Herschel Users' Group

MINUTES OF FOURTH MEETING

15-16 December 2011

Members Attending: E. Falgarone, P. Hartogh, L. Hunt, R. Kennicutt (Chair), L. Kristensen, G. Meeus, M. Meixner, A. Noriega-Crespo, D. Rigopoulou, G. Stacey, A. Weiss

HSC Staff Attending: G. Pilbratt, D. Ardila, P. Garcia-Lario, A. Marston, B. Merin, L. Metcalfe, S. Ott

SUMMARY

The HUG continues to be impressed with the excellent performance of the observatory and the efficient use of the spacecraft time remaining. Key Programmes are being completed at a steady pace, and observations have been scheduled for a substantial fraction of OT1 programmes.

Listed below are the highest priority recommendations arising out of the meeting. The relevant sections of the main report are indicated in parentheses.

1. **Director's Discretionary and "Must-Do" Observations:**
   The HUG encourages the Herschel Project Scientist to convene a committee to evaluate whether any important types of observations have been overlooked by the time allocation process; these might be in terms of target type, observing mode, or level of risk in observations. Such observations should only be approved if the committee is convinced that their scientific value is demonstrably better than the ample set of available HOTAC-approved Priority 2 observations (Section 3).

2. **Community Support:**
   The HUG notes that the recently concluded OT2 proposal round proceeded much more smoothly than OT1, particularly in the area of handling of duplications between proposals. The current communications tools of the HelpDesk, web pages, and E-News appear to be effective. We recommend that the HSC explore whether the HelpDesk communications can be posted publicly (with the permission of users) through a searchable web page, so others can benefit from the knowledge exchanged (Section 4).

3. **User Survey:**
   In order to gather more complete information on the experiences and concerns of Herschel users, including the Open Time users, the HUG will conduct a web-based survey of users in spring 2012. The survey will solicit general feedback on user support as well as specific feedback for the instruments, calibrations, and data processing packages used by each proposer. The HUG will consult with the HSC on the questionnaire and share the statistical results with the HSC and the Herschel community (Section 4).

4. **Data Processing and Interactions with Users:**
   The HUG notes the continuing improvements in data processing as evidenced most recently in the HIPE 7.0 release. The establishment of interest groups and organization of Webex telecons has been well received by the participants, and the committee hopes these will continue to be pursued actively. The HUG recommends that the HSGS (Herschel Science Ground Segment) continue to host its annual Herschel data processing workshop in 2012, but with more of an emphasis on advanced topics, following an introductory session for new observers (Section 5.1).

5. Instrument Calibration:

The HUG also notes the steady progress made overall in the quality and documentation of instrument calibrations. Improvements are still critically needed in a few areas, as highlighted below. The HUG strongly encourages the HSC to organize an open Herschel calibration workshop in 2012, to bring together experts from the instrument teams and the HSC with expert users, to assess progress and identify key areas for future improvements (Section 5.2).

6. Instrument-Specific Needs, Priorities:

While noting with satisfaction the steady improvements in instrument calibrations and data processing generally, the HUG continues to note a few areas in which issues with calibration and/or processing are creating significant bottlenecks in the scientific exploitation of considerable bodies of Herschel data.

6.1 PACS Spectroscopy

PACS Spectroscopy is receiving strong attention and support by the ICC, HSC and NHSC. A new calibration block has been implemented with marked improvement in the overall calibration. Part of this improvement is related to a better flatfield on all spaxels, and therefore, on a better Instrumental Spectroscopic Response Function across all spaxels, and not only the central one. There are several tasks that are being addressed by the Herschel teams on the PACS Spectroscopy with a goal to implement most of them in HIPE 9.0.

6.2 SPIRE FTS Spectral Mapping

The new release of HIPE (v8) has seen the implementation of several new features aimed at improving pipeline processing (e.g. inclusion of bright source mode for the SPIRE spectrometer and reduction of the noise level in the relative spectral response function). Processing of SPIRE-FTS spectral maps remains a challenging task, and is a high priority for the SPIRE ICC and HSGS.

6.3 Extended Emission in PACS Imaging

Considerable attention by Key Programme teams and the HSGS itself continues to be devoted to characterizing and better understanding the treatment of extended diffuse emission in the processes scan maps from PACS and SPIRE. This effort is leading to a more broad view of the mapping algorithms that are being used in the HSA and that are available in HIPE. A considerable effort is being carried out to make the mapping software *Scanamorphos* part of HIPE9.0.

6.4 HIFI Standing Waves and Bright Object Spectroscopy

Members of the HUG have noted the steady improvements in data quality and calibration with the more recent releases of HIPE. Problems with baseline ripples remain, especially for bright sources.

7. User-Generated Data Products:

The HUG supports the effort by the HSC to compel Key Programme teams to honour their commitments to delivering user-generated data products to the HSC and making them publicly available, unless the means to reduce those data is not yet available. Teams that are publishing papers based on their observations should be prepared to make the associated data available (Section 7).

8. Herschel Post-Operations Phase (POP):

The Herschel Users' Group cannot overstate the importance of the Post-Operations Phase for the ultimate scientific success and legacy of the Herschel Space Observatory. Herschel is producing a tremendous wealth of imaging and spectroscopic observations which already are transforming their targeted science areas, and many of its scientific capabilities will not be duplicated or surpassed for decades. While great strides have

been made in calibrating, processing, and archiving these observations, this latter work remains far from finished. It is essential that sufficient funding be made available to the HSC and as importantly to the ICCs to complete this vital work and provide a lasting legacy archive of the data and scientific products of the Herschel mission. This relatively modest investment will leverage the much larger investment in the project to data, and have a disproportionately positive effect on the impact of Herschel.

In reviewing the preliminary plans for POP, the HUG was concerned both with the overall match in FTE support to tasks, as well as the lack of planning for how effort, particularly in the vital areas of data processing and instrument calibration will be allocated and prioritized. The HUG is particularly concerned over the SPIRE POP and the resources available to the SPIRE ICC team. We hope that a review can be conducted of the funding plans for SPIRE-ICC in the Post Operations Phase, in hopes that the current imbalance with respect to the other instrument teams can be assessed and addressed.

The POP planning process could benefit immensely from a discussion of the HUG with the HSC as well as key players in the ICCs. Therefore the HUG proposes to invite ICC representatives to its next meeting to explore these issues further. The goals of this discussion would be to learn more about the plans and concerns of the ICCs and HSC as Herschel approaches its POP, and to explore how in that phase the HUG can best serve as a liaison and advocate for the concerns and needs of the Herschel user community (Section 8).

9. Herschel Users Group:

The HUG agrees with the view of the Project Scientist that its charge should be extended into the post-operations phase, by at least two years. A process of rotation of committee members should be established and begun in 2012. Consideration should be given to the membership of the committee in the transition from prime mission to post-operations phase (Section 9).

1. INTRODUCTION

The Herschel Users' Group (HUG) held its fourth meeting at ESAC on 15-16 December 2011. The format was similar to that of previous HUG meetings, with one significant change. In place of the usual presentations by the main group leads for community support, instrument support and calibration, data processing, and the data processing user's group (DPUG), written reports/presentations were provided to the HUG in advance, and much of the afternoon of December 15 was devoted to an open discussion of issues raised, with all of the group leaders present. These discussions proved to be very valuable and this practice will be continued for future meetings. An agenda for the meeting is included as an appendix to this report. As usual copies of many of the presentations received can also be found on the HUG web pages: http://herschel.esac.esa.int/HUG.shtml

The minutes are organised by topic in roughly the same order as they were raised at the meeting.

2. GENERAL ISSUES AND RESPONSE TO FIRST HUG REPORT

The HUG continues to be impressed with the excellent performance of the observatory and the efficient use of the spacecraft time remaining. Key Programmes are being completed at a steady pace, and observations have been scheduled for a substantial fraction of OT1 programmes.

The results of the (last) OT2 Call for Proposals were released shortly before the HUG meeting, and the handling and outcome of this Call was a major topic of discussion. The handling of duplications was much smoother than for OT1, and the HUG was gratified to see some of its recommendations implemented successfully.

A few minor issues were raised by HUG members (or brought to their attention by other Herschel users and proposers) and discussed. The question was raised of whether proposers placed in Priority 2 should have the opportunity to revise their AORs to optimize scheduling. The HSC is reluctant to allow such a round of revisions because consideration of such contingencies was included in the OT2 instructions, and the large workload imposed by new revisions on the HSC would not be justified by the minimal gains. It was pointed out that OT1 proposers who were placed into the Priority 2 pool had no such forewarning (though many re-proposed for OT2), and it might be useful for the HSC to check whether any particular programmes have been adversely affected by this inconsistency.

At the request of HUG the Project Scientist reviewed the procedures for scheduling observations. This often incorporates block scheduling of instruments which will appear to favour for a time one or another observing mode or programme, but the HUG was satisfied that over the mission there is no evidence of any kind of preferential treatment, either in terms of proposal type or instrument.

3. DIRECTOR'S DISCRETIONARY TIME

The Project Scientist Göran Pilbratt discussed his plans for allocating the modest amount of time available to DD time over the remainder of the mission, and invited the comments of the HUG. Requests for small allocations of time for targets of opportunity, follow-up of new discoveries, etc. have been received in the past and will continue to be considered. A more general question is whether there are particular types of "must do" targets or observations which have been overlooked in the previous Herschel time allocations, and which should be carried out to complete the Herschel legacy. The Project Scientist proposed to organize a small committee of experts to consider whether such gaps remain, and if so to recommend one or more high-priority areas to be allocated time (up to a maximum of 200 hours).

The HUG discussed this proposal and recommends that such a committee be convened. It was pointed out that a similar exercise was conducted for the Spitzer Space Telescope, but the group concluded in the end that no serious gaps were left by the normal time allocation process, and that the remaining time available should be allocated to programmes approved by the Spitzer TAC. The HUG would not be surprised if a similar review for Herschel reaches the same conclusion, but the exercise should take place. Ideally the committee would include not only experts on the performance and scientific programme of Herschel but also those from other wavelength communities and science areas outside of the core science communities for Herschel. Consideration might be given not only to possibly overlooked science areas but also to Herschel observation types which are difficult to propose through the normal HOTAC process, for example very deep spectroscopic observations. The HUG also emphasized however that ample observing opportunities are available and that these new areas should only be added on the basis of the strong recommendation of an advisory committee.

4. COMMUNITY SUPPORT AND COMMUNICATIONS WITH USERS

As with many other aspects of the Herschel operations the effectiveness of the Community Support office appears to be improving steadily over the life of the mission. There were almost no concerns raised by the HUG in this area. A general topic of concern both for the HSC staff and the HUG is whether the main modes of information exchange with users - mainly the HelpDesk, web pages, and Herschel e-News updates - would prove adequate as the balance of active proposals changes from large Key Programmes to smaller Open Time projects. The nature of this shift is difficult to predict because even the OT projects often incorporate experienced Herschel observers in their collaborations. However the transition to an OT1 and OT2-dominated programme provides a useful milestone for re-assessing the way in which the HSC and HUG maintain contact with the full user community.

One suggestion raised was to increase the value of the HelpDesk communications by making the correspondence generally available to all users on the web. This would require the permission of users (perhaps via a checkbox when a HelpDesk message is sent), and some capability for searching the database of messages. Such systems have been implemented for other facilities and allow users to learn from the experiences of others.

A common concern expressed by the Community Support group at the HSC and the HUG is the need to survey the broader Hershel user community on their experiences, in order to be sure that the priorities for improvements established by the HUG and the HSC properly reflect those of Herschel users on the ground. Valuable feedback from Key Programme users was gathered by the DPUG in its data processing user survey, but the HUG believes that a broader survey reaching the whole Herschel user community is important at this stage.

After considerable discussion the HUG decided to organize a survey of its own. It will use one of the readily available web services and contain questions both on general Herschel support and specific questions relating to the instruments, calibrations, and data processing packages being used by individual observers. The HUG will consult with the Community Support group on the design of the questionnaire and in disseminating the survey to users, but responses will be collated directly by the HUG, in order to encourage full and candid feedback. A sub-committee led by Leslie Hunt (also Dimitra Rigopoulou, Gwen Meeus, Axel Weiss) has been charged with drafting a questionnaire and selecting a web client for collecting and collating the information. The aim is to circulate the survey by late spring 2012 and have results in hand for the next HUG meeting in early summer 2012.

The HSC is also considering how to further survey users, including an extension of the DPUG survey, but in order to avoid multiple polling at the same time such surveys will be placed on hold until the HUG survey is completed.

5. USER SUPPORT FOR INSTRUMENT CALIBRATION, DOCUMENTATION, DATA PROCESSING

As mentioned earlier a general discussion was conducted with the HSC staff leads on the status of instrument calibrations, documentation, and data processing. As with other aspects of Herschel the quality and completeness of the information and data processing has improved substantially since the previous HUG meeting, and numerous examples were given of improved data products with the latest algorithms. A gradual re-reduction of all Herschel observations to the latest pipelines will be carried out with HIPE 8.2, beginning in March. A few specific high-priority areas remain, as highlighted in Section 6, but the overall the HUG is impressed with the steady pace of progress.

5.1 Data Processing Workshops, Interest Groups, Telecons

In the past year a number of interest groups have been organized, and meetings of these groups have taken place through a combination of face-to-face meetings and (Webex) telecons. These have been well received by the participants, and the HUG commends the HSC for organizing them, and hopes they will continue to be active. There is some concern that the existence of these groups is not disseminated widely enough within the Herschel user committee, and the HUG will consider whether its user survey can be used to alert users to them**.**

During the early phases of the Herschel mission the HSC and NHSC organised more general week-long data processing workshops, which were aimed at introducing new users to Herschel data and the data processing tools. As the project has matured user interest in these “beginners” workshops has diminished, and recent attendees often express more interest in specific areas and more advanced topics. The question naturally arises of whether these workshops have outlived their usefulness. When asked for its advice the HUG recommended that an HSC workshop be organised as planned for spring 2012, because it is quite possible that with the beginning of OT1 and OT2 observing on the large scale a new user base will emerge. However the HUG also encouraged the HSC to advance the level of the workshop to aim, possibly with the addition of an extra introductory day at the beginning for new users who need a general introduction to Herschel and HIPE. The workshop should provide valuable feedback to the HSC. The HUG also encourages the HSGS to arrange for user representation at the 2012 HIPE Forum.

5.2 Instrument Calibration

In preparation for the meeting Tony Marston provided a written summary on recent progress in calibrations which was extremely informative, and the HUG has asked that it be disseminated more widely to the Herschel community, not only on the HUG web pages but ideally linked from the Herschel Documentation pages as well.

With the increasing maturity of the calibration effort the HUG strongly recommends that the HSGS organize an open calibration workshop in 2012. The workshop would bring together experts from the ICCs and HSC together with expert users who are exercising the Herschel data, identify areas for improvement, and provide an impetus to provide the most up-to-date calibration documentation. Such workshops have proven to be very useful for other missions. It would also be useful if presentations from the ongoing series of internal calibration workshops were posted on the HSC website.

6. INSTRUMENT-SPECIFIC ISSUES AND PRIORITIES

An important role played by the HUG is to monitor the flow of science from the original observations to published papers, and identify areas where science is being hampered or delayed by problems or lack of software for processing and calibrating data. It is a measure of the success of the ICCs and HSC that the list of such problem areas has diminished steadily at each successive HUG meeting. However a few important issues remain, some of them old and some new, and the HUG identifies them as priorities for continued attention.

6.1 PACS Spectroscopy

PACS Spectroscopy is receiving strong attention and support by the ICC, HSC and NHSC. In Bruno Merin's report it was clear that a new calibration block has been implemented with a marked improvement in the overall calibration. Part of this improvement is related to a better flatfield on all spaxels, and therefore, on a better Instrumental Spectroscopic Response Function across all spaxels, and not only the central one. Observers on the HUG have noticed and welcomed the significant improvement in HIPE8.1 versus HIPE7.0, especially when looking at line and short range scan spectroscopy. The also report lingering problems in specific areas, for example in mismatching of orders in PACS SED mode spectroscopy.

Several tasks are being addressed by the Herschel teams on the PACS Spectroscopy with a goal to implement most of them in HIPE 9.0 (recall that the current available version of HIPE is 8.1 [Feb 2011] and the version is updated on an approximately six month basis]. These include:

- Making spectrometer convolution kernels available.
- Improved hyper-spectral cube reconstruction.
- Improved a-posteriori pointing reconstruction based on guide star positions used for the observation.
- Point source flux correction for observations not perfectly centered on the central spaxel.
- Improved post-pipeline flatfield to correct small residual pixel-pixel response variations.
- Improved transient and response drift correction for unchopped observations.
- Improved correction for systematics affecting the spectral shape of sources and detectability of unresolved lines.

6.2 SPIRE FTS Spectral Mapping

The new release of HIPE (v8) has seen the implementation of several new features aimed at improving pipeline processing (e.g. inclusion of bright source mode for the SPIRE spectrometer and reduction of the noise level in the relative spectral response function).

Processing of SPIRE-FTS spectral maps remains, however, a challenging task. The ICC and the HSC are aware of the challenges faced by observers. The remit of the FTS User Support Group is to provide immediate tailored assistance to observers with SPIRE-FTS spectral maps. In addition “specific-topic” (or targeted sessions on a specific topic for lack of better wording) WEBEX sessions organised by the HSC are also aimed at providing assistance with user-specific issues related to the reduction of spectral maps.

6.3 Extended Emission in PACS Imaging

Although there has been progress on investigating the PACS extended source photometry, there remains a perception in the astronomical community that PACS photometry can deviate by up to 20 - 30% when compared to prior missions. The degree of discrepancy varies with wavelength, and the general consensus appears to be that when MIPS 70 micron is corrected for non-linearity effects at high surface brightness, the agreement with PACS is quite good, approximately linear with a dispersion of roughly 20%. The agreement at 100 micron between PACS and DIRBE data is even better, around 15% dispersion, and it appears that IRAS may be discrepant. At 160 micron, the agreement between PACS and other instruments is less clear. Much work is ongoing within the ICC itself, and also between Key Project teams and the ICC. The HUG urges that attention continues to be given to this potential problem, and that any updated analyses be released to the community at large as soon as they are available.

6.4 HIFI: Standing Waves and Bright Object Spectroscopy

Members of the HUG have noted the steady improvements in data quality and calibration with the more recent releases of HIPE. Standing waves remain a significant issue, and we suggest that in addition to the standard baseline ripple removal procedure the Lomb periodogram method be implemented.

Concerns about the spectroscopy of bright objects have been reported at previous HUG meetings. The new routines from HIPE8.0 have been tested by members of the HssO Key Programme. The noise characteristics now agree much better with HSPOT predictions, but unfortunately severe baseline ripples appear. The ripples are so strong that no one from the KP has yet managed to handle them with baseline ripple removal routines, so that still the standard calibration routine (with up to 3 times more noise) are used. This area clearly could benefit from continued attention.

6.5 Other

The effort on extended emission is leading to a more broad view of the mapping algorithms that are being used in the HSA and that are available in HIPE. A considerable effort is being carried out to make the mapping software Scanamorphos part of HIPE9.0. This is an IDL+HIPE software developed by H. Roussel (IAP) that works on a more *ad hoc* basis on the data than other algorithms such as MADmap. The maps produced by it are indeed comparable in quality as those created using MADmap (one of the leading algorithms to create 2.5 level products of PACS/SPIRE parallel mapping observations).

Also relating to mapping, the SPIRE de-striper is now part of HIPE8. This is very good news for improving the quality of the SPIRE maps, since algorithms like MADmap are not quite as efficient in removing artefacts, and “naive mapping” (the default) always left a low level stripe noise in the final SPIRE photometric maps.

7. USER-GENERATED DATA PRODUCTS AND PROPRIETARY DATA PERIOD

When the Key Programme teams submitted their proposals each was required to specify plans for delivering user-generated data products to the HSC and making them available publicly. A summary of user-reduced data released to date is available on the HSC website (http://herschel.esac.esa.int/UserReducedData.shtml), and the HUG was gratified to see that a few teams are beginning to honor their commitments. However the data available represent only a small fraction of the projects (7 of the 42 Key Programmes) and an even smaller fraction of the Herschel data taken, especially when SDP observations are excluded. The HSC plans to begin contacting Key Programme PIs to accelerate the delivery of user-

produced data products and the HUG strongly endorses this effort. The HSC should be prepared to host these datasets when necessary, though the HUG understands that it will be some time before such data can be integrated into the main Herschel data archives.

The HUG is also aware that in some instances it is not yet possible to deliver data products or even publish the observations, because data processing software and/or calibration information critical for the scientific analysis of the data are not yet available. Clearly this will need to be taken into account when managing expectations for data deliveries by the KP teams. However when a team publishes scientific results from its data it would reasonably follow that a public delivery of those same data should soon follow.

A related question was raised about the appropriateness of the 6-month proprietary period for the original Herschel data, when software necessary to reduce such data are not yet available. ESA policies on Herschel proprietary data are quite strict, and this would make it extremely difficult if not impossible to increase the proprietary period for a particular set of observations. Users who find themselves in this difficult situation should be sure to inform the HSC (and if necessary the HUG), so the needs can be assigned a high priority.

Independently of the issues of proprietary access, the release of large bodies of observations for which current pipeline reductions are seriously flawed is another concern of the HUG. The question of whether such data could be flagged in some way was raised, but it is not clear how such a process could be automated.

8. THE POST-OPERATIONS PHASE OF HERSCHEL

In early 2013 the superfluid helium cryogen will be depleted from ESA's Herschel Space Observatory. Scientific observing can then no longer be conducted, and the mission will formally enter its Post-Operations Phase (POP). A five-year POP already has been built into the Herschel mission plan, but the details of the work packages, their priorities, and allocation across the teams in the Instrument Control Centres (ICCs), the Herschel Science Centre (HSC), and the NASA Herschel Science Center (NHSC) remain to be developed in detail. The HUG was presented with preliminary drafts of these plans and asked to comment.

The Herschel Users' Group cannot overstate the importance of the Post-Operations Phase for the ultimate scientific success and legacy of the mission. Herschel is producing a tremendous wealth of imaging and spectroscopic observations which already are transforming their targeted science areas, and many of its scientific capabilities will not be duplicated or surpassed for decades. During the cold mission phase the attention of the Herschel Science Team, the ICCs, and the HSC has focused first and foremost on the health and safety of the spacecraft and on the optimization of the instruments and observations. While great strides have been made as well in calibrating, processing, and archiving these observations, this latter work by necessity remains far from finished, and will become the top priority in the POP. It is essential that sufficient funding be made available to the HSC and as importantly to the ICCs to complete this vital work and provide a lasting legacy archive of the data and scientific products of the Herschel mission. This relatively modest investment will leverage the much larger investment in the project to date, and have a disproportionately positive effect on the impact of Herschel. A prime example of such benefit is for the planning of observations with the Atacama Large Millimeter Array (ALMA).

Based on its reading of the early plans and its discussion with the HSC staff, the HUG is impressed with the thought and planning that currently is going into the POP planning. However it already can identify a few general concerns. One is the rapid ramp-down in funding into the POP, relative to the very ambitious goals and lists of activities that are listed in the plans. In view of the current workload on the much larger team in place, the HUG is skeptical about the ability of the reduced staff to meet some of the ambitious objectives in the

HSC plan. The HUG is also concerned about the retention of key expertise and manpower as the end of the POP phase approaches.

The HUG is particularly concerned over the SPIRE POP and the resources available to the SPIRE ICC team. SPIRE imaging comprises a considerable part of the data volume of Herschel, and the SPIRE FTS spectrograph has proven to be more sensitive than one dared to hope before launch, thus attracting more proposals in the two Open Time calls than had been anticipated. While all three Herschel instrument teams have a comparable workload during the POP, it appears that the size of the SPIRE-ICC will reduce more severely than for the PACS and HIFI teams, with a corresponding sharp ramp-down in commitments to tasks, many of which are regarded by the Committee as being essential to the long-term scientific return from Herschel and the value of its archive. Given the crucial role of the ICCs in developing instrument-specific data reduction modules and instrument calibrations (and for SPIRE spectroscopy and spectral mapping in particular) we cannot help but express concern about the current allocation of resource. We hope that a review can be conducted of the funding plans for SPIRE-ICC in the Post Operations Phase, in hopes that the current imbalance with respect to the other instrument teams can be assessed and addressed.

A specific concern of the HUG concerns the allocation, organization, and prioritization of work in data processing in the POP. Currently most of the in-house effort at the HSC in this area is allocated to producing Level-1 and Level-2 data, with prime responsibility for calibration, data processing algorithms, and higher-level processing resting with the three ICCs and the NHSC. In reality there is a high degree of collaboration between the HSC, the NHSC, and the ICC's in these task areas and especially in the boundary areas in between. In the POP it is clear that continued effort will be needed in the end-processing of data, but the resource available to the ICCs will diminish sharply in many cases (for the SPIRE team in particular). The HUG is concerned with the level of FTE support available for this critical work, and also with the process that will be in place for prioritizing and directing this support, given the independence under which the ICCs operate.

The HUG believes that these concerns are of sufficient importance that it would like to convene a discussion of the POP plans and the issues relating to data processing generally in a forum that would include not only the HSC staff leads but key players in the ICCs as well. Ideally this would take place at its next meeting, which is scheduled tentatively for June 2012 at ESAC. The goals of this discussion would be to learn more about the plans and concerns of the ICCs and HSC as Herschel approaches its POP, and to explore how in that phase the HUG can best serve as a liaison and advocate for the concerns and needs of the Herschel user community.

9. HUG MATTERS

In relation to the discussion of POP above, the Project Scientist discussed with the HUG the desirability of continuing the work of the committee past the cold mission phase. He and all of the members of the committee agreed that extending the charge to the committee by at least two years into POP would be sensible. Important work on calibration, re-processing, and archiving of data will continue, and the HUG can provide an important role by communicating the needs of the Herschel users (both observers and archival users), and in recommending priorities in an ever tightening funding environment. However some thought should be given to rotating the membership of the committee over time and revisiting the frequency of HUG meetings after the cold mission phase.

The HUG Chair R. Kennicutt communicated that because of new responsibilities in Cambridge he would need to step down as chair of the committee after the current meeting. The Project Scientist will consult with the HST and HUG about selecting a new chair. It is also possible that a few other HUG members may wish to rotate off the committee in the coming year, but it was agreed that any such rotations should be gradual, to preserve corporate memory.

The dates for the next HUG meeting were provisionally set to June 2012, probably at ESAC.

The HUG wishes to express its thanks once again to Göran Pilbratt and the HSC staff for hosting a productive, informative, and smoothly running meeting.

APPENDIX 1: AGENDA

Thursday December 15

09.30 HUG Closed Session

10.30 Project Scientist's Report (Pilbratt)

12.00 Discussion of Report, Issues Arising

13.00 Policy Issues (if not covered already above)
- data release policies
- delivery of Key Programme data products

13.30 Lunch

14.30 Question/Answer Session and Discussion of Group Reports (Garcia-Lario, Marston, Merin, Ott)
* discussion topics as suggested by HUG and HSC

16.30 Planning for Post-Operations Phase (Pilbratt)

17.30 HUG Closed Session

19.00 Adjourn

20.30 Dinner

Friday December 16

09.30 Discussion of the HUG
- frequency, duration, format of meetings
- meeting logistics, hotel, etc
- communications with users
- membership, chair

10.30 Further Discussion of Other Issues

11.00 HUG Closed Session

12.30 Preliminary Report/Briefing

13.30 Adjourn