

TUC Community Survey Summary

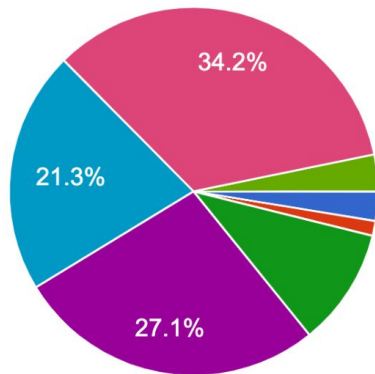
The following slides provide a summary of the TESS Users Committee Community Survey conducted between December 2023 - January 2024. Comments on survey outcomes resulted from online TUC community member meetings held online in February 2024.

TESS Users Committee, March 2024

Survey Demographics

What is your career stage?

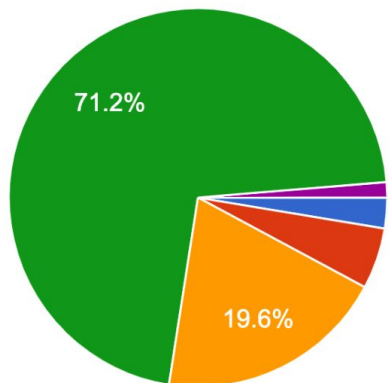
155 responses



- Citizen scientist
- Undergraduate student
- Post-baccalaureate student
- Graduate student
- Postdoctoral Researcher
- Assistant professor or staff equivalent
- Tenured professor or staff equivalent
- Emeritus professor or staff equivalent

How many years have you been using TESS? (The mission launched in 2018).

153 responses



- <1 year
- 1-2 years
- 2-4 years
- >=4 years
- I do not use TESS data in my research.

Discussion: largely as expected, except for relative lack of responses by graduate students (likely not representative of who actually works with the data)

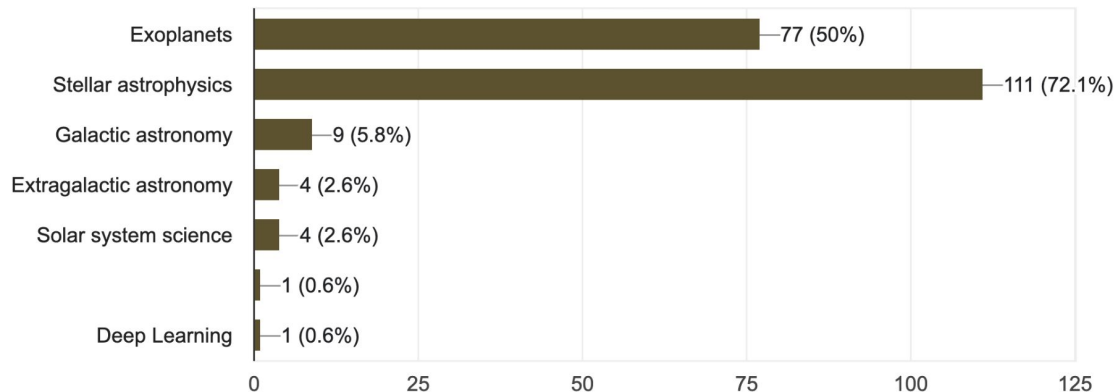
Survey

Demographics

Discussion: largely as expected. The TUC noted that a comparison of the category breakdown with the categories of submitted and funded GI program would be useful to determine whether the survey responses were representative.

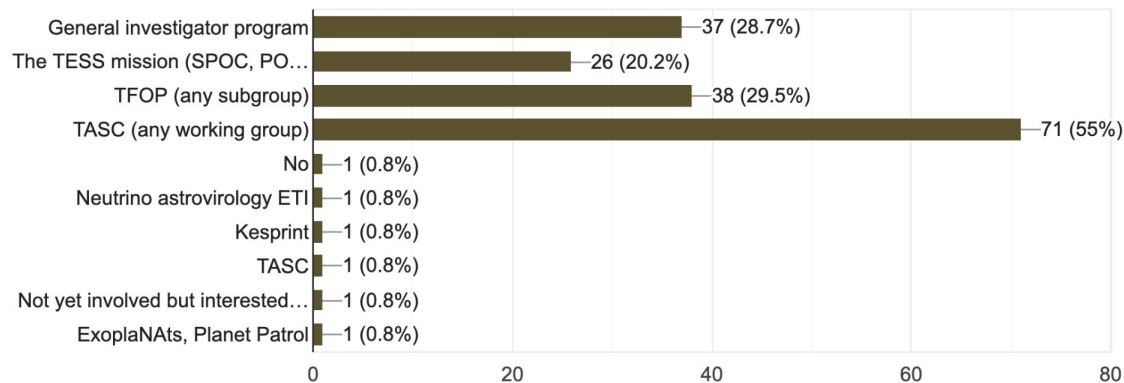
What are your primary research areas?

154 responses



Are you involved in any of the following TESS-related groups? You can select multiple boxes, or no boxes.

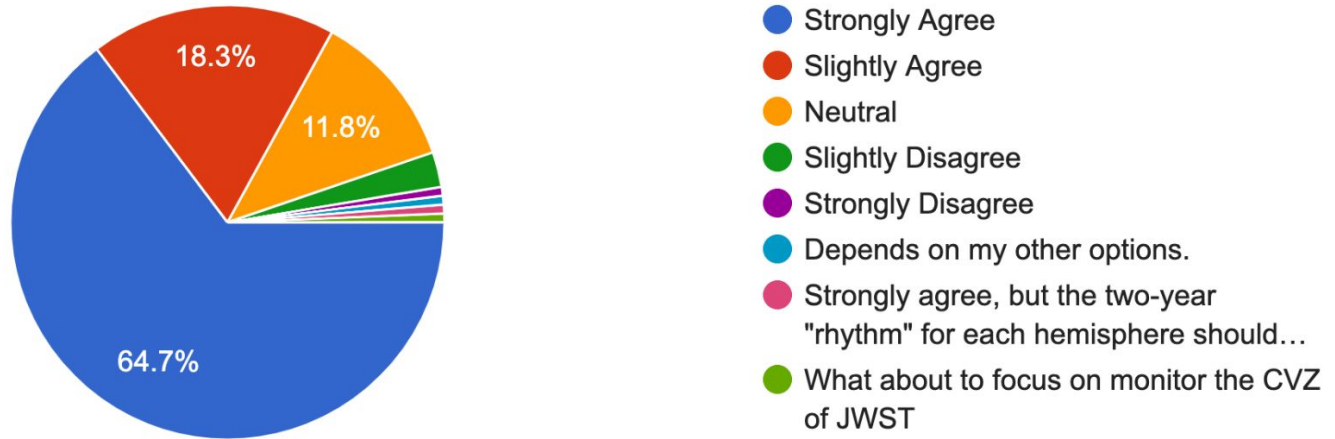
129 responses



Extended Mission: Observing Strategy

TESS should continue to observe the entire sky at least one time by the end of 2028 (by the end of 2025, the cumulative fraction of sky observed will be slightly above 95%).

153 responses

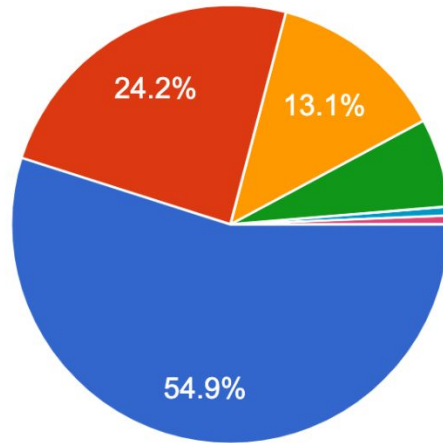


Discussion: very strong support for EM planning to include fields that have not been observed by the end of EM2.

Extended Mission: Observing Strategy

Assuming it is technically feasible (pending engineering analysis), it is important that the duration of a "TESS sector" will be extended beyond one lunar month (from one lunar month to one lunar month or more, i.e., from one lunar month to two to three consecutive months).

153 responses

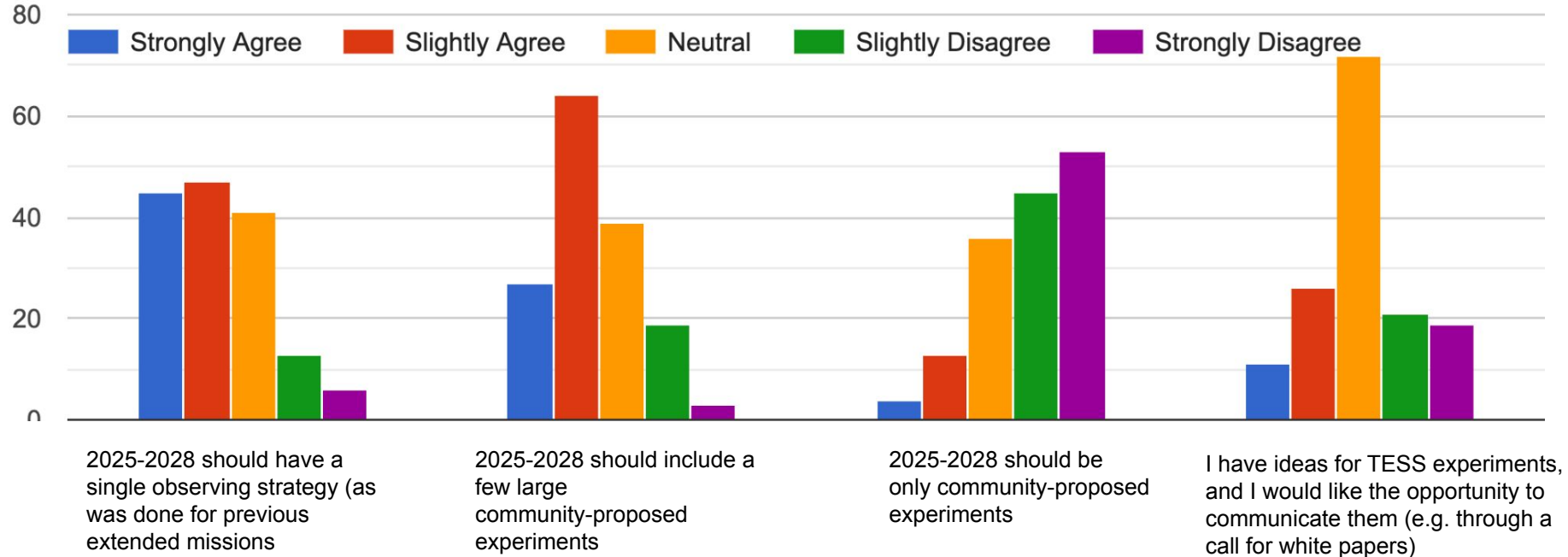


- Strongly Agree
- Slightly Agree
- Neutral
- Slightly Disagree
- Strongly Disagree
- yes, as long as the telescope continues to observe ~the full sky, which would then have to happen over longer (4-6...)
- My answer to this question strongly depends on where in the sky these ex...

Discussion: strong support for exploring the option of extended the duration of a TESS sector in EM3. Aligns with TUC recommendation #1.

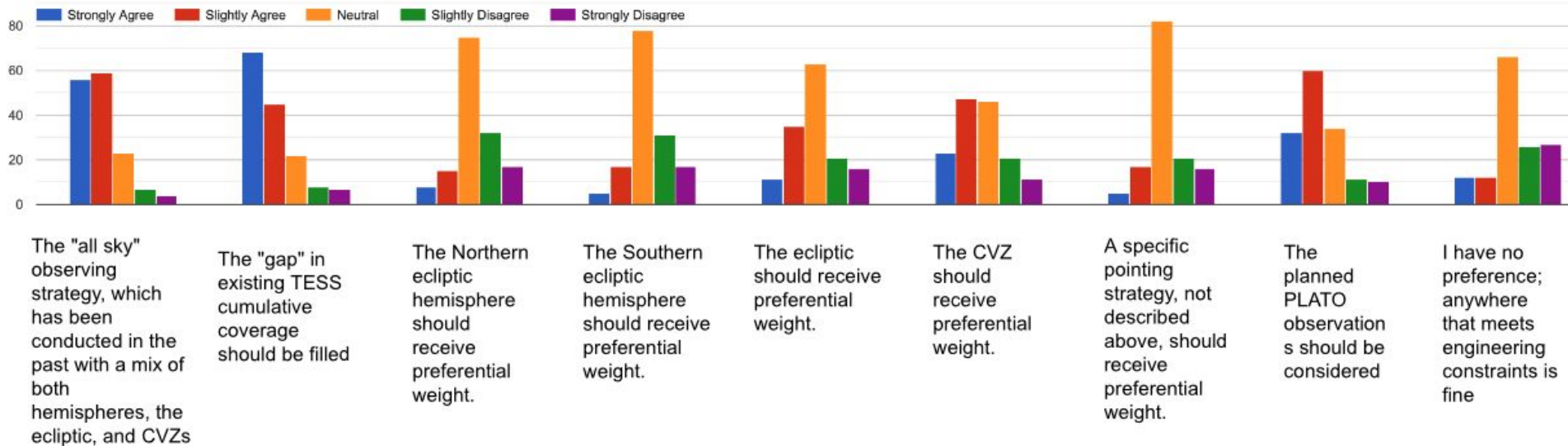
Extended Mission: Observing Strategy

Between 2025-2028, one possible approach for pointing TESS could be to perform a single coherent observational strategy, as has been done in the past. Another possibility could be to spend two years on a coherent strategy, and to spend one year on a set of three or four large, community-proposed experiments. Such experiments could encourage novel pointing strategies, subject to engineering constraints. Historic analogues from K2 include the microlensing campaign, and extragalactic campaigns. Please indicate your preference for such example strategies.



Extended Mission: Observing Strategy

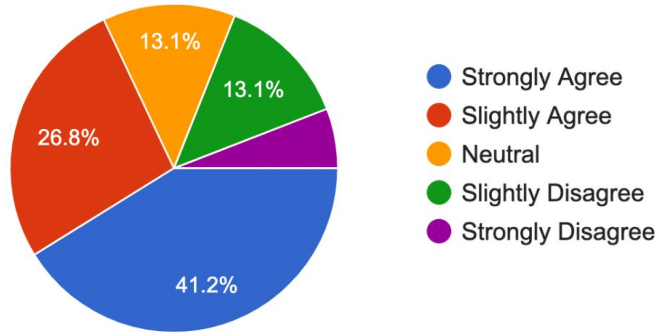
Please indicate your preference for where in the sky TESS should focus its observations in 2025-2028. "CVZ" refers to the continuous viewing zones.



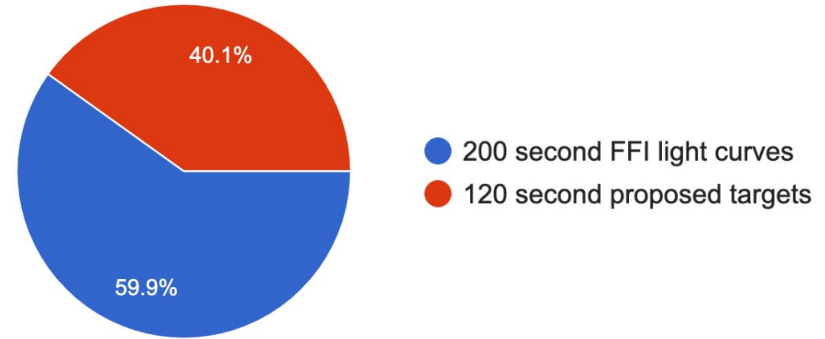
Discussion: Significant support for a mix of an "all-sky" observing strategy similar to previous EMs (with a focus on filling the remaining gaps) and a community proposed experiment. The latter should consider the PLATO field, but also provide the community an opportunity to express other ideas. Results align with TUC Recommendation #2.

Extended Mission: Observing Cadence

I can accomplish my science using 200 second cadence light curves, assuming they were produced in the same manner as 120 second cadence light curves produced by the TESS Science Processing Operations Center (SPOC).



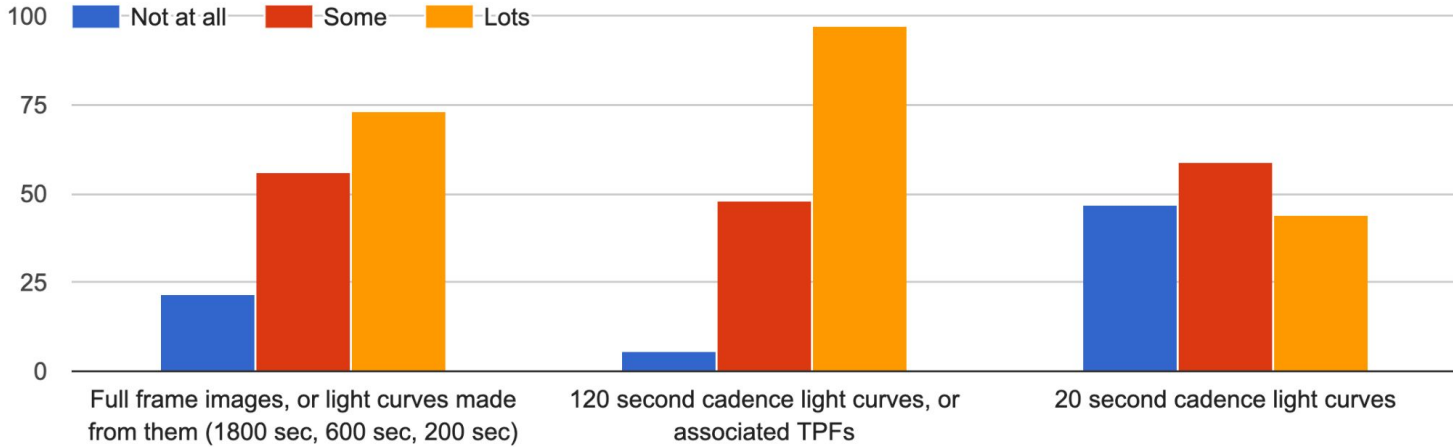
Which SPOC-processed light curves would you rather have, assuming only one can be available?



Discussion: significant support (60-70%) for SPOC-produced FFI light curves. The TUC noted that the first question should be given more weight since it does not make a distinction between proposed and non-proposed targets. Discussion of results was used to formulate TUC recommendation #12 (addendum).

Extended Mission: Observing Cadence

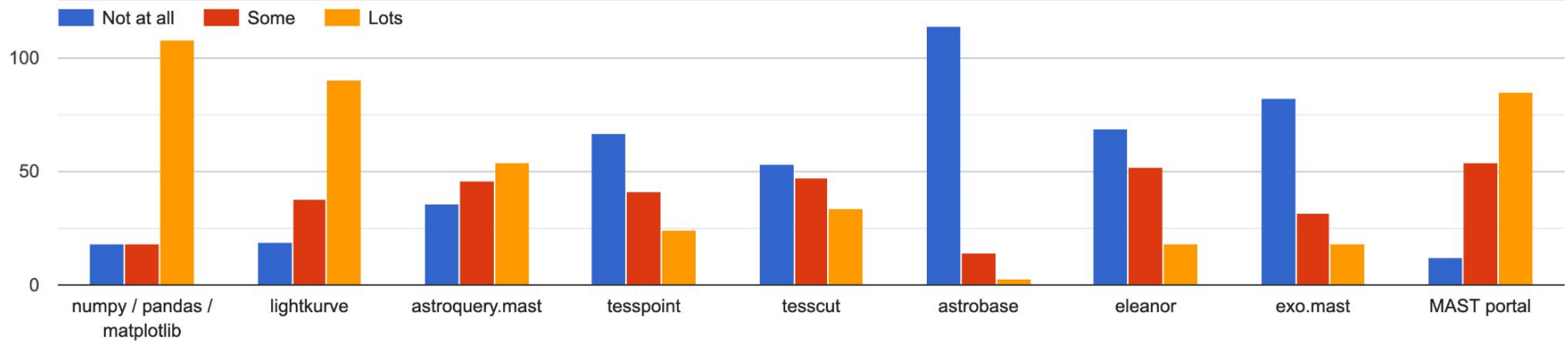
Which of the following core TESS data products have you previously used, and how much?



Discussion: Most community members use 120-second data, possibly because of the availability of SPOC light curves.

Extended Mission: Tools and Data Products

Which of the following software tools do you or your collaborators use to analyze TESS data, and how much?

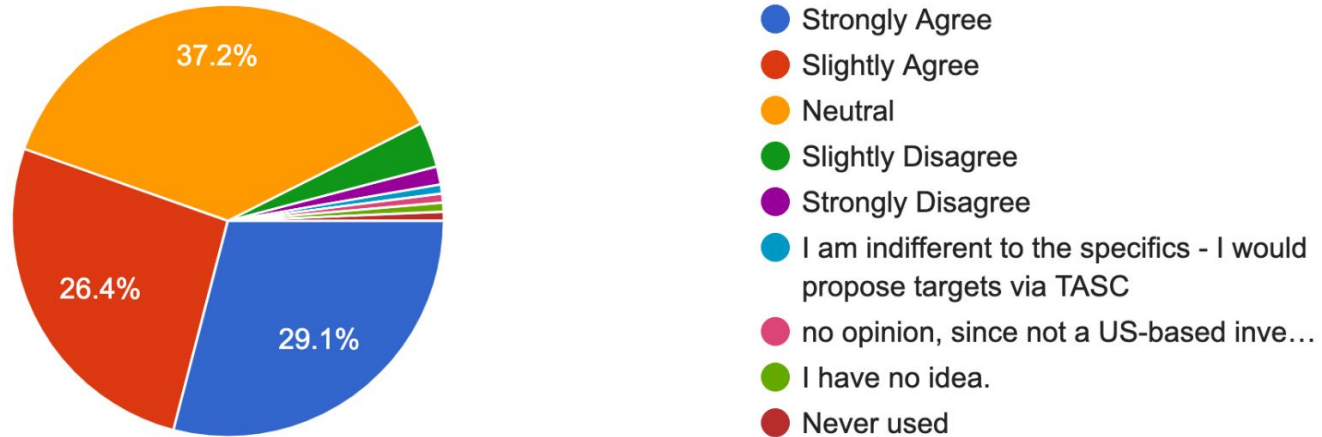


Discussion: Community uses a variety of software tools, including those developed by the community. Supports recommendation to maintain community-produced software (TUC recommendation #5)

GI Program

The existing categories of the [TESS general investigator call](#) (split into mini, small, large, and key programs) sufficiently meet my needs, including in the context of other existing NASA ROSES programs that can support TESS science (such alternative ROSES programs currently include ADAP, XRP, and SOSS).

148 responses



Discussion: Community generally satisfied with GI options. Significant neutral fraction likely due to international participation (ineligible for funding). See next slide for specific feedback of particular relevance.

GI Program

If you answered "Slightly Disagree" or "Strongly Disagree" to the previous question, please feel free to elaborate here:

Nice to have an archival category. I know they want us to go to XRP/ADAP, but HST/JWST have archival and TESS has a butt-load of archival data. Be nice if there were a category for different kinds of observing patterns (cadences, on-chip binning, pointings, etc).

Currently not possible to propose large multiwavelength programs or surveys. Esp. for unique capabilities at Xray or UV wavelength, one would have to go through Swift, HST, Chandra, call for proposals, etc.---but weighing the science case by including TESS is questionable in the outside calls.

Joint programs help, but they are relatively limited in scope.

I am not an an institution with students, so ,y minimum fundable unit is a postdoc, and that doesn't fit into any but the key programs which are offered rarely.

The community needs funding streams for intramural (NASA/MIT) and extramural (university/institute) methodological advances for TESS light curve analysis (i.e. alternatives to TOI approaches). The quality of TOI lists is not high enough today.

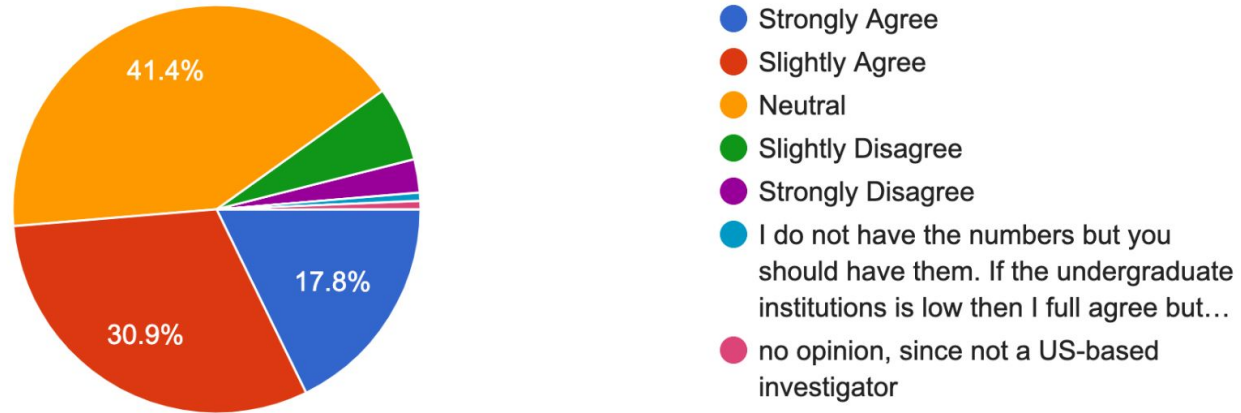
The categories have been useful, but I would be interested in larger (than small) options for developing light curves and tools that can benefit the community

A medium funding category would allow for more substantive investigations as the large programs are much less likely to be funded.

GI Program

The TESS GI program should consider including dedicated funding initiatives that aim to increase the involvement of primarily undergraduate institutions (PUIs) in TESS science investigations.

152 responses

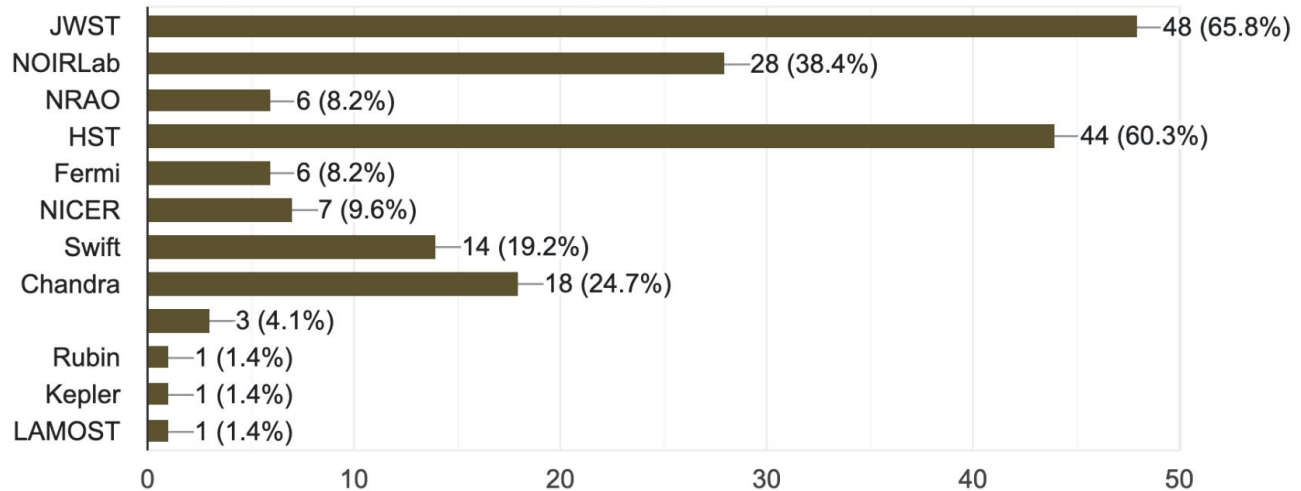


Discussion: Large fraction of responses are neutral, likely due to international participation or because question phrasing was not specific enough. Significant support (~50%) for some initiative in this direction. Discussion of these results was used to formulate TUC recommendation #13 (addendum).

GI Program

The TESS GI program currently enables coordination with facilities including HST, Fermi, NICER, and Swift. Would your science be supported by coordina...ditional facilities? You can check multiple boxes.

73 responses



Discussion: Support for more coordination with other missions that are not currently covered. Discussion of these results was used to formulate TUC recommendation #14 (addendum).