

Rodrigo Carvajal

PHYSICS AND 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 Ciências 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 ASTRONOMY 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 Fields¹. 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, 2024².

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 (July 2024) 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 (Nov. 2023) 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 (Mar. 2023) 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 (Jan. 2023) 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 (Oct. 2021) 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. BREDÁ, A. HUMPHREY, T. SCOTT, S. AMARANTIDIS, I. MATUTE, **R. CARVAJAL**, S. LORENZONI, P. LAGOS, A. PAULINO-AFONSO, AND H. MIRANDA
A&A 651, A99 (July 2021) A99. 2021. doi: 10.1051/0004-6361/202039792

¹Thesis text available at <https://repositorio.uc.cl/handle/11534/22335>

²ADS 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 (Jan. 2020) 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 (Dec. 2017) 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 (Aug. 2017) 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 (Jan. 2017) 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

PHD RESEARCHER Lisbon, Portugal
Nov. 2019 - Present

- Research as a PhD student. Project ‘The first Radio Galaxies in the Universe’.

Joint ALMA Observatory (JAO)

SCIENTIFIC VISITOR Santiago, Chile
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

RESEARCH ASSISTANT Santiago, Chile
Jan. 2019 - Oct. 2019

- Imaged and analysed ALMA data for project ‘Hunting for redshifts of faint DSGFs in A2744’.

Institute of Astrophysics, Pontificia Universidad Católica de Chile

MSC RESEARCHER Santiago, Chile
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

RESEARCH ASSISTANT Santiago, Chile
Aug. 2015 - Mar. 2016

- Used image enhancement techniques to improve quality of ALMA observations and study objects with low signal-to-noise ratio. Supervised by Prof. Franz Bauer and Dr Jorge González.

Joint ALMA Observatory (JAO)

RESEARCH ASSISTANT Santiago, Chile
Jan. 2014 - Mar. 2015

- Studied Mars’ atmosphere and produce profiles for temperature, and wind speed using ALMA observations. Supervised by Dr Rüdiger Kneissl and Dr David Rabanus, from JAO.

Departament of Astronomy, Universidad de Chile

RESEARCH ASSISTANT Santiago, Chile
Aug. 2013 - Oct. 2013

- Studied differences from outer structures of lensing galaxies through absorbed light of far quasars. Supervised by Prof. Sebastián López.

Departament of Astronomy, Universidad de Chile

Santiago, Chile

RESEARCH ASSISTANT

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). Supervised by Dr Isabelle Pâris.

Departament of Astronomy, Universidad de Chile

Santiago, Chile

RESEARCH ASSISTANT

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.
- Supervised by Prof. Sebastián López.

Departament of Astronomy, Universidad de Chile

Santiago, Chile

RESEARCH ASSISTANT

Aug. 2011 - Dec. 2011

- Determined influence of thermal-broadening Doppler parameter in turbulent broadening in Intergalactic Medium. Supervised by Prof. Sebastián López.

Departament of Astronomy, Universidad de Chile

Santiago, Chile

RESEARCH ASSISTANT

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. Supervised by Dr Nadia Lo.

STUDENT SUPERVISION EXPERIENCE

Instituto de Astrofísica e Ciências do Espaço

Lisbon, Portugal

CO-SUPERVISOR SUMMER INTERNSHIP

Jul. 2024

- Guided J. Castelo and F. Rosado. Project: ‘Supermassive Black Hole growth on galaxies: Linking AGN phases through Cosmic Time’ (supv. I. Matute).

Instituto de Astrofísica e Ciências do Espaço

Lisbon, Portugal

CO-SUPERVISOR SUMMER INTERNSHIP

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’ (supvs. B. Arsioli, I. Matute).

Faculdade de Ciências, Universidade de Lisboa

Lisbon, Portugal

CO-SUPERVISOR BSc STUDENT

Sep. 2022 - Feb. 2023

- Guided J. Bagagem. Project: ‘Connecting galaxies photometry with Super-Massive Black Hole (SMBH) properties: A machine learning approach’ (supv. I. Matute).

Faculdade de Ciências, Universidade de Lisboa

Lisbon, Portugal

CO-SUPERVISOR BSc STUDENT

Sep. 2021 - Feb. 2022

- Guided J. Lopes. Project: ‘Modelling Active Galactic Nuclei with Machine Learning’ (supv. I. Matute).

Faculdade de Ciências, Universidade de Lisboa

Lisbon, Portugal

CO-SUPERVISOR BSc STUDENT

Sep. 2021 - Feb. 2022

- Guided B. Resendes. Project: ‘Identifying and characterising AGN in next-generation radio surveys with machine learning’ (supv. I. Matute).

Instituto de Astrofísica e Ciências do Espaço

Lisbon, Portugal

CO-SUPERVISOR SUMMER INTERNSHIPS’ STUDENTS

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’ (supv. I. Matute).

Instituto de Astrofísica e Ciências do Espaço

Lisbon, Portugal

CO-SUPERVISOR SUMMER INTERNSHIPS’ STUDENTS

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’ (supv. J. Afonso).

Faculdade de Ciências, Universidade de Lisboa

Lisbon, Portugal

CO-SUPERVISOR BSc STUDENT

Sep. 2020 - Feb. 2021

- Guided I. Tiago. Project: ‘Understanding triggering Radio emission from AGNs’ (supv. I. Matute).

Faculdade de Ciências, Universidade de Lisboa

Lisbon, Portugal

CO-SUPERVISOR BSc STUDENT

Jul. 2020

- Guided L. Piscarreta on studying radio and X-ray emission of high-z AGN (supv. J. Afonso).

TEACHING EXPERIENCE

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

Santiago, Chile

TEACHING ASSISTANT

Mar. 2013 - Jul. 2013

- Teaching Assistant of course FI1001: Introduction to Newtonian Physics. Lecturer: Sebastián López

School of Engineering, Facultad de Ciencias Físicas y Matemáticas, Universidad de Chile

Santiago, Chile

TEACHING ASSISTANT

Mar. 2013 - Jul. 2013

- Teaching Assistant of course EI2001: Project Workshop. Lecturer: Sebastián López
- 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

Mar. 2012 - Jul. 2012

- Teaching Assistant of course AS3004–AS758. Intergalactic Medium. Lecturer: Sebastián López

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

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 'EXPLORING NEW REDSHIFT INDICATORS FOR RADIO-POWERFUL AGNs'	INAF. Italy Mar. 2021
Internal Workshop of the Instituto de Astrofísica e Ciências do Espaço (IA-ON7) 'SEARCHING FOR THE EARLIEST AGN IN THE RADIO SKY'	Online, Portugal Oct. 2020
Jornadas Doutorais (Doctoral Day) - Faculdade de Ciências 'THE FIRST RADIO GALAXIES IN THE UNIVERSE'	Universidade de Lisboa. Portugal Mar. 2020
Distant Galaxies from the Far South 'STACKING IN THE ALMA FRONTIER FIELDS'	Bariloche, Argentina Dec. 2017
INVITED TALKS AND SEMINARS	
IA/ML Forum - ESO 'HOW CONFIDENT CAN YOU BE? CALIBRATING PROBABILITIES FOR THE SELECTION OF AGN'	Garching, Germany Jun. 2024
Seminar - Joint ALMA Observatory (JAO) 'IDENTIFYING GIANTS IN ELAIS-S1 WITH MACHINE LEARNING'	Santiago, Chile May. 2024
Python Coffee - ESO 'SHAP ANALYSIS FOR INTERPRETABLE MACHINE LEARNING IN ASTROPHYSICS'	Santiago, Chile May 2024
Machine Learning in Australian Astronomy 'SELECTION OF RADIO-DETECTED AGN WITH ENSEMBLE MACHINE LEARNING'	Australia Nov. 2023
Machine Learning in Astronomy Group – SPARCS 'DEVELOPING A ML PIPELINE TO DETECT HIGH-REDSHIFT RADIO GALAXY CANDIDATES'	WSU. Sydney, Australia Jun. 2021
IA - Galaxies Machine Learning Club 'EXPLAINING MACHINE LEARNING MODELS: SHAP'	Porto, Portugal May. 2022
Seminar - Instituto de Astrofísica e Ciências do Espaço 'STACKING UV-SELECTED LYMAN-BREAK GALAXIES IN THE ALMA FRONTIER FIELDS'	Lisbon, Portugal Jul. 2020
Seminar - ESO 'STACKING UV-SELECTED LYMAN-BREAK GALAXIES IN THE ALMA FRONTIER FIELDS'	Santiago, Chile Jun. 2019
CONTRIBUTED POSTERS	
Encontro Ciência '24: Encontro com a Ciência e Tecnologia em Portugal 'PREDICTION OF RADIO AGN WITH ENSEMBLE MACHINE LEARNING IN MULTI-SURVEY DATA'	Porto, Portugal Jul. 2024
Encontro Ciência '23: Encontro com a Ciência e Tecnologia em Portugal 'ENSEMBLE MACHINE LEARNING FOR THE PREDICTION OF RADIO AGN IN MULTI-SURVEY DATA'	Aveiro, Portugal Jul. 2023
Coordinated Surveys of the Southern Sky 'RADIO GALAXY PREDICTION WITH MULTI-SURVEY DATA AND ENSEMBLE MACHINE LEARNING'	Garching, Germany Feb 2023
VLA Sky Survey in the Multiwavelength Spotlight 'SEARCHING FOR RADIO GALAXY DETECTIONS WITH ENSEMBLE MACHINE LEARNING'	NRAO. Socorro, NM. U.S.A. Sep. 2022
International Conference on Machine Learning for Astrophysics - ML4Astro 'RADIO GALAXY DETECTION PREDICTION WITH ENSEMBLE MACHINE LEARNING'	Catania, Italy May 2022
Encontro Ciência '22: Encontro com a Ciência e Tecnologia em Portugal 'FINDING HIGH-REDSHIFT RADIO GALAXIES WITH MACHINE LEARNING'	Lisbon, Portugal May 2022
Encontro Nacional de Astronomia e Astrofísica 'DETECTION OF HIGH-REDSHIFT RADIO GALAXIES USING MACHINE LEARNING MODELS'	Portugal Sep. 2021
Encontro Ciência '21: Encontro com a Ciência e Tecnologia em Portugal 'USING MACHINE LEARNING TO LOOK FOR HIGH-REDSHIFT RADIO GALAXIES'	Lisbon, Portugal Jun. 2021
A precursor view of the SKA Sky 'EXPLORING NEW REDSHIFT INDICATORS FOR RADIO-POWERFUL AGNs'	The SKA Observatory Mar. 2021
Encontro Ciência '20: Encontro com a Ciência e Tecnologia em Portugal 'MINING THE RADIO SKY TOWARD THE EARLIEST AGN'	Lisbon, Portugal Nov. 2020
Encontro Nacional de Astronomia e Astrofísica 'MINING THE RADIO SKY TOWARD THE EARLIEST AGN'	Online, Portugal Sep. 2020
Ground and space observatories: a joint venture to planetary science 'MAPPING THE WINDS ON MARS. TEST STUDY FOR PLANETARY ATMOSPHERIC MONITORING WITH ALMA'	Santiago, Chile 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 - WORKSHOP - 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
GUIDE - ANSWERED QUESTIONS ABOUT OBSERVATORIES IN THE STAND OF THE INSTITUTO DE ASTROFÍSICA E CIÊNCIAS DO ESPAÇO	Oct. 2021

Service

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 CIÊNCIAS DO ESPAÇO	Sep. 2022 - Jul. 2023
PACE ANALYST - PORTUGUESE ALMA CENTRE OF EXPERTISE (PACE) - INSTITUTO DE ASTROFÍSICA E CIÊNCIAS DO ESPAÇO	2019 - 2020

Projects and Collaborations Membership

PROJECTS

Finding Lyman-alpha emitters through machine learning	Fundação para a Ciência e a Tecnologia, 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.U LISBOA.PT	Dr Israel Matute Institute of Astrophysics and Space Sciences University of Lisbon Lisbon, Portugal ✉ IMATUTE@CIENCIAS.U LISBOA.PT
Dr Hugo Messias Joint ALMA Observatory European Southern Observatory Santiago, Chile ✉ HUGO.MESSIAS@ALMA.CL	
