...	...	10.25	9.67	9.41	...	...	...	...
GJ0871.1A	2(1)	22 44 58.0	-33 15 02	12.50	10.48	8.13	12.11	10.91	9.32	/40	7.79	7.15	6.93	*	...	12.08	0.469
GJ0871.1B	0(1)	22 45 00.1	-33 15 26	...	...	...	13.37	12.06	10.33	6/1	8.68	8.06	7.79	*	1.28	13.36	0.328
G156-046	1	22 45 06.1	-12 23 43	14.68	12.59	10.21	...	...	...	...	9.68	9.05	8.79	...	...	...	...
LP821-016	1	22 46 23.8	-16 56 53	13.15	11.10	9.18	12.61	11.58	10.30	/24	9.06	8.49 ^a	8.21	...	...	...	...
LHS3850	1	22 46 26.4	-06 39 26	16.92	14.49	11.77	15.99	14.53	12.66	2/1	10.79	10.19	9.85	*	...	16.07	0.124
GJ0873	1	22 46 49.7	+44 20 02	...	...	...	10.22	9.05	7.54	/37	6.11	5.55	5.30	*	...	10.22	0.309
GJ0874	1	22 48 17.4	-36 47 23	12.35	10.42	8.81	11.90	10.89	9.68	/2	8.48	7.87	7.63	...	...	...	...
LP932-081	1	22 48 38.4	-31 08 41	13.12	10.88	9.27	12.33	11.21	9.79	/40	8.41	7.82	7.49	...	...	...	...
LP932-083	1	22 49 08.4	-28 51 20	14.68	12.59	10.57	13.94	12.67	10.98	/40	9.34	8.78 ^a	8.47	...	...	...	...
GJ0875	1	22 50 19.4	-07 05 24	...	...	...	9.860	8.942	8.015	/2	6.93	6.32	6.10	*	...	9.86	0.620
GJ1274	1	22 50 37.7	+34 51 21	...	...	...	11.72	10.71	9.52	/37	8.28	7.72	7.51	*	...	11.72	0.446
LP985-032	1	22 51 23.7	-34 19 36	11.89	9.75	8.32	11.52	10.55	9.47	/24	8.36	7.75	7.49	...	...	...	...
GJ0875.1	1	22 51 53.5	+31 45 15	...	...	...	11.62	10.51	9.10	/37	7.70	7.13	6.87	*	...	11.62	0.408
LP821-027	1	22 52 05.2	-15 32 51	15.77	13.37	10.90	15.08	13.74	11.96	/24	10.24	9.69	9.37	...	...	...	...
SCR2252-6905	1	22 52 19.2	-69 05 48	16.83	14.83	12.39	15.72	14.38	12.65	/40	10.93	10.31	10.02	...	...	...	...
SCR2252-2220	1	22 52 25.8	-22 20 07	14.95	12.82	10.85	13.71	12.56	11.10	/39	9.70	9.11	8.86	...	...	...	...

LHS5394	1	22 52 48.1	-28 47 43	13.04	10.42	9.43	11.87	10.85	9.65	/20	8.41	7.82 ^a	7.58	*	...	11.87	0.449
GJ0876	1	22 53 16.8	-14 15 49	11.15	8.68	7.23	10.18	8.97	7.40	/40	5.93	5.35	5.01	*	...	10.18	0.297
SCR2253-1238	1	22 53 42.8	-12 38 43	13.49	10.90	9.78	12.58	11.55	10.31	/40	9.02	8.40	8.17	...	...	...	...
LEHPM1-5263	1	22 53 50.9	-71 28 07	17.38	15.29	12.67	...	...	...	...	10.85	10.30	9.96	...	...	...	...
GJ0878	1	22 54 21.5	+60 59 44	...	...	...	12.78	11.66	10.22	/37	8.84	8.20	7.97	*	...	12.78	0.294
LHS3872	1	22 54 46.5	-05 28 26	14.60	12.34	10.43	13.89	12.67	11.12	/40	9.65	9.09	8.81	*	...	13.87	0.280
HIP113201	1	22 55 27.2	-52 18 10	12.49	10.36	8.99	11.51	10.53	9.44	/20	8.32	7.66 ^a	7.42	*	...	11.51	0.559
GJ0877	1	22 55 45.5	-75 27 31	11.56	9.39	7.47	10.38	9.31	7.95	/2	6.62	6.08	5.81	*	...	10.38	0.416
GJ1277	1	22 56 24.7	-60 03 49	15.40	13.19	10.65	14.00	12.59	10.79	/16	8.98	8.36	8.11	*	...	14.00	0.147
LP761-006	1	22 56 26.2	-11 09 39	16.27	14.17	12.29	...	...	...	...	10.50	9.92	9.63	...	...	...	...
GJ0880	1	22 56 34.8	+16 33 12	...	...	...	8.65	7.67	6.55	/2	5.36	4.80	4.52	*	...	8.65	0.568
L718-070(A)	2(1)	23 00 33.4	-23 57 10	12.81	10.31	9.24	11.57	10.59	9.48	/33	8.25	7.67	7.41	*	...	11.57	0.495
L718-071(B)	0(1)	23 00 36.5	-23 58 10	...	...	...	11.61	10.62	9.49	/33	8.26	7.66	7.42	*	0.04	11.61	0.490
LP877-045	1	23 00 36.7	-26 04 56	14.52	12.17	10.83	...	...	...	...	9.54	9.00	8.75	...	...	...	...
LP933-037	1	23 01 23.9	-26 49 47	16.73	14.58	12.35	...	...	...	...	10.74	10.16	9.88	...	...	...	...
L215-016	1	23 01 32.5	-55 30 18	14.06	12.24	10.25	12.65	11.57	10.25	/39	8.98	8.36	8.13	...	...	...	...
LP701-056	1	23 01 46.2	-06 14 23	14.28	12.12	10.12	...	...	...	...	9.49	8.90	8.65	...	...	...	...
L286-074	1	23 01 49.5	-53 17 08	14.46	12.58	10.75	...	...	...	...	9.39	8.74	8.50	...	...	...	...
HIP113850	1	23 03 20.8	-49 43 34	...	...	...	10.67	9.74	8.75	/20	7.66	7.03	6.81	*	...	10.67	0.617
SCR2303-4650	1	23 03 35.6	-46 50 47	...	...	...	13.89	12.54	10.83	2/1	9.22	8.69	8.26	*	...	13.90	0.203
LP821-054	1	23 03 59.7	-16 12 07	15.73	13.62	11.46	14.63	13.38	11.77	/24	10.21	9.66	9.29	...	...	...	...
GJ0887B	0	23 05 52.0	-35 51 11	...	...	...	...	...	...	/2	...	...	...	*	2.09	9.58	0.281
GJ0887A	2	23 05 52.1	-35 51 11	8.00J	6.91J	5.28J	7.34J	6.37J	5.32J	/2	4.34J ^a	3.61J ^a	3.47J ^a	*	...	7.49	0.511
HIP114066	1	23 06 04.8	+63 55 34	...	...	...	10.82	9.93	9.00	/35	7.82	7.17	6.98	*	...	10.82	0.657
L1007-017	1	23 06 27.8	-00 29 38	13.27	11.24	9.51	...	...	...	...	9.08	8.40	8.16	...	...	...	...
2MA2306-0502	1	23 06 29.4	-05 02 29	19.88	17.32	13.58	18.75	16.54	14.10	/40	11.35	10.72	10.30	*	...	18.75	0.079
SSS2307-5009	1	23 06 58.8	-50 08 59	22.80	19.74	16.69	20.67	19.02	16.60	/9	13.39	12.70	12.24	*	...	20.67	0.075
SCR2307-8452	1	23 07 19.7	-84 52 04	16.33	14.16	11.83	15.13	13.76	12.00	/39	10.36	9.81	9.47	*	...	15.13	0.137
LHS0535	1	23 07 43.5	+68 40 06	...	...	...	12.45	11.36	9.96	/37	8.62	8.10	7.92	*	...	12.45	0.305
LHS3898	1	23 07 46.8	-27 54 23	13.47	10.97	9.82	...	...	...	...	8.80	8.21	7.92	...	...	...	...
GJ0889.1	1	23 08 06.9	+03 19 44	...	...	...	10.910	9.973	8.983	/2	7.87	7.31	7.07	*	...	10.91	0.511
GJ0890	1	23 08 19.5	-15 24 35	...	...	...	10.840	9.949	9.006	/2	7.98	7.30	7.11	*	...	10.84	0.629
LTT09381	1	23 09 39.3	-01 58 24	13.22	11.24	9.23	...	...	...	...	8.67	8.01	7.80	...	...	...	...
GJ1279	1	23 09 40.9	-67 43 58	9.45	7.52	6.56	...	...	...	...	6.08	5.46	5.33	...	...	...	...
LTT09388	1	23 10 00.3	-21 11 43	13.67	11.52	9.82	12.77	11.66	10.22	/40	8.86	8.24	8.00	...	...	...	...
L120-181	1	23 10 20.7	-69 12 22	13.18	11.17	9.79	...	...	...	...	8.89	8.26	8.06	...	...	...	...
GJ1281	1	23 10 42.2	-19 13 35	13.45	11.39	9.92	12.45	11.42	10.19	/15	8.98	8.46	8.23	*	...	12.45	0.436
LEHPM1-5562	1	23 10 54.9	-38 02 01	13.93	11.71	9.97	...	...	...	...	9.38	8.71	8.51	...	...	...	...
LP822-037	1	23 11 57.8	-17 01 59	14.97	12.71	10.77	...	...	...	...	9.57	8.96	8.70	...	...	...	...
LHS3909	1	23 12 11.3	-14 06 12	13.93	11.20	9.89	12.97	11.82	10.40	/26	9.06	8.48	8.22	*	...	12.97	0.313
LTT09412	1	23 13 01.8	-05 31 10	12.96	10.61	9.55	...	...	...	...	8.86	8.20	7.97	...	...	...	...
GJ2154B	0(1)	23 14 16.4	-19 38 46	...	...	...	13.90	12.67	11.07	2/1	9.41	8.89	8.48	*	3.34	13.83	0.250
GJ2154A	2(1)	23 14 16.7	-19 38 39	11.26J	9.01J	7.79J	10.49	9.53	8.56	/40	7.47	6.80	6.62	*	...	10.49	0.641
LEHPM1-5625	1	23 15 02.0	-35 28 25	14.45	12.01	9.95	...	...	...	...	9.24	8.70	8.40	...	...	...	...
LHS3918	1	23 15 43.8	-12 21 49	13.70	11.74	9.98	...	...	...	...	9.26	8.63 ^a	8.39	...	...	...	...
LHS0539	1	23 15 51.6	-37 33 31	15.97	13.81	11.56	14.97	13.66	11.98	/40	10.40	9.87	9.59	*	...	14.97	0.162
LP702-050	1	23 15 54.5	-06 27 46	18.06	15.94	13.13	...	...	...	...	11.11	10.57	10.23	...	...	...	...
LHS3916	2	23 15 57.2	-81 22 21	11.61J	9.49J	8.24J	10.00J	9.12J	8.23J	/20	7.19J	6.58J	6.35J	...	...	...	...
LTT09448	1	23 16 36.7	-01 30 48	15.05	13.01	11.14	...	...	...	...	9.82	9.19	8.91	...	...	...	...
L719-021	1	23 17 00.2	-23 23 47	12.13	9.76	8.94	10.85	9.96	9.10	/20	8.10	7.45	7.25	...	...	...	...
LTT09461	1	23 17 21.8	-25 42 21	14.92	12.76	11.14	...	...	...	...	9.88	9.29	9.02	...	...	...	...
LHS3923	1	23 17 22.9	+38 12 03	...	...	...	11.46	10.39	9.07	/37	7.76	7.19	6.96	*	...	11.46	0.469
LTT09462	1	23 17 25.5	-40 26 46	14.09	12.26	10.25	13.06	11.96	10.56	/40	9.24	8.57	8.35	...	...	...	...
LHS3925	1	23 17 50.3	-48 18 47	14.83	12.50	10.53	13.61	12.44	10.92	/26	9.53	8.97 ^a	8.71	*	...	13.61	0.285
GJ0894.1	1	23 18 17.9	+46 17 21	...	...	...	10.89	9.95	8.98	2/1	7.89	7.23	7.02	*	...	10.89	0.647
G273-014	1	23 19 35.6	-08 53 17	16.12	14.04	12.08	...	...	...	...	10.42	9.86	9.58	...	...	...	...
LP642-048	2	23 20 57.7	-01 47 37	14.79J	12.84J	10.57J	13.64J	12.42J	10.84J	/40	9.36J	8.79J	8.49J	...	...	...	...
LTT09506	1	23 21 05.7	-16 51 49	13.85	11.69	10.03	...	...	...	...	9.17	8.60	8.34	...	...	...	...
LHS0543	1	23 21 37.4	+17 17 25	...	...	...	11.65	10.46	8.88	/37	7.39	6.77	6.51	*	...	11.65	0.333
LP934-033	1	23 22 23.6	-27 25 45	18.75	16.39	13.62	...	...	...	...	11.64	11.06	10.75	...	...	...	...
LTT09524	1	23 24 05.6	-05 11 14	14.49	12.40	10.58	...	...	...	...	9.56	8.94	8.69	...	...	...	...
LP822-073	1	23 24 16.9	-15 22 23	17.96	15.60	12.84	...	...	...	...	11.19	10.54	10.20	...	...	...	...
LP822-074	1	23 24 29.1	-18 31 15	14.50	12.45	10.36	...	...	...	...	9.54	8.97	8.69	...	...	...	...
GJ0895	1	23 24 30.5	+57 51 15	...	...	...	10.00	9.03	7.95	2/1	6.80	6.10	5.87	*	...	10.01	0.575
G273-039	1	23 25 16.0	-12 52 31	12.35	10.39	9.53	...	...	...	...	8.82	8.11	7.98	...	...	...	...
L120-120	1	23 25 25.1	-67 40 08	15.60	13.32	11.09	14.38	13.11	11.48	/39	9.91	9.33	9.05	...	...	...	...

LHS0543a	1	23 25 47.5	+53 08 25	...	...	...	14.64	13.31	11.62	1/1	9.88	9.28	8.98	*	...	14.64	0.223
GJ2155	1	23 26 12.3	+08 53 37	...	...	...	10.59	9.71	8.84	/37	7.76	7.07	6.92	*	...	10.59	0.661
LHS3954	1	23 27 26.5	-17 41 33	19.38	16.95	13.71	...	...	...	...	11.75	11.20	10.84	...	...	...	...
LP986-059	1	23 27 28.7	-37 54 12	13.32	10.91	9.62	...	...	...	...	8.85	8.25	7.98	...	...	...	...
LP702-096	1	23 27 55.5	-05 27 01	14.42	12.38	10.66	...	...	...	...	9.68	9.05	8.78	...	...	...	...
G190-027C	0	23 29 25.2	+41 27 48	...	...	...	...	...	...	...	...	...	...	*	1.71	13.60	0.216
G190-027B	0(2)	23 29 25.2	+41 27 48	...	...	...	12.42J	11.18J	9.56J	/33	8.02J	7.41J	7.17J	*	0.97	12.86	0.280
G190-028A	3(1)	23 29 26.2	+41 28 20	...	...	...	11.89	10.76	9.31	/33	7.93	7.33	7.07	*	...	11.89	0.378
GJ1284B	0	23 30 13.4	-20 23 27	...	...	...	...	...	...	...	...	...	...	*	0.00	17.75	0.093
GJ1284A	2	23 30 13.5	-20 23 27	11.89J	9.85J	7.83J	11.14J	10.02J	8.59J	/27	7.20J	6.61J	6.33J	*	...	15.03	0.145
APM2330-4737	1	23 30 16.2	-47 36 45	19.17	16.75	13.19	18.08	15.87	13.68	/6	11.23	10.64	10.28	*	...	18.08	0.086
SCR2330-0838	2(1)	23 30 16.9	-08 38 37	15.47	13.57	11.58	14.29	13.07	11.48	/40	9.97	9.36	9.13	...	...	...	...
LEHPM2-2163	1	23 30 38.2	-84 55 19	15.69	13.52	11.17	...	...	...	...	9.84	9.31	9.00	...	...	...	...
DEN2331-2749	1	23 31 21.8	-27 49 50	20.42	17.99	14.40	19.07	16.54	14.19	/6	11.65	11.06	10.65	*	...	19.07	0.079
LTT09580	1	23 31 25.0	-16 15 58	13.90	11.78	9.74	13.13	11.95	10.40	/40	8.88	8.29 ^a	8.00	...	...	...	...
GJ0896A	2(1)	23 31 52.2	+19 56 14	...	...	...	10.29	9.13	7.62	3/1	6.16	5.58	5.33	*	...	10.29	0.349
GJ0896B	0(1)	23 31 52.6	+19 56 14	...	...	...	12.41	11.05	9.30	3/1	7.10 ^a	6.56	6.26	*	2.12	12.41	0.171
LTT09582	1	23 32 00.2	-39 17 37	13.87	11.42	9.91	12.93	11.77	10.30	/40	8.90	8.26	8.02	...	...	...	...
LTT09596	1	23 33 36.7	-42 13 22	13.68	11.28	9.92	12.58	11.48	10.10	/40	8.68	8.07	7.80	...	...	...	...
GJ0899	1	23 34 03.3	+00 10 46	...	...	...	11.180	10.154	8.888	/2	7.66	7.07	6.83	*	...	11.18	0.442
GJ1286	1	23 35 10.5	-02 23 21	15.56	13.42	10.30	14.73	13.10	11.10	/40	9.15	8.51	8.18	*	...	14.67	0.111
LHS3978	1	23 35 44.6	+06 11 46	...	...	...	16.17	14.73	12.90	2/1	11.09	10.48	10.17	*	...	16.17	0.135
G275-071	1	23 35 48.8	-24 19 09	14.68	12.74	10.83	...	...	...	...	9.65	9.07 ^a	8.77	...	...	...	...
LTT16952	1	23 36 25.6	+55 29 43	...	...	...	11.70	10.73	9.62	/32	8.45	7.81	7.58	*	...	11.70	0.535
LHS0547	1	23 36 52.3	-36 28 52	14.85	12.76	10.54	13.76	12.46	10.79	/15	9.19	8.67	8.42	*	...	13.76	0.170
LP763-003	1	23 37 38.3	-12 50 28	18.61	15.93	12.92	...	...	...	...	11.46	10.83	10.45	...	...	...	...
L026-054	1	23 37 52.8	-76 45 26	13.06	11.77	8.97	...	...	...	...	8.58	8.01	7.68	...	...	...	...
LTT09634	1	23 38 08.2	-16 14 10	11.52	9.34	7.68	11.34	10.31	9.08	/34	7.81	7.21	7.00	...	...	...	...
LTT09635	1	23 38 17.4	-41 31 04	12.99	10.56	9.39	11.93	10.89	9.62	/20	8.36	7.73	7.49	*	...	11.93	0.430
LEHPM1-6053	1	23 40 23.9	-40 21 47	14.23	12.29	10.46	...	...	...	...	9.26	8.63	8.34	...	...	...	...
G275-082	1	23 41 16.3	-26 57 21	13.97	11.74	9.75	...	...	...	...	9.20	8.50	8.28	...	...	...	...
LP703-042	1	23 41 39.3	-06 35 50	16.11	13.99	11.61	...	...	...	...	10.32	9.70	9.40	...	...	...	...
LEHPM2-1679	1	23 41 41.6	-85 56 07	16.59	14.36	12.21	...	...	...	...	10.60	10.02	9.69	...	...	...	...
GJ0905	1	23 41 55.0	+44 10 39	...	...	...	12.29	10.77	8.85	/37	6.88	6.25	5.93	*	...	12.29	0.122
GJ1288	1	23 42 51.0	+30 48 59	...	...	...	14.36	...	...	/10	9.64	9.08	8.81	*	...	14.35	0.148
GJ1289	1	23 43 06.3	+36 32 13	...	...	...	12.57	11.30	9.67	/37	8.11	7.45	7.23	*	...	12.57	0.195
LEHPM1-6134	1	23 44 10.9	-68 31 47	15.67	13.52	11.49	...	...	...	...	10.03	9.52	9.16	...	...	...	...
GJ1290	1	23 44 23.3	+21 36 14	...	...	...	13.29	12.09	10.56	/31	9.07	8.45	8.23	*	...	13.29	0.322
LEHPM1-6159	1	23 45 10.6	-38 32 24	15.13	12.96	10.94	...	...	...	...	9.78	9.16	8.88	...	...	...	...
LHS4009B	0	23 45 31.0	-16 10 20	...	...	...	...	...	...	...	...	...	...	*	0.25	15.26	0.122
LHS4009A	2	23 45 31.3	-16 10 20	15.31J	12.72J	9.93J	14.38J	12.90J	10.99J	/26	9.21J	8.61J	8.31J	*	...	15.01	0.128
LHS4012	1	23 46 32.0	-50 43 28	15.75	13.37	11.16	...	...	...	...	10.05	9.51	9.26	...	...	...	...
LP987-023	1	23 46 38.2	-34 10 02	13.67	11.34	9.82	12.58	11.49	10.14	/24	8.85	8.25	8.04	...	...	...	...
GR0481	1	23 47 37.8	-23 16 06	15.05	13.21	11.13	...	...	...	...	9.80	9.14	8.93	...	...	...	...
GJ0907	1	23 48 03.1	+49 00 57	...	...	...	12.08	11.08	9.93	/37	8.77	8.14	7.93	*	...	12.08	0.386
LHS4016B	0	23 48 36.0	-27 39 38	...	...	...	...	...	...	...	...	...	...	*	0.00	13.09	0.364
LHS4016A	2	23 48 36.1	-27 39 39	13.13J	10.88J	9.30J	12.34J	11.25J	9.90J	/27	8.58J	8.02J	7.74J	*	...	13.09	0.364
GJ0908	1	23 49 12.5	+02 24 04	...	...	...	8.980	8.028	6.947	/2	5.83	5.28	5.04	*	...	8.98	0.485
LHS4021	1	23 50 31.6	-09 33 33	14.01	11.45	9.58	13.44	12.19	10.59	/26	8.94	8.39 ^a	8.04	*	...	13.44	0.243
2MA2351-2537(B)	0	23 51 50.4	-25 37 36	...	...	...	...	...	...	...	...	...	...	*	2.72	22.79	0.075
LEHPM1-6333(A)	2	23 51 50.5	-25 37 37	22.05J	18.89J	15.57J	19.98J	17.86J	15.47J	/40	12.47J	11.73J	11.27J	*	...	20.07	0.078
LEHPM1-6366	1	23 52 32.2	-34 13 07	17.87	15.65	13.18	...	...	...	...	11.31	10.72	10.42	...	...	...	...
L217-036	1	23 52 44.4	-57 56 03	14.42	12.22	10.26	...	...	...	...	9.25	8.59 ^a	8.30	...	...	...	...
LTT09783	1	23 53 08.3	-42 32 04	13.72	11.60	9.77	...	...	...	...	9.17	8.59	8.34	...	...	...	...
L085-031	1	23 53 25.2	-70 56 41	14.32	11.96	9.80	13.01	11.78	10.18	/40	8.68	8.10	7.78	*	...	13.01	0.236
LP987-047	1	23 53 41.0	-35 59 06	14.77	12.69	10.68	...	...	...	...	9.41	8.78	8.55	...	...	...	...
L026-027	1	23 53 50.1	-75 37 57	10.80	8.27	6.94	10.02	8.99	7.72	/20	6.45	5.78	5.55	*	...	10.02	0.497
LHS4038	1	23 54 04.3	-41 32 31	14.68	12.55	10.63	...	...	...	...	9.50	8.93	8.67	...	...	...	...
L169-058	1	23 54 41.3	-61 35 10	14.16	11.74	9.93	...	...	...	...	9.19	8.62	8.35	...	...	...	...
LHS4046	1	23 55 26.0	-03 59 00	14.77	12.94	10.77	13.86	12.72	11.25	/37	9.87	9.21	8.95	...	...	...	...
GJ0912B	0	23 55 39.7	-06 08 33	...	...	...	...	...	...	...	...	...	...	*	2.72	13.97	0.223
GJ0912A	2	23 55 39.8	-06 08 33	11.80J	9.98J	7.99J	11.16J	10.13J	8.87J	/2	7.60J	6.96J	6.72J	*	...	11.25	0.506
G158-008	1	23 55 55.2	-13 21 24	14.24	12.11	10.36	13.43	12.26	10.72	/24	9.26	8.70	8.43	...	...	...	...
LEHPM1-6494	1	23 56 10.8	-34 26 05	22.21	19.31	16.15	20.83	18.36	15.91	/9	12.95	12.38	11.97	*	...	20.83	0.075
SCR2356-0429	2	23 56 20.4	-04 29 32	14.74J	12.75J	10.54J	13.70J	12.54J	11.04J	/40	9.64	9.04	8.78	...	...	...	...
GJ1292	1	23 57 44.1	+23 18 17	...	...	...	11.72	10.60	9.15	/37	7.80	7.32 ^a	7.06	*	...	11.72	0.379

LP987-060	1	23 57 53.6	-34 07 36	14.36	12.03	10.36	...	...	...	...	9.28	8.62	8.36	...	...	...
LP764-040	3(1)	23 58 13.7	-17 24 34	13.24	11.36	9.38	11.88	11.00	10.09	/40	8.31	7.70	7.44	...	...	...
LTT17066	1	23 58 32.6	+07 38 31	...	...	...	11.71	10.61	9.21	/30	7.91	7.29	7.06	*	...	11.71 0.434
APM2359-6246	1	23 58 42.9	-62 45 42	18.17	15.88	13.08	16.95	15.26	13.30	/6	11.39	10.83	10.52	*	...	16.95 0.111
LTT09828B	0	23 59 44.8	-44 05 00	...	...	...	...	...	...	...	...	...	...	*	2.00	14.97 0.152
LTT09828A	2	23 59 44.8	-44 05 00	13.90J	11.79J	9.70J	12.81J	11.67J	10.23J	/40	8.88J	8.29J	8.04J	*	...	12.97 0.298
LHS4057	1	23 59 50.2	+47 45 09	...	...	...	16.12	14.63	12.76	2/1	10.87	10.26	9.93	*	...	16.11 0.124
LHS4058	1	23 59 51.4	-34 06 43	14.07	11.89	9.81	12.84	11.64	10.08	/26	8.59	7.98	7.75	*	...	12.84 0.297
Beyond 25 pc																
GJ1293	1	00 01 25.8	-16 56 55	11.48	9.08	8.46	10.73	9.88	9.04	/40	8.02	7.41	7.22	...	...	...
L290-032	1	00 02 27.1	-46 01 44	13.47	11.44	9.90	...	...	...	...	9.18	8.52	8.34	...	...	...
LHS0105	1	00 09 17.3	-19 42 32	16.88	14.88	12.53	15.52	14.18	12.46	/40	10.88	10.33	10.07	...	...	...
LTT00074	1	00 11 04.6	-05 47 02	11.48	9.61	8.21	10.86	9.96	9.04	/35	7.98	7.31	7.12	...	...	...
LTT00095	1	00 13 29.1	-36 49 44	12.26	9.69	8.47	...	...	...	...	7.80	7.18	6.96	...	...	...
LHS1048	1	00 15 33.5	-35 11 48	15.77	13.80	12.10	14.53	13.47	12.09	/40	10.80	10.26	10.06	...	...	...
SCR0015-6957	1	00 15 52.5	-69 57 21	14.58	12.54	10.91	13.54	12.52	11.18	/40	9.89	9.24	9.01	...	...	...
LHS0109	1	00 17 40.0	-10 46 17	15.03	12.93	12.00	13.88	12.97	12.10	/40	11.05	10.56	10.37	...	...	...
LEHPM1-0439	1	00 18 19.4	-82 07 15	16.92	14.76	12.62	15.78	14.63	13.03	/40	11.68	11.12	10.86	...	...	...
L086-093	1	00 18 34.6	-68 46 60	12.33	10.05	9.21	11.32	10.43	9.57	/25	8.58	7.97	7.72	...	...	...
LP644-095	1	00 19 12.4	-03 03 13	12.05	10.06	8.72	...	...	...	...	8.27	7.65	7.46	...	...	...
LHS0110	2	00 19 37.0	-28 09 46	13.39J	11.37J	10.25J	13.65	12.66	11.44	/16	10.25	9.73	9.48	...	...	...
LEHPM1-0494	2(1)	00 21 05.9	-42 44 43	18.56	16.18	13.60	17.28	15.67	13.69	/9	12.00	11.37	11.05	...	...	...
LTT00207	1	00 23 47.3	-36 51 41	11.87	9.78	9.39	...	...	...	...	8.27	7.61	7.47	...	...	...
SCR0027-0806	1	00 27 45.4	-08 06 05	18.65	16.26	13.49	17.51	15.83	13.72	/39	11.57	10.97	10.61	...	...	...
LHS1094	1	00 32 15.4	-63 05 28	10.87	9.01	7.43	...	...	...	...	7.02	6.34	6.17	...	...	...
SCR0033-6317	1	00 33 02.3	-63 17 50	15.68	13.79	11.93	14.79	13.62	12.02	/40	10.41	9.80	9.57	...	...	...
LTT00313	1	00 35 38.1	-10 04 19	13.01	11.05	9.33	11.85	10.81	9.57	/40	8.33	7.74	7.48	...	...	...
LHS1106	1	00 36 00.0	-09 30 56	12.33	10.13	9.27	11.25	10.40	9.60	/37	8.54	7.90	7.72	...	...	...
SCR0052-6155	1	00 52 09.9	-61 55 23	14.82	12.63	10.86	13.69	12.60	11.26	/40	9.98	9.35	9.12	...	...	...
SIP0052-6201	1	00 52 15.3	-62 01 55	19.63	17.36	14.18	18.41	16.46	14.26	/40	12.15	11.74	11.37	...	...	...
GJ0043	1	00 55 25.4	-51 49 58	13.04	11.15	9.21	12.34	11.34	10.16	/2	8.99	8.39	8.11	...	...	...
LTT00525	1	00 55 49.3	-29 40 34	11.09	9.19	8.09	...	...	...	...	7.28	6.74	6.57	...	...	...
G270-100	1	00 56 30.2	-04 25 16	16.06	13.91	11.81	...	...	...	...	10.44	9.83	9.56	...	...	...
LTT00648	1	01 09 38.8	-07 10 50	12.19	9.88	8.86	11.38	10.38	9.20	/19	7.96	7.38	7.11	...	...	...
SCR0112-7939	1	01 12 23.5	-79 39 13	17.16	15.14	12.89	15.75	14.48	12.79	/40	11.18	10.62	10.34	...	...	...
GJ0056.2	1	01 17 59.4	-48 09 01	12.72	10.35	9.64	11.54	10.65	9.74	/2	8.68	8.00	7.84	...	...	...
LHS1245	1	01 24 22.1	-44 08 11	13.30	10.76	9.88	...	...	...	...	8.93	8.30	8.09	...	...	...
GJ2022	3(2)	01 24 27.7	-33 55 09	14.63J	12.65J	10.70J	13.56J	12.26J	10.62J	/27	9.20J	8.66J	8.24J	...	...	...
GJ1038	1	01 25 01.8	-32 51 04	11.08	8.69	8.21	...	...	...	...	7.07	6.42	6.21	...	...	...
L002-060	1	01 29 20.9	-85 56 11	14.53	12.59	10.46	13.49	12.21	10.58	/40	9.05	8.39	8.08	...	...	...
L222-009	1	01 35 40.4	-50 15 42	11.53	9.23	8.37	...	...	...	...	7.93	7.27	7.14	...	...	...
LP939-103	1	01 36 36.9	-34 23 26	15.40	14.66	12.65	15.49	14.37	12.88	/40	11.47	10.92	10.64	...	...	...
SCR0138-5353	1	01 38 20.5	-53 53 26	15.70	13.70	11.74	14.36	13.20	11.70	/39	10.28	9.69	9.42	...	...	...
SCR0138-7855	2	01 38 54.0	-78 55 18	14.87J	12.78J	11.20J	13.54J	12.49J	11.19J	/40	9.92J	9.35J	9.11J	...	...	...
SCR0139-7536	1	01 39 27.9	-75 36 14	15.57	13.17	11.51	13.79	12.66	11.23	/40	9.87	9.24	8.97	...	...	...
LP708-253	1	01 40 04.8	-13 54 41	13.31	11.38	9.94	...	...	...	...	8.78	8.09	7.93	...	...	...
L367-082	1	01 41 03.6	-43 38 10	12.45	10.41	9.53	...	...	...	...	8.81	8.14	7.96	...	...	...
SCR0143-3840	1	01 43 03.3	-38 40 08	12.71	10.51	9.22	11.55	10.60	9.59	/40	8.52	7.85	7.68	...	...	...
L367-008	1	01 45 21.4	-39 57 20	12.49	10.28	9.14	...	...	...	...	8.43	7.76	7.59	...	...	...
L173-003	1	01 51 46.2	-54 57 58	12.64	10.75	9.61	...	...	...	...	9.01	8.17	7.94	...	...	...
SCR0153-0703	1	01 53 20.6	-07 03 32	15.66	13.39	11.76	14.42	13.22	11.72	/40	10.31	9.71	9.44	...	...	...
SCR0153-5000	1	01 53 24.2	-50 00 04	14.78	12.45	10.95	13.41	12.38	11.11	/40	9.93	9.30	9.03	...	...	...
L223-102	1	01 54 39.0	-50 45 58	15.54	13.39	11.79	14.16	13.19	11.98	/40	10.77	10.31	10.06	...	...	...
LTT01021	1	01 55 32.2	-15 31 22	12.40	9.57	9.10	11.71	10.80	9.85	/25	8.81	8.17 ^a	7.94	...	...	...
SCR0156-6702	2(1)	01 56 26.1	-67 02 36	13.55	11.37	10.22	12.72	11.77	10.61	/40	9.44	8.75	8.59	...	...	...
SCR0201-5739	1	02 01 38.8	-57 39 36	14.98	13.05	11.49	13.56	12.54	11.35	/40	10.14	9.47	9.25	...	...	...
L583-033	2	02 02 17.5	-26 33 52	14.30J	11.83J	9.80J	13.45J	12.24J	10.69J	/40	9.81 ^a	9.22 ^a	8.95	...	...	...
LP649-030	1	02 03 30.2	-04 54 41	11.81	9.63	8.79	11.12	10.23	9.32	/35	8.20	7.54	7.36	...	...	...
SCR0211-0354	1	02 11 52	-03 54 02	...	...	...	15.97	14.42	12.53	2/1	10.68	10.07	9.73	...	...	...
GJ0088	1	02 12 51.0	-17 41 12	11.30	9.29	8.25	11.08	10.16	9.24	/2	8.20	7.60 ^a	7.34	...	...	...
LP941-016	1	02 13 37.4	-35 12 24	12.94	10.34	9.69	...	...	...	...	8.75	8.10	7.85	...	...	...
LHS1380	1	02 17 56.8	-35 37 01	12.42	10.08	8.88	11.63	10.67	9.62	/23	8.51	7.93	7.68	...	...	...
LHS1386	1	02 18 41.4	-39 37 11	14.22	11.98	10.27	13.33	12.27	10.93	/40	9.67	9.07	8.80	...	...	...
SCR0228-6248	1	02 28 13.9	-62 48 05	15.84	13.53	11.28	14.83	13.57	11.94	/40	10.43	9.86	9.57	...	...	...
SCR0232-3006	1	02 32 03.1	-30 06 41	15.95	13.32	11.78	14.78	13.59	12.05	/40	10.57	9.93	9.65	...	...	...
SCR0234-8204	1	02 34 47.1	-82 04 29	...	14.13	12.81	14.97	13.87	12.46	/40	11.11	10.51	10.25	...	...	...

LHS5058	1	02 36 32.8	-34 36 32	12.47	10.33	9.18	...	...	...	...	8.67	8.02	7.84	...	...	...
SCR0238-1420	1	02 38 07.5	-14 20 11	12.99	11.41	9.75	12.36	11.38	10.22	/40	9.05	8.39	8.16	...	...	...
L441-032	1	02 39 56.7	-38 28 00	12.31	10.27	9.21	...	...	...	...	8.47	7.82	7.63	...	...	...
LHS0158	1	02 42 02.9	-44 30 59	14.15	11.82	10.46	13.64	12.66	11.60	/15	10.43	9.94	9.73	...	...	...
LP651-009	1	02 46 12.9	-04 19 57	16.06	13.82	11.97	15.06	13.88	12.37	/40	10.91	10.37	10.08	...	...	...
LP651-011	1	02 46 48.9	-04 21 28	14.24	12.22	10.70	13.48	12.46	11.26	/40	10.05	9.48	9.23	...	...	...
SCR0247-5729	2	02 47 14.6	-57 29 22	16.80J	14.56J	12.43J	15.65J	14.36J	12.73J	/40	11.20J	10.62J	10.36J	...	...	...
LHS1459	1	02 51 43.3	-26 01 39	14.83	12.79	11.23	13.88	12.91	11.83	/40	10.70	10.17	9.95	...	...	...
LTT01393	1	02 55 23.2	-25 13 29	11.94	10.13	8.20	...	...	...	...	8.08	7.45	7.23	...	...	...
L012-040	1	03 03 26.4	-82 50 39	12.05	10.11	9.29	...	...	...	...	8.37	7.75	7.59	...	...	...
LTT01453	1	03 03 36.7	-25 35 33	11.68	9.71	8.14	11.04	10.11	9.13	/23	8.00	7.34	7.11	...	...	...
LTT01552	1	03 17 28.2	-01 07 27	13.79	11.61	10.53	12.85	11.89	10.87	/40	9.73	9.18	8.99	...	...	...
LP887-068	1	03 17 35.1	-27 41 47	12.39	10.30	9.00	...	...	...	...	8.36	7.70 ^a	7.46	...	...	...
G077-042	1	03 17 55.4	-01 05 41	15.48	13.43	11.64	14.45	13.36	12.08	/40	10.81	10.26	9.97	...	...	...
LP888-006	1	03 20 51.1	-28 15 34	12.80	10.66	8.96	12.19	11.21	10.07	/23	8.94	8.29	8.04	...	...	...
SCR0325-0308	1	03 25 03.1	-03 08 20	15.22	13.17	11.39	13.88	12.79	11.41	/39	10.06	9.45	9.20	...	...	...
SCR0327-3634	1	03 27 46.8	-36 34 40	13.40	11.29	9.27	12.69	11.61	10.24	/40	8.92	8.26	8.04	...	...	...
LHS1561	1	03 34 39.6	-04 50 33	13.63	11.43	9.47	13.07	11.84	10.30	/26	8.83	8.27	7.93	...	...	...
SCR0337-1056	1	03 37 38.2	-10 56 55	11.81	9.68	8.44	11.34	10.45	9.45	/40	8.41	7.80	7.59	...	...	...
GJ0155.3	1	03 53 19.7	-37 03 59	13.06	11.08	9.63	...	...	...	...	8.74	8.21	7.95	...	...	...
LHS1622	1	04 03 30.4	-37 53 33	16.01	13.86	11.99	14.73	13.51	11.96	/40	10.43	9.87	9.58	...	...	...
LHS0186	1	04 03 38.4	-05 08 05	16.24	14.31	12.76	14.87	13.86	12.73	/40	11.57	11.10	10.85	...	...	...
WT0135	1	04 11 27.1	-44 18 10	15.04	12.65	11.03	14.10	13.06	11.82	/16	10.55	10.11	9.83	...	...	...
LHS1656	1	04 18 51.0	-57 14 01	14.07	12.02	10.03	13.29	12.18	10.84	/26	9.52	8.94	8.65	...	...	...
L446-008	1	04 21 00.5	-35 51 21	11.57	8.73	8.43	10.63	9.78	8.94	/40	7.92	7.32	7.11	...	...	...
LHS1676	1	04 31 44.0	-21 50 44	17.31	15.14	12.42	16.02	14.57	12.75	/40	11.02	10.55	10.28	...	...	...
SCR0457-0731	1	04 57 23.8	-07 31 40	14.23	12.15	10.30	13.58	12.45	11.05	/40	9.68	9.07	8.82	...	...	...
L305-024	1	05 06 07.3	-47 12 52	14.07	11.96	10.32	12.63	11.65	10.46	/39	9.32	8.66 ^a	8.43	...	...	...
LP892-040	1	05 21 15.9	-32 21 27	15.51	13.17	11.13	14.24	13.10	11.57	/24	10.08	9.49	9.21	...	...	...
SCR0525-7425	1	05 25 45.6	-74 25 26	14.81	12.89	11.35	13.43	12.44	11.21	/40	10.03	9.42	9.21	...	...	...
SCR0527-7231	1	05 27 07.0	-72 31 20	16.01	13.97	11.77	14.71	13.49	11.86	/39	10.34	9.76	9.47	...	...	...
LHS1815	1	06 04 20.4	-55 18 47	13.27	11.06	9.61	...	...	...	...	8.80	8.21	7.99	...	...	...
SCR0610-1832	1	06 10 08.2	-18 32 25	15.98	13.81	11.58	14.87	13.68	12.12	/40	10.64	10.05	9.76	...	...	...
LHS1837	1	06 19 50.7	-59 52 25	14.75	12.55	10.86	13.73	12.69	11.48	/40	10.25	9.67	9.45	...	...	...
SCR0629-4648	2(1)	06 29 33.6	-46 48 37	14.39	11.98	10.38	13.31	12.20	10.86	/40	9.59	8.98	8.72	...	...	...
SCR0635-6722	1	06 35 48.8	-67 22 59	12.21	9.84	8.67	11.54	10.62	9.64	/39	8.54	7.96	7.69	...	...	...
SCR0639-6939	1	06 39 08.4	-69 39 32	14.60	12.40	10.59	13.61	12.56	11.32	/40	10.09	9.49	9.25	...	...	...
SCR0639-6934	1	06 39 22.3	-69 34 13	13.68	11.25	10.11	12.71	11.74	10.69	/40	9.55	8.94	8.73	...	...	...
SCR0644-4223	2	06 44 32.1	-42 23 45	15.59J	13.35J	11.18J	14.44J	13.19J	11.55J	/39	9.93J	9.27J	8.98J	...	...	...
LP453-049	1	06 44 32.4	-38 31 59	15.58	13.25	11.11	14.18	13.04	11.54	/25	10.09	9.47	9.20	...	...	...
SCR0659-2031	1	06 59 48.7	-20 31 47	13.95	11.56	9.64	13.00	11.98	10.72	/40	9.51	8.93	8.68	...	...	...
LHS1904	1	07 11 19.7	-67 07 22	11.95	9.80	8.90	11.15	10.23	9.30	/18	8.28	7.64	7.41	...	...	...
SCR0714-7140	1	07 14 26.2	-71 40 38	17.83	15.82	13.34	16.79	15.32	13.50	/40	11.72	11.09	10.77	...	...	...
SCR0719-5050	1	07 19 35.4	-50 50 52	16.00	13.74	10.88	14.59	13.35	11.80	/40	10.33	9.74	9.48	...	...	...
SCR0724-3125	1	07 24 21.2	-31 25 58	15.25	12.35	10.25	14.41	13.08	11.38	/40	9.79	9.22	8.89	...	...	...
SCR0725-8530	1	07 25 22.2	-85 30 58	15.44	13.03	11.26	14.30	13.21	11.84	/40	10.54	10.02	9.70	...	...	...
LTT02856	1	07 26 29.1	-70 49 41	13.73	11.30	9.70	12.59	11.52	10.30	/4	9.09	8.47	8.24	...	...	...
WT0214	1	07 28 40.1	-61 20 41	17.36	15.33	12.83	16.00	14.74	13.10	/40	11.61	11.11	10.86	...	...	...
GJ2061	1	07 31 04.1	-37 13 46	12.39	10.01	9.05	11.47	10.49	9.40	/19	8.25	7.65	7.44	...	...	...
SCR0733-4406	1	07 33 42.7	-44 06 13	16.19	13.89	11.53	15.13	13.79	12.05	/40	10.32	9.73	9.44	...	...	...
SCR0743-1929	1	07 43 22.1	-19 29 04	15.81	13.24	10.61	14.41	13.25	11.74	/40	10.26	9.71	9.45	...	...	...
SCR0745-4814	2(1)	07 45 32.2	-48 14 57	18.00	15.80	13.14	16.62	15.16	13.32	/40	11.57	11.03	10.74	...	...	...
GJ1100	1	07 47 03.1	-13 56 19	12.40	9.91	8.67	11.51	10.61	9.66	/38	8.53	7.94	7.73	...	...	...
SCR0749-4955	1	07 49 29.4	-49 55 06	16.64	14.74	12.34	15.28	14.03	12.44	/40	10.93	10.25	9.96	...	...	...
SCR0758-4126	1	07 58 28.7	-41 26 44	14.59	12.28	10.11	13.44	12.36	11.01	/40	9.69	9.13	8.91	...	...	...
LP784-012	1	08 02 03.4	-17 10 18	12.00	8.91	9.08	...	...	...	...	8.18	7.60	7.35	...	...	...
SCR0810-4056	1	08 10 20.3	-40 56 50	13.35	11.14	9.83	12.44	11.48	10.41	/40	9.30	8.66	8.45	...	...	...
SCR0829-6203	1	08 29 24.7	-62 03 23	17.78	15.72	13.42	16.22	14.95	13.24	/40	11.70	11.21	10.92	...	...	...
SCR0829-3709	1	08 29 41.3	-37 09 35	15.14	12.69	10.28	14.27	13.02	11.41	/40	9.83	9.26	9.00	...	...	...
L891-016	2(1)	08 31 21.6	-06 02 02	11.78	9.49	8.11	11.21	10.29	9.21	/34	8.00	7.37	7.18	...	...	...
L186-042	1	08 35 47.5	-56 45 13	13.23	10.01	9.58	11.78	10.88	9.99	/25	8.97	8.34	8.16	...	...	...
LTT03187	1	08 36 14.3	-41 33 26	11.74	9.46	7.37	...	...	...	...	8.08	7.34 ^a	7.02	...	...	...
GJ0316	1	08 40 00.3	-06 28 33	10.87	8.92	8.23	9.97	9.11	8.25	/2	7.20	6.57	6.38	...	...	...
SCR0840-3113	1	08 40 56.6	-31 13 33	15.57	13.32	11.35	14.34	13.12	11.59	/40	10.06	9.54	9.27	...	...	...
L098-062	1	08 41 32.6	-68 25 40	11.87	9.80	9.40	11.05	10.18	9.29	/40	8.23	7.58 ^a	7.38	...	...	...
SCR0843-2937	1	08 43 09.5	-29 37 31	16.13	13.95	11.68	14.93	13.66	12.06	/40	10.53	10.01	9.72	...	...	...

SCR0844-7120	1	08 44 54.6	-71 20 43	15.11	13.08	11.04	14.07	12.96	11.56	/40	10.25	9.57	9.30	...	...	...
SCR0852-3507	1	08 52 54.1	-35 07 33	14.89	12.79	10.17	13.79	12.64	11.17	/40	9.77	9.19	8.94	...	...	...
SCR0853-6123	1	08 53 03.0	-61 23 48	17.94	15.73	12.96	16.75	15.31	13.52	/40	11.82	11.27	10.91	...	...	...
LHS2072	1	08 55 04.7	-71 35 48	15.65	13.36	11.24	14.46	13.22	11.65	/40	10.17	9.59	9.34	...	...	...
LP786-022	1	08 57 14.2	-19 35 04	12.69	10.72	9.54	...	...	...	...	8.69	8.05	7.86	...	...	...
SCR0859-7517	1	08 59 52.0	-75 17 30	14.64	12.66	10.96	13.58	12.50	11.15	/40	9.86	9.24	9.03	...	...	...
SCR0904-4851	1	09 04 47.8	-48 51 24	17.58	15.80	13.54	16.18	14.83	13.13	/40	11.49	10.94	10.60	...	...	...
SCR0912-8311	1	09 12 59.6	-83 11 52	17.99	15.74	13.19	16.66	15.20	13.37	/40	11.56	10.98	10.69	...	...	...
SCR0914-7304	1	09 14 53.9	-73 04 19	16.00	13.84	11.87	14.68	13.49	11.95	/40	10.50	9.87	9.61	...	...	...
SCR0916-3431	1	09 16 07.1	-34 31 31	16.29	14.22	11.81	15.04	13.82	12.23	/40	10.71	10.11	9.81	...	...	...
SIP0933-1602	1	09 33 49.7	-16 02 55	20.17	18.01	15.31	19.11	17.11	14.78	/40	12.72	12.23	11.89	...	...	...
SCR0936-3237	1	09 36 01.5	-32 37 59	13.02	10.69	9.19	12.19	11.19	10.09	/40	8.95	8.34	8.12	...	...	...
CE089	1	09 38 53.8	-33 48 45	17.97	15.85	13.13	16.87	15.34	13.38	/40	11.51	11.05	10.78	...	...	...
SCR0943-4833	1	09 43 18.2	-48 33 50	15.31	13.27	11.30	14.30	13.14	11.63	/40	10.18	9.56	9.27	...	...	...
L462-023	1	09 44 45.4	-36 32 38	12.39	10.27	9.27	...	...	...	...	8.61	7.94	7.79	...	...	...
SCR0947-0020	1	09 47 20.1	-00 20 09	19.44	17.26	14.47	18.23	16.50	14.32	/40	12.26	11.63	11.35	...	...	...
LHS2209	1	09 54 52.5	-13 31 21	15.54	13.53	11.95	14.46	13.48	12.41	/40	11.25	10.69	10.47	...	...	...
SCR1005-4322	1	10 05 03.1	-43 22 28	14.76	12.51	...	13.76	12.65	11.20	/40	9.85	9.33	9.06	...	...	...
WT0248	1	10 05 54.9	-67 21 31	14.67	13.28	12.02	14.52	13.40	11.95	/15	10.56	10.10	9.87	...	...	...
LTT03719	1	10 10 00.0	-25 58 33	12.02	10.13	9.15	...	...	...	...	8.32	7.67 ^a	7.50	...	...	...
LHS2228	1	10 11 09.2	-82 51 58	11.90	9.75	8.87	...	...	...	...	8.21	7.55	7.37	...	...	...
SCR1011-8106	1	10 11 12.4	-81 06 42	16.54	14.50	12.53	15.20	13.94	12.37	/40	10.82	10.24	9.93	...	...	...
LTT03763	1	10 15 50.1	-11 47 48	12.66	10.42	9.62	...	...	...	...	8.69	8.05 ^a	7.81	...	...	...
L752-053	1	10 21 08.1	-17 43 38	11.58	9.39	8.13	11.25	10.32	9.36	/23	8.26	7.59	7.40	...	...	...
LHS2257	1	10 24 23.4	-02 34 18	...	...	...	14.89	14.39	13.89	/40	10.86	10.37	10.08	...	...	...
LHS0284	1	10 36 03.1	-14 42 29	17.75	15.75	13.64	16.78	15.49	13.81	/16	12.28	11.79	11.58	...	...	...
LP904-036	1	10 36 28.4	-28 27 15	13.23	11.07	9.60	12.02	10.99	9.74	/40	8.50	7.83 ^a	7.58	...	...	...
LP904-045	1	10 40 18.5	-29 30 23	13.13	10.82	9.76	...	...	...	...	8.78	8.07 ^a	7.89	...	...	...
L017-050	1	10 41 56.4	-82 59 23	14.78	12.41	10.95	13.21	12.12	10.77	/40	9.51	8.92	8.66	...	...	...
LP905-022	1	10 51 58.9	-32 01 20	12.91	10.63	9.49	...	...	...	...	8.42	7.78	7.60	...	...	...
LP849-020	1	10 52 26.4	-22 41 16	12.67	10.66	9.32	...	...	...	...	8.86	8.23	7.96	...	...	...
LTT04033	1	10 58 41.3	-42 40 09	12.64	10.76	10.28	...	...	...	...	8.89	8.26	8.16	...	...	...
LTT04042	1	11 00 02.8	-35 06 37	12.03	9.91	8.47	...	...	...	...	8.08	7.44	7.24	...	...	...
SCR1104-0150	1	11 04 08.4	-01 50 18	14.38	12.52	11.10	13.29	12.29	11.11	/40	9.87	9.30	9.04	...	...	...
SCR1104-8352	1	11 04 51.0	-83 52 25	15.50	13.47	12.23	13.89	12.92	11.67	/40	10.53	9.96	9.67	...	...	...
UPM1105-5825	2(1)	11 05 30.4	-58 25 19	14.44	...	11.60	13.95	12.88	11.57	/40	10.30	9.71	9.50	...	...	...
LTT04105	1	11 09 12.2	-04 36 25	11.76	10.13	8.55	...	...	...	...	8.20	7.60	7.33	...	...	...
LHS0299	1	11 11 22.7	-06 31 56	15.51	13.38	12.16	14.78	13.85	12.94	/40	11.92	11.37	11.14	...	...	...
LP792-044	3(1)	11 13 13.0	-19 06 23	15.98	13.97	12.11	15.05	13.92	12.43	/40	11.20	10.66	10.46	...	...	...
SCR1117-3202	1	11 17 29.3	-32 02 10	16.00	13.58	11.33	14.58	13.37	11.80	/40	10.34	9.76	9.48	...	...	...
SCR1118-3511	1	11 18 59.7	-35 11 39	17.17	14.90	12.81	15.93	14.56	12.83	/40	11.15	10.50	10.23	...	...	...
SCR1121-8057	1	11 21 27.9	-80 57 03	15.26	13.71	11.50	14.54	13.38	11.90	/40	10.48	9.84	9.60	...	...	...
GJ0429.2	1	11 28 00.5	-09 10 57	12.77	10.90	9.39	12.37	11.43	10.38	/40	9.29	8.74 ^a	8.49	...	...	...
SCR1132-8446	1	11 32 22.3	-84 46 28	17.64	15.87	13.94	16.27	15.12	13.58	/40	12.22	11.76	11.51	...	...	...
USN1137-0317	1	11 37 16.6	-03 17 37	16.41	14.24	12.02	15.65	14.27	12.50	/40	10.87	10.36	10.09	...	...	...
CE440-087	1	11 47 50.7	-28 49 45	...	...	...	16.21	14.98	13.38	/40	12.02	11.45	11.24	...	...	...
Ruiz440-064	1	11 48 50.6	-28 33 23	...	...	12.84	16.24	14.79	12.92	/40	11.13	10.64	10.35	...	...	...
SCR1153-5430	1	11 53 22.6	-54 30 08	15.39	13.16	11.01	14.30	13.39	11.61	/40	10.21	9.58	9.28	...	...	...
SCR1159-4256	1	11 59 37.7	-42 56 39	14.20	11.96	10.35	13.35	12.22	10.85	/40	9.54	8.98 ^a	8.72	...	...	...
LP907-063	1	12 03 03.9	-33 39 55	18.61	16.54	14.06	17.79	16.15	14.22	/40	12.39	11.83	11.50	...	...	...
LP908-010	1	12 03 28.1	-29 23 00	16.70	13.65	11.70	15.36	14.04	12.36	/40	10.74	10.13	9.81	...	...	...
SCR1204-4037	1	12 04 15.5	-40 37 53	14.70	12.61	10.72	13.47	12.34	10.92	/39	9.57	9.02	8.75	...	...	...
GJ2090	1	12 04 36.6	-38 16 25	12.96	10.71	9.56	...	...	...	...	8.60	7.99	7.73	...	...	...
WT1928	1	12 08 06.9	-32 06 36	15.61	13.77	12.05	14.04	12.96	11.62	/40	10.30	9.66	9.40	...	...	...
NLTT30217	1	12 17 06.8	-17 38 15	12.78	10.83	9.66	11.98	11.03	9.99	/23	8.86	8.23	8.03	...	...	...
LHS0323	1	12 17 30.2	-29 02 21	17.94	16.06	13.99	16.95	15.66	14.02	/16	12.54	12.05	11.78	...	...	...
LP470-065	2	12 17 46.8	-39 04 05	12.12J	9.98J	9.13J	...	...	...	...	8.55	7.87	7.70	...	...	...
SCR1217-3557	1	12 17 55.8	-35 57 15	15.05	13.06	11.02	13.94	12.78	11.35	/40	9.94	9.33	9.09	...	...	...
SCR1220-8302	1	12 20 03.7	-83 02 29	17.03	14.94	12.80	15.71	14.35	12.62	/39	10.97	10.39	10.07	...	...	...
LHS0326	1	12 24 26.8	-04 43 37	16.08	14.02	12.99	14.92	13.98	13.05	/40	11.93	11.43	11.23	...	...	...
SCR1224-8205	1	12 24 39.8	-82 05 53	16.42	14.37	12.22	15.25	13.96	12.27	/40	10.69	10.06	9.81	...	...	...
SCR1227-4039	1	12 27 03.9	-40 39 40	13.00	10.82	9.40	11.96	11.03	10.03	/40	8.93	8.27	8.08	...	...	...
LP909-006	1	12 30 19.6	-28 24 31	16.51	14.41	11.64	15.39	14.10	12.45	/40	10.85	10.27	9.96	...	...	...
LHS2573	1	12 32 32.2	-26 10 14	14.35	12.22	10.44	13.47	12.40	11.03	/40	9.75	9.23	9.02	...	...	...
LTT04828	1	12 39 55.9	-08 34 42	12.50	10.30	9.39	...	...	...	...	8.64	8.02	7.82	...	...	...
SCR1240-8116	1	12 40 56.0	-81 16 31	15.15	13.12	11.25	14.11	12.89	11.28	/39	9.73	9.16	8.89	...	...	...

LHS5231	1	12 59 18.2	-00 10 33	13.81	11.84	9.87	12.93	11.77	10.24	/40	8.79	8.23 ^a	7.92	...	...	...
WT1962	2	12 59 51.3	-07 30 35	16.29J	14.15J	12.38J	15.42J	14.23J	12.68J	/40	11.19J	10.68J	10.43J	...	...	...
L147-045	1	13 04 43.8	-62 15 26	13.08	11.10	10.07	...	...	...	...	8.48	7.85 ^a	7.61	...	...	...
LHS2698	1	13 13 29.6	-32 27 05	15.34	13.34	11.50	14.21	13.14	11.76	/26	10.48	9.96	9.70	...	...	...
LP910-061	1	13 16 21.9	-33 47 45	12.89	11.04	9.61	...	...	...	...	8.97	8.32	8.14	...	...	...
SCR1322-7254	1	13 22 27.5	-72 54 37	16.24	14.12	12.25	15.33	14.13	12.60	/40	11.14	10.55	10.31	...	...	...
SCR1328-7253	1	13 28 42.1	-72 53 47	17.91	15.97	13.78	16.90	15.64	13.99	/40	12.47	12.00	11.69	...	...	...
LHS2744	1	13 30 52.6	-32 37 49	12.39	10.73	9.24	...	...	...	...	8.81	8.15	8.00	...	...	...
SIP1338-3752	1	13 38 26.5	-37 52 50	17.72	15.76	13.14	16.75	15.25	13.39	/40	11.75	11.28	10.97	...	...	...
LTT05294	1	13 39 37.6	-01 35 43	12.65	9.83	9.66	...	...	...	...	8.76	8.12	7.88	...	...	...
SIP1343-3823	1	13 43 49.4	-38 23 50	17.12	14.95	12.59	15.78	14.48	12.84	/40	11.26	10.68	10.41	...	...	...
LTT05330	2(1)	13 44 55.1	-45 35 19	11.85	9.71	9.72	11.29	10.41	9.51	/40	8.47	7.86	7.66	...	...	...
SCR1347-7610	1	13 47 56.8	-76 10 20	12.40	10.27	8.88	11.49	10.57	9.66	/39	8.62	8.01	7.77	...	...	...
LP912-026	1	13 53 19.8	-30 46 38	13.20	11.14	9.85	...	...	...	...	8.90	8.26	8.05	...	...	...
LHS2841	1	14 00 57.0	-31 47 50	12.10	10.44	9.17	...	...	...	...	8.22	7.57 ^a	7.34	...	...	...
GJ0539.2	2(1)	14 09 27.2	-30 55 49	13.07	10.99	9.64	11.81	10.88	9.88	/2	8.79	8.12	7.90	...	...	...
SCR1410-2750	1	14 10 22.6	-27 50 59	17.04	14.83	12.63	15.43	14.11	12.46	/40	10.89	10.31	10.05	...	...	...
L836-121	3(2)	14 14 21.4	-15 21 22	10.58J	9.13J	7.63J	10.32J	9.49J	8.58J	/34	7.43J	6.78J	6.60J	...	...	...
LHS5275	1	14 39 58.8	-56 54 46	12.66	10.05	...	...	...	...	...	8.33	7.71	7.52	...	...	...
SCR1441-7338	1	14 41 14.4	-73 38 41	18.28	16.15	13.05	17.05	15.31	13.25	/39	11.20	10.61	10.27	...	...	...
SCR1450-3742	1	14 50 02.9	-37 42 10	14.82	12.40	10.44	14.01	12.84	11.32	/39	9.95	9.37	9.07	...	...	...
LHS0381	1	14 50 28.9	-08 38 37	16.53	14.36	13.18	15.10	14.11	13.07	/40	11.97	11.46	11.24	...	...	...
LHS0382	1	14 50 41.2	-16 56 31	16.40	14.27	12.30	15.73	14.61	13.17	/40	11.85	11.38	11.11	...	...	...
LHS0385	1	14 55 35.8	-15 33 44	15.47	13.39	12.23	14.61	13.67	12.78	/40	11.74	11.28	11.06	...	...	...
SCR1510-5141	1	15 10 56.6	-51 41 36	13.95	11.32	9.59	13.04	11.96	10.64	/40	9.39	8.84 ^a	8.58	...	...	...
UPM1515-6258	1	15 15 04.9	-62 58 06	16.90	16.13	14.79	15.74	14.60	13.13	/40	11.74	11.13	10.85	...	...	...
LP915-016	2	15 17 21.1	-27 59 50	11.83J	9.83J	9.18J	11.05J	10.17J	9.30J	/20	8.23J	7.60J	7.42J	...	...	...
UPM1523-5454	1	15 23 43.7	-54 54 35	...	...	...	13.45	12.37	11.08	/40	9.77	9.19	8.87	...	...	...
LP802-068	1	15 24 45.8	-17 07 39	12.53	10.75	9.24	...	...	...	...	8.41	7.73	7.53	...	...	...
SCR1528-3807	1	15 28 50.6	-38 07 41	13.74	11.96	10.63	12.27	11.34	10.34	/40	9.28	8.59	8.38	...	...	...
LEHPM2-0016	1	15 29 14.0	-29 07 38	20.38	18.43	15.48	19.38	17.52	15.28	/16	13.32	12.86	12.50	...	...	...
SCR1532-3622	1	15 32 13.9	-36 22 31	15.48	13.50	11.96	14.03	12.89	11.45	/39	10.10	9.54	9.28	...	...	...
LP916-023	1	15 44 05.5	-32 05 22	14.92	12.91	11.14	13.74	12.62	11.18	/23	9.81	9.21	8.94	...	...	...
L336-071	1	15 49 38.3	-47 36 34	11.94	9.85	8.93	11.16	10.24	9.35	/19	8.30	7.68 ^a	7.50	...	...	...
LP916-003	1	15 54 23.5	-33 08 44	13.61	11.62	10.34	12.02	11.07	10.02	/23	8.85	8.20	8.02	...	...	...
LP684-003	1	15 56 41.4	-04 14 21	12.41	10.35	9.40	...	...	...	...	8.68	8.09	7.83	...	...	...
LHS3144	1	16 00 27.8	-34 43 17	15.13	12.96	11.32	13.58	12.49	11.09	/25	9.75	9.26	8.98	...	...	...
LHS3147	1	16 02 23.6	-25 05 57	14.06	11.61	9.59	13.20	12.09	10.63	/26	9.28	8.69	8.41	...	...	...
SCR1608-4442	1	16 08 43.9	-44 42 29	16.59	14.95	12.94	15.40	14.12	12.46	/40	10.88	10.36	10.10	...	...	...
SCR1609-3730	1	16 09 05.4	-37 30 40	14.30	12.34	11.44	12.71	11.79	10.85	/40	9.81	9.19	8.99	...	...	...
LEP1610-0040	2	16 10 29.0	-00 40 54	21.22J	17.70J	14.90J	19.09J	17.10J	14.97J	/40	12.91J	12.30J	12.02J	...	...	...
GJ0618.1	1	16 20 24.8	-04 16 02	11.43	9.54	8.36	10.69	9.83	8.97	/2	7.95	7.27	7.08	...	...	...
LP745-070	1	16 33 41.6	-09 33 12	12.37	10.09	9.51	...	...	...	...	8.38	7.78 ^a	7.55	...	...	...
SCR1637-4703	1	16 37 56.6	-47 03 44	16.26	13.88	11.56	14.77	13.57	12.04	/39	10.60	10.04	9.70	...	...	...
2MA1651-2719	1	16 51 59.8	-27 19 51	...	...	...	15.38	14.17	12.56	/40	10.96	10.39	10.10	...	...	...
CCD1702-2718	2(1)	17 02 09.1	-27 18 24	13.22	11.48	10.00	11.82	10.94	10.07	/40	8.88	8.25	8.02	...	...	...
LP806-025	1	17 07 58.3	-19 28 43	15.89	14.07	12.48	12.98	11.92	10.63	/40	9.35	8.78	8.55	...	...	...
NLT744264	1	17 10 03.8	-21 46 56	15.69	13.64	12.30	12.65	11.65	10.52	/40	9.36	8.76	8.51	...	...	...
SCR1712-1907	1	17 12 26.1	-19 07 04	17.03	15.40	14.10	14.52	13.43	12.08	/40	10.72	10.16	9.90	...	...	...
SCR1716-2239	1	17 16 35.7	-22 39 49	16.49	14.75	13.38	14.80	13.63	12.12	/40	10.69	10.07	9.84	...	...	...
UPM1718-2245	2(1)	17 18 25.6	-22 46 29	16.14	14.79	13.29	14.07	13.01	11.69	/40	10.21	9.61	9.38	...	...	...
LHS0440	1	17 18 32.3	-43 26 38	13.55	10.68	10.04	12.98	11.98	10.87	/40	9.70	9.13	8.95	...	...	...
LP920-011	1	17 19 13.7	-27 45 44	15.76	13.82	13.50	13.81	12.71	11.36	/40	10.03	9.40	9.20	...	...	...
GJ1217	1	17 22 43.0	-14 57 37	11.92	9.81	9.17	10.93	10.08	9.26	/35	8.25	7.63	7.44	...	...	...
LP687-026	1	17 22 50.6	-03 29 38	14.92	13.77	12.54	13.81	12.75	11.48	/40	10.21	9.58	9.35	...	...	...
SCR1724-3727	1	17 24 07.0	-37 27 53	16.53	14.58	12.64	15.00	13.78	12.20	/40	10.69	10.13	9.80	...	...	...
SCR1733-2452	1	17 33 04.6	-24 52 57	15.64	14.40	14.36	14.04	13.02	11.84	/40	10.63	9.97	9.77	...	...	...
SCR1735-4051	1	17 35 15.5	-40 51 13	17.98	16.29	13.82	16.70	15.28	13.41	/40	11.61	11.04	10.70	...	...	...
LTT07022	1	17 39 28.3	-22 41 46	12.64	11.20	11.00	...	...	...	...	8.60	7.95	7.78	...	...	...
SCR1750-2530	1	17 50 07.6	-25 30 21	16.75	14.89	12.48	15.06	13.78	12.25	/40	10.65	9.95	9.68	...	...	...
SCR1750-0128	1	17 50 14.4	-01 28 51	15.43	13.93	12.21	14.56	13.38	11.84	/40	10.43	9.89	9.64	...	...	...
LHS0456	1	17 50 59.0	-56 36 07	12.95	10.91	9.93	12.08	11.12	10.09	/40	8.99	8.42	8.19	...	...	...
LP808-023	1	17 51 27.5	-18 59 32	13.43	11.46	11.15	...	...	...	...	8.87	8.22	8.06	...	...	...
SCR1753-7403	1	17 53 32.6	-74 03 46	16.28	14.04	11.80	15.05	13.76	12.09	/40	10.56	9.96	9.70	...	...	...
SCR1755-0455	1	17 55 30.7	-04 55 42	16.63	15.34	13.76	15.19	13.90	12.25	/40	10.70	10.08	9.78	...	...	...
SCR1800-0755	1	18 00 33.9	-07 55 03	14.71	13.56	12.08	13.36	12.30	10.99	/40	9.86	9.26	8.98	...	...	...

SCR1801-7000	1	18 01 28.9	-70 00 49	15.10	13.00	10.97	14.00	12.87	11.42	/40	10.01	9.41	9.16	...	...	...
SCR1802-1919	1	18 02 28.7	-19 19 19	16.14	14.51	13.76	14.18	13.13	11.85	/40	10.64	9.97	9.77	...	...	...
L077-206	1	18 06 55.6	-74 35 20	15.06	13.13	10.66	14.05	12.97	11.59	/40	10.18	9.69	9.45	...	...	...
LEHPM2-0088	1	18 08 00.0	-81 20 49	...	15.45	13.19	16.02	14.69	13.00	/40	11.36	10.79	10.52	...	...	...
SCR1808-0341	1	18 08 48.4	-03 41 54	16.74	16.07	15.40	15.37	14.32	13.01	/40	11.72	11.19	11.03	...	...	...
LTT07218	1	18 09 33.3	-12 02 20	11.80	10.10	9.21	...	...	...	...	7.80	7.16	6.99	...	...	...
LEP1809-0247	1	18 09 50.1	-02 47 43	17.68	17.03	15.84	16.25	14.87	13.04	/40	11.43	10.92	10.68	...	...	...
SCR1820-6225	1	18 20 49.4	-62 25 53	12.84	10.95	9.63	12.04	11.12	10.17	/39	9.14	8.49	8.30	...	...	...
GJ1226	2	18 20 57.2	-01 02 58	13.47J	12.10J	9.79J	13.07	11.98	10.56	/15	8.75J	8.19J	7.95J	...	...	...
SCR1821-0700	1	18 21 54.2	-07 00 18	13.93	12.57	12.34	12.70	11.76	10.71	/40	9.63	8.91	8.73	...	...	...
G155-020	2(1)	18 31 04.4	-09 58 09	15.07	13.72	12.30	13.98	12.85	11.40	/40	9.99	9.36	9.12	...	...	...
SCR1842-2736	1	18 42 56.7	-27 36 33	13.43	11.80	10.95	13.04	12.13	11.13	/40	10.02	9.36	9.18	...	...	...
SCR1844-1310	1	18 44 59.6	-13 10 24	16.13	14.84	13.75	14.52	13.42	12.04	/40	10.69	10.12	9.89	...	...	...
G155-041	1	18 47 36.0	-17 03 16	15.09	13.54	12.04	13.61	12.58	11.29	/25	10.04	9.46	9.23	...	...	...
LHS0468	1	18 48 44.9	-02 33 46	15.18	13.35	12.26	13.54	12.54	11.35	/40	10.16	9.65	9.42	...	...	...
SCR1851-6156	1	18 51 55.4	-61 56 56	14.09	12.10	10.30	13.19	12.12	10.78	/40	9.50	8.88	8.69	...	...	...
LHS3421	1	18 52 52.4	-57 07 37	13.09	11.26	9.65	...	...	...	...	8.52	7.84	7.59	...	...	...
SCR1853-7537	1	18 53 26.6	-75 37 40	12.20	9.85	9.09	11.18	10.29	9.41	/39	8.34	7.73	7.50	...	...	...
SCR1854-2859	1	18 54 20.8	-28 59 53	15.30	13.86	13.03	13.42	12.44	11.22	/40	10.01	9.42	9.20	...	...	...
SCR1900-2547	1	19 00 47.1	-25 47 13	15.25	13.26	11.50	14.15	12.99	11.54	/40	10.13	9.52	9.28	...	...	...
SCR1901-0737	1	19 01 32.4	-07 37 24	16.53	14.44	12.12	15.63	14.19	12.38	/40	10.57	10.00	9.70	...	...	...
SCR1901-3106	1	19 01 59.2	-31 06 45	13.97	11.90	10.93	14.19	12.99	11.54	/40	9.61	9.01	8.77	...	...	...
SCR1907-7924	1	19 07 53.5	-79 24 03	15.53	13.59	11.77	14.38	13.22	11.78	/40	10.36	9.82	9.56	...	...	...
SCR1916-3638	1	19 16 46.6	-36 38 06	18.20	15.88	14.78	16.83	15.82	14.76	/16	13.66	13.12	12.95	...	...	...
LP347-017	1	19 19 09.0	-45 47 59	12.32	10.19	9.28	...	...	...	...	8.52	7.83	7.64	...	...	...
LHS3451	2(1)	19 19 29.3	-18 19 06	15.34	12.84	11.45	14.77	13.71	12.35	/40	11.02	10.52	10.33	...	...	...
LEHPM2-3658	2(1)	19 22 43.7	-43 19 21	13.79	11.54	9.84	12.88	11.78	10.53	/40	9.28	8.70	8.46	...	...	...
L347-073	1	19 26 30.2	-48 36 16	14.04	11.80	9.90	13.06	11.96	10.63	/40	9.39	8.85 ^a	8.53	...	...	...
L347-072	1	19 27 30.9	-48 33 53	13.87	11.67	9.93	12.88	11.85	10.63	/40	9.43	8.87 ^a	8.62	...	...	...
L208-005	1	19 30 13.7	-54 56 19	12.24	9.93	9.43	...	...	...	...	8.65	8.04	7.87	...	...	...
SCR1932-0652	1	19 32 46.3	-06 52 18	14.92	13.27	11.50	13.97	12.83	11.34	/39	9.94	9.36	9.10	...	...	...
GJ0762	1	19 34 36.5	-62 50 39	13.18	11.32	9.88	12.09	11.07	9.83	/26	8.59	8.00 ^a	7.77	...	...	...
SCR1936-4816	1	19 36 33.3	-48 16 54	17.23	15.05	12.55	15.92	14.50	12.76	/40	11.05	10.47	10.18	...	...	...
LTT07786	3(1)	19 42 52.8	-45 04 53	10.68	8.73	7.59	...	...	...	...	7.30	6.66	6.45	...	...	...
LHS3480	1	19 44 22.0	-22 30 54	18.50	16.41	14.60	17.27	16.00	14.46	/40	13.05	12.53	12.25	...	...	...
LHS3492	1	19 51 31.3	-50 55 38	16.52	14.58	12.29	15.27	14.05	12.45	/40	10.97	10.49	10.19	...	...	...
GJ0769	1	19 54 00.1	-47 48 37	13.72	11.43	10.59	12.53	11.52	10.28	/2	9.08	8.54	8.29	...	...	...
SCR1954-7356	1	19 54 06.4	-73 56 51	16.85	14.89	12.96	15.78	14.64	13.17	/40	11.81	11.31	11.08	...	...	...
SCR1955-2856	1	19 55 16.8	-28 56 43	15.10	13.12	11.35	14.14	12.92	11.46	/40	10.04	9.48	9.22	...	...	...
SCR1959-5549	1	19 59 58.8	-55 49 30	16.19	13.95	11.82	14.85	13.59	11.98	/40	10.47	9.88	9.63	...	...	...
L277-205	1	20 03 52.4	-53 57 28	14.22	12.21	10.32	13.03	11.99	10.68	/40	9.42	8.77	8.59	...	...	...
L277-082	1	20 10 45.4	-51 19 39	13.43	11.35	10.34	12.56	11.65	10.73	/40	9.71	9.07	8.87	...	...	...
LHS3528	1	20 10 55.5	-25 35 09	15.97	13.99	11.20	13.11	12.06	10.76	/24	10.22	9.61	9.35	...	...	...
LP814-044	1	20 17 52.4	-17 17 09	11.84	10.15	7.99	...	...	...	...	8.37	7.69	7.55	...	...	...
LP815-001	1	20 20 07.1	-19 39 03	13.42	11.35	8.74	12.33	11.34	10.20	/24	9.01	8.44	8.21	...	...	...
SCR2025-1534	1	20 25 08.6	-15 34 16	13.33	11.23	9.29	12.70	11.62	10.25	/40	8.92	8.30	8.05	...	...	...
WT0708	1	20 27 04.4	-68 41 07	18.66	16.34	13.74	17.26	15.75	13.86	/40	11.99	11.38	11.13	...	...	...
LP567-063	1	20 34 31.1	-32 31 00	13.40	11.42	9.77	12.17	11.08	9.71	/40	8.37	7.74	7.51	...	...	...
LTT08147	1	20 36 43.6	-02 41 20	12.77	10.48	9.98	12.13	11.18	10.10	/38	8.93	8.28	8.10	...	...	...
SCR2042-5737	2	20 42 46.4	-57 37 15	15.07J	13.22J	11.56J	14.12J	12.89J	11.33J	/39	9.97J	9.53J	9.03J	...	...	...
SCR2043-6501	1	20 43 10.4	-65 01 17	16.18	14.04	12.04	14.97	13.88	12.52	/40	11.25	10.76	10.52	...	...	...
LHS3582	1	20 46 18.0	-47 09 28	12.23	10.17	8.89	...	...	...	...	8.72	8.14	7.90	...	...	...
2MA2051-2458	1	20 51 09.8	-24 58 18	15.71	13.47	11.62	14.51	13.26	11.70	/40	10.20	9.64	9.37	...	...	...
LHS3600	1	20 55 59.9	-59 56 44	13.17	11.55	9.99	...	...	...	...	8.44	7.78	7.60	...	...	...
LEHPM1-4008	1	20 58 30.4	-65 01 11	18.14	15.90	13.78	16.61	15.22	13.48	/40	11.80	11.21	10.89	...	...	...
LP816-061	1	20 59 06.6	-16 05 37	12.28	10.26	9.16	...	...	...	...	8.60	8.03	7.80	...	...	...
L211-096	1	20 59 51.3	-58 45 31	13.31	11.69	10.25	...	...	...	...	8.66	8.06	7.82	...	...	...
SCR2102-3128	2(1)	21 02 15.6	-31 28 13	14.17	12.17	10.27	13.26	12.19	10.86	/40	9.57	8.97	8.73	...	...	...
L163-023	1	21 02 25.0	-60 31 36	13.52	12.08	10.27	11.96	10.97	9.79	/40	8.64	7.92	7.71	...	...	...
LHS3615	1	21 03 21.7	-50 22 52	13.84	11.60	9.71	13.10	11.96	10.48	/40	9.11	8.46	8.19	...	...	...
LHS3620	1	21 04 25.4	-27 52 47	17.69	15.60	14.36	16.61	15.59	14.53	/16	13.41	12.89	12.70	...	...	...
LEHPM1-4021	1	21 05 11.4	-62 47 02	18.32	16.31	14.10	17.01	15.55	13.80	/40	12.17	11.64	11.36	...	...	...
SCR2105-3515	1	21 05 41.8	-35 15 00	15.06	12.93	10.88	14.03	12.87	11.41	/40	10.02	9.46	9.18	...	...	...
LHS0505	1	21 11 57.9	-31 03 16	22.25	15.33	...	16.25	14.93	13.20	/40	11.62	11.10	10.84	...	...	...
LEHPM1-4051	1	21 15 15.1	-75 41 52	15.47	13.37	11.13	14.48	13.25	11.66	/16	10.14	9.60	9.33	...	...	...
LP637-024	1	21 19 18.3	-00 33 19	12.22	10.18	9.03	...	...	...	...	8.72	8.06	7.87	...	...	...

GJ0836.4	1	21 42 07.5	-12 09 48	13.32	11.32	9.48	12.83	11.74	10.35	/2	8.92	8.30	8.02	...	...	...
L048-001	1	21 42 58.5	-74 05 56	14.24	12.20	10.59	13.06	12.02	10.74	/39	9.46	8.78	8.58	...	...	...
CD-32 16735	1	21 47 02.7	-32 24 40	10.27	7.74	6.46	9.22	8.11	6.70	/40	5.24	4.41 ^a	4.06	...	...	...
L282-061	1	21 51 12.3	-52 15 40	12.14	10.23	8.94	11.36	10.47	9.62	/19	8.61	8.00	7.82	...	...	...
LHS0515	1	21 55 48.0	-11 21 43	18.89	16.39	15.10	17.39	16.20	14.87	/40	13.64	13.19	12.91	...	...	...
LHS3740	1	21 58 53.2	-57 56 04	15.13	13.09	10.90	14.06	12.88	11.33	/16	9.85	9.27	9.00	...	...	...
LHS3754	1	22 04 40.9	-19 46 42	15.15	10.77	10.32	14.28	13.21	11.93	/40	10.54	10.15	9.85	...	...	...
LHS3775	1	22 12 56.0	-18 15 21	15.69	13.53	11.90	14.55	13.59	12.45	/40	11.29	10.77	10.52	...	...	...
LP699-075	1	22 18 13.2	-03 10 20	11.86	10.08	8.95	...	...	...	...	8.34	7.73	7.52	...	...	...
LEHPM1-4592	1	22 21 11.4	-19 58 15	21.09	18.84	16.07	19.96	18.16	15.98	/40	14.19	13.74	13.48	...	...	...
WT0918	1	22 21 37.0	-65 47 30	17.54	15.19	12.82	16.27	15.02	13.32	/40	11.66	11.07	10.75	...	...	...
LP931-054	1	22 23 18.0	-27 09 15	16.26	14.17	11.78	14.65	13.44	11.86	/24	10.36	9.79	9.51	...	...	...
SCR2224-7242	1	22 24 51.6	-72 42 00	15.80	13.80	11.79	14.80	13.56	11.99	/40	10.46	9.87	9.57	...	...	...
LEHPM1-4828	1	22 32 42.7	-60 16 34	16.92	14.86	12.95	15.55	14.31	12.74	/40	11.25	10.70	10.45	...	...	...
LHS3836	1	22 38 02.9	-65 50 09	15.13	13.09	11.07	14.34	13.14	11.61	/26	10.18	9.67	9.41	...	...	...
LP932-053	1	22 39 44.0	-32 04 18	11.84	9.73	9.01	...	...	...	...	8.34	7.68	7.52	...	...	...
SCR2241-6119	2(1)	22 41 44.4	-61 19 31	15.64	13.65	11.70	14.41	13.21	11.66	/39	10.21	9.61	9.35	...	...	...
SCR2242-5103	2	22 42 10.9	-51 03 28	12.78J	10.98J	9.44J	12.27J	11.33J	10.20J	/40	9.20J	8.66J	8.36J	...	...	...
LHS3846	1	22 44 00.2	-04 57 57	16.00	13.61	11.45	15.19	14.08	12.70	/40	11.40	10.89	10.63	...	...	...
L106-104	1	22 46 45.2	-63 18 05	12.14	10.33	8.84	11.41	10.46	9.41	/19	8.29	7.71	7.45	...	...	...
LTT09210	1	22 48 53.0	-28 50 03	11.44	9.35	8.47	10.67	9.81	8.96	/40	7.90	7.28	7.08	...	...	...
LTT09203	1	22 48 54.5	-54 18 52	12.67	10.36	9.52	11.24	10.33	9.43	/19	8.36	7.70	7.55	...	...	...
L214-072	1	22 49 26.0	-58 15 12	11.98	9.96	8.91	...	...	...	...	8.28	7.63 ^a	7.46	...	...	...
SCR2250-5726	2(1)	22 50 45.0	-57 26 02	18.07J	16.10J	13.80J	17.76	16.34	14.54	/40	12.63J	12.00J	11.81J	...	...	...
LP933-024	2	22 55 43.9	-30 22 39	12.66J	10.16J	9.24J	...	...	...	...	8.56	7.90	7.71	...	...	...
LHS5396	1	23 00 23.6	-31 07 12	12.27	9.51	8.72	11.07	10.15	9.20	/19	8.13	7.48	7.25	...	...	...
L286-071	1	23 00 26.1	-53 13 40	11.93	10.08	9.19	...	...	...	...	8.35	7.78	7.61	...	...	...
SCR2312-3124	1	23 12 08.7	-31 24 04	17.18	14.88	12.56	15.69	14.43	12.74	/40	11.13	10.53	10.26	...	...	...
LHS5397	1	23 14 15.4	-56 50 52	13.29	11.29	9.81	...	...	...	...	8.87	8.22	8.01	...	...	...
L168-009	1	23 20 07.5	-60 03 55	11.61	9.63	8.06	11.01	10.07	9.06	/19	7.94	7.32 ^a	7.08	...	...	...
LTT09507	1	23 21 11.3	-01 35 45	12.76	10.77	9.33	...	...	...	...	8.70	8.13	7.82	...	...	...
GJ0895.1	1	23 25 42.0	-45 36 35	12.02	9.63	8.82	11.26	10.32	9.34	/19	8.23	7.59	7.37	...	...	...
SCR2325-8057	1	23 25 52.9	-80 57 41	16.22	13.03	11.84	15.28	14.05	12.42	/40	10.85	10.26	9.98	...	...	...
L288-049	1	23 41 43.6	-51 56 37	12.79	10.30	9.20	...	...	...	...	8.63	8.00	7.79	...	...	...
LEHPM1-6094	1	23 42 02.3	-78 41 23	16.09	13.81	11.67	15.02	13.79	12.29	/40	10.89	10.36	10.06	...	...	...
WT1026	1	23 46 35.2	-52 47 02	15.82	13.64	12.18	14.78	13.76	12.59	/40	11.42	10.89	10.68	...	...	...
LP1035-064	1	23 47 56.5	-39 11 13	15.73	13.61	11.54	14.42	13.24	11.70	/40	10.19	9.58	9.32	...	...	...
LHS4025	1	23 50 52.6	-39 05 17	15.93	13.47	11.43	14.44	13.19	11.64	/40	10.16	9.59	9.31	...	...	...
SCR2352-6124	1	23 52 29.5	-61 24 23	17.10	14.73	12.63	15.65	14.45	12.93	/40	11.52	11.02	10.82	...	...	...
L361-021	1	23 57 45.6	-45 48 55	12.11	10.00	8.81	11.13	10.25	9.38	/19	8.36	7.71	7.52	...	...	...

^a2MASS magnitude error greater than 0.05 mags.

A 'J' next to a photometry value indicates that the magnitude is blended due to one or more close companions.

References: (1) this work; (2) Bessel (1990); (3) Bessell (1991); (4) Costa & Méndez (2003); (5) Costa et al. (2005); (6) Costa et al. (2006); (7) Dahn et al. (1982); (8) Dahn et al. (2002); (9) Dieterich et al. (2014); (10) Harrington & Dahn (1980); (11) Harrington et al. (1993); (12) Henry et al. (2004); (13) Henry et al. (2006); (14) Høg et al. (2000); (15) Jao et al. (2005); (16) Jao et al. (2011); (17) Jao et al. (2014); (18) Kilkenney et al. (2007); (19) Koen et al. (2002); (20) Koen et al. (2010); (21) Lépine et al. (2009); (22) Patterson et al. (1998); (23) Reid et al. (2002); (24) Reid et al. (2003b); (25) Reid et al. (2004); (26) Riedel et al. (2010); (27) Riedel et al. (2014); (28) Weis & Uppgren (1982); (29) Weis (1984); (30) Weis (1986); (31) Weis (1987); (32) Weis (1988); (33) Weis (1991a); (34) Weis (1991b); (35) Weis (1993); (36) Weis (1994); (37) Weis (1996); (38) Weis (1999); (39) Winters et al. (2011); (40) Winters et al. (2015).

APPENDIX B

ASTROMETRY DATA

This appendix provides the astrometry data for the M dwarf primaries with trigonometric parallaxes presented in this thesis, including the names of the M dwarf, the number of known components in each system, coordinates (J2000.0), proper motion magnitudes and position angles with references, the weighted means of the published trigonometric parallaxes and the errors, the number of parallaxes included in the weighted mean and references, and an asterisk indicating if the object is included in the multiplicity sample. The table is divided into the 1180 systems within 25 pc (top) and the 162 systems beyond 25 pc (bottom). All proper motions are from SuperCOSMOS, except where noted. Proper motions with the reference ‘RECONS (in prep)’ indicate SuperCOSMOS proper motions that will be published in the RECONS 25 Parsec Database, and parallaxes with that same reference indicate that they will be published in a future paper by a member of the RECONS team.

Table B.1: Astrometry Data

Name	# obj	RA	DEC	μ ($''/\text{yr}^{-1}$)	P.A. (deg)	ref	π (mas)	σ_π (mas)	# π	ref	Mult
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
Within 25 pc											
GJ1001	3	00 04 36.5	−40 44 03	1.636	159.7	70	79.87	3.75	2	25,66	*
GJ0001	1	00 05 24.4	−37 21 27	6.106	112.5	27	230.32	0.90	2	66,67	*
LHS1019	1	00 06 19.2	−65 50 26	0.564	158.7	70	59.85	2.64	1	67	*
GJ1002	1	00 06 43.2	−07 32 17	2.041	204.0	37	213.00	3.60	1	66	*
GJ1003	1	00 07 26.7	+29 14 33	1.890	127.0	36	53.50	2.50	1	66	*
LHS1022	1	00 07 59.1	+08 00 19	0.546	222.0	36	44.00	6.30	1	66	*
L217-028	1	00 08 17.4	−57 05 53	0.370	264.0	38	75.17	2.11	1	1	*
HIP000687	1	00 08 27.2	+17 25 27	0.110	233.8	27	45.98	1.93	1	67	*
G131-026	2	00 08 54.0	+20 50 18	0.251	194.4	51	54.13	1.35	1	51	*
GJ0007	1	00 09 04.3	−27 07 20	0.715	079.7	70	43.61	2.56	2	66,67	*
LEHPM1-0255	1	00 09 45.1	−42 01 40	0.271	096.7	70	53.26	1.51	1	1	*
LSPM0011+5908	1	00 11 32.0	+59 08 40	1.482	218.1	33	108.34	0.49	2	33,23	*
GJ0011	2	00 13 15.8	+69 19 36	0.774	112.2	27	47.51	3.90	2	66,67	*
LTT17095	2	00 13 38.7	+80 39 56	0.314	053.8	27	51.05	1.75	1	67	*
GJ1005	2	00 15 28.1	−16 08 02	0.842	132.4	58	168.42	0.89	4	26,58,59,66	*
GJ0012	1	00 15 49.0	+13 33 22	0.687	064.1	47	86.42	2.03	3	66,49,58	*
2MA0015-1636	2	00 15 58.1	−16 36 57	0.120	276.9	47	55.70	1.30	1	56	*
L290-072	2	00 16 02.0	−48 15 39	0.244	190.9	70	43.89	4.39	1	67	*
GJ1006	2	00 16 14.6	+19 51 37	1.043	136.2	27	66.03	1.59	2	66,67	*

L218-009	1	00 16 36.6	-50 16 09	0.432	052.2	70	45.04	3.36	1	67	*
GJ1007	1	00 16 56.3	+05 07 27	0.633	189.0	47	56.90	3.70	1	66	*
LHS1054	1	00 17 20.3	+29 10 58	0.808	061.5	47	43.82	2.26	2	66,67	*
GJ0016	1	00 18 16.5	+10 12 10	0.031	173.0	27	60.44	2.09	2	66,67	*
GJ0015	2	00 18 23.0	+44 01 24	2.916	081.9	27	279.87	0.60	3	66,67,22	*
GJ2003	1	00 20 08.3	-17 03 41	0.136	094.0	27	43.11	3.75	1	67	*
LHS0112	1	00 20 29.4	+33 05 06	1.363	129.0	36	79.30	3.70	1	66	*
GJ0017.1	1	00 21 19.6	-45 44 47	0.854	179.8	70	57.76	1.92	2	66,67	*
LHS5004a	1	00 21 37.3	-46 05 33	0.442	218.1	70	51.80	4.40	1	67	*
GJ1009	1	00 21 56.1	-31 24 22	0.223	165.9	70	55.62	2.32	1	67	*
LHS1064	1	00 23 18.5	-50 53 38	0.570	090.6	70	49.95	2.71	2	66,67	*
GJ1011	1	00 23 27.1	+24 18 20	0.259	298.0	36	61.00	4.10	1	66	*
GJ1010	2	00 23 28.8	+77 11 21	0.839	273.1	27	55.80	2.59	2	66,19	*
NLTT01261	1	00 24 24.9	-01 58 28	0.158	329.5	47	86.60	4.00	1	64	*
LHS1068	1	00 24 38.4	+30 02 19	0.600	089.1	47	52.80	4.40	1	66	*
GJ2005	3	00 24 44.2	-27 08 24	0.654	348.3	9	129.71	2.43	2	9,66	*
GJ0021	1	00 26 52.7	+70 08 32	0.199	223.3	27	60.55	1.34	2	66,67	*
G217-051	1	00 27 04.0	+49 41 04	0.477	123.0	36	46.90	3.10	1	66	*
LP349-025	2	00 27 56.0	+22 19 33	0.427	111.8	47	69.70	0.70	3	23,16,1	*
GJ1012	1	00 28 39.5	-06 39 49	0.865	203.0	36	75.40	5.10	1	66	*
GJ1013	1	00 31 35.4	-05 52 13	1.098	163.0	37	62.30	4.20	1	66	*
GJ0022	3	00 32 29.4	+67 14 08	1.759	098.1	27	98.09	1.56	2	66,59	*
GR*0050	3	00 32 53.2	-04 34 07	0.186	155.4	70	56.17	1.45	1	1	*
LHS1101	1	00 34 44.1	+71 11 31	0.609	126.4	47	50.70	3.10	1	66	*
LHS1104	2	00 35 52.8	+52 41 45	0.789	102.0	36	41.69	2.14	2	66,58	*
GJ1014	1	00 36 00.4	+10 28 08	1.178	111.7	47	63.60	4.50	1	66	*
G172-013	1	00 36 06.7	+45 30 49	0.298	242.0	36	43.90	9.80	1	66	*
GJ0026	1	00 38 59.0	+30 36 59	1.557	088.8	27	80.10	3.90	1	66	*
GJ0027.1	1	00 39 58.8	-44 15 12	0.535	114.6	27	40.99	2.70	2	66,67	*
GJ1016	1	00 41 30.5	-33 37 32	0.452	234.8	70	51.21	2.23	1	67	*
LHS1134	1	00 43 26.0	-41 17 34	0.738	217.1	70	95.49	2.11	1	1	*
GJ1019	1	00 43 35.6	+28 26 41	1.077	188.1	47	51.80	4.00	1	66	*
LHS1140	1	00 44 59.3	-15 16 18	0.625	153.0	70	80.18	2.76	1	1	*
LTT00453	1	00 48 13.4	-05 08 08	0.218	125.8	70	42.07	3.76	1	67	*
LTT00464	1	00 49 01.7	-50 08 42	0.340	133.2	70	46.32	2.08	1	67	*
GJ1022	1	00 49 29.1	-61 02 33	1.143	093.5	70	48.62	1.39	1	30	*
LTT10301	2	00 50 33.2	+24 49 00	0.203	101.9	27	84.42	4.65	1	67	*
RG0050-2722	1	00 52 54.6	-27 05 56	0.098	026.0	66	41.00	4.00	1	66	*
GJ1024	1	00 56 38.4	+17 27 35	0.728	114.0	36	56.40	4.10	1	66	*
LTT00534	1	00 56 50.4	-11 35 20	0.324	223.4	70	40.37	2.81	1	67	*
L087-002	1	00 57 12.5	-64 15 24	0.391	066.6	70	56.25	1.38	1	1	*
GJ0046	1	00 58 27.9	-27 51 25	1.339	105.0	70	80.75	3.13	2	66,67	*
GJ1025	1	01 00 56.1	-04 26 57	1.350	069.0	70	87.70	2.38	1	29	*
GJ0047	1	01 01 20.0	+61 21 57	0.840	158.0	36	90.90	4.40	1	66	*
GJ0048	1	01 02 32.2	+71 40 47	1.785	102.3	27	121.07	1.20	2	66,67	*
GJ0049	2	01 02 38.8	+62 20 42	0.736	083.1	27	100.59	1.44	3	66,66,67	*
LHS0132	1	01 02 51.1	-37 37 44	1.493	082.2	70	81.95	2.73	1	9	*
GJ1026	2	01 03 14.1	+20 05 52	0.671	086.5	27	61.14	3.03	2	66,67	*
L087-010	1	01 04 07.0	-65 22 27	0.343	239.1	70	83.80	1.25	1	1	*
GJ1028	1	01 04 53.8	-18 07 29	1.342	071.0	37	99.80	5.00	1	66	*
GJ1029	1	01 05 37.6	+28 29 34	1.906	095.0	36	79.30	3.00	1	66	*
GJ1030	1	01 06 41.5	+15 16 22	0.277	203.8	27	45.87	2.25	2	66,67	*
GJ0052.2	1	01 07 49.6	+34 12 54	1.483	069.3	47	45.10	3.20	1	66	*
SSS0109-5101	1	01 09 01.5	-51 00 50	0.224	067.3	70	64.35	1.53	1	47	*
GJ1032	1	01 09 12.5	-24 41 21	0.301	090.4	70	44.29	3.02	1	67	*
LP647-013	1	01 09 51.2	-03 43 26	0.376	086.6	70	104.23	2.29	1	9	*
LP707-016	1	01 10 17.5	-11 51 18	0.236	119.0	37	53.94	1.47	1	1	*
GJ0054	2	01 10 22.9	-67 26 42	0.697	033.7	27	128.24	1.93	3	25,66,67	*
LP467-016	2	01 11 25.4	+15 26 21	0.223	122.7	51	45.79	1.78	1	51	*
SCR0111-4908	1	01 11 47.5	-49 08 09	0.542	213.1	70	54.26	1.39	1	1	*
LHS1212	2	01 11 57.0	+04 54 50	0.623	146.0	36	62.80	1.80	1	66	*
GJ0054.1	1	01 12 30.7	-16 59 56	1.386	063.6	70	269.08	2.99	2	66,67	*
LEHPM1-1343	1	01 13 16.4	-54 29 14	0.369	070.2	70	60.45	1.10	1	1	*
L221-060	1	01 14 34.2	-53 56 32	0.340	020.0	70	60.38	1.81	1	67	*

GJ1034	1	01 16 29.2	+24 19 27	1.822	112.9	47	48.10	4.50	1	66	*
GJ1036	1	01 17 15.4	-35 42 57	0.197	152.7	70	61.68	3.43	1	67	*
L797-030	1	01 17 15.7	-13 15 48	0.368	086.9	27	42.78	2.55	1	67	*
GJ0056.1	1	01 18 16.0	-12 53 59	0.722	165.5	70	45.28	3.27	2	66,67	*
GJ1035	1	01 19 52.2	+84 09 33	1.081	295.0	36	71.60	2.70	1	66	*
GJ0057	1	01 21 34.6	-41 39 23	1.279	112.5	70	59.90	1.53	2	66,67	*
HIP006365	1	01 21 45.3	-46 42 51	0.134	231.9	27	44.71	2.57	1	67	*
LTT00755	1	01 22 23.1	-33 12 51	0.470	130.7	70	40.66	1.85	1	67	
LHS1240	2	01 22 43.2	+00 31 07	0.567	202.0	36	69.40	4.00	1	66	*
SCR0128-1458	1	01 28 39.5	-14 58 04	0.075	224.6	47	73.24	1.41	1	47	*
LHS0142	1	01 32 26.2	-21 54 19	1.050	212.2	70	55.18	1.88	2	66,67	*
LHS1268	1	01 37 20.8	-49 11 44	0.509	076.7	27	44.38	1.49	2	66,67	
LHS1272	1	01 38 29.9	+00 39 05	0.538	072.5	27	49.44	3.00	1	67	*
GJ0065	2	01 39 01.5	-17 57 02	3.368	080.4	35	373.70	2.70	1	66	*
LP991-084	1	01 39 21.7	-39 36 09	0.283	146.1	70	115.90	1.33	1	47	*
LHS1288	1	01 42 55.7	-42 12 12	0.663	102.2	27	42.56	2.33	2	66,67	*
GJ0070	1	01 43 20.1	+04 19 18	0.875	209.0	27	87.35	1.86	2	66,67	*
SCR0143-0602	1	01 43 45.1	-06 02 40	0.047	104.5	47	50.52	1.49	1	47	*
GJ0073	1	01 44 58.5	+16 20 39	0.815	240.0	36	61.00	3.70	1	66	*
L294-092	1	01 47 42.6	-48 36 06	0.371	141.5	70	74.42	1.62	1	1	*
L1303-013	1	01 48 03.9	+21 12 24	0.402	122.0	27	49.06	3.36	1	67	*
2MA0149+2956	1	01 49 09.0	+29 56 13	0.409	155.4	47	44.40	0.70	1	11	*
LHS1302	1	01 51 04.1	-06 07 05	0.609	118.6	70	100.78	1.89	1	25	*
GJ0078	1	01 51 48.7	-10 48 13	0.782	133.4	27	61.59	2.80	2	66,67	*
GJ0079	1	01 52 49.2	-22 26 06	0.845	090.0	27	90.77	1.15	2	66,67	
LHS5045	1	01 52 51.6	-48 05 41	0.565	247.5	70	74.96	1.68	1	1	*
L088-043	1	01 53 37.1	-66 53 34	0.417	065.0	70	75.44	3.51	1	1	*
GJ1041	3	01 59 12.4	+03 31 09	0.256	083.7	27	41.34	1.29	3	56,56,67	*
GJ0082	1	01 59 23.5	+58 31 16	0.383	119.8	47	81.69	3.41	2	66,67	*
GJ0083.1	1	02 00 13.0	+13 03 07	2.097	148.0	36	224.80	2.90	1	66	*
L173-019	1	02 00 38.3	-55 58 04	0.125	122.8	47	121.93	2.71	1	47	*
LP030-055	2	02 01 54.0	+73 32 32	0.319	104	36	87.46	0.56	1	23	*
LHS1326	1	02 02 13.8	+10 20 11	0.746	248.8	47	112.00	3.20	1	66	*
GJ0084	2	02 05 04.9	-17 36 53	1.315	097.4	27	109.59	1.87	2	66,67	*
GJ0084.1	3	02 05 23.7	-28 04 11	0.572	037.5	70	43.24	2.06	2	66,67	*
LHS1339	1	02 05 48.6	-30 10 36	0.500	282.1	70	107.81	2.92	1	67	*
GJ0084.2	1	02 06 57.2	+45 11 04	0.519	150.1	27	51.33	3.40	2	66,67	*
GJ0085	1	02 07 23.3	-66 34 12	1.800	078.0	36	86.15	1.83	1	47	*
LHS1347	1	02 09 36.1	-14 21 33	0.610	127.7	70	50.89	2.47	2	66,67	*
LTT01133	3	02 11 02.2	-35 40 14	0.263	218.7	27	48.21	2.89	1	67	*
LHS1351	1	02 11 18.0	-63 13 41	0.765	243.2	49	71.53	1.64	1	49	*
GJ0087	1	02 12 20.9	+03 34 32	1.776	262.8	27	95.92	1.38	2	66,67	*
LHS1358	1	02 12 54.0	+00 00 16	0.508	087.2	47	65.27	2.07	1	49	*
GJ0091	1	02 13 53.6	-32 02 29	0.911	122.5	70	80.04	1.68	2	66,67	*
LHS1363	1	02 14 12.6	-03 57 44	0.504	105.0	70	82.13	1.14	1	47	*
GJ1045	1	02 14 59.4	+17 25 09	0.594	145.2	47	48.80	3.40	1	66	*
LHS1375	1	02 16 31.5	+13 35 37	0.665	130.3	47	117.70	4.00	1	66	*
LHS1377	2	02 16 41.2	-30 59 18	0.724	069.9	70	69.81	3.10	1	67	*
LHS1378	1	02 17 12.9	+35 26 19	0.600	115.6	47	96.40	1.10	1	66	*
WT0084	1	02 17 28.5	-59 22 44	0.537	202.2	70	76.61	3.02	1	9	*
GJ0093	1	02 17 34.2	-53 59 20	0.621	050.5	70	44.43	2.50	2	66,67	*
GJ0094	1	02 18 59.4	+35 21 00	0.792	122.0	36	56.40	8.10	1	66	*
GJ1046	2	02 19 10.1	-36 46 41	1.497	068.5	35	71.06	3.23	1	67	*
GJ1047	3	02 21 04.7	+36 53 02	0.919	128.0	36	46.20	3.60	1	66	*
GJ0096	1	02 22 14.6	+47 52 48	0.220	079.8	27	84.10	1.07	2	66,67	*
L513-008	1	02 27 30.4	-30 54 36	0.431	099.1	70	48.50	1.96	1	67	*
LHS1407	1	02 28 05.5	+03 10 05	0.816	180.9	47	43.30	5.20	1	66	*
GJ0101	1	02 31 27.7	+57 22 43	1.042	088.0	36	52.65	1.63	2	66,32	*
GJ0102	1	02 33 37.2	+24 55 38	0.687	177.0	36	102.40	2.70	1	66	*
L225-057	2	02 34 21.2	-53 05 37	0.425	141.4	70	50.94	1.83	1	1	*
GJ0103	2	02 34 22.6	-43 47 47	0.300	157.7	70	86.18	0.78	2	66,67	
GJ0104	1	02 35 53.3	+20 13 11	0.288	119.9	27	73.21	1.78	2	66,67	*
APM0237-5928	1	02 36 32.5	-59 28 06	0.731	054.8	70	103.72	1.12	1	25	*
LHS1426	1	02 37 32.1	+00 21 12	0.562	108.9	47	40.20	4.30	1	66	*

L174-028	1	02 37 52.8	-58 45 11	0.216	022.0	70	66.62	3.37	1	67	*
LTT17400	1	02 39 17.35	+07 28 17	0.527	106.7	47	51.50	3.00	1	56	*
GJ1050	1	02 39 50.7	-34 07 58	1.737	162.5	29	93.74	4.44	1	29	*
G075-035	1	02 41 15.1	-04 32 18	0.353	097.6	70	84.71	1.38	1	47	*
GJ1051	1	02 43 53.2	-08 49 46	0.973	140.3	70	40.29	3.90	2	66,67	*
GJ0109	1	02 44 15.5	+25 31 24	0.935	112.7	27	131.67	1.87	2	66,44	*
LP993-115	3	02 45 14.3	-43 44 11	0.433	168.4	70	87.37 ^a	1.33	2	51,51	*
LTT17413	2	02 45 39.6	+44 56 55	0.427	107.1	27	43.32	2.33	1	67	*
SCR0246-7024	1	02 46 02.3	-70 24 06	0.259	113.3	70	80.18	1.27	1	1	*
LHS0017	1	02 46 14.9	-04 59 21	2.524	138.1	35	60.30	8.20	1	66	*
LHS1443	1	02 46 34.7	+16 25 10	0.970	231.2	47	68.50	3.50	1	66	*
LTT01349	1	02 46 42.9	-23 05 12	0.300	069.4	70	43.45	1.72	1	67	*
LP771-021	1	02 48 41.0	-16 51 22	0.272	192.1	70	61.60	5.40	1	65	*
GJ0114.1	1	02 50 09.8	-53 08 20	0.521	348.9	70	76.34	1.62	2	66,67	*
GJ0118	1	02 52 22.2	-63 40 48	1.166	057.1	67	85.79	1.97	2	66,67	*
SO0253+1652	1	02 53 00.0	+16 52 52	5.107	138.2	25	259.41	0.89	3	25,62,23	*
GJ0119	2	02 56 34.4	+55 26 14	0.859	121.9	27	48.13	2.85	4	66,67,67,58	*
GJ0120	1	02 57 31.0	+10 47 25	1.821	103.0	36	50.00	5.80	1	66	*
LTT01445	3	03 01 51.0	-16 35 31	0.503	238.3	70	143.81 ^a	2.49	3	25,25,67	*
LHS1490	1	03 02 06.4	-39 50 52	0.859	221.3	70	71.51	2.60	1	47	*
GJ0121.1	1	03 02 38.1	-18 09 59	0.446	068.9	70	51.83	3.87	2	66,67	*
LHS1491	1	03 04 04.5	-20 22 43	0.703	138.9	70	67.28	1.25	1	49	*
LEHPM1-3070	1	03 06 11.6	-36 47 53	0.690	196.0	15	76.46	1.42	1	15	*
GJ1054	3	03 07 55.8	-28 13 11	0.342	249.8	70	55.50	2.50	1	17	*
LHS1499	1	03 08 28.2	+43 01 40	0.558	140.0	36	40.80	5.60	1	66	*
GJ1055	1	03 09 00.2	+10 01 26	0.646	153.0	36	83.90	4.00	1	66	*
GJ0125	2	03 09 30.7	+45 43 57	0.543	230.6	27	63.82	1.91	2	66,67	*
LHS1512	1	03 10 15.4	+05 54 31	0.575	192.6	27	59.12	4.68	1	67	*
GJ1053	1	03 10 58.3	+73 46 20	2.124	121.6	47	83.30	3.40	1	66	*
GJ0130	1	03 12 29.8	-38 05 20	1.460	060.1	70	79.60	9.70	1	66	*
GJ1057	1	03 13 22.9	+04 46 29	1.706	086.0	36	117.10	3.50	1	66	*
LP831-045	2	03 14 18.2	-23 09 30	0.397	062.4	70	64.01	1.36	1	1	*
LTT11051	1	03 14 47.7	+48 30 51	0.377	159.8	27	50.20	9.40	1	66	*
GJ0130.1	3	03 16 13.8	+58 10 02	0.561	127.4	27	67.67	2.90	2	66,67	*
LP831-068	1	03 16 47.8	-21 25 26	0.295	061.0	70	53.46	2.35	1	1	*
LTT17492	2	03 17 12.2	+45 22 22	0.276	247.3	47	54.40	1.00	1	45	*
LHS1525	1	03 17 45.2	+25 15 06	0.865	114.9	27	46.29	2.98	1	67	*
LP887-070	1	03 18 04.0	-30 24 12	0.342	208.3	70	43.49	2.55	1	67	*
GJ0134	1	03 18 07.5	+38 15 07	0.720	142.6	27	61.30	1.85	2	66,67	*
LTT01577	1	03 18 58.3	-36 23 35	0.198	229.9	70	49.59	3.15	1	67	*
2MA0320-0446	2	03 20 28.4	-04 46 37	0.678	190.6	13	49.22	2.88	1	47	*
LP412-031	1	03 20 59.0	+18 54 22	0.427	125.6	47	68.80	0.59	2	9,11	*
GJ0133	1	03 21 21.7	+79 58 02	0.499	055.2	67	71.58	1.50	2	66,67	*
GJ1058	1	03 22 05.5	+02 55 46	0.803	156.0	36	59.10	5.10	1	66	*
GJ1059	1	03 23 04.8	+41 59 53	0.719	143.0	36	65.10	3.40	1	66	*
LTT11117	1	03 23 20.6	+11 41 11	0.275	241.0	36	54.70	2.40	1	66	*
GJ0140	3	03 24 06.4	+23 47 06	0.251	121.6	27	51.31	4.66	1	67	*
LTT01628	1	03 25 39.7	-42 59 12	0.355	113.4	70	42.92	2.11	1	67	*
LP532-081	3	03 25 41.7	+05 51 54	0.253	226.2	47	43.40	3.50	1	66	*
GJ0143.1	1	03 29 19.8	-11 40 42	0.329	169.2	70	45.38	1.96	2	66,67	*
LSPM0330+5413	1	03 30 49.0	+54 13 55	0.158	268.8	47	103.80	1.40	1	34	*
LP888-018	1	03 31 30.3	-30 42 39	0.406	174.0	70	80.32	1.07	1	47	*
GJ0143.3	1	03 31 47.1	+14 19 17	0.676	176.8	27	50.12	2.79	2	66,67	*
GJ0145	1	03 32 55.8	-44 42 07	0.335	293.7	70	92.93	1.92	2	66,67	*
LEHPM1-3396	1	03 34 12.2	-49 53 32	2.448	077.6	70	120.60	3.60	1	18	*
LHS0176	1	03 35 38.6	-08 29 23	1.550	101.9	30	77.77	1.30	1	30	*
GJ1061	1	03 35 59.7	-44 30 45	0.802	114.4	70	272.01	1.30	2	25,24	*
LSPM0336+3118	1	03 36 09.0	+31 18 40	0.168	138.4	47	79.60	2.50	1	34	*
GJ1062	1	03 38 15.7	-11 29 14	3.033	152.1	35	62.40	3.30	1	66	*
LP944-020	1	03 39 35.3	-35 25 44	0.411	047.8	70	158.47	1.00	2	15,65	*
LHS0178	1	03 42 29.4	+12 31 33	1.572	153.4	47	40.19	2.49	1	47	*
SCR0342-6407	1	03 42 57.4	-64 07 57	1.071	141.4	70	41.56	2.01	1	30	*
LHS1582	2	03 43 22.1	-09 33 51	0.505	053.4	70	46.04	1.78	1	49	*
LHS1593	1	03 47 23.2	+08 40 44	0.818	143.6	47	79.50	3.50	1	66	*

G080-021	1	03 47 23.4	-01 58 20	0.323	147.8	70	62.57	1.89	2	56,67	*
GJ0155.1	1	03 47 58.1	+02 47 16	0.577	222.7	27	58.68	2.34	2	66,67	*
LHS1596	1	03 48 33.3	+73 33 18	0.482	124.4	27	60.70	2.00	1	66	*
GJ1065	1	03 50 44.3	-06 05 42	1.428	196.8	35	105.40	3.20	1	66	*
LHS1604	1	03 51 00.0	-00 52 45	0.525	175.0	37	68.10	1.80	1	66	*
2MA0352+0210	1	03 52 10.8	+02 10 48	0.458	041.0	47	54.62	2.54	1	47	*
LP833-014	2	03 52 23.1	-22 52 56	0.464	066.8	70	41.07	4.81	1	67	*
LHS1610	2	03 52 41.0	+17 01 04	0.767	146.1	25	100.88	2.05	2	66,25	*
GJ0157.1	1	03 59 56.8	+26 05 41	0.736	108.7	47	43.80	5.10	1	66	*
LP031-301	3	04 05 57.0	+71 16 38	0.430	165.9	47	57.10	1.20	1	34	*
LHS1630	2	04 07 20.5	-24 29 14	0.704	161.1	70	56.18	1.06	1	49	*
GJ0162	1	04 08 37.4	+33 38 13	0.540	076.4	27	74.40	2.62	2	66,67	*
LP889-037	1	04 08 55.6	-31 28 54	0.260	195.0	38	64.35	1.75	1	47	*
GJ0163	1	04 09 15.7	-53 22 25	1.147	064.3	70	66.59	1.79	2	66,67	*
GJ1068	1	04 10 28.1	-53 36 08	2.554	199.1	29	143.42	1.92	1	29	*
LHS1638	1	04 12 20.3	+64 43 36	0.647	130.0	36	84.80	2.90	1	66	*
GJ0164	2	04 12 58.8	+52 36 42	0.910	203.0	36	72.34	1.18	2	66,41	*
GJ0165	2	04 13 08.2	+50 31 21	0.457	242.0	36	55.70	8.70	1	66	*
2MA0414-0906	1	04 14 17.3	-09 06 54	0.168	325.2	56	42.00	2.50	1	56	*
GJ2033	2	04 16 41.7	-12 33 23	0.225	348.9	70	46.82	4.32	1	67	*
G007-034	1	04 17 18.4	+08 49 20	0.395	161.2	51	73.27	1.27	1	51	*
LTT11399	1	04 19 59.6	+36 29 11	0.502	154.8	27	42.90	3.98	2	66,67	*
SCR0420-7005	1	04 20 12.6	-70 05 59	0.689	021.0	70	62.09	0.88	1	1	*
GJ1070	1	04 22 33.5	+39 00 44	0.712	136.0	36	53.40	4.70	1	66	*
LHS0189	2	04 25 38.4	-06 52 37	1.204	145.7	9	54.24 ^a	3.03	2	10,10	*
LHS0191	1	04 26 20.1	+03 35 43	1.056	187.1	47	58.40	1.80	1	66	*
LHS5094	1	04 26 32.6	-30 48 02	0.483	185.7	35	75.39	2.90	1	47	*
2MA0429-3123	2	04 29 18.4	-31 23 56	0.129	038.9	47	58.71	1.25	1	47	*
GJ0170	1	04 30 25.2	+39 51 00	0.633	153.1	47	95.90	2.80	1	66	*
LP715-051	2	04 31 09.0	-13 30 53	0.254	219.5	70	52.33	3.56	1	67	*
LHS1678	1	04 32 42.6	-39 47 12	0.997	165.9	35	51.08	1.25	1	47	*
LP775-031	2	04 35 16.1	-16 06 57	0.355	028.1	70	95.35	1.06	1	15	*
LP834-032	1	04 35 36.2	-25 27 35	0.242	160.4	70	57.64	1.78	1	47	*
L591-042	2	04 36 40.9	-27 21 18	0.347	231.9	70	40.57	1.79	2	1	*
LHS1686	1	04 36 41.5	+11 13 35	0.662	055.2	47	40.30	5.40	1	66	*
GJ0173	1	04 37 41.9	-11 02 20	0.318	232.0	70	90.20	1.72	2	66,67	*
LTT11472	2	04 38 12.6	+28 13 00	0.399	097.3	47	75.03	1.89	2	56,51	*
LP715-039	1	04 38 37.2	-11 30 15	0.371	227.4	70	50.95	2.14	1	1	*
LHS1690	1	04 39 32.0	+16 15 43	0.778	183.5	47	86.60	2.50	1	34	*
LP655-048	1	04 40 23.3	-05 30 08	0.359	069.2	51	102.61	0.71	1	51	*
HIP021765	2	04 40 29.2	-09 11 46	0.149	226.3	27	52.25	3.52	2	66,67	*
GJ0176	1	04 42 55.7	+18 57 29	1.298	149.6	27	110.00	2.00	2	66,67	*
LHS0197	1	04 46 23.8	+48 44 18	1.204	122.0	36	52.10	0.90	1	66	*
2MA0446-1116	2	04 46 51.8	-11 16 47	0.169	243.0	47	53.60	5.00	1	56	*
L736-001	1	04 49 32.8	-14 47 23	0.356	216.7	70	40.33	2.34	1	67	*
GJ1072	1	04 50 50.9	+22 07 22	0.744	124.0	36	71.10	5.70	1	66	*
APM0452-5819	1	04 51 37.3	-58 18 52	0.740	190.5	70	58.05	1.17	1	9	*
GJ0179	1	04 52 05.7	+06 28 35	0.341	155.2	67	80.82	3.78	2	66,67	*
LP776-025	1	04 52 24.4	-16 49 21	0.243	150.7	27	61.40	1.50	1	56	*
GJ1073	1	04 52 34.6	+40 42 24	1.633	133.0	36	77.40	2.40	1	66	*
GJ2036	2	04 53 31.2	-55 51 37	0.149	060.6	27	90.02	1.98	1	67	*
GJ0180	1	04 53 50.0	-17 46 24	0.767	148.1	27	82.60	2.32	2	66,67	*
GJ1074	1	04 58 45.9	+50 56 37	0.602	124.9	27	51.84	2.31	2	66,67	*
LHS1723	1	05 01 57.4	-06 56 47	0.769	226.9	25	187.92	1.26	1	25	*
LP476-207	3	05 01 58.8	+09 58 59	0.106	165.4	51	40.67	2.12	1	51	*
GJ0185	2	05 02 28.4	-21 15 24	0.278	206.9	70	120.27	1.67	2	17,66	*
LHS1731	1	05 03 20.1	-17 22 25	0.519	205.4	70	108.66	1.67	2	29,67	*
GJ0184	2	05 03 23.9	+53 07 42	2.018	139.7	27	72.60	1.78	2	66,67	*
G097-015	1	05 04 15.0	+11 03 24	0.207	342.0	47	104.96	1.48	1	47	*
BD-21 01074	3	05 06 49.9	-21 35 08	0.051	111.1	51	51.98	1.30	2	51,51	*
LP015-315	2	05 08 18.0	+75 38 15	0.204	126.2	47	62.30	0.67	1	23	*
GJ0190	2	05 08 35.1	-18 10 19	1.487	159.4	70	107.57	2.08	2	66,67	*
SCR0509-4325	1	05 09 43.9	-43 25 17	0.225	324.9	70	46.53	1.82	1	1	*
HD271076	1	05 10 09.1	-72 36 28	0.131	080.3	47	49.51	2.79	1	47	*

L1672-014	2	05 10 19.3	+48 50 05	0.454	154.0	36	50.35	4.59	2	66,17	*
LSPM0510+2714	1	05 10 20.0	+27 14 02	0.665	196.2	47	100.70	1.60	1	34	*
GJ0191	1	05 11 40.6	-45 01 06	8.728	131.4	27	255.67	0.91	2	66,67	*
GJ0192	1	05 12 42.2	+19 39 56	0.368	049.2	27	77.09	3.18	2	66,67	*
LHS1747	1	05 15 08.1	-07 20 49	0.514	148.0	27	44.54	4.06	1	67	*
LSPM0515+5911	1	05 15 31.0	+59 11 18	1.019	173.1	33	65.70	1.30	1	34	*
LHS1748	1	05 15 46.7	-31 17 45	0.593	065.6	70	43.18	1.40	1	49	*
LHS1749	2	05 16 00.4	-72 14 13	0.814	356.4	49	46.08	1.40	2	10,49	*
GJ1077	1	05 16 59.7	-78 17 20	1.123	176.0	70	65.71	1.88	2	30,66	*
SCR0517-4252	1	05 17 21.4	-42 52 47	0.186	012.8	70	47.60	1.56	1	1	*
L449-001	2	05 17 22.9	-35 21 55	0.269	230.6	70	84.38	1.35	1	51	*
2MA0517-3349	1	05 17 37.7	-33 49 03	0.560	124.7	70	61.57	1.54	1	47	*
GJ1078	1	05 23 49.6	+22 32 20	0.359	140.6	47	48.00	4.50	1	66	*
LP717-036	2	05 25 41.6	-09 09 12	0.197	164.7	47	48.20	5.00	1	56	*
GJ0203	1	05 28 00.1	+09 38 38	0.784	194.3	27	102.60	2.09	2	66,67	*
GJ1080	2	05 28 14.6	+02 58 14	1.186	198.0	36	52.30	2.20	1	66	*
GJ2043	2	05 29 27.0	+15 34 38	0.154	214.2	27	57.95	2.60	1	67	*
GJ0204.2	1	05 29 52.0	-03 26 30	0.540	211.2	70	56.80	6.50	1	66	*
LHS1767	1	05 31 04.3	-30 11 45	0.615	140.9	70	65.26	1.51	1	49	*
GJ0205	1	05 31 27.4	-03 40 38	2.228	159.9	27	175.99	1.04	2	66,67	*
GJ0206	2	05 32 14.6	+09 49 14	0.286	216.9	47	74.96	2.68	2	66,67	*
GJ1081	2	05 33 19.1	+44 48 59	0.377	170.9	47	65.20	1.80	1	66	*
SCR0533-4257	2	05 33 28.0	-42 57 20	0.039	328.7	47	99.35	1.70	1	47	*
GJ0207.1	1	05 33 44.8	+01 56 43	0.286	236.8	67	62.80	2.18	3	66,67,56	*
LTT11684	1	05 34 51.2	+13 52 25	0.410	197.0	36	80.60	9.80	1	66	*
LHS5109	1	05 36 00.1	-07 38 59	0.472	003.7	70	67.43	1.66	1	1	*
WT0178	1	05 37 39.8	-61 54 44	0.506	011.7	70	62.02	0.89	1	49	*
LHS0207	1	05 38 10.3	+79 31 19	1.192	141.0	36	45.10	1.40	1	66	*
GJ1083	2	05 40 25.7	+24 48 08	0.364	163.0	36	96.30	2.50	1	66	*
GJ0213	1	05 42 09.2	+12 29 21	2.546	128.2	27	171.50	1.00	3	66,67,22	*
GJ2045	1	05 42 12.7	-05 27 56	0.980	351.4	70	79.58	1.15	4	9,18,29,66	*
APM0544-4108	1	05 43 46.6	-41 08 08	0.621	168.3	70	48.41	0.78	1	49	*
LHS1785	1	05 47 09.1	-05 12 11	0.757	136.1	70	58.80	1.90	1	66	*
GJ0218	1	05 47 40.6	-36 19 43	0.781	099.1	27	67.04	1.42	2	66,67	*
GJ0220	1	05 53 14.1	+24 15 32	0.620	164.2	47	51.50	4.60	1	66	*
LP837-053	1	05 55 43.2	-26 51 23	0.323	092.6	70	68.57	2.17	1	67	*
LHS5112	2	05 56 56.2	-46 55 54	0.529	013.9	70	42.29	1.11	2	66,67	*
G192-011	2	05 59 37.7	+58 35 34	0.253	177.5	27	73.89	1.64	1	67	*
LTT17897	1	06 00 03.0	+02 42 23	0.314	097.8	27	190.77	1.86	2	66,25	*
LHS0214	2	06 00 49.0	+68 09 24	1.199	158.9	47	49.79	1.13	3	66,32,32	*
LHS1805	1	06 01 11.0	+59 35 01	0.831	190.0	36	128.20	2.30	1	66,32	*
LHS1807	1	06 02 22.6	-20 19 44	0.574	353.7	70	71.00	1.58	1	49	*
LHS1809	1	06 02 29.6	+49 50 58	0.801	174.0	36	107.70	2.60	1	66	*
APCOL	1	06 04 52.2	-34 33 36	0.330	003.6	70	119.21	0.98	1	50	*
LP838-016	1	06 07 43.7	-25 44 42	0.262	220.9	70	88.14	2.50	1	67	*
CD-35 02722	2	06 09 19.2	-35 49 30	0.057	186.4	27	44.10	1.20	1	56	*
GJ0226	1	06 10 19.8	+82 06 24	1.333	177.9	27	106.63	1.20	2	66,67	*
GJ0229	2	06 10 34.6	-21 51 53	0.717	191.2	27	173.77	0.97	2	66,67	*
GJ1088	1	06 10 52.9	-43 24 18	0.748	014.5	70	87.03	1.28	1	49	*
GJ0228	2	06 10 54.8	+10 19 05	0.943	176.8	27	94.44	2.60	2	66,67	*
G192-022	1	06 14 02.4	+51 40 08	0.370	258.0	36	70.40	10.00	1	66	*
GJ0231.3	1	06 19 20.8	-06 39 22	0.648	183.2	70	68.20	8.90	1	66	*
GJ0232	1	06 24 41.3	+23 25 59	0.763	132.0	36	119.40	2.30	1	66	*
LHS1848	1	06 25 53.5	+56 09 42	0.530	166.0	36	44.80	4.70	1	66	*
GJ0234	2	06 29 23.5	-02 48 51	0.930	131.7	27	244.44	0.92	3	21,59,66	*
SCR0630-7643	2	06 30 46.6	-76 43 09	0.491	355.8	70	114.16	1.85	1	25	*
SCR0631-8811	1	06 31 31.0	-88 11 37	0.484	354.8	70	63.97	2.28	1	1	*
GJ0237	2	06 31 51.1	-43 32 03	0.263	261.1	70	42.87	1.41	2	66,67	*
L032-009	2	06 33 43.3	-75 37 48	0.420	324.3	70	111.07 ^a	2.20	2	67,67	*
GJ0238	1	06 33 50.0	-58 31 43	0.903	332.2	70	60.94	1.92	2	66,67	*
LHS1857	1	06 36 07.6	+11 36 05	0.935	198.0	47	54.70	2.40	1	66	*
LP381-004	1	06 36 18.3	-40 00 24	0.247	285.9	70	51.15	1.68	1	67	*
GJ0239	1	06 37 10.8	+17 33 53	0.837	293.8	27	102.46	1.52	2	66,67	*
LP780-032	1	06 39 37.4	-21 01 33	0.208	301.8	70	64.39	0.80	1	47	*

L182-007	1	06 39 37.6	-55 36 35	0.381	274.6	70	75.19	1.10	1	67	*
SCR0640-0552	1	06 40 14.0	-05 52 23	0.620	172.1	70	85.75	2.97	1	1	*
G108-021	2	06 42 09.5	+03 35 41	0.287	173.0	36	95.70	8.50	1	66	*
SCR0642-6707	1	06 42 27.2	-67 07 20	0.804	120.2	70	73.02	1.04	1	1	*
L597-018	1	06 43 40.7	-26 24 41	0.464	225.1	70	55.43	0.99	1	1	*
LHS1864	2	06 43 50.9	+51 07 03	0.881	174.1	47	52.30	4.20	1	66	*
GJ2050	2	06 44 45.6	+71 53 15	0.563	192.7	27	45.31	2.12	2	66,67	*
LTT11918	1	06 47 18.9	+23 46 44	0.255	285.0	36	46.30	9.90	1	66	*
GJ1091	1	06 48 49.2	+37 08 37	0.194	274.0	36	44.30	5.60	1	66	*
GJ1092	1	06 49 05.5	+37 06 51	1.620	173.4	47	72.76	1.85	2	66,32	*
G108-036	1	06 51 59.02	+03 12 55	0.218	257.8	56	45.00	1.30	1	56	*
DEN0652-2534	1	06 52 19.8	-25 34 50	0.294	300.8	70	63.76	0.94	1	15	*
LHS0221	2	06 54 04.2	+60 52 18	1.125	152.6	27	95.42	1.85	2	66,59	*
GJ0251	1	06 54 48.9	+33 16 05	0.831	241.1	27	178.11	1.43	2	66,67	*
LHS1882	1	06 56 22.7	+54 57 38	0.706	199.0	36	58.00	6.90	1	66	*
LP382-056	2	06 57 11.7	-43 24 51	0.232	161.3	70	48.08	1.48	1	1	*
GJ0257	2	06 57 46.6	-44 17 28	1.107	263.8	70	124.57	2.08	2	66,67	*
GJ1093	1	06 59 28.8	+19 20 56	1.225	137.0	36	128.80	3.50	1	66	*
WT0207	1	07 02 36.6	-40 06 28	0.632	103.2	9	40.44	1.33	1	10	*
SCR0702-6102	2	07 02 50.4	-61 02 48	0.812	051.5	70	59.43	1.43	1	1	*
LHS0224	2	07 04 01.1	+52 41 12	1.167	144.8	47	109.77	1.37	1	66,32	*
GJ0263	2	07 04 17.7	-10 30 32	0.821	189.7	27	62.05	2.92	2	66,67	*
GJ0258	1	07 04 25.9	+68 17 19	0.348	081.2	27	66.97	2.51	2	66,67	*
LHS0225	2	07 04 45.8	-38 36 08	1.228	099.3	70	55.98 ^a	2.19	2	29,29	*
GJ2055	1	07 07 22.9	-21 27 27	0.288	137.7	27	57.81	2.36	1	67	*
LTT11972	1	07 07 50.4	+67 12 04	0.288	258.5	27	56.80	2.07	1	67	*
ESO207-061	1	07 07 53.3	-49 00 50	0.404	355.3	70	60.93	3.02	2	65,66	*
APM0710-5704	1	07 09 37.7	-57 03 42	0.456	046.3	70	59.10	1.08	1	1	*
GJ0268	2	07 10 01.8	+38 31 46	1.043	205.3	27	163.41	1.78	2	66,67	*
LHS1901	2	07 11 11.0	+43 29 58	0.680	146.0	36	74.56	0.95	2	34,16	*
SCR0713-0511	1	07 13 11.2	-05 11 49	0.319	187.2	70	90.86	1.64	1	1	*
GJ1096	1	07 16 18.0	+33 09 10	0.458	194.2	47	66.90	4.10	1	66	*
GJ0268.3	2	07 16 19.7	+27 08 33	0.196	191.5	27	86.13	2.22	3	66,67,28	*
SCR0717-0501	1	07 17 17.1	-05 01 04	0.602	136.3	70	92.68	1.69	1	1	*
LTT17957	2	07 17 32.2	+19 33 53	0.426	233.0	36	49.67	1.62	2	66,1	*
LTT12003	1	07 18 08.1	+39 16 29	0.241	242.3	27	69.01	2.07	1	67	*
L136-037	1	07 20 52.0	-62 10 12	0.344	303.1	70	88.80	2.57	1	1	*
LHS1914	1	07 22 41.1	+30 39 37	0.715	214.0	36	42.20	3.30	1	66	*
SCR0723-8015	2	07 23 59.7	-80 15 18	0.817	329.3	70	62.70	1.91	1	1	*
GJ0273	2	07 27 24.5	+05 13 32	3.735	171.2	27	266.23	0.66	3	66,67,22	*
LTT12020	1	07 27 28.6	+22 02 37	0.301	241.4	27	51.69	1.88	2	66,67	*
GJ1097	1	07 28 45.5	-03 17 53	0.931	150.5	70	86.08	1.83	2	66,67	*
GJ2060	3	07 28 51.4	-30 14 49	0.212	207.9	70	64.53	1.52	2	56,67	*
GJ0277	3	07 31 57.7	+36 13 09	0.360	224.4	27	84.44	1.81	3	66,67,67	*
GJ0275.1	1	07 32 02.0	+68 37 15	0.211	235.3	27	40.05	2.25	2	66,67	*
LHS1923	1	07 32 11.0	+57 55 35	0.929	179.0	36	44.00	1.70	1	58	*
LHS0231	1	07 33 56.1	+22 23 02	1.104	123.0	36	40.14	0.99	2	66,32	*
GJ1099	1	07 34 17.6	+00 59 09	0.624	181.9	47	68.70	2.60	1	66	*
GJ0277.1	1	07 34 27.4	+62 56 29	0.512	258.1	27	84.32	2.10	2	66,67	*
HIP036915	1	07 35 21.8	+54 50 59	0.121	282.2	27	78.14	2.69	1	67	*
LHS1932	1	07 36 12.0	-51 55 21	0.586	044.3	70	61.92	0.98	1	49	*
LTT17993	2	07 36 25.0	+07 04 43	0.397	143	25	116.60	0.97	1	25	*
SCR0736-3024	1	07 36 56.7	-30 24 16	0.424	145.7	61	75.32	1.04	1	1	*
L528-016	1	07 38 09.7	-31 12 19	0.251	318.7	70	67.01	1.33	1	1	*
2MA0738+2400	1	07 38 29.52	+24 00 08	0.224	235.1	47	53.00	2.50	1	56	*
LHS1935	1	07 38 41.0	-21 13 28	0.657	136.3	27	94.31	3.31	1	67	*
GJ0281	1	07 39 23.0	+02 11 01	0.288	210.8	27	68.80	1.38	2	66,67	*
SCR0740-4257	1	07 40 11.8	-42 57 40	0.713	318.2	70	127.23	1.06	1	47	*
GJ0285	1	07 44 40.1	+03 33 08	0.567	217.9	27	167.19	2.05	2	66,67	*
2MA0746+2000	2	07 46 43.0	+20 00 32	0.345	249.8	47	81.84	0.28	3	11,18,16	*
GJ0289	1	07 48 16.3	+20 22 05	1.757	124.1	27	67.18	1.74	2	66,67	*
L034-026	1	07 49 12.7	-76 42 07	0.212	205.6	70	94.36	2.11	1	51	*
GJ1103	1	07 51 54.7	-00 00 13	0.793	161.9	70	114.00	3.30	1	66	*
LHS1950	1	07 51 54.9	+05 32 13	0.572	135.0	36	62.70	3.10	1	66	*

LP423-031	1	07 52 24.0	+16 12 15	0.411	148.1	47	54.31	0.96	1	23,56	*
SCR0754-3809	1	07 54 54.8	-38 09 38	0.400	351.4	70	79.13	1.57	1	1	*
LHS1955	2	07 54 54.8	-29 20 56	0.629	146.8	70	74.36	1.13	1	49	*
GJ1101	1	07 55 49.9	+83 23 19	0.615	197.7	47	80.30	3.00	1	66	*
2MA0757+1201	1	07 57 27.16	+12 01 27	0.134	184.9	47	43.70	2.00	1	56	*
SCR0757-7114	1	07 57 32.5	-71 14 53	0.104	090.5	51	45.25	1.96	1	51	*
GJ1105	1	07 58 12.7	+41 18 13	0.717	162.8	27	120.94	2.32	2	66,67	*
LHS1976	2	08 03 19.5	+52 50 38	0.732	148.0	36	40.30	5.10	1	58	*
SCR0805-5912	1	08 05 46.2	-59 12 50	0.640	154.4	70	61.71	1.91	1	1	*
L1321-040	1	08 09 30.9	+21 54 17	0.324	258.7	27	44.86	3.36	1	67	*
GJ0298	1	08 09 58.1	-52 58 05	0.832	322.6	70	60.01	2.43	2	66,67	*
GJ0299	1	08 11 58.0	+08 46 23	5.211	167.0	36	146.30	3.10	1	66	*
GJ0300	1	08 12 40.9	-21 33 07	0.699	178.7	25	125.78	0.97	2	25,66	*
GJ0301	2	08 13 08.5	-13 55 01	0.536	198.7	70	52.11	1.98	2	59,66	
LHS1992	1	08 13 42.6	-76 07 49	0.685	337.4	70	61.86	1.82	1	1	
GJ2066	1	08 16 07.9	+01 18 09	0.379	279.0	27	109.82	1.48	2	66,67	*
L098-059	1	08 18 07.6	-68 18 47	0.391	162.6	70	94.80	2.98	1	47	*
LHS0246	1	08 25 49.7	+69 02 11	1.377	205.0	36	78.41	3.51	2	66,32	*
LHS2010	2	08 27 11.8	-44 59 21	0.537	343.1	49	72.80	1.30	1	49	*
GJ1110	1	08 28 11.4	+20 07 48	0.703	204.2	47	45.20	3.20	1	66	*
GJ0308	2	08 28 22.1	+35 00 59	1.046	252.0	27	53.28	5.00	2	66,67	*
GJ1111	1	08 29 49.5	+26 46 34	1.290	242.0	36	275.80	3.00	1	66	*
LHS2021	1	08 30 32.0	+09 47 15	0.667	226.0	49	63.44	1.11	2	10,49	*
GJ2069	5	08 31 37.5	+19 23 39	0.272	249.6	67	85.16	6.42	1	44	*
LHS2026	1	08 32 30.5	-01 34 39	0.540	151.9	70	50.80	0.50	1	66	*
GJ2070	1	08 34 25.9	-01 08 40	0.472	156.0	37	73.40	9.60	1	66	*
LHS0250	1	08 35 38.4	+68 03 21	1.009	236.4	27	76.87	1.98	2	66,32	*
LHS2029	1	08 37 07.9	+15 07 45	0.901	187.6	27	52.74	3.69	1	67	*
SCR0838-5855	2	08 38 02.2	-58 55 59	0.320	189.0	70	91.69	0.81	1	1	*
GJ0316.1	1	08 40 29.7	+18 24 09	0.908	240.0	36	81.84	0.28	2	66,56	*
LHS2038	1	08 40 55.3	+67 39 15	0.754	243.5	47	40.80	3.20	1	66	*
GJ0317	1	08 40 59.2	-23 27 23	0.912	329.0	70	65.33	0.40	2	3,66	*
LHS0252	1	08 41 17.6	+59 28 22	1.290	191.5	47	101.61	2.56	2	66,32	*
GJ2072	2	08 44 23.1	-44 28 21	0.148	057.9	27	53.89	2.20	1	67	*
GJ1114	1	08 51 43.8	+18 07 29	0.899	266.5	27	58.62	2.55	2	66,67	*
SCR0853-3924	1	08 53 28.7	-39 24 41	0.355	262.3	70	58.61	1.23	1	1	*
LHS2065	1	08 53 36.2	-03 29 32	0.550	249.4	15	117.25	0.64	4	9,15,58,66	*
GJ0326	2	08 54 05.3	-13 07 31	0.676	149.1	47	61.80	6.70	1	66	*
LHS2071	2	08 55 20.3	-23 52 15	0.578	267.6	70	62.84	1.43	1	49	*
LP844-033	1	08 56 17.6	-23 26 57	0.401	277.5	70	42.42	2.94	1	10	*
GJ0330	2	08 57 04.6	+11 38 49	0.326	185.1	27	60.63	2.23	2	66,67	*
GJ1116	2	08 58 12.2	+19 45 47	0.436	281.0	36	191.20	2.50	1	66	*
LTT12352	3	08 58 56.0	+08 28 26	0.503	130	25	147.66	1.98	1	25	*
GJ1118	1	08 59 05.3	-31 13 27	1.094	139.9	29	56.19	1.76	1	29	*
LHS2088	1	09 00 14.8	+72 57 40	0.893	090.0	36	72.60	3.40	1	66	*
LHS2090	1	09 00 23.0	+21 50 04	0.789	222.7	47	156.87	2.67	1	25	*
GJ1119	1	09 00 32.5	+46 35 11	0.703	218.9	47	96.90	2.70	1	66	*
GJ0333.2	2	09 00 48.5	+05 14 41	0.323	230.0	27	43.35	3.85	2	66,67	*
LHS0259	1	09 00 52.1	+48 25 25	1.130	193.0	36	51.61	3.01	2	66,32	*
LHS2094	1	09 02 19.8	+08 28 06	0.648	108.1	27	51.25	3.72	1	67	*
LP060-179	1	09 02 51.0	+68 03 18	0.419	031.0	36	85.30	3.80	1	57	*
GJ0334	1	09 06 45.4	-08 48 25	0.366	304.6	27	69.12	1.24	2	66,67	
LHS2106	1	09 07 02.8	-22 08 50	0.499	211.7	70	66.23	1.16	1	49	*
GJ1121	1	09 09 24.0	+40 06 05	0.814	220.2	47	45.70	3.40	1	66	*
DEN0909-0658	1	09 09 57.3	-06 58 19	0.185	276.4	2	42.50	4.20	1	2	*
GJ0336.1	1	09 11 30.8	+46 37 01	0.358	263.6	27	40.69	2.37	2	66,67	*
SCR0914-4134	1	09 14 17.4	-41 34 38	0.749	312.5	61	83.56	1.42	1	1	*
GJ0338	2	09 14 22.7	+52 41 11	1.657	249.9	27	163.73	2.52	3	66,67,67	*
LHS6167	2	09 15 36.4	-10 35 47	0.440	242.0	70	103.33	1.00	1	47	*
L749-034	1	09 16 20.7	-18 37 33	0.348	295.2	27	77.60	2.37	1	1	*
LHS2122	1	09 16 26.0	-62 04 16	0.934	313.3	49	58.59	2.57	1	49	*
GJ1123	1	09 17 05.3	-77 49 23	1.052	141.6	29	110.92	2.02	1	29	*
LHS0265	1	09 17 45.3	+58 24 13	1.134	180.0	36	64.80	3.38	2	66,32	*
GJ1122	2	09 19 18.5	+38 31 19	0.233	277.3	47	49.40	2.70	1	66	*

LHS0266	1	09 20 21.1	+26 43 43	1.007	121.0	36	47.80	4.60	1	66	*
LHS0267	1	09 20 58.1	+03 20 59	1.185	165.4	47	60.80	4.10	1	66	*
GJ0341	1	09 21 37.6	-60 16 55	0.859	253.1	70	95.68	0.91	2	66,67	*
GJ0347	2	09 28 53.3	-07 22 16	0.773	195.1	70	61.06	2.86	2	66,67	*
LHS0269	1	09 29 11.0	+25 58 09	1.086	255.0	36	56.47	0.97	2	57,23	*
GJ1125	1	09 30 44.6	+00 19 22	0.794	225.9	27	100.95	2.48	2	66,67	*
GJ0352	2	09 31 19.4	-13 29 19	0.733	087.9	70	98.48	3.10	2	59,66	*
LP788-001	1	09 31 22.3	-17 17 43	0.359	246.7	70	75.10	1.44	1	1	
GJ0353	1	09 31 56.3	+36 19 12	0.564	201.7	27	71.11	1.71	2	66,67	*
GJ0357	1	09 36 01.6	-21 39 39	0.995	171.8	27	110.74	1.90	2	66,67	*
2MA0936-2610	1	09 36 57.8	-26 10 11	0.044	137.7	47	53.75	1.42	1	47	*
G117-034	1	09 39 24.2	+31 45 17	0.282	222.5	27	41.65	3.79	1	67	*
GJ0358	1	09 39 46.4	-41 04 03	0.620	302.8	70	105.46	1.62	2	66,67	*
GJ0359	1	09 41 02.1	+22 01 28	0.672	135.0	36	79.00	3.80	1	66	*
GJ0361	1	09 41 10.3	+13 12 34	0.674	257.6	27	88.25	1.60	2	66,67	*
GJ0363	1	09 42 17.9	+55 58 31	0.861	234.9	47	65.10	8.70	1	66	*
GJ0360	2	09 42 34.8	+70 02 02	0.724	248.2	27	83.48	1.31	4	66,66,67,67	*
LHS2177	1	09 42 35.7	-19 14 05	0.545	241.6	70	63.47	3.54	1	67	*
GJ1128	1	09 42 46.4	-68 53 06	1.125	000.6	70	153.05	2.41	1	29	*
LHS5156	1	09 42 49.6	-63 37 56	0.506	084.1	70	95.15	1.17	1	49	*
LHS0272	1	09 43 46.2	-17 47 06	1.439	279.2	30	73.95	1.18	1	30	*
LHS2181	1	09 43 55.6	+26 58 08	0.590	260.2	27	71.29	4.49	1	67	*
WT0244	1	09 44 23.7	-73 58 38	0.517	257.2	70	43.30	1.50	1	49	*
GJ0367	1	09 44 29.8	-45 46 36	0.745	218.6	27	102.55	2.94	2	66,67	*
GJ1129	1	09 44 47.3	-18 12 49	1.597	264.3	30	93.89	2.49	1	30	*
G161-071	1	09 44 54.2	-12 20 54	0.353	275.7	70	74.10	1.43	1	47	*
LP462-119	2	09 45 40.1	-39 02 27	0.307	206.3	70	49.48	4.79	1	67	*
GJ0366	1	09 46 48.4	+76 02 38	1.003	175.1	27	62.63	1.25	2	66,67	*
G043-002	1	09 48 50.2	+15 38 44	0.222	359.7	47	56.90	3.20	1	56	*
LHS2195	1	09 49 22.2	+08 06 45	0.887	177.4	15	60.32	1.67	1	15	*
GJ2075	2	09 49 27.8	-55 20 09	0.300	126.5	70	47.70	1.84	1	67	
LTT03613	1	09 50 40.5	-13 48 39	0.195	125.5	70	51.14	1.86	1	1	*
GJ0369	1	09 51 09.6	-12 19 48	1.850	142.1	27	72.98	1.74	2	66,67	*
GJ0372	2	09 53 11.8	-03 41 25	0.512	190.7	70	62.20	2.10	2	66,67	*
GJ1130	2	09 53 28.1	-31 45 08	0.180	235.2	70	41.45	1.55	1	67	
LHS2206	1	09 53 55.0	+20 56 46	0.516	319.1	47	108.69	2.06	2	25,58	*
LP847-048	1	09 55 23.9	-27 15 41	0.185	207.7	70	88.32	3.18	1	67	*
GJ0373	1	09 56 08.6	+62 47 18	0.658	207.5	27	92.81	1.14	2	66,67	*
GJ0375	2	09 58 34.3	-46 25 30	0.678	138.4	70	64.77	1.72	2	66,67	*
GJ0377	1	10 01 10.7	-30 23 25	1.273	300.3	27	62.23	2.46	2	66,67	*
GJ0378	1	10 02 21.7	+48 05 19	1.647	202.8	47	66.40	1.54	2	66,67	*
LHS5166	2	10 04 38.7	-33 35 10	0.493	137.6	35	54.80	5.60	1	2	*
LP903-021	1	10 04 50.6	-31 05 28	0.339	226.8	70	43.49	3.44	1	67	*
LHS2220	1	10 06 43.8	+41 42 52	0.503	212.4	47	48.39	2.73	1	67	*
GJ1131	1	10 07 59.4	+69 14 46	0.872	269.0	36	56.20	4.00	1	66	*
LHS2224	1	10 09 24.6	+51 15 39	0.961	210.1	47	75.20	3.20	1	66	*
GJ0381	2	10 12 04.7	-02 41 05	0.790	140.3	27	83.52	2.77	2	66,67	*
GJ0382	1	10 12 17.7	-03 44 44	0.314	219.0	70	126.11	1.81	2	66,67	*
GJ1132	1	10 14 51.8	-47 09 24	1.126	291.7	29	83.07	1.69	1	29	*
GJ0386	1	10 16 46.0	-11 57 42	0.726	217.6	70	75.38	2.45	2	66,67	*
TWA022	2	10 17 27.0	-53 54 27	0.149	264.4	47	57.00	0.70	1	63	*
GJ0388	1	10 19 36.2	+19 52 11	0.504	265.1	27	204.60	2.80	1	66	*
LP392-039	2	10 19 51.3	-41 48 46	0.442	193.0	70	45.62	1.88	1	1	*
GJ0389	2	10 22 24.6	-60 10 38	0.531	139.6	27	50.42	1.83	2	66,67	*
GJ0390	1	10 25 10.8	-10 13 43	0.709	278.6	70	81.34	1.78	2	66,67	*
LHS2268	1	10 28 31.2	+48 14 10	0.612	103.5	47	47.70	2.20	1	66	*
GJ0393	1	10 28 55.6	+00 50 28	0.950	219.3	27	140.27	2.04	2	66,67	*
LTT03855	1	10 30 50.8	-35 46 39	0.334	271.3	70	40.62	2.03	1	67	*
LHS0283	1	10 35 06.5	+69 26 16	1.761	246.5	47	81.75	2.45	2	66,32	*
GJ0398	1	10 36 01.8	+05 07 06	0.679	279.6	47	68.80	6.30	1	66	*
2MA1036+1521	3	10 36 44.8	+15 21 39	0.118	120.5	56	49.80	5.00	1	56	*
LTT03896	1	10 37 45.3	-27 46 39	0.322	318.4	70	67.57	1.36	1	1	*
LEHPM2-2758	1	10 38 47.8	-86 32 44	0.223	198.2	43	75.31	2.59	1	1	*
GJ0399	1	10 39 40.6	-06 55 26	0.756	263.8	70	63.94	2.78	2	66,67	*

LP465-084	2	10 39 44.4	-37 55 14	0.241	123.8	70	71.51	2.48	1	67	*
GJ1135	2	10 41 09.3	-36 53 44	0.255	131.7	70	61.21	1.52	1	67	*
GJ1134	1	10 41 37.9	+37 36 39	1.492	256.5	47	96.70	2.30	1	66	*
GJ1136	2	10 41 51.8	-36 38 00	0.118	306.3	27	61.79	4.12	1	67	*
LP848-050	2	10 42 41.4	-24 16 05	0.205	015.4	70	85.07	2.23	1	1	*
WT1827	2	10 43 02.8	-09 12 41	1.959	280.0	29	80.99	2.42	1	29	*
LHS0288	1	10 44 21.0	-61 12 35	1.643	347.7	25	209.70	2.65	2	66,25	*
LP905-056	1	10 45 16.7	-30 48 27	0.247	185.2	70	71.41	2.37	1	67	*
DEN1048-3956	1	10 48 12.6	-39 56 07	1.530	229.2	29	248.53	1.18	3	9,12,29	*
LHS0292	1	10 48 14.6	-11 20 10	1.598	159.3	70	220.30	3.60	2	15,66	*
LHS2314	1	10 49 01.8	+05 01 59	0.598	215.4	47	41.10	2.30	1	66	*
GJ1138	2	10 49 45.6	+35 32 50	1.231	213.0	36	103.85	2.96	2	66,32	*
LHS2317	1	10 50 26.5	+33 05 19	0.593	177.4	47	43.60	2.80	1	66	*
GJ0402	1	10 50 52.0	+06 48 29	1.187	226.1	67	147.15	2.98	2	66,67	*
GJ0403	1	10 52 04.0	+13 59 51	1.126	280.0	36	80.24	2.69	2	66,57	*
LHS2328	1	10 55 34.5	-09 21 26	0.500	331.0	70	53.84	1.47	1	49	*
GJ0406	1	10 56 28.9	+07 00 53	4.696	234.0	36	419.10	2.10	1	66	*
LHS2335	1	10 58 35.1	-31 08 38	0.551	259.8	70	50.55	1.55	1	49	*
LHS2337	1	10 59 04.8	+30 14 55	0.611	239.7	47	44.80	5.80	1	66	*
GJ0408	1	11 00 04.2	+22 49 58	0.511	236.7	27	149.32	1.58	2	66,67	*
LHS0296	1	11 01 23.2	+02 59 46	1.103	112.0	36	71.80	3.10	1	66	*
GJ1141	2	11 02 21.0	+16 30 45	0.162	185.2	27	51.56	6.65	3	66,67,67	*
GJ0410	1	11 02 38.3	+21 58 01	0.150	110.1	27	85.01	1.02	2	66,67	*
GJ0411	1	11 03 20.1	+35 58 11	4.797	186.9	27	393.25	0.57	2	66,67	*
LP491-051	1	11 03 21.25	+13 37 57	0.229	290.7	47	64.80	3.00	1	56	*
GJ0412	2	11 05 28.5	+43 31 36	4.518	282.1	27	205.67	0.93	2	66,67	*
LHS2348	1	11 05 43.1	+10 14 09	0.933	138.5	27	50.90	4.58	1	67	*
LHS2351	1	11 06 20.0	+04 28 17	0.506	315.0	36	48.10	3.10	1	65	*
L754-040	1	11 07 27.7	-19 17 30	0.220	256.3	70	53.51	1.64	1	67	*
GJ0413.1	1	11 09 31.3	-24 35 55	0.892	244.7	70	93.23	1.67	2	66,67	*
GJ0414.1	2	11 11 19.4	+43 25 02	0.773	234.8	67	59.16	2.54	1	67	*
2MA1113+1025	1	11 13 00.6	+10 25 05	0.212	136.9	47	43.40	3.00	1	56	*
GJ0422	1	11 16 00.2	-57 32 52	2.733	294.9	35	78.82	2.49	2	66,67	*
L611-120	1	11 16 06.8	-30 10 41	0.338	289.7	70	43.09	2.10	1	67	*
GJ1144	1	11 16 22.2	-14 41 36	0.222	230.2	70	55.82	1.50	1	67	*
GJ1145	1	11 17 07.5	-27 48 49	0.234	110.0	70	56.52	1.28	1	67	*
LHS2395	1	11 19 31.0	+46 41 43	0.692	154	36	97.00	2.60	1	34	*
GJ0424	2	11 20 04.8	+65 50 47	2.956	273.6	27	112.10	0.99	2	66,67	*
GJ1146	1	11 21 38.5	+06 08 26	1.749	206.0	36	54.20	4.20	1	66	*
LHS2397a	2	11 21 49.2	-13 13 09	0.507	264.7	15	68.98	1.12	5	8,15,16,65,66	*
LHS2400	1	11 22 42.5	-32 05 40	0.614	175.6	9	44.26	2.28	1	10	*
LHS0302	1	11 23 08.2	+25 53 37	1.062	251.7	47	60.60	2.97	2	66,32	*
GJ2085	1	11 23 44.5	+08 33 48	1.019	281.0	27	46.24	2.27	2	66,67	*
LHS2401	1	11 23 57.3	-18 21 49	0.567	261.8	70	54.47	2.51	1	49	*
LHS2405	2	11 25 28.2	+78 15 44	0.661	254.9	27	44.88	7.98	2	66,66	*
LP672-042	1	11 30 41.8	-08 05 43	0.419	306.6	70	75.75	4.22	1	67	*
LHS0306	1	11 31 08.4	-14 57 21	1.432	163.2	29	89.02	1.66	2	29,57	*
GJ0430.1	1	11 31 43.3	+22 40 01	0.587	273.1	27	62.86	1.44	2	66,67	*
GJ0431	1	11 31 46.5	-41 02 47	0.735	283.7	27	96.39	2.34	2	66,67	*
LP792-033	1	11 32 19.0	-16 58 07	0.270	147.1	70	43.85	2.65	1	67	*
LHS2427	1	11 34 38.0	-23 52 15	0.683	244.2	27	56.06	2.03	2	66,67	*
GJ0433	2	11 35 27.0	-32 32 24	0.811	184.5	70	112.09	1.43	2	66,67	*
SCR1138-7721	1	11 38 16.8	-77 21 49	2.148	286.9	25	122.27	2.92	1	25	*
GJ1147	1	11 38 25.0	-41 22 33	0.945	272.7	70	66.08	1.08	1	49	*
SIP1141-3624	1	11 41 21.5	-36 24 35	0.573	058.3	70	115.67	1.55	1	47	*
GJ1148	1	11 41 44.6	+42 45 07	0.587	261.2	27	88.81	2.14	2	66,67	*
GJ0436	1	11 42 11.0	+26 42 23	1.210	132.2	67	98.95	2.07	2	66,67	*
GJ0438	1	11 43 19.8	-51 50 26	0.847	129.5	27	92.20	2.03	2	49,66	*
LP793-033	2	11 45 34.5	-20 21 12	0.202	072.7	70	51.92	3.35	1	67	*
GJ0443	1	11 46 42.9	-14 00 52	1.111	137.8	70	51.33	3.04	2	66,67	*
GJ0445	1	11 47 41.3	+78 41 28	0.884	057.3	27	187.26	1.64	2	66,67	*
GJ0447	1	11 47 44.4	+00 48 16	1.361	153.6	67	298.14	1.37	2	66,67	*
G010-052	1	11 48 35.49	+07 41 40	0.266	151.8	47	48.20	2.20	1	56	*
GJ1151	1	11 50 57.7	+48 22 39	1.821	237.0	36	121.76	2.59	2	66,32	*

GJ0450	1	11 51 07.3	+35 16 19	0.372	313.0	27	116.18	1.16	2	66,67	*
GJ0452	1	11 53 16.1	-07 22 28	0.540	198.5	27	52.78	3.48	2	66,67	*
LHS2471	1	11 53 54.2	+06 59 06	0.921	166.5	47	70.30	2.60	1	66	*
GJ0452.1	1	11 54 08.0	+09 48 12	0.794	175.8	47	88.51	3.65	2	66,58	*
LP851-346	1	11 55 42.9	-22 24 59	0.409	244.0	15	89.54	1.77	1	15	*
GJ2086	1	11 55 49.2	-38 16 49	0.681	116.9	70	41.09	2.88	1	67	*
LHS2482	1	11 57 32.8	+11 49 39	0.724	289.3	27	41.05	2.78	2	66,67	*
SCR1157-0149	1	11 57 45.6	-01 49 03	0.453	120.1	70	50.76	1.52	1	1	*
RXJ1159-5247	1	11 59 27.4	-52 47 19	1.110	264.8	70	106.35	0.74	1	47	*
GJ2088	2	12 02 13.2	-38 00 29	0.282	207.3	70	43.63	1.92	1	67	*
GJ0455	2	12 02 19.5	+28 35 33	0.769	269.4	47	49.40	3.90	1	66	*
SCR1206-3500	1	12 06 58.5	-35 00 52	0.403	225.7	70	42.44	1.43	1	1	*
GJ0456	1	12 08 22.2	-00 28 58	0.965	264.7	27	40.22	2.49	2	66,67	*
LHS2520	1	12 10 05.6	-15 04 17	0.719	184.5	70	77.93	2.41	1	49	*
L758-108	2	12 11 11.8	-19 57 38	0.260	227.9	70	79.43	2.36	1	67	*
GJ0458	2	12 12 20.8	+54 29 08	0.250	068.6	27	64.53	1.42	2	66,67	*
LP852-057	1	12 13 32.9	-25 55 25	0.433	137.3	70	42.71	2.03	1	67	*
SCR1214-2345	1	12 14 08.6	-23 45 17	0.100	034.3	51	91.39	1.55	1	51	*
GJ1154	2	12 14 16.6	+00 37 26	0.985	253.0	36	119.40	3.50	1	66	*
SCR1214-4603	1	12 14 40.0	-46 03 14	0.750	250.8	61	66.50	0.93	1	1	*
GJ1155	2	12 16 51.8	+02 58 02	0.706	292.0	36	46.30	3.40	1	66	*
GJ1156	1	12 18 59.4	+11 07 34	1.301	279.0	36	152.90	3.00	1	66	*
L018-022	1	12 20 33.8	-82 25 58	0.273	004.5	70	86.07	2.64	1	1	*
GJ0463	1	12 23 00.1	+64 01 51	0.766	299.4	27	54.86	1.86	2	66,67	*
GJ1157	1	12 23 01.4	-46 37 09	0.848	245.3	70	62.42	0.63	1	49	*
LTT17123	2	12 23 33.1	+67 11 17	0.259	114.5	27	77.54	3.23	1	67	*
GJ0464	1	12 23 53.5	+12 34 48	0.175	166.6	27	47.63	2.45	1	67	*
GJ0465	1	12 24 52.2	-12 38 36	2.553	154.4	29	111.67	1.68	3	29,66,67	*
BRI1222-1222	1	12 24 52.5	-18 14 32	0.353	230.4	70	58.60	3.80	1	65	*
GJ0469	2	12 28 57.5	+08 25 31	0.685	247.8	27	74.77	3.39	2	66,67	*
LP377-100	1	12 29 27.1	+22 59 47	0.166	261.3	47	49.10	3.00	1	56	*
GJ1158	1	12 29 34.5	-55 59 37	1.164	228.9	70	76.18	1.38	1	30	*
LHS2567	2	12 29 54.2	-05 27 24	0.660	243.8	70	47.68 ^a	1.29	2	49,49	*
SCR1230-3411	2	12 30 01.8	-34 11 24	0.529	234.4	70	52.80	1.53	1	1	*
GJ0471	1	12 31 15.8	+08 48 38	0.822	230.7	27	73.13	1.28	2	66,67	*
GJ0473	2	12 33 16.3	+09 01 16	1.811	277.0	36	227.90	4.60	1	66	*
GJ0476	1	12 35 00.7	+09 49 42	0.550	234.8	27	54.69	3.05	1	67	*
GJ0477	2	12 35 58.4	-45 56 21	0.706	188.7	27	54.65	2.93	2	66,67	*
GJ0479	1	12 37 52.2	-52 00 06	1.077	270.6	70	104.19	2.24	2	66,67	*
GJ1162	1	12 38 47.3	-04 19 17	0.765	253.7	70	50.70	3.10	1	66	*
LHS0337	1	12 38 49.1	-38 22 54	1.464	206.4	25	156.78	1.99	1	25	*
GJ0480	1	12 38 52.4	+11 41 46	1.183	258.0	67	71.34	2.54	2	66,67	*
G123-049	1	12 39 04.7	+47 02 23	0.408	107.3	67	45.90	4.48	1	67	*
GJ0480.1	1	12 40 46.3	-43 33 59	1.045	311.6	27	125.57	3.83	2	66,67	*
LHS5226	1	12 44 00.7	-11 10 30	0.501	250.8	70	72.28	1.70	1	1	*
SCR1245-5506	1	12 45 52.5	-55 06 50	0.413	107.0	70	99.16	1.36	1	1	*
LHS2632	1	12 46 51.0	+31 47 57	0.794	274.0	36	53.30	2.30	1	58	*
LHS2633	1	12 47 00.9	+46 37 33	0.827	250.9	47	47.77	2.36	1	67	*
LHS2634	1	12 47 09.8	-03 34 18	0.499	264.4	70	45.84	1.97	1	1	*
SCR1247-0525	1	12 47 14.7	-05 25 13	0.725	320.9	70	49.99	1.06	1	1	*
GJ0486	1	12 47 56.6	+09 45 05	1.108	245.4	27	119.58	2.64	2	66,67	*
GJ0487	3	12 49 02.7	+66 06 36	0.450	257.1	27	98.40	1.71	2	66,67	*
GJ0488	1	12 50 43.6	-00 46 05	0.420	170.5	70	94.30	0.81	2	66,67	*
DEN1250-2121	1	12 50 52.7	-21 21 14	0.526	128.6	70	57.77	1.72	1	15	*
LHS2651	1	12 55 57.4	+50 55 22	0.846	164.4	47	48.40	4.00	1	66	*
GJ0490	4	12 57 40.2	+35 13 30	0.307	240.9	27	50.28	2.30	2	66,67	*
SIP1259-4336	1	12 59 04.8	-43 36 25	1.133	104.0	13	127.62	0.52	1	47	*
HIP063480	1	13 00 25.8	-34 36 24	0.102	323.0	27	50.65	2.01	1	67	*
GJ0493.1	1	13 00 33.5	+05 41 08	0.973	284.0	36	123.10	3.50	1	66	*
GJ0494	3	13 00 46.5	+12 22 32	0.641	267.8	27	86.03	1.48	2	66,67	*
LHS2668	1	13 01 19.7	-63 11 42	0.595	225.5	70	58.19	2.37	2	66,67	*
G164-042	3	13 05 29.8	+37 08 10	0.367	235.9	67	40.50	5.29	1	67	*
LHS0346	1	13 09 20.4	-40 09 27	1.224	141.9	70	61.75	1.12	1	29	*
CE303	1	13 09 21.9	-23 30 36	0.378	177.4	70	69.33	1.33	1	15	*

GJ1167	1	13 09 31.3	+28 58 42	0.388	238.7	47	91.90	4.74	2	66,58	*
LHS2686	1	13 10 12.7	+47 45 19	0.825	226.0	36	96.80	4.70	1	58	*
WT0392	1	13 13 09.3	-41 30 40	1.028	271.7	29	83.58	1.58	1	29	*
NLTT33370	2	13 14 20.0	+13 20 01	0.317	241.1	47	61.00	2.80	1	34	*
GJ1169	1	13 16 30.2	+27 52 44	0.787	287.5	47	63.20	2.50	1	66	*
GJ1170	1	13 17 58.4	+36 17 56	0.350	192.5	27	46.32	2.05	2	66,67	*
GJ0507	3	13 19 33.5	+35 06 36	0.868	153.5	27	74.70	1.44	3	66,67,67	*
GJ0507.1	1	13 19 40.1	+33 20 47	0.330	244.0	27	58.58	1.46	2	66,67	*
LHS2718	1	13 20 03.9	-35 24 44	0.962	241.1	49	73.04	0.79	1	49	*
L977-016	2	13 20 24.9	-01 39 27	0.290	150.0	70	46.42	3.24	1	67	*
GJ0508.2	1	13 20 58.0	+34 16 44	0.562	122.4	27	62.16	1.83	2	66,67	*
LHS0350	1	13 22 54.6	+24 28 00	1.056	214.3	47	73.10	2.70	1	66	*
LHS2729	1	13 23 38.0	-25 54 45	0.643	244.8	70	71.48	1.53	1	49	*
GJ0510	1	13 25 48.9	-28 22 26	0.444	260.9	70	59.81	2.36	2	66,67	*
LHS2739	2	13 27 19.6	-31 10 40	0.587	254.5	70	50.10	2.50	1	56	*
LP855-014	1	13 27 54.0	-26 57 01	0.212	241.0	70	47.43	2.81	1	67	*
GJ0512	2	13 28 21.1	-02 21 37	0.520	167.4	70	72.84	2.70	2	66,67	*
GJ0513	1	13 29 21.3	+11 26 27	1.193	165.8	47	62.90	6.70	1	66	*
GJ0514	1	13 29 59.7	+10 22 37	1.557	133.6	27	131.70	0.99	2	66,67	*
GJ1171	1	13 30 31.1	+19 09 34	1.383	201.7	47	68.70	4.40	1	66	*
LP323-158	2	13 31 46.6	+29 16 36	0.260	237.1	51	55.51	2.38	1	51	*
GJ0516	2	13 32 44.6	+16 48 39	0.336	131.3	27	63.38	3.48	2	66,17	*
L906-011	1	13 38 58.7	-06 14 13	0.207	157.9	70	42.43	2.21	1	67	*
GJ0521	2	13 39 24.1	+46 11 11	0.393	353.5	27	77.29	1.54	2	66,67	*
GJ0521.1	1	13 40 07.1	-04 11 10	0.641	324.0	70	67.74	1.16	2	66,67	*
GJ1174	1	13 40 08.8	+43 46 38	1.135	283.7	47	62.70	3.80	1	66	*
LHS2777	1	13 40 18.0	+47 12 30	0.575	152.5	47	44.40	5.30	1	66	*
LHS0358	1	13 41 10.4	+30 01 53	1.564	269.2	47	48.10	1.90	1	66	*
LHS2783	1	13 42 09.9	-16 00 23	0.510	268.5	35	53.87	1.14	1	47	*
LHS2784	1	13 42 43.2	+33 17 24	0.748	187.4	47	108.51	3.10	2	66,67	*
SCR1343-4002	1	13 43 41.5	-40 02 29	0.242	117.8	70	58.81	0.99	1	1	*
LHS2789	2	13 44 27.6	+51 41 04	0.766	269.1	47	41.10	6.30	1	66	*
GJ0526	1	13 45 43.7	+14 53 29	2.298	129.3	27	184.72	0.74	3	66,67,22	*
LHS2794	1	13 45 50.7	-17 58 06	0.595	206.2	70	97.62	5.03	1	67	*
LP798-051	1	13 52 53.5	-18 20 17	0.290	242.3	70	42.93	3.25	1	67	*
GJ1181	2	13 55 02.6	-29 05 26	0.277	253.9	70	57.93	1.48	1	67	*
SSS1358-3938	1	13 58 05.4	-39 37 55	1.960	117.1	47	89.26	1.12	1	47	*
LP739-002	1	13 58 16.2	-12 02 59	0.345	275.3	70	54.24	1.33	1	47	*
LHS2836	1	13 59 10.4	-19 50 04	0.589	247.3	70	92.86	0.89	1	49	*
GJ0536	1	14 01 03.2	-02 39 18	1.046	303.3	70	99.73	1.51	2	66,67	*
HIP068570	1	14 02 19.6	+13 41 22	0.173	145.6	27	50.36	2.04	1	67	*
GJ0537	2	14 02 32.2	+46 20 02	0.585	095.0	36	88.80	3.90	1	66	*
LHS2852	1	14 02 46.7	-24 31 50	0.506	315.6	70	57.99	1.88	1	47	*
GJ0540	1	14 08 12.9	+80 35 50	0.584	158.8	27	59.18	1.14	2	66,67	*
LHS2866	1	14 08 16.9	+75 51 14	0.545	312.5	27	40.10	7.20	1	66	*
L548-010	1	14 10 57.5	-31 17 25	0.322	305.6	70	59.58	2.06	1	67	*
WT0460	2	14 11 59.9	-41 32 21	0.693	265.4	70	107.41	1.52	1	25	*
LHS2875	3	14 12 11.0	-00 35 04	0.746	290.8	70	40.20	3.40	1	66	*
GJ2106	1	14 13 12.9	-56 44 32	0.353	068.7	70	85.62	1.94	1	67	*
LHS2884	1	14 15 11.8	+45 00 40	0.707	251.5	27	61.30	6.10	1	66	*
GJ1182	1	14 15 30.2	+04 38 44	1.078	224.7	47	71.70	3.40	1	66	*
GJ0541.2	1	14 17 24.3	+45 26 40	0.049	113.5	27	52.60	1.25	1	67	*
GJ0543	1	14 19 11.0	-07 18 12	1.355	235.5	35	51.90	4.40	1	66	*
GJ0545	1	14 20 07.4	-09 37 13	1.023	217.7	70	71.40	1.30	3	29,58,66	*
SCR1420-7516	1	14 20 36.8	-75 16 06	0.194	243.8	70	43.12	1.82	1	1	*
LHS0370	1	14 20 53.0	+36 57 16	1.363	279.6	36	50.30	1.30	1	57	*
LHS2899	1	14 21 15.1	-01 07 20	0.670	162.5	70	74.66	2.15	1	49	*
GJ2107	1	14 23 06.4	-68 22 58	0.241	163.8	70	42.61	1.47	1	67	*
LHS2913	1	14 24 55.9	+08 53 15	0.569	073.8	27	72.83	4.53	2	66,67	*
GJ1183	2	14 27 56.1	-00 22 31	0.340	281.4	70	61.70	3.20	1	66	*
LHS2919	1	14 28 04.0	+13 56 13	0.605	217.6	47	82.80	4.10	1	34	*
LHS2921	1	14 28 27.7	+45 54 29	0.907	276.0	36	44.60	5.50	1	66	*
LHS2924	1	14 28 42.0	+33 10 03	0.815	213.7	47	92.25	1.25	3	66,64,58	*
GJ0550.3	1	14 29 18.6	-46 27 50	0.199	195.9	70	42.49	2.07	2	66,67	*

GJ0552	1	14 29 29.7	+15 31 57	1.677	321.2	27	70.91	1.90	2	66,67	*
LHS2930	1	14 30 33.7	+59 43 14	0.812	278.6	47	103.80	1.30	1	66	*
GJ0553	1	14 30 47.7	-08 38 47	1.292	259.3	27	59.46	1.40	2	66,67	
GJ0553.1	1	14 31 01.2	-12 17 46	0.580	234.6	70	91.78	3.70	2	66,67	*
LHS0375	1	14 31 38.3	-25 25 33	1.386	268.6	35	41.70	1.00	1	66	*
LHS2935	1	14 32 08.0	+08 11 30	0.471	272.1	47	77.38	0.99	1	1	*
GJ0555	1	14 34 16.8	-12 31 10	0.691	330.3	29	160.78	1.98	3	29,66,67	*
2MA1440+1339	1	14 40 22.9	+13 39 22	0.331	204.7	15	45.00	1.11	1	15	*
LTT14363	2	14 42 21.5	+66 03 20	0.311	263.8	27	93.17	1.30	1	67	*
SCR1444-3426	1	14 44 06.6	-34 26 47	0.451	187.7	70	65.35	1.01	1	1	*
SSS1444-2019	1	14 44 20.3	-20 19 26	3.507	236.0	53	61.60	1.96	2	18,53	*
GJ1185	1	14 47 55.2	-03 09 36	0.639	306.0	70	50.80	3.60	1	66	*
GJ0563.2	2	14 49 33.2	-26 06 20	1.396	275.6	27	50.91 ^b	7.84	3	66,67,67	*
GJ1186	1	14 53 37.2	+11 34 13	0.763	172.9	47	53.50	4.10	1	66	*
GJ0568	2	14 53 51.4	+23 33 20	0.724	278.5	27	97.11	3.01	2	66,67	*
GJ0569	3	14 54 29.2	+16 06 03	0.308	115.5	27	100.62	1.28	2	66,67	*
LHS2999	1	14 54 53.4	+09 56 36	0.510	217.9	27	40.78	2.48	1	67	*
LHS3001	2	14 56 27.2	+17 55 00	0.982	301.2	49	56.41	0.95	2	49,49	*
LHS3003	1	14 56 38.3	-28 09 49	0.975	209.8	9	152.49	2.02	3	9,65,66	*
LHS3005	1	14 57 20.6	+14 58 55	0.580	287.4	47	40.00	3.40	1	66	*
LP681-091	1	14 57 33.3	-06 19 49	0.234	164.9	70	40.81	4.60	1	67	
GJ1187	1	14 57 53.7	+56 39 24	0.712	158.4	47	89.00	4.60	1	66	*
GJ0572	2	15 00 55.5	+45 25 34	0.411	032.1	47	84.17	1.04	2	66,67	*
TVLM513-46546	1	15 01 05.5	+22 49 59	0.082	215.6	47	94.50	0.60	2	64,11	*
LHS3018	1	15 04 18.5	+60 23 04	0.684	285.1	27	56.01	1.31	1	67	*
2MA1507-2000	1	15 07 27.7	-20 00 43	0.129	121.9	47	42.53	0.63	1	47	*
LHS3030	1	15 09 35.5	+03 10 00	0.771	308.8	27	70.03	2.51	2	66,67	*
TVLM868-110639	1	15 10 16.8	-02 41 08	0.383	277.0	70	61.20	4.70	1	64	*
LTT06043	1	15 10 35.7	-42 58 37	0.421	229.3	70	41.04	2.28	2	66,67	
LHS0392	1	15 11 50.6	-10 14 18	1.005	257.6	35	67.40	3.10	1	66	*
LHS3033	1	15 11 53.4	+17 56 39	0.678	216.0	36	42.50	3.10	1	66	*
LP682-018	1	15 15 43.7	-07 25 21	0.329	219.6	70	59.20	1.11	1	1	*
LHS3056	2	15 19 11.7	-12 45 07	0.724	253.5	35	47.25	2.08	1	47	*
GJ0581	1	15 19 26.8	-07 43 20	1.224	265.6	68	160.12	1.33	3	66,67,68	*
HIP075187	1	15 21 52.9	+20 58 39	0.152	031.9	27	87.79	1.79	2	66,67	*
GJ0585	1	15 23 50.0	+17 27 38	1.302	197.0	36	85.10	2.90	1	66	*
GJ0587.1	1	15 28 01.3	+25 47 23	0.113	123.6	27	40.73	2.55	1	67	*
LP802-069	1	15 29 07.2	-17 22 55	0.184	272.3	70	40.17	2.54	1	67	
LHS3075	2	15 29 46.7	+42 52 13	0.669	148.1	47	51.10	4.40	1	66	*
L108-087	1	15 30 52.0	-68 01 18	0.213	091.4	70	58.33	1.62	1	1	
GJ0588	1	15 32 13.0	-41 16 32	1.563	228.7	27	168.52	1.27	2	66,67	*
GJ1193	1	15 34 30.5	+14 16 18	0.697	258.0	36	48.50	3.40	1	66	*
2MA1534-1418	1	15 34 56.9	-14 18 49	1.000	251.0	54	91.51	0.82	1	47	*
GJ0589	2	15 35 20.5	+17 42 47	1.258	259.4	47	70.30	2.10	1	66	*
LHS3091	1	15 35 41.1	+22 08 54	0.759	259.1	47	53.80	3.50	1	66	*
GJ0592	1	15 36 58.6	-14 08 02	0.756	214.7	70	74.90	3.80	1	66	*
GJ1194	2	15 40 03.5	+43 29 40	1.255	104.2	47	74.20	4.80	1	66	*
SIP1540-2613	1	15 40 29.6	-26 13 43	1.653	226.0	70	66.92	1.13	1	1	*
GJ0597	2	15 41 16.5	+75 59 34	1.096	132.5	27	74.61	1.98	2	66,67	*
GJ0595	2	15 42 06.5	-19 28 18	2.283	242.9	27	99.42	3.46	2	66,67	*
GJ2116	1	15 43 18.3	-20 15 33	1.173	195.3	70	46.73	1.17	1	30	*
L408-123	2	15 45 41.6	-43 30 29	0.467	215.1	70	52.71	1.02	1	1	*
LHS3114	1	15 46 31.9	-47 14 01	0.573	224.2	27	41.14	3.16	2	66,67	*
SCR1546-5534	2	15 46 41.8	-55 34 47	0.436	225.1	70	114.41	1.70	1	47	*
LHS3117	2	15 47 24.6	-10 53 47	0.521	225.7	70	66.21	3.18	1	67	*
LHS3122	2	15 49 32.9	+34 49 36	0.980	318.9	47	58.90	3.80	1	66	*
G202-016	1	15 49 36.2	+51 02 57	0.459	307.1	27	52.43	3.14	1	67	*
LHS3124	1	15 51 21.0	+29 31 06	0.494	206.5	47	53.18	1.89	1	1	*
LHS5303	1	15 52 44.6	-26 23 14	0.525	152.9	70	94.63	0.70	1	15	*
LHS3129	2	15 53 08.7	+34 44 39	0.565	154.2	47	44.66	2.33	2	66,66	*
LHS3132	1	15 55 05.2	+33 50 55	0.641	139.9	47	41.50	4.00	1	66	*
LHS3142	1	15 59 51.0	+14 59 50	0.879	209.0	47	40.00	5.10	1	66	*
GJ0606	1	15 59 53.4	-08 15 11	0.230	098.1	70	72.58	1.86	2	66,67	*
SCR1601-3421	1	16 01 55.7	-34 21 57	0.683	118.3	70	46.09	1.39	1	1	*

GJ0609	1	16 02 50.9	+20 35 21	1.534	224.7	47	100.30	3.10	1	66	*
LHS3149	1	16 04 20.0	-06 16 46	0.884	185.8	70	59.70	4.40	1	66	*
LP917-019	2	16 04 23.2	-33 03 40	0.256	261.3	70	43.67	2.14	1	67	
GJ1197	1	16 07 15.5	+26 49 49	0.564	140.0	36	45.90	3.70	1	66	*
2MA1607-0442	1	16 07 31.2	-04 42 10	0.462	176.5	70	63.90	1.47	1	15	*
GJ1198	1	16 08 15.0	-10 26 14	1.354	195.1	35	47.10	2.70	1	66	*
HIP079126	1	16 09 03.1	+52 56 37	0.215	072.9	27	59.07	1.04	1	67	*
LP804-027	1	16 12 41.8	-18 52 32	0.236	172.1	70	69.46	3.12	1	67	*
LHS3167	1	16 13 05.9	-70 09 08	0.607	202.1	49	60.25	0.95	1	49	*
LHS3169	1	16 14 21.9	-28 30 37	0.521	228.9	70	53.43	1.46	1	49	*
GJ1200	1	16 14 28.7	+19 06 04	2.033	280.0	36	55.90	3.30	1	66	*
GJ0618	2	16 20 03.5	-37 31 45	1.269	323.3	70	120.53	2.44	2	66,67	*
GJ0618.4	1	16 22 41.0	-48 39 20	0.729	230.7	70	42.14	3.35	2	66,67	*
GJ0620	1	16 23 07.6	-24 42 35	0.760	207.1	27	60.66	2.05	2	66,67	*
GJ0623	2	16 24 09.3	+48 21 10	1.230	111.5	27	126.12	1.15	3	66,40,55	*
GJ0622	1	16 25 13.0	-21 56 14	0.664	239.2	27	55.36	2.25	2	66,67	*
GJ0625	1	16 25 24.6	+54 18 14	0.468	111.8	27	153.14	0.92	2	66,67	*
LHS3197	1	16 26 48.1	-17 23 34	0.511	217.5	70	55.03	1.36	1	49	*
SCR1626-3812	1	16 26 51.7	-38 12 33	0.397	229.8	70	73.20	1.36	1	1	*
GJ2120	1	16 27 33.2	-10 00 29	0.397	214.5	70	43.72	3.13	1	67	*
GJ2121	2	16 30 13.1	-14 39 50	0.540	247.6	70	44.58	5.36	1	67	*
GJ0628	1	16 30 18.1	-12 39 45	1.188	184.3	27	234.38	1.50	2	66,67	*
SCR1630-3633	2	16 30 27.2	-36 33 56	0.369	262.2	70	65.51	1.59	1	1	*
GJ1202	1	16 31 35.1	+17 33 49	0.865	202.5	47	53.50	2.90	1	66	*
GJ1203	1	16 32 45.1	+12 36 45	0.779	259.7	27	55.62	2.53	2	66,67	*
2MA1632-0631	1	16 32 58.8	-06 31 48	0.367	175.4	70	53.31	1.48	1	15	*
LHS3218	1	16 35 24.6	-27 18 55	0.889	180.7	49	53.88	0.77	1	49	*
LHS0423	1	16 35 40.4	-30 51 20	1.158	223.6	29	51.39	2.94	1	29	*
GJ1204	1	16 36 05.3	+08 48 34	0.557	254.0	36	65.20	4.20	1	66	*
SCR1636-4041	1	16 36 57.6	-40 41 09	0.284	192.6	70	46.35	1.45	1	1	*
LHS5319	1	16 39 30.2	+50 34 03	0.517	141.5	67	47.46	1.97	1	67	*
LP625-034	1	16 40 05.7	+00 42 05	0.261	129.7	47	89.00	2.30	1	66	*
LP069-457	1	16 40 14.7	+67 36 32	0.451	326.0	36	74.70	4.30	1	66	*
GJ0633	1	16 40 45.3	-45 59 59	0.520	139.6	70	59.80	1.19	2	49,66	*
LTT14949	1	16 40 48.9	+36 19 00	0.228	322.0	27	52.03	2.31	1	67	*
GJ0634	1	16 41 28.3	-43 59 11	0.591	215.1	70	57.40	6.60	1	66	*
GJ2122	2	16 45 17.0	-38 48 30	0.062	205.3	47	87.35	2.28	1	47	*
LHS3240	1	16 46 13.7	+16 28 40	0.581	216.5	67	62.50	2.95	2	66,67	*
LHS3241	1	16 46 31.0	+34 34 56	0.531	223.9	47	84.30	0.76	1	23	*
LP154-205	1	16 47 55.2	-65 09 12	0.330	115.0	38	67.52	0.91	1	1	*
GJ0637	1	16 48 24.5	-72 58 34	0.709	219.5	70	63.05	1.95	2	66,67	*
LP806-008	1	16 48 46.0	-15 44 20	0.212	176.1	70	54.86	2.18	1	67	*
G169-029	1	16 50 57.0	+22 26 48	0.401	006.1	47	96.61	1.18	1	47	*
GJ0644	5	16 55 28.8	-08 20 11	1.206	222.2	27	154.96 ^a	0.52	5	9,59,66,66,67	*
LTT06745	1	16 55 38.0	-32 04 04	0.360	165.9	70	54.78	1.16	1	67	
SCR1656-2046	1	16 56 33.6	-20 46 37	0.275	224.0	70	61.79	1.09	1	1	*
GJ0645	1	16 56 45.1	-37 03 39	0.469	198.0	38	58.30	9.00	1	66	*
GJ1207	1	16 57 05.7	-04 20 56	0.612	129.0	70	115.26	1.50	2	25,66	*
GJ0649	1	16 58 08.8	+25 44 39	0.520	192.6	27	97.28	1.32	2	66,67	*
G139-003	2	16 58 25.0	+13 58 06	0.400	275.6	47	70.90	2.06	1	1	*
SCR1659-6958	1	16 59 28.1	-69 58 18	0.721	207.0	70	48.86	0.89	1	1	*
HIP083405	1	17 02 49.5	-06 04 06	0.148	236.0	27	52.83	1.98	1	67	*
LHS3262	1	17 03 25.4	+51 25 21	0.624	011.9	47	105.40	2.50	1	66	*
GJ1209	1	17 04 22.3	+16 55 56	1.136	175.0	36	58.20	3.20	1	66	*
GJ0655	1	17 07 07.4	+21 33 14	0.466	266.6	67	71.28	2.11	2	66,67	*
GJ1210	2	17 07 40.8	+07 22 07	0.606	231.5	47	78.00	5.30	1	66	*
UPM1710-5300	2	17 10 44.3	-53 00 25	0.207	184.3	70	64.55	2.96	1	1	*
L268-067	1	17 10 59.2	-52 30 56	0.280	304.9	27	80.17	1.84	1	67	*
LTT15087	1	17 11 34.7	+38 26 33	0.214	104.5	27	83.31	1.98	1	67	*
GJ0660	2	17 11 52.3	-01 51 06	0.640	239.5	67	85.23	2.47	2	59,66	*
GJ0661	2	17 12 07.9	+45 39 57	1.592	170.9	27	156.32	1.28	2	66,59	*
GJ0660.1	2	17 12 51.3	-05 07 32	0.717	163.5	70	49.99	3.39	2	66,67	*
GJ1212	2	17 13 40.5	-08 25 15	0.591	227.0	70	54.68	4.43	2	66,67	*
GJ1214	1	17 15 18.9	+04 57 50	0.946	141.9	47	77.20	5.40	1	66	*

L1205-067	1	17 16 00.6	+11 03 27	0.373	201.7	27	56.20	2.26	1	67	*
GJ2128	1	17 16 40.9	+08 03 30	0.289	246.7	47	67.08	2.69	1	67	*
GJ1215	3	17 17 42.9	+11 39 45	0.565	225.9	47	78.70	3.30	1	66	*
HIP084652	2	17 18 21.7	-01 46 53	0.136	137.1	47	51.86	2.49	1	67	*
GJ0671	1	17 19 52.7	+41 42 49	0.872	160.9	27	80.36	1.55	2	66,67	*
GJ0669	2	17 19 54.2	+26 30 03	0.411	328.1	67	90.65	1.65	4	66,67,56,56	*
GJ1216	1	17 20 46.3	+49 15 20	1.304	156.0	36	58.60	4.90	1	66	*
GJ0672.1	1	17 23 49.2	-32 15 16	0.639	195.4	27	42.38	3.92	2	66,67	*
GJ1219	1	17 27 39.9	+14 29 02	1.191	253.4	47	50.10	2.60	1	66	*
GJ1218	1	17 28 07.3	-62 27 14	0.959	197.4	29	61.32	1.10	2	9,29	*
SCR1728-0143	1	17 28 11.1	-01 43 57	0.206	148.7	70	40.57	2.33	1	1	*
GJ0674	1	17 28 39.9	-46 53 43	1.060	153.8	70	220.11	1.39	2	66,67	*
LHS33295	1	17 29 27.3	-80 08 57	0.670	317.9	70	79.95	1.82	1	49	*
GJ0676	2	17 30 11.2	-51 38 13	0.321	228.4	70	61.32	1.60	2	66,67	*
GJ0678.1	1	17 30 22.7	+05 32 54	0.252	173.5	27	100.57	1.04	2	66,67	*
SCR1731-2452	1	17 31 03.8	-24 52 44	0.198	217.6	70	40.16	1.50	1	1	*
GJ1220	1	17 31 07.4	+82 05 53	0.572	326.9	47	70.90	3.40	1	66	*
2MA1731+2721	1	17 31 29.7	+27 21 23	0.262	200.9	47	87.75	2.37	1	47	*
GJ0680	1	17 35 13.6	-48 40 51	0.456	006.2	27	102.15	2.70	2	66,67	*
GJ0687	1	17 36 25.9	+68 20 20	1.310	194.2	27	220.47	0.83	2	66,67	*
GJ0682	2	17 37 03.7	-44 19 09	1.177	217.1	27	198.09	2.06	2	66,67	*
GJ0686	1	17 37 53.3	+18 35 30	1.350	043.3	27	124.21	1.48	2	66,67	*
L204-148	1	17 38 32.5	-58 32 34	0.305	169.2	70	62.99	1.29	1	1	*
L1422-016	3	17 39 30.7	+27 45 44	0.202	176.4	27	40.05	2.46	1	67	*
LHS3315	1	17 42 10.8	-08 49 00	0.972	237.9	70	42.90	3.20	1	66	*
GJ0690.1	1	17 42 32.3	-16 38 25	0.656	191.4	35	51.50	5.20	1	66	*
G140-009	2	17 43 00.8	+05 47 21	0.249	104.9	27	50.09	2.48	1	67	*
GJ0694	1	17 43 55.9	+43 22 43	0.602	179.0	27	105.04	1.13	2	66,67	*
GJ0694.2	2	17 45 33.5	+46 51 19	0.029	310.6	27	46.58	1.09	2	66,67	*
LHS3324	1	17 46 05.8	+24 39 31	0.600	327.0	36	68.70	2.40	1	66	*
GJ2130	3	17 46 12.8	-32 06 09	0.278	196.2	25	70.60 ^a	1.59	3	17,25,2	*
LTT07077	1	17 46 29.4	-08 42 37	0.453	183.4	70	77.18	1.71	1	1	*
GJ0693	1	17 46 34.2	-57 19 09	1.711	218.0	70	171.10	2.22	2	66,67	*
SCR1746-3214	1	17 46 40.7	-32 14 04	0.240	062.2	70	86.54	1.39	1	1	*
LHS3332	1	17 49 56.1	+22 40 56	0.780	259.0	36	67.90	5.60	1	66	*
LHS3333	1	17 50 13.9	+23 46 16	0.574	322.8	47	44.80	4.10	1	66	*
GJ1222	1	17 54 17.1	+07 22 45	0.668	242.0	36	60.00	3.70	1	66	*
LHS3339	1	17 55 36.2	+58 25 04	0.879	017.0	36	46.40	1.00	1	66	*
L415-082	1	17 57 14.2	-41 59 29	0.353	188.5	70	58.32	1.14	1	1	*
LP044-162	1	17 57 15.0	+70 42 01	0.289	358.5	47	52.40	1.10	1	34	*
BARNARDS	1	17 57 48.5	+04 41 36	10.308	355.6	27	545.51	0.29	3	66,67,4	*
LHS3343	2	17 57 50.9	+46 35 19	0.580	358.4	67	69.99	1.44	3	66,67,58	*
GJ1223	1	18 02 46.3	+37 31 03	1.202	175.9	47	83.50	3.90	1	66	*
G154-043	2	18 03 36.1	-18 58 51	0.395	141.8	70	77.19	1.90	1	1	*
G182-037	2	18 04 17.5	+35 57 25	0.278	162.8	27	47.26	1.71	1	67	*
GJ0701	1	18 05 07.6	-03 01 53	0.662	120.3	27	128.72	1.36	2	66,67	*
GJ1224	1	18 07 32.9	-15 57 47	0.702	241.0	51	126.99	1.01	2	51,66	*
LP334-011	1	18 09 40.7	+31 52 12	0.205	014.6	27	46.59	3.22	1	67	*
L043-072	2	18 11 15.3	-78 59 23	0.279	020.0	38	89.27	1.99	1	1	*
LP390-016	1	18 13 06.57	+26 01 51	0.221	279.4	56	58.20	2.30	1	56	*
LHS3370	1	18 13 52.9	-77 08 21	0.775	195.9	70	42.85	4.25	1	10	*
LTT15403	1	18 15 43.5	+18 56 19	0.432	185.1	27	43.86	2.36	2	66,67	*
GJ0708.3	1	18 16 18.2	+01 31 27	0.771	211.0	36	60.10	7.20	1	66	*
GJ0709	1	18 16 31.0	+45 33 28	0.335	357.8	27	58.74	1.04	2	66,67	*
GJ1225	1	18 17 15.0	+68 33 19	1.704	202.7	47	53.70	3.30	1	66	*
LHS0462	2	18 18 02.7	+38 45 19	1.091	198.0	36	88.40	3.60	1	66	*
LHS3376	1	18 19 02.8	+66 11 07	0.623	131.0	36	137.50	5.30	1	66	*
GJ0712	1	18 22 06.7	+06 20 38	1.158	273.0	36	68.90	2.20	1	66	*
GJ1227	1	18 22 27.1	+62 03 02	1.578	218.8	47	121.50	2.20	1	66	*
LTT15449	1	18 25 04.7	+24 38 04	0.448	185.4	27	45.77	1.92	1	67	*
LHS3385	1	18 25 31.9	+38 21 12	0.748	185.9	67	40.80	1.81	2	66,67	*
LP630-081	1	18 26 17.0	+01 46 21	0.332	330.7	47	53.50	2.00	1	34	*
WT0562	1	18 26 19.8	-65 47 41	0.640	177.5	70	58.43	0.90	1	49	*
SCR1826-6542	1	18 26 46.8	-65 42 40	0.311	179.0	70	66.36	0.77	1	1	*

GJ0714	1	18 30 12.0	-58 16 28	0.476	176.9	70	68.99	2.65	1	1	
GJ0720	2	18 35 18.3	+45 44 38	0.578	050.9	27	64.79	0.86	2	66,67	*
2MA1835+3259	1	18 35 38.0	+32 59 54	0.783	184.5	47	176.50	0.50	1	48	*
G141-021	1	18 36 19.0	+13 36 30	0.339	034.0	47	86.11	2.01	1	1	*
GJ2138	2	18 38 44.8	-14 29 26	0.582	168.8	27	77.60	2.79	1	67	*
LP335-012	1	18 39 33.0	+29 52 17	0.228	159.0	36	84.07	0.93	2	23,34	*
LP044-334	1	18 40 02.0	+72 40 54	0.192	351	36	59.30	2.20	1	34	*
GJ0723	1	18 40 17.8	-10 27 55	0.552	198.0	27	46.12	5.81	2	66,67	*
GJ0724	1	18 40 57.3	-13 22 47	0.677	187.9	27	60.56	1.99	2	66,67	*
GJ1230	3	18 41 09.4	+24 47 15	0.482	082.1	47	120.90	7.20	1	66	*
SCR1841-4347	1	18 41 09.8	-43 47 33	0.854	265.4	70	82.25	0.67	1	1	*
LTT15513	1	18 41 59.0	+31 49 49	0.303	271.6	27	87.89	2.58	2	66,67	*
G141-029	1	18 42 45.0	+13 54 24	0.361	354.6	51	90.09	1.91	1	51	*
GJ0725	2	18 42 46.6	+59 37 49	2.245	323.6	67	283.83	1.46	3	66,67,67	*
LHS5341	1	18 43 07.0	-54 36 48	0.499	197.0	35	102.91	1.20	1	47	*
LTT07419	2	18 43 12.5	-33 22 46	0.394	203.3	9	66.30	1.48	3	10,1,1	*
LHS3406	1	18 43 21.7	+40 40 54	0.598	345.7	47	70.70	0.80	1	66	*
SCR1845-6357	2	18 45 05.3	-63 57 48	2.664	076.6	25	259.50	1.11	2	14,25	*
LHS3409	1	18 45 44.0	+52 28 20	0.843	299.0	36	49.20	1.30	1	66	*
LTT07434	2	18 45 57.5	-28 55 53	0.424	130.7	70	61.16	1.34	1	1	*
SCR1848-6855	2	18 48 21.0	-68 55 34	1.281	195.7	31	40.63	0.72	1	31	
SIP1848-8214	1	18 48 51.1	-82 14 42	0.274	189.6	70	56.52	1.56	1	1	
GJ0729	1	18 49 49.4	-23 50 11	0.643	107.8	70	337.22	1.97	2	66,67	*
LHS3413	1	18 49 51.2	-57 26 49	0.634	257.0	70	82.21	2.01	1	49	*
GJ0730	1	18 50 00.8	+03 05 17	0.448	204.1	27	48.31	2.02	2	66,67	*
HIP092451	1	18 50 26.6	-62 03 03	0.108	056.5	27	61.75	2.07	1	67	*
GJ0731	1	18 51 51.1	+16 34 59	0.533	205.1	27	65.58	1.56	2	66,67	*
GJ0735	2	18 55 27.4	+08 24 09	0.120	128.4	27	85.04	1.45	2	66,67	*
SCR1855-6914	1	18 55 47.9	-69 14 15	0.885	146.1	70	86.44	0.65	1	1	*
GJ0737	2	18 57 30.6	-55 59 30	0.450	180.4	27	80.84	1.89	2	66,67	
GJ0740	1	18 58 00.1	+05 54 29	1.235	189.1	27	91.73	1.50	2	66,67	*
GJ0739	1	18 59 07.5	-48 16 28	0.516	163.5	27	70.48	2.40	3	66,66,67	*
GJ0741	1	19 03 16.7	-13 34 05	0.780	226.0	37	52.40	3.80	1	66	*
GJ0745	2	19 07 05.5	+20 53 17	0.584	235.2	27	115.45	1.51	3	66,67,67	*
GJ0747	2	19 07 43.0	+32 32 41	1.679	048.9	47	122.30	2.50	1	66	*
GJ1231	1	19 08 15.8	+26 35 06	0.539	203.0	36	57.80	3.30	1	66	*
GJ1232	1	19 09 50.9	+17 40 06	0.740	227.0	36	93.60	2.80	1	66	*
GJ0748	2	19 12 14.6	+02 53 11	1.863	106.2	27	98.05	0.39	3	66,39,6	*
GJ0747.4	1	19 12 25.3	-55 52 08	0.302	240.6	70	46.66	3.19	2	66,67	*
G207-022	1	19 12 30.4	+35 33 35	0.261	113.2	47	58.30	2.90	1	66	*
LHS3443	1	19 13 08.0	-39 01 54	0.506	120.1	70	48.57	1.14	1	49	*
LHS3445	2	19 14 39.1	+19 19 03	0.748	305.0	27	53.72	1.73	3	66,67,58	*
GJ0750	2	19 16 42.9	-45 53 22	0.465	152.3	67	64.50	1.86	2	59,66	
GJ0752	2	19 16 55.2	+05 10 08	1.454	203.4	27	171.20	0.50	4	66,67,64,46	*
GJ0754	1	19 20 48.0	-45 33 30	2.961	167.5	29	169.17	1.53	2	29,66	*
LHS0475	1	19 20 54.3	-82 33 16	1.269	164.8	70	83.04	0.93	1	30	*
GJ1235	1	19 21 38.7	+20 52 03	1.751	213.0	36	100.10	3.50	1	66	*
GJ0756	1	19 21 51.4	+28 39 58	0.907	073.7	27	44.51	2.58	2	66,67	*
GJ1236	1	19 22 02.0	+07 02 31	0.836	242.0	36	92.90	2.50	1	66	*
LHS3459	1	19 22 40.0	+29 25 15	0.704	180.0	36	47.30	4.10	1	66	*
GJ1238	1	19 24 16.3	+75 33 12	0.711	033.7	47	90.30	5.10	1	66	*
G185-023	1	19 26 02.0	+24 26 17	0.227	056.3	47	52.80	1.50	1	34	*
LHS5348	2	19 27 52.7	-28 11 15	0.509	170.5	70	78.65	1.32	1	1	*
SCR1931-0306	1	19 31 04.6	-03 06 18	0.505	023.4	70	57.19	0.59	1	1	*
LHS3472	1	19 34 57.6	+53 15 06	0.564	037.8	47	72.10	7.30	1	66	*
LTT18490	1	19 39 32.8	+71 52 19	0.483	202.9	27	44.96	1.27	2	66,67	*
LP869-042	1	19 39 36.2	-26 45 07	0.440	132.6	70	43.07	1.92	1	67	
GJ1242	1	19 41 54.2	+03 09 16	0.536	210.0	36	43.00	2.60	1	66	*
LP869-019	1	19 42 00.7	-21 04 06	0.306	164.4	70	53.81	1.59	1	47	*
SCR1942-2045	1	19 42 12.8	-20 45 48	0.162	184.3	47	62.75	0.90	2	56,51	*
LP869-026	2	19 44 53.8	-23 37 59	0.410	115.8	70	67.87	1.10	1	47	*
GJ0766	2	19 45 45.5	+27 07 32	1.226	182.0	36	93.06	3.74	2	66,59	*
LTT15769	2	19 45 49.7	+32 23 13	0.442	063.4	27	82.19	3.36	2	66,17	*
GJ0767	2	19 46 24.3	+32 00 57	0.602	129.9	67	72.98	1.22	3	66,67,58	*

WT2180	1	19 48 22.0	-08 22 52	0.546	228.3	47	53.76	2.25	1	9	*
LHS3489	2	19 50 04.4	+32 35 22	0.526	062.0	36	58.80	3.40	1	66	*
GJ1243	1	19 51 09.3	+46 29 00	0.304	030.6	47	84.10	2.40	1	66	*
2MA1951-3510	2	19 51 35.9	-35 10 38	0.373	078.4	70	93.06	3.48	1	1	*
GJ1245	3	19 53 54.4	+44 24 54	0.707	140.7	47	220.68	0.97	2	66,58	*
LHS3499	1	19 55 52.8	+51 16 22	0.582	053.9	27	40.38	2.31	2	66,67	*
LHS3505	1	19 58 13.5	+02 01 25	0.864	201.0	36	63.40	3.80	1	66	*
GJ1248	1	20 03 51.0	+05 59 44	0.922	212.0	36	79.50	4.00	1	66	*
GJ0774	2	20 04 04.7	-65 36 01	0.856	170.9	70	76.12	6.36	2	17,66	*
LP870-065	1	20 04 30.8	-23 42 02	0.377	155.9	70	55.00	1.60	1	47	*
GJ0781.1	2	20 07 45.0	-31 45 14	0.807	158.9	27	64.20	4.56	2	66,67	*
GJ1250	2	20 08 17.9	+33 18 13	0.488	039.0	36	46.20	5.40	1	66	*
2MA2009-0113	1	20 09 18.2	-01 13 38	0.395	185.8	70	95.95	1.54	1	51	*
GJ0784	1	20 13 53.4	-45 09 51	0.760	094.1	70	161.35	0.99	2	66,67	*
SCR2016-7531	1	20 16 11.3	-75 31 05	0.253	081.3	70	66.60	1.44	1	1	*
LEHPM2-0783	1	20 19 49.8	-58 16 43	0.347	181.9	70	61.93	1.02	1	51	*
GJ0788.1	1	20 22 41.9	-58 17 09	0.862	122.4	70	51.51	1.88	2	66,67	*
GJ1253	1	20 26 05.3	+58 34 23	0.606	024.0	36	107.50	3.60	1	66	*
GJ0791	1	20 27 41.7	-27 44 52	0.925	193.8	70	68.25	2.88	2	66,67	*
GJ1252	1	20 27 42.1	-56 27 25	1.299	161.3	29	50.53	2.14	1	29	*
GJ1251	1	20 28 03.7	-76 40 16	1.427	149.6	29	79.02	2.25	1	29	*
L755-019	1	20 28 43.6	-11 28 31	0.186	117.6	70	53.18	1.67	1	51	*
GJ0791.2	2	20 29 48.3	+09 41 20	0.685	080.0	36	112.92	0.30	2	66,5	*
GJ0793	1	20 30 32.0	+65 26 58	0.528	057.7	27	124.63	1.02	2	66,67	*
GJ0792	2	20 31 25.6	+38 33 44	0.743	017.0	36	67.10	2.80	1	66	*
LEHPM2-1265	2	20 33 01.9	-49 03 11	0.261	150.4	70	59.74	1.18	1	1	*
GJ1254	1	20 33 40.3	+61 45 14	1.028	027.2	47	63.00	2.70	1	66	*
LHS3564	1	20 34 43.0	+03 20 51	0.533	144.0	27	47.04	2.06	2	66,67	*
SCR2036-3607	1	20 36 08.3	-36 07 12	0.051	007.3	51	62.13	1.40	1	51	*
LHS3566	1	20 39 23.8	-29 26 35	0.808	155.6	70	57.26	2.68	1	9	*
GJ1256	1	20 40 33.9	+15 29 59	1.471	063.1	47	102.00	2.20	1	66	*
GJ0800	1	20 42 57.2	-18 55 06	1.016	146.1	35	56.62	2.29	2	66,67	*
GJ0802	3	20 43 19.3	+55 20 53	1.941	28.5	47	63.00	5.50	1	66	*
G262-026	1	20 43 41.3	+64 16 54	0.321	107.0	27	47.32	1.66	1	67	*
GJ0806	1	20 45 04.1	+44 29 56	0.510	058.2	27	81.75	1.36	2	66,67	*
GJ0803	3	20 45 09.5	-31 20 27	0.451	130.9	70	100.97 ^a	1.00	6	66,66,51,51,67,67	*
LHS3583	1	20 46 37.1	-81 43 14	0.732	137.0	70	94.72	2.38	1	49	*
LP756-003	1	20 46 43.6	-11 48 13	0.360	098.8	70	53.50	1.30	1	56	*
SCR2049-4012	1	20 49 10.0	-40 12 06	0.066	290.3	47	109.43	1.52	1	47	*
GJ0808	1	20 51 41.6	-79 18 40	1.234	142.4	70	57.12	2.09	2	30,66	*
LP816-060	1	20 52 33.0	-16 58 29	0.308	275.7	27	175.03	3.40	1	67	*
2MA2053-0133	1	20 53 09.1	-01 33 04	0.416	121.6	42	55.00	2.00	1	56	*
GJ0809	1	20 53 19.7	+62 09 15	0.775	179.9	27	141.61	0.63	2	66,67	*
LHS3593	1	20 53 33.2	+10 36 37	0.674	229.0	47	71.90	2.80	1	66	*
GJ0810	3	20 55 37.8	-14 02 08	1.298	108.2	29	77.65 ^a	0.85	3	30,30,66	*
GJ0811.1	1	20 56 46.6	-10 26 55	1.131	182.1	27	63.00	2.95	2	66,67	*
GJ0813	1	20 57 25.3	+22 21 45	0.800	105.4	27	73.06	2.74	2	66,67	*
LTT16135	1	20 58 41.9	+34 16 27	0.323	116.7	27	41.49	2.24	1	67	*
GJ0815	3	21 00 05.3	+40 04 13	0.662	111.9	27	66.55	1.58	2	66,59	*
USN2101+0307	2	21 01 04.8	+03 07 04	1.004	091.9	47	57.82	2.04	1	47	*
GJ0816	1	21 01 58.6	-06 19 08	0.482	205.0	70	69.64	2.58	2	66,67	*
GJ2151	1	21 03 13.9	-56 57 48	0.466	316.1	70	75.03	5.60	2	66,67	*
GJ0817	1	21 04 53.4	-16 57 32	2.234	204.2	27	55.80	2.53	2	66,67	*
LEHPM2-0801	1	21 05 13.8	-55 03 56	0.334	171.0	70	67.80	1.47	1	1	*
LHS0064	2	21 07 46.5	+59 41 13	2.098	209.0	36	41.80	2.70	1	66	*
GJ0821	1	21 09 17.4	-13 18 09	2.118	160.3	27	81.97	1.90	2	66,67	*
LHS3639	1	21 11 49.6	-43 36 49	0.741	161.7	70	63.34	3.41	2	66,67	*
LTT16240	3	21 16 05.8	+29 51 51	0.183	086.5	47	51.55	2.12	2	56,56	*
LP397-010	1	21 16 06.0	+22 38 47	0.179	017.4	47	48.43	1.07	1	23	*
GJ0825	1	21 17 15.3	-38 52 03	3.453	250.5	35	253.44	0.80	2	66,67	*
L117-123	1	21 20 09.8	-67 39 06	0.455	280.9	70	48.07	2.13	3	66,66,67	*
SCR2122-4314	1	21 22 16.9	-43 14 05	0.262	184.7	70	48.77	1.68	1	1	*
GJ0826.2	1	21 24 18.4	-46 41 35	0.739	094.0	27	40.75	4.40	2	66,67	*
LSPM2124+4003	1	21 24 32.0	+40 04 00	0.694	086.9	33	66.69	1.32	1	23	*

APM2127-3844	1	21 27 04.6	-38 44 51	0.927	142.6	70	49.25	1.38	1	49	*
GJ0828.2	1	21 27 16.9	-06 50 39	0.417	174.7	70	60.92	2.35	2	66,67	*
HB2124-4228	1	21 27 26.1	-42 15 18	0.191	132.5	70	42.30	3.60	1	66	*
LHS3677	1	21 27 46.6	+07 17 16	0.652	199.5	47	40.70	5.90	1	66	*
L714-046	1	21 28 18.3	-22 18 32	0.343	218.3	70	51.83	1.51	1	1	*
GJ0829	2	21 29 36.8	+17 38 35	1.078	069.6	27	149.01	1.69	2	66,67	*
SCR2130-7710	1	21 30 07.0	-77 10 38	0.589	118.0	60	47.61	1.30	1	1	*
LHS0510	1	21 30 47.7	-40 42 30	1.759	143.4	70	83.60	2.52	1	29	*
GJ0831	2	21 31 18.6	-09 47 26	1.163	092.7	27	125.12	2.15	2	66,67	*
GJ0832	1	21 33 34.0	-49 00 33	0.800	183.9	35	202.03	1.00	2	66,67	*
LHS3686	2	21 33 50.2	+01 46 15	0.669	181.0	36	68.60	5.60	1	66	*
LHS3693	1	21 34 50.3	+51 32 13	0.552	055.9	67	55.90	2.43	2	66,67	*
WT0795	1	21 36 25.3	-44 01 00	0.827	144.4	49	69.53	0.70	1	49	*
HIP106803	1	21 37 55.7	-63 42 43	0.190	245.0	70	47.06	2.55	1	67	*
GJ0835	2	21 38 00.3	+27 43 25	0.465	096.0	27	78.20	2.10	1	59	*
LHS0512	1	21 38 43.7	-33 39 55	1.160	117.4	70	82.02	2.10	1	29	*
LTT16329	2	21 39 54.3	+27 36 43	0.363	129.4	27	40.93	3.05	1	67	*
LTT18537	1	21 44 12.9	+06 38 29	0.401	231.2	47	48.03	3.24	2	66,67	*
GJ1263	2	21 46 42.7	-00 10 24	0.944	121.8	70	83.50	3.90	1	66	*
L002-077	1	21 46 42.7	-85 43 05	0.298	128.6	1	63.40	1.87	1	1	*
LTT16369	1	21 46 56.0	+46 38 06	0.295	089.0	36	60.50	0.80	1	46	*
LHS3711	1	21 47 53.7	+50 15 16	0.823	058.0	36	46.70	6.00	1	66	*
LHS3713	1	21 48 14.3	+27 54 56	0.708	196.0	36	54.80	4.40	1	66	*
GJ1264	2	21 49 05.9	-72 06 08	0.459	127.4	70	61.29	1.54	1	67	*
LHS3719	1	21 49 25.9	-63 06 52	0.558	038.3	70	60.28	1.37	1	49	*
LHS0516	1	21 56 55.3	-01 54 09	1.417	064.9	70	74.80	3.20	1	66	*
LTT16412	1	21 57 26.2	+08 08 13	0.387	075.1	27	47.24	1.66	3	66,67,28	*
GJ0842.2	1	21 58 24.5	+75 35 20	0.233	083.9	27	48.49	1.06	2	66,67	*
LSPM2158+6117	1	21 58 35.0	+61 17 06	0.819	082.5	33	59.17	2.16	1	23	*
LHS3739	3	21 58 50.2	-32 28 18	0.542	223.7	70	50.92 ^a	0.77	2	49,49	*
GJ0842	1	21 59 34.7	-59 45 10	0.895	097.9	27	83.28	1.74	2	66,67	*
G188-038	1	22 01 13.1	+28 18 24	0.376	084.3	67	111.70	1.73	2	66,67	*
GJ0844	2	22 01 49.0	+16 28 02	0.428	070.4	27	61.99	2.21	2	66,67	*
GJ0846	1	22 02 10.2	+01 24 00	0.530	238.6	27	97.93	1.45	2	66,67	*
LHS3746	1	22 02 29.4	-37 04 51	0.843	101.3	70	134.29	1.31	1	25	*
LHS3748	1	22 03 27.1	-50 38 38	0.589	142.7	70	50.15	4.27	1	17	*
LTT08848	2	22 05 51.3	-11 54 51	0.340	236.6	70	45.00	2.68	1	67	*
WT0870	1	22 06 40.7	-44 58 07	0.753	216.9	70	56.51	1.13	1	49	*
GJ0849	1	22 09 40.3	-04 38 27	1.083	090.9	70	111.45	1.75	2	66,67	*
G214-012	1	22 09 45.5	+41 02 21	0.452	059.0	36	44.10	3.10	1	66	*
G214-014	1	22 11 16.9	+41 00 54	0.312	317.7	27	43.32	2.17	2	66,67	*
GJ0851	1	22 11 30.0	+18 25 34	0.376	061.1	27	85.69	1.22	2	66,67	*
LHS3773	1	22 12 35.9	+08 33 11	0.687	173.1	47	62.60	3.90	2	66,67	*
GJ1265	1	22 13 42.9	-17 41 09	0.928	110.9	70	96.00	3.90	1	66	*
GJ1266	1	22 16 20.2	+70 56 40	0.863	092.7	27	45.20	2.30	1	66	*
GJ0852	3	22 17 19.2	-08 48 13	0.569	237.4	70	99.60	3.30	1	66	*
L119-033	1	22 21 42.9	-65 31 33	0.165	334.1	27	53.65	3.15	1	67	*
LHS3799	1	22 23 07.0	-17 36 26	0.787	157.0	70	137.69	1.75	2	51,66	*
GJ0856	2	22 23 29.1	+32 27 33	0.329	129.1	27	64.47	6.49	1	67	*
GJ0855	1	22 23 33.3	-57 13 14	0.721	122.0	70	52.45	2.11	2	66,67	*
GJ1268	1	22 24 55.9	+52 00 19	0.483	030.3	47	62.70	3.60	1	66	*
GJ0860	2	22 27 59.4	+57 41 45	0.782	245.8	27	248.06	1.39	2	66,59	*
LP876-026	2	22 28 23.4	-25 54 08	0.329	173.7	70	49.00	6.47	1	67	*
LTT16590	1	22 28 45.9	+18 55 54	0.211	127.0	27	45.42	1.74	1	67	*
LHS0523	1	22 28 54.4	-13 25 19	1.083	196.5	35	88.80	4.90	1	66	*
LP640-074	1	22 29 05.8	+01 39 48	0.201	168.4	27	46.91	1.99	1	67	*
GJ1270	1	22 29 49.0	+41 28 49	1.293	069.0	36	72.50	2.90	1	66	*
GJ0863	1	22 33 02.2	+09 22 40	0.555	075.2	27	75.09	2.18	2	66,67	*
LP876-034	1	22 34 00.5	-25 14 33	0.325	198.8	70	62.20	3.07	1	67	*
LHS0526	1	22 34 53.7	-01 04 58	1.136	078.8	70	42.50	3.70	1	66	*
LP460-044	1	22 35 49.0	+18 40 30	0.326	081.6	47	43.54	3.55	1	23	*
GJ0864	2	22 36 09.7	-00 50 30	0.628	174.6	27	58.71	1.74	2	66,67	*
L645-074	2	22 38 24.7	-29 21 14	0.260	183.0	37	86.23	1.06	1	1	*
GJ0865	2	22 38 29.8	-65 22 42	0.815	101.5	70	78.34	5.24	2	66,67	*

GJ0866	3	22 38 33.6	-15 17 59	3.254	046.8	35	289.50	4.40	1	66	*
GJ0867	4	22 38 45.6	-20 37 16	0.456	100.0	27	115.01	1.30	2	66,67	*
GJ1271	1	22 42 38.7	+17 40 09	1.220	065.4	47	53.30	1.75	3	66,67,58	*
GJ0871.1	2	22 44 58.0	-33 15 02	0.230	123.1	70	43.82	2.31	2	56,67	*
LHS3850	1	22 46 26.4	-06 39 26	0.865	128.0	35	53.30	4.60	1	66	*
GJ0873	1	22 46 49.7	+44 20 02	0.842	236.9	27	198.21	0.84	3	66,67,20	*
GJ0875	1	22 50 19.4	-07 05 24	0.149	314.6	27	70.77	1.82	2	66,67	*
GJ1274	1	22 50 37.7	+34 51 21	0.901	070.1	27	55.49	2.33	2	66,67	*
GJ0875.1	1	22 51 53.5	+31 45 15	0.525	095.7	27	67.55	2.04	2	66,67	*
LHS5394	1	22 52 48.1	-28 47 43	0.461	229.7	70	50.99	2.84	1	67	*
GJ0876	1	22 53 16.8	-14 15 49	1.172	125.0	27	214.47	0.57	3	7,66,67	*
GJ0878	1	22 54 21.5	+60 59 44	0.729	261.5	47	65.70	5.90	1	66	*
LHS3872	1	22 54 46.5	-05 28 26	0.675	055.4	70	42.42	4.52	2	58,66	*
HIP113201	1	22 55 27.2	-52 18 10	0.185	132.8	70	40.34	2.84	1	67	*
GJ0877	1	22 55 45.5	-75 27 31	1.420	225.6	35	116.13	1.18	2	66,67	*
GJ1277	1	22 56 24.7	-60 03 49	1.082	210.4	30	97.48	1.17	1	30	*
GJ0880	1	22 56 34.8	+16 33 12	1.071	254.6	27	146.37	0.95	2	66,67	*
L718-071	2	23 00 33.4	-23 57 10	0.382	150.5	70	49.10 ^a	2.38	2	67,67	*
HIP113850	1	23 03 20.8	-49 43 34	0.108	196.3	27	49.22	2.02	1	67	*
SCR2303-4650	1	23 03 35.6	-46 50 47	0.190	263.1	1	63.15	1.27	1	1	*
GJ0887	2	23 05 52.1	-35 51 11	6.907	078.9	35	305.08	0.70	2	66,67	*
HIP114066	1	23 06 04.8	+63 55 34	0.185	108.5	27	40.81	1.60	1	67	*
2MA2306-0502	1	23 06 29.4	-05 02 29	1.036	117.1	9	82.58	2.58	1	10	*
SSS2307-5009	1	23 06 58.8	-50 08 59	0.437	087.4	70	46.59	1.57	1	15	*
SCR2307-8452	1	23 07 19.7	-84 52 04	0.613	097.2	60	65.84	1.95	1	1	*
LHS0535	1	23 07 43.5	+68 40 06	1.125	089.0	36	72.48	2.21	2	66,58	*
GJ0889.1	1	23 08 06.9	+03 19 44	0.555	062.4	27	63.15	2.13	2	66,67	*
GJ0890	1	23 08 19.5	-15 24 35	0.109	100.2	27	42.78	1.73	3	66,67,28	*
GJ1279	1	23 09 40.9	-67 43 58	0.372	238.9	70	66.74	0.83	1	67	*
GJ1281	1	23 10 42.2	-19 13 35	1.443	177.1	70	41.14	2.31	1	29	*
LHS3909	1	23 12 11.3	-14 06 12	0.755	196.3	70	54.90	2.00	1	49	*
GJ2154	2	23 14 16.7	-19 38 39	0.459	083.3	70	50.42	2.14	1	67	*
LHS0539	1	23 15 51.6	-37 33 31	1.311	078.4	29	52.85	2.01	1	29	*
LHS3916	2	23 15 57.2	-81 22 21	0.502	079.2	27	44.52	1.31	1	67	*
L719-021	1	23 17 00.2	-23 23 47	0.370	128.5	70	46.86	1.70	1	67	*
LHS3923	1	23 17 22.9	+38 12 03	0.470	196.0	36	57.10	3.20	1	66	*
LHS3925	1	23 17 50.3	-48 18 47	0.756	157.5	49	46.85	1.17	1	49	*
GJ0894.1	1	23 18 17.9	+46 17 21	0.356	067.2	27	40.49	1.98	2	66,67	*
LHS0543	1	23 21 37.4	+17 17 25	1.485	201.2	27	91.84	2.30	2	66,67	*
GJ0895	1	23 24 30.5	+57 51 15	0.293	192.3	27	76.48	1.22	2	66,67	*
LHS0543a	1	23 25 47.5	+53 08 25	1.071	071.0	36	40.40	3.10	1	66	*
GJ2155	1	23 26 12.3	+08 53 37	0.565	067.9	27	44.70	1.79	2	66,67	*
G190-028	3	23 29 26.2	+41 28 20	0.404	095.0	36	67.58	1.59	2	66,66	*
GJ1284	2	23 30 13.5	-20 23 27	0.374	122.6	70	66.13	1.91	2	17,51	*
APM2330-4737	1	23 30 16.2	-47 36 45	1.134	208.7	70	72.71	3.33	1	10	*
DEN2331-2749	1	23 31 21.8	-27 49 50	0.781	001.4	70	69.14	2.06	1	10	*
GJ0896	2	23 31 52.2	+19 56 14	0.545	094.7	27	159.88	1.53	3	66,67,69	*
GJ0899	1	23 34 03.3	+00 10 46	1.377	225.2	47	72.21	2.72	2	66,67	*
GJ1286	1	23 35 10.5	-02 23 21	1.191	135.1	70	138.30	3.50	1	66	*
LHS3978	1	23 35 44.6	+06 11 46	0.608	064.9	47	41.60	3.20	1	66	*
LTT16952	1	23 36 25.6	+55 29 43	0.499	101.4	27	40.18	2.37	1	67	*
LHS0547	1	23 36 52.3	-36 28 52	1.225	087.9	70	86.23	2.03	1	29	*
LTT09635	1	23 38 17.4	-41 31 04	0.301	135.9	70	53.54	3.52	1	67	*
GJ0905	1	23 41 55.0	+44 10 39	1.606	179.1	47	316.37	0.55	3	66,22,22	*
GJ1288	1	23 42 51.0	+30 48 59	0.475	232.1	47	81.80	2.60	1	66	*
GJ1289	1	23 43 06.3	+36 32 13	0.971	097.8	47	123.50	2.90	1	66	*
GJ1290	1	23 44 23.3	+21 36 14	0.428	079.0	36	45.40	4.00	1	66	*
LHS4009	2	23 45 31.3	-16 10 20	0.671	217.0	70	79.97	1.37	1	49	*
GJ0907	1	23 48 03.1	+49 00 57	0.629	083.6	67	59.94	2.94	2	66,67	*
LHS4016	2	23 48 36.1	-27 39 39	0.565	244.0	70	41.25	1.55	1	49	*
GJ0908	1	23 49 12.5	+02 24 04	1.390	134.2	67	168.02	1.18	2	66,67	*
LHS4021	1	23 50 31.6	-09 33 33	0.753	121.5	70	62.41	1.70	1	49	*
LEHPM1-6333	2	23 51 50.5	-25 37 37	0.408	067.3	70	46.77	1.27	1	47	*
L085-031	1	23 53 25.2	-70 56 41	0.292	089.4	70	80.82	2.50	1	1	*

L026-027	1	23 53 50.1	-75 37 57	0.452	147.1	27	100.07	1.05	1	67	*
GJ0912	2	23 55 39.8	-06 08 33	0.615	231.3	27	54.64	2.76	2	66,67	*
LEHPM1-6494	1	23 56 10.8	-34 26 05	0.319	163.6	70	52.37	1.71	1	15	*
GJ1292	1	23 57 44.1	+23 18 17	1.460	135.0	36	72.80	2.70	1	66	*
LTT17066	1	23 58 32.6	+07 38 31	0.368	167.3	27	58.34	1.87	2	66,67	*
APM2359-6246	1	23 58 42.9	-62 45 42	0.606	083.6	70	47.98	2.22	1	10	*
LTT09828	2	23 59 44.8	-44 05 00	0.255	358.0	70	64.87	2.48	1	1	*
LHS4057	1	23 59 50.2	+47 45 09	0.893	104.0	36	51.90	0.90	1	66	*
LHS4058	1	23 59 51.4	-34 06 43	0.939	132.8	49	63.14	2.02	1	49	*
Beyond 25 pc											
GJ1293	1	00 01 25.8	-16 56 55	0.386	132.8	70	31.13	2.21	1	67	
L290-032	1	00 02 27.1	-46 01 44	0.212	096.9	70	26.06	4.35	1	67	
LTT00074	1	00 11 04.6	-05 47 02	0.276	089.1	70	38.78	2.09	2	66,67	
LTT00095	1	00 13 29.1	-36 49 44	0.349	211.6	70	35.48	2.30	1	67	
LHS0109	1	00 17 40.0	-10 46 17	1.051	180.0	70	28.40	3.50	1	66	
LP644-095	1	00 19 12.4	-03 03 13	0.237	183.6	70	32.31	2.26	1	67	
LHS0110	2	00 19 37.0	-28 09 46	1.388	192.2	70	33.75 ^a	1.20	2	30,30	
LEHPM1-0494	2	00 21 05.9	-42 44 43	0.253	086.5	15	38.42 ^a	1.44	2	15,15	
LTT00207	1	00 23 47.3	-36 51 41	0.187	252.2	70	24.89	1.59	1	67	
SCR0027-0806	1	00 27 45.4	-08 06 05	0.184	122.3	70	24.89	1.24	1	1	
LHS1094	1	00 32 15.4	-63 05 28	0.525	103.2	70	39.88	1.09	2	66,67	
LTT00313	1	00 35 38.1	-10 04 19	0.193	250.6	70	32.72	1.47	1	1	
LHS1106	1	00 36 00.0	-09 30 56	0.577	195.4	70	29.60	2.06	1	67	
GJ0043	1	00 55 25.4	-51 49 58	0.432	045.0	70	30.31	3.94	2	66,67	
LTT00525	1	00 55 49.3	-29 40 34	0.400	074.5	70	32.81	1.13	2	66,67	
G270-100	1	00 56 30.2	-04 25 16	0.370	109.9	70	33.30	3.80	1	66	
LTT00648	1	01 09 38.8	-07 10 50	0.430	214.3	27	26.55	2.87	1	67	
GJ0056.2	1	01 17 59.4	-48 09 01	0.244	067.0	70	29.07	2.75	2	66,67	
LHS1245	1	01 24 22.1	-44 08 11	0.447	220.2	70	29.49	4.01	1	67	
GJ2022	3	01 24 27.7	-33 55 09	0.215	130.1	70	38.80	2.13	1	51	
GJ1038	1	01 25 01.8	-32 51 04	0.241	056.4	70	39.77	1.60	1	67	
L002-060	1	01 29 20.9	-85 56 11	0.431	137.9	70	32.52	2.48	1	1	
L222-009	1	01 35 40.4	-50 15 42	0.230	078.2	70	20.73	2.43	1	67	
LP708-253	1	01 40 04.8	-13 54 41	0.217	173.9	27	28.65	3.74	1	67	
L367-082	1	01 41 03.6	-43 38 10	0.221	190.5	70	23.95	2.61	1	67	
L367-008	1	01 45 21.4	-39 57 20	0.316	067.1	70	33.84	2.30	1	67	
L173-003	1	01 51 46.2	-54 57 58	0.283	092.8	70	20.89	3.35	1	67	
L583-033	2	02 02 17.5	-26 33 52	0.336	146.0	37	34.77	0.93	2	1	
LP649-030	1	02 03 30.2	-04 54 41	0.210	150.4	70	34.74	2.59	1	67	
SCR0211-0354	1	02 11 52.0	-03 54 02	0.152	185.4	1	30.38	1.89	1	1	
GJ0088	1	02 12 51.0	-17 41 12	0.548	067.0	70	37.73	2.64	2	66,67	
LP941-016	1	02 13 37.4	-35 12 24	0.424	199.4	70	34.50	3.55	1	67	
LHS1380	1	02 17 56.8	-35 37 01	0.553	057.6	70	34.94	2.75	1	67	
LHS5058	1	02 36 32.8	-34 36 32	0.530	136.0	70	31.86	3.18	1	67	
L441-032	1	02 39 56.7	-38 28 00	0.388	035.5	70	29.11	2.31	1	67	
LHS0158	1	02 42 02.9	-44 30 59	1.005	087.6	29	24.94	1.61	1	29	
LTT01393	1	02 55 23.2	-25 13 29	0.343	102.2	70	34.49	3.45	1	67	
L012-040	1	03 03 26.4	-82 50 39	0.434	056.0	70	27.25	1.29	1	67	
LTT01453	1	03 03 36.7	-25 35 33	0.251	060.3	70	25.92	2.56	1	67	
LP887-068	1	03 17 35.1	-27 41 47	0.329	099.8	70	33.95	2.61	1	67	
SCR0327-3634	1	03 27 46.8	-36 34 40	0.184	244.6	70	38.13	1.62	1	1	
LHS1561	1	03 34 39.6	-04 50 33	0.543	129.5	70	34.20	1.72	1	49	
GJ0155.3	1	03 53 19.7	-37 03 59	1.179	195.9	70	39.85	2.83	2	66,67	
LHS0186	1	04 03 38.4	-05 08 05	1.153	168.0	70	19.40	4.30	1	66	
WT0135	1	04 11 27.1	-44 18 10	0.692	067.1	30	39.04	2.42	1	30	
LHS1656	1	04 18 51.0	-57 14 01	0.815	022.1	49	39.41	1.94	1	49	
L446-008	1	04 21 00.5	-35 51 21	0.246	090.0	27	34.45	1.59	1	67	
LHS1815	1	06 04 20.4	-55 18 47	0.741	064.6	70	35.45	2.57	2	66,67	
SCR0644-4223	2	06 44 32.1	-42 23 45	0.197	163.8	70	33.49	2.06	2	1	
LHS1904	1	07 11 19.7	-67 07 22	0.649	172.7	70	37.88	1.39	2	66,67	
SCR0724-3125	1	07 24 21.2	-31 25 58	0.209	282.6	70	25.99	1.44	1	1	
GJ2061	1	07 31 04.1	-37 13 46	0.289	186.5	70	30.03	4.08	1	67	
SCR0733-4406	1	07 33 42.7	-44 06 13	0.298	161.6	70	23.05	0.73	1	1	
GJ1100	1	07 47 03.1	-13 56 19	0.513	166.3	27	36.23	2.59	2	66,67	

LP784-012	1	08 02 03.4	-17 10 18	0.387	294.2	70	33.31	3.16	1	67
SCR0829-3709	1	08 29 41.3	-37 09 35	0.327	300.8	70	39.94	0.90	1	1
L891-016	2	08 31 21.6	-06 02 02	0.455	260.4	70	37.95	2.70	1	67
LTT03187	1	08 36 14.3	-41 33 26	0.234	293.3	70	25.67	2.03	2	66,67
GJ0316	1	08 40 00.3	-06 28 33	0.213	153.1	70	33.22	1.57	2	66,67
L098-062	1	08 41 32.6	-68 25 40	0.191	327.4	70	32.44	1.45	1	67
LP786-022	1	08 57 14.2	-19 35 04	0.326	190.1	70	35.35	2.40	1	67
L462-023	1	09 44 45.4	-36 32 38	0.282	238.2	70	25.13	2.21	1	67
WT0248	1	10 05 54.9	-67 21 31	1.212	265.2	29	38.44	2.83	1	29
LTT03719	1	10 10 00.0	-25 58 33	0.318	146.2	70	26.60	1.93	1	67
LHS2228	1	10 11 09.2	-82 51 58	0.576	305.6	70	35.77	1.47	1	67
LTT03763	1	10 15 50.1	-11 47 48	0.302	255.8	70	25.97	3.45	1	67
L752-053	1	10 21 08.1	-17 43 38	0.448	281.2	70	30.18	2.39	1	67
LHS0284	1	10 36 03.1	-14 42 29	1.165	300.5	70	21.14	1.30	1	30
LP904-036	1	10 36 28.4	-28 27 15	0.191	258.0	70	37.49	1.37	2	67,1
LP904-045	1	10 40 18.5	-29 30 23	0.205	259.8	70	26.56	2.29	1	67
LP905-022	1	10 51 58.9	-32 01 20	0.236	282.3	70	30.86	2.68	1	67
LP849-020	1	10 52 26.4	-22 41 16	0.184	131.2	70	34.92	3.36	1	67
LTT04033	1	10 58 41.3	-42 40 09	0.252	292.5	70	19.27	3.43	2	66,67
LTT04042	1	11 00 02.8	-35 06 37	0.259	147.1	70	29.55	4.37	1	67
LTT04105	1	11 09 12.2	-04 36 25	0.347	251.1	70	35.06	2.35	1	67
LHS0299	1	11 11 22.7	-06 31 56	1.073	206.9	70	12.00	2.90	1	66
GJ0429.2	1	11 28 00.5	-09 10 57	1.007	147.8	27	39.79	2.99	2	66,67
CE440-087	1	11 47 50.7	-28 49 45	0.430	239.0	52	16.43	1.18	1	1
Ruiz440-064	1	11 48 50.6	-28 33 23	0.673	261.8	9	25.11	1.49	1	9
LP908-010	1	12 03 28.0	-29 23 00	0.314	313.7	1	37.64	1.20	1	1
GJ2090	1	12 04 36.6	-38 16 25	0.711	108.1	70	36.34	2.76	1	67
WT1928	1	12 08 06.9	-32 06 36	0.381	258.0	71	17.76	1.21	1	1
LHS0323	1	12 17 30.2	-29 02 21	1.106	267.1	30	23.29	1.83	1	30
LP470-065	2	12 17 46.8	-39 04 05	0.243	204.0	70	32.38	2.60	1	67
LHS0326	1	12 24 26.8	-04 43 37	1.301	241.8	30	20.39	1.94	1	30
LTT04828	1	12 39 55.9	-08 34 42	0.221	247.2	70	27.79	2.87	1	67
SCR1240-8116	1	12 40 56.0	-81 16 31	0.476	279.3	70	32.34	2.32	1	1
LHS5231	1	12 59 18.2	-00 10 33	0.470	161.2	1	34.41	1.76	1	1
WT1962	2	12 59 51.3	-07 30 35	0.501	291.0	71	28.37	1.32	1	1
L147-045	1	13 04 43.8	-62 15 26	0.276	290.4	70	26.00	3.30	1	67
LHS2698	1	13 13 29.6	-32 27 05	0.533	266.3	70	21.59	0.92	1	49
LP910-061	1	13 16 21.9	-33 47 45	0.203	175.1	70	25.56	2.85	1	67
LHS2744	1	13 30 52.6	-32 37 49	0.695	241.4	70	26.18	2.27	1	67
LTT05294	1	13 39 37.6	-01 35 43	0.375	238.5	70	30.93	3.29	1	67
LP912-026	1	13 53 19.8	-30 46 38	0.236	279.1	70	30.05	3.71	1	67
LHS2841	1	14 00 57.0	-31 47 50	0.681	277.0	66	29.67	2.38	2	66,67
GJ0539.2	2	14 09 27.2	-30 55 49	0.463	245.4	70	25.37	3.31	2	66,67
L836-121	3	14 14 21.4	-15 21 22	0.239	222.0	70	33.14	4.90	1	67
LHS5275	1	14 39 58.8	-56 54 46	0.533	126.2	70	17.70	8.80	1	66
SCR1441-7338	1	14 41 14.4	-73 38 41	0.206	029.1	70	39.82	0.94	1	1
LHS0381	1	14 50 28.9	-08 38 37	1.560	188.4	70	27.40	5.40	1	66
LHS0382	1	14 50 41.2	-16 56 31	1.429	244.0	29	20.69	2.25	1	29
LHS0385	1	14 55 35.8	-15 33 44	1.736	209.6	35	20.40	5.80	1	66
LP915-016	2	15 17 21.1	-27 59 50	0.193	252.2	70	33.98	3.77	1	67
LP802-068	1	15 24 45.8	-17 07 39	0.391	236.8	70	28.92	5.19	1	67
LEHPM2-0016	1	15 29 14.0	-29 07 38	1.034	188.4	70	27.82	1.03	1	30
L336-071	1	15 49 38.3	-47 36 34	0.390	174.1	70	36.80	2.42	2	66,67
LP684-003	1	15 56 41.4	-04 14 21	0.193	310.2	27	24.49	3.65	1	67
LHS3147	1	16 02 23.6	-25 05 57	0.661	200.4	70	39.18	1.37	1	49
GJ0618.1	1	16 20 24.8	-04 16 02	0.385	264.1	70	29.84	2.13	2	66,67
LP745-070	1	16 33 41.6	-09 33 12	0.198	198.3	70	32.60	2.47	1	67
LHS0440	1	17 18 32.3	-43 26 38	1.083	233.3	30	36.40	1.22	1	30
GJ1217	1	17 22 43.0	-14 57 37	0.216	193.3	70	37.17	2.80	1	67
LTT07022	1	17 39 28.3	-22 41 46	0.309	200.1	70	23.00	9.20	1	66
LP808-023	1	17 51 27.5	-18 59 32	0.334	165.2	70	22.71	2.92	1	67
LTT07218	1	18 09 33.3	-12 02 20	0.216	162.2	27	35.19	2.53	2	66,67
GJ1226	2	18 20 57.2	-01 02 58	1.079	209.4	70	34.10 ^a	4.00	2	29,29
LHS0468	1	18 48 44.9	-02 33 46	1.083	235.5	70	35.00	4.40	1	66

LHS3421	1	18 52 52.4	-57 07 37	0.773	194.1	70	37.62	3.82	2	66,67
SCR1901-0737	1	19 01 32.4	-07 37 24	0.189	227.1	70	39.39	0.96	1	1
SCR1901-3106	1	19 01 59.2	-31 06 45	0.211	122.4	70	21.72	1.18	1	1
SCR1916-3638	1	19 16 46.6	-36 38 06	1.328	184.0	70	14.78	1.37	1	30
LP347-017	1	19 19 09.0	-45 47 59	0.457	174.0	70	25.87	3.53	1	67
L208-005	1	19 30 13.7	-54 56 19	0.324	176.1	70	28.89	2.73	1	67
GJ0762	1	19 34 36.5	-62 50 39	0.515	222.7	70	38.89	1.33	2	49,66
LTT07786	3	19 42 52.8	-45 04 53	0.239	190.1	70	36.59	2.18	2	66,67
LHS3480	1	19 44 22.0	-22 30 54	0.547	139.5	70	17.70	0.80	1	66
LHS3492	1	19 51 31.3	-50 55 38	0.827	191.8	70	39.09	1.86	1	1
GJ0769	1	19 54 00.1	-47 48 37	1.041	185.6	70	39.60	8.50	1	66
LP814-044	1	20 17 52.4	-17 17 09	0.328	183.3	70	28.51	2.28	1	67
SCR2025-1534	1	20 25 08.6	-15 34 16	0.190	179.3	70	27.55	1.44	1	1
LP567-063	1	20 34 31.1	-32 31 00	0.205	169.5	1	37.19	1.78	1	1
LHS3582	1	20 46 18.0	-47 09 28	0.499	174.6	70	30.80	9.70	1	66
LHS3600	1	20 55 59.9	-59 56 44	0.619	125.3	70	36.04	2.47	1	67
LP816-061	1	20 59 06.6	-16 05 37	0.279	202.9	70	29.62	2.55	1	67
L211-096	1	20 59 51.3	-58 45 31	0.363	158.0	70	33.14	3.20	1	67
L163-023	1	21 02 25.0	-60 31 36	0.227	133.9	70	30.74	1.84	1	1
LHS3615	1	21 03 21.7	-50 22 52	0.495	142.0	70	39.63	1.25	1	1
LHS3620	1	21 04 25.4	-27 52 47	0.985	184.4	70	12.88	1.40	1	30
LEHPM1-4051	1	21 15 15.1	-75 41 52	1.053	144.6	30	32.96	1.28	1	30
LP637-024	1	21 19 18.3	-00 33 19	0.379	220.8	27	24.73	3.66	1	67
GJ0836.4	1	21 42 07.5	-12 09 48	0.719	170.4	70	28.60	2.60	1	66
CD-32 16735	1	21 47 02.7	-32 24 40	0.206	071.2	70	-4.69	3.88	1	70
L282-061	1	21 51 12.3	-52 15 40	0.353	126.8	70	31.55	2.51	1	67
LHS0515	1	21 55 48.0	-11 21 43	1.088	120.0	66	19.50	4.00	1	66
LHS3740	1	21 58 53.2	-57 56 04	0.923	096.9	70	35.94	1.45	1	30
LP699-075	1	22 18 13.2	-03 10 20	0.253	096.6	70	24.58	1.97	1	67
LHS3836	1	22 38 02.9	-65 50 09	0.694	118.9	49	36.42	1.32	1	49
LP932-053	1	22 39 44.0	-32 04 18	0.244	223.1	70	25.19	2.15	1	67
L106-104	1	22 46 45.2	-63 18 05	0.238	122.5	70	39.90	3.04	1	67
LTT09210	1	22 48 53.0	-28 50 03	0.284	215.6	70	24.91	2.19	1	67
LTT09203	1	22 48 54.5	-54 18 52	0.434	143.3	70	29.81	2.65	1	67
L214-072	1	22 49 26.0	-58 15 12	0.321	123.6	70	27.30	2.32	1	67
LP933-024	2	22 55 43.9	-30 22 39	0.384	062.4	27	30.95	2.75	1	67
LHS5396	1	23 00 23.6	-31 07 12	0.464	201.4	70	32.48	2.47	1	67
L286-071	1	23 00 26.1	-53 13 40	0.255	211.2	70	24.18	1.86	1	67
LHS5397	1	23 14 15.4	-56 50 52	0.440	239.8	70	35.75	3.02	1	67
L168-009	1	23 20 07.5	-60 03 55	0.332	246.3	70	37.92	2.23	1	67
LTT09507	1	23 21 11.3	-01 35 45	0.367	198.8	70	35.85	4.04	2	66,67
GJ0895.1	1	23 25 42.0	-45 36 35	0.490	093.6	70	27.86	2.80	2	66,67
L288-049	1	23 41 43.6	-51 56 37	0.257	184.5	70	36.29	4.03	1	67
L361-021	1	23 57 45.6	-45 48 55	0.389	113.2	70	24.39	2.91	2	66,67

^aThe weighted mean parallax includes the parallax of both the primary and the secondary components.^bThe HIP parallax is markedly different from that published in YPC and has an error of ~ 45 mas.

References: (1) this work; (2) Andrei et al. (2011); (3) Anglada-Escudé et al. (2012); (4) Benedict et al. (1999); (5) Benedict et al. (2000); (6) Benedict et al. (2001); (7) Benedict et al. (2002); (8) Biller & Close (2007); (9) Costa et al. (2005); (10) Costa et al. (2006); (11) Dahn et al. (2002); (12) Deacon & Hambly (2001); (13) Deacon et al. (2005b); (14) Deacon et al. (2005a); (15) Dieterich et al. (2014); (16) Dupuy & Liu (2012); (17) Fabricius & Makarov (2000); (18) Faherty et al. (2012); (19) Falin & Mignard (1999); (20) Gatewood et al. (1993); (21) Gatewood et al. (2003); (22) Gatewood (2008); (23) Gatewood & Coban (2009); (24) Henry et al. (1997); (25) Henry et al. (2006); (26) Hershey & Taff (1998); (27) Høg et al. (2000); (28) Ianna et al. (1996); (29) Jao et al. (2005); (30) Jao et al. (2011); (31) Jao et al. (2014); (32) Khovritchev et al. (2013); (33) Lèpine & Shara (2005); (34) Lèpine et al. (2009); (35) Luyten (1979a); (36) Luyten (1979b); (37) Luyten (1980a); (38) Luyten (1980b); (39) Martin & Mignard (1998); (40) Martinache et al. (2007); (41) Martinache et al. (2009); (42) Monet et al. (2003); (43) Pokorný et al. (2004); (44) Pourbaix et al. (2003); (45) Pravdo et al. (2006); (46) Pravdo & Shaklan (2009); (47) RECONS (in prep); (48) Reid et al. (2003b); (49) Riedel et al. (2010); (50) Riedel et al. (2011); (51) Riedel et al. (2014); (52) Ruiz et al. (1993); (53) Schilbach et al. (2009); (54) Schmidt et al. (2007); (55) Shakht (1997); (56) Shkolnik et al. (2012); (57) Smart et al. (2007); (58) Smart et al. (2010); (59) Söderhjelm (1999); (60) Subasavage et al. (2005a); (61) Subasavage et al. (2005b); (62) Teegarden et al. (2003); (63) Teixeira et al. (2009); (64) Tinney et al. (1995); (65) Tinney (1996); (66) van Altena et al. (1995); (67) van Leeuwen (2007); (68) von Braun et al. (2011); (69) Weis (1999); (70) Winters et al. (2015); (71) Wroblewski & Torres (1997).

APPENDIX C

DERIVED DISTANCES

This appendix provides the derived distance data for all M dwarf primaries, split into the 25 pc sample (top) and systems with best quality distances beyond 25 pc (bottom). Data listed includes the name of the M dwarf primary, coordinates, information on the *pltdists* (the distance, the total error, number of relations), *ccddists* (the distance, the total error, number of relations), and *trgdists* (the distance from the weighted mean of published parallaxes, the weighted mean error, and the number of parallaxes used to generate the weighted mean). These empirical values are then followed by the most reliable distance and its type. Distances based upon blended photometry are given in square brackets and are typically further than estimated. Distances for subdwarfs (both confirmed and candidates) are given in curly brackets and are typically closer than estimated.

Table C.1: Derived Distances for Nearby Red Dwarf Systems

Name	RA (hh:mm:ss)	DEC (dd:mm:ss)	d_{plt} (pc)	σ_{tot} (pc)	# rel	d_{ccd} (pc)	σ_{tot} (pc)	# rel	d_{trig} (pc)	σ_{trig} (pc)	# π	d_{best} (pc)	d_{type}
Within 25 pc													
2MA0000-1245	00 00 28.7	-12 45 16	22.2	7.6	7	23.1	4.0	11	...	...	...	23.1	ccd
LTT09844	00 00 46.9	-35 10 06	23.5	7.4	11	...	...	...	...	...	...	23.5	plt
GJ1001	00 04 36.5	-40 44 03	11.2	3.4	11	12.5	1.9	12	12.5	0.6	2	12.5	trg
G158-025	00 04 40.3	-09 52 42	24.5	7.4	11	...	...	...	...	...	...	24.5	plt
SIP0004-2058	00 04 41.5	-20 58 30	14.9	6.8	10	18.6	3.0	11	...	...	...	18.6	ccd
GJ0001	00 05 24.4	-37 21 27	3.7	1.0	11	5.6	0.9	11	4.3	0.0	2	4.3	trg
LP644-034	00 05 34.9	-06 07 07	23.0	6.2	11	...	...	...	...	...	...	23.0	plt
LP644-039	00 06 13.1	-02 32 11	27.3	9.2	11	21.9	3.9	12	...	...	...	21.9	ccd
LHS1019	00 06 19.2	-65 50 26	16.1	4.6	11	16.6	2.6	12	16.7	0.7	1	16.7	trg
GJ1002	00 06 43.2	-07 32 17	6.8	2.1	11	5.4	1.0	12	4.7	0.1	1	4.7	trg
GJ1003	00 07 26.7	+29 14 33	...	...	...	36.0	7.0	12	18.7	0.9	1	18.7	trg
LHS1022	00 07 59.1	+08 00 19	...	...	...	28.9	5.2	12	22.7	3.3	1	22.7	trg
L217-028	00 08 17.4	-57 05 53	17.3	5.9	11	13.2	2.0	12	13.3	0.4	1	13.3	trg
HIP000687	00 08 27.2	+17 25 27	...	...	...	18.5	3.2	12	21.8	0.9	1	21.8	trg
G131-026	00 08 54.0	+20 50 18	...	...	...	[10.7]	1.7	12	18.5	0.5	1	18.5	trg
GJ0007	00 09 04.3	-27 07 20	24.1	6.6	11	28.1	4.7	9	22.9	1.4	2	22.9	trg
LP644-094	00 09 13.5	-04 08 02	19.8	5.6	11	20.4	3.2	12	...	...	...	20.4	ccd
BPM46052	00 09 20.0	-21 14 41	16.0	4.8	11	...	...	...	...	...	...	16.0	plt
LEHPM1-0254	00 09 43.3	-41 17 36	23.4	8.7	11	...	...	...	...	...	...	23.4	plt
LEHPM1-0255	00 09 45.1	-42 01 40	10.8	3.2	11	12.5	2.0	12	18.8	0.5	1	18.8	trg
LSPM0011+5908	00 11 32.0	+59 08 40	...	...	...	10.7	1.9	12	9.2	0.0	2	9.2	trg
L217-009	00 11 49.1	-55 21 52	22.2	10.3	11	...	...	...	...	...	...	22.2	plt
GJ0011	00 13 15.8	+69 19 36	...	...	...	[15.9]	2.4	12	21.1	1.7	2	21.1	trg
LTT17095	00 13 38.7	+80 39 56	...	...	...	[14.8]	2.3	12	19.6	0.7	1	19.6	trg
GJ1005	00 15 28.1	-16 08 02	[8.0]	2.2	11	[6.7]	1.1	12	5.9	0.0	4	5.9	trg
GJ0012	00 15 49.0	+13 33 22	...	...	...	15.3	2.4	12	11.6	0.3	3	11.6	trg
LHS1051	00 15 51.5	-67 59 52	14.0	3.9	11	17.5	2.8	12	...	...	...	17.5	ccd
2MA0015-1636	00 15 58.1	-16 36 57	...	...	...	[11.8]	1.8	12	18.0	0.4	1	18.0	trg
L290-072	00 16 02.0	-48 15 39	[15.4]	4.2	11	[14.1]	2.2	12	22.8	2.3	1	22.8	trg

GJ1030	01 06 41.5	+15 16 22	...	...	...	15.6	2.6	12	21.8	1.1	2	21.8	trg
GJ0052.2	01 07 49.6	+34 12 54	...	...	...	38.3	6.3	12	22.2	1.6	1	22.2	trg
GJ1031	01 08 18.3	-28 48 21	15.4	4.2	11	...	...	...	...	...	...	15.4	plt
G271-001	01 08 50.4	-03 40 34	20.0	5.6	11	...	...	...	...	...	...	20.0	plt
SSS0109-5101	01 09 01.5	-51 00 50	15.0	4.3	11	15.0	2.7	9	15.5	0.4	1	15.5	trg
GJ1032	01 09 12.5	-24 41 21	14.8	4.1	11	15.4	2.4	12	22.6	1.6	1	22.6	trg
GJ2021	01 09 18.7	-24 30 24	18.6	5.2	11	...	...	...	...	...	...	18.6	plt
LP647-013	01 09 51.2	-03 43 26	9.3	4.3	11	11.4	2.1	12	9.6	0.2	1	9.6	trg
LP707-016	01 10 17.5	-11 51 18	17.3	5.5	11	12.6	2.1	12	18.5	0.5	1	18.5	trg
GJ0054	01 10 22.9	-67 26 42	[3.6]	1.6	10	[4.9]	0.8	12	7.8	0.1	3	7.8	trg
LP467-016	01 11 25.4	+15 26 21	...	...	...	[7.9]	1.2	12	21.8	0.9	1	21.8	trg
SCR0111-4908	01 11 47.5	-49 08 09	23.6	10.8	11	17.5	2.8	12	18.4	0.5	1	18.4	trg
LHS1212	01 11 57.0	+04 54 50	...	...	...	15.1	2.4	12	15.9	0.5	1	15.9	trg
GJ0054.1	01 12 30.7	-16 59 56	6.0	1.7	11	4.7	0.8	12	3.7	0.0	2	3.7	trg
LEHPM1-1343	01 13 16.4	-54 29 14	14.6	4.3	11	15.2	2.3	12	16.5	0.3	1	16.5	trg
SCR0113-7603	01 13 31.5	-76 03 09	21.7	8.0	11	22.8	3.6	12	...	...	...	22.8	ccd
LHS1217	01 14 08.6	-36 56 43	18.3	6.2	11	...	...	...	...	...	...	18.3	plt
L221-060	01 14 34.2	-53 56 32	13.1	3.5	11	16.1	2.6	12	16.6	0.5	1	16.6	trg
LP938-144	01 14 36.7	-34 34 51	23.8	8.8	11	...	...	...	...	...	...	23.8	plt
LP938-149	01 15 29.8	-33 25 52	24.0	7.5	11	...	...	...	...	...	...	24.0	plt
GJ1034	01 16 29.2	+24 19 27	...	...	...	33.8	6.0	12	20.8	2.0	1	20.8	trg
GJ1036	01 17 15.4	-35 42 57	11.0	3.7	11	14.0	2.3	12	16.2	0.9	1	16.2	trg
L797-030	01 17 15.7	-13 15 48	15.9	4.7	8	17.8	2.9	12	23.4	1.4	1	23.4	trg
GJ0056.1	01 18 16.0	-12 53 59	19.9	5.6	11	19.2	3.0	12	22.1	1.6	2	22.1	trg
LTT00734	01 19 51.1	-27 26 39	21.9	6.2	11	...	...	...	...	...	...	21.9	plt
GJ1035	01 19 52.2	+84 09 33	...	...	...	15.1	2.4	12	14.0	0.5	1	14.0	trg
GJ0057	01 21 34.6	-41 39 23	12.6	3.7	11	18.2	2.9	9	16.7	0.4	2	16.7	trg
HIP006365	01 21 45.3	-46 42 51	...	...	...	18.9	3.0	12	22.4	1.3	1	22.4	trg
LTT00755	01 22 23.1	-33 12 51	14.8	5.4	10	...	...	...	24.6	1.1	1	24.6	trg
LHS1240	01 22 43.2	+00 31 07	...	...	...	[13.8]	2.7	12	14.4	0.8	1	14.4	trg
L797-023	01 23 18.0	-12 56 23	24.4	6.7	11	22.2	3.5	12	...	...	...	22.2	ccd
LTT00774	01 23 24.8	-30 45 34	18.6	6.4	11	...	...	...	...	...	...	18.6	plt
SCR0124-0027	01 24 31.3	-00 27 56	27.6	8.2	11	21.6	3.4	12	...	...	...	21.6	ccd
LEHPM1-1550	01 26 43.1	-54 43 30	20.7	6.9	11	...	...	...	...	...	...	20.7	plt
SCR0128-1458	01 28 39.5	-14 58 04	...	...	...	12.8	2.0	12	13.7	0.3	1	13.7	trg
LTT00818	01 30 05.1	-25 45 08	20.3	5.6	11	...	...	...	...	...	...	20.3	plt
LHS0142	01 32 26.2	-21 54 19	16.9	4.7	11	17.7	2.9	12	18.1	0.6	2	18.1	trg
LP768-113	01 33 58.0	-17 38 24	18.7	5.4	11	14.0	2.2	12	...	...	...	14.0	ccd
SCR0135-6127	01 35 53.7	-61 27 11	29.9	7.9	11	24.9	3.9	12	...	...	...	24.9	ccd
LP883-537	01 36 08.7	-26 52 16	19.1	5.1	11	19.6	3.1	12	...	...	...	19.6	ccd
LP648-020	01 36 55.2	-06 47 38	23.9	7.5	11	...	...	...	...	...	...	23.9	plt
LHS1268	01 37 20.8	-49 11 44	12.9	3.9	11	16.6	2.8	10	22.5	0.8	2	22.5	trg
SCR0137-4148	01 37 23.5	-41 48 56	21.9	6.3	11	24.1	3.8	12	...	...	...	24.1	ccd
SCR0138-6029	01 38 01.1	-60 29 56	28.7	10.2	11	20.3	3.2	12	...	...	...	20.3	ccd
LHS1272	01 38 29.9	+00 39 05	...	...	...	17.6	2.8	12	20.2	1.2	1	20.2	trg
GJ0065	01 39 01.5	-17 57 02	[2.7]	1.0	11	[1.8]	0.3	12	2.7	0.0	1	2.7	trg
L294-078	01 39 11.5	-48 17 50	20.5	5.7	11	...	...	...	...	...	...	20.5	plt
LP991-084	01 39 21.7	-39 36 09	9.2	2.8	11	8.5	1.3	12	8.6	0.1	1	8.6	trg
SCR0139-5927	01 39 39.8	-59 27 56	17.4	5.2	11	...	...	...	...	...	...	17.4	plt
LHS1288	01 42 55.8	-42 12 13	16.4	4.8	11	23.8	3.7	9	23.5	1.3	2	23.5	trg
GJ0070	01 43 20.1	+04 19 18	...	...	...	11.1	1.7	12	11.5	0.2	2	11.5	trg
SCR0143-0602	01 43 45.1	-06 02 40	...	...	...	13.3	2.1	12	19.8	0.6	1	19.8	trg
GJ0073	01 44 58.5	+16 20 39	...	...	...	15.9	2.5	12	16.4	1.0	1	16.4	trg
WT0050	01 46 29.4	-53 39 33	13.5	3.9	11	13.7	2.3	12	...	...	...	13.7	ccd
L870-044	01 46 36.8	-08 38 58	15.5	5.1	11	14.6	2.2	12	...	...	...	14.6	ccd
L294-092	01 47 42.6	-48 36 06	9.9	2.8	11	11.5	1.8	12	13.4	0.3	1	13.4	trg
L1303-013	01 48 03.9	+21 12 24	...	...	...	17.2	2.7	12	20.4	1.4	1	20.4	trg
L173-039	01 48 26.0	-56 58 42	11.6	3.2	11	15.5	2.6	12	...	...	...	15.5	ccd
L052-022	01 48 26.2	-70 58 29	24.0	7.6	8	...	...	...	...	...	...	24.0	plt
2MA0149+2956	01 49 09.0	+29 56 13	...	...	...	19.8	3.2	3	22.5	0.4	1	22.5	trg
SCR0149-8038	01 49 42.7	-80 38 28	25.3	9.6	11	23.8	3.8	12	...	...	...	23.8	ccd
LP940-020	01 49 43.5	-33 19 20	25.0	7.2	11	...	...	...	...	...	...	25.0	plt
LP940-021	01 50 13.3	-37 41 52	21.6	6.0	11	22.7	3.5	12	...	...	...	22.7	ccd
LHS1300	01 50 20.1	-49 36 40	24.3	6.9	11	...	...	...	...	...	...	24.3	plt
LHS5043	01 50 53.3	-34 24 39	24.3	7.5	11	...	...	...	...	...	...	24.3	plt
LHS1302	01 51 04.1	-06 07 05	16.5	6.5	11	11.0	1.9	12	9.9	0.2	1	9.9	trg
GJ0078	01 51 48.7	-10 48 13	18.7	5.5	11	20.8	3.2	12	16.2	0.7	2	16.2	trg
GJ0079	01 52 49.2	-22 26 06	6.6	1.8	11	8.9	1.5	10	11.0	0.1	2	11.0	trg
LHS5045	01 52 51.6	-48 05 41	11.5	3.3	11	12.1	1.9	12	13.3	0.3	1	13.3	trg
LTT01010	01 53 11.4	-21 05 43	15.3	4.2	11	16.0	2.7	12	...	...	...	16.0	ccd
L088-043	01 53 37.1	-66 53 34	12.1	3.3	11	11.6	1.9	12	13.3	0.6	1	13.3	trg
LHS1311	01 53 50.6	-10 32 14	22.0	7.3	11	19.4	3.1	12	...	...	...	19.4	ccd
LP768-670	01 54 08.0	-15 36 22	21.7	6.6	11	16.3	2.5	12	...	...	...	16.3	ccd
L223-077	01 55 13.2	-53 06 31	21.2	6.4	11	...	...	...	...	...	...	21.2	plt
GJ1041	01 59 12.4	+03 31 09	...	...	...	19.4	3.9	10	24.2	0.8	3	24.2	trg
GJ0082	01 59 23.5	+58 31 16	...	...	...	7.7	1.2	12	12.2	0.5	2	12.2	trg
GJ0083.1	02 00 13.0	+13 03 07	...	...	...	5.3	0.8	12	4.5	0.1	1	4.5	trg
L173-019	02 00 38.3	-55 58 04			...	7.8	1.2	12	8.2	0.2	1	8.2	trg
LHS1325	02 00 47.3	-10 21 21	24.1	6.5	11	...	...	...	...	...	...	24.1	plt
LP709-018	02 01 43.9	-10 17 29	21.7	6.1	11	...	...	...	...	...	...	21.7	plt
LP030-055	02 01 54.0	+73 32 32	...	...	...	[10.9]	1.9	12	11.4	0.1	1	11.4	trg
LHS1326	02 02 13.8	+10 20 11	...	...	...	9.0	1.4	12	8.9	0.3	1	8.9	trg
L655-017	02 03 20.8	-21 13 43	13.9	4.6	8	12.0	1.9	12	...	...	...	12.0	ccd
LHS1332	02 04 27.5	-01 52 57	21.7	5.9	11	21.9	3.6	12	...	...	...	21.9	ccd
GJ0084	02 05 04.9	-17 36 53	[8.1]	2.5	9	[6.8]	1.1	12	9.1	0.2	2	9.1	trg
GJ0084.1	02 05 23.7	-28 04 11	16.1	4.5	11	21.8	3.5	10	23.1	1.1	2	23.1	trg
LHS1339	02 05 48.6	-30 10 36	14.0	3.7	11	15.7	2.6	12	9.3	0.3	1	9.3	trg

GJ0084.2	02 06 57.2	+45 11 04	...	...	...	16.7	2.9	10	19.5	1.3	2	19.5	trg
GJ0085	02 07 23.3	-66 34 12	18.3	5.0	11	19.2	3.0	12	11.6	0.3	1	11.6	trg
LHS1347	02 09 36.1	-14 21 33	17.4	5.1	11	13.9	2.3	12	19.7	1.0	2	19.7	trg
LP709-043	02 10 03.7	-08 53 00	17.2	4.5	11	15.6	2.5	12	...	...	...	15.6	ccd
SCR0210-6622	02 10 45.1	-66 22 27	30.0	9.5	11	23.3	3.6	12	...	...	...	23.3	ccd
LT01133	02 11 02.2	-35 40 14	...	...	...	14.8	3.4	12	20.7	1.3	1	20.7	trg
LHS1351	02 11 18.0	-63 13 41	18.9	5.0	11	18.0	2.8	12	14.0	0.3	1	14.0	trg
GJ0087	02 12 20.9	+03 34 32	...	...	...	11.4	1.8	11	10.4	0.2	2	10.4	trg
LHS1354	02 12 29.2	-08 04 10	[19.8]	7.0	11	[22.9]	3.9	12	...	...	...	[22.9]	ccd
LHS1358	02 12 54.0	+00 00 16	...	...	...	12.5	1.9	12	15.3	0.5	1	15.3	trg
LHS1356	02 12 58.8	-73 45 50	21.9	5.8	11	...	...	...	...	...	...	21.9	plt
L296-105	02 13 53.0	-49 23 14	21.4	5.6	11	...	...	...	...	...	...	21.4	plt
GJ0091	02 13 53.6	-32 02 29	9.4	2.7	11	10.1	1.6	12	12.5	0.3	2	12.5	trg
LHS1363	02 14 12.6	-03 57 44	15.7	5.4	11	11.0	1.7	12	12.2	0.2	1	12.2	trg
NLT07418	02 14 18.6	-30 33 47	17.4	5.2	11	...	...	...	...	...	...	17.4	plt
GJ1045	02 14 59.4	+17 25 09	...	...	...	19.6	3.1	12	20.5	1.4	1	20.5	trg
LHS1367	02 15 08.1	-30 40 01	12.7	3.5	11	13.1	2.1	11	...	...	...	13.1	ccd
StKM1-249	02 15 20.0	-13 00 58	21.8	6.1	11	...	...	...	...	...	...	21.8	plt
LHS1373	02 15 48.9	-12 40 27	18.6	5.0	11	18.0	2.9	12	...	...	...	18.0	ccd
LP829-041	02 16 21.4	-22 00 49	25.0	9.3	11	...	...	...	...	...	...	25.0	plt
LHS1375	02 16 31.5	+13 35 37	...	...	...	8.9	1.4	12	8.5	0.3	1	8.5	trg
SCR0216-5257	02 16 32.0	-52 57 47	25.6	7.3	11	22.8	3.8	12	...	...	...	22.8	ccd
LHS1377	02 16 41.2	-30 59 18	11.8	3.7	11	10.4	1.7	12	14.3	0.6	1	14.3	trg
LHS1378	02 17 12.9	+35 26 19	...	...	...	9.0	1.4	12	10.4	0.1	1	10.4	trg
WT0084	02 17 28.5	-59 22 44	19.1	9.8	11	15.8	2.6	12	13.1	0.5	1	13.1	trg
GJ0093	02 17 34.2	-53 59 20	22.7	6.4	11	27.0	4.2	10	22.5	1.3	2	22.5	trg
L174-034	02 18 17.9	-55 07 33	22.5	6.0	11	...	...	...	...	...	...	22.5	plt
GJ0094	02 18 59.4	+35 21 00	...	...	...	17.8	3.3	12	17.7	2.6	1	17.7	trg
GJ1046	02 19 10.1	-36 46 41	13.1	3.4	11	13.0	2.1	12	14.1	0.6	1	14.1	trg
GJ1047	02 21 04.7	+36 53 02	...	...	...	[22.4]	3.5	12	21.7	1.7	1	21.7	trg
GJ0096	02 22 14.6	+47 52 48	...	...	...	9.6	1.6	12	11.9	0.2	2	11.9	trg
LP710-008	02 22 17.8	-13 11 06	23.8	6.5	11	...	...	...	...	...	...	23.8	plt
LP941-057	02 22 18.3	-36 51 52	23.9	7.1	11	...	...	...	...	...	...	23.9	plt
L440-002	02 22 25.6	-34 33 18	21.2	5.8	11	...	...	...	...	...	...	21.2	plt
LP829-051	02 23 24.0	-23 18 25	21.9	7.6	11	20.8	3.2	12	...	...	...	20.8	ccd
L296-061	02 24 26.6	-47 10 24	19.7	5.6	11	...	...	...	...	...	...	19.7	plt
LP885-059	02 26 32.8	-29 30 56	24.8	7.3	11	...	...	...	...	...	...	24.8	plt
L513-008	02 27 30.4	-30 54 36	15.6	4.5	9	17.0	2.7	12	20.6	0.8	1	20.6	trg
LHS1407	02 28 05.5	+03 10 05	...	...	...	21.0	3.5	12	23.1	2.8	1	23.1	trg
LP941-090	02 28 07.7	-36 28 20	22.7	6.8	11	...	...	...	...	...	...	22.7	plt
LHS1412	02 30 34.9	-15 43 25	21.9	5.9	11	...	...	...	...	...	...	21.9	plt
GJ0101	02 31 27.7	+57 22 43	...	...	...	20.2	3.3	12	19.0	0.6	2	19.0	trg
LP650-158	02 31 33.3	-03 56 23	25.6	6.9	7	22.9	4.3	12	...	...	...	22.9	ccd
GJ0102	02 33 37.2	+24 55 38	...	...	...	9.9	1.5	12	9.8	0.3	1	9.8	trg
L225-057	02 34 21.2	-53 05 37	[10.7]	2.9	11	[9.5]	1.5	12	19.6	0.7	1	19.6	trg
GJ0103	02 34 22.6	-43 47 47	[5.6]	2.2	9	[6.6]	1.5	12	11.6	0.1	2	11.6	trg
GJ0104	02 35 53.3	+20 13 11	...	...	...	10.5	1.7	12	13.7	0.3	2	13.7	trg
APM0237-5928	02 36 32.5	-59 28 06	14.6	7.0	11	9.2	1.5	12	9.6	0.1	1	9.6	trg
LHS1426	02 37 32.1	+00 21 12	...	...	...	24.2	4.0	12	24.9	2.7	1	24.9	trg
L174-028	02 37 52.8	-58 45 11	15.1	4.9	11	12.5	1.9	12	15.0	0.8	1	15.0	trg
LEHPM1-2662	02 38 49.1	-39 16 37	24.4	7.0	11	...	...	...	...	...	...	24.4	plt
LT017400	02 39 17.35	+07 28 17	...	...	...	20.6	3.2	12	19.4	1.1	1	19.4	trg
GJ1050	02 39 50.7	-34 07 58	14.9	4.1	11	15.1	2.4	12	10.7	0.5	1	10.7	trg
G075-035	02 41 15.1	-04 32 18	16.3	5.0	11	12.2	1.9	12	11.8	0.2	1	11.8	trg
LHS1434	02 42 56.3	-38 56 12	18.8	5.1	11	22.1	3.4	12	...	...	...	22.1	ccd
GJ1051	02 43 53.2	-08 49 46	23.3	7.4	5	26.3	4.1	12	24.8	2.4	2	24.8	trg
GJ0109	02 44 15.5	+25 31 24	...	...	...	7.3	1.1	12	7.6	0.1	2	7.6	trg
LP993-115	02 45 14.3	-43 44 11	12.1	4.6	11	9.2	1.4	12	11.2	0.2	2	11.2	trg
LP711-005	02 45 18.5	-13 56 24	24.0	6.9	11	...	...	...	...	...	...	24.0	plt
LT017413	02 45 39.6	+44 56 55	...	...	...	18.1	3.2	12	23.1	1.3	1	23.1	trg
SCR0246-7024	02 46 02.3	-70 24 06	20.0	8.1	11	14.2	2.3	12	12.5	0.2	1	12.5	trg
LHS0017	02 46 14.9	-04 59 21	27.9	11.7	11	20.9	4.5	12	16.6	2.3	1	16.6	trg
LHS1443	02 46 34.7	+16 25 10	...	...	...	16.2	3.6	12	14.6	0.8	1	14.6	trg
LT01349	02 46 42.9	-23 05 12	14.6	4.1	11	20.1	3.2	9	23.0	0.9	1	23.0	trg
LP771-021	02 48 41.0	-16 51 22	19.0	5.2	11	19.1	3.0	12	16.2	1.4	1	16.2	trg
GJ0114.1	02 50 09.8	-53 08 20	11.8	3.2	11	12.1	1.9	12	13.1	0.3	2	13.1	trg
LEHPM1-2816	02 50 23.0	-21 04 45	25.0	6.9	11	...	...	...	...	...	...	25.0	plt
GJ0118	02 52 22.2	-63 40 48	12.2	3.3	11	11.6	1.8	12	11.7	0.3	2	11.7	trg
LEHPM1-2855	02 52 29.3	-24 17 19	21.4	6.6	11	...	...	...	...	...	...	21.4	plt
SO0253+1652	02 53 00.0	+16 52 52	...	...	...	4.0	0.7	12	3.9	0.0	3	3.9	trg
L012-006	02 53 17.0	-80 31 20	24.0	6.5	11	24.8	3.9	12	...	...	...	24.8	ccd
NLT09315	02 53 46.9	-61 35 19	16.5	4.4	11	...	...	...	...	...	...	16.5	plt
LP831-001	02 54 39.5	-22 15 59	20.1	5.8	11	...	...	...	...	...	...	20.1	plt
LHS1471	02 55 14.5	-51 40 21	21.8	6.0	11	...	...	...	...	...	...	21.8	plt
GJ0119	02 56 34.4	+55 26 14	...	...	...	15.0	2.5	12	20.8	1.2	4	20.8	trg
GJ0120	02 57 31.0	+10 47 25	...	...	...	22.6	3.8	12	20.0	2.4	1	20.0	trg
LHS1481	02 58 10.2	-12 53 06	21.3	5.8	11	22.6	3.9	12	...	...	...	22.6	ccd
LT01445	03 01 51.0	-16 35 31	[11.1]	3.7	8	6.9	1.3	12	7.0	0.1	3	7.0	trg
LHS1490	03 02 06.4	-39 50 52	{24.3}	9.2	11	{20.1}	4.0	12	14.0	0.5	1	14.0	trg
G075-060	03 02 09.8	-00 44 43	23.6	6.9	11	...	...	...	...	...	...	23.6	plt
APM0302-6952	03 02 30.8	-69 52 03	20.4	5.6	11	...	...	...	...	...	...	20.4	plt
GJ0121.1	03 02 38.1	-18 09 59	15.5	5.1	11	15.5	2.4	12	19.3	1.5	2	19.3	trg
LEHPM1-3019	03 03 00.7	-55 24 53	24.4	7.2	11	...	...	...	...	...	...	24.4	plt
LP711-044	03 03 47.9	-12 51 19	17.8	5.1	11	17.7	2.8	12	...	...	...	17.7	ccd
LHS1491	03 04 04.5	-20 22 43	13.8	4.2	11	12.4	2.0	12	14.9	0.3	1	14.9	trg
LEHPM1-3070	03 06 11.6	-36 47 53	13.8	5.4	11	12.8	2.0	10	13.1	0.2	1	13.1	trg
GJ1054	03 07 55.8	-28 13 11	[11.4]	3.0	2	[13.7]	2.6	12	18.0	0.8	1	18.0	trg

LHS1499	03 08 28.2	+43 01 40	...	...	...	39.9	6.2	12	24.5	3.4	1	24.5	trg
GJ1055	03 09 00.2	+10 01 26	...	...	...	15.0	2.5	12	11.9	0.6	1	11.9	trg
LP994-114	03 09 22.2	-39 11 03	18.4	5.7	11	...	...	...	...	...	...	18.4	plt
GJ0125	03 09 30.7	+45 43 57	...	...	...	[8.5]	1.5	12	15.7	0.5	2	15.7	trg
LP831-035	03 10 03.1	-23 41 31	21.3	6.3	11	...	...	...	...	...	...	21.3	plt
LHS1512	03 10 15.4	+05 54 31	...	...	...	17.8	2.7	12	16.9	1.4	1	16.9	trg
GJ1053	03 10 58.3	+73 46 20	...	...	...	17.9	3.9	12	12.0	0.5	1	12.0	trg
LTTO1505	03 11 36.7	-04 16 37	24.7	7.4	11	19.5	3.1	12	...	...	...	19.5	ccd
GJ0130	03 12 29.8	-38 05 20	13.3	3.5	7	16.7	2.7	12	12.6	1.6	1	12.6	trg
GJ1057	03 13 22.9	+04 46 29	...	...	...	7.6	1.2	12	8.5	0.3	1	8.5	trg
LP831-045	03 14 18.2	-23 09 30	[14.8]	3.9	11	[12.8]	2.0	12	15.6	0.3	1	15.6	trg
StKM1-350	03 14 36.7	-09 40 03	21.9	5.9	8	24.6	3.9	12	...	...	...	24.6	ccd
LT11051	03 14 47.7	+48 30 51	...	...	...	20.4	3.2	12	19.9	3.9	1	19.9	trg
GJ0130.1	03 16 13.8	+58 10 02	...	...	...	[16.1]	4.9	8	14.8	0.6	2	14.8	trg
LP831-068	03 16 47.8	-21 25 26	12.1	3.7	11	12.6	2.1	12	18.7	0.8	1	18.7	trg
LP994-091	03 17 03.0	-42 14 33	24.3	7.2	11	...	...	...	...	...	...	24.3	plt
LT17492	03 17 12.2	+45 22 22	...	...	...	[18.5]	8.1	10	18.4	0.3	1	18.4	trg
LHS1525	03 17 45.2	+25 15 06	...	...	...	22.5	3.5	12	21.6	1.4	1	21.6	trg
LP887-070	03 18 04.0	-30 24 12	16.3	5.2	8	19.7	3.2	12	23.0	1.4	1	23.0	trg
GJ0134	03 18 07.5	+38 15 07	...	...	...	10.9	1.9	12	16.3	0.5	2	16.3	trg
LP994-096	03 18 45.5	-40 51 34	13.6	4.1	11	13.9	2.2	12	...	...	...	13.9	ccd
LTTO1577	03 18 58.3	-36 23 35	19.1	5.7	8	15.4	2.4	12	20.2	1.3	1	20.2	trg
LTTO1578	03 19 29.2	-30 59 44	21.0	7.8	11	18.4	2.8	12	...	...	...	18.4	ccd
2MA0320-0446	03 20 28.4	-04 46 37	19.1	10.7	6	23.4	4.0	11	20.3	1.2	1	20.3	trg
L127-124	03 20 51.8	-63 51 53	17.7	6.8	11	...	...	...	...	...	...	17.7	plt
DEN0320-5520	03 20 58.9	-55 20 16	24.5	7.4	11	...	...	...	...	...	...	24.5	plt
LP412-031	03 20 59.0	+18 54 22	...	...	...	14.3	2.2	3	14.5	0.1	2	14.5	trg
GJ0133	03 21 21.7	+79 58 02	...	...	...	13.4	2.2	12	14.0	0.3	2	14.0	trg
LT17505	03 21 46.9	-06 40 24	11.4	3.2	11	14.5	2.3	12	...	...	...	14.5	ccd
GJ1058	03 22 05.5	+02 55 46	...	...	...	25.4	4.7	12	16.9	1.5	1	16.9	trg
GJ1059	03 23 04.8	+41 59 53	...	...	...	20.0	3.9	12	15.4	0.8	1	15.4	trg
LP832-007	03 23 06.7	-24 13 28	23.5	6.5	11	...	...	...	...	...	...	23.5	plt
LT11117	03 23 20.6	+11 41 11	...	...	...	15.4	2.4	12	18.3	0.8	1	18.3	trg
GJ0140	03 24 06.4	+23 47 06	...	...	...	[10.9]	1.8	12	19.5	1.8	1	19.5	trg
DEN0324-7727	03 24 26.9	-77 27 05	20.8	6.0	11	...	...	...	...	...	...	20.8	plt
LTTO1628	03 25 39.7	-42 59 12	20.4	5.6	11	24.8	3.9	9	23.3	1.2	1	23.3	trg
LP532-081	03 25 41.7	+05 51 54	...	...	...	[17.5]	3.7	12	23.0	1.9	1	23.0	trg
L055-011	03 28 08.4	-70 01 41	23.6	6.4	11	...	...	...	...	...	...	23.6	plt
GJ0143.1	03 29 19.8	-11 40 42	13.6	4.0	3	17.7	2.9	9	22.0	1.0	2	22.0	trg
LSPM0330+5413	03 30 49.0	+54 13 55	...	...	...	11.3	1.9	12	9.6	0.1	1	9.6	trg
LP888-018	03 31 30.3	-30 42 39	12.1	3.6	11	11.3	1.8	11	12.5	0.2	1	12.5	trg
GJ0143.3	03 31 47.1	+14 19 17	...	...	...	21.1	3.2	12	20.0	1.1	2	20.0	trg
GJ0145	03 32 55.8	-44 42 07	13.5	4.0	11	12.0	1.9	12	10.8	0.2	2	10.8	trg
LEHPM1-3396	03 34 12.2	-49 53 32	10.9	3.1	11	10.7	1.9	9	8.3	0.3	1	8.3	trg
LHS0176	03 35 38.6	-08 29 23	17.6	7.6	11	13.1	2.1	12	12.9	0.2	1	12.9	trg
GJ1061	03 35 59.7	-44 30 45	6.2	2.8	11	3.6	0.6	12	3.7	0.0	2	3.7	trg
LHS1567	03 36 06.7	-40 59 54	22.6	6.9	11	...	...	...	...	...	...	22.6	plt
LSPM0336+3118	03 36 09.0	+31 18 40	...	...	...	30.9	19.8	11	12.6	0.4	1	12.6	trg
LEHPM1-3427	03 36 47.6	-55 45 08	22.8	6.9	11	...	...	...	...	...	...	22.8	plt
LHS1572	03 38 10.0	-68 56 46	[13.9]	3.8	11	[14.5]	2.2	12	...	...	...	[14.5]	ccd
GJ1062	03 38 15.7	-11 29 14	{33.2}	9.6	11	{37.0}	6.0	12	16.0	0.9	1	16.0	trg
L228-092	03 38 55.9	-52 34 11	16.5	5.1	11	...	...	...	...	...	...	16.5	plt
LP944-020	03 39 35.3	-35 25 44	6.4	2.0	10	7.0	1.3	11	6.3	0.0	2	6.3	trg
NLTT11616	03 40 08.9	-60 35 59	22.8	6.0	11	...	...	...	...	...	...	22.8	plt
LHS0178	03 42 29.4	+12 31 33	...	...	...	40.9	6.6	12	24.9	1.6	1	24.9	trg
SCRO342-6407	03 42 57.4	-64 07 57	39.3	15.5	11	37.9	8.6	12	24.1	1.2	1	24.1	trg
LHS1582	03 43 22.1	-09 33 51	[16.7]	5.3	11	[13.3]	2.3	12	21.7	0.8	1	21.7	trg
LP944-038	03 44 47.9	-38 20 13	[19.0]	5.1	11	...	...	...	...	...	...	[19.0]	plt
LHS1590	03 46 45.4	-11 17 42	25.0	6.7	11	22.0	3.4	12	...	...	...	22.0	ccd
LHS1593	03 47 23.2	+08 40 44	...	...	...	17.7	2.9	12	12.6	0.6	1	12.6	trg
G080-021	03 47 23.4	-01 58 20	12.4	3.3	11	11.9	1.9	12	16.0	0.5	2	16.0	trg
GJ0155.1	03 47 58.1	+02 47 16	...	...	...	19.5	3.1	12	17.0	0.7	2	17.0	trg
LHS1596	03 48 33.3	+73 33 18	...	...	...	16.8	2.8	12	16.5	0.5	1	16.5	trg
LEHPM1-3548	03 50 05.5	-39 22 32	22.9	6.6	11	...	...	...	...	...	...	22.9	plt
GJ1065	03 50 44.3	-06 05 42	16.2	4.9	11	12.6	2.0	12	9.5	0.3	1	9.5	trg
LHS1604	03 51 00.0	-00 52 45	14.4	4.0	11	12.4	1.9	12	14.7	0.4	1	14.7	trg
2MA0352+0210	03 52 10.8	+02 10 48	...	...	...	21.4	3.7	10	18.3	0.9	1	18.3	trg
LP833-014	03 52 23.1	-22 52 56	[16.0]	4.4	11	[18.1]	2.8	12	24.4	2.9	1	24.4	trg
LHS1610	03 52 41.0	+17 01 04	...	...	...	[9.7]	1.5	12	9.9	0.2	2	9.9	trg
LEHPM1-3582	03 57 49.1	-37 54 04	17.3	5.2	11	...	...	...	...	...	...	17.3	plt
GJ0157.1	03 59 56.8	+26 05 41	...	...	...	15.6	2.5	12	22.8	2.7	1	22.8	trg
LP833-023	04 00 28.6	-25 52 52	22.2	6.2	11	...	...	...	...	...	...	22.2	plt
LP031-301	04 05 57.0	+71 16 38	...	...	...	16.6	2.6	12	17.5	0.4	1	17.5	trg
LHS1630	04 07 20.5	-24 29 14	[12.6]	3.4	11	[11.7]	1.8	12	17.8	0.3	1	17.8	trg
GJ0162	04 08 37.4	+33 38 13	...	...	...	11.5	2.0	12	13.4	0.5	2	13.4	trg
LP889-037	04 08 55.6	-31 28 54	17.5	5.4	11	14.0	2.2	12	15.5	0.4	1	15.5	trg
GJ0163	04 09 15.7	-53 22 25	13.6	3.8	11	12.0	1.9	12	15.0	0.4	2	15.0	trg
GJ1068	04 10 28.1	-53 36 08	13.0	4.0	7	9.4	1.6	12	7.0	0.1	1	7.0	trg
LP714-037	04 10 48.1	-12 51 43	23.5	9.4	11	...	...	...	...	...	...	23.5	plt
LHS1638	04 12 20.3	+64 43 36	...	...	...	12.8	2.0	12	11.8	0.4	1	11.8	trg
LHS1641	04 12 43.1	-22 50 39	22.5	6.1	11	...	...	...	...	...	...	22.5	plt
LHS1639	04 12 47.5	-53 52 04	20.7	5.8	11	...	...	...	...	...	...	20.7	plt
GJ0164	04 12 58.8	+52 36 42	...	...	...	[9.9]	1.5	12	13.8	0.2	2	13.8	trg
GJ0165	04 13 08.2	+50 31 21	...	...	...	[16.5]	3.1	12	18.0	2.9	1	18.0	trg
G160-054	04 13 45.9	-05 09 05	23.4	8.0	11	17.0	2.6	12	...	...	...	17.0	ccd
2MA0414-0906	04 14 17.3	-09 06 54	...	...	...	20.3	3.1	12	23.8	1.4	1	23.8	trg
GJ2033	04 16 41.7	-12 33 23	[11.8]	3.2	11	[13.9]	2.2	12	21.4	2.0	1	21.4	trg

G007-034	04 17 18.4	+08 49 20	...	...	...	10.7	1.6	12	13.7	0.2	1	13.7	trg
LEHPM1-3719	04 17 34.6	-48 34 39	18.9	9.2	11	...	...	...	...	...	...	18.9	plt
LHS1654	04 18 04.7	-49 01 30	24.9	7.3	11	...	...	...	...	...	...	24.9	plt
NLTT12979	04 18 06.5	-24 06 24	25.0	7.7	11	...	...	...	...	...	...	25.0	plt
NLTT12997	04 18 40.1	-25 07 09	21.7	6.2	11	...	...	...	...	...	...	21.7	plt
LT11399	04 19 59.6	+36 29 11	...	...	...	19.4	3.1	12	23.3	2.2	2	23.3	trg
SCR0420-7005	04 20 12.6	-70 05 59	22.5	9.2	11	16.3	2.7	12	16.1	0.2	1	16.1	trg
LHS1665	04 22 12.5	-57 26 01	15.8	4.5	11	...	...	...	...	...	...	15.8	plt
GJ1070	04 22 33.5	+39 00 44	...	...	...	21.3	3.4	12	18.7	1.7	1	18.7	trg
LHS1668	04 24 56.2	-40 02 48	19.3	6.3	11	15.8	2.8	12	...	...	...	15.8	ccd
LHS0189	04 25 38.4	-06 52 37	{[70.0]}	22.9	4	{[83.1]}	24.9	8	18.4	1.0	2	18.4	trg
LHS0191	04 26 20.1	+03 35 43	...	...	...	16.0	2.7	12	17.1	0.5	1	17.1	trg
LHS5094	04 26 32.6	-30 48 02	13.8	4.1	11	11.5	1.9	12	13.3	0.5	1	13.3	trg
LEHPM2-1698	04 27 05.8	-40 26 40	23.2	6.7	11	...	...	...	...	...	...	23.2	plt
L178-101	04 27 36.2	-59 21 16	20.2	5.3	11	...	...	...	...	...	...	20.2	plt
L130-037	04 28 05.7	-62 09 25	14.4	4.0	11	14.9	2.4	12	...	...	...	14.9	ccd
2MA0429-3123	04 29 18.4	-31 23 56	...	...	...	[10.6]	1.7	12	17.0	0.4	1	17.0	trg
GJ0170	04 30 25.2	+39 51 00	...	...	...	10.8	1.7	12	10.4	0.3	1	10.4	trg
LP715-051	04 31 09.0	-13 30 53	[12.3]	3.3	11	[13.4]	2.2	12	19.1	1.3	1	19.1	trg
LHS1678	04 32 42.6	-39 47 12	25.4	6.9	11	27.1	4.2	12	19.6	0.5	1	19.6	trg
SCR0433-0211	04 33 31.5	-02 11 01	29.6	10.7	11	21.8	3.8	12	...	...	...	21.8	ccd
L231-032	04 33 39.7	-51 57 22	23.5	6.3	11	...	...	...	...	...	...	23.5	plt
LP775-031	04 35 16.1	-16 06 57	[8.6]	3.5	11	[7.7]	1.2	11	10.5	0.1	1	10.5	trg
LP834-032	04 35 36.2	-25 27 35	13.0	4.0	11	10.8	1.7	12	17.3	0.5	1	17.3	trg
L951-054	04 36 26.8	-03 43 56	21.8	6.3	11	...	...	...	...	...	...	21.8	plt
L591-042	04 36 40.9	-27 21 18	18.1	4.9	11	17.9	2.8	12	24.6	1.1	2	24.6	trg
LHS1686	04 36 41.5	+11 13 35	...	...	...	26.5	4.2	12	24.8	3.4	1	24.8	trg
GJ0173	04 37 41.9	-11 02 20	8.2	2.1	11	9.9	1.6	12	11.1	0.2	2	11.1	trg
LP655-043	04 38 02.5	-05 56 13	16.8	5.8	11	14.7	2.3	12	...	...	...	14.7	ccd
LT11472	04 38 12.6	+28 13 00	...	...	...	[9.4]	1.5	12	13.3	0.3	2	13.3	trg
LP715-039	04 38 37.2	-11 30 15	14.0	3.9	11	14.9	2.3	12	19.6	0.8	1	19.6	trg
LHS1690	04 39 32.0	+16 15 43	...	...	...	12.3	2.0	12	11.6	0.3	1	11.6	trg
LP655-048	04 40 23.3	-05 30 08	8.9	2.7	11	8.5	1.3	12	9.8	0.1	1	9.8	trg
HIP021765	04 40 29.2	-09 11 46	...	...	...	[12.6]	2.0	12	19.1	1.3	2	19.1	trg
GJ0176	04 42 55.7	+18 57 29	...	...	...	7.2	1.2	12	9.1	0.2	2	9.1	trg
LP891-006	04 43 11.8	-32 26 42	24.6	6.8	11	...	...	...	...	...	...	24.6	plt
UPM0444-3749	04 44 50.2	-37 49 41	24.7	7.4	11	20.7	3.3	12	...	...	...	20.7	ccd
LHS0197	04 46 23.8	+48 44 18	...	...	...	23.3	4.7	12	19.2	0.3	1	19.2	trg
LP656-009	04 46 24.4	-02 49 08	23.2	6.3	11	24.9	3.9	12	...	...	...	24.9	ccd
2MA0446-1116	04 46 51.8	-11 16 47	...	...	...	[11.1]	1.7	12	18.7	1.8	1	18.7	trg
LP835-018	04 48 01.0	-26 03 01	25.0	8.0	11	...	...	...	...	...	...	25.0	plt
L736-001	04 49 32.8	-14 47 23	16.0	4.2	2	22.8	3.7	10	24.8	1.4	1	24.8	trg
GJ1072	04 50 50.9	+22 07 22	...	...	...	11.5	1.8	12	14.1	1.1	1	14.1	trg
APM0452-5819	04 51 37.3	-58 18 52	18.1	5.3	11	15.7	2.4	12	17.2	0.4	1	17.2	trg
LP716-010	04 52 04.0	-10 58 22	15.3	4.5	11	12.9	2.0	12	...	...	...	12.9	ccd
GJ0179	04 52 05.7	+06 28 35	...	...	...	8.8	1.5	12	12.4	0.6	2	12.4	trg
LP776-025	04 52 24.4	-16 49 22	12.1	4.9	4	10.4	1.6	12	16.3	0.4	1	16.3	trg
GJ1073	04 52 34.6	+40 42 24	...	...	...	15.4	2.6	12	12.9	0.4	1	12.9	trg
GJ2036	04 53 31.2	-55 51 37	...	...	...	8.2	1.3	12	11.1	0.2	1	11.1	trg
GJ0180	04 53 50.0	-17 46 24	9.7	2.7	11	11.9	1.9	12	12.1	0.3	2	12.1	trg
G084-025	04 57 58.6	-05 06 17	23.4	8.4	11	...	...	...	...	...	...	23.4	plt
GJ1074	04 58 45.9	+50 56 37	...	...	...	18.2	3.0	12	19.3	0.9	2	19.3	trg
LP891-046	04 59 24.4	-30 55 58	22.8	8.7	11	18.7	3.0	12	...	...	...	18.7	ccd
NLTT14380	04 59 32.3	-61 53 04	16.1	4.3	11	...	...	...	...	...	...	16.1	plt
LHS1723	05 01 57.4	-06 56 47	8.3	2.5	11	6.4	1.1	12	5.3	0.0	1	5.3	trg
LP476-207	05 01 58.8	+09 58 59	...	...	...	[6.3]	1.0	12	24.6	1.3	1	24.6	trg
GJ0185	05 02 28.4	-21 15 24	[5.4]	1.5	11	[6.9]	1.1	9	8.3	0.1	2	8.3	trg
LHS1731	05 03 20.1	-17 22 25	11.2	4.9	8	10.5	1.7	12	9.2	0.1	2	9.2	trg
GJ0184	05 03 23.9	+53 07 42	...	...	...	13.1	2.2	10	13.8	0.3	2	13.8	trg
G097-015	05 04 15.0	+11 03 24	...	...	...	13.0	2.1	12	9.5	0.1	1	9.5	trg
LP716-035	05 05 11.8	-12 00 29	21.1	5.9	11	22.1	6.5	12	...	...	...	22.1	ccd
BD-21 01074	05 06 49.9	-21 35 08	...	...	...	9.8	1.7	12	19.2	0.5	2	19.2	trg
NLTT14654	05 08 09.1	-73 26 50	22.7	10.8	10	...	...	...	...	...	...	22.7	plt
LP015-315	05 08 18.0	+75 38 15	...	...	...	[13.3]	2.1	12	16.1	0.2	1	16.1	trg
GJ0190	05 08 35.1	-18 10 19	[6.0]	1.8	11	[4.3]	0.7	12	9.3	0.2	2	9.3	trg
LP717-003	05 09 19.4	-13 48 41	22.2	6.7	11	...	...	...	...	...	...	22.2	plt
SCR0509-4325	05 09 43.9	-43 25 17	18.0	5.2	11	16.4	2.6	12	21.5	0.8	1	21.5	trg
HD271076	05 10 09.1	-72 36 28	...	...	...	14.9	2.3	12	20.2	1.1	1	20.2	trg
L1672-014	05 10 19.3	+48 50 05	...	...	...	[13.5]	2.1	12	19.9	1.8	2	19.9	trg
LSPM0510+2714	05 10 20.0	+27 14 02	...	...	...	8.6	1.4	12	9.9	0.2	1	9.9	trg
GJ0191	05 11 40.6	-45 01 06	6.3	1.8	11	7.9	1.2	9	3.9	0.0	2	3.9	trg
WT2419	05 11 44.6	-36 12 31	24.1	7.1	11	...	...	...	...	...	...	24.1	plt
GJ0192	05 12 42.2	+19 39 56	...	...	...	11.5	1.8	12	13.0	0.5	2	13.0	trg
NLTT14823	05 13 06.0	-76 53 22	16.2	8.6	11	22.6	3.6	12	...	...	...	22.6	ccd
LT02208	05 13 47.3	-31 19 34	23.5	6.6	11	24.8	3.8	12	...	...	...	24.8	ccd
G084-040	05 13 50.8	-01 03 07	24.0	8.2	8	...	...	...	...	...	...	24.0	plt
L521-011	05 14 53.6	-33 04 30	16.1	5.3	11	15.4	2.6	12	...	...	...	15.4	ccd
LHS1747	05 15 08.1	-07 20 49	20.4	5.7	11	22.0	3.5	12	22.5	2.1	1	22.5	trg
LSPM0515+5911	05 15 31.0	+59 11 18	...	...	...	13.1	2.1	12	15.2	0.3	1	15.2	trg
LHS1748	05 15 46.7	-31 17 45	17.1	4.5	11	19.9	3.1	12	23.2	0.8	1	23.2	trg
LHS1749	05 16 00.4	-72 14 13	[8.6]	5.0	11	[16.3]	2.6	12	21.7	0.7	2	21.7	trg
GJ1077	05 16 59.7	-78 17 20	12.0	3.2	11	12.3	2.0	12	15.2	0.4	2	15.2	trg
SCR0517-4252	05 17 21.4	-42 52 47	16.6	4.9	11	16.3	2.6	12	21.0	0.7	1	21.0	trg
L449-001	05 17 22.9	-35 21 55	[6.6]	1.8	11	[7.0]	1.1	12	11.9	0.2	1	11.9	trg
2MA0517-3349	05 17 37.7	-33 49 03	12.4	5.4	11	13.7	2.2	12	16.2	0.4	1	16.2	trg
LP892-032	05 18 36.6	-28 42 07	24.2	7.9	11	...	...	...	...	...	...	24.2	plt
GJ1078	05 23 49.6	+22 32 20	...	...	...	23.5	3.9	12	20.8	2.0	1	20.8	trg

LP717-036	05 25 41.7	-09 09 13	[12.8]	3.5	11	[12.6]	1.9	12	20.7	2.2	1	20.7	trg
L233-036	05 25 48.6	-51 19 16	20.0	5.6	11	...	...	...	...	...	...	20.0	plt
CD 42-01943	05 26 36.0	-42 20 18	[15.4]	4.8	8	...	...	...	...	...	...	[15.4]	plt
L306-062	05 26 40.8	-48 51 47	20.1	5.3	11	20.7	3.3	12	...	...	...	20.7	ccd
LEHPM2-1009	05 27 30.6	-51 29 16	16.0	4.9	11	...	...	...	...	...	...	16.0	plt
GJ0203	05 28 00.1	+09 38 38	...	...	...	12.4	2.1	12	9.8	0.2	2	9.8	trg
GJ1080	05 28 14.6	+02 58 14	...	...	...	[21.7]	4.1	12	19.1	0.8	1	19.1	trg
GJ2043	05 29 27.0	+15 34 38	...	...	...	16.6	2.8	12	17.3	0.8	1	17.3	trg
GJ0204.2	05 29 52.0	-03 26 30	15.7	4.4	11	14.8	2.3	12	17.6	2.0	1	17.6	trg
LT02295	05 30 18.6	-53 58 48	14.2	4.1	11	...	...	...	...	...	...	14.2	plt
L234-022	05 30 57.2	-53 30 52	16.6	4.6	11	...	...	...	...	...	...	16.6	plt
LHS1767	05 31 04.3	-30 11 45	17.5	4.7	11	17.3	2.7	12	15.3	0.4	1	15.3	trg
GJ0205	05 31 27.4	-03 40 38	3.8	1.1	11	4.8	1.1	12	5.7	0.0	2	5.7	trg
GJ0206	05 32 14.6	+09 49 14	...	...	...	[7.8]	1.2	12	13.3	0.5	2	13.3	trg
GJ1081	05 33 19.1	+44 48 59	...	...	...	[11.8]	1.8	12	15.3	0.4	1	15.3	trg
SCR0533-4257	05 33 28.0	-42 57 20	...	...	...	[7.4]	1.2	12	10.1	0.2	1	10.1	trg
GJ0207.1	05 33 44.8	+01 56 43	...	...	...	10.9	1.8	12	15.9	0.6	3	15.9	trg
LT11684	05 34 51.2	+13 52 25	...	...	...	9.7	1.5	12	12.4	1.5	1	12.4	trg
LP718-005	05 35 21.3	-09 31 07	19.9	6.0	11	...	...	...	...	...	...	19.9	plt
LHS5109	05 36 00.1	-07 38 59	12.5	3.5	11	10.0	1.6	12	14.8	0.4	1	14.8	trg
LP658-106	05 37 23.3	-08 16 06	24.8	8.1	11	...	...	...	...	...	...	24.8	plt
WT0178	05 37 39.8	-61 54 44	22.9	7.5	11	18.4	2.9	12	16.1	0.2	1	16.1	trg
LHS0207	05 38 10.3	+79 31 19	...	...	...	25.4	4.7	12	22.2	0.7	1	22.2	trg
L378-006	05 40 02.6	-40 11 14	23.8	6.8	11	...	...	...	...	...	...	23.8	plt
GJ1083	05 40 25.7	+24 48 08	...	...	...	[5.8]	0.9	12	10.4	0.3	1	10.4	trg
GJ0213	05 42 09.2	+12 29 21	...	...	...	6.1	1.0	12	5.8	0.0	3	5.8	trg
GJ2045	05 42 12.7	-05 27 56	16.2	7.1	11	16.1	3.2	12	12.6	0.2	4	12.6	trg
LP837-016	05 43 04.6	-26 35 40	21.8	6.3	11	22.9	3.6	12	...	...	...	22.9	ccd
APM0544-4108	05 43 46.6	-41 08 08	24.3	8.1	11	19.1	3.0	12	20.7	0.3	1	20.7	trg
2MA0544-2433	05 44 11.5	-24 33 03	18.0	7.0	11	19.0	3.0	12	...	...	...	19.0	ccd
LP837-019	05 44 57.0	-21 36 56	20.8	5.6	11	18.9	2.9	12	...	...	...	18.9	ccd
LP837-020	05 44 57.9	-24 56 10	21.4	6.3	11	...	...	...	...	...	...	21.4	plt
LHS1785	05 47 09.1	-05 12 11	20.2	7.2	11	20.1	3.2	12	17.0	0.6	1	17.0	trg
GJ0218	05 47 40.6	-36 19 43	13.1	3.6	11	13.2	2.1	12	14.9	0.3	2	14.9	trg
WT2440	05 47 50.2	-34 19 14	20.9	5.7	11	...	...	...	...	...	...	20.9	plt
L307-012	05 48 45.2	-45 55 42	24.1	6.6	11	...	...	...	...	...	...	24.1	plt
LHS1793	05 52 29.2	-55 06 43	20.9	5.6	11	...	...	...	...	...	...	20.9	plt
GJ0220	05 53 14.1	+24 15 32	...	...	...	12.8	2.2	12	19.4	1.8	1	19.4	trg
L379-017	05 53 40.1	-42 41 44	23.9	6.8	11	...	...	...	...	...	...	23.9	plt
NLT15791	05 53 55.4	-22 46 58	21.8	6.2	11	...	...	...	...	...	...	21.8	plt
LP837-053	05 55 43.2	-26 51 23	8.1	2.3	11	8.9	1.6	12	14.6	0.5	1	14.6	trg
LHS5112	05 56 56.2	-46 55 54	[13.4]	3.7	11	[17.6]	3.0	10	23.7	0.6	2	23.7	trg
UPM0559-5225	05 59 33.2	-52 25 05	21.3	5.7	11	21.4	3.5	12	...	...	...	21.4	ccd
G192-011	05 59 37.7	+58 35 34	...	...	...	11.8	2.0	12	13.5	0.3	1	13.5	trg
LT117897	06 00 03.0	+02 42 23	...	...	...	5.1	0.8	12	5.2	0.1	2	5.2	trg
LHS0214	06 00 49.0	+68 09 24	...	...	...	16.7	2.6	12	20.1	0.5	3	20.1	trg
LHS1805	06 01 11.0	+59 35 01	...	...	...	7.5	1.2	12	7.8	0.1	1	7.8	trg
LHS1807	06 02 22.6	-20 19 44	17.5	4.8	11	19.1	3.0	12	14.1	0.3	1	14.1	trg
LHS1809	06 02 29.6	+49 50 58	...	...	...	9.7	1.6	12	9.3	0.2	1	9.3	trg
LHS1810	06 02 54.2	-09 15 04	18.9	6.3	11	...	...	...	...	...	...	18.9	plt
APCOL	06 04 52.2	-34 33 36	6.1	2.0	11	4.6	0.7	12	8.4	0.1	1	8.4	trg
LP838-016	06 07 43.7	-25 44 42	13.8	3.9	11	12.4	2.0	12	11.4	0.3	1	11.4	trg
LEHPM2-3528	06 07 58.1	-61 15 11	19.8	5.9	11	18.3	2.9	12	...	...	...	18.3	ccd
LHS1823	06 08 16.4	-32 16 46	16.2	4.3	11	...	...	...	...	...	...	16.2	plt
CD-35 02722	06 09 19.2	-35 49 30	...	...	...	17.9	3.0	12	22.7	0.6	1	22.7	trg
GJ0226	06 10 19.8	+82 06 24	...	...	...	8.6	1.3	12	9.4	0.1	2	9.4	trg
GJ0229	06 10 34.6	-21 51 53	3.5	1.4	8	5.1	0.9	12	5.8	0.0	2	5.8	trg
GJ1088	06 10 52.9	-43 24 18	11.9	3.2	11	11.0	1.7	12	11.5	0.2	1	11.5	trg
GJ0228	06 10 54.8	+10 19 05	...	...	...	[8.8]	1.4	12	10.6	0.3	2	10.6	trg
L308-038	06 12 36.7	-47 29 33	20.3	5.3	11	...	...	...	...	...	...	20.3	plt
SCR0613-3437	06 13 57.3	-34 37 02	[26.2]	9.4	11	[21.9]	6.2	12	...	...	...	[21.9]	ccd
G192-022	06 14 02.4	+51 40 08	...	...	...	18.2	2.9	12	14.2	2.1	1	14.2	trg
GJ0231.3	06 19 20.8	-06 39 22	22.9	7.3	11	18.8	2.9	12	14.7	2.0	1	14.7	trg
L308-057	06 21 06.7	-49 05 38	19.3	7.5	11	...	...	...	...	...	...	19.3	plt
UPM0621-6111	06 21 45.7	-61 11 13	21.8	7.2	11	22.8	3.7	12	...	...	...	22.8	ccd
SCR0622-4956	06 22 36.1	-49 56 29	28.9	10.0	11	23.4	3.6	12	...	...	...	23.4	ccd
2MA0623-3435	06 23 08.8	-34 35 53	23.7	6.6	11	...	...	...	...	...	...	23.7	plt
GJ0232	06 24 41.3	+23 25 59	...	...	...	12.7	2.2	12	8.4	0.2	1	8.4	trg
LHS1848	06 25 53.5	+56 09 42	...	...	...	23.8	3.7	12	22.3	2.4	1	22.3	trg
GJ0234	06 29 23.5	-02 48 51	[5.7]	1.7	11	[3.1]	0.5	12	4.1	0.0	3	4.1	trg
SCR0630-7643	06 30 46.6	-76 43 09	[6.9]	2.0	11	[5.5]	0.9	12	8.8	0.1	1	8.8	trg
SCR0631-8811	06 31 31.0	-88 11 37	12.8	5.1	11	10.4	1.6	12	15.6	0.6	1	15.6	trg
GJ0237	06 31 51.1	-43 32 03	[14.5]	4.0	11	[17.8]	2.9	10	23.3	0.8	2	23.3	trg
LHS1852	06 32 22.0	-69 57 44	21.5	5.7	11	22.8	3.5	12	...	...	...	22.8	ccd
L032-009	06 33 43.3	-75 37 48	7.1	2.7	10	7.3	1.1	12	9.0	0.2	2	9.0	trg
GJ0238	06 33 50.0	-58 31 43	12.6	3.5	11	12.0	2.0	12	16.4	0.5	2	16.4	trg
LT02591	06 34 18.6	-31 52 23	20.2	5.3	11	...	...	...	...	...	...	20.2	plt
SCR0634-5403	06 34 36.9	-54 03 13	27.6	9.1	11	24.1	3.8	12	...	...	...	24.1	ccd
LHS1857	06 36 07.6	+11 36 05	...	...	...	20.1	3.4	12	18.3	0.8	1	18.3	trg
LP381-004	06 36 18.3	-40 00 24	12.8	5.0	10	17.7	2.9	9	19.6	0.6	1	19.6	trg
GJ0239	06 37 10.8	+17 33 53	...	...	...	11.3	1.9	12	9.8	0.1	2	9.8	trg
LP720-031	06 38 35.3	-14 04 58	22.6	7.4	11	...	...	...	...	...	...	22.6	plt
LP780-032	06 39 37.4	-21 01 33	15.8	4.6	11	11.7	1.8	12	15.5	0.2	1	15.5	trg
L182-007	06 39 37.6	-55 36 35	10.6	2.9	11	12.6	2.0	9	13.3	0.2	1	13.3	trg
LP453-031	06 39 41.1	-36 59 03	16.7	4.9	11	15.7	2.6	12	...	...	...	15.7	ccd
LP780-023	06 40 08.6	-16 27 26	19.8	5.8	11	20.0	3.2	12	...	...	...	20.0	ccd
SCR0640-0552	06 40 14.0	-05 52 23	8.5	2.3	11	9.3	1.5	12	11.7	0.4	1	11.7	trg

G108-021	06 42 09.5	+03 35 41	...	...	...	13.0	2.0	12	10.5	0.9	1	10.5	trg
LP780-026	06 42 10.8	-15 43 15	24.6	6.5	11	...	...	...	...	...	...	24.6	plt
SCR0642-6707	06 42 27.2	-67 07 20	24.1	12.0	11	17.6	3.8	12	13.7	0.2	1	13.7	trg
NLT16977	06 43 29.8	-70 03 21	16.2	4.4	11	15.3	2.4	12	...	...	...	15.3	ccd
L597-018	06 43 40.7	-26 24 41	19.1	5.1	11	18.1	3.0	12	18.0	0.3	1	18.0	trg
LHS1864	06 43 50.9	+51 07 03	...	...	...	[13.6]	2.1	12	19.1	1.6	1	19.1	trg
GJ2050	06 44 45.6	+71 53 15	...	...	...	17.8	3.0	12	22.1	1.0	2	22.1	trg
LTT11918	06 47 18.9	+23 46 44	...	...	...	39.1	6.4	12	21.6	4.8	1	21.6	trg
GJ1091	06 48 49.2	+37 08 37	...	...	...	33.5	5.5	12	22.6	2.9	1	22.6	trg
GJ1092	06 49 05.5	+37 06 51	...	...	...	21.2	3.7	12	13.7	0.4	2	13.7	trg
SCR0650-2135	06 50 26.6	-21 35 58	25.5	8.2	11	20.4	3.3	12	...	...	...	20.4	ccd
LHS1873	06 50 59.5	-09 10 50	25.6	9.2	8	22.5	3.5	12	...	...	...	22.5	ccd
G108-036	06 51 59.02	+03 12 55	...	...	...	20.8	3.2	12	22.2	0.6	1	22.2	trg
DEN0652-2534	06 52 19.8	-25 34 50	14.9	8.2	7	17.9	3.2	12	15.7	0.2	1	15.7	trg
L059-054	06 52 37.8	-73 58 16	20.7	5.6	11	...	...	...	...	...	...	20.7	plt
LHS0221	06 54 04.2	+60 52 18	...	...	...	[8.9]	1.4	12	10.5	0.2	2	10.5	trg
GJ0251	06 54 48.9	+33 16 05	...	...	...	4.9	0.8	12	5.6	0.1	2	5.6	trg
LP721-012	06 56 00.9	-38 24 17	24.2	6.7	11	...	...	...	...	...	...	24.2	plt
LP661-013	06 56 19.0	-08 35 46	21.0	7.8	11	18.5	2.8	12	...	...	...	18.5	ccd
LHS1882	06 56 22.7	+54 57 38	...	...	...	27.0	4.2	12	17.2	2.1	1	17.2	trg
LP382-056	06 57 11.7	-43 24 51	[13.5]	3.7	11	[12.0]	1.9	12	20.8	0.7	2	20.8	trg
GJ0257	06 57 46.6	-44 17 28	[8.6]	2.5	11	[6.9]	1.1	12	8.0	0.1	2	8.0	trg
WT0204	06 58 18.9	-39 32 16	23.9	7.3	11	19.7	3.1	12	...	...	...	19.7	ccd
GJ1093	06 59 28.8	+19 20 56	...	...	...	6.7	1.1	12	7.8	0.2	1	7.8	trg
SCR0659-5622	06 59 40.8	-56 22 47	28.0	9.1	11	24.4	4.2	12	...	...	...	24.4	ccd
WT1539	07 00 09.5	-28 47 02	15.7	5.7	10	...	...	...	...	...	...	15.7	plt
SCR0701-1437	07 01 36.6	-14 37 18	25.5	8.5	11	23.8	3.7	12	...	...	...	23.8	ccd
WT0207	07 02 36.6	-40 06 28	37.4	14.0	11	32.8	5.6	12	24.7	0.8	1	24.7	trg
SCR0702-6102	07 02 50.4	-61 02 48	[15.9]	7.6	11	[10.8]	2.0	12	16.8	0.4	1	16.8	trg
LHS0224	07 04 01.1	+52 41 12	...	...	...	[9.8]	2.0	12	9.1	0.1	1	9.1	trg
GJ0263	07 04 17.7	-10 30 32	[10.5]	2.7	3	[7.8]	1.3	12	16.1	0.8	2	16.1	trg
GJ0258	07 04 25.9	+68 17 19	...	...	...	13.2	2.1	12	14.9	0.6	2	14.9	trg
LHS0225	07 04 45.8	-38 36 08	[22.3]	6.8	9	13.1	5.1	12	17.9	0.7	2	17.9	trg
LEHPM2-0449	07 05 09.3	-80 29 50	22.0	6.8	11	...	...	...	...	...	...	22.0	plt
GJ2055	07 07 22.9	-21 27 27	12.9	4.4	10	13.3	2.1	12	17.3	0.7	1	17.3	trg
LTT11972	07 07 50.4	+67 12 04	...	...	...	16.0	2.6	12	17.6	0.6	1	17.6	trg
ESO207-061	07 07 53.3	-49 00 50	20.7	8.2	7	23.1	4.0	9	16.4	0.8	2	16.4	trg
LP840-016	07 08 07.0	-22 48 47	16.1	4.5	11	18.1	2.8	12	...	...	...	18.1	ccd
APM0710-5704	07 09 37.7	-57 03 42	17.6	6.0	11	14.3	2.4	12	16.9	0.3	1	16.9	trg
GJ0268	07 10 01.8	+38 31 46	...	...	...	[3.7]	0.6	12	6.1	0.1	2	6.1	trg
LHS1901	07 11 11.0	+43 29 58	...	...	...	...	...	...	13.4	0.2	2	13.4	trg
LHS1906	07 12 54.1	-52 20 06	20.3	5.3	11	...	...	...	...	...	...	20.3	plt
SCR0713-0511	07 13 11.2	-05 11 49	13.1	4.7	10	13.5	2.1	12	11.0	0.2	1	11.0	trg
LHS1909	07 15 49.0	-83 00 19	19.2	5.7	11	...	...	...	...	...	...	19.2	plt
GJ1096	07 16 18.0	+33 09 10	...	...	...	...	...	...	15.0	0.9	1	15.0	trg
GJ0268.3	07 16 19.7	+27 08 33	...	...	...	[7.8]	1.2	12	11.6	0.3	3	11.6	trg
SCR0717-0501	07 17 17.1	-05 01 04	15.9	5.8	8	13.1	2.2	12	10.8	0.2	1	10.8	trg
LTT17957	07 17 32.2	+19 33 53	...	...	...	20.5	3.2	12	21.2	0.7	1	21.2	trg
LTT12003	07 18 08.1	+39 16 29	...	...	...	13.0	2.2	12	14.5	0.4	1	14.5	trg
LEHPM2-4145	07 18 14.0	-52 29 30	23.5	6.9	10	...	...	...	...	...	...	23.5	plt
NLT17739	07 20 30.2	-40 55 33	20.6	5.6	11	...	...	...	...	...	...	20.6	plt
L136-037	07 20 52.0	-62 10 12	14.5	4.2	11	13.7	2.2	12	11.3	0.3	1	11.3	trg
LP527-012	07 21 54.4	-31 04 37	24.9	8.1	11	...	...	...	...	...	...	24.9	plt
LHS1914	07 22 41.1	+30 39 37	...	...	...	24.9	4.2	12	23.7	1.9	1	23.7	trg
L136-001	07 23 20.8	-60 06 13	18.9	5.1	11	...	...	...	...	...	...	18.9	plt
SCR0723-8015	07 23 59.7	-80 15 18	[19.3]	5.6	11	[17.0]	3.1	12	15.9	0.5	1	15.9	trg
L383-082	07 25 35.6	-42 38 57	21.4	5.7	11	...	...	...	...	...	...	21.4	plt
GJ0273	07 27 24.5	+05 13 32	...	...	...	[3.6]	0.6	12	3.8	0.0	3	3.8	trg
LTT12020	07 27 28.6	+22 02 37	...	...	...	14.0	2.5	12	19.4	0.7	2	19.4	trg
GJ1097	07 28 45.5	-03 17 53	11.2	4.1	11	9.7	1.5	12	11.6	0.3	2	11.6	trg
GJ2060	07 28 51.4	-30 14 49	[8.7]	2.7	11	[8.6]	1.5	12	15.5	0.4	2	15.5	trg
LHS1922	07 30 39.3	-44 24 01	13.7	3.8	11	...	...	...	...	...	...	13.7	plt
SCR0731-4807	07 31 08.1	-48 07 33	26.1	7.6	11	21.3	3.4	12	...	...	...	21.3	ccd
GJ0277	07 31 57.7	+36 13 09	...	...	...	7.0	1.1	12	11.8	0.3	3	11.8	trg
GJ0275.1	07 32 02.0	+68 37 15	...	...	...	16.0	2.8	12	25.0	1.4	2	25.0	trg
LHS1923	07 32 11.0	+57 55 35	...	...	...	...	...	...	22.7	0.9	1	22.7	trg
SCR0733-2749	07 33 26.8	-27 49 04	26.6	11.7	11	22.6	3.7	12	...	...	...	22.6	ccd
LHS0231	07 33 56.1	+22 23 02	...	...	...	41.5	8.9	12	24.9	0.6	2	24.9	trg
GJ1099	07 34 17.6	+00 59 09	...	...	...	16.0	2.5	12	14.6	0.6	1	14.6	trg
GJ0277.1	07 34 27.4	+62 56 29	...	...	...	12.3	3.6	12	11.9	0.3	2	11.9	trg
HIP036915	07 35 21.8	+54 50 59	...	...	...	14.1	2.2	12	12.8	0.4	1	12.8	trg
LHS1932	07 36 12.0	-51 55 21	17.0	4.5	11	15.8	2.5	12	16.2	0.3	1	16.2	trg
LTT17993	07 36 25.0	+07 04 43	...	...	...	[6.0]	0.9	12	8.6	0.1	1	8.6	trg
SCR0736-3024	07 36 56.7	-30 24 16	20.2	9.0	11	17.2	2.7	12	13.3	0.2	1	13.3	trg
L528-016	07 38 09.7	-31 12 19	14.8	4.1	11	14.1	2.2	12	14.9	0.3	1	14.9	trg
2MA0738+2400	07 38 29.52	+24 00 08	...	...	...	17.0	2.6	12	18.9	0.9	1	18.9	trg
LHS1935	07 38 41.0	-21 13 28	14.8	4.0	11	11.9	1.9	12	10.6	0.4	1	10.6	trg
GJ0281	07 39 23.0	+02 11 01	...	...	...	12.2	2.1	10	14.5	0.3	2	14.5	trg
SCR0740-4257	07 40 11.8	-42 57 40	10.0	2.9	11	7.2	1.1	12	7.9	0.1	1	7.9	trg
GJ0285	07 44 40.1	+03 33 08	...	...	...	3.8	0.6	12	6.0	0.1	2	6.0	trg
2MA0746+2000	07 46 43.0	+20 00 32	...	...	...	[10.8]	1.9	8	12.2	0.0	3	12.2	trg
GJ0289	07 48 16.3	+20 22 05	...	...	...	19.7	3.1	12	14.9	0.4	2	14.9	trg
L034-026	07 49 12.7	-76 42 07	12.2	3.6	11	9.2	1.4	12	10.6	0.2	1	10.6	trg
GJ1103	07 51 54.7	-00 00 13	11.3	3.8	11	8.7	1.4	12	8.8	0.3	1	8.8	trg
LHS1950	07 51 54.9	+05 32 13	...	...	...	16.7	2.6	12	16.0	0.8	1	16.0	trg
LP423-031	07 52 24.0	+16 12 15	...	...	...	11.9	1.9	12	18.4	0.3	1	18.4	trg
SCR0754-3809	07 54 54.8	-38 09 38	12.0	3.5	11	11.2	1.8	12	12.6	0.3	1	12.6	trg

LHS1955	07 54 54.8	-29 20 56	[13.4]	4.3	11	[8.6]	1.4	12	13.5	0.2	1	13.5	trg
GJ1101	07 55 49.9	+83 23 19	...	...	...	12.1	1.9	12	12.5	0.5	1	12.5	trg
LHS1957	07 56 53.9	-45 38 14	21.6	6.7	10	23.0	3.5	12	...	...	...	23.0	ccd
2MA0757+1201	07 57 27.16	+12 01 27	...	...	...	22.7	3.5	12	22.9	1.1	1	22.9	trg
SCR0757-7114	07 57 32.5	-71 14 53	...	...	...	11.2	1.8	12	22.1	1.0	1	22.1	trg
GJ1105	07 58 12.7	+41 18 13	...	...	...	8.2	1.3	12	8.3	0.2	2	8.3	trg
LHS5132	08 00 51.3	-57 30 34	23.7	6.3	11	...	...	...	...	...	...	23.7	plt
LHS1976	08 03 19.5	+52 50 38	...	...	...	[17.8]	2.8	12	24.8	3.2	1	24.8	trg
SCR0803-1939	08 03 26.9	-19 39 28	[23.8]	8.6	8	[23.9]	3.8	12	...	...	...	[23.9]	ccd
LHS1978	08 04 25.8	-83 13 59	21.6	5.8	11	...	...	...	...	...	...	21.6	plt
SCR0805-5912	08 05 46.2	-59 12 50	20.4	6.0	11	19.3	3.0	12	16.2	0.5	1	16.2	trg
L1321-040	08 09 30.9	+21 54 17	...	...	...	18.3	2.9	12	22.3	1.7	1	22.3	trg
GJ0298	08 09 58.1	-52 58 05	11.7	3.1	11	12.4	1.9	12	16.7	0.7	2	16.7	trg
GJ0299	08 11 58.0	+08 46 23	...	...	...	11.5	2.2	12	6.8	0.1	1	6.8	trg
GJ0300	08 12 40.9	-21 33 07	10.4	3.7	11	6.1	1.0	12	8.0	0.1	2	8.0	trg
SCR0812-4504	08 12 44.3	-45 04 34	28.6	11.2	11	23.3	3.8	12	...	...	...	23.3	ccd
GJ0301	08 13 08.5	-13 55 01	[9.3]	2.6	11	[12.8]	2.1	9	19.2	0.7	2	19.2	trg
L242-075	08 13 26.1	-53 17 38	17.8	5.8	11	...	...	...	...	...	...	17.8	plt
LHS1992	08 13 42.6	-76 07 49	17.7	5.0	11	14.4	2.2	12	16.2	0.5	1	16.2	trg
LP843-016	08 14 22.6	-25 42 19	17.4	4.8	11	15.7	2.6	12	...	...	...	15.7	ccd
GJ2066	08 16 07.9	+01 18 09	...	...	...	8.1	1.3	12	9.1	0.1	2	9.1	trg
LP386-035	08 16 37.5	-42 12 26	24.5	6.7	11	...	...	...	...	...	...	24.5	plt
L098-059	08 18 07.6	-68 18 47	11.9	3.2	11	12.6	1.9	12	10.5	0.3	1	10.5	trg
LHS0246	08 25 49.7	+69 02 11	...	...	...	10.7	1.7	12	12.8	0.6	2	12.8	trg
SCR0827-2526	08 27 07.0	-25 26 54	23.8	8.6	11	20.2	3.3	12	...	...	...	20.2	ccd
LHS2010	08 27 11.8	-44 59 21	[10.6]	3.8	8	[8.9]	1.4	12	13.7	0.3	1	13.7	trg
GJ1110	08 28 11.4	+20 07 48	...	...	...	28.3	4.6	12	22.1	1.6	1	22.1	trg
GJ0308	08 28 22.1	+35 00 59	...	...	...	[16.5]	2.8	12	18.8	1.8	2	18.8	trg
GJ1111	08 29 49.5	+26 46 34	...	...	...	3.3	0.5	12	3.6	0.0	1	3.6	trg
LHS2021	08 30 32.0	+09 47 15	...	...	...	14.4	2.3	12	15.8	0.3	2	15.8	trg
LHS2024	08 31 23.5	-10 29 54	24.6	12.2	11	14.7	2.3	12	...	...	...	14.7	ccd
GJ2069	08 31 37.5	+19 23 39	...	...	...	[6.3]	1.0	12	11.7	0.9	1	11.7	trg
LHS2026	08 32 30.5	-01 34 39	27.5	11.5	11	19.8	3.5	12	19.7	0.2	1	19.7	trg
GJ2070	08 34 25.9	-01 08 40	16.8	4.5	11	18.4	3.3	12	13.6	1.8	1	13.6	trg
SCR0835-3400	08 35 31.7	-34 00 37	25.9	10.9	11	22.0	3.7	12	...	...	...	22.0	ccd
LHS0250	08 35 38.4	+68 03 21	...	...	...	12.3	1.9	12	13.0	0.3	2	13.0	trg
LHS2029	08 37 07.9	+15 07 45	...	...	...	15.1	2.3	12	19.0	1.3	1	19.0	trg
SCR0837-2819	08 37 20.4	-28 19 58	24.4	8.9	11	23.1	3.8	12	...	...	...	23.1	ccd
LP844-004	08 37 33.9	-22 32 32	23.8	6.9	11	23.1	3.6	12	...	...	...	23.1	ccd
SCR0838-5855	08 38 02.2	-58 55 59	[8.5]	2.5	11	[8.0]	1.3	12	10.9	0.1	1	10.9	trg
SCR0838-5302	08 38 13.2	-53 02 12	21.1	11.2	11	23.8	3.7	12	...	...	...	23.8	ccd
LTT03201	08 38 54.5	-09 33 59	18.7	5.1	11	17.3	3.0	12	...	...	...	17.3	ccd
SCR0840-4044	08 40 01.7	-40 44 31	28.5	9.1	11	23.3	3.7	12	...	...	...	23.3	ccd
GJ0316.1	08 40 29.7	+18 24 09	...	...	...	11.9	1.9	12	12.2	0.0	2	12.2	trg
LHS2038	08 40 55.3	+67 39 15	...	...	...	24.5	3.8	12	24.5	1.9	1	24.5	trg
GJ0317	08 40 59.2	-23 27 23	12.0	3.5	11	9.7	1.5	12	15.3	0.1	2	15.3	trg
LHS0252	08 41 17.6	+59 28 22	...	...	...	9.4	1.5	12	9.8	0.3	2	9.8	trg
G114-014	08 42 23.2	-04 53 55	18.8	5.7	11	20.6	3.4	12	...	...	...	20.6	ccd
GJ2072	08 44 23.1	-44 28 21	...	...	...	[10.7]	1.8	12	18.6	0.8	1	18.6	trg
LP786-005	08 47 17.6	-20 58 20	24.8	7.7	11	...	...	...	...	...	...	24.8	plt
L388-106	08 48 23.2	-44 12 26	24.8	7.0	11	...	...	...	...	...	...	24.8	plt
LEHPM2-0870	08 48 59.1	-80 35 02	21.0	6.0	11	...	...	...	...	...	...	21.0	plt
GJ1114	08 51 43.8	+18 07 29	...	...	...	21.5	3.3	12	17.1	0.7	2	17.1	trg
SCR0852-6608	08 52 50.0	-66 08 47	26.3	7.7	11	25.0	4.0	12	...	...	...	25.0	ccd
SCR0853-3924	08 53 28.7	-39 24 41	15.1	5.5	8	16.5	2.5	12	17.1	0.4	1	17.1	trg
LHS2065	08 53 36.2	-03 29 32	8.7	2.9	11	8.8	1.6	12	8.5	0.1	4	8.5	trg
L532-012	08 54 02.4	-30 51 37	14.7	4.4	11	12.6	2.0	12	...	...	...	12.6	ccd
GJ0326	08 54 05.3	-13 07 31	[13.9]	3.7	11	[13.0]	2.0	12	16.2	1.8	1	16.2	trg
LHS2071	08 55 20.3	-23 52 15	[12.9]	3.7	11	[10.8]	1.7	12	15.9	0.4	1	15.9	trg
L139-024	08 56 06.6	-61 57 44	22.6	8.1	11	...	...	...	...	...	...	22.6	plt
LP844-033	08 56 17.6	-23 26 57	22.1	8.6	11	17.6	2.9	12	23.6	1.6	1	23.6	trg
GJ0330	08 57 04.6	+11 38 49	...	...	...	[13.1]	2.1	12	16.5	0.6	2	16.5	trg
GJ1116	08 58 12.2	+19 45 47	...	...	...	[3.5]	0.6	12	5.2	0.1	1	5.2	trg
LP606-030	08 58 43.3	-00 41 47	30.6	29.7	11	22.2	3.5	12	...	...	...	22.2	ccd
LTT12352	08 58 56.0	+08 28 26	...	...	...	[4.4]	0.7	12	6.8	0.1	1	6.8	trg
GJ1118	08 59 05.3	-31 13 27	19.0	5.3	11	16.9	2.6	12	17.8	0.6	1	17.8	trg
LHS2088	09 00 14.8	+72 57 40	...	...	...	18.2	3.2	12	13.8	0.7	1	13.8	trg
LHS2090	09 00 23.0	+21 50 04	...	...	...	5.6	0.9	12	6.4	0.1	1	6.4	trg
GJ1119	09 00 32.5	+46 35 11	...	...	...	9.1	1.4	12	10.3	0.3	1	10.3	trg
GJ0333.2	09 00 48.5	+05 14 41	...	...	...	16.9	2.8	12	23.1	2.1	2	23.1	trg
LHS0259	09 00 52.1	+48 25 25	...	...	...	14.4	9.0	12	19.4	1.1	2	19.4	trg
2MA0901-6526	09 01 31.7	-65 26 40	18.0	5.9	11	17.0	2.7	12	...	...	...	17.0	ccd
L063-046	09 01 39.0	-72 40 17	17.7	5.0	11	21.3	3.3	12	...	...	...	21.3	ccd
LHS2094	09 02 19.8	+08 28 06	...	...	...	15.1	2.3	12	19.5	1.4	1	19.5	trg
LP060-179	09 02 51.0	+68 03 18	...	...	...	13.4	2.3	12	11.7	0.5	1	11.7	trg
LTT03347	09 04 02.3	-25 04 10	25.0	6.7	11	...	...	...	...	...	...	25.0	plt
L244-024	09 05 17.9	-51 02 36	19.7	5.3	11	...	...	...	...	...	...	19.7	plt
SCR0905-0841	09 05 43.3	-08 41 58	25.2	7.2	11	20.8	3.3	12	...	...	...	20.8	ccd
GJ0334	09 06 45.4	-08 48 25	9.2	2.6	11	11.4	1.9	10	14.5	0.3	2	14.5	trg
LHS2106	09 07 02.8	-22 08 50	18.9	7.7	11	14.5	2.4	12	15.1	0.3	1	15.1	trg
SCR0907-3533	09 07 17.1	-35 33 03	27.4	8.8	11	24.6	3.9	12	...	...	...	24.6	ccd
L460-139	09 09 14.9	-39 59 32	24.8	7.0	11	...	...	...	...	...	...	24.8	plt
GJ1121	09 09 24.0	+40 06 05	...	...	...	23.7	3.9	12	21.9	1.6	1	21.9	trg
DEN0909-0658	09 09 57.3	-06 58 19	...	...	...	29.6	6.2	11	23.5	2.4	1	23.5	trg
GJ0336.1	09 11 30.8	+46 37 01	...	...	...	18.7	3.3	12	24.6	1.4	2	24.6	trg
SCR0914-4134	09 14 17.4	-41 34 38	18.2	8.0	11	14.6	2.4	12	12.0	0.2	1	12.0	trg
GJ0338	09 14 22.7	+52 41 11	...	...	...	...	...	...	6.1	0.1	3	6.1	trg

LHS6167	09 15 36.4	-10 35 47	[9.3]	3.4	11	[7.0]	1.2	12	9.7	0.1	1	9.7	trg
L749-034	09 16 20.7	-18 37 33	12.8	3.5	11	12.1	1.9	12	12.9	0.4	1	12.9	trg
LHS2122	09 16 26.0	-62 04 16	14.8	4.2	11	11.9	2.0	12	17.1	0.8	1	17.1	trg
LTT03416	09 16 44.0	-24 47 43	23.0	6.3	11	...	...	...	...	...	...	23.0	plt
GJ1123	09 17 05.3	-77 49 23	8.2	2.4	11	7.3	1.3	12	9.0	0.2	1	9.0	trg
LHS0265	09 17 45.3	+58 24 13	...	...	...	18.2	2.9	12	15.4	0.8	2	15.4	trg
GJ1122	09 19 18.5	+38 31 19	...	...	...	18.3	2.9	12	20.2	1.1	1	20.2	trg
G161-013	09 20 11.1	-01 10 17	22.8	6.4	11	...	...	...	...	...	...	22.8	plt
LHS0266	09 20 21.1	+26 43 43	...	...	...	35.3	7.1	12	20.9	2.0	1	20.9	trg
LEP0920-4922	09 20 26.0	-49 22 35	22.3	11.3	11	...	...	...	...	...	...	22.3	plt
LHS0267	09 20 58.1	+03 20 59	...	...	...	21.8	3.6	12	16.5	1.1	1	16.5	trg
SIP0921-2104	09 21 14.1	-21 04 44	17.2	8.6	11	18.8	3.7	10	...	...	...	18.8	ccd
GJ0341	09 21 37.6	-60 16 55	5.8	3.9	6	9.5	1.6	12	10.5	0.1	2	10.5	trg
LP902-060	09 23 32.4	-33 32 56	24.7	8.1	11	...	...	...	...	...	...	24.7	plt
LP389-001	09 24 17.3	-40 05 45	15.7	4.3	9	...	...	...	...	...	...	15.7	plt
L822-019	09 28 41.6	-12 09 56	22.0	5.9	11	23.9	15.4	10	...	...	...	23.9	ccd
GJ0347	09 28 53.3	-07 22 16	20.4	5.6	11	17.6	2.7	12	16.4	0.8	2	16.4	trg
WT1637	09 29 03.8	-24 29 04	15.0	4.5	11	...	...	...	...	...	...	15.0	plt
LHS0269	09 29 11.0	+25 58 09	...	...	...	16.6	2.6	12	17.7	0.3	2	17.7	trg
GJ1125	09 30 44.6	+00 19 22	...	...	...	9.8	1.5	12	9.9	0.2	2	9.9	trg
GJ0352	09 31 19.4	-13 29 19	[7.5]	2.7	5	[6.2]	1.0	12	10.2	0.3	2	10.2	trg
LP788-001	09 31 22.3	-17 17 43	13.1	3.9	11	12.5	2.0	12	13.3	0.3	...	13.3	trg
GJ0353	09 31 56.3	+36 19 12	...	...	...	13.1	2.1	12	14.1	0.3	2	14.1	trg
LP846-015	09 34 27.9	-26 43 27	15.6	4.6	11	...	...	...	...	...	...	15.6	plt
LTT03532	09 35 54.4	-33 43 51	24.0	6.4	11	...	...	...	...	...	...	24.0	plt
GJ0357	09 36 01.6	-21 39 39	9.8	4.3	11	10.6	1.7	12	9.0	0.2	2	9.0	trg
2MA0936-2610	09 36 57.8	-26 10 11	...	...	...	13.6	2.2	12	18.6	0.5	1	18.6	trg
G117-034	09 39 24.2	+31 45 17	...	...	...	...	...	...	24.0	2.2	1	24.0	trg
SCR0939-4300	09 39 44.7	-43 00 27	24.8	6.8	11	20.5	3.2	12	...	...	...	20.5	ccd
GJ0358	09 39 46.4	-41 04 03	8.5	2.3	11	7.2	1.1	12	9.5	0.2	2	9.5	trg
GJ0359	09 41 02.1	+22 01 28	...	...	...	16.5	2.9	12	12.7	0.6	1	12.7	trg
GJ0361	09 41 10.3	+13 12 34	...	...	...	9.9	1.6	12	11.3	0.2	2	11.3	trg
LTT03553	09 41 21.2	-20 34 41	20.5	5.6	11	21.1	3.6	12	...	...	...	21.1	ccd
G161-066	09 42 12.8	-07 01 46	24.5	7.6	11	...	...	...	...	...	...	24.5	plt
GJ0363	09 42 17.9	+55 58 31	...	...	...	12.1	1.9	12	15.4	2.1	1	15.4	trg
GJ0360	09 42 34.8	+70 02 02	...	...	...	8.3	1.3	12	12.0	0.2	4	12.0	trg
LHS2177	09 42 35.7	-19 14 05	17.8	5.0	11	16.3	2.5	12	15.8	0.9	1	15.8	trg
GJ1128	09 42 46.4	-68 53 06	8.0	2.5	11	6.3	1.0	12	6.5	0.1	1	6.5	trg
LHS5156	09 42 49.6	-63 37 56	13.3	4.9	11	9.6	1.5	12	10.5	0.1	1	10.5	trg
LHS0272	09 43 46.2	-17 47 06	{32.9}	9.2	11	{34.6}	5.6	12	13.5	0.2	1	13.5	trg
LHS2181	09 43 55.6	+26 58 08	...	...	...	11.1	1.7	12	14.0	0.9	1	14.0	trg
WT0244	09 44 23.7	-73 58 38	20.2	6.5	11	17.1	2.7	12	23.1	0.8	1	23.1	trg
GJ0367	09 44 29.8	-45 46 36	8.2	3.1	10	8.2	1.3	12	9.8	0.3	2	9.8	trg
GJ1129	09 44 47.3	-18 12 49	13.4	4.7	11	9.2	1.4	12	10.7	0.3	1	10.7	trg
G161-071	09 44 54.2	-12 20 54	10.2	4.4	11	6.3	1.0	12	13.5	0.3	1	13.5	trg
LP462-119	09 45 40.1	-39 02 27	[18.4]	4.9	11	[15.8]	2.6	12	20.2	2.0	1	20.2	trg
WT2458	09 45 58.4	-32 53 30	12.1	3.9	11	10.8	1.7	12	...	...	...	10.8	ccd
LHS2186	09 46 09.3	-04 25 43	21.2	7.9	11	...	...	...	...	...	...	21.2	plt
GJ0366	09 46 48.4	+76 02 38	...	...	...	14.4	2.2	12	16.0	0.3	2	16.0	trg
G043-002	09 48 50.2	+15 38 44	...	...	...	21.6	3.4	12	17.6	1.0	1	17.6	trg
LHS2195	09 49 22.2	+08 06 45	...	...	...	17.1	2.8	11	16.6	0.5	1	16.6	trg
GJ2075	09 49 27.8	-55 20 09	[12.3]	3.4	10	[13.6]	2.3	12	21.0	0.8	1	21.0	trg
LTT03613	09 50 40.5	-13 48 39	17.0	5.4	11	13.1	2.1	12	19.6	0.7	1	19.6	trg
LTT03612	09 50 48.3	-09 07 10	23.1	6.8	11	...	...	...	...	...	...	23.1	plt
GJ0369	09 51 09.6	-12 19 48	10.7	3.2	5	12.3	2.0	12	13.7	0.3	2	13.7	trg
LTT03616	09 51 23.3	-17 44 24	18.7	5.1	11	17.7	2.7	12	...	...	...	17.7	ccd
GJ0372	09 53 11.8	-03 41 25	[9.4]	2.6	11	[9.1]	1.5	12	16.1	0.5	2	16.1	trg
GJ1130	09 53 28.1	-31 45 08	13.6	3.8	11	17.9	3.0	9	24.1	0.9	1	24.1	trg
LTT03629	09 53 30.3	-31 28 12	23.0	6.5	11	...	...	...	...	...	...	23.0	plt
LHS2206	09 53 55.0	+20 56 46	...	...	...	11.4	1.9	12	9.2	0.2	2	9.2	trg
LP847-048	09 55 23.9	-27 15 41	13.9	3.9	11	10.6	1.7	12	11.3	0.4	1	11.3	trg
GJ0373	09 56 08.6	+62 47 18	...	...	...	8.4	1.5	12	10.8	0.1	2	10.8	trg
GJ0375	09 58 34.3	-46 25 30	[6.8]	2.3	11	[6.5]	1.0	12	15.4	0.4	2	15.4	trg
GJ0377	10 01 10.7	-30 23 25	10.0	2.8	11	9.7	1.6	12	16.1	0.6	2	16.1	trg
LP463-104	10 01 23.8	-38 50 25	18.2	5.0	11	...	...	...	...	...	...	18.2	plt
GJ0378	10 02 21.7	+48 05 19	...	...	...	11.9	2.0	12	15.1	0.4	2	15.1	trg
LHS5166	10 04 38.7	-33 35 10	21.9	6.3	11	19.2	3.1	12	18.3	1.9	1	18.3	trg
LP903-021	10 04 50.6	-31 05 28	16.9	4.6	11	18.2	3.0	12	23.0	1.8	1	23.0	trg
L319-147	10 06 08.7	-49 49 38	23.6	6.7	11	...	...	...	...	...	...	23.6	plt
LP789-023	10 06 31.9	-16 53 26	21.9	8.3	11	...	...	...	...	...	...	21.9	plt
LHS2220	10 06 43.8	+41 42 52	...	...	...	21.3	3.6	12	20.7	1.2	1	20.7	trg
L016-059	10 07 09.9	-82 50 16	[18.4]	5.1	11	...	...	...	...	...	...	[18.4]	plt
GJ1131	10 07 59.4	+69 14 46	...	...	...	26.4	4.5	12	17.8	1.3	1	17.8	trg
LP729-033	10 08 01.1	-14 36 27	20.3	6.1	11	...	...	...	...	...	...	20.3	plt
LHS2224	10 09 24.6	+51 15 39	...	...	...	19.1	3.3	12	13.3	0.6	1	13.3	trg
NLTT23623	10 10 46.8	-30 46 49	22.3	6.0	11	...	...	...	...	...	...	22.3	plt
WT1757	10 11 45.0	-24 25 34	17.3	5.1	11	...	...	...	...	...	...	17.3	plt
GJ0381	10 12 04.7	-02 41 05	[8.1]	2.2	11	[9.2]	1.4	12	12.0	0.4	2	12.0	trg
GJ0382	10 12 17.7	-03 44 44	5.9	1.7	11	5.9	1.0	12	7.9	0.1	2	7.9	trg
LHS2233	10 12 59.6	-35 43 59	21.1	5.6	11	22.1	3.9	12	...	...	...	22.1	ccd
GJ1132	10 14 51.8	-47 09 24	21.0	7.1	11	16.1	2.6	12	12.0	0.3	1	12.0	trg
G162-037	10 16 35.7	-11 56 48	24.1	7.1	11	...	...	...	...	...	...	24.1	plt
GJ0386	10 16 46.0	-11 57 42	9.0	2.8	11	13.1	3.3	10	13.3	0.4	2	13.3	trg
TWA022	10 17 27.0	-53 54 27	...	...	...	[6.1]	1.0	12	17.5	0.2	1	17.5	trg
LP790-002	10 18 13.9	-20 28 41	11.8	3.5	11	9.5	1.5	12	...	...	...	9.5	ccd
LTT03780	10 18 35.2	-11 43 00	17.3	5.8	11	17.4	2.7	12	...	...	...	17.4	ccd
GJ0388	10 19 36.2	+19 52 11	...	...	...	3.8	0.6	12	4.9	0.1	1	4.9	trg

LP392-039	10 19 51.3	-41 48 46	18.6	5.1	11	20.0	3.2	12	21.9	1.0	2	21.9	trg
WT2473	10 21 12.1	-37 05 44	18.3	5.2	11	...	...	...	...	...	...	18.3	plt
GJ0389	10 22 24.6	-60 10 38	[13.9]	4.1	2	17.3	2.9	12	19.8	0.7	2	19.8	trg
NLTT24218	10 22 46.1	-66 02 26	20.1	5.9	11	...	...	...	...	...	...	20.1	plt
L142-086	10 24 07.0	-63 59 55	14.2	3.8	6	15.1	2.6	12	...	...	...	15.1	ccd
GJ0390	10 25 10.8	-10 13 43	8.5	2.4	11	10.2	1.8	12	12.3	0.3	2	12.3	trg
LTT03835	10 26 38.3	-16 51 19	[21.3]	6.9	8	...	...	...	...	...	...	[21.3]	plt
LHS2268	10 28 31.2	+48 14 10	...	...	...	16.1	2.5	12	21.0	1.0	1	21.0	trg
GJ0393	10 28 55.6	+00 50 28	...	...	...	6.7	1.1	12	7.1	0.1	2	7.1	trg
LTT03855	10 30 50.8	-35 46 39	17.7	4.9	11	20.5	3.5	12	24.6	1.2	1	24.6	trg
LTT03538	10 31 08.5	-41 27 49	23.5	7.0	11	...	...	...	...	...	...	23.5	plt
LP904-068	10 33 39.1	-29 00 32	20.0	5.4	11	...	...	...	...	...	...	20.0	plt
LEHPM2-4342	10 34 24.7	-28 19 19	16.7	4.4	11	...	...	...	...	...	...	16.7	plt
LTT03877	10 35 01.1	-09 24 39	16.0	4.2	11	13.6	2.1	12	...	...	...	13.6	ccd
LHS0283	10 35 06.5	+69 26 16	...	...	...	11.2	1.8	12	12.2	0.4	2	12.2	trg
GJ0398	10 36 01.8	+05 07 06	...	...	...	11.6	1.8	12	14.5	1.3	1	14.5	trg
2MA1036+1521	10 36 44.8	+15 21 39	...	...	...	[10.8]	1.7	12	20.1	2.0	1	20.1	trg
NLTT24896	10 37 41.6	-29 31 04	24.2	8.2	11	...	...	...	...	...	...	24.2	plt
LTT03896	10 37 45.3	-27 46 39	10.6	2.9	11	10.1	1.6	12	14.8	0.3	1	14.8	trg
LEHPM2-2758	10 38 47.8	-86 32 44	13.2	5.2	11	14.5	2.2	12	13.3	0.5	1	13.3	trg
GJ0399	10 39 40.6	-06 55 26	13.9	4.1	11	11.7	1.9	12	15.6	0.7	2	15.6	trg
LP465-084	10 39 44.4	-37 55 14	[7.8]	2.4	11	[8.7]	1.3	12	14.0	0.5	1	14.0	trg
WT0309	10 40 47.5	-44 45 53	22.4	6.4	11	...	...	...	...	...	...	22.4	plt
GJ1135	10 41 09.3	-36 53 44	[9.5]	2.6	11	[11.3]	1.9	12	16.3	0.4	1	16.3	trg
GJ1134	10 41 37.9	+37 36 39	...	...	...	10.9	1.8	12	10.3	0.3	1	10.3	trg
LP904-051	10 41 44.0	-31 11 55	23.6	6.8	11	...	...	...	...	...	...	23.6	plt
GJ1136	10 41 51.8	-36 38 00	...	...	...	15.1	2.5	9	16.2	1.1	1	16.2	trg
LP848-050	10 42 41.4	-24 16 05	[11.7]	3.7	11	[9.7]	1.6	12	11.8	0.3	1	11.8	trg
WT1827	10 43 02.8	-09 12 41	[13.5]	5.4	11	[9.7]	1.5	12	12.4	0.4	1	12.4	trg
LTT03936	10 44 09.5	-26 37 44	20.7	5.7	11	...	...	...	...	...	...	20.7	plt
LHS0288	10 44 21.0	-61 12 35	...	...	...	6.8	1.6	12	4.8	0.1	2	4.8	trg
LP905-056	10 45 16.7	-30 48 27	12.2	3.2	11	15.0	2.3	12	14.0	0.5	1	14.0	trg
LP849-006	10 45 51.8	-23 09 01	17.1	5.2	11	...	...	...	...	...	...	17.1	plt
LP905-017	10 47 11.2	-32 15 06	22.1	7.1	11	...	...	...	...	...	...	22.1	plt
LHS2310	10 47 38.7	-79 27 46	12.2	4.2	11	13.3	2.1	12	...	...	...	13.3	ccd
NLTT25431	10 48 01.0	-76 34 16	21.4	10.6	11	...	...	...	...	...	...	21.4	plt
DEN1048-3956	10 48 12.6	-39 56 07	4.0	1.2	11	4.5	0.7	10	4.0	0.0	3	4.0	trg
LHS0292	10 48 14.6	-11 20 10	6.0	3.0	11	4.3	0.7	12	4.5	0.1	2	4.5	trg
LHS2314	10 49 01.8	+05 01 59	...	...	...	25.1	3.9	12	24.3	1.4	1	24.3	trg
GJ1138	10 49 45.6	+35 32 50	...	...	...	10.2	1.6	12	9.6	0.3	2	9.6	trg
LHS2317	10 50 26.5	+33 05 19	...	...	...	14.2	2.3	12	22.9	1.5	1	22.9	trg
GJ0402	10 50 52.0	+06 48 29	...	...	...	6.0	1.0	12	6.8	0.1	2	6.8	trg
GJ0403	10 52 04.0	+13 59 51	...	...	...	14.2	2.2	12	12.5	0.4	2	12.5	trg
LHS5179	10 53 02.2	-15 05 03	22.0	7.1	11	24.3	3.8	12	...	...	...	24.3	ccd
2MA1054-8505	10 54 11.0	-85 05 02	20.0	10.4	10	19.5	3.2	9	...	...	...	19.5	ccd
LTT04004	10 54 42.0	-07 18 33	14.2	3.9	11	12.2	1.9	12	...	...	...	12.2	ccd
LHS2328	10 55 34.5	-09 21 26	24.9	8.6	11	20.3	3.2	12	18.6	0.5	1	18.6	trg
LHS2329	10 55 40.1	-52 10 15	23.1	6.2	11	...	...	...	...	...	...	23.1	plt
GJ0406	10 56 28.9	+07 00 53	...	...	...	2.0	0.3	12	2.4	0.0	1	2.4	trg
LP731-028	10 56 38.9	-15 52 54	11.8	3.1	11	13.4	2.1	12	...	...	...	13.4	ccd
LTT04030	10 58 34.2	-05 54 09	19.6	5.2	11	...	...	...	...	...	...	19.6	plt
LHS2335	10 58 35.1	-31 08 38	17.3	5.2	11	16.6	2.7	12	19.8	0.6	1	19.8	trg
LHS2337	10 59 04.8	+30 14 55	...	...	...	19.7	3.1	12	22.3	2.9	1	22.3	trg
GJ0408	11 00 04.2	+22 49 58	...	...	...	6.3	1.0	12	6.7	0.1	2	6.7	trg
LHS0296	11 01 23.2	+02 59 46	...	...	...	20.7	3.6	12	13.9	0.6	1	13.9	trg
GJ1141	11 02 21.0	+16 30 45	...	...	...	20.6	3.3	12	19.4	2.5	3	19.4	trg
GJ0410	11 02 38.3	+21 58 01	...	...	...	10.0	1.6	12	11.8	0.1	2	11.8	trg
GJ0411	11 03 20.1	+35 58 11	...	...	...	...	...	...	2.5	0.0	2	2.5	trg
LP491-051	11 03 21.25	+13 37 57	...	...	...	13.8	2.1	12	15.4	0.7	1	15.4	trg
LP791-023	11 04 25.2	-17 48 09	23.4	6.7	11	...	...	...	...	...	...	23.4	plt
L066-047	11 04 33.5	-72 57 10	19.7	6.6	8	...	...	...	...	...	...	19.7	plt
UPM1104-6232	11 04 33.8	-62 32 35	19.4	6.5	11	16.9	2.7	12	...	...	...	16.9	ccd
LP849-051	11 05 06.9	-22 12 52	19.5	5.7	11	...	...	...	...	...	...	19.5	plt
GJ0412	11 05 28.5	+43 31 36	...	...	...	6.1	1.0	12	4.9	0.0	2	4.9	trg
LHS2348	11 05 43.1	+10 14 09	...	...	...	17.9	2.8	12	19.7	1.8	1	19.7	trg
LHS2351	11 06 20.0	+04 28 17	...	...	...	19.8	3.1	12	20.8	1.4	1	20.8	trg
LP731-047	11 06 56.9	-12 44 03	22.7	10.3	11	...	...	...	...	...	...	22.7	plt
L754-040	11 07 27.7	-19 17 30	13.3	3.6	11	16.7	2.7	10	18.7	0.6	1	18.7	trg
L017-069	11 07 58.2	-83 51 23	15.4	6.9	11	22.5	3.5	12	...	...	...	22.5	ccd
GJ0413.1	11 09 31.3	-24 35 55	9.6	2.7	11	9.4	1.5	12	10.7	0.2	2	10.7	trg
LHS2360	11 10 00.5	-74 36 15	12.1	5.2	11	14.9	2.8	12	...	...	...	14.9	ccd
SCR1110-3608	11 10 29.0	-36 08 25	22.3	7.1	11	23.8	3.7	12	...	...	...	23.8	ccd
GJ0414.1	11 11 19.4	+43 25 02	...	...	...	[11.6]	2.2	12	16.9	0.7	1	16.9	trg
2MA1113+1025	11 13 00.6	+10 25 05	...	...	...	20.9	3.4	12	23.0	1.6	1	23.0	trg
GJ0422	11 16 00.2	-57 32 52	15.7	4.3	8	12.1	1.9	12	12.7	0.4	2	12.7	trg
L611-120	11 16 06.8	-30 10 41	15.3	4.2	11	...	...	...	23.2	1.1	1	23.2	trg
LP850-015	11 16 18.7	-25 49 22	21.9	6.8	11	...	...	...	...	...	...	21.9	plt
GJ1144	11 16 22.2	-14 41 36	13.3	3.5	2	14.4	5.8	7	17.9	0.5	1	17.9	trg
LHS2386	11 16 36.7	-44 07 50	21.5	5.9	11	...	...	...	...	...	...	21.5	plt
LHS2385	11 16 37.6	-27 57 19	19.1	5.9	11	...	...	...	...	...	...	19.1	plt
LP732-015	11 17 06.5	-11 22 25	23.5	6.7	11	...	...	...	...	...	...	23.5	plt
GJ1145	11 17 07.5	-27 48 49	11.4	3.2	11	15.2	2.6	9	17.7	0.4	1	17.7	trg
LP792-053	11 19 22.8	-19 00 30	24.4	6.8	11	...	...	...	...	...	...	24.4	plt
LHS2395	11 19 31.0	+46 41 43	...	...	...	11.2	2.0	12	10.3	0.3	1	10.3	trg
L467-021	11 19 41.1	-36 15 20	23.3	6.7	11	...	...	...	...	...	...	23.3	plt
LP792-014	11 19 48.2	-16 32 38	25.0	9.7	11	...	...	...	...	...	...	25.0	plt
GJ0424	11 20 04.8	+65 50 47	...	...	...	[9.7]	1.6	12	8.9	0.1	2	8.9	trg

GJ0540	14 08 12.9	+80 35 50	...	...	...	12.4	2.1	12	16.9	0.3	2	16.9	trg
LHS2866	14 08 16.9	+75 51 14	...	...	...	21.9	3.4	12	24.9	4.6	1	24.9	trg
LP912-052	14 08 41.0	-28 01 04	23.6	7.8	11	...	...	...	...	...	...	23.6	plt
LTT05526	14 09 36.5	-41 22 28	21.7	6.0	11	...	...	...	...	...	...	21.7	plt
L548-010	14 10 57.5	-31 17 25	10.7	2.9	11	14.0	2.2	12	16.8	0.6	1	16.8	trg
WT0460	14 11 59.9	-41 32 21	9.6	3.2	11	7.3	1.1	12	9.3	0.1	1	9.3	trg
LHS2875	14 12 11.0	-00 35 04	[30.3]	8.6	11	[26.4]	4.2	12	24.9	2.1	1	24.9	trg
GJ0540.2	14 13 04.9	-12 01 27	12.1	3.4	11	10.2	1.6	12	...	...	...	10.2	ccd
GJ2106	14 13 12.9	-56 44 32	7.3	3.7	10	11.4	1.8	12	11.7	0.3	1	11.7	trg
LHS2884	14 15 11.8	+45 00 40	...	...	...	12.9	2.0	12	16.3	1.6	1	16.3	trg
GJ1182	14 15 30.2	+04 38 44	...	...	...	13.1	2.5	12	14.0	0.7	1	14.0	trg
LP739-036	14 15 46.4	-13 29 34	23.6	6.3	11	...	...	...	...	...	...	23.6	plt
L404-216	14 16 47.5	-44 53 21	16.8	5.1	11	...	...	...	...	...	...	16.8	plt
GJ0541.2	14 17 24.3	+45 26 40	...	...	...	17.1	2.9	10	19.0	0.5	1	19.0	trg
L404-010	14 17 25.9	-40 18 15	15.9	4.3	11	...	...	...	...	...	...	15.9	plt
LP619-064	14 17 59.1	-00 31 29	18.8	5.5	11	...	...	...	...	...	...	18.8	plt
GJ0543	14 19 11.0	-07 18 12	34.4	10.5	9	30.4	5.6	12	19.3	1.7	1	19.3	trg
GJ0545	14 20 07.4	-09 37 13	15.7	4.4	11	15.7	2.6	12	14.0	0.3	3	14.0	trg
SCR1420-7516	14 20 36.8	-75 16 06	21.4	6.7	11	18.0	2.9	12	23.2	1.0	1	23.2	trg
LHS0370	14 20 53.0	+36 57 16	...	...	...	24.3	4.1	12	19.9	0.5	1	19.9	trg
LHS2899	14 21 15.1	-01 07 20	14.1	3.9	11	15.4	2.4	12	13.4	0.4	1	13.4	trg
LP913-013	14 21 49.0	-31 54 35	17.4	4.6	11	22.9	3.6	12	...	...	...	22.9	ccd
GJ2107	14 23 06.4	-68 22 58	11.4	4.9	9	17.3	2.9	9	23.5	0.8	1	23.5	trg
LHS2906	14 23 07.8	-22 17 09	21.9	6.5	11	21.9	3.4	12	...	...	...	21.9	ccd
LHS2913	14 24 55.9	+08 53 15	...	...	...	15.5	2.5	12	13.7	0.9	2	13.7	trg
LP800-058	14 25 13.3	-16 24 56	23.3	7.3	11	...	...	...	...	...	...	23.3	plt
LP740-010	14 25 34.1	-11 48 52	18.3	5.0	11	...	...	...	...	...	...	18.3	plt
LP620-012	14 26 36.8	-01 15 23	23.3	6.9	11	...	...	...	...	...	...	23.3	plt
GJ1183	14 27 56.1	-00 22 31	12.4	5.2	11	12.7	2.0	12	16.2	0.8	1	16.2	trg
LHS2919	14 28 04.0	+13 56 13	...	...	...	12.1	1.9	3	12.1	0.6	1	12.1	trg
LHS2921	14 28 27.7	+45 54 29	...	...	...	19.2	3.0	12	22.4	2.8	1	22.4	trg
LHS2924	14 28 42.0	+33 10 03	...	...	...	12.1	2.2	7	10.8	0.2	3	10.8	trg
GJ0550.3	14 29 18.6	-46 27 50	15.4	4.4	11	20.2	3.2	9	23.5	1.2	2	23.5	trg
GJ0552	14 29 29.7	+15 31 57	...	...	...	11.0	1.7	12	14.1	0.4	2	14.1	trg
LP913-027	14 29 49.2	-29 32 14	22.2	5.9	11	...	...	...	...	...	...	22.2	plt
LHS2930	14 30 33.7	+59 43 14	...	...	...	9.7	1.5	7	9.6	0.1	1	9.6	trg
GJ0553	14 30 47.7	-08 38 47	8.6	2.3	4	12.1	2.1	10	16.8	0.4	2	16.8	trg
GJ0552.1	14 30 58.9	-54 06 05	13.2	5.3	11	16.3	3.9	11	...	...	...	16.3	ccd
GJ0553.1	14 31 01.2	-12 17 46	12.3	3.5	11	9.2	1.5	12	10.9	0.4	2	10.9	trg
LP740-020	14 31 15.6	-13 18 25	23.8	7.4	11	...	...	...	...	...	...	23.8	plt
LHS0375	14 31 38.3	-25 25 33	{94.9}	26.1	11	{126.3}	24.8	12	24.0	0.6	1	24.0	trg
SIP1432-3326	14 32 04.8	-33 26 26	[19.8]	6.3	11	...	...	...	...	...	...	[19.8]	plt
LHS2935	14 32 08.0	+08 11 30	...	...	...	11.2	1.7	12	12.9	0.2	1	12.9	trg
LP913-077	14 32 18.0	-33 20 59	17.7	5.0	11	...	...	...	...	...	...	17.7	plt
LP857-051	14 33 12.2	-22 12 31	24.5	6.6	11	...	...	...	...	...	...	24.5	plt
LHS5273	14 34 04.9	-18 24 11	16.8	5.4	11	...	...	...	...	...	...	16.8	plt
GJ0555	14 34 16.8	-12 31 10	4.8	1.4	11	4.5	0.7	12	6.2	0.1	3	6.2	trg
LP913-046	14 36 18.1	-30 57 33	25.0	6.7	11	...	...	...	...	...	...	25.0	plt
LP620-047	14 38 39.4	-02 57 24	24.0	6.5	11	...	...	...	...	...	...	24.0	plt
L333-199	14 40 20.8	-48 36 59	15.5	4.6	11	...	...	...	...	...	...	15.5	plt
LP914-006	14 40 22.1	-27 52 42	21.6	5.7	11	23.4	3.6	12	...	...	...	23.4	ccd
2MA1440+1339	14 40 22.9	+13 39 22	...	...	...	21.5	3.4	12	22.2	0.6	1	22.2	trg
LTT05828	14 41 09.9	-08 59 20	16.8	4.9	11	...	...	...	...	...	...	16.8	plt
LP680-049	14 41 15.3	-06 59 09	21.3	6.6	11	...	...	...	...	...	...	21.3	plt
LTT05831	14 41 35.8	-09 46 39	[15.1]	4.9	11	...	...	...	...	...	...	[15.1]	plt
LTT14363	14 42 21.5	+66 03 20	...	...	...	11.1	1.8	12	10.7	0.2	1	10.7	trg
SCR1444-3426	14 44 06.6	-34 26 47	{24.0}	7.5	11	{18.8}	3.0	12	15.3	0.2	1	15.3	trg
LP858-020	14 44 15.0	-27 17 26	23.8	7.4	11	...	...	...	...	...	...	23.8	plt
SSS1444-2019	14 44 20.3	-20 19 26	{28.0}	8.5	11	{27.8}	6.3	9	16.2	0.5	2	16.2	trg
GJ1185	14 47 55.2	-03 09 36	31.6	8.4	11	38.3	6.8	12	19.7	1.4	1	19.7	trg
GJ0563.2	14 49 33.2	-26 06 20	15.0	6.8	11	22.5	3.5	12	19.6	3.1	3	19.6	trg
SIP1452-3458	14 52 52.9	-34 58 47	25.0	10.7	11	...	...	...	...	...	...	25.0	plt
GJ1186	14 53 37.2	+11 34 13	...	...	...	21.6	3.3	3	18.7	1.4	1	18.7	trg
GJ0568	14 53 51.4	+23 33 20	...	...	...	[7.1]	1.1	12	10.3	0.3	2	10.3	trg
LP801-025	14 54 10.4	-20 41 29	19.8	6.8	11	...	...	...	...	...	...	19.8	plt
GJ0569	14 54 29.2	+16 06 03	...	...	...	7.9	1.3	12	9.9	0.1	2	9.9	trg
LHS2999	14 54 53.4	+09 56 36	...	...	...	21.7	3.6	12	24.5	1.5	1	24.5	trg
LTT05930	14 54 58.3	-11 23 21	18.1	4.9	11	...	...	...	...	...	...	18.1	plt
SCR1456-7239	14 56 02.3	-72 39 41	24.9	7.0	11	22.9	3.6	12	...	...	...	22.9	ccd
LHS3001	14 56 27.2	+17 55 00	...	...	...	19.7	3.1	12	17.7	0.3	2	17.7	trg
LP406-203	14 56 37.7	-44 56 28	23.5	7.4	11	...	...	...	...	...	...	23.5	plt
LHS3003	14 56 38.3	-28 09 49	6.7	2.6	11	6.6	1.0	12	6.6	0.1	3	6.6	trg
LHS3005	14 57 20.6	+14 58 55	...	...	...	28.4	4.6	12	25.0	2.1	1	25.0	trg
LP681-091	14 57 33.3	-06 19 49	23.5	6.5	7	30.4	5.5	10	24.5	2.8	1	24.5	trg
GJ1187	14 57 53.7	+56 39 24	...	...	...	13.4	2.4	12	11.2	0.6	1	11.2	trg
SCR1459-4210	14 59 57.4	-42 10 09	26.1	8.6	11	24.8	3.9	12	...	...	...	24.8	ccd
GJ0572	15 00 55.5	+45 25 34	...	...	...	9.3	1.6	10	11.9	0.2	2	11.9	trg
TVLM513-46546	15 01 05.5	+22 49 59	...	...	...	11.9	2.2	12	10.6	0.1	2	10.6	trg
L072-010	15 02 07.7	-71 18 01	14.8	4.5	11	13.1	2.1	12	...	...	...	13.1	ccd
LP914-041	15 03 13.2	-28 40 14	24.0	6.9	11	...	...	...	...	...	...	24.0	plt
L406-116	15 03 42.2	-42 38 51	22.7	6.1	11	...	...	...	...	...	...	22.7	plt
LP859-001	15 04 16.2	-23 55 57	17.4	5.7	11	...	...	...	...	...	...	17.4	plt
LHS3018	15 04 18.5	+60 23 04	...	...	...	15.3	2.4	12	17.9	0.4	1	17.9	trg
2MA1507-2000	15 07 27.7	-20 00 43			...	14.4	2.2	12	23.5	0.4	1	23.5	trg
LP859-011	15 08 23.4	-23 51 38	18.6	4.9	11	20.0	3.1	12	...	...	...	20.0	ccd
LHS3030	15 09 35.5	+03 10 00	...	...	...	11.3	1.8	12	14.3	0.5	2	14.3	trg
TVLM868-110639	15 10 16.8	-02 41 08	15.3	6.2	11	16.4	2.8	10	16.3	1.3	1	16.3	trg

LTT06043	15 10 35.7	-42 58 37	16.9	5.0	5	...	...	...	24.4	1.4	2	24.4	trg
SCR1511-3403	15 11 38.6	-34 03 17	16.1	7.4	11	20.5	3.2	12	...	...	...	20.5	ccd
LHS0392	15 11 50.6	-10 14 18	21.6	6.3	11	17.0	2.7	12	14.8	0.7	1	14.8	trg
LHS3033	15 11 53.4	+17 56 39	...	...	...	25.2	4.1	12	23.5	1.7	1	23.5	trg
LP682-018	15 15 43.7	-07 25 21	13.6	3.9	11	11.6	1.8	12	16.9	0.3	1	16.9	trg
LEHPM2-0027	15 16 53.1	-28 32 16	22.0	6.4	11	...	...	...	...	...	...	22.0	plt
LTT06063	15 17 21.7	-80 28 23	17.8	6.0	11	...	...	...	...	...	...	17.8	plt
LHS3056	15 19 11.7	-12 45 07	[11.6]	3.2	11	[10.3]	1.6	12	21.2	0.9	1	21.2	trg
GJ0581	15 19 26.8	-07 43 20	5.8	1.5	11	6.6	1.0	12	6.3	0.1	3	6.3	trg
LTT06128	15 21 34.3	-02 16 58	17.6	5.0	11	...	...	...	...	...	...	17.6	plt
HIP075187	15 21 52.9	+20 58 39	...	...	...	7.8	1.4	12	11.4	0.2	2	11.4	trg
GJ2112	15 22 13.0	-27 49 43	[17.2]	4.9	11	...	...	...	...	...	...	[17.2]	plt
GJ0585	15 23 50.0	+17 27 38	...	...	...	12.9	2.1	12	11.8	0.4	1	11.8	trg
GJ0587.1	15 28 01.3	+25 47 23	...	...	...	21.3	3.7	12	24.6	1.5	1	24.6	trg
G151-064	15 29 01.4	-06 12 46	24.4	7.0	11	...	...	...	...	...	...	24.4	plt
LP802-069	15 29 07.2	-17 22 55	14.7	4.0	8	...	...	...	24.9	1.6	1	24.9	trg
L480-094	15 29 40.7	-38 32 28	21.2	7.7	11	...	...	...	...	...	...	21.2	plt
LHS3075	15 29 46.7	+42 52 13	...	...	...	[15.1]	2.3	12	19.6	1.7	1	19.6	trg
L108-087	15 30 52.0	-68 01 18	14.5	4.9	11	13.5	2.1	12	17.1	0.5	1	17.1	trg
LHS3079	15 31 38.3	-26 54 07	19.3	8.8	11	22.2	3.5	12	...	...	...	22.2	ccd
LP915-041	15 31 39.9	-29 16 29	18.1	6.6	11	24.4	4.0	12	...	...	...	24.4	ccd
GJ0588	15 32 13.0	-41 16 32	2.8	0.8	11	4.5	0.7	12	5.9	0.0	2	5.9	trg
LEHPM2-0455	15 32 18.9	-25 51 03	23.9	9.8	11	...	...	...	...	...	...	23.9	plt
GJ1193	15 34 30.5	+14 16 18	...	...	...	21.0	3.2	3	20.6	1.5	1	20.6	trg
2MA1534-1418	15 34 56.9	-14 18 49	9.6	3.2	11	10.9	1.8	9	10.9	0.1	1	10.9	trg
GJ0589	15 35 20.5	+17 42 47	...	...	...	21.0	3.5	12	14.2	0.4	1	14.2	trg
LHS3091	15 35 41.1	+22 08 54	...	...	...	15.6	2.5	12	18.6	1.2	1	18.6	trg
GJ0590	15 36 34.5	-37 54 23	9.0	3.9	11	11.6	2.0	12	...	...	...	11.6	ccd
GJ0592	15 36 58.6	-14 08 02	15.3	4.8	11	11.3	1.7	12	13.4	0.7	1	13.4	trg
LP623-020	15 38 14.1	-01 54 55	19.3	5.7	11	...	...	...	...	...	...	19.3	plt
GJ1194	15 40 03.5	+43 29 40	...	...	...	[18.6]	4.4	11	13.5	0.9	1	13.5	trg
SIP1540-2613	15 40 29.6	-26 13 43	13.7	5.5	11	15.2	2.6	9	14.9	0.3	1	14.9	trg
GJ0597	15 41 16.5	+75 59 34	...	...	...	[13.1]	2.0	12	13.4	0.4	2	13.4	trg
GJ0595	15 42 06.5	-19 28 18	10.5	2.9	11	12.3	2.0	12	10.1	0.4	2	10.1	trg
GJ2116	15 43 18.3	-20 15 33	{30.7}	8.6	11	{42.7}	6.7	12	21.4	0.5	1	21.4	trg
LHS3109	15 43 19.6	-30 55 51	22.8	7.0	11	24.8	3.8	12	...	...	...	24.8	ccd
L408-123	15 45 41.6	-43 30 29	[15.8]	4.9	11	[15.4]	2.4	12	19.0	0.4	1	19.0	trg
LHS3112	15 45 54.5	-04 48 23	22.6	9.3	11	...	...	...	...	...	...	22.6	plt
LHS3114	15 46 31.9	-47 14 01	19.4	5.1	2	21.5	3.8	10	24.3	1.9	2	24.3	trg
SCR1546-5534	15 46 41.8	-55 34 47	[6.7]	4.7	8	[6.7]	1.1	12	8.7	0.1	1	8.7	trg
LHS3117	15 47 24.6	-10 53 47	[8.5]	3.3	11	[11.2]	1.8	12	15.1	0.7	1	15.1	trg
LHS3122	15 49 32.9	+34 49 36	...	...	...	[10.9]	1.8	12	17.0	1.1	1	17.0	trg
G202-016	15 49 36.2	+51 02 57	...	...	...	20.9	3.2	12	19.1	1.2	1	19.1	trg
LP803-037	15 50 09.8	-20 29 11	25.0	9.4	11	...	...	...	...	...	...	25.0	plt
SCR1551-3554	15 51 12.2	-35 54 48	16.9	9.8	11	21.6	3.4	12	...	...	...	21.6	ccd
LHS3124	15 51 21.0	+29 31 06	...	...	...	16.9	2.6	12	18.8	0.7	1	18.8	trg
LHS5303	15 52 44.6	-26 23 14	11.0	3.1	11	9.4	1.5	12	10.6	0.1	1	10.6	trg
LHS3129	15 53 08.7	+34 44 39	...	...	...	12.1	2.0	12	22.4	1.2	2	22.4	trg
LP860-046	15 53 57.1	-23 11 53	24.5	8.4	11	...	...	...	...	...	...	24.5	plt
LP409-071	15 54 00.8	-43 03 10	23.9	6.8	8	...	...	...	...	...	...	23.9	plt
LP683-049	15 54 50.4	-05 21 47	20.7	6.2	11	...	...	...	...	...	...	20.7	plt
LHS3132	15 55 05.2	+33 50 55	...	...	...	34.1	6.7	12	24.1	2.3	1	24.1	trg
LTT06368	15 58 27.8	-06 51 45	20.6	5.5	11	...	...	...	...	...	...	20.6	plt
LHS3142	15 59 51.0	+14 59 50	...	...	...	32.0	5.2	12	25.0	3.2	1	25.0	trg
GJ0606	15 59 53.4	-08 15 11	11.7	3.2	11	11.8	1.9	12	13.8	0.4	2	13.8	trg
SCR1601-3421	16 01 55.7	-34 21 57	20.2	11.9	11	18.6	3.0	12	21.7	0.7	1	21.7	trg
GJ0609	16 02 50.9	+20 35 21	...	...	...	9.6	1.5	12	10.0	0.3	1	10.0	trg
LHS3149	16 04 20.0	-06 16 46	21.1	7.1	11	16.2	2.6	12	16.8	1.2	1	16.8	trg
LP917-019	16 04 23.2	-33 03 40	10.9	4.9	9	18.0	3.1	10	22.9	1.1	1	22.9	trg
GJ1197	16 07 15.5	+26 49 49	...	...	...	29.6	4.7	12	21.8	1.8	1	21.8	trg
2MA1607-0442	16 07 31.2	-04 42 10	11.2	4.2	11	13.4	2.1	12	15.7	0.4	1	15.7	trg
GJ1198	16 08 15.0	-10 26 14	27.8	8.3	11	26.5	4.8	12	21.2	1.2	1	21.2	trg
SCR1608-2913	16 08 45.5	-29 13 06	[28.9]	8.4	11	[20.2]	4.6	12	...	...	...	[20.2]	ccd
HIP079126	16 09 03.1	+52 56 37	...	...	...	13.5	2.4	12	16.9	0.3	1	16.9	trg
LP481-066	16 09 13.0	-38 04 33	16.9	11.2	11	...	...	...	...	...	...	16.9	plt
SCR1609-3431	16 09 46.2	-34 31 07	22.5	10.3	11	21.9	3.5	12	...	...	...	21.9	ccd
LP684-033	16 10 58.4	-06 31 33	21.6	7.3	11	...	...	...	...	...	...	21.6	plt
LHS3165	16 12 07.1	-40 48 45	20.0	10.7	11	...	...	...	...	...	...	20.0	plt
LP804-027	16 12 41.8	-18 52 32	8.2	3.2	11	9.0	1.7	12	14.4	0.7	1	14.4	trg
LHS3167	16 13 05.9	-70 09 08	17.3	5.5	11	14.7	2.3	12	16.6	0.3	1	16.6	trg
LHS3169	16 14 21.9	-28 30 37	15.5	4.8	11	17.3	2.8	12	18.7	0.5	1	18.7	trg
GJ1200	16 14 28.7	+19 06 04	...	...	...	21.2	3.7	12	17.9	1.1	1	17.9	trg
GJ0618	16 20 03.5	-37 31 45	[4.4]	2.9	9	7.3	1.2	12	8.3	0.2	2	8.3	trg
LP917-025	16 20 37.6	-30 39 41	18.8	6.4	11	22.6	3.5	12	...	...	...	22.6	ccd
LP805-001	16 20 41.9	-20 05 14	12.6	9.5	11	15.7	2.5	12	...	...	...	15.7	ccd
LP625-004	16 21 26.3	-01 47 02	24.9	7.1	11	...	...	...	...	...	...	24.9	plt
GJ0618.4	16 22 41.0	-48 39 20	16.8	4.6	11	20.5	3.3	12	23.7	1.9	2	23.7	trg
LEP1623-6905	16 23 02.8	-69 05 37	35.0	11.6	11	24.6	5.8	12	...	...	...	24.6	ccd
GJ0620	16 23 07.6	-24 42 35	7.1	5.2	10	14.3	2.4	12	16.5	0.6	2	16.5	trg
GJ0623	16 24 09.3	+48 21 10	...	...	...	8.3	1.3	12	7.9	0.1	3	7.9	trg
LTT06556	16 25 01.5	-12 15 26	23.0	6.4	11	22.1	3.8	12	...	...	...	22.1	ccd
GJ0622	16 25 13.0	-21 56 14	10.8	4.8	10	17.9	3.1	10	18.1	0.7	2	18.1	trg
GJ0625	16 25 24.6	+54 18 14	...	...	...	8.5	1.3	12	6.5	0.0	2	6.5	trg
LHS3197	16 26 48.1	-17 23 34	19.9	7.4	11	14.1	2.4	12	18.2	0.5	1	18.2	trg
SCR1626-3812	16 26 51.7	-38 12 33	11.7	7.0	11	13.8	2.1	12	13.7	0.3	1	13.7	trg
GJ2120	16 27 33.2	-10 00 29	15.2	4.7	11	15.8	2.7	12	22.9	1.7	1	22.9	trg
GJ2121	16 30 13.1	-14 39 50	[19.1]	5.5	11	[14.5]	2.3	12	22.4	2.7	1	22.4	trg

2MA1731+2721	17 31 29.7	+27 21 23	...	...	...	14.2	3.4	12	11.4	0.3	1	11.4	trg
SIP1731-7851	17 31 44.9	-78 51 26	20.7	9.7	11	...	...	...	...	...	...	20.7	plt
UPM1732-4736	17 32 21.9	-47 36 58	18.5	5.7	11	17.0	2.6	12	...	...	...	17.0	ccd
LP688-003	17 34 08.7	-08 49 52	21.9	11.7	11	...	...	...	...	...	...	21.9	plt
HD320012	17 34 15.4	-35 19 54	23.5	20.2	10	...	...	...	...	...	...	23.5	plt
GJ0680	17 35 13.6	-48 40 51	6.5	2.1	11	8.3	1.3	12	9.8	0.3	2	9.8	trg
L112-088	17 36 14.6	-67 56 06	23.5	6.4	11	...	...	...	...	...	...	23.5	plt
GJ0687	17 36 25.9	+68 20 20	...	...	...	3.8	0.6	12	4.5	0.0	2	4.5	trg
GJ0682	17 37 03.7	-44 19 09	[6.1]	1.6	11	[3.9]	0.7	12	5.1	0.1	2	5.1	trg
GJ0686	17 37 53.3	+18 35 30	...	...	...	8.6	1.4	12	8.1	0.1	2	8.1	trg
LP920-069	17 38 03.6	-30 00 57	15.1	5.4	11	...	...	...	...	...	...	15.1	plt
L204-148	17 38 32.5	-58 32 34	13.8	4.5	11	13.8	2.1	12	15.9	0.3	1	15.9	trg
SCR1738-5942	17 38 41.0	-59 42 24	20.8	6.0	11	24.1	4.0	12	...	...	...	24.1	ccd
L1422-016	17 39 30.7	+27 45 44	...	...	...	20.8	3.5	12	25.0	1.5	1	25.0	trg
LHS3315	17 42 10.8	-08 49 00	22.8	13.4	11	32.2	5.8	12	23.3	1.8	1	23.3	trg
GJ0690.1	17 42 32.3	-16 38 25	18.8	10.9	11	31.2	5.0	12	19.4	2.0	1	19.4	trg
G140-009	17 43 00.8	+05 47 21	...	...	...	[14.0]	2.3	12	20.0	1.0	1	20.0	trg
GJ0694	17 43 55.9	+43 22 43	...	...	...	8.1	1.3	12	9.5	0.1	2	9.5	trg
LP921-012	17 44 17.4	-29 15 48	24.7	11.3	9	...	...	...	...	...	...	24.7	plt
LTTO7069	17 45 07.4	-08 00 45	19.6	7.2	11	...	...	...	...	...	...	19.6	plt
GJ0694.2	17 45 33.5	+46 51 19	...	...	...	16.1	2.9	12	21.5	0.5	2	21.5	trg
L270-064	17 45 43.7	-52 47 38	25.0	6.6	11	...	...	...	...	...	...	25.0	plt
LHS3324	17 46 05.8	+24 39 31	...	...	...	19.4	3.3	12	14.6	0.5	1	14.6	trg
GJ2130	17 46 12.8	-32 06 09	...	...	...	10.7	1.7	12	14.2	0.3	3	14.2	trg
G154-016	17 46 23.3	-18 07 09	18.7	13.7	11	...	...	...	...	...	...	18.7	plt
LTTO7077	17 46 29.4	-08 42 37	8.4	3.3	11	8.9	1.4	12	13.0	0.3	1	13.0	trg
GJ0693	17 46 34.2	-57 19 09	6.9	2.7	11	7.1	1.1	12	5.8	0.1	2	5.8	trg
SCR1746-3214	17 46 40.7	-32 14 04	9.9	3.2	11	11.2	1.8	12	11.6	0.2	1	11.6	trg
NLT745438	17 47 10.2	-01 29 55	19.0	6.8	11	...	...	...	...	...	...	19.0	plt
LHS3332	17 49 56.1	+22 40 56	...	...	...	15.5	2.6	3	14.7	1.2	1	14.7	trg
LHS3333	17 50 13.9	+23 46 16	...	...	...	17.3	2.7	3	22.3	2.1	1	22.3	trg
GJ1222	17 54 17.1	+07 22 45	...	...	...	13.0	2.1	12	16.7	1.0	1	16.7	trg
LHS3339	17 55 36.2	+58 25 04	...	...	...	19.7	3.3	12	21.6	0.5	1	21.6	trg
L415-082	17 57 14.2	-41 59 29	16.9	4.5	2	16.9	2.7	12	17.1	0.3	1	17.1	trg
LP044-162	17 57 15.0	+70 42 01	...	...	...	12.6	2.0	11	19.1	0.4	1	19.1	trg
L271-081	17 57 22.6	-52 29 07	21.7	6.1	11	...	...	...	...	...	...	21.7	plt
BARNARDS	17 57 48.5	+04 41 36	...	...	...	2.9	0.5	12	1.8	0.0	3	1.8	trg
LHS3343	17 57 50.9	+46 35 19	...	...	...	11.5	1.8	12	14.3	0.3	3	14.3	trg
LP749-016	17 59 58.7	-13 23 44	23.4	12.0	10	...	...	...	...	...	...	23.4	plt
GJ1223	18 02 46.3	+37 31 03	...	...	...	12.7	2.0	12	12.0	0.6	1	12.0	trg
G154-043	18 03 36.1	-18 58 51	[8.5]	5.8	11	[9.9]	1.5	12	13.0	0.3	1	13.0	trg
G182-037	18 04 17.5	+35 57 25	...	...	...	[16.5]	2.8	12	21.2	0.8	1	21.2	trg
GJ0701	18 05 07.6	-03 01 53	4.4	3.1	9	7.8	1.2	12	7.8	0.1	2	7.8	trg
SCR1805-2042	18 05 15.1	-20 42 28	17.4	10.0	11	22.3	3.7	12	...	...	...	22.3	ccd
GJ1224	18 07 32.9	-15 57 47	7.1	3.3	11	9.1	1.6	12	7.9	0.1	2	7.9	trg
LP334-011	18 09 40.7	+31 52 12	...	...	...	21.2	3.4	12	21.5	1.5	1	21.5	trg
LEP1809-0219	18 09 43.7	-02 19 35	11.9	9.4	11	16.0	2.5	12	...	...	...	16.0	ccd
NLT746026	18 10 11.0	-15 25 48	23.0	15.2	11	...	...	...	...	...	...	23.0	plt
L043-072	18 11 15.3	-78 59 23	[7.0]	2.7	11	[6.4]	1.0	12	11.2	0.3	1	11.2	trg
LP629-020	18 11 23.4	-02 17 50	22.9	14.6	8	...	...	...	...	...	...	22.9	plt
LP390-016	18 13 06.57	+26 01 51	...	...	...	12.7	2.0	12	17.2	0.7	1	17.2	trg
LHS3370	18 13 52.9	-77 08 21	40.6	11.1	11	43.9	8.6	12	23.3	2.3	1	23.3	trg
LTTO7246	18 15 12.4	-19 24 07	8.9	3.3	11	10.3	2.3	12	...	...	...	10.3	ccd
LT115403	18 15 43.5	+18 56 19	...	...	...	17.8	3.0	12	22.8	1.2	2	22.8	trg
GJ0708.3	18 16 18.2	+01 31 27	...	...	...	18.1	2.9	12	16.6	2.0	1	16.6	trg
GJ0709	18 16 31.0	+45 33 28	...	...	...	14.5	2.5	12	17.0	0.3	2	17.0	trg
GJ1225	18 17 15.0	+68 33 19	...	...	...	30.0	5.5	12	18.6	1.2	1	18.6	trg
LHS0462	18 18 02.7	+38 45 19	...	...	...	12.8	2.0	12	11.3	0.5	1	11.3	trg
LHS3376	18 19 02.8	+66 11 07	...	...	...	10.2	1.7	12	7.3	0.3	1	7.3	trg
LHS3378	18 19 17.0	-77 02 50	22.0	7.7	11	...	...	...	...	...	...	22.0	plt
LP690-011	18 19 59.6	-06 17 32	20.6	13.6	10	...	...	...	...	...	...	20.6	plt
GJ0712	18 22 06.7	+06 20 38	...	...	...	17.4	2.9	12	14.5	0.5	1	14.5	trg
GJ1227	18 22 27.1	+62 03 02	...	...	...	8.5	1.3	12	8.2	0.2	1	8.2	trg
LT115449	18 25 04.7	+24 38 04	...	...	...	19.0	3.5	12	21.9	0.9	1	21.9	trg
LHS3385	18 25 31.9	+38 21 12	...	...	...	23.9	4.0	12	24.5	1.1	2	24.5	trg
LP630-081	18 26 17.0	+01 46 21	...	...	...	16.3	2.5	12	18.7	0.7	1	18.7	trg
WT0562	18 26 19.8	-65 47 41	17.2	5.0	11	17.0	2.7	12	17.1	0.3	1	17.1	trg
SCR1826-6542	18 26 46.8	-65 42 40	9.2	2.5	11	9.3	1.5	12	15.1	0.2	1	15.1	trg
GJ0714	18 30 12.0	-58 16 28	9.7	2.8	11	12.0	2.0	10	14.5	0.6	1	14.5	trg
GJ0720	18 35 18.3	+45 44 38	...	...	...	12.4	2.2	12	15.4	0.2	2	15.4	trg
2MA1835+3259	18 35 38.0	+32 59 54	...	...	...	6.1	1.0	11	5.7	0.0	1	5.7	trg
G141-021	18 36 19.0	+13 36 30	...	...	...	10.3	1.6	12	11.6	0.3	1	11.6	trg
L489-068	18 38 30.3	-39 04 31	23.3	6.3	11	...	...	...	...	...	...	23.3	plt
GJ2138	18 38 44.8	-14 29 26	[8.8]	2.6	11	[12.8]	2.0	12	12.9	0.5	1	12.9	trg
LP335-012	18 39 33.0	+29 52 17	...	...	...	11.0	1.7	12	11.9	0.1	2	11.9	trg
LP044-334	18 40 02.0	+72 40 54	...	...	...	12.0	1.9	12	16.9	0.6	1	16.9	trg
GJ0723	18 40 17.8	-10 27 55	19.1	5.6	11	21.5	3.4	12	21.7	2.8	2	21.7	trg
Wolf1467	18 40 50.2	-08 04 59	19.2	9.4	11	...	...	...	...	...	...	19.2	plt
GJ0724	18 40 57.3	-13 22 47	8.4	4.1	11	13.3	2.3	12	16.5	0.5	2	16.5	trg
GJ1230	18 41 09.4	+24 47 15	...	...	...	[5.7]	1.0	12	8.3	0.5	1	8.3	trg
SCR1841-4347	18 41 09.8	-43 47 33	14.6	4.3	11	11.9	2.0	12	12.2	0.1	1	12.2	trg
LT115513	18 41 59.0	+31 49 49	...	...	...	10.9	1.7	12	11.4	0.3	2	11.4	trg
G141-029	18 42 45.0	+13 54 24	...	...	...	9.9	1.5	12	11.1	0.2	1	11.1	trg
GJ0725	18 42 46.6	+59 37 49	...	...	...	4.1	0.8	12	3.5	0.0	3	3.5	trg
LHS5341	18 43 07.0	-54 36 48	9.5	3.0	11	8.7	1.4	12	9.7	0.1	1	9.7	trg
LTTO7419	18 43 12.5	-33 22 46	12.1	3.3	8	13.3	2.2	12	15.1	0.3	3	15.1	trg
LHS3406	18 43 21.7	+40 40 54	...	...	...	12.5	2.0	12	14.1	0.2	1	14.1	trg

SCR1845-6357	18 45 05.3	-63 57 48	3.5	1.2	6	4.6	0.8	10	3.9	0.0	2	3.9	trg
LHS3409	18 45 44.0	+52 28 20	...	...	...	{44.2}	8.4	12	20.3	0.5	1	20.3	trg
LTT07434	18 45 57.5	-28 55 53	[8.3]	8.1	10	[11.6]	1.8	12	16.4	0.4	1	16.4	trg
SCR1847-1922	18 47 16.7	-19 22 21	23.0	6.6	11	20.6	3.2	12	...	...	...	20.6	ccd
LTT07452	18 48 01.3	-14 34 51	10.7	4.2	11	16.5	2.6	12	...	...	...	16.5	ccd
SCR1848-6855	18 48 21.0	-68 55 34	[39.0]	16.8	11	[37.3]	10.3	12	24.6	0.4	1	24.6	trg
LHS3411	18 48 38.7	-61 35 26	18.6	5.0	11	...	...	...	...	...	...	18.6	plt
L345-091	18 48 41.4	-46 47 08	[10.1]	3.8	11	[12.0]	1.9	12	...	...	...	[12.0]	ccd
SIP1848-8214	18 48 51.1	-82 14 42	13.5	5.7	11	13.8	2.2	12	17.7	0.5	1	17.7	trg
LP691-015	18 49 06.4	-03 15 18	11.1	5.8	11	14.8	2.3	12	...	...	...	14.8	ccd
GJ0729	18 49 49.4	-23 50 11	3.2	1.7	11	4.1	0.7	12	3.0	0.0	2	3.0	trg
LHS3413	18 49 51.2	-57 26 49	11.2	4.0	11	9.9	1.6	12	12.2	0.3	1	12.2	trg
2MA1849-0134	18 49 55.4	-01 34 09	24.1	10.9	11	...	...	...	...	...	...	24.1	plt
GJ0730	18 50 00.8	+03 05 17	...	...	...	17.4	2.8	12	20.7	0.9	2	20.7	trg
HIP092451	18 50 26.6	-62 03 03	...	...	...	15.4	2.5	12	16.2	0.5	1	16.2	trg
GJ0731	18 51 51.1	+16 34 59	...	...	...	13.7	2.4	12	15.3	0.4	2	15.3	trg
LHS3418	18 52 00.2	-60 46 11	19.2	5.3	11	...	...	...	...	...	...	19.2	plt
L489-043	18 52 25.3	-37 30 36	15.5	4.9	11	11.1	1.9	12	...	...	...	11.1	ccd
GJ0732	18 53 39.9	-38 36 45	15.4	4.5	11	11.5	1.8	12	...	...	...	11.5	ccd
L077-046	18 55 14.7	-71 15 03	20.6	6.3	11	...	...	...	...	...	...	20.6	plt
GJ0735	18 55 27.4	+08 24 09	...	...	...	[5.6]	0.9	12	11.8	0.2	2	11.8	trg
SCR1855-6914	18 55 47.9	-69 14 15	12.5	4.5	11	10.7	1.7	12	11.6	0.1	1	11.6	trg
SCR1856-4704	18 56 38.4	-47 04 58	[21.4]	6.2	11	[22.6]	3.6	12	...	...	...	[22.6]	ccd
SCR1856-4011	18 57 01.1	-40 11 51	[28.9]	10.0	11	[21.0]	6.0	11	...	...	...	[21.0]	ccd
GJ0737	18 57 30.6	-55 59 30	[5.8]	1.6	11	[7.8]	1.2	11	12.4	0.3	2	12.4	trg
GJ0740	18 58 00.1	+05 54 29	...	...	...	8.9	1.5	12	10.9	0.2	2	10.9	trg
GJ0739	18 59 07.5	-48 16 28	10.8	3.8	11	11.5	1.8	12	14.2	0.5	3	14.2	trg
L159-126	18 59 40.7	-63 27 22	16.8	5.0	11	...	...	...	...	...	...	16.8	plt
GJ0741	19 03 16.7	-13 34 05	34.2	15.6	11	24.8	5.4	12	19.1	1.4	1	19.1	trg
SCR1904-2406	19 04 21.8	-24 06 16	22.3	6.7	11	22.6	3.6	12	...	...	...	22.6	ccd
L274-159	19 05 20.3	-54 34 43	19.0	5.9	11	...	...	...	...	...	...	19.0	plt
GJ0745	19 07 05.5	+20 53 17	...	...	...	11.7	1.8	12	8.7	0.1	3	8.7	trg
GJ0747	19 07 43.0	+32 32 41	...	...	...	[7.9]	1.2	12	8.2	0.2	1	8.2	trg
GJ1231	19 08 15.8	+26 35 06	...	...	...	19.2	3.0	12	17.3	1.0	1	17.3	trg
L490-020	19 08 22.1	-37 05 28	23.7	6.6	11	...	...	...	...	...	...	23.7	plt
GJ1232	19 09 50.9	+17 40 06	...	...	...	9.8	1.5	12	10.7	0.3	1	10.7	trg
SIP1910-4132	19 10 34.6	-41 33 45	22.8	6.1	11	...	...	...	...	...	...	22.8	plt
L346-096	19 11 04.1	-47 39 14	20.1	5.9	11	...	...	...	...	...	...	20.1	plt
GJ0748	19 12 14.6	+02 53 11	...	...	...	[6.9]	1.4	12	10.2	0.0	3	10.2	trg
GJ0747.4	19 12 25.3	-55 52 08	17.6	5.2	11	21.4	3.5	12	21.4	1.5	2	21.4	trg
G207-022	19 12 30.4	+35 33 35	...	...	...	17.7	2.7	12	17.2	0.9	1	17.2	trg
WIS1912-3615	19 12 39.3	-36 14 57	25.6	7.8	11	19.3	3.7	12	...	...	...	19.3	ccd
SCR1913-2312	19 13 06.1	-23 12 05	26.0	9.1	11	20.8	3.2	12	...	...	...	20.8	ccd
LHS3443	19 13 08.0	-39 01 54	13.3	4.2	11	15.0	2.3	12	20.6	0.5	1	20.6	trg
LHS3445	19 14 39.1	+19 19 03	...	...	...	9.5	1.5	12	18.6	0.6	3	18.6	trg
LP868-019	19 16 35.6	-25 38 42	22.7	6.1	11	...	...	...	...	...	...	22.7	plt
GJ0750	19 16 42.9	-45 53 22	[8.2]	2.5	11	[10.1]	1.7	11	15.5	0.5	2	15.5	trg
GJ0752	19 16 55.2	+05 10 08	...	...	...	4.7	0.8	12	5.8	0.0	4	5.8	trg
SCR1918-4554	19 18 29.5	-45 54 30	25.9	9.4	11	20.9	3.5	12	...	...	...	20.9	ccd
L160-005	19 19 41.2	-59 55 20	18.8	6.2	11	...	...	...	...	...	...	18.8	plt
GJ0754	19 20 48.0	-45 33 30	7.9	2.2	11	6.8	1.1	12	5.9	0.1	2	5.9	trg
LHS0475	19 20 54.3	-82 33 16	11.8	4.3	11	13.0	2.0	12	12.0	0.1	1	12.0	trg
GJ1235	19 21 38.7	+20 52 03	...	...	...	10.8	1.7	12	10.0	0.4	1	10.0	trg
GJ0756	19 21 51.4	+28 39 58	...	...	...	22.2	3.6	12	22.5	1.3	2	22.5	trg
GJ1236	19 22 02.0	+07 02 31	...	...	...	15.5	2.4	12	10.8	0.3	1	10.8	trg
SCR1922-3503	19 22 05.6	-35 03 45	28.3	8.4	11	22.2	3.6	12	...	...	...	22.2	ccd
LHS3459	19 22 40.0	+29 25 15	...	...	...	28.7	4.9	12	21.1	1.9	1	21.1	trg
SCR1924-0931	19 24 11.0	-09 31 34	24.5	6.6	11	23.6	3.8	12	...	...	...	23.6	ccd
GJ1238	19 24 16.3	+75 33 12	...	...	...	10.5	1.6	12	11.1	0.6	1	11.1	trg
G185-023	19 26 02.0	+24 26 17	...	...	...	14.5	2.2	3	18.9	0.5	1	18.9	trg
SCR1927-0409	19 27 13.0	-04 09 49	20.5	8.4	11	20.8	3.3	12	...	...	...	20.8	ccd
LHS5348	19 27 52.7	-28 11 15	[14.7]	4.5	11	[11.6]	1.9	12	12.7	0.2	1	12.7	trg
L045-006	19 29 38.3	-74 44 42	14.4	6.6	11	17.5	2.7	12	...	...	...	17.5	ccd
L078-093	19 31 01.4	-73 37 06	18.9	8.6	11	...	...	...	...	...	...	18.9	plt
SCR1931-0306	19 31 04.6	-03 06 18	21.8	6.6	11	17.9	3.0	12	17.5	0.2	1	17.5	trg
L348-141	19 31 53.2	-48 33 54	24.8	8.2	11	...	...	...	...	...	...	24.8	plt
SCR1932-5005	19 32 48.6	-50 05 39	24.4	7.8	11	23.5	3.6	12	...	...	...	23.5	ccd
L275-026	19 34 03.9	-52 25 14	15.6	5.1	11	15.0	2.3	12	...	...	...	15.0	ccd
LHS3472	19 34 57.6	+53 15 06	...	...	...	17.9	2.8	12	13.9	1.4	1	13.9	trg
LTT18490	19 39 32.8	+71 52 19	...	...	...	20.9	3.4	12	22.2	0.6	2	22.2	trg
LP869-042	19 39 36.2	-26 45 07	11.6	4.2	11	16.0	2.7	12	23.2	1.0	1	23.2	trg
GJ1242	19 41 54.2	+03 09 16	...	...	...	28.2	4.3	3	23.3	1.4	1	23.3	trg
LP869-019	19 42 00.7	-21 04 06	12.1	3.4	11	10.5	1.6	12	18.6	0.6	1	18.6	trg
SCR1942-2045	19 42 12.8	-20 45 48	...	...	...	14.9	2.3	12	15.9	0.2	2	15.9	trg
L420-142	19 42 53.3	-44 06 28	22.7	6.4	11	...	...	...	...	...	...	22.7	plt
2MA1943-3722	19 43 24.7	-37 22 11	15.9	4.4	11	...	...	...	...	...	...	15.9	plt
LP925-037	19 43 51.8	-32 24 04	14.6	4.7	11	13.4	3.5	12	...	...	...	13.4	ccd
LP869-026	19 44 53.8	-23 37 59	[11.0]	3.2	11	[10.4]	1.7	12	14.7	0.2	1	14.7	trg
GJ0766	19 45 45.5	+27 07 32	...	...	...	[8.6]	1.3	12	10.8	0.4	2	10.8	trg
LTT15769	19 45 49.7	+32 23 13	...	...	...	14.9	2.3	12	12.2	0.5	2	12.2	trg
GJ0767	19 46 24.3	+32 00 57	...	...	...	[12.7]	2.9	8	13.7	0.2	3	13.7	trg
LHS3484	19 47 04.5	-71 05 33	24.7	6.7	11	24.7	3.9	12	...	...	...	24.7	ccd
SCR1947-7646	19 47 14.7	-76 46 55	27.0	10.4	11	22.2	3.5	12	...	...	...	22.2	ccd
WT2180	19 48 22.7	-08 22 52	20.6	5.9	11	18.8	3.2	12	18.6	0.8	1	18.6	trg
LHS3489	19 50 04.4	+32 35 22	...	...	...	[17.7]	2.7	12	17.0	1.0	1	17.0	trg
GJ1243	19 51 09.3	+46 29 00	...	...	...	12.7	2.0	12	11.9	0.3	1	11.9	trg
2MA1951-3510	19 51 35.9	-35 10 38	[13.0]	3.9	11	[11.0]	2.0	12	10.7	0.4	1	10.7	trg

2MA1951-4025	19 51 36.0	-40 25 21	23.4	6.8	11	...	...	...	...	...	...	23.4	plt
LP870-054	19 52 41.6	-24 46 02	23.8	8.2	11	...	...	...	...	...	...	23.8	plt
GJ1245	19 53 54.4	+44 24 54	...	...	...	[3.8]	0.6	12	4.5	0.0	2	4.5	trg
L160-159	19 54 04.1	-64 38 10	22.8	6.3	11	...	...	...	...	...	...	22.8	plt
LP926-055	19 54 24.9	-31 47 60	17.2	4.8	11	...	...	...	...	...	...	17.2	plt
LHS3499	19 55 52.8	+51 16 22	...	...	...	25.3	3.9	12	24.8	1.4	2	24.8	trg
LEHPM2-4639	19 56 06.6	-54 42 54	21.9	7.5	11	...	...	...	...	...	...	21.9	plt
LP754-008	19 57 52.0	-10 53 05	18.9	5.6	11	16.0	2.5	12	...	...	...	16.0	ccd
LHS3505	19 58 13.5	+02 01 25	...	...	...	17.6	2.7	12	15.8	1.0	1	15.8	trg
SCR1959-3631	19 59 21.0	-36 31 04	19.8	5.4	8	25.0	4.3	10	...	...	...	25.0	ccd
SCR1959-6236	19 59 33.6	-62 36 13	24.4	7.2	11	21.8	3.4	12	...	...	...	21.8	ccd
DEN2002-5425	20 02 13.4	-54 25 56	17.3	4.8	11	...	...	...	...	...	...	17.3	plt
GJ1248	20 03 51.0	+05 59 44	...	...	...	22.3	3.5	12	12.6	0.6	1	12.6	trg
LHS3514	20 03 58.9	-08 07 47	13.5	4.5	11	14.5	2.2	12	...	...	...	14.5	ccd
GJ0774	20 04 04.7	-65 36 01	[13.7]	3.6	3	14.8	2.3	12	13.1	1.1	2	13.1	trg
LHS3516	20 04 06.8	-31 41 48	19.0	5.6	11	...	...	...	...	...	...	19.0	plt
LP870-065	20 04 30.8	-23 42 02	11.1	3.2	11	10.7	1.7	12	18.2	0.5	1	18.2	trg
GJ0781.1	20 07 45.0	-31 45 14	10.8	2.9	11	12.5	2.2	12	15.6	1.1	2	15.6	trg
LEHPM2-0064	20 07 55.2	-42 05 15	13.6	4.6	11	13.0	2.0	12	...	...	...	13.0	ccd
LTT07959	20 07 57.6	-01 32 28	24.3	6.6	11	...	...	...	...	...	...	24.3	plt
LHS3525	20 08 07.5	-52 44 25	21.0	5.6	11	...	...	...	...	...	...	21.0	plt
GJ1250	20 08 17.9	+33 18 13	...	...	...	[14.6]	2.3	12	21.7	2.6	1	21.7	trg
WT0682	20 08 23.8	-55 21 26	23.4	11.1	11	...	...	...	...	...	...	23.4	plt
2MA2009-0113	20 09 18.2	-01 13 38	14.0	4.4	11	10.8	1.8	12	10.4	0.2	1	10.4	trg
L349-063	20 09 51.6	-47 31 34	19.6	5.5	11	...	...	...	...	...	...	19.6	plt
LTT07991	20 11 06.7	-02 30 10	19.9	7.3	11	...	...	...	...	...	...	19.9	plt
GJ0784	20 13 53.4	-45 09 51	4.8	1.3	11	6.0	1.0	9	6.2	0.0	2	6.2	trg
LP754-031	20 13 59.5	-11 14 55	24.8	6.9	11	...	...	...	...	...	...	24.8	plt
LHS3534	20 14 15.3	-54 49 15	24.1	6.4	11	...	...	...	...	...	...	24.1	plt
L209-071	20 15 22.7	-56 45 54	13.5	3.9	11	12.6	2.0	12	...	...	...	12.6	ccd
SCR2016-7531	20 16 11.3	-75 31 05	16.2	4.8	11	14.3	2.3	12	15.0	0.3	1	15.0	trg
SCR2018-3635	20 18 06.5	-36 35 28	20.7	6.9	11	24.9	4.0	12	...	...	...	24.9	ccd
LP814-065	20 18 14.6	-20 12 48	22.2	6.0	11	...	...	...	...	...	...	22.2	plt
LEHPM2-0783	20 19 49.8	-58 16 43	10.9	3.0	11	10.6	1.7	12	16.2	0.3	1	16.2	trg
LP927-008	20 20 43.6	-28 06 07	22.1	6.0	11	17.7	2.8	12	...	...	...	17.7	ccd
2MA2022-3653	20 22 01.8	-36 53 02	21.3	6.6	11	...	...	...	...	...	...	21.3	plt
GJ0788.1	20 22 41.9	-58 17 09	15.0	4.3	11	21.5	3.5	9	19.4	0.7	2	19.4	trg
SCR2025-2259	20 25 18.9	-22 59 06	23.5	7.0	11	24.6	3.9	12	...	...	...	24.6	ccd
SCR2025-3545	20 25 30.0	-35 45 46	17.8	5.1	11	20.1	3.2	12	...	...	...	20.1	ccd
SCR2025-4207	20 25 41.3	-42 07 31	25.4	7.8	11	23.3	3.9	12	...	...	...	23.3	ccd
LP927-017	20 25 51.6	-26 57 19	23.4	6.7	11	...	...	...	...	...	...	23.4	plt
GJ1253	20 26 05.3	+58 34 23	...	...	...	8.9	1.4	12	9.3	0.3	1	9.3	trg
LEHPM2-0285	20 27 07.1	-44 21 29	24.1	7.1	11	...	...	...	...	...	...	24.1	plt
L210-011	20 27 37.3	-54 52 59	15.1	4.0	11	...	...	...	...	...	...	15.1	plt
GJ0791	20 27 41.7	-27 44 52	12.3	3.4	11	11.1	1.8	12	14.7	0.6	2	14.7	trg
GJ1252	20 27 42.1	-56 27 25	20.0	5.5	11	22.3	3.5	12	19.8	0.8	1	19.8	trg
GJ1251	20 28 03.7	-76 40 16	16.5	4.7	11	16.4	3.0	12	12.7	0.4	1	12.7	trg
L755-019	20 28 43.6	-11 28 31	12.1	4.4	8	12.0	1.9	12	18.8	0.6	1	18.8	trg
L080-175	20 29 06.9	-74 21 12	24.5	7.0	11	...	...	...	...	...	...	24.5	plt
GJ0791.2	20 29 48.3	+09 41 20	...	...	...	6.8	1.1	12	8.9	0.0	2	8.9	trg
GJ0793	20 30 32.0	+65 26 58	...	...	...	7.1	1.1	12	8.0	0.1	2	8.0	trg
GJ0792	20 31 25.6	+38 33 44	...	...	...	[16.2]	2.6	12	14.9	0.6	1	14.9	trg
LEHPM2-1265	20 33 01.9	-49 03 11	16.5	6.4	11	[13.3]	2.1	12	16.7	0.3	1	16.7	trg
LP755-027	20 33 32.3	-09 59 05	25.0	6.8	11	...	...	...	...	...	...	25.0	plt
GJ1254	20 33 40.3	+61 45 14	...	...	...	10.2	1.6	12	15.9	0.7	1	15.9	trg
LHS3564	20 34 43.0	+03 20 51	...	...	...	20.1	3.5	12	21.3	0.9	2	21.3	trg
L162-190	20 34 52.9	-63 47 46	21.4	5.9	11	...	...	...	...	...	...	21.4	plt
SCR2036-3607	20 36 08.3	-36 07 12	...	...	...	14.2	2.2	12	16.1	0.4	1	16.1	trg
LHS3566	20 39 23.8	-29 26 35	16.8	5.6	11	15.5	2.6	12	17.5	0.8	1	17.5	trg
SCR2040-5501	20 40 12.4	-55 01 26	22.0	6.4	11	23.2	3.6	12	...	...	...	23.2	ccd
GJ1256	20 40 33.9	+15 29 59	...	...	...	8.6	1.3	12	9.8	0.2	1	9.8	trg
L567-074	20 42 43.4	-32 55 18	18.8	5.3	11	...	...	...	...	...	...	18.8	plt
LP695-372	20 42 45.2	-05 00 19	19.8	5.9	11	...	...	...	...	...	...	19.8	plt
GJ0800	20 42 57.2	-18 55 06	12.3	3.4	11	14.6	2.5	12	17.7	0.7	2	17.7	trg
GJ0802	20 43 19.3	+55 20 53	...	...	...	[11.9]	2.0	12	15.9	1.4	1	15.9	trg
G262-026	20 43 41.3	+64 16 54	...	...	...	26.0	4.1	10	21.1	0.7	1	21.1	trg
GJ0806	20 45 04.1	+44 29 56	...	...	...	12.0	1.9	12	12.2	0.2	2	12.2	trg
GJ0803	20 45 09.5	-31 20 27	4.2	1.1	11	5.3	0.9	12	9.9	0.1	4	9.9	trg
LHS3580	20 45 45.4	-29 27 29	18.9	5.1	11	...	...	...	...	...	...	18.9	plt
LHS3583	20 46 37.1	-81 43 14	10.6	2.9	11	10.8	1.7	12	10.6	0.3	1	10.6	trg
LP756-003	20 46 43.6	-11 48 13	17.8	5.4	11	14.6	2.3	12	18.7	0.5	1	18.7	trg
LHS3585	20 47 22.6	-25 47 07	23.7	6.2	11	...	...	...	...	...	...	23.7	plt
SCR2049-4012	20 49 10.0	-40 12 06	...	...	...	7.9	1.3	12	9.1	0.1	1	9.1	trg
SIP2049-1716	20 49 52.7	-17 16 08	22.1	8.6	11	...	...	...	...	...	...	22.1	plt
LEP2050-3424	20 50 16.2	-34 24 43	13.9	5.4	11	9.4	1.5	12	...	...	...	9.4	ccd
GJ0808	20 51 41.6	-79 18 40	16.7	4.6	11	21.7	3.3	12	17.5	0.6	2	17.5	trg
LP816-060	20 52 33.0	-16 58 29	7.3	2.7	11	5.4	0.8	12	5.7	0.1	1	5.7	trg
2MA2053-0133	20 53 09.1	-01 33 04	47.5	12.4	3	18.7	3.0	12	18.2	0.7	1	18.2	trg
LP636-019	20 53 14.7	-02 21 22	25.0	8.5	8	...	...	...	...	...	...	25.0	plt
GJ0809	20 53 19.7	+62 09 15	...	...	...	6.0	1.0	12	7.1	0.0	2	7.1	trg
LEHPM1-3996	20 53 28.0	-73 08 10	21.8	5.7	11	...	...	...	...	...	...	21.8	plt
LHS3593	20 53 33.2	+10 36 37	...	...	...	13.5	2.1	12	13.9	0.5	1	13.9	trg
LEHPM2-5514	20 54 15.0	-53 29 56	22.3	6.2	11	...	...	...	...	...	...	22.3	plt
GJ0810	20 55 37.8	-14 02 08	[9.5]	2.8	11	[10.3]	1.8	12	12.9	0.1	3	12.9	trg
LP636-060	20 56 04.1	-02 12 20	22.4	6.0	11	...	...	...	...	...	...	22.4	plt
LP872-027	20 56 27.2	-24 00 13	19.3	5.9	11	17.3	2.7	12	...	...	...	17.3	ccd
GJ0811.1	20 56 46.6	-10 26 55	12.9	3.8	11	11.3	1.9	12	15.9	0.7	2	15.9	trg

GJ0813	20 57 25.3	+22 21 45	...	...	...	18.6	2.9	12	13.7	0.5	2	13.7	trg
LTT16135	20 58 41.9	+34 16 27	...	...	...	21.1	3.6	12	24.1	1.3	1	24.1	trg
GJ0815	21 00 05.3	+40 04 13	...	...	...	[8.6]	1.5	12	15.0	0.4	2	15.0	trg
L424-030	21 00 54.9	-41 31 44	18.7	6.4	11	...	...	...	...	...	...	18.7	plt
APM2101-4125	21 01 03.8	-41 14 33	20.8	6.4	11	...	...	...	...	...	...	20.8	plt
USN2101+0307	21 01 04.8	+03 07 04	...	...	...	[13.9]	2.2	12	17.3	0.6	1	17.3	trg
WT0766	21 01 07.4	-49 07 25	18.0	5.3	11	...	...	...	...	...	...	18.0	plt
GJ0816	21 01 58.6	-06 19 08	12.1	5.2	5	10.9	1.7	12	14.4	0.5	2	14.4	trg
LTT08345	21 02 40.7	-18 31 17	20.2	5.5	11	...	...	...	...	...	...	20.2	plt
GJ2151	21 03 13.9	-56 57 48	13.7	3.8	11	15.1	2.3	12	13.3	1.0	2	13.3	trg
GJ0817	21 04 53.4	-16 57 32	18.2	5.0	11	23.2	3.6	12	17.9	0.8	2	17.9	trg
L281-046	21 04 53.9	-52 48 34	22.1	6.4	11	24.5	3.8	12	...	...	...	24.5	ccd
LEHPM2-0801	21 05 13.8	-55 03 56	17.1	4.8	11	16.7	2.9	12	14.7	0.3	1	14.7	trg
L280-056	21 06 26.9	-51 42 37	21.6	5.7	11	...	...	...	...	...	...	21.6	plt
LHS0064	21 07 46.5	+59 41 13	...	...	...	{[55.8]}	8.9	11	23.9	1.6	1	23.9	trg
APM2109-4003	21 08 31.3	-40 03 49	24.7	6.7	11	24.5	3.8	12	...	...	...	24.5	ccd
GJ0821	21 09 17.4	-13 18 09	13.3	3.6	11	16.8	2.6	12	12.2	0.3	2	12.2	trg
LP873-009	21 11 13.7	-22 48 18	18.7	6.3	11	17.5	2.8	12	...	...	...	17.5	ccd
LP757-092	21 11 24.2	-09 40 33	20.0	6.1	11	15.4	2.5	12	...	...	...	15.4	ccd
LHS3639	21 11 49.6	-43 36 49	19.4	5.4	11	19.4	3.0	12	15.8	0.9	2	15.8	trg
WT2203	21 14 14.0	-07 02 50	19.5	5.5	11	...	...	...	...	...	...	19.5	plt
LTT16240	21 16 05.8	+29 51 51	...	...	...	[11.7]	1.8	12	19.4	0.8	2	19.4	trg
LP397-010	21 16 06.0	+22 38 47	...	...	...	19.3	3.2	12	20.7	0.5	1	20.7	trg
GJ0825	21 17 15.3	-38 52 03	2.7	0.7	11	3.7	0.6	8	4.0	0.0	2	4.0	trg
L117-123	21 20 09.8	-67 39 06	11.4	3.1	11	15.6	2.6	12	20.8	0.9	3	20.8	trg
SCR2122-4314	21 22 16.9	-43 14 05	17.0	4.7	11	14.9	2.3	12	20.5	0.7	1	20.5	trg
GJ0826.2	21 24 18.4	-46 41 35	22.6	6.1	11	24.3	3.8	12	24.5	2.7	2	24.5	trg
LSPM2124+4003	21 24 32.0	+40 04 00	...	...	...	12.3	1.9	12	15.0	0.3	1	15.0	trg
APM2127-3844	21 27 04.6	-38 44 51	22.3	6.2	11	21.4	3.5	12	20.3	0.6	1	20.3	trg
GJ0828.2	21 27 16.9	-06 50 39	17.7	5.0	7	19.7	3.2	12	16.4	0.6	2	16.4	trg
HB2124-4228	21 27 26.1	-42 15 18	29.3	10.6	11	27.1	4.2	7	23.6	2.0	1	23.6	trg
LHS3677	21 27 46.6	+07 17 16	...	...	...	...	...	...	24.6	3.6	1	24.6	trg
LTT08524	21 27 58.5	-00 39 50	24.1	6.7	11	...	...	...	...	...	...	24.1	plt
L714-046	21 28 18.3	-22 18 32	18.7	5.0	11	17.0	2.7	12	19.3	0.6	1	19.3	trg
LP817-050	21 28 41.1	-14 31 04	24.9	6.8	11	...	...	...	...	...	...	24.9	plt
LP817-054	21 29 23.4	-18 55 08	22.6	7.4	11	...	...	...	...	...	...	22.6	plt
GJ0829	21 29 36.8	+17 38 35	...	...	...	[5.0]	0.8	12	6.7	0.1	2	6.7	trg
SCR2130-7710	21 30 07.0	-77 10 38	22.0	9.1	11	18.3	2.9	12	21.0	0.6	1	21.0	trg
LHS0510	21 30 47.7	-40 42 30	15.7	4.3	11	15.8	2.8	12	12.0	0.4	1	12.0	trg
GJ0831	21 31 18.6	-09 47 26	[6.2]	1.9	11	[4.8]	0.8	12	8.0	0.1	2	8.0	trg
LP698-002	21 32 29.8	-05 11 59	22.9	7.5	11	...	...	...	...	...	...	22.9	plt
GJ0832	21 33 34.0	-49 00 33	5.2	1.5	11	5.1	0.8	12	5.0	0.0	2	5.0	trg
LHS3689	21 33 48.9	-06 51 10	21.7	7.0	11	...	...	...	...	...	...	21.7	plt
LHS3686	21 33 50.2	+01 46 15	...	...	...	31.4	13.4	11	14.6	1.2	1	14.6	trg
L164-131	21 34 03.8	-63 11 07	23.6	6.3	11	...	...	...	...	...	...	23.6	plt
WT0792	21 34 22.3	-43 16 11	17.2	5.2	11	13.2	2.1	12	...	...	...	13.2	ccd
LHS3693	21 34 50.3	+51 32 13	...	...	...	14.1	2.2	12	17.9	0.8	2	17.9	trg
L164-124	21 34 52.2	-63 01 08	22.0	6.6	11	...	...	...	...	...	...	22.0	plt
SIP2135-3855	21 35 16.2	-38 55 48	25.7	7.6	11	23.3	3.6	12	...	...	...	23.3	ccd
SCR2135-5325	21 35 39.6	-53 25 32	20.8	6.7	11	20.7	3.6	12	...	...	...	20.7	ccd
WT0795	21 36 25.3	-44 01 00	15.5	4.4	11	13.1	2.1	12	14.4	0.1	1	14.4	trg
HIP106803	21 37 55.7	-63 42 43	11.5	3.3	11	14.8	2.5	12	21.3	1.2	1	21.3	trg
GJ0835	21 38 00.3	+27 43 25	...	...	...	10.8	1.8	12	12.8	0.3	1	12.8	trg
LHS0512	21 38 43.7	-33 39 55	12.7	3.9	11	12.4	1.9	12	12.2	0.3	1	12.2	trg
GJ0836	21 39 00.9	-24 09 29	17.4	4.8	11	16.2	2.5	12	...	...	...	16.2	ccd
LTT16329	21 39 54.3	+27 36 43	...	...	...	[17.9]	2.8	12	24.4	1.8	1	24.4	trg
L081-009	21 41 03.8	-69 45 35	22.0	5.8	11	...	...	...	...	...	...	22.0	plt
LTT18537	21 44 12.9	+06 38 29	...	...	...	13.8	2.3	12	20.8	1.4	2	20.8	trg
LTT08678	21 45 00.8	-05 47 13	24.2	6.8	11	...	...	...	...	...	...	24.2	plt
LP874-061	21 45 26.7	-21 33 58	23.3	6.7	11	...	...	...	...	...	...	23.3	plt
L002-077	21 46 40.4	-85 43 05	18.2	5.2	11	11.4	1.8	12	15.8	0.6	1	15.8	trg
GJ1263	21 46 42.7	-00 10 24	11.0	3.0	11	10.8	1.7	12	12.0	0.5	1	12.0	trg
LP874-062	21 46 45.5	-21 17 47	15.9	4.3	11	15.0	2.3	12	...	...	...	15.0	ccd
LTT16369	21 46 56.0	+46 38 06	...	...	...	14.7	2.4	12	16.5	0.2	1	16.5	trg
LP698-042	21 47 17.5	-04 44 41	18.7	6.9	11	...	...	...	...	...	...	18.7	plt
LHS3711	21 47 53.7	+50 15 16	...	...	...	21.8	3.7	12	21.4	2.8	1	21.4	trg
LHS3713	21 48 14.3	+27 54 56	...	...	...	19.9	3.1	12	18.3	1.5	1	18.3	trg
LP818-034	21 48 53.0	-19 47 27	19.0	5.6	11	17.4	2.7	12	...	...	...	17.4	ccd
GJ1264	21 49 05.9	-72 06 08	[7.3]	2.1	11	[9.4]	1.6	12	16.3	0.4	1	16.3	trg
L427-034	21 49 11.4	-41 33 30	[12.5]	3.4	11	[11.4]	2.0	12	...	...	...	[11.4]	ccd
LHS3719	21 49 25.9	-63 06 52	17.2	4.8	11	17.2	2.7	12	16.6	0.4	1	16.6	trg
WT0818	21 49 44.8	-41 38 33	19.8	5.6	11	19.1	3.0	12	...	...	...	19.1	ccd
LP638-050	21 51 27.0	-01 27 14	22.2	6.4	11	...	...	...	...	...	...	22.2	plt
SCR2154-4754	21 54 02.5	-47 54 02	26.9	7.7	11	24.0	3.8	12	...	...	...	24.0	ccd
LP818-054	21 55 02.2	-20 14 27	23.4	6.4	11	...	...	...	...	...	...	23.4	plt
LP983-034	21 55 48.4	-33 13 15	15.5	4.1	11	...	...	...	...	...	...	15.5	plt
LP758-062	21 56 19.8	-10 20 17	18.7	5.3	11	18.0	3.0	12	...	...	...	18.0	ccd
LHS0516	21 56 55.3	-01 54 09	20.7	5.9	11	16.3	2.7	12	13.4	0.6	1	13.4	trg
LP759-006	21 57 12.7	-09 03 27	16.1	5.1	11	15.3	2.4	12	...	...	...	15.3	ccd
LTT16412	21 57 26.2	+08 08 13	...	...	...	14.7	2.4	12	21.2	0.7	3	21.2	trg
LHS3735	21 57 39.3	-09 28 13	22.2	6.9	11	25.0	3.9	12	...	...	...	25.0	ccd
GJ0842.2	21 58 24.5	+75 35 20	...	...	...	16.5	2.9	12	20.6	0.5	2	20.6	trg
LSPM2158+6117	21 58 35.0	+61 17 06	...	...	...	18.0	3.3	12	16.9	0.6	1	16.9	trg
LHS3739	21 58 50.2	-32 28 18	31.5	10.7	11	27.6	4.5	12	19.6	0.3	2	19.6	trg
GJ0842	21 59 34.7	-59 45 10	8.4	2.3	11	9.9	1.6	12	12.0	0.3	2	12.0	trg
G188-038	22 01 13.1	+28 18 24	...	...	...	7.3	1.1	12	9.0	0.1	2	9.0	trg
GJ0844	22 01 49.0	+16 28 02	...	...	...	[8.9]	1.4	12	16.1	0.6	2	16.1	trg

GJ0843	22 02 00.8	-19 28 59	13.4	3.6	11	11.4	1.8	12	...	...	...	11.4	ccd
GJ0846	22 02 10.2	+01 24 00	...	...	...	8.8	1.4	11	10.2	0.2	2	10.2	trg
LP759-017	22 02 11.3	-11 09 46	24.1	8.7	11	...	...	...	...	...	...	24.1	plt
LHS3746	22 02 29.4	-37 04 51	9.7	2.9	11	8.1	1.3	12	7.5	0.1	1	7.5	trg
LT18559	22 02 31.3	-00 17 10	24.4	7.7	11	...	...	...	...	...	...	24.4	plt
LP875-009	22 03 20.0	-25 21 52	22.7	6.2	11	...	...	...	...	...	...	22.7	plt
LHS3748	22 03 27.1	-50 38 38	16.0	4.3	11	21.2	3.3	12	19.9	1.7	1	19.9	trg
LP759-025	22 05 35.7	-11 04 29	22.3	6.7	11	...	...	...	...	...	...	22.3	plt
LT08848	22 05 51.3	-11 54 51	11.1	3.1	11	14.8	2.6	10	22.2	1.3	1	22.2	trg
LHS3756	22 05 54.4	-38 16 06	21.9	6.0	11	...	...	...	...	...	...	21.9	plt
LP699-032	22 06 09.6	-07 23 36	17.0	4.9	11	...	...	...	...	...	...	17.0	plt
WT0870	22 06 40.7	-44 58 07	17.2	5.4	11	16.0	2.5	12	17.7	0.4	1	17.7	trg
L283-001	22 06 57.2	-49 49 42	18.4	5.0	11	...	...	...	...	...	...	18.4	plt
LP983-102	22 07 53.9	-37 04 24	23.0	6.1	11	...	...	...	...	...	...	23.0	plt
LP1032-066	22 08 16.2	-42 42 59	19.9	5.6	11	22.7	3.5	12	...	...	...	22.7	ccd
LT08875	22 08 32.4	-08 24 52	19.3	5.5	11	...	...	...	...	...	...	19.3	plt
L024-098	22 08 38.6	-83 03 29	21.9	6.8	11	...	...	...	...	...	...	21.9	plt
GJ0849	22 09 40.3	-04 38 27	5.2	1.4	11	5.7	0.9	12	9.0	0.1	2	9.0	trg
G214-012	22 09 45.5	+41 02 21	...	...	...	16.6	2.6	12	22.7	1.6	1	22.7	trg
LEHPM1-4416	22 10 13.2	-71 46 07	18.3	5.3	11	19.4	3.2	12	...	...	...	19.4	ccd
LT08900	22 11 13.5	-02 32 37	16.0	5.8	11	...	...	...	...	...	...	16.0	plt
G214-014	22 11 16.9	+41 00 54	...	...	...	25.0	4.1	10	23.1	1.2	2	23.1	trg
GJ0851	22 11 30.0	+18 25 34	...	...	...	7.9	1.4	12	11.7	0.2	2	11.7	trg
LT08905	22 11 56.9	-07 42 57	22.3	6.3	11	...	...	...	...	...	...	22.3	plt
LHS3773	22 12 35.9	+08 33 11	...	...	...	15.9	2.5	12	16.0	1.0	2	16.0	trg
LT08914	22 13 28.8	-14 44 54	20.2	6.2	11	21.9	3.5	12	...	...	...	21.9	ccd
GJ1265	22 13 42.9	-17 41 09	13.6	4.5	11	11.8	1.8	12	10.4	0.4	1	10.4	trg
WT0887	22 13 50.5	-63 42 10	16.3	5.6	11	...	...	...	...	...	...	16.3	plt
LP875-068	22 14 38.4	-21 41 53	14.2	4.0	10	18.1	3.1	10	...	...	...	18.1	ccd
GJ1266	22 16 20.2	+70 56 40	...	...	...	26.0	4.2	12	22.1	1.1	1	22.1	trg
LP984-001	22 17 19.0	-34 44 03	15.0	4.6	11	12.4	1.9	12	...	...	...	12.4	ccd
GJ0852	22 17 19.2	-08 48 13	[23.4]	7.7	8	13.5	2.3	12	10.0	0.3	1	10.0	trg
LHS3789	22 17 53.3	-36 11 20	22.6	6.1	11	...	...	...	...	...	...	22.6	plt
LHS3793	22 19 23.7	-28 23 21	23.3	6.6	11	...	...	...	...	...	...	23.3	plt
LP931-042	22 20 24.7	-27 05 52	24.7	8.7	11	...	...	...	...	...	...	24.7	plt
L119-033	22 21 42.9	-65 31 33	...	...	...	18.4	2.8	12	18.6	1.1	1	18.6	trg
LHS5384	22 21 49.7	-42 09 03	21.9	6.1	11	21.6	3.3	12	...	...	...	21.6	ccd
LP931-048	22 21 53.4	-31 31 23	20.0	5.4	11	...	...	...	...	...	...	20.0	plt
LEHPM1-4635	22 22 43.5	-72 15 44	22.9	6.6	11	...	...	...	...	...	...	22.9	plt
LHS3799	22 23 07.0	-17 36 26	8.5	3.0	11	6.1	0.9	12	7.3	0.1	2	7.3	trg
LP931-053	22 23 14.0	-27 23 58	18.4	6.1	11	...	...	...	...	...	...	18.4	plt
GJ0856	22 23 29.1	+32 27 33	...	...	...	[7.3]	1.1	12	15.5	1.6	1	15.5	trg
GJ0855	22 23 33.3	-57 13 14	13.2	3.6	11	15.4	2.5	12	19.1	0.8	2	19.1	trg
LP931-057	22 23 46.3	-28 06 50	[22.5]	6.1	11	...	...	...	...	...	...	[22.5]	plt
GJ1268	22 24 55.9	+52 00 19	...	...	...	...	...	...	16.0	0.9	1	16.0	trg
LP1033-011	22 24 56.7	-38 31 10	24.3	6.8	11	...	...	...	...	...	...	24.3	plt
LHS3804	22 25 05.1	-47 52 47	12.9	3.7	11	10.9	1.8	12	...	...	...	10.9	ccd
LEHPM1-4728	22 27 27.1	-35 00 51	23.5	6.2	11	...	...	...	...	...	...	23.5	plt
GJ0860	22 27 59.4	+57 41 45	...	...	...	[3.9]	0.7	12	4.0	0.0	2	4.0	trg
LP876-026	22 28 23.4	-25 54 08	[14.1]	3.8	11	[15.1]	3.6	12	20.4	2.7	1	20.4	trg
LT116590	22 28 45.9	+18 55 54	...	...	...	19.4	3.4	10	22.0	0.8	1	22.0	trg
LHS0523	22 28 54.4	-13 25 19	14.8	4.4	11	14.3	4.4	12	11.3	0.6	1	11.3	trg
LP640-074	22 29 05.8	+01 39 48	...	...	...	17.9	2.9	10	21.3	0.9	1	21.3	trg
GJ1270	22 29 49.0	+41 28 49	...	...	...	13.2	2.1	12	13.8	0.6	1	13.8	trg
LEHPM1-4771	22 30 09.5	-53 44 56	12.3	3.6	11	12.0	1.8	12	...	...	...	12.0	ccd
SCR2230-5244	22 30 28.0	-52 44 29	26.4	11.1	11	24.8	4.2	12	...	...	...	24.8	ccd
GJ0863	22 33 02.2	+09 22 40	...	...	...	12.8	2.0	12	13.3	0.4	2	13.3	trg
LP876-034	22 34 00.5	-25 14 33	10.0	2.7	11	13.0	2.0	12	16.1	0.8	1	16.1	trg
L166-044	22 34 04.6	-61 07 41	18.9	5.5	11	...	...	...	...	...	...	18.9	plt
LHS0526	22 34 53.7	-01 04 58	27.6	12.8	11	24.5	3.9	12	23.5	2.1	1	23.5	trg
LT09084	22 35 04.9	-42 17 48	14.9	4.1	11	15.1	2.4	12	...	...	...	15.1	ccd
LP460-044	22 35 49.0	+18 40 30	...	...	...	21.4	3.3	12	23.0	1.9	1	23.0	trg
GJ0864	22 36 09.7	-00 50 30	11.2	3.1	4	12.9	2.2	12	17.0	0.5	2	17.0	trg
L645-074	22 38 24.7	-29 21 14	12.6	3.8	11	11.5	1.8	12	11.6	0.1	1	11.6	trg
GJ0865	22 38 29.8	-65 22 42	[8.1]	2.5	11	[6.9]	1.1	12	12.8	0.9	2	12.8	trg
GJ0866	22 38 33.6	-15 17 59	[3.5]	2.2	11	[1.9]	0.3	12	3.5	0.1	1	3.5	trg
GJ0867	22 38 45.6	-20 37 16	4.4	1.1	3	5.4	0.9	12	8.7	0.1	2	8.7	trg
L083-030	22 40 42.9	-71 31 11	17.9	5.4	11	...	...	...	...	...	...	17.9	plt
LHS3844	22 41 58.1	-69 10 08	15.5	4.5	11	...	...	...	...	...	...	15.5	plt
LEHPM1-5031	22 41 59.4	-75 00 33	17.0	5.3	11	...	...	...	...	...	...	17.0	plt
L166-003	22 42 00.1	-59 15 13	19.3	5.7	11	...	...	...	...	...	...	19.3	plt
GJ1271	22 42 38.7	+17 40 09	...	...	...	13.1	2.3	12	18.8	0.6	3	18.8	trg
LP820-060	22 43 02.0	-20 07 18	20.8	6.2	11	...	...	...	...	...	...	20.8	plt
LP876-008	22 43 23.1	-24 24 52	19.5	5.6	11	...	...	...	...	...	...	19.5	plt
GJ0871.1	22 44 58.0	-33 15 02	11.1	3.7	11	7.9	1.3	12	22.8	1.2	2	22.8	trg
G156-046	22 45 06.1	-12 23 43	23.4	8.0	11	...	...	...	...	...	...	23.4	plt
LP821-016	22 46 23.8	-16 56 53	25.0	7.4	11	24.3	3.8	12	...	...	...	24.3	ccd
LHS3850	22 46 26.4	-06 39 26	25.9	10.7	11	18.0	2.8	12	18.8	1.6	1	18.8	trg
GJ0873	22 46 49.7	+44 20 02	...	...	...	4.5	0.7	12	5.1	0.0	3	5.1	trg
GJ0874	22 48 17.4	-36 47 23	20.0	5.6	11	19.8	3.1	12	...	...	...	19.8	ccd
LP932-081	22 48 38.4	-31 08 41	14.5	3.8	11	13.3	2.1	12	...	...	...	13.3	ccd
LP932-083	22 49 08.4	-28 51 20	16.9	4.6	11	13.7	2.1	12	...	...	...	13.7	ccd
GJ0875	22 50 19.4	-07 05 24	...	...	...	13.1	2.2	10	14.1	0.4	2	14.1	trg
GJ1274	22 50 37.7	+34 51 21	...	...	...	19.1	2.9	12	18.0	0.8	2	18.0	trg
LP985-032	22 51 23.7	-34 19 36	20.7	6.0	7	21.7	3.4	12	...	...	...	21.7	ccd
GJ0875.1	22 51 53.5	+31 45 15	...	...	...	10.3	1.6	12	14.8	0.5	2	14.8	trg
LP821-027	22 52 05.2	-15 32 51	26.8	10.4	11	18.0	2.8	12	...	...	...	18.0	ccd

L026-054	23 37 52.8	-76 45 26	15.3	6.1	11	...	...	...	...	...	...	15.3	plt
LTT09634	23 38 08.2	-16 14 10	16.0	5.0	8	14.0	2.2	12	...	...	...	14.0	ccd
LEHT09635	23 38 17.4	-41 31 04	15.5	4.6	11	16.8	2.7	12	18.7	1.2	1	18.7	trg
LEHPM1-6053	23 40 23.9	-40 21 47	17.7	5.1	11	...	...	...	...	...	...	17.7	plt
G275-082	23 41 16.3	-26 57 21	20.5	5.9	11	...	...	...	...	...	...	20.5	plt
LP703-042	23 41 39.3	-06 35 50	21.2	6.1	11	...	...	...	...	...	...	21.2	plt
LEHPM2-1679	23 41 41.6	-85 56 07	22.3	6.7	11	...	...	...	...	...	...	22.3	plt
GJ0905	23 41 55.0	+44 10 39	...	...	...	2.7	0.4	12	3.2	0.0	3	3.2	trg
GJ1288	23 42 51.0	+30 48 59	...	...	...	...	...	...	12.2	0.4	1	12.2	trg
GJ1289	23 43 06.3	+36 32 13	...	...	...	8.2	1.3	12	8.1	0.2	1	8.1	trg
LEHPM1-6134	23 44 10.9	-68 31 47	20.4	5.9	11	...	...	...	...	...	...	20.4	plt
GJ1290	23 44 23.3	+21 36 14	...	...	...	15.5	2.4	12	22.0	2.0	1	22.0	trg
LEHPM1-6159	23 45 10.6	-38 32 24	20.5	5.5	11	...	...	...	...	...	...	20.5	plt
LHS4009	23 45 31.3	-16 10 20	[13.9]	6.8	11	[9.2]	1.5	12	12.5	0.2	1	12.5	trg
LHS4012	23 46 32.0	-50 43 28	22.9	6.8	11	...	...	...	...	...	...	22.9	plt
LP987-023	23 46 38.2	-34 10 02	18.4	4.9	11	20.1	3.1	12	...	...	...	20.1	ccd
GR0481	23 47 37.8	-23 16 06	20.1	6.1	11	...	...	...	...	...	...	20.1	plt
GJ0907	23 48 03.1	+49 00 57	...	...	...	24.4	3.8	12	16.7	0.8	2	16.7	trg
LHS4016	23 48 36.1	-27 39 39	[17.8]	4.7	11	[17.2]	2.7	12	24.2	0.9	1	24.2	trg
GJ0908	23 49 12.5	+02 24 04	...	...	...	7.3	1.1	11	6.0	0.0	2	6.0	trg
LHS4021	23 50 31.6	-09 33 33	17.8	5.3	11	11.8	2.0	12	16.0	0.4	1	16.0	trg
LEHPM1-6333	23 51 50.5	-25 37 37	[13.4]	6.2	8	[17.2]	2.8	12	21.4	0.6	1	21.4	trg
LEHPM1-6366	23 52 32.2	-34 13 07	24.8	7.7	11	...	...	...	...	...	...	24.8	plt
L217-036	23 52 44.4	-57 56 03	16.9	4.5	11	...	...	...	...	...	...	16.9	plt
LTT09783	23 53 08.3	-42 32 04	23.0	6.3	11	...	...	...	...	...	...	23.0	plt
L085-031	23 53 25.2	-70 56 41	11.5	3.3	11	11.8	1.8	12	12.4	0.4	1	12.4	trg
LP987-047	23 53 41.0	-35 59 06	17.1	4.8	11	...	...	...	...	...	...	17.1	plt
L026-027	23 53 50.1	-75 37 57	7.2	2.0	11	6.7	1.1	12	10.0	0.1	1	10.0	trg
LHS4038	23 54 04.3	-41 32 31	20.2	5.4	11	...	...	...	...	...	...	20.2	plt
L169-058	23 54 41.3	-61 35 10	20.6	5.7	11	...	...	...	...	...	...	20.6	plt
LHS4046	23 55 26.0	-03 59 00	24.0	7.0	11	24.5	3.9	12	...	...	...	24.5	ccd
GJ0912	23 55 39.8	-06 08 33	[11.6]	3.4	11	[11.7]	1.9	12	18.3	0.9	2	18.3	trg
G158-008	23 55 55.2	-13 21 24	19.7	5.3	11	18.0	2.8	12	...	...	...	18.0	ccd
LEHPM1-6494	23 56 10.8	-34 26 05	20.2	9.0	11	22.8	3.8	9	19.1	0.6	1	19.1	trg
SCR2356-0429	23 56 20.4	-04 29 32	[21.6]	6.2	11	[22.4]	3.5	12	...	...	...	[22.4]	ccd
GJ1292	23 57 44.1	+23 18 17	...	...	...	11.9	2.1	12	13.7	0.5	1	13.7	trg
LP987-060	23 57 53.6	-34 07 36	18.5	5.0	11	...	...	...	...	...	...	18.5	plt
LP764-040	23 58 13.7	-17 24 34	12.0	3.4	11	16.0	7.8	12	...	...	...	16.0	ccd
LTT17066	23 58 32.6	+07 38 31	...	...	...	12.1	1.9	12	17.1	0.6	2	17.1	trg
APM2359-6246	23 58 42.9	-62 45 42	24.9	7.4	11	21.8	3.9	12	20.8	1.0	1	20.8	trg
LTT09828	23 59 44.8	-44 05 00	[16.4]	4.7	11	[17.6]	2.7	12	15.4	0.6	1	15.4	trg
LHS4057	23 59 50.2	+47 45 09	...	...	...	18.3	2.8	12	19.3	0.3	1	19.3	trg
LHS4058	23 59 51.4	-34 06 43	11.6	3.2	11	12.2	1.9	12	15.8	0.5	1	15.8	trg

Beyond 25 pc

GJ1293	00 01 25.8	-16 56 55	16.5	4.6	4	24.8	4.1	9	32.1	2.3	1	32.1	trg
L290-032	00 02 27.1	-46 01 44	24.5	6.6	11	...	...	...	38.4	6.6	1	38.4	trg
LHS0105	00 09 17.3	-19 42 32	25.9	7.9	11	29.1	5.1	12	...	...	...	29.1	ccd
LTT00074	00 11 04.6	-05 47 02	16.6	4.6	9	21.0	3.6	10	25.8	1.4	2	25.8	trg
LTT00095	00 13 29.1	-36 49 44	13.5	3.7	11	...	...	...	28.2	1.8	1	28.2	trg
LHS1048	00 15 33.5	-35 11 48	40.6	12.1	11	52.6	8.5	12	...	...	...	52.6	ccd
SCR0015-6957	00 15 52.5	-69 57 21	28.1	7.8	11	31.8	5.3	12	...	...	...	31.8	ccd
LHS0109	00 17 40.0	-10 46 17	{71.7}	22.1	11	{103.1}	17.1	9	35.2	4.4	1	35.2	trg
LEHPM1-0439	00 18 19.4	-82 07 15	55.3	15.7	11	58.8	11.0	12	...	...	...	58.8	ccd
L086-093	00 18 34.6	-68 46 60	22.6	6.6	11	30.3	4.9	9	...	...	...	30.3	ccd
LP644-095	00 19 12.4	-03 03 13	19.3	5.3	11	...	...	...	31.0	2.2	1	31.0	trg
LHS0110	00 19 37.0	-28 09 46	[51.9]	13.8	3	[49.3]	7.9	12	30.5 ^a	1.1	2	30.5	trg
LEHPM1-0494	00 21 05.9	-42 44 43	34.6	10.1	11	31.7	7.0	12	26.9 ^a	1.0	2	26.9	trg
LTT00207	00 23 47.3	-36 51 41	19.0	7.0	10	...	...	...	40.2	2.6	1	40.2	trg
SCR0027-0806	00 27 45.4	-08 06 05	22.9	6.6	11	18.6	2.9	12	40.2	2.0	1	40.2	trg
LHS1094	00 32 15.4	-63 05 28	10.1	2.9	11	...	...	...	25.1	0.7	2	25.1	trg
SCR0033-6317	00 33 02.3	-63 17 50	27.0	9.1	11	25.6	4.6	12	...	...	...	25.6	ccd
LTT00313	00 35 38.1	-10 04 19	13.9	3.8	11	17.5	2.7	12	30.6	1.4	1	30.6	trg
LHS1106	00 36 00.0	-09 30 56	22.2	6.6	11	30.5	5.7	10	33.8	2.4	1	33.8	trg
SCR0052-6155	00 52 09.9	-61 55 23	28.9	7.6	11	32.6	5.1	12	...	...	...	32.6	ccd
SIP0052-6201	00 52 15.3	-62 01 55	29.3	8.6	11	26.5	5.6	12	...	...	...	26.5	ccd
GJ0043	00 55 25.4	-51 49 58	23.5	7.0	11	25.8	4.1	12	33.0	4.4	2	33.0	trg
LTT00525	00 55 49.3	-29 40 34	12.6	3.8	11	...	...	...	30.5	1.1	2	30.5	trg
G270-100	00 56 30.2	-04 25 16	24.6	6.9	11	...	...	...	30.0	3.5	1	30.0	trg
LTT00648	01 09 38.8	-07 10 50	15.0	4.4	11	15.6	2.5	12	37.7	4.1	1	37.7	trg
SCR0112-7939	01 12 23.5	-79 39 13	29.3	9.3	11	33.3	5.1	12	...	...	...	33.3	ccd
GJ0056.2	01 17 59.4	-48 09 01	22.2	7.4	11	29.8	5.2	10	34.4	3.3	2	34.4	trg
LHS1245	01 24 22.1	-44 08 11	23.0	7.2	11	...	...	...	33.9	4.7	1	33.9	trg
GJ2022	01 24 27.7	-33 55 09	[13.8]	4.4	11	[14.8]	3.0	12	25.8	1.4	1	25.8	trg
GJ1038	01 25 01.8	-32 51 04	10.0	3.6	10	...	...	...	25.1	1.0	1	25.1	trg
L002-060	01 29 20.9	-85 56 11	12.3	3.7	11	12.2	2.0	12	30.8	2.4	1	30.8	trg
L222-009	01 35 40.4	-50 15 42	17.9	5.0	11	...	...	...	48.2	5.7	1	48.2	trg
LP939-103	01 36 36.9	-34 23 26	63.1	28.3	11	54.6	8.5	12	...	...	...	54.6	ccd
SCR0138-5353	01 38 20.5	-53 53 26	24.3	7.4	11	29.7	4.5	12	...	...	...	29.7	ccd
SCR0138-7855	01 38 54.0	-78 55 18	[26.7]	7.9	11	[35.3]	5.4	12	...	...	...	[35.3]	ccd
SCR0139-7536	01 39 27.9	-75 36 14	18.5	6.6	11	26.2	4.1	12	...	...	...	26.2	ccd
LP708-253	01 40 04.8	-13 54 41	17.6	5.6	11	...	...	...	34.9	4.6	1	34.9	trg
L367-082	01 41 03.6	-43 38 10	25.0	7.6	11	...	...	...	41.8	4.6	1	41.8	trg
SCR0143-3840	01 43 03.3	-38 40 08	19.3	5.3	11	25.3	4.1	12	...	...	...	25.3	ccd
L367-008	01 45 21.4	-39 57 20	19.3	5.4	11	...	...	...	29.6	2.0	1	29.6	trg
L173-003	01 51 46.2	-54 57 58	23.4	7.0	11	...	...	...	47.9	7.9	1	47.9	trg

SCR0153-0703	01 53 20.6	-07 03 32	26.6	8.4	11	29.5	4.7	12	...	...	...	29.5	ccd
SCR0153-5000	01 53 24.2	-50 00 04	28.0	7.6	11	36.3	5.9	12	...	...	...	36.3	ccd
L223-102	01 54 39.0	-50 45 58	47.4	12.7	11	66.6	11.2	12	...	...	...	66.6	ccd
LTT01021	01 55 32.2	-15 31 22	25.0	7.0	7	30.6	5.0	10	...	...	...	30.6	ccd
SCR0156-6702	01 56 26.1	-67 02 36	29.7	8.5	11	32.8	5.7	12	...	...	...	32.8	ccd
SCR0201-5739	02 01 38.8	-57 39 36	27.9	9.3	11	40.8	6.8	12	...	...	...	40.8	ccd
L583-033	02 02 17.5	-26 33 52	[30.6]	10.1	8	[35.5]	15.1	11	28.8	0.8	2	28.8	trg
LP649-030	02 03 30.2	-04 54 41	19.5	5.7	11	22.8	4.3	11	28.8	2.2	1	28.8	trg
SCR0211-0354	02 11 52.0	-03 54 02	22.9	...	11	16.8	...	12	32.9	2.1	1	32.9	trg
GJ0088	02 12 51.0	-17 41 12	19.6	5.3	7	23.7	3.8	9	26.5	1.9	2	26.5	trg
LP941-016	02 13 37.4	-35 12 24	21.1	6.7	10	...	...	...	29.0	3.0	1	29.0	trg
LHS1380	02 17 56.8	-35 37 01	21.6	5.9	11	24.5	3.8	12	28.6	2.3	1	28.6	trg
LHS1386	02 18 41.4	-39 37 11	28.8	7.7	11	29.5	4.6	12	...	...	...	29.5	ccd
SCR0228-6248	02 28 13.9	-62 48 05	29.6	9.4	11	26.2	4.2	12	...	...	...	26.2	ccd
SCR0232-3006	02 32 03.1	-30 06 41	31.3	9.2	11	29.3	4.6	12	...	...	...	29.3	ccd
SCR0234-8204	02 34 47.1	-82 04 29	36.8	16.3	7	50.1	7.7	12	...	...	...	50.1	ccd
LHS5058	02 36 32.8	-34 36 32	23.2	6.4	11	...	...	...	31.4	3.2	1	31.4	trg
SCR0238-1420	02 38 07.5	-14 20 11	23.3	7.1	11	26.4	4.4	12	...	...	...	26.4	ccd
L441-032	02 39 56.7	-38 28 00	20.4	6.0	11	...	...	...	34.4	2.7	1	34.4	trg
LHS0158	02 42 02.9	-44 30 59	58.6	16.9	8	62.7	10.1	12	40.1	2.6	1	40.1	trg
LP651-009	02 46 12.9	-04 19 57	40.4	10.7	11	39.1	6.0	12	...	...	...	39.1	ccd
LP651-011	02 46 48.9	-04 21 28	38.8	10.5	11	42.1	6.5	12	...	...	...	42.1	ccd
SCR0247-5729	02 47 14.6	-57 29 22	[37.3]	10.3	11	[36.6]	5.9	12	...	...	...	[36.6]	ccd
LHS1459	02 51 43.3	-26 01 39	56.2	15.4	11	69.3	10.8	11	...	...	...	69.3	ccd
LTT01393	02 55 23.2	-25 13 29	16.3	4.9	11	...	...	...	29.0	2.9	1	29.0	trg
L012-040	03 03 26.4	-82 50 39	20.6	6.8	11	...	...	...	36.7	1.7	1	36.7	trg
LTT01453	03 03 36.7	-25 35 33	16.5	4.7	11	18.8	3.4	12	38.6	3.9	1	38.6	trg
LTT01552	03 17 28.2	-01 07 27	37.2	10.6	11	45.6	7.2	12	...	...	...	45.6	ccd
LP887-068	03 17 35.1	-27 41 47	17.9	4.9	11	...	...	...	29.5	2.3	1	29.5	trg
G077-042	03 17 55.4	-01 05 41	45.5	12.1	11	52.1	8.3	12	...	...	...	52.1	ccd
LP888-006	03 20 51.1	-28 15 34	24.6	7.2	10	26.2	4.2	12	...	...	...	26.2	ccd
SCR0325-0308	03 25 03.1	-03 08 20	24.8	7.4	11	31.4	4.9	12	...	...	...	31.4	ccd
SCR0327-3634	03 27 46.8	-36 34 40	20.2	6.0	11	18.8	3.0	12	26.2	1.1	1	26.2	trg
LHS1561	03 34 39.6	-04 50 33	17.4	4.9	11	13.5	2.1	12	29.2	1.5	1	29.2	trg
SCR0337-1056	03 37 38.2	-10 56 55	21.3	5.9	6	26.2	4.1	9	...	...	...	26.2	ccd
GJ0155.3	03 53 19.7	-37 03 59	20.3	5.7	11	...	...	...	25.1	1.8	2	25.1	trg
LHS1622	04 03 30.4	-37 53 33	25.1	8.0	11	27.7	4.3	12	...	...	...	27.7	ccd
LHS0186	04 03 38.4	-05 08 05	{67.1}	20.0	11	{99.6}	16.1	11	51.6	12.0	1	51.6	trg
WT0135	04 11 27.1	-44 18 10	{50.5}	14.0	11	{54.6}	9.3	12	25.6	1.6	1	25.6	trg
LHS1656	04 18 51.0	-57 14 01	26.2	7.5	11	25.7	4.0	12	25.4	1.3	1	25.4	trg
L446-008	04 21 00.5	-35 51 21	16.8	4.9	7	23.5	3.9	9	29.0	1.3	1	29.0	trg
LHS1676	04 31 44.0	-21 50 44	28.1	9.3	11	26.8	5.2	12	...	...	...	26.8	ccd
SCR0457-0731	04 57 23.8	-07 31 40	28.2	7.7	11	25.2	3.9	12	...	...	...	25.2	ccd
L305-024	05 06 07.3	-47 12 52	21.1	5.7	11	30.3	4.9	12	...	...	...	30.3	ccd
LP892-040	05 21 15.9	-32 21 27	24.4	6.8	11	25.3	4.1	12	...	...	...	25.3	ccd
SCR0525-7425	05 25 45.6	-74 25 26	28.7	9.4	11	42.2	6.6	12	...	...	...	42.2	ccd
SCR0527-7231	05 27 07.0	-72 31 20	22.7	6.5	11	25.1	3.9	12	...	...	...	25.1	ccd
LHS1815	06 04 20.4	-55 18 47	20.3	5.4	11	...	...	...	28.2	2.1	2	28.2	trg
SCR0610-1832	06 10 08.2	-18 32 25	31.8	9.4	11	31.2	4.8	12	...	...	...	31.2	ccd
LHS1837	06 19 50.7	-59 52 25	39.7	10.6	11	45.2	7.0	12	...	...	...	45.2	ccd
SCR0629-4648	06 29 33.6	-46 48 37	25.8	6.8	11	27.3	4.3	12	...	...	...	27.3	ccd
SCR0635-6722	06 35 48.8	-67 22 59	22.7	6.3	11	26.1	4.2	11	...	...	...	26.1	ccd
SCR0639-6939	06 39 08.4	-69 39 32	36.0	9.9	11	39.7	6.2	12	...	...	...	39.7	ccd
SCR0639-6934	06 39 22.3	-69 34 13	33.4	9.1	11	38.5	6.1	12	...	...	...	38.5	ccd
SCR0644-4223	06 44 32.1	-42 23 45	[18.8]	5.2	11	[17.5]	2.9	12	29.9	1.9	2	29.9	trg
LP453-049	06 44 32.4	-38 31 59	23.6	6.8	11	26.1	4.2	12	...	...	...	26.1	ccd
SCR0659-2031	06 59 48.7	-20 31 47	29.2	8.9	11	31.3	4.8	12	...	...	...	31.3	ccd
LHS1904	07 11 19.7	-67 07 22	19.5	5.7	11	24.5	4.0	10	26.4	1.0	2	26.4	trg
SCR0714-7140	07 14 26.2	-71 40 38	33.1	9.9	11	29.4	4.7	12	...	...	...	29.4	ccd
SCR0719-5050	07 19 35.4	-50 50 52	26.6	12.6	11	27.4	4.3	12	...	...	...	27.4	ccd
SCR0724-3125	07 24 21.2	-31 25 58	24.5	9.5	11	16.5	2.6	12	38.5	2.1	1	38.5	trg
SCR0725-8530	07 25 22.2	-85 30 58	39.7	10.8	11	42.9	6.9	12	...	...	...	42.9	ccd
LTT02856	07 26 29.1	-70 49 41	22.2	6.0	11	25.2	4.0	12	...	...	...	25.2	ccd
WT0214	07 28 40.1	-61 20 41	44.2	13.8	11	50.3	9.4	12	...	...	...	50.3	ccd
GJ2061	07 31 04.1	-37 13 46	18.2	5.3	11	20.7	3.2	12	33.3	4.6	1	33.3	trg
SCR0733-4406	07 33 42.7	-44 06 13	22.3	6.7	11	18.7	2.9	12	43.4	1.4	1	43.4	trg
SCR0743-1929	07 43 22.1	-19 29 04	29.4	13.4	11	29.1	4.5	12	...	...	...	29.1	ccd
SCR0745-4814	07 45 32.2	-48 14 57	31.5	9.4	11	30.9	5.2	12	...	...	...	30.9	ccd
GJ1100	07 47 03.1	-13 56 19	22.5	6.3	11	26.8	4.6	11	27.6	2.0	2	27.6	trg
SCR0749-4955	07 49 29.4	-49 55 06	26.4	7.8	11	30.4	5.0	12	...	...	...	30.4	ccd
SCR0758-4126	07 58 28.7	-41 26 44	27.6	9.0	11	30.0	4.6	12	...	...	...	30.0	ccd
LP784-012	08 02 03.4	-17 10 18	17.4	6.0	7	...	...	...	30.0	2.9	1	30.0	trg
SCR0810-4056	08 10 20.3	-40 56 50	28.9	7.8	11	34.0	5.4	12	...	...	...	34.0	ccd
SCR0829-6203	08 29 24.7	-62 03 23	37.9	11.6	11	47.2	8.7	12	...	...	...	47.2	ccd
SCR0829-3709	08 29 41.3	-37 09 35	25.1	9.7	11	19.4	3.0	12	25.0	0.6	1	25.0	trg
L891-016	08 31 21.6	-06 02 02	17.4	4.9	11	18.0	3.3	12	26.4	1.9	1	26.4	trg
L186-042	08 35 47.5	-56 45 13	23.6	6.3	7	36.3	5.7	9	...	...	...	36.3	ccd
LTT03187	08 36 14.3	-41 33 26	15.3	5.7	8	...	...	...	39.0	3.1	2	39.0	trg
GJ0316	08 40 00.3	-06 28 33	11.8	4.1	11	16.1	2.8	10	30.1	1.4	2	30.1	trg
SCR0840-3113	08 40 56.6	-31 13 33	23.8	6.5	11	25.1	3.9	12	...	...	...	25.1	ccd
L098-062	08 41 32.6	-68 25 40	17.4	6.7	9	24.5	4.3	10	30.8	1.4	1	30.8	trg
SCR0843-2937	08 43 09.5	-29 37 31	28.3	8.3	11	28.8	4.7	12	...	...	...	28.8	ccd
SCR0844-7120	08 44 54.6	-71 20 43	29.9	8.3	11	32.0	5.3	12	...	...	...	32.0	ccd
SCR0852-3507	08 52 54.1	-35 07 33	24.7	9.8	11	25.1	3.9	12	...	...	...	25.1	ccd
SCR0853-6123	08 53 03.0	-61 23 48	40.3	15.0	11	35.2	5.8	12	...	...	...	35.2	ccd
LHS2072	08 55 04.7	-71 35 48	25.2	7.1	11	25.3	4.0	12	...	...	...	25.3	ccd
LP786-022	08 57 14.2	-19 35 04	21.3	6.3	11	...	...	...	28.3	1.9	1	28.3	trg

SCR0859-7517	08 59 52.0	-75 17 30	27.1	7.6	11	31.4	4.9	12	...	...	...	31.4	ccd
SCR0904-4851	09 04 47.8	-48 51 24	29.7	12.9	11	35.0	5.5	12	...	...	...	35.0	ccd
SCR0912-8311	09 12 59.6	-83 11 52	30.4	8.8	11	28.6	4.5	12	...	...	...	28.6	ccd
SCR0914-7304	09 14 53.9	-73 04 19	26.3	7.5	11	29.8	4.6	12	...	...	...	29.8	ccd
SCR0916-3431	09 16 07.1	-34 31 31	28.5	8.6	11	29.8	4.6	12	...	...	...	29.8	ccd
SIP0933-1602	09 33 49.7	-16 02 55	34.8	14.6	11	32.3	7.2	12	...	...	...	32.3	ccd
SCR0936-3237	09 36 01.5	-32 37 59	25.2	7.0	11	27.9	4.4	12	...	...	...	27.9	ccd
CE089	09 38 53.8	-33 48 45	32.0	9.7	11	27.8	5.4	12	...	...	...	27.8	ccd
SCR0943-4833	09 43 18.2	-48 33 50	26.1	7.1	11	26.3	4.2	12	...	...	...	26.3	ccd
L462-023	09 44 45.4	-36 32 38	22.6	6.5	11	...	...	...	39.8	3.5	1	39.8	trg
SCR0947-0020	09 47 20.1	-00 20 09	29.3	9.8	11	26.3	4.5	12	...	...	...	26.3	ccd
LHS2209	09 54 52.5	-13 31 21	66.2	17.9	11	85.0	13.2	12	...	...	...	85.0	ccd
SCR1005-4322	10 05 03.1	-43 22 28	28.1	7.3	6	29.3	4.7	12	...	...	...	29.3	ccd
WT0248	10 05 54.9	-67 21 31	47.1	19.3	11	42.8	7.5	12	26.0	1.9	1	26.0	trg
LTTO3719	10 10 00.0	-25 58 33	19.4	6.0	11	...	...	...	37.6	2.7	1	37.6	trg
LHS2228	10 11 09.2	-82 51 58	19.2	5.7	11	...	...	...	28.0	1.2	1	28.0	trg
SCR1011-8106	10 11 12.4	-81 06 42	26.7	9.4	11	30.6	4.8	12	...	...	...	30.6	ccd
LTTO3763	10 15 50.1	-11 47 48	21.9	7.1	11	...	...	...	38.5	5.2	1	38.5	trg
L752-053	10 21 08.1	-17 43 38	19.8	5.5	5	22.3	3.9	12	33.1	2.6	1	33.1	trg
LHS2257	10 24 23.4	-02 34 18	57.1	26.7	5	47.2	49.2	11	...	...	...	47.2	ccd
LHS0284	10 36 03.1	-14 42 29	{67.9}	19.2	11	{66.8}	13.6	12	47.3	2.9	1	47.3	trg
LP904-036	10 36 28.4	-28 27 15	14.4	4.1	11	17.7	3.0	12	25.2	1.0	1	25.2	trg
LP904-045	10 40 18.5	-29 30 23	20.0	6.1	11	...	...	...	37.7	3.3	1	37.7	trg
L017-050	10 41 56.4	-82 59 23	19.7	6.5	11	27.1	4.3	12	...	...	...	27.1	ccd
LP905-022	10 51 58.9	-32 01 20	16.7	5.1	11	...	...	...	32.4	2.8	1	32.4	trg
LP849-020	10 52 26.4	-22 41 16	23.9	6.6	11	...	...	...	28.6	2.8	1	28.6	trg
LTTO4033	10 58 41.3	-42 40 09	23.3	9.8	9	...	...	...	51.9	9.5	2	51.9	trg
LTTO4042	11 00 02.8	-35 06 37	16.9	4.6	11	...	...	...	33.8	5.1	1	33.8	trg
SCR1104-0150	11 04 08.4	-01 50 18	29.6	9.7	11	38.2	6.1	12	...	...	...	38.2	ccd
SCR1104-8352	11 04 51.0	-83 52 25	33.1	14.3	11	53.9	9.0	12	...	...	...	53.9	ccd
UPM1105-5825	11 05 30.4	-58 25 19	40.6	17.1	7	41.4	6.4	12	...	...	...	41.4	ccd
LTTO4105	11 09 12.2	-04 36 25	18.1	5.2	11	...	...	...	28.5	1.9	1	28.5	trg
LHS0299	11 11 22.7	-06 31 56	{109.1}	29.9	9	{142.2}	22.8	9	83.3	21.4	1	83.3	trg
LP792-044	11 13 13.0	-19 06 23	54.7	14.8	11	60.7	13.4	12	...	...	...	60.7	ccd
SCR1117-3202	11 17 29.3	-32 02 10	26.3	8.1	11	27.6	4.3	12	...	...	...	27.6	ccd
SCR1118-3511	11 18 59.7	-35 11 39	28.0	8.9	11	26.8	4.2	12	...	...	...	26.8	ccd
SCR1121-8057	11 21 27.9	-80 57 03	32.4	10.2	11	32.0	5.0	12	...	...	...	32.0	ccd
GJ0429.2	11 28 00.5	-09 10 57	30.8	8.6	7	36.8	5.7	11	25.1	1.9	2	25.1	trg
SCR1132-8446	11 32 22.3	-84 46 28	62.7	23.4	11	87.3	18.0	12	...	...	...	87.3	ccd
USN1137-0317	11 37 16.6	-03 17 37	34.4	9.8	11	27.4	5.1	12	...	...	...	27.4	ccd
CE440-087	11 47 50.7	-28 49 45	84.0	36.7	5	67.7	13.9	12	60.9	4.4	1	60.9	trg
Ruiz440-064	11 48 50.6	-28 33 23	28.1	7.6	3	25.3	4.4	12	39.8	2.4	1	39.8	trg
SCR1153-5430	11 53 22.6	-54 30 08	27.5	8.1	11	27.3	10.8	12	...	...	...	27.3	ccd
SCR1159-4256	11 59 37.7	-42 56 39	26.7	7.0	11	26.5	4.2	12	...	...	...	26.5	ccd
LP907-063	12 03 03.9	-33 39 55	45.8	13.5	11	36.9	6.8	12	...	...	...	36.9	ccd
LP908-010	12 03 28.1	-29 23 00	30.5	10.9	11	24.7	3.8	12	26.6	0.9	1	26.6	trg
SCR1204-4037	12 04 15.5	-40 37 53	21.2	5.7	11	25.1	3.9	12	...	...	...	25.1	ccd
GJ2090	12 04 36.6	-38 16 25	18.6	5.5	11	...	...	...	27.5	2.1	1	27.5	trg
WT1928	12 08 06.9	-32 06 36	23.8	10.0	11	35.9	5.8	12	56.3	3.9	1	56.3	trg
NLT730217	12 17 06.8	-17 38 15	23.8	7.0	11	28.5	4.6	12	...	...	...	28.5	ccd
LHS0323	12 17 30.2	-29 02 21	{73.3}	22.1	11	{76.7}	15.3	12	42.9	3.4	1	42.9	trg
LP470-065	12 17 46.8	-39 04 05	[22.8]	6.7	11	...	...	...	30.9	2.5	1	30.9	trg
SCR1217-3557	12 17 55.8	-35 57 15	24.4	6.7	11	26.8	4.2	12	...	...	...	26.8	ccd
SCR1220-8302	12 20 03.7	-83 02 29	25.0	8.8	11	26.4	4.1	12	...	...	...	26.4	ccd
LHS0326	12 24 26.8	-04 43 37	{99.9}	31.4	11	{140.7}	23.4	9	49.0	4.7	1	49.0	trg
SCR1224-8205	12 24 39.8	-82 05 53	25.4	7.7	11	25.7	4.0	12	...	...	...	25.7	ccd
SCR1227-4039	12 27 03.9	-40 39 40	24.4	6.7	11	30.1	5.0	12	...	...	...	30.1	ccd
LP909-006	12 30 19.6	-28 24 31	31.3	12.8	11	28.1	4.3	12	...	...	...	28.1	ccd
LHS2573	12 32 32.2	-26 10 14	31.4	8.5	11	33.2	5.6	12	...	...	...	33.2	ccd
LTTO4828	12 39 55.9	-08 34 42	22.9	6.8	11	...	...	...	36.0	3.8	1	36.0	trg
SCR1240-8116	12 40 56.0	-81 16 31	19.2	6.1	11	19.2	3.0	12	30.9	2.2	1	30.9	trg
LHS5231	12 59 18.2	-00 10 33	14.8	4.0	11	14.3	2.2	12	29.1	1.5	1	29.1	trg
WT1962	12 59 51.3	-07 30 35	[47.5]	12.9	11	[44.6]	7.1	12	35.2	1.6	1	35.2	trg
L147-045	13 04 43.8	-62 15 26	14.7	6.3	11	...	...	...	38.5	5.0	1	38.5	trg
LHS2698	13 13 29.6	-32 27 05	36.8	9.9	11	44.4	7.3	12	46.3	2.0	1	46.3	trg
LP910-061	13 16 21.9	-33 47 45	24.6	7.0	11	...	...	...	39.1	4.4	1	39.1	trg
SCR1322-7254	13 22 27.5	-72 54 37	44.1	11.8	11	41.9	6.5	12	...	...	...	41.9	ccd
SCR1328-7253	13 28 42.1	-72 53 47	71.2	20.3	11	71.7	13.0	12	...	...	...	71.7	ccd
LHS2744	13 30 52.6	-32 37 49	24.6	7.1	11	...	...	...	38.2	3.3	1	38.2	trg
SIP1338-3752	13 38 26.5	-37 52 50	41.3	12.7	11	37.7	9.0	12	...	...	...	37.7	ccd
LTTO5294	13 39 37.6	-01 35 43	22.8	7.6	9	...	...	...	32.3	3.5	1	32.3	trg
SIP1343-3823	13 43 49.4	-38 23 50	33.7	9.7	11	35.5	5.5	12	...	...	...	35.5	ccd
LTTO5330	13 44 55.1	-45 35 19	17.8	8.2	6	28.7	4.6	9	...	...	...	28.7	ccd
SCR1347-7610	13 47 56.8	-76 10 20	22.6	6.2	11	29.2	4.7	9	...	...	...	29.2	ccd
LP912-026	13 53 19.8	-30 46 38	21.1	6.2	11	...	...	...	33.3	4.2	1	33.3	trg
LHS2841	14 00 57.0	-31 47 50	16.3	5.3	11	...	...	...	33.7	2.7	2	33.7	trg
GJ0539.2	14 09 27.2	-30 55 49	19.9	5.6	11	27.5	4.7	12	39.4	5.2	2	39.4	trg
SCR1410-2750	14 10 22.6	-27 50 59	24.8	7.8	11	30.0	4.9	12	...	...	...	30.0	ccd
L836-121	14 14 21.4	-15 21 22	[12.8]	3.6	8	[16.2]	3.5	11	30.2	4.6	1	30.2	trg
LHS5275	14 39 58.8	-56 54 46	19.3	5.2	6	...	...	...	56.5	37.3	1	56.5	trg
SCR1441-7338	14 41 14.4	-73 38 41	19.0	5.5	11	16.8	2.7	12	25.1	0.6	1	25.1	trg
SCR1450-3742	14 50 02.9	-37 42 10	30.1	9.1	11	25.9	4.2	12	...	...	...	25.9	ccd
LHS0381	14 50 28.9	-08 38 37	{87.0}	27.3	11	{129.8}	21.3	10	36.5	7.5	1	36.5	trg
LHS0382	14 50 41.2	-16 56 31	{84.8}	24.8	11	{79.8}	14.7	12	48.3	5.3	1	48.3	trg
LHS0385	14 55 35.8	-15 33 44	{105.7}	29.2	11	{140.0}	24.1	9	49.0	15.2	1	49.0	trg
SCR1510-5141	15 10 56.6	-51 41 36	28.1	8.5	11	27.5	4.4	12	...	...	...	27.5	ccd
UPM1515-6258	15 15 04.9	-62 58 06	35.7	26.0	10	59.7	9.2	12	...	...	...	59.7	ccd

LP915-016	15 17 21.1	-27 59 50	[18.8]	6.3	10	[25.2]	4.4	10	29.4	3.3	1	29.4	trg
UPM1523-5454	15 23 43.7	-54 54 35	...	...	0	29.7	4.8	12	...	...	...	29.7	ccd
LP802-068	15 24 45.8	-17 07 39	16.8	5.0	11	...	...	...	34.6	6.4	1	34.6	trg
SCR1528-3807	15 28 50.6	-38 07 41	21.3	7.9	11	35.0	5.9	12	...	...	...	35.0	ccd
LEHPM2-0016	15 29 14.0	-29 07 38	51.8	16.3	11	47.4	11.4	12	36.0	1.3	1	36.0	trg
SCR1532-3622	15 32 13.9	-36 22 31	23.0	10.3	11	31.6	5.0	12	...	...	...	31.6	ccd
LP916-023	15 44 05.5	-32 05 22	22.3	6.7	11	26.1	4.0	12	...	...	...	26.1	ccd
L336-071	15 49 38.3	-47 36 34	20.5	5.9	11	25.9	4.2	10	27.2	1.8	2	27.2	trg
LP916-003	15 54 23.5	-33 08 44	16.7	6.4	11	27.0	4.7	12	...	...	...	27.0	ccd
LP684-003	15 56 41.4	-04 14 21	23.2	6.9	11	...	...	...	40.8	6.2	1	40.8	trg
LHS3144	16 00 27.8	-34 43 17	21.3	7.1	11	30.0	4.9	12	...	...	...	30.0	ccd
LHS3147	16 02 23.6	-25 05 57	23.1	7.3	11	20.7	3.2	12	25.5	0.9	1	25.5	trg
SCR1608-4442	16 08 43.9	-44 42 29	27.5	13.2	11	31.8	5.2	12	...	...	...	31.8	ccd
SCR1609-3730	16 09 05.4	-37 30 40	29.2	13.0	11	50.8	8.0	10	...	...	...	50.8	ccd
LEP1610-0040	16 10 29.0	-00 40 54	[37.5]	13.3	11	[35.3]	6.5	12	...	...	...	[35.3]	ccd
GJ0618.1	16 20 24.8	-04 16 02	16.4	4.5	9	22.1	3.9	10	33.5	2.4	2	33.5	trg
LP745-070	16 33 41.6	-09 33 12	18.6	6.5	10	...	...	...	30.7	2.3	1	30.7	trg
SCR1637-4703	16 37 56.6	-47 03 44	28.4	9.3	11	31.9	5.0	12	...	...	...	31.9	ccd
2MA1651-2719	16 51 59.8	-27 19 51	...	...	0	32.2	5.1	12	...	...	...	32.2	ccd
CCD1702-2718	17 02 09.1	-27 18 24	19.3	6.3	11	30.2	6.7	11	...	...	...	30.2	ccd
LP806-025	17 07 58.3	-19 28 43	10.8	9.1	11	27.3	4.2	12	...	...	...	27.3	ccd
NLTT44264	17 10 03.8	-21 46 56	11.7	9.5	11	32.3	5.1	12	...	...	...	32.3	ccd
SCR1712-1907	17 12 26.1	-19 07 04	22.1	20.7	11	44.7	7.0	12	...	...	...	44.7	ccd
SCR1716-2239	17 16 35.7	-22 39 49	24.4	18.1	11	35.2	5.4	12	...	...	...	35.2	ccd
UPM1718-2245	17 18 25.6	-22 46 29	18.2	15.6	11	32.8	6.7	12	...	...	...	32.8	ccd
LHS0440	17 18 32.3	-43 26 38	38.7	10.7	7	41.1	6.4	12	27.5	0.9	1	27.5	trg
LP920-011	17 19 13.7	-27 45 44	12.9	7.8	9	32.5	5.1	12	...	...	...	32.5	ccd
GJ1217	17 22 43.0	-14 57 37	19.0	6.3	10	27.7	4.6	9	26.9	2.0	1	26.9	trg
LP687-026	17 22 50.6	-03 29 38	23.5	14.1	10	38.8	6.2	12	...	...	...	38.8	ccd
SCR1724-3727	17 24 07.0	-37 27 53	23.4	10.1	11	30.2	4.7	12	...	...	...	30.2	ccd
SCR1733-2452	17 33 04.6	-24 52 57	22.6	14.2	8	52.8	8.6	12	...	...	...	52.8	ccd
SCR1735-4051	17 35 15.5	-40 51 13	27.2	12.6	11	28.6	4.4	12	...	...	...	28.6	ccd
LTTO7022	17 39 28.3	-22 41 46	14.3	9.1	9	...	...	...	43.5	20.7	1	43.5	trg
SCR1750-2530	17 50 07.6	-25 30 21	19.1	6.9	11	25.6	4.8	12	...	...	...	25.6	ccd
SCR1750-0128	17 50 14.4	-01 28 51	29.3	13.3	11	33.0	5.5	12	...	...	...	33.0	ccd
LHS0456	17 50 59.0	-56 36 07	25.6	8.0	11	31.9	5.0	12	...	...	...	31.9	ccd
LP808-023	17 51 27.5	-18 59 32	14.6	8.1	9	...	...	...	44.0	5.8	1	44.0	trg
SCR1753-7403	17 53 32.6	-74 03 46	26.1	7.4	11	26.1	4.2	12	...	...	...	26.1	ccd
SCR1755-0455	17 55 30.7	-04 55 42	21.5	18.5	11	26.5	4.1	12	...	...	...	26.5	ccd
SCR1800-0755	18 00 33.9	-07 55 03	21.1	13.1	11	36.3	6.7	12	...	...	...	36.3	ccd
SCR1801-7000	18 01 28.9	-70 00 49	26.2	7.1	11	27.8	4.3	12	...	...	...	27.8	ccd
SCR1802-1919	18 02 28.7	-19 19 19	23.1	20.0	10	48.8	7.8	12	...	...	...	48.8	ccd
L077-206	18 06 55.6	-74 35 20	33.7	11.8	11	36.0	5.7	12	...	...	...	36.0	ccd
LEHPM2-0088	18 08 00.0	-81 20 49	28.3	8.6	7	34.4	5.4	12	...	...	...	34.4	ccd
SCR1808-0341	18 08 48.4	-03 41 54	49.4	41.0	9	87.4	14.2	12	...	...	...	87.4	ccd
LTTO7218	18 09 33.3	-12 02 20	13.3	5.5	11	...	...	...	28.4	2.1	2	28.4	trg
LEP1809-0247	18 09 50.1	-02 47 43	28.3	24.6	8	35.6	7.6	12	...	...	...	35.6	ccd
SCR1820-6225	18 20 49.4	-62 25 53	28.3	7.9	11	36.4	5.8	10	...	...	...	36.4	ccd
GJ1226	18 20 57.2	-01 02 58	[15.5]	5.3	11	[12.7]	3.9	12	25.8 ^a	3.5	2	25.8	trg
SCR1821-0700	18 21 54.2	-07 00 18	18.6	12.5	9	38.9	6.7	12	...	...	...	38.9	ccd
G155-020	18 31 04.4	-09 58 09	21.2	13.6	11	26.8	4.2	12	...	...	...	26.8	ccd
SCR1842-2736	18 42 56.7	-27 36 33	38.5	13.4	7	50.3	8.6	12	...	...	...	50.3	ccd
SCR1844-1310	18 44 59.6	-13 10 24	23.2	17.7	10	44.2	6.8	12	...	...	...	44.2	ccd
G155-041	18 47 36.0	-17 03 16	23.7	12.5	11	38.4	5.9	12	...	...	...	38.4	ccd
LHS0468	18 48 44.9	-02 33 46	{28.4}	15.5	11	{49.1}	7.9	12	28.6	3.7	1	28.6	trg
SCR1851-6156	18 51 55.4	-61 56 56	25.5	6.9	11	27.4	4.3	12	...	...	...	27.4	ccd
LHS3421	18 52 52.4	-57 07 37	14.4	4.5	11	...	...	...	26.6	2.7	2	26.6	trg
SCR1853-7537	18 53 26.6	-75 37 40	20.1	6.1	11	25.9	4.4	10	...	...	...	25.9	ccd
SCR1854-2859	18 54 20.8	-28 59 53	18.8	15.0	10	41.7	6.5	12	...	...	...	41.7	ccd
SCR1900-2547	19 00 47.1	-25 47 13	25.8	8.0	11	28.8	4.5	12	...	...	...	28.8	ccd
SCR1901-0737	19 01 32.4	-07 37 24	22.4	6.5	11	18.5	2.9	12	25.4	0.6	1	25.4	trg
SCR1901-3106	19 01 59.2	-31 06 45	28.7	10.6	11	15.7	5.0	12	46.0	2.5	1	46.0	trg
SCR1907-7924	19 07 53.5	-79 24 03	29.0	8.9	11	33.8	5.3	12	...	...	...	33.8	ccd
SCR1916-3638	19 16 46.6	-36 38 06	{199.2}	60.9	11	{280.7}	47.9	11	67.7	6.3	1	67.7	trg
LP347-017	19 19 09.0	-45 47 59	20.9	6.4	11	...	...	...	38.7	5.4	1	38.7	trg
LHS3451	19 19 29.3	-18 19 06	68.0	18.7	11	59.7	9.8	12	...	...	...	59.7	ccd
LEHPM2-3658	19 22 43.7	-43 19 21	25.2	6.8	11	26.6	4.3	12	...	...	...	26.6	ccd
L347-073	19 26 30.2	-48 36 16	24.8	7.1	11	26.6	4.5	12	...	...	...	26.6	ccd
L347-072	19 27 30.9	-48 33 53	27.9	7.6	11	31.8	4.9	12	...	...	...	31.8	ccd
L208-005	19 30 13.7	-54 56 19	23.8	7.6	9	...	...	...	34.6	3.3	1	34.6	trg
SCR1932-0652	19 32 46.3	-06 52 18	23.7	9.1	11	26.7	4.1	12	...	...	...	26.7	ccd
GJ0762	19 34 36.5	-62 50 39	15.9	5.3	11	20.4	3.1	12	25.7	0.9	2	25.7	trg
SCR1936-4816	19 36 33.3	-48 16 54	26.3	7.6	11	25.9	4.2	12	...	...	...	25.9	ccd
LTTO7786	19 42 52.8	-45 04 53	12.5	3.4	8	...	...	...	27.3	1.6	2	27.3	trg
LHS3480	19 44 22.0	-22 30 54	[91.1]	29.2	11	{106.2}	20.3	12	56.5	2.6	1	56.5	trg
LHS3492	19 51 31.3	-50 55 38	34.0	9.8	11	38.8	6.8	12	25.6	1.2	1	25.6	trg
GJ0769	19 54 00.1	-47 48 37	21.7	8.8	11	27.3	4.3	12	25.3	5.7	1	25.3	trg
SCR1954-7356	19 54 06.4	-73 56 51	64.3	17.8	11	73.5	13.0	12	...	...	...	73.5	ccd
SCR1955-2856	19 55 16.8	-28 56 43	26.2	7.8	11	27.5	4.5	12	...	...	...	27.5	ccd
SCR1959-5549	19 59 58.8	-55 49 30	25.0	7.0	11	27.1	4.3	12	...	...	...	27.1	ccd
L277-205	20 03 52.4	-53 57 28	22.3	6.0	11	27.2	4.3	12	...	...	...	27.2	ccd
L277-082	20 10 45.4	-51 19 39	37.7	10.9	11	49.2	7.8	9	...	...	...	49.2	ccd
LHS3528	20 10 55.5	-25 35 09	{22.0}	8.3	11	{58.4}	22.1	8	...	...	...	{58.4}	ccd
LP814-044	20 17 52.4	-17 17 09	18.3	6.6	6	...	...	...	35.1	2.8	1	35.1	trg
LP815-001	20 20 07.1	-19 39 03	20.2	7.7	8	28.0	4.3	12	...	...	...	28.0	ccd
SCR2025-1534	20 25 08.6	-15 34 16	21.0	6.1	11	18.9	3.0	12	36.3	1.9	1	36.3	trg
WT0708	20 27 04.4	-68 41 07	33.9	9.8	11	31.9	5.1	12	...	...	...	31.9	ccd

LP567-063	20 34 31.1	-32 31 00	11.8	3.8	11	14.5	2.3	12	26.9	1.3	1	26.9	trg
LTT08147	20 36 43.6	-02 41 20	24.9	8.7	10	27.7	4.7	12	...	...	...	27.7	ccd
SCR2042-5737	20 42 46.4	-57 37 15	[22.7]	8.5	11	[25.3]	5.9	12	...	...	...	[25.3]	ccd
SCR2043-6501	20 43 10.4	-65 01 17	55.3	15.6	11	67.1	11.9	12	...	...	...	67.1	ccd
LHS3582	20 46 18.0	-47 09 28	24.0	6.5	8	...	...	...	32.5	11.4	1	32.5	trg
2MA2051-2458	20 51 09.8	-24 58 18	24.2	7.0	11	25.4	4.0	12	...	...	...	25.4	ccd
LHS3600	20 55 59.9	-59 56 44	12.9	5.3	11	...	...	...	27.8	1.9	1	27.8	trg
LEHPM1-4008	20 58 30.4	-65 01 11	33.1	12.7	11	36.6	5.8	12	...	...	...	36.6	ccd
LP816-061	20 59 06.6	-16 05 37	23.2	6.5	11	...	...	...	33.8	2.9	1	33.8	trg
L211-096	20 59 51.3	-58 45 31	14.8	6.3	11	...	...	...	30.2	2.9	1	30.2	trg
SCR2102-3128	21 02 15.6	-31 28 13	26.2	7.2	11	28.0	4.3	12	...	...	...	28.0	ccd
L163-023	21 02 25.0	-60 31 36	12.0	5.3	11	21.0	3.7	12	32.5	2.0	1	32.5	trg
LHS3615	21 03 21.7	-50 22 52	20.1	5.6	11	17.4	2.8	12	25.2	0.8	1	25.2	trg
LHS3620	21 04 25.4	-27 52 47	{188.7}	54.4	11	{246.0}	41.8	11	77.6	8.5	1	77.6	trg
LEHPM1-4021	21 05 11.4	-62 47 02	43.7	16.1	11	47.8	9.4	12	...	...	...	47.8	ccd
SCR2105-3515	21 05 41.8	-35 15 00	27.5	7.7	11	28.2	4.4	12	...	...	...	28.2	ccd
LHS0505	21 11 57.9	-31 03 16	37.9	9.9	3	42.3	7.7	12	...	...	...	42.3	ccd
LEHPM1-4051	21 15 15.1	-75 41 52	26.1	7.6	11	24.6	3.8	12	30.3	1.2	1	30.3	trg
LP637-024	21 19 18.3	-00 33 19	24.1	6.6	9	...	...	...	40.4	6.1	1	40.4	trg
GJ0836.4	21 42 07.5	-12 09 48	20.3	5.6	11	16.9	3.0	12	35.0	3.2	1	35.0	trg
L048-001	21 42 58.5	-74 05 56	21.9	6.3	11	26.7	4.5	12	...	...	...	26.7	ccd
CD-32 16735	21 47 02.7	-32 24 40	2.5	0.9	11	2.3	0.6	12	213.2	558.9	1	213.2	trg
L282-061	21 51 12.3	-52 15 40	23.1	6.3	9	32.1	5.1	9	31.7	2.5	1	31.7	trg
LHS0515	21 55 48.0	-11 21 43	{151.3}	50.6	11	{207.4}	48.9	12	51.3	11.0	1	51.3	trg
LHS3740	21 58 53.2	-57 56 04	22.2	6.3	11	22.4	3.4	12	27.8	1.1	1	27.8	trg
LHS3754	22 04 40.9	-19 46 42	43.1	17.1	4	49.3	8.7	12	...	...	...	49.3	ccd
LHS3775	22 12 56.0	-18 15 21	67.6	18.1	11	86.1	13.5	12	...	...	...	86.1	ccd
LP699-075	22 18 13.2	-03 10 20	19.2	5.4	8	...	...	...	40.7	3.3	1	40.7	trg
LEHPM1-4592	22 21 11.4	-19 58 15	{95.4}	27.9	11	{89.0}	29.1	12	...	...	...	{89.0}	ccd
WT0918	22 21 37.0	-65 47 30	41.0	12.7	11	38.0	6.2	12	...	...	...	38.0	ccd
LP931-054	22 23 18.0	-27 09 15	21.4	6.1	11	27.1	4.2	12	...	...	...	27.1	ccd
SCR2224-7242	22 24 51.6	-72 42 00	26.9	7.7	11	26.5	4.1	12	...	...	...	26.5	ccd
LEHPM1-4828	22 32 42.7	-60 16 34	35.4	12.3	11	42.5	6.8	12	...	...	...	42.5	ccd
LHS3836	22 38 02.9	-65 50 09	31.8	8.8	11	29.5	5.0	12	27.5	1.0	1	27.5	trg
LP932-053	22 39 44.0	-32 04 18	20.7	6.5	9	...	...	...	39.7	3.4	1	39.7	trg
SCR2241-6119	22 41 44.4	-61 19 31	23.2	7.3	11	26.6	4.1	12	...	...	...	26.6	ccd
SCR2242-5103	22 42 10.9	-51 03 28	[29.2]	8.3	10	[34.7]	6.0	11	...	...	...	[34.7]	ccd
LHS3846	22 44 00.2	-04 57 57	65.5	22.0	9	66.1	11.1	12	...	...	...	66.1	ccd
L106-104	22 46 45.2	-63 18 05	18.3	5.2	11	22.0	3.4	12	25.1	1.9	1	25.1	trg
LTT09210	22 48 53.0	-28 50 03	17.1	5.0	10	22.2	3.9	10	40.1	3.6	1	40.1	trg
LTT09203	22 48 54.5	-54 18 52	17.5	6.1	11	26.0	4.5	10	33.6	3.0	1	33.6	trg
L214-072	22 49 26.0	-58 15 12	19.6	5.6	11	...	...	...	36.6	3.1	1	36.6	trg
SCR2250-5726	22 50 45.0	-57 26 02	73.7	21.2	11	46.4	8.0	12	...	...	...	46.4	ccd
LP933-024	22 55 43.9	-30 22 39	[21.0]	6.1	11	...	...	...	32.3	2.9	1	32.3	trg
LHS5396	23 00 23.6	-31 07 12	17.4	5.1	11	21.4	3.6	12	30.8	2.4	1	30.8	trg
L286-071	23 00 26.1	-53 13 40	20.9	6.6	10	...	...	...	41.4	3.2	1	41.4	trg
SCR2312-3124	23 12 08.7	-31 24 04	29.4	8.4	11	31.6	4.9	12	...	...	...	31.6	ccd
LHS5397	23 14 15.4	-56 50 52	19.6	5.6	11	...	...	...	28.0	2.4	1	28.0	trg
L168-009	23 20 07.5	-60 03 55	16.4	4.7	11	18.7	3.1	12	26.4	1.6	1	26.4	trg
LTT09507	23 21 11.3	-01 35 45	20.9	5.7	11	...	...	...	27.9	3.2	2	27.9	trg
GJ0895.1	23 25 42.0	-45 36 35	19.3	5.6	11	21.7	3.6	12	35.9	3.6	2	35.9	trg
SCR2325-8057	23 25 52.9	-80 57 41	43.1	15.1	11	30.2	4.7	12	...	...	...	30.2	ccd
L288-049	23 41 43.6	-51 56 37	21.5	5.9	11	...	...	...	27.6	3.1	1	27.6	trg
LEHPM1-6094	23 42 02.3	-78 41 23	40.7	12.4	11	40.4	7.1	12	...	...	...	40.4	ccd
WT1026	23 46 35.2	-52 47 02	72.8	19.3	11	88.7	14.4	12	...	...	...	88.7	ccd
LP1035-064	23 47 56.5	-39 11 13	22.7	6.4	11	25.3	4.0	12	...	...	...	25.3	ccd
LHS4025	23 50 52.6	-39 05 17	22.4	6.3	11	25.2	4.0	12	...	...	...	25.2	ccd
SCR2352-6124	23 52 29.5	-61 24 23	50.3	14.6	11	59.4	11.2	12	...	...	...	59.4	ccd
L361-021	23 57 45.6	-45 48 55	20.2	5.6	11	27.1	4.5	10	41.0	5.0	2	41.0	trg

GJ1293 32.12 L290-032 38.37 LTT00074 25.79 LTT00095 28.18 LHS0109 35.21 LP644-095
30.95 LHS0110 29.63 LEHPM1-0494 26.03 LTT00207 40.18 SCR0027-0806 40.18 LHS1094
25.08 LTT00313 30.56 LHS1106 33.78 GJ0043 32.99 LTT00525 30.48 G270-100 30.03 LTT00648
37.66 GJ0056.2 34.40 LHS1245 33.91 GJ2022 25.77 GJ1038 25.14 L002-060 30.75 L222-009
48.24 LP708-253 34.90 L367-082 41.75 L367-008 29.55 L173-003 47.87 L583-033 28.60 LP649-

^aThe weighted mean distance includes that of both the primary and the secondary components.

030 28.79 SCR0211-0354 32.92 GJ0088 26.50 LP941-016 28.99 LHS1380 28.62 LHS5058 31.39
 L441-032 34.35 LHS0158 40.10 LTT01393 28.99 L012-040 36.70 LTT01453 38.58 LP887-
 068 29.46 SCR0327-3634 26.23 LHS1561 29.24 GJ0155.3 25.09 LHS0186 51.55 WT0135
 25.61 LHS1656 25.37 L446-008 29.03 LHS1815 28.21 SCR0644-4223 31.14 LHS1904 26.40
 SCR0724-3125 38.48 GJ2061 33.30 SCR0733-4406 43.38 GJ1100 27.60 LP784-012 30.02
 SCR0829-3709 25.04 L891-016 26.35 LTT03187 38.96 GJ0316 30.10 L098-062 30.83 LP786-
 022 28.29 L462-023 39.79 WT0248 26.01 LTT03719 37.59 LHS2228 27.96 LTT03763 38.51
 L752-053 33.13 LHS0284 47.30 LP904-036 26.67 LP904-045 37.65 LP905-022 32.40 LP849-
 020 28.64 LTT04033 51.89 LTT04042 33.84 LTT04105 28.52 LHS0299 83.33 GJ0429.2 25.13
 CE440-087 60.86 Ruiz440-064 39.82 LP908-010 26.57 GJ2090 27.52 WT1928 56.31 LHS0323
 42.94 LP470-065 30.88 LHS0326 49.04 LTT04828 35.98 SCR1240-8116 30.92 LHS5231 29.06
 WT1962 35.25 L147-045 38.46 LHS2698 46.32 LP910-061 39.12 LHS2744 38.20 LTT05294
 32.33 LP912-026 33.28 LHS2841 33.70 GJ0539.2 39.42 L836-121 30.18 LHS5275 56.50 SCR1441-
 7338 25.11 LHS0381 36.50 LHS0382 48.33 LHS0385 49.02 LP915-016 29.43 LP802-068 34.58
 LEHPM2-0016 35.95 L336-071 27.17 LP684-003 40.83 LHS3147 25.52 GJ0618.1 33.51 LP745-
 070 30.67 LHS0440 27.47 GJ1217 26.90 LTT07022 43.48 LP808-023 44.03 LTT07218 28.42
 GJ1226 29.33 LHS0468 28.57 LHS3421 26.58 SCR1901-0737 25.39 SCR1901-3106 46.04
 SCR1916-3638 67.66 LP347-017 38.65 L208-005 34.61 GJ0762 25.71 LTT07786 27.33 LHS3480
 56.50 LHS3492 25.58 GJ0769 25.25 LP814-044 35.08 SCR2025-1534 36.30 LP567-063 26.89
 LHS3582 32.47 LHS3600 27.75 LP816-061 33.76 L211-096 30.18 L163-023 32.53 LHS3615
 25.23 LHS3620 77.64 LEHPM1-4051 30.34 LP637-024 40.44 GJ0836.4 34.97 CD-32 16735

***** L282-061 31.70 LHS0515 51.28 LHS3740 27.82 LP699-075 40.68 LHS3836 27.46
LP932-053 39.70 L106-104 25.06 LTT09210 40.14 LTT09203 33.55 L214-072 36.63 LP933-
024 32.31 LHS5396 30.79 L286-071 41.36 LHS5397 27.97 L168-009 26.37 LTT09507 27.89
GJ0895.1 35.89 L288-049 27.56 L361-021 41.00

APPENDIX D

DETECTION LIMITS CONTOUR PLOTS

This appendix provides contour plots for the 880 detection limit simulations. The ‘Y’, ‘N’, or ‘M’ labels in each plot indicate *yes*, *no*, or *maybe* for whether or not the companion was detectable at the separation, magnitude and seeing conditions explored.

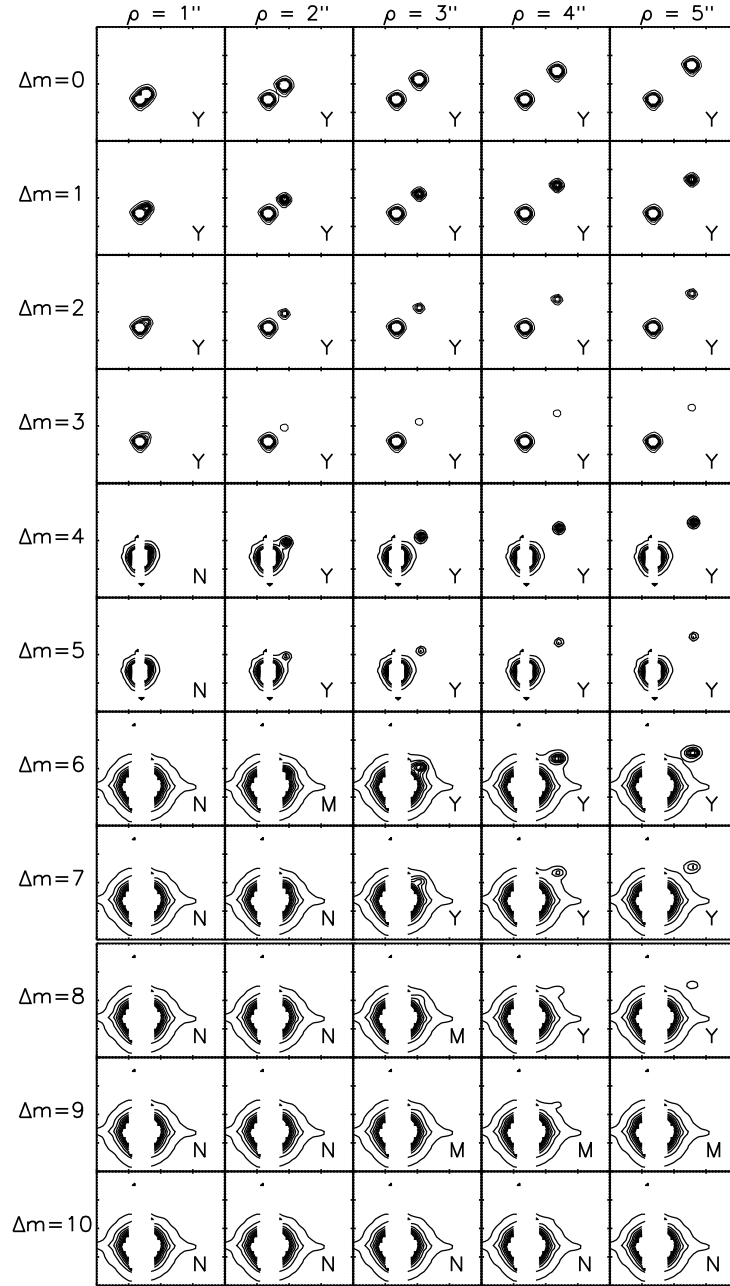


Figure D.1 Detection Limits for the CTIO/SMARTS 0.9m: Contour plots for GJ 285, with $I = 8.24$ at $0''.8$ seeing conditions for an embedded companion at $\rho = 1 - 5''$ with $\Delta m_{\text{ags}} = 0 - 10$. The Y, N, and M labels indicate *yes*, *no*, or *maybe* for whether or not the embedded companion is detectable. The 3-second exposure was used for $\Delta m_{\text{ags}} = 0 - 3$, the 30-second exposure was used for $\Delta m_{\text{ags}} = 4 - 5$, and the 300-second exposure was used for $\Delta m_{\text{ags}} = 6 - 10$.

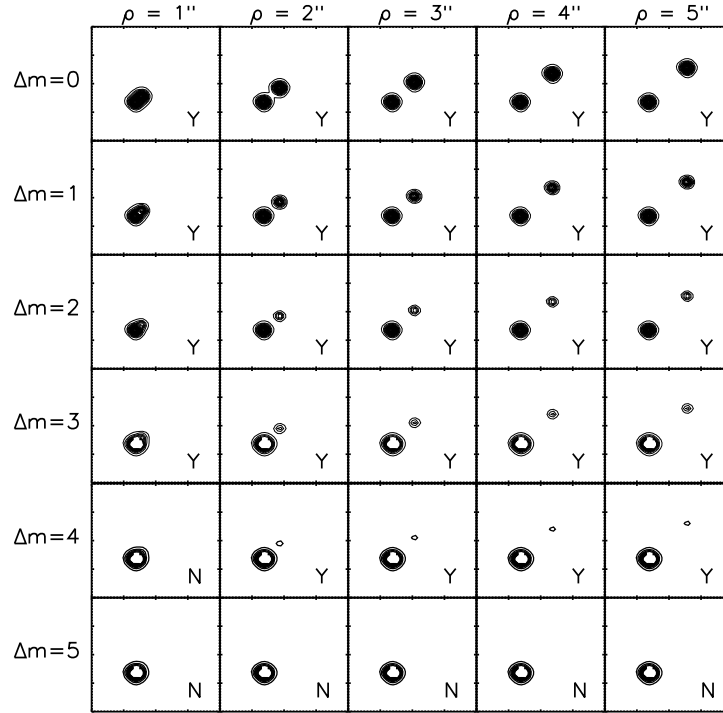


Figure D.2 Detection Limits for the CTIO/SMARTS 0.9m: Contour plots for LP848-050AB, with $I = 12.47$ at $0''.8$ seeing conditions for an embedded companion at $\rho = 1 - 5''$ with $\Delta m_{\text{ags}} = 0 - 5$. The AB separation is $\rho < 2''$. The Y, N, and M labels indicate *yes*, *no*, or *maybe* for whether or not the embedded companion is detectable. The 30-second exposure was used for $\Delta m_{\text{ags}} = 0, 1, 2$, and the 300-second exposure was used for $\Delta m_{\text{ags}} = 3, 4, 5$.

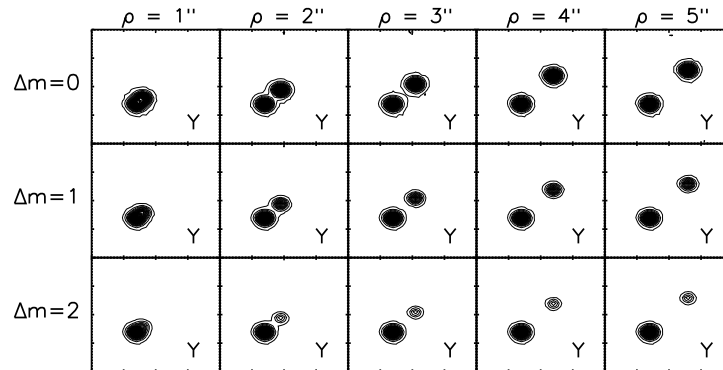


Figure D.3 Detection Limits for the CTIO/SMARTS 0.9m: Contour plots for SIP1632-0631, with $I = 15.56$ at $0''.8$ seeing conditions for an embedded companion at $\rho = 1 - 5''$ with $\Delta m_{\text{ags}} = 0 - 2$. The Y, N, and M labels indicate *yes*, *no*, or *maybe* for whether or not the embedded companion is detectable. The 300-second exposure was used.

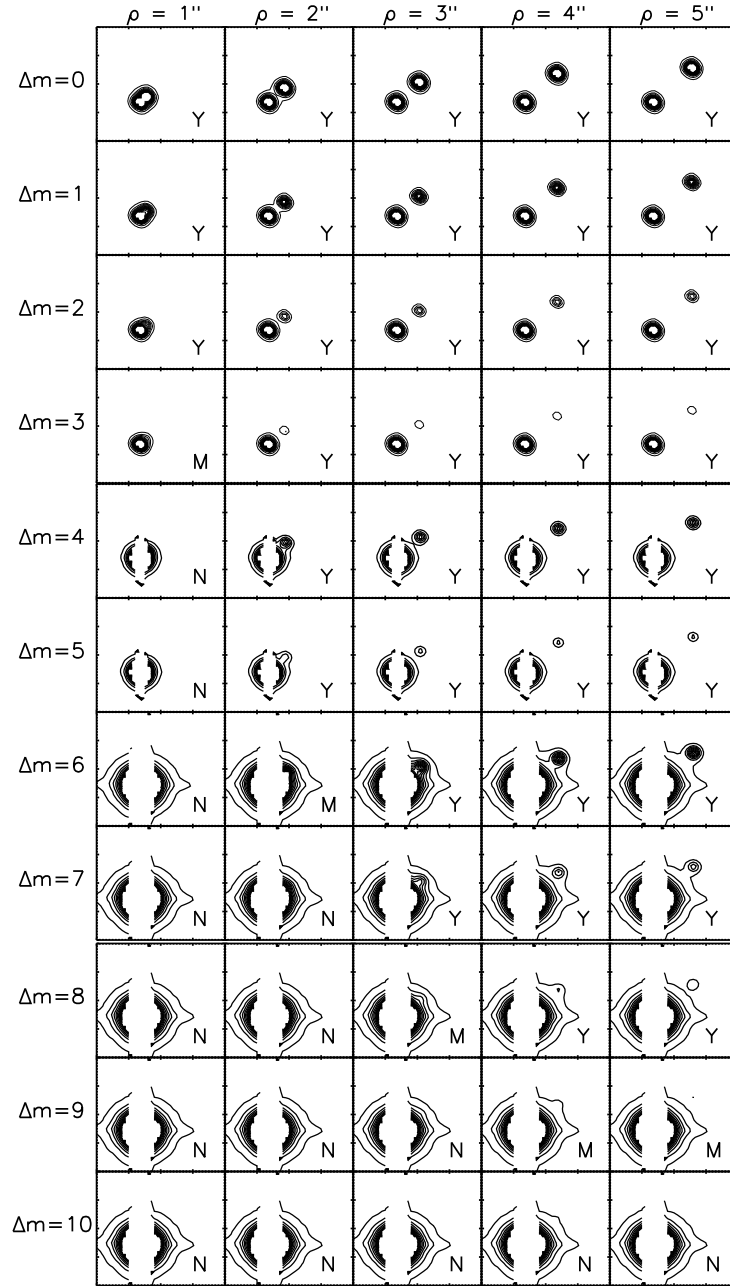


Figure D.4 Detection Limits for the CTIO/SMARTS 0.9m: Contour plots for L032-009A, with $I = 8.04$ at $1''.0$ seeing conditions for an embedded companion at $\rho = 1 - 5''$ with $\Delta m_{\text{ags}} = 0 - 10$. The AB separation is $\rho_{AB} = 22.40''$. The Y, N, and M labels indicate *yes*, *no*, or *maybe* for whether or not the embedded companion is detectable. The 3-second exposure was used for $\Delta m_{\text{ags}} = 0 - 3$, the 30-second exposure was used for $\Delta m_{\text{ags}} = 4 - 5$, and the 300-second exposure was used for $\Delta m_{\text{ags}} = 6 - 10$.

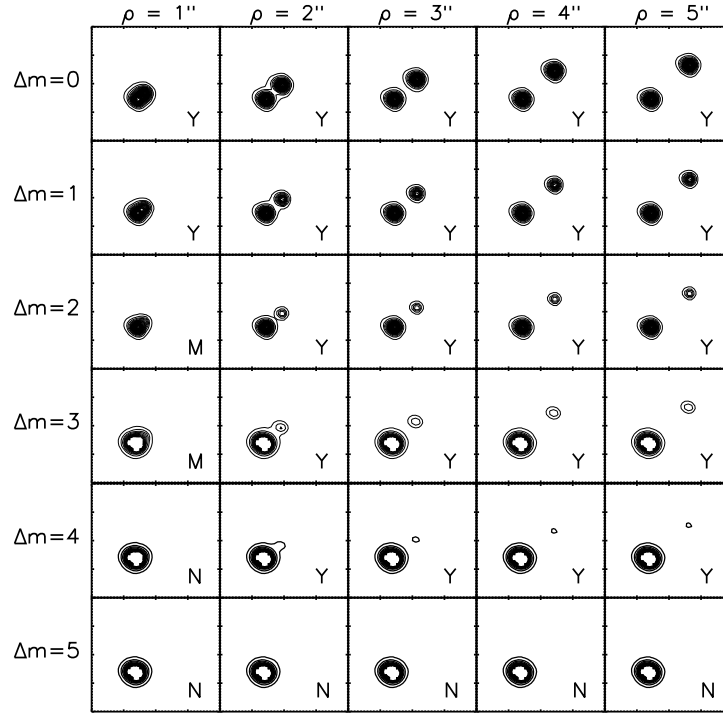


Figure D.5 Detection Limits for the CTIO/SMARTS 0.9m: Contour plots for SCR0754-3809, with $I = 11.98$ at $1''.0$ seeing conditions for an embedded companion at $\rho = 1 - 5''$ with $\Delta m_{\text{ags}} = 0 - 5$. The Y, N, and M labels indicate *yes*, *no*, or *maybe* for whether or not the embedded companion is detectable. The 30-second exposure was used for $\Delta m_{\text{ags}} = 0, 1, 2$, and the 300-second exposure was used for $\Delta m_{\text{ags}} = 3, 4, 5$.

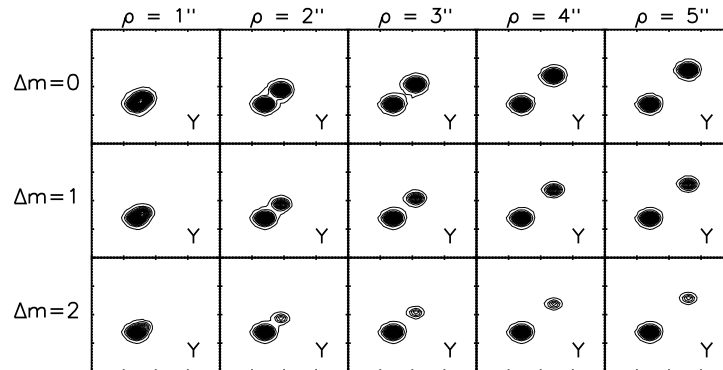


Figure D.6 Detection Limits for the CTIO/SMARTS 0.9m: Contour plots for BRI1222-1221, with $I = 15.59$ at $1''.0$ seeing conditions for an embedded companion at $\rho = 1 - 5''$ with $\Delta m_{\text{ags}} = 0 - 2$. The Y, N, and M labels indicate *yes*, *no*, or *maybe* for whether or not the embedded companion is detectable. The 300-second exposure was used.

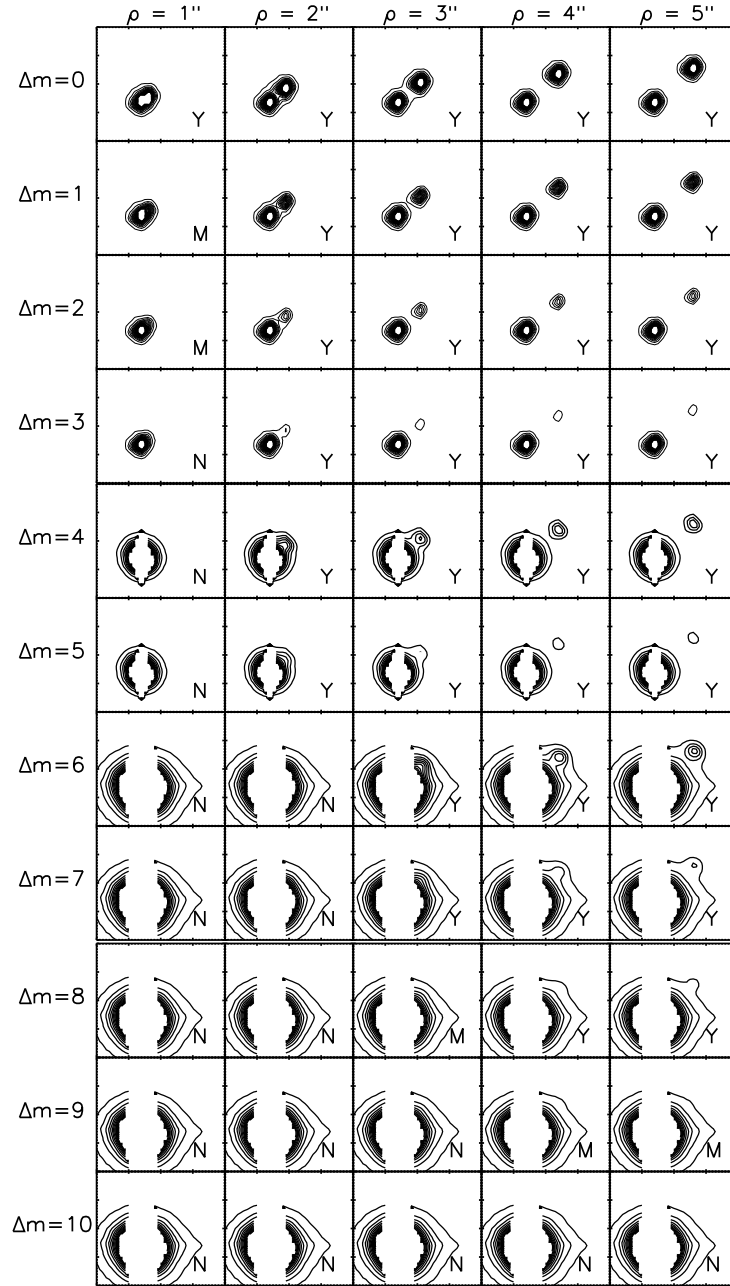


Figure D.7 Detection Limits for the CTIO/SMARTS 0.9m: Contour plots for GJ2060AB, with $I = 7.83$ at $1''.5$ seeing conditions for an embedded companion at $\rho = 1 - 5''$ with $\Delta m_{\text{ags}} = 0 - 10$. AB have $\rho = 0''.485$. The Y, N, and M labels indicate *yes*, *no*, or *maybe* for whether or not the embedded companion is detectable. The 3-second exposure was used for $\Delta m_{\text{ags}} = 0 - 3$, the 30-second exposure was used for $\Delta m_{\text{ags}} = 4 - 5$, and the 300-second exposure was used for $\Delta m_{\text{ags}} = 6 - 10$.

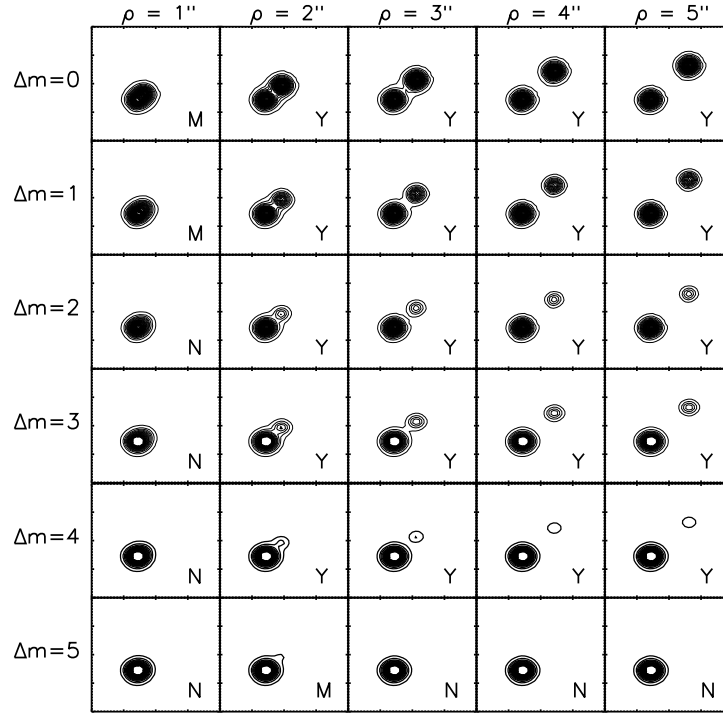


Figure D.8 Detection Limits for the CTIO/SMARTS 0.9m: Contour plots for 2MA2053-0133, with $I = 12.46$ at $1''.5$ seeing conditions for an embedded companion at $\rho = 1 - 5''$ with $\Delta m_{\text{ags}} = 0 - 5$. The Y, N, and M labels indicate *yes*, *no*, or *maybe* for whether or not the embedded companion is detectable. The 30-second exposure was used for $\Delta m_{\text{ags}} = 0, 1, 2$, and the 300-second exposure was used for $\Delta m_{\text{ags}} = 3, 4, 5$.

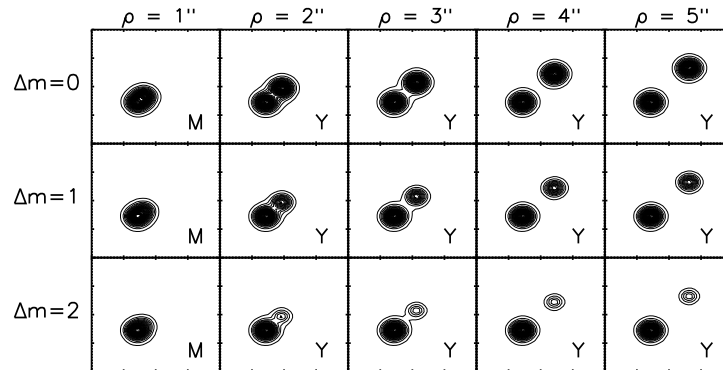


Figure D.9 Detection Limits for the CTIO/SMARTS 0.9m: Contour plots for a reference star scaled to $I = 16.00$ at $1''.5$ seeing conditions for an embedded companion at $\rho = 1 - 5''$ with $\Delta m_{\text{ags}} = 0 - 2$. The Y, N, and M labels indicate *yes*, *no*, or *maybe* for whether or not the embedded companion is detectable. The 300-second exposure was used.

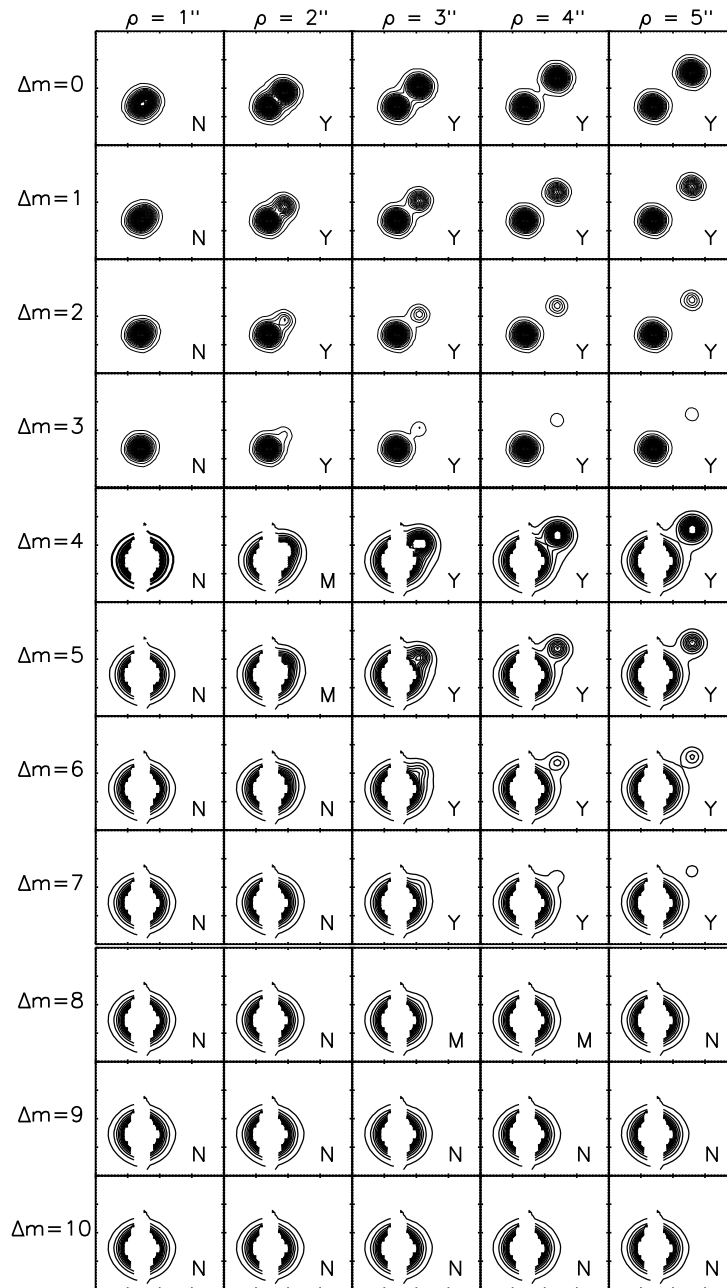


Figure D.10 Detection Limits for the CTIO/SMARTS 0.9m: Contour plots for a reference star scaled to $I = 8.00$ at $1''.8$ seeing conditions for an embedded companion at $\rho = 1 - 5''$ with $\Delta m = 0 - 10$. The Y, N, and M labels indicate *yes*, *no*, or *maybe* for whether or not the embedded companion is detectable. The 3-second exposure was used for $\Delta m = 0 - 3$, and the 300-second exposure was used for $\Delta m = 4 - 10$.

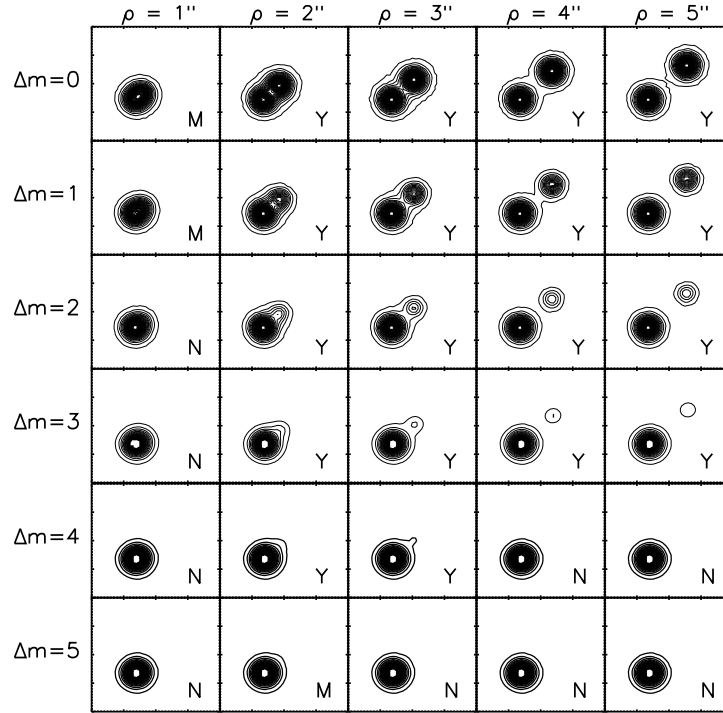


Figure D.11 Detection Limits for the CTIO/SMARTS 0.9m: Contour plots for SCR2307-8452, with $I = 12.00$ at $1''.8$ seeing conditions for an embedded companion at $\rho = 1 - 5''$ with $\Delta m_{\text{ags}} = 0 - 5$. The Y, N, and M labels indicate *yes*, *no*, or *maybe* for whether or not the embedded companion is detectable. The 30-second exposure was used for $\Delta m_{\text{ags}} = 0, 1, 2$, and the 300-second exposure was used for $\Delta m_{\text{ags}} = 3, 4, 5$.

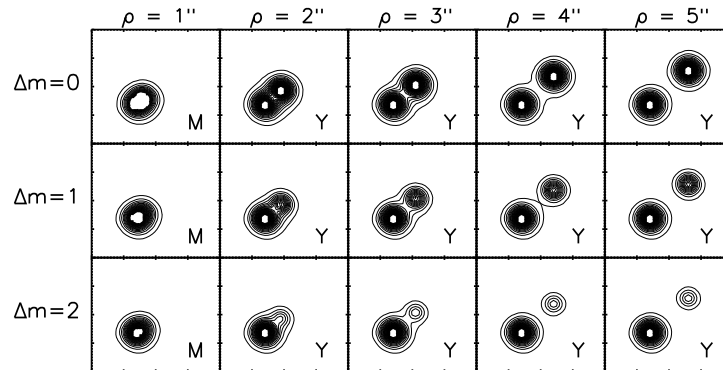


Figure D.12 Detection Limits for the CTIO/SMARTS 0.9m: Contour plots for a reference star scaled to $I = 16.00$ at $1''.8$ seeing conditions for an embedded companion at $\rho = 1 - 5''$ with $\Delta m_{\text{ags}} = 0 - 2$. The Y, N, and M labels indicate *yes*, *no*, or *maybe* for whether or not the embedded companion is detectable. The 300-second exposure was used.

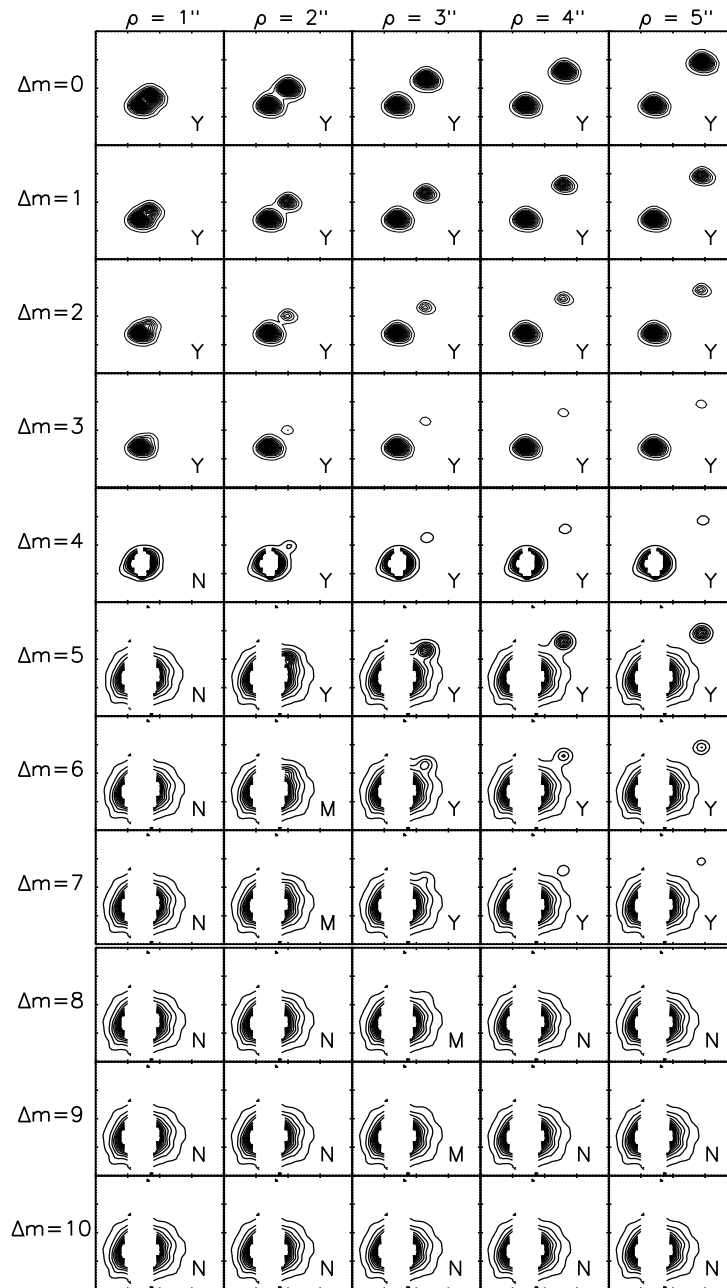


Figure D.13 Detection Limits for the Lowell 42in: Contour plots for GJ 709, with $I = 8.41$ at $1''.0$ seeing conditions for an embedded companion at $\rho = 1 - 5''$ with $\Delta m = 0 - 10$. The Y, N, and M labels indicate *yes*, *no*, or *maybe* for whether or not the embedded companion is detectable. The 3-second exposure was used for $\Delta m = 0 - 3$, the 30-second exposure was used for $\Delta m = 4$, and the 300-second exposure was used for $\Delta m = 5 - 10$.

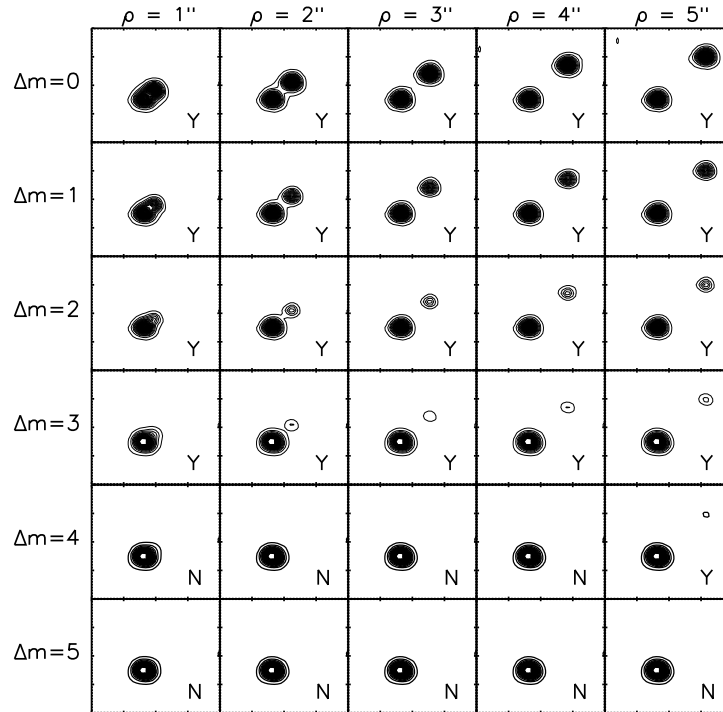


Figure D.14 Detection Limits for the Lowell 42in: Contour plots for GJ1231, with $I = 12.08$ at $1''.0$ seeing conditions for an embedded companion at $\rho = 1 - 5''$ with $\Delta m_{\text{ags}} = 0 - 5$. The Y, N, and M labels indicate *yes*, *no*, or *maybe* for whether or not the embedded companion is detectable. The 30-second exposure was used for $\Delta m_{\text{ags}} = 0 - 2$, and the 300-second exposure was used for $\Delta m_{\text{ags}} = 3 - 5$.

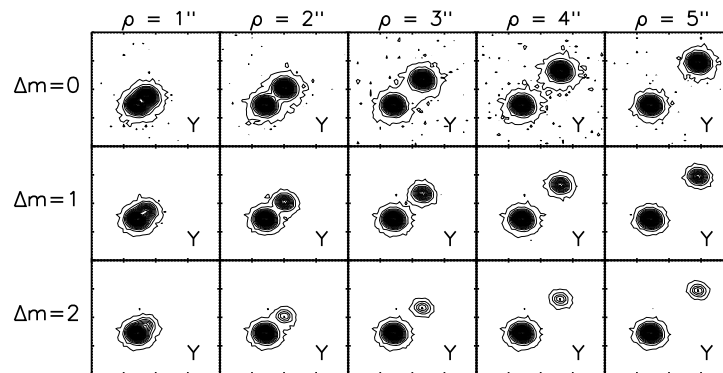


Figure D.15 Detection Limits for the Lowell 42in: Contour plots for a reference star scaled to $I = 16.00$ at $1''.0$ seeing conditions for an embedded companion at $\rho = 1 - 5''$ with $\Delta m_{\text{ags}} = 0 - 2$. The Y, N, and M labels indicate *yes*, *no*, or *maybe* for whether or not the embedded companion is detectable. The 300-second exposure was used.

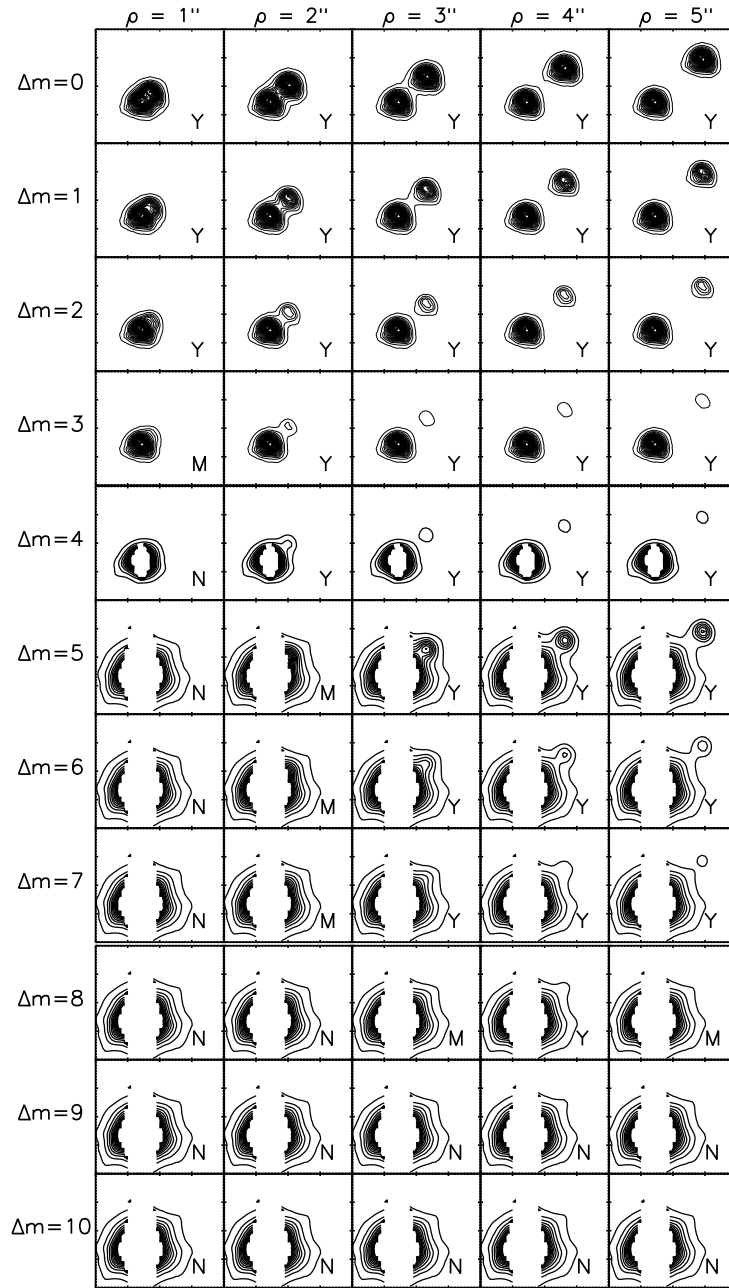


Figure D.16 Detection Limits for the Lowell 42in: Contour plots for GJ 109, with $I = 8.10$ at $1''.5$ seeing conditions for an embedded companion at $\rho = 1 - 5''$ with $\Delta m = 0 - 10$. The Y, N, and M labels indicate *yes*, *no*, or *maybe* for whether or not the embedded companion is detectable. The 3-second exposure was used for $\Delta m = 0 - 3$, the 30-second exposure was used for $\Delta m = 4$, and the 300-second exposure was used for $\Delta m = 5 - 10$.

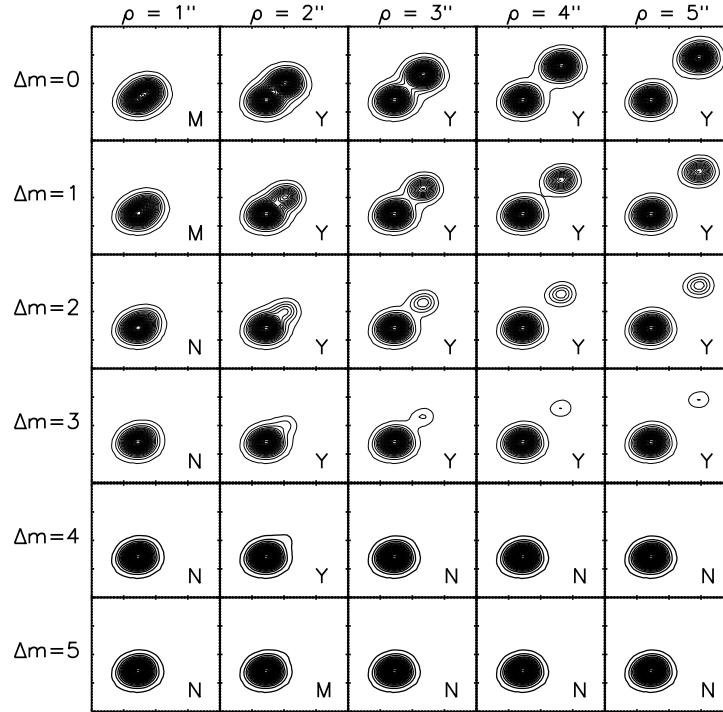


Figure D.17 Detection Limits for the Lowell 42in: Contour plots for LHS 1378, with $I = 12.09$ at $1''.5$ seeing conditions for an embedded companion at $\rho = 1 - 5''$ with $\Delta m = 0 - 5$. The Y, N, and M labels indicate *yes*, *no*, or *maybe* for whether or not the embedded companion is detectable. The 300-second exposure was used.

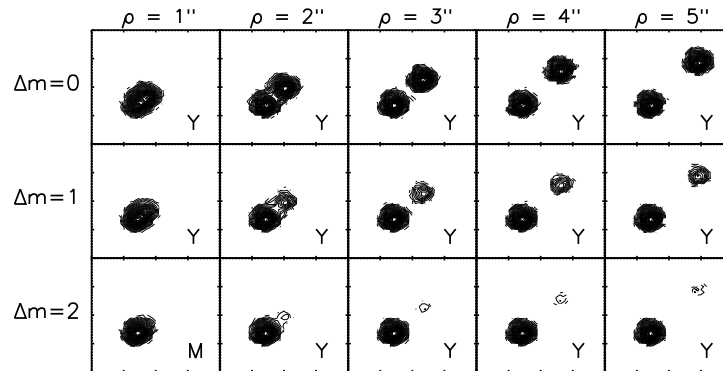


Figure D.18 Detection Limits for the Lowell 42in: Contour plots for 2MA0352+0210, with $I = 16.12$ at $1''.5$ seeing conditions for an embedded companion at $\rho = 1 - 5''$ with $\Delta m = 0 - 2$. The Y, N, and M labels indicate *yes*, *no*, or *maybe* for whether or not the embedded companion is detectable. The 300-second exposure was used.

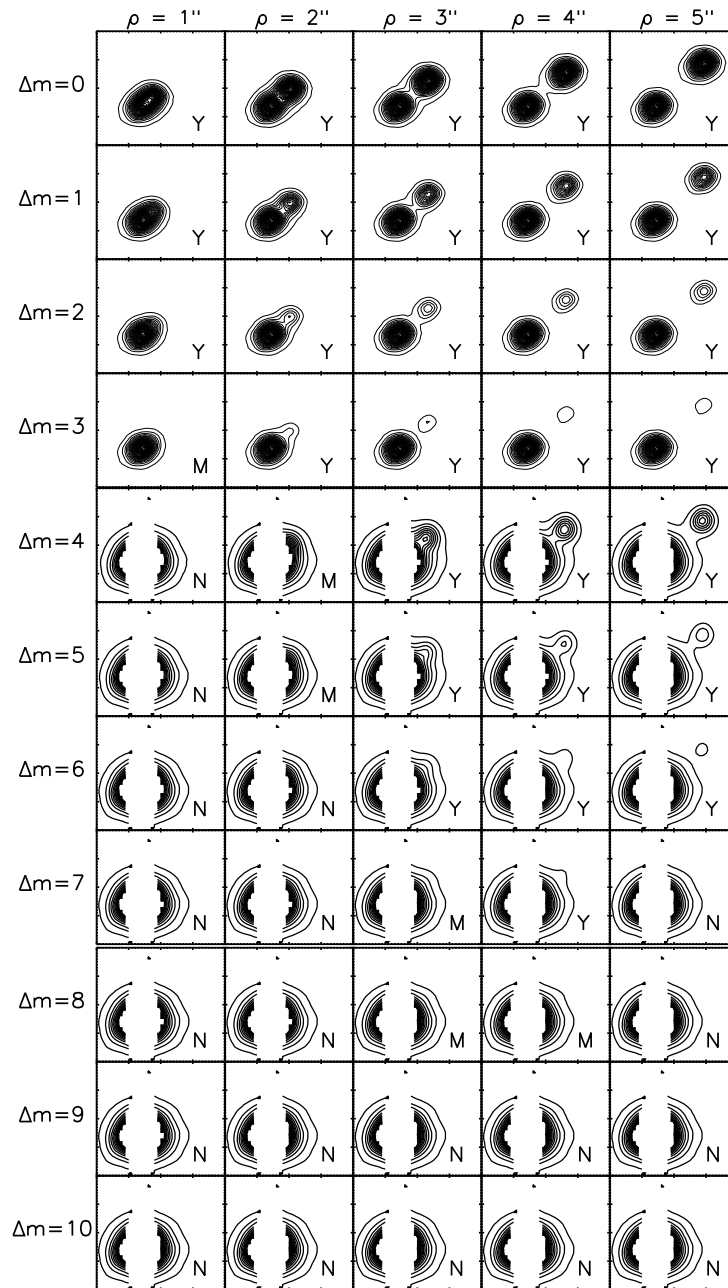


Figure D.19 Detection Limits for the Lowell 42in: Contour plots for GJ 134, with $I = 8.21$ at $1''.8$ seeing conditions for an embedded companion at $\rho = 1 - 5''$ with $\Delta m = 0 - 10$. The Y, N, and M labels indicate *yes*, *no*, or *maybe* for whether or not the embedded companion is detectable. The 3-second exposure was used for $\Delta m = 0 - 3$, and the 300-second exposure was used for $\Delta m = 4 - 10$.

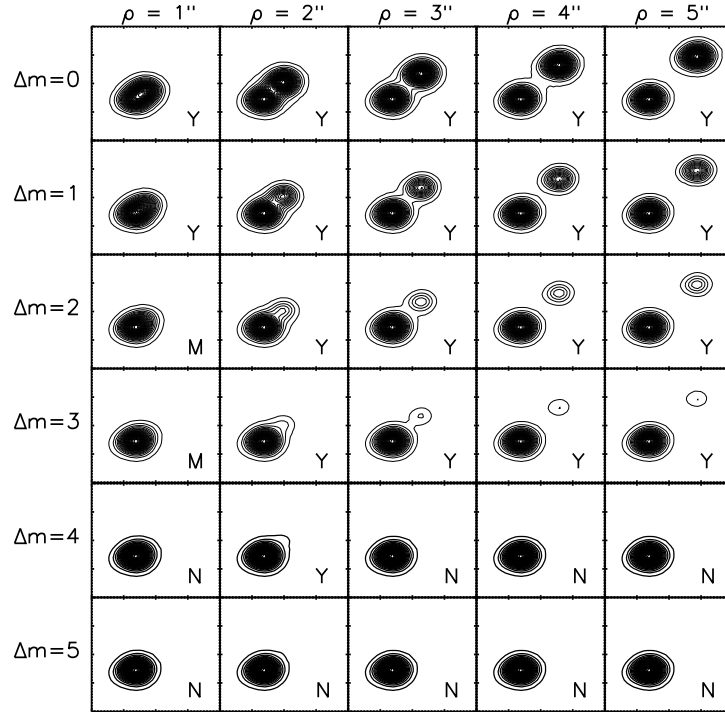


Figure D.20 Detection Limits for the Lowell 42in: Contour plots for LHS1375, with $I = 12.01$ at $1''.8$ seeing conditions for an embedded companion at $\rho = 1 - 5''$ with $\Delta m = 0 - 5$. The Y, N, and M labels indicate *yes*, *no*, or *maybe* for whether or not the embedded companion is detectable. The 300-second exposure was used.

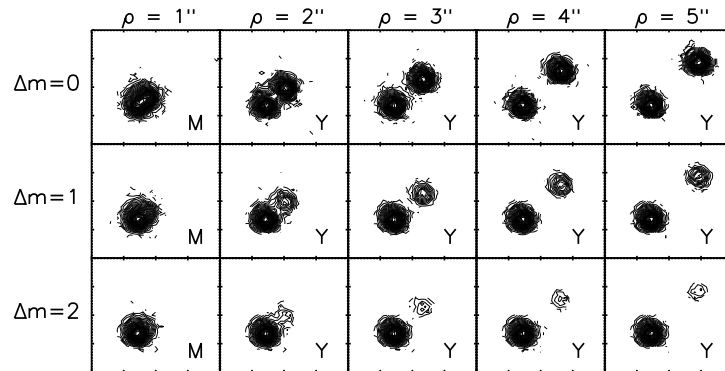


Figure D.21 Detection Limits for the Lowell 42in: Contour plots for SIP0320-0446AB, with $I = 16.37$ at $1''.8$ seeing conditions for an embedded companion at $\rho = 1 - 5''$ with $\Delta m = 0 - 2$. AB have $\rho_{AB} < 0.33$. The Y, N, and M labels indicate *yes*, *no*, or *maybe* for whether or not the embedded companion is detectable. The 300-second exposure was used.

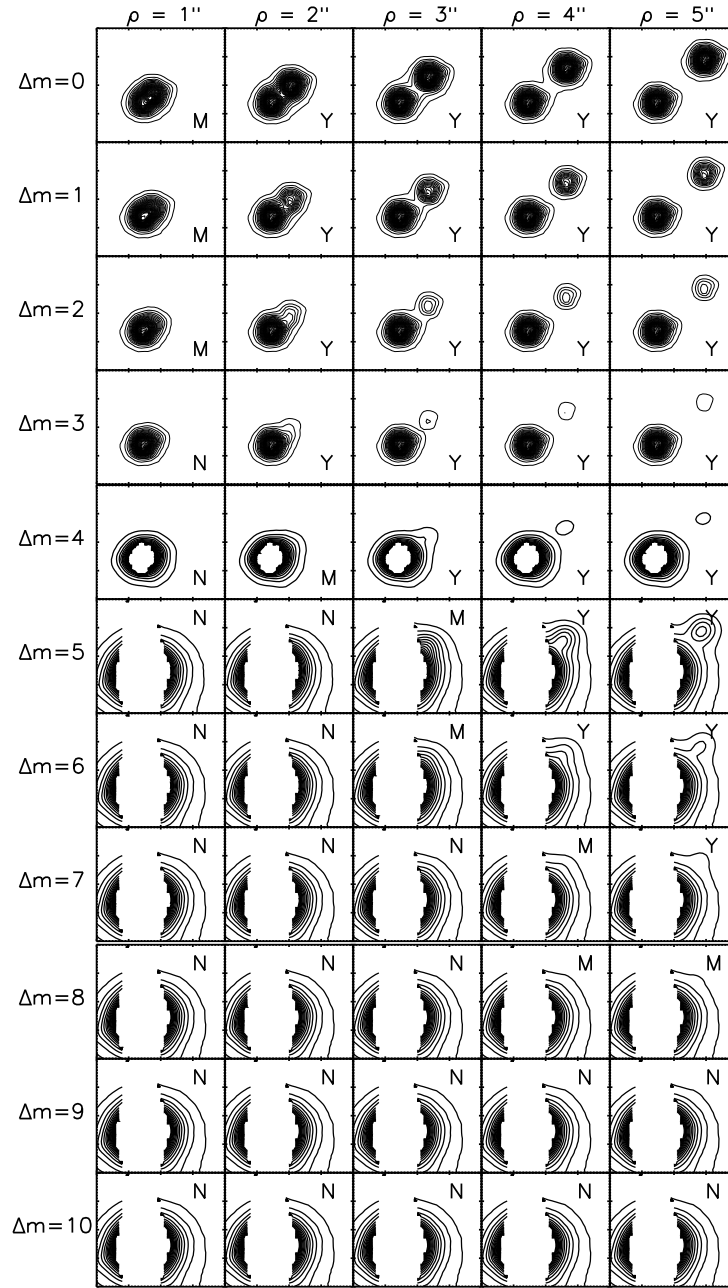


Figure D.22 Detection Limits for the Lowell 42in: Contour plots for GJ 720A, with $I = 8.02$ at $2''.0$ seeing conditions for an embedded companion at $\rho = 1 - 5''$ with $\Delta m = 0 - 10$. The Y, N, and M labels indicate *yes*, *no*, or *maybe* for whether or not the embedded companion is detectable. The 3-second exposure was used for $\Delta m = 0 - 3$, the 30-second exposure was used for $\Delta m = 4$, and the 300-second exposure was used for $\Delta m = 5 - 10$.

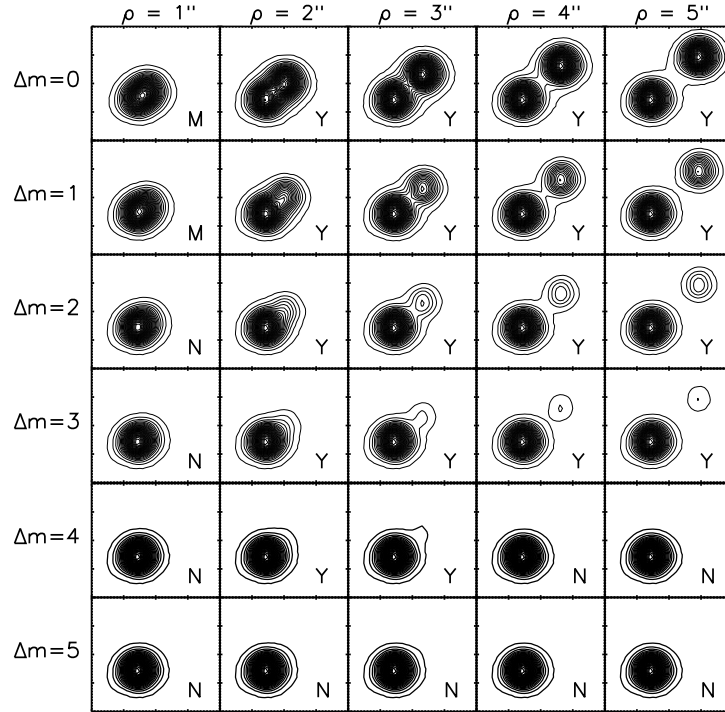


Figure D.23 Detection Limits for the Lowell 42in: Contour plots for LHS3005, with $I = 11.99$ at $2''.0$ seeing conditions for an embedded companion at $\rho = 1 - 5''$ with $\Delta\text{mags} = 0 - 5$. The Y, N, and M labels indicate *yes*, *no*, or *maybe* for whether or not the embedded companion is detectable. The 300-second exposure was used.

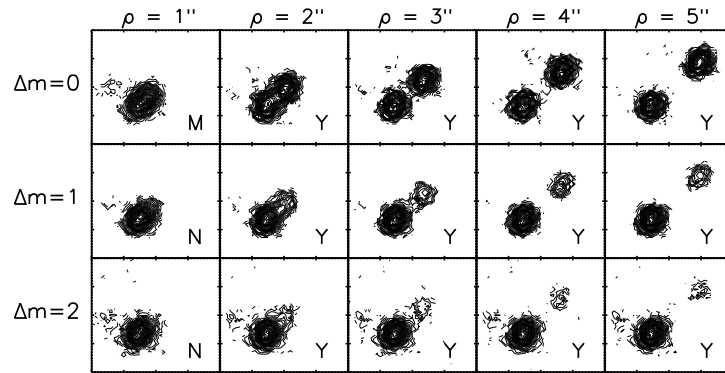


Figure D.24 Detection Limits for the Lowell 42in: Contour plots for 2MA1731+2721, with $I = 15.50$ at $2''.0$ seeing conditions for an embedded companion at $\rho = 1 - 5''$ with $\Delta\text{mags} = 0 - 2$. The Y, N, and M labels indicate *yes*, *no*, or *maybe* for whether or not the embedded companion is detectable. The 300-second exposure was used.