

# KIC 011501492

## 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) | $R_p$ ( $R_{\oplus}$ ) | $S_p$ ( $S_{\oplus}$ ) |
|--------------|----------|---------|---------------|--------------|-------------|------------------|-----|-----|-----------------------------|-----------------|------------------------|------------------------|
| 011501492-01 | OBS      | 8226.01 | 371.909734    | 308.979297   | 476.0       | 23.809           | 7.6 | 8.5 | 1.04                        | 6164            | 2.67                   | 1.28                   |

## Robovetter Results

| TCE          | Run Type | Disp | Score | N | S | C | E | Comments   |
|--------------|----------|------|-------|---|---|---|---|--|
| 011501492-01 | OBS      | FP   | 0.00  | 1 | 0 | 0 | 0 | INDIV_TRANS_MARSHALL_SKYE—ALL_TRANS_CHASES—INCONSISTENT_TRANS—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.

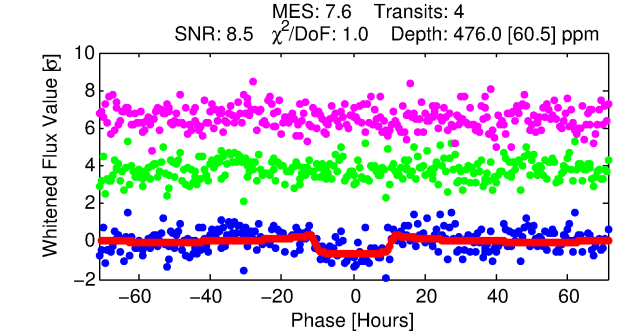
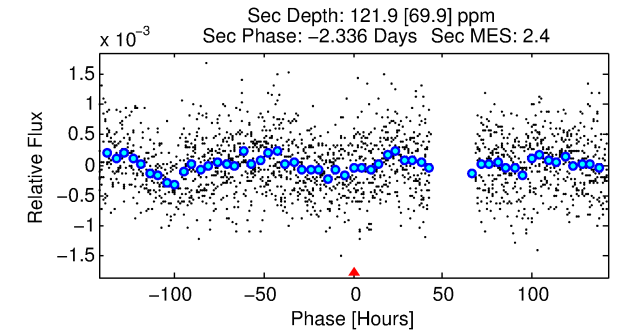
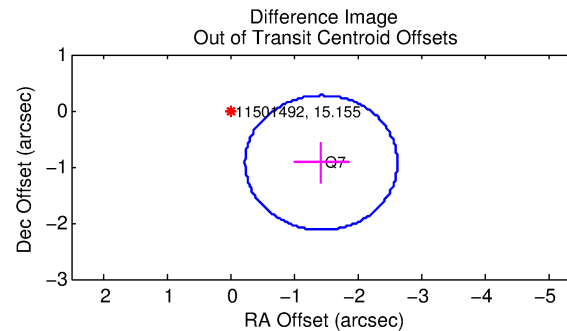
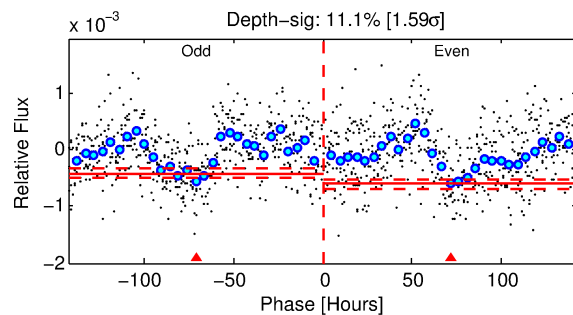
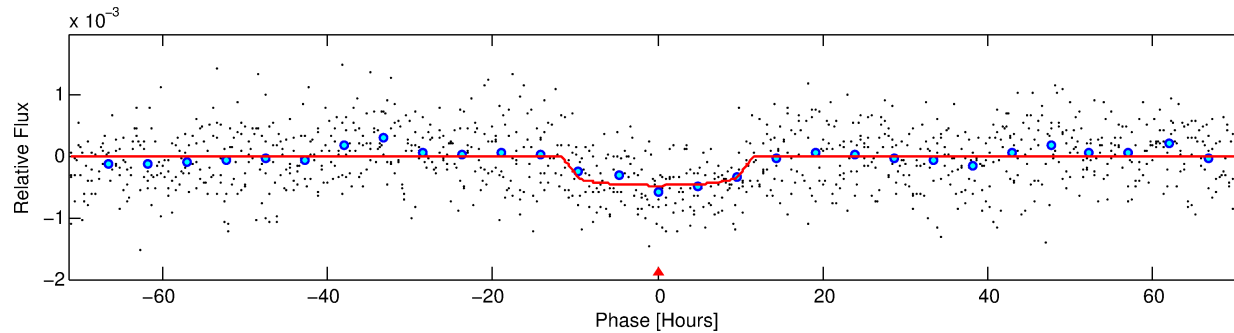
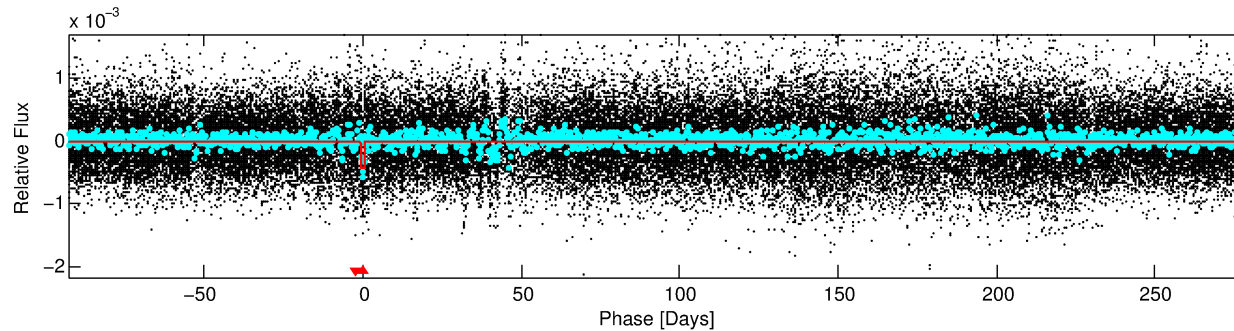
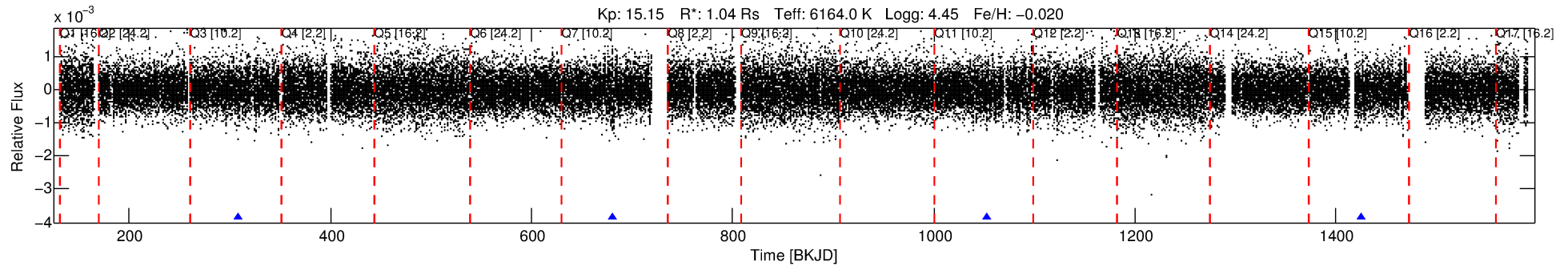
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 011501492-01

No Significant Match Found

# DV One-Page Summary

KIC: 11501492 Candidate: 1 of 1 Period: 371.910 d



## DV Fit Results:

Period = 371.90973 [0.01864] d  
Epoch = 308.9793 [0.0332] BKJD  
Rp/R\* = 0.0234 [0.0026]  
a/R\* = 59.63 [25.61]  
b = 0.89 [0.10]  
Seff = 1.28 [0.54]  
Teq = 271 [28] K  
Rp = 2.67 [0.92] Re  
a = 1.0489 [0.2840] AU  
Ag = 10371.42 [7534.92] [1.38 $\sigma$ ]  
Teffp = 4235 [670] K [5.91 $\sigma$ ]

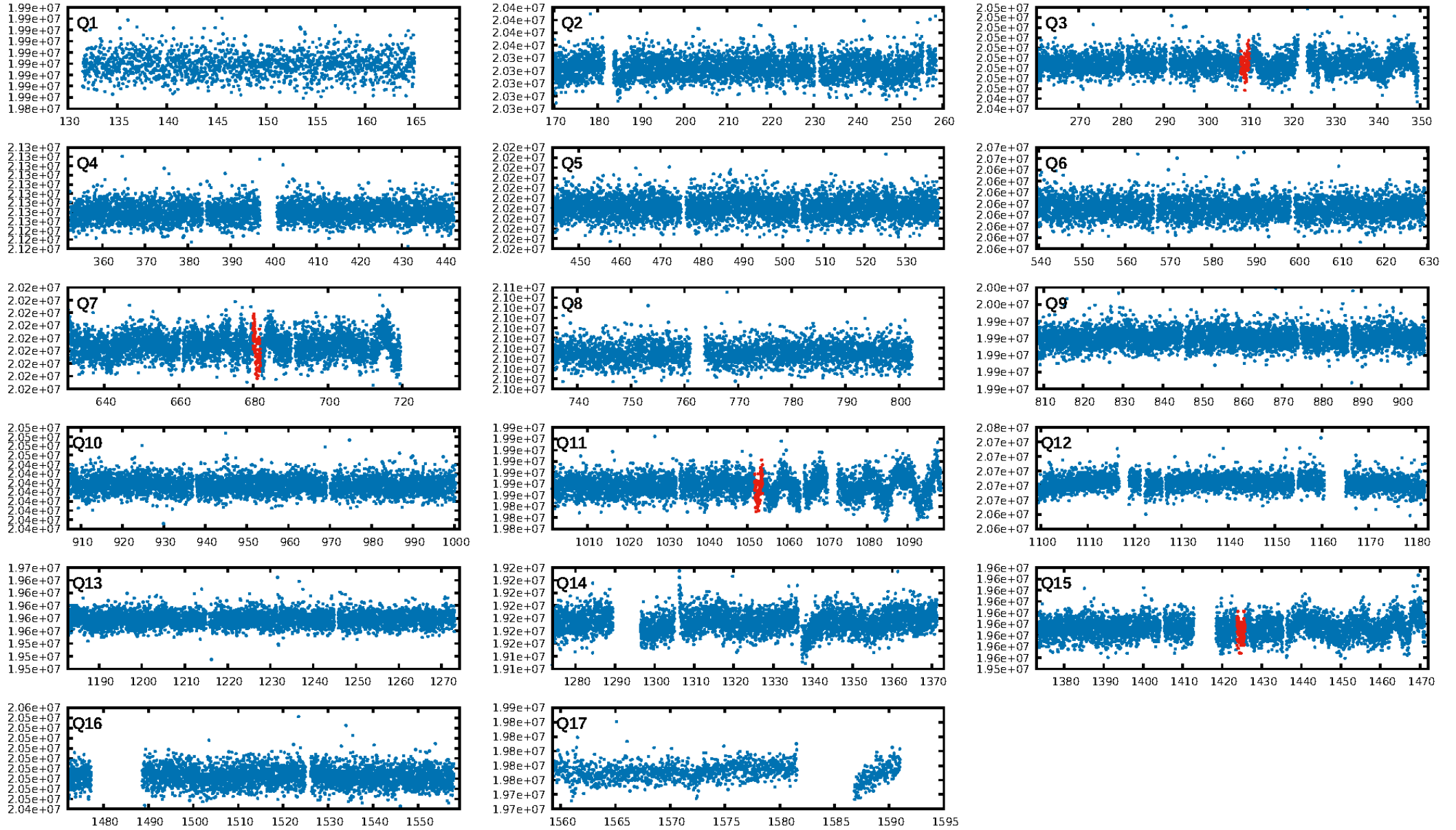
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: 9.2%  
ModelChiSquareGof-sig: 100.0%  
Bootstrap-pfa: 2.72e-09  
RollingBand-fgt: 1.00 [4/4]  
GhostDiagnostic-chr: -8.332  
Centroid-sig: 0.0%  
Centroid-so: 3.485 arcsec [2.25 $\sigma$ ]  
OotOffset-rm: 1.709 arcsec [4.28 $\sigma$ ]  
KicOffset-rm: 1.791 arcsec [4.47 $\sigma$ ]  
OotOffset-st: 0/1/0/0 [1]  
KicOffset-st: 0/1/0/0 [1]  
DiffImageQuality-fgm: 0.00 [0/1]  
DiffImageOverlap-fno: 1.00 [4/4]

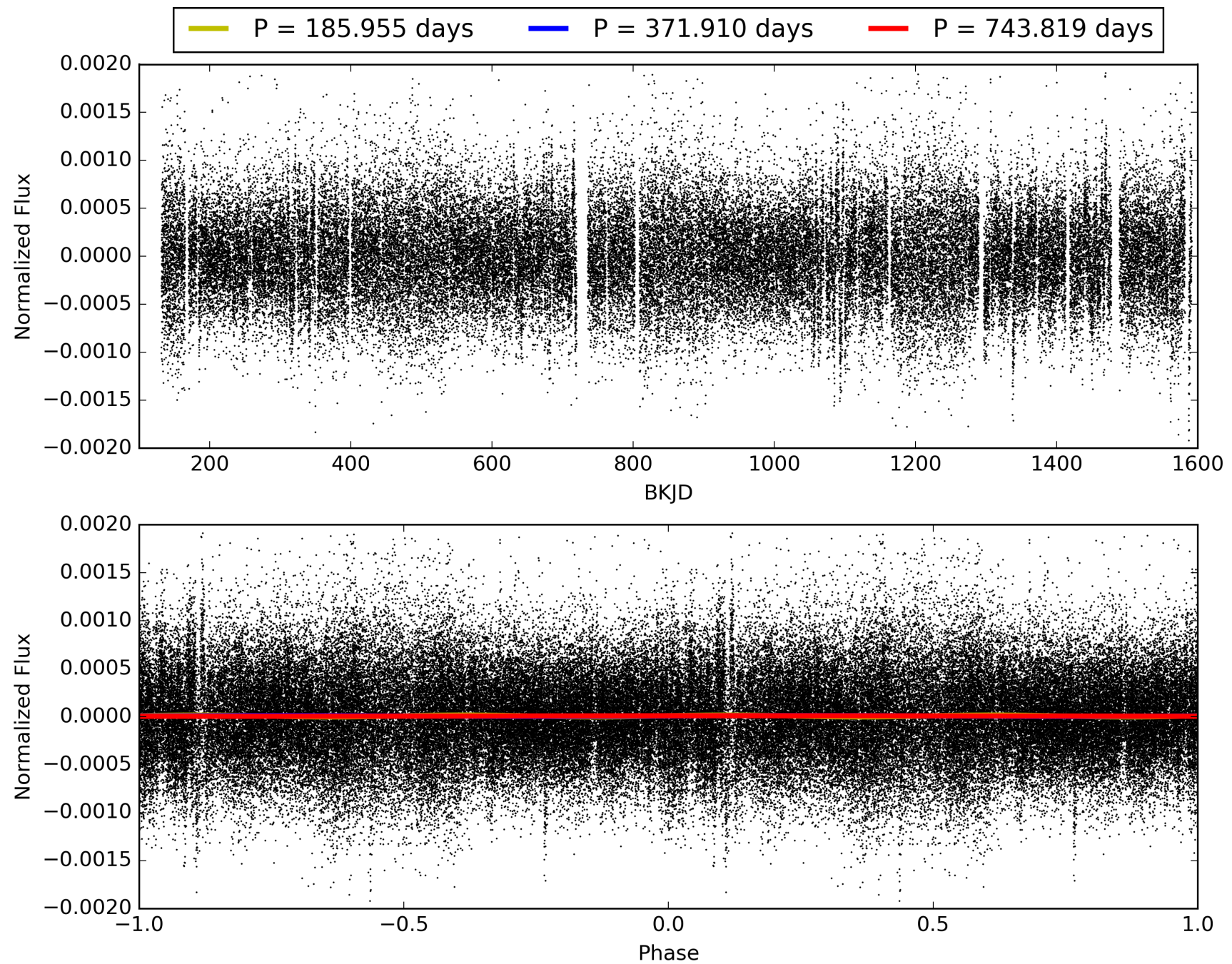
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 28-Jan-2016 19:36:27 Z

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

# TCE 011501492-01, PDC Light Curves

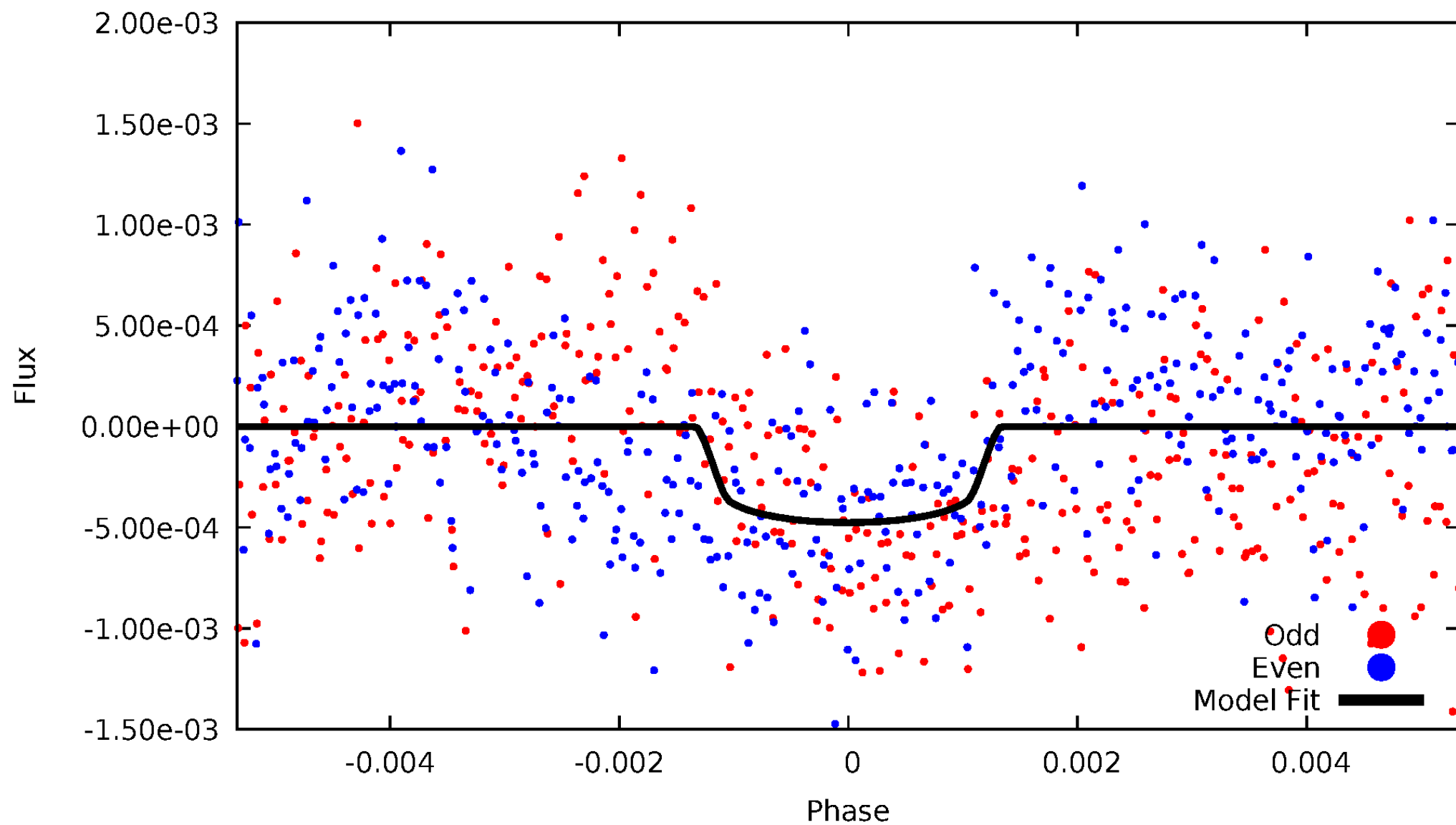


# TCE 011501492-01



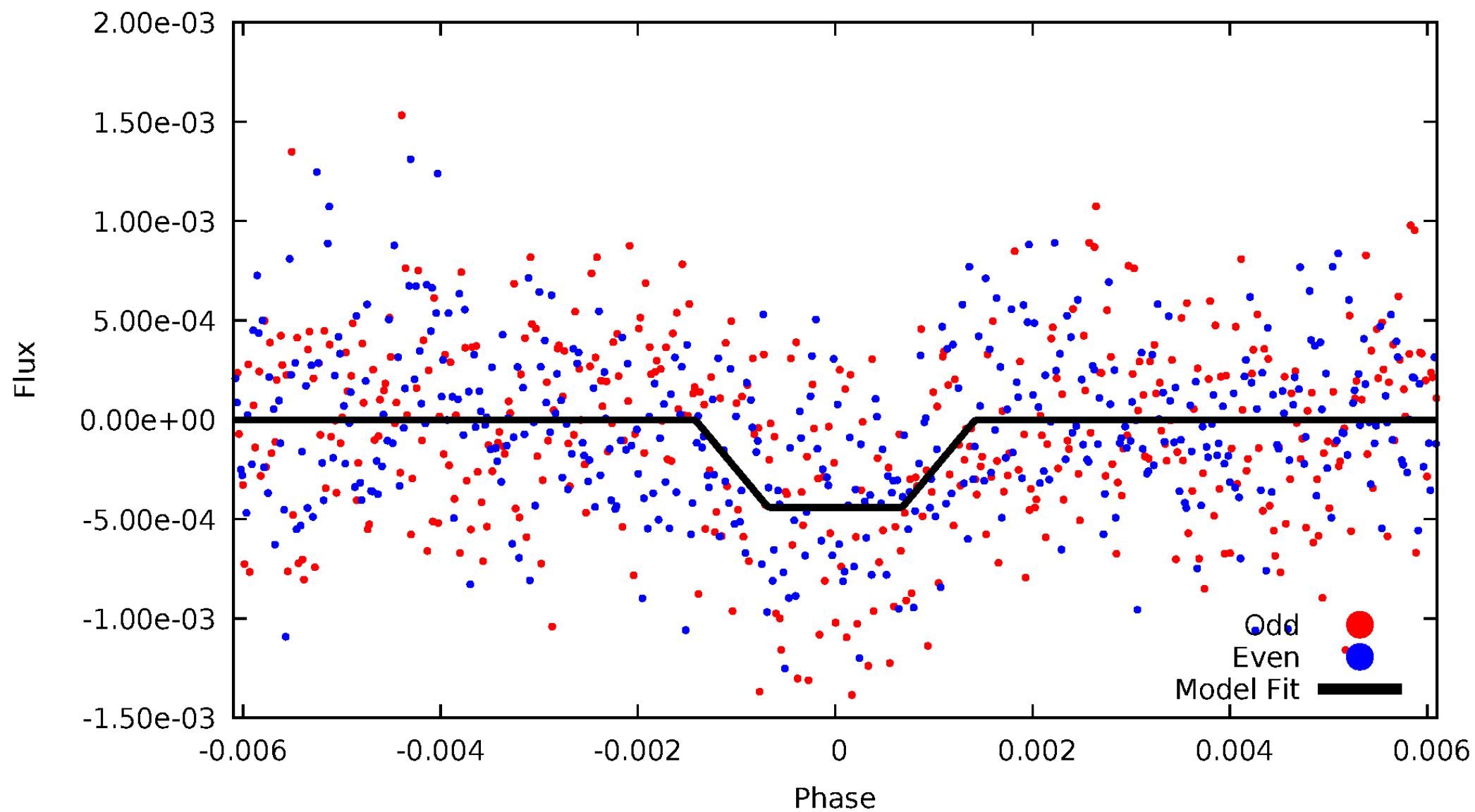
# DV Odd/Even

TCE 011501492-01



# ALT Odd/Even

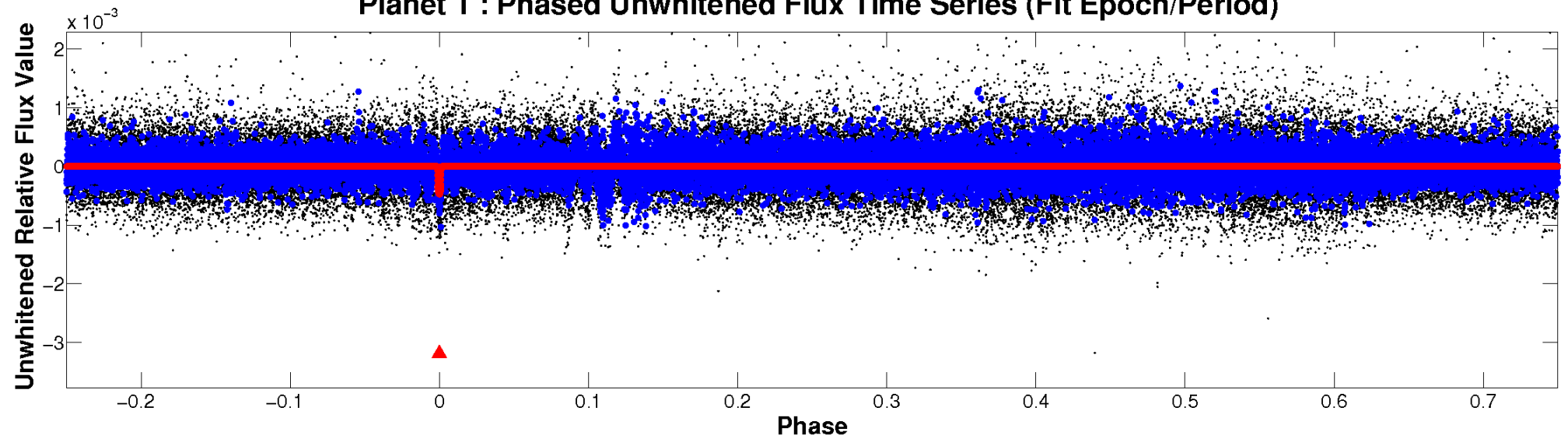
TCE 011501492-01



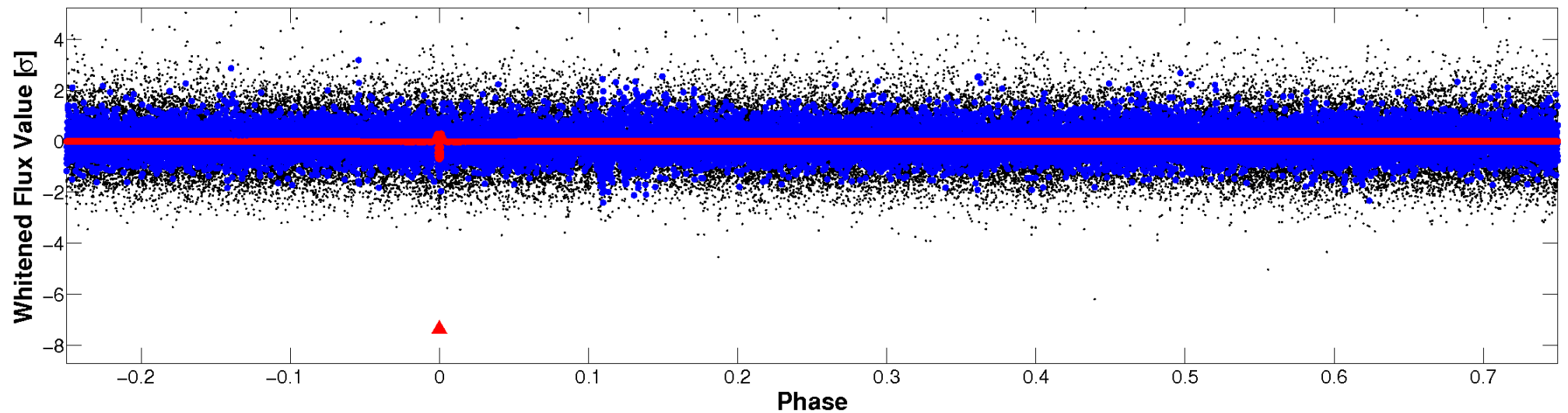


# Non-Whitened Vs. Whitened Light Curve

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

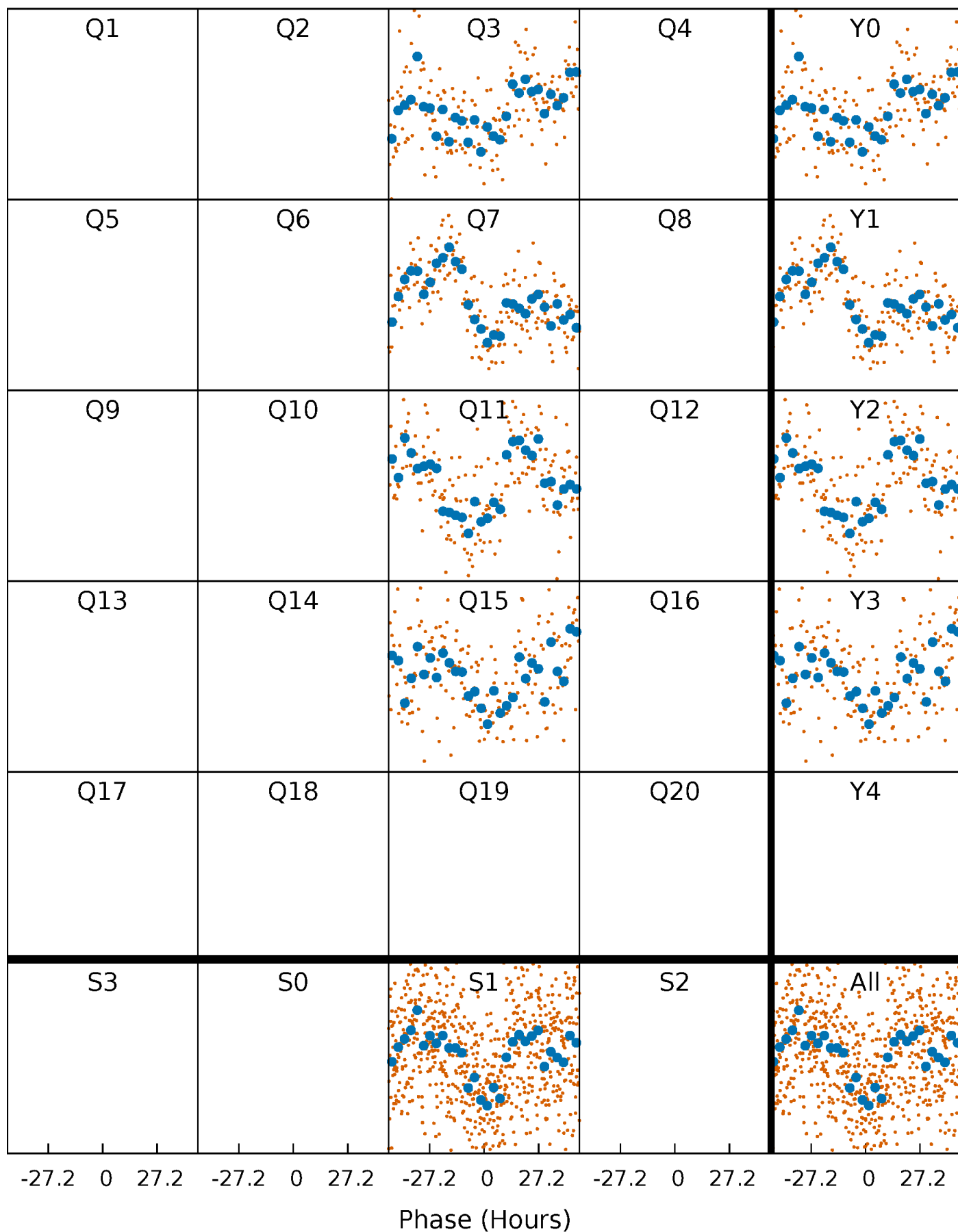


**Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)**



# PDC Quarter-Phased Transit Curves

TCE 011501492-01   P=371.909734 Days    $T_0=308.979297$  (BKJD)





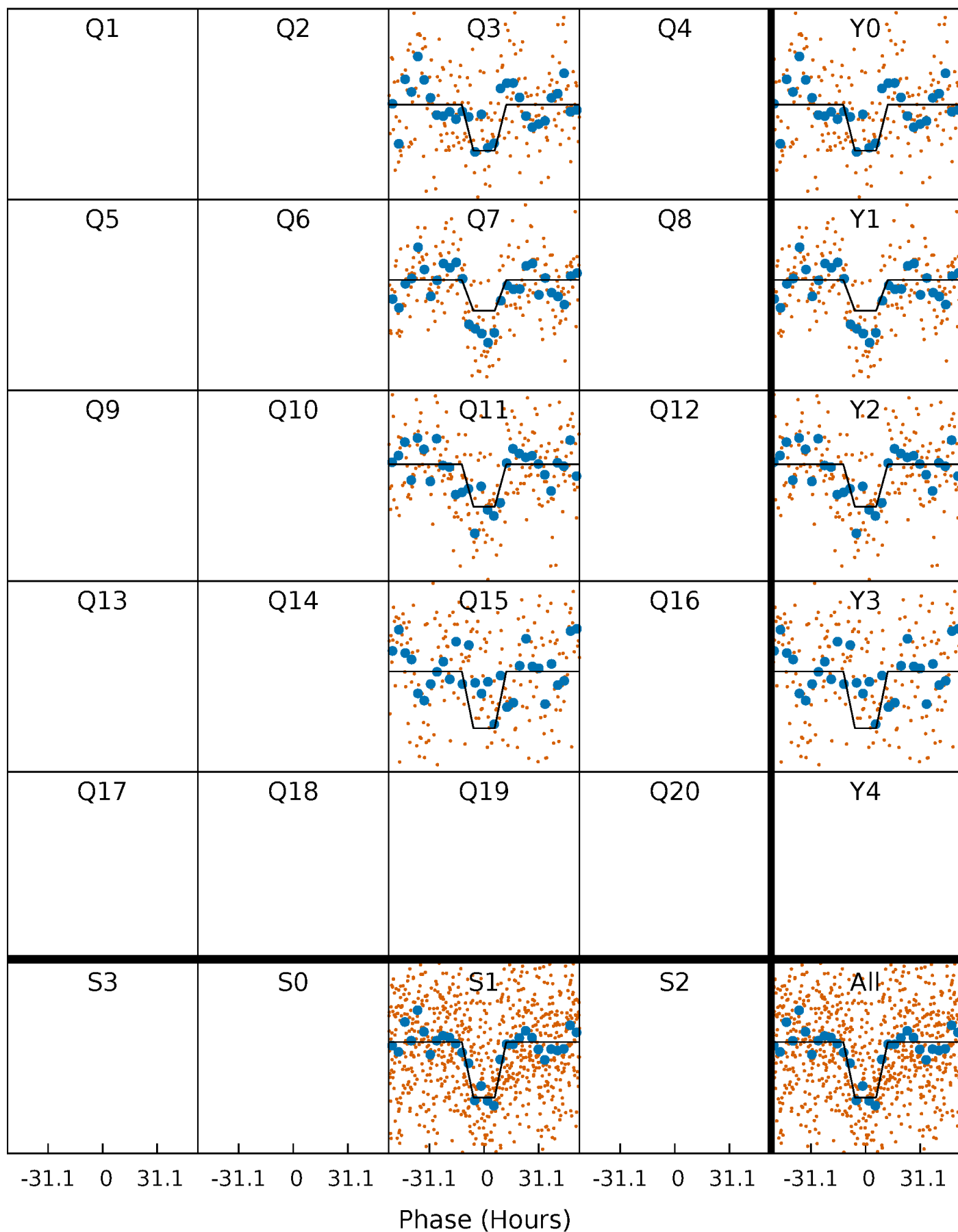
# DV Quarter-Phased Transit Curves

TCE 011501492-01     $P=371.909734$  Days     $T_0=308.979297$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

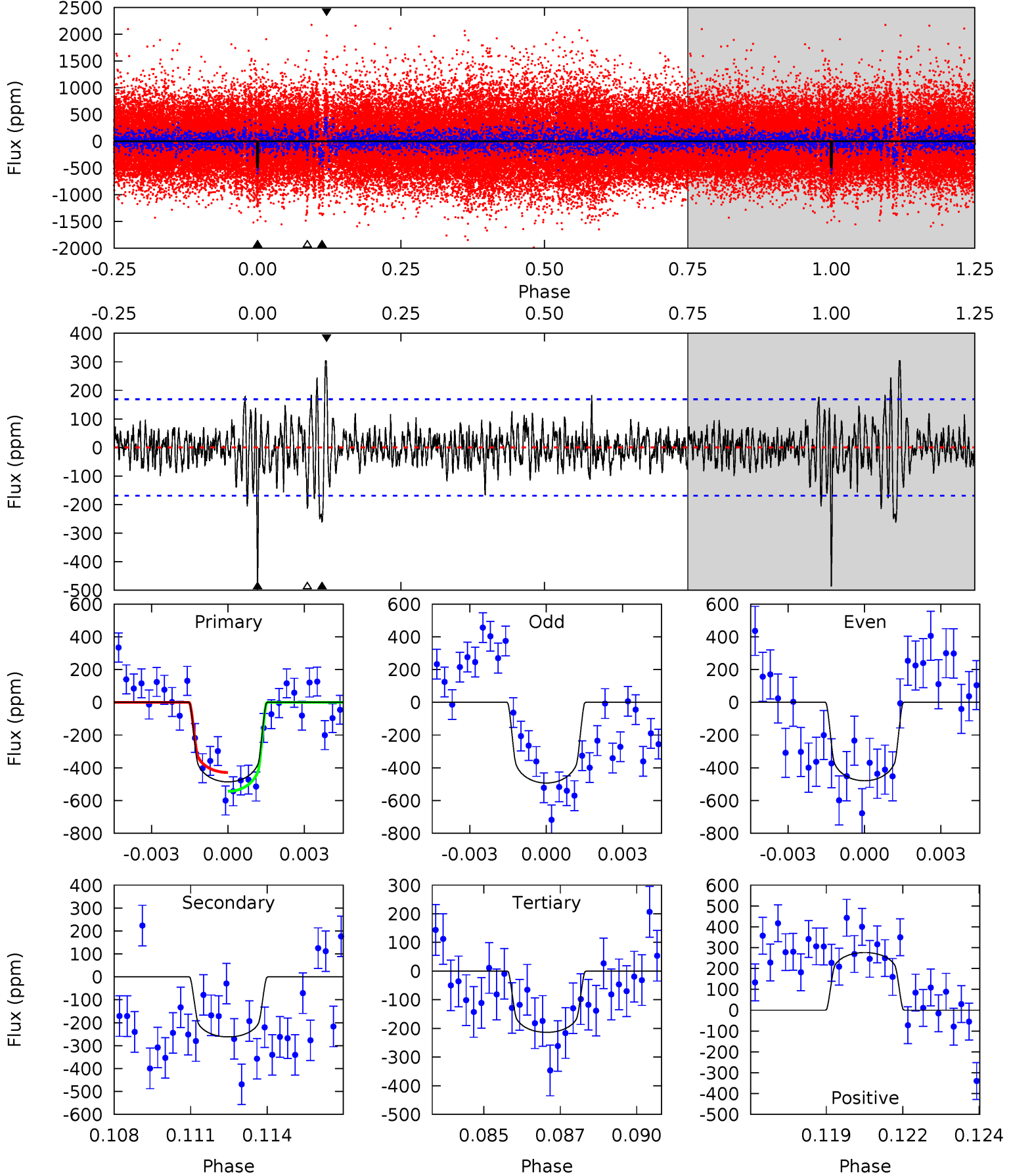
TCE 011501492-01 P=371.802247 Days  $T_0=309.126189$  (BKJD)



# DV Model-Shift Uniqueness Test

011501492-01, P = 371.909734 Days, E = 308.979297 Days

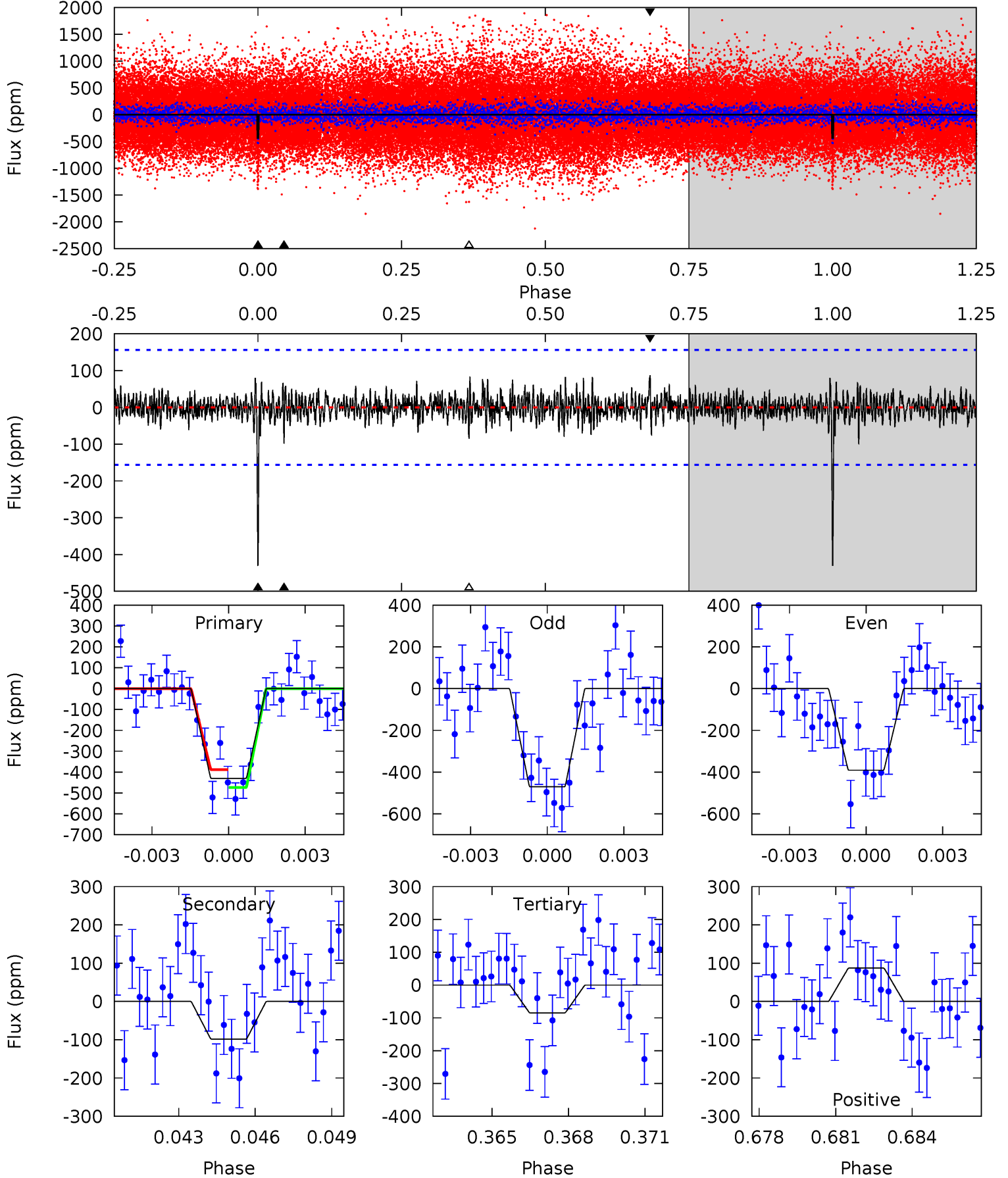
| Pri  | Sec  | Ter  | Pos  | FA <sub>1</sub> | FA <sub>2</sub> | F <sub>Red</sub> | Pri-Ter | Pri-Pos | Sec-Ter | Sec-Pos | Odd-Evn | DMM  | Shape | TAT  |
|------|------|------|------|-----------------|-----------------|------------------|---------|---------|---------|---------|---------|------|-------|------|
| 15.2 | 8.20 | 6.69 | 8.65 | 5.28            | 3.01            | 1.73             | 8.51    | 6.55    | 1.51    | -0.45   | 0.22    | 1.00 | 0.39  | 1.80 |



# Alt Model-Shift Uniqueness Test

011501492-01, P = 371.802247 Days, E = 309.126189 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  |
|------|------|------|------|-----------------|-----------------|------------------|---------|---------|---------|---------|---------|------|-------|------|
| 14.5 | 3.31 | 2.86 | 2.93 | 5.26            | 2.98            | 0.82             | 11.6    | 11.6    | 0.45    | 0.38    | 1.35    | 1.11 | 0.17  | 1.45 |



### Stellar Parameters For KIC 011501492

|        | $T_{\text{eff}}(K)$  | $\log(g)$                 | $[\text{Fe}/\text{H}]$     | $R \text{ (R}_{\odot})$   | $M(\text{M}_{\odot})$     | $p_{\star} \text{ (g}\cdot\text{cm}^{-3})$ |
|--------|----------------------|---------------------------|----------------------------|---------------------------|---------------------------|--|
|        | $6164^{+193}_{-236}$ | $4.446^{+0.056}_{-0.210}$ | $-0.020^{+0.250}_{-0.300}$ | $1.045^{+0.341}_{-0.114}$ | $1.109^{+0.146}_{-0.146}$ | $1.370^{+0.415}_{-0.759}$                  |
|        | +3%/-4%              | +1%/-5%                   | +1250%/-1500%              | +33%/-11%                 | +13%/-13%                 | +30%/-55%                                  |
| 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 011501492-01 / KOI 8226.01

| Detrend | Depth (ppm)   | $R_p \text{ (R}_{\oplus})$ | $T_{\text{max}} \text{ (K)}$ | $T_{\text{obs}} \text{ (K)}$ | $A_{\text{obs}}$        |
|---------|---------------|----------------------------|------------------------------|------------------------------|-------------------------|
| DV      | $-262 \pm 32$ | $2.81^{+0.46}_{-0.41}$     | $388^{+29}_{-20}$            | $5165^{+334}_{-301}$         | $19754^{+7268}_{-5479}$ |
| Alt.    | $-98 \pm 30$  | $2.50^{+0.47}_{-0.36}$     | $386^{+30}_{-20}$            | $4389^{+376}_{-365}$         | $9006^{+4847}_{-3561}$  |

$T_{\text{max}}$  = 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

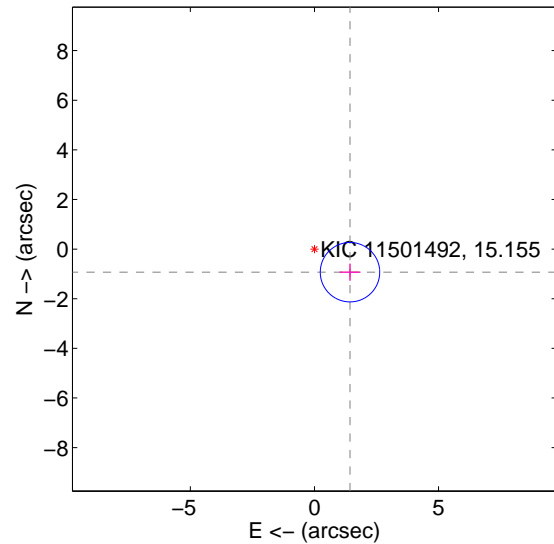
Supplemental centroid analysis for 011501492-01. Kepler magnitude: 15.15. Transit SNR 8.45

There are 0 quarters with good PRF difference image offsets

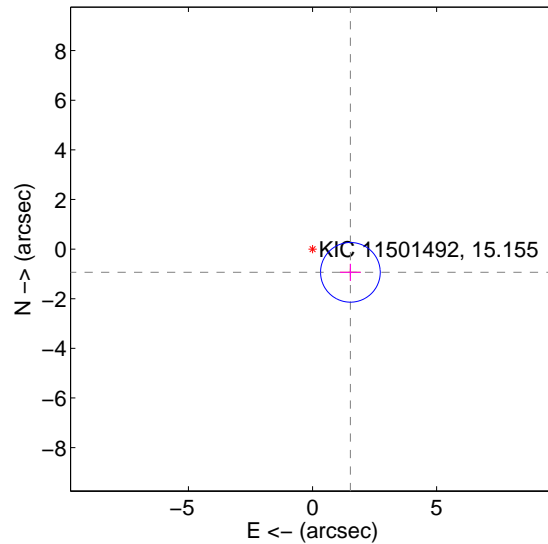
The direct PRF centroid is offset from the target star catalog position by about 0.09 arcsec

|   | Distance in arcsec | Distance / $\sigma$ | $\Delta$ RA        | $\Delta$ Dec       |
|---|--------------------|---------------------|--------------------|--------------------|
| PRF-fit source offset from OOT          | $1.709 \pm 0.399$  | 4.28                | $-1.433 \pm 0.420$ | $-0.931 \pm 0.345$ |
| PRF-fit source offset from KIC position | $1.791 \pm 0.401$  | 4.47                | $-1.526 \pm 0.420$ | $-0.936 \pm 0.345$ |
| photometric centroid source offset      | $3.48 \pm 1.55$    | 2.25                | $0.62 \pm 1.71$    | $-3.43 \pm 1.54$   |

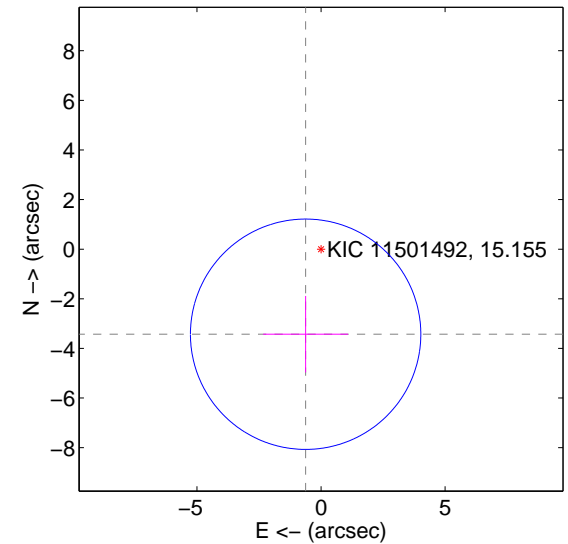
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position



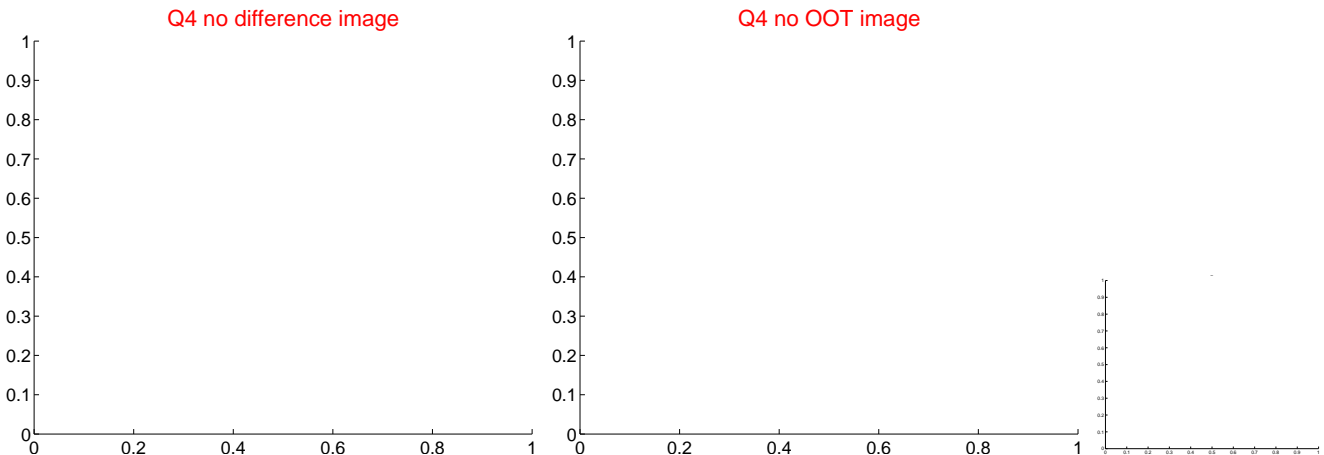
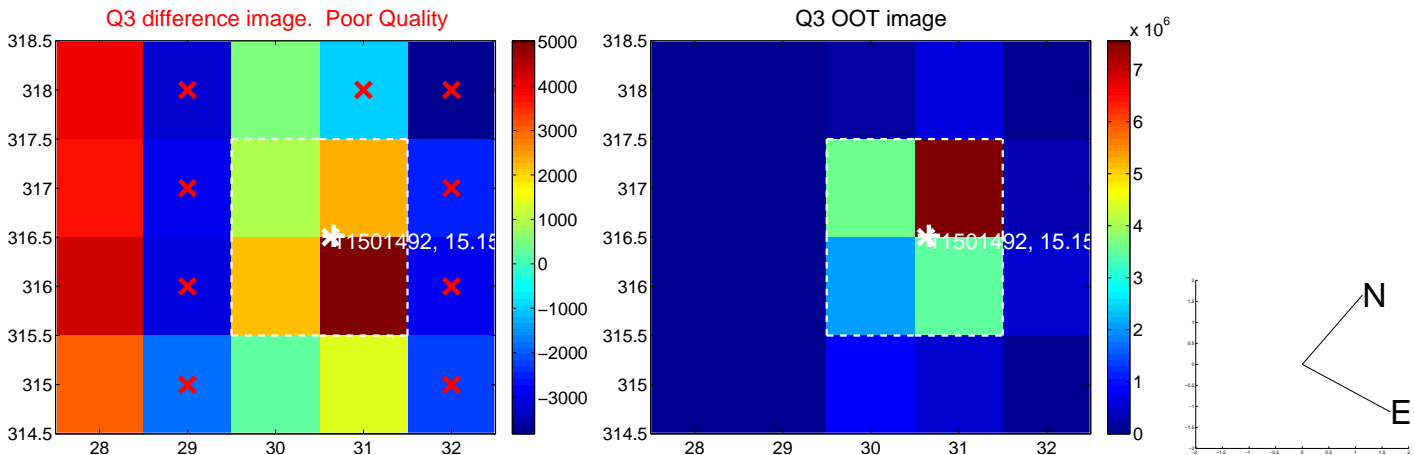
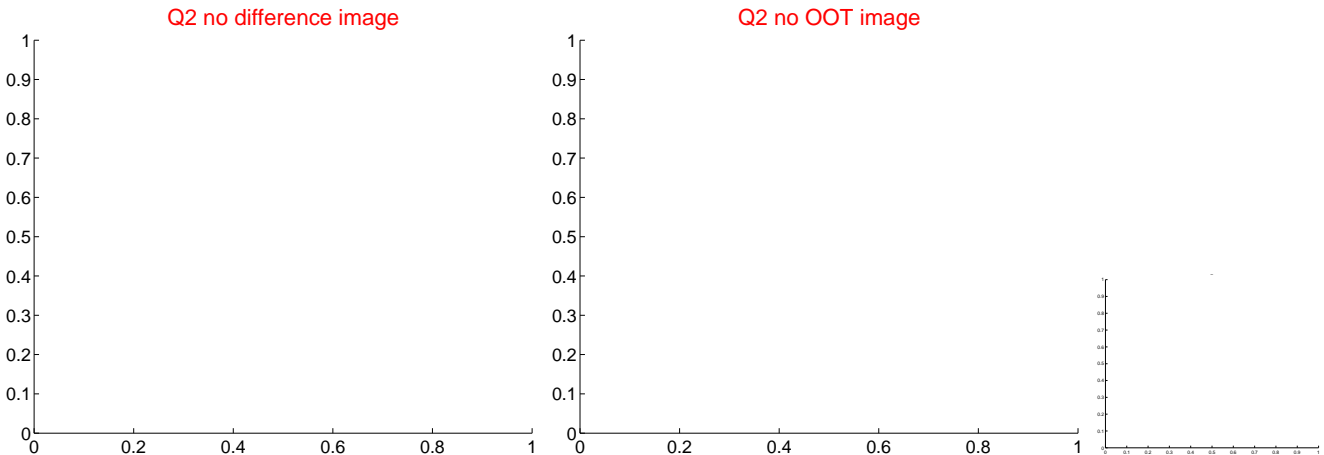
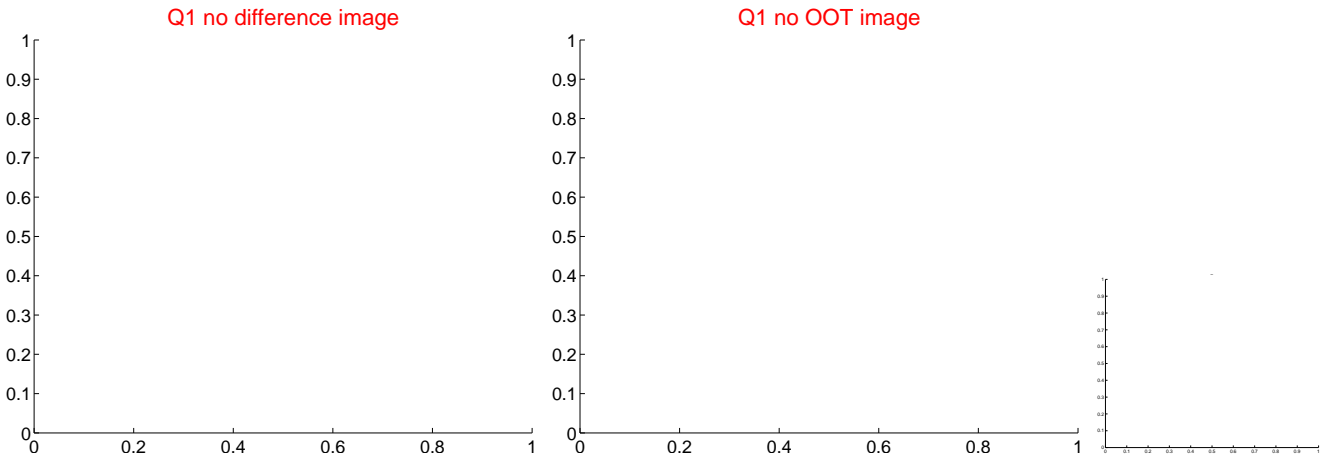
offset from photometric centroids



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.

Q5 no difference image



Q5 no OOT image



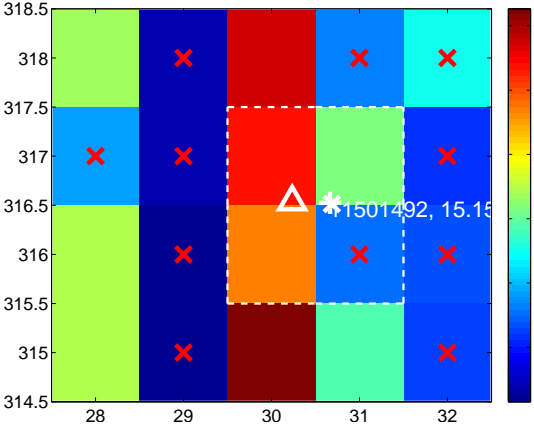
Q6 no difference image



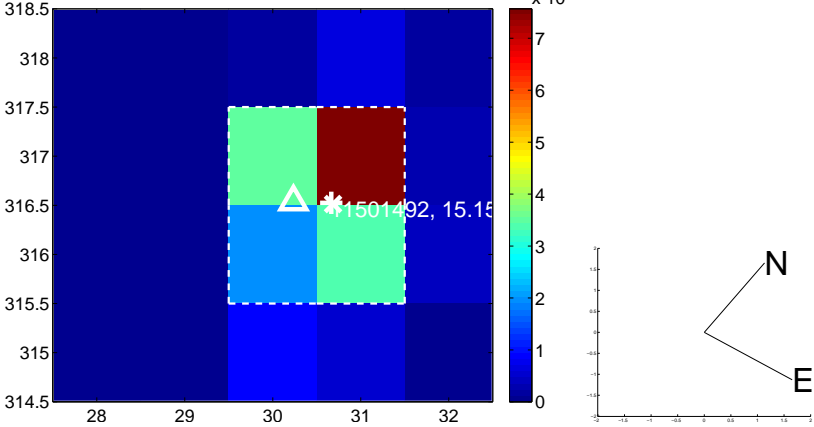
Q6 no OOT image



Q7 difference image. Poor Quality



Q7 OOT image



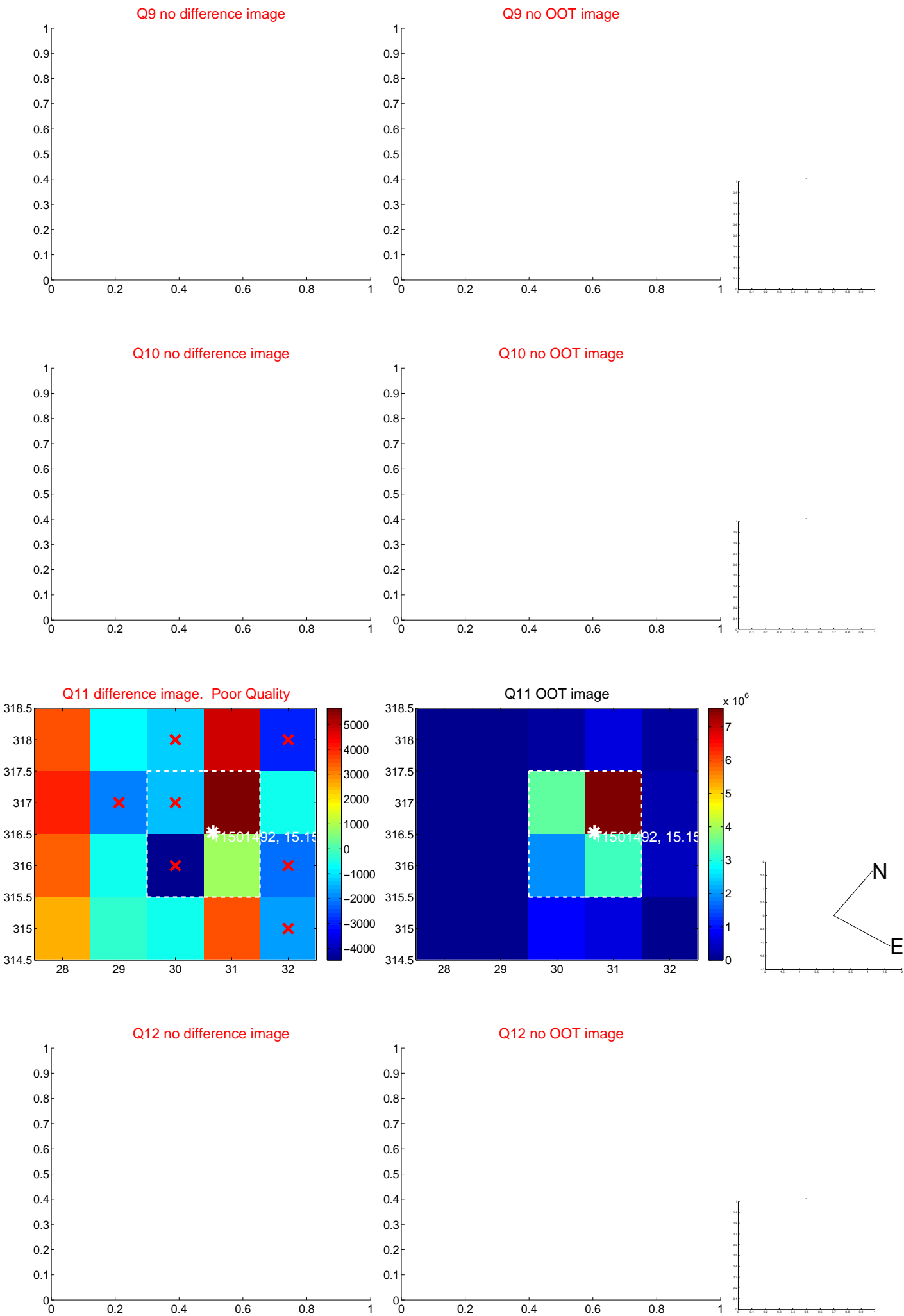
Q8 no difference image



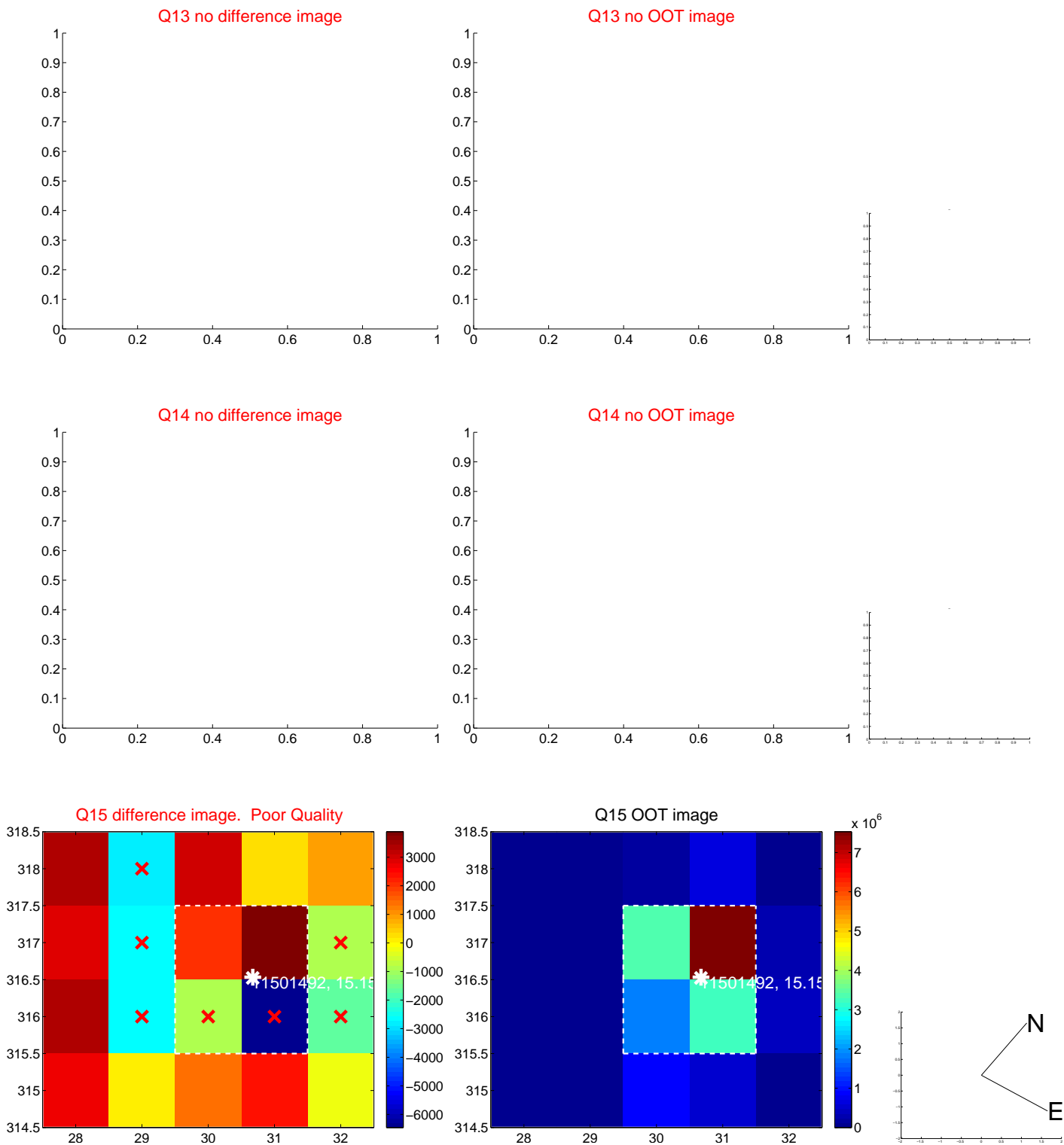
Q8 no OOT image



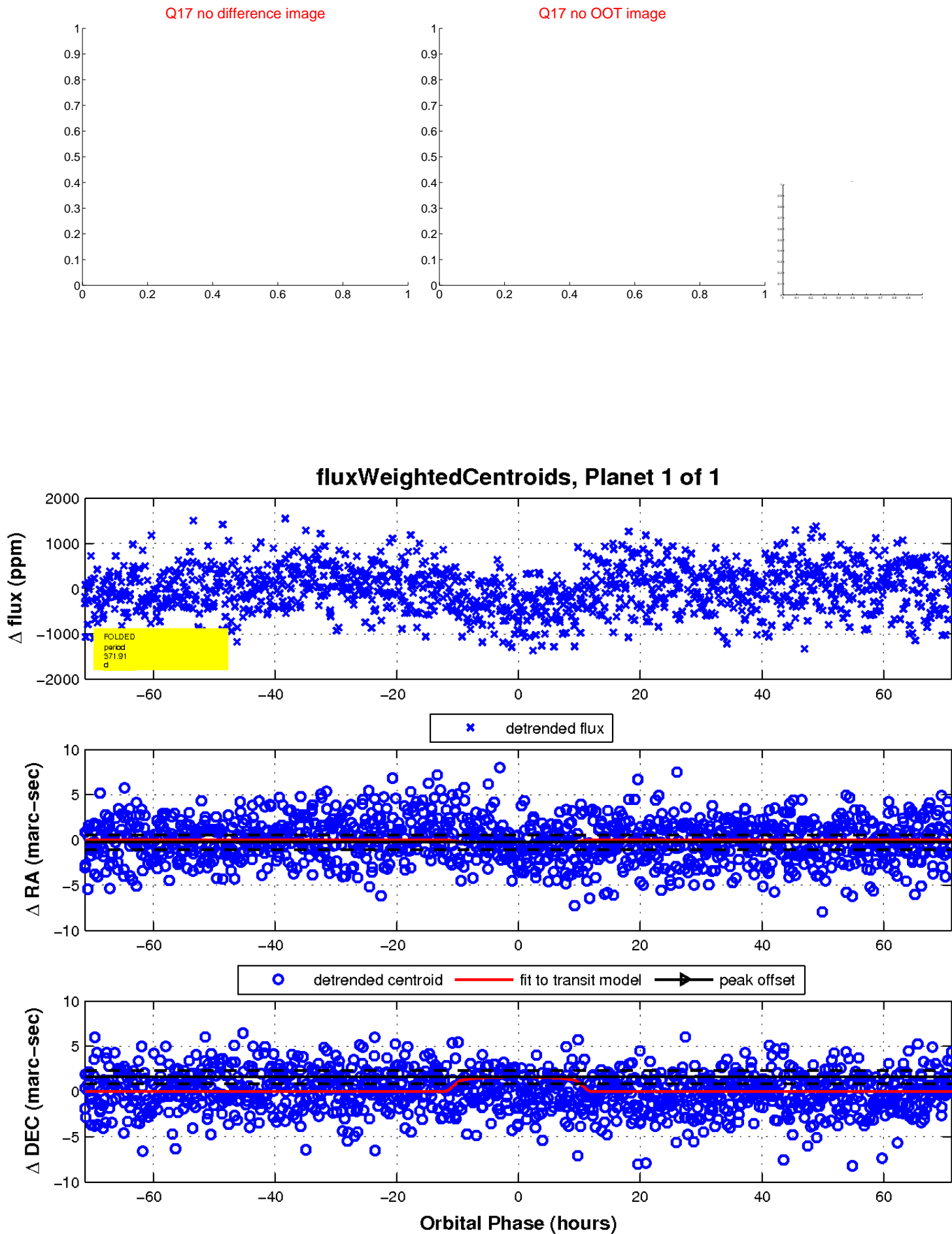
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



white ×: KIC target position; +: OOT centroid; △: difference centroid. red ✕: large negative pixel value.



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



# UKIRT Image

Declination

