(Submitted to The Astronomical Journal) <u>NEMES/S</u>: Exoplanet tra<u>N</u>sit surv<u>E</u>y of nearby <u>M</u>-dwarfs in T<u>ESS FFIS</u>

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- In this work, we've analyzed over 35,000 M-dwarf stars located within 100 parsecs of Earth that were observed in **TESS Sectors 1 - 5 with 30 minute cadences.**
- Of those 35,000, we've identified 183 transit signals, 29 of









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which we've determined to be due to planetary eclipses. - The planet candidates we've detected have planet radii ranging from 1.26 - 5.31 Earth radii and orbital periods ranging from 1.25 to 6.84 days.

- 24 of our 29 candidates are new detections!

- All target stars are filtered using stellar parameters from TIC v8
- 2300 K < Effective Temperature < 4000 K
- Stellar Radius < 0.5 Solar Radius
- Stellar Mass < 0.5 Solar Mass
- Logg > 3
- Distance < 100 parsecs
- Targets are also cross referenced with the TESS Candidate Target List (CTL, Muirhead et al. 2018).
- Extract Raw photometry and remove short term instrumental effects by using a Pixel Level Decorrelation (PLD) algoritm based on Deming et al. 2015
- Remove long term stellar variations with a time-windowed median based smoothing function (Wötan, Hippke et al. 2019a).
- Once the photometry is extracted and cleaned, we then perform an algorithmic search using Transit Least Squares (Hippke et al. 2019b) for the period range 1 - 9 days.







