

# KIC 006871350

## 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) | $R_p$ ( $R_{\oplus}$ ) | $S_p$ ( $S_{\oplus}$ ) |
|--------------|----------|------|---------------|--------------|-------------|------------------|-----|------|-----------------------------|-----------------|------------------------|------------------------|
| 006871350-01 | OBS      | No   | 0.783203      | 132.099918   | 38.7        | 1.787            | 9.2 | 12.4 | 2.31                        | 7549            | 1.67                   | 38933.19               |

## Robovetter Results

| TCE          | Run Type | Disp | Score | N | S | C | E | Comments                                      |
|--------------|----------|------|-------|---|---|---|---|---|
| 006871350-01 | OBS      | FP   | 0.00  | 1 | 0 | 0 | 0 | LPP_DV—LPP_ALT—MOD_NONUNIQ_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.

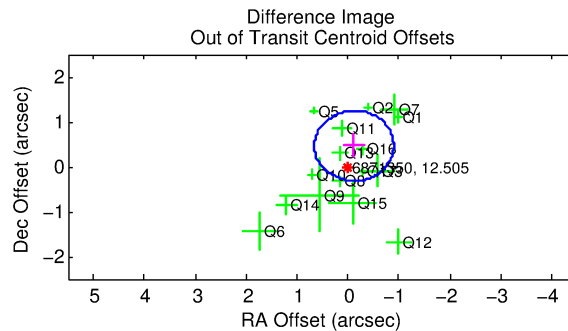
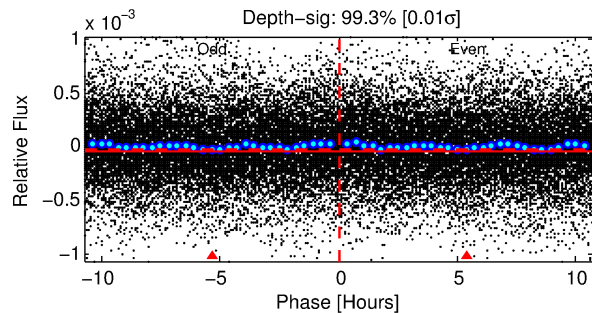
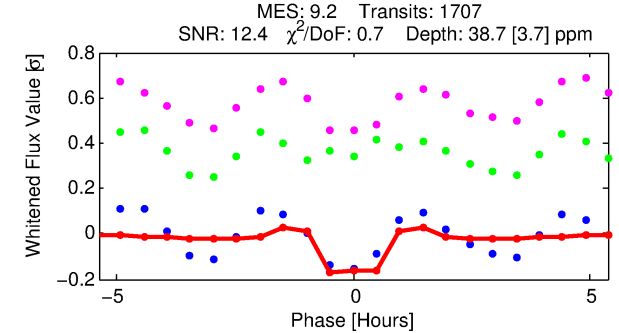
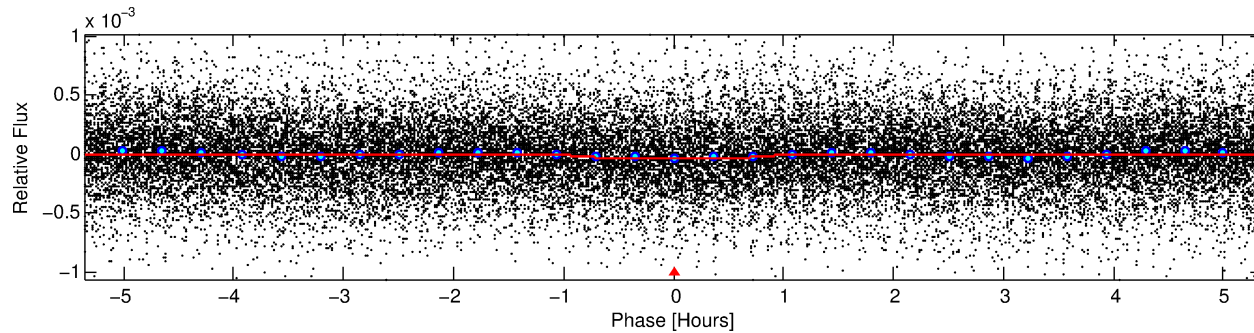
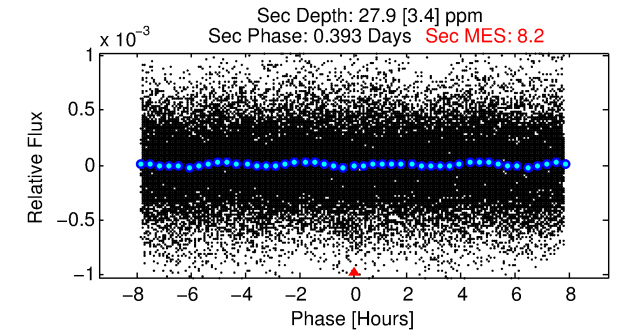
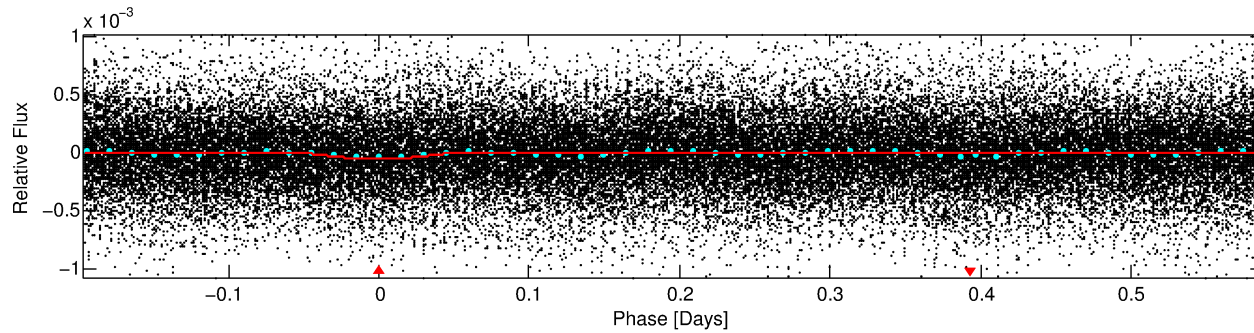
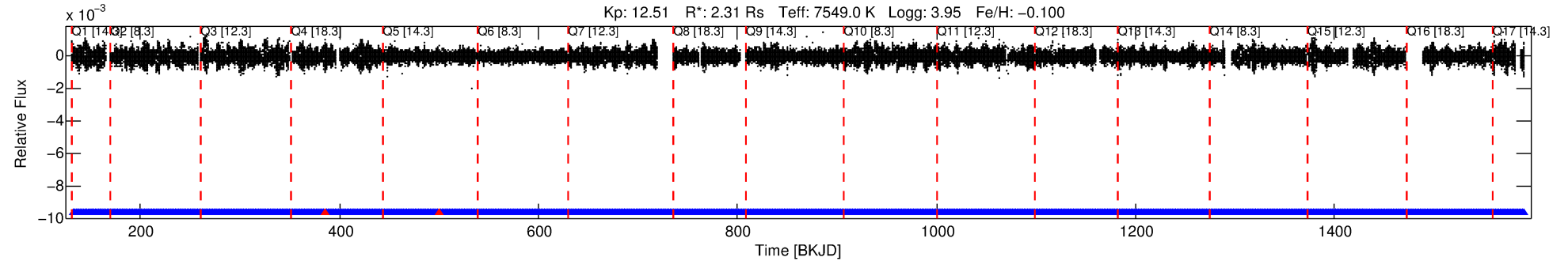
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 006871350-01

No Significant Match Found

# DV One-Page Summary

KIC: 6871350 Candidate: 1 of 1 Period: 0.783 d



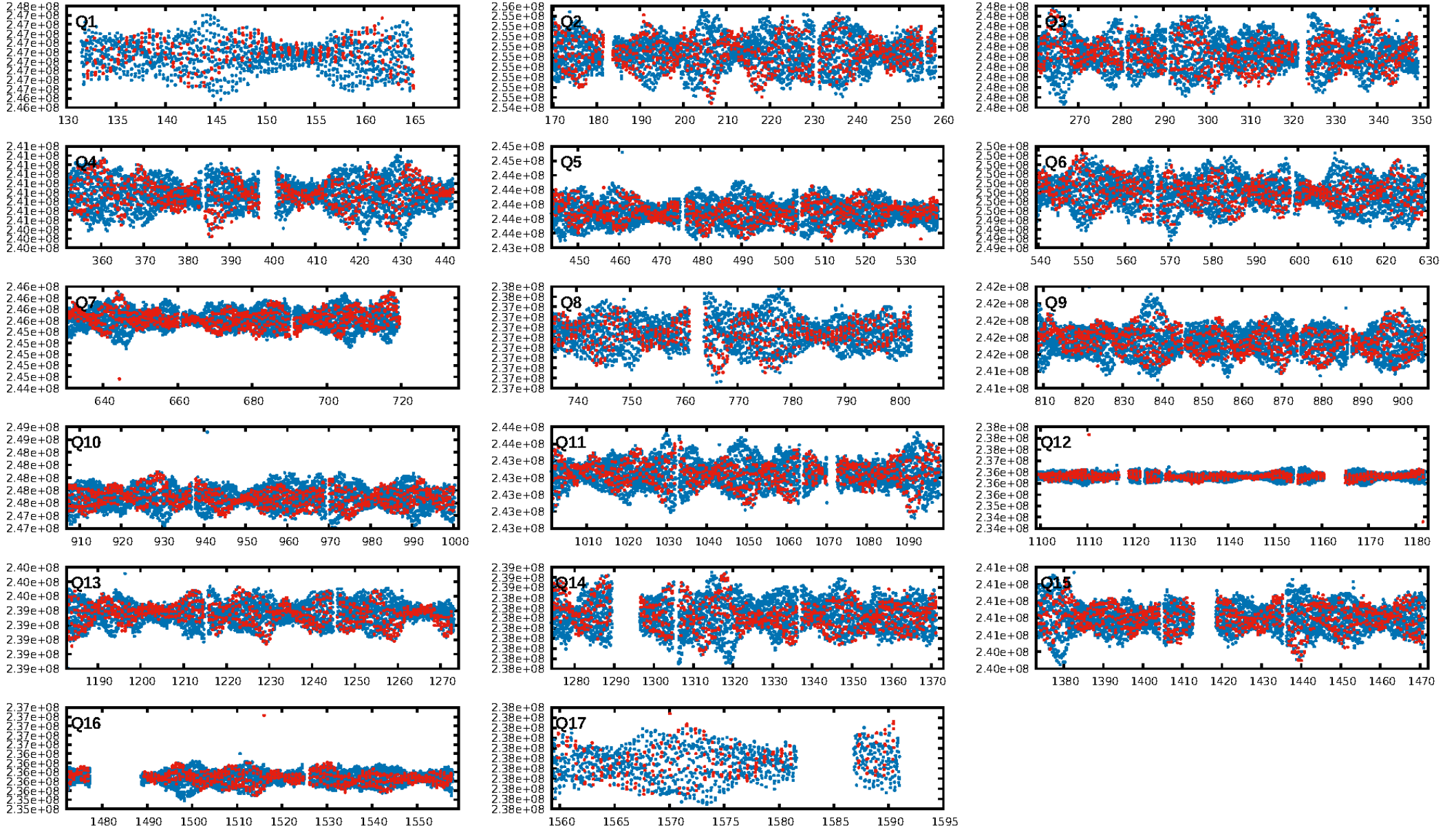
## DV Fit Results:

Period = 0.78320 [0.00001] d  
Epoch = 132.0999 [0.0013] BKJD  
Rp/R\* = 0.0066 [0.0013]  
a/R\* = 1.78 [1.52]  
b = 0.90 [0.27]  
Seff = 38933.19 [17503.58]  
Teq = 3582 [403] K  
Rp = 1.67 [0.63] Re  
a = 0.0200 [0.0056] AU  
Ag = 2.21 [1.30] [0.93σ]  
**Teffp = 6751 [753] K [3.71σ]**

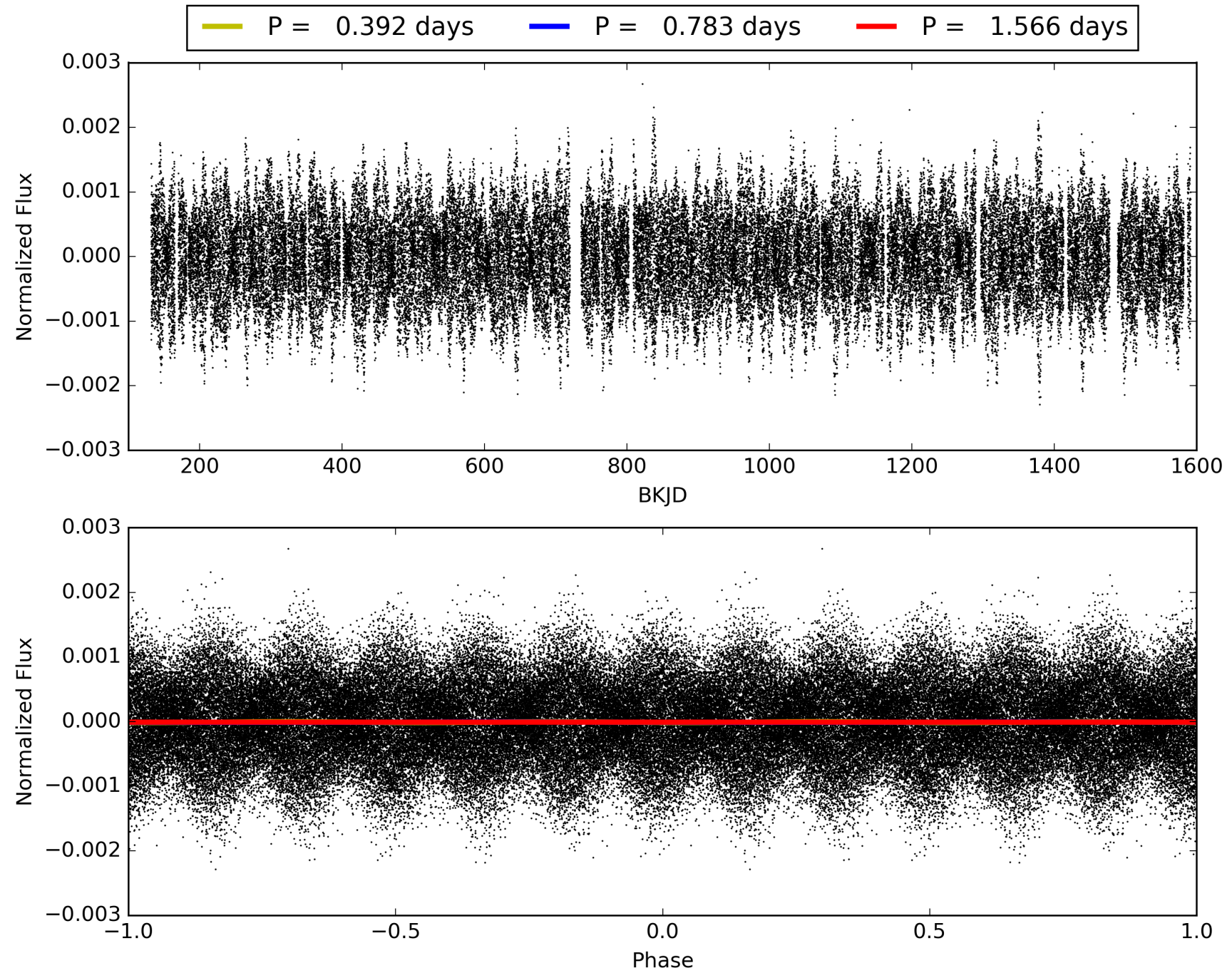
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: N/A  
ModelChiSquareGof-sig: N/A  
Bootstrap-pfa: 1.23e-20  
RollingBand-fgt: 1.00 [1629/1631]  
GhostDiagnostic-chr: -7.296  
Centroid-sig: 18.1%  
Centroid-so: 0.379 arcsec [1.03σ]  
OotOffset-rm: 0.478 arcsec [1.84σ]  
KicOffset-rm: 0.544 arcsec [2.05σ]  
OotOffset-st: 4/4/3/5 [16]  
KicOffset-st: 4/4/3/5 [16]  
DiffImageQuality-fgm: 0.62 [10/16]  
DiffImageOverlap-fno: 1.00 [17/17]

# TCE 006871350-01, PDC Light Curves



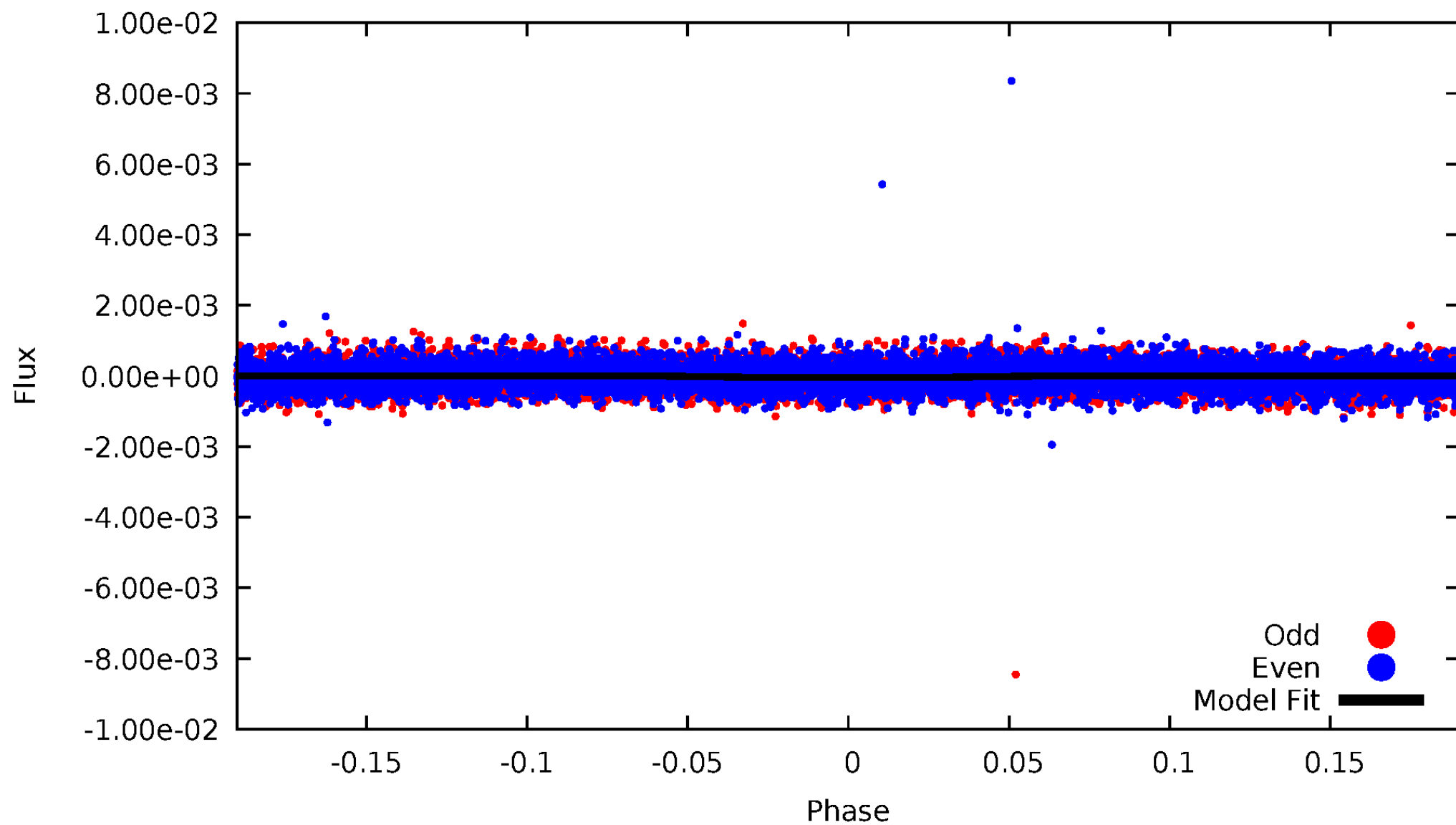
# TCE 006871350-01





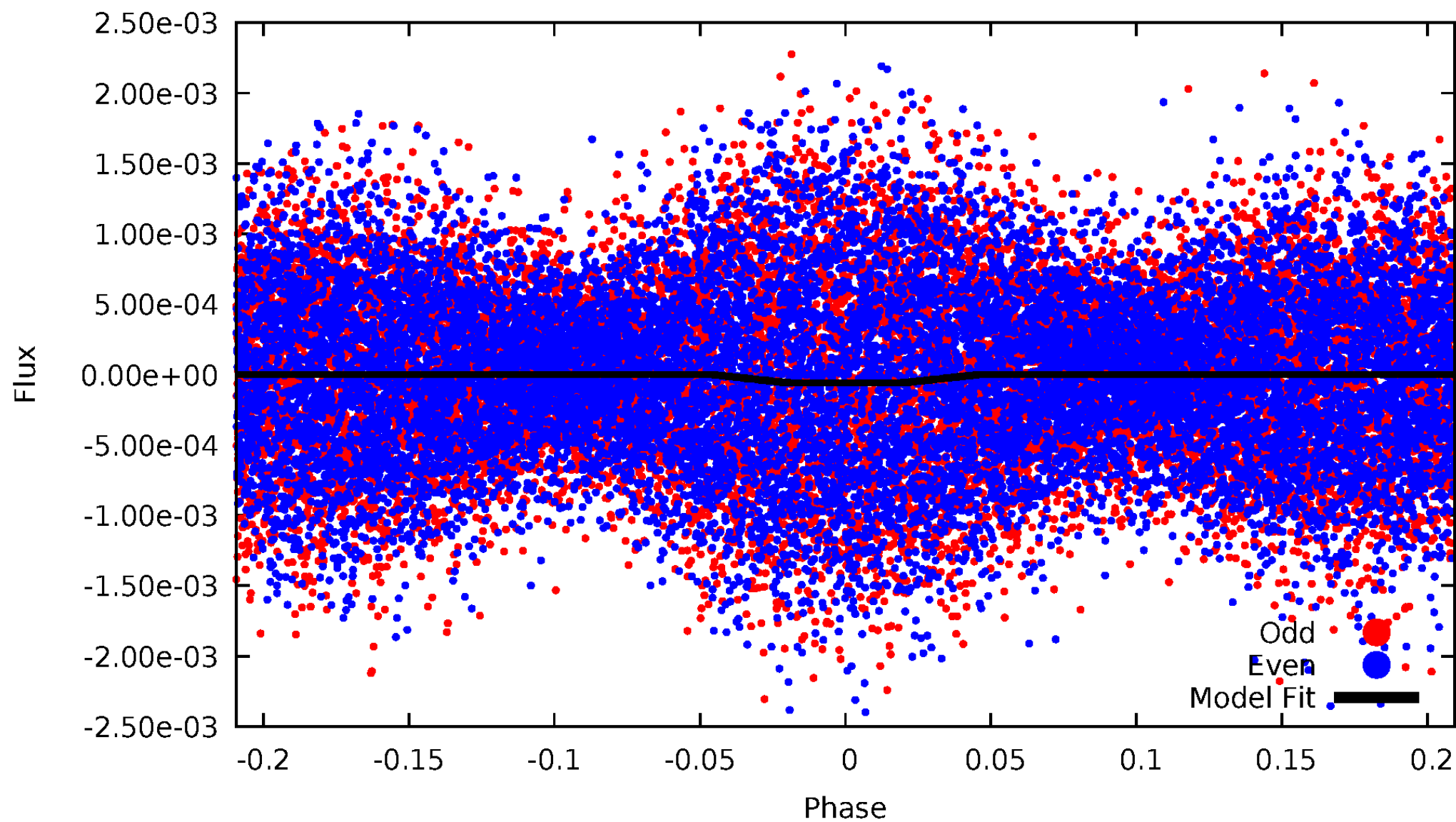
# DV Odd/Even

TCE 006871350-01

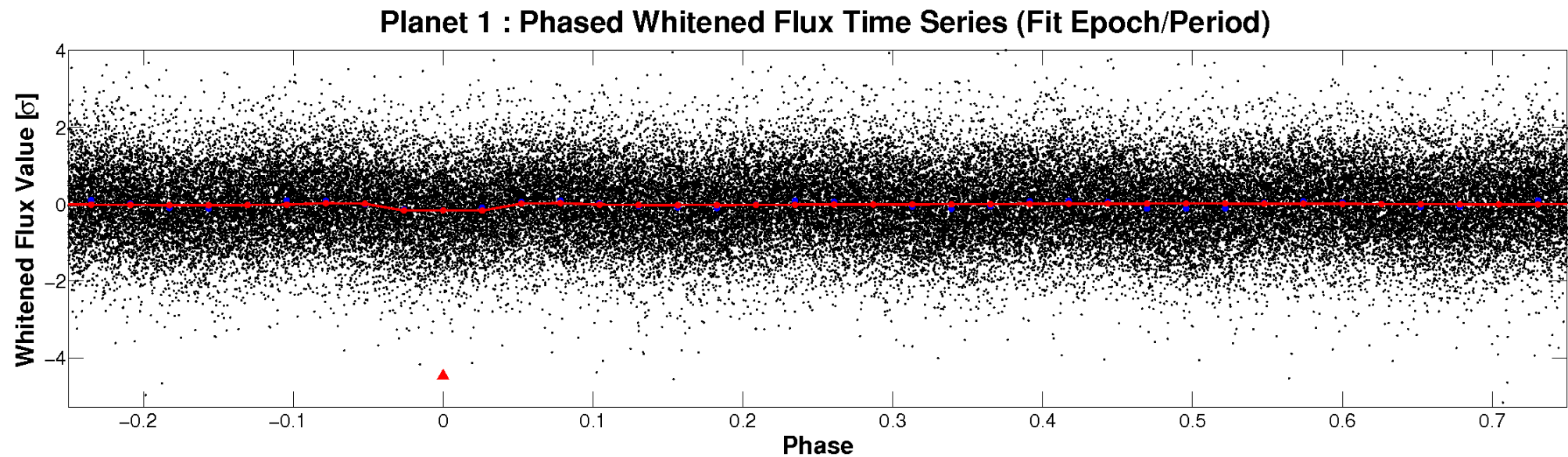
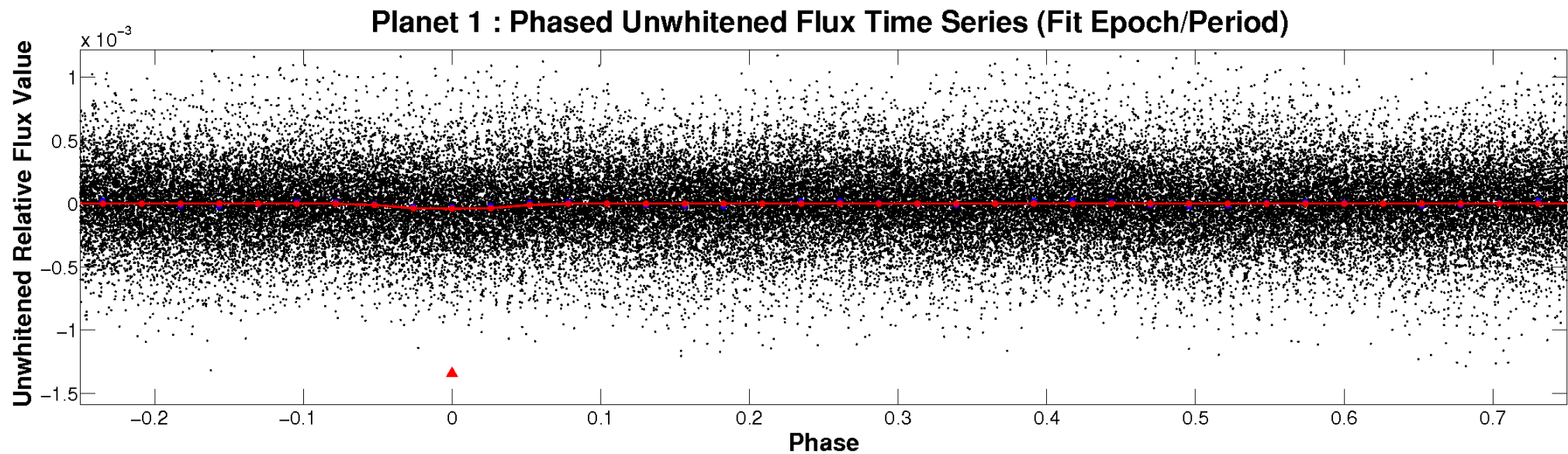


# ALT Odd/Even

TCE 006871350-01

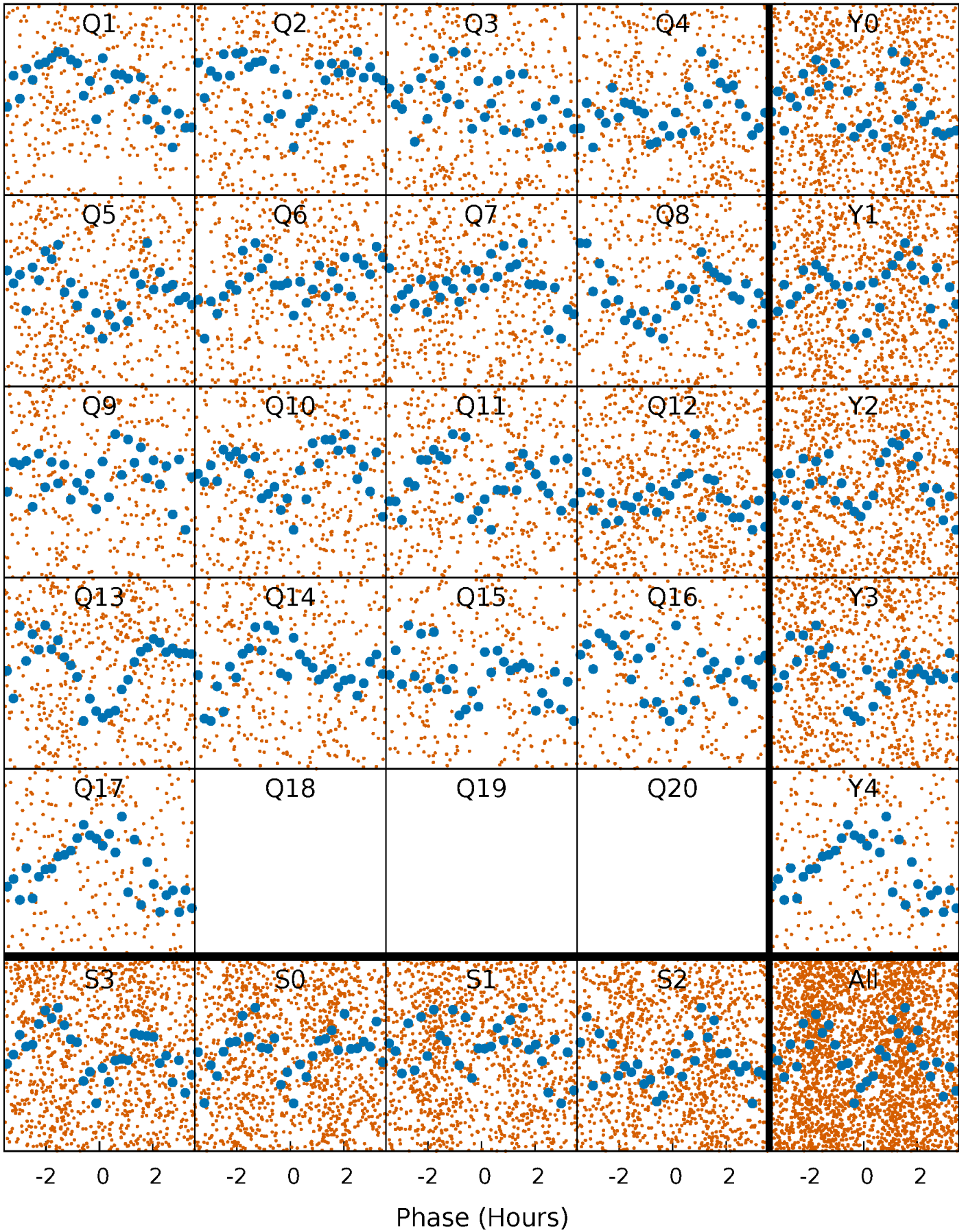


# Non-Whitened Vs. Whitened Light Curve



# PDC Quarter-Phased Transit Curves

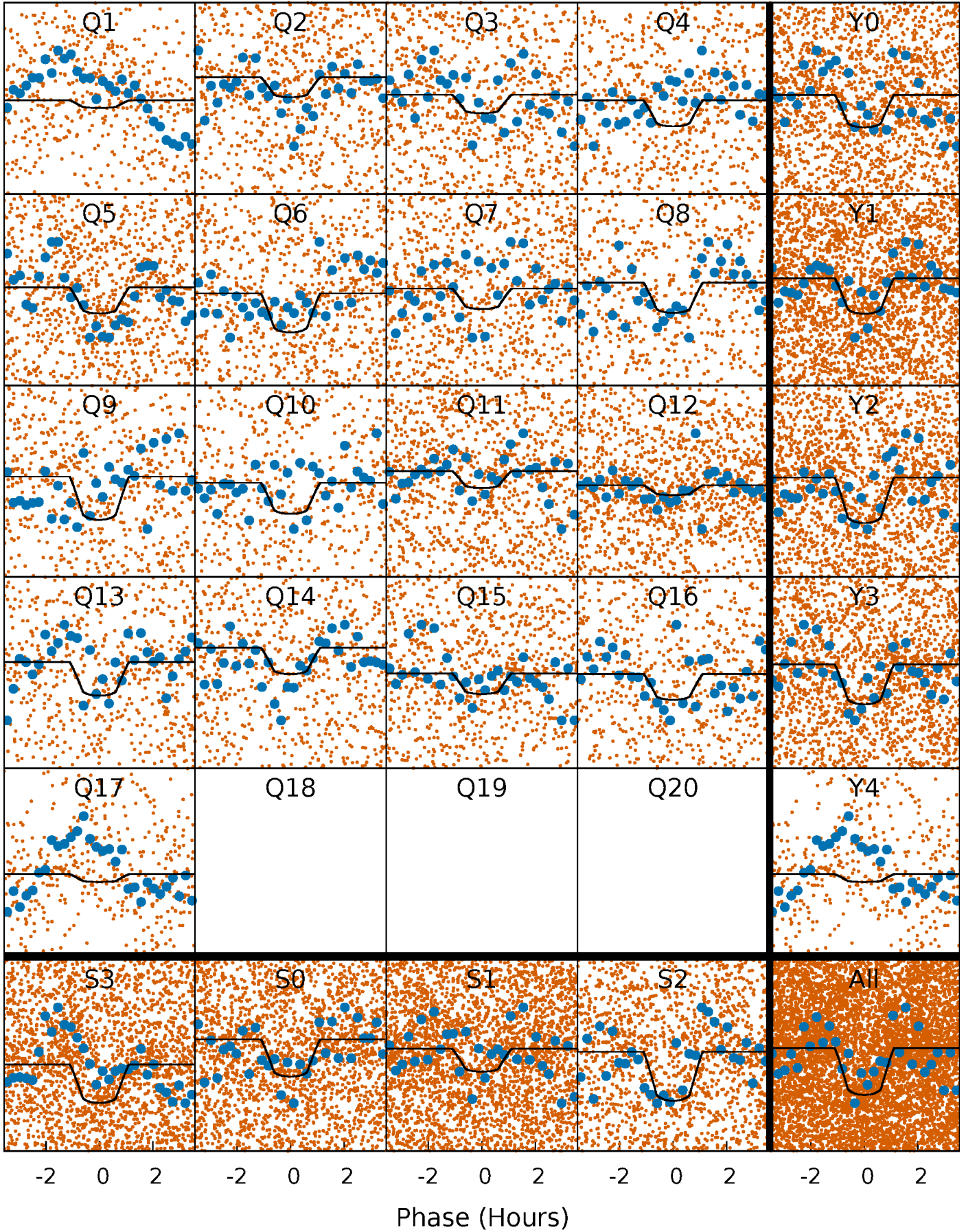
TCE 006871350-01   P= 0.783203 Days    $T_0=132.099918$  (BKJD)





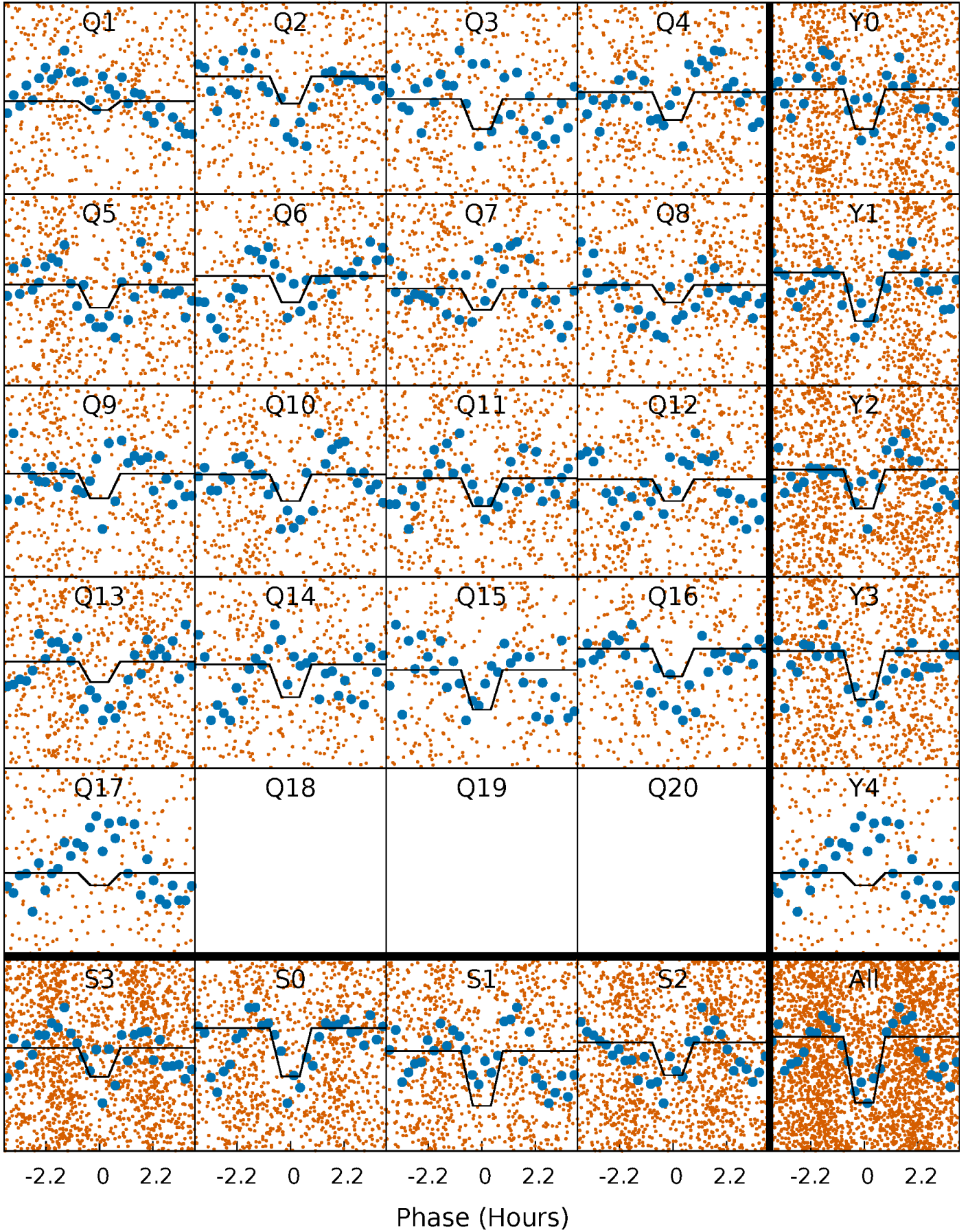
# DV Quarter-Phased Transit Curves

TCE 006871350-01 P= 0.783203 Days  $T_0=132.099918$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

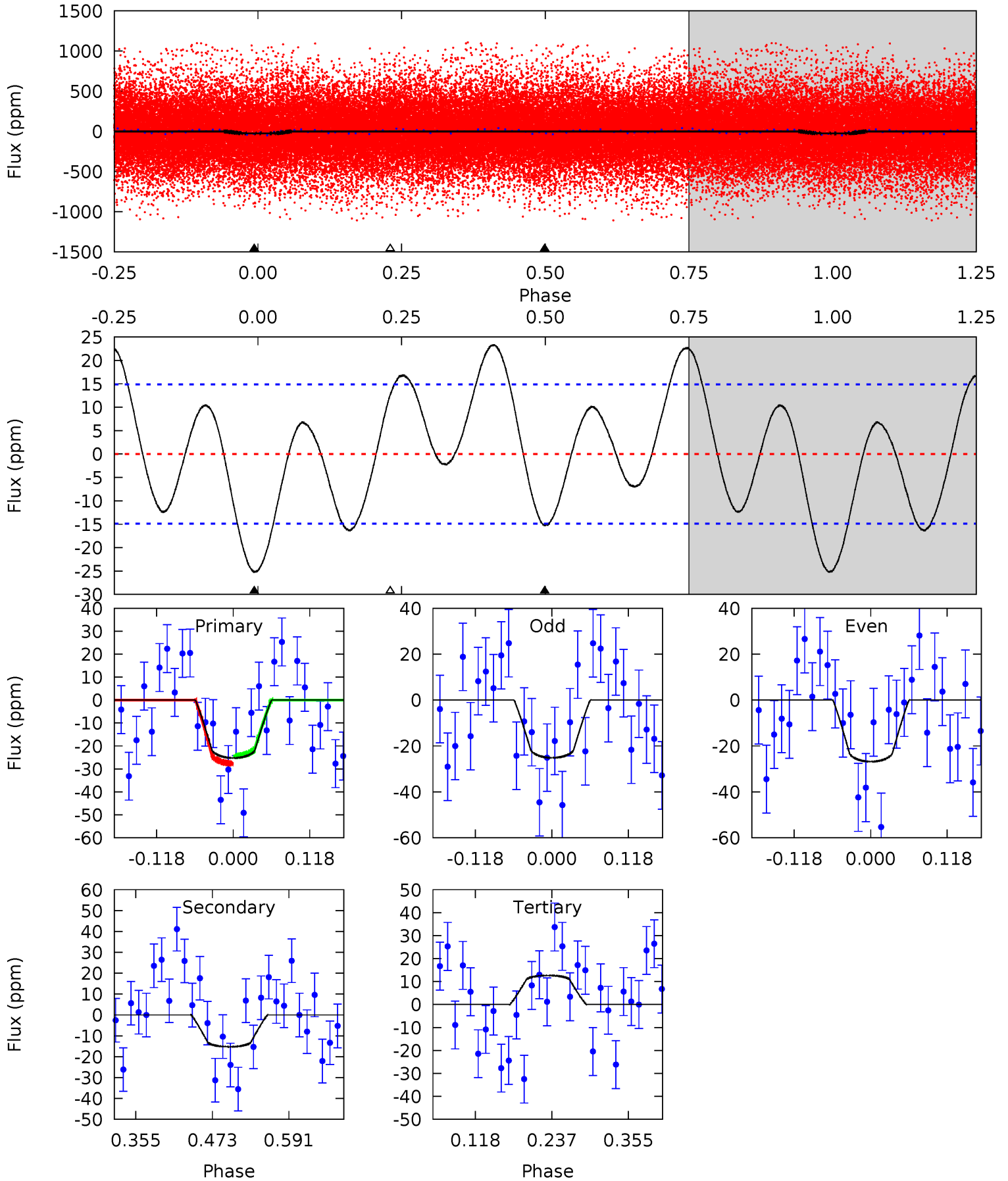
TCE 006871350-01 P= 0.783198 Days  $T_0=132.099323$  (BKJD)



# DV Model-Shift Uniqueness Test

006871350-01, P = 0.783203 Days, E = 131.316715 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  |
|------|------|-------|-----|-----------------|-----------------|------------------|---------|---------|---------|---------|---------|------|-------|------|
| 7.69 | 4.65 | -3.86 | 0   | 4.53            | 1.56            | 3.28             | 11.5    | 7.69    | 8.50    | 4.65    | 0.25    | 0.29 | 0.48  | 0.50 |

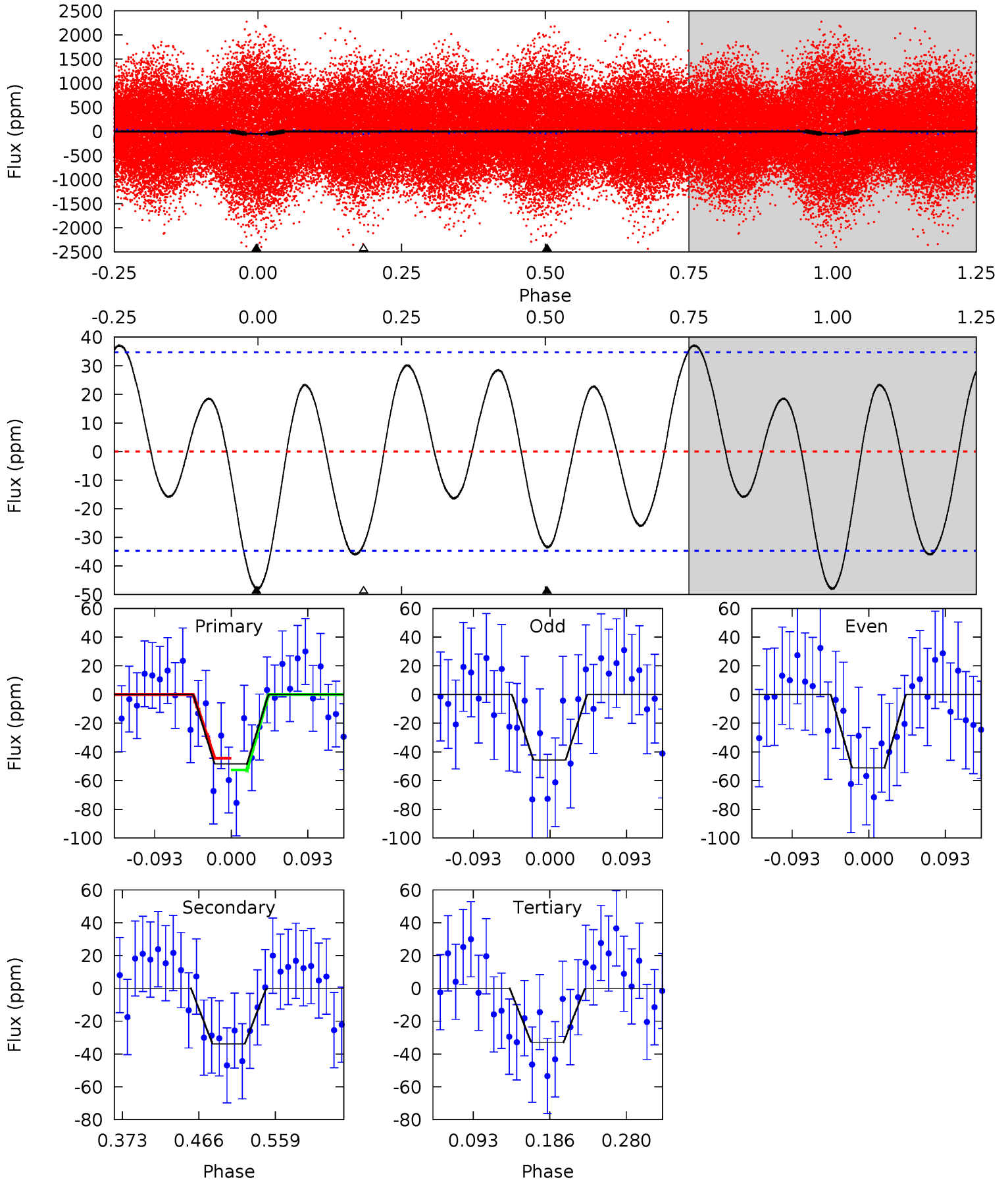




# Alt Model-Shift Uniqueness Test

006871350-01, P = 0.783198 Days, E = 131.316125 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  |
|------|------|------|-----|-----------------|-----------------|------------------|---------|---------|---------|---------|---------|------|-------|------|
| 6.38 | 4.46 | 4.33 | 0   | 4.58            | 1.68            | 2.60             | 2.04    | 6.38    | 0.13    | 4.46    | 0.37    | 0.64 | 0.44  | 0.53 |





### Stellar Parameters For KIC 006871350

|        | $T_{\text{eff}}(K)$  | $\log(g)$                 | [Fe/H]                     | $R (R_{\odot})$           | $M(M_{\odot})$            | $\rho_{\star} (\text{g}\cdot\text{cm}^{-3})$ |
|--------|----------------------|---------------------------|----------------------------|---------------------------|---------------------------|--|
|        | $7549^{+235}_{-314}$ | $3.950^{+0.234}_{-0.136}$ | $-0.100^{+0.200}_{-0.350}$ | $2.315^{+0.493}_{-0.740}$ | $1.741^{+0.185}_{-0.344}$ | $0.198^{+0.322}_{-0.081}$                    |
|        | +3%/-4%              | +6%/-3%                   | +200%/-350%                | +21%/-32%                 | +11%/-20%                 | +163%/-41%                                   |
| Source | KIC0                 | 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 006871350-01 / KOI

| Detrend | Depth (ppm) | $R_p (R_{\oplus})$     | $T_{\text{max}} (K)$ | $T_{\text{obs}} (K)$ | $A_{\text{obs}}$          |
|---------|-------------|------------------------|----------------------|----------------------|---------------------------|
| DV      | $-15 \pm 3$ | $1.60^{+0.44}_{-0.35}$ | $4942^{+366}_{-405}$ | $5314^{+833}_{-664}$ | $1.248^{+0.908}_{-0.484}$ |
| Alt.    | $-34 \pm 8$ | $1.87^{+0.46}_{-0.41}$ | $4968^{+342}_{-426}$ | $6248^{+882}_{-786}$ | $2.098^{+1.534}_{-0.796}$ |

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

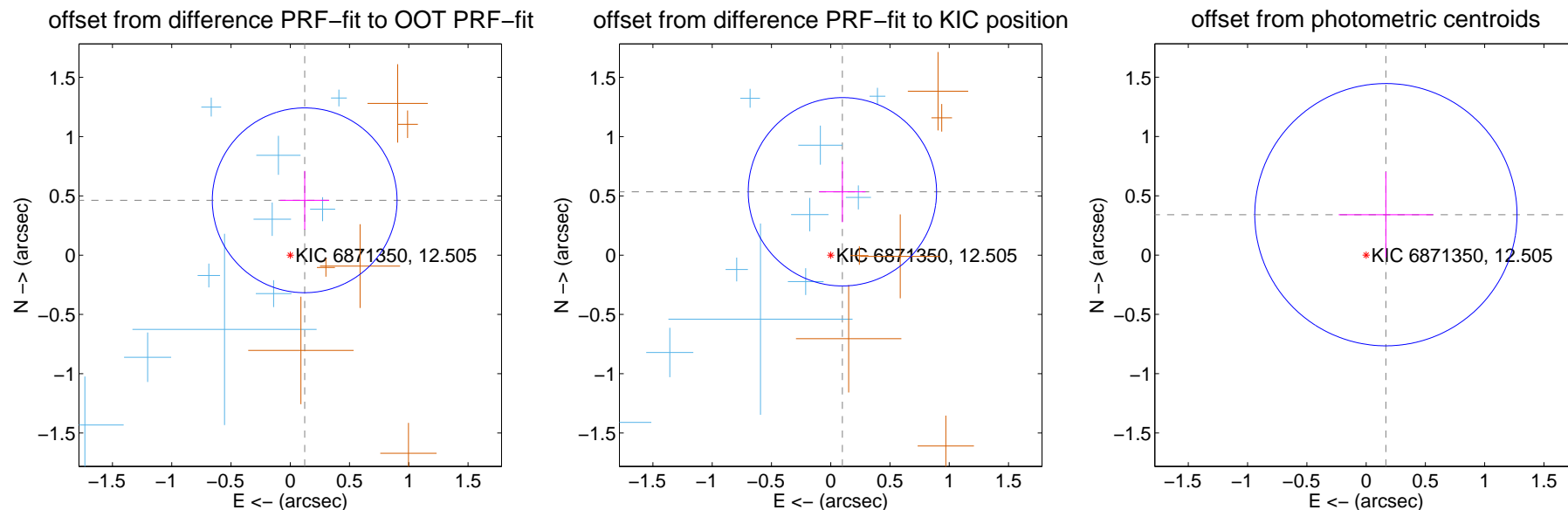
## DV Centroid Data

Supplemental centroid analysis for 006871350-01. Kepler magnitude: 12.51. Transit SNR 12.36

There are 10 quarters with good PRF difference image offsets

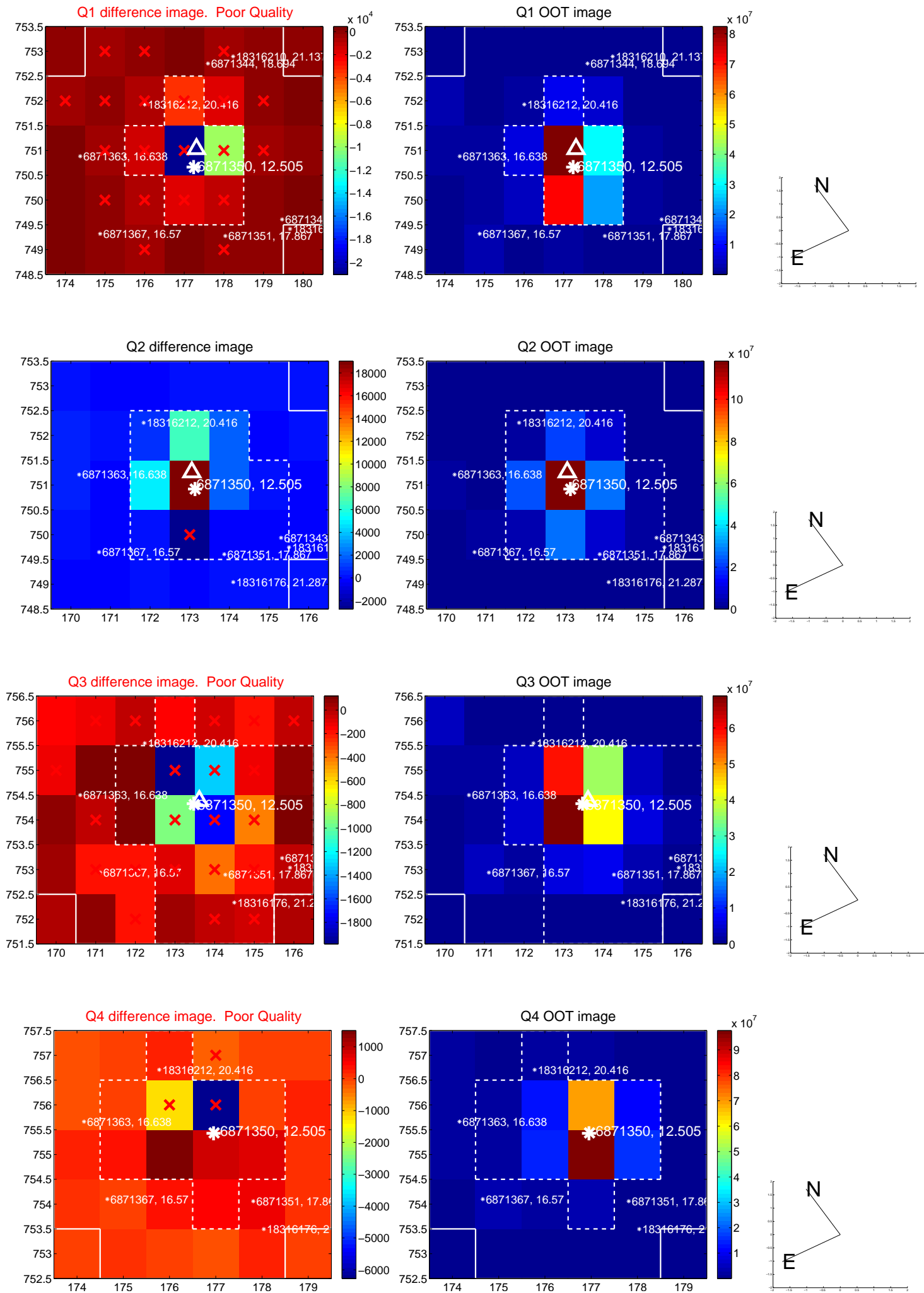
The direct PRF centroid is offset from the target star catalog position by about 0.12 arcsec

|   | Distance in arcsec | Distance / $\sigma$ | $\Delta$ RA        | $\Delta$ Dec      |
|---|--------------------|---------------------|--------------------|-------------------|
| PRF-fit source offset from OOT          | $0.478 \pm 0.260$  | 1.84                | $-0.122 \pm 0.207$ | $0.463 \pm 0.248$ |
| PRF-fit source offset from KIC position | $0.544 \pm 0.265$  | 2.05                | $-0.099 \pm 0.195$ | $0.535 \pm 0.257$ |
| photometric centroid source offset      | $0.38 \pm 0.37$    | 1.03                | $-0.17 \pm 0.40$   | $0.34 \pm 0.36$   |

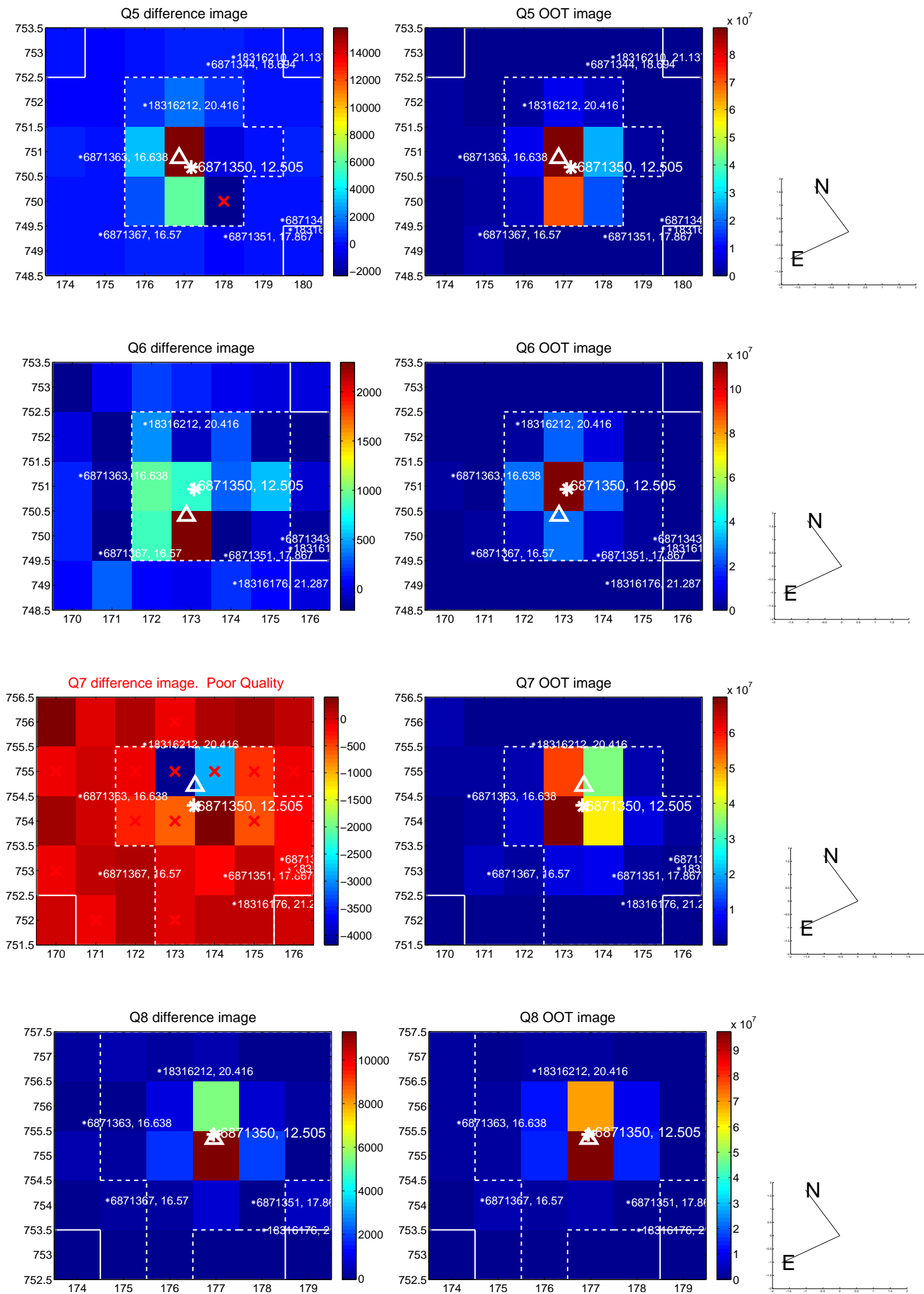


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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

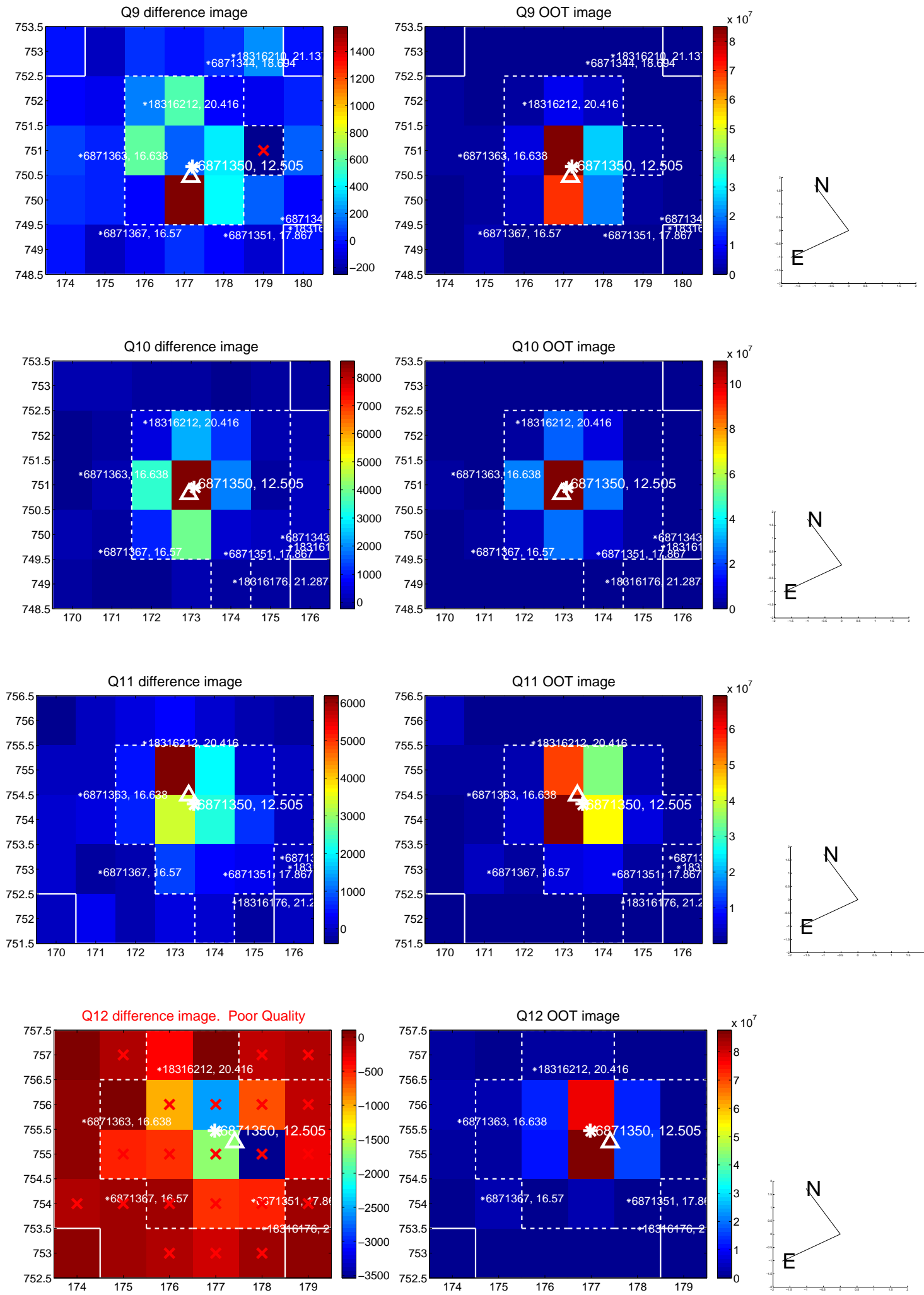


white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

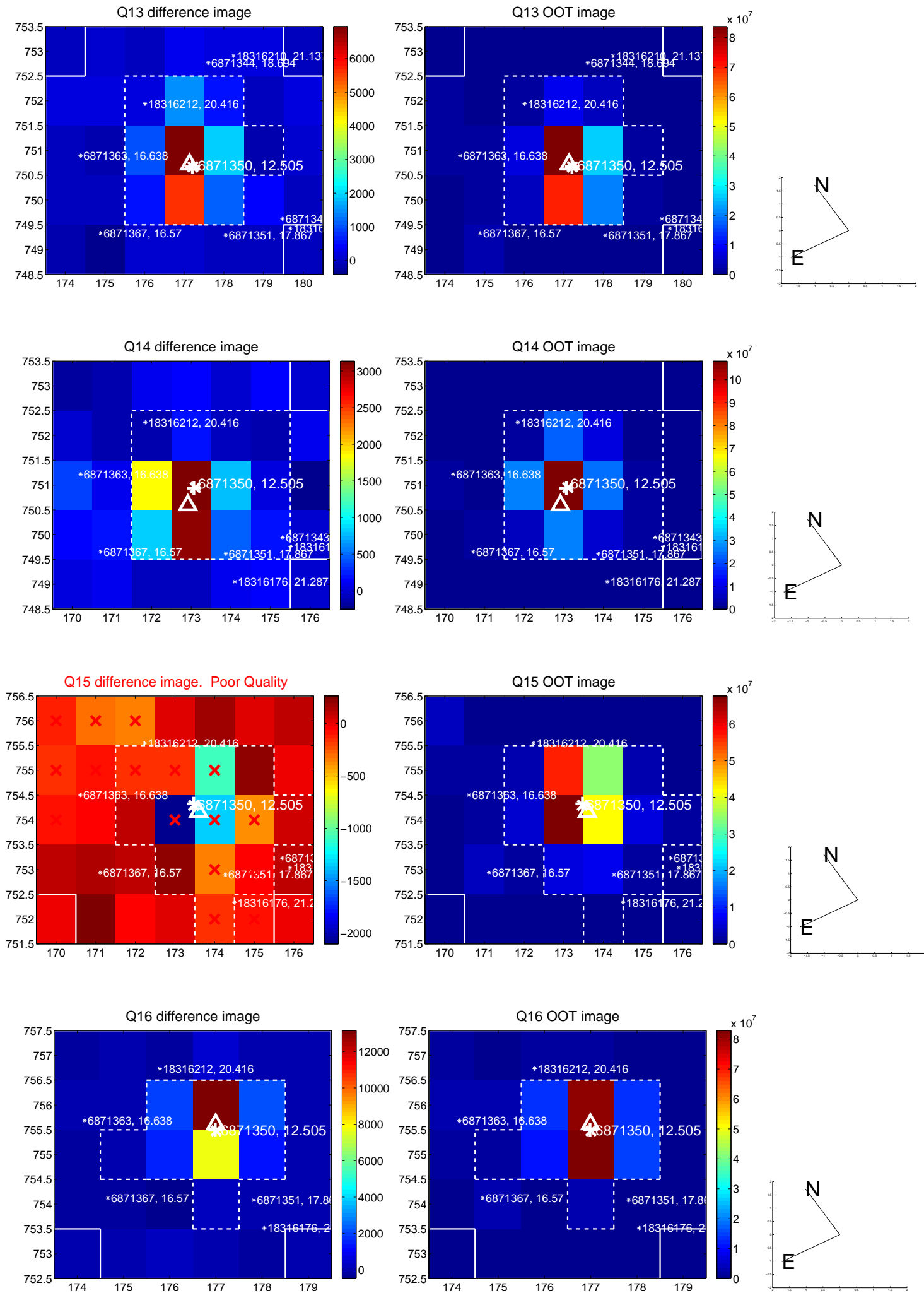




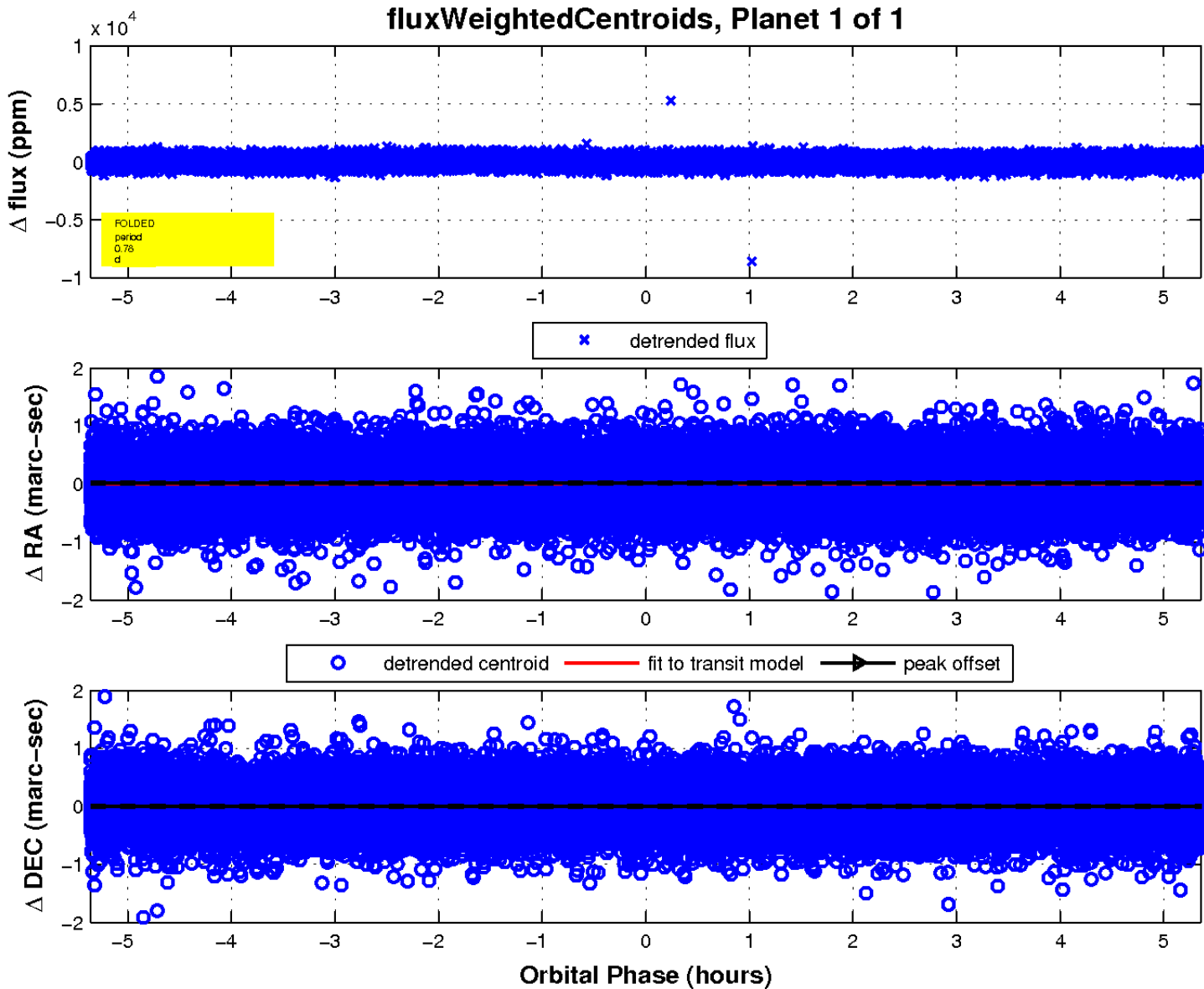
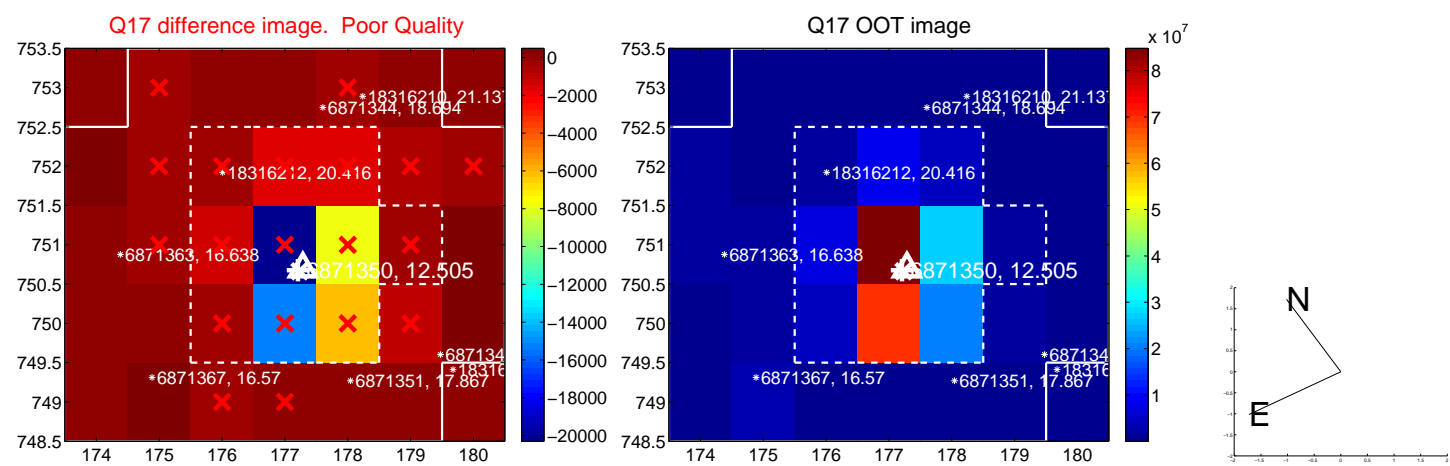
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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



UKIRT Image

Declination

