



NEWS

Canadian Student Rocket Challenge Sees Significant Growth for 2023

by **Craig Bamford**

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The first experimental amateur launch license was issued for the Launch Canada Challenge. Credit: Launch Canada.

Canadian student rocketry organization Launch Canada took a big step in 2022 with their inaugural Launch Canada Challenge which let student rocketry clubs compete for a variety of different launch-related challenges. In an interview with SpaceQ, Launch Canada president Adam Trumpour offered some thoughts on last year's event, and where they're planning to take it this year.

Launch Canada Success in 2022

The 2022 challenge offered opportunities for the student teams to compete in three different challenges: basic rocketry (smaller rockets with solid propellant engines generally using off-the-shelf components), advanced rocketry (liquid or hybrid-propelled custom-built engines, possibly with multiple stages), and a "tech challenge" division that highlighted interesting custom-made technology and components.

The Challenge was part of the [Stardust Festival](#) in Cochrane Ontario, which was focused on inspiring interest in STEAM activities among Northern Ontario students, with a particular focus on Indigenous communities.

When asked about the 2022 competition, Trumpour said that it “went as well as I could have hoped,” and that the students were enthusiastic about the launch event. While many clubs were in a “rebuilding” phase due to the effects of the COVID-19 pandemic and its related supply chain issues, he saw that the teams “pulled together to help each other through it,” and was confident that they were going to come back again and give it another go.

The greatest challenge that Trumpour had been concerned about was the site. As the site was located in Northern Ontario in the middle of a forest, Trumpour said that he’d been concerned that the students might have had some difficulty retrieving spent rockets, even though the rockets were being tracked by GPS. Trumpour had been concerned about a “brutal slog,” but was happy to find that retrieval wasn’t a problem, and “a lot of the people really kind of enjoyed that wilderness survival aspect to it.”

When asked about whether there will be changes to the format, Trumpour said that it will mostly remain the same, with the three challenge streams that had been present in the 2022 competition. He considers the format a success, and wants to build on it going forward.

Growing Numbers of Student Clubs

Students saw it as a success too, and more teams are planning to enter in 2023. After the close of this year's registration, the number of teams planning to enter this year has ballooned to 26. Trumpour said that there will be "six teams doing tech development, 8 doing advanced rocketry [i.e. using liquid- or hybrid-propellant rockets], and the rest doing basic rocketry."

Trumpour said that there will be overlap, though. A number of the "advanced" teams will be demonstrating technology that they're planning on using during their launch. (One team was planning to do that during the 2022 challenge, but had technical issues that stopped them from launching.) Trumpour highlighted [Space Concordia's](#) team, which are in the process of building a rocket that can reach the 100 kilometre mark devised in the Base II challenge in 2020-2021, as potentially showing off their "massive beast of a rocket engine" via a hot fire test.

He also mentioned some other tech division teams. Metropolitan University (formerly Ryerson) has a club called the "Metropolitan Aerospace and Combustion Hub" (MECH) that will be test firing a smaller liquid rocket engine. The University of British Columbia's team will be performing "a really interesting thrust vectoring demonstration." Queen's University's team is working on "a really interesting rocket tracking station."

Owing to the growing popularity of the event, however, several of these advanced-tier teams will have basic-tier counterparts from the same university. In addition to MECH, for example, students at Metropolitan University have created a secondary club for newer rocketry students that will be making a solid-fueled basic rocket that they'll be taking to

the Challenge. Concordia also has a second club, one that wanted to go “back to basics” and build “more traditional, smaller, solid rockets.”

He also pointed to the University of British Columbia having multiple teams, with a new team from the UBC Okanagan campus that has a “friendly rivalry” with the main UBC team. Both teams are aiming to attend the event.

While some schools that were announced to be joining couldn’t make it —Trumpour said that Royal Military College and Dalhousie will not be able to attend—many more will be. And while almost all are still university teams, Trumpour noted that 2023 will feature their first college team, from Humber College.

He was impressed when he visited the Humber team, saying that they had “shown a lot of maturity.” He said that “it’s very easy for a brand new team to bite off more than they can chew, but the Humber team has been really good, going with a straightforward rocket that is going to give them a lot of valuable opportunities to learn.”

He also noted that the Humber team was able to access a proper workspace, which can be a real issue for student rocket teams.

New Date, New Meetings, and a Possible New Location

Trumpour said that they plan on continuing their collaboration with the Stardust festival, as it had been a big success. Yet, partially due to the success of the event, he said that they’ll be making at least two big changes in 2023, and possibly another.

One confirmed change is in the date of the event: from early August to late August. While they attracted a lot of interest with their early-August event, there were key schools, like the University of Waterloo, where the timing was a problem. Many schools have summer classes with exams in early August, and so any students with summer classes, like Waterloo students, were unable to attend last year's event. Trumpour also said that some students were unable to attend due to other commitments, like Co-Op placements and summer jobs. The shift to late August is being made in hopes that it'll help resolve these issues and allow more teams to join in.

Another big change is in rocket inspections. Student teams' rockets are inspected on-site for viability and safety, and teams are required to provide extensive documentation before the event. Trumpour noted that the event staff would sometimes discover that these rockets on-site were very different from the ones described in the documentation, however, as teams make last-minute changes as they go from describing their rockets on paper to actually building them.

To avoid this problem, Launch Canada is planning to have virtual meetings (over platforms like Zoom or FaceTime) with the teams a few weeks before the event. Trumpour and other Launch Canada experts will be able to take a look at the rocket, ask the team to show all of its pieces and demonstrate its resilience, and ask questions about any changes or discrepancies. Trumpour said that it doesn't replace physical inspections, but that if they can "catch 80% of the problems when the students still have a bit of time to address them in their own workspaces, that will help a lot when we get to the field."

The key remaining question, though, is about the location. While they liked the 2022 location and their interactions with people in Cochrane, the increased number of teams may make it difficult to work with the site, especially for the advanced teams that require more space for their larger rockets and launch pads. This was a concern for the 2022 event, but there were a comparatively small number of advanced teams. The increased number for 2023 could create some strain.

Trumpour said they had nothing to announce at the moment, but that it's possible that they may end up moving the event to Timmins. Representatives from Timmins reached out to them after the last event and were, according to Trumpour, "quite enthusiastic about helping us out as well." Timmins would have a larger site that can accommodate the larger number of teams, as well as (potentially) more local infrastructure for housing and supporting the teams.

He said that they would have more to announce on the 2023 location some time in the next month.

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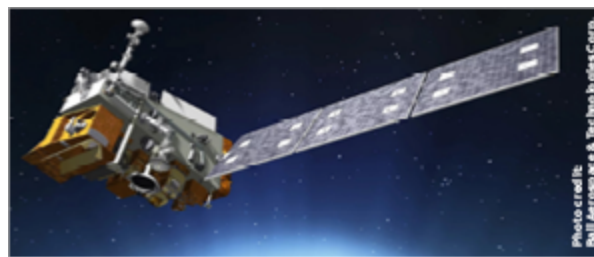

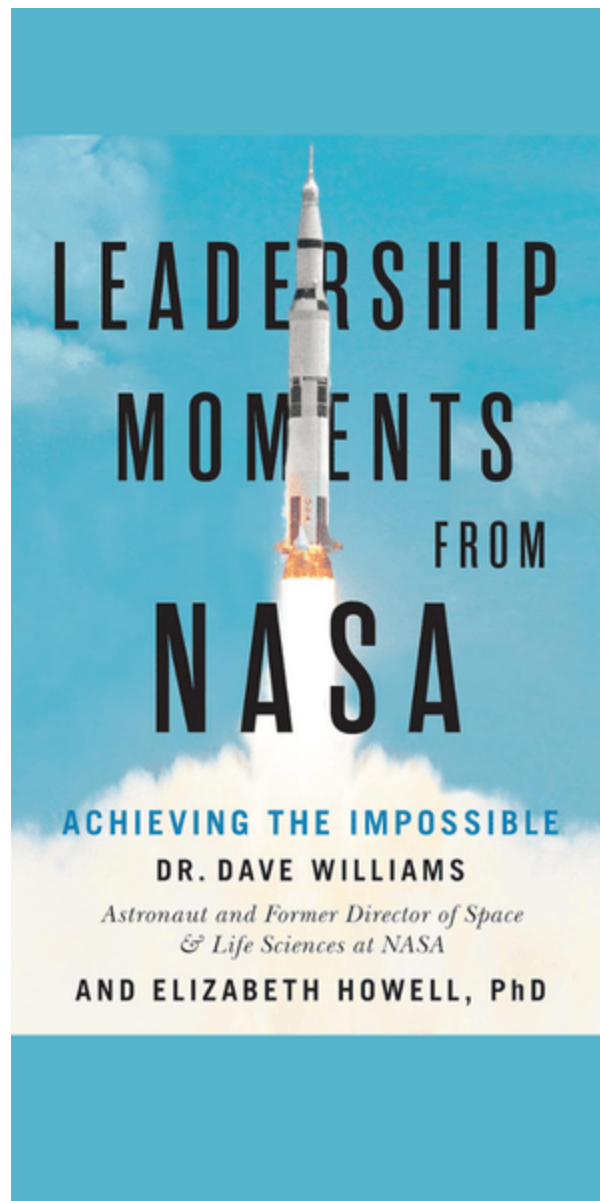


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