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TWO-YEAR INITIATIVE FOR BALLOON SAT COTEST FOR HIGH SCHOOL STUDENTS

**Abstract**

This paper introduces the efforts of the two-year Balloon-Sat contest for high school students. Since Balloon-Sats ascend to an altitude of approximately 30 km, they can carry out missions in an environment close to outer space, making them suitable for introductory education for space development. On the other hand, demonstration experiments require specialized knowledge such as flight path simulation and burst height control. In addition, Japan is a small country surrounded by sea on all sides, so it is necessary to set the drop point of the payload at sea, and recovering the payload at sea requires chartering a ship and arranging recovery personnel. Furthermore, helium gas for experiments is expensive, and it is difficult for high schools alone to finance the purchase. Therefore, this research group has been holding a balloon sat contest for high school students for two years. In this contest, university students were responsible for operating the balloon sat and recovering the payload, while high school students were only required to create the payload that would carry out the mission. The purpose was to make it easier to participate in balloon experiments and expand the scope of space human resource development. High school students participating in the contest will learn how to create mission payloads and participate in stratospheric balloon experiments in the Balloon-Sat Contest, and when they go on to university, they will be able to manage the Balloon-Sat contest and conduct their own balloon experiments as university student members. This will also be a collaborative effort with the balloon experiment at the university. In this paper, we first provide an overview of the Balloon-Sat Contest. Next, we will explain how to conduct the contest. After that we describe the evaluation method of each team based on the mission plan, implementation report, and presentation of the results report. Lastly, we will summarize the questionnaire evaluations by the participants and examine the educational effects of the Balloon-Sat Contest for high school students.