

## 10<sup>th</sup> GEMINI OPERATIONS WORKING GROUP MEETING

February 2-3, 2006

### Draft Minutes

Present: Taft Armandroff (Chair), Dennis Crabtree, Max Abans, Paul Francis, Inger Jorgensen, Rachel Johnson, Sebastian Lopez, Phil Puxley, Doug Simons, Richard Wainscoat, Michael West.

#### Action items

*Action 10.1: Armandroff to organize telecons of the NGO-Gemini leadership. The first one will occur on February 21 at 10 am HST.*

*Action 10.2: For the Keck-Michelle time trade, The NGOs are to consider what other instruments on Keck be of interest in addition to HIRES (by the next Ops WG meeting). Armandroff will circulate a list of Keck instruments to the NGOs.*

*Action 10.3: Armandroff to inquire with Dave Bell about whether there will be any changes to the NOAO backend for semester 2006B. If there will be, an e-mail to the NGO exploder is needed. An e-mail listing what libraries and dependencies exist is also needed.*

*Action 10.4: Gemini to update the OT libraries starting with the four most popular instruments (GMOS N & S, GNIRS, NIRI) with real examples that cover most of the available modes. NGOs to be involved in checking the libraries. Both Gemini and NGOs to advertise the availability of these enhancements. This should be accomplished before the releaser of the OT for 2006B.*

*Action 10.5: In order better communications among the NGOs and Gemini, set up self-maintaining mail system (e.g., mailman) at Gemini for joint Gemini/NGO instrument support teams.*

*Action 10.6: By the Call for Proposals Telecon of the Ops WG, Gemini will have a plan outline for updating the science operations Web pages.*

*Action 10.7: Armandroff to provide letter to Abans on behalf of Ops Working Group that expresses disappointment with lack of travel support for Bruno Castillho to NGO/Gemini Staff Meeting.*

*Action 10.8: The subcommittee of Armandroff, Johnson, Crabtree, and Roy are to review the NGO core metrics and forward the full Ops WG for adoption.*

*Action 10.9: NGOs are to brief their NTACS on the initiative to exploit the poorest observing conditions (Resolution 10.X).*

*Action 10.10: Johnson, Crabtree, and Armandroff to write article for Gemini Focus that illustrates the role and accomplishments of the NGOs.*

*Action 10.11: Armandroff to contact the GSC Chair to set up a GSC telecom to initiate the planning of "Gemini Science 2007".*

#### Resolutions

*Resolution 10.2: The NGOs are stakeholders in Gemini user support and thus are stakeholders in the information on the Gemini science operations Web pages. Thus, the NGOs should be involved in the*

*redesign and implementation of the science operations Web pages, particularly those related to Phase II.*

*Resolution 10.3: TheOps WG notes Board Resolution X.Y on NICI Campaign Science that relieved Brazil and Argentina from charging for the NICI Science Campaign. We respectfully and strongly support the Board's statement that this practice is not precedent setting for the future observing campaigns for the "Aspen" instruments. WORK WITH RAVCHEL ^ RICHARD EMAIL*

*Resolution 10.3: In order to stimulate profitable use of the worst observing conditions, the Ops WG seeks to allow programs in these conditions without the usual partner charging. These would be programs for the 90% cloud cover bin or worse, and also for programs in the worst image quality bin with any cloud cover. The water vapor constraint has to be "any." Programs are to be drawn from the NTACs and approved by the ITAC. The Call for Proposals for 2006B should reflect this initiative of poorest conditions observations are "too cheap to meter."*

*Resolution 10.3: There is concern among the ITAC members regarding the Gemini-Board-mandated sizes of the scientific ranking bands. The final queue structure resulting from the ITAC may not be delivering optimum scientific productivity. Since semester 2005A, the size of Band 1 has been decreased (from approximately one third of the top three bands). Presently, Band 1 is the top approximately 20% of programs, Band 2 covers the next 30%, and Band 3 covers the remainder (extending up to 107% and 109% in North and South, respectively, in 2005A). These are percentages of the available queue time, which is the available science time less classical less estimated rollover (e.g., 62% of the available science time in 2006A on Gemini South). The first concern is that Band 1 is now so small that rather insignificant differences in grade can easily move a highly ranked proposal from Band 1 into Band 2. Simulations have also shown that with a smaller Band 1 that is forced to include all partners, the larger partners receive somewhat less than their partner shares of Band 1. Also, TOO programs are required to be in Band 1. Because TOO is an area where Gemini excels, each partner seeks to place its highly ranked TOO programs into Band 1, yet this is increasingly difficult with a small Band 1. Finally, the number of hours in Band 1 depends on the amount of classical time, and semesters with large amounts of classical could render Band 1 subcritical in terms of observing conditions / constraints. In addition, Band 3 is now so large that programs with a rather significant range in grade are contained in this single category, with memory of their ranking gone. The ITAC feels that there is a significant difference in scientific promise between programs at the top and bottom of Band 3, depending on the oversubscription of each partner. The Ops WG believes that dividing the proposals into three more equal-sized scientific ranking bands would sample the TAC grades in a more optimal manner (e.g., top 30% in Band 1, next 30% in Band 2, and final 40% in Band 3).*

*Resolution 10.4: The Operations Working Group approves the proposed schedule of instrument swaps and instrument block schedule proposed by Gemini. We do recommend that the exact size of the blocks and dates for the instrument swaps be evaluated once the level of demand for the various instruments is known.*

*Resolution 10.5: The Operations Working Group is pleased with the response to the five night time exchange with Keck. We believe that the scheduling of Gemini's nights on Keck can be made much easier if only whole (integer) nights are available and if specific dates for these nights are announced in the Call for Proposals*

Resolution 10.6: The Ops WG discussed the draft Gemini 2006B Call for Proposals. Other than some feedback on the proposed Subaru time trade and the size of TEXES programs, the Ops WG endorses the draft Gemini 2006B Call for Proposals. The Subaru time trade should be discussed at the Ops WG telecon at the end of February. If the proposed ambitious Subaru arrangement cannot be successfully concluded, we recommend night-for-night trade of classical time with Subaru. The wording in the Call should encourage ambitious multi-night proposals for TEXES that address key Aspen science (but should not impose a strict minimum number of hours).

DRAFT PHIL

## 1. Review of Minutes and Action items

The minutes from our August 2006 meeting were approved.

Action items were reviewed. Action item X.X on overheads was addressed by correcting the former GMOS Phase-I 75% efficiency assumption that was questionable. All other action items were successfully accomplished.

We reviewed the Gemini Board resolutions from their May 2005 meeting. The Ops Working Group was interested in Board resolution 2005.A.6 related to instrument decommissioning.

There is no ITAC report yet, due to other pressing Gemini activities. Hence, there were no ITAC action items to discuss.

## 2. Instrumentation

Doug Simons reviewed the status of Gemini instrumentation.

- NIFS: NIFS was delivered. NIFS has a HAWAII-2RG detector with excellent performance in terms of dark current and read noise. This gives it an advantage against OSIRS and SINFONI. NIFS first light occurred on October 10. As of today, NIFS is well into accomplishing System Verification observations.
- GSAOI: GSAOI had a very successful cold cycle number 4, which was a full-up test including all subsystems. The detector's On Detector Guide Window (ODGW) was used for the first time. No significant noise was injected into the science field by use of the ODGW. The next step is a detailed characterization and optimization of the detectors. An April 2006 acceptance test in Canberra is anticipated. Delivery is anticipated in May or June. No on-telescope tests are planned for 2006 since GSAOI requires MCAO being integrated.
- FLAMINGOS-2: The FLAMINGOS-2 JH grism was received from RGL. The electronics are reading out the detectors. The instrument is largely integrated. The first full-system cold test was cut short by the self-destruction of their HAWAII-II detector (as has occurred previously with NIFS and other instruments). The detector is a total loss. Using the old FLAMINGOS-1 engineering detector, first light for FLAMINGOS-2 has now been achieved. The next step is to characterize the performance of the optics and to check for light leaks. Simons estimates 6 months to pre-ship acceptance testing (assuming no major flexure or other problems).

- **NICI:** NICI is still showing a modest light leak. Masking the serial registers of the detectors did not fix this issue. The NICI Team has had to install a compensator in the output beam of the AO system to shift the focal positions. The wavefront sensor is conformed to work fine using artificial (known) aberrations in input beam. The CILAS deformable mirror is now being installed into NICI. Simons predicts that NICI will be delivered in 6 months.
- **TEXES:** TEXES is present at Gemini North. An engineering run will occur in February. A number of key tests is planned for this run, including very demanding chopping / nodding. A 5-night Demo Science run is planned for July. Then, a 17-night community access run is planned for November.
- **MICHELLE:** Gemini has decided to upgrade MICHELLE's detector controller to SDSU-3 (from the current EDICT controller)
- **ALTAIR:** Gemini recently received the refigured laser launch telescope objective mirror. It was just installed at Gemini North. Thus, Gemini will resume ALTAIR laser-guide-star commissioning.
- **GMOS CCDs:** Gerry Lupino reported a few weeks ago that he has finally received a CCD from Lincoln Labs for test purposes.

### 3. Initial Discussion of 2006BA Call for Proposals

We began by discussing the Gemini North capabilities to be offered in semester 2006B. Gemini recommends offering laser-guide-star AO in 2006B. It needs to be run in queue, because of the inability to operate in cloud. It will be both bright and dark time, with a maximum of 7-14 nights per month.

Jorgensen proposed integer nights only for the Keck HIRES time exchange. Crabtree suggested defining specific Keck nights in the Gemini Call for Proposals. Because HIRES was modestly undersubscribed at ITAC, we discussed whether another Keck instrument might be preferable for time trades for Gemini MICHELLE time. Action 10.2 asks the NGOs to explore this with their communities.

The science fraction is proposed to be very high, 90%.

In the South, there are no new instruments planned for the 2006B Call for proposals. Only NICI will (hopefully) be new, but it will only be offered for Campaign Science. The Observatory proposes 75% science time. The remaining 25% will likely be used for NICI and FLAMINGOS-2 commissioning, MCAO preparations, GMOS CCD recommissioning, and cablewrap overhaul.

For 2006B, we will again use a flexible blocking strategy for the instrument assignments to ports that takes into account user demand. In the north, NIFS, MICHELLE, and TEXES will be sharing one port. In the South, T-ReCS and NICI will share one port, while GMOS-S and FLAMINGOS-2 will share another port. This is complicated because of the unknown dates of NICI and FLAMINGOS-2 delivery.

Puxley presented the aggregate time accounting, updated on January 7. The U.K. and Canada are still behind in the amount of time they've received. The Gemini Staff is the furthest ahead,

followed by the U.S. Puxley proposed once again to apply 50% of the aggregate imbalance to the advertised hours in the 2006B Call for Proposals.

Wainscoat asked about the details of the Subaru time exchange. Details are still being worked out. The trade would be queue for queue on both telescopes. Depending on the amount of the queue that was executed each semester, there would be a rebalancing the following semester. In effect, Subaru would be treated like another partner. We will discuss the Subaru arrangements at the upcoming Ops WG telecom.

Jorgensen raised the question of whether, during this 17-night TEXES block, if the Band-1 or Band-2 TEXES is either completed or not observable, whether Band-1 GMOS or NIRI programs should be run instead. The Ops WG felt that if any TEXES program can be run during this block that it should be run instead. Conversely, if no TEXES program can be run in the observing conditions, a non-TEXES program should be executed. For the TEXES time, because the capability will not be available for a long period, there is interest in stimulating proposals of a sufficient scale to have significant scientific impact. The sense of the Ops WG was that this should be done via words encouraging large, impactful programs responsive to the Aspen Report. The Ops WG does not favor hard limits on minimum size of TEXES programs.

The Ops WG favored clearly expressing in the Call for Proposals the need for requesting integer numbers of HIRES nights and for fixed HIRES blocks in the Call for Proposals.

#### **4. 2006B Process and Schedule**

Gemini plans further work on PIWI for Joint proposals. PIWI would show a summary of all components, including those of other partners.

Gemini did quite a bit of work on the “save proposal as PDF” feature in the PIT. Gemini has consulted with Dave Bell and Dave Gasson at NOAO. The “save proposal as PDF” feature is not working perfectly yet. There is a hope that using some new libraries may fix this.

Improved guide star search and selection is being implemented in PIT

Rachel Johnson requested that PIWI include the NGO support person on the front PIWI page.

Puxley reminded us that Michelle, T-ReCS, and bHROS fell at or below the 16-night minimum. There will be a warning in the Call for Proposals that Michelle, T-ReCS, bHROS, and Phoenix may not be offered in some future semester.

Puxley showed the 2006A observing conditions balance. He stated that this semester has the most nicely balanced conditions ever.

Puxley showed the 2006B proposed semester timeline.

We will take up training for 2006B during one of the Ops WG telecons. Training will likely be needed for NIFS and possibly LGS AO.

#### **5. NGO Phase I and Phase II Reports**

During the NGO reports (see Appendix), the following items of consensus emerged:

- The graphs that Paul Francis generates for Australian time allocated and observed as a function of semester are popular. Inger asked if we would like Gemini to prepare these for all partners, and the group said they would appreciate that.
- Paul Francis suggested that we allow PIT top track thesis proposals, and there was broad support for this.
- We should program I.D.s in the subject line of e-mails to Gemini regarding a specific program.
- The GMOS Cookbook was useful when sent to users.
- The O.T. libraries are helping users.
- Documenting which overheads are inaccurate in the OT (e.g., T-ReCS) should be documented somewhere; relevant Gemini and NGO contacts and P.I.s should be informed.

## 6. Science Efficiency and Productivity

In the North, all the staff are cross-trained for multi-instrument queue. In the South, staff cross-training is on-going. Multiple queue coordinators are used at each site. Jorgensen discussed the principles that go into queue planning.

There was significant discussion of the image quality condition bins. Crabtree advocated expressing the imaging quality in seeing FWHM.

Crabtree asked about whether commercial scheduling software could be applied to the issues of the queue.

Jorgensen reported that in the North Band 1 and 2 completion will be 100% (excluding targets of opportunity), which is excellent.

Quick electronic distribution through the archive (GSA) was started from Gemini South in November 2005 and for Gemini North in mid-December 2005. The NIFS SV data will be distributed via the GSA.

## NGO & Gemini Staff Meeting

Armandroff discussed the Meeting of NGO and Gemini Staffs that took place in Tucson on November 29-30. The meeting was a real success, with excellent participation from Gemini and all but one of the NGOs. Elab

We then discussed the ideas that were discussed and voted on at the meeting for enhancing the way that the NGOs and Gemini perform user support and work as a team. First, we discussed the top suggestion that there be a self-maintaining mail system, like mailman, that would allow having e-mail alias/discussion lists that allowed communication with a list of everyone at the NGOs and Gemini that are responsible for a particular capability. This has not yet been implemented. Colin Aspin attempted to implement this, but ran into technical a technical issue. We wrote an action item (#)

Wainscoat and Francis highlighted raised experiences in user complaints about Phase-IIs not being addressed by Gemini Staff for a long time after being taken by the NGOs to "For Activation" status. These are Band-3 programs. Gemini will establish an internal deadline for 2006B Phase-IIs. All Phase IIIs will be checked by Gemini Staff within some period of order a month of being received.

## 7. NGO-Gemini Interactions

Phil Puxley reported that Bernadette Rodgers is taking over ITAC and proposal management responsibilities. Jean-Rene will reassume the ITAC Chair. Bryan Miller is taking over operations leadership of process software development. There is a job ad out for DataFlow software science leadership. Inger Jorgensen is assuming responsibility for the time accounting. Expect that the public announcement of the new Gemini Director will take place in a couple of weeks time.

Jorgensen discussed NGO staff visits. To Gemini North in 2005B, there were one visit each from U.K., Canada, and Australian NGOs, and six visits from the U.S. NGO. The visits have worked well. The typical visit length is ten days. Jorgensen emphasized that the visits be long enough to allow time to discuss Phase-II and other issues with Gemini Staff. For Gemini South 2005B, there were 11 U.S. NGO visits, two from Canada, two from the U.K., and one from Chile.

Ste how we are going to have subcommittee refine metrics, then send to full Ops WG. Elaborate A subcommittee (LIST) had developed core metrics

## **8. Discussion of Reports on Semester Science Operations**

Phil Puxley reviewed semester 2005B science operations. The weather loss was very high at Gemini South in 2005B during the first half of the semester, particularly affecting T-ReCS. Demo Science for bHROS was successfully completed for two of three programs. GNIRS lens replacement was successfully carried out and tested by the Joint NAO / Gemini Team. Cross-training of Staff on GNIRS and GMOS was successful.

Semester 2005B at Gemini North was quite successful, with very high program completion (100% in Band 1, and very close to 100% in Band 2). NIFS commissioning was completed and SV started.

Puxley then reviewed 2006A proposals and planning. Demand was high, though dominated by U.S. proposals. For 2006A in the South, demand for GNIRS exceeded GMOS-S for the first time; GMOS-S has traditionally been the most popular instrument.

We discussed the poor observing conditions issue. Jorgensen expressed that the 90% cloud cover bin is likely not useful scientifically. She enunciated a need for poor-seeing programs. Crabtree advanced the idea of not even charging for the absolute worst conditions. Armandroff suggested strongly discounted charging in these very worst conditions. The time we are discussing for this is CC = 90%, and also the worst IQ bin with any cloud. The consensus was to keep this free. The NTACS should give such programs a ranking number of 1000 or greater.

### **SIZE OF QUEUE BANDS**

Puxley described how the science ranking bands were established in 2005B and 20-06A. Band 1 was nominal set as the top 20%. The Band-2 to Band-3 boundary is set at roughly 50%. This methodology under-represents the largest partners given the merging quanta.

The larger number of instruments will tend to lower program completion.

## **9. NICI Science Campaign**

Jensen discussed the NICI Science Campaign. A NICI Campaign Team was selected. Elab...

Rachel Johnson asked about the GSC's request that NICI have a certain minimum performance before going forward with the campaign. Joe Jensen replied that ALTAIR performance likely represented the Observatory's perspective on the floor on performance.

Armandroff raised the issue of the Gemini Board resolution relating to the NICI Campaign Science that relieved Brazil and Argentina from being charged, although they clearly stated that

## 11. Finalization of Call for Proposals for 2005B

As regards the Subaru time trade, MOIRCS will not be ready in multi-object mode. Hence, the Subaru time trade will only offer SuprimeCam. There is a concern among the Ops WG members that no rapid-response TOOs be included in the Subaru time trade. Otherwise,

## 12. Other items

Doug Aspen updated the Ops WG on progress for the Aspen instrument initiatives. For PRVS, the studies are underway and should be reviewed in October by independent review committees, then sent to the GSC and the Board. The Mauna Kea site monitoring work, motivated by GLAO, is also underway. A WFMOS kickoff meeting has occurred. There are two teams studying WFMOS. The study period for WFMOS has been extended by six months, due to the need to get Subaru engineering results to both teams to support their studies. GPI contract work is underway.

Colin Aspin updated the Ops WG on the GSA and DataFlow. GSA Version 1.35 was released on 25 January 2006. This version includes NIFS, bHROS, and observing log query improvements. The average delay from data taking to ingestion into the GSA is 20 minutes. SV data is now flowing into the GSA. PIs now get MOS pre-imaging from the GSA. Francis and others advocated sending e-mail to P.I.s when data arrives in the GSA. Aspin agreed and talked about taking steps to enable this e-mail while not sending e-mail annoyingly frequently. The number of users and amount of downloads has increased dramatically.

Bryan Miller is now in charge of prioritizing high-level software. He is open to suggestions from the Ops WG. Phil Puxley has given Bryan the suggestions on high-level software from the August Ops Working Group meeting. We should discuss high-level software prioritization at a future Ops WG telecom with Bryan present.

Rachel Johnson presented on GMOS mask making from non-GMOS images. When Rachel worked on the Gemini North data, the residuals were larger than Gemini South. Thus, we do not have a capability of making GMOS masks without GMOS pre-imaging in 2006A. Rachel and Ilona will continue to work on this.

We discussed the next "Gemini Focus" Newsletter contents. The Operations Working Group suggests article on bHROS science (possibly on Li6), MCAO update, NIFS science, the review of 2005 observing, and Phil Puxley's contributions to Gemini. Jean-Rene Roy suggested that all NGOs review their "Gemini Focus" distribution lists to insure inclusion of key scientists and funding-agency leaders in their communities.

There is much enthusiasm and support to commence planning for another meeting following "Gemini Science 2004." Planning for 2007 should start now. Max Abans stated that Brazil would be pleased to host "Gemini Science 2007". He suggests Iguazou Falls or Florionopolis (beach resort). They suggest the first week of May. Armandroff offered for the U.S. NGO to support the meeting in either the wine country North of San Francisco or at Yosemite east of San Francisco.



Roy discussed a review of the NGOs. Most aspects of Gemini have been reviewed, but the NGOs have not yet been reviewed as a system. Roy anticipates a review some time in the next year, after the Gemini Director is announced. The committee would include at least one NGO person and external people. It would visit every NGO. The Visiting Committee is visiting Gemini South in April. If the issue of the NGOs

### **13. Next Operations Working Group meeting**

Rachel Johnson will be the next Chair of the Ops WG, effective April 1, 2006.

The next Ops WG meeting will be hosted by the Canadian NGO and held in Victoria, British Columbia on August 3-4.

Brazil is interested in hosting the August 2007 Ops WG meeting.