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EXAMINATION OF THE IMPORTANCE OF STUDENT SPACE PROGRAMS TO CAPACITY BUILDING IN SPACE RELATED FIELDS

Abstract

Student space programs provide an excellent opportunity for undergraduate and graduate students to obtain experience in space physics and space technology. Demand for natural resources in the high North is increasing. As space weather interferes with technologies such as satellite navigation, understanding the affects of space weather on the Earth's atmosphere is becoming more important. Exciting hands-on workshop courses in space physics and space engineering offer a means to recruit students in order to meet these new demands. Existing student opportunities include university sponsored weather balloon launches, nano satellite programs such as CubeSat, the international space elevator challenge, and student rocket programs such as the Canada Norway Student Sounding Rocket program (CaNoRock). The recruitment potential of these programs is evident at the University of Saskatchewan where four out of eight undergraduate students who have attended CaNoRocK are pursuing graduate studies in space physics or space technology. In addition to this, three out of four students who participated in a weather balloon project for their engineering capstone design course in 2009-2010 have already become M.Sc. students at the university's Institute of Space and Atmospheric Studies. It is pertinent to note that all of these students are staying within Canada for their studies.

Existing student space programs will be discussed with a focus on the experiences had by students who are now pursuing space related careers due to these programs. The technical, theoretical, and cultural benefits of these space programs are evident in their present success and provide justification for the development and expansion of future student space programs. Indeed, student space programs are an invaluable method by which Canada may build its capacity of space scientists and technologists.