

KIC 002581191

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}) |
|--------------|----------|---------|---------------|--------------|-------------|------------------|------|------|-----------------------------|-----------------|------------------------|------------------------|
| 002581191-01 | OBS | 2203.01 | 1.990414 | 132.721678 | 144.8 | 4.509 | 21.9 | 23.9 | 1.00 | 6198 | 1.75 | 1328.68 |

Robovetter Results

| TCE | Run Type | Disp | Score | N | S | C | E | Comments |
|--------------|----------|------|-------|---|---|---|---|----------------------|
| 002581191-01 | OBS | FP | 0.00 | 0 | 0 | 1 | 0 | CENT_RESOLVED_OFFSET |

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 002581191-01

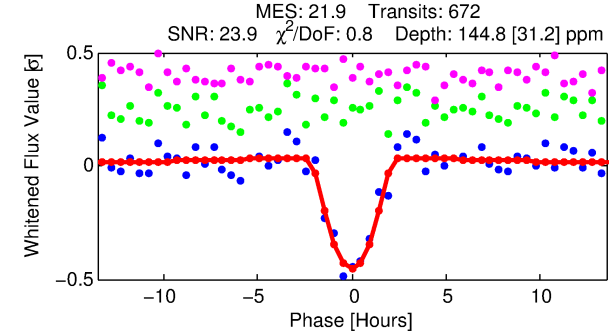
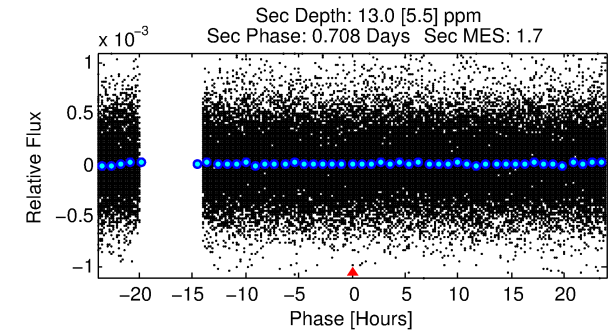
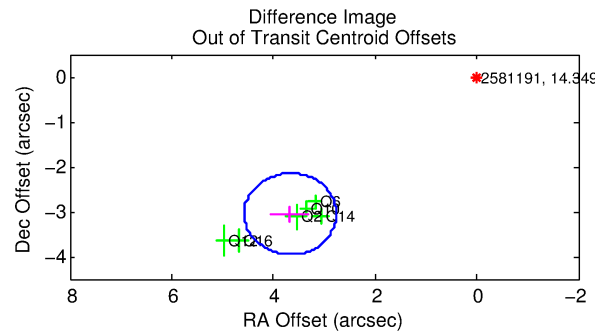
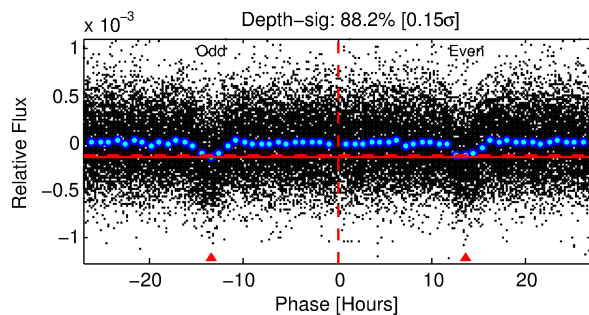
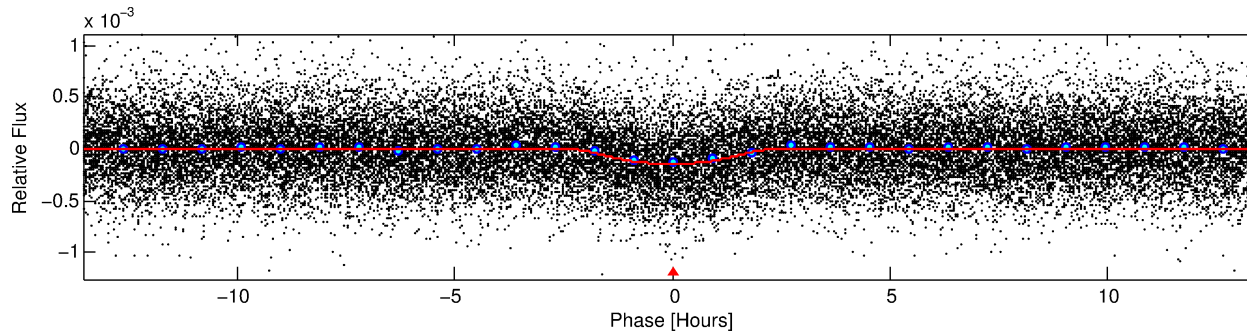
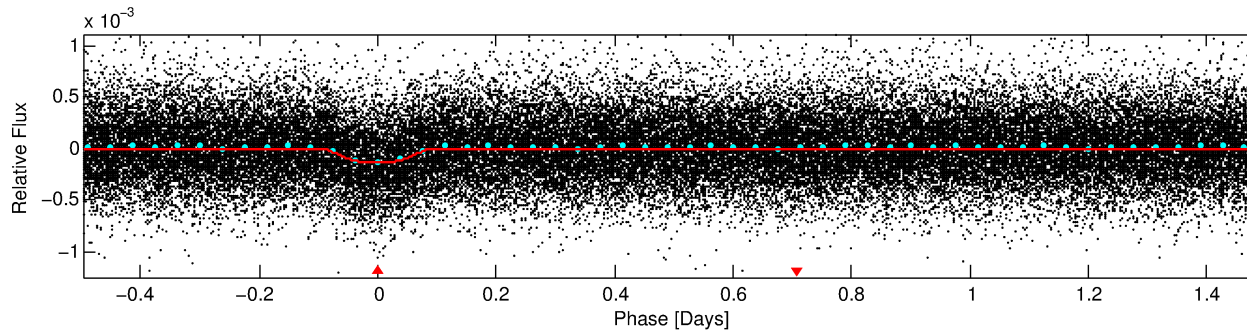
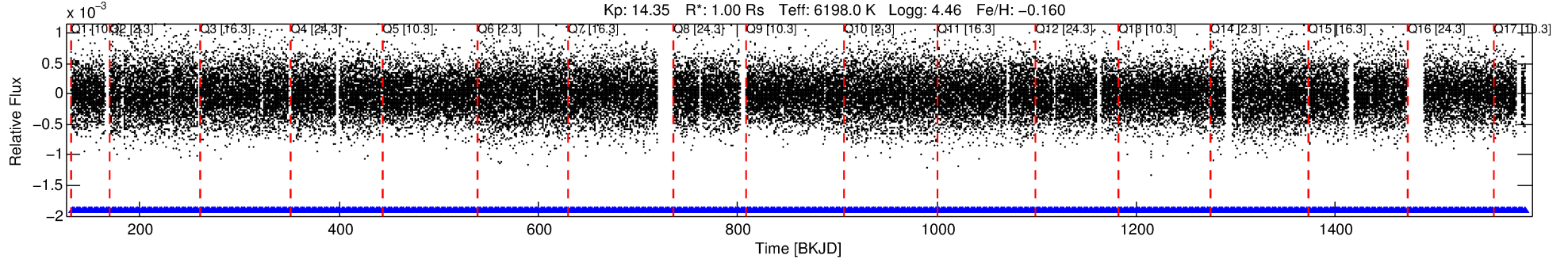
No Significant Match Found

DV One-Page Summary

KIC: 2581191 Candidate: 1 of 1 Period: 1.990 d

KOI: K02203.01 Corr: 0.884

Kp: 14.35 R*: 1.00 Rs Teff: 6198.0 K Logg: 4.46 Fe/H: -0.160



DV Fit Results:

Period = 1.99041 [0.00001] d
Epoch = 132.7217 [0.0033] BKJD
Rp/R* = 0.0159 [0.0036]
a/R* = 1.28 [0.08]
b = 0.99 [0.01]
Seff = 1328.68 [559.90]
Teq = 1540 [162] K
Rp = 1.75 [0.71] Re
a = 0.0317 [0.0089] AU
Ag = 2.35 [1.74] [0.78σ]
Teffp = 2947 [467] K [2.85σ]

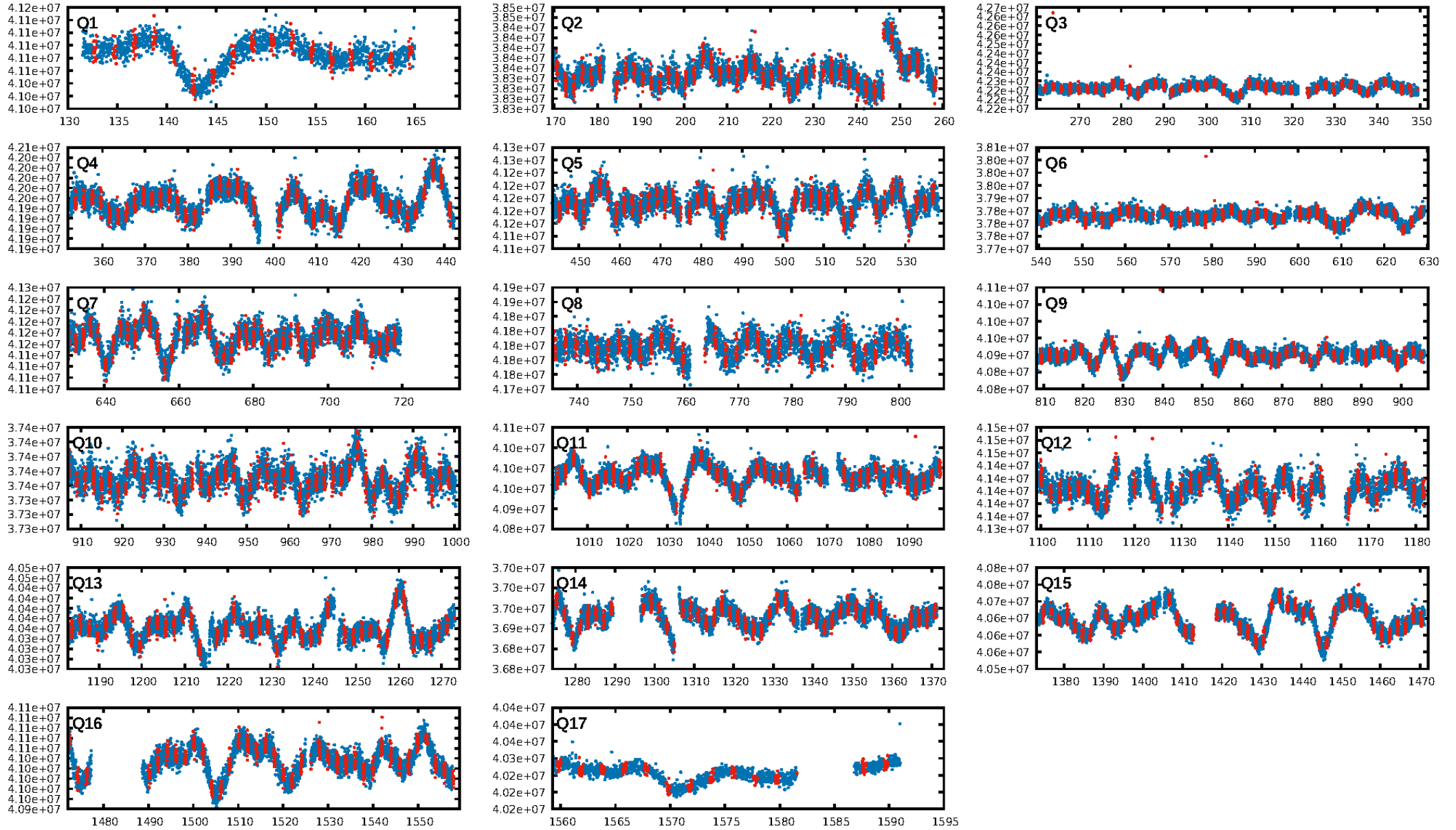
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 4.07e-101
RollingBand-fgt: 1.00 [642/642]
GhostDiagnostic-chr: -0.5482
Centroid-sig: 0.0%
Centroid-so: 9.483 arcsec [15.39σ]
OotOffset-rm: 4.773 arcsec [15.83σ]
KicOffset-rm: 4.721 arcsec [12.25σ]
OotOffset-st: 4/0/2/0 [6]
KicOffset-st: 4/0/2/0 [6]
DiffImageQuality-fgm: 0.83 [5/6]
DiffImageOverlap-fno: 1.00 [17/17]

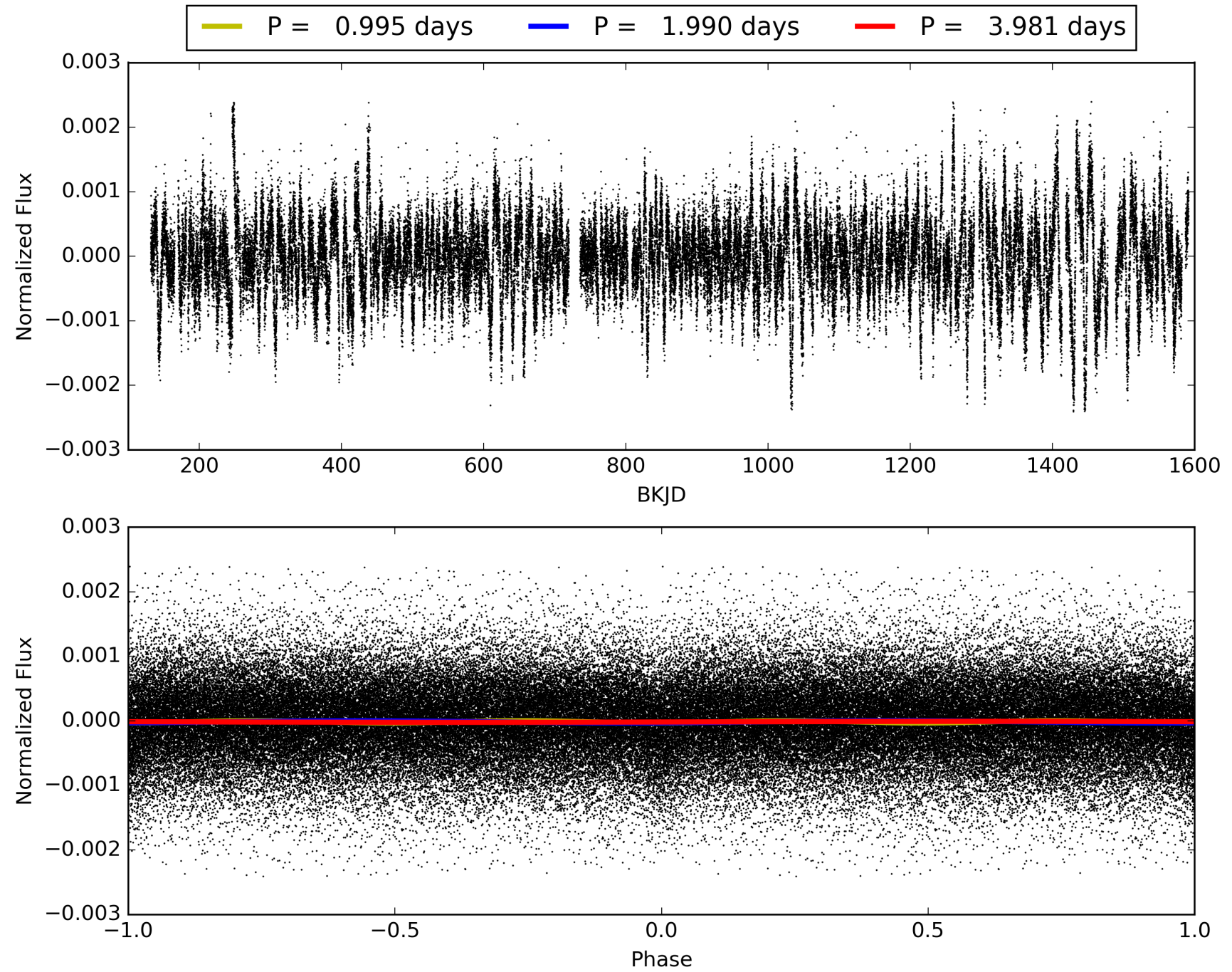
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 01:18:56 Z

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

TCE 002581191-01, PDC Light Curves

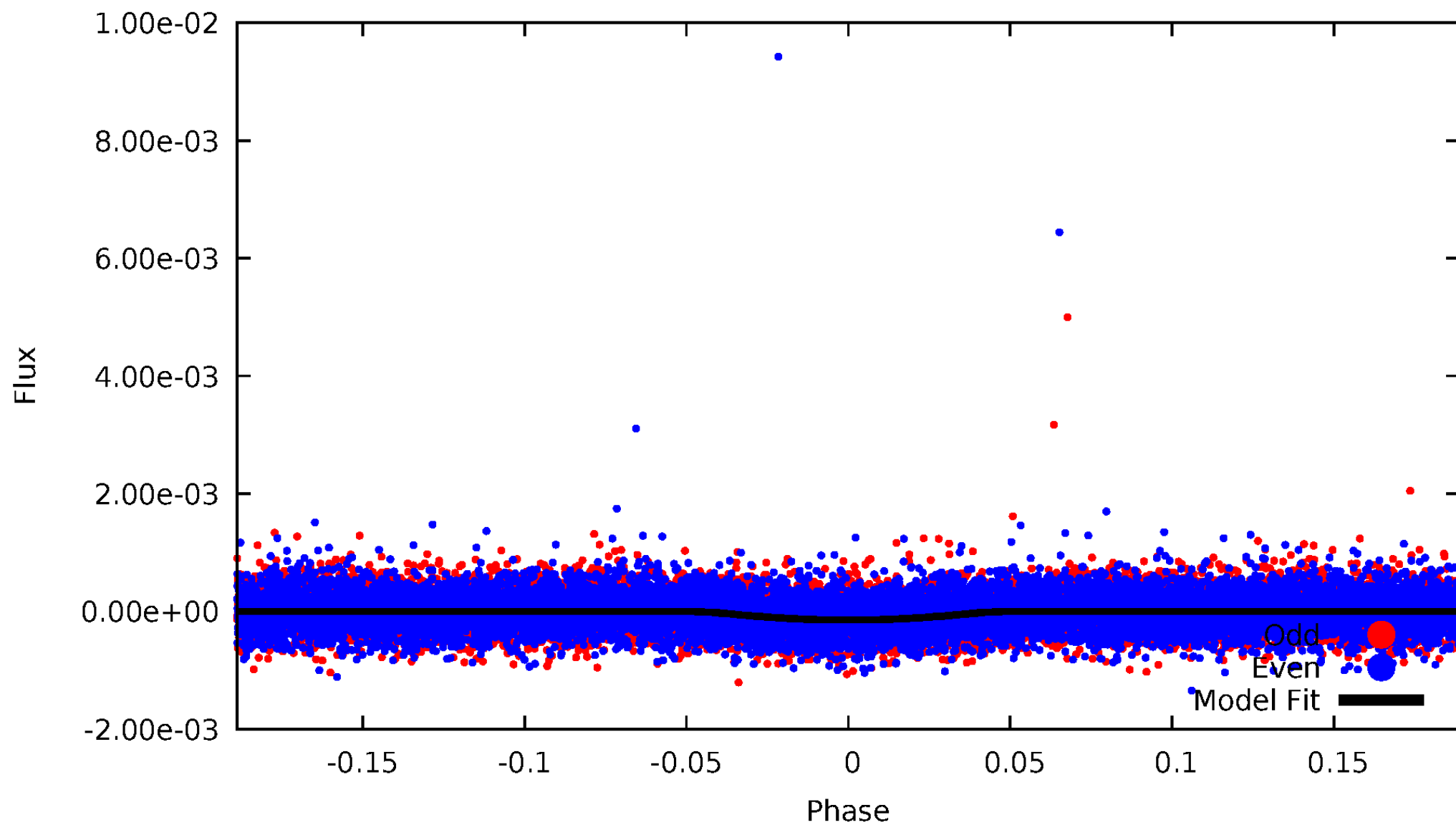


TCE 002581191-01



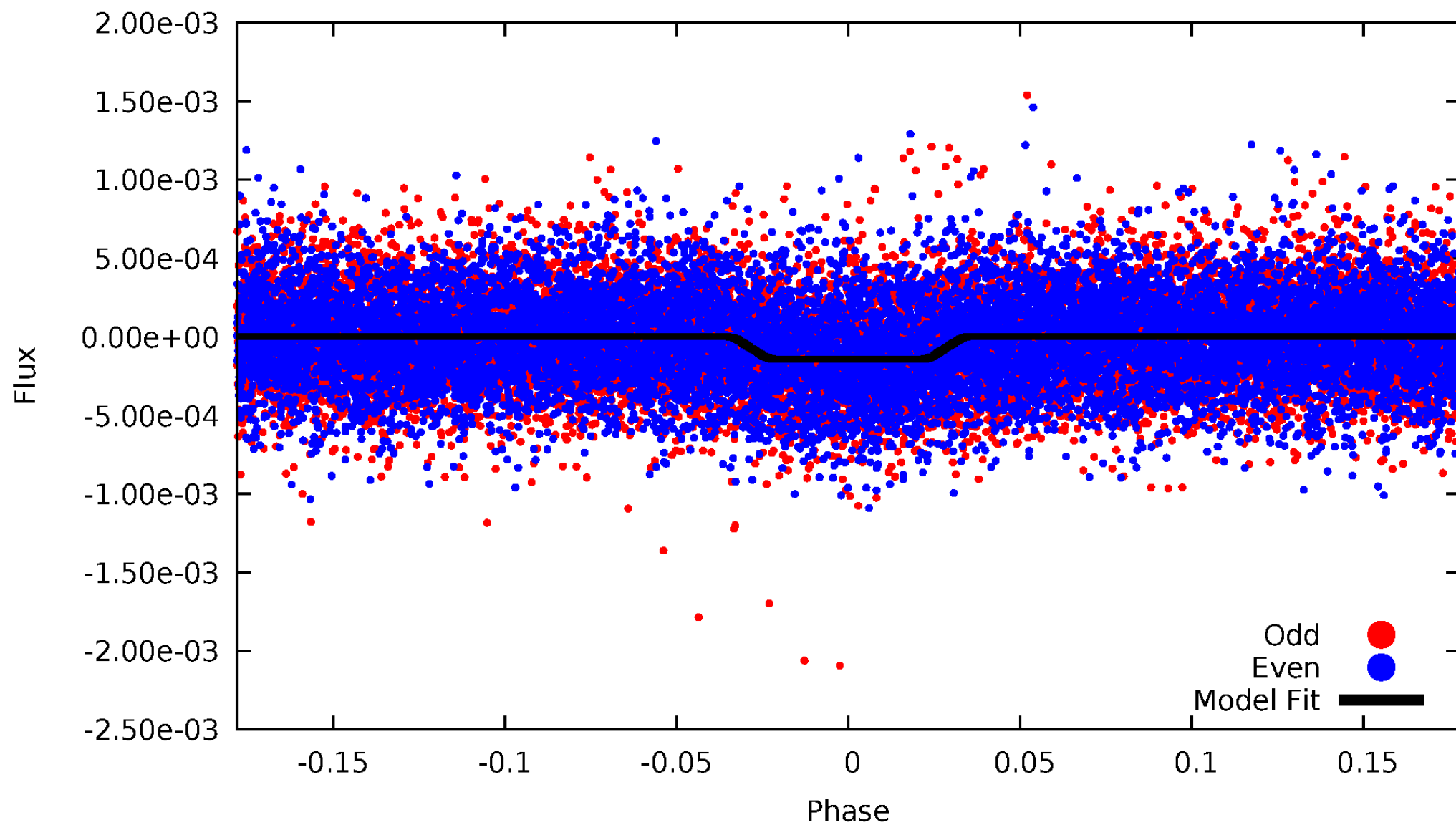
DV Odd/Even

TCE 002581191-01

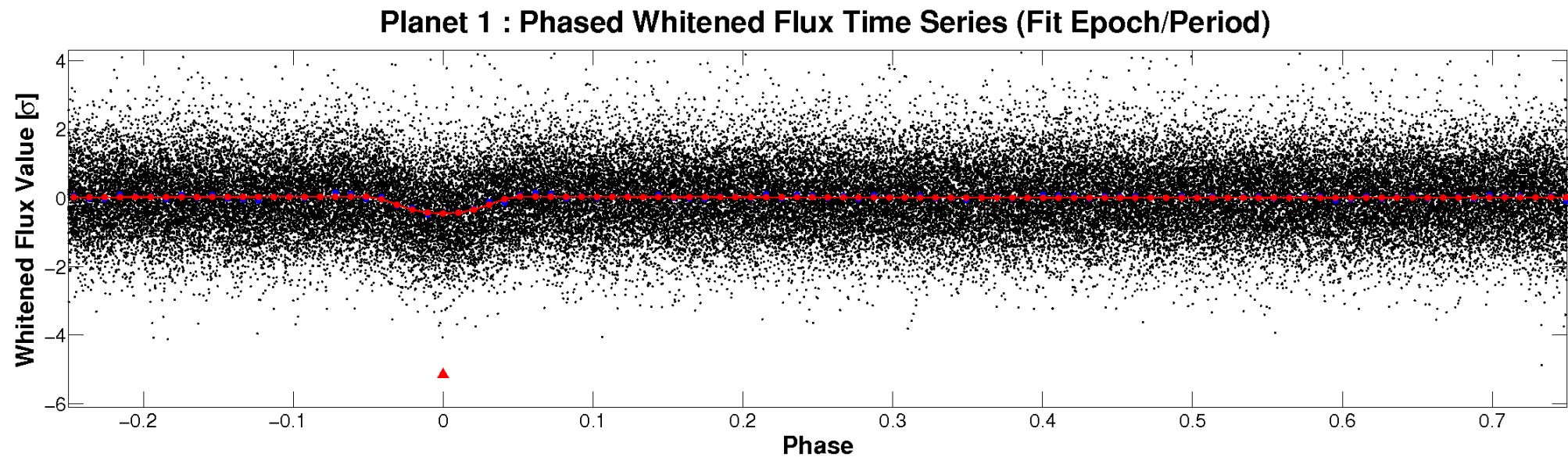
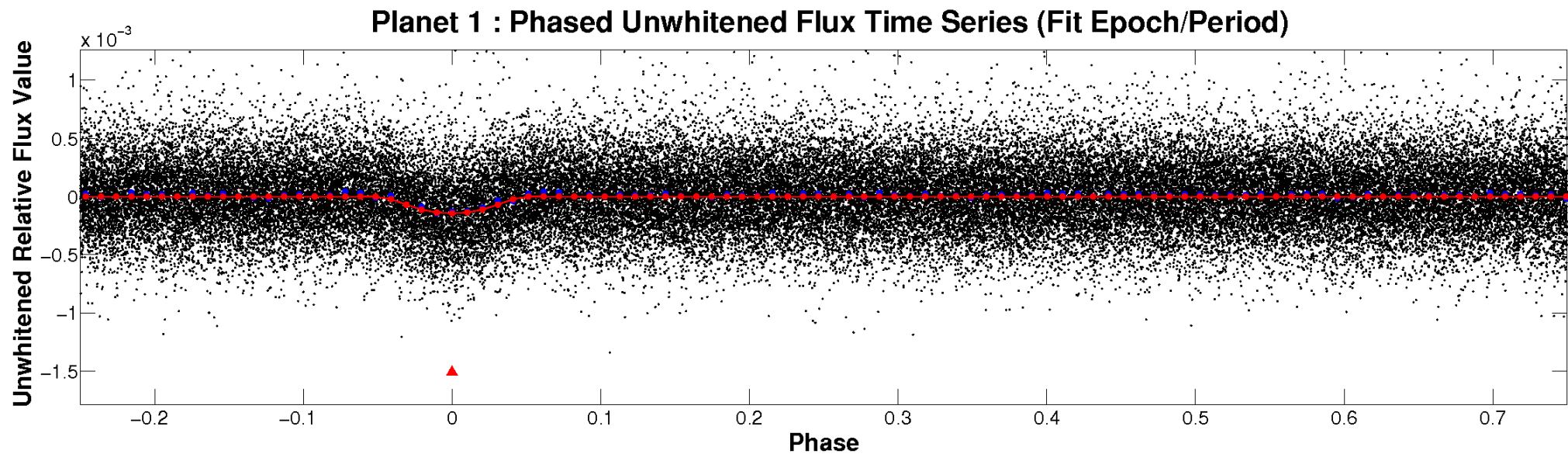


ALT Odd/Even

TCE 002581191-01

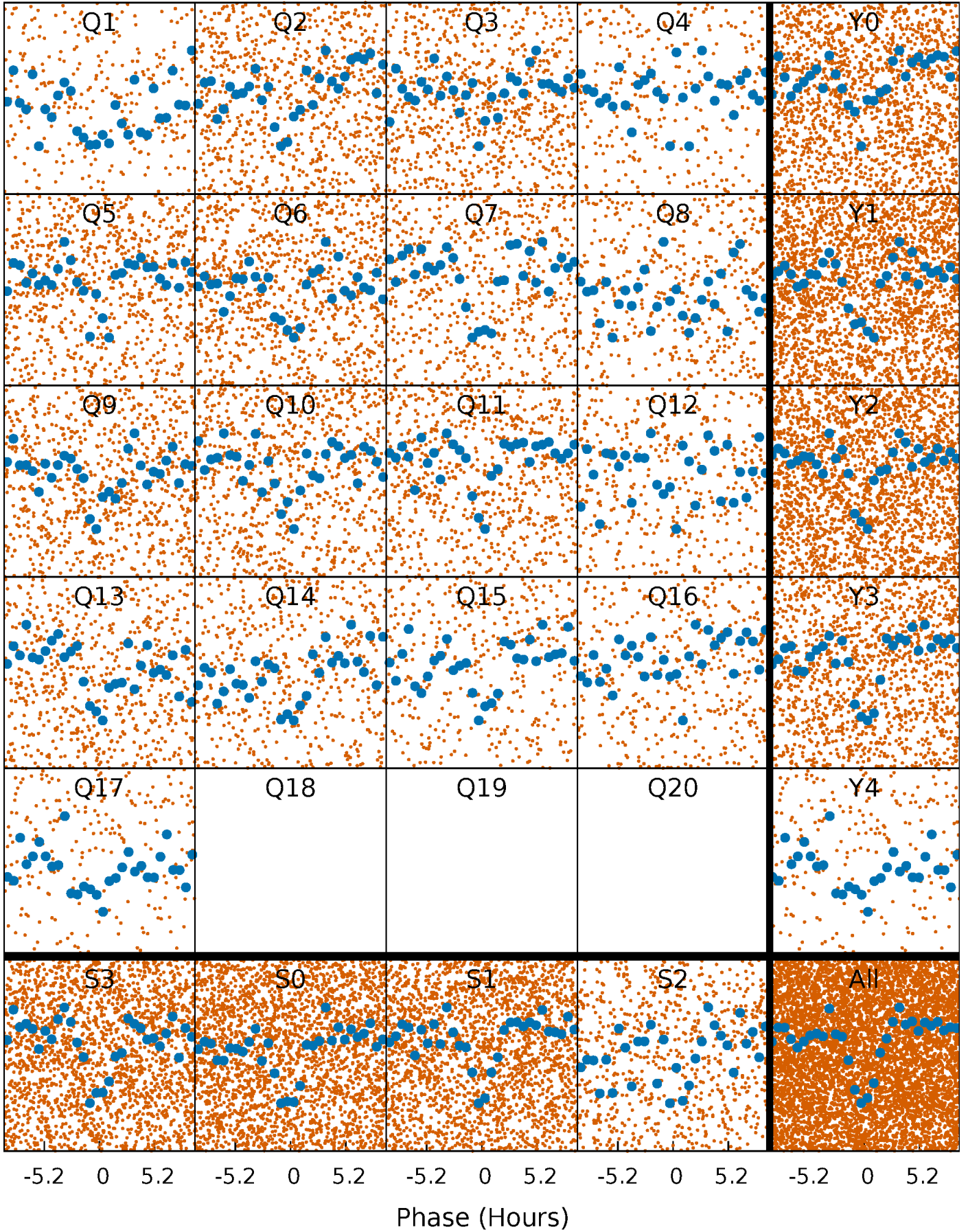


Non-Whitened Vs. Whitened Light Curve



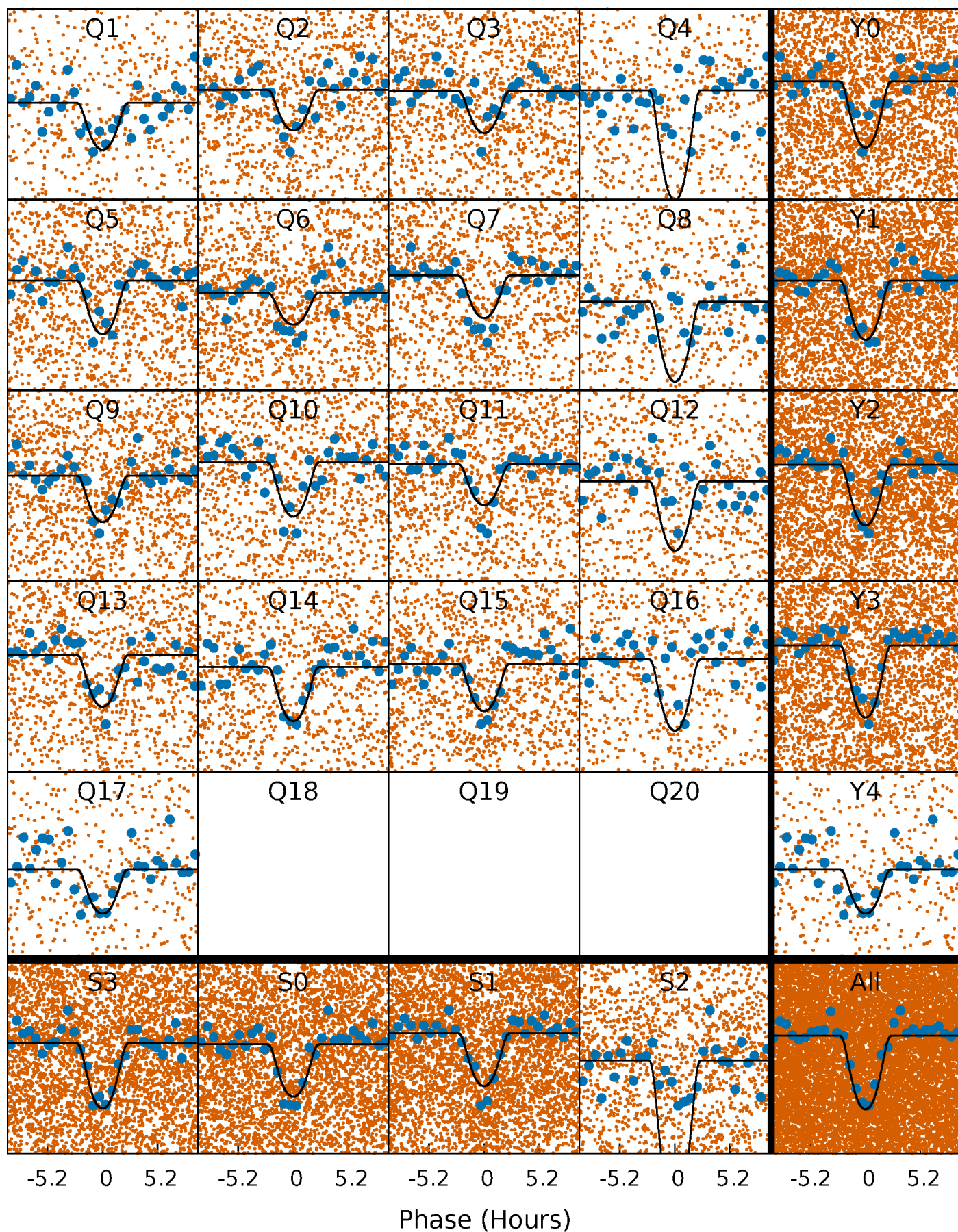
PDC Quarter-Phased Transit Curves

TCE 002581191-01 P= 1.990414 Days $T_0=132.721678$ (BKJD)



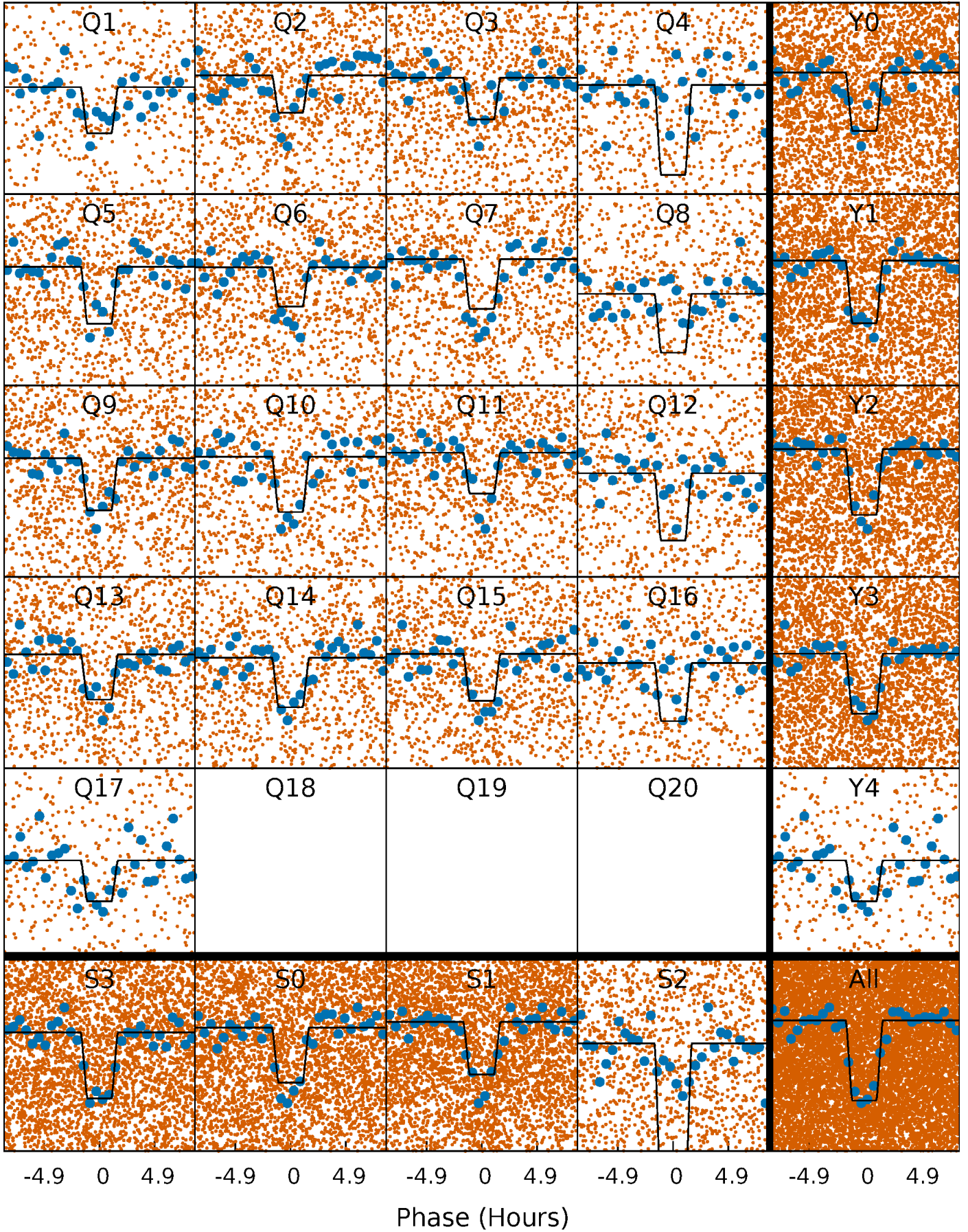
DV Quarter-Phased Transit Curves

TCE 002581191-01 P= 1.990414 Days $T_0=132.721678$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

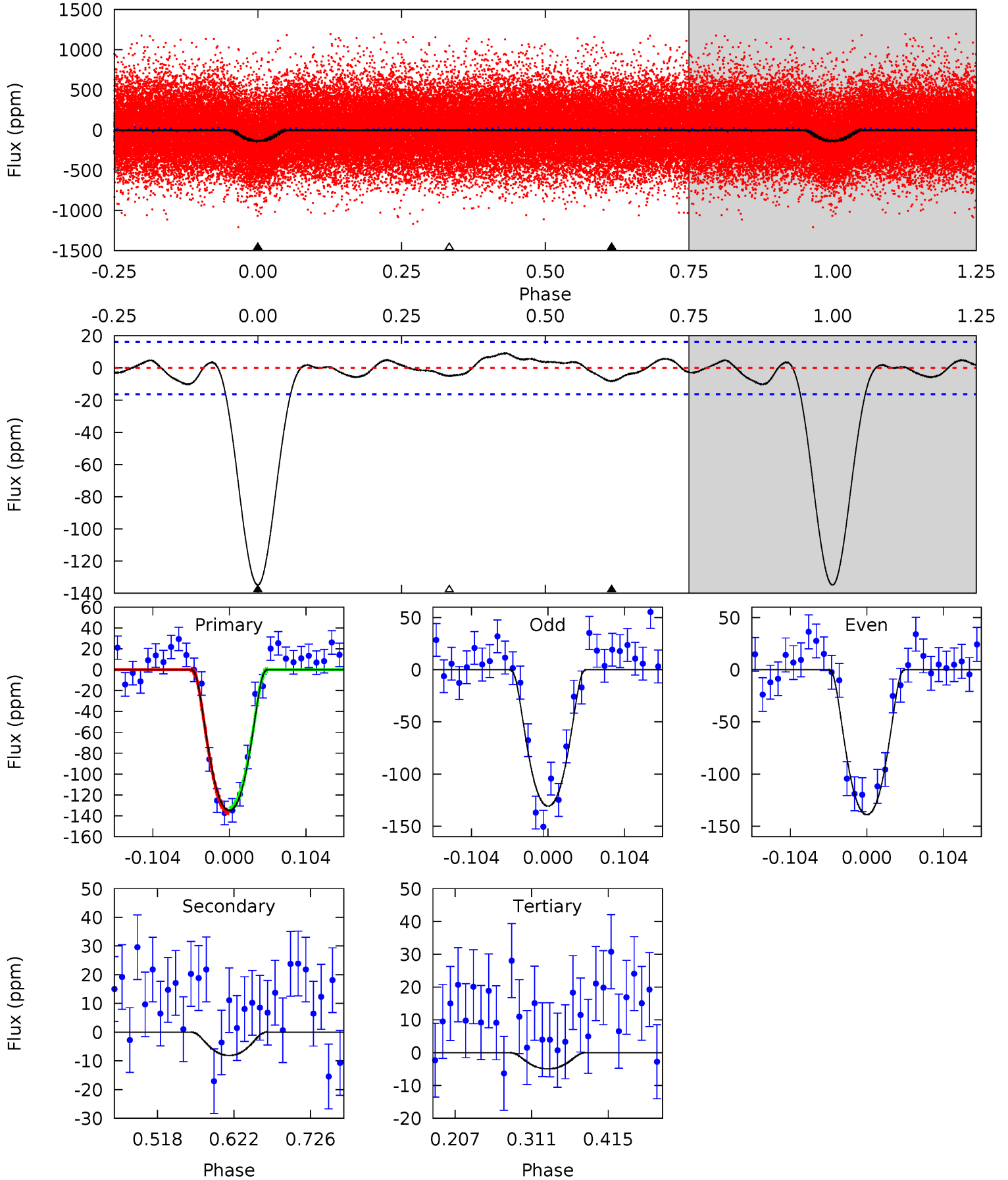
TCE 002581191-01 P= 1.990416 Days $T_0=132.718588$ (BKJD)



DV Model-Shift Uniqueness Test

002581191-01, P = 1.990414 Days, E = 130.731264 Days

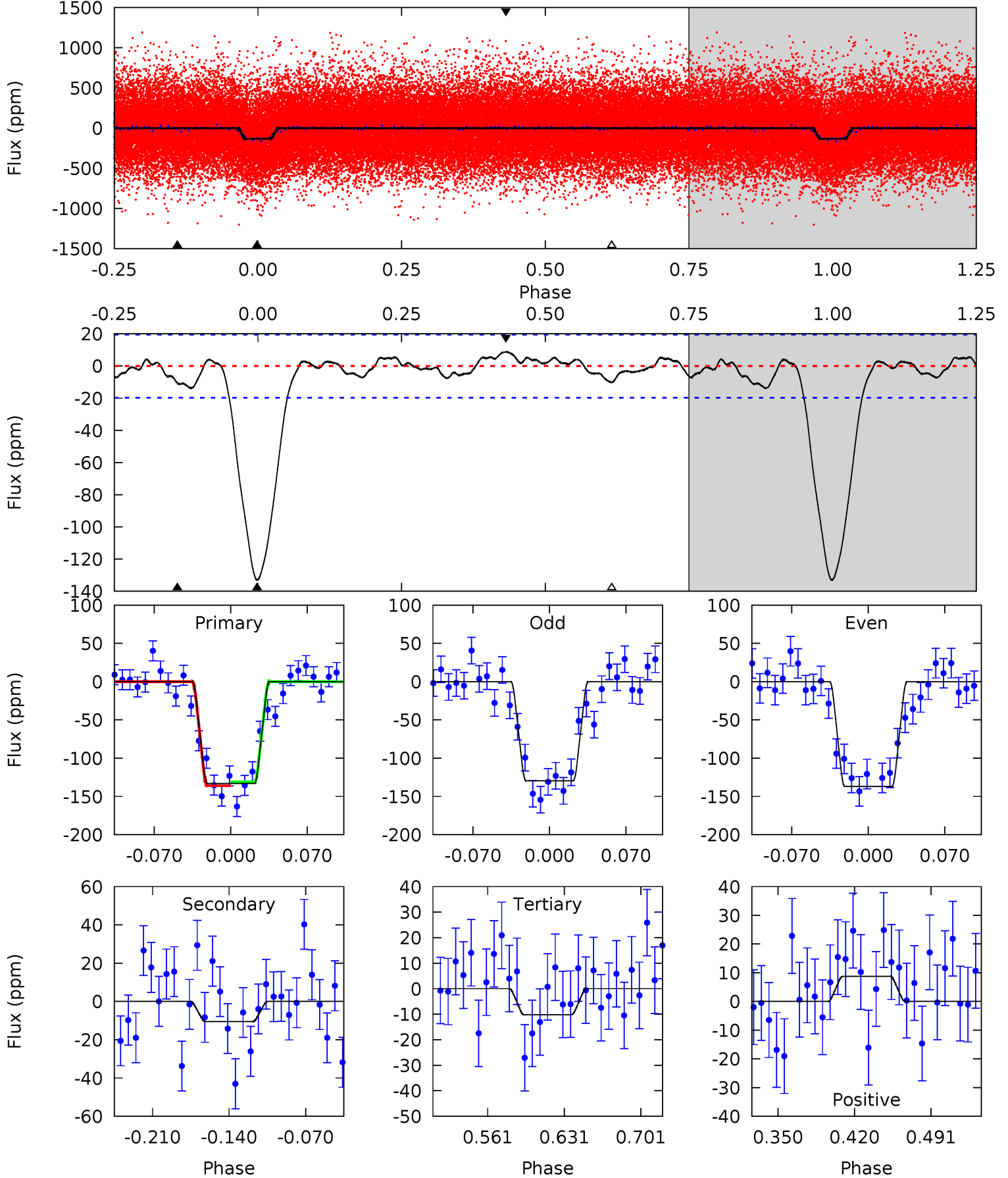
| Pri | Sec | Ter | Pos | FA ₁ | FA ₂ | F _{Red} | Pri-Ter | Pri-Pos | Sec-Ter | Sec-Pos | Odd-Evn | DMM | Shape | TAT |
|------|------|------|-----|-----------------|-----------------|------------------|---------|---------|---------|---------|---------|------|-------|------|
| 37.8 | 2.27 | 1.39 | 0 | 4.56 | 1.63 | 1.29 | 36.4 | 37.8 | 0.89 | 2.27 | 1.15 | 0.92 | 0.06 | 0.58 |



Alt Model-Shift Uniqueness Test

002581191-01, P = 1.990416 Days, E = 130.728172 Days

| Pri | Sec | Ter | Pos | FA ₁ | FA ₂ | F _{Red} | Pri-Ter | Pri-Pos | Sec-Ter | Sec-Pos | Odd-Evn | DMM | Shape | TAT |
|------|------|------|------|-----------------|-----------------|------------------|---------|---------|---------|---------|---------|------|-------|------|
| 31.4 | 2.49 | 2.41 | 2.07 | 4.64 | 1.81 | 1.00 | 29.0 | 29.3 | 0.08 | 0.41 | 0.87 | 0.97 | 0.06 | 0.59 |



Stellar Parameters For KIC 002581191

| | $T_{\text{eff}}(K)$ | $\log(g)$ | [Fe/H] | $R (R_{\odot})$ | $M(M_{\odot})$ | $p_{\star} (\text{g}\cdot\text{cm}^{-3})$ |
|--------|----------------------|---------------------------|----------------------------|---------------------------|---------------------------|---|
| | 6198^{+175}_{-197} | $4.464^{+0.054}_{-0.216}$ | $-0.160^{+0.250}_{-0.300}$ | $1.005^{+0.342}_{-0.107}$ | $1.072^{+0.144}_{-0.144}$ | $1.489^{+0.441}_{-0.806}$ |
| | +3%/-3% | +1%/-5% | +156%/-188% | +34%/-11% | +13%/-13% | +30%/-54% |
| 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 002581191-01 / KOI 2203.01

| Detrend | Depth (ppm) | $R_p (R_{\oplus})$ | $T_{\text{max}} (K)$ | $T_{\text{obs}} (K)$ | A_{obs} |
|---------|-------------|------------------------|----------------------|----------------------|---------------------------|
| DV | -8 ± 4 | $1.85^{+0.49}_{-0.43}$ | 2195^{+178}_{-106} | 3053^{+363}_{-468} | $1.199^{+1.098}_{-0.637}$ |
| Alt. | -11 ± 4 | $1.39^{+0.47}_{-0.44}$ | 2198^{+171}_{-102} | 3592^{+584}_{-481} | $2.915^{+3.628}_{-1.582}$ |

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

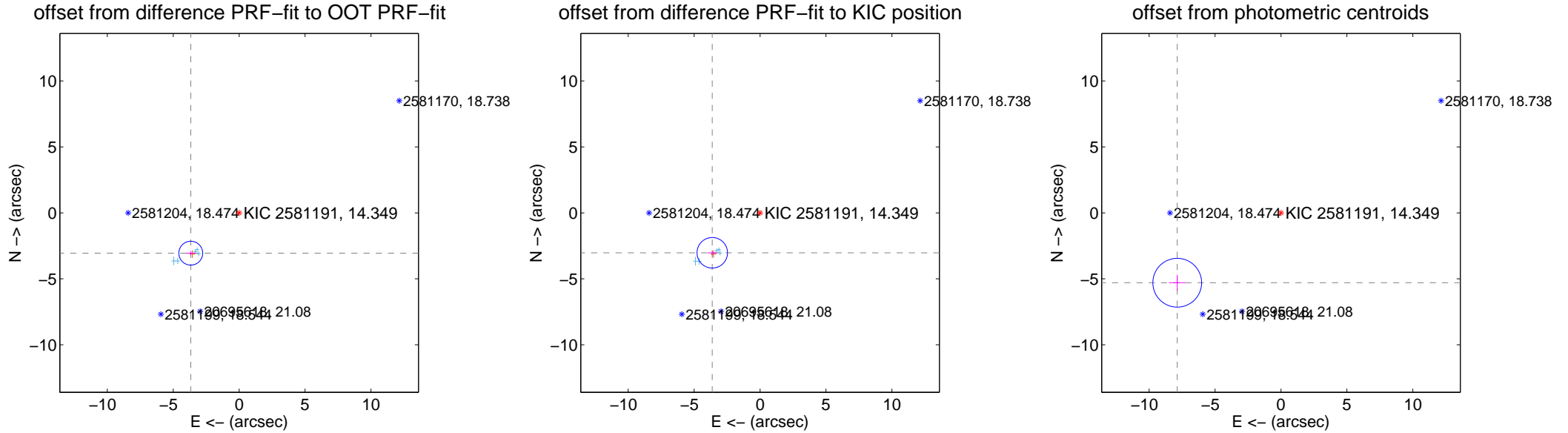
DV Centroid Data

Supplemental centroid analysis for 002581191-01. Kepler magnitude: 14.35. Transit SNR 23.93

There are 5 quarters with good PRF difference image offsets

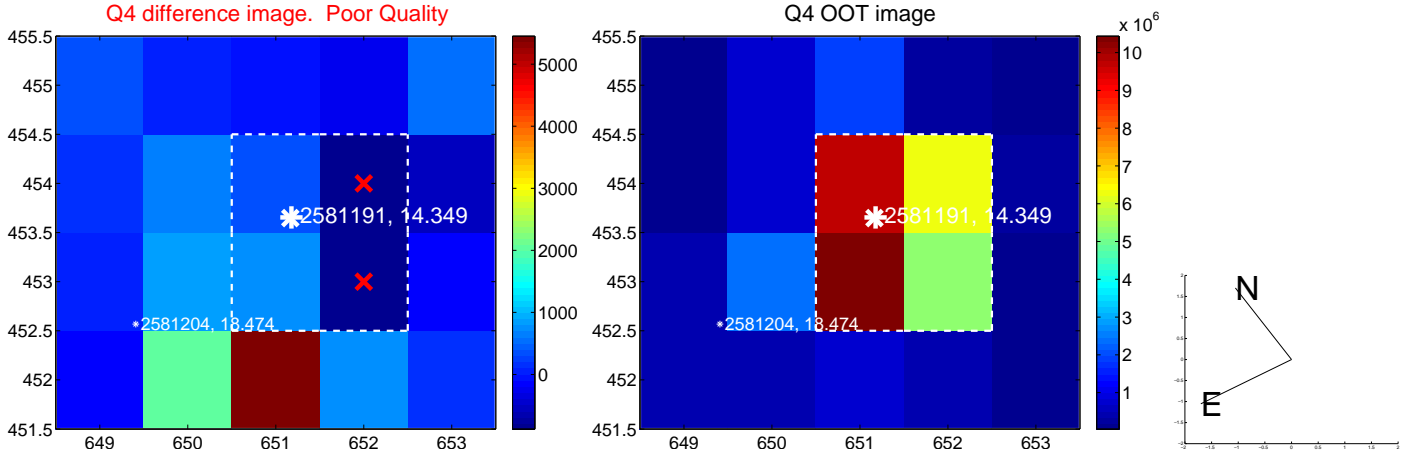
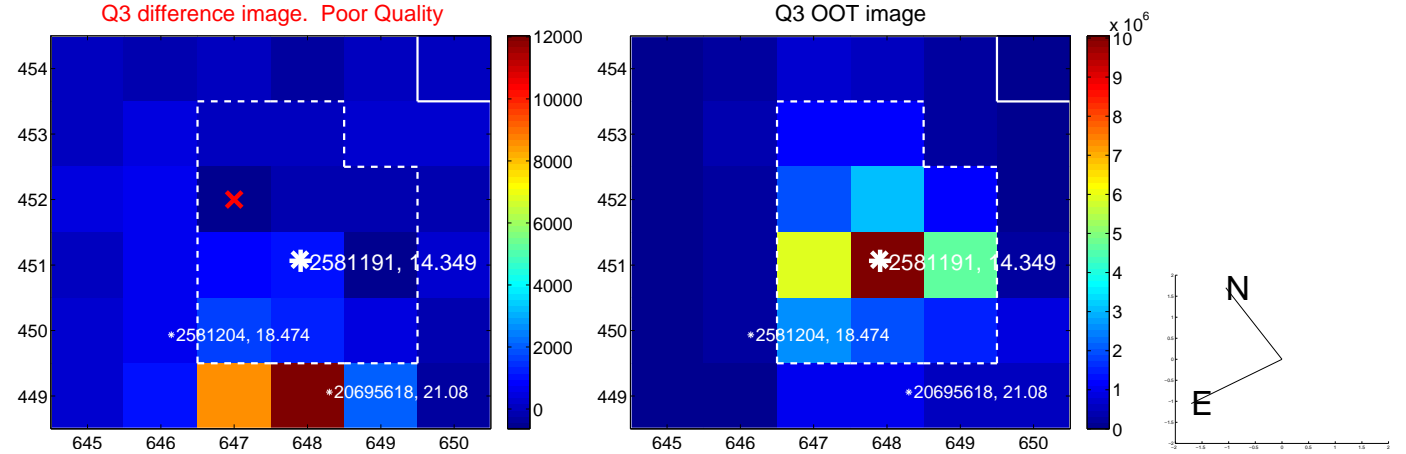
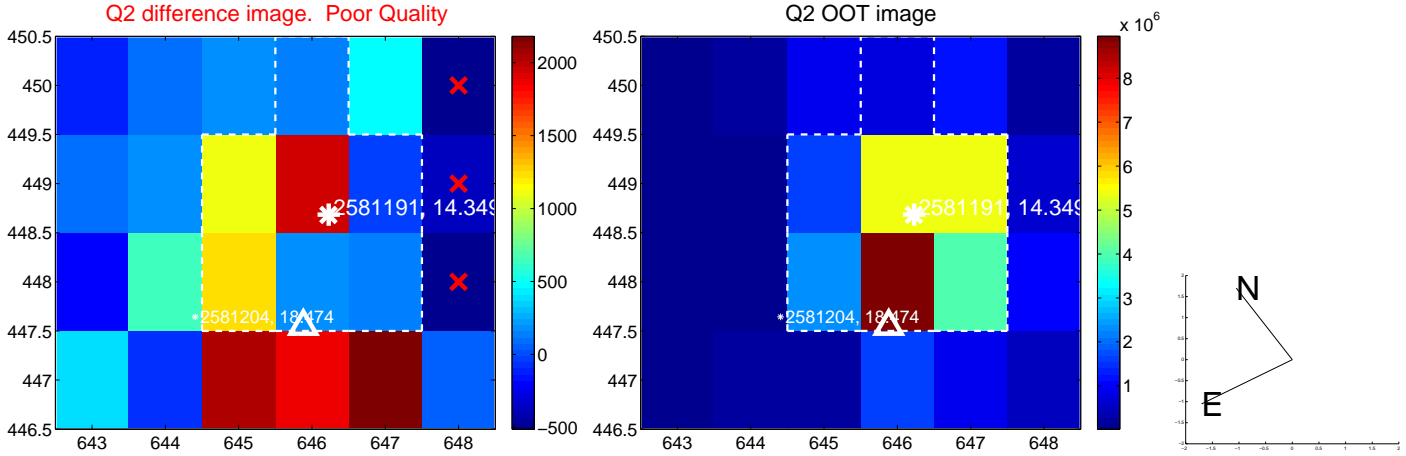
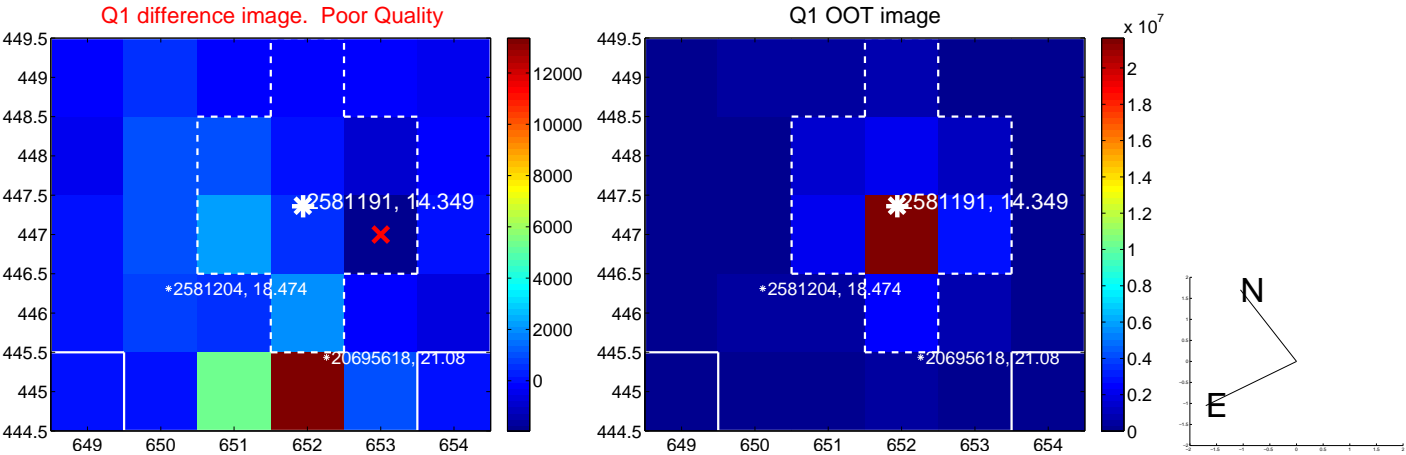
The direct PRF centroid is offset from the target star catalog position by about 0.05 arcsec

| | Distance in arcsec | Distance / σ | Δ RA | Δ Dec |
|---|--------------------|---------------------|-------------------|--------------------|
| PRF-fit source offset from OOT | 4.773 \pm 0.302 | 15.83 | 3.668 \pm 0.369 | -3.054 \pm 0.161 |
| PRF-fit source offset from KIC position | 4.721 \pm 0.386 | 12.25 | 3.624 \pm 0.359 | -3.026 \pm 0.187 |
| photometric centroid source offset | 9.48 \pm 0.62 | 15.39 | 7.87 \pm 0.62 | -5.30 \pm 0.60 |

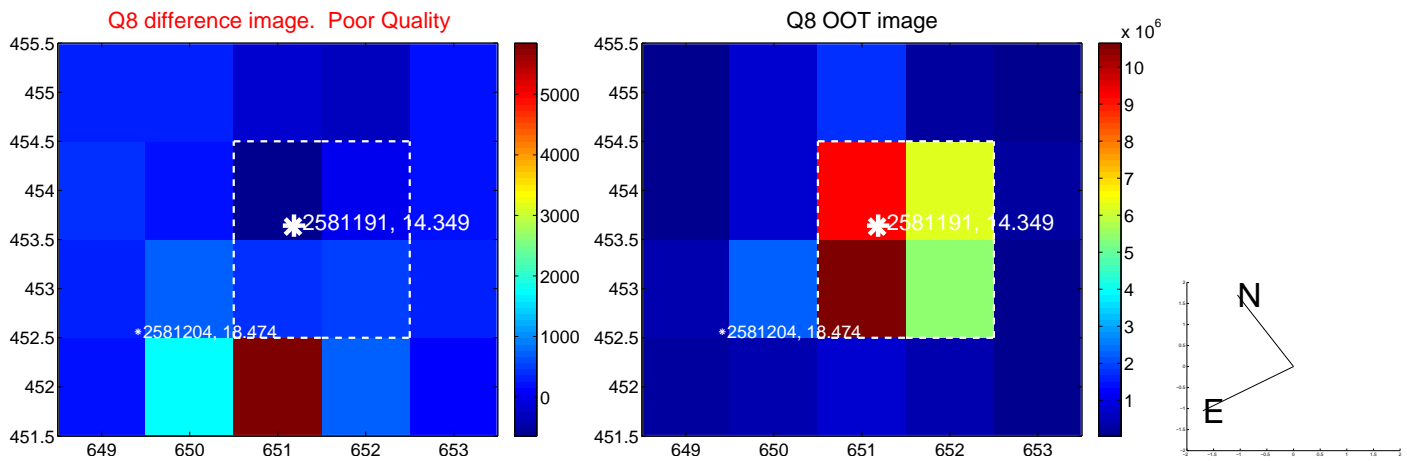
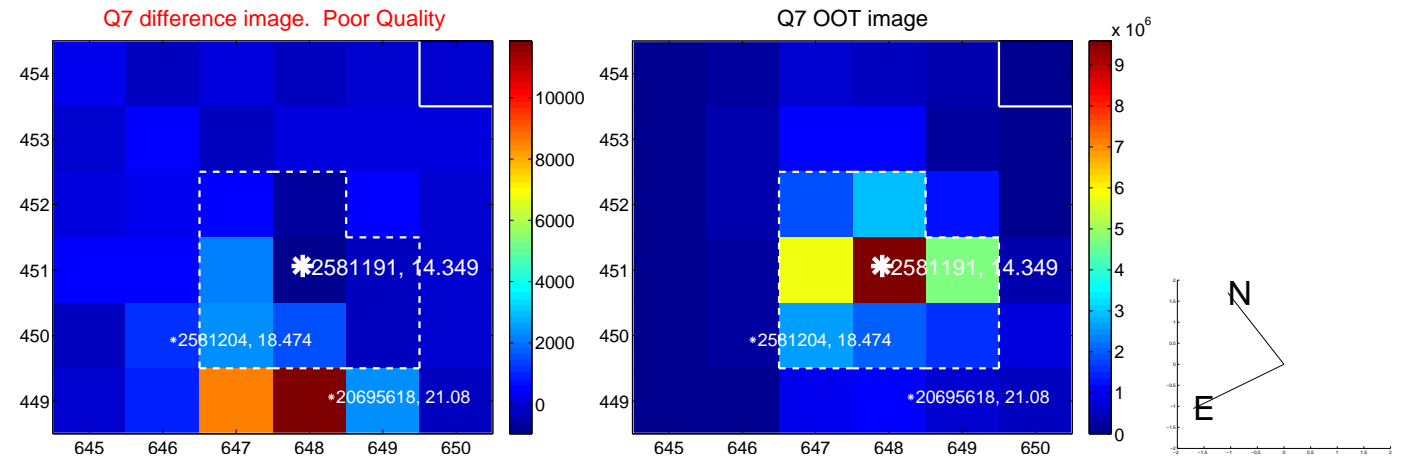
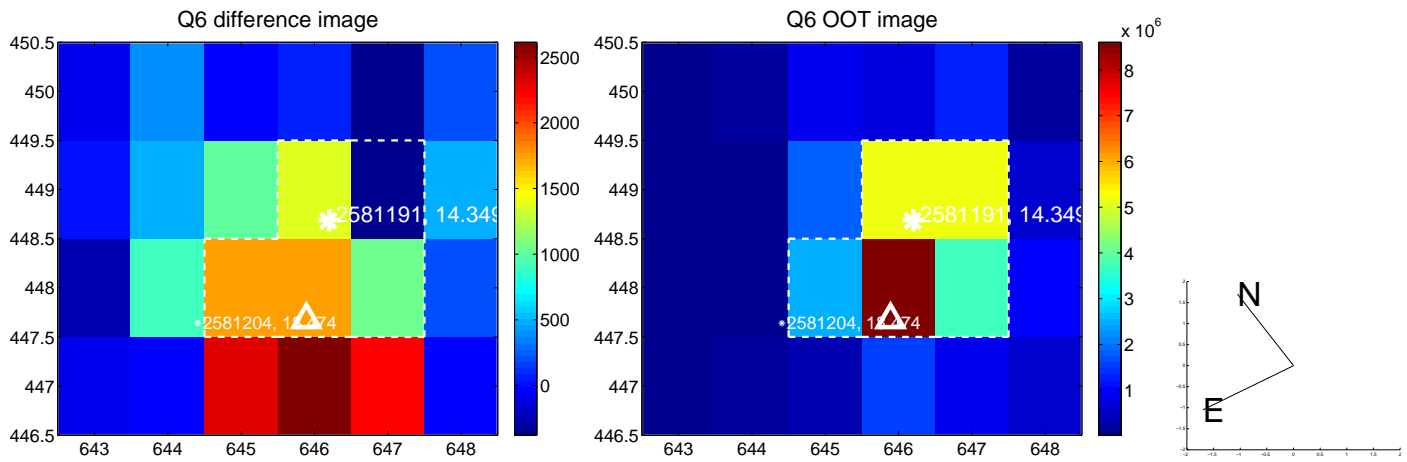
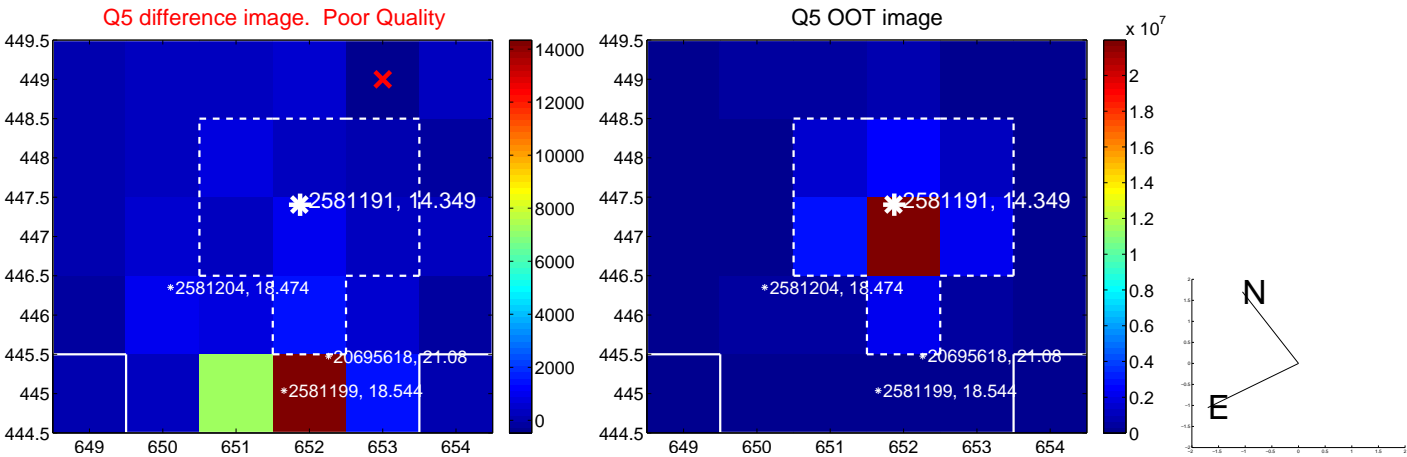


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

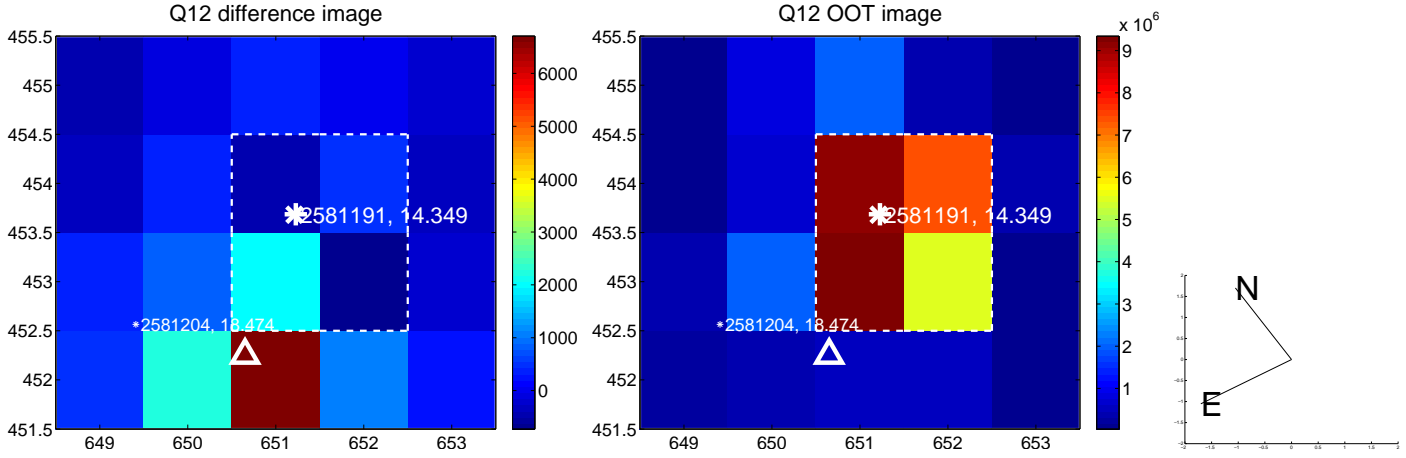
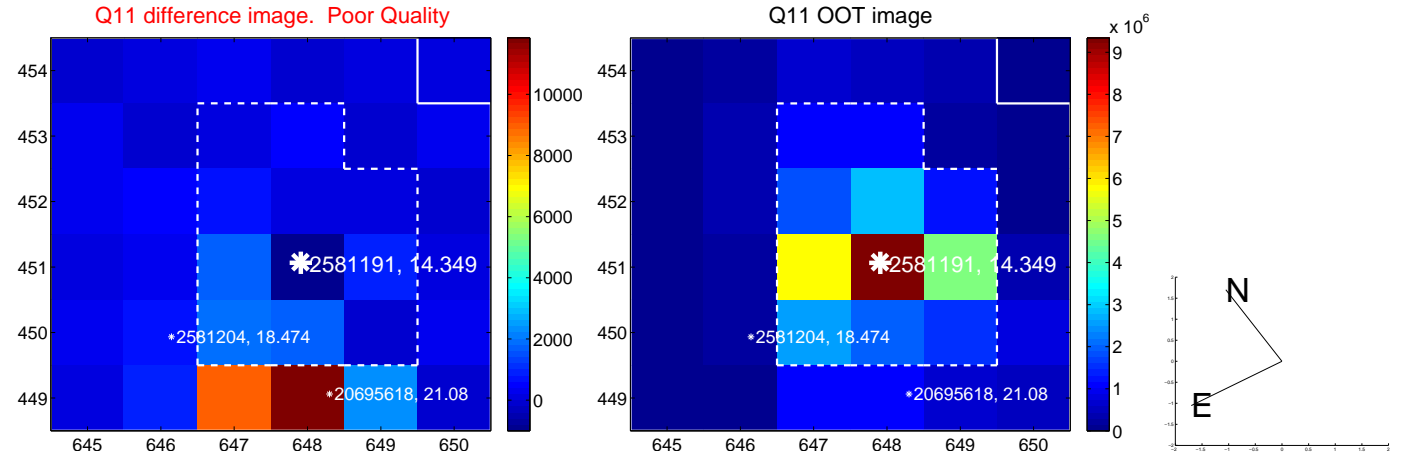
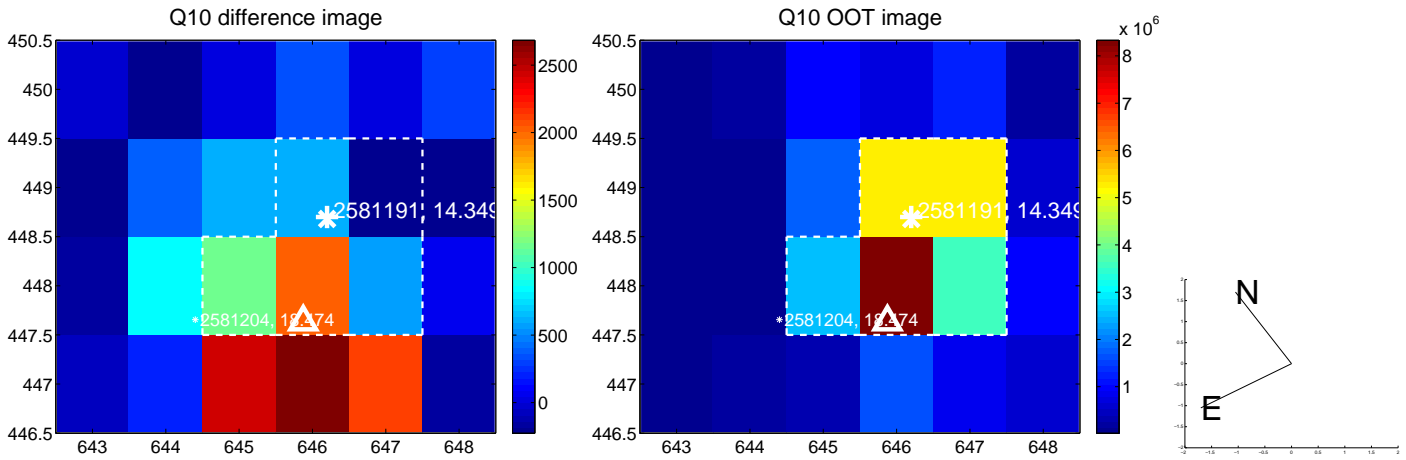
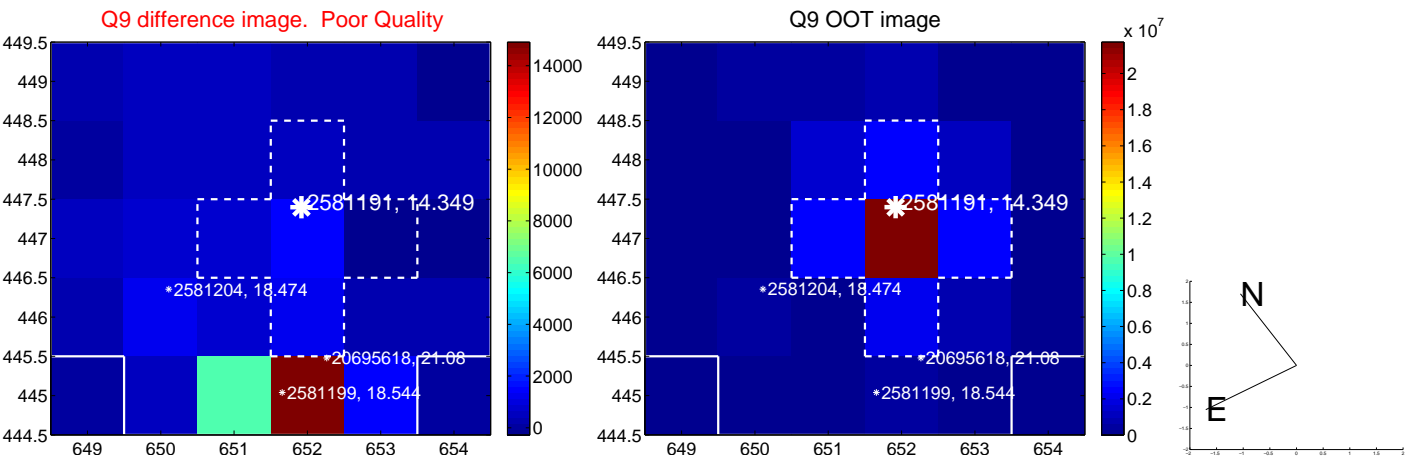
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



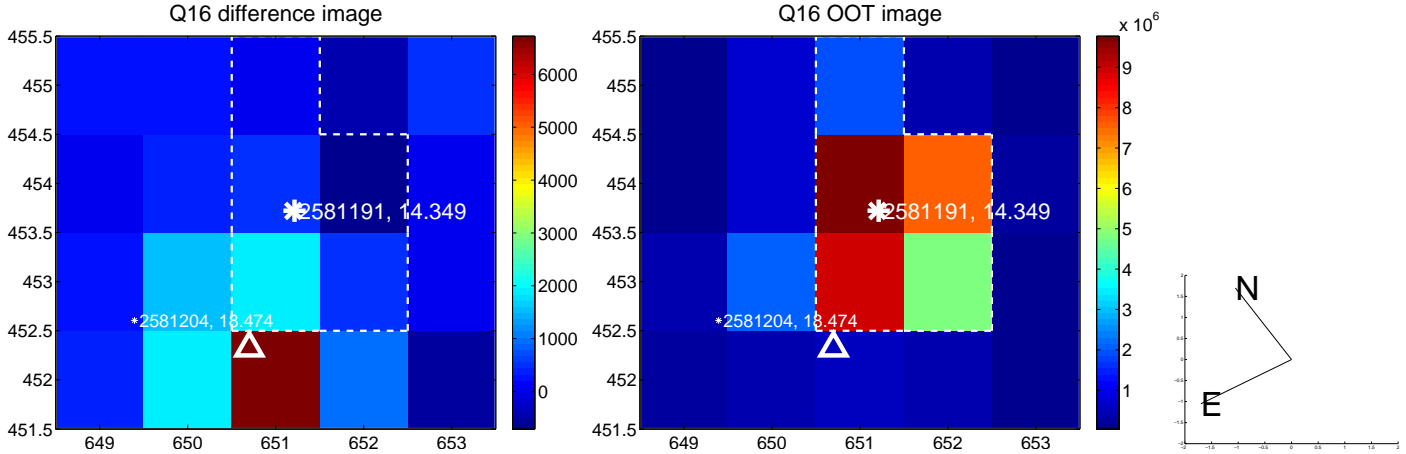
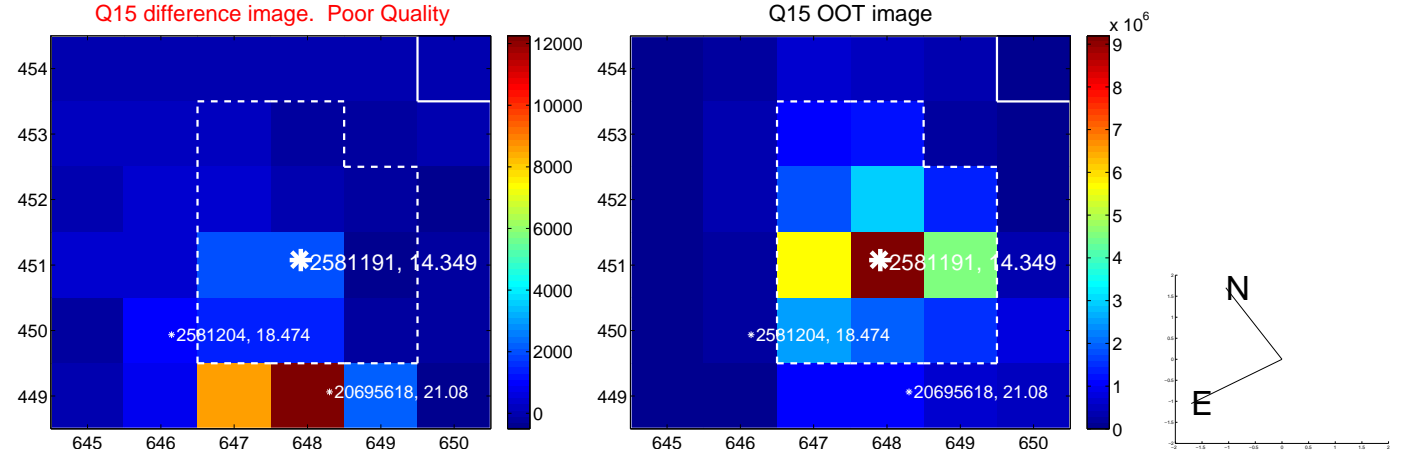
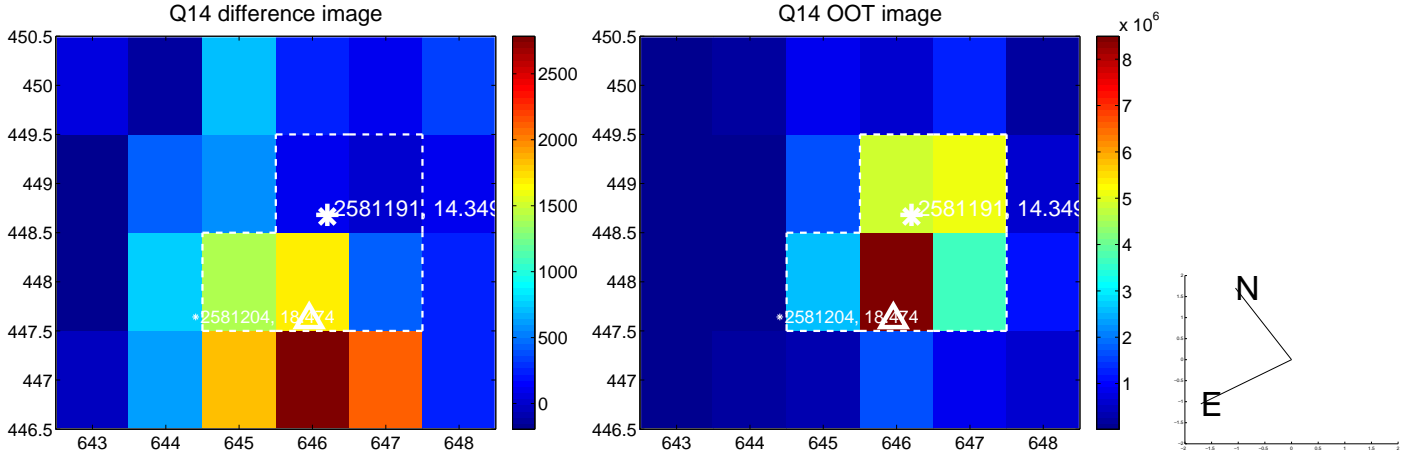
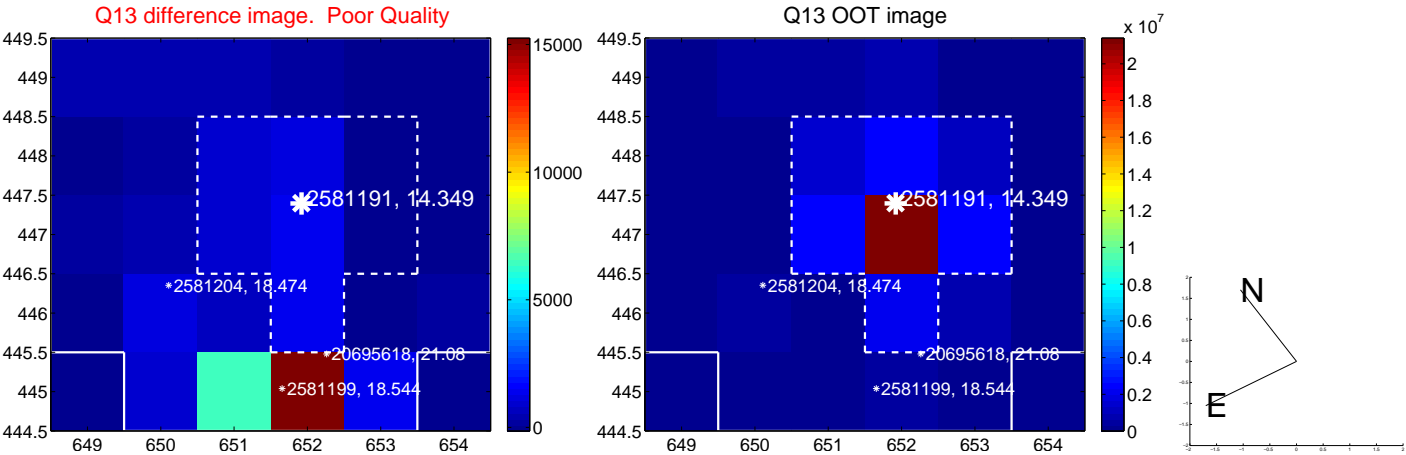
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



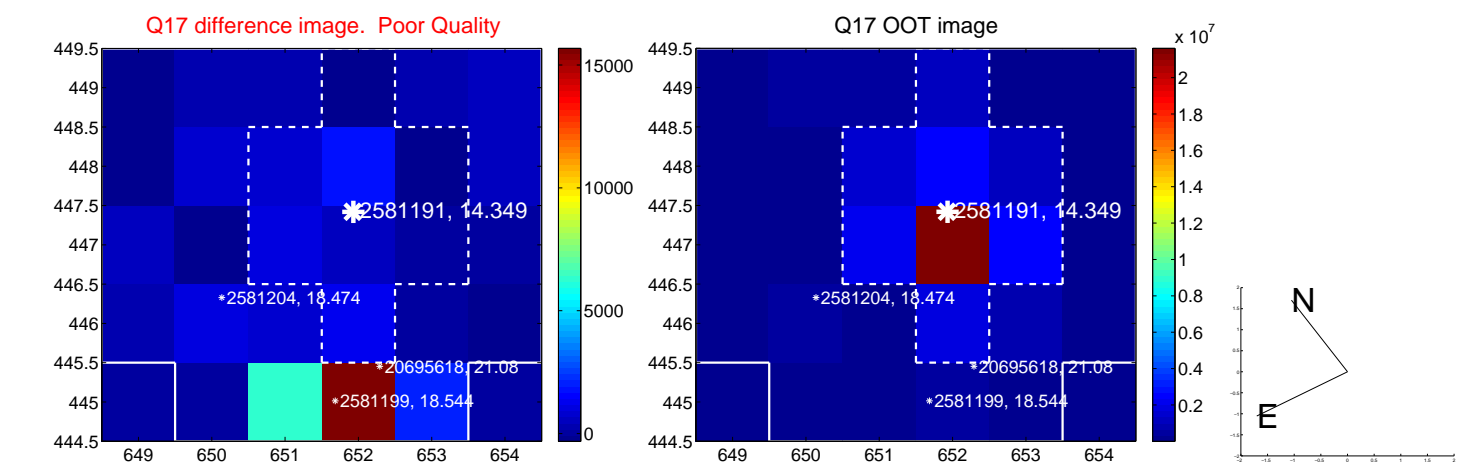
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



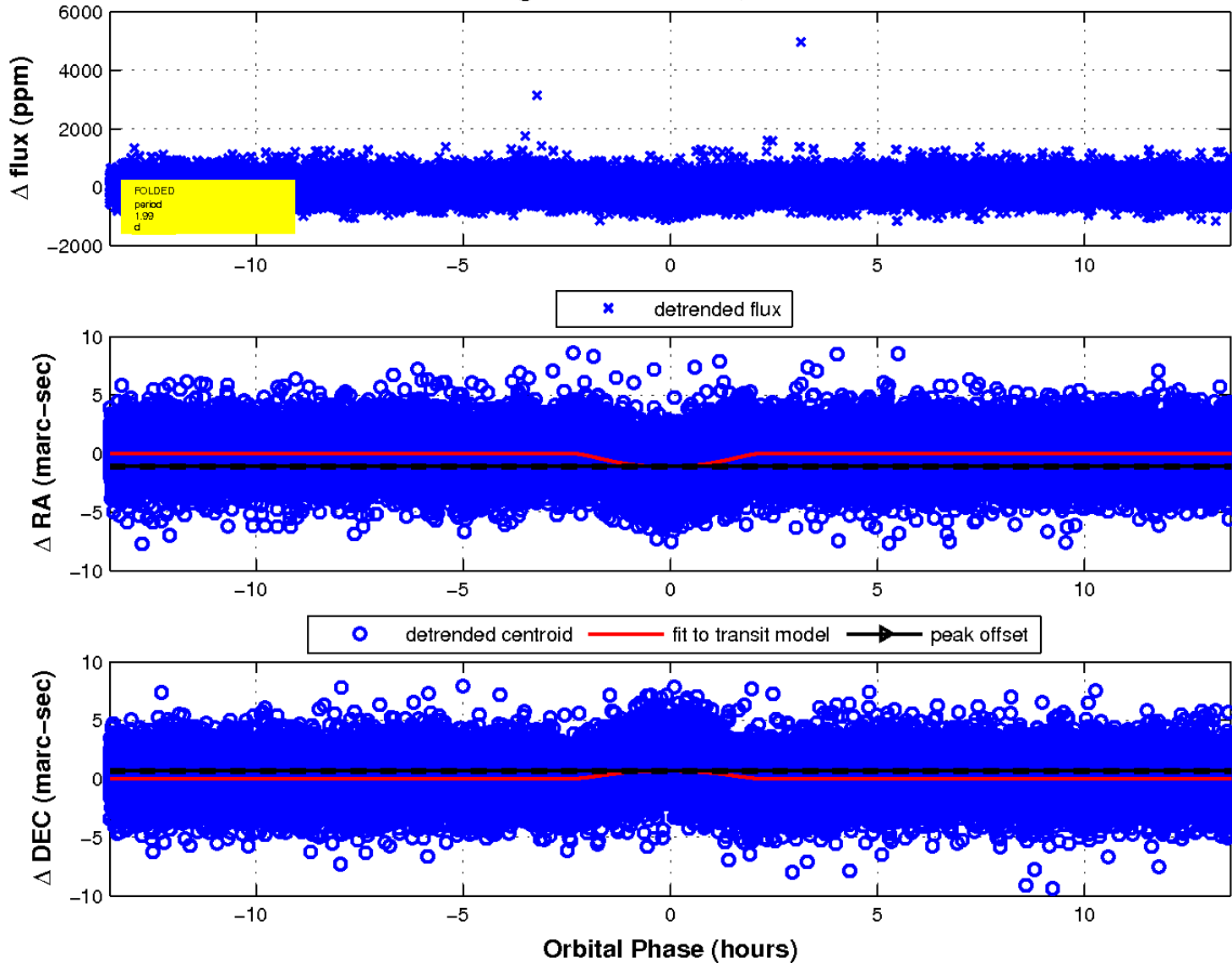
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



fluxWeightedCentroids, Planet 1 of 1



UKIRT Image

Declination

