

KIC 006058544

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}) |
|--------------|----------|------|---------------|--------------|-------------|------------------|------|------|-----------------------------|-----------------|------------------------|------------------------|
| 006058544-01 | OBS | No | 5.300328 | 134.260596 | 28.1 | 26.807 | 10.6 | 11.1 | 0.76 | 5416 | 0.40 | 140.25 |

Robovetter Results

| TCE | Run Type | Disp | Score | N | S | C | E | Comments |
|--------------|----------|------|-------|---|---|---|---|----------|
| 006058544-01 | OBS | FP | 0.00 | 1 | 0 | 0 | 0 | LPP_DV |

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

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

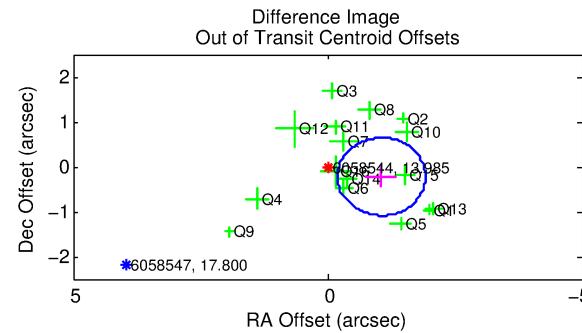
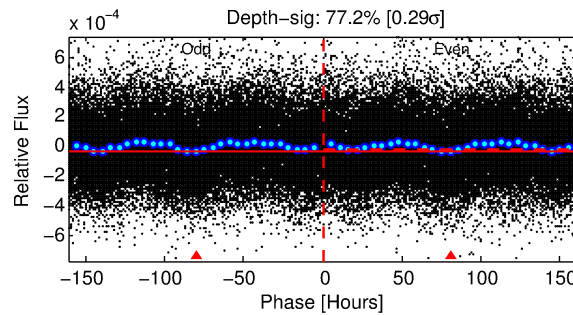
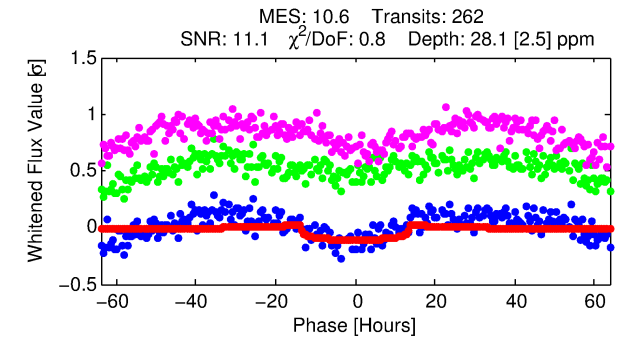
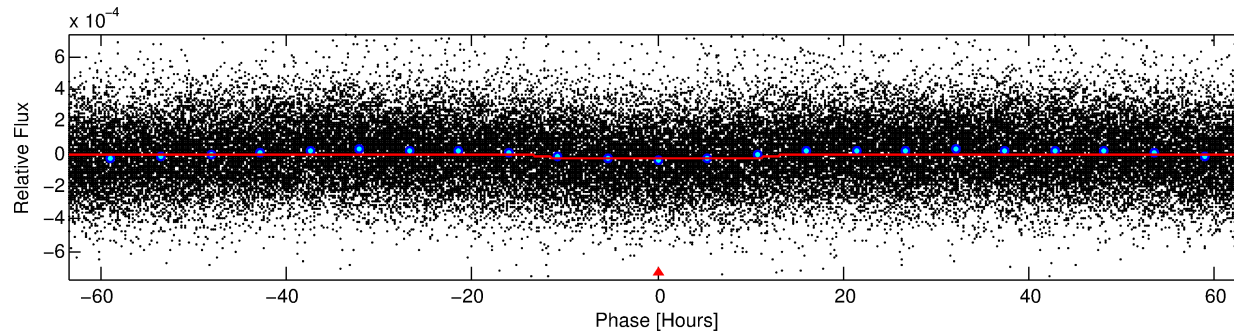
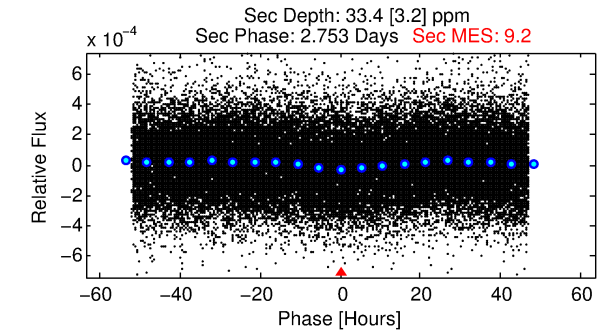
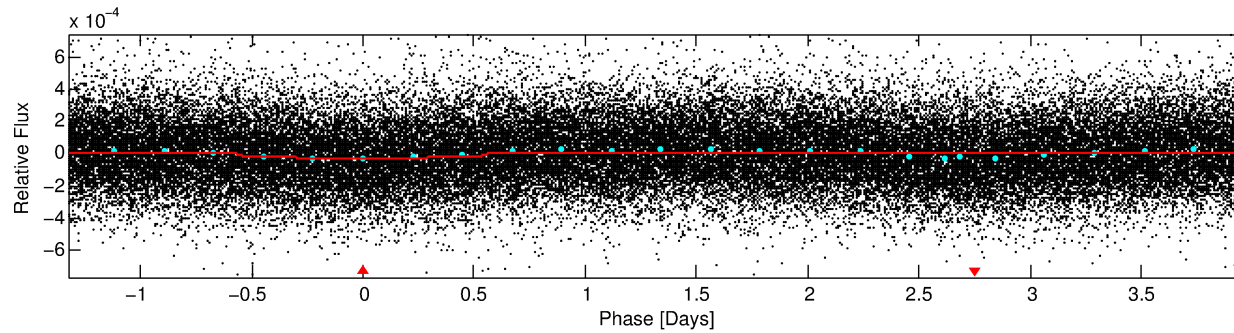
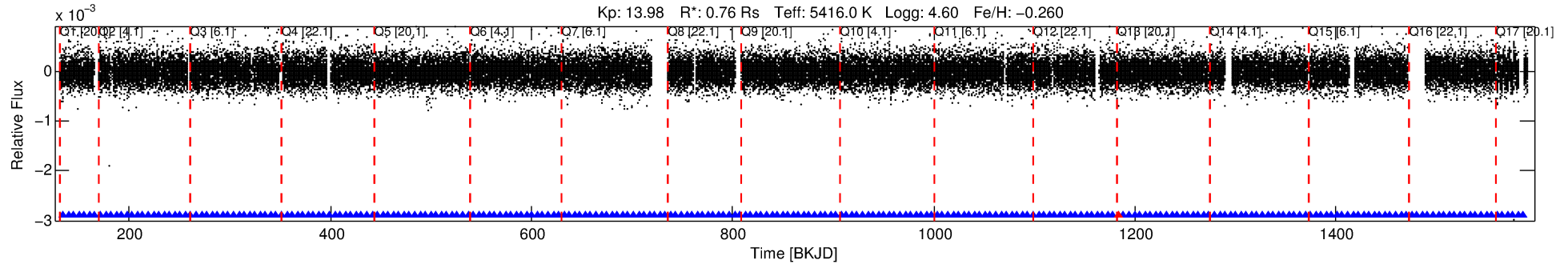
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 006058544-01

No Significant Match Found

DV One-Page Summary

KIC: 6058544 Candidate: 1 of 1 Period: 5.300 d



DV Fit Results:

Period = 5.30033 [0.00014] d
Epoch = 134.2606 [0.0197] BKJD
Rp/R* = 0.0048 [0.0046]
a/R* = 1.62 [3.93]
b = 0.18 [21.56]
Seff = 140.24 [31.34]
Teq = 878 [49] K
Rp = 0.39 [0.38] Re
a = 0.0561 [0.0077] AU
Ag = 369.48 [709.77] [0.52σ]
Teffp = 5948 [2846] K [1.78σ]

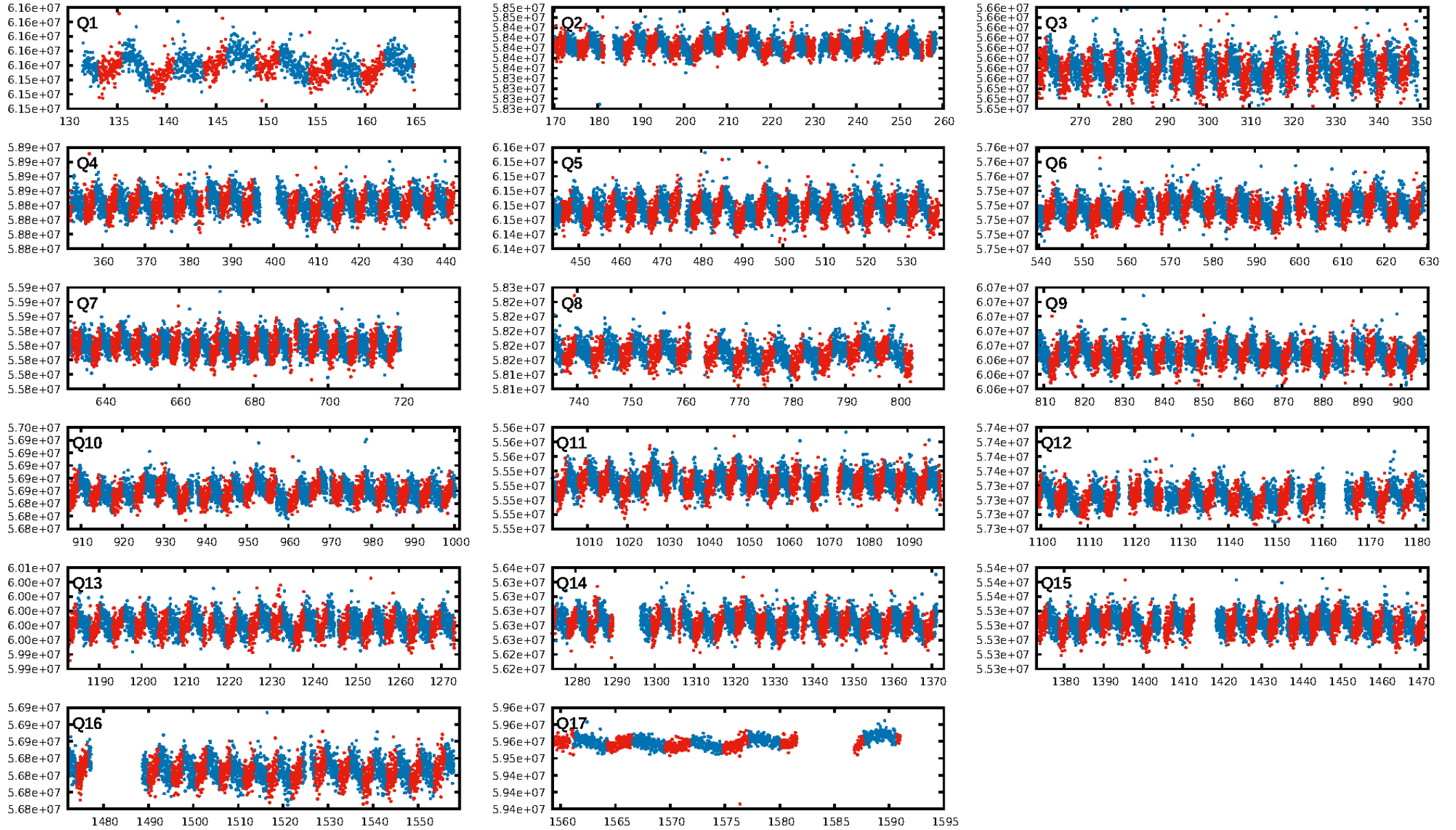
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 6.04e-26
RollingBand-fgt: 1.00 [249/250]
GhostDiagnostic-chr: 3.674
Centroid-sig: 0.3%
Centroid-so: 2.196 arcsec [1.98σ]
OotOffset-rm: 1.082 arcsec [3.75σ]
KicOffset-rm: 0.967 arcsec [3.45σ]
OotOffset-st: 4/4/4/4 [16]
KicOffset-st: 4/4/4/4 [16]
DiffImageQuality-fgm: 0.94 [15/16]
DiffImageOverlap-fno: 1.00 [17/17]

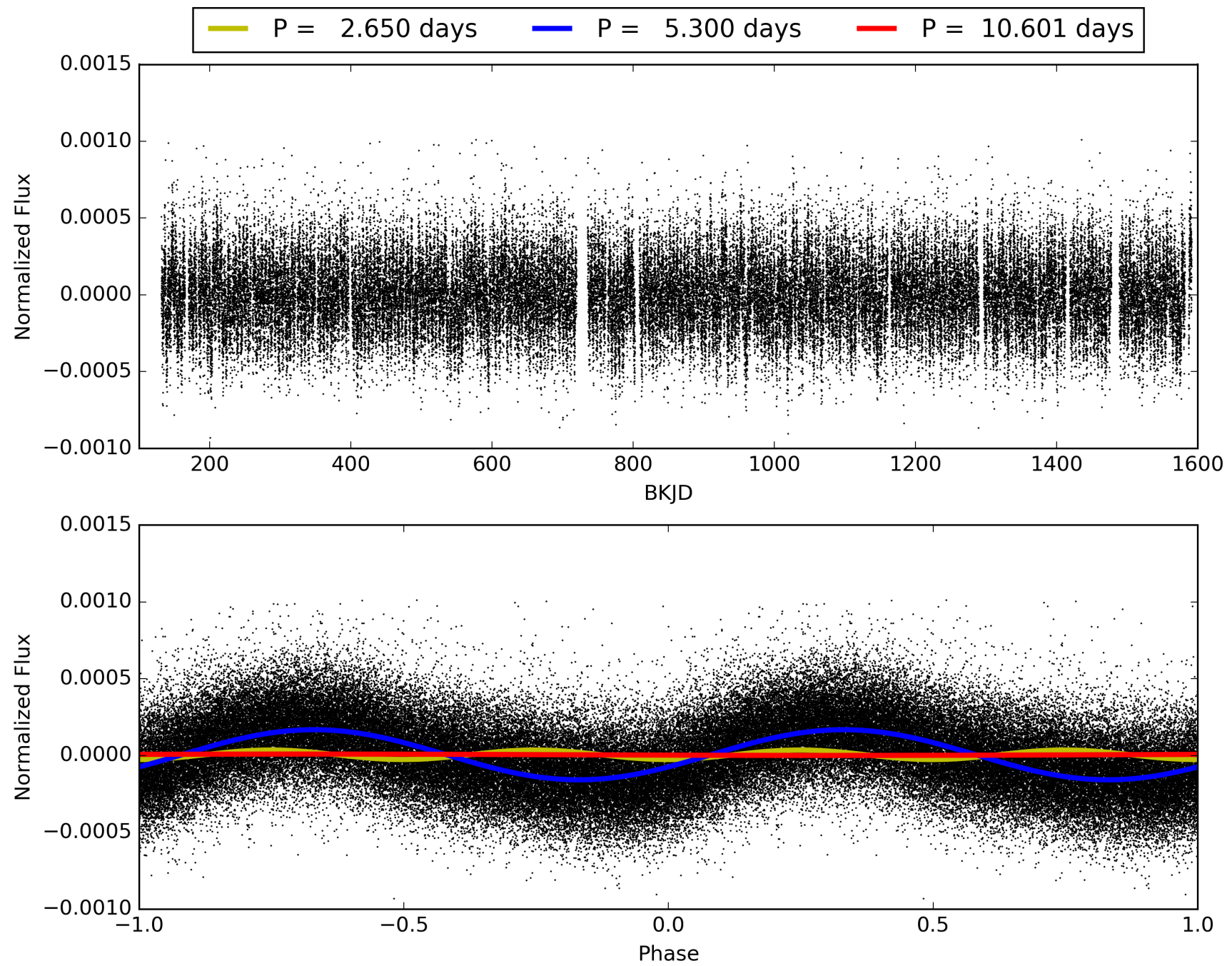
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 11:51:37 Z

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

TCE 006058544-01, PDC Light Curves

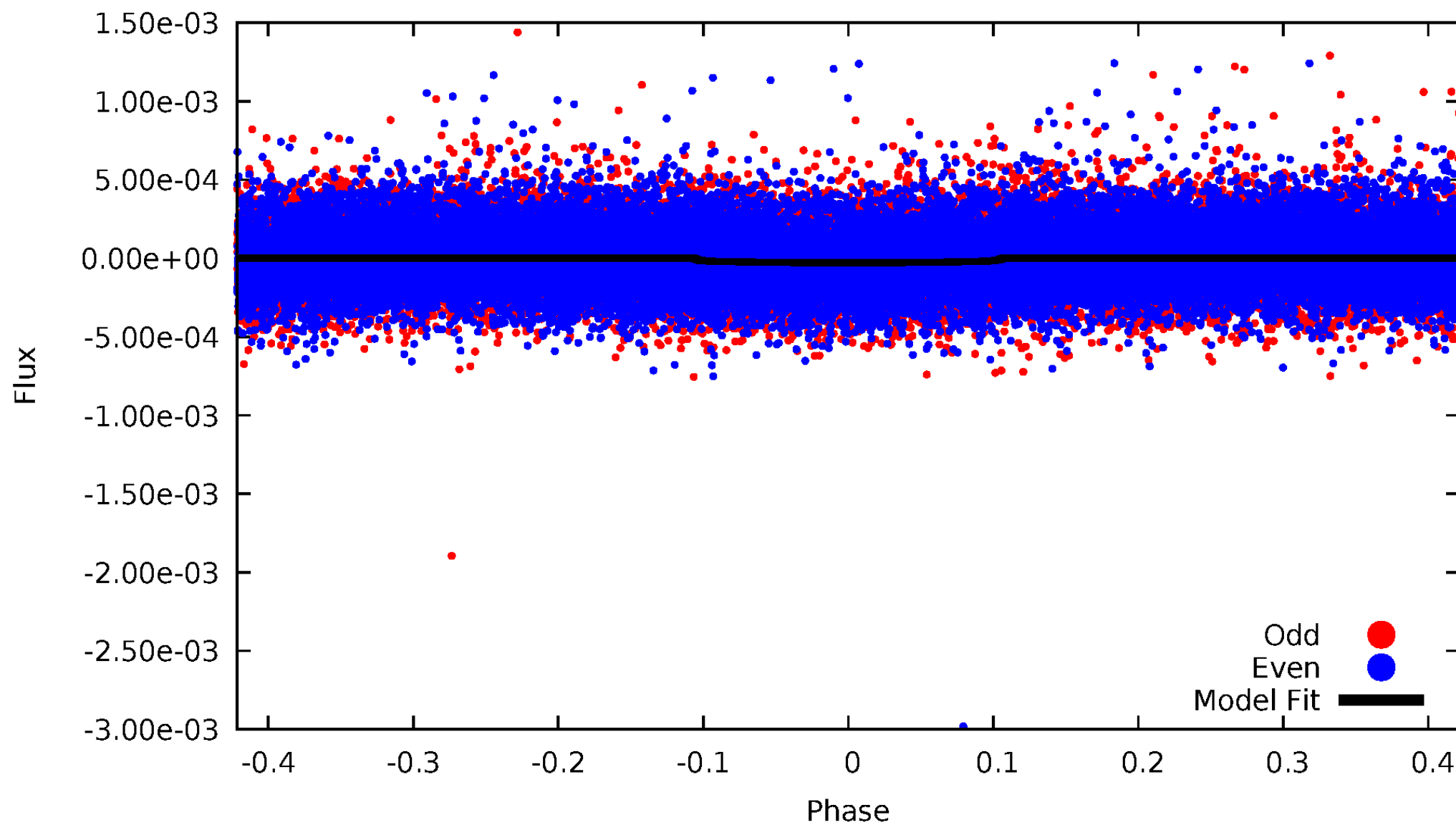


TCE 006058544-01



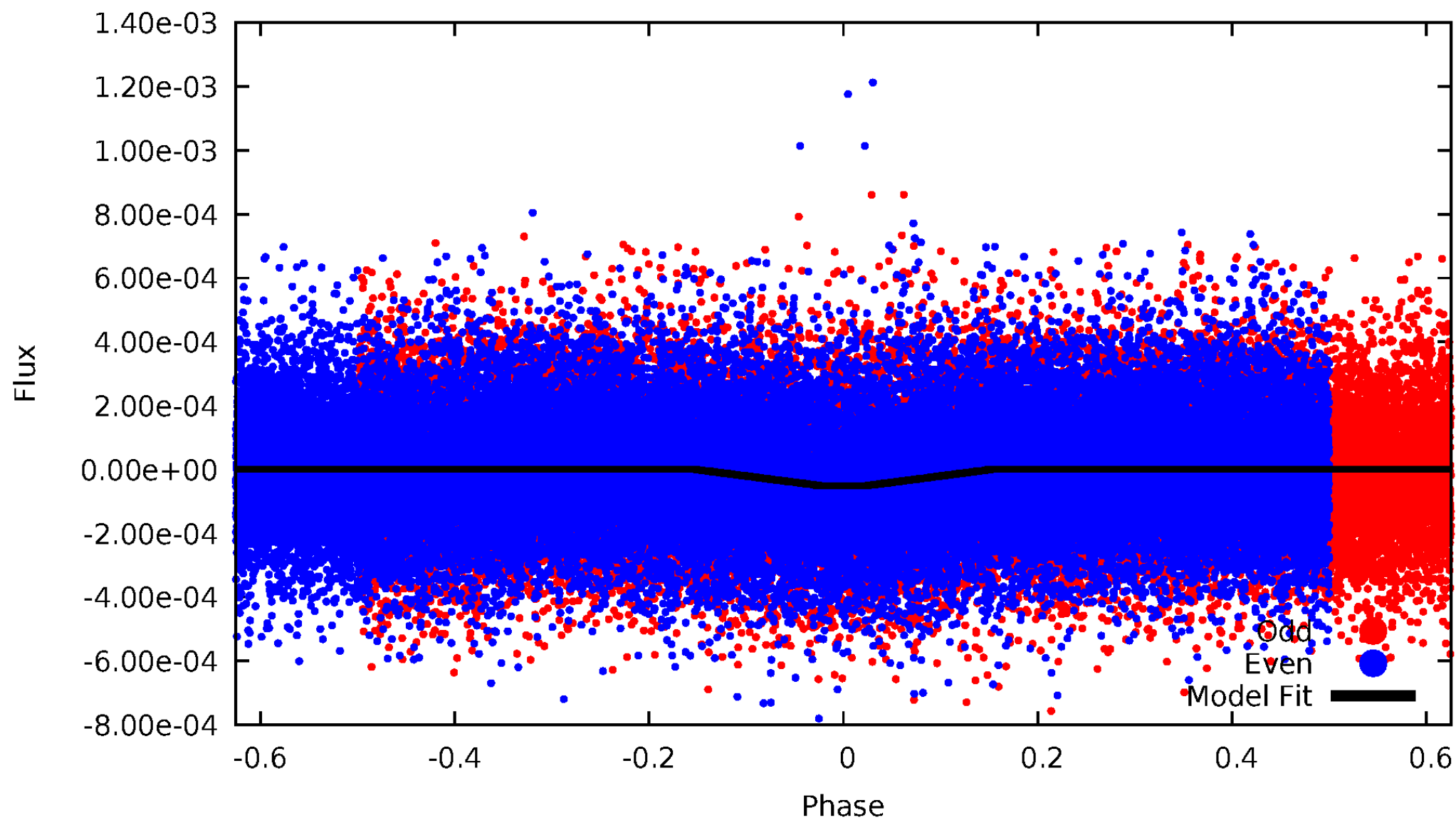
DV Odd/Even

TCE 006058544-01

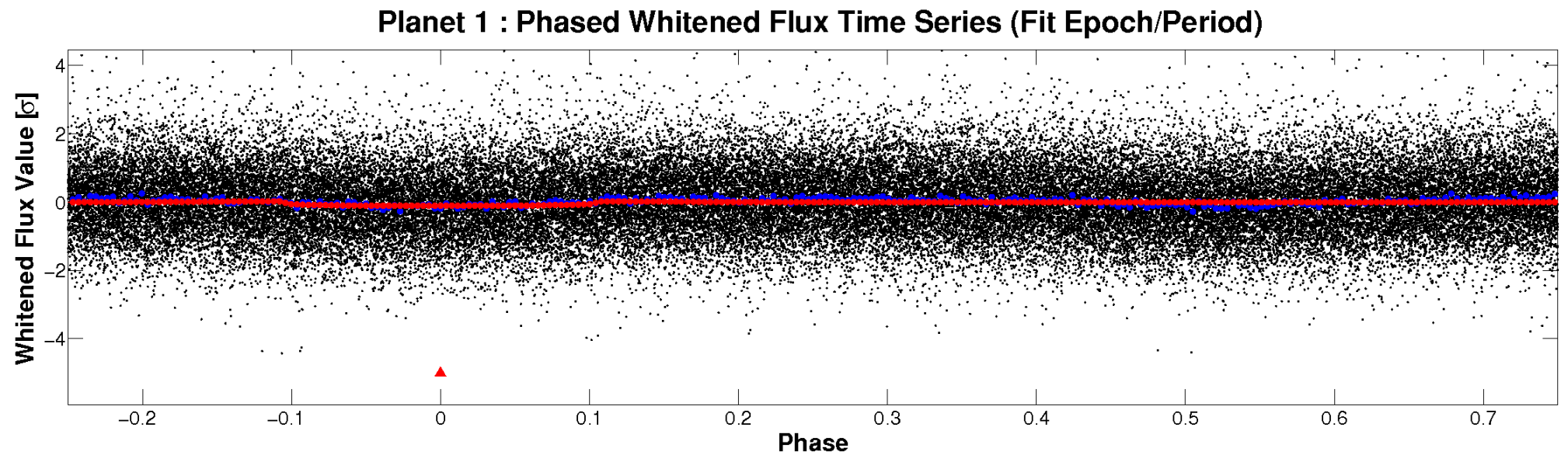
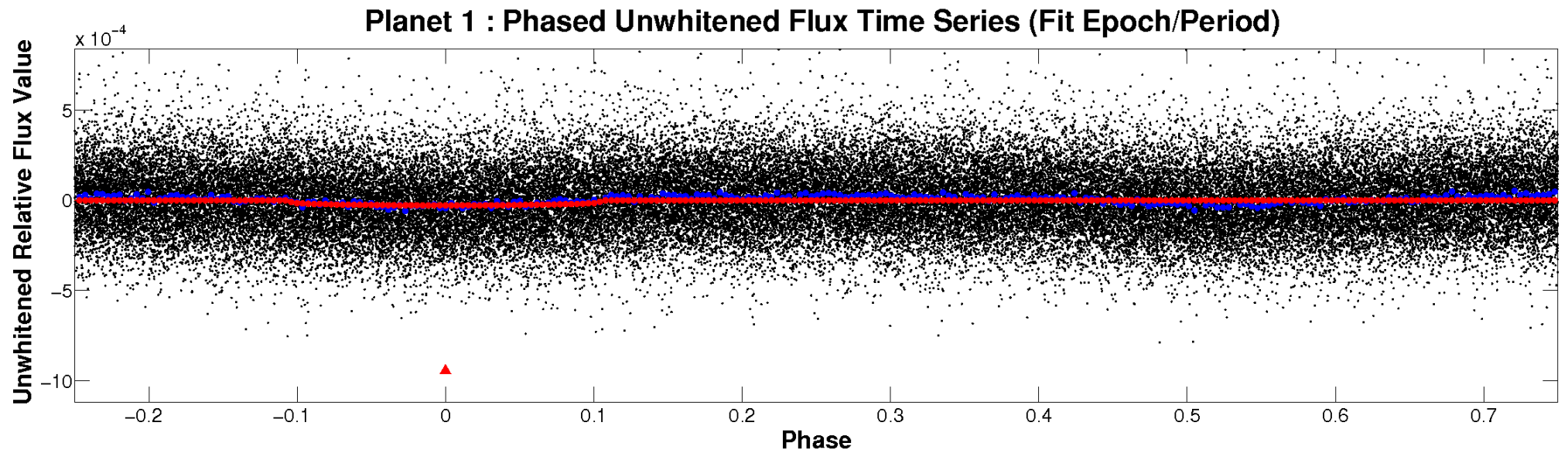


ALT Odd/Even

TCE 006058544-01

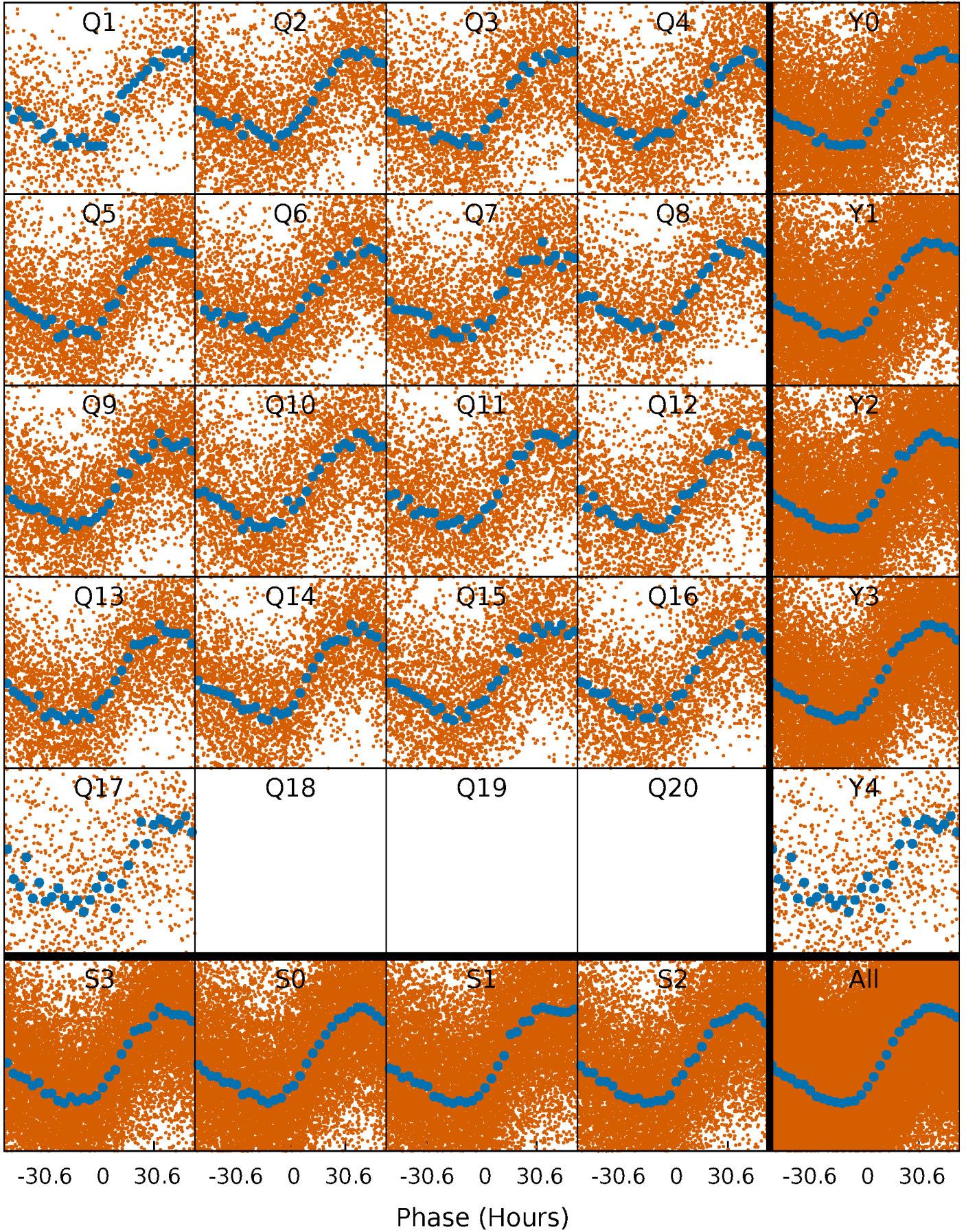


Non-Whitened Vs. Whitened Light Curve



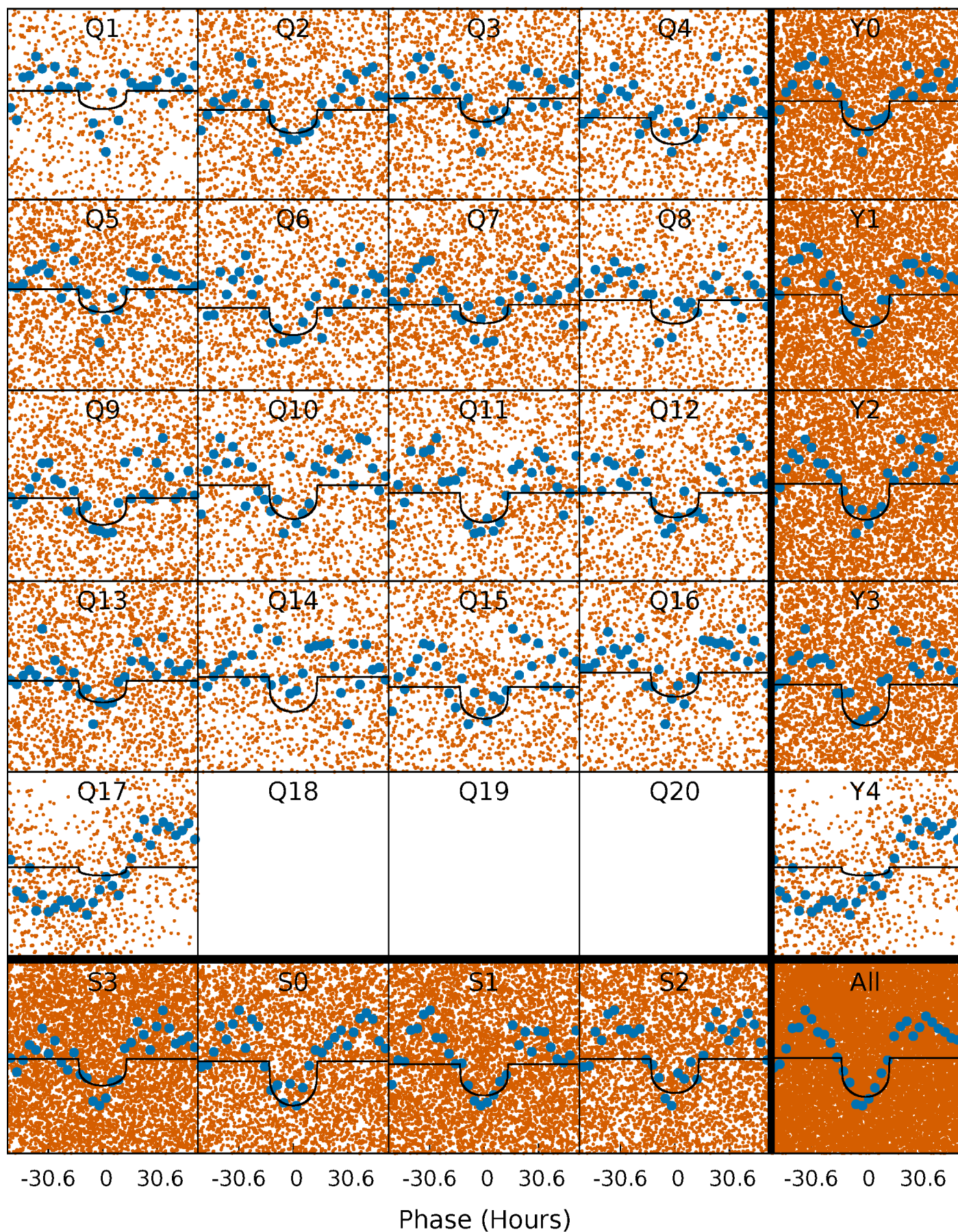
PDC Quarter-Phased Transit Curves

TCE 006058544-01 P= 5.300328 Days $T_0=134.260596$ (BKJD)



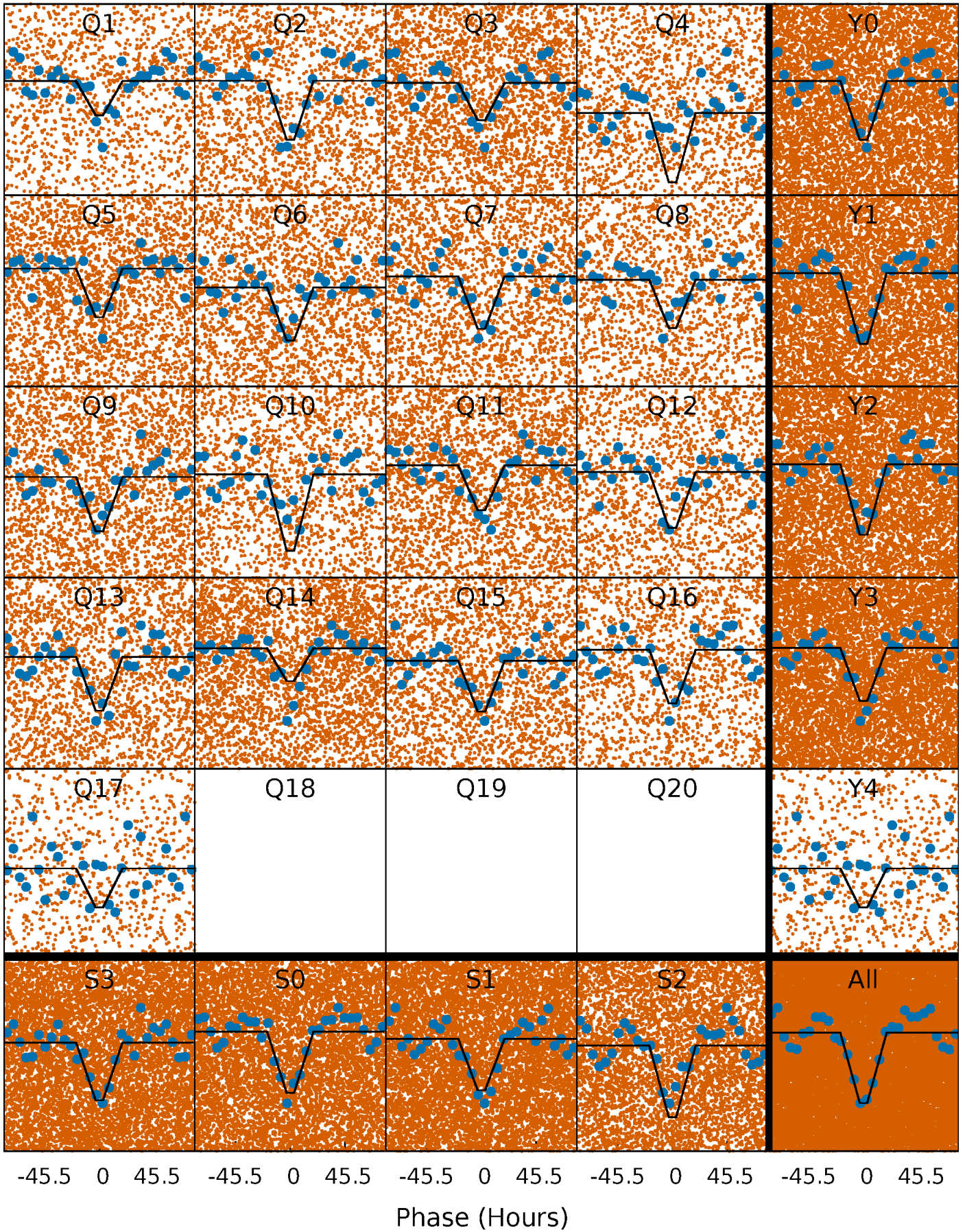
DV Quarter-Phased Transit Curves

TCE 006058544-01 P= 5.300328 Days $T_0=134.260596$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

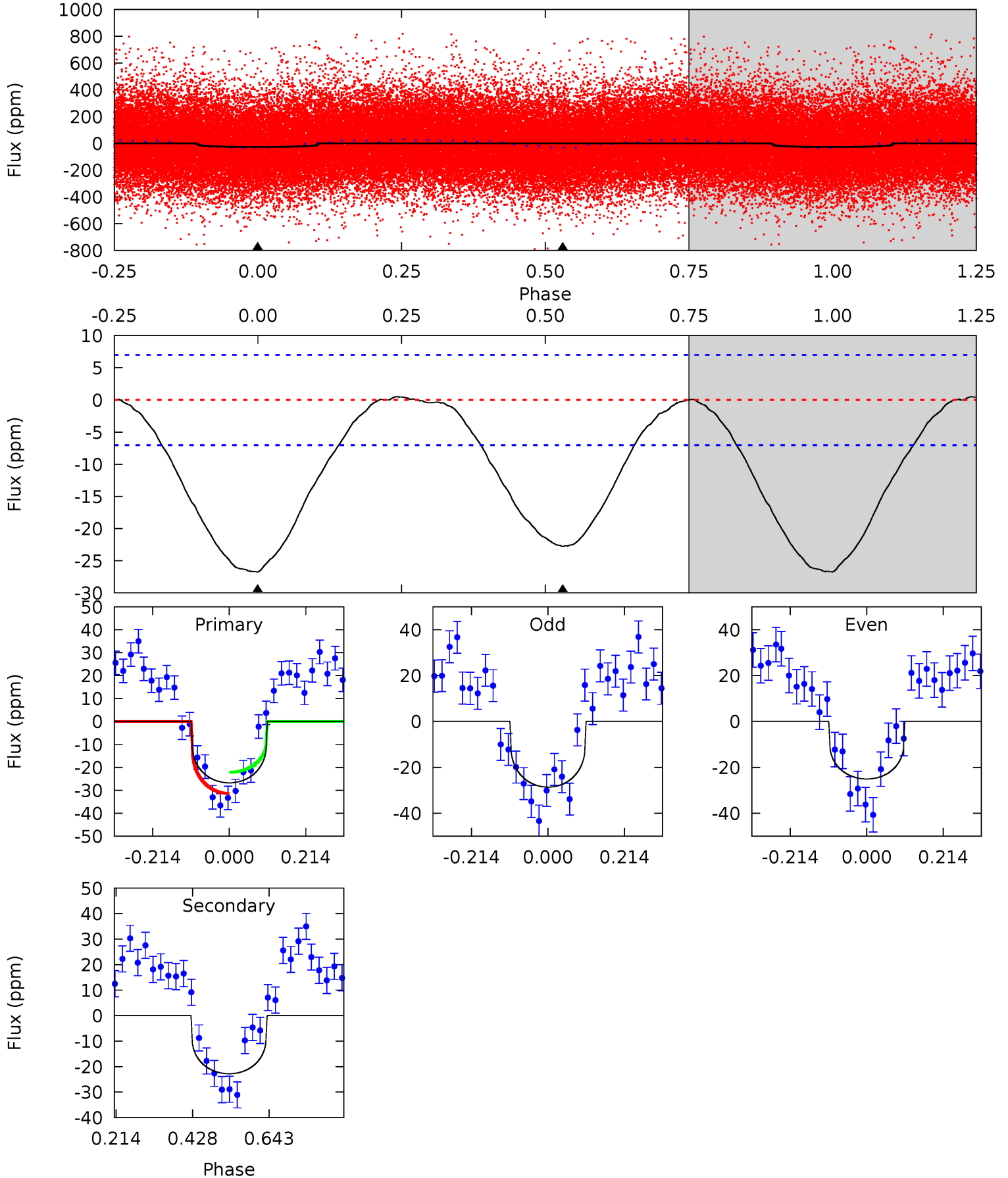
TCE 006058544-01 P= 5.300708 Days $T_0=134.122039$ (BKJD)



DV Model-Shift Uniqueness Test

006058544-01, P = 5.300328 Days, E = 128.960268 Days

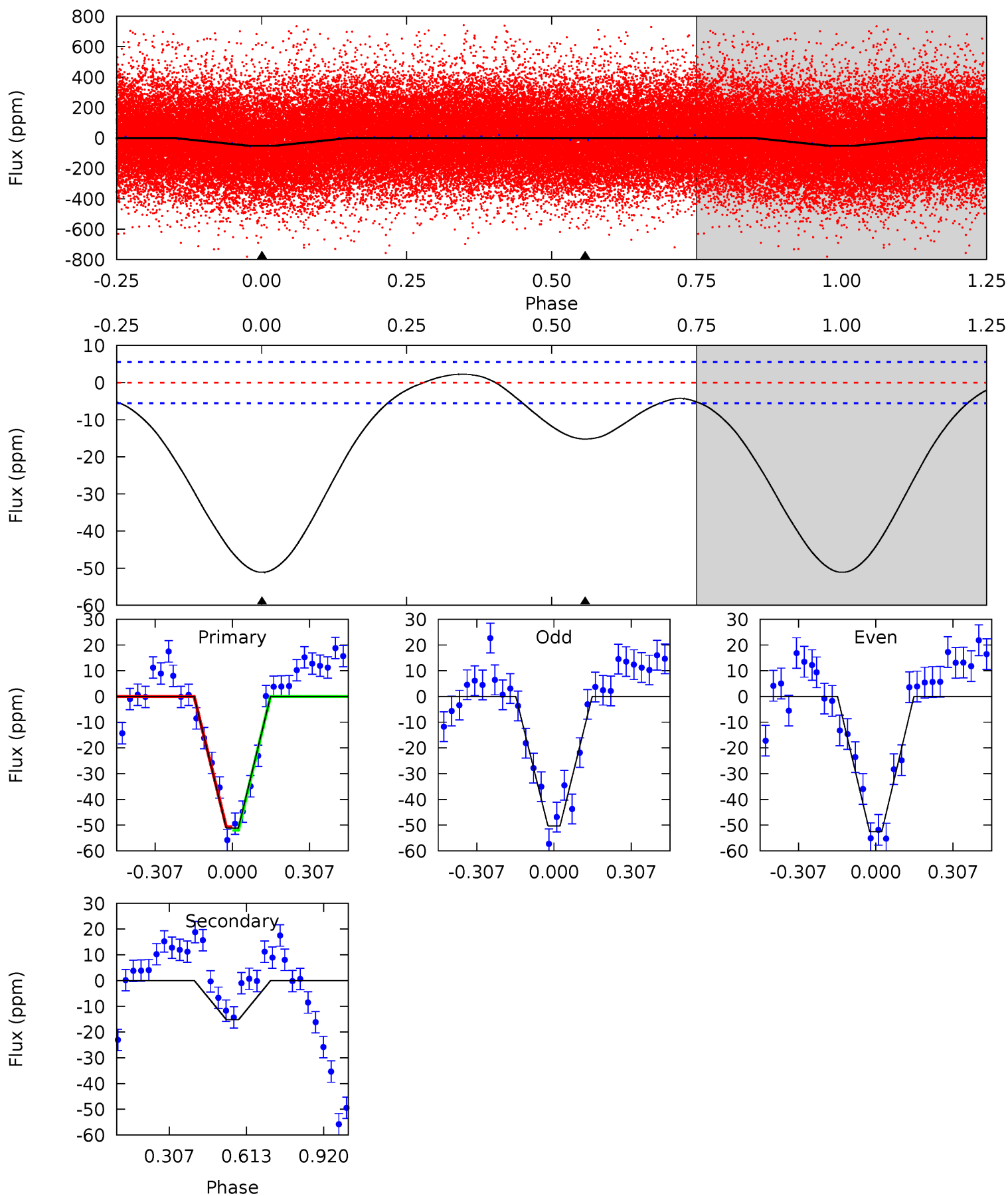
| Pri | Sec | Ter | Pos | FA ₁ | FA ₂ | F _{Red} | Pri-Ter | Pri-Pos | Sec-Ter | Sec-Pos | Odd-Evn | DMM | Shape | TAT |
|------|------|-----|-----|-----------------|-----------------|------------------|---------|---------|---------|---------|---------|------|-------|------|
| 16.8 | 14.3 | 0 | 0 | 4.40 | 1.24 | 0.25 | 16.8 | 16.8 | 14.3 | 14.3 | 1.10 | 0.91 | 0.02 | 2.90 |



Alt Model-Shift Uniqueness Test

006058544-01, P = 5.300708 Days, E = 128.821331 Days

| Pri | Sec | Ter | Pos | FA ₁ | FA ₂ | F _{Red} | Pri-Ter | Pri-Pos | Sec-Ter | Sec-Pos | Odd-Evn | DMM | Shape | TAT |
|------|------|-----|-----|-----------------|-----------------|------------------|---------|---------|---------|---------|---------|------|-------|------|
| 39.8 | 11.8 | 0 | 0 | 4.32 | 1.02 | 1.38 | 39.8 | 39.8 | 11.8 | 11.8 | 0.88 | 1.10 | 0.04 | 0.50 |



Stellar Parameters For KIC 006058544

| | $T_{\text{eff}} (K)$ | $\log(g)$ | $[\text{Fe}/\text{H}]$ | $R (R_{\odot})$ | $M (M_{\odot})$ | $p_{\star} (\text{g}\cdot\text{cm}^{-3})$ |
|--------|----------------------|---------------------------|----------------------------|---------------------------|---------------------------|---|
| | 5416^{+146}_{-146} | $4.603^{+0.035}_{-0.105}$ | $-0.260^{+0.300}_{-0.300}$ | $0.756^{+0.126}_{-0.058}$ | $0.847^{+0.071}_{-0.098}$ | $2.757^{+0.428}_{-0.918}$ |
| | +3%/-3% | +1%/-2% | +115%/-115% | +17%/-8% | +8%/-12% | +16%/-33% |
| 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 006058544-01 / KOI

| Detrend | Depth (ppm) | $R_p (R_{\oplus})$ | $T_{\text{max}} (K)$ | $T_{\text{obs}} (K)$ | A_{obs} |
|---------|-------------|------------------------|----------------------|-----------------------|---------------------|
| DV | -23 ± 2 | $0.48^{+0.36}_{-0.29}$ | 1239^{+54}_{-44} | 5010^{+2953}_{-989} | 168^{+865}_{-114} |
| Alt. | -15 ± 1 | $0.65^{+0.36}_{-0.37}$ | 1243^{+52}_{-47} | 4131^{+1654}_{-601} | 62^{+260}_{-36} |

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

DV Centroid Data

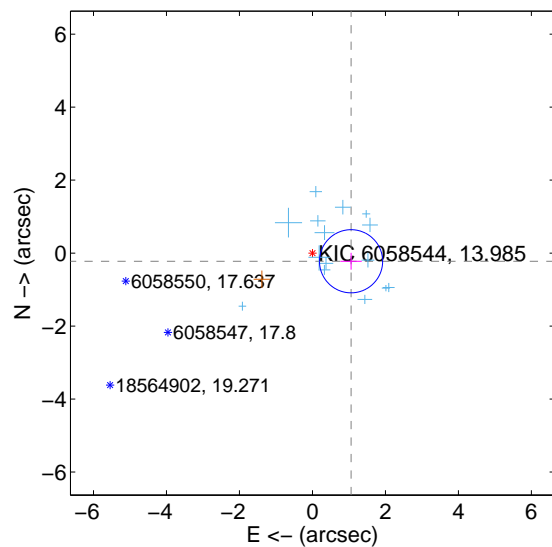
Supplemental centroid analysis for 006058544-01. Kepler magnitude: 13.98. Transit SNR 11.07

There are 15 quarters with good PRF difference image offsets

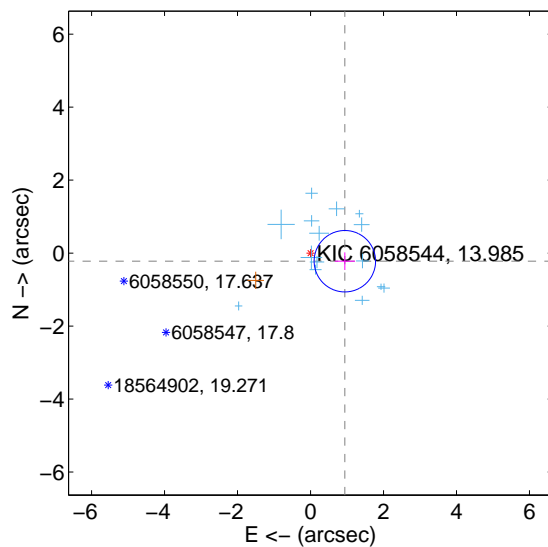
The direct PRF centroid is offset from the target star catalog position by about 0.16 arcsec

| | Distance in arcsec | Distance / σ | Δ RA | Δ Dec |
|---|--------------------|---------------------|--------------------|--------------------|
| PRF-fit source offset from OOT | 1.082 ± 0.288 | 3.75 | -1.058 ± 0.293 | -0.224 ± 0.230 |
| PRF-fit source offset from KIC position | 0.967 ± 0.281 | 3.45 | -0.941 ± 0.278 | -0.222 ± 0.242 |
| photometric centroid source offset | 2.20 ± 1.11 | 1.98 | -0.11 ± 1.14 | 2.19 ± 1.11 |

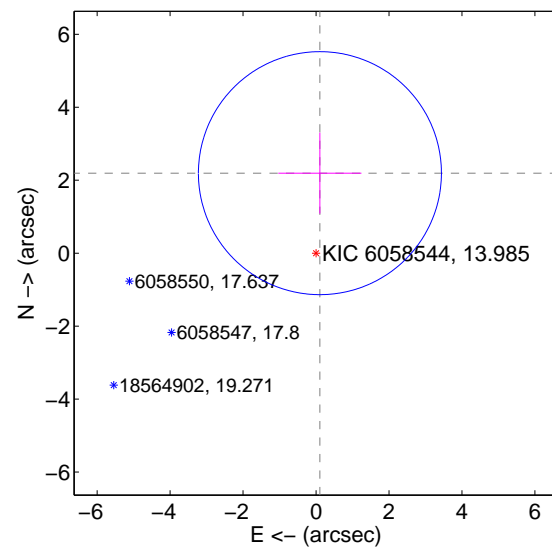
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

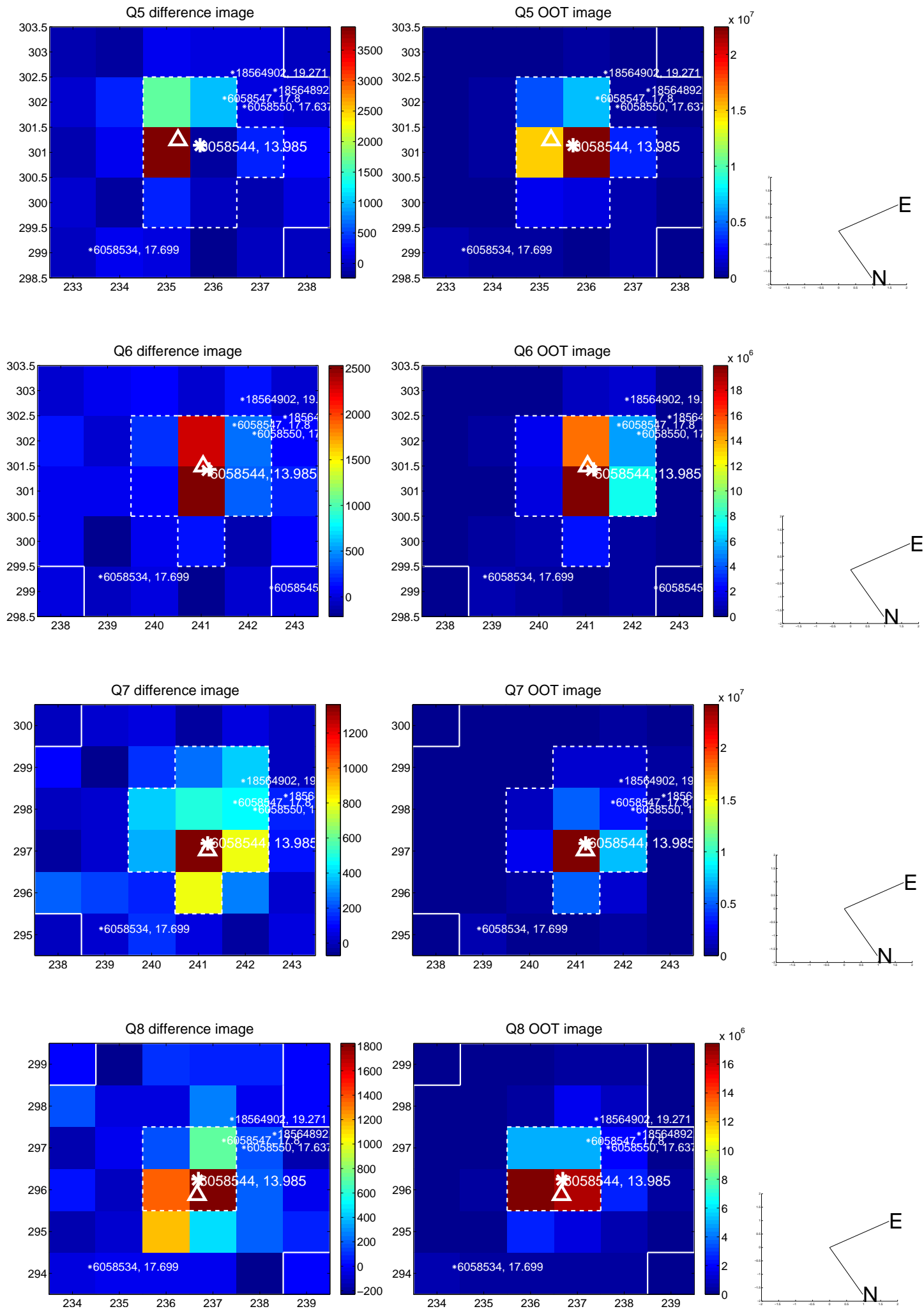


offset from photometric centroids

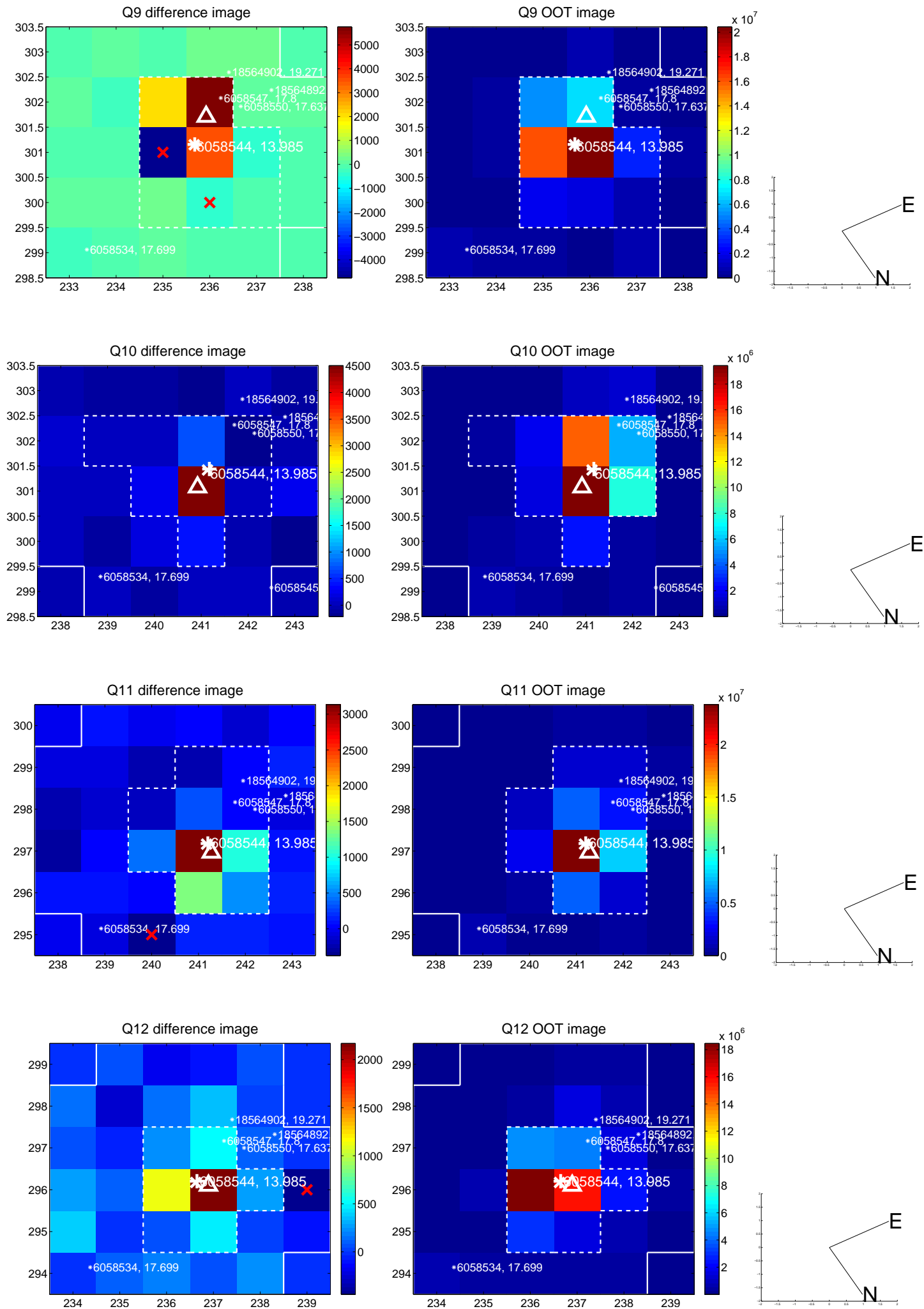


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

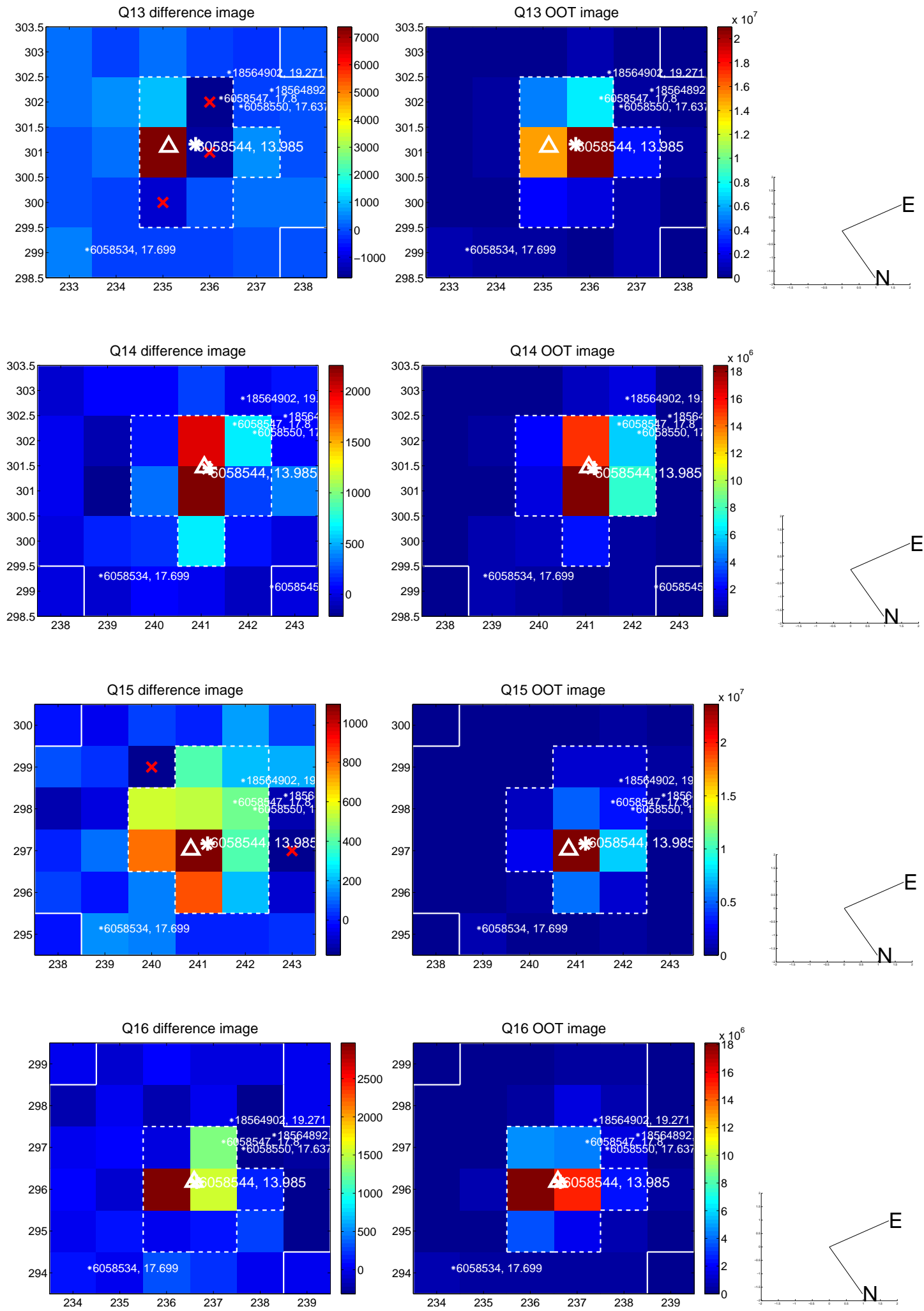
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



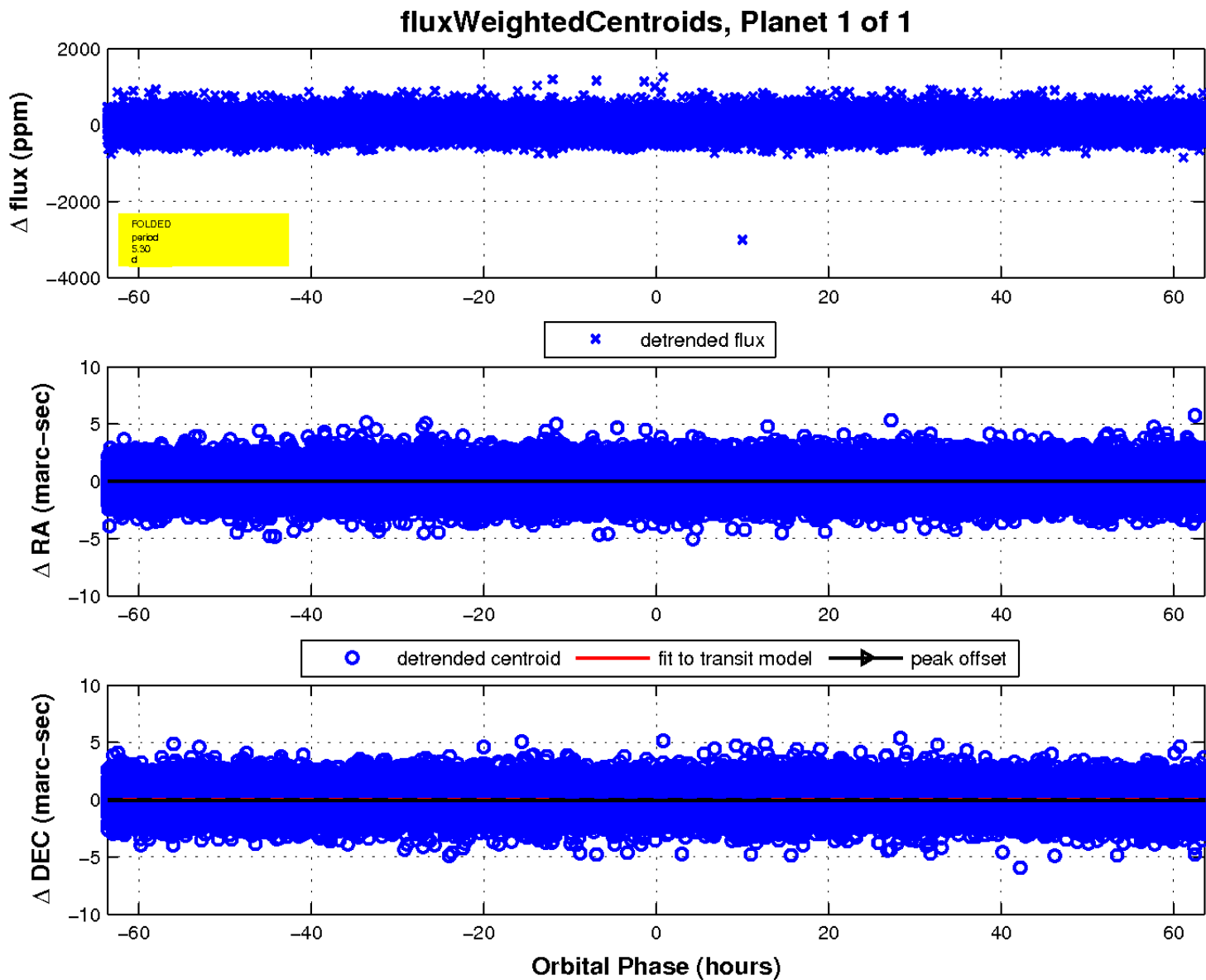
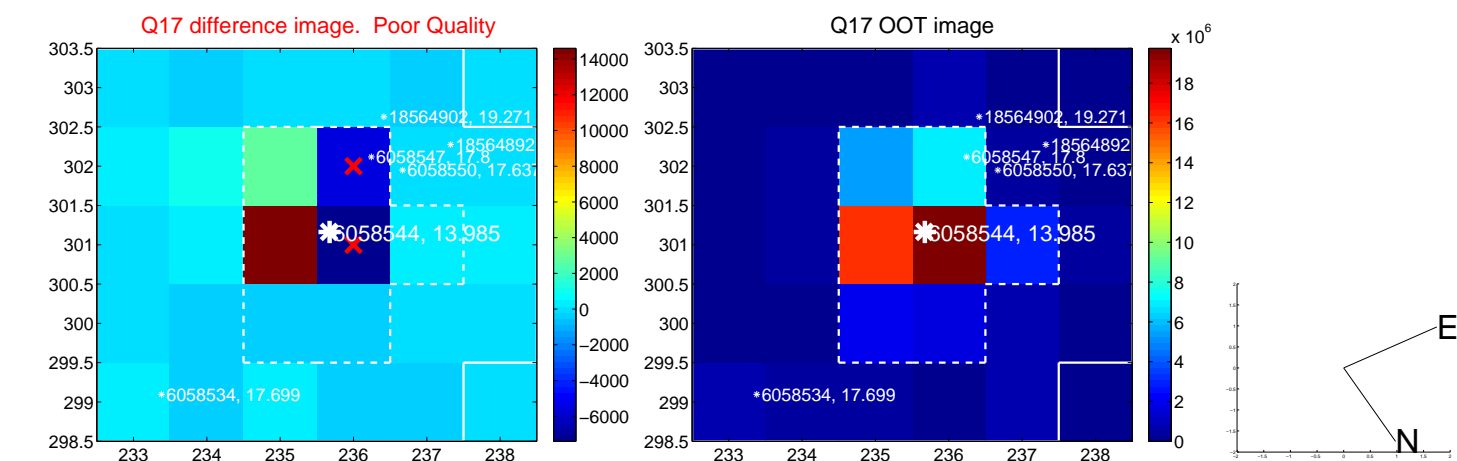
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



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



UKIRT Image

Declination

