

# KIC 008379021

## 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) | $R_p$ ( $R_{\oplus}$ ) | $S_p$ ( $S_{\oplus}$ ) |
|--------------|----------|---------|---------------|--------------|-------------|------------------|------|------|-----------------------------|-----------------|------------------------|------------------------|
| 008379021-01 | OBS      | 3268.01 | 11.524824     | 134.082827   | 550.2       | 1.864            | 13.6 | 16.6 | 0.89                        | 5592            | 3.65                   | 77.25                  |

## Robovetter Results

| TCE          | Run Type | Disp | Score | N | S | C | E | Comments   |
|--------------|----------|------|-------|---|---|---|---|------------|
| 008379021-01 | OBS      | PC   | 1.00  | 0 | 0 | 0 | 0 | NO_COMMENT |

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

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

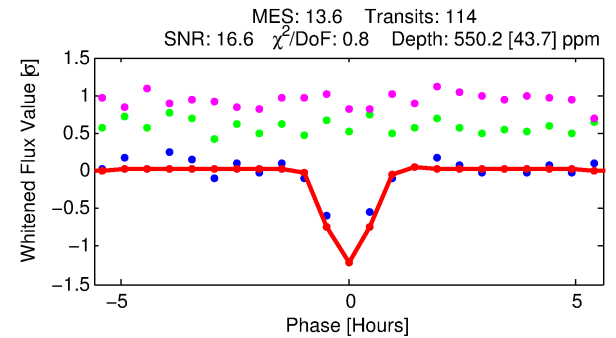
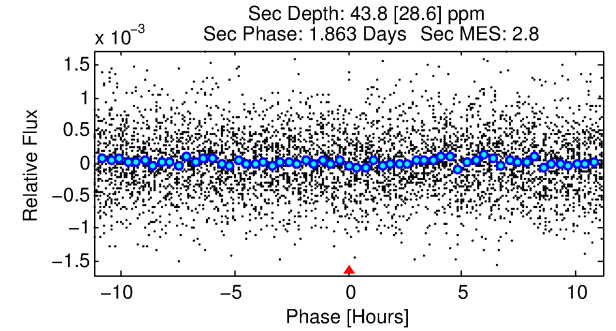
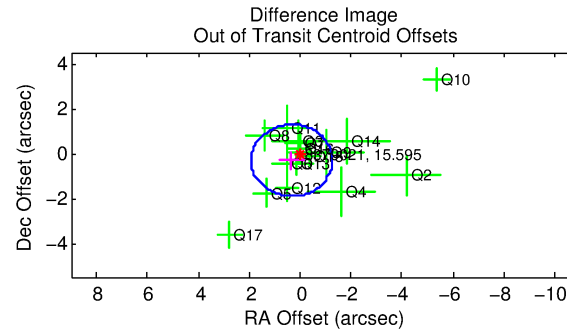
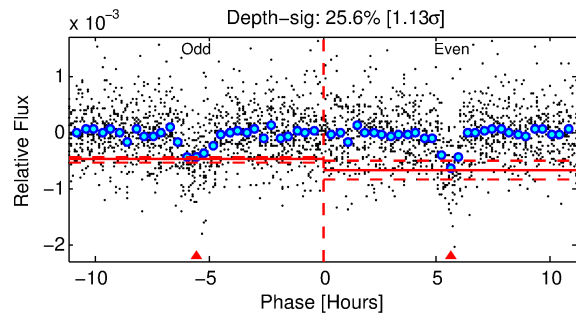
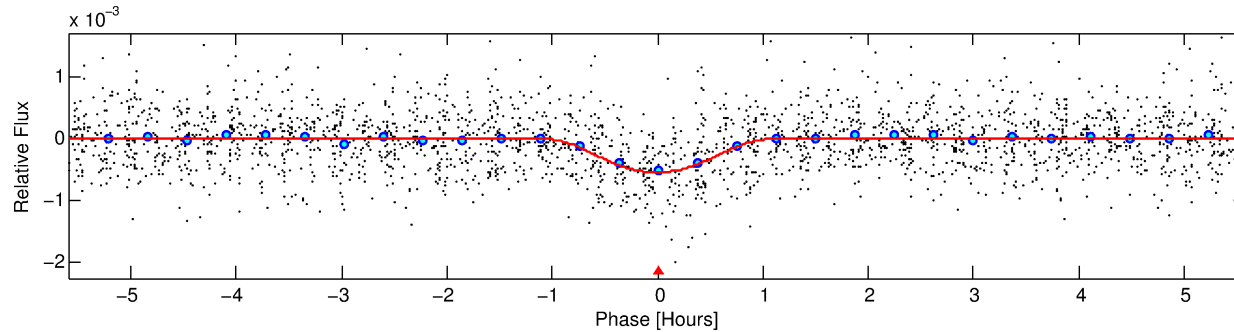
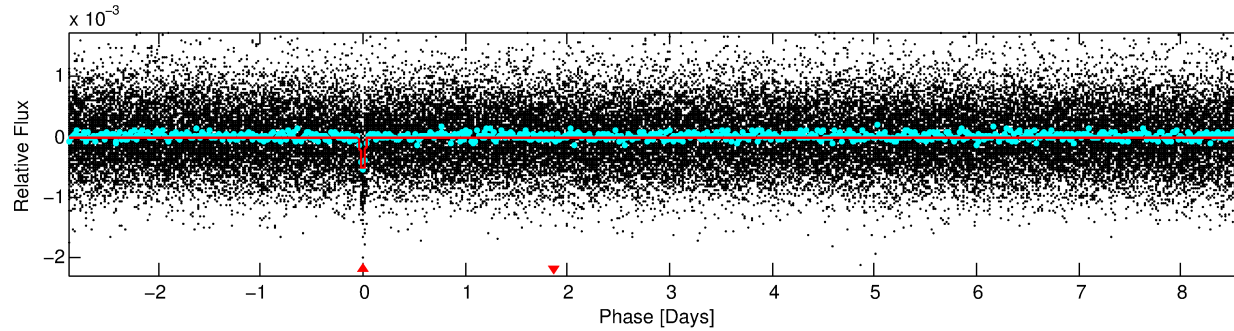
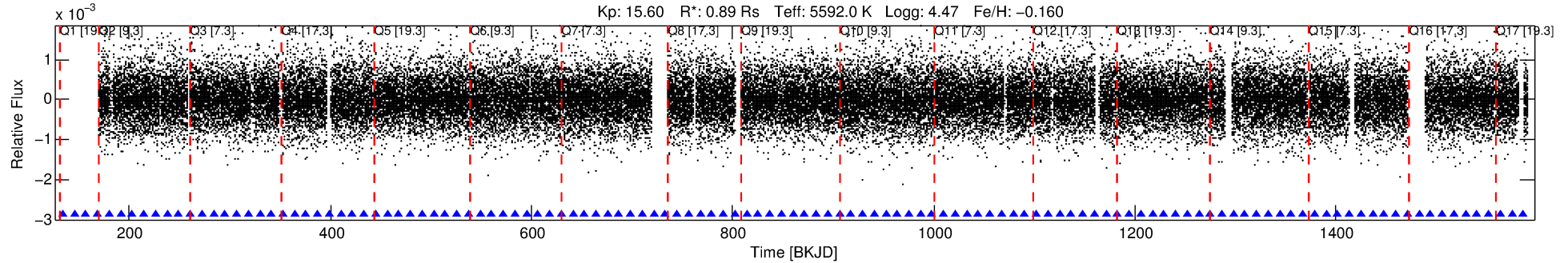
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 008379021-01

No Significant Match Found

# DV One-Page Summary

KIC: 8379021 Candidate: 1 of 1 Period: 11.525 d  
KOI: K03268.01 Corr: 0.948



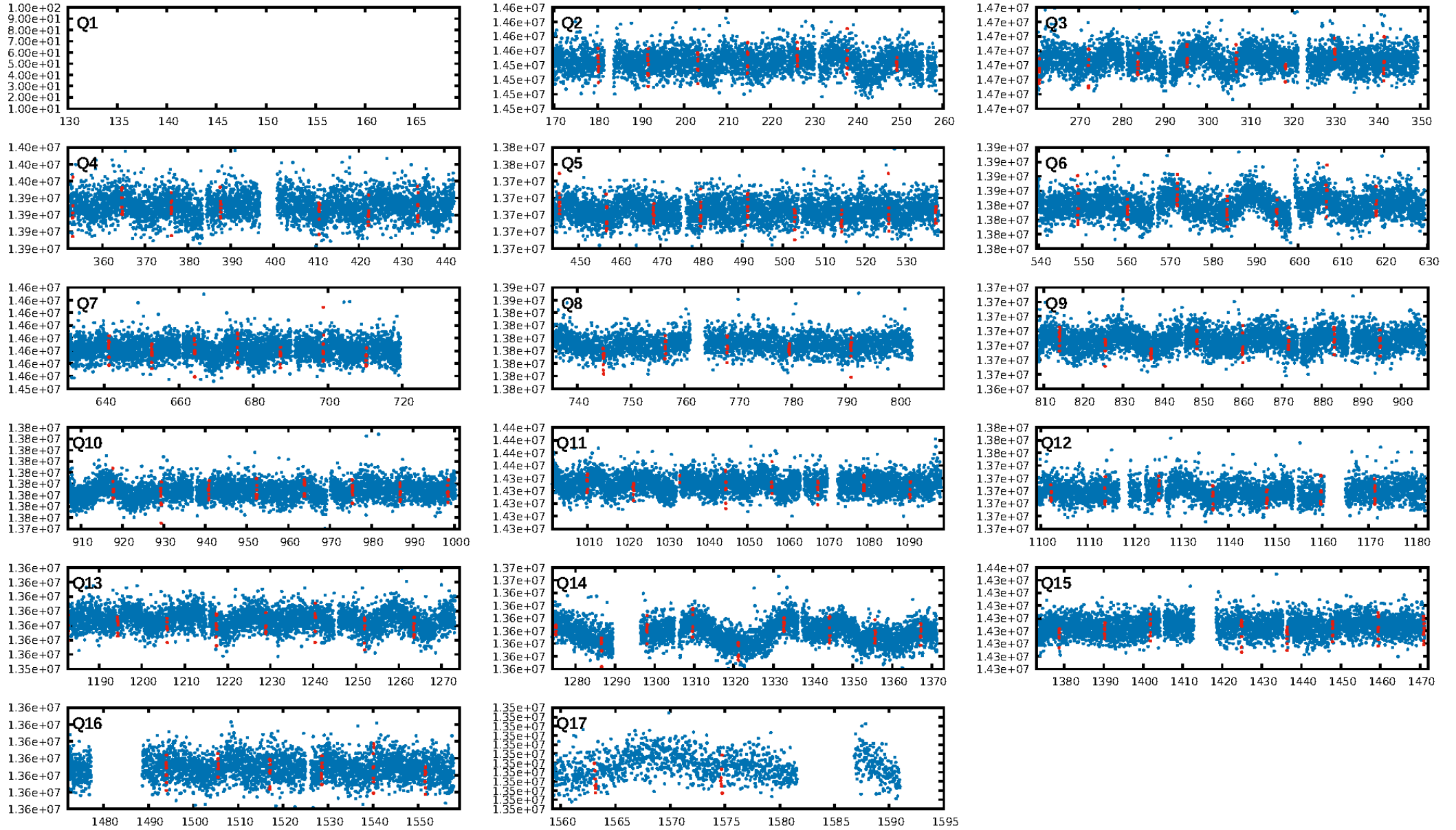
## DV Fit Results:

Period = 11.52482 [0.00004] d  
Epoch = 134.0828 [0.0028] BKJD  
Rp/R\* = 0.0375 [0.0794]  
a/R\* = 14.66 [10.05]  
b = 0.99 [0.14]  
Seff = 77.25 [25.30]  
Teq = 756 [62] K  
Rp = 3.65 [7.78] Re  
a = 0.0950 [0.0195] AU  
Ag = 16.32 [70.08] [0.22 $\sigma$ ]  
Teffp = 2349 [2517] K [0.63 $\sigma$ ]

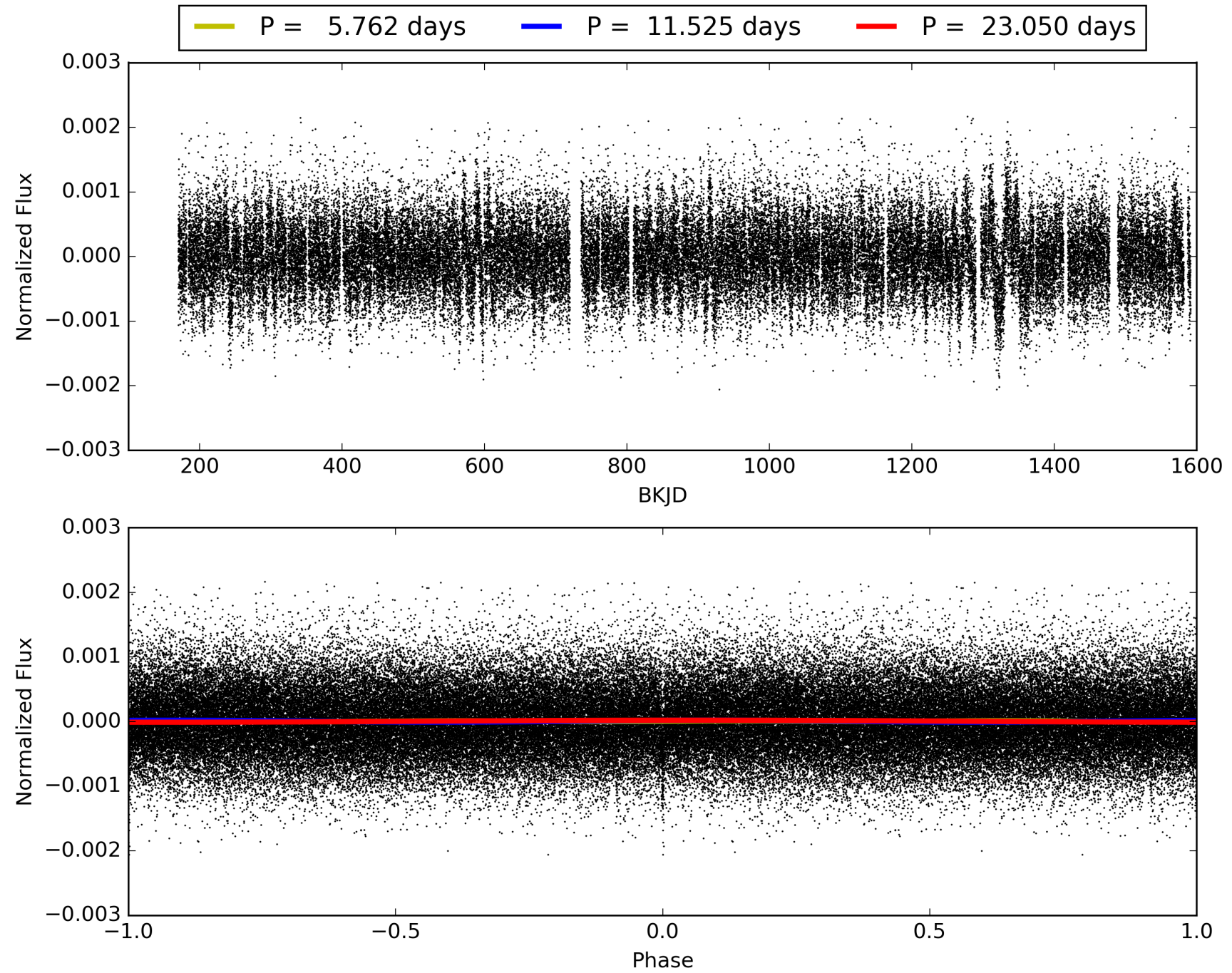
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: 100.0%  
ModelChiSquareGof-sig: 100.0%  
Bootstrap-pfa: 6.67e-41  
RollingBand-fgt: 1.00 [112/112]  
GhostDiagnostic-chr: 3.384  
Centroid-sig: 0.1%  
Centroid-so: 1.743 arcsec [1.92 $\sigma$ ]  
OotOffset-rm: 0.456 arcsec [0.86 $\sigma$ ]  
KicOffset-rm: 0.603 arcsec [1.20 $\sigma$ ]  
OotOffset-st: 4/4/4/4 [16]  
KicOffset-st: 4/4/4/4 [16]  
DiffImageQuality-fgm: 0.75 [12/16]  
DiffImageOverlap-fno: 1.00 [16/16]

# TCE 008379021-01, PDC Light Curves

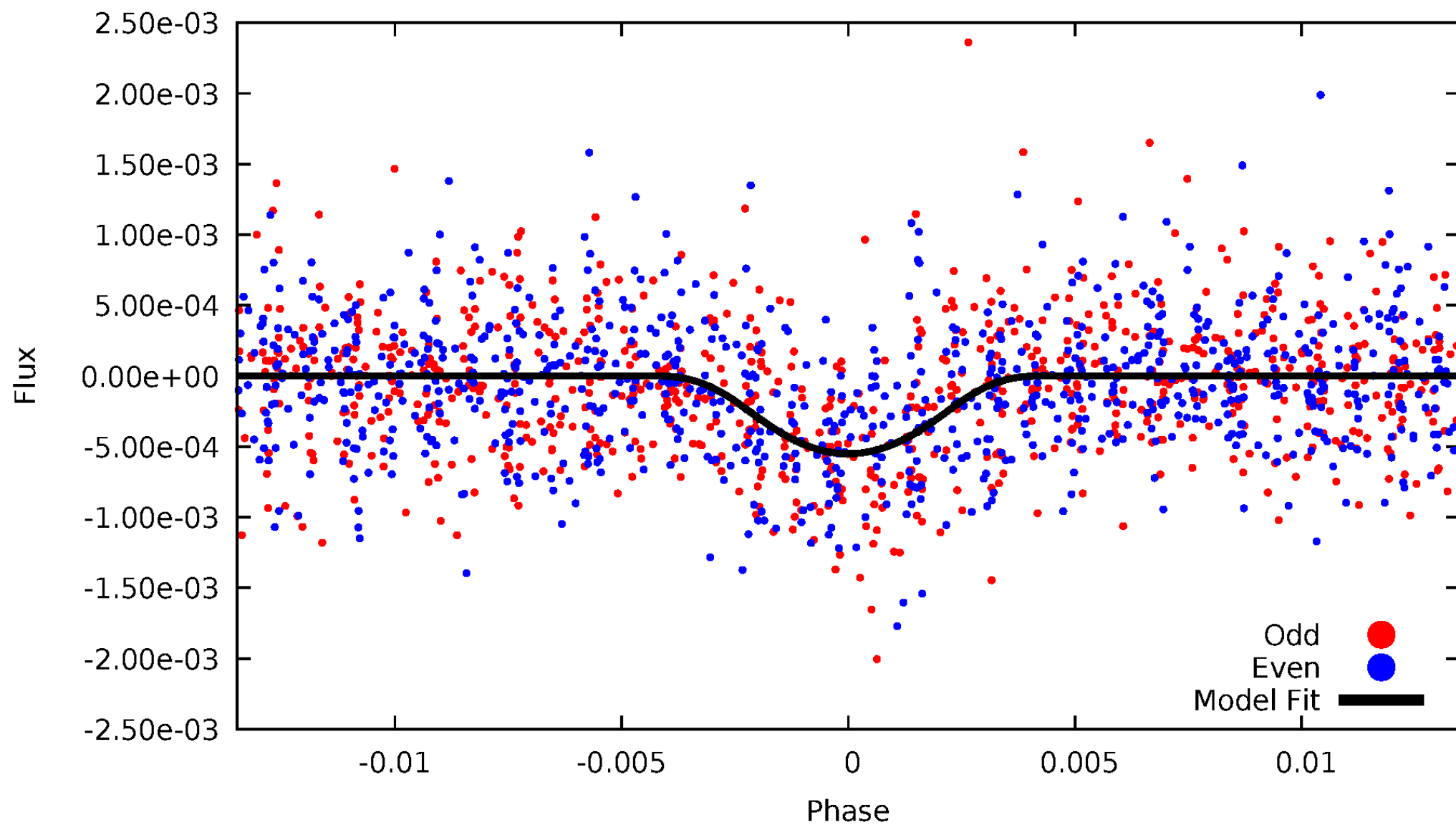


TCE 008379021-01



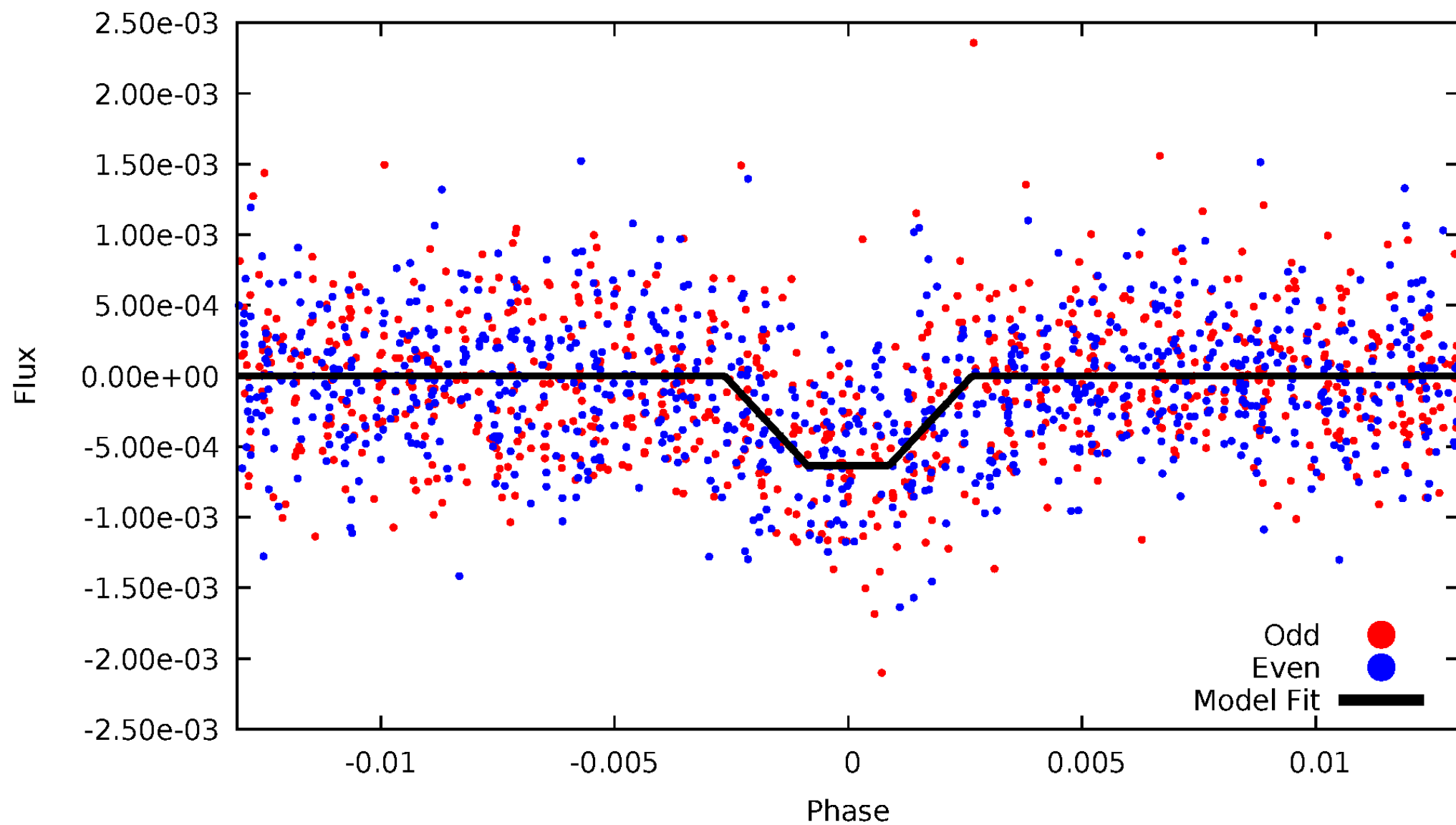
# DV Odd/Even

TCE 008379021-01



# ALT Odd/Even

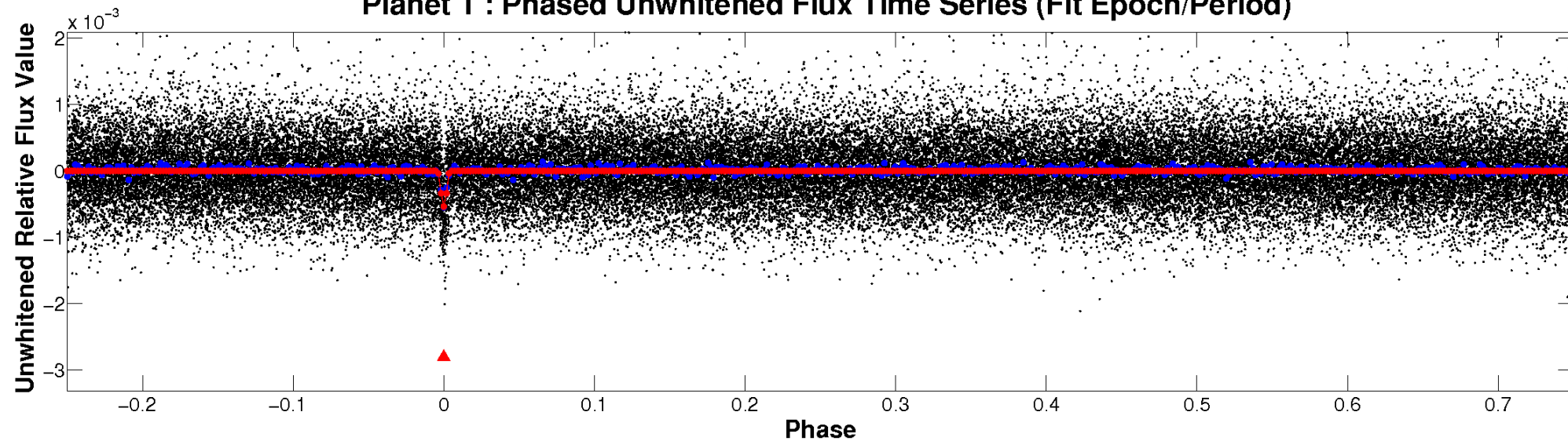
TCE 008379021-01



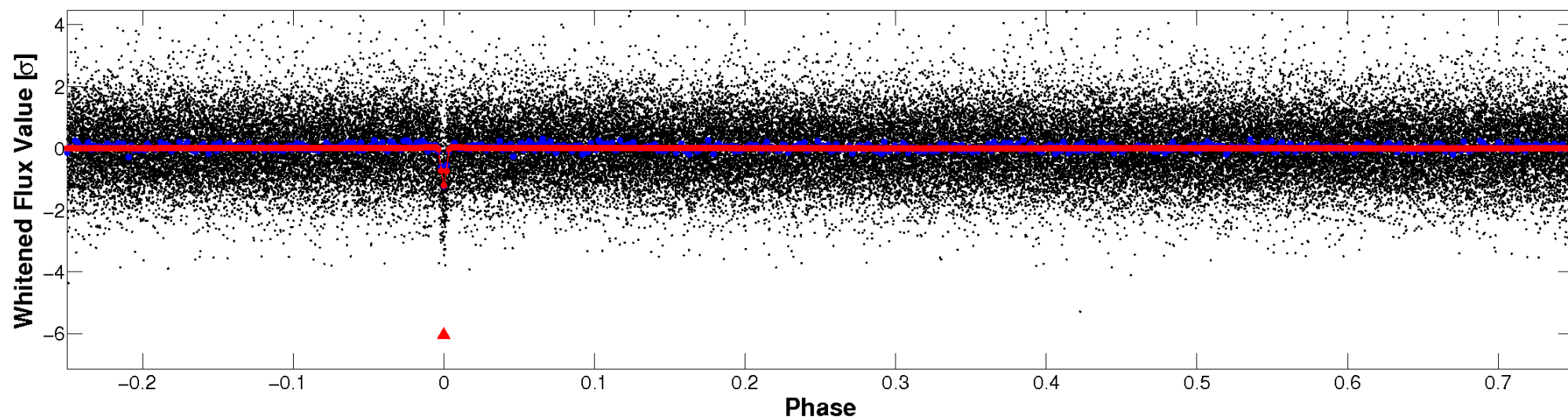


# Non-Whitened Vs. Whitened Light Curve

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

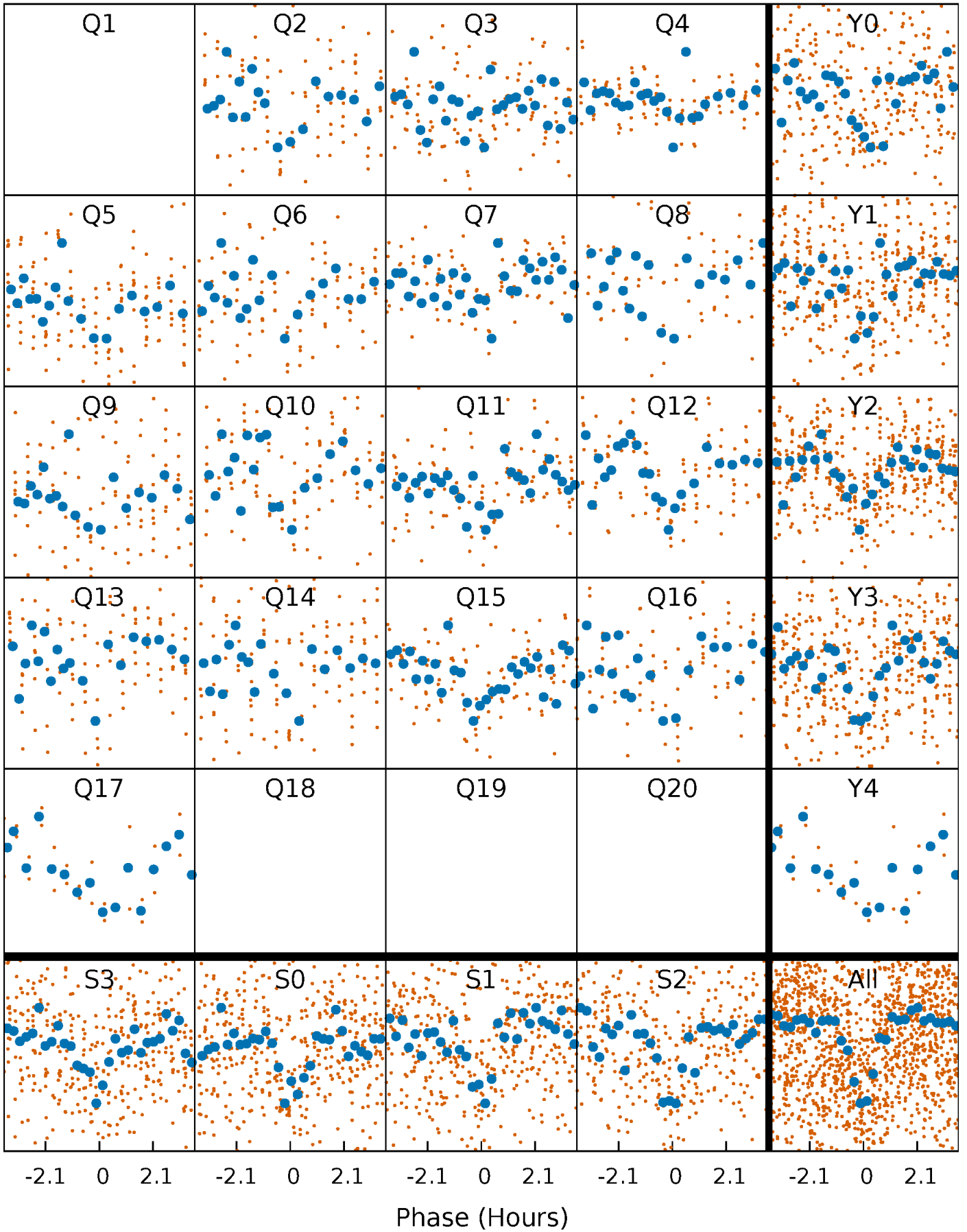


**Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)**



# PDC Quarter-Phased Transit Curves

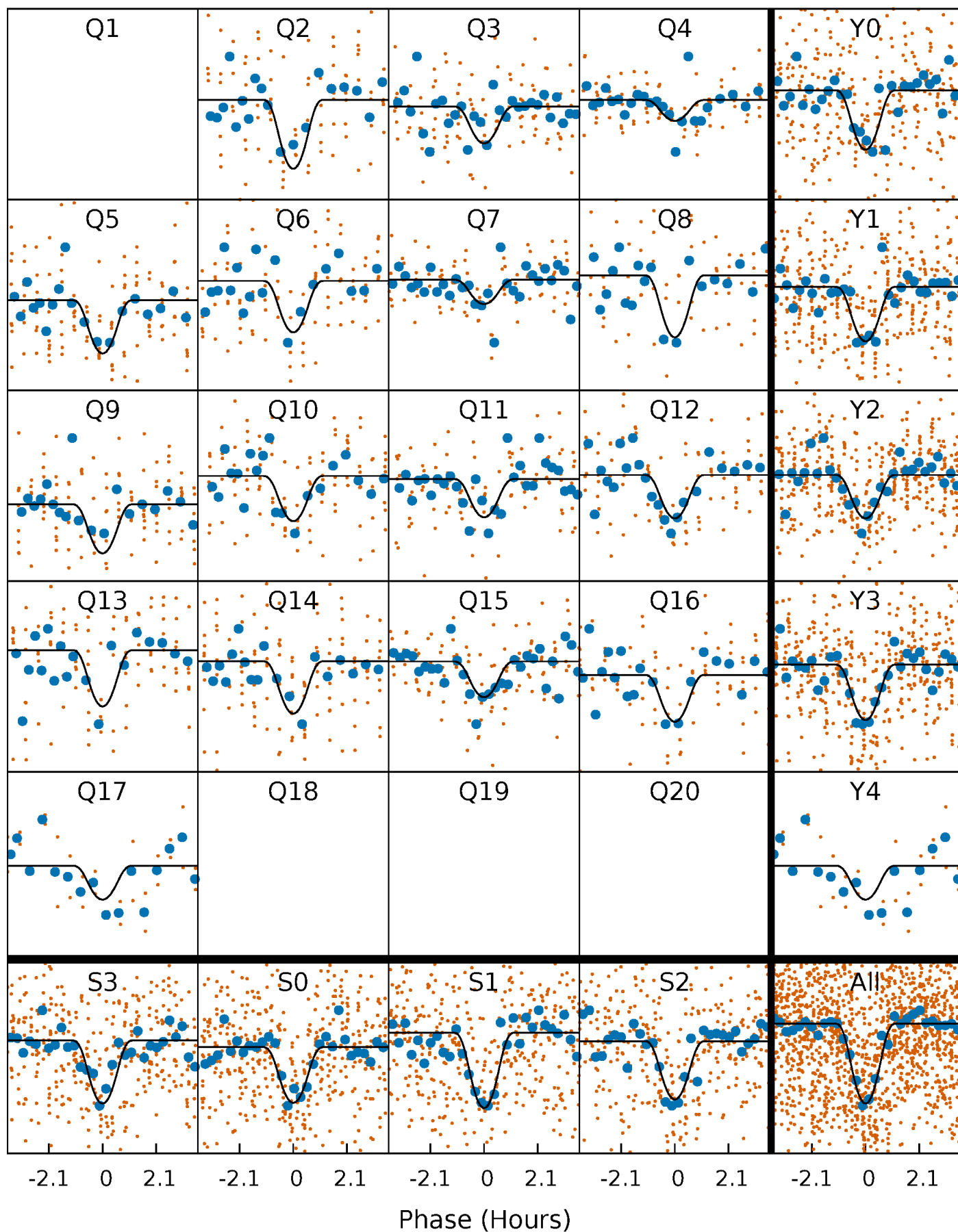
TCE 008379021-01 P= 11.524824 Days  $T_0=134.082827$  (BKJD)





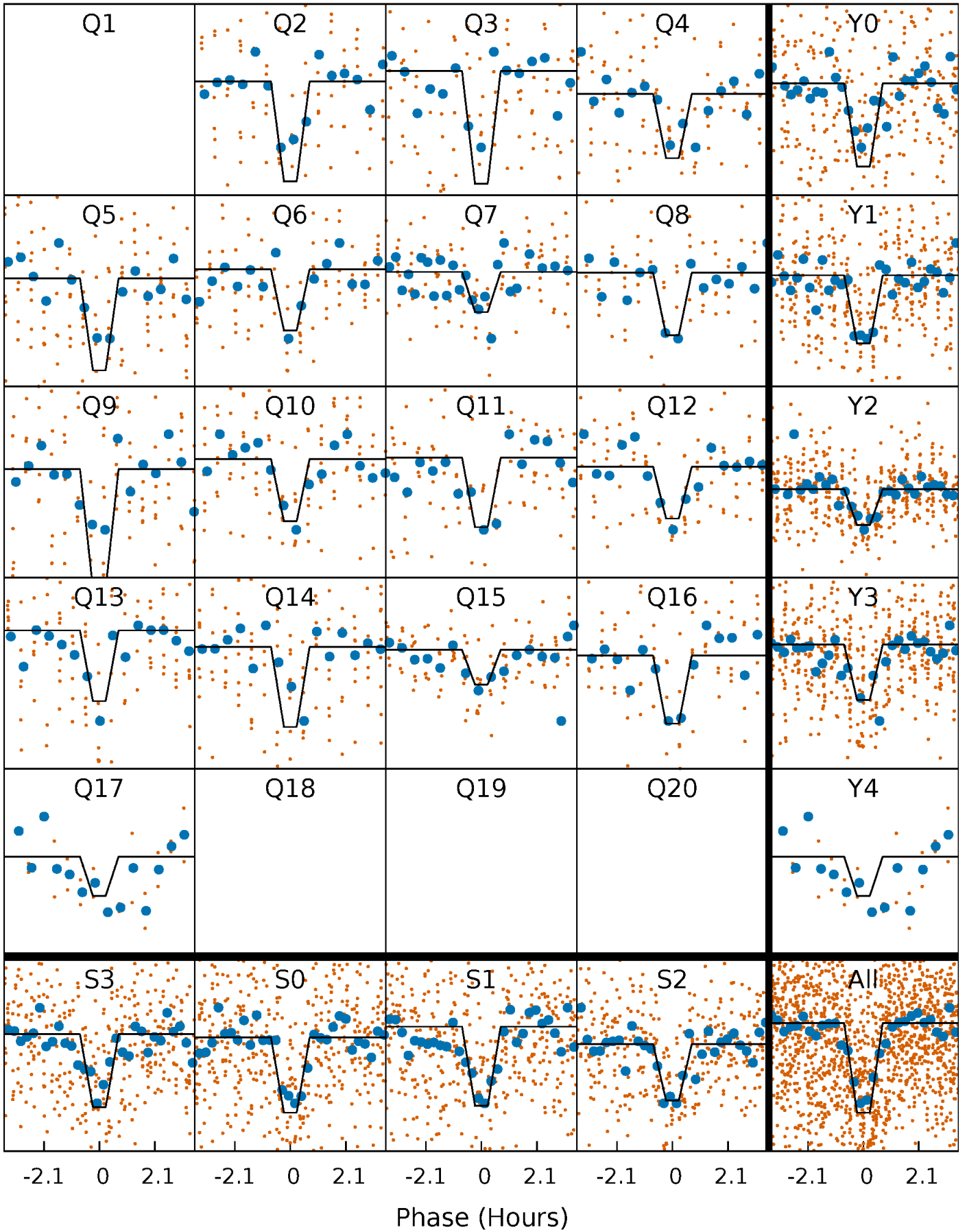
# DV Quarter-Phased Transit Curves

TCE 008379021-01 P= 11.524824 Days  $T_0=134.082827$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

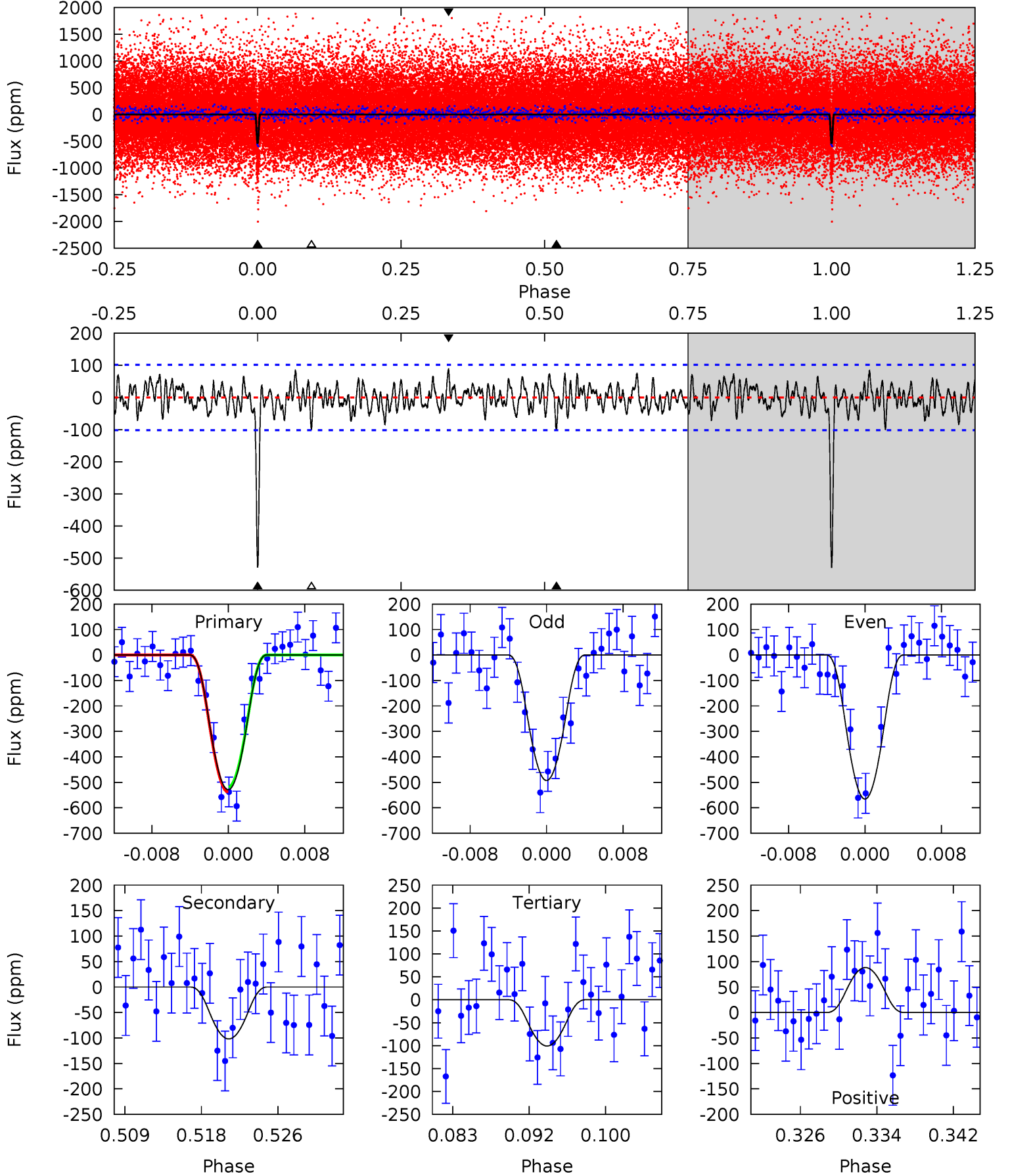
TCE 008379021-01 P= 11.524796 Days  $T_0=134.083756$  (BKJD)



# DV Model-Shift Uniqueness Test

008379021-01,  $P = 11.524824$  Days,  $E = 134.082827$  Days

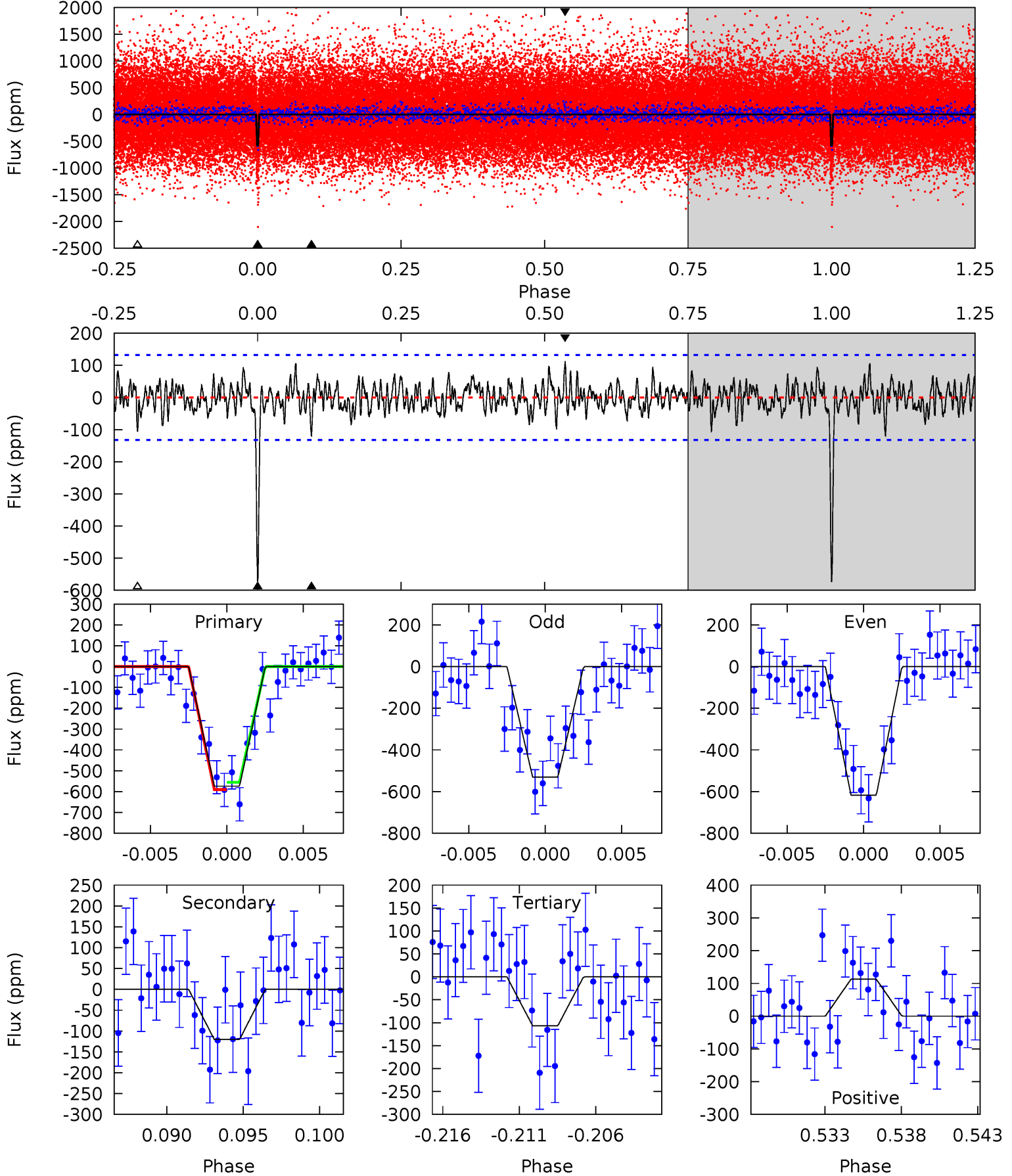
| Pri  | Sec  | Ter  | Pos  | FA <sub>1</sub> | FA <sub>2</sub> | F <sub>Red</sub> | Pri-Ter | Pri-Pos | Sec-Ter | Sec-Pos | Odd-Evn | DMM  | Shape | TAT  |
|------|------|------|------|-----------------|-----------------|------------------|---------|---------|---------|---------|---------|------|-------|------|
| 26.4 | 5.08 | 5.02 | 4.40 | 5.06            | 2.64            | 1.55             | 21.3    | 22.0    | 0.05    | 0.68    | 1.81    | 1.01 | 0.14  | 0.47 |



# Alt Model-Shift Uniqueness Test

008379021-01, P = 11.524796 Days, E = 134.083756 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  |
|------|------|------|------|-----------------|-----------------|------------------|---------|---------|---------|---------|---------|------|-------|------|
| 22.3 | 4.68 | 4.14 | 4.38 | 5.15            | 2.79            | 1.32             | 18.1    | 17.9    | 0.54    | 0.30    | 1.71    | 1.04 | 0.16  | 0.67 |



### Stellar Parameters For KIC 008379021

|        | $T_{\text{eff}}(K)$  | $\log(g)$                 | [Fe/H]                     | $R (R_{\odot})$           | $M(M_{\odot})$            | $p_{\star} (\text{g}\cdot\text{cm}^{-3})$ |
|--------|----------------------|---------------------------|----------------------------|---------------------------|---------------------------|---|
|        | $5592^{+169}_{-152}$ | $4.472^{+0.091}_{-0.169}$ | $-0.160^{+0.300}_{-0.300}$ | $0.892^{+0.213}_{-0.115}$ | $0.862^{+0.104}_{-0.076}$ | $1.710^{+0.641}_{-0.759}$                 |
|        | +3%/-3%              | +2%/-4%                   | +188%/-188%                | +24%/-13%                 | +12%/-9%                  | +37%/-44%                                 |
| 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 008379021-01 / KOI 3268.01

| Detrend | Depth (ppm)   | $R_p (R_{\oplus})$     | $T_{max} (K)$      | $T_{obs} (K)$         | $A_{obs}$                  |
|---------|---------------|------------------------|--------------------|-----------------------|----------------------------|
| DV      | $-102 \pm 20$ | $7.10^{+6.38}_{-4.68}$ | $1070^{+63}_{-55}$ | $2805^{+1146}_{-433}$ | $9.690^{+74.283}_{-7.057}$ |
| Alt.    | $-120 \pm 26$ | $6.52^{+6.35}_{-4.25}$ | $1068^{+72}_{-51}$ | $2960^{+1195}_{-491}$ | $14^{+98}_{-10}$           |

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



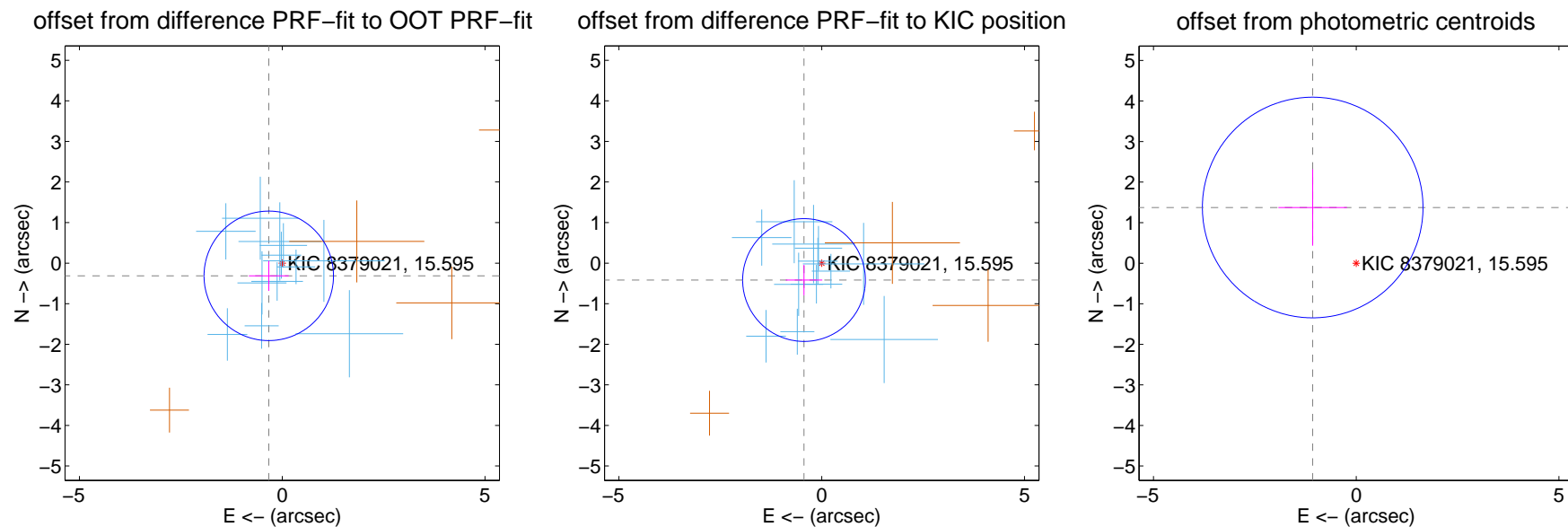
## DV Centroid Data

Supplemental centroid analysis for 008379021-01. Kepler magnitude: 15.60. Transit SNR 16.59

There are 12 quarters with good PRF difference image offsets

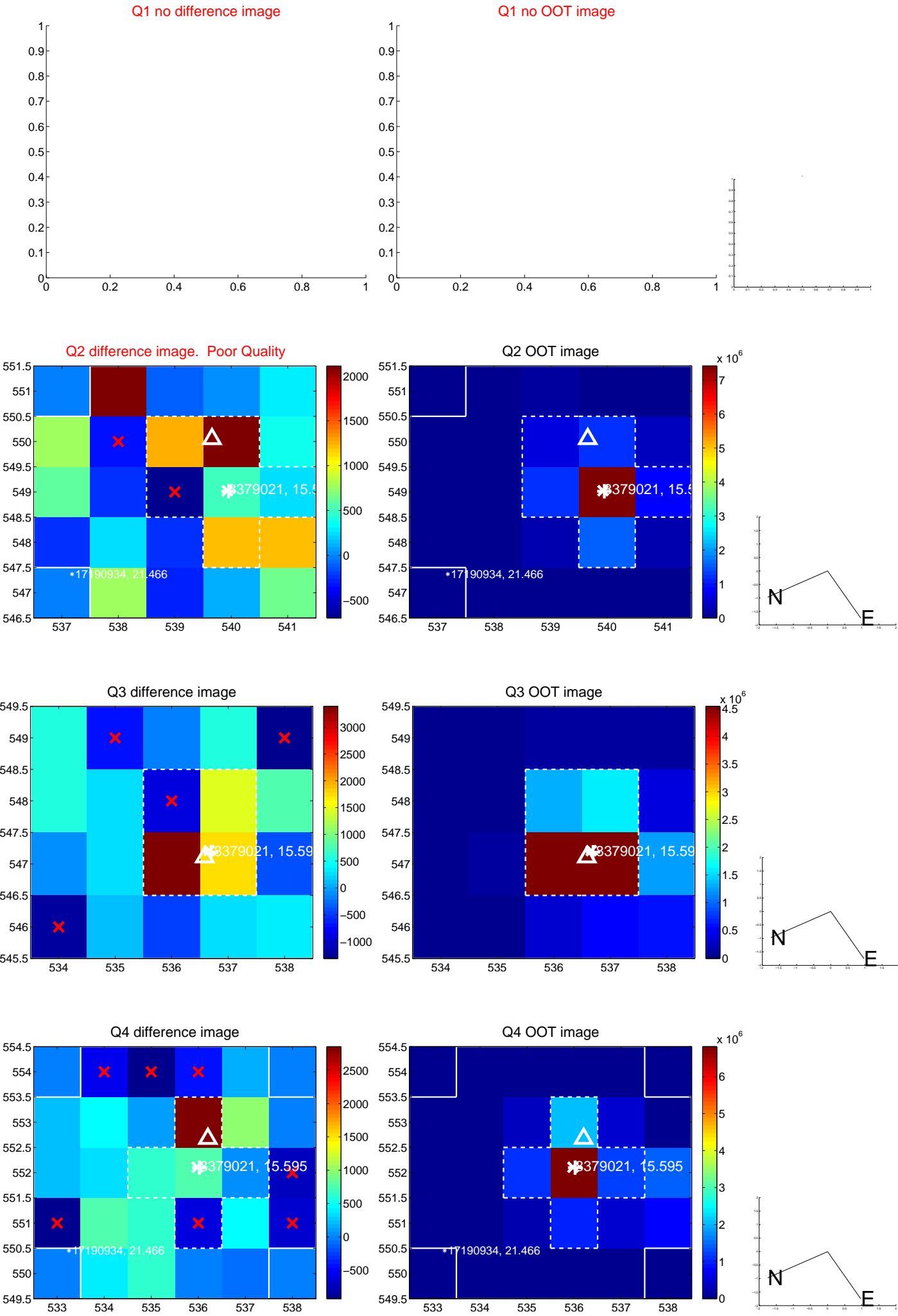
The direct PRF centroid is offset from the target star catalog position by about 0.08 arcsec

|   | Distance in arcsec | Distance / $\sigma$ | $\Delta$ RA       | $\Delta$ Dec       |
|---|--------------------|---------------------|-------------------|--------------------|
| PRF-fit source offset from OOT          | $0.456 \pm 0.532$  | 0.86                | $0.332 \pm 0.491$ | $-0.313 \pm 0.370$ |
| PRF-fit source offset from KIC position | $0.603 \pm 0.504$  | 1.20                | $0.437 \pm 0.450$ | $-0.416 \pm 0.375$ |
| photometric centroid source offset      | $1.74 \pm 0.91$    | 1.92                | $1.07 \pm 0.85$   | $1.37 \pm 0.94$    |

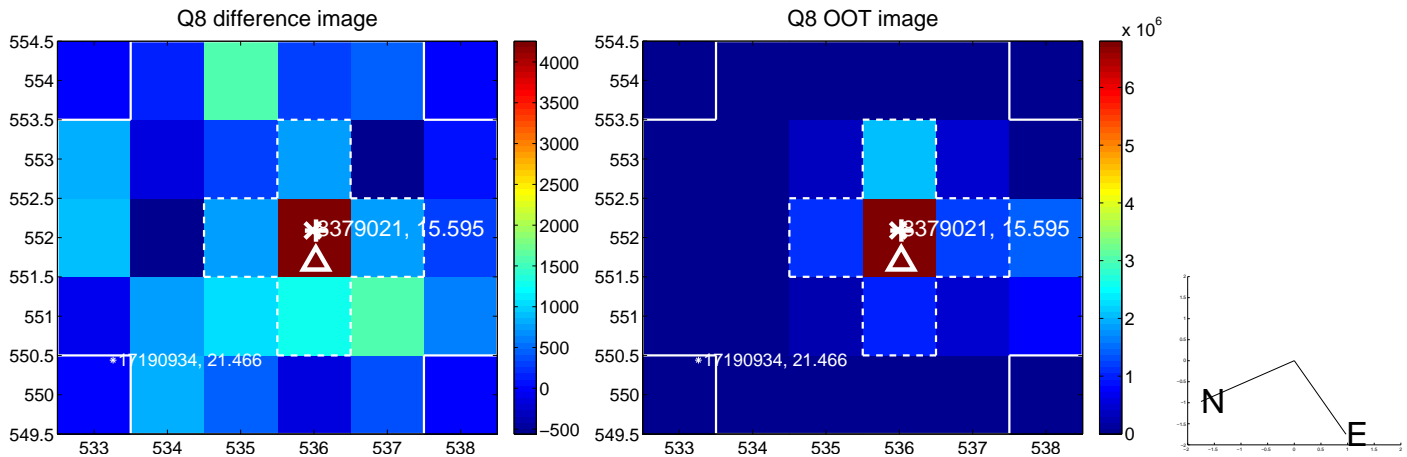
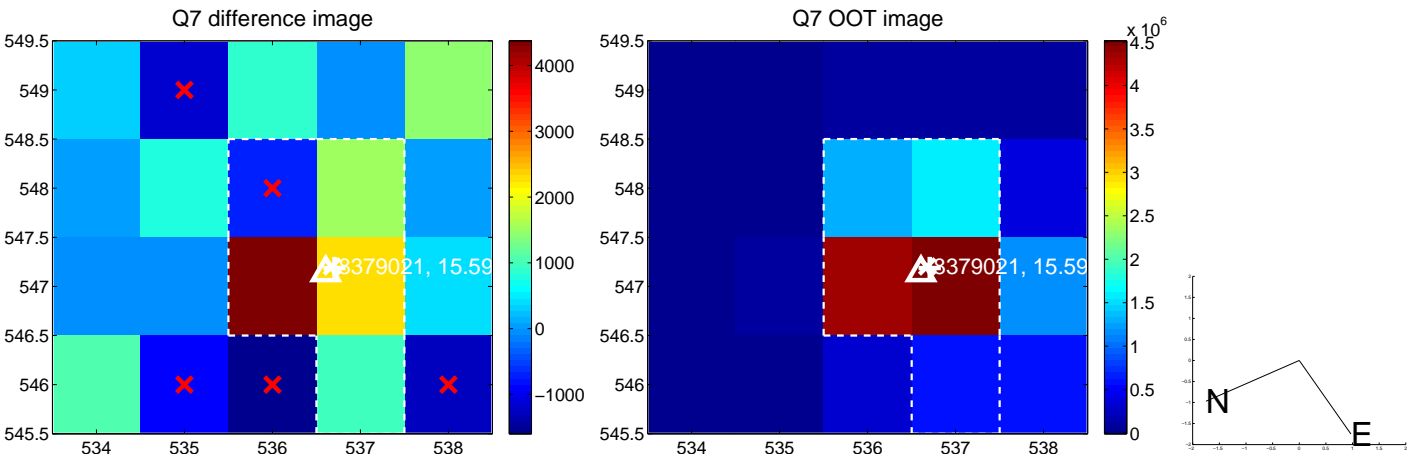
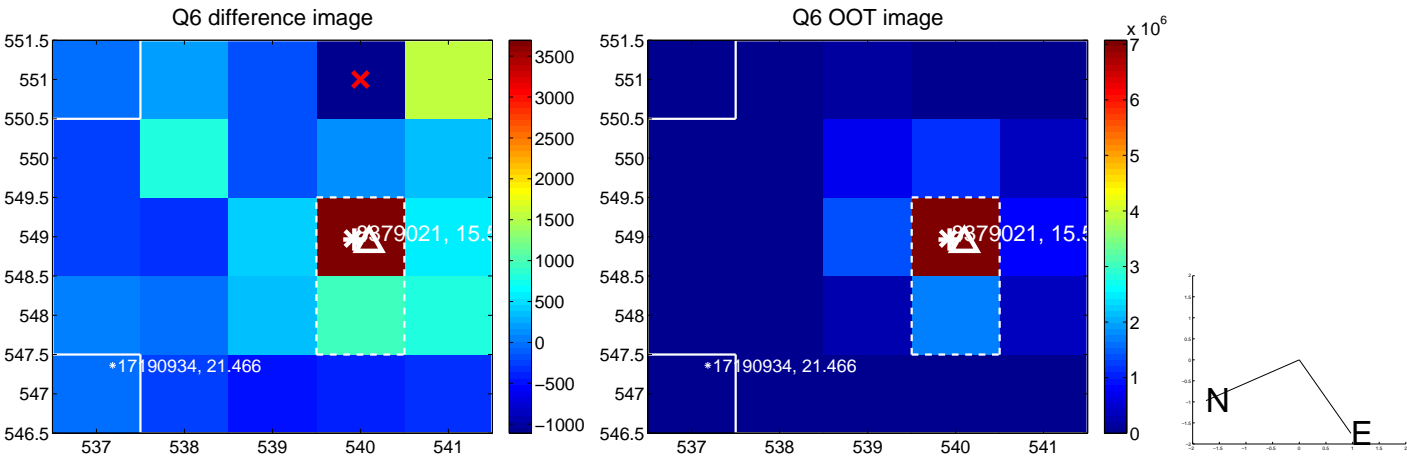
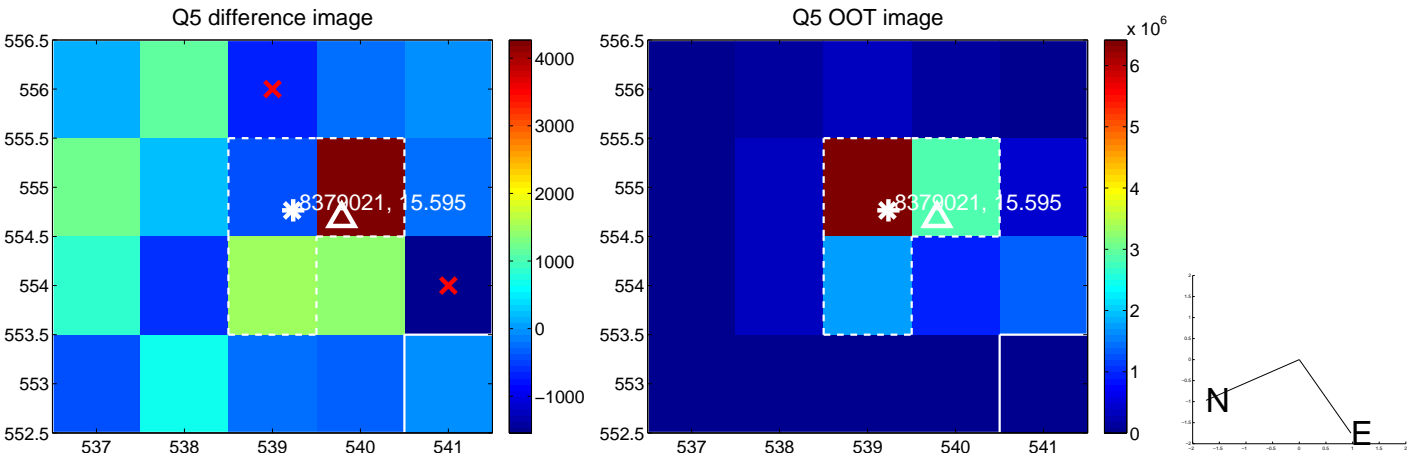


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets**; **Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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

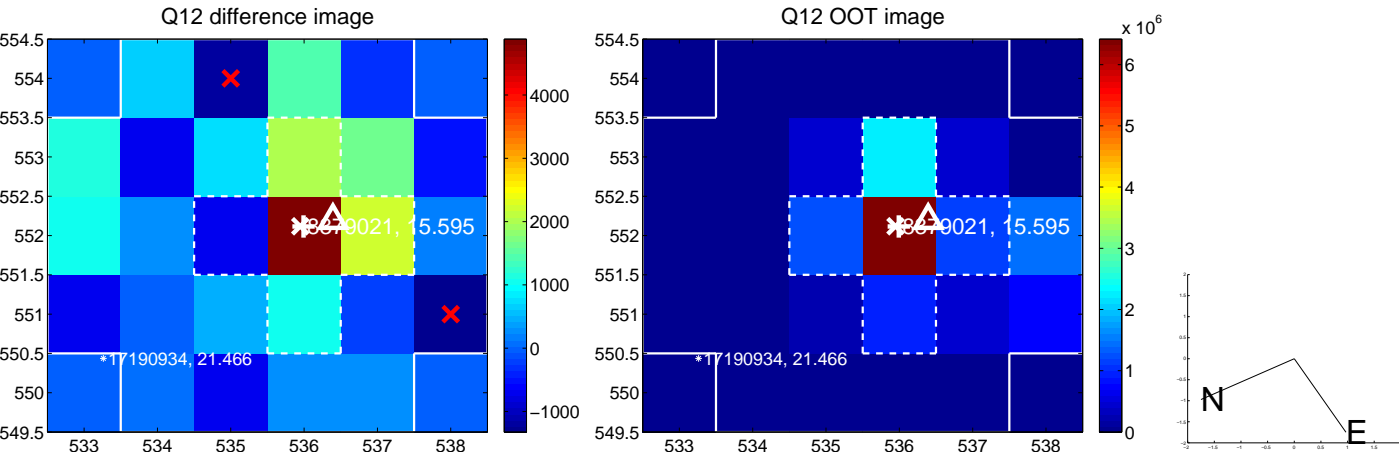
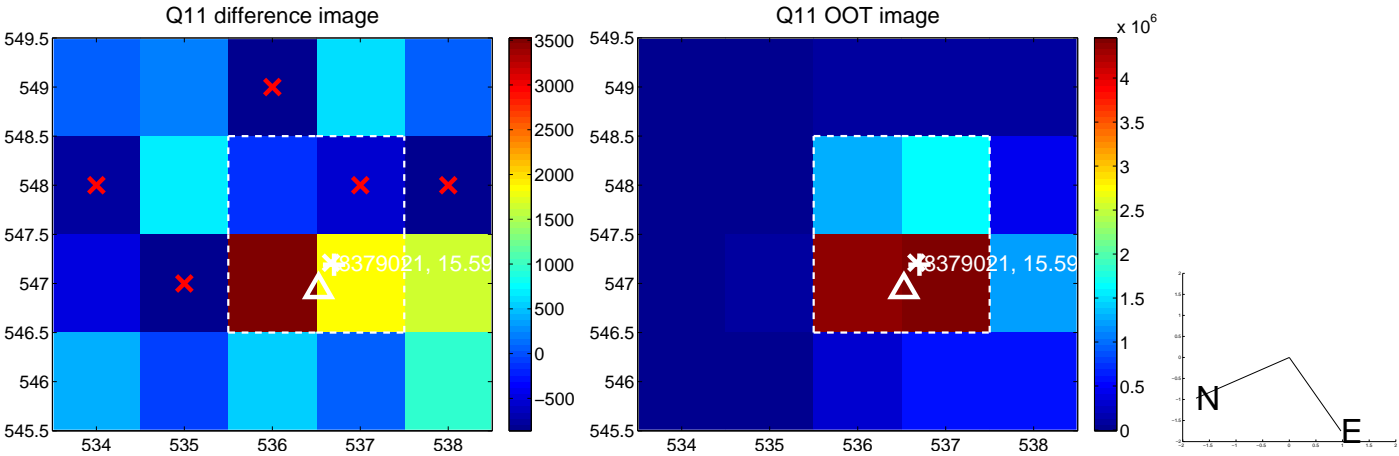
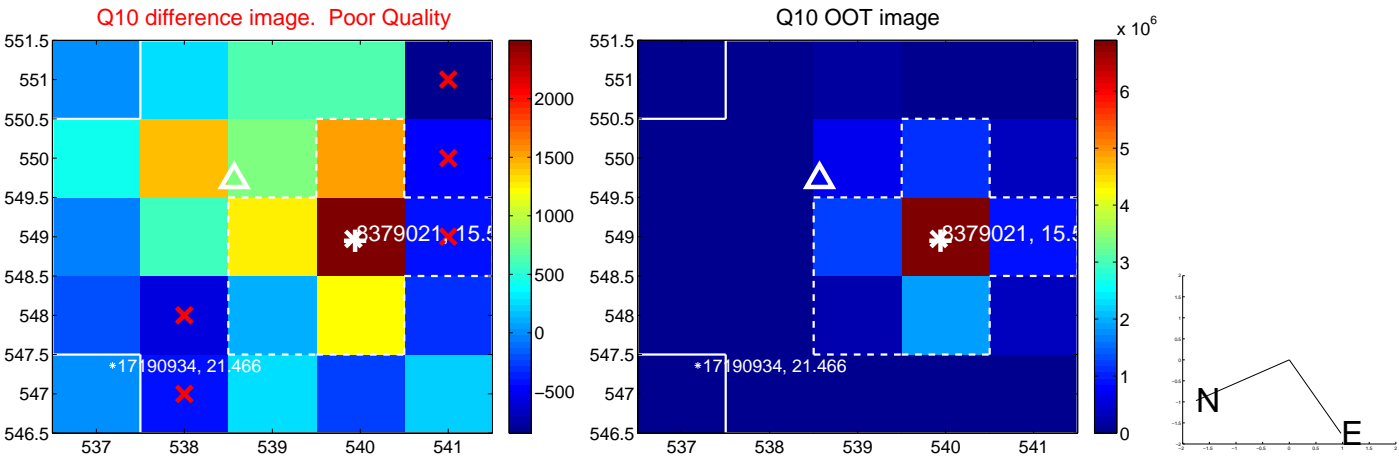
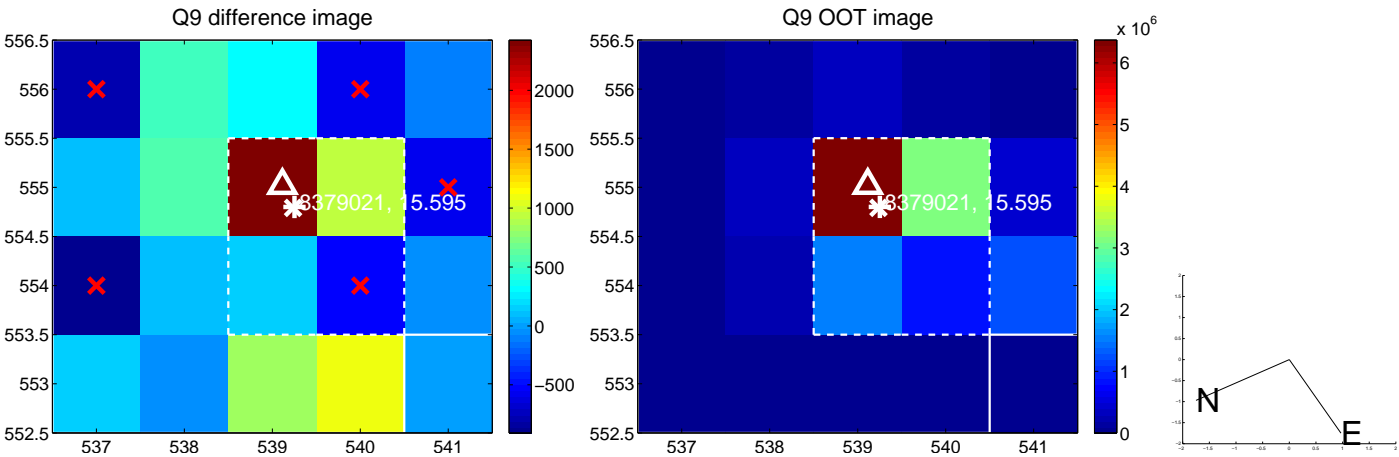
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



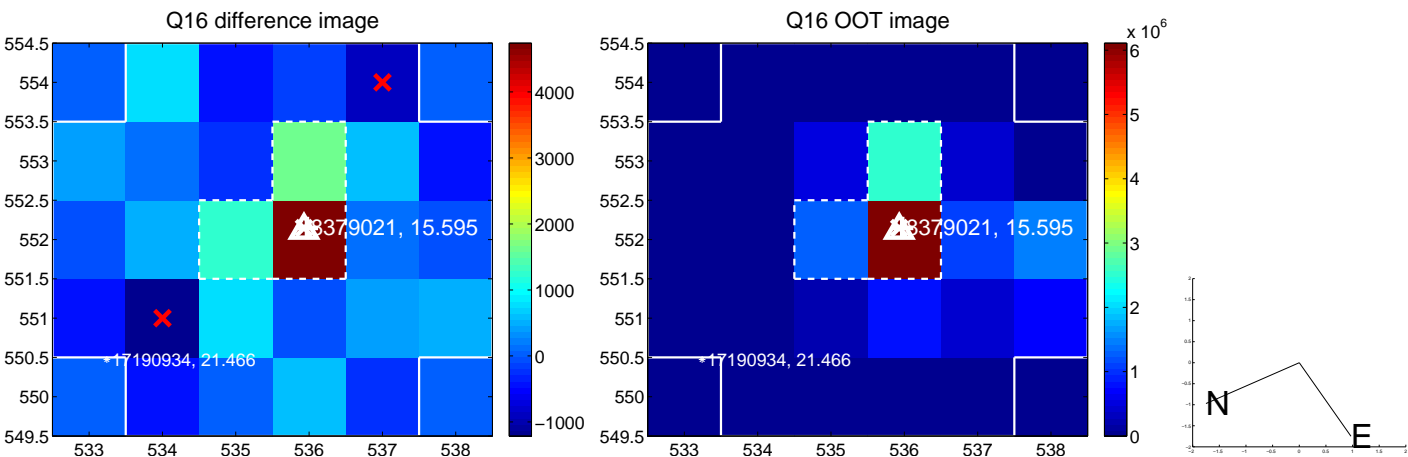
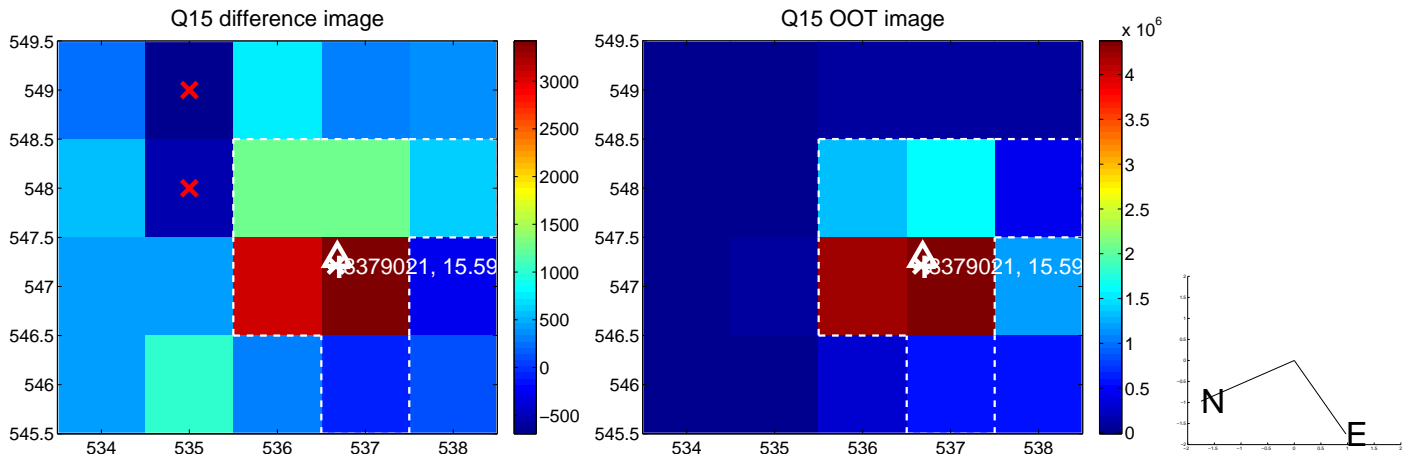
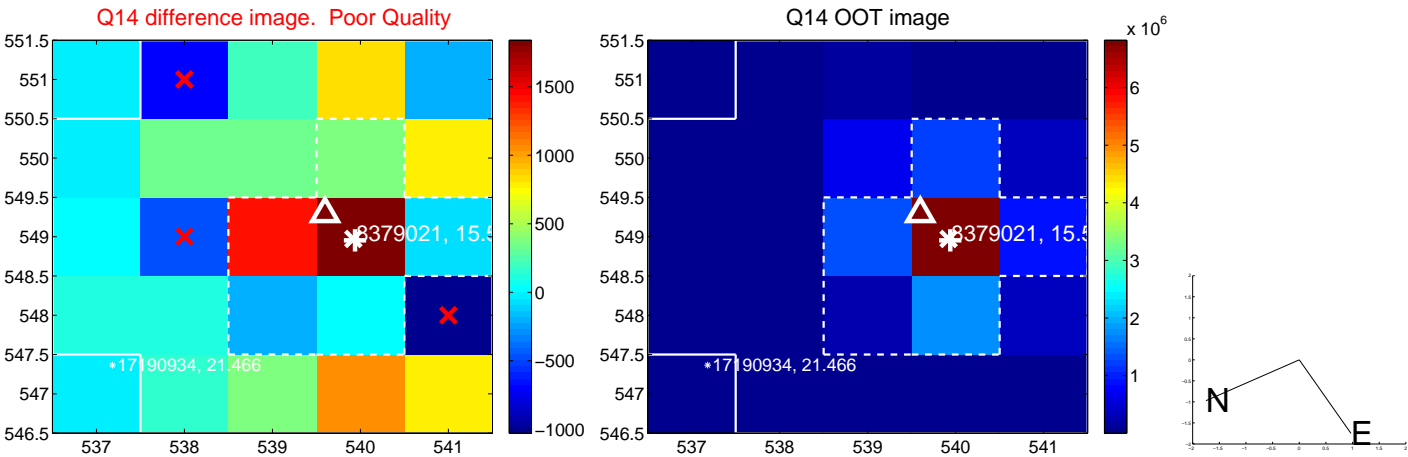
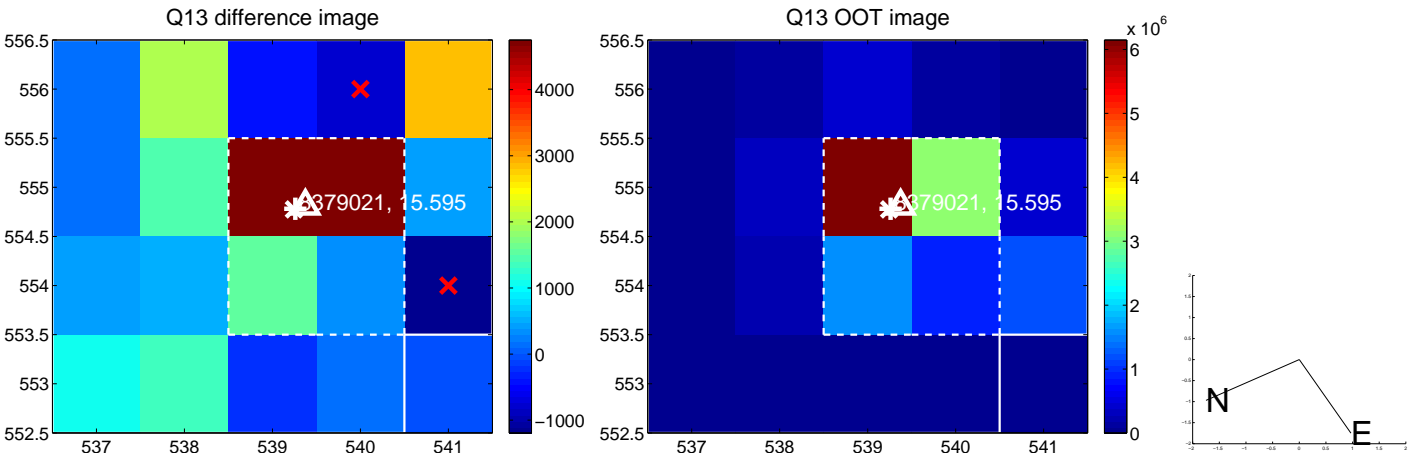
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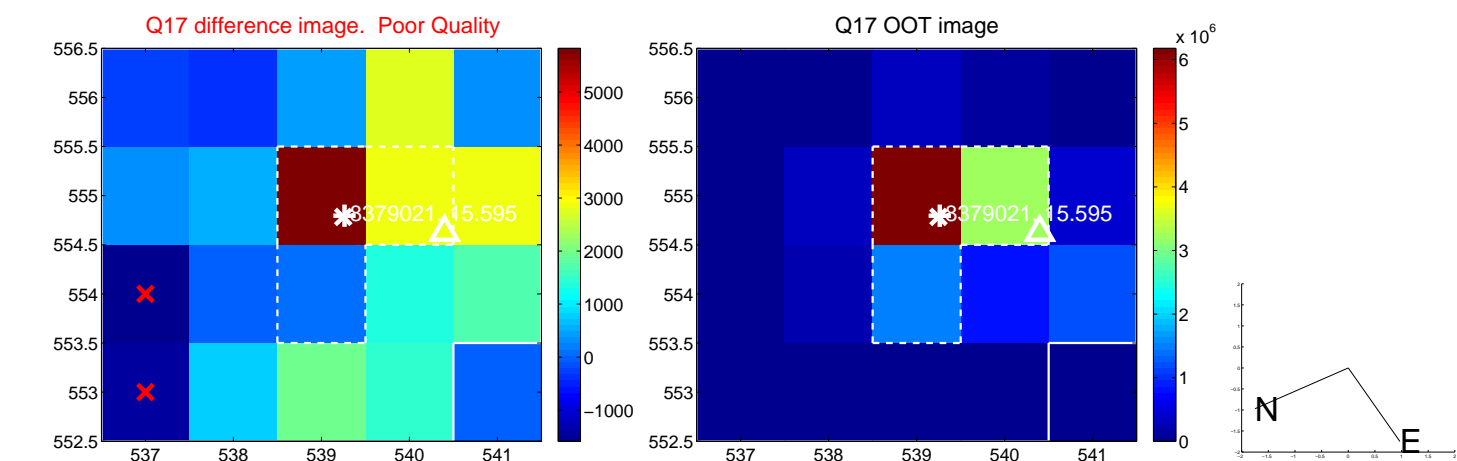


white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

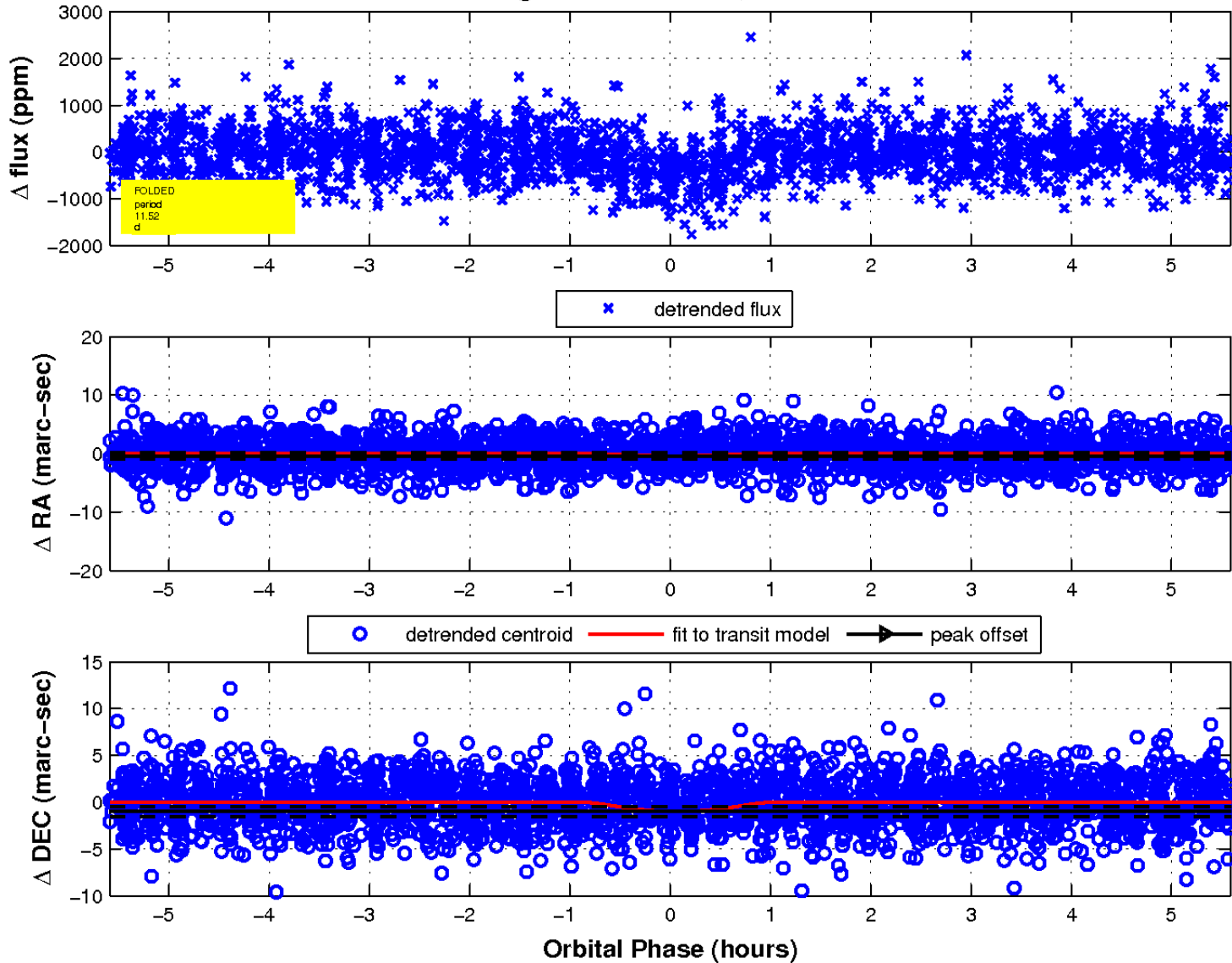




white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



fluxWeightedCentroids, Planet 1 of 1



# UKIRT Image

Declination

