

Report of Gemini's Science and Technology Advisory Committee (STAC) November 2018

The STAC held its fifteenth meeting on 12-13 November 2018 in La Serena, Chile.

STAC Membership

Thomas Barnes	Jae-Joon Lee
Guillermo Bosch (video)	Marcelo Mora
Fabio Bresolin (not attending)	Laura Parker (chair, video)
Ryan Foley	Henri Plana
Craig Heinke	Andrew Skemer
Elliott Horch (video)	Eric Steinbring
Inese Ivans (video)	Marsha Wolf

The STAC congratulates Gemini on obtaining a new funding award from the NSF, allowing the development of a world-leading AO system on Gemini-North, new real-time computer systems, and software enabling rapid transient follow-up. The STAC also congratulates Gemini and the Republic of Korea on negotiating the entrance of Korea into the Gemini partnership.

15.1 The STAC recommends the following development priorities, which in order are: GNAO, SCORPIO, GN Laser, GHOST, GNAOI, IGRINS2, GIRMOS, NGS2, GNIRS Controller, Gemini AO RTCs, IUP, DM0.

15.2 The STAC thanks the observatory for providing completion statistics for targets of opportunity and information on publications delays. The STAC is pleased to see that the FTA has been a success and is producing papers quickly. We ask that these data continue to be included in future reports. The STAC would also like to see information on the fraction of requested triggers which are not observed.

15.3 The STAC endorses the suggested central wavelength shifts for SCORPIO to match the LSST filters. The STAC acknowledges the importance of fast acquisition of targets, and encourages the investigation of how to improve the speed of acquisition, including the possible addition of a slit-viewing camera. The STAC emphasizes that regardless of the method to acquire targets, obtaining science-quality images through defined filters so that each target can have a high-fidelity absolute flux calibration at the time of the spectral observation is critical.

15.4 The STAC is excited about the opportunities a new AO system on GN will enable. We see the adaptive secondary mirror (ASM) as a critical part of the GNAO system. The STAC strongly recommends including the incorporation of an ASM within the GNAO design from the beginning. A future GLAO system could feed all the other back-end instruments, as well as improve their performance and efficiency.

15.5 The STAC endorses funding a basic GNAOI imager from IDF funds, keeping the design simple and the total cost envelope under \$3 million. Given the instrument pressure and future duplicated capabilities, the STAC suggests that Gemini plan to decommission this instrument when GIRMOS becomes available with imaging capability.

15.6 The STAC suggests Eric Steinbring as a STAC representative to help plan the science requirements for the first light imager for GNAO. Dr. Steinbring would also be happy to be invited to join the working group consulting on GNAO planning for Gemini.

15.7 The STAC thanks the GPI team for their detailed report of the issues involved in moving GPI from the South to the North. Given the perceived cost/benefits, the STAC does not support moving GPI from South to North unless it has an upgraded wavefront sensor to enable fainter guide stars. The GPI team would need to obtain extramural funding to enable this upgrade.

15.8 The STAC thanks the observatory for the document outlining procedures for converting a visitor instrument into a facility instrument. The STAC continues to recommend that visitor instruments being built specifically for Gemini and/or that involve significant Gemini resources should have Gemini participate in their design review processes. These instruments should also report on their lab performance and present commissioning reports as soon as possible after their initial deployment on Gemini.

15.9 The STAC recommends against issuing a call for an IUP in 2019, to ensure that the Observatory maintains budget capability for AO priorities within the IDF budget.

15.10 The STAC congratulates the observatory on a successful IGRINS visiting run at Gemini. The STAC remains supportive of bringing IGRINS back to Gemini and endorses the plan to negotiate with the IGRINS team to secure substantial guaranteed time on Gemini.

15.11. The STAC suggests Andrew Skemer as the STAC representative for IGRINS2 issues. The STAC encourages the observatory to ask the IGRINS2 team to consider the possibility of being AO-fed as part of the design process.

15.12 The STAC is pleased to see a transient follow-up working group established. We suggest that the terms of reference require the working group to produce a report which can be provided at the next STAC meeting. The STAC has additional names to provide to the observatory to add scientific diversity to the working group.

15.13 The STAC thanks the observatory for providing information on the declining popularity of the LLP. We request that the observatory survey all PIs of previous successful and unsuccessful LLP proposals to try to learn more about the declining demand.

15.14 The STAC endorses the science time request from the observatory as follows:

2019A: 93% for the South and 86% for the North.

2019B: 86% for the South and 90% for the North.

15.15 The STAC would like to note that they are rarely consulted as instrument points of contact. STAC members are happy to provide support to the observatory and act as communication channels between the meetings.

STAC Points of Contact:

ALTAIR & Gemini North AO: Eric Steinbring

F2: Marsha Wolf

GeMS: Eric Steinbring

GHOST: Inese Ivans

GMOS: Marcelo Mora

GNIRS: Marsha Wolf

GRACES: Fabio Bresolin

GPI: Andrew Skemer

Instrument Upgrade Program:

ToOs: Craig Heinke

SCORPIO: Tom Barnes (until May 2019) Ryan Foley (from May 2019)

Visiting Instruments: Elliott Horch

IGRINS2: Andrew Skemer

Default for other issues: Chair

Future STAC Meetings:

The 2019A meeting will be May 13-14 in Hilo.