Caltech Optical Observatories
Palomar Adaptive Optics

March 6, 2006 LGS Facilty IPT Meeting Minutes
A. Bouchez 3/6/07

Caltech: Angione, Bouchez, Cromer, Moore, Guiwits, Shelton
Palomar: Doyle, Henning, Roberts, Tripathi

Actions for the April observing run are underlined.

1. Subsystem status

1.1. BTO
- Rewrote motion control system (not obvious to user). Code has been simplified. Seemed to work well.
- "Automatic mode" of BTO implemented and tested. Comes up in this mode.
- Sum signals on quad cells with new Q1 filter: Q1=22000, Q2=500, Q3=4000 at optimum laser_pol + 2.0 deg.
- Problems noted with "set zenith". Possibly related to "track reset".
- Status loop running slow, causing strange numbers reported by laser pulse frequency display.
- Problem with "set trigger" button. Need driver upgrade.
- Add Set Threshold capability.
- Do not move laser_select on Restore command.
- Need print_conf command (SG).
- Add resistor to produce 0 sum signal if Q3 is not connected. AB to check.

1.2. Laser diagnostics
- Added temporary enclosures on both benches.
- Added filters on cameras & photodiodes before run.
- Software ready. Some problems with fiber communication.
- Add separate filters for Coude 589/660.
- Mount for beam block.
- Mount for Pulnix 2" mirror.
- Get final enclosures made up.

1.3. Laser
- Ed coming to Palomar 3/25-4/3 to work on laser. Some testing needed on laser before he comes.
- Last week, removed old KTP from 1.06. Now giving 20W. Ordered new ThorLabs mount.
- Added new water connectors to both laser heads. Also fixed leak in AOM. Both laser got bumped. Both lasers need realignment.
- SNR on sodium cell photodiode still not sufficient.
    - Check whether Na is plating out on window.
    - Add insulating window to sodium cell?
    - Switch to photodiode with build-in preamp?
- Renu to come to campus to discuss laser automation sometime Tue-Thu next week.

1.4. LGS computer
- Trouble with temp. control GUI yesterday. Need to debug ADC powerup procedure.
- Wire up new ADC brick (CS)
- Future work:
    - Log temperatures and photodiode value to AODR.

- o   Implement outer frequency servo loop.
- o   Write LGS ADC driver (for diag. bench photodiodes)

1.5. Safety systems

- • Not using clients may be the reason IRCAM is running so slowly.