

# A. Farid Char Bonilla

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## Academic background

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2010 (Degree) Bachelor in Psychology, Universidad Santo Tomás, Antofagasta, Chile.

## Work experience in astronomy

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### Current appointments (sorted by relevance)

**Research Assistant, Unit of Astronomy, University of Antofagasta [AstroUA] (2012-present).** My first duties when I joined AstroUA were as Outreach Coordinator. I was in charge of: leading, developing and/or validating new educational materials for students, teachers and the general public, in the context of partnerships and funds raised thanks to the support of public and private institutions; general coordination of AstroUA's Public Talks and Observing Programs, seasonal workshops and alliances with external institutions. These are some remarkable projects held during this period, under my responsibility or strong participation from my side:

- Adaptation and advice on educational materials, such as third-party Astronomy games, English-Spanish translation of materials from the Hands-On Universe program, etc.
- Organization of the Winter Astronomy School for teachers, journalists and tourist guides.
- Development of educational materials based on "Nayra", a small observatory in the University campus, provided with two telescopes for daytime and nighttime activities.
- Lead instructor of a joint program with [EXPLORA-CONICYT](#), to help teachers forming After-School Astronomy clubs in elementary schools (Third grade).

Since mid-2014, my job switched to a closer work with AstroUA's scientific research (while I am still involved in many outreach programs as an instructor), in the aim to help our growing staff of astronomers with data reductions, observing runs at large observatories, preparing manuals for specific telescopes and be more involved in AstroUA's [Ckoirama](#) Observatory as the main telescope operator, while I co-authored some ISI-indexed publications. These are some relevant projects under my responsibility or strong participation from my side:

- Stable collaboration with the [EURONEAR](#) consortium on behalf of UA (asteroid recoveries).
- Preparation of internal manuals for telescope operation (e.g. 0.9-m at CTIO, 1.5-m Danish at La Silla) as references for current and future staff astronomers at AstroUA.
- Stable duties as operator of the 0.6-m telescope at Ckoirama Observatory.

**Coordinator, National Coordination Office, Andean Node of Astronomy (2014-present).** Under supervision of the Chilean Society of Astronomy (SOCHIAS), I coordinate efforts and strategies to develop astronomy outreach between the six countries of the Node (Bolivia, Colombia, Chile, Ecuador, Perú and Venezuela), with a strong focus on three Task Forces (Universities and Research, Children and Schools, Public Outreach). This is one of the current Regional Offices of Astronomy for Development (OAD) of the Astronomical International Union (IAU).

**Bilingual visitor guide, Paranal Observatory, European Southern Observatory (2010-present).** Under the supervision of ESO ePOD, I am a team member of the tourist guides at Paranal Observatory, receiving visitors every Saturday (only daytime tours, in Spanish and English). My main duties consist of guiding, manage and explain any aspect of the observatory, as well as answering common questions about astronomy from students, the general public, novice and advanced amateur astronomers from all over the world.

**Astronomy teacher for DeLTA-UCN Program, Catholic University of the North [UCN] (2010-present).** This Program is focused on K-12 students with a proven high level of talent in one or more academic fields, coming from vulnerable schools. They can choose limited bi-annual courses in some specific and advanced, "STEM" field. I am in charge of three Basic Astronomy courses, with a strong focus on providing practical/real-life experiments, and explain physics principles which can be applied to astronomy through analytical thinking.

**Astronomy teacher at the undergraduate level, UCN (2016-present).** Under the supervision of the Undergraduate Office at UCN, this is an elective course offered to undergraduate students on a semi-annual basis, whose main goal is providing an effective approach to astronomy and science, through analytical thinking, abstraction and basic concepts about skepticism, regarding misconceptions and "myths" about astronomy.

## Work history

- 2009-2013** Served as a **member of the E-ELT Site Testing Team**, as Operator of LuSci (Lunar Scintillometer) in the context of the Surface Layer investigation in the E-ELT candidate sites close to the Paranal Observatory, requested by the European Southern Observatory. Some of these duties also included my participation in the development of a semi-automated LuSci model. Supervisor: Dr. Gianluca Lombardi.
- 2006-2010** Served as **Club Leader** for an After-School Astronomy Club, Hrvatska Skola San Esteban. I was in charge of a Fifth-grade group, emphasizing practical experiences, experiments, participation in national fairs and many basic observing experiences through some available telescopes.
- 2006-2007** Served as **Team member** of the “Bracket” mobile planetarium, UCN. This position has involved some travel through the Antofagasta Region and I was able to communicate astronomy to broad audiences, especially K-12 students and vulnerable populations.
- 2005-2011** Served as **Team member** of the Outreach Group at the Institute of Astronomy, UCN. My main duties have involved the preparation of many talks for the general public, operate amateur telescopes for public observing, develop educational materials for teachers and students, and perform some training to local teachers. This position was also my first approach to a professional Department of Astronomy.
- 2003-2006** Served as **Club Leader**, After-School Astronomy Club, Colegio San Luis. I was in charge of a Fifth-grade group, emphasizing practical experiences, experiments, participation in national fairs and many basic observing experiences through a small observatory at the school’s roof.

## Research

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### ISI-indexed publications

- Vaduvescu et al. First EURONEAR NEA discoveries from La Palma using the INT. MNRAS, 449, 1614-1624 (2015).
- Braga-Ribas et al. A ring system detected around the minor planet (10199) Chariklo. Nature, 508, 72-75 (2014).
- Vaduvescu et al. Mining the ESO WFI and INT WFC archives for Known Near Earth Asteroids. Mega-Precovery software. Astronomische Nachrichten, 334, 718-728 (2013).

### Other

#### publications

- Char, F., Forero-Romero, J. The new Andean Regional Office of Astronomy for Development (ROAD). IAU General Assembly, Meeting 29, id. 2255995 (2015).
- Lombardi et al. Surface Layer Turbulence Profiling with the SL-SLODAR and LuSci at ESO Paranal Observatory. Revista Mexicana de Astronomía y Astrofísica, 44, 208-209 (2014).
- Char, F., Vaduvescu, O., Popescu, M. Exploring the Solar System with Mega-Precovery data mining server: strengthening our database and functionalities. Boletín AAA (2014).
- Char et al. Seguimiento fotométrico de tránsitos exoplanetarios. Boletín de la AAA, 55, 387-391 (2012).
- Char et al. Turbulence profiles of the future E-ELT with LuSci (Lunar Scintillometer). Boletín de la AAA, 55, 523-527 (2012).
- González et al. Remote controlling of a lunar scintillometer from Paranal to Armazones in the context of the E-ELT Site Testing monitoring. Boletín de la AAA, 54, 439-442 (2011).

### Posters

- Lombardi et al. Surface Layer Turbulence Profiling with the SL-SLODAR and LuSci at ESO Paranal Observatory. Adaptive Optics for Extremely Large Telescopes, 3rd edition (poster).
- Unda-Sanzana E. et al. The observability of variable objects using the urban Observatorio Sirius in Antofagasta. VIII SOCHIAS Annual Meeting (poster).

### Runs\*

- Observing runs at the SARA 0.6-m remote telescope (CTIO), since 2014 (CNTAC proposal code CN2014B-4).
- Observing runs at the 0.9-m telescope (CTIO), since 2011 (CNTAC proposal codes CN013, CN2012B-30, CN2014B-47).
- Observing runs at the 0.5-m remote telescope in San Pedro de Atacama, since 2013, as part of a collaboration between U. de Antofagasta and the Searchlight Observatory Network (Canada).
- Observing run at the 8.2-m UT4 telescope (VLT), 2011 ESO proposal code 087.C-0470 A).
- Observing run at the 0.41-m telescope (OCA-UCN Observatory), 2007.

\* As telescope operator or assistant.

## Outreach

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**Summary** - I have provided **regular contributions** to: the local and national press since 2010 (e.g. weekly contributions for the local newspaper “El Mercurio”, sporadic contributions to national newspapers and advisory to national TV programs covering astronomy in Antofagasta), most of them can be found in the social media; the AstroUA’s Outreach Program (e.g. several talks offered for the Public Talks Program, specific workshops for teachers and public observing sessions); some global (e.g. GTTP Ambassador, CyGames SELENE, Globe at Night) and national (e.g. PROED, Astromanía) projects related to astronomy education, on behalf of AstroUA. More information can be found in its official [website](#).

- I have broad experience in conducting outdoor astronomy activities, such as naked eye stargazing and telescope usage, but especially on **astrophotography**. Some examples of these skills can be found in the following activities and honors:

- Since 2012, I have been nominated as Photo Ambassador by the European Southern Observatory (ESO) [[source](#)].
- During the XXIX IAU General Assembly (Aug 3-14, 2015) SOCHIAS asked me to capture photo-spheres from the larger observatories in Chile, for the official Chilean stand [[sample](#)].
- During the first half of 2016, EXPLORA-CONICYT asked me to capture a new series of photo-spheres from selected astronomical sites, as the main resource for an educational app (in preparation).

- I have participated in working groups and advisory boards related to **astrotourism** and astronomy outreach; also, I have been included in the development team of some specific projects, such as:

- The first digital planetarium to be built in San Pedro de Atacama, co-sponsored by the Tokyo Atacama Observatory (in preparation).
- The first study on clear sky sites in the Antofagasta Region to be certified as Starlight Tourist Destinations [[source](#)].
- The first Roadmap document about astronomy outreach in Chile, generated during the 1<sup>st</sup> and 2<sup>nd</sup> Chile-U.S. Astronomy Education Outreach Summit [[source](#)].
- The AUI-NRAO Advisory Board, to help guide and strengthen existing education and outreach programs and to help foster the establishment of new ones.

**Others** - Creation of a southern Deep-Sky objects catalog for amateurs: “Caelum Austrinus 300” [[source](#)].  
- Founder of the “Likancabur” Astronomy club in Antofagasta (2005-2011).  
- Founder of the “Argo Navis” e-magazine, related to astronomy in Chile (2005-2008) [[source](#)].  
- Member and project manager in the Red Chilena de Astronomía (2000).  
- Creation of an amateur astronomy website: “Austrinus” (2000) [[source](#)].

## Event attendance (last 6 years)

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- 2016** - CAP2016 (Communicating Astronomy with the Public) Meeting. May 16-20, 2016. Medellín, Colombia.  
- 2<sup>nd</sup> Chile-U.S. Astronomy Education Outreach Summit. March 7-10, 2016. La Serena, Chile.  
- XIII Annual Meeting of the Sociedad Chilena de Astronomía. March 1-4, 2016. Antofagasta, Chile.
- 2015** - XXIX IAU General Assembly. August 3-14, 2015. Honolulu, Hawai’i, United States.  
- 1<sup>st</sup> Chile-U.S. Astronomy Education Outreach Summit. March 22-28, 2015. Santiago, Chile.  
- First face-to-face Meeting of OAD Regional Coordinators. January 23-30, 2015. Cape Town, South Africa.
- 2013** - “Seminario Internacional sobre Protección del Cielo Nocturno del Norte de Chile”. October 22, 2013. Antofagasta, Chile.  
- 56<sup>o</sup> Annual Meeting, Asociación Argentina de Astronomía. September 16-20, 2013. Tandil, Argentina.  
- Encuentro Observacional de Astronomía Star Party del Sur Mendocino”. April 12-14, 2013. Valle Grande, San Rafael, Mendoza, Argentina.
- 2012** - X Annual Meeting of the Sociedad Chilena de Astronomía. October 10-12, 2012. Viña del Mar, Chile.  
- 55<sup>o</sup> Annual Meeting, Asociación Argentina de Astronomía. September 17-21, 2013. Mar del Plata, Argentina.
- 2011** - International Congress of Amateur Astronomy. November 17-19, 2011. Antofagasta, Chile.  
- III National Olympiad of Astronomy and Astronautics. July 28-30, Antofagasta, Chile.  
- Astronomy meeting “Espacio Profundo+WAP”. January 29-February 5, Uspallata, Mendoza, Argentina.

## Affiliations and honors

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- 2016** - Member of EPO Advisory Council for AUI-NRAO.  
**2015** - Member of the Chilean Astronomy Society (SOCHIAS) [source].  
**2014** - Discoverer of the fourth known quasi-satellite of the Earth, 2014 OL<sub>339</sub> [source].  
**2012** - Associate Member (Commissions C1 and C2), International Astronomical Union (IAU) [source].  
- Member of the Chilean Skeptic Society (AECH) [source].

## Computer and telescope skills

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- Intermediate** - Astronomy software for image acquisition and/or analysis, e.g. Starlink, Arcon-IRAF, Astrometrica, DS9, MPO Canopus, some UNIX-based tools; other tools for site testing purposes.
- Advanced** - Software interfaces for go-to telescopes, e.g. Celestron NexRemote, Meade Autostar, STI, ACP, MaxIm DL, etc.; Educational astronomy software and/or online tools, such as Stellarium, TheSkyX, Salsa-J, Heavens-Above; some tools for astrophotography, such as StarStax, DSS and others.  
- Microsoft/Mac office suites, Windows XP+/Mac OS 10+/Linux Ubuntu 7+, collaborative environments such as Google documents and social networks; proficient knowledge of HTML and CMS platforms, such as Wordpress, Joomla, etc.

Some examples of these skills can be found in these past or actual positions:

- Telescope operator of Ckoirama Observatory and main responsible of the small telescopes operated by AstroUA for outreach purposes since 2012.
- Operator of LuSci (Lunar Scintillometer) as part of my work in the E-ELT Site Testing team, under the supervision of ESO, between 2009 and 2013.
- Visitor observer for runs at large observatories with an old TCS, such as the 0.9-m telescope at CTIO, or the 1.5-m Danish telescope at La Silla.
- Development of many websites and sub-sections related to AstroUA projects, as well as personal projects related to astronomy and some hobbies (e.g. photography).

## Languages

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Spanish: Native.  
English: Fluent.

## Others

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Driving license up to date.