

# KIC 007955788

## 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) | $R_p$ ( $R_{\oplus}$ ) | $S_p$ ( $S_{\oplus}$ ) |
|--------------|----------|------|---------------|--------------|-------------|------------------|-----|-----|-----------------------------|-----------------|------------------------|------------------------|
| 007955788-01 | OBS      | No   | 382.707133    | 305.612018   | 589.3       | 20.375           | 8.2 | 8.8 | 0.88                        | 5767            | 2.21                   | 0.73                   |

## Robovetter Results

| TCE          | Run Type | Disp | Score | N | S | C | E | Comments  |
|--------------|----------|------|-------|---|---|---|---|---|
| 007955788-01 | OBS      | FP   | 0.00  | 1 | 0 | 0 | 0 | INDIV_TRANS_MARSHALL—LPP_DV—ALL_TRANS_CHASES—CENT_FEW_DIFFS |

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

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

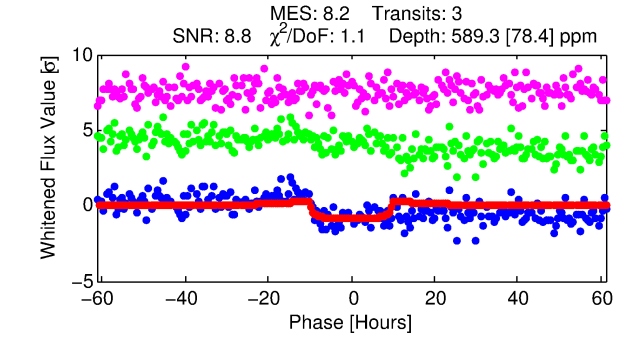
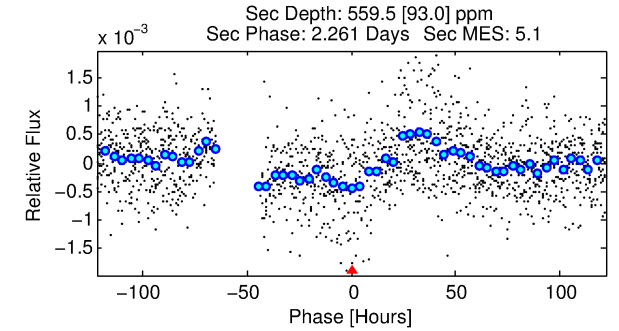
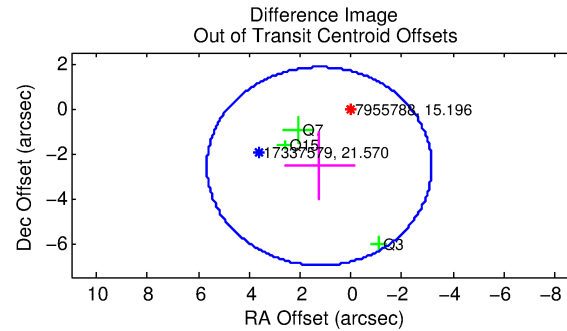
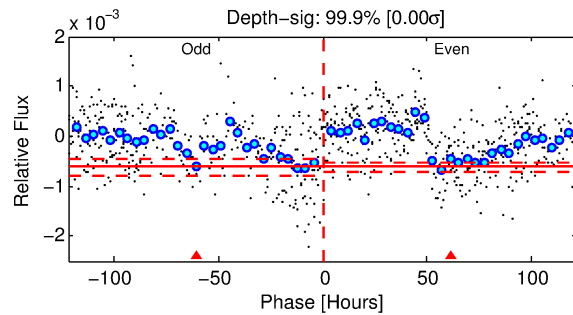
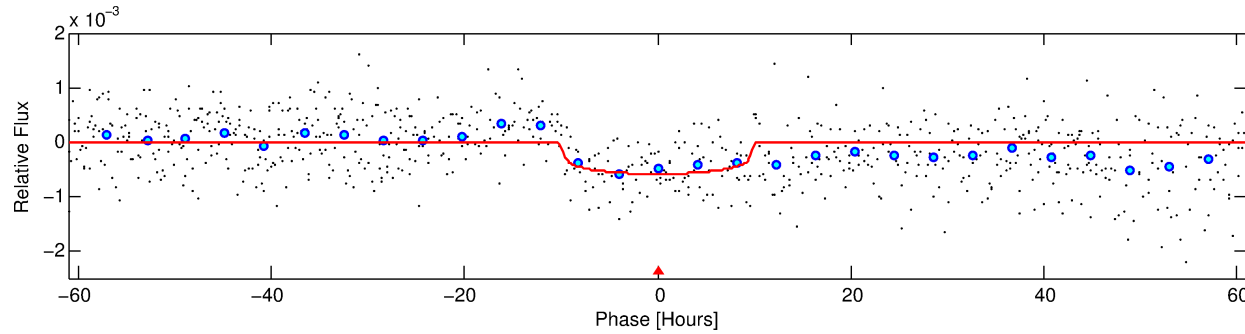
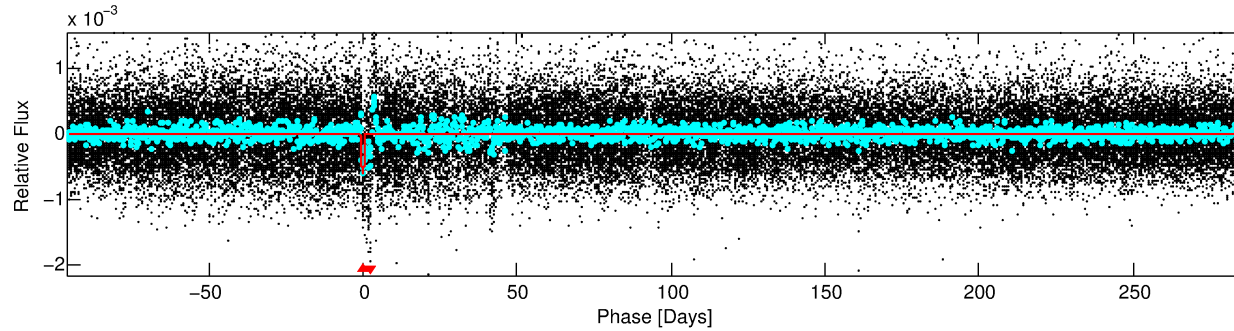
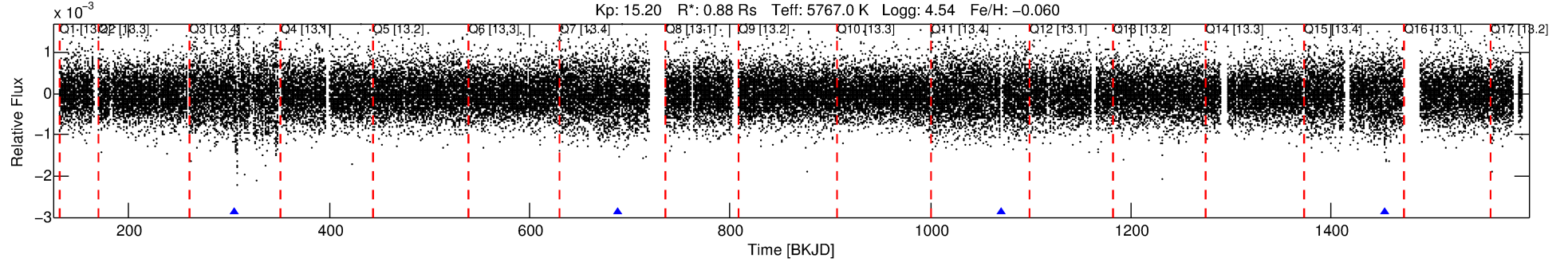
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 007955788-01

No Significant Match Found

# DV One-Page Summary

KIC: 7955788 Candidate: 1 of 1 Period: 382.707 d



## DV Fit Results:

Period = 382.70713 [0.01320] d  
Epoch = 305.6120 [0.0250] BKJD  
Rp/R\* = 0.0230 [0.0088]  
a/R\* = 121.84 [201.68]  
b = 0.57 [1.97]  
Seff = 0.73 [0.25]  
Teq = 236 [20] K  
Rp = 2.21 [1.03] Re  
a = 1.0239 [0.2256] AU  
Ag = 65952.27 [56046.20] [1.18σ]  
Teffp = 5847 [1163] K [4.82σ]

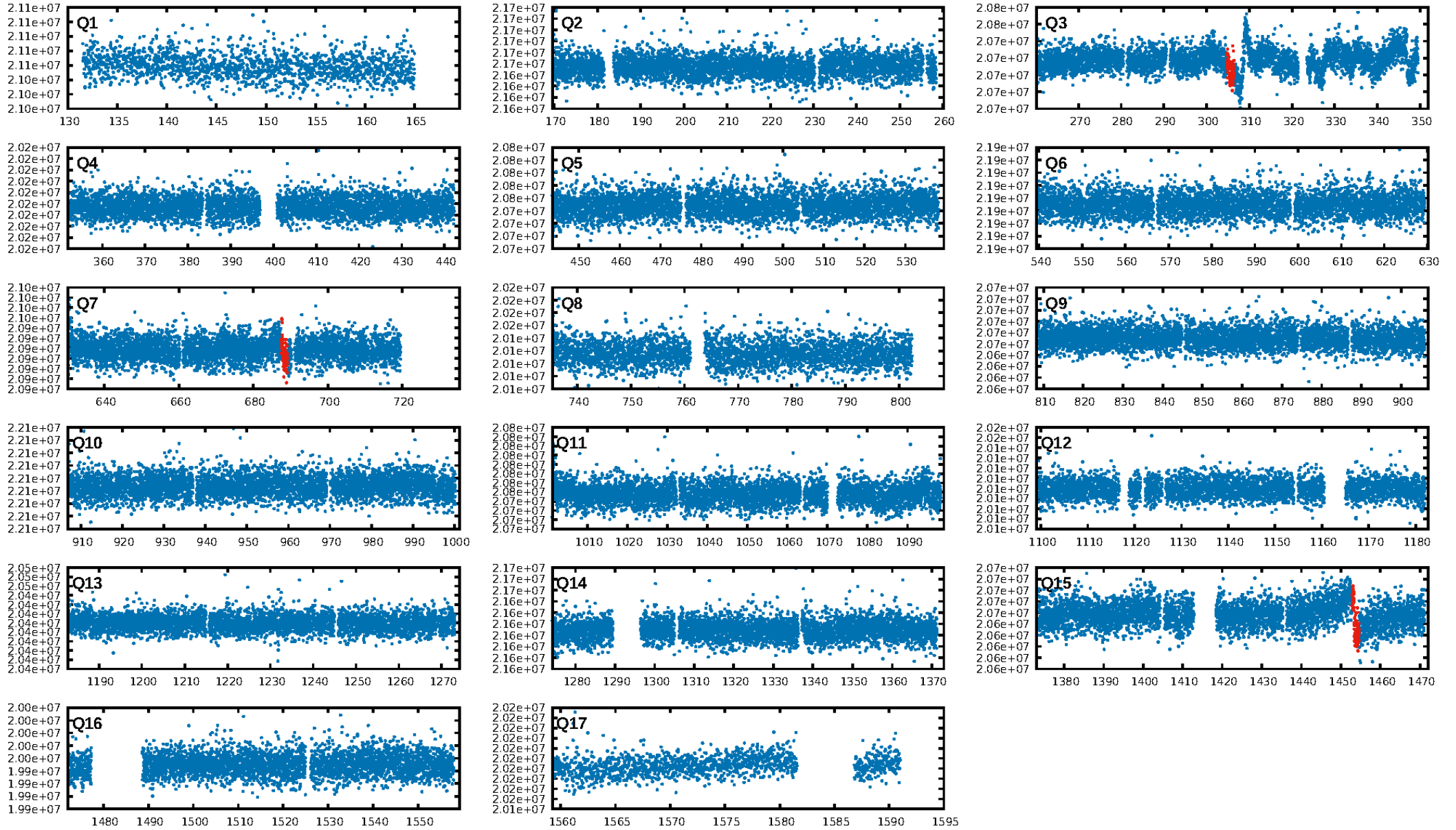
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: 8.8%  
ModelChiSquareGof-sig: 100.0%  
Bootstrap-pfa: 7.64e-14  
RollingBand-fgt: 1.00 [3/3]  
GhostDiagnostic-chr: 2.495  
Centroid-sig: 55.8%  
Centroid-so: 1.742 arcsec [0.92σ]  
OotOffset-rm: 2.856 arcsec [1.94σ]  
KicOffset-rm: 2.879 arcsec [1.96σ]  
OotOffset-st: 0/3/0/0 [3]  
KicOffset-st: 0/3/0/0 [3]  
DiffImageQuality-fgm: 0.67 [2/3]  
DiffImageOverlap-fno: 1.00 [3/3]

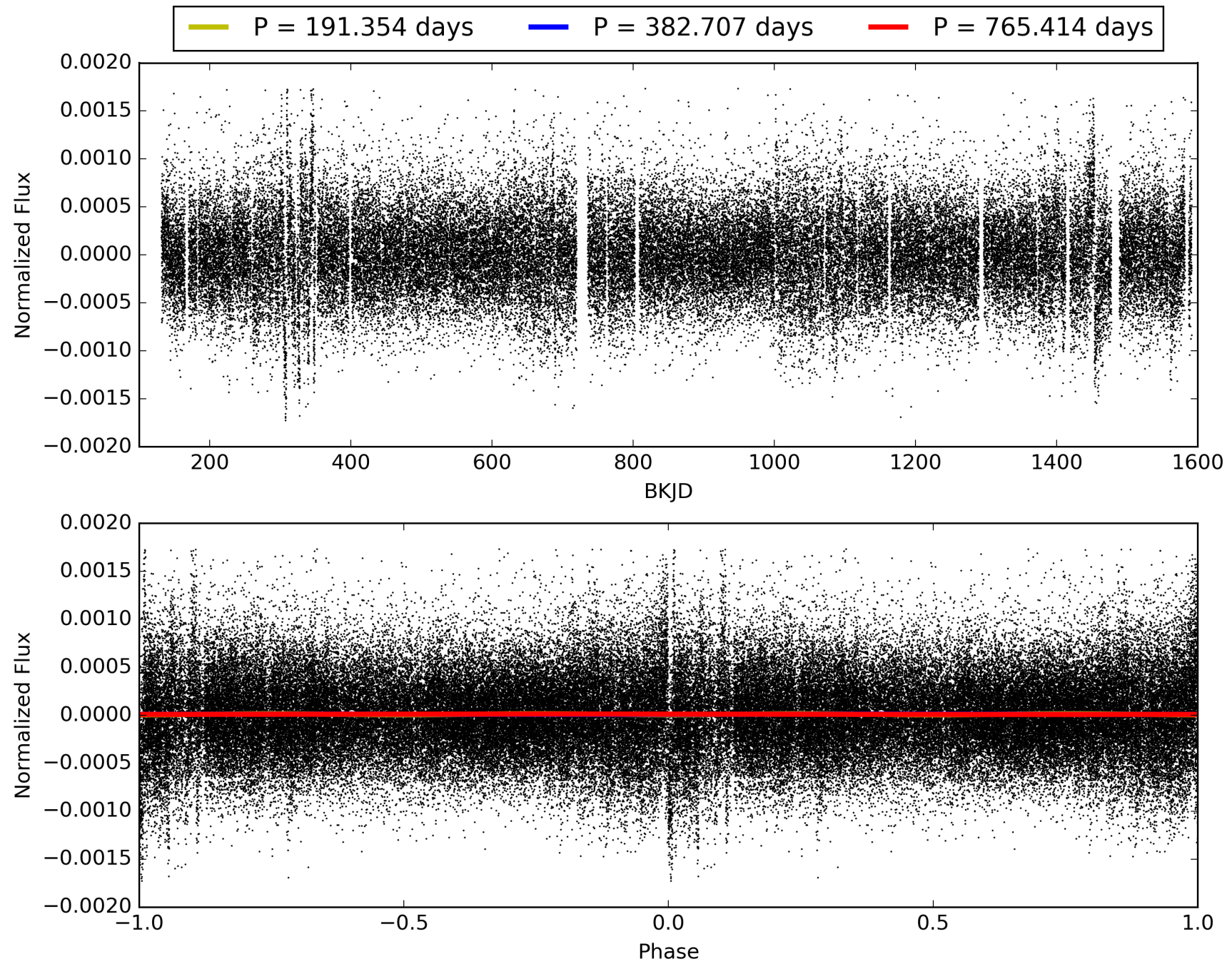
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 13:20:26 Z

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

# TCE 007955788-01, PDC Light Curves

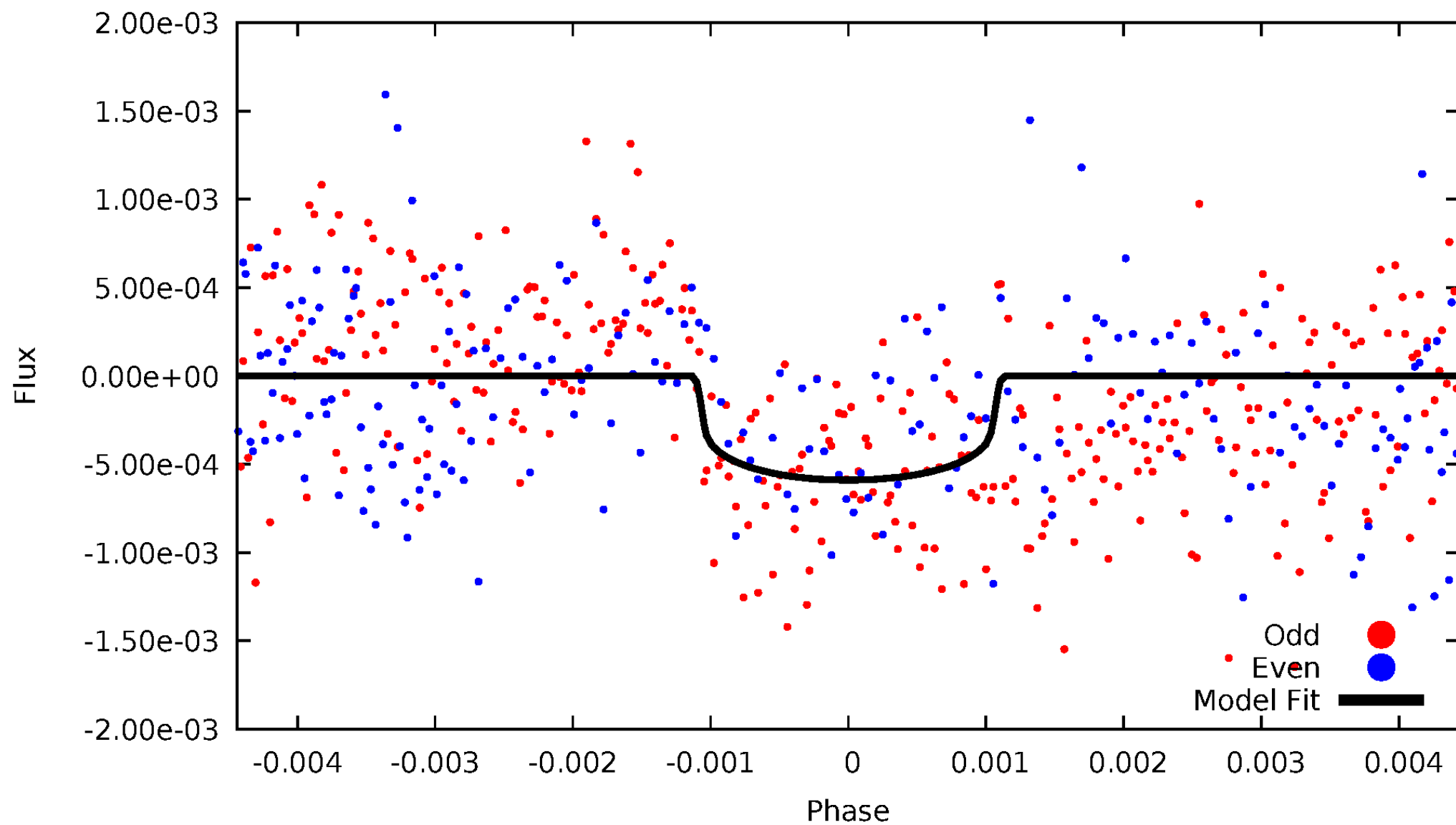


TCE 007955788-01



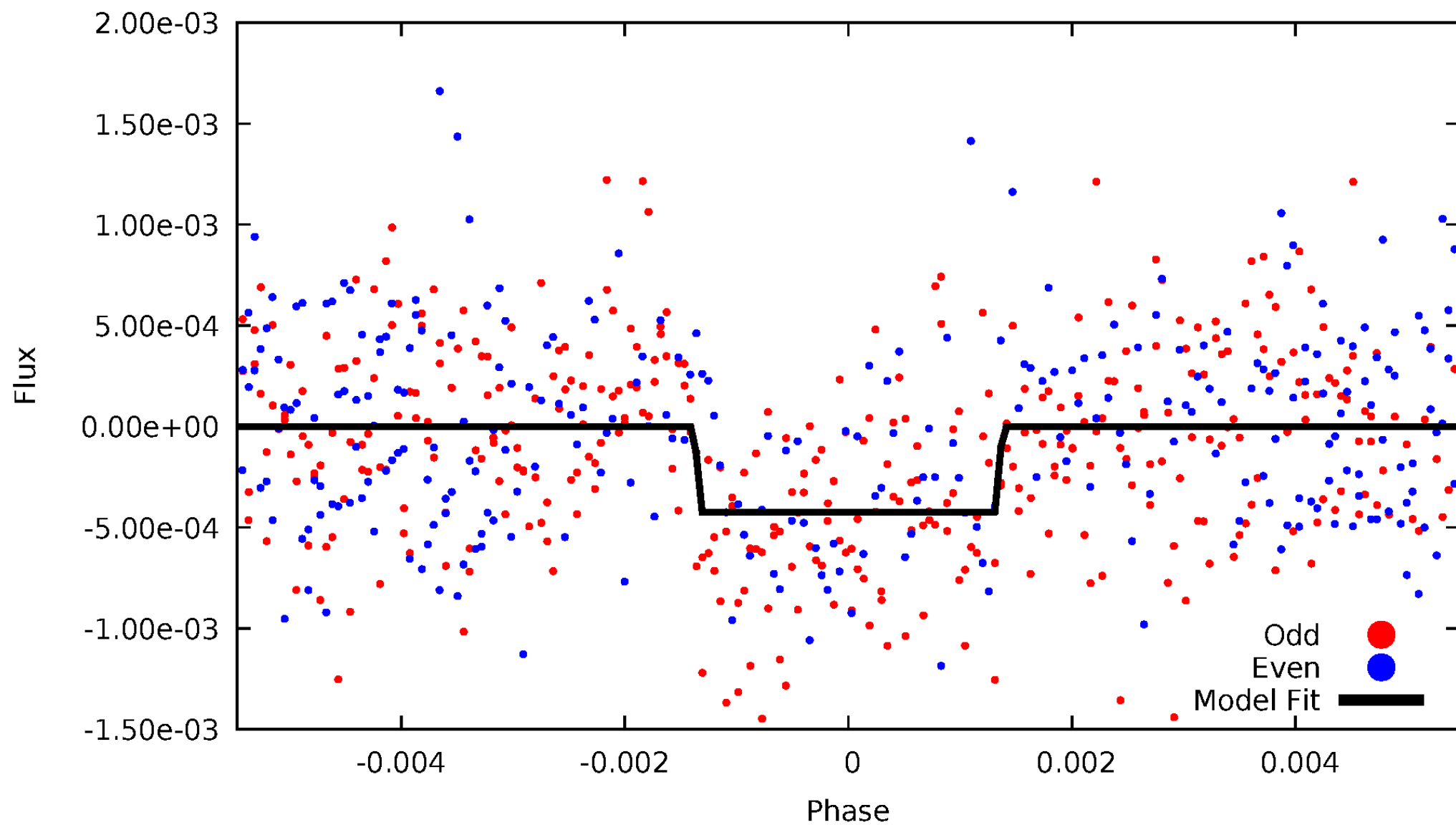
# DV Odd/Even

TCE 007955788-01



# ALT Odd/Even

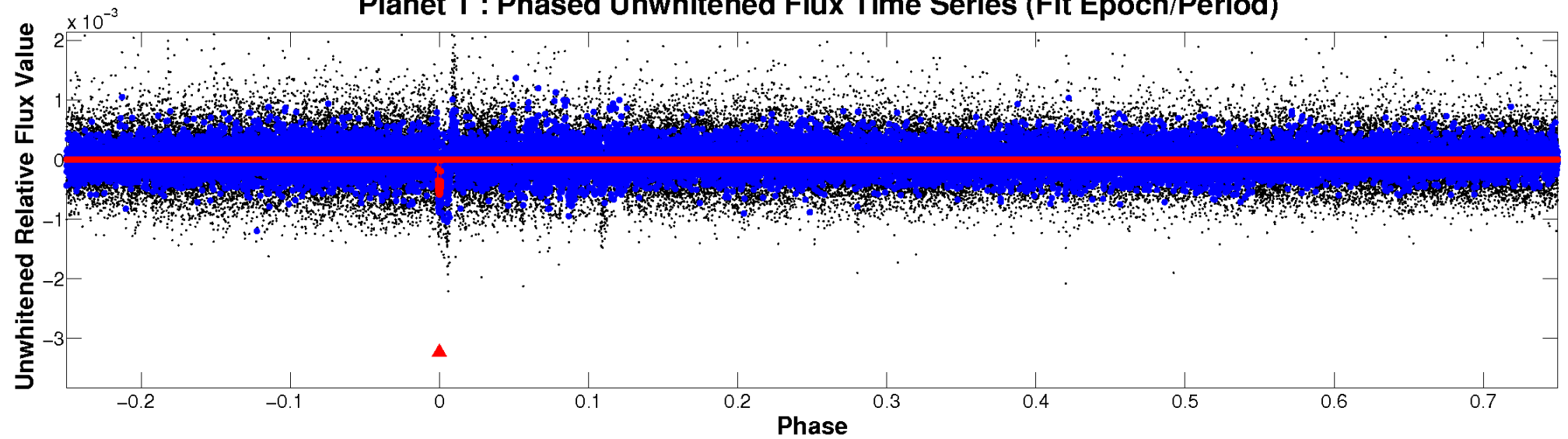
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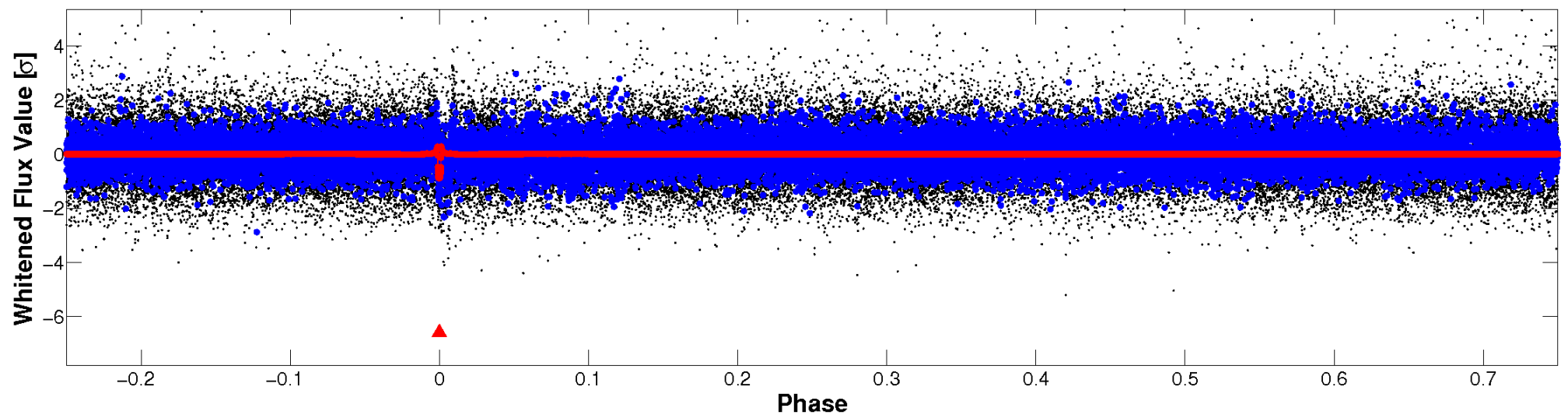


# Non-Whitened Vs. Whitened Light Curve

**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

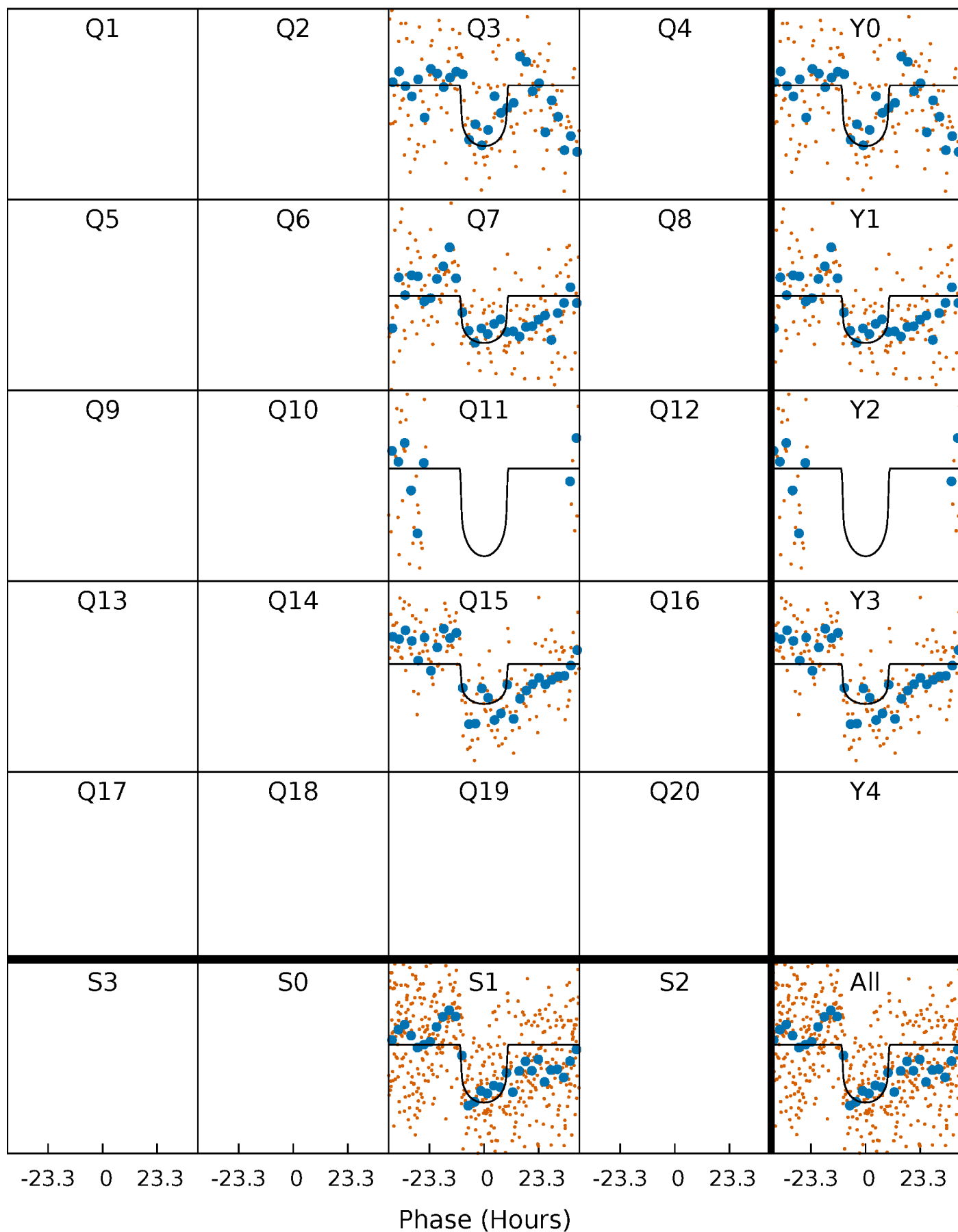
TCE 007955788-01 P=382.707133 Days  $T_0=305.612018$  (BKJD)





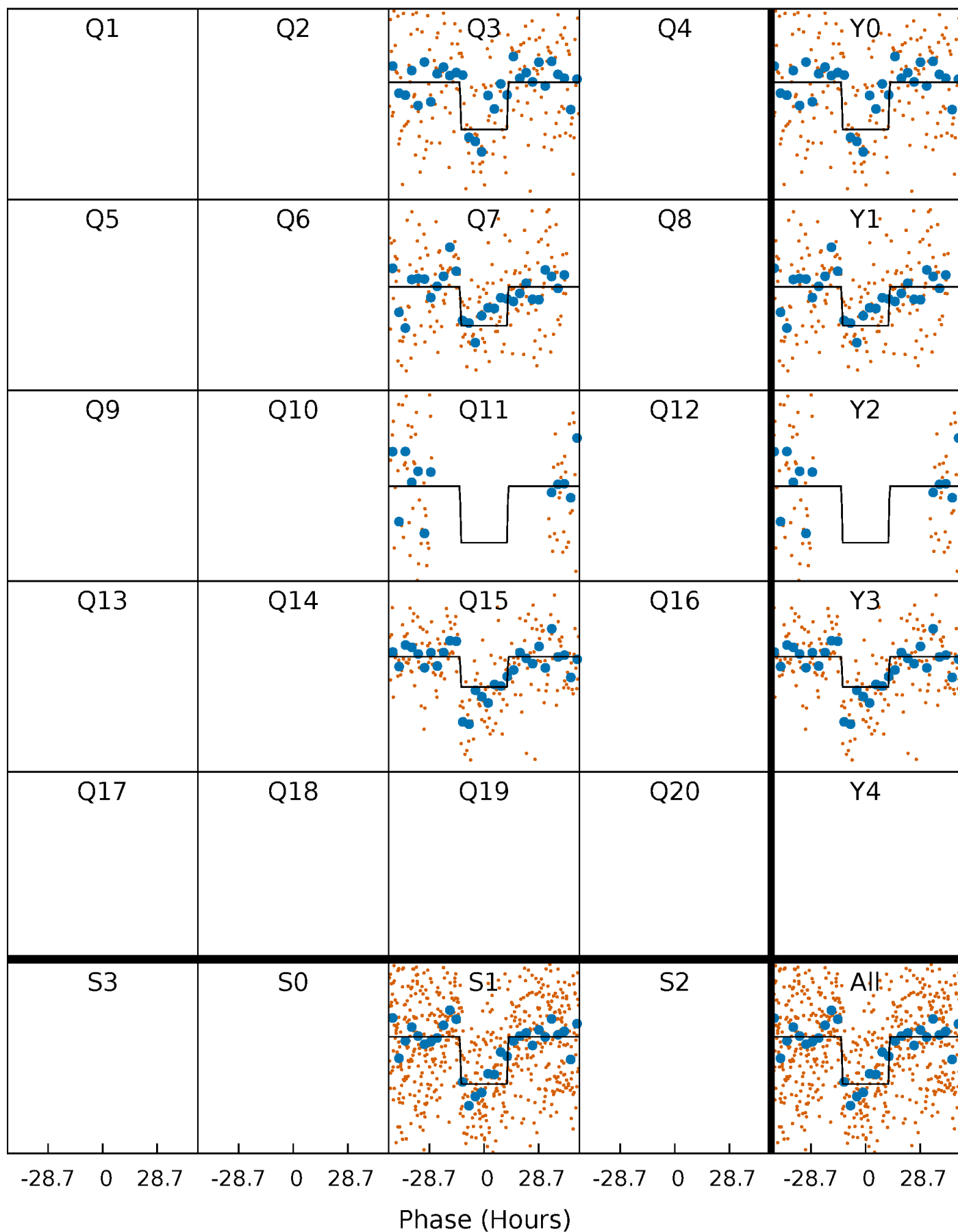
# DV Quarter-Phased Transit Curves

TCE 007955788-01 P=382.707133 Days  $T_0=305.612018$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

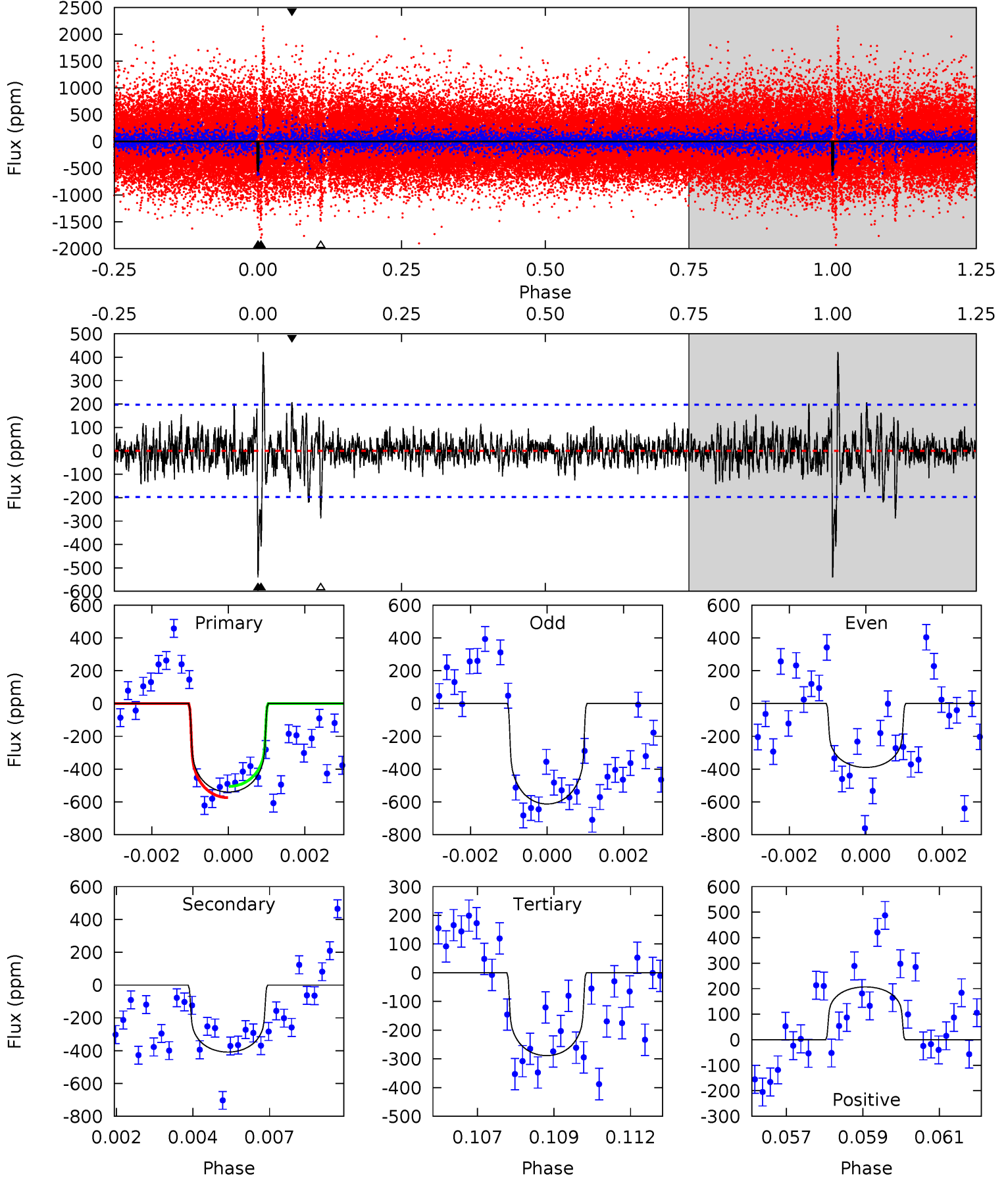
TCE 007955788-01 P=382.720579 Days  $T_0=305.697418$  (BKJD)



# DV Model-Shift Uniqueness Test

007955788-01, P = 382.707133 Days, E = 305.612018 Days

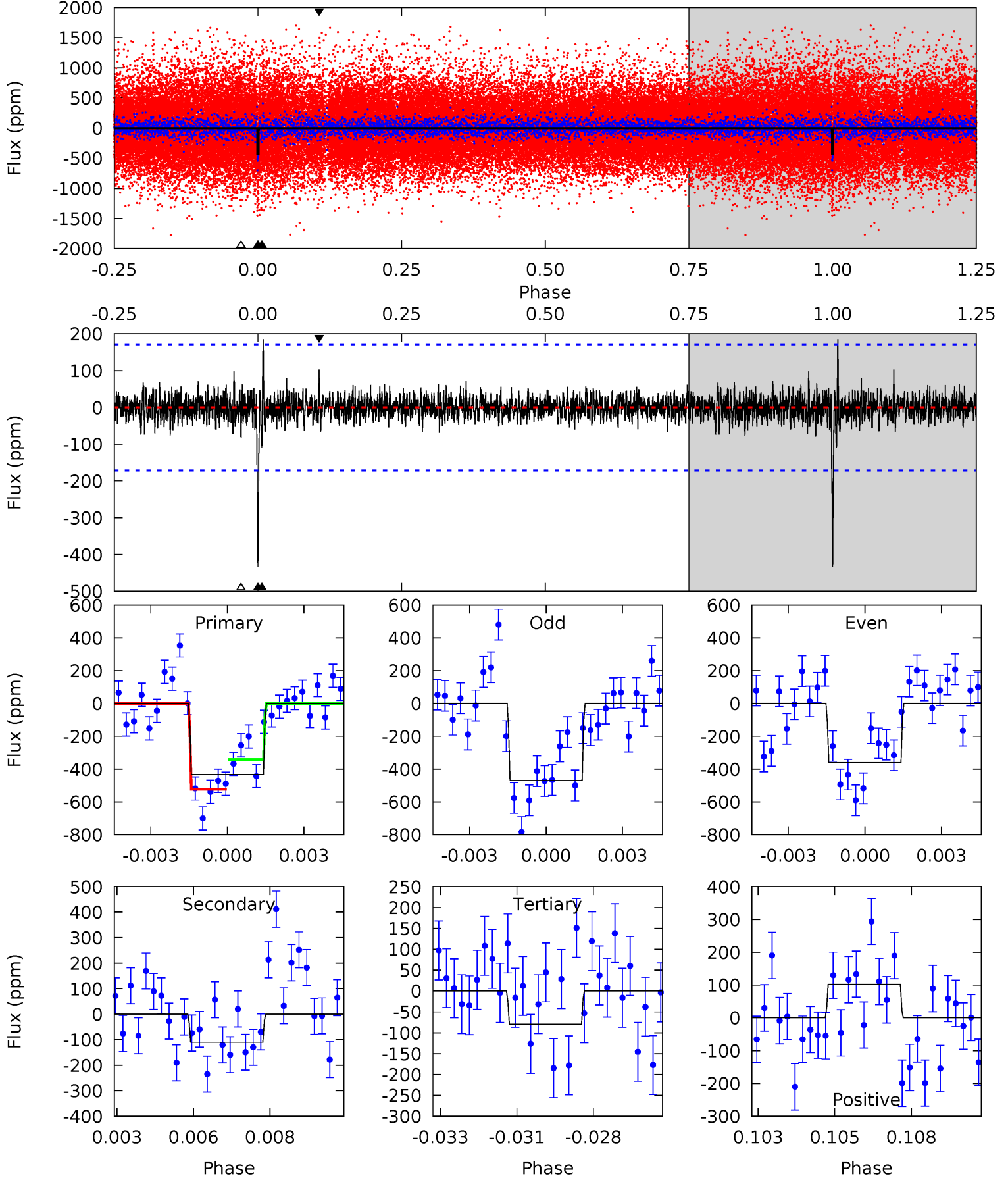
| Pri  | Sec  | Ter  | Pos  | FA <sub>1</sub> | FA <sub>2</sub> | F <sub>Red</sub> | Pri-Ter | Pri-Pos | Sec-Ter | Sec-Pos | Odd-Evn | DMM  | Shape | TAT  |
|------|------|------|------|-----------------|-----------------|------------------|---------|---------|---------|---------|---------|------|-------|------|
| 14.5 | 11.0 | 7.78 | 5.58 | 5.31            | 3.06            | 1.42             | 6.77    | 8.97    | 3.23    | 5.43    | 2.83    | 1.14 | 0.44  | 0.92 |



# Alt Model-Shift Uniqueness Test

007955788-01, P = 382.720579 Days, E = 305.697418 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  |
|------|------|------|------|-----------------|-----------------|------------------|---------|---------|---------|---------|---------|------|-------|------|
| 13.3 | 3.38 | 2.45 | 3.14 | 5.27            | 2.99            | 0.67             | 10.8    | 10.1    | 0.93    | 0.24    | 1.56    | 1.25 | 0.30  | 2.78 |



### Stellar Parameters For KIC 007955788

|        | $T_{\text{eff}}(K)$  | $\log(g)$                 | $[\text{Fe}/\text{H}]$     | $R (R_{\odot})$           | $M(M_{\odot})$            | $p_{\star} (\text{g}\cdot\text{cm}^{-3})$ |
|--------|----------------------|---------------------------|----------------------------|---------------------------|---------------------------|---|
|        | $5767^{+156}_{-173}$ | $4.538^{+0.044}_{-0.176}$ | $-0.060^{+0.300}_{-0.300}$ | $0.881^{+0.230}_{-0.077}$ | $0.979^{+0.102}_{-0.114}$ | $2.017^{+0.368}_{-0.988}$                 |
|        | +3%/-3%              | +1%/-4%                   | +500%/-500%                | +26%/-9%                  | +10%/-12%                 | +18%/-49%                                 |
| 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 007955788-01 / KOI

| Detrend | Depth (ppm)   | $R_p (R_{\oplus})$     | $T_{max} (K)$     | $T_{obs} (K)$         | $A_{obs}$                 |
|---------|---------------|------------------------|-------------------|-----------------------|---------------------------|
| DV      | $-408 \pm 37$ | $2.30^{+0.90}_{-0.93}$ | $336^{+21}_{-14}$ | $5406^{+1579}_{-677}$ | $43769^{+81942}_{-21365}$ |
| Alt.    | $-110 \pm 33$ | $2.14^{+0.90}_{-0.83}$ | $336^{+19}_{-15}$ | $4270^{+991}_{-566}$  | $13609^{+22857}_{-7812}$  |

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

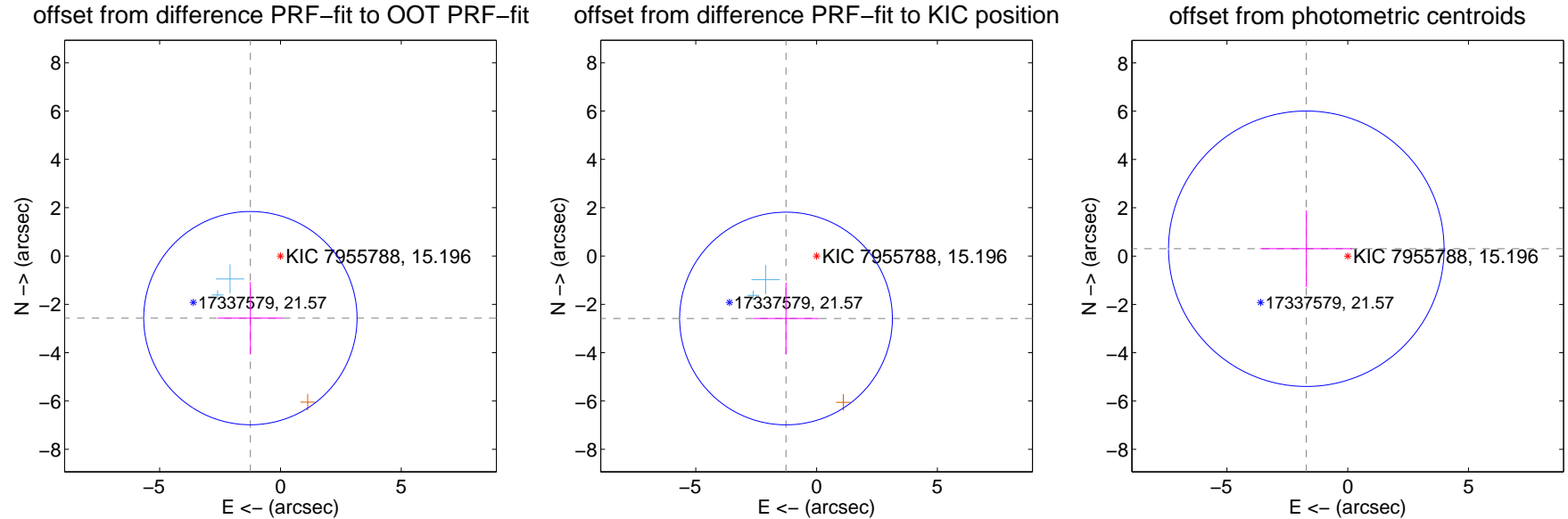
## DV Centroid Data

Supplemental centroid analysis for 007955788-01. Kepler magnitude: 15.20. Transit SNR 8.83

There are 2 quarters with good PRF difference image offsets

The direct PRF centroid is offset from the target star catalog position by about 0.03 arcsec

|   | Distance in arcsec | Distance / $\sigma$ | $\Delta$ RA       | $\Delta$ Dec       |
|---|--------------------|---------------------|-------------------|--------------------|
| PRF-fit source offset from OOT          | $2.856 \pm 1.471$  | 1.94                | $1.245 \pm 1.356$ | $-2.571 \pm 1.497$ |
| PRF-fit source offset from KIC position | $2.879 \pm 1.467$  | 1.96                | $1.265 \pm 1.355$ | $-2.587 \pm 1.493$ |
| photometric centroid source offset      | $1.74 \pm 1.90$    | 0.92                | $1.71 \pm 1.91$   | $0.30 \pm 1.58$    |



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.

Q1 no difference image



Q1 no OOT image



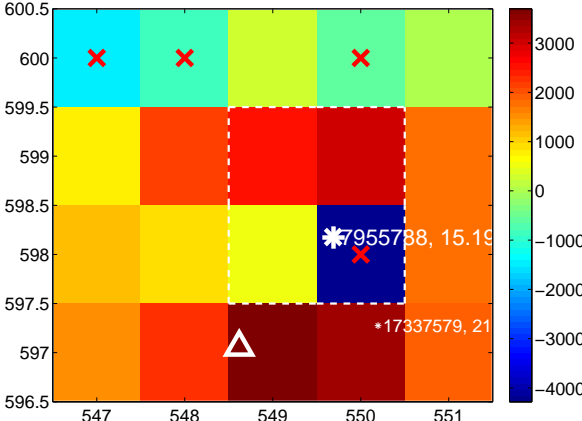
Q2 no difference image



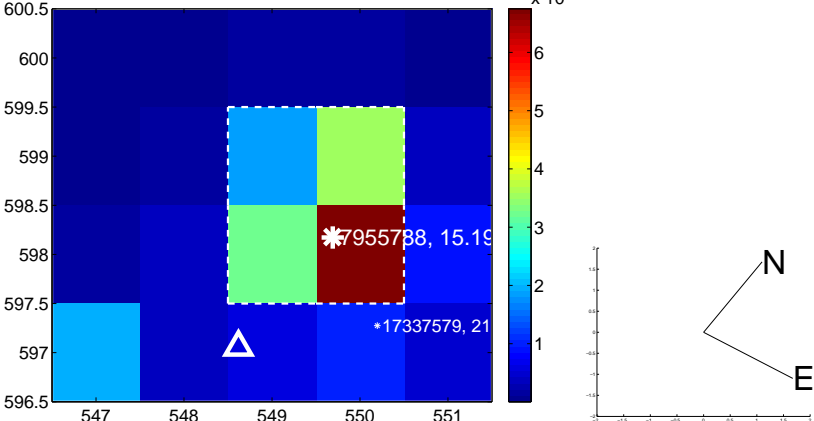
Q2 no OOT image



Q3 difference image. Poor Quality



Q3 OOT image



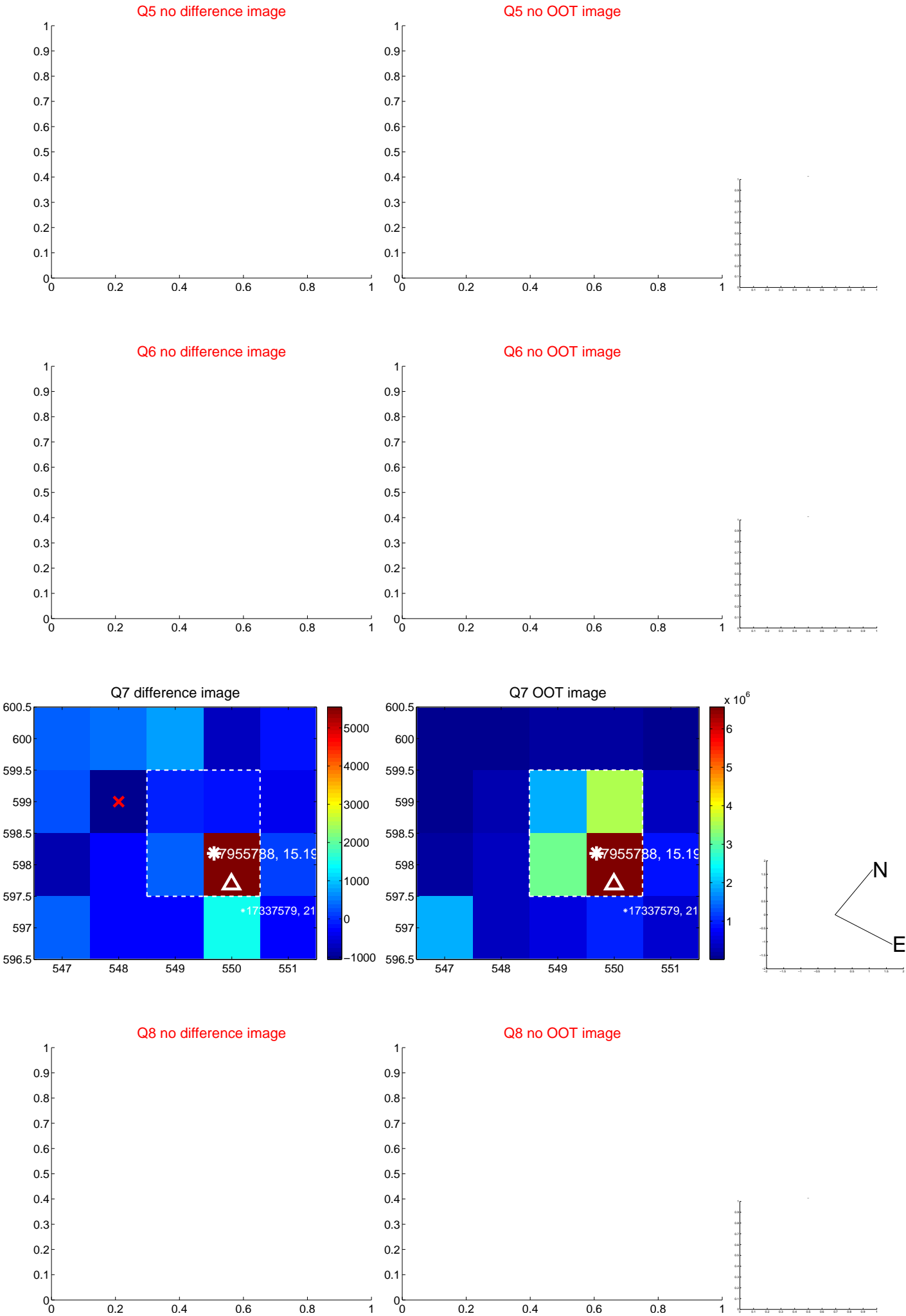
Q4 no difference image



Q4 no OOT image



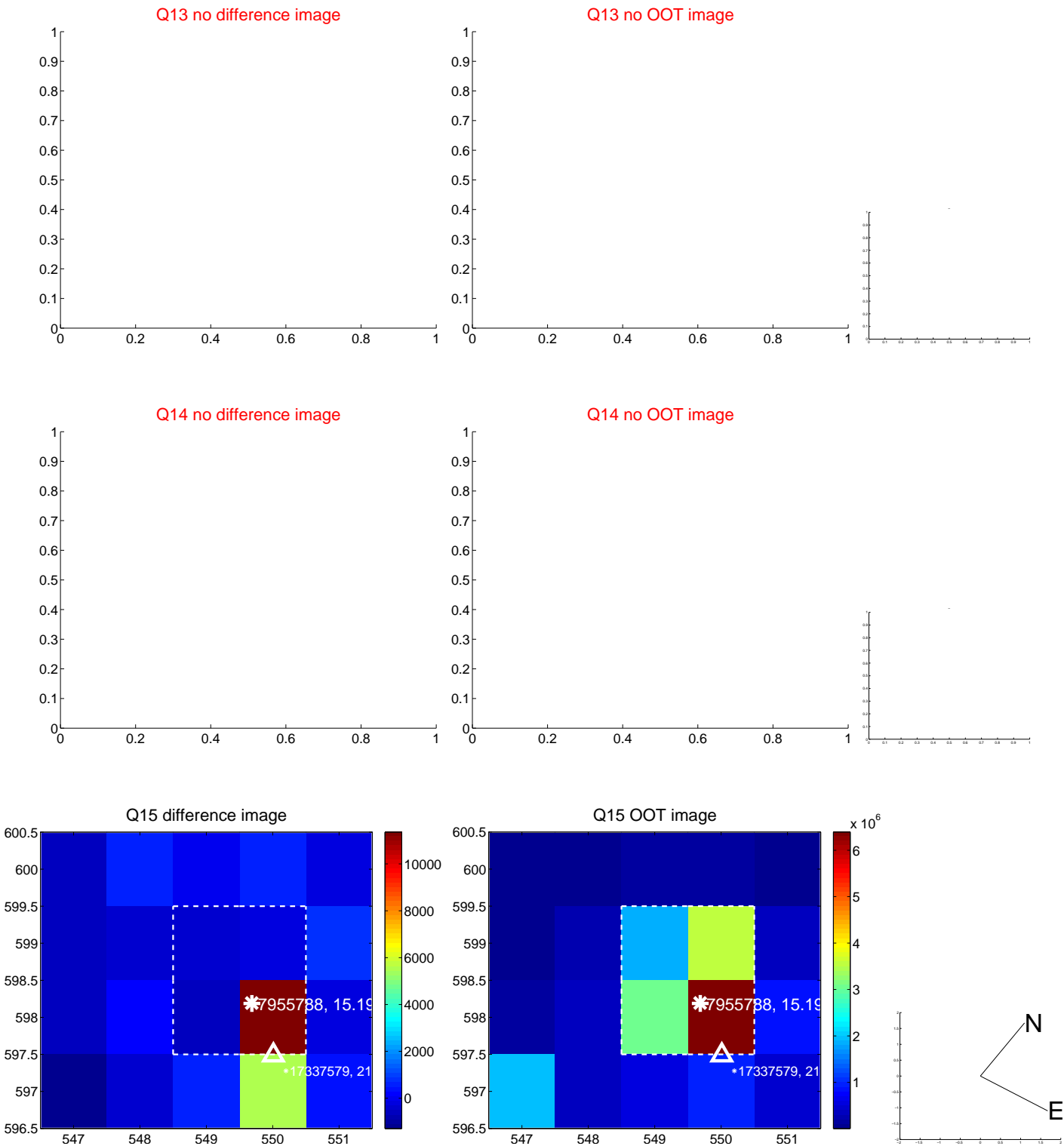
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



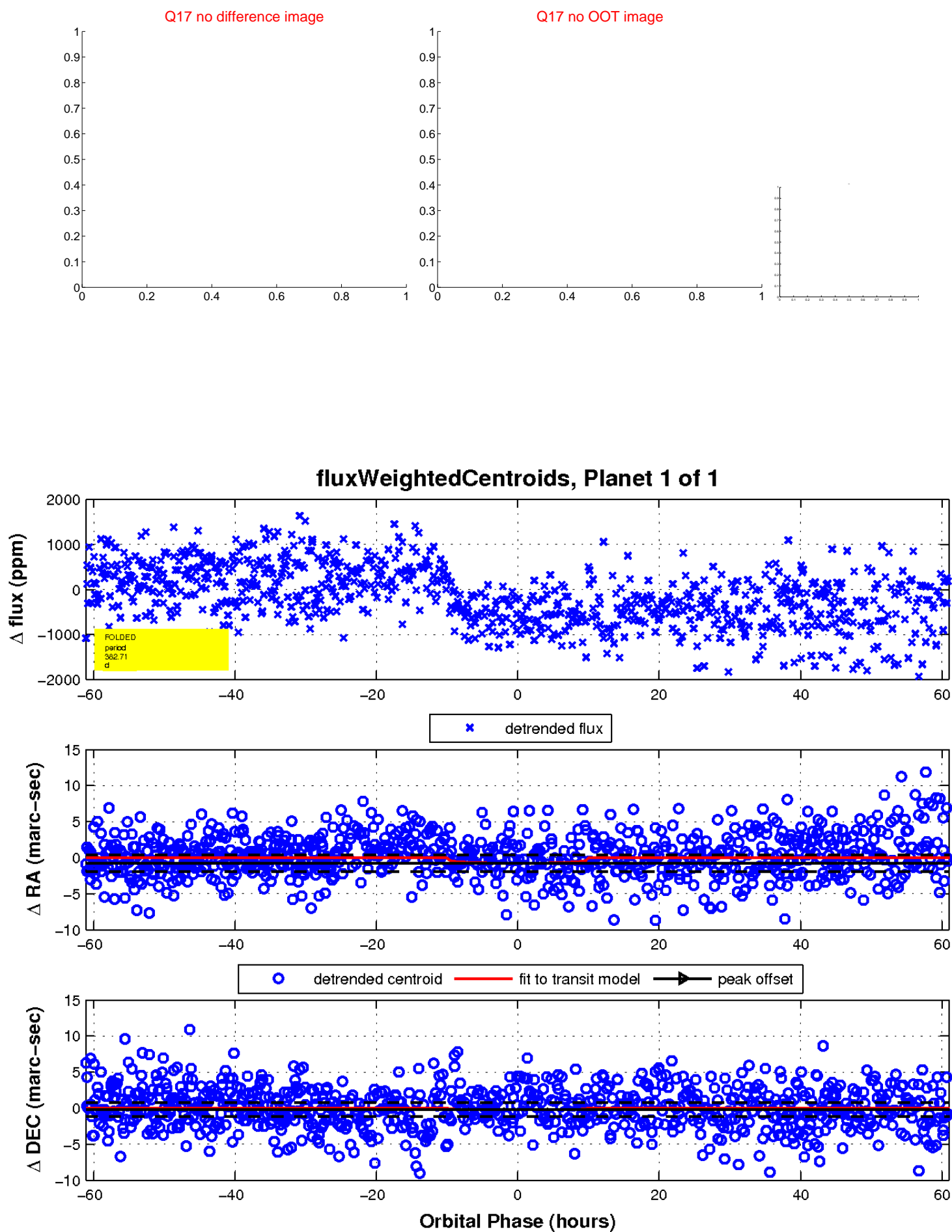
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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



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



UKIRT Image

Declination

