MINUTES OF THE UCOAC MEETING
UC Irvine, 31 March 2010

Attending at UCI: Mike Bolte (UCO Director; UCSC), Alex Filippenko (UCOAC Chair; UCB), Gabriela Canalizo (UCR), Gary Chanan (UCI), Burt Jones (UCSC), Lori Lubin (UCD), Geoff Marcy (UCB), Clair Max (UCSC), Ian McLean (UCLA), Jerry Nelson (UCSC), Rem Stone (Lick/Mt. Hamilton), David Tytler. By phone: Xavier Prochaska (UCSC), Mike Rich (UCLA). Others (not UCOAC members): Aaron Barth (UCI), Betsy Barton (UCI; part time), Misty Bentz (UCI), Maureen McLean (UCSC), Bahram Mobasher (UCR; part time), Virginia Trimble (UCI; part time).

Introduction: Alex Filippenko

Alex thanked Gary Chanan for making the meeting arrangements at UCI and everyone for attending. He apologized for the early starting time, which was dictated by flight schedules. Attendees should provide updates to their campus colleagues and discuss issues with them, bringing new matters to the attention of Alex and Mike.

Report from UCO: Mike Bolte

APF (Automatic Planet Finder) Update: The spectrometer first light was in December 2009; final optical alignment is being completed in Santa Cruz and all the motors, mechanisms, and software are being exercised. Pushing for a final signoff of the telescope and dome by the end of April 2010 followed by installation of the spectrometer at Mt. Hamilton. An extended commissioning phase is expected to gradually improve the precision, with a goal of 1 m/s eventually.

Hamilton Spectrograph CCD: A 4k × 4k, 12-micron per pixel E2V CCD given to UCO in exchange for contributions to the Chinese LAMOST project has been installed in the Lick Observatory MOS red-side dewar. It has excellent cosmetic qualities, quantum efficiency, and charge-transfer efficiency. The point-spread function is expected to be as good as or better than with the LBNL chip in Dewar 8. It will be deployed at the Hamilton Spectrometer mid-April and should be ideal for the follow-up program of observing Kepler exoplanet candidates.

Kast Spectrograph: The Kast spectrograph was recently upgraded, and improvements are continuing. However, the problem with the temporally and spatially variable blue-side focus has recently become much worse, according to Filippenko's group. They will conduct some tests on their next observing run; further tests will be done on two upcoming nights assigned to Graeme Smith.

Shane Adaptive Optics (AO): With a $2M MRI grant, there will be upgrades to the Shane 3-m AO system and IRCAL camera, with throughput optimization. Speed gains of more than a factor of 12 at *J, H,* and *K* are expected for point sources, and there will be improved spectroscopic capability. The AO bench will be redesigned with several key

upgrades (MEMS deformable mirror) to double the Strehl. Various upgrades are being made to IRCAL, with a 20 arcsec field of view and well-sampled *J*-band spectra.

Gemini Planet Imager (GPI): GPI is the $20M high-contrast extreme AO imager commissioned for the Gemini-S telescope. The PI is Bruce Macintosh and the Project Scientist is James Graham. After receiving components from a number of labs in North America including the UCLA IR Lab, UCO/LAO (Laboratory for Adaptive Optics) is under contract to put it all together and conduct end-to-end testing; this will be done in the "Highbay" on the Santa Cruz campus.

SASIR: This is a project to build a 6.5-m infrared telescope at San Pedro Martir in Mexico (Baja California); the PI is Josh Bloom (UC Berkeley). It is a collaboration between UNAM, UC, INAOE, and the University of Arizona (UA). There will be a 0.5 gigapixel camera with *Y* through *K* filters, and a 1° diameter field of view. The basic idea is to conduct a super 2-MASS-like survey with a time-domain component for transients and variable phenomena. There was a mirror-casting event at Steward Observatory in August 2009, with quite a turnout from Mexico as well as the UA President. Design funding proposals are pending.

Mt. Hamilton Bandwidth Upgrade: For a long time now, there has been a plan to install a Mt. Hamilton microwave link to NASA Ames, increasing the bandwidth from the current 4.5 Mb per sec to ~100 Mb per sec, but progress has been very slow at Ames. The enhanced bandwidth will allow expanded remote use and enable live broadcasts for education and public outreach (EPO) programs. The project is being done with Blue Oak Ranch ARI NSF funding, UCSC ITS funding, and UCO funding.

Lick 3 m Shane Mirror Recoating: The 3-m mirror was realuminized in February 2010. The process was documented carefully, because several of the experts who have done this before are no longer with UCO and this is expected to be the last time for some others. There are a number of process, hardware, and safety issues. Throughput improved by only about 10%, because the mirror was not as dirty or tarnished as had been thought. See http://loen.ucolick.org/coatings/120-inch_Realuminizing_2010/index.htm for details.

Lick Long-Term Plan and Infrastructure: The Lick Observatory (Mt. Hamilton) long-term was finalized and will soon be posted on the ucolick web page. The main recommendations were as follows. (1) Forefront research: upgrade AO and the near-IR, keep the rest of the instruments updated. Implement flexible scheduling, encourage large programs and high-risk/high-return programs. (2) Education: expand undergraduate access (classes and research). (3) Use Lick as a platform for technology development. (4) Expand EPO programs, probably with partners. (5) Continue to use Lick as a venue for fundraising.

Remote observing is one key capability required to achieve many of these goals. Already, undergraduate students have been much more involved in research than previously, and the demand for Nickel 1-m time has increased. The Shane-AO + IRCAL upgrade is

underway, as are the Kast and Hamilton Spectrometer upgrades. Attempts are being made to improve EPO.

Lick Observatory Deputy Director of Operations: There were 28 applicants for the replacement of Remington Stone, who is retiring. Interviewed the top four candidates, all of whom were good. An offer was made to (and accepted by) John Wareham; he starts on April 1, but Rem will stay through April 30 in order to provide continuity and advice. John has experience in setting up medical treatment and research facilities; he also has UC and small-town experience, but no astronomy background.

Mike Bolte and the UCOAC members thanked Rem for his decades of service on Mt. Hamilton. A special card for Rem was signed by the UCOAC members, and several of them made remarks about his friendly, high-quality assistance over the years.

Public Outreach: Currently, we have six "Music of the Spheres" programs annually (in the summer) at Mt Hamilton, featuring live music, a science lecture and viewing through the 36-inch refractor and the Nickel 1-m telescope. There are also six summer Visitor Nights annually, with the same activities except no live music. There is a limited number of tours for UC undergraduate classes. The main building has (mostly old) exhibits, a guided tour of the 36-inch refractor, and a gift shop. The Shane telescope has a Visitors Gallery with some exhibits and a recorded message.

To expand its public outreach, UCO is looking to partner with other Bay Area science centers. A visit to the Moore Foundation on March 30 did not result in anything to be immediately initiated. Attempts will continue, however, focusing on the following potential new programs: (1) expand the number and viewing capacity of the summer visitor programs; (b) overhaul the exhibits in the main building; (c) add exhibits on the history of science and technology special to Lick Observatory; (d) revive and expand the Lick Observatory summer teacher workshops (K-12 and university level); and (e) extend tours to local schools and interested groups.

Keck Observatory Report: Mike Bolte

Keck Strategic Planning: One of the activities of the Keck Science Steering Committee (SSC) is to periodically update the Keck Scientific Strategic Plan. The 2009 Plan looks at the changing astronomical landscape going forward with the selection of Hawaii as the TMT site, the various large-field photometric surveys underway (Palomar Transit Factory, PanSTARRS, WISE, etc.) and the plans for our 8–10-m competition. Topics under discussion to address these changes in the landscape are better multi-object spectroscopy, different approaches to scheduling (time domain, cadence, major programs), major upgrades, and adaptive optics.

LRIS-R Upgrade: Unfortunately, one of two original LBNL devices failed, as did one of the two amplifiers on the good remaining CCD. Tests were undertaken and the problem is probably now understood; it is related to thermal stresses on an overhang region on the substrate when temperatures are too low. Steps have been taken to prevent further

degradation. UCO has obtained three new LBNL devices; they are now being characterized in Santa Cruz. The Keck SSC decided that a new cryostat should be built and delivered as a plug-in system; anticipated completion in October or November 2010.

Keck Cosmic Web Imager (KCWI): Based on a Palomar instrument by Chris Martin, KCWI is a proposed optical imager slicer IFS (integral field unit spectrograph) for Keck. It has received $1.2M of TSIP (Telescope System Instrumentation Program) funding to take it to the Preliminary Design Review (PDR). Harland Epps (UCSC) is designing the camera, and UC Santa Cruz will probably do the red-side detector system and coatings.

Keck-1 Laser: The new laser for K1 LGSAO tested out better than specifications, and the laser and center launch telescope are now at the Keck Observatory. There are some problems with the fiber feed to the launch telescope. OSIRIS will be moved to K1 once the laser is commissioned (Semester 2011A).

Deployable Keck-1 Tertiary Mirror: One clever idea for enabling Target of Opportunity (ToO) or cadence observing is to replace the Keck-1 tertiary with a deployable system. Prochaska, Nelson, Cabak, and Epps have demonstrated the feasibility of this. Seed money will be requested to prepare for an August 2010 TSIP submission.

Next Generation Adaptive Optics (NGAO): The NGAO PDR is scheduled for June 2010.To date, a desired $20M lead gift for the project has not materialized, and we are now considering alternate plans with a more staged approach to improvements to the Keck AO system. It is desirable to utilize the thinking and design that went into the existing NGAO studies, and to also be competitive 5–10 years in the future. In planning a staged approach, the current AO system error budget is an excellent guide. An advantage of the alternative approach would be that we can derive benefits on relatively short timescales, but the final product will likely fall short of the original NGAO goals.

Possible piecewise improvements to Keck AO include the following. (1) Strehl improvements: more powerful laser + center launch, higher-actuator-count deformable mirror, infrared tip/tilt/focus sensor, and tomography. (2) Sensitivity improvements: lower IR background via cooled AO system, better AO coatings (improve NIRC2 image quality and OSIRIS efficiency), and point-spread function (PSF) calibration.

Keck AO science output has been steadily improving; AO is relatively new, but the Keck Observatory got in on the ground floor and is making an impact. There are now about 20 papers per year with each of the AO natural guide star and laser guide star systems. Incidentally, about 5 papers per year are produced from data with the Keck interferometer.

NASA Purchase of Additional Nights: NASA purchased five HIRES nights in Semester 2010A; no TSIP nights were sold in 2010A, and MOSFIRE is unlikely to use four 2010A nights for commissioning. NASA has requested an additional five HIRES nights in Semester 2010B, and the request will be granted. UC astronomers can compete for the time and have done so very successfully in the past.

MOSFIRE: There has been good progress; Ian McLean provided a more complete report (see below).

Keck Science Steering Committee (SSC): In February 2010, Xavier Prochaska became the UC Co-Chair, succeeding Jean Brodie. One new UC member will be selected soon.

2010 Keck Science Meeting (Filippenko)

It is UC's turn to host the annual Keck Science Meeting. Bolte suggested that UC Berkeley be the host campus, as it has not hosted in many years. Filippenko noted that Berkeley is on the semester system, with classes starting in late August; thus, a weekend (Saturday–Sunday) meeting might be necessary, given how hard it is to find available buildings during the school year. However, Marcy said that the Clark Kerr campus might be available. We will probably stay with the usual Friday–Saturday system (science on Friday, strategy on Saturday); however, a Sunday–Monday pair of dates might also be considered. Marcy will check into a possible location, as soon as the CARA Board approves the suggested dates and UCB as a venue.

Keck ToO Policy: Xavier Prochaska

Prochaska discussed the current Keck ToO (Target of Opportunity) policy and its implementation over the past 5 years with GRB (gamma-ray burst) observations. Proposals have been submitted and accepted, with the understanding that the PIs could ask observers for ToO observations but were not guaranteed to receive them. Prochaska reported that outright refusals for ToO observations occurred rarely (about 10% of the time), but that it was also rare that they obtained the desired data as quickly as had been hoped. Thus, Prochaska and Josh Bloom (UCB) wrote a letter to the UCOAC with a list of possible improvements, and these were discussed at length during the meeting.

The UCOAC eventually voted on and approved a proposal that all UC programs allocated at least one night of observing time will be subject to donating up to one hour of each night to approved ToO programs. The observers will be able to briefly negotiate when to take the observations (e.g., to delay until completion of a current exposure, if necessary), but they are discouraged from questioning the scientific merits of these TAC-approved programs. The one hour per night is actual clock time from the termination of the observer's own program and should include overhead for the observer to reconfigure the instrument for both the ToO observation and the resumption of the normal program. Coauthorship on a resulting paper will be offered to the observer.

This policy will start in Semester 2011A. The TAC will recommend a specific number of maximum hours for approved ToO programs and the actual interrupts will be tracked each semester.

Keck Snapshot Monitoring Programs: Alex Filippenko

Filippenko presented a message from Imke de Pater (UC Berkeley), in which she describes projects that require a few hours per night ("snapshot" observations) during many nights in a semester for synoptic monitoring of objects (e.g., volcanic activity on Io, weather on giant planets). It is difficult to conduct such investigations with typical time allocations of a few whole nights (or half nights) per semester. UCOAC members discussed ways in which projects of this sort could be conducted. Bolte is sympathetic, and will strive to accommodate projects of sufficiently high scientific merit.

On an unrelated issue, Mike Rich noted that currently the bibliography counts against the maximum of "two additional pages" of figures, tables, and references in Keck proposals, yet this does not seem wise. UCOAC members agreed that references shall henceforth not count against the page limit.

UCLA IR Lab Update: Ian McLean

Currently there are four main projects, as follows.

(1) MOSFIRE, a 0.97–2.45 micron camera and multi-object spectrograph for the Keck Observatory. PI Ian McLean. It is currently in integration and testing. All major deliverables are in hand, and first light should occur in May 2010.

(2) GPI, a 1–2.5 micron extreme AO camera and integral field spectrograph for the Gemini South 8-m telescope. The overall PI is Bruce Macintosh (LLNL); James Larkin (UCLA) is the PI for the infrared spectrograph. It is currently in integration and testing. First light is expected soon, and it will be delivered to UCSC within months.

(3) IRIS, a 1–2.5 micron AO camera and integral field spectrograph for the 30-m telescope. PI James Larkin (UCLA); Co-PI Anna Moore (Caltech). It is in the conceptual design phase; they hope to start the preliminary design review phase this year.

(4) FLITECAM, a 1–5 micron camera and grism spectrometer for NASA's Stratospheric Observatory for Infrared Astronomy (SOFIA). PI Ian McLean. It is complete except for the installation of new filters; awaiting SOFIA (2011).

In particular, there was considerable interest in MOSFIRE. There has been good progress on this powerful, exciting new instrument. The science flat mirrors were inspected just before the holidays in 2009, but the silver coatings had degraded. The mirrors were rushed back to the vendor, stripped, recoated, and received back in early January. Cool Down #3 was completed by the end of December 2009, and Cool Down #4 was completed a few days ago. The flexure control system, pupil mechanism, grating turret mechanism, and CSU (Cryogenic Slit Unit) all operated properly in 17 different gravity orientations during Cool Down #3. The only new problem was that one masking bar in the CSU (# 75) had a clutch problem when cold and would not move. The CSU was tested extensively after warm-up and tested in Cool Down #4; repairs are planned for

mid-April. The final mirrors and diffraction grating have been installed, the alignment has been finalized, and the external guide structure has been installed. Preparations are being made for Cool Down #5, planned for mid-May: the camera barrel is assembled, the collimator barrel is in progress, and the filter wheel and detector head are in final assembly and cold testing.

The UCLA IR Lab is very busy with the above four new instruments, which is good. Its previous Keck instruments (NIRSPEC, NIRC2, OSIRIS) are in regular use, as is its previous Lick instrument (Gemini). For the future, the UCLA IR Lab has written a white paper on proposed detector upgrades for NIRSPEC; also, working with Sean Adkins at Keck on concepts for an NGAO instrument.

A new faculty member, Dr. Mike Fitzgerald (Ph.D. UC Berkeley), will arrive at UCLA in July. He has expertise in advanced AO systems for the TMT/NGAO era.

TMT Update: Mike Bolte

Progress: Much project activity has been devoted to getting the cost back down to $986M (in 2009 dollars). A Keck-like operations model has been adopted as the baseline for TMT. There has been good progress on segment fabrication.

Site: The final EIS (environmental impact statement) was submitted to the University of Hawaii in March 2010. The CMP (Comprehensive Management Plan) for the Mauna Kea Science Reserve was completed by the Office of Mauna Kea Management and accepted by the BLNR (Board of Land and Natural Resources); a lawsuit over the CMP was dismissed. An accepted CMP is required before any Use Permit can be issued for Mauna Kea. The current schedule has the CDUP (Conservation District Use Permit) application going in at the end of June 2010.

Partnerships: In addition to Caltech, UC, and ACURA (Canada), Japan is a participating institution; there are Japanese observers on the TMT Board and Science Advisory Committee (SAC). China has chosen TMT for its future large-telescope venture, and India is near the end of a process to decide which of the ELT programs they will seek funding to join. Brazil has expressed an interest in TMT and sent a delegation to the February Board meeting. Taiwan is also interested.

Quite sensibly, China, India, and Taiwan want to build communities of observers and have contacted UCO and Caltech about purchasing Keck time. They have also suggested scientific or technical exchanges and collaborations as an alternative. Bolte would like to make a call to the community to find out what UC astronomy groups are open to such collaborations.

International partnerships can be complex and difficult. For example, governments tend to be risk averse with resources, and they like to work with other governments. A significant challenge for TMT is putting together the jigsaw puzzle of work packages and funding proposals in three or more countries.

A "Partnership Principles" document is under development to determine how specific contributions map to telescope time and governance, how work packages get distributed and are valued, and many other legal details. A "Founders' Share" that recognizes leadership, initial risk, and early capital (time value of money) will be part of the agreement. Other factors include contributions to capital costs and operations (nominally for 20 years). The current UC strawman share stands at 18%, and UCOAC members said that they would not want this to decrease very much.

The Lick AGN Monitoring Project: Aaron Barth

The Lick AGN Monitoring Project (LAMP) was centered on a 64-night observing run with the Lick Shane 3-m telescope, carried out in spring 2008. The team included faculty, postdocs, and students from UC Irvine, Santa Barbara, Berkeley, Riverside, and Los Angeles, and collaborators from Lick Observatory, Las Cumbres, JPL, Princeton, and the University of Tokyo. Our goals were to measure reverberation lag times for Hβ and other broad emission lines for a sample of 13 low-redshift Seyfert 1 galaxies, selected to have low black hole masses (between 1 and 30 million solar masses), and to use the results to improve the calibrations of the correlation between broad-line region radius and AGN luminosity and of the M–σ relationship for active galaxies. Supplementary observations for photometric monitoring were obtained with the KAIT, Tenagra, Palomar 60-inch, and MAGNUM telescopes.

Some highlights of the results from the project include (a) measurements of reverberation lags and black hole masses for 9 galaxies with Hβ and other emission lines; (b) the first high-quality measurement of velocity-resolved variability across the Hβ line for the galaxy Arp 151; and (c) a new calibration of the M-σ relationship for reverberation-mapped active galaxies. As of spring 2010, we have three published papers based on LAMP results and two additional papers that have been submitted, with additional work in progress. We also observed one supernova per night in queue mode; to date, two refereed publications and eight Circulars have resulted from these LAMP supernova observations.

UCOAC members congratulated Aaron and his team on their success, and thanked him for his presentation. They are considering new models for Lick telescope time allocation, and having had this test case will be useful for their future deliberations.

UC Keck Time Allocation Committee Feedback: Ian McLean

McLean and some other UCOAC members have had requests from UC astronomers for better and faster feedback on observing proposals rejected or severely cut by the UC Keck TAC. Bolte acknowledges that this has been a problem; though feedback has been provided to some observers, in many cases he has been too busy to provide timely feedback. UCOAC members suggested that Bolte delegate the task to other faculty at

UCO, and he agreed that this is a good plan. Observers can expect to see some improvement regarding TAC feedback in the future.

UC/Keck Data Repository and Reduction Service: Xavier Prochaska

Efforts are underway (primarily planning) to construct a UC/Keck data repository. This is being led by Brad Holden, Will Deich, and X. Prochaska of UCO. They are discussing with the Keck Observatory the optimal means of transferring the UC data on a nightly basis to a RAID system at UCO. The UCOAC began discussing the proprietary policy that one would impose on these data, including the calibration files and headers. They will consider this topic at greater length in the next meeting.

Brad Holden and X. Prochaska have constructed to the beta phase a web-based platform for ingesting and reducing Keck observations for the UC community. The current implementation handles HIRES, ESI, DEIMOS, and LRIS spectral observations. Members of the UC community that would like to participate in beta testing should contact Holden or Prochaska.

UC Postdoc Access to Keck: Alex Filippenko

Filippenko brought up an issue that the UCOAC has discussed every few years in the past: PI access to the Keck telescopes by UC postdoctoral scholars. Some postdocs at UCB (and other UC campuses) have requested that we revisit the issue. They point out the following. (1) It can be difficult for independent postdocs (prize fellows such as Hubble Fellows) to convince UC faculty members to collaborate with them on a program of their own that they wish to conduct. (2) Postdocs at Caltech, the University of Hawaii, and Yale (which buys time from Caltech) are able to be PIs on Keck proposals. (3) It is important for postdocs to demonstrate leadership ability, and being PIs of Keck proposals is one way of doing this. Thus, the postdocs suggested that some small amount of time (up to, say, 5% of the UC allocation) be set aside for postdoc-led proposals, with perhaps the requirement of a "faculty representative" to officially sponsor each proposal and encourage collaboration.

The UCOAC members are sympathetic to this request and discussed it in detail. The points are valid and were taken seriously. However, in the end, they voted against allowing postdocs to be PIs of Keck proposals, based on the following arguments. (1) Keck time is a very precious resource, and there are already very many faculty applicants. The average allocation is becoming so small that it is difficult for faculty to conduct major projects. Quite a few proposals are fully rejected each semester. Faculty at Caltech and UH, by contrast, can get substantially more nights for their projects. (2) Faculty members have made a long-term commitment to UC and are the lifeblood of the University. They teach, serve on committees, and do many other things for the University. They expect to be able to conduct their Keck studies if ranked sufficiently highly. If their time allocation becomes too small, remaining at UC becomes less attractive for them. (3) The UC employment term of each postdoc is quite limited, generally to two or three years. Unless observations for a program can be completed in

just one year, it is quite possible (especially given the weather and instrument failures) that some postdocs will depart from UC before obtaining all of the data that they need, thereby leaving their project dead or of inferior quality. (4) Less time for UC faculty can translate to fewer opportunities for graduate students, making UC less attractive for them. (5) 5% of the UC Keck time amounts to only about 11 nights per year, to be distributed among several dozen postdocs. Many postdocs would not get time during their tenure at UC. (6) Reading and reviewing several dozen additional proposals each semester is substantial work for faculty TAC members who are very busy. Already, the TAC process takes two meeting days, plus the time spent reading and evaluating the proposals in advance. (7) Postdocs can show leadership by completing and publishing papers (and giving talks) based on Keck data, on projects whose PIs are UC faculty. They can also be PIs of proposals for national facilities such as HST, Chandra, and even Keck through the NOAO allocation. (8) By striving to collaborate with UC faculty, postdocs become more interactive and visible, which can have very positive effects on future recommendations from the faculty. (9) Projects are less likely to be abandoned if a faculty PI bears ultimate responsibility in the eyes of the Keck TAC; that PI will jeopardize his or her chances of obtaining time for future projects if some are left unfinished.

Keck Time-Assignment Policies: Mike Rich

The question has been raised that certain programs and PIs appear to be receiving very large allocations, sometimes more than 5 nights per semester. However, the point was made that there are certain special opportunities (e.g., Kepler mission follow-up observations) that require major allocations if the discoveries are to be exploited. On the other hand, some programs (e.g., monitoring of the Galactic center) might require fewer nights if new policies on synoptic observations (cadence issues) were implemented. The concern was also raised that the UC Keck community does not have resources deep enough to compete with, for example, the largest European groups. At the suggestion of Jerry Nelson, Rich agreed to undertake a study of the number of nights allocated by program and PI. UCOAC took note of the issue but no policy change is recommended at this time.

Keck and Lick Data-Rights Policy: Mike Rich

Rich introduced a simplified Keck/Lick data-rights policy, in response to discussions at the October 2009 UCOAC meeting. The suggested policy is as follows. (1) All observers would agree to subscribe to the AAS Ethics Policy. (2) The PI owns his/her data indefinitely, or until the data become public. (3) If there is a serious dispute among a team, the team can request a decision from the UCO Director. If there appears to be a potential conflict of interest (e.g., a team member at the UCO Director's institution), three unbiased people from different UC campuses would be appointed to a panel, and its decision would be binding.

Some people did not like parts of the AAS ethics policy, and it was pointed out that UC has a policy. Rich agreed to circulate both policies to UCOAC members. Rich pointed out that NASA gives the PI absolute power, whereas ESO gives data rights to all CoIs.

Bolte asked what the NSF policy is, but such policy varies depending on whether a grant is Collaborative or Individual. There appeared to be general agreement that PI control, with the ethics policy backup, was the best choice.

Bolte pointed out that it might be hard to find three people to make a ruling, and felt that the UCOAC Director should make any final decision. Rich and others emphasized that there are times when one can be seriously conflicted, for example in cases involving colleagues, personal friends, or former students. In such a case, the three-person committee might be a necessity. Filippenko pointed out that such a committee would probably be willing to serve only if its decision were binding.

There was a general consensus that the UCO Director should be the person to resolve disputes. No action was taken, but the point will be discussed after the UCOAC has had a chance to review the UC and AAS ethics policies.

The open meeting was adjourned at 5:15 pm, and an Executive Session was held.

These minutes were provided by UCOAC Chair Alex Filippenko.