

Terms of Reference for the 2025 Mid-Term Review

I. Context

Building on the success of the original [Long Range Plan \(LRP\)](#), the 2020 Long Range Plan (LRP2020) made a series of recommendations to support world-leading astronomical research in Canada out to the 2030 time frame. The scope of these suggestions was broad, and included prioritization of large projects as well as community-focussed recommendations related to values including inclusion, equity, and sustainability.

While many major facilities now take a decade or more to develop, new opportunities and initiatives present themselves on a shorter time scale. Funding cycles also tend to have 5-year horizons. Since 2020, funding for Canadian participation has been obtained for the Square Kilometre Array, Rubin, CCAT, and CHORD, but not in all recommended projects. In any case, there is a need to review the recommendations on the 2020 LRP, via a Mid-Term Review (MTR).

As for LRP2020, the MTR will be a collaborative process initiated by the Canadian Astronomical Society (CASCA) with the support of all Canadian national agencies and organizations that fund or administer astronomical research. The review will be undertaken by an Author Panel (hereafter “the panel”), led by two Co-Chairs. Community input will proceed via mechanisms that may include a call for white papers, a dedicated website, the mobilization of CASCA and related committees, and a series of consultative town halls.

II. Statement of Task

The MTR is not intended to be as wide-ranging and detailed as the decadal plan outlined in the LRP2020. The key parts of the review are an assessment of the status of the LRP2020 recommendations, an analysis of new opportunities, and recommendations to address emerging issues. The series of priorities that result are anticipated to be relevant on a 5-year timeline and are not to include major revisions or expansions of LRP2020 that are inconsistent with the original goals of the plan. The resulting review will serve as a single unified vision to reaffirm the LRP2020 process over the second-half of the 2020-2030 decade.

III. Scope

Formulation of the MTR is a two-step process, namely a review followed by a prioritization exercise. It is anticipated that the MTR will focus on the following areas:

- i. Assessment of the state of astronomy and astrophysics in Canada in the context of the priorities and goals (including those related to community) outlined in LRP2020. A key aspect of this review is the identification of any systemic implementation gaps and hazards that have emerged in the time period since LRP2020 was released, and the risks presented to the Canadian astronomical

- community. This will include evaluating opportunities to partner with other organizations to advance LRP2020 recommendations.
- ii. Articulation of a preferred path forward given the changing landscape for the Thirty Metre Telescope.
 - iii. Identification of potential new research directions or areas of opportunity and the types of facilities and support that are needed to pursue them. This assessment will be science driven (first) and program driven (second) rather than facility oriented. This review is anticipated to primarily fill any gaps that have opened in the coverage of LRP2020. Consideration of costs will be included.
 - iv. Evaluation of the status of computing resources in Canada for the purposes of high performance computing and supporting observing facilities (specifically data management and software).
 - v. Determination of guidelines for sustained support of national infrastructure, including domestic observatories and instrumentation labs.
 - vi. Consideration of a greater role for the astronomy community in contributing to policy discussions, including national and international policies around dark and quiet skies and Canadian science policy.

IV. Approach

Projects that were approved by LRP2020 that are partly funded or underway (including the Thirty Metre Telescope and the Square Kilometre Array Observatory) need not be reassessed in detail. However, the impact of these facilities or programs and their relevance to astronomy and astrophysics out to 2030 should be incorporated within the MTR. Throughout the process of reviewing progress on facilities and research priorities, the panel will necessarily have to make judgments on the feasibility, technical readiness and risks involved in supporting a particular facility or program. The panel is expected to maintain independence in this process (see Conflicts of Interest section), and will consult with independent authorities when necessary. It is critical to the overall success of the MTR that the assessment of science capability and budgetary demands is seen as a fair and rigorous process.

V. Selection of the Co-Chairs of the Author Panel

The selection of the Co-Chairs is a critical issue since the MTR process must be viewed to be open and without bias. Co-Chairs that are viewed favourably by the entire community will thus bring goodwill toward the planning process. As a consequence of the sensitive nature of the choice of the Co-Chairs, the selection process will involve the Board of Directors of CASCA.

VI. Selection of the Author Panel

Once a Co-Chair of the author panel has been appointed, the selection of the remaining panel members will begin. The additional panel members to be appointed will include a second Co-Chair

and between five and seven panelists, including a CASCA Board Observer. Because the panel will be required at certain points to make comparative assessments of the relative merits of different subject fields and programs, it is necessary that the panel have significant breadth in scientific expertise, focus (e.g., instrumentation, observation, theory/computation, community, training) as well as diversity in terms of geography, institutional affiliation, career stage, and other demographic characteristics. The panel members will be selected by the CASCA President and Panel Co-Chairs, in consultation with the CASCA Board.

VII. Structure of the Review

To provide reports to the author panel, the MTR will rely upon CASCA and joint CASCA committees, and incorporate the community feedback provided through mechanisms that may include a focussed call for white papers, town hall meetings, surveys, and open discussions.

VIII. Deliverables

The author panel will deliver the final version of the MTR (in English) and associated recommendations to the President of CASCA and the CASCA Board of Directors. The MTR will then be simultaneously released, in both official languages, to the Canadian astronomical community and all relevant parties including ACURA, NSERC, NRC, CFI, CSA, and relevant Ministries of the Government of Canada.

IX. Schedule

The review process will begin upon appointment of the author panel, which is anticipated to be announced in August 2024. Working groups are anticipated to begin their tasks as soon as they are assigned. The process is expected to take no longer than 12 months, with the public release of the MTR in Fall 2025.

X. Conflicts of Interest

All panel members will ensure that all work conducted under their auspices is conducted in a manner free of conflicts of interest. Any persons associated with the panel are also bound to similar conduct. For the purposes of this review, a conflict of interest is defined to be a situation where any panel member or their family is able to benefit financially from involvement in the review process, or if a prioritization process is perceived to benefit the individual's place of work. If a conflict of interest arises, it must be declared so that the Co-Chairs may take appropriate action. Panel members are also advised to provide early notification of the possibility of such conflicts occurring.

XI. Confidentiality

The review is expected to be an accountable and open process. Submissions to the committee will be made public, although proprietary information should be so-indicated and will be kept confidential. However, prior to mutually agreed upon release dates, all panel members are to agree that they will not disclose or give to any person any information or documents relating to the MTR.