

Microsatellite Development and Education of Space Science and Technology at Kanazawa University

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At Kanazawa University, Advanced Research Center for Space Science and Technology (ARC-SAT) has been established on July 1, 2019. ARC-SAT has 3 research divisions: Satellite Development Division, Astronomy & Astrophysics Division and Solar-Terrestrial Science Division. ARC-SAT is concluding “Kanazawa University Satellite Project (Kanazawa-SAT³: Study and Training in Space Science and Technology for Kanazawa Cube-Satellites)” . In this project, a space science and engineering course has been established in the Graduate School of Natural Sciences in April 2018. This course is based on the 'satellite development by students', and students are actually involved in the design, fabrication, ground tests, and operation of scientific satellites, aiming to train personnel who are familiar with space science and space engineering, with satellite-development skills.

As an activity of ARC-SAT and Kanazawa-SAT³ project, a microsatellite is being developed by staff and students of Kanazawa University. It is a scientific satellite which will contribute to the elucidation of the mechanism of gravitational wave generation by identifying the source of gravitational wave by detecting the arrival direction of gamma rays and X rays radiated at the same time when a gravitational waves are generated by collision of astronomical objects. It is a microsatellite with a total weight of 50 kg or less, and its size is cubic with a side of 50 cm, and will be inserted into a solar synchronous orbit at about 660 km altitude. The satellite is on the stage of flight model assembly. And for the ground station, we have installed a parabolic antenna (2.4 m is diameter) and a crossed Yagi antenna (14 elements) in Kanazawa university.

In the presentation, we will report the details of ARC-SAT and Kanazawa-SAT³ project, and the development status of our satellite.

Keywords: Microsatellite, Gravitational wave, Kanazawa SAT3

