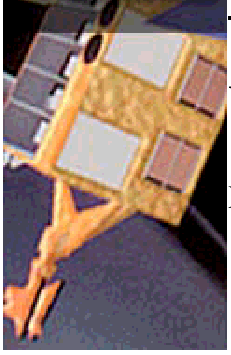
RXTE Archive

RXTE GOF

The RXTE Team is committed to making archival data available promptl and conveniently.



When do data enter the archive?

RXTE data fall into four categories, with different policies for public release:

1. **NRA data:** The standard proprietary period for RXTE data obtained in response t accepted GO proposals is twelve months from the date of receipt by the PI. Howe reprocessing activities, the proprietary period for AO-1 data taken before 1996 De 16 was extended until six months after receipt of the reprocessed data.

2. **Non-NRA Targets of Opportunity:** The data from TOO observations that were anticipated in accepted proposals are publicly available as soon as they are proces RXTE Science Data Center.

3. **ASM:** All ASM data are made publicly available as soon as they are processed.

4. **In-Orbit Checkout:** These data were taken during the first month of the mission January) to calibrate and test the RXTE instruments. These data were all non-prop from the beginning, and are already present in the Archive.

The RXTE data archive is maintained by the High Energy Astrophysics Science Archiv Research Center, HEASARC. and can be accessed using their online service.

When will the GO data I'm interested in public?

The RXTE GOF has developed the RXTE Public Data Web tool to allow RXTE users t when proprietary data will go public. Users can search on target name, PI, proposal nun complete ObsID, and/or date. For example, to find out what data went public in March would enter in the appropriate box "Mar-*-2000".

The user may also search the XTEPUBLIC catalogue using the HEASARC's Browse t which datasets are currently available.

By the beginning of 2000, more than 400 GBytes of RXTE GO data had been made pul

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How are the data organized in the Archiv

Archival RXTE data occupy the **`xte/data/archive`** directory on the anonymous FTP s **`legacy.gsfc.nasa.gov`**. Directories at the next lowest level are named AO0 for IOC d for AO-1 data, etc. Note that you will see directories for data that are not yet public. Th there, but the data files themselves will not be accessible to you until the proprietary pe expires.

Below this level, RXTE data files are arranged in a hierarchical set of directories. First directories named after the proposal number; the next level contains the individual obse ("ObsID's"), while the final level contains directories for each of the Subsystems (PCA ACS etc.). **In the catalogue of publicly available RXTE data, individual entries cor to the ObsID level. GO data released through our Online Data Area are also grou ObsID.**

Observation IDs

Since the ObsID is the link from the browsable catalogue to the data themselves, it's wo explaining its nomenclature. Each ObsID corresponds to a single observation, where "observation" refers to a temporally contiguous collection of data from a single pointing format for the ObsIDs is as follows:

```
NNNNN-TT-VV-SSX
```

where:

1. **NNNNN** is the five-digit proposal number assigned by the GOF and is identical to tl the parent directory.

2. **TT** is the two-digit target number assigned by the GOF. Note that for the case of o target, the target number may be zero.

3. **VV** is the two-digit viewing number, assigned by GOF, which tracks the number o scheduled looks at the target. In particular the viewing number corresponds to:

   - different (requested) observations of the same target (e.g., at different epoch monitoring),

   - different instrument configurations during the same pointing,

   - different scans for scan-mapping of extended sources.

4. **SS** is the two-digit sequence number used for identifying different pointings that r the same viewing if the SOF decided, for operational reasons, to split that viewing more than one chunk or if it was split "by accident", by a TOO, for instance.

5. **X**, 15th character, when present, indicates:

```
A       Slew before observation
Z       Slew after observation
S       Raster scan observation
R       Raster grid observation
G,C,D   ObsIDs that may contain data gaps
0-9     Segments of a long observation (i.e., > 8 hours)
b-r     (reserved for) Real-time configuration changes
```

   When not present, it indicates a regular pointed observation (< 8 hours) or the last of a long observation.

Spacecraft Subsystems

Each ObsID directory contains a set of 15 subdirectories, each containing data files deri a single spacecraft Subsystem. The typical observer will not need to know about most o but a complete listing is as follows:

ace – Attitude Control Electronics & star trackers
acs – Attitude Control System
cal – References to files in the Calibration Database
clock – Time delta correction data from Mission Operations Center
eds – Experiment Data System housekeeping
fds – Flight Data System
gsace – Gimbals and Solar Array Control Electronics
hexte – HEXTE science and housekeeping data
ifog – Interferometric Fibre Optics Gyroscope

ipsdu – Instrument Power Switching and Distribution Unit
orbit – Orbit ephemeris from the Flight Dynamics Facility
pca – PCA science and housekeeping data
pse – Power System Electronics
spsdu – Spacecraft Power Switching and Distribution Unit
stdprod – Standard Products - cleaned light curves, spectra etc.

Though they represent the lowest rung in the directory hierarchy, the Subsystem directc not necessarily contain files of one type. In most cases, a further division is made based **Application**, the term used for a distinct source of telemetry. In the case of the PCA, th Event Analyzers are considered applications. **Note that the ASM is *not* included.**

Also in the ObsID directory are various index files used by XDF - the XTE Data Finder identify the underlying data files.

Example of Directory Structure

An example will clarify how `XTEPUBLIC` relates to the ObsID and manifold directory st Searching `XTEPUBLIC` for the IOC observation of 4U1907+09 yields the ObsIDs:

```
10154-02-01-00
10154-02-03-00
10154-02-04-00
10154-02-05-00
10154-02-06-00
...
```

The directory containing PCA data from the first ObsID is:

```
xte/data/archive/AO1/P10154/10154-02-01-00/pca
```

Please note that although you can work your way down the directory structure using on is often more convenient to use Browse to find and retrieve the data, or retrieve a whole using anonymous FTP.

How do I find and retrieve the data I war

The `XTEPUBLIC` catalogue in the HEASARC database lists all publicly available RXTE (Also, remember the RXTE Public Data tool mentioned above.) There two methods for public data: the web-based Browse, and anonymous FTP.

Using Browse

Browse is a web-based browser with a graphical user interface. Link to the main Brows and choose the "Advanced" version (to allow greater search flexibility). In the "Advanc interface, check the RXTE mission box, choose to search either by object name/coordin parameters, and then begin your search:

1. Choose the `XTEPUBLIC` catalogue.
2. Enter search criteria into appropriate boxes. If you chose to search by name, you r enter e.g. **`4U1907+09`** into the **Object Name or coordinates** box, and click **Subm** search by parameters, you'll click again to begin your search, and perhaps choose proposal number (called PRNB within Browse), ObsID etc. Then click **Submit**.
3. A successful search will display the corresponding catalogue entries, i.e. the ObsI per line. **Check the box(es) to the left of the ObsID(s) you're interested in.**
4. Below this listing, you'll find a choice of categories of data:

   ```
   GIF Standard Products Only of a Single RXTE Observation (GIFS)
   Standard Products (including GIFs) of a Single RXTE Observation (S
   Complete Data Directory of a Single RXTE Observation (FULL OBSID)
   ```

   (Note that the STDPRODS includes the GIFS in the category above, and the FUL includes the STDPRODS and GIFS.) Choose one by clicking on it to highlight it.
5. Then click on the radio button to **`Retrieve data products in selected cate`** (or `List products in the selected categories` and then retrieve the produc subsequent command).
6. Click on **`Submit`**. Browse will now construct the appropriate tar command, and ta data you have requested. This may take a while.
7. Browse will bring up a new page when your tar job is complete. You may now cli **`Download TAR file`** to initiate the transfer of the tar file to your host machine. **M you have enough disk space!** - the total size of the tar file will be indicated.
8. When untarred, your data files and index files will appear in the usual configurati RXTE datasets, as described above

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Anonymous FTP

Anonymous FTP can be a convenient alternative to Browse, if you don't wish to tie up browser for the duration of the data retrieval. Here's an example of the steps you might

1. **`ftp legacy.gsfc.nasa.gov`**, giving 'anonymous' as your name, and your Emai as the password.

2. **`cd xte/data/archive`** (stopping to read the information presented here)

3. **`cd AO1`**

4. **`get P10154.tar`** to obtain all the public data from this proposal. The FTP server automatically create the tarfile on your home machine in the directory from whicl initiated the FTP run - make sure you have sufficient space. You might want to `cc` and obtain a subset of the data (e.g. `get 10154-02-04-00.tar`).

There is no advantage to pulling over a gzipped file using e.g. `get 10154-02-04-00.t` the datafiles within the directory structure are already gzipped.

If you try to FTP data which is still proprietary, you'll end up with a tarfile containing c orbit information, calibration files and index files, but no science data.

Cautions and Caveats

- **RXTE data will be released into the archive on a weekly basis.** Observations n turning public before 12:01a.m. on a given Saturday will be available (i) the follo Monday, for anonymous FTP access; (ii) Tuesday, for Browse access.

- **RXTE datasets may be larger than you are accustomed to**, and response may l peak times, particularly if multiple users are attempting to get their hands on the s dataset. Please ensure you have sufficient disk space for the transfers, and try to p data retrieval to avoid times of heavy network traffic. If you have problems, try ag

- **RXTE data will go public on an ObsID basis**, based on the date when the tape c that ObsID was mailed to the original PI. Thus, not all the parts of a given propos necessarily go public at the same time, particularly in the case of large proposals c long-term monitoring campaigns.

How do I proceed with data reduction an analysis?

1. Install the FTOOLS package

2. Read the materials on the Data Analysis & Processing page

3. Consult *RXTE Frequently Asked Questions*.

If you have a question about RXTE, please send email to one of our help desks. This maintained by the RXTE GOF and was last modified on Wednesday, 07-Jun-2000 14 EDT.

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Structure and Evolution of the Universe theme.

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