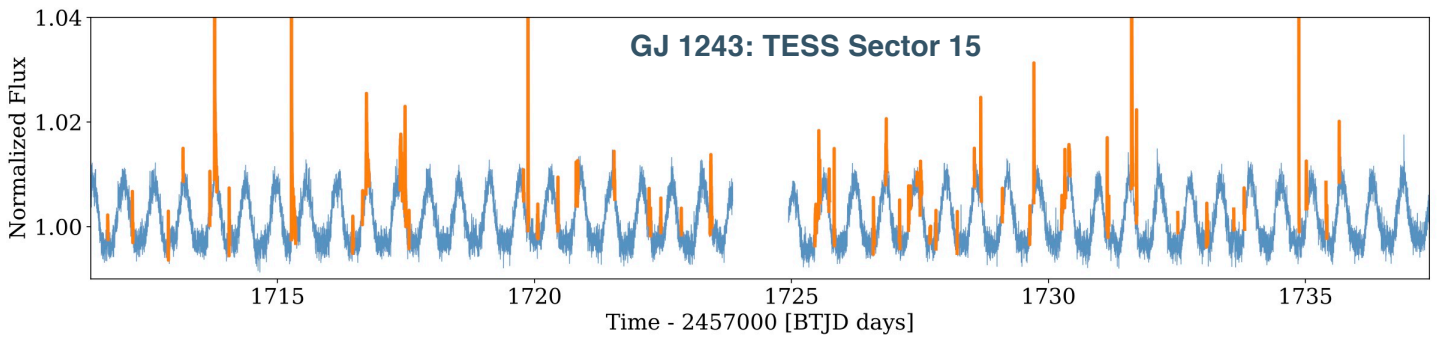


From Kepler to TESS: 10 Years of Flare Activity from Space

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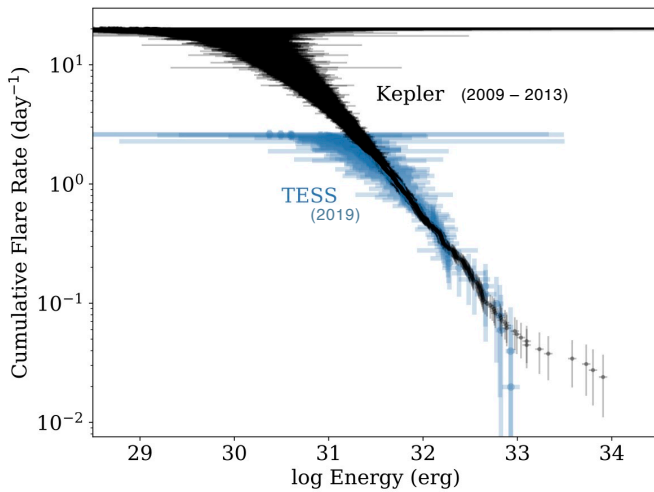


We have carried out the first flare & starspot analysis of **GJ 1243** from over 50 days of data from TESS Sectors 14 & 15.

Using 133 flare events detected in the 2-min TESS data, we compare the cumulative flare frequency distributions, and find the flare activity for GJ 1243 is unchanged between the Kepler and TESS epochs. Two distinct starspot groups are found in the TESS data, with the primary spot having the same rotational period and phase as in Kepler.

As expected for this highly active M4, the constant spot and flare activity reveal no sign of solar-like activity cycles over 10 yr. However, we highlight the unique ability for Kepler and TESS to use flare rates to detect activity cycles for many years to come. New 20-second cadence data from TESS will also allow us to test the widely used empirical flare profile created for GJ 1243 using Kepler 1-minute data.

Flare Frequency Distribution for GJ 1243



Starspot "phase map" for GJ 1243

