Rodrigo **Carvajal**

ASTROPHYSICS PHD STUDENT

OAL - Edifício Leste, 2º piso. Tapada da Ajuda. 1349-018 Lisboa. Portugal

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Summary

Final-year PhD student in Physics and Astrophysics at the Instituto de Astrofísica e Ciencias do Espaço (IA), in the Faculdade de Ciências of the Universidade de Lisboa (FCUL), in Lisbon, Portugal. Working on identification and characterisation of radio-detected active galactic nuclei and implementation of machine learning tools to detect and study them in large-area radio surveys.

Education

INSTRUCTION

Faculdade de Ciências, Universidade de Lisboa   *Lisbon, Portugal*

PHD IN PHYSICS AND ASTROPHYSICS (THESIS SUBMITTED)   *Nov. 2019 - 2024*

- Thesis: 'Towards better selection and characterisation criteria for high-redshift radio galaxies using machine-assisted pattern recognition' Supvs.: J. Afonso, I. Matute, H. Messias.

Pontificia Universidad Católica de Chile   *Santiago, Chile*

MSc IN ASTROPHYSICS (MAXIMUM DISTINCTION)   *Mar. 2016 - Jan. 2019*

- Thesis: Stacking UV-selected Lyman-Break Galaxies in the ALMA Frontier Fields[1]. Supv.: F. E. Bauer.

Universidad de Chile   *Santiago, Chile*

LICENCIADO EN CIENCIAS (BSc EQUIVALENT. DISTINCTION)   *Mar. 2007 - Jan. 2014*

- Degree in Astronomy (no thesis required).

PRIZES AND AWARDS

2019 - 2024	**PhD::SPACE Fellowship,** Instituto de Astrofísica e Ciências do Espaço	*Lisbon, Portugal*
2024	**JAO Visitor Program,** Joint ALMA Observatory	*Santiago, Chile*
2017	**Teaching Assistant Scholarship,** Pontificia Universidad Católica de Chile	*Santiago, Chile*
2007 - 2010	**Beca Universidad de Chile,** Universidad de Chile	*Santiago, Chile*

Publications

Ten refereed publications. Three of them as first author with 20 citations. Seven publications as co-author, with 135 citations. Additionally, one publication in a conference proceedings book and one press release with impact on mass media. Citation values from NASA ADS as of July, 2024[2].

REFEREED ARTICLES

Identifying type II quasars at intermediate redshift with few-shot learning photometric classification
P. A. C. CUNHA, A. HUMPHREY, J. BRINCHMANN, S. G. MORAIS, **R. CARVAJAL**, J. M. GOMES, I. MATUTE, and A. PAULINO-AFONSO
A&A 687, A269 A269. 2024. DOI: `10.1051/0004-6361/202346426`

Selection of powerful radio galaxies with machine learning
R. CARVAJAL, I. MATUTE, J. AFONSO, R. P. NORRIS, K. J. LUKEN, P. SÁNCHEZ-SÁEZ, P. A. C. CUNHA, A. HUMPHREY, H. MESSIAS, S. AMARANTIDIS, D. BARBOSA, H. A. CRUZ, H. MIRANDA, A. PAULINO-AFONSO, and C. PAPPALARDO
A&A 679, A101 A101. 2023. DOI: `10.1051/0004-6361/202245770`

Improving machine learning-derived photometric redshifts and physical property estimates using unlabelled observations
A. HUMPHREY, P. A. C. CUNHA, A. PAULINO-AFONSO, S. AMARANTIDIS, **R. CARVAJAL**, J. M. GOMES, I. MATUTE, and P. PAPADEROS
MNRAS 520.1 pp. 305–313. 2023. DOI: `10.1093/mnras/stac3596`

An investigation of the star-forming main sequence considering the nebular continuum emission at low-z
H. MIRANDA, C. PAPPALARDO, P. PAPADEROS, J. AFONSO, I. MATUTE, C. LOBO, A. PAULINO-AFONSO, **R. CARVAJAL**, S. LORENZONI, and D. SANTOS
A&A 669, A16 A16. 2023. DOI: `10.1051/0004-6361/202244390`

Exploring New Redshift Indicators for Radio-Powerful AGN
R. CARVAJAL, I. MATUTE, J. AFONSO, S. AMARANTIDIS, D. BARBOSA, P. CUNHA, and A. HUMPHREY
Galaxies 9.4 p. 86. 2021. DOI: `10.3390/galaxies9040086`

Self-consistent population spectral synthesis with FADO. II. Star formation history of galaxies in spectral synthesis methods
C. PAPPALARDO, L. S. M. CARDOSO, J. M. GOMES, P. PAPADEROS, J. AFONSO, I. BREDA, A. HUMPHREY, T. SCOTT, S. AMARANTIDIS, I. MATUTE, **R. CARVAJAL**, S. LORENZONI, P. LAGOS, A. PAULINO-AFONSO, and H. MIRANDA
A&A 651, A99 A99. 2021. DOI: `10.1051/0004-6361/202039792`

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[1]Thesis text available at `https://repositorio.uc.cl/handle/11534/22335`
[2]ADS Public Library: `https://ui.adsabs.harvard.edu/public-libraries/prom6U0VR26WDYTftnpfYw`

The ALMA Frontier Fields Survey. V. ALMA Stacking of Lyman-Break Galaxies in Abell 2744, Abell 370, Abell S1063, MACSJ0416.1-2403 and MACSJ1149.5+2223
R. Carvajal, F. E. Bauer, R. J. Bouwens, P. A. Oesch, J. González-López, T. Anguita, M. Aravena, R. Demarco, L. Guaita, L. Infante, S. Kim, R. Kneissl, A. M. Koekemoer, H. Messias, et al.
A&A 633, A160 A160. 2020. DOI: 10.1051/0004-6361/201936260

The ALMA Frontier Fields Survey. III. 1.1 mm emission line identifications in Abell 2744, MACSJ 0416.1-2403, MACSJ 1149.5+2223, Abell 370, and Abell S1063
J. González-López, F. E. Bauer, M. Aravena, N. Laporte, L. Bradley, M. Carrasco, **R. Carvajal**, R. Demarco, L. Infante, R. Kneissl, A. M. Koekemoer, A. M. Muñoz Arancibia, P. Troncoso, E. Villard, and A. Zitrin
A&A 608, A138 A138. 2017. DOI: 10.1051/0004-6361/201730961

The ALMA Frontier Fields Survey. II. Multiwavelength Photometric analysis of 1.1 mm continuum sources in Abell 2744, MACSJ0416.1-2403 and MACSJ1149.5+2223
N. Laporte, F. E. Bauer, P. Troncoso-Iribarren, X. Huang, J. González-López, S. Kim, T. Anguita, M. Aravena, L. F. Barrientos, R. Bouwens, L. Bradley, G. Brammer, M. Carrasco, **R. Carvajal**, et al.
A&A 604, A132 A132. 2017. DOI: 10.1051/0004-6361/201730628

The ALMA Frontier Fields Survey. I. 1.1 mm continuum detections in Abell 2744, MACS J0416.1-2403 and MACS J1149.5+2223
J. González-López, F. E. Bauer, C. Romero-Cañizales, R. Kneissl, E. Villard, **R. Carvajal**, S. Kim, N. Laporte, T. Anguita, M. Aravena, R. J. Bouwens, L. Bradley, M. Carrasco, R. Demarco, et al.
A&A 597, A41 A41. 2017. DOI: 10.1051/0004-6361/201628806

Conference Proceedings

Radio Galaxy Detection Prediction with Ensemble Machine Learning
R. Carvajal, I. Matute, J. Afonso, S. Amarantidis, and D. Barbosa
Machine Learning for Astrophysics, 2023, Cham. ISBN: 978-3-031-34167-0. DOI: 10.1007/978-3-031-34167-0_6

Press Releases

Black holes are missing in the early Universe, and computers are after them
Institute of Astrophysics and Space Sciences · Faculty of Sciences, University of Lisbon   *Dec. 2023*

Experience

Research Experience

Faculdade de Ciências, Universidade de Lisboa   *Lisbon, Portugal*
PhD Researcher   *Nov. 2019 - Present*
- Research as a PhD student. Project 'The first Radio Galaxies in the Universe'.

Joint ALMA Observatory (JAO)   *Santiago, Chile*
Scientific visitor   *May. 2024*
- Research as scientific visitor for four weeks. Working with H. Messias in the project 'Identifying giants in ELAIS-S1 with machine learning'.

Institute of Astrophysics, Pontificia Universidad Católica de Chile   *Santiago, Chile*
Research Assistant   *Jan. 2019 - Oct. 2019*
- Imaged and analysed ALMA data for project 'Hunting for redshifts of faint DSFGs in A2744'.

Institute of Astrophysics, Pontificia Universidad Católica de Chile   *Santiago, Chile*
MSc Researcher   *Mar. 2016 - Jan. 2019*
- Research as MSc student. Project 'Lyman-Break Galaxies in the ALMA Frontier Fields'.

Institute of Astrophysics, Pontificia Universidad Católica de Chile   *Santiago, Chile*
Research Assistant (supvs. Prof. Franz Bauer, Dr Jorge González)   *Aug. 2015 - Mar. 2016*
- Used image enhancement techniques to improve quality of ALMA observations and study objects with low signal-to-noise ratio.

Joint ALMA Observatory (JAO)   *Santiago, Chile*
Research Assistant (supvs. Dr Rüdiger Kneissl, Dr David Rabanus)   *Jan. 2014 - Mar. 2015*
- Studied Mars' atmosphere and produce profiles for temperature, and wind speed using ALMA observations.

Departament of Astronomy, Universidad de Chile   *Santiago, Chile*
Research Assistant (supv. Prof. Sebastián López)   *Aug. 2013 - Oct. 2013*
- Studied differences from outer structures of lensing galaxies through absorbed light of far quasars.

Departament of Astronomy, Universidad de Chile   *Santiago, Chile*
Research Assistant (supv. Dr Isabelle Pâris)   *Mar. 2013 - May. 2013*
- Searched quasars pairs at small distances over catalogue of more than 100000 objects (SDSS-DR9 Quasar Catalog. Pâris et al. 2012).

Departament of Astronomy, Universidad de Chile *Santiago, Chile*
RESEARCH ASSISTANT (SUPV. PROF. SEBASTIÁN LÓPEZ) *Mar. 2012 - Jul. 2012*
- Confirmed influence of thermal-broadening Doppler parameter in turbulent broadening in Intergalactic Medium.
- Measured correlation for results of Voigt curve-fitting procedures in metallic species absorption lines from far quasar emission.

Departament of Astronomy, Universidad de Chile *Santiago, Chile*
RESEARCH ASSISTANT (SUPV. PROF. SEBASTIÁN LÓPEZ) *Aug. 2011 - Dec. 2011*
- Determined influence of thermal-broadening Doppler parameter in turbulent broadening in Intergalactic Medium.

Departament of Astronomy, Universidad de Chile *Santiago, Chile*
RESEARCH ASSISTANT (SUPV. DR NADIA LO) *Jan. 2011*
- Worked in project "A study of the Molecular Properties of the Vela Molecular Ridge (Coud C)" searching possible clumps using data from Mopra Radio Telescope.

STUDENT SUPERVISION EXPERIENCE

Instituto de Astrofísica e Ciências do Espaço *Lisbon, Portugal*
CO-SUPERVISOR SUMMER INTERNSHIP (SUPV. DR I. MATUTE) *Jul. 2024*
- Guided J. Castelo and F. Rosado. Project: 'Supermassive Black Hole growth on galaxies: Linking AGN phases through Cosmic Time'.

Instituto de Astrofísica e Ciências do Espaço *Lisbon, Portugal*
CO-SUPERVISOR SUMMER INTERNSHIP (SUPVS. DRS. B. ARSIOLI, I. MATUTE) *Jul. 2023*
- Guided L. Rodrigues, G. Monteiro, A. Correia, D. Barreta, and T. Melo. Project: 'Multifrequency Analysis and Machine Learning for the most powerful quasars in the Universe'.

Faculdade de Ciências, Universidade de Lisboa *Lisbon, Portugal*
CO-SUPERVISOR BSC STUDENT (SUPV. DR I. MATUTE) *Sep. 2022 - Feb. 2023*
- Guided J. Bagagem. Project: 'Connecting galaxies photometry with Super-Massive Black Hole (SMBH) properties: A machine learning approach'.

Faculdade de Ciências, Universidade de Lisboa *Lisbon, Portugal*
CO-SUPERVISOR BSC STUDENT (SUPV. DR I. MATUTE) *Sep. 2021 - Feb. 2022*
- Guided J. Lopes. Project: 'Modelling Active Galactic Nuclei with Machine Learning'.

Faculdade de Ciências, Universidade de Lisboa *Lisbon, Portugal*
CO-SUPERVISOR BSC STUDENT (SUPV. DR I. MATUTE) *Sep. 2021 - Feb. 2022*
- Guided B. Resendes. Project: 'Identifying and characterising AGN in next-generation radio surveys with machine learning'.

Instituto de Astrofísica e Ciências do Espaço *Lisbon, Portugal*
CO-SUPERVISOR SUMMER INTERNSHIPS' STUDENTS (SUPV. DR I. MATUTE) *Jul. 2021*
- Guided J. Sandrin, P. Ferreira, P. Rodrigues, and A. Monteiro. Project: 'Identifying and characterising AGN in next-generation radio surveys using machine and deep learning'.

Instituto de Astrofísica e Ciências do Espaço *Lisbon, Portugal*
CO-SUPERVISOR SUMMER INTERNSHIPS' STUDENTS (SUPV. DR J. AFONSO) *Jul. 2021*
- Guided A. Labib, M. E. Pimentel, L. Barroso, and J. Rato. Project: 'The 200: exploring the most active supermassive black holes in the first Gyr of the Universe'.

Faculdade de Ciências, Universidade de Lisboa *Lisbon, Portugal*
CO-SUPERVISOR BSC STUDENT (SUPV. DR I. MATUTE) *Sep. 2020 - Feb. 2021*
- Guided I. Tiago. Project: 'Understanding triggering Radio emission from AGNs'.

Faculdade de Ciências, Universidade de Lisboa *Lisbon, Portugal*
CO-SUPERVISOR BSC STUDENT (SUPV. DR J. AFONSO) *Jul. 2020*
- Guided L. Piscarreta on studying radio and X-ray emission of high-z AGN.

TEACHING EXPERIENCE

Department of Physics, Facultad de Ciencias Físicas y Matemáticas, Universidad de Chile *Santiago, Chile*
TEACHING ASSISTANT (LECTURER: PROF. SEBASTIÁN LÓPEZ) *Mar. 2013 - Jul. 2013*
- Teaching Assistant of course FI1001: Introduction to Newtonian Physics.

School of Engineering, Facultad de Ciencias Físicas y Matemáticas, Universidad de Chile *Santiago, Chile*
TEACHING ASSISTANT (LECTURER: PROF. SEBASTIÁN LÓPEZ) *Mar. 2013 - Jul. 2013*
- Teaching Assistant of course EI2001: Project Workshop.
- Taught students how to characterise a CCD at the University Observatory.

Department of Astronomy, Facultad de Ciencias Físicas y Matemáticas, Universidad de Chile

Santiago, Chile

TEACHING ASSISTANT (LECTURER: PROF. SEBASTIÁN LÓPEZ)

Mar. 2012 - Jul. 2012

• Teaching Assistant of course AS3004–AS758.

OBSERVATION EXPERIENCE

30m Pico Veleta Radio Telescope

IRAM, Spain

NIKA2 AND EMIR INSTRUMENTS - ONE-WEEK OBSERVATION RUN UNDER POOLED OBSERVATIONS SCHEME

Nov. 2022

6.5m Magellan-Clay Telescope

LCO, Chile

MAGE INSTRUMENT - ONE-NIGHT OBSERVATION RUN UNDER THE SUPERVISION OF DR. ISABELLE PÂRIS

Feb. 2013

WORKING EXPERIENCE

Observatorio Astronómico Andino (OAA)

Santiago, Chile

TOURIST GUIDE

2013 - 2019

• Showed tourists main features of night sky and answering questions on Astronomy and Astrophysics in both Spanish and English.

Participation in Conferences and Seminars

CONTRIBUTED TALKS

International EMU Collaboration Meeting 2024

Perth. Western Australia

'ENHANCING RADIO LUMINOSITY FUNCTIONS WITH MACHINE LEARNING'

Sep. 2024

XXXIV Encontro Nacional de Astronomia e Astrofísica (ENAA)

Guimarães. Portugal

'FEEDING RADIO LUMINOSITY FUNCTIONS WITH MACHINE LEARNING PREDICTIONS'

Sep. 2024

Internal Workshop of the Instituto de Astrofísica e Ciências do Espaço (IA-ON8)

Universidade de Lisboa. Portugal

'BLACK HOLES FROM BLACK BOXES'

Jan. 2024

Debating the potential of Machine Learning in astronomical surveys # 2

IAP, Paris/Flatiron Institute, New York

'EXTRACTING PHYSICAL RULES FROM ENSEMBLE MACHINE LEARNING FOR THE SELECTION OF RADIO AGN'

Nov. 2023

XXXIII Encontro Nacional de Astronomia e Astrofísica (ENAA)

Universidade de Coimbra. Portugal

'ENSEMBLE MACHINE LEARNING FOR THE SELECTION OF RADIO AGN IN MULTI-SURVEY DATA'

Sep. 2023

SPARCS XI. Meeting of the SKA Pathfinders Radio Continuum Surveys (SPARCS)

IDIA. South Africa

'ENSEMBLE MACHINE LEARNING FOR RADIO GALAXY DETECTIONS'

Nov. 2022

XXXII Encontro Nacional de Astronomia e Astrofísica (ENAA)

University of Lisbon. Portugal

'ENSEMBLE MACHINE LEARNING FOR THE EXTRACTION OF HIGH-REDSHIFT RADIO GALAXIES'

Sep. 2022

EMU International Virtual Meeting

Online

'SEARCHING FOR HIGH-z RADIO GALAXY DETECTIONS WITH ENSEMBLE MACHINE LEARNING'

Jul. 2022

Jornadas Doutorais (Doctoral Day) - Faculdade de Ciências

Universidade de Lisboa. Portugal

'PREDICTION OF DISTANT RADIO GALAXIES CANDIDATES WITH MACHINE LEARNING'

Feb. 2022

SAZERAC SIPS: Learning the high-redshift Universe

Online

'HIGH-REDSHIFT RADIO GALAXIES CANDIDATES PREDICTION WITH ENSEMBLE MACHINE LEARNING'

Feb. 2022

XVII SOCHIAS Meeting. Meeting of the Chilean Society of Astronomy

Online

'PREDICTION OF HIGH-REDSHIFT RADIO GALAXY CANDIDATES WITH ENSEMBLE MACHINE LEARNING'

Jan. 2022

SPARCS X. Meeting of the SKA Pathfinders Radio Continuum Surveys (SPARCS)

IDIA. South Africa

'USING ENSEMBLE MACHINE LEARNING TO PREDICT HIGH-REDSHIFT RADIO GALAXY DETECTIONS'

Nov. 2021

Internal Workshop of the Instituto de Astrofísica e Ciências do Espaço (IA-ON8)

Universidade de Coimbra. Portugal

'OBTAINING HIGH-REDSHIFT RADIO GALAXY CANDIDATES WITH MACHINE LEARNING'

Nov. 2021

Debating the potential of Machine Learning in astronomical surveys

IAP, France

'USING A SERIES OF MACHINE LEARNING MODELS FOR THE DETECTION OF HIGH-REDSHIFT RADIO GALAXY CANDIDATES'

Oct. 2021

50th Young European Radio Astronomers Conference

IRAM

'USING MACHINE LEARNING TO IDENTIFY HIGH-REDSHIFT RADIO GALAXY CANDIDATES'

Aug. 2021

RGCW: A new window on the radio emission from galaxies, clusters and cosmic web

INAF. Italy

'EXPLORING NEW REDSHIFT INDICATORS FOR RADIO-POWERFUL AGNS'

Mar. 2021

Internal Workshop of the Instituto de Astrofísica e Ciências do Espaço (IA-ON7)

Online, Portugal

'SEARCHING FOR THE EARLIEST AGN IN THE RADIO SKY'

Oct. 2020

Jornadas Doutorais (Doctoral Day) - Faculdade de Ciências *Universidade de Lisboa. Portugal*

'The first Radio Galaxies in the Universe' *Mar. 2020*

Distant Galaxies from the Far South *Bariloche, Argentina*

'Stacking in the ALMA Frontier Fields' *Dec. 2017*

Invited Talks and Seminars

IA/ML Forum - ESO *Garching, Germany*

'How confident can you be? Calibrating probabilities for the selection of AGN' *Jun. 2024*

Seminar - Joint ALMA Observatory (JAO) *Santiago, Chile*

'Identifying giants in ELAIS-S1 with machine learning' *May. 2024*

Python Coffee - ESO *Santiago, Chile*

'SHAP analysis for interpretable Machine Learning in Astrophysics' *May 2024*

Machine Learning in Australian Astronomy *Australia*

'Selection of radio-detected AGN with ensemble machine learning' *Nov. 2023*

Machine Learning in Astronomy Group – SPARCS *WSU. Sydney, Australia*

'Developing a ML pipeline to detect high-redshift Radio Galaxy candidates' *Jun. 2021*

IA - Galaxies Machine Learning Club *Porto, Portugal*

'Explaining Machine Learning Models: SHAP' *May. 2022*

Seminar - Instituto de Astrofísica e Ciências do Espaço *Lisbon, Portugal*

'Stacking UV-selected Lyman-Break Galaxies in the ALMA Frontier Fields' *Jul. 2020*

Seminar - ESO *Santiago, Chile*

'Stacking UV-selected Lyman-Break Galaxies in the ALMA Frontier Fields' *Jun. 2019*

Contributed Posters

Encontro Ciência '24: Encontro com a Ciência e Tecnologia em Portugal *Porto, Portugal*

'Prediction of Radio AGN with Ensemble Machine Learning in multi-survey data' *Jul. 2024*

Encontro Ciência '23: Encontro com a Ciência e Tecnologia em Portugal *Aveiro, Portugal*

'Ensemble Machine Learning for the prediction of Radio AGN in multi-survey data' *Jul. 2023*

Coordinated Surveys of the Southern Sky *Garching, Germany*

'Radio Galaxy prediction with multi-survey data and ensemble Machine Learning' *Feb 2023*

VLA Sky Survey in the Multiwavelength Spotlight *NRAO. Socorro, NM. U.S.A.*

'Searching for Radio Galaxy detections with ensemble Machine Learning' *Sep. 2022*

International Conference on Machine Learning for Astrophysics - ML4Astro *Catania, Italy*

'Radio Galaxy detection prediction with ensemble Machine Learning' *May 2022*

Encontro Ciência '22: Encontro com a Ciência e Tecnologia em Portugal *Lisbon, Portugal*

'Finding high-redshift Radio Galaxies with Machine Learning' *May 2022*

Encontro Nacional de Astronomia e Astrofísica *Portugal*

'Detection of high-redshift Radio Galaxies using Machine Learning models' *Sep. 2021*

Encontro Ciência '21: Encontro com a Ciência e Tecnologia em Portugal *Lisbon, Portugal*

'Using Machine Learning to look for high-redshift Radio Galaxies' *Jun. 2021*

A precursor view of the SKA Sky *The SKA Observatory*

'Exploring new redshift indicators for radio-powerful AGNs' *Mar. 2021*

Encontro Ciência '20: Encontro com a Ciência e Tecnologia em Portugal *Lisbon, Portugal*

'Mining the radio sky toward the earliest AGN' *Nov. 2020*

Encontro Nacional de Astronomia e Astrofísica *Online, Portugal*

'Mining the radio sky toward the earliest AGN' *Sep. 2020*

Ground and space observatories: a joint venture to planetary science *Santiago, Chile*

'Mapping the winds on Mars. Test study for planetary atmospheric monitoring with ALMA' *Mar. 2015*

Other Meetings

'SPARCS XII 2024' - SKA Pathfinders Radio Continuum Surveys (SPARCS) - INAF *Bologna, Italy - May 2024*

'MOONS Science Consortium Meeting 2024' - Faculdade de Ciências, Universidade de Lisboa *Lisbon, Portugal - Jan. 2024*

'Artificial intelligence and the uncertainty challenge in fundamental physics' - SCAI, Paris and Institut Pascal Paris-Saclay *Paris, France - Nov. 2023*

'Machine Learning meets galaxy classification: addressing paradigms of galaxy evolution and their environment' - ESAC — *Villafranca del Castillo, Spain - Nov. 2023*

'Cosmology in the Radio Sky: Prospects and Challenges in the Square Kilometre Array Observatory era' - Instituto de Astrofísica e Ciências do Espaço — *Portugal - Dec. 2021*

'Machine Learning in Science & Engineering' - Columbia University - Data Science Institute — *NY U.S.A. - Dec. 2020*

'SOCHIAS (Chilean Society of Astronomy) annual meeting' — *Pucón, Chile - Dec. 2020*

'Exploiting Archives for Radio Astronomy in the SKA-era' — *Lisbon, Portugal - Nov. 2020*

'European Astronomical Society Annual Meeting' — *Leiden, Netherlands - Jun. 2020*

'SOCHIAS (Chilean Society of Astronomy) annual meeting' — *Santiago, Chile - Jan. 2011*

Skills

Programming Python, LaTeX, C, Java, Bash, Mathematica, Matlab

Software Common Astronomy Software Application (CASA), Tool for operations on catalogues and tables (TOPCAT), The Atmospheric Radiative Transfer Simulator (ARTS), SAOImage DS9, Gnuplot, ESO-MIDAS, EsoRex

Languages Spanish, English, Portuguese

Outreach

IX Ecuadorian School of Astronomy and Astrophysics — *Quito, Ecuador*
Lecturer: 'Looking for galaxies in a Universe of data' (in Spanish) — *Aug. 2023*

Ser Cientista (Being a Scientist). Faculdade de Ciências, Universidade de Lisboa — *Lisbon, Portugal*
Co-supervision of high school students guiding students on project 'O FADO das Galáxias' through one week of work (supv. C. Pappalardo) — *Jul. 2022*

Festival Internacional de Ciência (FICA) - International Festival of Science — *Oeiras, Portugal*
Answered questions about observatories in the stand of the Instituto de Astrofísica e Ciencias do Espaço — *Oct. 2021*

Service

Reviewer in Open Research Europe (by European Commission) — *2024*

Reviewer in Cycle 11 distributed review process - ALMA Observatory — *2024*

Member of data validation team - Evolutionary Map of the Universe — *2023 - Present*

Chair of KS8 session - EMU International Virtual Meeting — *Jul. 2022*

Co-organiser Galaxies Research Group Journal Club - Instituto de Astrofísica e Ciencias do Espaço — *Sep. 2022 - Jul. 2023*

PACE Analyst - Portuguese ALMA Centre of Expertise (PACE) - Instituto de Astrofísica e Ciencias do Espaço — *2019 - 2020*

Projects and Collaborations Membership

Projects

Finding Lyman-alpha emitters through machine learning — *FCT, Portugal*
PTCRIS: EXPL/FIS-AST/1085/2021 - P.I. A. Paulino-Afonso — *Jan. 2022 - Dec. 2023*

Collaborations

Evolutionary Map of the Universe (EMU) — *2020 - Present*

Square Kilometre Array Observatory (SKAO) - Extragalactic Continuum Science Working Group — *2020 - Present*

SKA Pathfinders Radio Continuum Surveys Working Group (SPARCS) — *2020 - Present*

Multi-Object Optical and Near-infrared Spectrograph (MOONS) — *2023 - Present*

Certificates

Responsible Conduct of Research. Stage 1 - Basic Course - Collaborative Institutional Training Initiative (CITI) — *2016*

Human Subjects Research. Stage 1 - Basic Course - Collaborative Institutional Training Initiative (CITI) — *2016*

IELTS Academic 7.5/9.0 — *2017*

References

Dr José Afonso

Institute of Astrophysics and Space Sciences
University of Lisbon
Lisbon, Portugal

✉ JMAFONSO@CIENCIAS.ULISBOA.PT

Dr Hugo Messias

Joint ALMA Observatory
European Southern Observatory
Santiago, Chile

✉ HUGO.MESSIAS@ALMA.CL

Dr Israel Matute

Institute of Astrophysics and Space Sciences
University of Lisbon
Lisbon, Portugal

✉ IMATUTE@CIENCIAS.ULISBOA.PT