September 10, 2007 Laser IPT Meeting Minutes

A. Bouchez

Caltech: Bouchez, Petrie, Roberts
Palomar: McKenna, Tripathi

1. Coude facility

- AB to send first draft of specifications on laser environment (temp., particulate spec., power dissipation, air volume exchange.) RT, DM, EK to fill in details.
- DM will then request quotes for full room temperature and particulate control based on these specifications.

2. Laser work in past 2 weeks

- New flow switches have been installed; not tubular in-line but paddle-wheel switches on the output lines. Waiting on new 24V power supply to activate.
- Ed's controller includes a water conductivity measurement circuit, though this is not currently connected to any sensor. Too high conductivity, due to contamination, would cause diode modules to catastrophically fail. Ed recommended installing a sensor.
- RT changed out first LBO crystal, cleaned second. Power out was 7.5 W at ambient pressure. No measurement of conversion efficiency after 1st/2nd crystal made. Tight cover led to optics getting misalignment when it was replaced.
- RT attempted to measure bandwidth with spectrum analyzer. Unable to due to problems with etalon lock and mount. RT to order new 4-axis etalon mount. Will repeat experiment when it has arrived.

3. Future laser work

- Laser work this week
  - Realign SFG, optimize pressure.
  - Set up for AOA WFS measurement (JR can help afternoon of 9/17).
- Beam size at output shutter: Solution requires documentation of laser optical design and correction of any mismatch between the IR beams. Will postpone this until after September observing run.
  - Document current IR beam sizes.
  - Document current SFG and output telescope design.
  - Design new system (IR beam & output telescopes).
- BBO test crystal: RT to determine correct crystal size and order.

4. LLT

- Zemax modeling: 2mm movement of lens has no apparent effect on spherical aberration. Lateral shift of lens would produce significant coma.
  - JR to verify work.
  - JR to send summed extrafocal images to AB.
  - DMK to send extrafocal software "cookbook" to AB.
  - HP to send LLT primary figure data to JR, AB.
  - AB will investigate using "Registack" and extrafocal software for LLT.
- HP: Could measure LLT lens wrt. 2ndary to ~0.125". HP to verify dimensions before next observing run.
- AB to finish work on new mirror cover.
- AB to provide CO2 cleaning procedure & ask Bruce to order part.
- AB to ask AM about diagnostics cover status & suggest that Palomar complete work.

meeting adjourned at 9:35 am.