D.3C(S) TESS General Investigator – Cycle 9 (Supplementary Information)

Ver. 1.0; Last Update: July 10, 2025

NOTICE: This preliminary text is supplementary to the D.3C TESS Investigator Observer program element in ROSES 2025. The execution of the TESS Cycle 9 General Investigator Program is contingent upon the outcome of the 2025 Astrophysics Senior Review. The most up to date version of this file can always be found at https://heasarc.gsfc.nasa.gov/docs/tess/proposing-investigations.html.

1.1 Overview

The Transiting Exoplanet Survey Satellite (TESS) General Investigator (GI) Program solicits proposals for the acquisition and analysis of new scientific data from the TESS mission, a NASA Explorer mission that was launched in April 2018 and began science operations in July 2018. Additionally, proposals that support the acquisition and/or analysis of scientific data from ground-based telescopes are solicited. Such ground-based programs must directly support the analysis and/or interpretation of TESS scientific data.

TESS was designed to monitor the brightness of nearby, bright F, G, K, and M stars to photometrically search for transiting planets smaller than Neptune. (See Ricker et al., 2015, *Journal of Astronomical Telescopes, Instruments, and Systems*, 1, 014003, for a detailed description). In its prime mission, TESS targeted more than 200,000 stars spread over the celestial sphere with a photometric sensitivity sufficient to permit the detection of transiting planets with a radius less than 2.5 Earth radii. Now in its extended mission as of July 2020, TESS continues to enable the search for transiting planets. TESS's high-precision, continuous baseline photometric capability is also well suited to time domain astronomy, which includes studies of stellar variability and asteroseismology research, and analyses of both Galactic and extragalactic astrophysical sources.

Observations associated with the TESS GI Cycle 9 solicitation are expected to be executed between September 2026 and September 2027.

There is no exclusive-use period associated with the data from TESS observations. All mission products will be made available through the Space Telescope Science Institute's Mikulski Archive for Space Telescopes (MAST) public archive once data processing and validation are complete.

Funding through the NASA TESS GI Program is available only to scientists at U.S. institutions who are identified as the Principal Investigators (PIs). No sub-awards will be made by NASA except in the case of Civil Servant Co-Is, who are eligible for direct subawards. U.S. based Co-Is on foreign-led proposals do not qualify for funding. Funding for accepted target proposals will typically be initiated only after the first data collected for the proposed investigation are uploaded to the MAST.

1.2 The TESS Mission

A detailed discussion of the TESS prime and extended missions and their scientific objectives can be found at https://tess.gsfc.nasa.gov. The TESS instrument consists of four wide field-of-view (FOV) cameras, each of which observes a 24x24 square degree field. The cameras are aligned with their fields adjacent, such that the instantaneous field-of-view is 24x96 square degrees.

During Cycle 9, TESS will continue its third extended mission. TESS will usually observe each sector continuously for two spacecraft orbits (2x approximately 14 days), with the boresight of the four-camera array pointed nearly antisolar. Data will be downlinked twice per orbit (approximately every 7 days). Data products collected will include full-frame images (FFIs) every 200 seconds, 120-second cadence sub-image data for approximately 8,000 pre-selected GI targets per sector, and 20-second cadence sub-images for approximately 2,000 pre-selected GI targets per sector. These GI targets are awarded through the GI program. There are no restrictions on what targets can be proposed as part of GI programs, as long as they are visible in the sectors to be observed in Cycle 9.

Additional targets will be observed at 120- and 20-second cadence that include Director's Discretionary Targets (DDT) and exoplanet targets chosen by the TESS project team.

Cycle 9 will observe fields in the Southern Ecliptic Hemisphere, Ecliptic, and Northern Ecliptic Hemisphere. Figure D.3C(S)-1 shows the layout of the TESS Cycle 9 observing strategy and Table D.3C(S)-1 provides the telescope boresight pointing parameters. The spacecraft pointings in this document are preliminary, and may be updated before the deadline of this call. The final observing plan for Cycle 9 will be posted at https://heasarc.gsfc.nasa.gov/docs/tess/proposing-investigations.html and https://tess.mit.edu/observations/ prior to the GI proposal deadline.

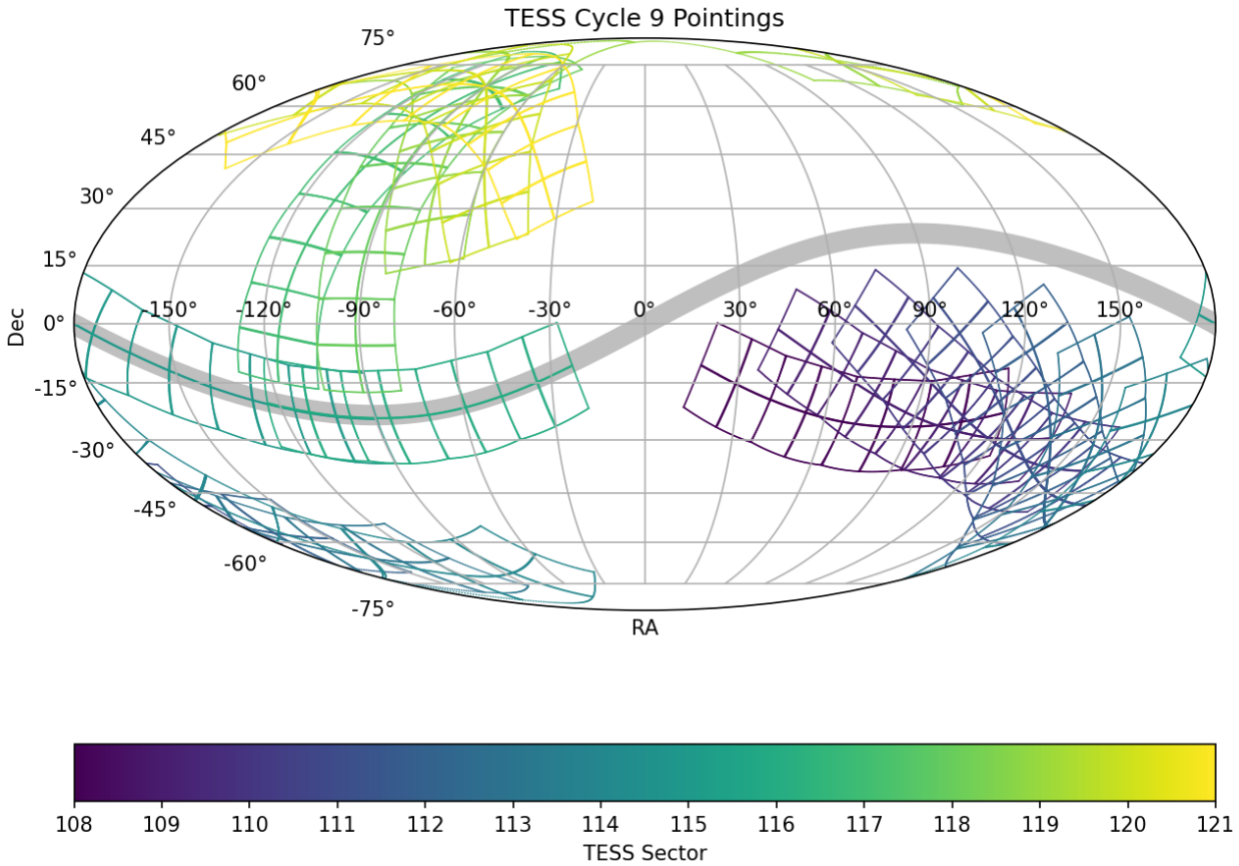

Figure D.3C(S)-1. TESS Cycle 9 pointings. The ecliptic plane is highlighted in gray. These pointings are preliminary and subject to change.

Sector	RA	Dec	Roll	Start	End
108	66.2663	-25.1811	261.1568	9/7/26	10/5/26
109	86.382	-22.6679	249.8954	10/5/26	10/31/26
110	106.0743	-23.7944	238.6947	10/31/26	11/26/26
111	125.4703	-28.2718	228.4036	11/26/26	12/22/26
112	145.1712	-35.6981	219.7678	12/22/26	1/17/27
113	166.4824	-45.527	213.9682	1/17/27	2/13/27
114	192.2167	-56.6197	213.7675	2/13/27	3/14/27
115	219.6384	-16.0606	251.3437	3/14/27	4/12/27
116	288.1479	-23.3419	276.7904	4/12/27	5/10/27
117	251.5614	32.2829	347.6386	5/10/27	6/7/27
118	269.0677	30.5688	359.3655	6/7/27	7/3/27
119	274.188	61.9047	19.4458	7/3/27	7/29/27
120	278.1539	62.9604	40.3192	7/29/27	8/23/27
121	281.2282	64.6669	62.6836	8/23/27	9/19/27

Table D.3C(S)-1. Pointing parameters of TESS Cycle 9

TESS Cycle 9 will continue the rolled sectors from TESS Cycle 8, which will result in certain locations on the sky being observed repeatedly for multiple sectors consecutively. Investigations that make use of having consecutive sectors for particular targets are explicitly encouraged. The durations of each sector are shown in Figure D.3C(S)-2.

TESS Cycle 9 will also fill in a large gap in the TESS survey that has not yet been observed, leading to some targets being observed for the first time in Cycle 9.

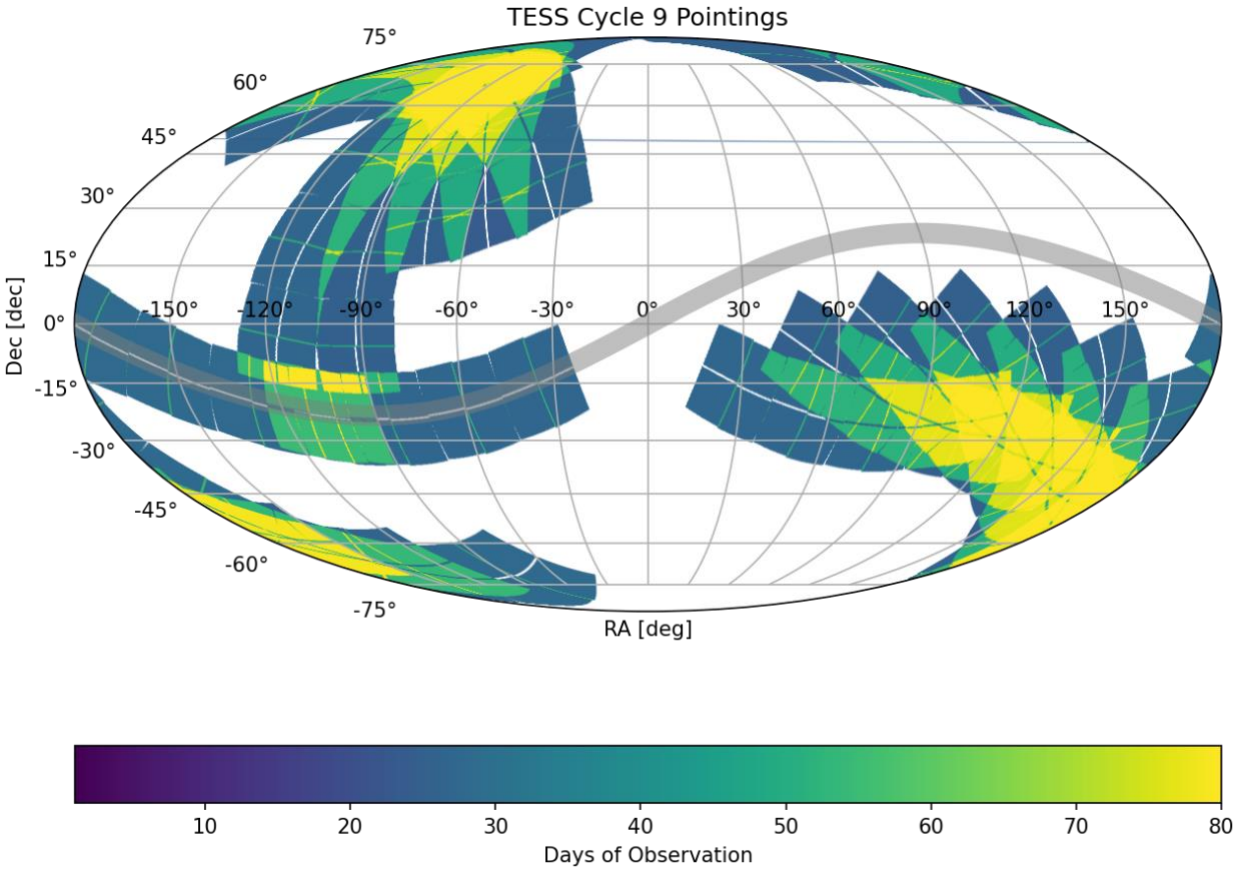

Figure D.3C(S)-2. TESS Cycle 9 pointings in terms of duration. The ecliptic plane is highlighted in gray. Cycle 9 will continue the rolled sectors from TESS Cycle 8.

General investigators can assess whether targets are observable using i) the tess-point command line tool (https://github.com/tessgi/tess-point), ii) the tess-point web interface (https://heasarc.gsfc.nasa.gov/wsgi-scripts/TESS/TESS-point_Web_Tool/TESSpoint_Web_Tool/wtv_v2.0.py/), or iii) the tesswcs (https://github.com/tessgi/tesswcs) Python tool.

1.2.1 *Observing Modes and Data Products*

TESS observes both Full Frame Images (images from a 2048x2048 pixel region of each CCD) and Target Pixel Files. When taken as Target Pixel Files, data for specific targets are saved onboard and transmitted as "postage stamp" sub-images. Each postage stamp sub-image has an area sufficiently large to accommodate the optimal aperture for the astrophysical target and pixels from which the local background can be calculated. Extended or very bright objects can be accommodated with more appropriately chosen sub-image pixels. Postage stamp observations are collected at either 120- or 20-second cadence, which is shorter than the 200s Full Frame Image cadence. FFI and postage stamp observations consist of 2 second frames, coadded onboard the TESS spacecraft to a cadence of either 20, 120, or 200 seconds.

The TESS Target Pixel File data are processed with a data reduction pipeline based on software developed for the Kepler mission. This pipeline performs pixel-level calibration, background subtraction, aperture photometry, identification, and removal of systematic errors for both 120- and 20-second cadence postage stamp data, and the search for transit signals in the 120-second cadence postage stamp data. The pipeline calibration corrects for bias level, smear, flat fielding, dark current, background, and instrument noise, and identifies galactic cosmic ray hits inside the optimal target aperture. FFI data are calibrated by the pipeline, but does not have background subtracted, and optimal target apertures are not provided.

For cadences of 120 or 200 seconds, onboard Cosmic-Ray Mitigation (CRM; see *TESS Instrument Handbook* Section 5.1) is used. When CRM is used, for each pixel timeseries in any dataset, CRM will remove the highest and lowest values from 10 frames before coadding, in order to remove cosmic ray hits from the dataset. For 20-second postage-stamp data, this process is not used. As such, the 20-second data has different noise properties than the 120-second data and will contain more cosmic ray events. For any target with 20-second data with no CRM, the mission will also provide data at 120-second with CRM.

Data distribution and archival services are performed through the Mikulski Archive for Space Telescopes (MAST). Final data products available to GI observers include raw and calibrated target pixel files, pipeline-produced light curves for each postage stamp target, and raw and calibrated images for the FFI data.

Data are archived in standard FITS formats for images and light curves. Proposers should be aware that pipeline-generated light curves may not be optimal for all science programs and plan their analyses accordingly.

In addition to the standard mission products, there are several TESS High-Level Science Products (HLSPs) available at the MAST that can be accessed from https://archive.stsci.edu/hlsp/. Details on all those products are available at that webpage. Working with High Level Science Products is permitted in TESS GI programs where data is required from Cycle 9. Proposals should justify these choices in the Science/Technical/Management (S/T/M) section.

1.2.2 *Instrumentation and Technical Capabilities*

TESS has neither changeable filters nor dispersing elements. Photometry is taken through a broad bandpass ranging from 600 to ≥1000 nm. There is no hard brightness limit for TESS. Additional details can be found in the Instrument Handbook available under the Documentation section at the MAST TESS webpage: https://archive.stsci.edu/missions-and-data/tess.

The tess-point web interface (https://heasarc.gsfc.nasa.gov/wsgi-scripts/TESS/TESSpoint_Web_Tool/TESS-point_Web_Tool/wtv_v2.0.py/) provides target visibility windows, estimates an object's magnitude in the TESS bandpass, and estimates the 1-sigma noise level for a given target.

1.3 Permitted General Investigator Science

The primary purpose of the TESS GI Program is to enhance and maximize the science return from TESS. The program facilitates and supports investigations using postage stamp observations, research undertaken with FFIs, and ground-based supporting observations of TESS targets, including radial velocity measurements of TESS exoplanet host stars. Proposals may also be a combination of postage stamp target requests, FFI analysis, and ground-based observing support. If new observations of postage stamp targets are required, the specific targets requested must be included in the target list. No targets are guaranteed to be observed outside of the GI Program. Proposals to the GI Program may make use of TESS HLSPs as the primary TESS data product used in the analysis. In this case, proposers should address the potential risk in their proposal that there is no guarantee that any given HLSP will be publicly available on a regular cadence.

This section discusses the proposals that are compliant with the TESS General Investigator proposal call. This is summarized in the flowchart in Figure D.3C(S)-3.

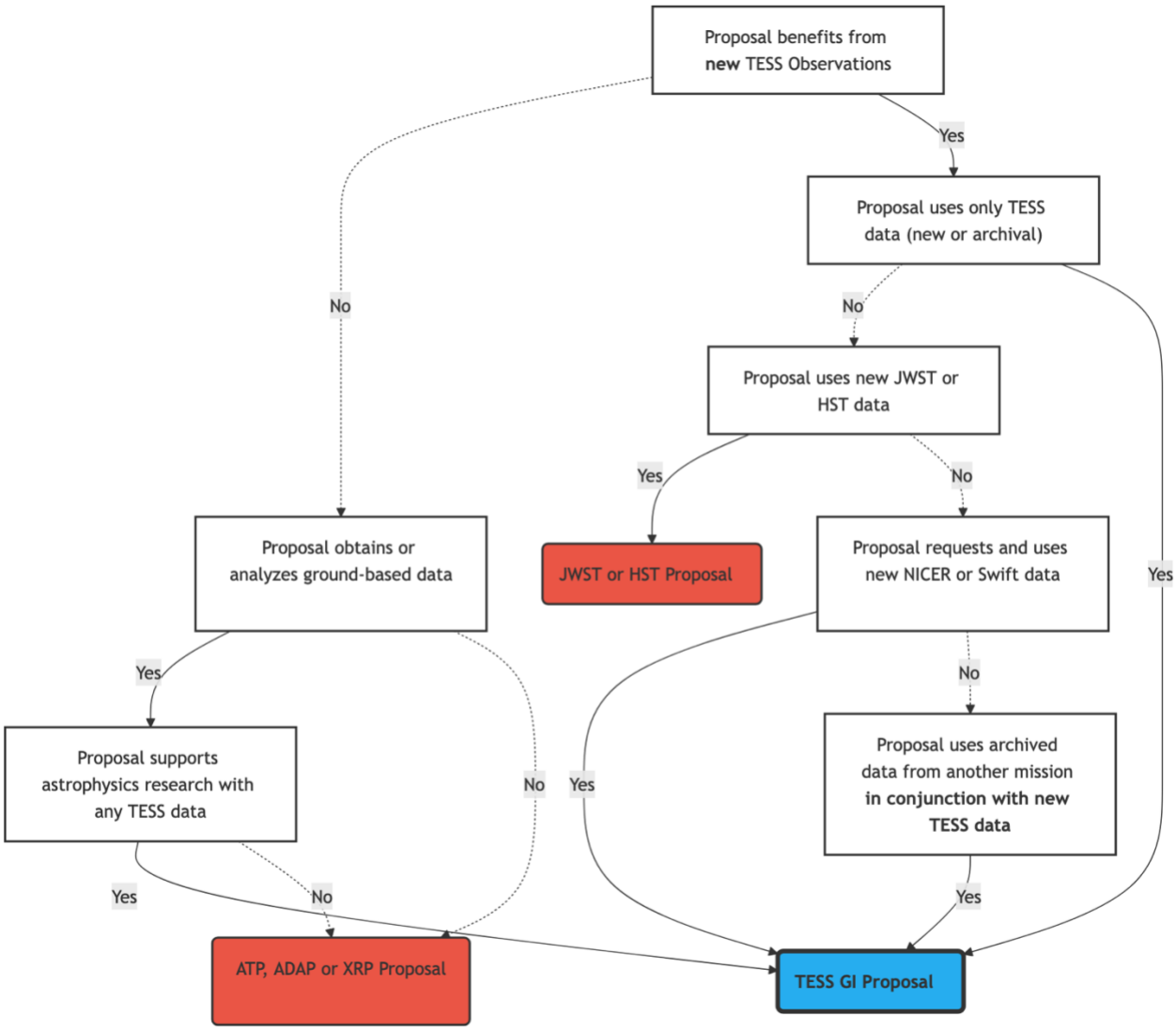

Figure D.3C(S)-3. Flowchart showing which proposal calls are available to General Investigators.

1.3.1 *Proposal Types Overview*

The TESS General Investigator call has the following types of proposal.

Proposal **sizes**:

- **Mini**: A 2-page, unfunded proposal requesting a small number of targets (1-100)
- **Small**: A 4-page proposal, which may request up to $90,000 in funding, and may request a moderate number of targets (~1000)
- **Large:** A 6-page proposal, which may request up to $250,000 in funding, and may request a large number of targets (>>1000)
- **Key: TBD. May be solicited depending upon the final determination of award funding.**

Proposal **categories**:

- **Regular:** These proposals are regular GI programs. Proposed work must clearly require new data taken during Cycle 9 (see section 1.3.2).
- **Ground-based**: These proposals are expected to be 10-20% of proposals submitted, and are to obtain or analyze ground-based data to support TESS science. These proposals may use any TESS data, including archived data. See section 1.3.5.
- **Joint proposal**: These proposals are expected to be ~5% of proposals submitted. These proposals request time from other facilities in concurrence with observations from TESS Cycle 9. See section 1.3.6.

A proposal of any size, and any category can request targets (see section 1.6), including targets of opportunity (see Section 1.3.7).

1.3.2 *Archival Data vs. New Data Requirements*

The scientific justification of a GI proposal should focus on a compelling investigation that either:

a) benefits from the collection of TESS Cycle 9 data (regular proposal) or
b) benefits from the analysis of new or archival ground-based data which supports the analysis and/or interpretation of TESS data from Cycle 1 through 8 (ground-based proposal).

For a regular TESS GI proposal to be compliant with the TESS General Investigator proposal call, investigations must require new TESS data. Proposals requesting new TESS observations that do not make a clear justification for the benefit of new data in the proposed analysis are not compliant with the TESS General Investigator proposal call. Proposals may use archival data to support their investigation but the investigation must be enabled by new data from Cycle 9. The average TESS target has approximately 3 sectors of archival data. TESS GI programs should demonstrate that new Cycle 9 data will either provide new scientific opportunities by itself, or in conjunction with the archival TESS data. Proposals that require only archival data are not eligible, and must instead be proposed under the NASA ROSES ADAP proposal call. The proposal may include theoretical components, software development, and/or data simulation that strengthen the proposal, but the primary focus of the proposal must be on analysis of TESS data.

TESS Cycle 9 will make use of a new pointing strategy which prioritizes longer continuous pointings at declinations closer to the ecliptic. This strategy is designed to enable, for example, studies of longer period stellar activity, searches for longer period planets, and easier ground-based follow-up. Any investigations that meaningfully require longer continuous observation of targets, and therefore are enabled by TESS Cycle 9, are explicitly encouraged to propose to the GI call.

Examples of compliant regular investigations include (but are not limited to);

- Analyzing new TESS data of newly observed regions of the sky
- Obtaining long period rotation rates for stars using Cycle 9’s rolled sectors

- Analyzing stellar flares using Cycle 9 20s data
- Searching new data for long period exoplanet candidates using Cycle 9 data in conjunction with archival data
- Improving ephemeridess for archival planets using new Cycle 9 data in conjunction with archival data
- Analyzing stellar activity cycles using the long baseline obtained in Cycle 9
- Investigating TDAMM triggers in Cycle 9

Special category: In the category of TESS GI **ground-based observing proposals**, any TESS data from Cycle 1 through to Cycle 9 may be used in the proposed work. If postage stamp targets are requested by a proposal, the choice of 20-second or 120-second cadence should be justified in the S/T/M section.

1.3.3 *Excluded Investigations.*

Proposed investigations in which the primary emphasis is theory/modeling or analysis of archival TESS data are non-compliant. ROSES provides alternative opportunities to exploit or support the TESS mission in these areas:

- Investigations for which the primary emphasis is non-exoplanet theory and/or modeling may be proposed to the Astrophysics Theory Program (ATP; Program Element D.4)
- Investigations for which the primary emphasis is theory and/or modeling or archival data analysis related to exoplanets or protoplanetary disks may be proposed to the Exoplanet Research Program (XRP; Program Element F.3).
- Investigations for which the primary emphasis is analysis of archival data for any topic other than exoplanets or protoplanetary disks may be proposed to the Astrophysics Data Analysis Program (ADAP; Program Element D.2).

1.3.4 *Software and Tools*

Proposals must clearly describe the plans to make any new software, higher level data products and/or supporting data publicly available. Software developed with TESS GI funds must add value to the TESS science community, be freely available, and have the source code openly accessible.

1.3.5 *Ground-Based Focused Proposals.*

Proposals that are focused on ground-based observing programs must have a clear science driver and describe how the ground-based component is both feasible and required for analysis and/or interpretation of TESS data. Programs in this category that will collect new observations from ground-based facilities, especially contemporaneously with TESS observations, are particularly encouraged. Proposals that use only archival ground-based data to support TESS science but do not plan to collect new ground-based data are allowed; such proposals need to be strongly justified. Proposals must describe how the funding would be used to support the collection or analysis of ground-based data in support of TESS, including, for example, purchasing telescope time, instrument development, travel to observatories, support for students, etc. Funding awards of all sizes will be considered; in previous Cycles the TESS GI Program has awarded a total of up to $500,000 to ground-based observing programs.

New ground-based data collected with TESS GI funding support must be made publicly available in a timely fashion at either the NASA Exoplanet Science Institute (NExScI) ExoFOP service (https://exofop.ipac.caltech.edu), as a MAST High-Level Science Product (http://archive.stsci.edu/hlsp/), or at another publicly accessible and established data archive. Other data products created with TESS GI funding support should be archived as a MAST High-Level Science Product (http://archive.stsci.edu/hlsp/).

Investigations for which the primary emphasis is the collection and/or analysis of ground-based data may be proposed to the Exoplanet Research Program (XRP; Program Element F.3), or the NSF Astronomy and Astrophysics Research Grants Program (AAG). However, note that PIs are not permitted to submit proposals that are substantively similar to both this call and the XRP.

See also Section 1.3.2 *Archival Data vs. New Data Requirements*.

1.3.6 *Joint proposals with other facilities*

To foster synergistic observations, TESS has established joint observing programs with the Hubble Space Telescope (HST), the Fermi Gamma-ray Space Telescope (Fermi), the Neutron Star Interior Composition ExploreR (NICER), and the Neil Gehrels Swift Observatory (Swift).

Proposals for joint JWST and HST observations should be submitted through the JWST GO (https://jwst-docs.stsci.edu/jwst-opportunities-and-policies) and HST GO (https://www.stsci.edu/hst/proposing) Programs, and the TESS targets will be recommended by that process.

Proposals for joint Fermi observations should be submitted through the Fermi GI Program (ROSES D.3B), and the TESS targets will be recommended by that review. Funds for selected programs will be awarded from the Fermi project for joint investigations in this case (and no funds will be awarded from the TESS project). Alternatively, proposals that plan to make use of Fermi data may be submitted to the TESS GI program. In this case, TESS GI funding is available to successful U.S.-based investigators. If accepted as a TESS proposal, no funds will be awarded from the Fermi project. Joint observations may be funded through either Fermi or TESS, but not both.

The TESS GI Program can also award Swift and NICER observations through joint programs with the Swift and NICER missions (D.3A). Observing time under these programs will be awarded only to proposals that require use of TESS and Swift and/or NICER to meet the primary science goals. Proposals to these joint programs must clearly justify the need for Swift and/or NICER data and the amount of Swift/NICER time needed to achieve the science goals. These proposals must also present a defined plan for analysis of both the TESS and Swift/NICER data. A minimum of 100 ksec of total Swift time and up to 300 ksec of NICER time will be available through these programs. TESS GI funding is available to successful U.S.-based investigators who request Swift and/or NICER observing time through the TESS GI process. No funds will be awarded from the Swift or NICER projects for joint investigations proposed to this TESS Program element.

1.3.7 Target of Opportunity Observations

The TESS GI Program recognizes the category of Target of Opportunity (ToO) observations of rapidly evolving phenomena whose occurrence is not predictable at the time of the TESS proposal due date. Due to TESS mission constraints, ToO-triggered target definitions can typically only be uploaded to the spacecraft for observations two or three observing sectors after the initial detection. Details regarding the circumstances in which a ToO is triggered must be included in the scientific justification and on the target form. ToO proposals must also include an estimated probability for triggering the observations; the latter will be used in the accounting of total allocated targets. ToOs remain active during the cycle; ToOs not carried out during the cycle must be re-proposed to subsequent solicitations. ToO observations would commence after the spacecraft upload following a trigger. The impact to science of delays of two or three observing sectors between trigger and data collection must be addressed in proposals requesting ToO observations. ToO observations are anticipated to be used in cases where observers require high cadence target data of a new event.

Note that postage stamp observations of targets at either 20- or 120-second cadence may be proposed at any time via the DDT program. Decisions regarding DDT proposals will be made by the TESS Principal Investigator or an official designee. Requests for DDT observations are ineligible for funding under the TESS GI Program.

1.5 On-source Monitoring Times

General investigators can assess whether targets are being observed by TESS at any given time using either the tess-point command line tool (https://github.com/tessgi/tesspoint) or the tesswcs Python tool (https://github.com/tessgi/tesswcs).

1.6 Target Lists

The TESS Input Catalog (TIC) is intended to contain most optically-persistent objects in the sky down to the limits of available photometric catalogs. The TIC enables the selection of optimal targets for planet transit searches, and the calculation of flux contamination in the TESS sub-image for each target. The TIC has been publicly released (v8.2, as of October 2021; this version will be superseded by revisions as available) and is searchable via MAST at http://archive.stsci.edu/tess/. The TIC is documented by Stassun et al. (2019; https://ui.adsabs.harvard.edu/abs/2019AJ....158..138S/abstract), with recent updates in Paegert et al. (2021; https://arxiv.org/abs/2108.04778).

Proposals requesting postage stamp targets are required to submit a target list. Targets must be submitted electronically, at the same time as the science proposal, via the Astrophysics Research Knowledgebase (ARK) Remote Proposal System (RPS) website; https://heasarc.gsfc.nasa.gov/ark/rps/. A definition of each column and a detailed description of the example table can be found at the link to the table template at the TESS Science Support Center website (https://tess.gsfc.nasa.gov/). If a proposed target does not appear in the TIC, the information required to append the target to the TIC must be provided.

2. Programmatic Information

2.1 General Information

Funding in Cycle 9 is anticipated to be available to U.S.-based PIs through this opportunity, see Section 2.2.1. In previous cycles around $2M was made available for the support of approximately 35 Guest Investigations. Of this $0.5M was made available for ground-based proposals. We anticipate the overall budget for Cycle 9 to be similar to Cycle 8. The performance period for awards belonging to proposals in the small category will be exactly 1 year, while awards for proposals in the large category (and Key, if solicited) may have a performance period of 2 years. PIs will be allowed to request a no-cost extension for one additional year as needed. The Cycle 9 GI Program will also award targets to unfunded non-U.S.-based investigations of high merit, as determined by peer review. Additional General Investigator targets will be drawn from proposals in the Mini category (see Section 2.2.1) and from proposals that are not selected for funding if target resources permit. Scientists participating in the TESS mission, including members of the Follow-Up Team, are permitted to propose to the GI Program and are subject to the same program rules as the rest of the science community.

2.2 Proposal Submission and Evaluation

The TESS GI Program uses a two-phase proposal process, consistent with Section IV(b)vii of the *ROSES Summary of Solicitation*. All proposal materials will be submitted electronically; Phase-1 proposals via ARK/RPS, and Phase-2 proposals are submitted via NSPIRES (see Section 2.2.6 below). The science evaluation is based on the Phase1 proposal. There are four categories of Phase-1 proposals, given in Table D.3C(S)-1, below. The Phase-1 peer review will be performed in a "dual-anonymous" manner, i.e., not only are proposers unaware of the identity of the members on the review panel, but the reviewers do not have explicit knowledge of the proposal teams (see Section 2.2.4). Only proposers whose Phase-1 proposals are selected will be invited to submit budget proposals in Phase-2. The detailed cost evaluation by NASA is based on the Phase-2 proposal. The scope of the proposed work must remain consistent between Phase-1 and Phase-2 proposals. The PI may change between the Phase-1 and Phase-2 proposals; any changes in the PI or PI institution from Phase-1 to Phase-2 must be justified in the Phase-2 proposal.

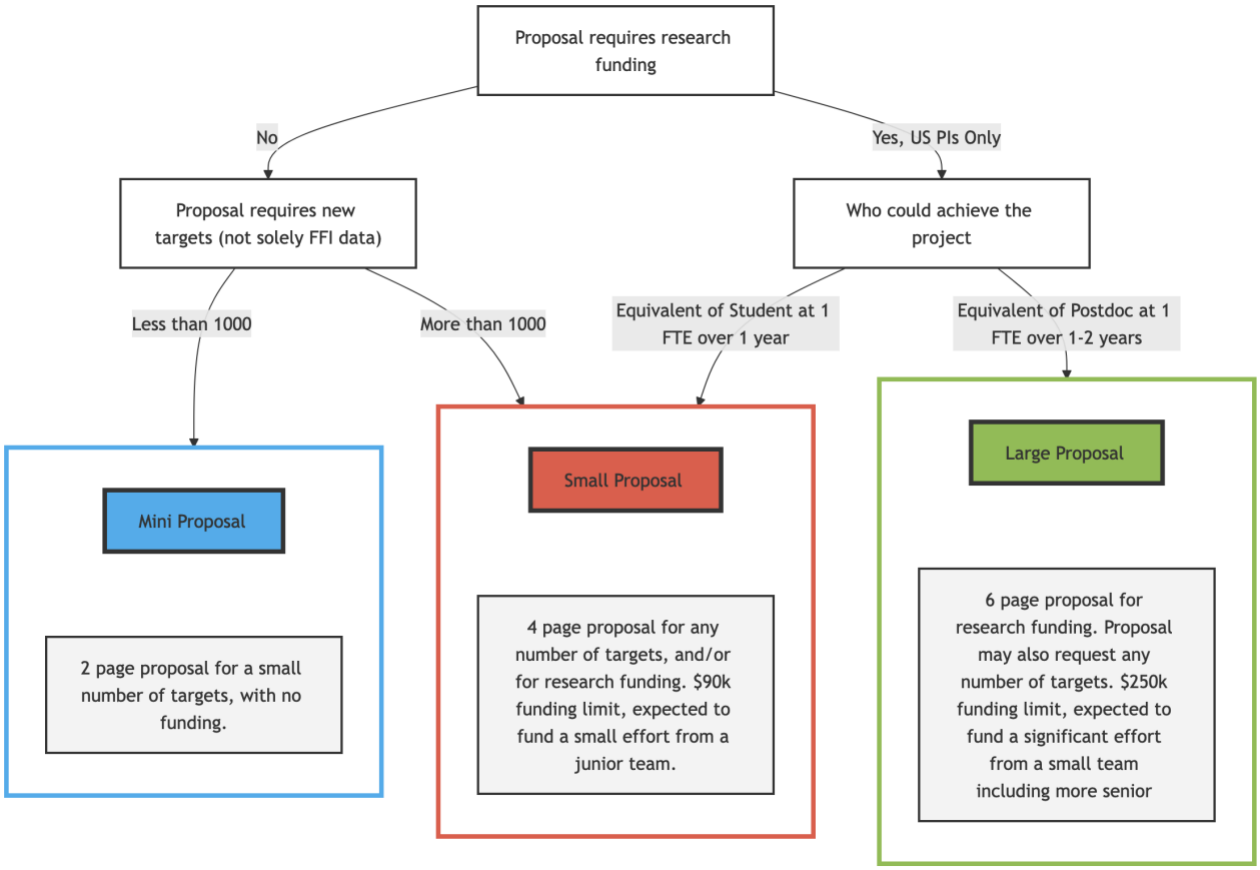

Figure D.3C(S)--4. Flowchart showing the categories of TESS General Investigator

2.2.1 *Categories of TESS General Investigator Proposals*

There are three categories of investigations: Mini**,** Small, and Large. Key projects may be solicited depending upon final determination of award funding. The three categories are summarized in Table D.3C(S)-1.

Mini proposals may request only a small number of targets, and are not eligible for funding. A maximum of 1,000 120-second cadence targets and up to 50 20-second cadence targets may be requested by any single Mini proposal. Requests for ToOs, joint programs with Swift, NICER and Fermi, and ground-based focused programs are not permitted in Phase-1 proposals submitted to the Mini category.

Table D.3C(S)-2. Categories of Phase-1 Investigations

Category	Summary	Maximum award, page limit

Mini	Programs that propose to ensure a specific small set of targets are included in the TESS GI target list, have a limited scope, and/or augment existing projects with targets. This category is designed to be relatively low effort to submit, but is not eligible for funding.	No funding. Up to 2 pages are allotted for the Science/Technical/Management (S/T/M) section.
Small	Programs that result in new scientific insights but are relatively limited in scope. Unlikely to require the development of a large amount of software, or new analysis methods.	Up to $90,000. Up to 4 pages for the S/T/M section.
Large	Programs that have significant scope and complexity. May require significant development of new techniques or software. These programs are expected to provide additional benefit to the science community beyond publishing scientific papers.	Up to $250,000. Up to 6 pages for the S/T/M section. The additional space compared with a Small proposal should be used to describe the benefits that the program will provide to the science community, including a description and schedule of the project deliverables.

Awards for most investigations (i.e., focused analysis and/or relatively small numbers of targets) are expected to be capped at approximately $90,000. Investigations requiring more complex analysis, specialized software development, or a large number of targets, may require funding substantially above the average award (i.e., up to $250,000 per award). Large programs are expected to provide additional benefit to the science community beyond publishing scientific papers (e.g., software releases or other value-added data products). Large proposals will need to provide a compelling justification for the higher funding level, including a detailed work plan that sufficiently justifies the expected work effort. In previous cycles approximately $2 million was made available to support standard Small and Large programs, and are anticipating a similar level of funding for Cycle 9.

In previous Cycles, approximately $500,000 was made available to programs that focus on ground-based observing. Ground-based focused proposals should be identified in ARK/RPS as such and will be reviewed in a panel separately from other Phase-1 proposals submitted to the TESS GI Program. Proposers should identify their program as Small or Large. Mini programs are not permitted in this category. Proposers of ground-based TESS investigations may make use of archival TESS data from previous cycles.

2.2.3 *Submission and Evaluation of Phase-1 Proposals to the TESS GI Program*

A Phase-1 proposal consists of at least two parts: the anonymized science/technical justification, and the separately uploaded non-anonymized Expertise and Resources document. All Phase-1 proposals in the Small, Large, or Key (if solicited) category must include (at minimum) a one-paragraph work plan in the science/technical section. This work plan must give details on how the proposed effort will be carried out, including the allocation of effort amongst investigators (expressed in terms of each participant's role in the investigation to preserve the anonymity of the document).

All Phase-1 proposals requesting funds must also provide upon submission a bottom-line budget number in the provided field of the Astrophysics Research Knowledgebase (ARK) RPS submission form; this number should not be included in the body of the Phase-1 proposal. The detailed cost evaluation will be deferred until Phase-2.

To summarize, proposers to the TESS GI Program should review Table D.3C(S)-1 and must adhere to the following Phase-1 proposal submission procedures:

- All Phase-1 proposals must be submitted via the Astrophysics Research Knowledgebase (ARK) Remote Proposal System (RPS) website at https://heasarc.gsfc.nasa.gov/ark/rps/. Instructions for doing so will be provided at the TESS Science Support Center web site (https://heasarc.gsfc.nasa.gov/ark/tess/help.html);
- Target tables are to be submitted through ARK/RPS and must follow the format given on the ARK/RPS website (https://heasarc.gsfc.nasa.gov/ark/tess/help.html);
- The Scientific/Technical/Management section of Phase-1 proposals is limited to two pages for Mini programs, four pages for Small programs and six pages for Large programs and Key Projects (if solicited), instead of the default 15 pages specified in the *NASA Proposer's Guide*. The requirement for a table of contents in the body of the Phase-1 proposal is waived. References are not included in the page limits**.** The anonymized Phase-1 proposal must be uploaded to the ARK/RPS website as a PDF file.
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- All Phase-1 proposals should adhere to the dual-anonymous proposal guidelines (see Section 2.2.4), so a second separate "Expertise and Resources - Not Anonymized" document must also be uploaded.
- No supporting material (e.g., Curriculum Vitae, pending/current support) is required or allowed other than what is specified in the supplemental documentation concerning the dual-anonymous review procedure (see Section 2.2.4).
- Optional LaTeX and MS Word templates for the Scientific/Technical/Management section will be provided on the TESS Science Support Center website. (https://heasarc.gsfc.nasa.gov/docs/tess/proposal-templates.html). While optional, proposers are encouraged to review the templates for further guidance on Phase-1 proposal content.
- For Small and Large programs, the Scientific/Technical/Management section must include a minimum of one paragraph describing the work plan (expressed in terms of each participant's role

in the investigation to preserve the anonymity of the document). Mini programs do not require a work plan.

Phase-1 proposals from non-U.S. institutions are acceptable and will only be considered on a no-exchange-of-funds basis. Non-U.S. proposals will be reviewed to the same standards as proposals from U.S. institutions and selected solely by NASA.

All Phase-1 proposal materials must be submitted electronically by 4:30 pm Eastern time via ARK/RPS on the due date for this program given in Tables 2 and 3 of ROSES. Note that the 4:30 pm deadline (and the website for submission) are different from and supersede the default deadline stated in the *Proposer's Guide* and in the *ROSES Summary of Solicitation.*

2.2.4 *Specific Instructions for Dual-Anonymous Peer Review Phase-1 Proposals*

The overarching objective of dual-anonymous peer review is to reduce unconscious bias in the evaluation of a proposal. Under this system, not only are proposers unaware of the identity of the members on the review panel, but the reviewers do not have explicit knowledge of the proposal teams.

Proposers should consult the "Guidelines for Anonymous Proposals" document in the "Other Documents" section on the NSPIRES of this program element for instructions on writing proposals appropriate for dual-anonymous peer review. The instructions here and in that document supersede the default instructions given in the *NASA Proposer's Guide* and the *ROSES Summary of Solicitation.* Proposers will also be required to upload a separate one-page "Expertise and Resources Not Anonymized" document, which is not anonymized. The "Guidelines for Anonymous Proposals" document contains complete information on how to write this separate document.

In order to meet the objectives of dual-anonymous peer review, review panels will be instructed to evaluate the anonymized proposals without initially taking into account the proposing team qualifications. As a final check, and only after the evaluation is finalized for all proposals, the panel will be provided with the "Expertise and Resources Not Anonymized" documents. The panel will validate the qualifications of the team in order to allow the reviewers to assess the team capabilities required to execute a given proposed science investigation.

A summary of the key factors for PIs to keep in mind are:

- Proposals should eliminate language that identifies the proposers or institutions, as discussed in the Guidelines for Anonymous Proposals.
- Proposals requesting funding to support ground-based observing programs should provide sufficient details of the instrumentation or facilities available for the proposed work to allow the facility access to be adequately assessed. Facilities can be named, but the institution through which the proposers have access should not be identified in the anonymized Scientific/Technical/Management section of the proposal.
- PIs are required to upload a one-page "Expertise and Resources Not Anonymized" PDF through ARK as a separate upload when submitting the anonymized

Scientific/Technical/Management section. This document must not be anonymized.

- NASA understands that dual-anonymous peer review represents a major shift in the evaluation of General Observer / General Investigator proposals, and as such there may be occasional slips in writing anonymized proposals. However, NASA reserves the right to return without review proposals that are particularly egregious in terms of the identification of the proposing team.

A summary of the key requirements for preparing anonymized Phase-1 proposals is provided in the table below. Additional information may also be found on the web at: https://science.nasa.gov/researchers/dual-anonymous-peer-review.

Table 2. Phase-1 Dual-Anonymous Peer Review Preparation

Item	Requirement
Anonymization	Phase-1 proposals are anonymized. Phase-2 (cost) proposals are not anonymized.
Submission	Phase-1 proposals are submitted through ARK/RPS. Phase-2 (cost) proposals are submitted through NSPIRES.
References	References should be in the [1], [2] format.
Work plan	Include an anonymized (at minimum) one-paragraph work plan in the main body of the Phase-1 proposal, except Mini proposals, see Section 2.2.3.
Page length of the S/T/M section	2 pages for Mini programs, 4 pages for Small programs, and 6 pages for Large programs and Key Projects (if solicited). See Section 2.2.1 for details
Separate "Expertise and Resources Not Anonymized" document	This one-page document provides a list of all team members, their roles, organizations, expertise, and contributions to the work. The document should also discuss any specific resources that the team has access to that are key to completing the proposed work.

2.2.5 *Evaluation of Phase-1 Proposals submitted to the TESS GI Program*

Phase-1 proposals will be evaluated by a peer evaluation panel with respect to Relevance and Merit, as defined in Appendix D of the *NASA Proposer's Guide*. The evaluation of intrinsic merit of Phase-1 proposals shall include:

- The suitability of using new TESS data products for the proposed investigation (not applicable for ground-based observing focused programs, although ground-based programs should make clear the need for ground-based data in order to analyze or interpret TESS data);
- The extent to which the investigation complements and enhances the anticipated science return from the TESS mission; and

- The degree to which the proposed investigation capitalizes on the unique capabilities of TESS.

The review panel will also evaluate the suitability of the proposed effort for the selected category of investigation (Mini, Small, or Large). Moreover, the review panel will assess the demands the proposed investigation places upon mission resources.

2.2.6 *Submission and Evaluation of Phase-2 proposals*

Subject to the availability of funding, successful Phase-1 proposers will be contacted on behalf of the TESS Program Scientist and invited to submit a budget proposal in Phase-2. Upon notification of selection of a Phase-1 proposal, a proposer must respond as follows.

Follow the instructions for submitting a Phase-2 proposal given in the selection notification from the Phase-1 review. Phase-2 proposals must be submitted via NSPIRES (https://nspires.nasaprs.com/) by an Authorized Organizational Representative (AOR) of the proposing organization. The budget proposal will consist of a Budget Details section (maximum of two pages), a Narrative section (maximum of two pages), and a Biographical Sketch and Current and Pending support for the PI. The funding amount requested in the Phase-2 cost proposal may not exceed the amount proposed in Phase-1. Any changes in the PI or PI institution from Phase-1 to Phase-2 must be justified in the Narrative section of the proposal.

NASA program personnel will evaluate the Phase-2 cost proposals for cost reasonableness and compare the proposed cost to available funds and consistent with Section VI(a) of the *ROSES Summary of Solicitation.* Note that since the Phase-2 proposals will not be peer reviewed, the requirement to redact the budget information (per Section IV(b)(iii) of the *Summary of Solicitation*) is waived. All costs must be included in the proposal. Requests for major equipment purchases must be supported with a vendor quote. Proposers should note that Phase-2 (cost) proposals should not be anonymized.

2.3 Supplemental Information

Further details concerning the proposal submission requirements and process can be found at http://tess.gsfc.nasa.gov/, the TESS Science Support Center website. This website provides a detailed mission description; technical information about the TESS mission, instrument, and observation feasibility; and instructions for completing the required proposal forms. The Web TESS Viewing Tool found at the TESS Science Support Center website (https://heasarc.gsfc.nasa.gov/wsgi-scripts/TESS/TESSpoint_Web_Tool/TESS-point_Web_Tool/wtv_v2.0.py/) and the TESS-point software (https://github.com/tessgi/tess-point) provide the capability to see when user-provided TESS targets will be observed. The Web TESS Viewing Tool additionally provides estimated TESS magnitudes and photometric precisions for point sources.

3.1 Proposal Checklist

Below is a check list of all items required for TESS Cycle 9 GI proposals:

Science Compliance:

- Proposal requires TESS Cycle 9 data to meet science goals (unless proposing in the ground-based category).

Proposal Compliance:

- Proposal is anonymized (see Section 2.2.4)
- Proposal material length is [select one|
  - Mini Proposal: 2 pages
  - Small Proposal: 4 pages
  - Large Proposal: 6 pages
  - Key Project Proposal (if solicited): 6 pages
- Included in above page limit, proposal material contains sections;
  - Science
  - Technical
  - Management plan
  - Work plan
- Proposers will separately upload an Expertise and Resources document (non-anonymized) with a two page limit. (see Section 2.2.4) This does not count towards the page limit.
- If proposal requires targets:
  - Proposal includes a target list at time of submission. (see Section 1.6)
  - Targets are observable during Cycle 9
  - If target to be downlinked at a faster cadence (20s), proposal justifies the use of this resource.

3. Summary of Key Information

Expected program budget for first year of new awards	Approximately $2M total funding is anticipated, with $500,000 anticipated to be awarded to ground-based observing focused programs.
Number of new awards pending adequate proposals of merit	~20
Maximum duration of awards	1 year (small programs), 2 years (large programs)
Due date for Phase-1 proposals	4:30 pm on the due date given in Tables 2 and 3 of ROSES.

Planning date for start of investigation	Cycle 9 observations are expected to start in September 2026. Funding will typically be released to the PI after the first data collected for the proposed investigation are uploaded to the MAST. The earliest such date is approximately November 2026.
Page limit for Phase-1 proposals	2 pages for Mini programs, 4 pages for Small programs and 6 pages for Large programs. See Section 2.2.1 for details. See Section 2.2.4 for Guidelines for preparing proposals for Anonymous Reviews. Page limits include figures but not references.
Relevance	This program is relevant to the Astrophysics questions and goals in the NASA Science Plan. Proposals that are relevant to this program are, by definition, relevant to NASA.
General information and overview of this solicitation	See the *ROSES Summary of Solicitation*.
Detailed instructions for the preparation and submission of Phase-2 proposals	Selected proposers invited to submit a Phase-2 proposal will be given instructions how to submit via NSPIRES. See Section 2.2.6.
Submission medium	Electronic proposal submission is required; no hard copy is required or permitted. Proposals are submitted through ARK/RPS: https://heasarc.gsfc.nasa.gov/ark/rps/
Template	Proposal templates are found here.

Programmatic information may be obtained from the TESS Program Scientist	Joshua Pepper Astrophysics Division Science Mission Directorate NASA Headquarters Washington, DC 20546-0001 Email: joshua.a.pepper@nasa.gov
Technical questions concerning this program element may be directed to the TESS General Investigator Program Lead	Tyler Pritchard Code 667 Goddard Space Flight Center National Aeronautics and Space Administration Greenbelt, MD 20771-0001 Telephone: 301-286-2467 Email: Tyler.A.Pritchard@nasa.gov