Physicist Carlos Fernando Gutiérrez Canales
Place of birth: León, Gto., México
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Web pages
Fernando-Canales-researchgate
Fernando-Canales-github

EDUCATION

Doct. en Astron. et Astrophys. - PhD in Astronomy and Astrophysics March 2022-Ongoing
LESIA, l'Observatoire de Paris (France)
Thesis: Study and correction algorithms for the PLATO space mission
Supervisors: Dr. Réza Samadi and Dr. Aaron Birch

Maestría en Ciencias (Astrofísica) - M.Sc. in Astrophysics August 2019 - August 2021
Department of Astronomy, University of Guanajuato (Mexico)
Thesis: *Homogeneus Analysis of K2 multi-planet systems hosting USP planets*
Supervisors: Dr. Oscar Barragán and Dr. Erick Nagel
General Grade: 9.5/10

Licenciatura en Física - B.Sc. in Physics August 2014 - December 2018
Department of Physics, University of Guanajuato (Mexico)
Thesis: *Teoría Atómica y Realismo Científico*
Supervisors: Dr. Vicente Aboites and Dr. Octavio Obregón
General Grade: 8.98/10

SCIENTIFIC INTERESTS

Exoplanets; planets detection; transiting planets; high-precision radial velocity; high-resolution spectroscopy; Bayesian data analysis; numerical astrophysics; philosophy of Science; history of Science; foundations of Mathematics.

PUBLICATIONS

1. C.F. Gutiérrez Canales, O. Obregón and V. Aboites, 2019, *Teoría Atómica y Realismo Científico* Revista Mexicana de Física E, 65
2. Oscar Barragán, Suzanne Aigrain, Edward Gillen and Fernando Gutiérrez-Canales, 2021, *TESS Re-observes the Young Multi-planet System TOI-451: Refined Ephemeris and Activity Evolution*, Res. Notes AAS 5 51
3. E. Nagel, F. Gutiérrez-Canales, S. Morales-Gutiérrez and A. P. Sousa, 2021, *Interpretation of Optical and IR light curves for Transitional Disk Candidates in NGC 2264 using the extincted stellar radiation and the emission of optically thin dust inside the hole*, RMxAA
4. O. Barragán,...,F. Gutiérrez-Canales,...,E. Nagel, 2022, *The young HD 73583 (TOI-560) planetary system: Two* $10_{\oplus}$ *mini-Neptunes transiting a 500-Myr-old, bright, and active K dwarf*, MNRAS

AWARDS AND GRANTS

1. **Bachelor's degree obtained with *Honors***, University of Guanajuato, May 2019.
2. **CONACyT National Scholarship**, August 2019 - July 2021, to study a master degree in an international high-level postgraduate program. Mexico.
3. **Master's degree obtained with *Honors***, University of Guanjuato, August 2021.

CONFERENCES, SCHOOLS, MEETINGS

1. **Mathematical Relativity: A Riemmanian Approach**, May 2019, CIMAT, Guanajuato, Mexico.
2. **IX Astronomy Student Meeting (REA)**, July 2020, Cozumel Planetarium, Q. Roo, Méx. Due to Covid-19 global pandemic, this meeting moved to July 2021 and will be an online meeting. I am both a participant and a member of the scientific organizing committee (SOC) of this congress.
3. **First Advanced School Physics of University of Guanajuato**, July 2016, Departament of Physics, UG, León, Méx.

TEACHING EXPERIENCE

1. I've been teacher of various courses about mathematics and physics at high-school level. Also I have been assistant to several professors during my Bachelor's degree.

EXPERIENCE IN ASTRONOMY

- **Theoretical experience:** Theoretical and numerical simulations of fluid physics in astronomy. I have performed numerical simulations of Circumstellar disks with a FORTRAN code developed partially by myself.
- **Data analysis:** Simultaneous transit and radial velocity modelling of photometric and spectroscopic data using pyaneti, which involves Metropolis-Hastings and stretch move algorithms.

LANGUAGES

Spanish Native
English Listening, reading, speaking and writing (very good, CERF C1).
Frehcn Listening, reading, speaking and writing (good).

COMPUTER SKILLS

- OS: Linux/Unix (principally Fedora and Ubuntu), Windows.
- Programming: `git` and the web repository `github.com`, `FORTRAN`, `C` and `python`.
- Scientific software: Aladin, Gnuplot, R, Mendeley, topcat and LaTeX.
- Codes with astronomical application: `Pyaneti`.
- Others: Microsoft Office, Libre Office, WPS Office, inkscape, Photoshop, Lightroom, vi, texmaker, stellarium.

OUTREACH

- Several outreach astronomical activities. They include conferences and activities with telescopes. These events have been organized in terms of a collaboration between the University of Guanajuato and different governmental institutions. The most important of these activities is the so called “Noche de las Estrellas Nacional” (National star night). The last one of these events was made in order to teach astronomy in the archaeological ruins of ”Peralta”, Abasolo, Guanajuato.
- Invited by different institutions in México for outreach talks such as “Universidad de Guanajuato”, public high-schools and a local tv channel at Leon, Guanajuato, in order to talk about the anniversary of the Apollo 11 mission and SpaceX.