

## DC Electric field observation in the ionosphere by S-520-26 sounding rocket.

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Mesosphere and thermosphere at the altitude from 90km to 300km decide dynamics, temperature and structure of thermosphere. However, the observed data is insufficient. Because, a satellite cannot stay at the region long time. Air motion, density and temperature of vertical direction are physical basic parameter in order to understand the atmospheric structure and air temperature in the ionosphere. It is possible to investigate it only with the sounding rocket.

S-520-26 sounding rocket was launched at Uchinoura space center of JAXA on January 12 2012. It clarifies structure and plasma dynamics of mesosphere and thermosphere. This sounding rocket observes plasma motion, density, temperature and change of ionosphere F region at dawn, electric field and neutral atmospheric wind.

S-520-26 sounding rocket reached to an altitude of about 300 km 278 seconds after a launch, and observed DC electric field. This is aim. This observation method is called double probe method. That use pair of electric field antenna measurement. This research, observation of electric field is reported. And this data use to make clear plasma dynamics at F area.