

KIC 003539869

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}) |
|--------------|----------|------|---------------|--------------|-------------|------------------|-----|-----|-----------------------------|-----------------|------------------------|------------------------|
| 003539869-01 | OBS | No | 2.687257 | 132.787319 | 97.1 | 21.073 | 9.4 | 9.9 | 1.77 | 7392 | 1.77 | 4356.85 |

Robovetter Results

| TCE | Run Type | Disp | Score | N | S | C | E | Comments |
|--------------|----------|------|-------|---|---|---|---|--------------------------------|
| 003539869-01 | OBS | FP | 0.00 | 1 | 0 | 0 | 0 | LPP_DV—LPP_ALT—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.

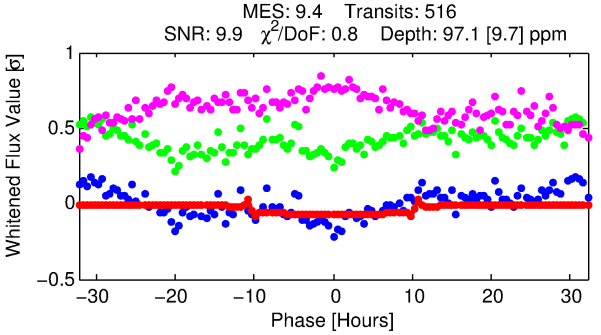
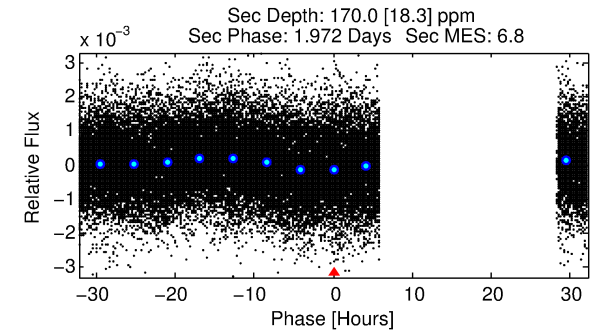
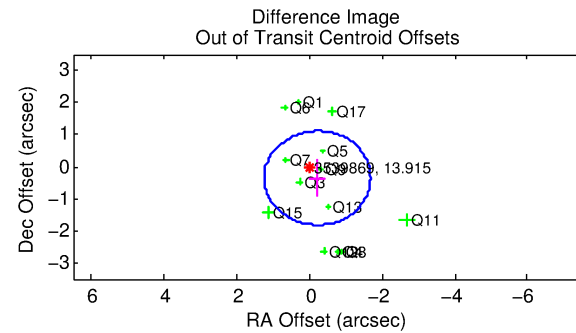
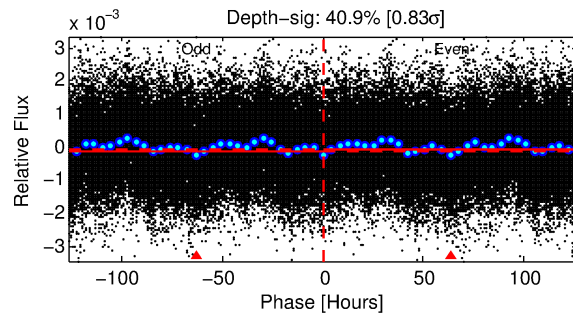
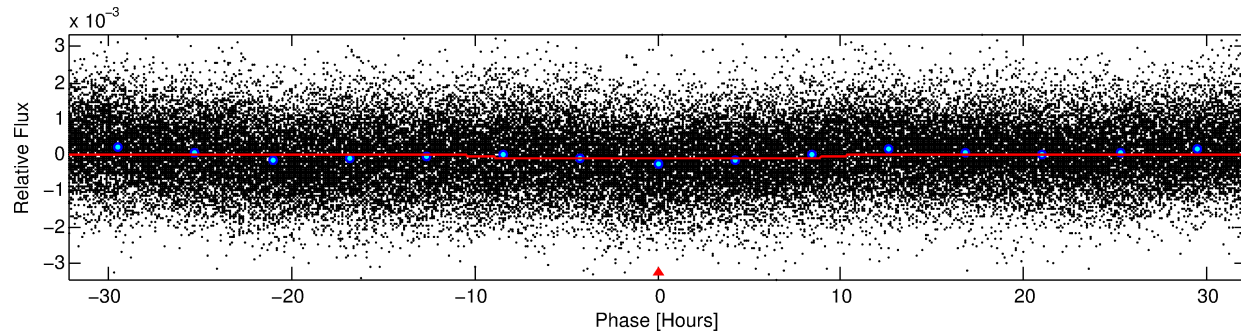
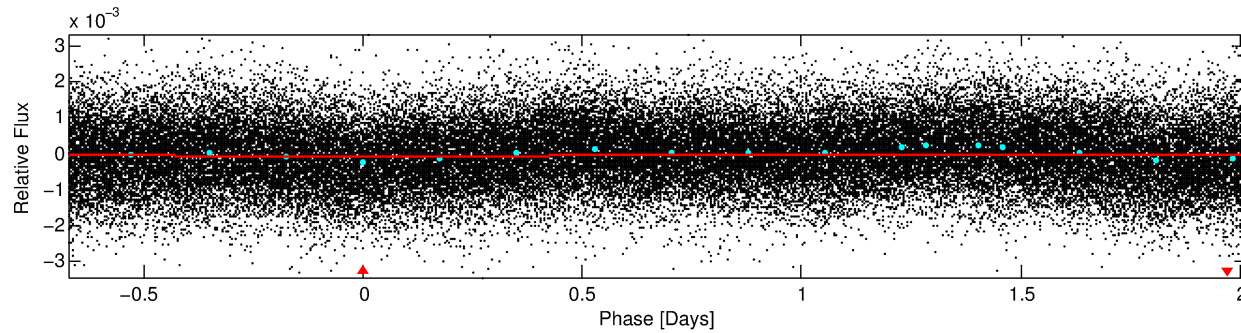
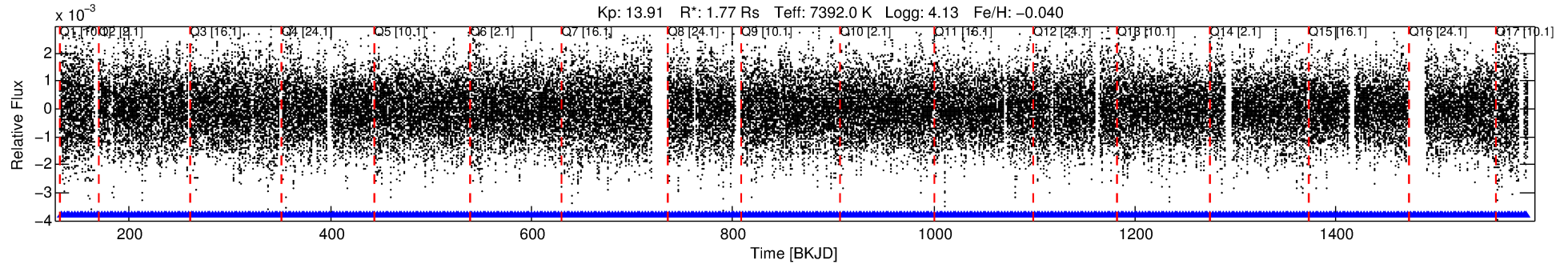
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 003539869-01

No Significant Match Found

DV One-Page Summary

KIC: 3539869 Candidate: 1 of 1 Period: 2.687 d



DV Fit Results:

Period = 2.68726 [0.00003] d
Epoch = 132.7873 [0.0047] BKJD
Rp/R* = 0.0092 [0.0029]
a/R* = 1.17 [0.60]
b = 0.17 [10.45]
Seff = 4356.85 [1682.12]
Teq = 2072 [200] K
Rp = 1.77 [0.77] Re
a = 0.0439 [0.0106] AU
Ag = 57.27 [41.12] [1.37 σ]
Teffp = 8811 [1449] K [4.61 σ]

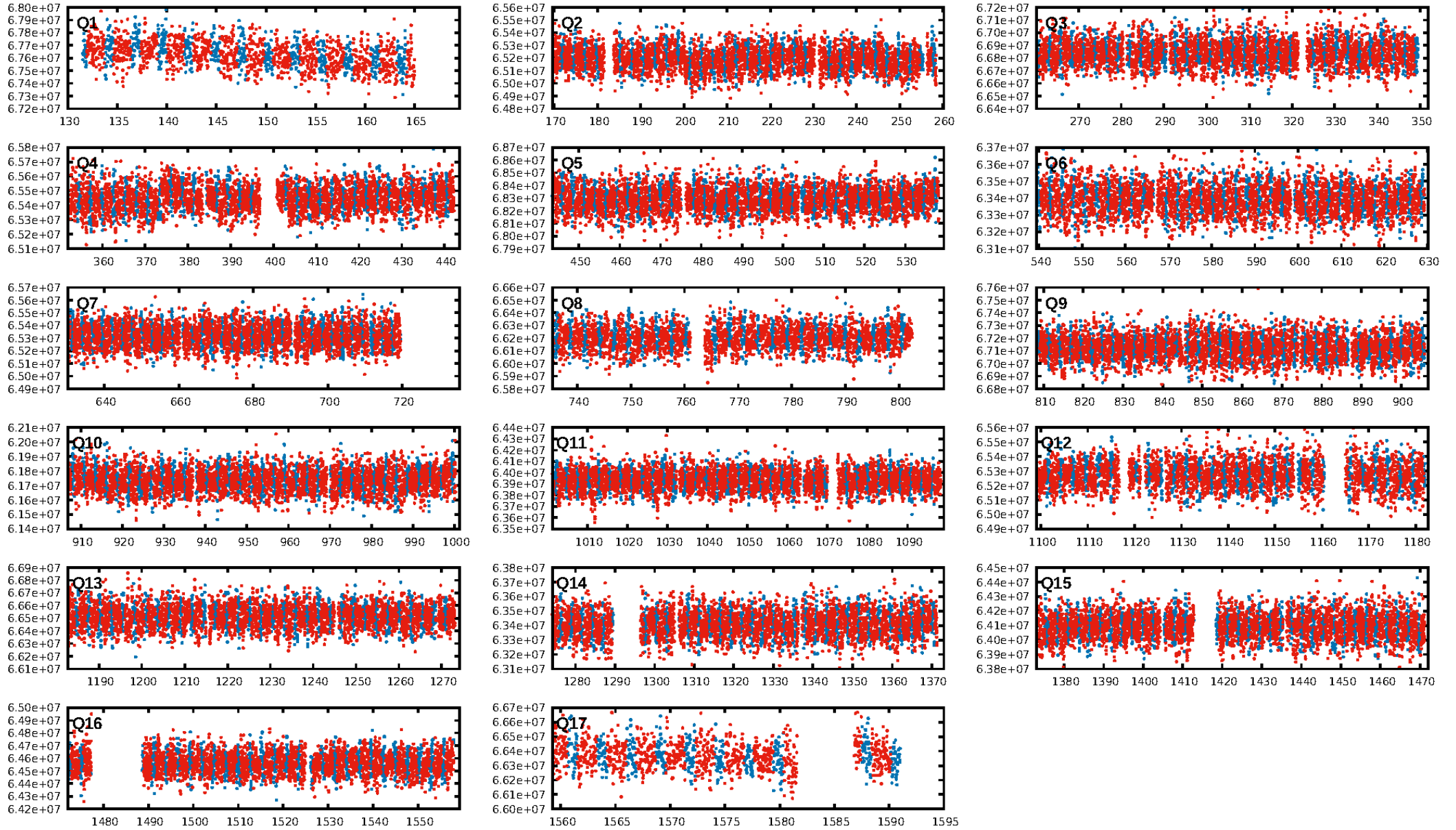
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [492/492]
GhostDiagnostic-chr: 3.08
Centroid-sig: 30.3%
Centroid-so: 0.303 arcsec [1.19 σ]
OotOffset-rm: 0.417 arcsec [0.85 σ]
KicOffset-rm: 0.396 arcsec [0.81 σ]
OotOffset-st: 1/4/3/5 [13]
KicOffset-st: 1/4/3/5 [13]
DiffImageQuality-fgm: 0.92 [12/13]
DiffImageOverlap-fno: 1.00 [17/17]

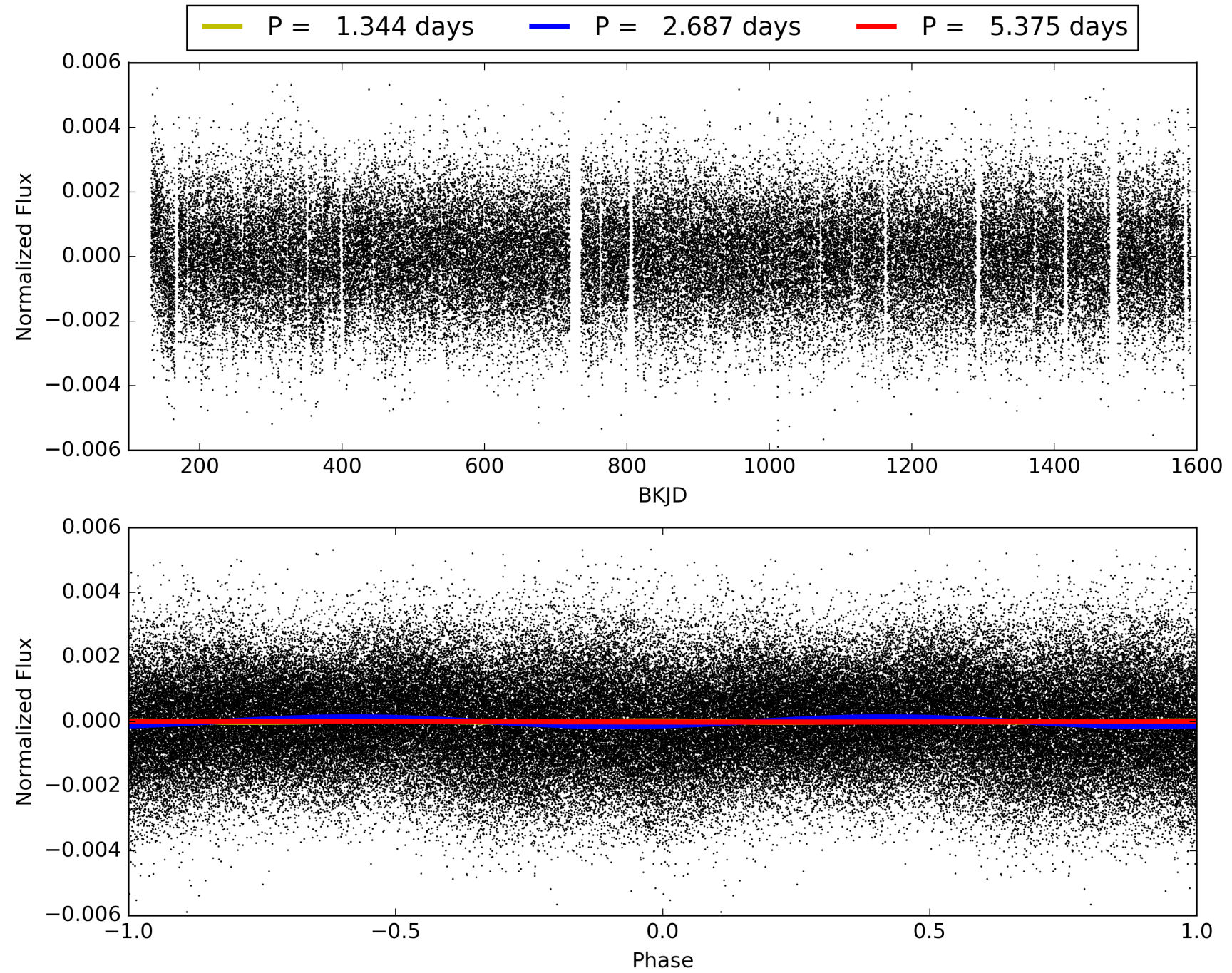
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 15:46:31 Z

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

TCE 003539869-01, PDC Light Curves

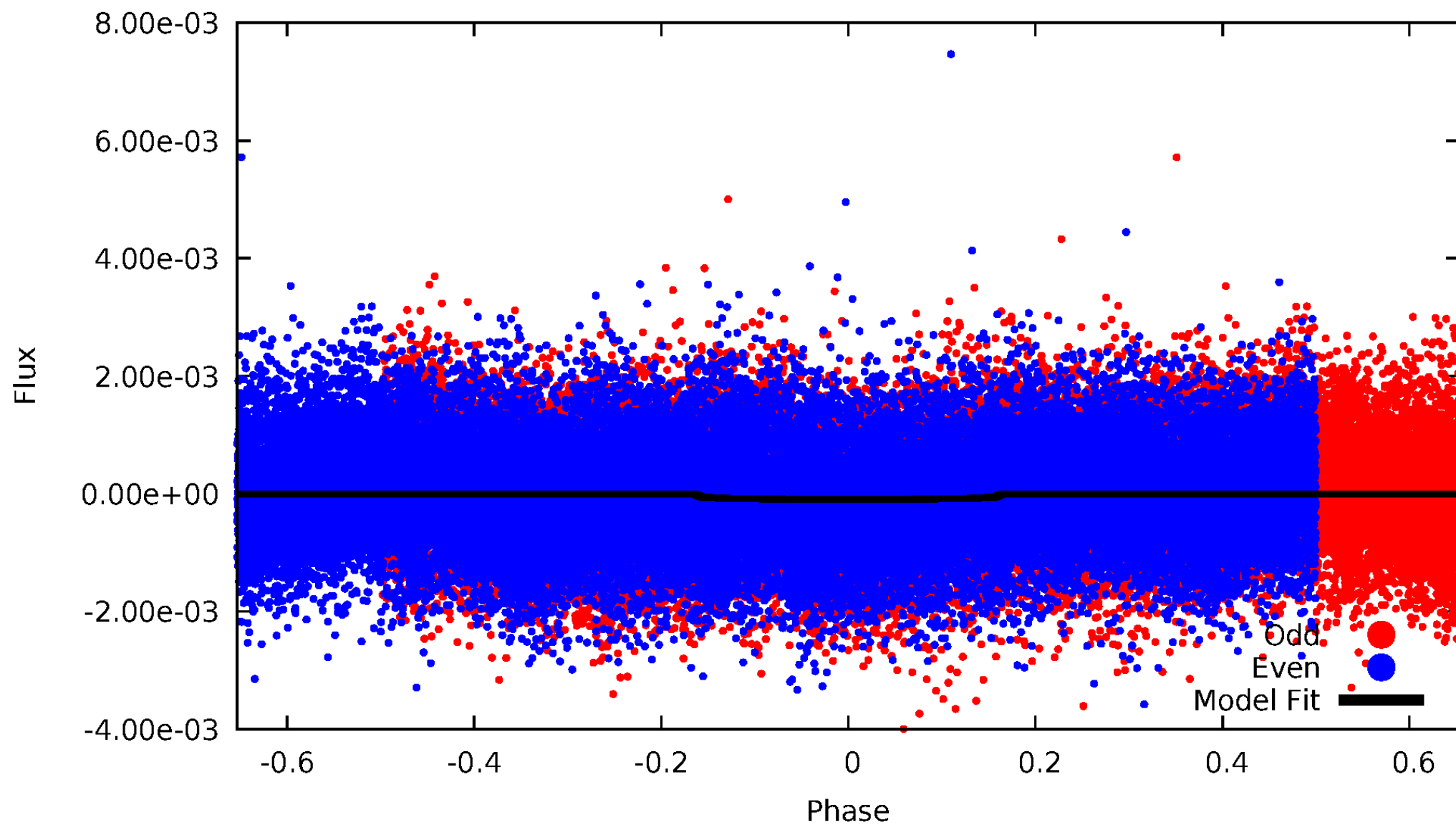


TCE 003539869-01



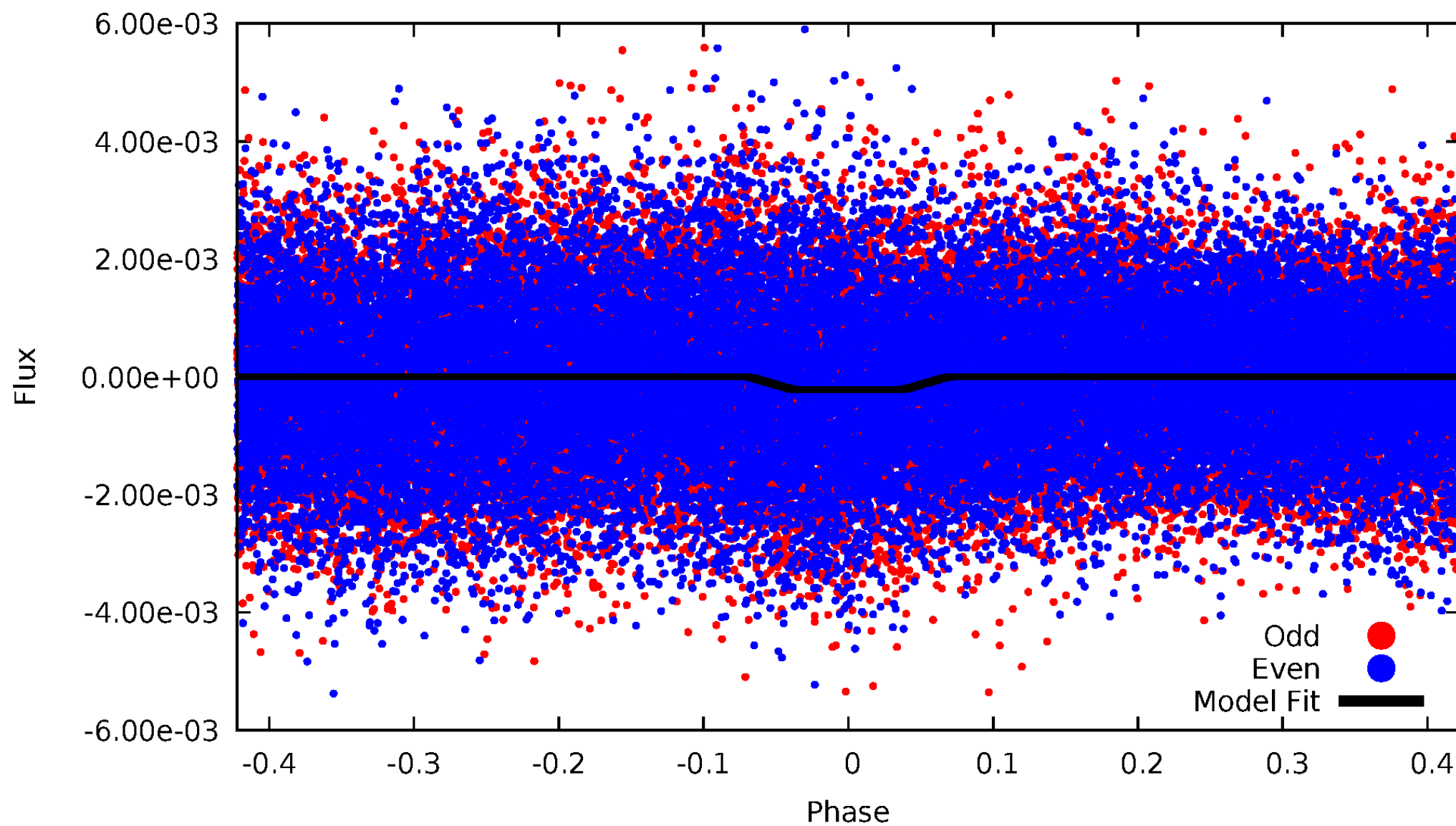
DV Odd/Even

TCE 003539869-01



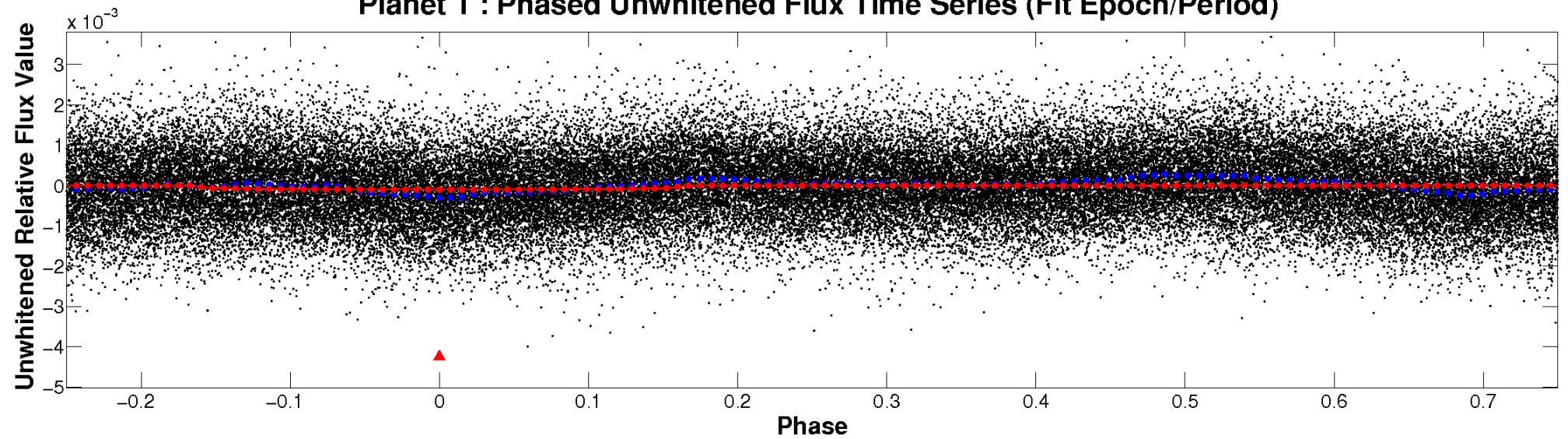
ALT Odd/Even

TCE 003539869-01

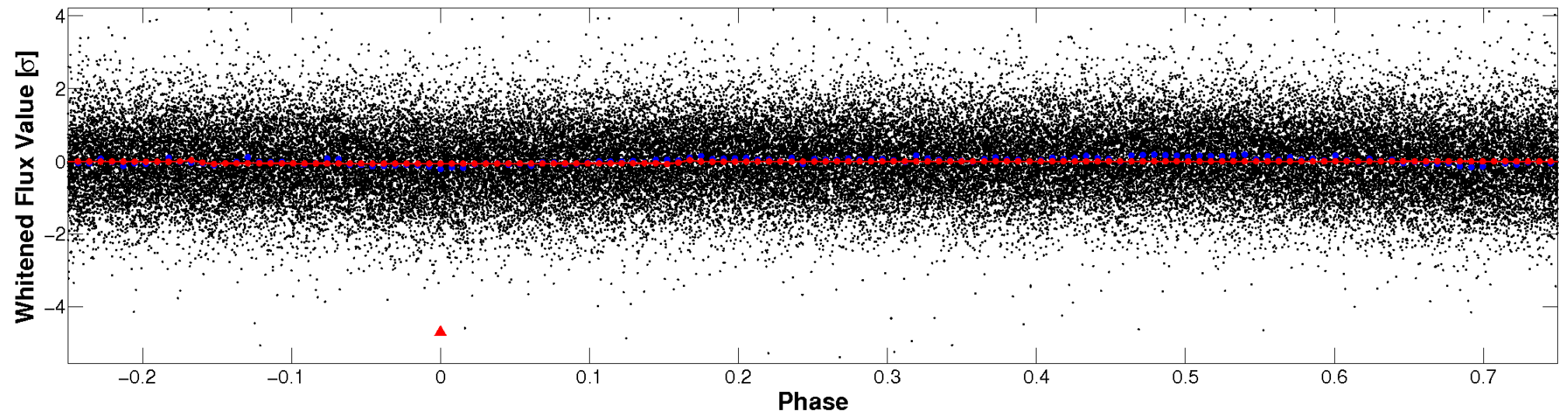


Non-Whitened Vs. Whitened Light Curve

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

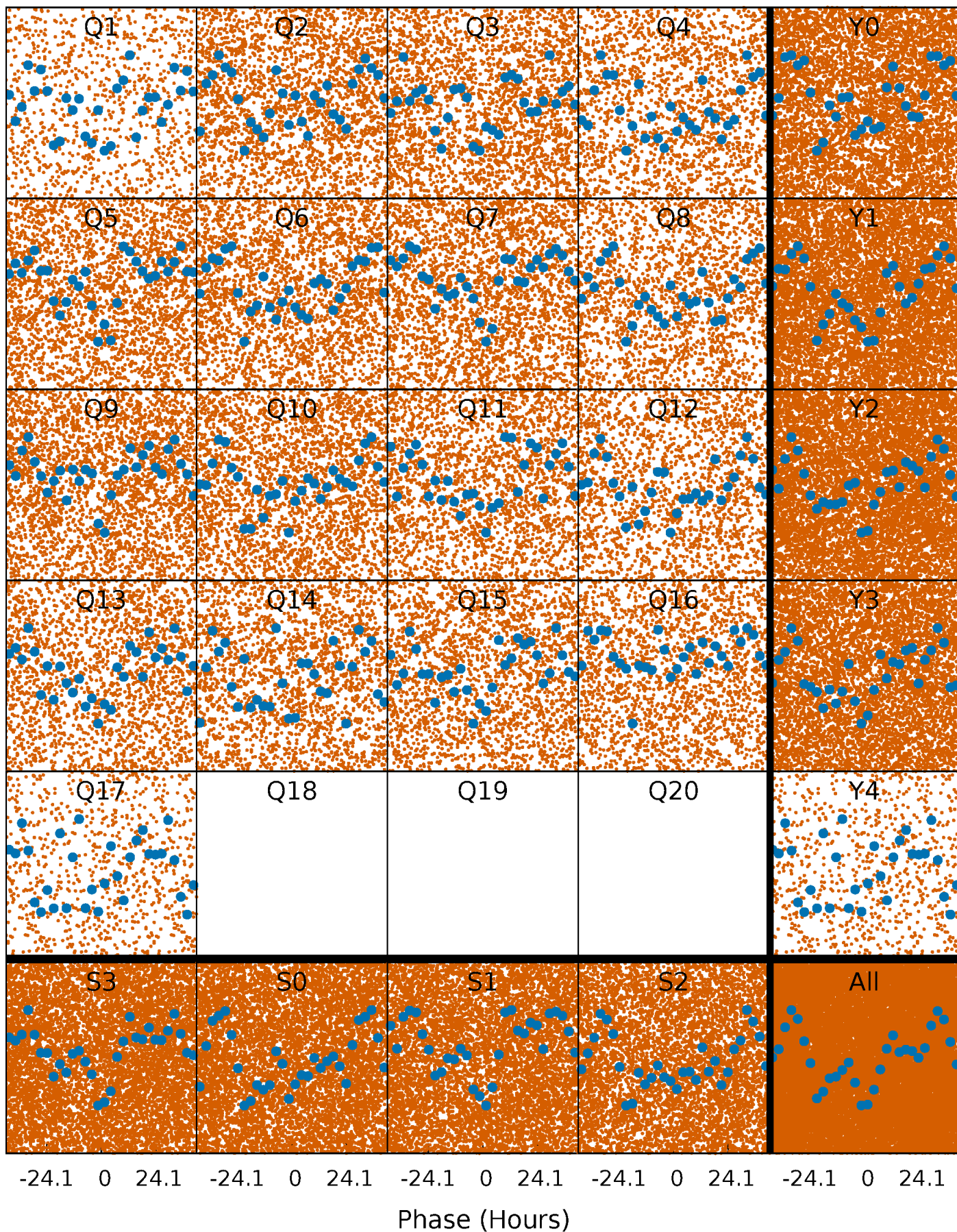


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



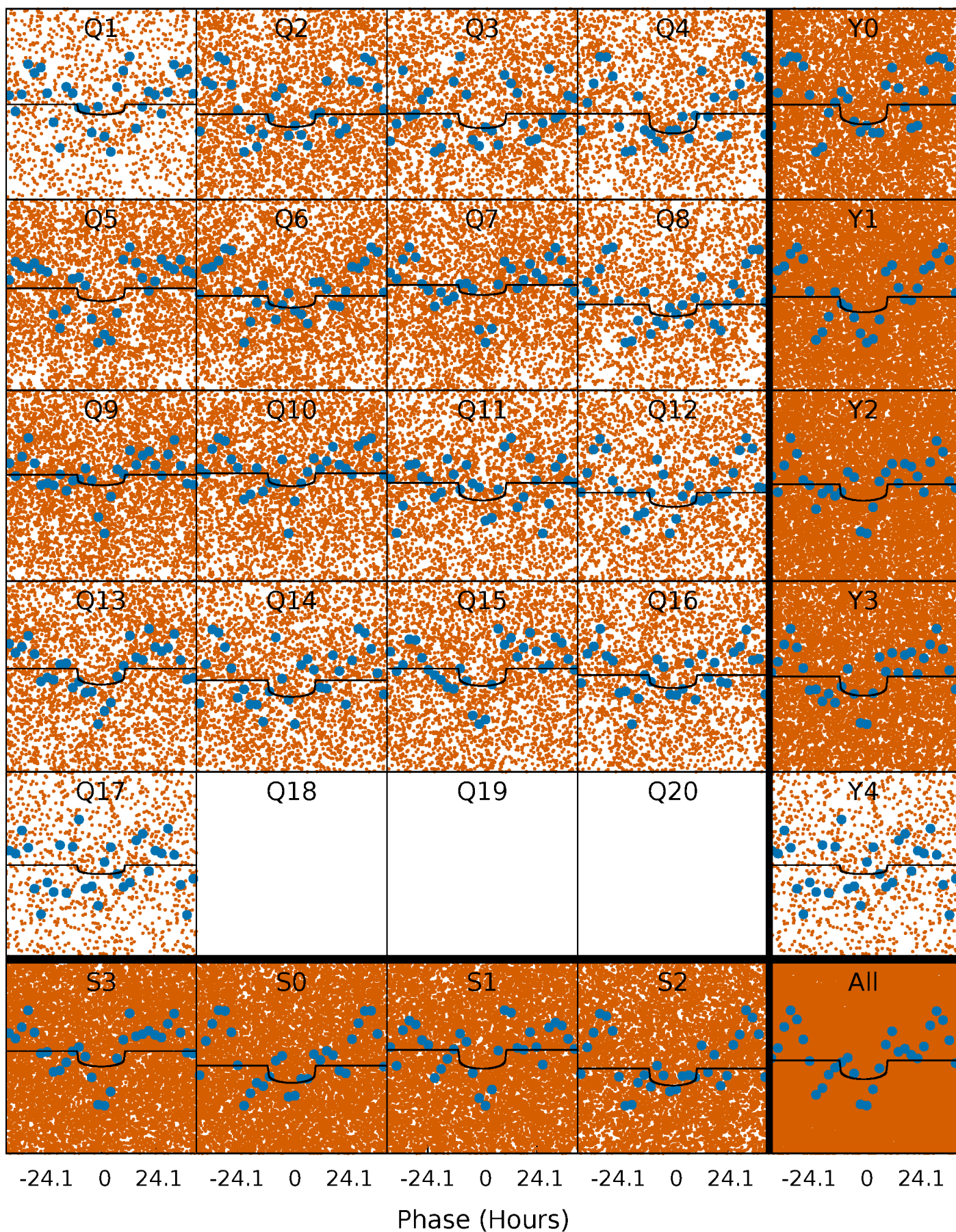
PDC Quarter-Phased Transit Curves

TCE 003539869-01 P= 2.687257 Days $T_0=132.787319$ (BKJD)



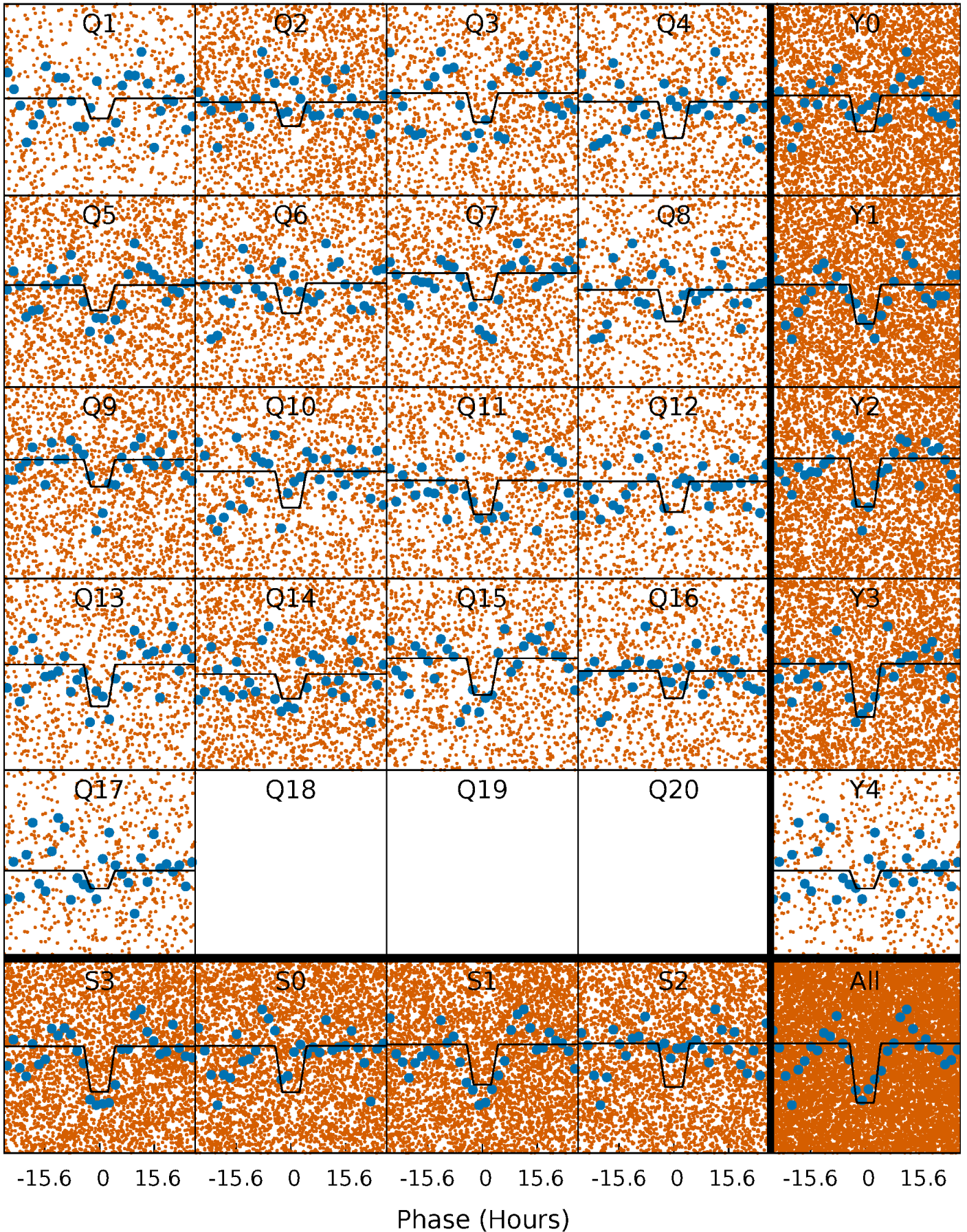
DV Quarter-Phased Transit Curves

TCE 003539869-01 P= 2.687257 Days $T_0=132.787319$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

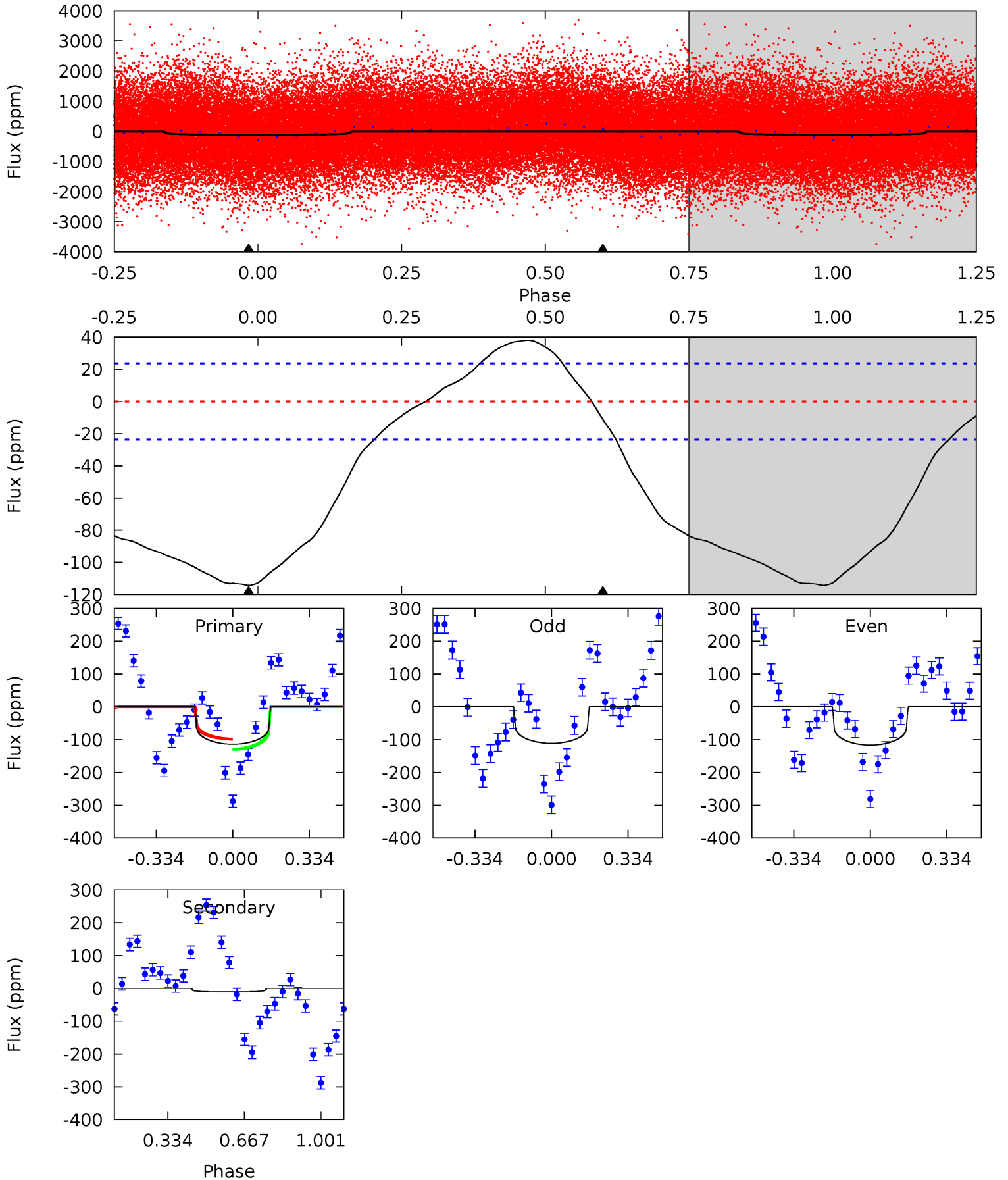
TCE 003539869-01 P= 2.687311 Days $T_0=132.801824$ (BKJD)



DV Model-Shift Uniqueness Test

003539869-01, P = 2.687257 Days, E = 130.100062 Days

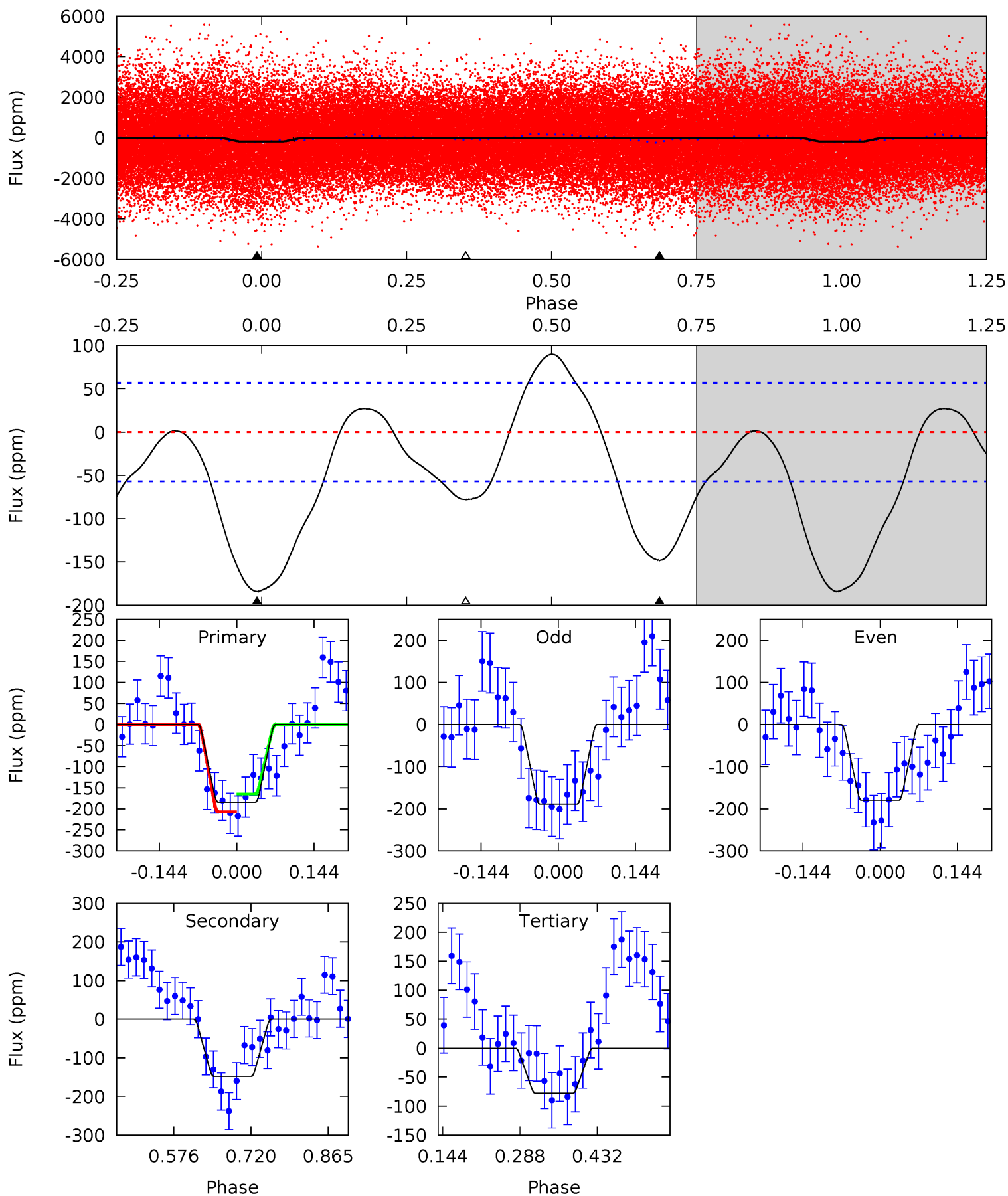
| Pri | Sec | Ter | Pos | FA ₁ | FA ₂ | F _{Red} | Pri-Ter | Pri-Pos | Sec-Ter | Sec-Pos | Odd-Evn | DMM | Shape | TAT |
|------|------|-----|-----|-----------------|-----------------|------------------|---------|---------|---------|---------|---------|------|-------|------|
| 20.8 | 2.00 | 0 | 0 | 4.31 | 0.97 | 1.22 | 20.8 | 20.8 | 2.00 | 2.00 | 0.49 | 1.11 | 0.25 | 2.65 |



Alt Model-Shift Uniqueness Test

003539869-01, P = 2.687311 Days, E = 130.114513 Days

| Pri | Sec | Ter | Pos | FA ₁ | FA ₂ | F _{Red} | Pri-Ter | Pri-Pos | Sec-Ter | Sec-Pos | Odd-Evn | DMM | Shape | TAT |
|------|------|------|-----|-----------------|-----------------|------------------|---------|---------|---------|---------|---------|------|-------|------|
| 14.5 | 11.7 | 6.15 | 0 | 4.49 | 1.46 | 4.13 | 8.35 | 14.5 | 5.52 | 11.7 | 0.35 | 1.14 | 0.33 | 1.56 |



Stellar Parameters For KIC 003539869

| | $T_{\text{eff}}(K)$ | $\log(g)$ | [Fe/H] | $R (R_{\odot})$ | $M(M_{\odot})$ | $p_{\star} (\text{g}\cdot\text{cm}^{-3})$ |
|--------|----------------------|---------------------------|----------------------------|---------------------------|---------------------------|---|
| | 7392^{+207}_{-337} | $4.135^{+0.120}_{-0.180}$ | $-0.040^{+0.200}_{-0.350}$ | $1.772^{+0.528}_{-0.352}$ | $1.563^{+0.222}_{-0.222}$ | $0.396^{+0.271}_{-0.197}$ |
| | +3%/-5% | +3%/-4% | +500%/-875% | +30%/-20% | +14%/-14% | +68%/-50% |
| 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 003539869-01 / KOI

| Detrend | Depth (ppm) | $R_p (R_{\oplus})$ | $T_{\text{max}} (K)$ | $T_{\text{obs}} (K)$ | A_{obs} |
|---------|---------------|------------------------|----------------------|----------------------|---------------------------|
| DV | -11 ± 6 | $1.83^{+0.60}_{-0.57}$ | 2890^{+224}_{-181} | 4350^{+913}_{-736} | $3.276^{+4.160}_{-2.016}$ |
| Alt. | -148 ± 13 | $2.92^{+0.74}_{-0.69}$ | 2914^{+193}_{-176} | 6567^{+967}_{-643} | 18^{+12}_{-7} |

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

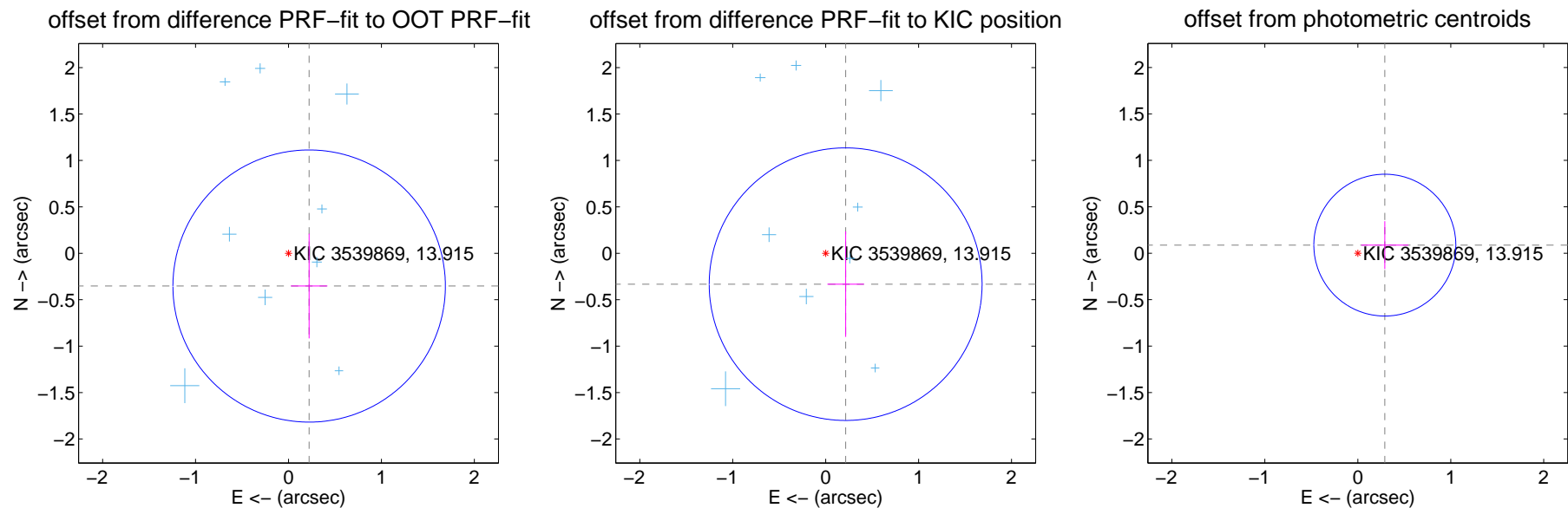
DV Centroid Data

Supplemental centroid analysis for 003539869-01. Kepler magnitude: 13.91. Transit SNR 9.90

There are 12 quarters with good PRF difference image offsets

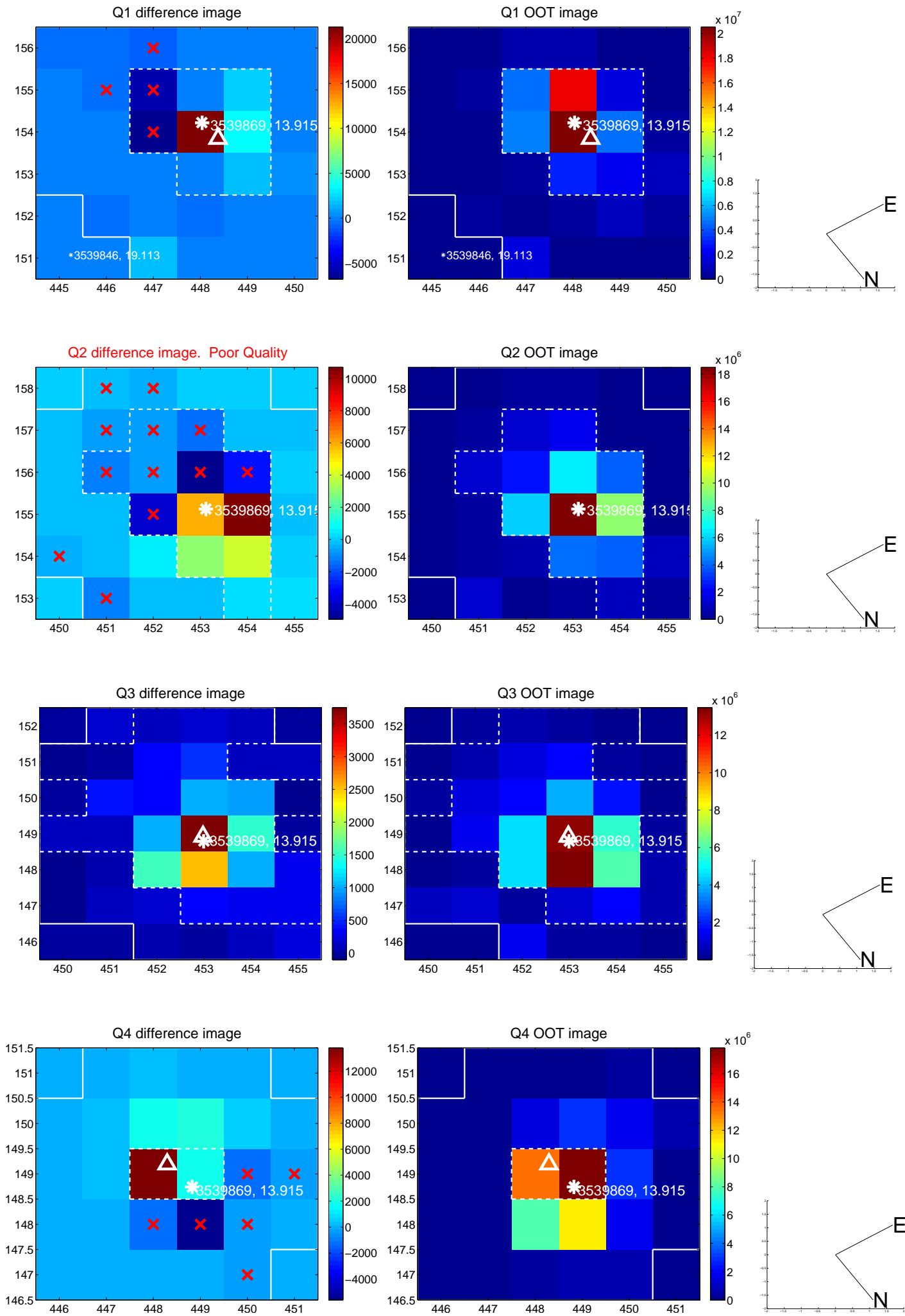
The direct PRF centroid is offset from the target star catalog position by about 0.05 arcsec

| | Distance in arcsec | Distance / σ | Δ RA | Δ Dec |
|---|--------------------|---------------------|--------------------|--------------------|
| PRF-fit source offset from OOT | 0.417 ± 0.489 | 0.85 | -0.222 ± 0.196 | -0.353 ± 0.564 |
| PRF-fit source offset from KIC position | 0.396 ± 0.489 | 0.81 | -0.215 ± 0.197 | -0.333 ± 0.569 |
| photometric centroid source offset | 0.30 ± 0.25 | 1.19 | -0.29 ± 0.25 | 0.09 ± 0.26 |

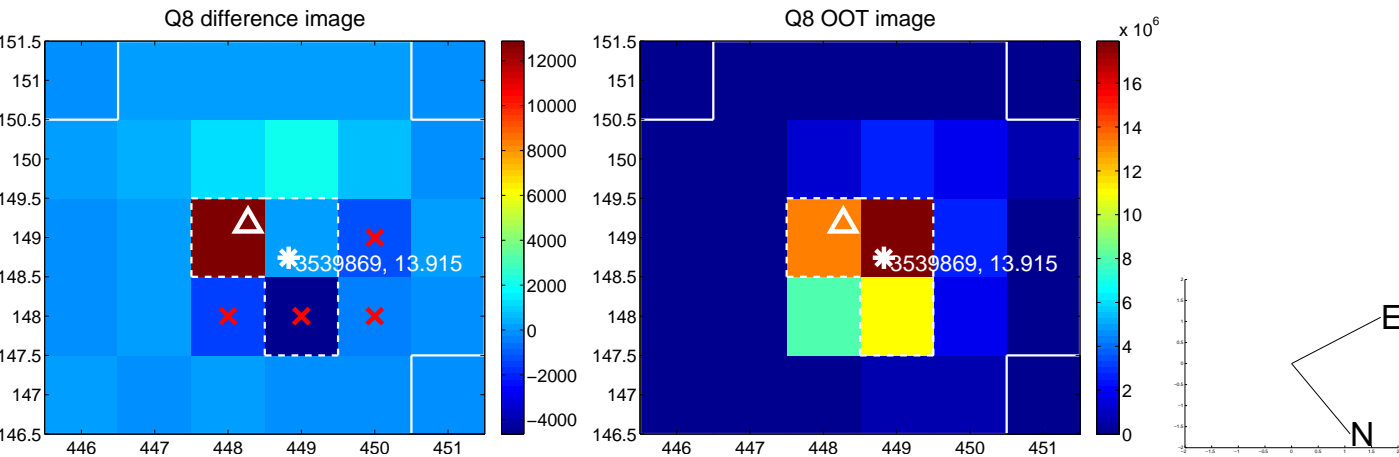
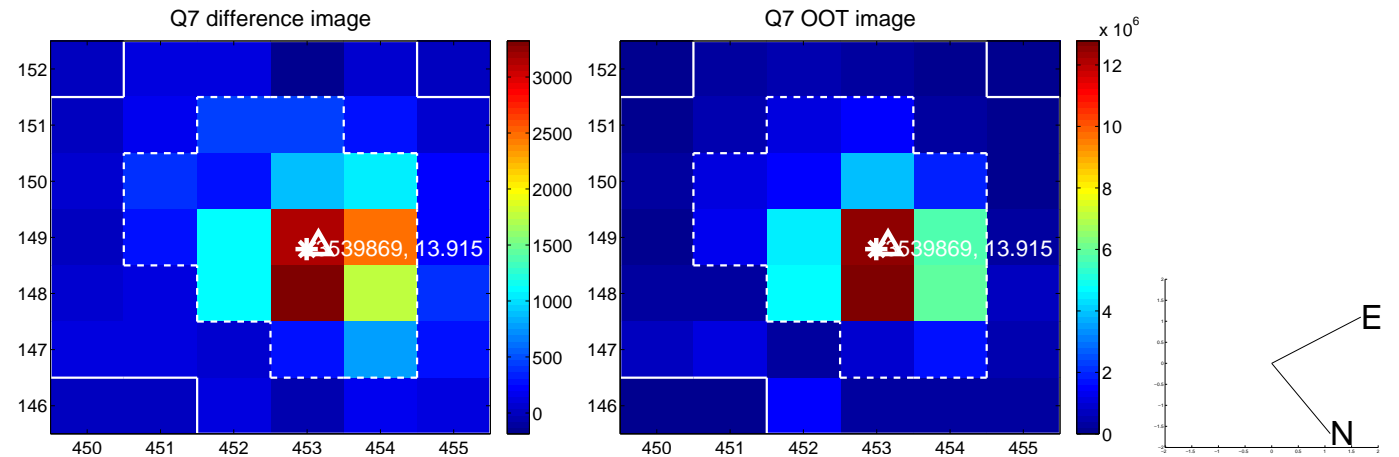
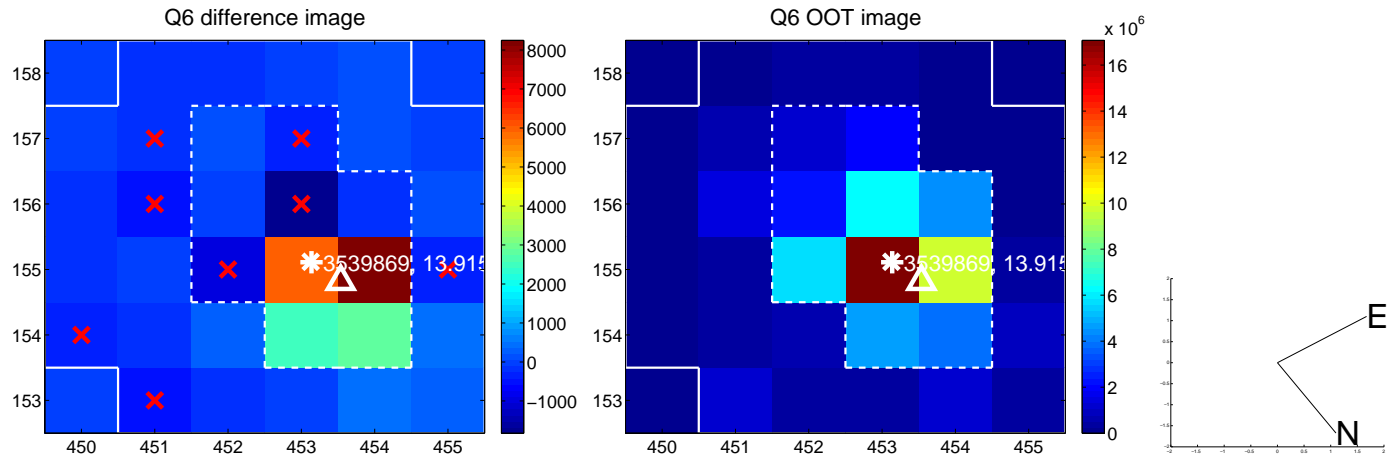
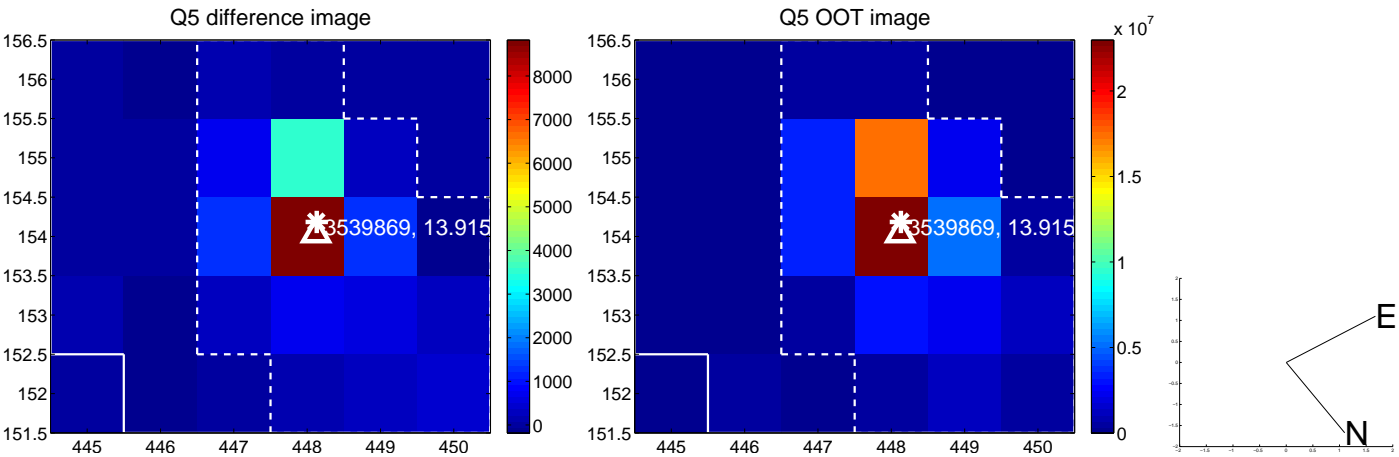


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

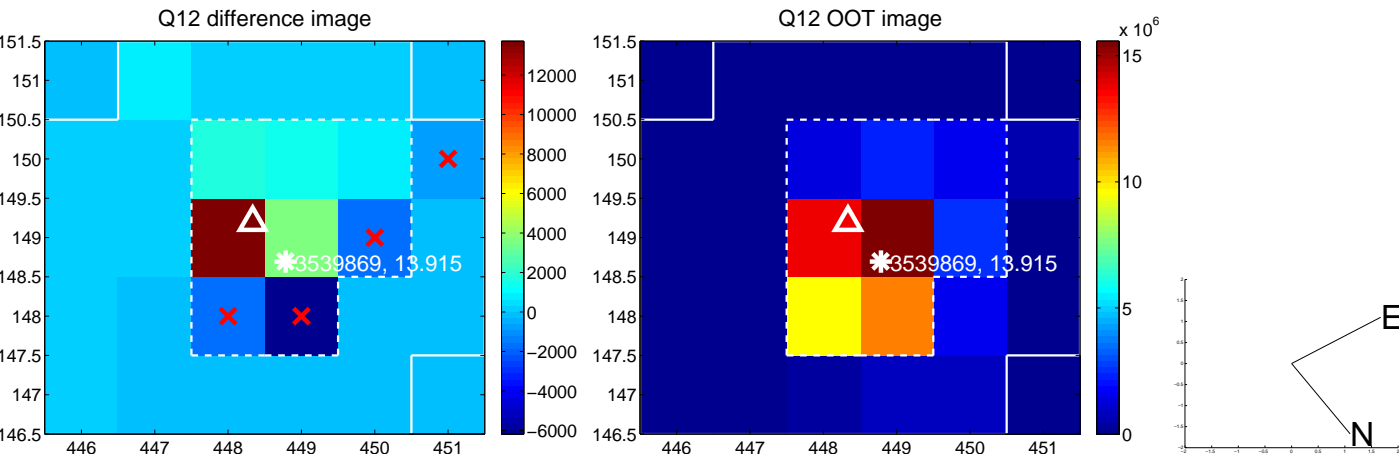
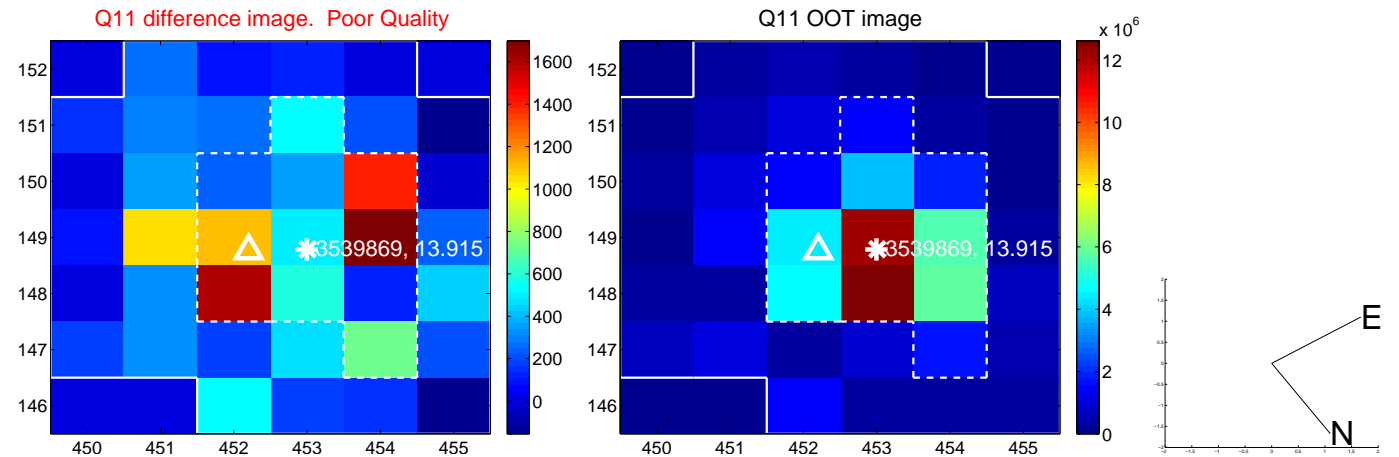
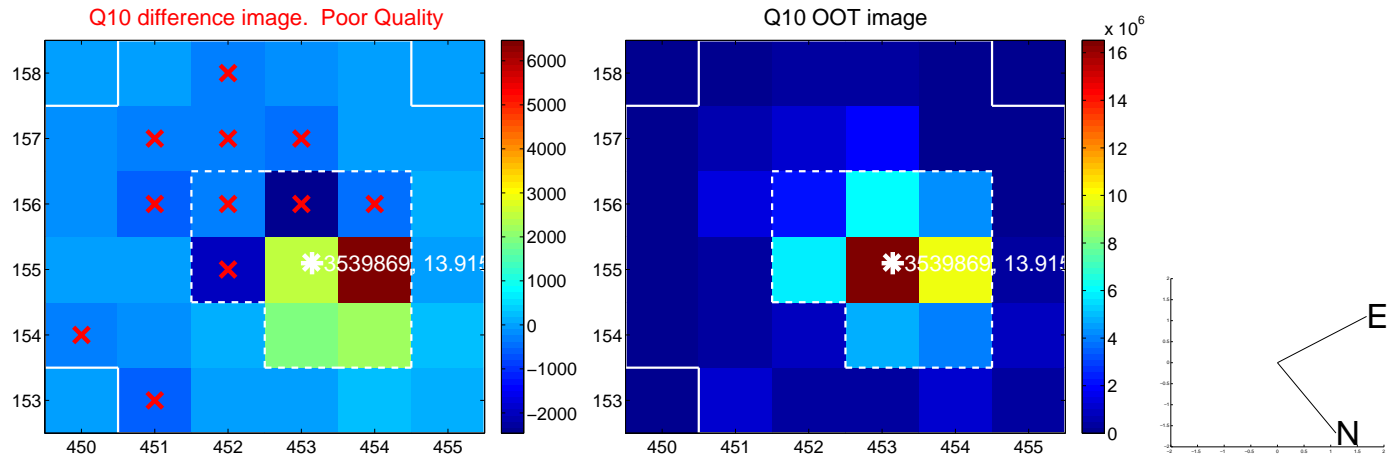
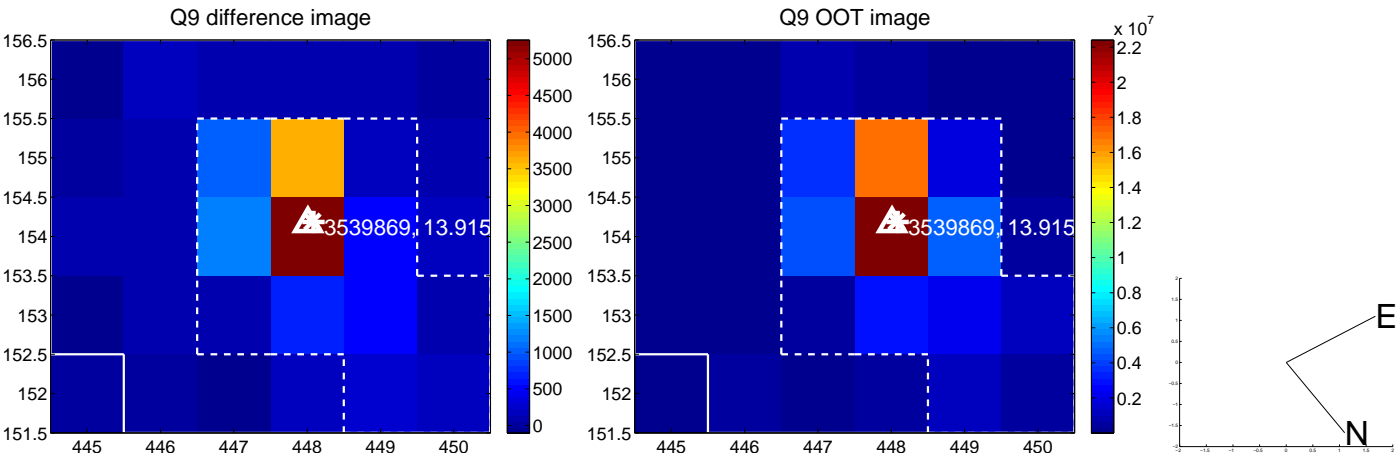
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



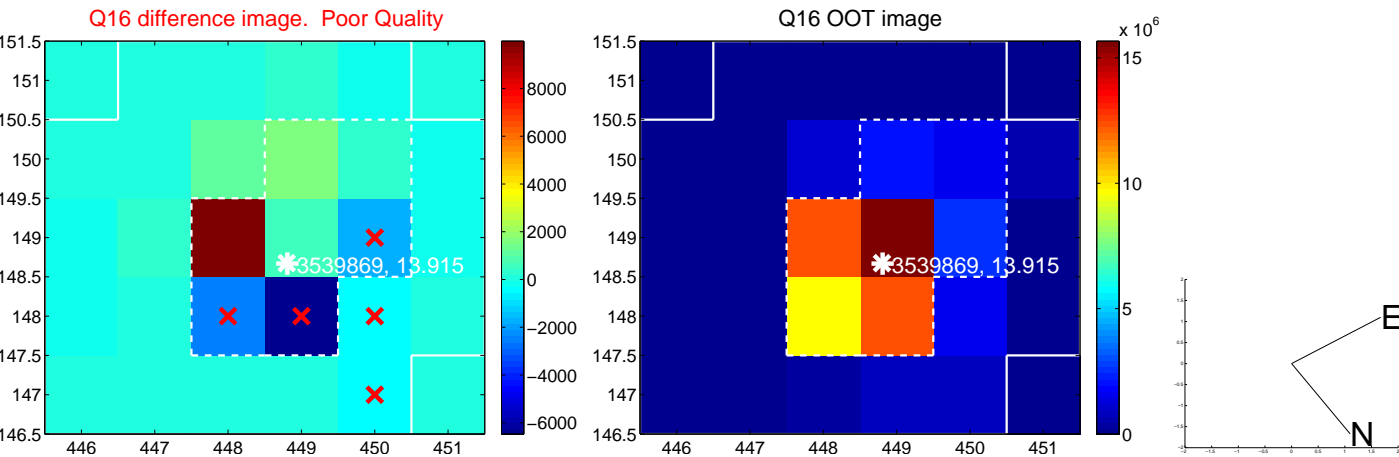
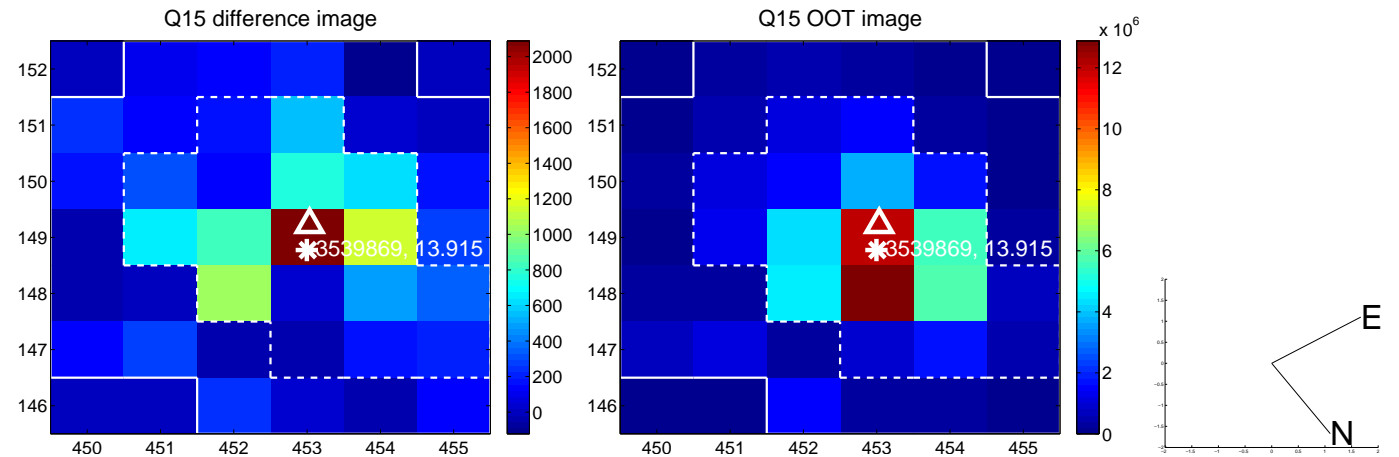
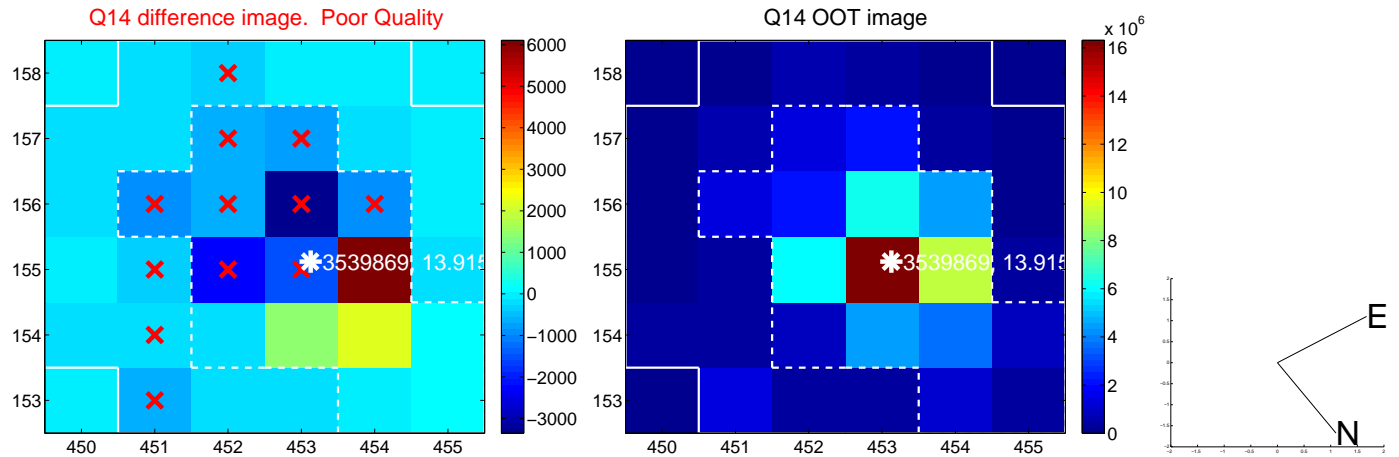
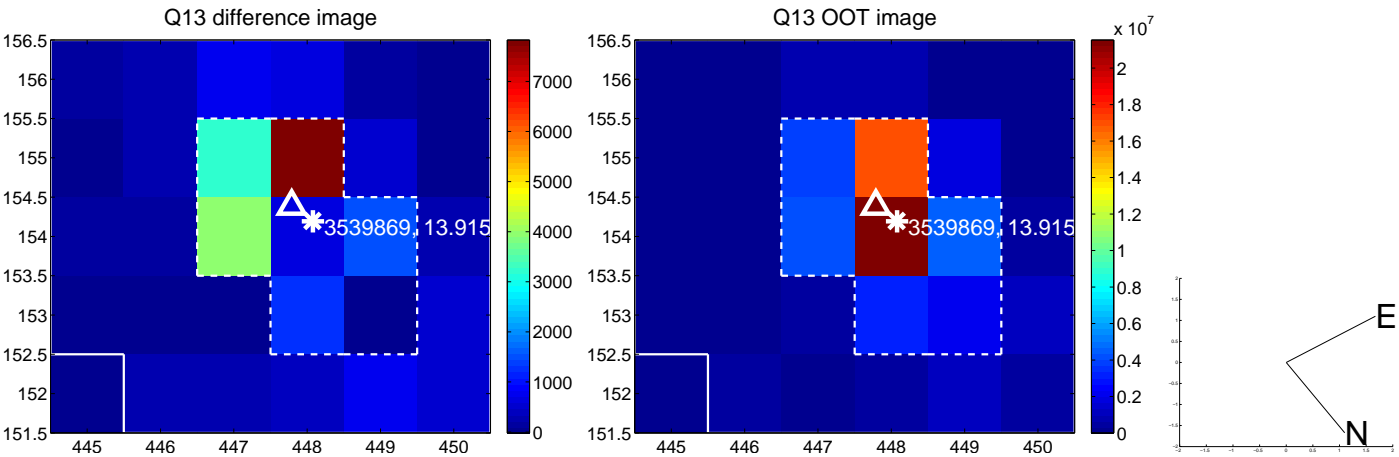
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



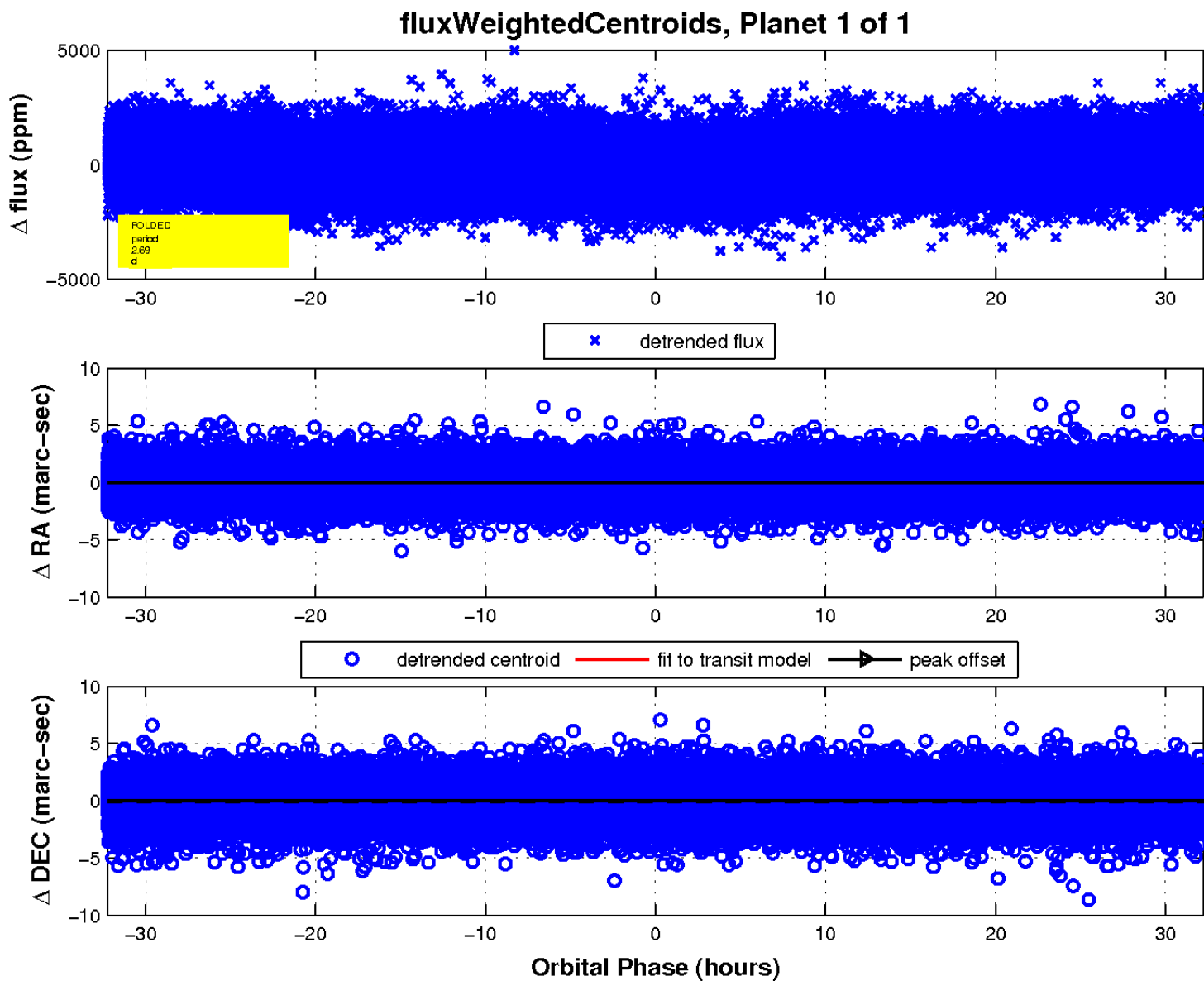
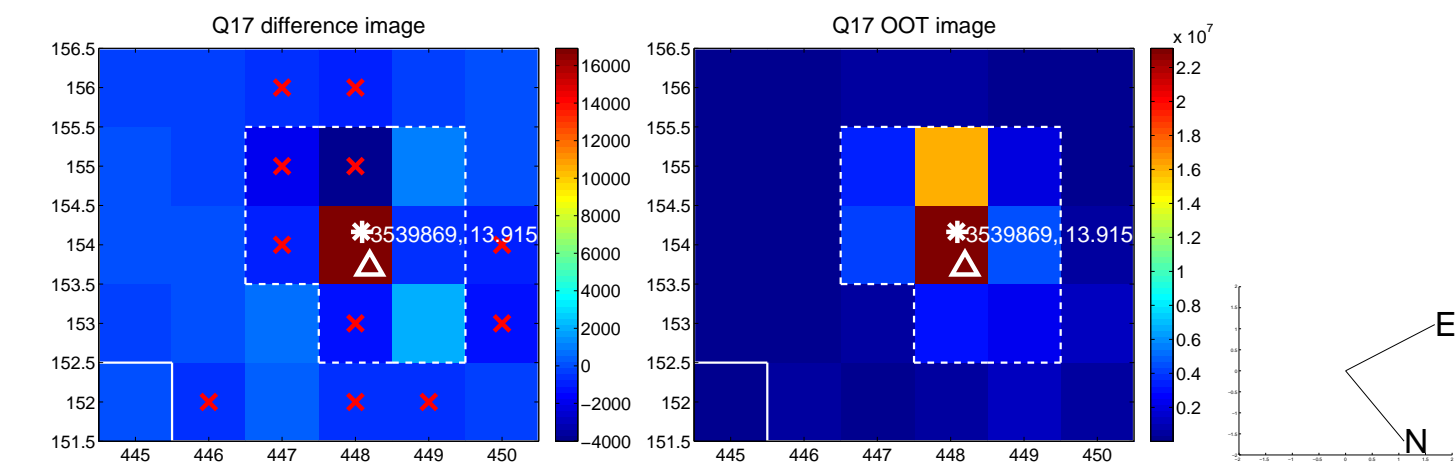
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



UKIRT Image

Declination

