

## I. Opening Remarks.

The JCSA Meeting was held on 2011 June 7-8 at the University of Calgary, immediately following the Annual General Meeting (AGM) of the Canadian Astronomical Society (CASCA). Attending from the JCSA were Laura Ferrarese (chair), David Lafreniere, Gilles Joncas, Brian McNamara, David Naylor and Laura Parker. Jean Dupuis, Denis Laurin, and Alain Ouellet represented the CSA. Some or all of the open sessions of the meeting were attended by Patrick Côté (NRC), René Doyon (UdeM), Daniel Durand (NRC), Frederic Grandmont (ABB), John Hutchings (NRC), Michael Fich (U. of Waterloo) and David Schade (NRC).

Several important developments have occurred since the JCSA's November 2011 meeting in St-Hubert. A few are positive. The JCSA was deeply relieved to learn that the extant problems with JWST/NIRISS' dual wheel mechanism have been solved, and NIRISS is now on track for delivery to NASA in July 2012. The CASTOR (Cosmological Advanced Survey Telescope for Optical and ultraviolet Research) concept study was greeted with considerable enthusiasm by the JCSA as well as by the CASCA community present at the AGM.

However, the outlook is grim. The budget cuts to the CSA announced in the 2012 federal budget are even more severe than anticipated. Plans on how to cope with these cuts are not yet in place<sup>1</sup>.

This compounds an already critical situation. Virtually all PIs of on-going missions expressed strong concerns about the lack of a stable funding scheme to support technical and science operations. Several PIs asked the JCSA for advice on how to continue to fund such initiatives beyond the expiration of current grants/contracts. It is of great concern to the JCSA that there are currently no mechanisms to extend existing CSA grants beyond the 5-year mark and that, due to budgetary constraints, there are currently no plans to resume SSEP grants, a highly successful program that was instrumental in allowing the community to benefit from CSA's multi-million dollar investments in space missions. In the current climate, at the time the JCSA met, the CSA could not commit to long term funding, resorting instead to extending grants/contracts for a few months at a time. The uncertainties that arise from the inability to count on long term support are resulting in loss of key HQP and are jeopardizing the Canadian technical and scientific operations of all on-going missions.

Future Canadian involvement in planned missions (SPICA, Euclid, CASTOR) is likewise in jeopardy. Beyond the funding concerns, CSA's delays in responding to requests from our international partners is deeply worrisome. In particular, the JCSA was discouraged to learn that the CSA, having finally released RFPs to investigate a Canadian contribution to ESA's Euclid mission, will not supply ESA with an LOI stating the intent to contribute work towards Euclid's ground-based segment before the agreed deadline (June 15, 2012). This could have devastating consequences for Canadian participation in the mission.

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<sup>1</sup> On this subject, we note that a petition organized by CASCA in support of the Canadian space astronomy program, sent to Dr. Steve MacLean and Mr. Gilles Leclerc in January 2012 and signed by 400 professional astronomers across the country, has yet to be acknowledged by the CSA.

## Budget Outlook.

In its last report, the JCSA asked to be kept informed of the extent and consequences of the 2012 federal budget cuts. Most important, the JCSA recommended to be consulted before such cuts were implemented, so that it could work with the PIs of current grants/contracts in trying to mitigate the damage.

In Nov 2011, the CSA declined to discuss budget projections, in spite of the fact that the projected overall budget envelope was publicly available<sup>2</sup>. At the June 2012 meeting, this discussion did take place, although the projections were not updated following the release, in April 2012, of the federal budget. In the expectation that current commitments will need to be reduced to cope with the federal budget cuts, the CSA asked the JCSA to prioritize on-going and future CSA activities related to space astronomy.

The JCSA is now fully engaged in this task, which will be carried out in full consultation with all parties involved. Our goal is to have a prioritized list by early fall 2012. *However, we wish to stress that CSA activities related to space astronomy programs are already at a minimum, barely sufficient level. Further reduction of any such activities will further weaken an already starved space astronomy program, and potentially fatally compromise the status of the CSA in the eyes of international partners.*

*Recommendation #1: All grants/contracts should to be extended at least until the JCSA has finished its prioritization exercise. No cuts should be implemented without consultation with the JCSA.*

*Recommendation #2: The JCSA wishes to be informed of the result of the ARLU review as soon as the process is completed.*

In this context, we wish to reiterate one of the most important statements made in our last report, namely the need for the CSA to move towards a “cradle to grave” *modus operandi* in which the same attention and support is bestowed to all phases of a mission. These include:

- Hardware and software development
- Operational support
- Post-operational support
- Data management, archival and processing
- Support for science operations
- Science exploitation (through, e.g., SSEP-like grants and funding for GO time awarded in open competitions).

The CSA must ensure that none of these phases is neglected as required by the project/collaboration. A flexible scheme, whereby funding can be easily transferred from one project phase to another as the need arise is a must to allow for smooth operations.

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<sup>2</sup> the 2011-12 CSA Report on Plans and Priorities (RPP): <http://www.asc-csa.gc.ca/pdf/rpp-2011-eng.pdf> and <http://www.asc-csa.gc.ca/pdf/rpp-2011-details-eng.pdf>

## II. CSA Support of On-Going and Future Missions

Concerns over the availability of funds necessary to perform various tasks related to operational activities have not eased in this reporting period. EBEX, BRITE-Constellation, Herschel/SPIRE, Herschel/HIFI, Plank/LFI, AstroSat/UVIT, JWST/NIRISS, Astro-H, SPICA, CASTOR and Euclid are all in critical planning, operation or post-operation phases that cannot continue without adequate financial support. None of the current grants/contracts has been extended beyond March 2013 (at best), in spite of the fact that the lifetime of all of these missions will extend beyond that date.

A review of the current budget requests will be performed as part of the prioritization exercise discussed earlier in this report. Here, however, we wish to express concern over the lack of coherent and reliable funding mechanisms:

- 1) Renewal of on-going grants beyond 5 years requires Treasury Board approval. Although low risk, 5 years is not a long timescale for a space mission, and it certainly does not cover all mission phases as described earlier in this report. It is therefore recommended that, given sufficient justification, the CSA does seek TB approval to extend on-going grants for longer periods. This is particularly important given the lack of alternative funding mechanisms, which is presently jeopardizing the ability to fulfill our contractual obligations, and ultimately will tarnish the reputation of Canada as a viable partner in international space missions.
- 2) SSEP grants are no longer supported and there is no plan to reinstate the program. The community support for SSEP grants has been unanimous: this is one program the CSA implemented well. We strongly encourage the CSA to reinstate the program as soon as possible.
- 3) The results of the FAST competition (carried out in 2011) had not been announced at the time the JCSA met. During the November 2011 meeting, the JCSA was told that the projects selected would be notified in February 2012, and a second FAST call would be announced in 2012. These delays compromise the ability to attract highly qualified personnel and must be avoided.
- 4) The JCSA encourages the CSA to open formal discussions with NSERC regarding funding for space missions: coordination between the two agencies is necessary to ensure adequate level of support.

*Recommendation #3: The CSA should begin immediate discussions with NSERC. Under the current strained budget, a scheme could be developed whereby NSERC supports science operation, while CSA focuses mostly on technical developments. However, this requires strict coordination between the two Agencies.*

## III. Canadian Participation in Euclid.

The JCSA remains firm in its support of Canadian participation in Euclid. However, we fear that chronic delays in the CSA dealings with ESA are threatening the viability of Canada as a partner in this important mission.

We note that following the JCSA recommendations, in December 2011 the CSA amended its MOU to the CADC to allow a ground segment study, and immediately after issued three RFPs for a) detector characterization, b) a disturbance compensation wheel, and c) ground based segment work. Unfortunately, the delays in issuing the RFPs were such that by the time proposals were submitted and contracts awarded, ESA was no longer interested in a hardware contribution to the mission. The terms of the ground segment work also had shifted. The Euclid Consortium is now interested in Canada providing access to PanSTARRS and in the CADC developing the algorithms needed for the “Euclidization” of PanSTARRS data. The latter contribution necessitates the establishment and funding of a Canadian science team responsible for guiding the algorithm development.

ESA requested an LOI from the CSA stating intent to contribute to the ground segment work as described above, with a deadline of June 15, 2012. The JCSA was disappointed to learn that the contents of the LOI had not been shared with the Euclid science advisory subcommittee (Hutchings/van Waerbeke/Carlberg), despite the subcommittee’s repeated requests to do so. Even more disheartening is the fact that, on June 8, 2012 the CSA announced that it would not be able to comply with ESA’s request until the completion of an internal review process expected for late summer of 2012, therefore missing the agreed deadline.

The consequences of this are potentially devastating. The continuing delays, on CSA’s side, to comply with ESA’s requests, and the failure to meet ESA’s deadlines, are jeopardizing Canada’s chances to fulfill the number one priority in the 2010 Long Range Plan for Canadian Astronomy.

*Recommendation #4: the JCSA recommends that the CSA shares the contents of the LOI, even if not signed, with ESA before June 15, 2012, stating the reasons as to why official signatures cannot be obtained until a later date. Failing this, the JCSA recommends that the CSA immediately contacts ESA to explain the situation and the reasons for the delay. This is of the utmost importance.*

#### **IV. Concluding remarks**

The JCSA is composed of Laura Ferrarese (chair), Luigi Gallo, David Lafreniere, Brian McNamara, David Naylor and Laura Parker. Gilles Joncas, Samir Boughaba and Greg Fahlman are ex-officio members in their role as CASCA President, NSERC representative and NRC/NSI GM, respectively.

Laura Ferrarese will end her term as JCSA Chair effective June 15, 2012, and replace Gilles Joncas as an ex-officio member in her capacity as CASCA President. Brian McNamara will be the new JCSA chair starting June 16, 2012. The JCSA wishes to thank Gilles Joncas and Luigi Gallo for having served on the committee. Two nominations for replacements have been submitted to the CSA.

On behalf of the JCSA,



Laura Ferrarese  
June 11, 2012