

# KIC 007116519

## Q1-17 DR25 TCE Parameters

| TCE          | Run Type | KOI?    | Period (Days) | Epoch (BKJD) | Depth (ppm) | Duration (Hours) | MES | SNR  | R <sub>★</sub> (R <sub>☉</sub> ) | T <sub>★</sub> (K) | R <sub>p</sub> (R <sub>⊕</sub> ) | S <sub>p</sub> (S <sub>⊕</sub> ) |
|--------------|----------|---------|---------------|--------------|-------------|------------------|-----|------|----------------------------------|--------------------|----------------------------------|----------------------------------|
| 007116519-01 | OBS      | 7813.01 | 0.566762      | 131.871610   | 981.6       | 2.000            | 9.3 | -1.0 | 1.00                             | 6039               | 3.14                             | 6256.49                          |

## Robovetter Results

| TCE          | Run Type | Disp | Score | N | S | C | E | Comments                           |
|--------------|----------|------|-------|---|---|---|---|------------------------------------|
| 007116519-01 | OBS      | FP   | 0.00  | 0 | 0 | 1 | 1 | CENT_NOFITS—HALO_GHOST—EPHEM_MATCH |

**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.

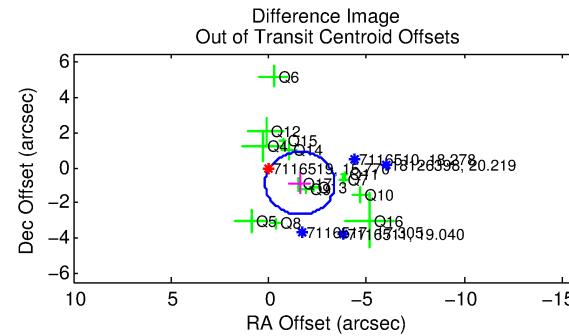
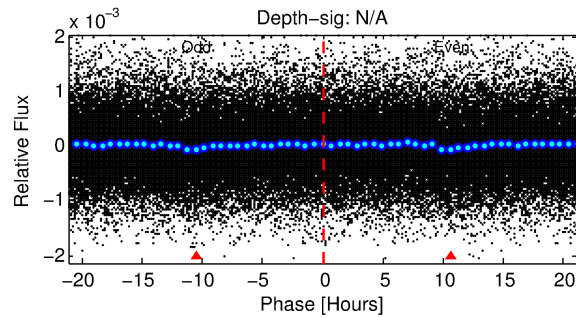
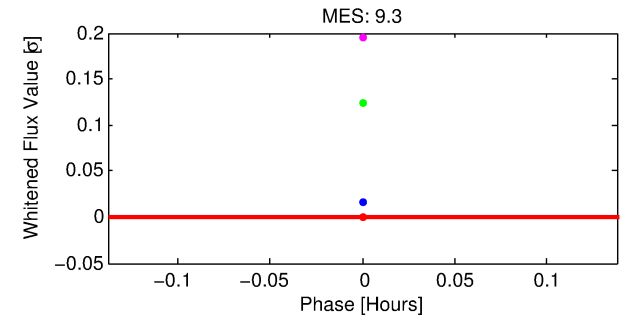
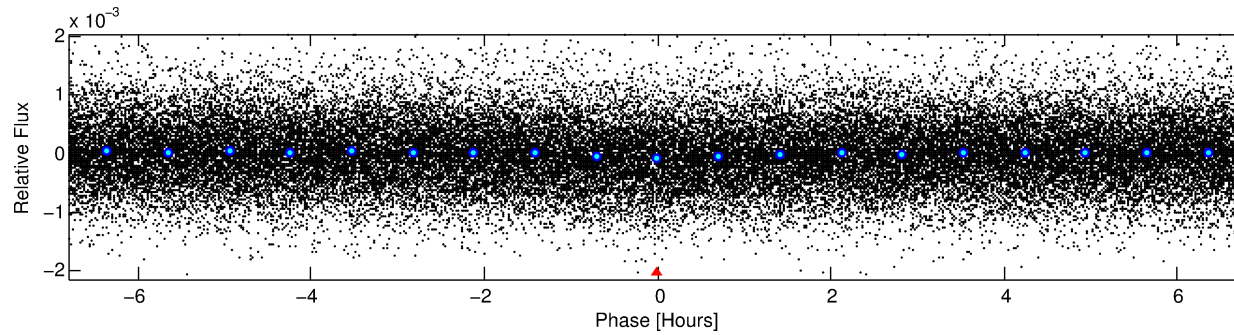
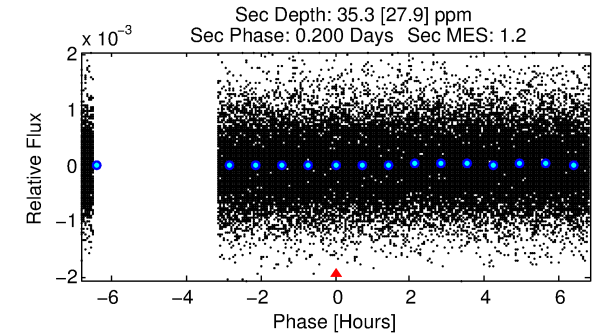
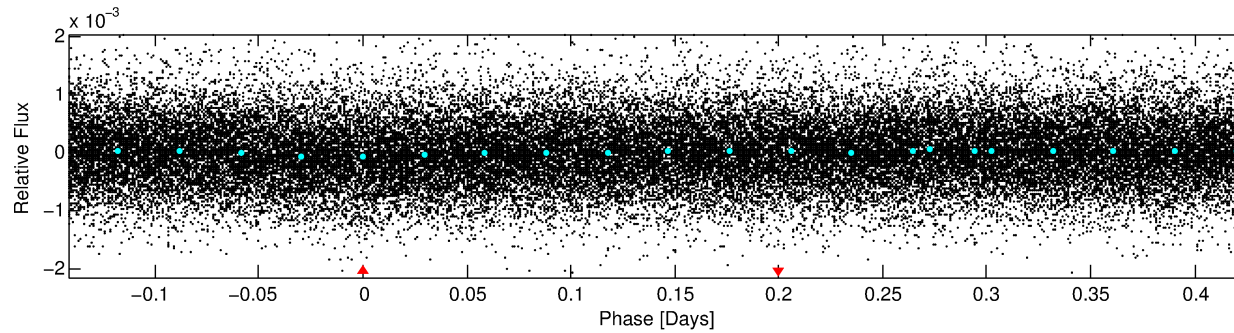
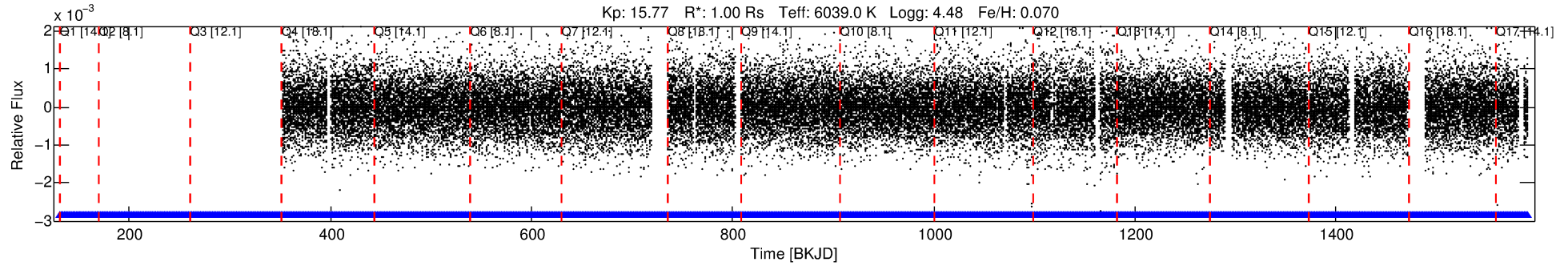
## Ephemeris Match Information For 007116519-01

| TCE (1)      | KIC     | Parent (2) | Parent KIC | P <sub>1</sub> :P <sub>2</sub> | Dist (″) | ΔRow | ΔCol | m <sub>2</sub> | m <sub>1</sub> | D <sub>2</sub> /D <sub>1</sub> | Mechanism  | Flag | σ <sub>P</sub> | σ <sub>T</sub> |
|--------------|---------|------------|------------|--------------------------------|----------|------|------|----------------|----------------|--------------------------------|------------|------|----------------|----------------|
| 007116519-01 | 7116519 | RR-Lyr-pri | 7198959    | 1:1                            | 608.1    | 139  | -64  | 7.86           | 15.77          | 634.72                         | Direct-PRF | 0    | 2.95           | 21.34          |

**Notes:** P<sub>1</sub>:P<sub>2</sub> is the period ratio. Dist is the distance in arcseconds. ΔRow and ΔCol are the number of pixels apart in row and column. m<sub>2</sub> and m<sub>1</sub> are the magnitudes of the parent and child. D<sub>2</sub>/D<sub>1</sub> is the parent's transit depth divided by the child's. σ<sub>P</sub> and σ<sub>T</sub> are the significance of the match in period and epoch. For a match to be considered significant σ<sub>P</sub> < 5.0 and σ<sub>T</sub> < 5.0. Matches which have σ<sub>P</sub> and σ<sub>T</sub> very close to this cutoff should receive extra scrutiny, especially if the period ratio is very large.

# DV One-Page Summary

KIC: 7116519 Candidate: 1 of 1 Period: 0.567 d



## TPS TCE Results:

Period = 0.56676 d  
Epoch = 131.8716 BKJD

DV fit results are unavailable

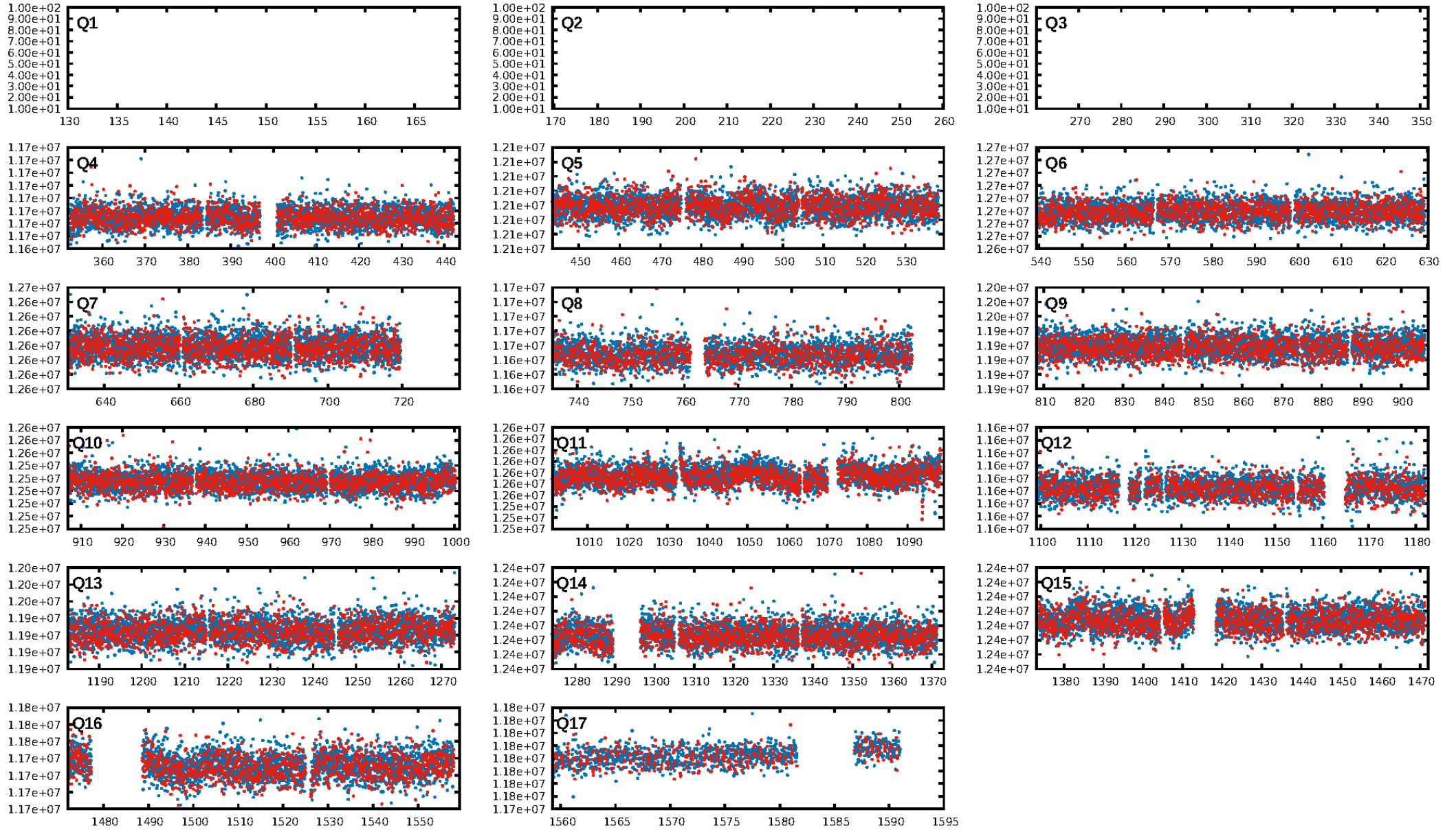
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: N/A  
ModelChiSquareGof-sig: N/A  
Bootstrap-pfa: 2.49e-22  
RollingBand-fgt: 1.00 [1966/1966]  
GhostDiagnostic-chr: -0.1927  
Centroid-sig: 0.0%  
Centroid-so: 2.842 arcsec [2.87σ]  
OotOffset-rm: 1.814 arcsec [3.06σ]  
KicOffset-rm: 2.037 arcsec [3.11σ]  
OotOffset-st: 3/3/4/4 [14]  
KicOffset-st: 3/3/4/4 [14]  
DiffImageQuality-fgm: 0.00 [0/14]  
DiffImageOverlap-fno: 1.00 [14/14]

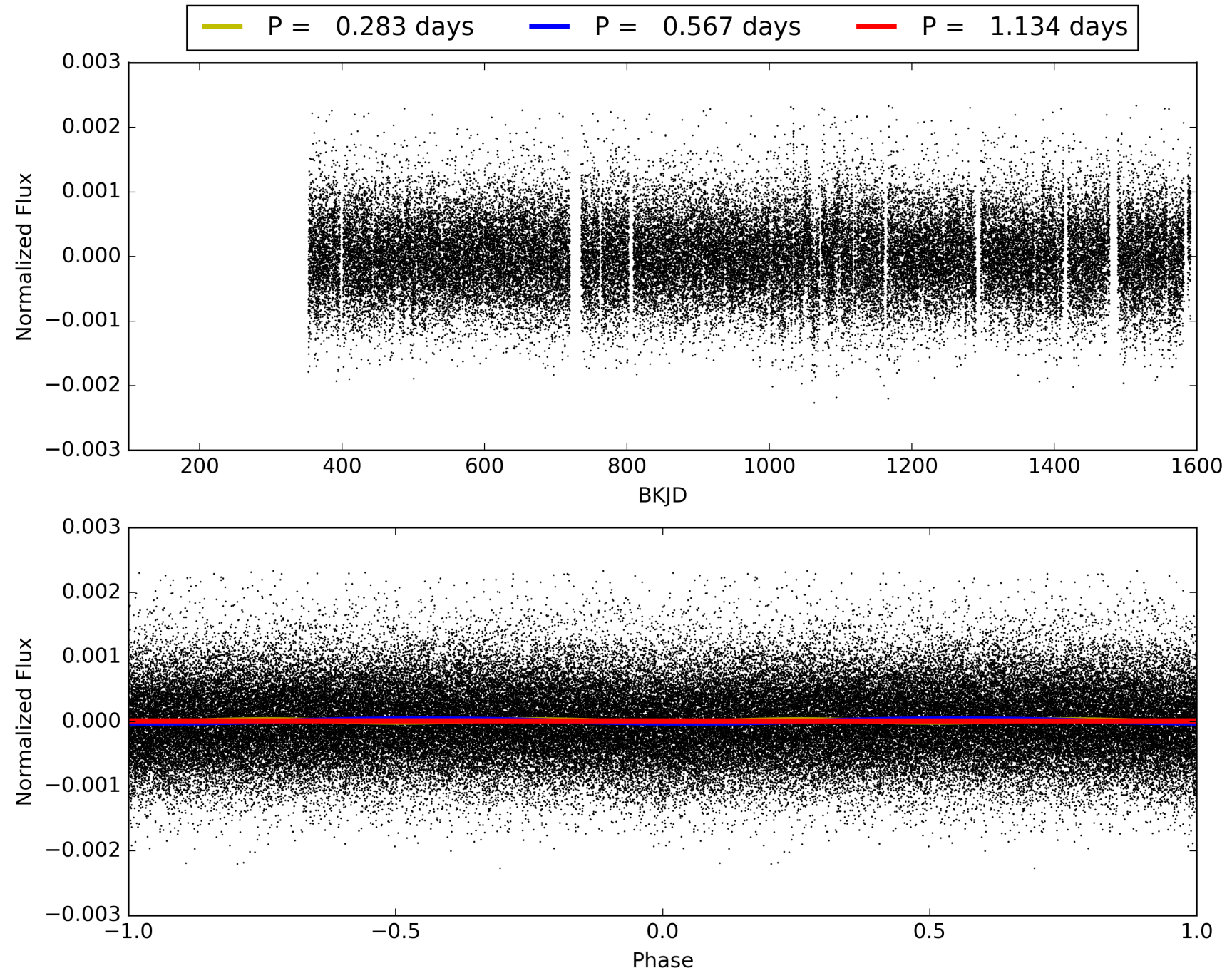
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 08:15:04 Z

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

# TCE 007116519-01, PDC Light Curves



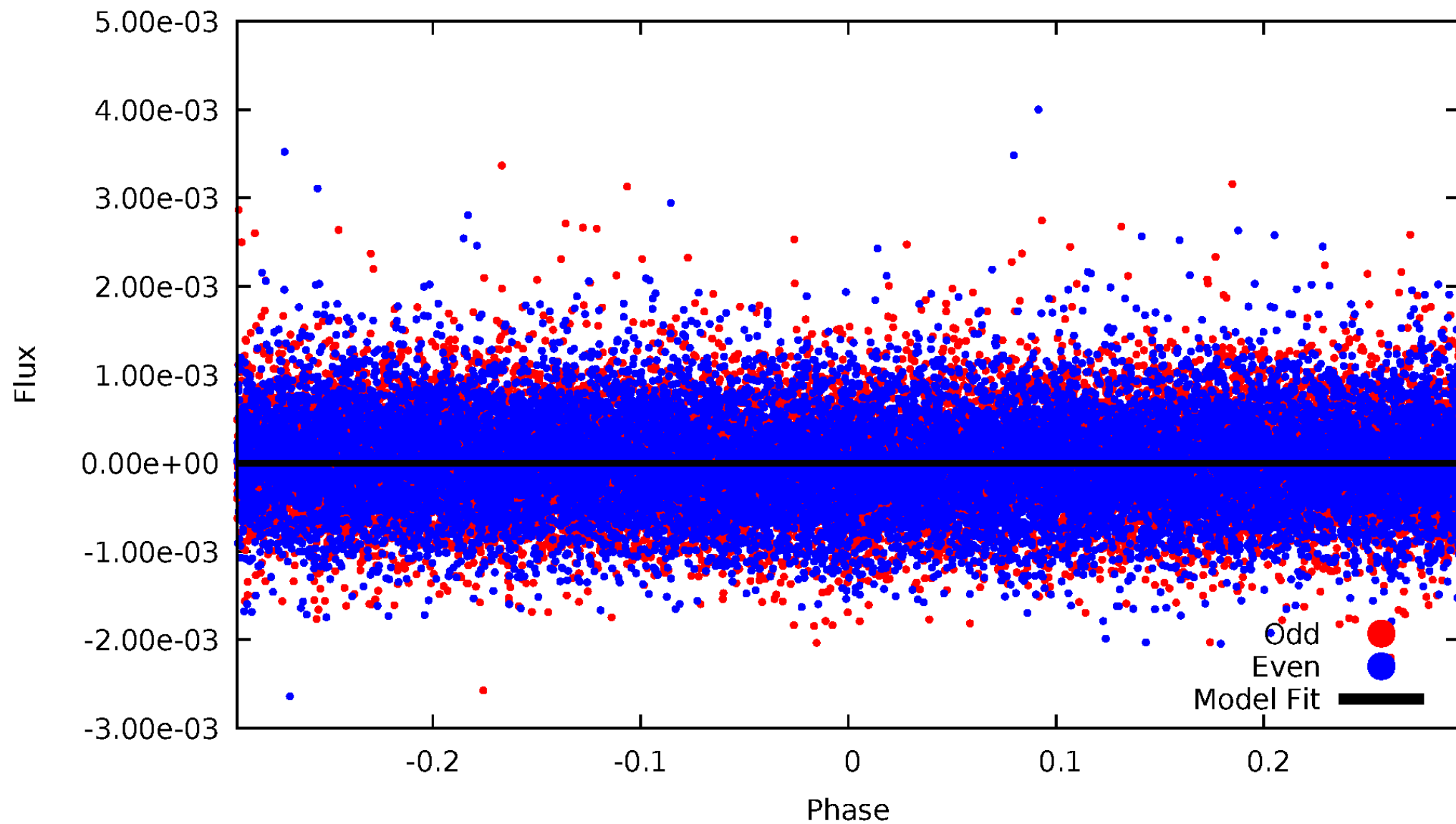
TCE 007116519-01





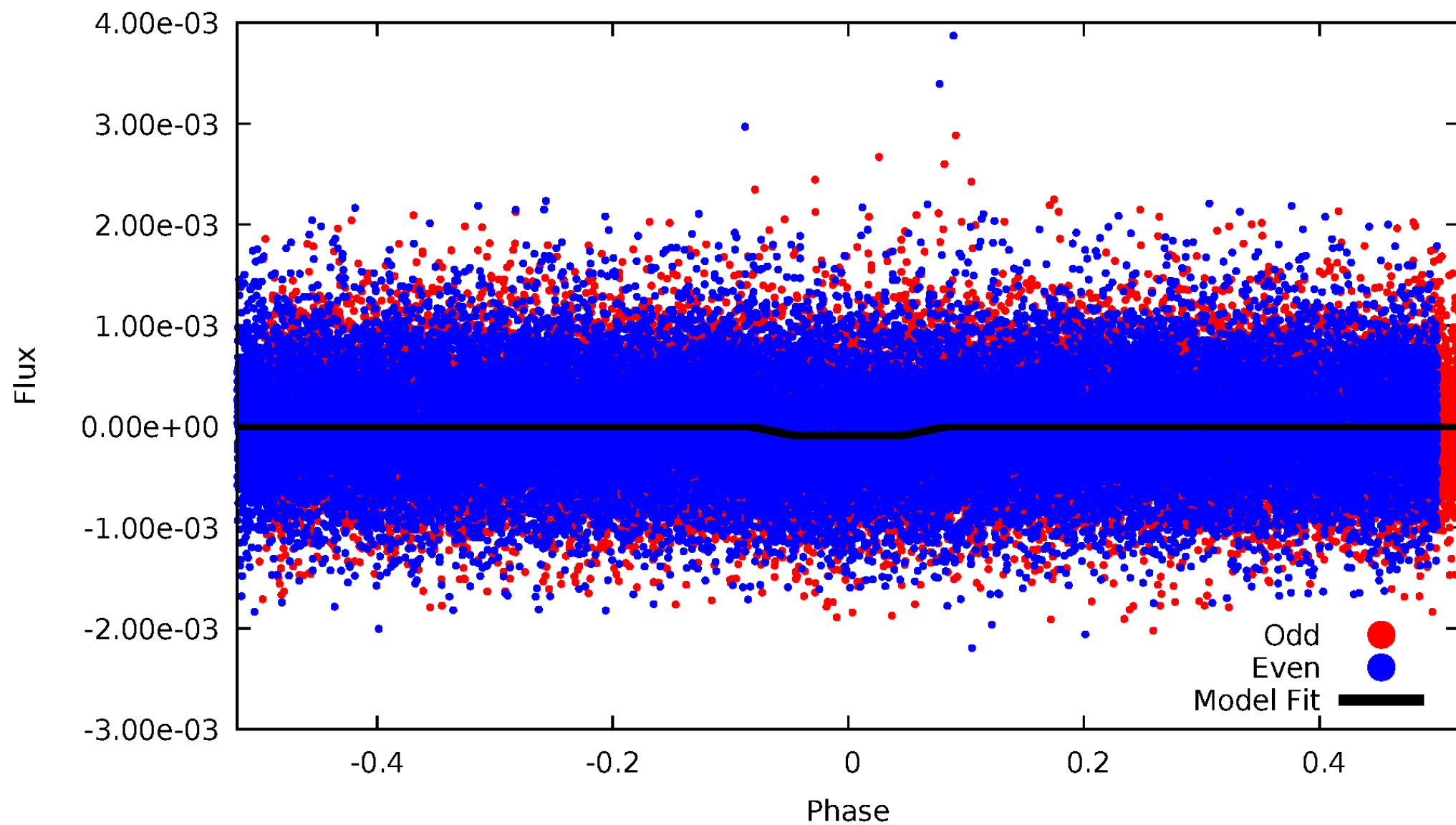
# DV Odd/Even

TCE 007116519-01

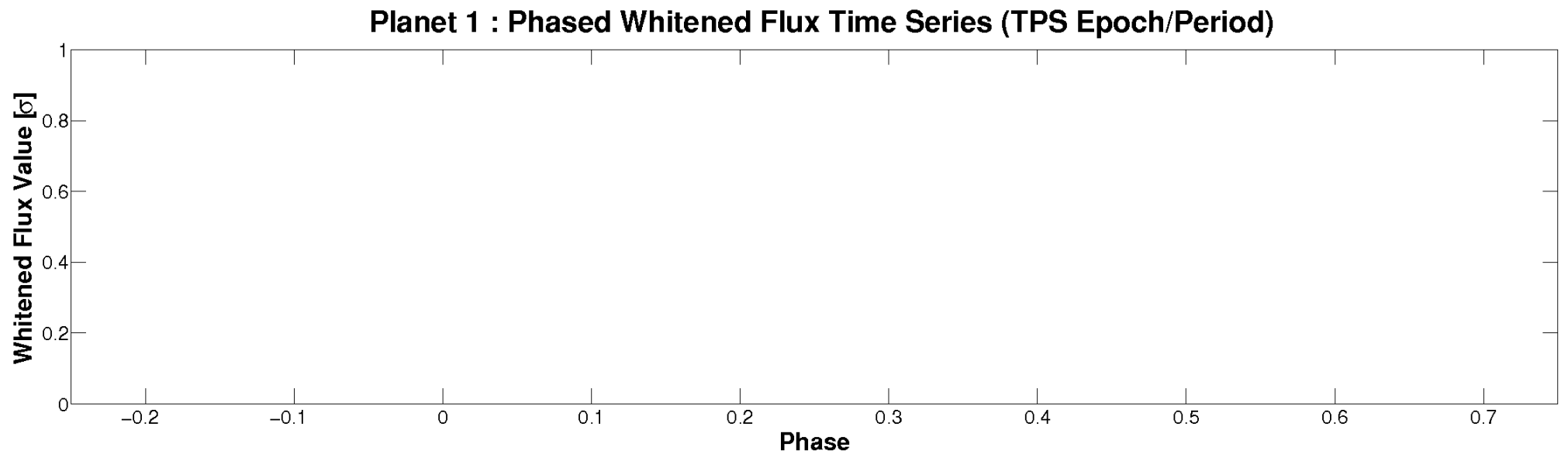
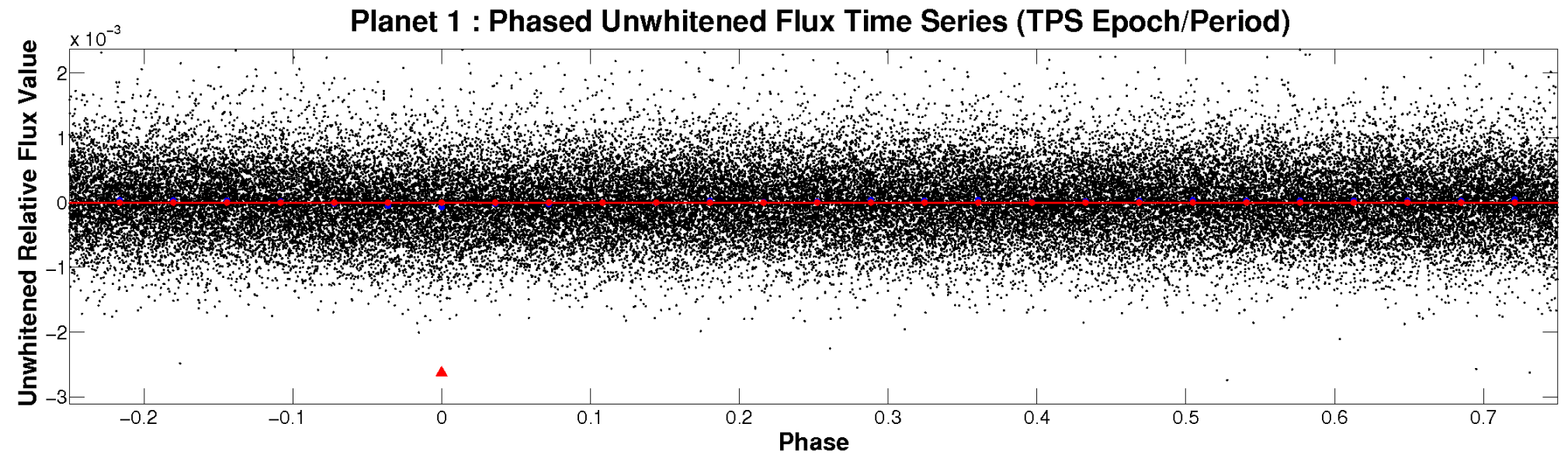


# ALT Odd/Even

TCE 007116519-01

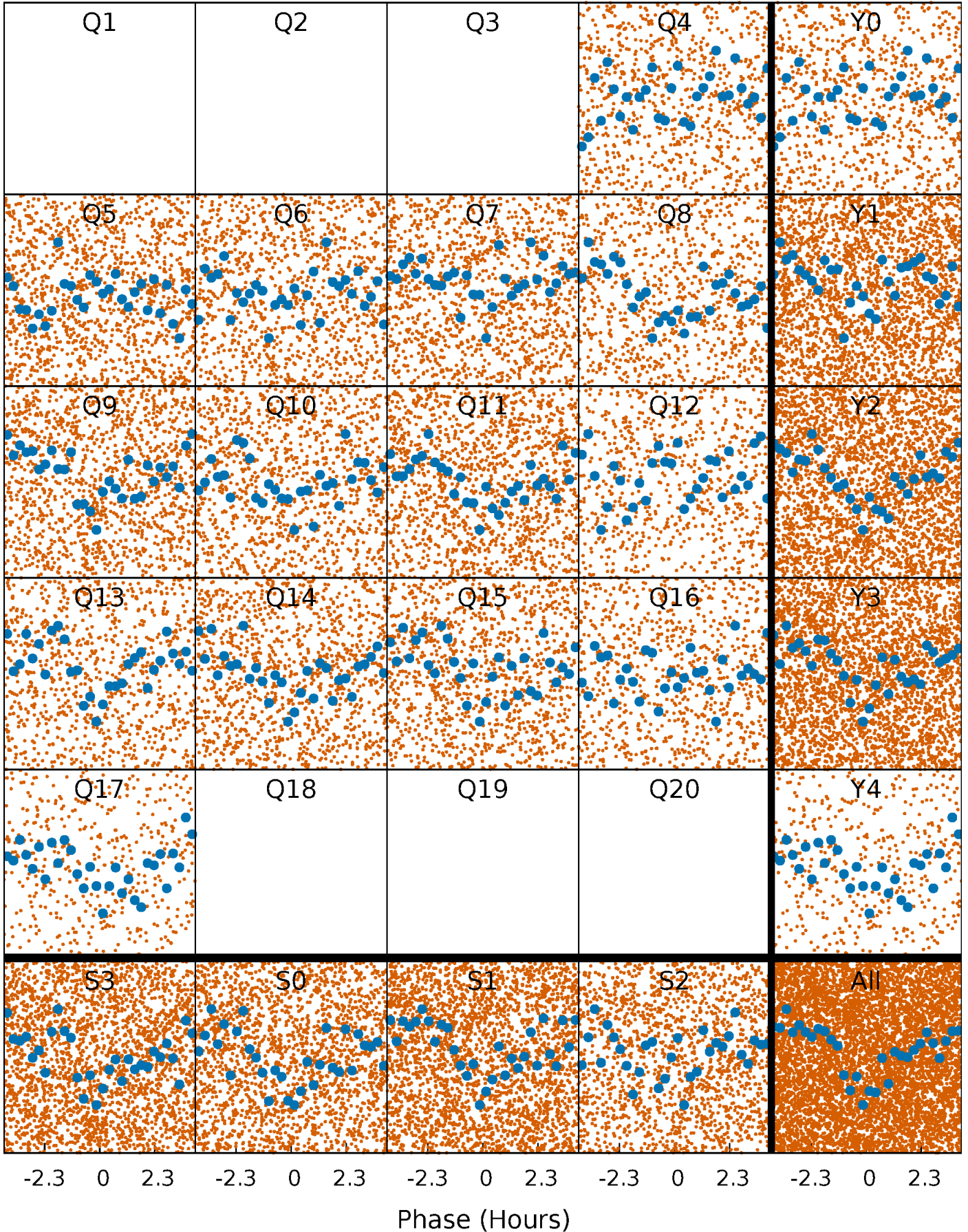


# Non-Whitened Vs. Whitened Light Curve



# PDC Quarter-Phased Transit Curves

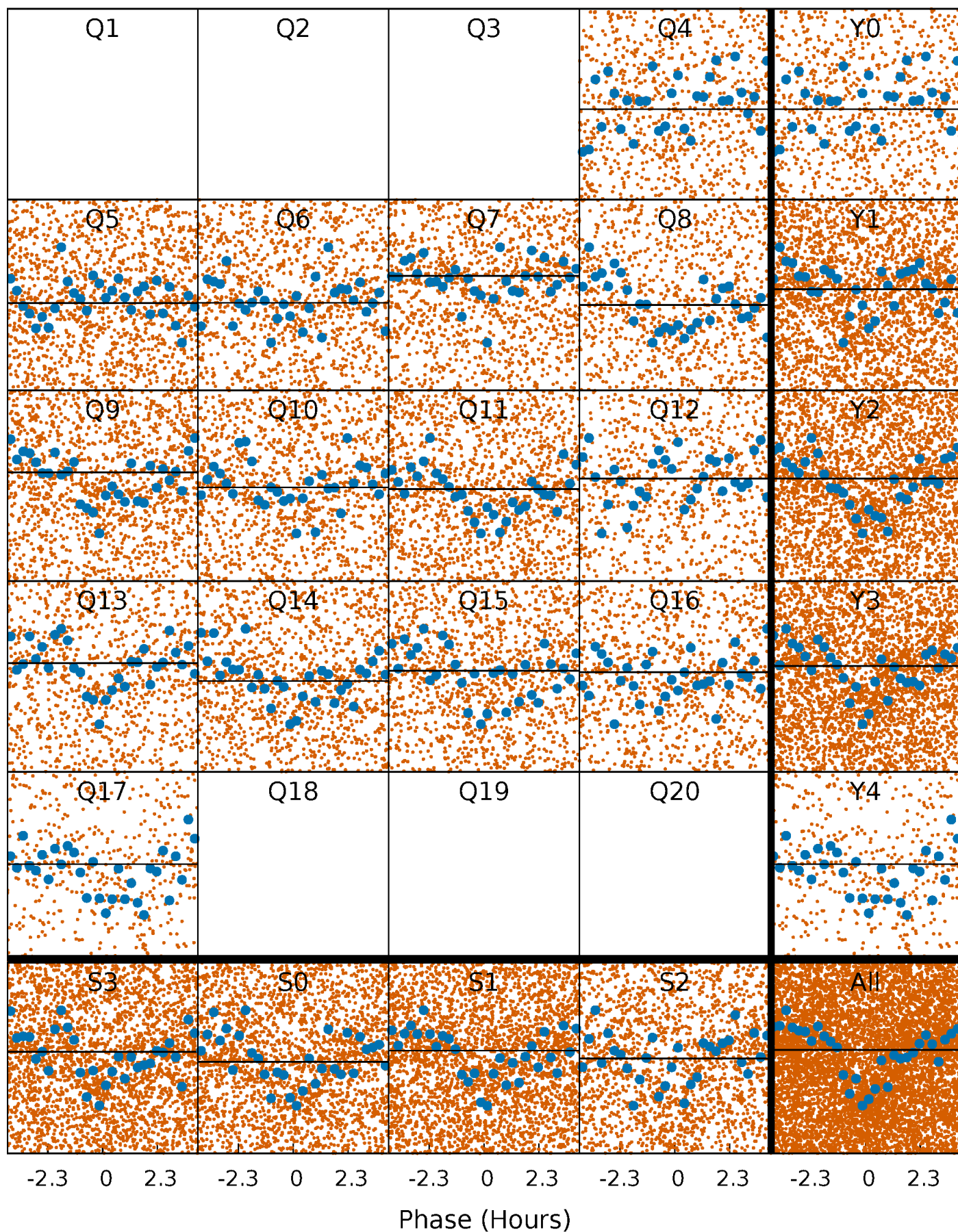
TCE 007116519-01 P= 0.566762 Days  $T_0=131.871611$  (BKJD)





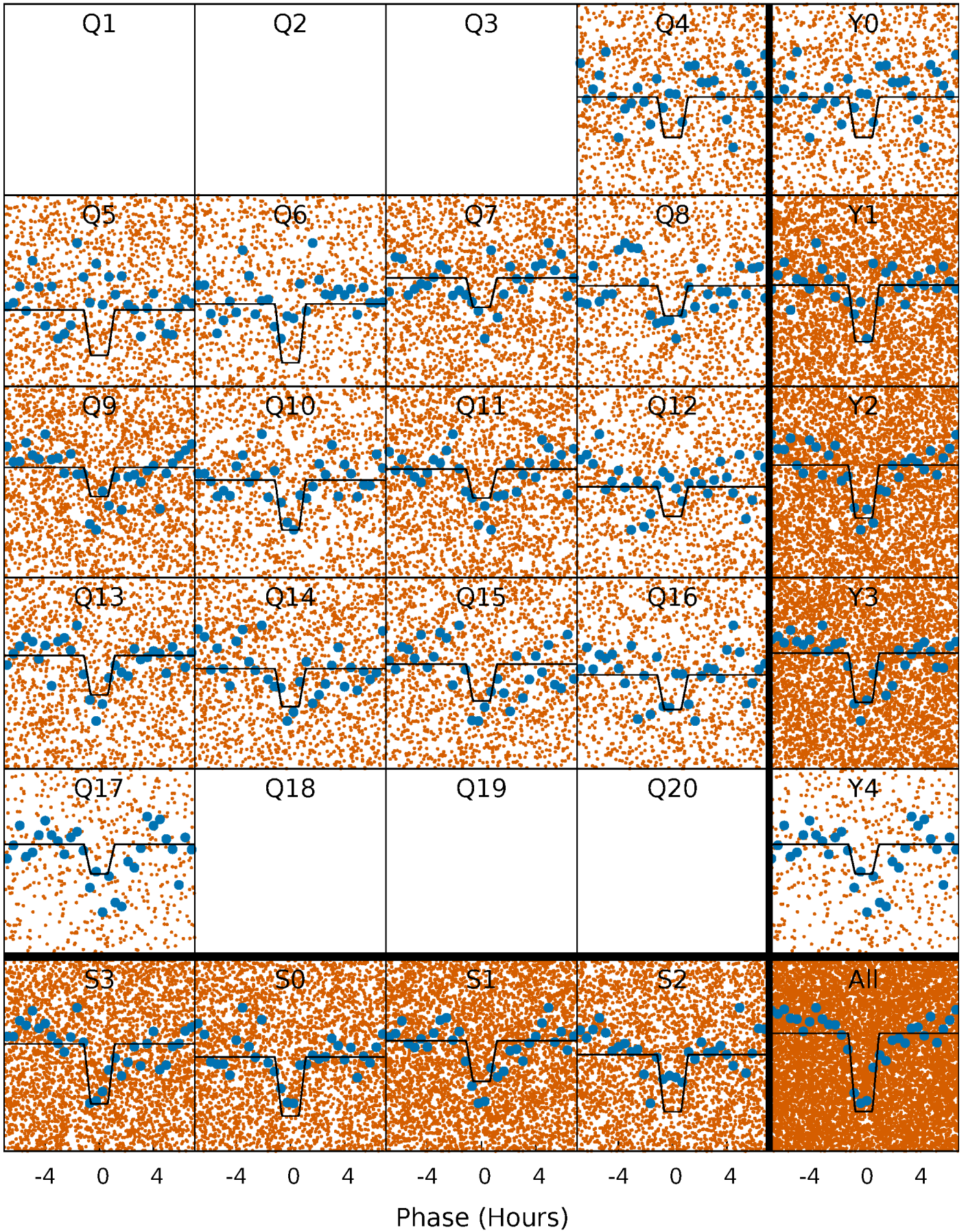
# DV Quarter-Phased Transit Curves

TCE 007116519-01 P= 0.566762 Days  $T_0=131.871611$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

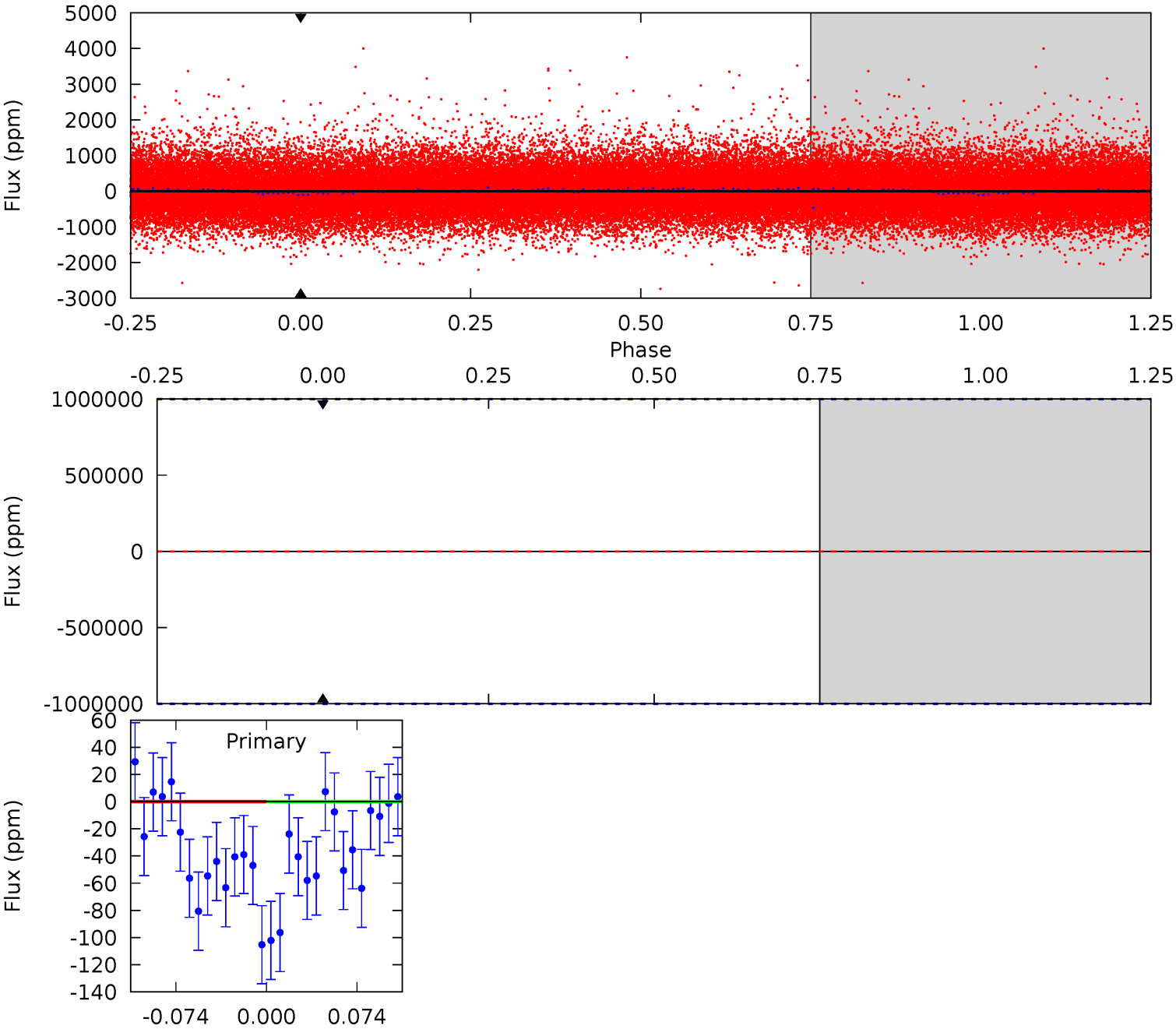
TCE 007116519-01 P= 0.566762 Days  $T_0=131.872801$  (BKJD)



DV Model-Shift Uniqueness Test

007116519-01, P = 0.566762 Days, E = 131.871611 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 |
|-----|-----|-----|-----|-----------------|-----------------|------------------|---------|---------|---------|---------|---------|-----|-------|-----|
| 0   | 0   | 0   | 0   | 1.00            | 1.00            | 1.00             | 0       | 0       | 0       | 0       | 0       | 0   | 0     | 0   |

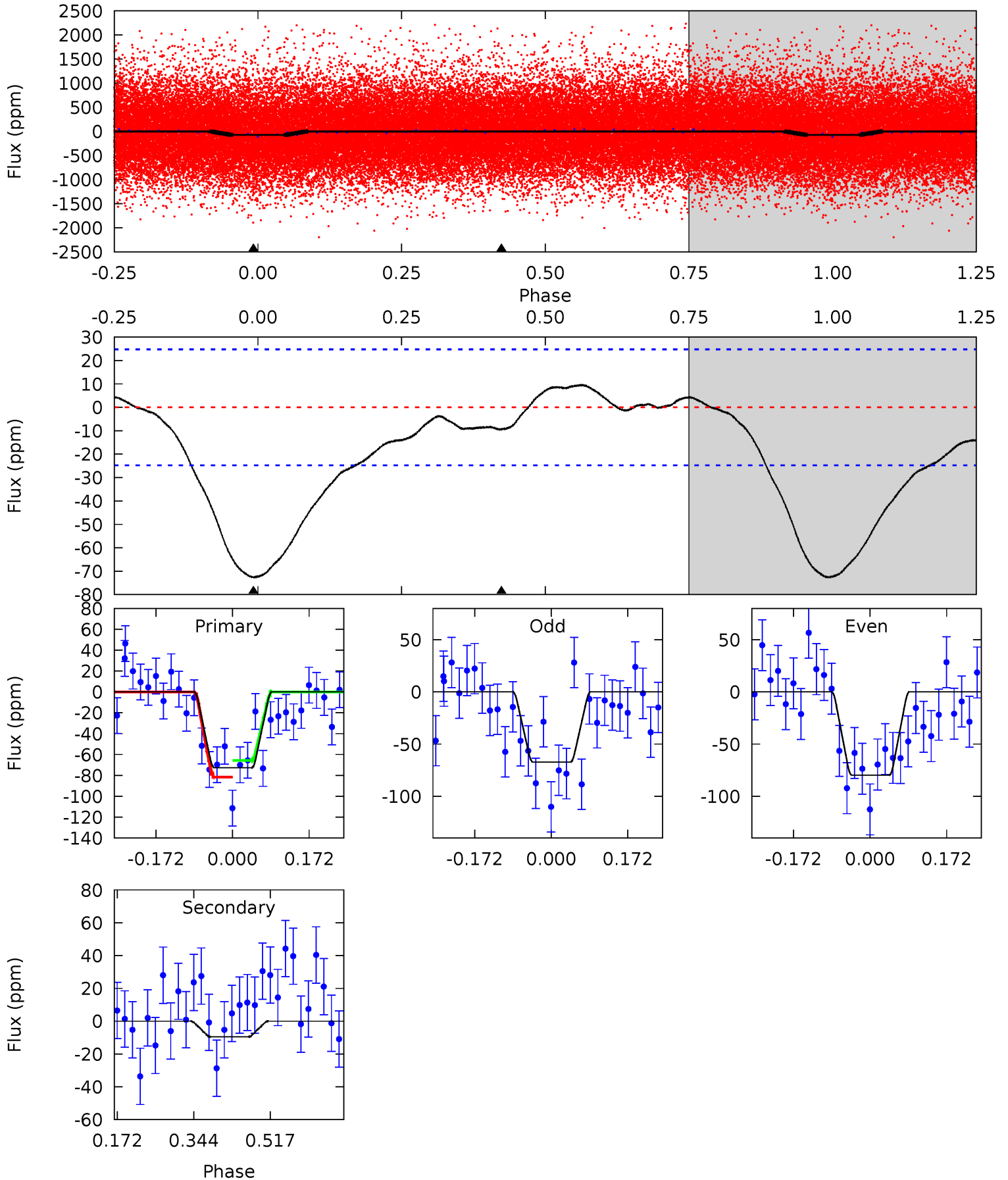




# Alt Model-Shift Uniqueness Test

007116519-01, P = 0.566762 Days, E = 131.872801 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  |
|------|------|-----|-----|-----------------|-----------------|------------------|---------|---------|---------|---------|---------|------|-------|------|
| 13.1 | 1.72 | 0   | 0   | 4.45            | 1.37            | 1.67             | 13.1    | 13.1    | 1.72    | 1.72    | 1.12    | 0.89 | 0.12  | 1.44 |





### Stellar Parameters For KIC 007116519

|        | $T_{\text{eff}}(K)$  | $\log(g)$                 | [Fe/H]                    | $R (R_{\odot})$           | $M(M_{\odot})$            | $p_{\star} (\text{g}\cdot\text{cm}^{-3})$ |
|--------|----------------------|---------------------------|---------------------------|---------------------------|---------------------------|---|
|        | $6039^{+190}_{-232}$ | $4.478^{+0.054}_{-0.216}$ | $0.070^{+0.250}_{-0.350}$ | $1.005^{+0.318}_{-0.106}$ | $1.108^{+0.130}_{-0.159}$ | $1.537^{+0.433}_{-0.808}$                 |
|        | +3%/-4%              | +1%/-5%                   | +357%/-500%               | +32%/-11%                 | +12%/-14%                 | +28%/-53%                                 |
| 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 007116519-01 / KOI 7813.01

| Detrend | Depth (ppm)     | $R_p (R_{\oplus})$     | $T_{\text{max}} (K)$ | $T_{\text{obs}} (K)$     | $A_{\text{obs}}$              |
|---------|-----------------|------------------------|----------------------|--------------------------|-------------------------------|
| DV      | $0 \pm 1000000$ | $9.15^{+9.41}_{-6.10}$ | $3244^{+256}_{-168}$ | $3576^{+17352}_{-22870}$ | $1.000^{+202.257}_{-172.943}$ |
| Alt.    | $-10 \pm 6$     | $8.65^{+9.10}_{-6.06}$ | $3238^{+255}_{-170}$ | $-3181^{+251}_{-173}$    | $0.012^{+0.126}_{-0.010}$     |

$T_{\text{max}}$  = 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  $A_{\text{obs}} \gg 1.0$

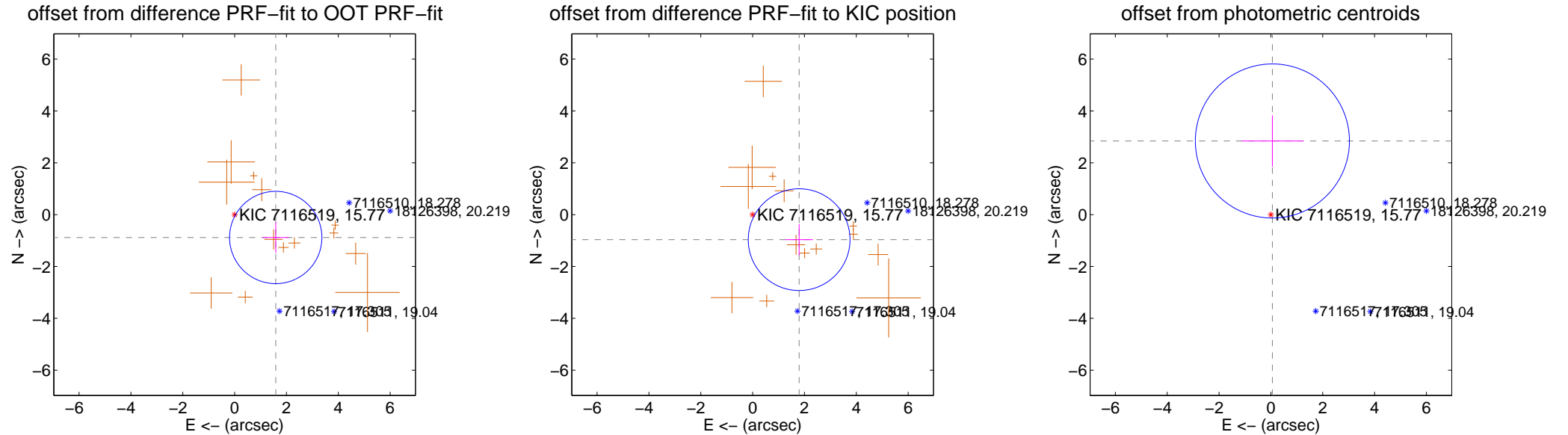
## DV Centroid Data

Supplemental centroid analysis for 007116519-01. Kepler magnitude: 15.77. Transit SNR -1.00

There are 0 quarters with good PRF difference image offsets

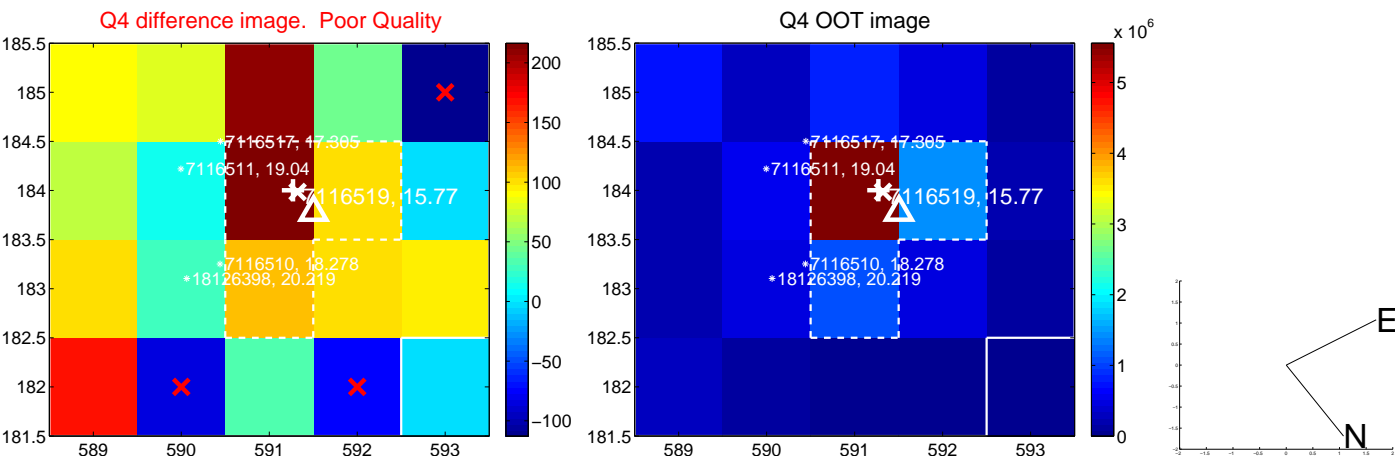
The direct PRF centroid is offset from the target star catalog position by about 0.27 arcsec

|   | Distance in arcsec | Distance / $\sigma$ | $\Delta$ RA        | $\Delta$ Dec       |
|---|--------------------|---------------------|--------------------|--------------------|
| PRF-fit source offset from OOT          | $1.814 \pm 0.594$  | 3.06                | $-1.585 \pm 0.508$ | $-0.882 \pm 0.591$ |
| PRF-fit source offset from KIC position | $2.037 \pm 0.654$  | 3.11                | $-1.794 \pm 0.531$ | $-0.965 \pm 0.603$ |
| photometric centroid source offset      | $2.84 \pm 0.99$    | 2.87                | $-0.06 \pm 1.19$   | $2.84 \pm 0.99$    |

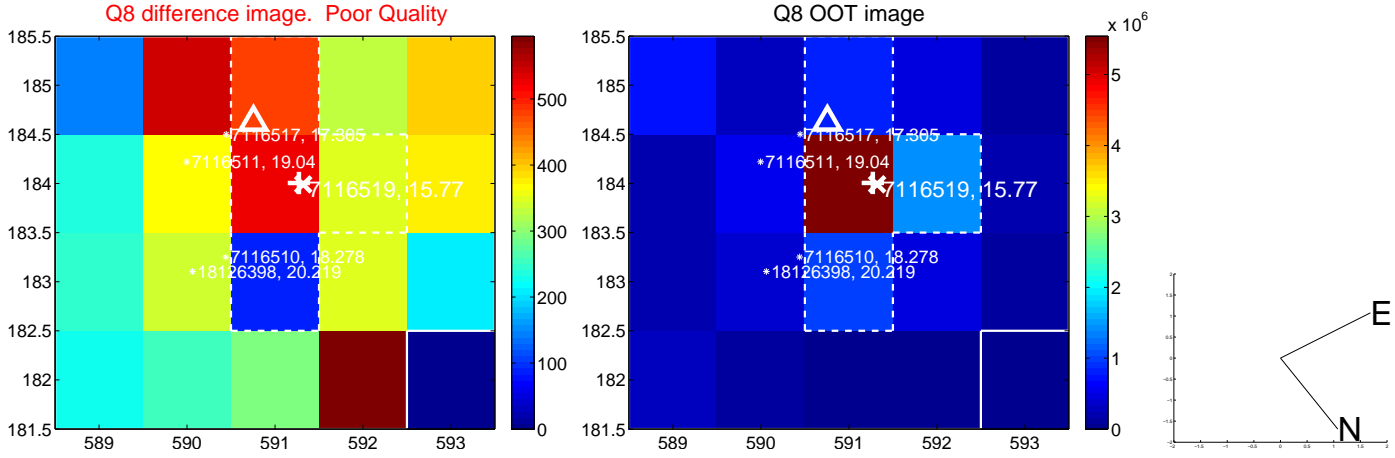
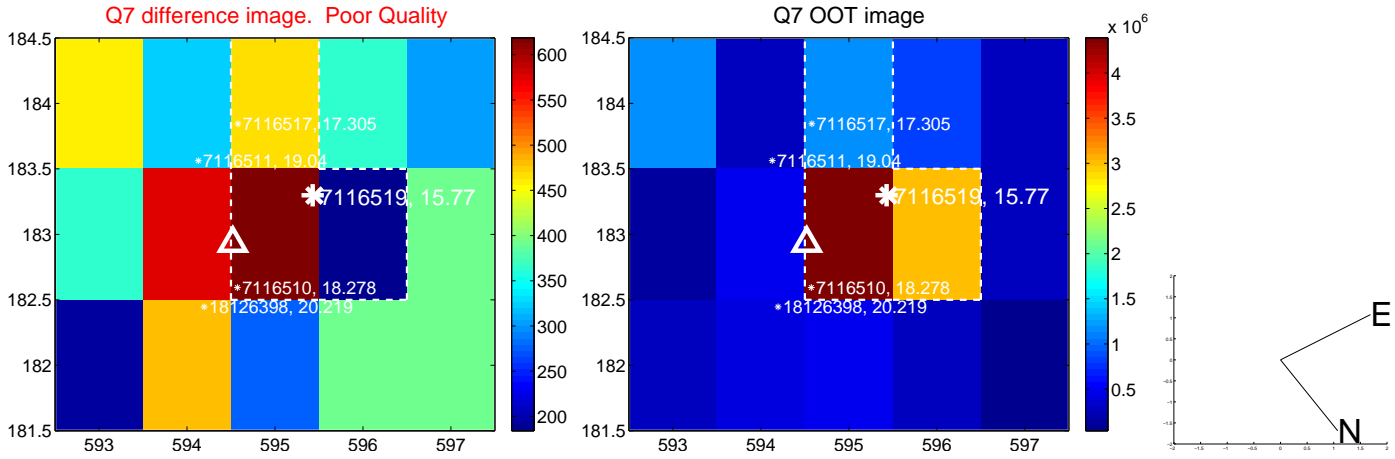
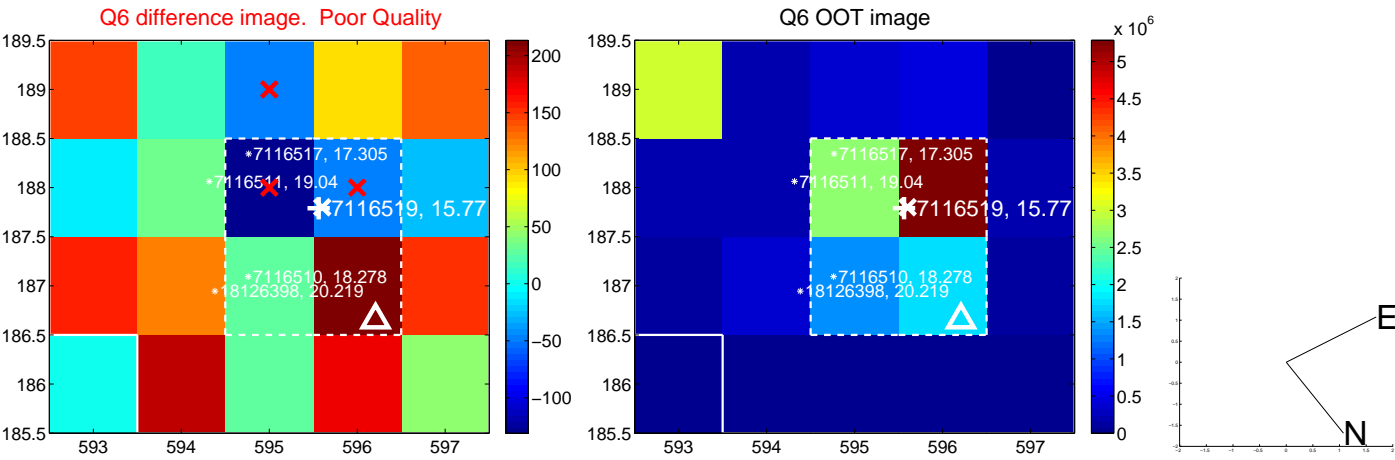
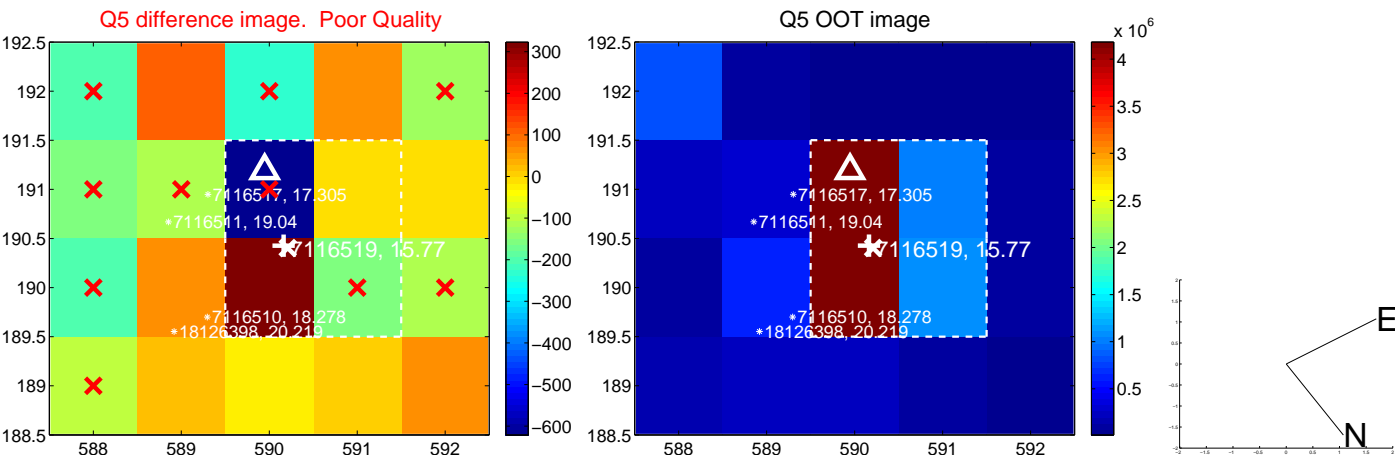


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: three- $\sigma$ . 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 ×: KIC target position; +: OOT centroid; △: difference centroid. red ✕: large negative pixel value.

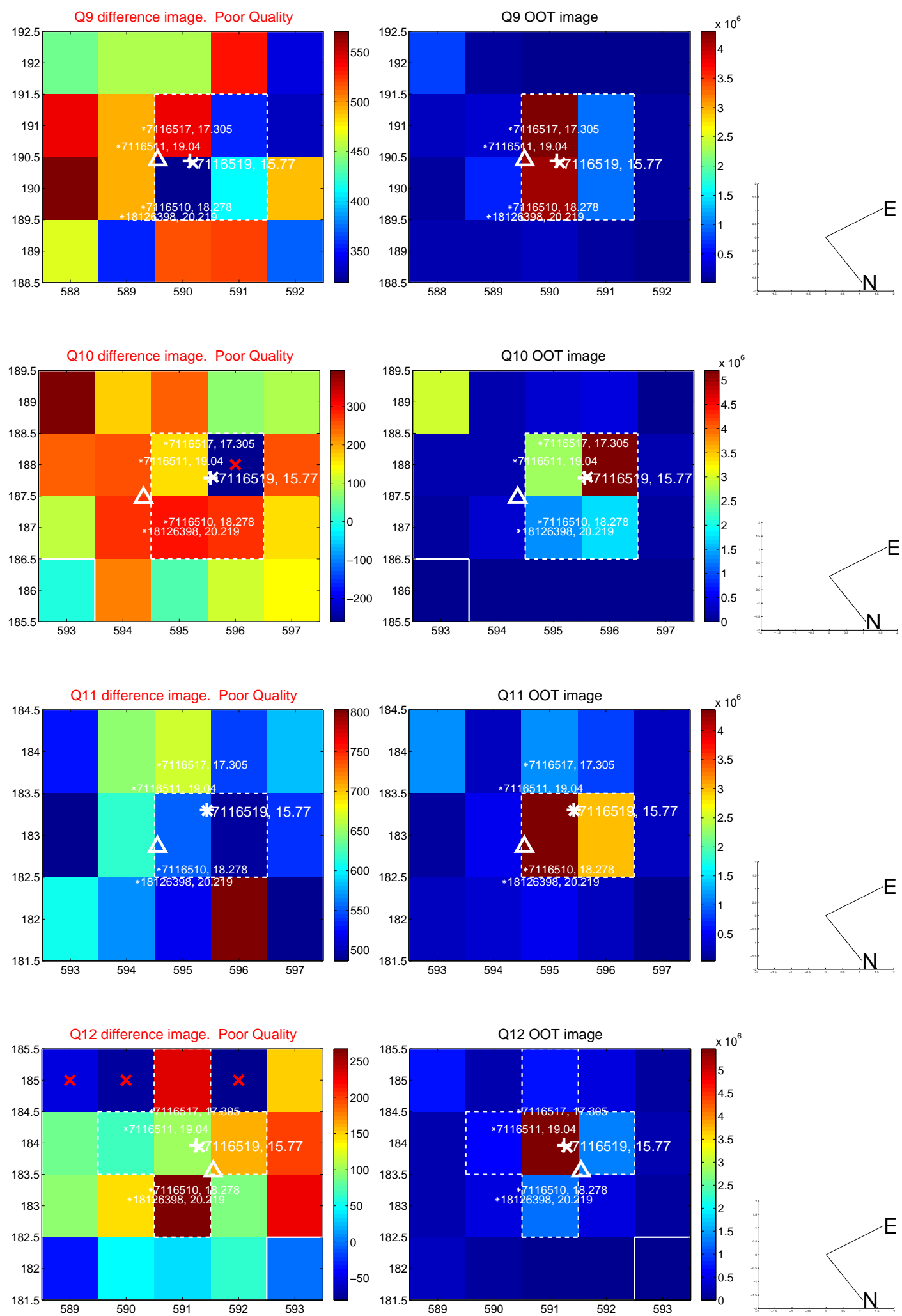


white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

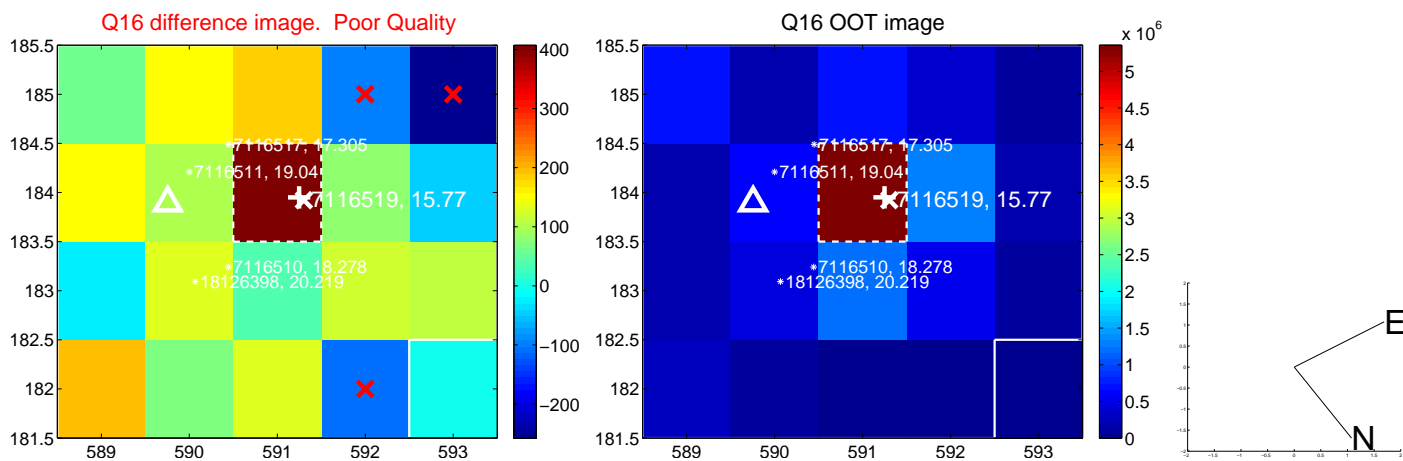
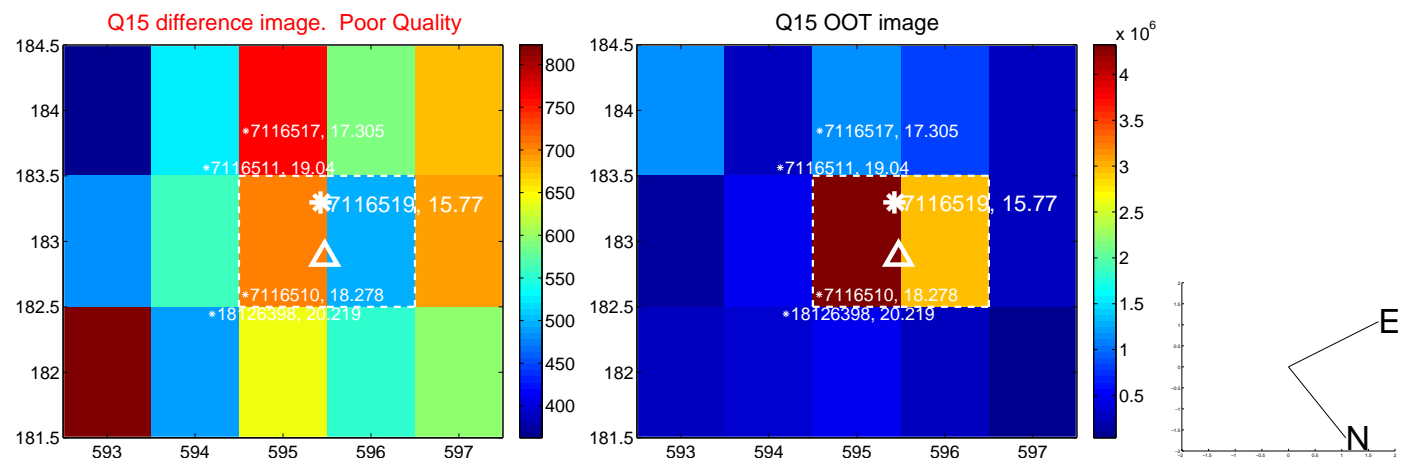
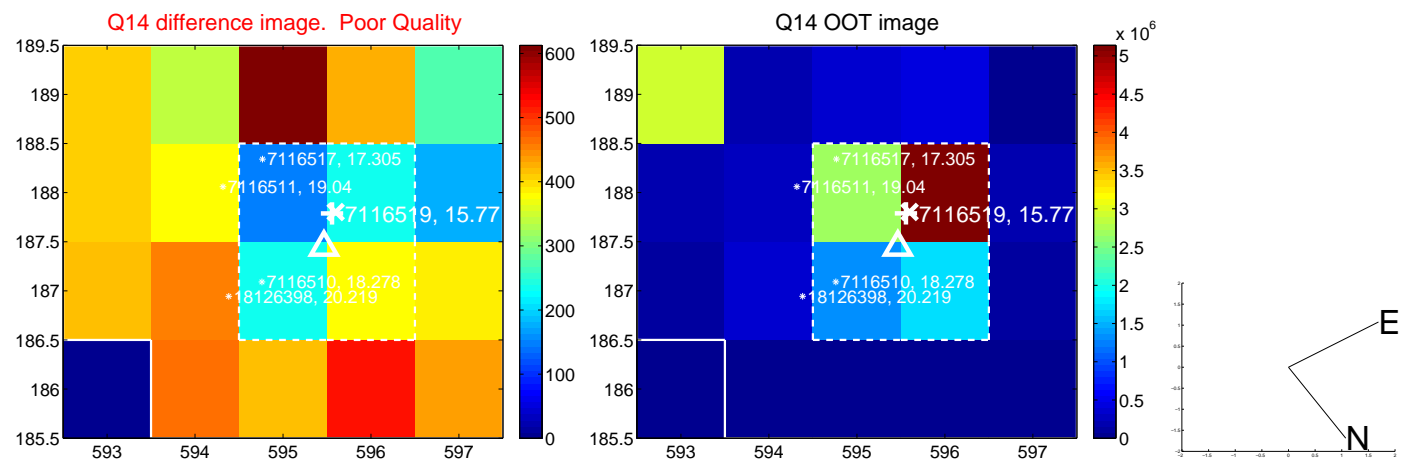
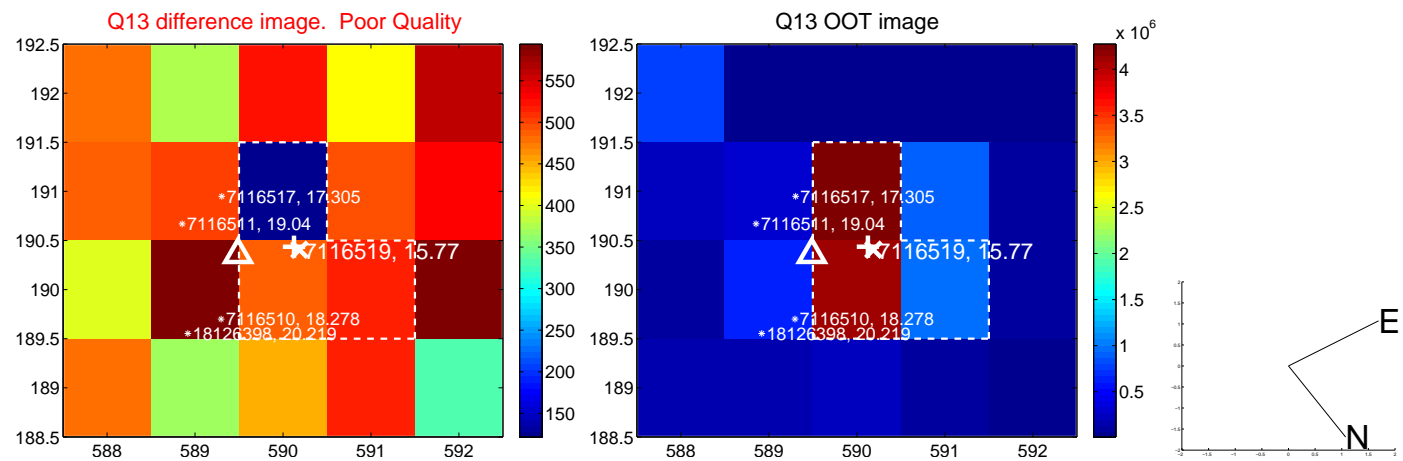




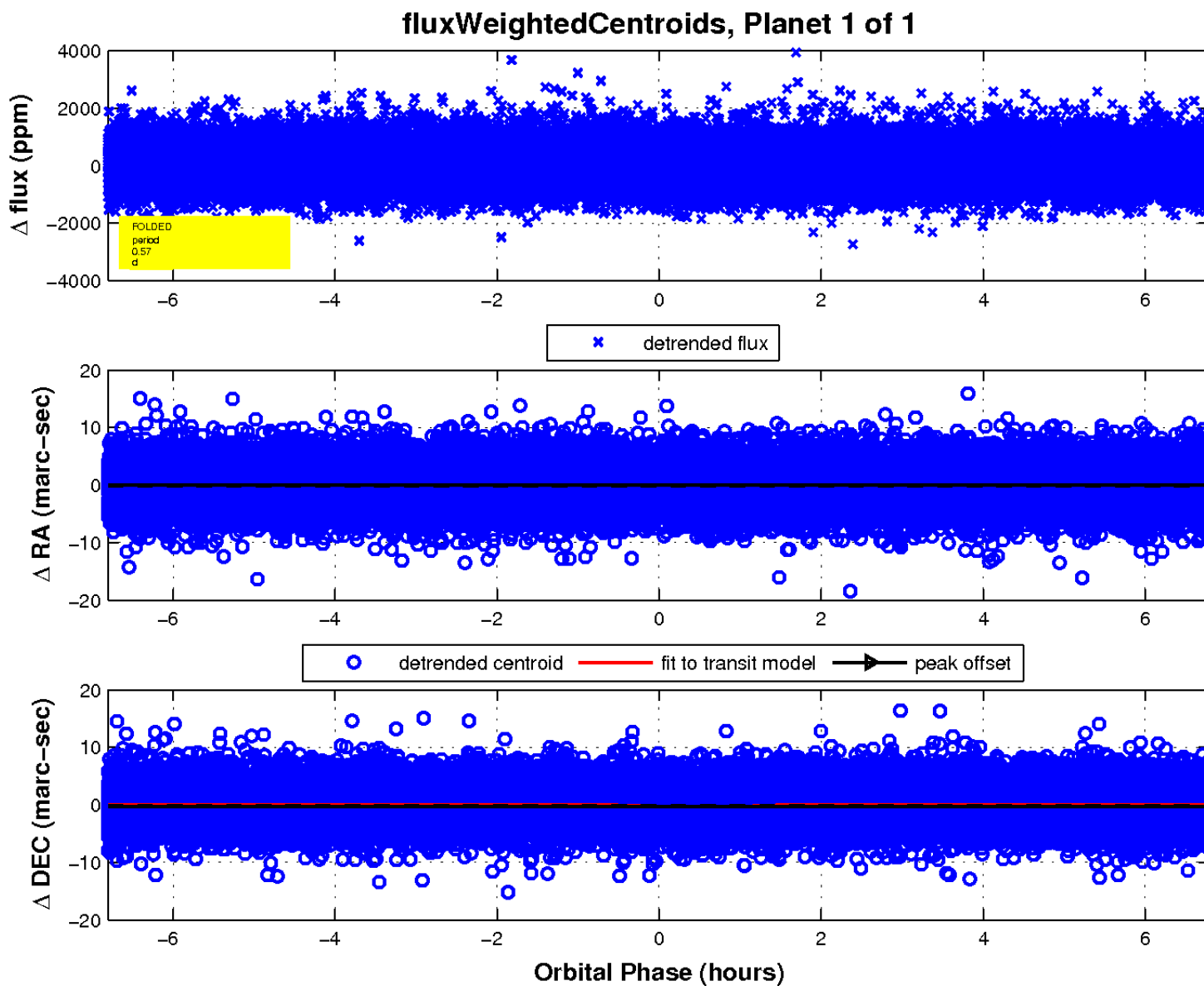
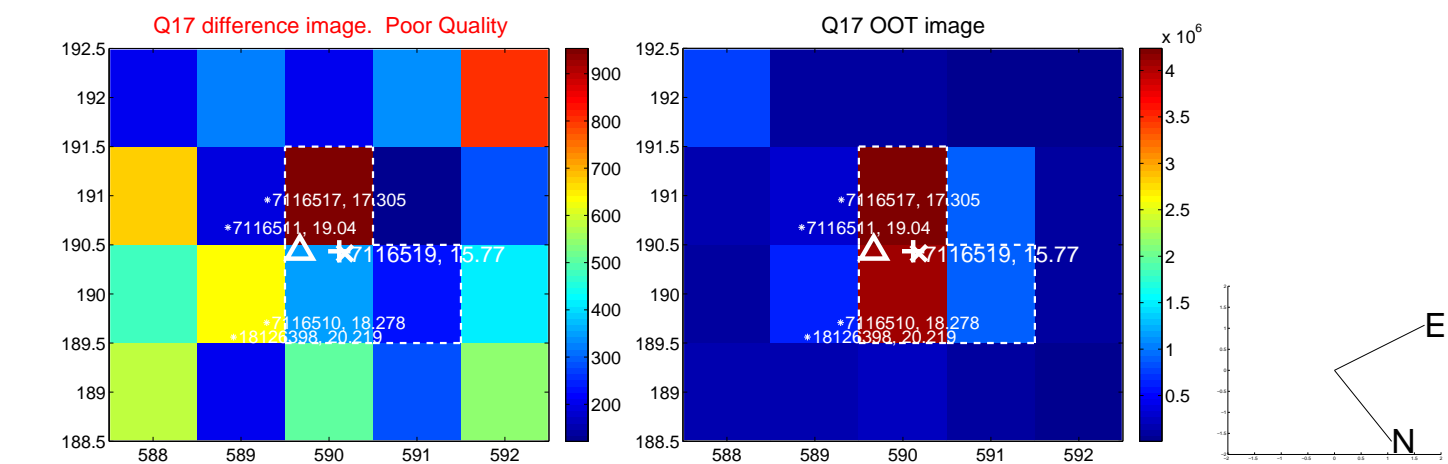
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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



UKIRT Image

Declination

