

# KIC 005449303

## 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) | $R_p$ ( $R_{\oplus}$ ) | $S_p$ ( $S_{\oplus}$ ) |
|--------------|----------|------|---------------|--------------|-------------|------------------|-----|-----|-----------------------------|-----------------|------------------------|------------------------|
| 005449303-01 | OBS      | No   | 0.562786      | 131.548285   | 13.8        | 2.303            | 8.7 | 8.8 | 3.06                        | 6785            | 1.33                   | 65387.53               |

## Robovetter Results

| TCE          | Run Type | Disp | Score | N | S | C | E | Comments               |
|--------------|----------|------|-------|---|---|---|---|------------------------|
| 005449303-01 | OBS      | FP   | 0.00  | 1 | 0 | 0 | 0 | LPP_DV—MOD_NONUNIQ_ALT |

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

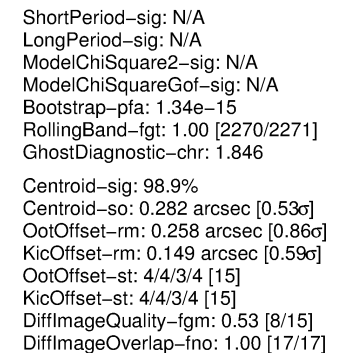
N = Not Transit-Like. S = Stellar Eclipse. C = Centroid Offset. E = Ephemeris Match.

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.

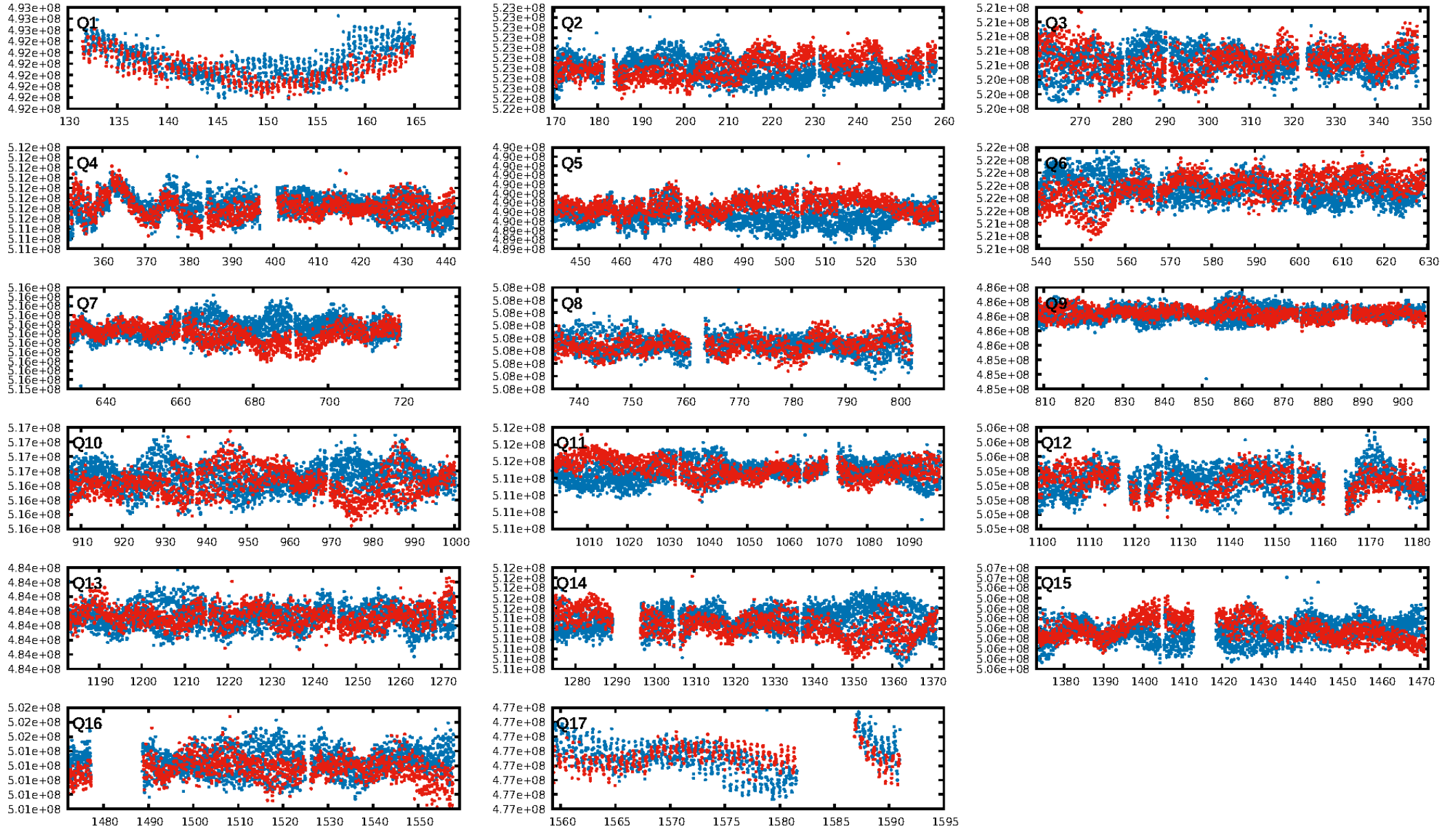
## Ephemeris Match Information For 005449303-01

No Significant Match Found

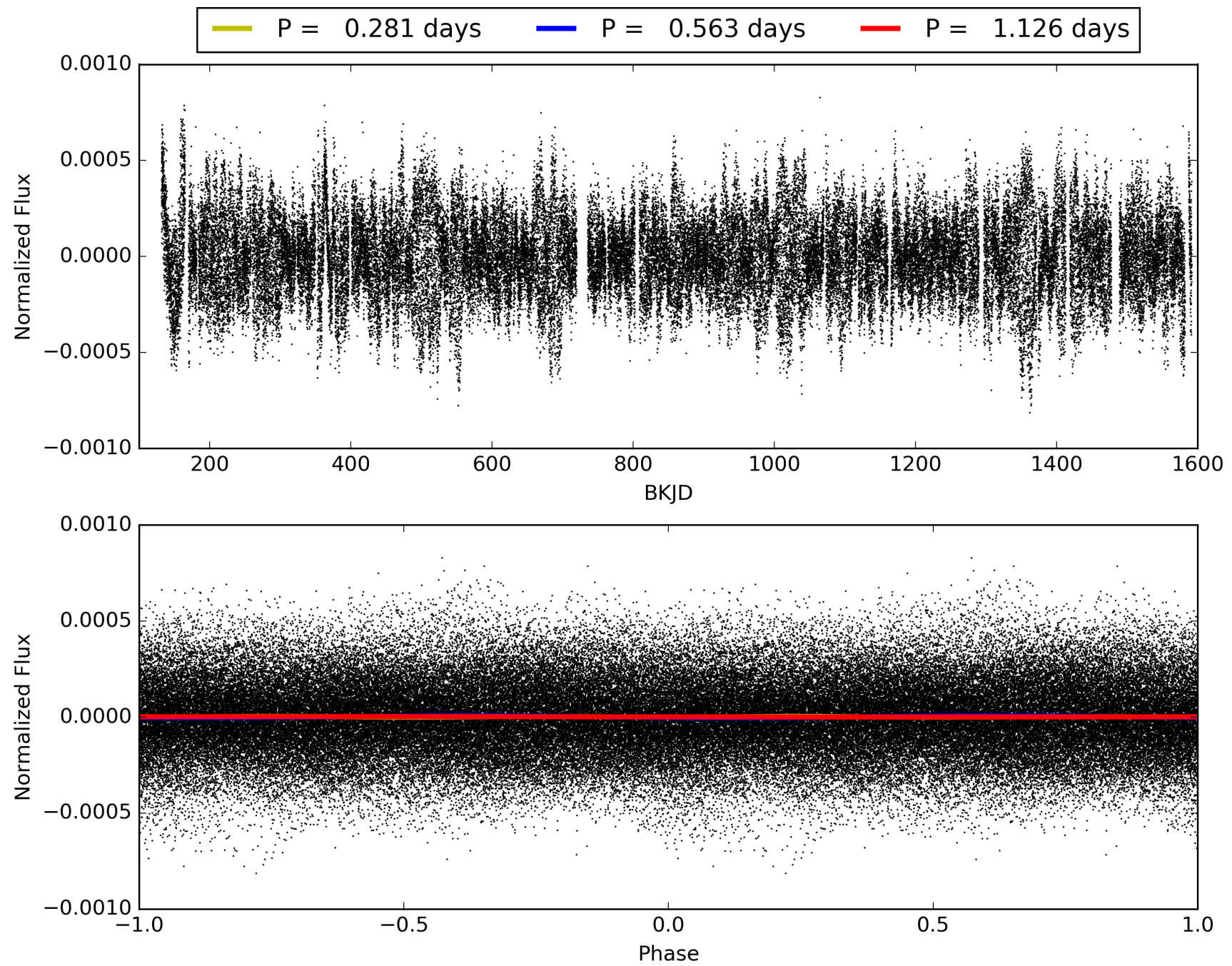
## KIC: 5449303    Candidate: 1 of 1    Period: 0.563 d



# TCE 005449303-01, PDC Light Curves

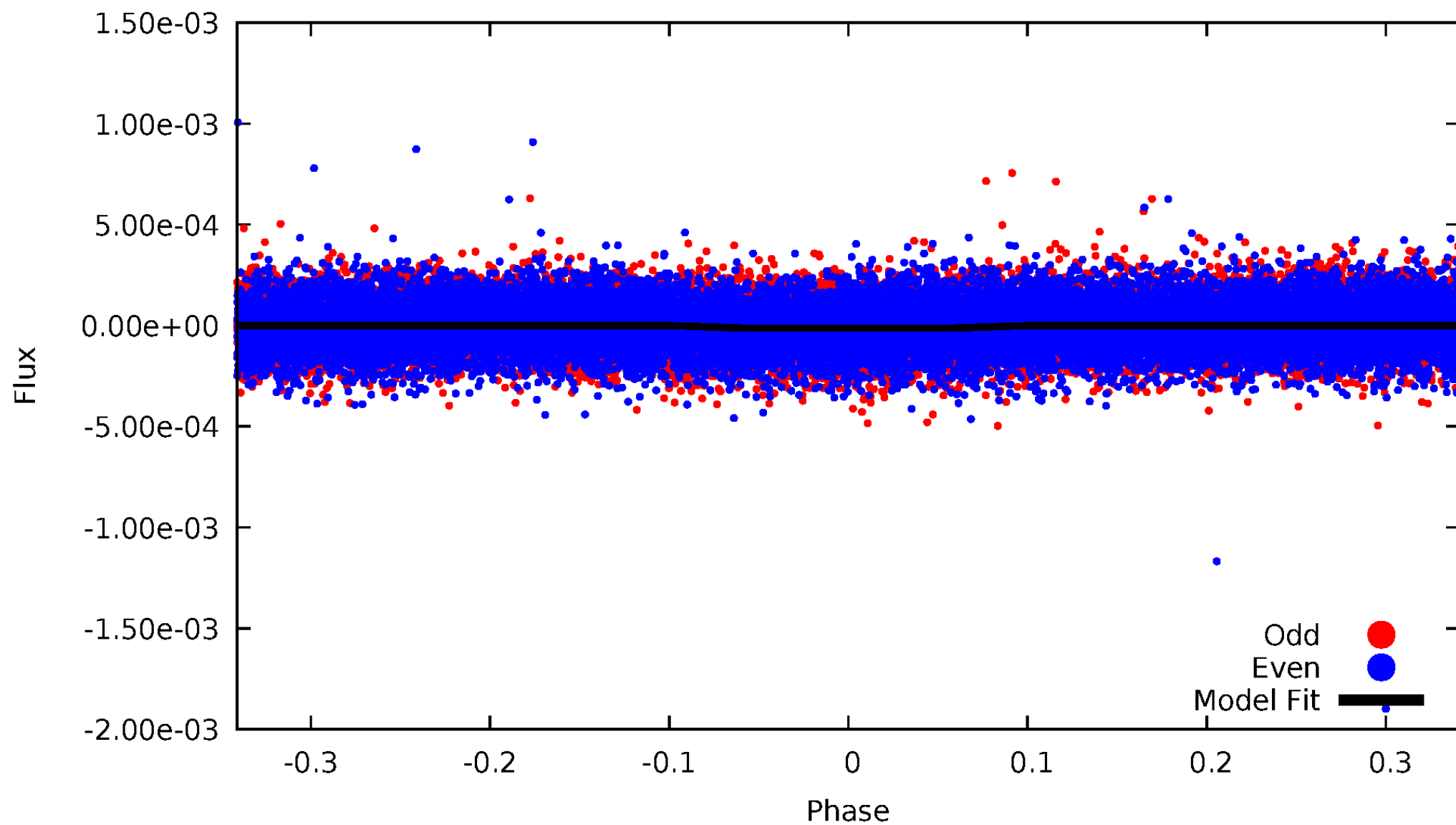


TCE 005449303-01



# DV Odd/Even

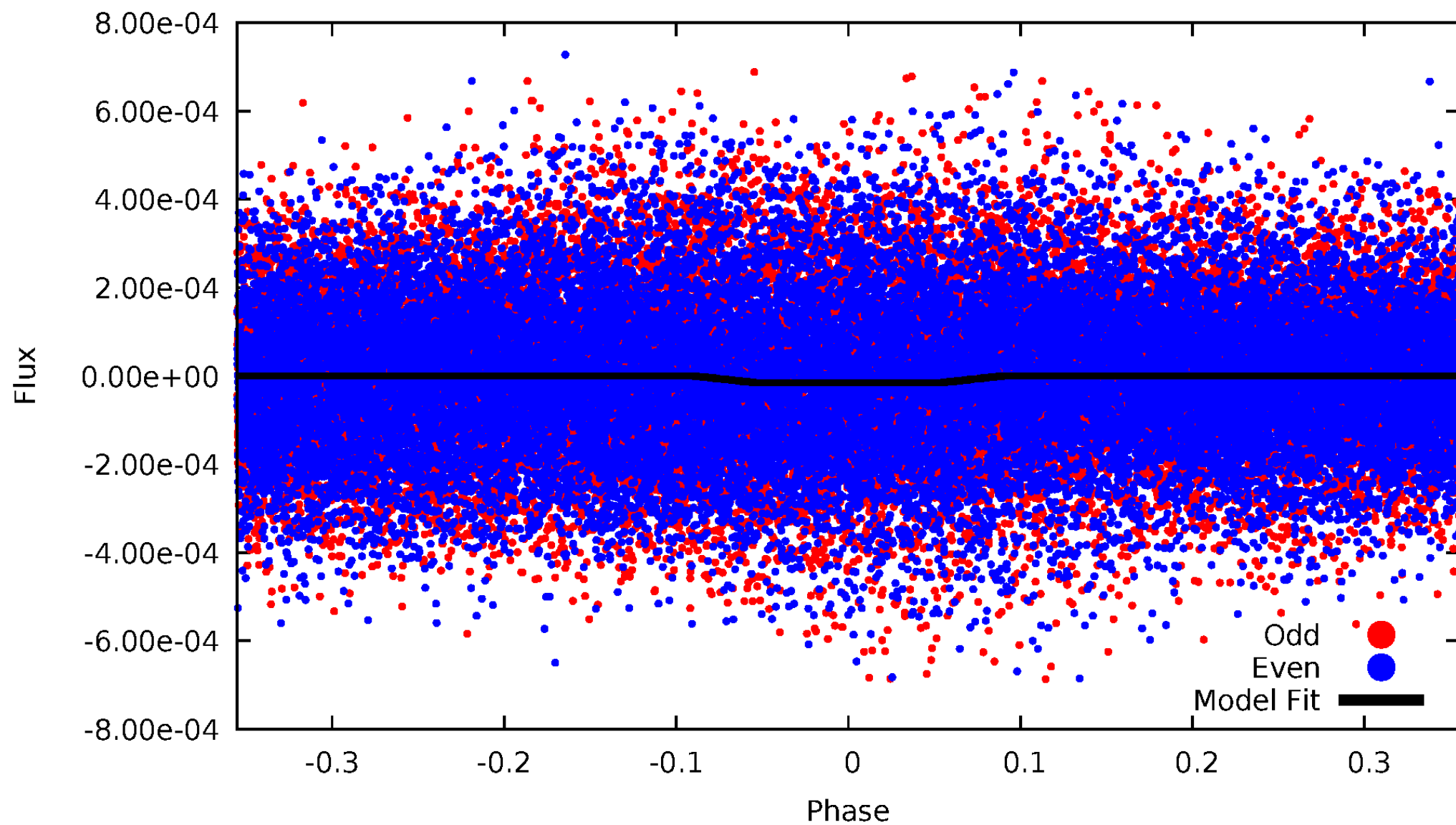
TCE 005449303-01





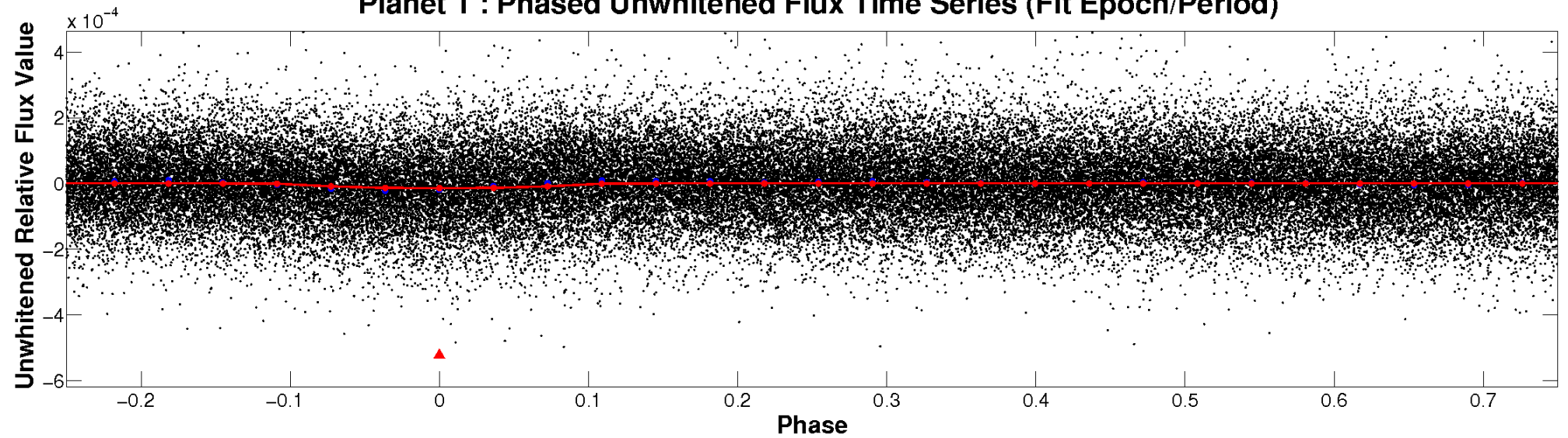
# ALT Odd/Even

TCE 005449303-01

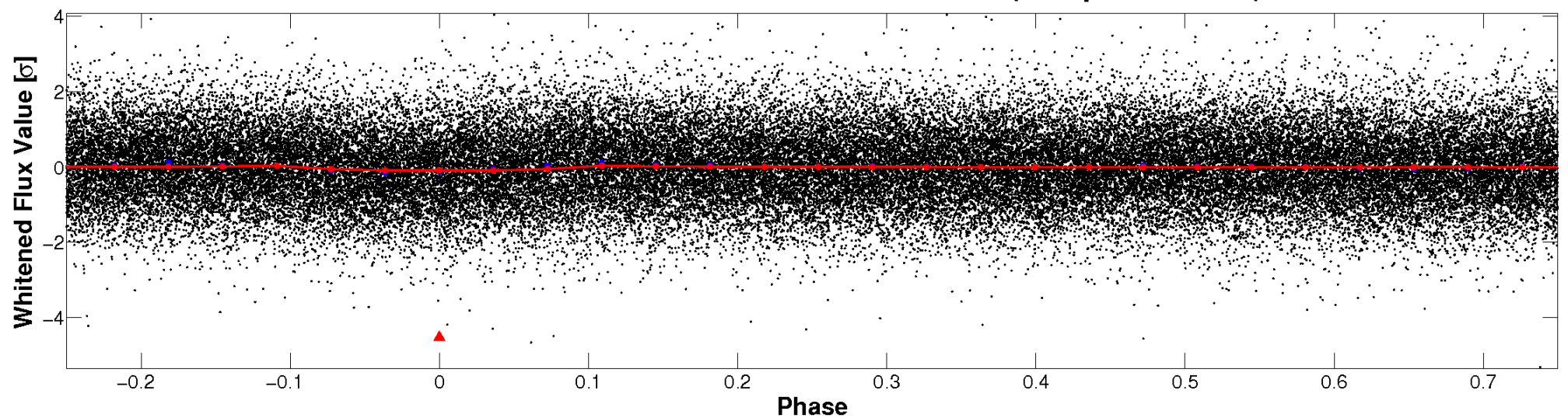


# Non-Whitened Vs. Whitened Light Curve

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

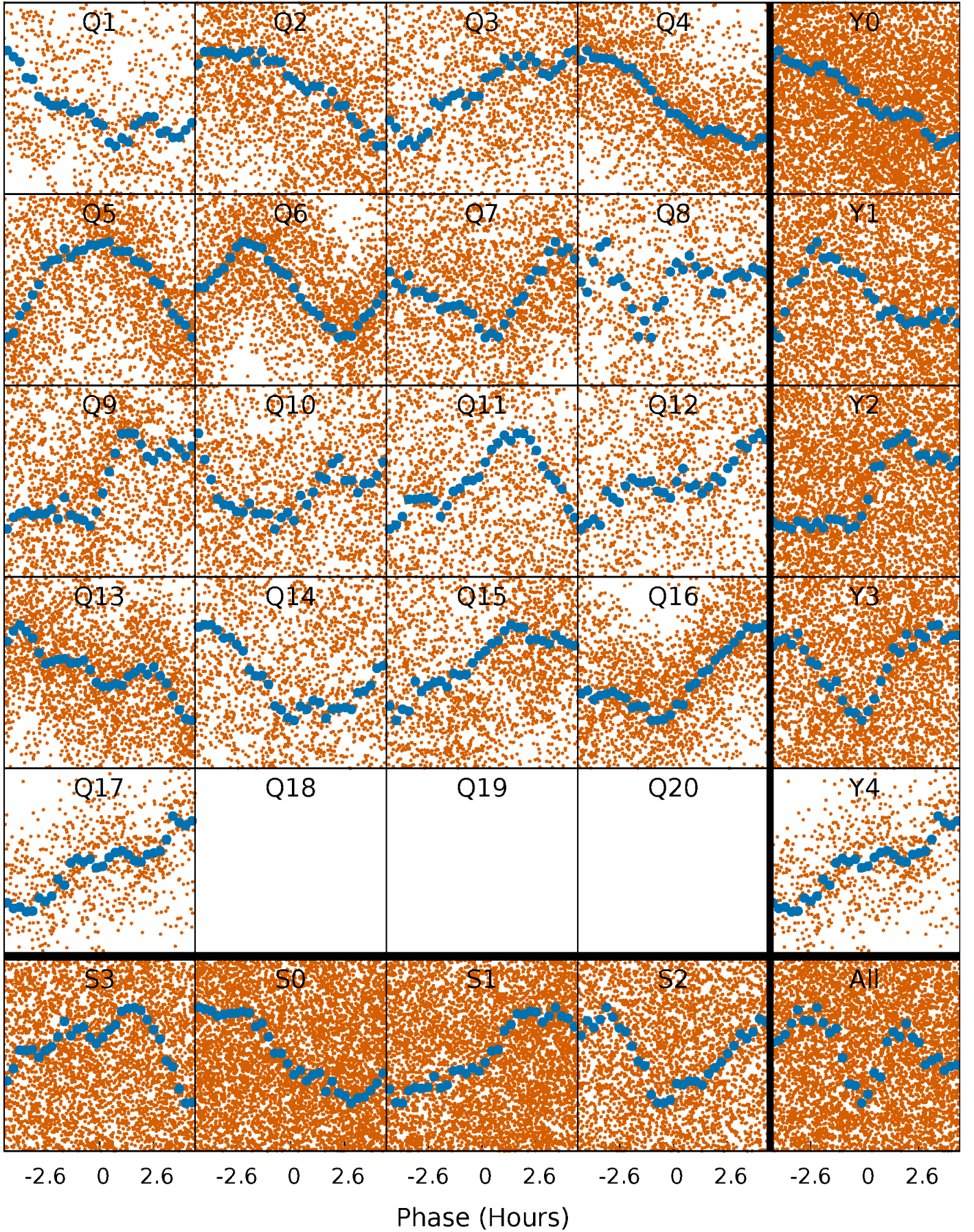


**Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)**



# PDC Quarter-Phased Transit Curves

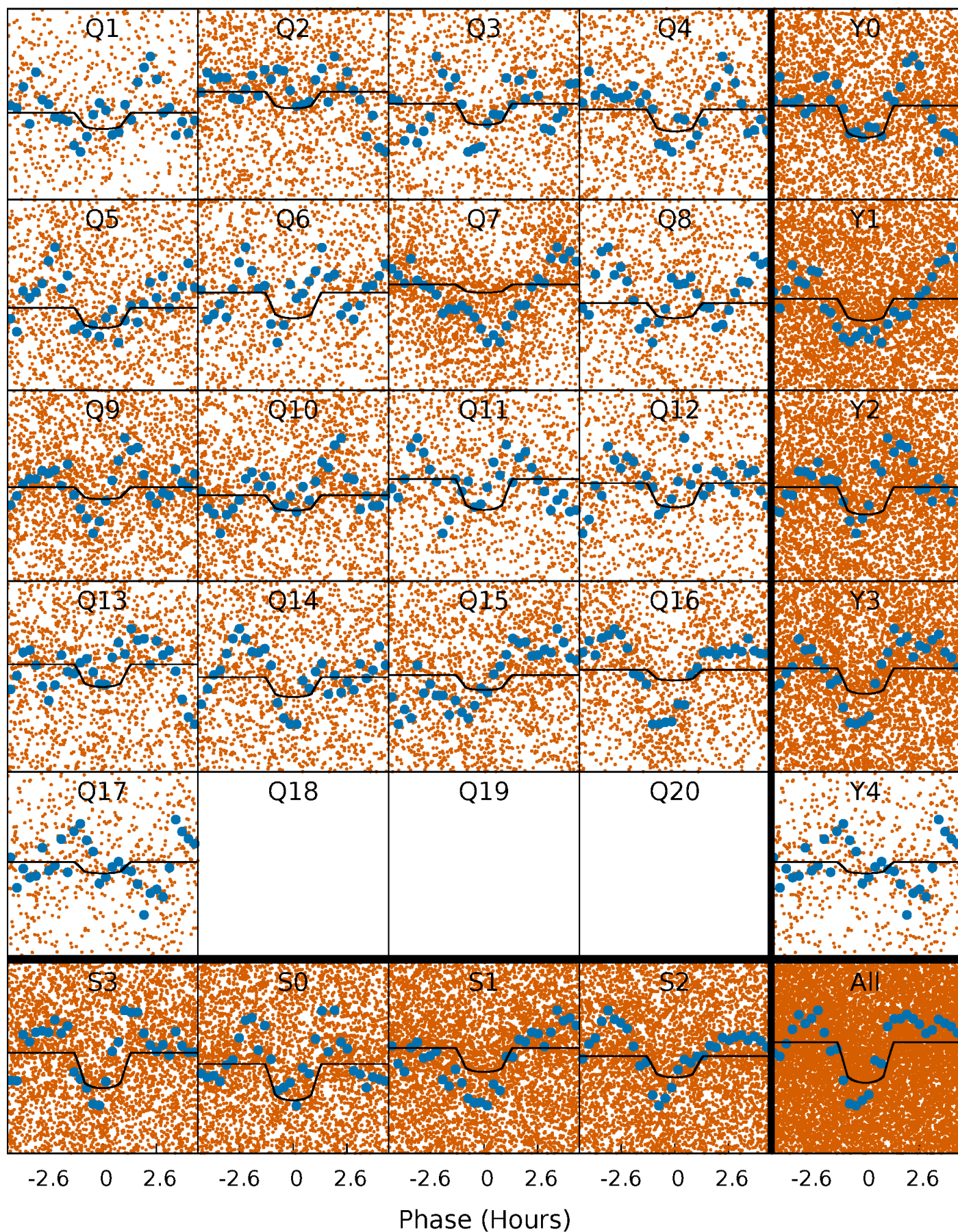
TCE 005449303-01 P= 0.562786 Days  $T_0=131.548285$  (BKJD)





# DV Quarter-Phased Transit Curves

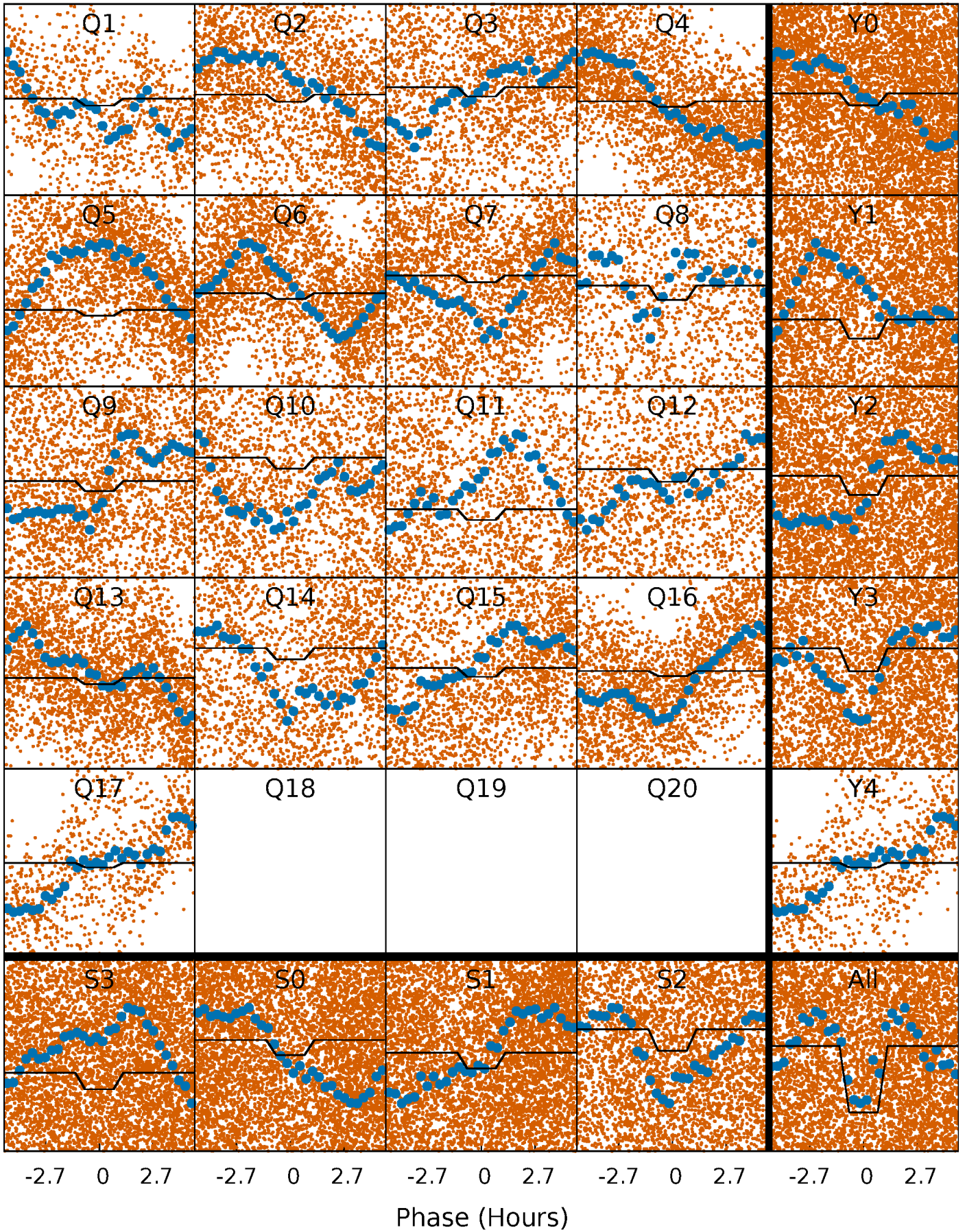
TCE 005449303-01 P= 0.562786 Days  $T_0=131.548285$  (BKJD)





# Alt. Detrend Quarter-Phased Transit Curves

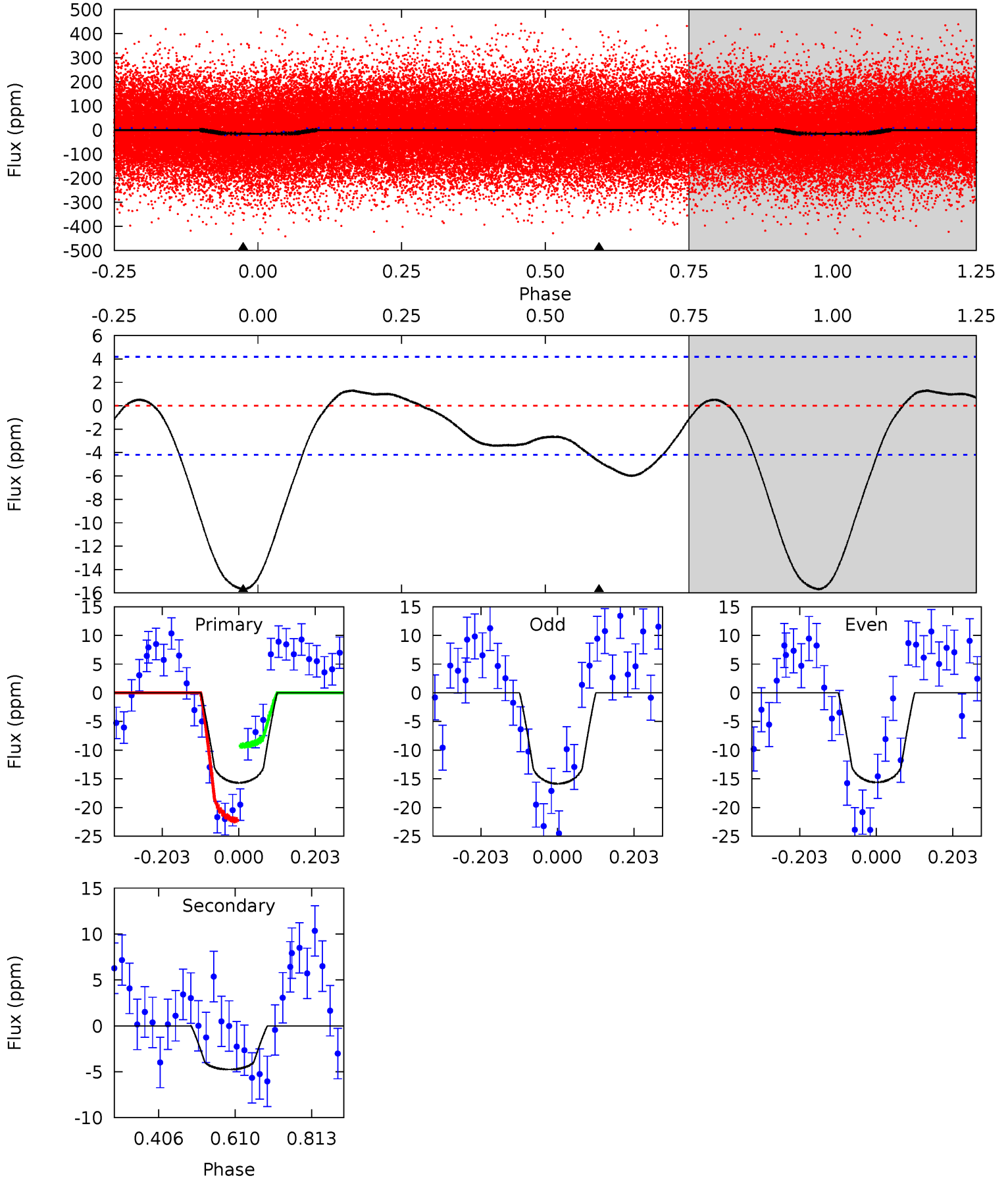
TCE 005449303-01 P= 0.562784 Days  $T_0=131.549349$  (BKJD)



# DV Model-Shift Uniqueness Test

005449303-01, P = 0.562786 Days, E = 130.985499 Days

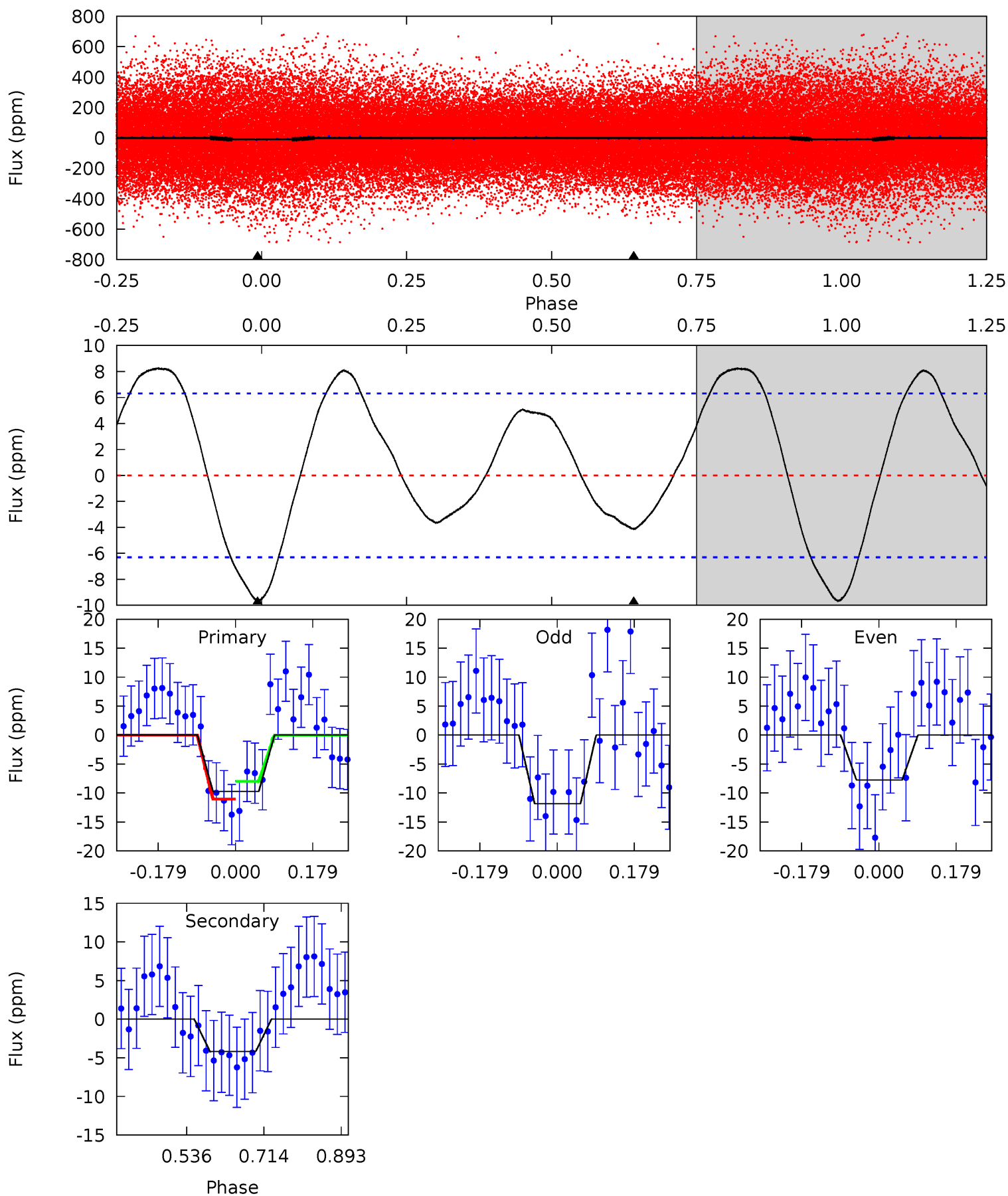
| Pri  | Sec  | Ter | Pos | FA <sub>1</sub> | FA <sub>2</sub> | F <sub>Red</sub> | Pri-Ter | Pri-Pos | Sec-Ter | Sec-Pos | Odd-Evn | DMM  | Shape | TAT  |
|------|------|-----|-----|-----------------|-----------------|------------------|---------|---------|---------|---------|---------|------|-------|------|
| 16.5 | 5.00 | 0   | 0   | 4.41            | 1.27            | 1.45             | 16.5    | 16.5    | 5.00    | 5.00    | 0.13    | 1.02 | 0.08  | 6.89 |



# Alt Model-Shift Uniqueness Test

005449303-01, P = 0.562784 Days, E = 130.986565 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  |
|------|------|-----|-----|-----------------|-----------------|------------------|---------|---------|---------|---------|---------|------|-------|------|
| 6.84 | 2.94 | 0   | 0   | 4.44            | 1.35            | 2.16             | 6.84    | 6.84    | 2.94    | 2.94    | 1.39    | 0.51 | 0.46  | 0.98 |





### Stellar Parameters For KIC 005449303

|        | $T_{\text{eff}}(K)$ | $\log(g)$                 | [Fe/H]                    | $R$ ( $R_{\odot}$ )       | $M(M_{\odot})$            | $\rho_{\star}$ ( $\text{g}\cdot\text{cm}^{-3}$ ) |
|--------|---------------------|---------------------------|---------------------------|---------------------------|---------------------------|--|
|        | $6785^{+71}_{-91}$  | $3.743^{+0.208}_{-0.096}$ | $0.180^{+0.150}_{-0.150}$ | $3.064^{+0.444}_{-0.889}$ | $1.895^{+0.192}_{-0.263}$ | $0.093^{+0.115}_{-0.027}$                        |
|        | +1%/-1%             | +6%/-3%                   | +83%/-83%                 | +14%/-29%                 | +10%/-14%                 | +124%/-29%                                       |
| 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 005449303-01 / KOI

| Detrend | Depth (ppm) | $R_p$ ( $R_{\oplus}$ ) | $T_{\text{max}}$ (K) | $T_{\text{obs}}$ (K)   | $A_{\text{obs}}$          |
|---------|-------------|------------------------|----------------------|------------------------|---------------------------|
| DV      | $-5 \pm 1$  | $1.28^{+0.44}_{-0.38}$ | $5673^{+230}_{-398}$ | $3994^{+1335}_{-7572}$ | $0.427^{+0.466}_{-0.187}$ |
| Alt.    | $-4 \pm 1$  | $1.27^{+0.40}_{-0.37}$ | $5645^{+243}_{-383}$ | $3703^{+1417}_{-7634}$ | $0.380^{+0.398}_{-0.190}$ |

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

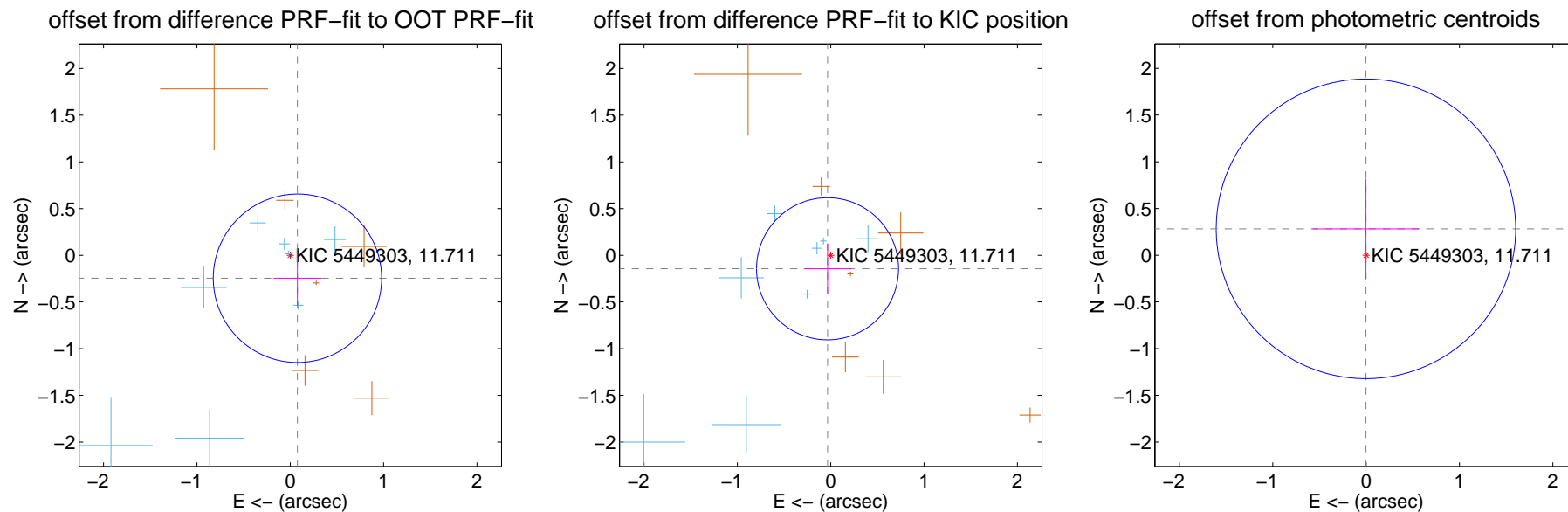
## DV Centroid Data

Supplemental centroid analysis for 005449303-01. **Kepler magnitude: 11.71.** Transit SNR 8.80

There are 8 quarters with good PRF difference image offsets

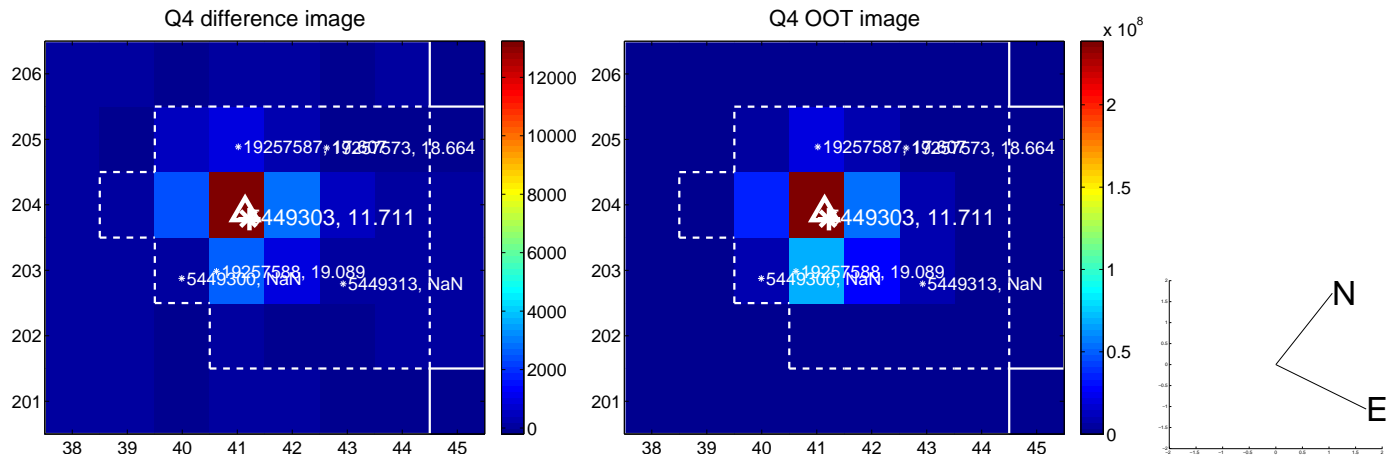
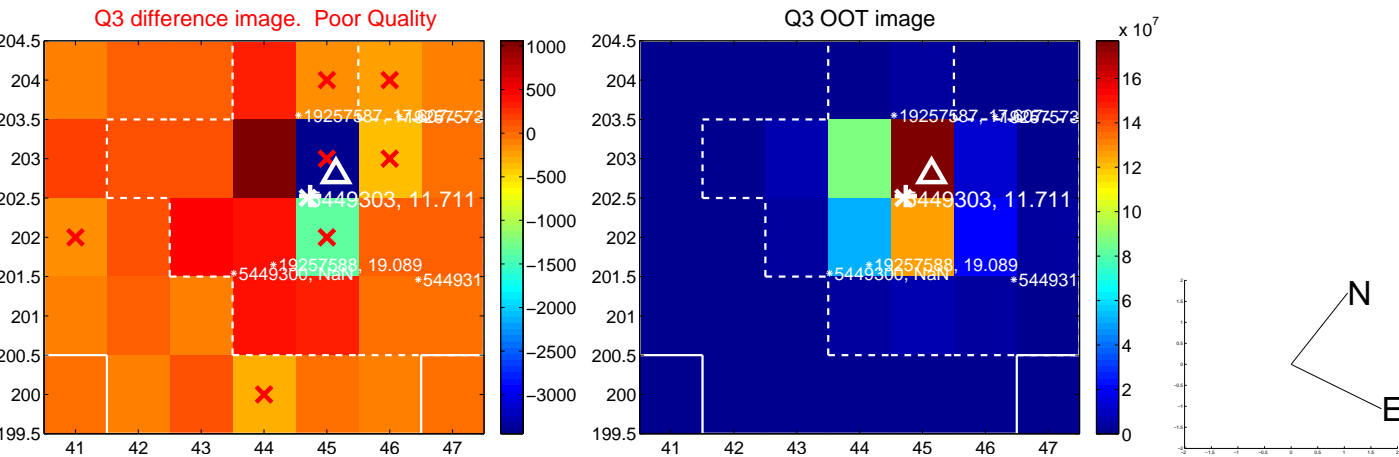
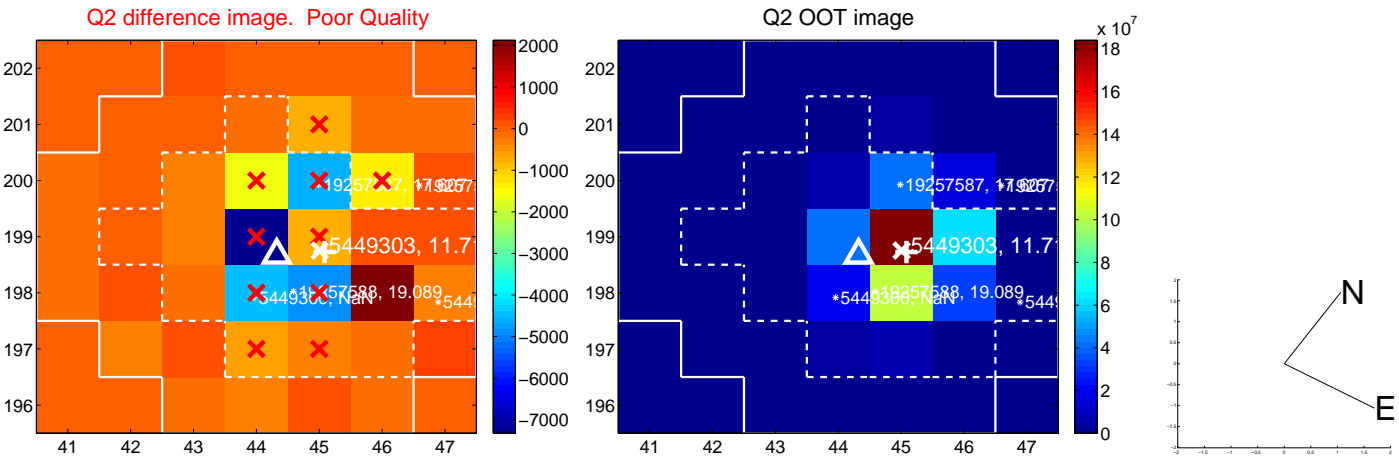
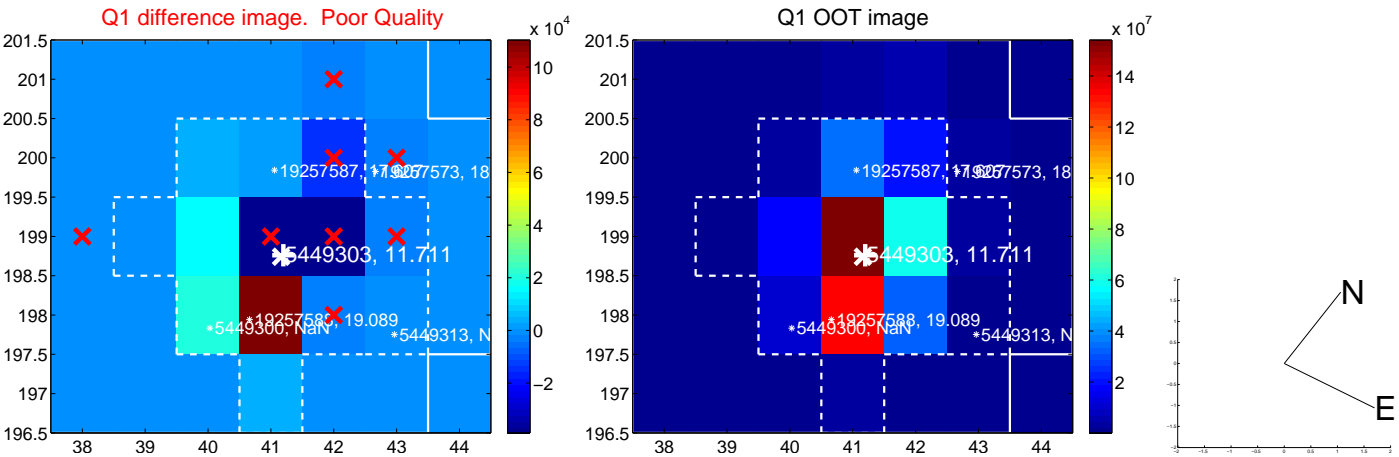
The direct PRF centroid is offset from the target star catalog position by about 0.15 arcsec

|   | Distance in arcsec | Distance / $\sigma$ | $\Delta$ RA        | $\Delta$ Dec       |
|---|--------------------|---------------------|--------------------|--------------------|
| PRF-fit source offset from OOT          | $0.258 \pm 0.301$  | 0.86                | $-0.077 \pm 0.258$ | $-0.246 \pm 0.293$ |
| PRF-fit source offset from KIC position | $0.149 \pm 0.254$  | 0.59                | $0.034 \pm 0.255$  | $-0.145 \pm 0.268$ |
| photometric centroid source offset      | $0.28 \pm 0.53$    | 0.53                | $0.00 \pm 0.57$    | $0.28 \pm 0.53$    |

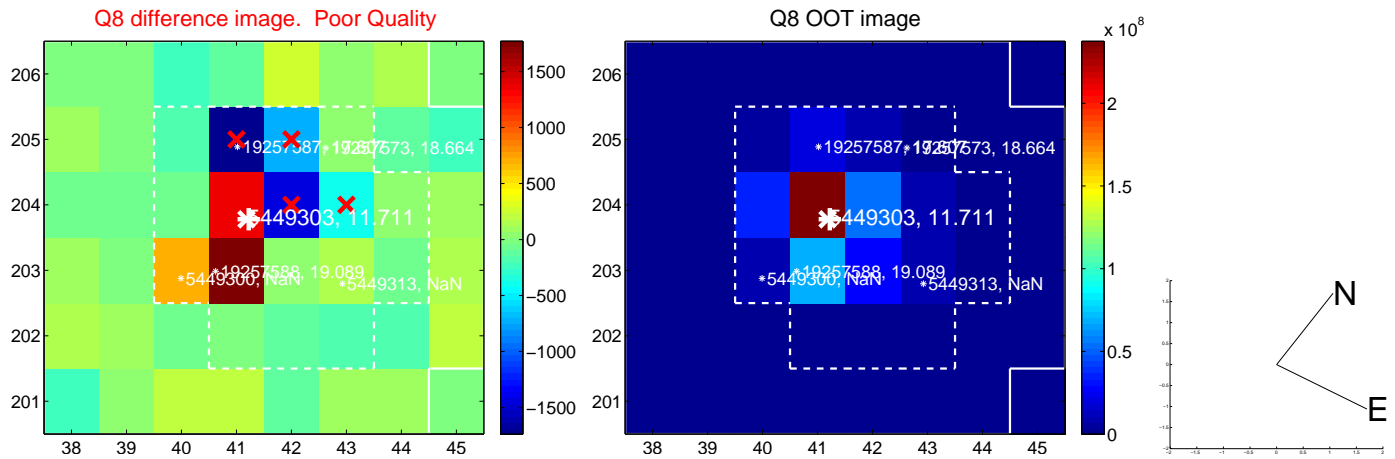
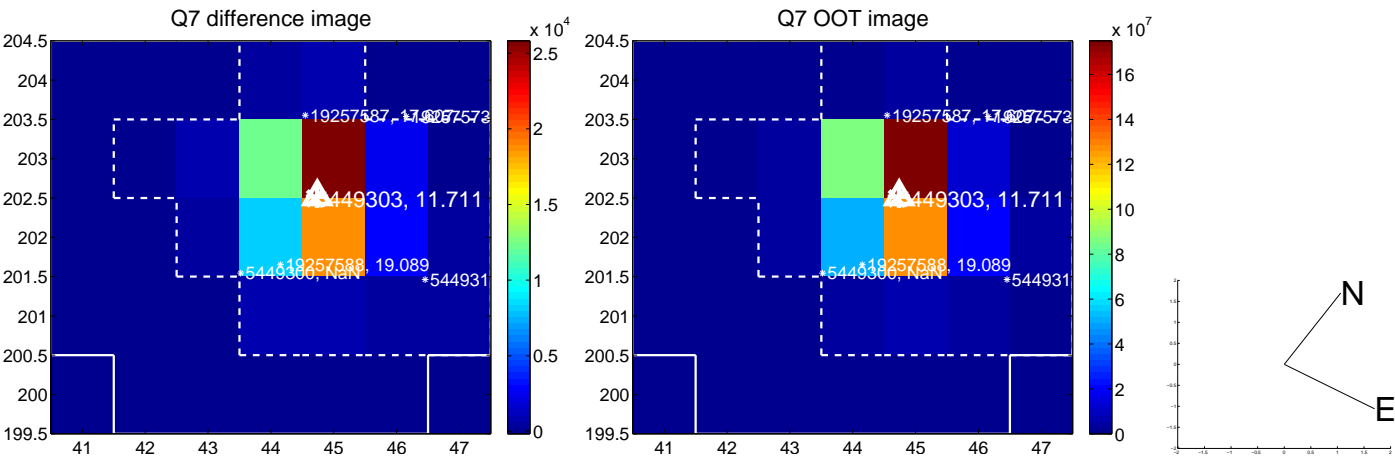
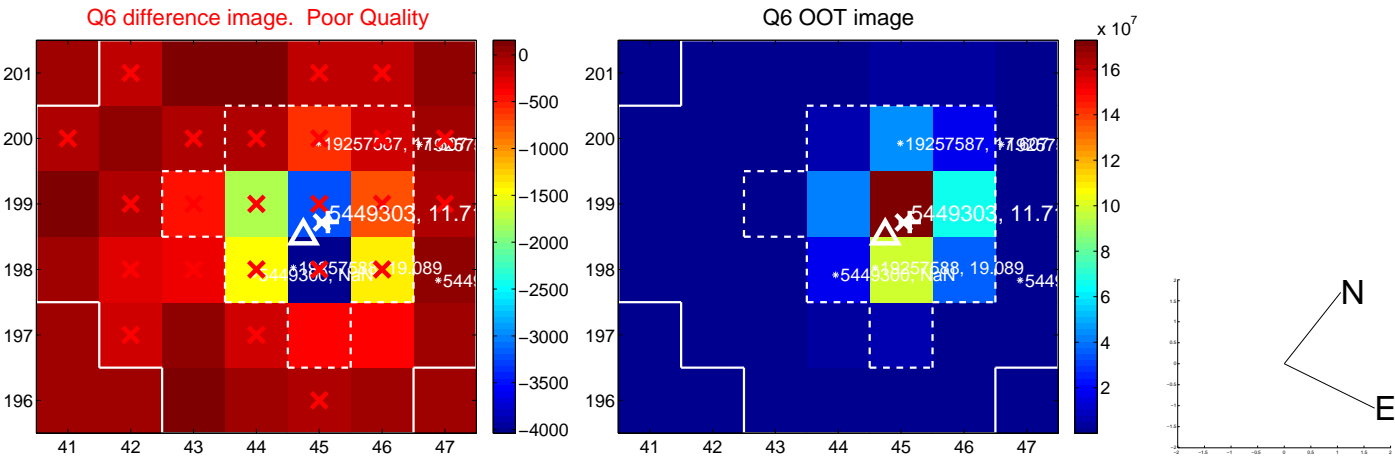
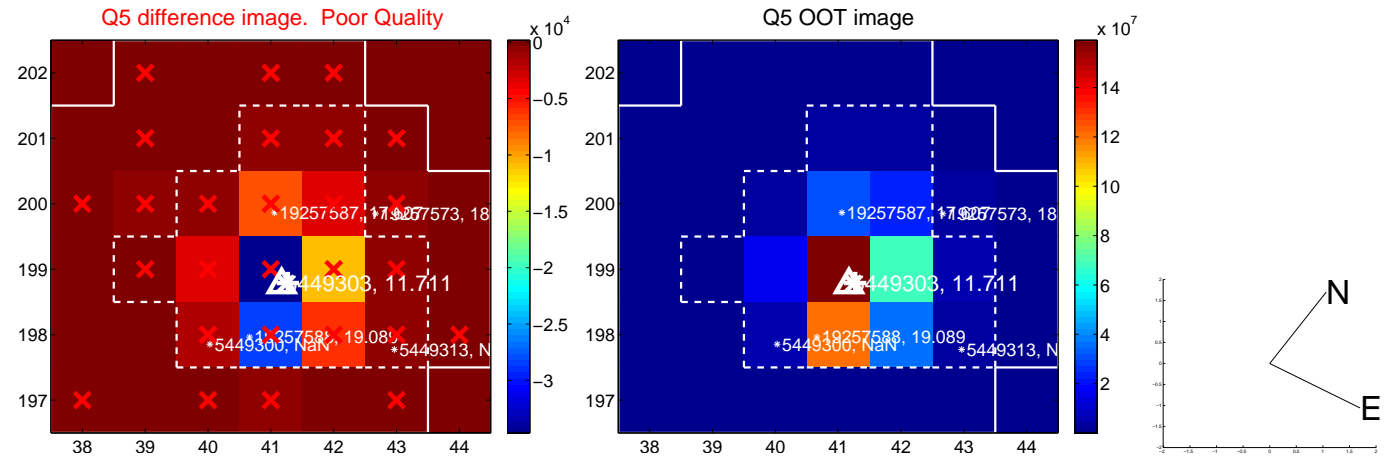


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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

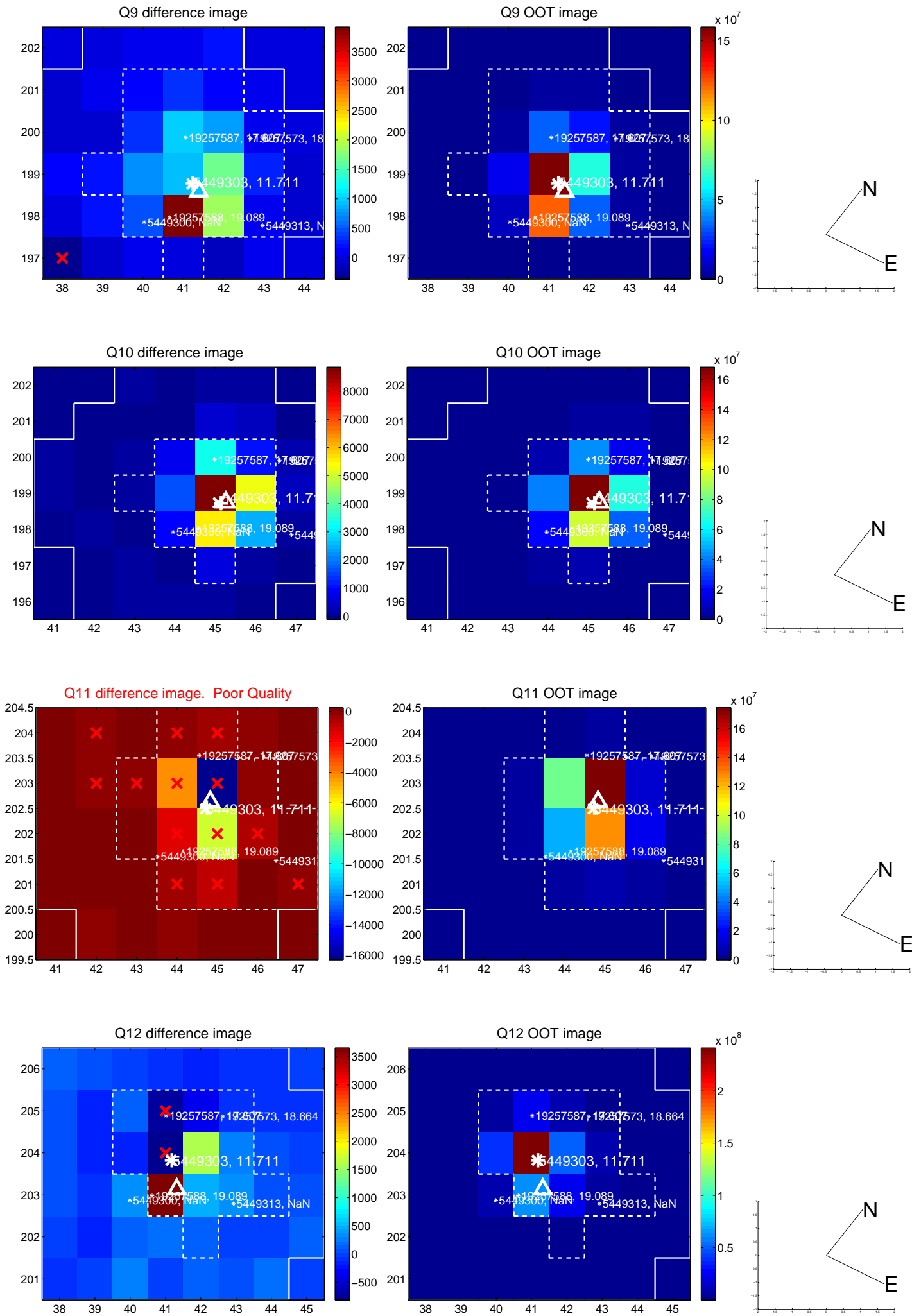


white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

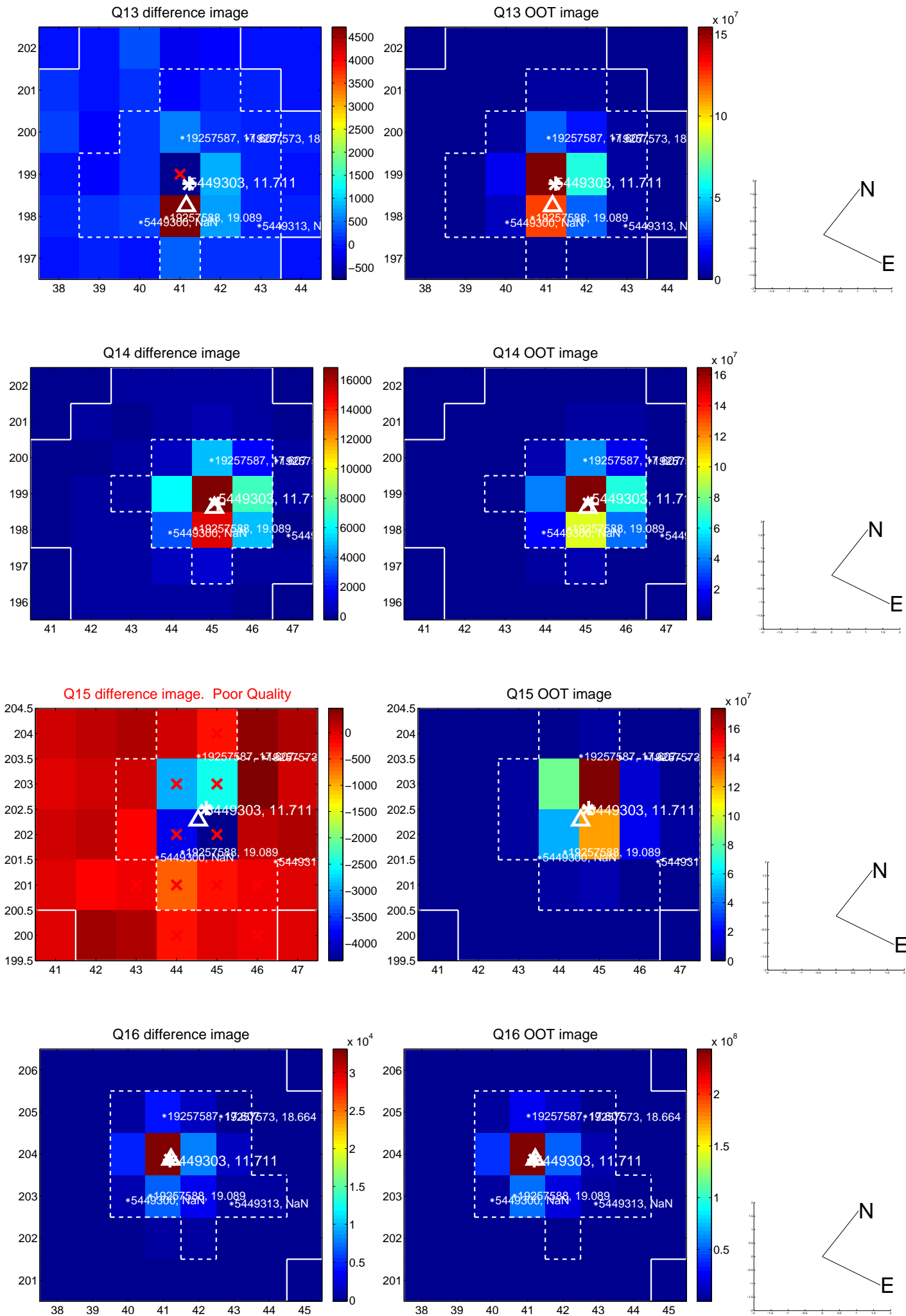




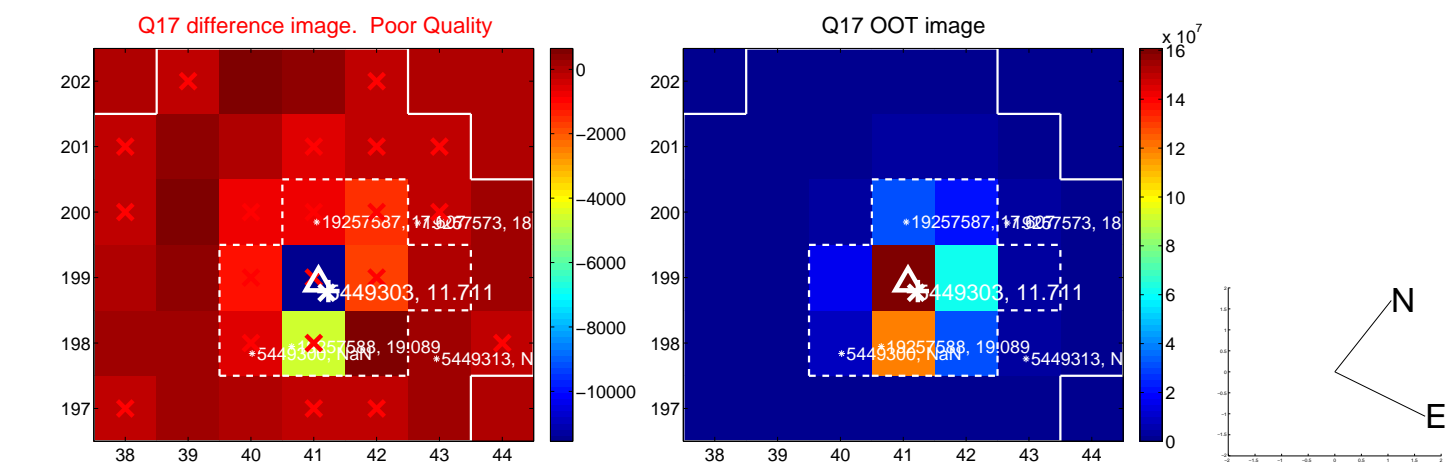
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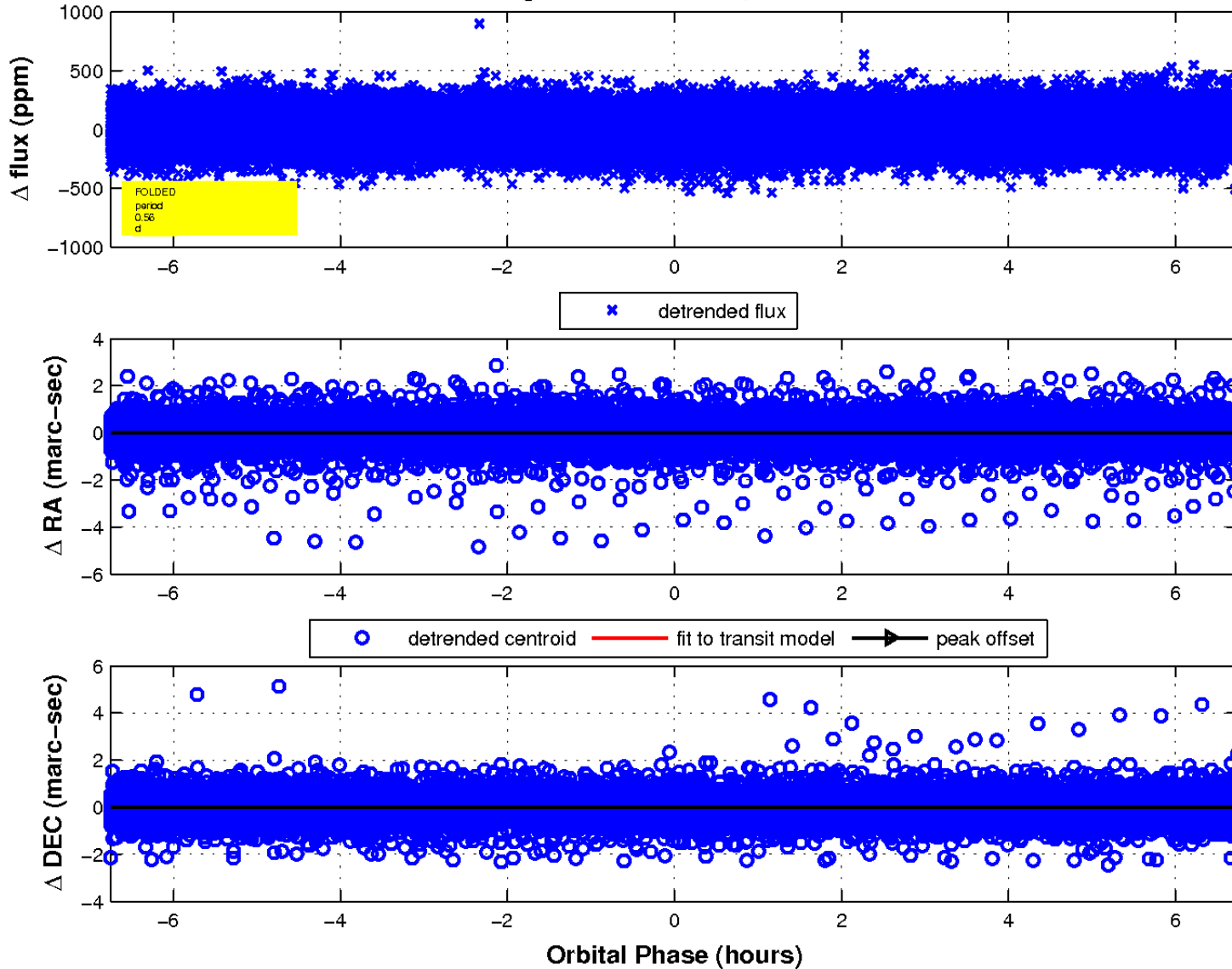
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white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



fluxWeightedCentroids, Planet 1 of 1



UKIRT Image

Declination

