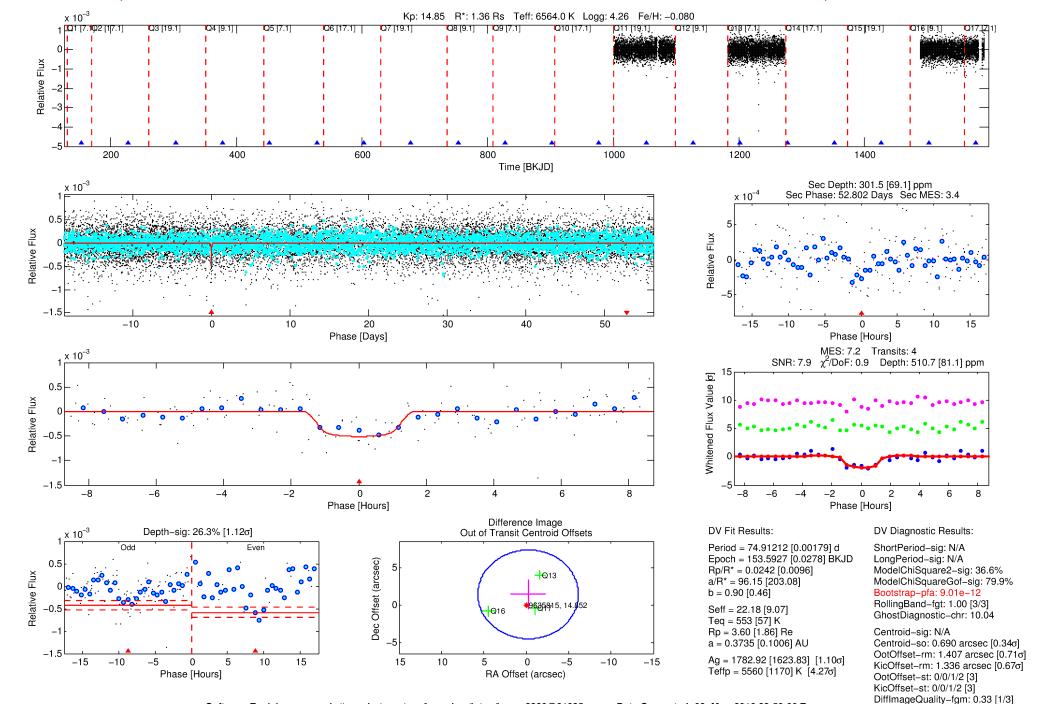
# WARNING: THIS DATA IS SIMULATED, NOT OBSERVED

## DV One-Page Summary

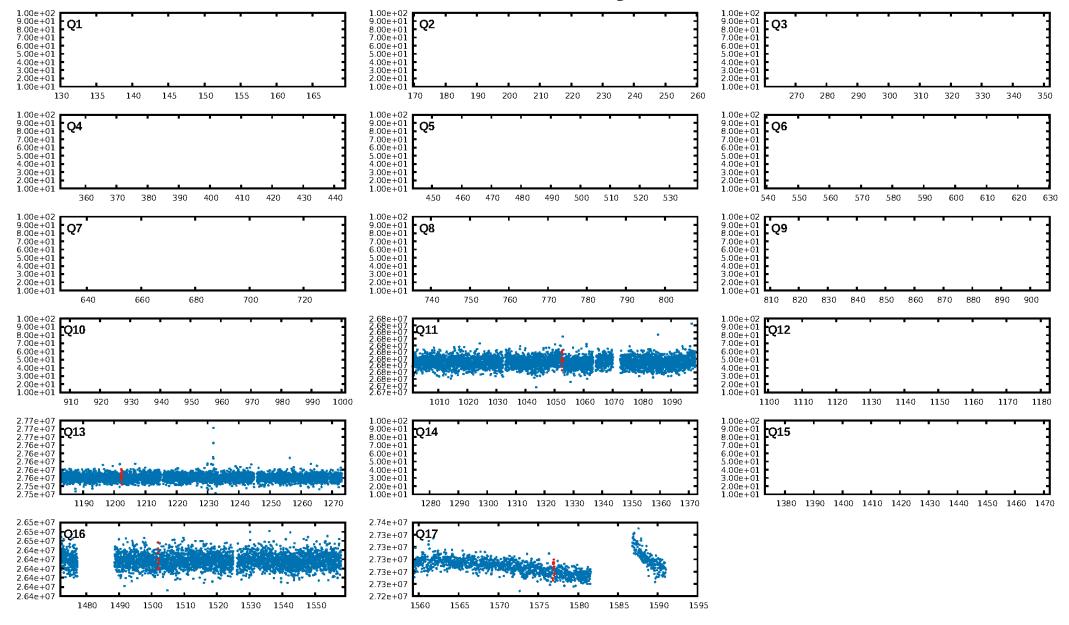
KIC: 9635815 Candidate: 1 of 1 Period: 74.912 d

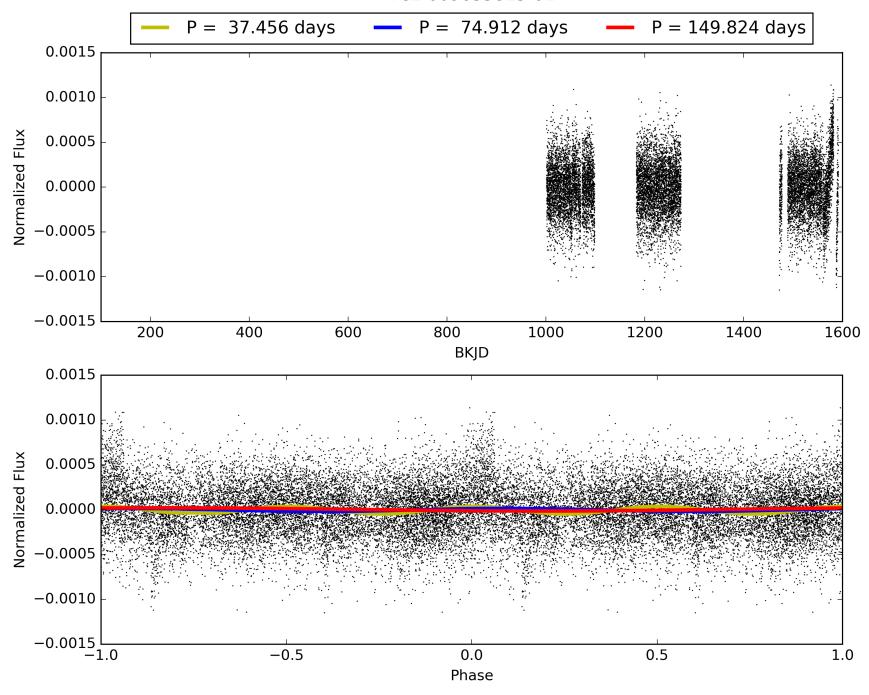
# WARNING: THIS DATA IS SIMULATED, NOT OBSERVED

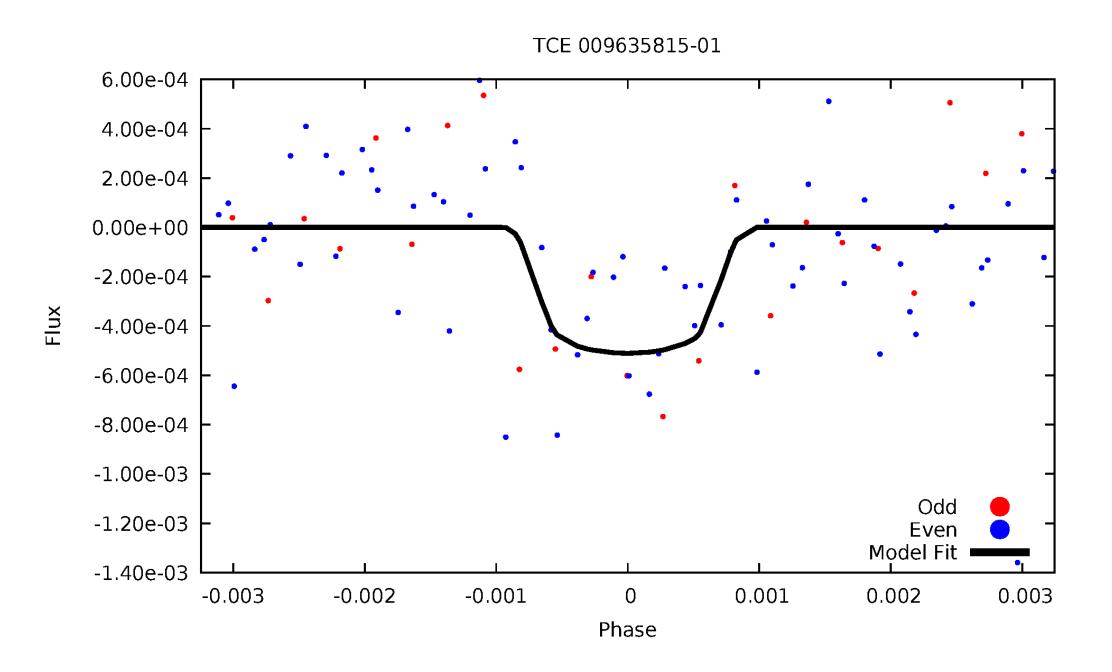
DiffImageOverlap-fno: 1.00 [4/4]



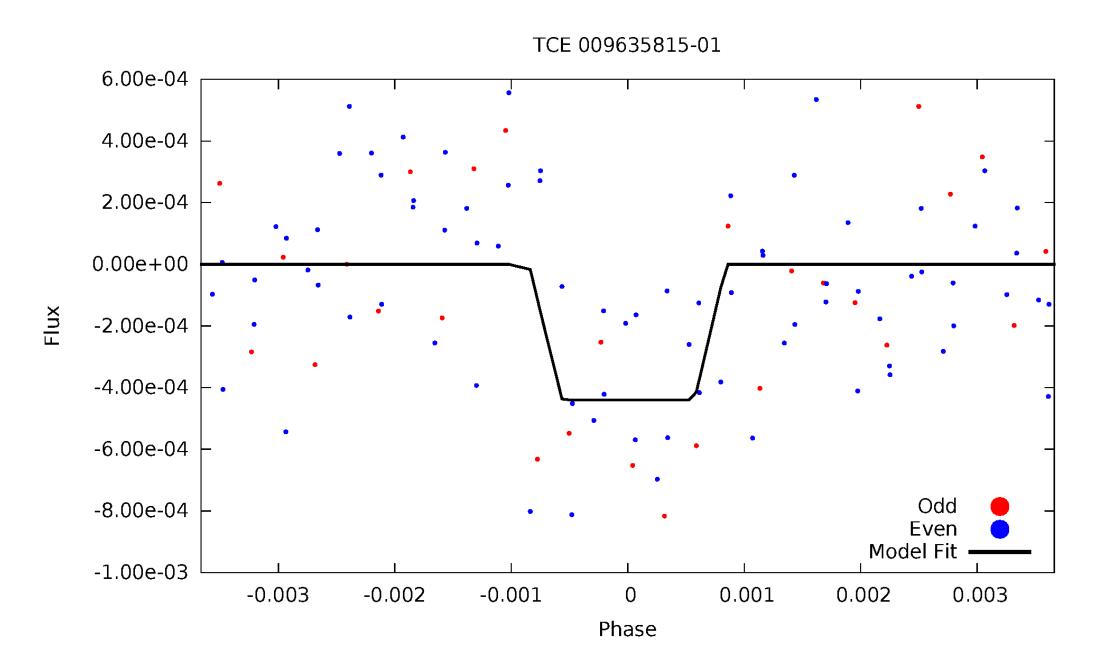
#### TCE 009635815-01, PDC Light Curves



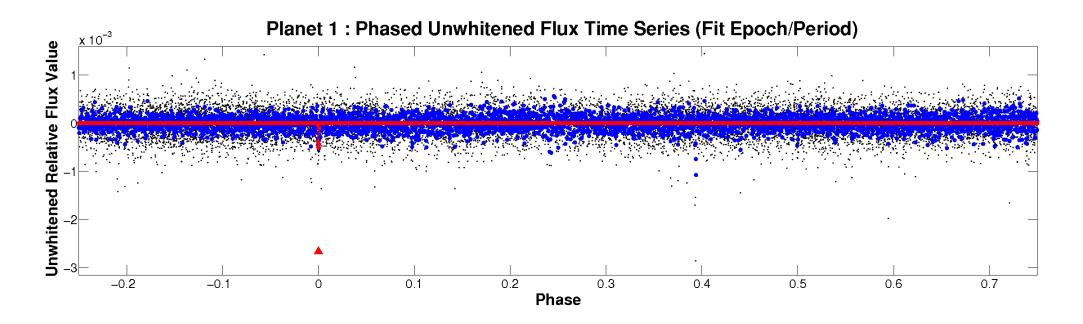


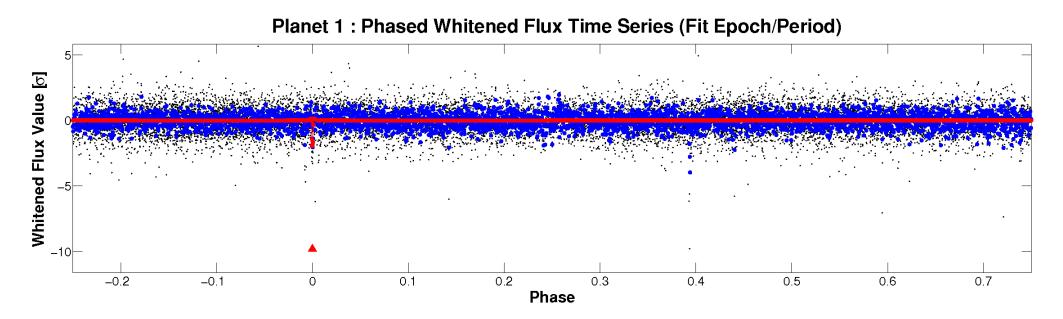


## ALT Odd/Even



## Non-Whitened Vs. Whitened Light Curve





# PDC Quarter-Phased Transit Curves

TCE 009635815-01  $P= 74.912122 Days T_0=153.592657 (BKJD)$ 

|            | 1          | T             | <u></u>    |            |
|------------|------------|---------------|------------|------------|
| Q1         | Q2         | Q3            | Q4         | YO         |
| Q5         | Q6         | Q7            | Q8         | Y1         |
| Q9         | Q10        | Q11           | Q12        | Y2         |
| Q13        | Q14        | Q15           | Q16        | Y3         |
| Q17        | Q18        | Q19           | Q20        | Y4         |
| S3         | S0         | S1            | S2         | All        |
| -3.3 0 3.3 | -3.3 0 3.3 | -3.3 0 3.3    | -3.3 0 3.3 | -3.3 0 3.3 |
|            |            | Phase (Hours) |            |            |
|            |            | (             |            |            |

# DV Quarter-Phased Transit Curves

TCE 009635815-01  $P= 74.912122 Days T_0=153.592657 (BKJD)$ 

| Q1         | Q2         | Q3            | Q4         | YO         |
|------------|------------|---------------|------------|------------|
| Q5         | Q6         | Q7            | Q8         | Y1         |
| Q9         | Q10        | Q11           | Q12        | Y2         |
| Q13        | Q14        | Q15           | Q16        | Y3         |
| Q17        | Q18        | Q19           | Q20        | Y4         |
| -3.3 0 3.3 | -3.3 0 3.3 | -3.3 0 3.3    | -3.3 0 3.3 | -3.3 0 3.3 |
| -3.3 U 3.3 | -3.3 U 3.3 | Phase (Hours) | -3.3 U 3.3 | -o.o U o.o |

# Alt. Detrend Quarter-Phased Transit Curves

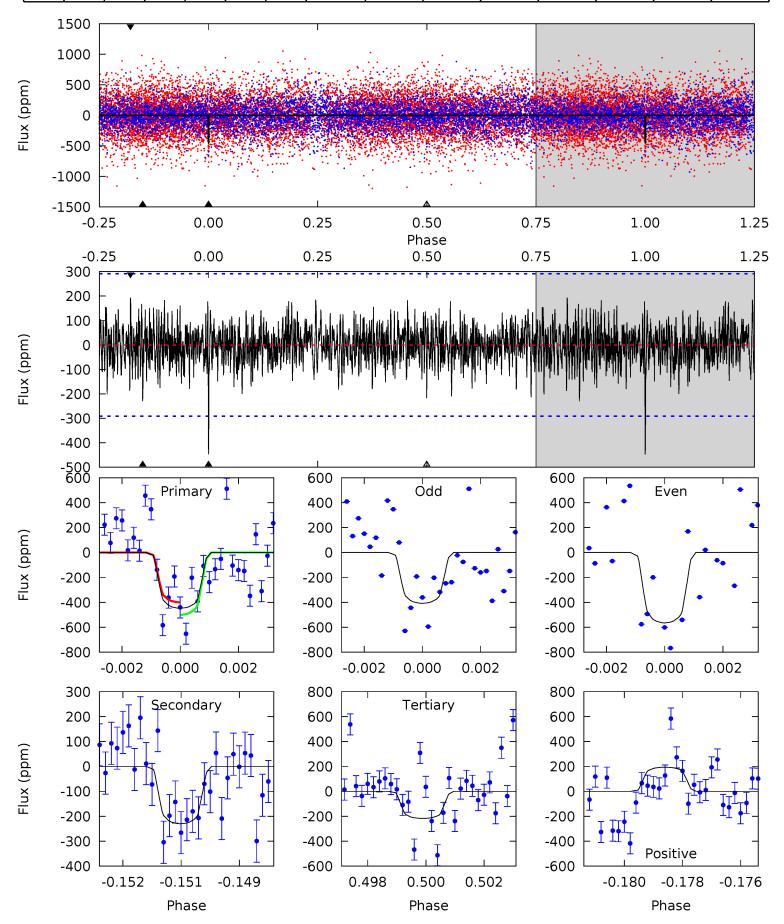
TCE 009635815-01  $P=74.912750 Days T_0=153.577118 (BKJD)$ 

| Q1         | Q2           | Q3            | Q4         | YO         |  |  |  |  |  |
|------------|--------------|---------------|------------|------------|--|--|--|--|--|
| Q5         | Q6           | Q7            | Q8         | Y1         |  |  |  |  |  |
| Q9         | Q10          | Q11           | Q12        | Y2         |  |  |  |  |  |
| Q13        | Q14          | Q15           | Q16        | Y3         |  |  |  |  |  |
| Q17        | Q18          | Q19           | Q20        | Y4         |  |  |  |  |  |
| S3         | S0           | S1            | S2         | All        |  |  |  |  |  |
| -3.8 0 3.8 | 3 -3.8 0 3.8 | -3.8 0 3.8    | -3.8 0 3.8 | -3.8 0 3.8 |  |  |  |  |  |
|            |              | Phase (Hours) |            |            |  |  |  |  |  |
|            |              | •             |            |            |  |  |  |  |  |

## DV Model-Shift Uniqueness Test

#### 009635815-01, P = 74.912122 Days, E = 153.592657 Days

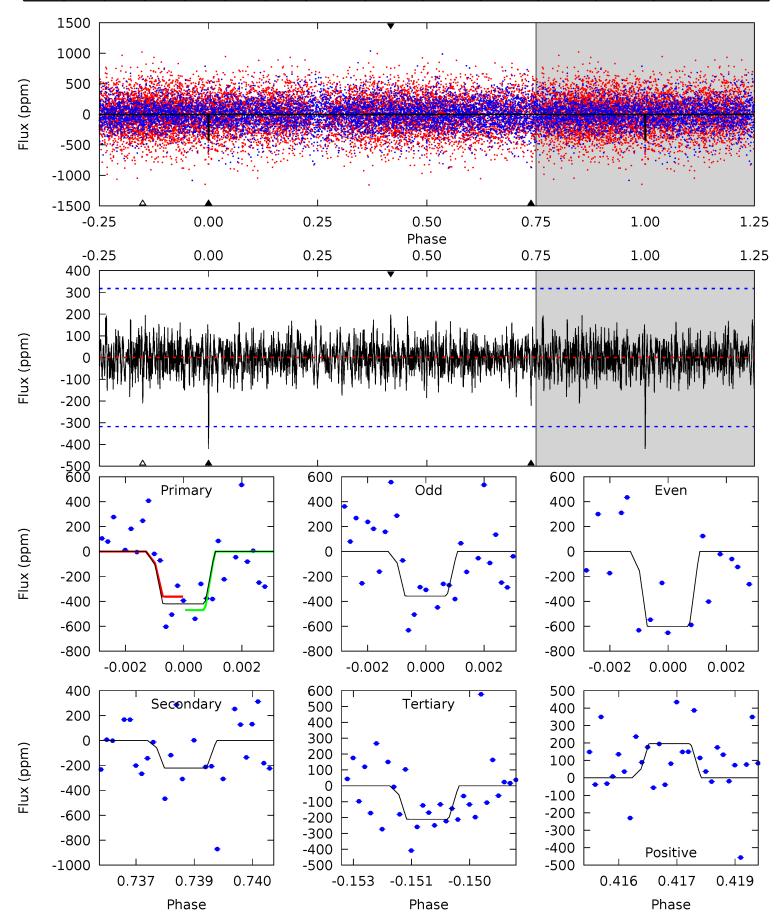
| Pri  | Sec  | Ter  | Pos  | FA <sub>1</sub> | FA <sub>2</sub> | F <sub>Red</sub> | Pri-Ter | Pri-Pos | Sec-Ter | Sec-Pos | Odd-Evn | DMM  | Shape | TAT  |
|------|------|------|------|-----------------|-----------------|------------------|---------|---------|---------|---------|---------|------|-------|------|
| 8.21 | 4.22 | 3.99 | 3.56 | 5.34            | 3.12            | 1.15             | 4.22    | 4.66    | 0.23    | 0.66    | 1.29    | 1.06 | 0.30  | 0.93 |



## Alt Model-Shift Uniqueness Test

#### 009635815-01, P = 74.912750 Days, E = 153.577118 Days

| Pri  | Sec  | Ter  | Pos  | FA <sub>1</sub> | FA <sub>2</sub> | F <sub>Red</sub> | Pri-Ter | Pri-Pos | Sec-Ter | Sec-Pos | Odd-Evn | DMM  | Shape | TAT  |
|------|------|------|------|-----------------|-----------------|------------------|---------|---------|---------|---------|---------|------|-------|------|
| 7.09 | 3.75 | 3.57 | 3.32 | 5.37            | 3.16            | 0.99             | 3.53    | 3.77    | 0.18    | 0.43    | 1.73    | 1.13 | 0.32  | 0.92 |



#### Stellar Parameters For KIC 009635815

|        | $T_{\rm eff}(K)$     | $\log(g)$                 | [Fe/H]                     | $R (R_{\odot})$           | $M(\mathrm{M}_{\bigodot})$ | $p_{\star} (\text{g} \cdot \text{cm}^{-3})$ |
|--------|----------------------|---------------------------|----------------------------|---------------------------|----------------------------|---|
|        | $6564^{+181}_{-250}$ | $4.261^{+0.108}_{-0.201}$ | $-0.080^{+0.250}_{-0.300}$ | $1.364^{+0.452}_{-0.243}$ | $1.240^{+0.188}_{-0.188}$  | $0.688^{+0.415}_{-0.346}$                   |
|        | +3%/-4%              | +3%/-5%                   | +312%/-375%                | +33%/-18%                 | +15%/-15%                  | +60%/-50%                                   |
| Source | KIC0                 | KIC0                      | KIC0                       |                           | DSEP                       |   |

KIC = Kepler Input Catalog; PHO = Photometry; SPE = Spectroscopy; AST = Asteroseismology TRA = Transits; DESP = Dartmouth Models; MULT = Multiple Models

## Secondary Eclipse Parameters for KIC 009635815-01 / KOI

| Detrend | Depth (ppm)   | $R_p(R_{\bigoplus})$   | $T_{max}$ (K)     | $T_{obs}$ (K)         | $A_{obs}$             |
|---------|---------------|------------------------|-------------------|-----------------------|-----------------------|
| DV      | $-230 \pm 55$ | $3.70^{+1.68}_{-1.47}$ | $782^{+57}_{-48}$ | $5188^{+1457}_{-721}$ | $1253^{+2134}_{-688}$ |
| Alt.    | -222±59       | $3.16^{+1.57}_{-1.51}$ | $782^{+63}_{-49}$ | $5513^{+2335}_{-863}$ | $1675^{+4702}_{-965}$ |

 $T_{max}$  = Theoretical Maximum Planetary Temperature  $T_{obs}$  = Observed Planetary Temperature (Assuming A=0.3)  $A_{obs}$  = Observed Albedo (Assuming T=0)

If a secondary eclipse is present, the system is likely an EB if  $T_{obs} \gg T_{max}$  AND  $A_{obs} \gg 1.0$ 

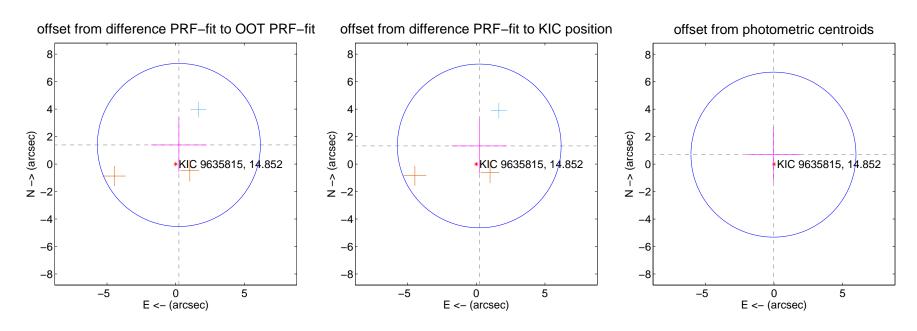
#### DV Centroid Data

Supplemental centroid analysis for 009635815-01. Kepler magnitude: 14.85. Transit SNR 7.86

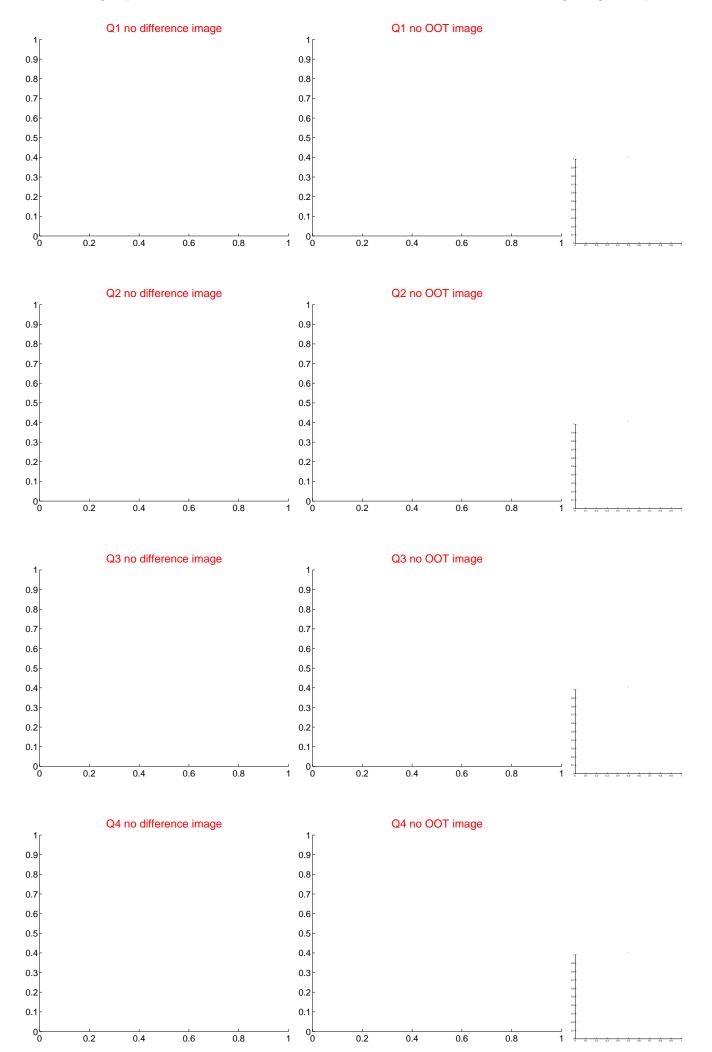
There are 1 quarters with good PRF difference image offsets

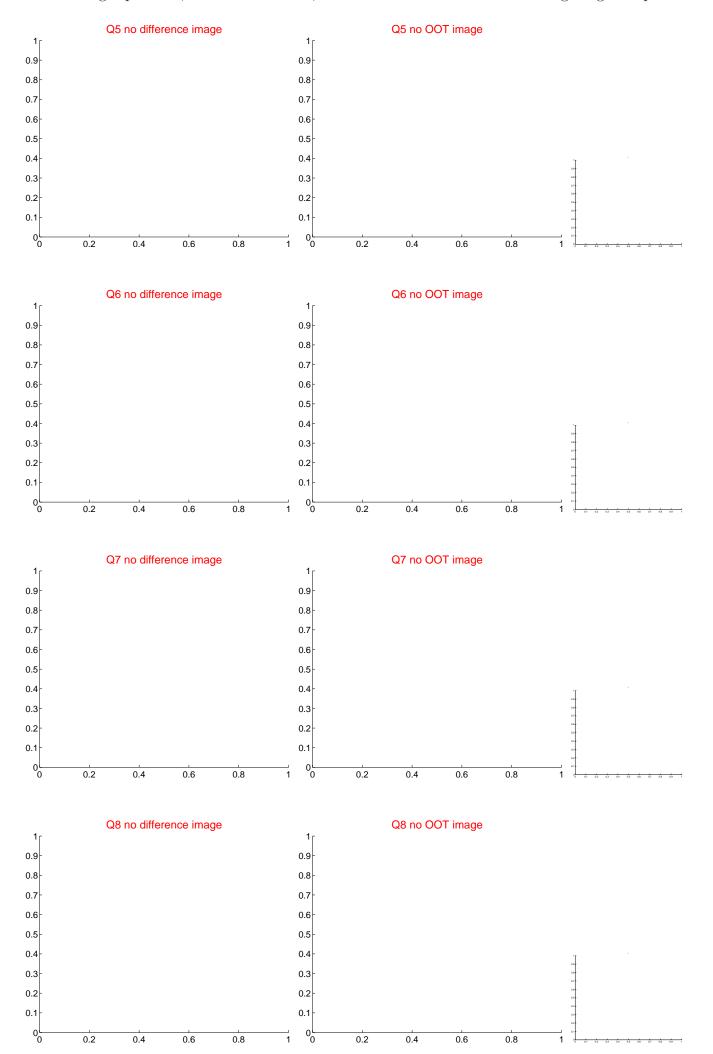
The direct PRF centroid is offset from the target star catalog position by about 0.12 arcsec

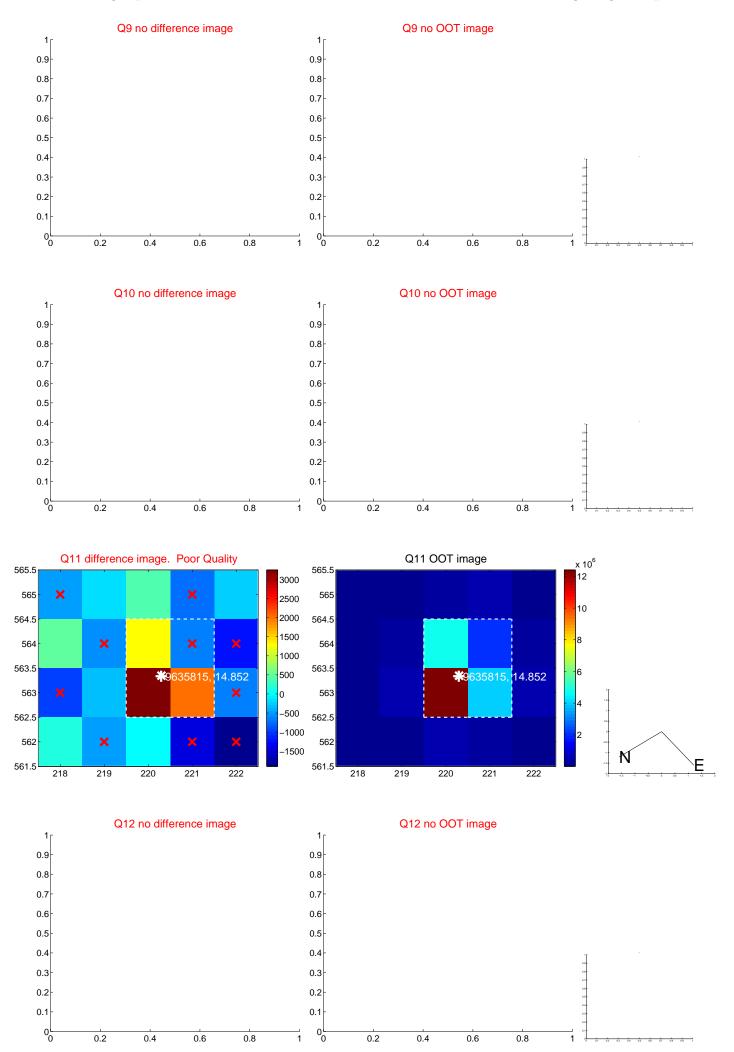
|   | Distance in arcsec | Distance / $\sigma$ | $\Delta$ RA        | $\Delta$ Dec      |
|---|--------------------|---------------------|--------------------|-------------------|
| PRF-fit source offset from OOT          | $1.407 \pm 1.977$  | 0.71                | $-0.230 \pm 2.019$ | $1.388 \pm 1.976$ |
| PRF-fit source offset from KIC position | $1.336 \pm 1.986$  | 0.67                | $-0.217 \pm 2.008$ | $1.318 \pm 1.985$ |
| photometric centroid source offset      | $0.69 \pm 2.00$    | 0.34                | $0.04 \pm 1.95$    | $0.69 \pm 2.00$   |



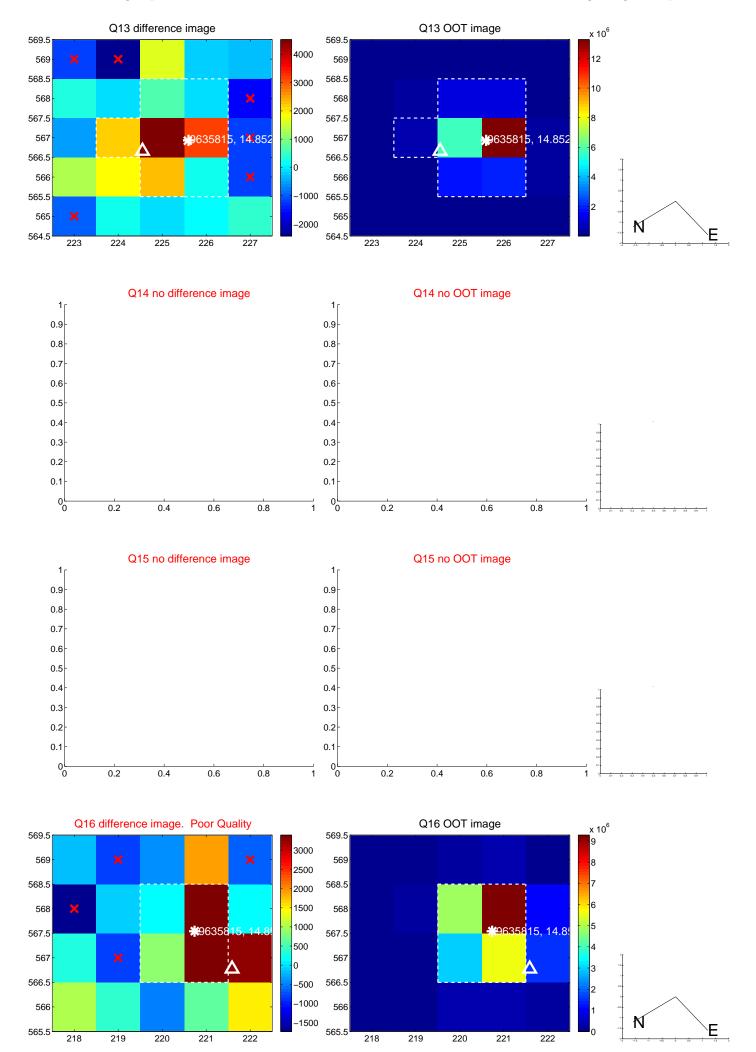
Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: three- $\sigma$ . Red \*: target star. Blue \*: Other stars. Text next to a star gives its KIC ID and kepmag. KIC IDs > 15,000,000 are from the UKIRT catalog.



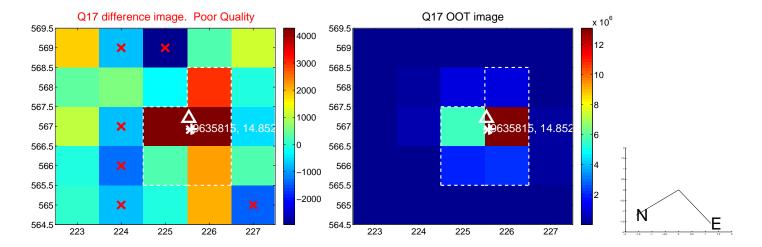


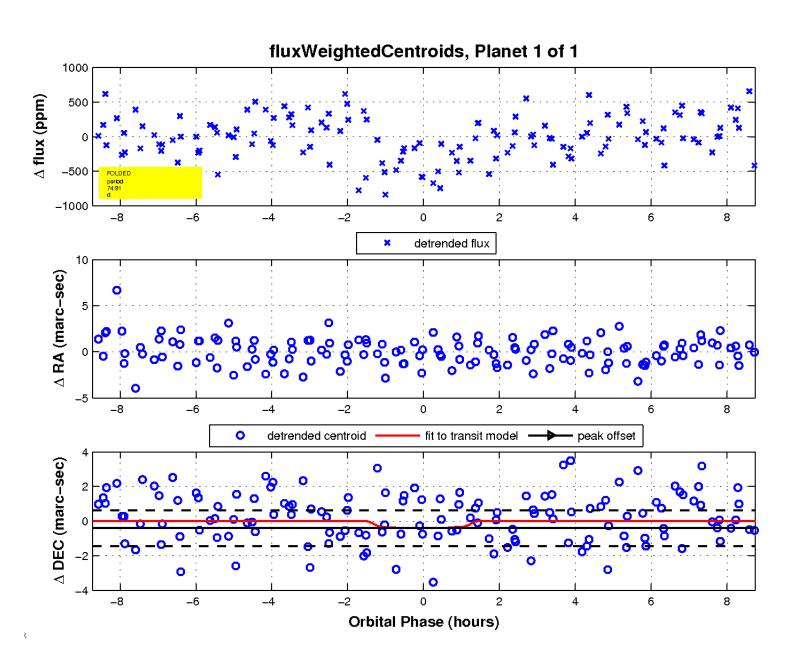


white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.





# UKIRT Image

