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Room:101

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Development of a New Telescope Dedicated to Observation of Planets at Haleakala, Hawaii : VI

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We plan to construct a 1.8m new telescope at the summit of Mt. Haleakala, Maui, Hawaii in collaboration with the Institute for Astronomy of University of Hawaii, Institute of Astronomy of National Autonomous University of Mexico, and Kiepenheuer Institute for Solar Physics in Germany.

The telescope is dedicated to observation of solar system planets and exoplanets. When we try to observe a faint emission close to these targets, intense solar scattered light from the planetary disk becomes a serious problem if we see a solar system planet, and strong light from the central star in case when we are going to observe an exoplanet. In order to suppress this problem, it is necessary to avoid diffraction due to a spider structure that holds a secondary mirror and to minimize the scattered light from mirror surfaces as far as possible. To attain these necessities, the telescope optics will be an off-axis Gregorian type, and ultra-smooth mirror surface will become possible with a new polish technology called HyDra. Since a telescope with such a wide dynamic range dedicated to observation of planets does not exist yet, it is expected the telescope will become a unique facility for the ground-based observation of planets when it is realized.

A telescope project called PLANETS is being developed under a joint research agreement between Tohoku University and University of Hawaii. A basic design of the telescope has been completed and the primary mirror blank made of glass ceramic is now being manufactured.

Outline of this telescope project can be seen at <http://www.ifa.hawaii.edu/haleakalanew//planets/planets.shtml>, and at the presentation, current status of the development plan of our telescope will be given.

Keywords: optical telescope, planetary observation, optical infrared, Gregorian, Hawaii Haleakala, off-axis