

# KIC 007739172

## 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) | $R_p$ ( $R_{\oplus}$ ) | $S_p$ ( $S_{\oplus}$ ) |
|--------------|----------|------|---------------|--------------|-------------|------------------|-----|-----|-----------------------------|-----------------|------------------------|------------------------|
| 007739172-01 | OBS      | No   | 6.401656      | 134.653139   | 10.5        | 21.942           | 8.7 | 8.7 | 2.48                        | 8003            | 0.94                   | 3082.01                |

## Robovetter Results

| TCE          | Run Type | Disp | Score | N | S | C | E | Comments                             |
|--------------|----------|------|-------|---|---|---|---|--------------------------------------|
| 007739172-01 | OBS      | FP   | 0.00  | 1 | 0 | 0 | 0 | LPP_DV—MOD_NONUNIQ_ALT—CENT_FEW_MEAS |

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

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

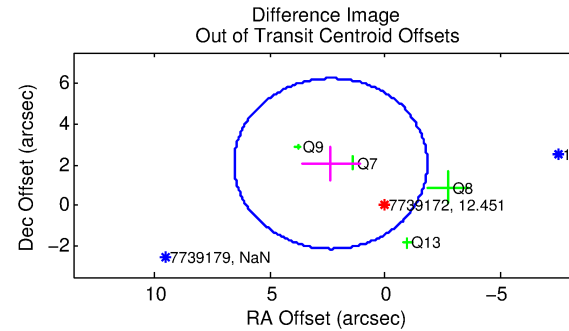
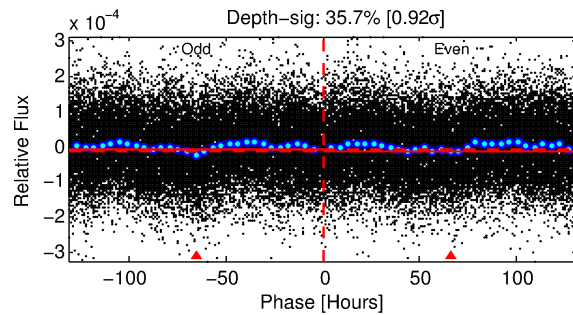
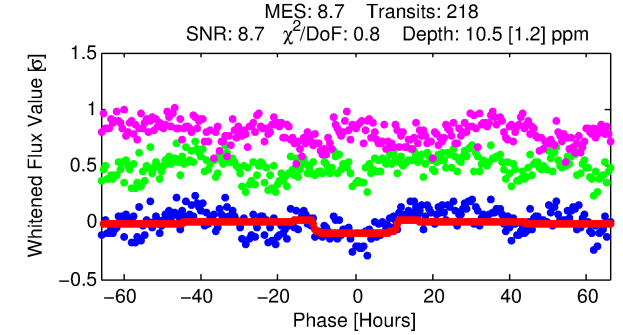
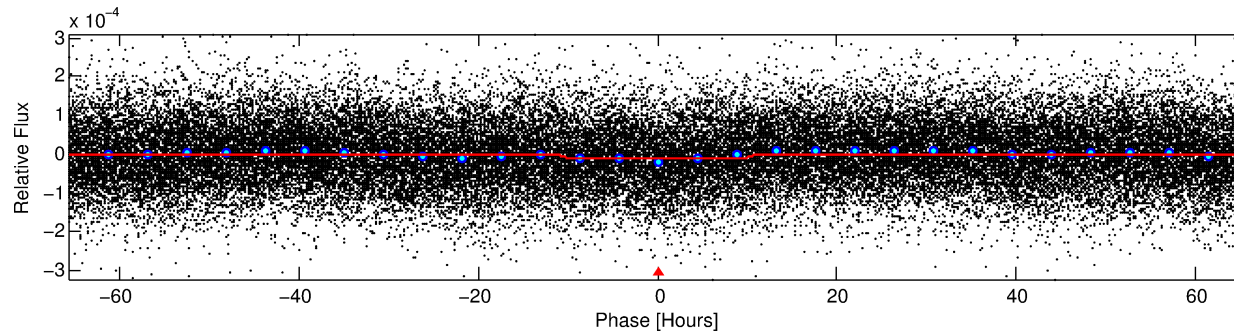
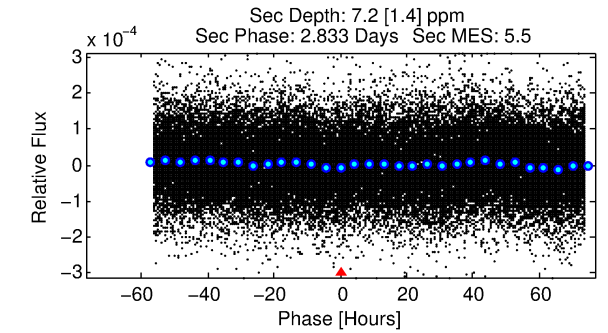
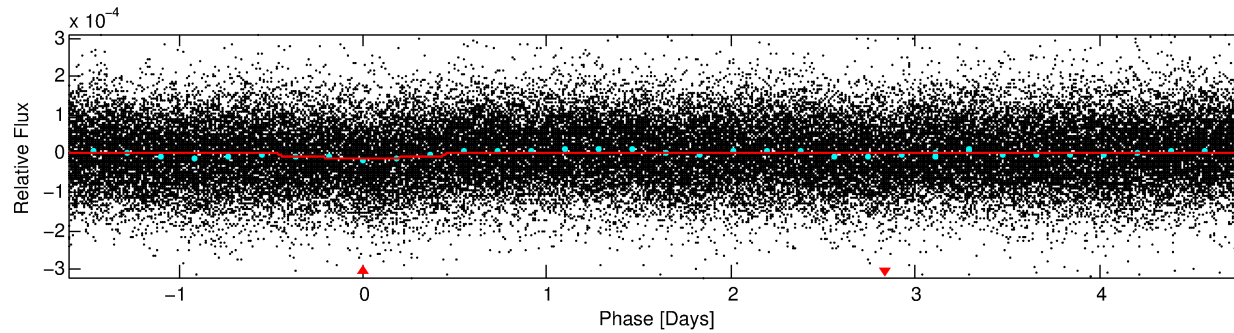
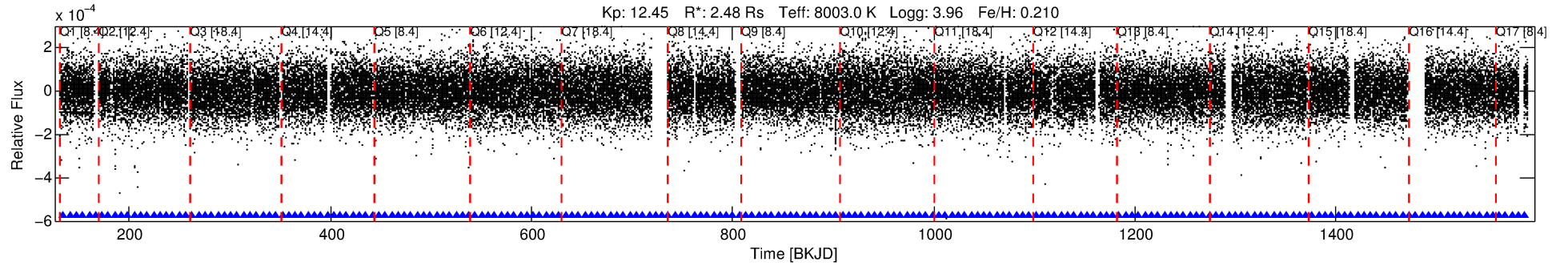
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 007739172-01

No Significant Match Found

# DV One-Page Summary

KIC: 7739172 Candidate: 1 of 1 Period: 6.402 d



## DV Fit Results:

Period = 6.40166 [0.00019] d  
Epoch = 134.6531 [0.0215] BKJD  
Rp/R\* = 0.0035 [0.0005]  
a/R\* = 1.34 [0.44]  
b = 0.91 [0.15]  
Seff = 3082.01 [1274.83]  
Teq = 1900 [196] K  
Rp = 0.94 [0.31] Re  
a = 0.0857 [0.0219] AU  
Ag = 32.98 [16.48] [1.94 $\sigma$ ]  
Teffp = 7039 [644] K [7.63 $\sigma$ ]

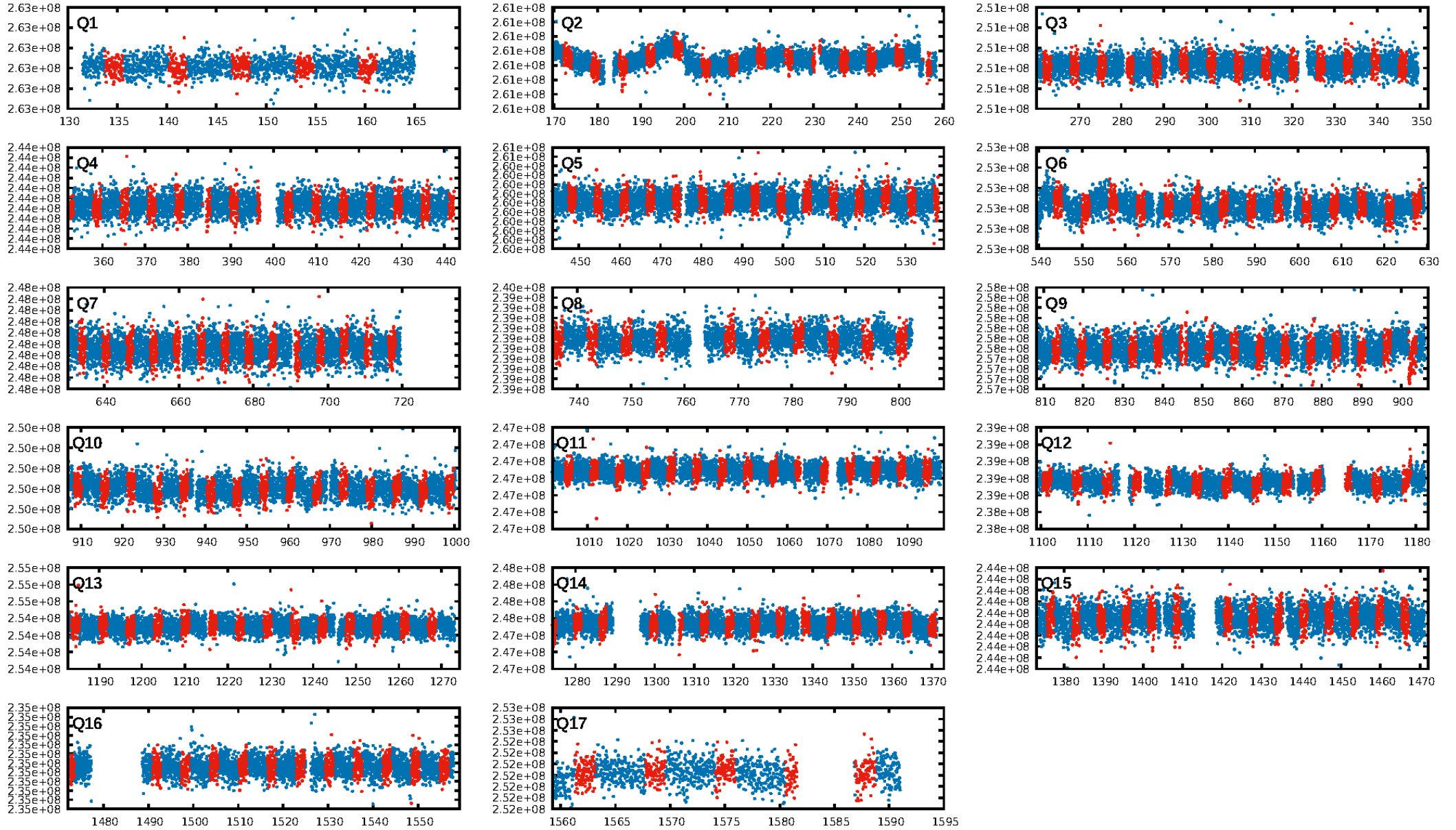
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: N/A  
ModelChiSquareGof-sig: N/A  
Bootstrap-pfa: 7.83e-17  
RollingBand-fgt: 1.00 [208/208]  
GhostDiagnostic-chr: 1.647  
Centroid-sig: 0.0%  
Centroid-so: 3.841 arcsec [2.79 $\sigma$ ]  
OotOffset-rm: 3.125 arcsec [2.25 $\sigma$ ]  
KicOffset-rm: 3.082 arcsec [2.46 $\sigma$ ]  
OotOffset-st: 0/1/1/2 [4]  
KicOffset-st: 0/1/1/2 [4]  
DiffImageQuality-fgm: 0.50 [2/4]  
DiffImageOverlap-fno: 1.00 [17/17]

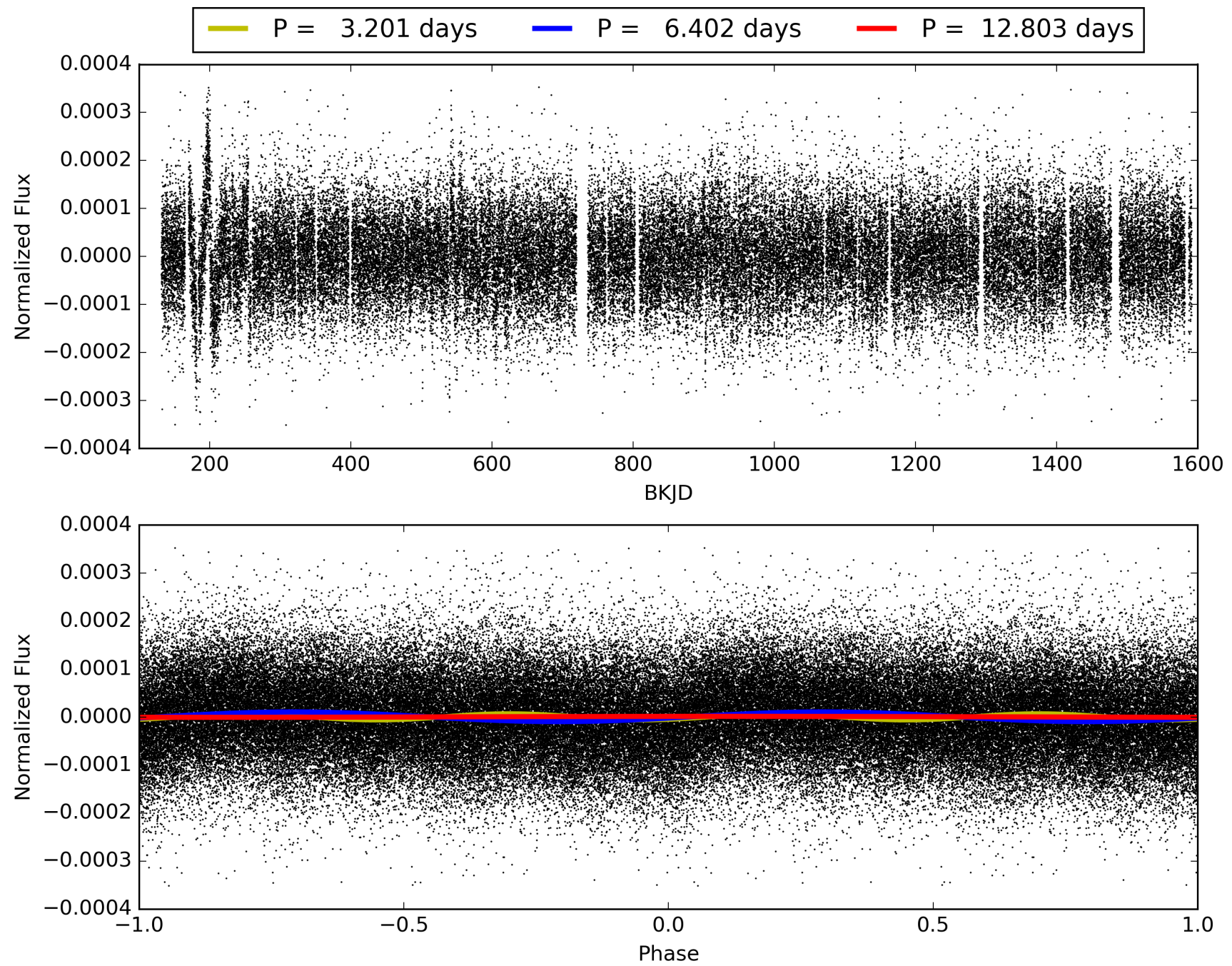
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 22:46:44 Z

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

# TCE 007739172-01, PDC Light Curves



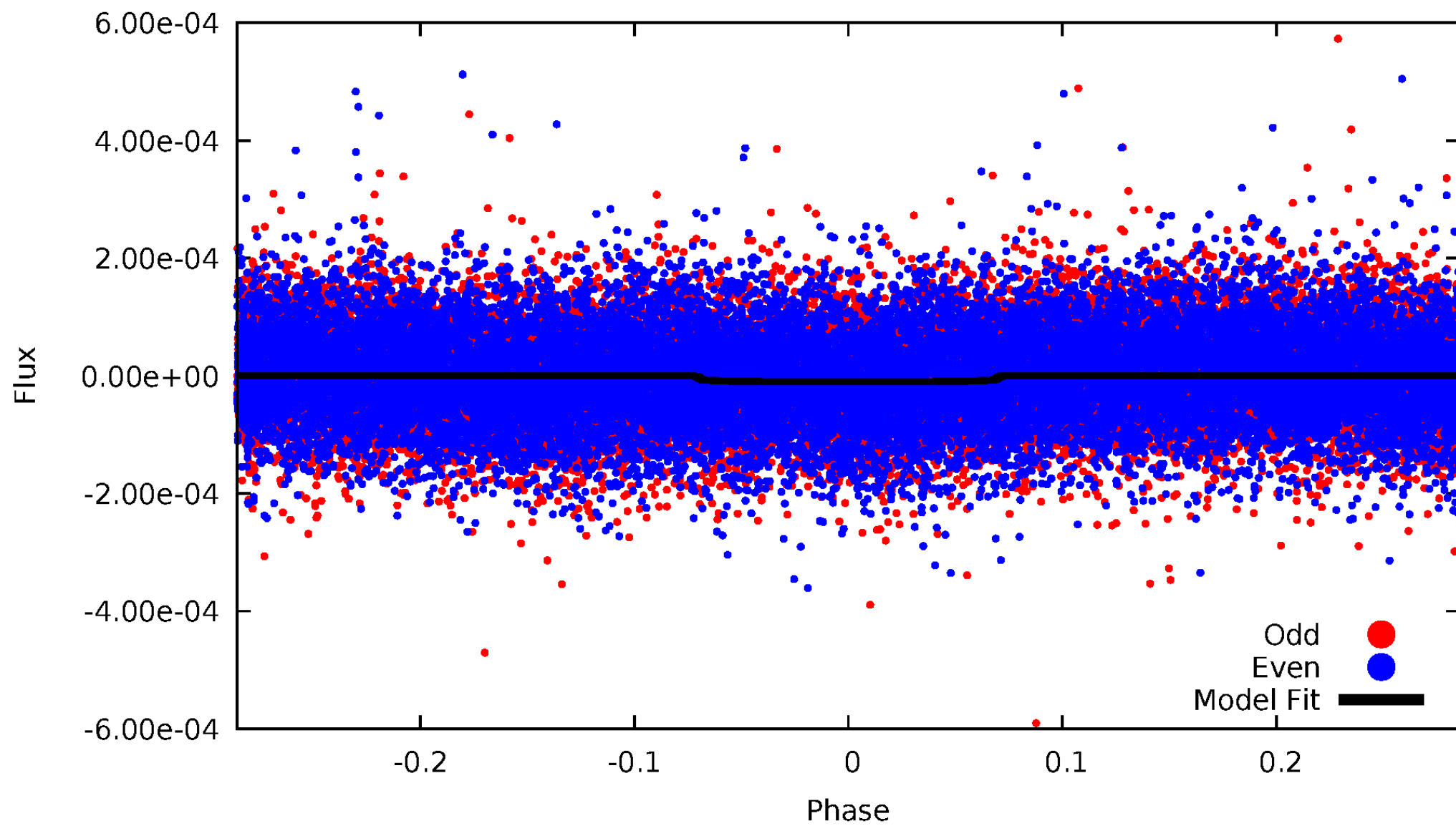
TCE 007739172-01





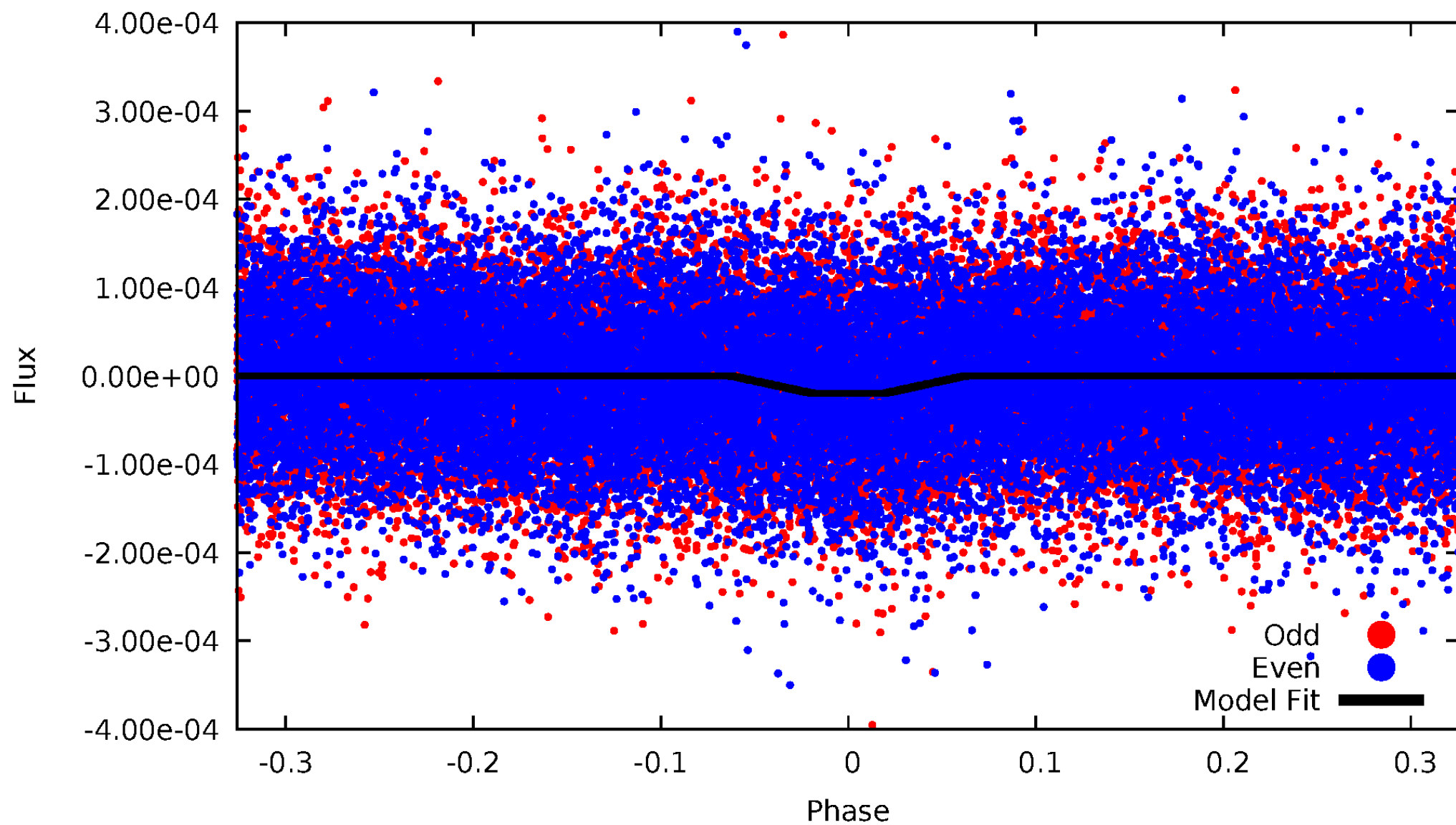
DV Odd/Even

TCE 007739172-01



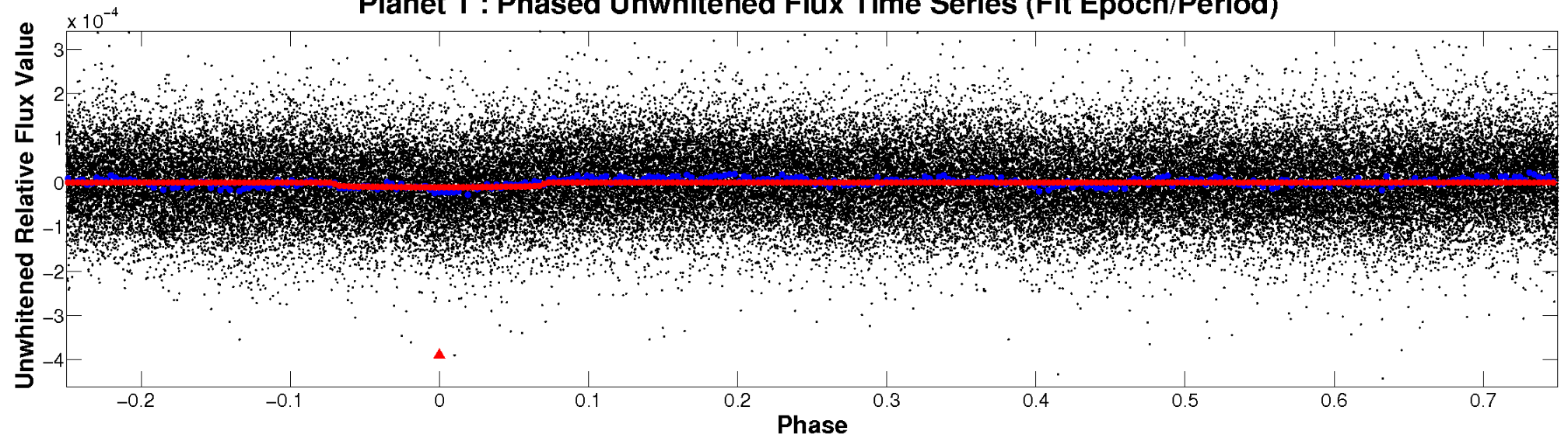
# ALT Odd/Even

TCE 007739172-01

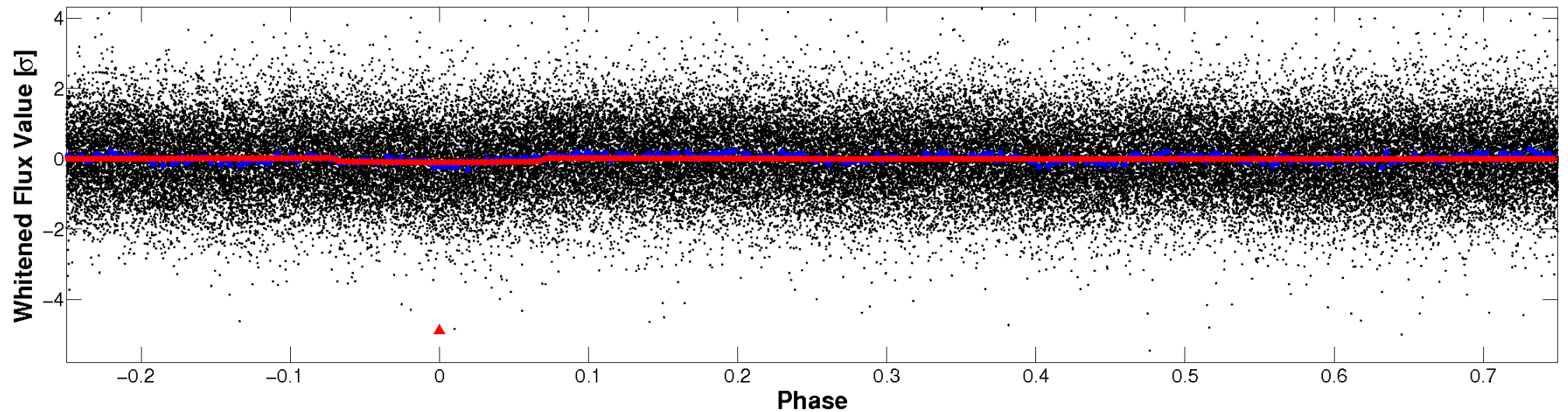


# Non-Whitened Vs. Whitened Light Curve

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

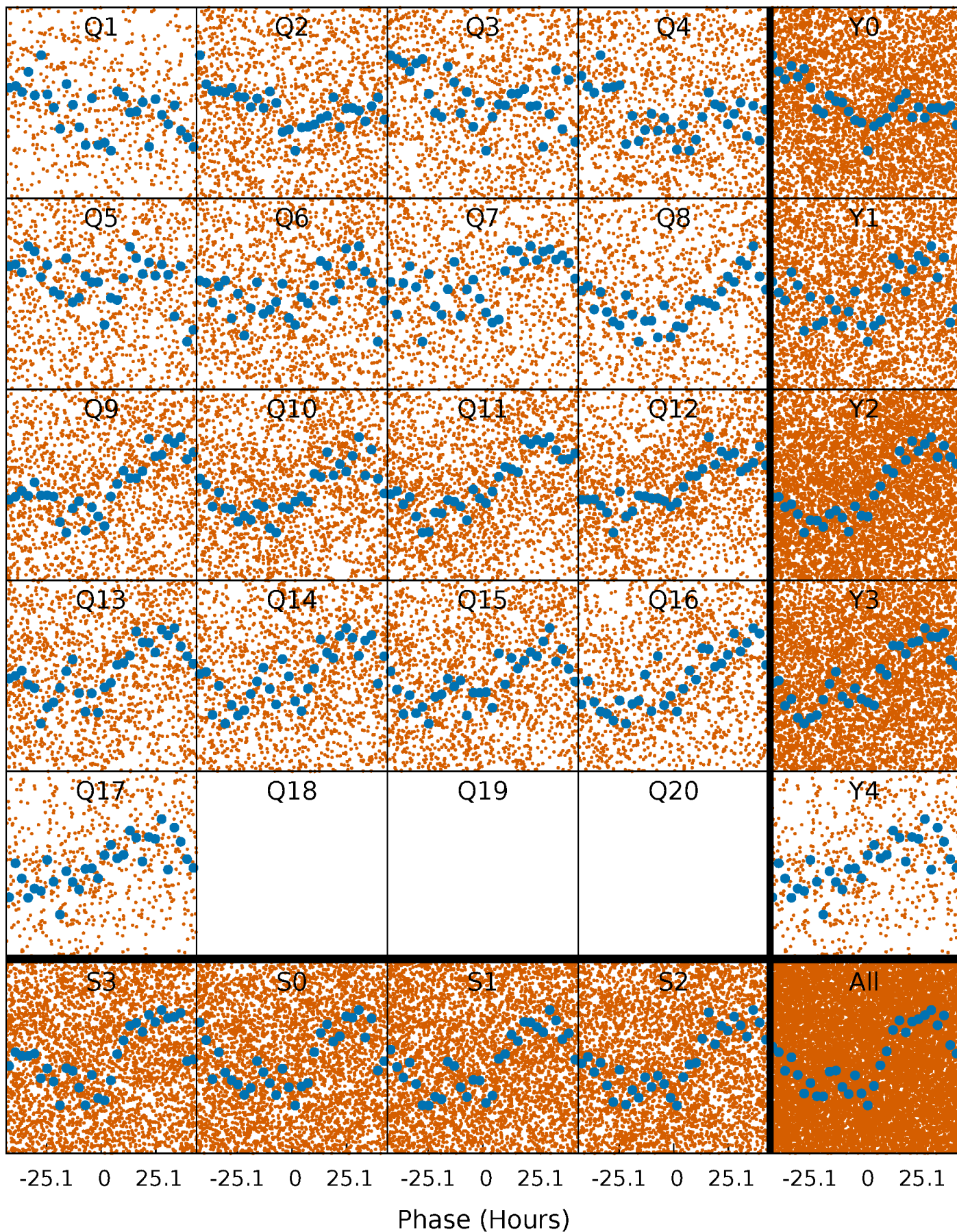


**Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)**



# PDC Quarter-Phased Transit Curves

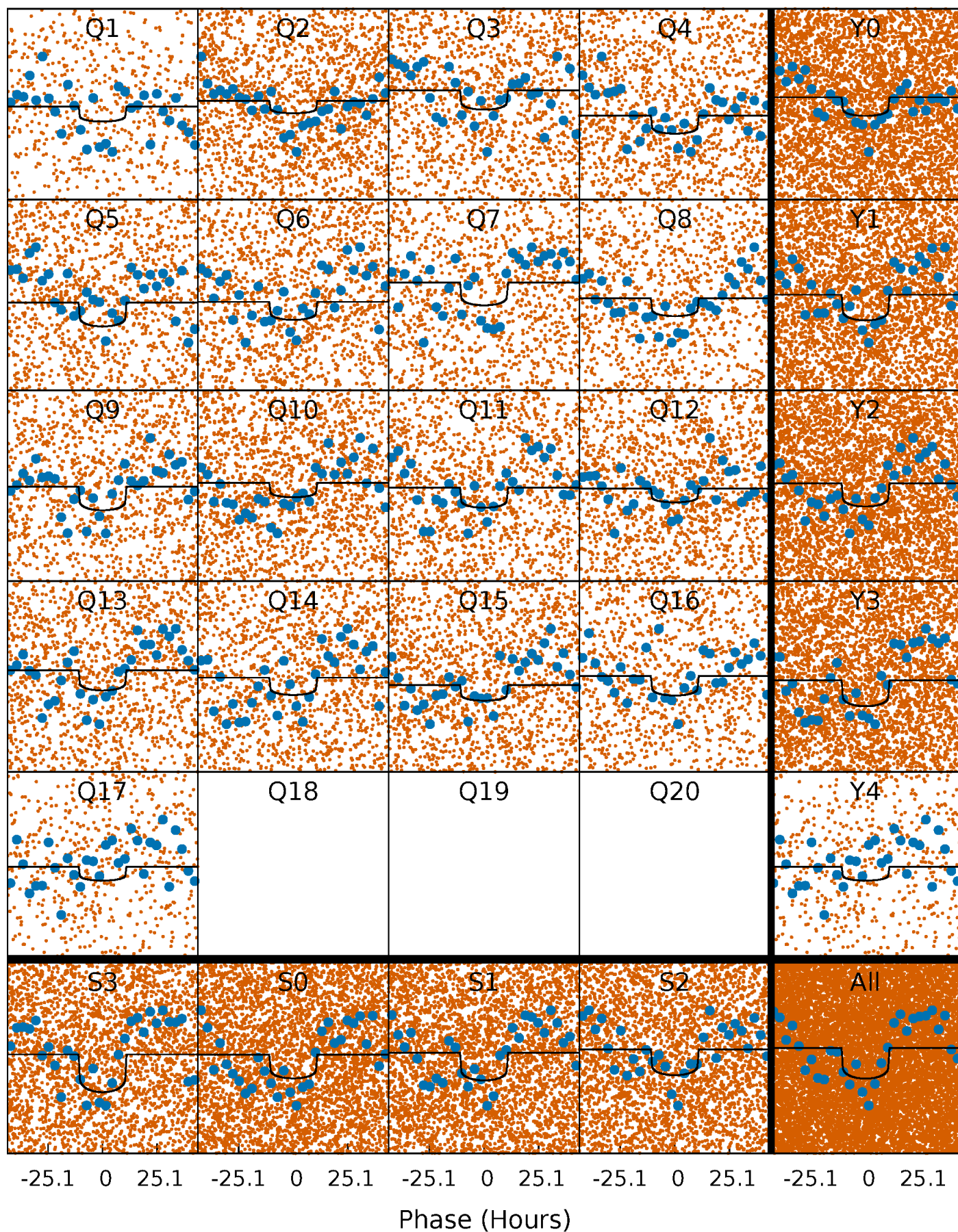
TCE 007739172-01 P= 6.401656 Days  $T_0=134.653139$  (BKJD)





# DV Quarter-Phased Transit Curves

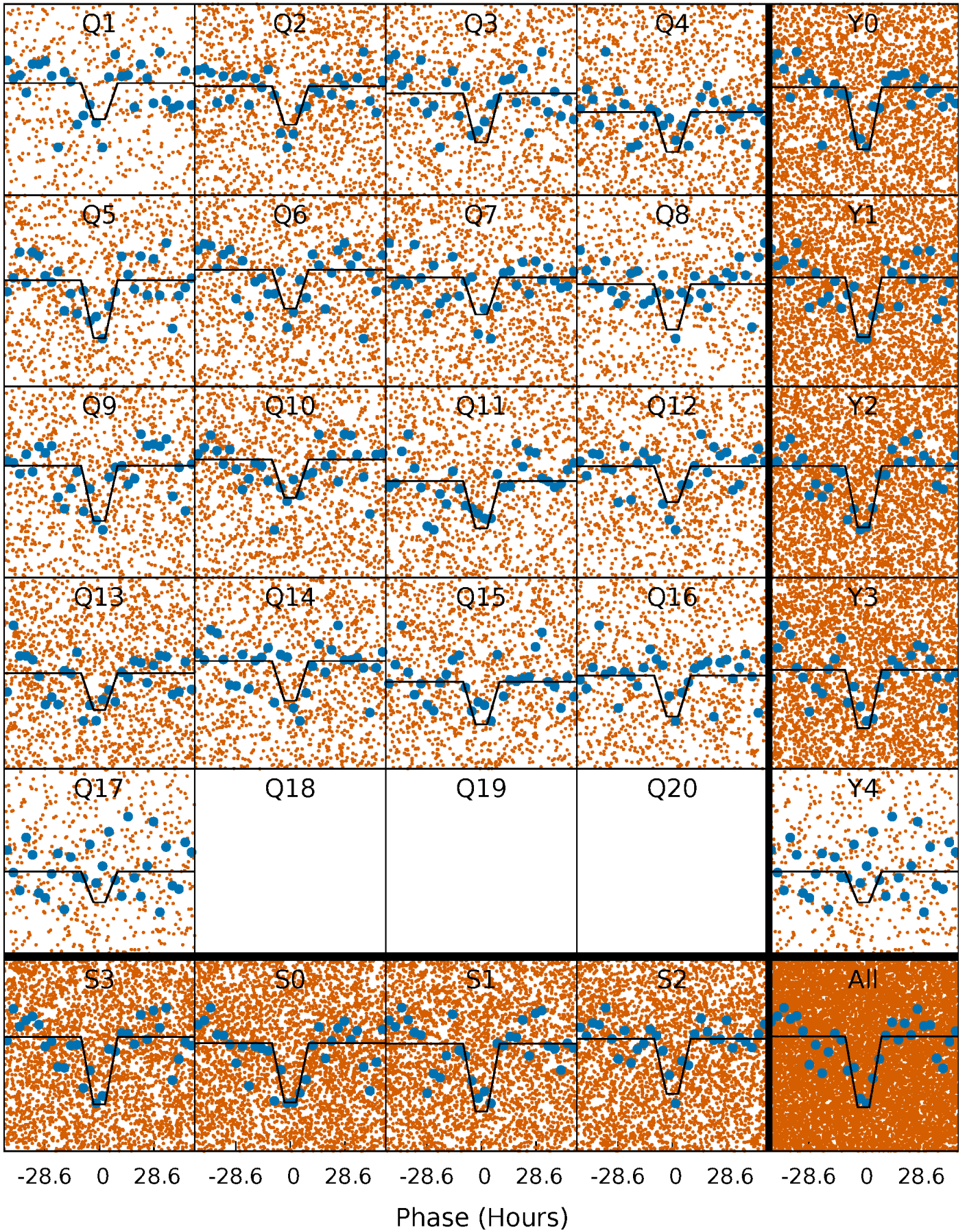
TCE 007739172-01 P= 6.401656 Days  $T_0=134.653139$  (BKJD)





# Alt. Detrend Quarter-Phased Transit Curves

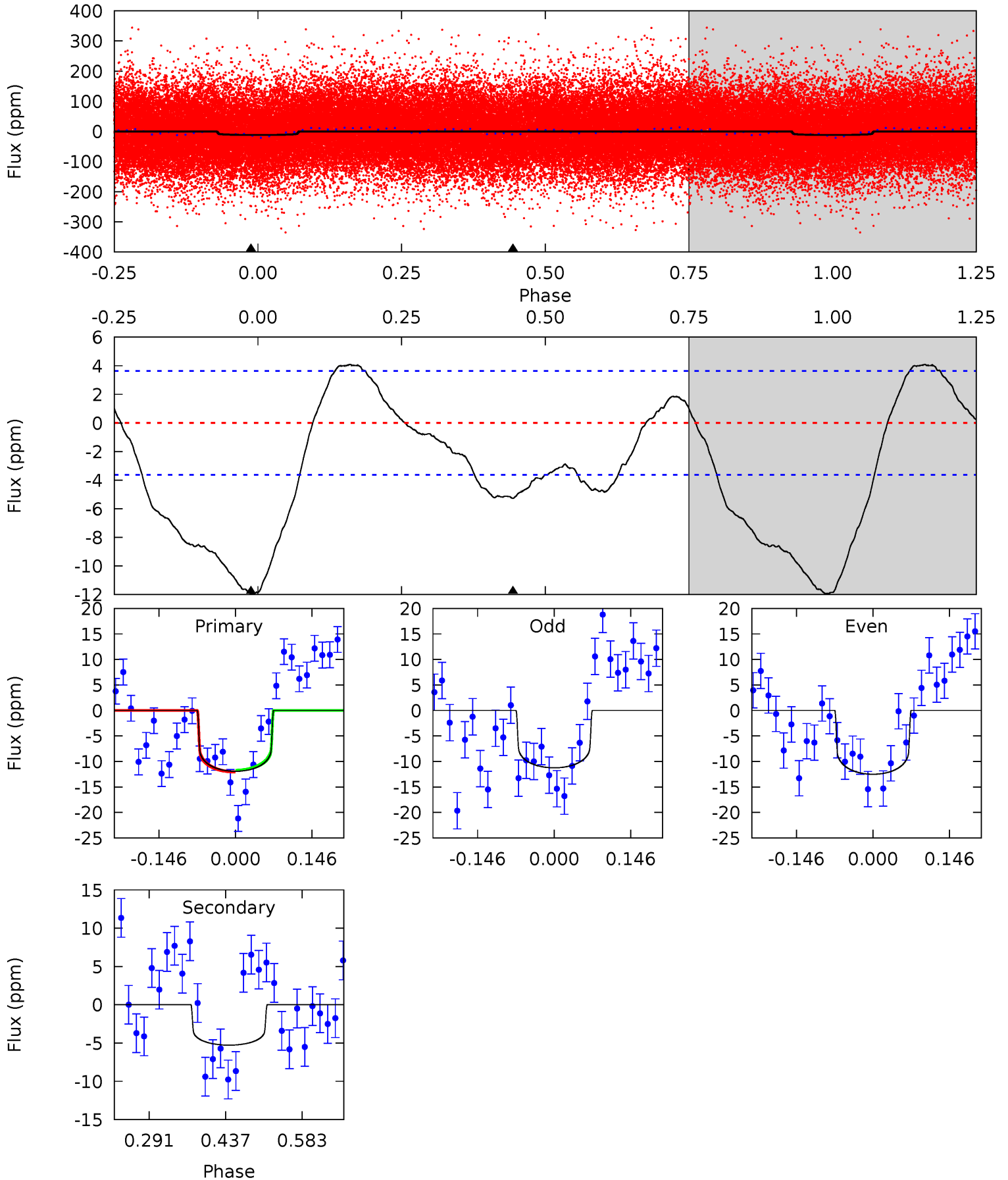
TCE 007739172-01 P= 6.401121 Days  $T_0=134.734747$  (BKJD)



# DV Model-Shift Uniqueness Test

007739172-01, P = 6.401656 Days, E = 128.251483 Days

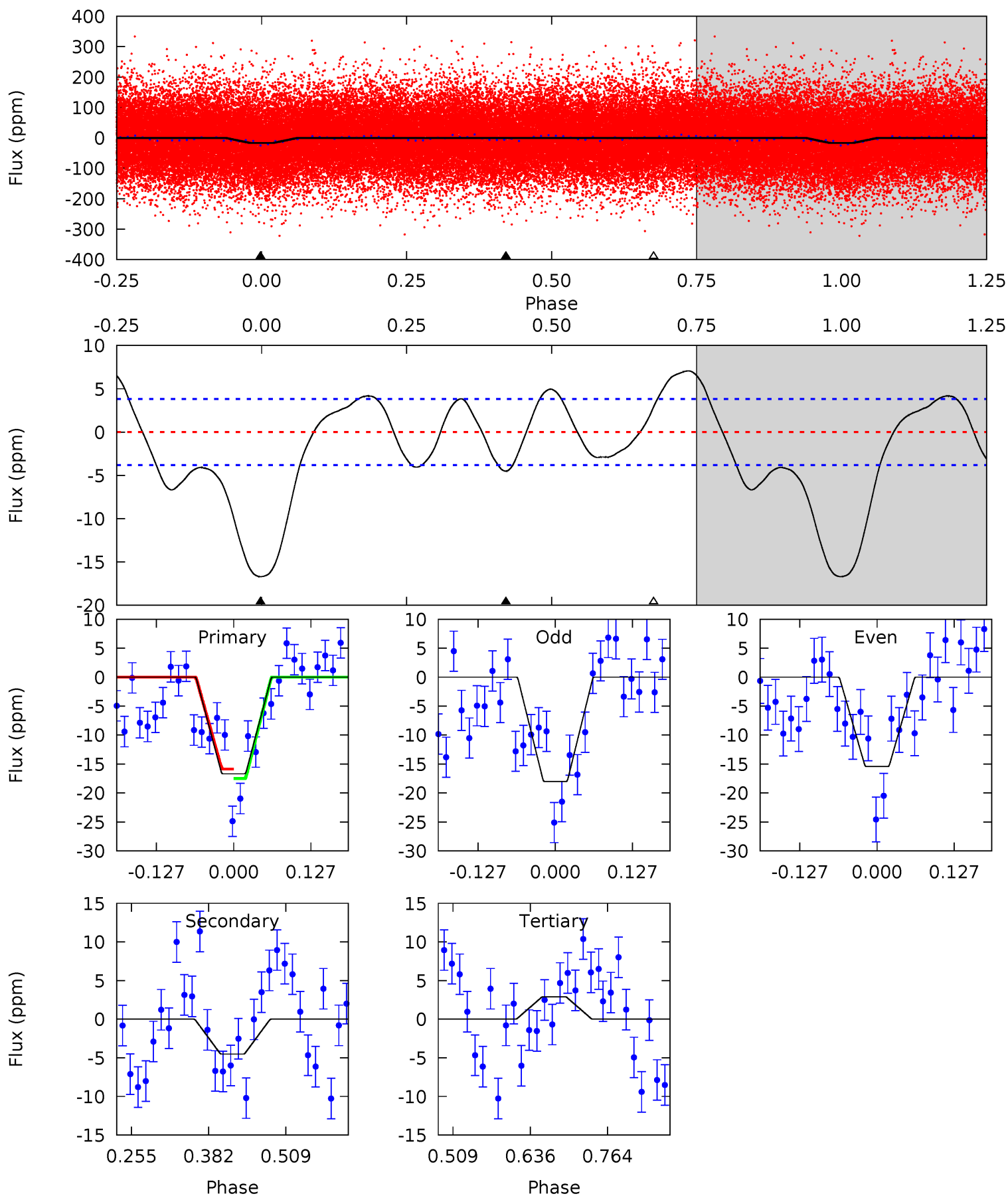
| Pri  | Sec  | Ter | Pos | FA <sub>1</sub> | FA <sub>2</sub> | F <sub>Red</sub> | Pri-Ter | Pri-Pos | Sec-Ter | Sec-Pos | Odd-Evn | DMM  | Shape | TAT  |
|------|------|-----|-----|-----------------|-----------------|------------------|---------|---------|---------|---------|---------|------|-------|------|
| 14.7 | 6.51 | 0   | 0   | 4.49            | 1.45            | 3.70             | 14.7    | 14.7    | 6.51    | 6.51    | 0.78    | 1.19 | 0.26  | 0.21 |



# Alt Model-Shift Uniqueness Test

007739172-01, P = 6.401121 Days, E = 128.333626 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  |
|------|------|-------|-----|-----------------|-----------------|------------------|---------|---------|---------|---------|---------|------|-------|------|
| 19.7 | 5.34 | -3.44 | 0   | 4.51            | 1.52            | 4.67             | 23.2    | 19.7    | 8.78    | 5.34    | 1.53    | 1.11 | 0.30  | 0.96 |





### Stellar Parameters For KIC 007739172

|        | $T_{\text{eff}}(K)$  | $\log(g)$                 | [Fe/H]                    | $R (R_{\odot})$           | $M(M_{\odot})$            | $p_{\star} (\text{g}\cdot\text{cm}^{-3})$ |
|--------|----------------------|---------------------------|---------------------------|---------------------------|---------------------------|---|
|        | $8003^{+222}_{-333}$ | $3.960^{+0.210}_{-0.140}$ | $0.210^{+0.150}_{-0.500}$ | $2.483^{+0.555}_{-0.740}$ | $2.053^{+0.306}_{-0.421}$ | $0.189^{+0.228}_{-0.078}$                 |
|        | +3%/-4%              | +5%/-4%                   | +71%/-238%                | +22%/-30%                 | +15%/-21%                 | +121%/-41%                                |
| 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 007739172-01 / KOI

| Detrend | Depth (ppm) | $R_p (R_{\oplus})$     | $T_{max} (K)$        | $T_{obs} (K)$        | $A_{obs}$       |
|---------|-------------|------------------------|----------------------|----------------------|-----------------|
| DV      | $-5 \pm 1$  | $0.92^{+0.20}_{-0.17}$ | $2624^{+201}_{-204}$ | $6308^{+571}_{-539}$ | $25^{+13}_{-8}$ |
| Alt.    | $-5 \pm 1$  | $1.18^{+0.22}_{-0.21}$ | $2626^{+197}_{-213}$ | $5400^{+378}_{-391}$ | $13^{+7}_{-4}$  |

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

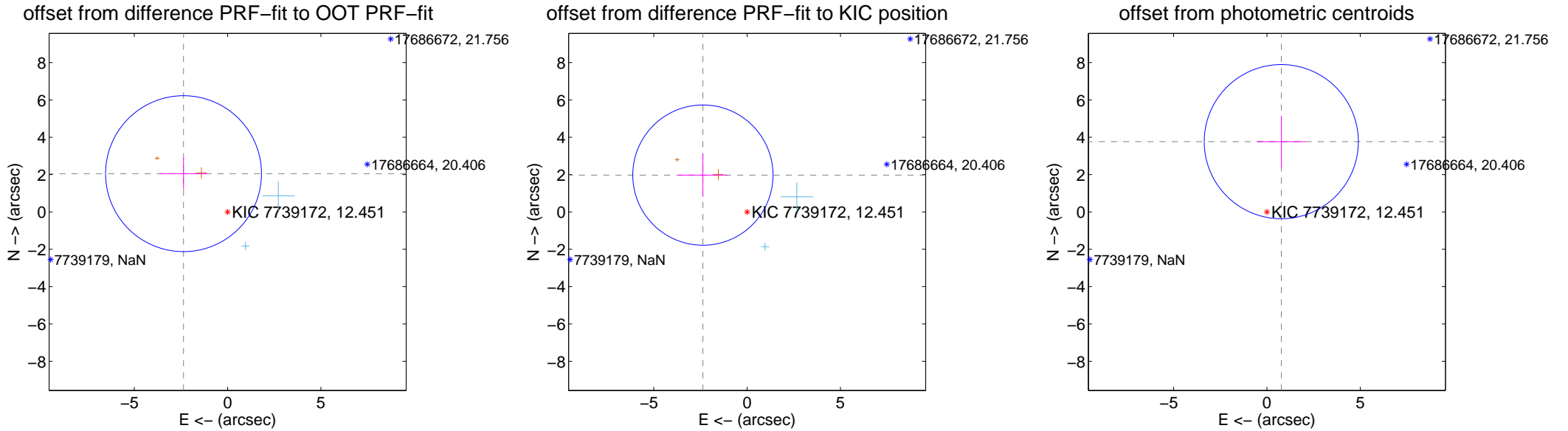
## DV Centroid Data

Supplemental centroid analysis for 007739172-01. Kepler magnitude: 12.45. Transit SNR 8.75

There are 2 quarters with good PRF difference image offsets

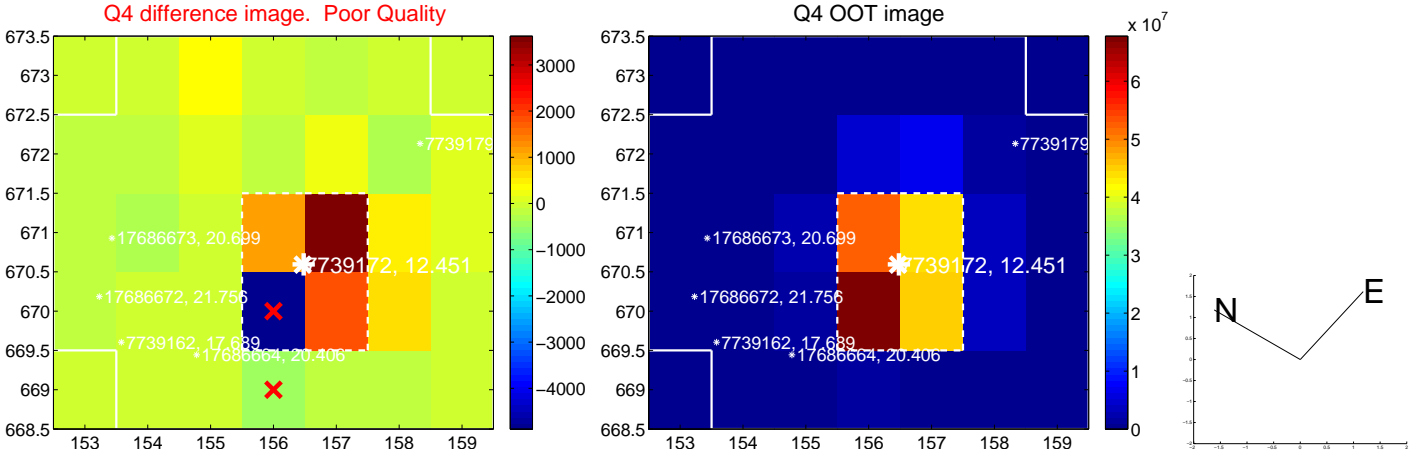
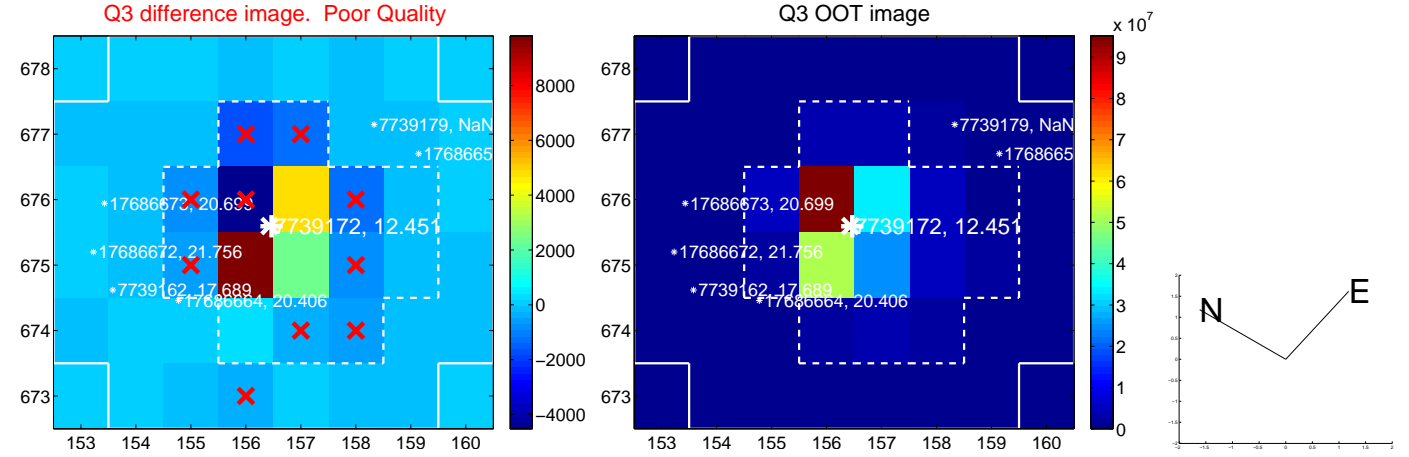
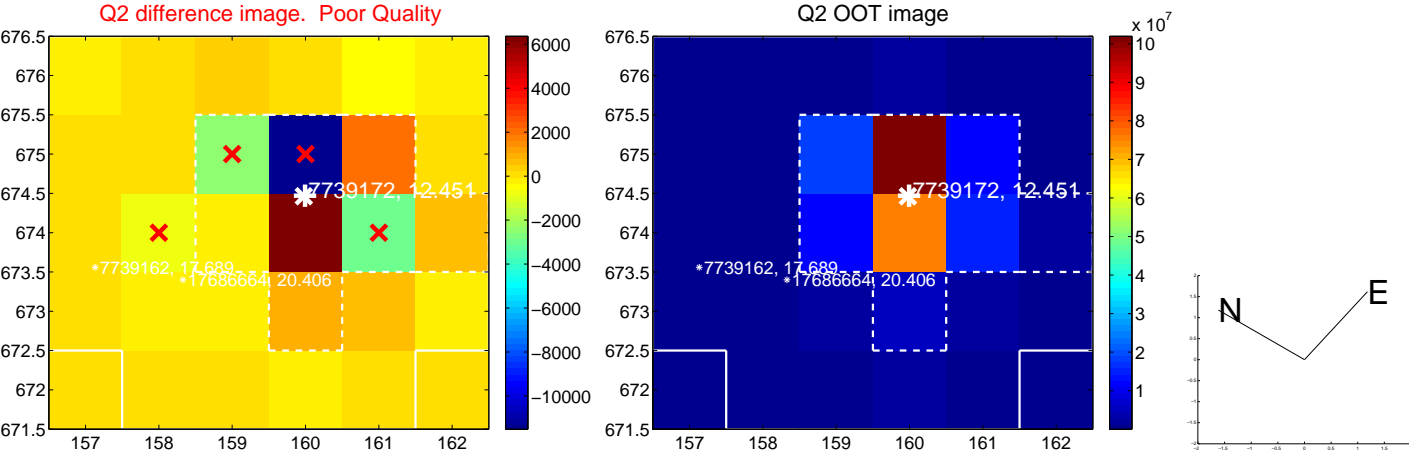
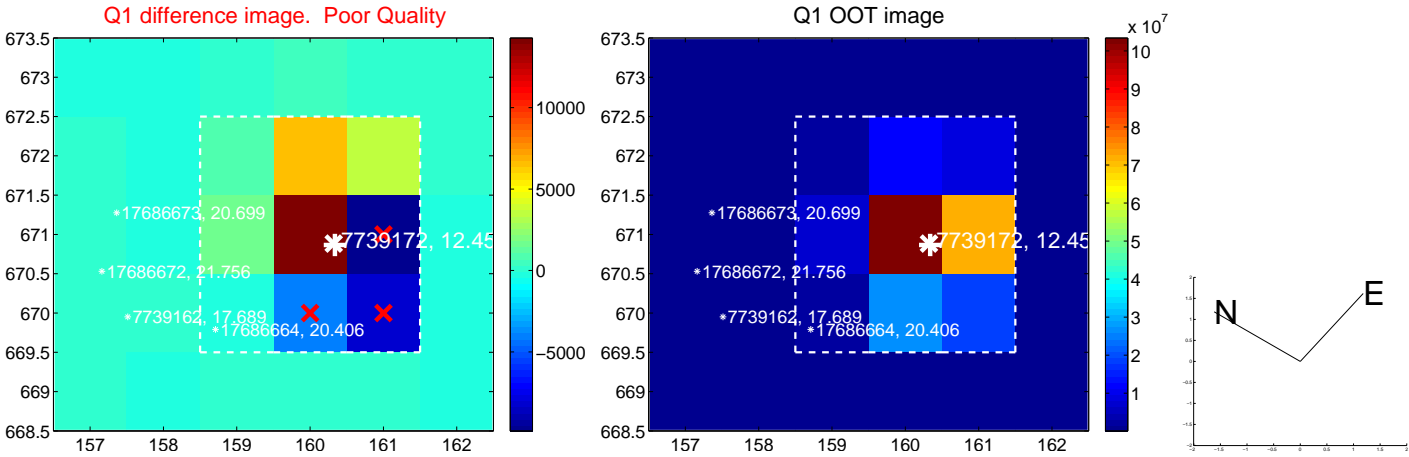
The direct PRF centroid is offset from the target star catalog position by about 0.04 arcsec

|   | Distance in arcsec | Distance / $\sigma$ | $\Delta$ RA       | $\Delta$ Dec      |
|---|--------------------|---------------------|-------------------|-------------------|
| PRF-fit source offset from OOT          | $3.125 \pm 1.392$  | 2.25                | $2.360 \pm 1.270$ | $2.049 \pm 0.838$ |
| PRF-fit source offset from KIC position | $3.082 \pm 1.252$  | 2.46                | $2.369 \pm 1.312$ | $1.973 \pm 1.159$ |
| photometric centroid source offset      | $3.84 \pm 1.38$    | 2.79                | $-0.77 \pm 1.30$  | $3.76 \pm 1.38$   |

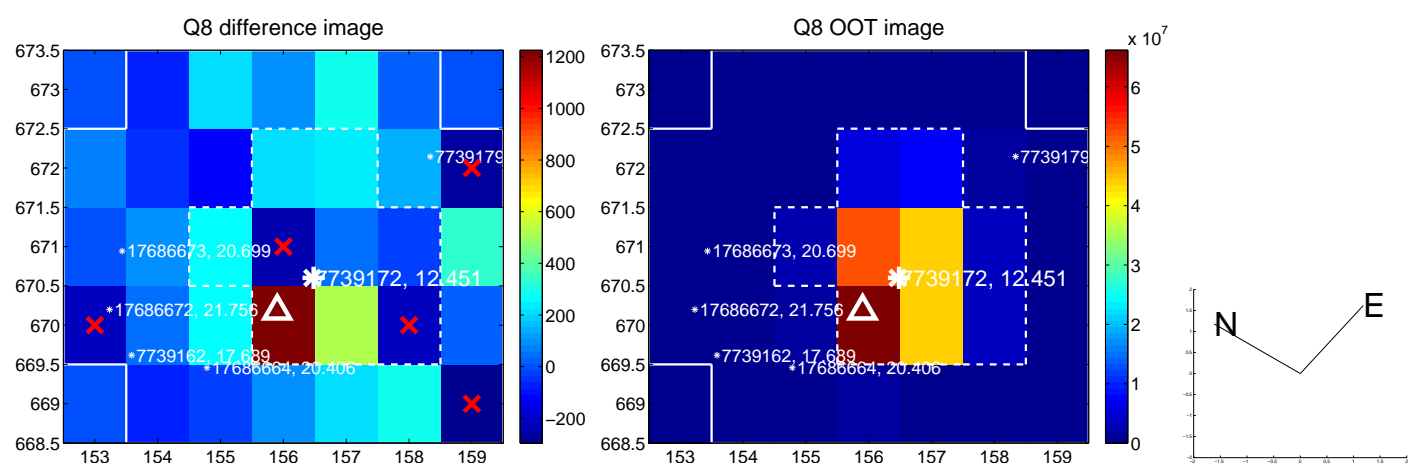
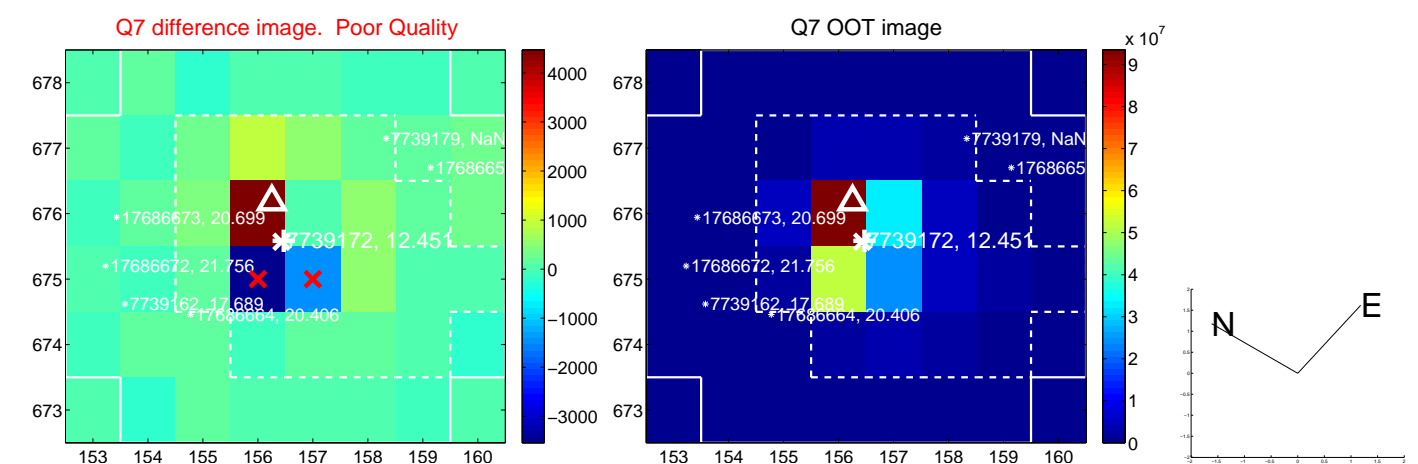
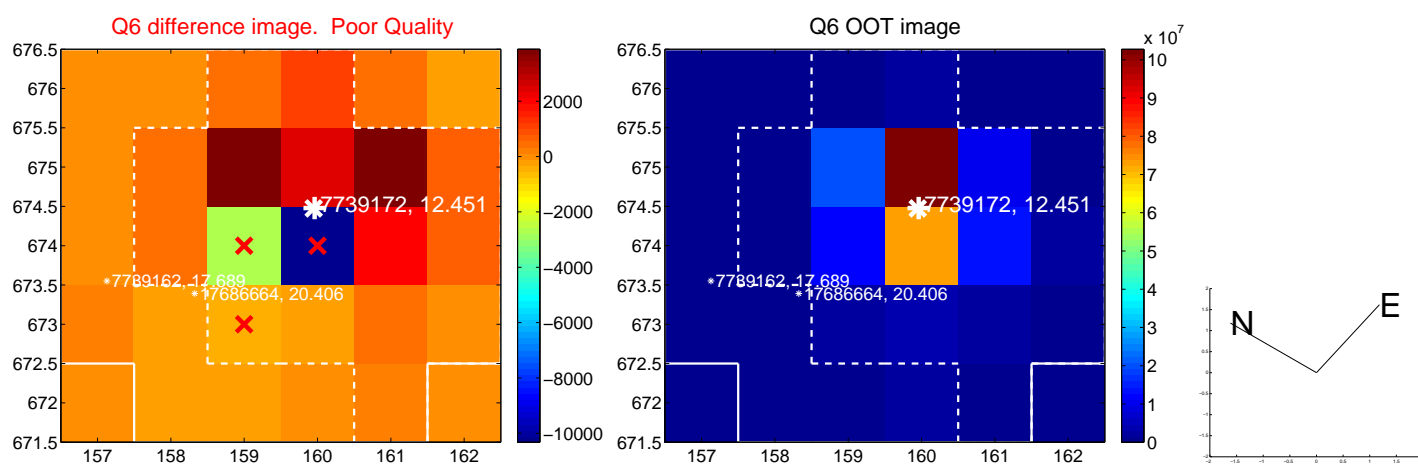
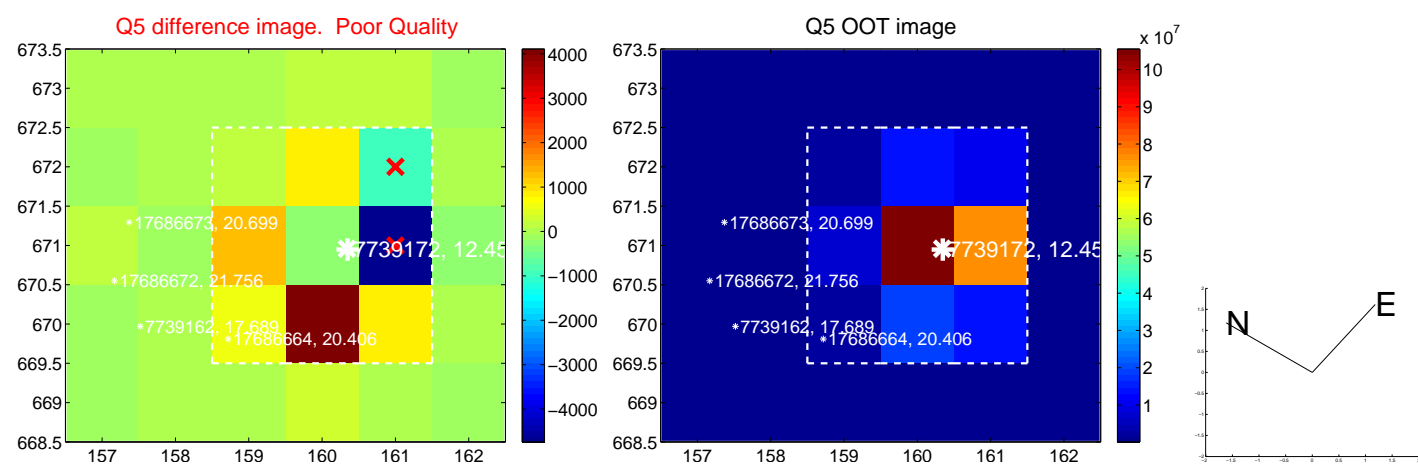


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: three-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

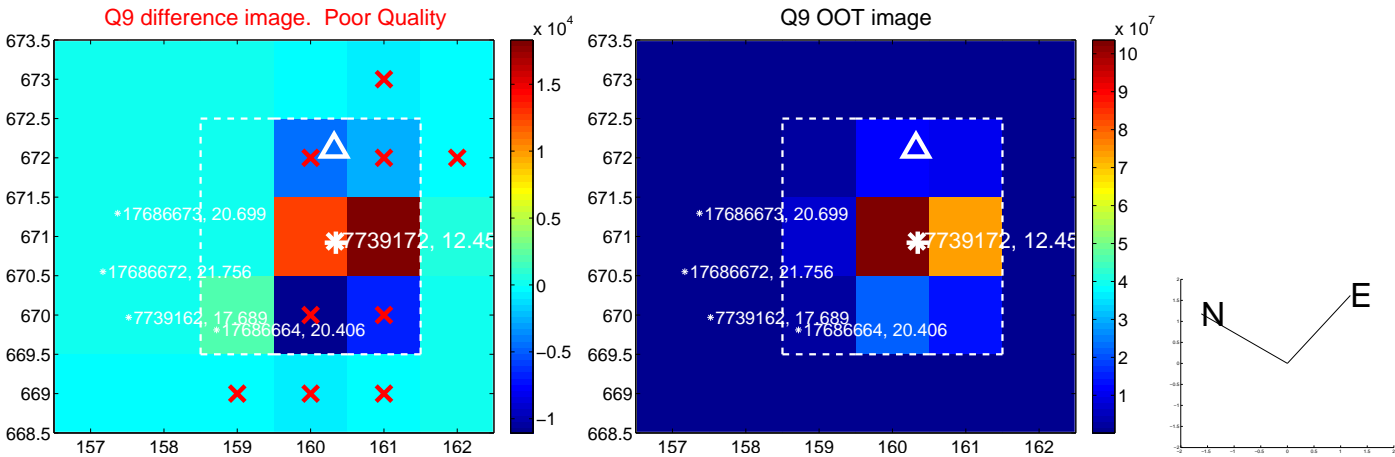


white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

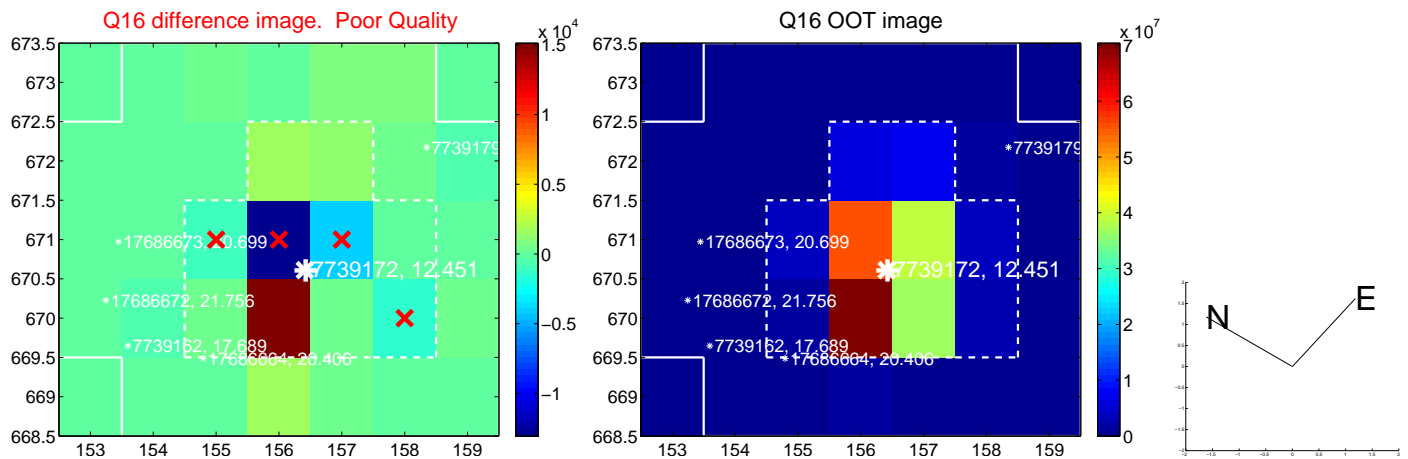
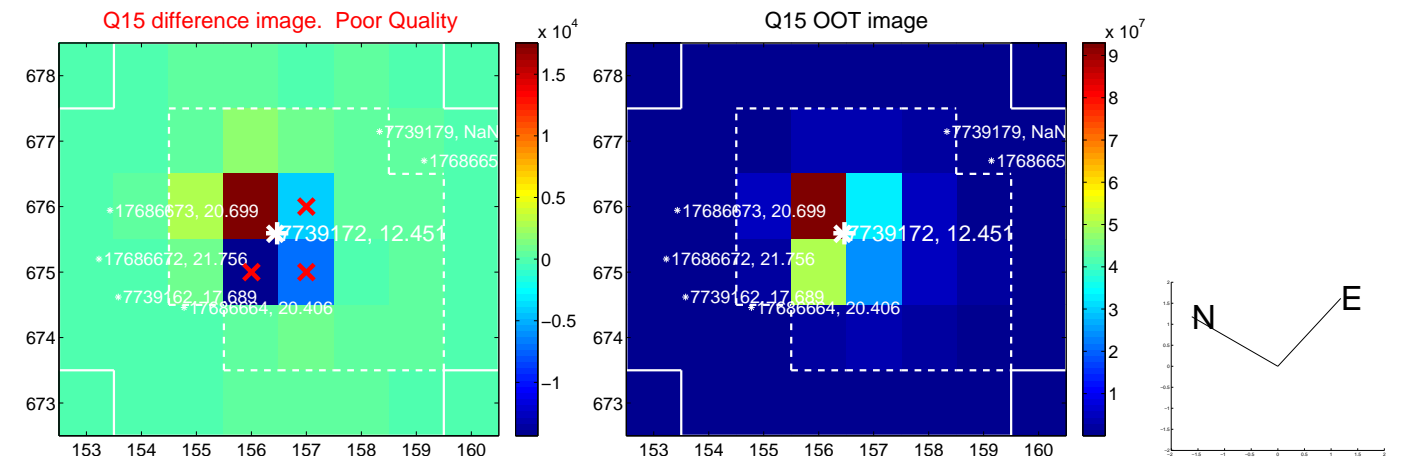
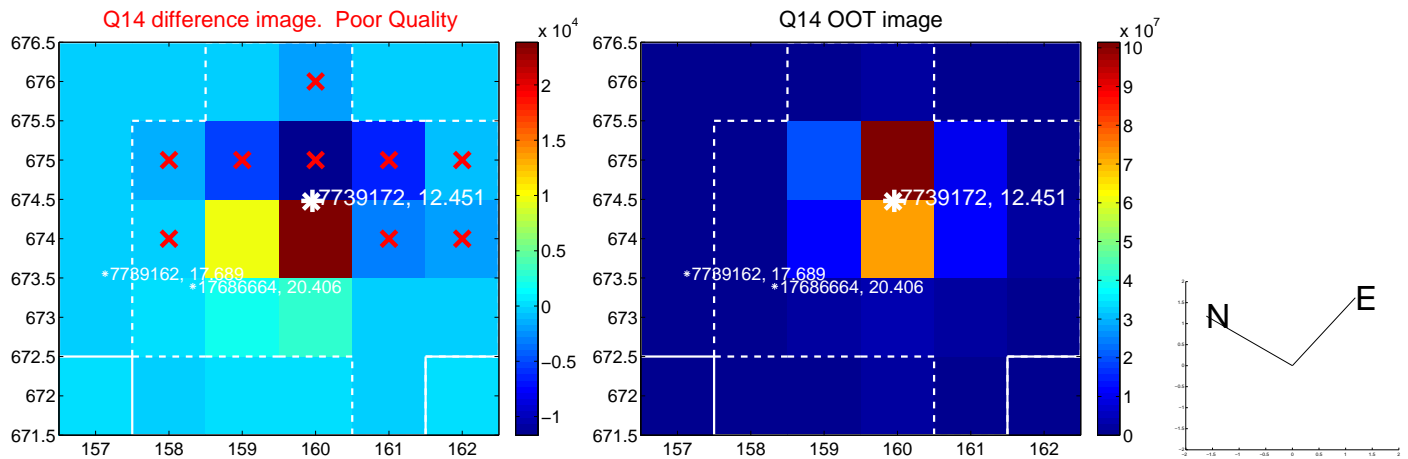
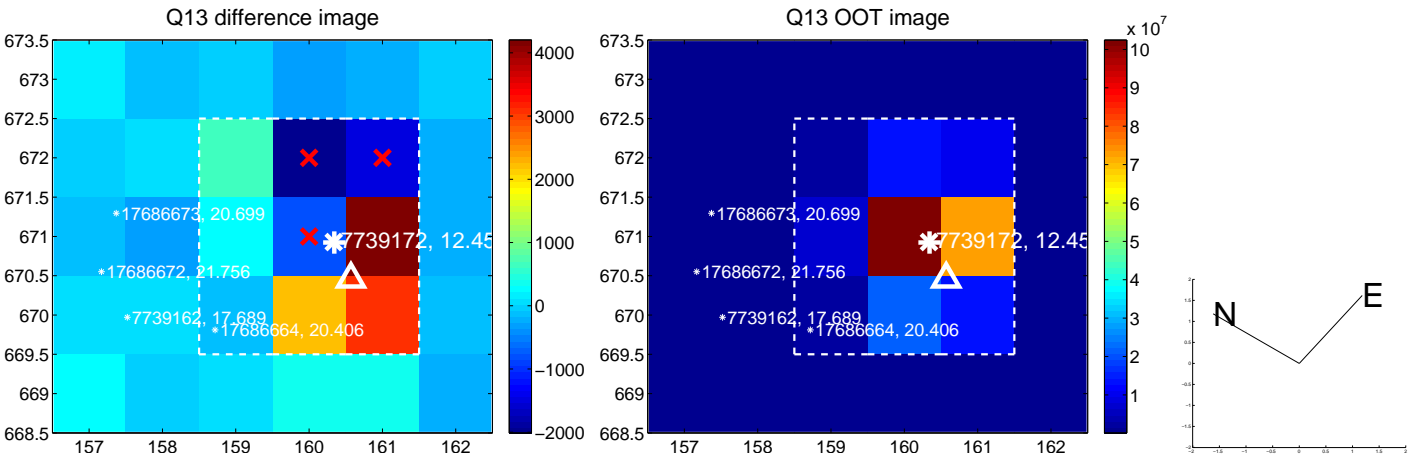




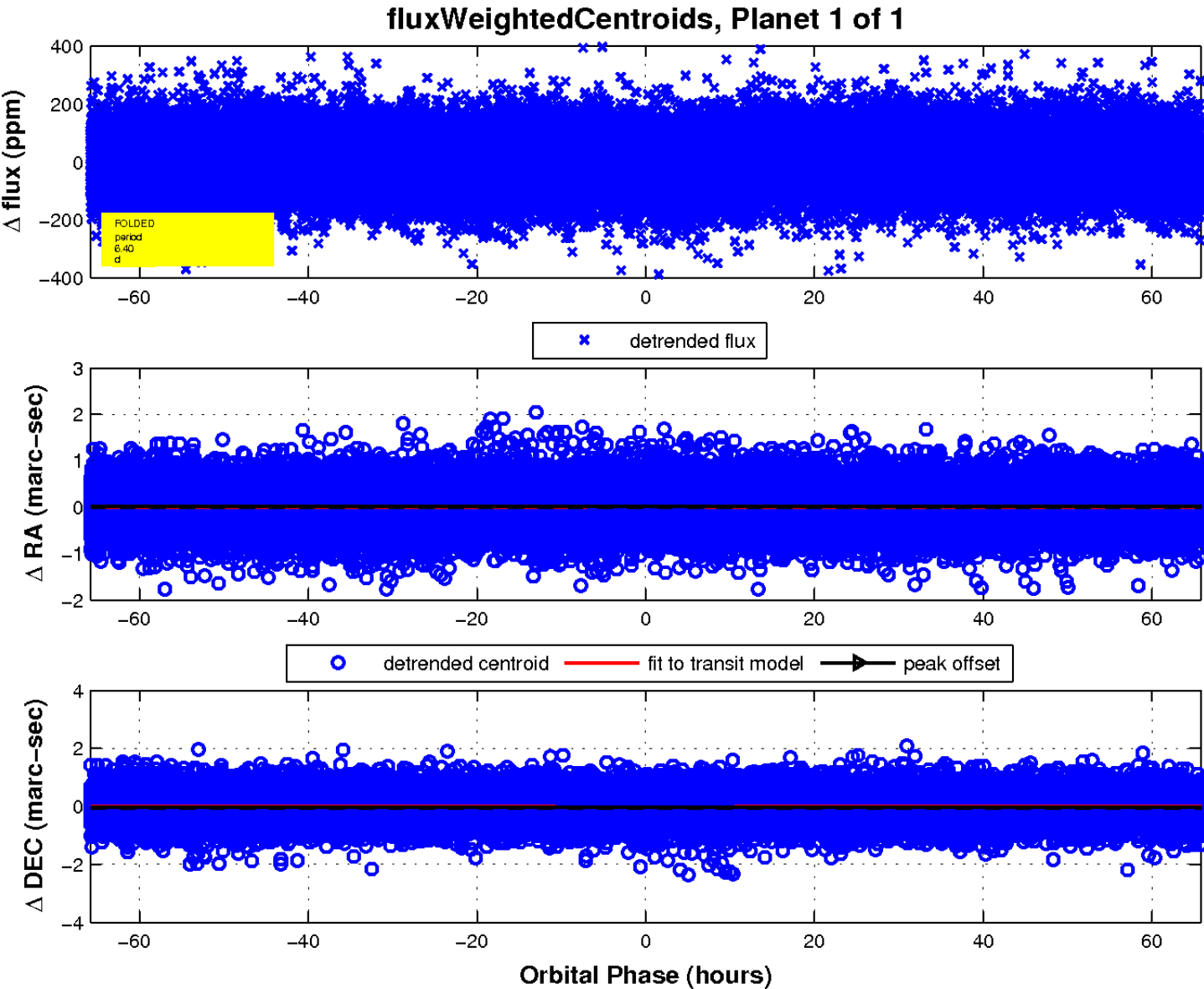
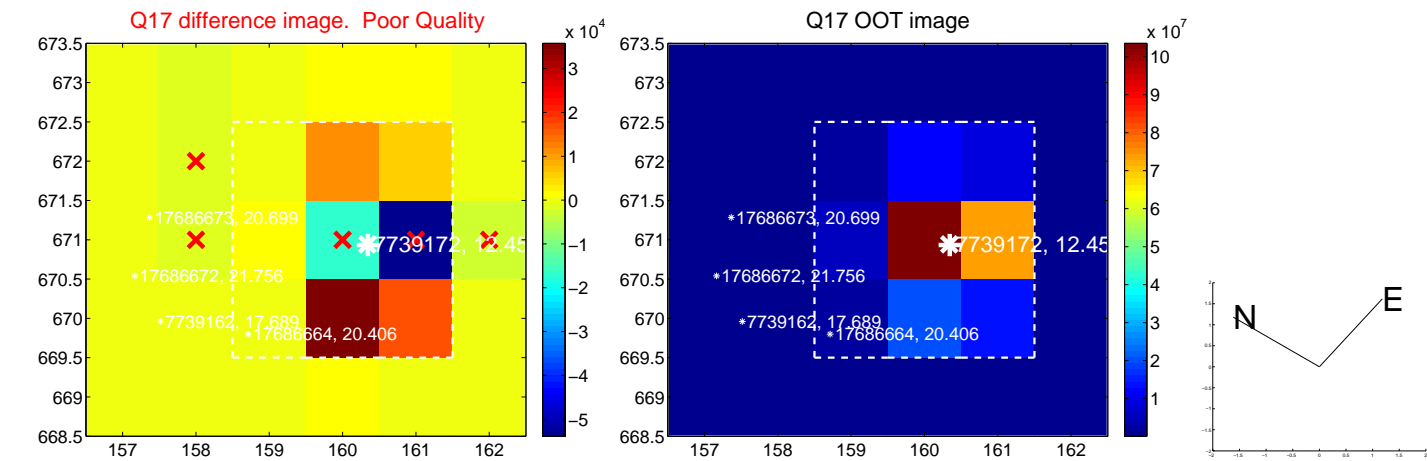
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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



UKIRT Image

Declination

