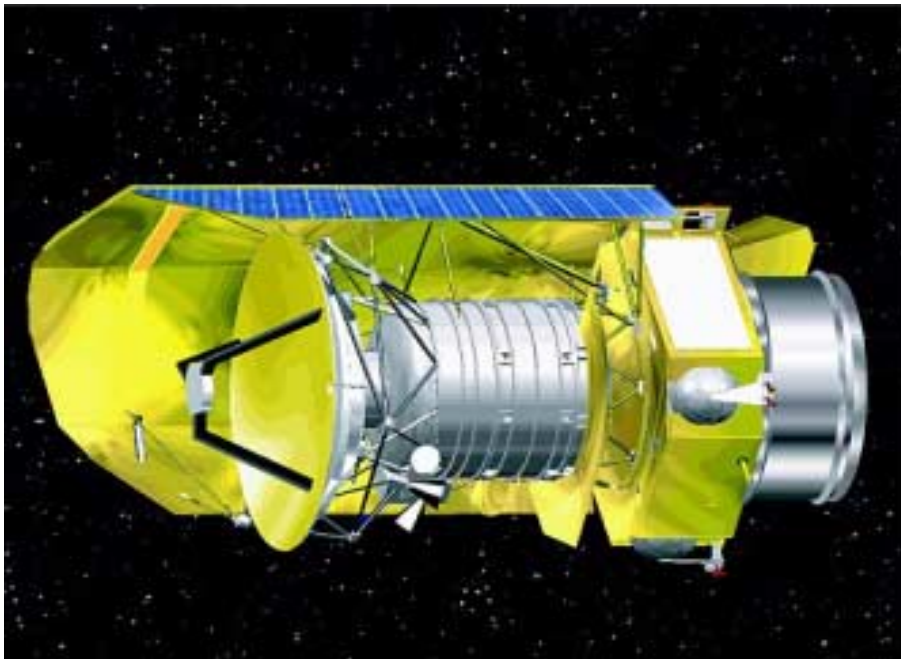


ESA Symposium on

The Promise of FIRST

Toledo, Spain, 12-15 December 2000



3rd Announcement and Call for Papers

Registration and abstract submission deadline: 1 October 2000

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 bolometer/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 158-610 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

The meeting will have three main components: invited talks, contributed talks and posters, and discussion/workgroup sessions. After introducing the FIRST mission and its science instruments, invited speakers will introduce various areas of astronomy, contributed talks and poster sessions will be held, and these areas will then 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, and as a byproduct could also identify areas with lower priority for spending extensive amounts of FIRST observing time.



Invited Speakers

The invited speakers will be 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, and tentative titles of their presentations, includes:

- Philippe André, CEA Saclay, France: The Earliest Stages of Star Form.: Protostars and Dense Cores
Michael Barlow, University College, London, United Kingdom: Photometry, variability, and SEDs
Dominique Bockelée-Morvan, Observatoire de Paris, Meudon, France: Comets and asteroids
José Cernicharo, CSIC, Madrid, Spain: H₂O in interstellar and circumstellar clouds: What we know and what could be expected from FIRST
Ewine van Dishoeck, Sterrenwacht Leiden, Netherlands: High-resolution gas spectroscopy
Jacqueline Fischer, Naval Research Laboratory, Washington DC, USA: Normal and dwarf galaxies
Asuncion Fuente, OAN, Madrid, Spain: Outflow dynamics, accretion disks, and chemical abundances
Reinhard Genzel, MPE, Garching, Germany: A general view of IR astrophysics
Maryvonne Gerin, ENS, Paris, France: The diffuse interstellar medium
Thijs de Graauw, SRON, Groningen, Netherlands: The FIRST HIFI instrument
Matt Griffin, QMW, London, United Kingdom: The FIRST SPIRE instrument
Michel Guélin, IRAM, Grenoble, France: Spectroscopy and physical conditions of gas
Martin Kessler, ISO Data Centre, ESA, Spain: ISO's view of the IR universe
Andrew Lawrence, Royal Observatory, Edinburgh, United Kingdom: AGNs
Emmanuel Lellouch, Obs de Paris, Meudon, France: Planetary photometry, chemistry and mineralogy
Dieter Lutz, MPE, Garching, Germany: Spectroscopy of ultraluminous and interacting galaxies
Max Pettini, Inst of Astr, Cambridge, UK: Chemical abundances in distant galaxies: variation with z
Thomas Passvogel, FIRST/Planck Project, ESA, The Netherlands: The FIRST mission: Implementation status and schedule
Tom Phillips, Caltech, Pasadena, USA: FIRST in the context of other facilities
Göran Pilbratt, Astrophysics Division, ESA, Netherlands: The FIRST mission: Science objectives and this meeting
Albrecht Poglitsch, MPE, Garching, Germany: The FIRST PACS instrument
Jean-Loup Puget, IAS, Orsay, France: Science with Planck
Michael Rowan-Robinson, Imperial College, London, UK: Deep surveys and source counts
Rens Waters, University of Amsterdam, Netherlands: From ISM dust to protoplanetary dust
Edward Wright, University of California, Los Angeles, USA: Surveys from the radio to X-rays

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

Call for Papers

Contributed papers, both for oral presentation and poster sessions are solicited. An important criterion for oral presentations is to put FIRST in the context of a specific issue, and to address one or more of the aims given for this meeting. Use the online registration form to give title and oral/poster presentation preference of your proposed presentation. Absolute deadline for submitting the abstract is 1 October 2000. The scientific programme will be posted on the symposium website around 25 October 2000.

Venue and Registration

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.



View of Toledo by El Greco, Metropolitan Museum of Art

Use the online registration form to register for the conference. The deadline is 1 October 2000, early registration is strongly encouraged. The registration fee is 30,000 Pesetas (180 Euro) and includes coffee breaks, conference dinner, and a copy of the proceedings. Late registration will be 41,500 Pesetas (249 Euro).



The symposium organisers encourage all participants to stay in the conference hotel. Special prices of 13,300 Pesetas (80 Euro) per night for a single room, or 11,600 Pesetas (70 Euro) per night (per person) for a double room including half board (breakfast and lunch), or 15,300/13,300 Pesetas (92/80 Euro) for a single/double (per person) room with full board (breakfast, lunch, and dinner) have been negotiated. Reservations for Hotel Beatriz should be made on the online registration form at the time of registration.

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.

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)
- J.R. Goicoechea CSIC <javier@isis.iem.csic.es>

The LOC Conference Secretary is:

- A. Diez (CSIC) <asun@astro.iem.csic.es>

Timetable and more information

The deadline for registration is 1 October 2000, early registration is encouraged. The scientific programme will be made available on the symposium website around 25 October 2000.

For latest and local information, and an online registration form, consult 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 Científicas
- Cortes de Castilla La Mancha
- Hotel Beatriz
- Iberdrola
- Junta de Comunidades de Castilla la Mancha
- Instituto Geográfico Nacional
- Ministerio de Ciencia y Tecnología
- Sociedad Española de Astronomía
- Universidad de Castilla la Mancha