

# KIC 006525193

## 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> ) |
|--------------|----------|---------|---------------|--------------|-------------|------------------|------|------|----------------------------------|--------------------|----------------------------------|----------------------------------|
| 006525193-01 | OBS      | 2653.01 | 1.710275      | 131.623822   | 237.6       | 3.317            | 17.9 | 19.6 | 1.02                             | 5834               | 2.42                             | 1276.21                          |

## Robovetter Results

| TCE          | Run Type | Disp | Score | N | S | C | E | Comments               |
|--------------|----------|------|-------|---|---|---|---|------------------------|
| 006525193-01 | OBS      | FP   | 0.00  | 0 | 0 | 1 | 1 | HALO_GHOST—EPHEM_MATCH |

**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 006525193-01

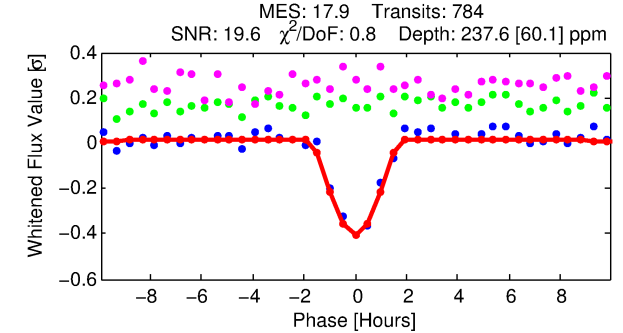
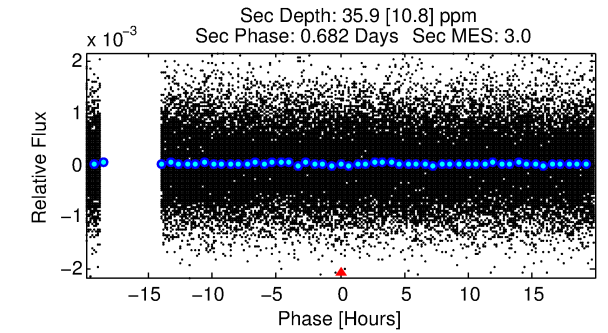
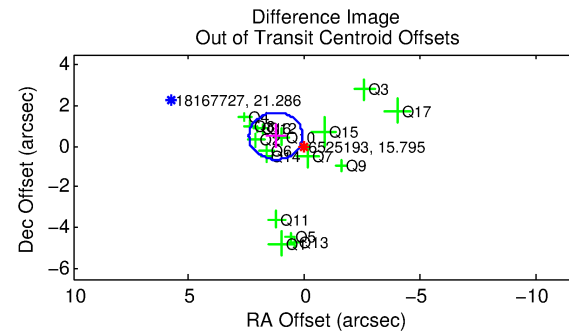
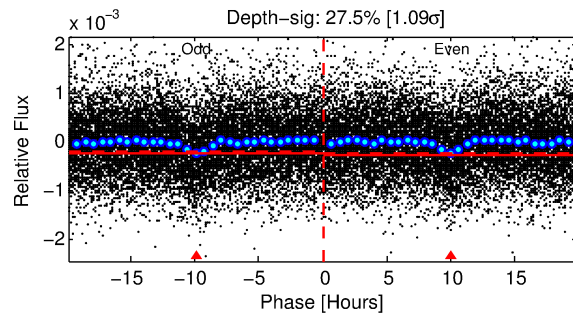
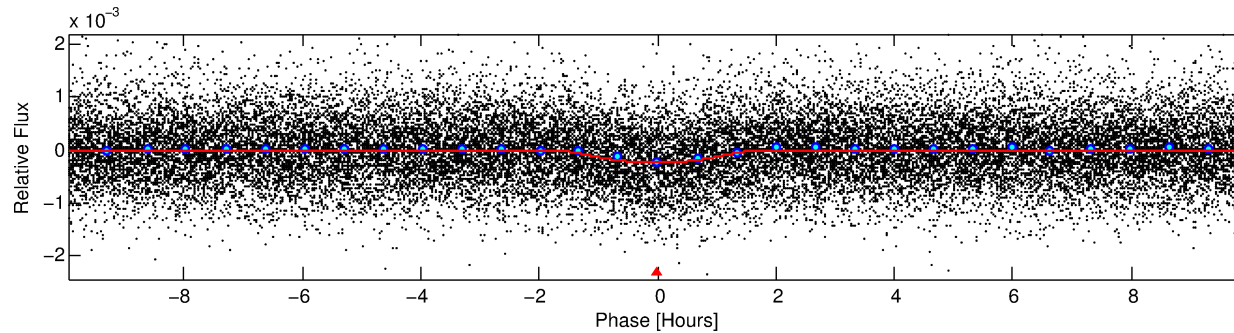
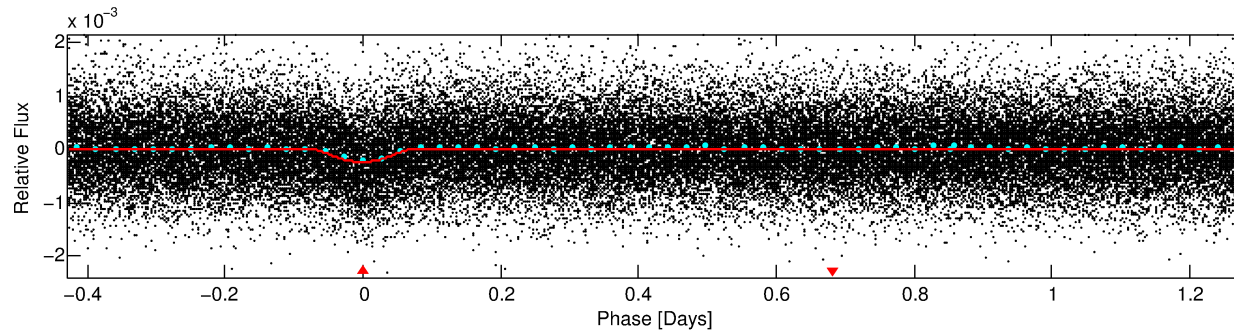
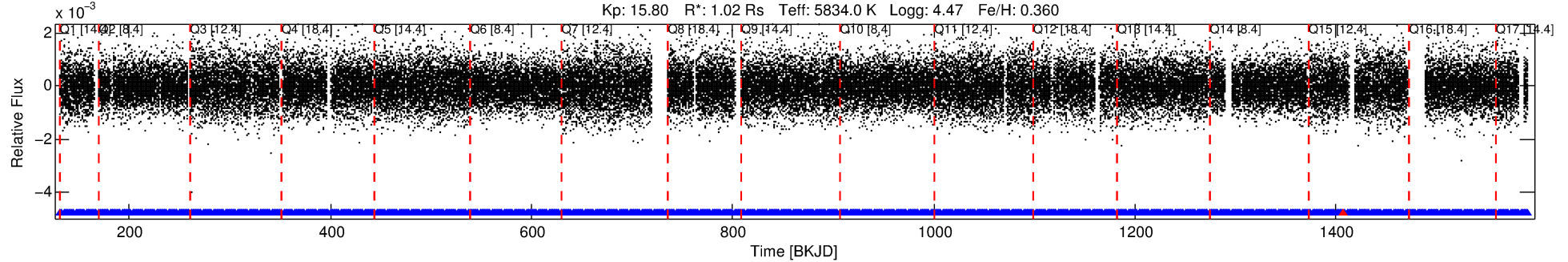
| TCE (1)      | KIC     | Parent (2) | Parent KIC | P <sub>1</sub> :P <sub>2</sub> | Dist (″) | ΔRow | ΔCol | m <sub>2</sub> | m <sub>1</sub> | D <sub>2</sub> /D <sub>1</sub> | Mechanism  | Flag | σ <sub>P</sub> | σ <sub>T</sub> |
|--------------|---------|------------|------------|--------------------------------|----------|------|------|----------------|----------------|--------------------------------|------------|------|----------------|----------------|
| 006525193-01 | 6525193 | 5293.01    | 6525196    | 1:1                            | 76.5     | -16  | -11  | 10.15          | 15.79          | 661.93                         | Direct-PRF | 0    | 1.05           | 0.50           |

**Notes:** P<sub>1</sub>:P<sub>2</sub> is the period ratio. Dist is the distance in arcseconds. ΔRow and ΔCol are the number of pixels apart in row and column. m<sub>2</sub> and m<sub>1</sub> are the magnitudes of the parent and child. D<sub>2</sub>/D<sub>1</sub> is the parent's transit depth divided by the child's. σ<sub>P</sub> and σ<sub>T</sub> are the significance of the match in period and epoch. For a match to be considered significant σ<sub>P</sub> < 5.0 and σ<sub>T</sub> < 5.0. Matches which have σ<sub>P</sub> and σ<sub>T</sub> very close to this cutoff should receive extra scrutiny, especially if the period ratio is very large.

# DV One-Page Summary

KIC: 6525193 Candidate: 1 of 1 Period: 1.710 d  
KOI: K02653.01 Corr: 0.826

Kp: 15.80 R\*: 1.02 Rs Teff: 5834.0 K Logg: 4.47 Fe/H: 0.360



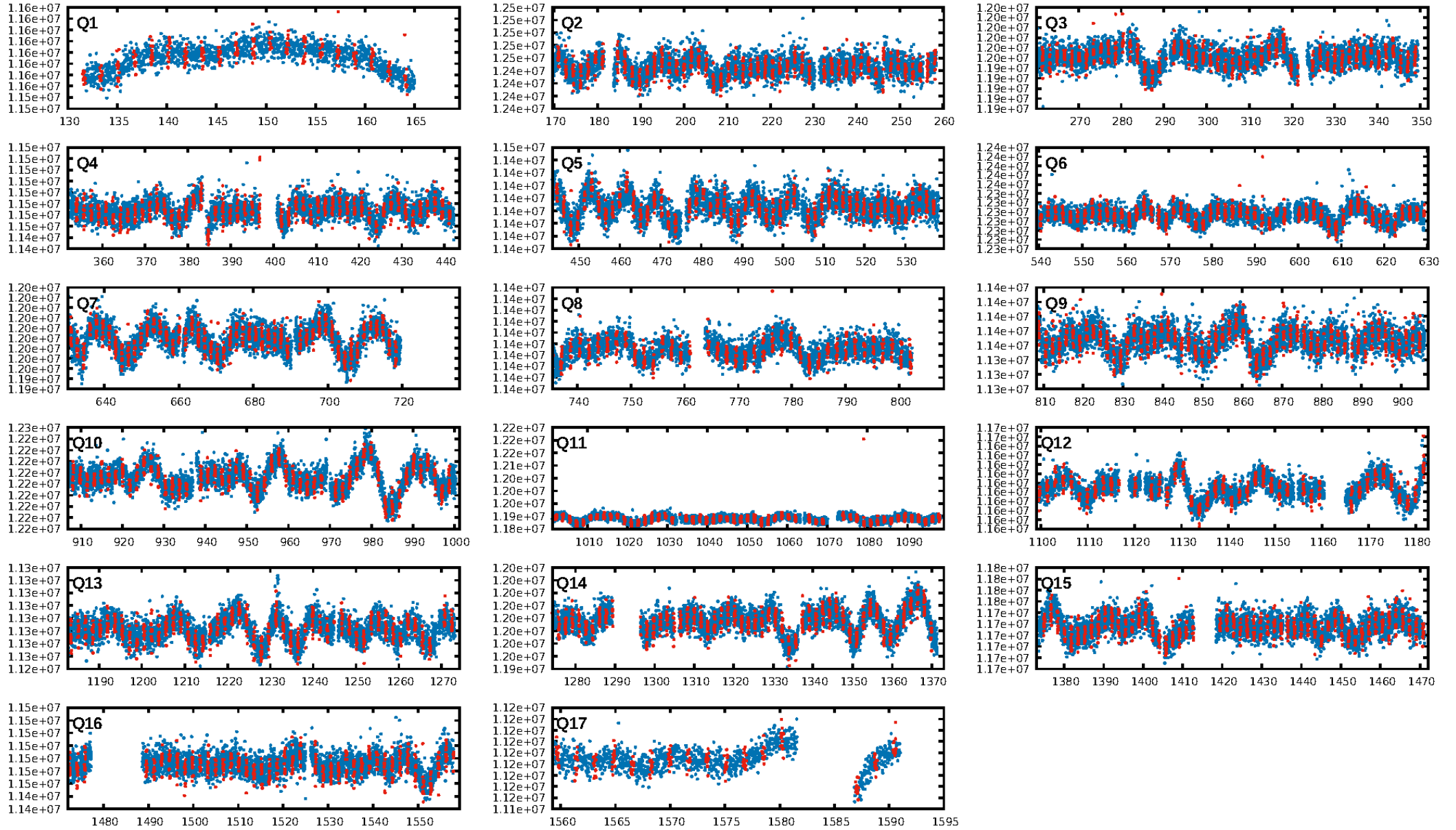
## DV Fit Results:

Period = 1.71027 [0.00001] d  
Epoch = 131.6238 [0.0026] BKJD  
Rp/R\* = 0.0217 [0.0108]  
a/R\* = 1.45 [0.19]  
b = 0.99 [0.02]  
Seff = 1276.21 [446.01]  
Teq = 1524 [133] K  
Rp = 2.42 [1.33] Re  
a = 0.0292 [0.0059] AU  
Ag = 2.87 [3.13] [0.60σ]  
Teffp = 3067 [812] K [1.88σ]

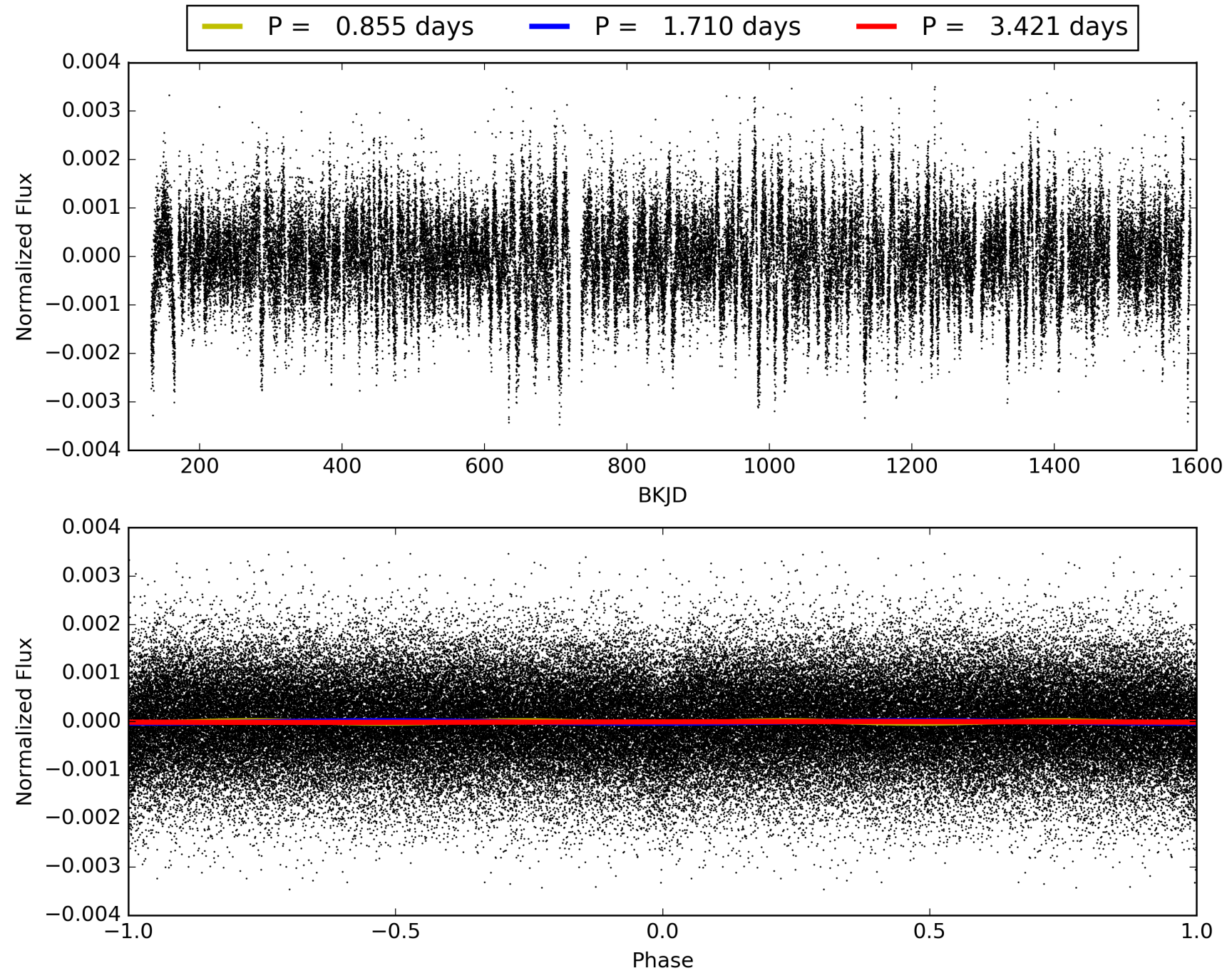
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: N/A  
ModelChiSquareGof-sig: N/A  
Bootstrap-pfa: 6.98e-69  
RollingBand-fgt: 1.00 [747/748]  
GhostDiagnostic-chr: 0.1894  
Centroid-sig: 0.0%  
Centroid-so: 3.893 arcsec [5.65σ]  
OotOffset-rm: 1.341 arcsec [3.48σ]  
OotOffset-st: 4/4/4/5 [17]  
KicOffset-rm: 1.272 arcsec [2.94σ]  
KicOffset-st: 4/4/4/5 [17]  
DiffImageQuality-fgm: 0.00 [0/17]  
DiffImageOverlap-fno: 1.00 [17/17]

# TCE 006525193-01, PDC Light Curves



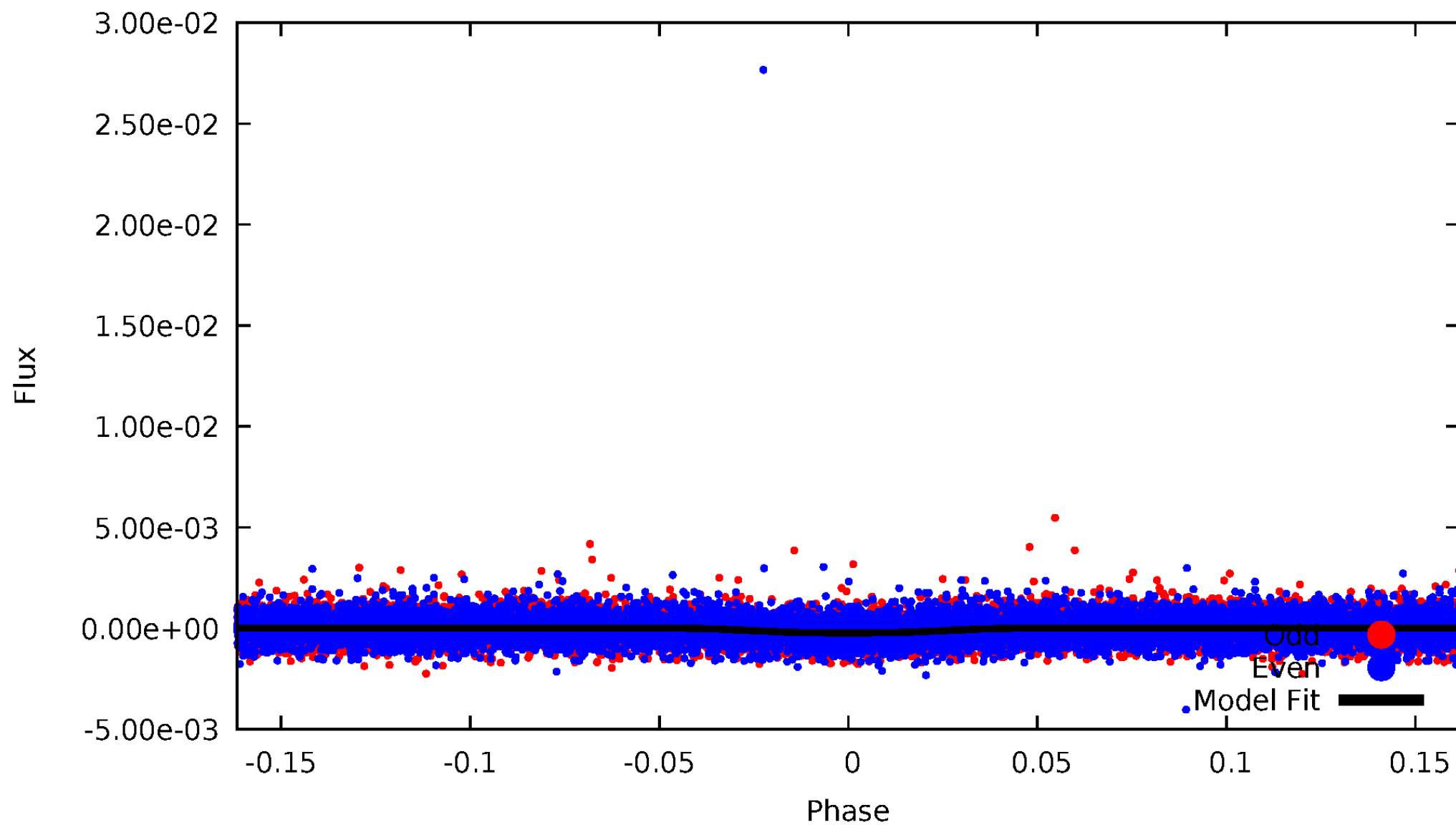
TCE 006525193-01





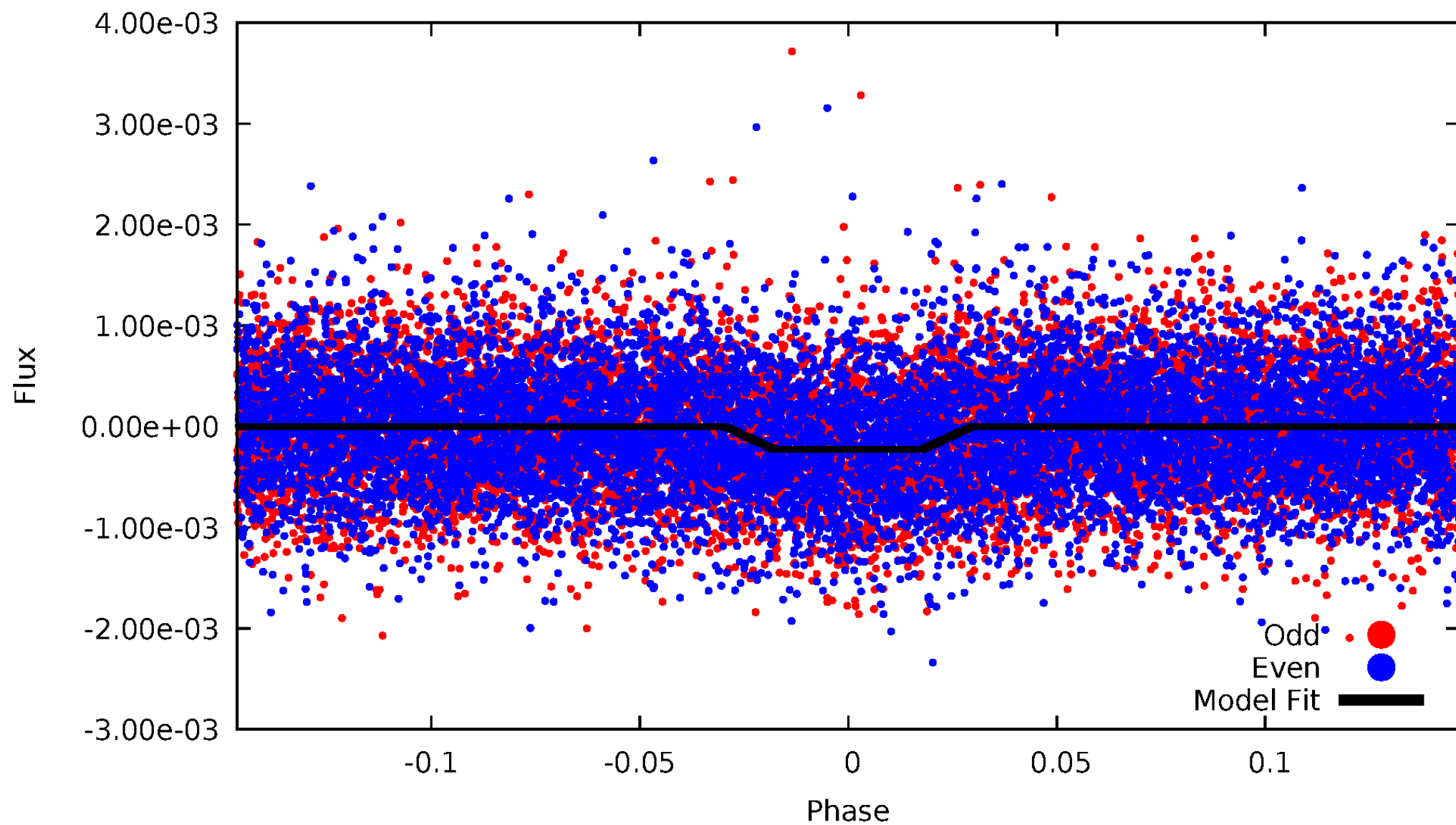
# DV Odd/Even

TCE 006525193-01



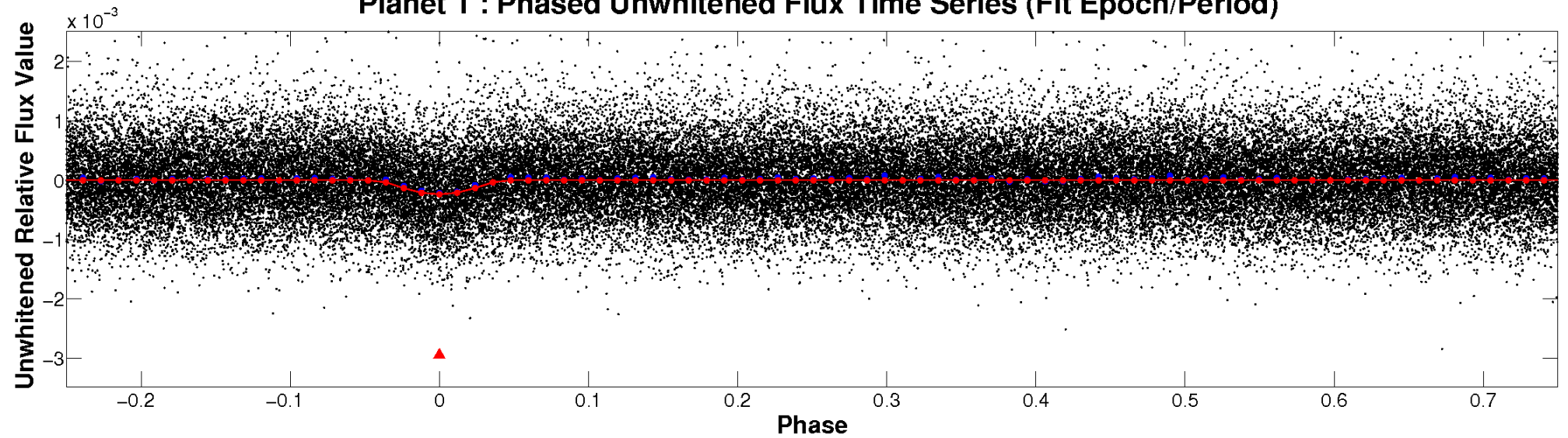
# ALT Odd/Even

TCE 006525193-01

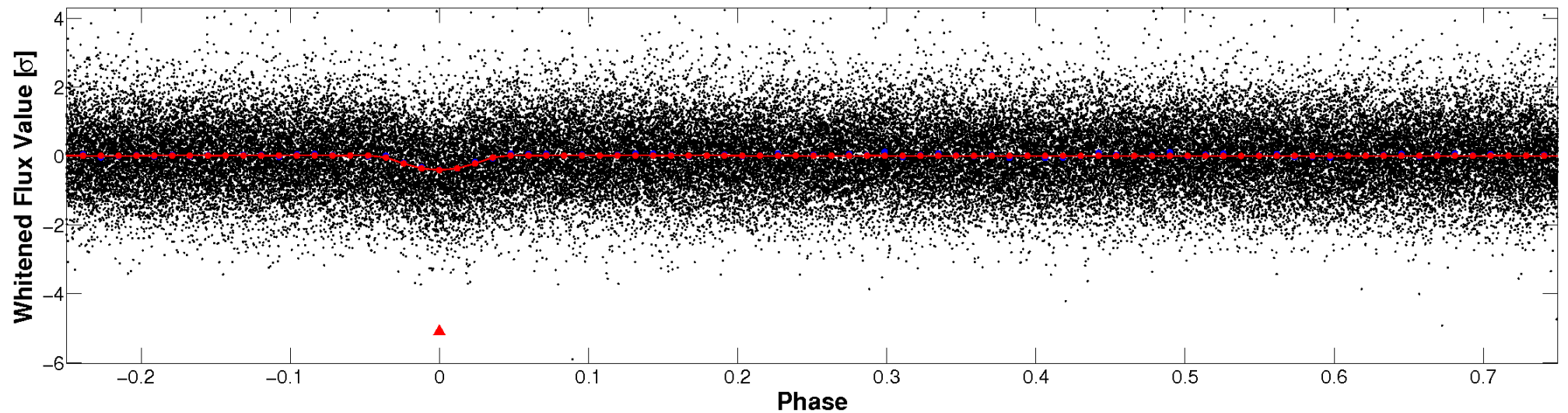


# Non-Whitened Vs. Whitened Light Curve

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

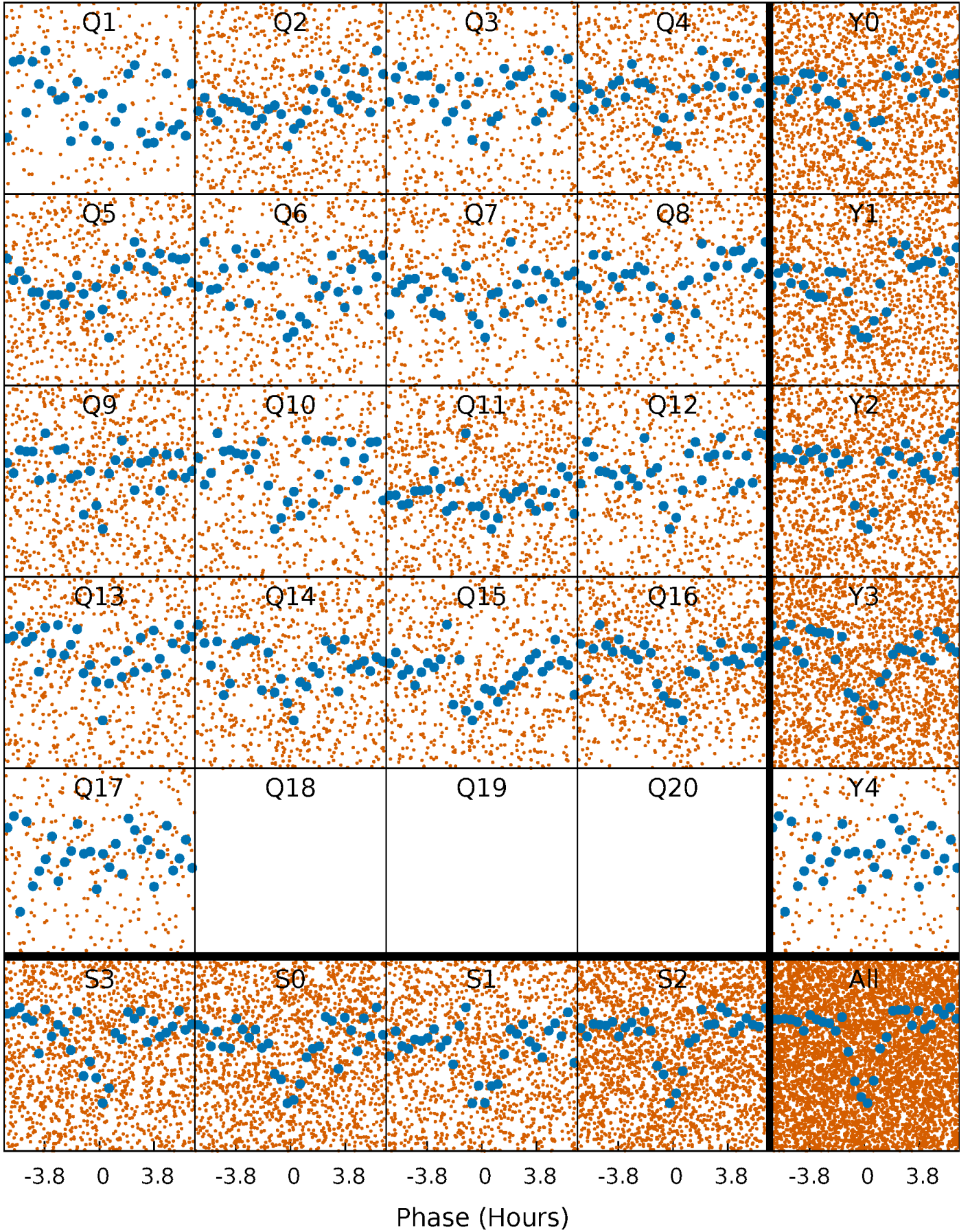


**Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)**



# PDC Quarter-Phased Transit Curves

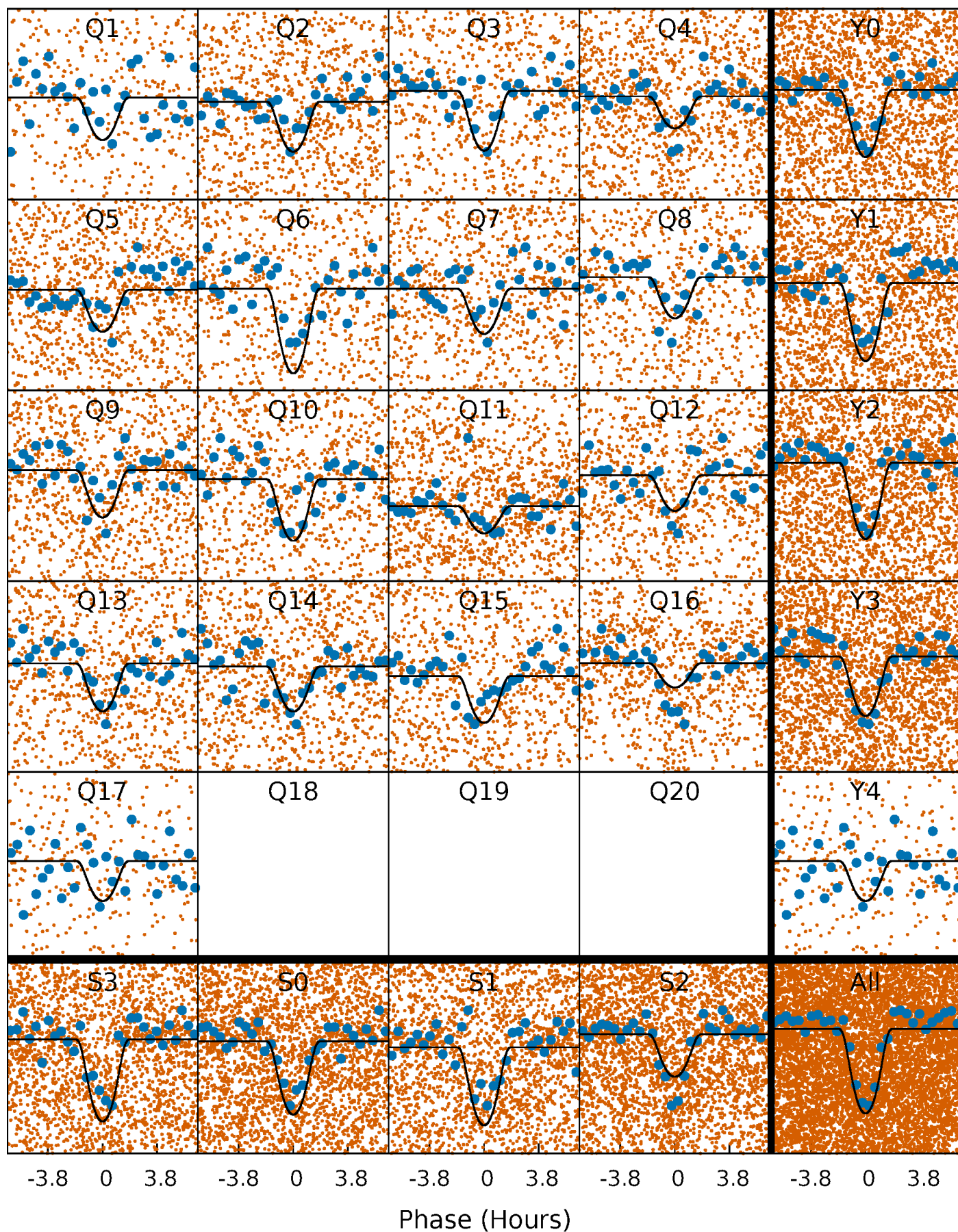
TCE 006525193-01   P= 1.710275 Days    $T_0=131.623822$  (BKJD)





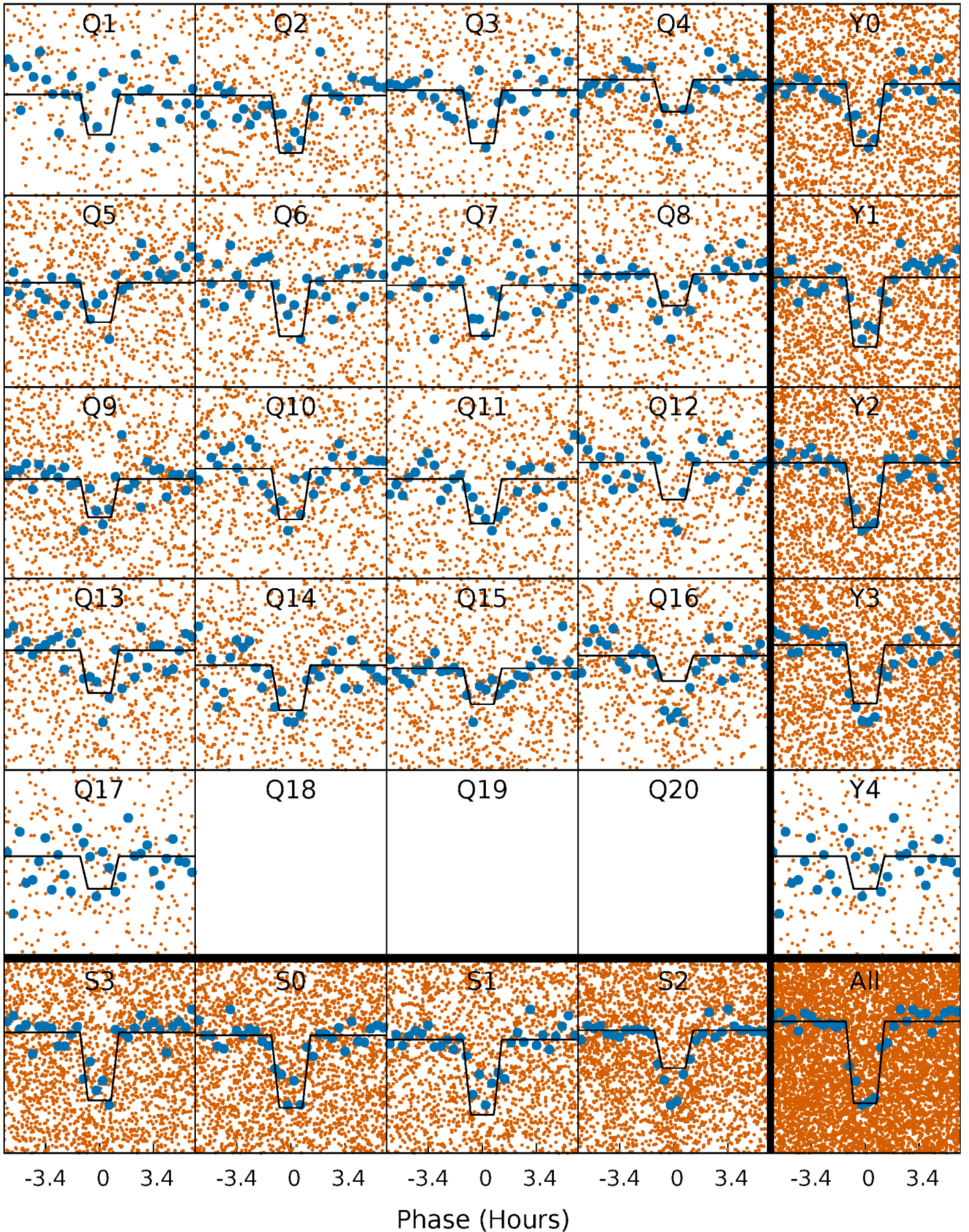
# DV Quarter-Phased Transit Curves

TCE 006525193-01 P= 1.710275 Days  $T_0=131.623822$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

TCE 006525193-01 P= 1.710279 Days  $T_0=131.620942$  (BKJD)

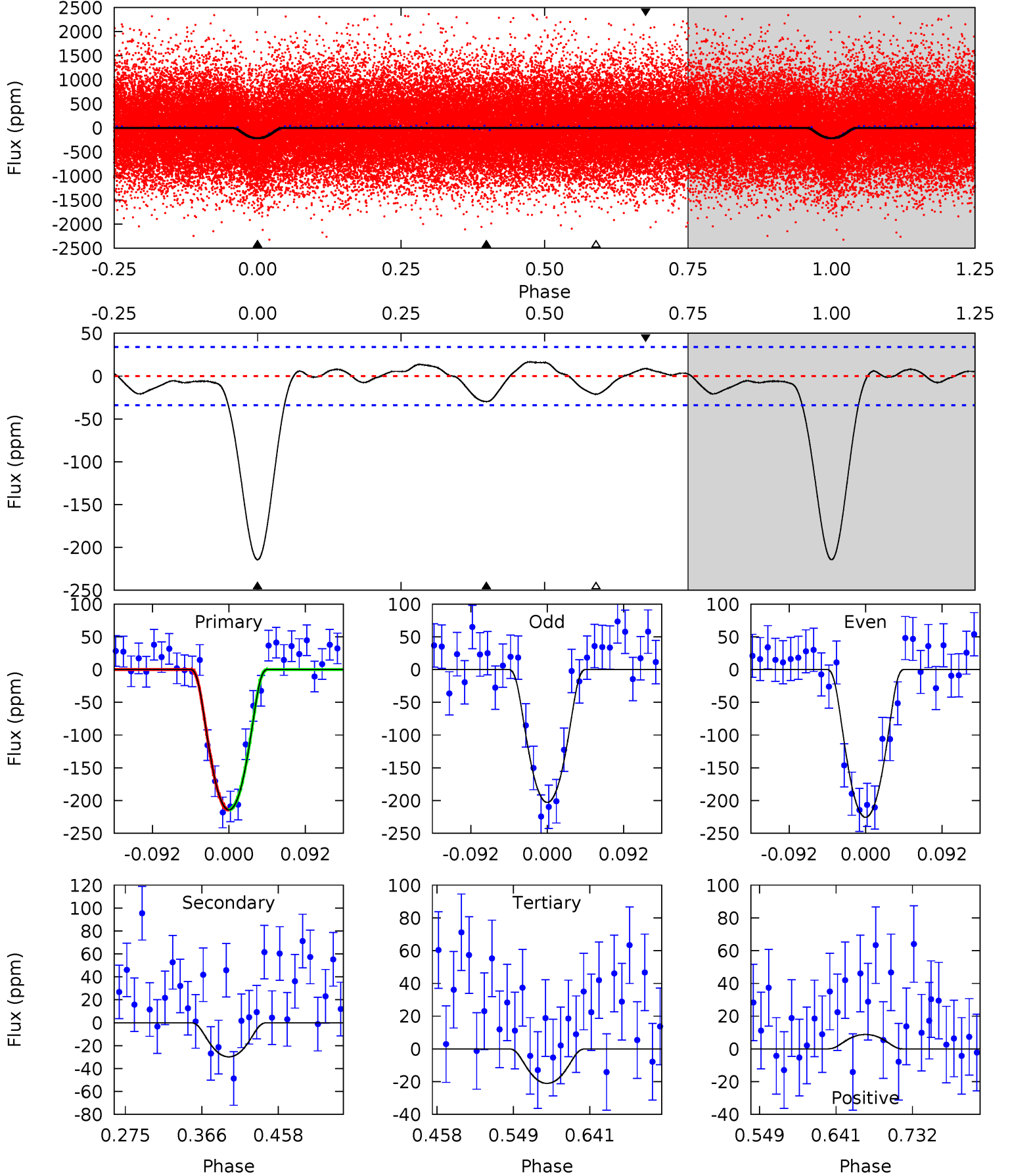




# DV Model-Shift Uniqueness Test

006525193-01, P = 1.710275 Days, E = 129.913547 Days

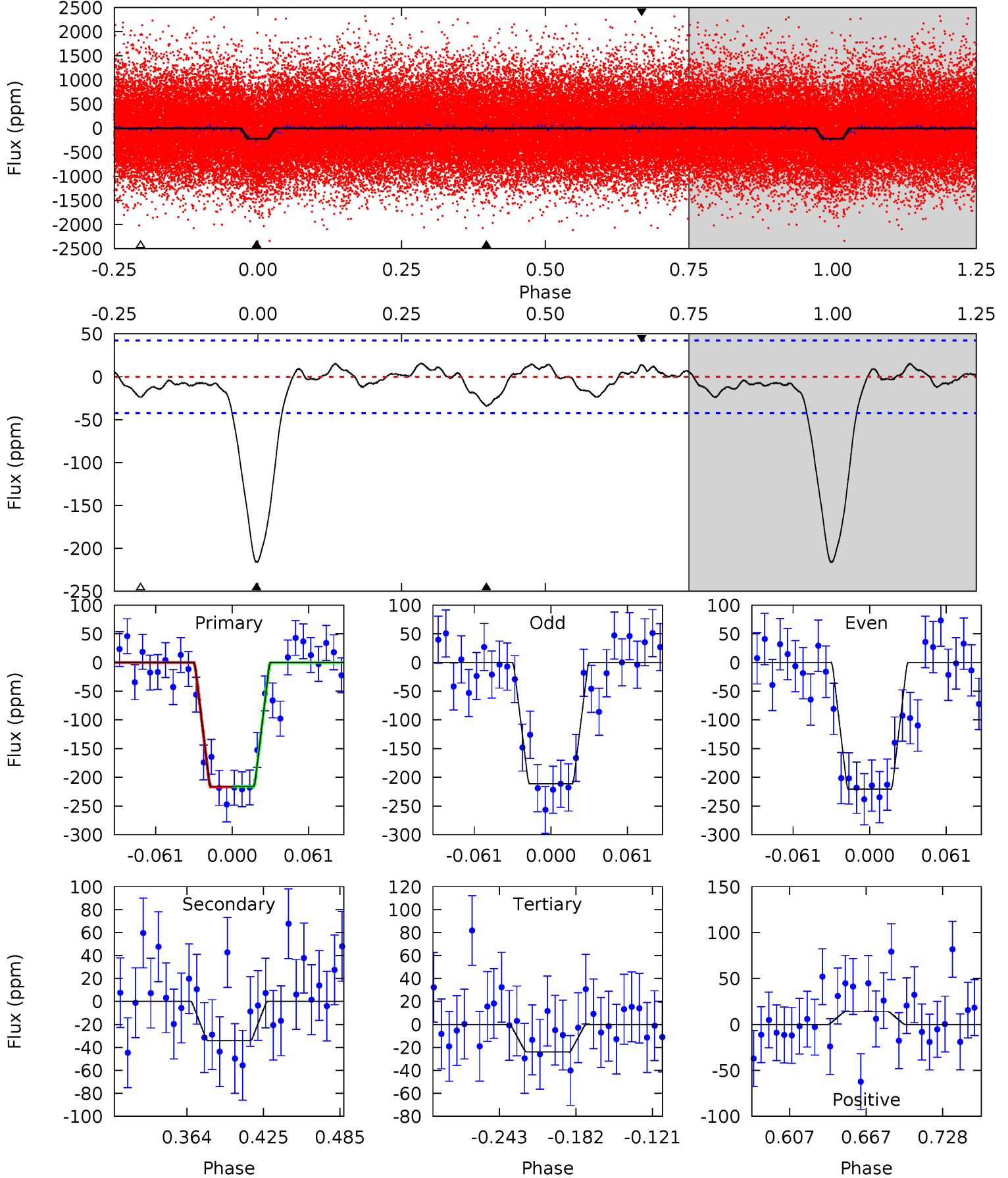
| Pri  | Sec  | Ter  | Pos  | FA <sub>1</sub> | FA <sub>2</sub> | F <sub>Red</sub> | Pri-Ter | Pri-Pos | Sec-Ter | Sec-Pos | Odd-Evn | DMM  | Shape | TAT  |
|------|------|------|------|-----------------|-----------------|------------------|---------|---------|---------|---------|---------|------|-------|------|
| 28.9 | 4.02 | 2.84 | 1.18 | 4.58            | 1.69            | 1.28             | 26.0    | 27.7    | 1.18    | 2.83    | 1.53    | 0.91 | 0.07  | 0.04 |



# Alt Model-Shift Uniqueness Test

006525193-01, P = 1.710279 Days, E = 129.910663 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  |
|------|------|------|------|-----------------|-----------------|------------------|---------|---------|---------|---------|---------|------|-------|------|
| 23.8 | 3.76 | 2.64 | 1.54 | 4.67            | 1.88            | 1.07             | 21.2    | 22.3    | 1.12    | 2.22    | 0.52    | 0.98 | 0.07  | 0.06 |





### Stellar Parameters For KIC 006525193

|        | $T_{\text{eff}}(K)$  | $\log(g)$                 | [Fe/H]                    | $R$ ( $R_{\odot}$ )       | $M(M_{\odot})$            | $p_{\star}$ ( $\text{g}\cdot\text{cm}^{-3}$ ) |
|--------|----------------------|---------------------------|---------------------------|---------------------------|---------------------------|---|
|        | $5834^{+182}_{-243}$ | $4.472^{+0.046}_{-0.173}$ | $0.360^{+0.100}_{-0.300}$ | $1.023^{+0.237}_{-0.109}$ | $1.132^{+0.100}_{-0.150}$ | $1.489^{+0.338}_{-0.687}$                     |
|        | +3%/-4%              | +1%/-4%                   | +28%/-83%                 | +23%/-11%                 | +9%/-13%                  | +23%/-46%                                     |
| 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 006525193-01 / KOI 2653.01

| Detrend | Depth (ppm) | $R_p$ ( $R_{\oplus}$ ) | $T_{max}$ (K)        | $T_{obs}$ (K)         | $A_{obs}$                  |
|---------|-------------|------------------------|----------------------|-----------------------|----------------------------|
| DV      | $-30 \pm 7$ | $2.52^{+1.23}_{-1.16}$ | $2175^{+131}_{-115}$ | $3295^{+902}_{-421}$  | $2.024^{+5.379}_{-1.094}$  |
| Alt.    | $-34 \pm 9$ | $1.86^{+1.18}_{-1.08}$ | $2176^{+130}_{-111}$ | $3827^{+1577}_{-654}$ | $4.508^{+20.601}_{-2.929}$ |

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

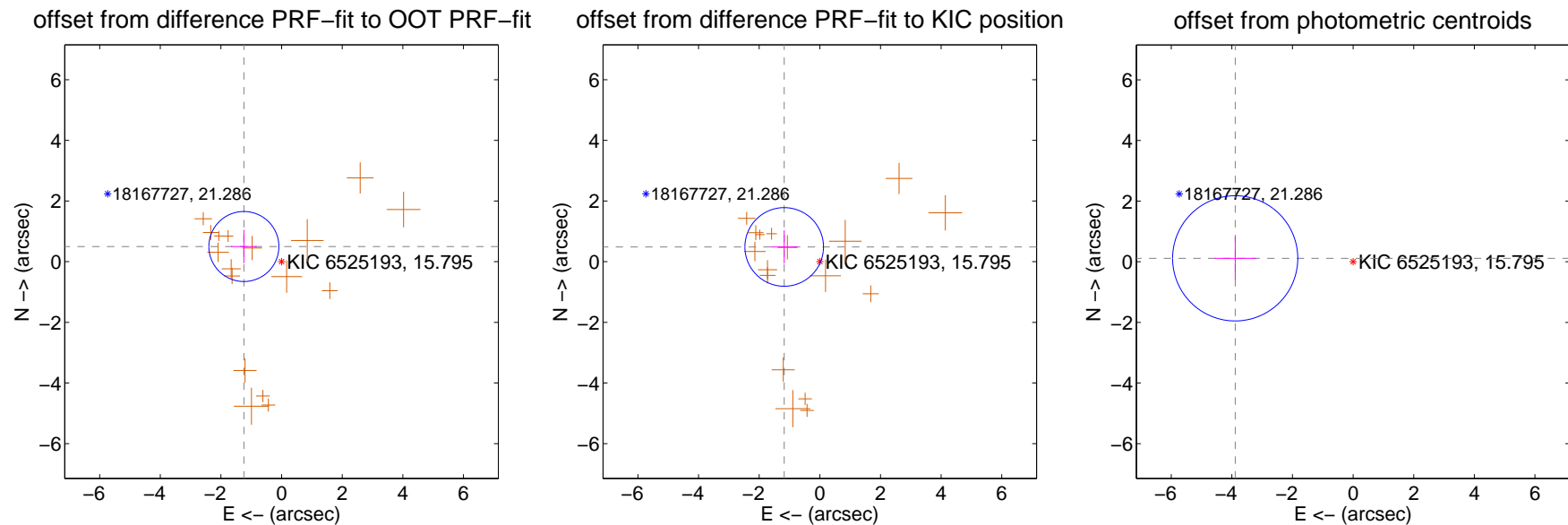
## DV Centroid Data

Supplemental centroid analysis for 006525193-01. Kepler magnitude: 15.79. Transit SNR 19.63

There are 0 quarters with good PRF difference image offsets

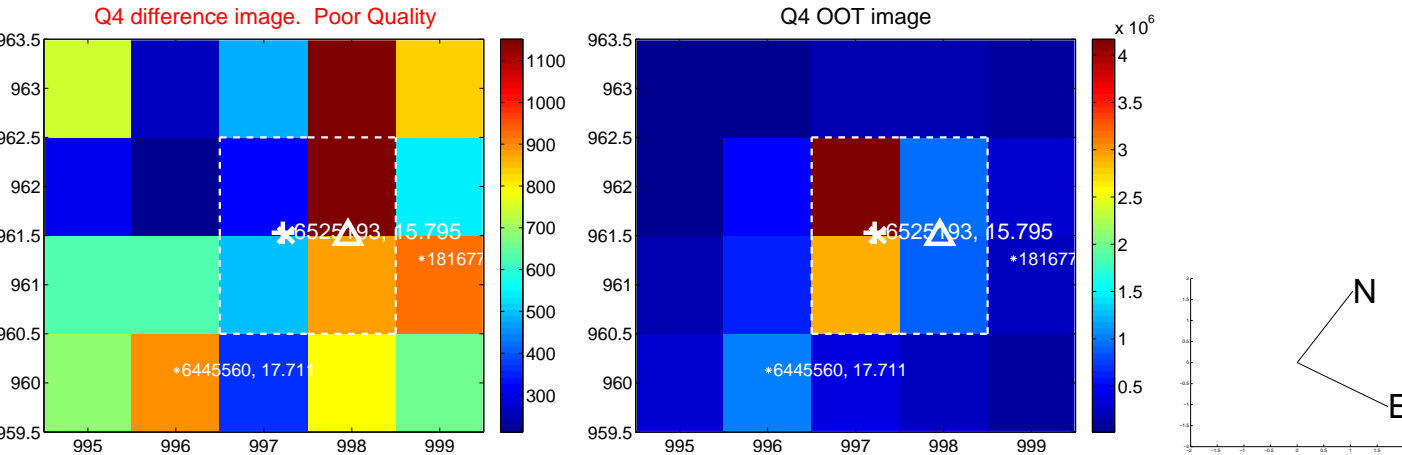
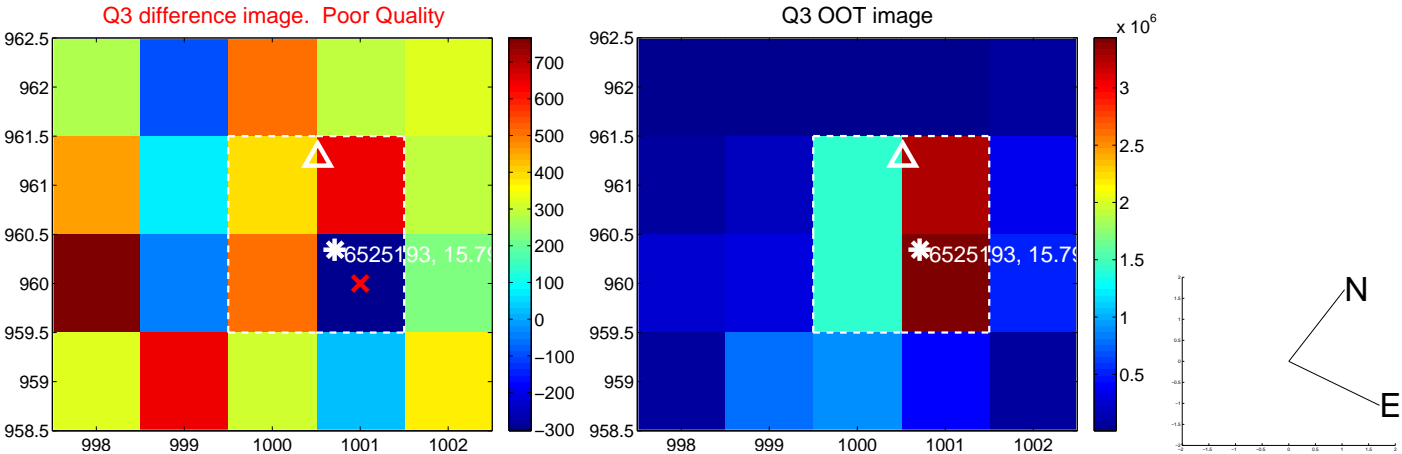
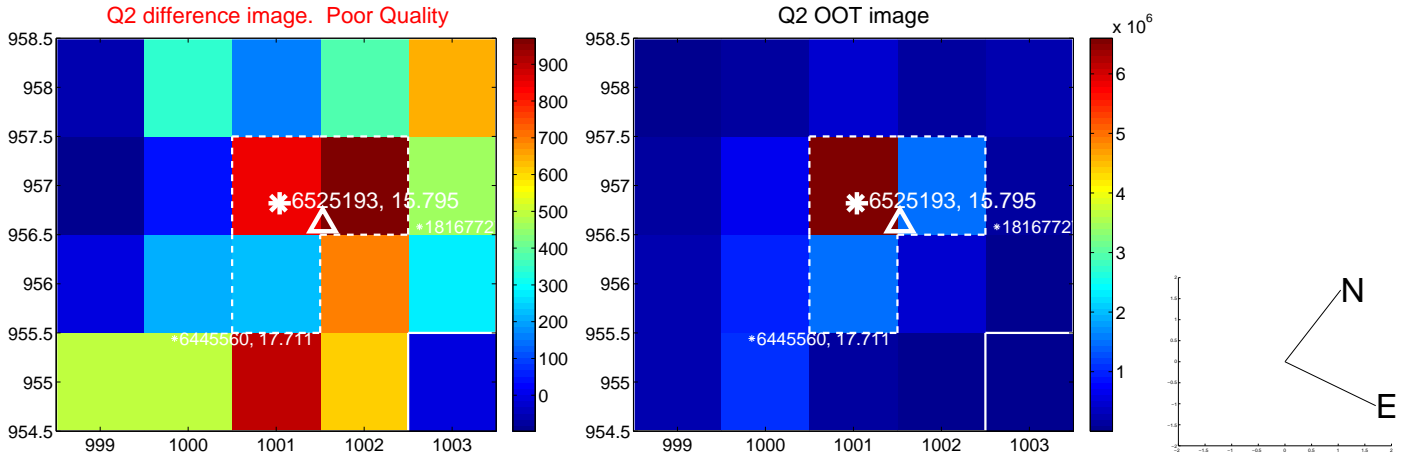
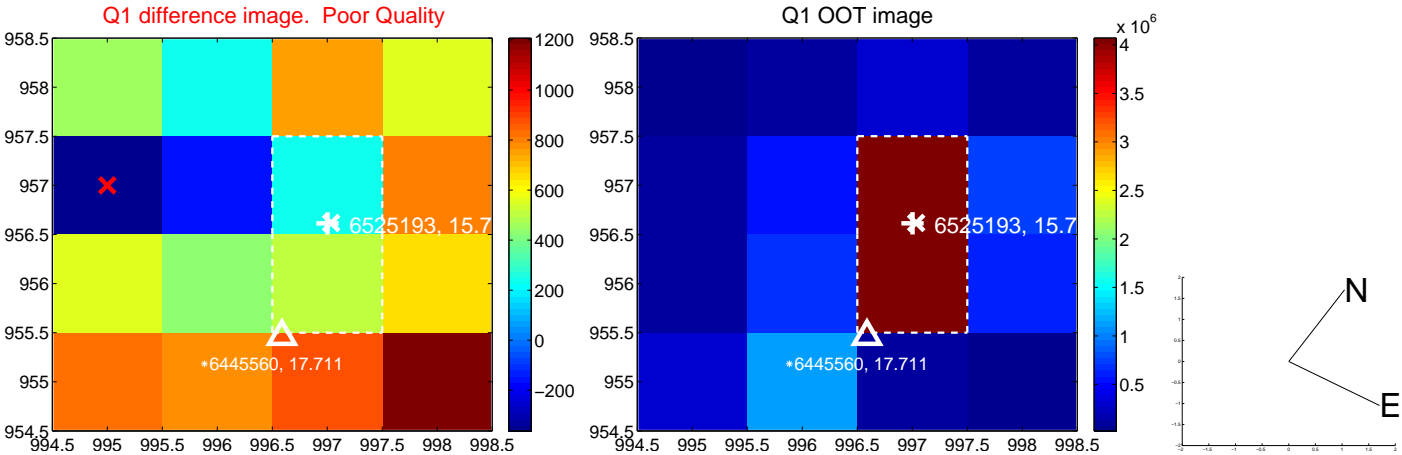
The direct PRF centroid is offset from the target star catalog position by about 0.16 arcsec

|   | Distance in arcsec | Distance / $\sigma$ | $\Delta$ RA       | $\Delta$ Dec      |
|---|--------------------|---------------------|-------------------|-------------------|
| PRF-fit source offset from OOT          | $1.341 \pm 0.385$  | 3.48                | $1.244 \pm 0.422$ | $0.501 \pm 0.550$ |
| PRF-fit source offset from KIC position | $1.272 \pm 0.432$  | 2.94                | $1.176 \pm 0.443$ | $0.487 \pm 0.551$ |
| photometric centroid source offset      | $3.89 \pm 0.69$    | 5.65                | $3.89 \pm 0.69$   | $0.11 \pm 0.71$   |

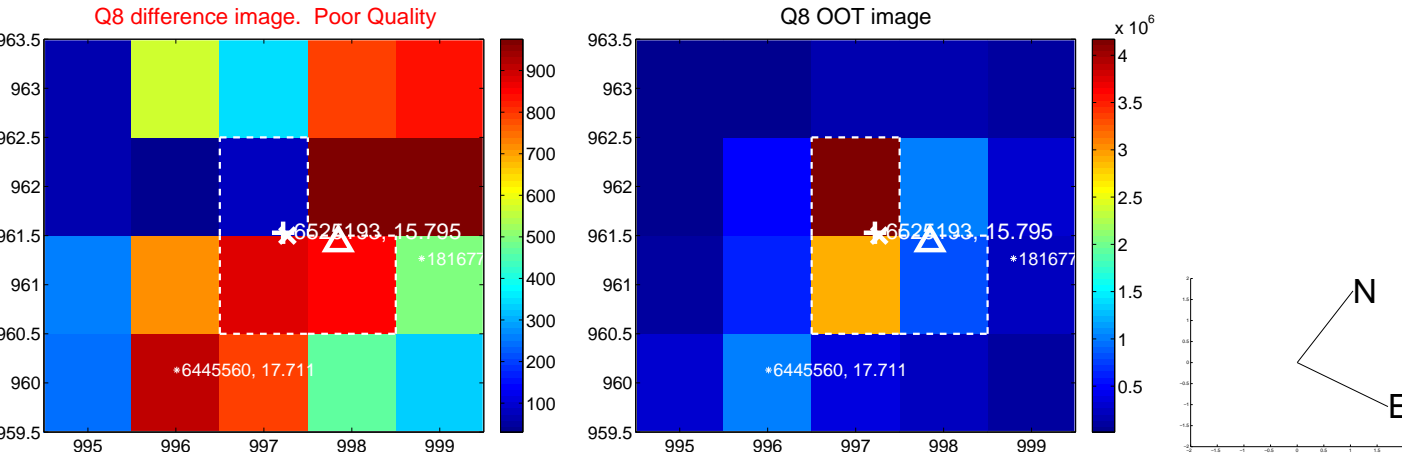
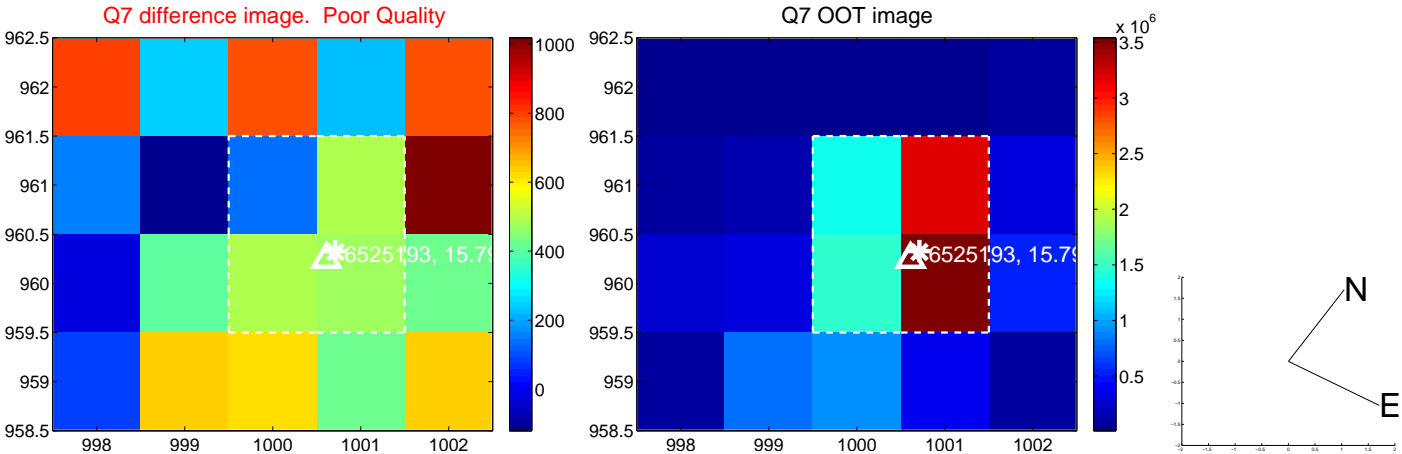
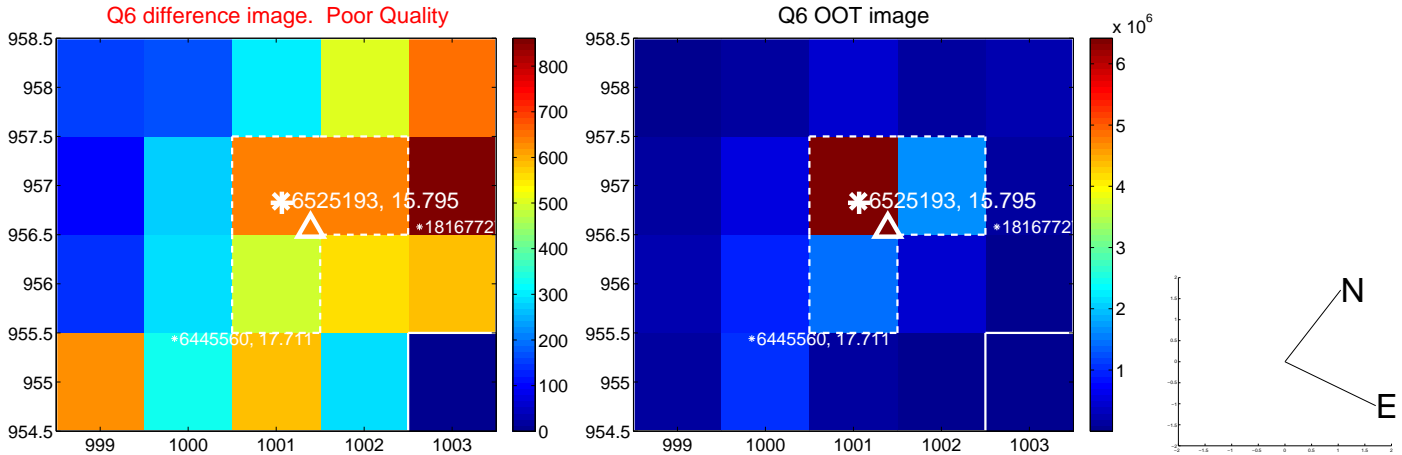
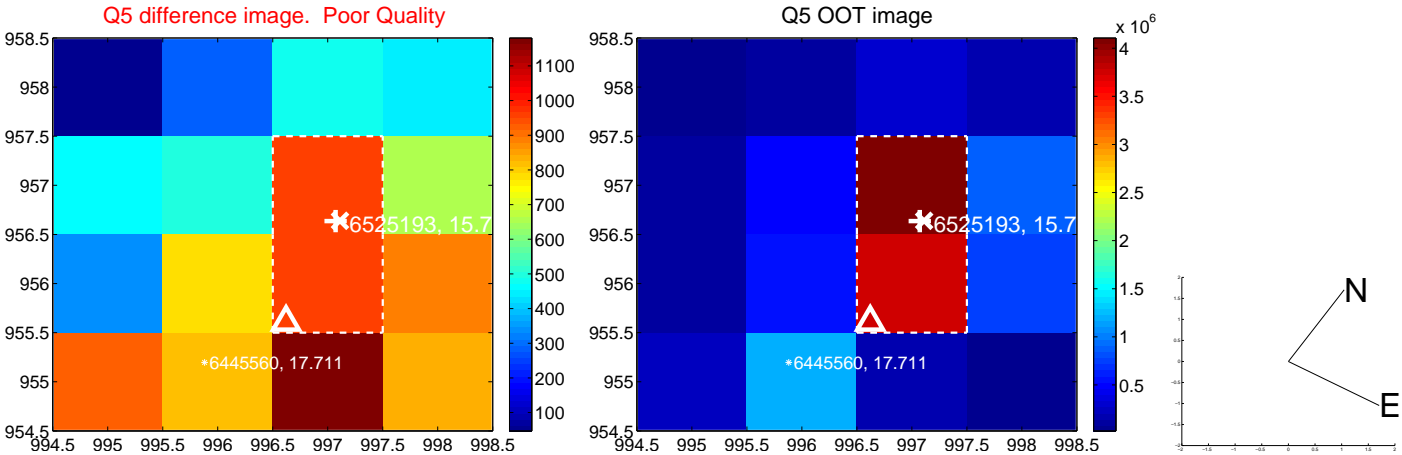


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: three-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

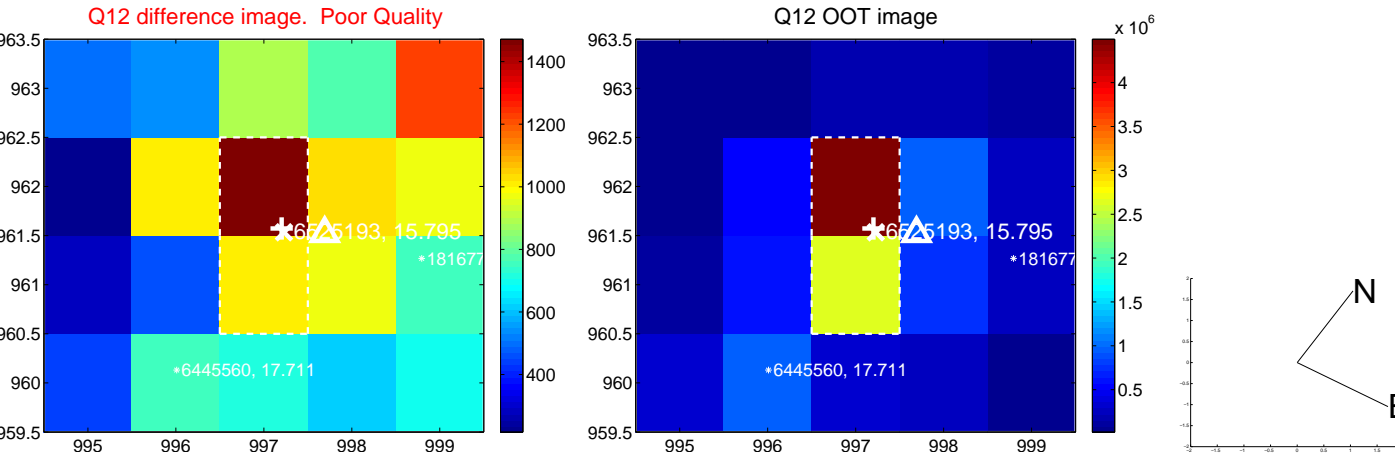
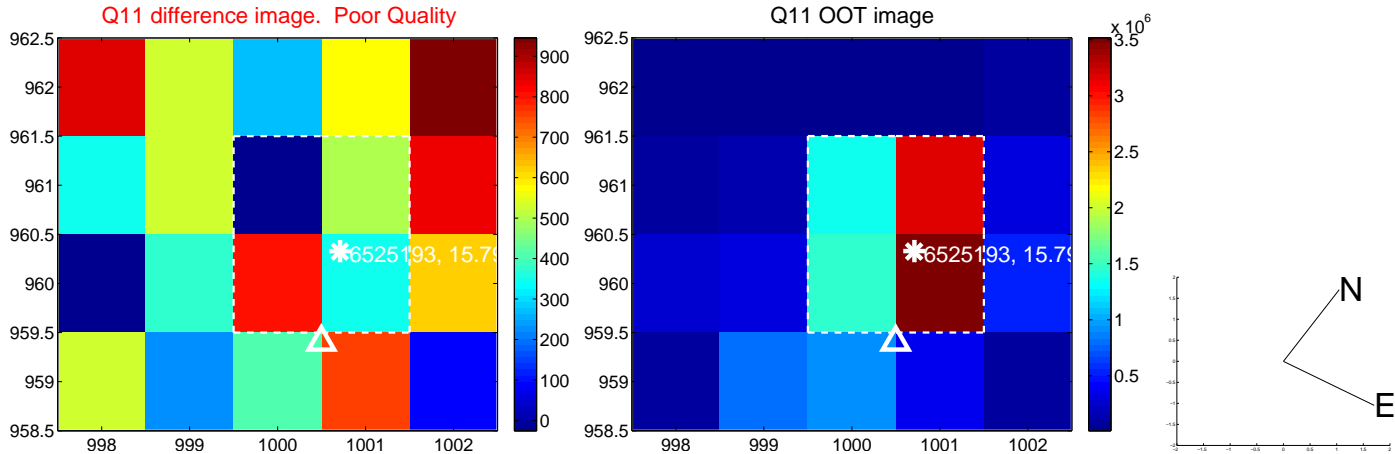
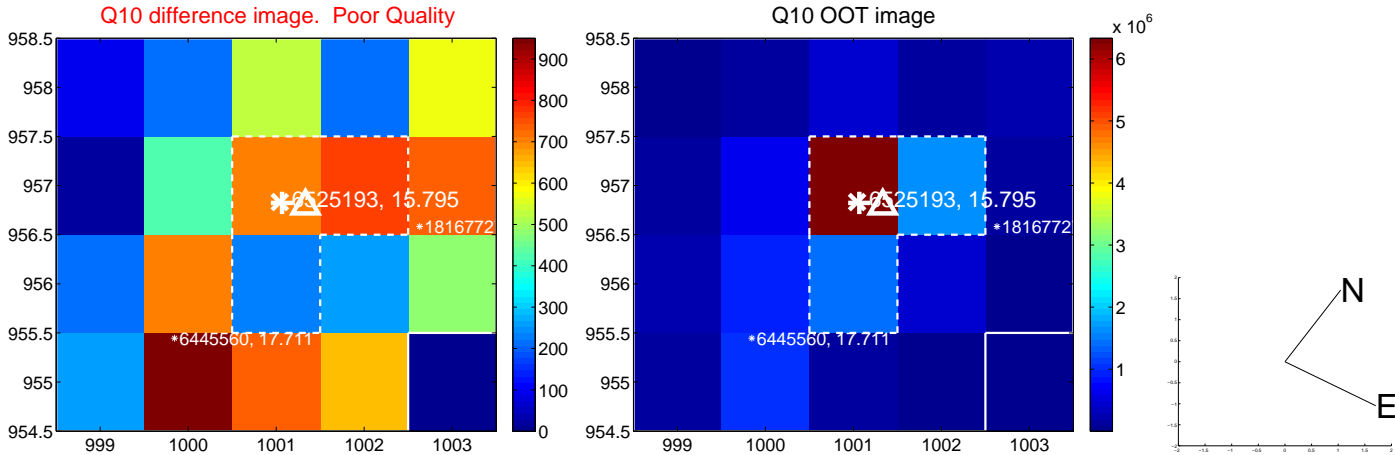
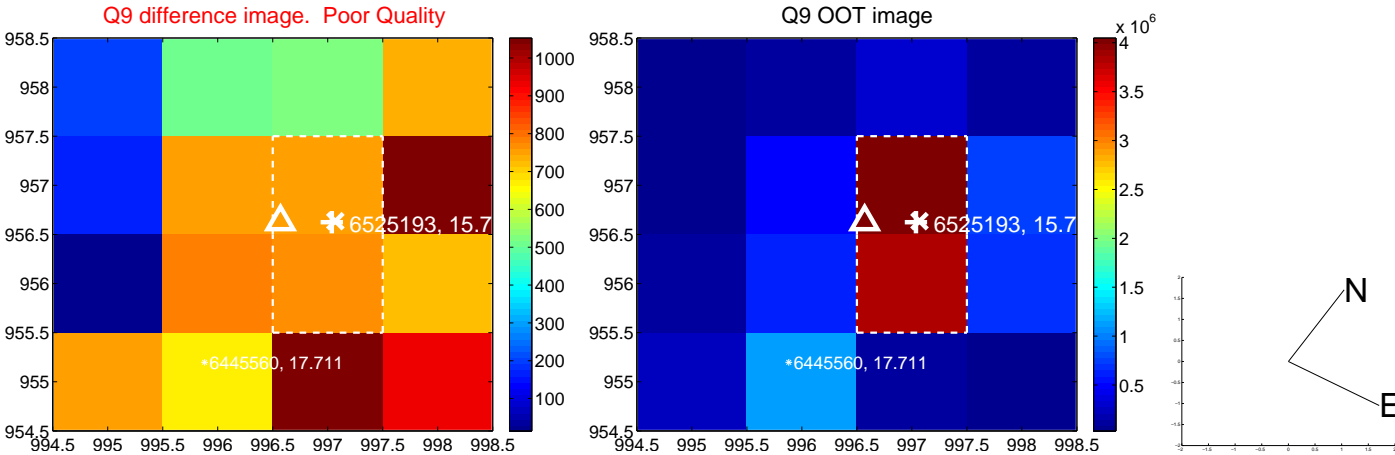


white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

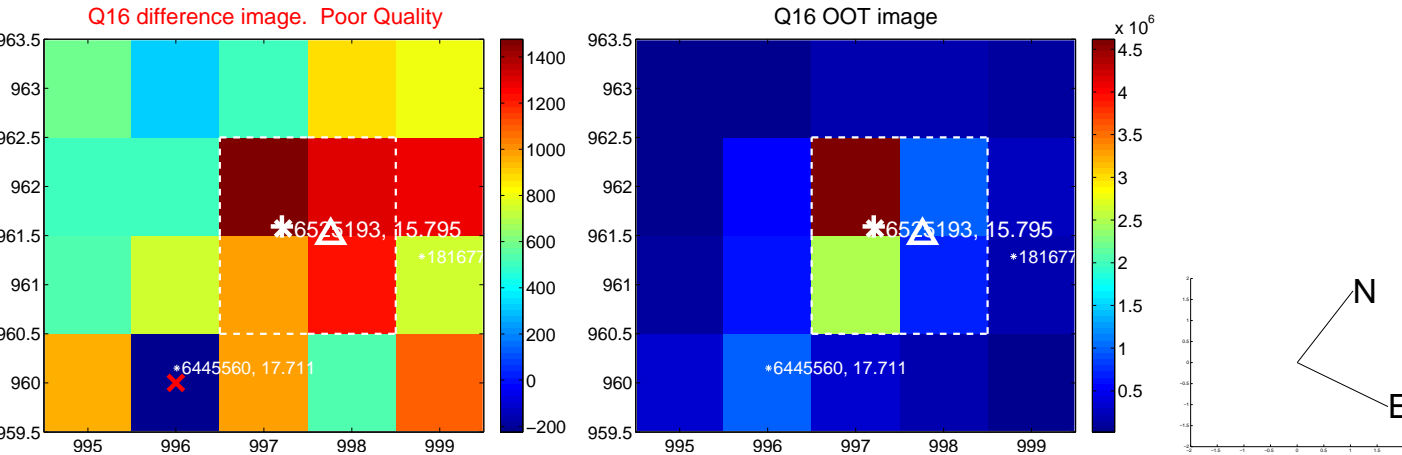
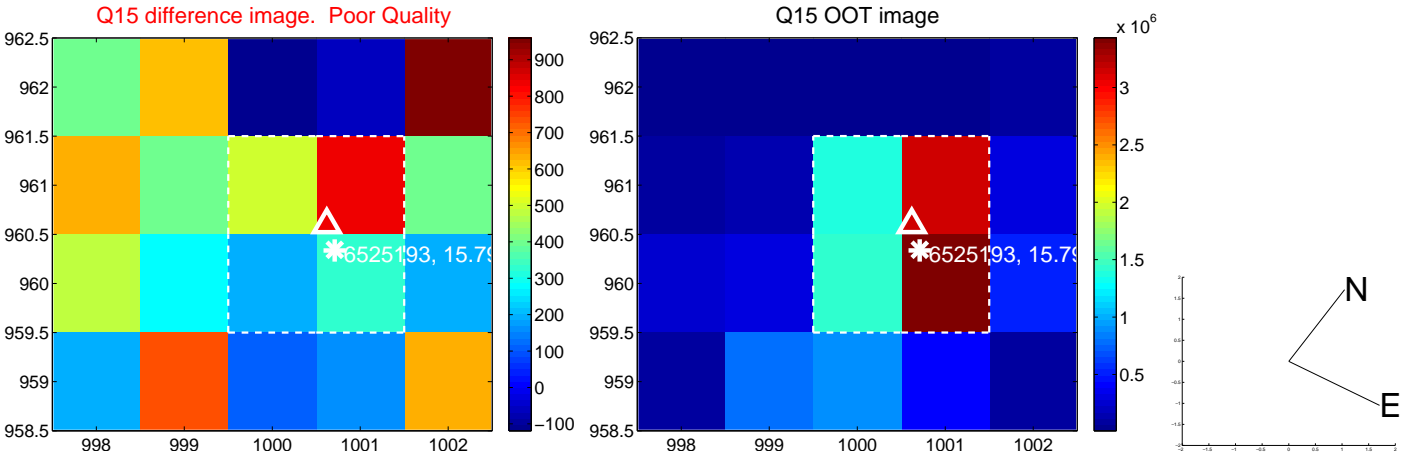
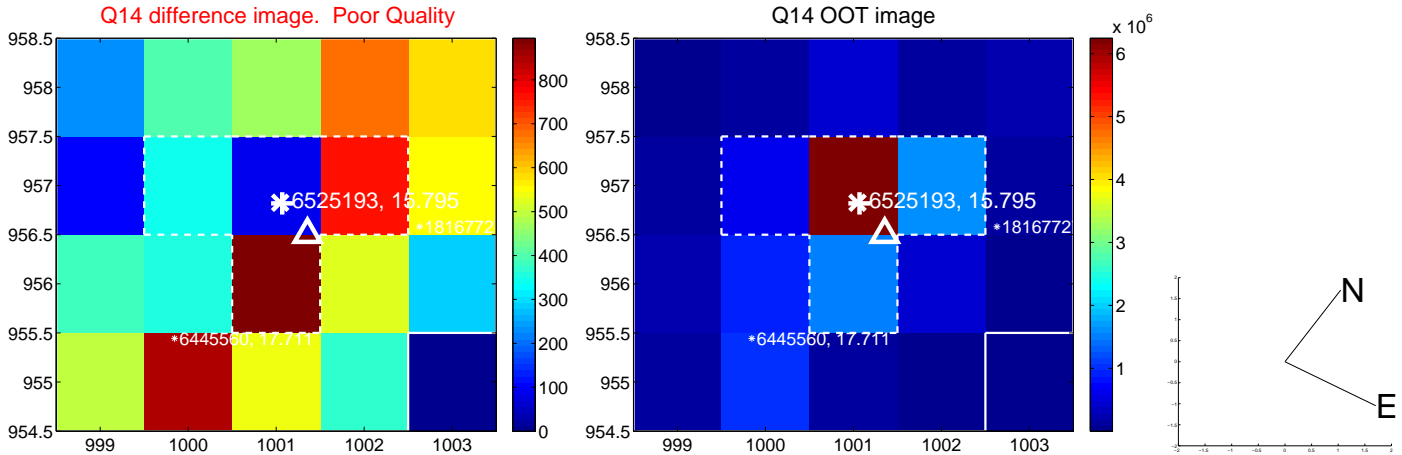
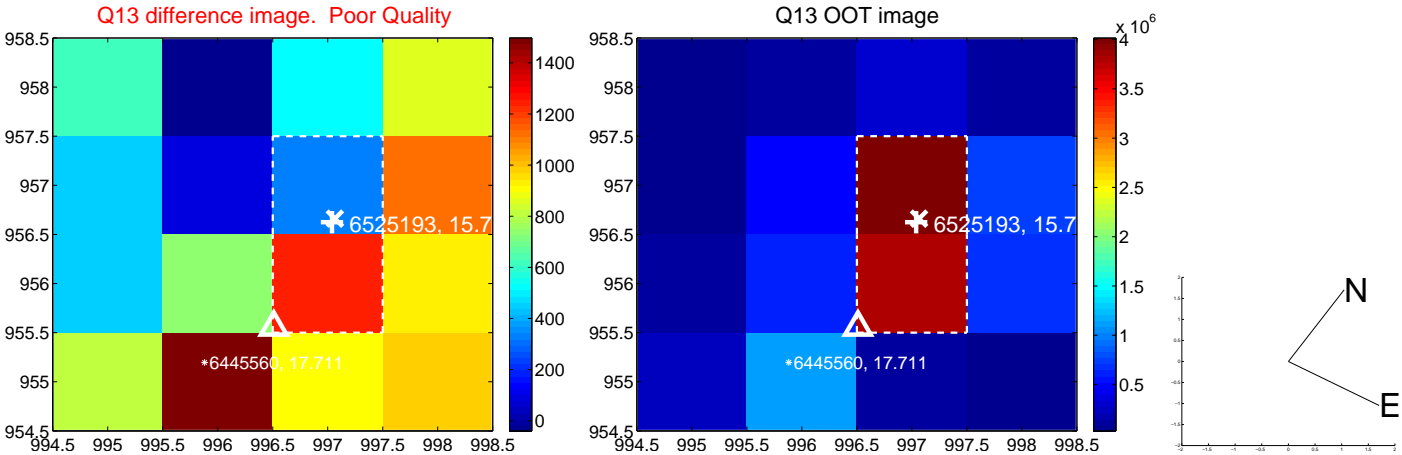




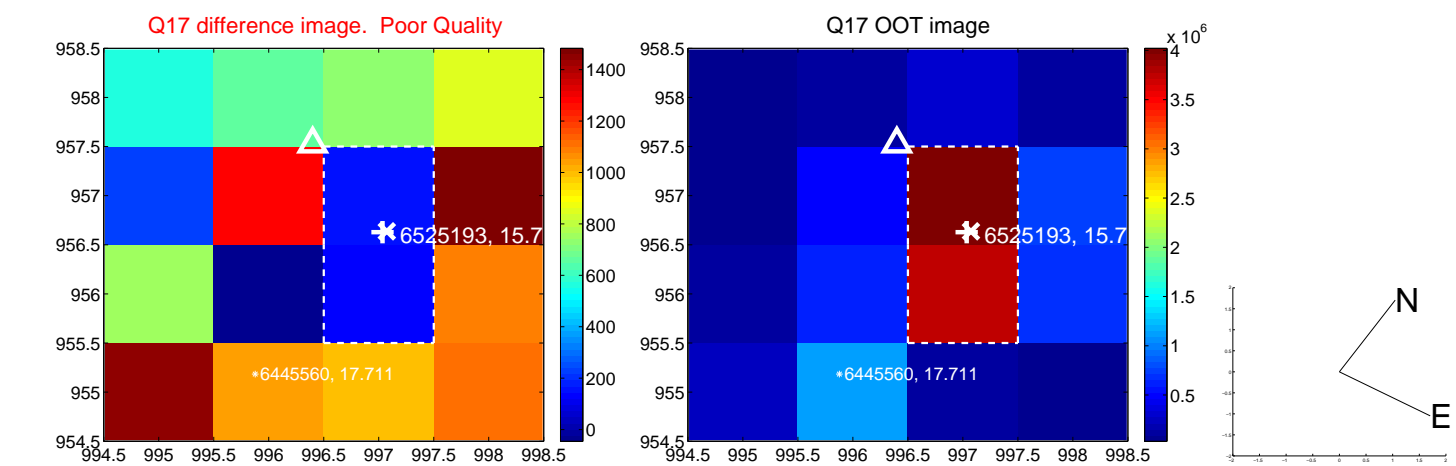
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



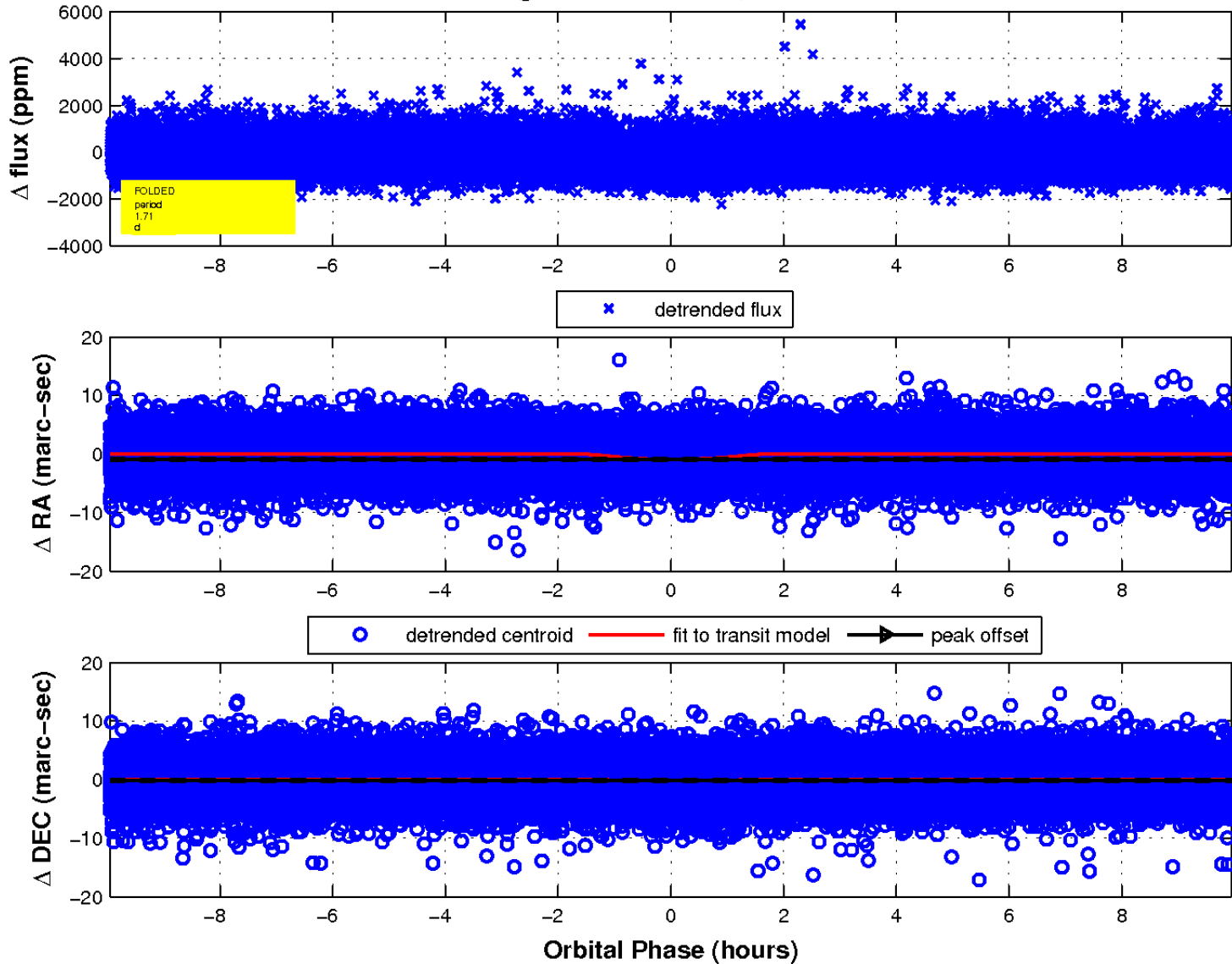
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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



fluxWeightedCentroids, Planet 1 of 1



UKIRT Image

Declination

