August 16, 2007 Laser IPT Meeting Minutes

A. Bouchez

Caltech: Bouchez, Roberts
Palomar: McKenna, Tripathi
Chicago: Kibblewhite

1. NSF proposal

Ed plans on submitting a proposal to NSF. Will discuss tomorrow 9am PDT. Proposal must be in by end of next week.

2. Status of previous items

2.1. Flow switches

- Have 2 types: Cartrige-type (2.0 gal/min on arrival, min setting in 1 gal/min). Paddle-wheel (2 gal/min on arrival, min setting is 1 gal/min). Flow rates are lower than this (0.8 in diode arm).
- DCK would like to qualify flow switches to determine margins. Would like to install a test-loop for turn-on/turn-off testing.
  - Previous flow switches have shorted *closed*.
- Ed suggestion: Test using big chiller. 3-way valve can send flow to laser or bypass. Make sure flow switches are in return line.
  - Question: On big chiller, variable bypass before solenoid: How is it adjusted? Ed: Can adjust pressure-release valve, which control max pressure which diode lasers can experience. Should be adjusted to get 50 PSI on diode pressure gauges. However, a bypass valve bypasses the laser can also adjust pressure.
- Test procedure:
  - Laser fully bypassed; adjust pressure release valve to get 50 PSI.
  - Throttle down flow rate, and carefully open each diode.
  - Verify that system drops to 48 PSI.
- Determined that one of the paddle-wheel pressure gauges is incorrect part number. However, Dan and Renu believe they can proceed with current parts, once test that they have sufficient margin.
- Will use flow meter itself to calibrate on a bypass loop on large chiller. Should be set to ~0.7 gal/min through diodes. AOMs are in diode head loop, circulated by small chiller - no concern about contamination on this line.

2.2. Other items

- Oscillator will not arrive by this run. Purchased 2.
- Palomar to purchase Zemax license. Dan will look into this.
- Big chiller compressor tripped out yesterday, but pump continued to run. Concerned that laser does not have a temperature interlock. Unexpected failure mode. 2 suggested safety system improvements:
  - Thermal well to measure chiller water temperature on laser.
  - To prevent restart of chiller while differential pressure is too high, could implement a restart delay on the chiller power supply.
  - Smaller chiller displays correct temperature, but potentiometer does not have sufficient range to reduce temperature further.
  - Dan is proposing hiring a "physics lab tech." to help Renu with all these issues.
- WFS experiments with laser: Jenny has blocked out time. Renu will send email at end of day tomorrow.

Meeting adjourned at 9:10 am.