1 PROGRAM MANAGEMENT OVERVIEW

Project	Work complete	Duration complete	Status	Comments
FLAMINGOS-2	36%	~32%	Behind-schedule	Some further delays in opto-mechanical design due to critical resources required to support other telescope operation activities (T-ReCS and GMOS). Telescope commissioning milestone pushed off by 1 month to end of December. Schedule must be re-baselined.
GeMS	5%	24%	Behind-schedule	Phase 6 finished in May. Started Phase 7 of shutdown, delays in planning phase and resources assigned
GMOS-N CCD	7%	15%	On-schedule	Project re-baselined in April, next milestone is September when system should be ready for implementation in GMOS early 2013
GPI	NA	NA	Behind-schedule	Overall project tracked at UCSC is about 96.1% complete (since initiation in 2006) . MEMS actuator failure will delay schedule by 3+ months. Replan currently in progress. Expected delivery at telescope in 2013Q1/2.
GHOS	~22%	~30%	On-schedule	Conceptual Design Phase finished on time. The overall project schedule is still very uncertain pending a team down-select which should happen in the coming quarter.
GRACES	~25%	30%	On-schedule	Final stages of fiber injection and delivery modules design.
A&G-2	NA	NA	On-schedule	Project was re-baselined to launch the Request for Proposal end of October and initiate procurement phase in January 2013.

2 PAST/CURRENT PROJECT ACTIVITIES

- **FLAMINGOS-2**
  - Both spare L1 lenses procured are in coating stages and will be delivered early July by the 2 vendors. A spare L7 is in production too.
  - Measurements were done in-situ with 8 temperature sensors attached to L1 (bonded back together) in the MOS dewar to understand thermal gradients and stresses during cool down and warm up. Data is fed to a FEA model done by a contractor to validate our new design and the future temperature profiles to be used.
  - L1 cell redesign is in critical review and will go to fabrication in July
  - OIWFS has been repaired and is being tested.
  - The new fanout board designed last year was installed in parallel in the camera dewar to improve thermal stability of the Hawaii II array and minimize future risks of delamination. It was successfully tested with the engineering grade array and tests with the science grade array are underway.
- **GeMS and GSAOI**
  - The 2 commissioning runs scheduled in April were mostly weathered out and no useful scientific data was obtained with the commissioning targets submitted by the Community. New objects will be observed in November when commissioning resumes.
  - GSAOI and Canopus are in shutdown mode for the winter break and various upgrades and maintenance are carried out, in particular improvements to the NGSWFS alignment to improve its sensitivity, now limited to R~16.
- **GMOS-N CCDs**
  - The action plan for noise reduction defined during a review with an external committee is proceeding and the resulting new filtering circuit has demonstrated significant improvement in the read noise. Further testing and circuit development will continue into the coming quarter.
  - The new replacement science grade CCD was shipped by Hamamatsu. This detector features an improved coating which provides better response at the blue end of the spectrum while maintaining the same excellent red response of the other detectors. This CCD will therefore be mounted in the "blue-most" position in the GMOS focal plane array. Plans are for it to be tested in our lab in July and August. If all goes well, it will be integrated in the focal plane array shortly thereafter.
- **GPI**
  - First round of system characterization was carried out in March and April.
  - Mitigations were implemented in May on several subsystems like the IFS alignment, the broadband calibration source, and the XY controllable spatial filter.
  - Using Speckle Nulling, a contrast ratio of $1x10^{-6}$ at 0.5" (5σ @ 1.5μm) without atmosphere is typically measured.
  - A preliminary acceptance readiness was conducted on June 25.
- **GHOS**
  - The 3 teams delivered their CoD packages mid May. They were reviewed by a committee at the end of June. An external cost analysis is underway and expected by end of June, at which point Gemini will make an informed decision on how to proceed with this instrument.
- **GRACES**
  - Optical fibers have been purchased and tested for throughput and Focal ratio Degradation. The results are encouraging and only a few percent off the theoretical values. Some braiding experiment are also being done to prepare the installation of the fiber in the long conduit between Gemini and CFHT.
  - Ongoing design for image slicer in ESPaDOnS and injection module in GMOS
- **A&G-2**
  - A first iteration was done for the science requirements.

- A concept for the optical arrangement of the various sensors was determined using the top 2 modules above the Science Fold.
- 3D modeling was done to verify how to integrate GCAL into the new A&G design.
- The beamsplitter feasibility study started in October 2011 was completed by the contractor and might be used in the future for a GLAO design.
- Robert Wyman is the new project manager and resources are being secured in his team to accelerate the progress and finish writing all the requirements.

3 COMING PROJECT ACTIVITIES (next quarter)

- **FLAMINGOS-2**
  - Check alignment of OIWFSs
  - Fabricate new L1 cell and integrate HW back into MOS dewar to test in thermal cycle.
  - Study improvements to L2-L9 cells and implement. Assemble optical train in camera dewar and start alignment.
- **GeMS and GSAOI**
  - Continuation of winter shutdown activities: NGSWFS alignment, RTC hot spare setup, miscellaneous BTO upgrades, new chiller 3 commissioning for laser system, GSAOI activities: new cryo-cooler control scheme, filter wheel fix, DC and CC crash investigation
- **GMOS-N CCDs**
  - The new blue Hamamatsu chip will be tested in our lab late July and August. Continued testing and development of our filtering efforts to reduce the read noise of these CCDS will continue between August and October. We plan to integrate the new CCDs into GMOS-N in January, 2013.
- **GPI**
  - Design, fabricate and install new Lyot Mask to cover the failed actuator.
  - Resume system characterization and prepare for the pre-delivery acceptance test stage.
- **GHOS**
  - We plan to complete the team down-select and resulting contractual negotiations in order to start the Preliminary Design Stage by period by September.
- **GRACES**
  - Finish testing of the fiber and critical design of the injection and delivery modules. Fabrication and delivery to Gemini is planned to happen by October.
- **A&G-2**
  - Contract short feasibility study for opto-mechanical arrangement and packaging
  - Finalize science and sub-system requirements, prepare material for Request for Proposal phase to be launched end of October.

4 OTHER DEVELOPMENT TEAM ACTIVITIES

- **Joint work with Gemini STAC and Gemini science staff**
  - Check the report from the April meeting at http://www.gemini.edu/science/#stac
  - Continue internal discussion about Long Range Plan (LRP) process gathering input from our science staff
- **Gemini-North AO workshop (June 19-21)**
  - See final agenda at: https://www.astrosci.ca/gnao2012/Home.html
  - The workshop held in Victoria, BC, investigated science goals for a next generation adaptive optics system at Gemini North with ~50 participants from throughout the Gemini community. The science goals will characterize the needed AO performance from which the Observatory will identify a number of potential next generation AO systems which will be presented to the STAC & the GBOD in 2012B for the next level action.
- **Gemini Users Meeting (July 17-20)**
  - Continued work to prepare sessions about instrumentation and LRP discussion