

KIC 002310586

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}) |
|--------------|----------|------|---------------|--------------|-------------|------------------|-----|-----|-----------------------------|-----------------|------------------------|------------------------|
| 002310586-01 | OBS | No | 1.207626 | 132.691480 | 109.3 | 5.596 | 7.5 | 7.1 | 1.47 | 7188 | 1.74 | 7974.50 |

Robovetter Results

| TCE | Run Type | Disp | Score | N | S | C | E | Comments |
|--------------|----------|------|-------|---|---|---|---|---|
| 002310586-01 | OBS | FP | 0.00 | 1 | 0 | 0 | 0 | LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT |

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

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

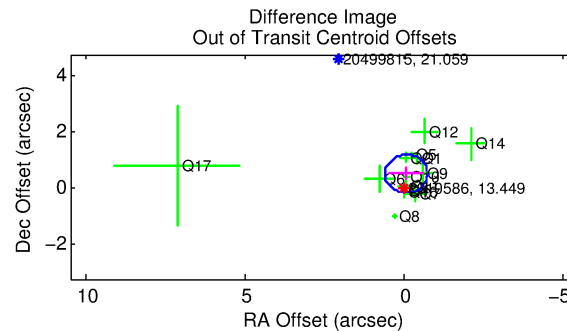
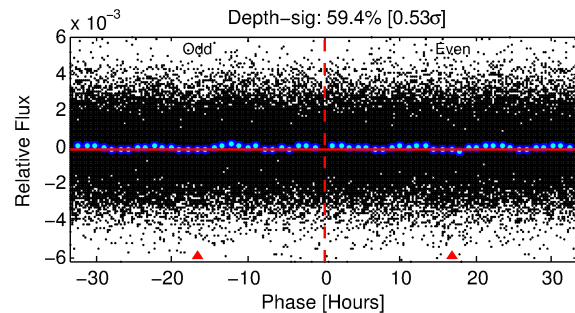
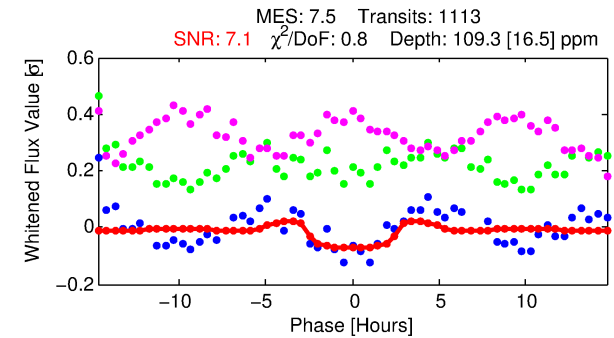
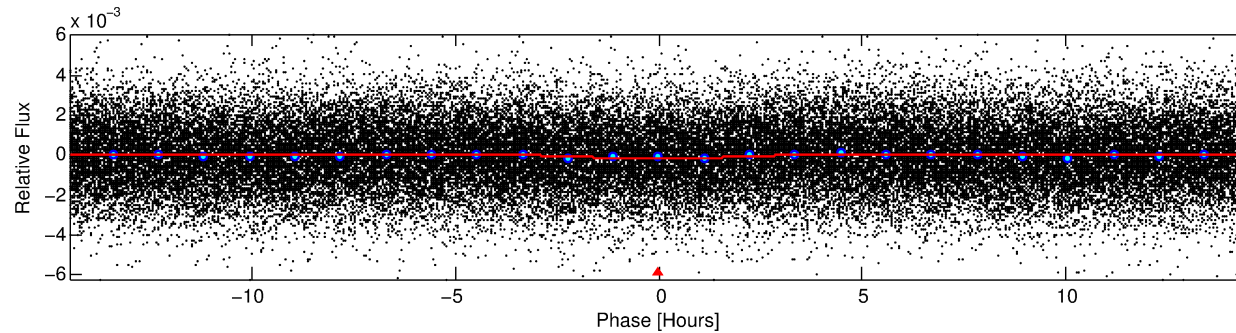
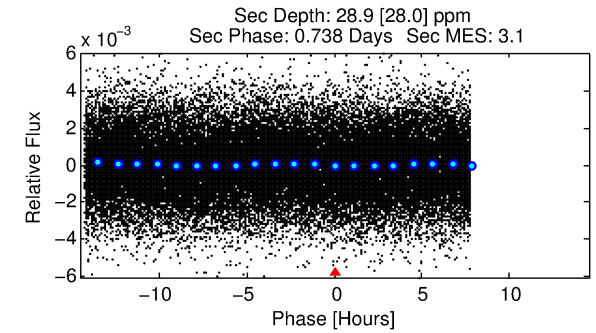
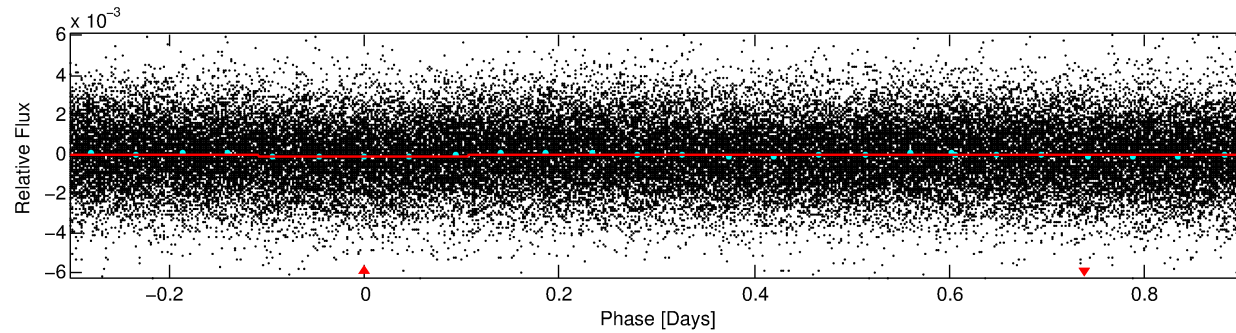
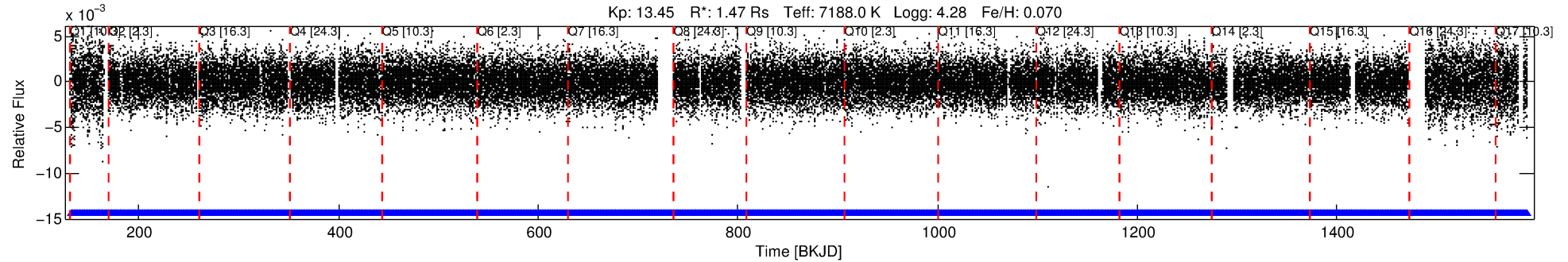
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 002310586-01

No Significant Match Found

DV One-Page Summary

KIC: 2310586 Candidate: 1 of 1 Period: 1.208 d



DV Fit Results:

Period = 1.20763 [0.00002] d
Epoch = 132.6915 [0.0078] BKJD
Rp/R* = 0.0108 [0.0072]
a/R* = 1.27 [1.94]
b = 0.86 [1.23]
Seff = 7974.50 [3987.36]
Teff = 2410 [301] K
Rp = 1.74 [1.35] Re
a = 0.0254 [0.0084] AU
Ag = 3.40 [5.80] [0.41σ]
Teffp = 5059 [2087] K [1.26σ]

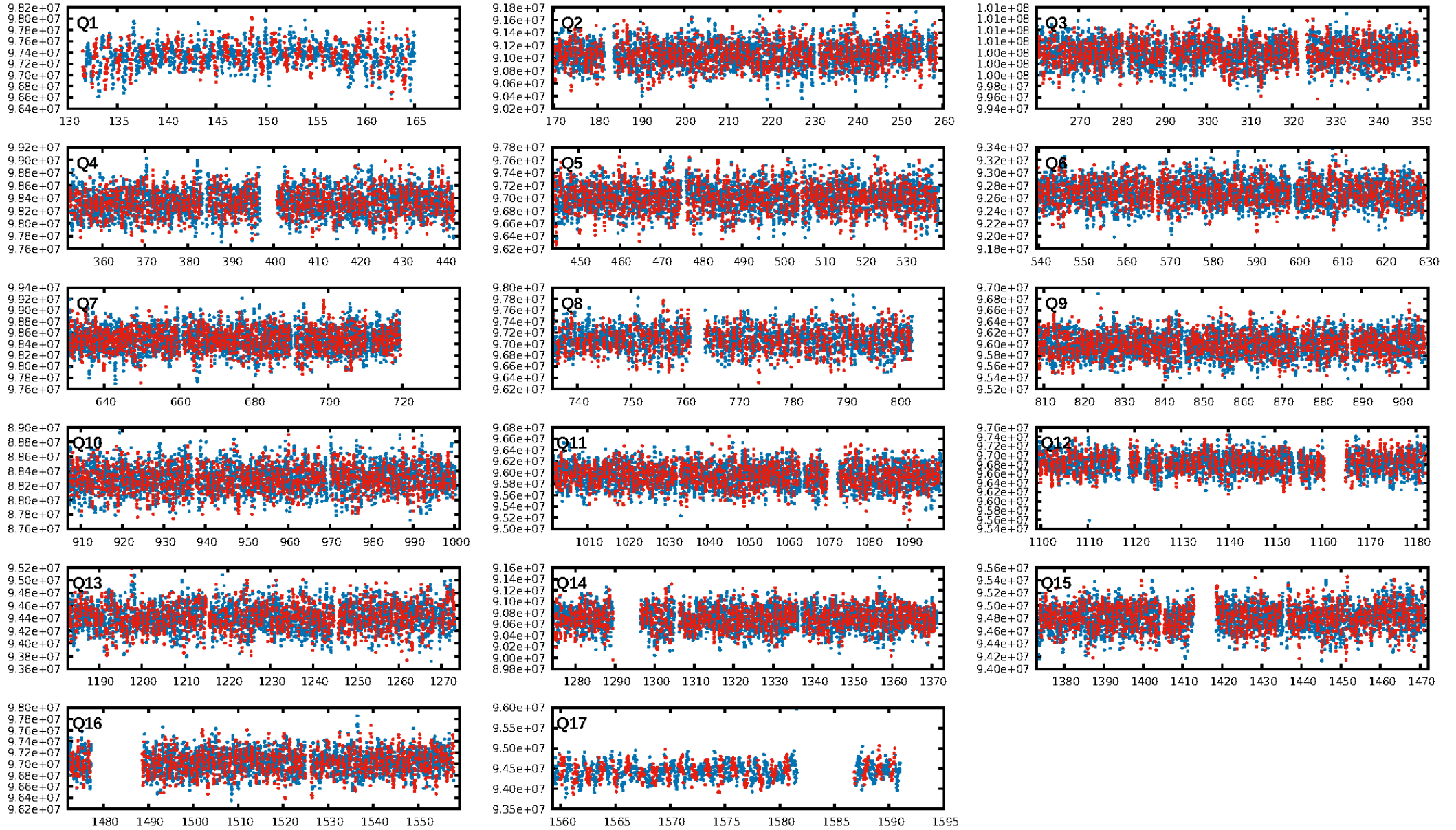
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 7.47e-11
RollingBand-fgt: 1.00 [1064/1064]
GhostDiagnostic-chr: 1.095
Centroid-sig: 34.2%
Centroid-so: 0.383 arcsec [1.35σ]
OotOffset-rm: 0.505 arcsec [2.25σ]
OotOffset-st: 4/2/4/4 [14]
KicOffset-rm: 0.496 arcsec [1.93σ]
KicOffset-st: 4/2/4/4 [14]
DiffImageQuality-fgm: 0.71 [10/14]
DiffImageOverlap-fno: 1.00 [17/17]

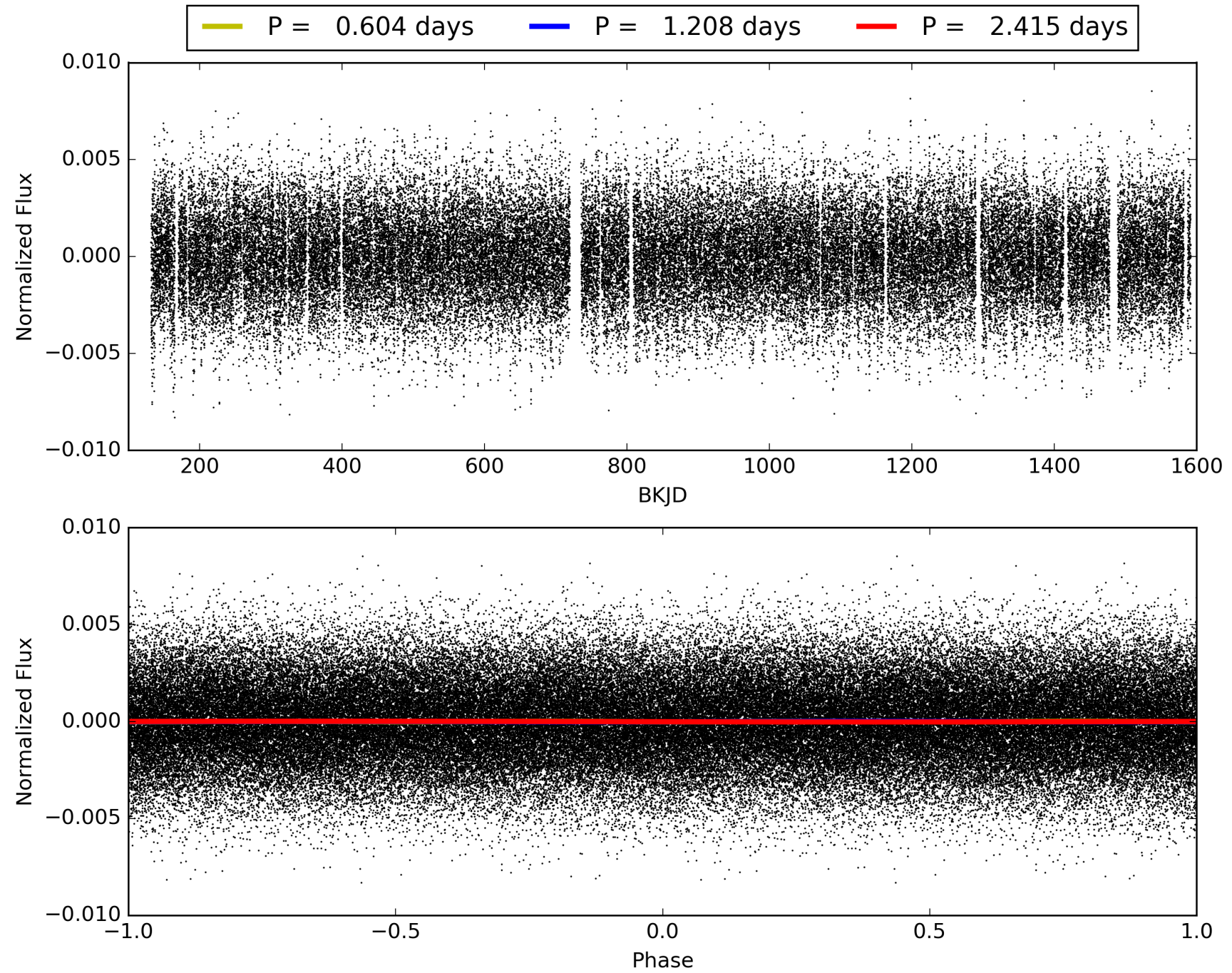
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 01:18:31 Z

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

TCE 002310586-01, PDC Light Curves

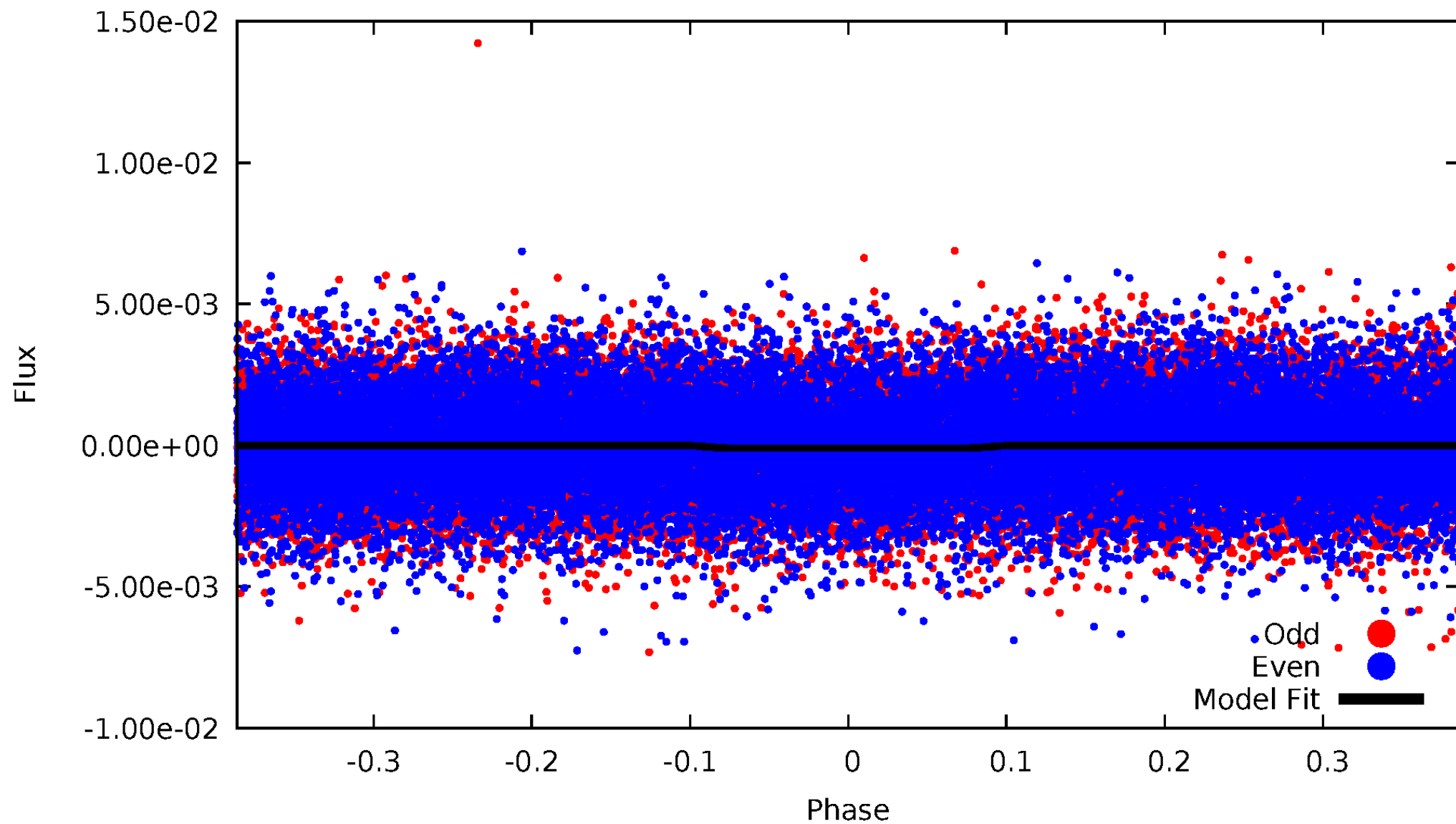


TCE 002310586-01



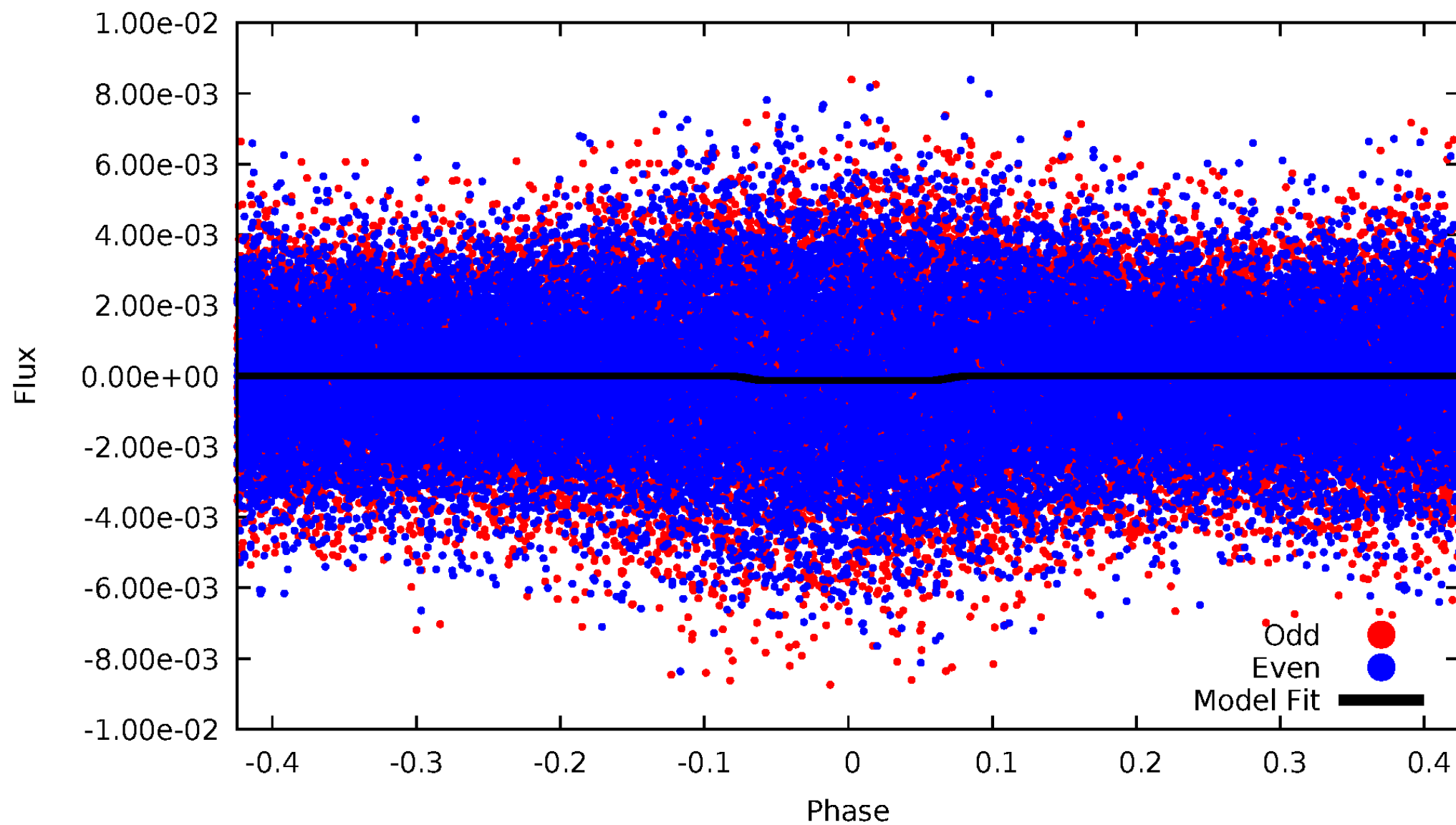
DV Odd/Even

TCE 002310586-01



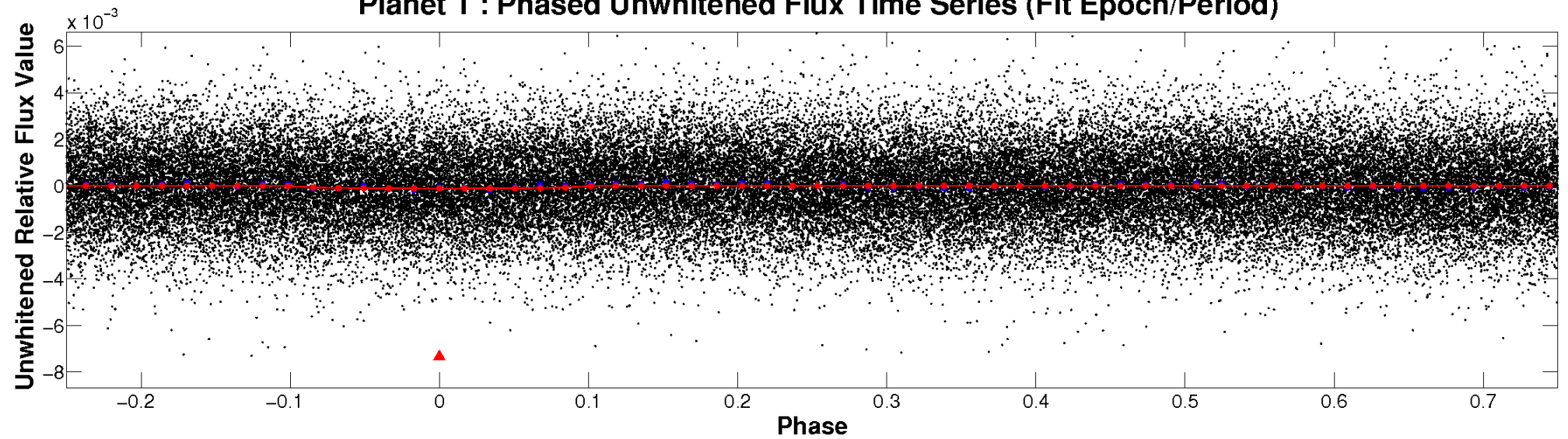
ALT Odd/Even

TCE 002310586-01

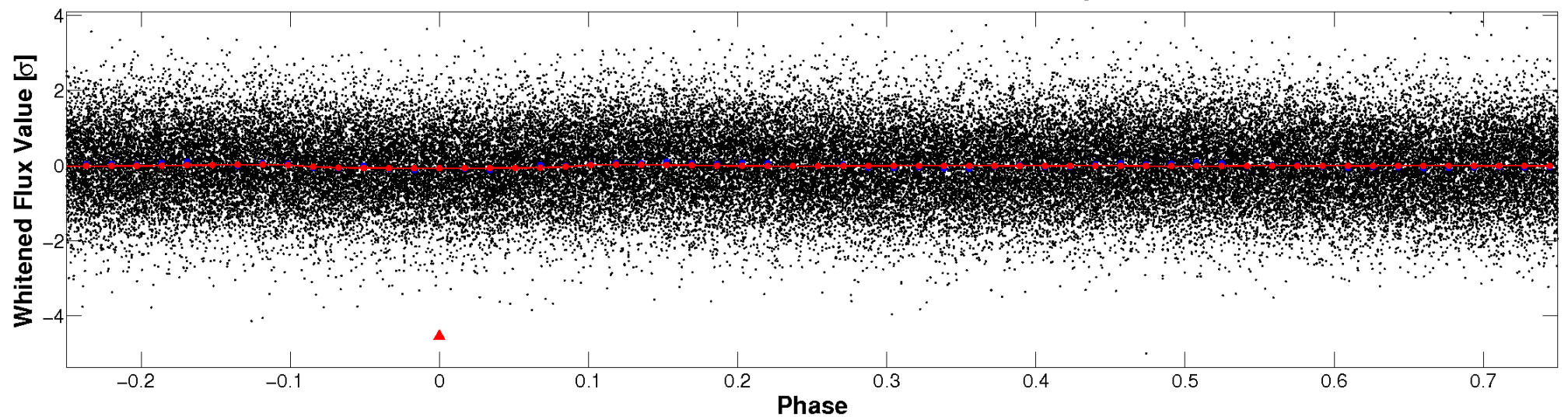


Non-Whitened Vs. Whitened Light Curve

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

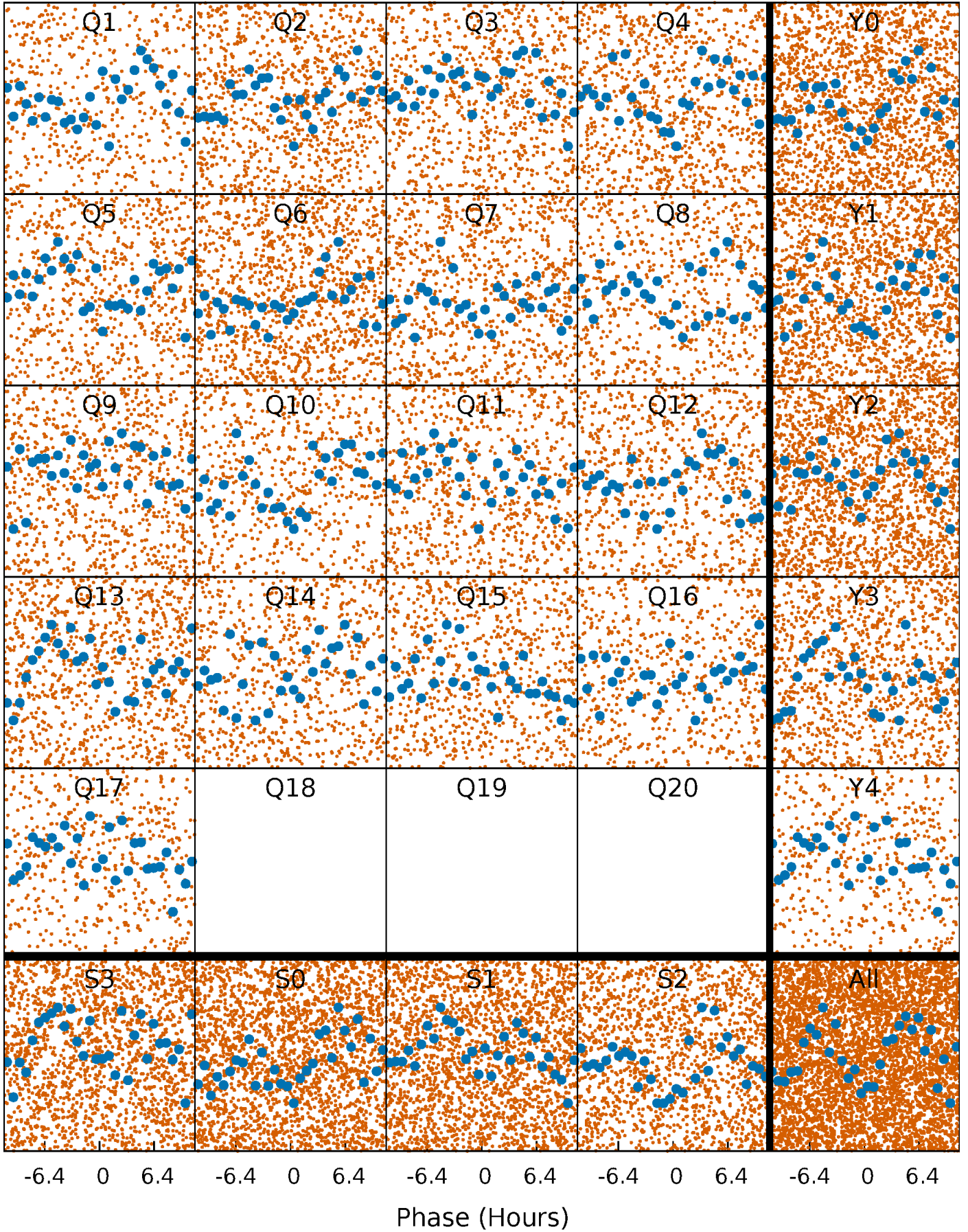


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



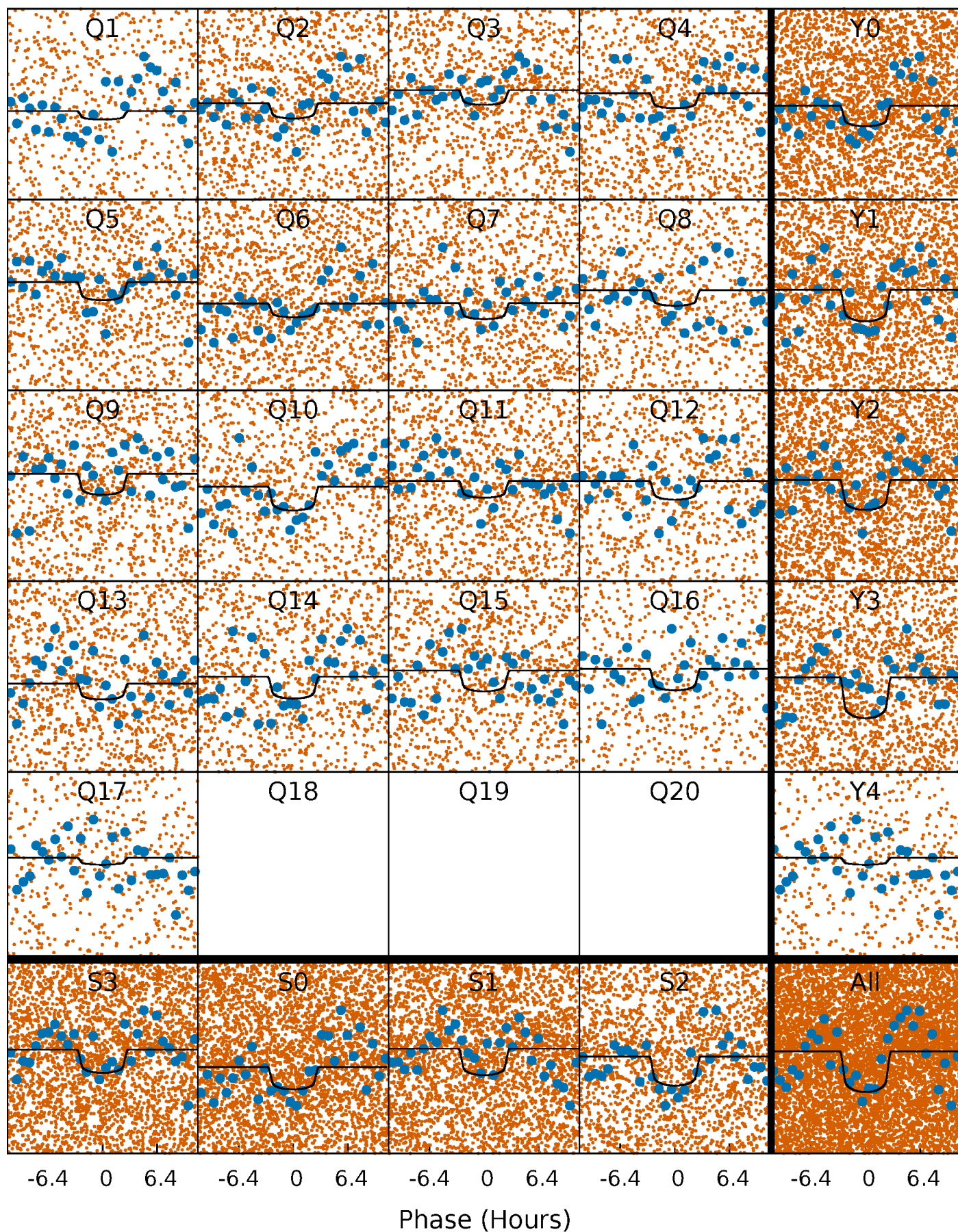
PDC Quarter-Phased Transit Curves

TCE 002310586-01 P= 1.207626 Days $T_0=132.691480$ (BKJD)



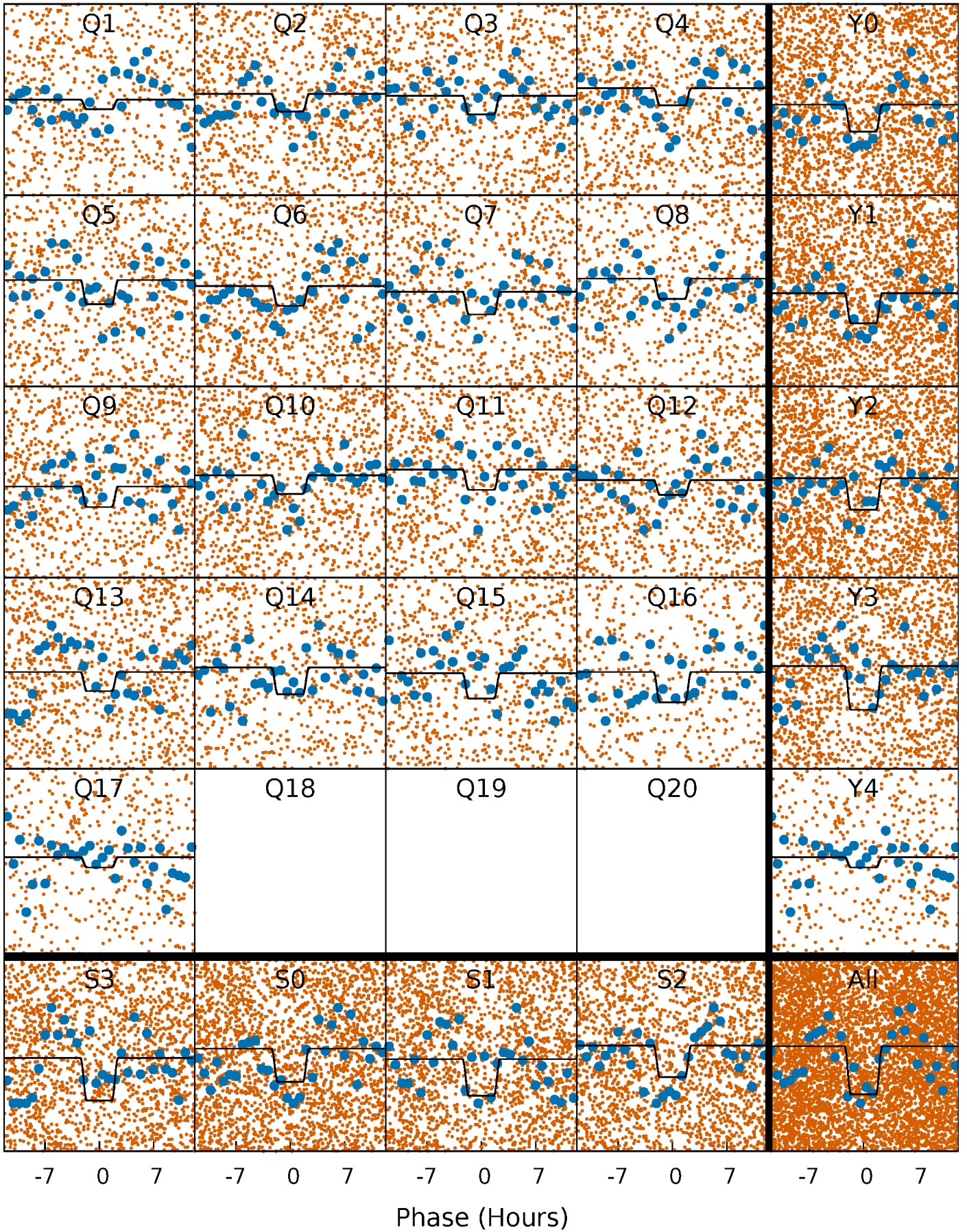
DV Quarter-Phased Transit Curves

TCE 002310586-01 P= 1.207626 Days $T_0=132.691480$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

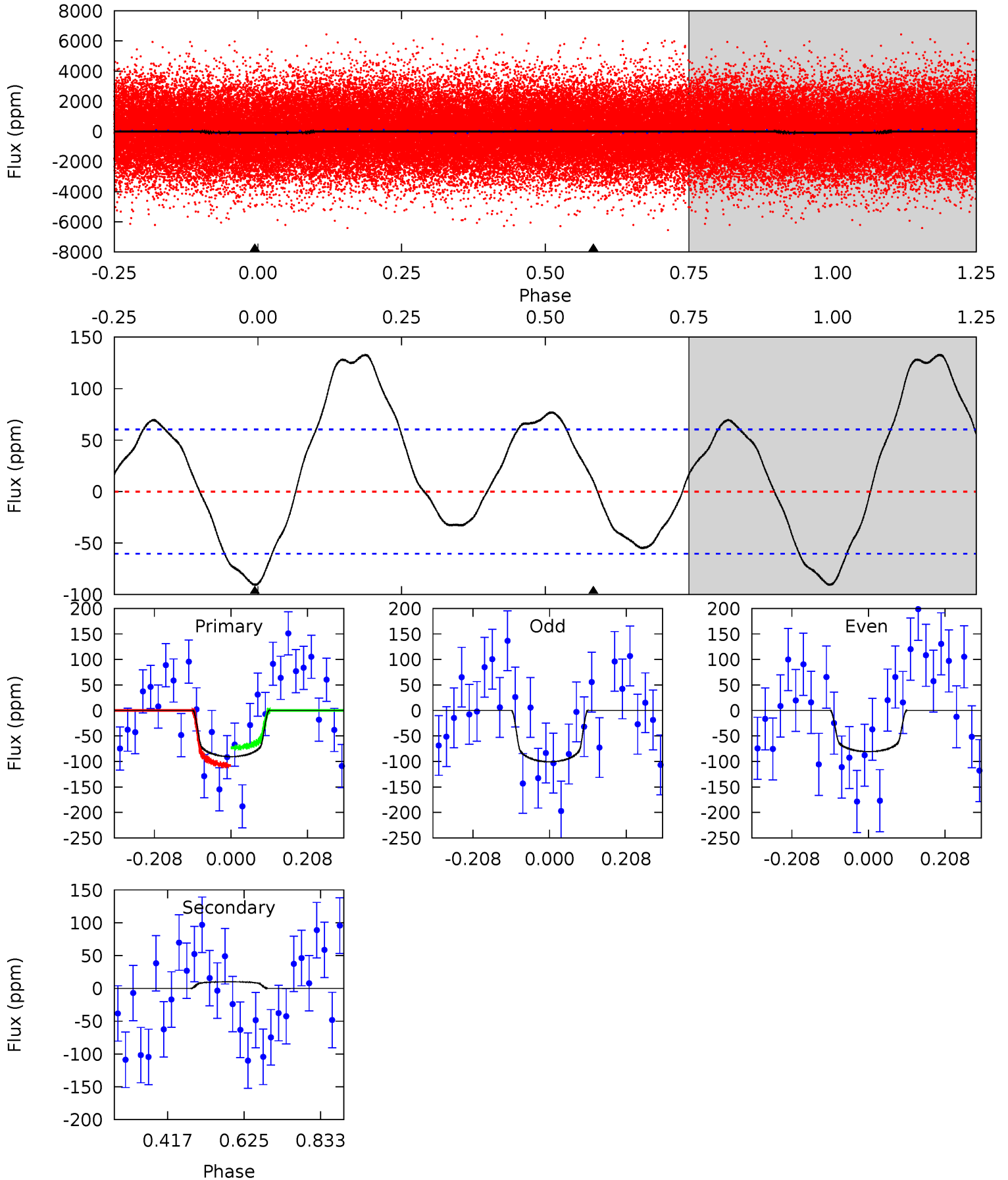
TCE 002310586-01 P= 1.207623 Days $T_0=132.691117$ (BKJD)



DV Model-Shift Uniqueness Test

002310586-01, P = 1.207626 Days, E = 131.483854 Days

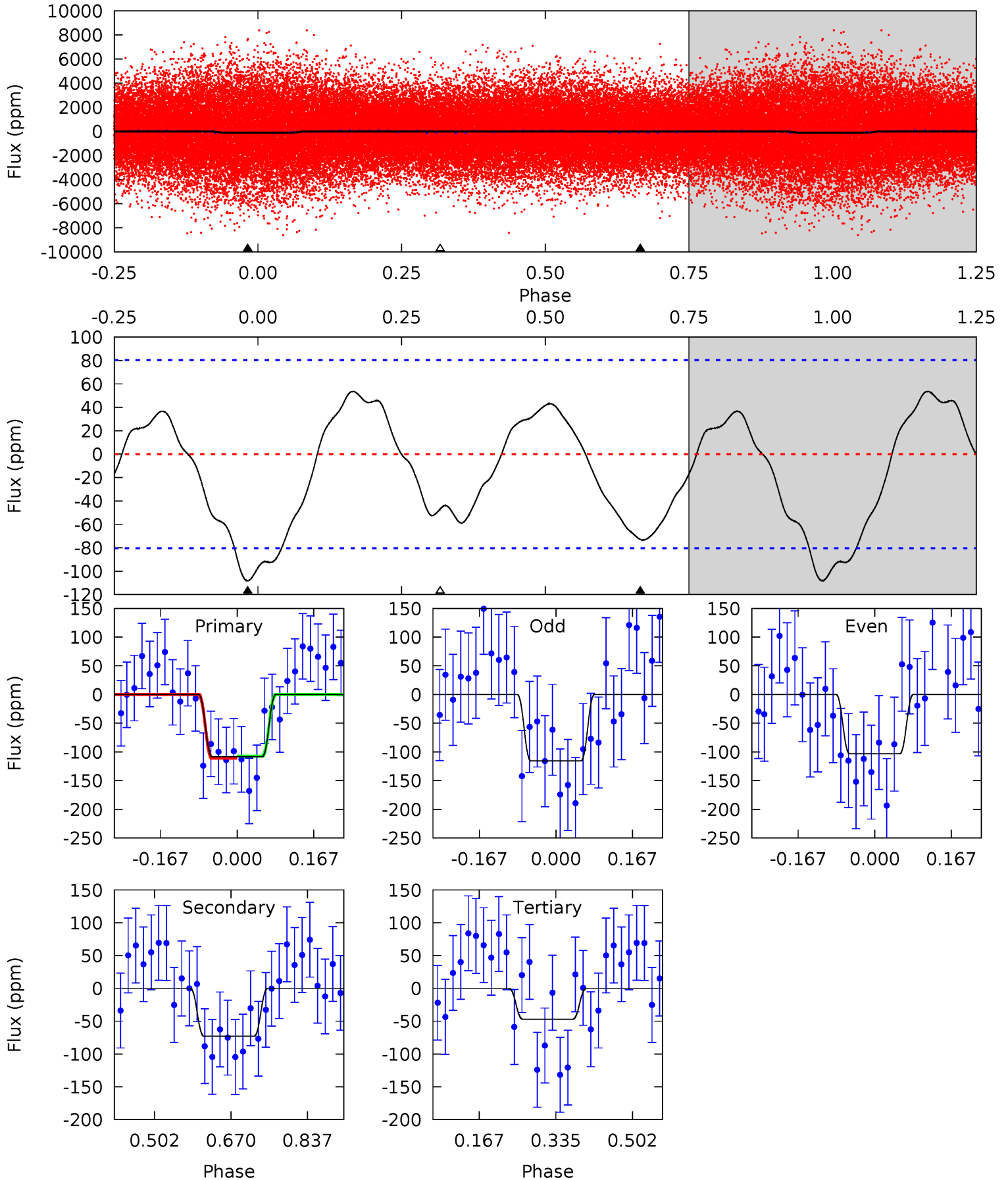
| Pri | Sec | Ter | Pos | FA ₁ | FA ₂ | F _{Red} | Pri-Ter | Pri-Pos | Sec-Ter | Sec-Pos | Odd-Evn | DMM | Shape | TAT |
|------|-------|-----|-----|-----------------|-----------------|------------------|---------|---------|---------|---------|---------|------|-------|------|
| 6.62 | -0.73 | 0 | 0 | 4.41 | 1.26 | 3.58 | 6.62 | 6.62 | -0.73 | -0.73 | 0.73 | 0.99 | 0.59 | 1.27 |



Alt Model-Shift Uniqueness Test

002310586-01, P = 1.207623 Days, E = 131.483494 Days

| Pri | Sec | Ter | Pos | FA ₁ | FA ₂ | F _{Red} | Pri-Ter | Pri-Pos | Sec-Ter | Sec-Pos | Odd-Evn | DMM | Shape | TAT |
|------|------|------|-----|-----------------|-----------------|------------------|---------|---------|---------|---------|---------|------|-------|------|
| 6.00 | 4.04 | 2.60 | 0 | 4.46 | 1.38 | 2.09 | 3.40 | 6.00 | 1.44 | 4.04 | 0.34 | 0.96 | 0.33 | 0.11 |



Stellar Parameters For KIC 002310586

| | $T_{\text{eff}}(K)$ | $\log(g)$ | [Fe/H] | $R (R_{\odot})$ | $M(M_{\odot})$ | $p_{\star} (\text{g}\cdot\text{cm}^{-3})$ |
|--------|----------------------|---------------------------|---------------------------|---------------------------|---------------------------|---|
| | 7188^{+200}_{-325} | $4.281^{+0.062}_{-0.248}$ | $0.070^{+0.200}_{-0.300}$ | $1.467^{+0.592}_{-0.185}$ | $1.499^{+0.233}_{-0.190}$ | $0.669^{+0.178}_{-0.413}$ |
| | +3%/-5% | +1%/-6% | +286%/-429% | +40%/-13% | +16%/-13% | +27%/-62% |
| 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 002310586-01 / KOI

| Detrend | Depth (ppm) | $R_p (R_{\oplus})$ | $T_{max} (K)$ | $T_{obs} (K)$ | A_{obs} |
|---------|--------------|------------------------|----------------------|-------------------------|----------------------------|
| DV | 10 ± 14 | $1.96^{+1.15}_{-1.04}$ | 3446^{+310}_{-198} | -4137^{+1611}_{-1511} | $-0.706^{+0.976}_{-3.762}$ |
| Alt. | -73 ± 18 | $1.98^{+1.19}_{-1.08}$ | 3441^{+277}_{-189} | 5899^{+3395}_{-1202} | $6.160^{+22.285}_{-3.786}$ |

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 $A_{obs} \gg 1.0$

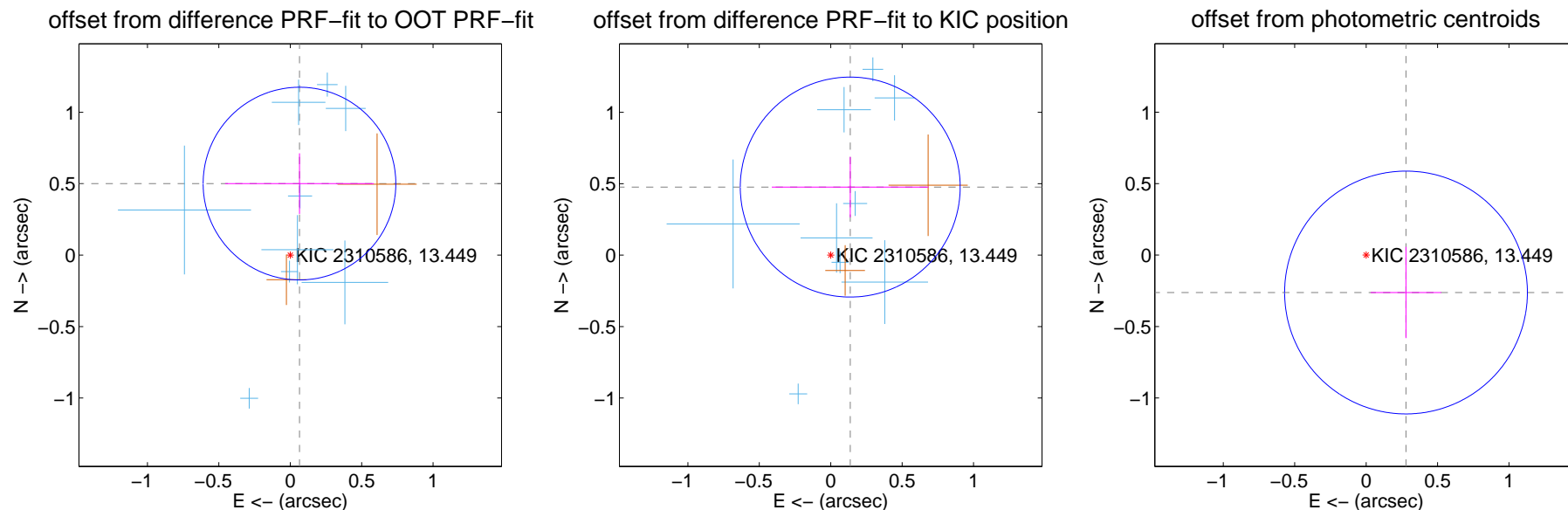
DV Centroid Data

Supplemental centroid analysis for 002310586-01. Kepler magnitude: 13.45. Transit SNR 7.10

There are 10 quarters with good PRF difference image offsets

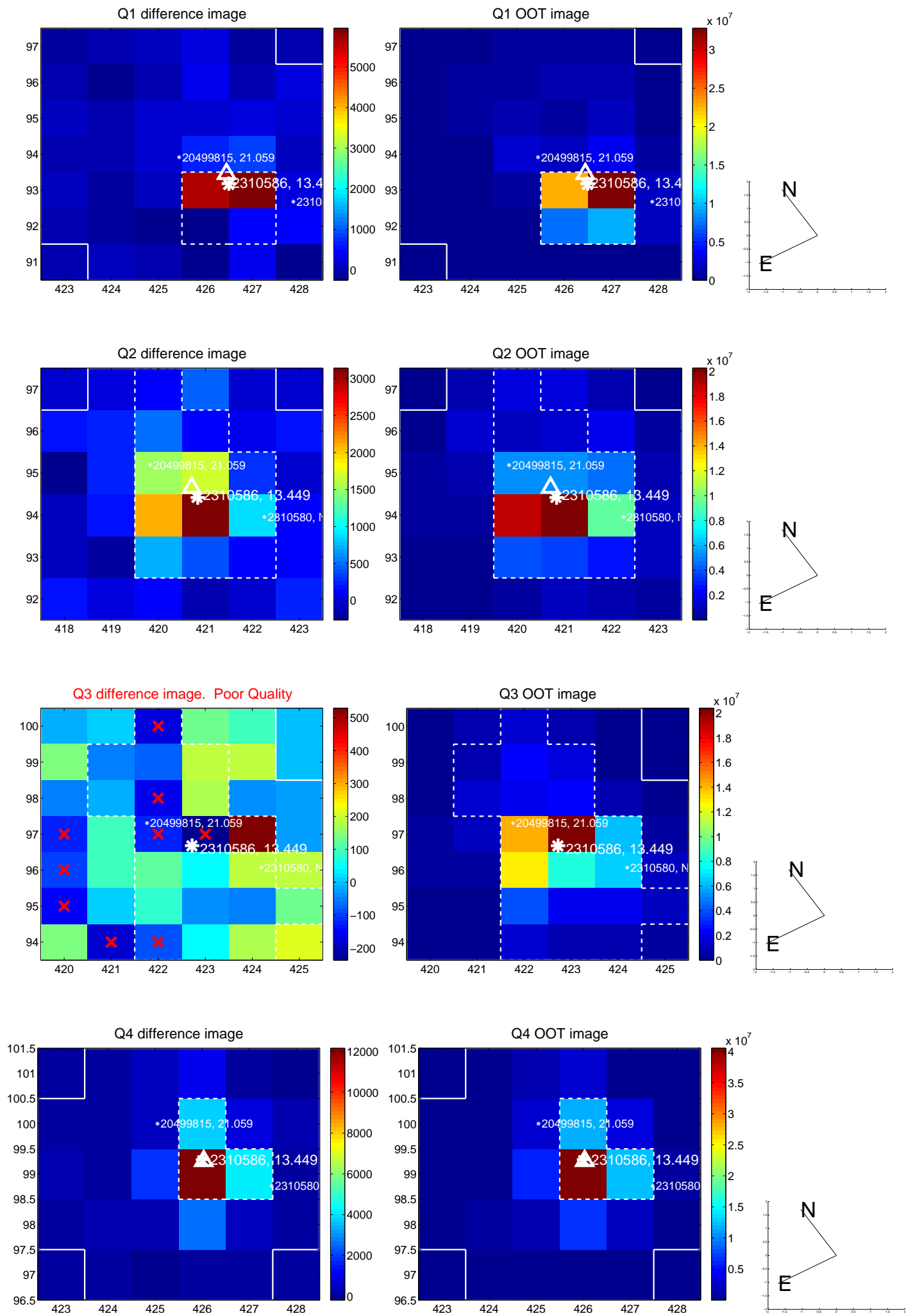
The direct PRF centroid is offset from the target star catalog position by about 0.10 arcsec

| | Distance in arcsec | Distance / σ | Δ RA | Δ Dec |
|---|--------------------|---------------------|--------------------|-------------------|
| PRF-fit source offset from OOT | 0.505 ± 0.225 | 2.25 | -0.065 ± 0.521 | 0.501 ± 0.212 |
| PRF-fit source offset from KIC position | 0.496 ± 0.257 | 1.93 | -0.137 ± 0.549 | 0.477 ± 0.211 |
| photometric centroid source offset | 0.38 ± 0.28 | 1.35 | -0.28 ± 0.25 | -0.26 ± 0.32 |

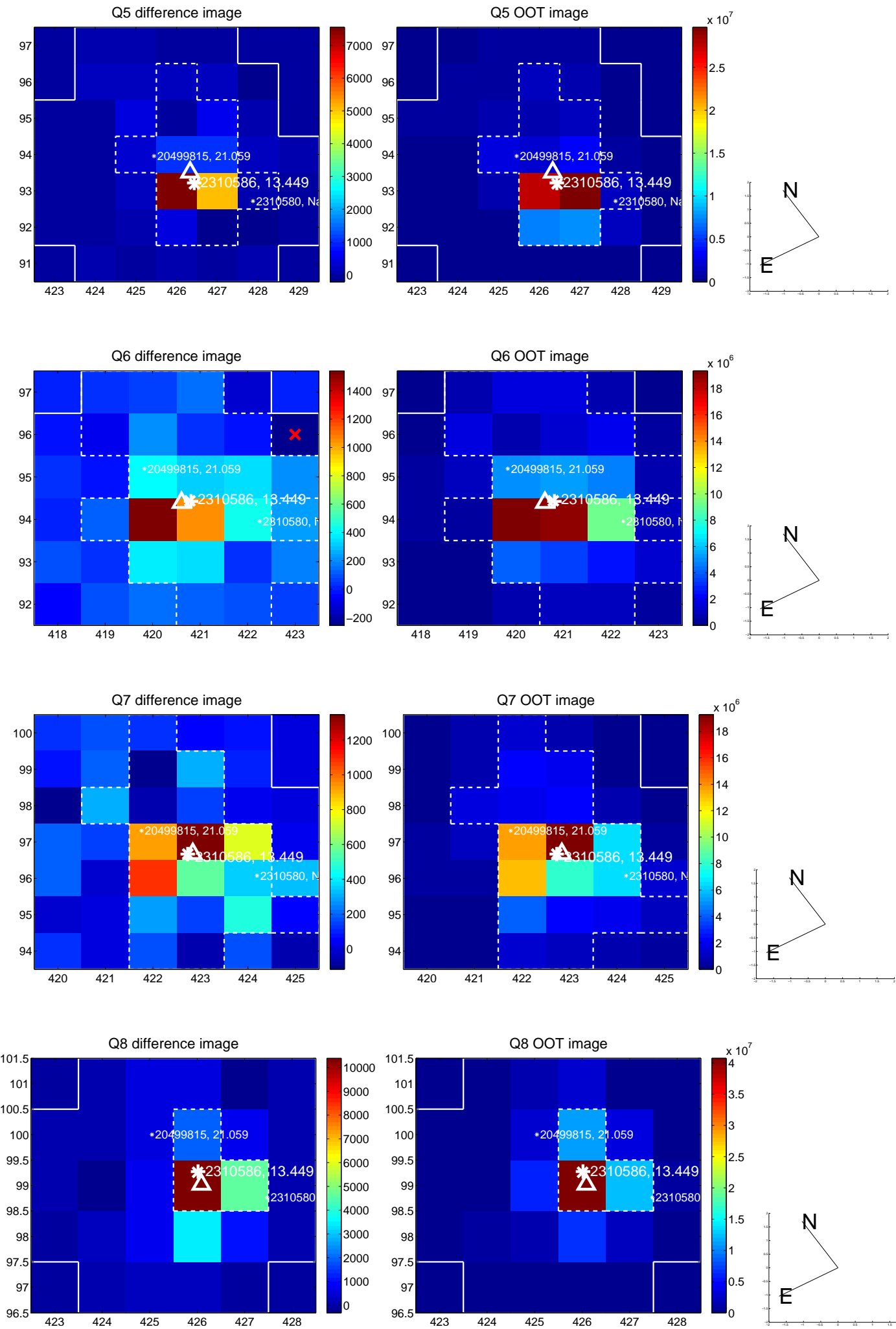


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

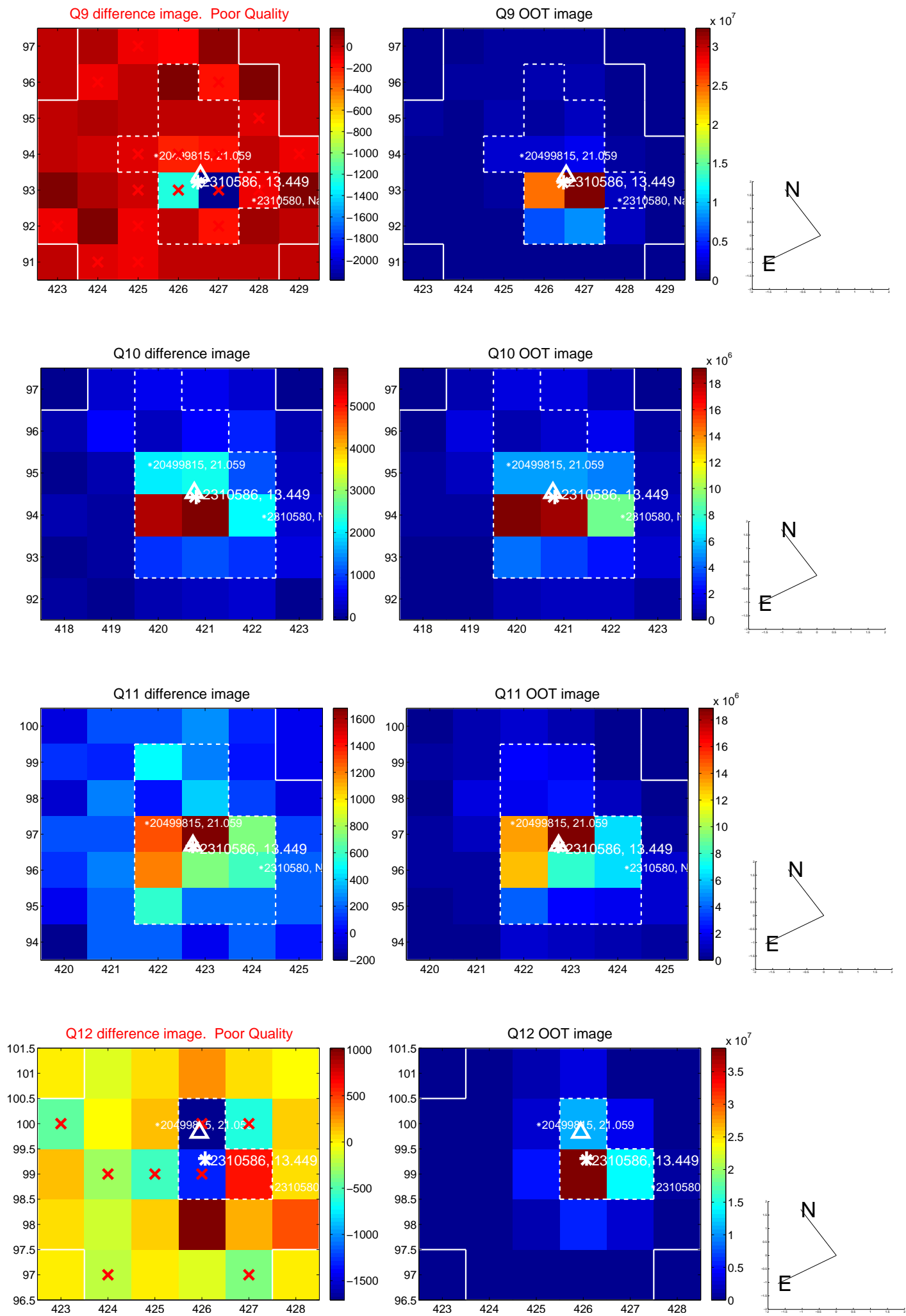
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



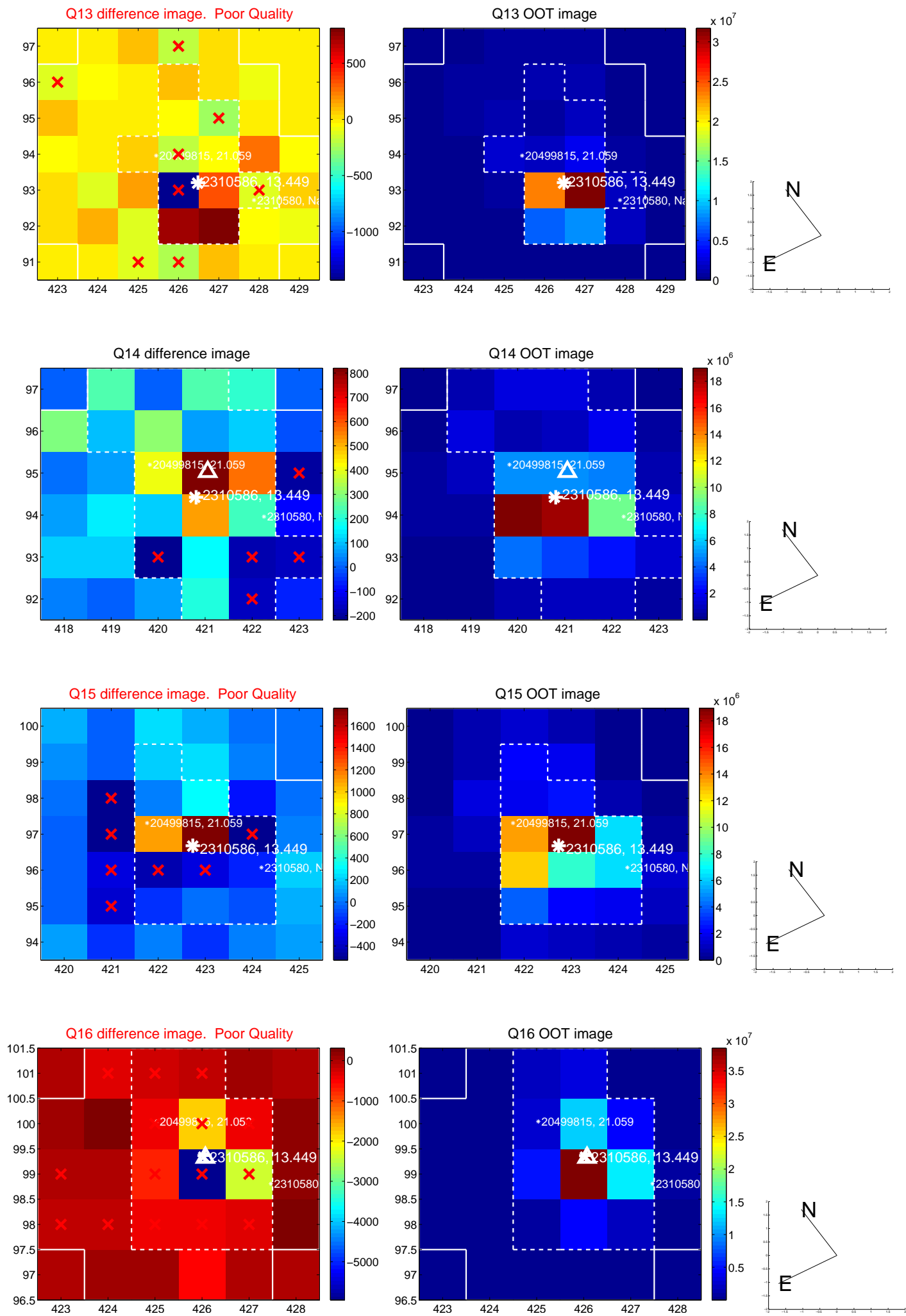
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



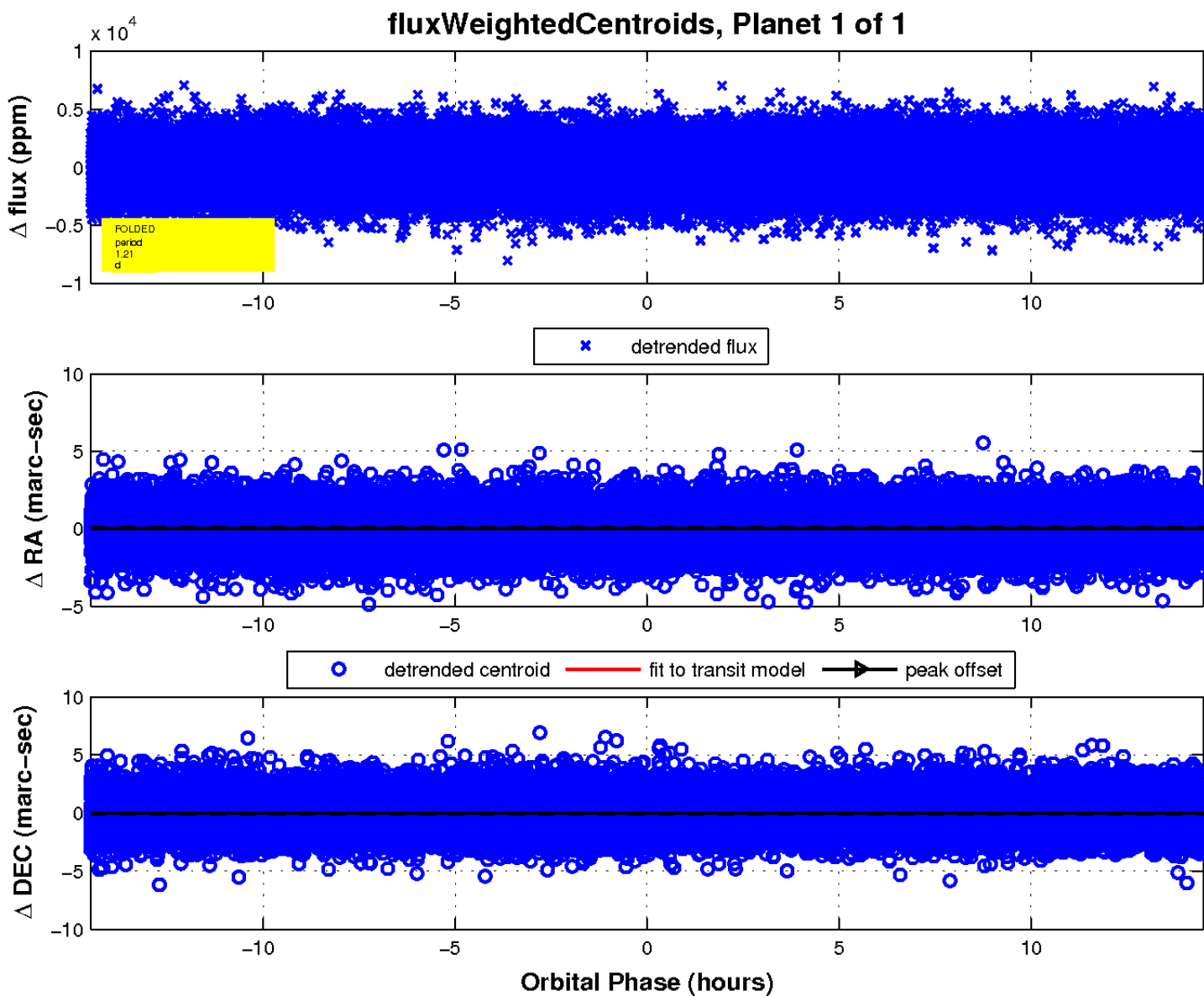
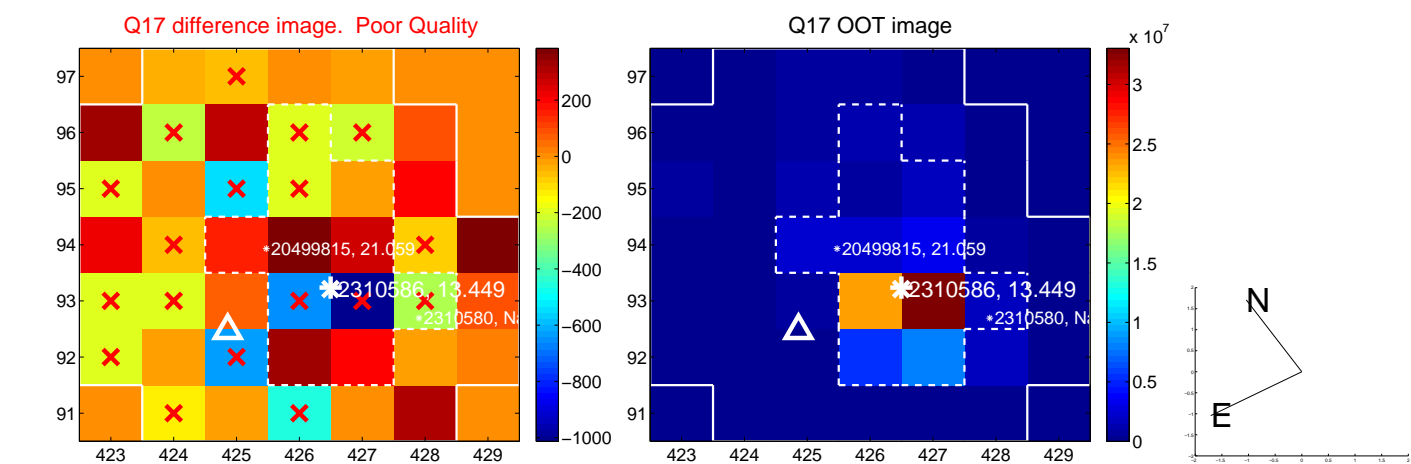
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white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

