Marco Barbera

Position

Associate professor of Astronomy and Astrophysics
Università degli Studi di Palermo (UNIPA), Italy

Teaching

- "Physics 1" for the Undergraduate Degree in Chemistry
- "Astrophysics Laboratory" for the Master degree in Physics

Research

- PI or participant in vibro-acoustic test campaigns conducted at the Max-Planck-Institut fur Extraterrestrische Physik (Munich, D) with use of contactless laser-scanner vibrometers to monitor the performance of thin fragile space qualified filters.
- Responsible for the design and development of the optical blocking filters of the Spectrograph and Context Imager instruments on board the NASA MIDEX solar mission MUSE (launch in 2027).
- Responsible for the design and development of the thin filters of the X-Ray Integral Field Unit (X-IFU) and Wide Field Imager (WFI) detectors on board the ESA L2 Athena mission (launch in 2037).
- Head of the Research Unit UNIPA-DiFC in the projects: LAOF (contract N. 4000120250/17/NL/BJ, 4000120250/17/NL/BJ–CCN1, 4000120250/17/NL/BJ–CCN2) and FCF (N. 4000139215/22/NL/GLC/rk) funded by ESA to develop filters for x-ray detectors in space, based on innovative technologies.
- Head of the Research Unit UNIPA-DiFC in the project H2020-INFRAIA-2018-2020: "Integrated Activities for the High Energy Astrophysics Domain (AHEAD2020)" (GA No. 871158).
- Head of the Research Unit UNIPA-DiFC in the project H2020-INFRAIA-2014-2015: "Integrated Activities for the High Energy Astrophysics Domain (AHEAD)" (GA No. 654215).
- Head of the Research Unit UNIPA-DiFC in the project TECNO-INAF 2012: "Improvement of the angular resolution of glass/plastic thin-foil X-ray mirrors for large area telescopes via active control (AXYOM)".
- Member of the Italian team of the China high energy astrophysics space mission eXTP with a key role in the design and calibration of the optical filters of the LAD instrument.
- Head of Research Unit UNIPA-DiFC in the project FP7-SPACE-2010-1 entitled "Cryogenic Electronics for Space Applications and Research (CESAR)" (GA No. 263455).
- Responsible at the XACT facility INAF-OAPA for the calibration program of the detector named Lunar Orbital X-ray Fluorescence Imaging Spectrometer (LOXIA) of the Chinese Mission Chang'E-1 (in orbit from October 2007 to March 2009).
- Responsible at the XACT facility INAF-OAPA for the calibration program of the filters of the X-ray Telescope (XRT) on board the Hinode solar mission (in orbit since September 2006).
- Head of Research Unit INAF-OAPA in PRIN-MIUR 2004 project entitled "Development and characterization of optics for X-Ray Astronomy with single and multilayer reflective coatings".
- Scientific coordinator of a project for the upgrade of XACT facility at INAF-OAPA funded by PON 2000-2006 "Ricerca Scientifica, Sviluppo Tecnologico ed Alta Formazione", Asse II, Misura II, azione 1.
- Co-I of research programs funded by NASA for the development and application of Germanium NTD microcalorimeters (NRA00-OSS-01, NRA01-OSS-01), and for the development of optical grazing incidence X-ray optics (NRA00-OSS- 01, NRA01-HEA-01).
- Co-I of two biennial programs PRIN-MIUR, 1999 and 2001 for the development and application of cryogenic X-ray microcalorimeters.
- Responsible for the design and construction of an Adiabatic Demagnetization Refrigerator (ADR) at INAF-OAPA to test cryogenic X-ray microcalorimeters.
- Visiting Scientist for 1 year at the Center for Astrophysics, Cambridge, MA, collaborating with dr. Eric Silver to the development of Ge NTD X-ray microcalorimeters, and with dr. Herbert Schnopper to the development of plastic foil X-ray grazing incidence optics.
- Visiting Scientist for 2 months at the Marshall Space Flight Center, Huntsville, AL, US to participate in the end-to-end calibration of the Chandra space observatory.
- Visiting scientist for 7 months at the Center For Astrophysics, Cambridge, MA. Member of the High Resolution Camera instrument team of the Chandra space observatory.
- Collaborator in the design and construction of the X-ray Astronomy Calibration and Testing (XACT) facility at INAF-OAPA.

Education

1991 – M.S. Degree in Physics, Università degli Studi di Palermo
1995 – PhD. in Physics, Università degli Studi di Palermo

Nationality

Italian

Place and date of birth

Palermo, 02/10/1967