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Highlights observed by MAXI



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Dr. Matsuoka is a senior advisor of RIKEN (the Institute of Physical and Chemical Research) since 2010. He is an experimental and observational researcher of astrophysics based on X-ray astronomy (all fields of X-ray astronomy) since 1963. He has published about 300 papers on X-ray objects using balloon, rockets, and satellites, Hakucho, Tenma, Ginga, Asca, HETE & Suzaku as well as MAXI. He is a science project manager in JAXA and RIKEN of MAXI since 1997. He got his PhD from Nagoya University in 1966. His career is as followings: Director of Cosmic Radiation Laboratory of RIKEN from 1986 to 1999; Professor of ISAS and Tokyo University from 1975 to 1986.

Abstract

MAXI is a Monitor of All-sky X-ray Image on Japan Experimental Module of International Space Station. It has observed X-ray variability of thousands-X-ray objects since August, 2009. MAXI has discovered 10 new X-ray transients and novae, and six of them were black hole candidates. The six black hole candidates revealed typical or atypical light curves in considerably weaker level. It has also detected about 20 new X-ray rich GRB.



MAXI discovered a flash from tidal disruption in a normal galaxy with Swift. It was like a long GRB, but it was sometimes detected by Fermi/Swift gamma-ray detectors. MAXI detected also a short flash from a nova with white dwarf in SMC. The detailed analysis suggested that this nova have a heavy white dwarf near Chandrasekhar limit. MAXI detected the super X-ray burst which caused probably another outburst from NS-LMXB. MAXI is monitoring Be-binary X-ray pulsars, and consequently detected 42 outbursts from 14 X-ray pulsars, in which we detected aperiodic phenomena, sometimes revealing a long-time precession period. MAXI detected a lot of stellar flares with unbiased all sky observations. Consequently, we have proposed that the origin of GRXE is explained by a composite X-rays consisting of large and faint stellar flares and cataclysmic variables.

Finally, soft X-ray monitor MAXI/SSC obtained a probable hypernova remnant in Cygnus constellation which occurred 3 million years ago with energy of 10^{53-54} ergs.

We conclude that more detailed and precise monitor with all sky X-ray image is very important in the future, e.g., as one payload on Chinese Space Station.

All are welcome! Tea, coffee, biscuits will be served at 2:15 P.M.

You are welcome to nominate speakers to Weimin Yuan (wmy@nao.cas.cn), Mei Zhang (zhangmei@bao.ac.cn), Licai Deng (licai@bao.ac.cn), Xuelei Chen (xuelei@cosmology.bao.ac.cn), Shude Mao (smao@nao.cas.cn)