

Multi-wavelength Observations of High Energy Phenomena at Hiroshima University

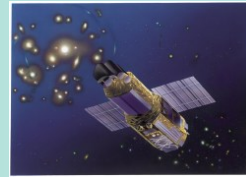
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Cosmic high energy phenomena often radiate a time-variable polarized emission in a broad-band energy band. Therefore, multi-wavelength simultaneous observation is very important to study such phenomena and understand the physical process. At Hiroshima University, we are building up the multi-wavelength observational system, based on the next Gamma-ray satellite "GLAST", X-ray satellite "Suzaku", X-ray Polarization Balloon experiment "PoGO", and the Hiroshima 1.5m Optical/NIR telescope "Kanata". We also hope to collaborate with the MAXI and radio observatories.

Capture of the Transient Phenomena

Transient phenomena such as gamma-ray bursts, blazars, microquasars, supernova are important to understand the high energy process. Hiroshima University will take part in the all-time monitor of GLAST transient events, and 1.5m Optical/NIR telescope "Kanata" will **quickly follow** up such events. **Polarization in both optical and X-ray band** is unique tool to probe the high energy phenomena.



Suzaku

Complementary observation with broad-band X-ray measurements

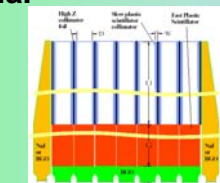
Gamma-ray All-sky monitor with good sensitivity



GLAST

(see Katagiri's Poster)

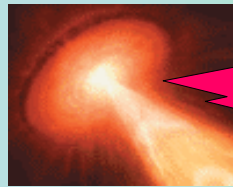
Data transfer is every 2-3hr via other satellite for transmission.



PoGO Balloon

Hard X-ray polarization with high sensitivity

(see Mizuno's Poster)



1.5m Telescope "Kanata"

Ready at any time
Fast pointing system
Polarization



NASA & SLAC (GLAST ISOC)

Hiroshima University



Optical wide-field camera
15arcmin FOV, R<23mag
(detection limit in 3hr exp.)
450-1100nm with Fully-depleted CCD
Many Filters (narrow/wide)
Spectroscopy (E/dE=3000)
Imaging Polarimetry
R<16.4mag (dp=0.2% in 10min exp.)

Higashi-Hiroshima Observatory

2006/05/26 Opened!!
Observation will start within 2-3 months!

20 min drive from Hiroshima Univ.

Specified for pointing the transient phenomena quickly
Fast pointing; 5 deg/s around azimuth axis
Automatic pointing

One of the best seeing sites in Japan; 1.1 arcsec FWHM in R band

Always ready for observing the transient phenomena

Objective Targets

BLAZARS
Microquasars

Hope to collaborate with MAXI and radio observatory

Continuous year-scale
multi-wavelength monitor

Capture of beginning of the outbursts

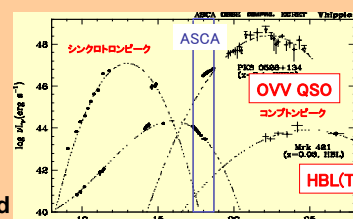
Gamma-ray bursts

Post-Prompt emission

Unidentified Gamma-ray sources

Identification

Galaxies, AGNs, Protostars...



Kubo et al. 1998 ApJ 504, 693

