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MAY 2018

MAST NEWSLETTER

THE LATEST UPDATES FROM THBARBARA A. MIKULSKI ARCHIVE FOR SPACE TELESCOPEST

STSCI

MINOR HST TIME CORRELATION OFFSET ISSUE: DATA REPROCESSING IN PROGRESS

STSCI WILL BE REPROCESSING ALL HST DATA FROM JUNE 2017 TO MAY 2018 DUE TO A RECENTLY-DISCOVERED UT TIMING ERROR.

MAY 14, 2018



This is to notify HST users that all observations obtained or reprocessed in the approximate timeframe from June 2017 through May 2018 will be reprocessed to ensure that the Universal Time (UT) timestamps on all associated data products are accurate.

The HST Science Operations Ground System uses a set of time correlation calibration parameters to translate scheduled command activity times between Universal Time (UT) and spacecraft clock counts for execution by the spacecraft and instrument computers. Clock correlation is required to maintain the proper UT time assignment because of the intrinsic on-board clock drift rate. HST engineers recently discovered that the science ground system has been using an erroneous set of time correlation parameters for the past 11 months. This has introduced small, but increasing errors in the assignment of execution activity UT times to associated data products ranging from ~0.5 seconds on day 2017.179 (June 28, 2017) up to ~2.75 seconds when the error was corrected on day 2018.124 (May 4, 2018).

The data reprocessing has begun and should be completed within about 2 months for all affected datasets. STScI expects that this will have little impact on most data, but we encourage users to examine their data products. We apologize for this oversight and any inconvenience this may cause in your research efforts. Additional questions or comments may be sent to the Archive Helpdesk or archive@stsci.edu.

Back to top 🗹 🎔 f

TAP SERVICE NOW AVAILABLE FOR HUBBLE SOURCE CATALOG

THE HUBBLE SOURCE CATALOG IS NOW AVAILABLE THROUGH AN IVOA STANDARD TABLE ACCESS PROTOCOL SERVICE ALLOWING TABLE DATA ACCESS VIA QUERIES IN ADQL.

MAY 14, 2018



As part of an extended effort at MAST to share our data through new powerful and flexible services and client applications, the Hubble Source Catalog (HSC) is now available via an International Virtual Observatory Alliance (IVOA) standard Table Access Protocol (TAP) RESTful webservice. TAP serves the HSC in a data model already familiar to users of our CASJOBS interface. It joins the existing CAOM TAP service as a new type of VO-enabled window into our holdings.

> TAP QUERY SERVICE URL: HTTP://VAO.STSCI.EDU/HSCTAP/TAPSERVICE.ASPX

The MAST TAP service for the Hubble Source Catalog provides a method for directly querying tables and views, combining positional and other search filters. TAP clients enable cross-correlation of results with the user's data and that of other VO-enabled archives. The Table Access Protocol API is an IVOA standard, with astronomical data centers worldwide providing catalogs searchable through services with the same interface. These services, which can accept geometry-based positional queries in the SQL-like ADQL language, are supported by software clients such as TOPCAT to visually build and manipulate tabular query results. The MAST HSC TAP service is registered in the IVOA network of metadata registries for automated VO client discovery. Python-based programmatic access to TAP-enabled data is also possible through extensions to astropy packages such as Astroquery and PyVO.

A help page with documentation for TAP, its use and sample queries, and the underlying standards, is also <u>available here</u>. TAP schema information is built into the service and can be accessed from the same help page. Support for table uploads is in development. Plans to add TAP interfaces for additional catalogs at MAST including PanSTARRS and select High Level Science Products are underway, and we welcome user feedback on priorities among these catalogs. Any additional questions and feedback may be sent to the <u>Archive Helpdesk</u> or archive@stsci.edu.

Back to top 🛛 🎔 f

HLSP INQUIRIES NOW EASIER WITH NEW INTEREST FORM

MAST HAS A NEW FORM TO EXPRESS INTEREST IN CONTRIBUTING HIGH LEVEL SCIENCE PRODUCTS.

MAY 14, 2018



MAST has released a new web form (available at https://archive.stsci.edu/hlsp/interest/) for collecting initial information from interested PI's to assist both you and us as we work

together to archive your High Level Science Products. Those interested in contributing an HLSP for release through MAST are encouraged to fill out this form as early in the process as possible. Upon submission, an archive scientist at MAST will review your information and begin planning for ingest to MAST.

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The new interest form will begin a dialogue with MAST and get the ball rolling.

This interest form was initially developed in collaboration with <u>AAS</u> for inclusion with the paper submission process, but this form may be used for general HLSP submissions as well. If filling out the interest form while submitting a paper or paper revision to a journal, please include this information (title and journal) so we can work with you to insert references to your HLSP directly into your paper. If filling out this form before submission, tentative title and journal information is sufficient, but note that at least one peer-reviewed publication must be accepted before HLSP are released to the public. In the meantime, work can proceed at MAST to prepare for your HLSP well in advance, so beginning the discussion with MAST early in the process is still strongly encouraged. Any additional questions on the process may be sent to the <u>Archive Helpdesk</u> or to <u>archive@stsci.edu</u>. We look forward to working with you!

Back to top 🗹 🎔 f

THE LATEST NEW AND UPDATED HIGH LEVEL SCIENCE PRODUCTS

IN THE PAST TWO MONTHS, MAST HAS ADDED THREE NEW HLSPS AND RECEIVED UPDATES FOR THREE MORE.

MAY 14. 2018





Optical and infrared mosaics of the Lagoon Nebula (M8).

NEW:

ATLAS-VAR (Heinze et al. 2018) is a catalog of 4.7 million variable star candidates identified from the ATLAS survey. Numerous variability metrics and a Lomb-Scargle periodogram are used to classify the candidates. The first data release, presented here, consists of variable stars identified through analysis of 1.4 x 10⁸ stars down to a limiting magnitude of r ~18 that obtained a minimum of 100 observations during the first two years of ATLAS operations. The full catalog is available though the MAST CasJobs SQL interface.



Amplitude vs. period for ATLAS-VAR PULSE variables.

• HOTSTARLIB (Khan & Worthey 2018) is an extension of the HST stellar spectral library. This project provides 41 spectra of 40 different stars from 0.2 to 1.0 microns with excellent fluxing. The targets include O-type stars, helium-burning stars, and post-AGB stars. In addition to spectral calibration, line-of-sight dust extinction is estimated and corrected. These spectra complement the existing <u>HST Next Generation Stellar Library (NGSL)</u>, extending to hotter stars and those that burn helium.

 STScI Outreach Imaging Team is a collection of highlevel science products resulting from outreach imaging projects at STScI. The first release is of M8 (Lagoon Nebula) in ACS/WFC3 UVIS and IR to celebrate Hubble's 28th anniversary. Mosaics in FITS format as well as interactive displays are available for use at the MAST project page.



NGSL stars and the HOTSTARLIB sample in a log T_{eff}, log g diagram.

UPDATED:

- BoRG have released Version 3 of their data files, which delivers WFC3 imaging in five filters for 89 parallel fields. In addition to a new set of filters, the parallel fields in version 3 have been optimized for higher redshift candidates at z~9-10. Interactive displays are available, as well as drizzled images and weight maps.
- K2SFF detrended light curves for Campaign 15 are now available through the standard search form and the MAST Portal.
- KEGS have released Version 2 extragalactic K2 light curves. Version 2 supersedes Version

 and includes a change in the long-term trending function as well as solving algorithm.

 See the README file for details about these changes. Version 2 also adds more
 Campaigns: KEGS now contains extragalactic light curves for Campaigns 3, 5, 6, 8, and 10.

If you are interested in working with MAST on a High Level Science Product of your own, please use the new HLSP Interest form to get the process started. Additional questions or feedback can be sent through the Archive Helpdesk or to archive@stsci.edu.

Back to top 🗹 🎔 f

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THE LATEST NEW AND UPDATED HIGH LEVEL SCIENCE PRODUCTS





ABOUT

This newsletter is a MAST publication produced by Jonathan Hargis, Peter Forshay, and Randy Thompson, on behalf of the entire MAST staff, who welcome your comments and suggestions.

The Mikulski Archive for Space Telescopes (MAST) is a NASA funded project to support and provide to the astronomical community a variety of astronomical data archives, with the primary focus on scientifically related data sets in the optical, ultraviolet, and near-infrared parts of the spectrum. MAST is located at the Space Telescope Science Institute (STScI).

LEARN MORE



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