

# Evaluation of NRC Herzberg Astronomy and Astrophysics (HAA) Portfolio

EVALUATION SUMMARY REPORT

November 14, 2016



**Prepared by:**  
Office of Audit and Evaluation  
National Research Council Canada

**Approval:**

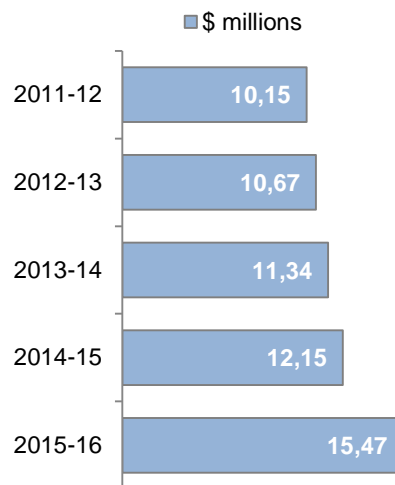
This report was approved by NRC's President on November 14<sup>th</sup>, 2016

## SUMMARY REPORT

Portfolio description	International Telescope Agreements Gs&Cs expenditures
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NRC is mandated by the NRC Act to “operate and administer any astronomical observatories established or maintained by the Government of Canada”. NRC-HAA is the portfolio responsible for fulfilling this mandate, including Canada’s participation in all current and future offshore facilities. HAA provides financial contributions and designs/develops instruments to support the administration and operation of observatories supported by Canada.

For the period covered by the evaluation, HAA directly supported two national observatories located in British Columbia, the Dominion Astrophysical Observatory (DAO) and the Dominion Radio Astrophysical Observatory (DRAO), as well as six offshore observatories: Canada-France-Hawaii Telescope (CFHT), Gemini, James Clerk Maxwell Telescope (JCMT), Atacama Large Millimetre/submillimetre Array (ALMA), Thirty Meter Telescope (TMT), and Square Kilometre Array (SKA).



Scope and methodology	Challenges and limitations
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The evaluation examined HAA Portfolio and program spending between FY 2011-12 and FY 2015-16. A complete and in-depth assessment of the performance of NRC’s internal services was not within the scope of the evaluation. In accordance with the TBS *Policy on Evaluation*, the evaluation covered the core issues of relevance and performance, including effectiveness and efficiency and economy.

- The level of client satisfaction with CADC services was not assessed.
- NRC Corporate KPI used to assess efficiency does not include corporate administrative costs.

### Overall evaluation findings

















The evaluation found HAA to be relevant to NRC and federal government mandates. Further, HAA meets the needs of the Canadian astronomy community as the Portfolio ensures that its activities and funding priorities are aligned with the Canadian Astronomical Society’s (CASCA) Long Range Plan 2010 (LRP2010). Canadian astronomers report that HAA plays a critical role in representing the interests of the Canadian astronomy community internationally through its involvement in existing and future observatories. Additionally, HAA’s facilities at DAO and DRAO are unique in Canada, providing core capabilities and expertise in the development of observatory instrumentation.

HAA has performed very well and has had significant impacts by supporting Canada’s offshore observatories as well as other telescopes around the world. HAA support has been primarily focused on financial support and the development of world-class instruments and technologies. HAA has collaborated with industry on instrumentation projects, which have resulted in positive impacts for the partnering companies. Most stakeholders perceive HAA as vital in supporting Canada’s performance in the field of astronomy.

The evaluation also found that HAA has encountered operational challenges which may impact HAA’s

ability to meet its objectives. Challenges included procurement delays, lengthening timelines for staffing actions, and limitations in IT desktop support. Further, the evaluation found that the transfer of HAA's IT infrastructure to Shared Services Canada (SSC) has had major impacts on the Portfolio's ability to plan, implement and acquire new IT equipment and networking capacity. Despite these challenges, the Portfolio consistently delivered observatory instruments on time, on budget and according to required specifications.

The overall assessment of HAA's performance by evaluation issue is presented in the table below.

<b>Assessment of HAA's performance</b>		
Legend:	 Meets expectations	 Low area of concern
	 Medium area of concern	 Management attention required
<b>Issue</b>	<b>Assessment</b>	<b>Associated recommendation</b>
<b>Relevance</b>		
Alignment with the needs of Canadian astronomers		1
Appropriateness of current delivery model		None
Alignment with federal priorities and NRC strategic objectives		2, 3
Alignment with federal roles and responsibilities		None
<b>Performance</b>		
Success in providing Canadian astronomers with access to national and international telescopes and science data products		4
Scientific impacts of international telescopes administered and operated by HAA		None
Contribution to the development of novel instruments and technologies		None
Scientific and industry impacts of instruments and technologies developed by HAA		None
Support for Canadian universities by training students and post-doctoral researchers		None
Contribution to strengthening Canada's position in the field of astronomy		None
<b>Efficiency and economy</b>		
HAA is administered in a cost-effective and efficient manner		None
Key risks and factors influencing the cost-effective and efficient use of resources by HAA		5

Recommendations	Management response
<p>1. The Vice-President’s Office (VPO) of Emerging Technologies – National Infrastructure and Future Technologies, in consultation with HAA, should consider establishing a formal consultation process to allow the Canadian astronomy community to provide strategic advice on the Portfolio’s scientific activities and priorities.</p>	<p>Accepted. NRC will investigate appropriate mechanisms for obtaining advice on a regular basis from the astronomy community and will develop a proposed process early in FY 2017-18.</p>
<p>2. HAA should continue to work with partners to expand outreach and awareness activities.</p>	<p>Accepted. HAA will continue to work in concert with partners to expand outreach activities. A new model to optimise use of the Centre of the Universe will be explored.</p>
<p>3. HAA, in collaboration with other NRC Portfolios and NRC Business Management Support (BMS), should explore opportunities to leverage competencies and astronomy-related technologies.</p>	<p>Accepted. HAA with support from the VPO of Emerging Technologies – National Infrastructure and Future Technologies and BMS will engage into discussions with the broader NRC community and ensure that competencies and intellectual property held at HAA are known and shared.</p>
<p>4. HAA should identify the reasons why Canadian PIs are not allocated observing time commensurate with Canada’s financial support to ALMA operations and take the appropriate measures identified, as needed.</p>	<p>Accepted. HAA will work with the Canadian astronomy community and with the National Science Foundation to understand why the allocation of ALMA time to Canadian astronomers within the allocation of ALMA time to the North American Consortium has not been proportional to Canada’s share of the North American Contributions and will attempt work to remove any impediments to Canadian access.</p>
<p>5. HAA, in collaboration with KITS, should continue to undertake efforts to find a solution related to the IT equipment upgrades and high speed networking capacity issues at the CADC.</p>	<p>Accepted. NRC will continue to work to find a solution to ensure that CADC services to clients are not impacted.</p>