

Dr. Eduardo BALBINOT

Last update, 4th May 2022

PERSONAL INFO

PLACE AND DATE OF BIRTH: Porto Alegre, Brazil | 31 August 1987
NATIONALITY: Brazilian and Italian
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AVAILABLE FROM: 30 September 2022

EMPLOYMENT

SEP 2018-PRESENT	Postdoctoral Research Fellow at the Kapteyn Astronomical Institute (Groningen) - with Amina Helmi <ul style="list-style-type: none">Team leader of the pointed streams sub-survey in WEAVEExternal 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 <i>Supervised by Prof. Basilio Xavier Santiago</i> <i>Thesis: The MW satellite system in the cosmological context</i>
DEC 2009- JAN 2011	UFRGS ¹ , M.S. in Astrophysics <i>Supervised by Prof. Basilio Xavier Santiago</i> <i>Dissertation: Analysis of disrupting stellar clusters in the Local Group</i>
JAN 2005- DEC 2009	UFRGS ¹ , B.Sc. in Physics <i>Final project: Formation and evolution of LMC star clusters</i>

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

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

OBSERVING EXPERIENCE

As a PI I was awarded the equivalent of ~ 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 Col, HST | 16 orbits
Unveiling the formation of Andromeda XIX - a uniquely diffuse Local Group galaxy
- 2016 Col, HST | 24 orbits
Dating the Early Star Formation Episode(s) of Ret II
- 2016 Col, 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 Observer, CTIO Blanco 4m, | 9 nights
- 2013 Col, SOAR 4.2m, | 20h
Star clusters in the west halo of the Small Magellanic Cloud
- 2012 Observer, CTIO Curtis-Schmidt 1.2m, | 6 nights
- 2012 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 Col, SOAR 4.2m, | 33h
The star clusters in the Magellanic Bridge: in situ star formation?
- 2009 Col, SOAR 4.2m, | 20h
Probing the LMC age-gap at intermediate cluster masses

INSTRUMENTATION, COLLABORATIONS, AND TECHNICAL RESPONSIBILITIES

WEAVE	catalogue production, validation, and science verification. Leading the stellar stream effort for the LR HighLat survey.
4MOST	bench-testing, validation, and integration of the calibration unit being developed at ASTRON. Member of Survey 1 (Galactic Archaeology).
DES	member with data rights. I helped with the Galactic survey design and commissioning of PreCam, the precursors of the Dark Energy Camera (DECam).
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: ~ 200 h of outreach lectures as part of the Itinerant Educational Observatory¹, and other outreach programs (Astronomy on Tap; Pint of Science)

¹<https://www.facebook.com/oei.aventureiros/>

Duties

- 2022: SKIES entrepreneurship training program (participant)
- 2020: WEAVE ITP telescope time allocation expert consultant
- Referee for MNRAS, ApJ and A&A since ~ 2015 (over 20 publications refereed)
- 2016-present: Journal Club coordinator
- 2012-2014: Astronomy Dojo coding sessions
- 2005-2014: Student representative in Under/Postgrad committees

TALKS

Invited

- ICC, Barcelona (2021). Title: "The power of Gaia for stellar streams", Host: T. Antoja
- "Survival of Dense Star Clusters in the Milky Way System" – Heidelberg (2018). Title: "The contribution of GCs to the build up of the MW halo."
- "Halo Substructure and Dark Matter" workshop – Madrid (2018) Title: "The Milky Way halo seen by the Dark Energy Survey"

I have also given contributed talks in over 30 international conferences and collaboration meetings, as well as given countless public outreach talks.

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 billionyears 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)

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
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