Dr. Eduardo BALBINOT

PERSONAL INFO

PLACE AND DATE OF BIRTH:	Porto Alegre, Brazil | 31 August 1987
DATE OF BIRTH:	31 August 1987
NATIONALITY:	Brazilian and Italian
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EMPLOYMENT

SEP 2022 - PRESENT	Postdoctoral Research Assistant at the Leiden Observatory
SEP 2018 - SEP 2022	Postdoctoral Research Fellow at the Kapteyn Astronomical Institute (Groningen) - with Amina Helmi ○ PI of the pointed streams sub-survey in WEAVE ○ Expert consultancy on 4MOST calibration unit building at ASTRON
AUG 2014 - SEP 2018	Postdoctoral Research Assistant at The University of Surrey - ERC Fellow PI: M. Gieles

FORMAL EDUCATION

JAN 2011- OCT 2014	UFRGS[1], PhD in Astrophysics *Supervised by Prof. Basilio Xavier Santiago* *Thesis: The MW satellite system in the cosmological context*
DEC 2009- JAN 2011	UFRGS[1], M.S. in Astrophysics *Supervised by Prof. Basilio Xavier Santiago* *Dissertation: Analysis of disrupting stellar clusters in the Local Group*
JAN 2005- DEC 2009	UFRGS[1], B.Sc. in Physics *Final project: Formation and evolution of LMC star clusters*

TECHNICAL SKILLS

Programming languages (ordered by skill level)	PYTHON, FORTRAN, C, BASH, JAVASCRIPT, PERL, SQL (POSTGRES), PHP, LaTeX, C++, AWK
Operating systems	GNU/Linux (main), MACOX, and Windows (basic)
Astronomy specific	IRAF, DOLPHOT, DAOPHOT, PYRAF, MULTIDRIZZLE, ASTROPY, SEXTRACTOR and the Astromatic.net suite

Other related skills: survey design and simulation, photometric/spectroscopic reduction pipelines, web visualization of astronomical images (see live implementation here), Bayesian and classic inference, wrapping of third party code, version control (GIT), and collaborative project development. I am a contributing author to the fol-

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[1]Universidade Federal do Rio Grande do Sul (UFRGS) is one of the top higher education institutions in Latin America, ranking 6th overall (source).

lowing open-source astronomy-related packages: VAEX, LIMEPY, GALA. I have a basic understanding of mainstream machine-learning frameworks such as SKLEARN and TENSORFLOW.

OBSERVING EXPERIENCE AND GRANTS

As a PI I was awarded the equivalent of $\sim$ 405 k€ in observing time at 4 and 8-meter class facilities. Below is a list of most of the observing programs I have been involved in.

2019	PI, WHT/ISIS 4m | 1 night *Multiple stellar populations in the GD-1 stellar stream*
2017	CoI, HST/ACS-WFC3 | 16 orbits (`id:15302`) *Unveiling the formation of Andromeda XIX - a uniquely diffuse Local Group galaxy*
2016	CoI, HST/ACS-WFC3| 24 orbits (`id:14766`) *Dating the Early Star Formation Episode(s) of Ret II*
2016	CoI, ESO/VLT 8.2m, | 41h *Dark matter content and chemistry of ultra-faint Magellanic satellites*
2015	PI, ESO/VLT 8.2m, | 48h *Unveiling the southern Halo with DES: detailed observations of the Tucana II, Horologium I, and the Phoenix stream*
2015	PI, CTIO Blanco 4m, | 2 nights *Survey for extra tidal features in southern globular clusters*
2015 2013	Observer, CTIO Blanco 4m, | 9 nights CoI, SOAR 4.2m, | 20h *Star clusters in the west halo of the Small Magellanic Cloud*
2012 2012	Observer, CTIO Curtis-Schmidt 1.2m, | 6 nights PI, CFHT 3.8m, | 21h *New Milky Way satellites in BOSS footprint*
2012	PI, CFHT 3.8m, | 16h *New Milky Way satellites in BOSS footprint*
2010	Observer, PI, CTIO Blanco 4m, | 10h *Tidal tails around two disrupting globular clusters*
2009	CoI, SOAR 4.2m, | 33h *The star clusters in the Magellanic Bridge: in situ star formation?*
2009	CoI, SOAR 4.2m, | 20h *Probing the LMC age-gap at intermediate cluster masses*

I am the co-I and main work package contributor of two ERC Synergy (13.8 M€) that made into the final selection stage, one of which is being assessed currently (PI: Boyarsky). I was also the shortlisted for the *La Caixa Junior Leaders* (300 k€) in 2022.

INSTRUMENTATION, COLLABORATIONS, AND TECHNICAL RESPONSIBILITIES

WEAVE	builder (pending); catalogue production, validation, and science verification. PI of the stellar stream effort for the LR HighLat survey and science verification experiment 1.
4MOST	bench-testing, validation, and integration of the calibration unit being developed at ASTRON. Member of Survey 1, 3, and 13; contributor to quality assurance.
DES	member with data rights. I helped with th Galactic survey design and commissioning of Pre-Cam, the precursor of the Dark Energy Camera (DECam). Active member of spin-off surveys such as MagLites and DELVE.
S^5	full member.

TEACHING AND DEPARTMENTAL DUTIES

Teaching and outreach

- 2014-present: Co-supervised 8 Bachelor final year projects and 3 Masters; unofficially contributed to 3 PhD thesis.
- 2017: Tutoring computer and research methods;

- 2005-present: ∼ 200h of outreach lectures as part of the Itinerant Educational Observatory [1], and other outreach programs (Astronomy on Tap; Pint of Science)

Duties and other activities

- 2022: SKIES entrepreneurship training program (participant)
- 2020: WEAVE ITP telescope time allocation external consultant
- Referee for MNRAS, ApJ and A&A since ∼ 2015 (over 15 publications refereed)
- 2016-present: Journal Club coordinator
- 2012-2014: Astronomy Dojo coding sessions
- 2005-2014: Student representative in Under/Postgrad committees

TALKS

Invited

- "Community Atlas of Tidal Streams (CATS)", *invited team member*, Pasadena, USA (2022)
- "The power of Gaia for stellar streams", Colloquium for the Gaia group at ICC, Barcelona Host: T. Antoja (2021)
- "Survival of Dense Star Clusters in the Milky Way System" – Heidelberg. Title: "The contribution of GCs to the build up of the MW halo." (2018)
- "Halo Substructure and Dark Matter" workshop – Madrid. Title: "The Milky Way halo seen by the Dark Energy Survey" (2018)
- "Internal cluster dynamics and stream formation" – Seminar – Liverpol/LJMU (2017)
- "Finding stellar streams in photometric surveys" – Colloquium – UFRGS (2016)
- "The visibility of cold streams" – Colloquium – Yale. Host: M. Geha (2016)
- "The initial conditions of the Milky Way globular clusters" – Talk – Lorentz workshop *Globular Clusters and Galaxy Halos* (2016)

I have also given contributed talks in over 20 international conferences and collaboration meetings, as well as given countless public outreach talks. Here is a list of the most recent ones:

- "Stellar streams in the solar neighbourhood" – EAS, Valencia (2022)
- "Linking nearby streams to halo overdensities" – EAS, Valencia (2022)
- "Multiple stellar populations in GD-1" – STREAMS21, Flatiron (online; 2021)
- "Multiple stellar populations in stellar streams: the case of GD-1" – MODEST19/IAU 351, Bologna (2019)
- "The visibility of cold streams" – Galapagos (2016) – On the Origin (and Evolution) of Baryonic Galaxy Halos

Besides science talks, I also participated on 5 DES collaboration meetings, 2 WEAVE meetings, 3 4MOST meetings. I also co-organized a series of workshops in ISSI (Zurich) in preparation for the Gaia data releases.

PRESS RELEASES

A few selected highlights of my work in the media:

- This star cluster is slowly being taken over by black holes. In a billion years they'll kill it. (Bad Astronomy - SyFy - 2021)
- Rivers in the sky (Symmetry Magazine - 2018)
- Dark Energy Survey finds more celestial neighbors (Symmetry Magazine and others - 2015)
- Scientists find rare dwarf satellite galaxy candidates (Symmetry Magazine and others - 2015)
- Researchers use stars to infer mass of Milky Way (phys.org)
- A new globular cluster in the Milky Way (Veja magazine; portuguese - 2012)

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[1] https://www.facebook.com/oei.aventureiros/

LANGUAGES

ENGLISH/PORTUGUESE:	Fluent
SPANISH:	Advanced
FRENCH/ITALIAN	Intermediate

REFERENCES

- Amina Helmi (University of Groningen): ahelmi@astro.rug.nl
- Else Starkenburg (University of Groningen): estarkenburg@astro.rug.nl
- Mark Gieles (University of Barcelona): mgieles@icc.ub.edu
- Basilio Santiago (UFRGS): santiago@if.ufrgs.br
- Leo Girardi (INAF, Padova): leo.girardi@oapd.inaf.it
- Nate Bastian (LJMU): N.J.Bastian@ljmu.ac.uk
- Justin Read (University of Surrey): j.read@surrey.ac.uk
- Eduardo Bica (UFRGS): bica@if.ufrgs.br
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