



Announcement of Opportunity for Key Programmes

Executive Summary

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Executive Summary

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Chapter 1. Executive Summary

1.1. This document

Welcome to the Herschel Space Observatory (aka Herschel) Announcement of Opportunity (AO) for Key Programme (KP) observing proposals! The purpose of this document, the Executive Summary, is:

- to provide the essentials of the AO information in a brief easy-to-read document, and
- to act as guide for further reading by pointing out what additional information is available.

This document will tell you where you will find the information you are looking for. It is recommended to print the PDF version of this document and to read it all before proceeding to the rest of the AO package.

Please note upfront that this AO has two deadlines, one for Guaranteed Time (GT) proposals, and another later one for Open Time (OT) proposals. The GT KP phase has now been completed and the GT KP reserved observations list has been made available. It is now possible to submit OT KP proposals, the deadline for OT KP proposal submission is 25 October 2007.

1.2. Herschel observing

Herschel is an ESA cornerstone observatory for the far infrared and submillimetre, covering roughly the 57-670 μm spectral range. Herschel has a 3.5 m diameter passively cooled low emissivity telescope, and a payload of three scientific instruments called HIFI, PACS, and SPIRE. The instrument complement can perform imaging photometry in six broad bands, low- to medium resolution imaging spectroscopy, and very high resolution heterodyne spectroscopy across most of the Herschel spectral range. The instrument focal plane units are cryogenically cooled using a superfluid helium cryostat which gives the mission a finite lifetime. More information about Herschel and its instruments can be found on this website in general and in the five observers' manuals in the AO documentation package in particular.

Herschel will provide the astronomical community with a facility to carry out astronomical observations for a period of three years, starting six months after the launch planned for 31 July 2008. The available observing time is divided into Guaranteed Time (GT) and Open Time (OT). Nominally 19776 hours of schedulable observing time is available throughout the mission, 32% is GT and the remainder is OT. The GT is owned by contributors to the mission, primarily by the instrument Principal Investigator (PI) consortia. The OT will be made available to the worldwide astronomical community, including the GT holders, through a standard competitive proposal procedure.

1.3. The Key Programme AO

This Announcement of Opportunity (AO) is the initial Herschel AO and is for so-called Key Programmes (KPs) only. It has two parts, in the first part only GT KP proposals were due. After closing the call for GT holders, a scientific and technical evaluation of the proposed observations was conducted, and a list of 'reserved observations' has been produced and made public. Now, OT KP proposals are solicited. This second part of the call is open for all members of the astronomical community, including the GT holders. When the KP AO procedure has been completed, the first AO cycle for 'regular' proposals will be initiated, however, only the GT part will be performed before the launch of Herschel, the OT part will await the verification of the in-flight performance of the observatory. All observing time proposals will be reviewed by the Herschel Observing Time Allocation Committee (HOTAC).

The Key Programme (KP) concept has been introduced to ensure that there is a mechanism allowing observing programmes requiring large amounts of observing times. It is the intention that they are

carried out 'early' in the mission to enable follow-up observations to be carried out by Herschel itself. A KP must have the following characteristics:

- exploit unique Herschel capabilities to address (an) important scientific issue(s) in a comprehensive manner,
- require a large amount of observing time to be used in a uniform and coherent fashion, and
- produce a resulting well characterised dataset of high archival value.

The sizes of the KPs are foreseen to be in the range 100-1000 hours of observing time, however, the upper limit is not fixed. It has to be recognised that the awarding of such large amounts of observing time requires that the observations are reduced in a timely fashion and the resulting data products and the methods employed to generate them are shared with the community. More information can be found in the 'Policies and Procedures' document in the AO documentation package.

The sequence of dates for the KP AO is as follows:

- 1 February 2007 12:00 UT: The Herschel KP AO is issued. Guaranteed Time (GT) KP proposals can now be submitted.
- 4 April 2007 12:00 UT: Submission deadline for GT KP proposals. Proposals can no longer be submitted or updated. Start of GT HOTAC process.
- 9 July 2007 12:00 UT: Announcement of final GT KP 'Reserved Observations'. Open Time (OT) proposals can now be submitted.
- 25 October 2007 12:00 UT: Submission deadline for KP OT proposals. Proposals can no longer be submitted or updated. Start of OT HOTAC process.
- 28 February 2008 12:00 UT: Announcement of final accepted OT KP proposals and observations.

The sequence above is described in greater detail in the 'Policies and Procedures' document in the AO documentation package. Note that 12:00 UT refers to 12:00 hours (noon) Universal Time (UT=GMT).

1.4. The AO package

The AO package consists of 'administrative' documentation, manuals, the Herschel observation planning tool (HSpot), and supporting documentation and information.

1.4.1. AO documentation

The following documents are provided:

- The Herschel Key Programme Announcement of Opportunity. This letter from the ESA Director of Scientific Programme is the formal Announcement of Opportunity to apply for the Herschel Key Programme observing time.
- Executive Summary (this document). The essentials of the call, summarises the AO and associated documents, tools, and services, providing the reader with a concise overview and help on where to find what information.
- Policies and procedures. This is the 'administrative' document of the Announcement of Opportunity, providing all necessary information about the policies adopted and the procedures to be followed.

- Herschel Observer's Manual. Provides information about Herschel pertinent to using the observatory from the perspective of an observer.
- HIFI/PACS/SPIRE/SPIRE-PACS Parallel mode Observer's Manual. Provides information about and how to use the HIFI/PACS/SPIRE instrument and the SPIRE/PACS parallel mode to perform observations. (Four documents, one manual each for HIFI, PACS, SPIRE, and the SPIRE-PACS parallel mode.)
- HSpot Users' Manual. Provides information about and how to use the HSpot tool itself to plan Herschel observations. There is also a separate document giving information about 'known issues' with HSpot.
- Reserved Observations. Information on the accepted set of GT KP proposals (proposal id, title, PI name and institution, and links to the abstracts) is provided in the AO web pages, together with instructions on how to access their associated AORs through HSpot as well as on how to search the database of Reserved Observations to avoid potential duplications.

1.4.2. AO tools

The AO package also includes the following tools:

- HerschelFORM LaTeX package: This is the LaTeX package to be used for OT KP proposal generation.
- Reserved Observations Search Tool: This is a java-based web tool developed at the HSC to search the 'Reserved Observations List', the list containing those observations already planned by GT KP proposers, which cannot be duplicated by OT KPs.
- HSpot: This is the software tool for planning Herschel observations and submitting proposals, which has been built starting from the tool developed for the Spitzer Space Observatory called 'Spot', thus 'Herschel-Spot' or simply 'HSpot'. The look and feel of this tool is that of the Spitzer tool, but it has been fully adapted for Herschel. It also performs background and confusion noise estimation.

1.4.3. Additional documentation

There will be additional material containing explanatory material not part of the 'core' AO documentation. The 'AO Latest News' page should be consulted on a regular basis.

1.5. The webpages

The [Herschel Science Centre webpages](#) contain information about Herschel and the complete AO package and associated information and user services.

The information related AO package can be found by clicking the menu buttons under 'Herschel AO for Key Programmes' heading in the menu on the left side of the homepage. The names of the various buttons are meant to be self explanatory.

The Herschel user services links are found below the AO information menu buttons. The currently available services are Helpdesk, Proposal Handling, and Mailing lists. The 'Services Overview' button provides a description of these services. Note that in order to enable us to help in the best possible way you need to be a registered user to use these services. You can register by clicking on the 'User Registration' button and follow the instructions.

1.6. Proposed way forward

We propose you start working with the AO in the following way:

- Read the Executive Summary (this document) for an overview, then
- consult the AO 'how-to' step-by-step webpage and follow the instructions there.

It is encouraged that you to register as a user right away, in the process you can set your notification levels so that we can offer you the best possible help via the Helpdesk.

Welcome to the Herschel Space Observatory!