Minutes of SPIRE Steering Group Meeting, Porquerolles, 7 October 2003

Matt Griffin, 1 November 2003

Attendance

Steering Group members (or alternates):	Philippe André	France (for Laurent Vigroux)
	Jean-Paul Baluteau	France
	Jamie Bock	USA (for Andrew Lange)
	Dave Clements	UK (for Michael Rowan-Robinson)
	Matt Griffin	UK (Chair)
	David Naylor	Canada
	Ismael Perez-Fournon	Spain
	Göran Olofsson	Sweden
	Paolo Saraceno	Italy
	Bruce Swinyard	UK (for Roger Emery)
Co-Is (or alternates):	Walter Gear	
	Jason Glenn (for Harvey Moseley)	
	Mat Page (for Alan Smith)	
	Jason Stevens (for Gillian Wright)	
Others:	Ken King	PM
	Alain Abergel	CEA
Apologies from	Pierre Cox	
	Alberto Franceschini	
	Emmanuel Lellouch	

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1. Adoption of the agenda

The draft agenda circulated by the chairman prior to the meeting were agreed.

2. Minutes of the last SPIRE Steering Group meeting

The minutes of the previous meeting (Rome, July 2002) had been approved previously by e-mail.

3. Statements

None.

4. Review of actions

The actions from the last SPIRE Steering Group meeting (Rome, July 2002) and from the last Co-Investigators' meeting (RAL, July 2003) were reviewed. See Section 8 for a summary.

5. Overview of SPIRE programmatic and funding status

Matt Griffin gave a brief overview of some major issues that the Steering Group should be aware of, inevitably concentrating on difficulties and problems rather than the many successes and achievements that the consortium should also be proud of.

5.1 The overall Herschel/Planck schedule and risk

The SPIRE team was performing extremely well in trying to maintain the project on schedule. At present, the highest priority was to implement the CQM programme. Nevertheless, there would inevitably be major problems in delivering on time. This was a common situation for all five Herschel-Planck instruments. The five Herschel and Planck PIs had sent a letter to ESA Director of Science on Sept. 19, expressing concern about the risk to the scientific success of the missions arising from the tight schedule and the lack of margin and time for testing. The text is reproduced below.

> *Dear David,*
>
> *We are writing to make you aware of our worries concerning the risks to the success of Herschel and Planck which we are now taking to try and maintain compatibility with the mission schedule. We are conscious of the need to minimise the costs to ESA and the national funding agencies, and are committed to the fastest and most economical implementation of the missions. Although not formally compliant with the official FM delivery dates, we continue to work constructively with the ESA and Industry teams to adapt our programmes to the needs of the schedule to the maximum extent possible, although our efforts are being hampered by some key subsystem deliveries being subject to agency-level problems over which we have little control.*
>
> *It is a major concern to all of us that our instrument schedules are already severely compressed and lacking in margins. The historical reasons for this overall situation are complex, and include a combination of technical problems, funding and programmatic difficulties, and the manner in which the missions have been implemented.*
>
> *We believe that it would be very beneficial for the five Herschel/Planck instrument PIs to meet with you to clarify and assess the overall level of the risks to the Herschel/ Planck programme and seek to arrive at the most intelligent way forward.*
>
> *Yours sincerely, etc.*

No response had been received at the time of the Steering Group meeting [*Note: Since the meeting, the DSci has written to the PIs asking for their major concerns to be raised at an already planned meeting with the Herschel-Planck Project Manager on October 22nd, after which issues that need to be addressed at DSci-level can be discussed at a meeting with the DSci to be arranged in the early December timeframe.*]

Thermal straps and overall thermal performance: SPIRE was doing everything possible to achieve the best possible thermal performance. This included a lot of very late redesign and was adding expense, complexity, technical risk and schedule risk to the programme.

Instrument sensitivity: There were large uncertainties in the sensitivity estimates for SPIRE. The Steering Group should be concerned that, due to schedule pressure to deliver and lack of resources at JPL for testing, there is a danger of having to fly detector arrays that may not have been properly characterised and may achieve less than the envisaged scientific performance.

AIV Programme: The SPIRE AIV programme was so far progressing well, although more slowly than hoped. However, the whole schedule was highly reliant on nothing major going wrong at any stage, and this would always be a worry for such a complex and novel programme.

Warm electronics deliveries: The later than desired delivery of the DRCU and DPU would pose some problems and risks for the programme.

5.2 Major dangers

Re-evaluation of Herschel and Planck missions: Political pressures in connection with the revision of ESA's science programme could have implications for Herschel and Planck. Some voices within Europe were even asking whether the missions could be cancelled. Although that is a very unlikely scenario, the fact that it is even mentioned illustrates that we are working in a generally unfavourable climate of opinion.

Increased costs to UK for extended AIV programme: The AIV programme was proving to be quite labour intensive, and would inevitably last longer than originally budgeted. UK costs would therefore increase accordingly, and additional resources might have to be sought from PPARC as the identified reserves were small.

Possible loss of Guaranteed Time: The Steering Group and Co-Is should take note of the fact that the instrument teams' GT could well be reduced if the Director of Science has to bail out the consortium with additional funding support from ESA.

Significantly degraded instrument sensitivity: Compromises are already being made with respect to detector testing and optimisation that are effectively sacrificing instrument sensitivity in favour of the schedule.

5.3 Brief reports on funding status in SPIRE partner countries

Canada (David Naylor)
- The MoU formalising the CSA support of SPIRE and the involvement of Lethbridge University and the five Associate Scientists from the Canadian Community was signed in July
- There were also possibilities of deploying additional postdoc and student effort on SPIRE

France (Jean-Paul Baluteau):
- The change in the warm electronics model philosophy had resulted in some extra costs which CNES have partly agreed.
- CNES have also indicated that using flight grade components for the QM2 was not agreed.

Italy (Paolo Saraceno)
- The Planck LFI funding crisis appeared to be resolved now.
- The situation for Herschel still needed to be sorted out. Under the new funding scheme, money would come to the scientific institutes via the industrial contractors. In the case of Herschel there were three of these, so it would not be simple.
- A meeting with industry was planned for this week to address various schedule and funding issues.

Spain (Ismael Perez-Fournon)
- No update since the July meeting

Sweden (Göran Olofsson)
- No update since the July meeting

UK (Matt Griffin)

- The UK programme was progressing without major disruption due to funding problems, although resources were stretched in all institutes.
- It was envisaged that all subsystems could be delivered, but the AIV programme would require more time and more resources at RAL, and an overspend with respect to the current envelope appeared very likely. PPARC would have to be approached for additional support.

USA (Jamie Bock)

- The project reserves were negative going into the next fiscal year.
- It was envisaged that reserves could be borrowed from Planck, the ramp-up of the Herschel Science Center at IPAC could be delayed, and that a de-facto launch delay was a reasonable assumption.
- The testing of the FS arrays was not fully ensured in the programme, although the intention was to implement the tests.
- The Herschel/Planck PM (Gary Parks) had just visited NASA HQ to argue for an increase in the reserves [*Note: After the Steering Group meeting, it was announced that this visit ad produced a successful outcome, especially with respect to securing the FS array testing in the programme.]*
- Increasing the detector DQE would require changing to a different type of NTD material – if additional funding is needed for this it is not clear where it would come from.

6. Appointment of new Associate Scientists

Nominations for the appointment of the following people as SPIRE Associate Scientists were discussed and approved:

Nominee	Institute	Nominated by
Annie Zavagno	Institut d'Astrophysique de Marseille	Jean-Paul Baluteau
Delphine Russeil	Institut d'Astrophysique de Marseille	Jean-Paul Baluteau
Tanya Lim	RAL	Roger Emery
Bernhard Schulz	IPAC	Jamie Bock
Raphael Moreno	IRAM	Emmanuel Lellouch
Dave Clements	Imperial College	Michael Rowan-Robinson

The supporting cases for the nominations are attached as Annex 1.

7. Arrangements for definition of the SPIRE Consortium's science programme

A note on the SPIRE SAGs and the appointment of SAG co-ordinators, produced by the PI, Co-PI and Project Scientists in response to an action from the July Co-Is' meeting, was tabled and discussed. The following lists of SAGs and SAG coordinators were discussed and agreed by the Steering Group:

1	High-redshift galaxies	Jamie Bock, Seb Oliver
2	Galaxies in the local universe	Walter Gear, Sue Madden
3	Star formation in the galaxy	Philippe André, Paolo Saraceno
4	Galactic ISM	Jean-Paul Baluteau, Pierre Cox
5	Solar system	Régis Courtin, Bruce Swinyard
6	Stellar and circumstellar	Mike Barlow, Göran Olofsson

The final appointment of the co-ordinators is to be confirmed by the individuals themselves. An updated version (dated Oct. 10) of the note on the SAGs and their co-ordination is attached as Annex 2.

8. Review of actions

No.	Action	Responsible	Due Date	Status
AI-SG2	Contact senior Co-Investigators in Canada, Italy, Spain, Sweden in connection with drafting and agreeing MoUs covering these countries participation in SPIRE (hardware and ICC).	Matt Griffin, Ken King	31 July	Closed for Canada only. Producing an MoU with Italy under current circumstances is not regarded as easily done. For Spain and Sweden, it is not a high priority at present but may be revisited if appropriate.
AI-SG3	Write a note for the Steering Group on the case for ESA support of ICC staff costs as soon as the ICC manpower cost assessment has been completed (with the production of the SPIRE SIP).	Matt Griffin	31 Oct.	Not done, but ICC scope and resourcing has been the subject of several meetings with ESA. This action is now defunct as it is known that any funding support of the SPIRE ICC by ESA will carry a penalty of reduced GT.
AI-SG4	PI to inform David Naylor and Gary Davis of the Steering Group's decision on Canadian participation in SPIRE	Matt Griffin	18 July	Closed
AI-SG5	PI and PM to negotiate on matters of detail with David Naylor and the CSA and formalise the agreement through an MoU	Matt Griffin, Ken King	30 Sept.	Closed. MoU has been signed.
AI-SG6	Revise the funding note and issue formally to the national agencies and ESA.	Matt Griffin, Ken King	18 July	Closed.
AI-SG7	Inform Mat Page of his appointment as Associate Scientist	Matt Griffin	31 July	Closed
AI-SG8	Invite Co-Is to send in nominations for new Associate Scientists.	Matt Griffin	31 Oct.	Closed
AI-CoI-1	Assess optimum management and workpackage structure for the ICC (now - launch) and Ken to make proposal to ICC SG in October. Include specific task list that Jean-Paul can use in a proposal for a postdoc.	Ken King, Walter Gear, Jean-Paul Baluteau	7 Oct.	To be addressed in ICC Steering Group meeting on Oct. 8
AI-CoI-2	Propose a table of operations phase WPs/Functions. Include tasks located at RAL and those that can be off-site.	Ken King	7 Oct.	To be addressed in ICC Steering Group meeting on Oct. 8
AI-CoI-3	Propose a set of SAG titles and suggested SAG leaders to Oct. SPIRE SG (to be circulated to all Co-Is before the meeting), taking into account the implications of the Herschel Time Allocation Scheme for the SPIRE consortium.	Matt Griffin, Laurent Vigroux, Jean-Paul Baluteau, Walter Gear	30 Sept.	
AI-CoI-4	Establish monthly top-level telecons with chief SPIRE Co-Is	Matt Griffin	Aug. 31	Not implemented yet. To be started end Oct.

AI-CoI-5	Present a plan for AIV support to the Cons Mtg. in Oct. including format for data exchange and transfer to subsystem experts	Bruce Swinyard	7 Oct.	Closed (addressed in Bruce's presentation to the main meeting)
AI-CoI-6	Produce a revised version of the SPIRE Scientific Constitution for final approval by the Co-I's before the October Consortium meeting	Matt Griffin		Closed. Revised constitution has been approved.

9. Annex 1: Supporting cases for people nominated for appointment as SPIRE Associate Scientists

Nominee: **Annie Zavagno**
Institute: **Observatoire de Marseilles**
Nominated by: **Jean-Paul Baluteau**
Case: Annie Zavagno is Assistant Professor with fifteen year's experience in multi-wavelength studies of Galactic massive-star forming regions in the infrared and submillimetre ranges. After a PhD thesis on the properties of mid-IR dust emission and optical properties of intermediate-mass stars she joined IFSI, the infrared group in Rome, where she worked, as an ESA external post-doctoral fellow (1994-1996), with Paolo Saraceno and Sergio Molinari on a ground-based preparation of GT ISO programs on star formation. She also prepared and became the PI of an ISO OT program dedicated to the study of dust properties towards selected Galactic HII regions. This study leads her to begin a multi-wavelength program on triggered massive star formation at the border of Galactic HII regions. She is the PI of several ESO (NTT, SEST) and IRAM-30m accepted proposals on this subject. These proposals engaged several European institutions (ESO, Arcetri). Annie also participates in the PACS consortium and already proposed a GT program on triggered massive-star formation, based on a full-used of the Herschel instruments (PACS, SPIRE, HIFI). She also has close ties with the Saclay Star formation group (Philippe André, Frédérique Motte).

Current role: Science: Galactic star formation. Activity to date: Medium.

Nominee: **Delphine Russeil**
Institute: **Observatoire de Marseilles**
Nominated by: **Jean-Paul Baluteau**
Case: Delphine Russeil is Assistant Professor with several year's experience in multi-wavelength studies of the interstellar medium within our Galaxy. She has devoted much of her time to the study of the star formation complexes from observations of the ionised and molecular gas both in the radio and the visible (H-alpha). She made a systematic collect of exciting stars of the major HII region complexes and re-examined their distance determination within an homogeneous approach. She was able to provide a synthetic view of the structure and kinematics of our Galaxy which is considered to be a reference for future works. She is presently making use of the 2MASS (exciting stars tracer) and MSX (PDR tracer) surveys data. Her experience should be complementary to that of the SPIRE groups. She is thus able to make a substantial contribution to the preparation of the galactic surveys by providing scientific data which can help us to refine these SPIRE key projects.

Current role: Science: Galactic star formation. Activity to date: 0

Nominee: **Tanya Lim**
Institute: **Rutherford Appleton Laboratory**
Nominated by: **Roger Emery**
Case: Tanya Lim is a staff member of the Space Science and Technology Dept at RAL. She joined RAL as part of the ISO/LWS project team, working at the Vilspa ground station, taking responsibility for much of the instrument calibration. Upon completion of the ISO operations, she returned to RAL to work on the data processing and is now managing all of the activities of the archive phase. Tanya has been actively involved in ISO science, mainly involving studies of the interstellar medium. Her technical work and science interests place Tanya in an excellent position to not only make a substantial contribution to the SPIRE programme, but also to exploit it scientifically. For the past year, she has also been working on the SPIRE programme, preparing for calibration in the laboratory and continuing through to orbit operations.

Current role: Tech: Calib & Ops; Science: Galactic ISM. Activity to date: High.

Nominee: **Bernhard Schulz**
Institute: **IPAC, Pasadena**
Nominated by: **Jamie Bock**

Case: Bernard has been very active in early data analysis work for SPIRE. He has developed data modules for analysing bolometer and JFET test data that have proven quite useful to the SPIRE detector program at JPL, and it is anticipated that these modules will also benefit the SPIRE AIV testing. In the future, Bernhard plans to be highly active in the SPIRE ICC as the U.S. Herschel Science Center ramps up. Bernhard has shown in his involvement to date to be very responsive to the needs of the instrument, and eager to get involved with real data at an early stage.

Current role: Tech: ICC:. Activity to date: High

Nominee: **Raphael Moreno**
Institute: **DESPA, Paris**
Nominated by: **Emmanuel Lellouch**

Case: Raphael Moreno has already worked on the report *Photometric and spectroscopic calibration of Herschel instruments with planets and satellites*. His role in this report was to simulate the submillimetre spectrum of the giant planet adapted to the Herschel spectral range, based on a radiative transfer modelling developed during his PhD. Raphael has worked at the IRAM institute during 5 years where he was in charge of the flux calibration. He has also used the 117-channel bolometer array, working at 1.2 mm, at the IRAM-30-m telescope to observe asteroids, and was involved in the data reduction software of bolometer array and in defining calibration uncertainties. This expertise may be useful for reducing SPIRE observations of Trans-Neptunian objects. His contribution to the SPIRE instrument could be to establish more detailed models of Uranus and Neptune and satellites, adapted to its spectral range and its resolving power, and on the longer term to participate to the instrument calibration scheme.

Current role: Tech: Calibration; Science: Solar System:. Activity to date: Low

Nominee: **Dave Clements**
Institute: **Imperial College, UK**
Nominated by: **Michael Rowan-Robinson**

Case: Dave Clements has now taken over the role of SPIRE Project Manager at Imperial College, at 25% of his time, and is extremely effective. He has also stood in for me at several consortium and PPARC meetings. He has a distinguished background in far infrared and submillimetre astronomy, including involvement in the ELAIS, CUDSS, SLUG and SHADES surveys, with an impressive publication list. His major scientific interest is the detailed astrophysics of ULIRGs. I think he would be a valuable addition to the SPIRE team and I would expect his involvement to be at the 'medium' level at this stage.

Current role: ICC; Science: Extragalactic:. Activity to date: Medium

10. Annex 2: Updated version of note on SAGs and their co-ordination

From: **Matt Griffin**
To: **Approved SPIRE SAG Co-ordinators**
Date: **10 October 2003**

1. Introduction

At the July 2003 Co-Investigators' meeting, the PI, Co-PI, and Project Scientists undertook an action to propose a set of SAG titles and suggested SAG leaders to the Oct. SPIRE Steering Group meeting. At the SPIRE Steering Group meeting at Porquerolles on October 7, the proposal was endorsed, and the nominated SAG members approved.

2. Principles

(i) the "rules of the game" for GT and OT as recently defined by the Herschel Science Team (presented by Göran Pilbratt at the Porquerolles meeting);
(ii) the need to have experienced and high ranking figures (mostly Co-Is), in charge of the groups;
(iii) the need for the groups to be led by enthusiastic experts in the relevant fields, who will be able to devote sufficient time to the coordinating activity;
(iv) the need to have some balance with respect to the leading participating countries (but without distorting the optimisation from the point of view of individuals' capabilities).

3. SAG organisation

- SAG leaders are co-ordinators and generators of activity, not dictators or owners of the programme. Nor are they necessarily the leaders of proposals emerging from their SAGs.
- The SAGs are expected to have many members, with activity levels varying from very high to very low.
- To share the work, SAGs have two coordinators who have equal status.
- SAGs are expected to organise the production of proposals for GT for consideration by the Co-Is.
- SAGs can set up appropriate sub-groups internally (for example to formulate particular proposals).

4. List of SAGs and approved co-ordinators

1	High-redshift galaxies	Jamie Bock, Seb Oliver
2	Galaxies in the local universe	Walter Gear, Sue Madden
3	Star formation in the galaxy	Philippe André, Paolo Saraceno
4	Galactic ISM	Jean-Paul Baluteau, Pierre Cox
5	Solar system	Régis Courtin, Bruce Swinyard
6	Stellar and circumstellar	Mike Barlow, Göran Olofsson

5. Large Open Time Key Programme working groups

- SPIRE's plans for these should be formulated initially under the auspices of the relevant SAGs, although the final proposals will involve, and may even be led by, non-SPIRE people.
- As noted in the SPIRE Scientific Constitution, members of the SPIRE Science Team who are involved in open time proposals are expected to give priority the team's GT programme, and to ensure that the GT programme is complemented rather than duplicated or undermined by open time proposals.
- It will be important to ensure that large open time programmes in which the SPIRE team is strongly involved are genuinely open to the community - SPIRE must not be seen to lead these too strongly.
- Two large Key Programmes that are foreseen are a wide area extragalactic survey and a survey of the galactic plane. A working group on the large galactic survey has already been formed, co-ordinated by Sergio Molinari and Bruce Swinyard, and will be seeking wider participation in the near future. The large extragalactic survey definition activity should await the initial definition of the extragalactic survey programme to be carried out in SPIRE GT.

6. Herschel/Planck synergy

- Although there is not a specific group for this, it is expected that liaison will take place through the appropriate SAGs.
- Bruno Guiderdoni presented a summary of possible Planck-related Herschel programmes at the Porquerolles meeting.

7. The Standing Committee for Science

- The terms of reference of the Standing Committee for Science are as given in the *SPIRE Scientific Constitution*
- It was decided at the Steering Group meeting that a better option would be for the SCS just to comprise the SPIRE Co-Investigators. The advantages of this are:
    - international and institute balance is more naturally catered for;
    - the full range of scientific interests and expertise is included;
    - the decision-making power is where it rightly resides, since the Co-Is are officially the owners of all SPIRE GT data.
- The *SPIRE Scientific Constitution* will be updated accordingly

8. Next steps

The next steps for the SPIRE science programme definition were summarised at the end of the Porquerolles meeting as follows:

- Approved SAG organisers to confirm that they are willing to take on the task
- Science Team members to join the appropriate SAG(s) by contacting the appropriate SAG organisers (this may start happening before the above . . .)
- Matt (in consultation with Laurent, Jean-Paul, Walter) to produce a note providing guidelines for the SAG coordinators
    - Instrument sensitivities to be assumed
    - Recommended standard format for "proposals"
    - An outline of the plan/timeline for programme definition
    - Other relevant guidance
    - Deadline for this: mid. November (but SAGs can get started before then)
- SAGs to work for ~ 6 months (through e-mail, telecons, meetings as appropriate) to
    - formulate first-cut programmes
    - consider collaborations/liaison with other SAGs/groups
- A meeting with the PACS team to discuss technical and organisational aspects of the implementation of science programmes that require substantial PACS and SPIRE observations (date TBD after discussion with PACS PI)
- Full SPIRE Science Team meeting (~ March 2004 timeframe) to review work to date and plan for detailed programme definition and assessment by the Co-Is