

KIC 002985587

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}) |
|--------------|----------|---------|---------------|--------------|-------------|------------------|------|------|-----------------------------|-----------------|------------------------|------------------------|
| 002985587-01 | OBS | 2807.01 | 3.375699 | 134.216998 | 158.0 | 1.249 | 16.7 | 19.1 | 1.28 | 6310 | 1.90 | 1112.89 |

Robovetter Results

| TCE | Run Type | Disp | Score | N | S | C | E | Comments |
|--------------|----------|------|-------|---|---|---|---|------------|
| 002985587-01 | 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.

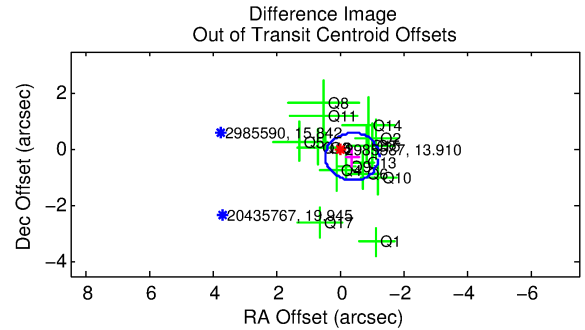
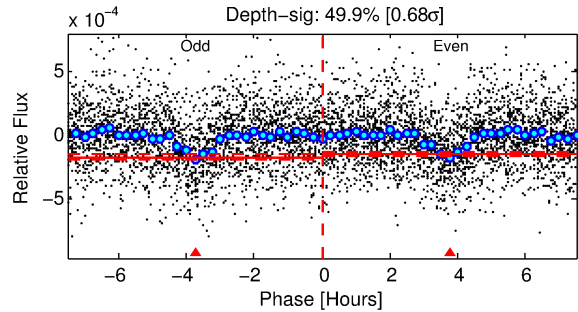
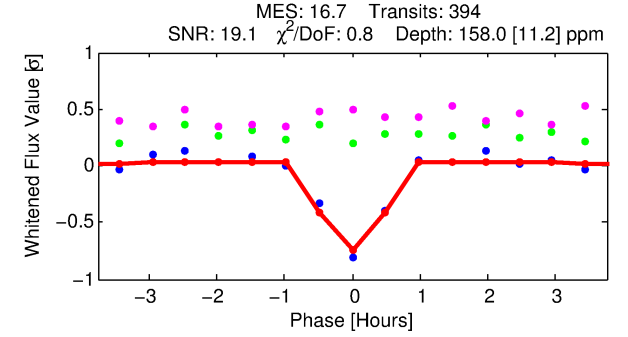
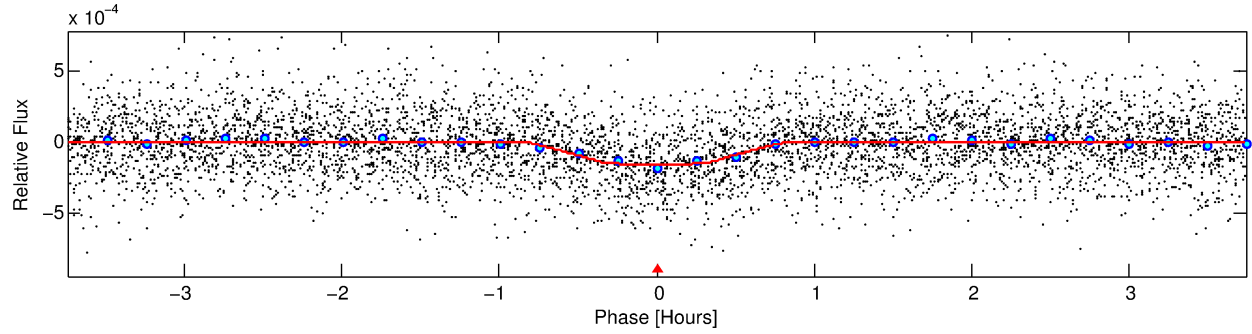
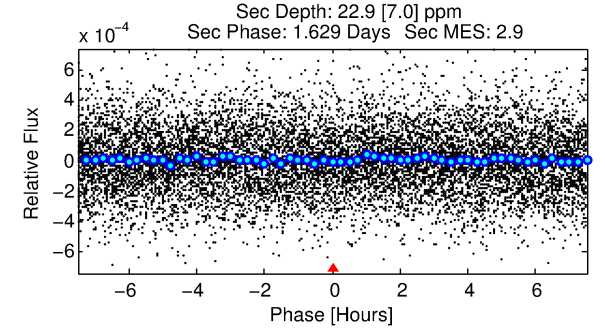
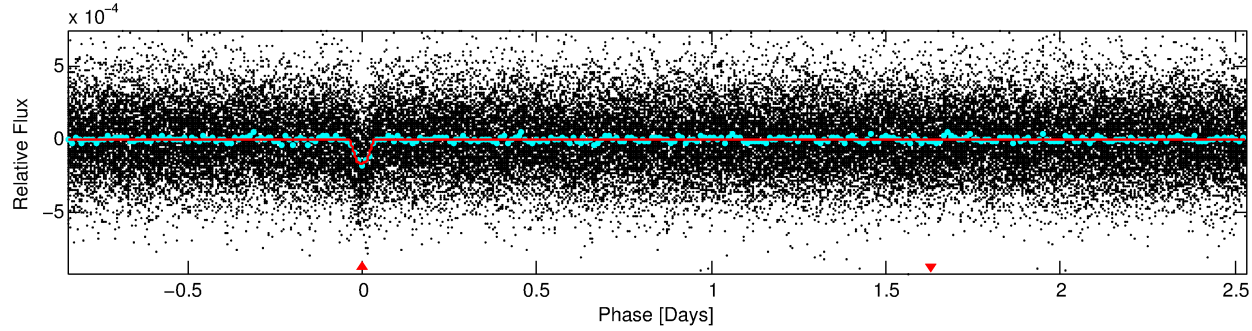
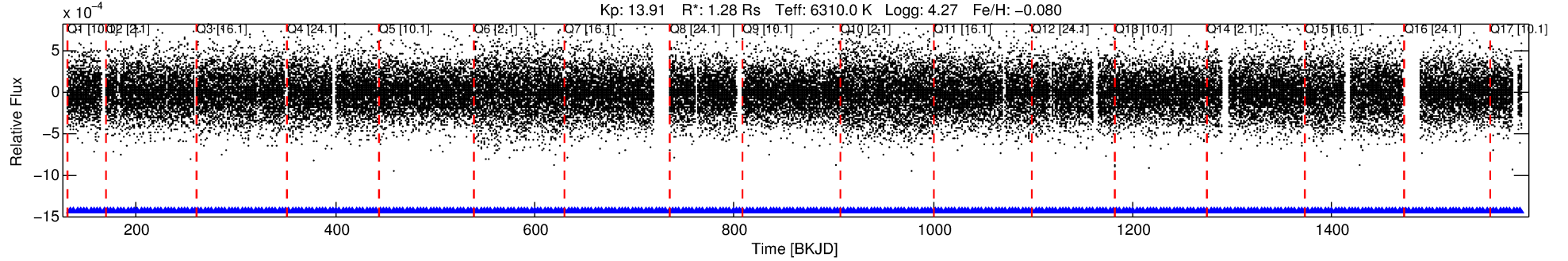
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 002985587-01

No Significant Match Found

DV One-Page Summary

KIC: 2985587 Candidate: 1 of 1 Period: 3.376 d
KOI: K02807.01 Corr: 0.848



DV Fit Results:

Period = 3.37570 [0.00001] d
Epoch = 134.2170 [0.0013] BKJD
Rp/R* = 0.0136 [0.0038]
a/R* = 9.59 [14.55]
b = 0.90 [0.32]
Seff = 1112.89 [440.67]
Teq = 1473 [146] K
Rp = 1.90 [0.79] Re
a = 0.0458 [0.0118] AU
Ag = 7.31 [5.40] [1.17σ]
Teffp = 3745 [610] K [3.62σ]

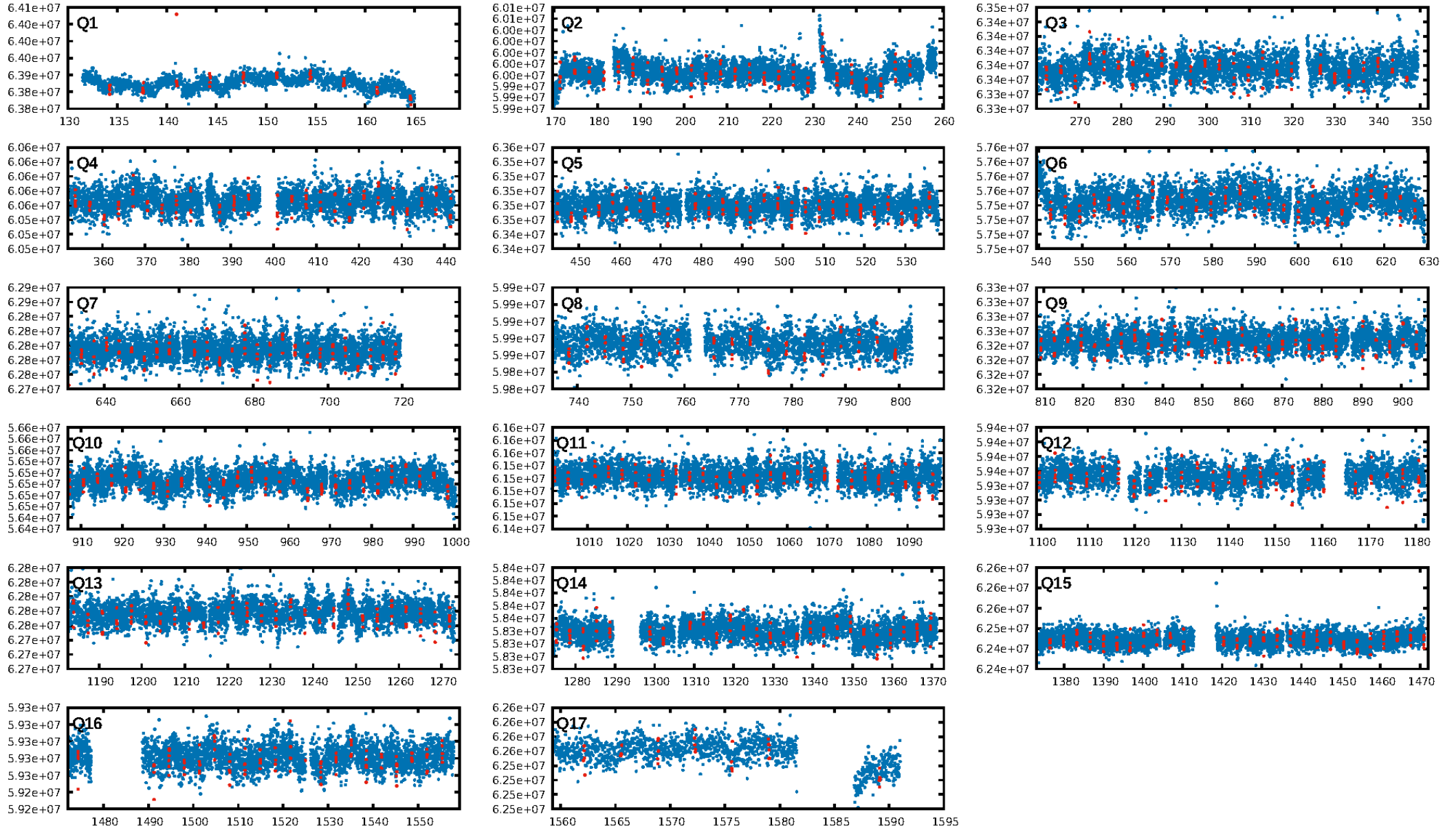
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 2.32e-61
RollingBand-fgt: 1.00 [377/377]
GhostDiagnostic-chr: 5.636
Centroid-sig: 2.7%
Centroid-so: 0.542 arcsec [0.97σ]
OotOffset-rm: 0.444 arcsec [1.58σ]
KicOffset-rm: 0.230 arcsec [0.81σ]
OotOffset-st: 4/4/3/5 [16]
KicOffset-st: 4/4/3/5 [16]
DiffImageQuality-fgm: 0.69 [11/16]
DiffImageOverlap-fno: 1.00 [17/17]

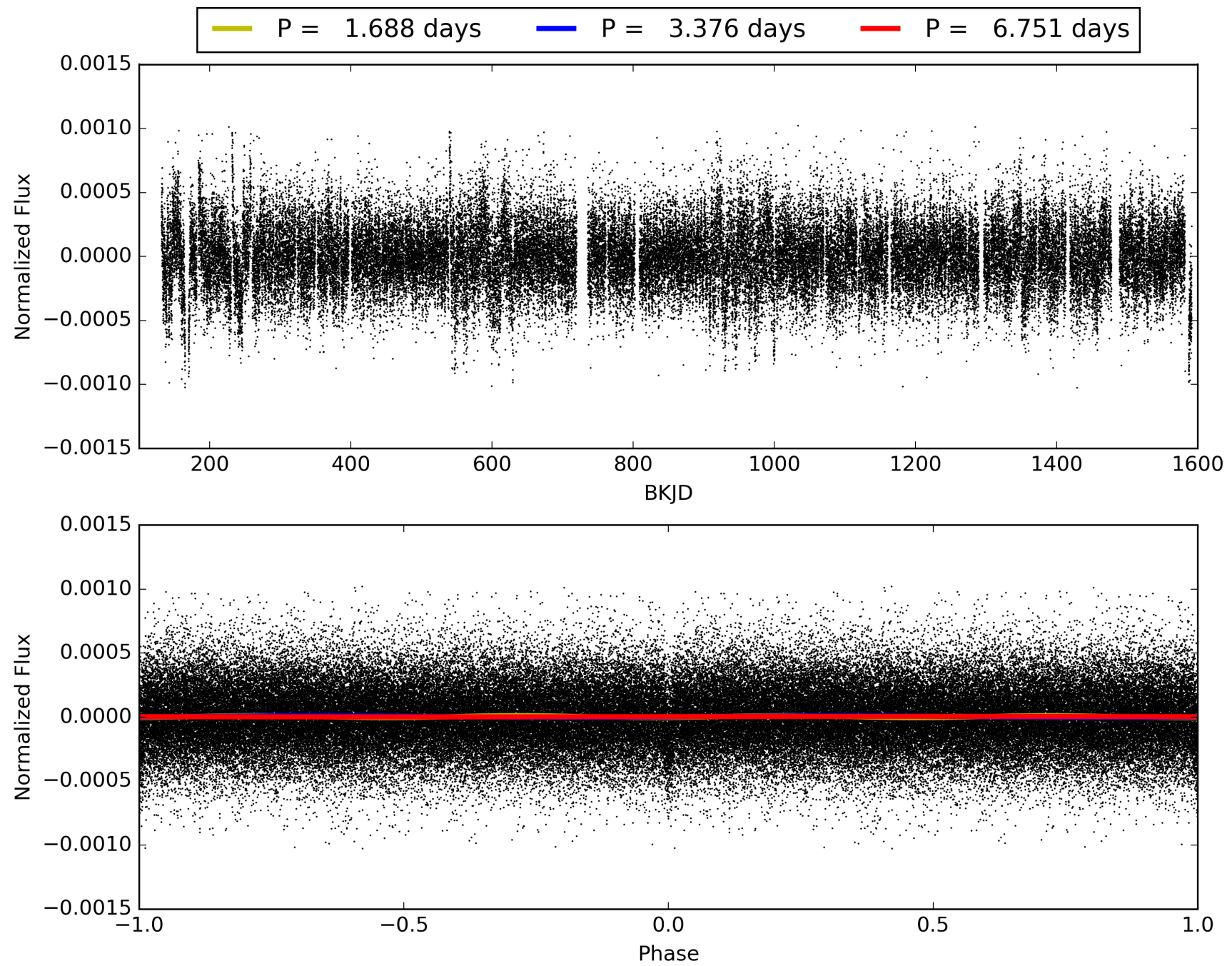
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 15:30:44 Z

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

TCE 002985587-01, PDC Light Curves

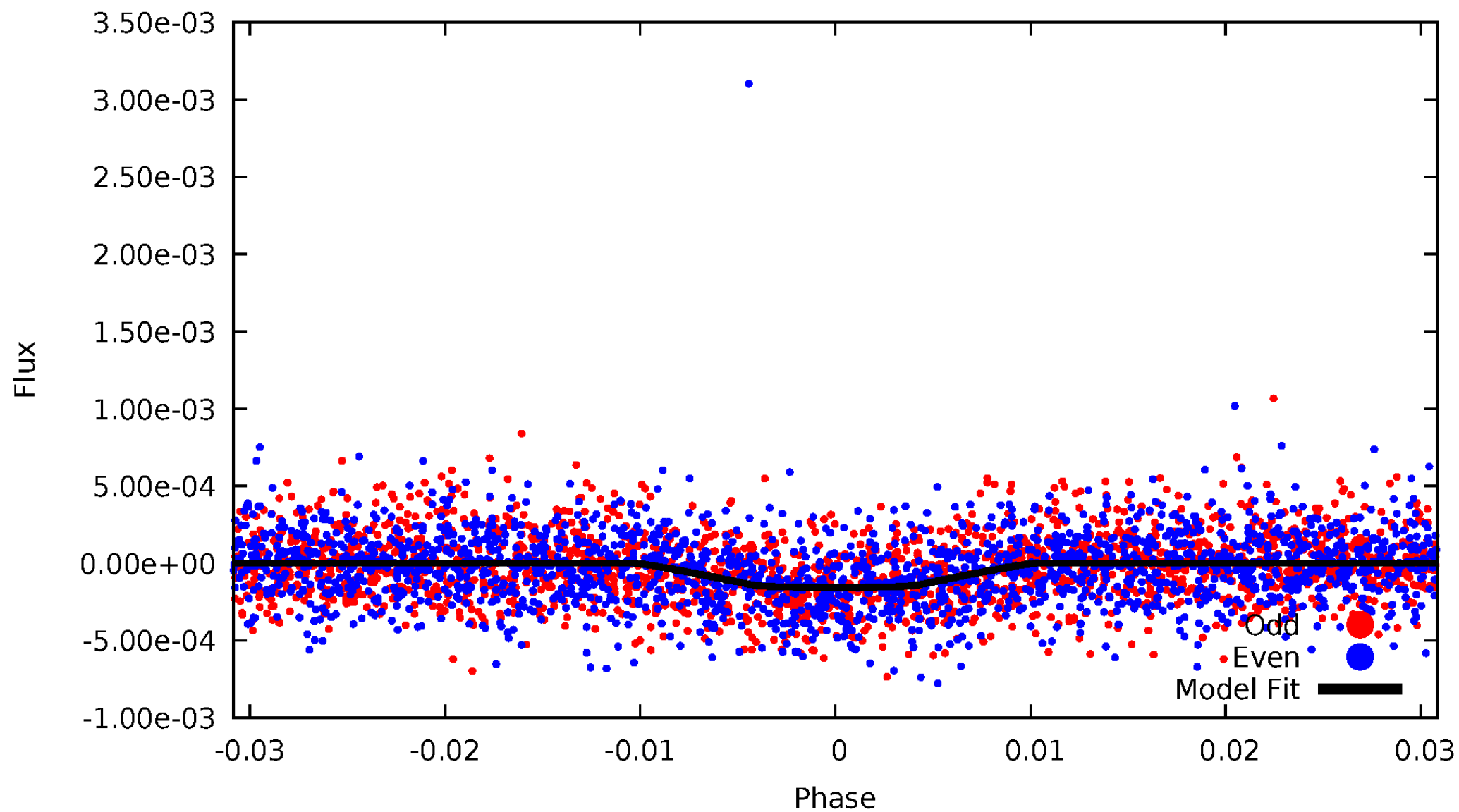


TCE 002985587-01



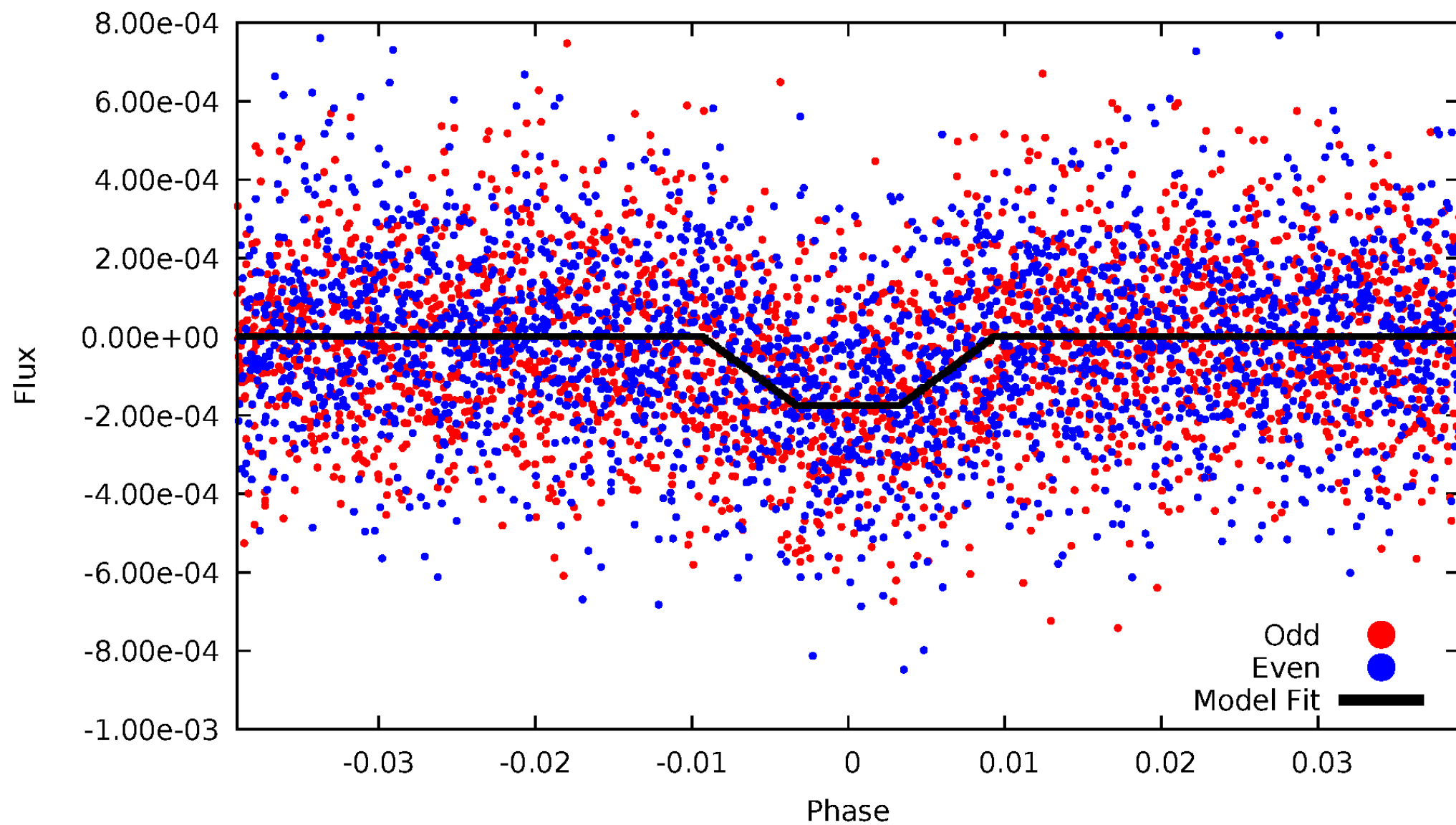
DV Odd/Even

TCE 002985587-01

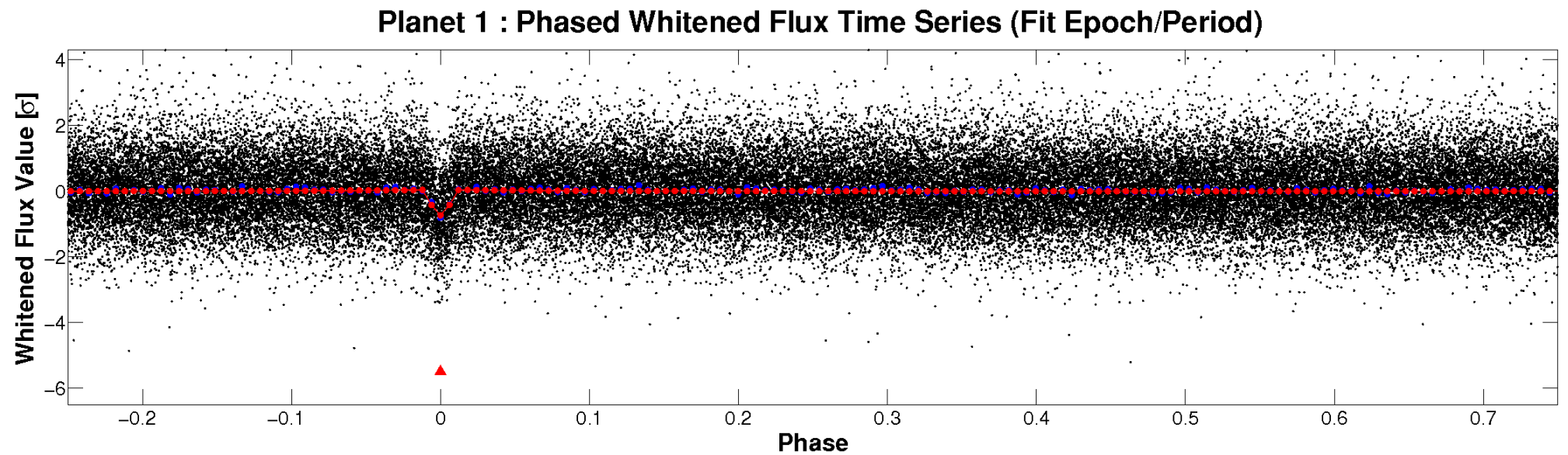
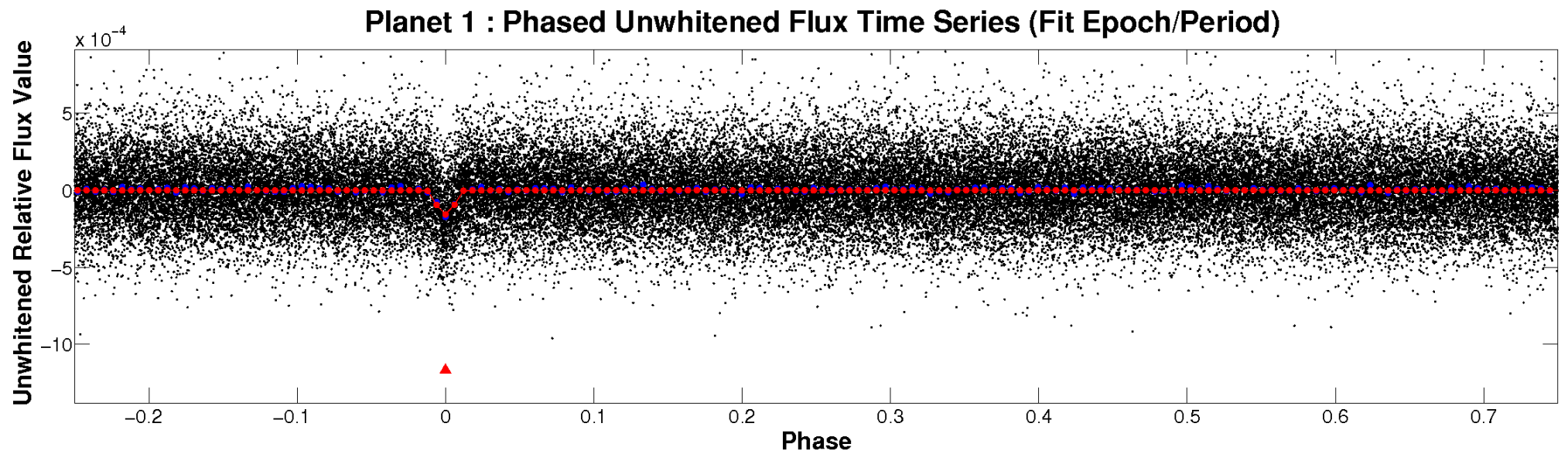


ALT Odd/Even

TCE 002985587-01

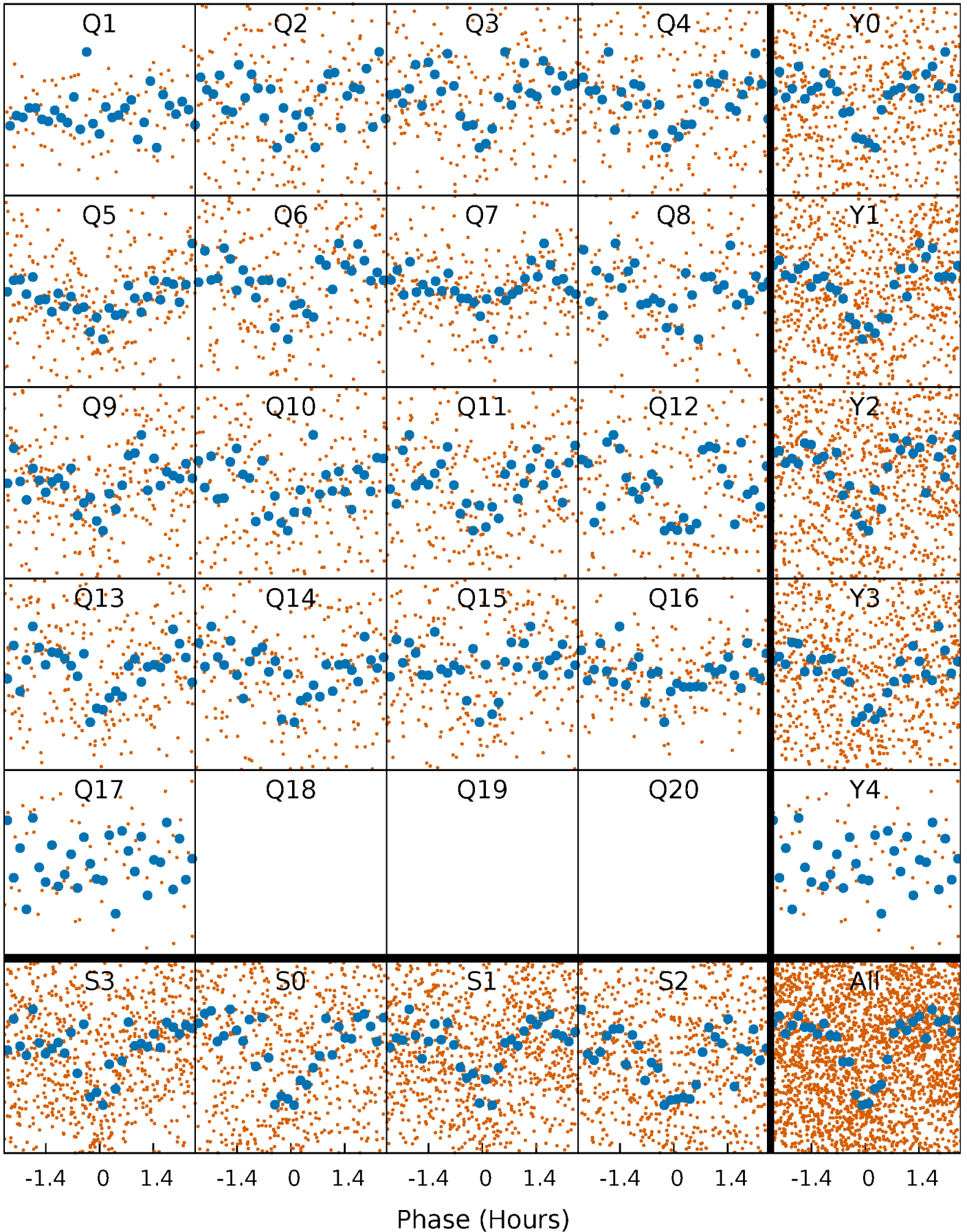


Non-Whitened Vs. Whitened Light Curve



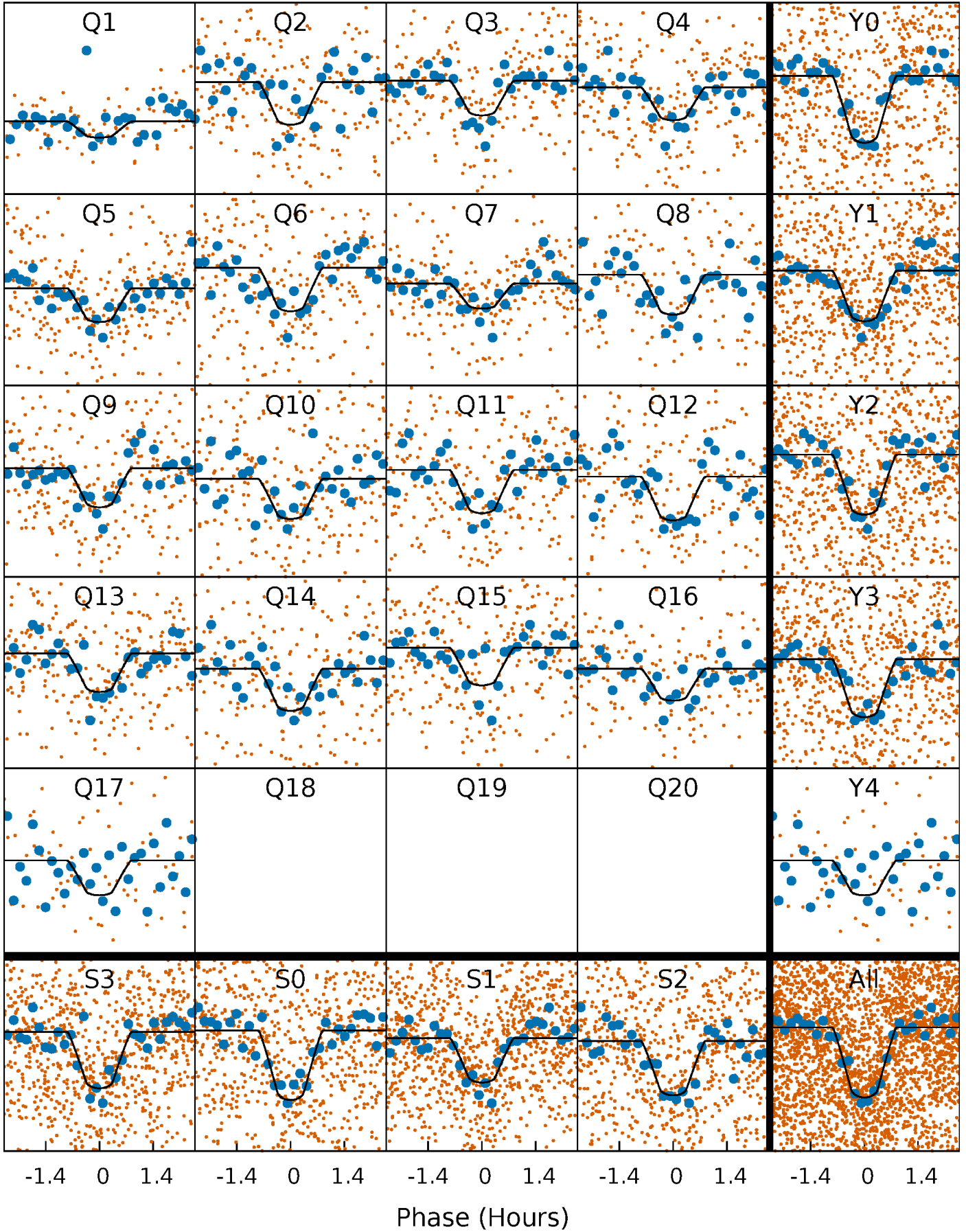
PDC Quarter-Phased Transit Curves

TCE 002985587-01 P= 3.375699 Days $T_0=134.216998$ (BKJD)



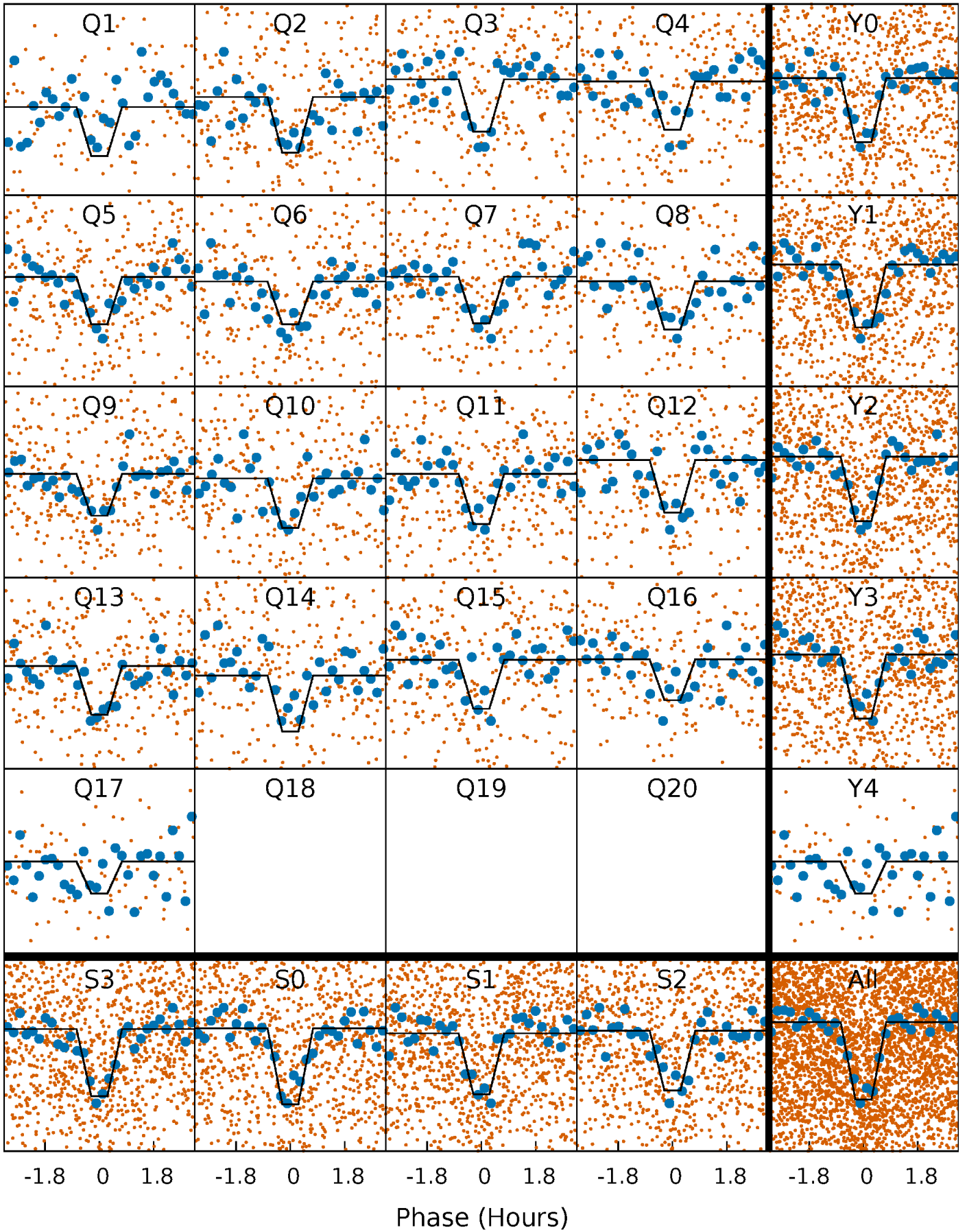
DV Quarter-Phased Transit Curves

TCE 002985587-01 P= 3.375699 Days $T_0=134.216998$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

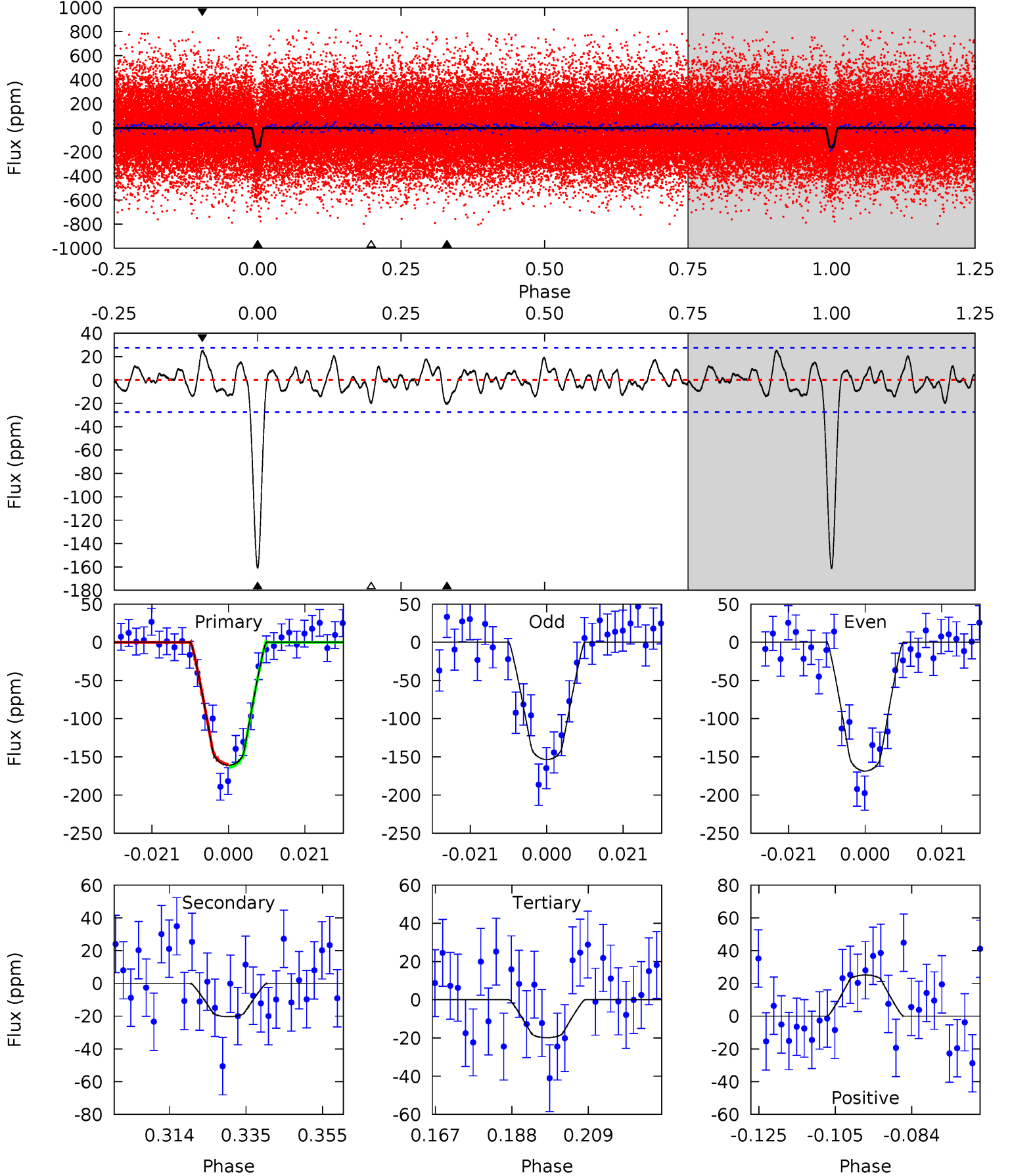
TCE 002985587-01 P= 3.375714 Days $T_0=134.213711$ (BKJD)



DV Model-Shift Uniqueness Test

002985587-01, P = 3.375699 Days, E = 130.841299 Days

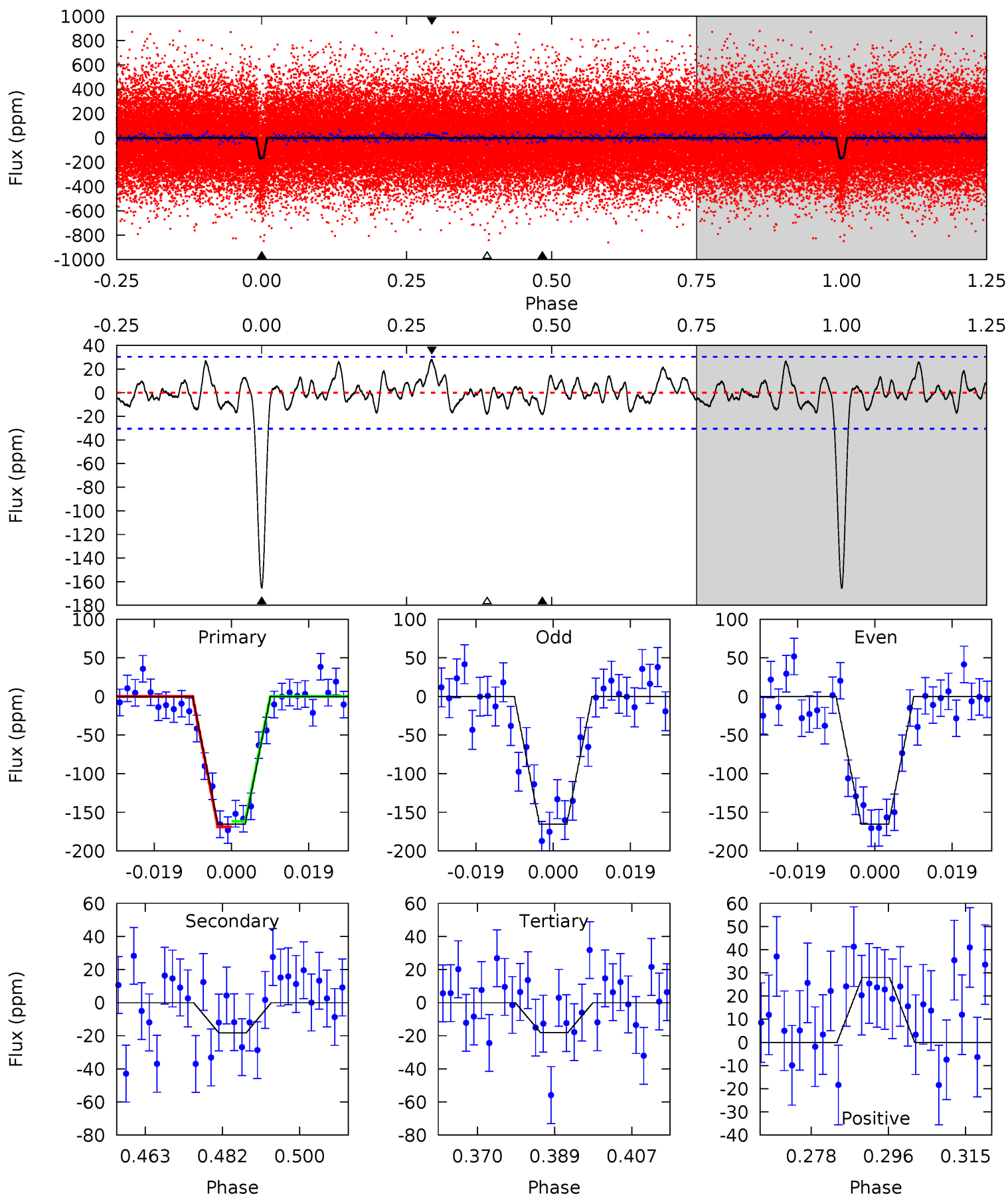
| Pri | Sec | Ter | Pos | FA ₁ | FA ₂ | F _{Red} | Pri-Ter | Pri-Pos | Sec-Ter | Sec-Pos | Odd-Evn | DMM | Shape | TAT |
|------|------|------|------|-----------------|-----------------|------------------|---------|---------|---------|---------|---------|------|-------|------|
| 28.5 | 3.61 | 3.52 | 4.45 | 4.88 | 2.31 | 1.37 | 25.0 | 24.1 | 0.09 | -0.84 | 1.33 | 1.02 | 0.13 | 0.26 |



Alt Model-Shift Uniqueness Test

002985587-01, P = 3.375714 Days, E = 130.837997 Days

| Pri | Sec | Ter | Pos | FA ₁ | FA ₂ | F _{Red} | Pri-Ter | Pri-Pos | Sec-Ter | Sec-Pos | Odd-Evn | DMM | Shape | TAT |
|------|------|------|------|-----------------|-----------------|------------------|---------|---------|---------|---------|---------|------|-------|------|
| 26.6 | 2.95 | 2.91 | 4.51 | 4.91 | 2.36 | 1.41 | 23.7 | 22.1 | 0.04 | -1.56 | 0.02 | 0.97 | 0.14 | 0.58 |



Stellar Parameters For KIC 002985587

| | $T_{\text{eff}}(K)$ | $\log(g)$ | [Fe/H] | $R (R_{\odot})$ | $M(M_{\odot})$ | $p_{\star} (\text{g}\cdot\text{cm}^{-3})$ |
|--------|----------------------|---------------------------|----------------------------|---------------------------|---------------------------|---|
| | 6310^{+170}_{-208} | $4.273^{+0.136}_{-0.204}$ | $-0.080^{+0.250}_{-0.300}$ | $1.282^{+0.391}_{-0.228}$ | $1.122^{+0.181}_{-0.131}$ | $0.751^{+0.539}_{-0.382}$ |
| | +3%/-3% | +3%/-5% | +312%/-375% | +30%/-18% | +16%/-12% | +72%/-51% |
| 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 002985587-01 / KOI 2807.01

| Detrend | Depth (ppm) | $R_p (R_{\oplus})$ | $T_{\text{max}} (K)$ | $T_{\text{obs}} (K)$ | A_{obs} |
|---------|-------------|------------------------|----------------------|----------------------|---------------------------|
| DV | -20 ± 6 | $1.91^{+0.63}_{-0.55}$ | 2066^{+133}_{-121} | 3935^{+537}_{-446} | $6.277^{+6.870}_{-3.130}$ |
| Alt. | -18 ± 6 | $1.86^{+0.63}_{-0.54}$ | 2068^{+165}_{-133} | 3875^{+639}_{-452} | $5.868^{+7.022}_{-3.121}$ |

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

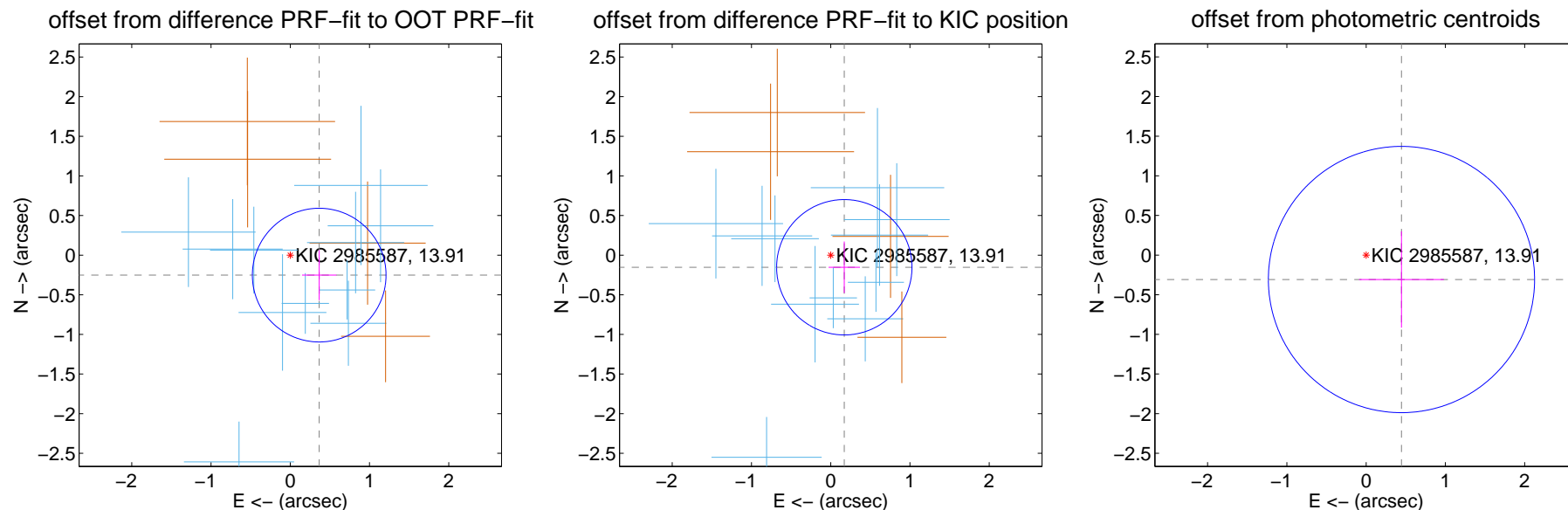
DV Centroid Data

Supplemental centroid analysis for 002985587-01. Kepler magnitude: 13.91. Transit SNR 19.15

There are 11 quarters with good PRF difference image offsets

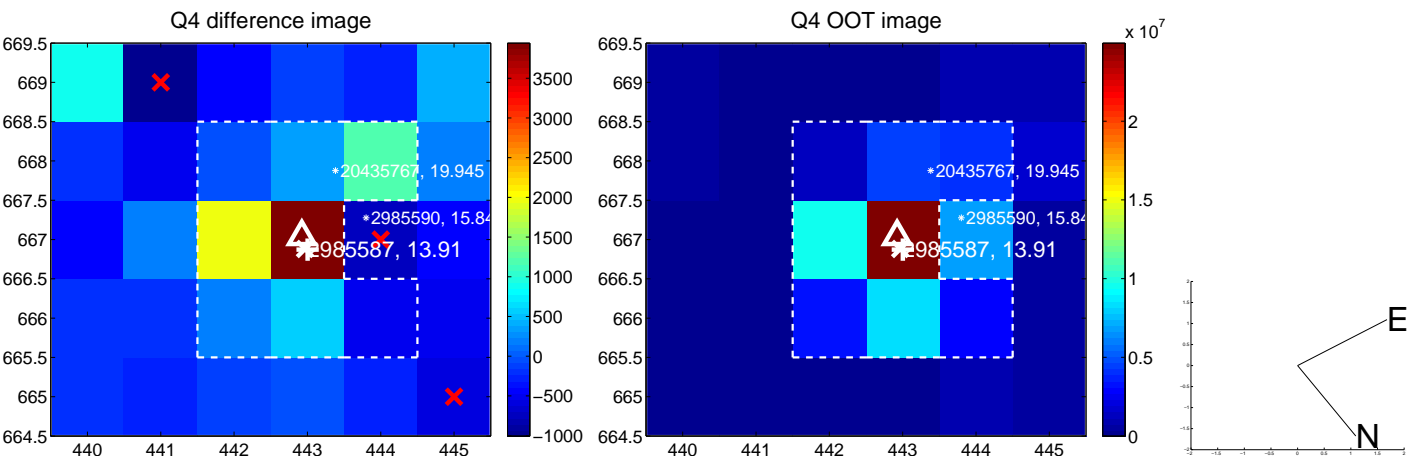
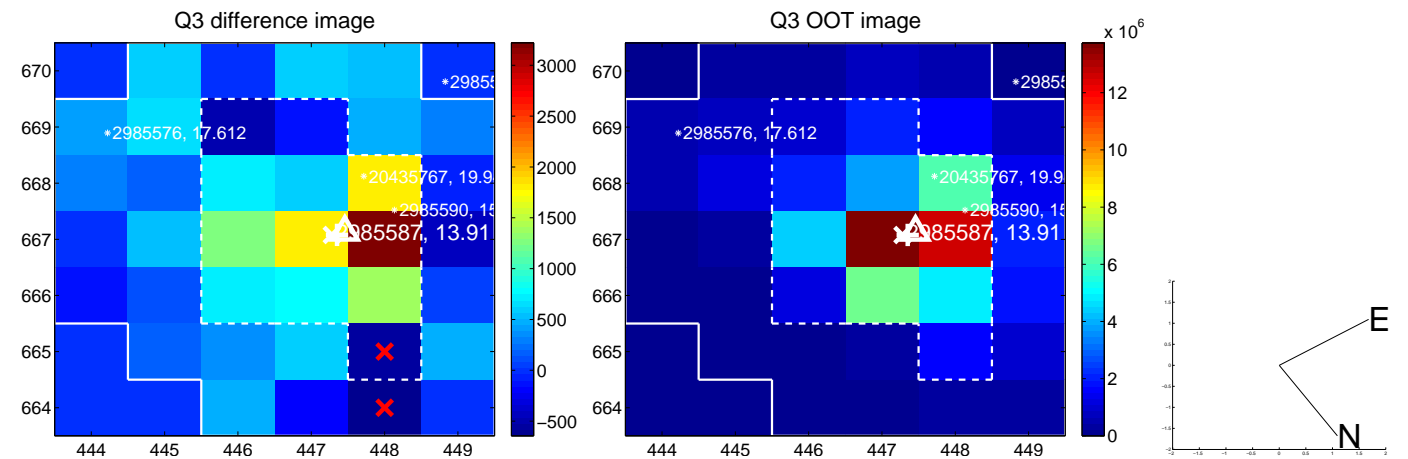
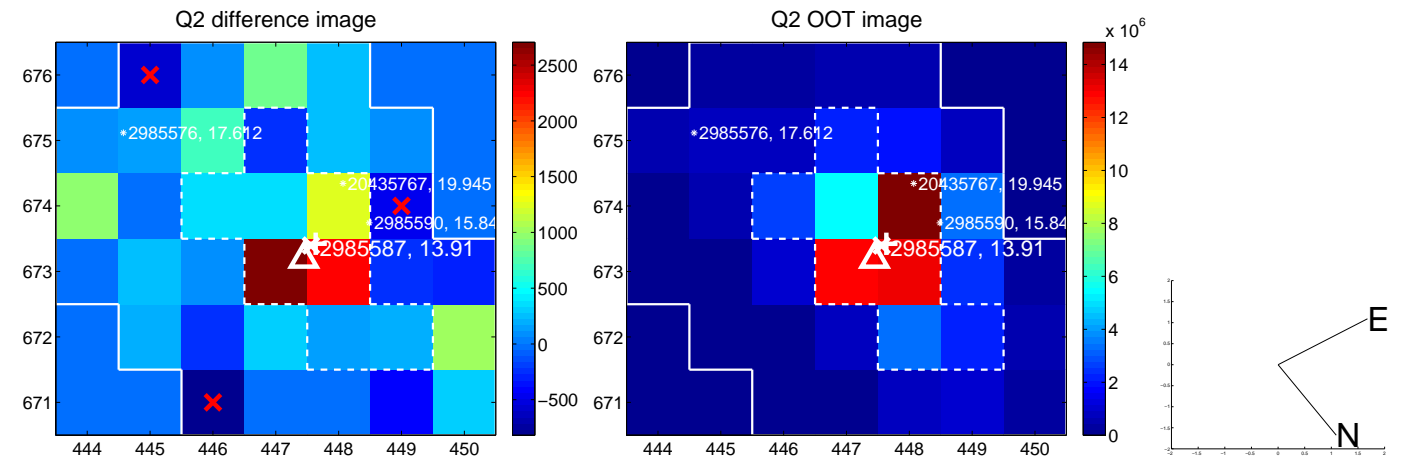
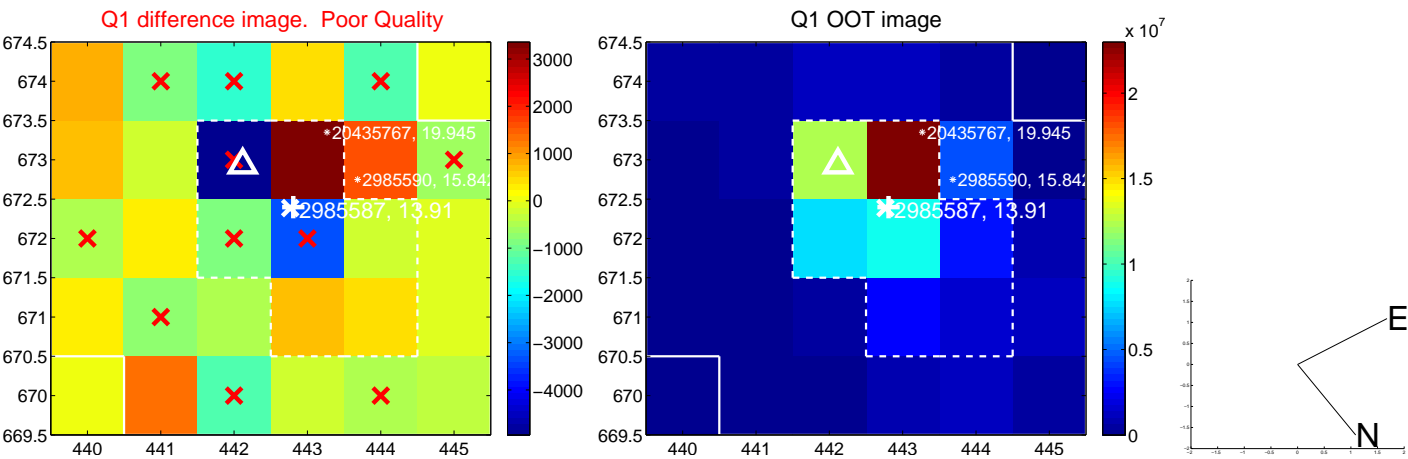
The direct PRF centroid is offset from the target star catalog position by about 0.17 arcsec

| | Distance in arcsec | Distance / σ | Δ RA | Δ Dec |
|---|--------------------|---------------------|--------------------|--------------------|
| PRF-fit source offset from OOT | 0.444 ± 0.281 | 1.58 | -0.365 ± 0.217 | -0.252 ± 0.316 |
| PRF-fit source offset from KIC position | 0.230 ± 0.285 | 0.81 | -0.171 ± 0.198 | -0.153 ± 0.324 |
| photometric centroid source offset | 0.54 ± 0.56 | 0.97 | -0.45 ± 0.54 | -0.31 ± 0.61 |

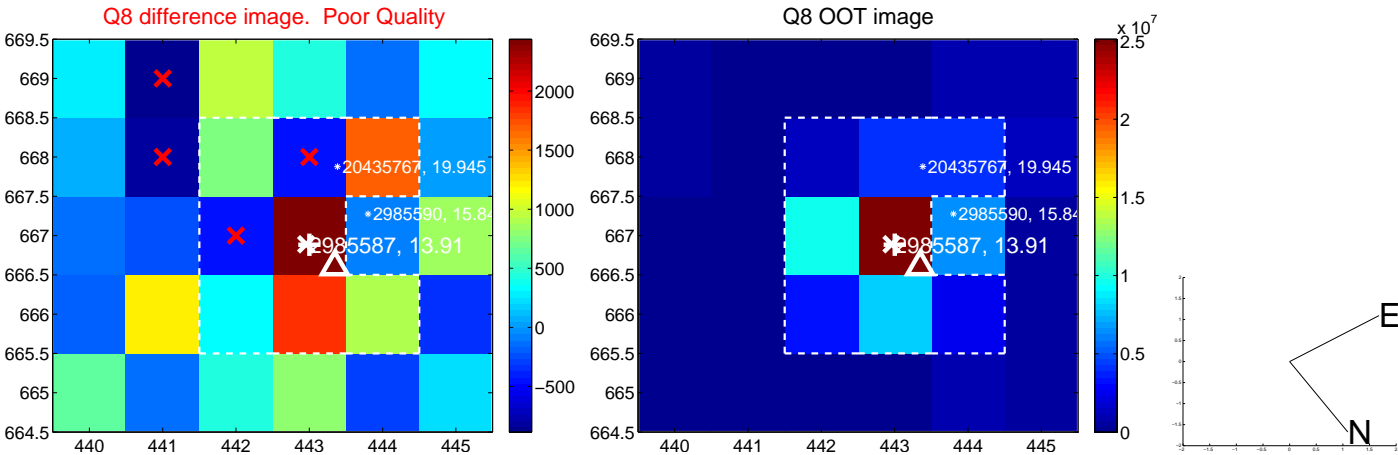
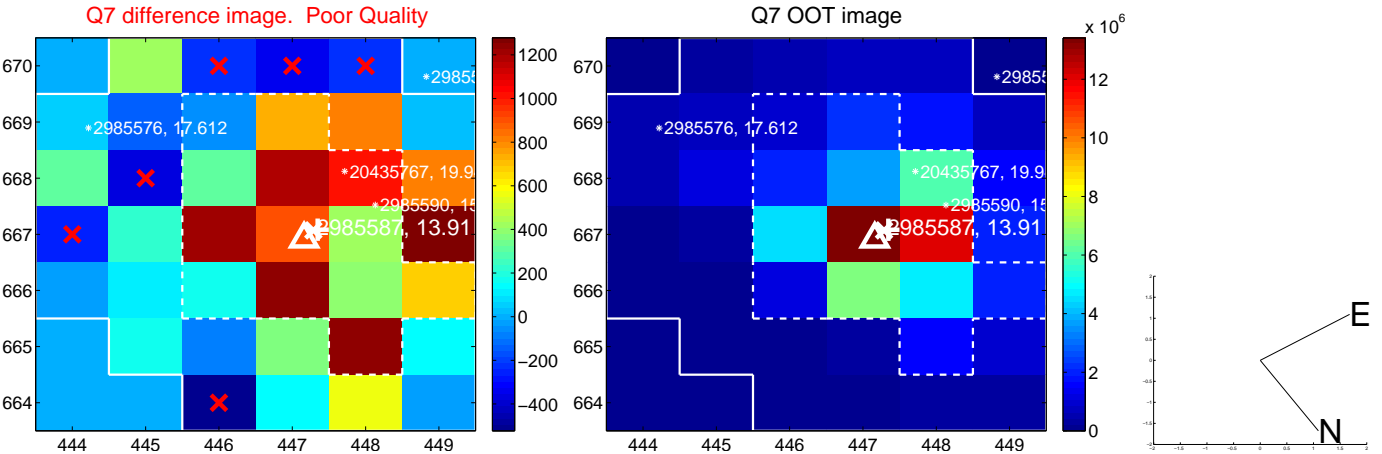
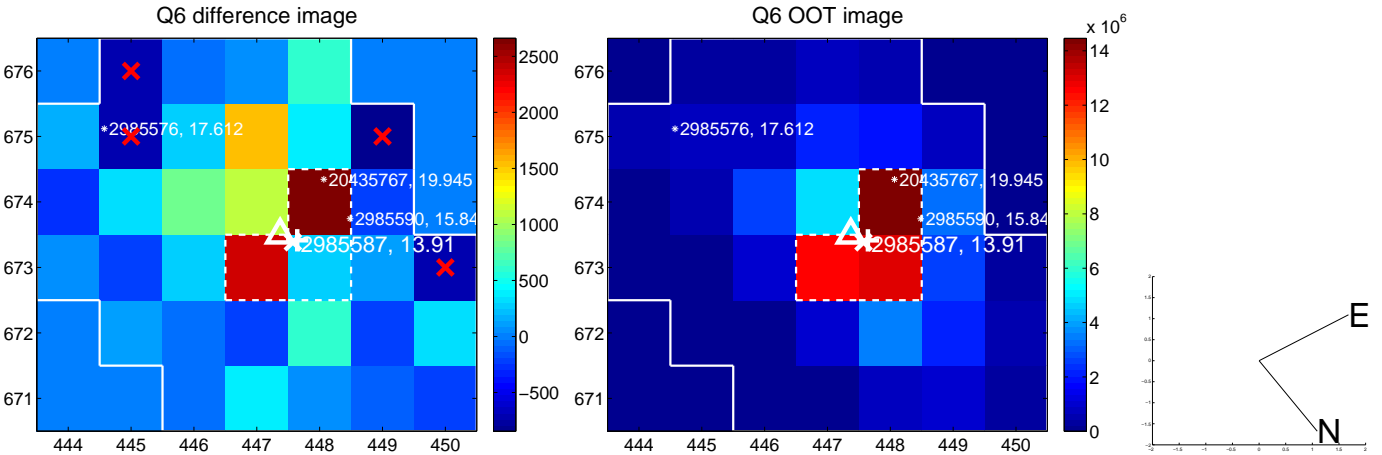
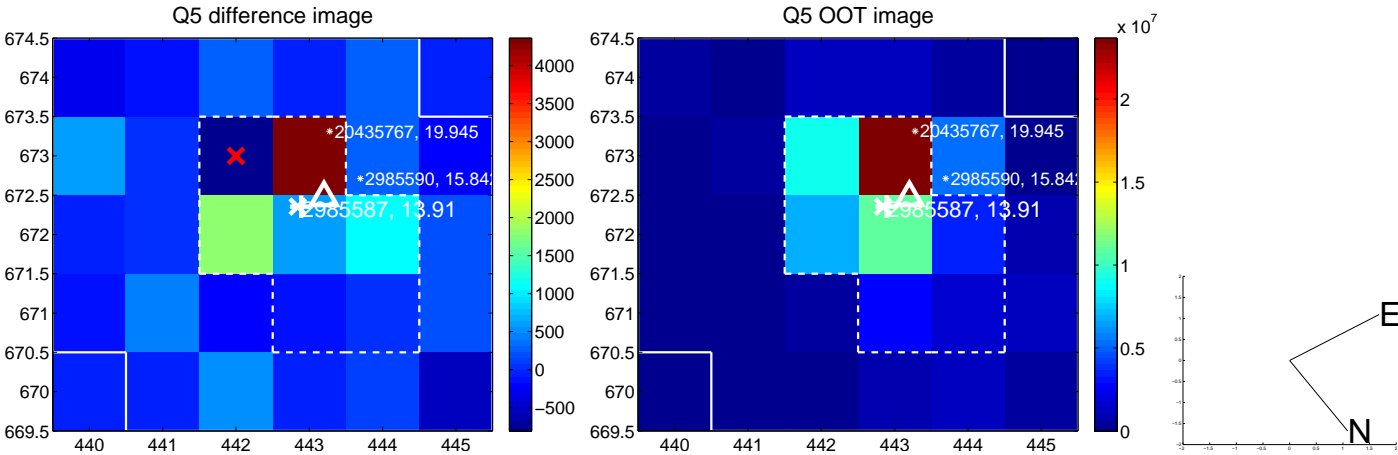


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

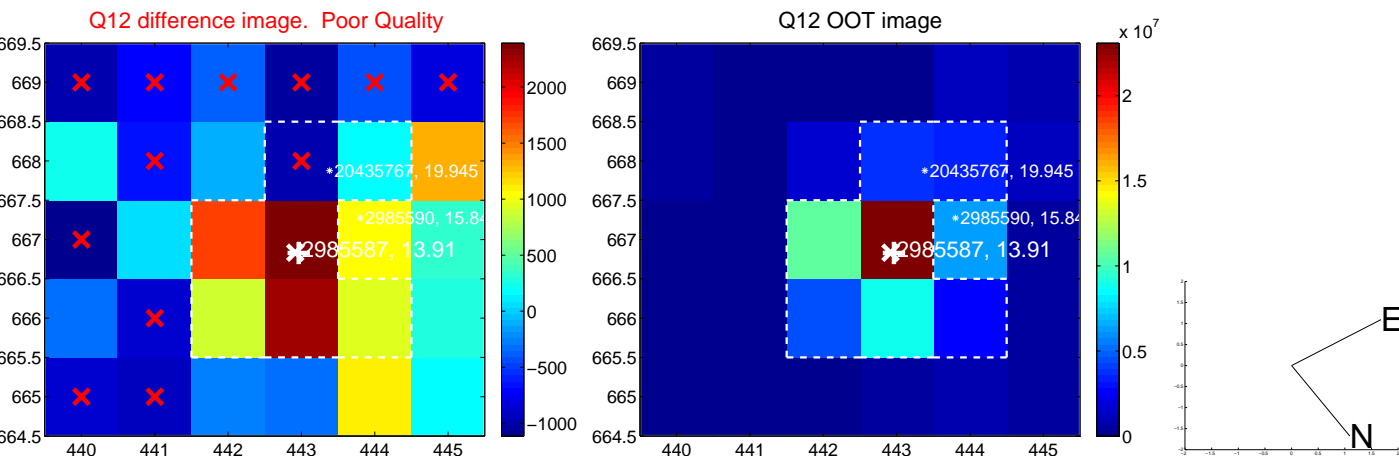
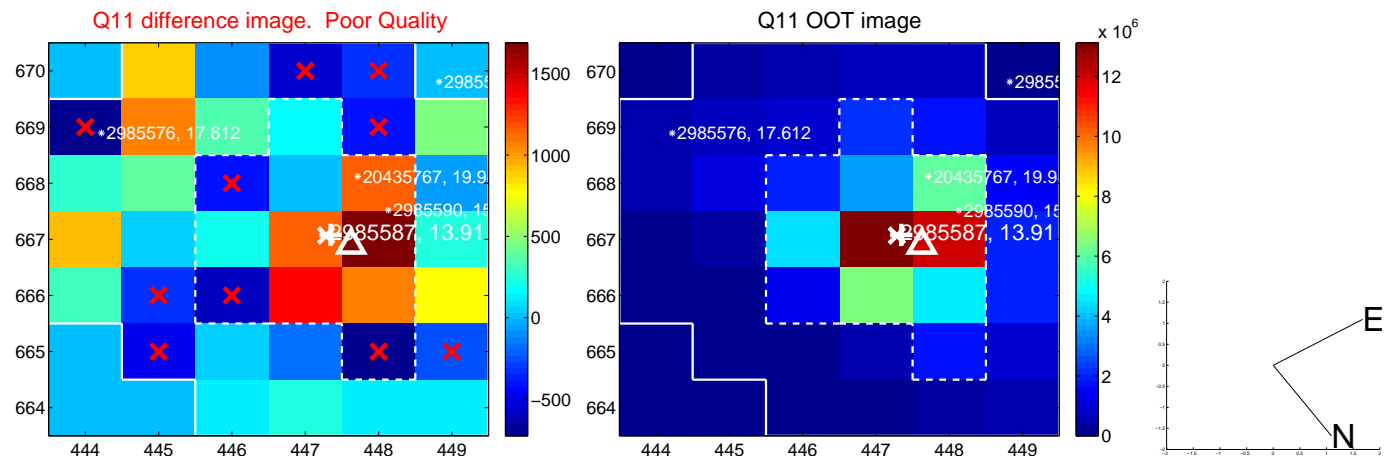
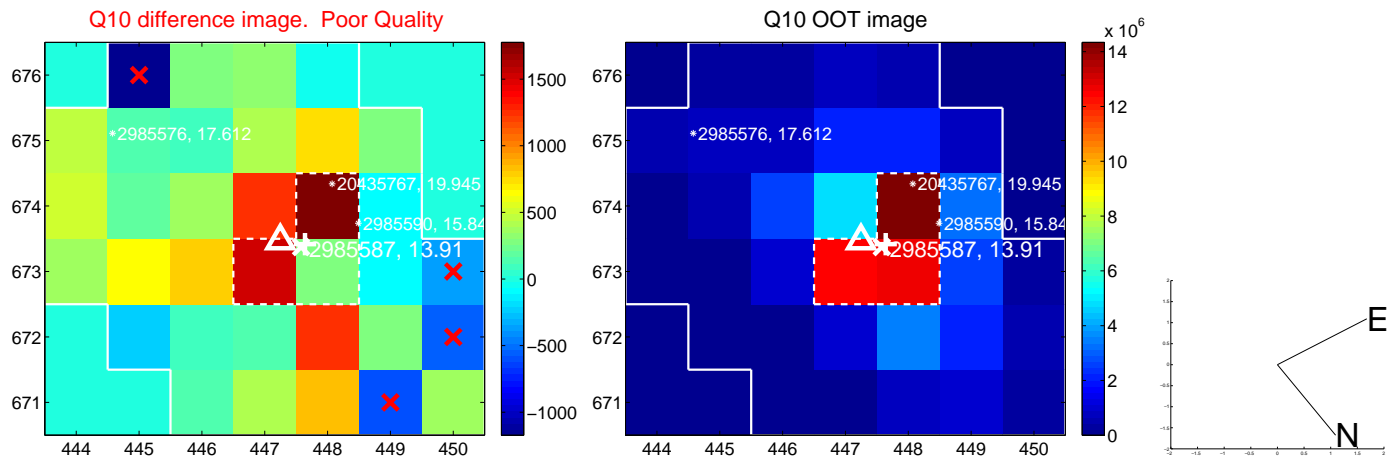
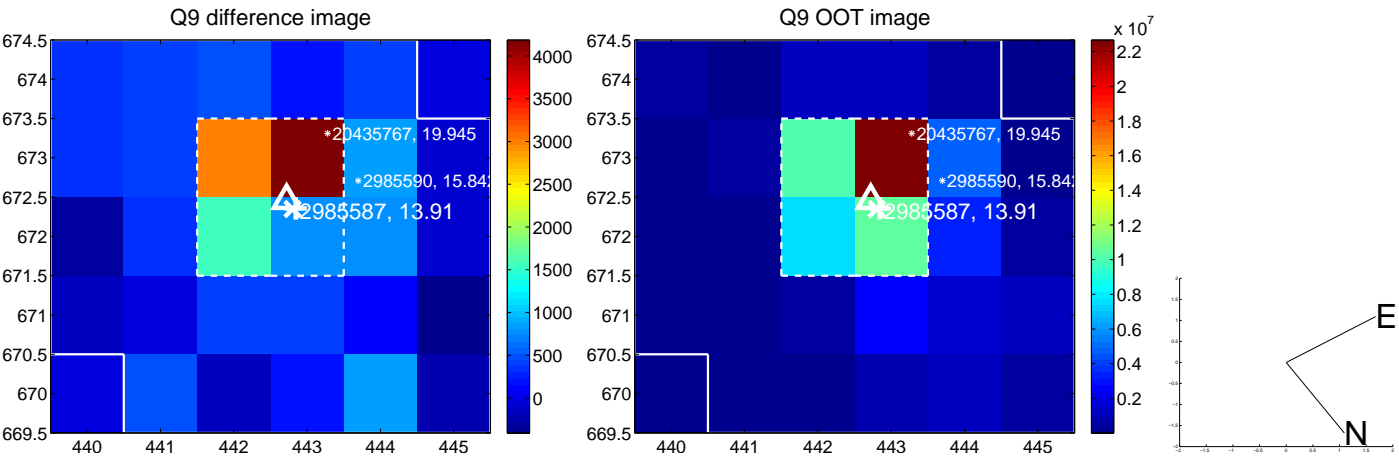
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



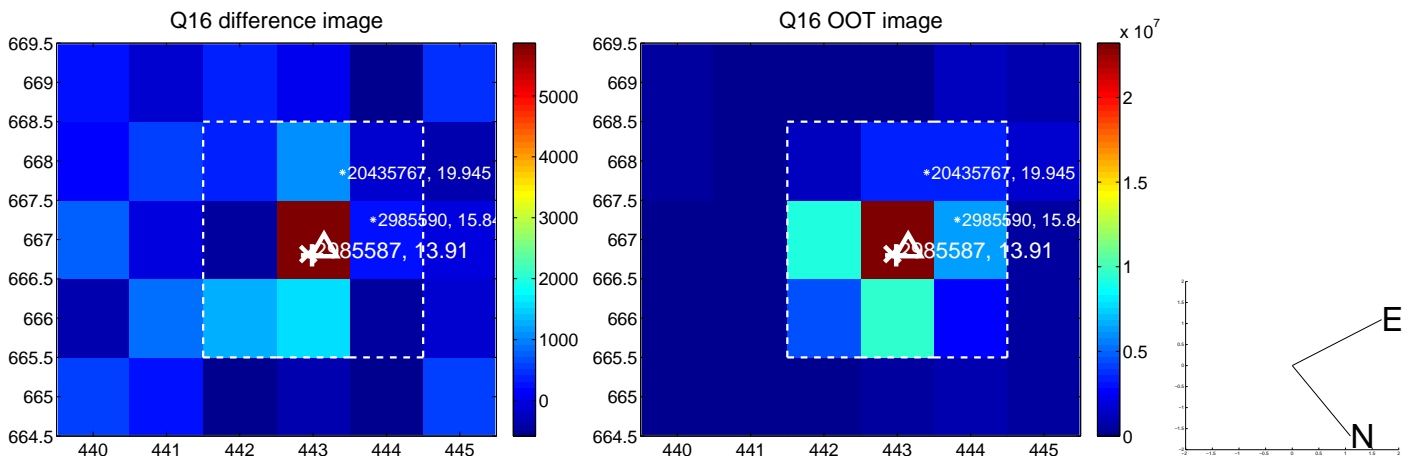
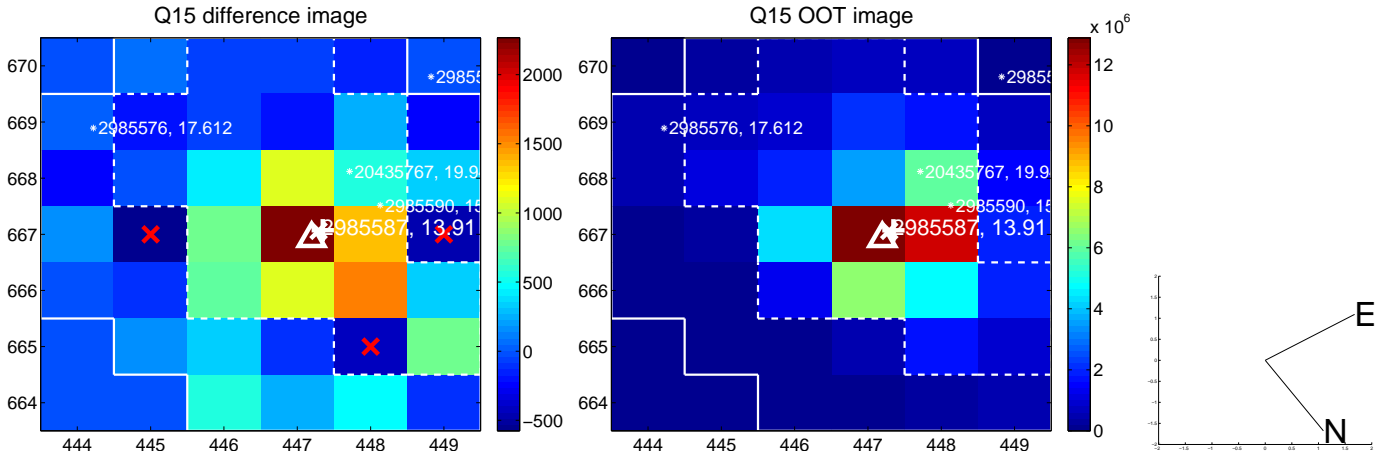
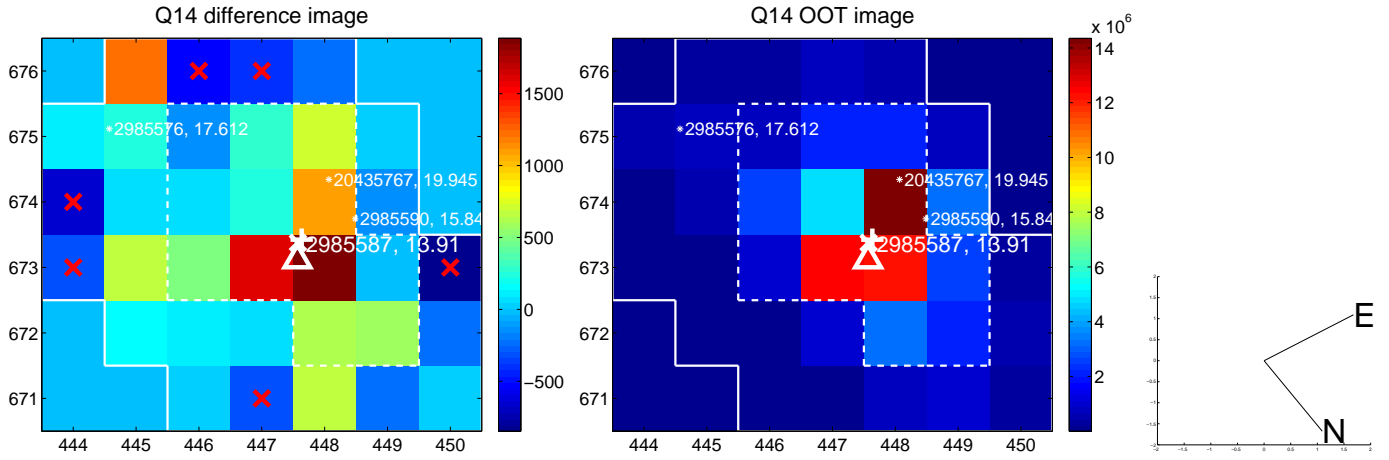
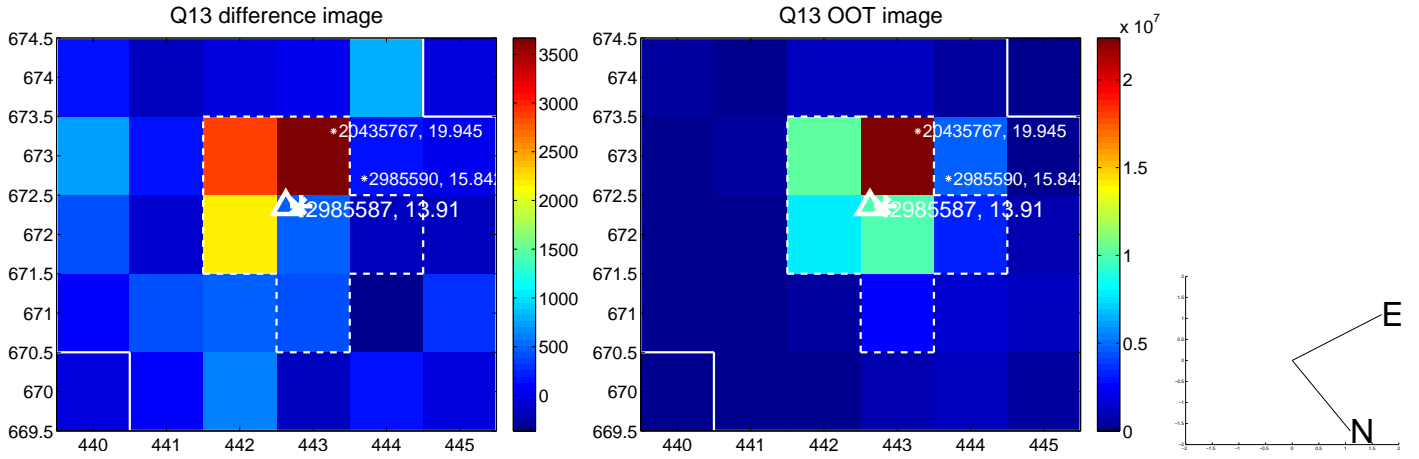
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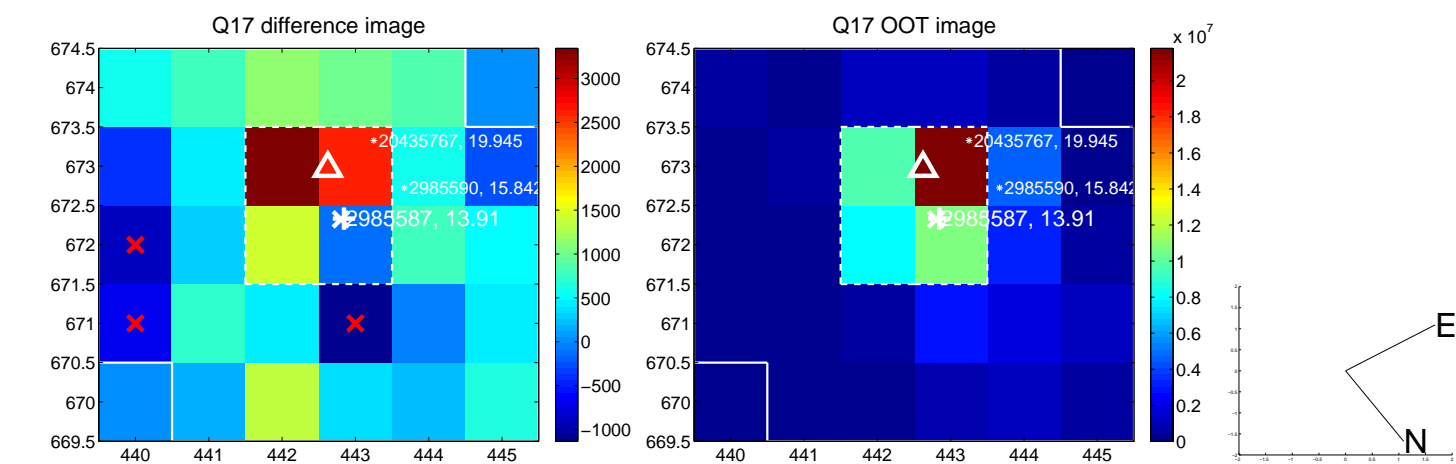
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



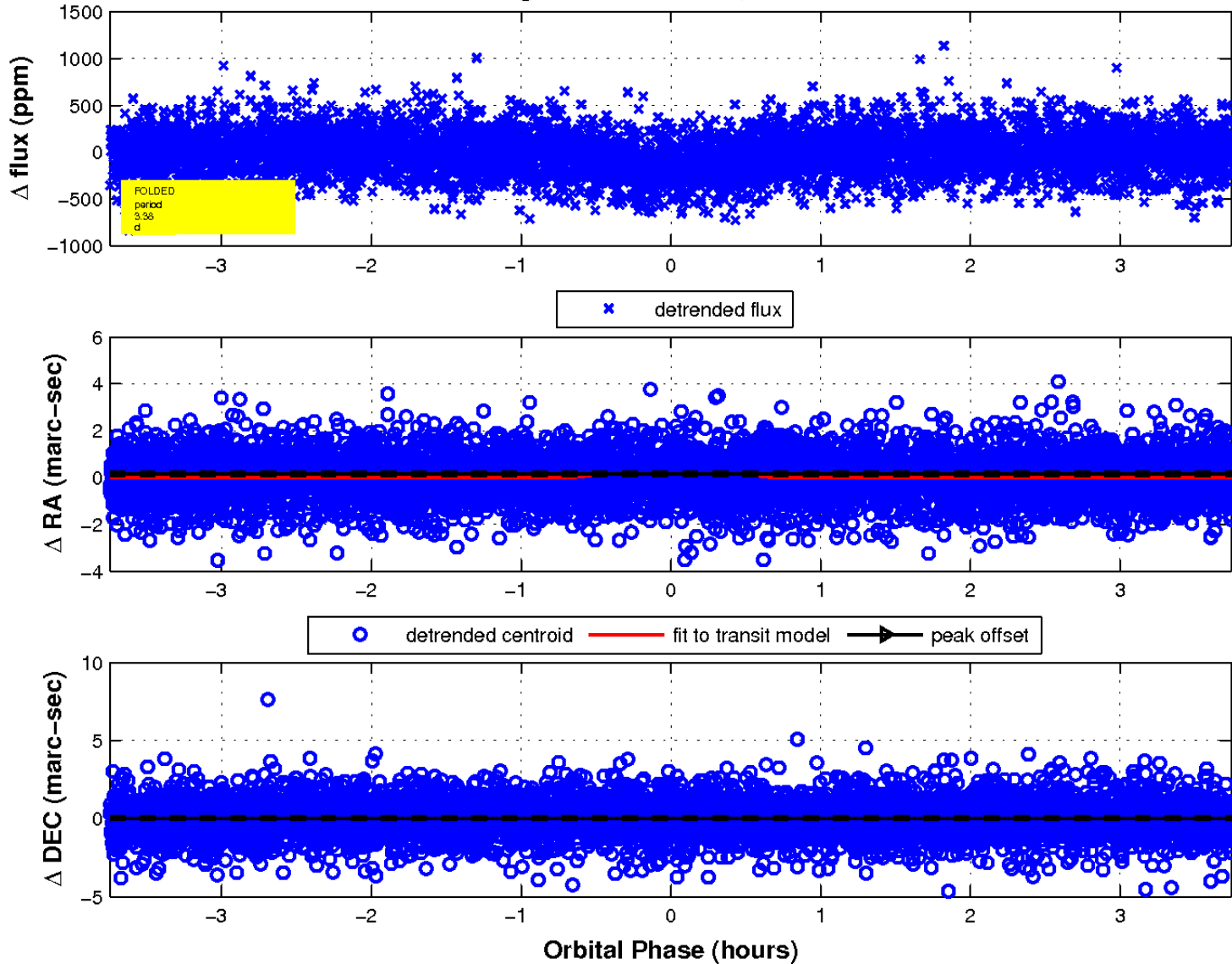
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



fluxWeightedCentroids, Planet 1 of 1



UKIRT Image

Declination

