

Postdoctoral Position in Time-Series Astronomy with the NASA TESS Mission Data

Applications are now being accepted for one or more Postdoctoral Research Associates in the analysis of time-series astronomy data from the NASA TESS mission, based at NASA's Goddard Space Flight Center (GSFC) in Greenbelt MD. The position consists of a postdoctoral appointment in the University of Maryland, Baltimore County's (UMBC) Center for Space Sciences and Technology ([CSST](#)), funded by NASA through the Center for Research and Exploration in Space Science and Technology II ([CRESST II](#)).

The successful applicant(s) will work with Dr. Christina Hedges to extract time-series flux data from NASA's TESS mission on solar system objects. NASA's TESS mission is a survey, observing large portions of the sky each month at high cadence. TESS data includes "Full Frame Images" (FFIs) that each cover approximately 12 square degrees on the sky. This dataset is valuable for searching for time-domain astronomical phenomena such as transiting exoplanets, stellar flares, and supernovae. These surveys also observe bright solar system objects in these FFIs which provides a unique window into solar system objects with long baseline, uninterrupted photometry. However, they are challenging to extract due to their motion, and TESS noise. The successful applicant(s) will work to build on and improve existing methods and Python tools to extract solar system objects from the TESS data and produce and analyze a dataset of the time-series photometry.

GSFC is a vibrant community of over 100 Ph.D. astronomers and encourages participation and collaboration. The successful candidates will have at least 20%-time to pursue independent research. All duties related to the TESS Mission and independent research are fully funded through this position.

Candidates for the position must have a Ph.D. in astronomy, astrophysics, physics, computer science, data science or a related field by the date of the appointment. A qualified candidate would have experience in the following:

- Working with time-series data from space-based observatories (e.g., NASA Kepler, K2, TESS, HST)
- Photometry methods
- Statistical analyses of time-series data
- Building and working with Python pipelines for working with astronomical data
- Version controlling with git/github

Additional expertise in any of the following is beneficial, but not required:

- Detrending time-series data
- Working with large datasets
- High performance computing
- Working with bayesian modeling frameworks (such as pymc3)
- Building hierarchical models
- Python packaging

Candidates should send a cover letter, CV (including publication list), a 3-page statement of research interests, and contact information for three references via email to Ms. Katherine McKee (katherine.mckee@nasa.gov). Complete applications received by August 27, 2023, will receive full consideration, this position will otherwise remain open until filled.

The nominal start date for this position is in Fall 2023, the exact date to be decided by mutual agreement. This position is funded for 2 years, with the possibility of extension depending on the availability of funding. Flexible work from home options are available for this position. The successful candidate will be expected to be onsite at GSFC a minimum of 2 days a week, though they may work onsite up to 5 days a week.

Salary and benefits are competitive, commensurate with experience and qualifications. For more information about the proposed research, contact Dr. Christina Hedges (christina.l.hedges@nasa.gov). For information about CRESST II or UMBC, contact Dr. Don Engel (donengel@umbc.edu). Vaccination is strongly recommended for UMBC students, faculty, and staff. UMBC is committed to inclusive excellence and innovation and strongly encourages applications from women, minorities, veterans, and individuals with disabilities. UMBC is an equal opportunity employer and welcomes all to apply. We strongly encourage members of underrepresented groups to apply.