

# KIC 011560447

## 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) | $R_p$ ( $R_{\oplus}$ ) | $S_p$ ( $S_{\oplus}$ ) |
|--------------|----------|---------|---------------|--------------|-------------|------------------|--------|--------|-----------------------------|-----------------|------------------------|------------------------|
| 011560447-01 | OBS      | 7458.01 | 0.527685      | 131.808989   | 246727.6    | 2.166            | 6960.5 | 3188.7 | 1.48                        | 5321            | 93.02                  | 10036.04               |

## Robovetter Results

| TCE          | Run Type | Disp | Score | N | S | C | E | Comments   |
|--------------|----------|------|-------|---|---|---|---|--|
| 011560447-01 | OBS      | FP   | 0.00  | 0 | 1 | 0 | 0 | SWEET_EB—MOD_SEC_ALT—MOD_ODDEVEN_DV—DEEP_V_SHAPED—CENT_SATURATED |

**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.

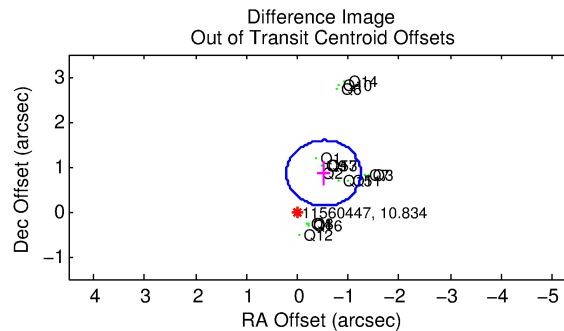
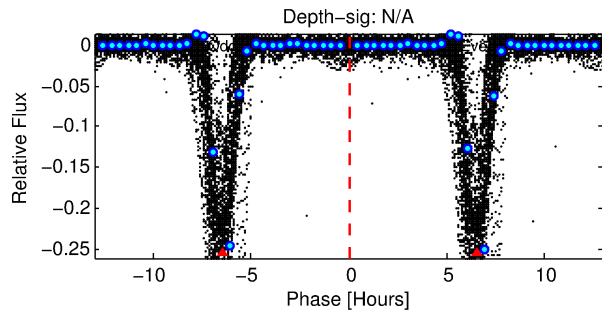
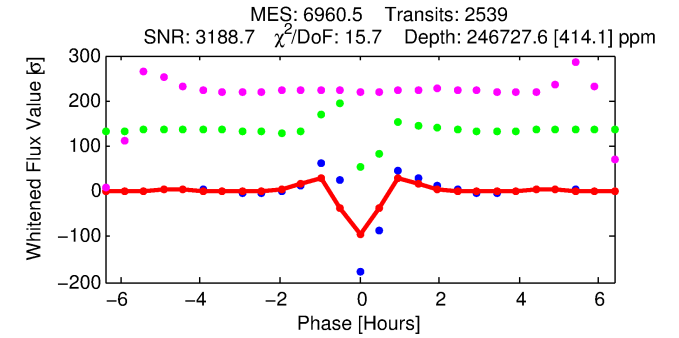
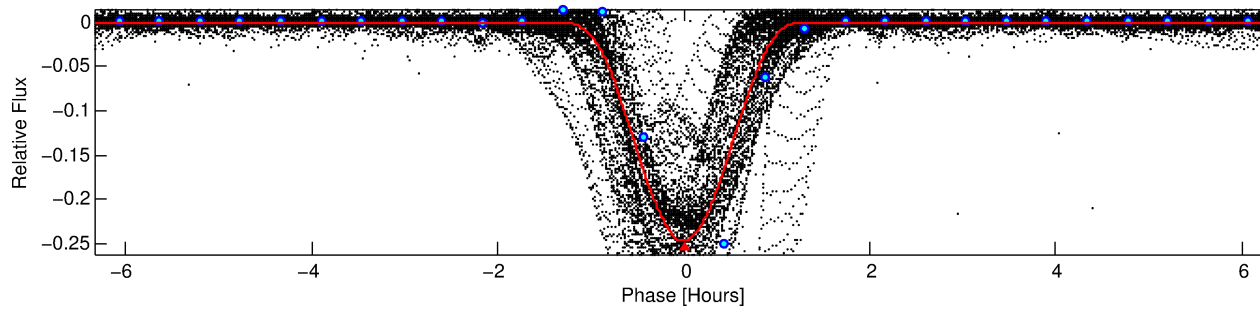
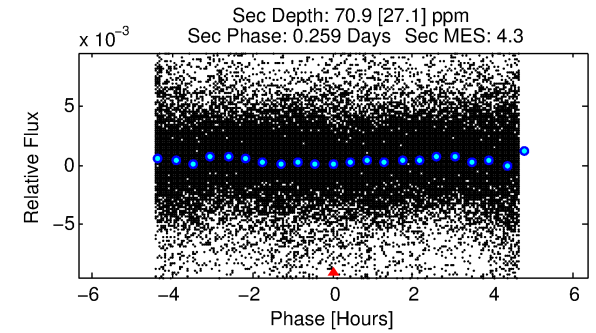
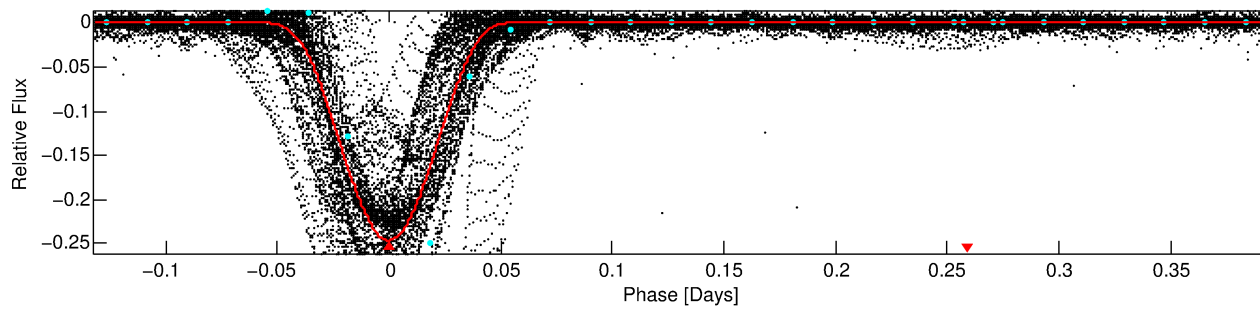
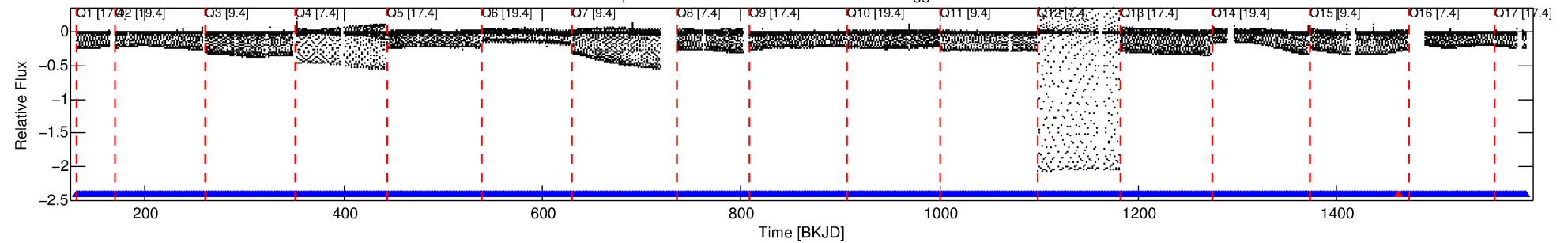
## Ephemeris Match Information For 011560447-01

No Significant Match Found

# DV One-Page Summary

KIC: 11560447 Candidate: 1 of 1 Period: 0.528 d  
KOI: K07458.01 Corr: 0.929

Kp: 10.83 R\*: 1.48 Rs Teff: 5321.0 K Logg: 4.07 Fe/H: 0.160



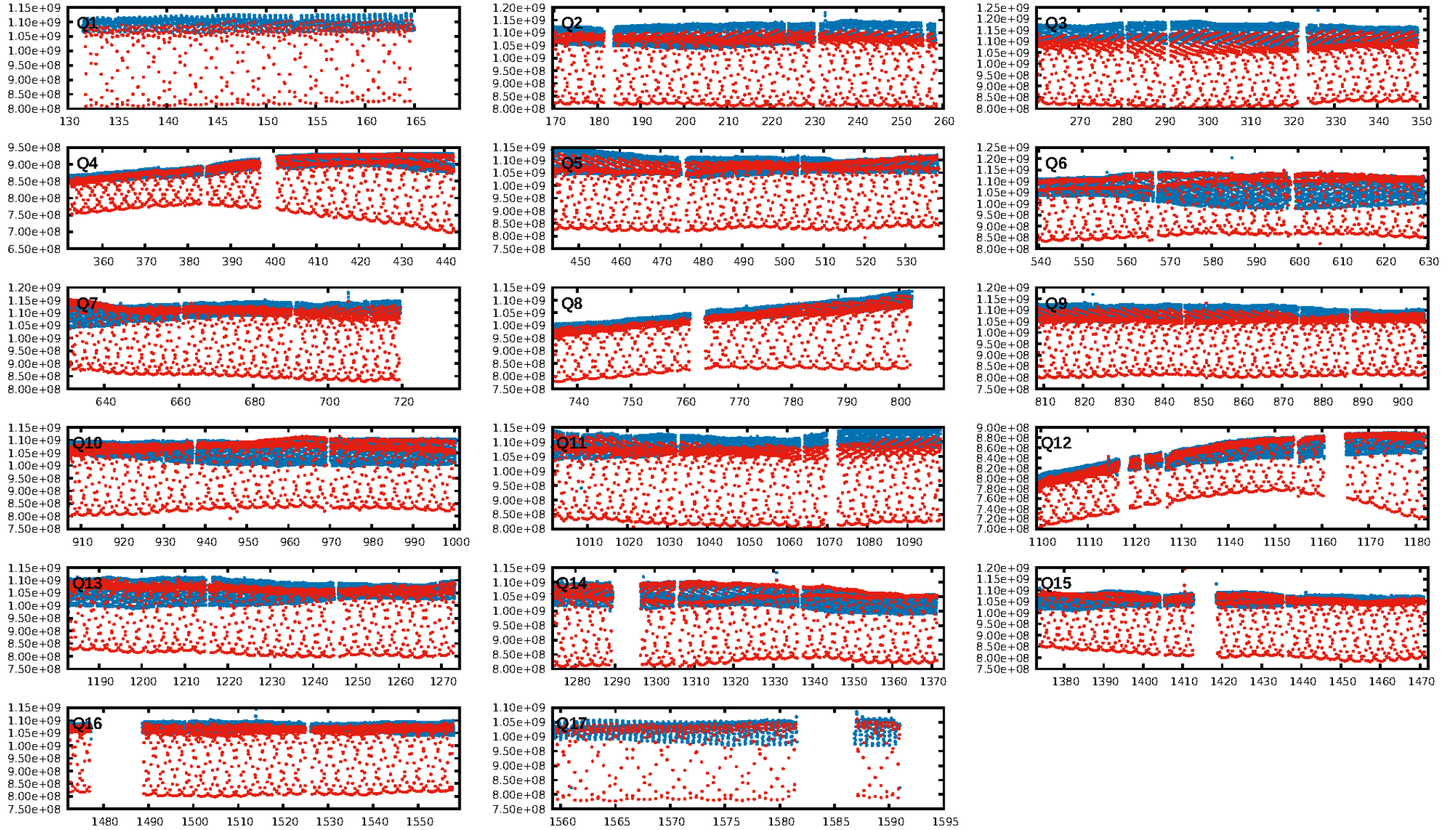
## DV Fit Results:

Period = 0.52769 [0.00000] d  
Epoch = 131.8090 [0.0000] BKJD  
Rp/R\* = 0.5779 [0.0880]  
a/R\* = 2.85 [0.09]  
b = 0.71 [0.14]  
Seff = 10036.04 [6492.05]  
Teq = 2552 [413] K  
Rp = 93.02 [38.70] Re  
a = 0.0125 [0.0049] AU  
Ag = 0.00 [0.00] [-1762.43σ]  
Teffp = 642 [79] K [-4.54σ]

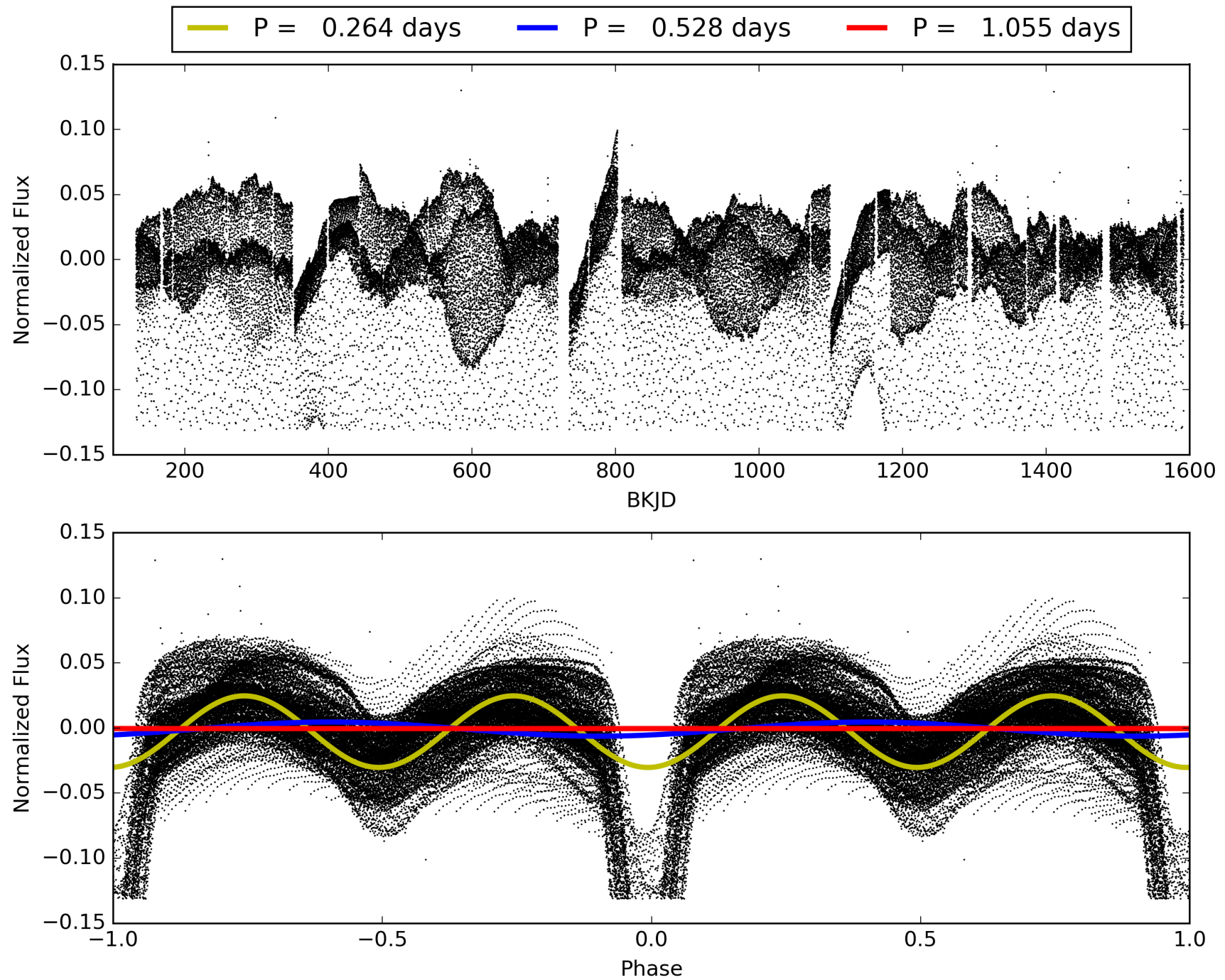
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: N/A  
ModelChiSquareGof-sig: N/A  
Bootstrap-pfa: N/A  
RollingBand-fgt: 1.00 [2424/2425]  
GhostDiagnostic-chr: 1.43  
Centroid-sig: 0.0%  
Centroid-so: 1.196 arcsec [3617.30σ]  
OotOffset-rm: 0.999 arcsec [4.11σ]  
KicOffset-rm: 2.483 arcsec [7.41σ]  
OotOffset-st: 4/4/4/5 [17]  
KicOffset-st: 4/4/4/5 [17]  
DiffImageQuality-fgm: 0.76 [13/17]  
DiffImageOverlap-fno: 1.00 [17/17]

# TCE 011560447-01, PDC Light Curves

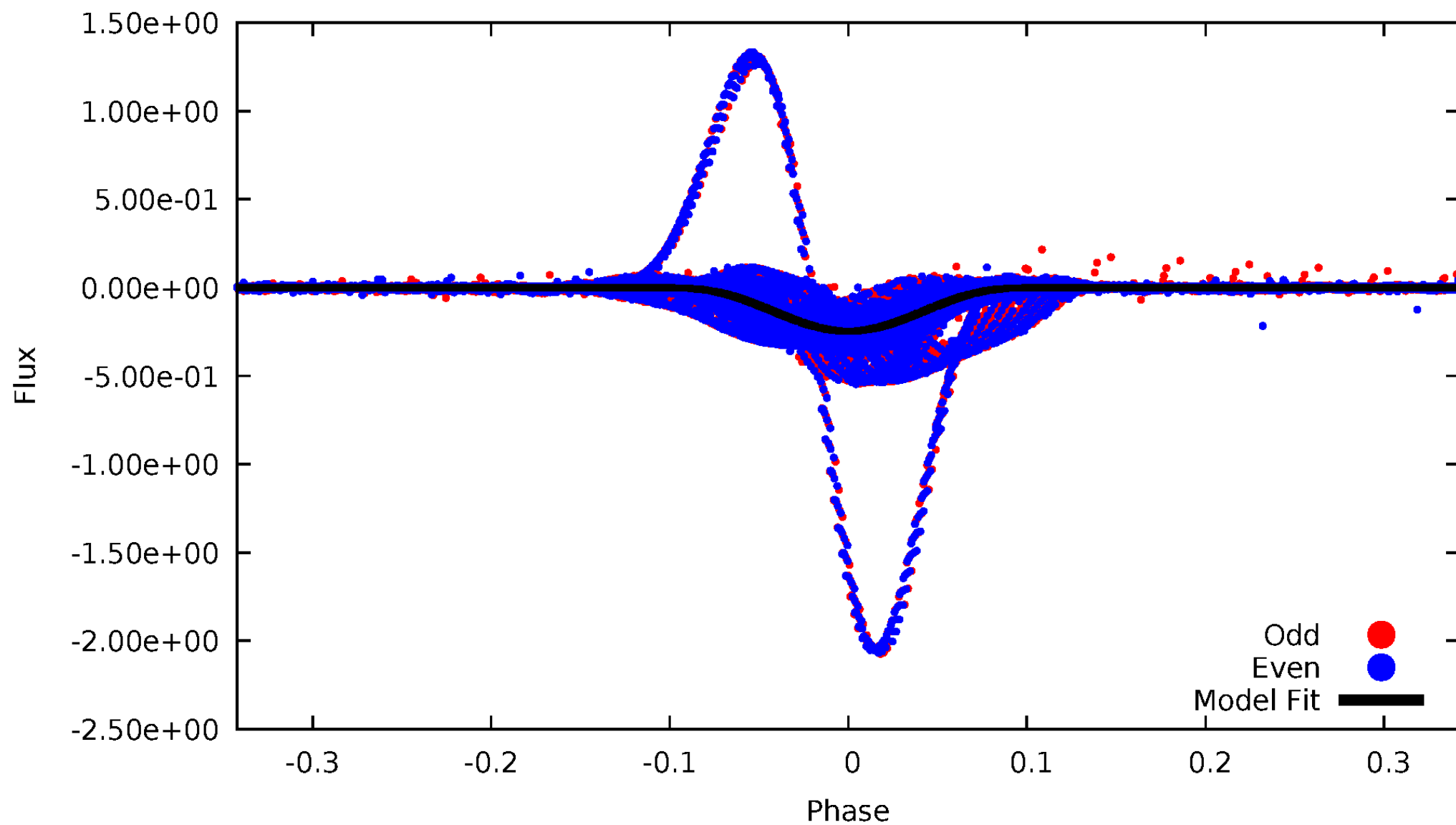


TCE 011560447-01



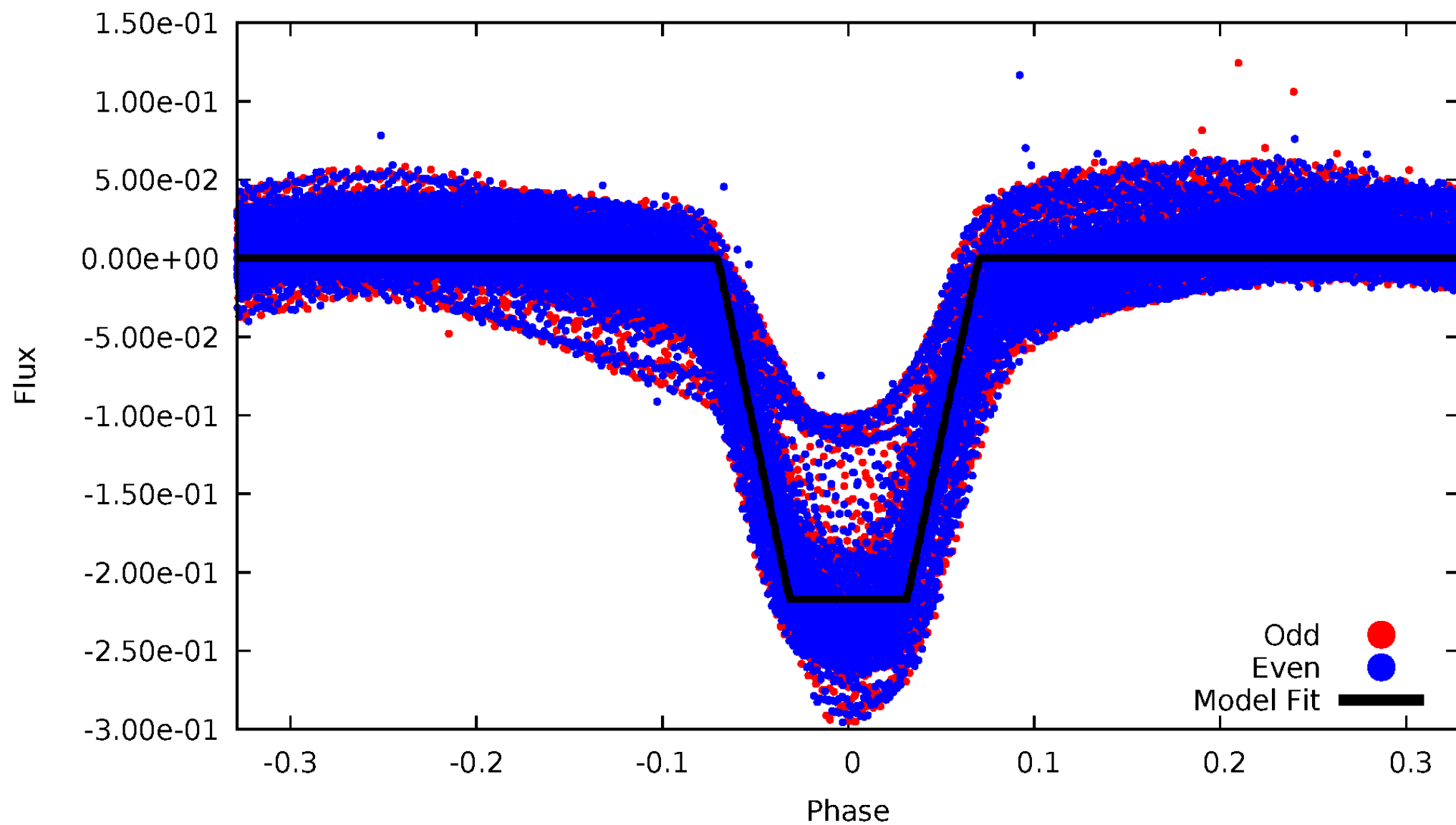
# DV Odd/Even

TCE 011560447-01



# ALT Odd/Even

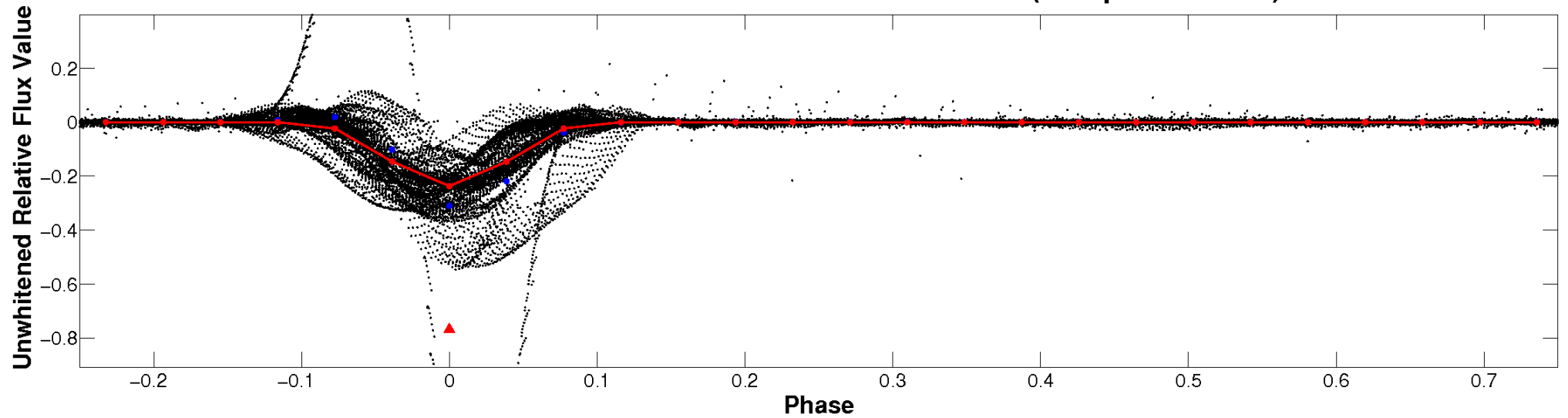
TCE 011560447-01



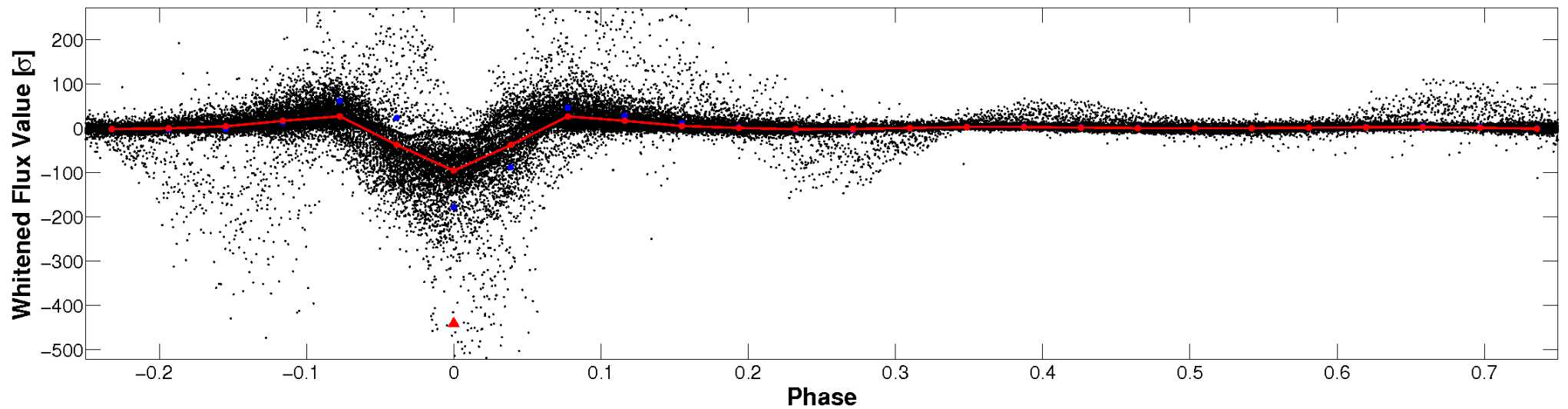


# Non-Whitened Vs. Whitened Light Curve

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

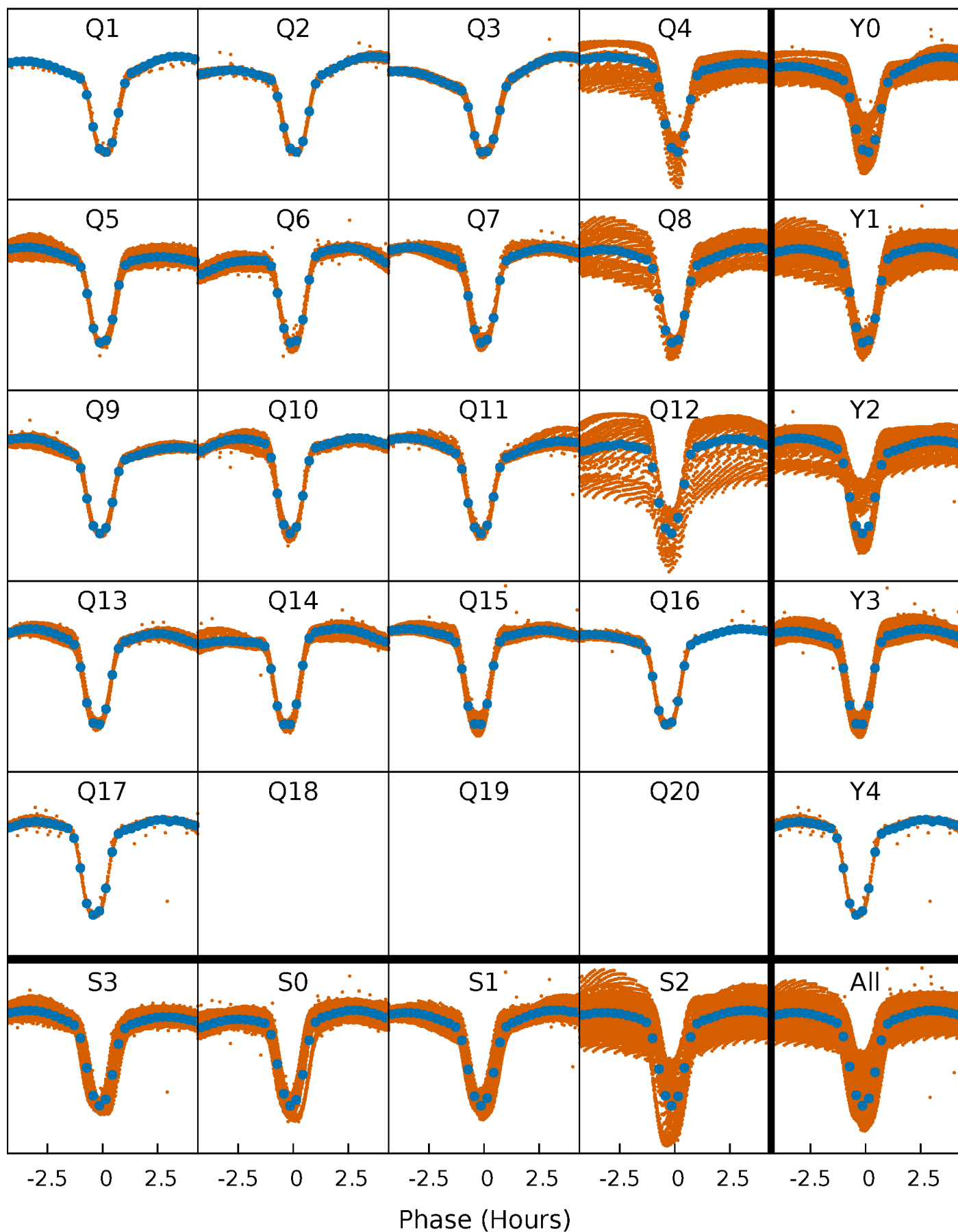


**Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)**



# PDC Quarter-Phased Transit Curves

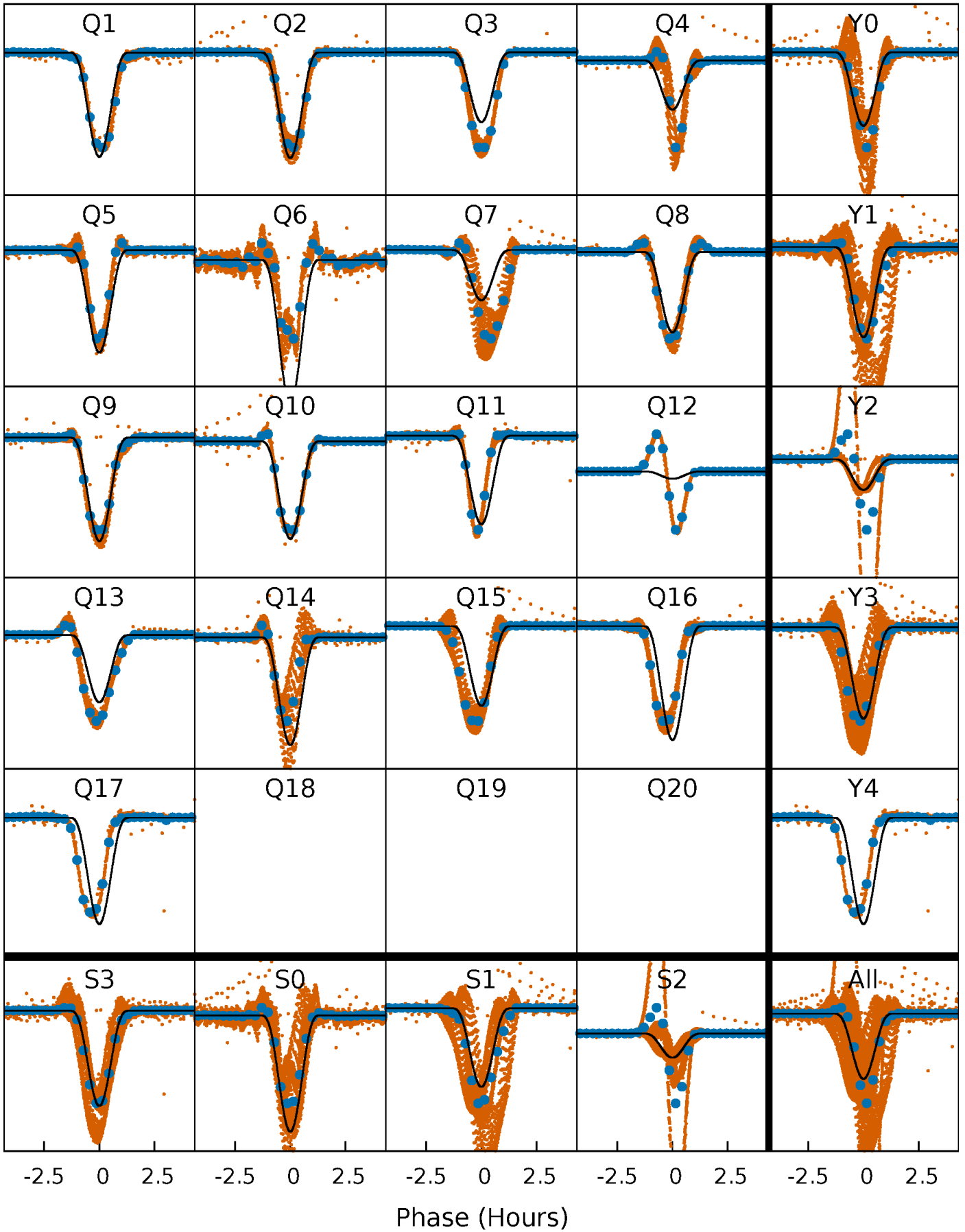
TCE 011560447-01   P= 0.527685 Days    $T_0=131.808989$  (BKJD)





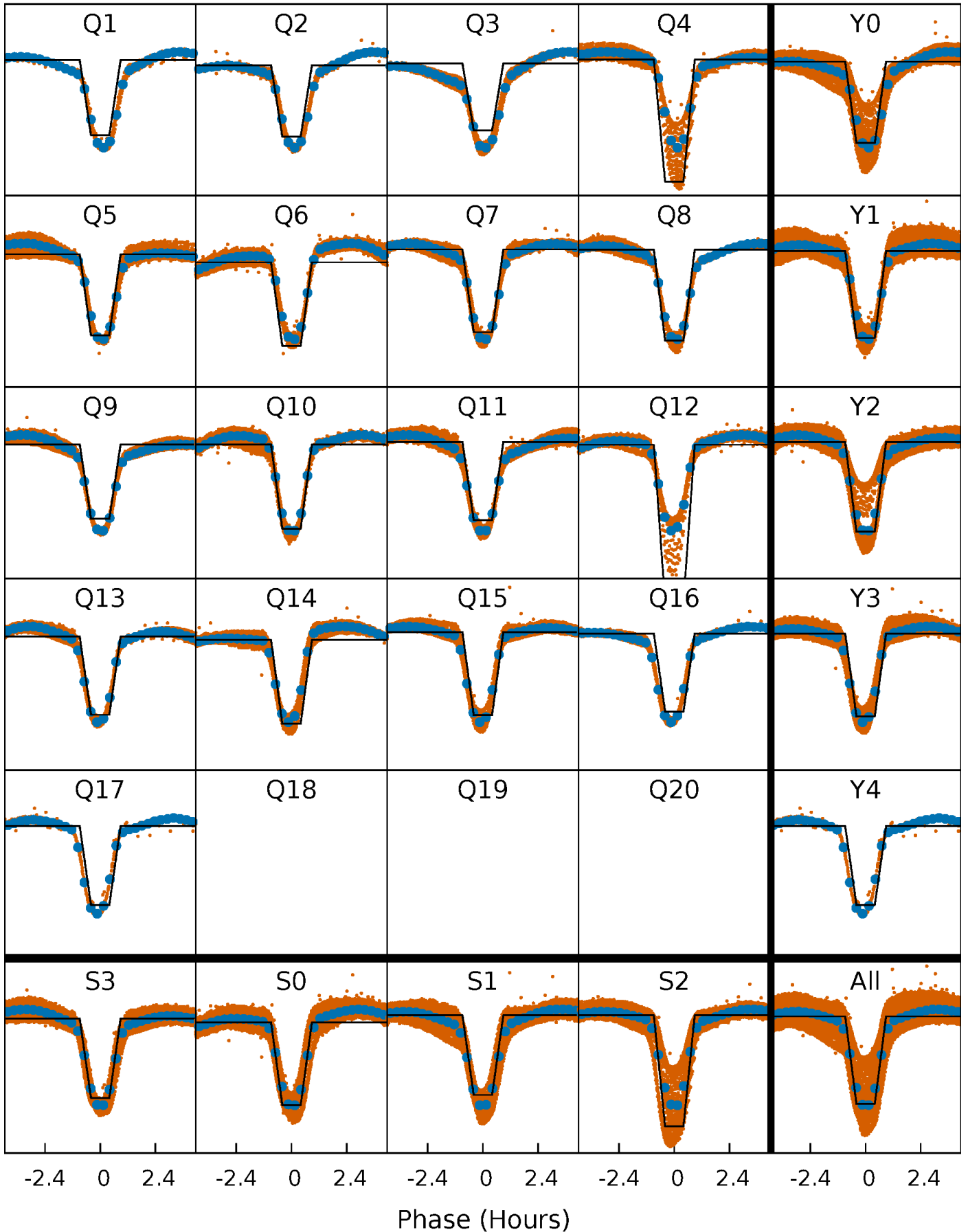
# DV Quarter-Phased Transit Curves

TCE 011560447-01 P= 0.527685 Days  $T_0=131.808989$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

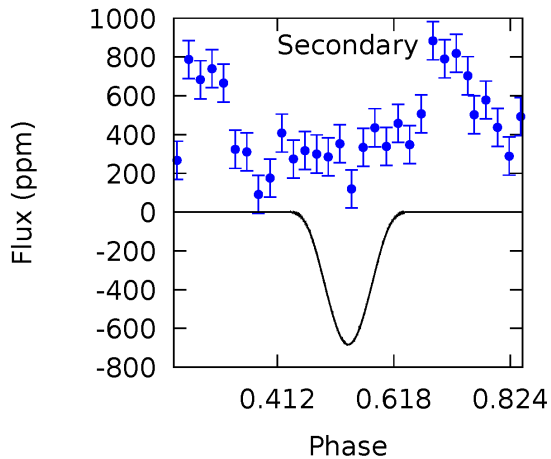
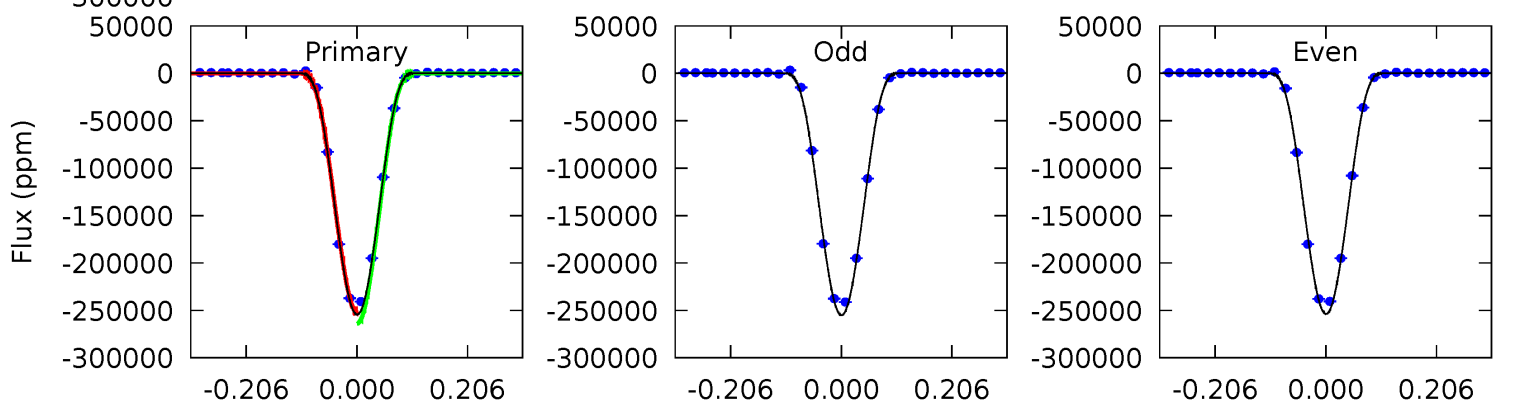
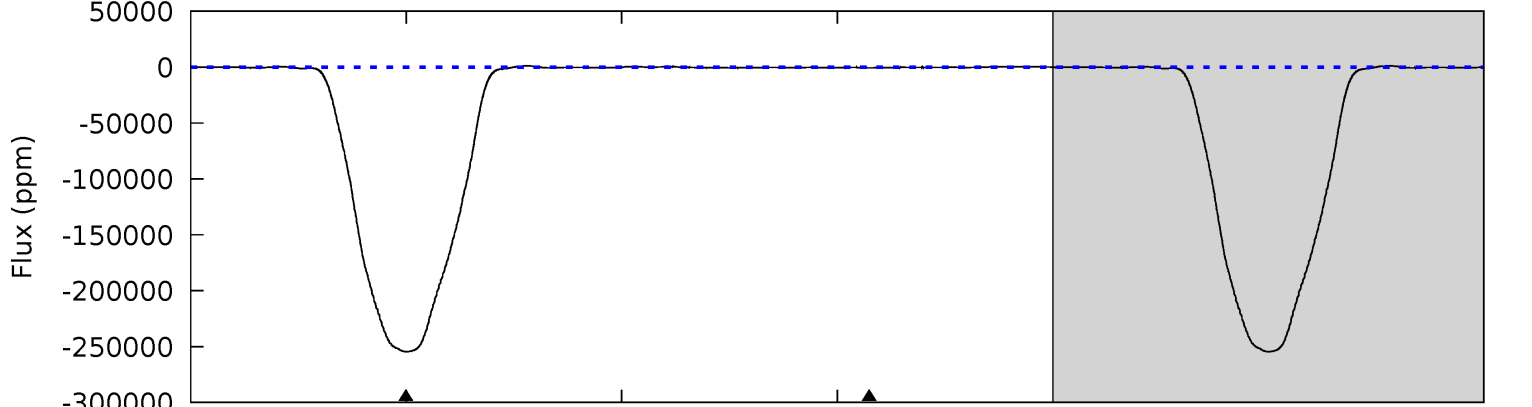
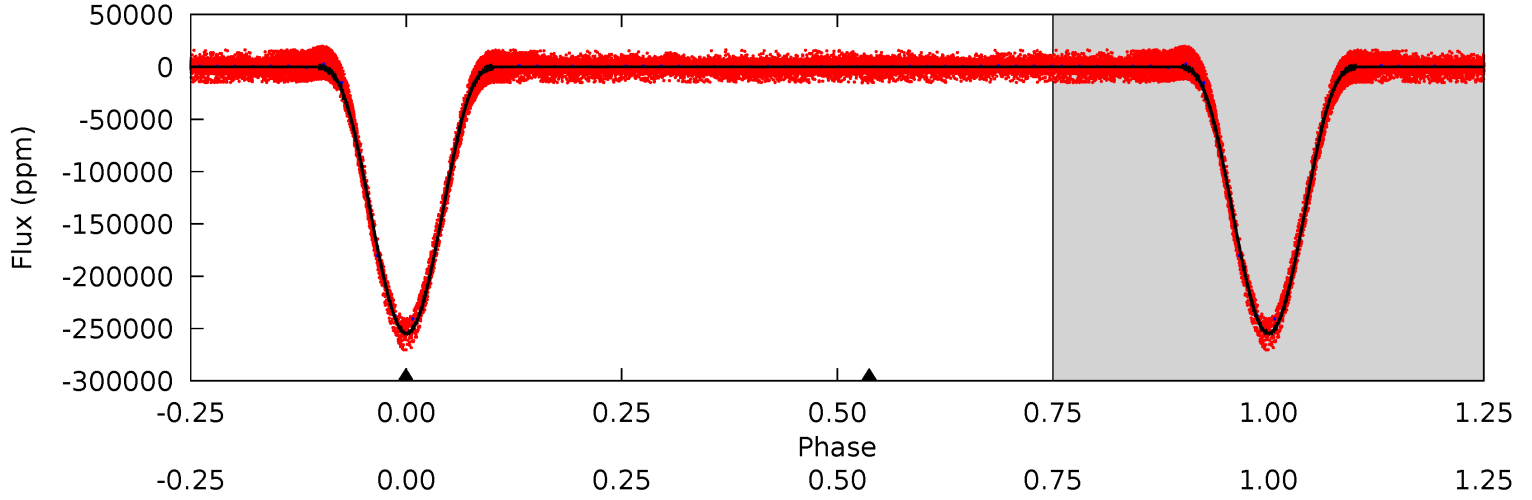
TCE 011560447-01 P= 0.527683 Days  $T_0=131.807300$  (BKJD)



# DV Model-Shift Uniqueness Test

011560447-01, P = 0.527685 Days, E = 131.281304 Days

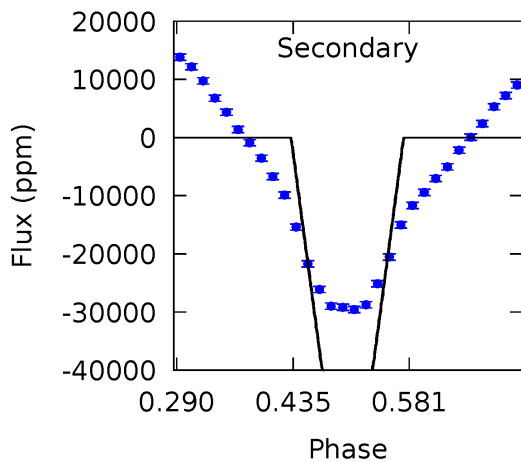
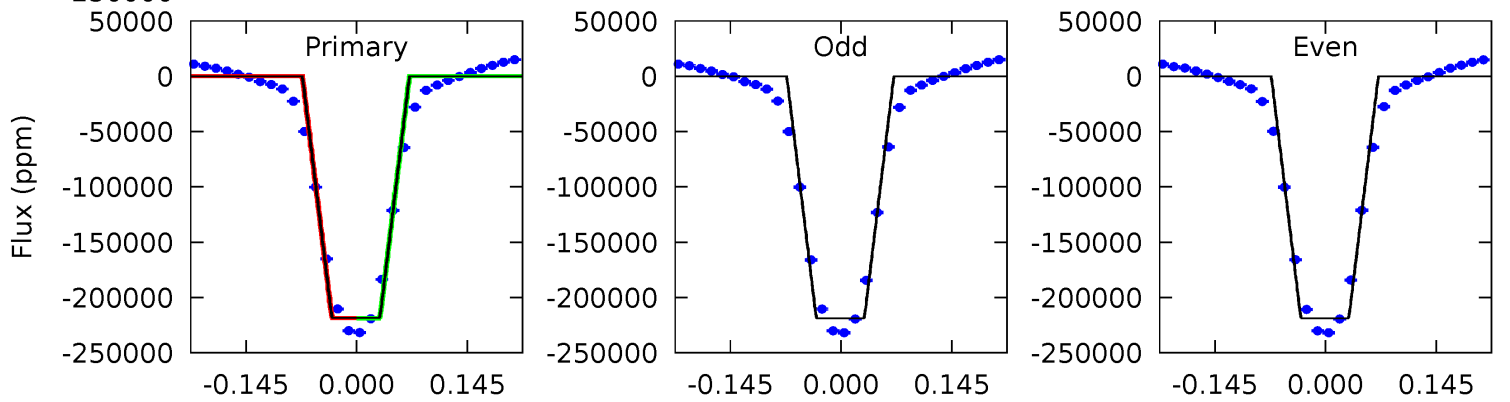
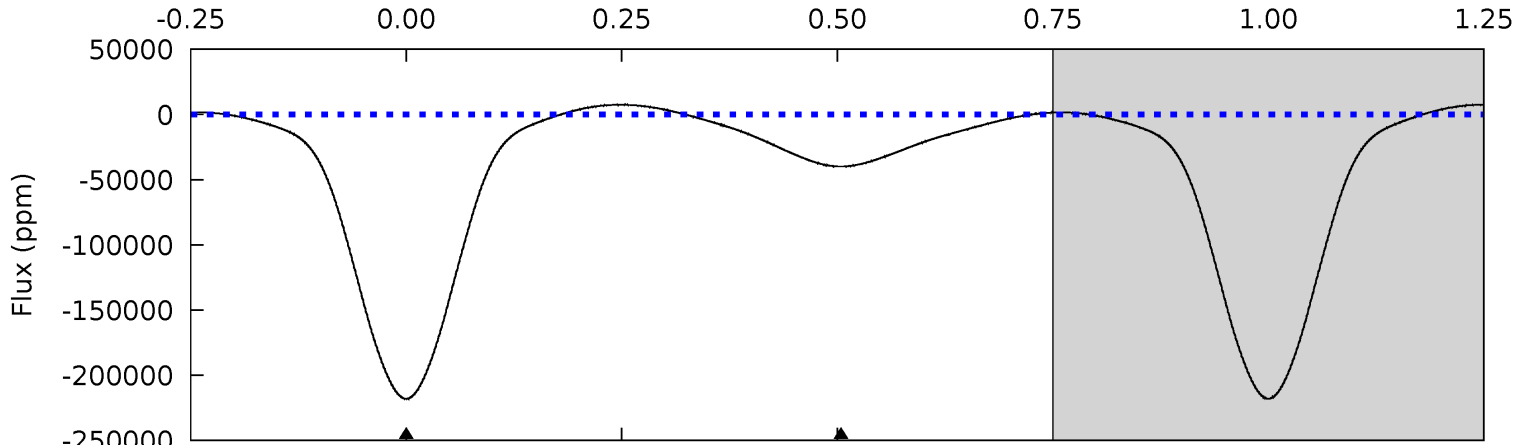
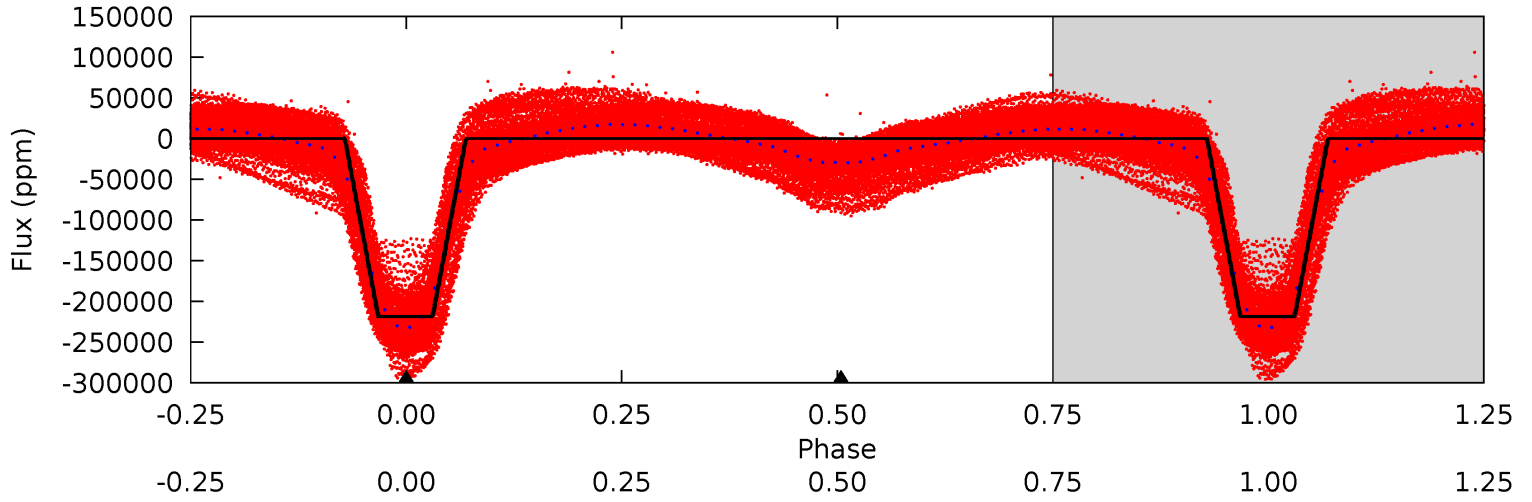
| Pri  | Sec  | Ter | Pos | FA <sub>1</sub> | FA <sub>2</sub> | F <sub>Red</sub> | Pri-Ter | Pri-Pos | Sec-Ter | Sec-Pos | Odd-Evn | DMM  | Shape | TAT |
|------|------|-----|-----|-----------------|-----------------|------------------|---------|---------|---------|---------|---------|------|-------|-----|
| 4642 | 12.5 | 0   | 0   | 4.41            | 1.26            | 5.12             | 4642    | 4642    | 12.5    | 12.5    | 12.2    | 1.22 | 0.00  | 0   |



# Alt Model-Shift Uniqueness Test

011560447-01, P = 0.527683 Days, E = 131.279617 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  |
|------|-------|-----|-----|-----------------|-----------------|------------------|---------|---------|---------|---------|---------|------|-------|------|
| 1066 | 194.9 | 0   | 0   | 4.49            | 1.46            | 24.3             | 1066    | 1066    | 194.9   | 194.9   | 0.40    | 0.96 | 0.03  | 0.95 |



### Stellar Parameters For KIC 011560447

|        | $T_{\text{eff}}(K)$ | $\log(g)$                 | $[\text{Fe}/\text{H}]$    | $R$ ( $R_{\odot}$ )       | $M(M_{\odot})$            | $p_{\star}$ ( $\text{g}\cdot\text{cm}^{-3}$ ) |
|--------|---------------------|---------------------------|---------------------------|---------------------------|---------------------------|---|
|        | $5321^{+88}_{-72}$  | $4.069^{+0.384}_{-0.096}$ | $0.160^{+0.200}_{-0.100}$ | $1.475^{+0.229}_{-0.571}$ | $0.931^{+0.049}_{-0.067}$ | $0.408^{+1.167}_{-0.114}$                     |
|        | +2%/-1%             | +9%/-2%                   | +125%/-62%                | +16%/-39%                 | +5%/-7%                   | +286%/-28%                                    |
| Source | SPE68               | SPE68                     | SPE68                     | DSEP                      |                           |   |

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

### Secondary Eclipse Parameters for KIC 011560447-01 / KOI 7458.01

| Detrend | Depth (ppm)      | $R_p$ ( $R_{\oplus}$ )    | $T_{\text{max}}$ (K) | $T_{\text{obs}}$ (K)  | $A_{\text{obs}}$          |
|---------|------------------|---------------------------|----------------------|-----------------------|---------------------------|
| DV      | $-683 \pm 55$    | $86.70^{+20.21}_{-19.62}$ | $3521^{+194}_{-381}$ | $-3370^{+228}_{-124}$ | $0.008^{+0.005}_{-0.003}$ |
| Alt.    | $-39928 \pm 205$ | $69.90^{+18.19}_{-17.40}$ | $3507^{+200}_{-341}$ | $3537^{+413}_{-433}$  | $0.729^{+0.562}_{-0.269}$ |

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

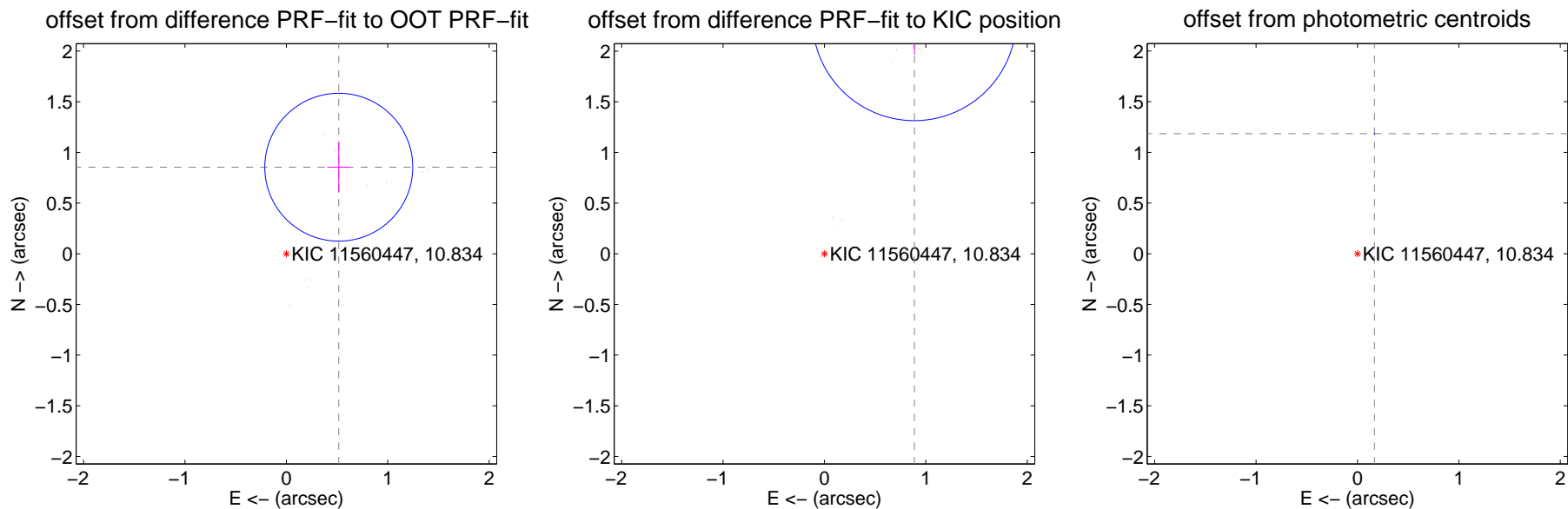
## DV Centroid Data

Supplemental centroid analysis for 011560447-01. **Kepler magnitude: 10.83.** Transit SNR 3188.72

There are 13 quarters with good PRF difference image offsets

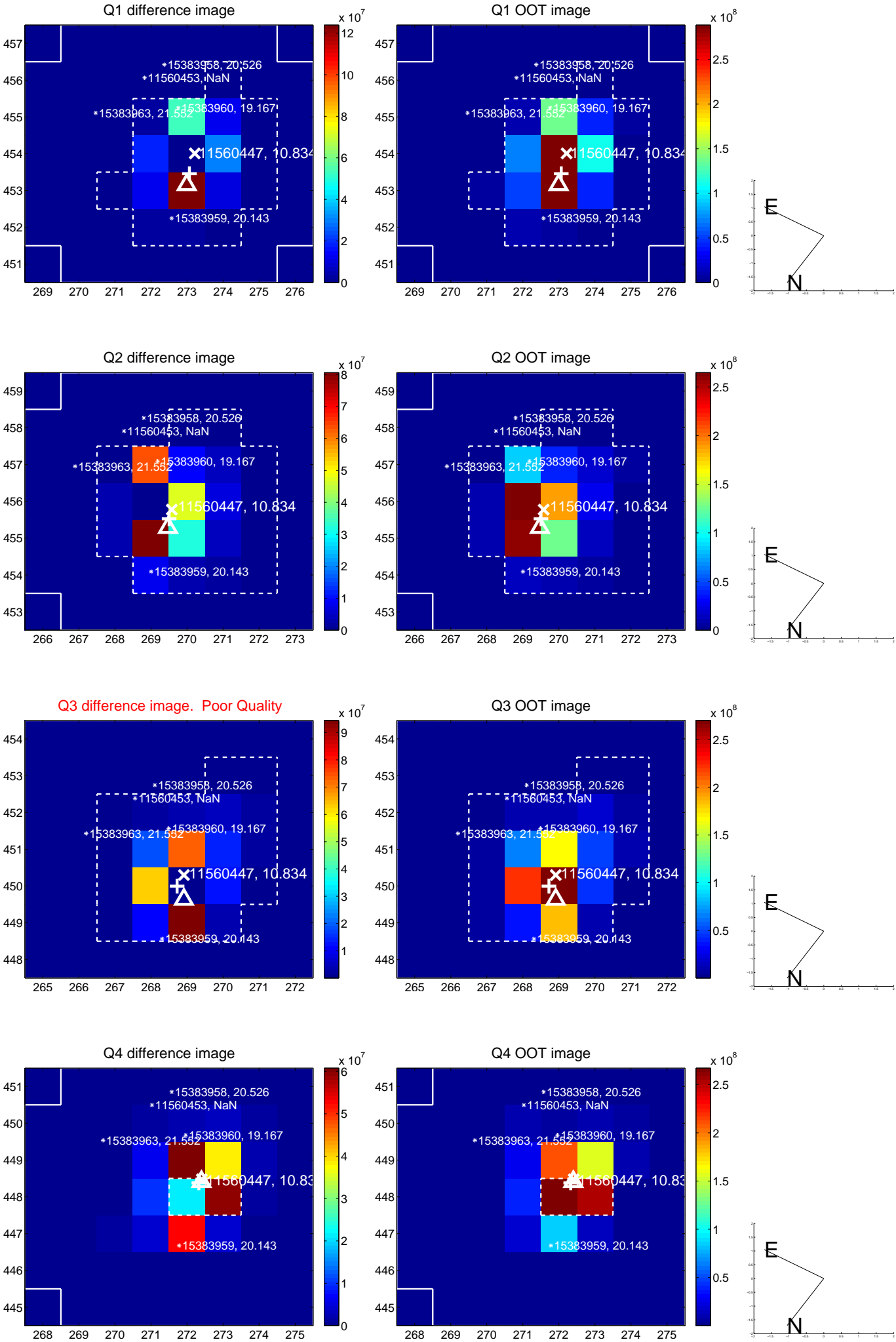
The OOT PRF centroid is offset from the target star catalog position by about 2.34 arcsec so the offset from difference PRF-fit to OOT-fit may be invalid.

|   | Distance in arcsec | Distance / $\sigma$ | $\Delta$ RA        | $\Delta$ Dec      |
|---|--------------------|---------------------|--------------------|-------------------|
| PRF-fit source offset from OOT          | $0.999 \pm 0.243$  | 4.11                | $-0.517 \pm 0.113$ | $0.855 \pm 0.250$ |
| PRF-fit source offset from KIC position | $2.483 \pm 0.335$  | 7.41                | $-0.887 \pm 0.136$ | $2.319 \pm 0.355$ |
| photometric centroid source offset      | $1.20 \pm 0.00$    | 3617.30             | $-0.17 \pm 0.00$   | $1.18 \pm 0.00$   |



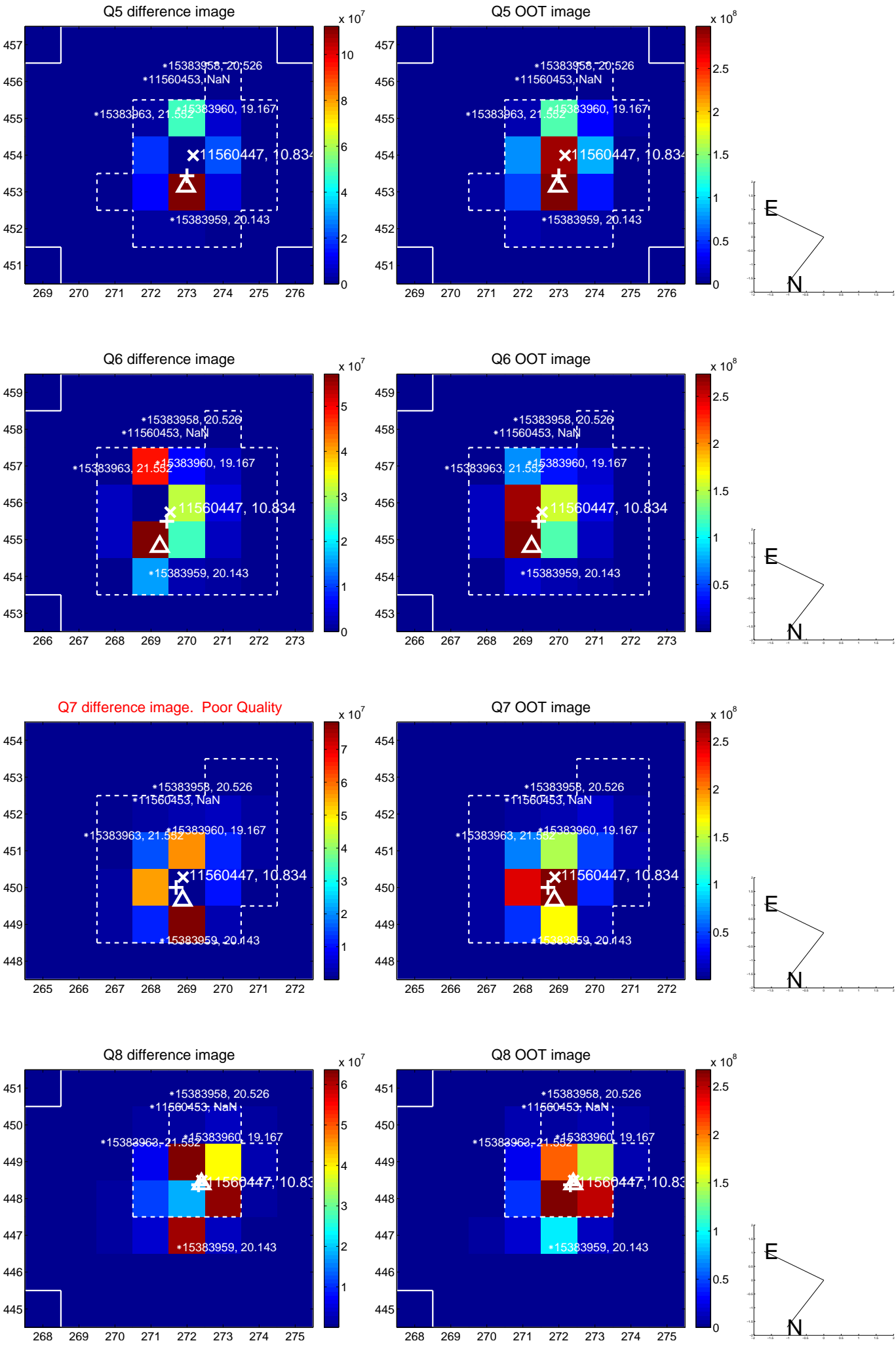
Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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

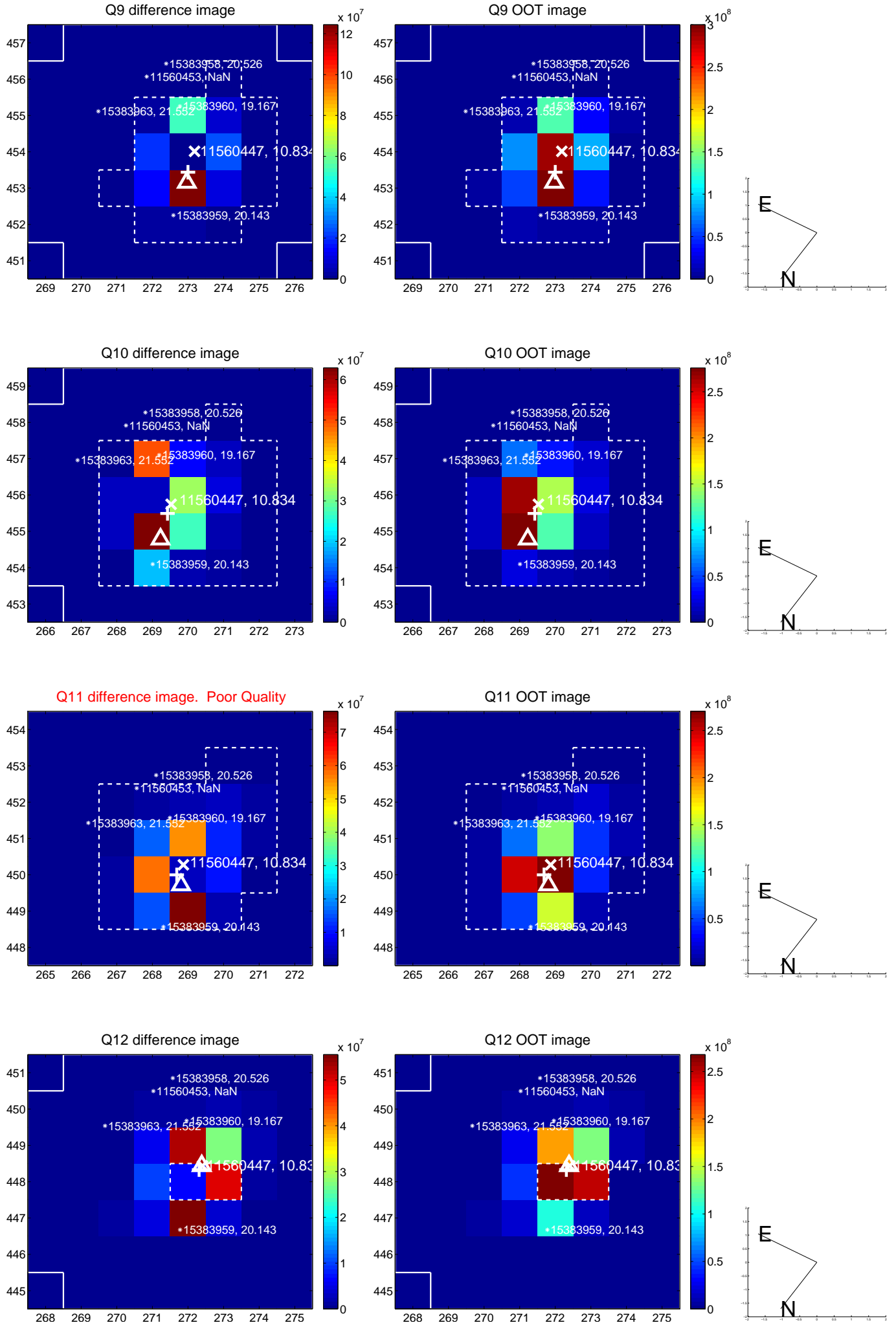




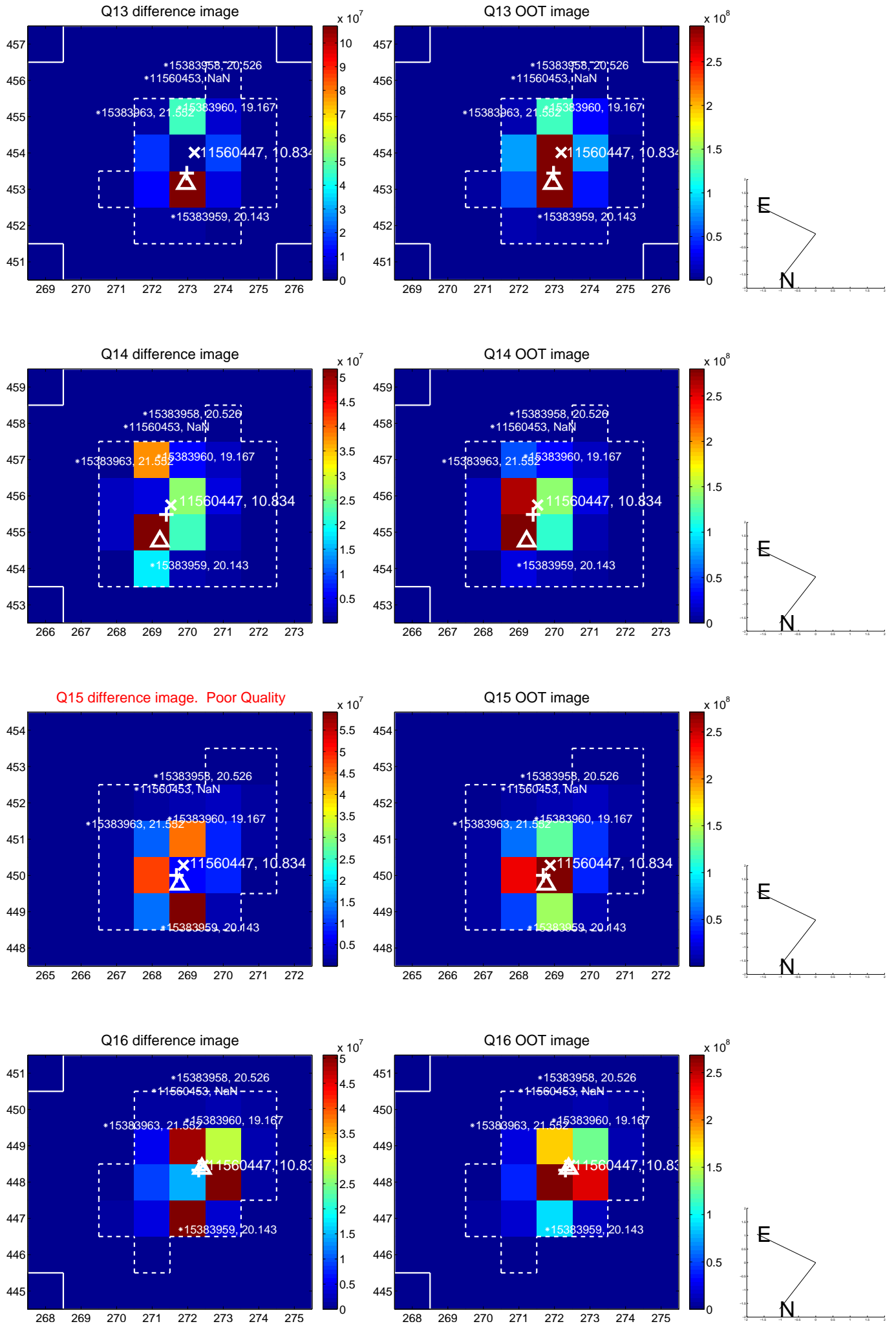
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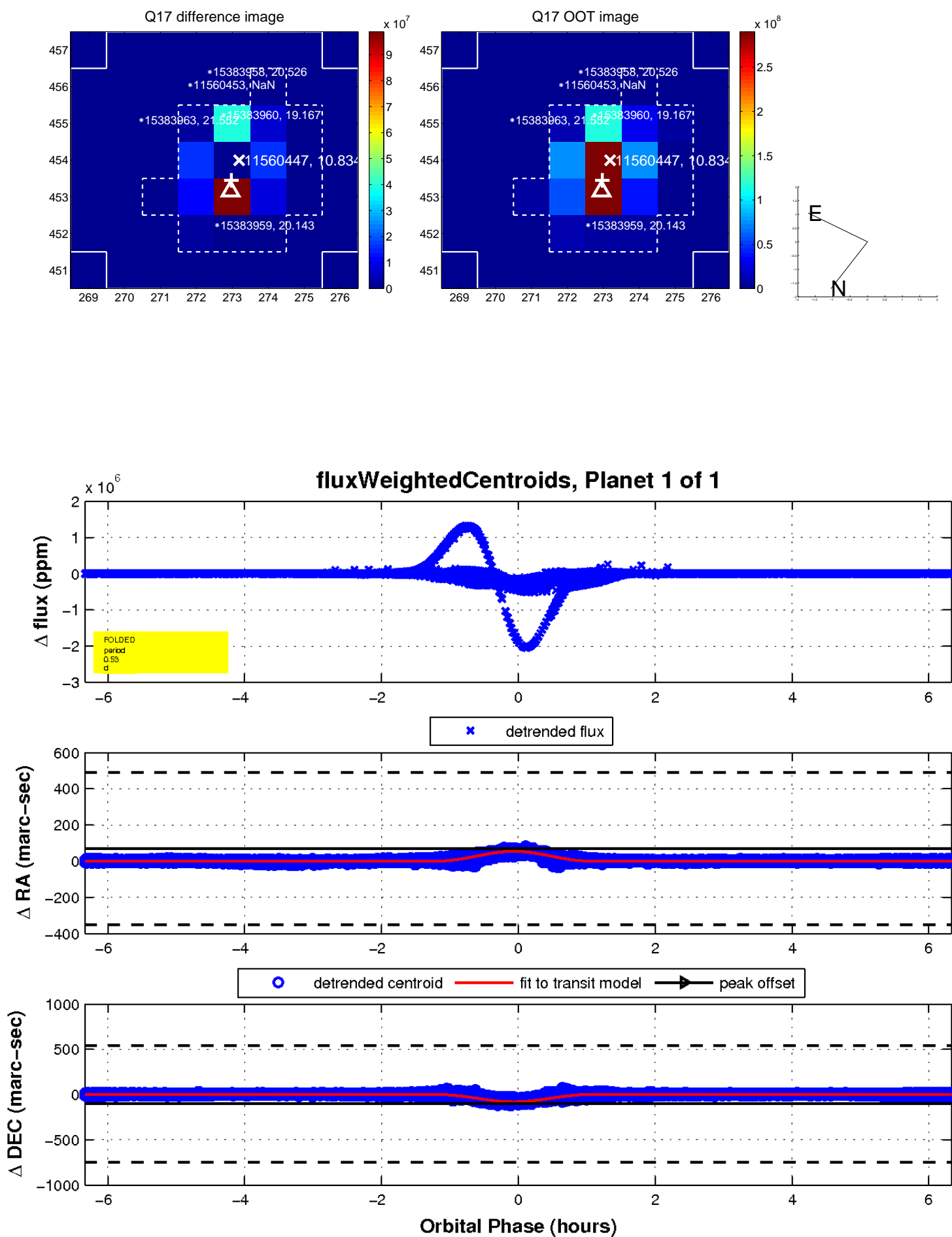
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UKIRT Image

