August 8, 2006 Palomar LGS IPT Meeting Notes

Caltech: Bouchez, Moore, Roberts, Troy, Petrie
Palomar: Henning, Pickles, Shelton, Thicksten
Chicago: Kibblewhite

1. Palomar science meeting 9/14/06

The meeting will be held on Thu. 9/14 here on campus, the day before the Keck Science meeting at UC Irvine. The chosen date conflicts with the Keck NGAO kickoff meeting (also at UCI). There are currently three topics on the agenda:

- Status of the Palomar LGS project.
- Hale telescope key science projects.
- Rapid response science at Palomar

We discussed possible AO topics to present, and came up with the following list (and likely presenters):

- LGS capabilities for shared-risk science for 07A (Mitch)
- NGS performance improvements
- Capabilities of SWIFT (Mattias Tecza)

The issue of what to say about shared-risk science in 07A if we fail to demonstrate reasonable LGS performance during the September engineering run came up. It is likely that in this case we would request a postponement in the start of shared-risk science.

2. Chopper tests

J. Roberts presented results of chopper tests performed during the July engineering run.

1. Open-loop tip-tilt residuals increased by 9% when chopper is on but stopped, and by 20% (in B axis) when chopper is running. This is probably sufficiently low to ignore.
2. The HOWFS background data indicate that the chopper was successfully blocking *all* raleigh scatter, but som light was nevertheless recorded after a20" laser offset. This is unexplained.
3. Chopper effects on LOWFS remain to be investigated.

3. BTO transmission

A. Bouchez presented most recent installment of BTO transmission measurements. 2 optics in LL, the 1/4-wave plate and M6, were clearly damaged and were removed and replaced, respectively. Once these and the Coude FSM mirror are replaced, we can expect an end-to-end transmission of ~65%. This analysis leads to the following tasks:

- Chris and Hal have come up with a design for a stop for the ¼-wave plate. This needs to be machined and installed, and the optic replaced. (HP, AB)
- The new FSM-200 requires new controller and some modification of electronics. (CS)
- We should remeasure the LLT primary with the reflectometer and contact L&L optical regarding their coating job.

4. Other items

4.1. Laser diagnostics

Discussion of the laser diagnostics requirements was postponed to a dedicated meeting on 8/9. AB will organize.

4.2. Phase retrieval

Sid will come for next run: 8/10 noon - eve, working again next morning. The goal is to repeat last summer's phase retrieval demonstration. Eventually we would like to turn this into a facility-class tool for Palomar AO.

4.3. White light fix

C. Shelton has fixed the white light source, which can now be controlled with analogue voltage (lab power supply not necessary). He is working on final cabling today. Currently you need to use the AOCP window to control power level, or bypass this with a knob in the back.

4.4. Laser upgrade work

E. Kibblewhite not arriving at Palomar until Sat. 8/12 afternoon. Will leave Sat. 8/19 morning.