

J. Sebastián Carrazco Gaxiola

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Atlanta, GA, USA

Education

Georgia State University , Atlanta, GA	
Ph.D. in Astronomy (Expected 2027)	<i>August 2022 - Present</i>
<i>Department of Physics and Astronomy</i>	
Georgia State University , Atlanta, GA	
M.S. in Physics, Concentration in Astronomy	<i>August 2022 - Summer 2024</i>
Universidad Nacional Autónoma de México (UNAM) , Coyoacán, Mexico City	
Master in Science, Concentration in Astrophysics	<i>January 2022 - June 2022</i>
<i>Instituto de Astronomía</i>	
Withdrew after one semester in order to pursue Ph.D. at Georgia State University.*	
Universidad Autónoma de Sinaloa , Culiacán, Sinaloa	
B.S. in Astronomy (Graduated with Honors)	<i>August 2016 - February 2021</i>
Minor in Geoscience Engineer (Topography)	
<i>Facultad de Ciencias de la Tierra y el Espacio</i>	
Honor Thesis: <i>Preliminary Study of the TAOS-II and DDOTI Projects to Search for Transiting Exoplanets from the OAN-SPM*</i>	

Research Experience

CTIO/SMARTS 1.5m Telescope Fellow,	<i>January 2023 - Present</i>
<i>RECONS Institute</i> , Chambersburg, PA	
– CHIRON Spectrograph support. Tasks: Manage observing queue, provide scientific and technical support for users, assist with telescope operations in coordination with CTIO staff. Telescope observer for 2-3 two weeks turns a year.	
Graduate Research Assistant,	<i>August 2022 - Present</i>
<i>Department of Physics and Astronomy</i> , Georgia State University	
– RKSTAR Characterization Survey. Running the stellar characterization of a Volume Complete sample of K dwarfs within 40 pc. Surveying Chromospheric Activity, Rotation, Fundamental Properties, and Space Kinematics.	
Graduate Research Assistant,	<i>January 2022 - July 2022</i>
<i>Instituto de Astronomía</i> , UNAM, Mexico City	
– Participated in the SAINT-EX project at the San Pedro Mártir Observatory, conducting remote observations and developing data pipelines for analyzing light curves of potential exoplanet candidates.	
Undergraduate Research Assistant,	<i>August 2019 - August 2021</i>
<i>Instituto de Astronomía</i> , UNAM, Mexico City	
– Thesis: Preliminary Study of the TAOS-II and DDOTI Projects to Search for Transiting Exoplanets.	
– Investigated exoplanetary candidates through the analysis of white dwarf stars, utilizing data from the TAOS-II survey and DDOI archive. Developed reduction pipelines and analyzed light curves to identify potential exoplanet transits.	

Observing Experience

SMARTS CTIO 1.5m telescope , Chile 21 nights using the CHIRON Spectrograph, classical mode	2023-2025
SMARTS CTIO 0.9m telescope , Chile 11 nights using CCD camera, classical mode	2023
OAN-SPM SAINT-EX 1.0m telescope , Mexico 50 nights using CCD camera, remote observation mode	February - June 2022
INAOE Guillermo Haro Observatory , Cananea, Mexico 13 nights using NIR CCD camera, classical mode	November 2017 - December 2018

Publications

- Carrazco Gaxiola, S., Hubbard-James, H.-S., Henry, T., et al. (2024). Identifying Young and Active Stars Among the Nearest 1500 K Dwarfs within 40 Parsecs with the CHIRON Spectrograph. American Astronomical Society Meeting Abstracts, 56(2), 259–05.
- Henry, T., Johns, T., Leblanc, M., Carrazco Gaxiola, J., Couperus, A., Horch, E., Jao, W.-C., Kar, A., Vrijmoet, E., Winters, J., et al. (2024). Exploring the Solar Neighborhood with Rock Stars and Rum: The RECONS RKSTAR and RMSTAR Samples. American Astronomical Society Meeting Abstracts, 56(2), 432–03.
- Luque, R., Osborn, H. P., Leleu, et al. (2023). A Resonant Sextuplet of Sub-Neptunes Transiting the Bright Star HD 110067. *Nature*, 623(7989), 932–937.
- Wilson, T., Simpson, A., Cameron, et al. (2023). LHS 1903 Provides Evidence for Gas-Depleted Formation of Planets Around M-Dwarfs.
- Carrazco-Gaxiola, J. S., Gómez Maqueo Chew, Y., Pereyra, M. (2023). Sample of White Dwarfs to Search for Transiting Exoplanets from OAN-SPM. RMxAC, 55, 93.
- Barkaoui, K., Timmermans, M., Soubkiou, A., et al. (2023). TOI-2084 b and TOI-4184 b: Two New Sub-Neptunes Around M Dwarf Stars. *Astronomy & Astrophysics*, 677, A38.
- Carrazco-Gaxiola, J. S., Gómez Maqueo Chew, Y., Pereyra, E. M. (2023). C1-05. Muestra de Enanas Blancas para Buscar Exoplanetas Transitantes Desde el OAN-SPM. INV-01. Cuantificación de la Habitabilidad en Cuerpos Planetarios, 55.

Technical Skills

- **Programming Languages:** Python, Java, C++, MATLAB, R, SQL, LaTeX, Bash
- **Software:** IRAF, PyRAF, AstroPy, Matplotlib, Topcat, Jupyter, Microsoft Office (Word, Excel, PowerPoint)
- **Observational Tools:** CHIRON Spectrograph, CCD cameras, 1.5m, 0.9m, 2.12m telescopes
- **Data Analysis:** Data Reduction, Time Series Analysis, Statistical Modeling
- **Languages:** English (Fluent), Spanish (Native), French (Basic)

Awards and Grants

Georgia State University , Atlanta, GA <i>Graduate Research Assistantship in Astronomy</i>	2022 - Present
Universidad Autónoma de Sinaloa , Culiacán, Sinaloa <i>Best Undergraduate Thesis Award in Astronomy</i>	2021

UNAM, Mexico City
Best Undergraduate Research Poster Presentation Award

2020