




# Alejandro S. Borlaff *MSc, PhD*

NASA Research Scientist - STA Division - Ames Research Center




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NASA/BAERI researcher at the Ames Research Center. Ph.D. in Astrophysics. Specialist in calibration and operations of space telescopes. Multi-wavelength observational astronomy and instrumentation (*Hubble*, *Chandra*, *Roman*). Airborne astronomer with the NASA/DLR Stratospheric Observatory for Infrared Astronomy (SOFIA), member of ESA/*Euclid* and ESA/ARRKHAIS mission Science Working Groups. Top 25 of the 2022 Astronaut Selection of the European Space Agency.

## 🎓 Education

-  **PhD in Astrophysics - Instituto de Astrofísica de Canarias / Resident Fellowship Program** Oct 2014 – Nov 2018  
"Understanding the outskirts of disc galaxies" (PhD advisor: John E. Beckman) - Distinction Excellent Cum laude Tenerife, Spain
-  **Master's degree in Astrophysics - Universidad Complutense de Madrid** Sept 2013 – Sept 2014  
Thesis: "Morphological visual classification of galaxies at cosmological distances", EQF Level 7, Final grade: 9.07/10 Madrid, Spain
-  **Physics (5-year) bachelor degree - Universidad Complutense de Madrid** Sept 2008 – Sept 2013  
Thesis: "Antitruncated disks on lenticular galaxies formed through major mergers", EQF Level 7, Final grade: 7.8/10 Madrid, Spain

## 🏢 Work Experience

-  **National Aeronautics and Space Administration / BAER Institute** November 2022 – Current  
NASA/BAERI Space Science and Astrobiology (STA) division researcher NASA Ames Research Center - Moffett Field, N245-5
-  **National Aeronautics and Space Administration** November 2019 – November 2022  
NASA Postdoctoral Fellow NASA Ames Research Center - Moffett Field, N245-5
-  **European Space Agency** March 2019 – October 2019  
ESAC Faculty Research Specialist ESA/ESAC European Space Astronomy Centre

## 📖 Selected publications: Total publications: 47. h-index: 18. i-10 index: 27

- [SAUNAS I: Searching for Low Surface Brightness X-ray Emission with Chandra/ACIS](#). Accepted ApJ, **Borlaff+**(2024).
- [Euclid preparation. XVI. Exploring the ultra-low surface brightness Universe with Euclid/VIS](#). **Borlaff+2022**. A&A.
- [The missing light of the Hubble Ultra Deep Field](#). **A. S. Borlaff** et al. (2019). A&A, V621, id.A133.
- [The Magnetic Field in the Multiphase Interstellar Medium of M51](#). **A. S. Borlaff** et al. (2021). ApJ, 921, 128B.

## 🏆 Awards

### Research grants and observations

- » NASA/ROSES Roman 2022 - ROSALIA: ROman Sky Analyst for Low surface brightness Imaging & Astronomy (22-ROMAN22-0087). Grant total funding: \$1,444,807 (2023-2027)
- » STScI/Hubble Archival Cycle 30 - STRAYCOR: Stray-light background correction for HST ACS and WFC3 (PID: 17041) Grant total funding: \$368,868 (2022-2024)
- » NASA/ROSES ADAP 2022 - The Extended Hot Gas Halos of Galaxies (22-ADAP22-0118). Grant total funding: \$995,416 (2023-2027)
- » Harvard CfA Chandra Archival Cycle 24 - Exploring the Origin Of Lenticular Galaxies With Chandra/ACIS (PID: 24610329). Grant total funding: \$215,800 (2022-2023)
- » SOFIA Cycle 9 observing proposal 09\_0113: "Testing for multi-component magnetic fields and their effects on the structure of galactic disks", 20.1h, SOFIA/HAWC+ (2021 - 2022, granted)
- » VLA/21A-043, "Flares, breaks and warps in the outskirts of the HI and stellar disk of UGC11859", 9h, HI observations, JVLA C-array (2021)
- » VLA/20A-493, "Clues to the Origin of Cold Gas in the Void Elliptical Galaxy KIG 16", 12h (DDT), HI observations, JVLA C-array (2021)

### Selection processes

- » Astronaut Selection. European Space Agency 2022 - Finalist (European Top 25 candidate, National Top 3. Stage 6/6 completed)
- » NASA Postdoctoral Fellowship Award 2019 – NASA / USRA NASA Postdoctoral Award - Fellowship for research at the NASA Ames Research Center in California. Total funding: \$73,866 per yr for a period of 3 years.
- » Juan de la Cierva Postdoctoral Fellowship Award – Spanish ministry for research and education Postdoctoral fellowship awarded by the Ministry for Research and Education - Government of Spain (awarded, declined)
- » ERASMUS+ Programme Award – European Commission - Universidad de La Laguna ERASMUS+ Programme Award, supporting travel, accommodation for a 3-month visit to the University of Oulu, Finland. Director: Prof. Heikki Salo, Dr. Pertti Rautiainen