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FLY A ROCKET! A NORWEGIAN-ESA EDUCATIONAL PROGRAM

Abstract

Fly a Rocket! was initiated as an ESA Education program in collaboration with the Norwegian Center for Space Related Education (NAROM) and the Norwegian Space Center to give students on early levels of higher education an introduction to space physics and space engineering. For each cycle, the 24 selected students go through an online pre-course, to ensure that all students, who may have widely different backgrounds, have a good understanding of space physics and engineering knowledge related to a rocket campaign. A five-day long campaign follows, where the students travel to Andøya Space Center in Norway and have background lectures from industry professionals, introduction to rocket physics, and do practical work on making sensors for use in the student rocket, which they later assemble and launch. After launch the students analyze data that has been collected through the student telemetry station during the rocket flight to 9 km of altitude and balloon releases. After the campaign period is over, the students work together to create a report that describes all aspects of the campaign and present the data analysis.

The campaign builds on the thought that students work best when they do practical work and mix this with lectures from experts. Lectures cover topics such as rocket physics, space physics, satellite engineering, and telecommunication. The students go through exactly the same procedures as in a professional scientific sounding rocket campaign, but in a more condensed time format. The students do all the work, including manning all stations during the countdown before launch, with supervision from NAROM and ASC professionals.

The program aims to inspire the participants and inspire and motivate students to consider careers and further study in space and space related disciplines. This view is supported by the feedback from the students on the program's pilot cycle, which all agreed that the program was motivating for further involvement in aerospace and especially ESA activities, with sufficient in-depth learning outcomes with emphasis on learning by doing. The social aspect and the ability to expand their networks with each other and industry professionals was also important for the students.

By the time of the conference, "Fly a Rocket!" will have been through two cycles, and the paper will present the experience and lessons learned from the two cycles of the program.