

## PROFESSIONAL EXPERIENCE

**NASA Goddard Space Flight Center** (10,000 employees, Astrophysics Division)

**Oct 2014 – Present**

**Electrical Project Development Leader** (Sep 2017 – Present)

**Washington D.C.**

*Electrical Project Development Leader for the \$40M HIRMES project (space telescope hunting for earth-like planets across the galaxy)*

- Manage 10 Engineers and lead all electrical-related activities of 40 electrical, mechanical and thermal engineers to integrate and operate the HIRMES space telescope mounted in a Boeing 747 as a part of the Stratospheric Observatory for Infrared Astronomy (SOFIA) program.
- Coordinate deliverables and electrical system integration between 4 NASA centers, private companies and universities.
- Conceived the instrument design, created a 2-year project schedule, assigned tasks to individuals and lead daily meetings.
- Entrusted with hiring and mentoring 4 team members, a responsibility typically reserved for leadership members with 15+ years of experience
- Awarded the 2019 NASA Early Career Public Achievement Medal (1 of 4 recipients among 80,000 NASA employees; youngest recipient this year).

**Lead Systems Engineer** (Oct 2015 – Oct 2018)

*Lead Systems Engineer for the \$6M Balloon Experimental Twin Telescope for Infrared Interferometry (BETTII). BETTII, a stratospheric balloon-based telescope, was the first space interferometer deployed to study the formation of newborn stars and planetary systems.*

- Directed team of 20 engineers and scientists, as project's electrical and control systems lead; conceived and implemented all the control and stabilization algorithms to point the telescope in space with groundbreaking accuracy. Operated the telescope, commanding it to observe different target stars.
- Validated new technology/promoted to Co-investigator (a position typically reserved for PhD/senior engineers) on BETTII v2 mission, beginning Jan 2020.
- Mentored and supervised graduate research for 6 Masters and PhD students on a daily basis.
- Published 9 scientific papers in journals, including the *Journal of Astronomical instrumentation* and *SPIE Defense and Commercial Sensing*.

**Lead Communications Engineer** (Oct 2014 – Oct 2015)

*Lead Communications Engineer for the Balloon Experimental Twin Telescope for Infrared Interferometry (BETTII)*

- Developed a robust telecommunications infrastructure for the telemetry system used by the BETTII Telescope that detected and auto-corrected errors.
- Member of the core team (1 of 2 out of 20) during deployment/operation of the telemetry system during BETTII's launch and flight. Collected 300GB of data.

**Equitur** (Equestrian travel agency with 3 employees and €200K in annual revenue)

**Dec 2006 – Dec 2011**

**Chief Executive Officer**

**Barcelona, Spain**

- Secured €100K in funding, managed staff, and travelled Europe/Africa to scout locations. Managed company until 2011 sale to an investor group.

## LEADERSHIP AND COMMUNITY INITIATIVES

- **Fundación Rafael Del Pino, Scholarship Recipient** (1 of 12, selected from 1,500) – Awarded to Spanish citizens for excellent scholarship and potential. (prize includes €50,000 annually for 2 years of business school) (2019)
- **Personal project (Built IoT sensor to monitor air quality)** – Installed sensors to detect pollution in high traffic areas in Maryland (2hr/wk for 16 wks, 2019)
- **NASA Office of Education, Speaker** – Promoted STEM to high school students and Latino women across Maryland (4hr/month, 2016-2019)
- **USA Science and Engineering Festival** (dedicated to promoting science and engineering to students), *Volunteer* – Conducted workshops and talks to educate children about applications of math and science in space telescopes (24hr annually for 2 years, 2016; 2017)
- **Society of Photo-optical Instrumentation Engineers, Speaker** – Gave lecture on pointing telescopes in space for audience of 50 (5 talks, 2017-2018)
- **NASA Interviewee** - Gave 7 media interviews about telescopes, Apollo's 50<sup>th</sup> anniversary and NASA to radio shows/newspapers/magazines (2015-2019)
- **Personal project (Designed/Built/Flew a quadcopter drone)** - Published operating software so others can build similar drones (10hr/wk, 2015-2016)
- **Rural Community, Vaalwater, South Africa, Volunteer** - Provided food/organized equestrian activities for children ages 5-14 (10hr/wk, Summer 2009)
- **Horse Safaris, Volunteer Guide** - Led overseas guests on week-long horse safaris in South Africa, Botswana and Iceland (60hr/wk, Summers 2009-2013)
- **Freelance Journalist** - Published 3 articles for Spanish and Mexican horse magazines describing various horse trails and safaris in Africa (2008-2012)
- **Local Festivals in Spain/South Africa/Botswana/Tunisia, Volunteer** - Organized ~50 events with horses/ponies for children (12hr/event, 2006-2011)

## EDUCATION

**Higher Institute of Aeronautics and Space (Grande École ISAE-SUPAERO)**

**Toulouse, France**

**Aeronautical Engineering Graduate Program** (Year Abroad Program) **Major: Space Communications**

**Aug 2013 – Mar 2014**

- **Researcher** - Conducted research for Airbus on improving ground to satellite communications and avoiding drone collisions (10hr/wk for 7 months, 2013-14)
- **NASA Goddard, Intern** - Worked on the BETTII space telescope, resulting in full-time job offer (40-60hr/wk, Apr-Oct 2014)
- **Table Tennis Team, Member** – Practiced twice weekly and participated in competitions across Occitanie Region, France (5hr/wk, 2013)

**Polytechnic University of Catalonia (UPC -ETSETB)**

**Barcelona, Spain**

**Master of Science in Telecommunications Engineering**

**Sep 2011 – Jun 2013**

- **Master's Thesis** – “Telemetry System of BETTII Space Telescope at NASA Goddard.” Received honors (9.5/10)
- **Mobility App, Developer** - Led 5-member student-team to develop app for 2012 London Olympic Games (#4 among 80 competitors); hired as an intern by the sponsor, ATOS Software, as a result of the work. (30hr/wk for 7 months, 2012)
- **Soccer/Volleyball Teams, Member** – Practiced twice weekly and participated in competitions across Spain (8hr/wk, 2012)

**Polytechnic University of Catalonia (UPC -ETSETB)**

**Barcelona, Spain**

**Bachelor of Science in Electrical Engineering**

**Sep 2008 – Jun 2011**

- **Member** (1 of 8) of AUCOOP (delivering technology to rural areas) – Developed/shipped Internet repeaters and PCs to Mexico & Bolivia (2hr/wk, 2011)

## ADDITIONAL INFORMATION

**Languages:** Spanish (native), Catalan (native), English (fluent, TOEFL 116), French (fluent), Italian (basic)

**Interests:** Planet hunting across the galaxy, horse riding, building gadgets, playing piano, sailing, soccer, salsa dancing, and traveling (36 countries).