

KIC 005530441

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}) |
|--------------|----------|------|---------------|--------------|-------------|------------------|-----|-----|-----------------------------|-----------------|------------------------|------------------------|
| 005530441-01 | OBS | No | 4.356336 | 131.800343 | 10.7 | 33.212 | 8.8 | 4.5 | 1.60 | 7144 | 0.56 | 1767.54 |

Robovetter Results

| TCE | Run Type | Disp | Score | N | S | C | E | Comments |
|--------------|----------|------|-------|---|---|---|---|----------|
| 005530441-01 | 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.

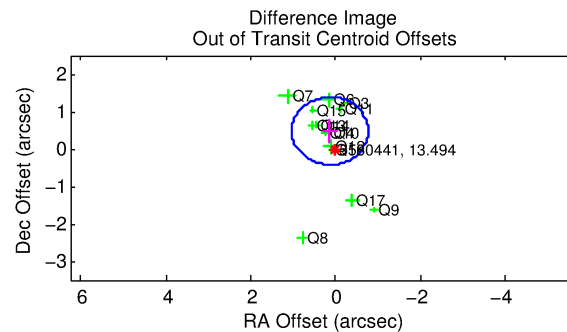
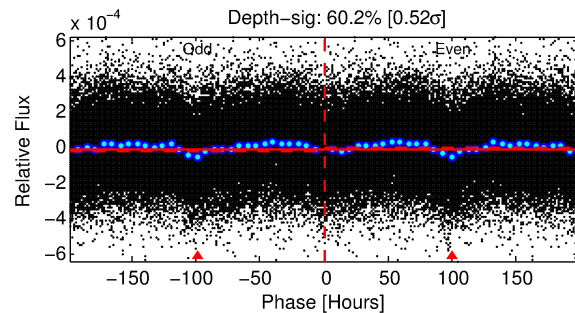
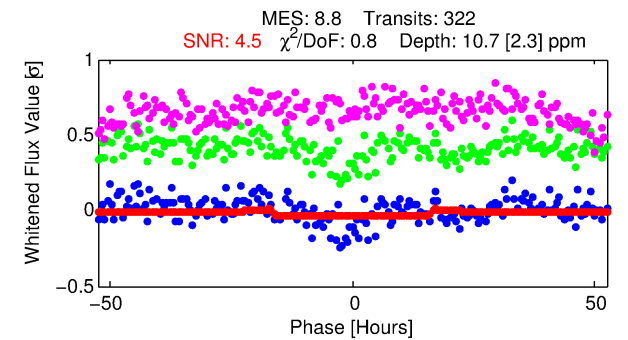
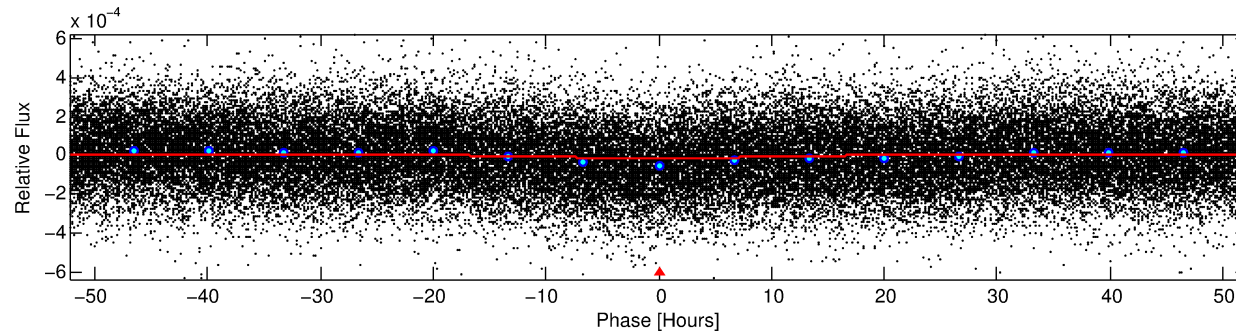
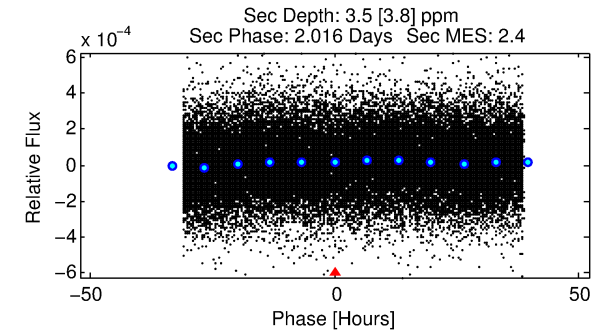
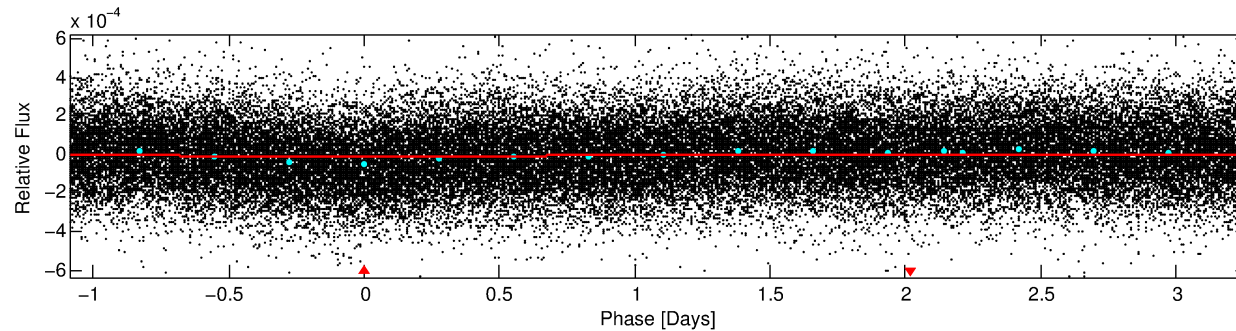
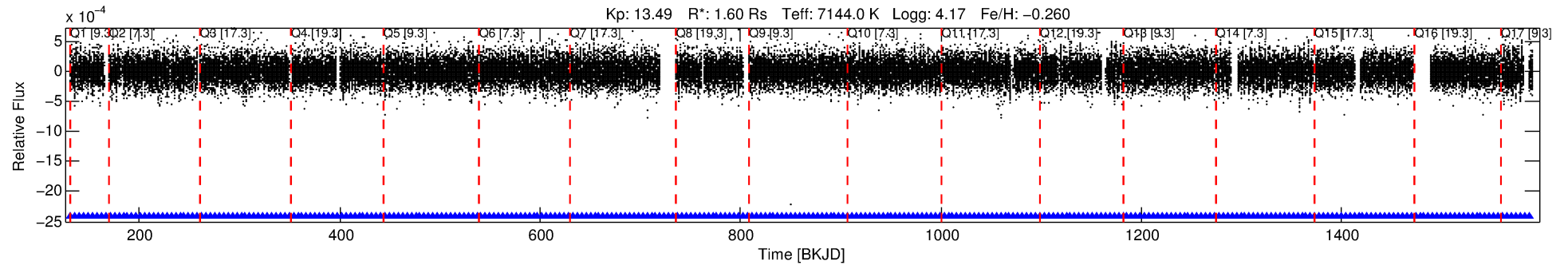
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 005530441-01

No Significant Match Found

DV One-Page Summary

KIC: 5530441 Candidate: 1 of 1 Period: 4.356 d



DV Fit Results:

Period = 4.35634 [0.00019] d
Epoch = 131.8003 [0.0298] BKJD
Rp/R* = 0.0032 [0.0019]
a/R* = 1.10 [0.68]
b = 0.72 [2.39]
Seff = 1767.54 [674.71]
Teq = 1653 [158] K
Rp = 0.56 [0.37] Re
a = 0.0580 [0.0142] AU
Ag = 20.70 [33.73] [0.58σ]
Teffp = 5452 [2184] K [1.74σ]

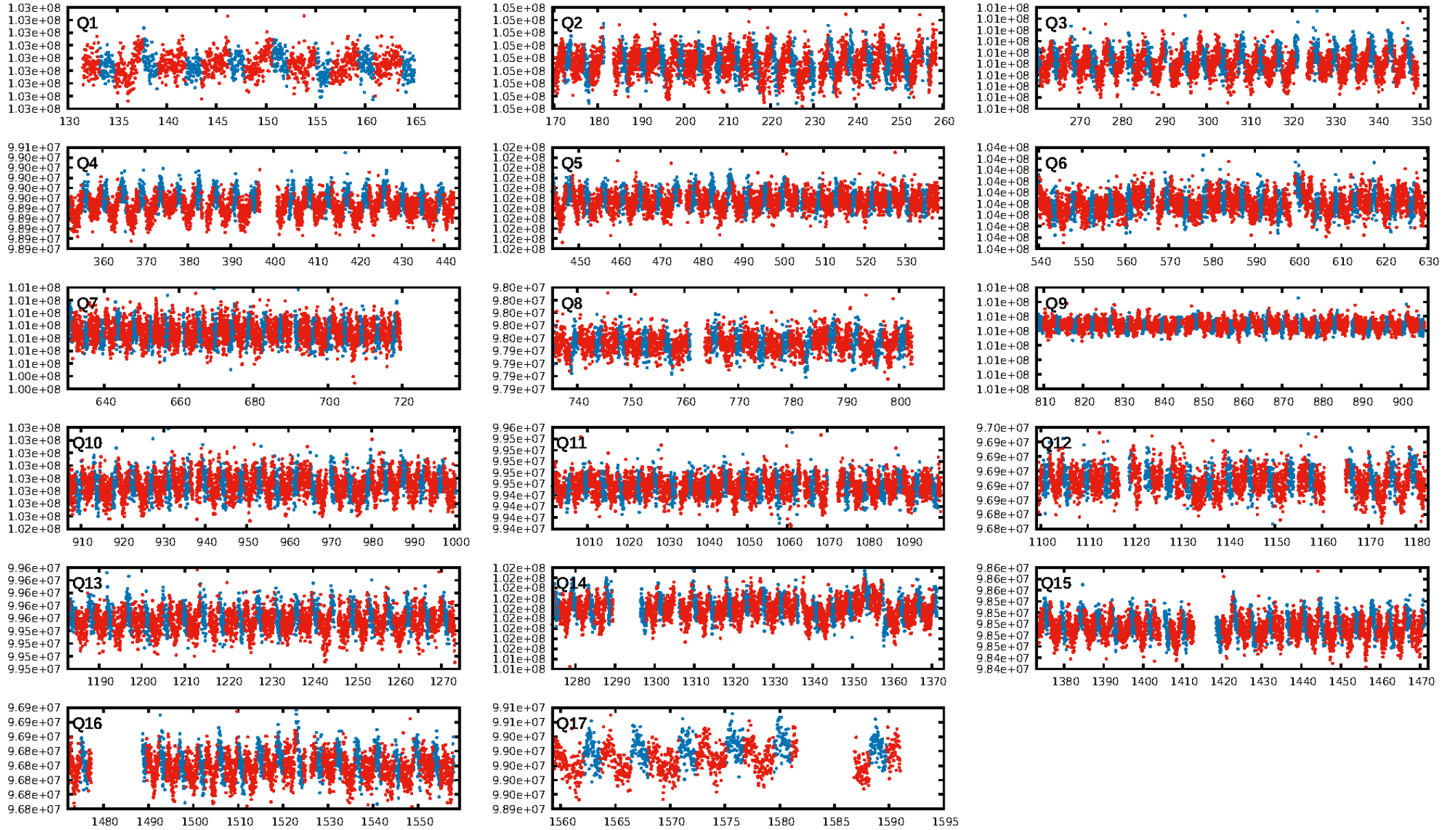
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [307/307]
GhostDiagnostic-chr: 2.079
Centroid-sig: 0.9%
Centroid-so: 2.231 arcsec [1.57σ]
OotOffset-rm: 0.498 arcsec [1.65σ]
OotOffset-st: 3/4/4/3 [14]
KicOffset-rm: 0.507 arcsec [1.55σ]
KicOffset-st: 3/4/4/3 [14]
DiffImageQuality-fgm: 1.00 [14/14]
DiffImageOverlap-fno: 1.00 [17/17]

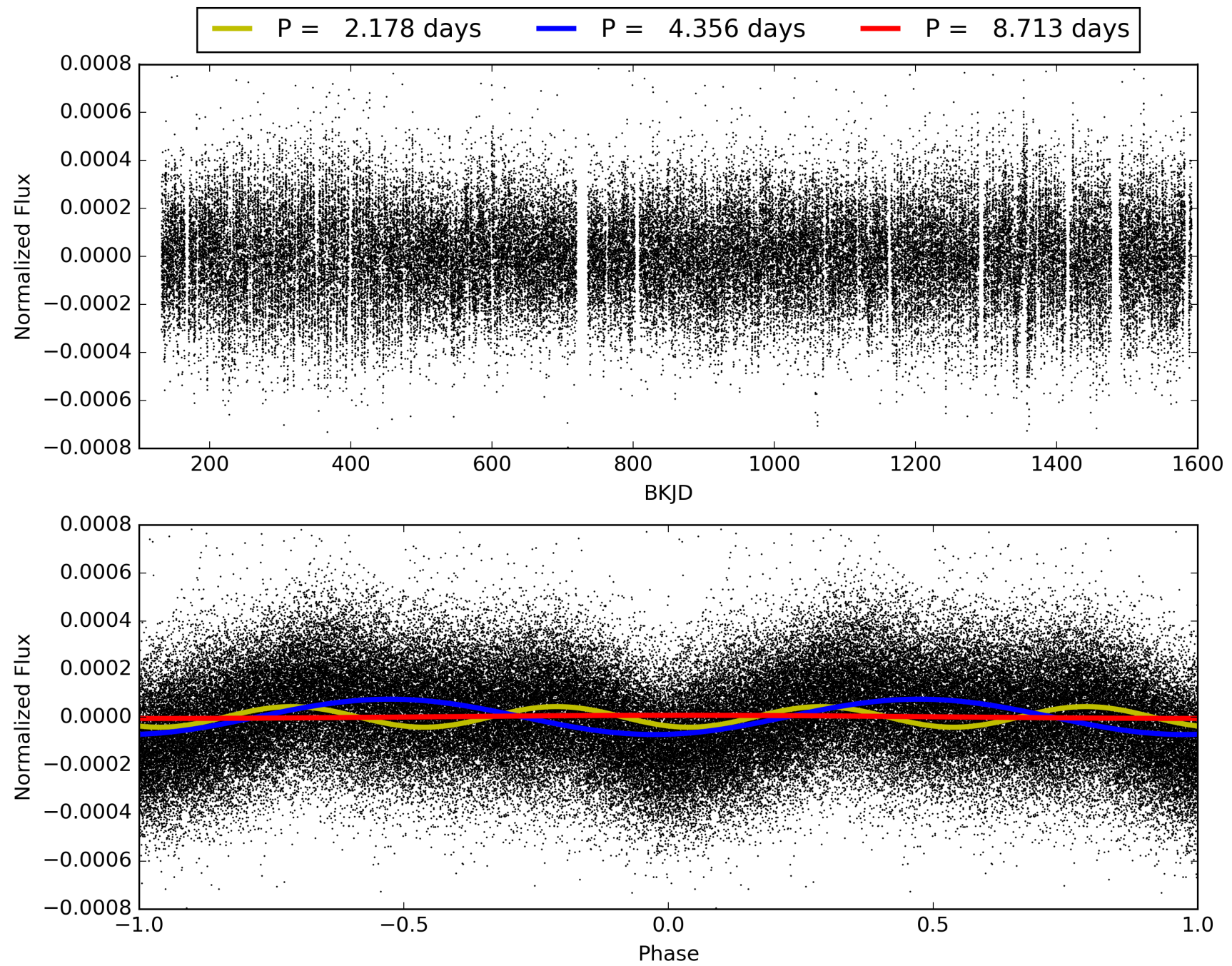
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 04:09:55 Z

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

TCE 005530441-01, PDC Light Curves

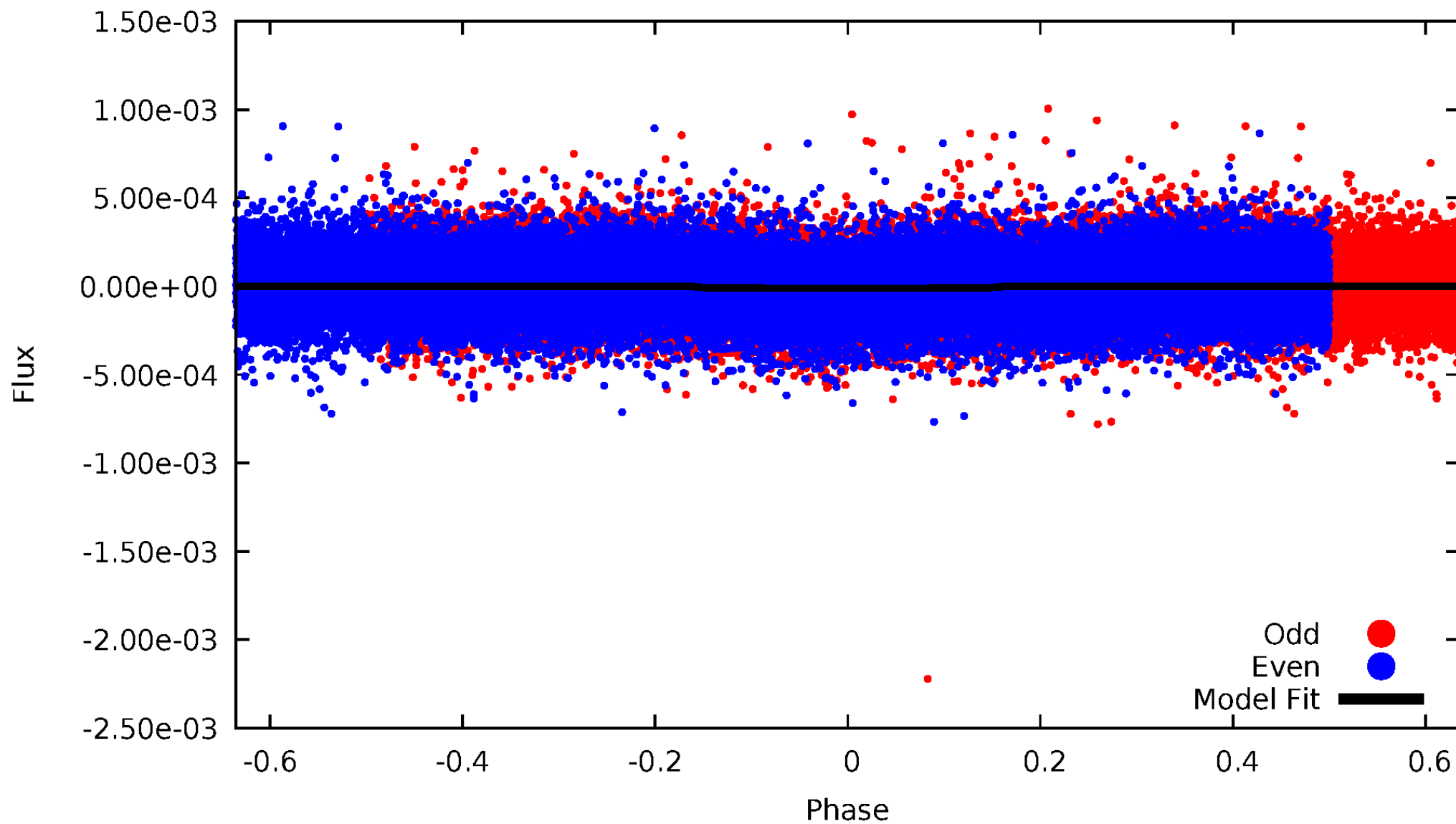


TCE 005530441-01



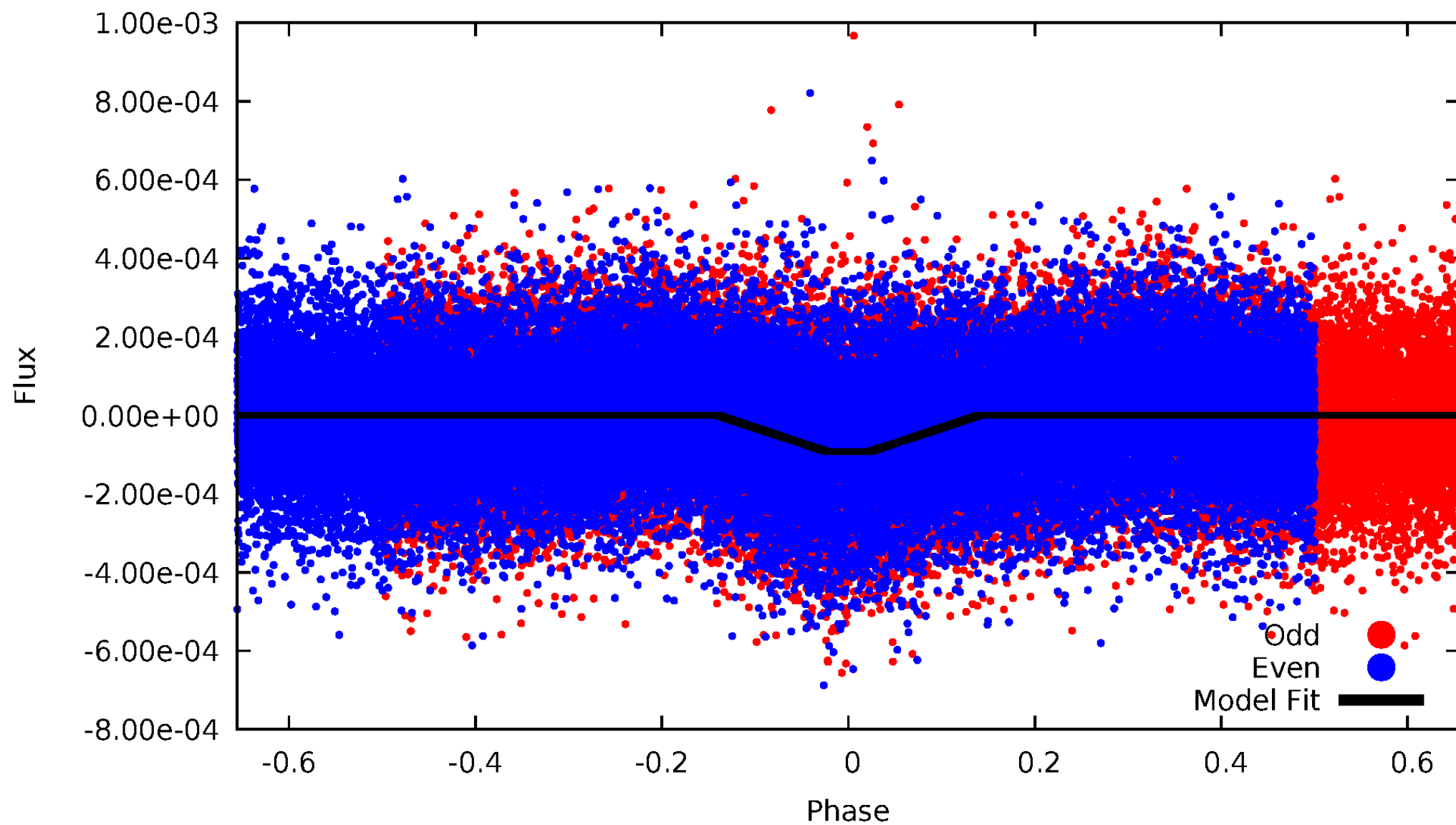
DV Odd/Even

TCE 005530441-01



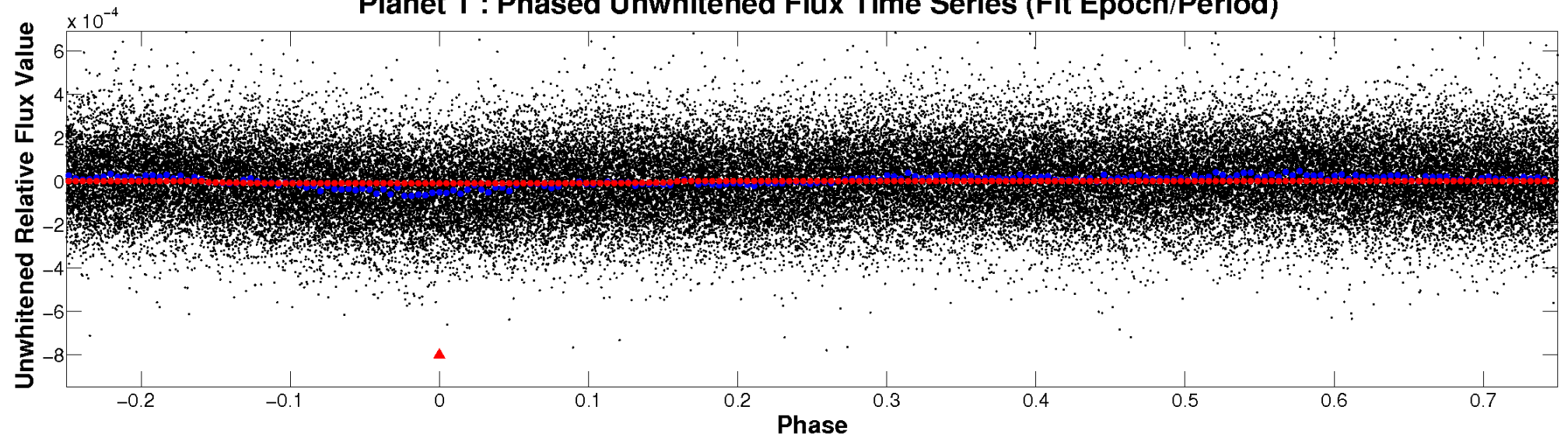
ALT Odd/Even

TCE 005530441-01

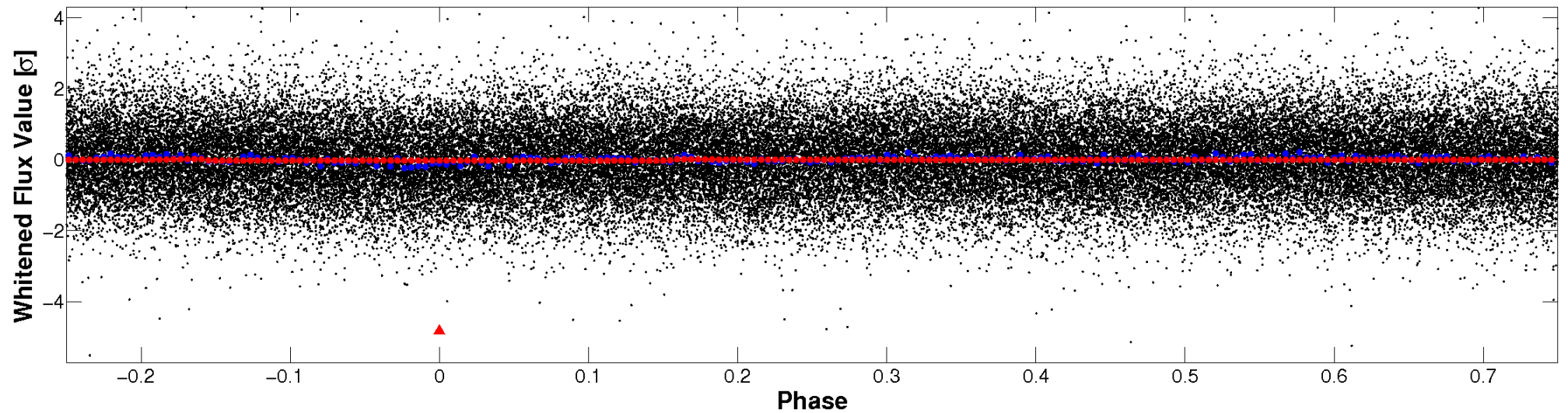


Non-Whitened Vs. Whitened Light Curve

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

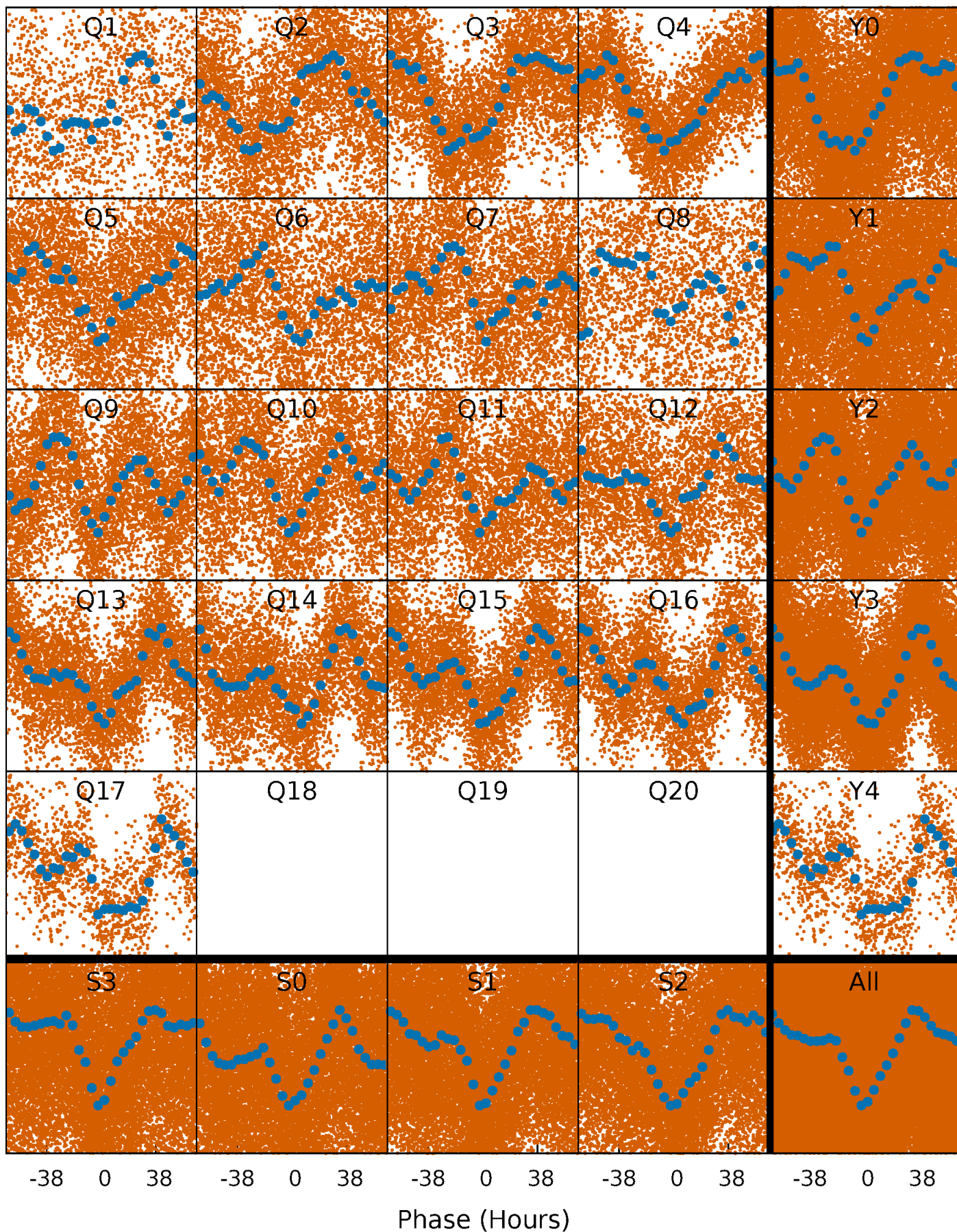


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



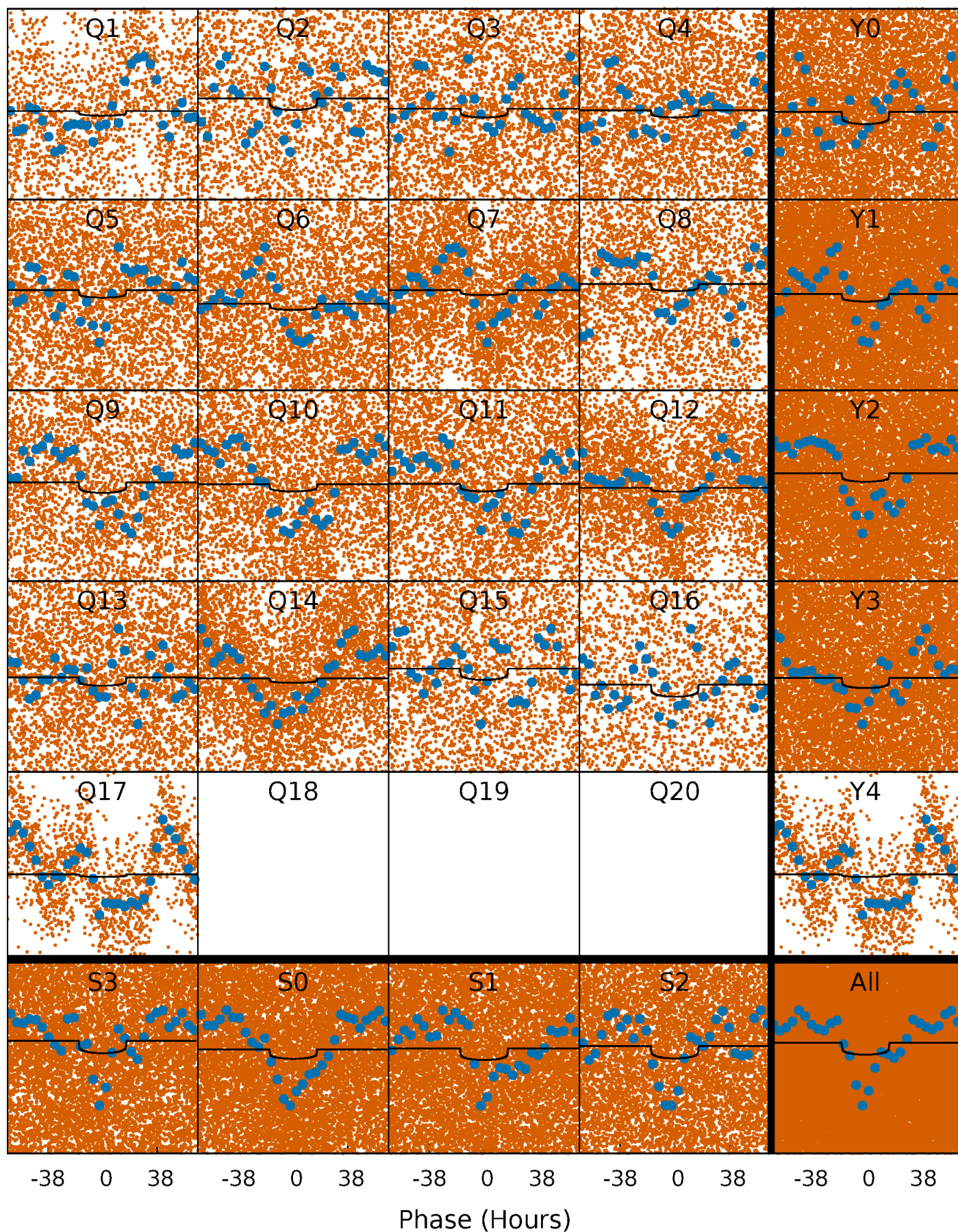
PDC Quarter-Phased Transit Curves

TCE 005530441-01 P= 4.356336 Days $T_0=131.800342$ (BKJD)



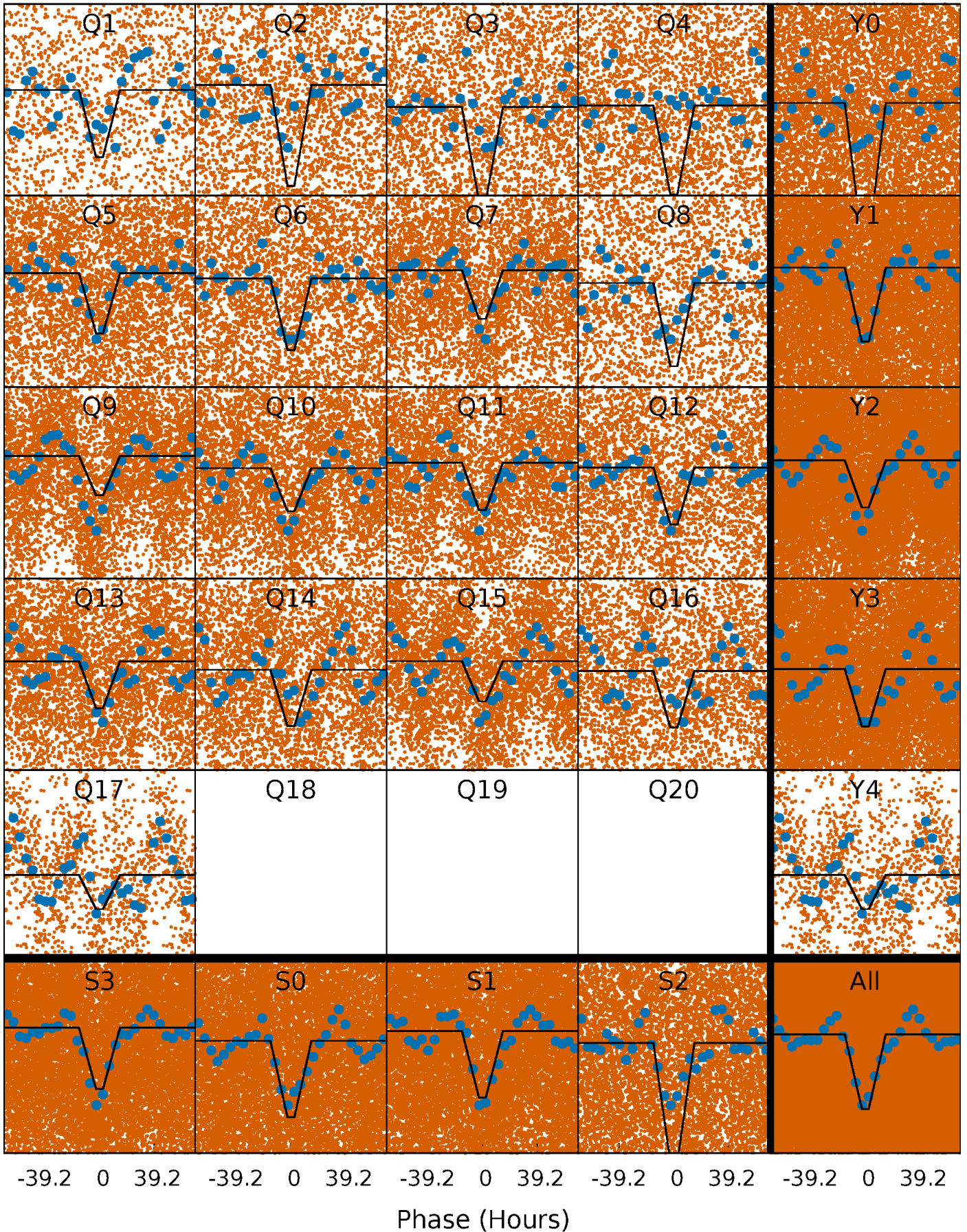
DV Quarter-Phased Transit Curves

TCE 005530441-01 P= 4.356336 Days $T_0=131.800342$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

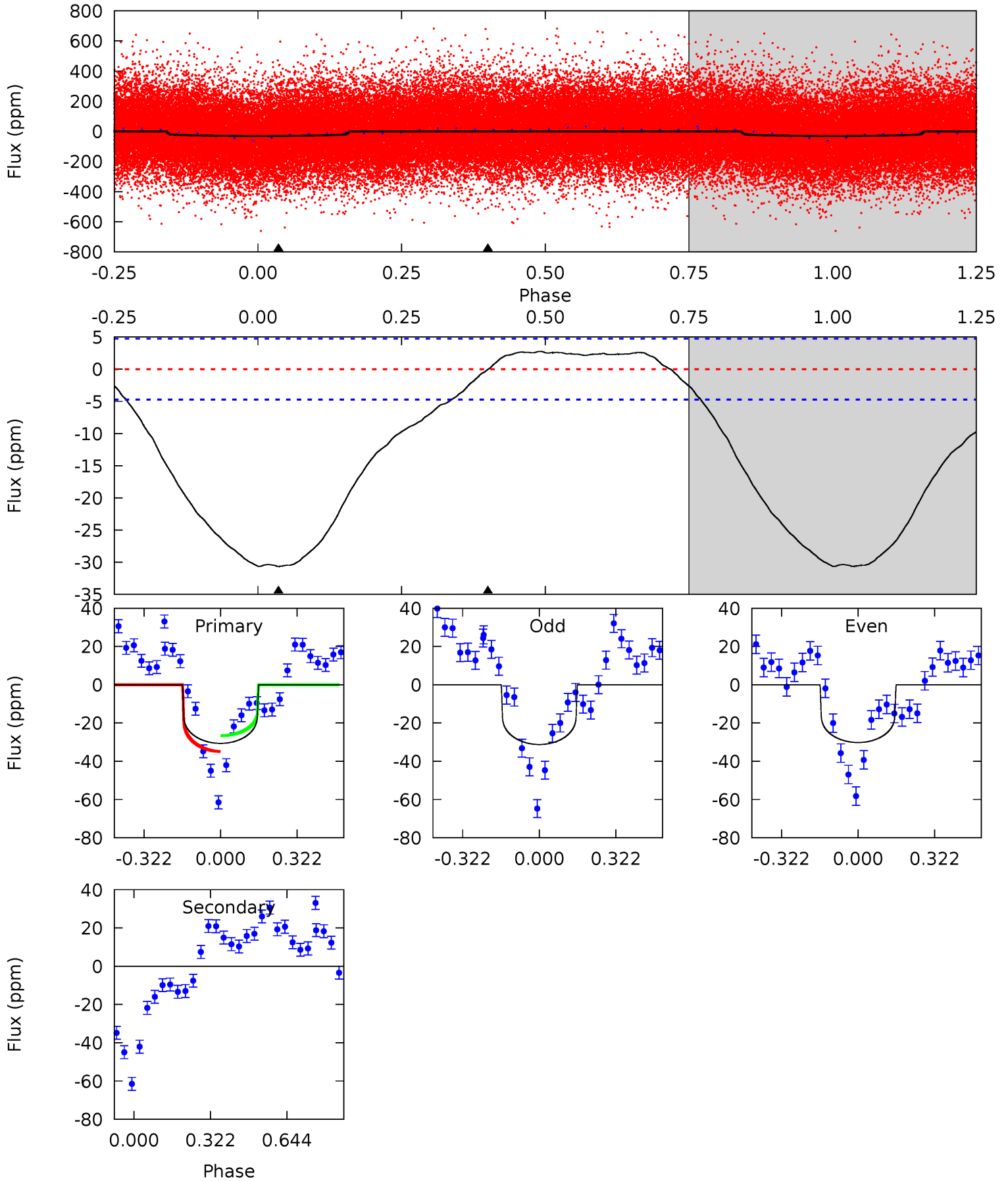
TCE 005530441-01 P= 4.356267 Days $T_0=131.809222$ (BKJD)



DV Model-Shift Uniqueness Test

005530441-01, P = 4.356336 Days, E = 127.444006 Days

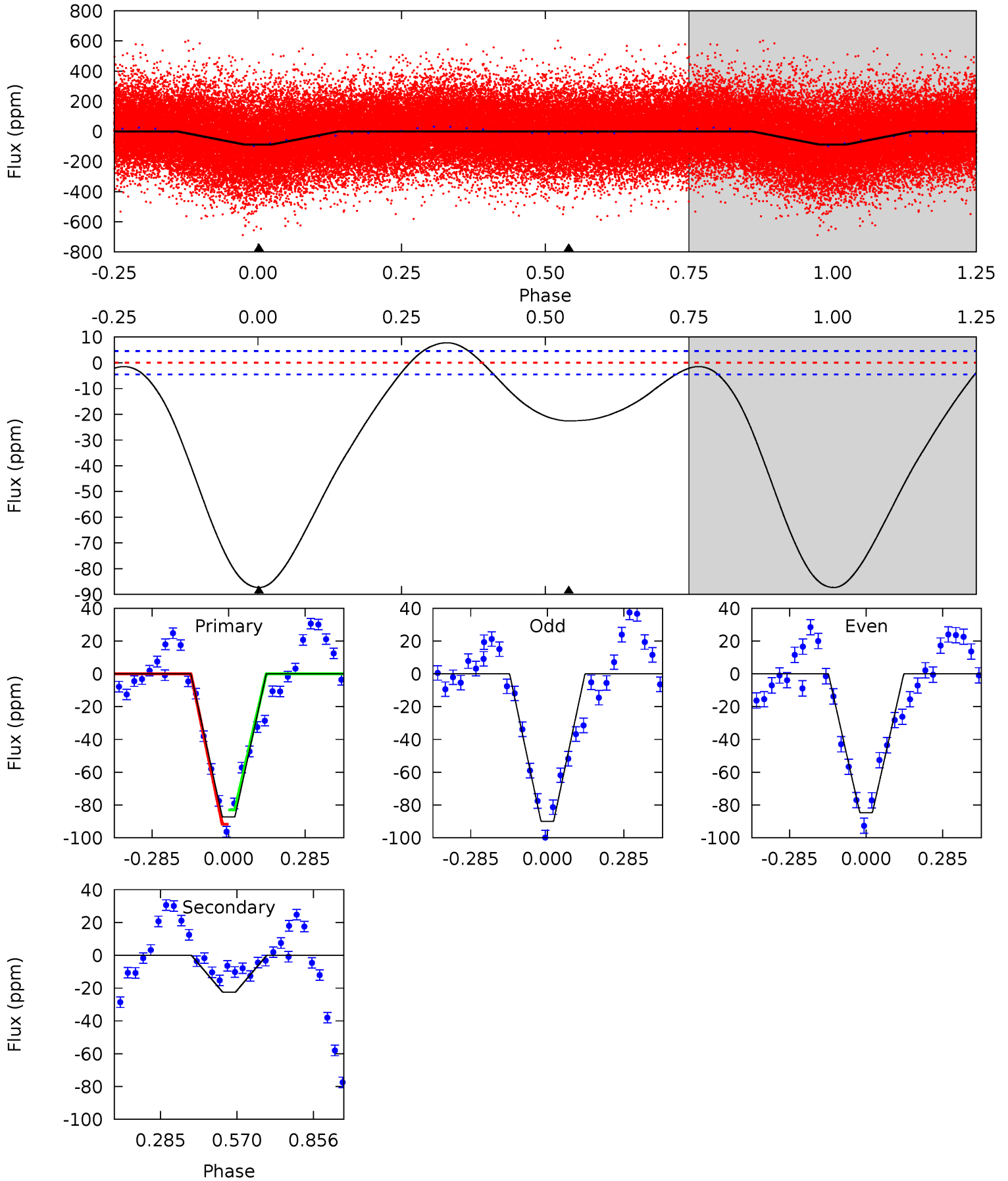
| Pri | Sec | Ter | Pos | FA ₁ | FA ₂ | F _{Red} | Pri-Ter | Pri-Pos | Sec-Ter | Sec-Pos | Odd-Evn | DMM | Shape | TAT |
|------|------|-----|-----|-----------------|-----------------|------------------|---------|---------|---------|---------|---------|------|-------|------|
| 28.0 | 0.04 | 0 | 0 | 4.31 | 0.99 | 1.91 | 28.0 | 28.0 | 0.04 | 0.04 | 0.48 | 1.10 | 0.08 | 3.74 |



Alt Model-Shift Uniqueness Test

005530441-01, P = 4.356267 Days, E = 127.452955 Days

| Pri | Sec | Ter | Pos | FA ₁ | FA ₂ | F _{Red} | Pri-Ter | Pri-Pos | Sec-Ter | Sec-Pos | Odd-Evn | DMM | Shape | TAT |
|------|------|-----|-----|-----------------|-----------------|------------------|---------|---------|---------|---------|---------|------|-------|------|
| 83.0 | 21.5 | 0 | 0 | 4.34 | 1.07 | 4.96 | 83.0 | 83.0 | 21.5 | 21.5 | 2.55 | 0.99 | 0.08 | 4.02 |



Stellar Parameters For KIC 005530441

| | $T_{\text{eff}}(K)$ | $\log(g)$ | $[\text{Fe}/\text{H}]$ | $R (R_{\odot})$ | $M(M_{\odot})$ | $p_{\star} (\text{g}\cdot\text{cm}^{-3})$ |
|--------|----------------------|---------------------------|----------------------------|---------------------------|---------------------------|---|
| | 7144^{+199}_{-299} | $4.169^{+0.148}_{-0.181}$ | $-0.260^{+0.250}_{-0.350}$ | $1.597^{+0.482}_{-0.321}$ | $1.377^{+0.214}_{-0.235}$ | $0.476^{+0.359}_{-0.234}$ |
| | +3%/-4% | +4%/-4% | +96%/-135% | +30%/-20% | +16%/-17% | +75%/-49% |
| 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 005530441-01 / KOI

| Detrend | Depth (ppm) | $R_p (R_{\oplus})$ | $T_{\text{max}} (K)$ | $T_{\text{obs}} (K)$ | A_{obs} |
|---------|-------------|------------------------|----------------------|-------------------------|---------------------------|
| DV | -0 \pm 1 | $0.58^{+0.35}_{-0.33}$ | 2307^{+189}_{-157} | -2279^{+6719}_{-2165} | $0.212^{+8.213}_{-7.658}$ |
| Alt. | -23 \pm 1 | $1.66^{+0.43}_{-0.36}$ | 2311^{+182}_{-152} | 5044^{+559}_{-396} | 15^{+9}_{-6} |

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 $A_{\text{obs}} \gg 1.0$

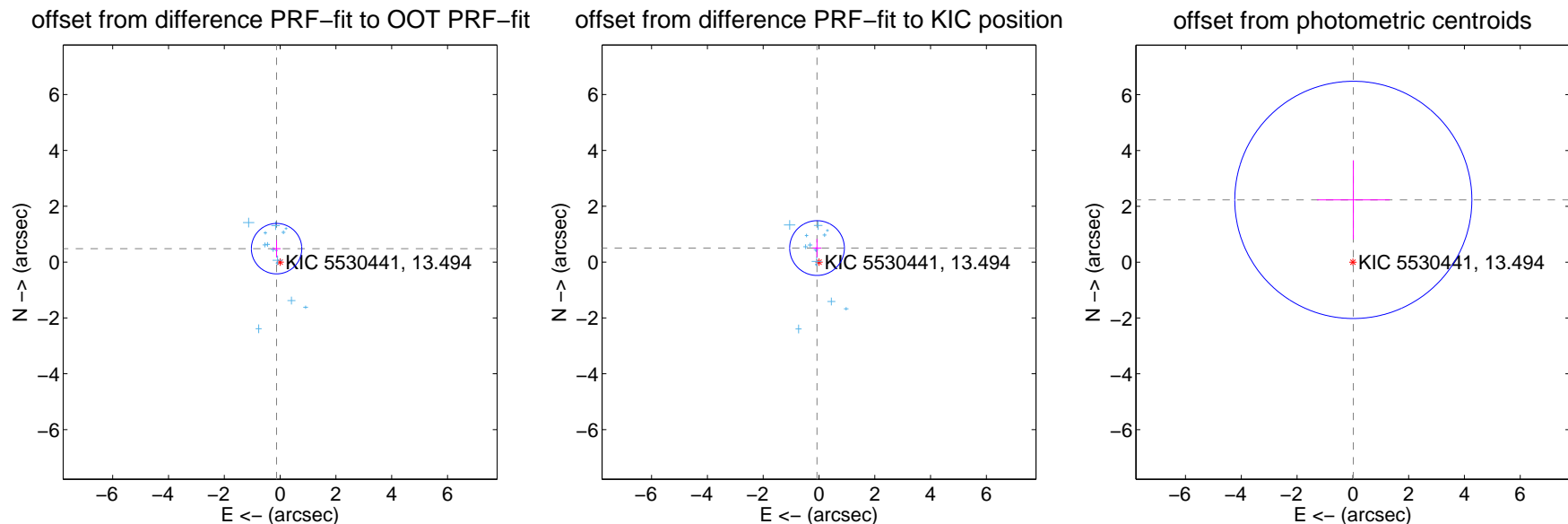
DV Centroid Data

Supplemental centroid analysis for 005530441-01. Kepler magnitude: 13.49. Transit SNR 4.51

There are 14 quarters with good PRF difference image offsets

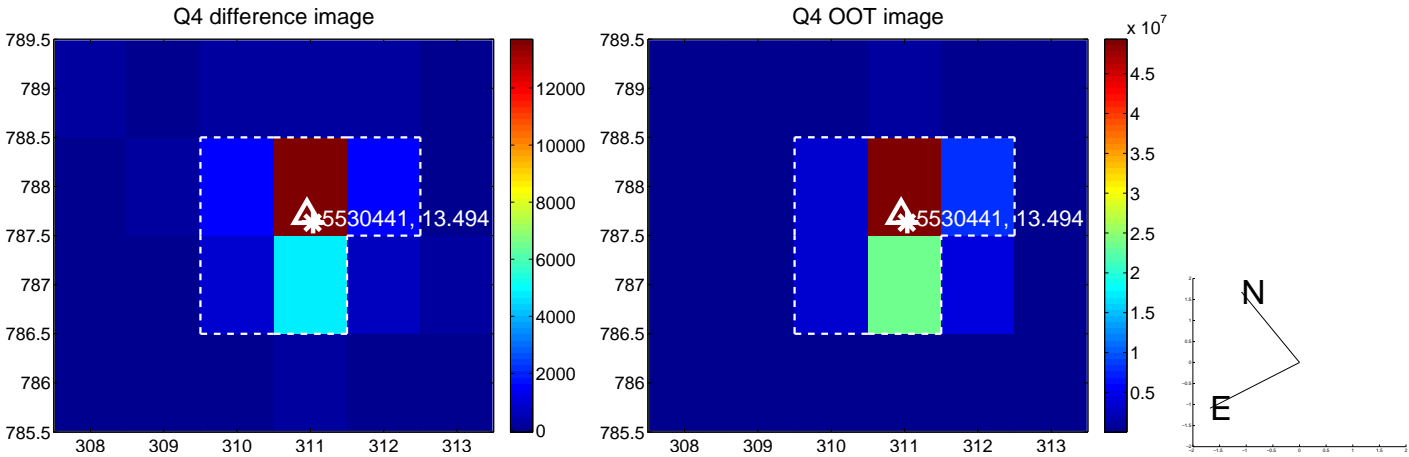
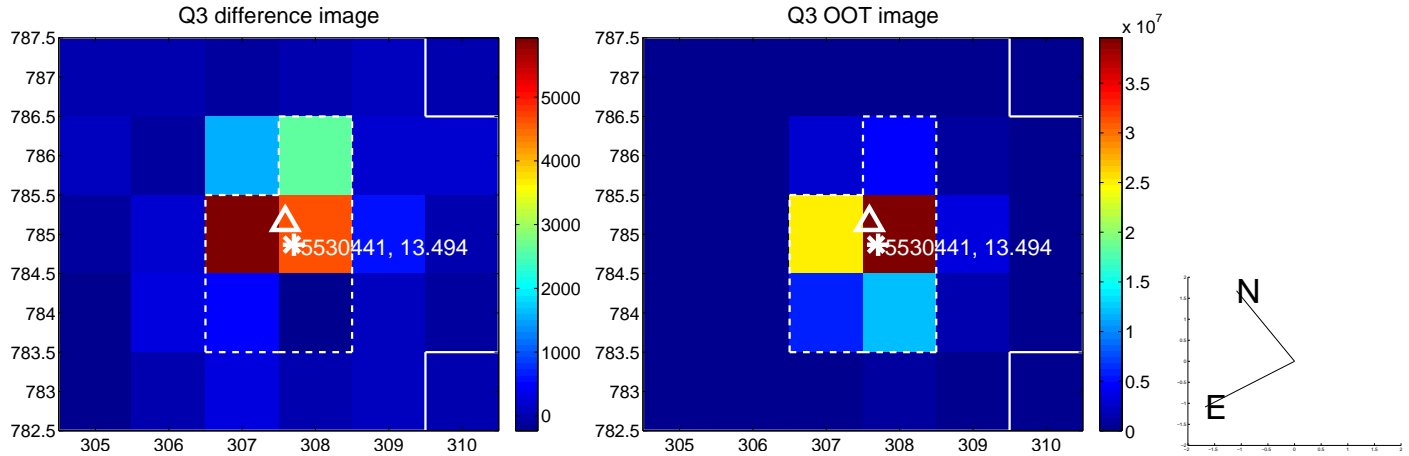
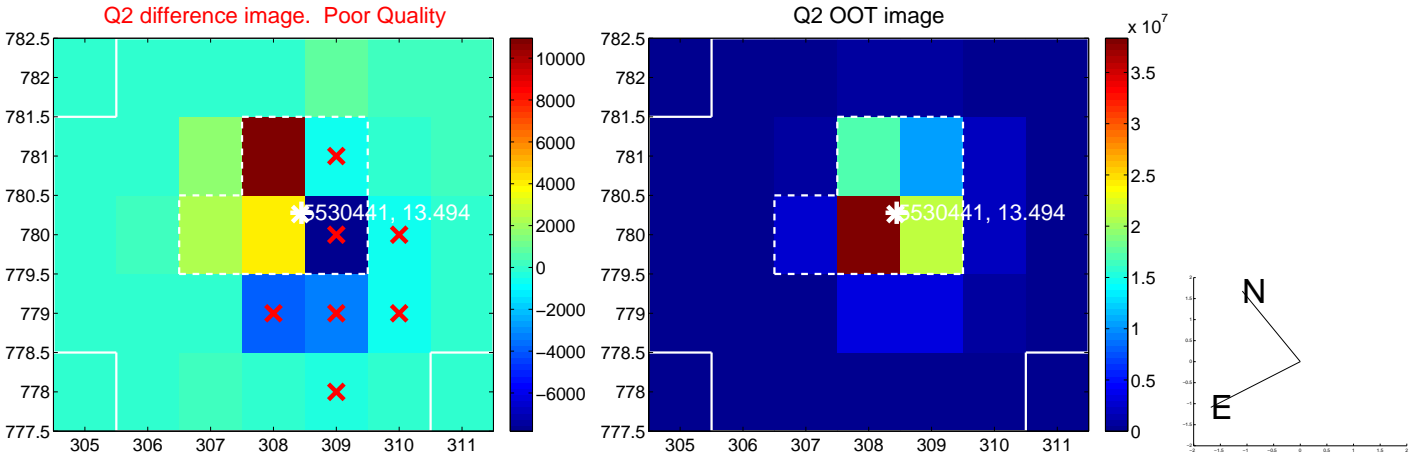
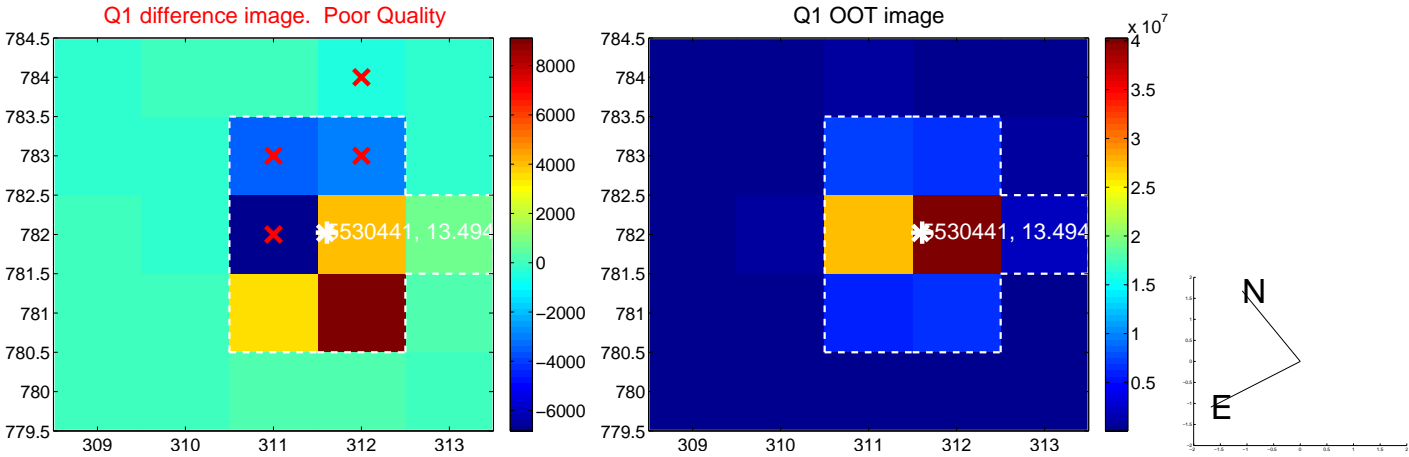
The direct PRF centroid is offset from the target star catalog position by about 0.05 arcsec

| | Distance in arcsec | Distance / σ | Δ RA | Δ Dec |
|---|--------------------|---------------------|-------------------|-------------------|
| PRF-fit source offset from OOT | 0.498 ± 0.301 | 1.65 | 0.127 ± 0.144 | 0.481 ± 0.306 |
| PRF-fit source offset from KIC position | 0.507 ± 0.327 | 1.55 | 0.070 ± 0.152 | 0.502 ± 0.325 |
| photometric centroid source offset | 2.23 ± 1.42 | 1.57 | -0.02 ± 1.30 | 2.23 ± 1.42 |

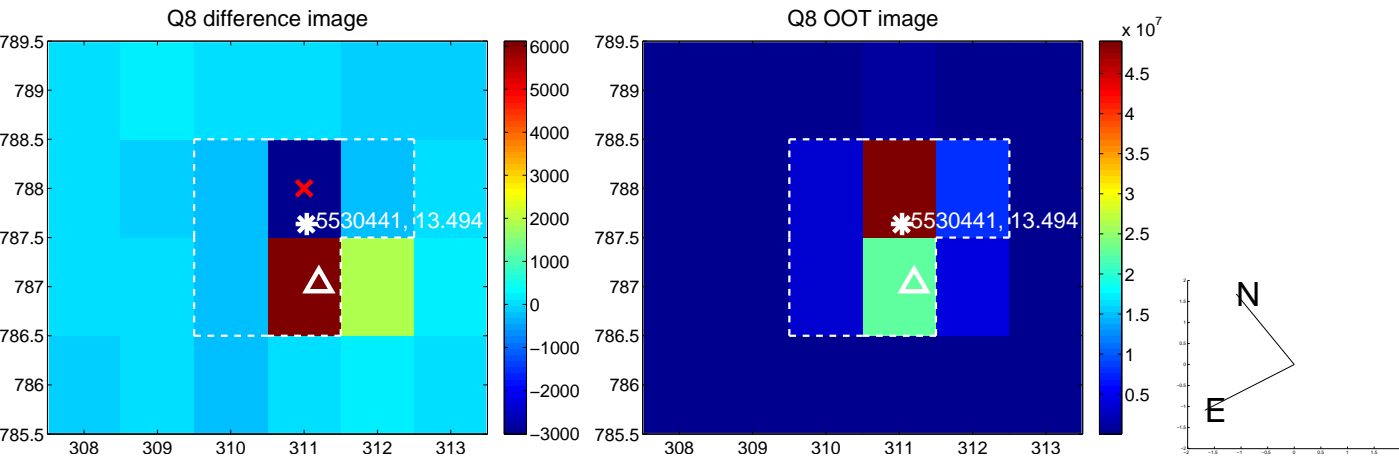
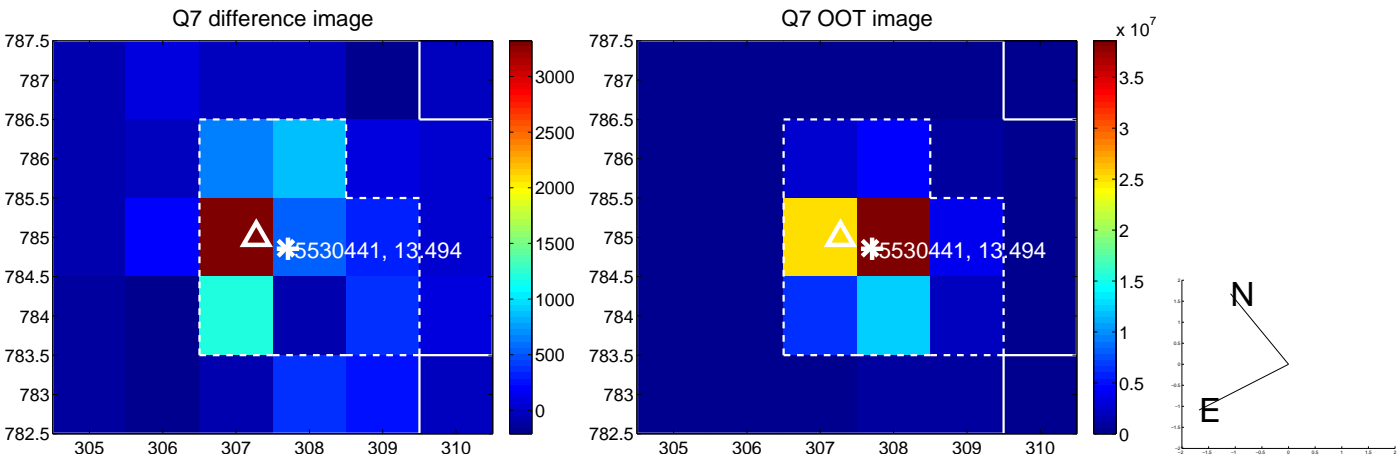
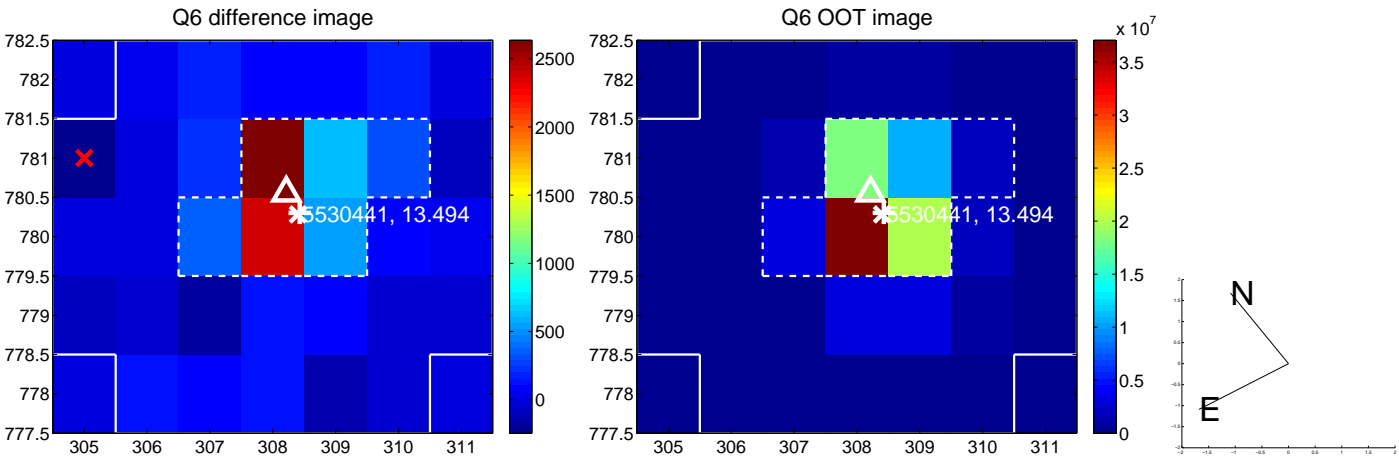
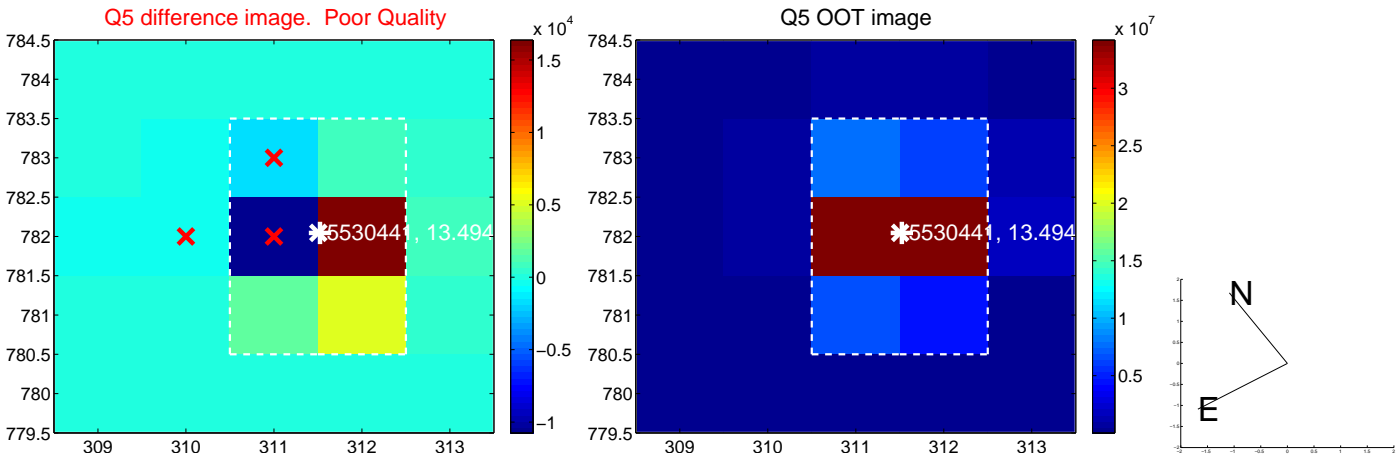


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

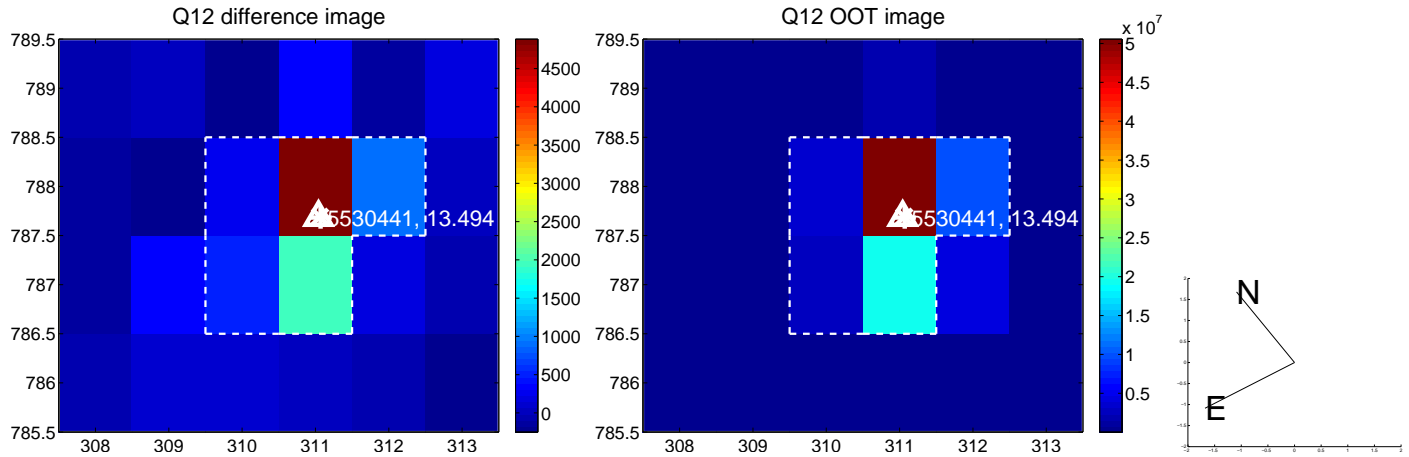
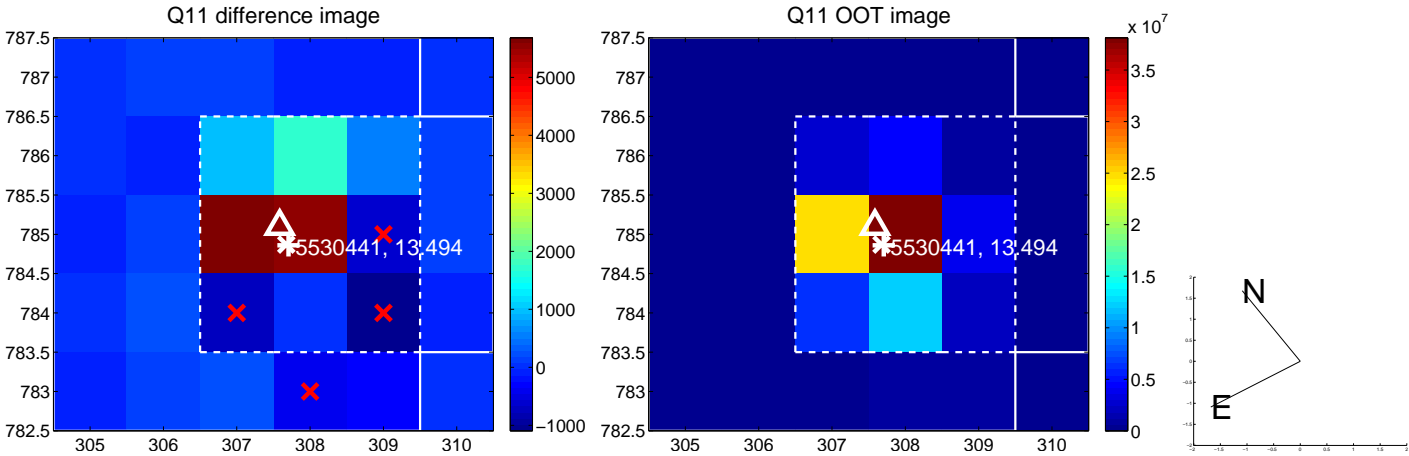
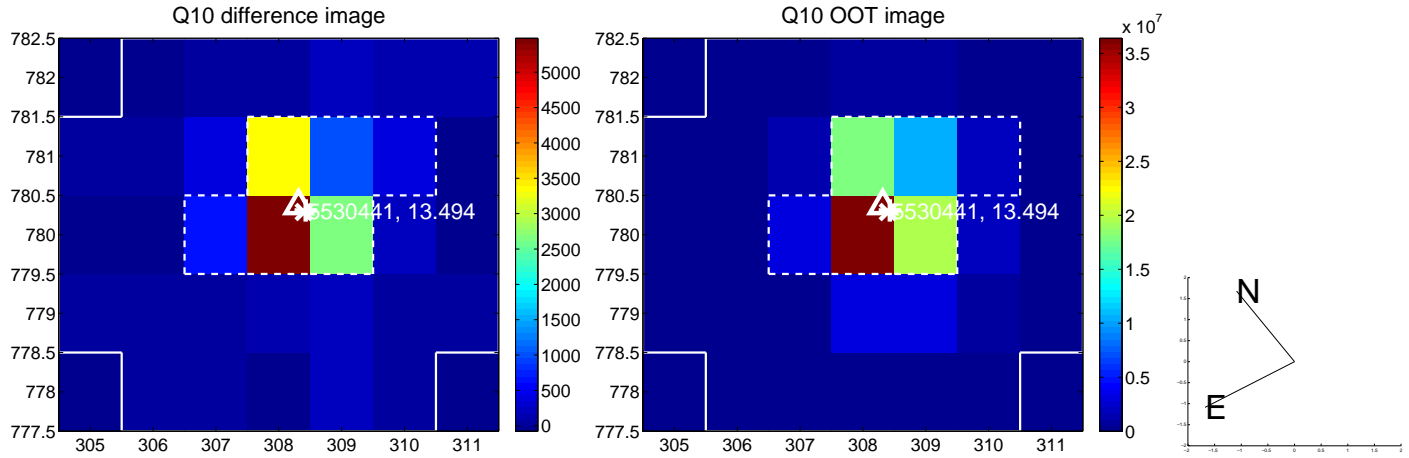
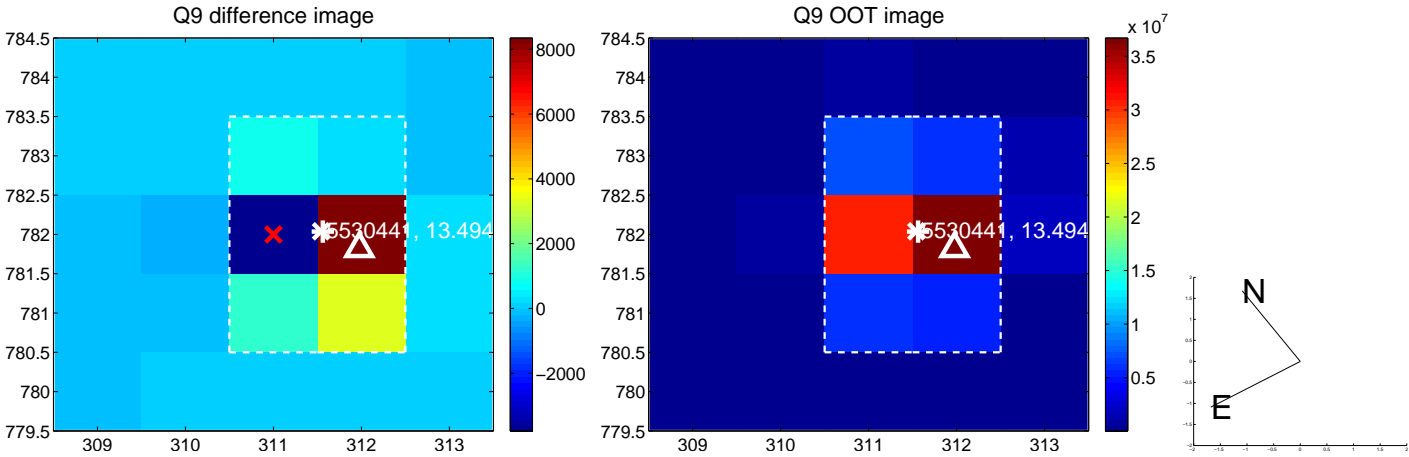
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



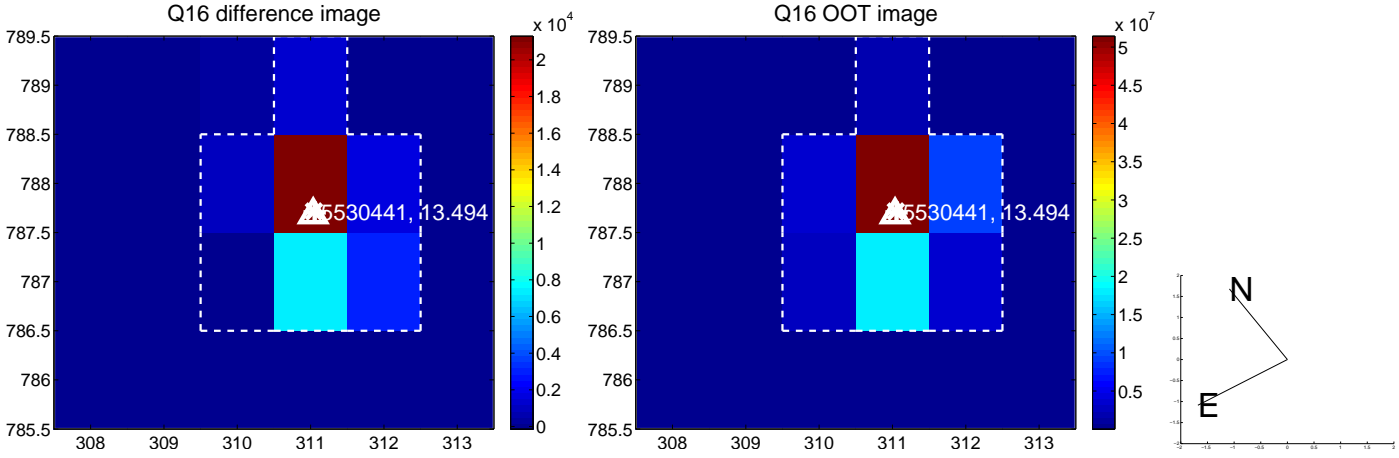
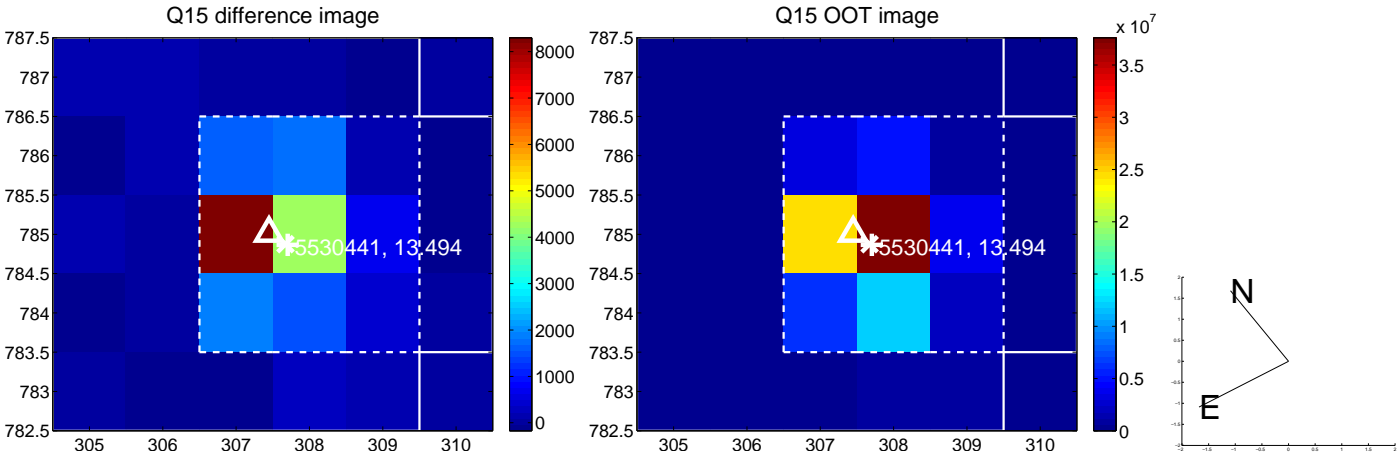
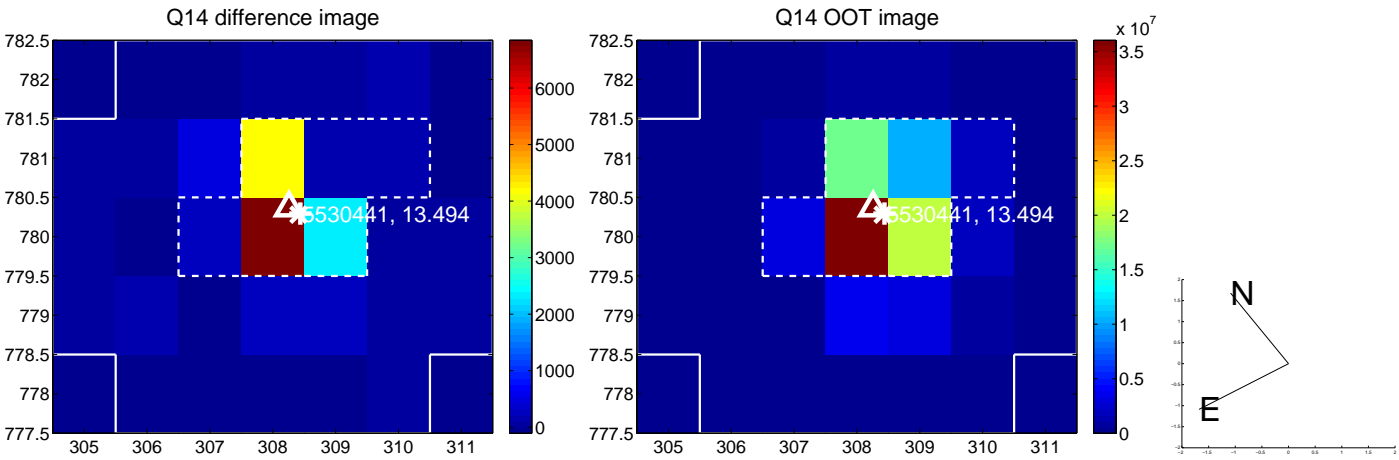
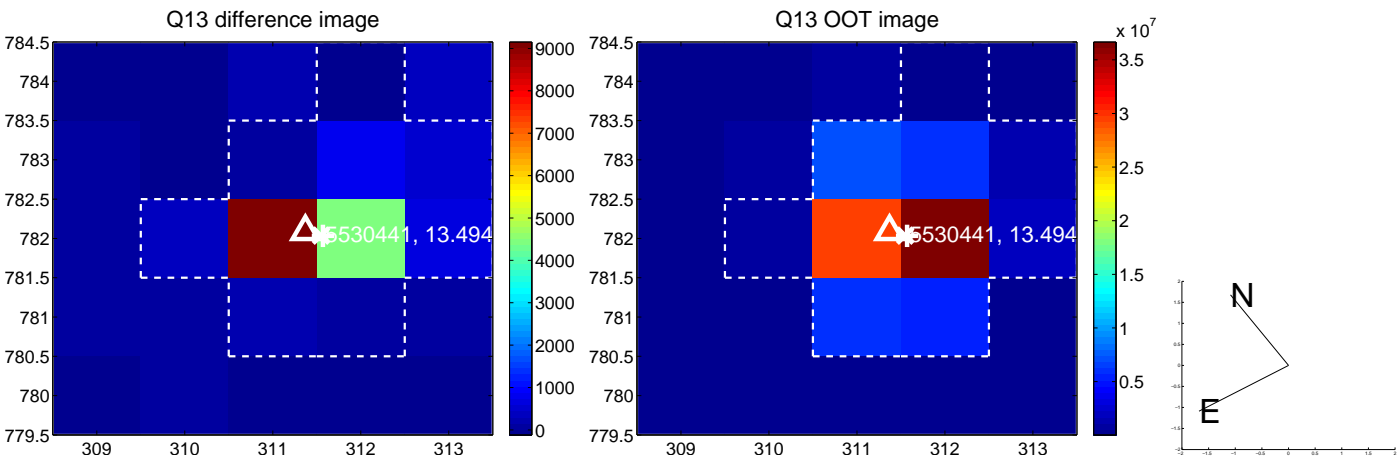
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



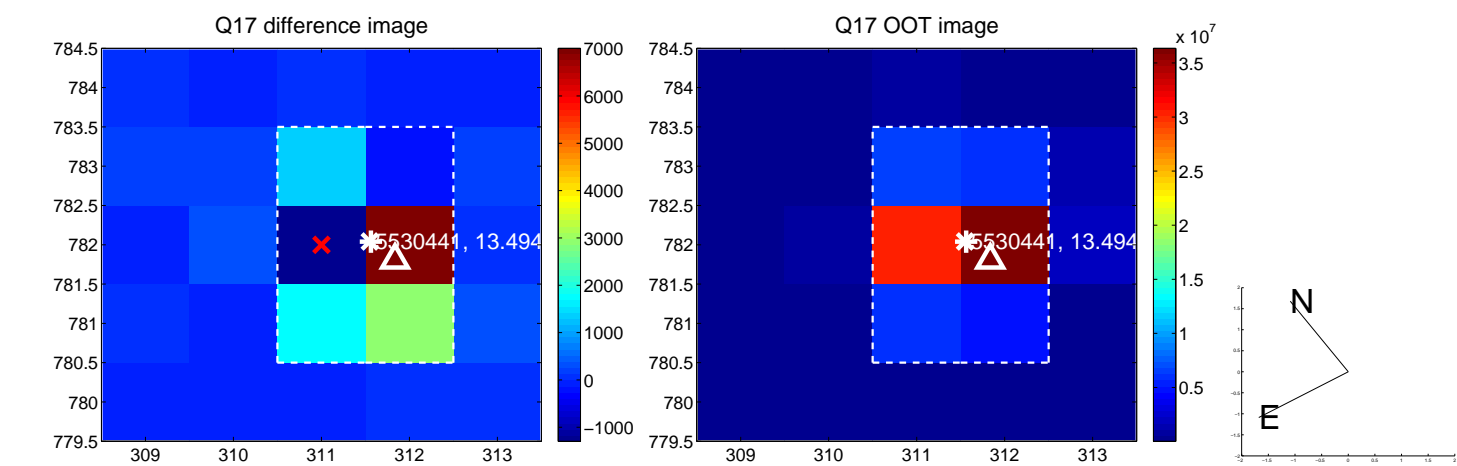
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



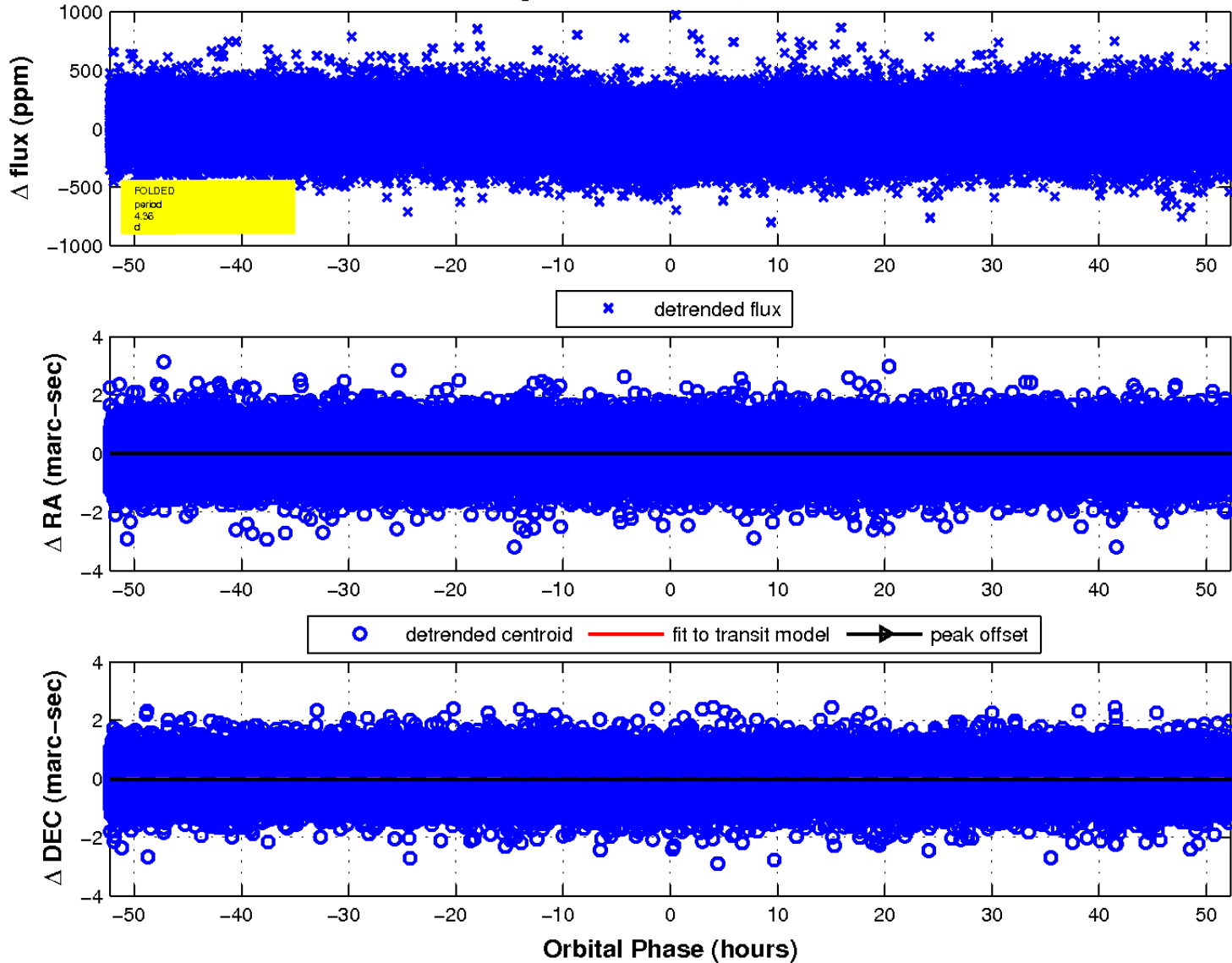
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



fluxWeightedCentroids, Planet 1 of 1



UKIRT Image

Declination

