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## Proposal for atmosphere and plasmasphere observation from small satellite

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JAXA/ISAS has been leading satellite observation studies of ionosphere in Japan. Previous (before 2000) ISAS satellites were all 'small satellite', and INDEX satellite program showed that small satellite program is very effective in terms of science outcome for atmosphere/ionosphere research. AKEBONO satellite conducted in situ observation of ionosphere (its remote sensing instrument stopped shortly after the orbit operation). INDEX satellite made optical remote sensing of Aurora and limb air glow. Currently ISS/JEM/IMAP is under development (2012 January launch is scheduled) which will measure nadir airglow with high spectral resolution imager, GPS occultation (and reflection) is another technique for atmosphere/ionosphere research, which is not yet developed in Japan. This paper reports the status of Atmosphere-Plasmasphere observation proposal by using in-situ measurement, optical remote sensing, and GPS techniques.

Keywords: ionosphere, atmosphere, remote sensing, in situ observation, small science satellite