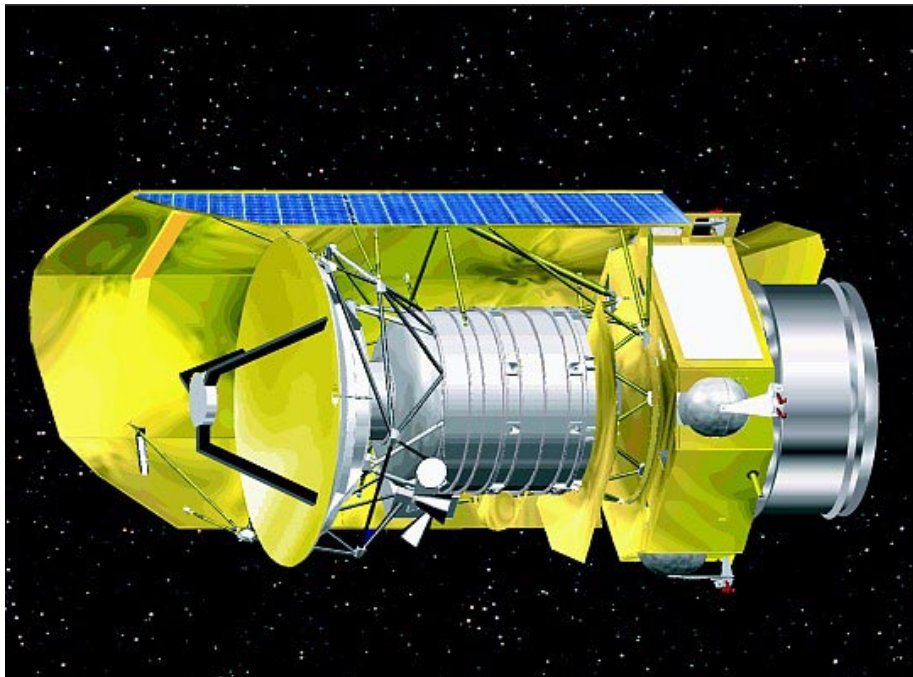


ESA Symposium on

The Promise of FIRST

Toledo, Spain, 12-15 December 2000



2nd Announcement

Background

The ESA Cornerstone mission FIRST - the Far InfraRed and Submillimetre Telescope - is scheduled to be launched in the year 2007. FIRST will be the first space observatory to cover the submillimetre and far infra-red part of the spectrum. It will have a science payload complement consisting of three instruments and offer unprecedented capabilities for photometry and spectroscopy in the 60-670 μm range.

The instrument complement consists of:

- PACS - a photoconductor detector array camera and spectrometer covering 60-210 μm
- SPIRE - a bolometer detector array camera and spectrometer covering 200-670 μm
- HIFI - a heterodyne very high resolution spectrometer covering 110-600 μm

FIRST will operate from an orbit around the second Lagrangian point (L2) in the Sun-Earth system, and will offer a nominal lifetime of 3 years of routine operations. Approximately two thirds of the available observing time is open time, thus FIRST will be offering unique capabilities to the whole astronomical community!

Science objectives

The FIRST science objectives target the ‘cold’ universe. The key science objectives emphasise specifically the formation of stars and galaxies. Typical observing programmes will include:

- Deep unbiased extragalactic photometric surveys
- Photometric surveys of active and quiescent molecular clouds
- Follow-up spectroscopy of specially interesting galactic and extragalactic survey sources
- Spectral surveys of different types of objects, including early epoch starburst and active galaxies
- Studies of ‘individual’ sources in detail
- Studies of comets and other solar system objects

Observations have never been performed in space across the ‘prime band’ of FIRST. From past experience, it is also clear that the ‘discovery potential’ is significant when a new capability is being implemented for the first time.

Aims of the meeting

It is necessary and appropriate already now to address the very important issue of how to use the available observatory time in the optimum manner, in order to maximise the scientific return from the mission.

In this context, a question of prime importance is what fraction of the total time ought to be allocated to ‘key’ programmes (assumed to need relatively large amounts of observing time, e.g. various kinds of surveys) as opposed to smaller ‘focussed’ or ‘general’ programmes.

Given the stated science objectives, and that FIRST is the first facility of its kind, it has always been recognised that ‘key’ programmes will play an important role; thus it is foreseen that a ‘significant’ fraction of the observing time will be used for such programmes. However, it is not clear what that fraction should be.

All astronomy missions and observatories - ground, air, and space based - to varying degrees rely on, and complement, each other; FIRST is not an exception. It is therefore vital - especially for major instruments where the cost per unit observing time is high, which certainly applies to FIRST - to make sure that each facility is used in the best possible way. This means attracting all available good ideas, including those from members of the community who may not ‘automatically’ consider themselves potential FIRST users.

Thus, specifically we want to:

- Announce FIRST and its foreseen science capabilities to the astronomical community
- Identify areas of astronomy where the impact of FIRST will be the greatest
- Consider the issue of large ‘key’ programmes versus smaller ‘traditional’ programmes
- Establish complementarity to other facilities

Organisation

After introducing the FIRST mission and its science instruments, invited speakers will introduce various areas of astronomy, which then will be discussed - in smaller groups - with the aim of addressing the questions listed above. These discussions could produce e.g. prioritised lists of potential observing programmes, but could also identify areas on which one should not spend extensive amounts of FIRST observing time.

Invited speakers

The list of invited speakers is being finalised and will include speakers addressing astronomical areas of importance in connection with the scientific objectives of FIRST from a variety of points of view. The list of confirmed speakers includes:

Rafael Bachiller, OAN, Madrid, Spain
Michael Barlow, University College, London, United Kingdom
Dominique Bockelée-Morvan, Observatoire de Paris, Meudon, France
José Cernicharo, CSIC, Madrid, Spain
Jacqueline Fischer, Naval Research Laboratory, Washington DC, USA
Reinhard Genzel, MPE, Garching, Germany
Maryvonne Gerin, ENS, Paris, France
Thijs de Graauw, SRON, Groningen, Netherlands
Matt Griffin, QMW, London, United Kingdom
Michel Guélin, IRAM, Grenoble, France
Martin Kessler, ISO Data Centre, ESA, Spain
Andrew Lawrence, Royal Observatory, Edinburgh, United Kingdom
Emmanuel Lellouch, Observatoire de Paris, Meudon, France
Dieter Lutz, MPE, Garching, Germany
Max Pettini, Institute of Astronomy, Cambridge, United Kingdom
Tom Phillips, Caltech, Pasadena, USA
Göran Pilbratt, Astrophysics Division, ESA, Netherlands
Albrecht Poglitsch, MPE, Garching, Germany
Michael Rowan-Robinson, Imperial College, London, United Kingdom
Rens Waters, University of Amsterdam, Netherlands
Edward Wright, University of California, Los Angeles, USA

Science Organising Committee

The FIRST Science Team is the Science Organising Committee (SOC):

Peter Barthel, University of Groningen; Mission Scientist
José Cernicharo, Consejo Superior de Investigaciones Científicas; Mission Scientist - Co-Chairman
Pierre Encrenaz, Observatoire de Paris; Mission Scientist
Thijs de Graauw, SRON, Groningen; HIFI Principal Investigator
Matt Griffin, QMW, London; SPIRE Principal Investigator
Paul Harvey, University of Texas; Mission Scientist
Martin Harwit, Cornell University; Mission Scientist
Thomas Paßvogel, ESA; FIRST/Planck Project
Tom Phillips, Caltech, Pasadena; HIFI Co-Principal Investigator
Göran Pilbratt, ESA; Project Scientist - Co-Chairman
Albrecht Poglitsch, MPE, Garching; PACS Principal Investigator
Laurent Vigroux, CEA SAP, Saclay; SPIRE Co-Principal Investigator
Christoffel Waelkens, University of Leuven; PACS Co-Principal Investigator

Venue

The venue will be Hotel Beatriz in Toledo (located approximately 70 km from Madrid), Spain. The meeting will start on the morning of Tuesday 12 December 2000 and last four full days. Toledo can conveniently be reached by car, bus, and train from Madrid.

Proceedings

The Symposium proceedings will be published approximately 3 months after the Symposium by the ESTEC Publications Division in the ESA Special Publication series as ESA SP-460. Author instructions will be sent to all authors and published on the Symposium website (see below).

Local Organising Committee

The Local Organising Committee (LOC) consists of:

- J. Cernicharo (CSIC) - Chairman
- F. Najarro (CSIC)
- J. Martin-Pintado (OAN)
- F. Langa (U. Castilla La Mancha)
- E. Gonzalez-Alfonso (CSIC)
- M. J. Sempere (CSIC)

Timetable and more information

The 3rd Announcement and Call for Papers will be circulated in July 2000. Up to date information regarding the meeting, an online form for expressing your interest, and local information, will be made available via the Symposium website which is linked to from the FIRST website at URL <http://astro.estec.esa.nl/FIRST>.

Sponsors

This ESA Symposium is co-sponsored by:

- Caja de Ahorros de Castilla la Mancha
- Consejo Superior de Investigaciones Cientificas
- Cortes de Castilla La Mancha
- Hotel Beatriz
- Iberdrola
- Spanish Ministry of Education and Culture (TBC)
- Spanish Society of Astronomy