

SPACE EDUCATION AND OUTREACH SYMPOSIUM (E1)
In Orbit - Postgraduate Space Education (4)

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RESUMING STRATOSPHERIC BALLOON LAUNCHES IN CANADA: A NEW MID-LATITUDE
STRATOSPHERIC BALLOON BASE

Abstract

In 2012, an agreement was signed between the “Centre National d’Études Spatiales” (CNES) and the Canadian Space Agency (CSA) for an international collaboration for the launch of stratospheric balloons. The CNES, with their 3500 flights of heritage and 50 years experience in ballooning, brought to the table the flight hardware, including a newly develop control system for aerostat known as NOSYCA, as well as all associated ground support equipment. On the other hand, CSA provides a mid-latitude launch base located in a low populated area of northern Ontario, aerostats recovery services as well as interfaces with all national authorities needed to fly heavy stratospheric balloons safely within Canadian airspace. In exchanges of these services, Canadian payloads are to be flown yearly by CNES from its worldwide network of sites. The effort started with the site selection process and the requirement definition and resulted in infrastructures with distinct buildings for the payloads, the flight chain and means of launch. A flight control center is also available as well as offices and conference rooms on the second floor of the flight chain building. With a development cycle that matches graduate studies, training highly qualified personnel is one of the main drivers behind the programme. Nonetheless, a selection process and selection committee was defined to select Canadian payloads to be flown through this collaboration amongst Universities as well as other sources whether they are internal or external to CSA. This paper describes the Timmins Stratospheric Balloon Base (TSBB) installations and corresponding services provided by CSA as well as the selection process for Canadian payloads to be flown through this collaboration. The paper gives examples of universities payloads in space weather and atmospheric sciences. The payloads are designed, built, and tested by undergraduates, graduates and post-doctoral fellows under supervision from professors and experts from space industries. The goal is to use the balloon platform for technology demonstration, proof of concept and as a training ground of future space engineers and scientists.