FAQ

High-Level Science Products ▶

Software ▶

FITS ▶

Related Sites

NASA Datacenters ▶

MAST Services

MAST and the VO ▶

Newsletters & Reports ▶

Data Use Policy

Dataset Identifiers

Acknowledgments

The Multimission Archive at STScI Newsletter

| June 5, 2001 | Space Telescope Science Institute | Volume 11 |

The Multimission Archive at STScI (MAST) Newsletter disseminates information to users of the HST, FUSE, IUE, Copernicus, EUVE, HUT, UIT, WUPPE, IMAPS, BEFS, TUES and VLA-FIRST data archives supported by MAST. Inquiries should be sent to archive@stsci.edu.

Index of Contents

MAST World Wide Web Site Redesigned

A new and improved MAST World Wide Web (WWW) site is available at http://archive.stsci.edu. The site has been reorganized to improve user-navigation and consistency and several new features have been added.

Most pages now offer two menus. Along the top of each page are general links to: mission data search pages (Data), mission home pages (Missions), help contacts (Contacts), the STScI home page (STScI), and the MAST home page (MAST). In the upper right corner is a site-wide text search option to locate pages by topic. (For example, to find references to "on the fly calibration or OTFC", type in "OTFC" and hit return. A list of page links will be displayed containing this term.)

On the left side of each page is a second menu of links. From the top MAST page, these links point to non-mission specific or cross mission topics such as cross-mission search tools, frequently asked questions (FAQ), software, and prepared (highly processed) data sets. For the mission-specific pages, standard menu items are now used (when possible) and include Getting Started, Data Search and Retrieval, What's New, FAQ, Data Reduction/Analysis, Instrumentation/Operations, Processing Information, Project Publications, Papers, and Related Sites. Selection of a main menu topic often opens sub-menus of related links. Also included on the mission-specific pages is a "quick data search" option which will search the mission database for a specified target name or coordinates.

One further improvement to the MAST home page is the cross-wavelength target search. Users may enter a target or coordinates, and/or select the data type (image or spectra) and wavelength range of interest. When a target is specified, the search results list the first 10 observations found for each mission. If no target is entered, the returned page lists a summary of the MAST missions that fit the data type and selected wavelength range.

The redesigned WWW pages are now created dynamically and allow us to separate the page content from most of the html format. This results in more consistency between pages, easier maintenance, and will allow more features to be added in the near future such as printer-friendly page format options and user-customized page layout.

In addition to the WWW site improvements, three new missions will be offered including: the Sloan Digital Sky Survey (SDSS), the Tuebingen Ultraviolet Echelle Spectrograph (TUES) from the ORFEUS-II mission, and the Guide Star Catalog version II (GSC II).

Randy Thompson

The MAST Spectral/Imaging Scrapbook: Spectra and Sky Images a la Carte

On June 4, 2001 MAST unveiled its new "Spectral/Imaging Scrapbook." The Scrapbook is a WWW-based data-browsing tool which gives a broad view of the spectra/images available at MAST over a wide range of wavelengths. The Scrapbook is designed to permit the user to peruse representative spectra or sky images from mission data stored in the UV/optical/near-IR MAST archives. This tool is located at http://archive.stsci.edu/scrapbook.html. The user submits a request by entering either the name of a (non-solar system) object or coordinates of a sky region and specifies "spectra" or "images." A page is returned promptly with a table of selected datasets and thumbnail spectra or images in several wavelength regions. The thumbnails are links to preview pages with in turn contain links to permit access of data in FITS format, publication links, and other information about the dataset. To date, the Scrapbook includes HST/GHRS, HST/FOS, IUE, HUT, and EUVE spectra and HST-WFPC2 images.

The Scrapbook utilizes a pair of Tables of Representative Spectra and Images (TORS, TORI) compiled from the MAST archive. These tables list unique datasets representing, respectively, each object or unique pointing observed by each MAST mission assembled for the Scrapbook to date. The datasets contain either a calibrated spectrum or image, as the case may be, for up to several wavelength regions. The return page first displays a table with these dataset names, mission instrument/name, and angular separation from input position. Following the table is a montage of spectra or sky images contained in these datasets. Representative spectra and images have been selected according to a set of "rules" or specifications developed in an automated and unbiased way. The specifications included parameters such as exposure lengths, dates of observations, and grating/filter configuration.

To maximize its utility, the Scrapbook form page includes three search options. The first (default) option searches the TORS/TORI tables by coordinates within the defined search radius. Users may enter their own coordinates, or use the SIMBAD/NED name resolvers to obtain coordinates. A second option, useful for objects in crowded fields, compares the name returned by SIMBAD or NED with the MAST catalog. The third option compares the user input name directly with entries in the TORS or TORI tables. This option accepts wildcards and is useful for objects with unusual designations (e.g., NGC 4151-jet).

Even in its first version form, the Scrapbook can be used for a variety of purposes, ranging from perusal of spectra (or sky regions) of particular objects, spectra of objects within a small area on the sky (clusters of stars or galaxies), or as a teaching device making use of the full population of objects (or pointings) observed by the HST and other UV satellites. As this year proceeds, datasets from additional missions (e.g., HST/STIS, HST/NICMOS, HST/FOC, FUSE, ORFEUS, UIT) are likely to be listed. Also, the Scrapbook lends itself to the addition of spectra and images from other NASA data archiving centers.

In the future MAST intends to add other functionalities to the Scrapbook or closely allied tools. These could include high-dispersion spectra, comparison of different datasets (overplotting, merging), and conceivably coaddition of individual spectra. MAST will consult and consider community needs in prioritizing new applications.

Dr. Myron Smith

Sloan Digital Sky Survey Public Science Archive Goes Live!

The Sloan Digital Sky Survey (SDSS), using a dedicated 2.5 meter telescope and a large format CCD camera, will image over 10,000 square degrees of high Galactic latitude sky in five broad bands (u', g', r', i' and z', centered at 354, 477, 623, 763, and 913 nm, respectively). The survey will also yield medium resolution spectra for approximately 1 million galaxies and 100,000 quasars. The early data from the first 490 square degrees, including 55,000 spectra, were released to the public on June 5, 2001. The STScI is providing support for the distribution of this superb data through the MAST website http://archive.stsci.edu/sdss/. The SDSS Data Products available from this site include:

- Image Parameters: Properties and profiles of all detected objects: positions, magnitudes, sizes, shapes and more (300 attributes per object);
- Spectroscopic Parameters: redshifts, line identifications and spectra-based classifications (30 attributes per object);
- Three-color composite images;
- Flux vs. wavelength plots with spectral features identified, and other notations overlaid;
- Photometrically and astrometrically calibrated images in the five wavebands (corrected frames with 0.4 arcsec pixels; binned images with 1.6 arcsec pixels);
- Cut-out pixel maps, called atlas images, surrounding each object detected in the images;
- Maps of regions (mask images) which could not be used for science surrounding bright stars, bad columns, and other defects;
- Flux- and wavelength-calibrated spectra in the range of 3900-9100 Angstroms at a resolution of R=1800.

Researchers using the SDSS archive may choose to query the SDSS catalog in a simple or advanced manner, view and collect images of a particular object or region of sky, obtain catalog information for an image or spectrum via the SkyServer (an interactive SDSS browsing tool geared to the general public), or access the 1-D spectra.

The imaging phase of the SDSS is currently about 20% complete and the next major data

release is scheduled for January 2003 and will include all data obtained through July 2001.

Dr. Marc Postman

Updated Guide Star Catalog now available

The Catalogs and Surveys Branch of the Space Telescope Science Institute has been digitizing the photographic Sky survey plates from the Palomar and UK Schmidt telescopes to produce the Guide Star Catalog (GSC) and Digitized Sky Survey (DSS). These catalogs support ground and space-based telescope operations and provide a valuable scientific resource to the astronomical community.

The CASB group at STScI and the Astrometry Group of the Osservatorio Astronomico di Torino , in collaboration with the Astrophysics division of ESA, the GEMINI project and the ST-ECF have been working on a new version of the GSC. The Guide Star Catalog II (GSC II) is an all-sky catalog based on processing the photographic Sky Survey plates, at two epochs and three bandpasses (F, J, IV-N), from the Palomar and UK Schmidt telescopes (DSS).

This will use multiple epochs and bandpasses of the survey plates in order to obtain proper motion and color information in addition to accurate coordinates, magnitudes and classifications for all objects. A database called COMPASS was constructed to hold the GSC-II data using Objectivity, a commercial Object-Oriented database system. The astrometric reference catalogs are the ACT and TYCHO2, and photometry will be based upon CCD sequences obtained for each plate. This project is expected to be completed in 2002.

With more than 998 million unique objects in the database thus far, construction of the complete GSC-II is still in progress. The GSC2.2 is an all-sky, magnitude-selected subset of the complete catalog designed to support Telescope Operations. It contains positions, classifications, and magnitudes for 435,457,355 objects, and is now available to the community via the WWW through the MAST interface.

This preliminary catalog contains positions, classifications and at least 2 magnitudes for all object brighter than 18.5 in photographic F and 19.5 in photograhic J. Since bright objects are heavily overexposed on Schmidt plates, we have replaced the bright stars with those from the Tycho-2 catalog. The only proper motions provided are those from the Tycho-2 catalog. It must be emphasized that this interim release should not be used for HST guide star coordinates at this time. The final version of the catalog (GSC 2.3) with all detected objects, proper motions and the near-ir magnitudes will be available in the summer of 2002.

The GSC-II consortium is dedicating the catalog to the memory of Dr. Barry M. Lasker, who passed away in February 1999. Dr. Lasker, one of the founders of the STScI, was directly responsible for the vision that led to the creation of the DSS and GSC projects that have greatly influenced and benefited modern observational astronomy.

The Guide Star Catalog-II is a joint project of the Space Telescope Science Institute and the Osservatorio Astronomico di Torino. The participation of the Osservatorio Astronomico di Torino was supported by the Italian Council for Research in Astronomy. Additional support was provided by the European Southern Observatory, the Space Telescope European Coordinating Facility, the International Gemini project, and the European Space Agency Astrophysics Division.

Dr. Brian McLean

StarView Archive Tool News

StarView 6.2 was made available on May 9, 2001. Existing installations will upgrade themselves with user permission; new installations can be downloaded from http://starview.stsci.edu. Managers of centralized installations were notified in advance of release. The newest version of StarView has significant performance improvements and a modern help interface. StarView now runs under both Java 1.3 and 1.2.2 -- the recommended Java 1.3 version is up to 30% faster. Help in StarView arrives in three modes: a context-sensitive help icon, browsable help in a separate screen, and an innovative ``Help With Next Step'' feature in the Help menu (or type ^Z). ``Help With Next Step'' provides a description of what your likely next actions may be, based on your current status. A small improvement with big convenience is the availability of the HST ``Quick'' form, from the Quick button on the button menu. Additional modifications and improvements include: retrieval compatibility with the new on-the-fly reprocessing system at the HST archive, capability to re-submit requests from outside StarView, improved look-and-feel to the Cross Qualification and Export Table features. A user can now store and restore queries to the retrieval tool, for repeated queries. The StarView user can now view the astronomical references using MAST datasets, based on the MAST literature search project.

A major upgrade option, available June 13 for Solaris 8 and Windows, is the joint StarView/Visual Target Tuner (VTT) interaction. StarView and the VTT (from the Astronomer's Proposal Tool project) can be downloaded bundled together. Since StarView and the VTT are both written in Java, they can exchange information. What that means for users is that a StarView user can search for all of the HST observations near a position on the sky, then overlay the plots of the aperture outlines for all or some of those observations on a Digitized Sky Survey image, through the VTT. When the StarView mode is on in the VTT, those

apertures are clickable, and the appropriate datasets are highlighted in the StarView results screen or its results table. This is a significant improvement over the old Overlay feature, which could only overlay the entire field of view (instead of a single aperture) for a single observations (instead of multiple observations.) To save on processing space, StarView and the VTT run from the same Java virtual machine, and therefore must be installed as a bundled version.

Future plans for StarView include integration of catalog searches and data retrieval for all of the MAST missions, including IUE and FUSE.

Dr. Megan Donahue

Additional ORFEUS Data Added

ORFEUS (Orbiting and Retrieval Far and Extreme Ultraviolet Spectrograph) is a telescope constructed and deployed by the German-US space agencies. It was deployed during two Space Shuttle missions for 5 days in September, 1993 and 14 days in November, 1996. The full telescope brings light to two spectrographs, including the Berkeley Extreme and Far-UV Spectrometer (BEFS) and the Tübingen Echelle Spectrograph (TUES), at its prime focus.

The Tübingen Echelle Spectrograph data from the second ORFEUS flight are now available from MAST at http://archive.stsci.edu/tues. The instrument was designed to achieve a spectral resolution of ~10000 when used with an entrance aperture of 10" diameter. During the 17.7 day flight, TUES returned 239 spectra of 62 targets.

Data from the second ORFEUS flight acquired by the Berkeley Extreme and Far-UV Spectrometer (BEFS) have been added to the MAST Archive. BEFS was designed to obtain spectra of UV point sources simultaneously at FUV and EUV wavelengths (380--1175 Angstroms) at a resolution of about 5000. With these capabilities BEFS provides a link with previous UV spectroscopic missions such as Copernicus, EUVE, HUT, IUE, and of course HST/GHRS and STIS.

Karen Levay

To Subscribe or Unsubscribe to the Newsletter

If you would like remove yourself from the mailing list send mail to archive_news-request@stsci.edu and put the single word unsubscribe in the BODY of the message. Information on the subject line will be ignored.

If someone would like to subscribe to the mailing list they should send mail to archive_news-request@stsci.edu and put the single word subscribe in the BODY of the message. Information on the subject line will be ignored. The subscriber will be asked to confirm the subscription.