

Data analysis of targets in TESS

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-

1. Observation data ^



[Download data](#)

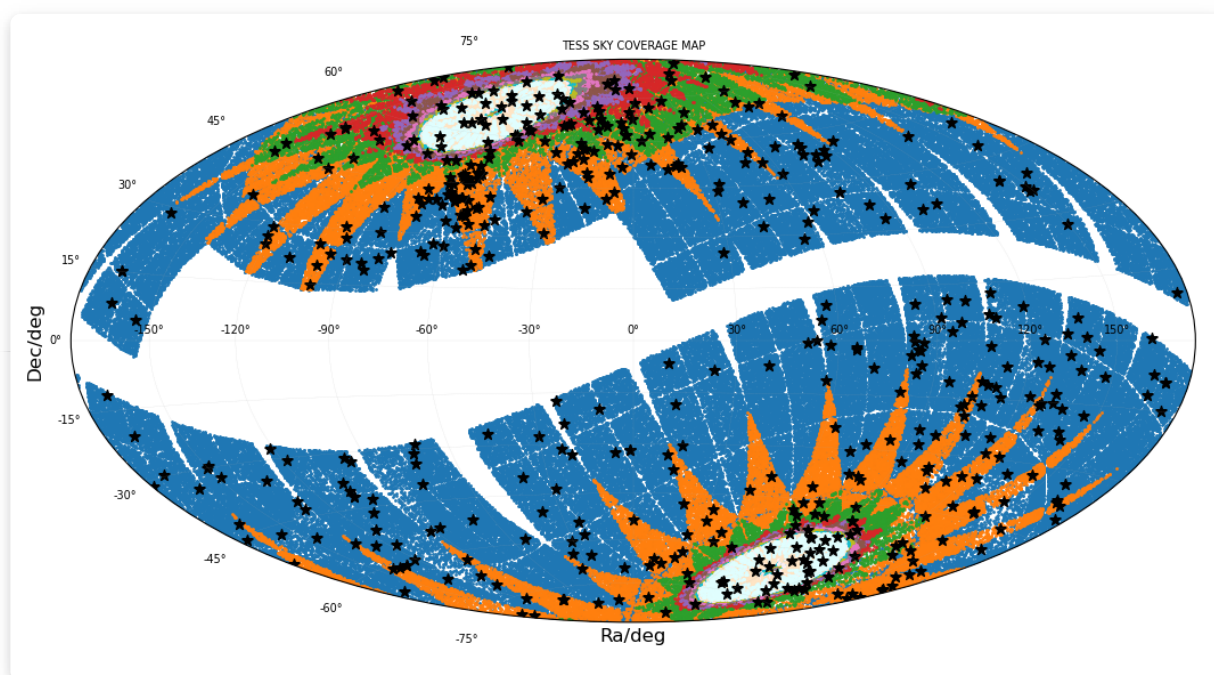


Figure 1. TESS observation targets of 26 sectors in the whole sky area. The black dots represent the large eccentricity binary samples we found.

Code

```
/home/life/notes/testpy/search.py
```

2.Data analysis of eccentric eclipsing binaries in TESS ^

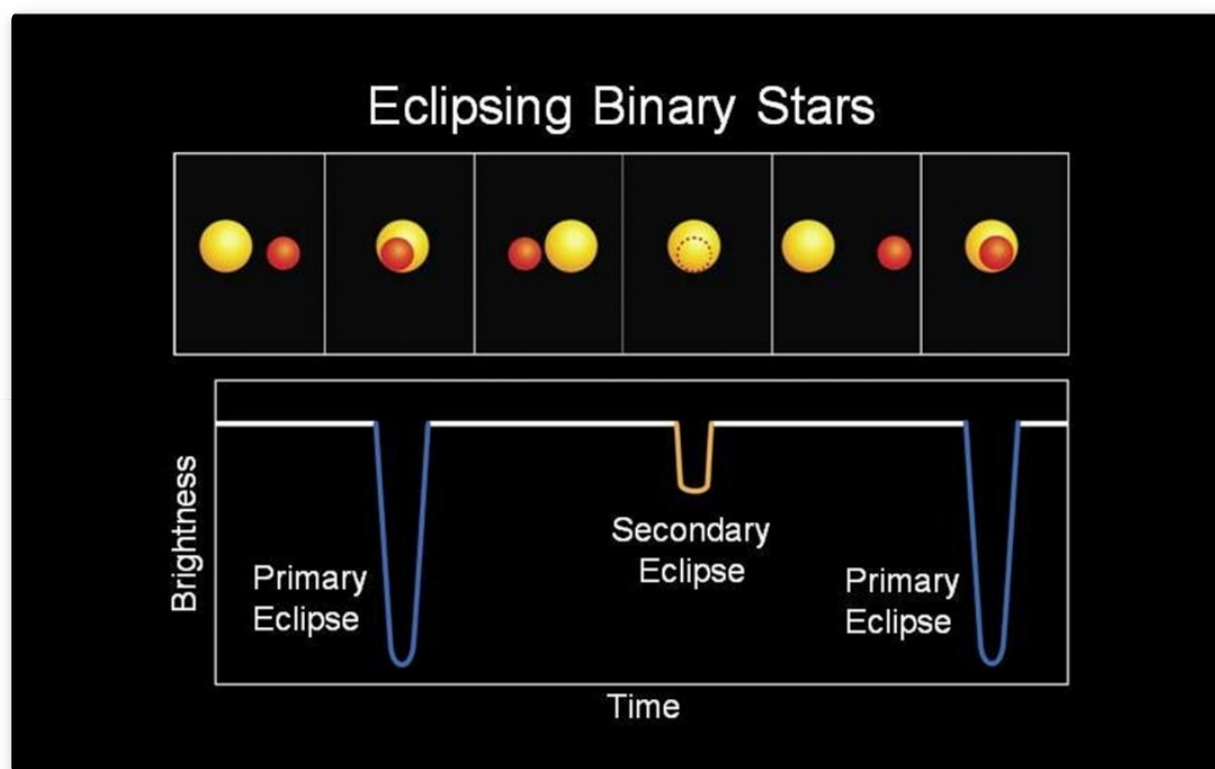


Figure 2. When the smaller star partially blocks the larger star, a primary eclipse occurs, and a secondary eclipse occurs when the smaller star is occulted.

The eclipsing binary candidates are first selected by **visually checking** whether more than three eclipses are present in the LightCurve.

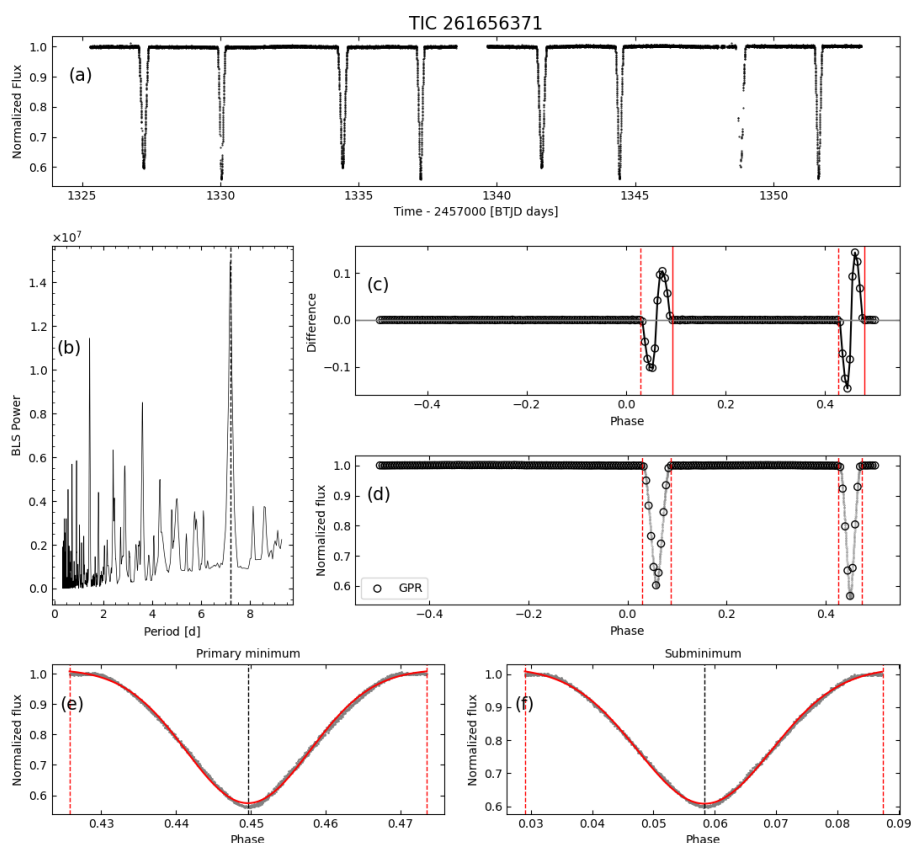
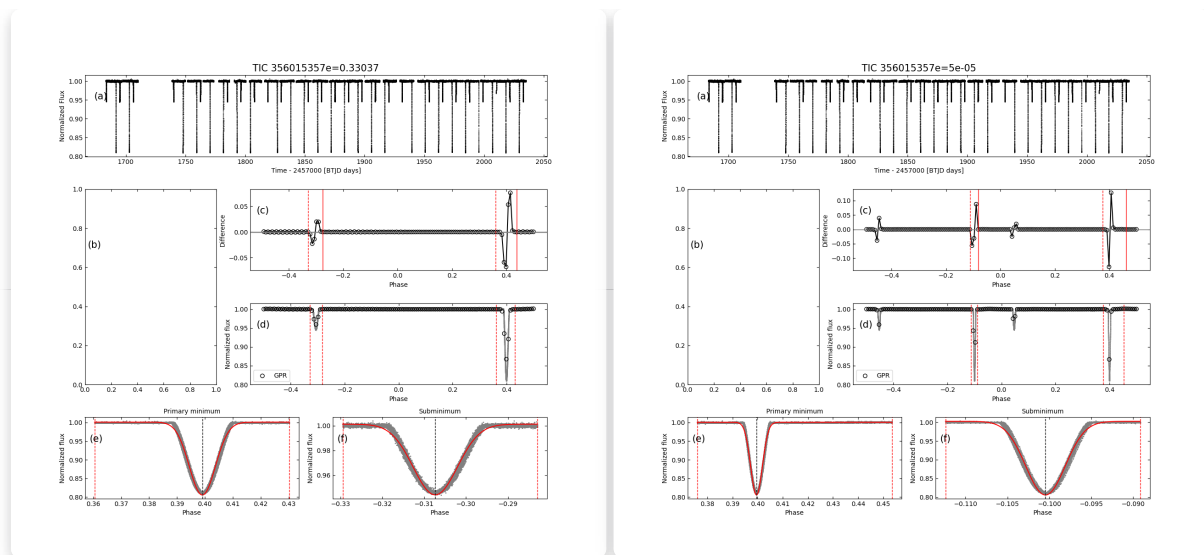


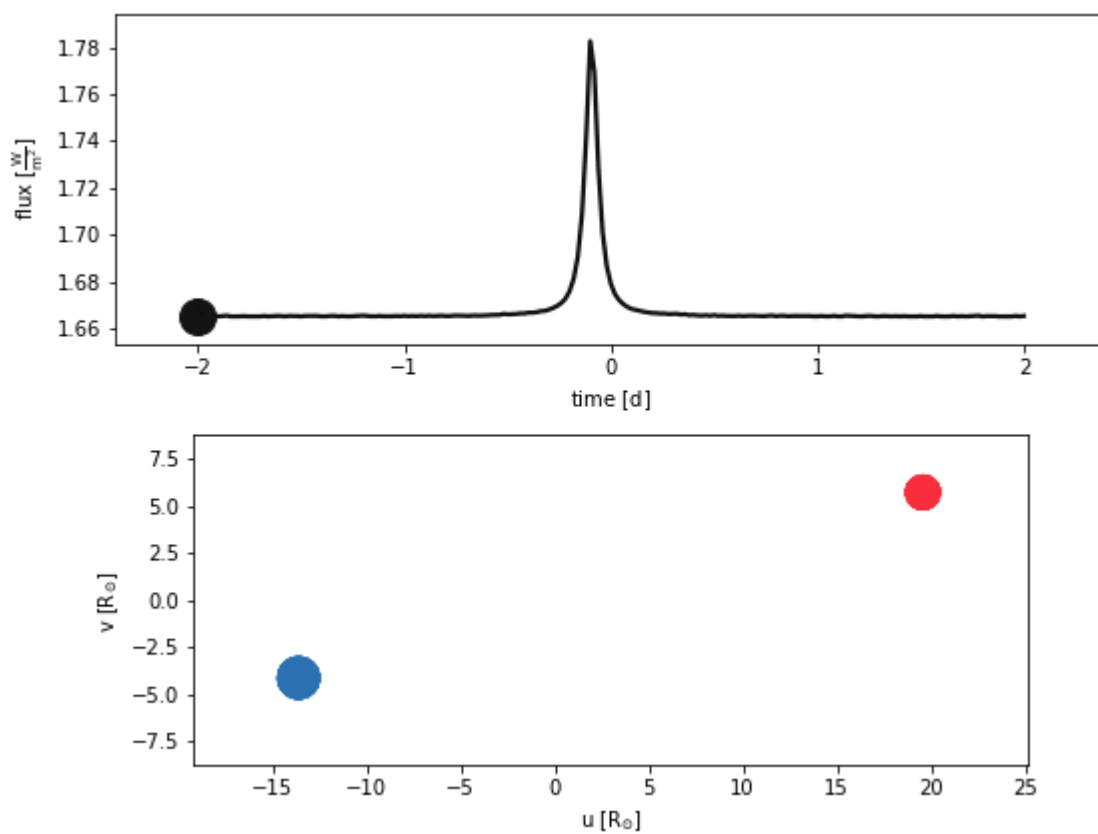
Figure 3. LC analysis and eclipses determination for EEB TIC 261656371 as an example. (a) Light curve. (b) The highest peak of the periodogram is determined as the initial period. (c, d) The original LC is folded and smoothed to obtain the differential folded LC and folded LC. The two eclipses are denoted by red dashed lines. (e, f) Two eclipses (black dots) are fitted by the Gaussian function (red solid curve) to determine phases (black dashed lines) of the primary and secondary minimum.

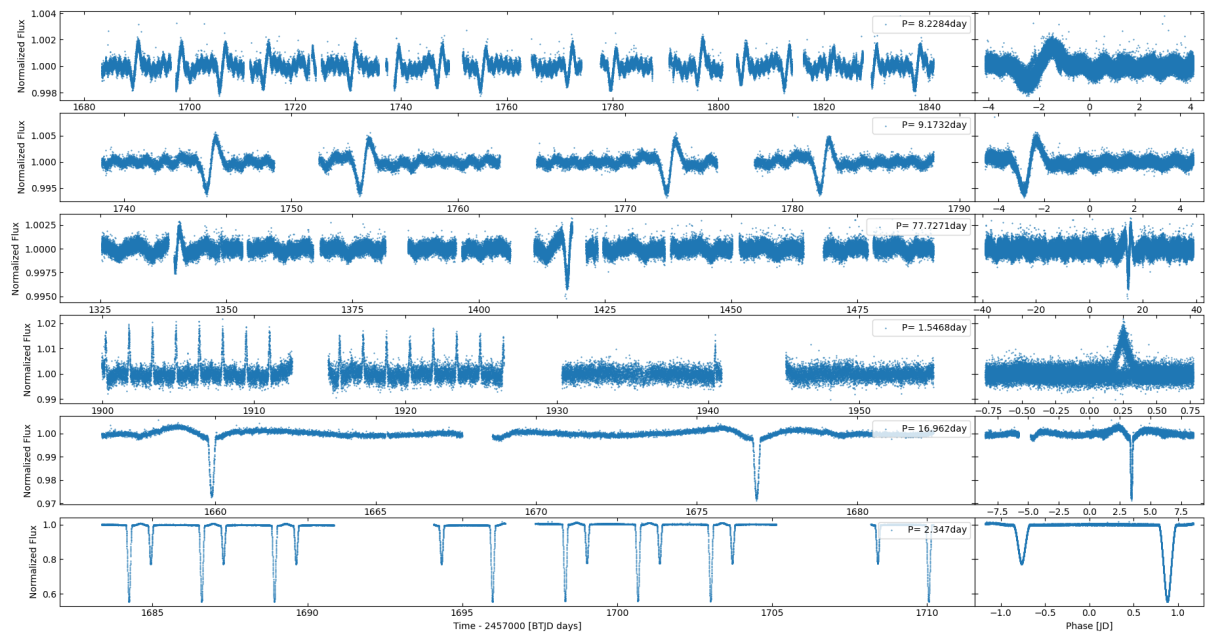
code

/home/life/双星偏心率的求解/汇总2021_9_30/code六件套/allEBselct2021_09_20.py



3. Other interesting things in TESS [^]





TIC 278956474:Two close binaries in one young quadruple system,identified by TESS

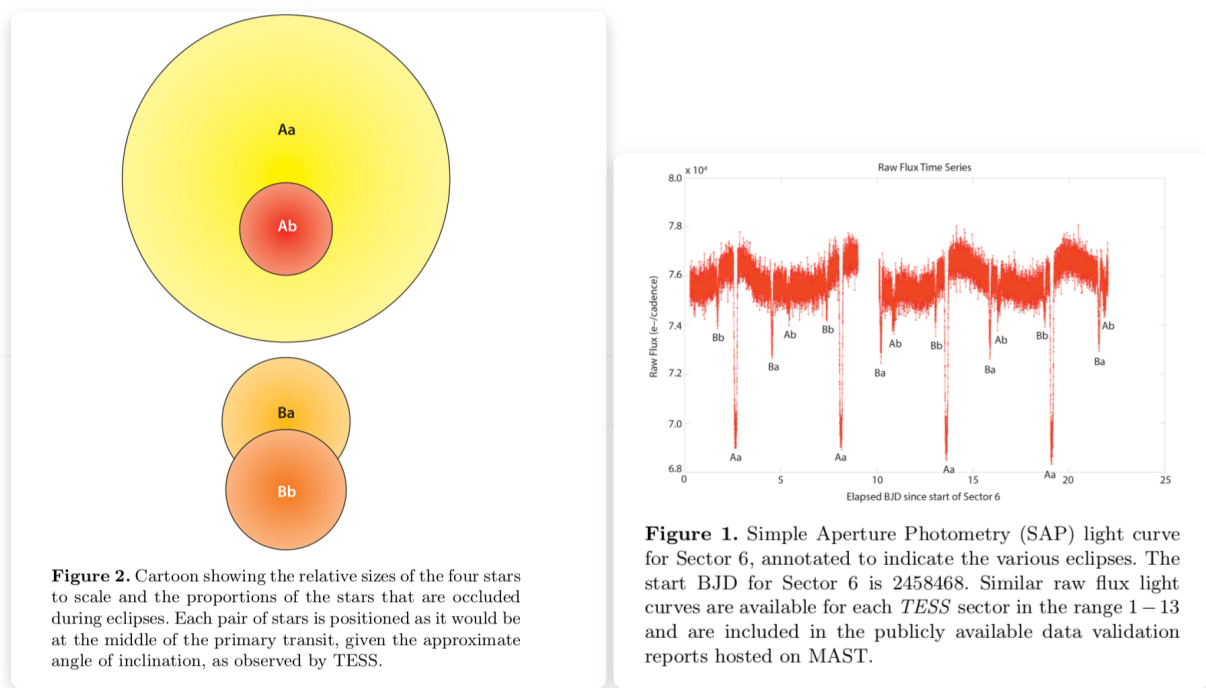
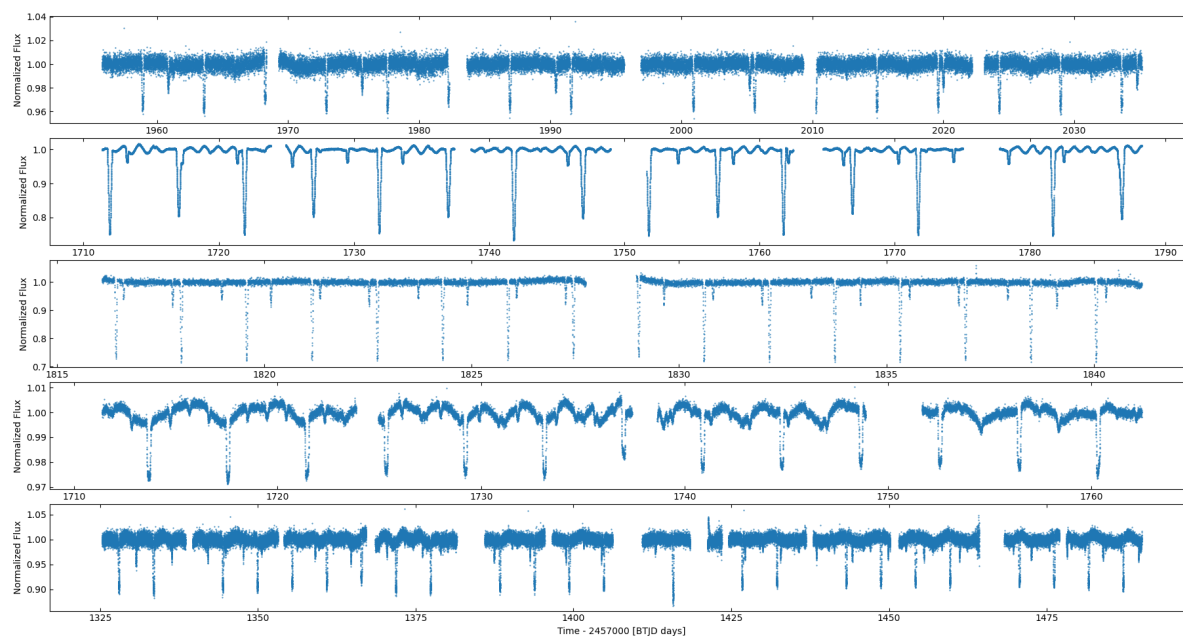


Figure 2. Cartoon showing the relative sizes of the four stars to scale and the proportions of the stars that are occluded during eclipses. Each pair of stars is positioned as it would be at the middle of the primary transit, given the approximate angle of inclination, as observed by TESS.

Figure 1. Simple Aperture Photometry (SAP) light curve for Sector 6, annotated to indicate the various eclipses. The start BJD for Sector 6 is 2458468. Similar raw flux light curves are available for each *TESS* sector in the range 1 – 13 and are included in the publicly available data validation reports hosted on MAST.



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Guo et al.

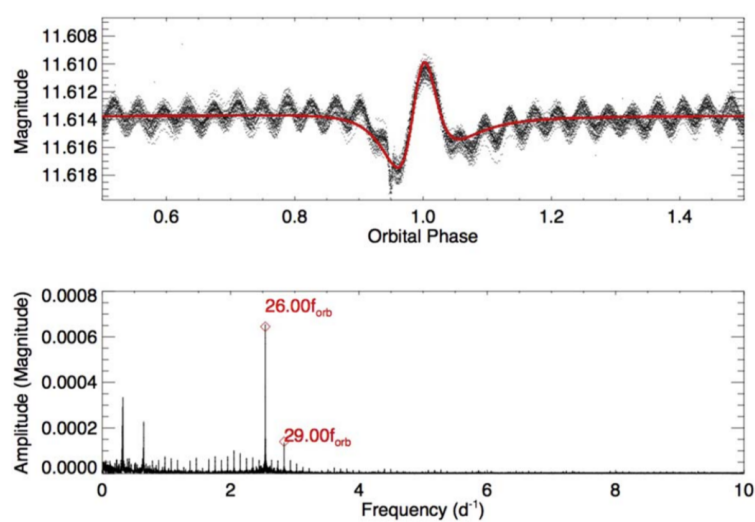


Figure 2. Phase-folded *Kepler* light curve of KIC 8719324 and its Fourier spectrum. The two dominant TEOs at 26 and 29 times of orbital frequency (f_{orb}) are labeled.