September 10, 2007 Laser IPT Meeting Minutes
A. Bouchez

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

1. Coude facility
   o 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.
   o 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
   o Laser work this week
     o Realign SFG, optimize pressure.
     o Set up for AOA WFS measurement (JR can help afternoon of 9/17).
   o 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.
     o Document current IR beam sizes.
     o Document current SFG and output telescope design.
     o Design new system (IR beam & output telescopes).
   o 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.
     o JR to verify work.
     o JR to send summed extrafocal images to AB.
     o DMK to send extrafocal software "cookbook" to AB.
     o HP to send LLT primary figure data to JR, AB.
     o 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.