[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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Mon. May 21, 2018 5:15 PM - 6:30 PM Poster Hall (International Exhibition Hall7, Makuhari Messe)

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-P06]The Circumpolar Stratospheric Telescope FUJIN for Observations of Planets

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In order to understand physical phenomena in the planetary atmospheres and plasmas continuous monitoring of their temporal variations and evolutions is necessary. A balloon-borne telescope system has been developed for a new platform of optical remote sensing of them from the polar stratosphere. Especially in the polar region a planet can be monitored from a balloon-borne telescope all day long for a selected observation period. The project name is FUJIN or the god of wind in Japanese. FUJIN-2 is equipped with a 400 mm Cassegrainian telescope with a Nasmyth focus, and lifted by a scientific balloon up to the stratosphere where atmospheric seeing and transmittance, especially in the near ultraviolet and infrared regions, are much better than the ground level. Attitude of the gondola of FUJIN-2 is controlled by a three-axis stabilized system with an active decoupling motor, a pair of control moment gyro and sun sensors. We are planning a long duration flight from ESRANGE in Kiruna in Sweden in 2020 for the earliest case. Westward trans-Atlantic or circumpolar flights during summer season realize a continuous observation of planets for about a week or three weeks, respectively. FUJIN-2 can also be

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used as a mobile observatory for a transient object like a comet.

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