# 1. Proposal checklist

A. Does this proposal request coordinated observations with XMM-Newton, requiring that XMM-Newton time be awarded too? Yes  $\Box$  No  $\boxtimes$ 

B. Is this proposal a re-submission of a proposal already approved by HOTAC in the OT1 Call and awarded Priority 2 Time, which you wish to be considered for an upgrade to Priority 1? Yes  $\boxtimes$  No  $\square$ 

C. Is this proposal robust against partial completion (e.g. due to mission ending)? Yes  $\Box$  No  $\boxtimes$ 

D. Does this proposal request ToO or ToO-like observations? Yes  $\Box$  No  $\boxtimes$ 

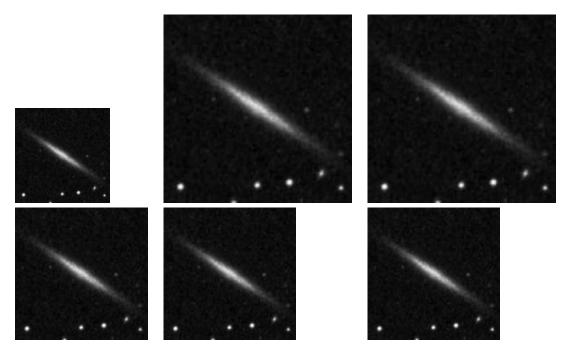
E. Does this proposal contain time-constrained observations that request that the observations be carried out between specific dates or be completed before a specific date? Yes  $\Box$  No  $\boxtimes$ 

F. Have you run the Herschel Duplication Checker Tool and ensured that there are no unjustified duplications of AORs approved in previous Calls? Yes  $\boxtimes$  No  $\square$ 

# 2. Description of the proposed programme (max. 3 pages)

**2.1 Scientific Goals:** Scientific background of the project, including the pertinent references; clear statement of the problem to be solved and how your observations with Herschel will resolve it.

Proposals that request large amounts of time should additionally demonstrate that their proposal provides a unique heritage commensurable with the amount of time (and thus helium cryogen) requested.



**Figure Array:** Use this if you have to include, for example, images of a sample of galaxies as a table rather than just individual figures as shown below.

2.2 Need for Herschel: Here you must demonstrate above all else the need to have Herschel Space Observatory data for the present proposal. HOTAC will weight very highly in its deliberations the capacity of a programme to exploit the unique benefits and advantages of Herschel for carrying out the programme over alternative, particularly ground-based, facilities and will reject proposals that it believes could be reasonably carried out elsewhere than with Herschel. Given the limited amount of cryogen remaining, HOTAC will value above all else observing programmes where Herschel can make a fundamental contribution to attaining new knowledge in important scientific questions.

2.3 Science Exploitation Plan: A brief, clear description of how the proposer plans to exploit the data scientifically after the observations are made. This description should be as non-technical as possible so that it is clearly understandable even to non-experts in the proposed field.

2.4 Relation to other observations: An explanation of what other observations (ground-based or satellite) will be combined with the requested Herschel Space Observatory observations to obtained the desired results. A description of whether these observations are already available, are being requested simultaneously, or will be requested in the future. Planned follow-up to Herschel Space Observatory observations should be detailed, as should the dependence of Herschel Space Observatory data reduction on the future availability of observations from other facilities.

Please state if the current proposal is linked to any others that are currently being submitted. If you are requesting coordinated XMM-Newton time you MUST answer "yes" the appropriate box in the check list to flag this fact to HOTAC.

#### 2.5 References:

- author1, year, reference
- author2, year, reference
- $\bullet\,$  author3, year, reference
- author4, year, reference

2. Description of the proposed programme (cont.)

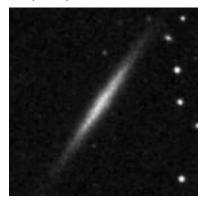


Fig 1: Standard single figure command. Put the caption of the figure here.

## 3. Technical Implementation (max. 1 page)

**3.1 Observing Strategy**: Justify the observing strategy. This should include a detailed description of the proposed observing modes and observation parameters, target selection, sensitivity, expected s/n, etc...

This box is where you show that your observing programme is both feasible and well thought out and that the way that you intend to use the instruments is efficient. It is important that, for faint targets, you show that the achieved s/n will be adequate for your science goals.

**3.2 Observing Time Requirements:** This box is where you must justify the total amount of time that has been requested. This section must include a brief summary of the data to be collected and justification the total observing time requested. Proposals should demonstrate that they are efficient in telescope use and that the requested time is fully justified.

This calculation must be completely transparent so that HOTAC can see why you need the amount of time that you have stated; in particular, any difference between the total time for the AORs that is given in HSpot and the total time that you have requested must be justified in detail. It is essential that HOTAC can see clearly how the total time requirement figure is arrived at.

**3.3 Other Special Requirements or Constraints**: A key part of the technical implementation is to justify any constraints on your observations, be they timing, chopper orientation, or the scan or the array orientation on the sky. Constraints usually make observations less efficient, particularly for scheduling, but may be essential to make the observations possible, or to obtain the science that is required. All constraints should be declared and justified in the proposal; new constraints cannot be added later unless the need for them is declared in advance and dummy constraints are submitted initially. Bear in mind that there is a risk associated with requesting highly time constrained observations late in the mission!

If you have time constraints on your observations, you should answer "yes" in the appropriate box in the check list to flag this both to HOTAC and to the Mission Planners who will schedule the observations.

Users should state in this section of the proposal template if part (or all) of the proposal is under ToO conditions, which are the triggering conditions and required reaction times. Check the HerschelFORM pdflatex manual for more details. If you have such observations, it is essential that you answer "yes" in the appropriate box in the check list to flag this fact. Should you choose to trigger a ToO after your proposal is accepted you must demonstrate that it fulfills the trigger conditions that you have specified.

**3.4 Duplication analysis:** Here you should give a description of your findings of analysis of your target list with the Herschel Duplication Checker. As a minimum there should be a clear statement that you have checked your AORs list against the database of approved observations and are satisfied that there are no potential duplications of observations save for those that are totally and clearly justified here. This must be combined with the answer "yes" in the appropriate box in the check list.

Any potential duplications with approved observations that you find must be detailed and justified as being permissible within the rules on duplications and as not implying the same, or very similar science. Details of what constitutes a duplication of existing observations can be found in the Herschel Duplication Policies Document for the OT2 Call. HOTAC will not approve proposals that duplicate already approved science and will delete any individual duplicating observations in accepted proposals, discounting the time from any award made.

**3.5 Robustness against incompletion:** Here you should demonstrate that your programme is robust against a potential early end of cryogen that could lead to it not having been completed at the end of the mission or, alternatively, should be treated as a high-priority project to be completed before the nominal end of cryogen. Your answer should be combined with the appropriate reply to the corresponding question in the check list.

For non-robust proposals, proposers should demonstrate that their programme is of sufficient scientific interest to justify being awarded high priority time that guarantees its complete and rapid execution.

For robust programmes, proposers should demonstrate the capability of their programme to produce valid and reliable results, even if only partially executed. Programmes that are high risk in the sense of requiring completeness or a very high execution level for their results to be considered useful or valid may be rejected unless rated highly enough to be awarded high priority time.

# 4. Data Processing Plans (max. 1 page)

4.1 Data Processing and Analysis Plans: Give a concise explanation of the strategy for data reduction and analysis with a description of available hardware, software, and manpower. For small projects this may be a very short statement. Larger projects with more complex data processing needs will be expected to show in adequate detail that they can use and process the data that they will receive efficiently and effectively.

**4.2 Product Generation Methods:** Provide here a careful description of any special software that you plan to use in analysing your data other than the Herschel Space Observatory Processing Environment (HIPE).

# 5. Management and Outreach Plans (max. 1 page)

**5.1 Team Resources and Management Plan:** Describe the strengths of your team and its appropriateness for a project of this type (here you should give a summary of the team and resources that are committed to the project, appropriate to the amount of time requested).

If a large amount of time is being requested, describe briefly the team management plan and organisational structure and the project schedule and management, to demonstrate that sufficient resources and organisation are available to exploit the time efficiently.

**5.2 Outreach Activities**: Comment how you plan to spread knowledge of your results beyond the Herschel community, in particular the plans that you have to diseminate results to the general public.