A plan of optical telescope dedicated to observation of solar system bodies

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We at planetary Plasma and Atmospheric Research Center, Tohoku University are conducting observations of Jupiter using a 60-cm Cassegrain-Coude telescope and a 1000m2 radio telescope at our Iitate observatory. Observations of sulfur ion emission of Io plasma torus using a Fabry-Perot Doppler imager, observation of sodium emission originated from Io using a 1-m grating spectrometer, and infrared observation of Venus using an FTIR spectrometer, in addition to Jupiter, have been being carried out so far. Since the main purpose of these observation is to catch the temporal variability of the observation targets, the present telescope is solely dedicated to planetary observations. As a future plan of these planetary observation, we plan to have a telescope with 2-3m aperture at a good site abroad with more favorable sky condition in order to make continuous observation of planets more efficient.

On the other hand, the Solar System Surveyor is planned by a group of NAO to have a 3m class surveillance telescope also at a site abroad. This plan is to reveal the outer edge of the solar system by surveying small bodies mainly in the Edgeworth-Kuiper Belt using a combination of a bright optics and a primary focus camera.

By combining above two plans, we recently started examining a possibility to have a 2-3m class telescope at a suitable site abroad, as Haleakala being a primary candidate. It is expected that we will have to take various considertions into account in system design in order to accomplish the both observation purposes.

We believe that realization of our plan will greatly contribute for progress of solar system science in our country.