DEIMOS
SSC Presentation: March 3, 1997
Unmet Milestones, Milestones for the Present Quarter, and Concerns

Unmet milestones from previous quarters:

- The designs for the and grating insertion and slide mechanisms are still not complete.
- Element 8 is not finished.
- Element 2 has not started.
- A revised software budget has not yet been prepared but will be finished for the Software CDR on April 29.
- The Leach II analog controller board has still not arrived.
- Full-sized simulated mosaic images have not yet been constructed (pending an image display system).
- The Alignment Report is only 80% complete.
- The in-house Lick CCD thinning effort was not completed.

Unmet milestones from the Tenth Quarter:

- The test dewar electronics are not finished.
- The final choice of CCD controller has not been made.
- The hardware simulator has been deferred.

Progress on major milestones for the present (Eleventh) quarter:

- We have taken delivery of the DEIMOS structure. Testing the drive will be delayed pending resolution of the dimensional conflicts.
- Design of the slitmask system is proceeding on schedule, and fabrication has started.
- Design of the grating system is progressing, and completion by the end of the quarter is possible.
- The slitmask-grating CDR was held on January 9. A report is pending.
- The meeting with ORA was held.
- The mechanical design of the camera barrel has started as planned.
- The Cargille laser fluid was ordered. Tests on RTV compatibility have been planned but have not yet started.
- The detailed mechanical design of the TV Guider has not started.
- The final design of the dewar system is nearing completion but is not final.
- Testing of the MITLL CCDs has not yet begun, pending receipt of CCDs from Lincoln. The decision on the final CCDs in DEIMOS is postponed pending these results.
- Progress has been made in understanding profilometer decentration measurements, but the issue of errors and how to compensate them is still unresolved. The decentration disappeared on Element 7 when the element was properly leveled in the profilometer, but a decentration of 0.009-in on Element 8 remains. We are still not sure this is real.
- The cooling of Element 5 has been deferred.
- Preparations for the software review on Apr. 29 are well along.
- Fabrication of Elements 1 and 2 have not started. We will instead begin with Element 5.
- The thermal sensitivity of the plate scale is largely understood, and it is known that we have a problem. Efforts on the solutions have not started.
- A calibration plan and associated database design are in progress.
- The design of the signal chain for flexure compensation has not yet started.

- Tests of the coefficient of thermal expansion for the camera RTV athermal mounts have been planned, but the tests themselves have not started.
- The use of DEIMOS (and LRIS) for narrow-band imaging has been studied and appears promising for some applications. A report is in progress.

Concerns:

- Breakage of first CaF_2 element still not thoroughly understood. Replacement time for broken blank is at least 90 days. Blanks on order are delayed, and at least one has broken during production. We are considering ordering back-up blanks as insurance. Cost would be approximately \$50 K.
- Possible off-center asphere on Element 8; possible optical consequences; lack of complete understanding of profilometer.
- Camera has large thermal sensitivity requiring passive dimensional compensation or active temperature control.
- A viable CCD signal chain has not yet been demonstrated. Controller choice is still pending (Leach II). Long CCD readout times are still a possibility.
- Several delays threaten schedule: late CCD controller delivery, late MITLL CCD delivery, late L&F fabrication of structure, dimensional errors in structure require rework before drive testing can start, fabrication of the camera elements is on critical path. Schedule has officially slipped one month.
- \$148 K was removed from the contingency, leaving \$292 K. The budget is tight.