

SPACE EDUCATION AND OUTREACH SYMPOSIUM (E1)
Lift Off - Primary and Secondary Space Education (1)

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AEROSPACELAB: A PROJECT TO MOTIVATE STUDENTS TO FOLLOW A CAREER IN SPACE

Abstract

This abstract shall introduce the project called AerospaceLab that is running since 2009 in Herrenberg, Germany. The project's aim is to raise the interest of young people and children for science and technology. The context of the project is to offer an additional learning environment for students beside their school.

Several smaller projects are included within the AerospaceLab dealing with different scientific and technical regimes such as robotics, aerodynamics and even satellites. In the beginning of the satellite project the students at the age of 14 to 18 defined the aim of their own project. At every stage whenever the scientific knowledge was missing, advisors from the University of Stuttgart working as volunteers help them with their decisions. Milestones were introduced at the end of every school year in order to keep the commitment of the students.

The students first studied existing satellites and their capabilities. From this stage they were able to decide what their own project goals. Their aim is to build a micro satellite in the range of a cubesat that shall be able to record images of the separation from its host satellite and transmit these images to the ground. These aims are manageable even for a student project since the design relies on easy to use development platforms and commercial of the shelf parts. The milestones envision a parabolic flight and a drop of a plane or balloon. A flight model will be considered after successful completion of the project milestones.

The aim is always to encourage the children to find solutions on their own, while the advisors give hints and advice for the students. To accomplish this aim the scientific background needed for the tasks is taught in very small groups using a step-by-step approach. The inhomogeneous age within the group leads to students learning from each other due to the different skills of every child. The areas students are working in are structural design and CAD, cameras as payload, microcontrollers and public relations.

The paper following this abstract will give an overview on the work of the children and the skills they were able to learn within the project. It will also give an insight to the setup and methodology of the

learning environment. Finally the lessons learned from the advisors point of view as a possible input for other projects are given.