Lick Community Workshop 2012

- Hosted by SETI on September 13&14, 2012. Barth had a lead role.
- 30+ persons attended, representing nearly every UC

**Top-level goals**

- Communicate the current and near-term activities at Lick Observatory.
- Explore and direct the future activities at Lick Observatory.
  - Carrying out exciting and forefront research
  - Broadening and improving the E/PO efforts
- Recognize and react to the intense and sustained budgetary pressures.
How important do you consider Lick facilities to your research program?

- Essential: 11.1%
- Important: 16.7%
- Of limited importance: 27.8%
- Unimportant: 25.9%
- Very important: 18.5%

9. What do you view as the major role(s) for Lick Observatory in the next 10 years?

- A premier A&A research facility for UC: 15.1% Strongly agree, 24.5% Agree, 15.1% Neutral, 35.8% Disagree, 7.5% Strongly disagree, 1.9% No opinion
- An avenue for development of new instrumentation and technology: 40.7% Strongly agree, 44.4% Agree, 13.0% Neutral, 0.0% Disagree, 0.0% Strongly disagree, 1.9% No opinion
- A focal point for UC A&A E/PO activities: 44.4% Strongly agree, 42.6% Agree, 9.3% Neutral, 3.7% Disagree, 0.0% Strongly disagree, 0.0% No opinion
- A valuable resource for PhD training: 40.7% Strongly agree, 44.4% Agree, 13.0% Neutral, 0.0% Disagree, 0.0% Strongly disagree, 1.9% No opinion
- A valuable resource for undergraduate education: 28.3% Strongly agree, 50.9% Agree, 9.4% Neutral, 7.5% Disagree, 0.0% Strongly disagree, 3.8% No opinion
- A research facility focused on PI research projects: 14.8% Strongly agree, 46.3% Agree, 25.9% Neutral, 9.3% Disagree, 0.0% Strongly disagree, 3.7% No opinion

UCO policies state that up to ~1/3 of Shane time may be allocated toward large programs (LSAPs), where LSAPs are defined as programs requiring 20 or more nights per semester. What is your opinion of the current policy on LSAPs?

- Strongly agree: 44.4%
- Agree: 42.6%
- Neutral: 9.3%
- Disagree: 3.7%
- Strongly disagree: 0.0%
- No opinion: 0.0%

Responses: 54
26. Various options are being considered as possible ways to decrease operating costs or raise revenue. Rate each of the following options. When evaluating these options, consider the benefits of these facilities not just for your own research, but the overall importance of each to UC astronomy research and education.

<table>
<thead>
<tr>
<th>Option</th>
<th>Strongly agree</th>
<th>Agree</th>
<th>Neutral</th>
<th>Disagree</th>
<th>Strongly disagree</th>
<th>No opinion</th>
<th>Responses</th>
</tr>
</thead>
<tbody>
<tr>
<td>Shutting down the CAT</td>
<td>19.2%</td>
<td>13.5%</td>
<td>25.0%</td>
<td>11.5%</td>
<td>9.6%</td>
<td>21.2%</td>
<td>52</td>
</tr>
<tr>
<td>Offering the CAT on a fee-per-night basis</td>
<td>38.5%</td>
<td>15.4%</td>
<td>15.4%</td>
<td>13.5%</td>
<td>1.9%</td>
<td>17.3%</td>
<td>52</td>
</tr>
<tr>
<td>Shuting down the Nickel</td>
<td>11.5%</td>
<td>13.5%</td>
<td>11.5%</td>
<td>30.8%</td>
<td>21.2%</td>
<td>13.5%</td>
<td>52</td>
</tr>
<tr>
<td>Offering the Nickel on a fee-per-night basis</td>
<td>33.3%</td>
<td>17.6%</td>
<td>11.8%</td>
<td>17.6%</td>
<td>9.8%</td>
<td>11.8%</td>
<td>51</td>
</tr>
<tr>
<td>Discontinuing participation in Super-LOTIS</td>
<td>25.5%</td>
<td>2.0%</td>
<td>31.4%</td>
<td>2.0%</td>
<td>2.0%</td>
<td>39.2%</td>
<td>51</td>
</tr>
<tr>
<td>Selling nights on the Shane</td>
<td>34.6%</td>
<td>32.7%</td>
<td>9.6%</td>
<td>7.7%</td>
<td>3.8%</td>
<td>11.5%</td>
<td>52</td>
</tr>
<tr>
<td>Retiring Shane instruments that are in low demand</td>
<td>33.3%</td>
<td>35.3%</td>
<td>11.8%</td>
<td>0.0%</td>
<td>2.0%</td>
<td>17.6%</td>
<td>51</td>
</tr>
<tr>
<td>Reducing the number of nights offered on the Shane</td>
<td>7.7%</td>
<td>21.2%</td>
<td>17.3%</td>
<td>30.8%</td>
<td>11.5%</td>
<td>13.5%</td>
<td>52</td>
</tr>
<tr>
<td>Restricting the frequency of instrument</td>
<td>42.3%</td>
<td>25.0%</td>
<td>9.6%</td>
<td>7.7%</td>
<td>0.0%</td>
<td>15.4%</td>
<td>52</td>
</tr>
</tbody>
</table>

UCO policies state that up to ~1/3 of Shane time may be allocated toward large programs (LSAPs), where LSAPs are defined as programs requiring 20 or more nights per semester. What is your opinion of the current policy on LSAPs?
Here are the publication numbers for the past 5 years for papers incorporating any amounts of data obtained from Lick Observatory. For each year the numbers are itemized for each telescope, and for the Shane telescope there is also the number for each instrument. Note, quite a few papers out there use data obtained from multiple LO telescopes. So, for example, it is common to have a combination of 3-m Kast with KAIT, or there are some that use data from the Hamilton on both the Shane and CAT. Thus if you add up the totals for each telescope it will typically come out to be greater than the net number of papers for LO in each year. I will leave it to you to place these in powerpoint if you don’t mind. I am not sure what you want there. I’m not even sure graphs are warranted. Just a table with various numbers per year may be adequate. I have papers compiled back to 2000 so please let me know if you’d like such numbers back further than 2008.

Regards

Graeme

Number of papers using some Lick Observatory data:

2012  Total number: 36
  3-m: 31;  Kast: 19;  Hamilton: 5;  GEMINI: 2;  AO: 3;  PFCam: 1;  3m-OWN: 1
  Other telescopes: Nickel: 8;  CAT: 2;  KAIT: 6;  Astrograph: 1

2011  Total number: 48
  3-m: 30;  Kast: 22;  Hamilton: 7;  GEMINI: 2;  AO: 1;  PFCam: 0
  Other telescopes: Nickel: 5;  CAT: 1;  KAIT: 17;  OWN: 1

2010  Total number: 32
  3-m: 23;  Kast: 14;  Hamilton: 8;  GEMINI: 2;  AO: 0;  PFCam: 0
  Other telescopes: Nickel: 6;  CAT: 5;  KAIT: 6;  Crossley: 1

2009  Total number: 36
  3-m: 28;  Kast: 17;  Hamilton: 5;  GEMINI: 0;  AO: 3;  PFCam: 2;  3m-OWN: 2
  Other telescopes: Nickel: 9;  CAT: 3;  KAIT: 12;  Crossley: 1

2008  Total number: 47
  3-m: 29;  Kast: 12;  Hamilton: 8;  GEMINI: 0;  AO: 6;  PFCam: 2;  3m-OWN: 3
  Other telescopes: Nickel: 6;  CAT: 8;  KAIT: 8;  Crossley: 2

1774 citations;  Median ~30
Current Activities: Scientific

Technical Innovation

- CAMS (Cameras for Allsky Meteor Surveillance); PI P. Jenniskens
- FIRST (Fibered Imager for Single Telescopes); PI F. Marchis
- POLISH (Imaging Polarimeter for 3m/Nickel); PI S. Wiktorowicz
- NIRIS (Near-Infrared Imaging Spectrograph); PI J. Rudy, R. Puetter
- ViLLaGEs (Visible Light Laser Guidestar Experiment); PI Gavel
- OSETI (Optical SETI instrument); PIs S. Wright, F. Drake, R. Stone
- Khayyam (Tunable Spatial Heterodyne Spectrometer); PI W. Harris
- FLITECAM (infrared imaging camera for SOFIA); PI I. McLean
- FDC (Fast Diagnostic Camera for SOFIA); PI J. Wolf
- BVIT (Berkeley Visible Image Tube); PI O. Siegumund
- C3POCam (CMOS 3-Color Prototype #0 Camera); PI J. Bloom
Current Activities: Scientific Lick Archive

- Web searchable archive - date, instrument, telescope, keywords
- Keyed to users, will only show data a given user is allowed to see.
- Can download selections as a tar file.
Cientifically abundant to supply the hard UV photons occurred at later times when quasars were sufficient, termed hydrogen reionization. A second and analogous gas to a highly ionized intergalactic medium (IGM) is required to fully ionize helium. Hydrogen and helium are the only two elements produced in the Big Bang in significant amounts, accounting for more than 99 percent of the universe's primordial mass. After recombination, the universe transitioned from a predominantly neutral gas to a highly ionized intergalactic medium (IGM). This phase transition from a predominantly neutral gas to a highly ionized intergalactic medium (IGM) is a critical period in the universe's history.

New UV (C) is getting an upgrade to take advantage of the improved performance of the current quasar surveys, such as the Sloan Digital Sky Survey, are biased against UV surveys, such as quasars. The Sloan Digital Sky Survey, are biasing the discovery of UV surveys, such as quasars. However, additional multi-object spectroscopy observations revealed that optical color similarities to stars.
Recommendations: Operations

- CAT pilot program
  - Fee-for usage, including UC researchers
- Reduce operations
  - 1 month shut-down
  - 5-6 day work week
- Reduce instruments
  - Retire PF-Cam, Gemini, Nickel spectr.
- Kast-Red upgrade
  - Highest priority
- Solicit funds from Kast
- ToO
  - Align policy with Keck
- LSAP
  - Encourage more projects
- PI Instruments
  - Development: Ask PI’s to help support staff
- APF
  - Payback for community

Tuesday, October 9, 2012
Recommendations: Revenue

• Partnerships/Selling Time
  • Pursue to 33% level
  • Market research
    • APO costs ~$6,500/night
    • UKIRT ~$1.2M/yr
    • WIYN, MDM?
  • Preferred partners
    • TMT/Keck partners
    • CSU

• Visitor ideas
  • Amateur experience
  • VIP rooms
  • On-site food vendor

• FOLO
  • Spend new funds where they are highly visible
Recommendations: Engaging UC

- Undergraduate education
  - Intern program
  - Actively encourage tours for UC classes
  - Advertise summer intern program
- Southern campuses
  - Seek donor funds for remote facilities
  - Arrange Lick visits in northern Cali alumni associations
- Instrumentation
  - Generate a more formal solicitation and seeding of projects
  - Lick/SSC?
  - Lick science meeting?
- Improve communication
  - Lick Newsletter
  - UCOAC
  - ??
Lick Workshop: Next steps

- Post (nearly) all materials on the Lick Workshop website
- Act on UCOAC recommended activities
  - CAT program
  - Retiring instruments
  - Seek partners
  - ToO policy
  - Full-speed ahead on Kast-Red (and guider?)
- Generate a report+recommendations document for the UCO Board

Tuesday, October 9, 2012
Day 1: September 13, 2012

09:00-09:15 Welcome + Introductions + Review of Goals [Marchis/Prochaska/Barth]
09:15-09:15 Status of Lick Observatory [Prochaska]
  - Telescopes (include stats on usage)
  - Instrumentation (include stats on usage)
  - Publications
  - E/O summary
  - Archiving
09:45-10:15 Current Operations [Prochaska + others]
  - On-call, instrument changes, OT, remote
  - Facilities
  - LO Technical staff
  - SPG
  - Scientific
  - UCO Technical
  - LOBO
  - Budget
10:15-10:30 Break
10:30-11:00 Future Operations: Break out groups
  - Large programs [Burgasser]
  - Innovative scheduling (queue, ToO, remote to laptops) [Barth]
  - Reduced operations on the 3m (nights and instruments) [Filippenko]
  - New partners (who, fraction of time, how to solicit) [Bolte]
11:00-12:00 Reports on Operations + Discussion
12:00 - 13:00 Lunch
13:00-13:10 Intro to new Instrument/Projects [Prochaska]
  3m Instrumentation
13:10-13:30 Shane AO upgrade + IRCAL [Gavel/Rockosi]
13:30-13:50 ARCONS [Mazin]
13:50-14:10 Kast/Red [Holden]
14:10-14:30 Near/IR imaging camera [Burgasser]
14:30-15:00 Discussion
15:00-15:20 Break

Day 2: September 14, 2012

09:00-09:10 Recap of Day 1 [Barth]
09:10-09:30 E/PO status and future [Prochaska/Max/Peticolas/Zevin]
09:30-09:45 FoLO [Kibrick]
09:45-10:00 FoLO Break out
  - Board members [Guhathakurta]
  - Brainstorm small items for FoLO monies [Lynam]
  - Brainstorm large items for FoLO monies [Wareham]
  - Engaging the Southern campuses via Development [Fitzgerald]
10:00-10:20 Reports from groups
10:20-10:30 Break
10:30-11:00 Increasing Usage of LO by UC [Prochaska, Barth]
10:40-11:15 Break outs
  - Small telescope operations [Malkan]
  - Undergrad education [Prochaska]
  - Instrumentation [Rockosi]
  - Long-term Projects [Cooper]
  - E/PO [Zevin]
11:15-12:00 Reports + Discussion
12:00-13:00 Lunch
13:00-13:15 Towards Consensus
13:15-15:00 Towards Consensus
15:00-16:30 Drafting an update to the LO Strategic Plan
16:30 Adjourn

Small Telescopes
15:35-15:50 Polarimeter [Sloane]
15:50-16:05 Khayyam [Harris]
16:05-16:20 KAIT [Filippenko]
16:20-16:30 Aperture Mask [Ammons]
16:30-17:00 Discussion

APF
17:00-17:30 Presentation + Discussion [Vogt]
17:30 Adjourn

https://appv3.sgizmo.com/reportsview/?key=125798-1469790-8ae358ccca1442c23a5ea8b814d0d4ed
8 submitted white papers
Community Survey

Tuesday, October 9, 2012
Lick Workshop: Current

Open-access Telescope Usage

Tuesday, October 9, 2012
Lick Workshop: Current Instrument Usage

Shane Instruments (2012)

KAST 54%

AO-NGS 10%

AO-LGS 7%

PF-Cam 1%

HamSpect 10%

GEMINI 2%

KAST 54%

ARCONS 3%

Aero 3%

POLISH 8%

Nickel Instruments (2012)

Imaging 71%

EYE 8%

OSETI 2%

Spect. 2%

Own 0%

POLISH 2%

EYE 8%

OSETI 2%