Attn: Robert Perram
From: Don Horan
Subject: DSPSE Status Meeting - 11 April 1994
cc: File

A DSPSE status meeting was held at 1000 (EDT) at the BATCAVE on 11 April 1994 and chaired by Don Horan. This meeting discussed spacecraft activities from 1000 on 4/9/94 to 1000 on 4/11/94. This memorandum briefly summarizes the results of the meeting.

Engineering

All spacecraft systems are nominal at this time.

The first attempt to carry out the maintenance burn at 0128 GMT today was aborted because the main sensor door was not closed. The script which was to close the main sensor door assigned time units of 8 milliseconds instead of seconds to the door closing and so inadequate time was allowed to close the main sensor door. The burn was successfully carried out approximately 5 hours later. The RCS stayed in primary mode until the latch valves closed at the end of the burn.

Even the second burn attempt came close to being aborted because one startracker cover did not close until approximately 1 minute before the scheduled burn time. The time required to close a door or cover is a function of the temperature of its dormant paraffin actuator. A hot actuator will require longer to close a cover.

In preparing for the first burn attempt, the tanks were unexpectedly pressurized early. Although this caused no harm, the cause of the early pressurization must be understood. It is believed that the early pressurization resulted from having the wrong telemetry apertures in effect. Normally, the correct apertures to support a burn would have been in effect, but they were delayed because of the bistatic radar tests which were in progress. There are also questions associated with the telemetered values in RCSALL and DUPER telemetry formats for the accelerometer readout for the delta v along the x-axis.

Flight Software

No resets of any kind.

TAMP

Initial results show that the burn was fine. The periselene altitude was raised to approximately 427 km, which is good. Overlap analysis for the new orbit is still being analyzed.

Sensors

New NIR exposure settings are being used and the digital interference in the NIR images seems to be gone. The new NIR exposure settings are designed to prevent pixels from becoming
saturated. The premise is that the interference pattern may have resulted from interaction between saturated pixels and the data compression scheme in use.

The focal plane temperature of the LWIR camera is generally remaining lower throughout the mapping runs now, so it seems that reducing the heat load is a correct move. The LWIR cryocooler is now turned on only 15 minutes before the start of mapping.

**SMOP**

Imaging and data transmission have been completed for orbits through 240. Mapping has been completed for orbits 241 and 242. Most of the images for orbit 241 have been transmitted. Transmission of the remaining images from orbit 241 and the images from orbit 242 is in progress.

Almost all of the mapping images that were missed on orbit 231 were retaken without losing any mapping images from subsequent orbits. A very small section in the southern hemisphere mid-latitudes remains missing for orbit 231.

The end-to-end bistatic radar tests on 9 April with Madrid and Canberra did not go smoothly. However, the real bistatic radar observations did go very well. Observations of the lunar south pole were done on orbit 234 using Goldstone, on orbits 235 and 236 using Canberra, and on orbit 237 using Madrid. All DSN operations went well. Good data was collected on all four observations, with good signal amplitudes and signal-to-noise ratios. The area southward of 85° south latitude was illuminated. Data is on magnetic tapes at the DSN stations. The tapes will be sent to JPL through routine channels where copies will be made and sent on to us. It will be a few weeks before the tapes are expected here.

**Schedule**

DSN has our required supports covered for today and tomorrow.

On Wednesday, a coverage gap is expected from 0435 to 0745 GMT because of the GOES launch. The gap starts in the middle of imaging on orbit 250. DSN support using the 34 m ends at 0415, and ends for the 70 m at 0435 unless Ulysses will yield some of their time. Gap filling is not needed until the mapping run on orbit 250 is done and transmission of SSDR data is ready to start. USAF support is being sought, too.

On Thursday, gaps because of GOES are expected from 0715 to 0815 GMT and 1120 to 1205 GMT. These gaps are in the midst of SSDR transmission from orbits 255 and 256.

On Saturday, 16 April, the retaking of images lost on orbit 131 will be attempted. DSN support gaps on Saturday, especially after orbits 264, 265 and following, will be especially bad.