

KIC 003758922

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}) |
|--------------|----------|---------|---------------|--------------|-------------|------------------|-----|-----|-----------------------------|-----------------|------------------------|------------------------|
| 003758922-01 | OBS | 4853.01 | 17.740798 | 144.361093 | 135.9 | 5.374 | 8.7 | 8.4 | 0.96 | 5817 | 1.28 | 51.76 |

Robovetter Results

| TCE | Run Type | Disp | Score | N | S | C | E | Comments |
|--------------|----------|------|-------|---|---|---|---|------------|
| 003758922-01 | OBS | PC | 0.62 | 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.

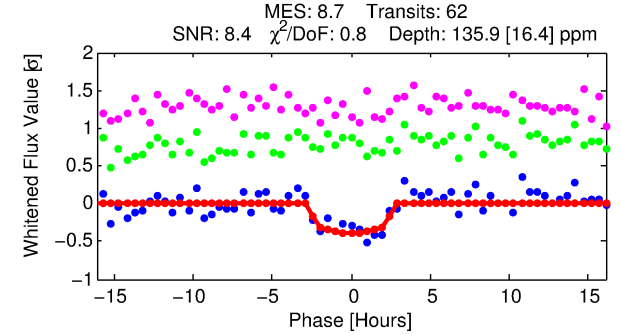
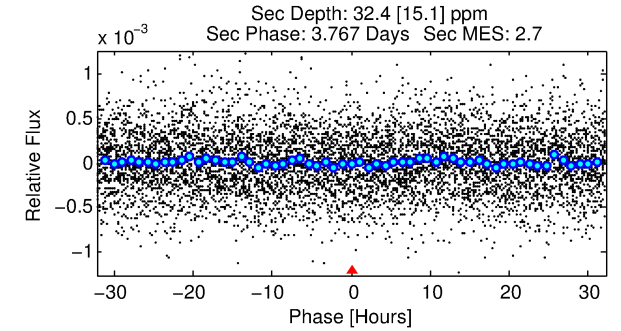
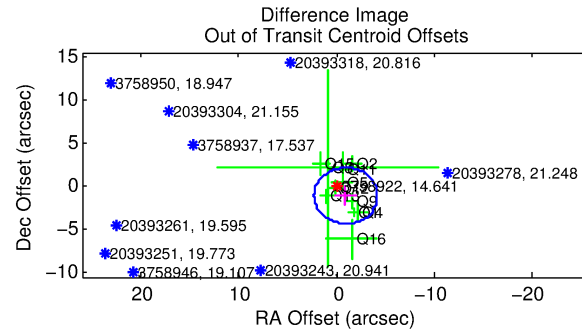
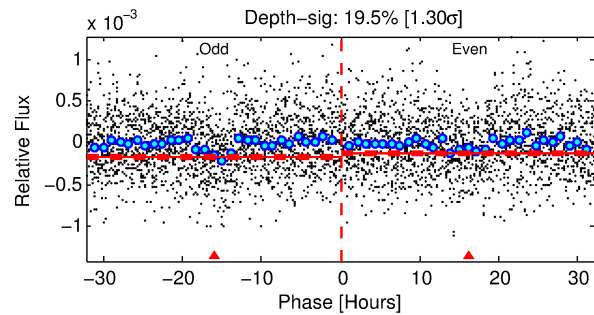
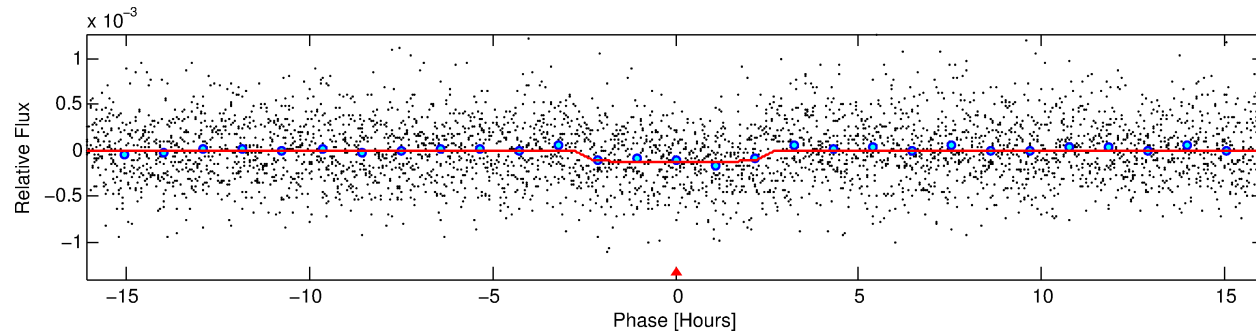
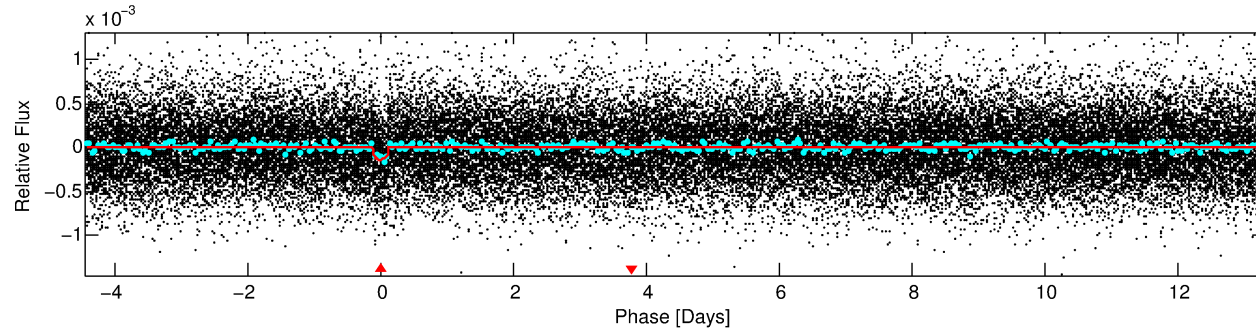
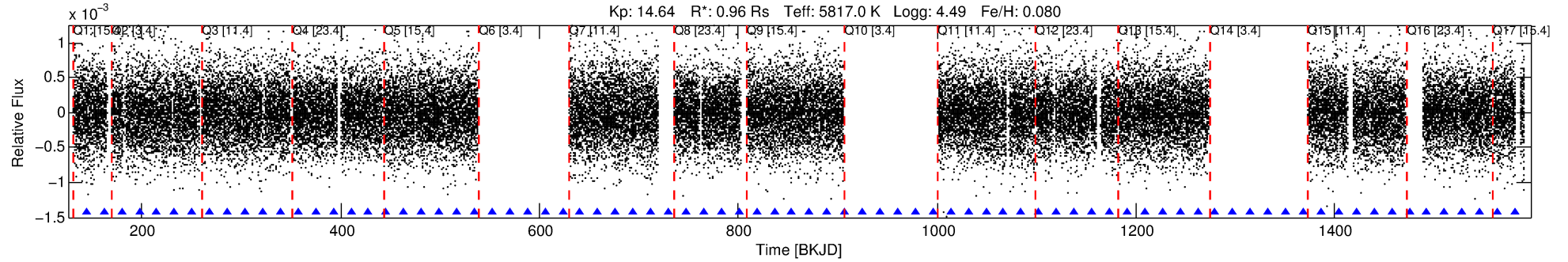
Ephemeris Match Information For 003758922-01

No Significant Match Found

DV One-Page Summary

KIC: 3758922 Candidate: 1 of 1 Period: 17.741 d

KOI: K04853.01 Corr: 0.921



DV Fit Results:

Period = 17.74080 [0.00027] d
Epoch = 144.3611 [0.0122] BKJD
Rp/R* = 0.0123 [0.0087]
a/R* = 13.57 [44.62]
b = 0.86 [1.03]
Seff = 51.76 [20.69]
Teff = 684 [68] K
Rp = 1.28 [0.99] Re
a = 0.1346 [0.0346] AU
Ag = 197.15 [303.34] [0.65 σ]
Teffp = 3963 [1483] K [2.21 σ]

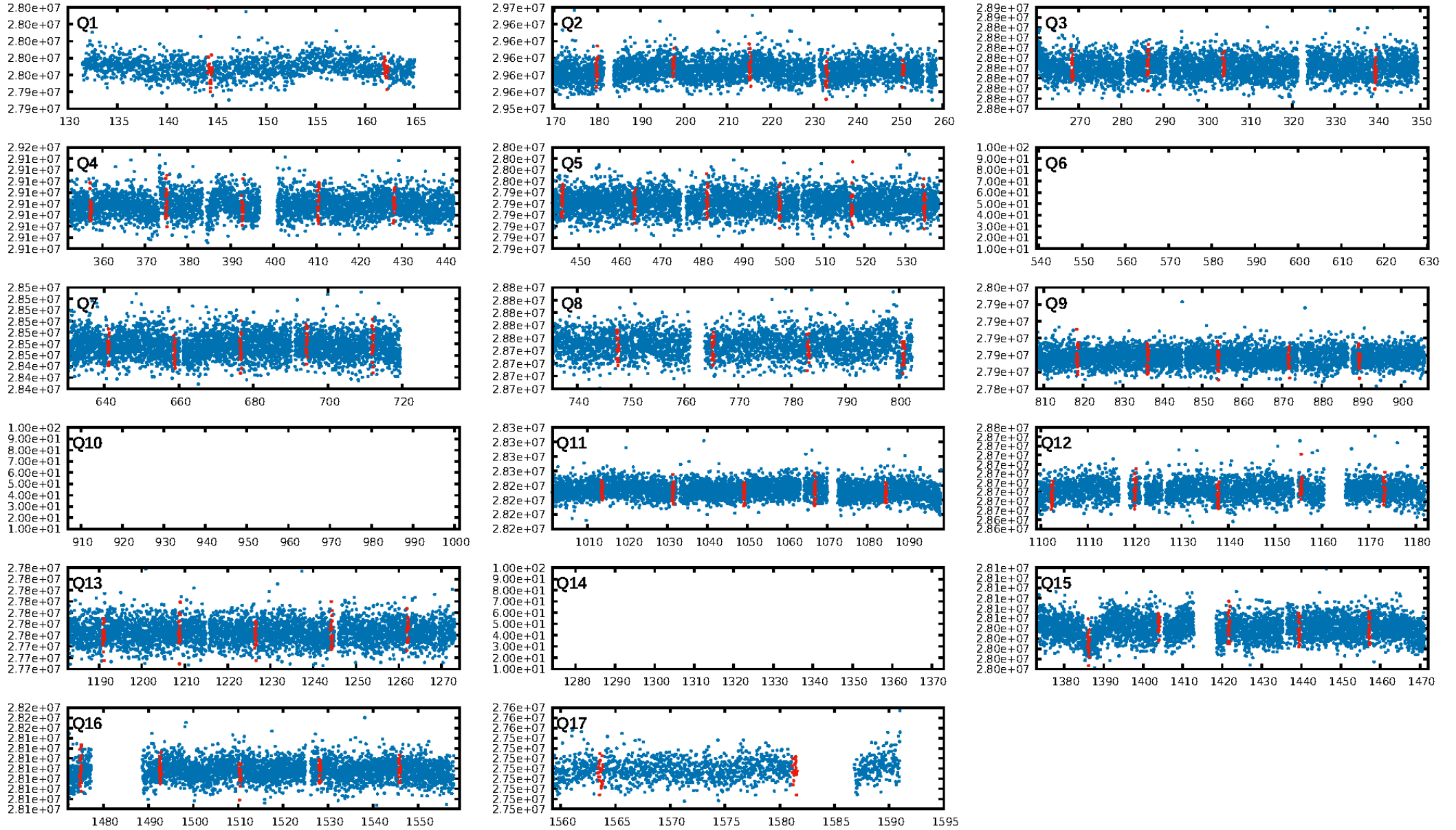
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: 99.5%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 2.78e-18
RollingBand-fgt: 1.00 [58/58]
GhostDiagnostic-chr: -5.424
Centroid-sig: 93.8%
Centroid-so: 0.037 arcsec [0.02 σ]
OotOffset-rm: 1.459 arcsec [1.35 σ]
OotOffset-st: 1/2/4/4 [11]
KicOffset-rm: 1.576 arcsec [1.46 σ]
KicOffset-st: 1/2/4/4 [11]
DiffImageQuality-fgm: 0.18 [2/11]
DiffImageOverlap-fno: 1.00 [14/14]

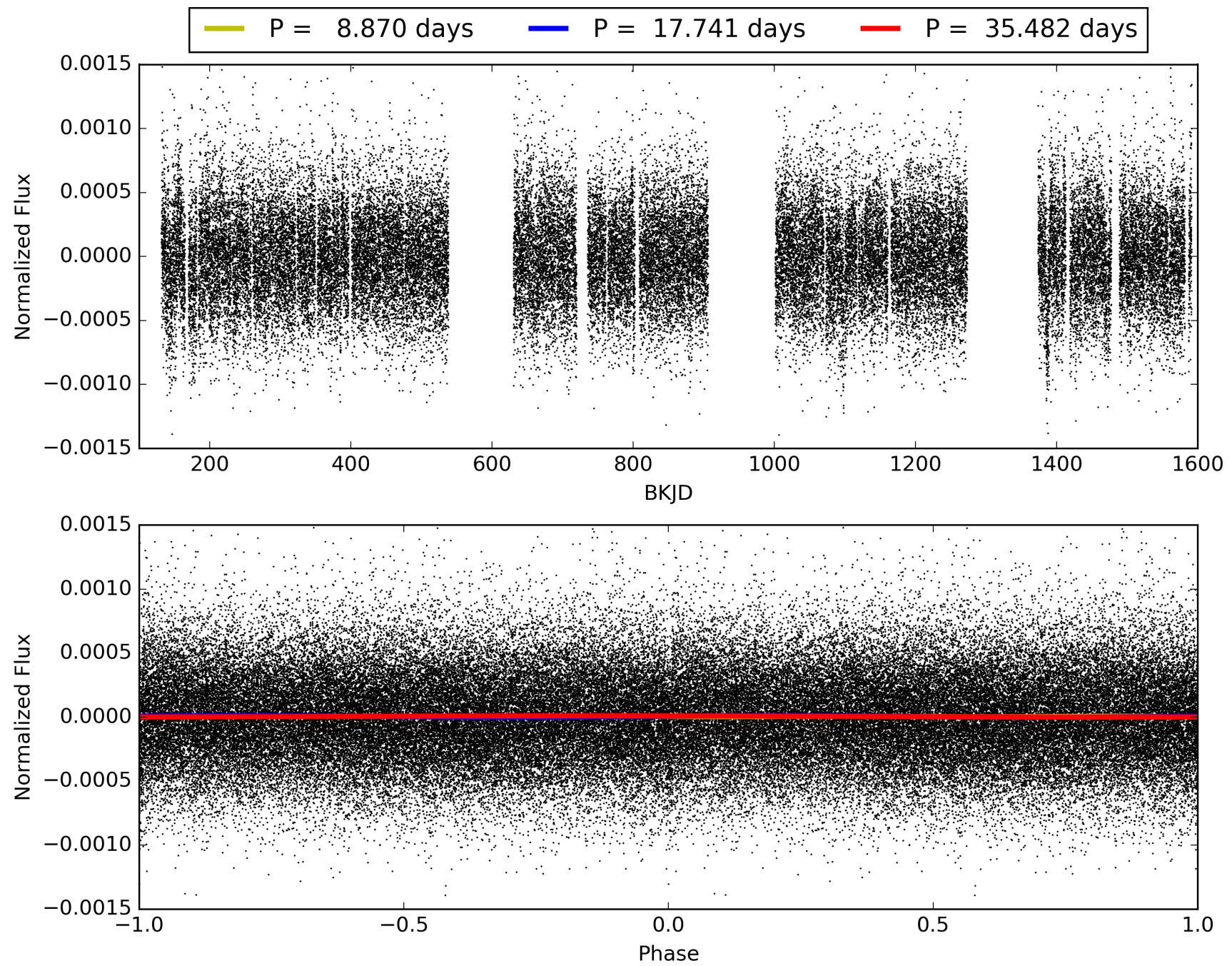
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 11:20:42 Z

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

TCE 003758922-01, PDC Light Curves

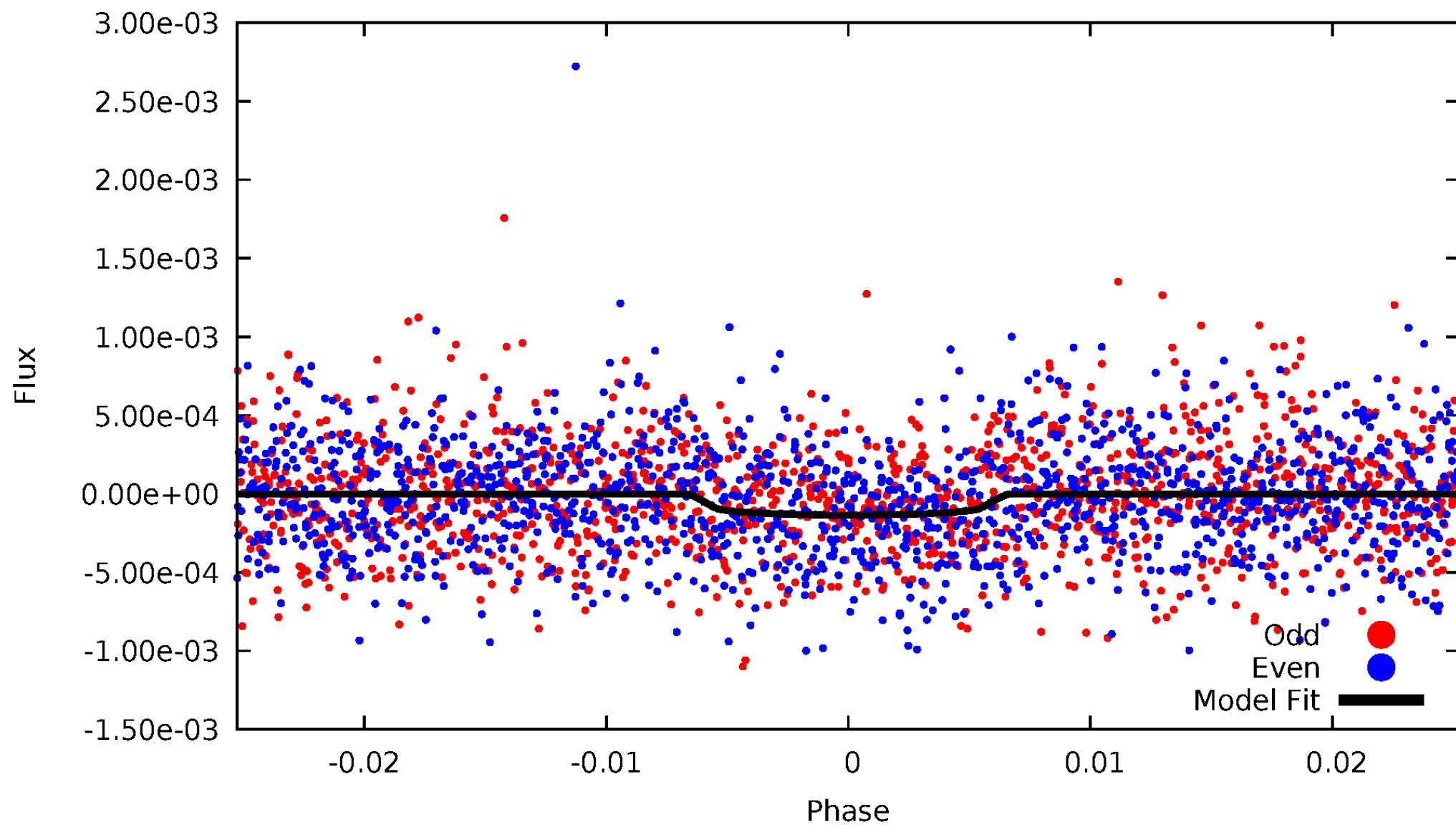


TCE 003758922-01



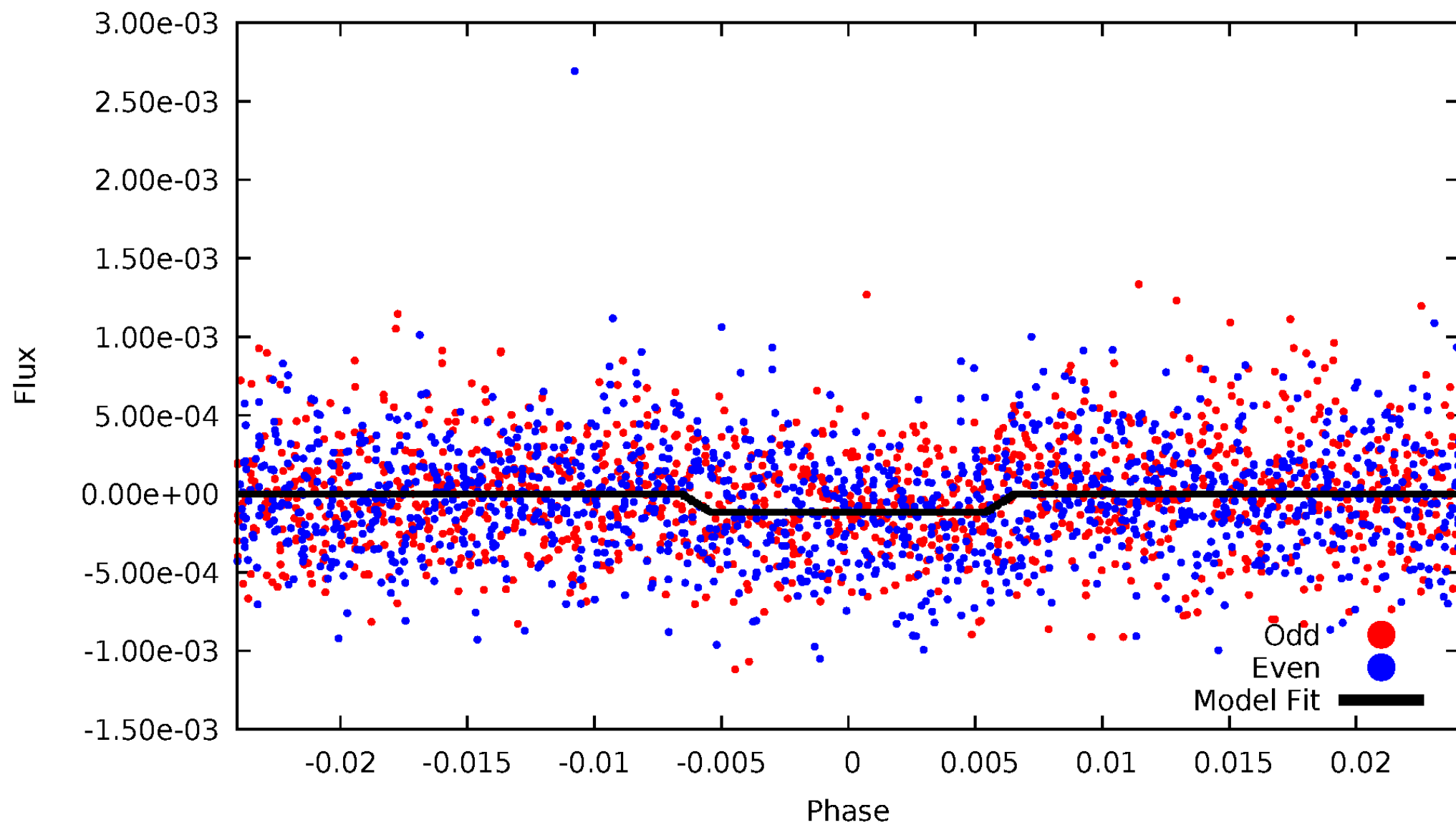
DV Odd/Even

TCE 003758922-01

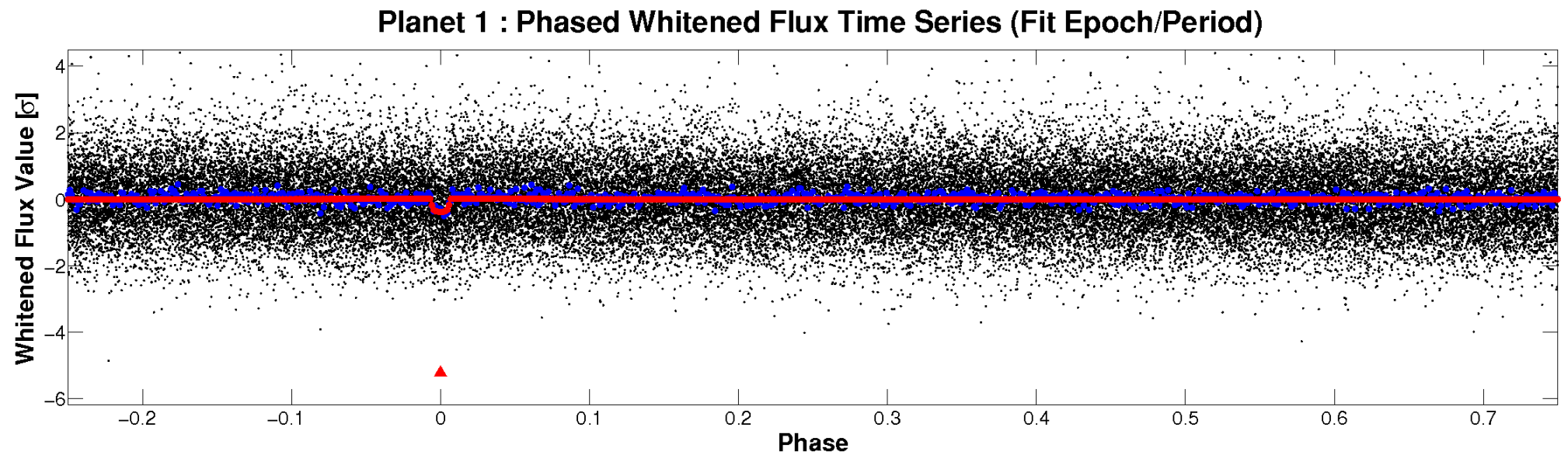
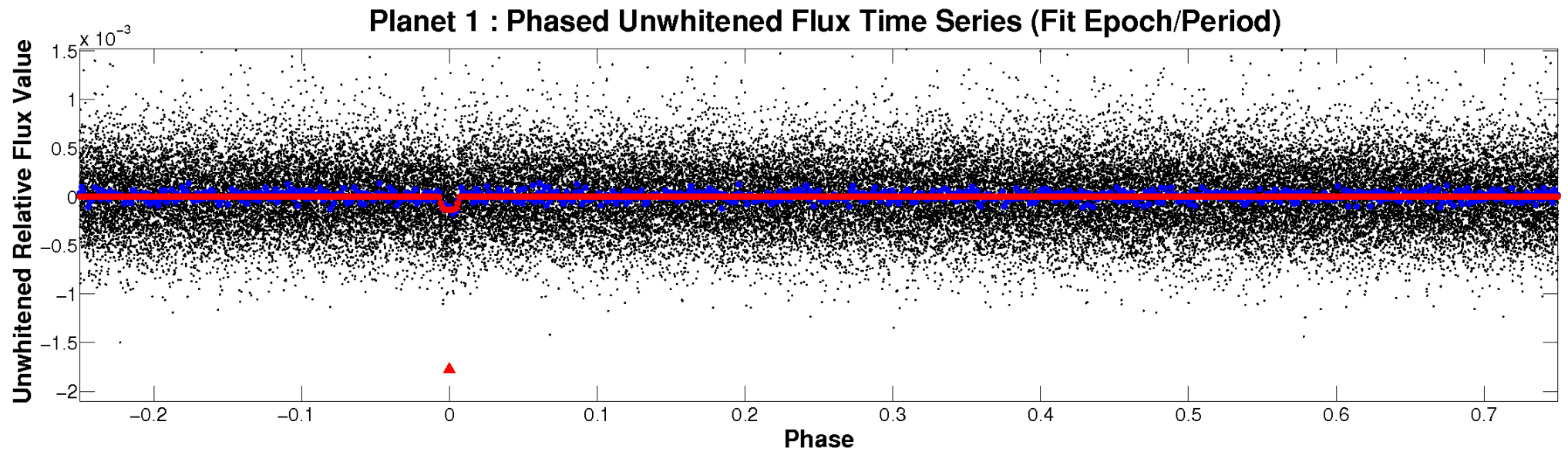


ALT Odd/Even

TCE 003758922-01

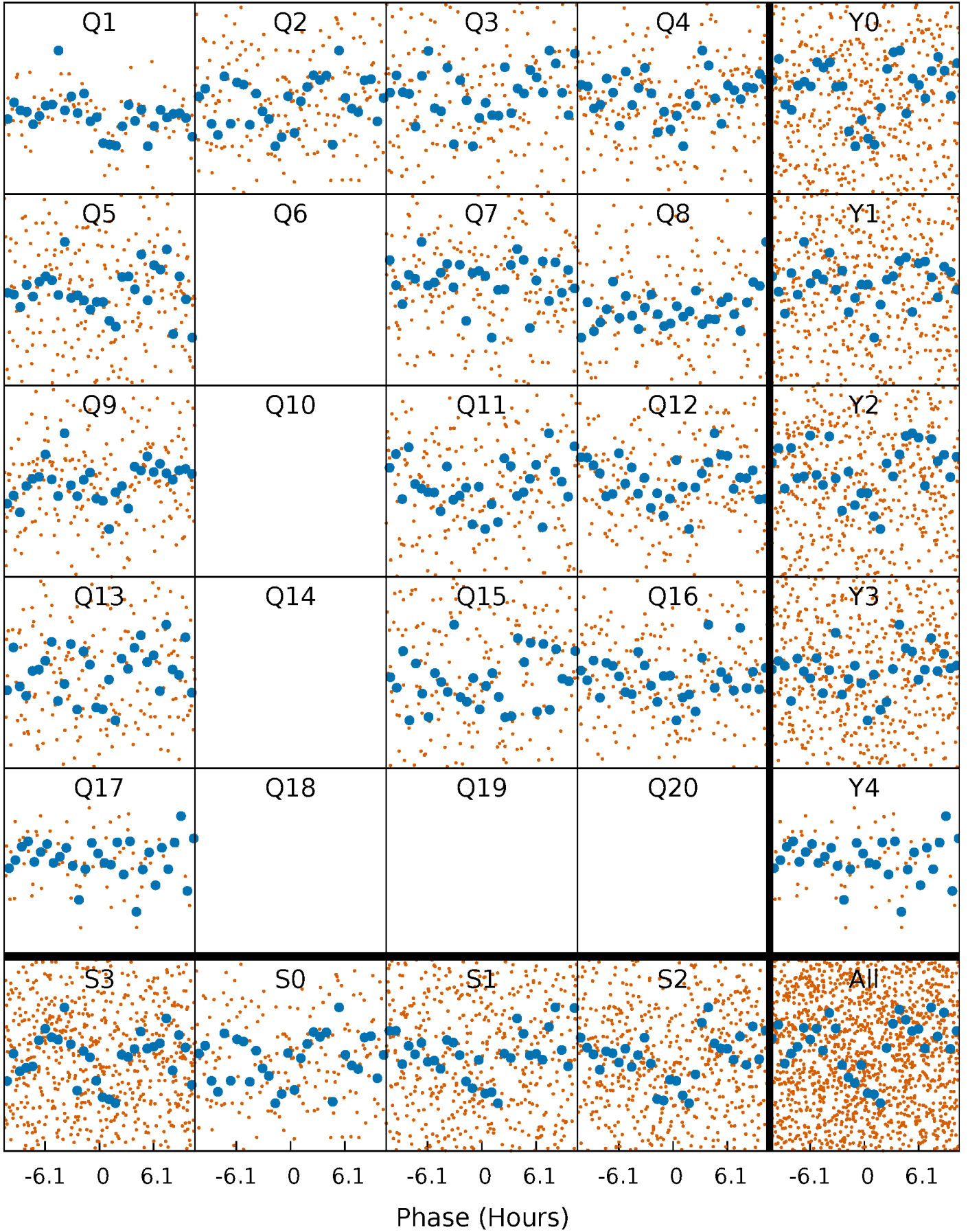


Non-Whitened Vs. Whitened Light Curve



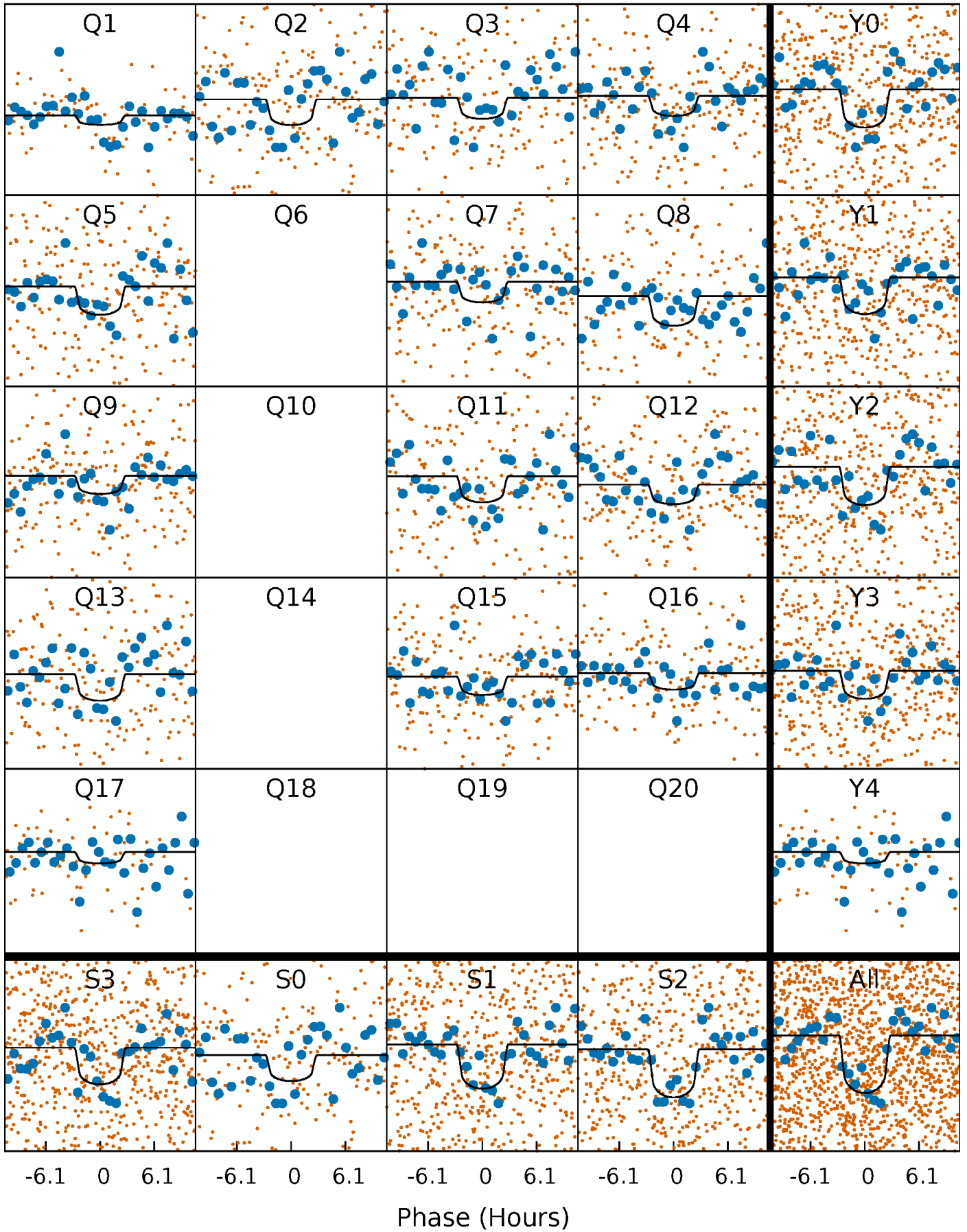
PDC Quarter-Phased Transit Curves

TCE 003758922-01 P= 17.740798 Days $T_0=144.361093$ (BKJD)



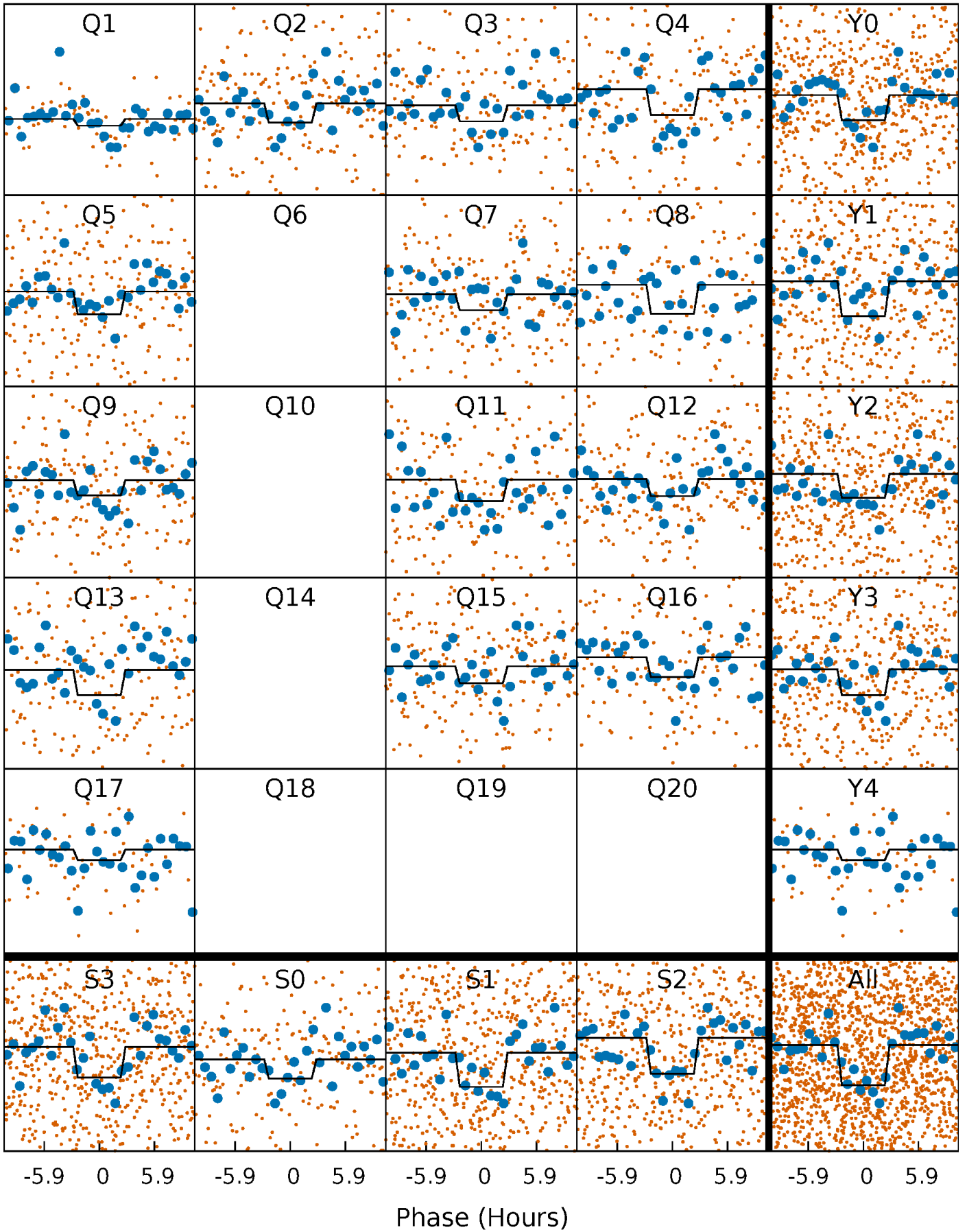
DV Quarter-Phased Transit Curves

TCE 003758922-01 P= 17.740798 Days $T_0=144.361093$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

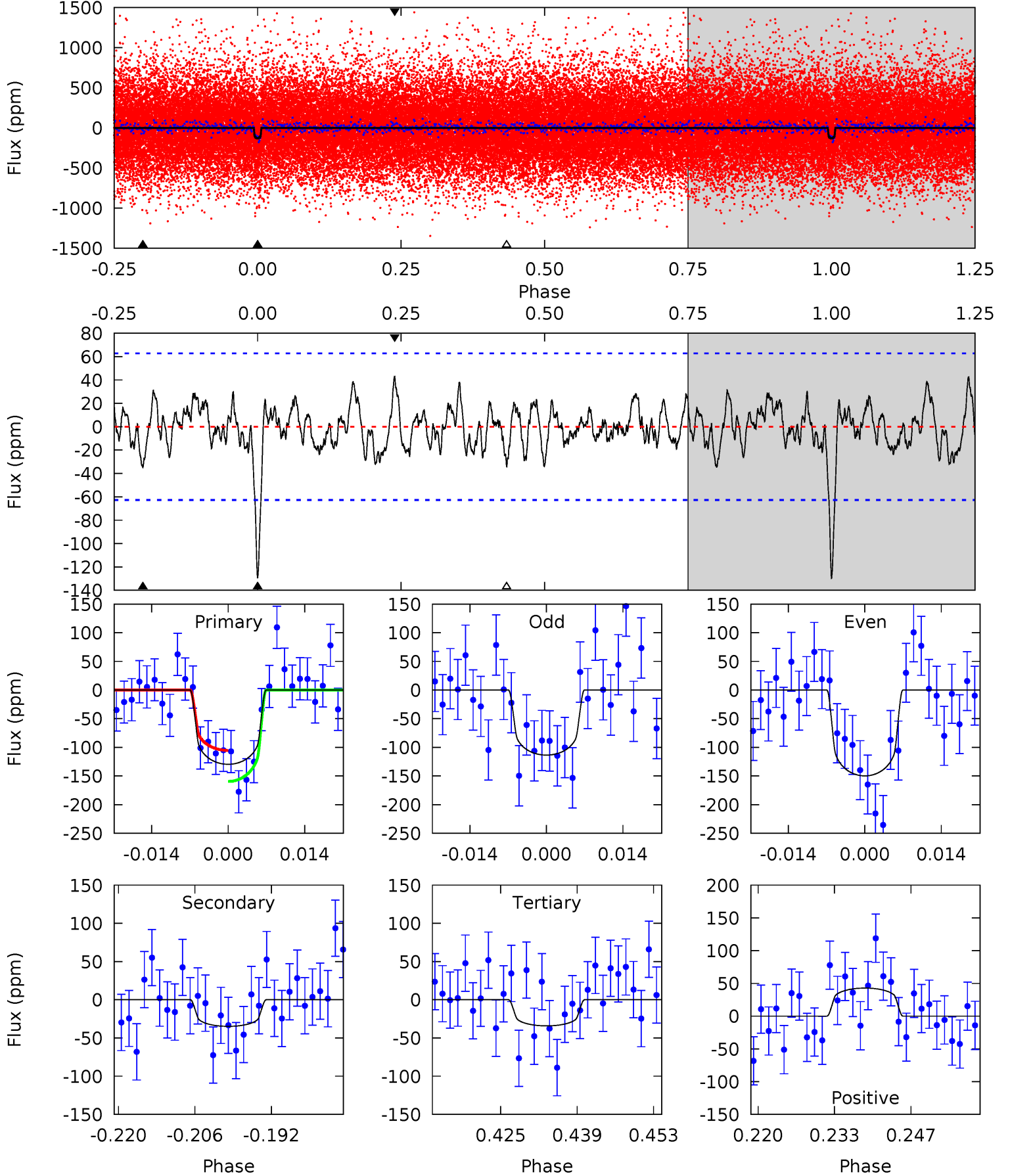
TCE 003758922-01 P= 17.740960 Days $T_0=144.352425$ (BKJD)



DV Model-Shift Uniqueness Test

003758922-01, P = 17.740798 Days, E = 126.620295 Days

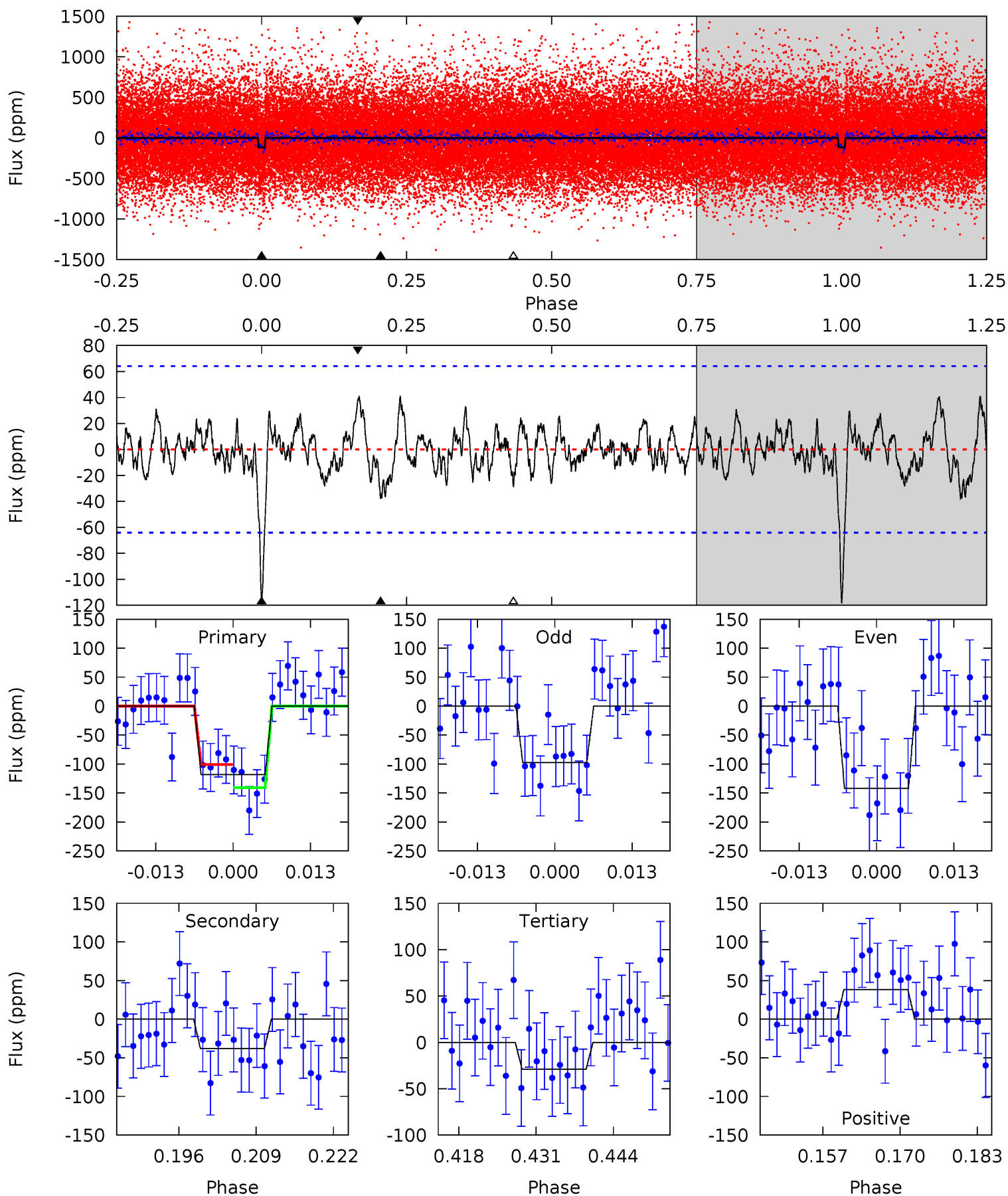
| Pri | Sec | Ter | Pos | FA ₁ | FA ₂ | F _{Red} | Pri-Ter | Pri-Pos | Sec-Ter | Sec-Pos | Odd-Evn | DMM | Shape | TAT |
|------|------|------|------|-----------------|-----------------|------------------|---------|---------|---------|---------|---------|------|-------|------|
| 10.3 | 2.75 | 2.70 | 3.38 | 4.97 | 2.46 | 1.14 | 7.55 | 6.87 | 0.05 | -0.63 | 1.44 | 1.00 | 0.25 | 2.15 |



Alt Model-Shift Uniqueness Test

003758922-01, P = 17.740960 Days, E = 126.611465 Days

| Pri | Sec | Ter | Pos | FA ₁ | FA ₂ | F _{Red} | Pri-Ter | Pri-Pos | Sec-Ter | Sec-Pos | Odd-Evn | DMM | Shape | TAT |
|------|------|------|------|-----------------|-----------------|------------------|---------|---------|---------|---------|---------|------|-------|------|
| 9.18 | 2.95 | 2.24 | 2.96 | 4.97 | 2.48 | 0.99 | 6.93 | 6.22 | 0.70 | -0.01 | 1.72 | 0.92 | 0.26 | 1.55 |



Stellar Parameters For KIC 003758922

| | $T_{\text{eff}}(K)$ | $\log(g)$ | [Fe/H] | $R (R_{\odot})$ | $M(M_{\odot})$ | $p_{\star} (\text{g}\cdot\text{cm}^{-3})$ |
|--------|----------------------|---------------------------|---------------------------|---------------------------|---------------------------|---|
| | 5817^{+139}_{-191} | $4.491^{+0.052}_{-0.208}$ | $0.080^{+0.250}_{-0.300}$ | $0.956^{+0.289}_{-0.096}$ | $1.032^{+0.112}_{-0.125}$ | $1.662^{+0.443}_{-0.881}$ |
| | +2%/-3% | +1%/-5% | +312%/-375% | +30%/-10% | +11%/-12% | +27%/-53% |
| 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 003758922-01 / KOI 4853.01

| Detrend | Depth (ppm) | $R_p (R_{\oplus})$ | $T_{max} (K)$ | $T_{obs} (K)$ | A_{obs} |
|---------|--------------|------------------------|-------------------|-----------------------|----------------------|
| DV | -35 ± 13 | $1.47^{+0.93}_{-0.81}$ | 973^{+75}_{-44} | 4084^{+1584}_{-661} | 155^{+603}_{-104} |
| Alt. | -38 ± 13 | $1.31^{+0.95}_{-0.80}$ | 974^{+72}_{-49} | 4382^{+2112}_{-788} | 216^{+1115}_{-147} |

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

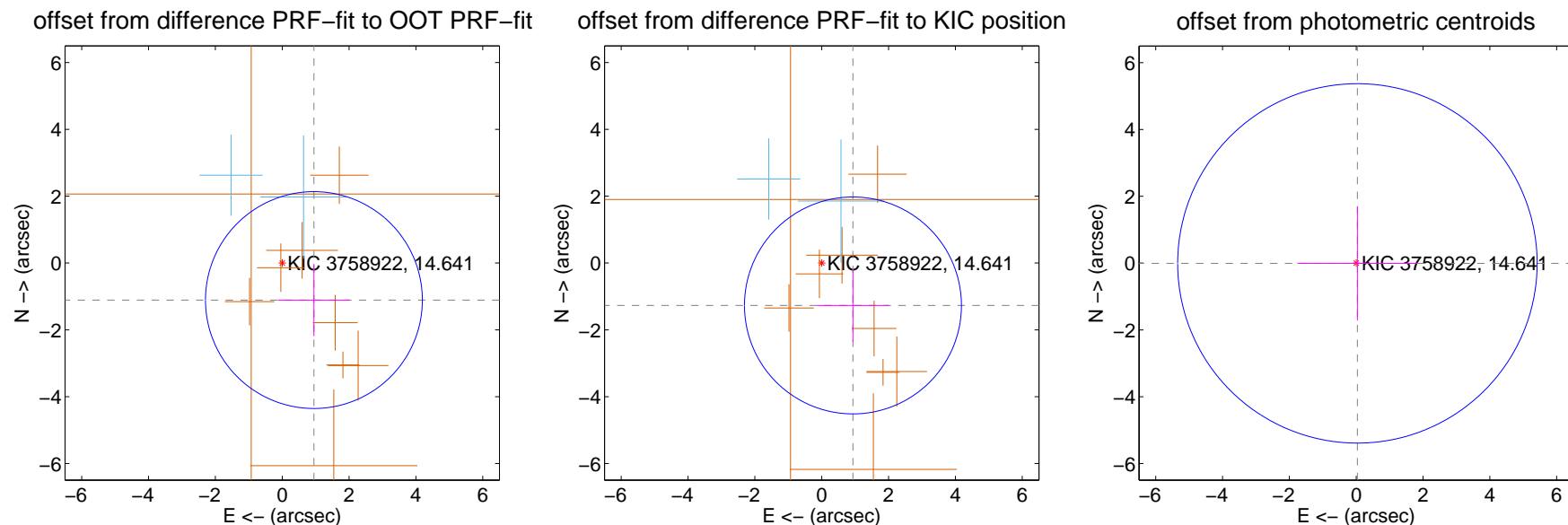
DV Centroid Data

Supplemental centroid analysis for 003758922-01. Kepler magnitude: 14.64. Transit SNR 8.40

There are 2 quarters with good PRF difference image offsets

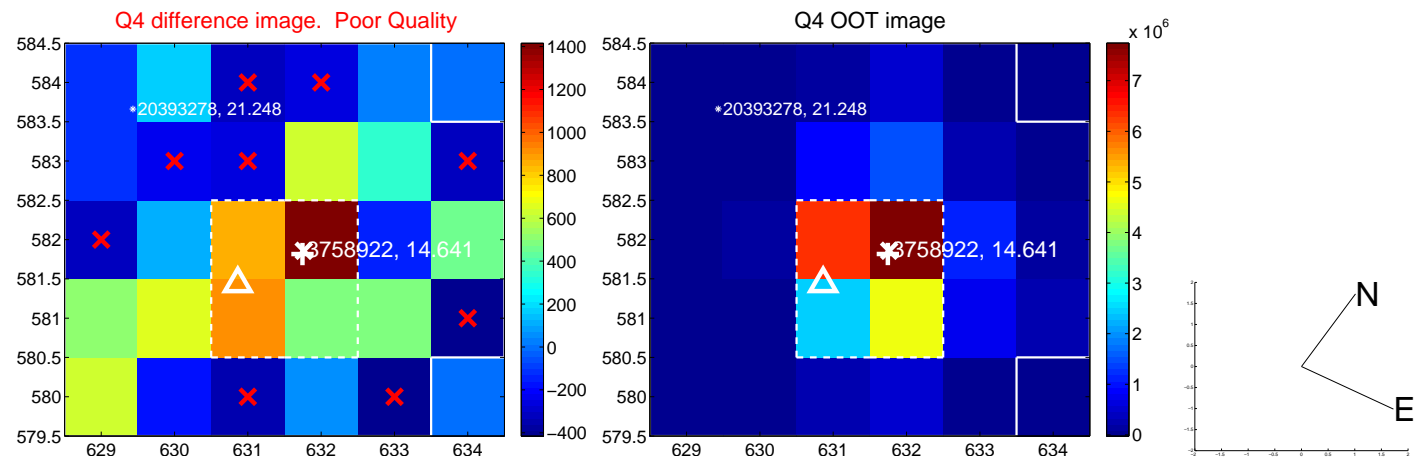
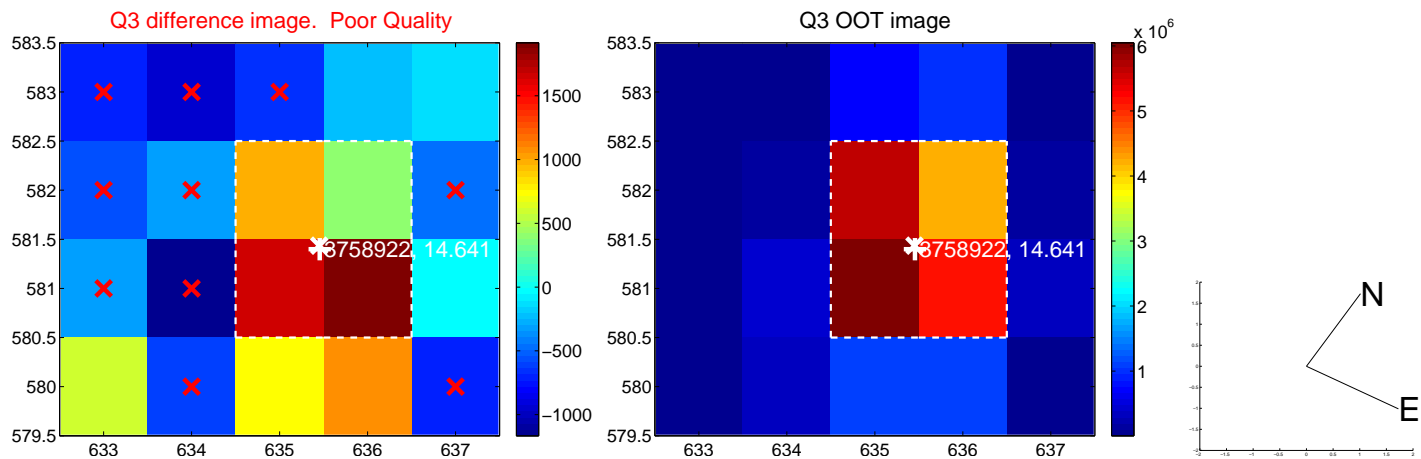
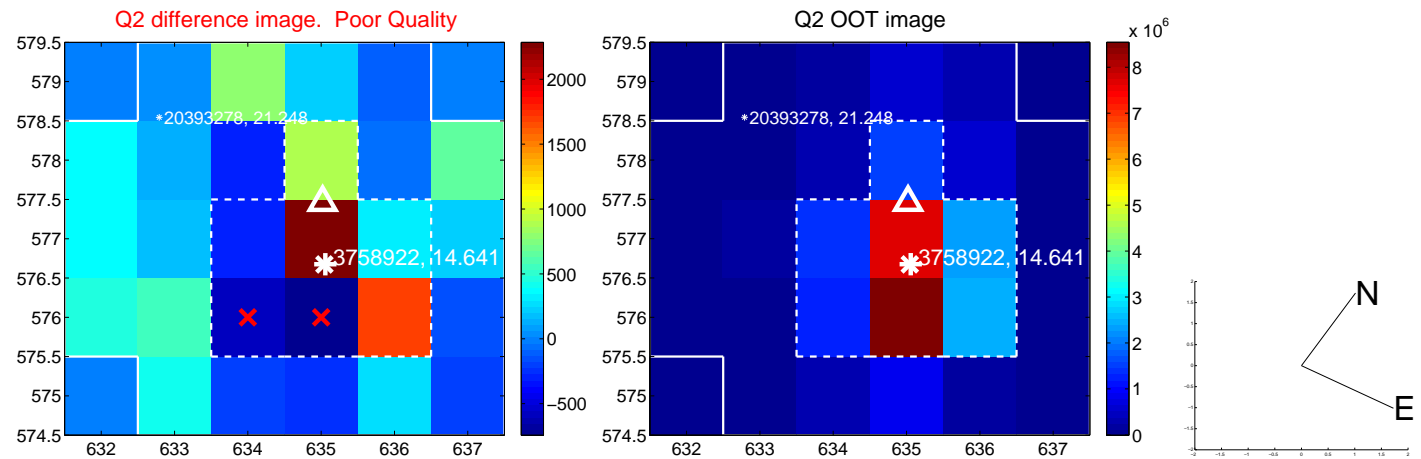
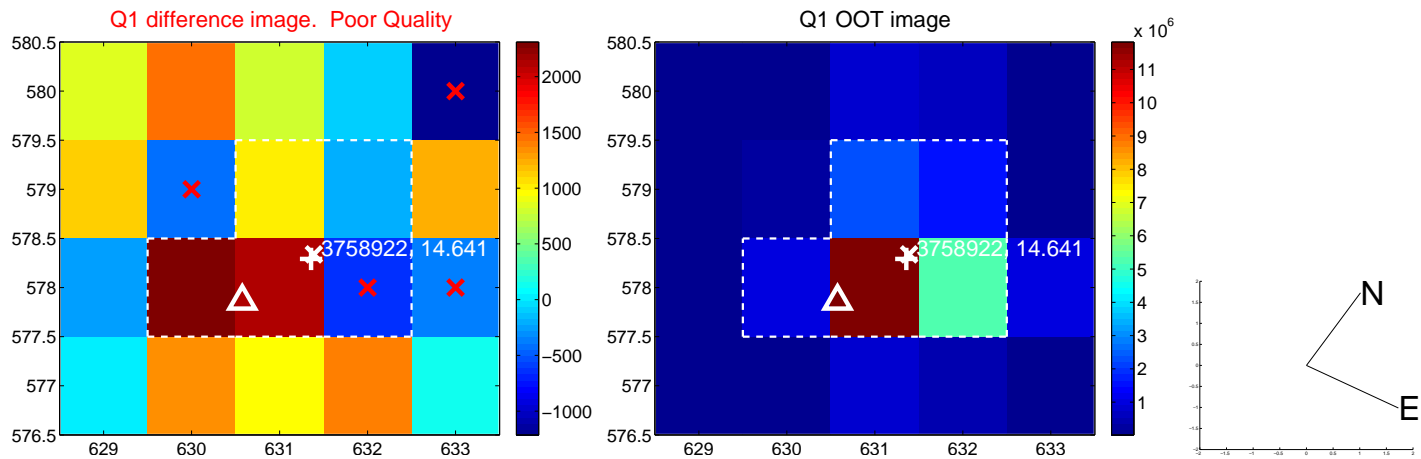
The direct PRF centroid is offset from the target star catalog position by about 0.11 arcsec

| | Distance in arcsec | Distance / σ | Δ RA | Δ Dec |
|---|--------------------|---------------------|--------------------|--------------------|
| PRF-fit source offset from OOT | 1.459 ± 1.082 | 1.35 | -0.949 ± 1.079 | -1.108 ± 1.084 |
| PRF-fit source offset from KIC position | 1.576 ± 1.082 | 1.46 | -0.935 ± 1.079 | -1.269 ± 1.084 |
| photometric centroid source offset | 0.04 ± 1.79 | 0.02 | -0.04 ± 1.80 | -0.01 ± 1.71 |

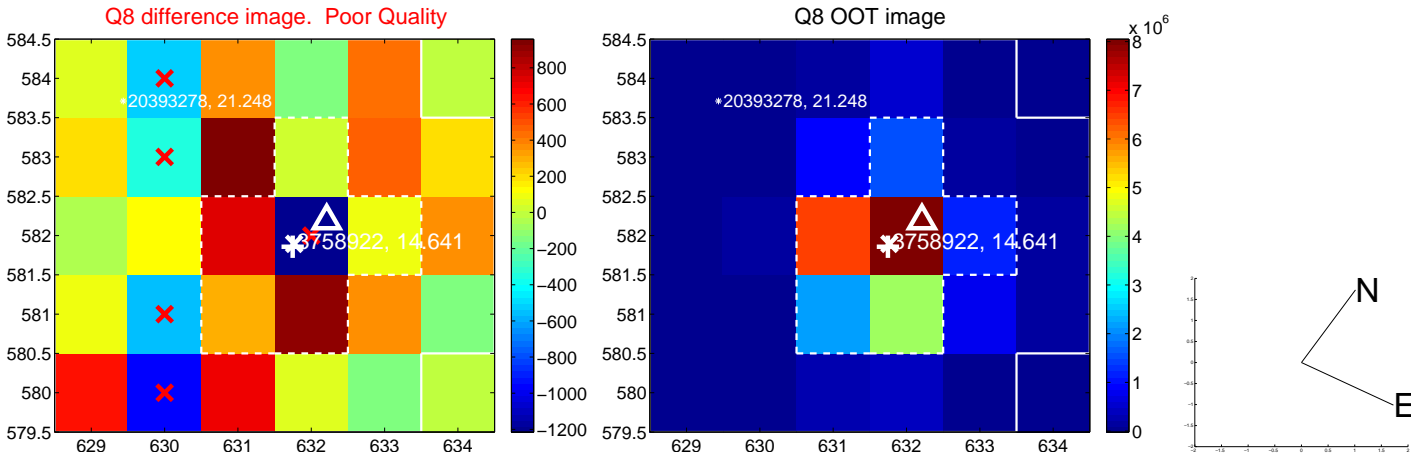
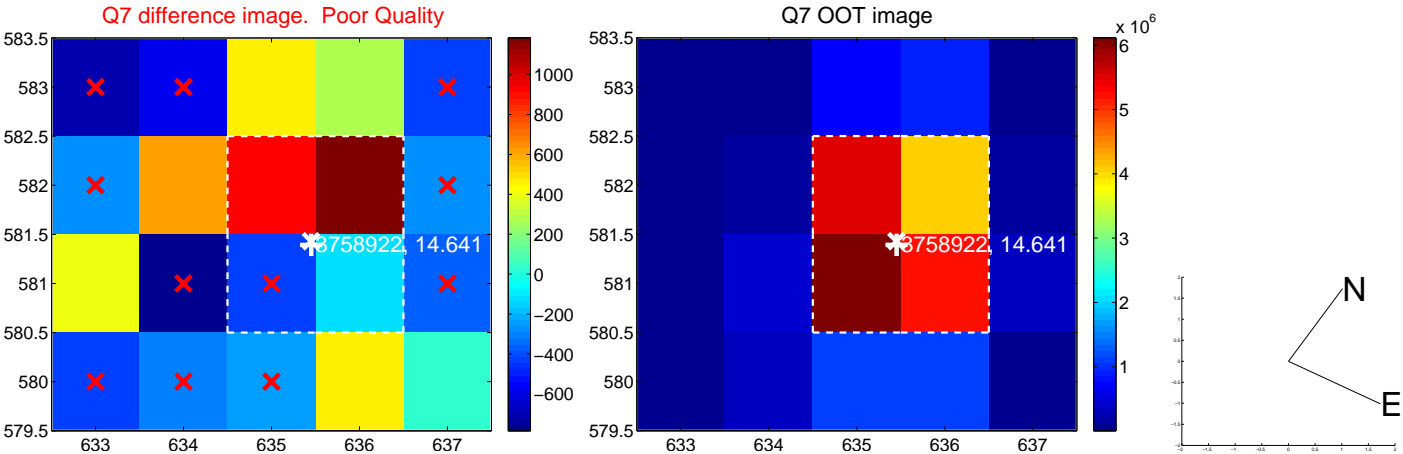
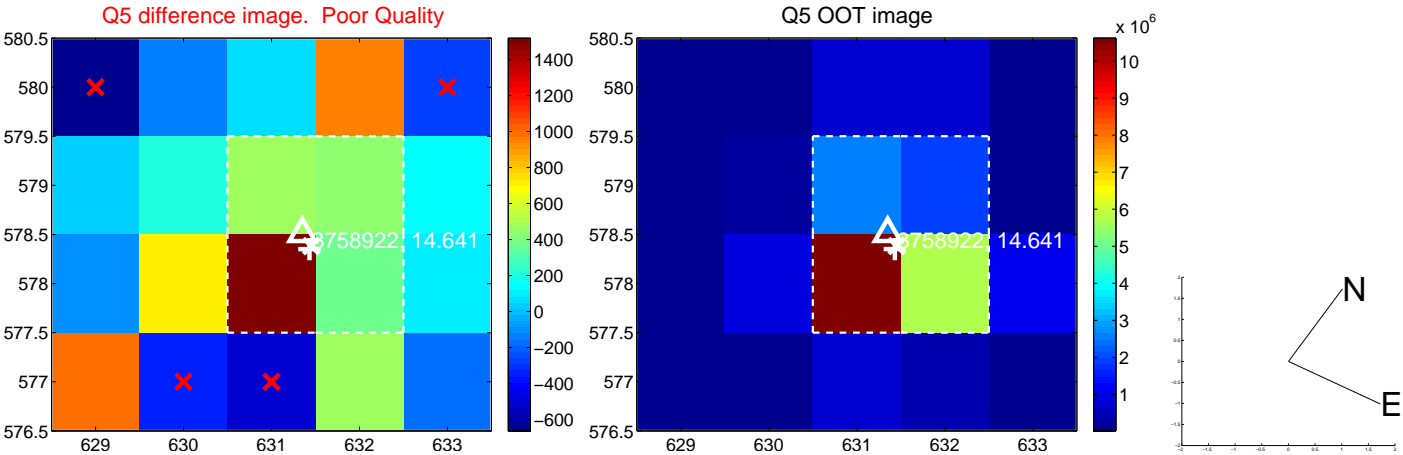


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

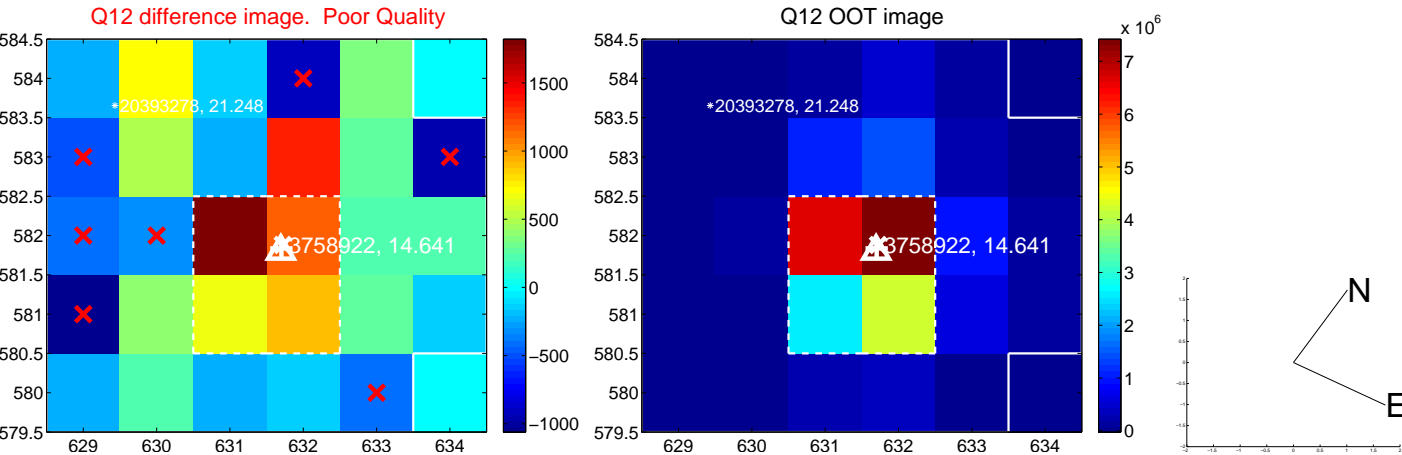
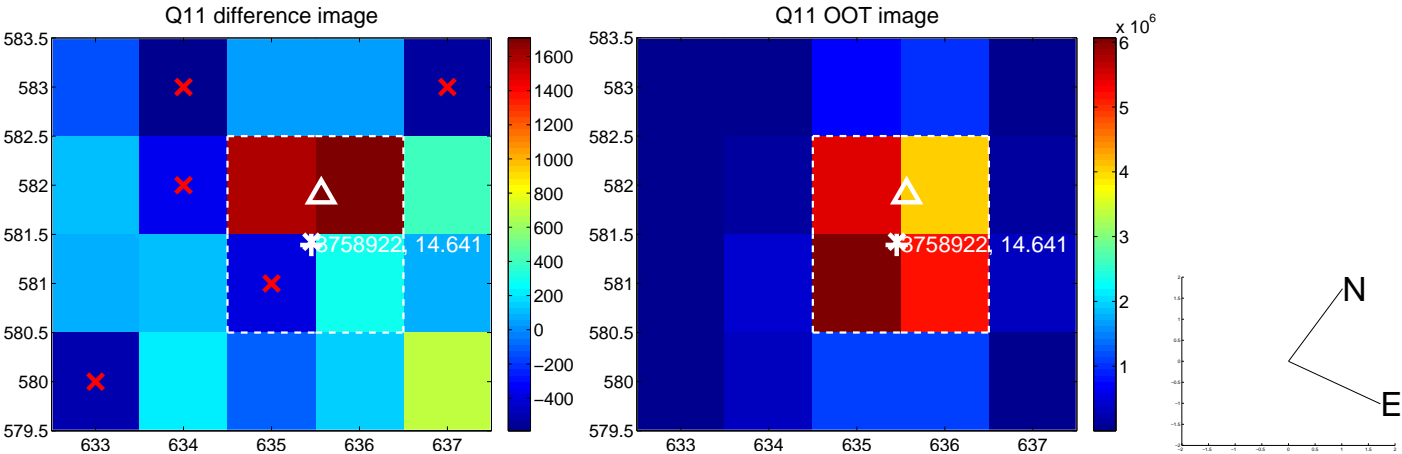
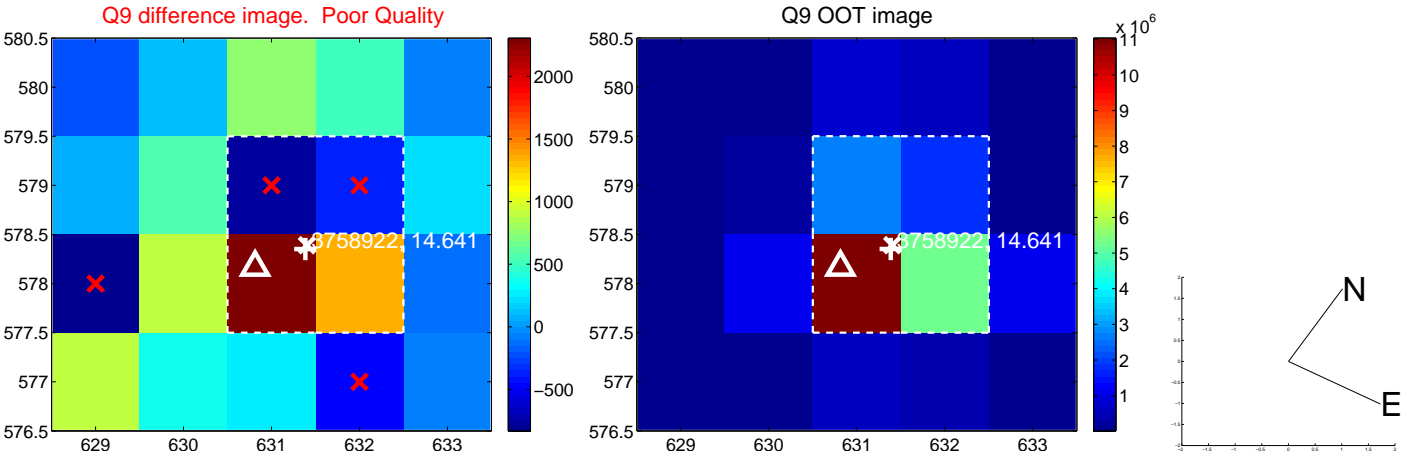
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



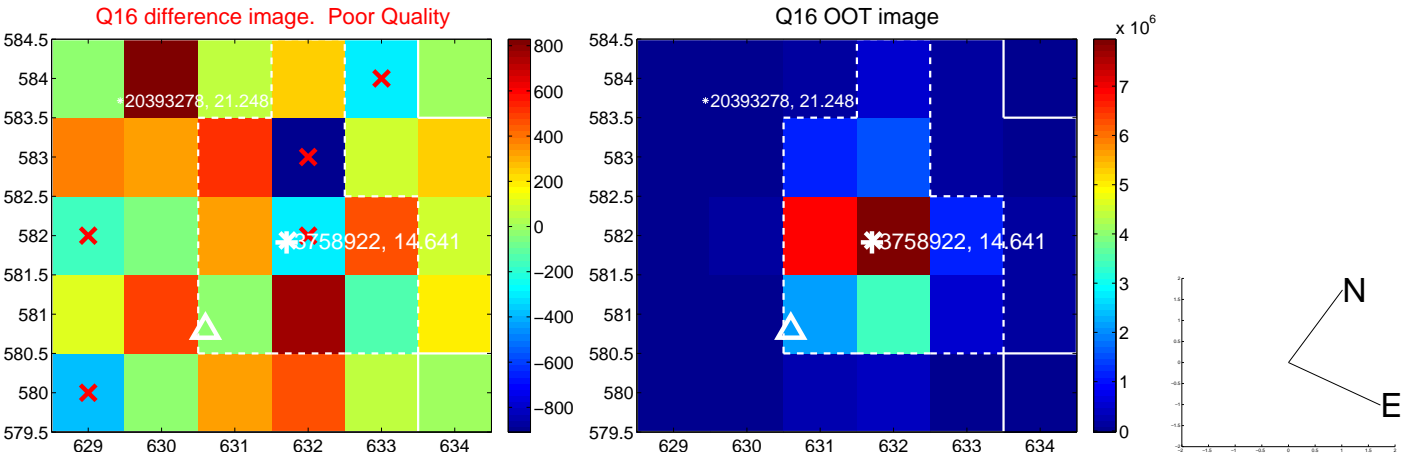
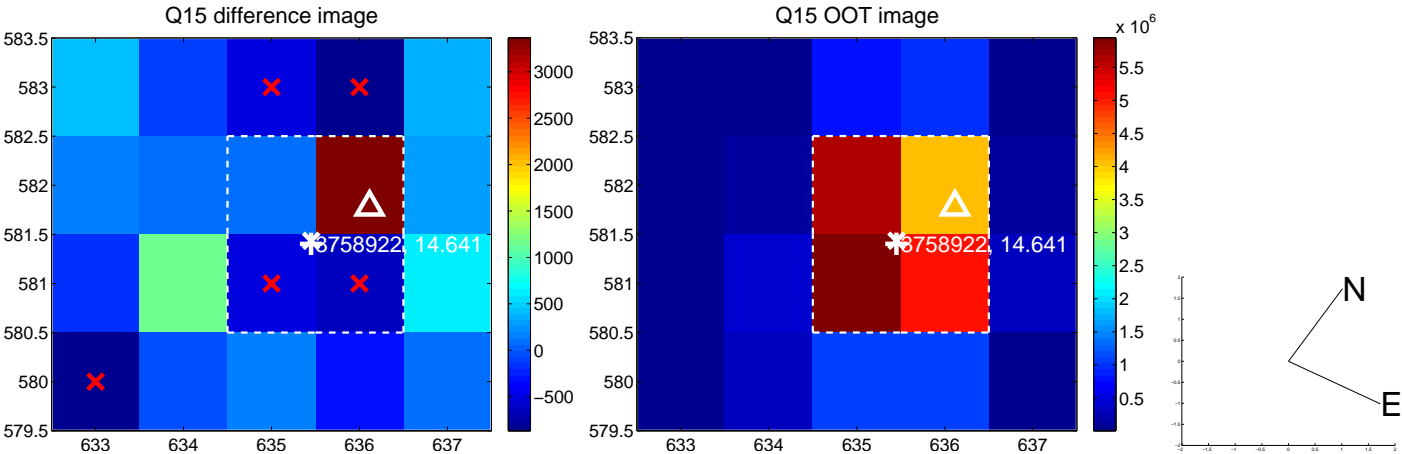
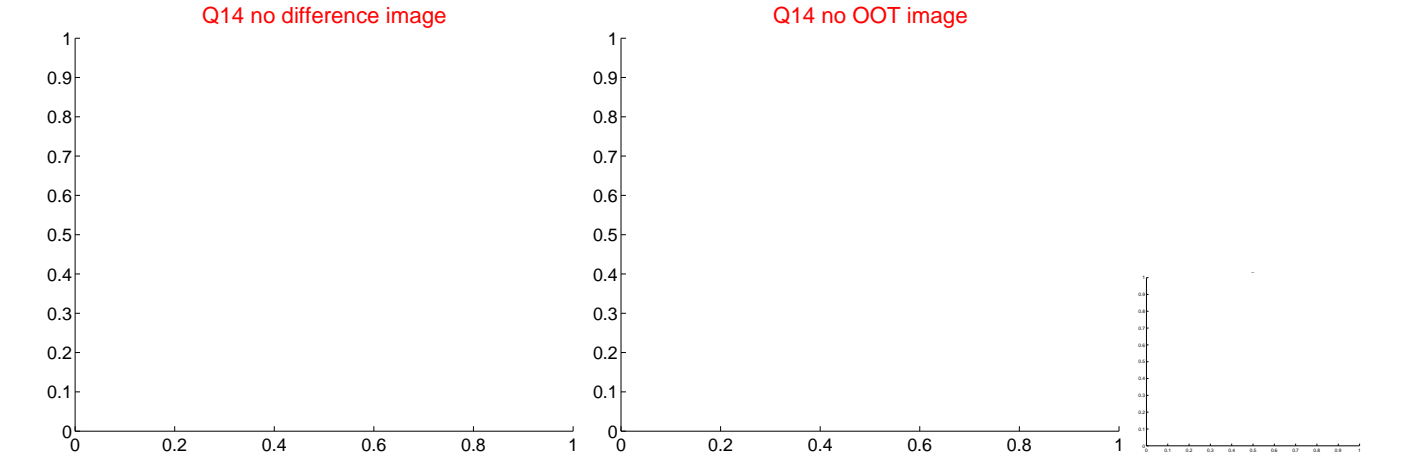
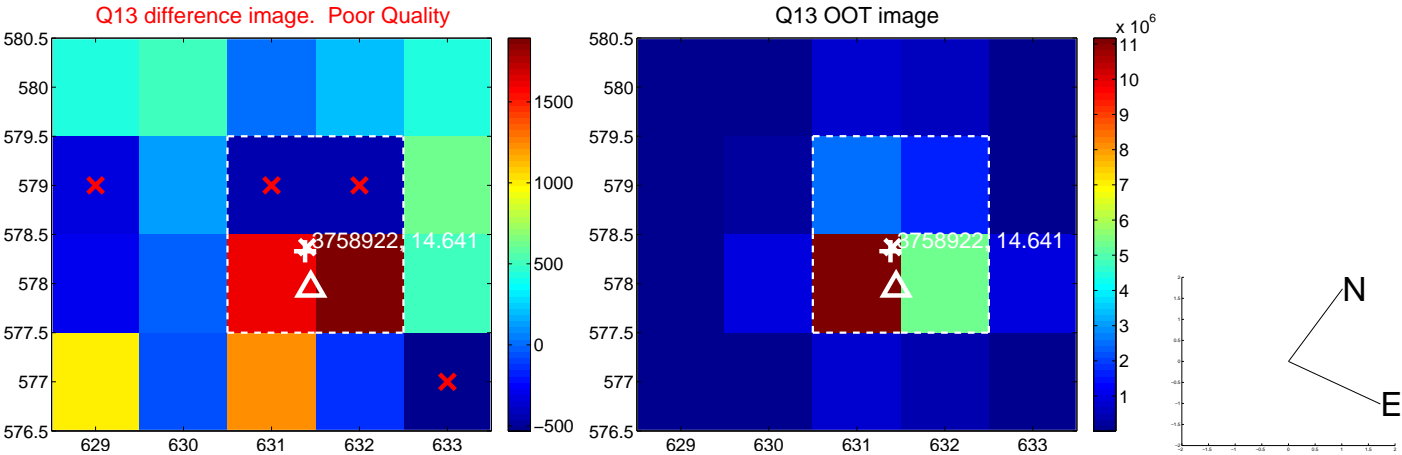
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



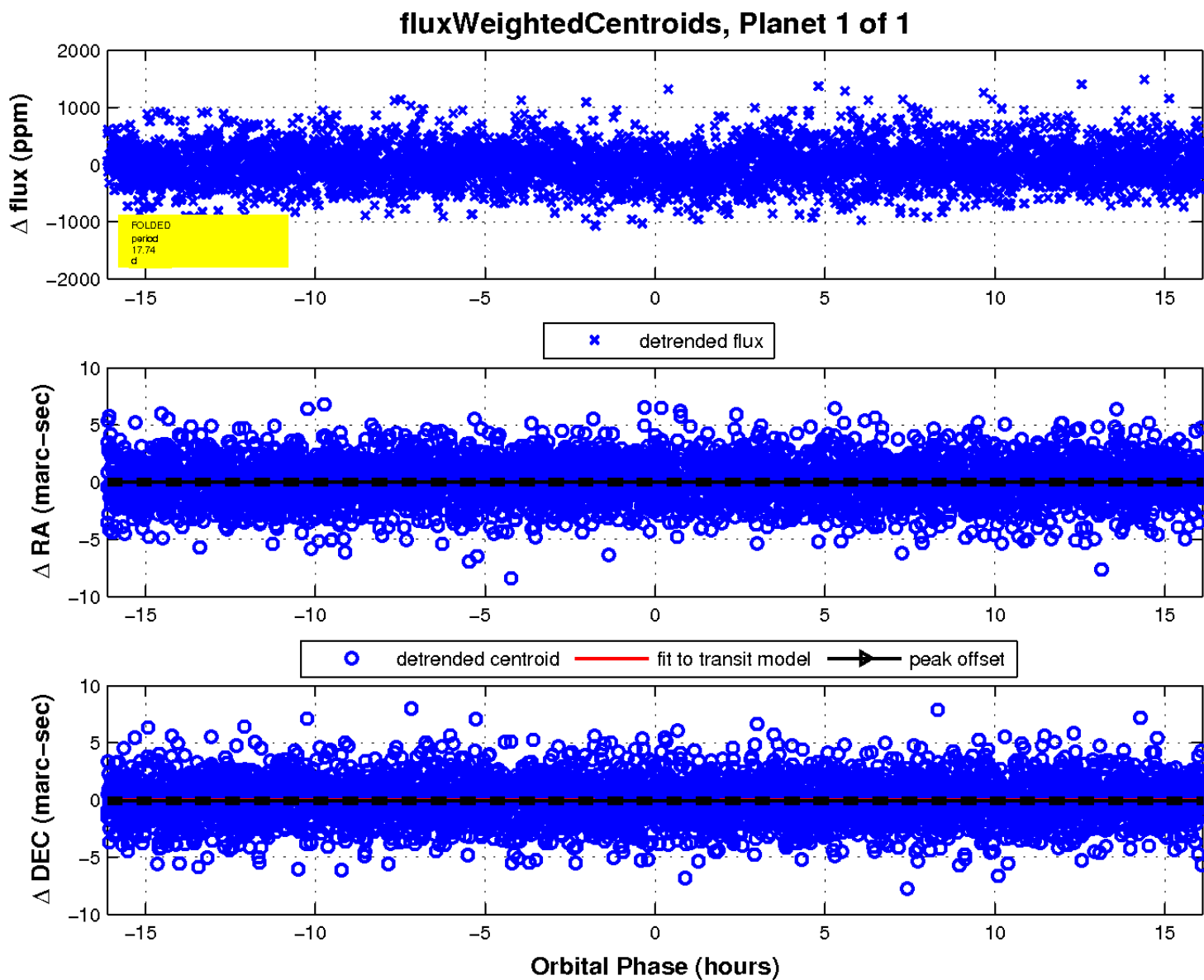
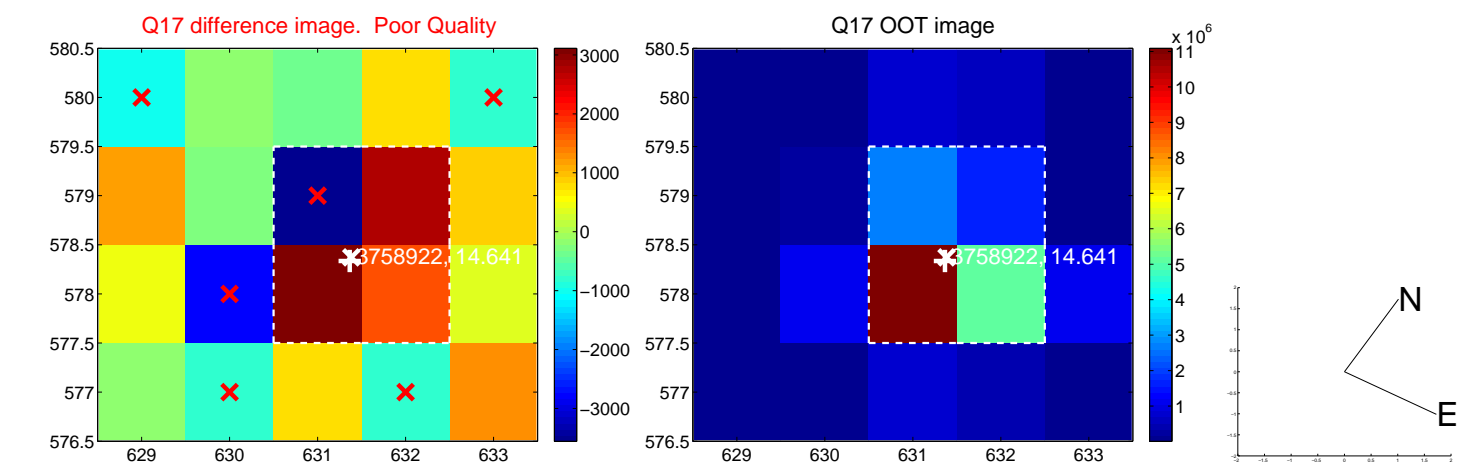
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white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination

