

Minutes of the UCOAC meeting
2014 May 21, UCLA

Attendees (in person): Sandra Faber (UCSC; Interim Director), Barth (UCI; Chair of UCOAC), Claire Max (UCSC), Tommaso Treu (UCSB/UCLA), Alex Filippenko (UCB), Alice Shapley (UCLA), Ian McLean (UCLA), Lori Lubin (UCD), Connie Rockosi (UCSC), Garth Illingworth (UCSC), Brian Siana (UCR), Gary Chanan (UCI), James Larkin (UCLA), Matt Malkan (UCLA).

Remote participants: Ben Mazin (UCSB), Crystal Martin (UCSB), Mike Bolte (UCSC), Graeme Smith (UCSC), Don Gavel (UCSC), Brad Holden (UCSC) .

Keck SSC Report. Crystal Martin presented a summary of instrumentation development plans and status. For KCWI-B, a recent setback was the departure of the project manager, and options are being examined for a replacement. A review of the Keck segment repair plans recently occurred and the SSC endorsed the current segment repair plan. A goal is to have repairs completed for a "pathfinder" segment by October 2015. Work on NIRES is ongoing and the instrument could be ready for first light in fall 2015, and possible choices for reduction pipelines are being investigated.

Three white papers were approved for funding in the recent WMKO call. These include planning for an upgrade to Keck's interface with US Strategic Command for obtaining permission for laser operations; examining the science case for an MKIDS-based IFU instrument; and planning for new reduction pipelines for use with the Keck archive.

Keck will be holding a strategic planning retreat on September 29-30 in Oxnard (attendance is by invitation only). The meeting will focus on Keck's role in the era of LSST, JWST, TMT, and other facilities. A preliminary agenda was presented and the UC SSC members are requesting input from the UC astronomical community on topics to discuss at the meeting.

The Keck Science Meeting will be held on October 2-3, 2015, at Caltech, with 1.5 days of science talks and a half-day town hall meeting to report on the strategic planning process.

The search process for a new Keck Director is underway and an advertisement has been posted, with a July application deadline.

TMT news and planning. Sandy Faber is currently serving as "temporary interim MOBIE PI", and UCSC is hoping to advertise a faculty search this fall to identify a new permanent PI. Chuck Steidel (Caltech) is serving as Project Scientist. The MOBIE science team should be reconstituted with membership from all partner institutions and nations. A MOBIE workshop was held at UCSC on March 20 with 45 attendees from UC and Caltech. Faber and David Koo (UCSC) traveled to China this spring to meet with potential partners and explore TMT collaborations. Faber undertook a second trip to China with Luc Simard and Matt Radovan to discuss technical aspects of the MOBIE project and learn about resources available in China. A program of 12 "mini-studies" related to MOBIE design issues was launched in order to introduce potential partners to TMT collaboration activities. These studies are not funded by the TMT project but effort will be tracked. UCO will be leading four of these and participating in three others.

The TMT ISDTs are in the process of revising the Detailed Science Case, and the plan is to release the document at the July TMT Forum meeting to be held in Tucson. At the Forum, ISDTs will be tasked with writing draft "large proposals" to help plan both the science goals of TMT key projects and for the project to gain a better understanding of the level of demand for large projects, and how time would be allocated and scheduled.

UC astronomers are encouraged to attend the TMT Science Forum, and UCO is soliciting requests for funding support to travel to the meeting.

TMT Mirror Segment Alignment and Phasing Report. Gary Chanan (UCI) presented a report on his work on TMT mirror segment alignment, which builds on his earlier work on Keck segment alignment. The work involves a collaboration of people at UCI, JPL, and TMT. The Alignment and Phasing System will be housed initially at a location along the elevation axis on the Nasmyth platform of TMT. Chanan described the broad-band and narrow-band phasing algorithms and showed examples from Keck and from TMT simulations. At TMT, the narrow-band phasing algorithm is planned to achieve a phasing accuracy of 10 nm. The alignment and phasing procedure will need to be run after every segment exchange, and the anticipated plan is to exchange 10 segments every 2 weeks in a steady state. The total time required to carry out the phasing procedure is 150 minutes, which averages to 11 minutes per night in a steady state if done once every two weeks. A promising development is that Fresnel phasing experiments done using equipment at ESO have gone well. Fresnel phasing does not use a lenslet array (unlike Fraunhofer phasing) and eliminates lenslet aberrations and reflections, also resulting in significant cost savings.

UCLA IR Report. Ian McLean (UCLA) presented a summary of recent work at the IR Lab, which is now in its 25th year of operations. Funding for MOSFIRE and GPI has ended since these instruments have been delivered, although the IR Lab will still provide some support. The SOFIA FLITECAM was commissioned in February 2014 with acceptance review pending. It has had six successful flights and obtained observations of targets including a recent supernova in M82, an exoplanet transit, and Paschen-alpha images of a star-forming region. The TMT IRIS instrument is currently in "light" preliminary design phase with a planned review in December 2014. A recent development is some optical redesign work to enable high-contrast imaging. The IRIS team submitted an NSF MSIP proposal in March 2014. The IR Lab would like to hire an engineer to carry out IRIS design work now if funding permits.

Keck instrument upgrade work in the IR Lab includes OSIRIS and NIRSPEC. The NSF proposal to upgrade the OSIRIS IFU detector was approved in 2013. A new H2RG detector will offer lower dark current, lower background, and less crosstalk, and will particularly improve short-wavelength sensitivity. A separate proposal to upgrade the OSIRIS imager (led by Andrea Ghez) was approved by the Moore Foundation. Preliminary design work is underway. For NIRSPEC, the upgrade plan includes replacing the science detector, the slit-viewing camera, and other instrument electronics. An NSF proposal to fund the upgrade is pending.

Lick Observatory.

APF: A general call for UC proposals for APF will be included in the July small telescope proposal call. A general announcement will be sent to the UC observer community before this to advertise the APF capabilities. Good data have been obtained for recent targets of opportunity including the recent supernova in M82.

ShaneAO: Two engineering runs were completed in spring and shared-risk observing nights are now under way. Both NGS and LGS observing modes are working well. Strehl of greater than 70% in the H and K bands has been achieved. Another engineering run is scheduled for July, and ShaneAO capabilities will be advertised to the UC observer community before the fall proposal deadline.

Friends of Lick Observatory: FoLO has raised about \$90K to date, and funding is being used to support a report on the Lick historical collections, improvements to the Lick walking tour, and an engineering study to assess repairs to the 36" refractor dome floor. The Lick Observatory Council is holding a one-day retreat on June 11 to discuss future plans for Lick.

Graduate student exchange programs. Faber discussed ideas for graduate student exchange programs that would bring students from universities in China and India to UC campuses for one or two year visits and include access to Lick observing time. A plan for this program is being drafted and expressions of interest from UC astronomers will be solicited. Another proposed idea is a telescope time exchange between Lick and Palomar that would involve collaborations between UC and Caltech faculty and graduate students. The UCOAC members were generally enthusiastic about both exchange programs and the benefits they would bring to graduate students and research at UC.

UCO Director Search Plans. UCOP has solicited nominations for search committee members but the search committee has not yet been named. UCOP also distributed a draft describing the search plans and timeline to the chancellors, the UCO Board, the Academic Senate Chair, and the UCOAC Chair, and requested comments and feedback on the search plans, but this document is not intended for general distribution yet. According to this draft plan, each participating campus and lab would have at least one member of the search committee. The job description and advertisement text have not yet been distributed. The plan states an intention for the search committee to begin its work in late spring or early summer with a goal of having a new director in place by July 2015.

Executive session. Topics discussed in executive session included the interim directorship for 2014-2015, priorities and choices for the UCO budget, and planning for UCOAC continuity during summer and fall 2014.

These minutes were prepared by UCOAC Chair Aaron Barth.