

JOSÉ SEBASTIÁN CARRAZCO GAXIOLA

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Georgia State University (GSU),
Department of Physics and Astronomy
Doctor of Philosophy in Astronomy

August 2022 - *Present*
Atlanta, Georgia

Universidad Nacional Autónoma de México (UNAM),
Instituto de Astronomía
Master in Science, concentration in Astrophysics

January 2022 - June 2022
Coyoacán, Mexico City

Quit. *Accepted in the program, enrolled one semester because of starting Astronomy Ph.D. program at Georgia State University in Fall 2022.*

Universidad Autónoma de Sinaloa (UAS),
Facultad de Ciencias de la Tierra y el Espacio
Bachelor of Astronomy
Cummulative GPA: 9.09/10

August 2016 - February 2021
Culiacán, Sinaloa

Degree earned by the dissertation:

Preliminary study of the TAOS-II and DDOTI projects to search for transiting exoplanets from the OAN-SPM.
(Written in spanish) Presented in November 2021, approved with honors.

RESEARCH EXPERIENCE

1.5m CTIO/SMARTS CHIRON Fellow
RECONS Institute

January 2023 - *Present*
Chambersburg, Pennsylvania

Graduate Research Assistant
Physics & Astronomy Department, GSU

August 2022 - *Present*
Atlanta, Georgia

- Working with RECONS and the RKSTAR project.

Graduate Research Assistant
Instituto de Astronomía, UNAM

January 2022 - July 2022
Coyoacán, Mexico City

- Research assistant at the project SAINT-EX observatory, located at San Pedro Mártir National Astronomical Observatory. Task: Launched the remote observations (49 nights); worked with the reduction and nightly report maker pipeline; searched for new secondary targets in archive data in order to re-run the reduction pipeline.

Dissertation, in order to get the Bachelor degree in Astronomy
Instituto de Astronomía, UNAM

August 2019 - August 2021
Coyoacán, Mexico City

- *Title:* Preliminary study of the TAOS-II and DDOTI projects to search for transiting exoplanets from the OAN-SPM.
- *Advisors:* Dr. Yilen Gómez Maqueo Chew, Dr. Emma Margarita Pereyra Talamantes, Dr. Jesús López Hernández
- Preliminary study to search for candidates of transiting exoplanets at the San Pedro Mártir National Astronomical Observatory. Through: 1) using Transneptunian Automated Occultation Survey II (TAOS-II) fields of views, search a sample of white dwarfs stars to observe and obtain their lightcurves in order to search for transiting exoplanets; 2) an with the Deca-Degree Optical Transient Imager (DDOTI) developed the tools to work with the data of a certain field with one confirmed Hot-Jupiter exoplanet to analyze the sampling method and precision.

Intern, as part of UAS's Professional Practices
Instituto de Astronomía, UNAM (Virtual)

March 2021 - June 2021
Coyoacán, Mexico City

- Optimized, developed and documented tools to work with data of projects from OAN-SPM. Documented the physical and observational properties of a sample of white dwarfs. Attended weekly the meeting of UNAM Planetary Astrophishing.

Summer Research Fellow, Mexican Academy of Sciences (AMC)

June 2020 - September 2020

Instituto de Astronomía, UNAM (Virtual)

Coyoacán, Mexico City

- Searched a sample of objects to observe and developing the tools to work with the data in order to use wide-field telescopes, such as the Transneptunian Automated Occultation Survey II (TAOS-II) and Deca-Degree Optical Transient Imager (DDOTI), located at the San Pedro Mártir National Astronomical Observatory to search for candidates of transiting exoplanets.

Brigadist, as part of UAS's Social Service

September 2019 - February 2020

Instituto de Astronomía, UNAM

Coyoacán, Mexico City

- Obtained a sample of agave flour in order to obtain their spectrum, to study their physical and chemical properties. Made the reduction of the bioluminescence continuum of the spectrum to obtain the not contaminated data.

Intern, Scientific and Technological Summer Research of the Pacific

June 2019 - August 2019

Instituto de Astronomía, UNAM

Coyoacán, Mexico City

- Compared two versions of the code 'velfit 2.0' to model velocity maps of observed and synthetic galaxies using IA-UNAM's supercomputer ATOCATL, finding errors in the data output, which were reported and analyzed by the working group in order to optimize performance and document the updated version.

Intern, Undergraduate Summer Research

June 2018 - August 2018

Instituto de Astronomía, UNAM

Coyoacán, Mexico City

- Created a semi-auto program to reduce raw observations. Reduction of raw telescope data of near galaxies programming Python codes to handle FITS archives for CCD reduction (bias, flats, darks), then produced the flux, wavelength and astrometric calibration.

Telescope observer (13 nights)

Nov 2017, Dec 2018

Guillermo Haro's Astrophysical Observatory, INAOE

Cananea, Sonora

- As an assistant of Dr. Héctor Javier Ibarra Medel & M.S. Giannina Dalle Mese Zavala, acquiring photometric observation of nearby galaxies with a 2.12m telescope.

TEACHING & MENTORING EXPERIENCE

Graduate Teaching Assistant

August 2022 - Present

Physics & Astronomy Department, GSU

Atlanta, Georgia

Lab Instructor of the Astronomy-1020K Lab: Stars and Galaxies.

Teacher Assistant

August 2019 - December 2019

Grader and aide for the class Calculus I for Geoinformatic and Geodesic Engineering sophomores at Facultad de Ciencias de la Tierra y el Espacio.

Mentor of Astronomy major students

2018 - 2020

Peer-mentor and instructor for the following Astronomy major courses and labs: Fundamentals of Astronomy, Programming I & II (Labs), Introduction to Astrophysics, Computational Astrophysics I (Lab).

HONORS, AWARDS, GRANTS & FELLOWSHIPS

Paris Pişmiş Award 2021 for undergraduate students, UNAM.

Award

For outstanding work and performance as undergrad student working on research at Instituto de Astronomía, UNAM.

B.S. degree received with highest honors.

Honor

After defending senior thesis with a GPA greater than 9/10.

- Third highest GPA of the generation.** Award
Awarded the 3rd highest GPA of the Bachelor in Astronomy 2016-2021's generation.
- UNAM PAPIIT graduate research grant (IG-101321).** Fellowship
Scholarship aimed to work in research.
 Adjuncted at the project "Planetary Systems, yesterday and today".
- UNAM PAPIIT undergraduate research grant (IG-101321).** Fellowship
Scholarship aimed to finish my undergraduate senior thesis and work on get my title.
 Adjuncted at the project "Planetary Systems, yesterday and today".
- UNAM PAPIIT undergraduate research grant (IN-107518).** Fellowship
Scholarship aimed to work on undergraduate senior thesis.
 Adjuncted at the project "SAINT-EX: Discovering transiting exoplanets from San Pedro Mártir".
- Elisa Acuña Scholarship.** Grant
Scholarship from "National Coordination of Scholarships for Well-being Benito Juárez", for Summer Research as Professional Practice. Folio: 12598933.
 Used for the virtual intership at the Instituto de Astronomía at the Universidad Nacional Autónoma de México.
- Summer Research Poster Presentation.** Award
Awarded 1st place with the poster titled "Comparison of galaxy velocity map models with VELFIT 2.0 tool and its modified version with MCMC".
 As part of the Sinaloa Knowledge Journey's month at the Facultad de Ciencias de la Tierra y el Espacio, UAS.

CONFERENCES & WORKSHOPS

- III Latin American Congress of Astrobiology** Congress (virtual)
Hosted by Sociedad Mexicana de Astrobiología (SOMA), August 03-06 2021. Presented the poster: "White Dwarfs sample to search for transiting exoplanets from the OAN-SPM".
- 2021 Dunlap Institute Virtual Summer School** Workshop (virtual)
Hosted by University of Toronto. Introduction to Astronomical Instrumentation.
- Code / Astro 2021** Workshop (virtual)
Supported by Heising-Simons Foundation, instructed by researchers from Caltech and IPAC. Software Engineering Workshop for Astronomy.

SERVICE & LEADERSHIP

- Student Society President of the Facultad de Ciencias de la Tierra y el Espacio Dec 2018 - Dec 2020
- Technical Council Member of the Facultad de Ciencias de la Tierra y el Espacio Dec 2018 - Dec 2020
- Member of the Astronomical Society of Sinaloa 2017-present
- Jóvenes con Ciencia (JC) organizer (weekly colloquiums and activities) 2018-2019
- Organizer. Jornada Sinaloense del Conocimiento 2020 (JSC 2020) at Facultad de Ciencias de la Tierra y el Espacio. 2018-2019 October-November, 2020
- Organizer. De la Tierra a la Luna, UAS's workshop for elementary school students. October to December, 2019.