

## Preliminary feasibility study of the solar observation payload for micro-satellites

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In this talk, we present preliminary feasibility studies on two types of solar observation payloads for micro-satellites. The three candidates are (1) an UV imaging telescope and (2) an X-ray spectrometer. In the case of UV imaging telescope, the most important constraint seems to be the control stability of a satellite in order to obtain a reasonably good spatial resolution. For solar imaging missions, we realize that an image stabilization system, which is composed of a small guide telescope with limb sensor and a servo controller of secondary mirror, is quite essential for a very good pointing stability of about 0.1 arcsec. Our preliminary investigations show that an X-ray spectrometer for the full disk Sun seems to be a good choice. The reasons are : (1) high temporal and spectral X-ray data are very essential for studying the acceleration process of energetic particles associated with solar flares, (2) we have a good heritage of X-ray detectors including a rocket-borne X-ray detector, (3) in the case of developing countries such as India and Czech, solar X-ray spectrometers were selected as their early stage satellite missions due to their poor pointing stabilities, and (4) there is no planned major mission after currently operating RHESSI mission. Finally, we present a preliminary design of a solar X-ray spectrometer covering soft X-ray (2 keV) to gamma ray (10 MeV).