

Approximately [65 members](#) of the space astronomy community, from universities, industry, government, and public institutions, gathered at the Université de Montréal on Nov 6-7, 2018 for the [Future of Space Astronomy in Canada workshop](#). The goal of the meeting was to “stimulate ideas and plans for the forthcoming Long Range Plan 2020.. [and].. hear about the status of ongoing and future space astronomy projects and to discuss current issues with CSA [Canadian Space Agency] funding.” Many of the most exciting science questions in astronomy including detection of life on exoplanets, and uncovering the nature of dark energy require observations from space. Canadian astronomers want to be or already are involved in a vast array of space astronomy missions.

Presentations discussed the background and context for LRP2020, Canadian involvement in current and future [proposed] space astronomy missions, the unique space technologies existing and under development in Canadian industry, and space-related outreach. Current mission involvement by Canadians ranges from leadership roles in design studies (e.g. [CASTOR](#)) to development of specific and globally unique technologies for proposed missions (e.g. [LiteBIRD](#), [SPICA](#)), to instrument testing and science planning for soon-to-launch missions (e.g. JWST). CSA science advisor [S. Gallagher](#) emphasized that Canadian astronomers can be proud of our world- leading science<sup>1</sup>; with [J. Hutchings](#) [NRC] and [J. Rowe](#) [Bishop’s] she made it clear that the CSA’s space astronomy budget is far too low to support our future ambitions. The long timescale between mission initiation and science return require a long-term plan for CSA and its funding which allows for open, competitively-allocated support for missions of various sizes.<sup>2</sup> Our inability to join missions in the last decade means that JWST will be the last “new mission” in which Canada participates for some time.

After J. Hutchings discussed the lessons learned from the Long Range Plan 2010 (LRP2010), [R. Thacker](#) [St. Mary’s, CASCA] introduced the plans for LRP2020. Once Canadian astronomers have decided on their priorities through LRP2020, realizing them is the next step. Engagement with government and outreach to the public are critical to increasing funding for the CSA; the “[Don’t Let Go Canada](#)” campaign by the Canadian aerospace industry covers more than space astronomy but shares the goal of a re-invigorated CSA. A strong space sector is needed not just to stay internationally competitive, but also to guarantee national security, foster economic development, and improve resource management. As [F. Grandmont](#) (ABB) pointed out, space technology is subject to export limitations even from Canada’s closest international partners and allies: the US and Europe. University-led research into remote-sensing and/or space-based capabilities is an effective and economical way to pursue this, with a strong multiplier effect because of the involvement of HQP. The federal government’s recent investments in fundamental science are helpful but do not directly contribute to space science and technology, where CSA is the cognizant agency.

Resolutions discussed at the end of the meeting addressed the path forward to improve the state of Canadian space astronomy. Canadian industry has made (and has the potential to make more) unique technological contributions to space astronomy, and astronomers need to work more closely with industry in developing common talking points to jointly advocate for increased public support for the CSA. We need to be less shy about promoting our science to the public and discussing its benefits to Canada with our elected representatives, and to be united in our advocacy for community priorities after LRP2020 is complete. Enthusiastic participation in the LRP process and in utilization of JWST - our country’s largest space astronomy investment - is critical.

---

<sup>1</sup> [“Competing in a Global Innovation Economy: The Current State of R&D in Canada”](#) (2018), The Council of Canadian Academies

<sup>2</sup> See also [“Vision for Space Exploration in Canada”](#) (2017), Caiazzo, Gallagher, and Heyl; [“Consultations on Canada’s Future in Space: What We Heard”](#) (2018), Space Advisory Board