

Users' Committee for Gemini 2017 Report

The Users' Committee for Gemini (UCG) met at Gemini Headquarters in La Serena, Chile on August 8-9, 2017. Day 1 was reserved for discussing items related to Queue Planning, Observatory Updates, Preparing for the Time Domain Era, 2018 Gemini Science Meeting planning, PV and LLP communications, the DR Forum, Cookbooks and other UCG business. On Day 2, the UCG sat in on the Operations Working Group meeting to hear the summary reports of the partner National Gemini Offices (NGOs) and items relating to the Observing and Proposal Tool (OT and PIT) software.

Observatory update and response to last year's report

The UCG was pleased to learn about the major effort underway to redesign the Gemini Observatory web pages to allow users to more easily find information. The committee felt that this is a very high priority, which relates to several themes below. There has been visible improvement on the Gemini website already, and the UCG encourages further development. The Observatory has started to implement short surveys to get rapid and pointed feedback directly from users; the community response thus far has been good. Implementing a quick and simple method to report specific website issues would also be extremely useful.

The UCG was encouraged by the Observatory's response to the 2016 report, specifically with respect to creating a webpage showing the queue completion statistics. However, the UCG felt that further clarification would be beneficial on this page, so that users understand not only what the statistics are for >80% completion, but also for higher rates (e.g., 100%). Additionally, there is further information related to a program's completion likelihood that is currently spread over multiple pages, and ideally a user should be able to find these more easily than is currently possible. A coherent approach to the layout and content of these pages should improve comprehension.

The UCG also acknowledged and greatly appreciated the recent improvements to archival data access, including the ability to search by PI name. The UCG emphatically supported the prospect of having access to reduced "quicklook" data products linked from the archive, which the Observatory is currently developing. There is a strong desire for these "quicklook" pipelines to effectively provide basic products for imaging and simple long-slit 2D spectral data (ideally bias subtraction, flat-fielding, gain correction, combining chips into a single image, WCS for imaging and wavelength solution for spectra). Such products will allow for more efficient real-time observing and hopefully lead to increases in productivity and publication rate.

Queue Planning

The UCG engaged in an interactive queue planning activity that was quite valuable for gaining insight into the numerous challenges faced by the queue coordinators. The UCG felt that a video which encapsulates and guides users through this process could be quite valuable to allow the average user to appreciate these challenges as well. With the complexity and effort that queue planning requires day in and out, the UCG encourages the Observatory to continue pursuing methods for automating as much of the scheduling as possible using algorithms and experience from past semesters schedules. This effort could overlap significantly with the long-term goals of preparing Gemini for the time domain era, an ultimate goal of which includes generating automated queue schedules/plans for Gemini based on objects selected from transient and other event brokers (see below).

Many PIs have expressed a desire for improved interactions with the Observatory from the Phase II process through to data acquisition. In the near term, the UCG felt that the user community would greatly benefit from improved communication with their contact scientists and Gemini support staff about what factors most commonly help or hurt a program's chances of being scheduled in the queue. The Gemini web pages already contain most of the relevant information for understanding how the queue functions, but it is a huge amount of information, often hard to find, and not logically linked. It would be helpful to add a page under the Sciops link to summarize and link to all information related to queue completion statistics, and perhaps statistics of which instruments have been used and what conditions have been obtained to date during the observing semester. The UCG recognized that tips about how to maximize observing completion in the queue is already included in the Gemini PI Notification e-mails ("helpful links" section) sent before the semester starts. However, those e-mails are fairly long and information may be easily missed by rushed PIs. An alternative could be to include much of the information on a webpage and send the link in a shorter e-mail to the PIs.

The UCG also recommends that the Observatory consider taking more active measures to alert the PIs of queue programs about the rough probability of their observations being executed. Making PIs aware of observations that are unlikely to be executed could be a very effective way of motivating them to track down the information provided on the Gemini web pages. At its simplest, this could entail reporting the fraction or amount of time, computed automatically during Phase I and II, that the requested conditions for each submitted observation are likely to be available within the window that the target is observable (e.g., above the required airmass, factoring in average weather and partner share). More refined versions could report a probability for each

observation to execute, incorporating additional information such as the historical availability of requested instrument configurations (e.g., if an uncommon filter or grating is required), the historical over/under-subscription of RA ranges, planned engineering/shutdown periods, and the schedulability of observations as a function of the length of individual observation blocks (for example, a 6-hour observation being much more difficult to schedule than a 1-hour observation). It would similarly be helpful if the ITC could incorporate some or all of the above factors to quantify more realistically the likelihood that a particular observation would be observed during the semester; currently the ITC only reports the frequency of occurrence of the requested conditions, which is too abstract. Additionally, it could be very useful for PIs to receive regular automated reports on the status of their observing programs throughout the semester: what has been executed and what the observing conditions were like (e.g. fraction of nights with specific observing conditions during the past month, and the instrument configurations). The UCG believes that active, transparent communication with PIs regarding the (in)completion odds of their programs is probably one of the most immediate ways that Gemini can significantly improve overall user expectations.

The UCG was pleased to learn about the one-on-one in-person phase II help workshops sponsored by Gemini and NGOs (e.g., winter 2017 AAS meeting) and encourages that these types of interaction opportunities continue.

Data Reduction Cookbooks and Pipelines

The effort that has been put into the GMOS data reduction cookbook has been well received by the community. Likewise, the development of the new pipeline DRAGRACES has been welcomed by GRACES users. The UCG was pleased to learn that a cookbook is being developed for FLAMINGOS-2 and encourages further development to widen the range of available cookbooks. There remains very strong support amongst Gemini users to have reduction packages and cookbooks for Gemini instruments, prioritised by amount of usage and degree of complexity.

The UCG noted that minor errors will always exist in such cookbooks and having a simple and clear mechanism to report these issues (perhaps similar to what is needed for website errors) would be highly desirable. The Observatory expressed a desire for volunteers to test the cookbook examples, and the UCG suggests that posting such requests on the DR Forum could be a useful way to promote interactivity and increased usage there.

Preparing for the LSST Era

The UCG was optimistic about the process of preparation for the time domain era, and welcomed the initiative of the Observatory to collect user stories and associated feedback to guide the development and construction of the tools for efficient responses to time domain event triggers. While this process is driven by ToO and will be developed with LSST in mind, *Gemini should be focused on deliverables that will affect the broadest user base and should be useful for many other applications at Gemini - especially since some fraction of Gemini users will not have full access to LSST data products.* For example, optimizing an automated queue scheduler and providing the ability for general users to setup Target/Observation Managers (TOMs; which match potential targets to available telescope/instrument configurations and coordinate observations and data), would be very beneficial to the general user community.

2018 Gemini Science Meeting Planning

The 2018 Gemini Science meeting will be held in San Francisco, July 23-26. The UCG discussed the possibility of organizing one or more workshops of interest to the user community, such as sessions on how to optimize observations getting executed in the queue, 'data-under-the-hood' talks by LLP PIs/groups, and/or a speed collaboration workshop. Given the large commitment of Gemini time to LLPs, there should be dedicated sessions for LLPs to present results and associated products at the meeting.

PV and LLP communication

In advance of the UCG meeting, two LLP PIs contacted their UCG representatives to provide suggestions for how the LLP process could be improved. Both PIs expressed a desire for improved communication between Gemini staff and LLP PIs. In particular, communication with the LLPs during semester could be improved to make the LLP PIs aware of potential execution inefficiencies and how they might modify their observations to make them more readily executable; this ties in with the queue planning discussion above. Given the importance of LLPs, the UCG recommends regular (e.g., monthly) reports to the LLPs on the status of their projects in order to help increase the completion rates for these programs. During this time, PIs would be encouraged to discuss whether they are obtaining the S/N they require to perform their science, and whether their IQ or other weather conditions may be relaxed. Importantly, the PV-mode runs present an opportunity to increase communication between LLPs and Gemini scientists. Both LLP PIs felt that there needs to be more proactive engagement with the

LLP teams during their PV runs. The UCG recommends that Gemini staff contact LLP PIs in advance of the travel booking for their PV-mode observing runs in order to arrange for a day-long visit to Gemini HQ either immediately before or following their run to increase interaction (e.g. giving a talk and/or setting up small meetings to discuss research) with their contact scientists and other Gemini staff astronomers/scientists.

The LLPs represent a large investment of Gemini resources, and in theory get extra support / attention from the Observatory. However, at present, the Gemini web pages dedicated to LLPs present only a list of the selected programs and their abstracts, and do not highlight the results of the programs or advertise what legacy datasets the LLPs will make available upon completion. The UCG felt that the delivery of legacy datasets should be a requirement for LLPs. For the sake of accountability and utility, the UCG recommends that the LLP pages also contain information about the amount of time awarded/executed, a timetable for execution and delivery of legacy data products, and links to relevant publications, results, and value-added resources for community use; the latter is presumably one of the fundamental criteria by which these programs were initially evaluated. Ultimately, the legacy data products from these programs need to be made available and easy to find. Another confusing issue is that the information and the results of the LLP selection do not seem to be announced at the same time as the regular Gemini programs. All of the information about the LLPs should be centralized onto a single initial LLP webpage.

DR Forum

The UCG was encouraged by the news of increased usage on the data reduction forum, especially considering that traffic from Gemini staff has decreased. Continuing to grow DR forum activity should remain a moderate priority. Incentivizing contributors with paid trips to Gemini facilities seems to have worked to increase user activity and the Observatory should continue devising such incentives. Graduate students, in particular, could be targeted with such incentives to encourage their participation on the forum.

The UCG commends the Observatory for the ongoing work toward a new Helpdesk system and encourages developing more overlap and synergy between the DR Forum and the Help Desk. There were some concerns, however, about the lack of Gemini updates/announcements being shared on the DR forum. The “Announcements” forum is clearly not being updated with regular announcements, despite it being an ideal place to post any/all public announcements that are already being disseminated via other media (Facebook, www.gemini.edu, etc.).

The UCG brainstormed several ideas for minor changes to the DR forum, such as having the option to list additional information about the users currently registered in the forum (full names instead of handles, institutions, etc.), and listing the number of posts/replies made.

Observing (OT) and Proposal Tool (PIT)

In the #97 e-Newsblast from the Gemini Observatory, some results were reported from a short user survey conducted at different points along the process from proposing for time to receiving data in 2017B. The UCG was quite pleased to learn that >50% of the users in the community took the time to respond to this short survey, and provided useful suggestions and comments to improve the PIT. This appears to be an excellent method for harvesting feedback and the UCG encourages the Observatory to continue such short surveys, as well as publish more extensive results of these surveys as soon as they are available.

The Observatory is now developing a new PIT and thus will not be updating the existing one more than absolutely necessary. The UCG suggested that users may remain more engaged in the surveys if they are provided more details on the results and specific timelines regarding when improvements, such as the new PIT, are expected. One important upcoming update to the existing PIT that the UCG expects to be extremely useful is the modification to how the PI and Co-Is can be listed, which could help to remove unconscious bias during the TAC process.

NGO interactions and User input:

A number of smaller items were discussed due to interactions between the UCG, NGOs and users, some of which could shape the discussion at the next UCG meeting.

It was noted by some users that relevant flats and standard star observations were sometimes obtained on different nights compared to the science data, leaving calibration more uncertain. The UCG recommends that the Observatory try to ensure that high-quality science calibration products are obtained under the same conditions (e.g., same night) to enable appropriate corrections.

The UCG would like to see more detailed information on the oversubscription rates or “demand” as a function of program type (FT, LLP, regular queue), by band, by instrument, by instrument mode and by subject panels.

There is a broad desire within the Gemini user community to see more comprehensive results from the Gemini Strategic Vision Survey. The results were synthesized by a dedicated committee and briefly summarized in a report (“Beyond 2021: A Strategic Vision for the Gemini Observatory”) linked from the Gemini Announcements webpage and in a recent Gemini Focus column. The UCG felt that it would be useful to users to publish the actual results of the survey, partner by partner, given the vagueness of many statements in the report. In general, when Gemini surveys the user community, the UCG encourages that the full results of these surveys to be published for the community.

Future Meeting:

The next UCG meeting will be held in San Francisco, in conjunction with the Gemini Science meeting 22-26 July 2018.

The User’s Committee for Gemini

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