

# KIC 008179325

## 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) | $R_p$ ( $R_{\oplus}$ ) | $S_p$ ( $S_{\oplus}$ ) |
|--------------|----------|---------|---------------|--------------|-------------|------------------|------|------|-----------------------------|-----------------|------------------------|------------------------|
| 008179325-01 | OBS      | 2359.01 | 3.172779      | 133.982908   | 311.1       | 7.073            | 22.4 | 25.2 | 0.74                        | 5058            | 2.16                   | 206.06                 |

## Robovetter Results

| TCE          | Run Type | Disp | Score | N | S | C | E | Comments                        |
|--------------|----------|------|-------|---|---|---|---|---------------------------------|
| 008179325-01 | OBS      | FP   | 0.00  | 0 | 0 | 1 | 0 | CENT_RESOLVED_OFFSET—HALO_GHOST |

**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 008179325-01

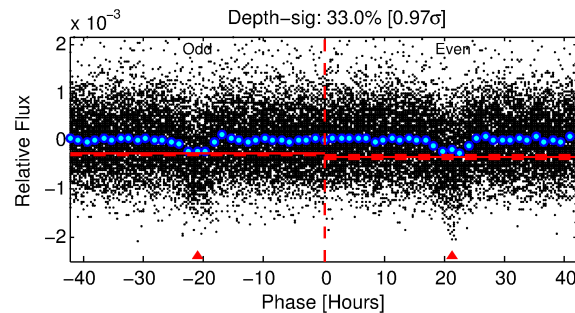
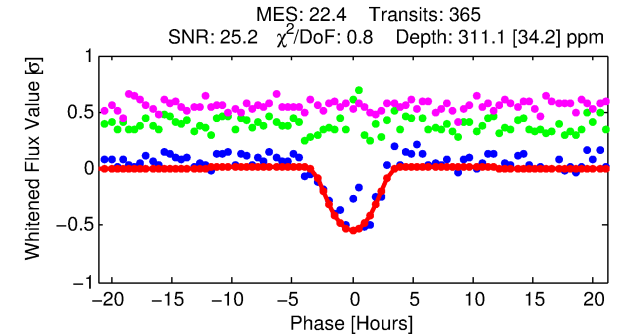
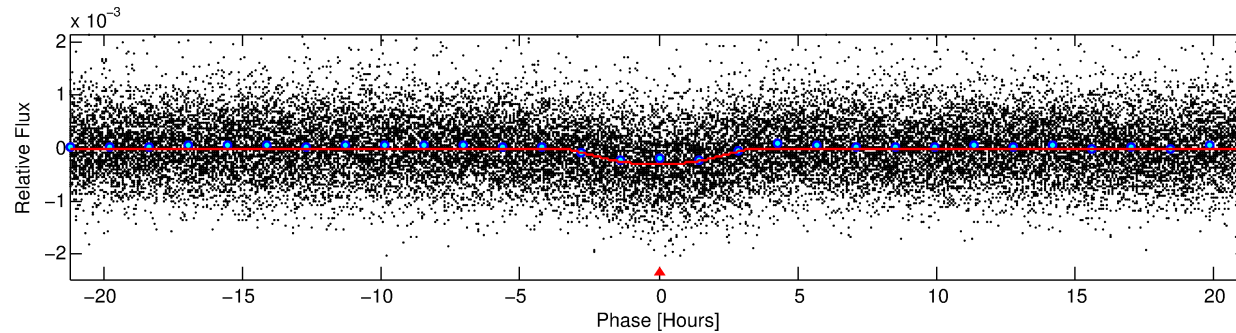
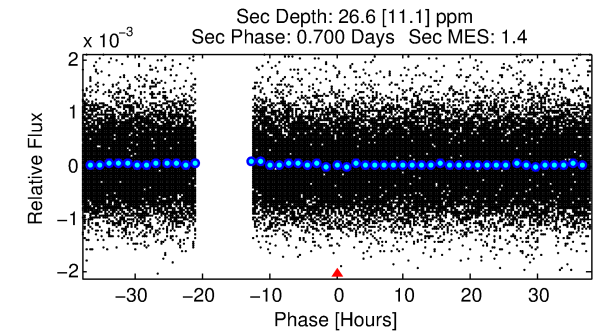
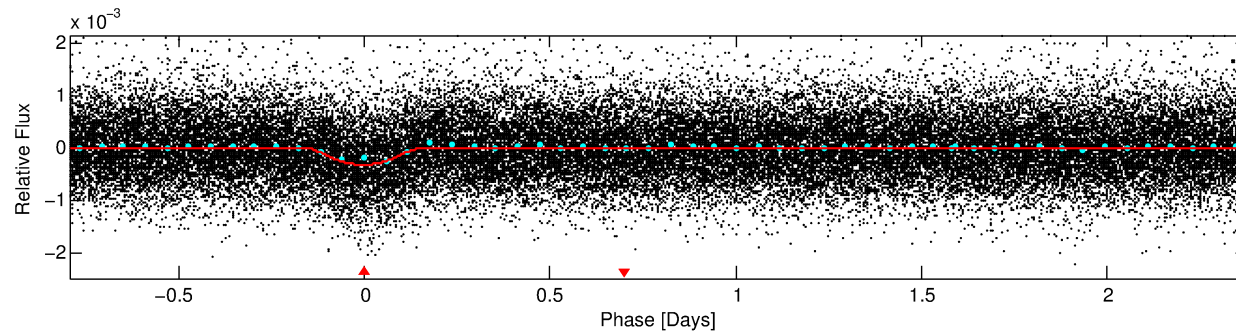
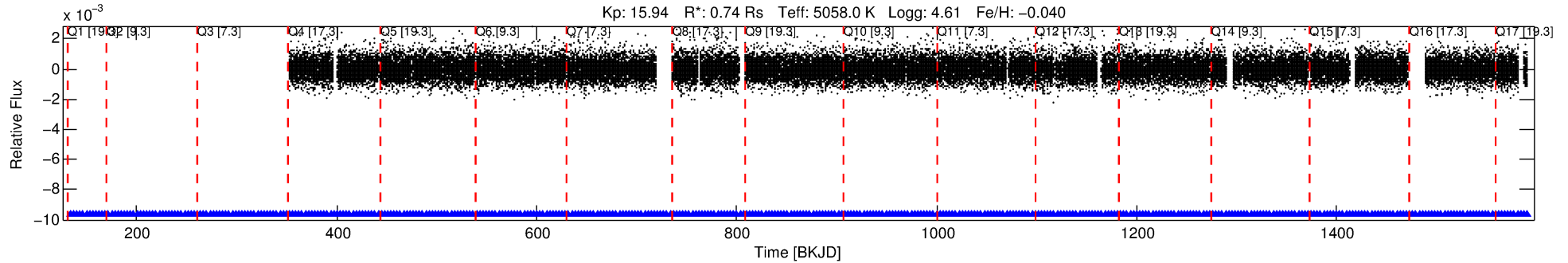
No Significant Match Found

# DV One-Page Summary

KIC: 8179325 Candidate: 1 of 1 Period: 3.173 d

KOI: K02359.01 Corr: 0.878

Kp: 15.94 R\*: 0.74 Rs Teff: 5058.0 K Logg: 4.61 Fe/H: -0.040



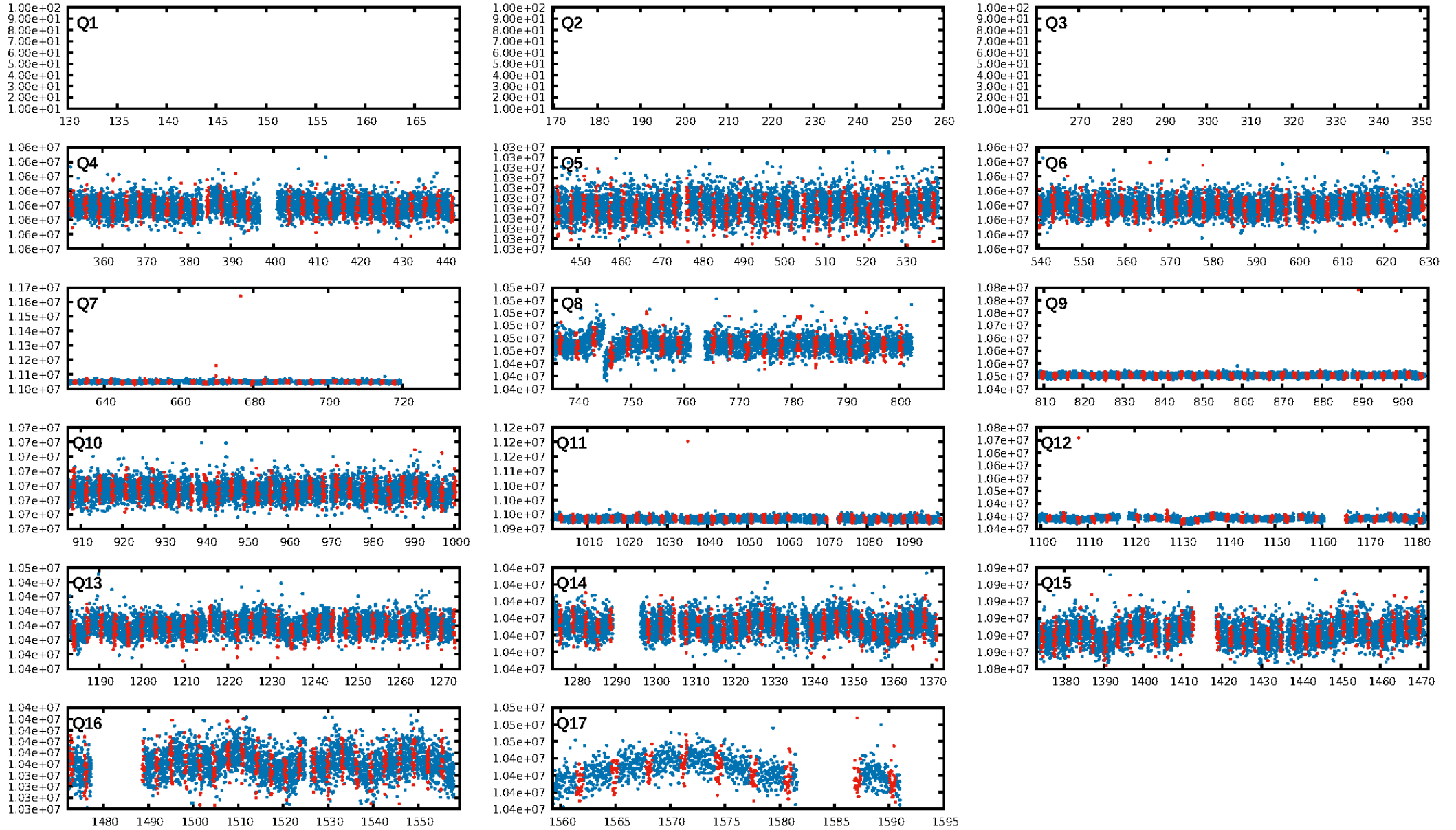
## DV Fit Results:

Period = 3.17278 [0.00003] d  
Epoch = 133.9829 [0.0078] BKJD  
Rp/R\* = 0.0268 [0.0146]  
a/R\* = 1.39 [0.14]  
b = 0.99 [0.03]  
Seff = 206.06 [43.55]  
Teq = 966 [51] K  
Rp = 2.16 [1.21] Re  
a = 0.0394 [0.0042] AU  
Ag = 4.87 [5.74] [0.68σ]  
Teffp = 2219 [653] K [1.91σ]

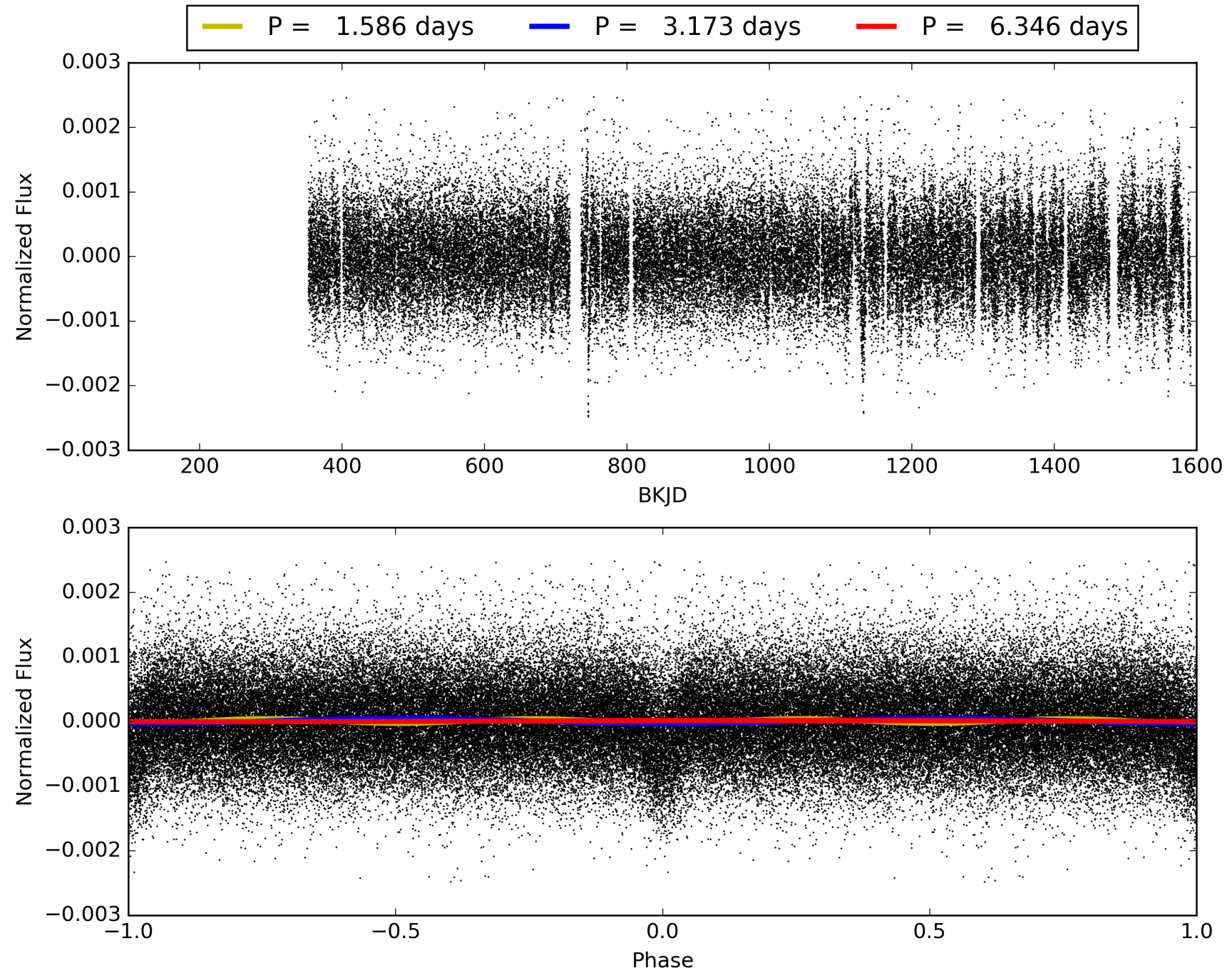
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: N/A  
ModelChiSquareGof-sig: N/A  
Bootstrap-pfa: 1.97e-106  
RollingBand-fgt: 1.00 [356/356]  
GhostDiagnostic-chr: -0.2168  
Centroid-sig: 0.0%  
Centroid-so: 334.111 arcsec [433.20σ]  
OotOffset-rm: N/A  
KicOffset-rm: N/A  
OotOffset-st: 0/0/0/0 [0]  
KicOffset-st: 0/0/0/0 [0]  
DiffImageQuality-fgm: N/A  
DiffImageOverlap-fno: 1.00 [14/14]

# TCE 008179325-01, PDC Light Curves

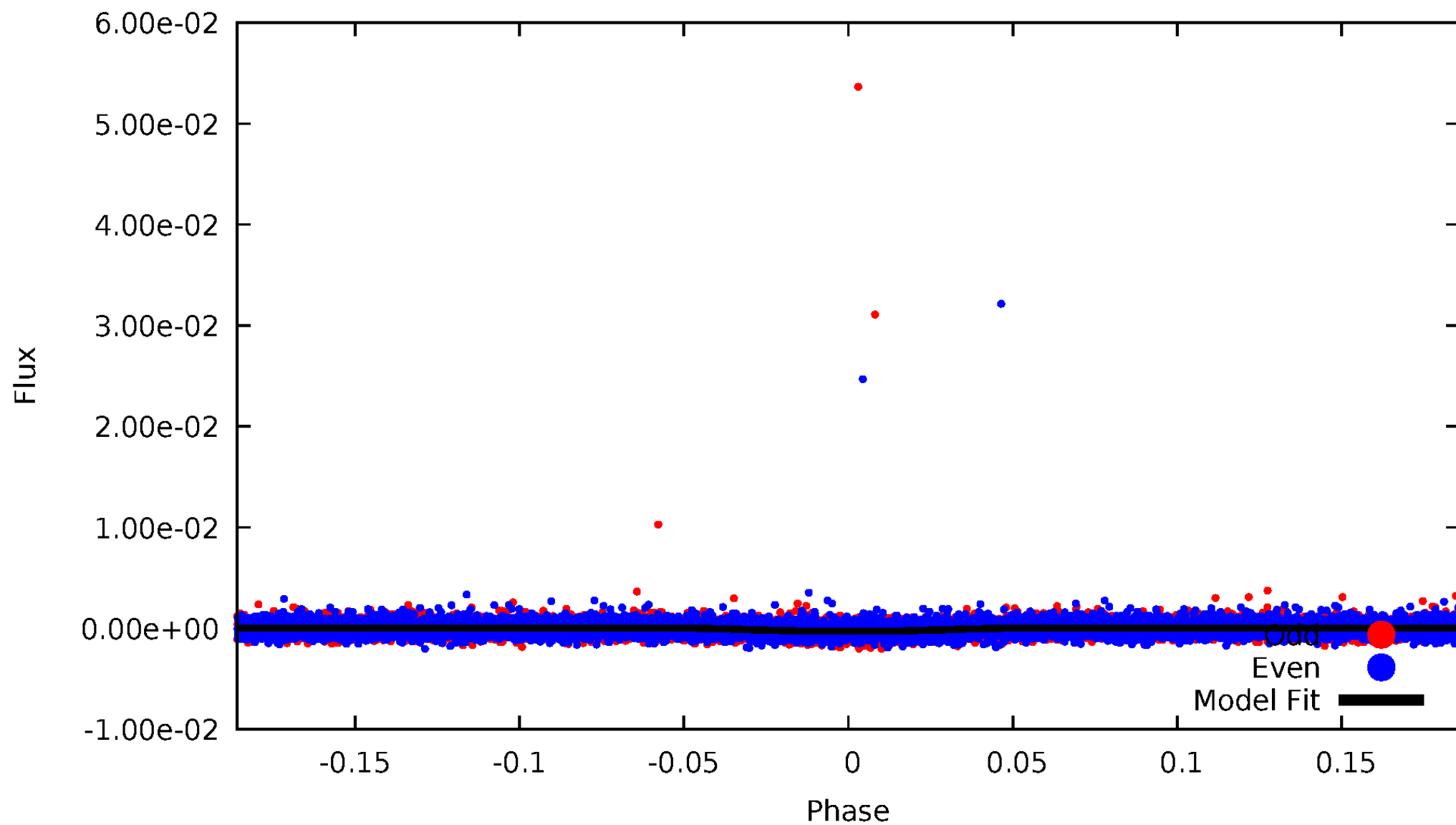


TCE 008179325-01



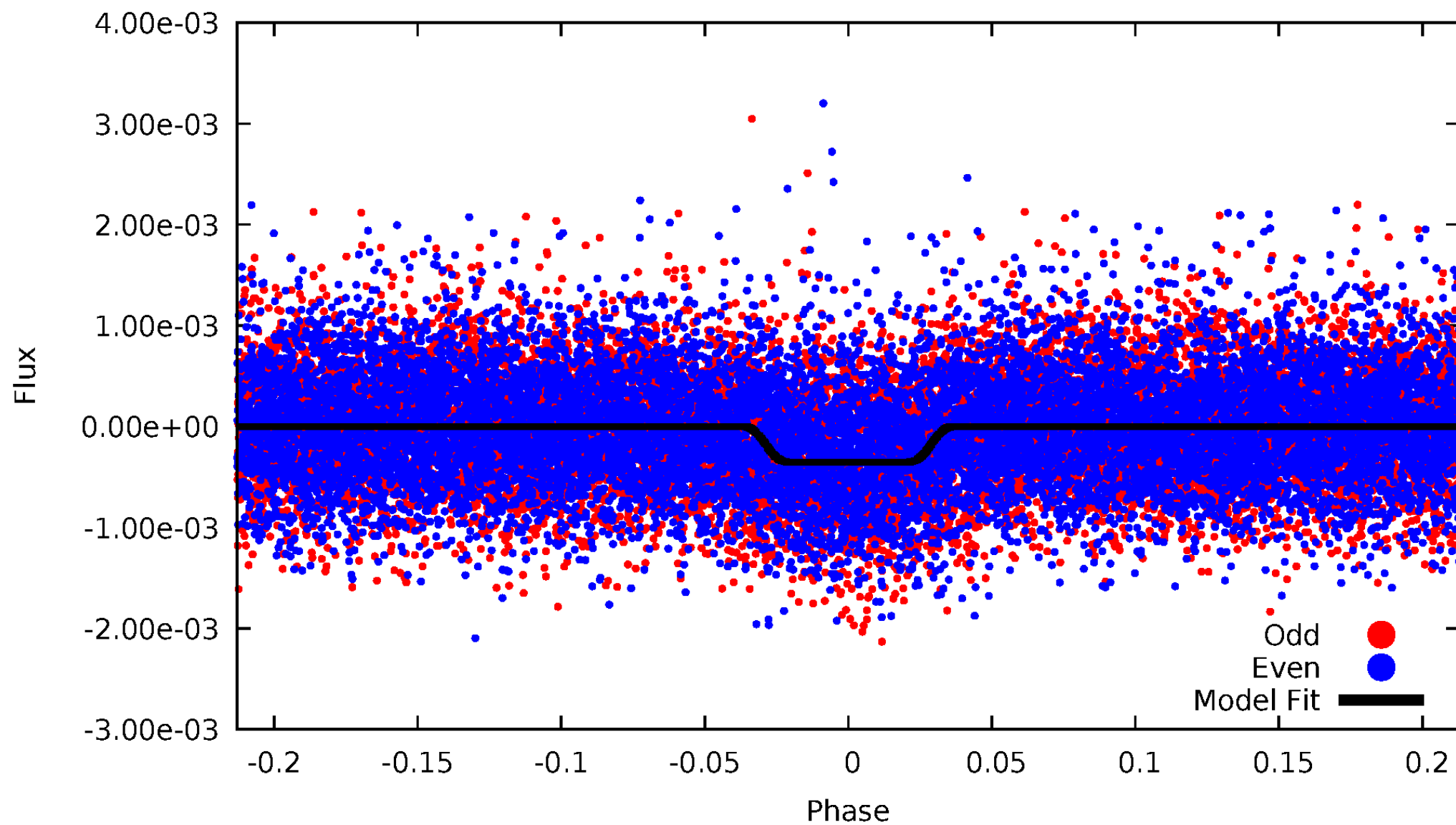
# DV Odd/Even

TCE 008179325-01



# ALT Odd/Even

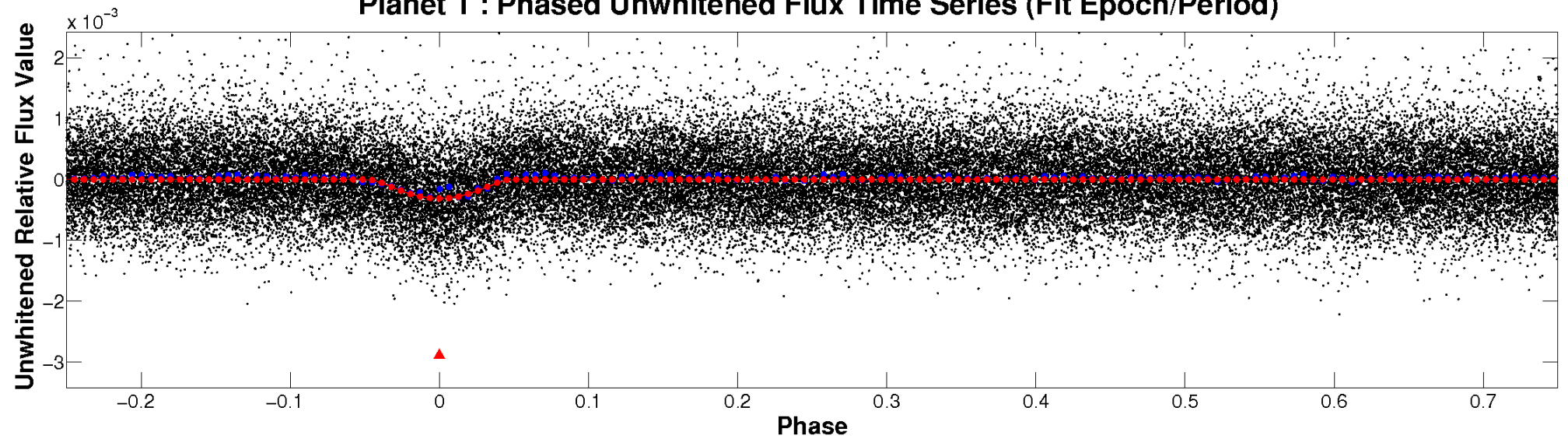
TCE 008179325-01



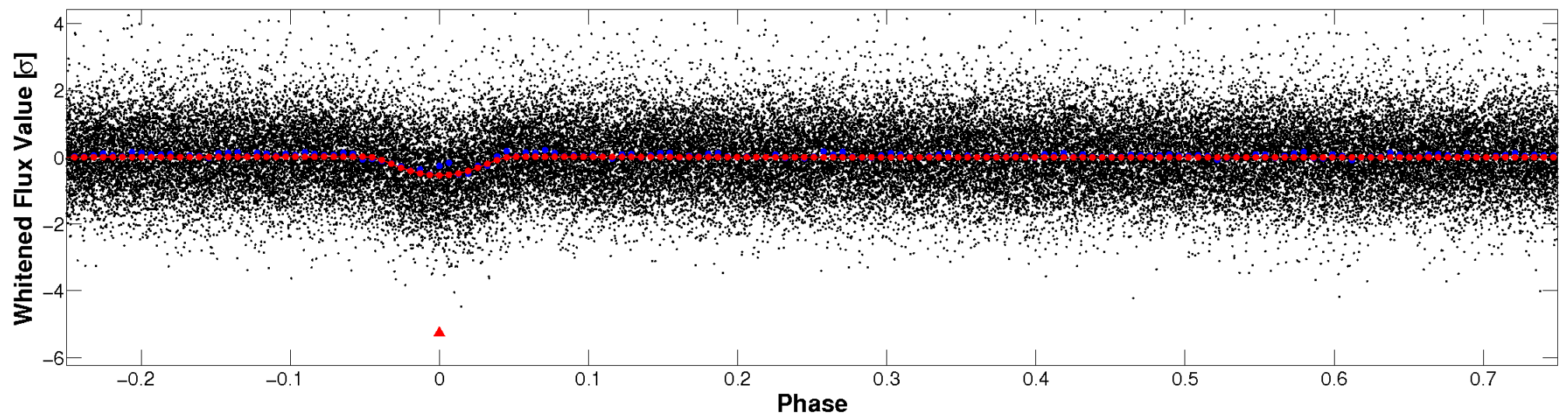


# Non-Whitened Vs. Whitened Light Curve

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

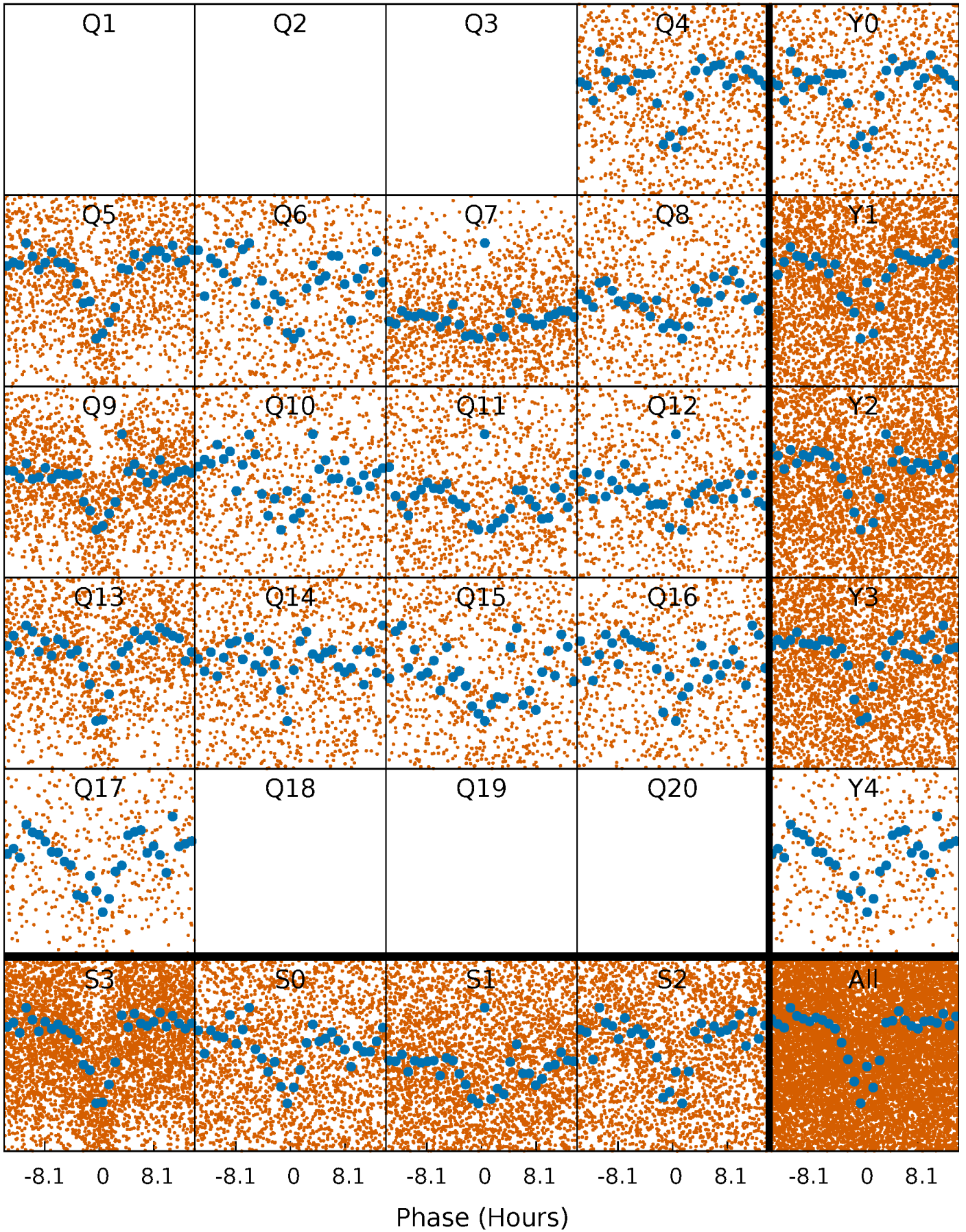


**Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)**



# PDC Quarter-Phased Transit Curves

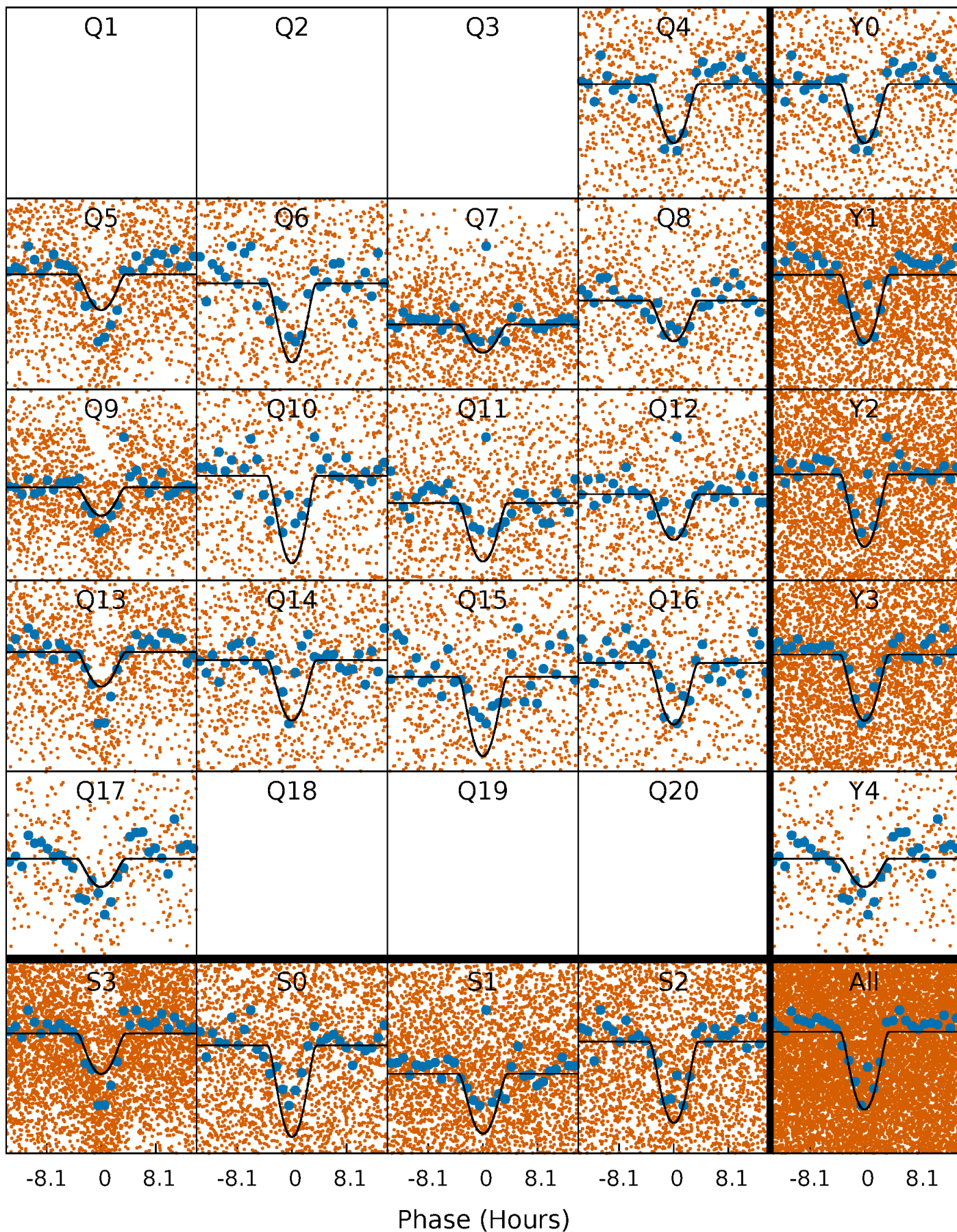
TCE 008179325-01 P= 3.172779 Days  $T_0=133.982908$  (BKJD)





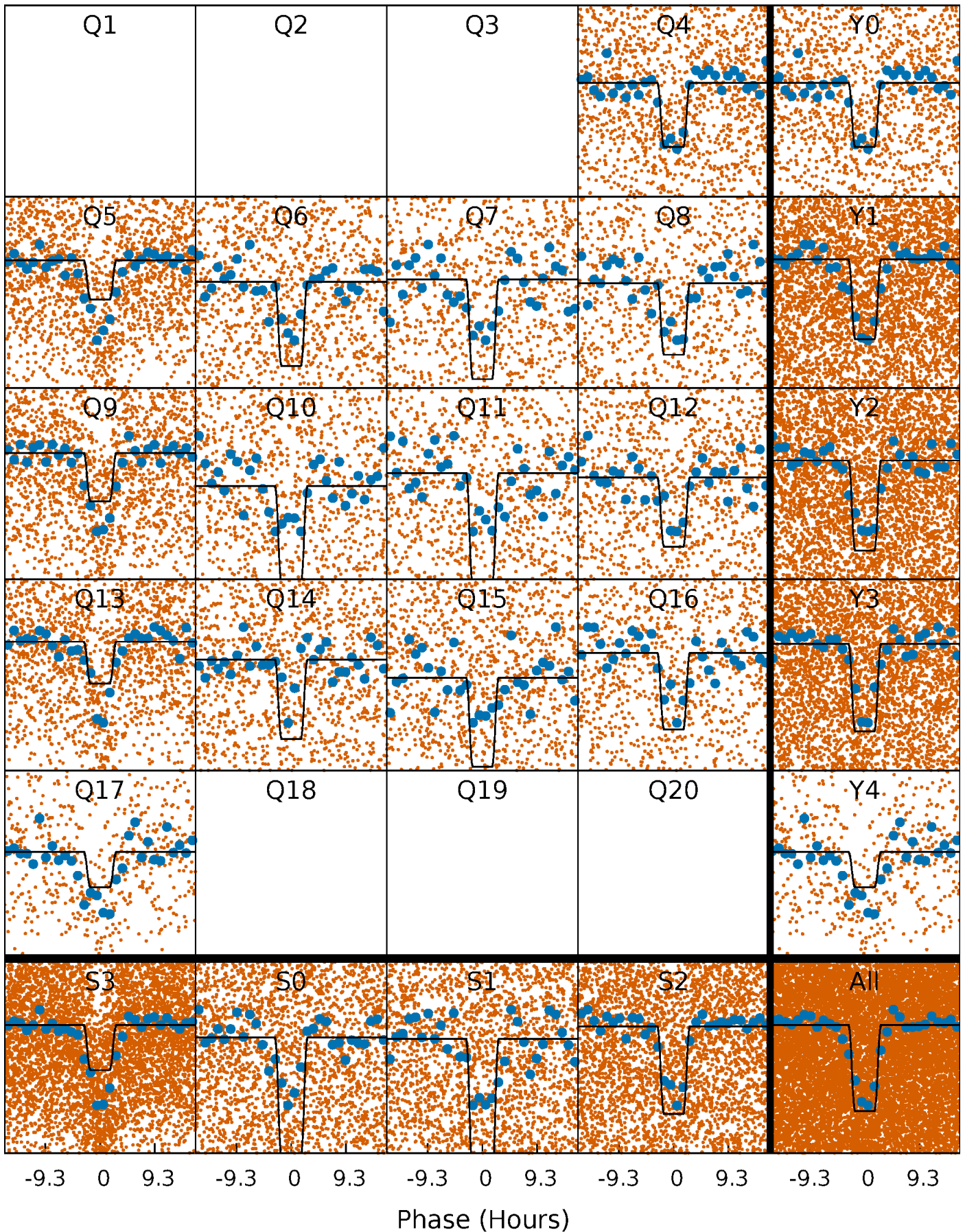
# DV Quarter-Phased Transit Curves

TCE 008179325-01 P= 3.172779 Days  $T_0=133.982908$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

TCE 008179325-01 P= 3.172734 Days  $T_0=133.993058$  (BKJD)

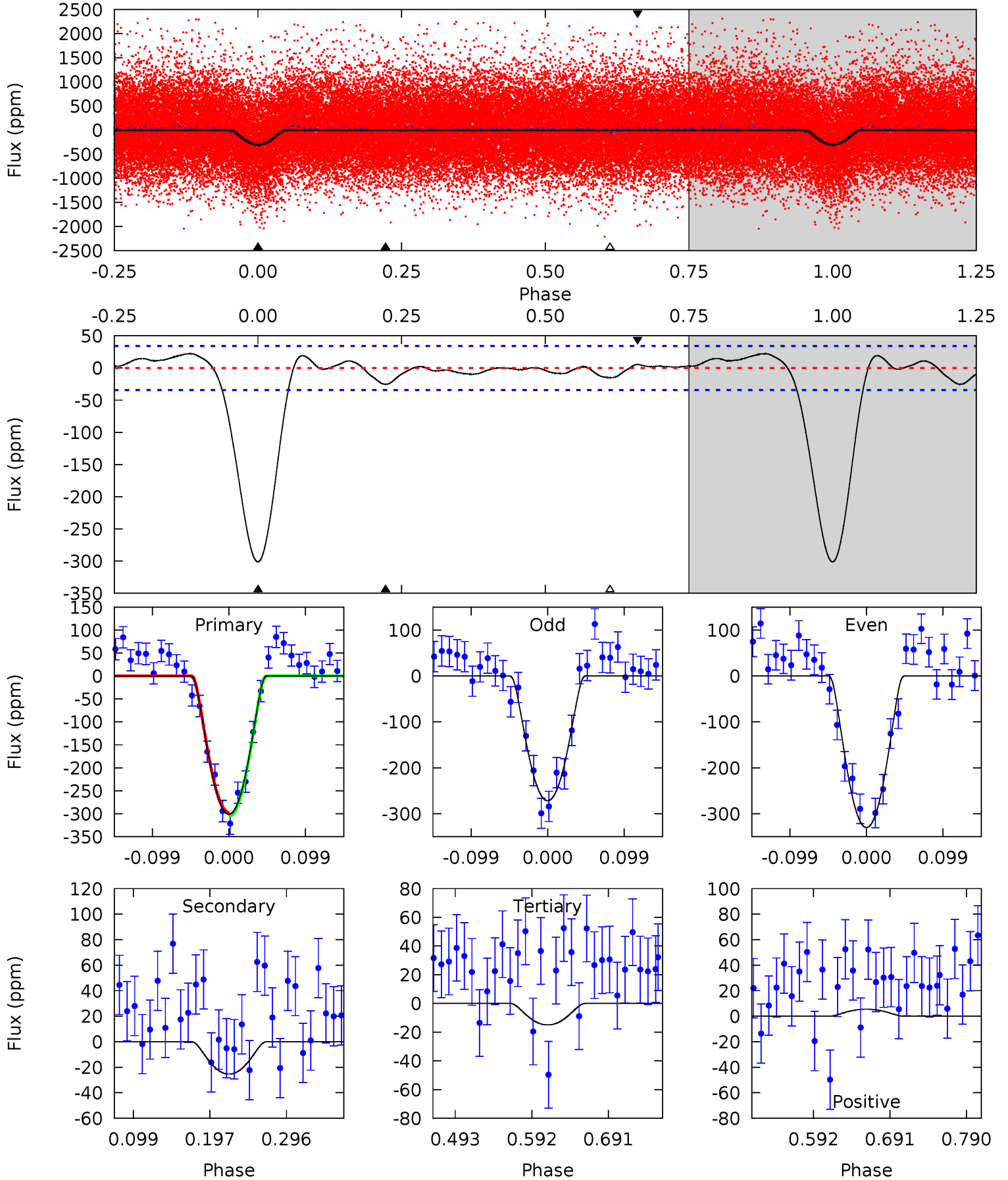




# DV Model-Shift Uniqueness Test

008179325-01, P = 3.172779 Days, E = 133.982908 Days

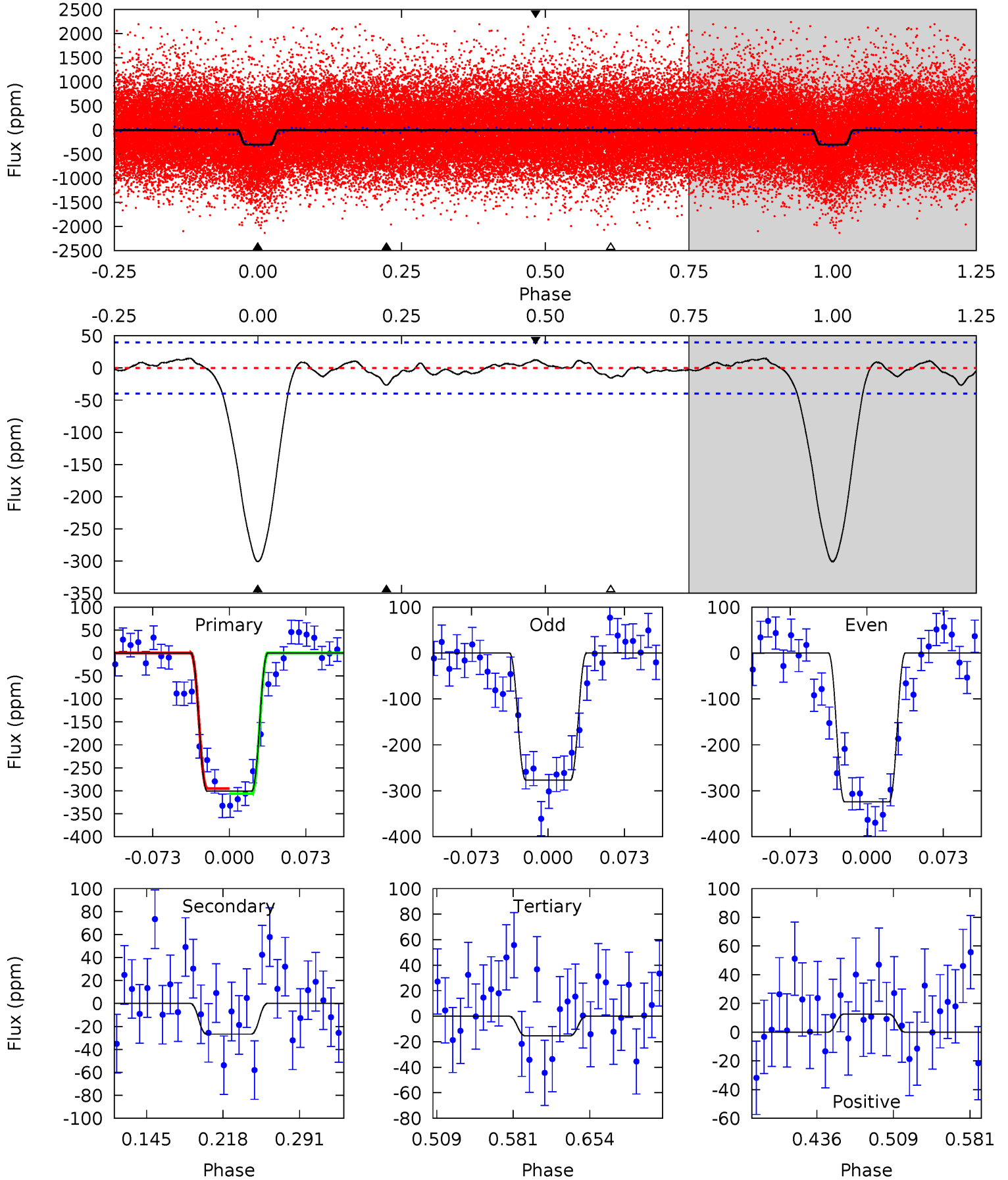
| Pri  | Sec  | Ter  | Pos  | FA <sub>1</sub> | FA <sub>2</sub> | F <sub>Red</sub> | Pri-Ter | Pri-Pos | Sec-Ter | Sec-Pos | Odd-Evn | DMM  | Shape | TAT  |
|------|------|------|------|-----------------|-----------------|------------------|---------|---------|---------|---------|---------|------|-------|------|
| 40.3 | 3.39 | 2.00 | 0.74 | 4.57            | 1.65            | 1.20             | 38.3    | 39.6    | 1.39    | 2.65    | 3.91    | 0.93 | 0.07  | 0.48 |



# Alt Model-Shift Uniqueness Test

008179325-01, P = 3.172734 Days, E = 133.993058 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  |
|------|------|------|------|-----------------|-----------------|------------------|---------|---------|---------|---------|---------|------|-------|------|
| 35.0 | 3.11 | 1.79 | 1.47 | 4.63            | 1.79            | 0.85             | 33.2    | 33.5    | 1.31    | 1.64    | 2.75    | 1.06 | 0.05  | 0.64 |





### Stellar Parameters For KIC 008179325

|        | $T_{\text{eff}} (K)$ | $\log(g)$                 | $[\text{Fe}/\text{H}]$     | $R (R_{\odot})$           | $M (M_{\odot})$           | $p_{\star} (\text{g}\cdot\text{cm}^{-3})$ |
|--------|----------------------|---------------------------|----------------------------|---------------------------|---------------------------|---|
|        | $5058^{+184}_{-163}$ | $4.610^{+0.027}_{-0.082}$ | $-0.040^{+0.300}_{-0.300}$ | $0.739^{+0.097}_{-0.057}$ | $0.827^{+0.059}_{-0.088}$ | $2.884^{+0.426}_{-0.793}$                 |
|        | +4%/-3%              | +1%/-2%                   | +750%/-750%                | +13%/-8%                  | +7%/-11%                  | +15%/-27%                                 |
| 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 008179325-01 / KOI 2359.01

| Detrend | Depth (ppm) | $R_p (R_{\oplus})$     | $T_{\text{max}} (K)$ | $T_{\text{obs}} (K)$  | $A_{\text{obs}}$           |
|---------|-------------|------------------------|----------------------|-----------------------|----------------------------|
| DV      | $-25 \pm 7$ | $2.29^{+1.18}_{-1.05}$ | $1365^{+56}_{-48}$   | $2794^{+605}_{-304}$  | $3.875^{+10.345}_{-2.182}$ |
| Alt.    | $-27 \pm 9$ | $1.71^{+1.15}_{-1.01}$ | $1370^{+56}_{-54}$   | $3067^{+1119}_{-423}$ | $7.493^{+40.016}_{-4.884}$ |

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

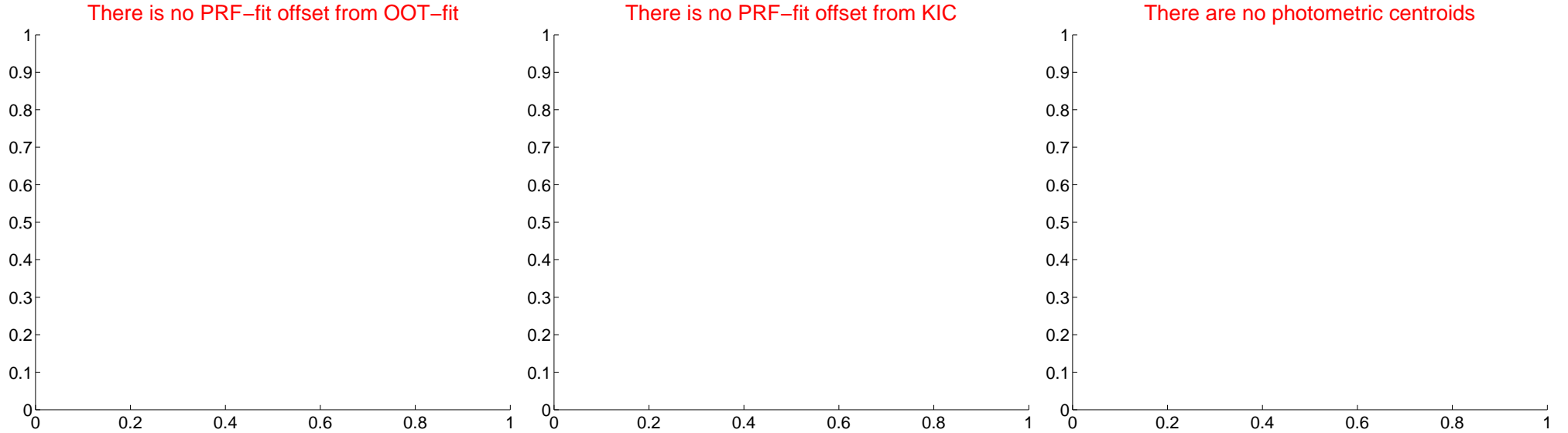
## DV Centroid Data

Supplemental centroid analysis for 008179325-01. Kepler magnitude: 15.94. Transit SNR 25.22

There are 0 quarters with good PRF difference image offsets

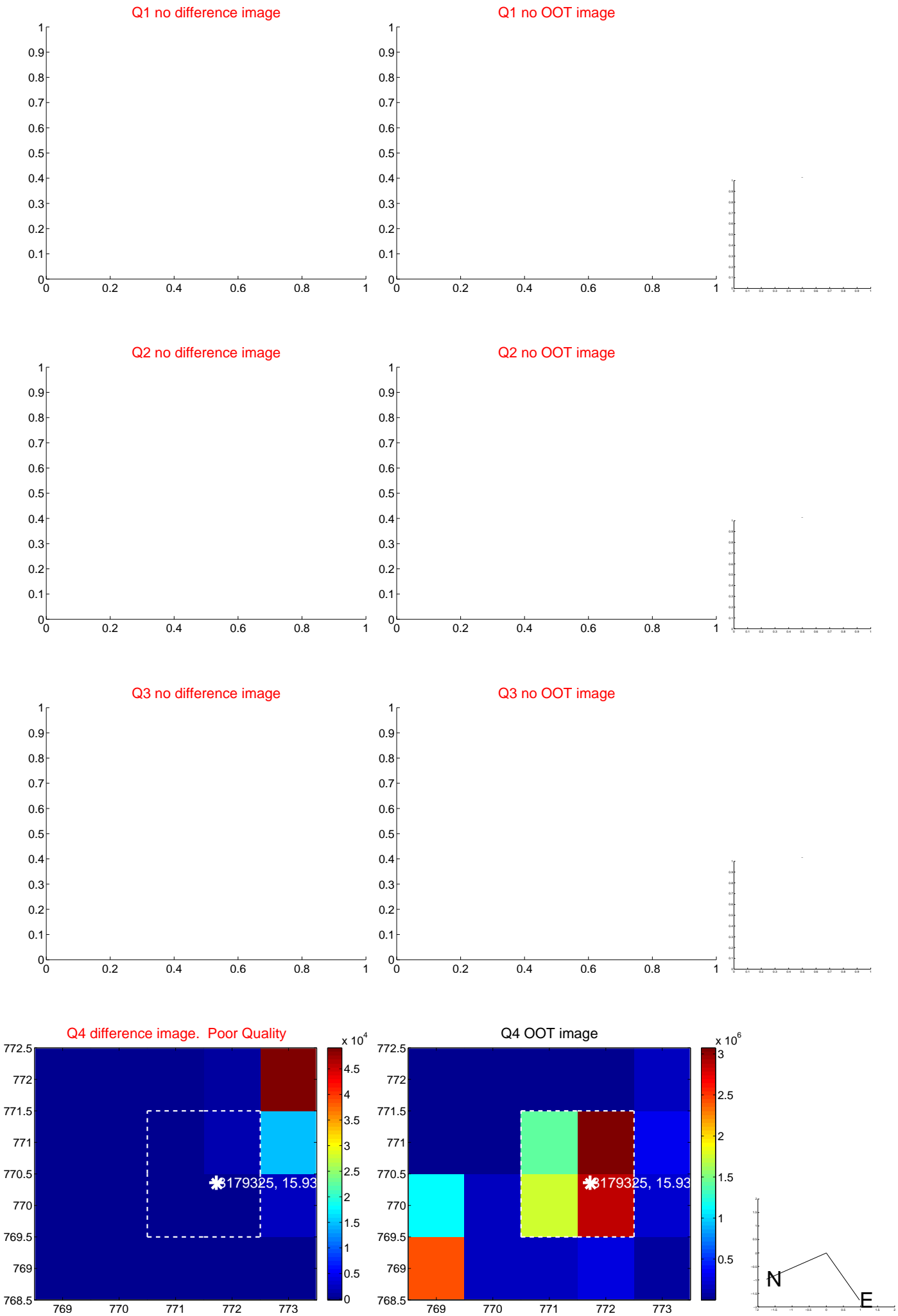
The direct PRF centroid is offset from the target star catalog position by about NaN arcsec

|   | Distance in arcsec | Distance / $\sigma$ | $\Delta$ RA | $\Delta$ Dec |
|---|--------------------|---------------------|-------------|--------------|
| PRF-fit source offset from OOT          | —                  | —                   | —           | —            |
| PRF-fit source offset from KIC position | —                  | —                   | —           | —            |
| photometric centroid source offset      | —                  | —                   | —           | —            |

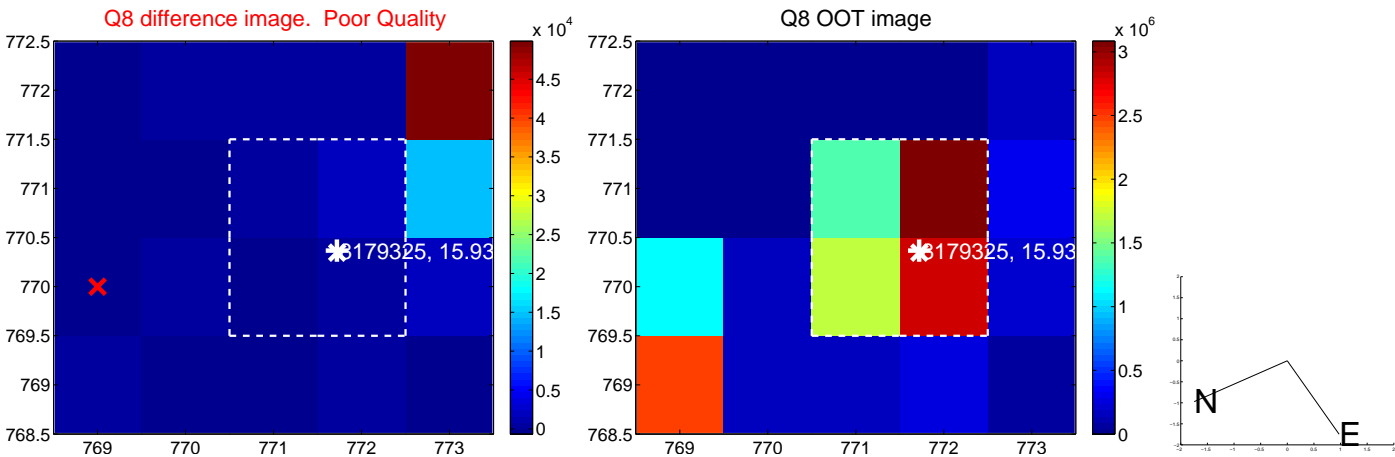
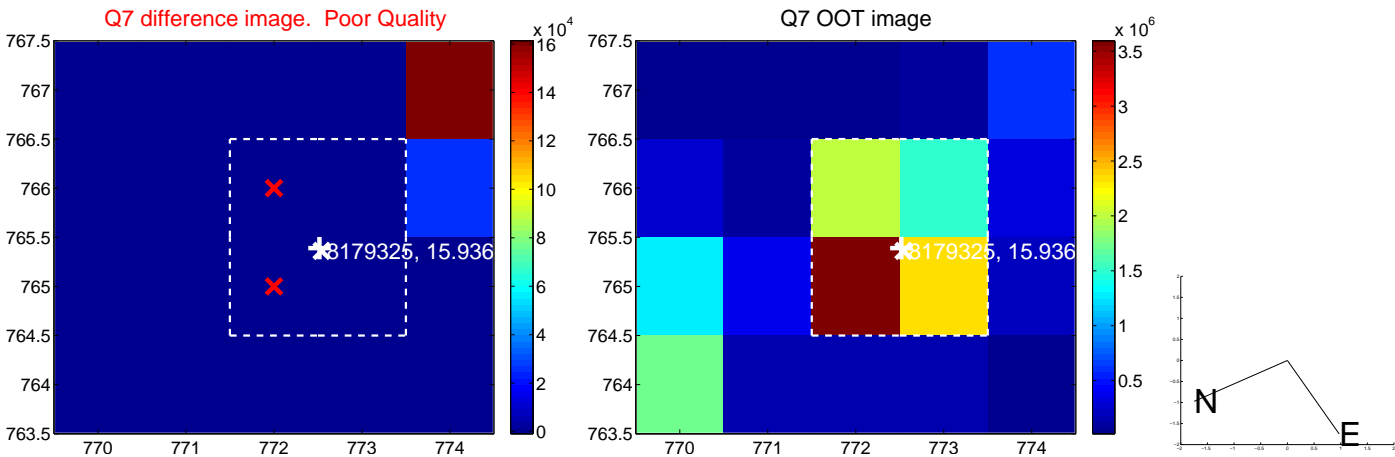
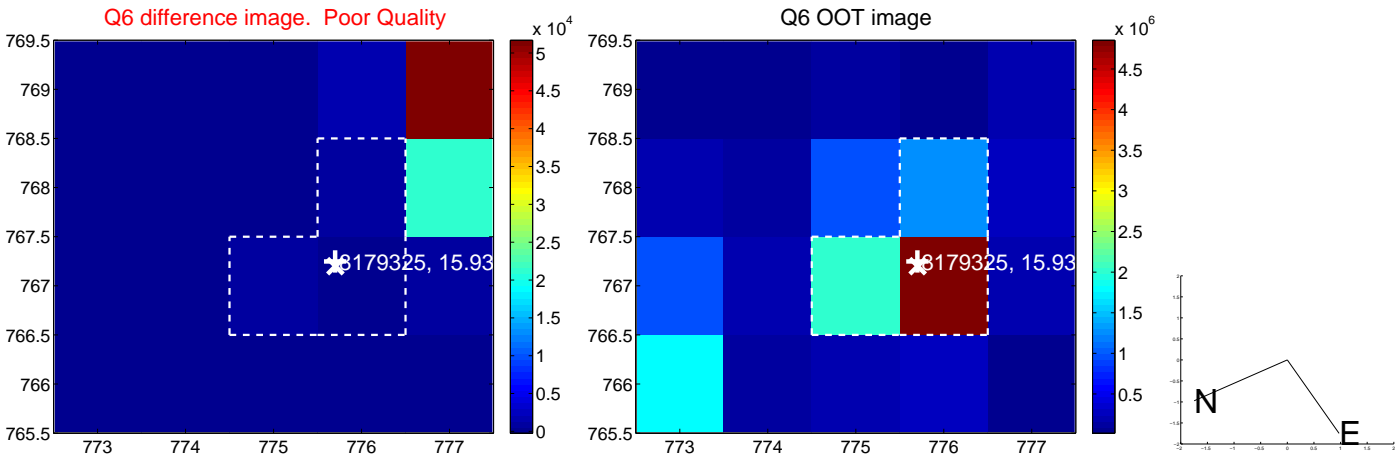
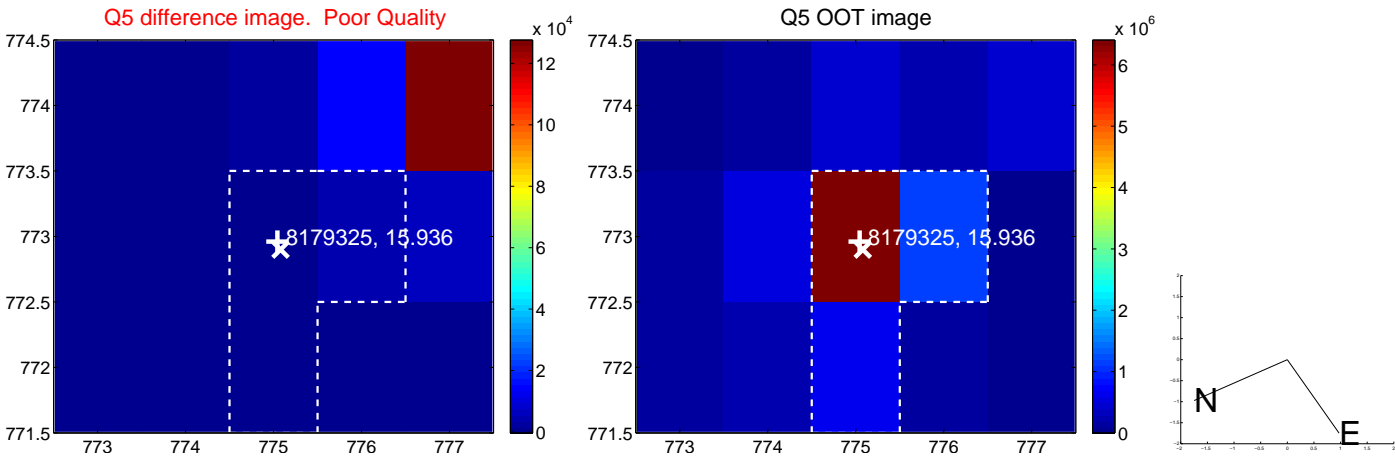


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: three-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

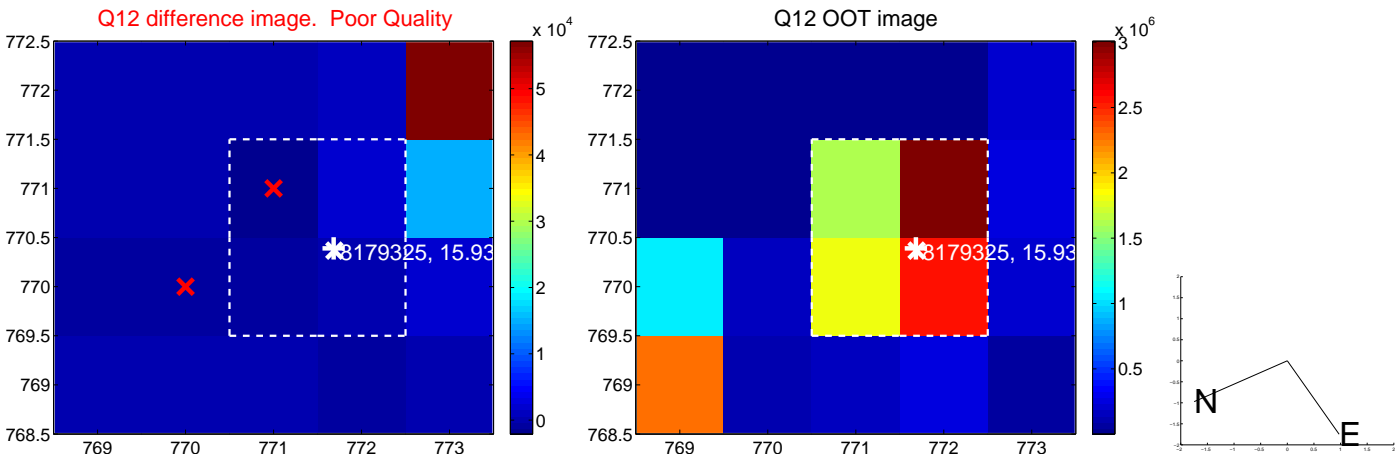
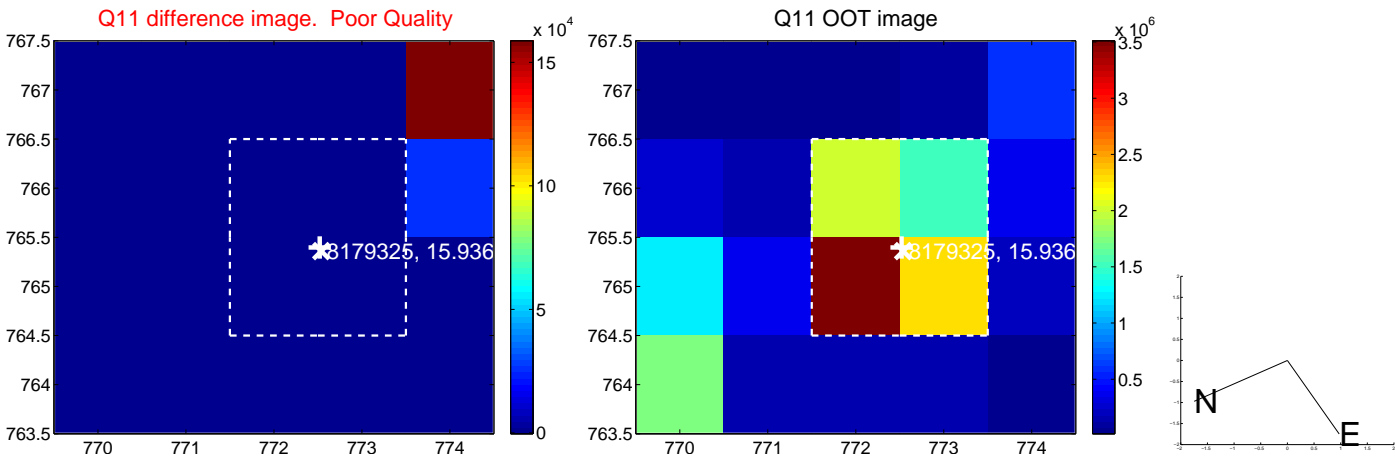
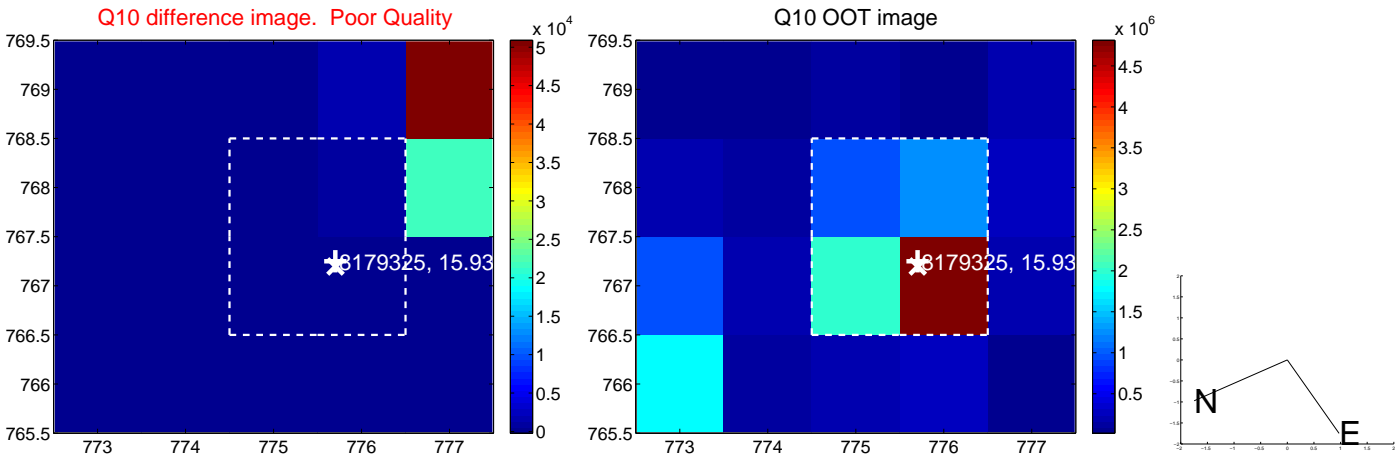
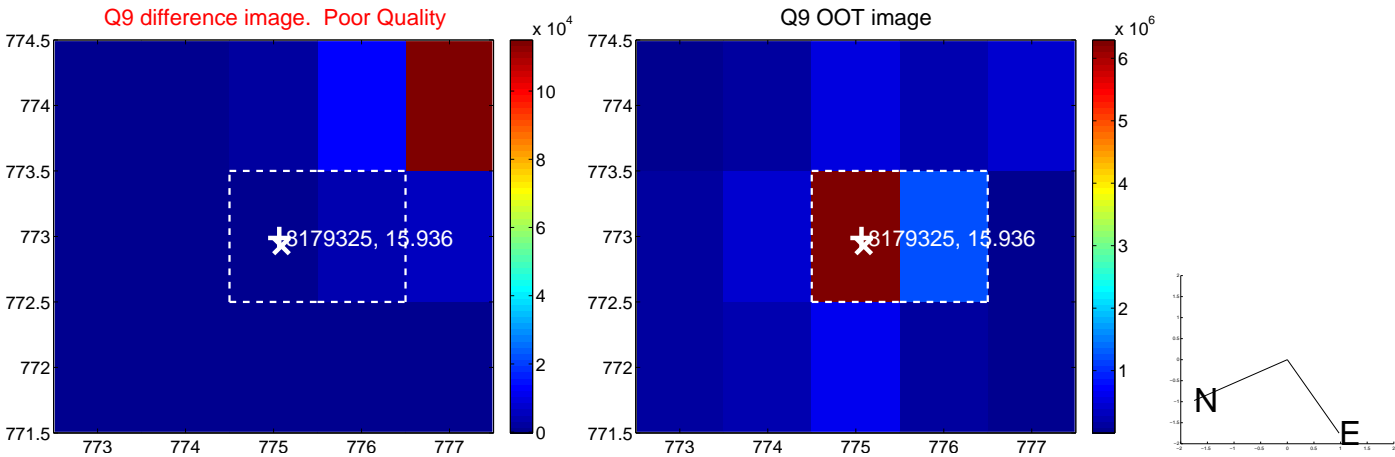


white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

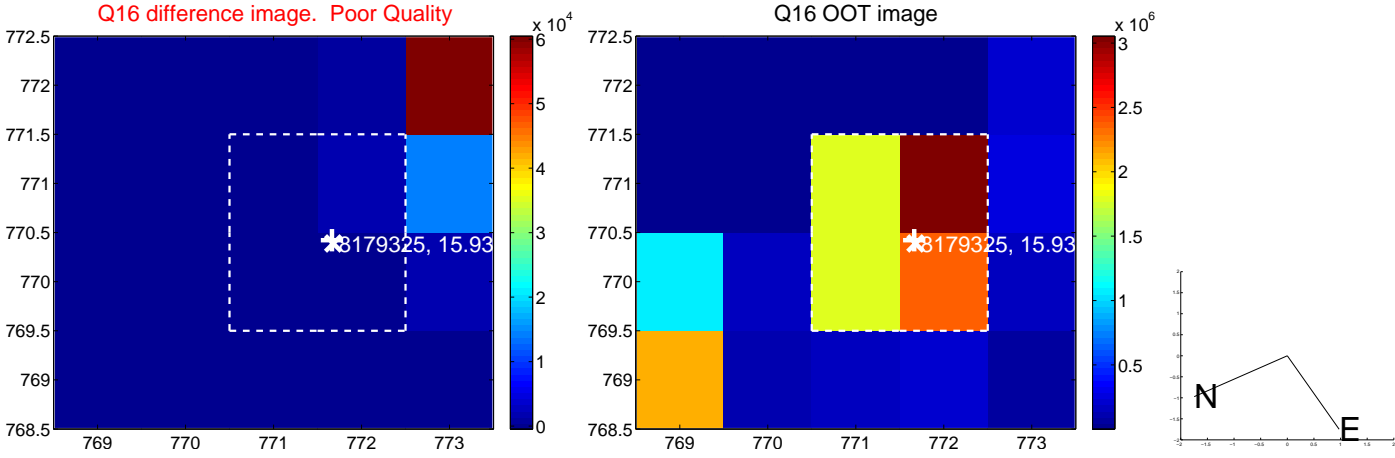
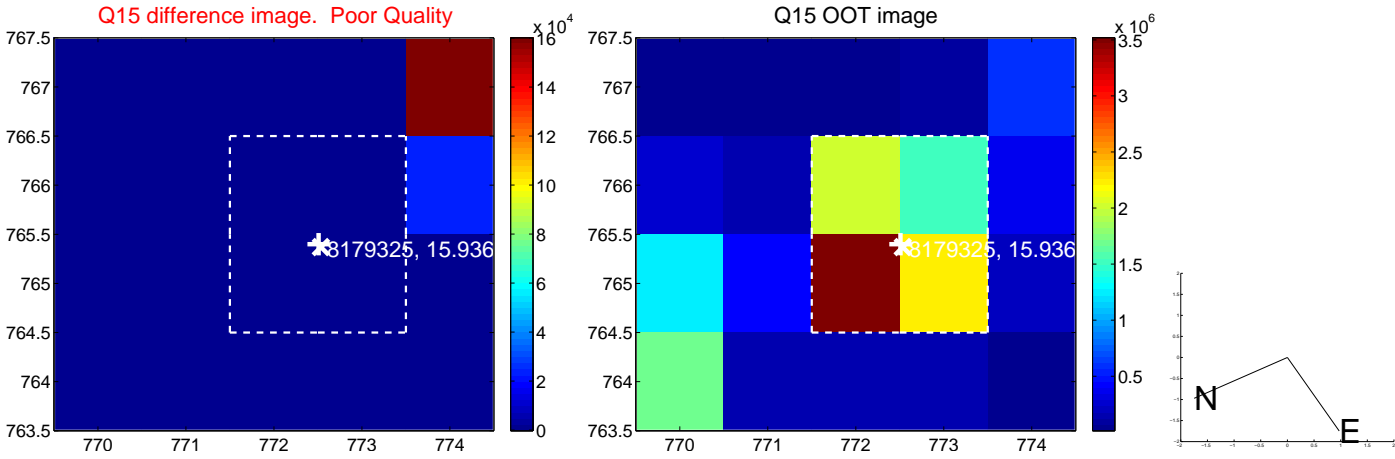
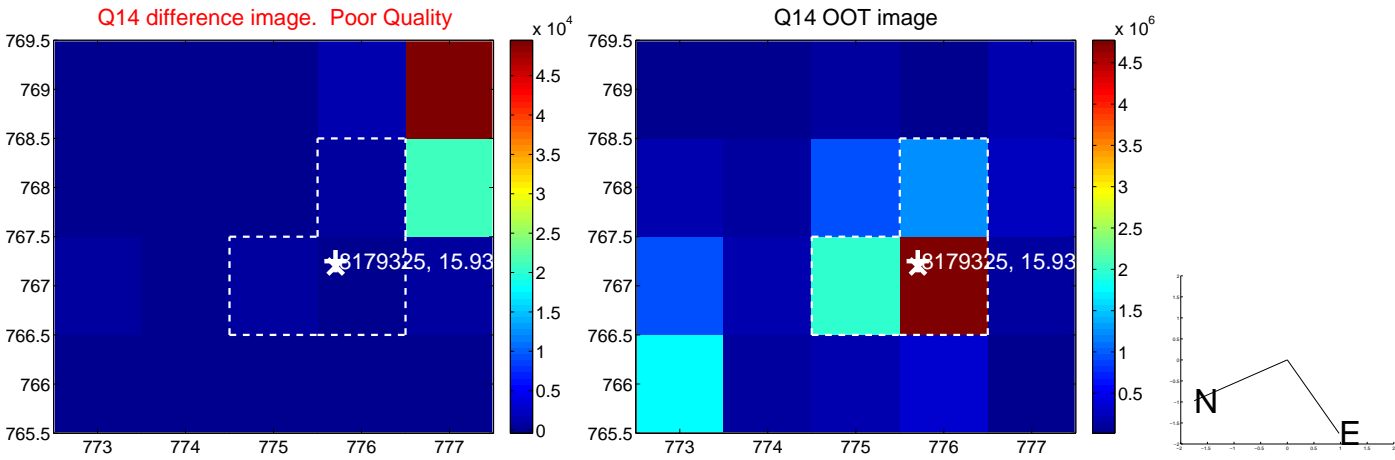
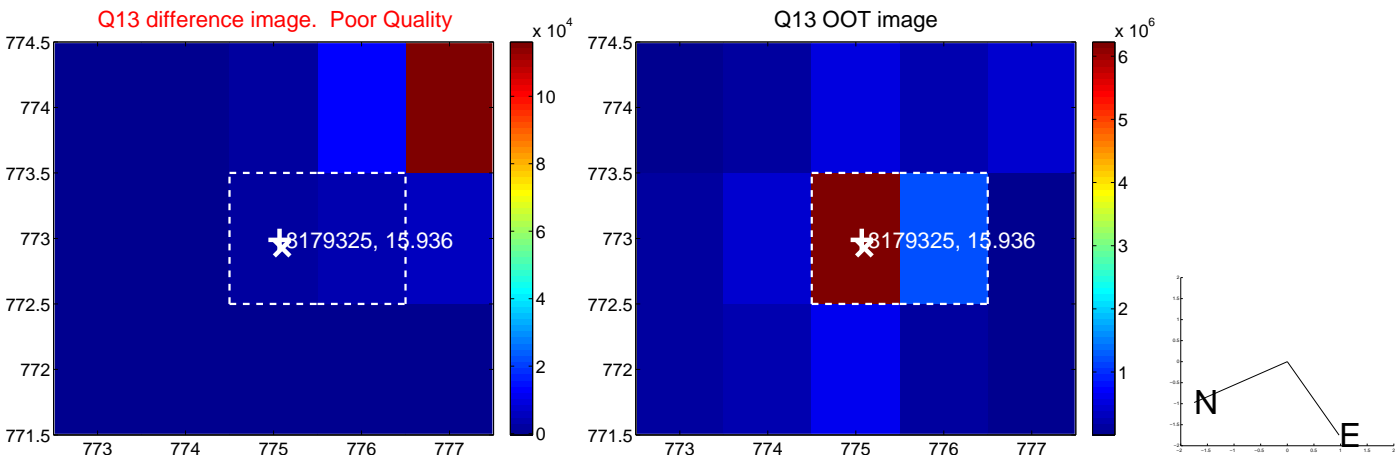




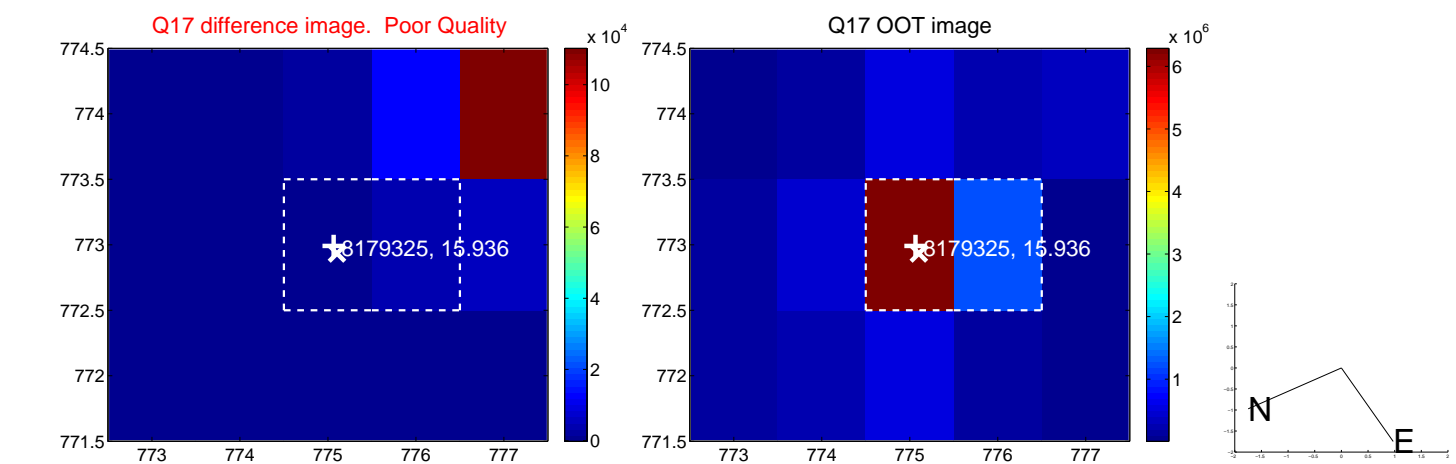
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



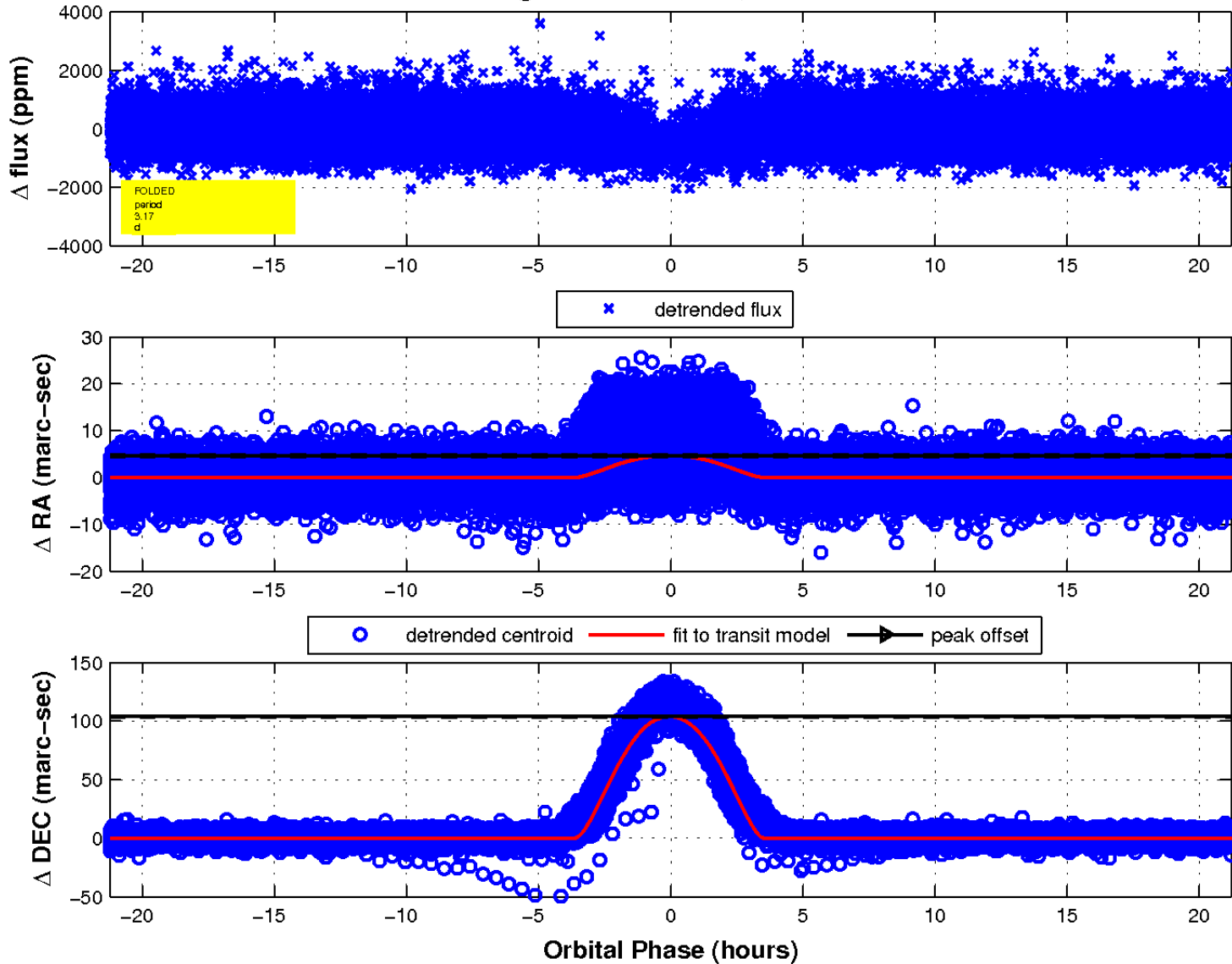
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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



fluxWeightedCentroids, Planet 1 of 1



UKIRT Image

Declination

