

# How to find and access **TESS** data

**NASA's Transiting Exoplanet Survey Satellite (TESS)** is a space-based observatory that is performing a near all-sky survey to search for planets transiting nearby stars, as well as a variety of transient and variable events. During science operations, continually over 27 days TESS takes a stream of images which are later reprocessed into three data products: Full-Frame Images (FFIs) are stacked, full-CCD images. Target Pixel Files (TPFs) are CCD cutouts of regions around selected targets stacked at the 20-second or 2-minute cadences. Light Curve Files are time-series measurements of source targets in the high-cadence TPFs.

## Tools to discover if TESS data of an object(s) exist:

### [TESS-Point Web Tool](#)

- Enter an individual ra, dec or upload target list csv file on an interactive web page

### [TESS-Point](#)

- Command line python script
- Enter an individual RA, Dec or pass a csv file
- Most accurate, but requires download & setup

### [tesswcs](#)

- python package that can be used to check TESS pointings, create TESS field of view maps, and more!

## Tools to discover if TESS data of an object(s) exist, and access that data:

### [lksearch](#)

- Used to find and download TESS/Kepler/K2 data
- Search for light curves, target pixel files, Data Validation reports, and more!
- Includes catalog search functionality and lightweight catalog crossmatching

### [lightkurve](#)

- Used to find and download TESS data at the start of many Python Notebooks / pipelines
- Individual search methods for different data products
  - [search\\_lightcurve\(\)](#) will search for SPOC calibrated TESS 20-s or 2-minute light curves
  - [search\\_targetpixelfile\(\)](#) will search for tpfs associated with SPOC calibrated light curves
  - [search\\_tesscut\(\)](#) will use TESSCut's API (below) to create a custom target pixel files
  - [search\\_result.download\(\)](#) to download search data

### [MAST Web Portal](#)

- Individual target search and bulk target file upload

### [TESScut](#)

- Allows you to create a 'postage stamp' cutout (TPF) from a given sector's FFIs
- Single target via website and API for automation and bulk downloads

## Tools to access large amounts of TESS bulk data

### [MAST TESS Bulk Downloads](#)

- Bulk Download options for FFI's, TPF's & Light Curves and TIC/TOI/TCE Catalogs

### [TICA Calibrated FFIs](#)

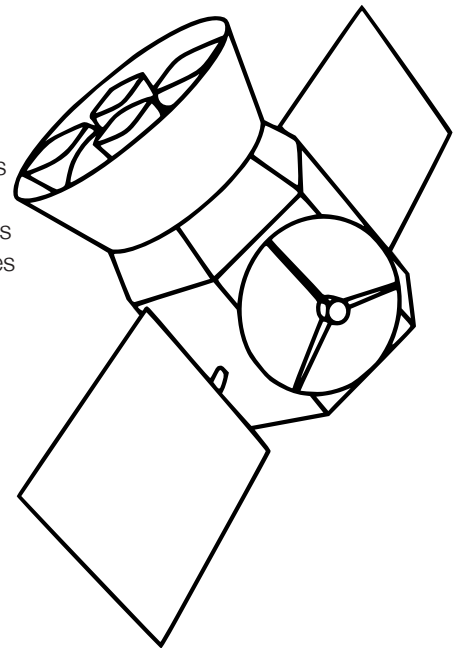
- A High Level Science Product (HLSP) of calibrated TESS FFI's that serve as the input to the MIT Quick Look Pipeline

## General information and resources on TESS data products & pointings:

[Timeseries Integrated Knowledge Engine \(TIKE\)](#) - Online JupyterHub for accessing and processing TESS data in the cloud

[TESS Pointings](#) - Details of where TESS has observed and future plans

[TESS Input Catalog \(TIC\)](#) - TIC is a compiled catalog of every persistent, non-solar system object in the sky that is a potentially observable TESS target. All TESS GI targets will have a unique TIC, but not all TICs will have been targeted with high cadence observations



Check to see **if a target was observed** by TESS

**A few targets:**

[TESS-Point](#) / [TESS-Point Web Tool](#)

[lksearch](#)

[MAST Portal Search](#)

[TESScut Web Service](#)

[tesswcs](#)

**Lots of targets:**

[TESS-Point](#) / [TESS-Point Web Tool](#)

[lksearch](#)

[MAST Portal Search](#)

[tesswcs](#)

Check to see **what kind of data exists** for a target

**A few targets:**

[lksearch](#)

[Lightcurve](#) - [search lightcurve](#) AND [tesscut](#)

[MAST Portal Search](#)

[toco](#)

**Lots of targets:**

[lksearch](#)

[Lightcurve](#) - [search lightcurve](#) AND [tesscut](#)

[MAST Portal Search](#)

Get TESS **processed lightcurves** for high-cadence targets

**A few targets:**

[Lightcurve](#) - [search lightcurve\(\)](#)

[MAST Portal Search](#)

[lksearch](#)

**Lots of targets:**

[Lightcurve](#) - [search lightcurve\(\)](#)

[lksearch](#)

[MAST Bulk Downloads](#)

Get TESS **processed target pixel files** for high-cadence targets

**A few targets:**

[MAST Portal Search](#)

[Lightcurve](#) - [search targetpixelfile\(\)](#)

[lksearch](#)

**Lots of targets:**

[lksearch](#)

[Lightcurve](#) - [search targetpixelfile\(\)](#)

[MAST Bulk Downloads](#)

Get TESS **custom target pixel files** for targets in FFI data

**A few targets:**

[Lightcurve](#) - [search tesscut\(\)](#)

[TESScut Web Service](#)

[lksearch](#)

**Lots of targets:**

[Lightcurve](#) - [search tesscut\(\)](#)

[TESScut API](#)

Get **bulk downloads** for any kind of TESS data & products

**Lots of targets:**

[lksearch](#)

[MAST Bulk Downloads](#)

[TICA Calibrated FFI's](#)

