



NOVEMBER 2018

MAST NEWSLETTER

THE LATEST UPDATES FROM THE BARBARA A. MIKULSKI ARCHIVE FOR SPACE TELESCOPE

STSCI

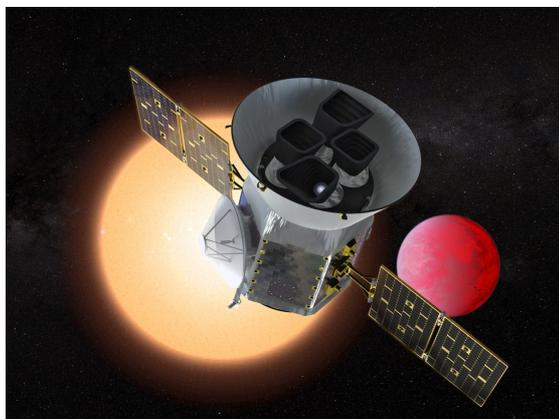
TESS MISSION DATA RELEASE IN EARLY DECEMBER

FULL TESS MISSION DATA SET FROM OBSERVATION SECTORS 1 AND 2 WILL BE
PUBLICLY-AVAILABLE FOR DOWNLOAD IN EARLY DECEMBER.

NOVEMBER 28, 2018



After a successful launch and several months of commissioning, the Transiting Exoplanet Survey Satellite (TESS) commenced science operations on July 25, 2018. TESS is currently collecting 2-minute cadence and 30-minute cadence full frame image science data from Observation Sector 5 in the Southern ecliptic hemisphere. Data from the first four Observation Sectors have been received on the ground and have been or are being processed through the pipeline. The TESS Science Office has been vetting planet candidates, and has begun issuing public alerts on a select set of especially promising



TESS candidates, that are also being followed up with ground-based telescopes to confirm.

It is anticipated that the full data set from Observation Sectors 1 and 2 will be released publicly via the Mikulski Archive for Space Telescopes (MAST) in early December 2018. This release will be accompanied by a draft version of the instrument handbook and release notes for each sector. The TESS Data Release Notes will include data quality diagnostics and information about data and instrument characteristics. The full data set from Sectors 3 and 4 will be released no later than January 25, 2019.

Several services will be available to support the community with this early release of data. A summary of those services that will be available at the MAST for TESS data download of the first two TESS Sectors can be found at <http://archive.stsci.edu/tess/summary.html>. Additionally, the MAST will provide an archive manual that will describe an overview of the TESS data products as well as instructions on how to download them. The manual contains tutorials and python notebooks that walk through how to use the MAST Portal, exo.MAST and Astroquery to retrieve data for scientifically interesting use cases.



The TESS Science Support Center maintains a list of approved Guest Investigator (GI) programs and their associated targets that are or will be observed at 2-minute cadence in Cycle 1. The observed GI targets lists are also available for individual sectors. The TESS Science Support Center will provide links to additional tools and

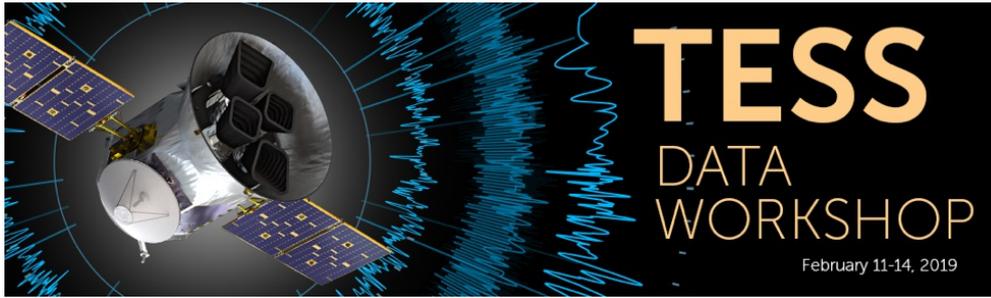
tutorials that can be used for analysis of TESS 2-minute cadence Target Pixel Files and 30-minute cadence Full Frame Images and also maintains an FAQ page.

The deadline to submit proposals for TESS GI Cycle 2 is February 28, 2019. Cycle 2 covers targets in the Northern ecliptic hemisphere. Further information about the proposal process, proposal tools, and permitted science areas can be found on the TESS Science Support Center website.

MIT TESS pages provide information regarding the current schedule of observations. Information on how to submit proposals for Director's Discretionary Targets to be observed

at 2-minute cadence in future sectors can also be found at the MIT site at <https://tess.mit.edu/science/ddt/>.

Questions about the GI program or using TESS data should be sent to tesshelp@bigbang.gsfc.nasa.gov. On February 11-14, STScI will also host a TESS Data Workshop to kickstart community analysis following the public release of the first four sectors. See the [Data Workshop page](#) for details and registration information, and contact the [Archive Helpdesk](#) for any other questions on this event.



Funding for the TESS mission is provided by NASA's Science Mission directorate. TESS team partners include the Massachusetts Institute of Technology, the Kavli Institute for Astrophysics and Space Research, NASA's Goddard Space Flight Center, MIT's Lincoln Laboratory, Orbital ATK, NASA's Ames Research Center, the Harvard-Smithsonian Center for Astrophysics, and the Space Telescope Science Institute.

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IMPROVED MAST API USER AUTHENTICATION NOW ACTIVE

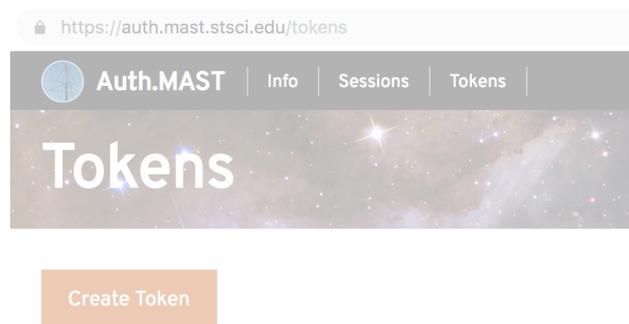
**THE USE OF API TOKENS FOR USER AUTHENTICATION WILL PROVIDE BOTH
INCREASED SECURITY AND MORE EFFICIENT CODING OF CURL AND ASTROQUERY
SCRIPTS.**

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The latest MAST Portal release (v3.8) includes a change to the API authentication mechanism used in downloading exclusive access data via cURL or Astroquery. Instead of using a MyST account username and password, users will now need to provide an API token in order to download protected data programmatically. This change was made to improve the stability of users authorizing with MAST using scripts or third-party applications. It also significantly improves security by eliminating the need to embed usernames and passwords in third-party applications and scripts. This change affects only exclusive access data downloads via cURL or Astroquery, and data access through the MAST Portal will work with your MyST credentials as usual.

API tokens are a short blurb that the MAST API will accept to identify a particular user profile. Visit the Auth.MAST website to manage your MAST API tokens and web sessions, using your MyST login. Both Astroquery and the cURL download script will have instructions on how to create and use these tokens. Users should also be sure to get the latest version of Astroquery to ensure compatibility.



The Auth.MAST Token Portal

Visit <https://auth.mast.stsci.edu> to get more details about this new and improved authentication mechanism built on top of your MyST account. Additional questions on the creation and use of API tokens, or other feedback, can be directed to the Archive Helpdesk.

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EXO.MAST NOW INCLUDES TARGETS FROM THE NASA EXOPLANET ARCHIVE

EXOPLANET TARGETS AND ASSOCIATED METADATA ARE NOW AVAILABLE TO SEARCH FOR DATA ACROSS MAST MISSIONS.

NOVEMBER 28, 2018



MAST is happy to announce that exoplanet listings and metadata from the [NASA Exoplanet Archive](#) are now available in the [exo.MAST Portal](#)! Combined with data from [exoplanets.org](#), there are now over 6000 exoplanets and candidates available for query through [exo.MAST](#). This allows users to search by planet for target data across MAST missions, and provides access to exoplanet and stellar properties with references, interactive plots of light curves, and transmission spectra.

EXO MAST

The [Data Coverage plot](#) shows observations, as a function of orbital phase, across missions like Hubble, Kepler/K2, & soon TESS! Seamlessly access data by selecting time windows of interest. For transiting planets, easily find observations taken during transit!

The [Kepler Lightcurve plot](#) shows stitched light curves folded on the orbital period. It's also folded at twice the period to show the odd/even transits, which can be used to look for false positives.

The [Transmission Spectra plot](#) shows spectral data from HST. You can directly download the spectra in text format, and a link to the paper abstract from which the data are taken.

For additional details on the [exo.MAST Portal](#), see the [August announcement article](#). Further questions on querying [exo.MAST](#) and retrieving exoplanet data can be directed to the [Archive Helpdesk](#).

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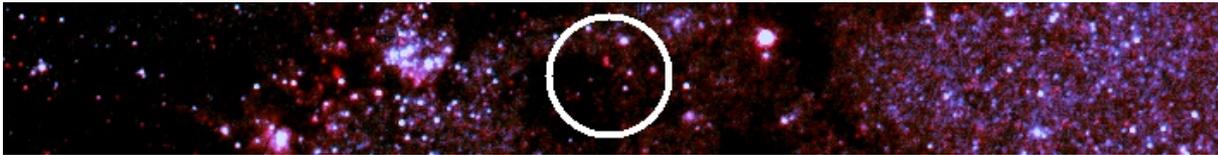
**NEW AND UPDATED HIGH-LEVEL SCIENCE PRODUCT COLLECTIONS AT MAST
INCLUDE A NEW SURVEY OF NEARBY CORE-COLLAPSE SUPERNOVAE, A NEW
OUTREACH IMAGE OF A YOUNG STAR SYSTEM, AND UPDATES TO TESS EXOPLANET
CANDIDATES.**

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NEW:

- **CCSNE** (B. Williams et al. 2018) is a two-filter imaging survey with HST of areas surrounding historic, nearby core-collapse supernovae. The imaging survey provides 9 new pointings (plus 9 parallel fields) with WFC3 and ACS. The collection also provides catalogs of stars in these regions, which are used to infer the initial supernova progenitor masses by fitting stellar evolution models.



UPDATED:

- The **STScI Outreach Imaging** team has released a set of HST infrared images revealing a planet-forming disk around a young star, HBC 672 (aka EC 82), located in the Serpens Nebula. Nicknamed the "Bat Shadow", this feature shows the unseen disk of rock, ice, and dust casting a shadow in the light of the bright young star. Images in FITS format and interactive displays are available at the MAST project page.



- A number of new exoplanet candidates have been added to the **TESS Data Alerts** collection from TESS Sectors 1 and 2. For the first time, some candidates also include sector-combined data validation files. See the [Data Alerts page](#) at MAST for access to the light curve, target pixel files, and data validation reports.



If you are thinking about contributing a High-Level Science Product of your own, please fill out the [HLSP Interest Form](#) to get started. HLSPs archived on MAST enjoy permanent hosting space, additional visibility, and, often, [increased citation rates](#). Any further questions on the process can be sent to the [Archive Helpdesk](#).

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MAST STAFF



IMPROVED MAST API USER AUTHENTICATION NOW ACTIVE

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EXO.MAST NOW INCLUDES TARGETS FROM THE NASA EXOPLANET ARCHIVE

SCOTT FLEMING



NEW AND UPDATED HLSPS FOR NOVEMBER

SCOTT FLEMING



ABOUT

This newsletter is a MAST publication produced by Greg Snyder, Peter Forshay, and Jonathan Hargis, 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).

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