

# KIC 005283458

## Q1-17 DR25 TCE Parameters

| TCE          | Run Type | KOI?    | Period (Days) | Epoch (BKJD) | Depth (ppm) | Duration (Hours) | MES   | SNR   | R <sub>★</sub> (R <sub>☉</sub> ) | T <sub>★</sub> (K) | R <sub>p</sub> (R <sub>⊕</sub> ) | S <sub>p</sub> (S <sub>⊕</sub> ) |
|--------------|----------|---------|---------------|--------------|-------------|------------------|-------|-------|----------------------------------|--------------------|----------------------------------|----------------------------------|
| 005283458-01 | OBS      | 1547.01 | 30.693964     | 150.807199   | 18091.5     | 2.978            | 311.8 | 286.2 | 1.02                             | 6137               | 13.82                            | 33.77                            |

## Robovetter Results

| TCE          | Run Type | Disp | Score | N | S | C | E | Comments   |
|--------------|----------|------|-------|---|---|---|---|------------|
| 005283458-01 | 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.

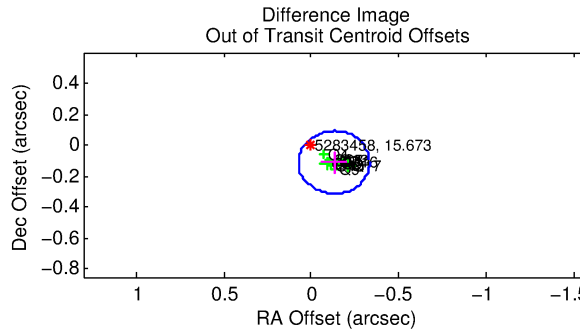
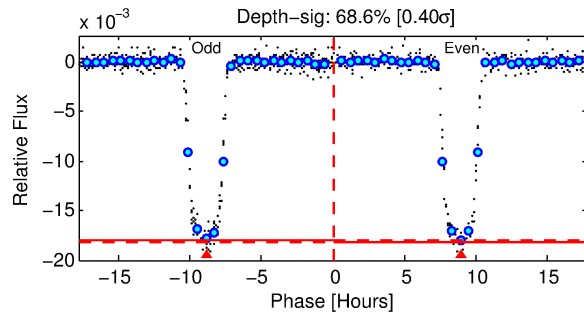
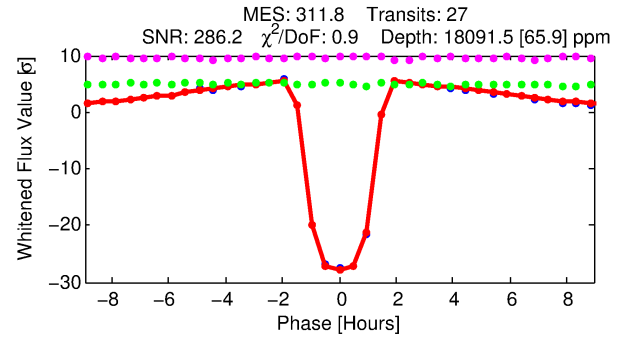
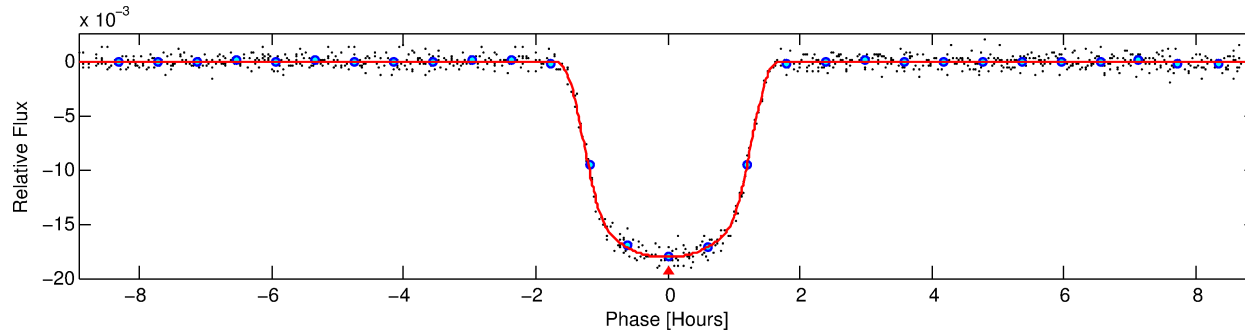
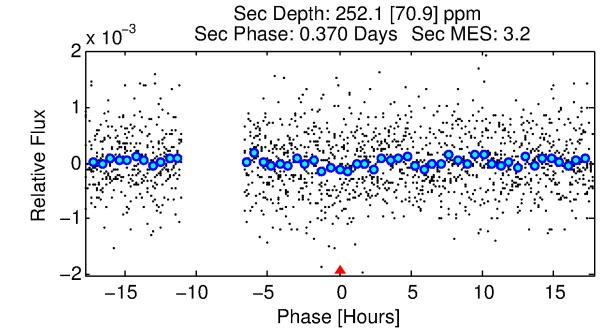
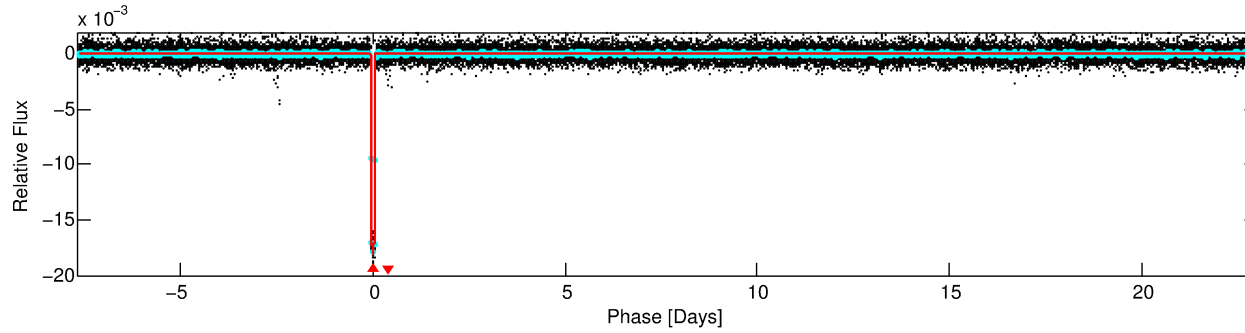
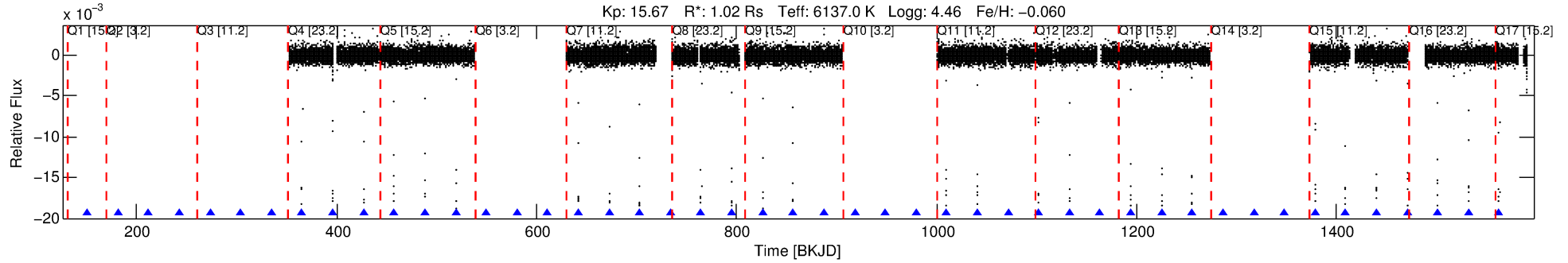
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 005283458-01

No Significant Match Found

# DV One-Page Summary

KIC: 5283458 Candidate: 1 of 1 Period: 30.694 d  
KOI: K01547.01 Corr: 0.997



## DV Fit Results:

Period = 30.69396 [0.00001] d  
Epoch = 150.8072 [0.0003] BKJD  
Rp/R\* = 0.1244 [0.0014]  
a/R\* = 85.34 [4.12]  
b = 0.30 [0.15]  
Seff = 33.77 [13.71]  
Teq = 615 [62] K  
Rp = 13.82 [4.40] Re  
a = 0.1975 [0.0519] AU  
Ag = 28.32 [13.31] [2.05 $\sigma$ ]  
Teffp = 2192 [176] K [8.44 $\sigma$ ]

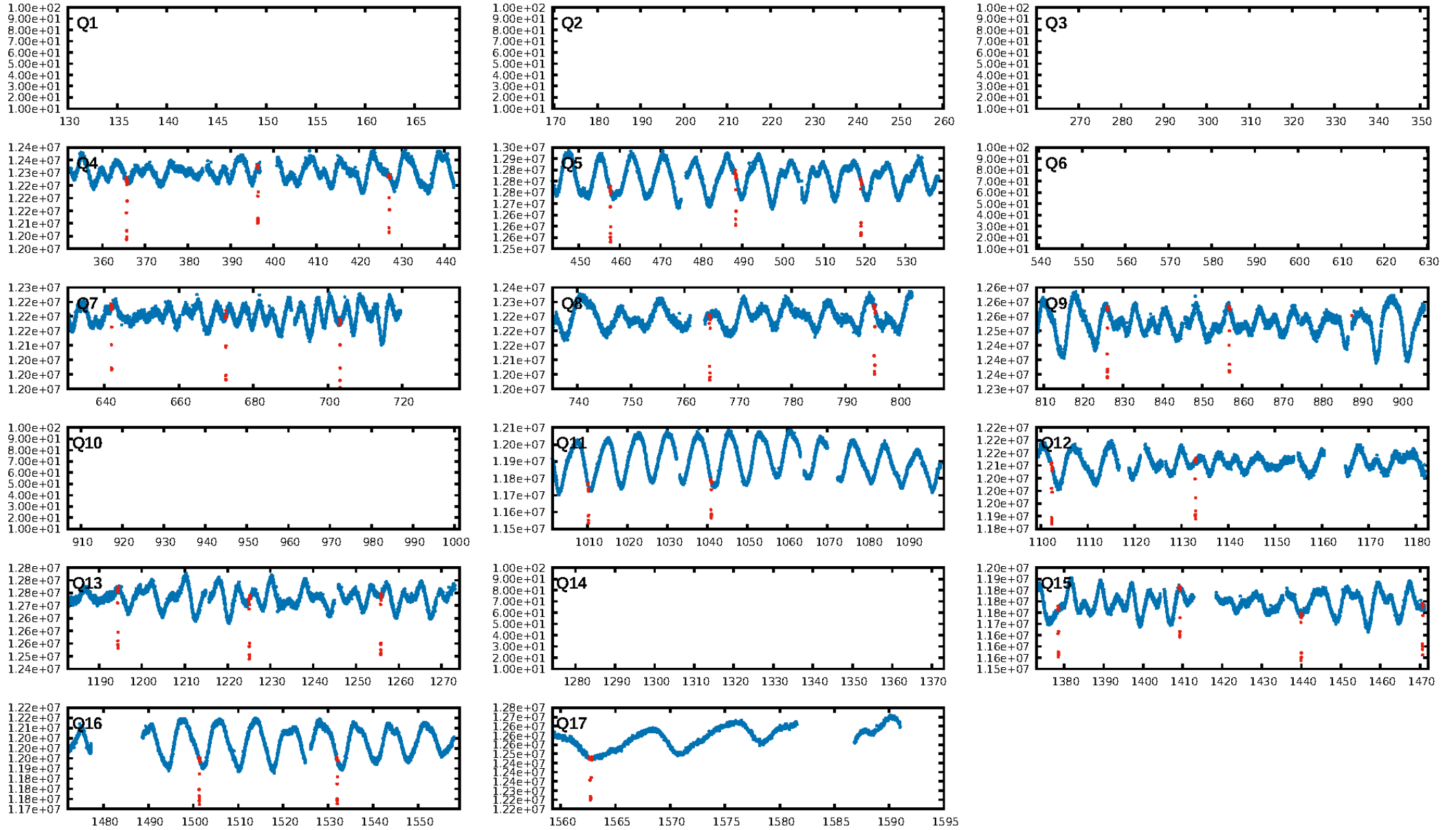
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: 13.8%  
ModelChiSquareGof-sig: 100.0%  
Bootstrap-pfa: 0.00e+00  
RollingBand-fgt: 1.00 [26/26]  
GhostDiagnostic-chr: 3.472  
Centroid-sig: 0.0%  
Centroid-so: 0.455 arcsec [10.82 $\sigma$ ]  
OotOffset-rm: 0.170 arcsec [2.51 $\sigma$ ]  
KicOffset-rm: 0.096 arcsec [1.35 $\sigma$ ]  
OotOffset-st: 0/3/4/4 [11]  
KicOffset-st: 0/3/4/4 [11]  
DiffImageQuality-fgm: 1.00 [11/11]  
DiffImageOverlap-fno: 1.00 [11/11]

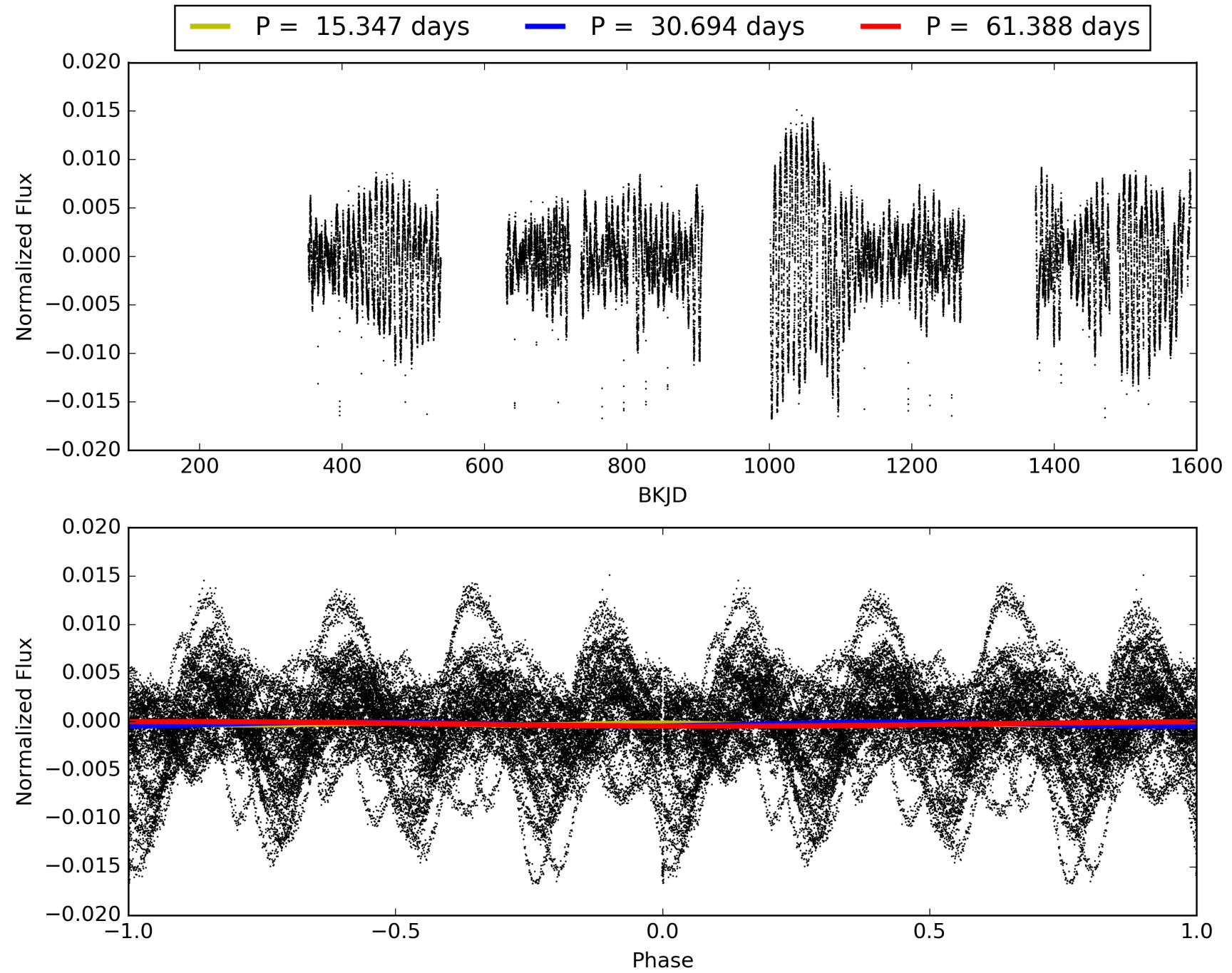
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 20:05:54 Z

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

# TCE 005283458-01, PDC Light Curves

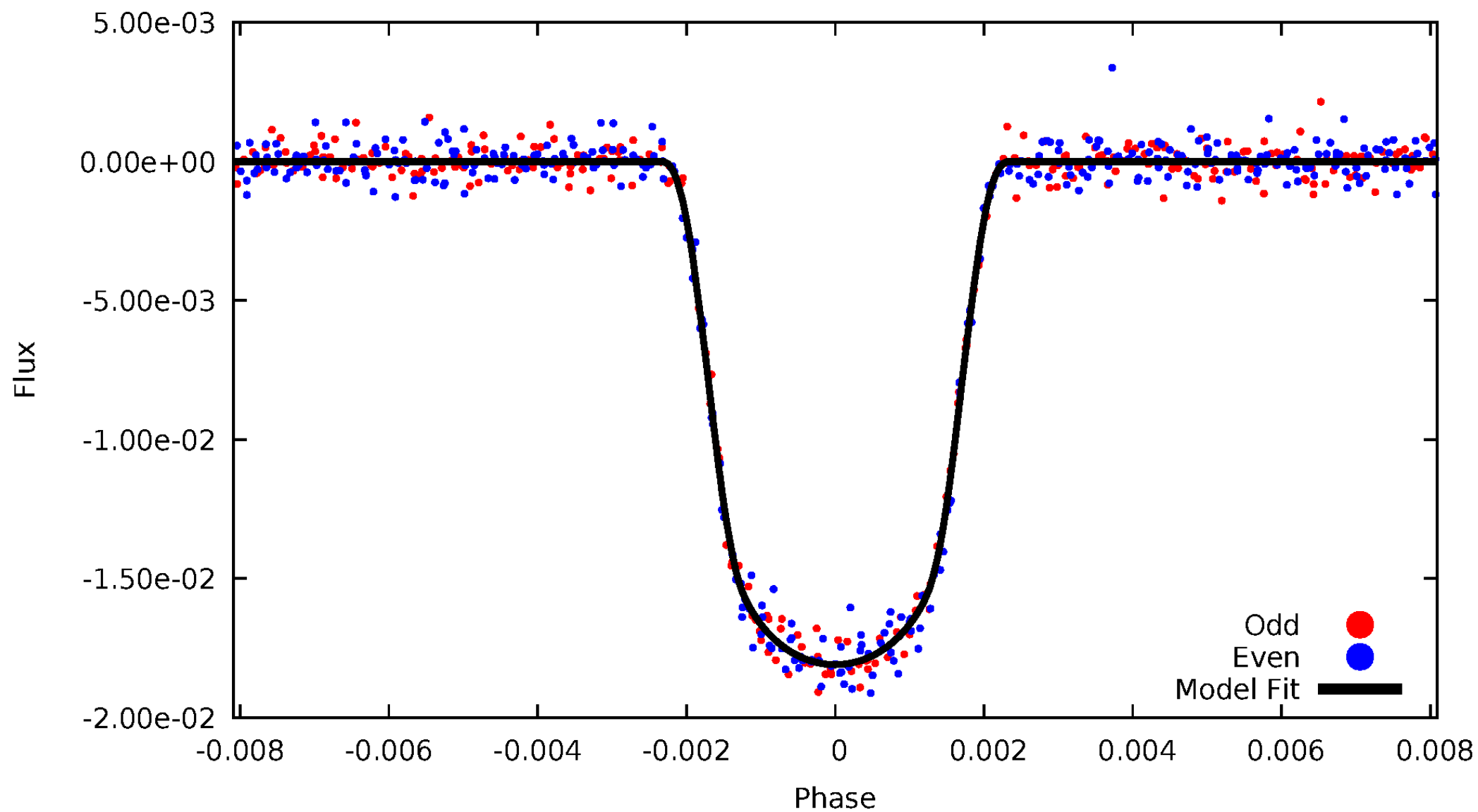


TCE 005283458-01



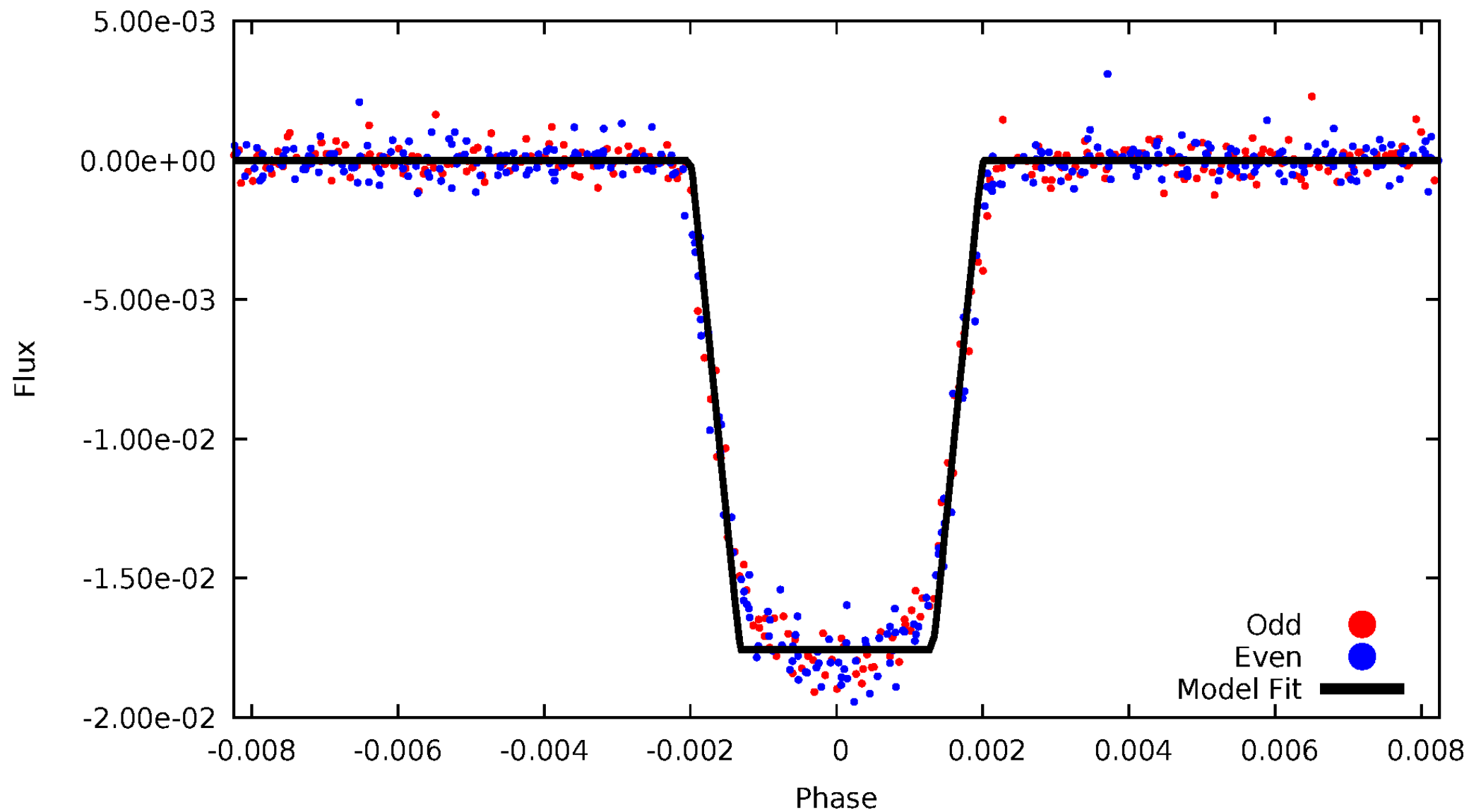
# DV Odd/Even

TCE 005283458-01



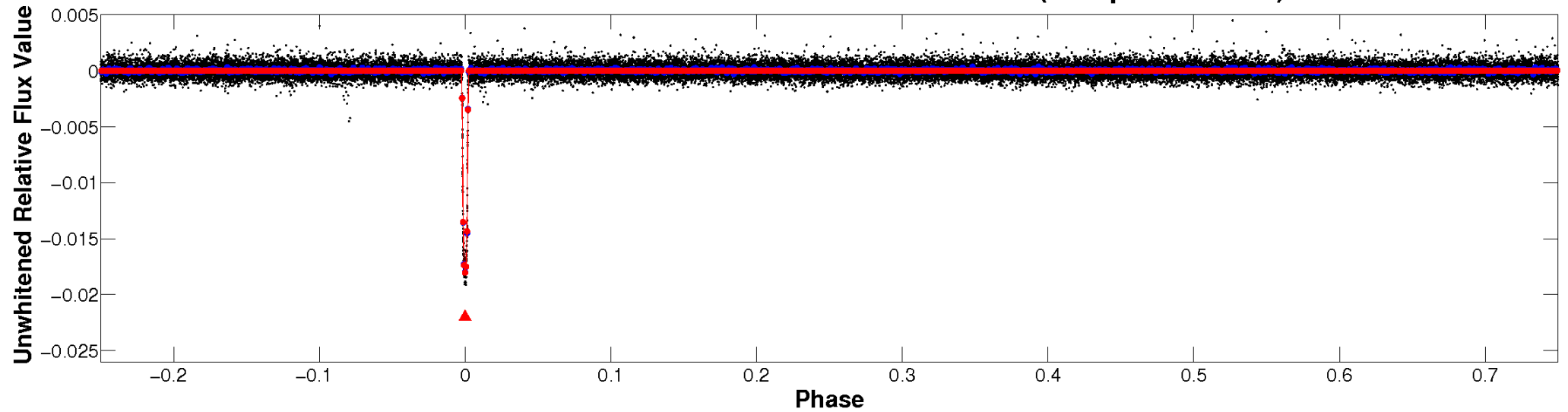
# ALT Odd/Even

TCE 005283458-01

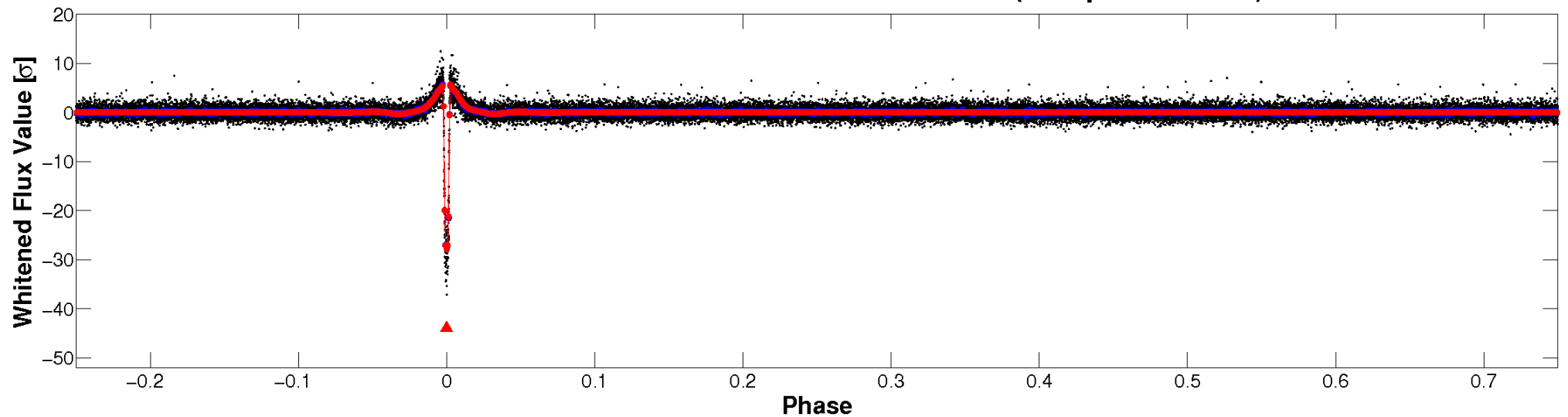


# Non-Whitened Vs. Whitened Light Curve

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

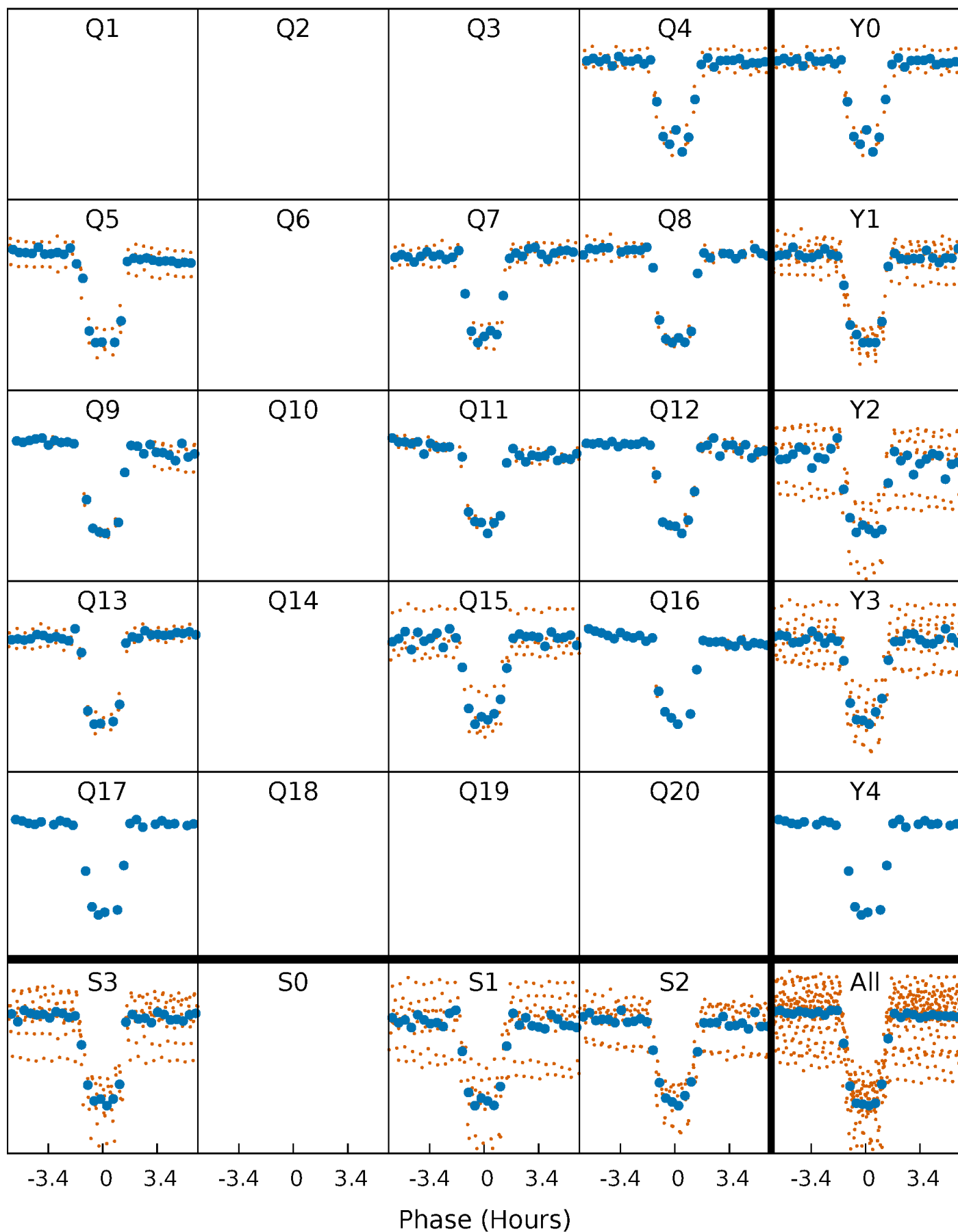


**Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)**



# PDC Quarter-Phased Transit Curves

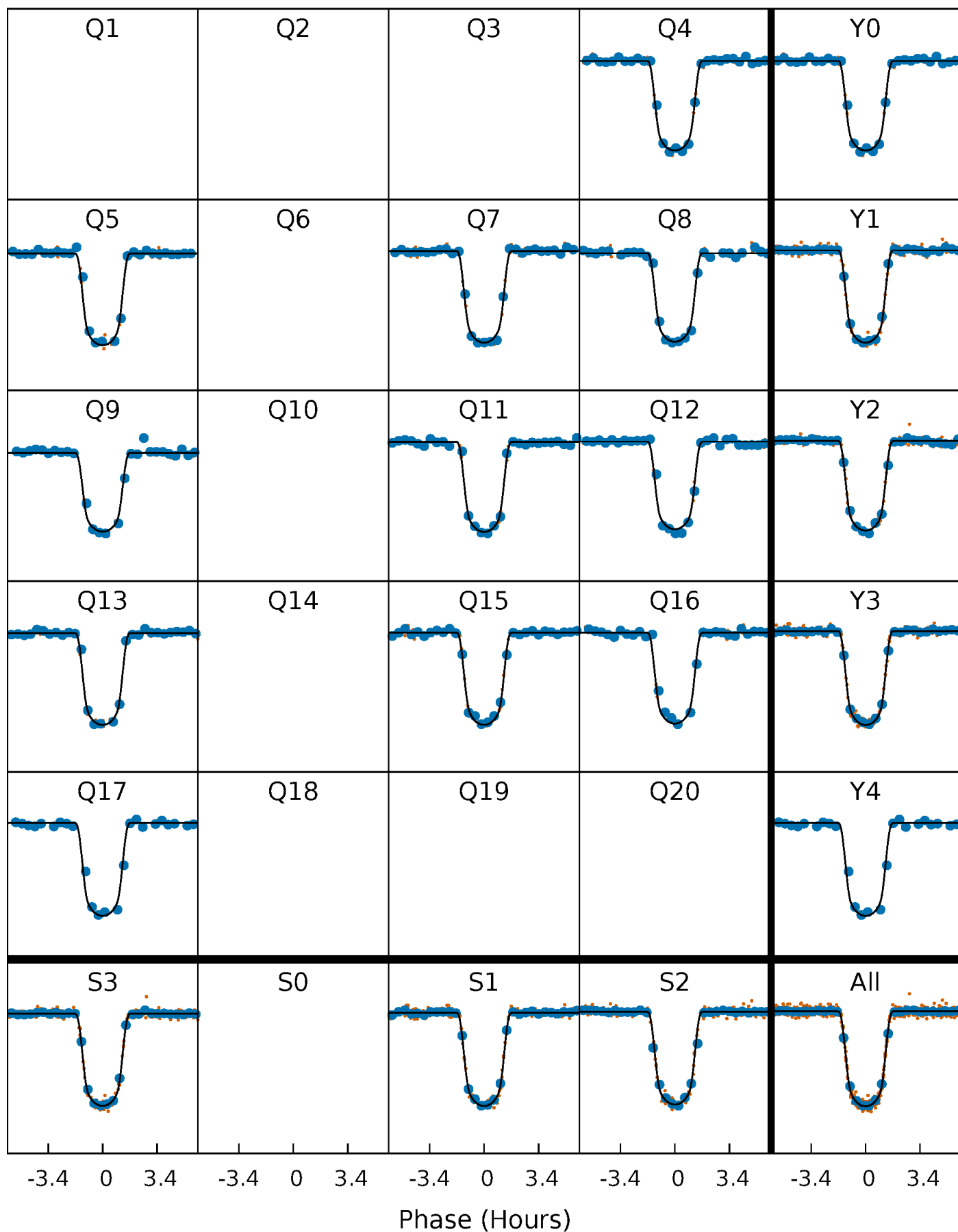
TCE 005283458-01 P= 30.693964 Days  $T_0=150.807199$  (BKJD)





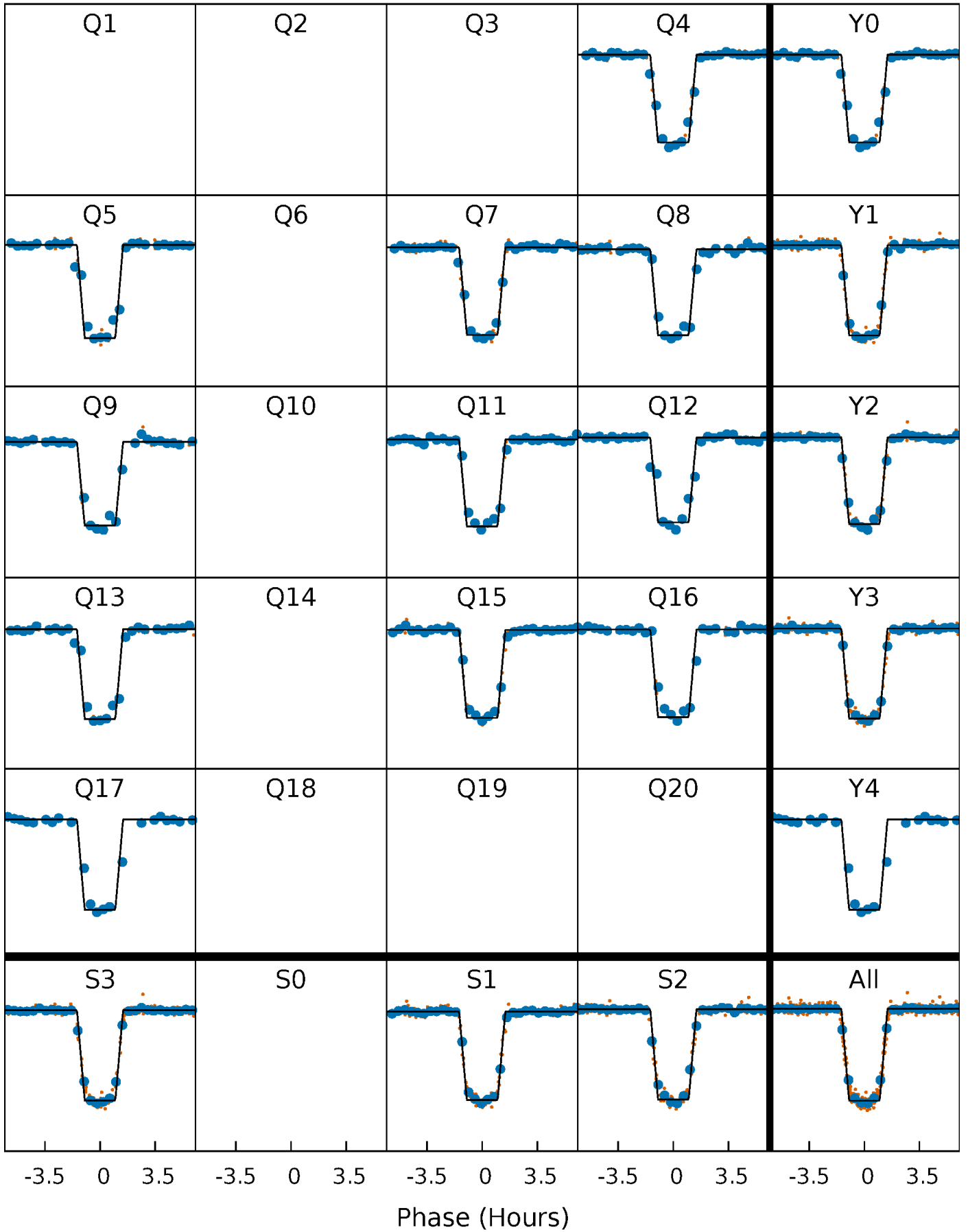
# DV Quarter-Phased Transit Curves

TCE 005283458-01 P= 30.693964 Days  $T_0=150.807199$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

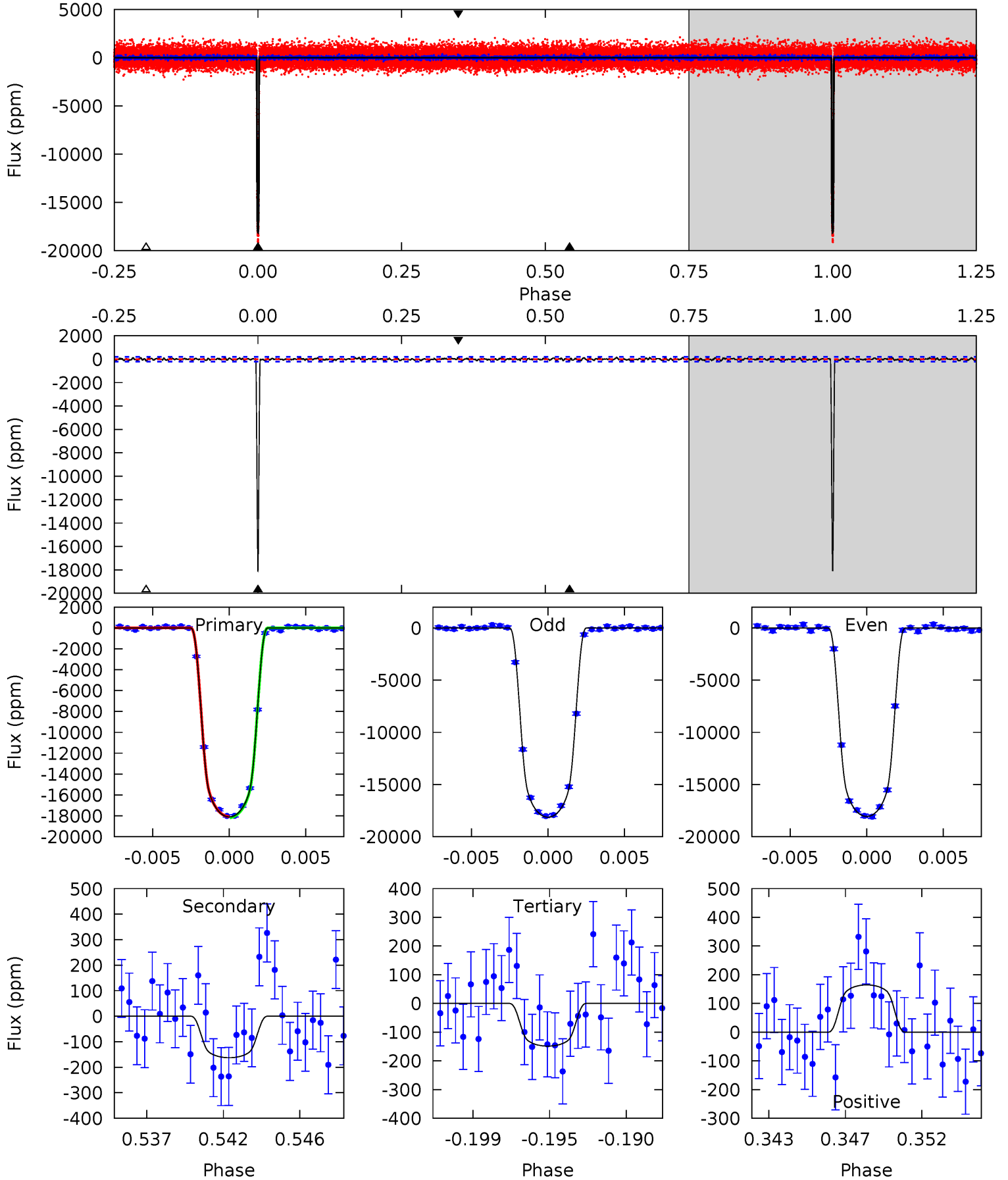
TCE 005283458-01 P= 30.693849 Days  $T_0=150.810358$  (BKJD)



# DV Model-Shift Uniqueness Test

005283458-01,  $P = 30.693964$  Days,  $E = 150.807199$  Days

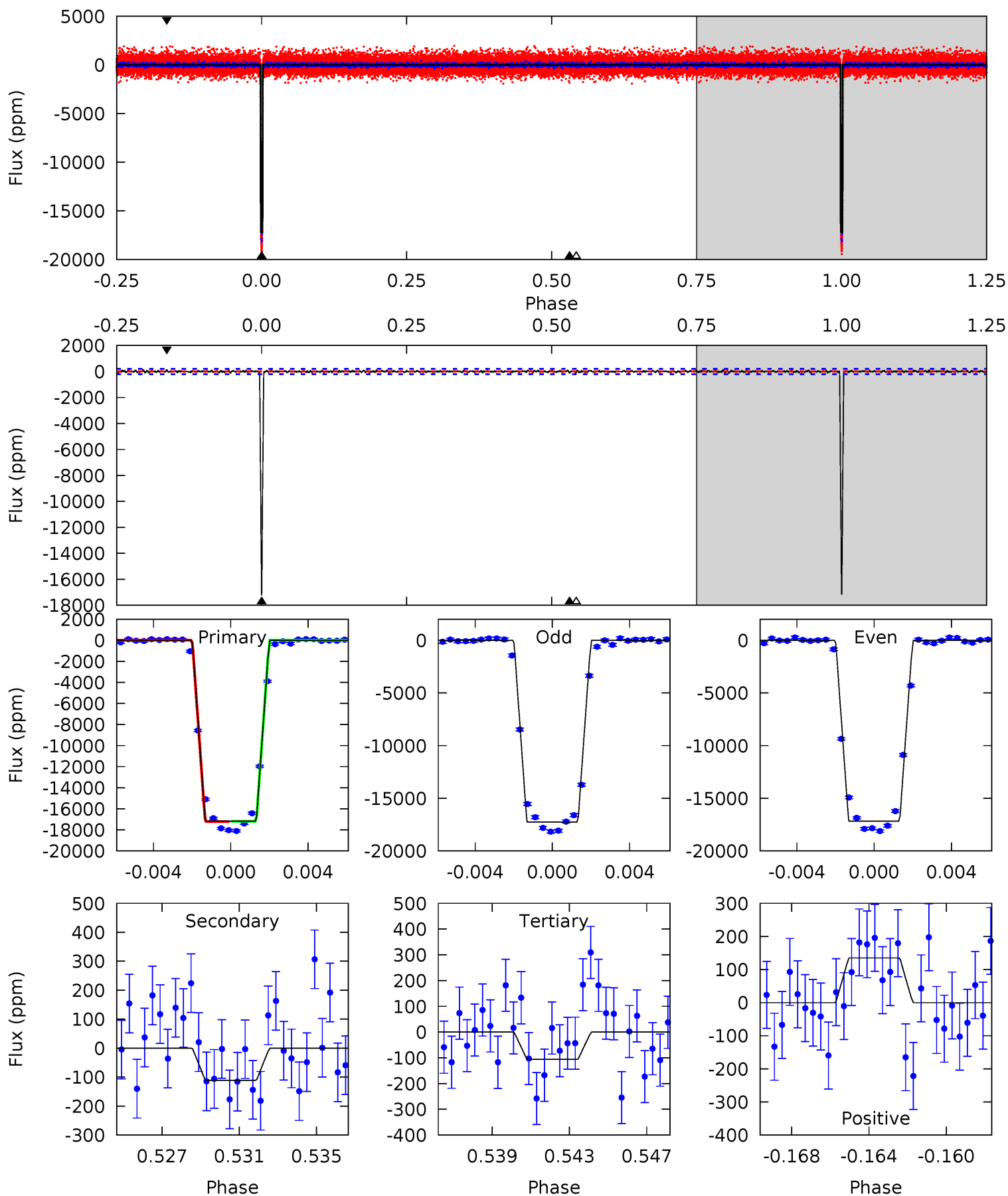
| Pri   | Sec  | Ter  | Pos  | FA <sub>1</sub> | FA <sub>2</sub> | F <sub>Red</sub> | Pri-Ter | Pri-Pos | Sec-Ter | Sec-Pos | Odd-Evn | DMM  | Shape | TAT  |
|-------|------|------|------|-----------------|-----------------|------------------|---------|---------|---------|---------|---------|------|-------|------|
| 463.4 | 4.16 | 3.81 | 4.21 | 5.17            | 2.83            | 1.29             | 459.6   | 459.2   | 0.36    | -0.05   | 0.94    | 1.00 | 0.01  | 1.27 |



# Alt Model-Shift Uniqueness Test

005283458-01, P = 30.693849 Days, E = 150.810358 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  |
|-------|------|------|------|-----------------|-----------------|------------------|---------|---------|---------|---------|---------|------|-------|------|
| 430.7 | 2.79 | 2.65 | 3.38 | 5.20            | 2.88            | 0.84             | 428.0   | 427.3   | 0.14    | -0.60   | 1.17    | 1.00 | 0.01  | 0.36 |



### Stellar Parameters For KIC 005283458

|        | $T_{\text{eff}}(K)$  | $\log(g)$                 | [Fe/H]                     | $R (R_{\odot})$           | $M(M_{\odot})$            | $p_{\star} (\text{g}\cdot\text{cm}^{-3})$ |
|--------|----------------------|---------------------------|----------------------------|---------------------------|---------------------------|-------------------------------------------|
|        | $6137^{+193}_{-236}$ | $4.460^{+0.054}_{-0.202}$ | $-0.060^{+0.250}_{-0.350}$ | $1.018^{+0.324}_{-0.108}$ | $1.086^{+0.153}_{-0.153}$ | $1.452^{+0.413}_{-0.771}$                 |
|        | +3%/-4%              | +1%/-5%                   | +417%/-583%                | +32%/-11%                 | +14%/-14%                 | +28%/-53%                                 |
| 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 005283458-01 / KOI 1547.01

| Detrend | Depth (ppm)   | $R_p (R_{\oplus})$      | $T_{max} (K)$     | $T_{obs} (K)$        | $A_{obs}$                 |
|---------|---------------|-------------------------|-------------------|----------------------|---------------------------|
| DV      | $-163 \pm 39$ | $14.10^{+2.29}_{-1.05}$ | $872^{+63}_{-41}$ | $2727^{+94}_{-113}$  | $17^{+5}_{-5}$            |
| Alt.    | $-111 \pm 40$ | $15.03^{+2.37}_{-1.16}$ | $876^{+64}_{-44}$ | $2563^{+109}_{-147}$ | $9.988^{+4.479}_{-3.826}$ |

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

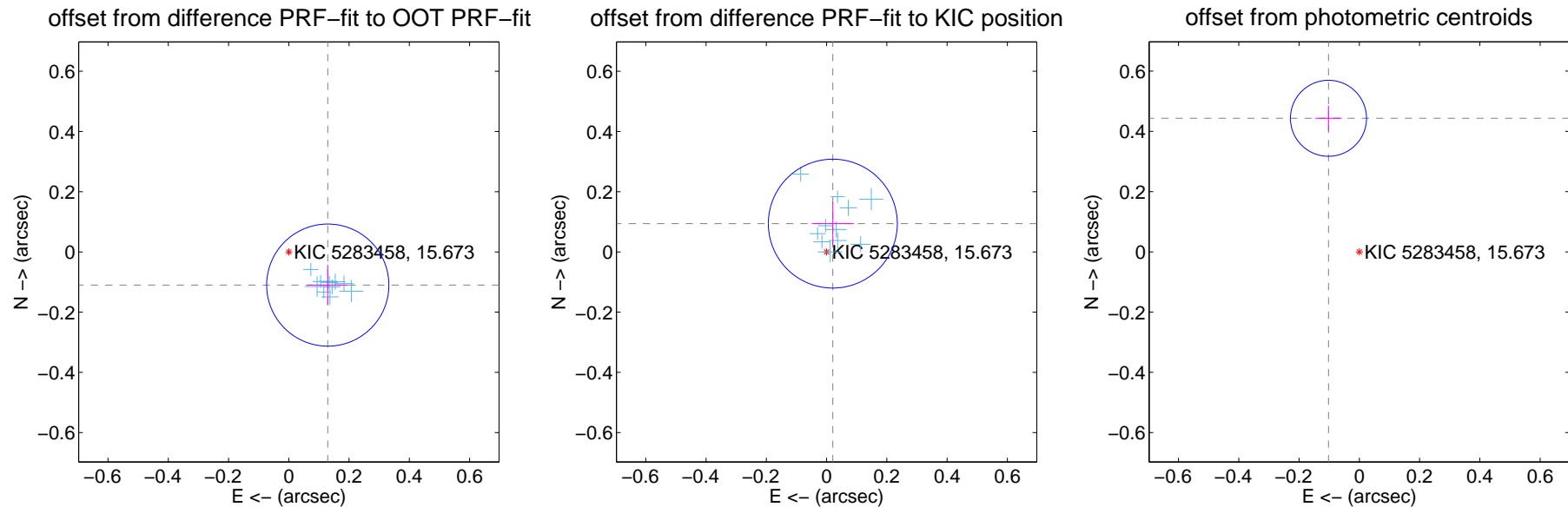
## DV Centroid Data

Supplemental centroid analysis for 005283458-01. Kepler magnitude: 15.67. Transit SNR 286.22

There are 11 quarters with good PRF difference image offsets

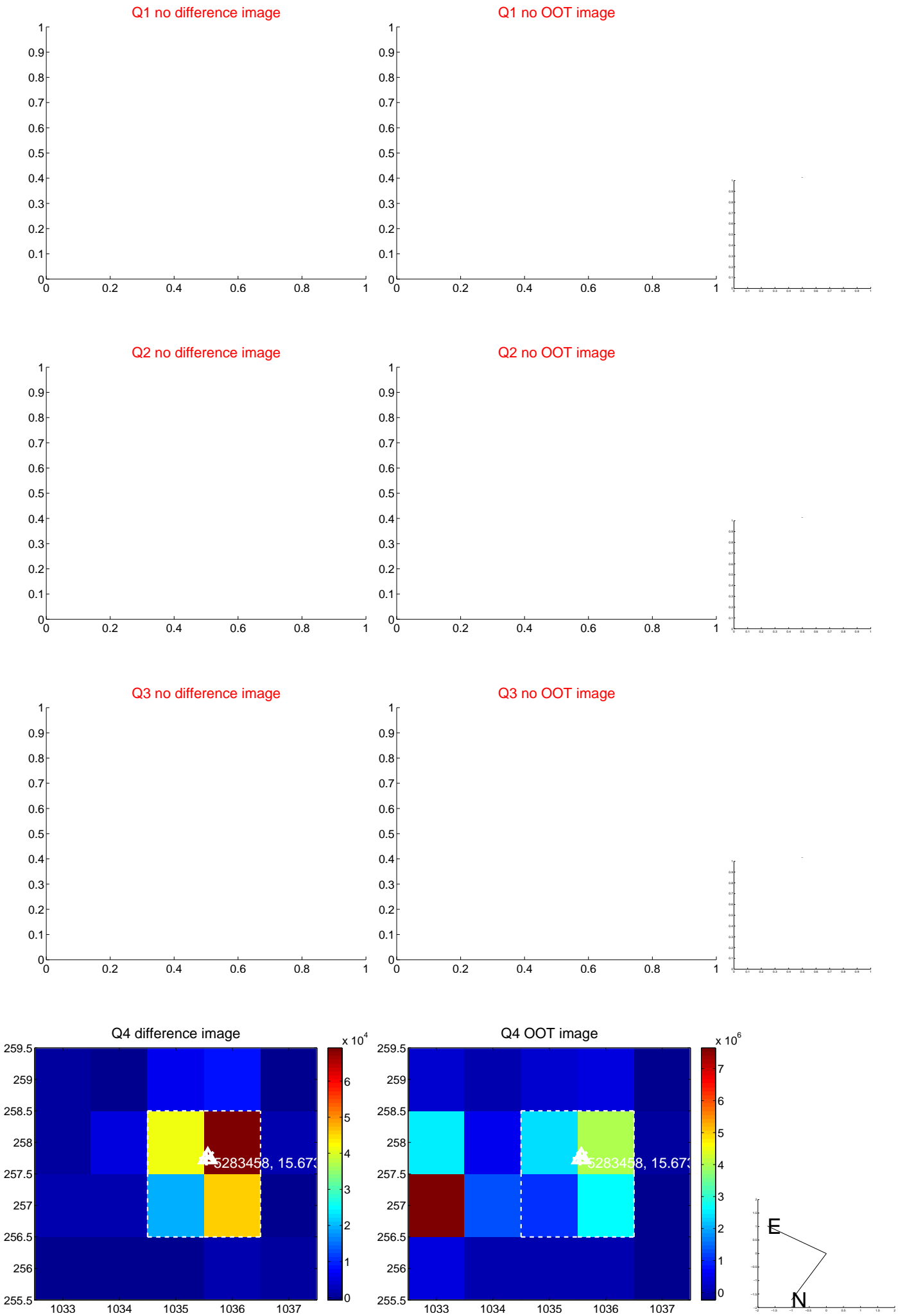
The direct PRF centroid is offset from the target star catalog position by about 0.31 arcsec

|                                         | Distance in arcsec | Distance / $\sigma$ | $\Delta$ RA        | $\Delta$ Dec       |
|-----------------------------------------|--------------------|---------------------|--------------------|--------------------|
| PRF-fit source offset from OOT          | $0.170 \pm 0.068$  | 2.51                | $-0.129 \pm 0.067$ | $-0.110 \pm 0.067$ |
| PRF-fit source offset from KIC position | $0.096 \pm 0.071$  | 1.35                | $-0.021 \pm 0.070$ | $0.094 \pm 0.071$  |
| photometric centroid source offset      | $0.46 \pm 0.04$    | 10.82               | $0.10 \pm 0.04$    | $0.44 \pm 0.04$    |

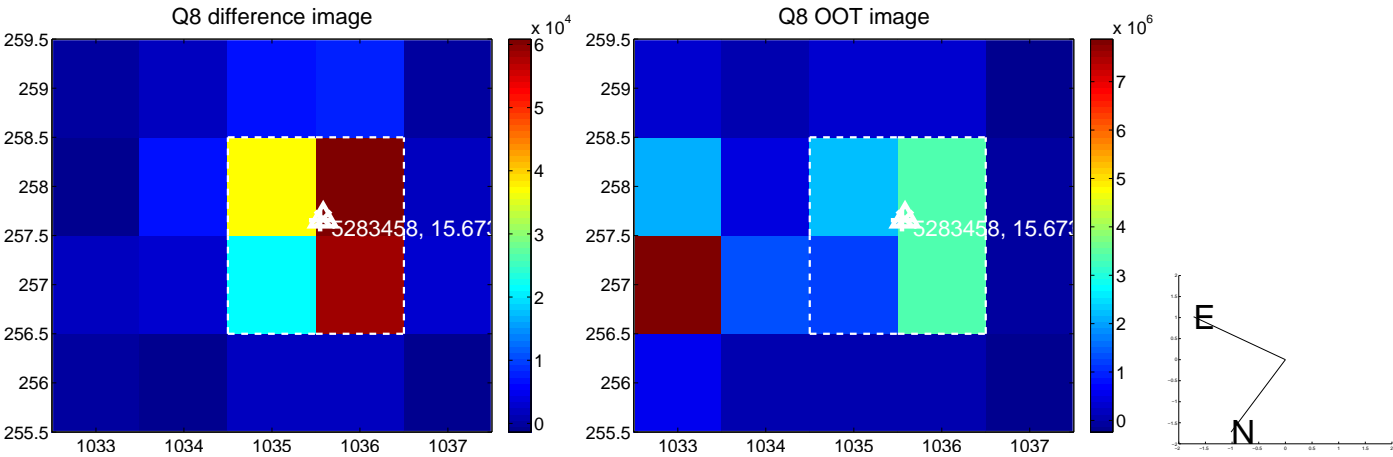
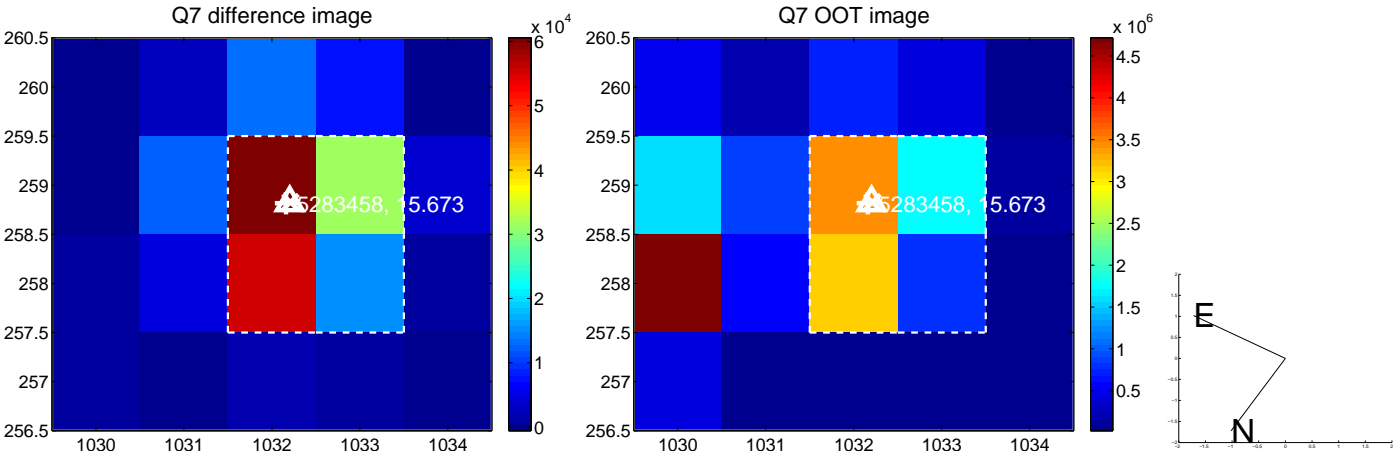
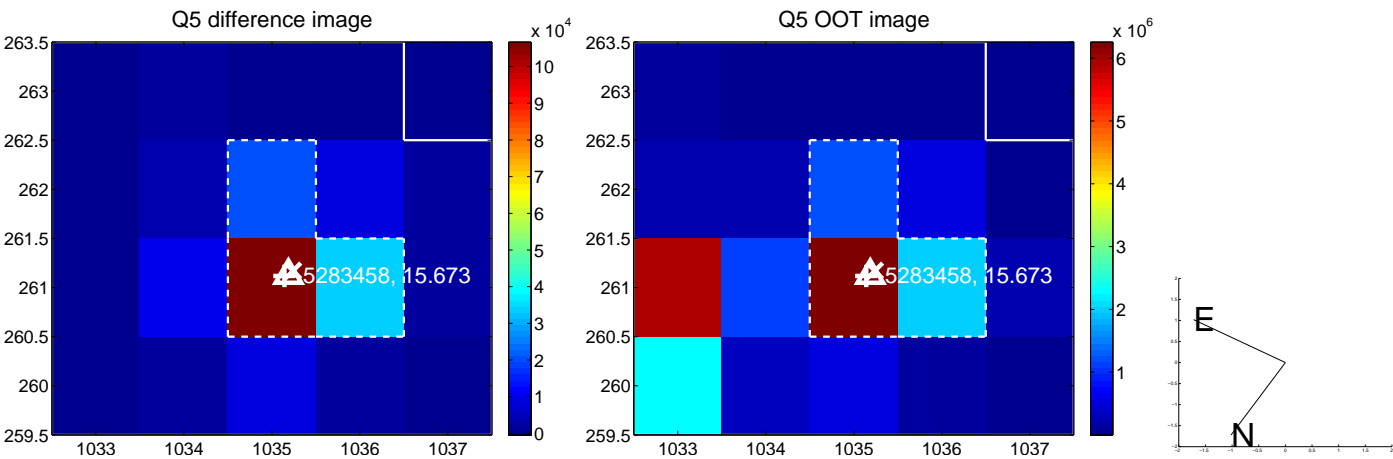


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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

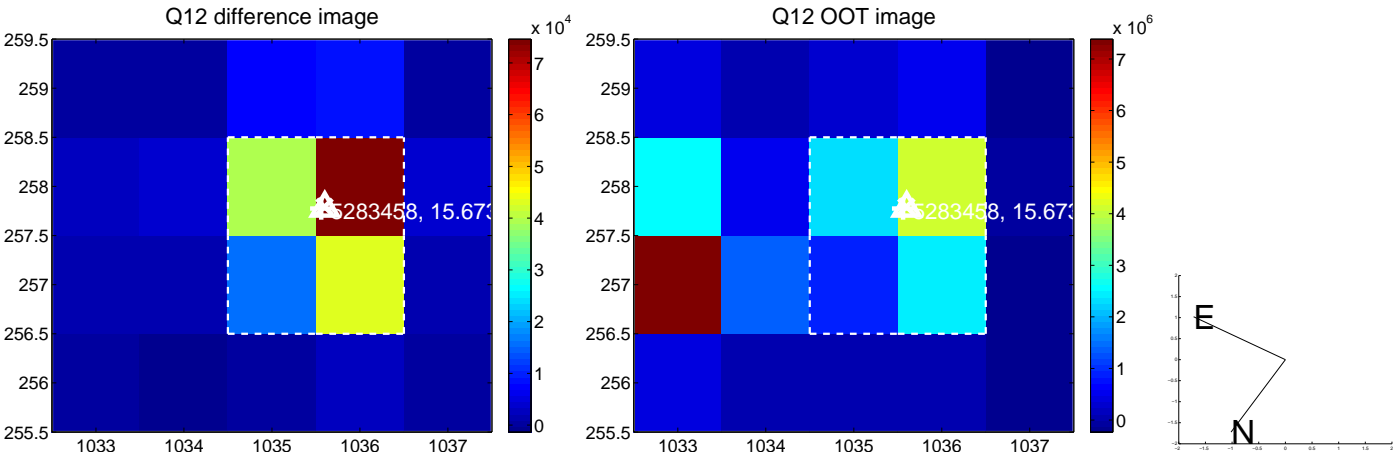
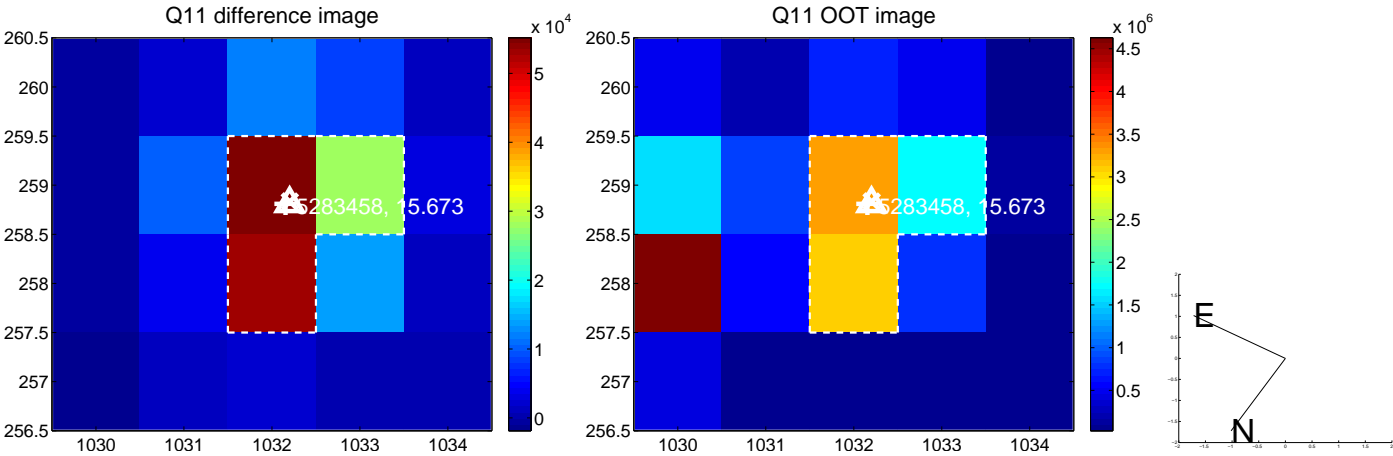
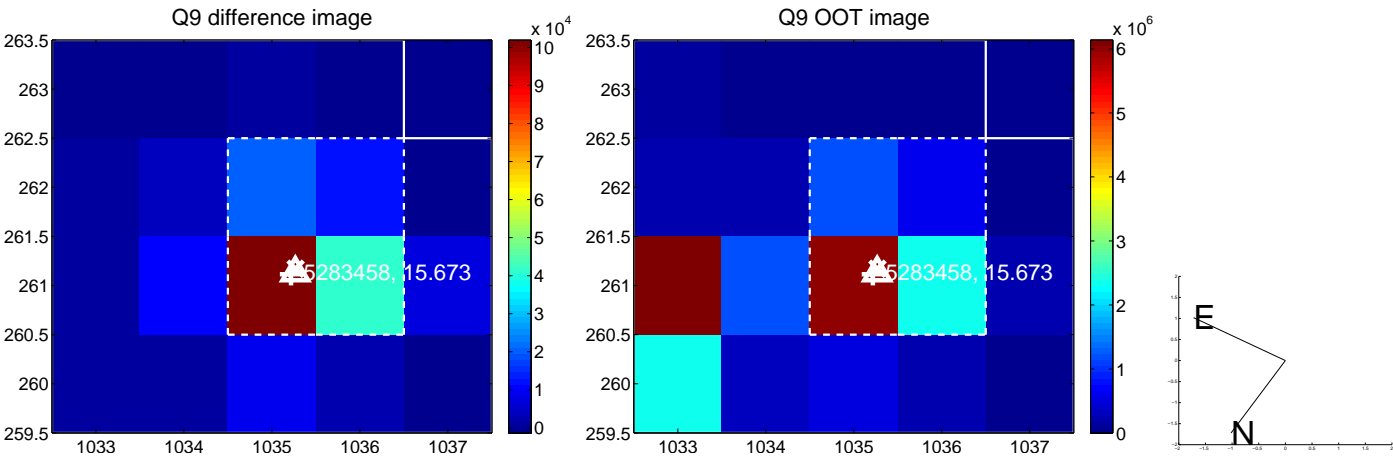


white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

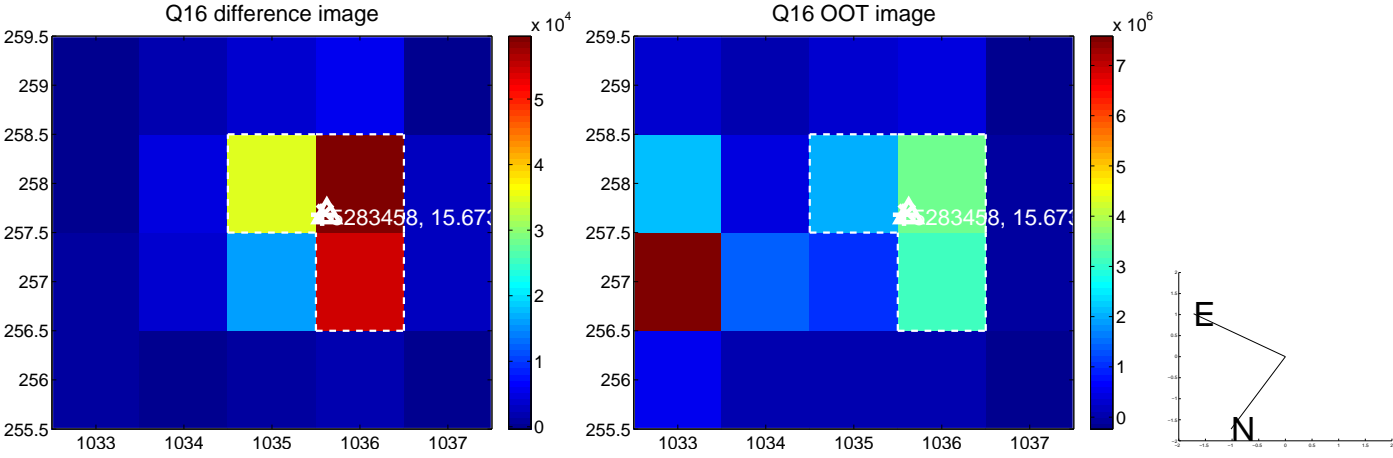
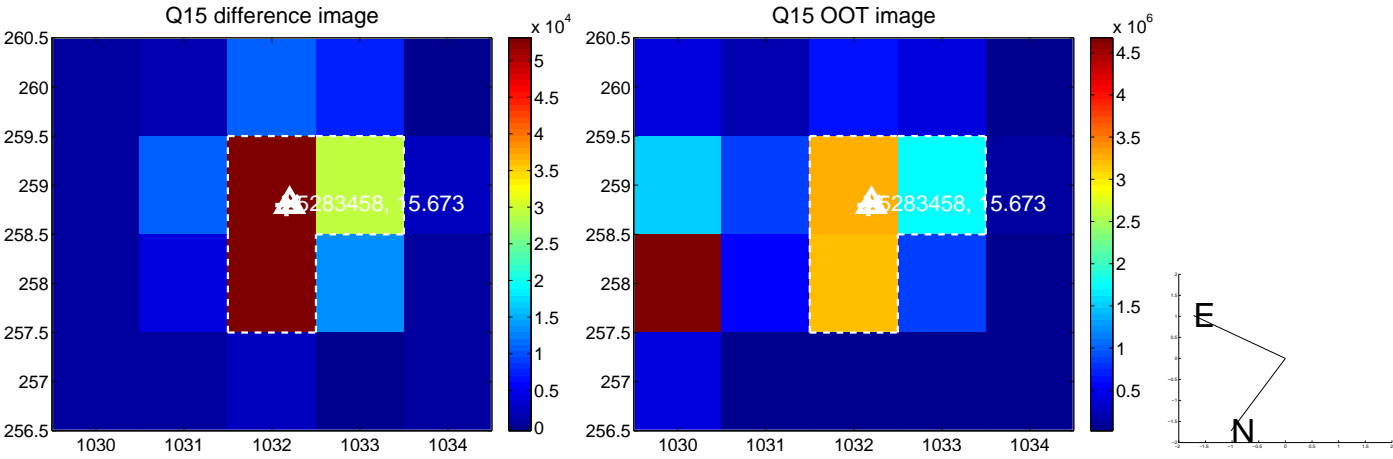
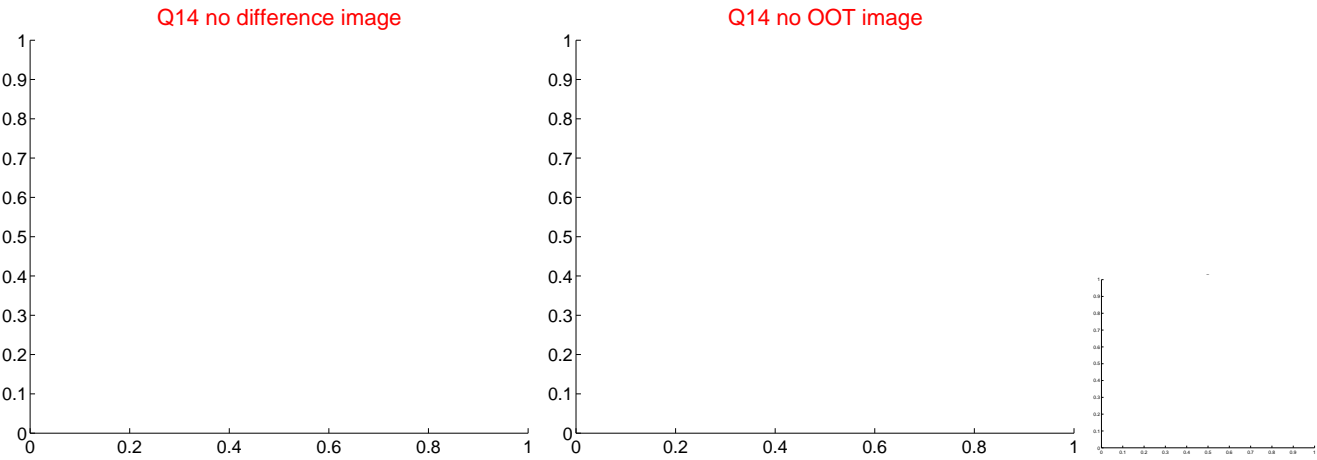
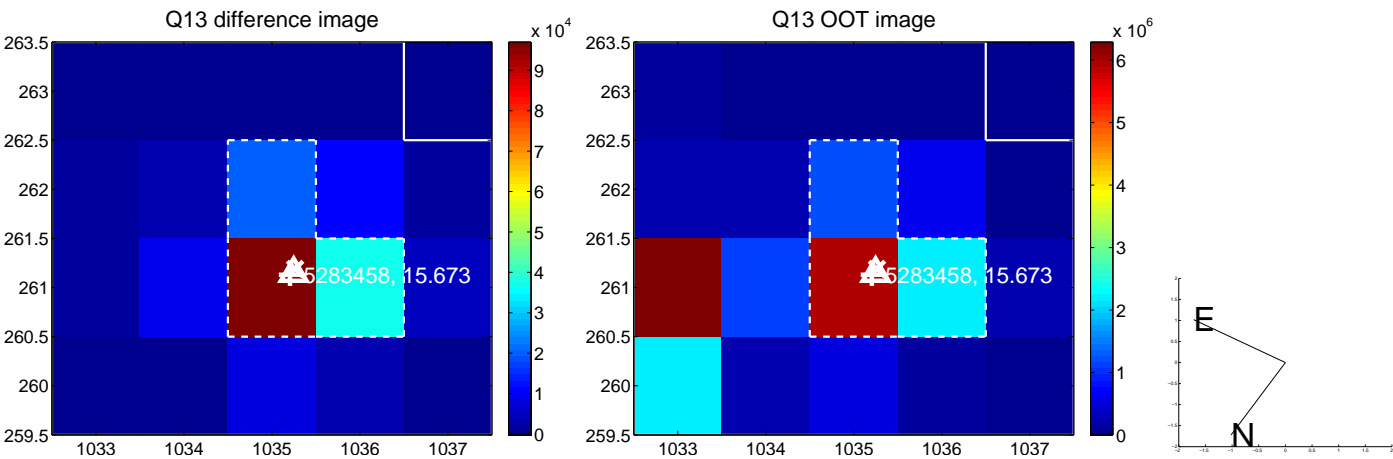




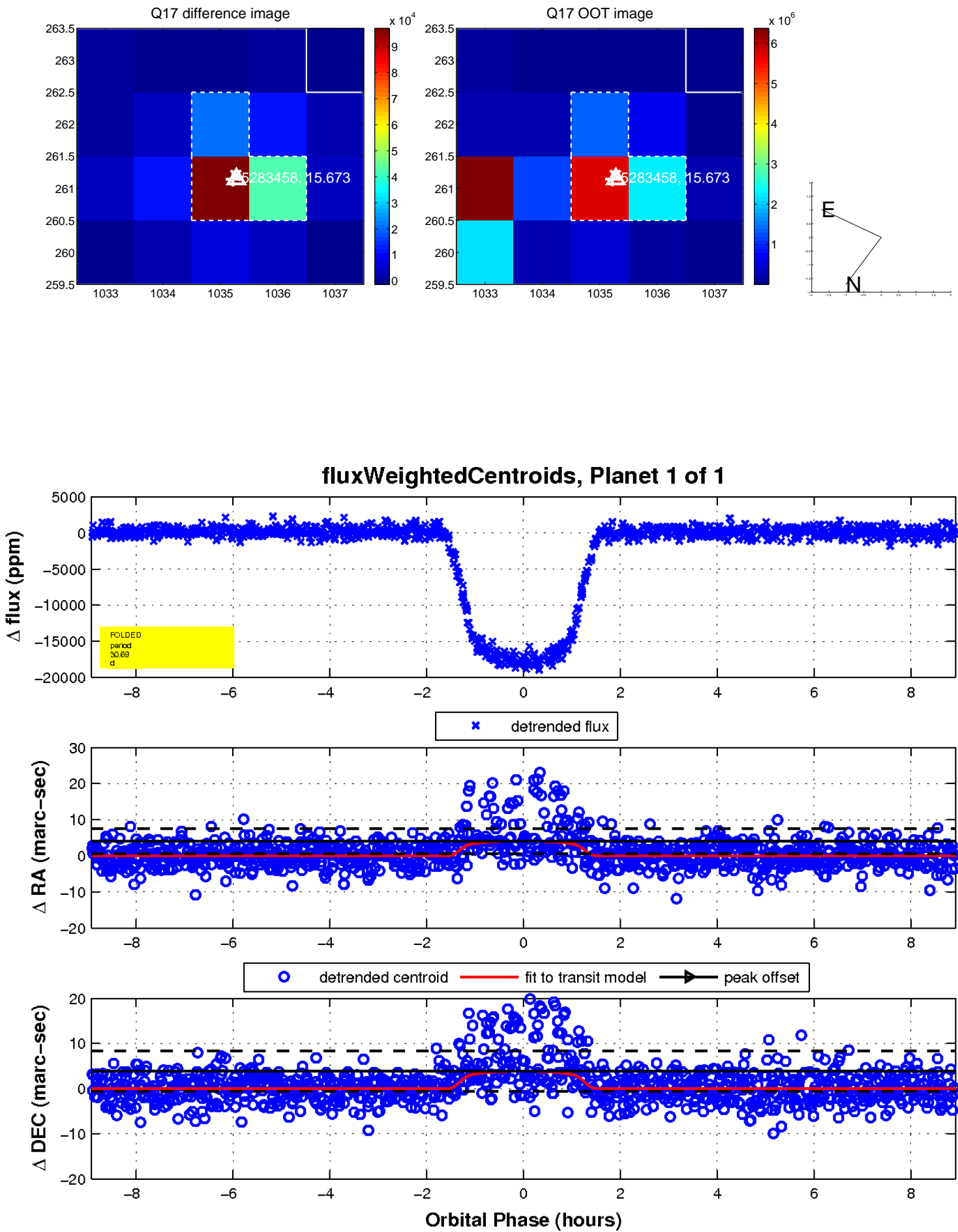
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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.



UKIRT Image

Declination

