

KIC 008123645

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}) |
|--------------|----------|------|---------------|--------------|-------------|------------------|------|------|-----------------------------|-----------------|------------------------|------------------------|
| 008123645-01 | OBS | No | 2.102967 | 132.347880 | 104.4 | 18.342 | 11.0 | 13.2 | 1.32 | 7132 | 1.56 | 3270.06 |

Robovetter Results

| TCE | Run Type | Disp | Score | N | S | C | E | Comments |
|--------------|----------|------|-------|---|---|---|---|----------------|
| 008123645-01 | OBS | FP | 0.00 | 1 | 0 | 0 | 0 | LPP_DV—LPP_ALT |

Notes: OBS = Observed. INJ = Injected. INV = Inverted. SCR = Scrambled.

N = Not Transit-Like. S = Stellar Eclipse. C = Centroid Offset. E = Ephemeris Match.

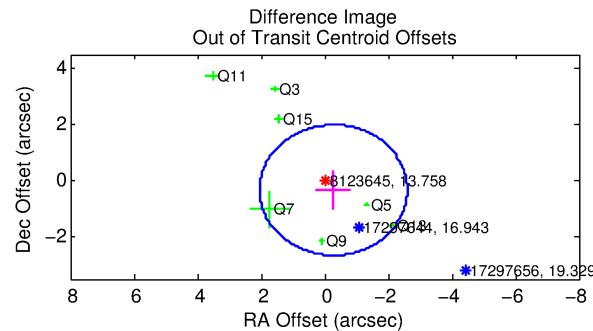
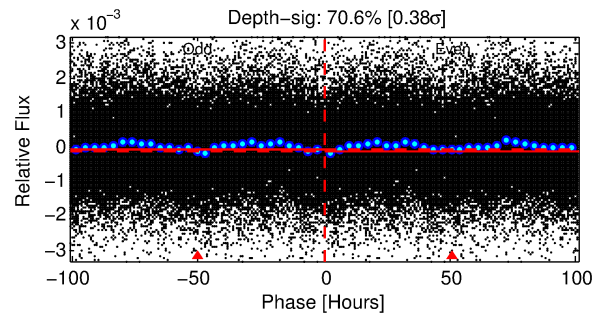
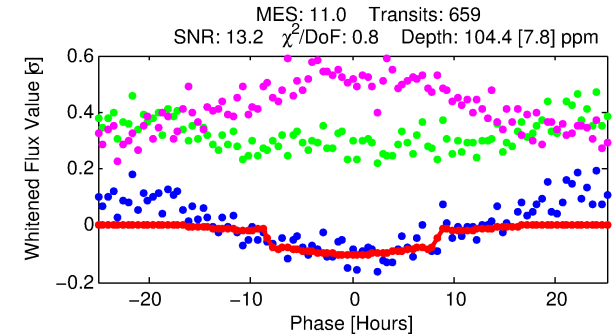
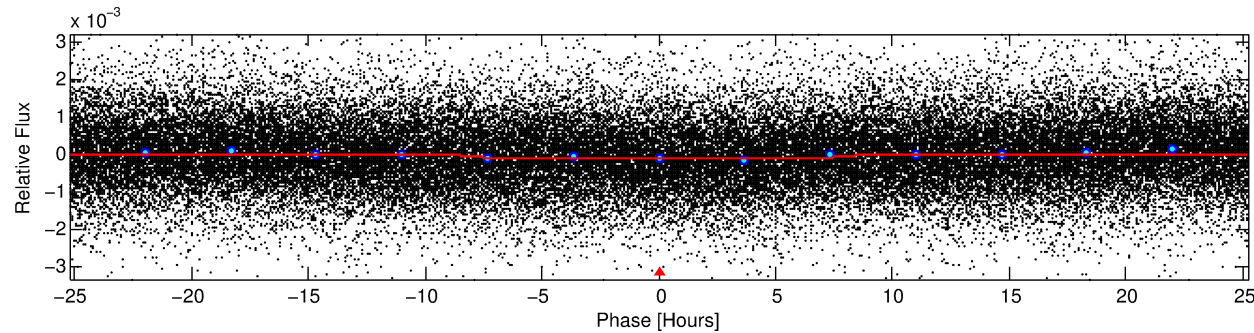
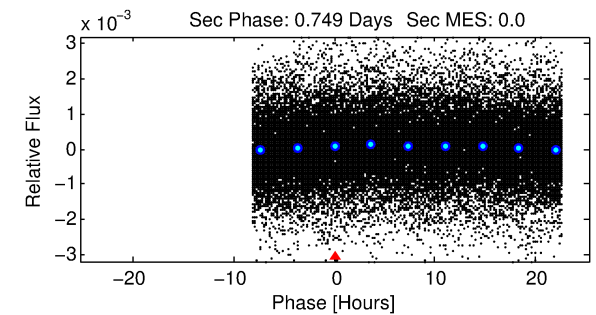
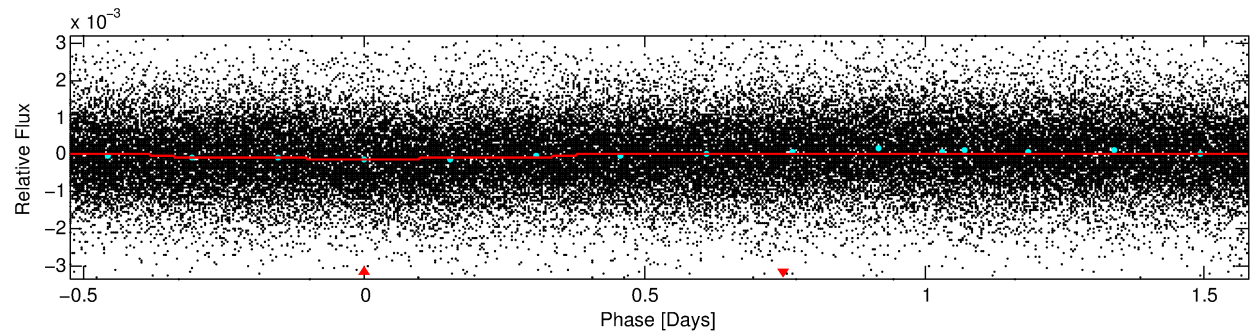
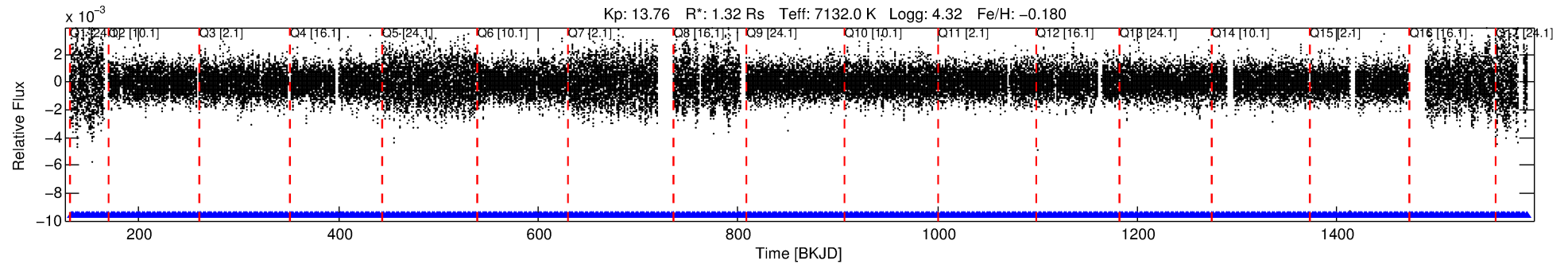
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 008123645-01

No Significant Match Found

DV One-Page Summary

KIC: 8123645 Candidate: 1 of 1 Period: 2.103 d



DV Fit Results:

Period = 2.10297 [0.00004] d
Epoch = 132.3479 [0.0121] BKJD
Rp/R* = 0.0108 [0.0005]
a/R* = 1.03 [0.01]
b = 0.90 [0.05]
Seff = 3270.06 [1537.19]
Teq = 1928 [227] K
Rp = 1.56 [0.59] Re
a = 0.0353 [0.0109] AU
Ag = N/A
Teffp = N/A

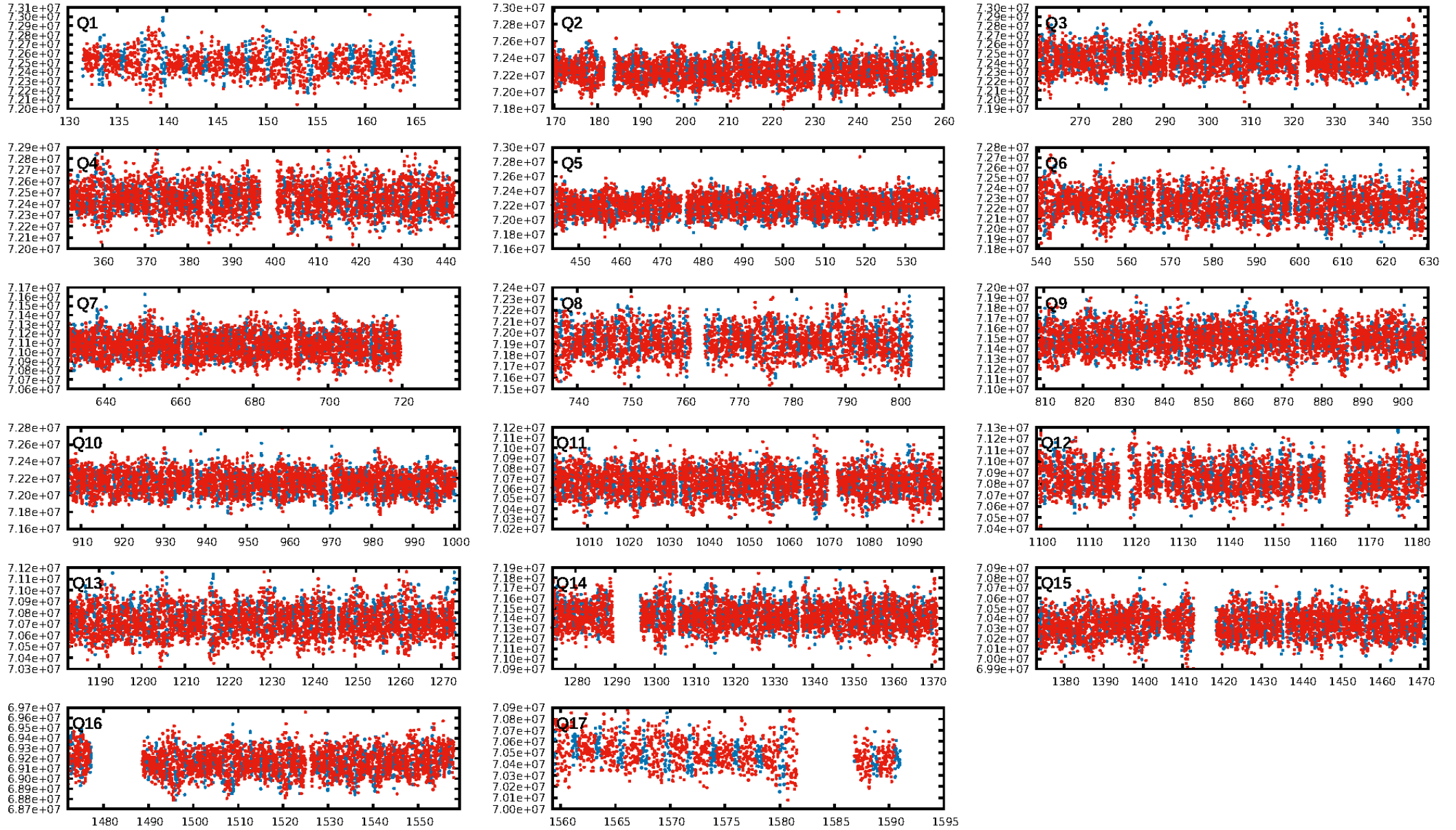
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [630/630]
GhostDiagnostic-chr: 2.67
Centroid-sig: 8.8%
Centroid-so: 0.424 arcsec [1.77σ]
OotOffset-rm: 0.432 arcsec [0.56σ]
KicOffset-rm: 0.471 arcsec [0.54σ]
OotOffset-st: 0/4/0/3 [7]
KicOffset-st: 0/4/0/3 [7]
DiffImageQuality-fgm: 0.57 [4/7]
DiffImageOverlap-fno: 1.00 [17/17]

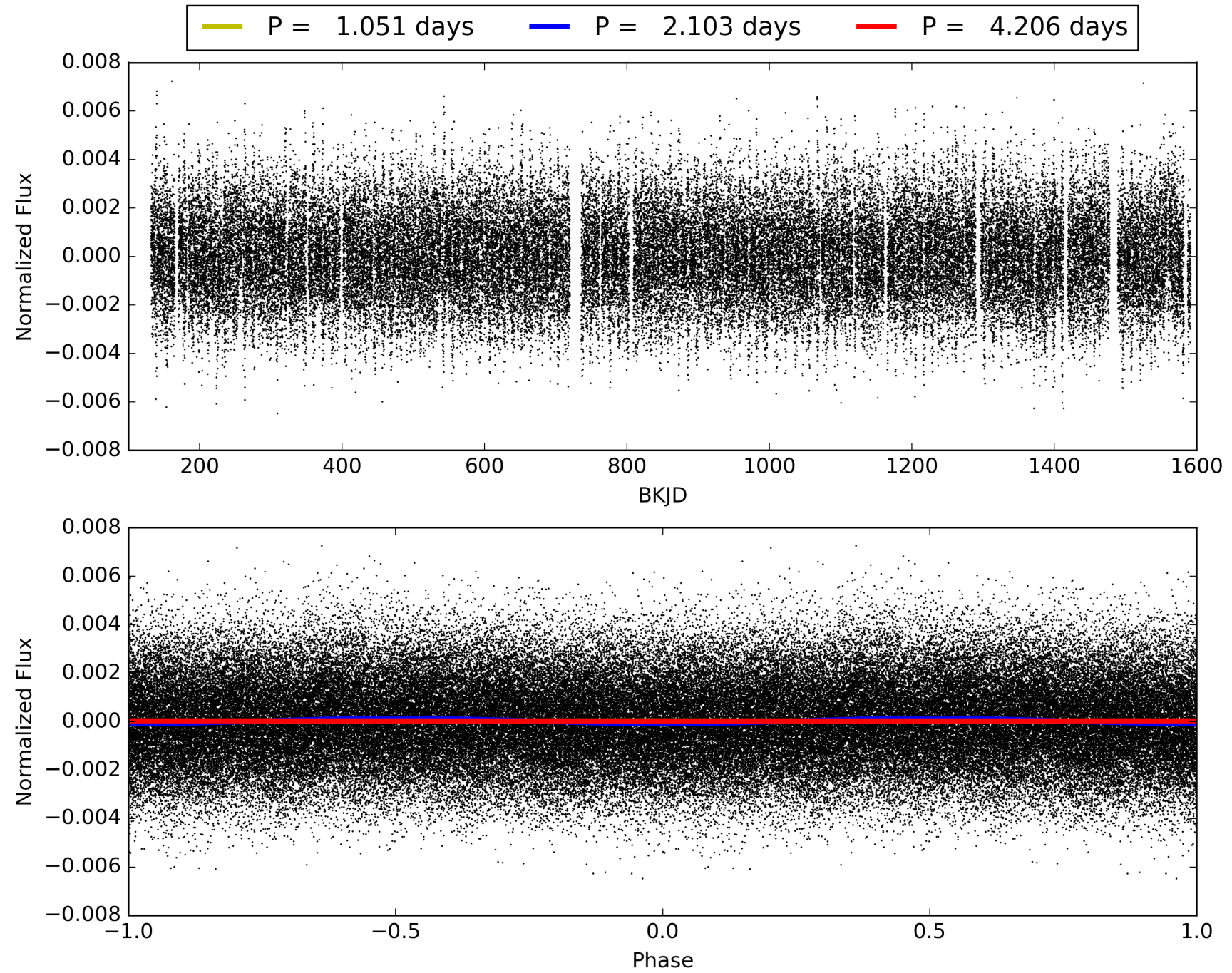
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 22:43:04 Z

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

TCE 008123645-01, PDC Light Curves

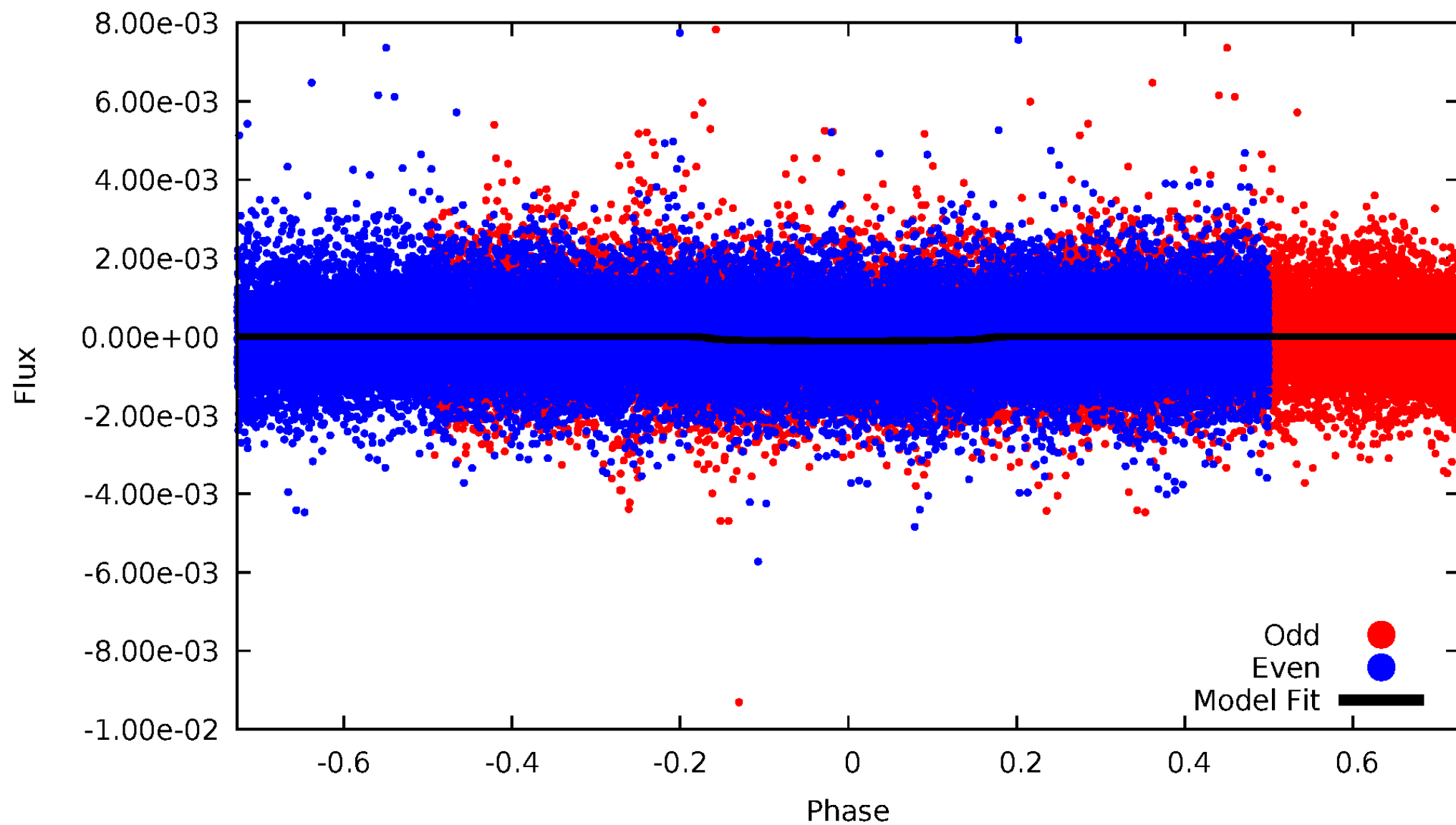


TCE 008123645-01



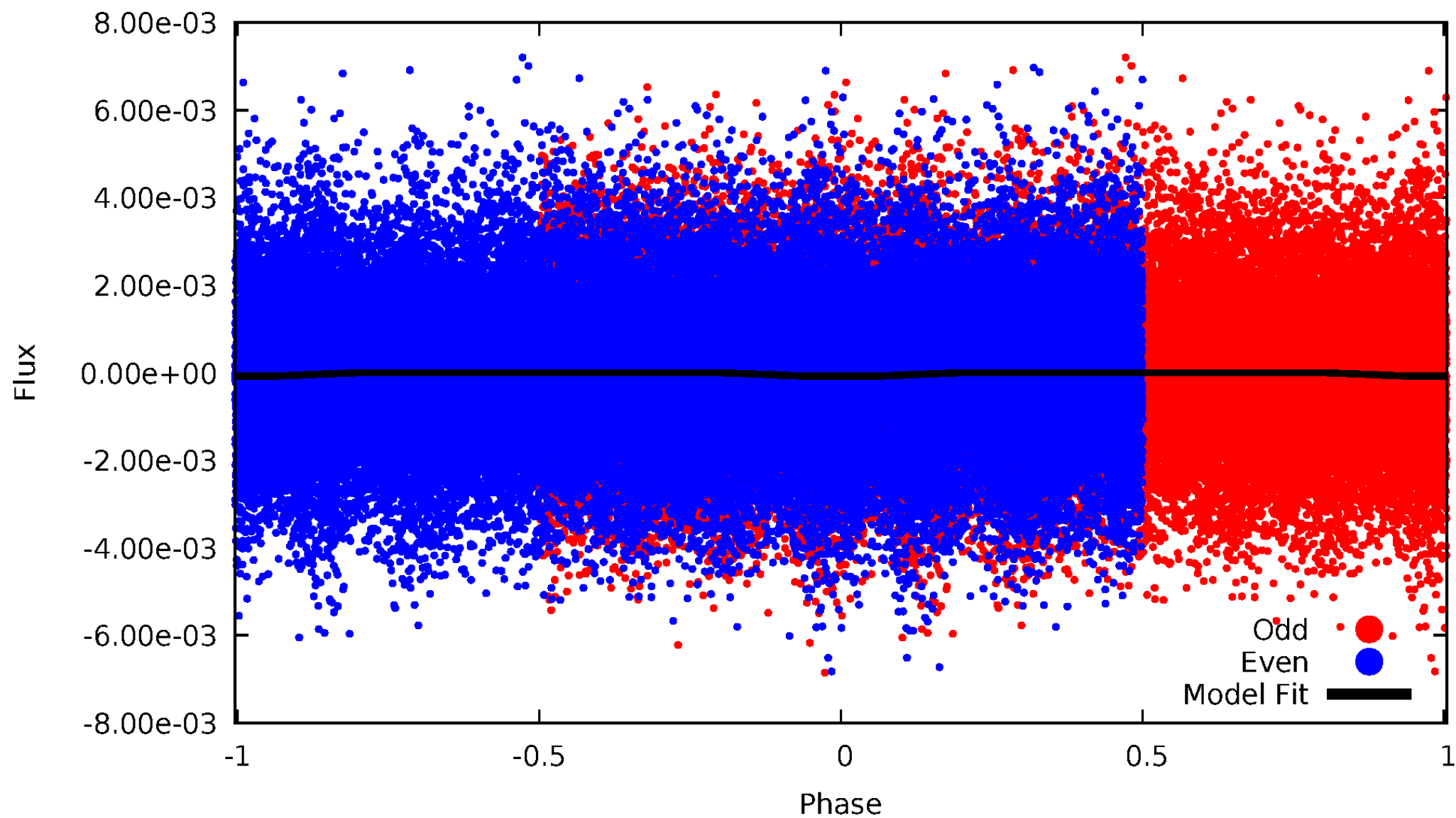
DV Odd/Even

TCE 008123645-01



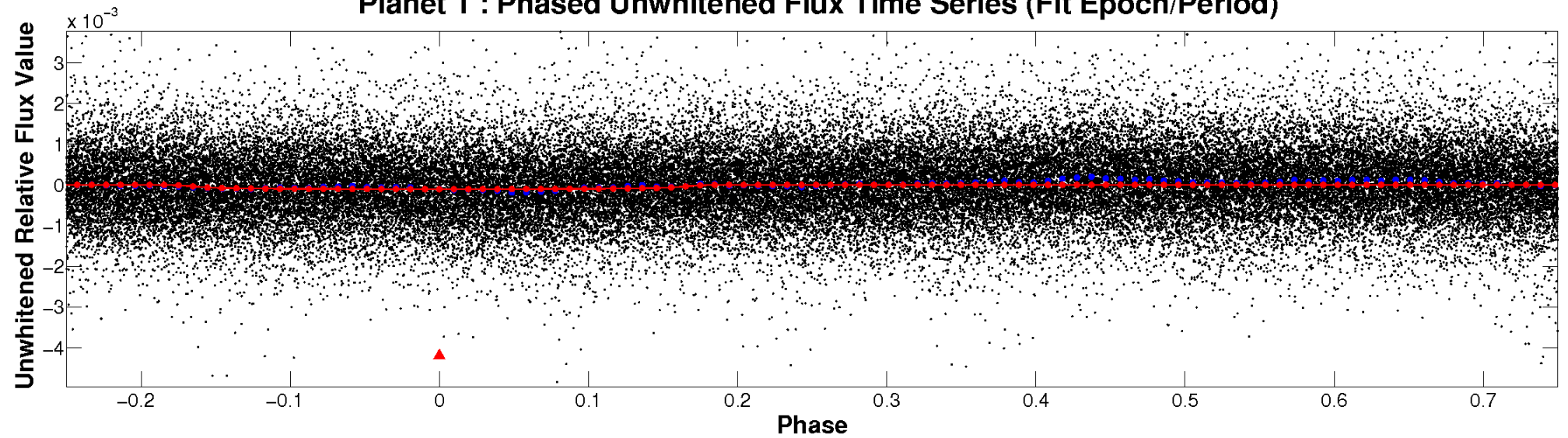
ALT Odd/Even

TCE 008123645-01

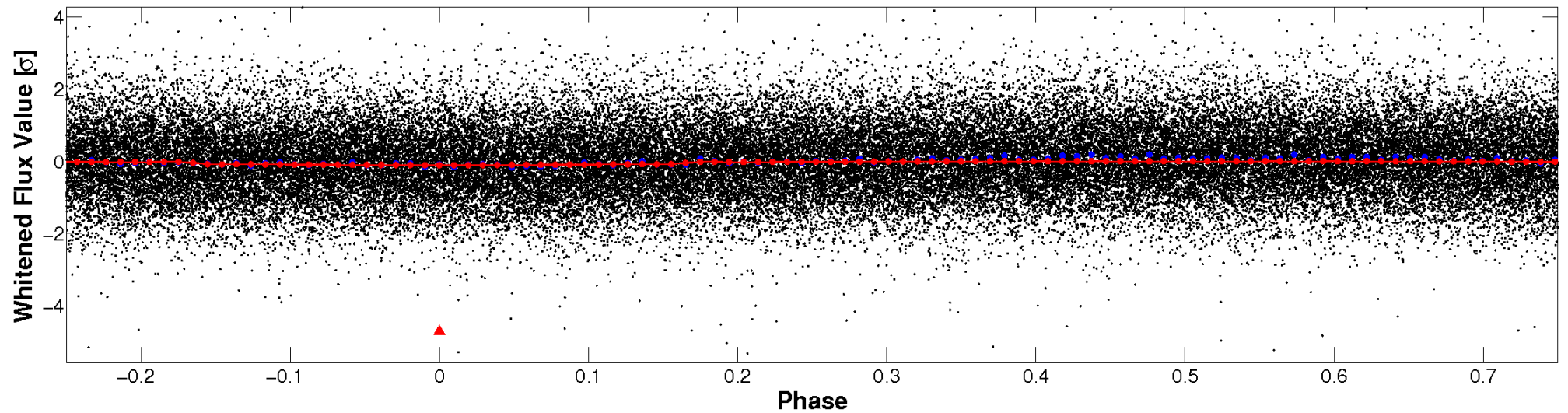


Non-Whitened Vs. Whitened Light Curve

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

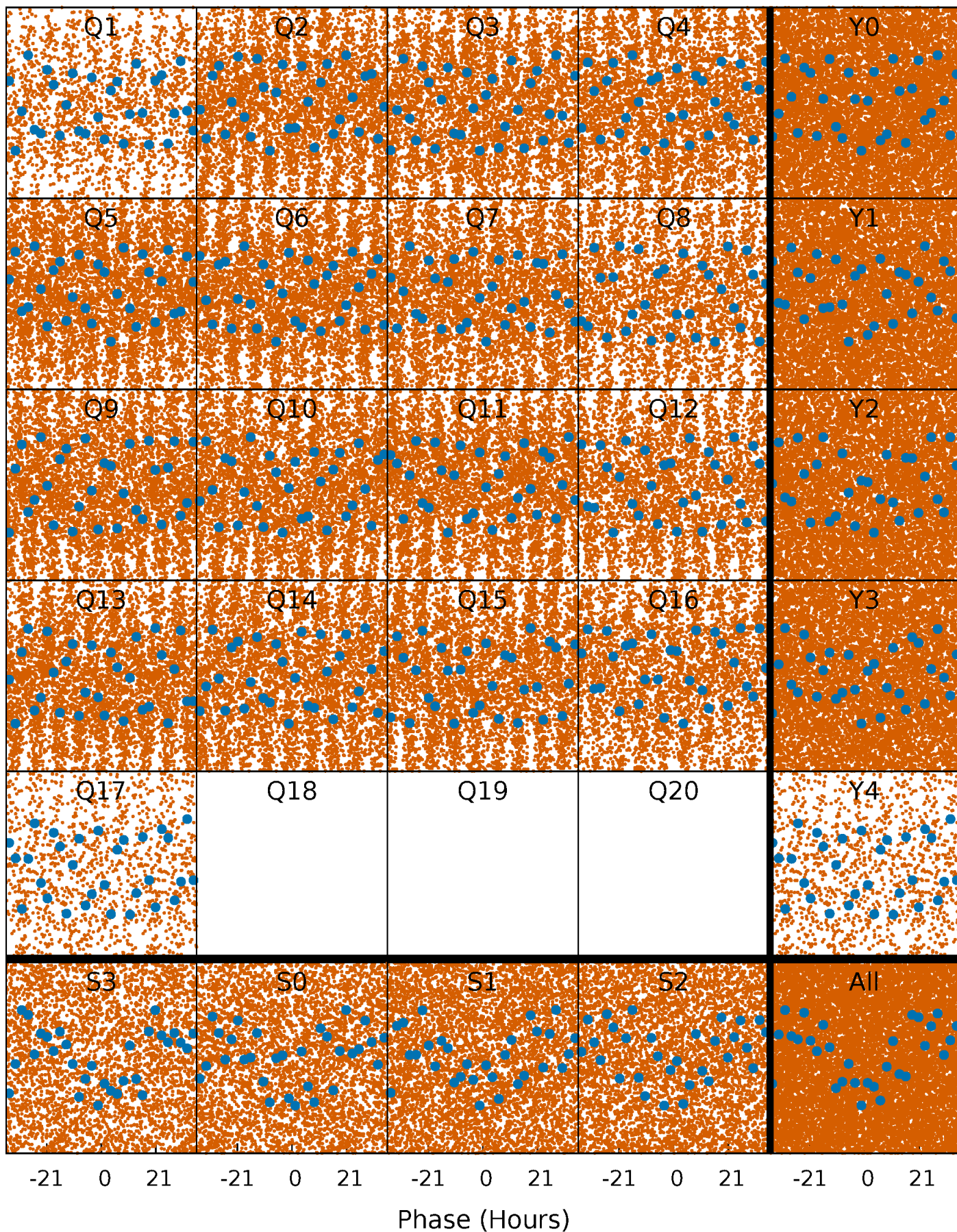


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



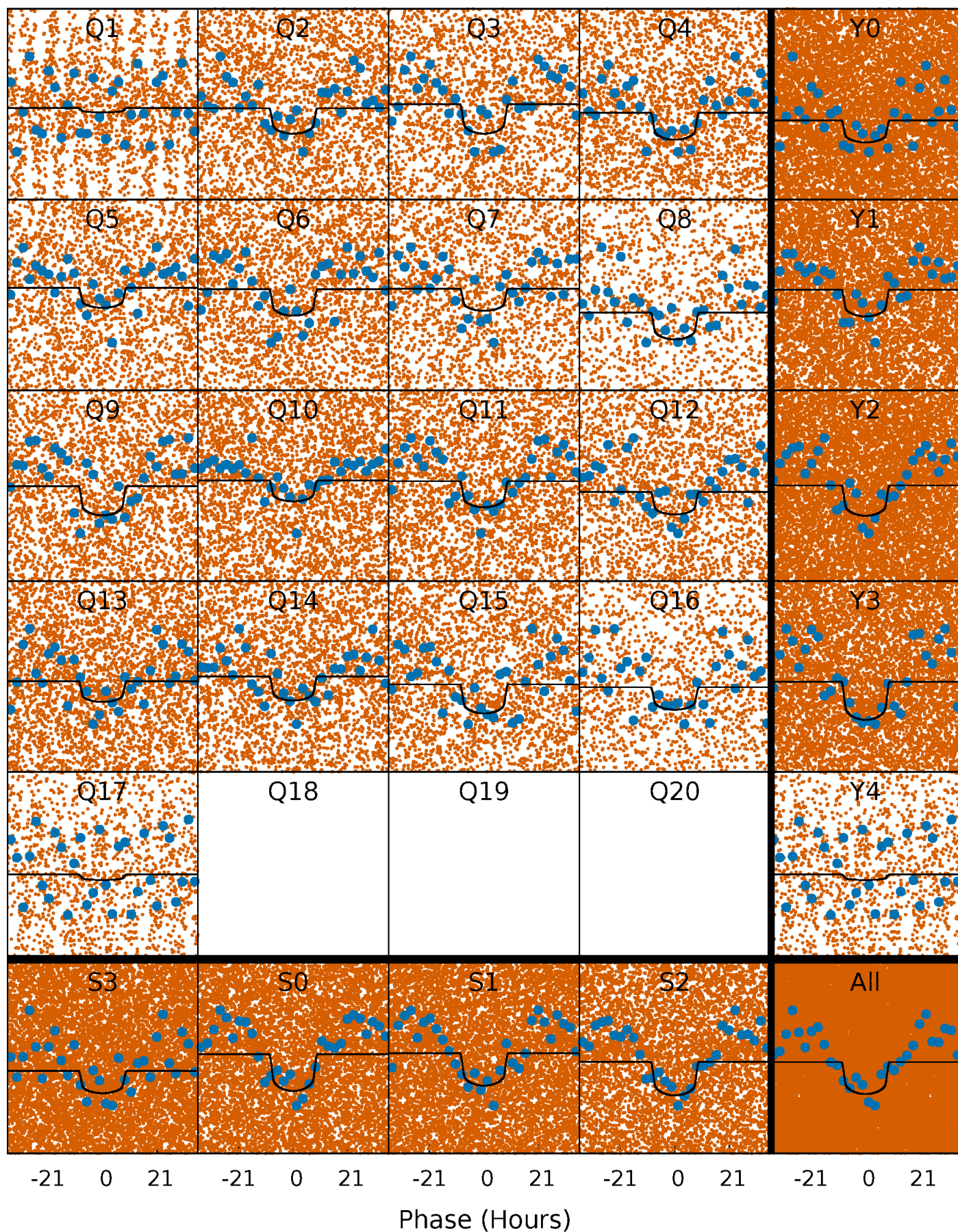
PDC Quarter-Phased Transit Curves

TCE 008123645-01 P= 2.102967 Days $T_0=132.347880$ (BKJD)



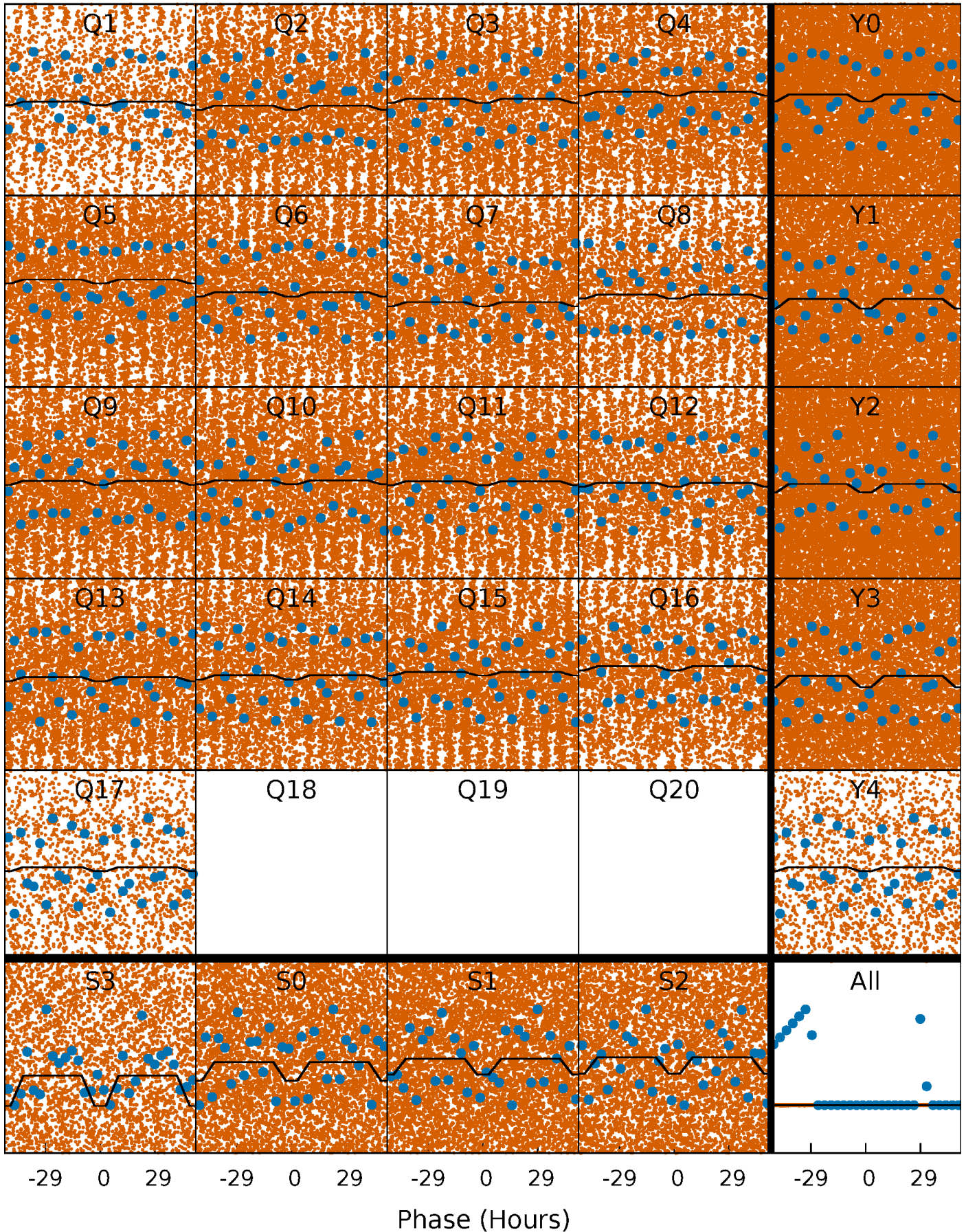
DV Quarter-Phased Transit Curves

TCE 008123645-01 P= 2.102967 Days $T_0=132.347880$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

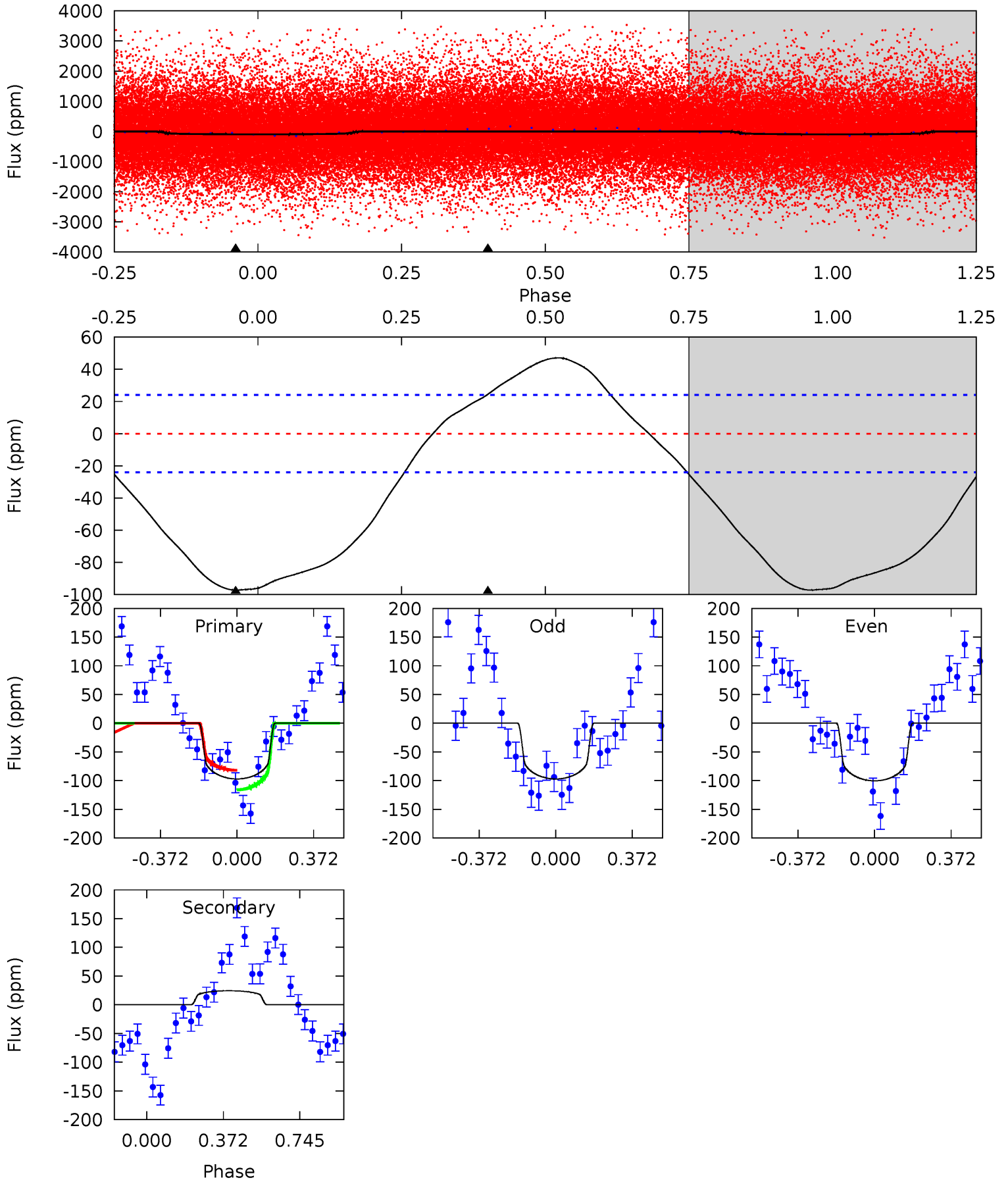
TCE 008123645-01 P= 2.102932 Days $T_0=132.302143$ (BKJD)



DV Model-Shift Uniqueness Test

008123645-01, P = 2.102967 Days, E = 130.244913 Days

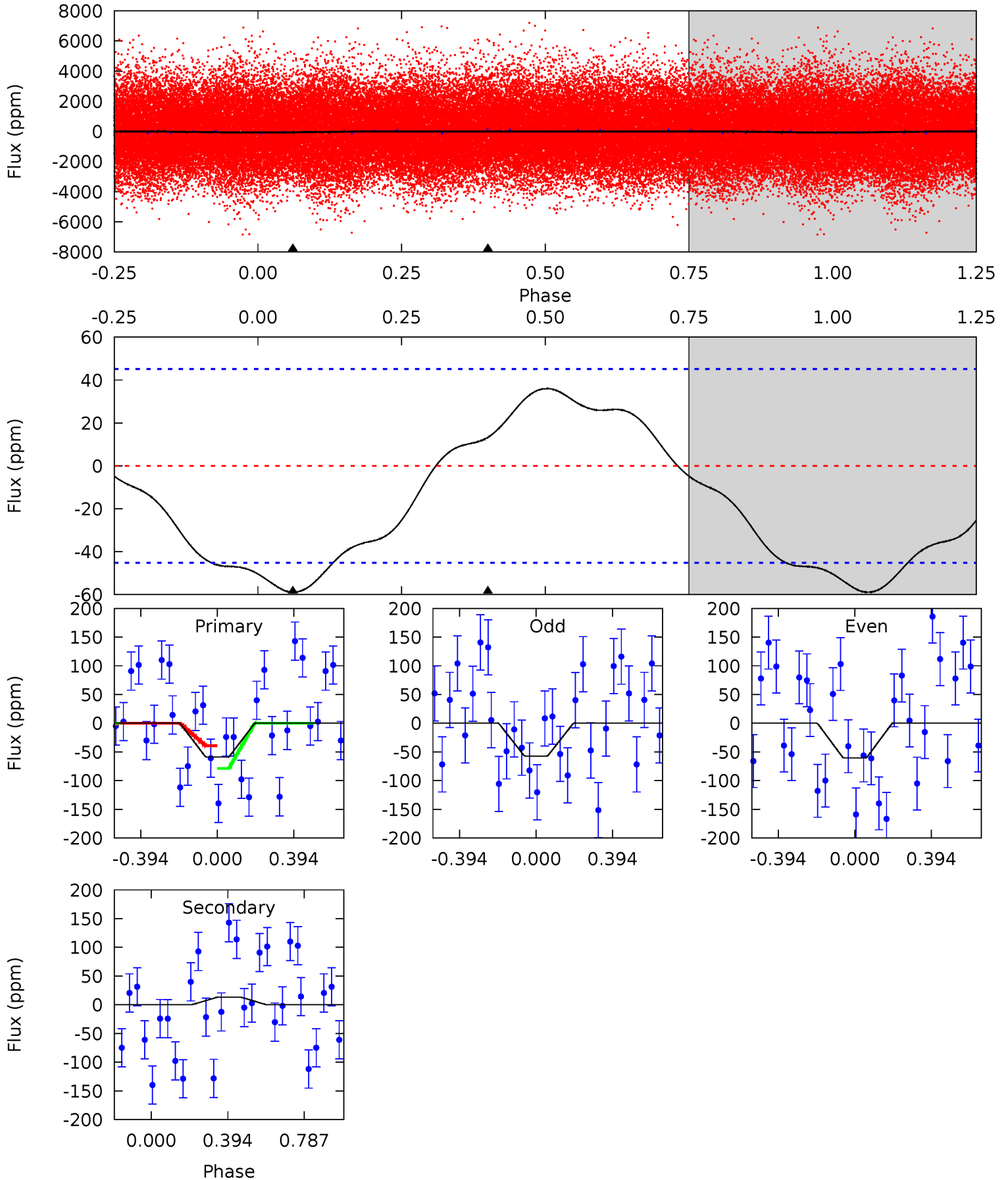
| Pri | Sec | Ter | Pos | FA ₁ | FA ₂ | F _{Red} | Pri-Ter | Pri-Pos | Sec-Ter | Sec-Pos | Odd-Evn | DMM | Shape | TAT |
|------|-------|-----|-----|-----------------|-----------------|------------------|---------|---------|---------|---------|---------|------|-------|------|
| 17.3 | -4.35 | 0 | 0 | 4.28 | 0.89 | 1.81 | 17.3 | 17.3 | -4.35 | -4.35 | 0.29 | 1.15 | 0.33 | 3.04 |



Alt Model-Shift Uniqueness Test

008123645-01, P = 2.102932 Days, E = 130.199211 Days

| Pri | Sec | Ter | Pos | FA ₁ | FA ₂ | F _{Red} | Pri-Ter | Pri-Pos | Sec-Ter | Sec-Pos | Odd-Evn | DMM | Shape | TAT |
|------|-------|-----|-----|-----------------|-----------------|------------------|---------|---------|---------|---------|---------|------|-------|------|
| 5.57 | -1.25 | 0 | 0 | 4.27 | 0.85 | 0.76 | 5.57 | 5.57 | -1.25 | -1.25 | 0.16 | 0.39 | 0.38 | 1.87 |



Stellar Parameters For KIC 008123645

| | $T_{\text{eff}}(K)$ | $\log(g)$ | [Fe/H] | $R (R_{\odot})$ | $M(M_{\odot})$ | $p_{\star} (\text{g}\cdot\text{cm}^{-3})$ |
|--------|----------------------|---------------------------|----------------------------|---------------------------|---------------------------|---|
| | 7132^{+200}_{-314} | $4.315^{+0.058}_{-0.232}$ | $-0.180^{+0.250}_{-0.350}$ | $1.324^{+0.499}_{-0.166}$ | $1.336^{+0.223}_{-0.183}$ | $0.811^{+0.268}_{-0.470}$ |
| | +3%/-4% | +1%/-5% | +139%/-194% | +38%/-13% | +17%/-14% | +33%/-58% |
| 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 008123645-01 / KOI

| Detrend | Depth (ppm) | $R_p (R_{\oplus})$ | $T_{max} (K)$ | $T_{obs} (K)$ | A_{obs} |
|---------|-------------|------------------------|----------------------|------------------------|----------------------------|
| DV | 24 ± 6 | $1.63^{+0.32}_{-0.18}$ | 2750^{+225}_{-158} | -4893^{+287}_{-303} | $-5.952^{+1.985}_{-2.345}$ |
| Alt. | 13 ± 11 | $1.33^{+0.25}_{-0.16}$ | 2752^{+232}_{-151} | -4733^{+1074}_{-670} | $-4.930^{+4.045}_{-4.506}$ |

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 $A_{obs} \gg 1.0$

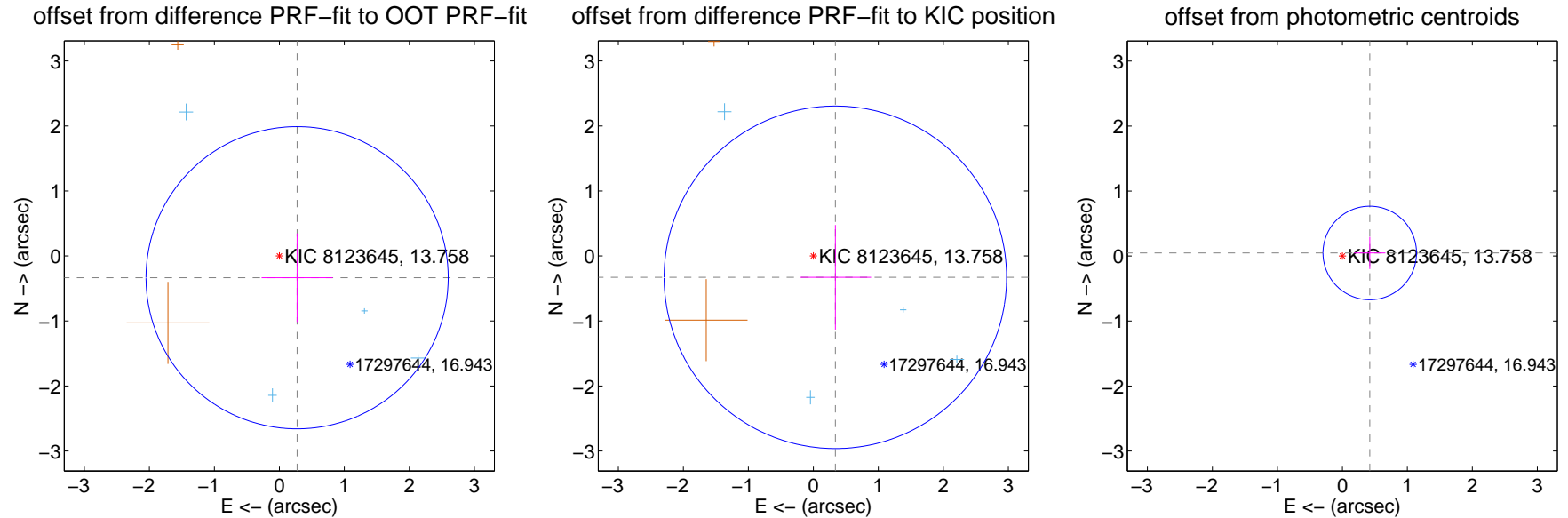
DV Centroid Data

Supplemental centroid analysis for 008123645-01. Kepler magnitude: 13.76. Transit SNR 13.18

There are 4 quarters with good PRF difference image offsets

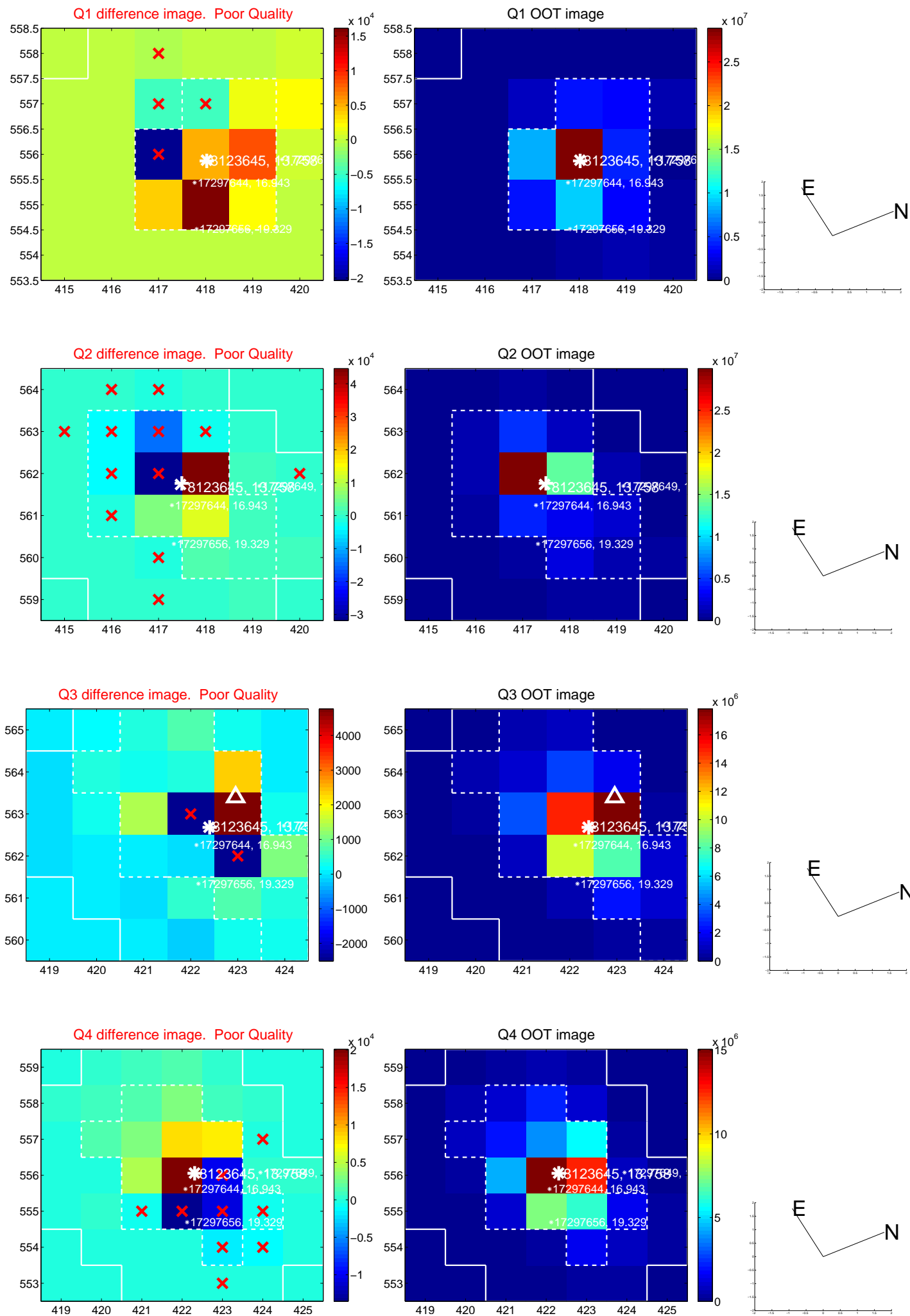
The direct PRF centroid is offset from the target star catalog position by about 0.07 arcsec

| | Distance in arcsec | Distance / σ | Δ RA | Δ Dec |
|---|--------------------|---------------------|--------------------|--------------------|
| PRF-fit source offset from OOT | 0.432 ± 0.775 | 0.56 | -0.273 ± 0.546 | -0.335 ± 0.681 |
| PRF-fit source offset from KIC position | 0.471 ± 0.878 | 0.54 | -0.338 ± 0.549 | -0.328 ± 0.805 |
| photometric centroid source offset | 0.42 ± 0.24 | 1.77 | -0.42 ± 0.24 | 0.05 ± 0.25 |

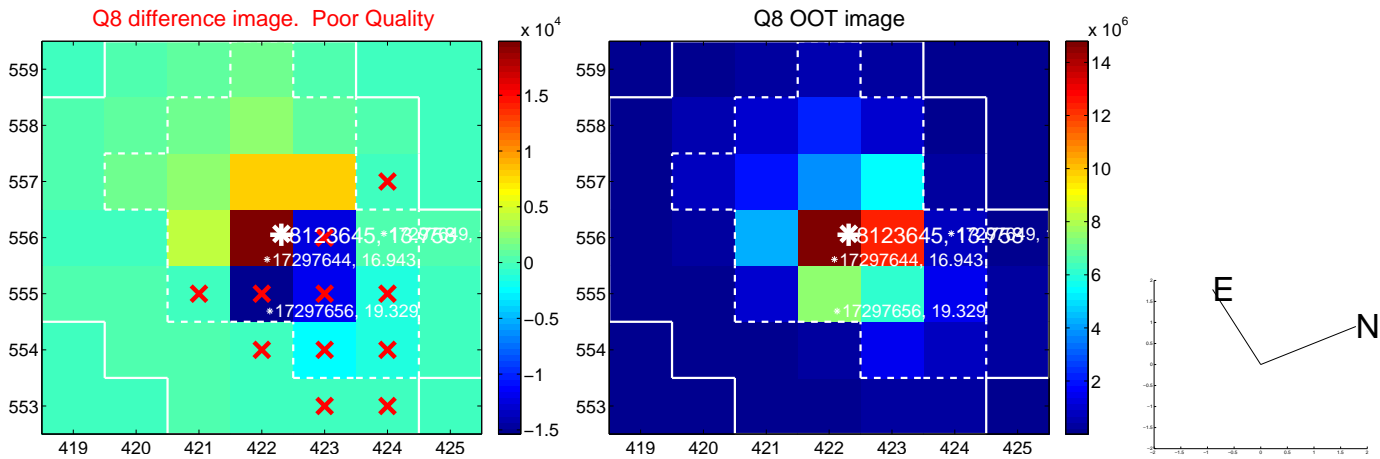
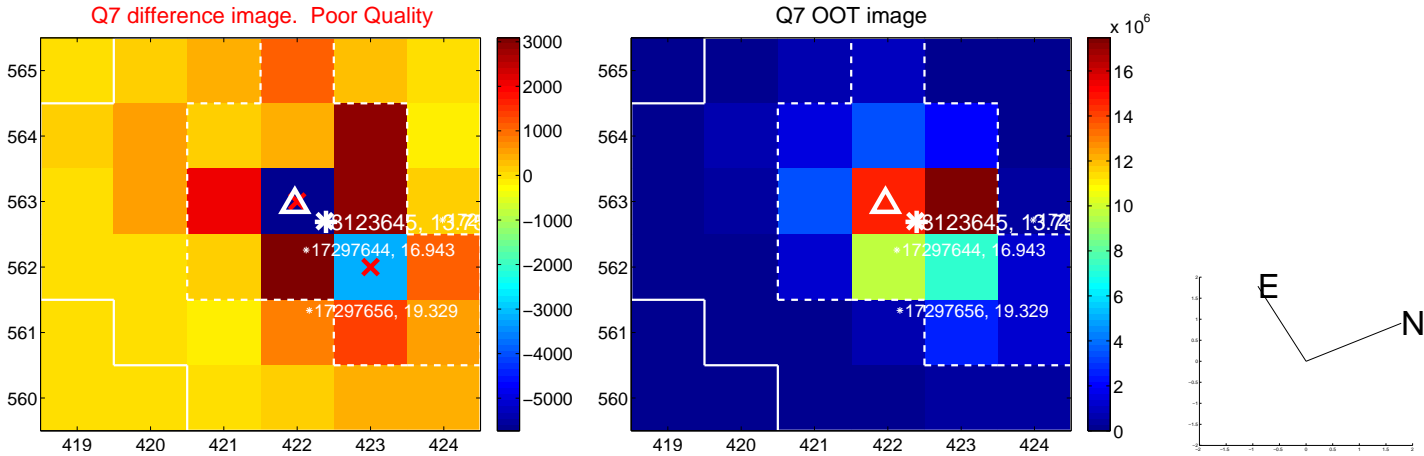
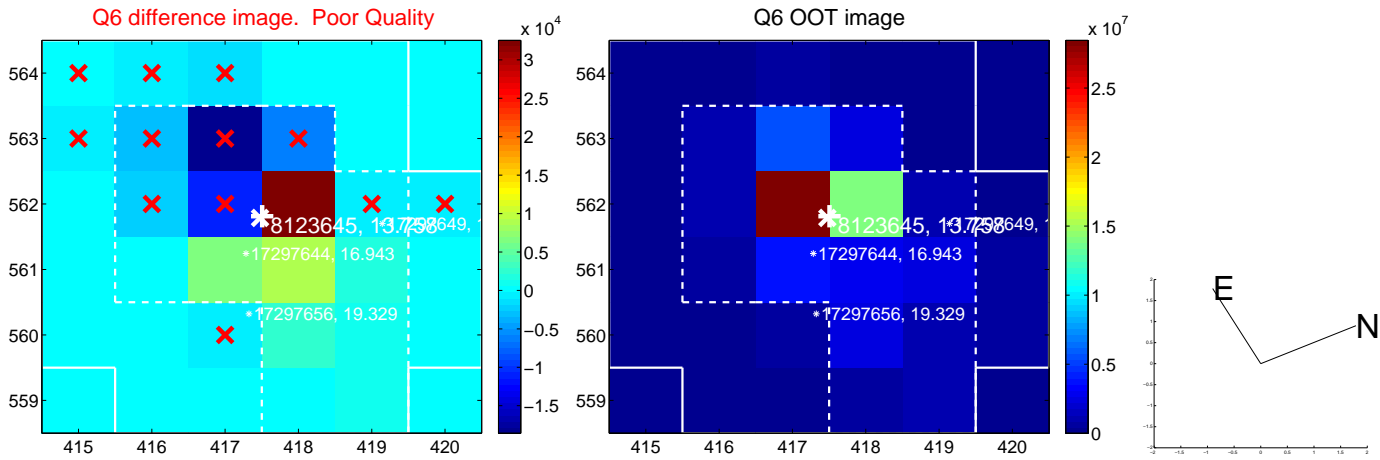
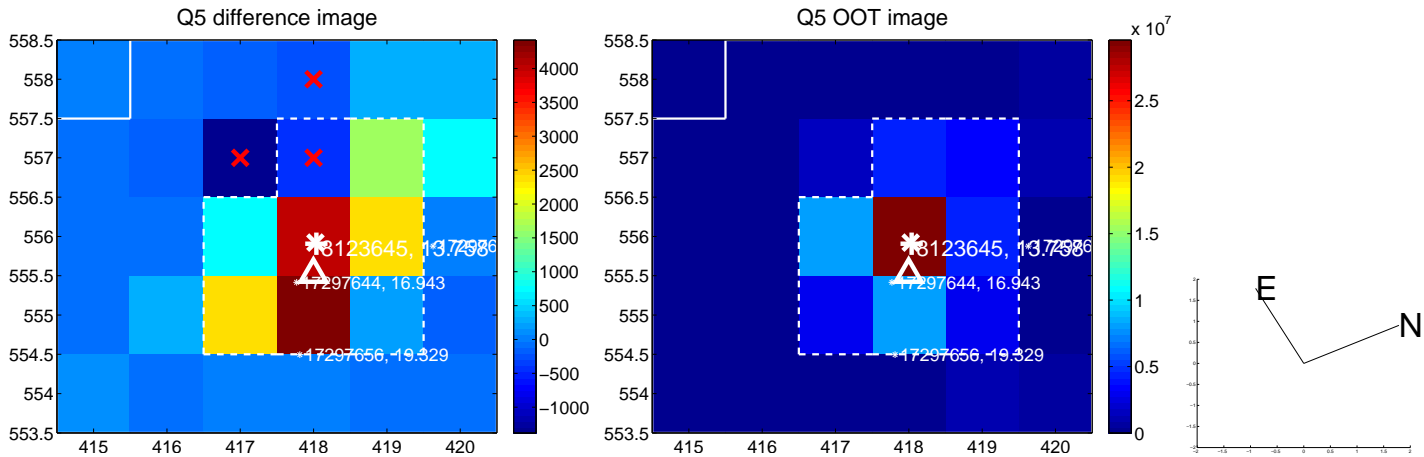


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

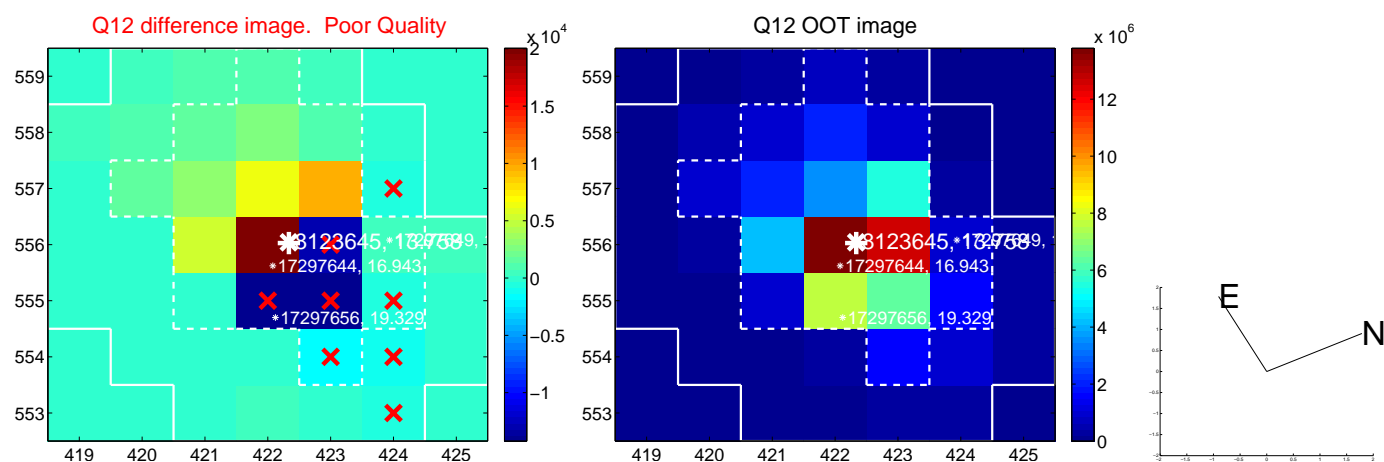
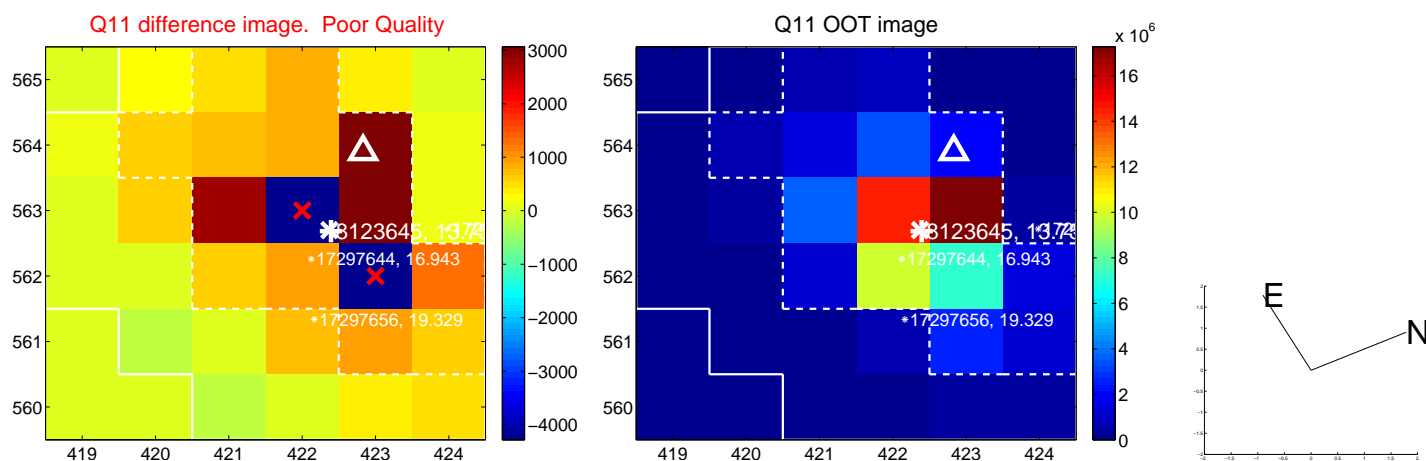
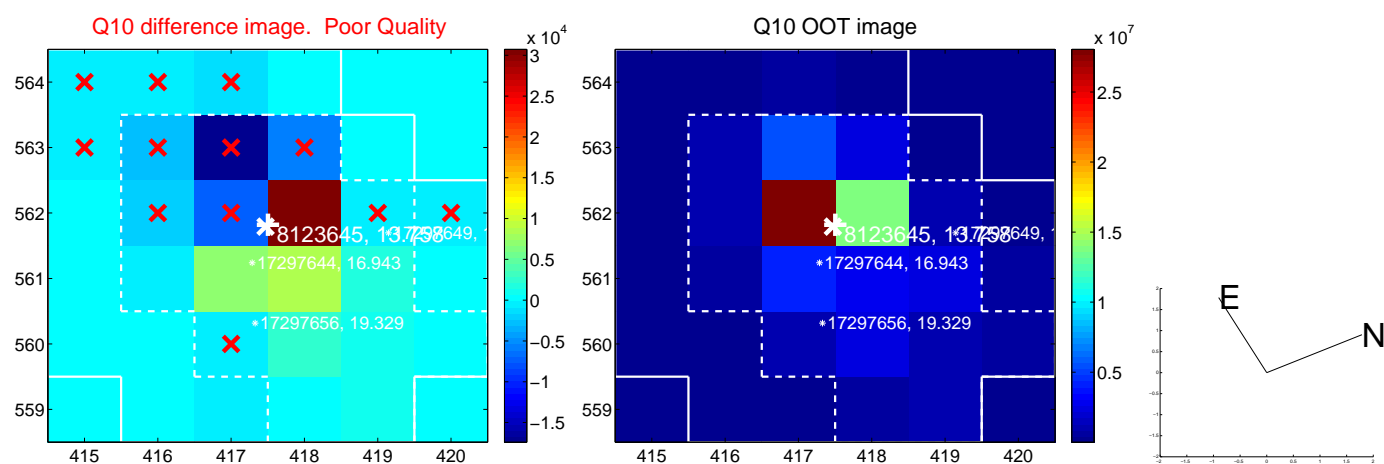
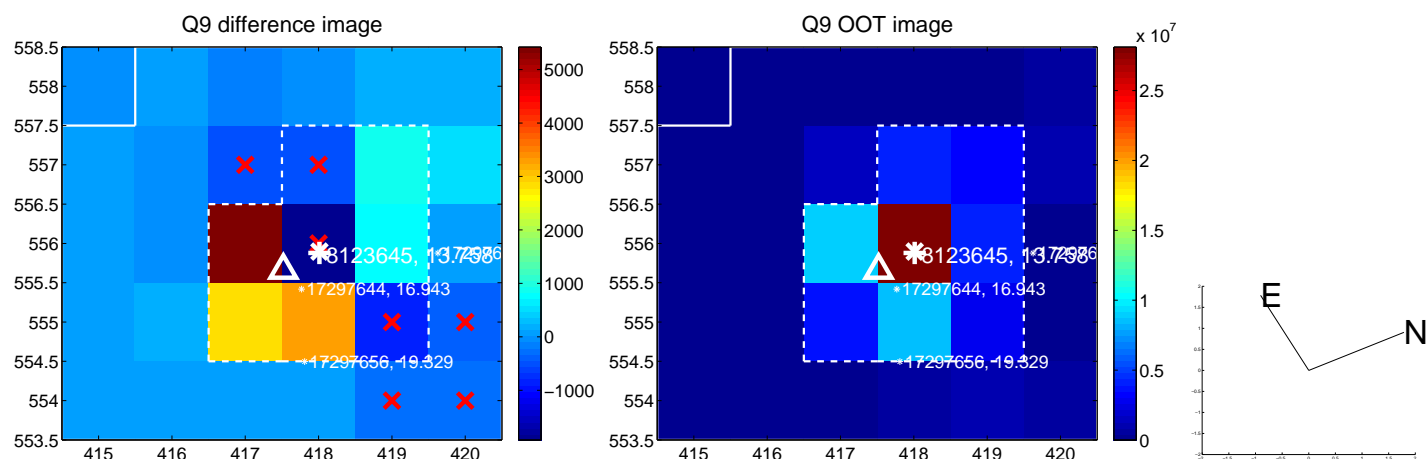
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



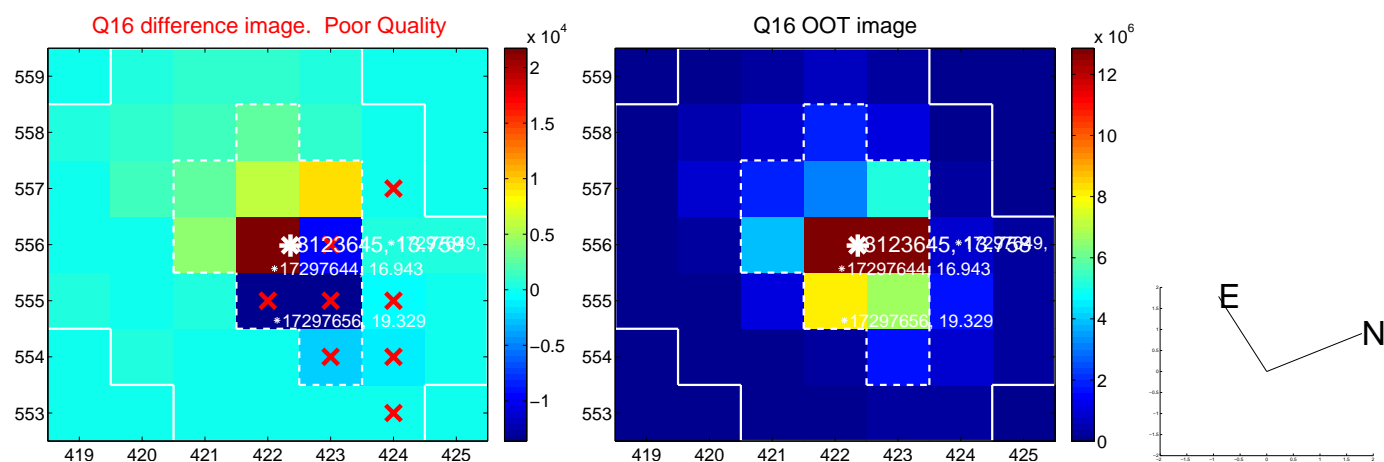
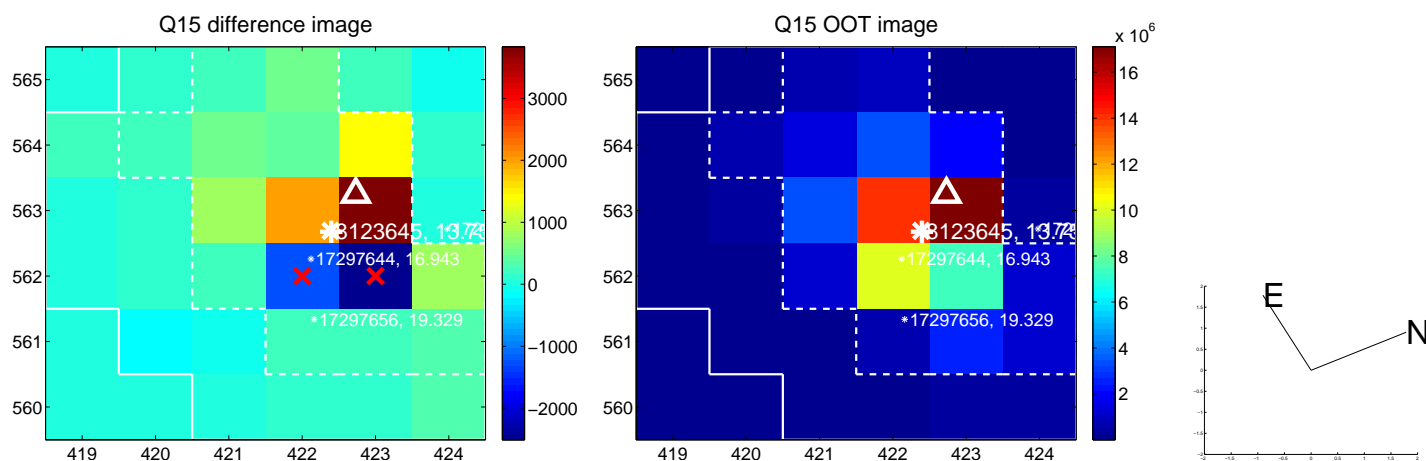
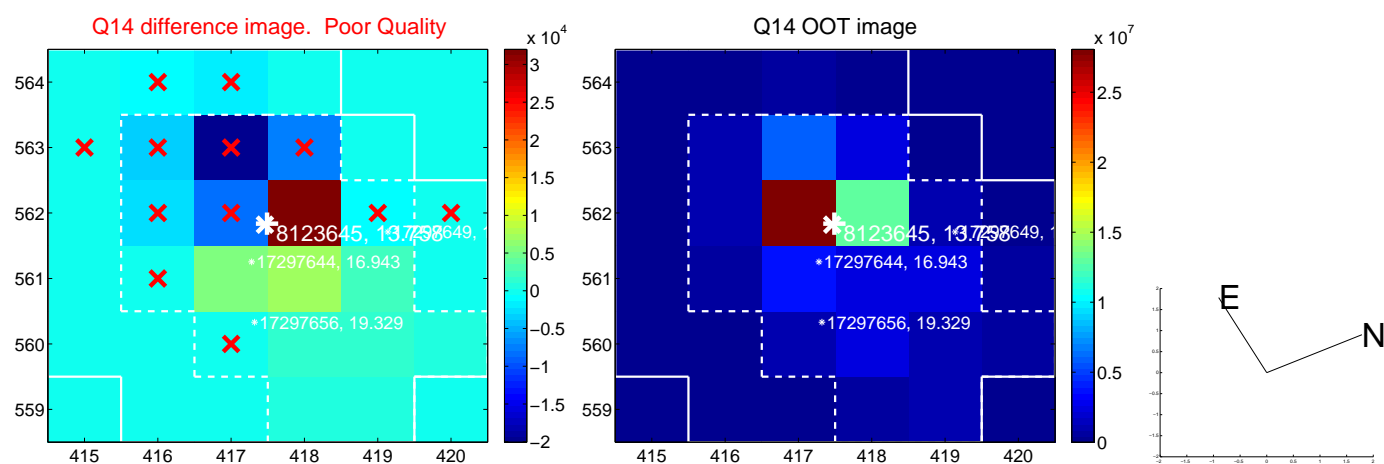
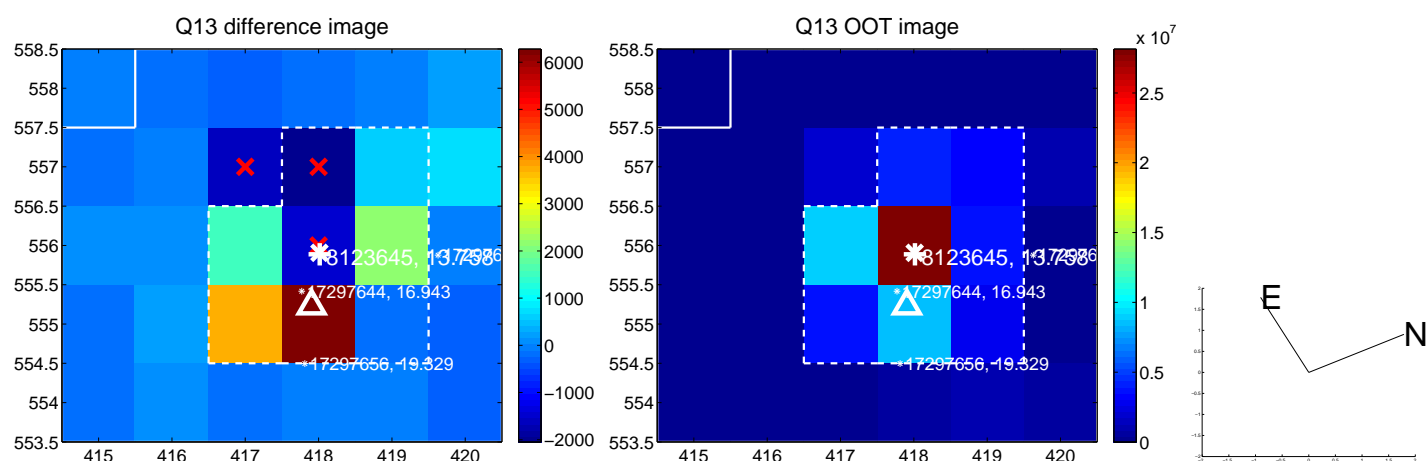
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



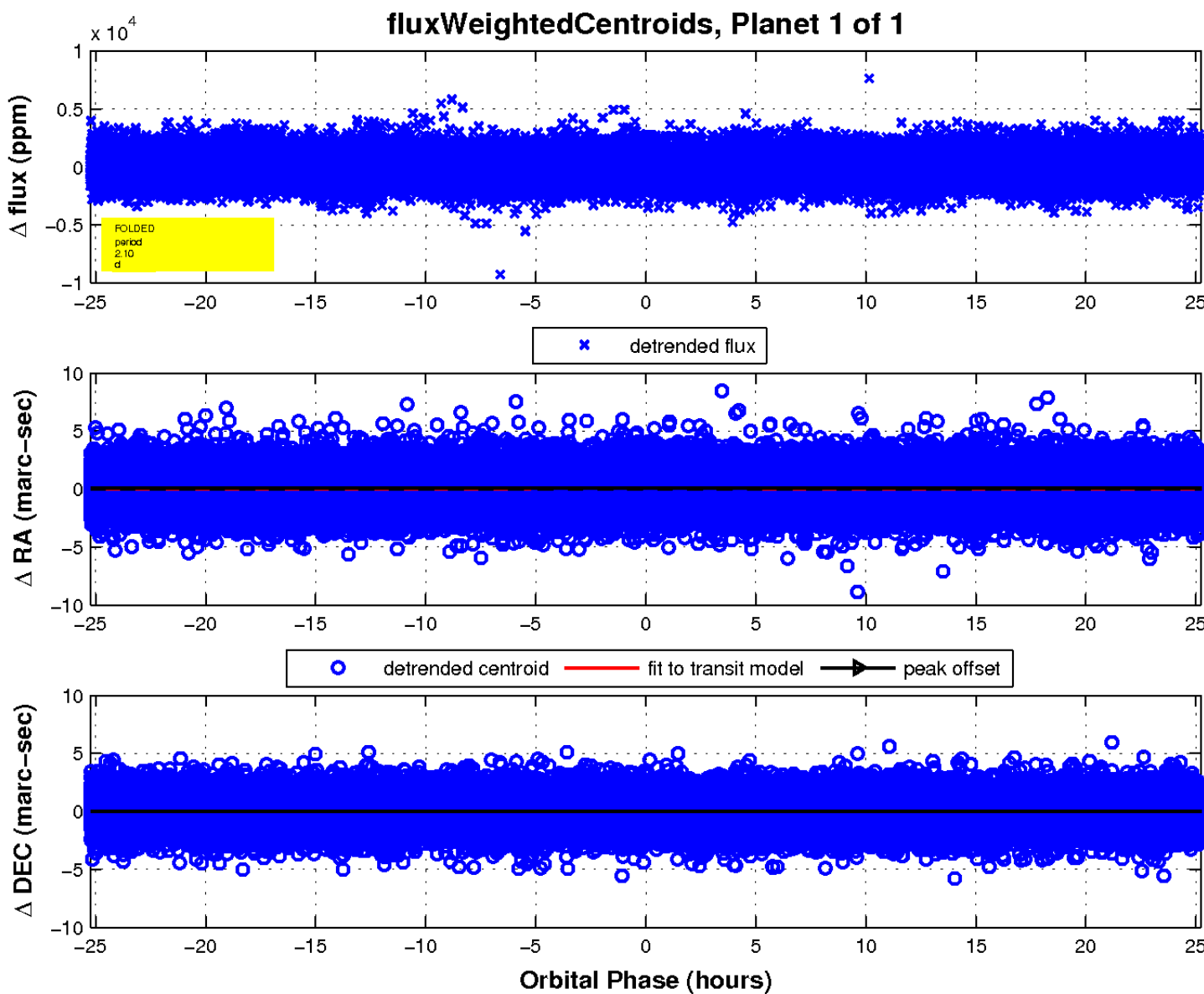
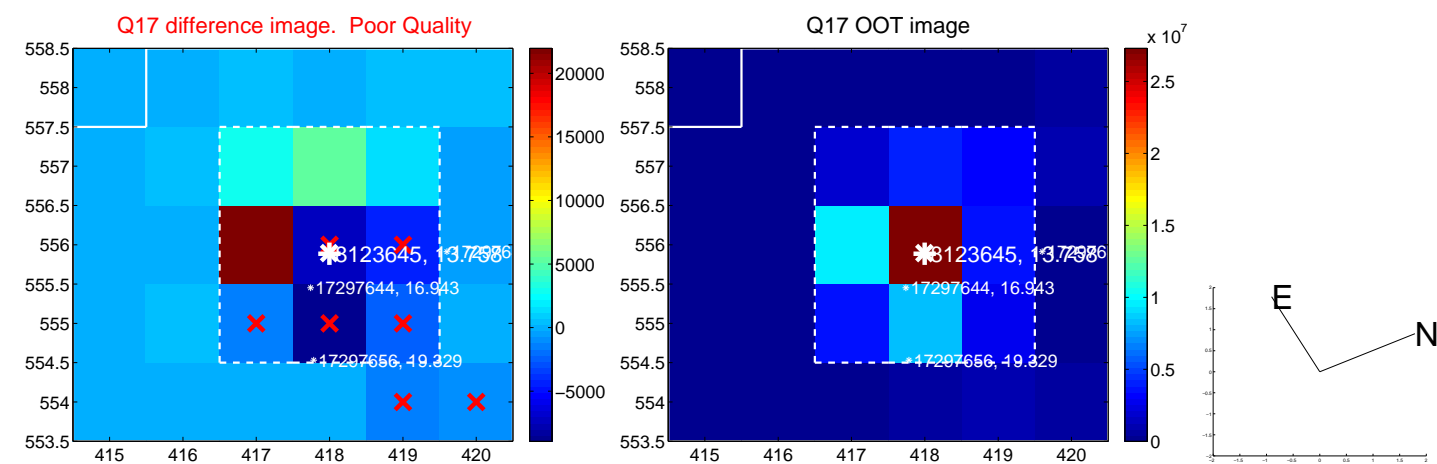
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



UKIRT Image

Declination

