

FOREWORD

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The ‘Herschel Space Observatory’ (formerly known as the ‘Far InfraRed and Submillimetre Telescope’ or FIRST – see below) will be the first ‘observatory type’ space mission for the far infrared and submillimetre wavelength range. Herschel is the fourth ‘cornerstone’ mission in the ESA science ‘Horizon 2000’ plan.

The science to be performed with Herschel has been discussed in a number of earlier meetings, the latest took place in Grenoble in April 1997 (Rowan-Robinson et al. (eds.) 1997). However, at the present time everything is much more concrete: In the autumn of 1997 the Announcement of Opportunity for the scientific payload was issued, it was selected in spring 1998, and confirmed in February 1999. Likewise, the Invitation To Tender for the space segment of the Herschel mission was issued to industry in autumn 2000. While we had our symposium in Toledo the proposals received were being evaluated, and as these words are being written an industrial consortium (with Alcatel Space as prime contractor, and Astrium GmbH and Alenia Spazio as major subcontractors) has started to work. We are now in phase B!

The basis for the contract (the largest single contract ever awarded by the ESA Science Directorate, comprising both Herschel and Planck) is a launch in February 2007, and the subsequent provision of three years of Herschel routine science operations. So the aim of the Toledo meeting could be summarised as the starting point to address the overall question: *How should the three years of observatory time, foreseen commencing in the summer of 2007, best be spent in order to maximise the scientific return and impact of the Herschel mission?*

The Herschel Science Team is the body that is charged with assuming the responsibility to find an answer to this question, and to implement an appropriate strategy. Notwithstanding that it is a very difficult task, you need to peer into the future for a start, but we in the Science Team do not even want to address such a major issue in isolation. On the contrary, we want to have a dialogue and receive input and feedback from the entire future Herschel user community.

Recognising that it is necessary and appropriate already now to address this very important issue, the Toledo meeting was organised to:

- announce Herschel and its foreseen science capabilities to the astronomical community

- identify areas of astronomy where the impact of Herschel will be the greatest
- consider the issue of large ‘key’ programmes versus smaller ‘traditional’ programmes
- establish complementarity to other facilities

as a starting point to address the overall question discussed above.

In addition to the usual oral and poster presentations, it was also decided to organise panel discussions to attempt directly addressing the latter three bullets in various areas in smaller groups. When discussing these panel discussions before the meeting took place, we were aware that they could become total failures, but in the end we are fairly pleased with the way they were conducted.

The meeting was attended by almost 200 people from all over the world and with various astronomical interests, from the very near to the very far, from what is happening now to what happened when the universe was young. Altogether we had approximately 120 presentations, about 70 oral talks and 50 posters. In order to accommodate the wish of many participants to give oral presentations we decided – after long discussions – to partly have parallel sessions. We tried organising plenary sessions that would serve as introductions to subsequent parallel sessions. This meant that the plenary sessions often had to cover two ‘different’ subjects, that each would be addressed in one of the parallel sessions to follow.

We are pleased with outcome of the meeting. It was well attended, and the atmosphere was very good, during the various sessions as well as outside, including – for some – a long night in the discotheque after the conference dinner. Many excellent presentations were given, and an unusually large fraction of them actually did address the specific issues we wanted to be addressed. One of the specific issues that was discussed was the question of pros and cons of large coordinated programmes versus smaller – for lack of a better word ‘traditional’ – programmes. In fact, the evaluation committee for the instrument proposals charged the Science Team to organise a meeting – or series of meetings – to address this particular issue. It has always been appreciated – at least by the people closely involved with the mission – that large ‘survey-type’ programmes must and should be a necessary and important part of the overall Herschel observation programme. In Toledo a ‘wider’ group of people – as evidenced in the



Figure 1. View of Toledo from the conference venue. The ‘old town’ with its winding streets and a multitude of attractions of various kinds was close enough for the evenings but far away not to distract during the day...

various panel discussions – came to the same conclusion. This is an important signal to the Science Team.

We were honoured by the presence of local dignitaries, as well as by the ESA Director of Science. Of special importance to all of us is the fact that Roger Bonnet used his welcome address to announce his decision to change the name of FIRST to the ‘Herschel Space Observatory’ in honour of Sir William Herschel (1738-1822) and his discovery of infrared light precisely 200 years ago.

Sir William published four papers on the subject in the year 1800 (Herschel 1800a,b,c,d), altogether and including figures they comprise almost 200 pages. As a sideline it is interesting to note that he was of course critically dependent of the sun as the source of radiation to perform his experiments; in the first paragraph in the second paper he writes ‘...; but, having lately had some favourable sunshine, and obtained a sufficient confirmation....’. When operating in space in 2007 Herschel will also be critically dependent of the sun, but only as the source of power, while we are taking extreme measures to prevent any radiation from the sun to reach anywhere near our detectors!

The success of any major meeting depends on the hard work of a large number of dedicated individuals; this one was no exception. The members of the Science Organising Committee (\equiv the Herschel Science Team) and of the Local Organising Committee in particular all contributed by working diligently, but a special mention must go to our conference secretary Asuncion Diez.

Finally a word about the Proceedings. The idea was to publish the proceedings very quickly, as we had the feeling that they would be not only ‘nice’, but also useful for some time to come. Disappointingly, in the end this has proved to be the most difficult part of the conference organisation. As is perhaps unavoidable but still unfortunate and undesirable, some of our colleagues have been unable to provide their presentations in written form. It makes me think of a cartoon (the appearance of which I

will not describe in any detail) with the punch line: ‘No work is ready until the paperwork is done!’ How true.

We have ‘re-grouped’ the oral talks in subject areas, this means that the order of the papers in the proceedings does not fully reflect the order in which the talks were given. As in the meeting, the poster presentations are ordered alphabetically by the first author. Thanks to all the contributors, and to Ana Heras and Timo Prusti who have done most of the slavework without which there would have been no Proceedings at all.

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