S2S sea to sea S2S surface to space

NSERC CRSNG

www.s2ss2s.ca

Since 2013, our team at the University of Regina have been launching helium-filled stratospheric balloons, gathering data and taking photographs from the edge of space using easy-to-program do-it-yourself electronics. Launching a space balloon and retrieving the payload afterward used to be difficult and expensive, but we have developed a kit of equipment and instructions to make it easy for anyone to perform this experiment. As an avenue for scientific inquiry, participating in the launch and retrieval of a space balloon, and analyzing the resulting data, has enormous potential. The National High Altitude Balloon Experiment Program enables schools, science centres, and community groups across Canada to explore the troposphere and the stratosphere, and share their findings with each other and the world.

Each launch involves preparing a payload of sensors and tracking equipment, getting clearance from Transport Canada, filling a weather balloon with helium, and releasing. Once the balloon reaches an altitude of around 30 km, it will burst and the payload will parachute back to Earth.

Based on experience gained from our previous launches and successful retrievals, we developed the s2ss2s launch kit. This kit is an inexpensive and easy-to-use way to launch, track, and retrieve a high altitude balloon payload, including complete instructions, preflight checklists, a flight operations template, and videos. You can see an example launch, flight, landing and retrieval here: https://youtu.be/AYUuWLYlpjU

Throughout 2015, there have been 16 balloon launches associated with this program, and we anticipate many more launches in the future as the program grows. We are encouraging high schools and other community organizations across Canada to participate in this program, taking high altitude video of their local communities, and collecting environmental data to understand climate change.

Each individual team will need to purchase a balloon launch kit, which includes: 600g Balloon; Parachute; Flight computer; Sensor kit; GPS tracker; and Camera. Each team will also need one “n88” size tank of Helium. The total cost for the kit is $1000, but subsequent launches only require new helium and a new balloon (around $250). Additionally, we have coordinated with funding and fundraising sources in order to reduce the price depending on the site.

For more details, please contact the program leads:
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