



FIRST/Planck Project

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Subject: FIRST - Telescope Workshop 21/22.06.1999

Dear all,

As we all know, the FIRST telescope development is one of the challenging technological developments of FIRST. The FIRST telescope is provided via a co-operation between ESA and NASA. The agreed development approach for the telescope includes as the next major milestone the demonstration of the readiness of the technology readiness and in combination with that a Preliminary Design Review of the flight design telescope. This PDR has been fixed to mid next year.

In order to prepare the path to the PDR and to support the effort for the telescope design, it has been agreed to hold two ESA/NASA working meetings for the telescope, one 21/22. June 1999 and one by end of the year. In order to enhance visibility and achieve direct feedback from the "users" of the telescope, we consider the support of the instrument teams essential and would like to invite you to actively participate. The details on the objectives of the first working and the proposed agenda are given below.

1. Objectives of the first working meeting on the FIRST Telescope

The dominating objective of the working meeting of the FIRST telescope is the preparation to a successful PDR in June 2000. From this one can define specific objectives for this first working meeting, i.e.

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- Review the telescope requirements in order to identify potential flexibility ("hard" and "soft" requirements) in the design implementation that could either achieve feasibility, optimise performance, ease design or reduce costs
- Improve visibility and understanding of telescope, instrument and cryostat development and design (especially w.r.t. interfaces of the telescope to the instruments and the cryostat)
- Provide a forum to discuss and agree on potential modifications of the telescope specification as a result of found difficulties and incompatibilities of the present telescope design with the specification
- Identify and agree on updates of the specification (in view of the segmented design)

Since the discussion is expected to be at a detailed engineering/design level I hope you can support us from the instrument teams with this expertise. The ideal composition for the instrument team for the working meeting, I could see would be the FPU engineering responsible, together with the experts (optical, straylight,...).

2. Proposed Agenda

Following the above outlined objectives I propose the following agenda. The agenda points 1 to 4 shall provide the overview and the background for the detailed discussion in item 5.

Agenda

	Item	Dur.
1.	Welcome and Introduction (ESA)	15'
2.	Instrument Design	
2.1	PACS instrument (PACS)	30'
2.2	SPIRE Instrument (SPIRE)	30'
2.3	HIFI Instrument (HIFI)	30'
3.	Cryostat Overview (ESA)	30'
4.	Telescope Overview (JPL)	60'
5.	Detailed discussion (Workshop)	
6.	Conclusions/Summary	

The presentations shall, in view of the objectives of the working meeting, provide an overview on the design status of the instruments, cryostat and telescope, however concentrate on the relevant interfaces, respectively the interface or design information needed from the telescope.

As a first approach this could include in for an instrument presentation the following elements:

- FPU design (optical/thermal)
- Instrument Operation – operational modes
- Straylight aspects
- Instrument requirements on the telescope (temperature, temperature gradient, ...).

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The presentation on the FIRST cryostat will follow the same lines, i.e. provide an overview on the mechanical, thermal and optical design and interfaces with the telescope. Specific items are:

- Telescope thermal environment
- Telescope mechanical interfaces
- Cryostat Cover/Cavity interfaces

The presentation on the telescope will include, aside the overall design, interfaces and the development approach, an introductory presentation on the telescope requirements and interfaces that are proposed by JPL to be discussed in detail during the workshop. A first list of these items are:

- Optical parameters/backfocal length (thickness of primary)
- Focus mechanism
- Temperature and temperature gradient requirements (slits)
- Straylight
- Drying in orbit/Contamination requirements
- Telescope heaters
- Telescope mechanical design requirements
- Telescope mechanical interfaces (triangle)
- Alignment approach
- Telescope test plan

We expect to complete the detailed discussion on the various items identified in the overview presentations by 22.06.1999 lunchtime and to conclude the meeting early in the afternoon.

3. Date and Place

The working meeting will be held on the 21/22.06.1999 at ESTEC, room Newton 1, starting at 13:00 to allow travel in the morning.

Please confirm your participation to the working meeting asap.

Best regards



T. Passvogel