

High sensitivity HDTV camera and objective spectrometer from UV to visible wavelength for meteor observations.

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We have observed Leonid from 1998 to 2002. The observations were performed by means of a cooled CCD camera with an objective spectrometer of grism (direct vision grating) at Nobeyama Radio Observatory in 1998, an I.I.(Image intensified) -HDTV camera, which was developed by NHK, with an objective spectrometer of transmission grating and I.I.-CCD cameras with grism objective spectrometers on Leonid MAC (Multi Instrument Aircraft Campaign) and at summit of Mauna Kea, Hawaii in 1999. We have observed Leonid by use of an I.I.-CCD camera with grism objective spectrometer at Tenerife Island of Canaries in 2000.

We had developed UV-I.I.-CCD and UV-I.I.-HDTV camera, which ranges from 250 to 800nm, for LEO-LEO (Leonid Meteor Observer from Low Earth Orbit) and Leonid MAC respectively. The objective lenses were composed of fused silica and calcium fluoride. The I.I. have sensitivity from 200 to 800 nm. Objective spectrometers of refraction grating were used for spectroscopic observations on UV wavelength. We could obtain numerous and high quality spectra of meteors and participant trains of Leonid and others. We observed Leonid at summit of Mauna Kea, Mt. Isa of Australia and Nobeyama in 2001, and on Leonid MAC, at Tenerife Island and Nobeyama in 2002. The UV spectra indicate some new materials of meteorite.

We are proposing a color I.I.-HDTV camera, which ranges from UV to near IR wavelength, which is attached on EUSO (Extreme Universe Space Observatory).

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URLs

Grism; <http://atlas.riken.go.jp/~ebizuka/ebi-e.html>

NASA Leonid MAC; <http://leonid.arc.nasa.gov/>

EUSO; <http://stj.riken.go.jp/~shimizu/euso/>