

KIC 010686752

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}) |
|--------------|----------|------|---------------|--------------|-------------|------------------|------|-----|-----------------------------|-----------------|------------------------|------------------------|
| 010686752-01 | OBS | No | 0.656806 | 131.675195 | 10.8 | 3.546 | 11.1 | 9.1 | 2.39 | 7495 | 0.84 | 50684.50 |

Robovetter Results

| TCE | Run Type | Disp | Score | N | S | C | E | Comments |
|--------------|----------|------|-------|---|---|---|---|---|
| 010686752-01 | OBS | FP | 0.00 | 1 | 0 | 0 | 0 | LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—CENT_SATURATED |

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

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

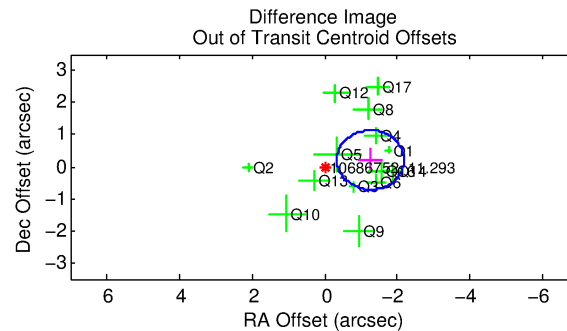
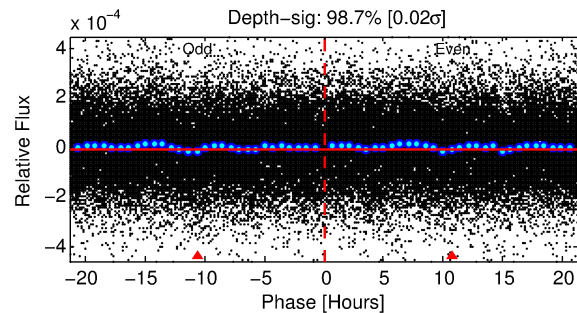
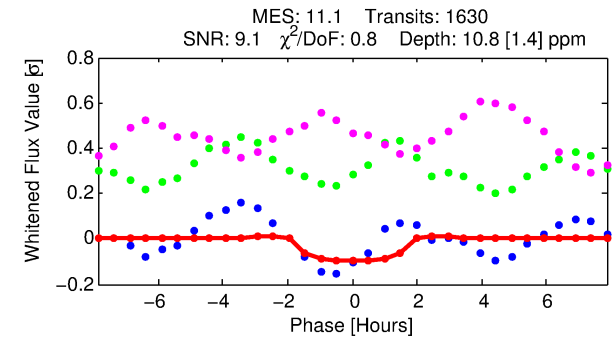
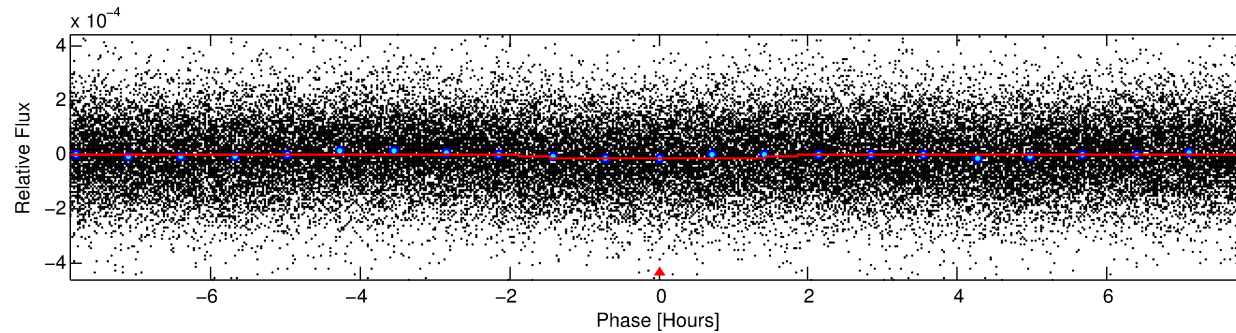
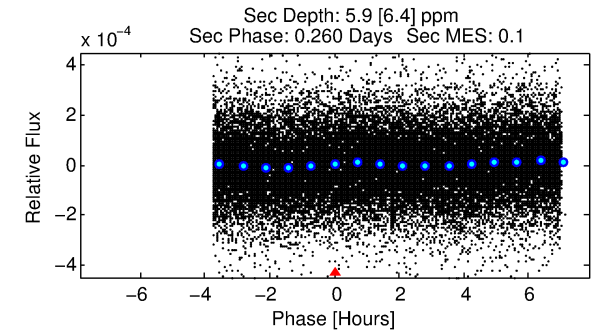
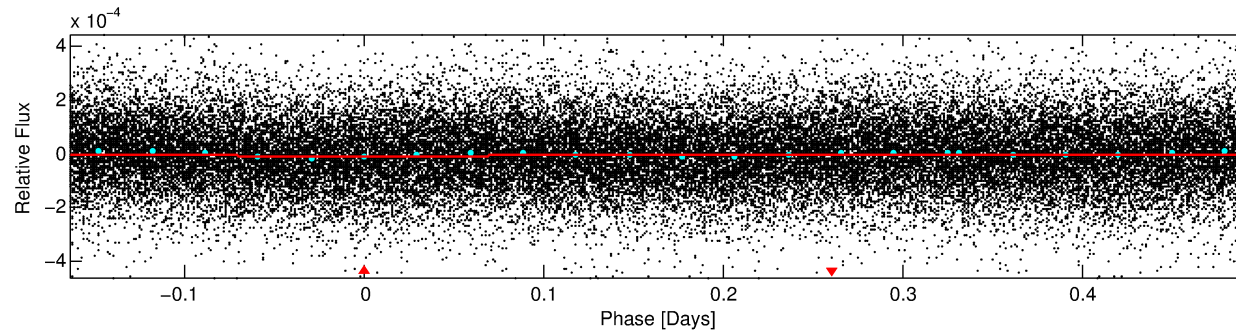
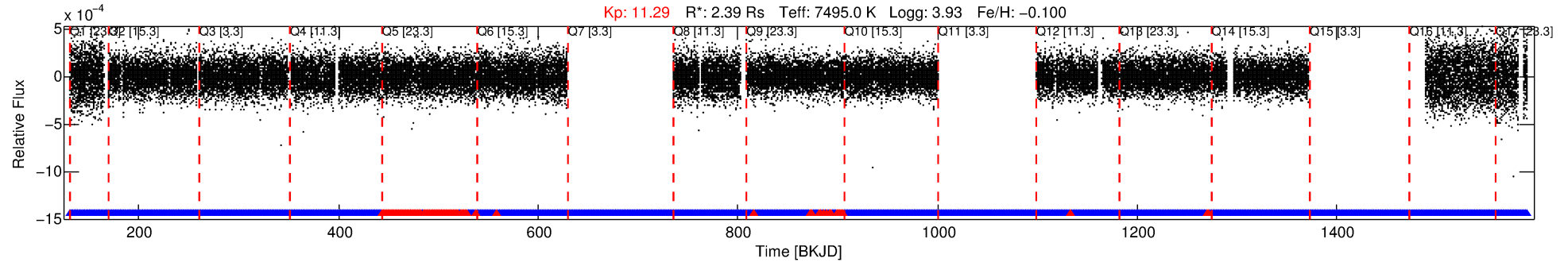
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 010686752-01

No Significant Match Found

DV One-Page Summary

KIC: 10686752 Candidate: 1 of 1 Period: 0.657 d



DV Fit Results:

Period = 0.65681 [0.00001] d
Epoch = 131.6752 [0.0044] BKJD
Rp/R* = 0.0032 [0.0008]
a/R* = 1.31 [0.85]
b = 0.70 [1.14]
Seff = 50684.50 [26434.54]
Teq = 3826 [499] K
Rp = 0.84 [0.35] Re
a = 0.0178 [0.0056] AU
Ag = 1.46 [1.89] [0.24σ]
Teffp = 6497 [1971] K [1.31σ]

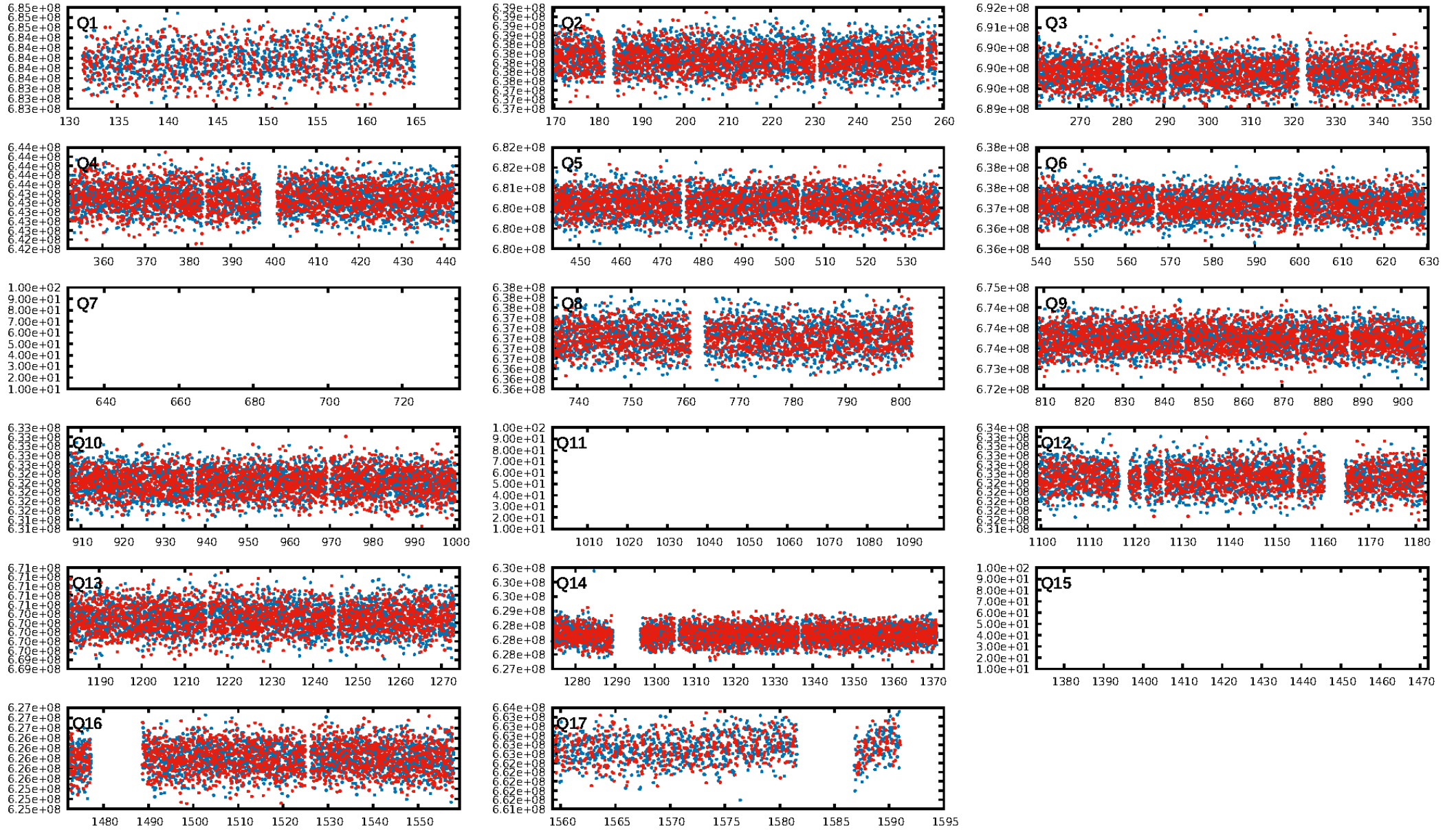
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 9.78e-21
RollingBand-fgt: 0.92 [1412/1539]
GhostDiagnostic-chr: 2.625
Centroid-sig: 84.0%
Centroid-so: 0.564 arcsec [0.67σ]
OotOffset-rm: 1.272 arcsec [4.12σ]
KicOffset-rm: 1.273 arcsec [3.95σ]
OotOffset-st: 4/1/4/5 [14]
KicOffset-st: 4/1/4/5 [14]
DiffImageQuality-fgm: 0.64 [9/14]
DiffImageOverlap-fno: 1.00 [14/14]

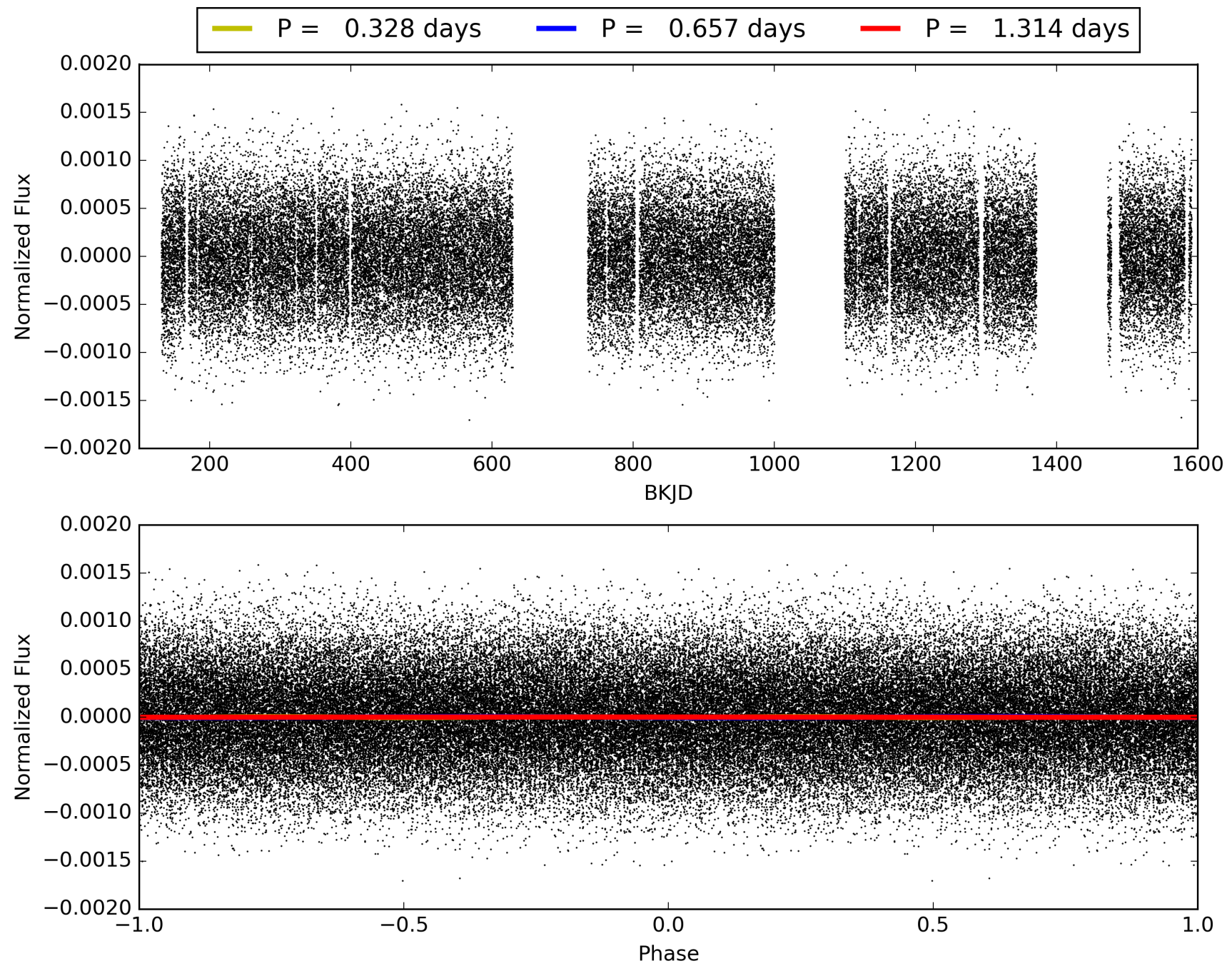
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 07:43:49 Z

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

TCE 010686752-01, PDC Light Curves

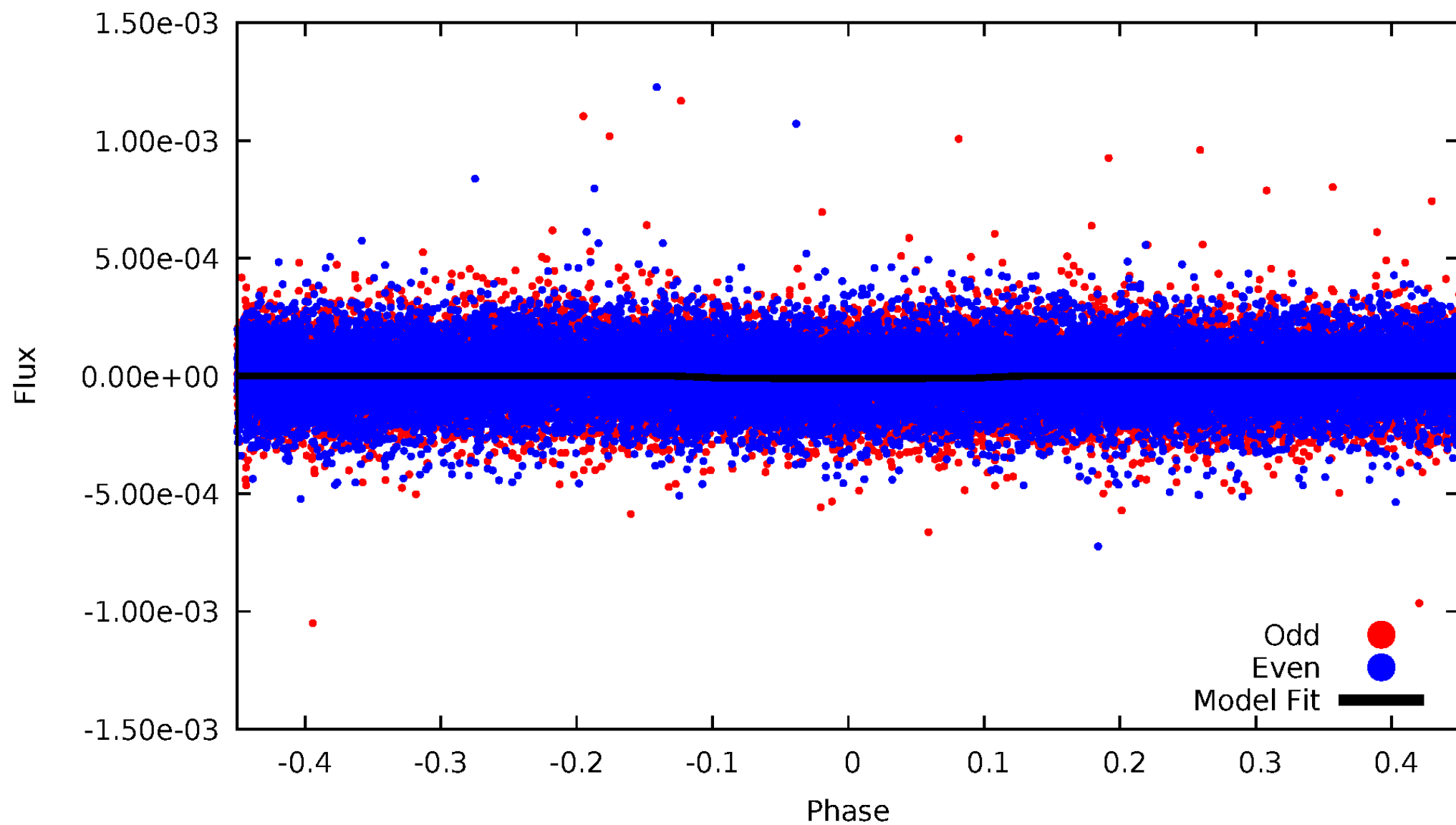


TCE 010686752-01



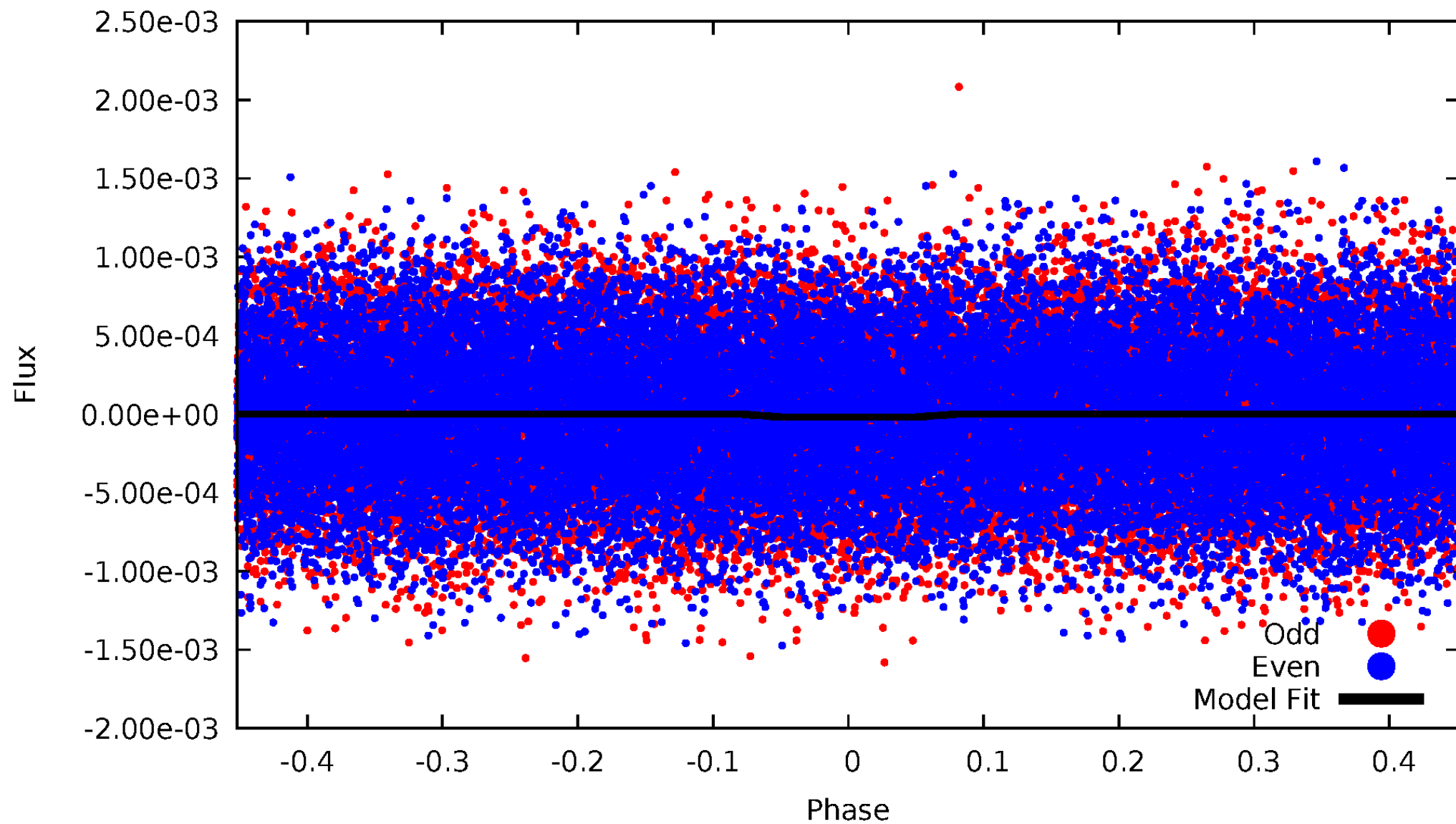
DV Odd/Even

TCE 010686752-01



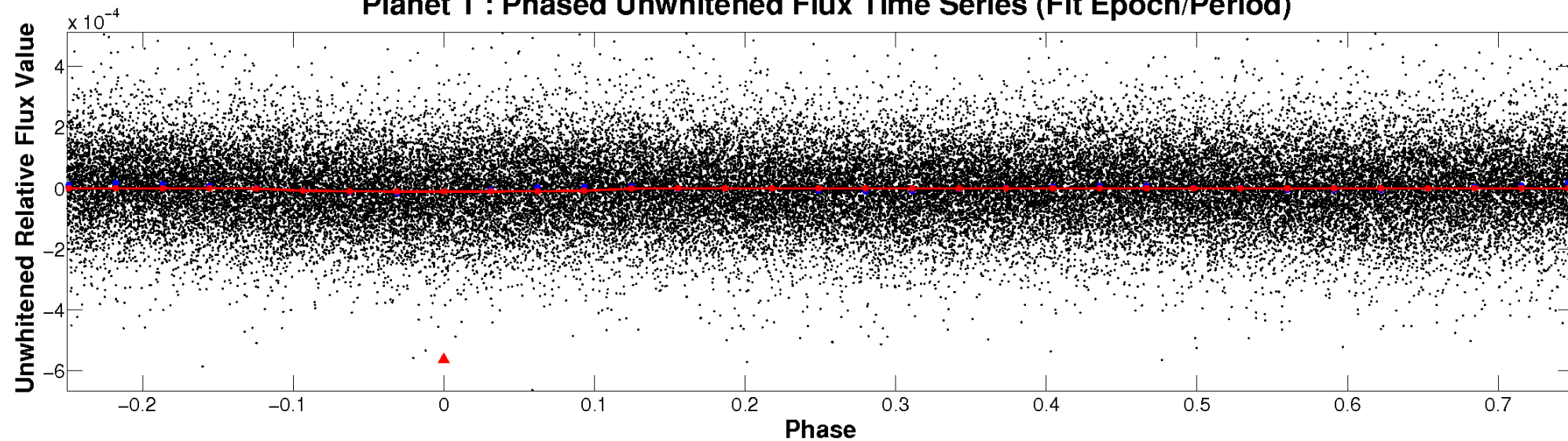
ALT Odd/Even

TCE 010686752-01

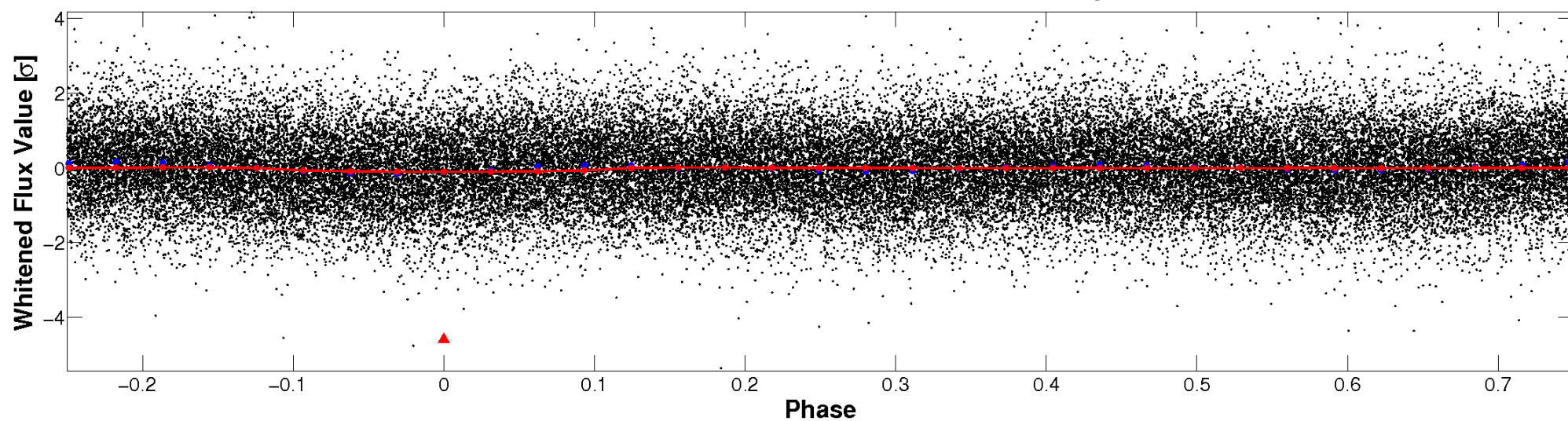


Non-Whitened Vs. Whitened Light Curve

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

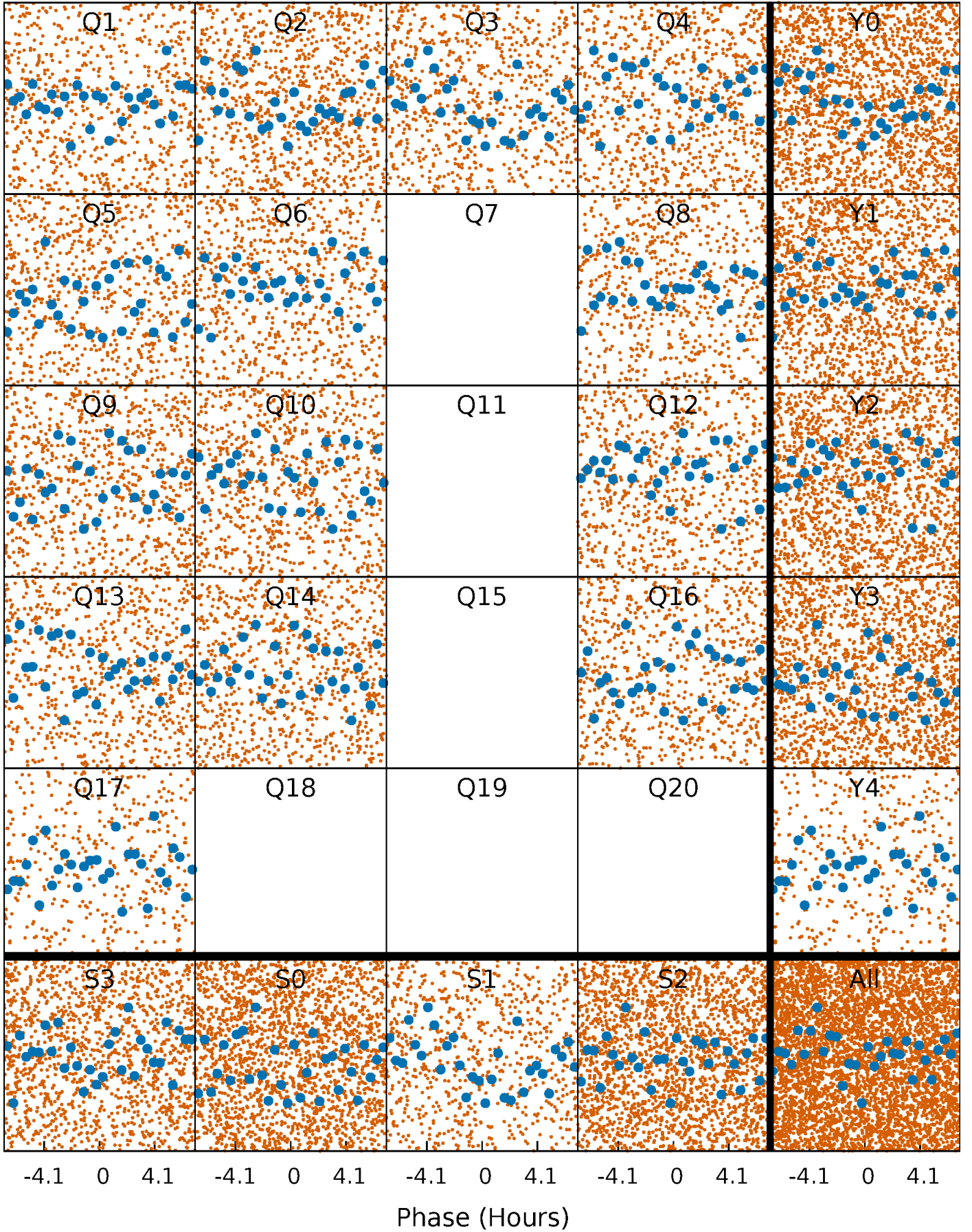


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



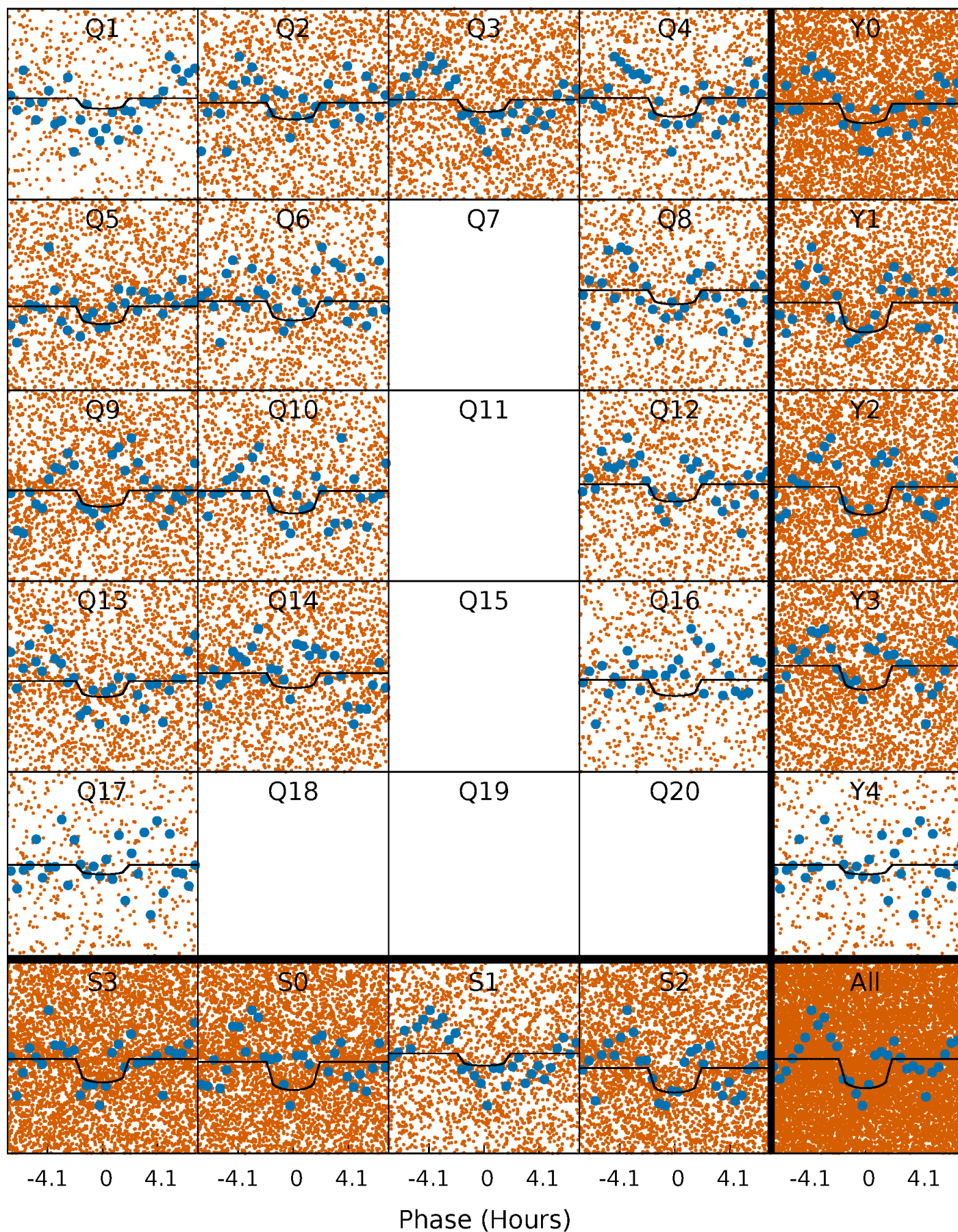
PDC Quarter-Phased Transit Curves

TCE 010686752-01 P= 0.656806 Days $T_0=131.675196$ (BKJD)



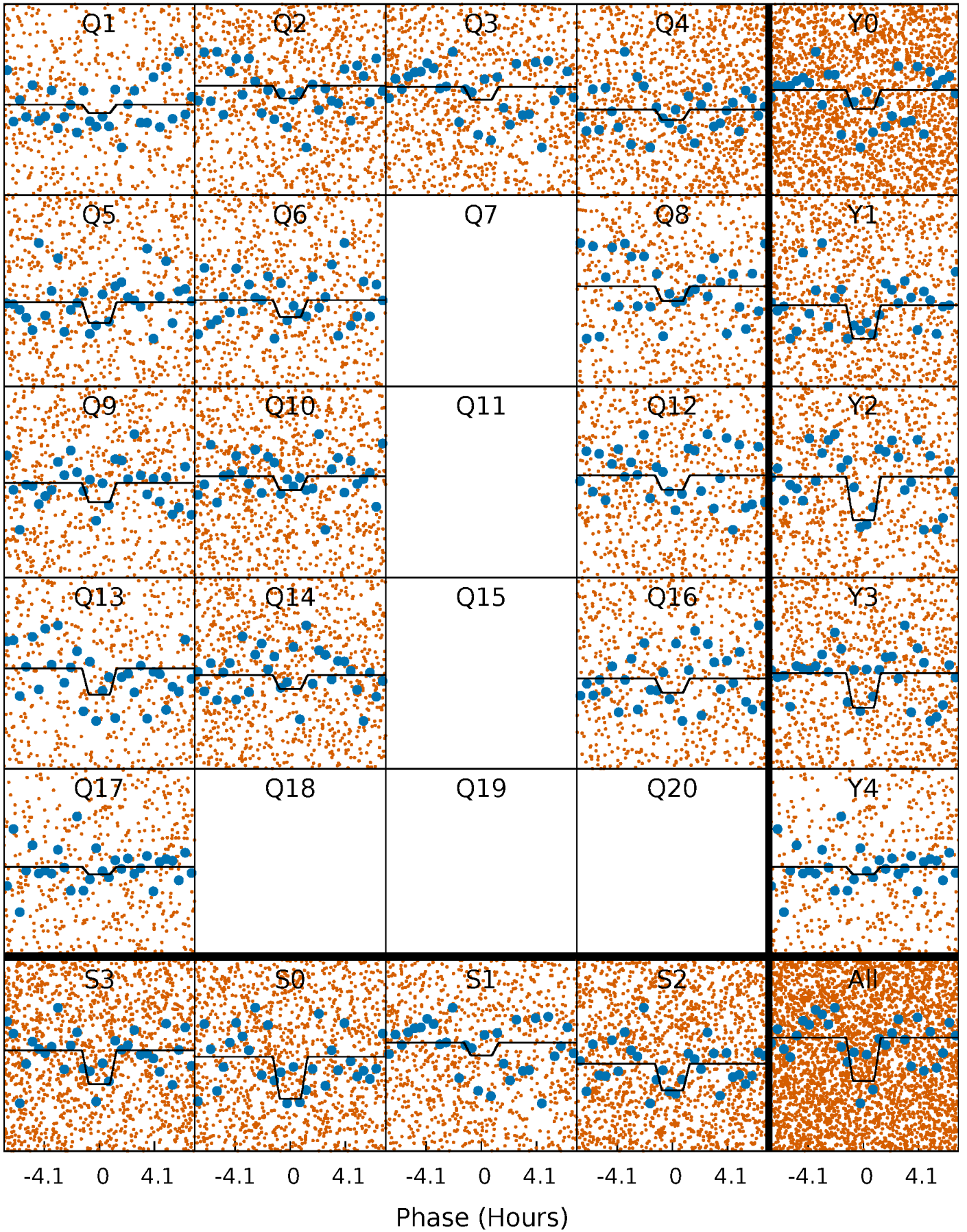
DV Quarter-Phased Transit Curves

TCE 010686752-01 P= 0.656806 Days $T_0=131.675196$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

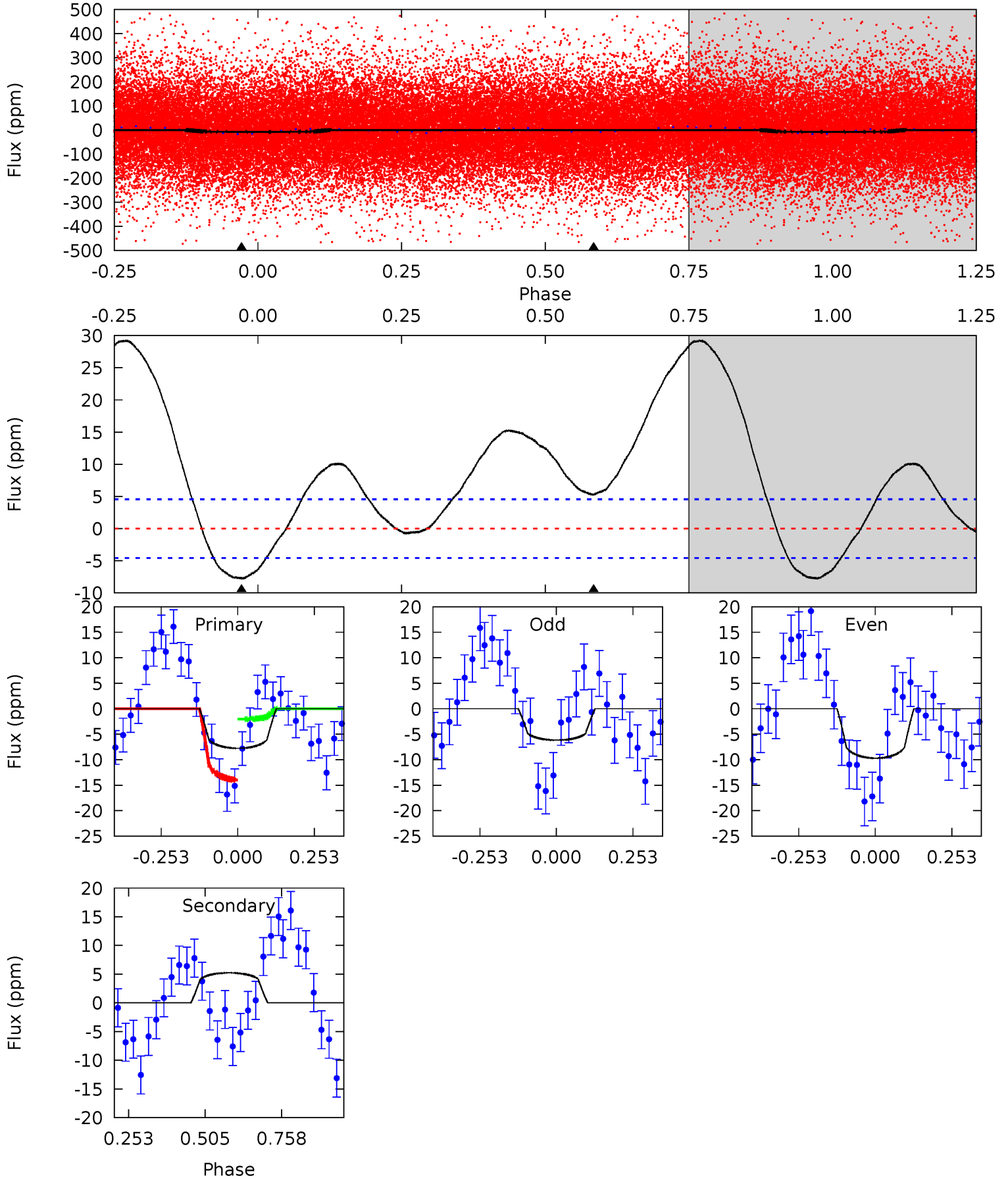
TCE 010686752-01 P= 0.656781 Days $T_0=131.681325$ (BKJD)



DV Model-Shift Uniqueness Test

010686752-01, P = 0.656806 Days, E = 131.018390 Days

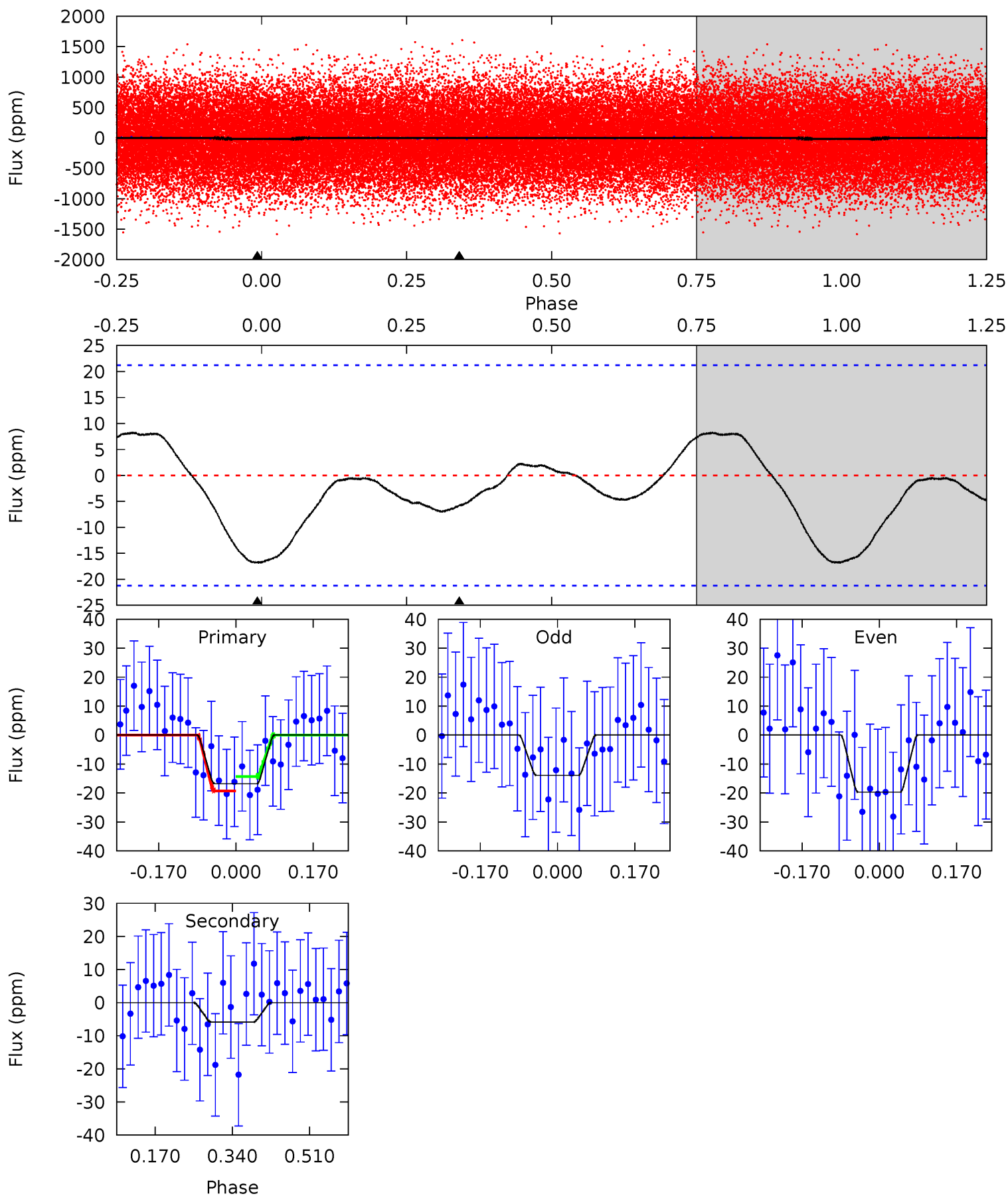
| Pri | Sec | Ter | Pos | FA ₁ | FA ₂ | F _{Red} | Pri-Ter | Pri-Pos | Sec-Ter | Sec-Pos | Odd-Evn | DMM | Shape | TAT |
|------|-------|-----|-----|-----------------|-----------------|------------------|---------|---------|---------|---------|---------|------|-------|------|
| 7.42 | -5.01 | 0 | 0 | 4.37 | 1.14 | 1.16 | 7.42 | 7.42 | -5.01 | -5.01 | 1.70 | 0.94 | 0.79 | 5.59 |



Alt Model-Shift Uniqueness Test

010686752-01, P = 0.656781 Days, E = 131.024544 Days

| Pri | Sec | Ter | Pos | FA ₁ | FA ₂ | F _{Red} | Pri-Ter | Pri-Pos | Sec-Ter | Sec-Pos | Odd-Evn | DMM | Shape | TAT |
|------|------|-----|-----|-----------------|-----------------|------------------|---------|---------|---------|---------|---------|------|-------|------|
| 3.53 | 1.23 | 0 | 0 | 4.45 | 1.37 | 0.98 | 3.53 | 3.53 | 1.23 | 1.23 | 0.60 | 1.06 | 0.33 | 0.51 |



Stellar Parameters For KIC 010686752

| | $T_{\text{eff}} (K)$ | $\log(g)$ | $[\text{Fe}/\text{H}]$ | $R (R_{\odot})$ | $M (M_{\odot})$ | $\rho_{\star} (\text{g}\cdot\text{cm}^{-3})$ |
|--------|----------------------|---------------------------|----------------------------|---------------------------|---------------------------|--|
| | 7495^{+235}_{-314} | $3.926^{+0.287}_{-0.123}$ | $-0.100^{+0.200}_{-0.350}$ | $2.389^{+0.533}_{-0.800}$ | $1.754^{+0.167}_{-0.391}$ | $0.181^{+0.357}_{-0.068}$ |
| | +3%/-4% | +7%/-3% | +200%/-350% | +22%/-33% | +10%/-22% | +197%/-38% |
| 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 010686752-01 / KOI

| Detrend | Depth (ppm) | $R_p (R_{\oplus})$ | $T_{\text{max}} (K)$ | $T_{\text{obs}} (K)$ | A_{obs} |
|---------|-------------|------------------------|----------------------|------------------------|----------------------------|
| DV | 5 ± 1 | $0.80^{+0.26}_{-0.23}$ | 5249^{+385}_{-414} | -6521^{+629}_{-1092} | $-1.428^{+0.660}_{-1.373}$ |
| Alt. | -6 ± 5 | $1.07^{+0.29}_{-0.25}$ | 5253^{+357}_{-491} | 4957^{+1258}_{-8736} | $0.835^{+1.031}_{-0.662}$ |

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

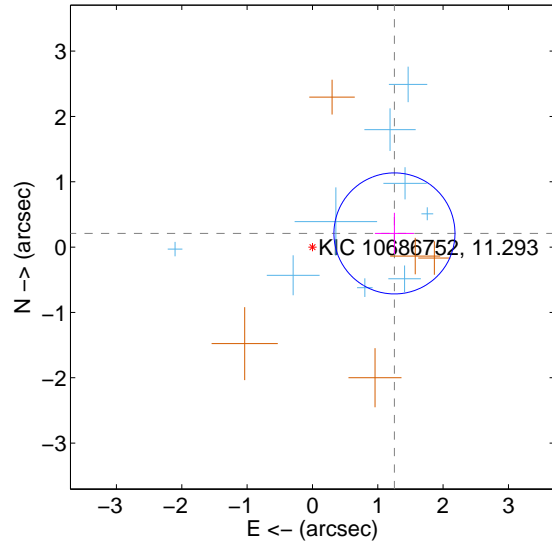
Supplemental centroid analysis for 010686752-01. **Kepler magnitude: 11.29.** Transit SNR 9.14

There are 9 quarters with good PRF difference image offsets

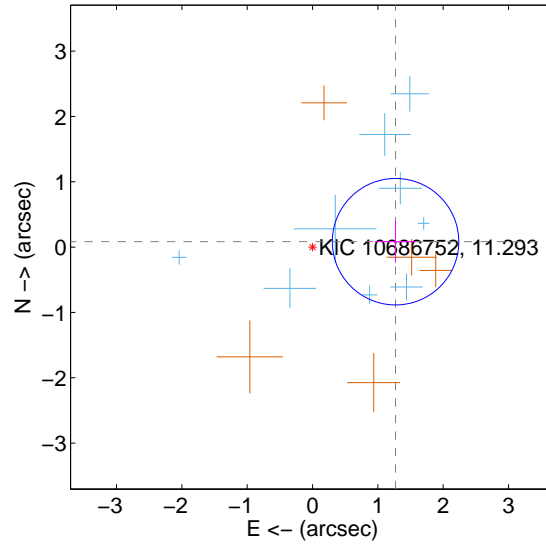
The direct PRF centroid is offset from the target star catalog position by about 0.15 arcsec

| | Distance in arcsec | Distance / σ | Δ RA | Δ Dec |
|---|-------------------------------------|---------------------|--------------------|-------------------|
| PRF-fit source offset from OOT | 1.272 ± 0.309 | 4.12 | -1.255 ± 0.300 | 0.209 ± 0.316 |
| PRF-fit source offset from KIC position | 1.273 ± 0.323 | 3.95 | -1.271 ± 0.315 | 0.083 ± 0.322 |
| photometric centroid source offset | 0.56 ± 0.84 | 0.67 | -0.27 ± 0.95 | -0.49 ± 0.80 |

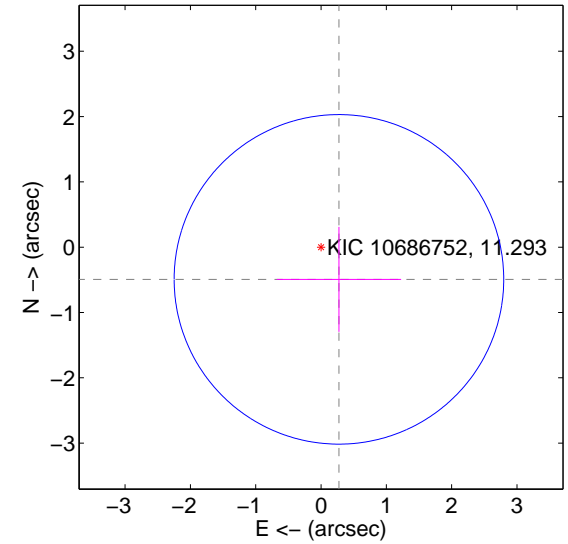
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

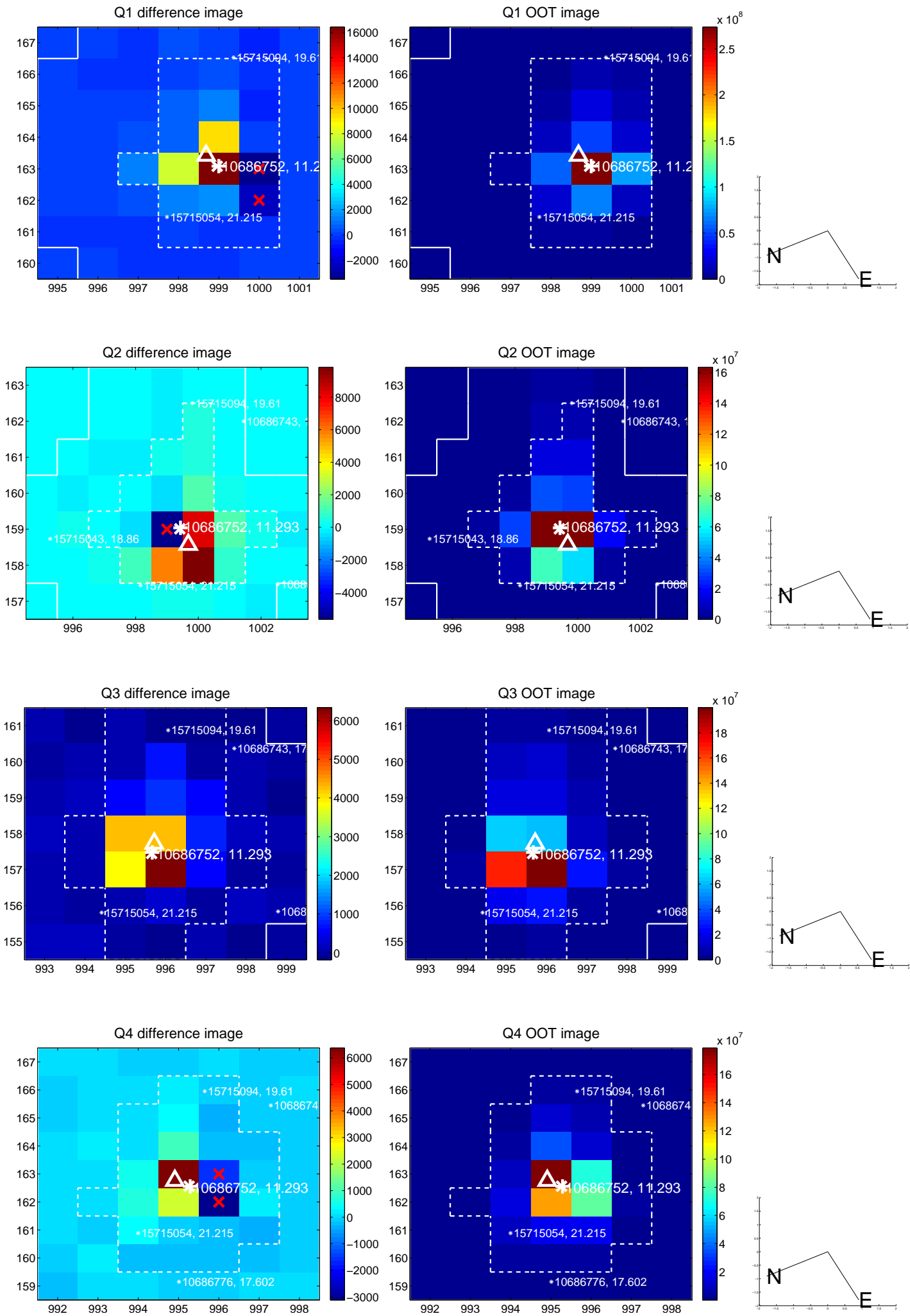


offset from photometric centroids

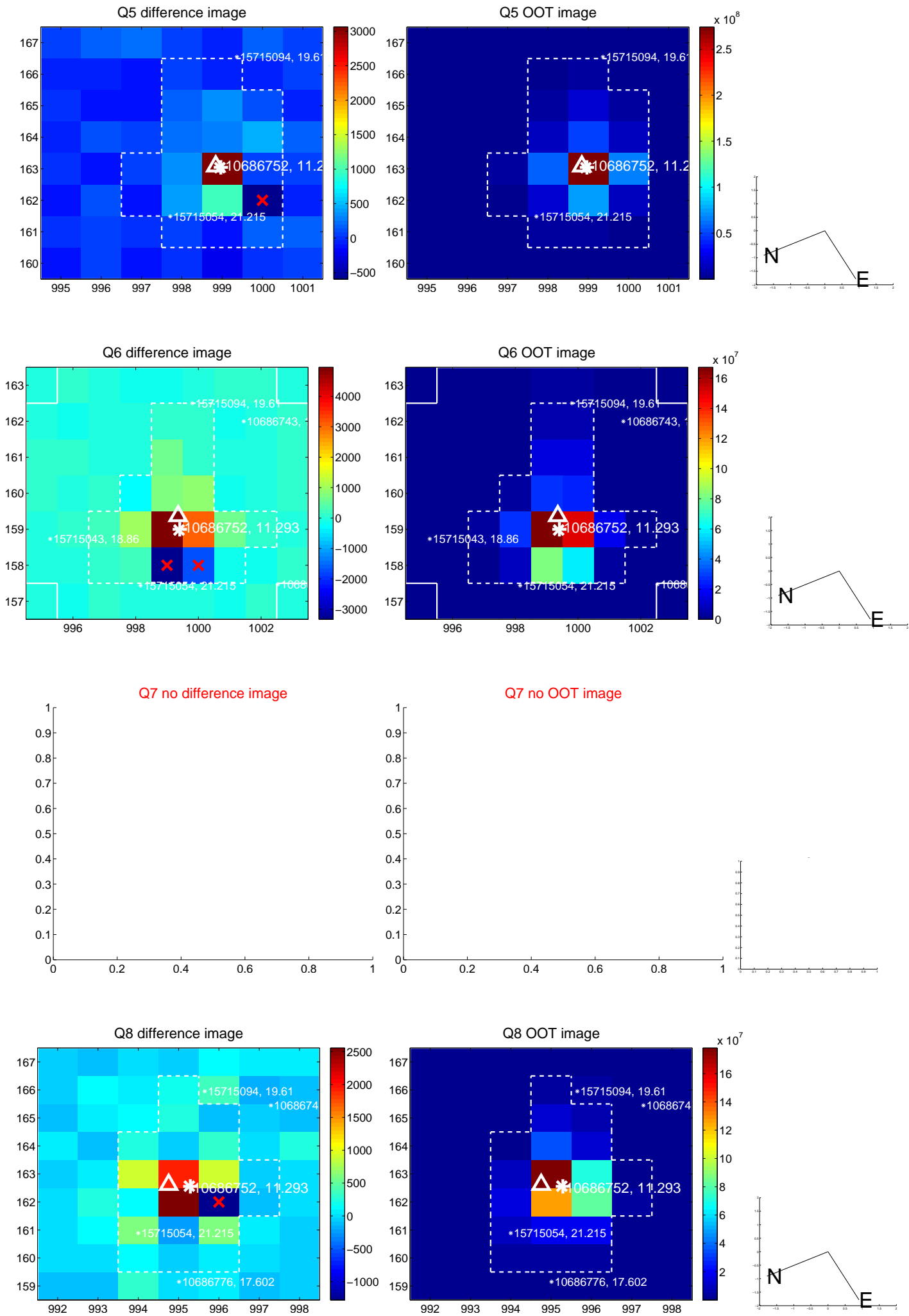


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

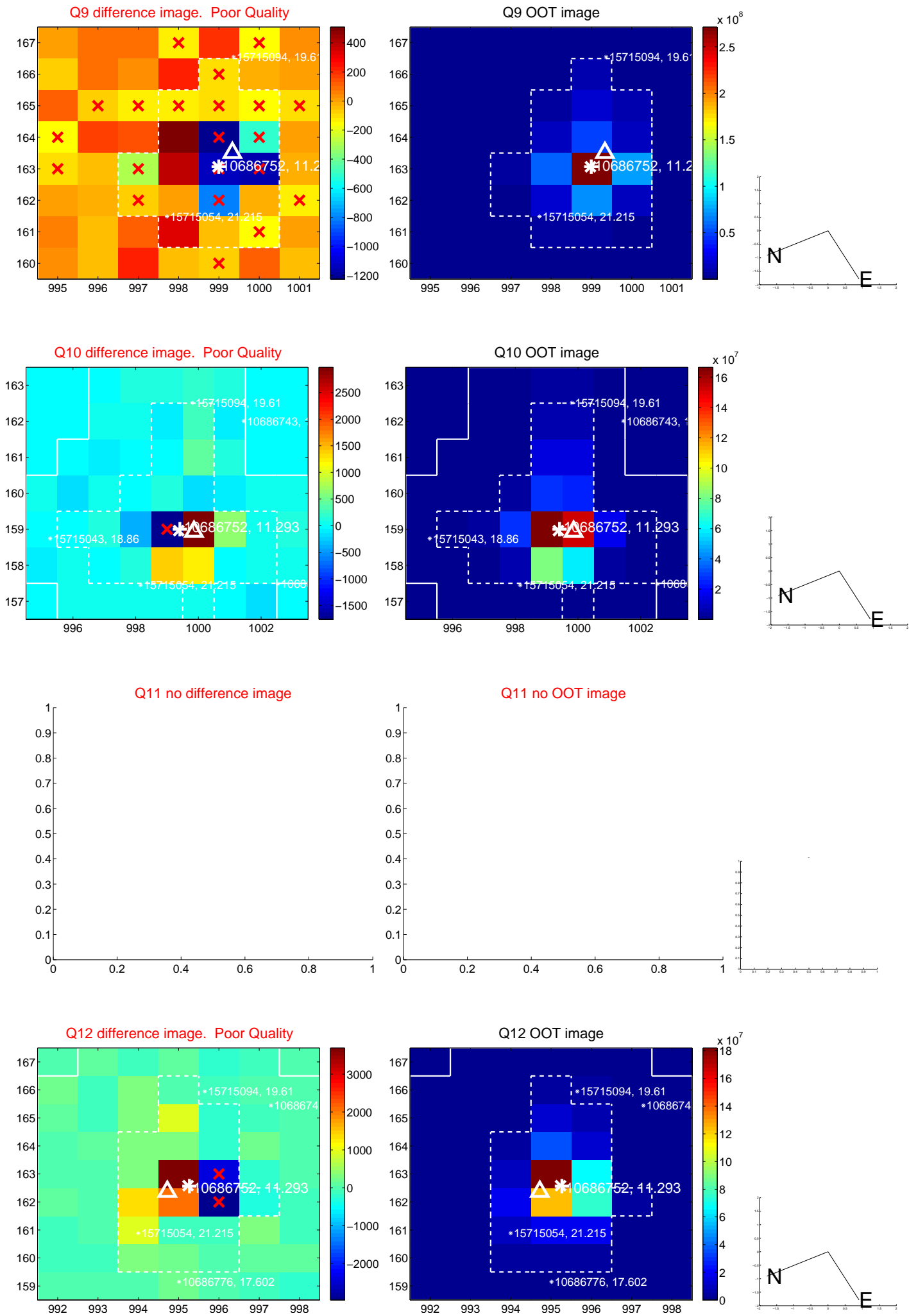
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



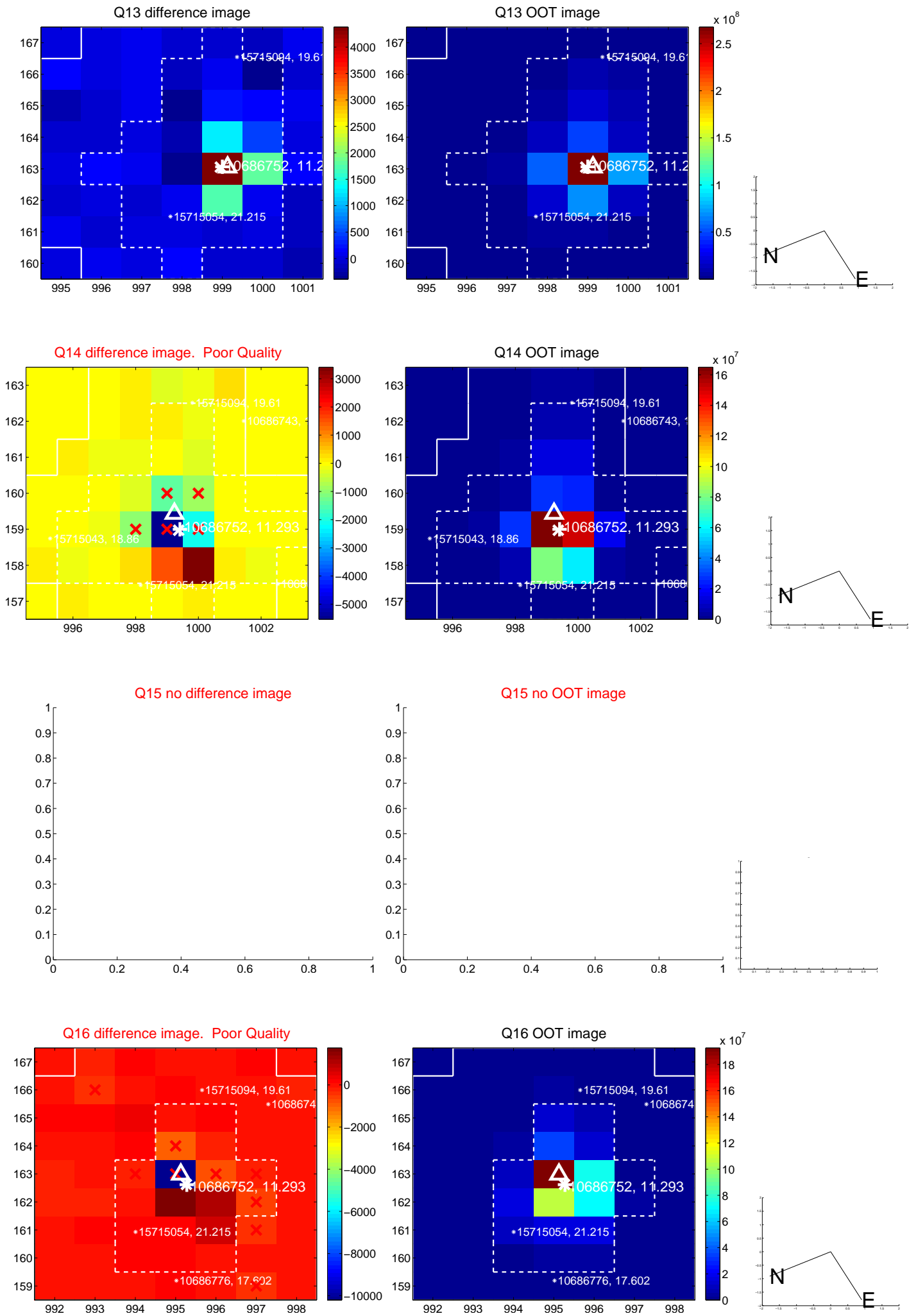
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



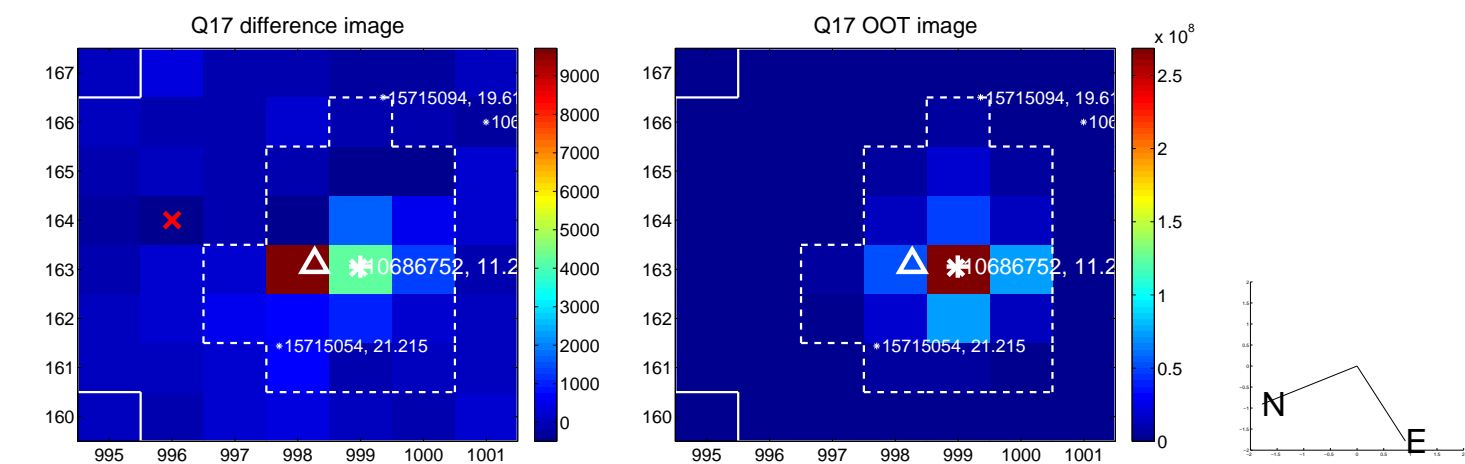
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



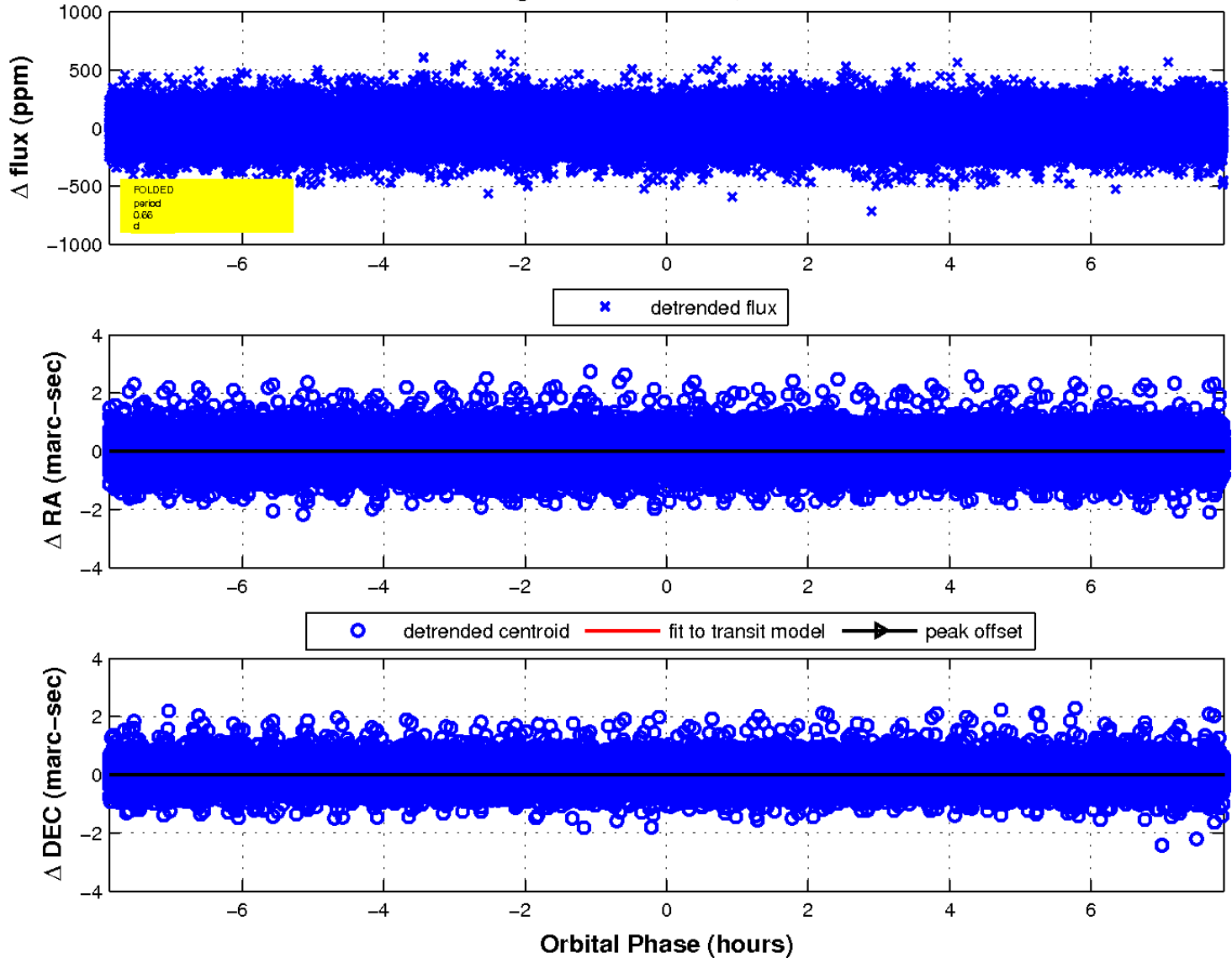
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



fluxWeightedCentroids, Planet 1 of 1



UKIRT Image

Declination

