



# DOCUMENT

## 5<sup>th</sup> Announcement of Opportunity for Science Planners in the NASA-led IRIS Mission

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## 1 PURPOSE AND SCOPE

The Interface Region Imaging Spectrograph (IRIS) is a NASA Small Explorer (SMEX) mission that allows tracing the flow of solar energy and plasma from the photosphere through the chromosphere and transition region into the corona using spectroscopy and imaging in ultraviolet windows between 130 and 283 nm. IRIS can reveal the dynamics of the chromosphere and transition region and allow understanding the processes powering them. IRIS is a major leap from previous and existing solar spectrographs (e.g., SOHO/CDS or SUMER, Hinode/EIS) in terms of spatial (0.3-0.4 arcsec), temporal (2 s) and spectral (3 km/s) resolution. More information about the IRIS mission can be found at <http://iris.lmsal.com>

At its meeting in November 2014, ESA’s Science Programme Committee (SPC), approved ESA’s participation in IRIS under the form of a “Mission of Opportunity”. The SPC approved in October 2018 the extension of the participation in the mission operations for 2019-2020. The ESA participation to the IRIS mission entails the access of competitively selected scientists based in ESA Member States to the mission’s observations.

Four Announcements of Opportunity (AO) for participation in the IRIS mission under the form of “Science Planners” were issued in April 2015, March 2016, April 2017, and April 2018.

The present 5<sup>th</sup> Announcement of Opportunity (AO) solicits proposals for participation in the IRIS mission from scientists working in the ESA Member States, under the form of “Science Planners”, according to the duties and rights indicated in Section 2. A maximum of three scientists will be appointed through the present AO. The appointment duration will be one year.

The schedule for this AO cycle is given in Table 1.

**Table 1: AO schedule and deadlines**

<b>Date</b>	<b>Event</b>
15 April 2019	Release of this AO
15 May 2019 – 12:00 hrs (noon) CEST	Proposals due
July 2019	Appointment of successful proposers

## 2 APPOINTMENT REQUIREMENTS AND CONDITIONS

Because of the narrow field of view of the IRIS spectrograph, planning of the observations is a critical task, necessary to achieve the best possible science output from the mission. Given also the extremely variable nature of the target (with active regions evolving on short time scales) science planning is a key element of IRIS’ exploitation, and one cannot simply



decouple science observations from their planning, as can be done, e.g., in many astronomical space telescopes. For these reasons, the most effective approach is to train selected scientists to perform (in close cooperation with the IRIS team following the regular process involving a weekly science meeting) the planning for a number of weeks, during which they can execute their own science observations as well as the regularly scheduled calibration/synoptic and coordination programmes.

This approach has the added benefit (apart from maximising the science output) of providing a unique hands-on training opportunity for the involved scientists, allowing them to operate a live instrument and to acquire the understanding necessary to best exploit the data. This planning experience may be useful e.g., in the context of understanding and preparing observations for future solar physics missions, such as Solar Orbiter.

The selected scientists will act as IRIS “Science Planner” and run the IRIS instrument for 2 weeks each (spread throughout the year). This involves creating and uploading the daily science plan to IRIS for the coordinated observing programmes (in particular also with Hinode and ground-based observatories) as well as regularly scheduled calibration programmes. In addition, each selected scientist will have the possibility to run her/his own science observing programmes during those periods.

Selected scientists (unless they have previous and recent experience in IRIS planning) will be required for their first planning phase to travel to the “Lockheed Martin Solar and Astrophysics Laboratory” – LMSAL (Palo Alto, CA, USA) for at least 10 days. They need to be at LMSAL from the Wednesday before their planning week and stay throughout the planning week. Subsequent planning can be done remotely from their home institution. Candidates should take into account that remote planning requires timeline work during morning hours in Pacific time with the deadline for timeline submission at noon Pacific time (21:00 CET).

The selection of scientists responding to the present AO will be performed through a peer-review process, in coordination with the IRIS team, to ensure both optimal science return to the involved scientists and, among other things, spacecraft safety and overall science return to the mission.

The proposals should demonstrate the candidate’s scientific expertise and technical expertise in science planning in the fields relevant for the IRIS mission and should include a brief synopsis of the science programmes the candidates plan to run.

The candidates should state their commitment to carry on the planning activities as described above, including travelling to LMSAL for the required periods.

The proposals should also include a Letter of Endorsement from the relevant Institution or Agency about the financial support for the travel costs and for the accomplishment of the required activities.



The successful candidates will be appointed as “Science Planner” for the IRIS mission by the Director of Science for a period of one year. Their appointment is *ad personam*.

Each selected scientist will be required to submit at the end of the appointment a short report of his/her IRIS-related activities to ESA.

### **3 CONTENTS OF THE PROPOSAL**

Proposals submitted in response to the AO are limited in length to 5 A4 pages (minimum font size 11 pt), and must contain the following information:

- A cover letter stating the proposer’s name and affiliation and explicitly mentioning the proposer's title, position, institute, address, telephone number and e-mail address (max. 1 page).
- A brief curriculum vitae also including the most relevant publications (max. 1 page).
- A summary of the scientific expertise and technical expertise in science planning in the fields relevant for the IRIS mission and a synopsis of the science programme the candidate plans to run, as well as a statement concerning the time availability commitment to carry out the planning activities as described in Section 2, including travelling to LMSAL for the required periods (max. 2 pages).
- A Letter of Endorsement from the relevant Institution or Agency about the financial support for the travel cost and the accomplishment of the required activities (max. 1 page).

### **4 EVALUATION CRITERIA**

The following criteria will be used (in no particular order) in assessing and evaluating individual proposals:

- Candidate’s scientific and technical expertise in the fields relevant for the IRIS mission.
- Scientific merit of the programme the candidate plans to run.
- Adequacy of the time that the candidate intends to devote to the required activities.
- Adequacy of resources available to the candidate to carry out the required activities.

### **5 PROPOSAL SUBMISSION**

Proposals shall be submitted electronically in PDF format using the interface available at <http://www.cosmos.esa.int/web/iris-2019> and must be received not later than the date indicated in Table 1. Proposers will receive confirmation upon successful receipt of their proposals.



Further queries should be addressed to:

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