

# KIC 010147217

## 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) | $R_p$ ( $R_{\oplus}$ ) | $S_p$ ( $S_{\oplus}$ ) |
|--------------|----------|------|---------------|--------------|-------------|------------------|-----|-----|-----------------------------|-----------------|------------------------|------------------------|
| 010147217-01 | OBS      | No   | 2.018170      | 132.071176   | 12.1        | 19.012           | 8.8 | 8.0 | 2.96                        | 6935            | 1.04                   | 12294.82               |

## Robovetter Results

| TCE          | Run Type | Disp | Score | N | S | C | E | Comments                                      |
|--------------|----------|------|-------|---|---|---|---|---|
| 010147217-01 | OBS      | FP   | 0.00  | 1 | 0 | 0 | 0 | LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—CENT_FEW_DIFFS |

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

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

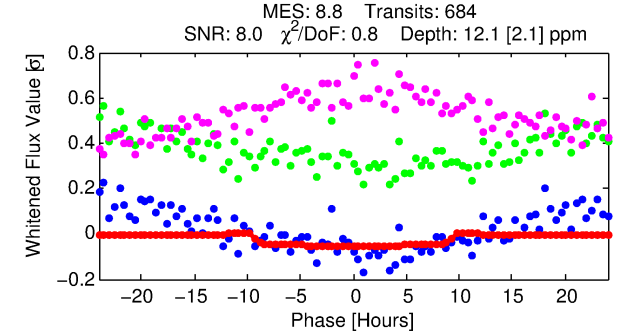
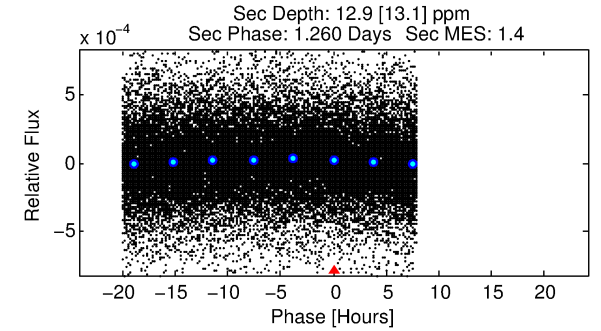
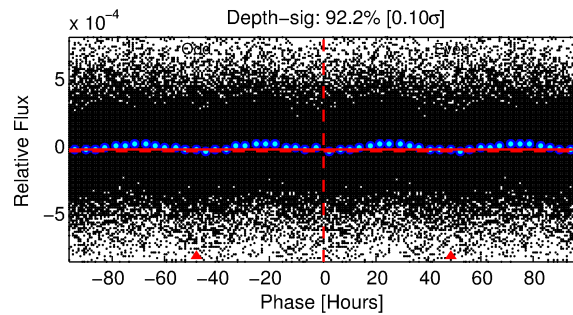
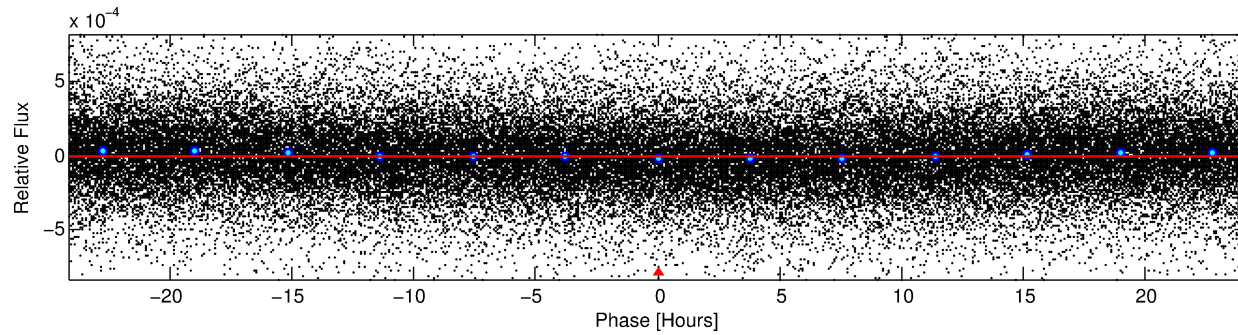
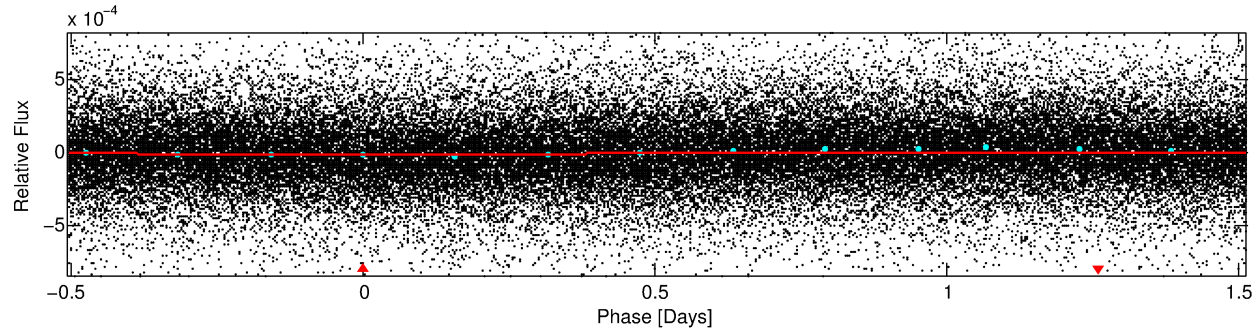
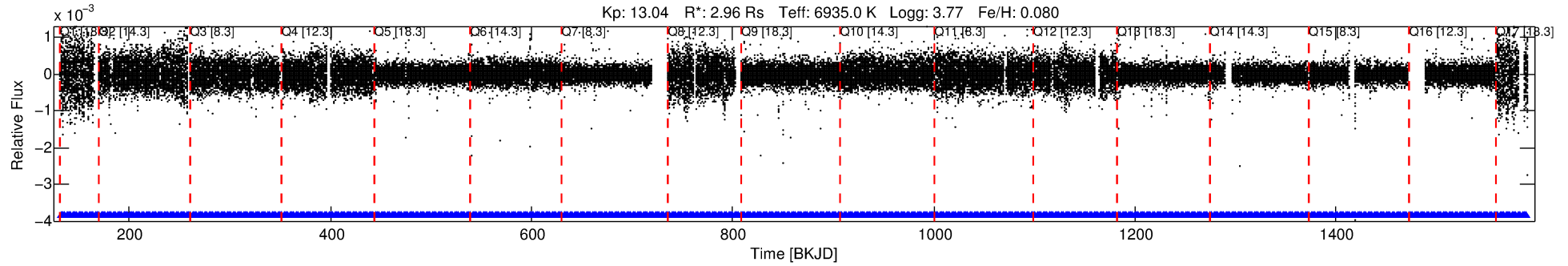
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 010147217-01

No Significant Match Found

# DV One-Page Summary

KIC: 10147217 Candidate: 1 of 1 Period: 2.018 d



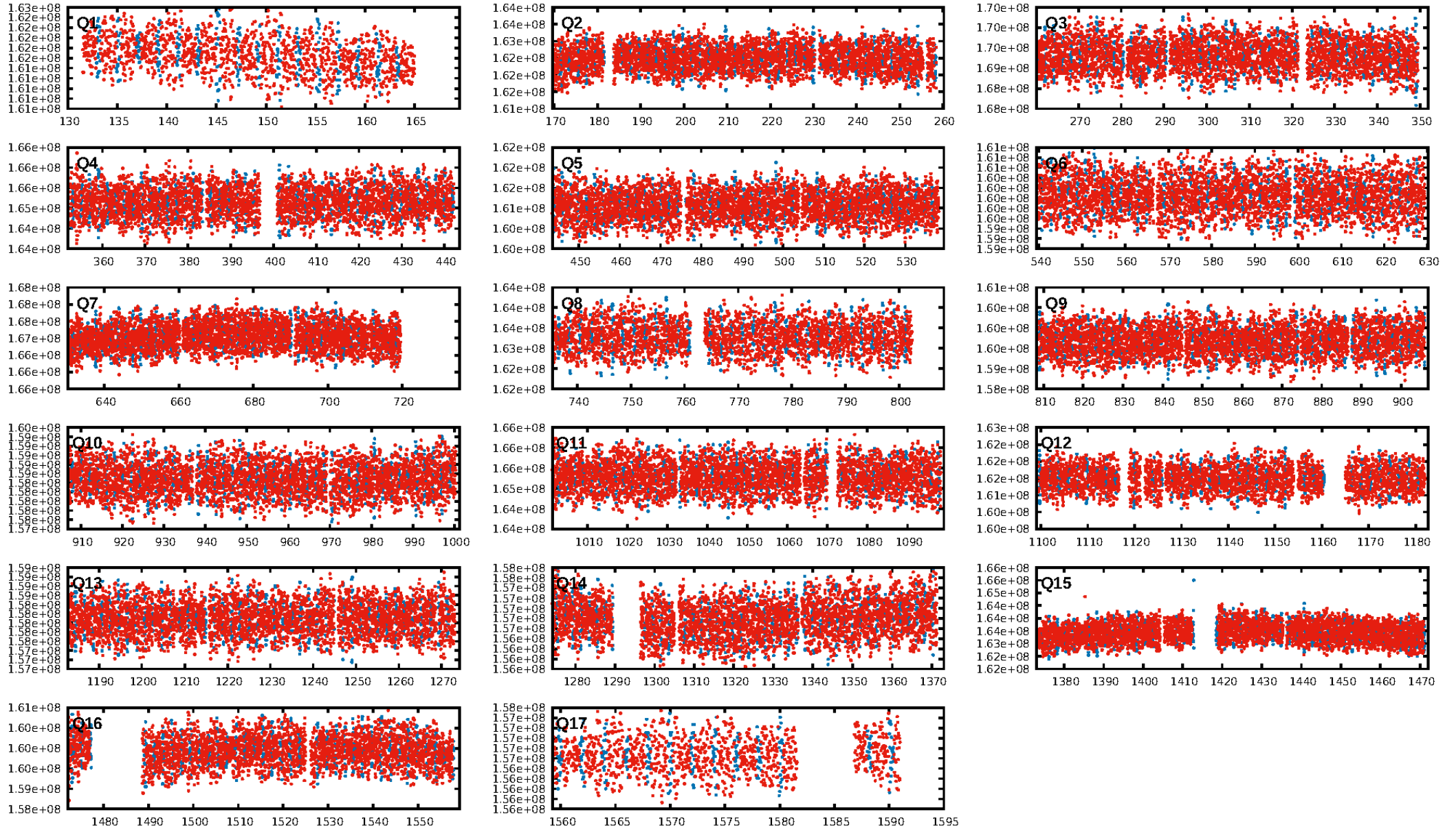
## DV Fit Results:

Period = 2.01817 [0.00006] d  
Epoch = 132.0712 [0.0172] BKJD  
Rp/R\* = 0.0032 [0.0040]  
a/R\* = 1.06 [0.85]  
b = 0.04 [183.96]  
Seff = 12294.82 [9026.27]  
Teq = 2685 [493] K  
Rp = 1.04 [1.37] Re  
a = 0.0385 [0.0173] AU  
Ag = 9.65 [26.52] [0.33 $\sigma$ ]  
Teffp = 7316 [4869] K [0.95 $\sigma$ ]

## DV Diagnostic Results:

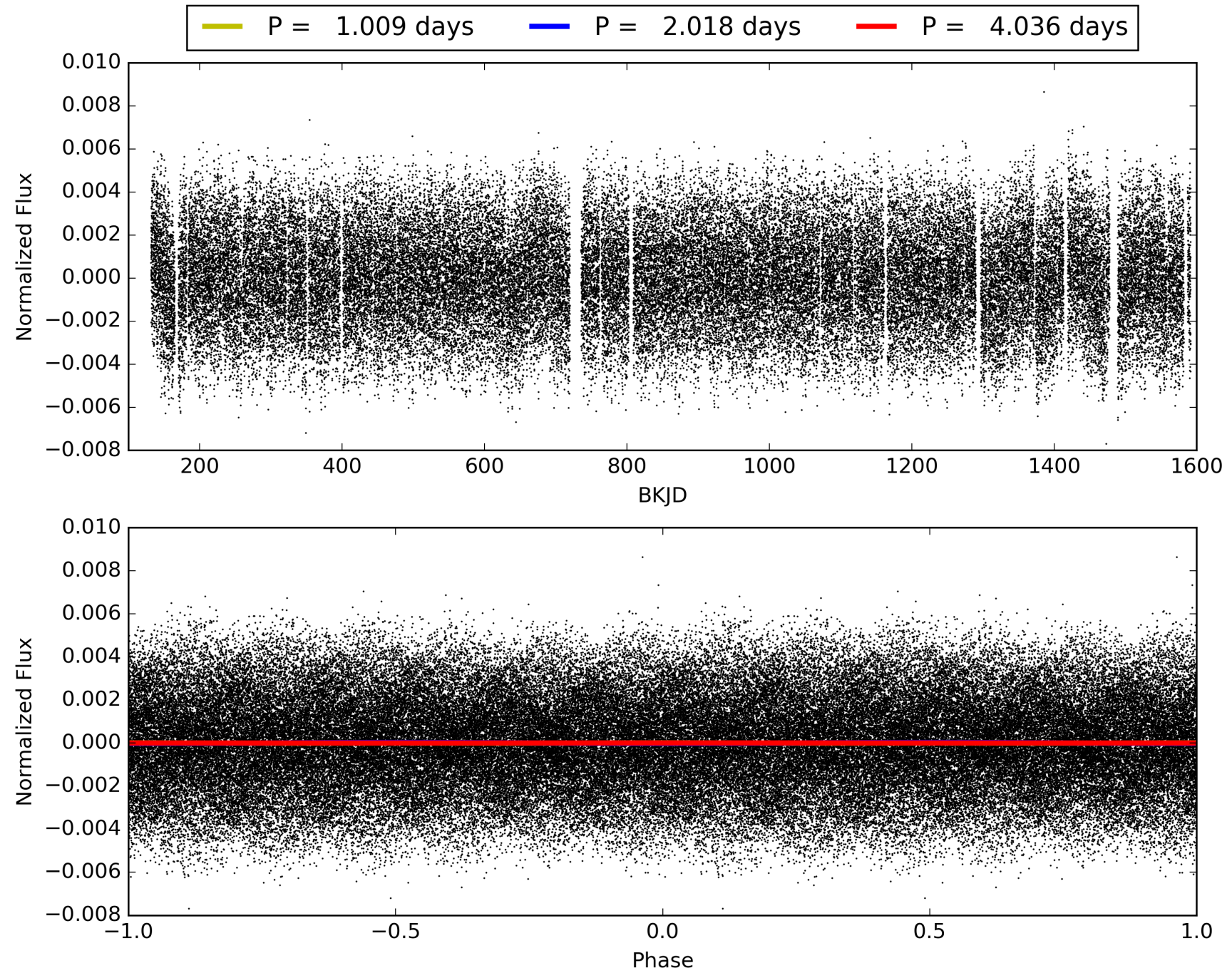
ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: N/A  
ModelChiSquareGof-sig: N/A  
Bootstrap-pfa: N/A  
RollingBand-fgt: 1.00 [652/652]  
GhostDiagnostic-chr: 1.77  
Centroid-sig: 0.4%  
Centroid-so: 1.789 arcsec [2.11 $\sigma$ ]  
OotOffset-rm: N/A  
KicOffset-rm: N/A  
OotOffset-st: 0/0/0/0 [0]  
KicOffset-st: 0/0/0/0 [0]  
DiffImageQuality-fgm: N/A  
DiffImageOverlap-fno: 1.00 [17/17]

# TCE 010147217-01, PDC Light Curves



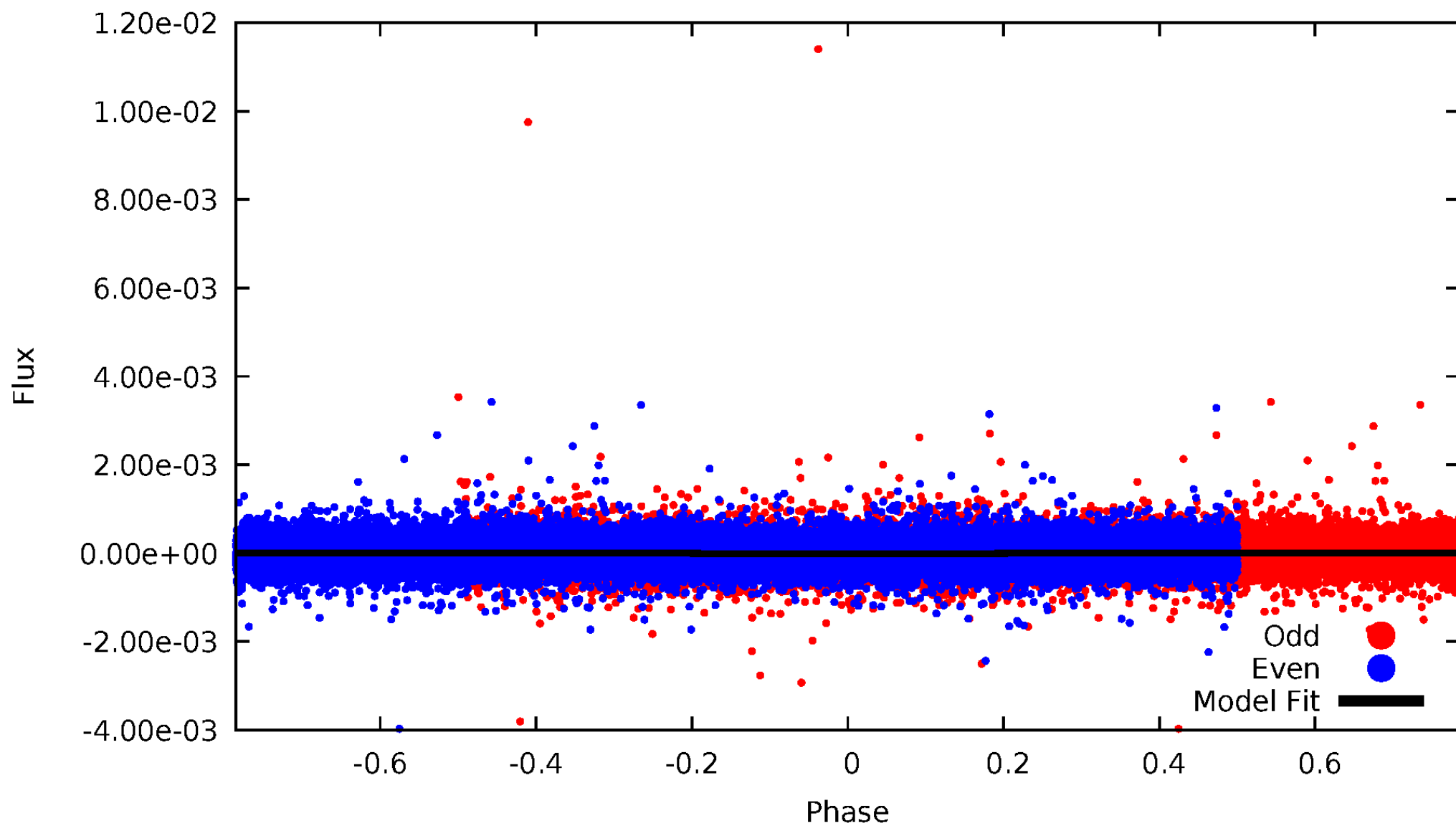


# TCE 010147217-01



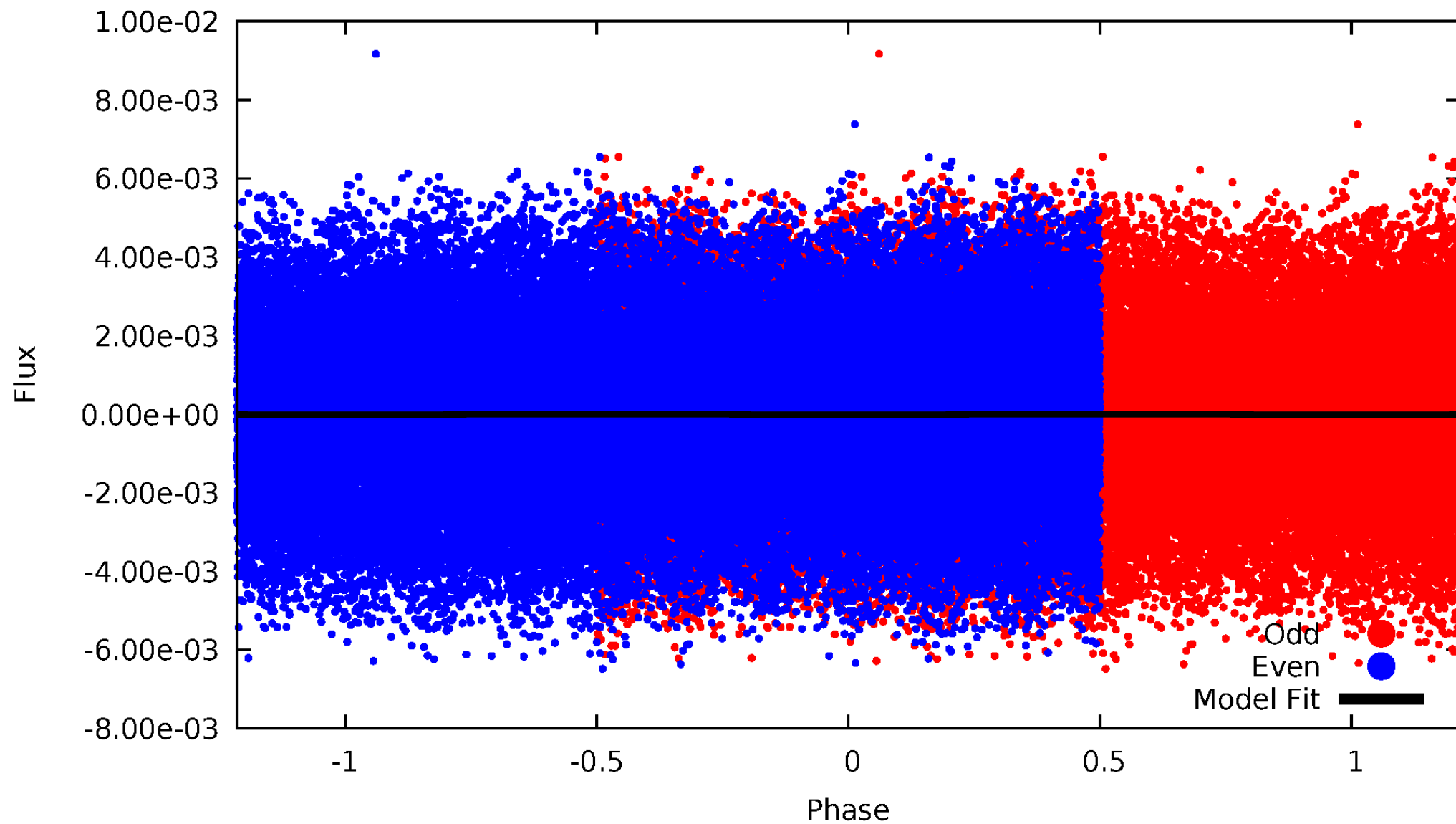
# DV Odd/Even

TCE 010147217-01



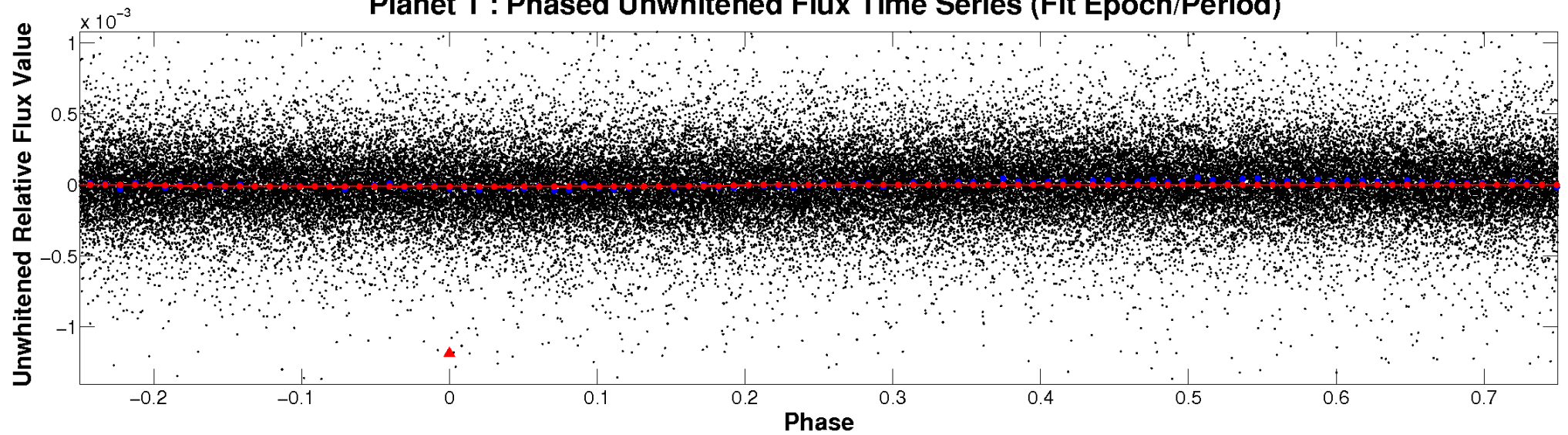
# ALT Odd/Even

TCE 010147217-01

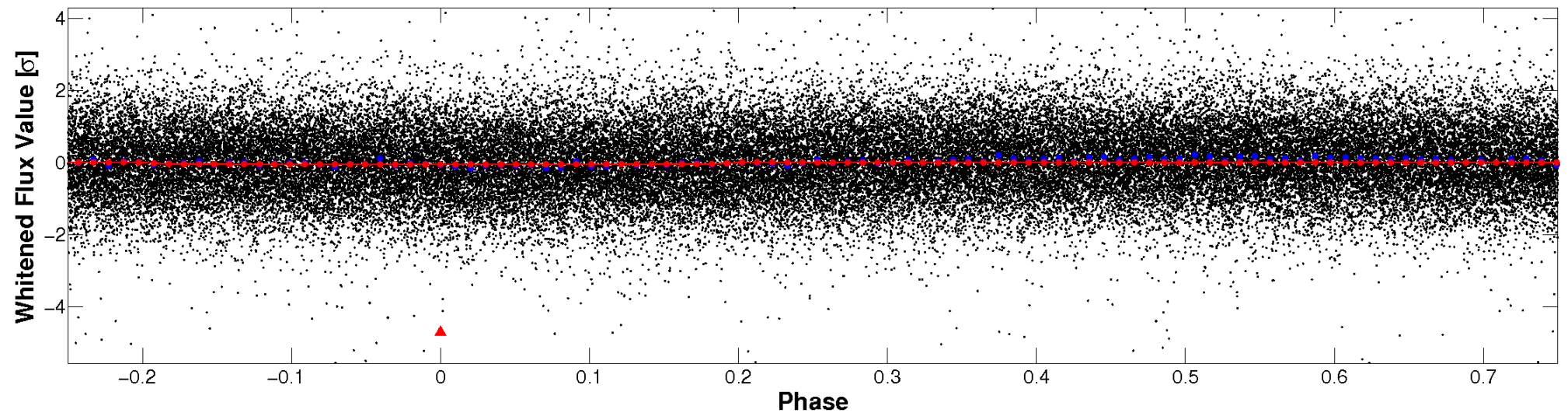


# Non-Whitened Vs. Whitened Light Curve

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



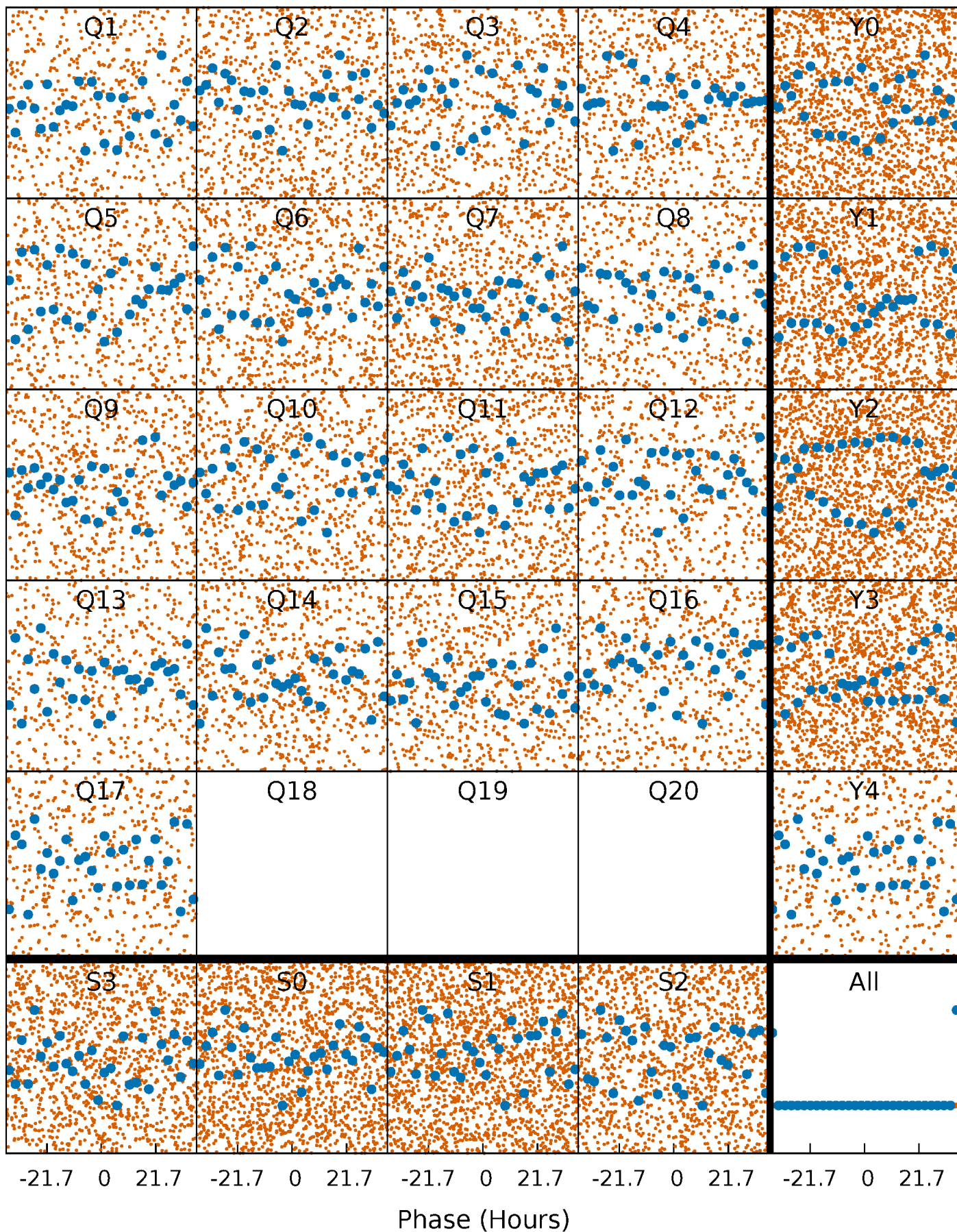
**Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)**





# PDC Quarter-Phased Transit Curves

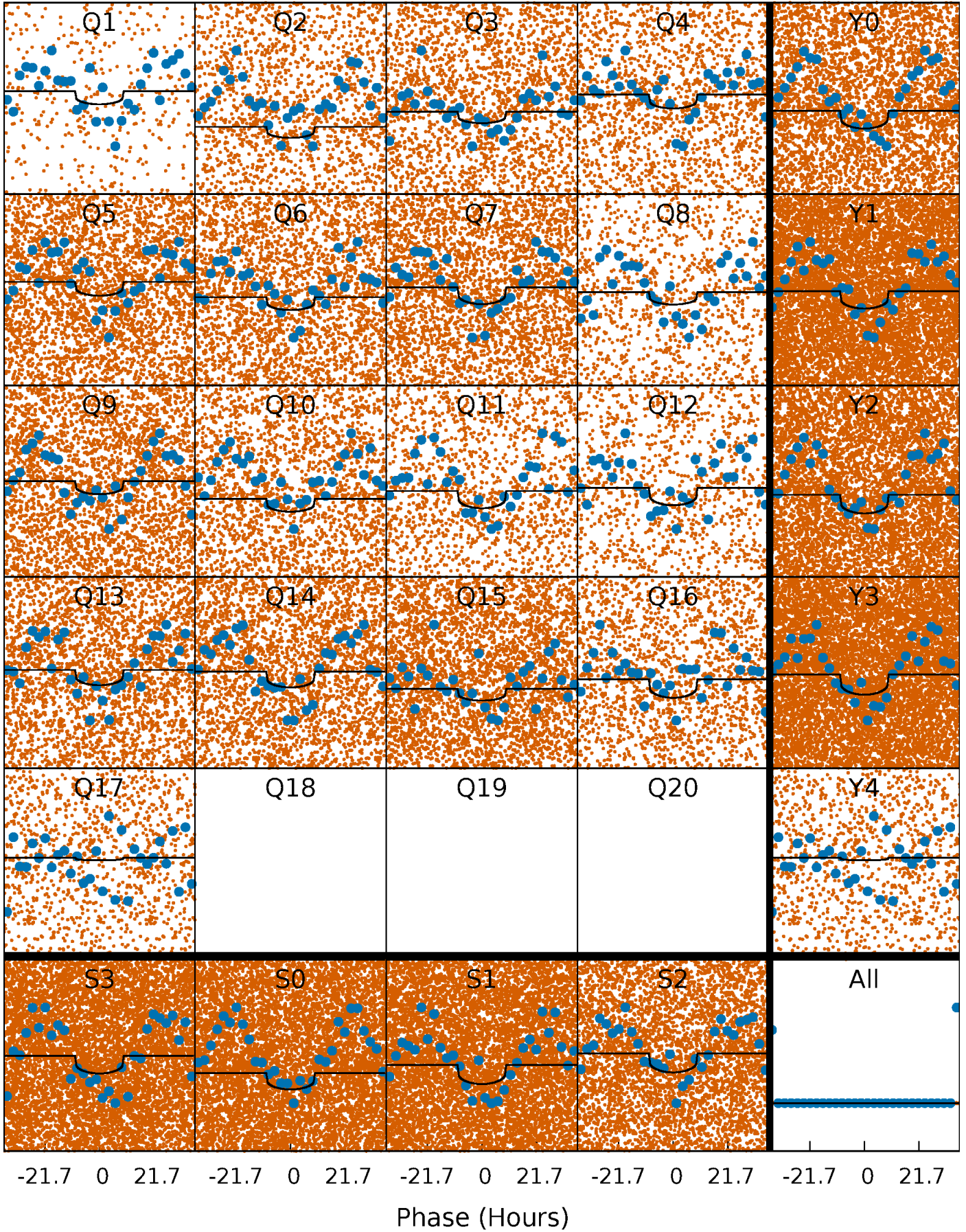
TCE 010147217-01 P= 2.018170 Days  $T_0=132.071176$  (BKJD)





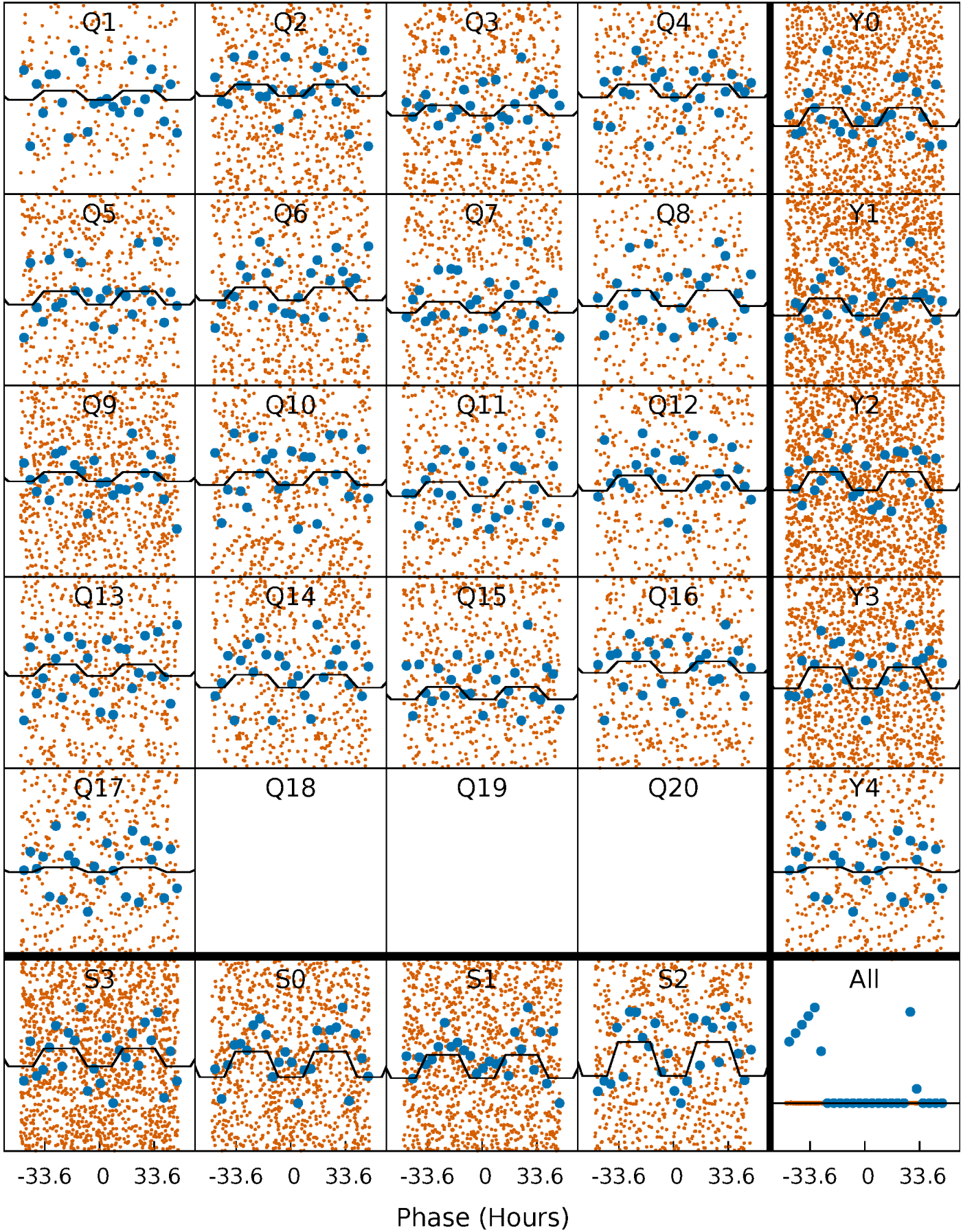
# DV Quarter-Phased Transit Curves

TCE 010147217-01 P= 2.018170 Days  $T_0=132.071176$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

TCE 010147217-01   P= 2.017862 Days    $T_0=132.062346$  (BKJD)

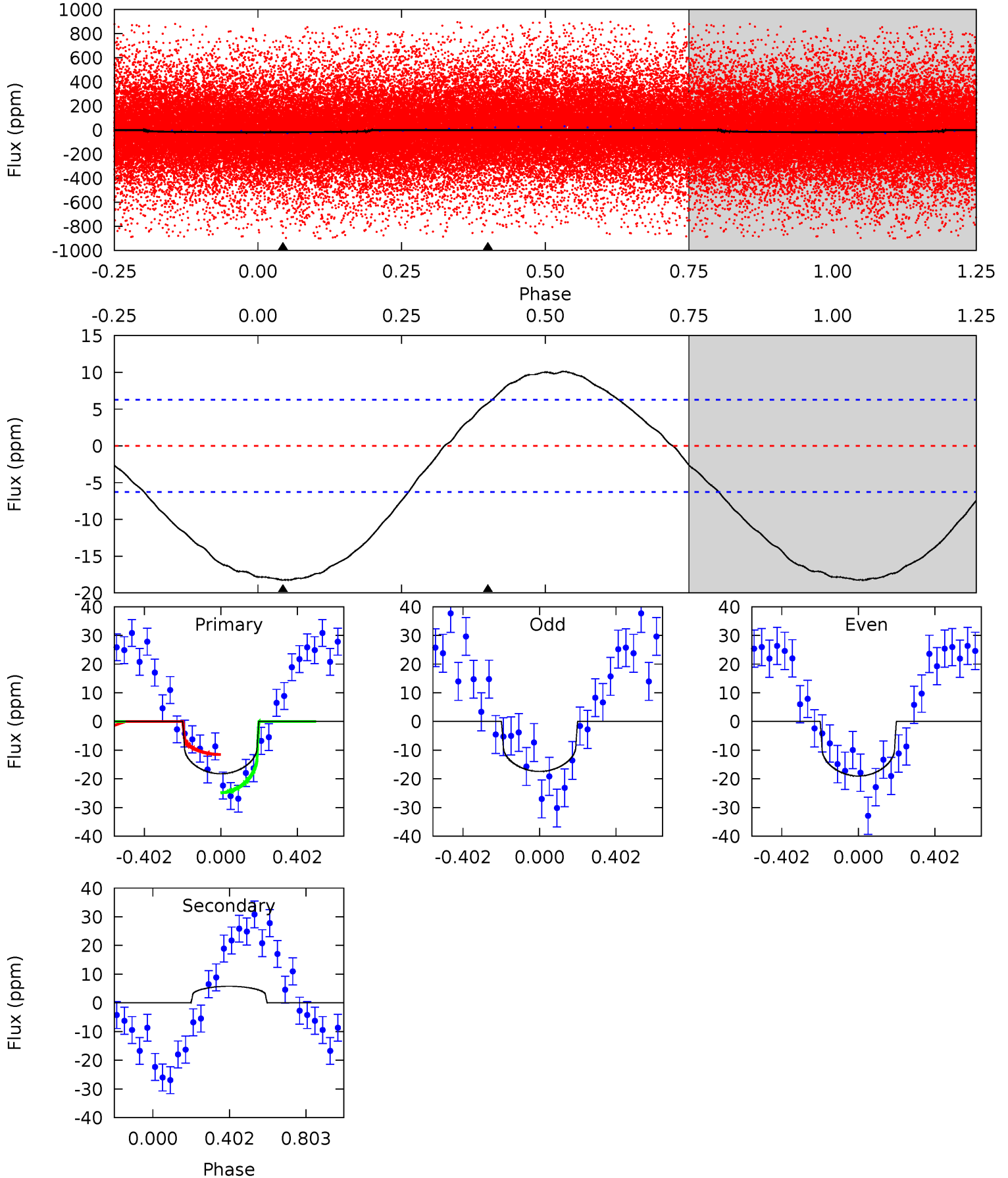




# DV Model-Shift Uniqueness Test

010147217-01, P = 2.018170 Days, E = 130.053006 Days

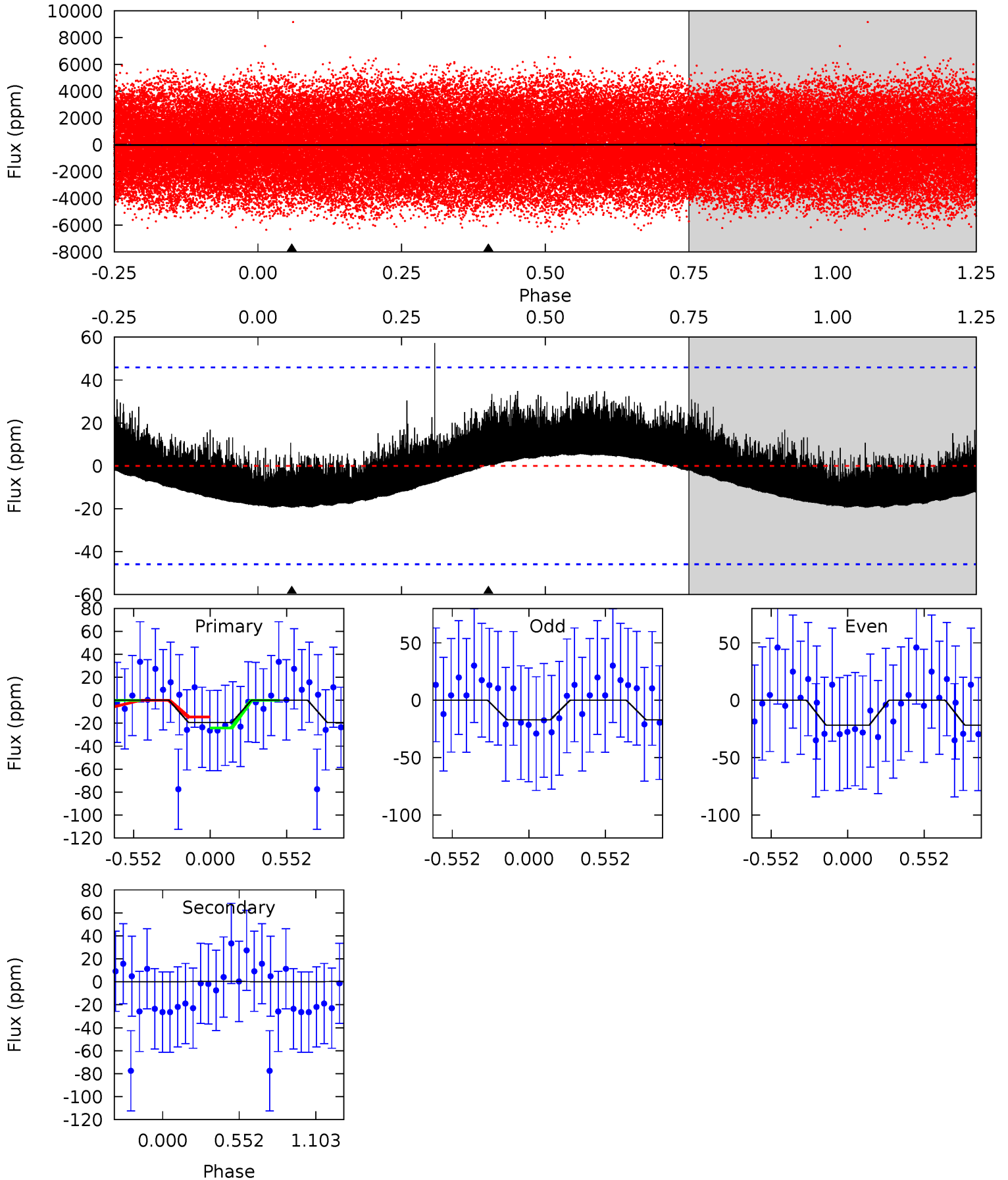
| Pri  | Sec   | Ter | Pos | FA <sub>1</sub> | FA <sub>2</sub> | F <sub>Red</sub> | Pri-Ter | Pri-Pos | Sec-Ter | Sec-Pos | Odd-Evn | DMM  | Shape | TAT  |
|------|-------|-----|-----|-----------------|-----------------|------------------|---------|---------|---------|---------|---------|------|-------|------|
| 12.4 | -3.94 | 0   | 0   | 4.26            | 0.84            | 1.55             | 12.4    | 12.4    | -3.94   | -3.94   | 0.55    | 1.19 | 0.36  | 4.54 |



# Alt Model-Shift Uniqueness Test

010147217-01, P = 2.017862 Days, E = 130.044484 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  |
|------|-------|-----|-----|-----------------|-----------------|------------------|---------|---------|---------|---------|---------|------|-------|------|
| 1.78 | -0.02 | 0   | 0   | 4.19            | 0.60            | 0.50             | 1.78    | 1.78    | -0.02   | -0.02   | 0.21    | 0.97 | 0.75  | 0.41 |





### Stellar Parameters For KIC 010147217

|        | $T_{\text{eff}}(K)$  | $\log(g)$                 | [Fe/H]                    | $R$ ( $R_{\odot}$ )       | $M(M_{\odot})$            | $p_{\star}$ ( $\text{g}\cdot\text{cm}^{-3}$ ) |
|--------|----------------------|---------------------------|---------------------------|---------------------------|---------------------------|---|
|        | $6935^{+191}_{-311}$ | $3.765^{+0.416}_{-0.104}$ | $0.080^{+0.250}_{-0.300}$ | $2.964^{+0.560}_{-1.399}$ | $1.864^{+0.170}_{-0.510}$ | $0.101^{+0.366}_{-0.035}$                     |
|        | +3%/-4%              | +11%/-3%                  | +312%/-375%               | +19%/-47%                 | +9%/-27%                  | +363%/-34%                                    |
| Source | PHO54                | PHO54                     | PHO54                     | DSEP                      |                           |   |

KIC = Kepler Input Catalog; PHO = Photometry; SPE = Spectroscopy; AST = Asteroseismology  
 TRA = Transits; DESP = Dartmouth Models; MULT = Multiple Models

### Secondary Eclipse Parameters for KIC 010147217-01 / KOI

| Detrend | Depth (ppm) | $R_p$ ( $R_{\oplus}$ ) | $T_{\text{max}}$ (K) | $T_{\text{obs}}$ (K)    | $A_{\text{obs}}$            |
|---------|-------------|------------------------|----------------------|-------------------------|-----------------------------|
| DV      | $6\pm1$     | $1.23^{+1.15}_{-0.77}$ | $3640^{+265}_{-419}$ | $-5274^{+975}_{-3276}$  | $-2.971^{+2.200}_{-17.463}$ |
| Alt.    | $0\pm11$    | $1.60^{+1.27}_{-0.94}$ | $3639^{+262}_{-423}$ | $-3661^{+9180}_{-2390}$ | $-0.136^{+4.547}_{-5.216}$  |

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

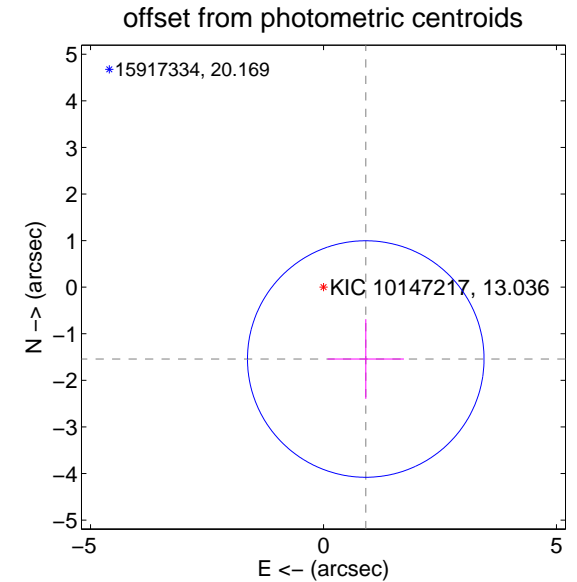
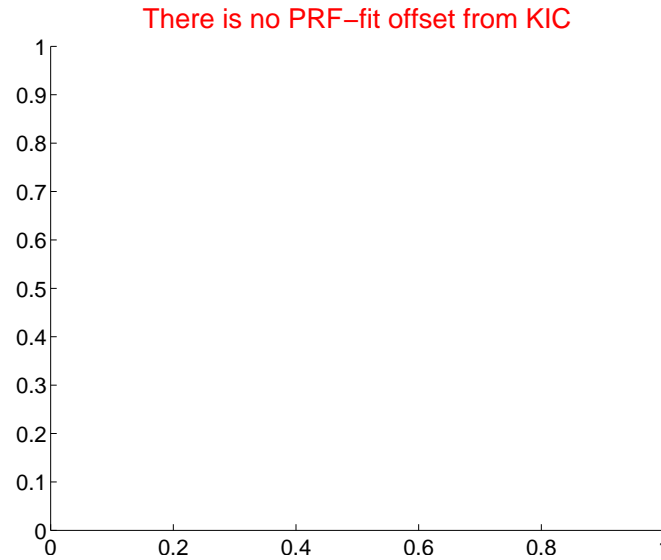
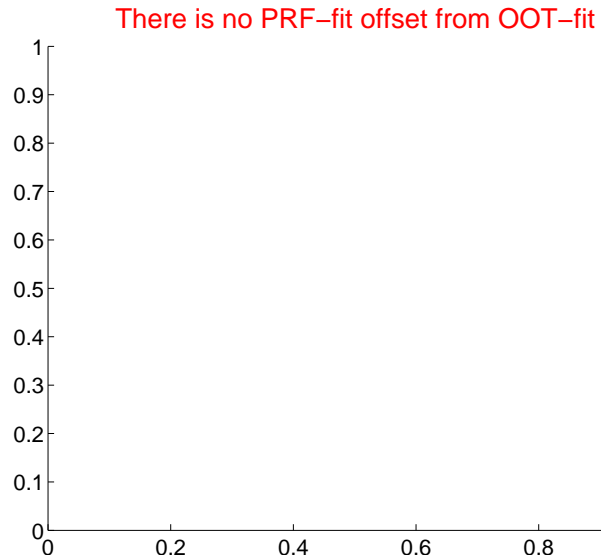
## DV Centroid Data

Supplemental centroid analysis for 010147217-01. Kepler magnitude: 13.04. Transit SNR 8.00

There are 0 quarters with good PRF difference image offsets

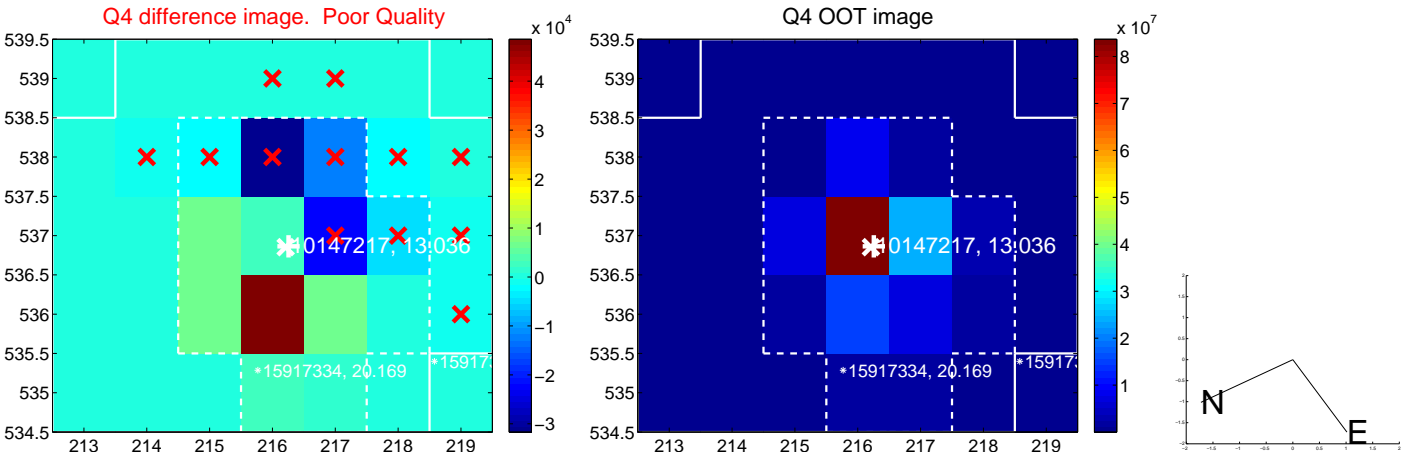
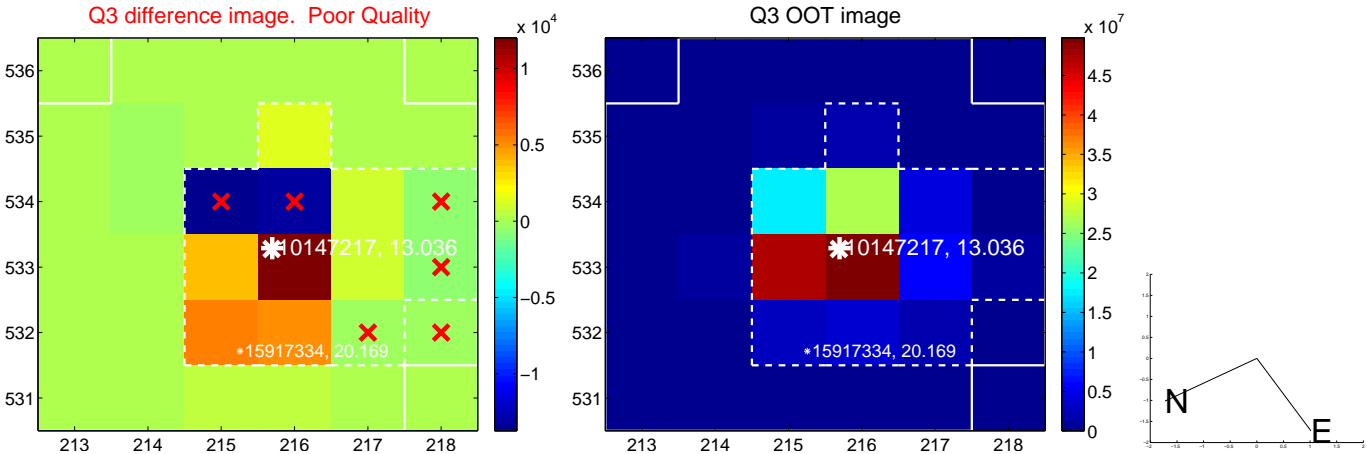
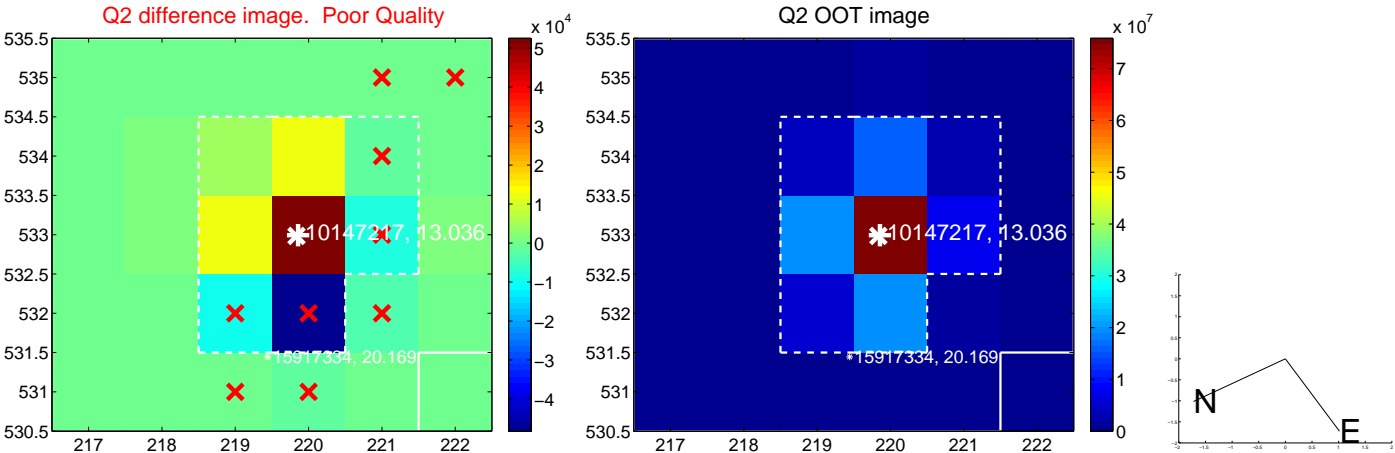
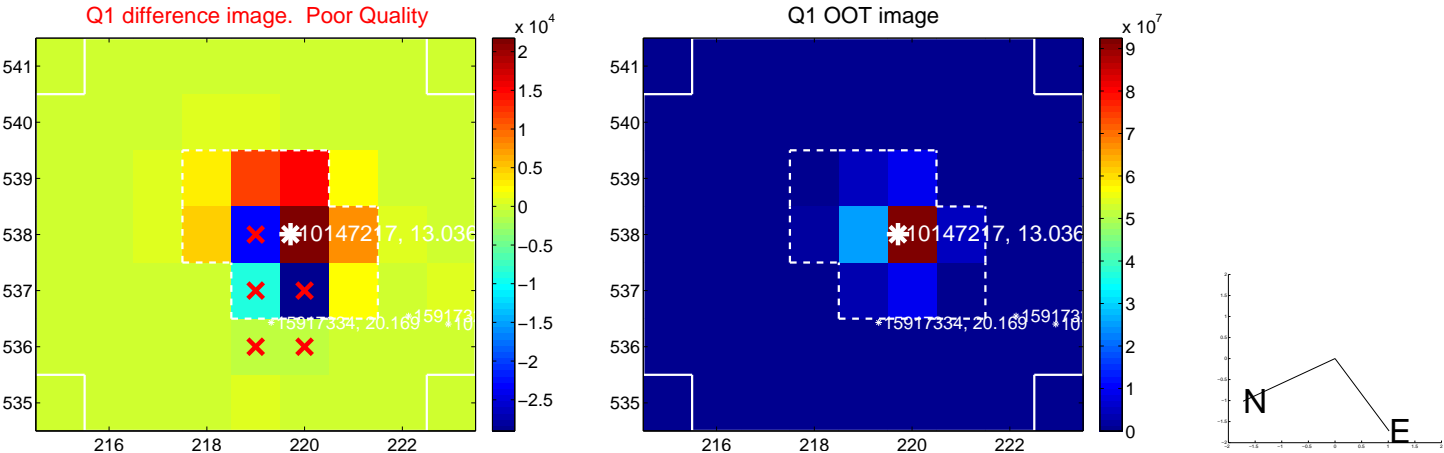
The direct PRF centroid is offset from the target star catalog position by about NaN arcsec

|   | 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      | $1.79 \pm 0.85$    | 2.11                | $-0.91 \pm 0.82$ | $-1.54 \pm 0.86$ |

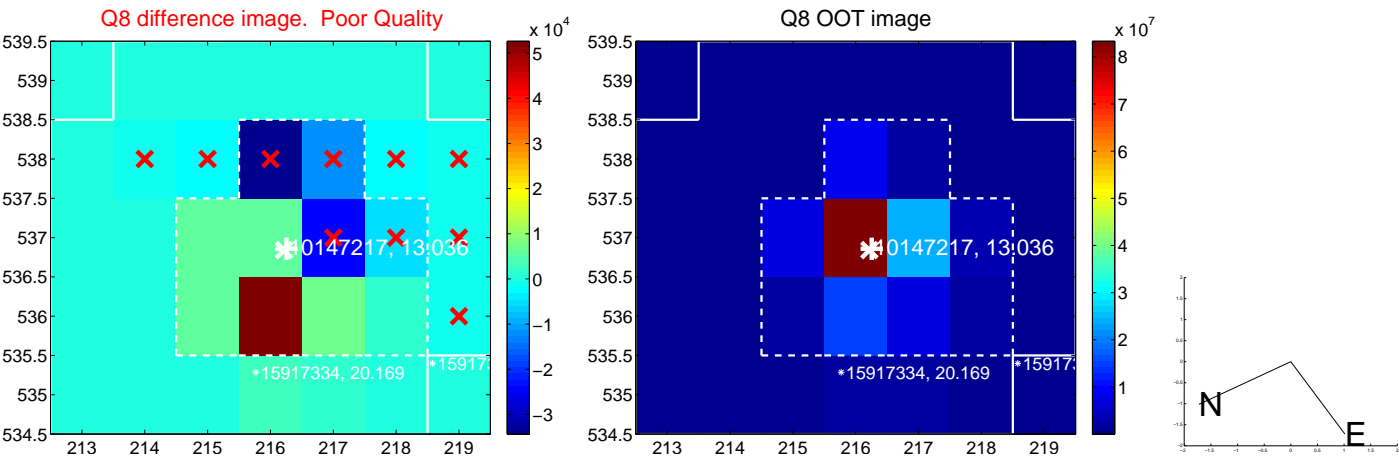
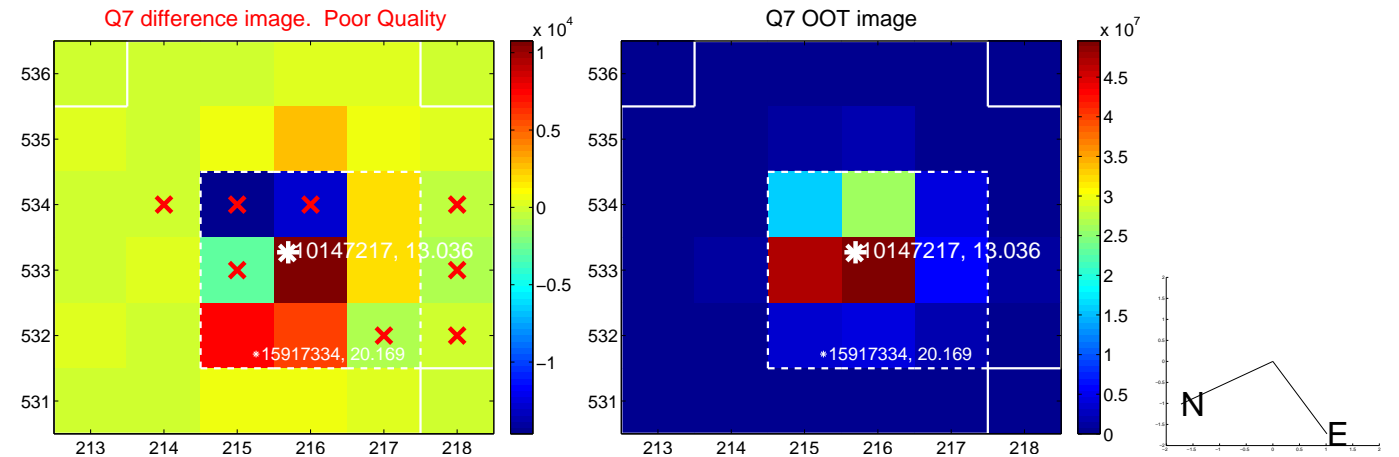
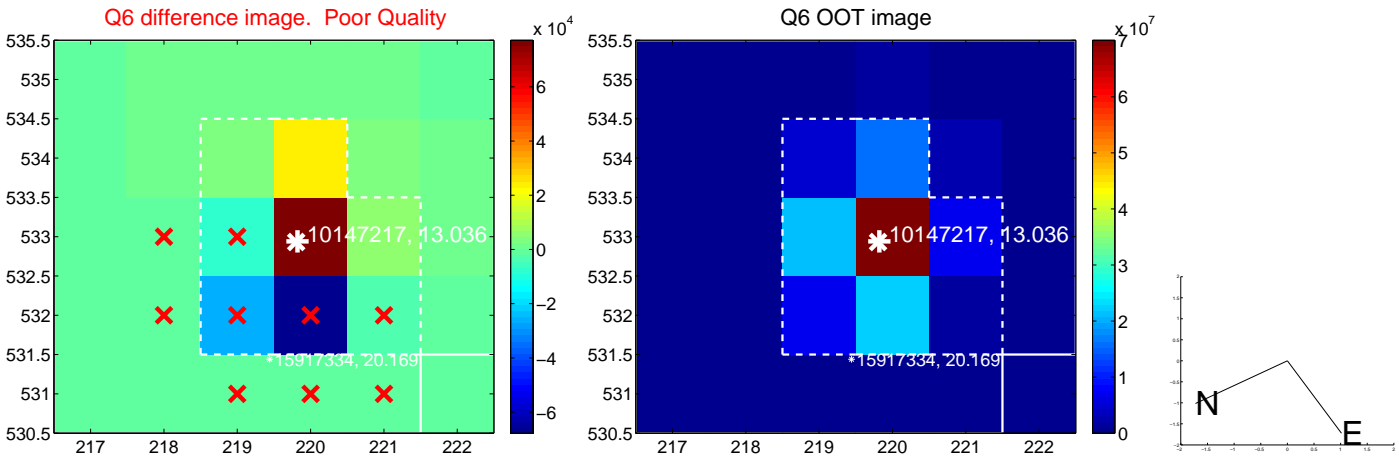
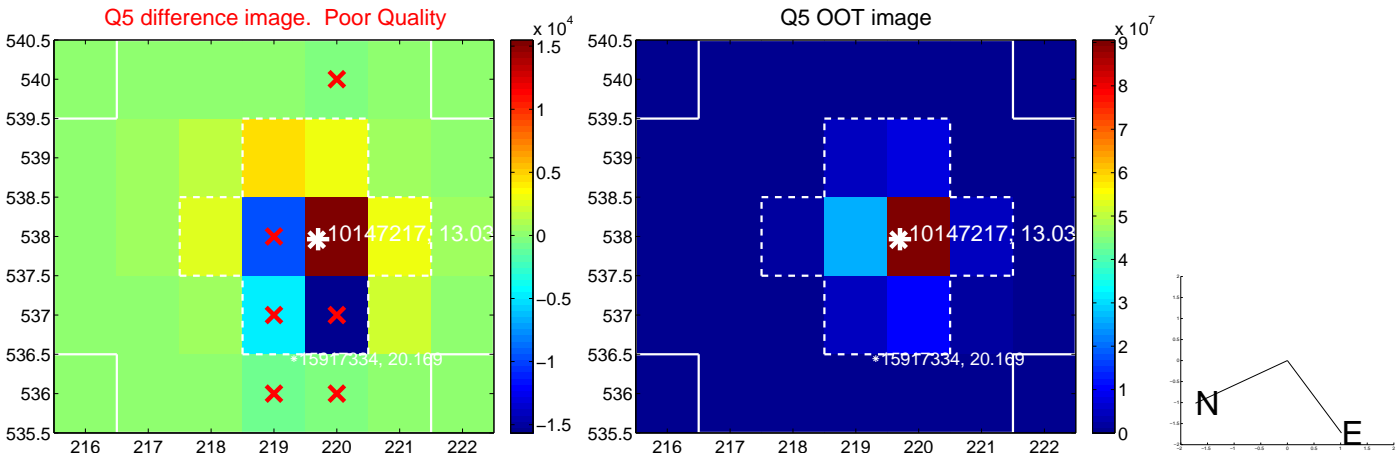


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: three-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

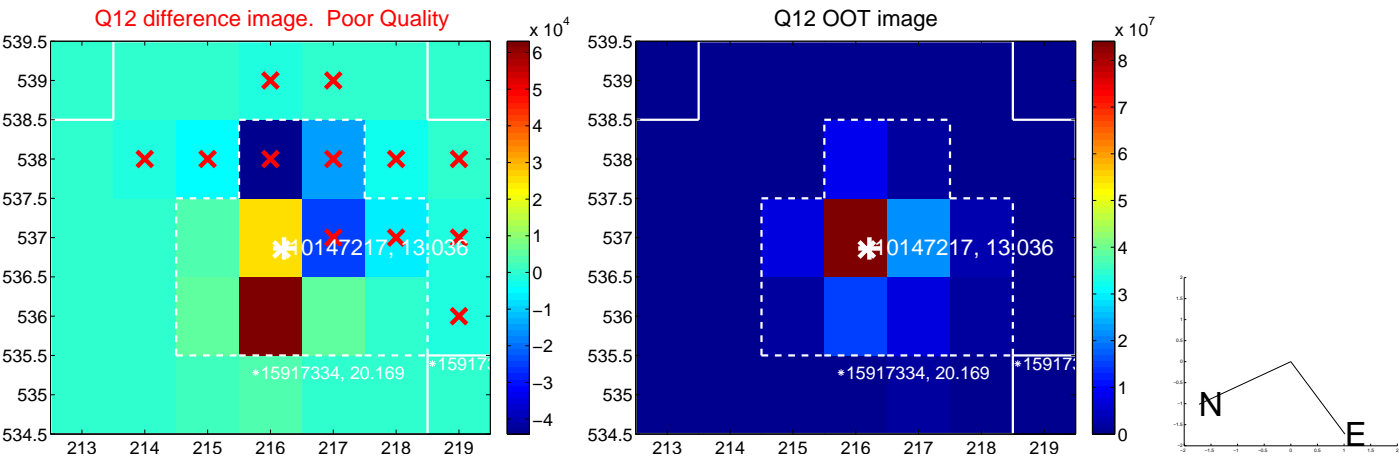
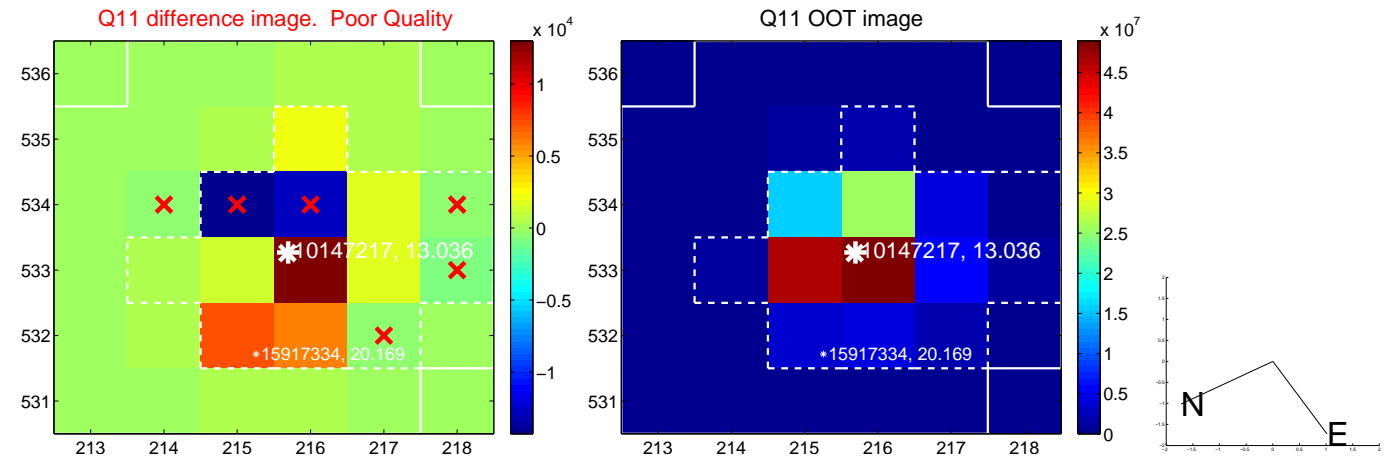
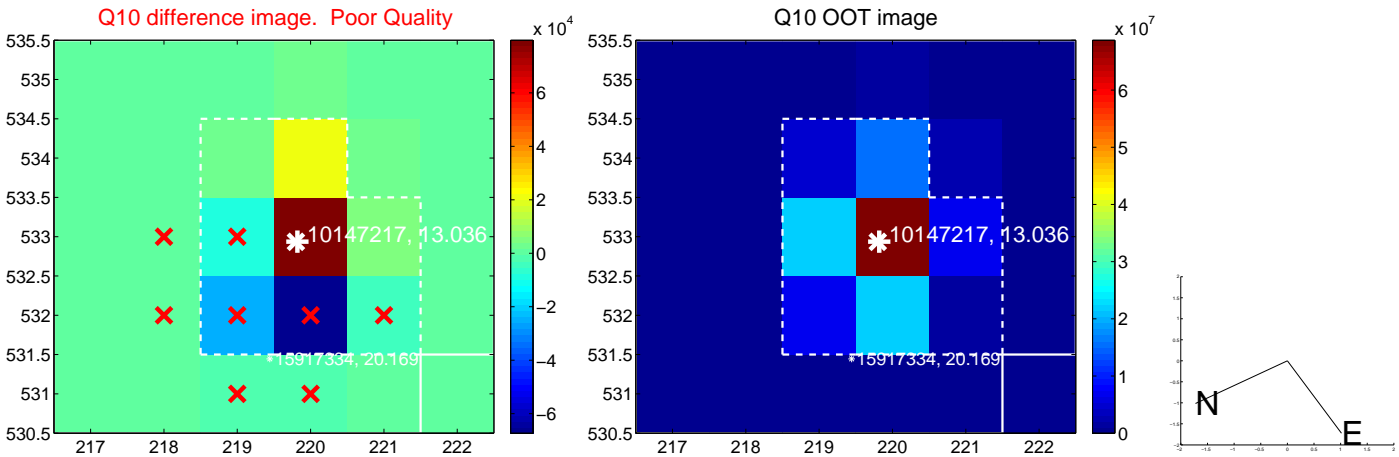
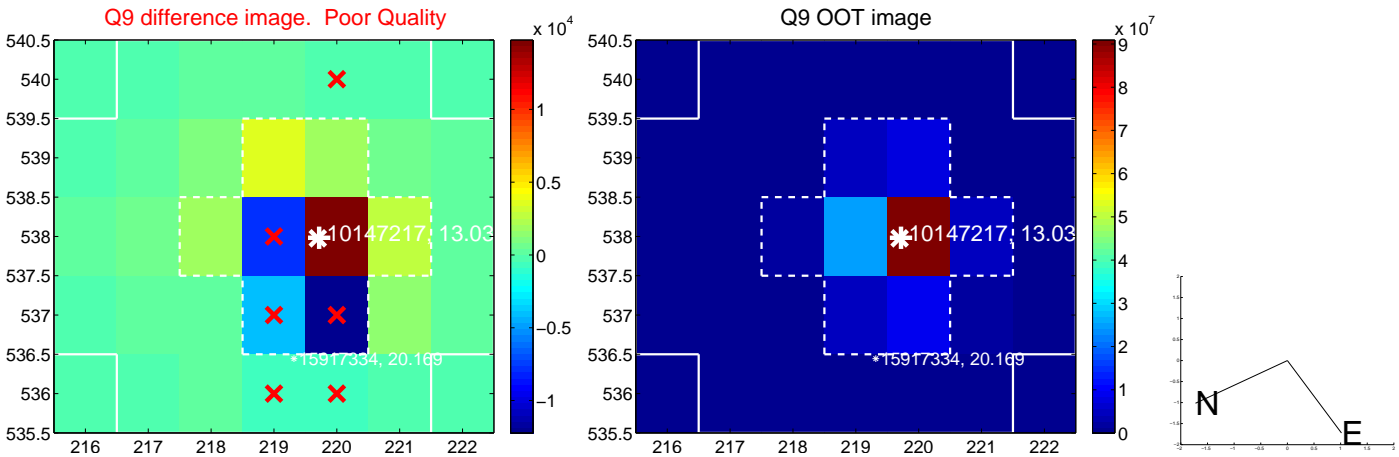


white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

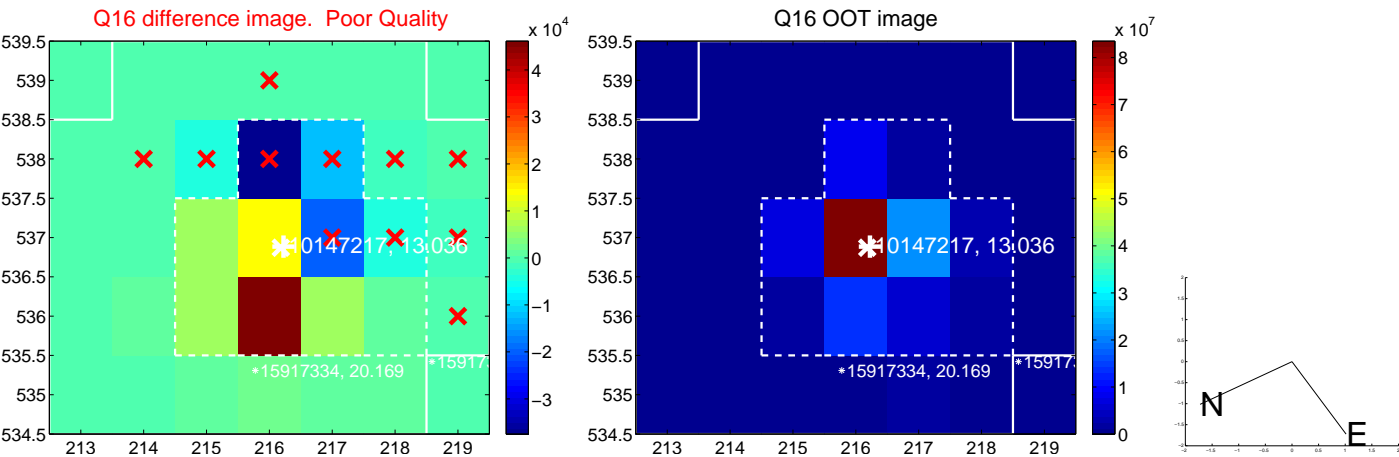
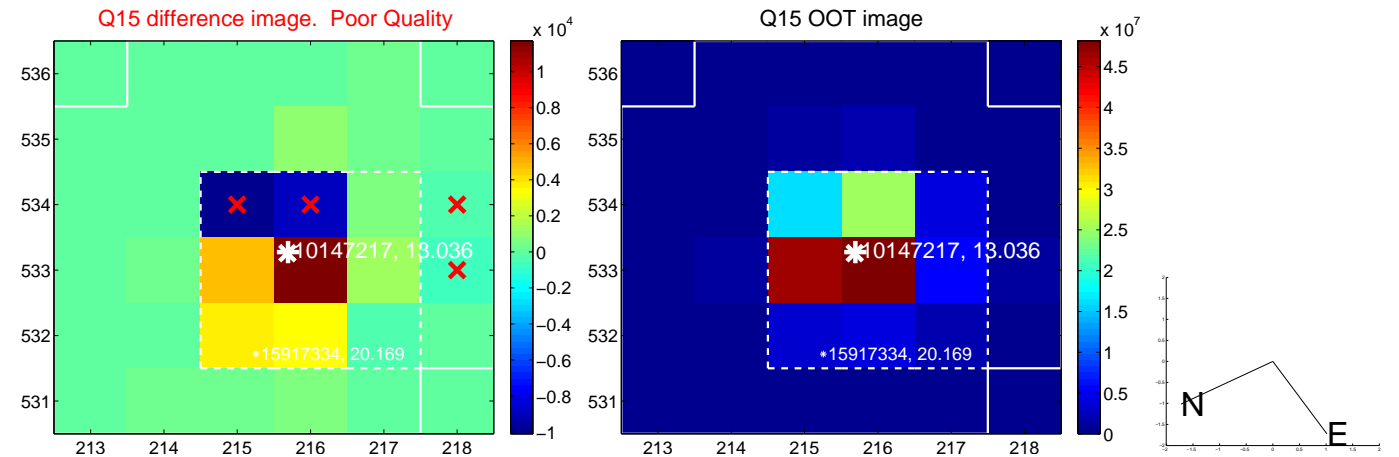
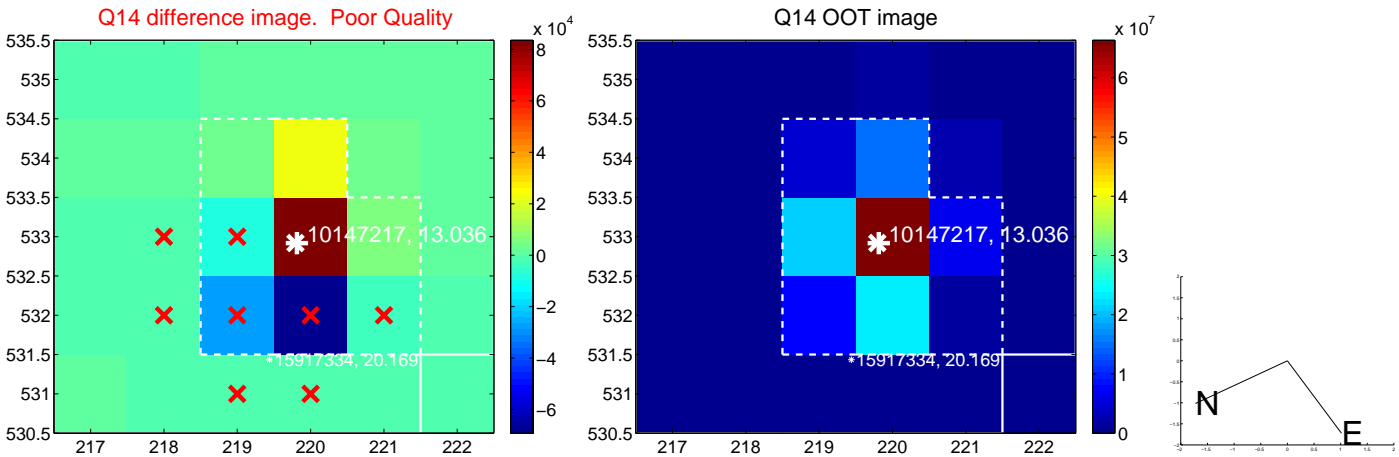
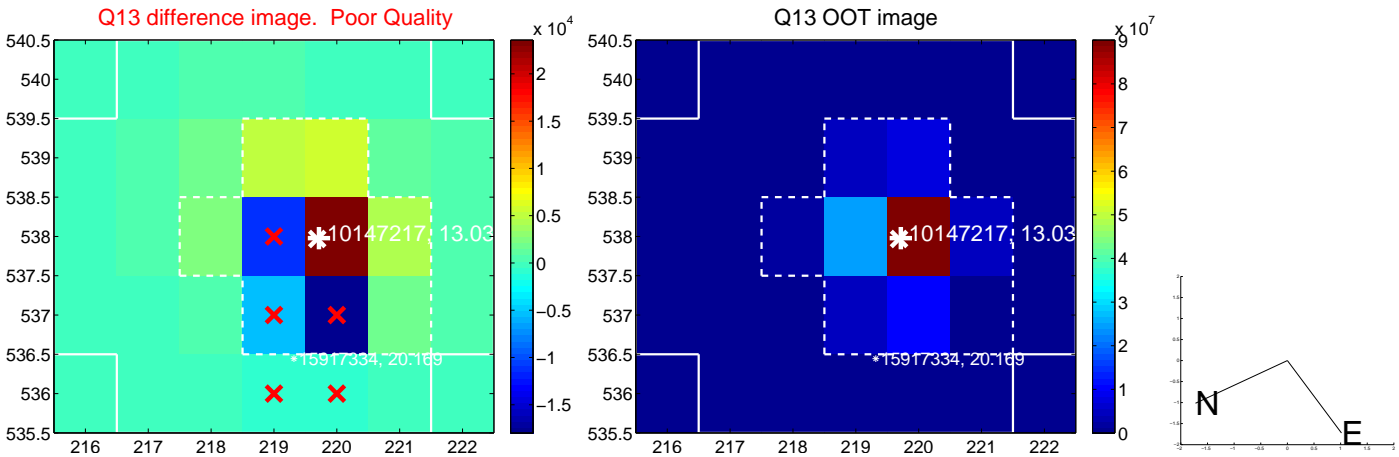




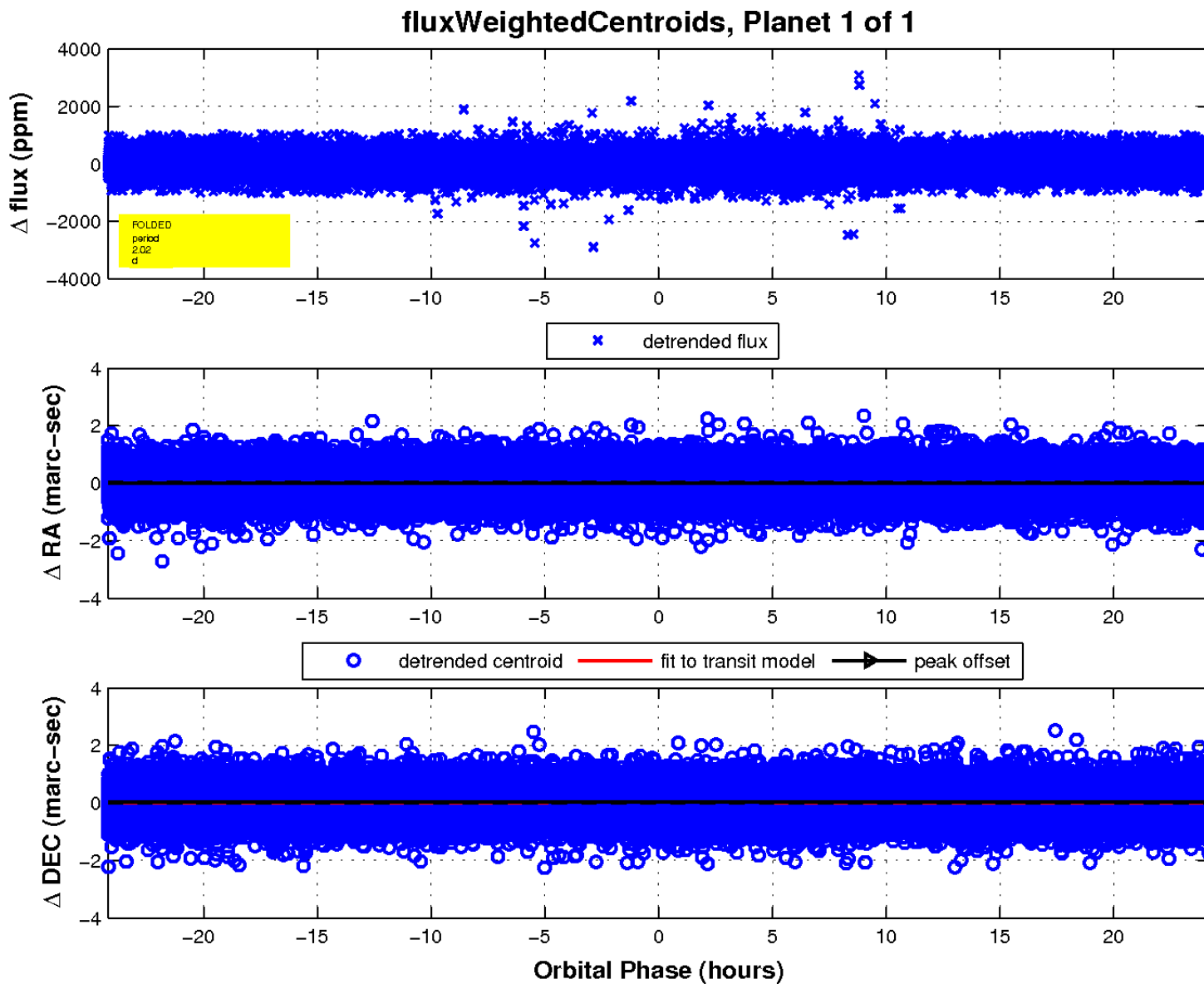
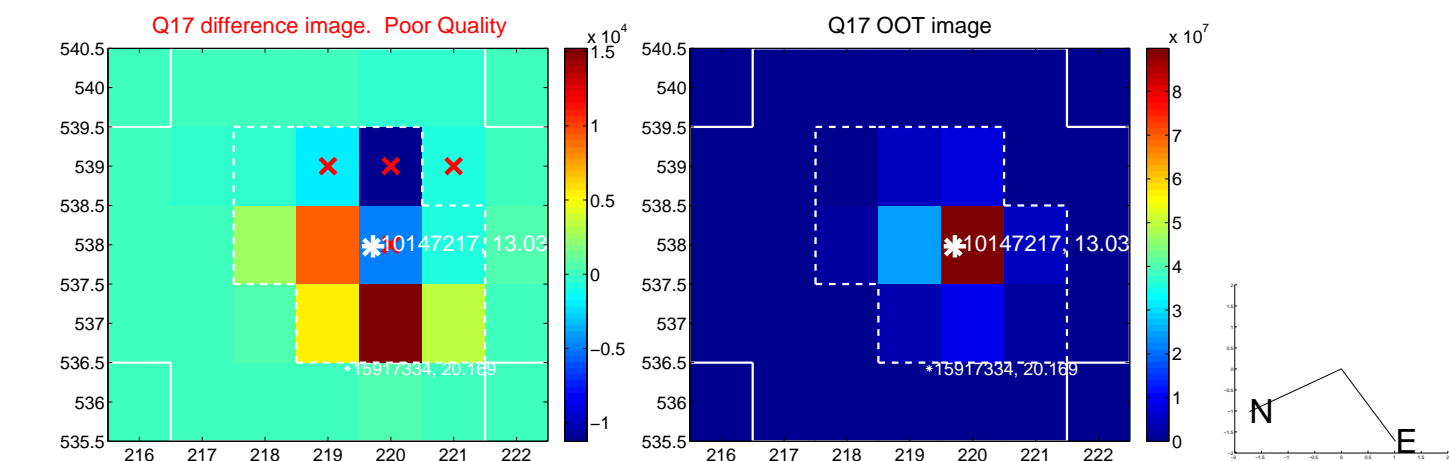
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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

