
 [EE] Evening Poster | P (Space and Planetary Sciences) | P-CG Complex & General

[P-CG21]Future missions and instrumentation for space and planetary science

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Not only national space agencies but some universities and even companies in the world are now leading a number of space science and exploration missions and also energetically initiating new research activities for satellite and rocket developments and international collaborations in these days because the Earth observations from the space and the space explorations could be achieved much easier than a few decades ago. The deployment to the space, which itself is not purely a scientific purpose but one of methods for better sciences, is vigorously motivating the technical innovation and the educational development. For successful space missions, it is also crucial to research and develop aim-oriented on-board instruments, and the fundamental research and development of observational instrumentation with future perspectives could totally lead space missions in some case. Detailed investigation and evaluation on various on-board instruments are needed during their proposals, selections, and fabrications in order to promote the missions, and inevitably we have to make multi-sided arrangements and evolution at every process and aspect of any type of space missions, independently of their mission sizes. In this session, we focus on these comprehensive research activities in the space missions, including the mission integrations and the individual instrumental developments, and we also call many presentations showing the uniqueness and renovation regarding the mission strategy and methodology, and the status and latest results in the related state-of-the-art researches and developments, which would provide all of researchers and developers with invaluable opportunities for active discussion, information sharing, and collaboration toward the realization of more missions for more fruitful space sciences and explorations in nearer future.

[PCG21-P12]Development of the first Kanazawa University Microsatellite

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At Kanazawa University, researchers from science and engineering fields have been collaborating to promote the “Kanazawa University Satellite Project (Kanazawa-SAT3: Study and Training in Space Science and Technology for Kanazawa Cube-Satellites).” In this project, we are developing a microsatellite called “Kanazawa-SAT3.” The scientific mission of the microsatellite is to detect the direction-of-arrivals of X rays radiated from a gravitational wave source, the possible collision of massive astronomical objects. It should contribute to the investigation of the mechanism of gravitational wave generation by identifying the gravitational wave source. The microsatellite will be put into a solar synchronous orbit at an altitude of 660 km. The size and mass of the microsatellite are 50-cm cubic and 50 kg, which could be launched as a piggyback onboard the HII-A rocket. In association with the project, the “Space Science and Engineering Course” is scheduled to be newly established in the Graduate School of Natural Science and Technology, Kanazawa University in April 2018. The curriculum of the course is based on education on space science and engineering through the

development of scientific micro- and/or nano-satellites by students. The course aims at developing the human resources that will meet the needs of space industry and academia. The structural and thermal model of Kanazawa-SAT3 has been developed and evaluated by vibration and thermal-vacuum tests. We are now developing the flight model. In the presentation, we will report the details of the satellite development.