

## UCG 2015 Report

The Users' Committee for Gemini (UCG) met in Toronto, Canada on June 19, 2015, immediately following the Future & Science of Gemini meeting that week. The UCG felt that the timing of this meeting was very helpful, allowing UCG members to hear Gemini update presentations and obtain feedback from other users.

### Communication:

The UCG recognizes the Gemini Observatory's efforts to rectify problems of effective communication with users. With respect to visibility, the Observatory has done well to promote itself at partner national meetings and technical conferences. The Observatory has begun to implement a process by which operational problems will be quickly disseminated to the community. It is still not clear how far this process has been implemented, or whether it will need to be modified. As one example, a key problem that arose in early 2015 was related to the Hamamatsu CCDs on GMOS-S. While the Observatory has made some efforts to contact PIs and announce possible issues, there is a feeling within the community that information is still lagging. Many people within the community still do not know about the degree and severity of the problems, how to cope with them in their existing data, or how to mitigate them in potential upcoming data.

*The UCG would be interested in discussing the detailed plan for how Gemini informs users about operational problems.*

The National Gemini Offices (NGOs) have requested a mechanism to regularly communicate with UCG members, and for the UCG Chair to connect to the Operations Working Group (OpsWG) meeting to summarize the UCG report. *The UCG felt that short telecons between each partner NGO and their UCG members would be appropriate. In particular, UCG members would be interested in receiving a concise summary of common HelpDesk questions from their NGO. The UCG also agrees that having the UCG Chair (both incoming and outgoing, during transitions) telecon to the OpsWG meeting is appropriate.*

### Getting Gemini Data Published

Although not all observations made with Gemini telescopes can be expected to eventually result in a publication (40% of completed programs in the years 2006-2013 resulted in at least one publication), Gemini would like to understand if there are any obstacles to publishing that could be alleviated by changing observatory practices. The Ops Working Group has made efforts to understand the reasons for unpublished data. This work includes comparisons between different instruments and modes, to find out how to better help users. In some cases, the reasons for not publishing are not easily addressable by Gemini (e.g., a project is not completed before a

student or postdoc moves on) but other issues can be addressed, or at least prevented in the future. For example, users may not have received the signal-to-noise they expected, and might have benefitted from additional support at the proposal or phase 2 stage. The new Gemini archive may make it easier for unpublished data to be used by astronomers other than the original proposers. This is another route to eventual publication and should be encouraged.

Some obstacles to publication have been identified by the OpsWG working with PIs, and the UCG recommends that efforts continue to address these issues. We do not recommend changing proprietary periods for Gemini data as we do not believe this would make much difference to publication rates. Sending a single reminder when a proprietary period is about to expire is helpful, but repeated reminders are not likely to produce positive results. *The UCG recommends that Gemini pursue making a “quick-look” reduction of data available from the archive: this will provide an incentive for users to look at their data quickly and help jump-start the reduction process.*

The UCG considered whether Gemini proposals should request, instead of the outcomes of proposals from the past 2 years, the outcomes of proposals from the past 5 years. The rationale is that this would encourage publication over longer timescales, and give TACs a better picture of how effectively PIs publish data. The UCG felt this could provide benefits, but that this would require substantial additional effort from proposers to assemble the relevant proposal information. The UCG was interested in this change if the effort by proposers to identify the proposal information could be minimized. For instance, providing a search tool within the PIT to assemble a list of proposals involving a particular investigator (ID, name, proposed hrs, allocated hrs, % of allocated hrs completed) would be very helpful, so that proposers would only need to add comments about each one.

## **Data Reduction Cookbooks**

The UCG finds that useful cookbooks and associated scripts are essential for timely data reduction. Even though some progress has been made in recent years to remedy this (e.g. GMOS-IFU cookbooks in the DR Forum by David Rupke and by Davide Lena), it is still an area with significant room for improvement. In particular for new instruments, like the Hamamatsu CCDs, rapid communication of issues and propagation of reduction solutions is important in order to avoid a frustrated user base.

*The UCG encourages the Observatory, NGOs, and expert users in the community to collaborate on the production of data reduction cookbooks.* Both the Australian and US NGOs have committed to making the production of cookbooks a priority in the coming year. Among the priority areas identified by the UCG are cookbooks for:

- GSAOI (particularly the distortion corrections)

- NIFS
- GMOS-MOS
- FLAMINGOS-2
- GNIRS.

The UCG recommends that Gemini continue to support data reduction workshops, led by partner NGOs at partner national meetings, contributing staff members where feasible.

## Data Reduction (DR) Forum

A large fraction of problems brought to UCG members by individual users relate to the difficulty of identifying appropriate solutions to data reduction problems. The UCG has found the Data Reduction Forum to have cookbooks, scripts, and solutions to many problems that users in various partners have encountered, though it is far from being a complete resource. The UCG agrees with Gemini that the DR Forum is a very promising avenue for helping users to obtain and share solutions to problems in data reduction.

Gemini asked for UCG's assistance in identifying the key obstacles to DR Forum participation by users. The UCG agreed that lack of knowledge of the DR Forum, or of what resources were already located there, was the most critical obstacle to effective usage of the DR Forum. Major other obstacles included a lack of incentives for users to contribute, and/or return to the forum; skepticism about whether questions would be answered helpfully; fear of asking "stupid" questions; the daunting structure of the forums; and reluctance to contribute imperfect, narrowly focused, or "spaghetti" code. Some users found searching the DR Forum to be difficult.

Some suggested solutions to these problems include:

*\*Gemini could enable email notifications to users via keyword (e.g. interested users could receive notice of any new posts mentioning NIFS).*

*\*Gemini could reward "power users" who agree to moderate portions of the DR Forum (routinely posting and answering queries) with modest amounts of telescope time.*

*\*Gemini could put some of the heavily-used and sought-after information into the user forum in order to increase traffic.*

*\*Gemini could link related (by keyword) DR Forum posts on the right-hand side of relevant Gemini webpages (e.g.*

<http://www.gemini.edu/sciops/instruments/gmos/longslit-spectroscopy>

could have links to

<http://drforum.gemini.edu/topic/gmos-classical-longslit-reduction-scripts/>

<http://drforum.gemini.edu/topic/gmos-ns-longslit-reduction-scripts/>

and

<http://drforum.gemini.edu/topic/trouble-reducing-gmos-s-longslit-data-with-hamamatsu-chips/>

*\*Gemini could improve the tagging of posts (e.g.; unite Flamingos2 and F2 tags, ensure that a single query would identify all longslit GMOS posts).*

*\*Gemini could enable (logged-in) users to post anonymous questions, to combat fears that their questions may make them look stupid or that their English is imperfect.*

*\*Gemini might put in place a system to allow upvoting of posts.*

*\*Gemini could place an announcement on the DR Forum requesting that users acknowledge help from scripts in any published work that results.*

The UCG recommends that Gemini explore these possibilities, and continue to think creatively about other methods to increase utilization of this resource.

## The Adaptive Optics User Experience

Adaptive Optics remains a cornerstone of Gemini capability: the 2015 User Survey indicates that 74% of responding users believe AO will be necessary for their future Gemini science (Q4), particularly MCAO (47% of users not skipping question Q6, compared to 30% for extreme AO and 22% for single-conjugate AO).

The UCG applauds the recent increase in publications using GeMS/GSAOI, and recognizes that much of this progress is related to improved technical understanding of the instrument by a dedicated AO team. In addition, GSAOI users look forward to LGS upgrades that will increase the Strehl ratio and photometric/astrometric precision; and the NGS2 effort, which will increase the sky coverage of the system, significantly reduce acquisition overheads, and improve the overall usability of the system. However, as was made clear during the Gemini Science Meeting, the user experience of GSAOI continues to be severely hampered by the lack of a robust static distortion correction script. Such a tool is required to reliably coadd and mosaic data, and is thus necessary for eventual publication of some types of data. *The UCG recommends that effort continue to be focused on the production of this distortion correction script, as well as frequent updating of the DR Forum with ongoing progress on this point (or incentivizing GSAOI users to publish this information on the DR Forum).* The listed MCAO acquisition and optimization times are large compared to instruments of similar complexity, *and several GSAOI users recommended that the overhead times used for Phase I proposals be reassessed and updated on the Gemini website.*

Recent Gemini Planet Imager publications by non-GPIES queue users indicate that a working operating knowledge of the instrument has been successfully transitioned to Observatory staff and that the public data reduction pipeline is usable. The UCG applauds Gemini for this successful transition.

Few Gemini users are aware of the near-100% sky coverage available with LGS+P1 “super seeing” mode on the Northern telescope. *This capability is unique among nearly all 8-10 meter telescopes and should be better publicized.*

The Observatory is to be commended for frequently sponsoring members of the Gemini Adaptive Optics group to attend global AO technical meetings. Due to the complexity of AO instruments, a successful AO program requires fostering a knowledgeable working community of engineers, AO experts, and AO users.

## Fast Turnaround Program

The first fast turnaround (FT) call went out in March 2015, with the first several months' calls generating between 8-17 proposals. That number dipped to only three in the most recent cycle, and there is some concern that the level of interest or need for this mode of proposal is lacking. The UCG views this new program very positively, and recommends that it should continue to be supported and strongly promoted. In the early months the success rate of proposals has been similar to other (i.e., semesterly) avenues for obtaining time. In addition to awarding time to strong science programs, the early FT proposal cycles have already provided an arena for students to gain experience writing and reviewing proposals (an unanticipated but very positive outcome).

The FT mode is a significant departure from more familiar and traditional proposal modes (e.g., semester by semester, DDT), and there seems to be a lot of room for improvement in community-wide awareness of the program. Word-of-mouth is likely to be the most effective mechanism for increasing awareness of the FT proposal cycles, though the committee also considered the possibility of prioritizing some amount of publicity/press for science results from the early FT programs. At the very least it may be beneficial for Gemini to contact early recipients of FT time and ask that those scientists advertise the FT as the source of data for relevant forthcoming results.

There are also some misconceptions within the community about the purpose of fast turnaround, such that it can be mistakenly viewed as simply a "slower DDT". The purpose of FT, and the criteria for evaluating/ranking FT proposals, are clearly stated on the relevant Gemini webpage, but simply posting information is not necessarily sufficient. *One thing that might help reviewers evaluate FT proposals in accordance with the official review criteria would be to ask reviewers for individual grades in each of the criteria; this would separate out the "rapid response" element of the evaluation.* The UCG also considered the possibility of tweaking the name of the program to include "rolling" in the name (e.g., fast turnaround/rolling proposal calls). The announcement email for each FT proposal deadline could also be modified to include a little information (~1-2 sentences) summarizing the purpose of FT so as to help differentiate it from DDT.

## Eavesdropping

Some users who have agreed to participate in the remote eavesdropping observing mode were contacted only once, and never again until after their programs were completely observed. *The*

*UCG discussed the possibility of sending users an email if they are in the queue on a given night, and recommends clarification on the interplay between the PIs and the Gemini staff.*

## **Priority Visitor Mode Observing**

Some users are concerned about several facets of the priority visitor mode observing program, namely (1) that teams with more monetary and personnel resources may be getting access to more than their fair share of the best observing conditions, and (2) that this mode of observing can be incompatible with the experimental design of certain types of survey programs. The UCG discussed pathways for alleviating these concerns. Providing a limited amount of financial aid, in addition to the “bring one get one” program, would be beneficial for PIs at small institutions with fewer funding options. For LLP PIs for whom taking advantage of PV mode observing offers little to no advantage, or even has negative consequences, it should be possible to request queue mode observing. In general, the committee agrees that providing an option for band 1 and 2 general observers to participate in PV mode observing would be a good idea. However, in awarding PV time care needs to be taken to assure that PV-mode observers do not consume more than a fair share of the best conditions.

The discussion should continue to determine the best way to mitigate costs on both side (i.e. through the possibility of implementing remote observing capability).

## **Proposing and the OT**

The UCG commends the Gemini Observatory for the ongoing improvements in the functionality of the OT, particularly in the automated selection and prioritisation of guide stars. Upcoming improvements for 2015B, including the use of UCAC4 as the default guide star catalog, as well as incorporation of the ITC into the OT, are eagerly awaited. It would be nice to see the “Update” feature of the OT reinstated, instead of having to do a complete download and reinstall each semester.

## **Archive**

The UCG is very enthused to learn about the progress on the new in-house archive expected to roll out in Sept 2015, particularly with respect to the anticipated improvements to calibration linking. We expect that this will alleviate many longstanding user complaints about the difficulty of finding calibration products associated with their datasets, some of which may be taken months beforehand. Gemini will likely have no shortage of beta-testers, if they want them (several UCG have expressed interest already).

The UCG discussed the possibility of the Gemini Observatory providing quick-look data products in the archive for the most used instruments/modes (but hopefully expanded to most instruments/modes). At the moment, this is on the Observatory's to-do list, but has not been prioritized very highly. Such quick-look products would provide an immediate benefit to PIs, informing them about what was in their data (quality, content) and potentially giving them added motivation to move forward with their projects and publish their results more quickly. Such quick-look products would also allow archive users to assess what was in the archive and its utility. This addresses another concern of the Gemini Observatory, that only a small percentage of Gemini archive data is currently being exploited.

A topic for future discussion: what level of information should the Gemini Science Archive have on spectroscopic data?

### **Recent User Survey**

Gemini conducted a general survey of users in mid-2015, asking questions about user experiences, and user plans for both the short-term and long-term future. The UCG did not have time to consider these results in any depth, but will synthesize information relevant to the UCG's role from the 2015 Gemini User Survey in the next few months, and discuss via telecon.

### **Future Meetings:**

Craig Heinke is stepping down from UCG, and Franz Bauer will be the new Chair of UCG. Both Heinke and Bauer will connect via telecon with Ops WG, during the week of Aug 15, in Hilo, to summarize this report. The next UCG meeting, in 2016, should be scheduled relatively early, so as to provide the ability to inform the Ops WG meeting.

### **The User's Committee for Gemini**

Craig Heinke (CA, Chair) - *University of Alberta*

S. Mark Ammons (US) - *Lawrence Livermore National Laboratory*

Pauline Barmby (CA) - *University of Western Ontario*

Lilia Bassino (AR) - *Universidad Nacional de La Plata*

Franz Bauer (CL) - *Pontificia Universidad Católica de Chile*

Matthew Bayliss (US) - *Harvard-Smithsonian Center for Astrophysics*

Bo Reipurth (UH) - *University of Hawaii*

Eduardo Cypriano (BR) - *Universidade de Sao Paulo*

Armin Rest (US) - *Space Telescope Science Institute*

Stuart Ryder (ex officio) - *Gemini Operations Working Group Chair*

Jessica Werk (US) - *University of California, Santa Cruz*

October 7, 2015

