



# IASF Bologna



Istituto di **A**strofisica **S**paziale e **F**isica Cosmica di Bologna

## IASF-Bologna

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The institute acknowledges and thanks INAF, NASA, and ESA for the images.

The background of the cover image has been made by the superposition of the Orion Nebula taken from the Hubble Space Telescope archive, with images from Spitzer and XMM-Newton.





## Astrophysics and cosmology

Carried on in close collaboration with scientists and research groups from all over the world, IASF-Bologna studies the Universe in many different fields, from the cosmic background radiation, black holes, active galactic nuclei, star and galaxy formation, gamma-ray bursts, to compact galactic objects – in other words, covering the most relevant themes in modern astrophysics and cosmology.

**IASF-Bologna**, one of the institutes of INAF - the Italian National Institute for Astrophysics, specialises in space science, bringing together expertise in both technological and developmental research, and in astrophysics and cosmology.

**IASF-Bologna** participates in national and international research programmes, many of which are realized in collaboration with ASI - the Italian Space Agency, universities and research institutions from Italy and abroad.

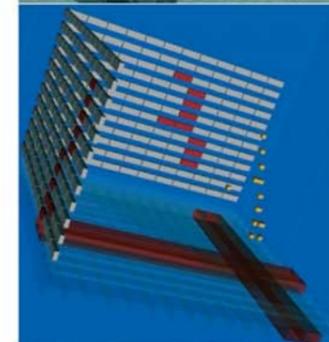
**IASF-Bologna's** staff have been, and still are, involved with a high level of responsibility, in a number of national (ASI), European (ESA - European

Space Agency) and international (NASA, etc...) scientific space missions, like BeppoSAX, XMM-Newton, INTEGRAL, AGILE and Planck.

## AGILE wins the Bruno Rossi Prize

The *Bruno Rossi Prize* for 2012 has been awarded to the team of the Italian space mission AGILE, led by Marco Tavani of INAF Rome, to which IASF-Bologna has made very important contributions. The *Bruno Rossi Prize*, which IASF-Bologna already received in 1998 for the BeppoSAX mission, is awarded annually by the American Astronomical Society for a significant contribution to high energy astrophysics.

To study the Universe, IASF-Bologna designs and constructs instruments that cover the whole of the electromagnetic spectrum from microwaves to the infrared, and from X-rays to gamma rays.



## A wide range of instrumentation

The staff of **IASF-Bologna** has expertise in the design, development, realization and management of instrumentation for astrophysics in nearly all the bands of the electromagnetic spectrum: radiometers and microwave antennas, millimeter polarimetric antennas, X- and gamma-ray detectors, together with laboratories and equipment for ground testing and control of space instrumentation..

## Space infrastructures

**IASF-Bologna** possesses thermo-vacuum chambers and cryo-chambers to test space instrumentation in extreme conditions (pressures down to  $110^{-6}$  mBar, and temperatures from  $-250^{\circ}\text{C}$  to  $20-70^{\circ}\text{C}$ ), a 10000-1000 class clean room, plus a radioactive source repository and labs for testing and calibration of X- and gamma-ray detectors. These facilities are complimented by a high performance computer system centre especially designed for space mission management control and data analysis.

## The future

**IASF-Bologna** is involved in some of the most important national and international projects for future space missions in the domains of astrophysics and cosmology, e.g. the *Cosmic Vision 2015-2025* programme of the European Space Agency.

## The staff of IASF-Bologna



- permanent staff
- temporary staff
- fellows and doctoral students
- collaborators

About 60 people work at **IASF-Bologna**, approximately half of which are permanent research, technical and administrative staff; the other half is composed of short term contract staff, research fellows, and collaborators.

## IASF-Bologna and the city

**IASF-Bologna** promotes a number of initiatives in the field of education and public outreach (e.g. the annual Researcher's night). A significant effort is also made by **IASF-Bologna** in the local organization of seminars and exhibitions in direct collaboration with schools and school teachers.