

MAXI data distribution and the archive system

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ABSTRACT

MAXI is designed for monitoring the all-sky in the X-ray band by scanning with slit collimators and slit aperture. The sensitivity of MAXI will reach about 5mCrab in 1 day, and 1 mCrab in 1 month. We plan to make most of the MAXI data products public in a timely manner. MAXI data will be distributed by the Web Interface (from RIKEN site, URL is <http://www.maxi.riken.jp>). MAXI will provide light curves, spectra, images of about 1000 cataloged objects. The data distribution will start in about 3 month after the MAXI activation. In this paper, we will describe about the data distribution system and explain the policy of the data distribution and the instruction of Web Interface.

KEY WORDS: MAXI data distribution

1. Introduction

Monitor of All-sky X-ray Image (MAXI) is an all-sky monitor with ability that can observe the all-sky with about 1.5 degree position resolution and high sensitivity (Ueno et al. 2008). MAXI employs two types of X-ray cameras, Gas Slit Camera (GSC: Mihara et al. 2008) and Solid-state Slit Camera (SSC: Tomida et al. 2008). Each consists of two perpendicular fan-beamed field of view that scans the sky with the revolution of the International Space Station. The observed data will be provided to world wide astronomers through the ground analytical system as soon as possible.

2. MAXI data distribution system

The MAXI data are down-linked through ISS telemetry. There are two types of telemetry, which are low-speed Mil-1553b interface and MEDIUM-speed Ethernet interface. The real-time coverage is about 30 to 70 percents. The data processing on the ground has two stages, which are Tsukuba Space Center (TKSC) and RIKEN. The health check of the detectors, the attitude determination and the data completeness check are done in

TKSC. Then all the data are transferred to the RIKEN and distributed to the world from RIKEN server. At RIKEN, public archive data will be updated after the analytical process. The figure 1 shows overview of the MAXI data distribution system.

The MAXI public archive system has web interface for anonymous user. You can get analytical products from this site.

3. Policy of the data distribution

MAXI team discloses the astronomical products according to the following policy of the data distribution.

- A) All the down-linked data will be used to the data distribution. The products for the distribution are new transients discovered with MAXI, All-sky map image, the light curves and the spectrum of the known sources, and archive data of any part of the sky.
- B) The distribution products are in FITS format or TEXT format. We do not provide the MAXI specific software tools. MAXI data can be treated with the software, which are distributed from HEADAS etc.(Xspec or familiar software).

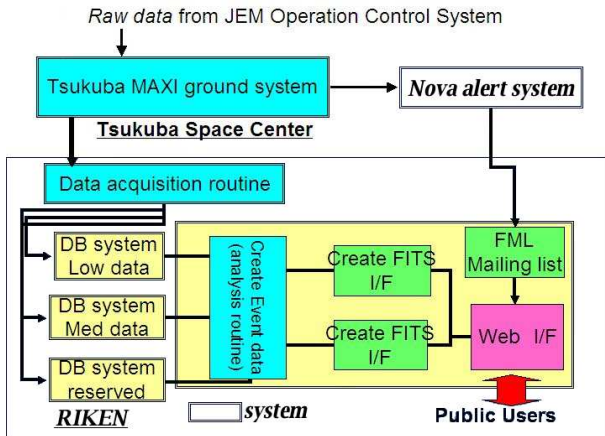


Fig. 1. Overview of the MAXI data distribution system

- C) We do not provide the event data in early stage. Currently we do not have enough man power for the data distribution. If you want the event data, please contact and collaborate with the MAXI team.
- D) A detail analysis will be done by collaborating with the MAXI team.

4. Distribution of products

We plan to start distribution of these products three month after the MAXI activation.

4.1. Novae alerts

The transient phenomena such as X-ray novae, GRB, and so on, discovered by the MAXI nova-alert system are immediately informed to users (Negoro et al. 2008). The MAXI team would like astronomers in any wavelength to use this information. The distribution method will be the mailing-list that the MAXI team sets up on the web site. Everyone who wants to use it can make his registration to the mailing-list. We will also utilize the existing astronomer mailing-list (ex. GCN circ. for GRBs).

4.2. All-Sky map

MAXI observes the whole sky 15 times a day, and can generate the all-sky images. After analyzed in the ground analysis system, the all-sky image of the day can be provided every day. We plan to provide the weekly image, and monthly image as well.

4.3. Regular updates of known sources

The flux and spectrum of about 1000 known sources will be updated regularly on the MAXI web site. We plan to list the light curves in two or more energy bands every day. The spectrum will be accumulated in one week to one month.

5. Archive system

We will issue the on-demand data products in about one year after the MAXI activation. Everyone who registered in the MAXI web site can request the MAXI data of any part of the sky. The selection criteria by users will be the position of the sky, the area (selection circle), the energy range, observation time-span and the detector (GSC and/or SSC).

6. User interface

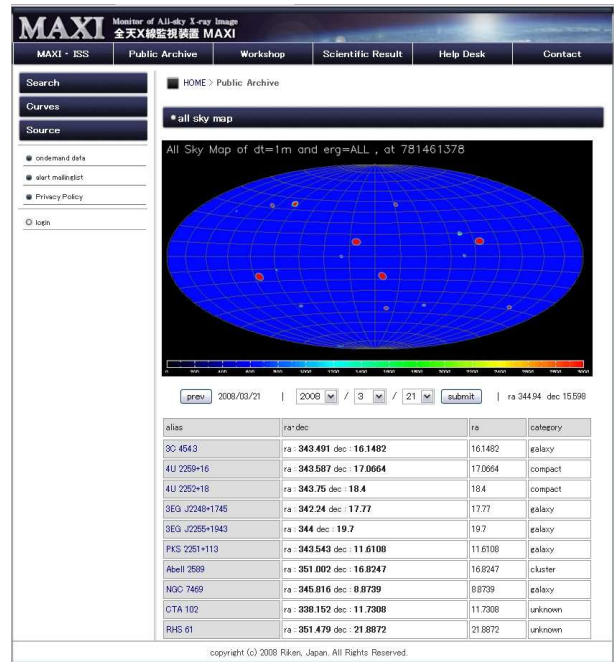


Fig. 2. Web interface of the MAXI data distribution system

The web site for data distribution will be set at RIKEN site.

<http://www.maxi.riken.jp/>

This site offers all the MAXI information for the astronomers. The all-sky image of the day will appear in the top page. Here, past images of one week span can be seen. Then, you choose in the menu and move to the data distribution page. The figure 2 shows the page of the data distribution page.

We plan to offer the regular data products of all the known sources which is selected by the MAXI team by two method. One is very easy way that users can get the MAXI products of any sources by clicking the point on the all-sky image. Another needs a little special technique such that user inputs directly the position or the name of the source. You will get the light curve and the spectrum in one page for each sources. Finally, we wish to help your astrophysical study by providing our MAXI data.

References

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