

# KIC 005785279

## 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) | $R_p$ ( $R_{\oplus}$ ) | $S_p$ ( $S_{\oplus}$ ) |
|--------------|----------|---------|---------------|--------------|-------------|------------------|------|------|-----------------------------|-----------------|------------------------|------------------------|
| 005785279-01 | OBS      | 4259.01 | 0.909126      | 132.404543   | 74.5        | 1.341            | 10.0 | 10.2 | 1.00                        | 5486            | 1.04                   | 2585.78                |

## Robovetter Results

| TCE          | Run Type | Disp | Score | N | S | C | E | Comments   |
|--------------|----------|------|-------|---|---|---|---|------------|
| 005785279-01 | OBS      | PC   | 0.89  | 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.

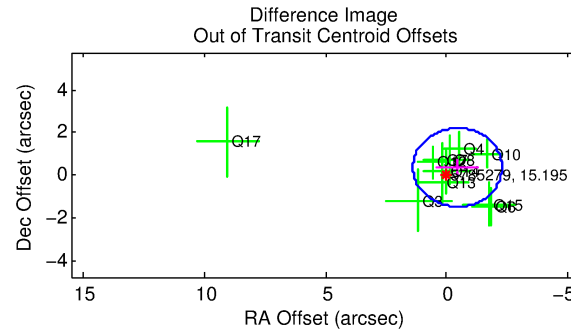
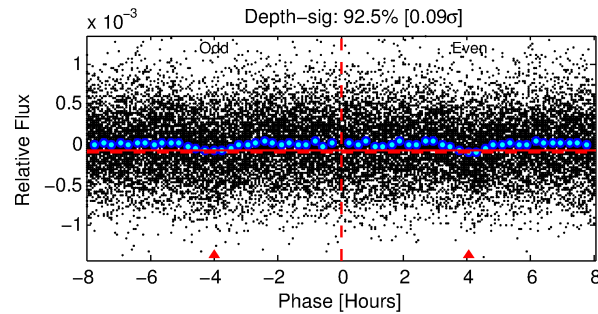
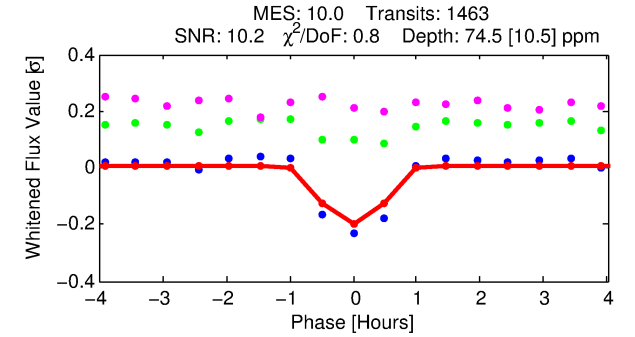
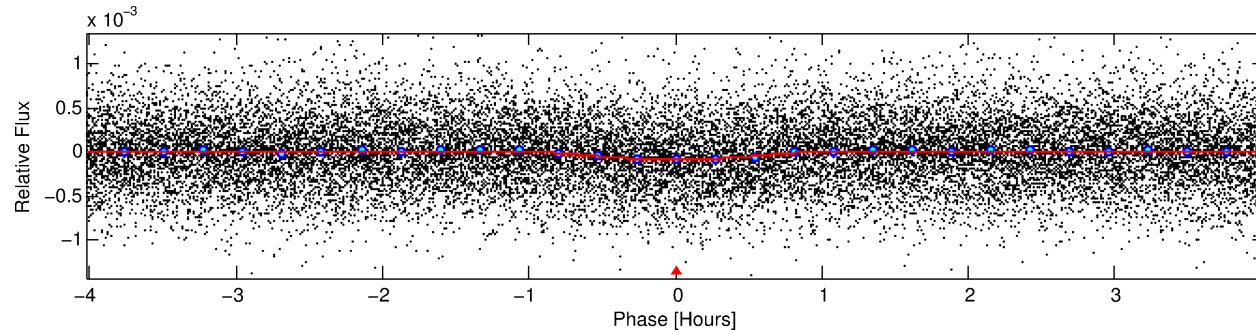
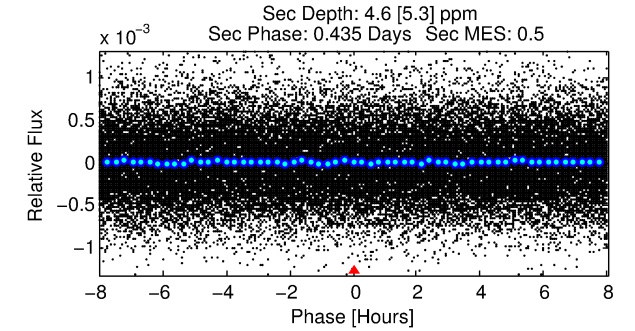
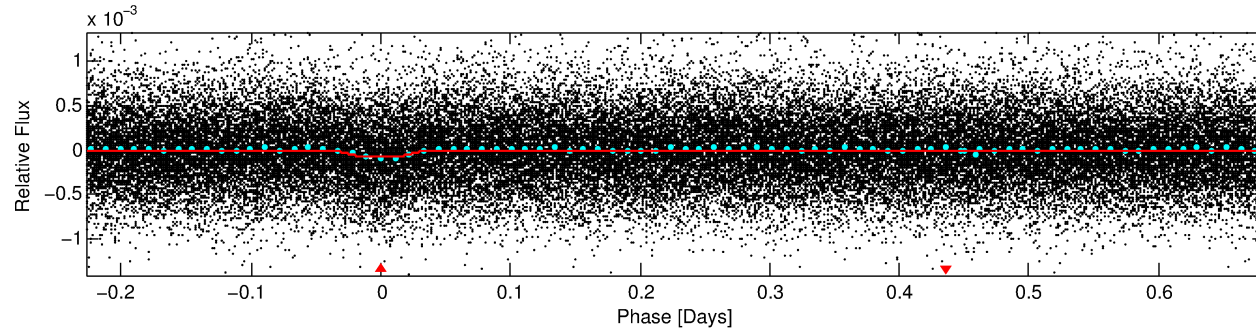
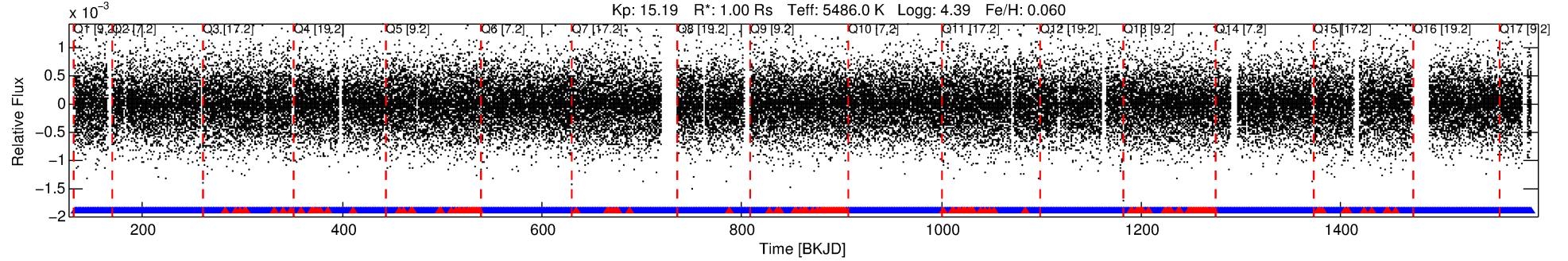
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 005785279-01

No Significant Match Found

# DV One-Page Summary

KIC: 5785279 Candidate: 1 of 1 Period: 0.909 d  
KOI: K04259.01 Corr: 0.970



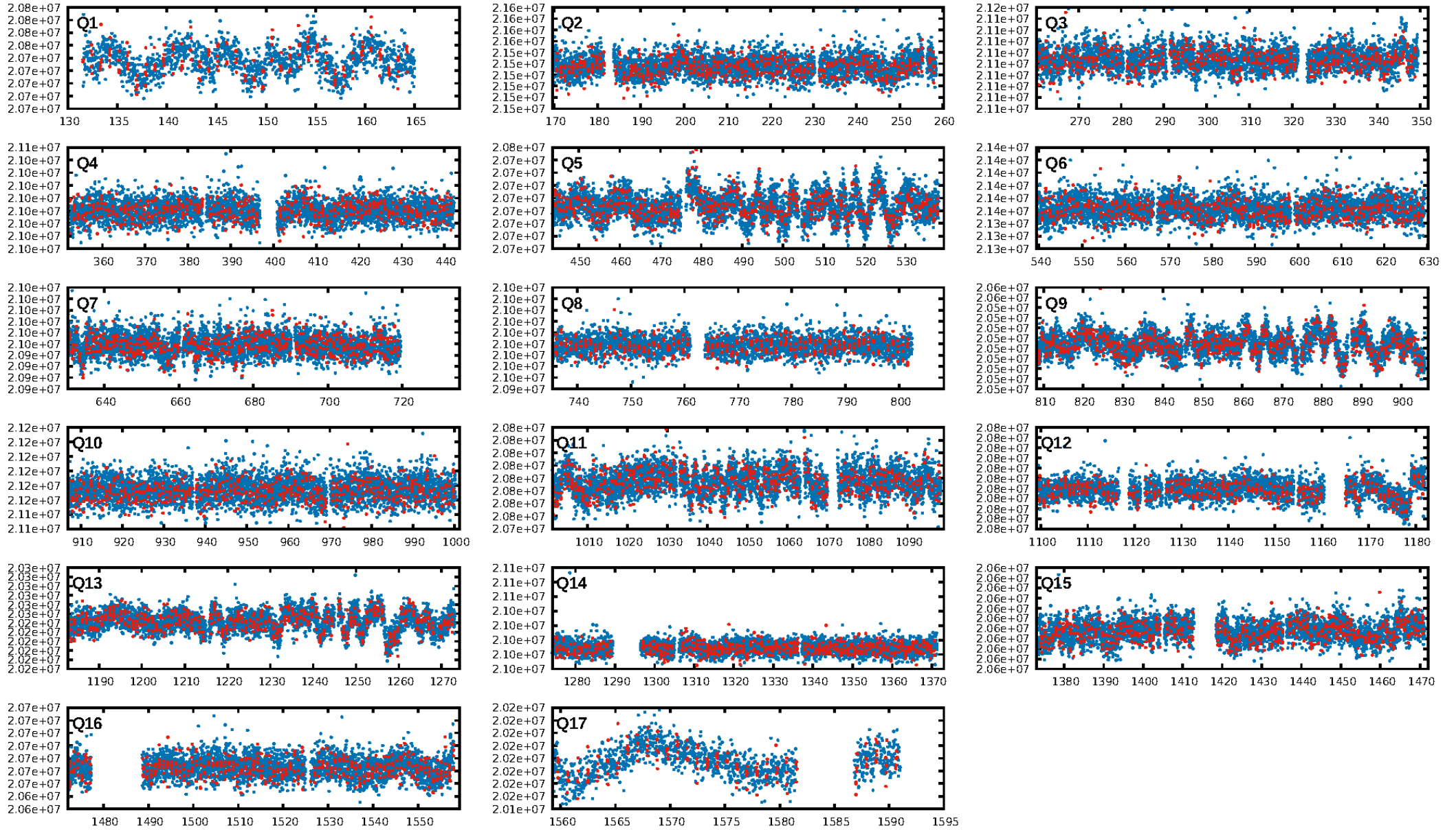
## DV Fit Results:

Period = 0.90913 [0.00001] d  
Epoch = 132.4045 [0.0021] BKJD  
Rp/R\* = 0.0095 [0.0083]  
a/R\* = 2.55 [8.30]  
b = 0.90 [0.84]  
Seff = 2585.78 [916.03]  
Teff = 1818 [161] K  
Rp = 1.04 [0.94] Re  
a = 0.0176 [0.0040] AU  
Ag = 0.73 [1.53] [-0.18σ]  
Teffp = 2595 [1355] K [0.57σ]

## DV Diagnostic Results:

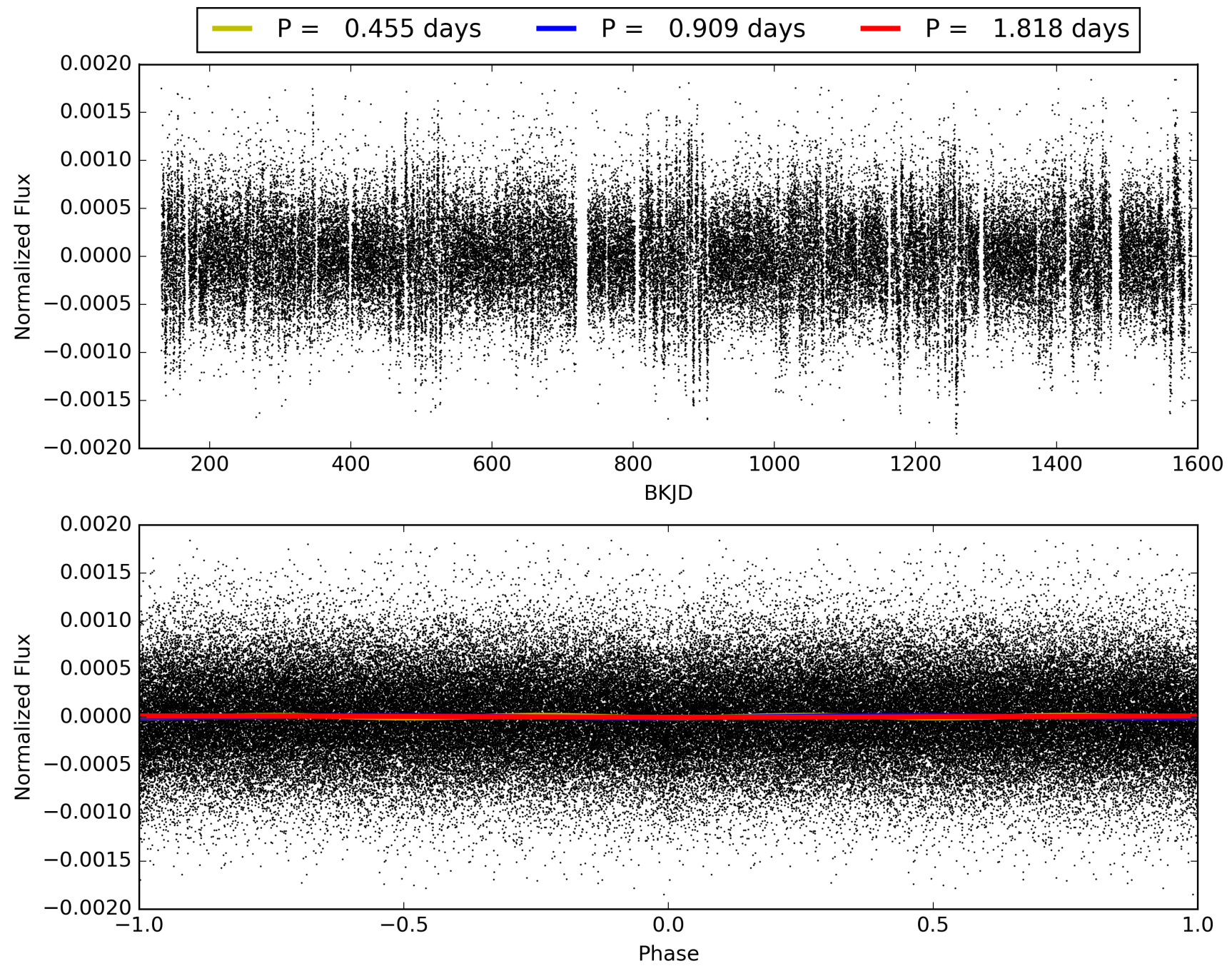
ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: N/A  
ModelChiSquareGof-sig: N/A  
Bootstrap-pfa: 6.65e-24  
RollingBand-fgt: 0.88 [1227/1396]  
GhostDiagnostic-chr: -40.05  
Centroid-sig: 39.5%  
Centroid-so: 1.135 arcsec [0.80σ]  
OotOffset-rm: 0.577 arcsec [0.94σ]  
KicOffset-rm: 0.717 arcsec [0.89σ]  
OotOffset-st: 3/3/3/2 [11]  
KicOffset-st: 3/3/3/2 [11]  
DiffImageQuality-fgm: 0.64 [7/11]  
DiffImageOverlap-fno: 1.00 [17/17]

# TCE 005785279-01, PDC Light Curves



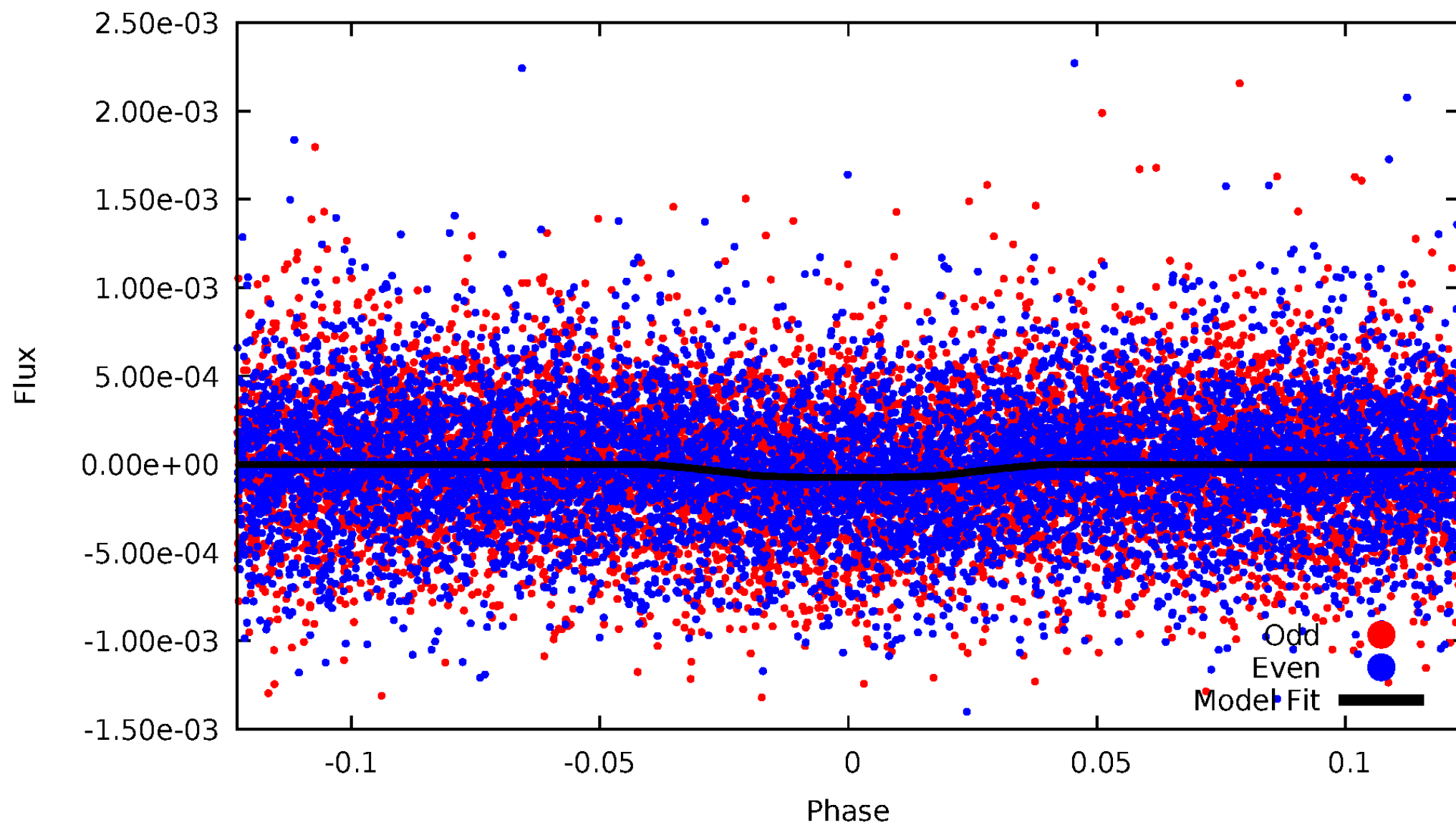


TCE 005785279-01



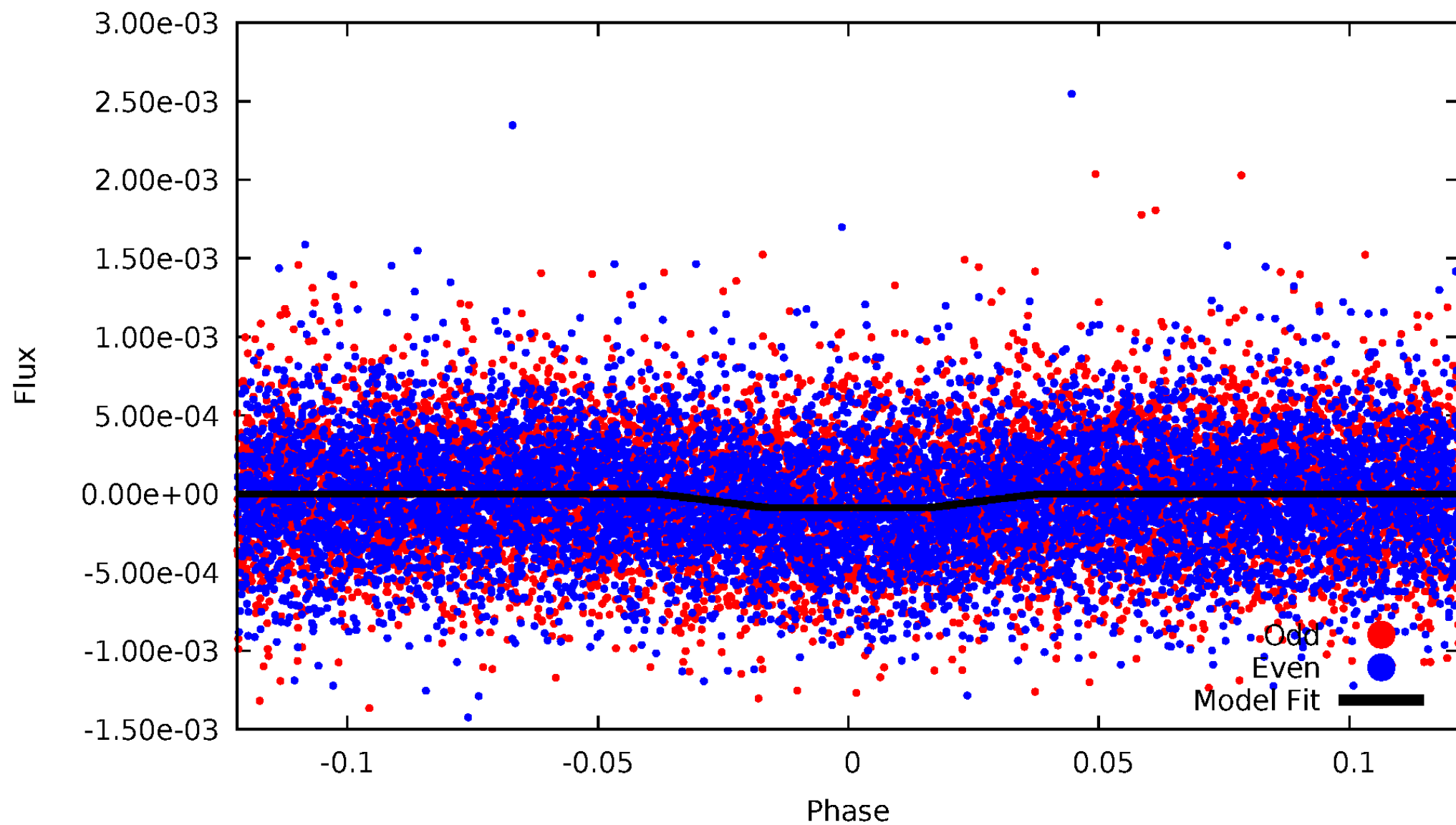
# DV Odd/Even

TCE 005785279-01



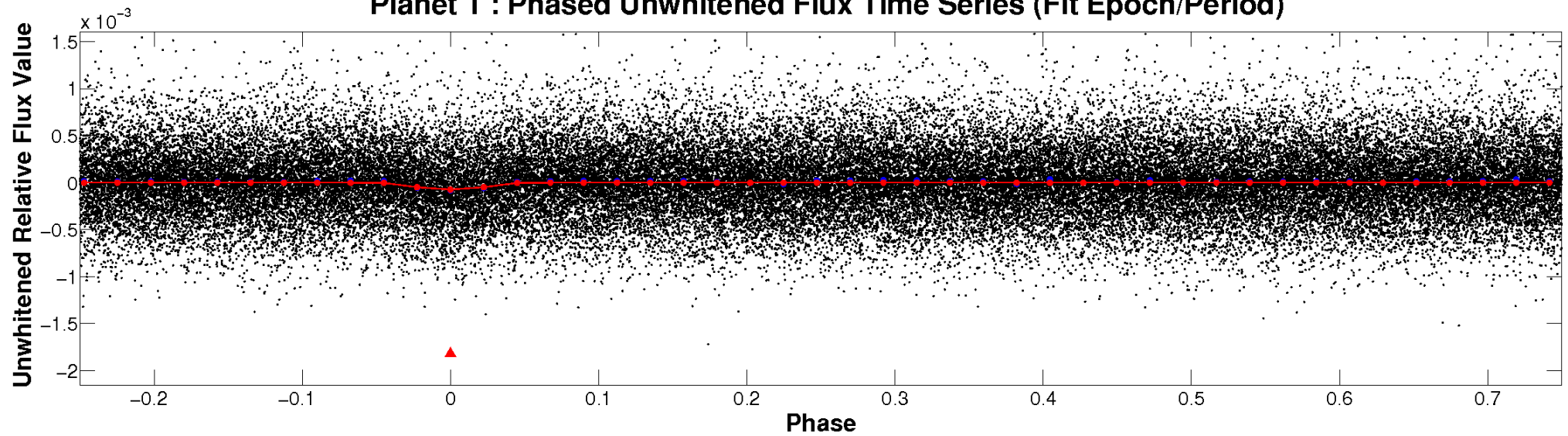
# ALT Odd/Even

TCE 005785279-01

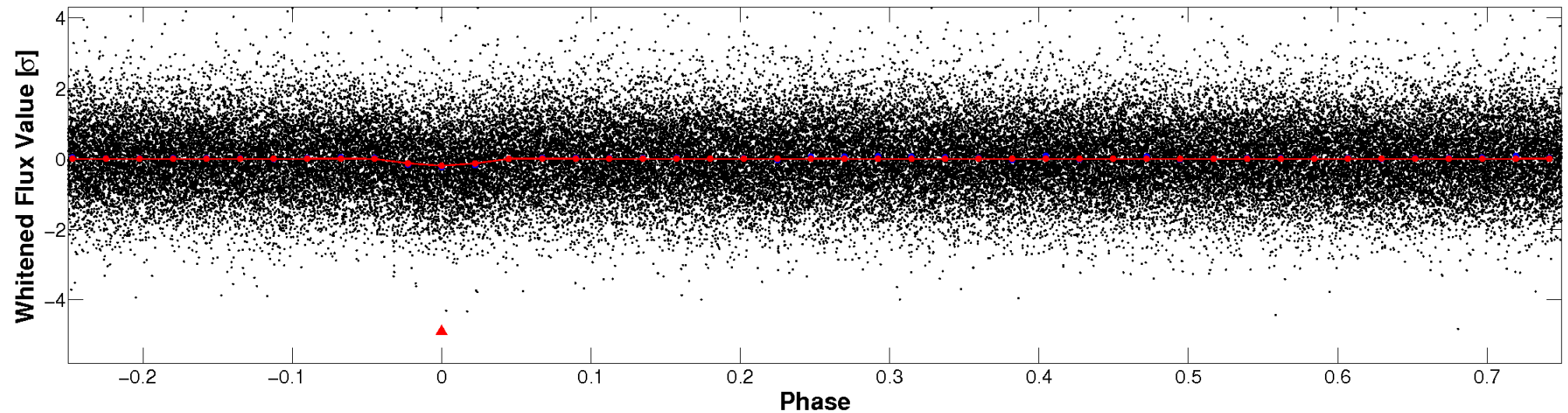


# Non-Whitened Vs. Whitened Light Curve

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



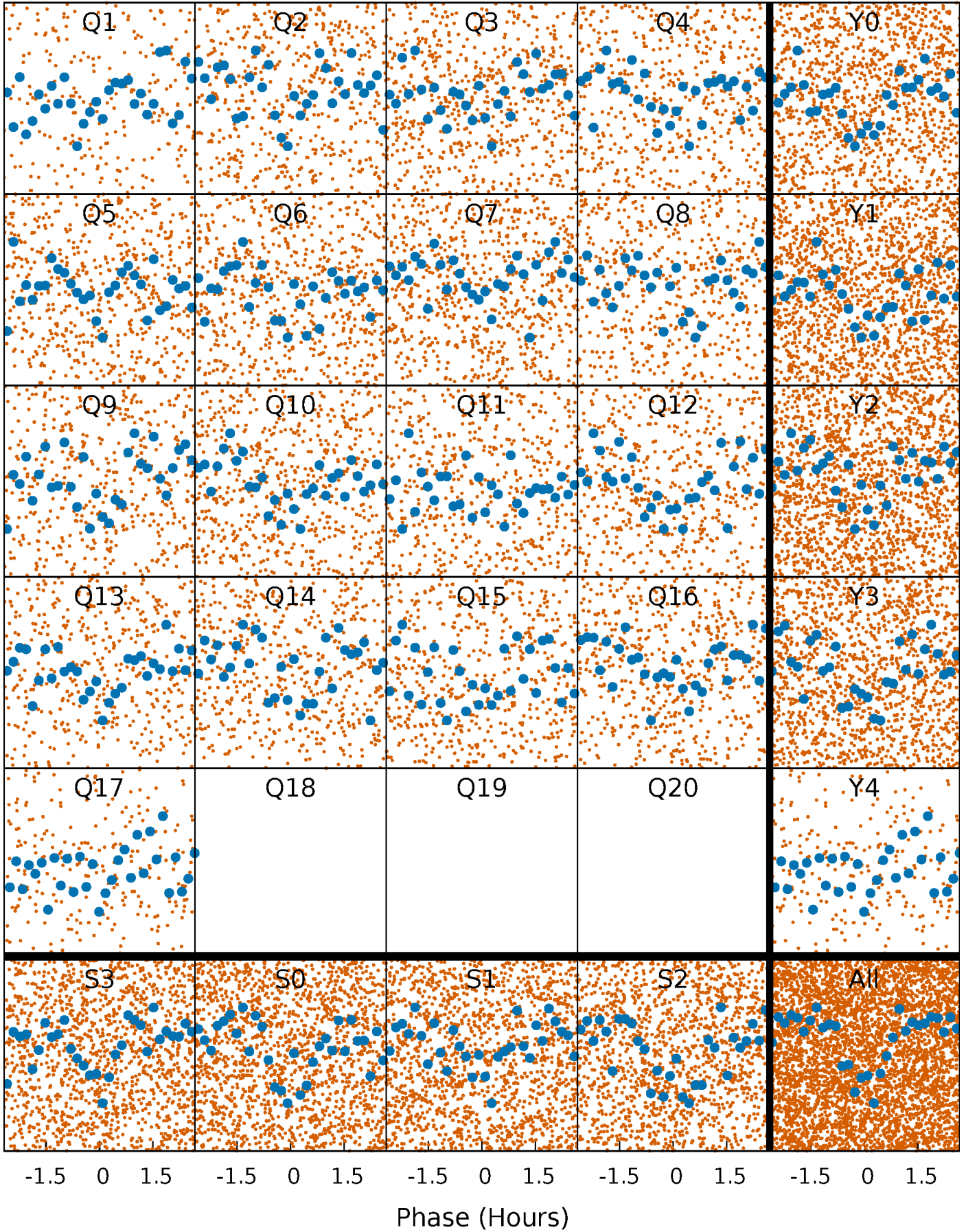
**Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)**





# PDC Quarter-Phased Transit Curves

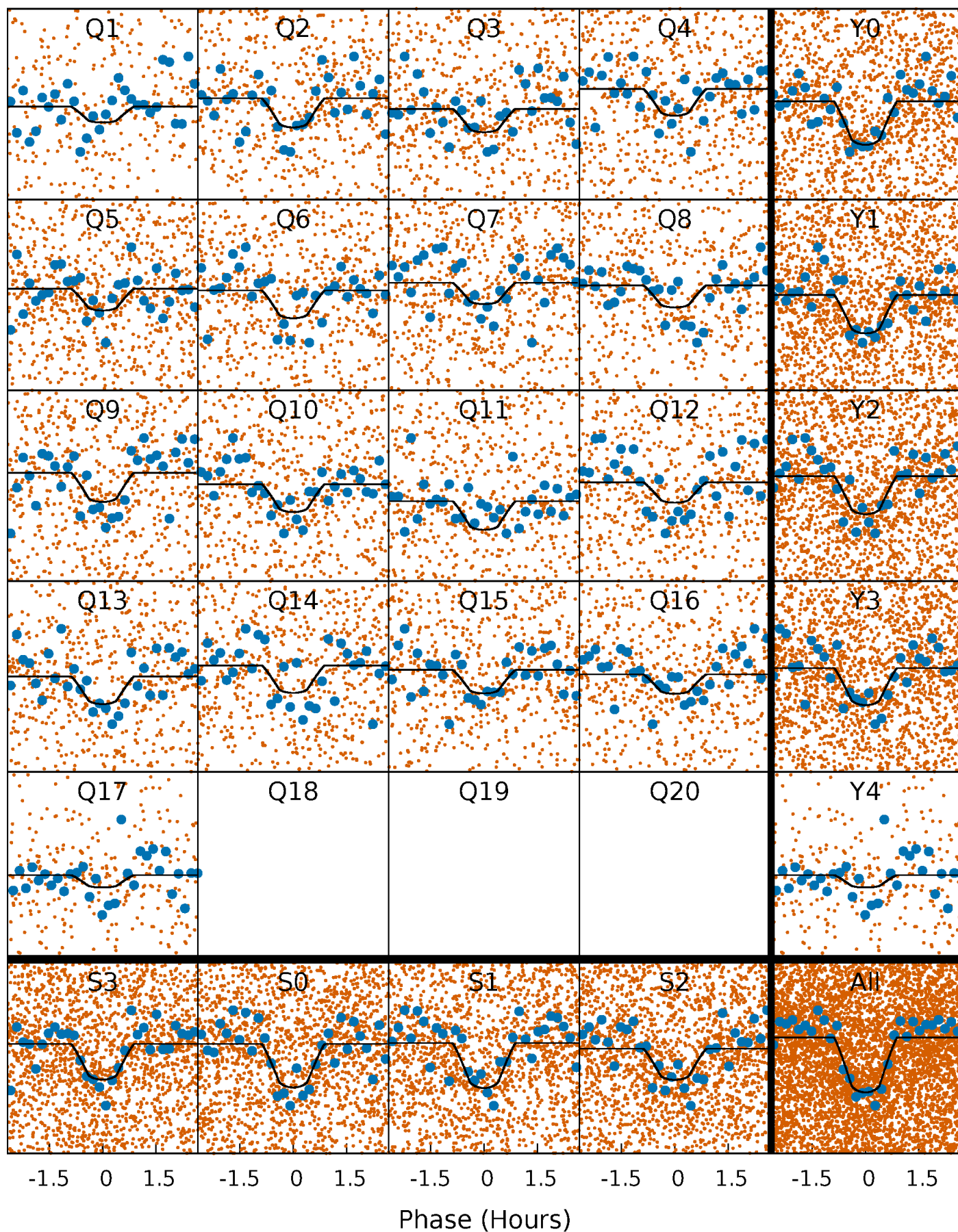
TCE 005785279-01 P= 0.909126 Days  $T_0=132.404543$  (BKJD)





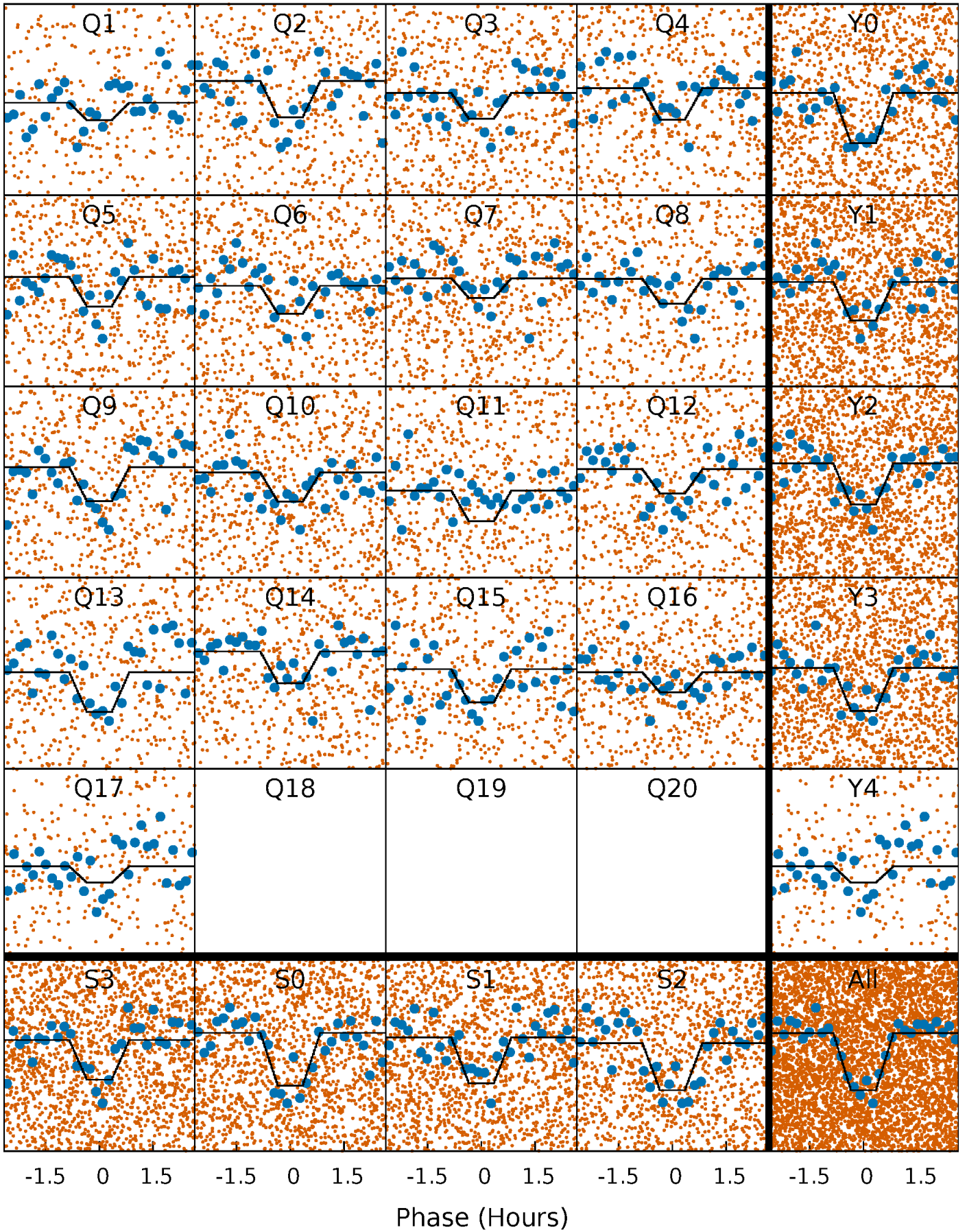
# DV Quarter-Phased Transit Curves

TCE 005785279-01 P= 0.909126 Days  $T_0=132.404543$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

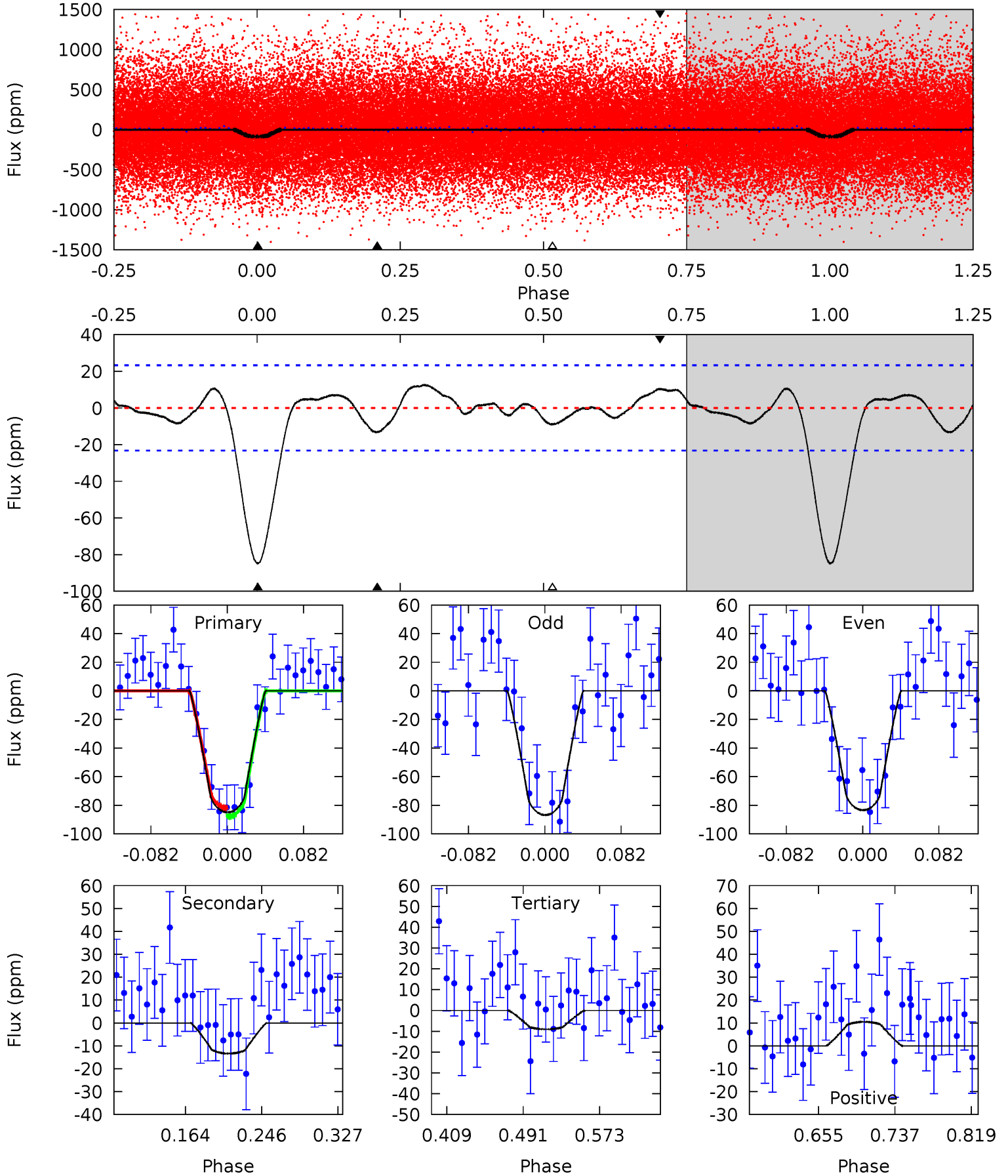
TCE 005785279-01 P= 0.909128 Days  $T_0=132.404491$  (BKJD)



# DV Model-Shift Uniqueness Test

005785279-01, P = 0.909126 Days, E = 131.495417 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  |
|------|------|------|------|-----------------|-----------------|------------------|---------|---------|---------|---------|---------|------|-------|------|
| 16.8 | 2.64 | 1.79 | 2.07 | 4.61            | 1.74            | 1.06             | 15.0    | 14.7    | 0.86    | 0.57    | 0.34    | 1.08 | 0.13  | 0.59 |

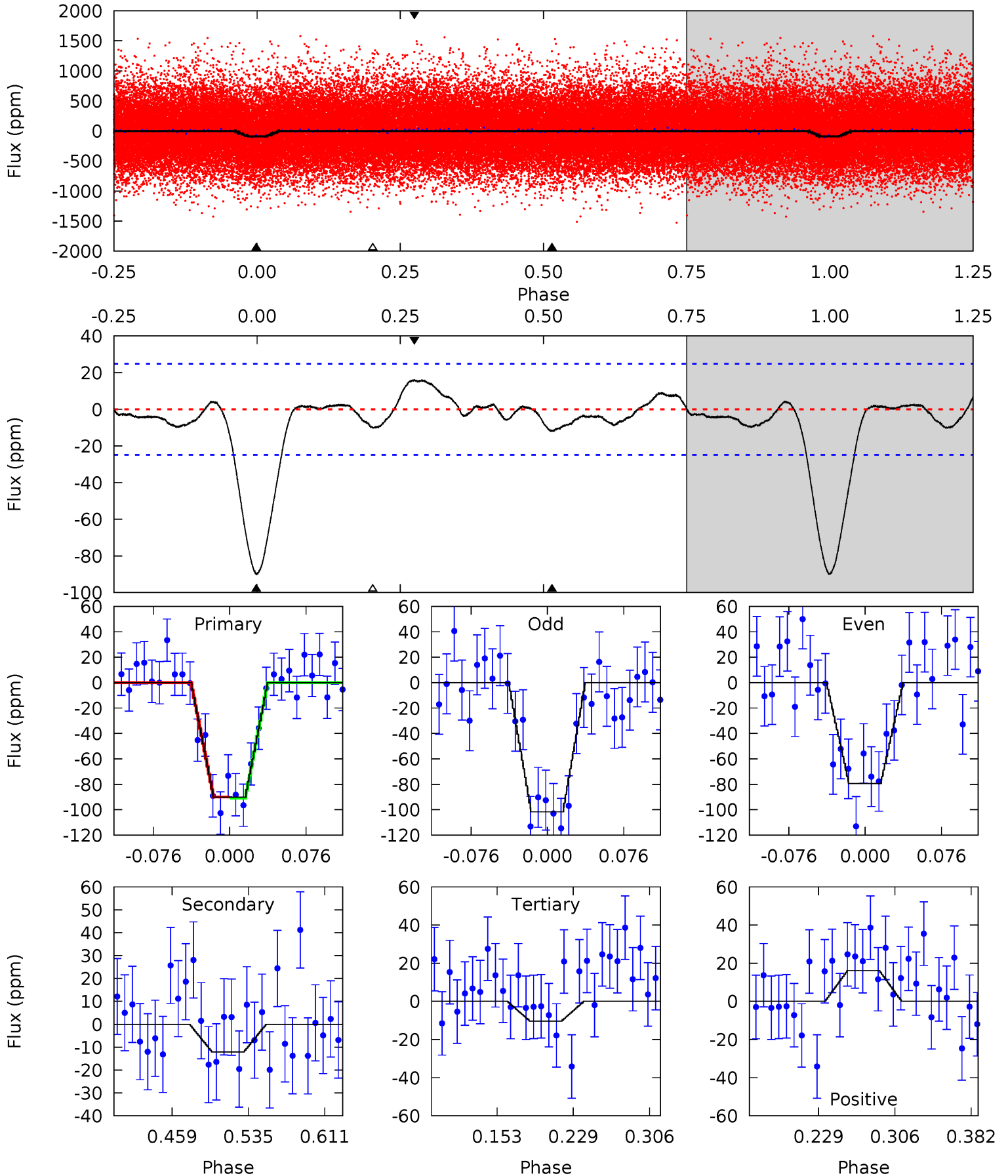




# Alt Model-Shift Uniqueness Test

005785279-01, P = 0.909128 Days, E = 131.495363 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  |
|------|------|------|------|-----------------|-----------------|------------------|---------|---------|---------|---------|---------|------|-------|------|
| 16.8 | 2.25 | 1.92 | 3.01 | 4.62            | 1.77            | 1.21             | 14.8    | 13.7    | 0.33    | -0.75   | 2.08    | 0.87 | 0.15  | 0.07 |





### Stellar Parameters For KIC 005785279

|        | $T_{\text{eff}}(K)$  | $\log(g)$                 | [Fe/H]                    | $R (R_{\odot})$           | $M(M_{\odot})$            | $p_{\star} (\text{g}\cdot\text{cm}^{-3})$ |
|--------|----------------------|---------------------------|---------------------------|---------------------------|---------------------------|---|
|        | $5486^{+164}_{-164}$ | $4.389^{+0.149}_{-0.182}$ | $0.060^{+0.250}_{-0.300}$ | $0.996^{+0.272}_{-0.168}$ | $0.885^{+0.101}_{-0.074}$ | $1.263^{+0.848}_{-0.623}$                 |
|        | +3%/-3%              | +3%/-4%                   | +417%/-500%               | +27%/-17%                 | +11%/-8%                  | +67%/-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 005785279-01 / KOI 4259.01

| Detrend | Depth (ppm) | $R_p (R_{\oplus})$     | $T_{max} (K)$        | $T_{obs} (K)$          | $A_{obs}$                 |
|---------|-------------|------------------------|----------------------|------------------------|---------------------------|
| DV      | $-13 \pm 5$ | $1.13^{+0.94}_{-0.69}$ | $2543^{+180}_{-153}$ | $3525^{+1543}_{-938}$  | $1.772^{+8.852}_{-1.316}$ |
| Alt.    | $-12 \pm 5$ | $1.20^{+0.91}_{-0.71}$ | $2544^{+190}_{-152}$ | $3387^{+1512}_{-1073}$ | $1.367^{+7.323}_{-1.006}$ |

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

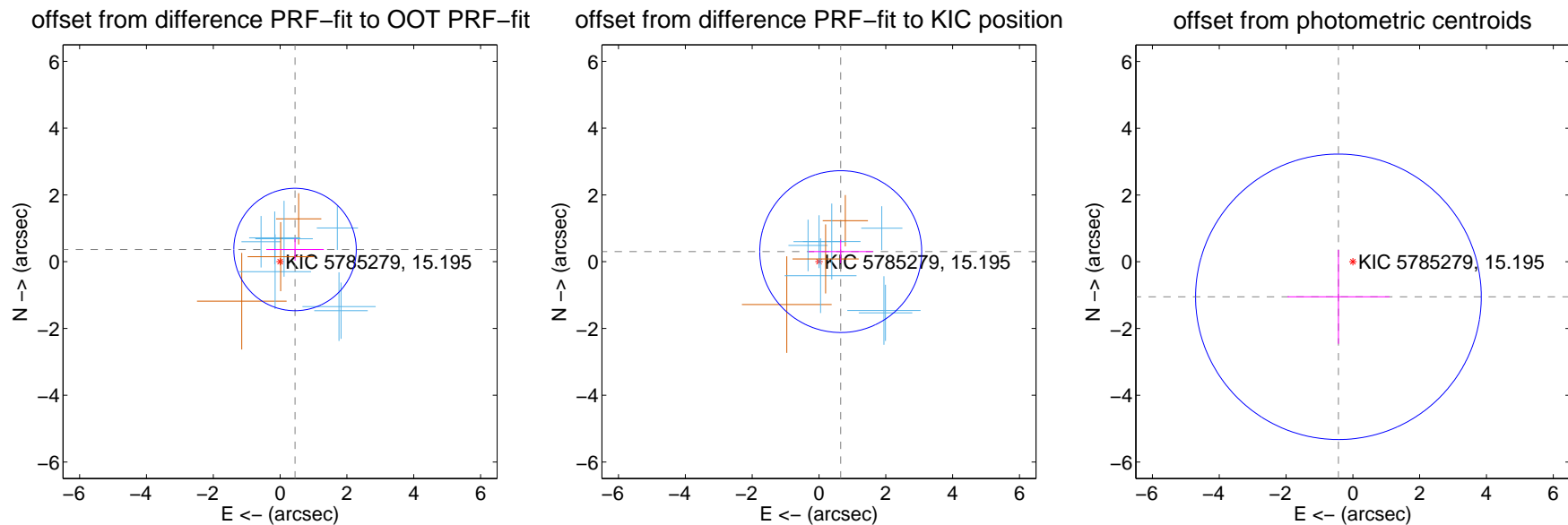
## DV Centroid Data

Supplemental centroid analysis for 005785279-01. Kepler magnitude: 15.20. Transit SNR 10.15

There are 7 quarters with good PRF difference image offsets

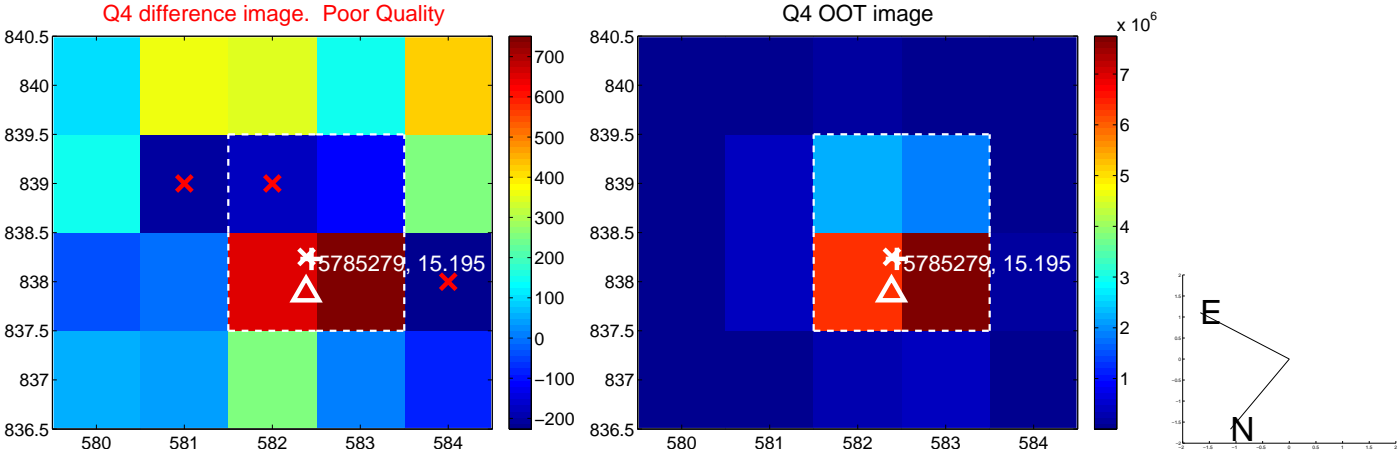
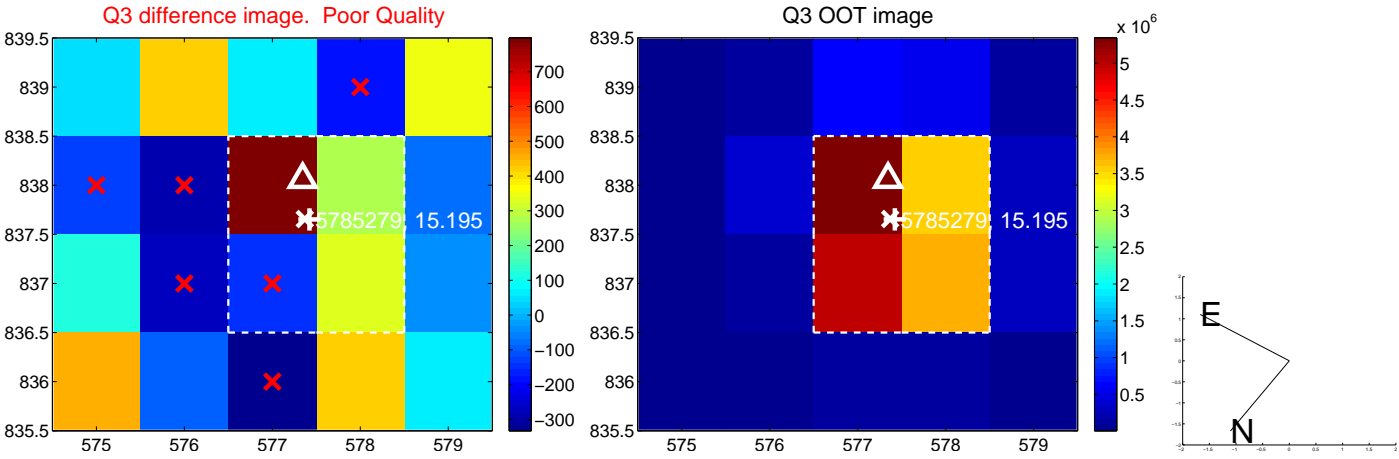
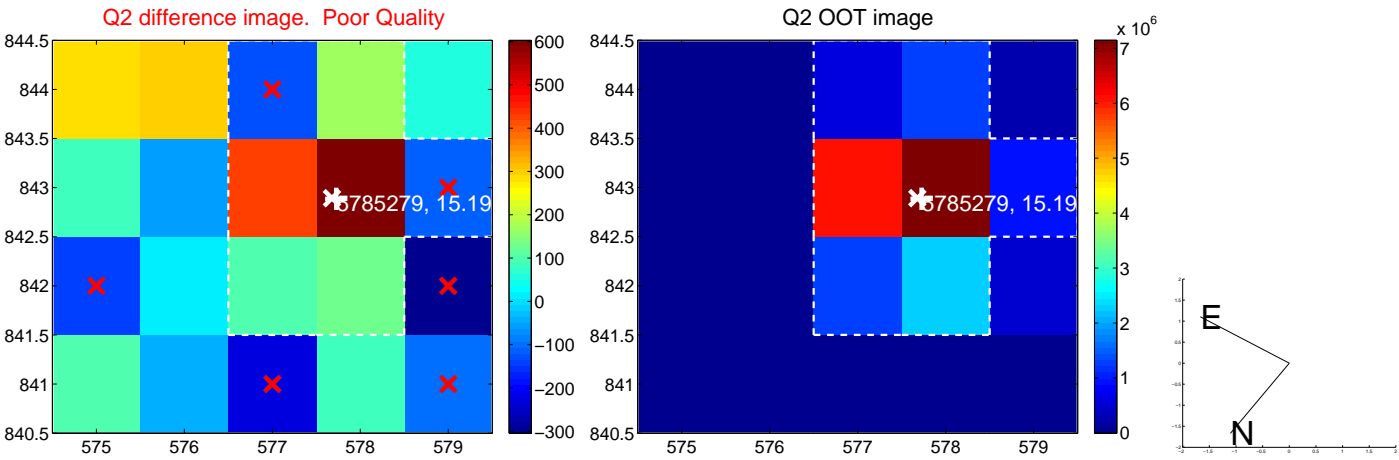
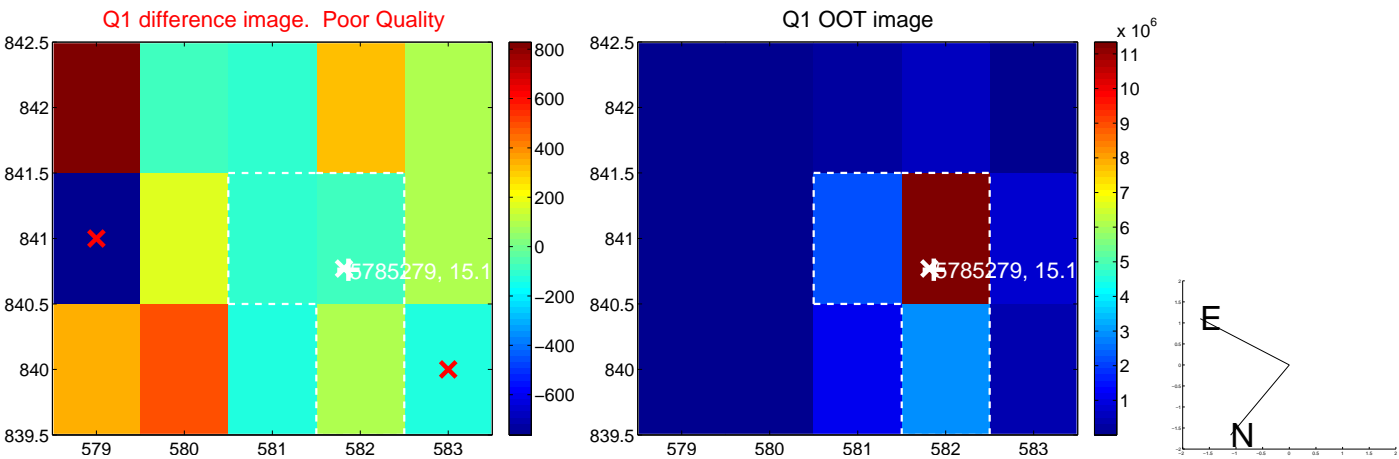
The direct PRF centroid is offset from the target star catalog position by about 0.27 arcsec

|   | Distance in arcsec | Distance / $\sigma$ | $\Delta$ RA        | $\Delta$ Dec      |
|---|--------------------|---------------------|--------------------|-------------------|
| PRF-fit source offset from OOT          | $0.577 \pm 0.611$  | 0.94                | $-0.447 \pm 0.861$ | $0.365 \pm 0.332$ |
| PRF-fit source offset from KIC position | $0.717 \pm 0.808$  | 0.89                | $-0.650 \pm 0.965$ | $0.302 \pm 0.350$ |
| photometric centroid source offset      | $1.14 \pm 1.43$    | 0.80                | $0.43 \pm 1.53$    | $-1.05 \pm 1.41$  |

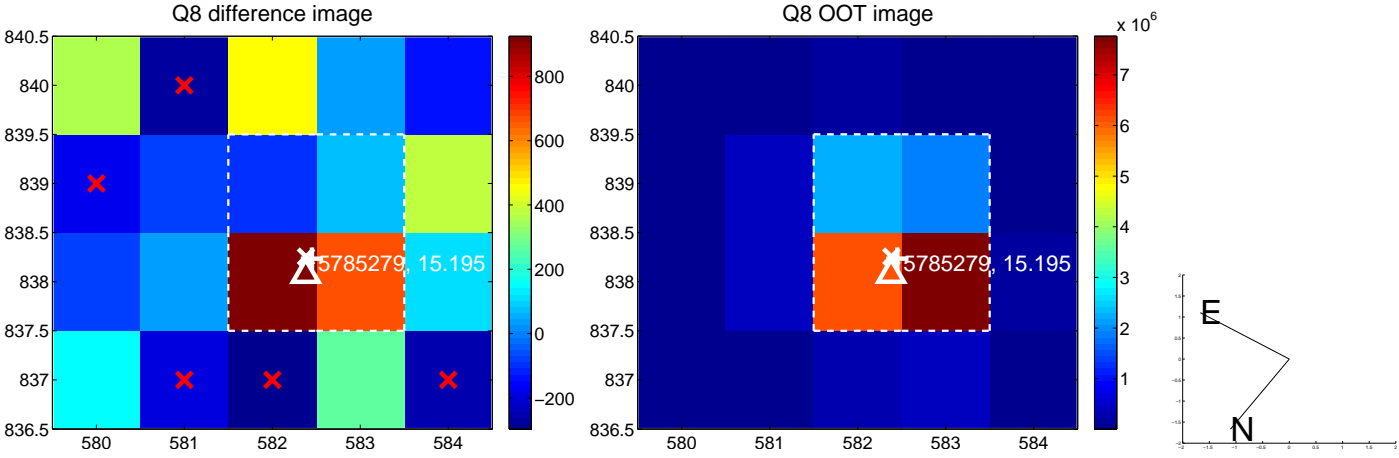
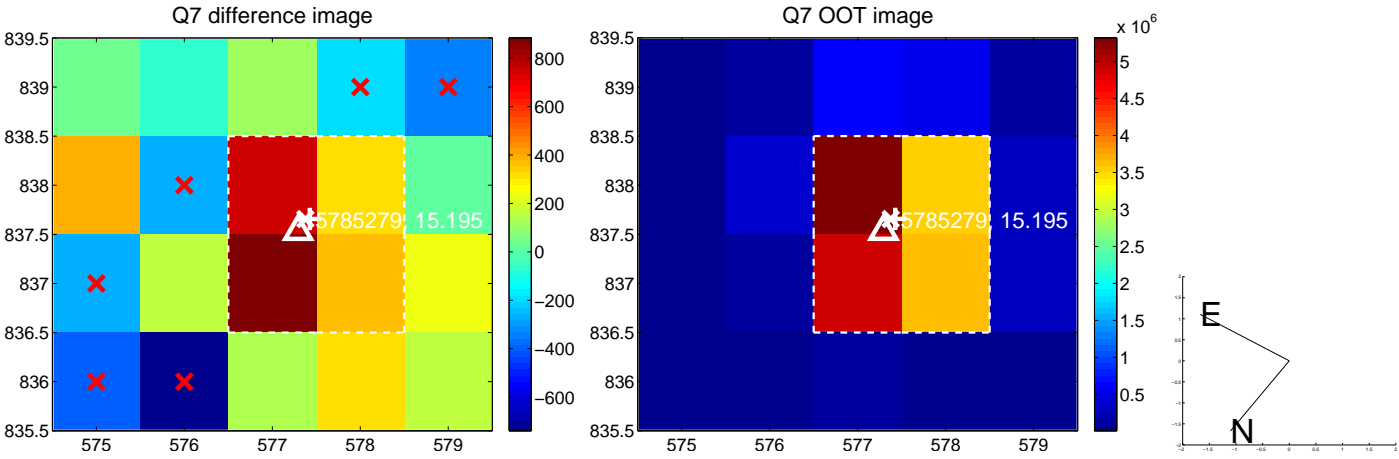
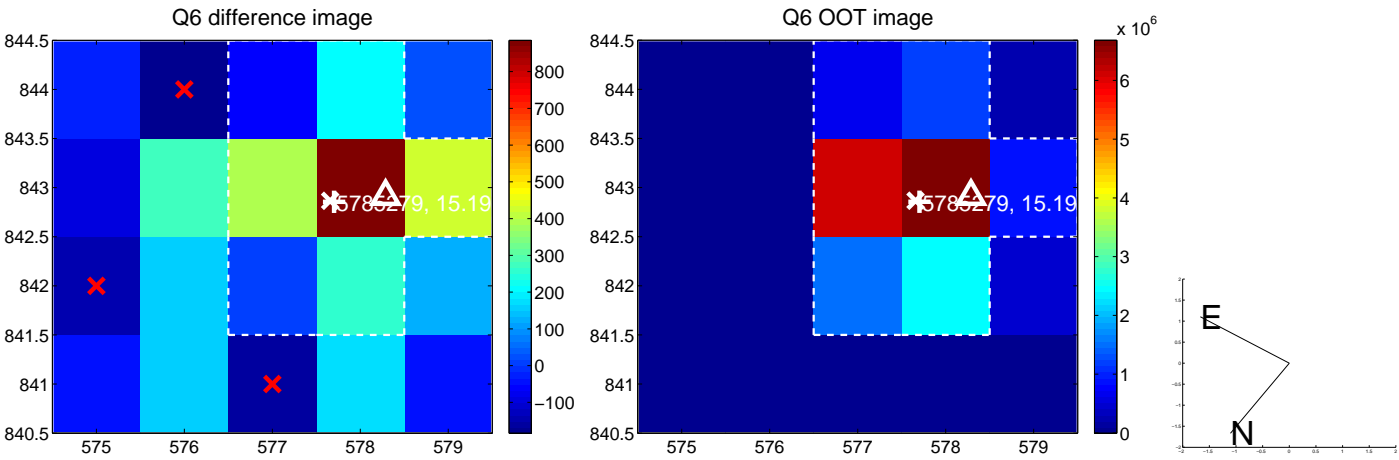
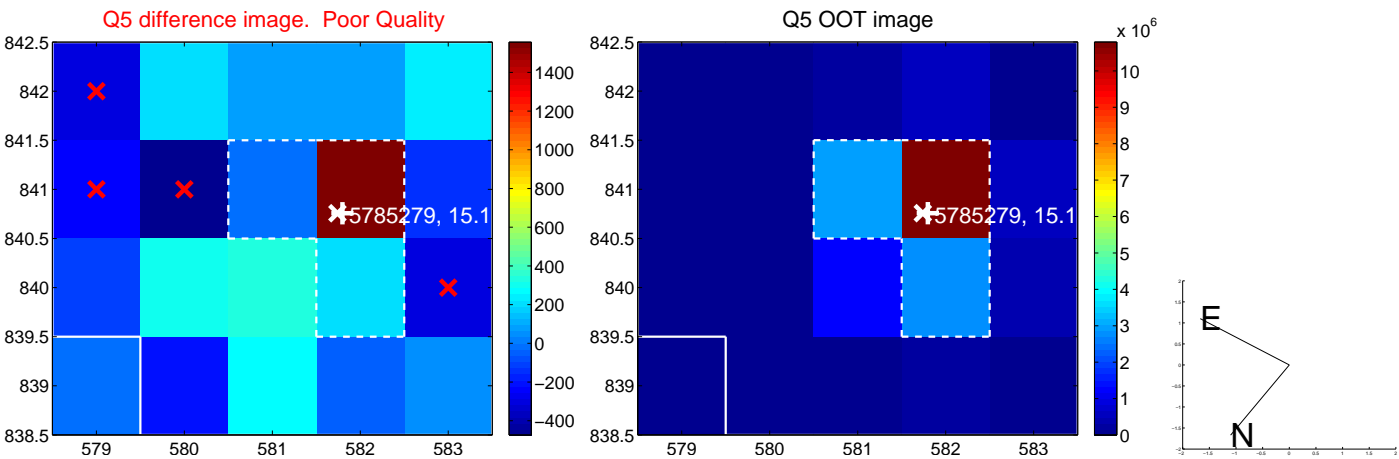


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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

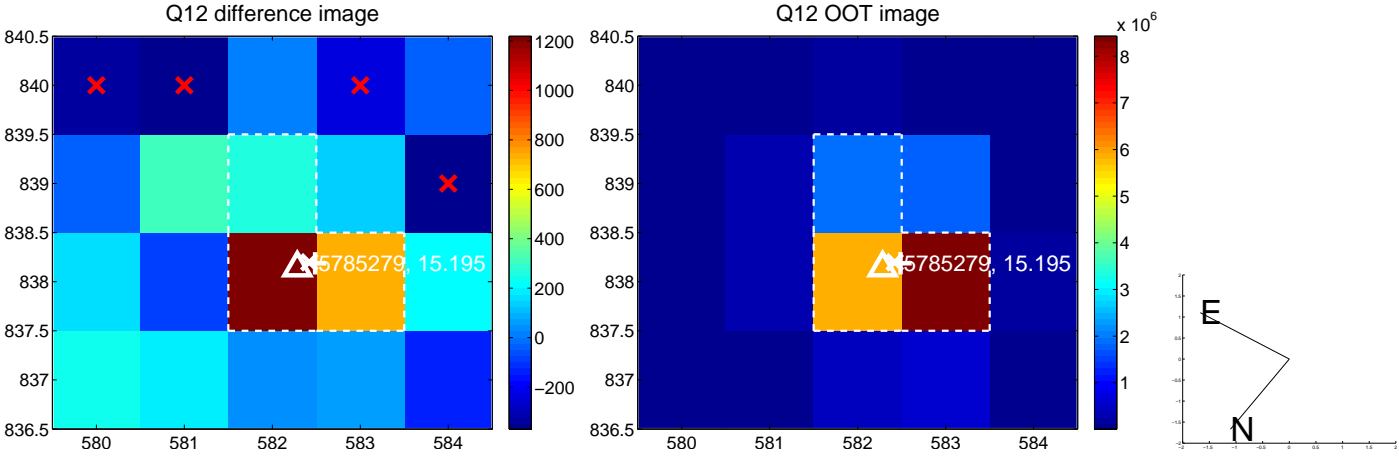
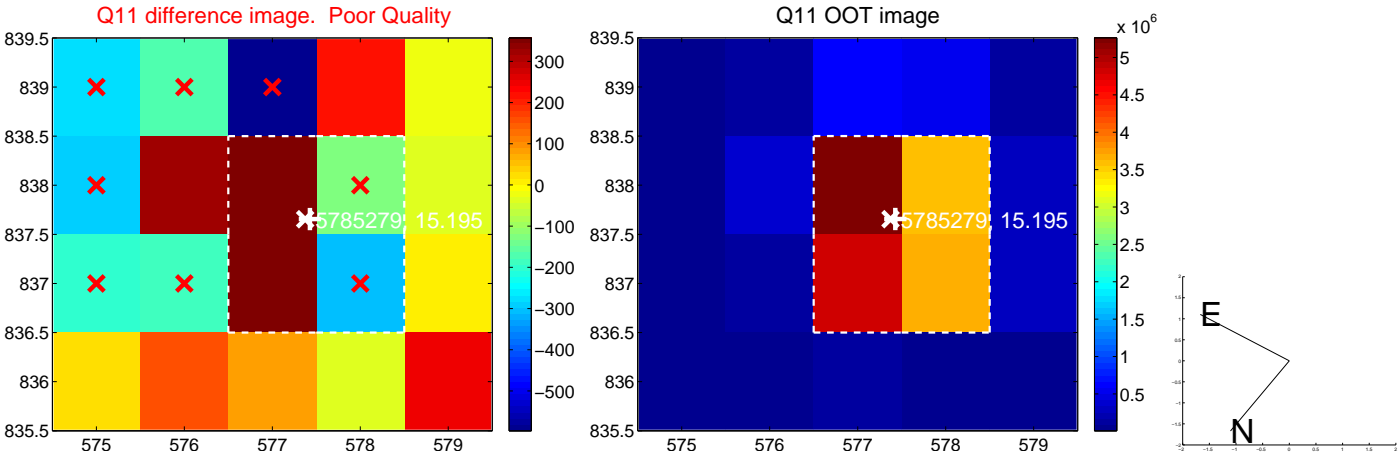
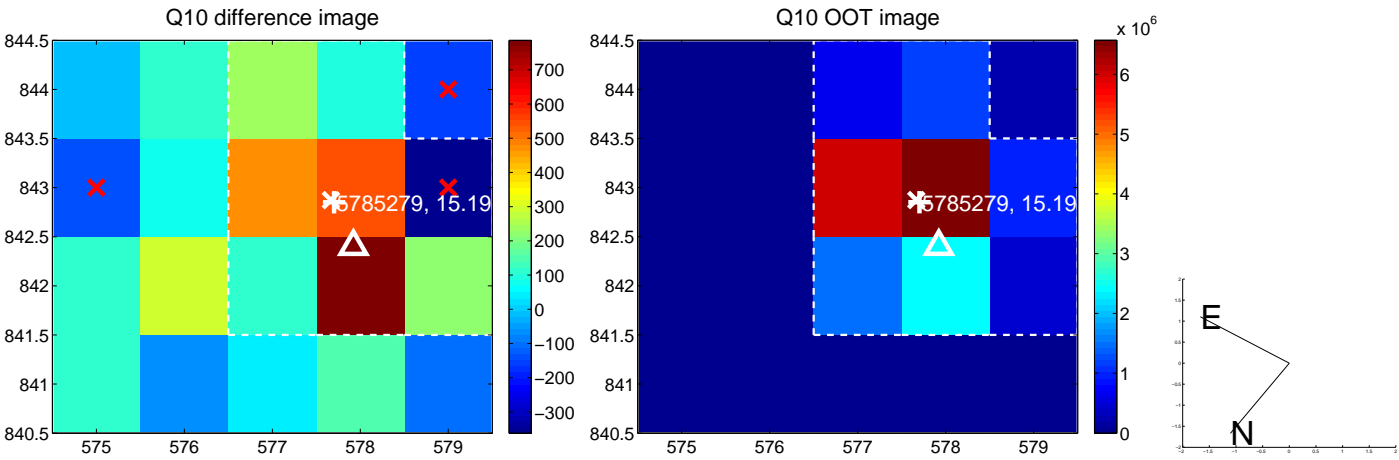
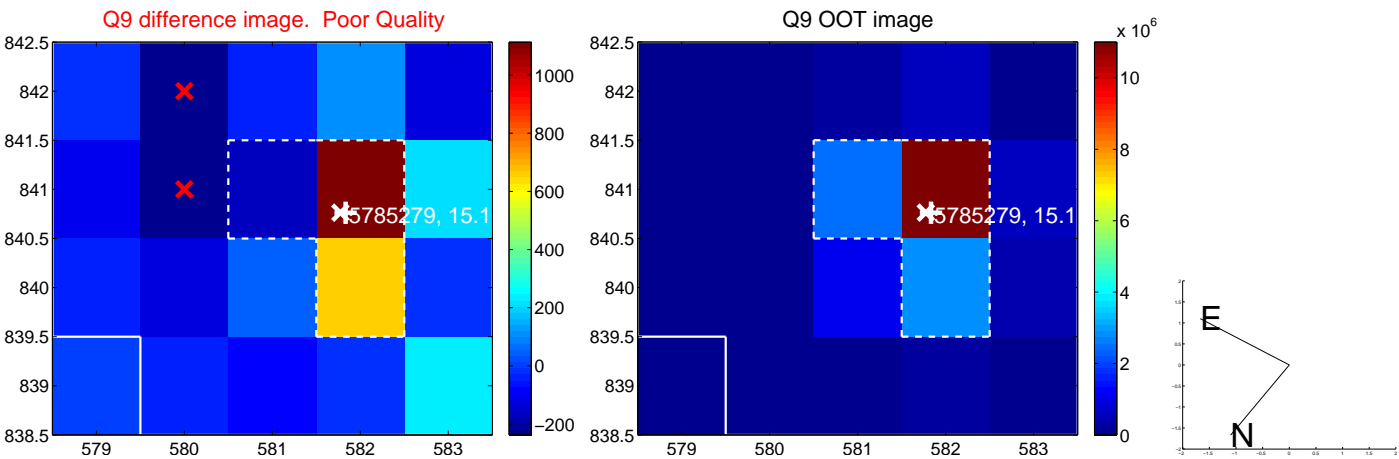


white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

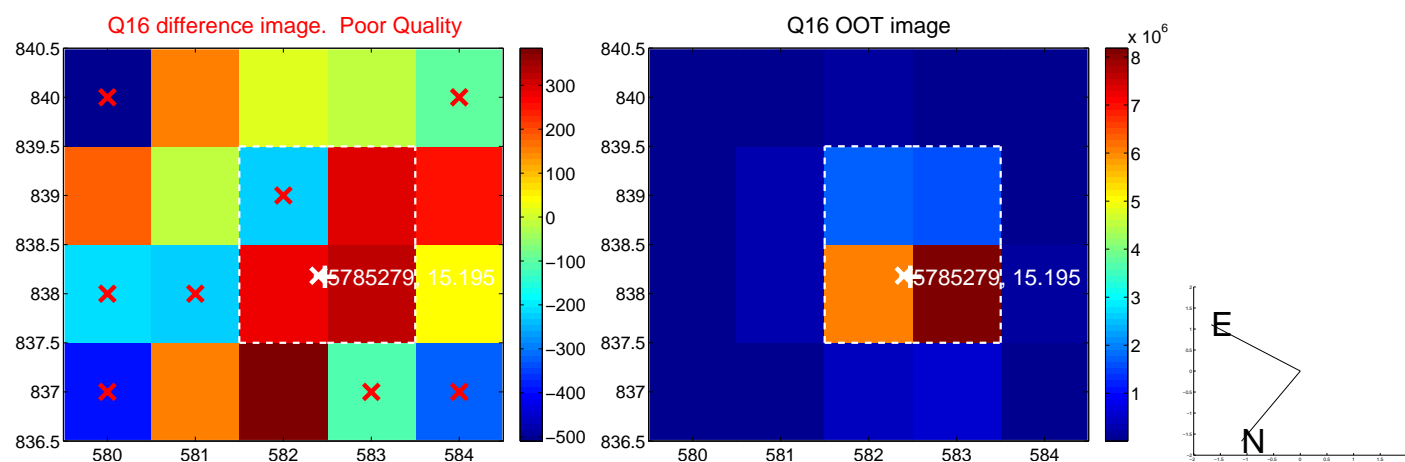
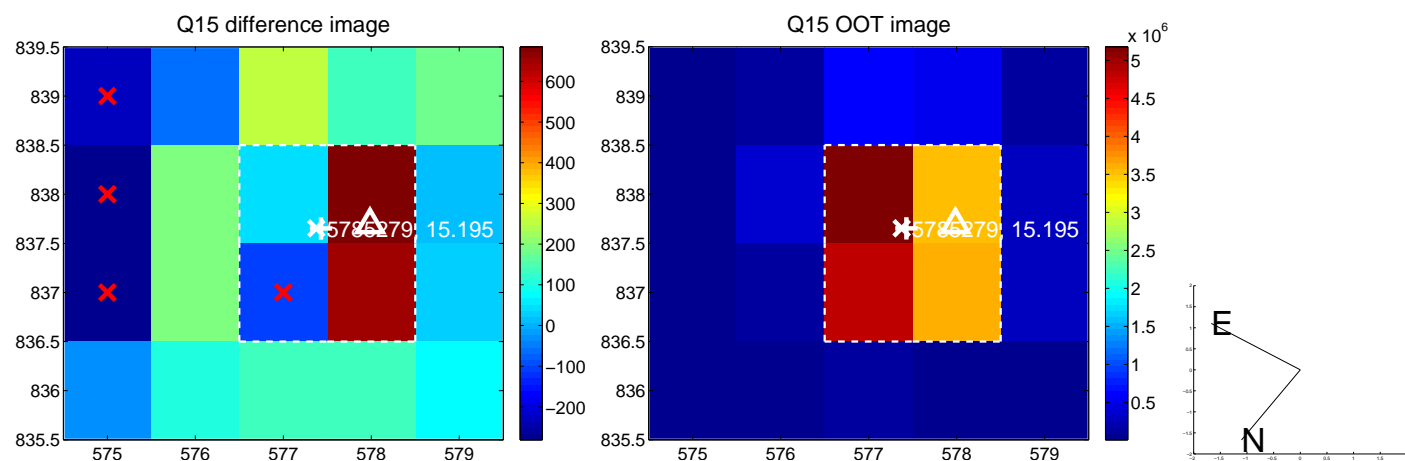
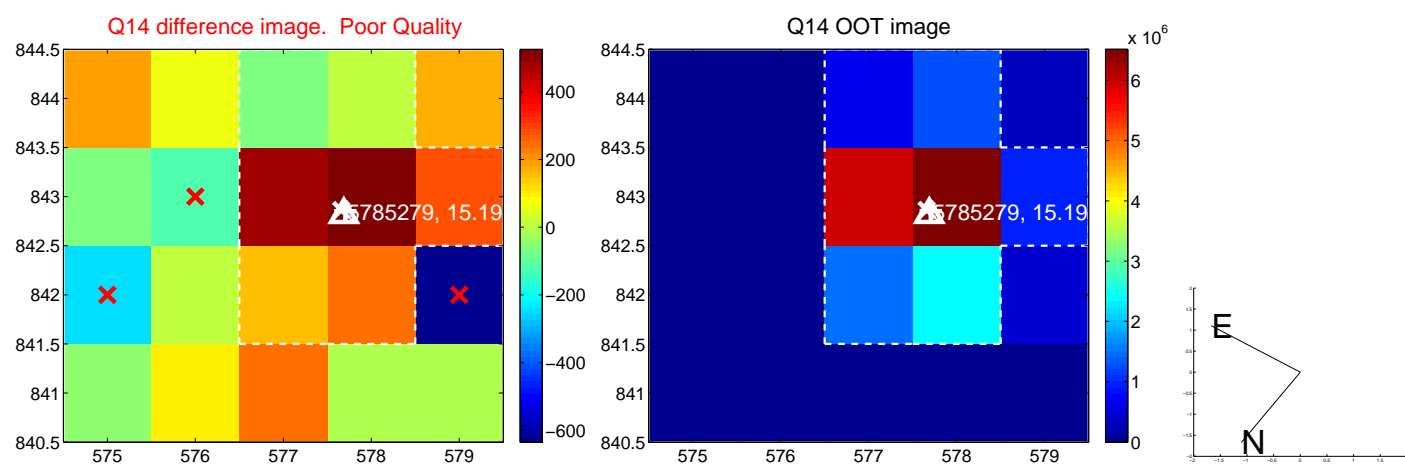
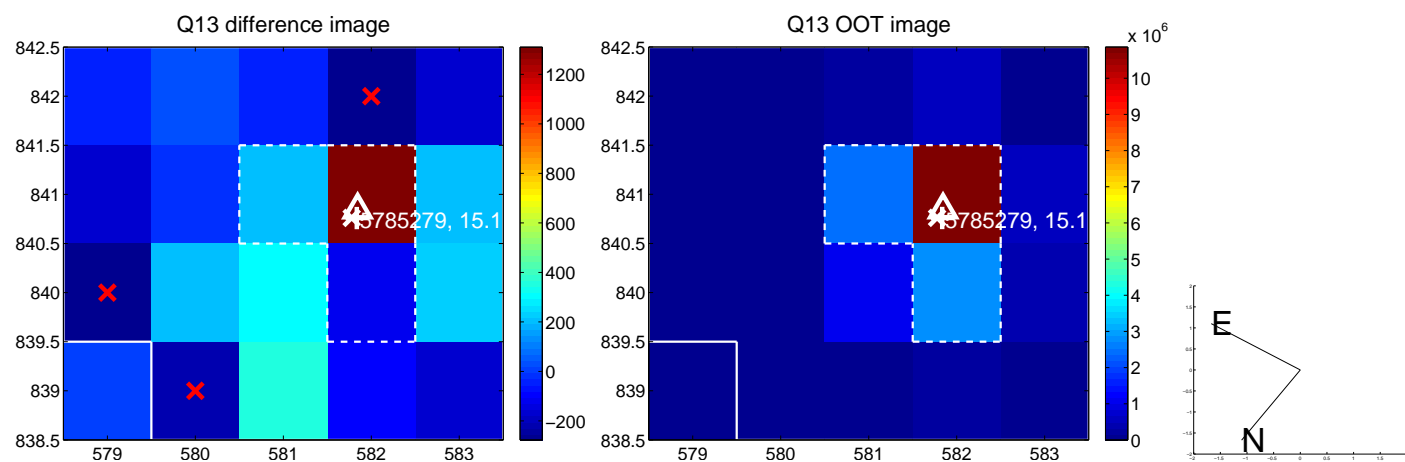




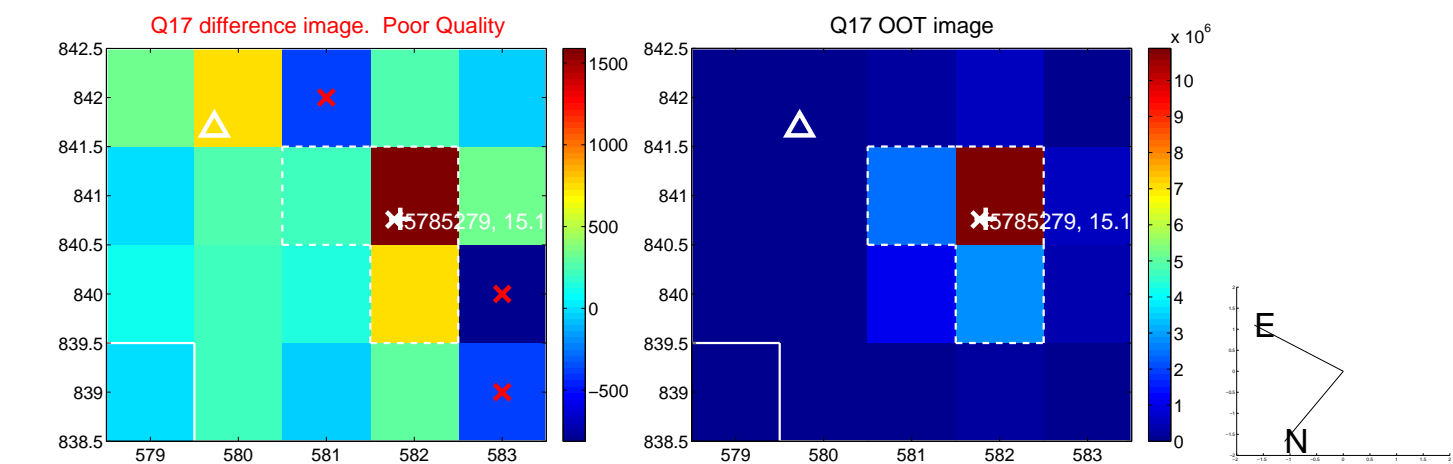
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



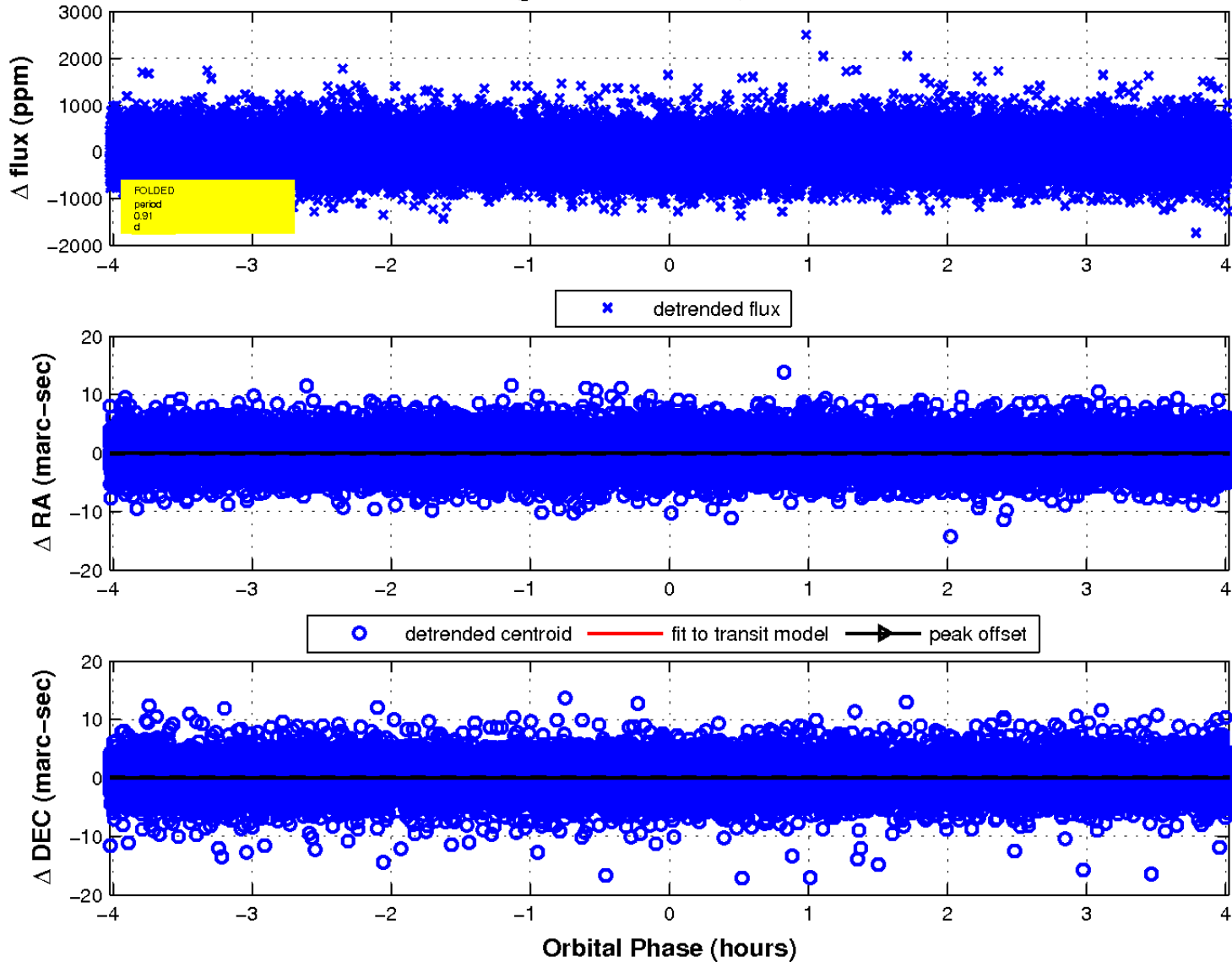
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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



fluxWeightedCentroids, Planet 1 of 1



UKIRT Image

Declination

