



Evaluation Summary Space Astronomy Missions and Planetary Missions Programs

About the programs

Space Astronomy Missions (SAM) Encompasses the definition, design, technology development, implementation and use of complete Canadian space telescope systems and the provision of Canadian instruments, sensors and subsystems to international space telescope or probe missions. It generates scientific data about the universe through the observation of the solar system and deep space.

Planetary Missions (PM) Encompasses the definition, design, technology development, implementation and use of Canadian exploration signature technologies and scientific instruments made available to international exploration missions. It supports the robotic exploration of remote bodies (planets, asteroids, etc.) to conduct detailed observations and science.

About the evaluation

Evaluation covers the period from April 2011 to March 2016 during which the total disbursements amounted to over \$100 M.

Conducted in 2017 in response to the Treasury Board of Canada Secretariat's Policy on results (2016).

The evaluation's purpose is to systematically collect and analyze evidence on the **relevance, effectiveness** and **efficiency** of these programs, as well as unintended outcomes for the reporting period

It is the **first evaluation** of the SAM & PM programs.

The evaluation used a **mixed-methods approach** that combined **qualitative and quantitative analyses** which included:

- Documentation review
- Key informant interviews (with the CSA, industry, academia and international partners)
- E-surveys
- Two case studies

What we have learned?

- The programs are **highly relevant** and well aligned with the government's innovation agenda and the CSA's mandate.
- These programs are **essential** to maintaining **a world-class cadre of astronomers and planetary scientists** in Canada dedicated to advancing the knowledge of space through scientific discovery.
- The CSA is the **only** federal organization that provides the scientific community with access to space astronomy opportunities and data.
- **Canadian instruments** on space astronomy and planetary missions **have transmitted a constant stream of observations and images** of various types and quality over the years.
- The programs are **highly cost-effective** which have contributed to Canada's reputation in the international space exploration community.

How can we improve the programs?

- The evaluation found that the engagement of the science teams was delayed due to a lack of grant funding at start-up and fragmented funding for scientific research during and after missions.
- The principle of end-to-end funding for science team participation in space missions is generally accepted as a standard best practice.
- **Recommendation:** The program should develop clear guidelines that clarify the definition and scope of science support to missions in order to allow for the continuity of science support funding throughout all phases of a mission from pre-definition phase to post-operation activities.





Evaluation Summary Space Astronomy Missions and Planetary Missions Programs

Canada's influential position among the leaders in space exploration research is a source of **pride** and **inspiration** to attract and retain highly qualified **personnel** in the science, technology, engineering and mathematics disciplines that are essential to an **innovative** and **productive** Canadian economy.

Creation of a specialized research institute



Continued growth in scientific production by SAM & PM funded researchers

Number of publications:

SAM: From 82 to **149**

PM: From 15 to **20**



With relatively **modest investments**, the programs were successful in obtaining **access to space mission infrastructure** that Canada on its own could never afford, such with **James Webb Space Telescope** and the **Mars Science Lab**. In exchange for investments, there were **scientific, cultural** and **economic benefits for Canadians**.



Canadian Space Agency

Agence spatiale canadienne

[Link to full evaluation report including the Management Action Plan](#)

Canada