The PLANCK Newsletter

Issue 2 *Information and news for the Planck community* **January 2002**

From the Editor

J. Tauber

This is the second edition of the Planck Newsletter. It contains several items of interest, including the "approved" Working Group structure. Unfortunately I have not received many inputs from you for inclusion in this issue. Before the next one, I will circulate a call to prompt (and hopefully stimulate) you to do so. However, do not hesitate to send me material at any time !

In the meantime, if you have any feedback, please send it directly to me at jtauber@rssd.esa.int .

I wish you, in the name of all ESA collaborators, a productive and successful 2002 !

Inside This Issue

The Baseline Core Programme and the Working Groups

The Planck Science Team at its meeting of 24-25 September reviewed the scientific proposals received in early June and the working group structure associated to these areas.

Two types of teams have existed up to now: the collaborations formed to write proposals and the original transverse "technical working groups" created at the Estec meeting of January 2001.

To reiterate on previous statements, and with the exception of specific proposals whose authors have been separately notified**, the Science Team perceived all the science proposed to be of high quality and therefore accepted in the Planck Baseline Core Programme**. All the science proposed will be included in the Planck Science Case being written by work group coordinators, based on the received proposals.

However, it is also clear that many proposals overlapped significantly both in their scientific scope as well as in the preparatory work proposed.

Therefore the ST has streamlined and unified the various groups, forming Working Groups in each area.

The high priority preparatory work needed in the coming two years will be concentrated into a small number of coordinated Working Groups which will be closely monitored by the ST. The coordinators of the Working Groups have been requested to ensure that all high priority work arising from the proposals is included in the existing Working Groups, or that new Working Groups be proposed whenever necessary. **Work made within these Working Groups, and complying with the policies established in "Policies for Planck Scientists, Data Rights and Publications" (April 2001), will count towards gaining access to the Planck Scientist List, in a similar way as work carried out within the Instrument Development Team and Data Processing Centres.**

It is expected that the Working Group structure will evolve in the coming years and adjust to the needs and wishes of the Consortia, and that the Core Programme which will be established in 2005-2006 will be based on the activities of the Working Groups, the Instrument Teams, and the DPC Teams.

More on the Working Groups on page 3

From the Project Scientist

J. Tauber

2001 has been full of important milestones:

- we started with the all-Planck workshop at Estec, which was a huge success in terms of consolidating the scientific programme of the Planck Consortia, inaugurating an era of common work (reflected in the working group structure that you see published today), and setting the basis for the updated science case of Planck
- the first formal review of the instruments took place, the so-called Instrument Intermediate Design Review
- the industrial Prime Contractor for both Planck and Herschel spacecraft was selected; the signature of this contract (the largest ever for ESA Science !) put us firmly into the development phase
- the first formal ESA review of the Planck Science Ground Segment took place
- the Planck Science Office at ESA was established, the last missing element in the Ground Segment

We are now in the middle of Phase B development for the spacecraft, and at the end of Phase B for the instruments. We do have some serious problems with the development of the instruments, but they are still formally on track for delivery near the expected dates.

2002 promises to be an interesting year too, as the Prime Contractor finalises the spacecraft design, and the instruments enter into the manufacturing phase, ramping up for their first deliveries to ESA in 2003. A few of the expected milestones are:

- the Instrument Baseline Design Review, planned in February - March
- the S/C Preliminary Design Review, planned in July, followed by a Mission-level Review (i.e. including the Ground Segment)
- A Science Ground Segment Review, tentatively planned around October
- A Requirements Review for the Mission Operations Centre, signaling the start of its development
- The start of integration, test and calibration campaigns for both instruments Qualification Models

We have a full and busy year ahead of us !

News from the Herschel/Planck Project Team

T. Passvogel (Project Manager)

The activities of the Prime Contractor (Alcatel Space - Cannes) for the Herschel and Planck spacecraft are well underway, with the schedule approaching the mid-point of the design phase (Phase B). A major (System Requirements) review took place in August - September, which was successfully passed.

Industry is issuing sequentially throughout Phase B Invitations to Tender for spacecraft element procurements, which means that their specifications (which are in many cases driven by the instruments) must be very firmly established. Therefore, a lot of effort is now being spent on stabilizing and freezing the instrument interfaces to the spacecraft; items of special concern are the mass and power budgets. The procurement of the Planck reflectors (by Astrium Friedrichshafen) has started a little later than planned and is causing some reshuffling of the integration and test schedules.

The next major milestone for industry is the Preliminary Design Review, slated for July 2002. In the meantime the instruments are continuing their own development, with the next review (the so-called Instrument Baseline Design Review) planned in the February/March 2002 timeframe; this review is timed to ensure that the instrument development is at a level compatible with that of the spacecraft.

Planck Working Group Structure

Below is the structure which was proposed by the Planck Science Team, and which has since been ratified at kick-off meetings for all WGs. The list is on line at http://astro.estec.esa.nl/planck_scripts/allWorkGroupsMemberList , and coordinators can use a Web interface (at http://astro.estec.esa.nl/planck_scripts/workGroupCoordAdmin) to add or remove group members. Coordinators are requested to keep the group membership up to date.

The Science Team has started to work on a document which will contain general objectives and working guidelines for the WGs and their coordinators, e.g. objectives, reporting, software development, usage of Livelink, CVS, and other DPC facilities, publication, etc. The document will also include guidelines for coordinators to evaluate the time spent by group members on these activities, part of the process eventually leading to a place on the Planck Scientist List. It is hoped that this document will be ready for distribution by April of 2002.

WG 1: Systematic effects (M. Bersanelli, J.M. Lamarre)

1.1	**External stray light, side lobes**	**Bernard, Burigana**
1.2	**Beam shape**	**Maffei, Villa, Naselsky**
1.3	**Instrument intrinsic effects**	**Versillé, Levin**
1.4	**Thermal effects**	**Emery, Mennella**
1.5	**Pointing effects and reconstruction**	**Van Leeuwen, Maino**
1.6	**Specific effects for polarisation**	**Delabrouille, Leahy**
1.7	**Methods for detection of systematics**	**Lasenby, Banday**
1.8	**Calibration**	**Piat, Smoot**
1.9	**Effects of systematics on Science**	**De Bernardis, Gorski**

WG 2: Component Separation (F. Bouchet, G. De Zotti)

2.1	**Diffuse emission separation methods**	**Prunet, Baccigalupi, Linden-Vornle**
2.2	**Point and compact Sources extraction (Wavelets, matched filters)**	**Hobson, Gallegos, Hornstrup**
2.3 (=6.2)	**Preparation + generic use techniques of Ancillary catalogs to be used for component separation: extragalactic (incl. source identification)**	**Helou, Partridge**
2.4 (=7.2)	**Preparation + generic use techniques of Ancillary maps to be used for component separation: galactic (incl. source identification)**	**Bernard, Davies**
2.5 (=4.2)	**Simulations of non Gaussian models (template production for component separation)**	**Shellard, Matarrese**
2.6 (=5.5)	**Simulations of clusters and LSS (template production for component separation)**	**White, Mazzotta, Sommer-Larsen**
2.7 (=6.5)	**Simulations of compact sources and cosmic background (template production for component separation)**	**Guiderdoni, Danese**
2.8 (=7.3)	**Simulation of the diffuse interstellar emission (incl. Zodiacal emission) (template production for component separation)**	**Boulanger, Juvela**
2.9 (=7.7)	**Moving objects extraction and separation**	**Ganga, Cremonese**

WG 3: Cosmological Parameters (G. Efstathiou, F. Bouchet, C. Lawrence, N. Vittorio, I. Novikov, K. Gorski)

3.1	**From TOD to maps**	**Teyssier, Natoli**
3.2	**Map based C(l) (pseudo C(l), Maximum Likelihood...)**	**Hivon, Balbi**
3.3	**Harmonic C(l)**	**Challinor, Wandelt**

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WG 4: Non-gaussianity (N. Turok, E. Martínez-Gonzalez)

4.1 (=1.7)	Effect of systematics on NG	Lasenby, Banday
4.2	Effect of Component Separation / Secondary anisotropies on NG	Hobson, Barreiro
4.3	Statistical methods and Tools to detect primordial NG	Heavens, Ferreira, Hannestad
4.4 (=2.5)	Simulations of non Gaussian models and theories	Shellard, Matarrese

WG 5: Clusters and Secondary Anisotropies (M. Bartelmann, S. White, N. Aghanim, A. Lasenby)

5.1	Contamination assessment, including input to simulations of contamination; interface to Herschel	Bock, Andreani
5.2	Optical and IR data assembly	Mann, White, Fogh-Olsen
5.3	X-ray data assembly	Arnaud, Mazzotta
5.4	Submm and interferometer data assembly	Church, Kneissl
5.5 (=2.6)	Physical simulations	White, Mazzotta, Sommer-Larsen
5.6	Characterising physical signal	Aghanim, Hornstrup, Gallegos

WG 6: Extragalactic sources (M. Rowan-Robinson, B. Partridge)

6.1	Quick time alarm for variable sources	Lahteenmaki
6.2 (=2.3)	Extragalactic sources cross identifications with ancillary catalogs	Helou, Partridge
6.3	Modelling and analysis tools (extraction of astrophysical information), including radio sources, GPS and inverted sources, Quasars and BL Lacs, and dusty objects	Clements, Granato
6.4	Follow-up with Herschel and/or complementary Key Projects. Other (ground-based) follow-up preparations.	Guiderdoni (TBC), Ganga, Hjorth
6.5 (=2.7)	Simulations of compact source fields and statistical analysis tools (including background fluctuations)	Guiderdoni, Danese

WG 7: Galactic and Solar System science (M. Giard, R. Davies)

7.1	The physics of dust (theoretical and laboratory)	Ristorcelli, Palumbo
7.2 (=2.4)	Ancillary maps collection, cross-correlation tools, and analysis tools	Bernard, Davies
7.3 (=2.8)	Simulations of diffuse emission (incl. zodiacal emission), and associated analysis tools: - recovery of dust and gas properties in localised regions - global inversion techniques	Boulanger, Juvela
7.4	Simulation and analysis tools for polarised galactic emission (extraction of astrophysical information)	Banday, Wilkinson
7.5	Preparation of and Coordination with Herschel Key Projects	Lagache, Valenziano
7.6	Modelling and analysis tools for galactic point sources (stellar objects, SNRs, PNs, compact HII regions)	Lasenby, Umana
7.7 (=2.9)	Modelling and analysis tools for solar system objects	Ganga (TBC), Cremonese

Breaking news from JPL on the Sorption Cooler

(from C. Lawrence)

The first cooldown of the Planck Elegant Breadboard sorption cooler started last Thursday (10 Jan.). The cold end was at 17.5 K by Saturday afternoon. Initial measurements showed 999 mW of cooling at a precool temperature of 63 K (warmer than expected in space, but what the GSE provided for the initial measurements), exactly as modelled. It appears that we have not only A cooler that cools, but more specifically THE cooler designed, built, and modelled. Complete characterization will take months, but this is clearly good news, and an important step toward Planck!

Congratulations to the whole team at JPL !

News from the LFI Instrument

M. Bersanelli & R. Mandolesi

The development programme of the LFI is proceeding. The baseline design of the focal plane configuration has been completed, including an optimisation of the feeds location and orientation for polarisation measurements. The design of the main frame of the front end unit has been completed and analysed both thermally and mechanically. A mock-up of the LFI front end unit has been produced to investigate the details of integration, interfaces, wiring, connections, and so on.

The units that are critical for the instrument performances are the radiometer chain assemblies (RCA), which include the front-end feeds and cryogenic amplifier modules, waveguide sections and back-end modules. At three of the four frequencies (i.e. 30, 70 and 100 GHz) radiometer chains have been assembled as "Elegant Breadboard" (EBB) models in order to verify their functionality and performances, as well as testing for non-idealities and systematic effects. The EBB models of feeds horns and orthomode transducers show excellent performance and their development is in line for QM development.

The measured noise and power performances of the EBB low noise amplifiers are approaching and surpassing the LFI requirements. In particular, recent measurements on TRW amplifiers at 30 GHz show a substantial improvement with respect to previous measured data. The LFI noise performances achieved at all EBB frequencies are record low values. As a result of an intensive effort, cryogenic phase switches at 100 GHz have now been demonstrated with indium phosphide devices. These components have been tested cryogenically and implemented in the EBB front end modules, and they meet the Planck LFI performance requirements.

One of the most critical interfaces of the LFI instrument concerns the array of waveguides connecting the 20K front end with the back end unit. The overall radiometer array assembly envelope has now been agreed in detail with Alcatel, and it is compatible with the telescope structure and Planck satellite design. A critical issue is the high thermal load on the three thermal shields (V-grooves) imposed by the LFI waveguides. LABEN, in collaboration with Custom Microwave, has recently identified a solution which is expected to solve the excess thermal load. Preliminary thermal measurements on the waveguide prototypes show results consistent with the model predictions. In addition, RF performances of the waveguides confirm the design expectations.

A Planck-like telescope is being built by the TESRE institute, which will be used by the LFI team to test the LFI optical properties using the aluminium RF telescope model.

The LFI requires cooling of the front end modules at a temperature of 20K. This is achieved with a hydrogen sorption, developed by JPL, which is a critical element in the whole Planck mission since it also provides pre-cooling to the HFI instrument. Currently the cooler EBB version is integrated in a cryo-facility at JPL and ready to be tested.

Recently, financial difficulties on the Italian side have triggered the consideration of back up solutions for the 100 GHz channel in order to decrease the associated costs. In particular, a back-up solution is under consideration with a design modification capable of enhancing the LFI polarization capabilities at 100 GHz, at the expense of temperature anisotropy sensitivity.

Extensive simulation activity is being carried out by the LFI team in a coordinated way on all critical issues, including in-flight calibration, main beam reconstruction during the survey using external planets, straylight effects. In addition, inputs from the systematic effects working group are being translated into specific algorithms and integrated in the overall simulation pipeline. This represents a first step in the configuration of the data analysis pipeline to be developed and implemented in the DPC.

Calendar of (some) Events

Science Team meetings

Date: 6-7 April, 2002
Place: JPL, Pasadena
Date: 8-9 July
Place: Estec, Noordwijk
Date: 10-11 October (TBC)
Place: Tesre, Bologna

HFI Baseline Design Review

Date: 19-20 February (TBC)
Place: IAS, Orsay

LFI Baseline Design Review

Date: 26-27March (TBC)
Place: Itesre, Bologna

Workshop of the Systematic Effects Working Group

Place: Tor Vergata, Rome (TBC)
Date: 17-19 April (TBC)

LFI Consortium meeting

Place: Santillana del Mar
Date: 14-15 Oct. 2002

HFI Consortium meeting

Place: Orsay (TBC)
Date: 22-23 Oct. 2001 (TBC)

News from the HFI

J.L. Puget

Instrument Design

The instrument design is now almost complete.

- **Focal plane unit**: an important step was completed in the last few months when the mechanical interfaces between bolometer cases, the 0.1 optical plate, the horns and filters and the support plates at 1.6 K and 4K were finalised. These interfaces are essential as they insure the proper alignment of all the optical elements and their positioning with respect to the 4K Focal Plane unit.
- **Detection units** including bolometers, back-to-back horns and filters of the very same design as those of Planck have been integrated in the ARCHEOPS balloon experiment. In ARCHEOPS the bolometers are also cooled to 100mK with a Planck-type dilution cooler. The first scientific flight of this experiment from Kiruna in January 2001 obtained about 8 hrs of scientific data. Detector chains have been calibrated on the sky (dipole, galaxy and Jupiter all giving calibration factors agreeing within error bars). The optical efficiency of the ARCHEOPS chains was also measured, and the good news is that the values measured on some of them are significantly above the Planck requirements and compatible with the expected value. Furthermore, for those detectors which deviated significantly, proper corrective actions have been identified. More recently the first CQM (cryogenic qualification model) detector units have been integrated by the Cardiff team with the first Planck bolometers delivered by Caltech/JPL. These detector units have also been measured to have excellent optical efficiencies (above the expected values).
- The **polarization sensitive bolometers** which have been adopted as the baseline for HFI are now back on track within requirements after meeting some technical difficulties.
- The **mechanical interface with the LFI** is also converging, although the principle and procedures for the positioning and alignment of the HFI focal plane unit with respect to the telescope (which involves LFI and telescope structure) is still not finalised.
- The **calibration** of the CQM focal plane unit is planned to start in December 2002. The big (ex-ISOCAM) helium cooled cryogenic chamber in Orsay was modified and is being reassembled. Calibration sources are in the final design stage or being built (including the Fourier Transform spectrometers to be provided by Canada, see below). The data base, data acquisition and quick look software for the calibration will be a first implementation of the elements of the Data Processing Centre (DPC).
- **The cooling chain**: with the excellent performances of the bolometers and their associated optics tested in the laboratory and the balloon experiments, the cooling chain is recognised by everybody as the most critical element of Planck HFI. This cooling chain relies on the passive cooling below 60K achieved through the design of the payload module by Alcatel, the hydrogen sorption cooler built by JPL (cooling both instruments), the helium Joule –Thomson 4K cooler built by RAL with Astrium UK, and finally the 100 mK dilution cooler built by Air Liquide under the direction of IAS/CRTB. This list illustrates well the complexity of this development. The dilution cooler has been flown on the ARCHEOPS balloon experiment but with a helium cryostat for pre-cooling. The hydrogen Sorption cooler is a new development and has never flown before in this form. An important step was reached at the end of 2001 as the Elegant Bread-board of this cooler was integrated into a chamber to start testing in January 2002. The first test of the full cooling chain will take place in Liège in late 2003 and 2004 in a large cryogenic facility when the cryogenic qualification model of the full payload will be tested.

Data Processing Centre

The HFI DPC is now developing the bread board model of the pipeline to be completed at the end of 2003.

- The responsibility of the HFI DPC **Level 1** (going from raw telemetry to ordered time lines) has been taken over by the PCC College de France in Paris who was already developing many of the needed functions for the calibration tests.
- The **Level 2** processing (bulk of the data processing leading to cleaned/calibrated time lines and frequency maps) is under the responsibility of the Paris-Orsay-Saclay-Data-Center (POSDAC, coordinated by IAP). Releases of the L2 software should take place every 6 months, starting in December 2001.
- The **Level 3** team in Cambridge has been developing and testing methods for the component separation and extraction of the power spectrum.
- **Level-S** is now producing simulated data sets which can be used by the different levels of the two DPCs to test their software. We can thus expect a new generation of simulations of the end-to-end Planck capabilities by the end of 2003. These new simulations will allow a much better estimate of the science goals to be achieved using the polarization capabilities of Planck. This is critical when the importance of CMB polarization measurements are becoming evident and it is realised that Planck has a unique capability to carry out these measurements on large and intermediate scales.
- **IDIS** (Integrated Data and Information System) in charge of managing both HFI and LFI data flows is progressing as planned. The first implementation of its most critical part, data management, is to be released at the end of the first quarter of 2002, to be closely followed by the "pipeline coordinator".

Canadian participation in Planck

We are very glad that the contribution of our Canadian colleagues is now secured following critical meetings in the fall of 2001. The funding profile problems for the Herschel-Planck Canadian contribution has been solved satisfactorily through the efforts of all involved partners. The instrumental elements to be supported by the Canadian participation (Sorption cooler electronics, calibration spectrometers) should be available with minimal delays with respect to the original schedule.

News from the LFI DPC

F. Pasian & R. Mandolesi

As is known to most readers, the LFI Consortium has chosen a "distributed-development, centralized-operations" approach for the implementation of its DPC. Data reduction and analysis software is developed by the members of the Consortium at their own facilities as prototype code – this code is then installed and eventually integrated at a single site (OAT, Trieste), where DPC operations will occur.

A Bread Board Model (BBM) of the pipeline is currently being implemented, with the double aim of supporting LFI ground tests and evaluating the infrastructure needed to support a realistic full data flow. The BBM is planned to be completed by the summer of 2002. While the Level 1 (telemetry handling) facilities are expected to be already at a good level of refinement, the reduction and analysis code will only be very preliminary. This is because the understanding of systematic effects can only be limited at this stage, and consequently the simulations are bound to be incomplete. Furthermore, only a partial IDIS implementation will be available at the time, both in terms of data structures (the Data Management Component) and processing environment (the Pipeline Coordinator). A more refined model of the pipeline (the Development Model) is scheduled to be available in early 2004.

The Trieste, Bologna and Geneva groups are currently busy developing the Level 1 facilities needed to support the LFI instrument-level tests. The related tools are being developed by the DPC Team following the concept of smooth transition between ground tests and DPC operations: they are to be installed on the EGSE computers, and will eventually run at the DPC (with modifications/extensions) as its Level 1. The system consists of telemetry unscrambling facilities, visualization subsystems (Real Time Assessment – RTA – for housekeeping telemetry, Quick-Look Analysis – QLA – for scientific telemetry), and archiving tools. The system is being tested using simulated telemetry data: time series of LFI observations produced by the Level S, properly quantized and packetized by LFI-specific software, which is able of providing LFI housekeeping telemetry as well.

As for the data reduction and analysis software belonging to Levels 2 and 3, all building blocks to implement the basic BBM pipeline have been installed. As mentioned, removal of systematics and instrument calibration is very preliminary and is currently based on work developed in Milan; destriping software has been built in Bologna and Trieste; map-making code (both for temperature and polarization) has been developed in Rome; point source extraction in maps and time series has been contributed by Santander; component separation algorithms based on Independent Component Analysis have been developed in Pisa and Trieste, while the MASTER code for C_l estimation has been recently installed during a visit of Eric Hivon to Trieste. Integration of this existing software in a coherent pipeline has just started. Many other groups have agreed to contribute to the Development Model of the pipeline, and input is also expected from the common Working Groups established within the Planck project.

The interaction between the LFI data reduction and analysis pipeline and Level 4 (located in Garching and common to both the HFI and LFI DPCs) will also be tested. In particular, the interface between the pipeline will be defined and preliminarily implemented, and the prototype data storage and distribution system built by the Level 4 team is planned to be exercised by an appropriate data flow.

The Planck Science Office

J. Tauber

The Planck Science Office (PSO) was created in the past few months, as the ESA entity which deals with science and operations issues. Aside from generic support tasks to the Project Scientist, it is charged with managing some working groups on system level Ground Segment engineering. After the launch of Planck, it will be coordinating scientific operations, and in particular will be directing the implementation of the scanning strategy.

The PSO (one more acronym to learn) currently consists of all of three people: Jan Tauber (leading it as Project Scientist), Rene Laureijs (who joined in December after working many years in the ISO Project, and will be acting as Deputy Project Scientist), and Martin Bremer (who is taking on the role of Science Ground Segment System Engineer).

Video Conferencing: something for the future or something for now?

K. Bennett

Many of us have been considering the option of video conferencing for some time, but have never come to a conclusion or recommendation. Thus it remains an under-exploited option. In these days of travel restrictions and financial limitations there is a strong case for an objective evaluation of this option. I must admit that the tele-presence of one of our JPL colleagues at the recent HFI Cardiff meeting served to remind me of the unfinished business regarding this matter.

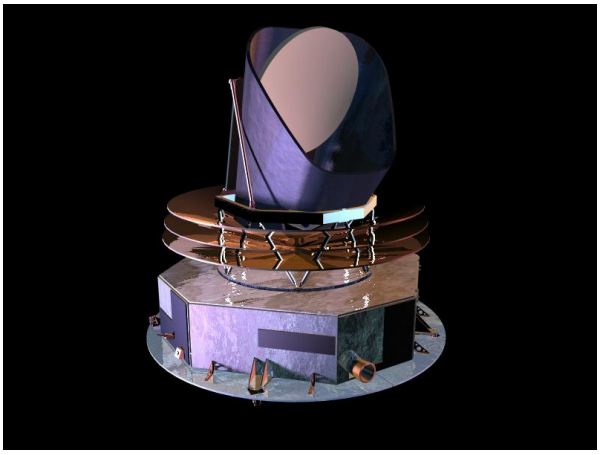
ESTEC has recently implemented an Agency-wide solution which at present uses ISDN lines and eventually, when more margin is available in a broader internet, will be IP based. Both fixed and portable facilities (which can be rolled to the work place) have been set up using the standard H320 (eventually H324). The Herschel/Planck project team already takes advantage of this facility in its contact with Alcatel. If other institutes already support this standard, we should add them to a common video directory.

MPA is about to decide on their facility and JPL has obsolescent systems which may or may not be available to suit today's standard (this is being looked into). IAS/IAP are looking seriously at an Alcatel compatible system, so things are taking shape. In short, if your institute has plans for video conferencing, it makes sense to ensure that we can communicate before the investments are made.

In addition, there are products available such as NetMeeting which might support desk-to-desk conferencing (with support for visual aids) that may improve the efficacy of daily technical discussions among our collaborators. It is coincidental (if not opportune) that one of our colleagues is now working off-site. This has given us the incentive to evaluate the available 'NetMeeting' type of solution for the purpose of co-ordinating this off-site work with ESTEC colleagues. We will report on this shortly.

Within the context of IDIS, and on behalf of the collaboration, I have taken the initiative of setting up a discussion forum (TBD) within LiveLink where you are invited to deposit any ideas, suggestions, documents, specifications, links or information which you would like to share with the rest of us on this important item so we can arrive at an early consensus.

While there is no substitute for personal contact in a project as intricate as Planck, few of us have time and resources to make all the necessary trips. Let's hope that video conferencing will provide expedient assistance and leave us more time for our other tasks, even though I will miss the clinking of glasses !



The Planck People Database

A database of all members of the Planck collaboration (i.e. LFI, HFI, DK-Planck, ESA) has been available for some time on line through the Planck Web page. It has however proven to be rather difficult to keep it up to date with the (sometimes rapidly) changing membership of the Consortia. The last update of the database took place in early 2001, and this is now creating some problems since other tools (such as the WG membership) are based on it. Ways of improving the manner in which this database is managed are now being discussed, and it is very likely that in the near future it will be changed such that each Consortium can directly update its own membership. This is foreseen to happen sometime between February and March. Until then, the database will not be updated. We ask you for just a little more patience!

News from the Systematic Effects Working Group

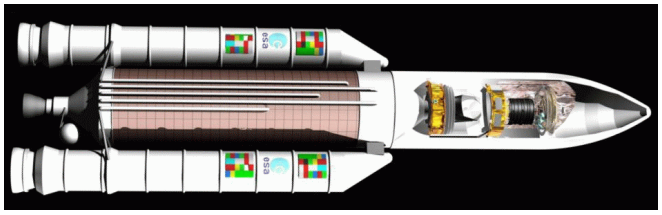
M. Bersanelli and J.M. Lamarre

The Planck Systematic Effects Working Group (SEWG) is one of the transversal working groups established within the Planck collaboration, to study and model in detail all the expected sources of instrumental and environmental non-idealities which may impact the Planck measurements.

Although a key design goal of the Planck mission and of its instruments is the rejection of systematic effects, non idealities will be present at some level. It is expected that understanding of systematics will be crucial for the full scientific exploitation of the Planck survey. The SEWG is coordinated by the LFI and HFI Instrument Scientists, and has been organised in 9 working teams. Each team covers a well defined area (beam distortions, sidelobe pick-up, thermal effects, intrinsic non-gaussian noise from the instruments, pointing errors) and is lead by members of the Instrument Teams. In addition, the SEWG addresses issues such as calibration, polarisation-specific effects, methods for detection and removal of systematics, and studies their impact on the scientific products. A kick-off meeting with the Team coordinators took place in June 2001, and activities have been going on since then. On December 17-18, a second coordination meeting took place at Estec.

Some of the systematics have already been modelled in a preliminary form, such as the effect of sorption cooler on LFI data and straylight timelines. In addition, tools from the pointing working team will be available soon for simulations. If you want to use these results please contact the Team Coordinators (see Planck Working Groups Structure).

It is expected that a wider workshop on systematic effects in CMB measurements will be held in the Spring of 2002.



The new Science Case for Planck

The well-known "Red Book" was written in 1996, as the result of the Phase A Study of COBRAS/SAMBA. Since then the field has developed rapidly, with many experiments taking data or in development. The Planck instruments have also in the meantime evolved to more capable and focussed configurations. The Science Team has therefore asked the two Survey Scientists (C. Lawrence and G. Efstathiou) to organise the publication of an updated scientific case for Planck, based on the proposals that you all submitted in June. They in turn have distributed the upcoming document into chapters and asked the Working Group coordinators to collate the proposals within their areas, removing overlaps in the process.

The resulting document, which will also include short descriptions of the satellite, payload, and Ground Segment (including DPCs) will be published under the ESA SP series sometime in the middle of 2002.

If you have ideas for striking or interesting graphics to be used on the cover, please communicate them to me or to one of the Survey Scientists.

Publication policy

Attention has been drawn to the fact that some publications can have damaging effects for the image of the Planck project. For example, analysis of instrumental effects can lead to preliminary conclusions indicating reduced scientific return in some aspects of Planck science. While such analysis is very useful and well intentioned, when published it can also be used by third parties in less positive ways. Therefore such results should be internally evaluated before being released. This is one of the reasons for having a publication policy in place, and you are all urged to adhere to it. It can be found on Livelink at http://astro.estec.esa.nl/llink/livelink?func=doc.Fetch&nodeId=61803 .

A FORTHCOMING POSTER