

Report of the Long Range Plan Implementation Committee (LRPIC)

The current core members and observers (with affiliations) are given below, in geographical order. Those with asterisks are also members of the Mid Term Review (MTR) panel. Monthly telecons are held, and additional email exchanges as needed. The group members have in-depth knowledge and individual involvement in several LRP initiatives.

Laura Ferrarese (CASCA PP)
JJ Kavelaars (JCSA chair)
John Hutchings
Ingrid Stairs
Pauline Barmby (GAC chair)
Brian McNamara
Michael Balogh *
Christine Wilson (CASCA president) *
Norm Murray
Matt Dobbs *
Rob Thacker (MTR panel chair)

The committee continues to keep abreast of developments in all LRP projects, monitor progress, and look for potential priority issues as they evolve. This is relevant as most LRP projects are minor partnerships in large international projects, where Canada has little influence, particularly on schedule. The LRPIC MTR white paper (http://casca.ca/wp-content/uploads/2014/09/LRPIC_WP_MTR.pdf) gives our overview as of December 2014. Since then, we have recorded updates, as many projects are evolving on timescales of months. This report highlights the currently evolving issues where clear resolution within the MTR timescale may not be possible. The table at the end of this report shows the status as of early May 2015. The LRPIC also contributed a set of slides for discussion at the MTR town hall meetings.

The LRPIC recognizes with gratitude that the funding approval for the TMT was the outcome of sustained and dedicated efforts by many, including the Canadian board members, the coalition for astronomy, ACURA, CASCA, university leaders, and the scientists and engineers who developed the project. Now the real work will begin, along with the other TIO partners.

We also note with pleasure the delivery in January to JAXA of the Astro-H metrology system that constitutes Canada's partnership in that mission – due for launch next year.

The CSA situation remains critical for LRP priorities. In the current budget there is no funding for a major mission as noted in LRP2010. The current CSA budget plans do not offer any significant change in the overall space science funding for the next few years. At the present time, we are faced with accepting ever-smaller shares in international missions, and an eroding

credibility with other agencies. The challenge thus is working within Canada to secure increased funding with ideas that inspire that outcome.

We see the following as current LRP issues that will be active for the next several months. An overriding issue is how to adopt priorities in times of uncertain funding, evolving projects, and with a wide range of participation-level in new facilities. While the TMT funding approval is an excellent and major step forward, it is not clearly a precedent for how to proceed on other LRP priorities. For some projects, expressing levels of endorsement may be preferable to stating outright priorities.

1. SKA
 - a. Impact of the SKA-1 new baseline on Canada's contribution to it.
 - b. Science level of interest and likely funding needs for Canada
 - c. Implications for Canada in SKA-2.
2. WFIRST
 - a. Wrap-up of concept studies and CSA partnership possibilities
 - b. Science return for such partnership – CSA/NASA discussion
 - c. Achievable performance of coronagraph instrument
3. CASTOR
 - a. Contracts for science definition, technical studies, and design details.
 - b. International partnership possibilities and costs
4. MSE
 - a. International partnership in design studies
 - b. International science team activities
 - c. Schedule, CFHT and UKIRT future
5. CCAT – way forward and implications for Canada in JCMT
6. CSA
 - a. Overall budget and space exploration future.
 - b. Postponed Space Conference – not before November 2015.
 - c. Space Exploration workshop also on indefinite hold, from June 2015.

May 2015 status summary of LRP new projects

What	When	Who	New \$C	Share	Funds	Notes
TMT	2014-2020	US, Japan, China, India	~\$243M	~15%	GoC, NRC, CFI	Approved April 2015. Details TBA.
SKA	2016-2024	Consortium	~\$30-50M	6-10%	Thru 2015...	to 2023 +\$? SKA2 for 2030
CASTOR	2015-2022?	CSA + XSA	\$>=150m	33%?	CSA	Tech + science studies; partners Phase 0, Sci Def RFPs
MSE	2014-2023?	Can, Fr, China, India, Aus, +..	>=\$34m?	~20%	Current +	Office, staff, at CFHT. Partnership design work to 2018
CCAT	2013-	Univ	\$21-35M	15-25%	Current + ?	No CFI
CHIME	2013-	UBC, UT, McG	\$10M	100%	CFI x2	DRAO under way. Pulsar add-on
SPICA	2015-2022?	JAXA+ESA	\$6M?	?	(CSA)	FTS not happening?
WISH	>2017?	JAXA	\$-20M?	?	(CSA)	Filter changer, no CSA study
Astro-H	2012-2015	JAXA	~\$8M	5%	Current	Delivered, launch 2016
WFIRST	2015 - ?	NASA + JAXA + ESA	>=\$20M?	>=1%? Sci team	CSA	WFI, coronagraph studies Science return TBD
Athena	2028 launch	ESA et al	Long lead	?	CSA	Co-chair of science panel
JCMT	2014-16	UK, Asian cons	\$0.1m/yr	few%	??	Initial 2 years.
Balloon, Microsat	2012-2020	CSA, CNES	\$10M	100%	Current	Continuing

Funds indicated all spread over several years – details differ.
 Amounts secured or in present budgets. Space and Ground-based