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SPACE CONCORDIA ROCKETRY DIVISION'S JOURNEY TO THE STARS: A STORY OF GRIT,
PERSEVERANCE, AND RESILIENCE

Abstract

Space Concordia's Rocketry Division (SCRD) is a Montreal-based engineering group who has been building and launching rockets since 2014. In summer 2018, SCRD achieved a major milestone by launching its first supersonic rocket, Supersonice, to a target altitude of 30,000 ft. Supersonice carried a sophisticated fluid dynamics experiment onboard and was Concordia University's first supersonic vehicle. The rocket reached speeds of over 2,400 km/h in just 3 seconds, which is an incredible feat for a student team. SCRD's success did not stop there. The team won 1st place in both the Advanced Category and the Space Dynamics Payload Challenge at the Spaceport America Cup, the world's largest rocketry competition, attended by over 125 international universities. Now, SCRD is setting its sights even higher as it aspires to become the first student team to build a liquid propelled rocket that will pass the Kármán line (100 km. of altitude) and reach space. To that end, SCRD has been working on their latest rocket: Starsailor.

As one of the focal points for aerospace and space research at Concordia University, SCRD regularly contributes to the promotion of space education in Canada. In addition to carrying out technical work, SCRD members host rocket science workshops and organize multiple outreach events at educational institutions across Montreal and beyond. To date, SCRD has already reached out to over 20,000 young Canadians. Overall, SCRD's history is a testament to the grit, perseverance, and resilience of its members and their ability to achieve their goals. This paper explores the roots and evolution of SCRD, detailing the team's previous and ongoing technical projects and outreach initiatives, highlighting valuable insights and lessons learned. What is more, this report will discuss SCRD's efforts to foster collaboration with other rocketry teams in North America.