

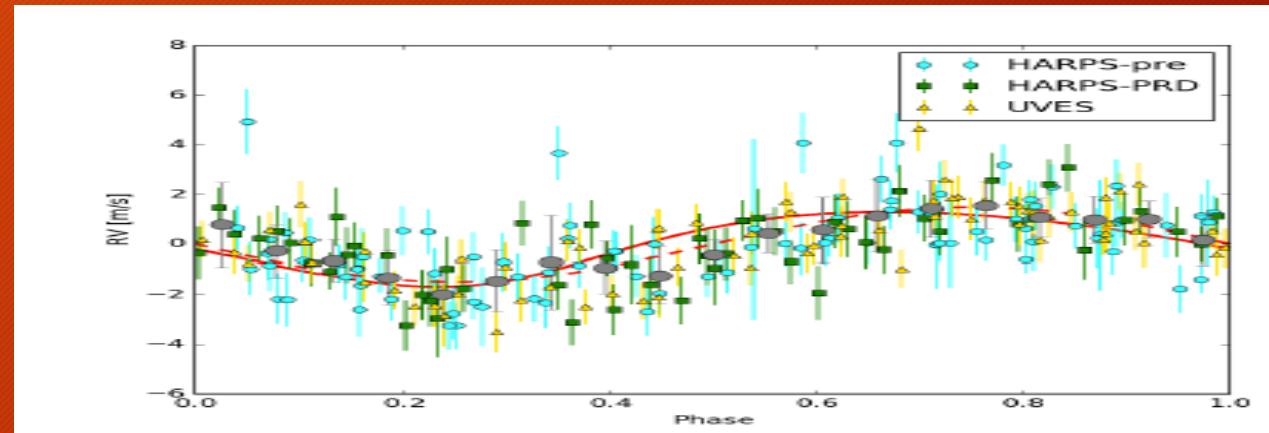
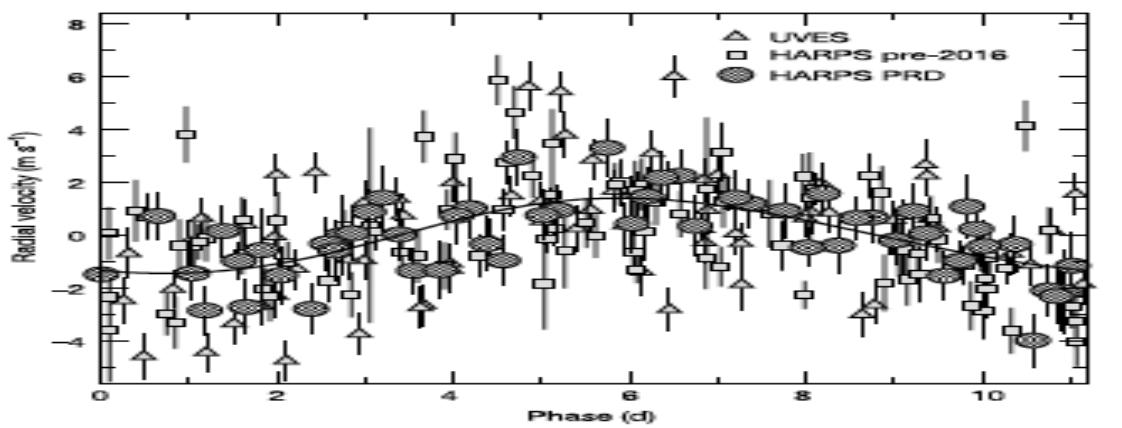
A Multi-Year Transit Search for Proxima Centauri b

Dax Feliz^[1,2], Karen Collins^[2], Keivan Stassun^[2], David Blank^[3], Graeme White^[3]

Fisk University^[1], Vanderbilt University^[2], University of Southern Queensland (Australia)^[3]

Quick Summary of Proxima Centauri b

- Anglada-Escude et al 2016 (left) released a RV detection paper of ProxCen b:
 - a) $1.3 M_{\text{Earth}}$
 - b) 11.186 day orbital period



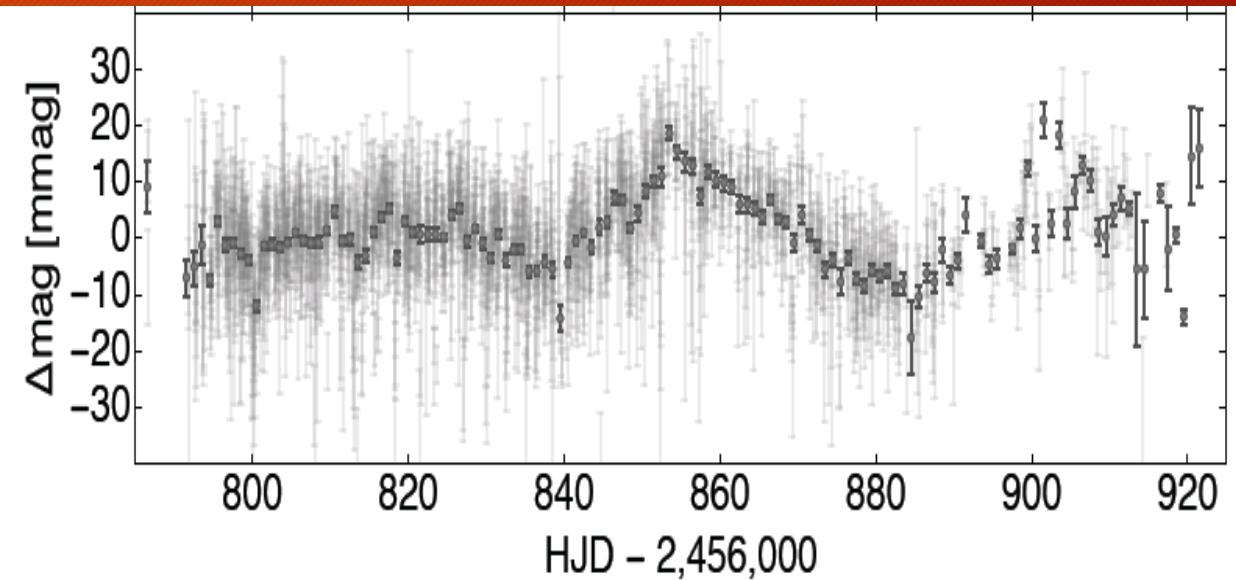
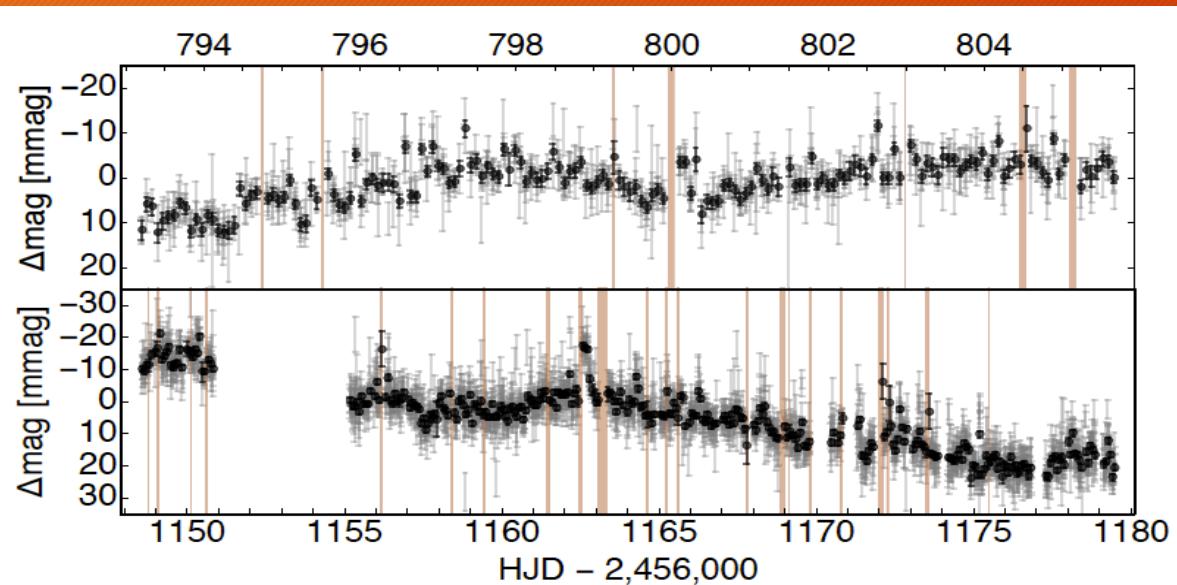
- Damasso et al 2017 (right) did a follow up RV analysis of ProxCen b:
 - $1.21 M_{\text{Earth}}$
 - 11.1855 day orbital period

Initial Transit Survey of ProxCentauri b

- Kipping et al 2016 used the MOST Space Telescope(left) and HAT-South ground telescope(right) to observe Proxima Centauri.
 - Concluded that there is no significant evidence of a transiting planet around Proxima Centauri.

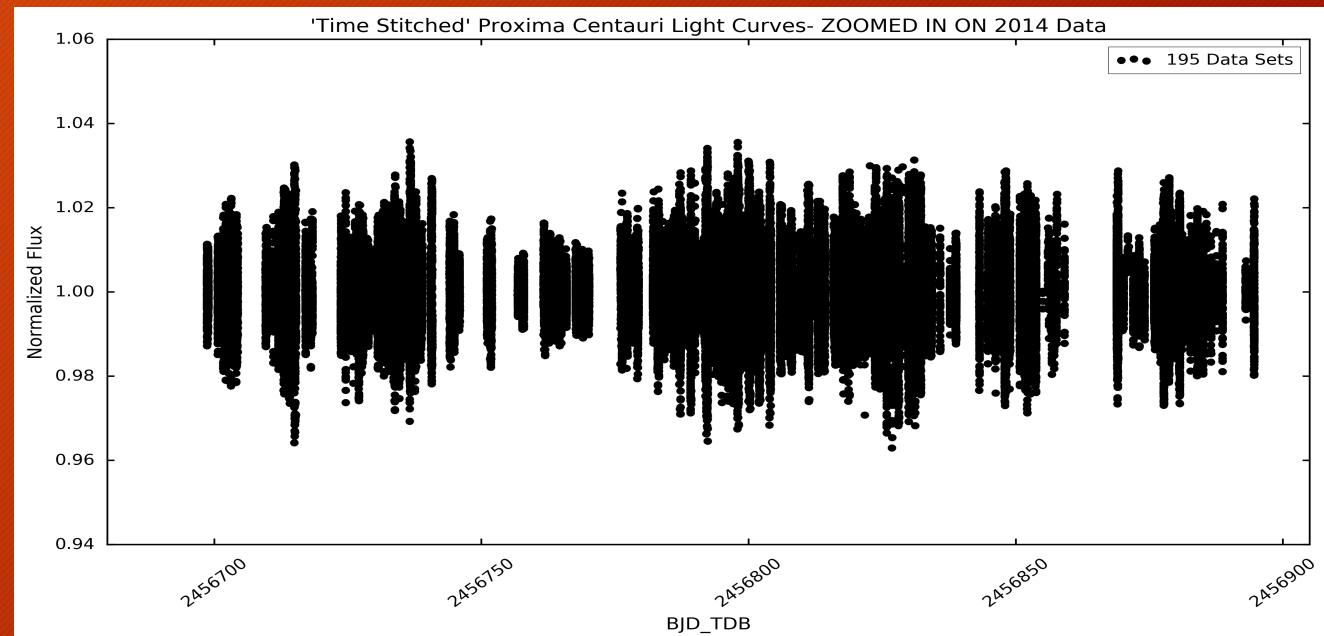
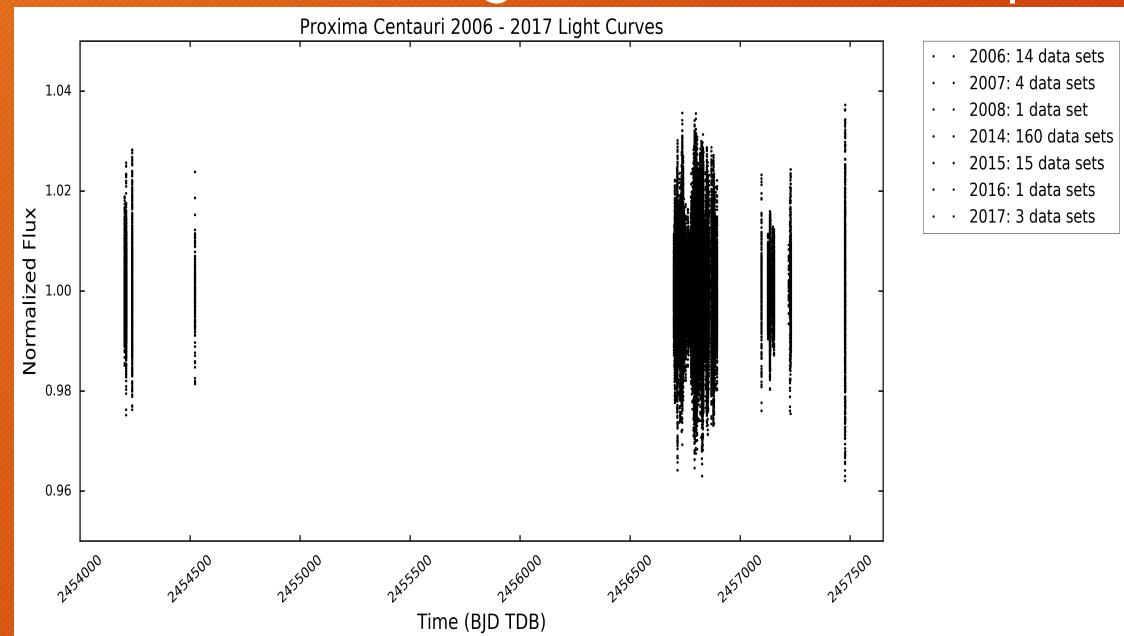
2014 (top), 2015(bottom) Light Curves, ~ 44 days of observations

HAT-South Ground Telescope 2014 Light Curve



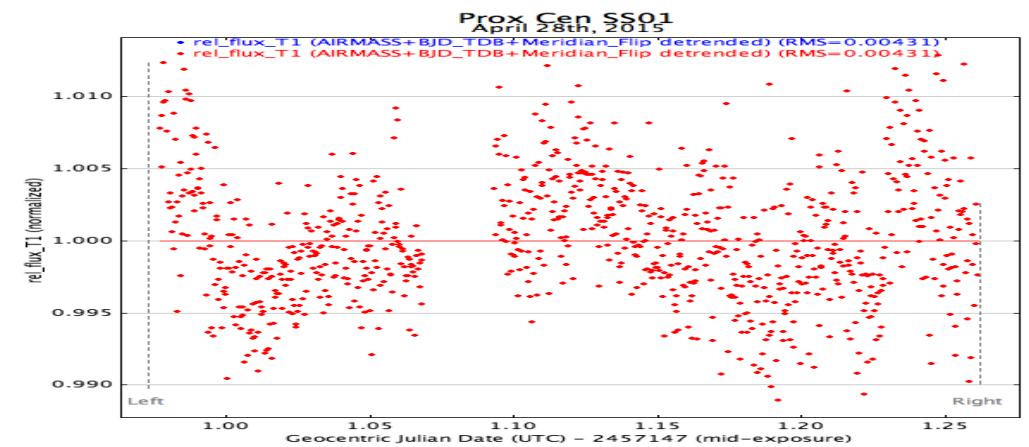
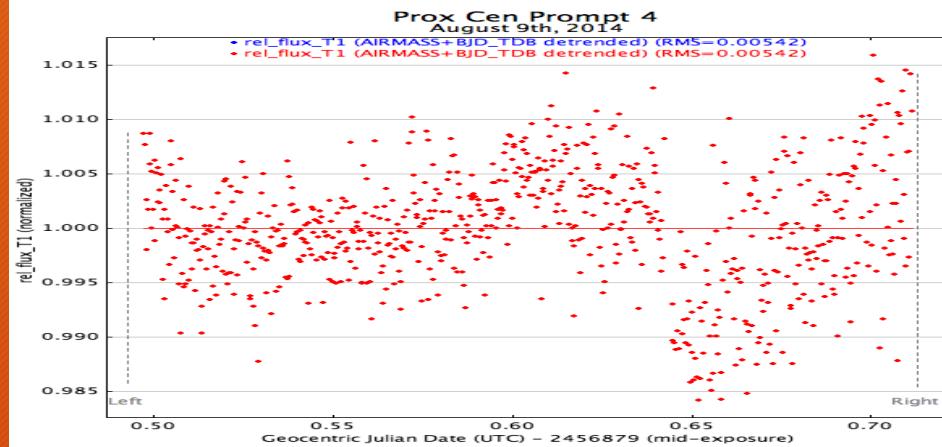
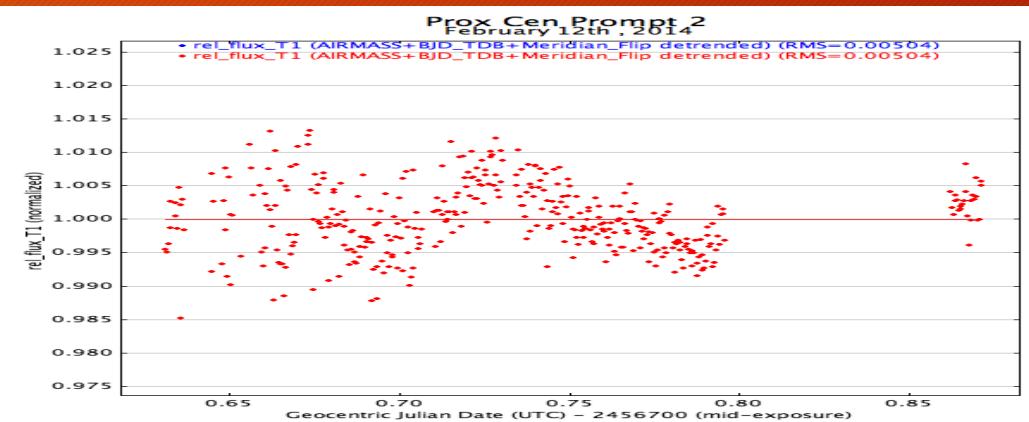
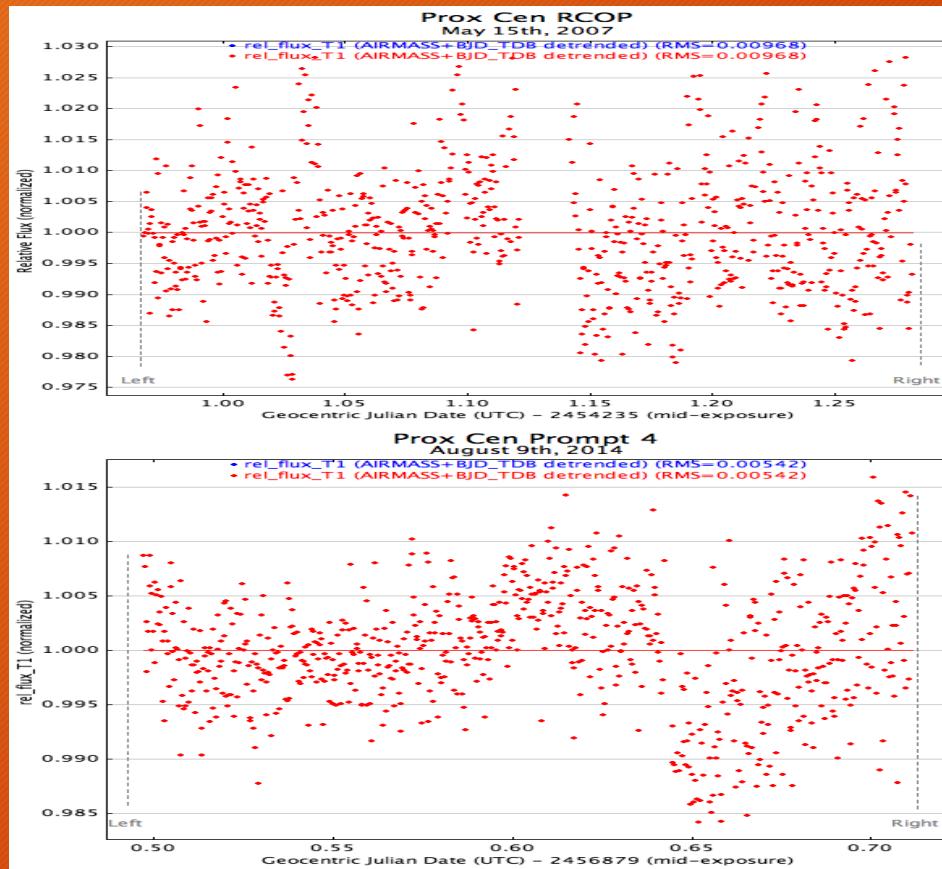
Where do we come in?

- Using SKYNET and KELT-FUN data spanning from 2006-2008, 2014-2017 we have ~ 230 nights of time series photometric observations of Proxima Centauri.
- We have combined our datasets and are in the process of running the BLS VARTOOLS algorithm to search for periodic events

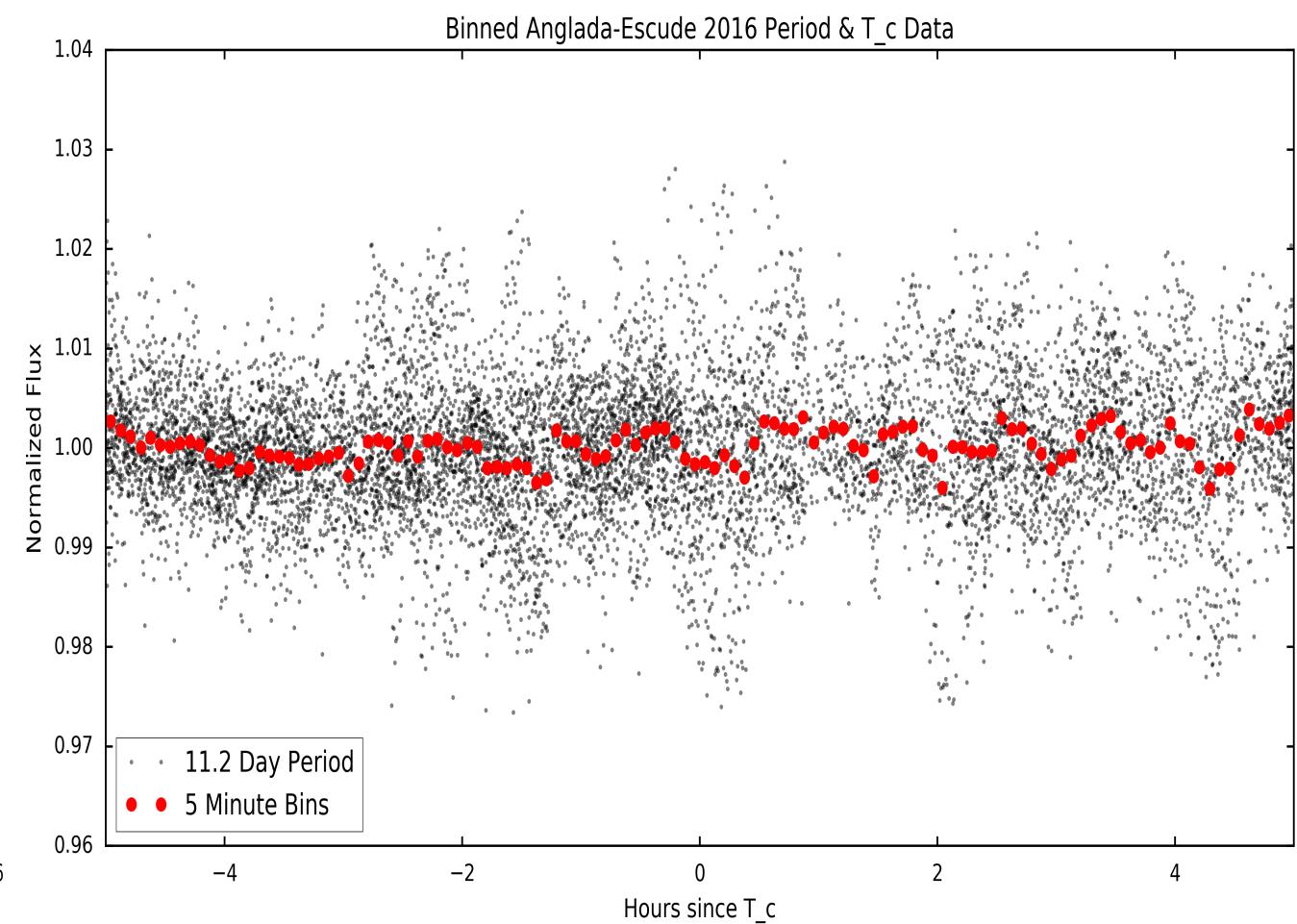
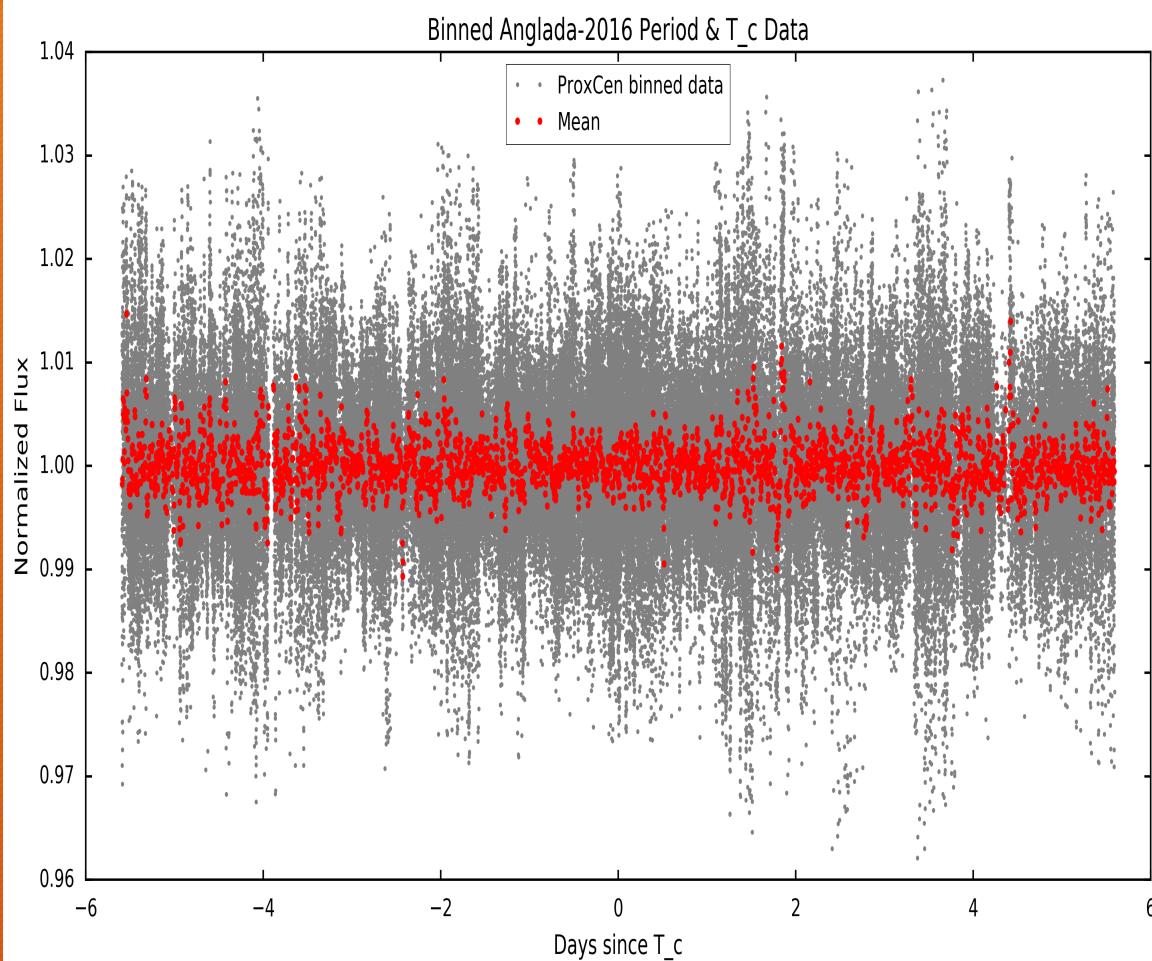


Some Example Light Curves

- Expected Transit Duration: ~ 1 to 2 hours
- Expected Transit Depth: 5 to 10 mmag



Phase Folding Around Anglada-Escude period



Preliminary BLS Search: 1-30 days

