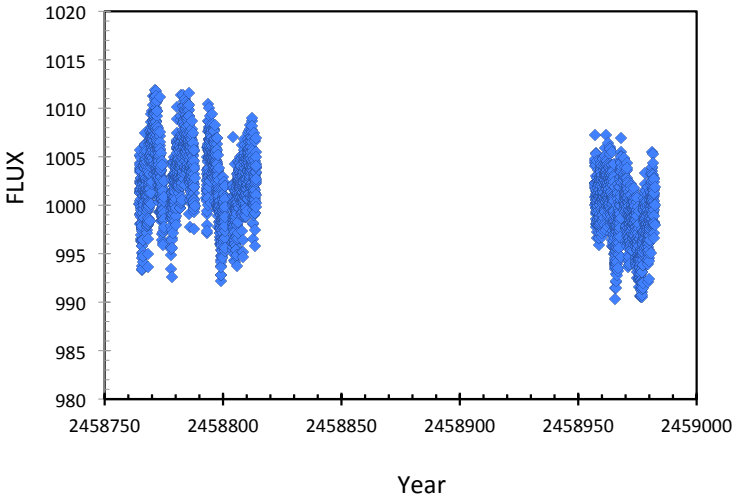
V1405 Cas (Nova Cas 2021)

(Brad Schaefer, 20 April 2021)

TESS data from Sectors 17, 18, and 24 (starting 8 Oct 2019, 3 Nov 2019, and 16 Apr 2020)
2998 fluxes, each from a 30-minute integration.
The first plot is simply the TESS fluxes detrended:



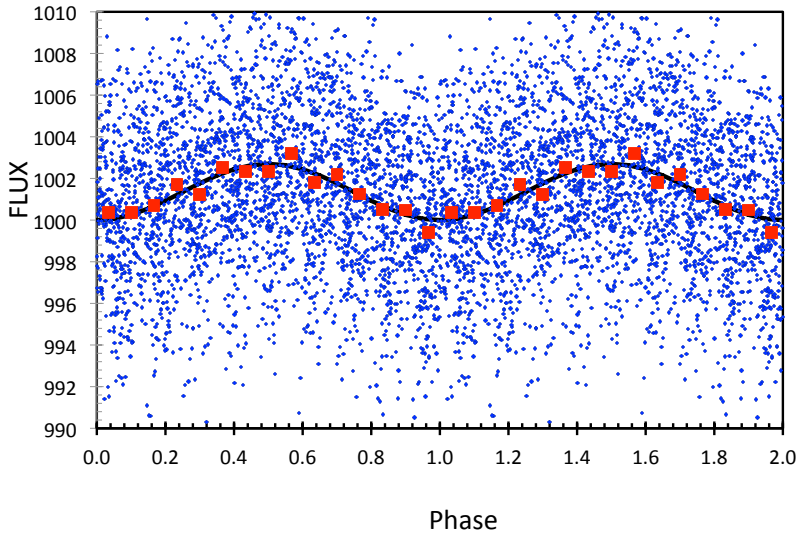
Hmm, the horizontal axis should be labeled "BJD", not "Year". Ordinary CV flickering can be seen when the light curve is looked at close up.

The second plot is the TESS detrended light curve folded with

Period = 0.1883907 ± 0.0000048 days

Epoch of minimum light = BJD 2458859.0688 ± 0.0021

The blue dots are individual fluxes, the red squares are phase-binned light curve, and the black curve is the best fit sinewave. The periodicity is significant at the 14.3-sigma confidence level.



The folded light curve does *not* show an EW star, because the minima are not narrow, because EW stars do not flicker, and because it is impossible for any EW star to have any normal thermonuclear eruption. The folded light curve does look like an ordinary pre-nova or nova-like light curve, because it has flickering, and the folded light curve is close to a sinewave as is always seen from irradiation effects in CVs. This last point shows that the orbital period is 0.1883907 days.