

SPACE EDUCATION AND OUTREACH SYMPOSIUM (E1)
On Track - Undergraduate Space Education (3)

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THE AEROSPACE DEVELOPMENT AND RESEARCH GROUP OF THE NATIONAL UNIVERSITY
OF COLOMBIA, GIDA-UN, A TOOL FOR AEROSPACE EDUCATION IN COLOMBIA.

Abstract

The origin and evolution of the Aerospace Research and Development Group of the National University of Colombia, GIDA-UN, for its acronym in Spanish is presented. The group arises in the year 2012 as a student initiative to create an academic space to do activities in the fronts of technology and knowledge appropriation, research in diverse fields in aerospace, and outreach for both the academic community and the general public. This initiative is supported by teachers in the Mechanical and Mechatronics Engineering Department of the Engineering Faculty, and is mainly funded by the Wellness Direction of the Faculty and University. The context in which the group arises is not an easy one. Colombia is a country with low to none governmental or private initiatives in science and technology in general, and in the aerospace field in particular. The aerospace initiatives are in general associated with military and war efforts, and many of the technologies and materials, such as propellants are restricted. At the University, some projects have been developed regarding the topics of rocketry and propulsion, yet they have been punctual initiatives with no continuity, and in general, aerospace initiatives have been discouraged, in relation with the current sociopolitical situation of the country. This initiative aims to fill the gap between the situation it encountered and the interest of students and teachers in the field, while showing the potential this field has in the country. The development of activities in the groups is mostly project based work, with a main project guiding the work, and side projects supporting it or advancing in other fields. The current main project is the Prometeo I mission, which aims to make 4 launches of a sounding rocket to 2km height. The organizational structure of the group is based on that of space agencies, and the work flow is based upon Space Mission Engineering concepts and procedures. The groups work has allowed for the acquisition and spreading of knowledge in the fields of Propulsion, GNC, Mission Design, and field operations, among others. It also has allowed the forming of strategic partnerships with entities that regulate propellant type substances, and provider of test equipment such as a Crawford bomb, and an engine test bench. Outreach activities have also been developed in the form of conferences, workshops and courses for the students, on topics such as propulsion, celestial mechanics and aerospace systems in general.