

# KIC 007960547

## 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) | $R_p$ ( $R_{\oplus}$ ) | $S_p$ ( $S_{\oplus}$ ) |
|--------------|----------|---------|---------------|--------------|-------------|------------------|---------|--------|-----------------------------|-----------------|------------------------|------------------------|
| 007960547-01 | OBS      | 6940.01 | 6.767341      | 135.265500   | 243416.5    | 4.511            | 15643.1 | 9788.5 | 0.84                        | 5926            | 54.52                  | 179.17                 |

## Robovetter Results

| TCE          | Run Type | Disp | Score | N | S | C | E | Comments   |
|--------------|----------|------|-------|---|---|---|---|--|
| 007960547-01 | OBS      | FP   | 0.00  | 0 | 1 | 0 | 0 | MOD_SEC_DV—MOD_SEC_ALT—MOD_ODDEVEN_ALT—DEEP_V_SHAPED |

**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.

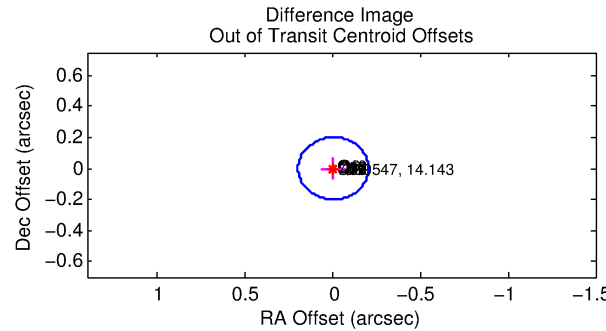
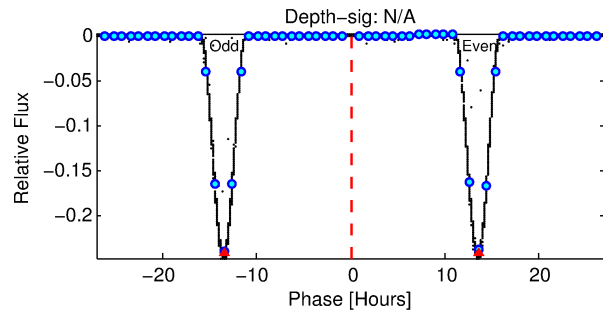
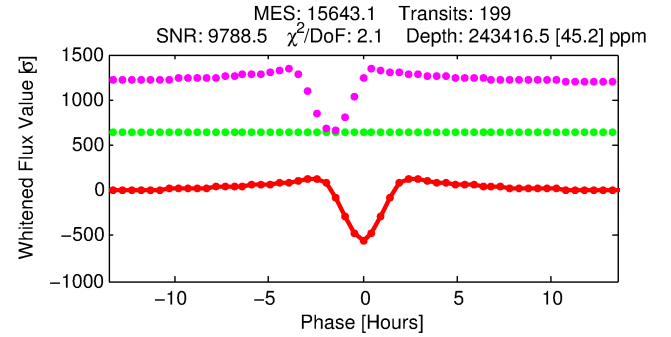
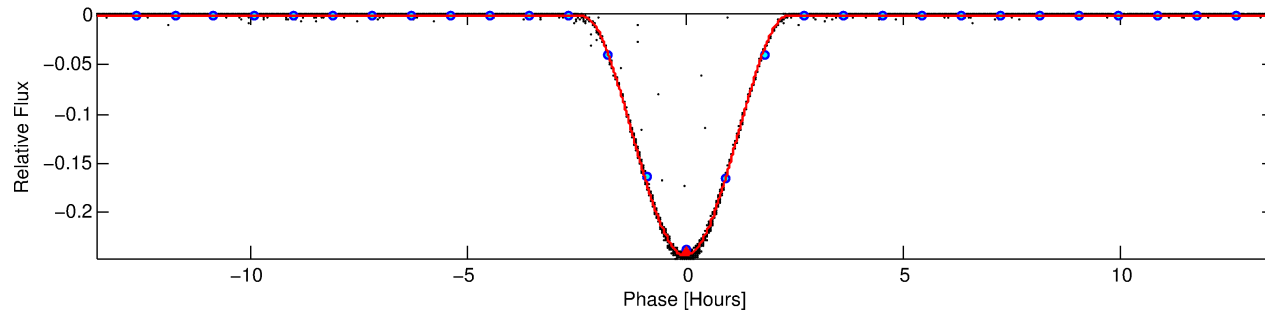
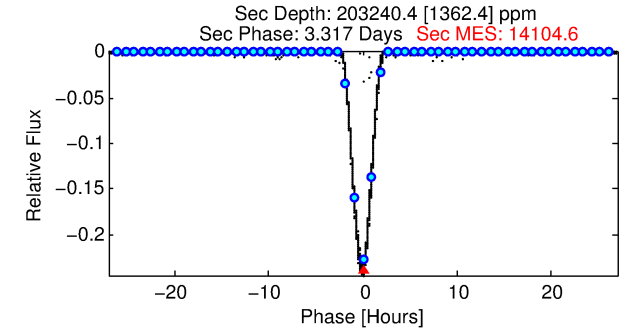
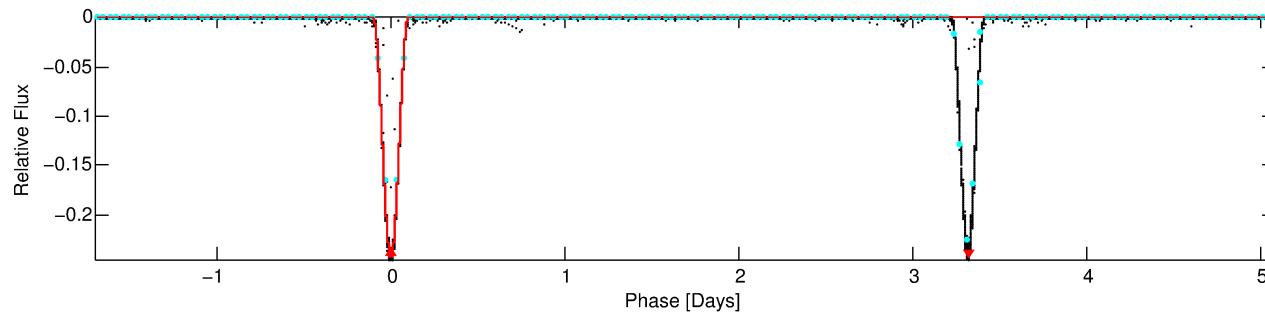
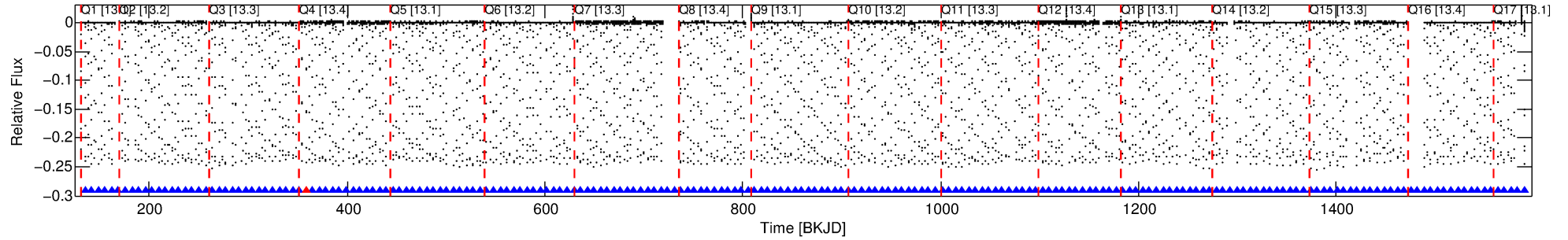
## Ephemeris Match Information For 007960547-01

No Significant Match Found

# DV One-Page Summary

KIC: 7960547 Candidate: 1 of 1 Period: 6.767 d  
KOI: K06940.01 Corr: 0.998

Kp: 14.14 R\*: 0.84 Rs Teff: 5926.0 K Logg: 4.51 Fe/H: -0.560



## DV Fit Results:

Period = 6.76734 [0.00000] d  
Epoch = 135.2655 [0.0000] BKJD  
Rp/R\* = 0.5926 [0.0096]  
a/R\* = 16.10 [0.04]  
b = 0.76 [0.01]  
Seff = 179.17 [58.81]  
Teq = 933 [77] K  
Rp = 54.52 [14.13] Re  
a = 0.0662 [0.0143] AU  
Ag = 164.88 [51.44] [3.19σ]  
Teffp = 5169 [145] K [25.8σ]

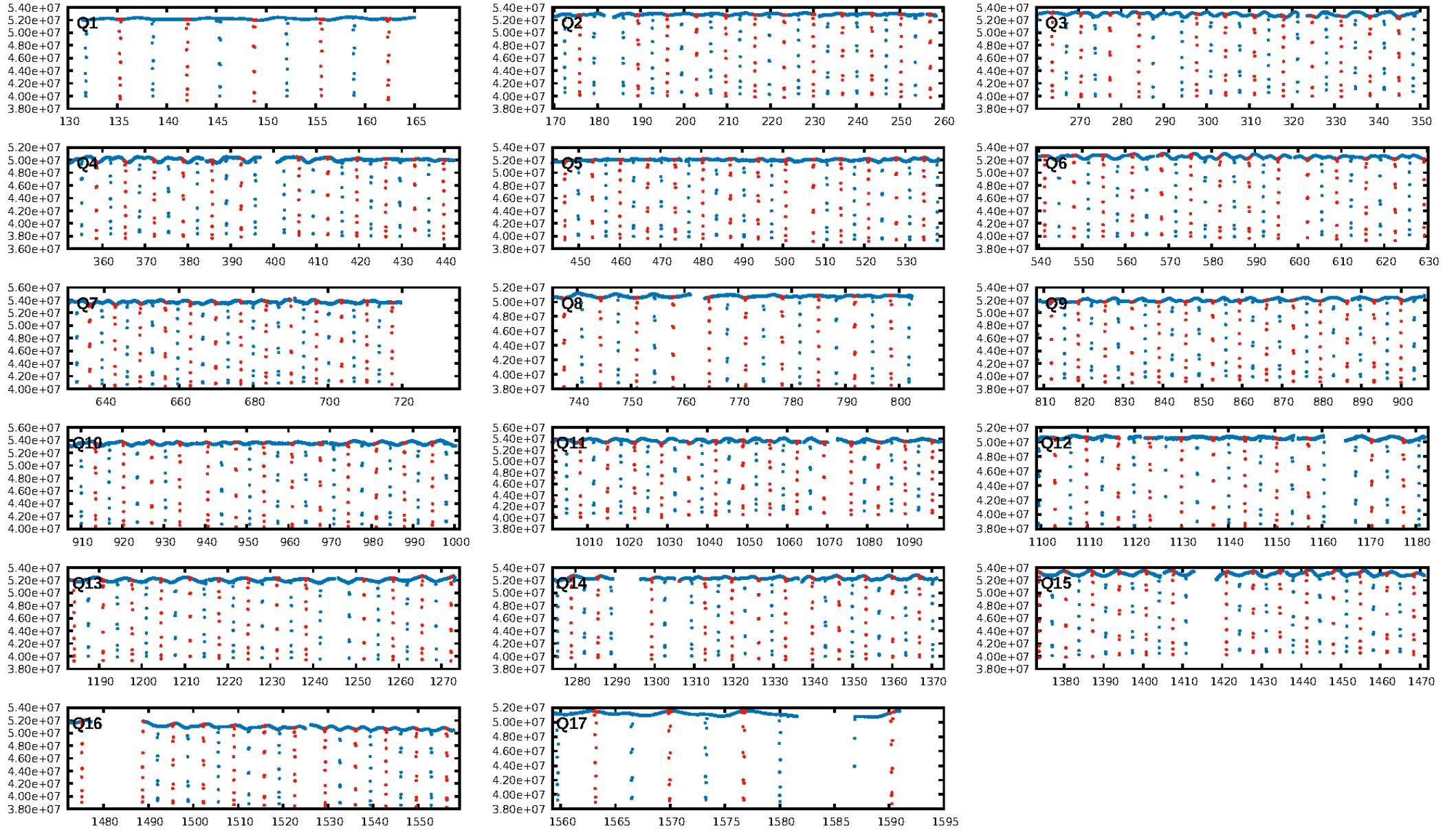
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: 0.0%  
ModelChiSquareGof-sig: 0.0%  
Bootstrap-pfa: N/A  
RollingBand-fgt: 0.99 [189/190]  
GhostDiagnostic-chr: 1.825  
Centroid-sig: 0.0%  
Centroid-so: 0.118 arcsec [231.17σ]  
OotOffset-rm: 0.004 arcsec [0.06σ]  
KicOffset-rm: 0.128 arcsec [1.90σ]  
OotOffset-st: 4/4/4/5 [17]  
KicOffset-st: 4/4/4/5 [17]  
DiffImageQuality-fgm: 1.00 [17/17]  
DiffImageOverlap-fno: 1.00 [17/17]

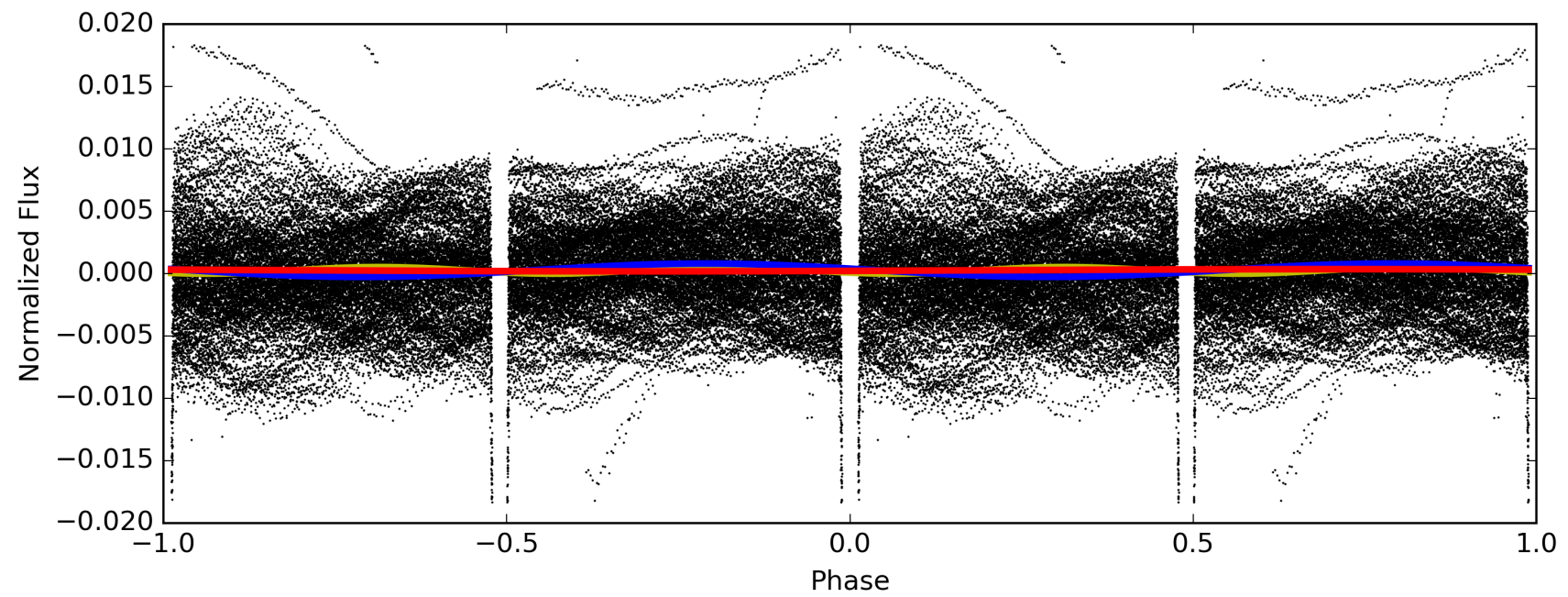
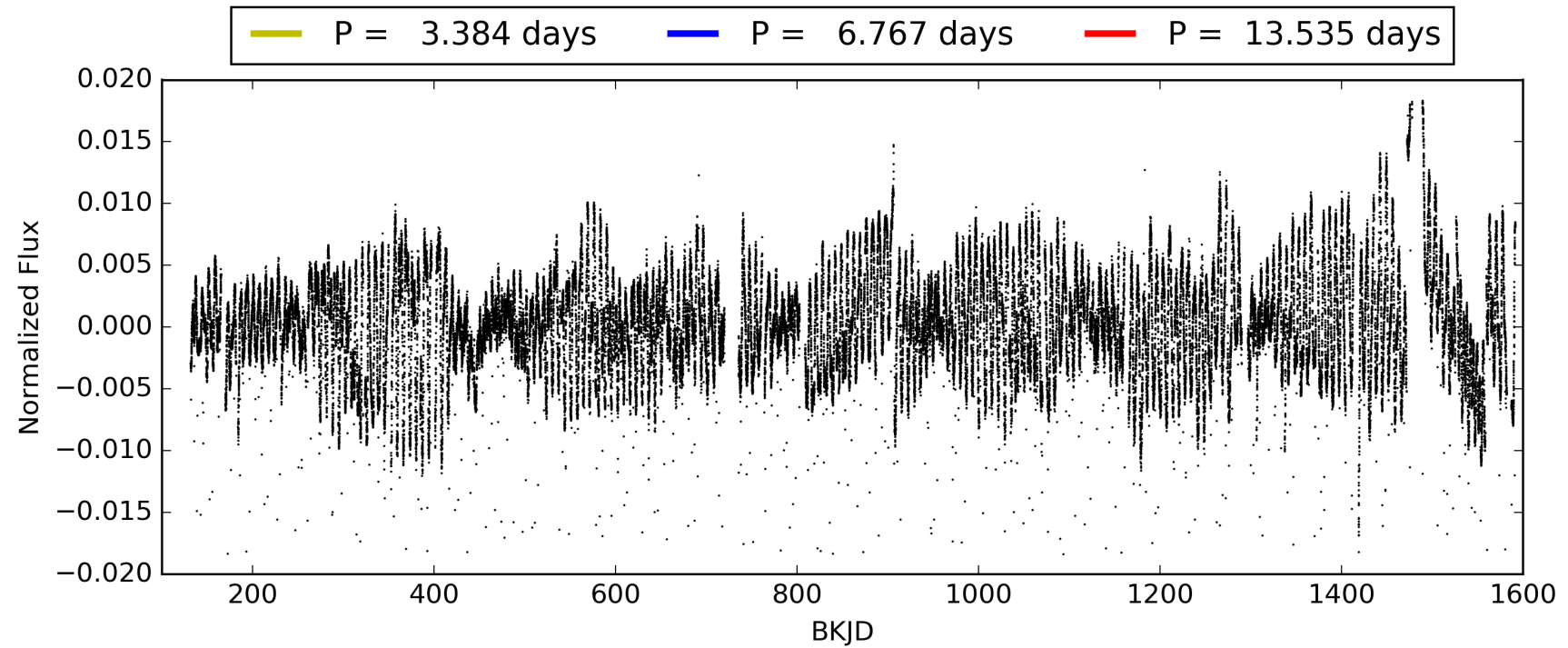
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 17:28:19 Z

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

# TCE 007960547-01, PDC Light Curves

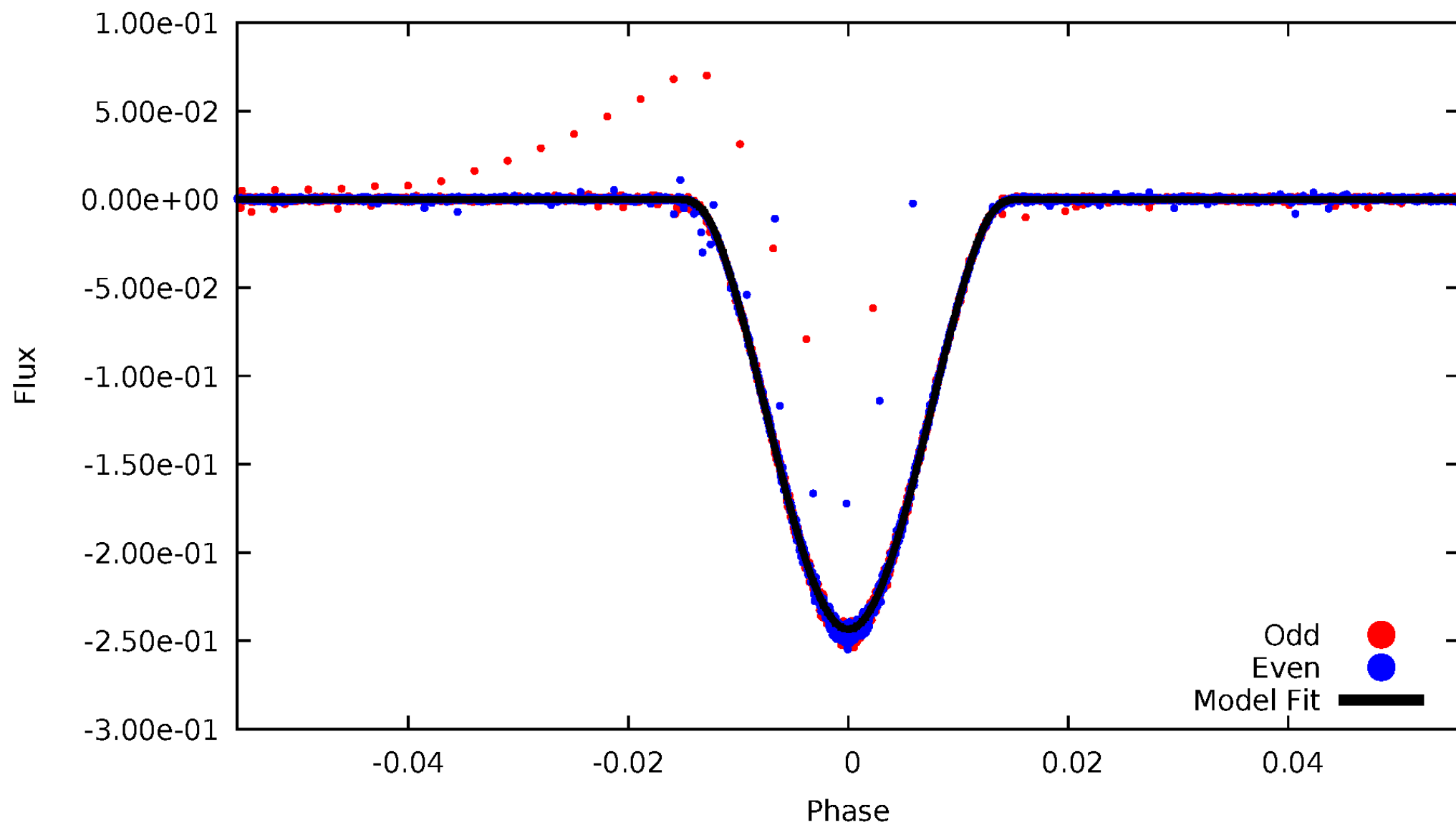


TCE 007960547-01



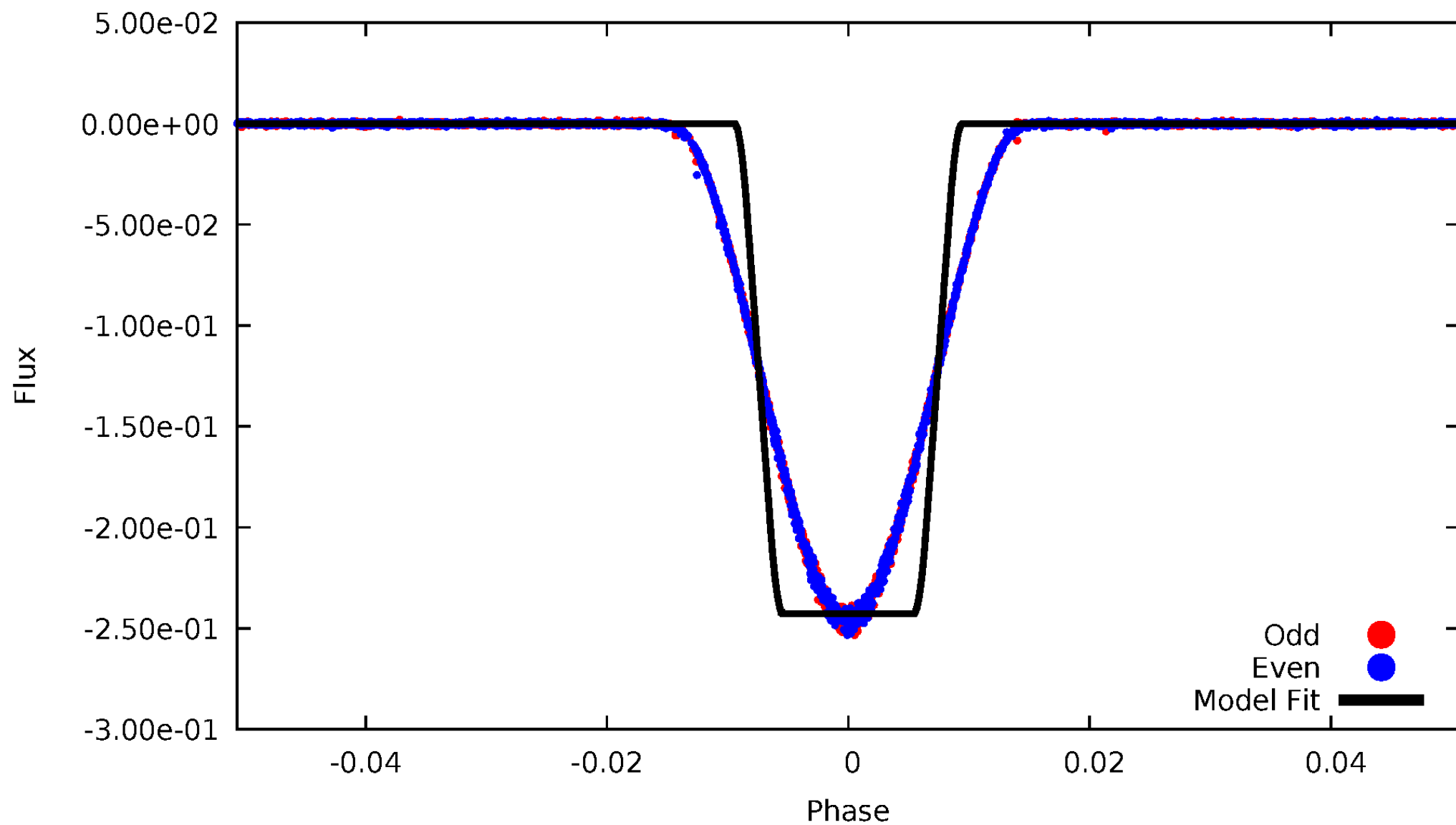
# DV Odd/Even

TCE 007960547-01



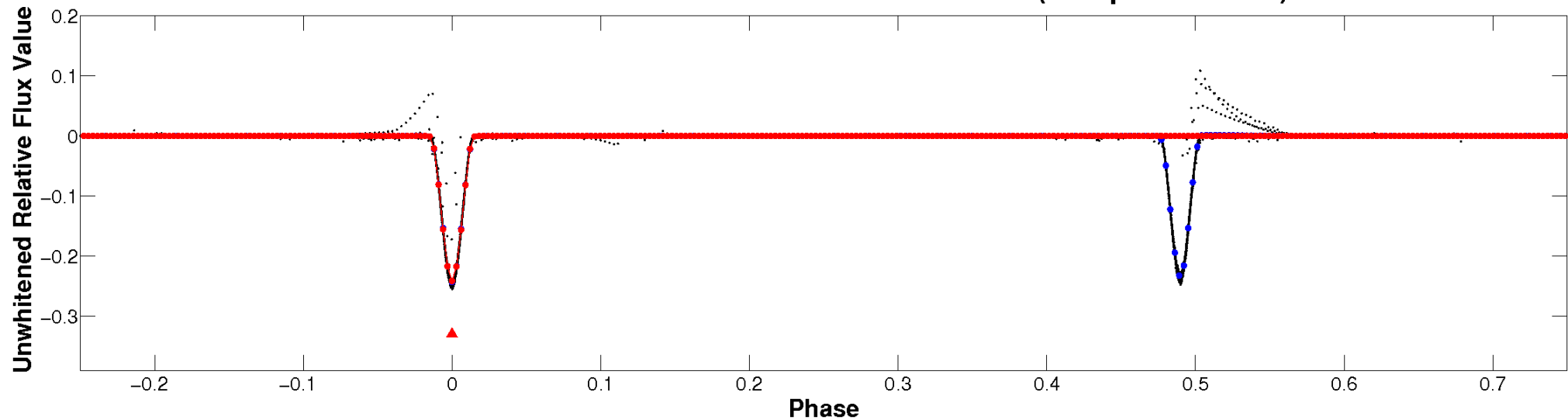
# ALT Odd/Even

TCE 007960547-01

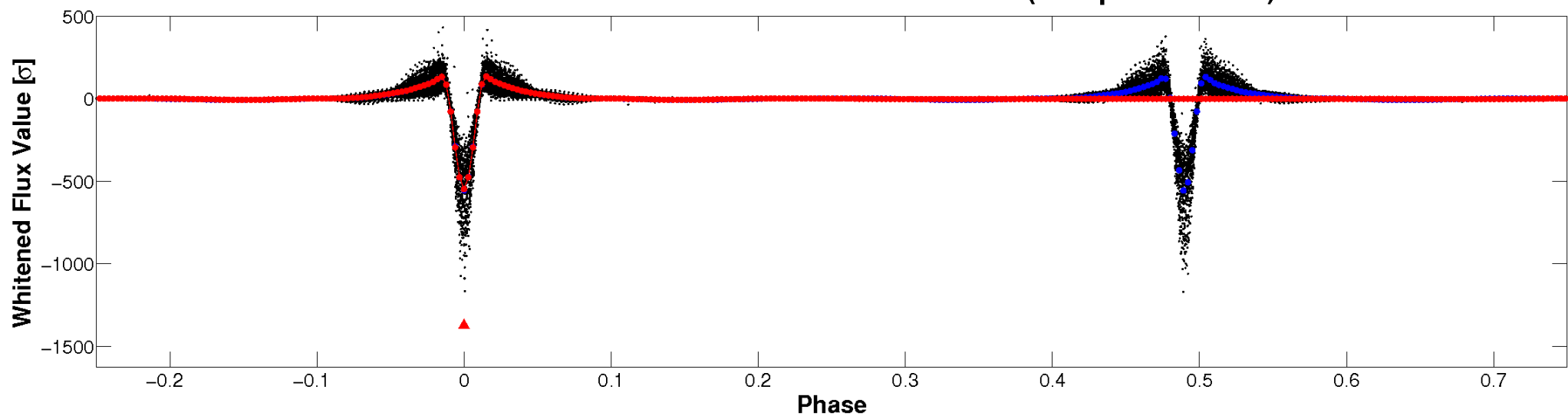


# Non-Whitened Vs. Whitened Light Curve

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

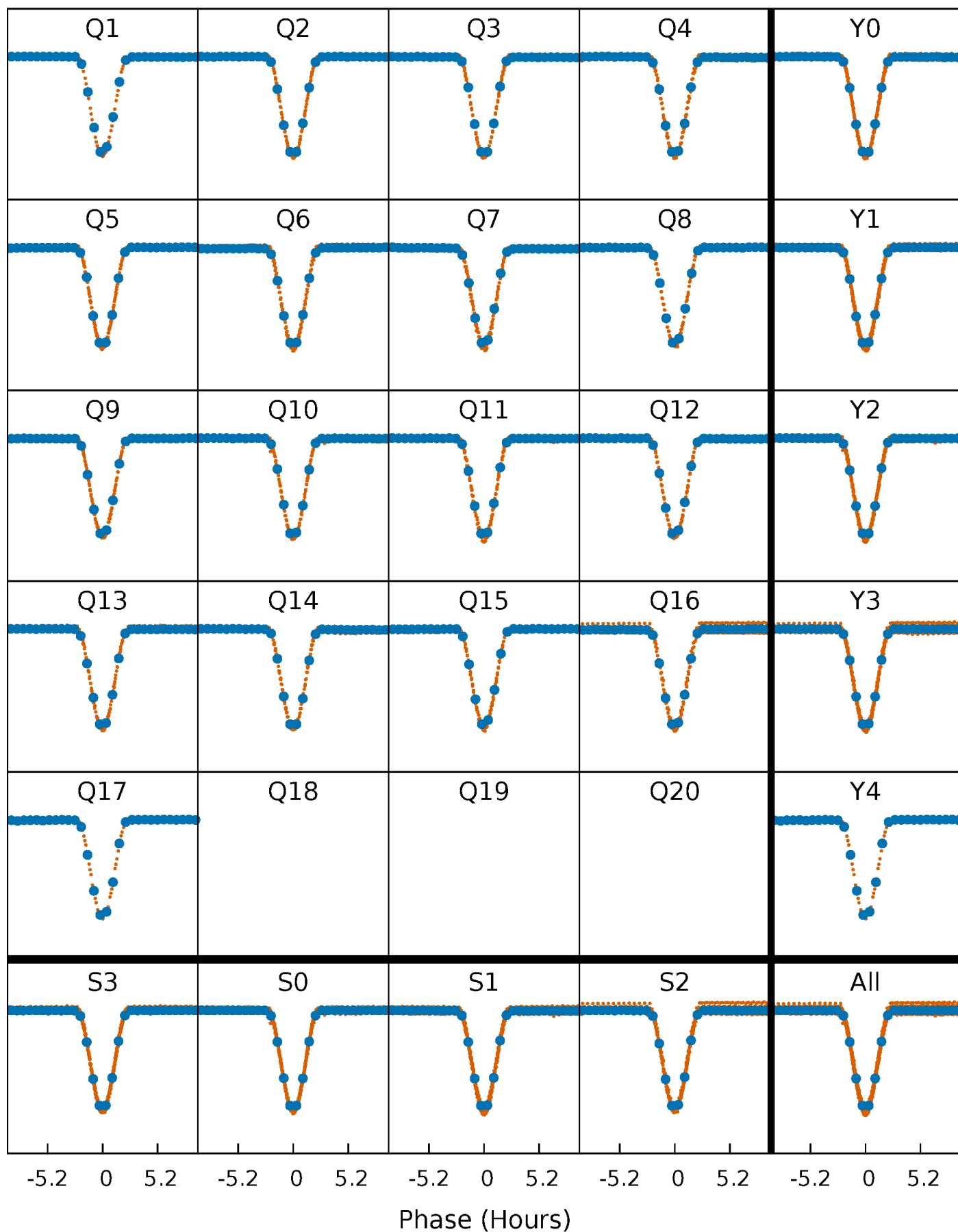


## Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



# PDC Quarter-Phased Transit Curves

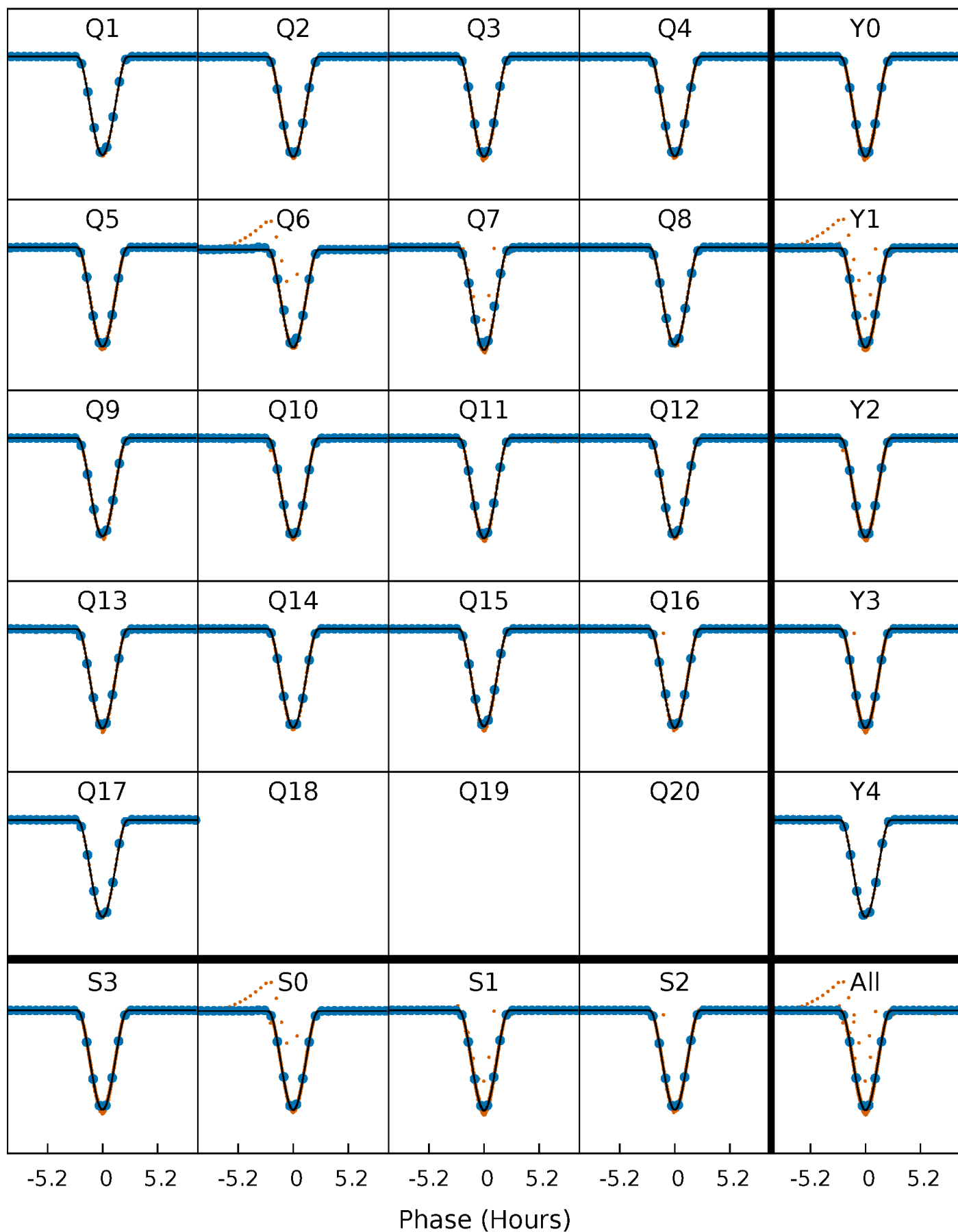
TCE 007960547-01 P= 6.767341 Days  $T_0=135.265500$  (BKJD)





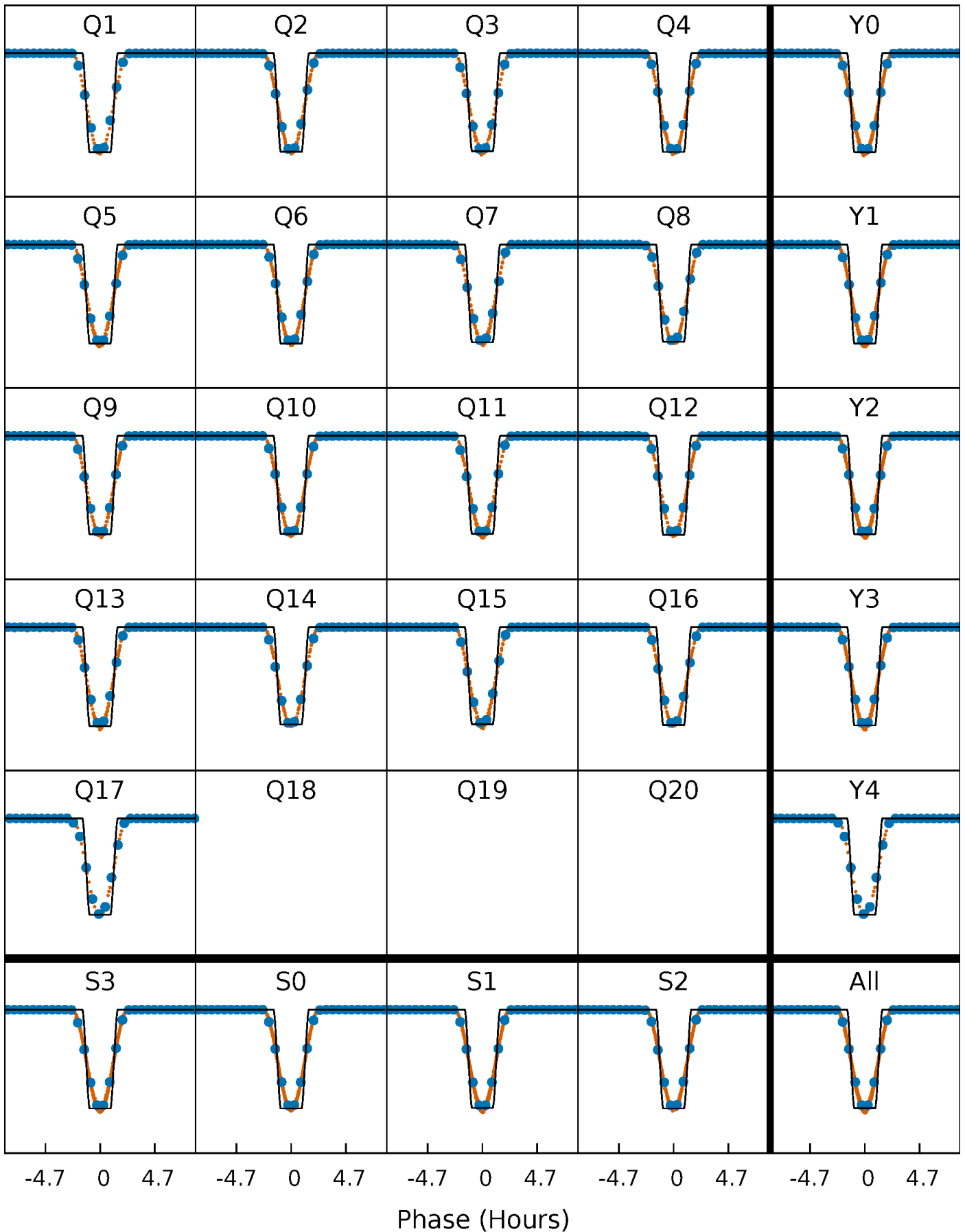
# DV Quarter-Phased Transit Curves

TCE 007960547-01 P= 6.767341 Days  $T_0=135.265500$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

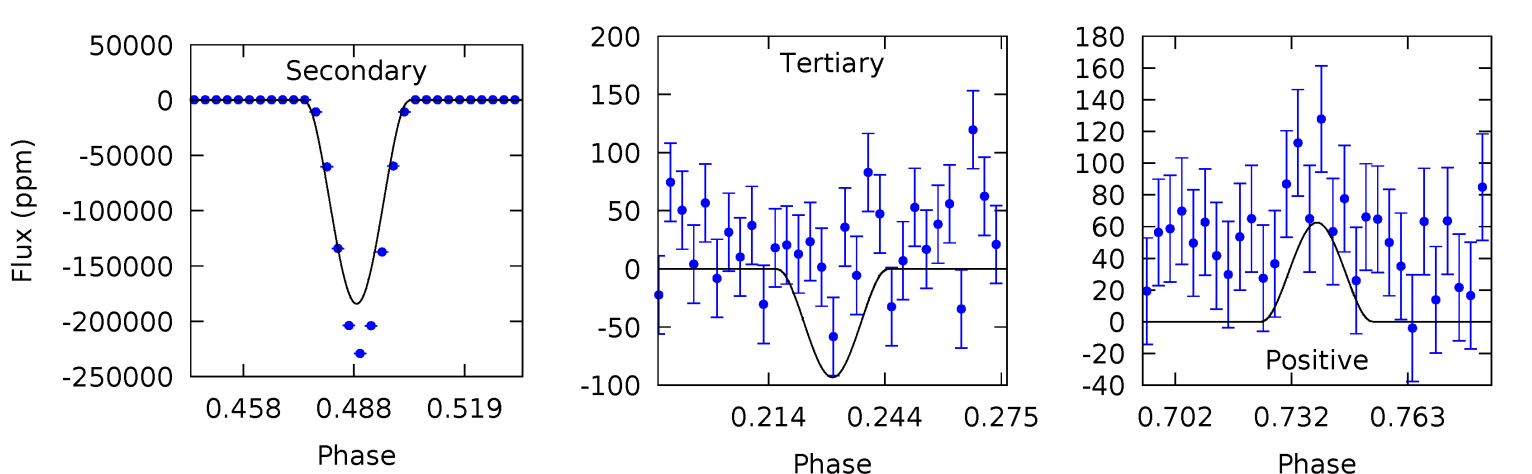
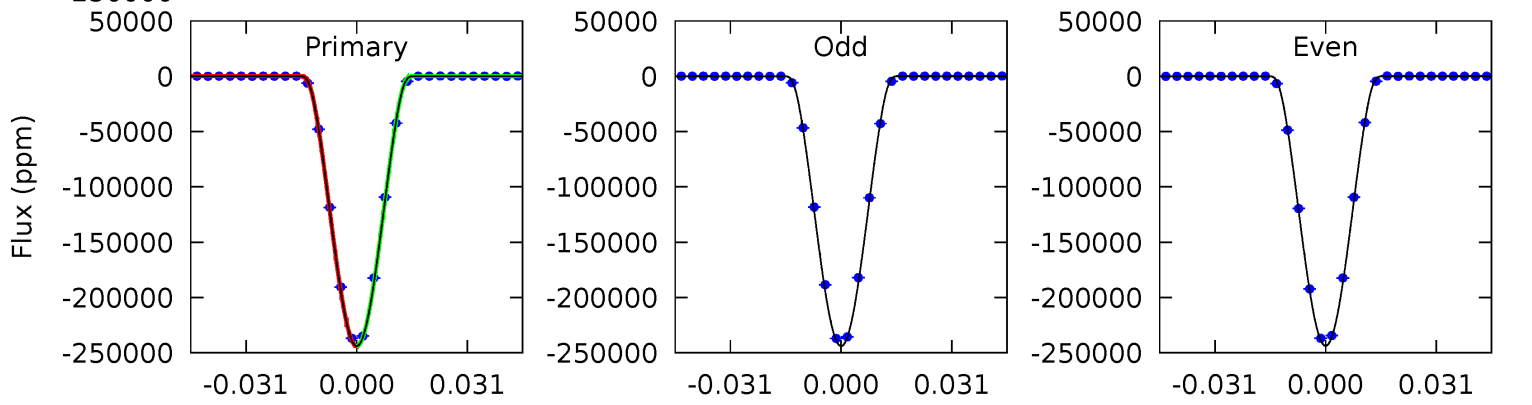
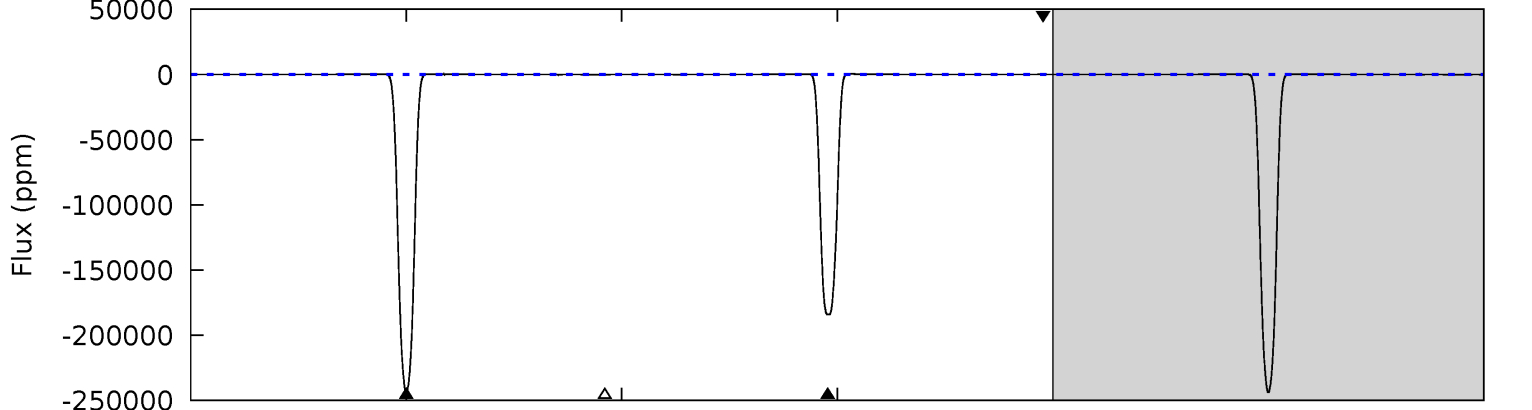
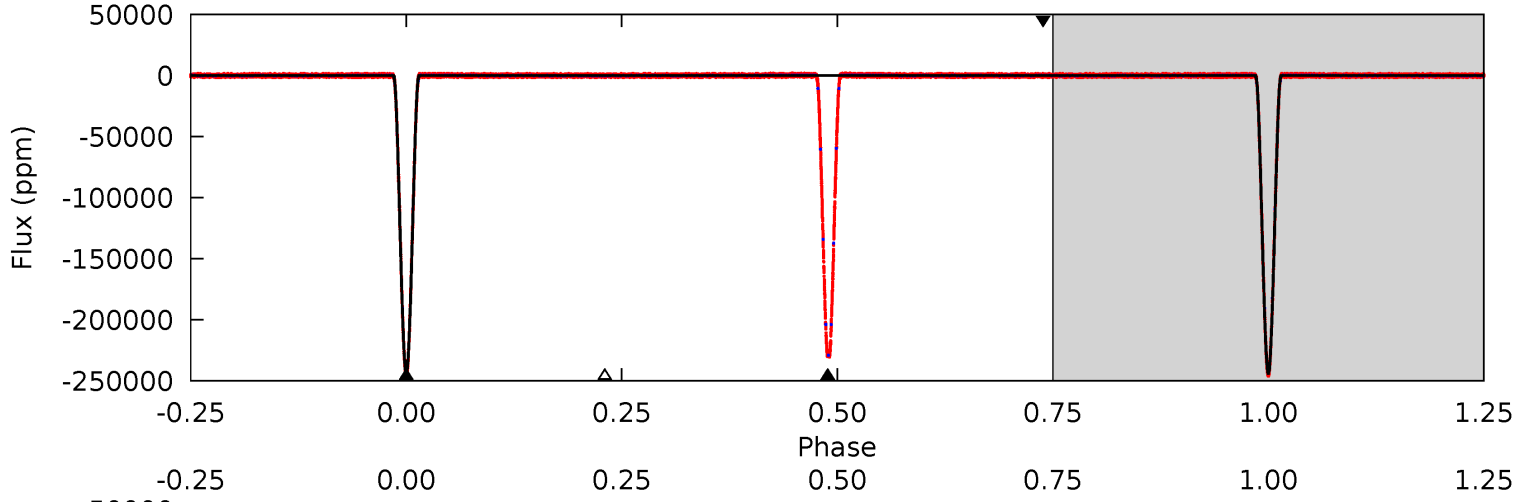
TCE 007960547-01 P= 6.767343 Days  $T_0=135.265376$  (BKJD)



# DV Model-Shift Uniqueness Test

007960547-01, P = 6.767341 Days, E = 128.498159 Days

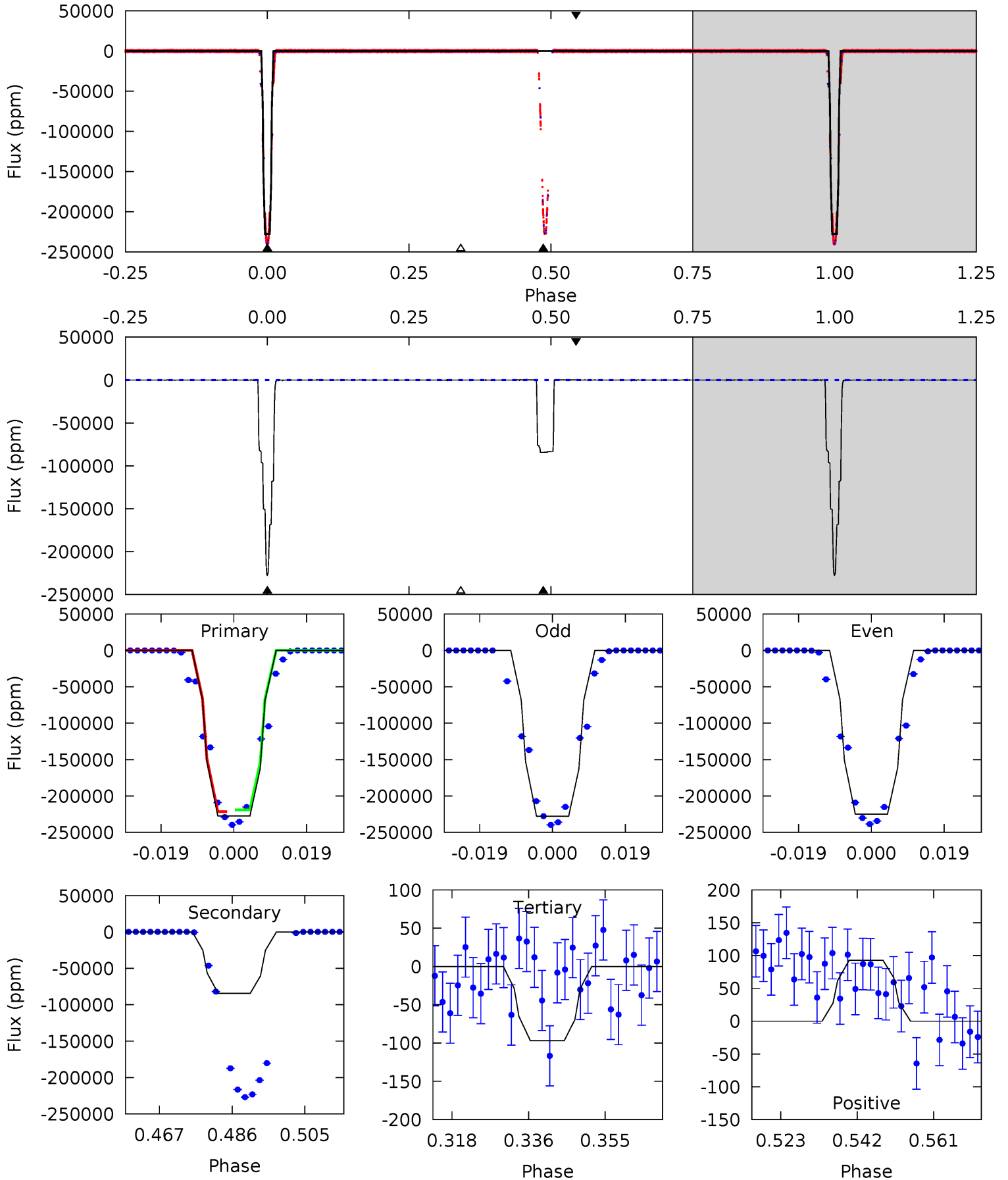
| Pri   | Sec   | Ter  | Pos  | FA <sub>1</sub> | FA <sub>2</sub> | F <sub>Red</sub> | Pri-Ter | Pri-Pos | Sec-Ter | Sec-Pos | Odd-Evn | DMM  | Shape | TAT  |
|-------|-------|------|------|-----------------|-----------------|------------------|---------|---------|---------|---------|---------|------|-------|------|
| 19512 | 14734 | 7.46 | 5.00 | 4.81            | 2.16            | 6.77             | 19504   | 19507   | 14726   | 14729   | 8.93    | 0.99 | 0.00  | 2.64 |



# Alt Model-Shift Uniqueness Test

007960547-01, P = 6.767343 Days, E = 128.498033 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 |
|------|------|------|------|-----------------|-----------------|------------------|---------|---------|---------|---------|---------|------|-------|-----|
| 8906 | 3299 | 3.80 | 3.63 | 4.90            | 2.35            | 10.3             | 8903    | 8903    | 3295    | 3295    | 52.1    | 1.00 | 0.00  | 0   |



### Stellar Parameters For KIC 007960547

|        | $T_{\text{eff}}(K)$  | $\log(g)$                 | [Fe/H]                     | $R$ ( $R_{\odot}$ )       | $M(M_{\odot})$            | $p_{\star}$ ( $\text{g}\cdot\text{cm}^{-3}$ ) |
|--------|----------------------|---------------------------|----------------------------|---------------------------|---------------------------|---|
|        | $5926^{+159}_{-159}$ | $4.513^{+0.072}_{-0.168}$ | $-0.560^{+0.300}_{-0.300}$ | $0.843^{+0.218}_{-0.087}$ | $0.844^{+0.095}_{-0.071}$ | $1.985^{+0.627}_{-0.947}$                     |
|        | +3%/-3%              | +2%/-4%                   | +54%/-54%                  | +26%/-10%                 | +11%/-8%                  | +32%/-48%                                     |
| 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 007960547-01 / KOI 6940.01

| Detrend | Depth (ppm)      | $R_p$ ( $R_{\oplus}$ )  | $T_{max}$ (K)      | $T_{obs}$ (K)        | $A_{obs}$         |
|---------|------------------|-------------------------|--------------------|----------------------|-------------------|
| DV      | $-184143 \pm 12$ | $55.55^{+7.36}_{-4.07}$ | $1318^{+83}_{-56}$ | $5338^{+141}_{-135}$ | $176^{+25}_{-37}$ |
| Alt.    | $-84262 \pm 26$  | $45.82^{+5.68}_{-3.17}$ | $1315^{+75}_{-55}$ | $4767^{+117}_{-113}$ | $105^{+14}_{-20}$ |

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

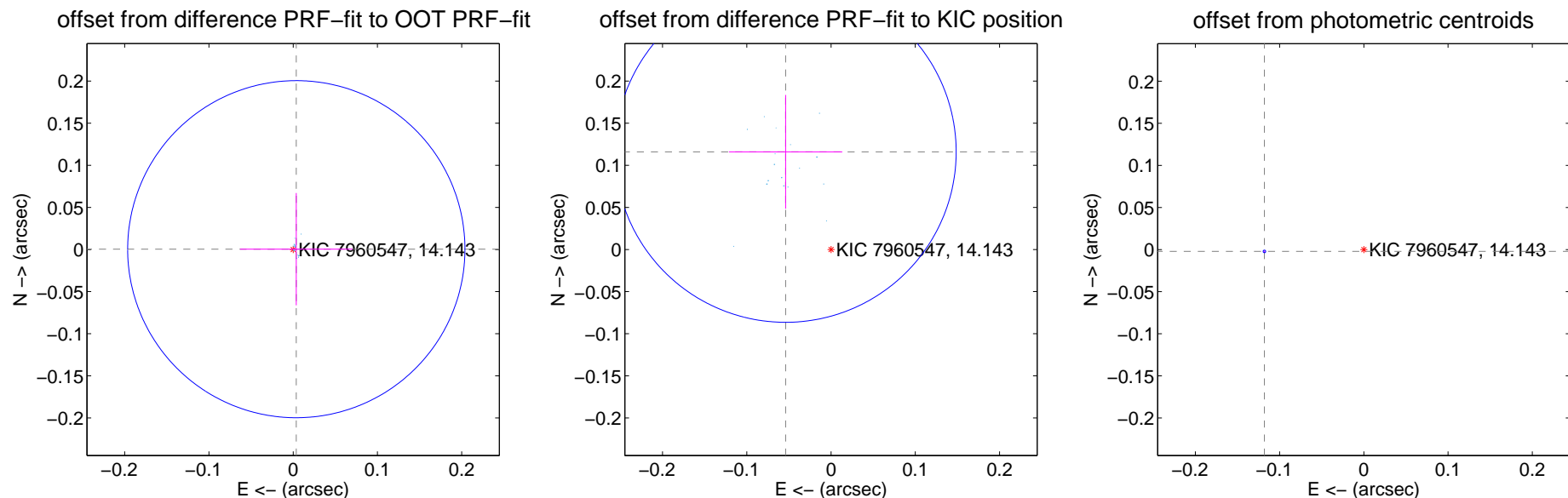
## DV Centroid Data

Supplemental centroid analysis for 007960547-01. Kepler magnitude: 14.14. Transit SNR 9788.50

There are 17 quarters with good PRF difference image offsets

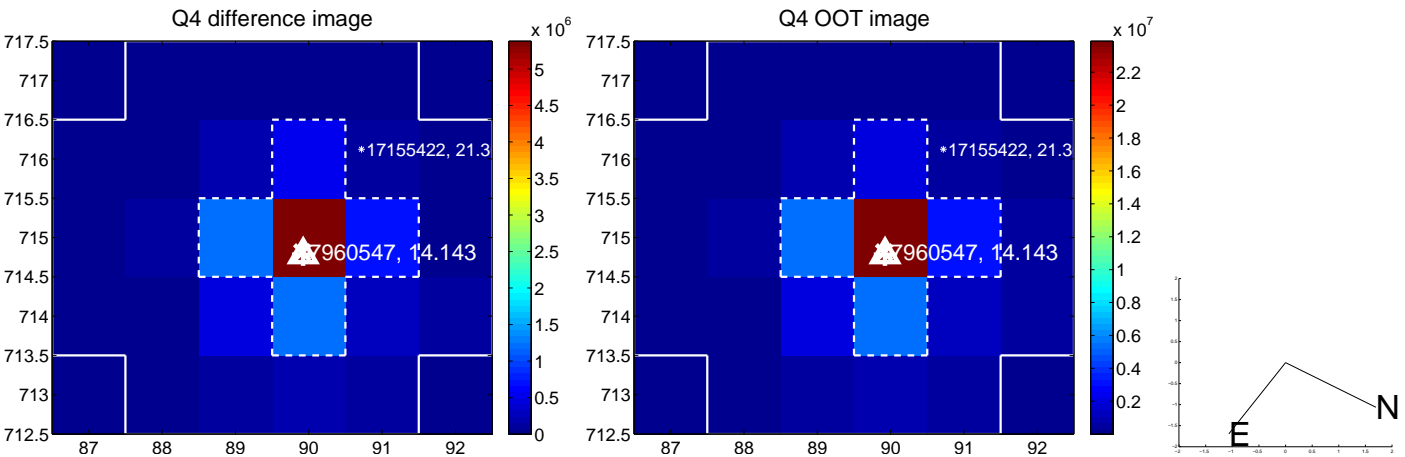
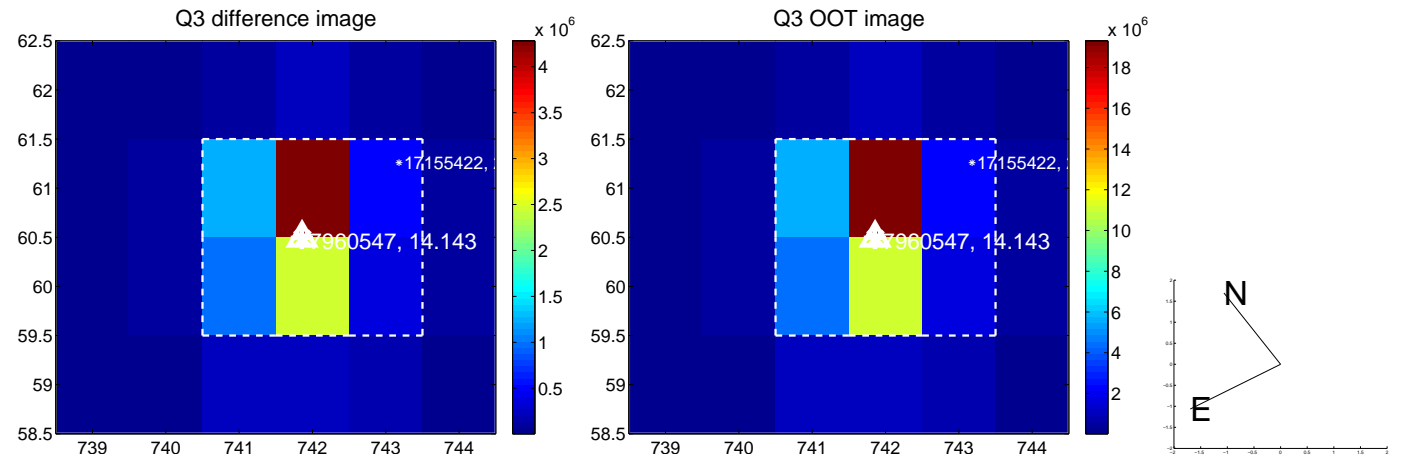
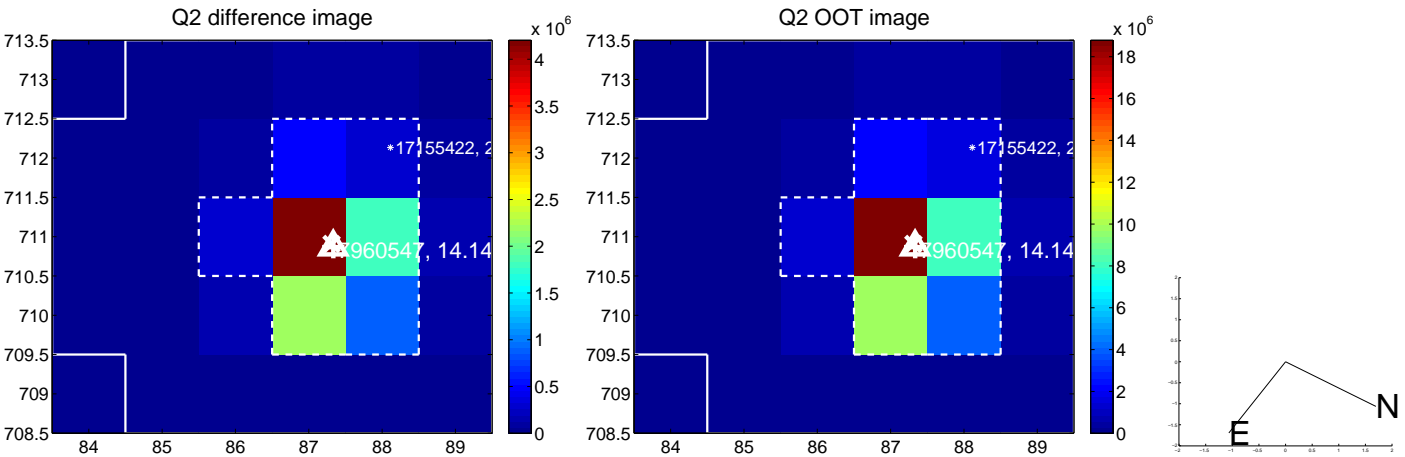
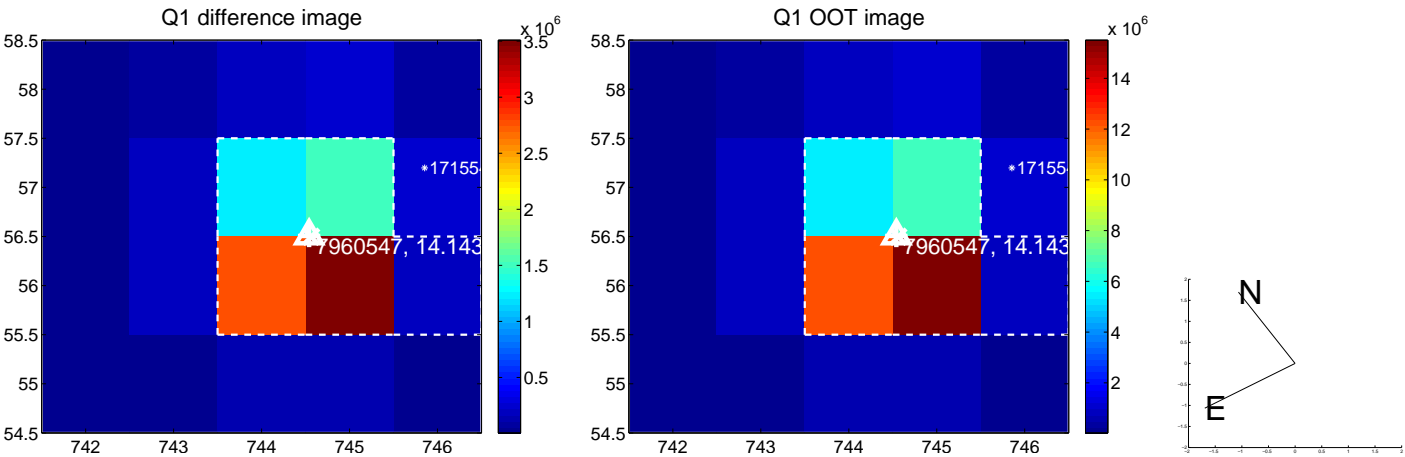
The direct PRF centroid is offset from the target star catalog position by about 0.11 arcsec

|   | Distance in arcsec | Distance / $\sigma$ | $\Delta$ RA        | $\Delta$ Dec      |
|---|--------------------|---------------------|--------------------|-------------------|
| PRF-fit source offset from OOT          | $0.004 \pm 0.067$  | 0.06                | $-0.004 \pm 0.067$ | $0.000 \pm 0.067$ |
| PRF-fit source offset from KIC position | $0.128 \pm 0.067$  | 1.90                | $0.054 \pm 0.067$  | $0.116 \pm 0.068$ |
| photometric centroid source offset      | $0.12 \pm 0.00$    | <b>231.17</b>       | $0.12 \pm 0.00$    | $-0.00 \pm 0.00$  |

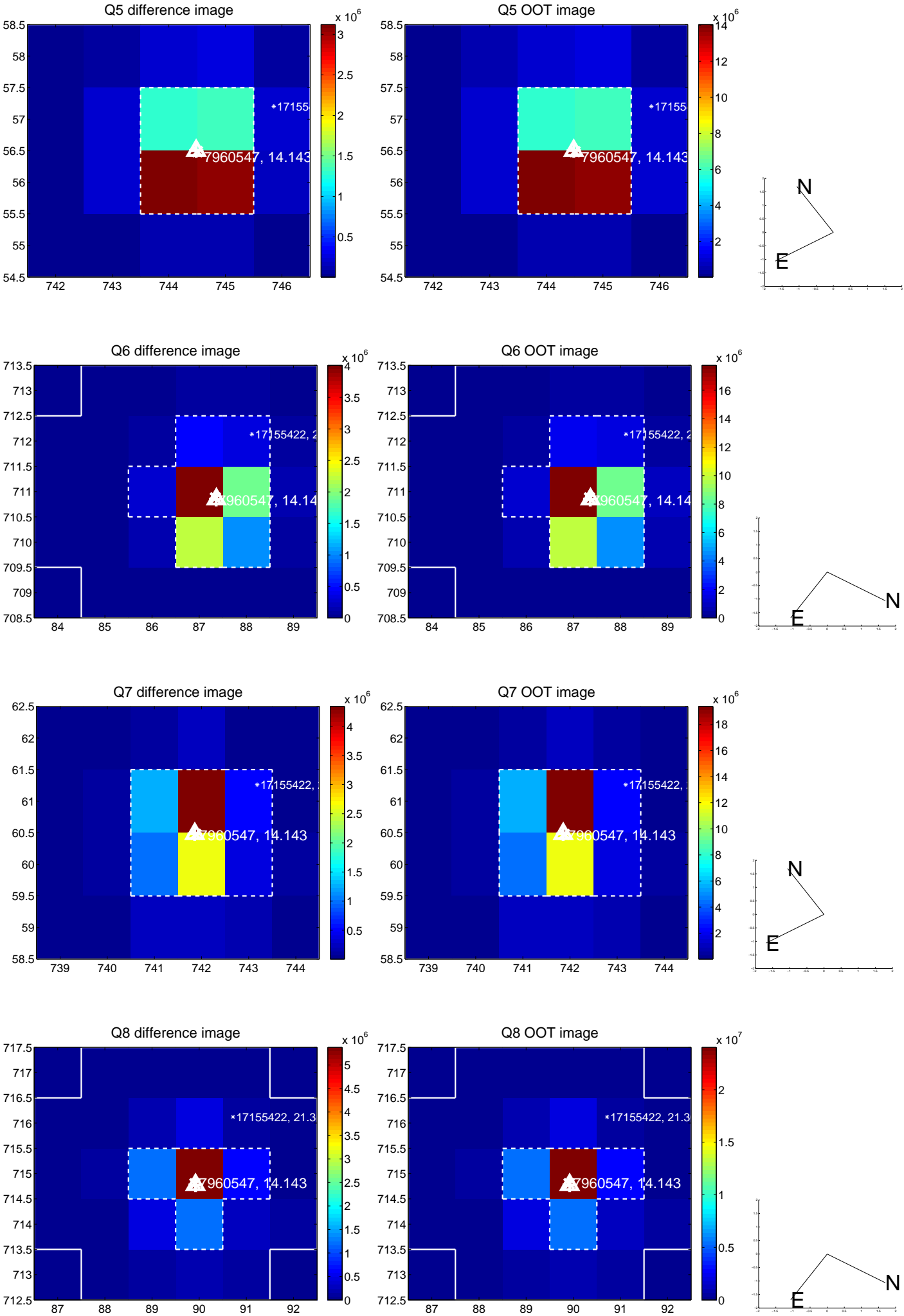


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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

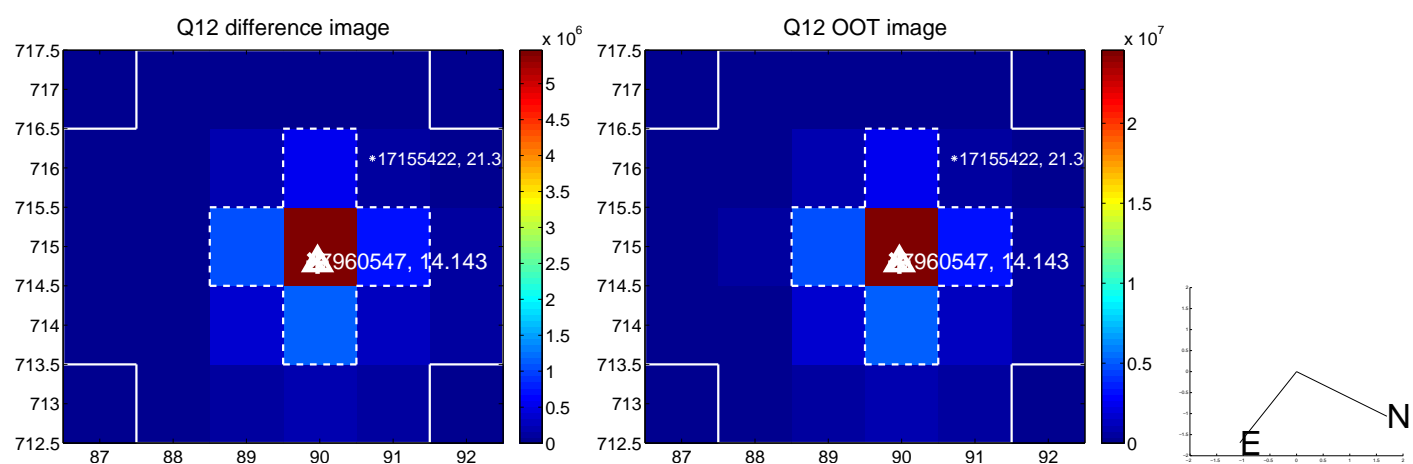
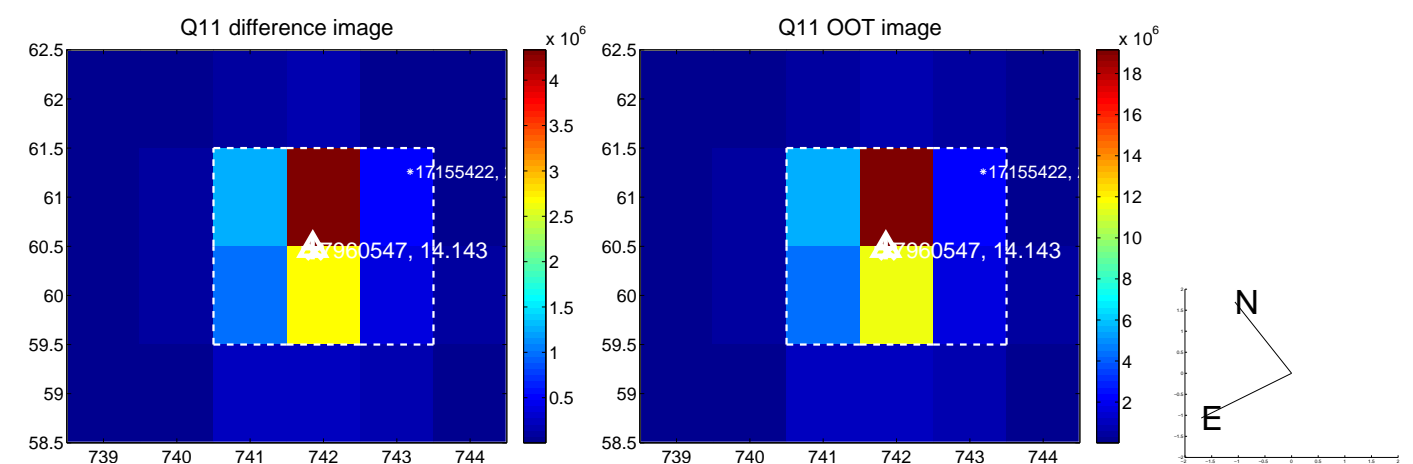
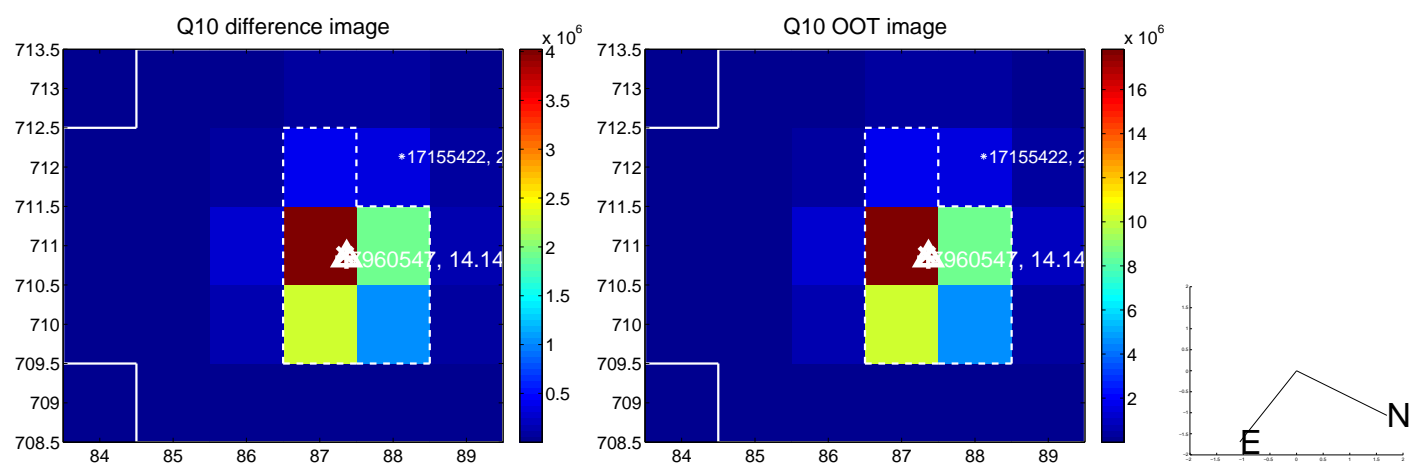
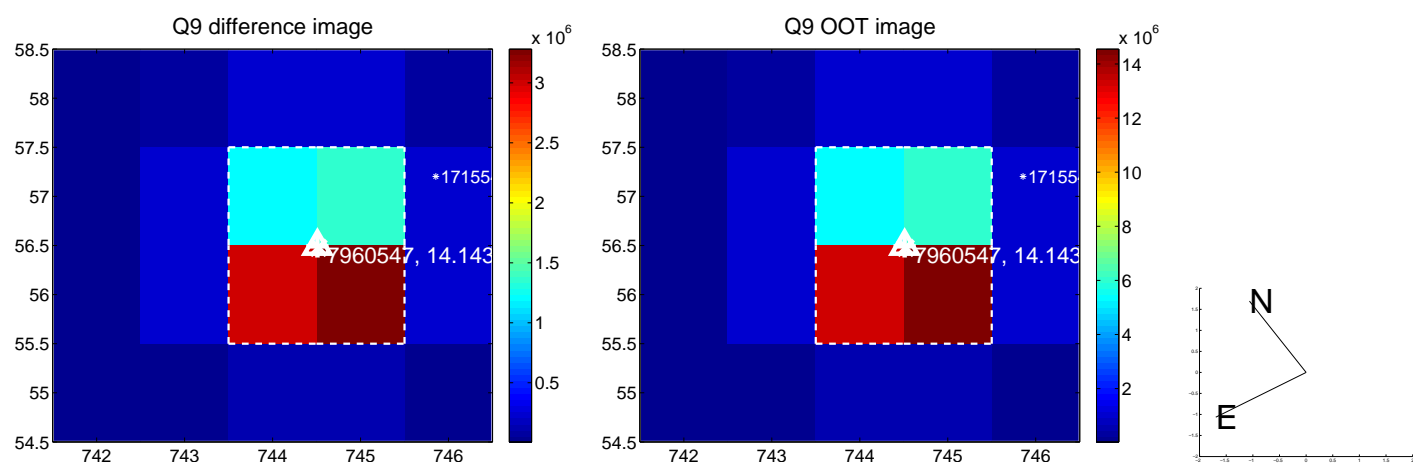


white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

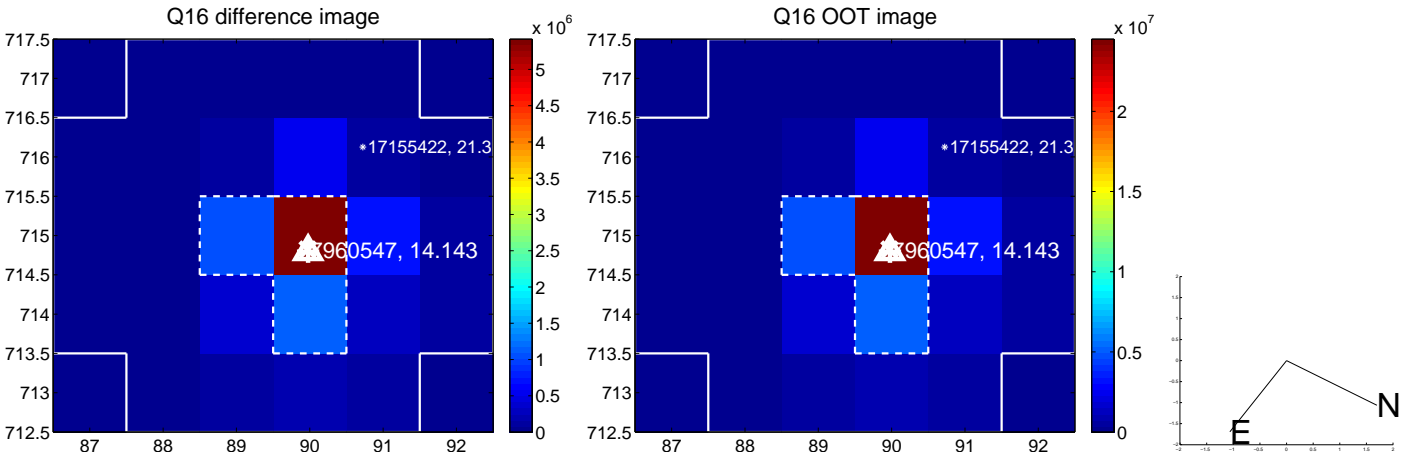
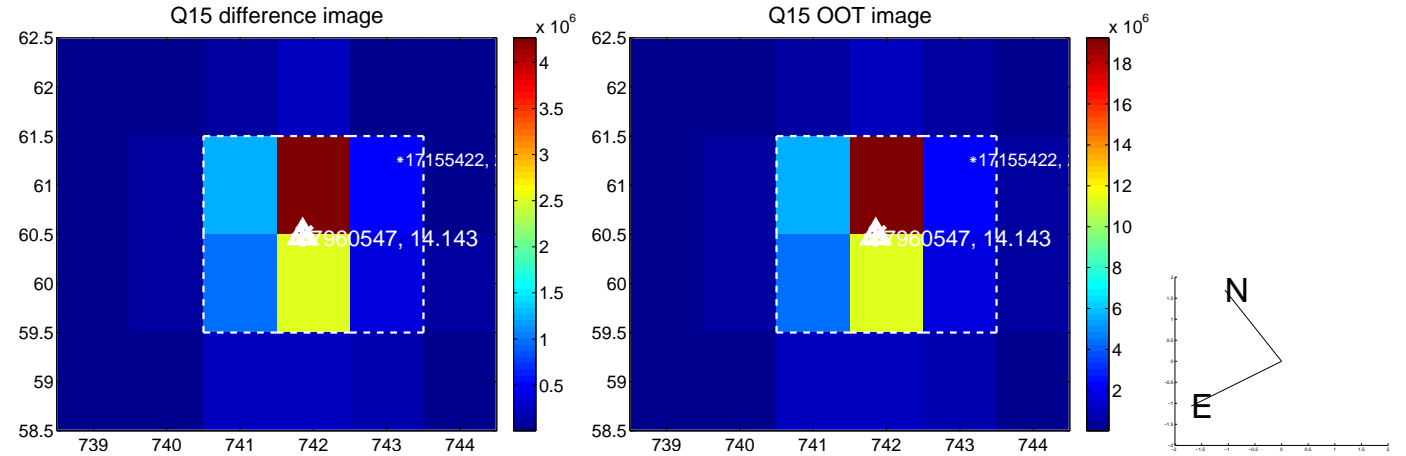
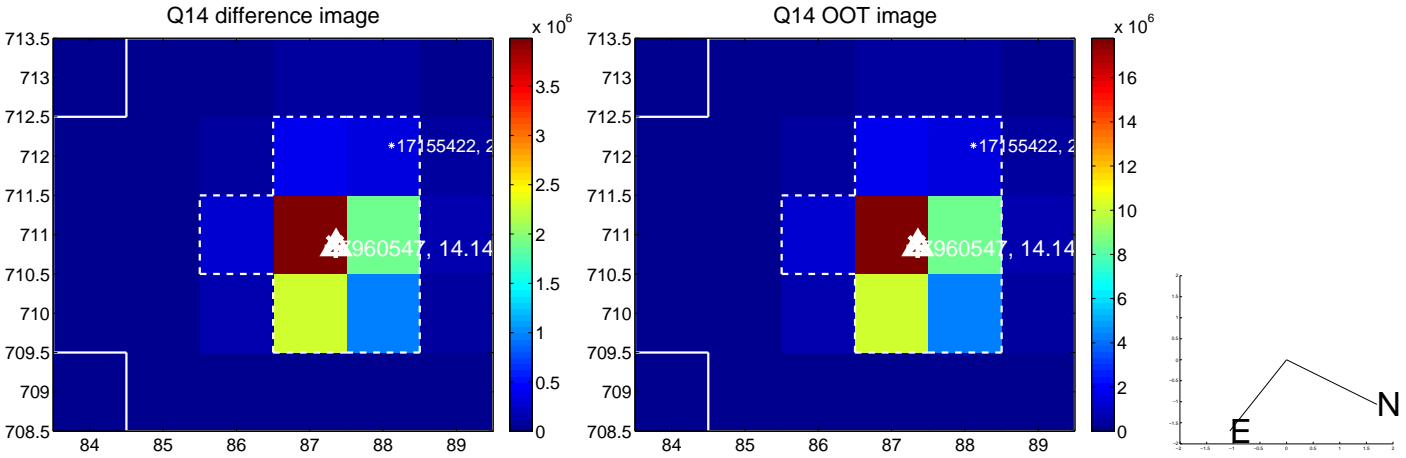
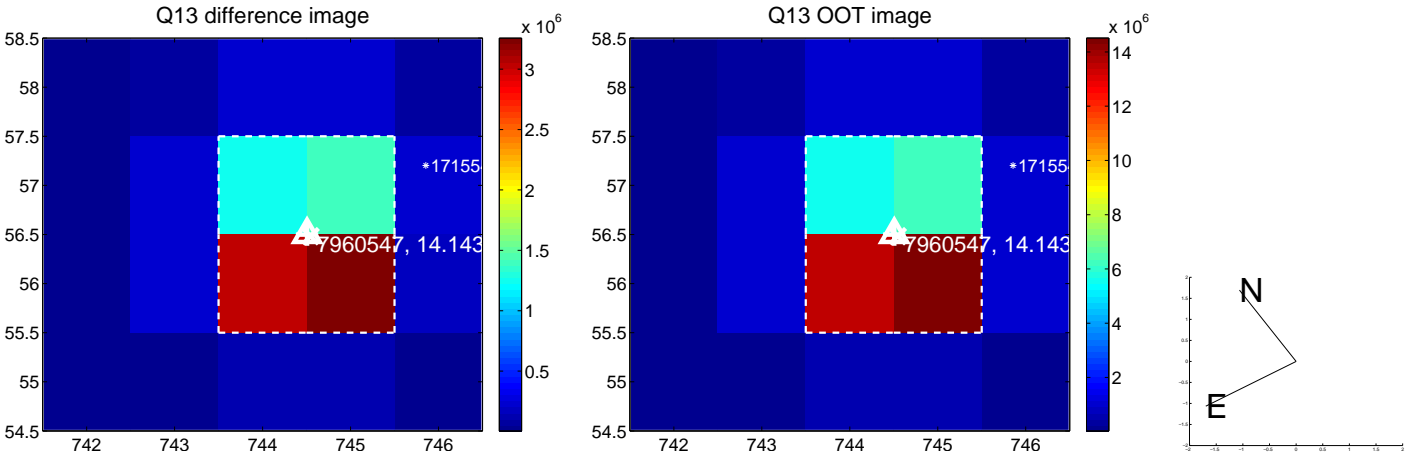




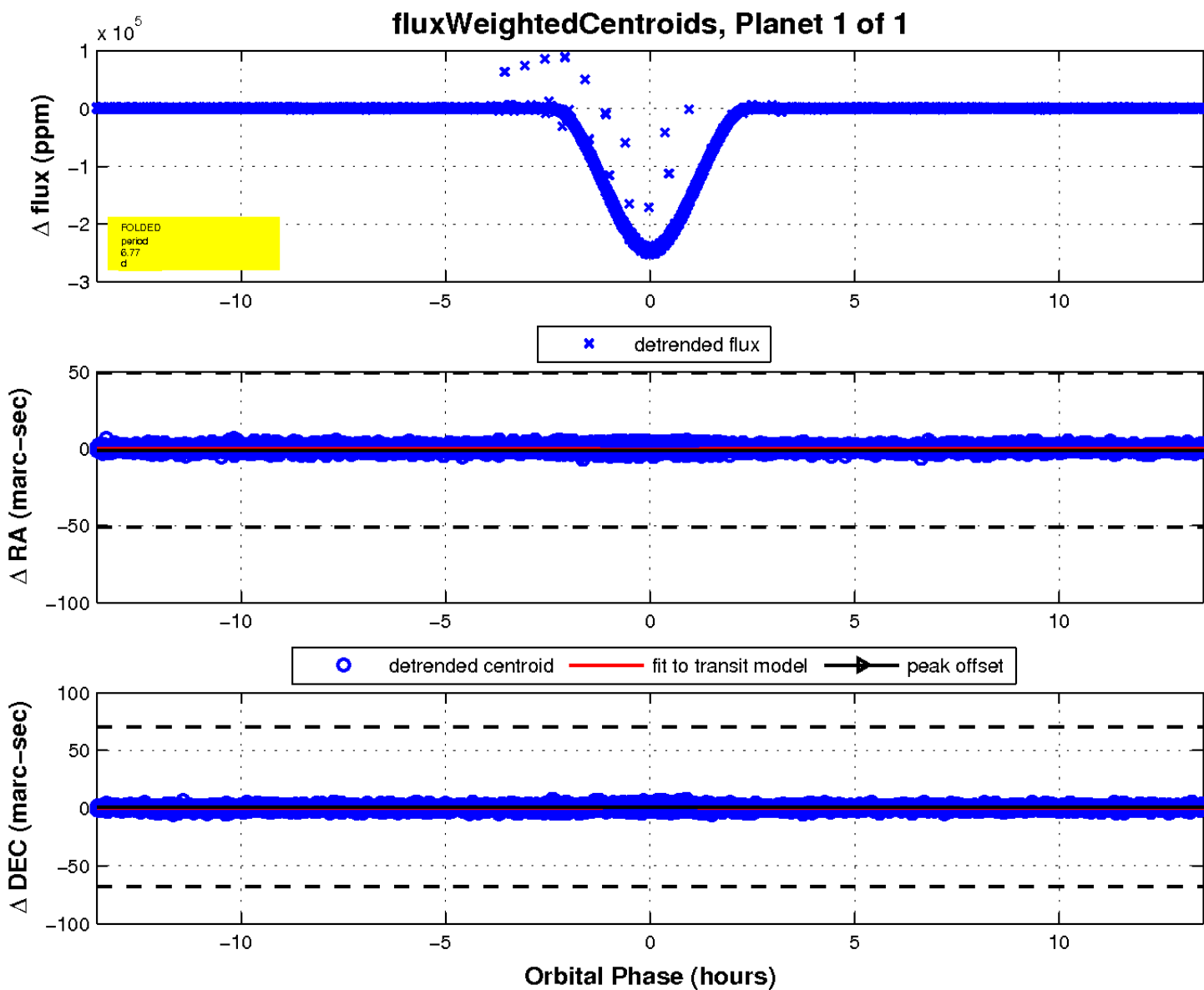
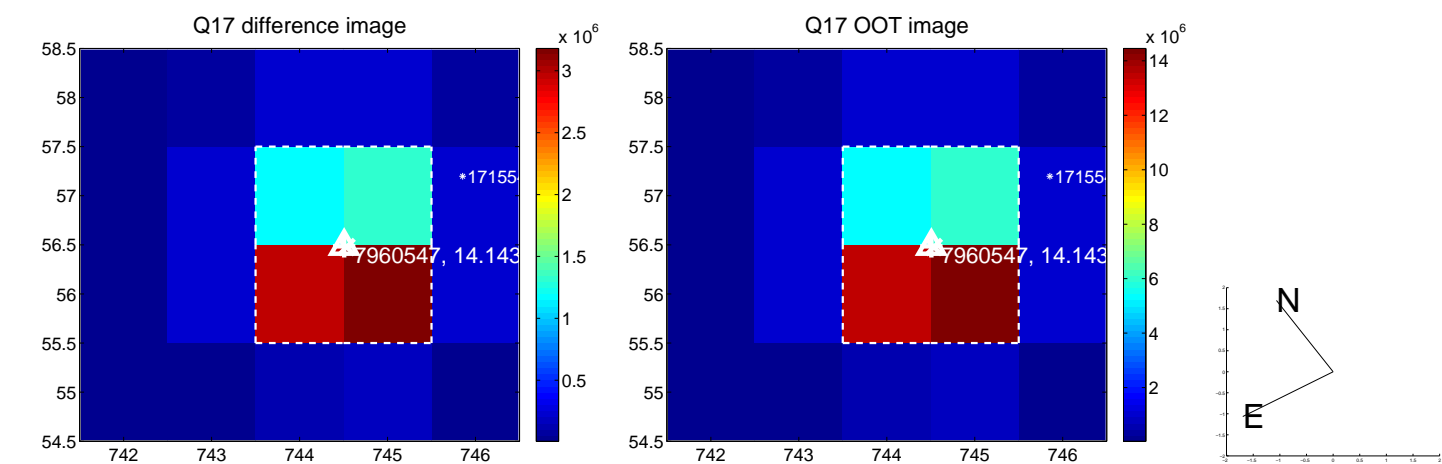
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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



UKIRT Image

Declination

