

CATAC Report

Dec 5, 2019

Membership

Michael Balogh (University of Waterloo), Chair
Bob Abraham (University of Toronto; TIO SAC)
Stefi Baum (University of Manitoba)
Laura Ferrarese (NRC)
David Lafrenière (Université de Montréal)
Harvey Richer (UBC)
Kristine Spekkens (Royal Military College of Canada)

Luc Simard (Director General of NRC-HAA, non-voting, ex-officio)
Don Brooks (Executive Director of ACURA, non-voting, ex-officio)
Rob Thacker (CASCA President, non-voting, ex-officio)
Kim Venn (TIO Board, non-voting, ex-officio)
Stan Metchev (TIO SAC, non-voting, ex-officio)
Tim Davidge (TIO SAC Canadian co-chair; NRC, observer)
Greg Fahlman (NRC, observer)

Meetings and Reports

CATAC continues to meet approximately biweekly via telecon. A record of selected meetings is on our web page http://casca.ca/?page_id=8347 and, where possible, reports are shared publicly.

CATAC has published three reports in the last six months:

- [Final report on TMT instrumentation](#) (July 4, 2019)
- [Final committee report to LRP2020](#) (Sept 27, 2019)
- [Community Information package](#) (Oct 12, 2019)

All are available on our CASCA website. In addition, we provide updates in every edition of eCassiopeia.

Construction update

The notice to proceed with construction was given on June 20, 2019, shortly after the CASCA meeting. This was accompanied by a press conference during which the Governor stressed the need for stewardship, safety and security during construction. Opinion polls at the time indicated a strong majority of support for TMT among Hawaiians, including among the Native Hawaiian population resident on the Big Island. However, when an attempt to begin construction was made in mid-July, the road was blocked by a few hundred opponents. Police took a nonviolence approach and did not attempt to break the blockade, although citations were issued on the mountain to a number of protestors who were then allowed to return to the site as they wished. In the following days, the number of people blocking the Access Road swelled to over a thousand, and a semi-permanent camp was established with food, hula, and medical facilities. An effective social media campaign, tapping into broader issues related to indigenous rights in Hawai'i and around the world, including in Canada, dominated the headlines and those issues continue to resonate today.

Universities were put under a lot of pressure, as many students and alumni wrote to express the view that the TMT project must achieve the consent of the indigenous Hawaiians in order for the project to proceed. Parallels were drawn with the findings of the Truth and Reconciliation committee here in Canada. ACURA responded by publishing a [statement](#) that respected the protests, acknowledged the work TMT has done to respect cultural and environmental sensitivities, and expressed support for a peaceful resolution to the conflict. Several universities posted their own statements, most of which emphasized these same points. The CATAC Chair and CASCA President issued a joint statement on July 31 aimed at providing some factual context, background and references to the situation.

Protests have continued, and no attempt has been made to restart construction. It became apparent to us that many Canadian astronomers, particularly the younger generation, were unfamiliar with the project's history and were eager for more information. CATAC provided a fairly comprehensive overview in our [report to LRP2020](#), which was circulated on the CASCA email exploder. On Oct 11 we released a more [detailed document](#), with the primary goal of providing the historical context of the current controversy, with abundant references and links to factual information.

There appears to be a good understanding now, at least among most Canadian astronomers, University and political leaders, that Canada should not directly interfere in the process happening in Hawai'i. Mayor Harry Kim has been charged with negotiating a solution, and he released a report in late September titled [The Heart of Aloha](#). While this short report is a good start, it is likely that additional, new ideas will be needed to resolve the conflict. We understand that there is still a lot of activity going on within the Hawaiian community to find a solution. Thus, we continue to wait to see if a path forward will emerge.

In the meantime, progress on obtaining two building permits at the alternative site in the Canary Islands continued, and both were in place by mid-November. Decisions on the next steps will be made by the TIO Members, who have been meeting regularly since August. The site at ORM presents its own significant challenges, scientifically, financially and politically.

Instrumentation

Following discussion at the CASCA meeting in May, CATAC revised and finalized our [recommendations](#) for post-first light instrumentation. Those recommendations are summarized here for convenience:

1. We recommend that Canadian SAC members support a transparent and effective instrumentation development plan, similar to the one presented by Luc Simard to the TMT SAC in November, 2010.
2. Instrument teams require time and funding to develop ideas to the level that allows them to compete for significant external construction funds. We recommend that Canadian Board and SAC members emphasize the importance that the TIO provide funding for early design work (e.g. mini-studies) as well as for Conceptual Design Phases. Despite the budget challenges facing the project, this work must begin immediately if we are to have a competitive instrument suite on the telescope.
3. We recommend that Canadians interested in the scientific or technical capabilities of an instrument contact other TMT partners and begin work on these ideas now, to the extent possible.
4. The TMT Science Forums have proven to be fertile environments for building relationships between partners for instrument development. Forums have now been held in all partner countries except Canada. Canada should host the next TMT Science Forum.

The main new development is that the high-contrast, high-dispersion spectrograph MODHIS has been endorsed by the SAC as a first-light instrument, though its exact nature is still a topic of discussion. MODHIS will be effective for finding and characterizing massive exoplanets. Several Canadians are part of a CFI application that includes funding to participate in the development of this instrument.

The new science team (including Balogh and Abraham) for the first light Wide Field Optical Spectrograph (WFOS) instrument has met once by telecon since the last CATAC report. The focus at the moment is on updating the science drivers described in the Operational Concepts

Definition Document. A review of white papers submitted to the US Decadal survey was undertaken to identify any new science cases that are not already covered in the document.

Community Engagement

No Canadians were able to attend the [Science Forum](#) in November, in Xiamen, China. This was not too surprising given the great uncertainty surrounding the project at the moment. However, it is still disappointing that we were not able to make use of the substantial funding ACURA has made available for participation in these important events.

CATAC provided a comprehensive [report](#) to LRP2020, which is meant to also serve many of the purposes of a white paper. TMT has been a topic of discussion at Town Halls across the country. At the moment there is uncertainty about the project, and much of this is likely to be resolved, one way or the other, well before the LRP report is published. Should a fundamental change (e.g. in site, scope, timescale etc) be announced, there will be a need for consultation and further input to the LRP process. CATAC is prepared to lead this process.

The [TMT Early Careers Workshop](#), originally planned to be held January, 2020 in Hilo, will instead be held at HAA, May 26-June 1, 2020. CATAC is prepared to help advertise and promote this among Canadian astronomers.

The TMT SAC responded positively to our offer to host the next Science Forum in Canada. It was seen as important that this meeting be held after the US Decadal Survey process completes, so that there is some clarity around the project status and project resources are freed up to contribute. We are therefore aiming for a date in late Spring/early summer 2021. Vancouver is the most likely location.