

# **NASA's TESS Mission Interactive Data Workshop**

AAS 245 Meeting – National Harbor, MD

Gaylord National Resort & Convention Center

Room: National Harbor 2

Saturday 11<sup>th</sup> Jan - Sunday 12<sup>th</sup> 2025, 9am - 5pm ET

NASA's TESS mission (launched in 2018) provides the community with high cadence, optical time-series across the sky, with nearly continuous observations lasting between 27 days and one year. TESS operations have been extended through September 2025, and so TESS will continue to provide time-series data for users on hundreds of thousands of targets, as well as Full Frame Images of >2000 square degrees of the sky each month. These observations provide valuable resources for a wide range of astronomy; the detection of exoplanets, the investigation of stellar variability, the identification of extra-galactic transient events, the study of AGN, and more.

This two-day workshop is presented to the community to learn about TESS, learn how to obtain data (and research funding!) through the TESS General Investigator Program, learn how to quickly get to work with the data - all of which is available with no exclusive access period, and learn about TIKE - a JupyterHub service provided by the STScI which can help you access and analyze your TESS data. This workshop is ideal for both new and established users of TESS data and TIKE. New users can expect to learn where to get started with obtaining and using data. More experienced users can expect to learn about the 200s observing mode and updated analysis techniques. We strongly encourage participation from scientists at all career-stages, working on extragalactic astronomy, stellar astronomy, exoplanet astronomy. We additionally encourage attendance from anyone interested in proposing for TESS observations.

The workshop will consist of; i) short talks introducing the NASA TESS mission ii) explanations of how to propose for TESS observations and obtain research funding in upcoming proposal calls iii) tutorials on working with TESS data iv) how to work with TIKE and to optimize your script for the cloud v) interactive work-with-the-experts sessions to show you how to work with TESS data and TIKE for your own targets. Please bring a laptop for these in person interactive sessions!

Day 1: Saturday 11<sup>th</sup> Jan 9am – 5pm ET

Time	Title	Duration
9:00	Introduction to this event	10 mins
9:10	Introduction to TESS	20 mins
9:20		
9:30	Introduction to TIKE	10 mins
9:40	Beyond Exoplanet Science with TESS	20 mins
9:50		
10:00	Break	10 mins
10:10	Proposing for TESS Data and Time	40 minutes
10:20		
10:30		
10:40		
10:50	How to Find if Your Target was Observed by TESS	20 mins
11:00		
11:10	Break	10 mins
11:20	MAST: How to Access TESS Data	30 mins
11:30		
11:40		
11:50	Tutorial: Detrending Spacecraft Systematics	40 mins
12:00		
12:10		
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12:30	Lunch (Not Included)	60 mins
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13:30	Hackathon: Work with the experts directly on your science areas!	3 hrs
13:40		
13:50		

14:00	In this interactive session please bring your laptops to work directly with TESS scientists and hack on your own projects. We will organize into small groups and presenters will be available to give advice, answer questions, and debug code!	
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16:40	Wrap Up	20 mins
16:50		

Day 2: Sunday 12<sup>th</sup> Jan 9am – 5pm ET

Time	Title	Duration
9:00	Introduction to day 2	10 mins
9:10	Introduction to MAST	10 mins
9:20	Querying for data in MAST	20 mins
9:30		
9:40	Cross-matching the TIC	20 mins
9:50		
10:00	Break	10 mins
10:10	Tutorial: Introduction to the Cloud and TIKE (code along)	60 minutes
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11:10	Break	10 mins
11:20	Optimizing your scripts for the cloud/TIKE	60 mins
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12:20	TIKE as a tool for education	10 mins
12:30	Lunch (Not Included)	60 mins
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13:30	Office hours: Work with the experts directly on your science areas!  For this interactive session, please bring your laptops. You'll work directly with TESS/MAST scientists and hack on your own projects. TIKE experts will be in attendance to get your scripts running in the cloud!	3 hrs
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16:40	<b>Wrap Up</b>	20 mins
16:50		