


**FAX**
**FIRST/Planck Project**

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subject	<b><u>Instrument Data Rates</u></b>				

At the end of the selection process, the FIRST and Planck scientific evaluation committees stressed the importance of increasing the telemetry data rate allocated to the experiments.

The committee reported about the importance of such an increase because of the high data rates from the experiments and the need to limit the loss caused by the onboard data compression.

The Project therefore took the action to evaluate the possibility of some increase of the 50 kbps for FIRST and 30 kbps for Planck baselined in the Announcement of Opportunity (S-Band downlink).

Already in the meetings with the PI's and delegations in late 1998 and early 1999, the Project indicated that the use of X-Band would be envisaged in the light of the recent Rosetta and Mars Express baselines.

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Additional costs have been evaluated internally by the Project with the support of ESOC, for an increase in data rates for FIRST and Planck.

In fact an increase (to 200 kbps) of the rates would lead to cost increases vis-à-vis the baseline in the areas of :

- Ground Segment (mainly ground links)
- On board transponders and their test equipment
- On board amplifiers and/or antennas
- On board mass memories
- On board data handling and their test equipment

These costs have been judged unacceptable for the financial situation of FIRST and Planck.

However, with a view to improve science and possibly to lead to certain simplification of the instruments, the Project is willing to baseline new data rates for FIRST and Planck as follows:

1. FIRST instruments will not pass on to the spacecraft mass memory more than an average of 100 kbps over 24 hours. Note: burst transmission up to 800 kbps for short period is already agreed in the instrument baseline.
2. Planck instruments will not pass on to the spacecraft mass memory more than an average of 60 kbps over 24 hours.

These bit rates will include (like in the baseline) science and housekeeping data and formatting requirements.



F. Felici