1.0 - Introduction to TESS

The Transiting Exoplanet Survey Satellite (TESS) is an all-sky transit survey whose principal goal is to detect Earth-sized planets orbiting bright stars amenable to follow-up observations to determine planet masses and atmospheric compositions. TESS conducted high-precision photometry of more than 200,000 stars during its primary two-year mission with a cadence of approximately 2 minutes (and 20 seconds in the extended mission for select targets). These targets are read out as postage stamps and made available to the community as target pixel files (TPFs) and calibrated light curves. In addition, the full image frame is read out every 30 minutes (10 minutes in the first extended mission, 200 seconds in the second extension). These Full Frame Images (FFIs) will enable users to conduct photometry on any target within the 24x96 degree field-of-view. For more information on the data products provided by the TESS mission, see the Data Product Overview section in this Archive Manual.

The Mikulski Archive for Space Telescopes (MAST) is a NASA-funded project to support and provide to the public a variety of astronomical archives, with a primary focus on space-based telescopes operating in the optical, ultraviolet, and near-infrared parts of the spectrum. MAST is located at the Space Telescope Science Institute in Baltimore, MD, USA. TESS is one of the missions that MAST supports, alongside other missions like the Hubble Space Telescope, James Webb Space Telescope, Kepler, and K2. MAST is an Affiliated Data Center for the Gaia mission, is the archive for the PanSTARRS project, and plays a leading role in the Virtual Observatory. Having TESS data co-located with more than 20 other missions spanning many decades and covering many parts of the electromagnetic spectrum allows for powerful and unique searches and analyses. See the Data Search Tutorials section in this Archive Manual for some examples.

Quick Links

TESS Homepage at MAST

TESS Homepage at Goddard

TESS Homepage at MIT

ExoFOP-TESS at NExScI