

KIC 011453915

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}) |
|--------------|----------|------|---------------|--------------|-------------|------------------|-----|------|-----------------------------|-----------------|------------------------|------------------------|
| 011453915-01 | OBS | No | 24.099985 | 145.523371 | 44.3 | 67.495 | 9.0 | 15.7 | 1.14 | 6338 | 1.56 | 67.10 |

Robovetter Results

| TCE | Run Type | Disp | Score | N | S | C | E | Comments |
|--------------|----------|------|-------|---|---|---|---|--------------------------------------|
| 011453915-01 | OBS | FP | 0.00 | 1 | 0 | 0 | 0 | LPP_DV—MOD_NONUNIQ_DV—CENT_SATURATED |

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

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

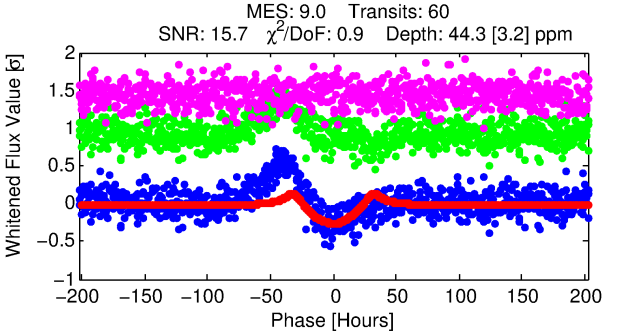
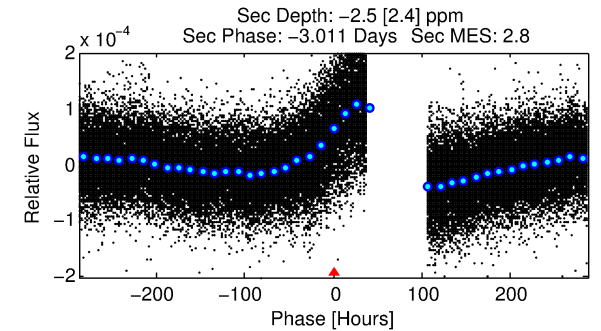
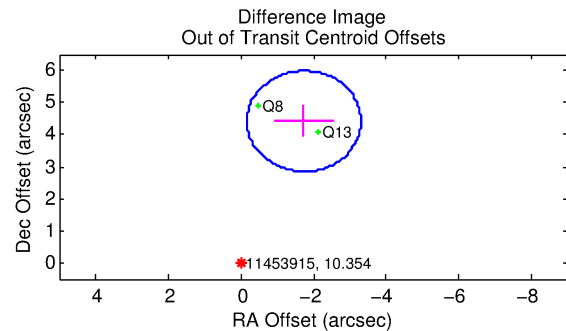
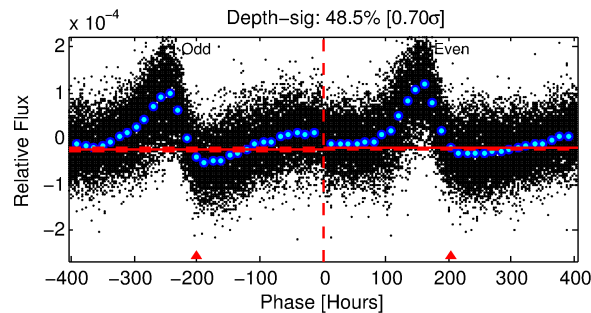
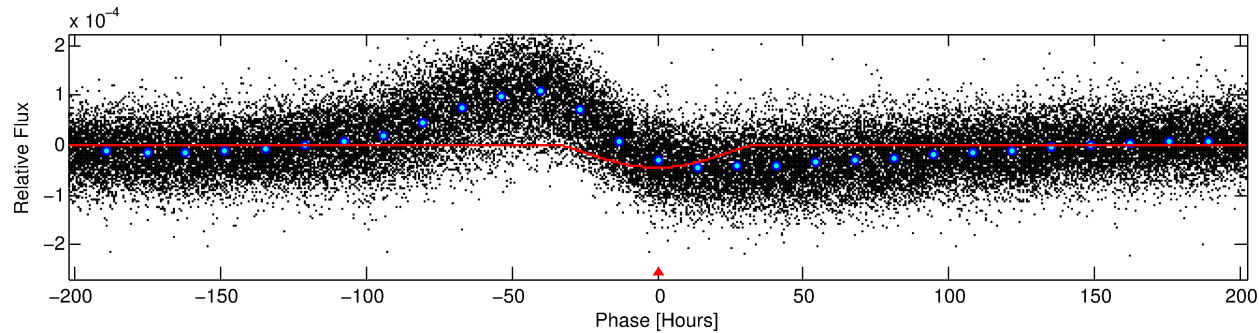
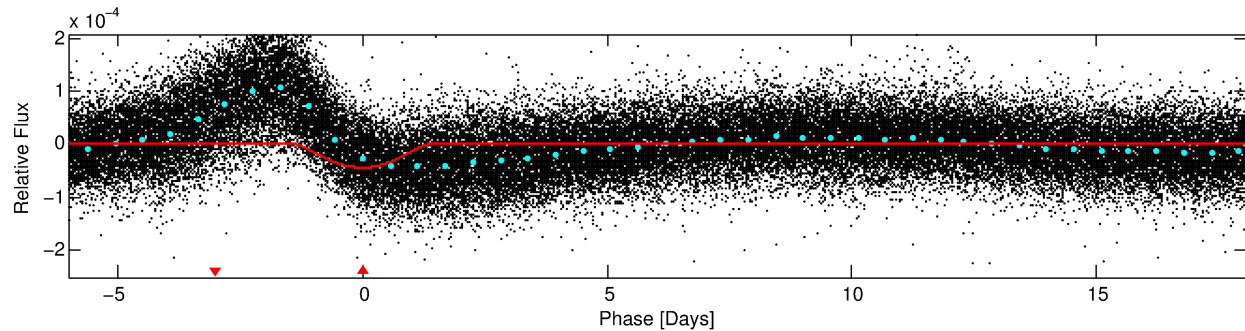
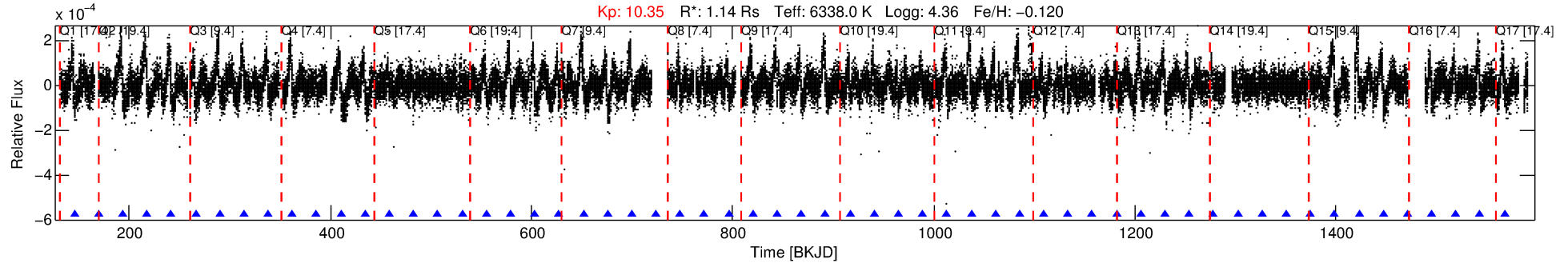
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 011453915-01

No Significant Match Found

DV One-Page Summary

KIC: 11453915 Candidate: 1 of 1 Period: 24.100 d



DV Fit Results:

Period = 24.09999 [0.00195] d
Epoch = 145.5234 [0.0662] BKJD
Rp/R* = 0.0125 [0.0094]
a/R* = 1.09 [0.03]
b = 1.00 [0.01]
Seff = 67.10 [3.89]
Teff = 730 [11] K
Rp = 1.56 [1.17] Re
a = 0.1678 [0.0045] AU
Ag = N/A
Teffp = N/A

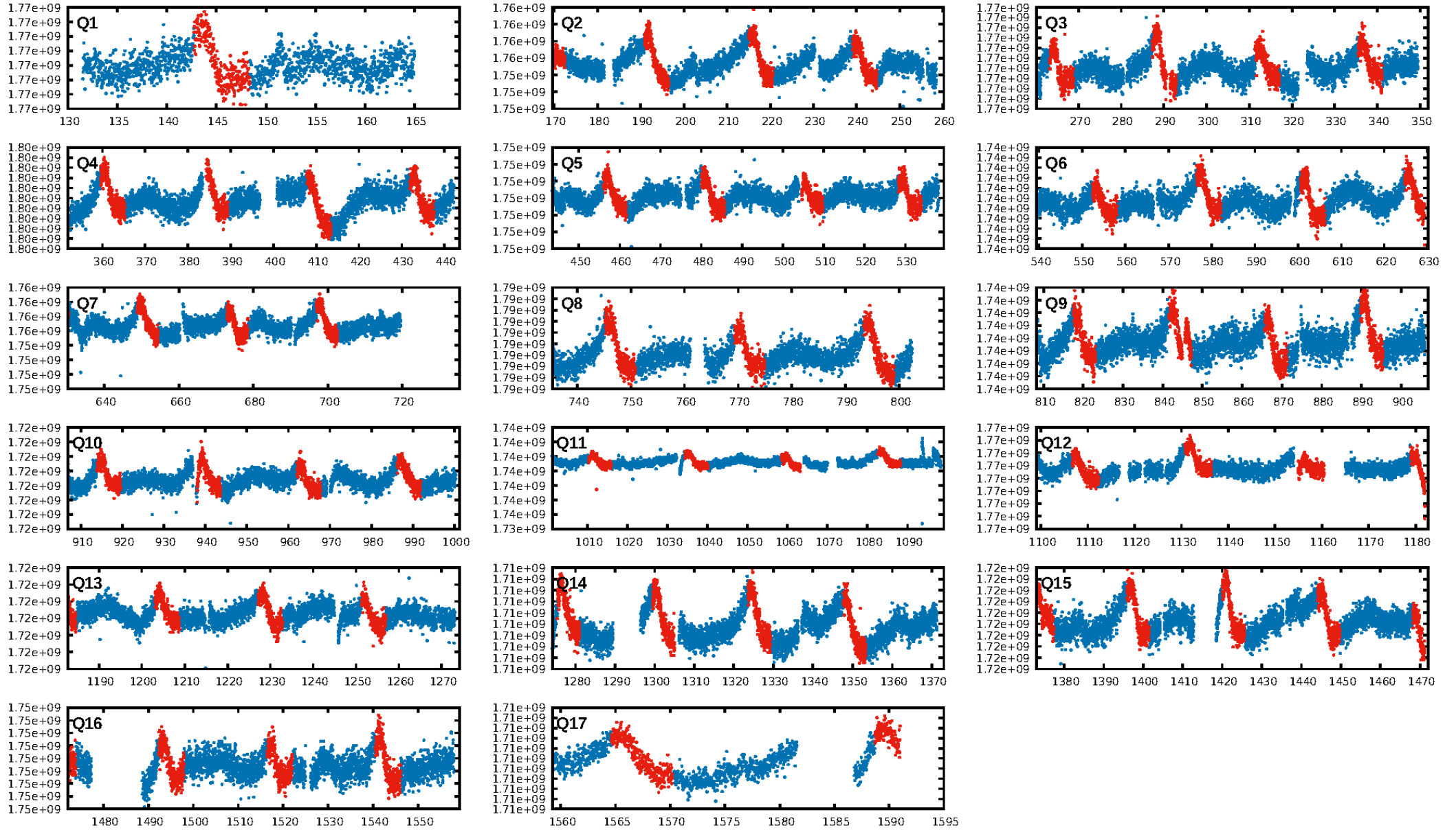
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: 66.4%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 3.30e-18
RollingBand-fgm: 1.00 [57/57]
GhostDiagnostic-chr: 0.5453
Centroid-sig: 65.2%
Centroid-so: 0.515 arcsec [0.91 σ]
OotOffset-rm: 4.743 arcsec [9.07 σ]
KicOffset-rm: 5.305 arcsec [8.25 σ]
OotOffset-st: 0/0/1/1 [2]
KicOffset-st: 0/0/1/1 [2]
DiffImageQuality-fgm: 1.00 [2/2]
DiffImageOverlap-fno: 1.00 [14/14]

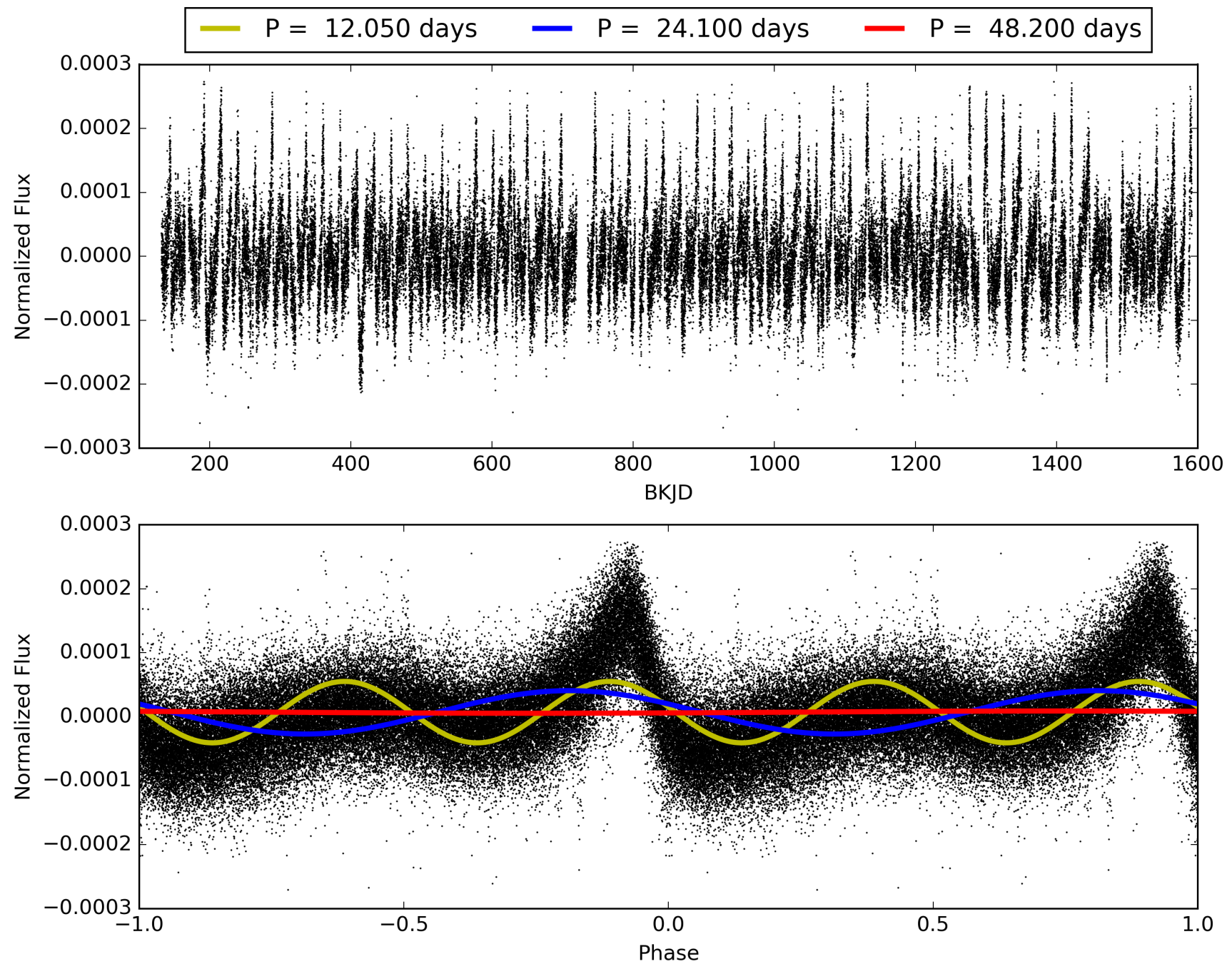
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 28-Jan-2016 21:56:37 Z

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

TCE 011453915-01, PDC Light Curves

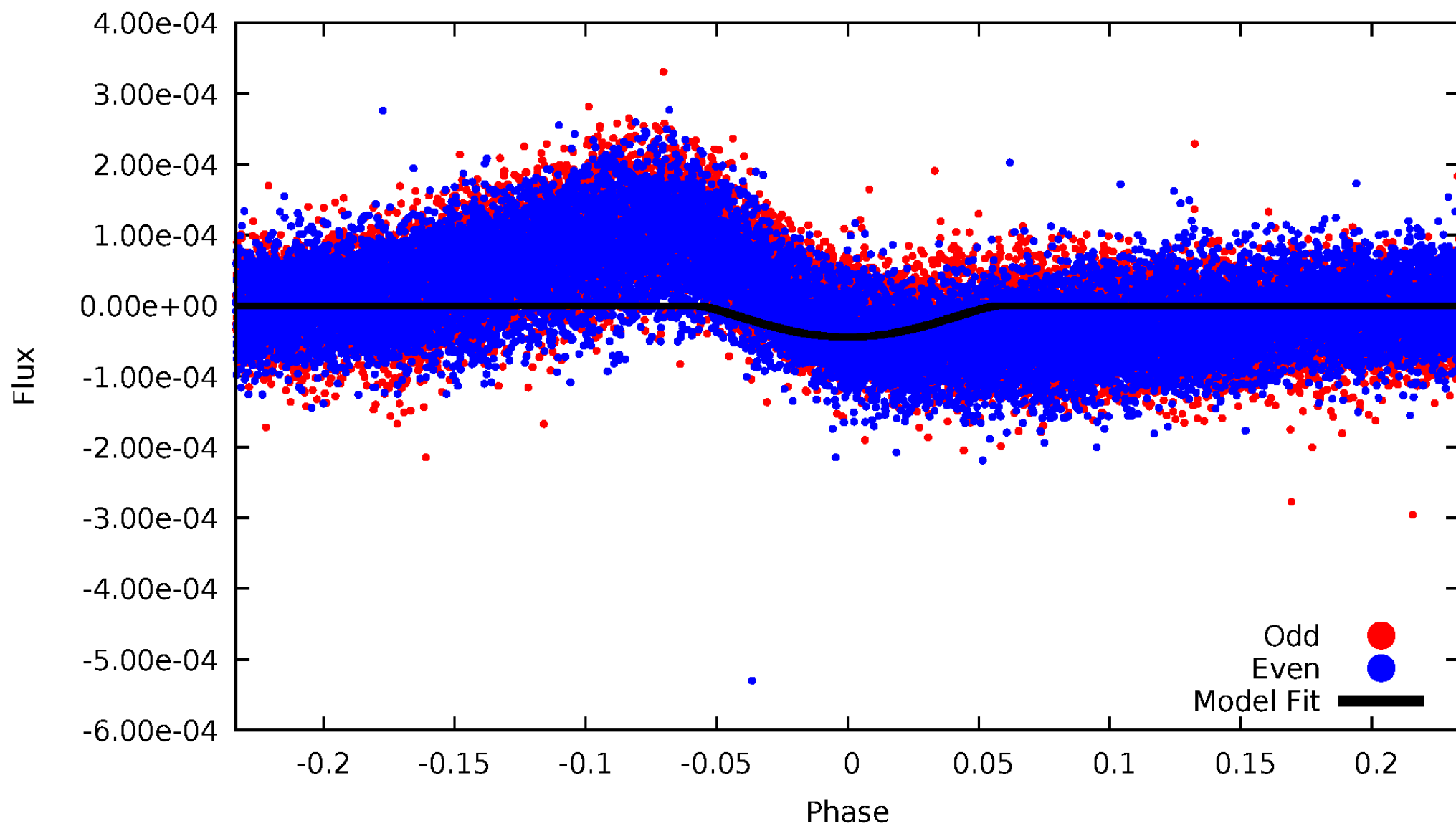


TCE 011453915-01



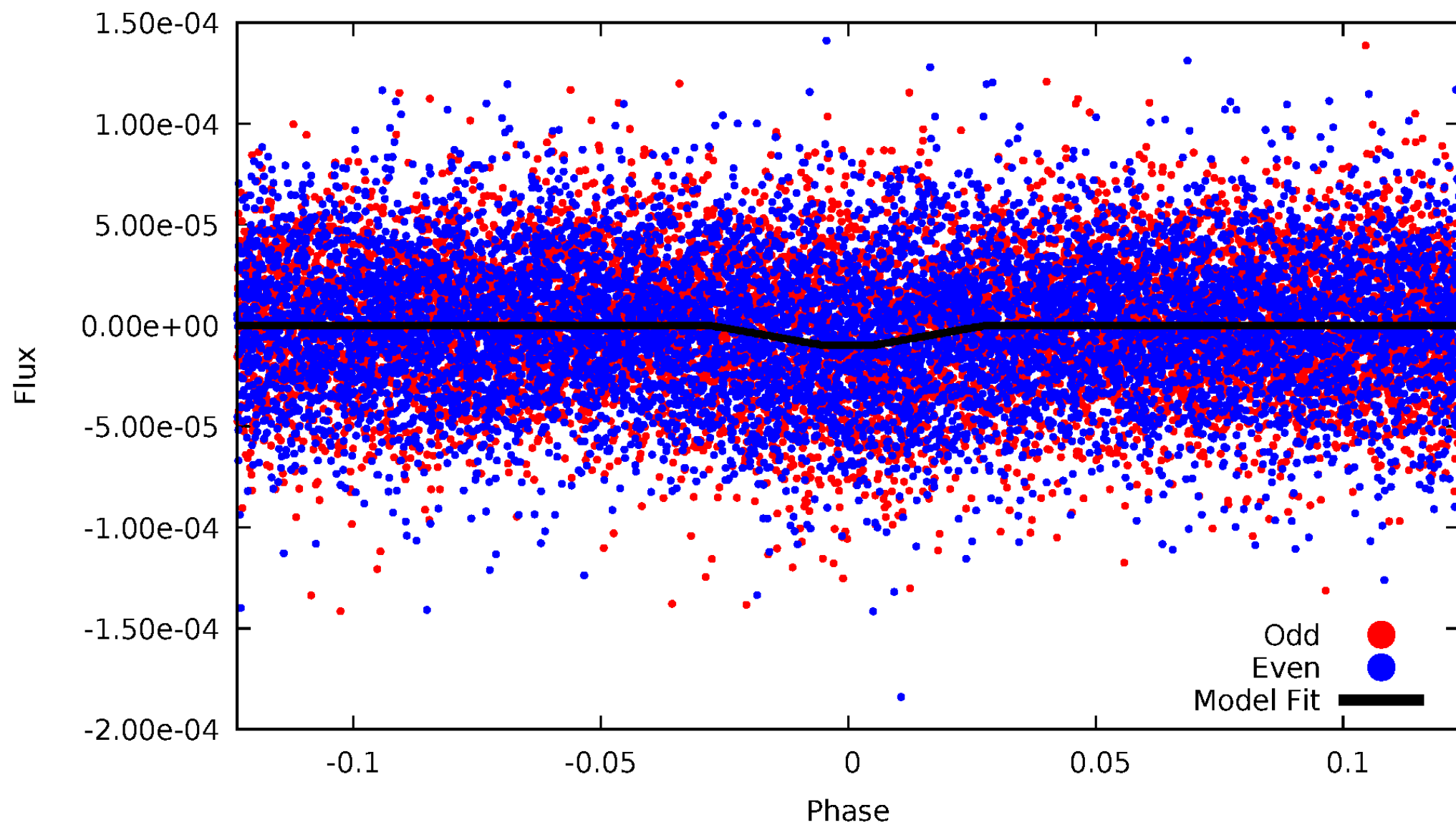
DV Odd/Even

TCE 011453915-01

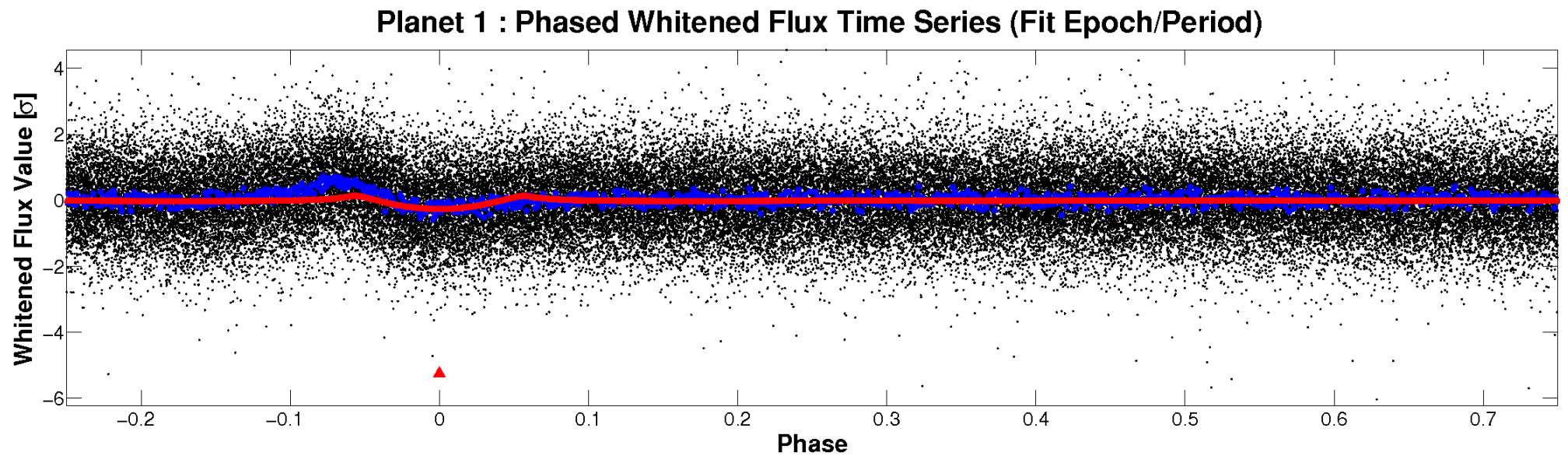
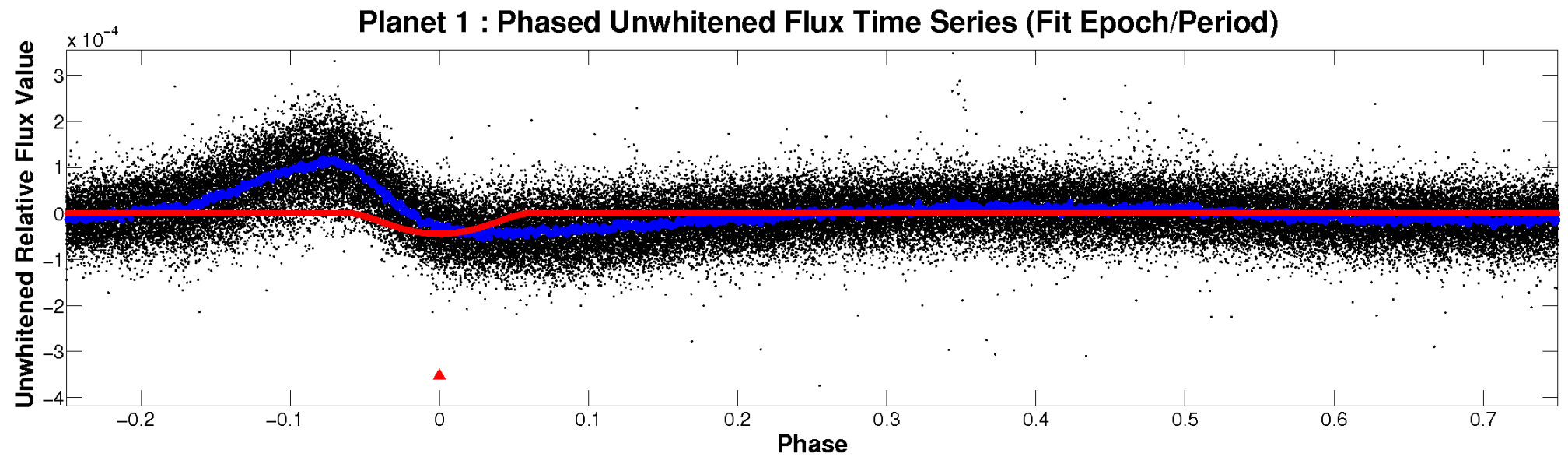


ALT Odd/Even

TCE 011453915-01

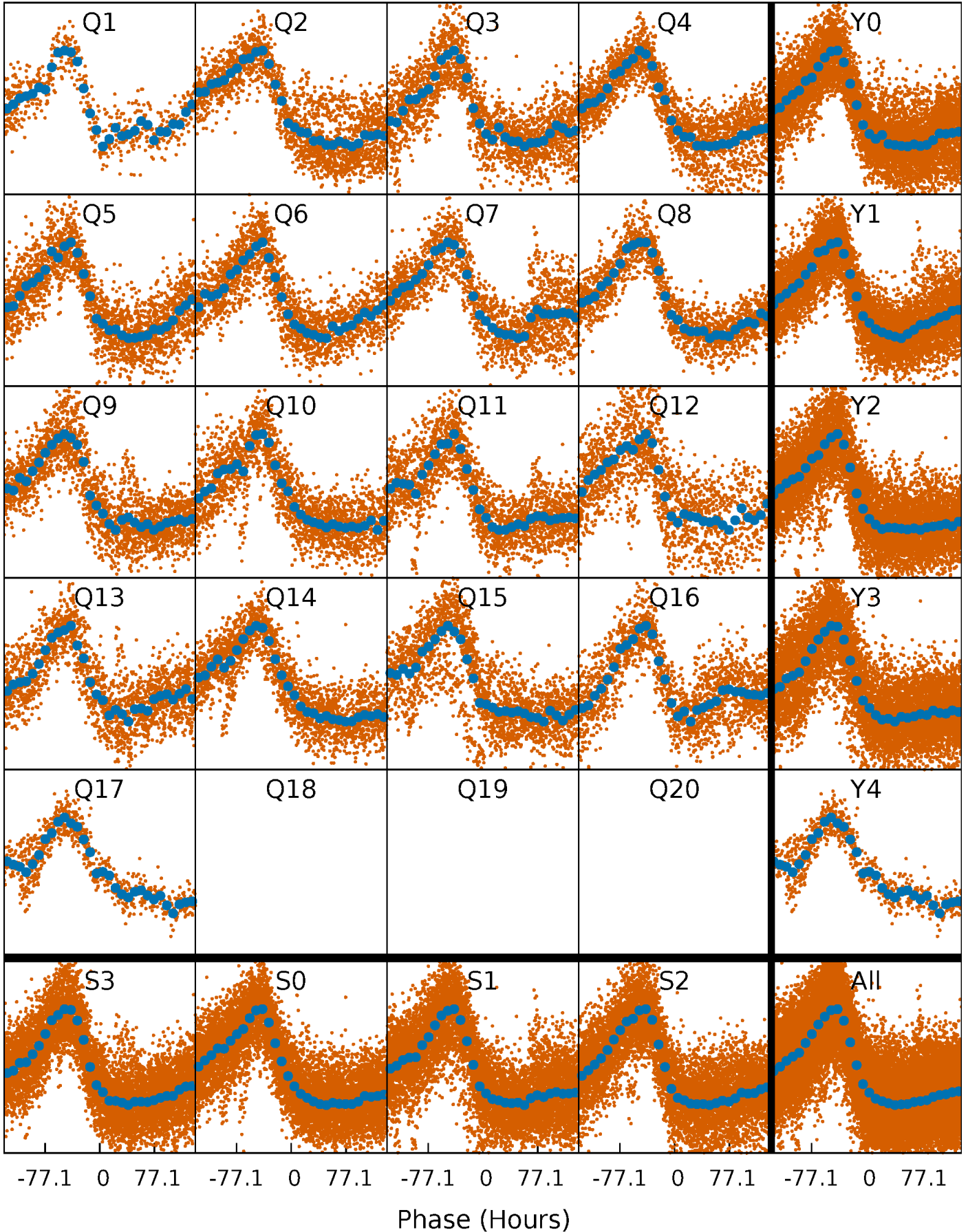


Non-Whitened Vs. Whitened Light Curve



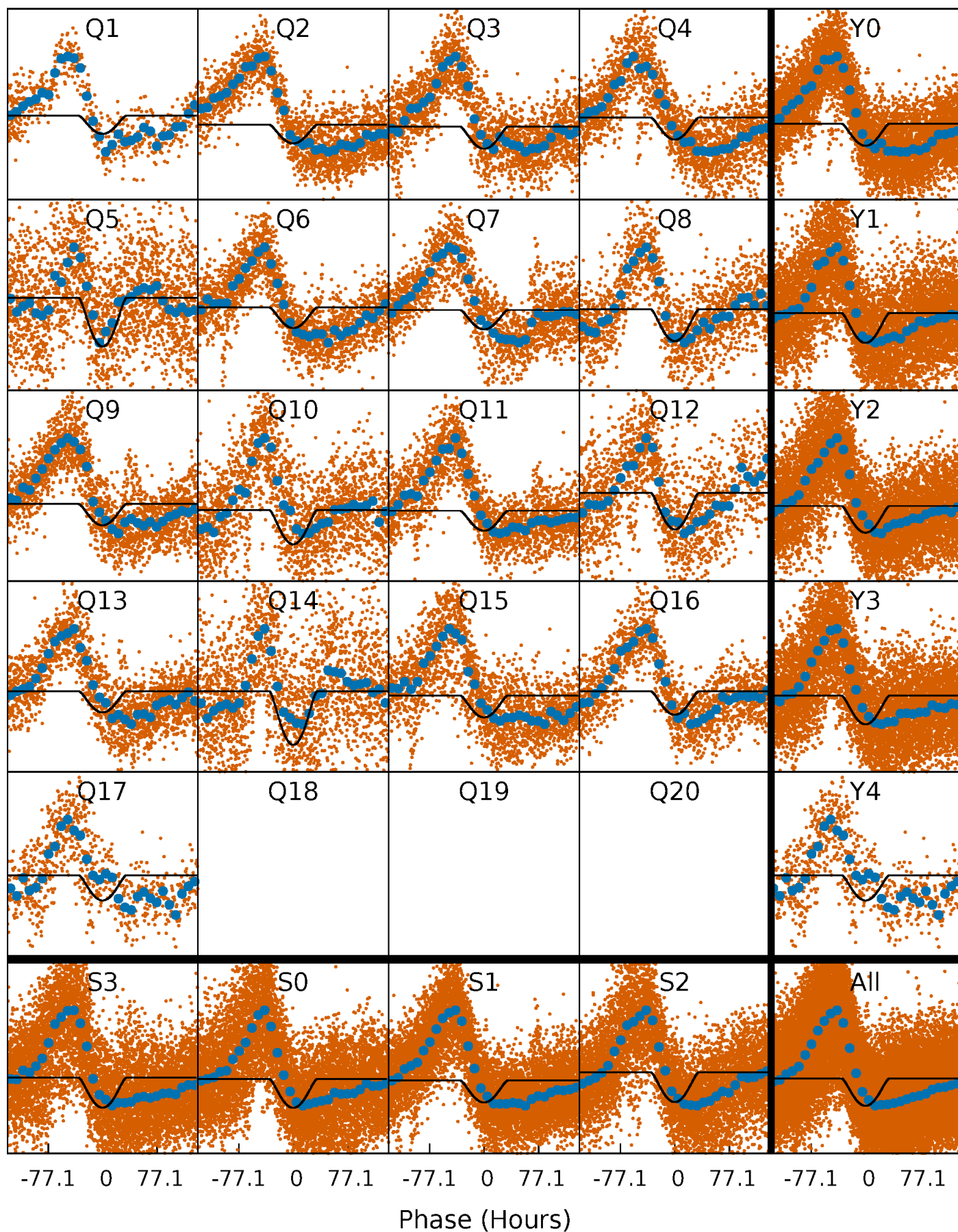
PDC Quarter-Phased Transit Curves

TCE 011453915-01 P= 24.099985 Days $T_0=145.523371$ (BKJD)



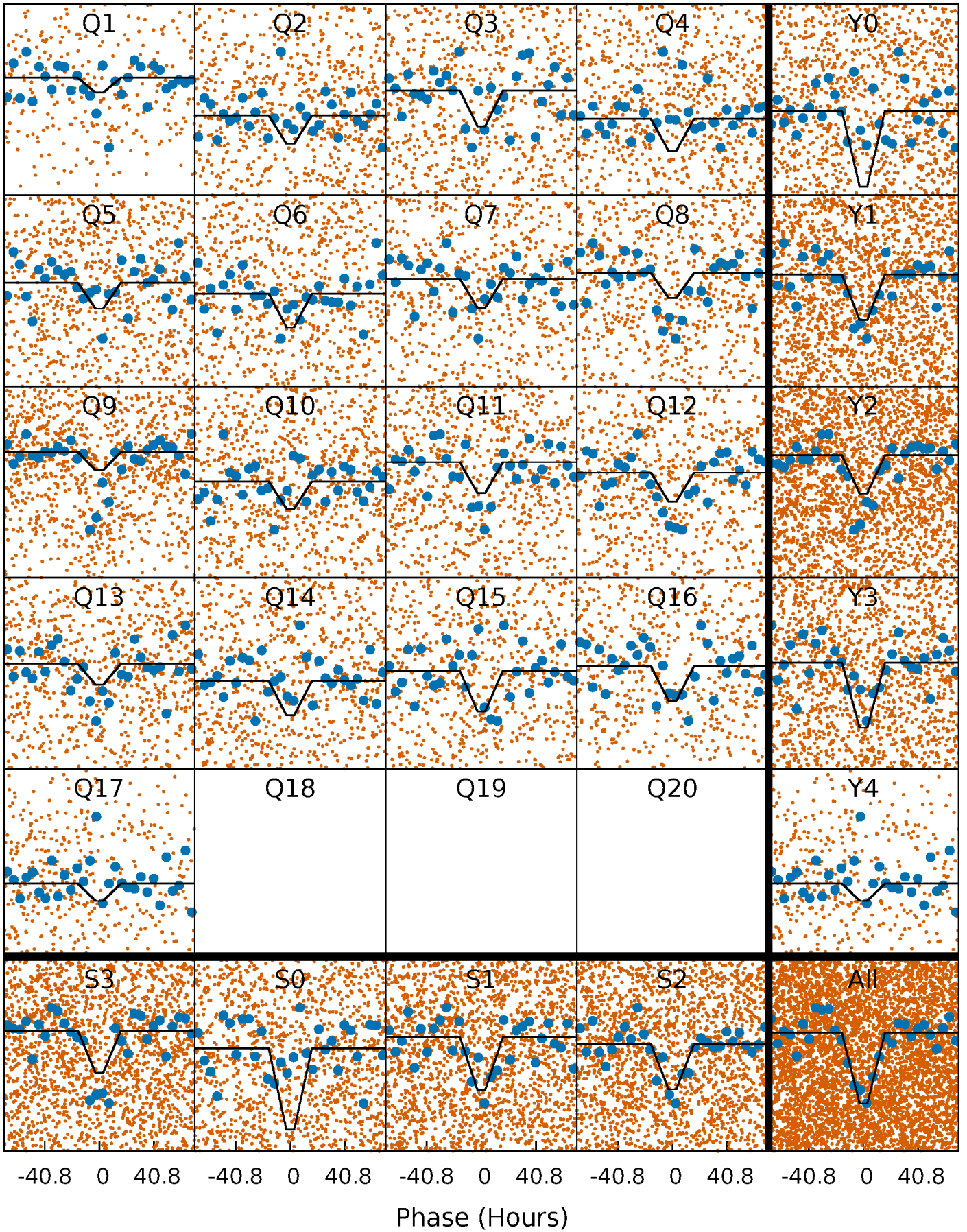
DV Quarter-Phased Transit Curves

TCE 011453915-01 P= 24.099985 Days $T_0=145.523371$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

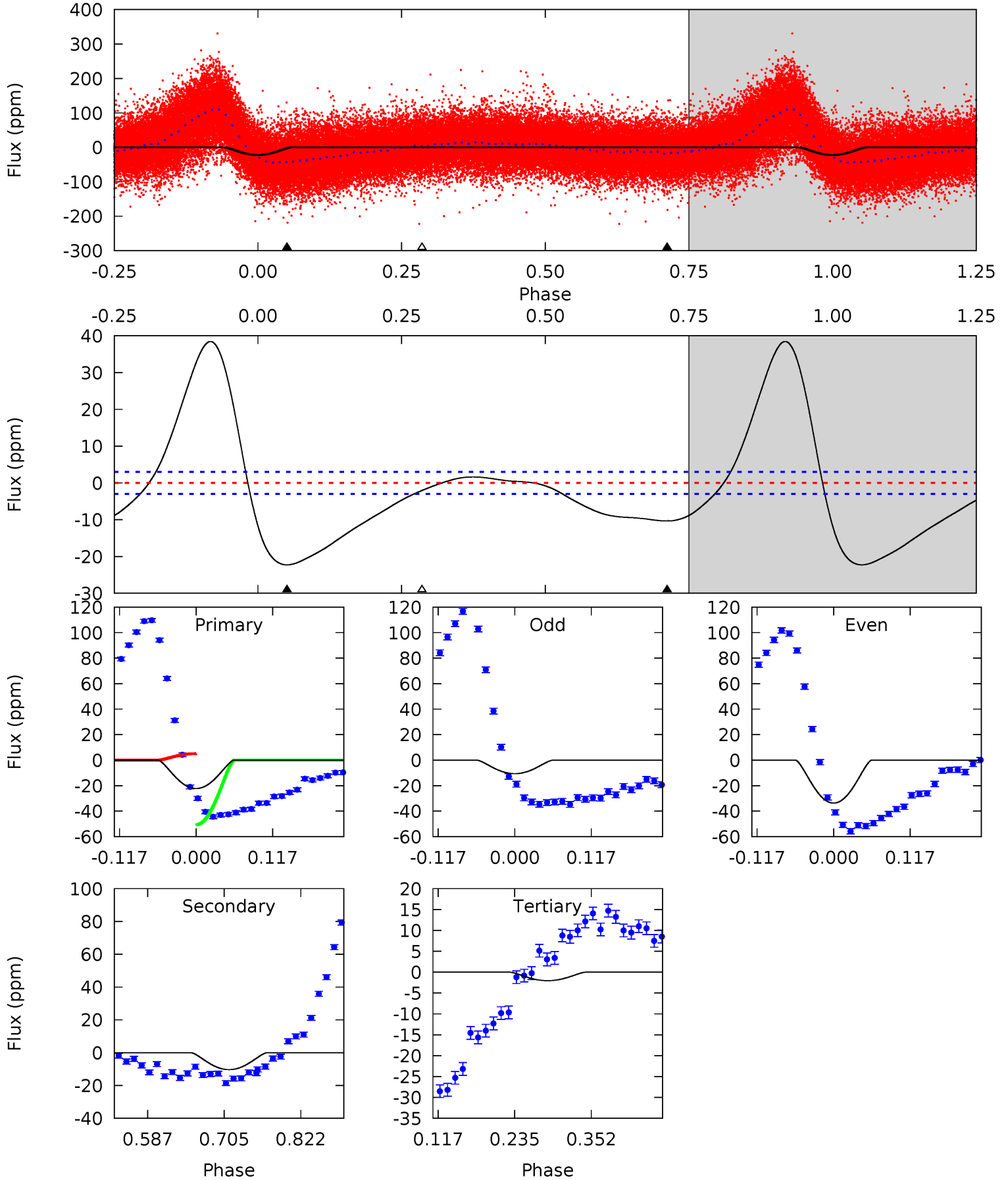
TCE 011453915-01 P= 24.096593 Days $T_0=145.311897$ (BKJD)



DV Model-Shift Uniqueness Test

011453915-01, $P = 24.099985$ Days, $E = 121.423386$ Days

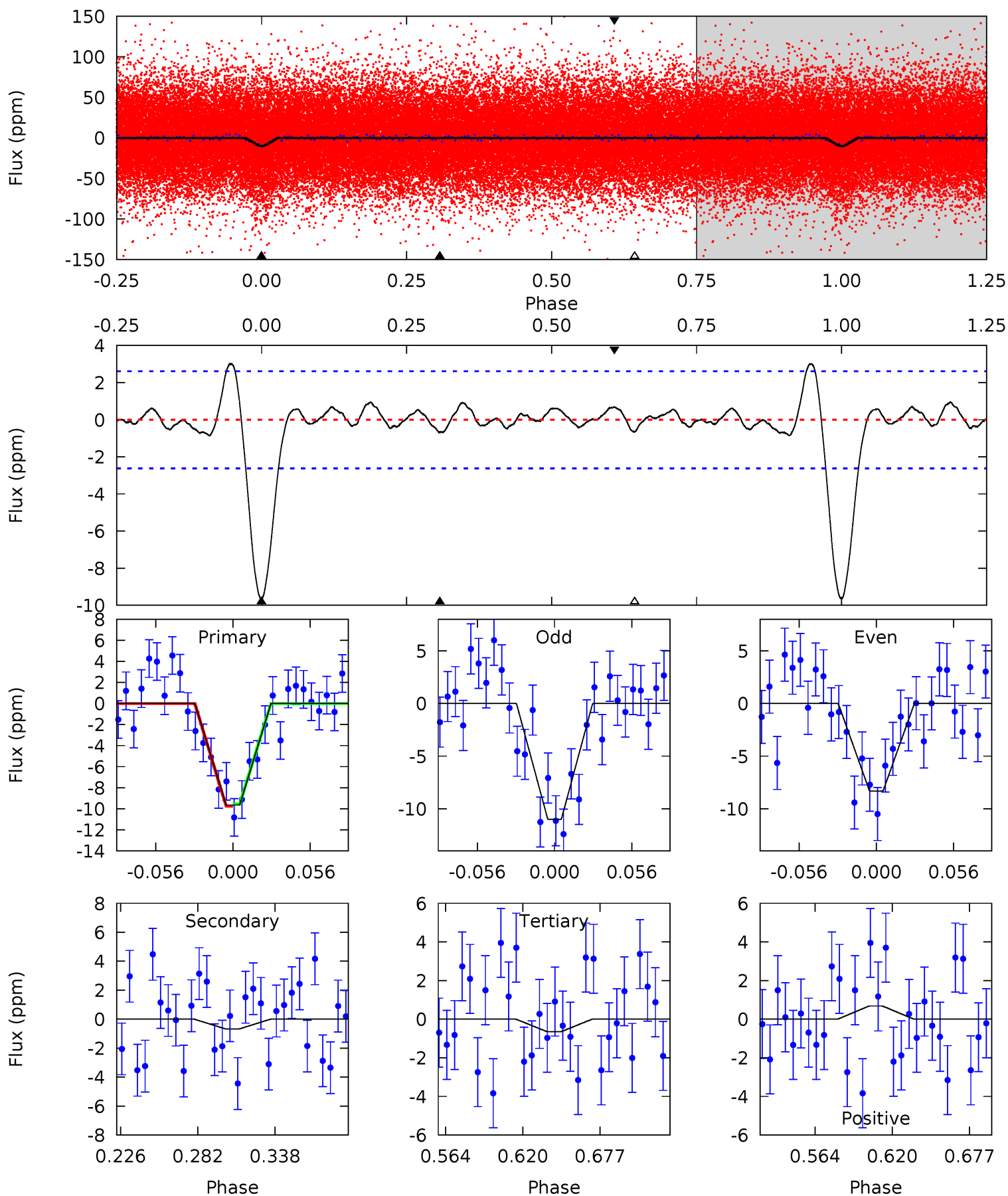
| Pri | Sec | Ter | Pos | FA ₁ | FA ₂ | F _{Red} | Pri-Ter | Pri-Pos | Sec-Ter | Sec-Pos | Odd-Evn | DMM | Shape | TAT |
|------|------|------|-----|-----------------|-----------------|------------------|---------|---------|---------|---------|---------|------|-------|------|
| 33.7 | 15.6 | 3.09 | 0 | 4.53 | 1.57 | 19.6 | 30.6 | 33.7 | 12.5 | 15.6 | 17.5 | 1.09 | 0.63 | 44.9 |



Alt Model-Shift Uniqueness Test

011453915-01, P = 24.096593 Days, E = 121.215304 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 | 1.21 | 1.17 | 1.22 | 4.68 | 1.91 | 0.85 | 16.1 | 16.1 | 0.04 | -0.01 | 2.41 | 1.09 | 0.24 | 0.18 |



Stellar Parameters For KIC 011453915

| | $T_{\text{eff}}(K)$ | $\log(g)$ | [Fe/H] | $R (R_{\odot})$ | $M(M_{\odot})$ | $p_{\star} (\text{g}\cdot\text{cm}^{-3})$ |
|--------|---------------------|---------------------------|----------------------------|---------------------------|---------------------------|---|
| | 6338^{+76}_{-70} | $4.357^{+0.014}_{-0.012}$ | $-0.120^{+0.150}_{-0.150}$ | $1.143^{+0.042}_{-0.035}$ | $1.080^{+0.076}_{-0.055}$ | $1.020^{+0.058}_{-0.055}$ |
| | +1%/-1% | +0%/-0% | +125%/-125% | +4%/-3% | +7%/-5% | +6%/-5% |
| Source | SPE72 | AST10 | SPE72 | DSEP | | |

KIC = Kepler Input Catalog; PHO = Photometry; SPE = Spectroscopy; AST = Asteroseismology
 TRA = Transits; DESP = Dartmouth Models; MULT = Multiple Models

Secondary Eclipse Parameters for KIC 011453915-01 / KOI

| Detrend | Depth (ppm) | $R_p (R_{\oplus})$ | $T_{\text{max}} (K)$ | $T_{\text{obs}} (K)$ | A_{obs} |
|---------|-------------|------------------------|----------------------|-----------------------|----------------------------|
| DV | -10 ± 1 | $1.65^{+1.20}_{-1.02}$ | 1020^{+15}_{-13} | 3577^{+1559}_{-546} | 59^{+345}_{-39} |
| Alt. | -1 ± 1 | $0.97^{+0.93}_{-0.66}$ | 1020^{+12}_{-12} | 2700^{+1172}_{-712} | $8.663^{+84.072}_{-7.785}$ |

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

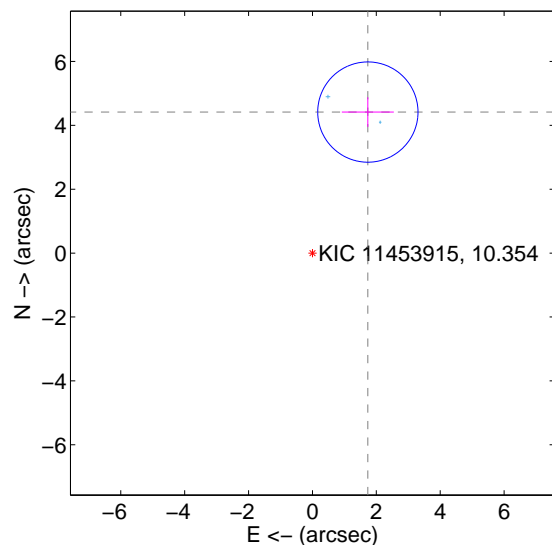
Supplemental centroid analysis for 011453915-01. **Kepler magnitude: 10.35.** Transit SNR 15.74

There are 2 quarters with good PRF difference image offsets

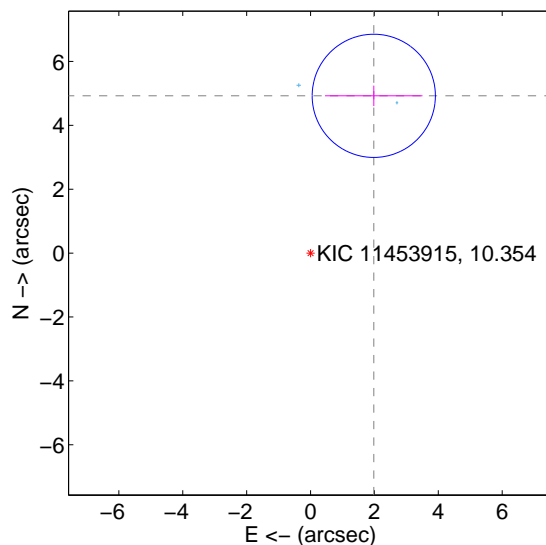
The direct PRF centroid is offset from the target star catalog position by about 0.84 arcsec

| | Distance in arcsec | Distance / σ | Δ RA | Δ Dec |
|---|-------------------------------------|---------------------|--------------------|-------------------|
| PRF-fit source offset from OOT | 4.743 \pm 0.523 | 9.07 | -1.735 \pm 0.813 | 4.414 \pm 0.462 |
| PRF-fit source offset from KIC position | 5.305 \pm 0.643 | 8.25 | -1.980 \pm 1.526 | 4.922 \pm 0.321 |
| photometric centroid source offset | 0.51 \pm 0.57 | 0.91 | -0.51 \pm 0.54 | 0.10 \pm 0.98 |

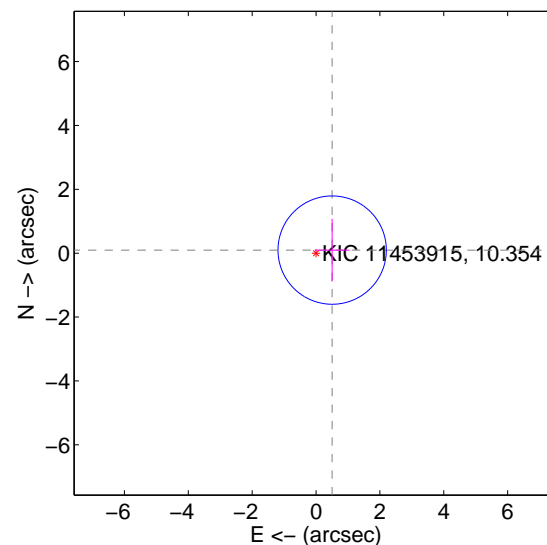
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

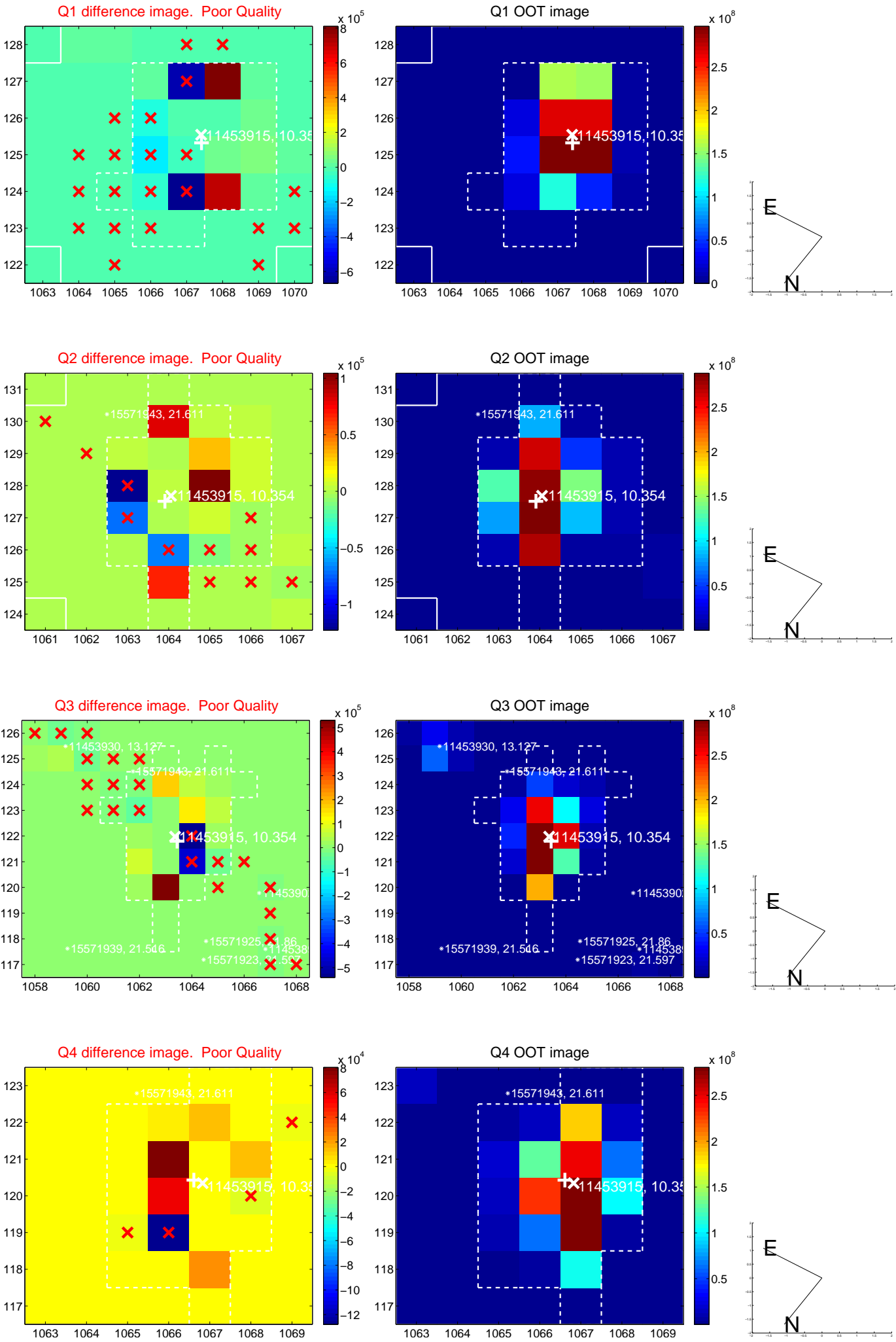


offset from photometric centroids

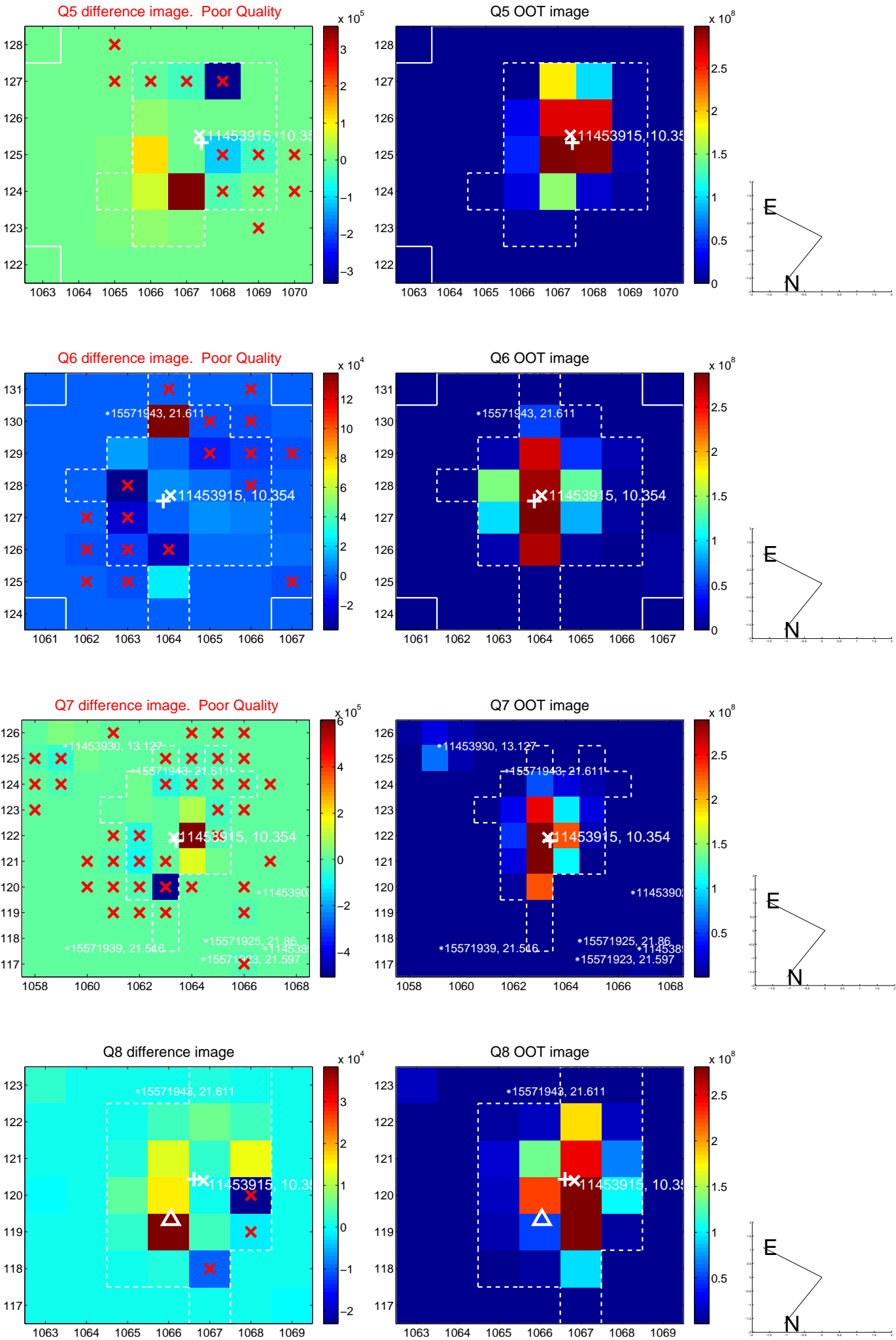


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

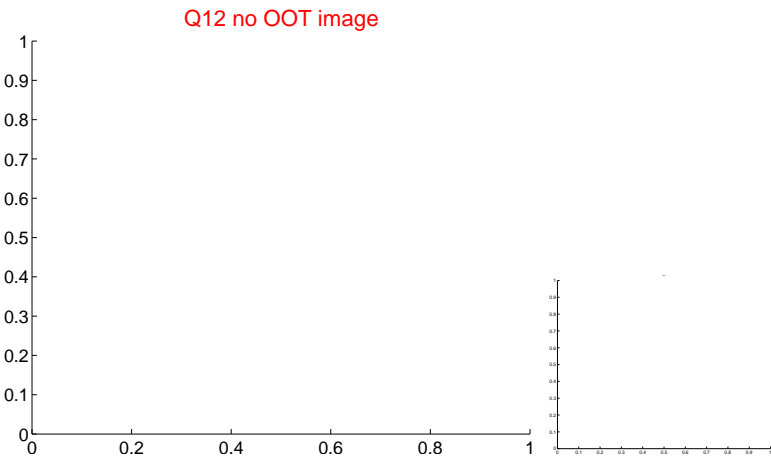
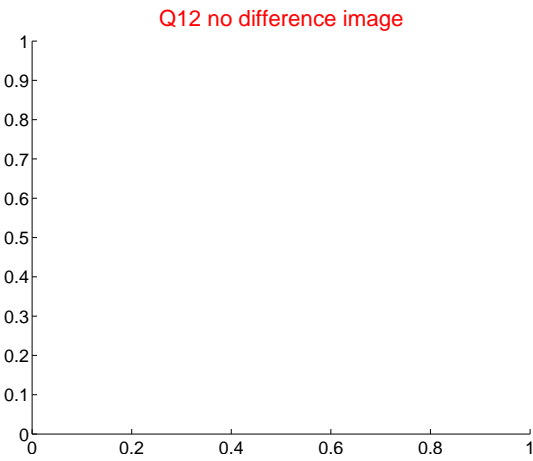
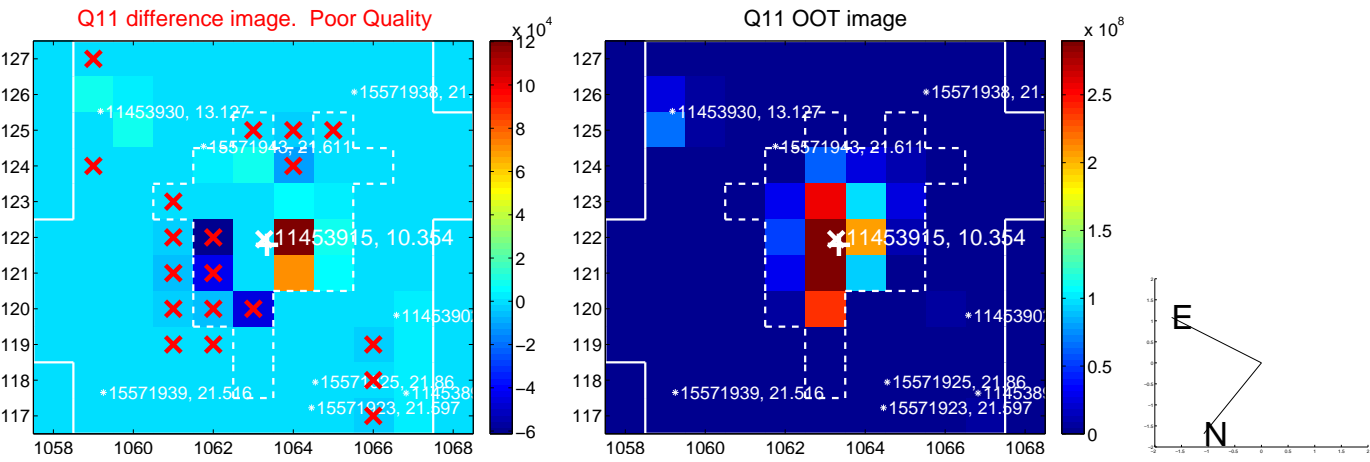
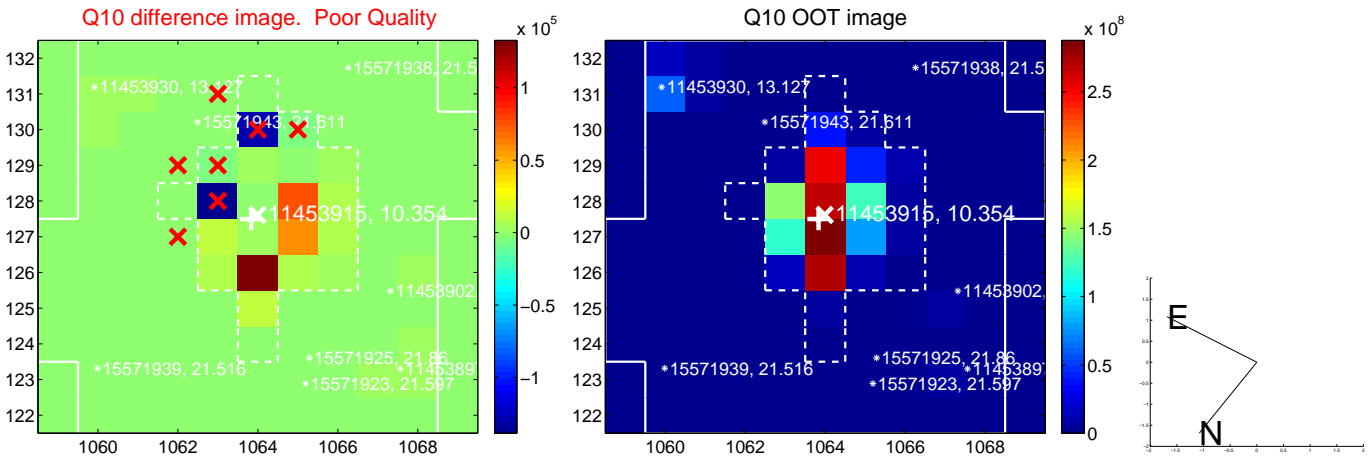
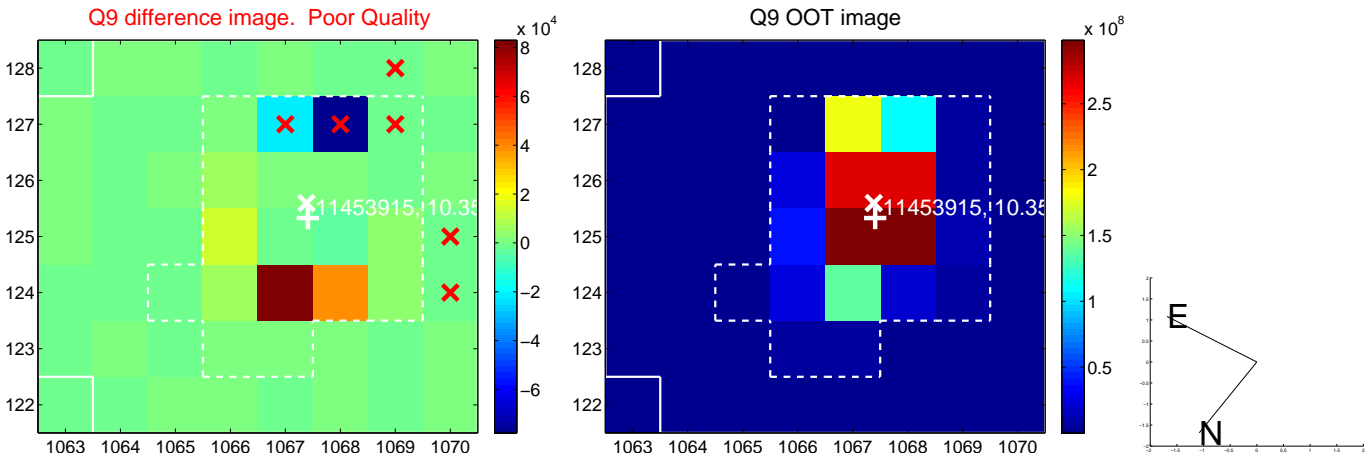
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



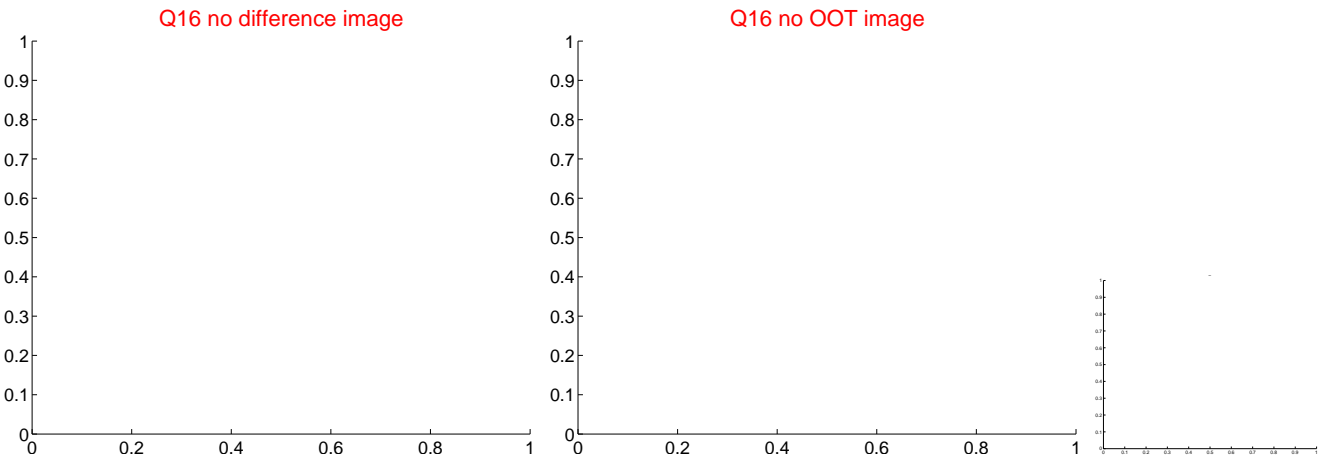
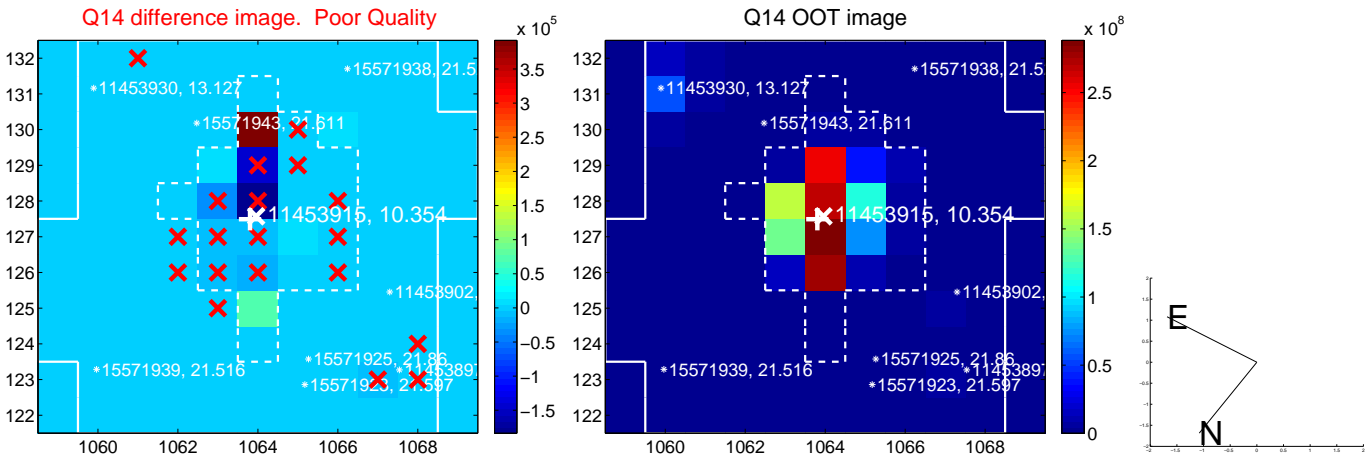
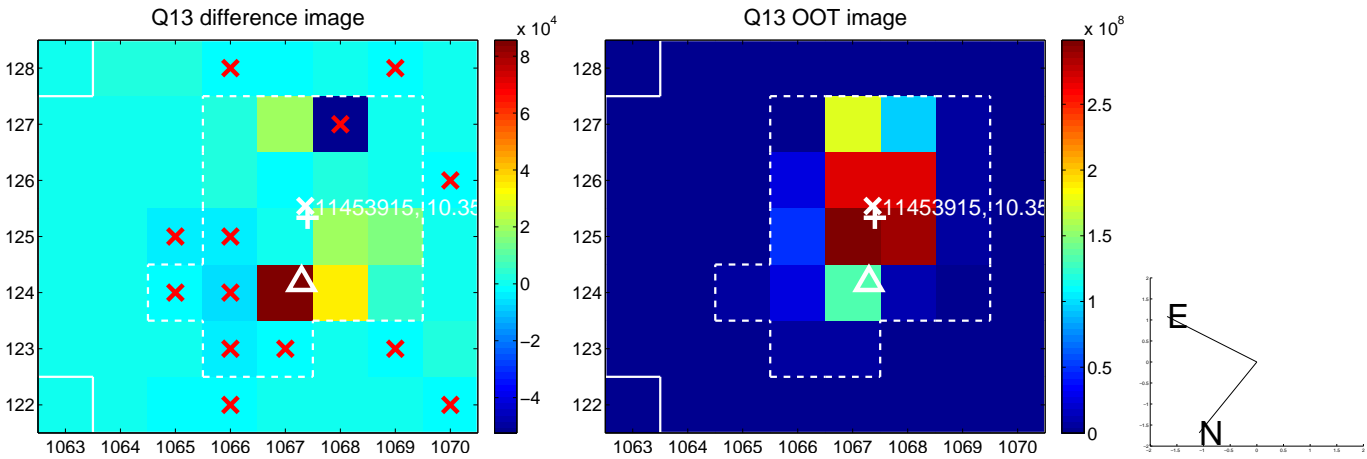
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



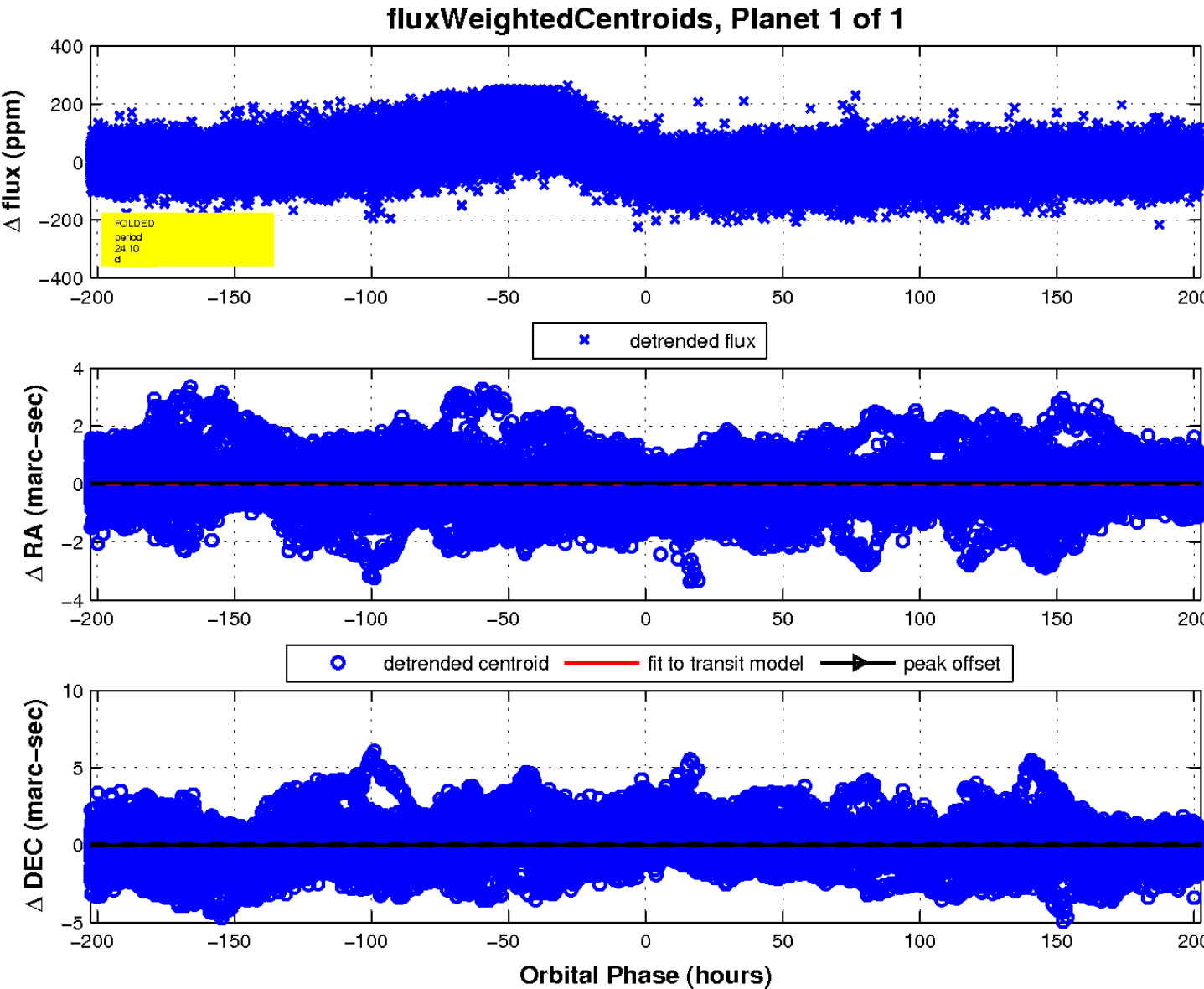
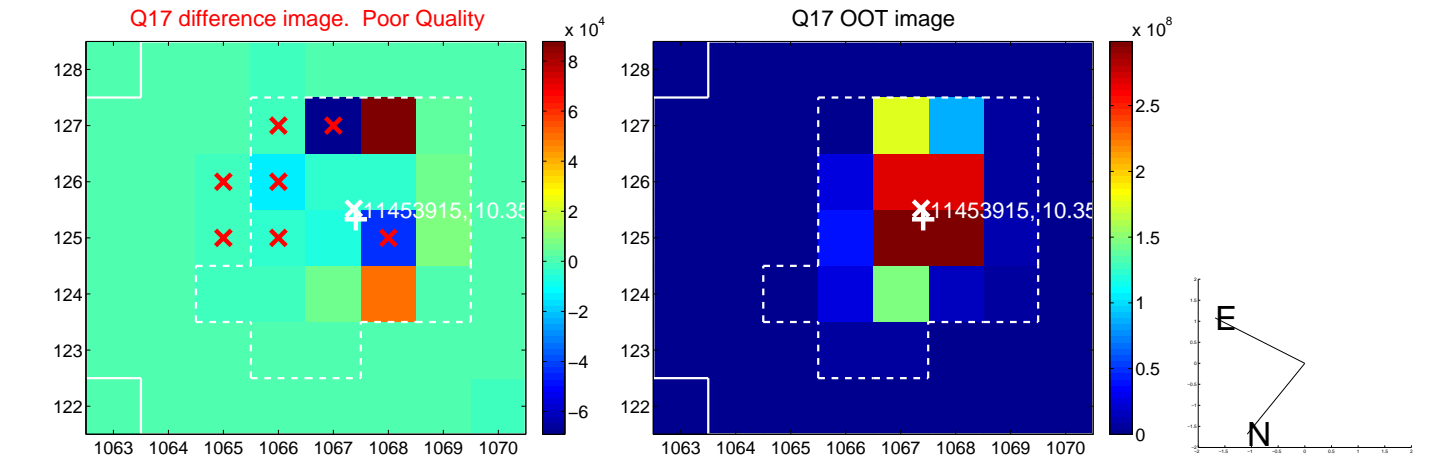
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



UKIRT Image

