7/14/06
Rev: 7/20/06, 7/21/06, 7/25/06, 7/31/06

MEMS AO/ ViLLaGES
Preliminary Design Review
August 1, 2006

Participants

Design Team
- Don Gavel, PI
- Scott Severson, co-PI
- Marc Reinig, software and electronics
- Brian Bauman, optics
- Chris Lockwood, optical mechanical systems
- Science Team
  - Mark Ammons
  - Katie Morzinski
- Observatory Support
  - Ellie Gates, Support Astronomer
  - Bryant Grigsby, Support Astronomer

UCO attendees
- Mike Bolte, UCO/Lick Observatory Director
- Maureen McLean, Assistant Director, Administration & Finance
- Dave Cowley, UCO Shops Manager
- Bob Kibrick, Observatory Software guru
- Will Deich, UCO Software Group Leader

External reviewers
- Brent Ellerbroek, TMT AO Project Manager
- Matthew Britton, Caltech Optical Observatories / Palomar Observatory
- James Graham, Professor of Astronomy, UC Berkeley
- Dave Palmer, GPI Project Manager (and Real-time control software guru; designer of the Lick AO RTC system)

Agenda

10:00 Introduction and Overview - Gavel
- Motivation
- Experiment Objectives/deliverables
- Expected performance – error budget, resolution, Strehl
- Purpose of design review: criteria for passing

10:30 Optomechanical – Bauman, Severson Lockwood
- Operational concept in each mode - Bauman
  1. closed loop
  2. open loop
  3. LGS uplink
  4. LGS downlink
- Optical design - Bauman
- Optical components - Severson
- Grand mechanical view: telescope mounting, relationship to Nickel and CCD camera - Lockwood
- Optical bench layout – Lockwood
- Mounting and flexure analysis - Lockwood

11:15 Electronics and real time control – Reinig
- Flow diagram of algorithms in each mode (closed loop, open loop, NGS, LGS)
- CPU analysis
- Hardware interface
  - WFS
  - DM – use BMC drivers? RedNun? JPL/LLNL drivers?
- Software plan
  - Modify LickAO controller RT software
  - WFS configuration (multiple Hartmann patterns)
  - Diagnostic streams
  - Interface to User Interface
- Automation (very minimal)
  - Science Camera focus
  - Fiber calibrator stage
- User Interface plan
  - Incorporate modified version of LickAO
  - Interface to science CCD controller – FITS headers

12:00 Lunch (catered)

12:30 Dome Infrastructure – Grigsby
- Door air interlock
- Floor insulation
- Fans
- Temperature monitoring

1:00 Project Plan and Schedule - Gavel

1:30 Concluding discussions