SSC Report (Public)
April 16, 2013

Observatory Report

- Congratulations to Keck management for a great Keck 20th celebration.
  - Captured Keck's leadership role in many phases of astrophysics
  - Successfully engaged and energized university leadership, donors, and Keck science community
  - Keck Observatory is developing a plan to capitalize on the momentum generated by putting donors and scientists together more often. Example: Consider adding a donor event to the next Keck Science Meeting (fall 2014). Engage SSC in organizing and participating in this public component.
- Pending federal proposals: OSIRIS detector upgrade, ATI,, KI deployable tertiary, MRI, NIRSPEC upgrade, NASA
- Support NIRSPEC work with Keck funds until outcome of NASA proposal is clarified.

Observatory Report (con't)

- Considerable concern about Senate language in NSF budget regarding maintaining floor level for large NSF facilities; negative impact on grants program, PIs, ATI, MSIP, etc.
  - How can Keck advocate more effectively in Washington?
  - Engage University lobbyists
  - Engage AAS and participate in Congressional Visit Day
  - Work to focus any future CAA Study on the full optical/infrared landscape in the next decade

- KCWI-B now in full scale development, pre-ship review Nov 2014
- Requested supplemental funding from NSF for near IR tip tilt system

- 3 month delay to AO near-IR tip tilt correction project

- Major infrastructure projects continue: TCS and segment repair

DEIMOS Upgrade Study

- Phase 1 report by Rockosi et al. delivered to SSC. Three major aspects under study:
  - Blue wavelengths: extend down to 4000 A
  - Red wavelengths: improve QE up to 1.04 μm
  - 2nd channel: boost FOV by 2x
- Consideration of spectral layout & desired spectral resolutions means all new detectors need both high red & blue QE.
- Study group has:
  - Developed accurate model for current DEIMOS throughput.
  - Tested QE of Hamamasatu (200 μm) and e2v (150 μm) CCDs.
- No existing CCD meets QE & wavelength range needs, but predicted that a thicker e2v (200 um) CCD would be a good match. Anticipated availability is in the next <~ 1 year.

DEIMOS Upgrade Study (con't)

- Predicted gains from new CCDs, gratings & broadband coatings:
  - ~2x throughput boost at blue (400-500 nm) and red (>900 nm) ends.
  - Blue grating upgrade alone would offer ~1.5x throughput gain.
  - Detector upgrade would also need new dewar, CCD readout (same as KCWI), and flexure-compensation system CCDs.
- Also limited study of 2nd DEIMOS channel
  - Need re-design of several spectrograph mechanisms/components.
- Proposed Phase 2 study: Refine detector study
  - Test new LBNL CCDs & (hopefully) 200 μm e2v CCDs
  - Other hardware (dewar & FCS) and software work.
  - Additional funds needed for proper 2nd DEIMOS channel study.
  - Complete by early Nov 2013, to decide on NSF MRI readiness.