

Minutes of the UCOAC Meeting
2015 May 13, SETI institute

Attending in person: Claire Max (UCSC; UCO Interim Director), Ian McLean (UCLA), Aaron Barth (UCI; UCOAC Chair), Graeme Smith (UCSC), Chris Fassnacht (UCD), Alex Filippenko (UCB), Paula Towle (UCSC), Anna Korossy (UCSC), Geoff Marcy (UCB).

Attending remotely:

UCSB: Ben Mazin, Crystal Martin

UCSC: Mike Bolte, Connie Rockosi, Garth Illingworth, Brad Holden, David Cowley

UCLA: Alice Shapley, Andrea Ghez, Mike Rich, Matt Malkan, Mike Fitzgerald, James Larkin, Jean-Luc Margot

UCSD: Shelley Wright

UCR: Gillian Wilson

SHREK.

Geoff Marcy presented an overview of the science case and design of SHREK (Stable High Resolution Echelle for Keck), a proposed Keck instrument. The main science driver is characterization of Earth-sized planets, including masses, densities, compositions, orbits, and occurrence rate. This requires an error floor of <1 m/s for Doppler measurements. The instrument will be fiber-fed and will employ a fiber scrambler. Zerodur glass may be used for the optical bench in order to maintain stability. Initially the instrument will be built with a Green camera covering 445-590 nm, with plans for a Red camera to be added in the future covering 590-850 nm. Currently, the project is searching for a full-time mechanical engineer. Funding has been provided through grants from the Keck Foundation and the Heising-Simons Foundation. The project has a projected budget of \$5.5M including contingency, and is preparing for System Design Review in August 2015.

TMT.

Mike Bolte gave an overview of recent TMT news including the Canada's official commitment of funding toward the project, and an update on project construction plans and current status. Garth Illingworth provided an update on the recent publication on arXiv of the TMT Detailed Science Case, and plans for the upcoming TMT Science Forum and UC participation. UCO has allocated funding to support travel for UC participants to attend the meeting. Claire Max presented recent news on WFOS. The WFOS team recently held a meeting to review the outcome of the engineering mini-studies and to assess the technical expertise of the teams contributing to the studies. The review panel found that the studies produced impressive results on a short timescale and that multiple institutions were able to make meaningful contributions to the project. An important outcome of the recent design studies is that the current WFOS concept is viable with no need to re-scope the spectral resolution or field size. Next steps include

completing the detailed requirements for all sub-systems, completing the end-to-end optical design to CDR level, and improving the structures to make them stiffer and lighter. The conceptual design review is scheduled for April 2016.

UCLA IR Lab annual report.

Ian McLean gave a brief summary of the UCLA IR Lab's annual report. This year is the 25th anniversary of the founding of the IR Lab. The report included updates on current projects. FLITECAM for SOFIA was delivered in May with next flights scheduled for June and September. The TMT IRIS spectrograph is in "sequential design" and had an external optical review in February 2015. The next major review is scheduled for November 2015. Plans are under way to upgrade the Keck OSIRIS spectrograph detector to an H2RG detector that will have higher QE and better cosmetics. Michael Fitzgerald is leading a project to replace the existing OSIRIS imager with a fully functioning diffraction-limited camera with an H2RG detector. An NSF ATI proposal to upgrade the NIRSPEC detector last year was not successful, but a revised proposal was submitted to NSF MRI in January 2015.

Keck.

Crystal Martin (SSC Co-Chair) gave an update on recent Keck Science Steering Committee topics and noted that the meeting slides from the most recent SSC meeting (posted on the SSC web site) contain detailed notes on instrument status. These notes are available on the SSC web site and will be of interest to all Keck users. The URL is <https://www.ucolick.org/keckssc/public/index.html>. Martin urged UC astronomers to fill out post-observing comment forms after every run, since those are read by WMKO management and the SSC co-chairs.

Currently, WMKO is in the process of recruiting a Chief Scientist, which is a new position for the Observatory. The Strategic Planning process is under way, with a task force selected by the Observatory directors (UC, Caltech, WMKO). A workshop will be held in Japan in September to discuss Keck-Subaru synergies. WMKO recently released its annual call for white papers for instrument design funding. \$100K will be available, and the proposal deadline is June 1.

New instruments, upgrades, etc.: NIRES may ship in July for shared risk science starting this summer. The focus and spectral format look good. Detector noise is larger than expected, but there may be a straightforward solution. KCWI (blue side) is planned for delivery to Keck this fall. The Keck 1 deployable tertiary passed its PDR in November 2014. Tests on mirror segment repair are under way and will be important for confirming the timescale and budget for the segment repair project.

ToO and cadence observing: As part of the K1DM3 proposal, WMKO committed to a 3-year staged plan to implement TDA capability. Starting in semester 2015B, there is a new agreement between Caltech and UC for cross-institution interrupts for the first time. Interrupts are for 1 hour per night maximum, with no instrument changes for now. The Directors are working to formalize the policy for interrupts, and it will be necessary to ensure that all observers are made aware of what the new policies are. Current policy is

that UC programs of ≥ 1 total night can be interrupted, even if that total time is allocated in half-night intervals. One possible concern is how to account for interrupt requests in a way that would ensure that an observer having a run of two half-nights would be interrupted at most once during the run. Another issue is that first-half nights often contain substantially less useful time than second-half nights, due to initial setup time, particularly for LGS-AO nights. UCOAC members voiced concerns over whether the policies would allow for "protected" proposals that could not be interrupted (for example, a classical night scheduled to observe a known time-critical event such as an exoplanet transit). Concerns were also raised regarding what happens in the situation that a ToO request is made which the primary observer knows (based on current conditions) to be unfeasible and would therefore not be a good use of telescope time. It will be critically important for the Observatory to fully and correctly account for all ToO requests made, and to keep track of any situations where a scheduled observer refuses to honor a ToO request, should that occur. Cadence observing (i.e., blocks of time shorter than a half-night that can be scheduled in advance for time-domain science) will be done just within UC for now and not shared with Caltech, but WMKO will now accept unmatched partial nights to try to optimize the schedule. This may be very helpful for southern targets which are only accessible for a short time during the night.

The 2015 Keck Science Meeting will be held at UCLA on September 17-18. A suggestion was made to hold a forum on software pipelines.

Lick Observatory.

Alex Filipenko discussed plans for using the funds donated by Google. A portion of this funding will be used to support the hiring of a new telescope operator and the purchase of a new fork lift for the 3-m dome. Possible future uses (under discussion) include supporting the hire of a new instrument scientist or investing in AO technology development for Lick. Claire Max gave an update on the Lick Transition Team's work related to evaluating the structures and buildings at Lick, their future repair needs, failure modes and risk level, etc. This information will be used to decide which buildings are in most urgent need of maintenance and repair, and which buildings may potentially be decommissioned.

Claire Max described strategic planning needs to identify science initiatives for the coming decade and to identify the ways in which Lick will need to change in response to science requirements. Ideas and suggestions were solicited for how to plan the next steps, whether a workshop on strategic planning would be useful, and how to organize it. The consulting firm SeriesC could potentially facilitate a workshop. Key issues will include future instrumentation for the Shane, the role of education and student training, and large surveys at the Shane and APF. It was agreed that a reasonable goal would be to try to find a date for a 1-day workshop meeting in early fall.

Brad Holden gave an update on the Kast spectrograph upgrade. There is a possibility of getting a newer and larger CCD (instead of the one that was originally planned to be used for the upgrade). The electronics design is in progress, and materials for the new dewar have been purchased.

UCO Budget.

Claire Max gave an overview of the 2015-16 UCO budget and strategies for funding salary/benefits costs increases for next year given a flat budget scenario. She presented an overview of UCO's existing endowment funds, most of which are earmarked for specific purposes. Some of these designated purposes have somewhat outlived their usefulness, such as one fund dedicated to purchasing books for the Lick Observatory library, but cannot be easily reallocated toward other more useful purposes.

Barth and Max have been working on drafting a call for proposals for a UCO mini-grant program which may provide a total of up to \$150K for seed funding for instrumentation design or other projects of system-wide importance. The goal is to issue the call for proposals and have UCOAC members review the proposals sometime during the summer.

Future meeting plans.

A Fall meeting date will be selected once the UCO Director search process is concluded. Shelley Wright made a suggestion that for future meetings UCO should try using WebEx or Blue Jeans, which will make it easier for remote participants to join the meeting, compared with the usual polycom setup which limits the number of remote sites that can join the conference. In advance of the next UCOAC meeting, UCO should investigate options and try a subscription to one of these services (or some other alternative) to see if it is suitable for our needs.

These minutes were prepared by UCOAC Chair Aaron Barth.