

Curriculum Vitae

BARBARA BALMAVERDE

Permanent Address

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Current Affiliation

INAF - Osservatorio Astrofisico di Brera,
via Brera 28, 20121 Milano

Research field: My main research interests concern the connection between the properties of radio loud AGN and its host: in particular I investigate the role of AGN feedback. I apply an intensive multi-wavelength observational approach on radio loud AGNs of different bolometric luminosity (mainly in infrared, optical, X-ray band and optical integral field spectroscopy). I'm preparing to exploit data from future observing facility, such as CTA and LSST.

EDUCATION **PhD in Astrophysics**

Università degli Studi di Torino, Italy

Date of dissertation: Feb, 2007

Title of the thesis: "**The host galaxy/AGN connection in nearby galaxies. A new view of the origin of the radio-quiet/radio-loud AGN dichotomy?**"

Supervisor: Dr. Alessandro Capetti

Applied techniques: Chandra X-ray data analysis, fit of the galaxy optical brightness profile in HST images.

B.S., Physics

Università degli Studi di Torino, Italy

GPA: 110/110

Date of Graduation: Oct, 2003

Title of the thesis: "**Measurement of black hole masses in AGNs.**"

Supervisor: Dr. Alessandro Capetti

Applied techniques: analysis of emission lines in near IR VLT spectra

WORKING **INAF- Osservatorio Astronomico di Brera, Italy**

EXPERIENCE Post Doc

01/02/2018-01/02/2019

Subject: "**Active Galactic Nuclei in the ASTRI-CTA data-challenge**"

Supervisor: A. Caccianiga

SNS - Scuola Normale Superiore, Pisa, Italy

Post Doc

01/02/2017-01/02/2018

Subject: "**Windy black holes**"

Supervisor: S. Gallerani

INAF - Osservatorio Astronomico di Bologna, Italy
Post Doc 01/02/2016-01/02/2017
Subject: "Searching for galaxy and AGN overdensities around $z \sim 6$ QSOs."
Supervisor: R. Gilli
Applied techniques: multiband photometry, creation of photometric catalogues and use of photometric redshift codes

Università degli Studi di Firenze, Italy
Post Doc 01/07/2014-01/07/2015
Subject: "The relationship between black holes and host galaxies: the role of AGN feedback."
Supervisor: A. Marconi
Applied techniques: SFR and sSFR determination through SED fitting

Università degli Studi di Firenze, Italy
Post Doc 01/07/2013-01/07/2014
Subject: "Black hole growth and AGN feedback through the cosmic time" Supervisor: A. Marconi
Applied techniques: Photometry on Herschel images, SED fitting

INAF - Osservatorio Astrofisico di Torino, Italy
Post Doc 01/02/2011-30/06/2013
Subject: "Black hole masses and the innermost structure of early-type galaxies"
Supervisor: A. Capetti
Applied techniques: analysis of HST spectra and Chandra data

Sempla srl
IT Consultant 01/06/2008-30/12/2010
Information Technology consultant: J2EE Web Developer

INAF - Osservatorio Astrofisico di Torino, Italy
Post Doc 01/01/2007-31/12/2007
Subject: "High energy observations of Extragalactic Relativistic Jets"
Supervisor: A. Capetti
Applied techniques: analysis of HST spectra and Chandra data

Grants

BANDO ASI-INFN-INAF 2017: "Exploring the radio morphology-accretion mode link in AGN through X-ray"
PI: Eleonora Torresi
Financed: 27000 euros
I'm the coordinator of the third research unit. Financed: 7000 euros.

PRIN INAF 2014: "Windy Black Holes combining Galaxy Evolution"
PI: Fabrizio Fiore
Financed: 140000 euros

PRIN INAF 2011: "A panchromatic view of the Narrow Line Region of Active Galactic Nuclei: where the monster meets the galaxy"

PI: Alessandro Capetti

Financed: 51000 euros

Membership

Member of the LSST collaboration

Young Researcher in the Transients and Variable Stars group

Italian PI: Claudia Raiteri

Member of the CTA collaboration

PI of the MURALES project (a survey of radio galaxies with VLT/MUSE)

Responsability

APPROVED OBSERVING PROGRAMS

Cumulative ESO Exposure Time (Apex, FORS2, MUSE, SINFONI):

232h 56 min 54 s

(as PI or CO-I from <http://archive.eso.org>)

ESO program and non-ESO in detail:

2018.1.00739.S Title: Dancing with the stars: a binary AGN in the ULIR radio galaxy 3C459

PI: Barbara Balmaverde

Instrument: **ALMA; 6hrs; Priority C**

2018.1.01601.S Title: The Making of a local galaxy cluster: star formation and AGN feedback in a proto-cluster at $z=1.69$

PI: Roberto Gilli

Instrument: **ALMA; Priority B**

0102.B-0048 Title: A MUse **RA**dio **L**oud **E**mission lines **S**napshot survey: completing the **MURALES**.

PI: Barbara Balmaverde

Instrument: **VLT/MUSE; 11 hrs; priority A**

2018.1.00992.S Title: A SUPER spatially-resolved assessment of the impact of AGN-driven outflows

PI: Chris Harrison

Instrument: **ALMA; Priority B**

VLA/18B-084 Title: Unveiling the large scale gas reservoir in powerful radio galaxies.

P.I: Barbara Balmaverde

Instrument: **VLA; 38.70 hrs, priority C**

2017.1.01606.S Title: "The environment of early supermassive black holes: ALMA observations of a flagship field" PI: Roberto Gilli
Instrument: **ALMA; Priority C**

2017.1.00888.S Title: A puzzling outflow in a QSO at $z=2.4$
PI: Stefano Carniani
Instrument: **ALMA; Priority A**

2017.1.00893.S title: SUPER-ALMA v2: gas fractions and depletion timescales in AGN hosts at $z \sim 2$
PI: Vincenzo Mainieri
Instrument: **ALMA**

099.B-0137(A) Title: "The MURALES survey: a MUSE Radio Loud Emission lines Snapshot."
PI: Barbara Balmaverde
Instrument: **VLT/MUSE; 19.5 hrs; Priority B**

098.A-0774(A) title: "SUPER-APEX: Molecular gas properties in X-ray selected AGN at $z \sim 2$ "
PI: Claudia Cicone
Instrument: **APEX; 28.2 hrs**

097.B-0766(A) Title: "The AGN/clusters feedback: a direct measurement of the expansion speed of the X-ray cavities."
PI: Barbara Balmaverde
Instrument: **VLT/MUSE; Obs. Time: 2hrs;**

A33TAC_9 Title: "Opening the infrared window toward the measurement of the host stellar mass in type 1 quasars."
PI: Barbara Balmaverde
Instrument: **TNG/NICS; Obs. Time: 6hrs**
Observation not performed for bad weather conditions.

2015.1.00407.S Title: "Fast outflows quenching star formation at high redshift"
PI: Alessandro Marconi
Instrument: **ALMA; 3hrs: priority B**

196.A-0377 Title: SUPER: "a Survey for Unveiling the Physics and the Effect of Radiative feedback."

PI: Vincenzo Manieri
Instrument: **VLT/SINFONI; Obs. Time: 270hrs**

094.B-0321(A) Title: "Seyfert galaxies under the MUSE microscope: the physics of the Narrow Line Region" PI: Alessandro Marconi
Instrument: **VLT/MUSE; 16hrs**

60.A-9339(A) Title: "Local AGN sample"
PI: Hawthorn/Marconi/Salvato
Instrument: **VLT/MUSE; 2hrs 46m**

AOT26/2012B-TAC14 Title: "The AGN/clusters feedback: a direct measurement of the expansion speed of the X-rays cavities."
PI: Barbara Balmaverde
Instrument: **TNG/DOLoReS; Obs. Time: 1.4hrs**
Observation not performed for bad weather conditions.

AOT13/06A-TAC_57 Title: "Active Galactic Nuclei in nearby galaxies: a new view of the origin of the radio-quiet/radio-loud dichotomy?"
PI: Barbara Balmaverde
Instrument: **TNG/DOLoReS; 2 nights**

07700157 Title: "Active Galactic Nuclei in nearby galaxies: a new view of the origin of the radio-loud radio-quiet dichotomy?"
PI: Alessandro Capetti
Instrument: **Chandra - Cycle 7; 205 ks**

AA303-2006 Title: "Deep study of nucleated dwarf ellipticals in Virgo Cluster"
PI: Alessandro Capetti
Instrument: **VLA; 31.5 hrs**

AC807-2006 Title: "Continuum survey of nearby early-type galaxies"
PI: David Axon
Instrument: **VLA; 3.5 hrs**

076.B-0221(A) Title: "Securing the First Step of the Black Hole Mass Ladder"
PI: Alessandro Marconi
Instrument: **VLT/FORS2; 9 hrs**

073.B-0263(A,B) Title: "Hunting for hypermassive black holes: the BH-galaxy connection at the high end of the mass function"

PI: Alessandro Marconi

Instrument: **VLT/FORS2; 10 hrs**

OBS. EXPERIENCE	Jun 2005 (three nights)	TNG - Santa Cruz de La Palma- Canary island - observations performed
SELECTION OF MEETINGS, SIMPOSIA, SCHOOLS, ETC	11-15 June 2018	Half a century of blazars and beyond, Torino (Italy) - poster
	4-8 June 2018	LSST TVS Survey Strategy Proposal Preparation Workshop, Bethlehem, PA, (USA)
	14-18 May 2018	CTA consortium meeting, Paris, (France)
	26-28 March 2018	Energetics and life cycles of radio sources, Astron, Dwingeloo (NL) - contributed talk
	April 2017	QSO at all cosmic epoch, Padova, Italy - poster
	Sept 2016	AGN12, Naples, Italy - contributed talk
	Sept 2014	Where Black Holes and Galaxies Meet, Trieste, Italy - contributed talk
	June 2014	Investigating the distant Universe with GRBs, AGN and Galaxies, Cefalu, Italy - contributed talk
	Oct 2012	X-ray Astronomy: towards the next 50 years!, Milano, Italy - contributed talk
	Oct 2011	Data analysis for high energy astrophysics, Palermo, Italy - contributed talk
	Mar 2004	Winter school on astroparticles and cosmology, Dolomieu, France - contributed talk
	May 2005	Italian astrophysics School, S. Agata sui due golfi (NA),Italy - contributed talk

May 2006 Italian astrophysics School: Dynamic of galaxies – AGN , Bertinoro (FC, Italy)
- contributed talk

May 2004 VI Italian National meeting on AGNs, Volterra, Italy - contributed talk

Reviewer Member-at-large of the **TAC for LBT-TNG-REM** - Call AOT37

Reviewer for the Cycle 17 Chandra Proposal Peer Review,
23-26 June 2015, Boston, Massachusetts;

Reviewer for Monthly Notices, Astronomy & Astrophysics and ApJ.

Divulgation Course: Introduction to Astrophysics
Summer School for undergraduate students, Bard (AO) Italy, one week in 2010, 2011, 2012

ASTROKIDS
Feltrinelli, Torino, May 2012

Space and ground-based Telescope	VLT/MUSE	Extensive experience (proposing, reduction and analysis of data)
	Chandra X-ray Observatory	Extensive experience (proposing, reduction of data)
	Hubble Space Telescope	Limited experience (reduction and analysis of data)
	Herschel Space Observatory	Limited experience (reduction and analysis of data)
	Other Telescopes	Observing runs with TNG, reduction of VLT/MUSE data
	CTA	Eduction and data analisys with Ctools
	LSSTs	Use of MAF for the preparation to the call for White Papers on LSST Cadence Optimization

Multiwavelength X-ray Analysis Experience Spectral fitting (Chandra and XMM data); quantitative imaging analysis;

Optical: Extensive experience with space- and ground-based imaging data (especially HST); photometry, observational techniques; optical spectroscopy (e.g., VLT/ISAAC); integral field spectroscopy (e.g., VLT/MUSE).

Mid infrared Herschel PACS and SPIRE photometry.

Gamma-ray Data analysis of ASTRI/CTA simulated data with the software Ctools and Gamma π

**COMPUTER
SKILLS**

OS: Linux, Windows, Mac

Languages: IDL, Latex, Java, Python

Software: CIAO, XMM-SAS, IRAF, SuperMongo, HIPE, Gaia, Topcat, BPZ, Hyperz

Expertise: X-ray and Gamma-ray analysis, optical spectra reduction, optical and IR photometry, IR SED fitting, Integral field spectroscopic data analysis, photometric redshift measurement

REFEREES

Dr. Alessandro Capetti

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Dr. Roberto Gilli

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via Ranzani,1, 40127-Bologna, Italy

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