

# KIC 007549389

## Q1-17 DR25 TCE Parameters

| TCE          | Run Type | KOI? | Period (Days) | Epoch (BKJD) | Depth (ppm) | Duration (Hours) | MES | SNR | $R_{\star}$ ( $R_{\odot}$ ) | $T_{\star}$ (K) | $R_p$ ( $R_{\oplus}$ ) | $S_p$ ( $S_{\oplus}$ ) |
|--------------|----------|------|---------------|--------------|-------------|------------------|-----|-----|-----------------------------|-----------------|------------------------|------------------------|
| 007549389-01 | OBS      | No   | 18.470859     | 149.547811   | 50.8        | 34.411           | 7.5 | 9.5 | 2.11                        | 6194            | 1.60                   | 280.05                 |

## Robovetter Results

| TCE          | Run Type | Disp | Score | N | S | C | E | Comments              |
|--------------|----------|------|-------|---|---|---|---|-----------------------|
| 007549389-01 | OBS      | FP   | 0.00  | 1 | 0 | 0 | 0 | LPP_DV—MOD_NONUNIQ_DV |

**Notes:** OBS = Observed. INJ = Injected. INV = Inverted. SCR = Scrambled.

N = Not Transit-Like. S = Stellar Eclipse. C = Centroid Offset. E = Ephemeris Match.

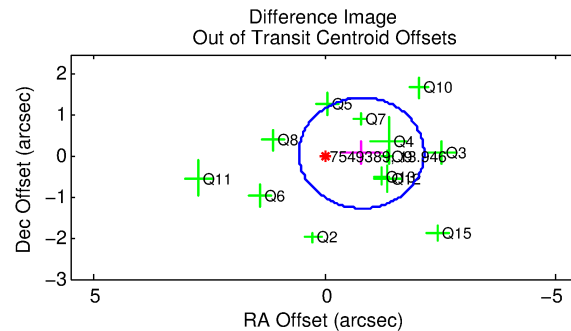
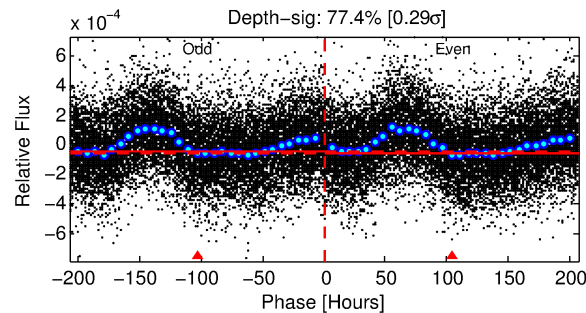
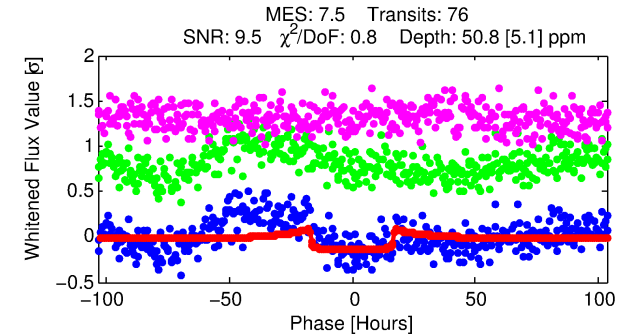
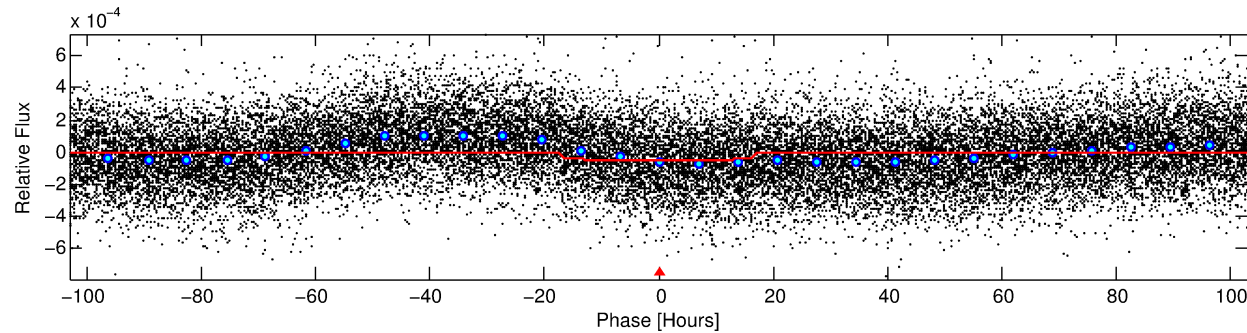
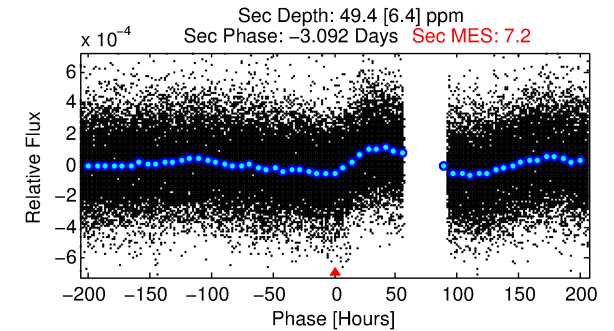
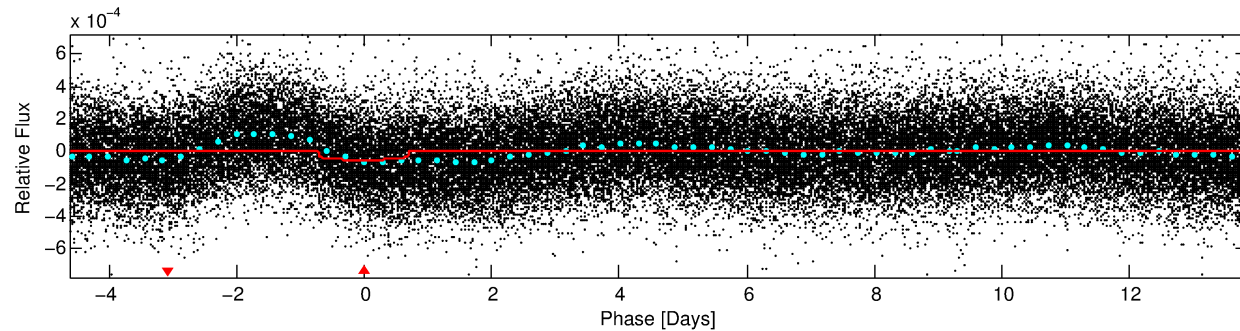
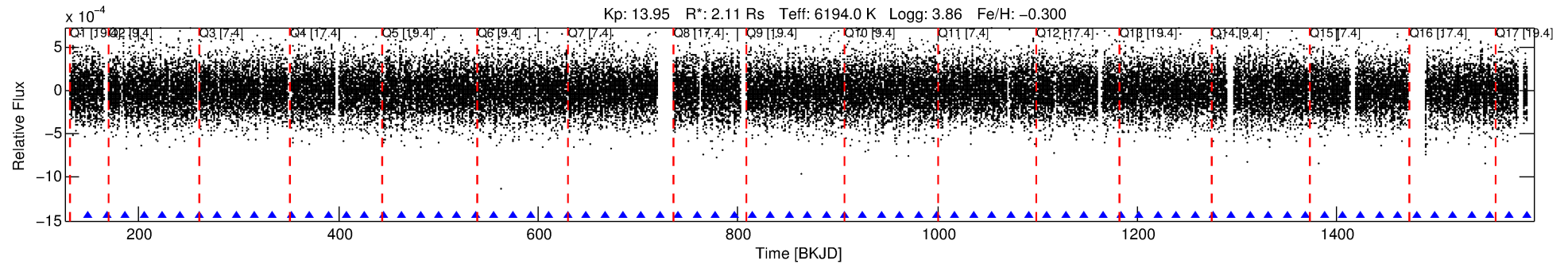
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 007549389-01

No Significant Match Found

# DV One-Page Summary

KIC: 7549389 Candidate: 1 of 1 Period: 18.471 d



## DV Fit Results:

Period = 18.47086 [0.00053] d  
Epoch = 149.5478 [0.0237] BKJD  
Rp/R\* = 0.0070 [0.0010]  
a/R\* = 3.14 [1.97]  
b = 0.68 [0.55]  
Seff = 280.05 [230.27]  
Teq = 1043 [214] K  
Rp = 1.60 [0.78] Re  
a = 0.1446 [0.0703] AU  
Ag = 221.93 [193.17] [1.14σ]  
**Teffp = 6225 [537] K [8.96σ]**

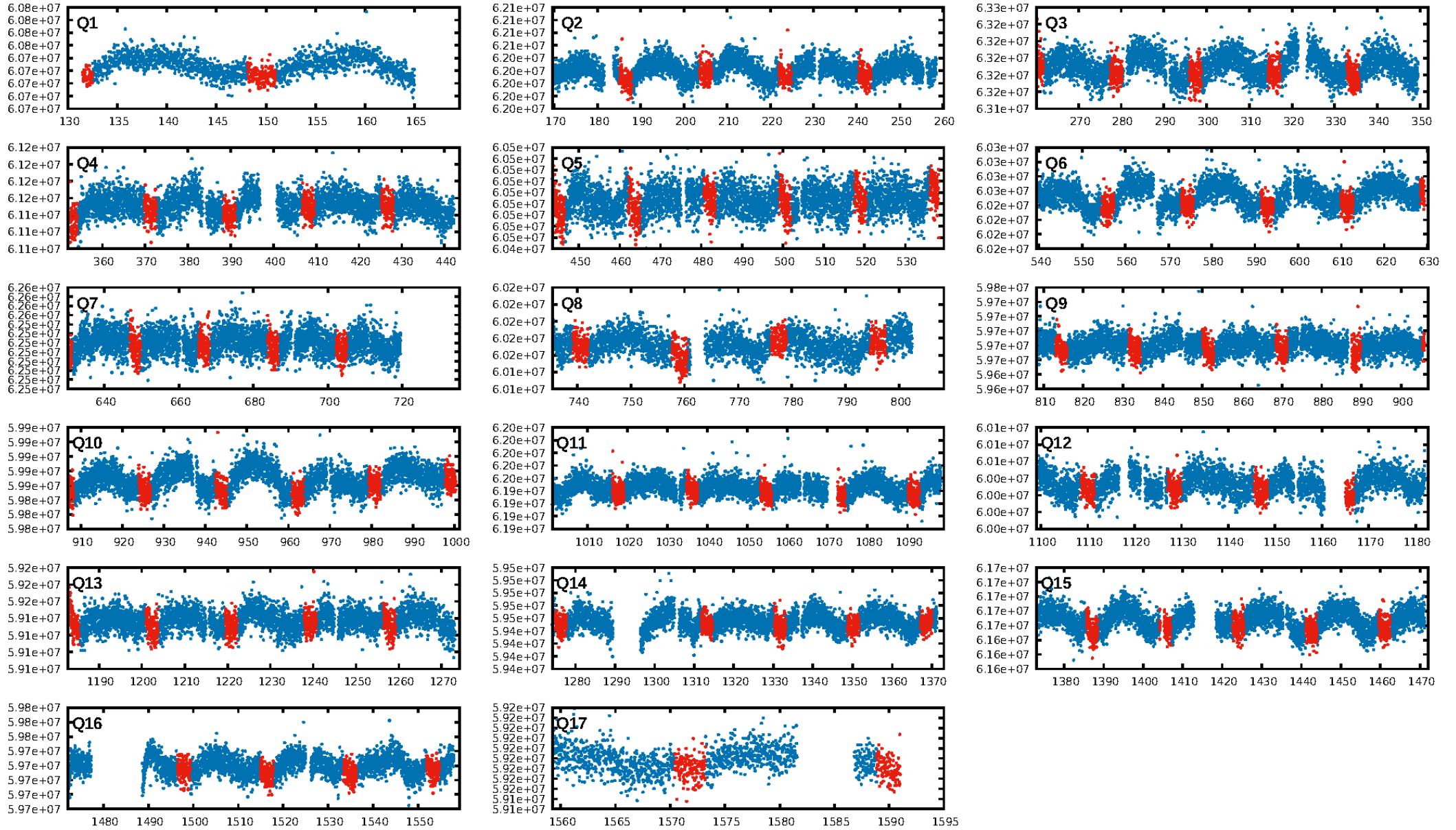
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: 99.9%  
ModelChiSquareGof-sig: 100.0%  
Bootstrap-pfa: 1.38e-14  
RollingBand-fgt: 1.00 [72/72]  
GhostDiagnostic-chr: -2.684  
Centroid-sig: 64.4%  
Centroid-so: 0.532 arcsec [0.60σ]  
OotOffset-rm: 0.800 arcsec [1.77σ]  
KicOffset-rm: 0.791 arcsec [1.71σ]  
OotOffset-st: 3/4/3/3 [13]  
KicOffset-st: 3/4/3/3 [13]  
DiffImageQuality-fgm: 0.92 [12/13]  
DiffImageOverlap-fno: 1.00 [17/17]

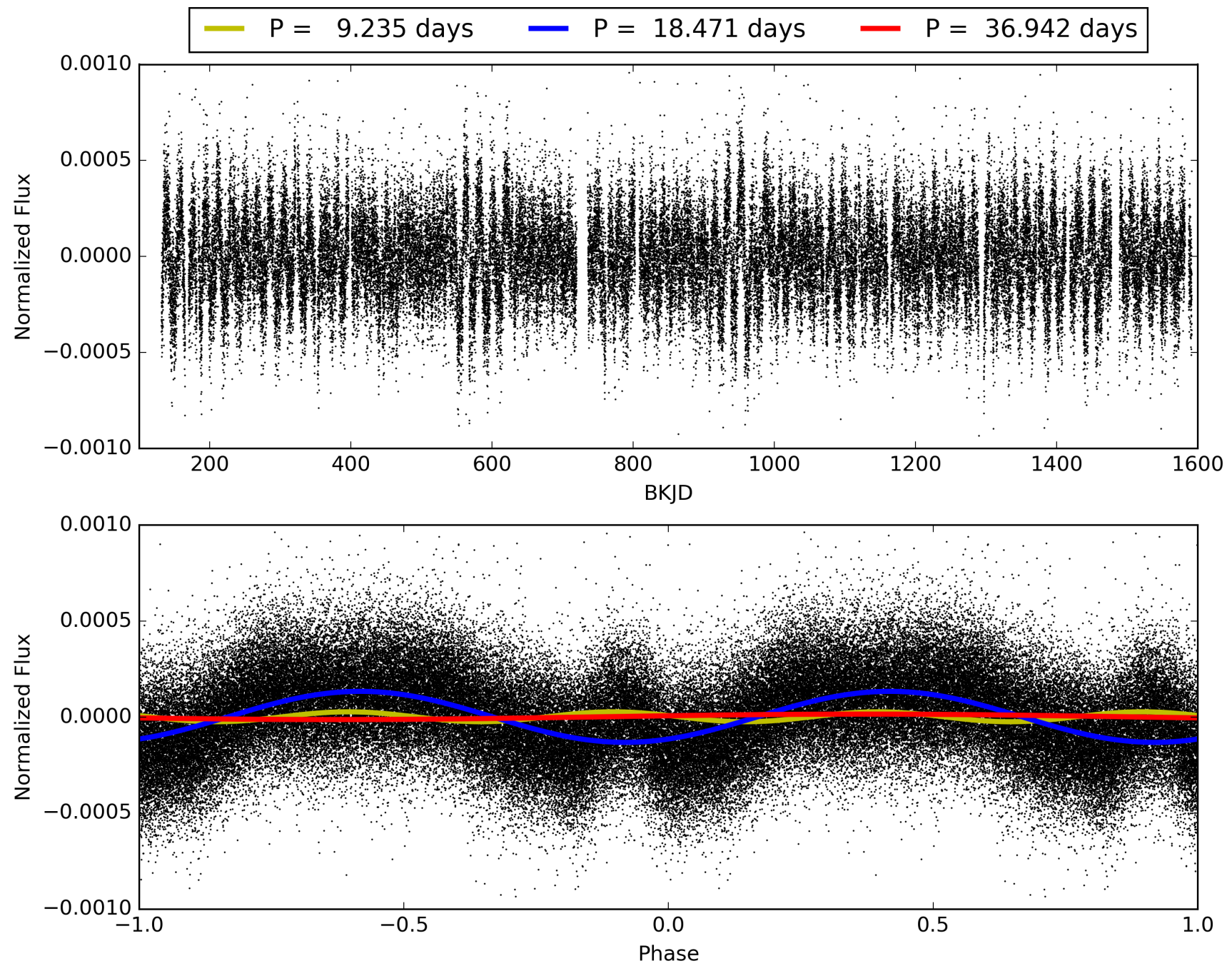
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 19:44:53 Z

This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

# TCE 007549389-01, PDC Light Curves



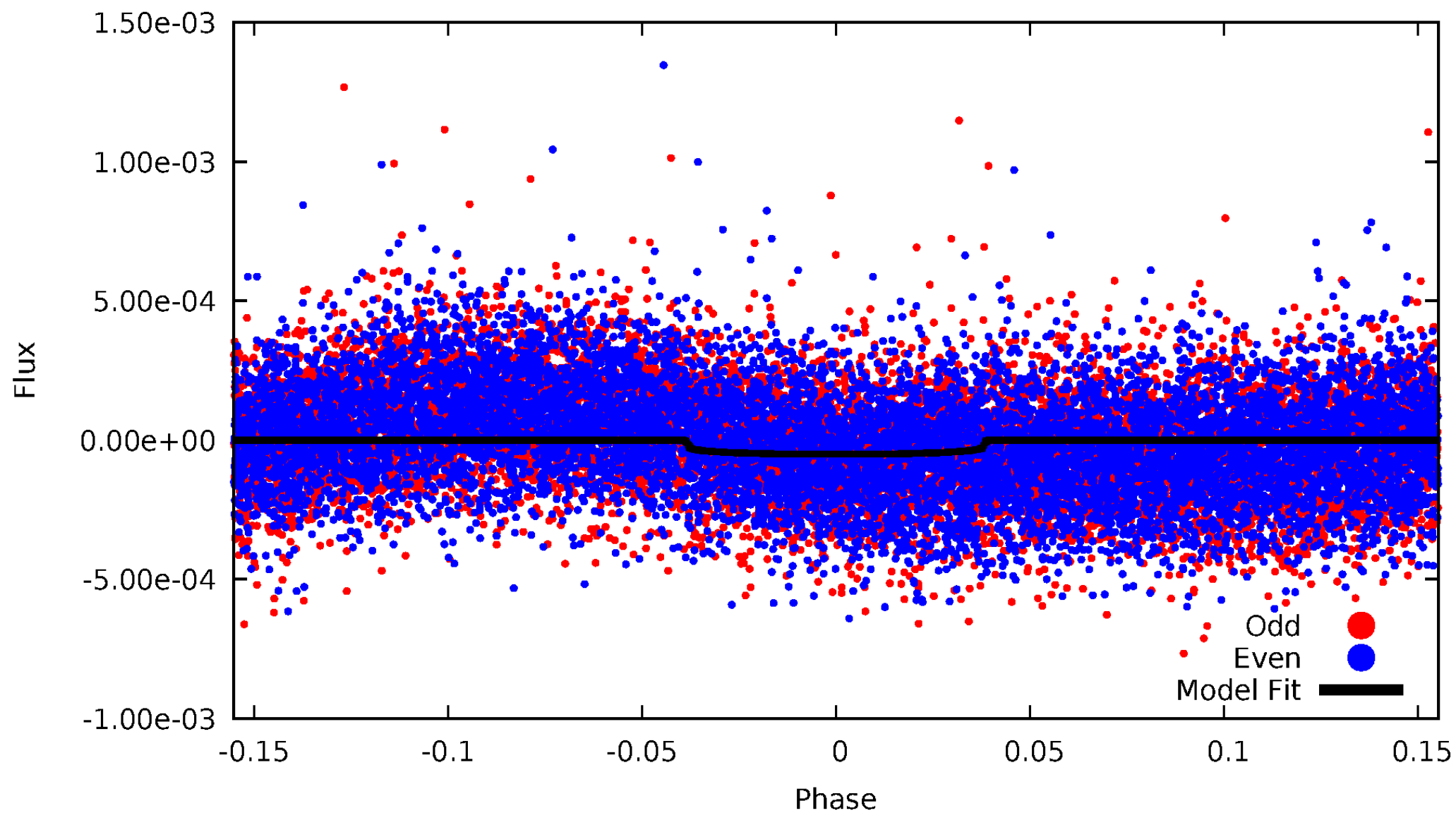
# TCE 007549389-01





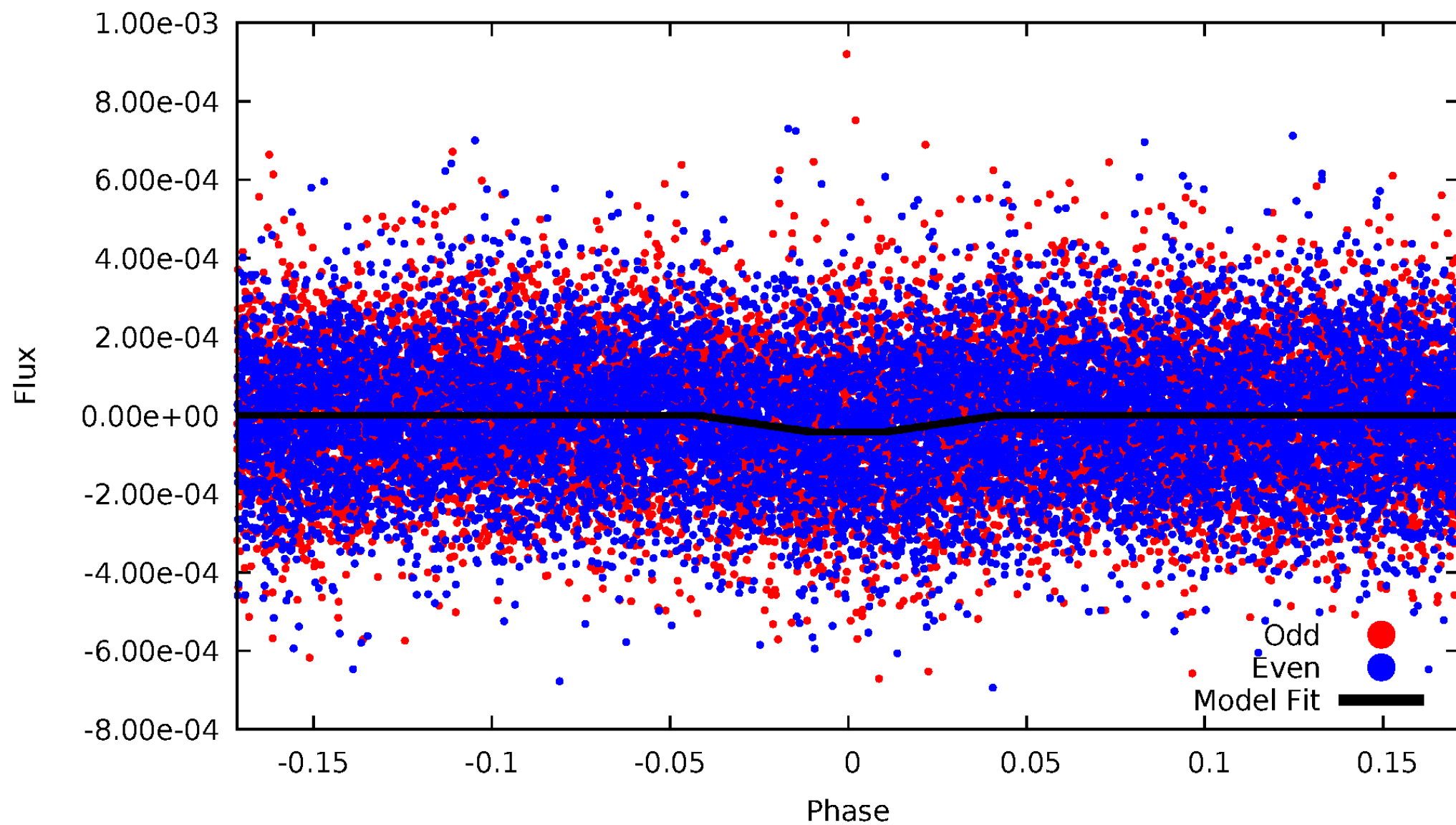
# DV Odd/Even

TCE 007549389-01



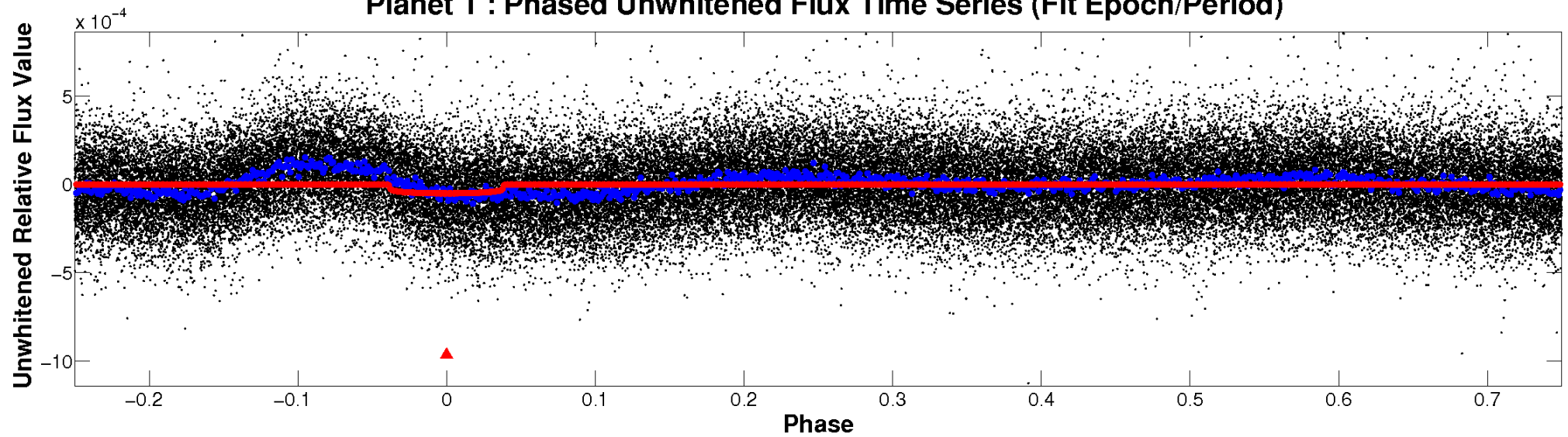
# ALT Odd/Even

TCE 007549389-01

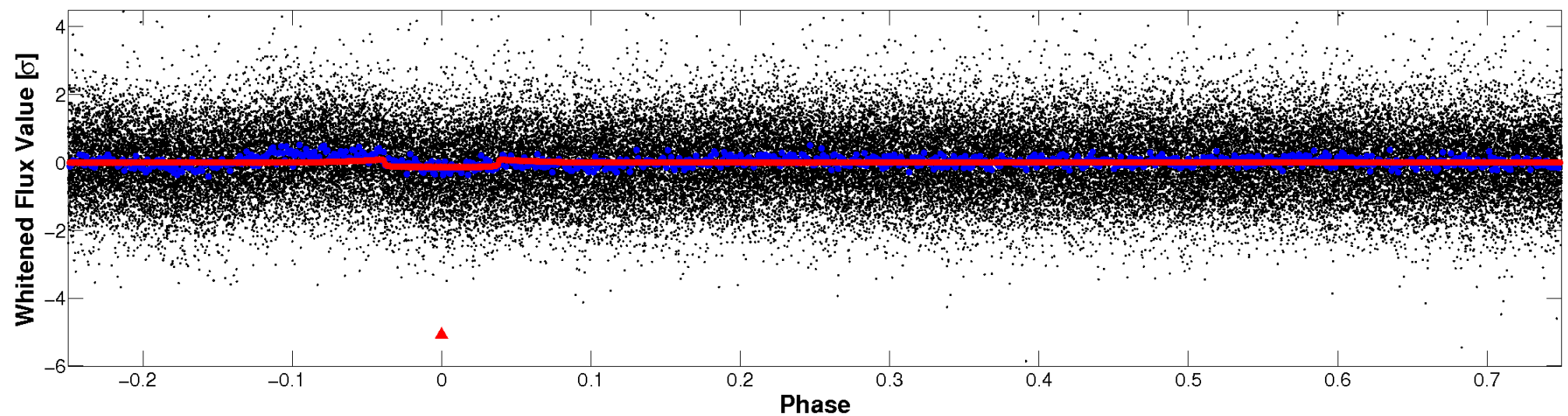


# Non-Whitened Vs. Whitened Light Curve

**Planet 1 : Phased Unwhitened Flux Time Series (Fit Epoch/Period)**

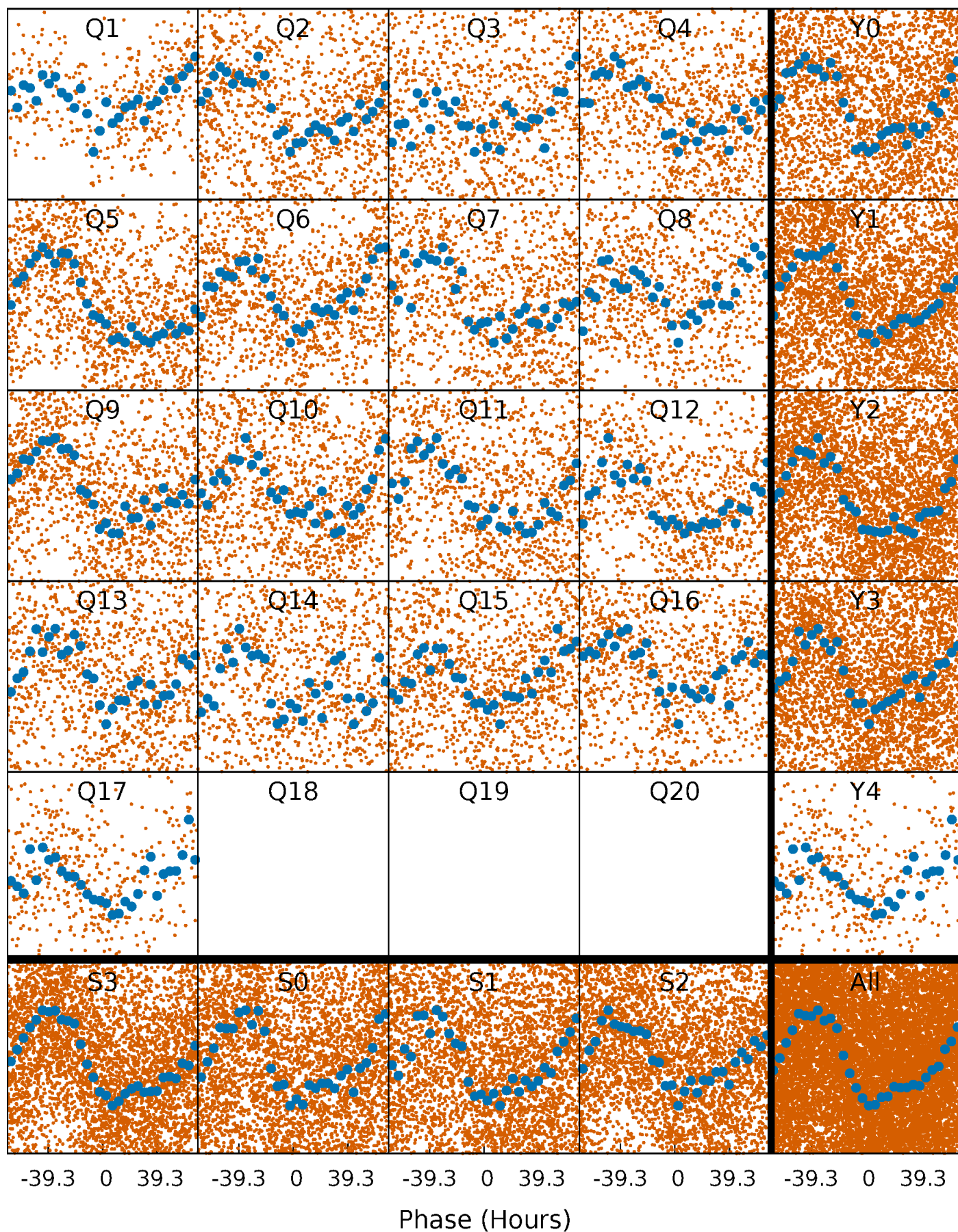


**Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)**



# PDC Quarter-Phased Transit Curves

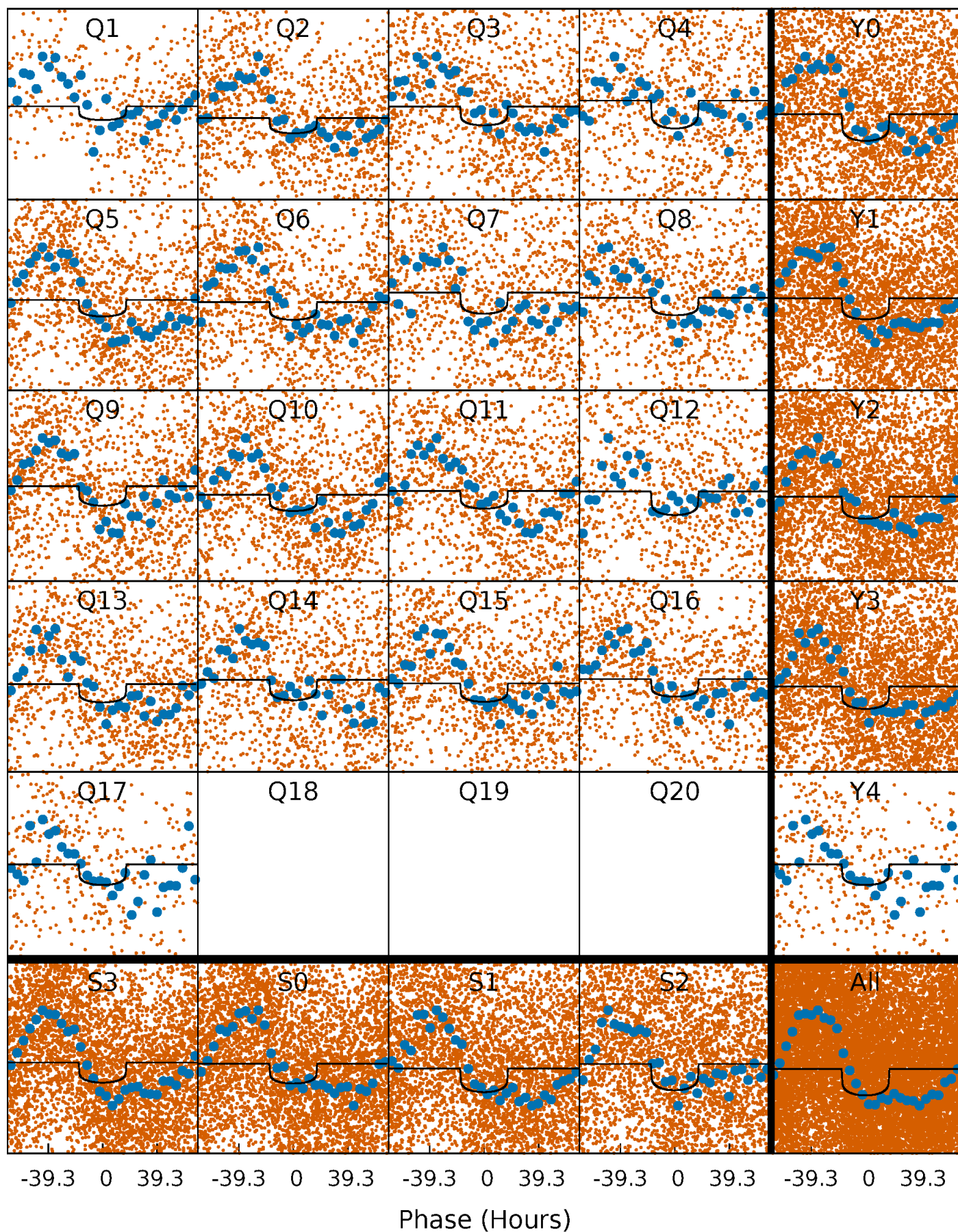
TCE 007549389-01 P= 18.470859 Days  $T_0=149.547811$  (BKJD)





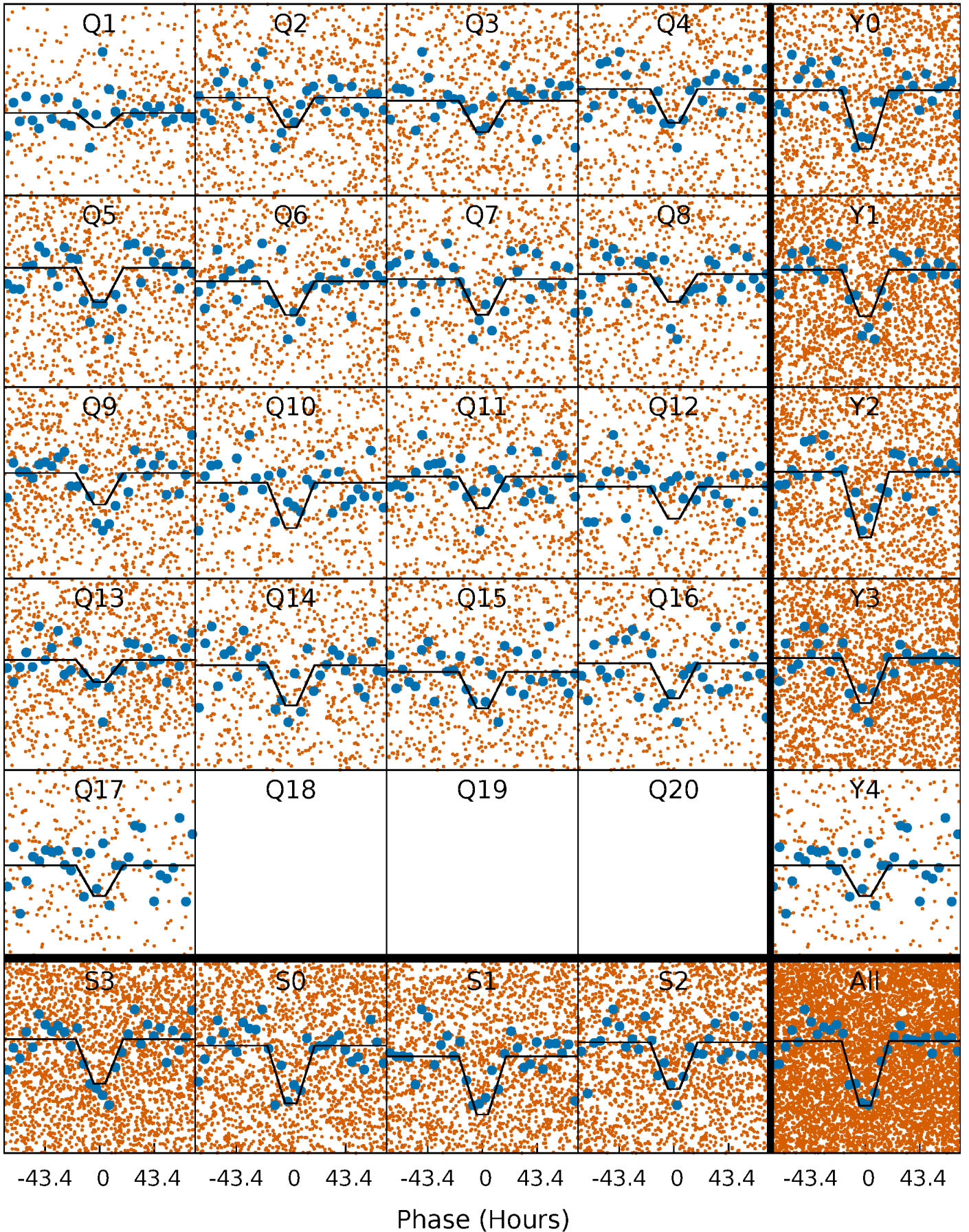
# DV Quarter-Phased Transit Curves

TCE 007549389-01 P= 18.470859 Days  $T_0=149.547811$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

TCE 007549389-01 P= 18.470455 Days  $T_0=149.534296$  (BKJD)

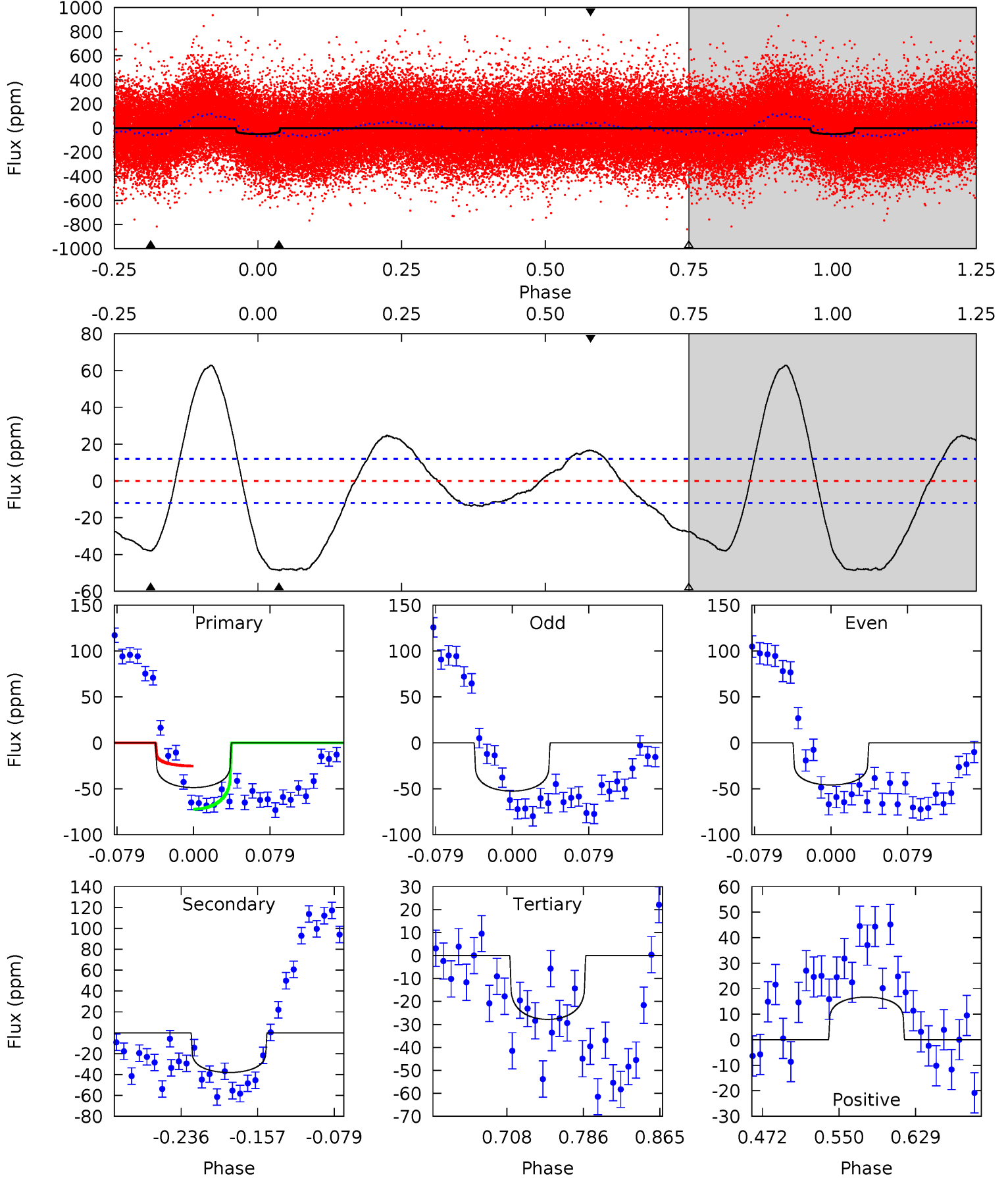




# DV Model-Shift Uniqueness Test

007549389-01, P = 18.470859 Days, E = 131.076952 Days

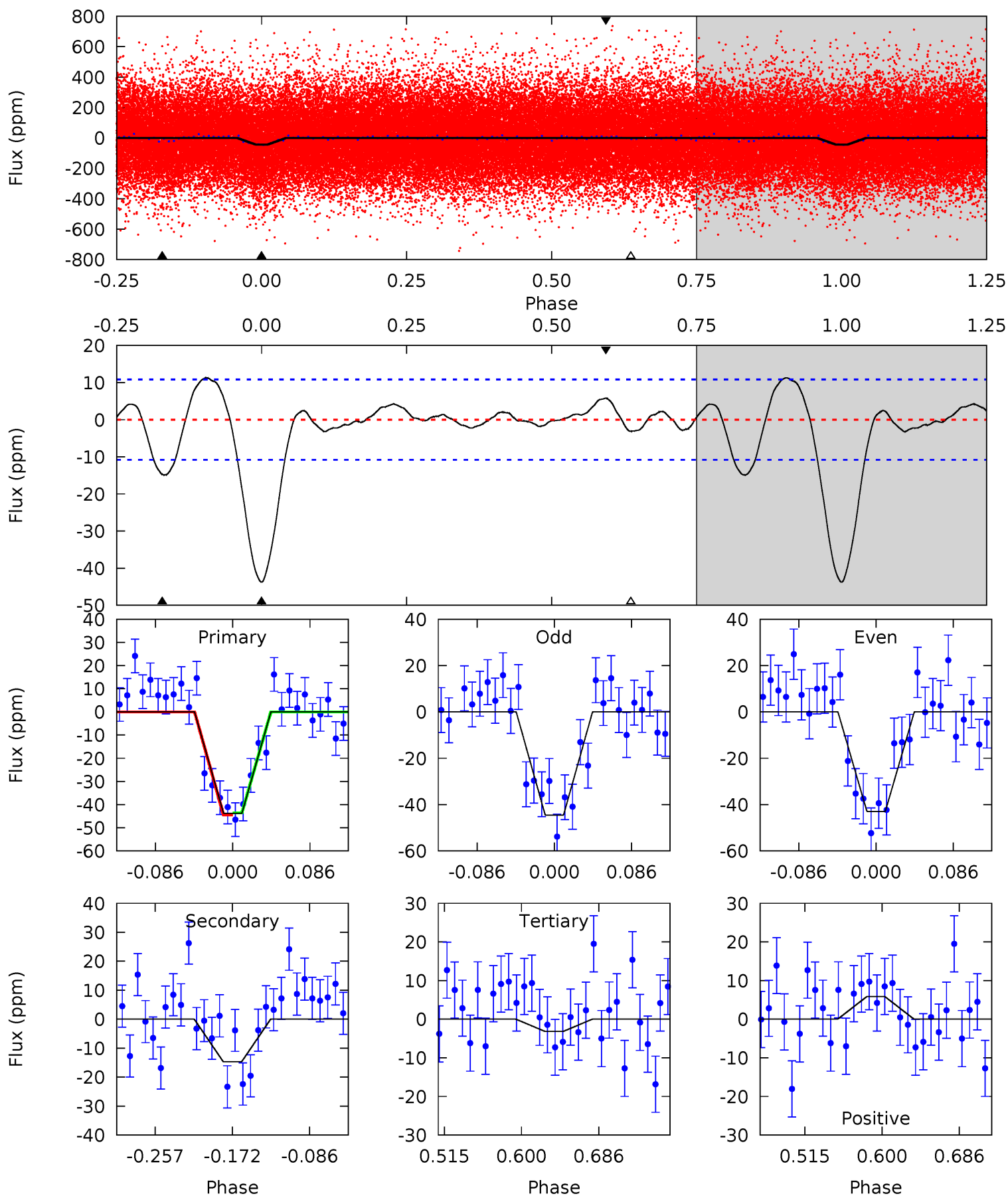
| Pri  | Sec  | Ter  | Pos  | FA <sub>1</sub> | FA <sub>2</sub> | F <sub>Red</sub> | Pri-Ter | Pri-Pos | Sec-Ter | Sec-Pos | Odd-Evn | DMM  | Shape | TAT  |
|------|------|------|------|-----------------|-----------------|------------------|---------|---------|---------|---------|---------|------|-------|------|
| 18.7 | 14.6 | 10.7 | 6.41 | 4.61            | 1.76            | 8.01             | 8.00    | 12.3    | 3.93    | 8.19    | 1.28    | 0.93 | 0.56  | 9.07 |



# Alt Model-Shift Uniqueness Test

007549389-01, P = 18.470455 Days, E = 131.063841 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  |
|------|------|------|------|-----------------|-----------------|------------------|---------|---------|---------|---------|---------|------|-------|------|
| 18.6 | 6.25 | 1.34 | 2.48 | 4.60            | 1.72            | 0.88             | 17.2    | 16.1    | 4.90    | 3.77    | 0.33    | 0.82 | 0.21  | 0.19 |





### Stellar Parameters For KIC 007549389

|        | $T_{\text{eff}}(K)$  | $\log(g)$                 | [Fe/H]                     | $R$ ( $R_{\odot}$ )       | $M(M_{\odot})$            | $p_{\star}$ ( $\text{g}\cdot\text{cm}^{-3}$ ) |
|--------|----------------------|---------------------------|----------------------------|---------------------------|---------------------------|---|
|        | $6194^{+212}_{-212}$ | $3.863^{+0.488}_{-0.122}$ | $-0.300^{+0.300}_{-0.300}$ | $2.107^{+0.528}_{-0.980}$ | $1.181^{+0.176}_{-0.242}$ | $0.178^{+0.874}_{-0.062}$                     |
|        | +3%/-3%              | +13%/-3%                  | +100%/-100%                | +25%/-47%                 | +15%/-20%                 | +491%/-35%                                    |
| Source | PHO1                 | 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 007549389-01 / KOI

| Detrend | Depth (ppm) | $R_p$ ( $R_{\oplus}$ ) | $T_{\text{max}}$ (K) | $T_{\text{obs}}$ (K) | $A_{\text{obs}}$   |
|---------|-------------|------------------------|----------------------|----------------------|--------------------|
| DV      | $-38 \pm 3$ | $1.47^{+0.38}_{-0.39}$ | $1408^{+124}_{-180}$ | $5840^{+537}_{-422}$ | $204^{+154}_{-75}$ |
| Alt.    | $-15 \pm 2$ | $1.37^{+0.39}_{-0.34}$ | $1412^{+115}_{-178}$ | $4842^{+419}_{-332}$ | $90^{+69}_{-35}$   |

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

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

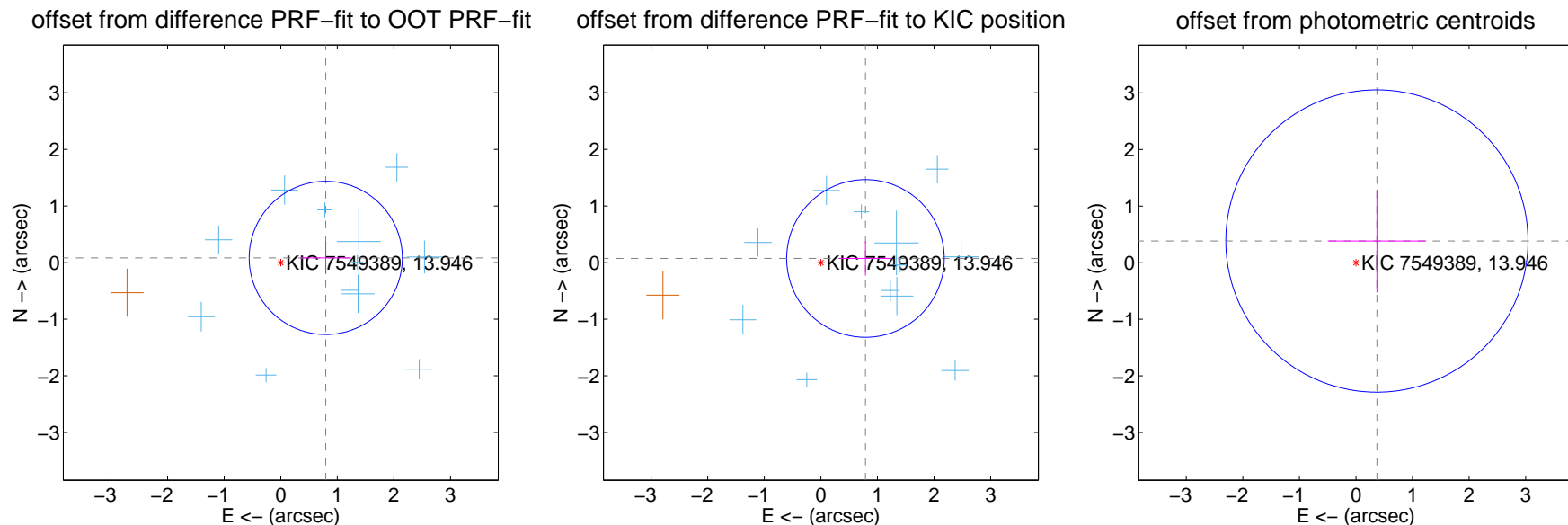
## DV Centroid Data

Supplemental centroid analysis for 007549389-01. Kepler magnitude: 13.95. Transit SNR 9.53

There are 12 quarters with good PRF difference image offsets

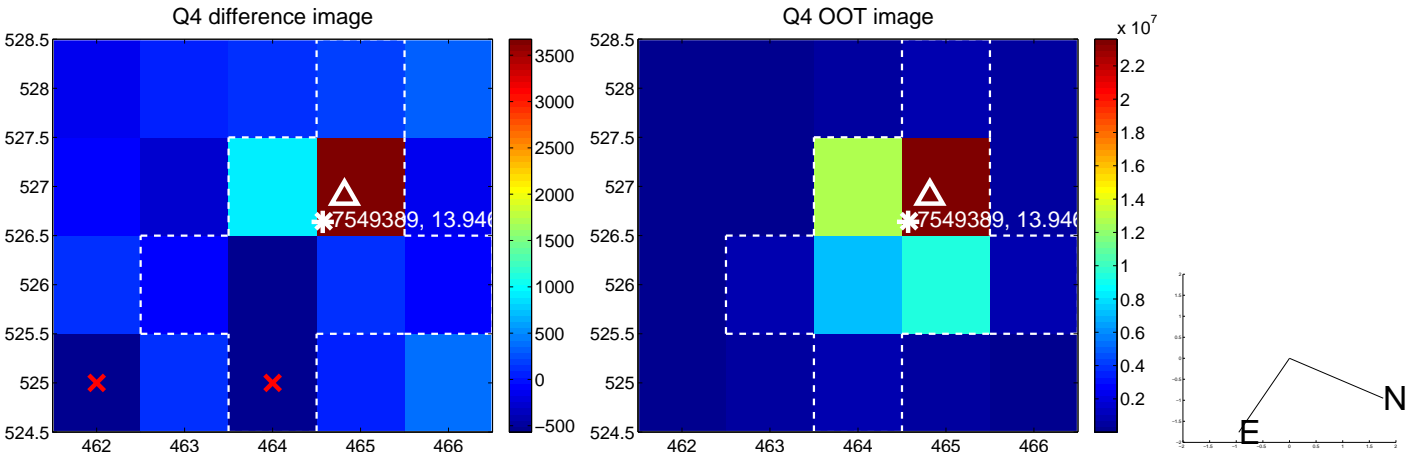
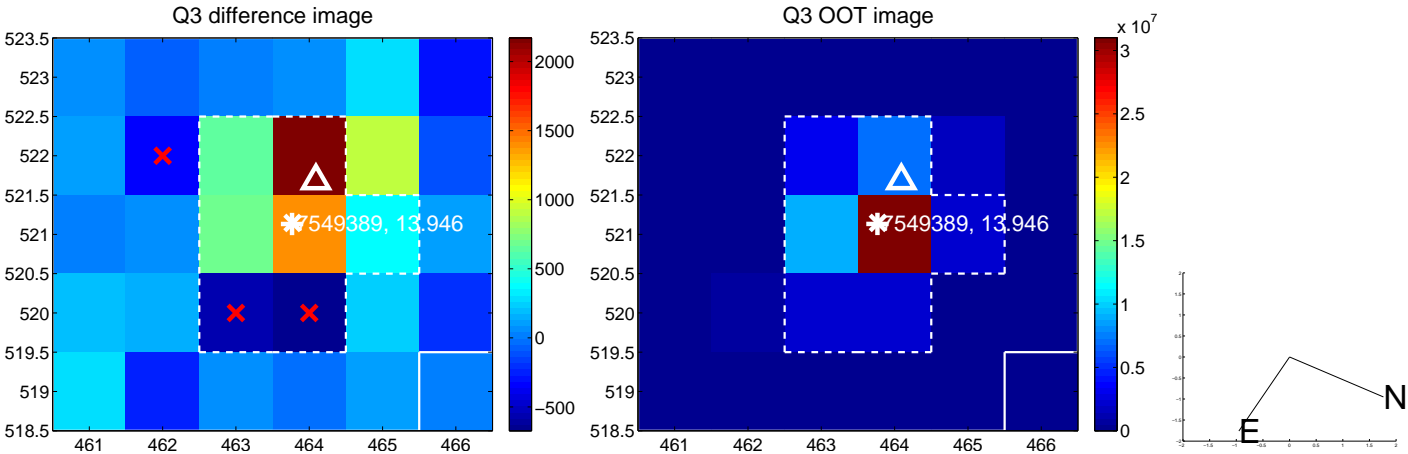
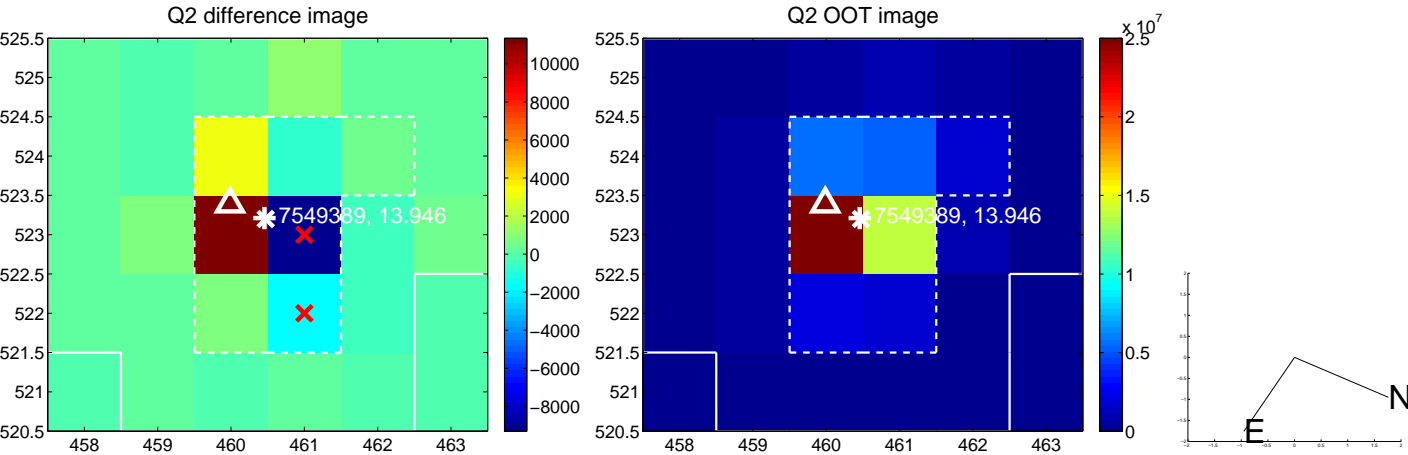
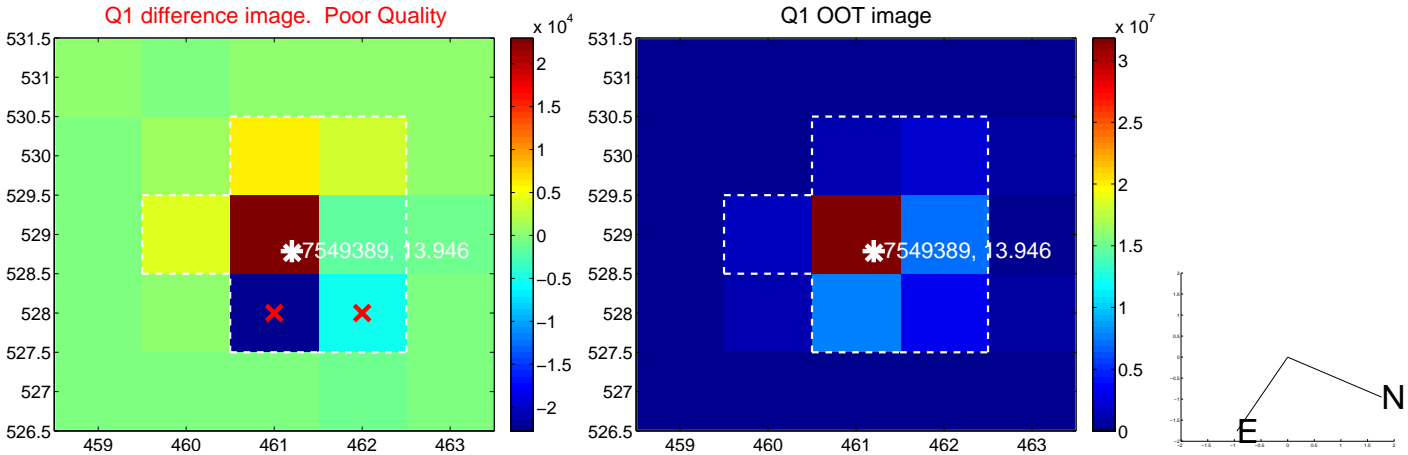
The direct PRF centroid is offset from the target star catalog position by about 0.08 arcsec

|   | Distance in arcsec | Distance / $\sigma$ | $\Delta$ RA        | $\Delta$ Dec      |
|---|--------------------|---------------------|--------------------|-------------------|
| PRF-fit source offset from OOT          | $0.800 \pm 0.451$  | 1.77                | $-0.795 \pm 0.447$ | $0.083 \pm 0.286$ |
| PRF-fit source offset from KIC position | $0.791 \pm 0.464$  | 1.71                | $-0.788 \pm 0.462$ | $0.073 \pm 0.303$ |
| photometric centroid source offset      | $0.53 \pm 0.89$    | 0.60                | $-0.37 \pm 0.87$   | $0.38 \pm 0.91$   |

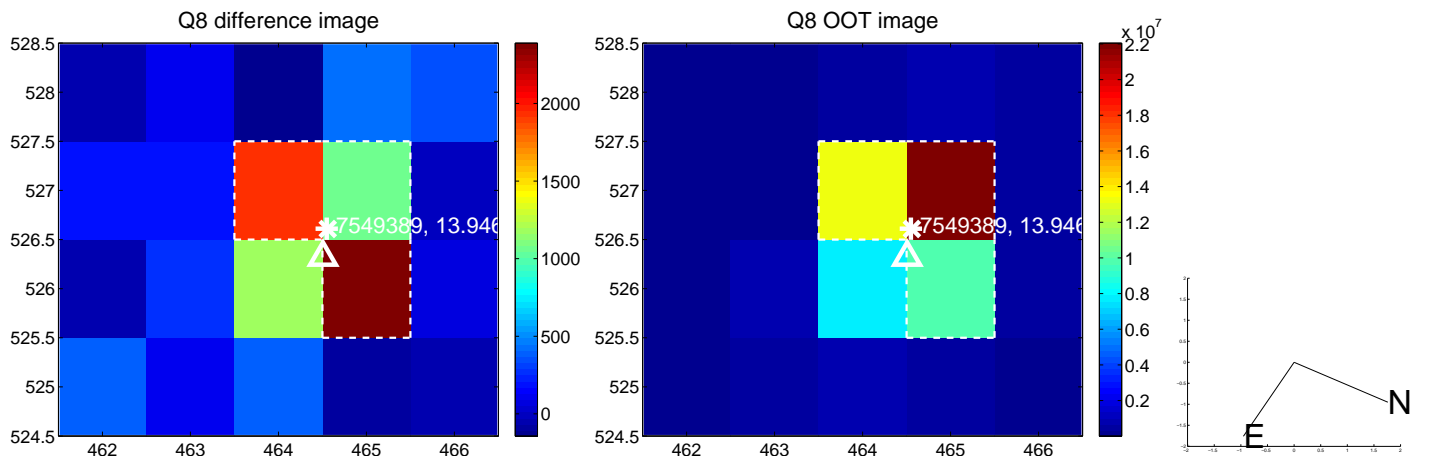
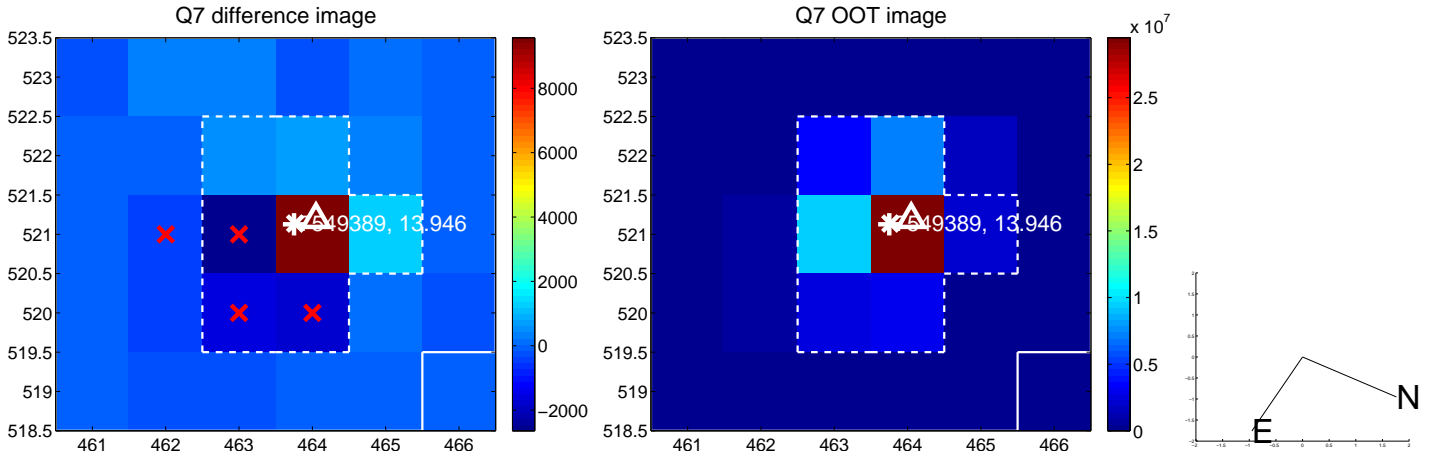
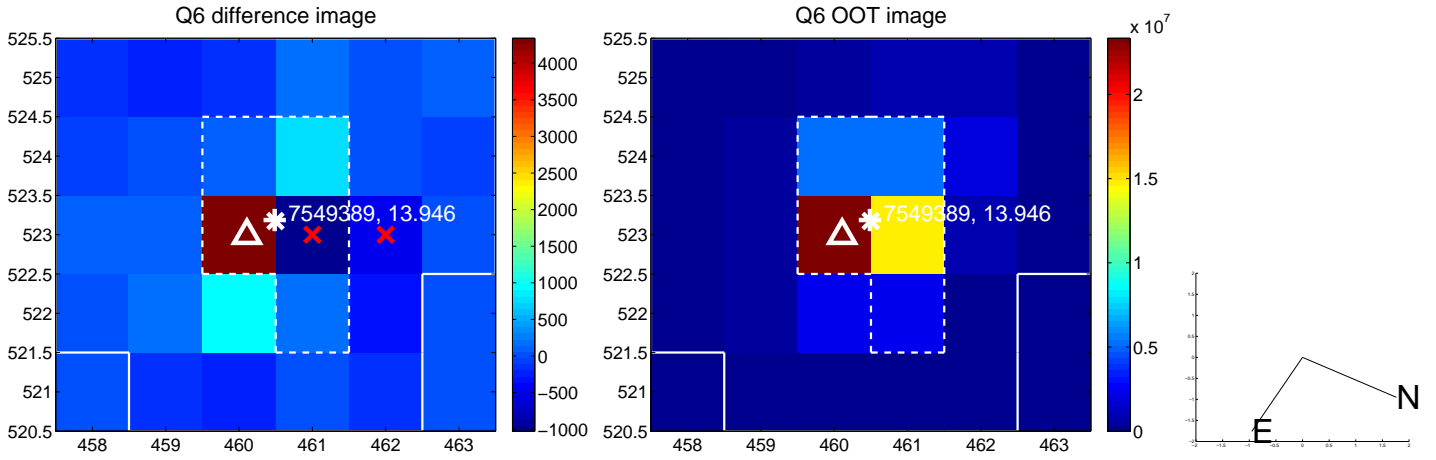
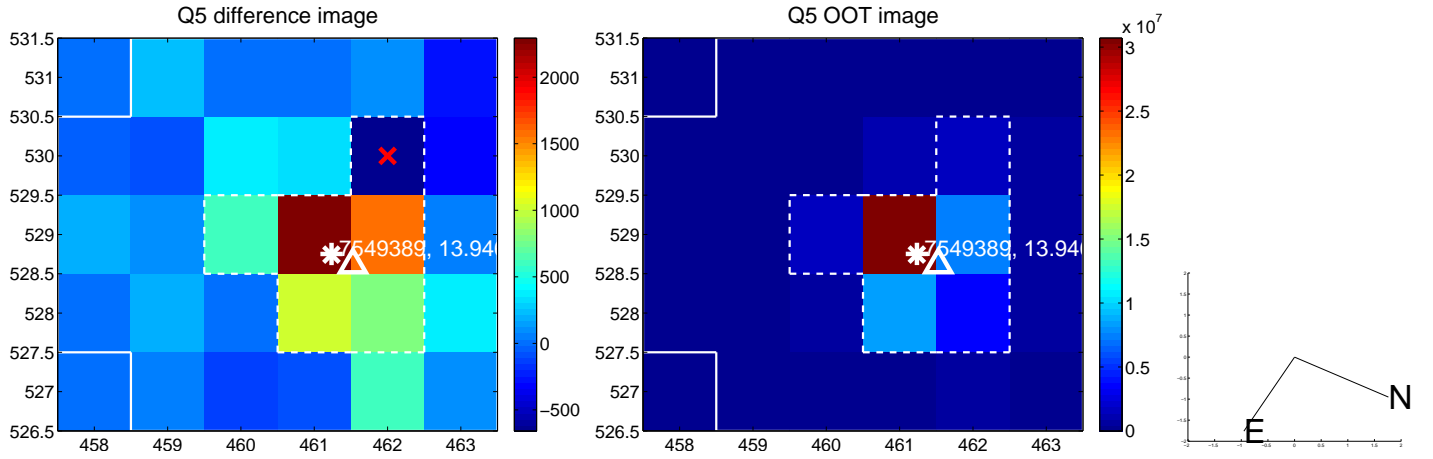


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: 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.

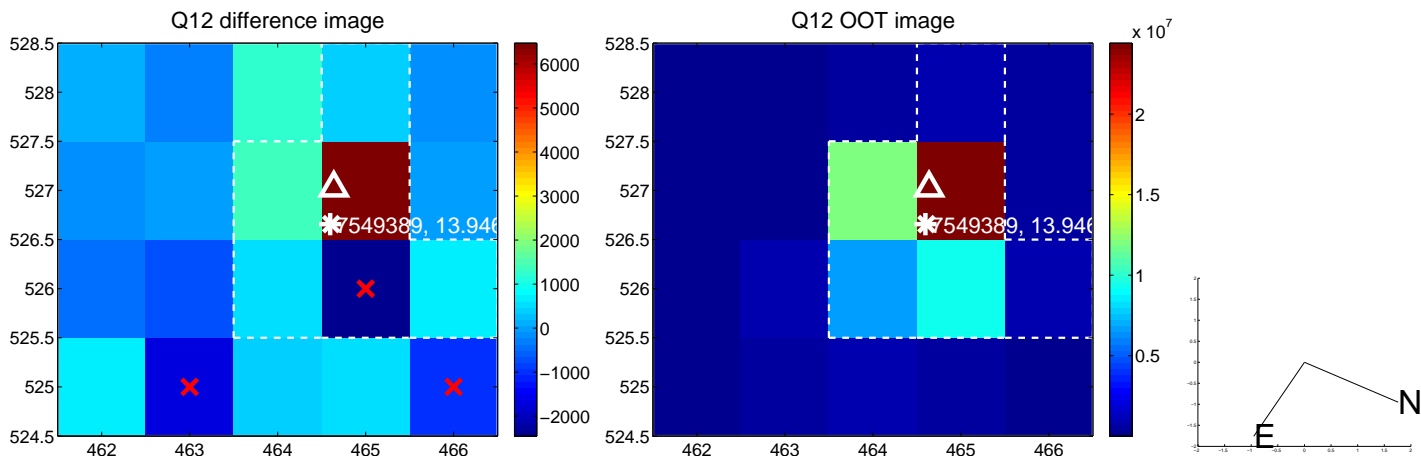
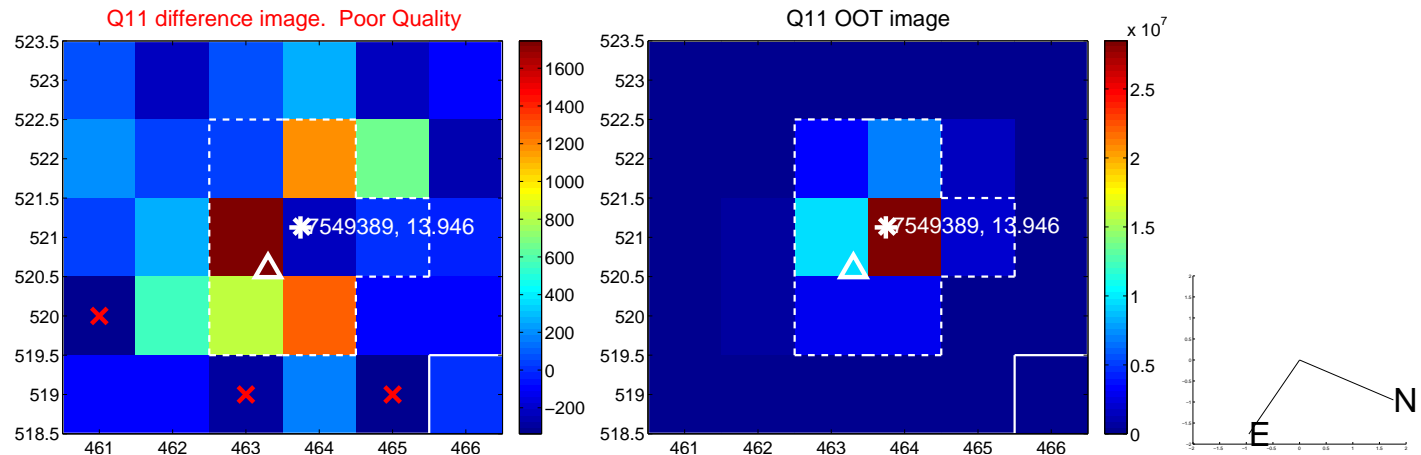
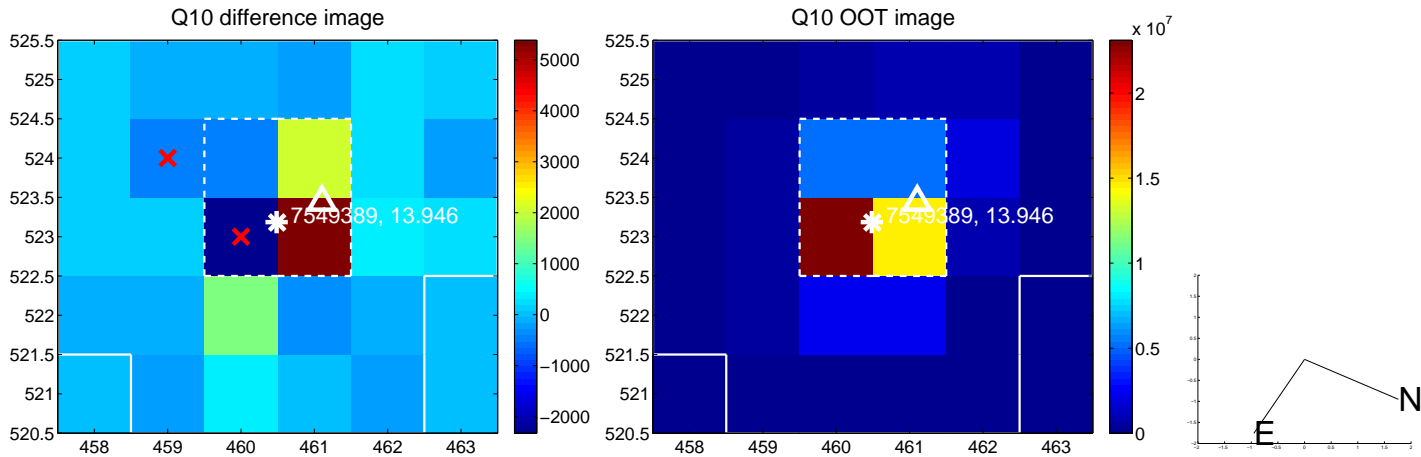
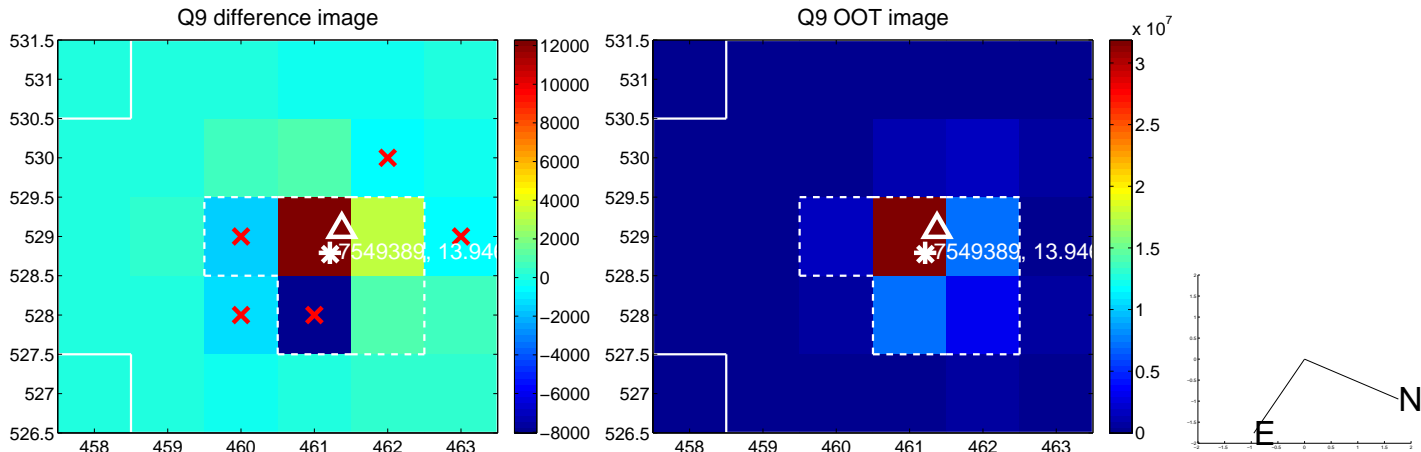


white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

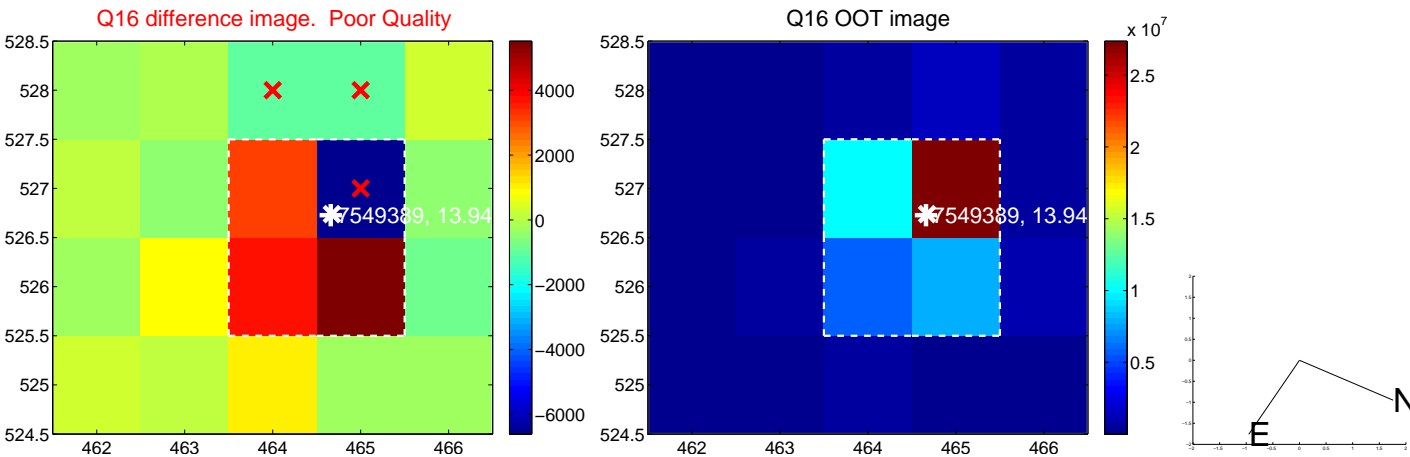
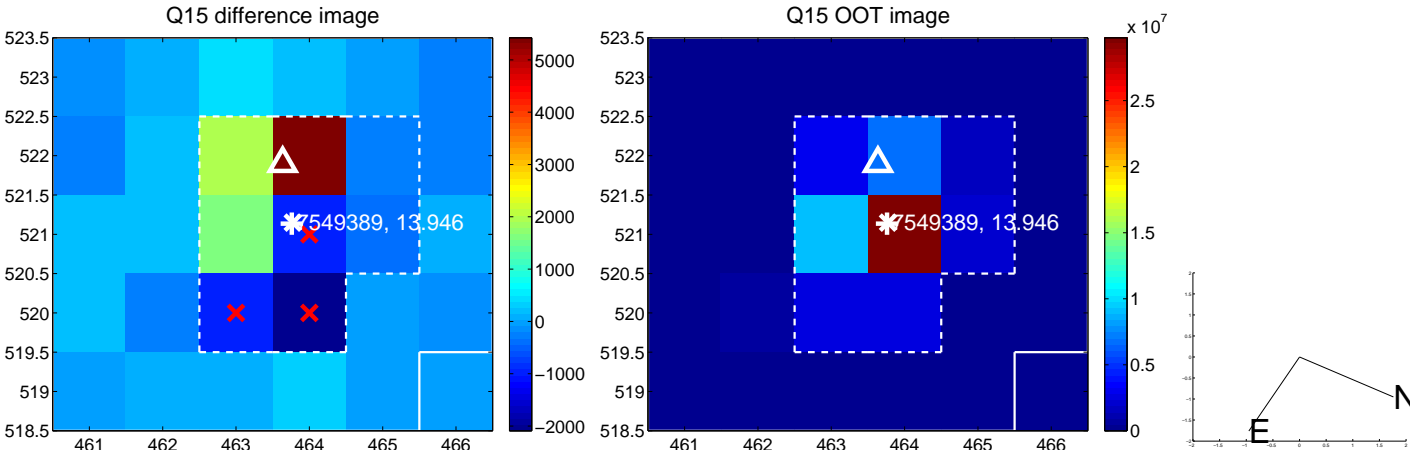
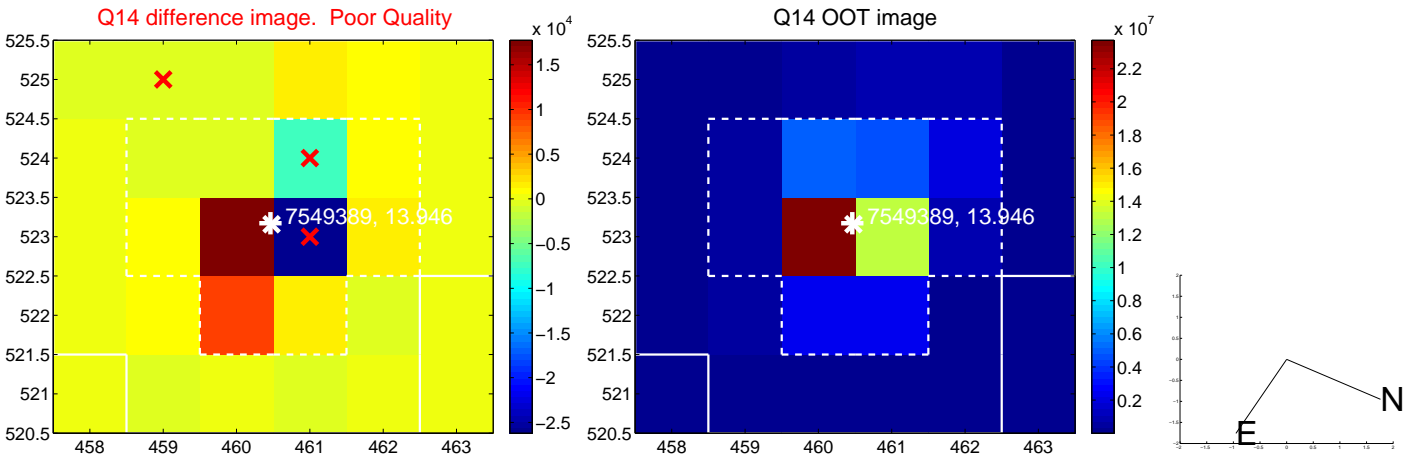
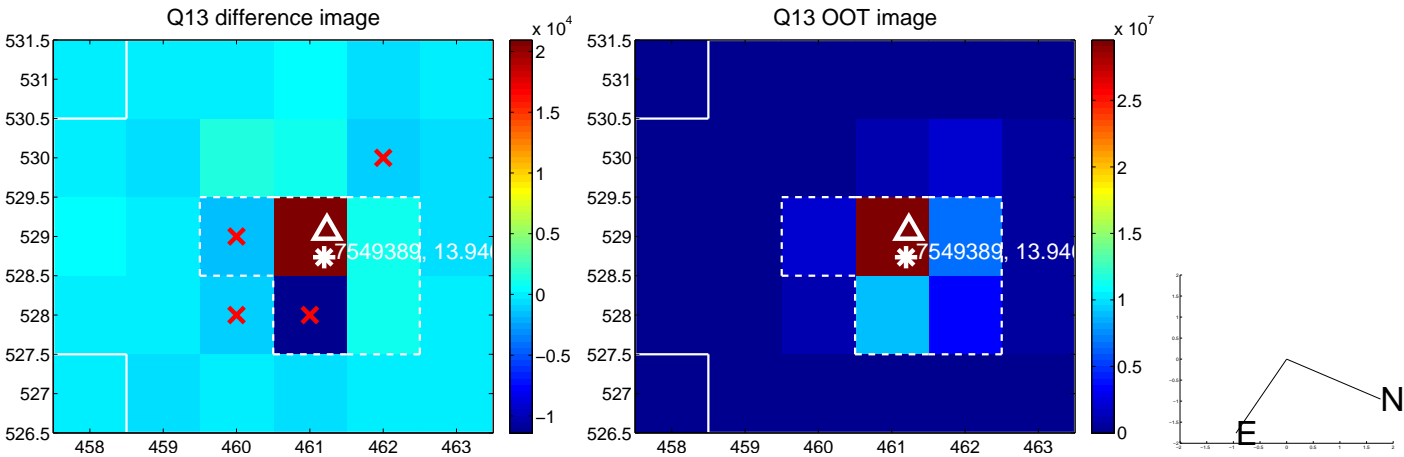




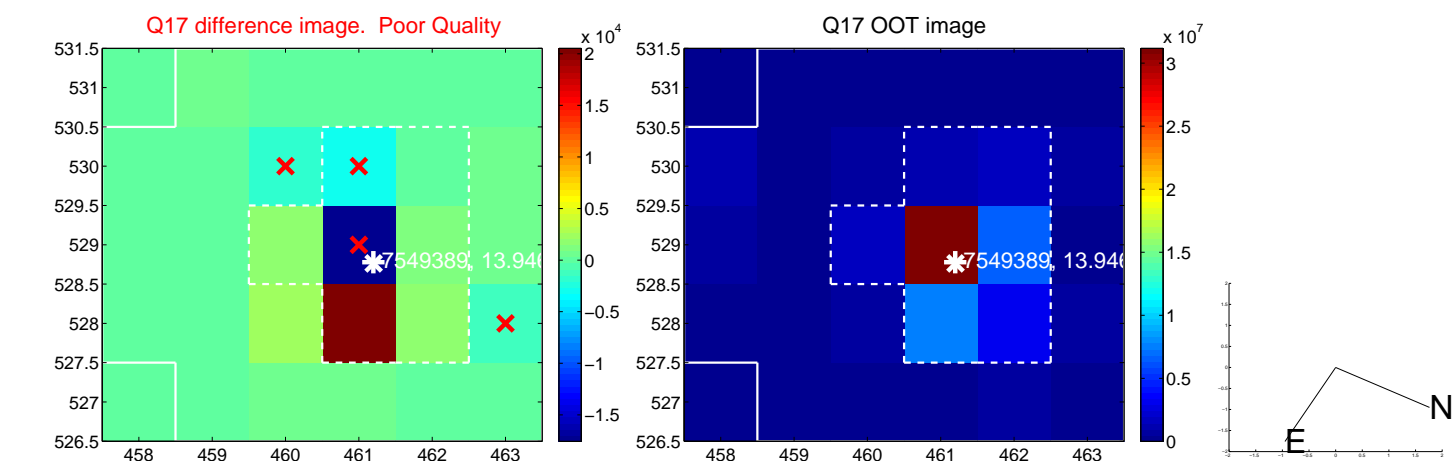
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



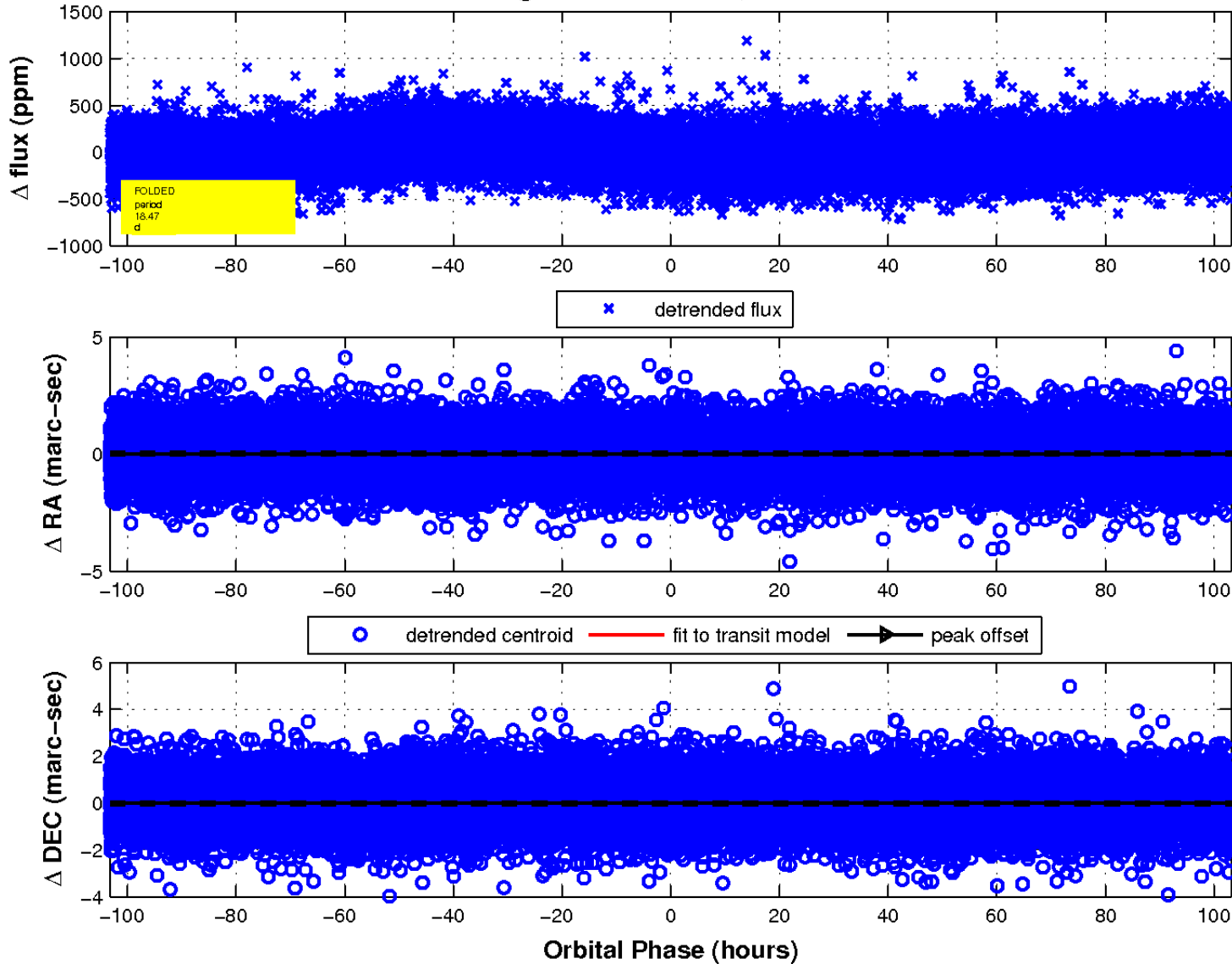
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



white ×: KIC target position; +: OOT centroid; △: difference centroid. red ×: large negative pixel value.



fluxWeightedCentroids, Planet 1 of 1



UKIRT Image

Declination

