

KIC 006037187

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}) |
|--------------|----------|---------|---------------|--------------|-------------|------------------|------|------|-----------------------------|-----------------|------------------------|------------------------|
| 006037187-01 | OBS | 1061.01 | 41.805905 | 142.820634 | 420.8 | 6.368 | 23.6 | 24.7 | 0.97 | 5907 | 2.31 | 19.06 |

Robovetter Results

| TCE | Run Type | Disp | Score | N | S | C | E | Comments |
|--------------|----------|------|-------|---|---|---|---|------------|
| 006037187-01 | OBS | PC | 1.00 | 0 | 0 | 0 | 0 | NO_COMMENT |

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 006037187-01

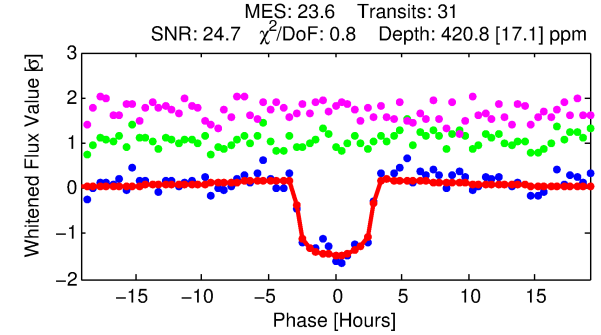
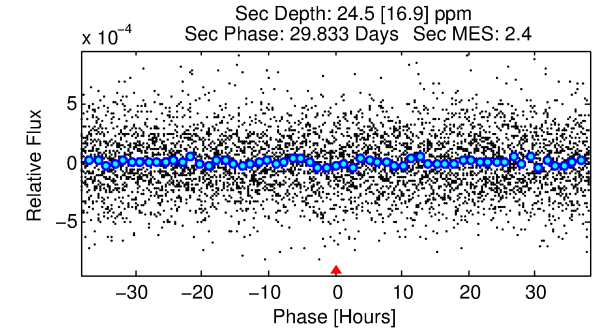
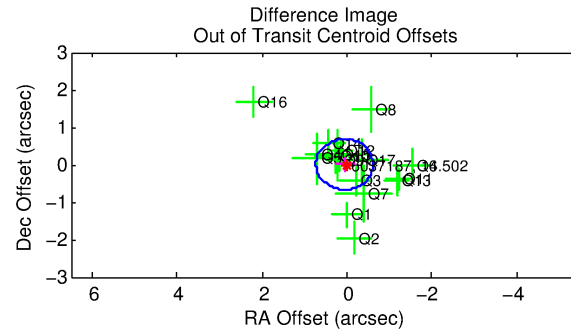
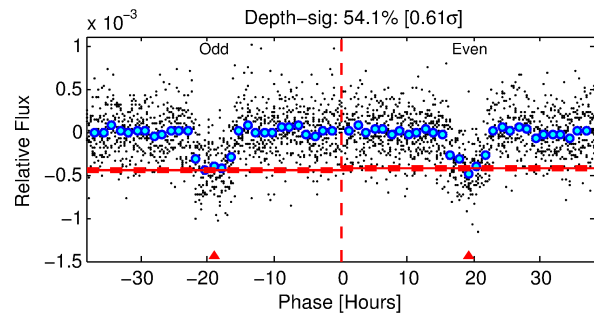
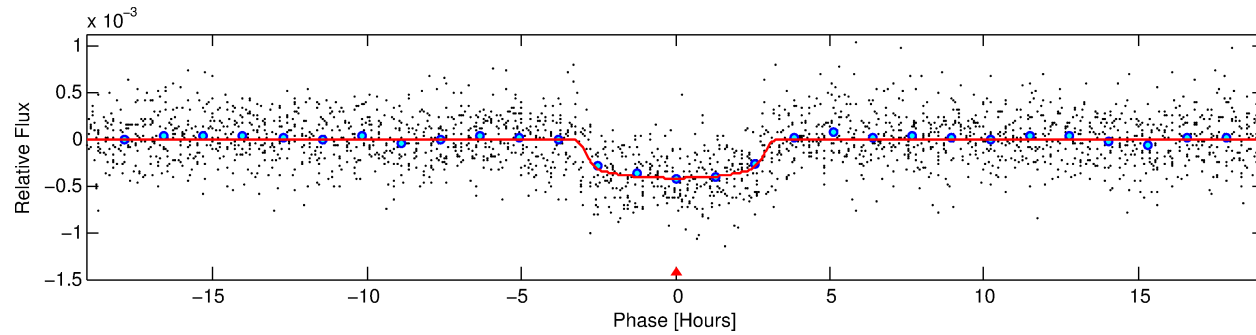
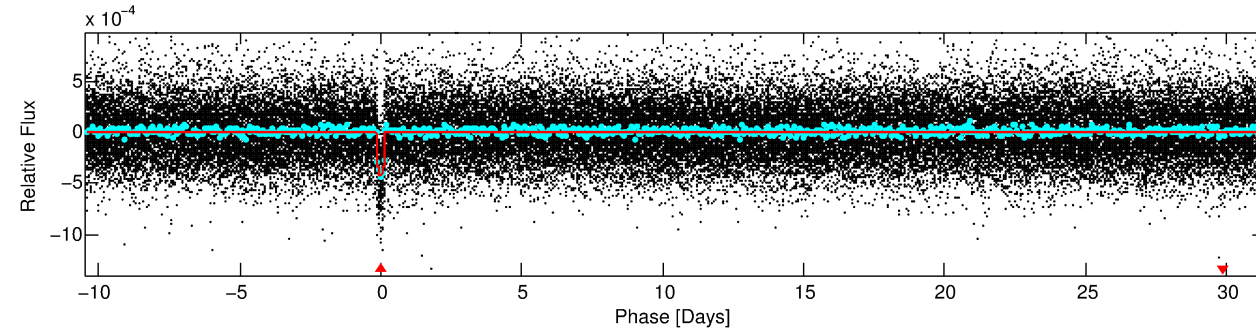
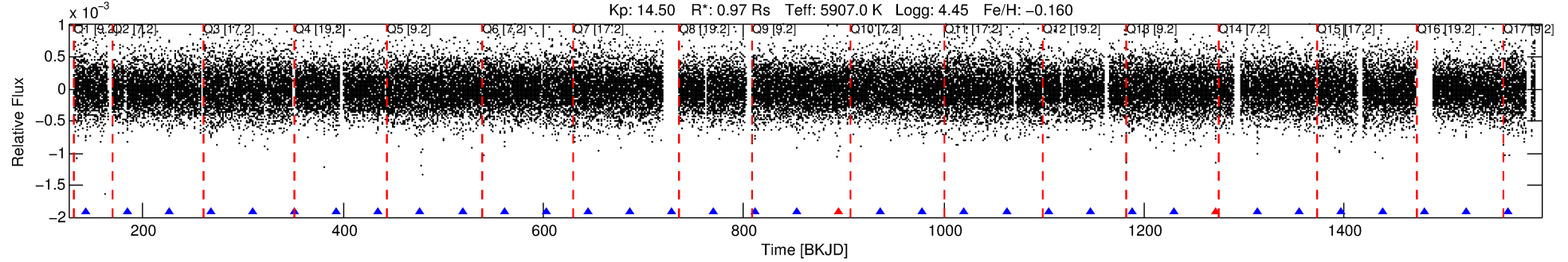
No Significant Match Found

DV One-Page Summary

KIC: 6037187 Candidate: 1 of 1 Period: 41.806 d

KOI: K01061.01 Corr: 0.981

Kp: 14.50 R*: 0.97 Rs Teff: 5907.0 K Logg: 4.45 Fe/H: -0.160



DV Fit Results:

Period = 41.80590 [0.00025] d
Epoch = 142.8206 [0.0048] BKJD
Rp/R* = 0.0217 [0.0020]
a/R* = 26.61 [11.29]
b = 0.87 [0.12]
Seff = 19.06 [7.35]
Teq = 533 [51] K
Rp = 2.31 [0.73] Re
a = 0.2328 [0.0585] AU
Ag = 137.37 [109.50] [1.25σ]
Teffp = 2820 [509] K [4.47σ]

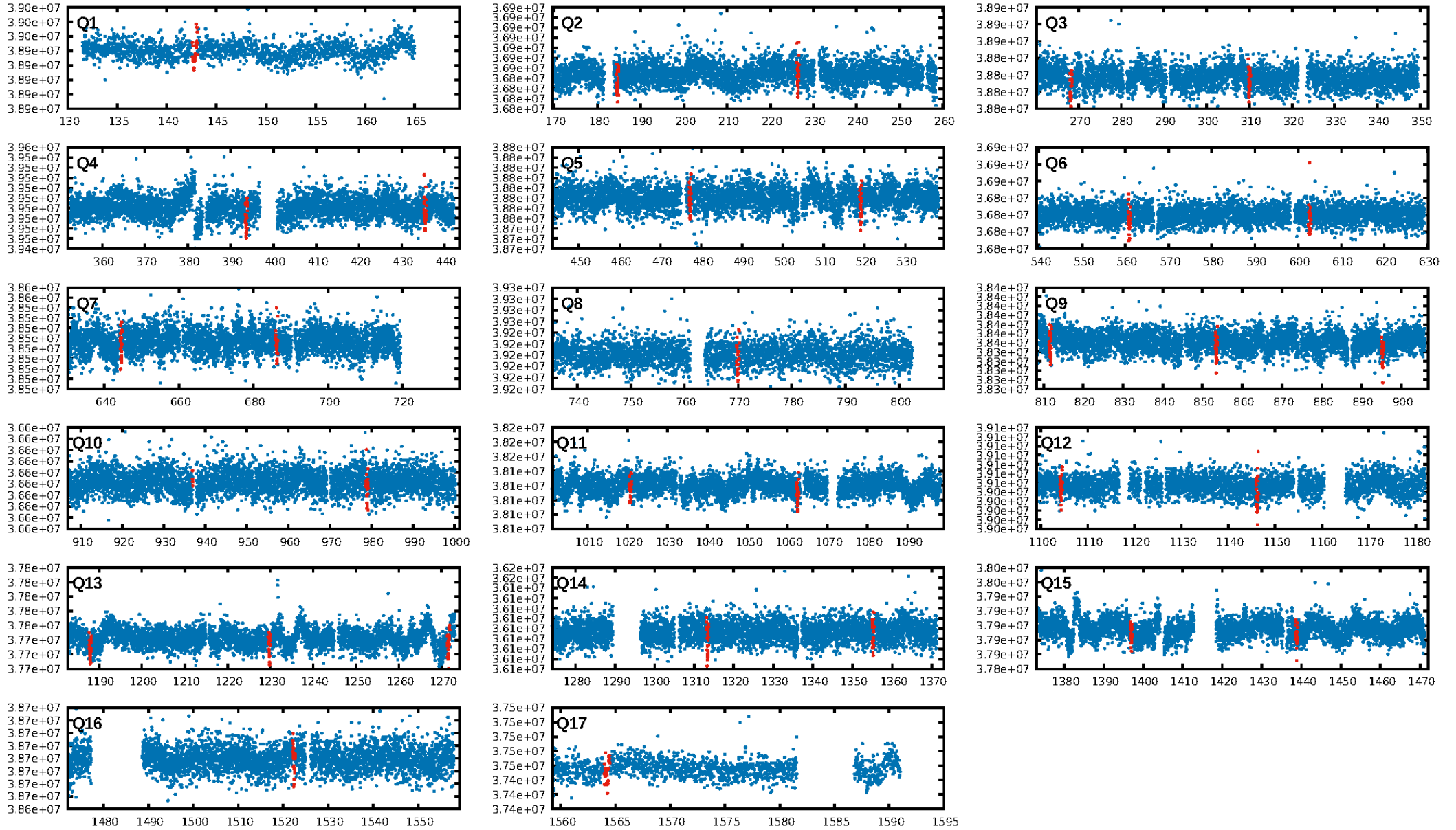
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: 97.0%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 1.88e-112
RollingBand-fgt: 0.93 [27/29]
GhostDiagnostic-chr: 36.5
Centroid-sig: 9.5%
Centroid-so: 0.672 arcsec [1.32σ]
OotOffset-rm: 0.055 arcsec [0.24σ]
KicOffset-rm: 0.112 arcsec [0.55σ]
OotOffset-st: 4/4/4/5 [17]
KicOffset-st: 4/4/4/5 [17]
DiffImageQuality-fgm: 1.00 [17/17]
DiffImageOverlap-fno: 1.00 [17/17]

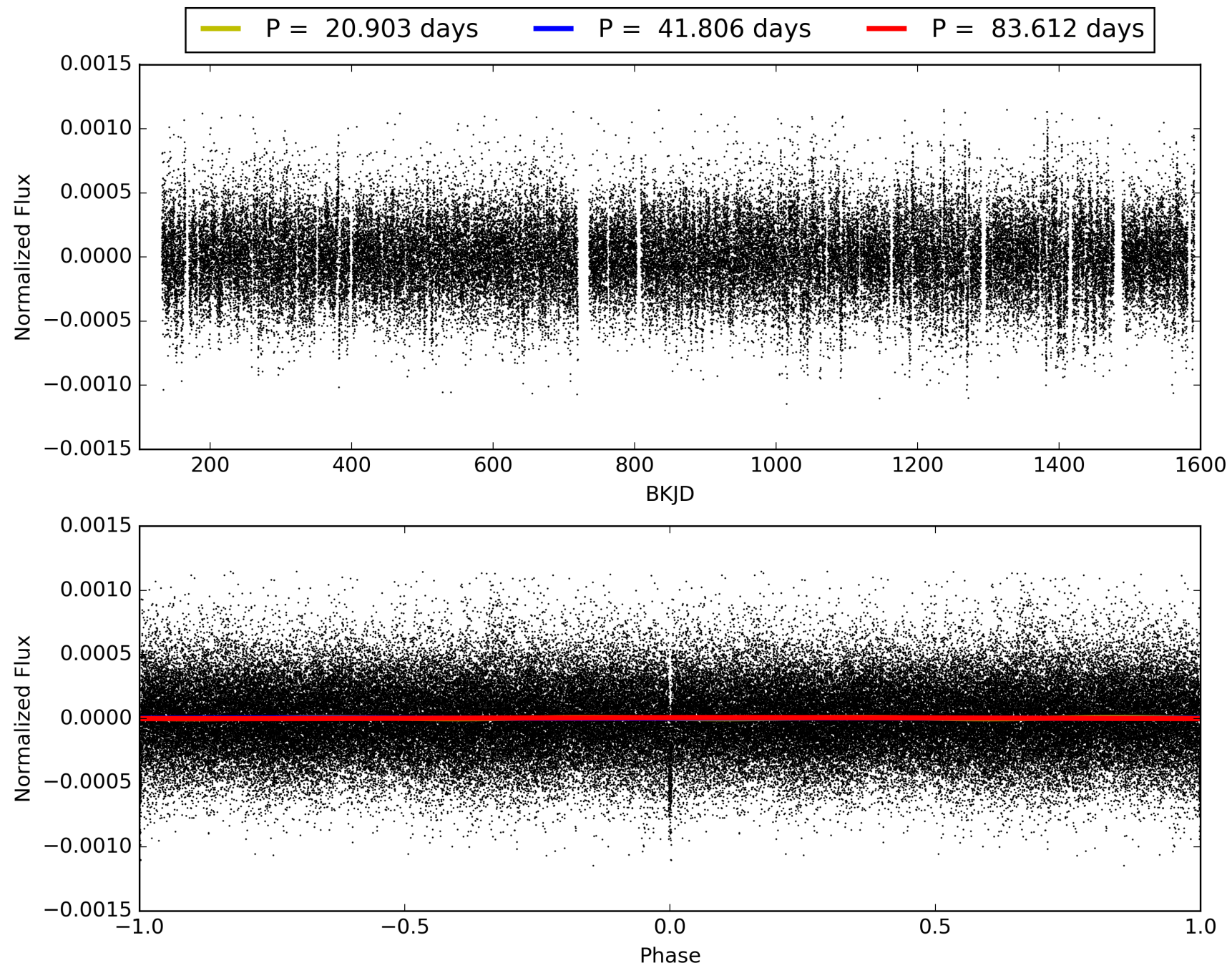
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 16:39:13 Z

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

TCE 006037187-01, PDC Light Curves

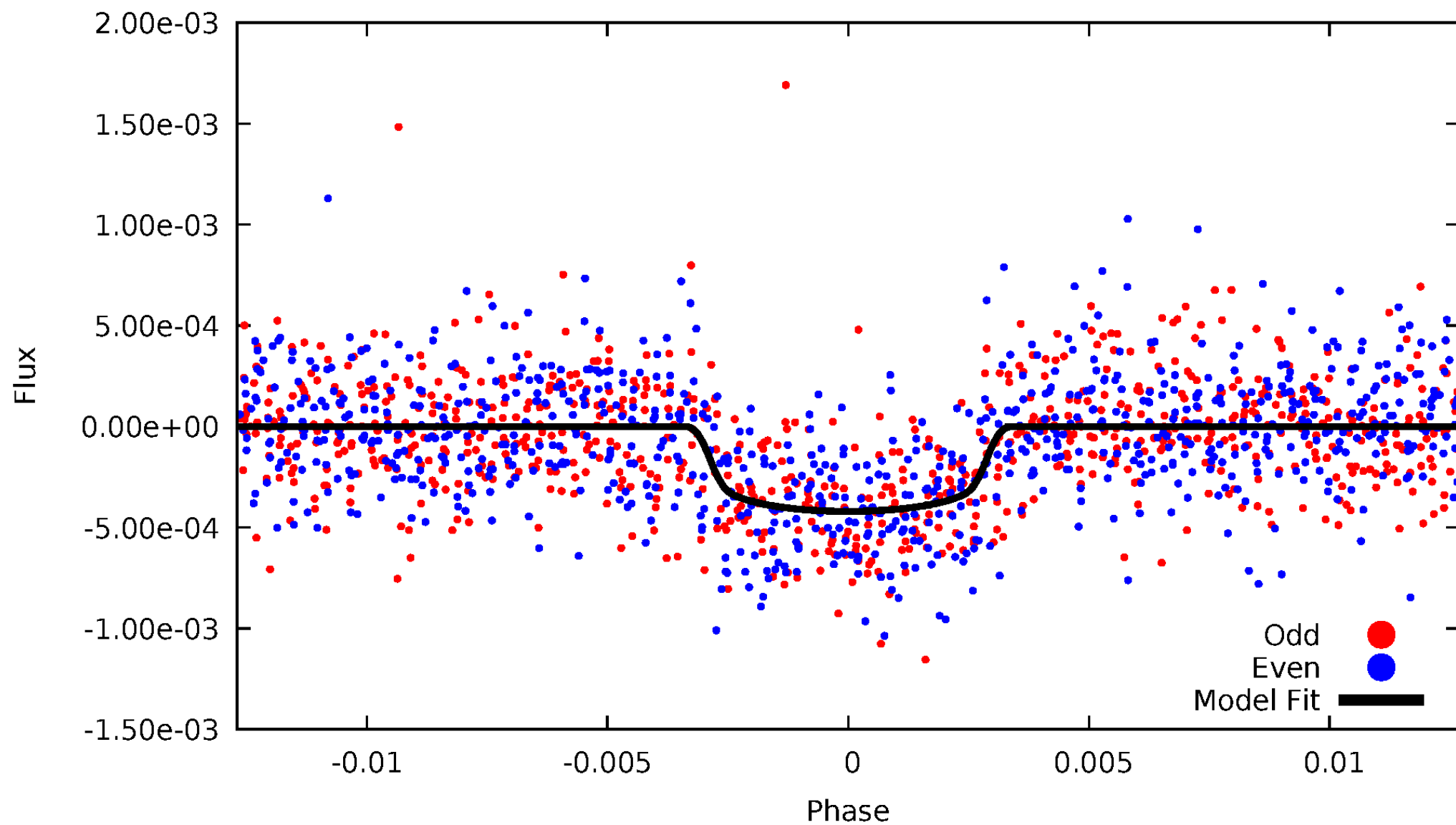


TCE 006037187-01



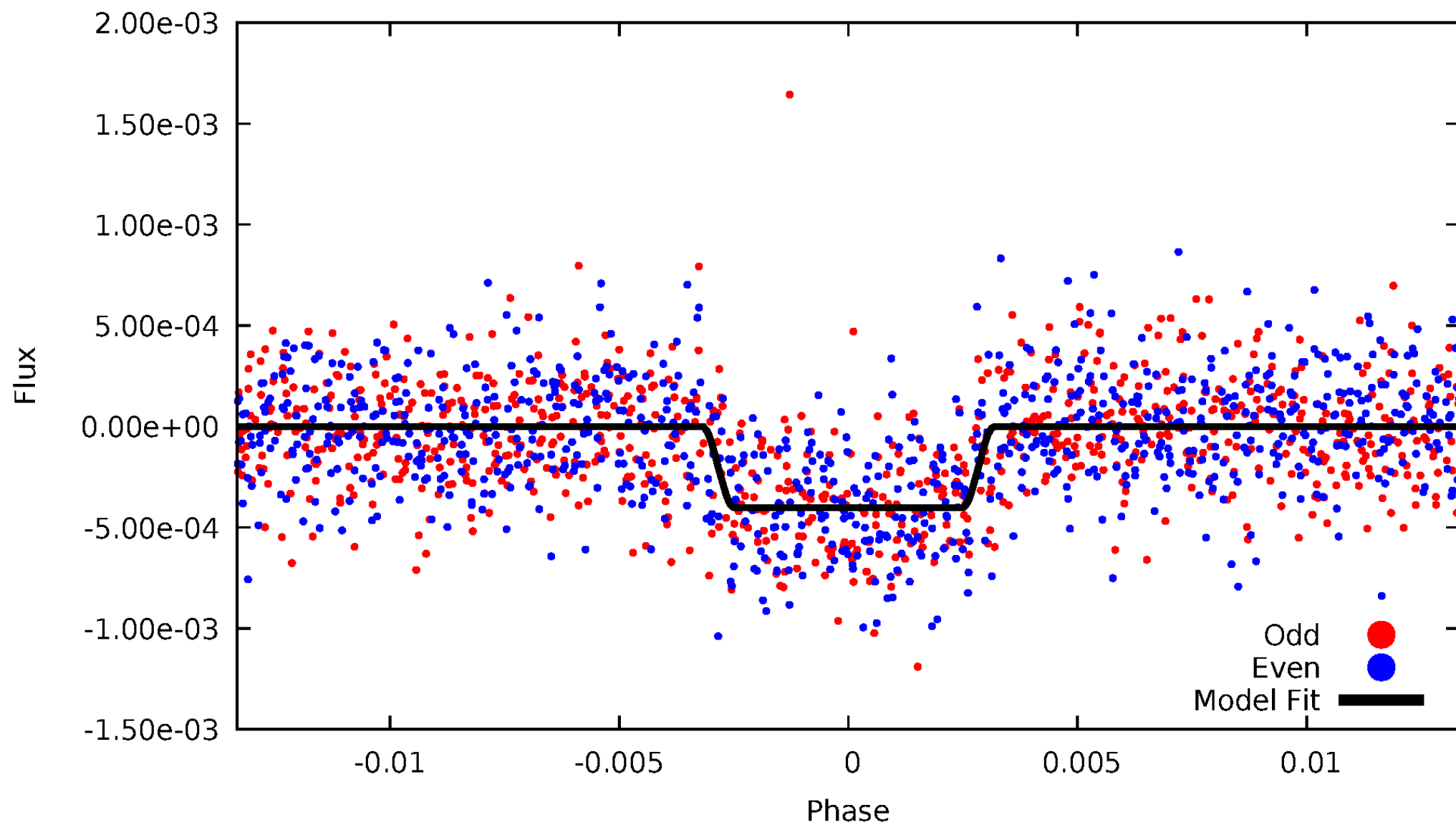
DV Odd/Even

TCE 006037187-01



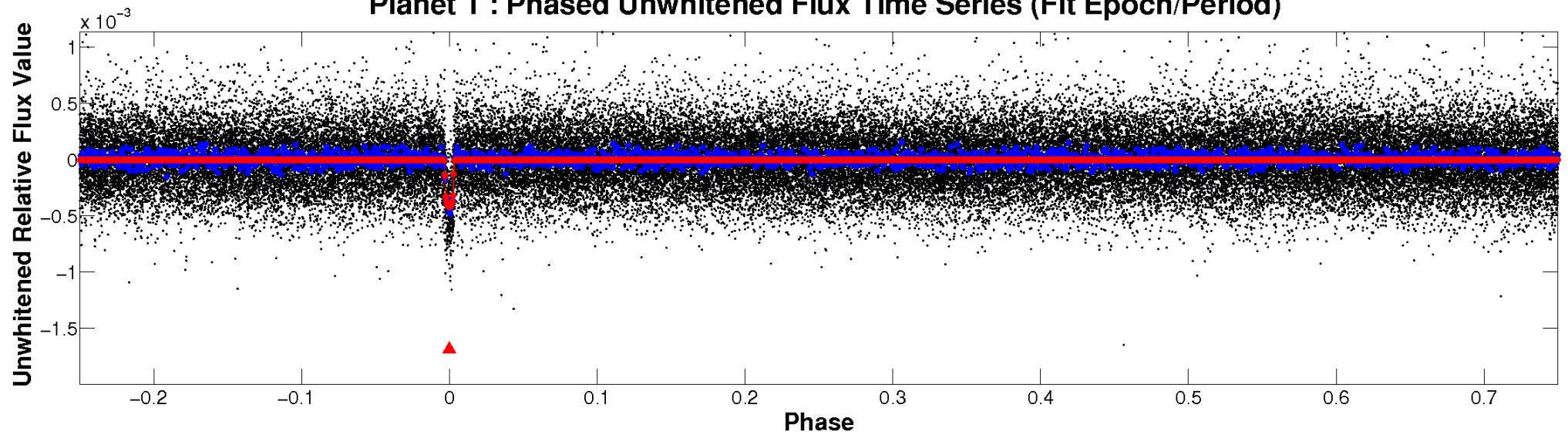
ALT Odd/Even

TCE 006037187-01

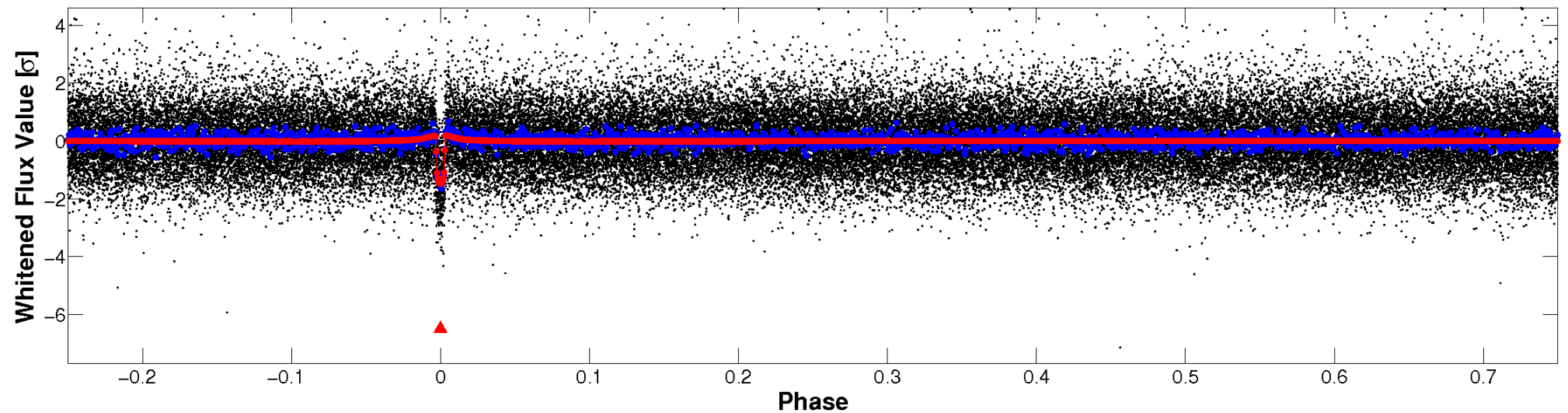


Non-Whitened Vs. Whitened Light Curve

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

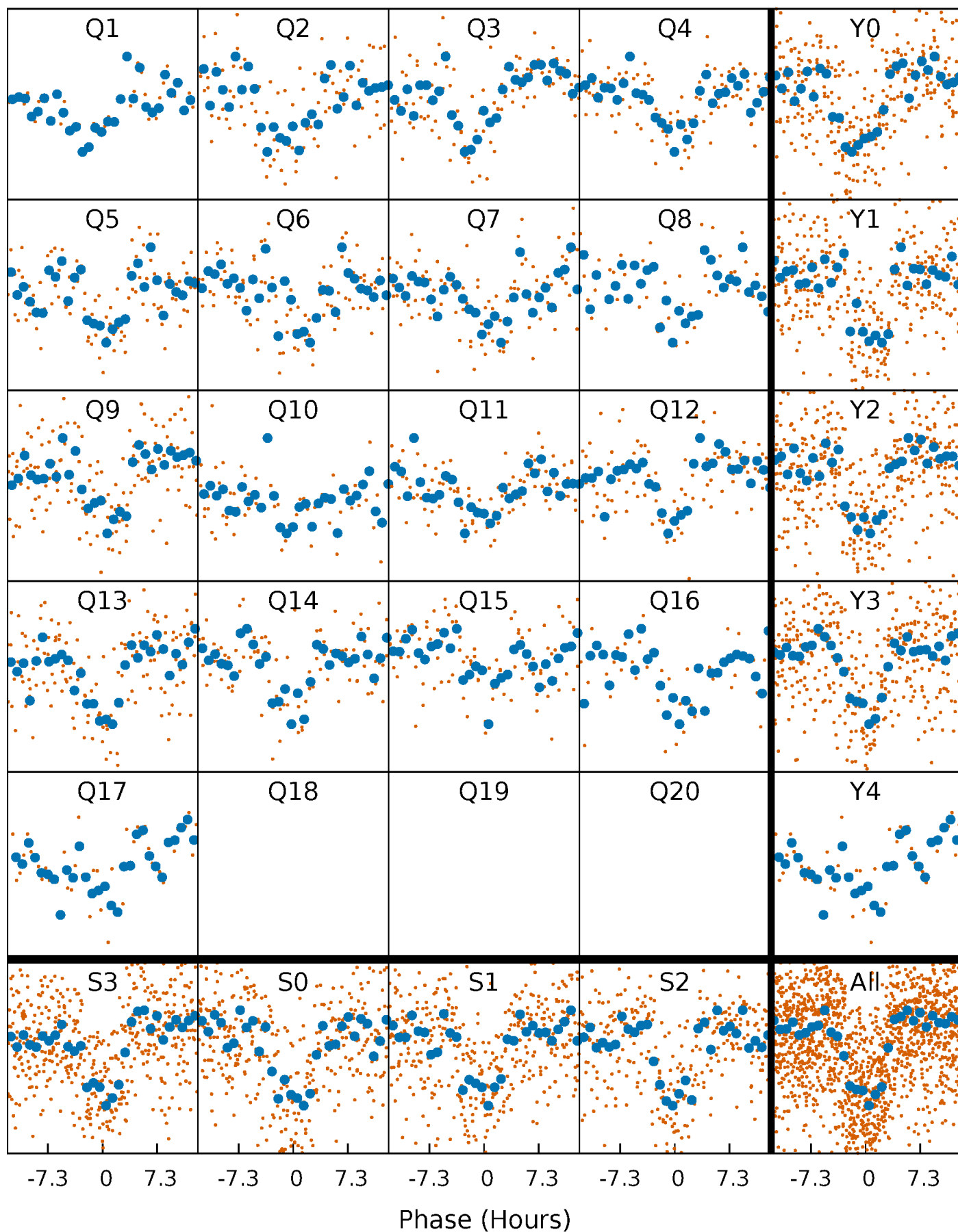


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



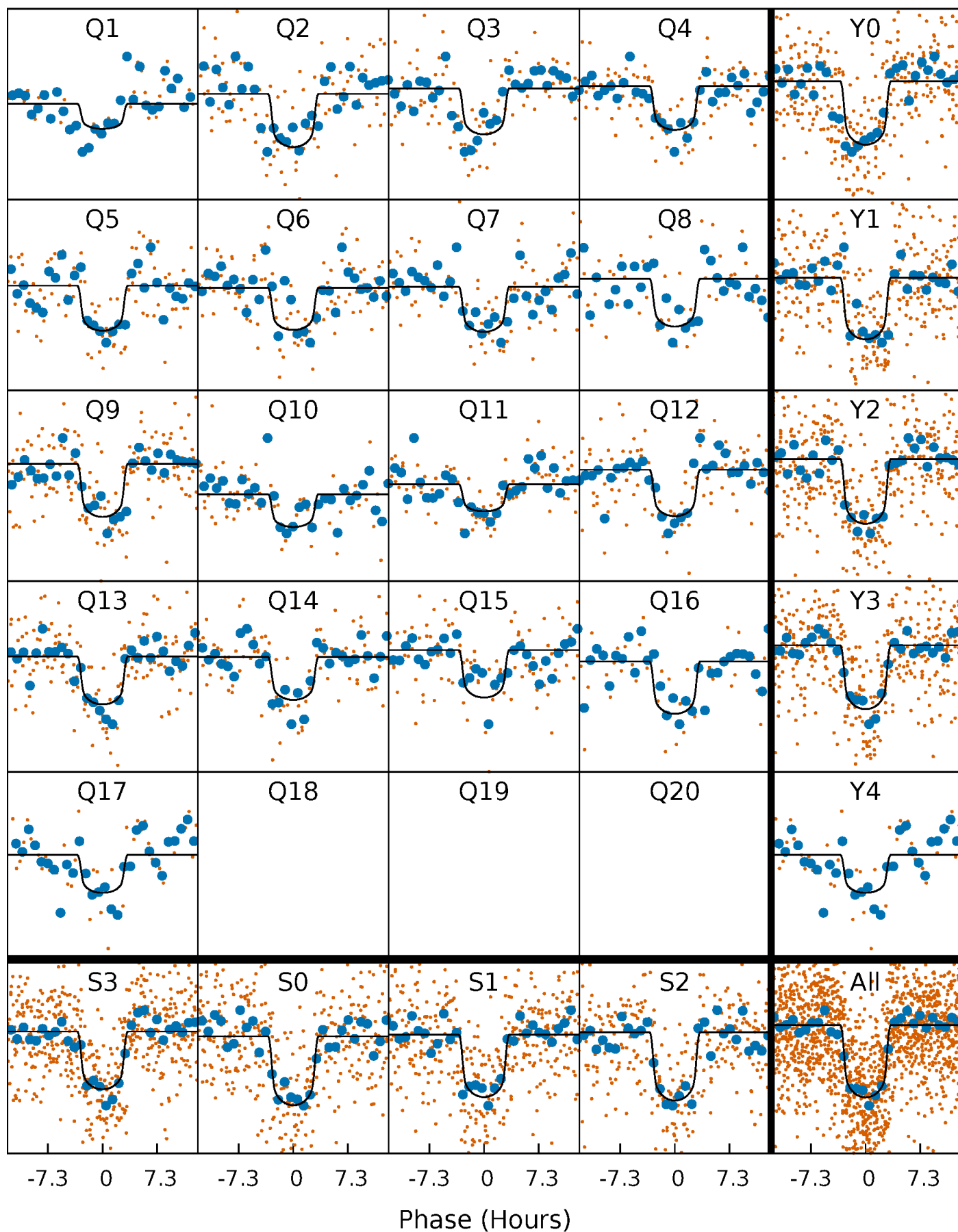
PDC Quarter-Phased Transit Curves

TCE 006037187-01 P= 41.805905 Days $T_0=142.820634$ (BKJD)



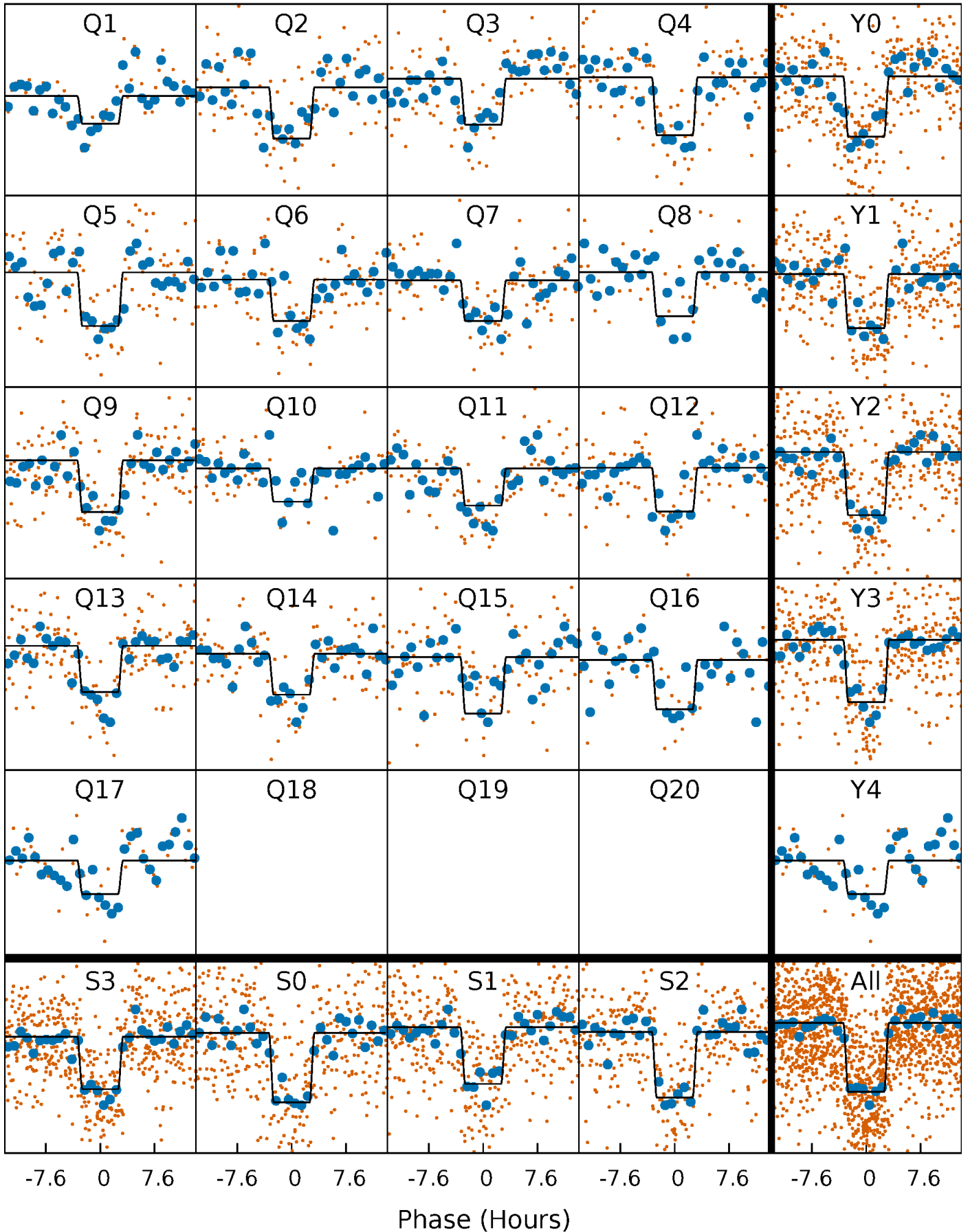
DV Quarter-Phased Transit Curves

TCE 006037187-01 P= 41.805905 Days $T_0=142.820634$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

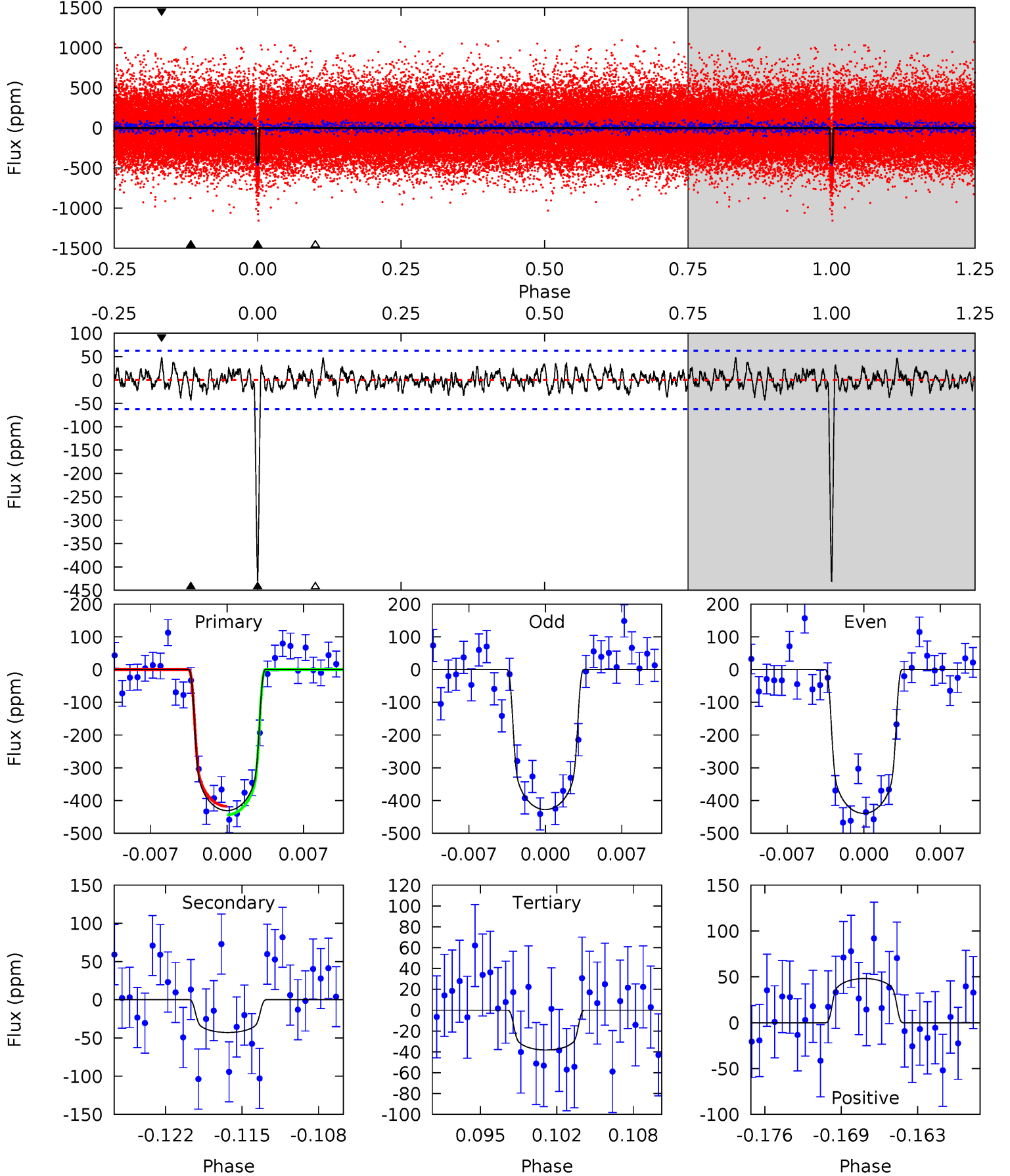
TCE 006037187-01 P= 41.806181 Days $T_0=142.816846$ (BKJD)



DV Model-Shift Uniqueness Test

006037187-01, P = 41.805905 Days, E = 101.014729 Days

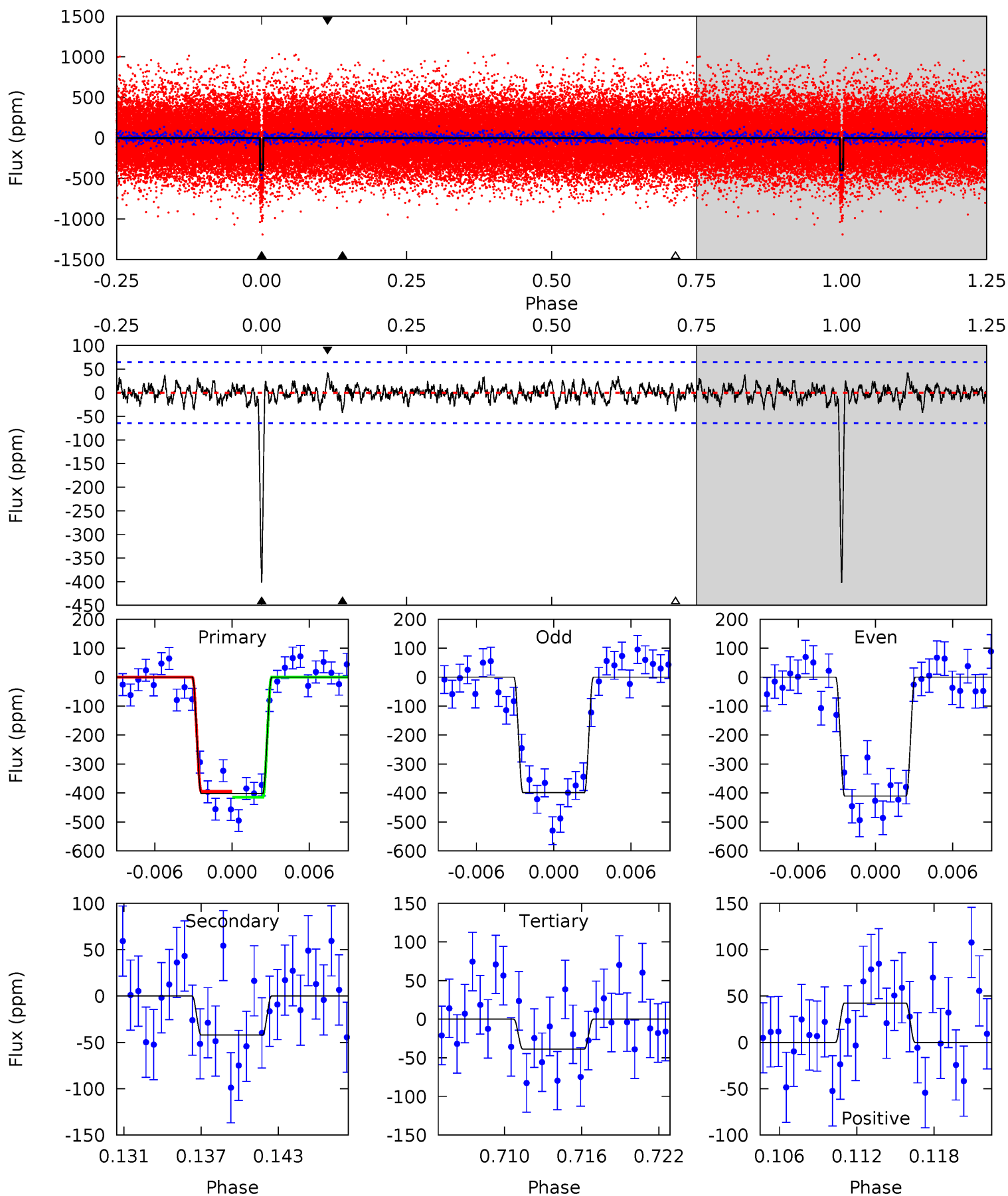
| Pri | Sec | Ter | Pos | FA ₁ | FA ₂ | F _{Red} | Pri-Ter | Pri-Pos | Sec-Ter | Sec-Pos | Odd-Evn | DMM | Shape | TAT |
|------|------|------|------|-----------------|-----------------|------------------|---------|---------|---------|---------|---------|------|-------|------|
| 35.2 | 3.51 | 3.13 | 3.94 | 5.10 | 2.71 | 1.15 | 32.1 | 31.3 | 0.37 | -0.43 | 0.47 | 1.00 | 0.10 | 1.07 |



Alt Model-Shift Uniqueness Test

006037187-01, P = 41.806181 Days, E = 101.010665 Days

| Pri | Sec | Ter | Pos | FA ₁ | FA ₂ | F _{Red} | Pri-Ter | Pri-Pos | Sec-Ter | Sec-Pos | Odd-Evn | DMM | Shape | TAT |
|------|------|------|------|-----------------|-----------------|------------------|---------|---------|---------|---------|---------|------|-------|------|
| 31.9 | 3.34 | 3.07 | 3.37 | 5.12 | 2.74 | 1.00 | 28.9 | 28.6 | 0.27 | -0.03 | 0.49 | 1.01 | 0.10 | 0.80 |



Stellar Parameters For KIC 006037187

| | $T_{\text{eff}}(K)$ | $\log(g)$ | [Fe/H] | $R (R_{\odot})$ | $M(M_{\odot})$ | $p_{\star} (\text{g}\cdot\text{cm}^{-3})$ |
|--------|----------------------|---------------------------|----------------------------|---------------------------|---------------------------|---|
| | 5907^{+159}_{-195} | $4.445^{+0.084}_{-0.196}$ | $-0.160^{+0.300}_{-0.300}$ | $0.973^{+0.294}_{-0.126}$ | $0.961^{+0.132}_{-0.108}$ | $1.472^{+0.531}_{-0.760}$ |
| | +3%/-3% | +2%/-4% | +188%/-188% | +30%/-13% | +14%/-11% | +36%/-52% |
| 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 006037187-01 / KOI 1061.01

| Detrend | Depth (ppm) | $R_p (R_{\oplus})$ | $T_{\text{max}} (K)$ | $T_{\text{obs}} (K)$ | A_{obs} |
|---------|--------------|------------------------|----------------------|----------------------|---------------------|
| DV | -43 ± 12 | $2.37^{+0.42}_{-0.31}$ | 755^{+53}_{-40} | 3659^{+211}_{-235} | 216^{+92}_{-76} |
| Alt. | -42 ± 13 | $2.19^{+0.37}_{-0.31}$ | 752^{+54}_{-39} | 3739^{+236}_{-252} | 256^{+123}_{-101} |

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

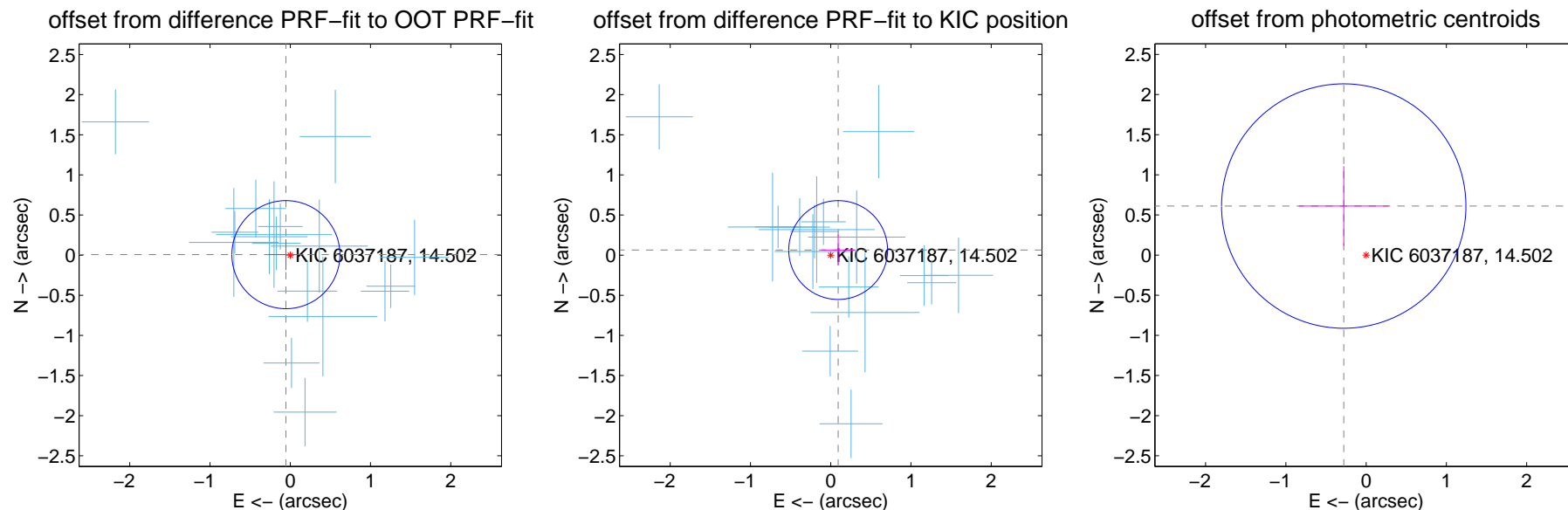
DV Centroid Data

Supplemental centroid analysis for 006037187-01. Kepler magnitude: 14.50. Transit SNR 24.72

There are 17 quarters with good PRF difference image offsets

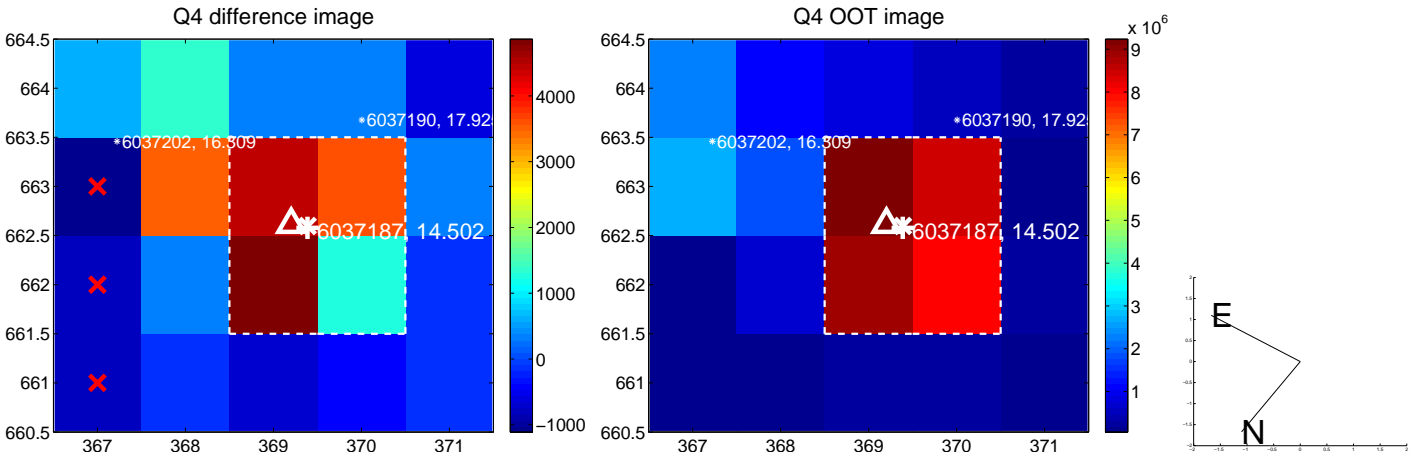
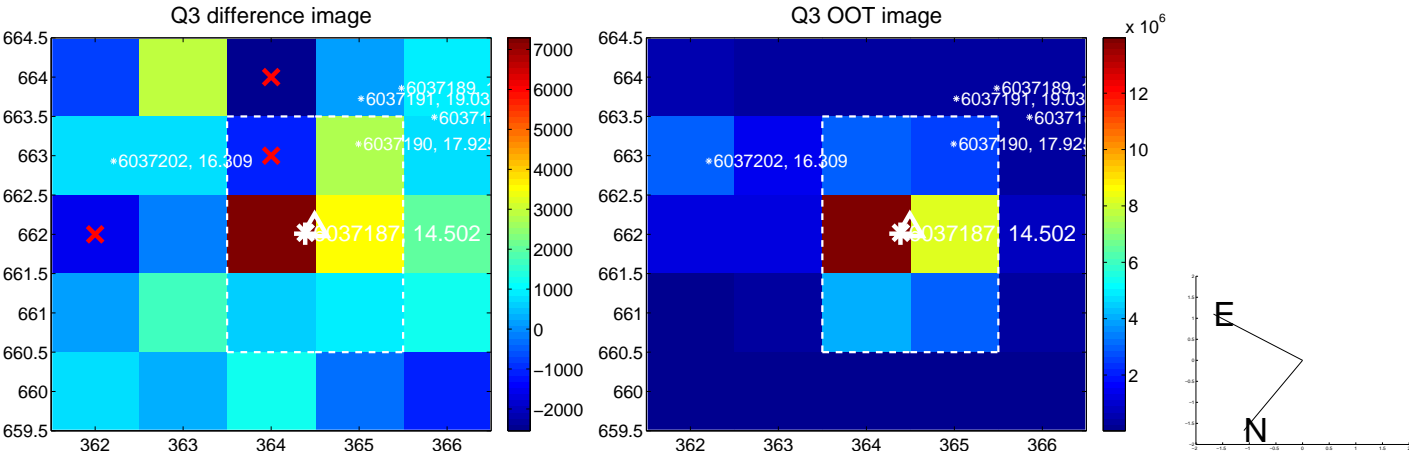
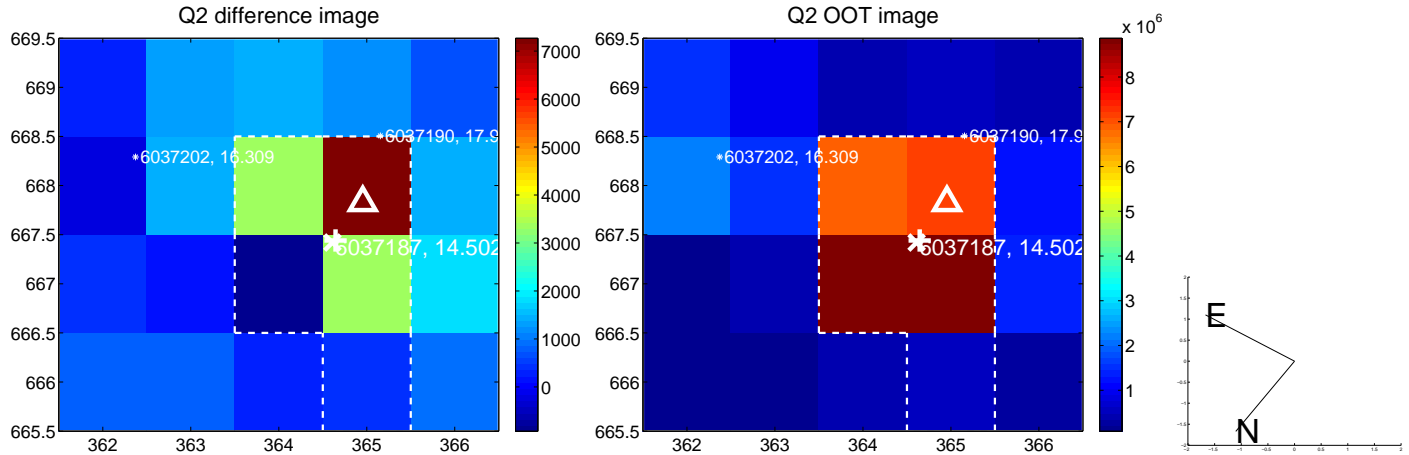
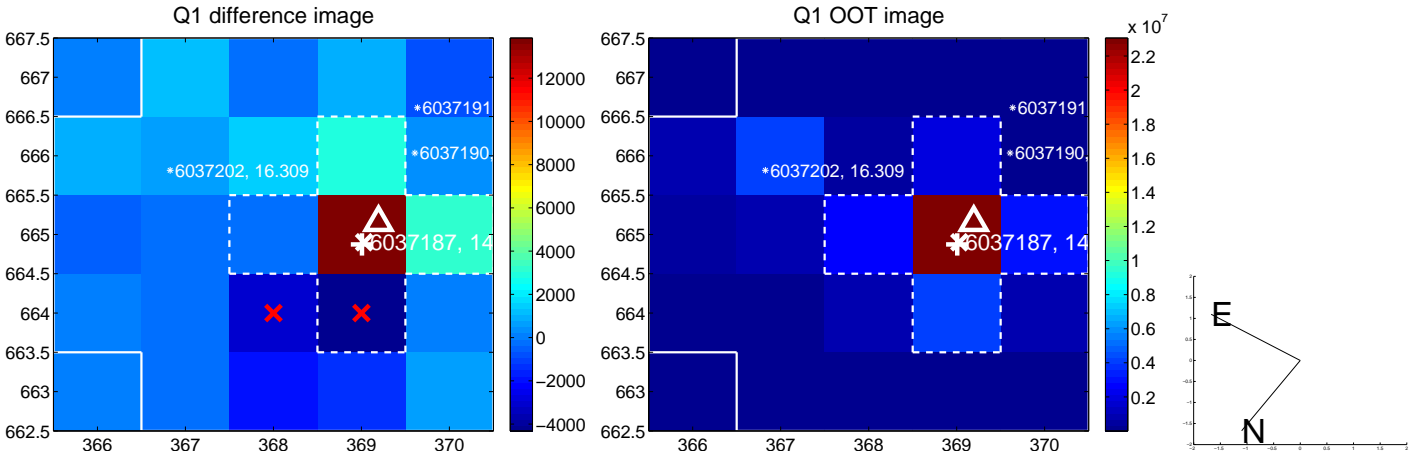
The direct PRF centroid is offset from the target star catalog position by about 0.12 arcsec

| | Distance in arcsec | Distance / σ | Δ RA | Δ Dec |
|---|--------------------|---------------------|--------------------|-------------------|
| PRF-fit source offset from OOT | 0.055 ± 0.224 | 0.24 | 0.054 ± 0.217 | 0.006 ± 0.191 |
| PRF-fit source offset from KIC position | 0.112 ± 0.205 | 0.55 | -0.093 ± 0.210 | 0.064 ± 0.194 |
| photometric centroid source offset | 0.67 ± 0.51 | 1.32 | 0.28 ± 0.56 | 0.61 ± 0.50 |

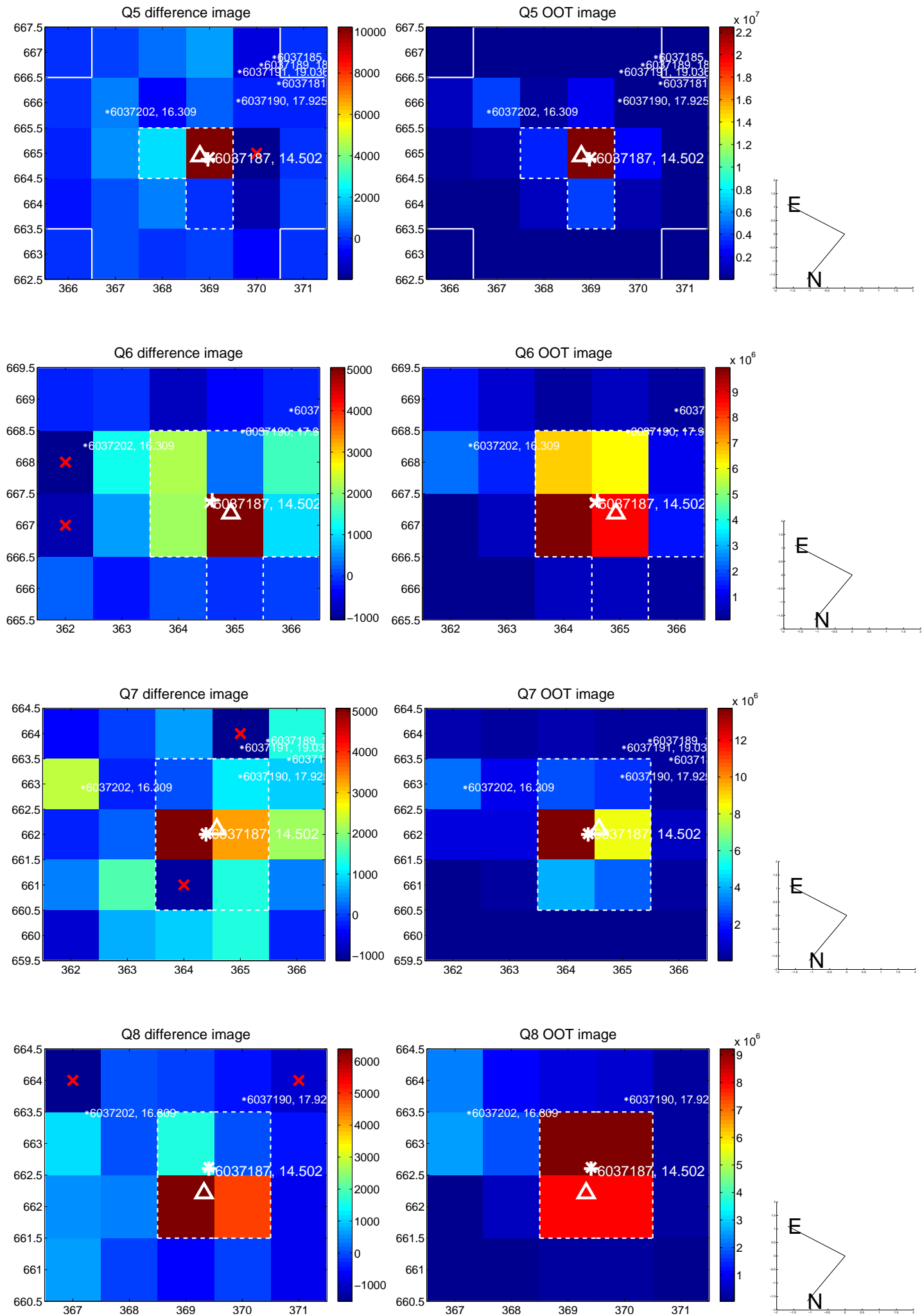


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

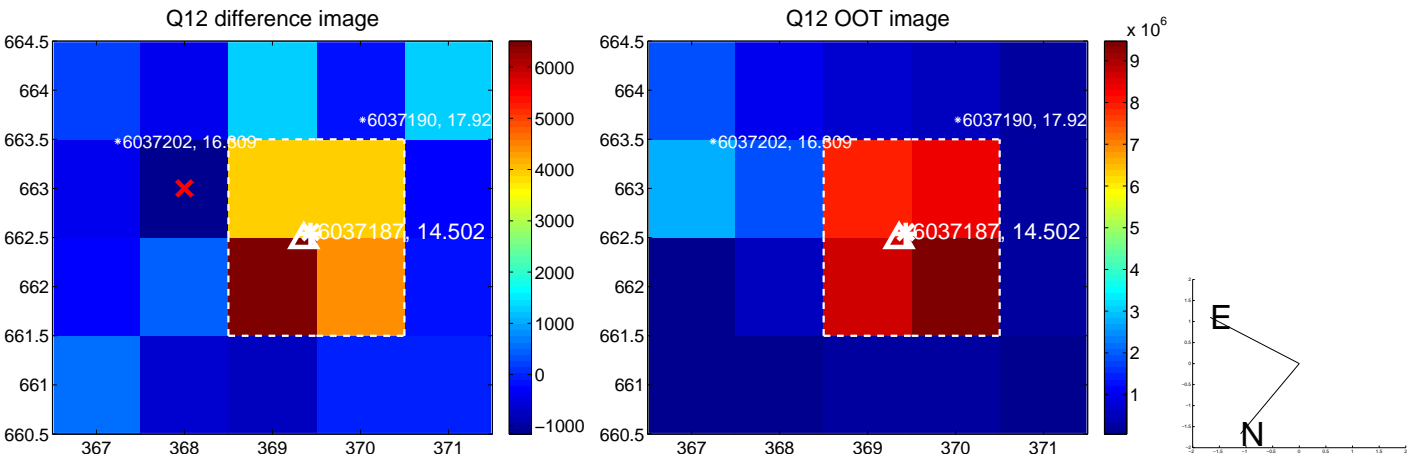
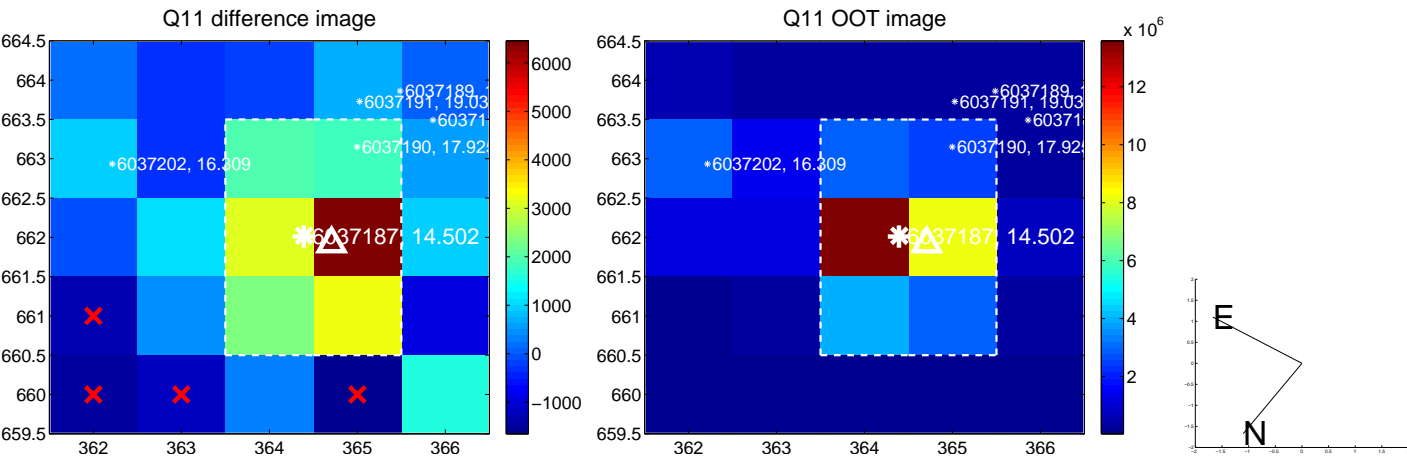
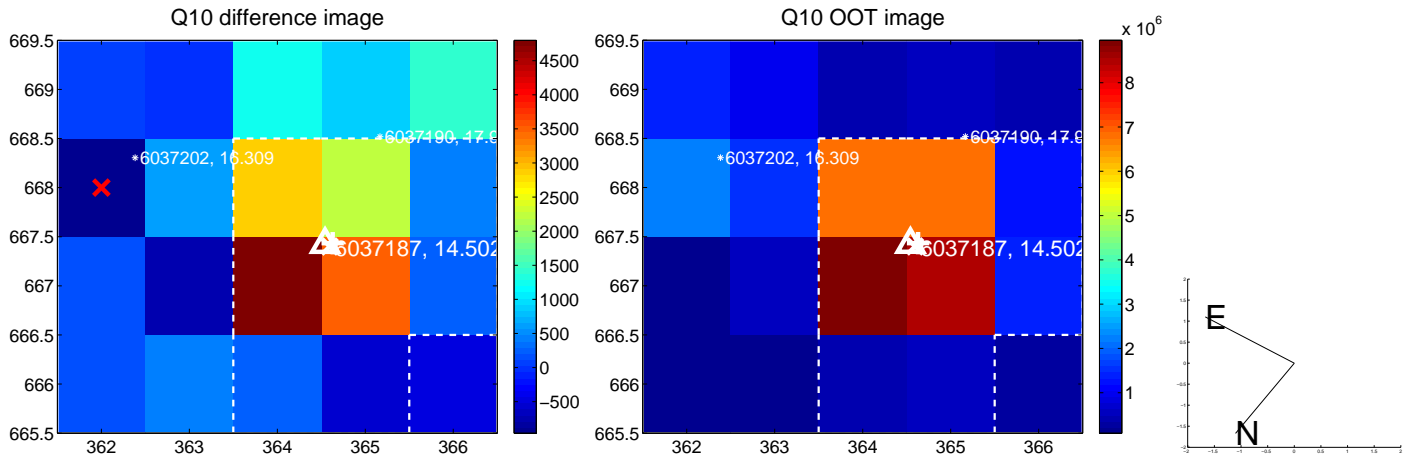
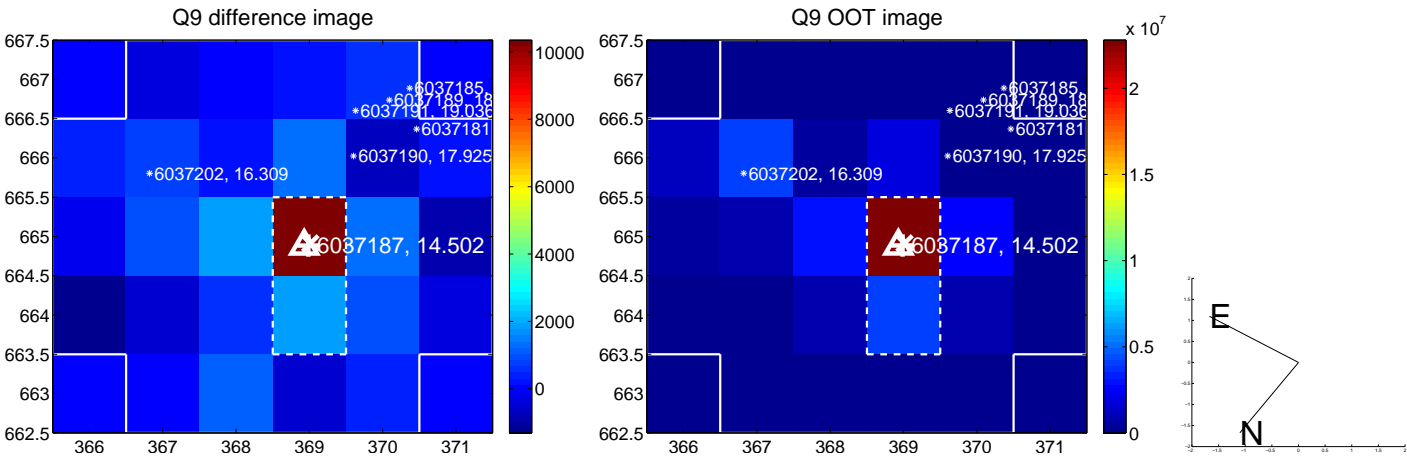
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



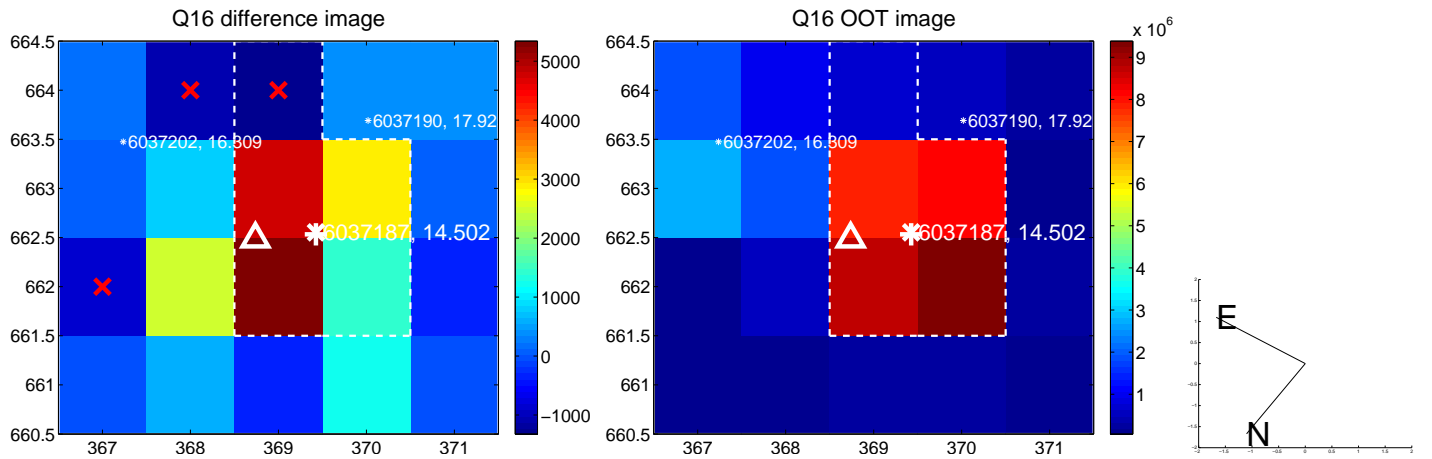
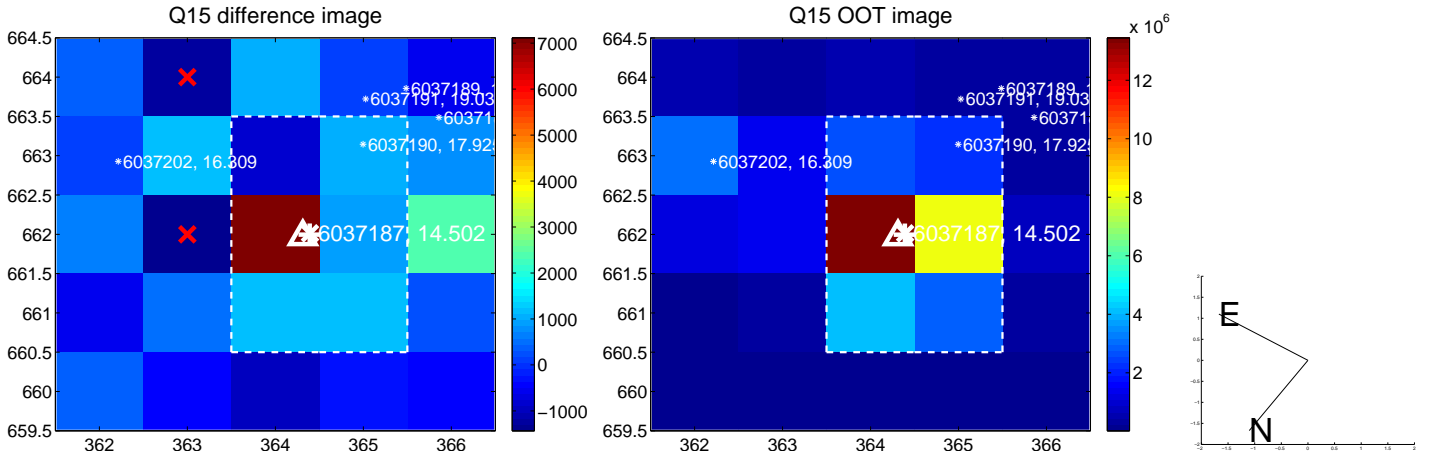
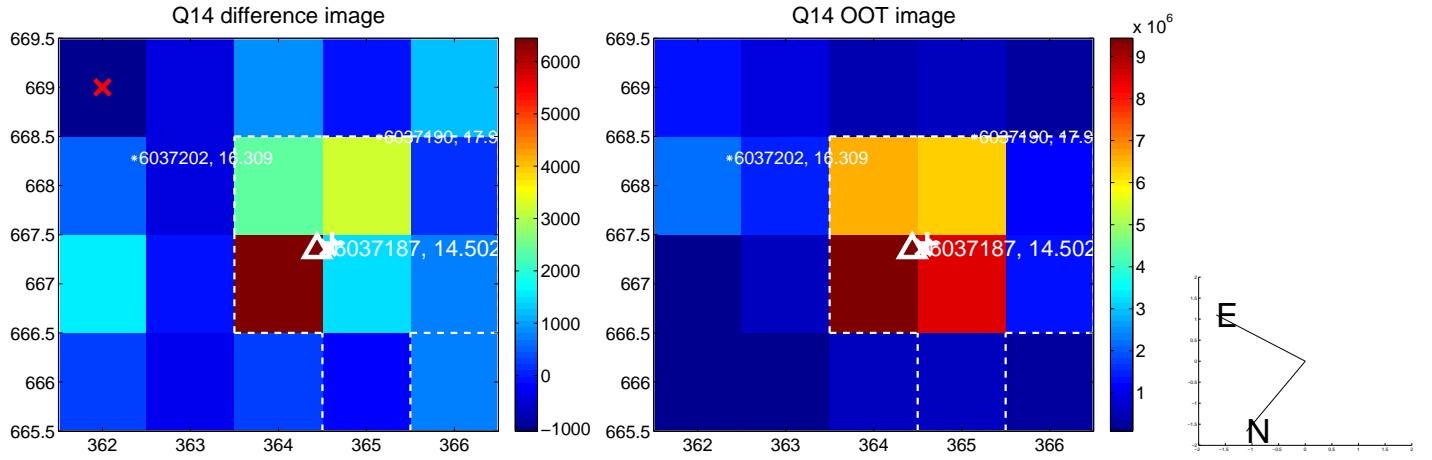
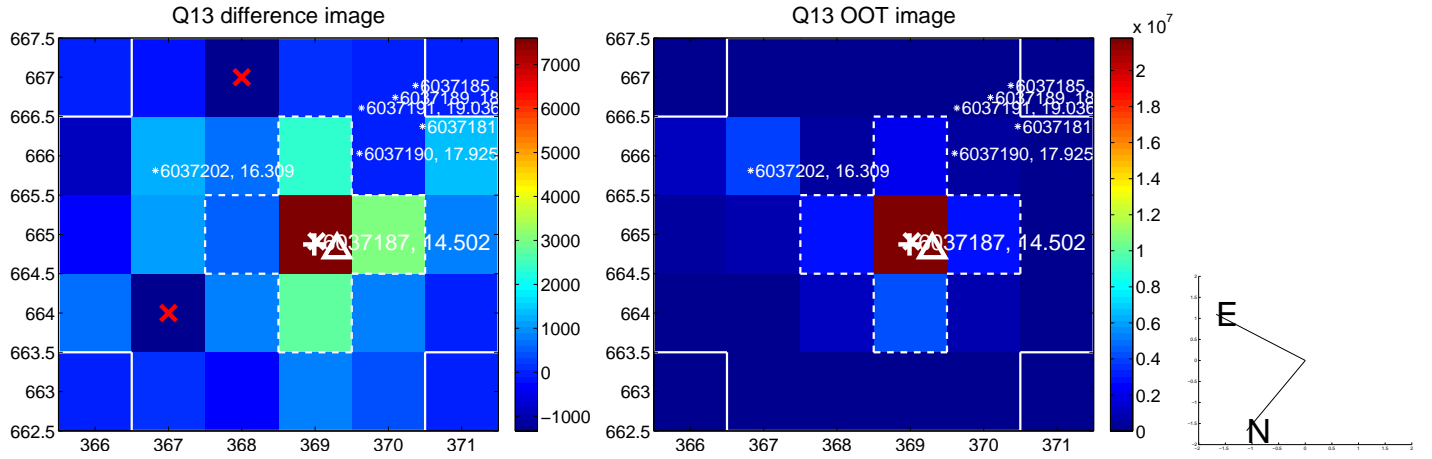
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



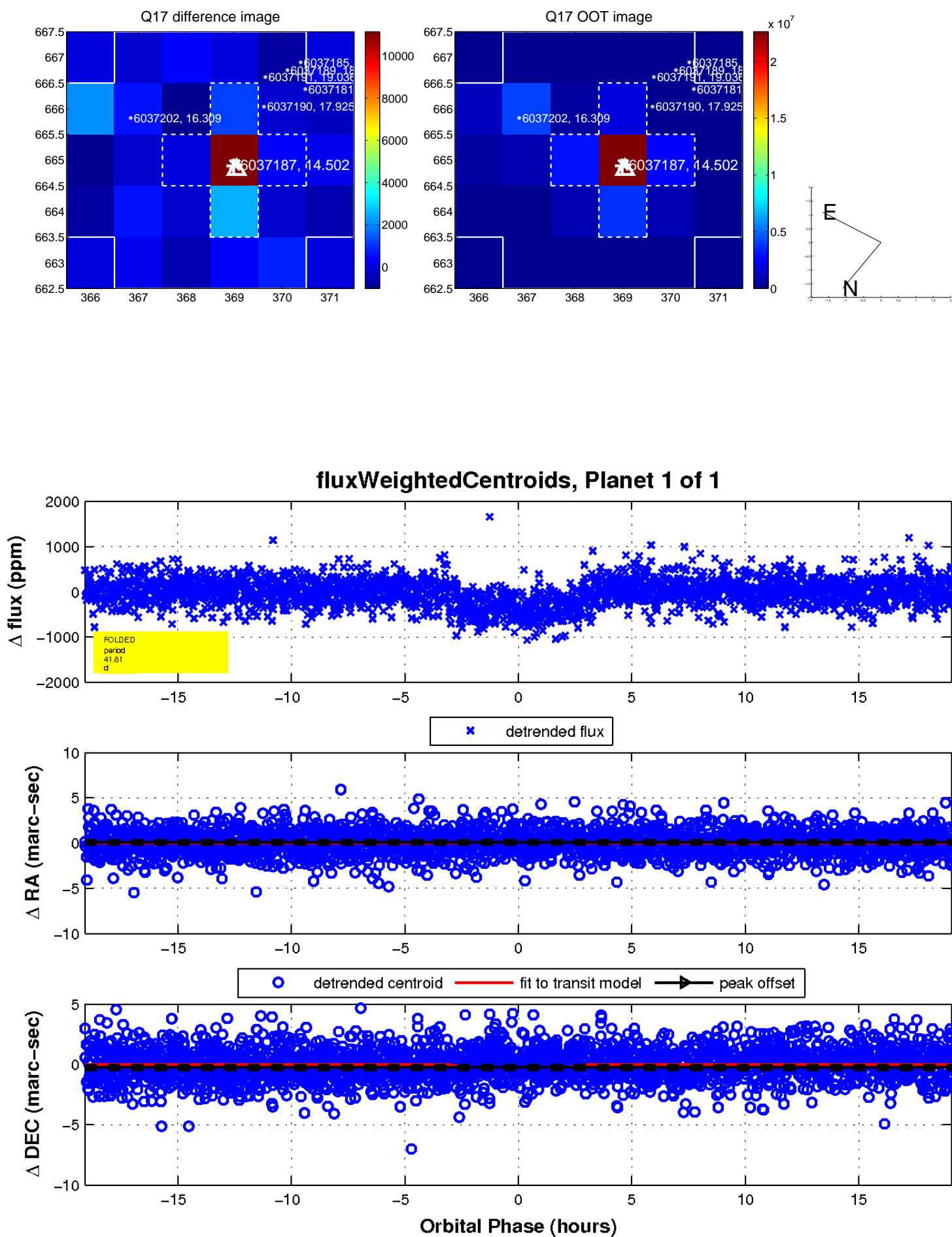
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



UKIRT Image

Declination

