

KIC 003861139

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}) |
|--------------|----------|------|---------------|--------------|-------------|------------------|-----|-----|-----------------------------|-----------------|------------------------|------------------------|
| 003861139-01 | OBS | No | 0.716696 | 131.562779 | 8.4 | 2.356 | 7.9 | 6.5 | 4.65 | 7159 | 1.57 | 0.00 |

Robovetter Results

| TCE | Run Type | Disp | Score | N | S | C | E | Comments |
|--------------|----------|------|-------|---|---|---|---|--|
| 003861139-01 | OBS | FP | 0.00 | 1 | 0 | 0 | 0 | LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—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.

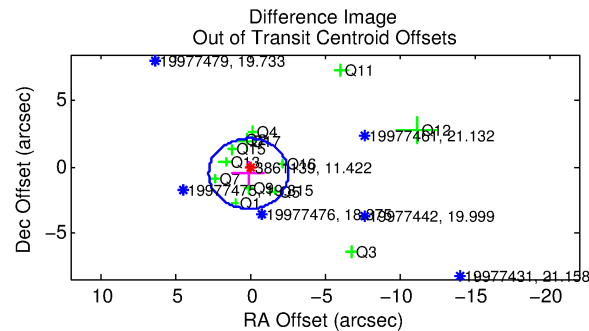
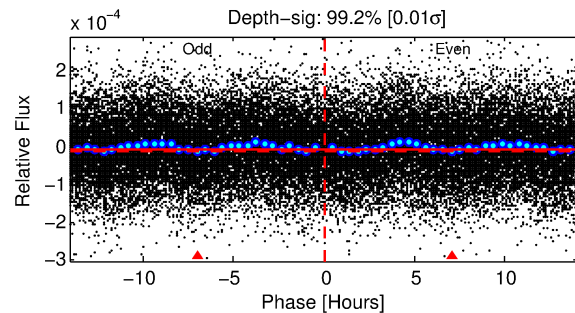
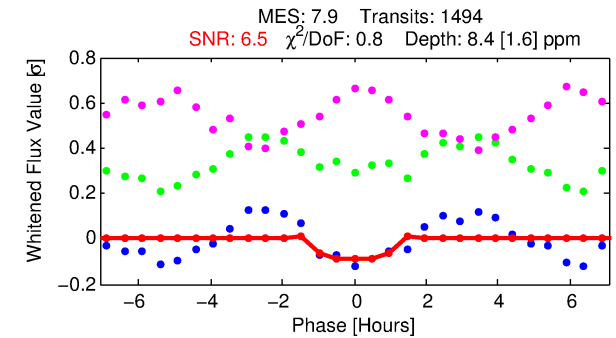
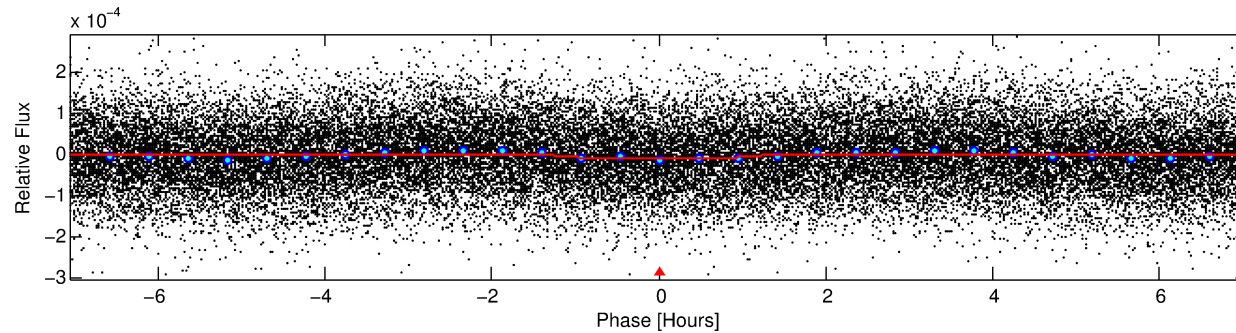
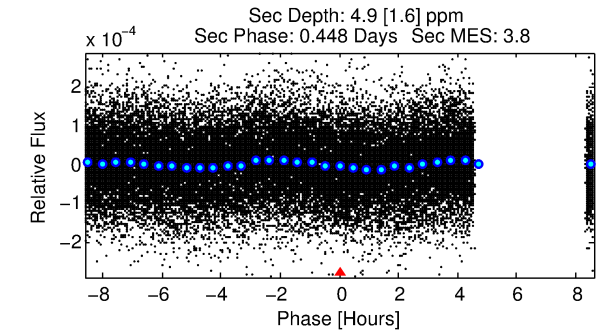
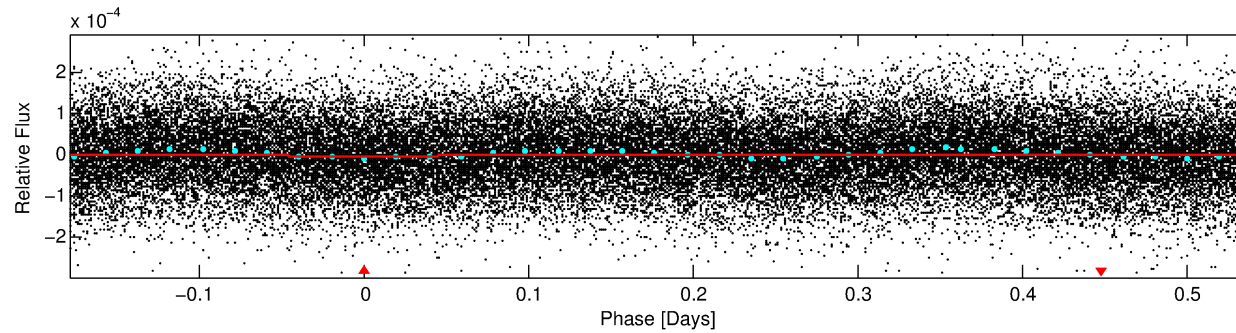
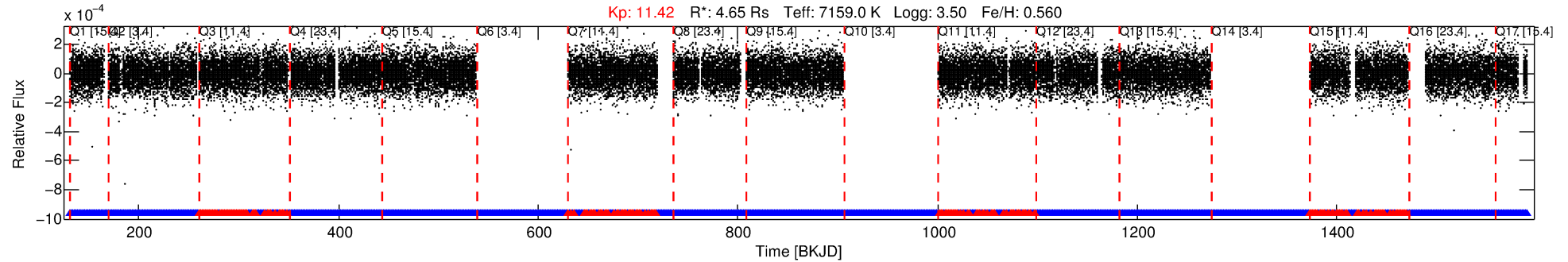
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 003861139-01

No Significant Match Found

DV One-Page Summary

KIC: 3861139 Candidate: 1 of 1 Period: 0.717 d



DV Fit Results:

Period = 0.71670 [0.00002] d
Epoch = 131.5628 [0.0040] BKJD
Rp/R* = 0.0031 [0.0007]
a/R* = 1.39 [0.79]
b = 0.90 [0.25]
Seff = N/A
Teq = N/A
Rp = 1.57 [0.53] Re
a = N/A
Ag = N/A
Teffp = N/A

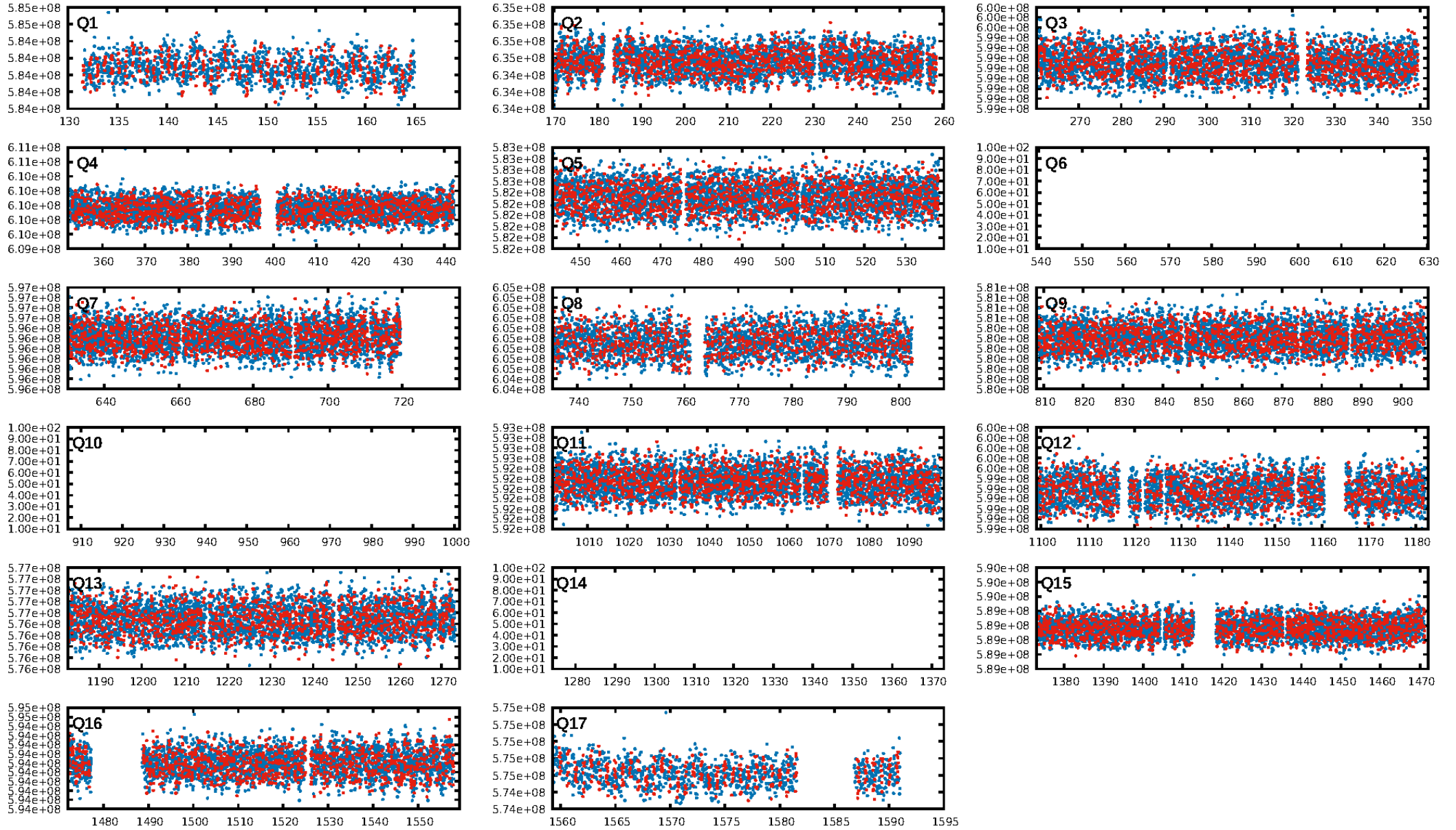
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 1.73e-12
RollingBand-fgt: 0.84 [1188/1409]
GhostDiagnostic-chr: 1.492
Centroid-sig: 10.8%
Centroid-so: 1.517 arcsec [1.21σ]
OotOffset-rm: 0.535 arcsec [0.60σ]
KicOffset-rm: 0.543 arcsec [0.64σ]
OotOffset-st: 1/4/3/5 [13]
KicOffset-st: 1/4/3/5 [13]
DiffImageQuality-fgm: 0.54 [7/13]
DiffImageOverlap-fno: 1.00 [14/14]

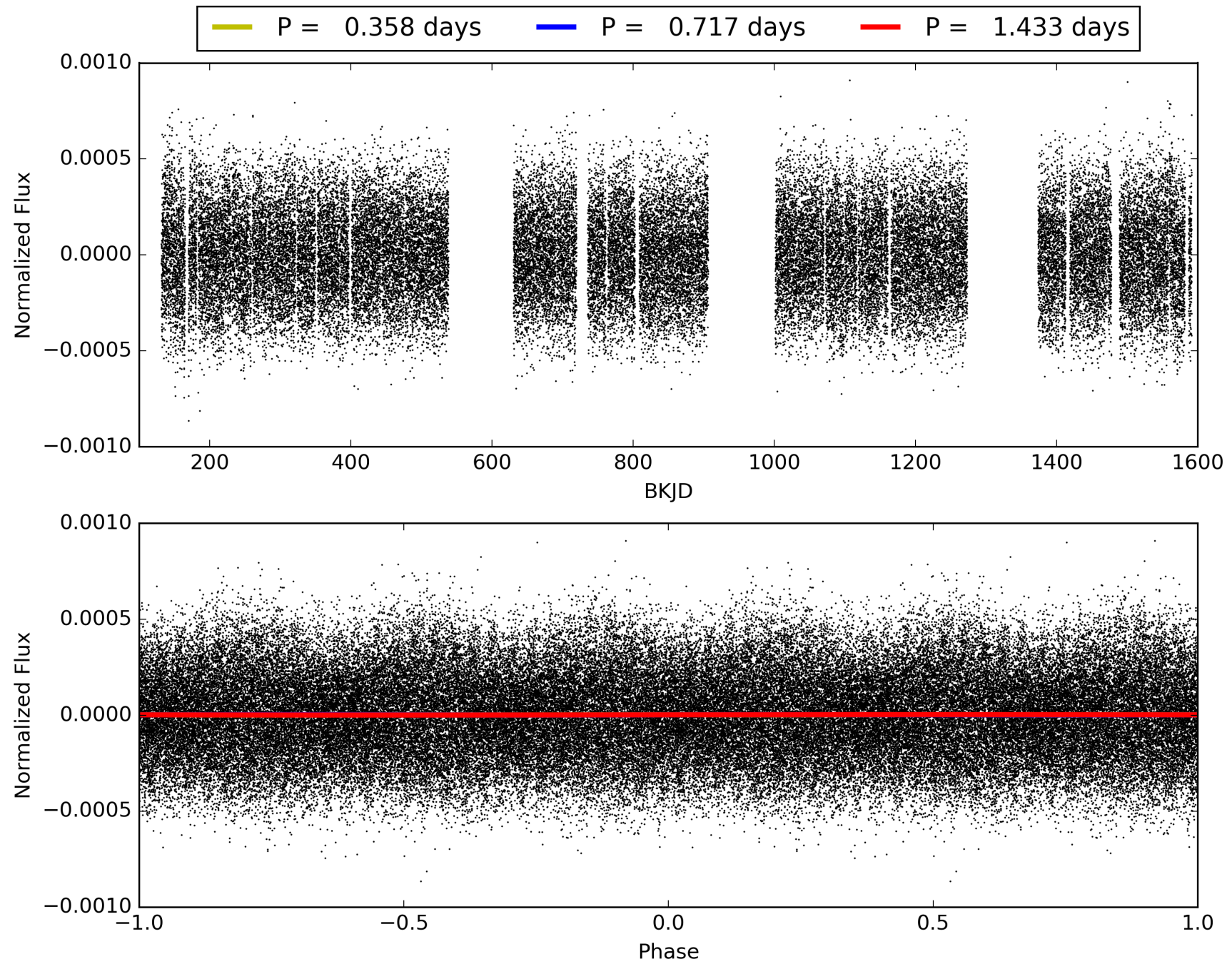
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 16:57:44 Z

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

TCE 003861139-01, PDC Light Curves

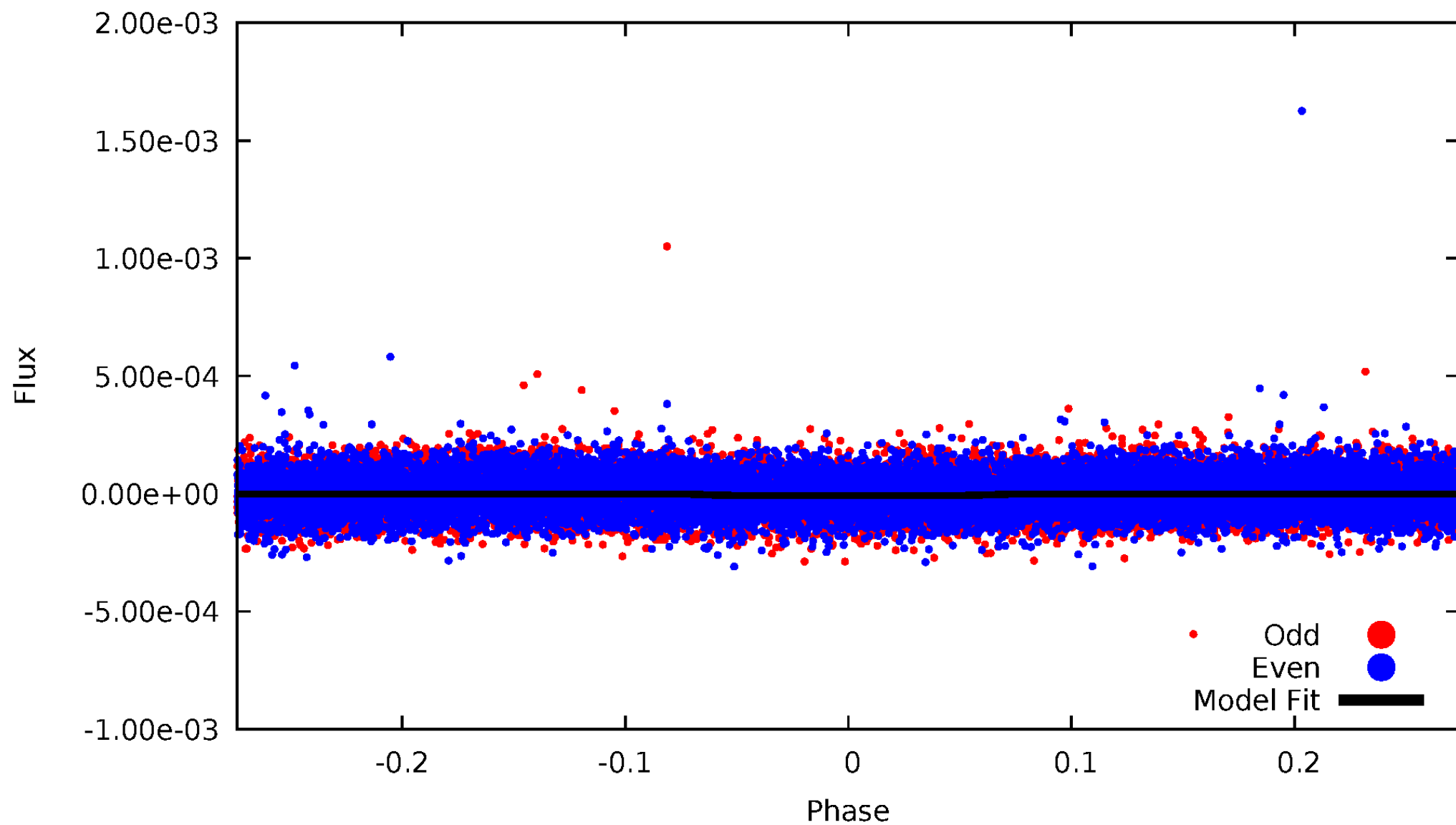


TCE 003861139-01



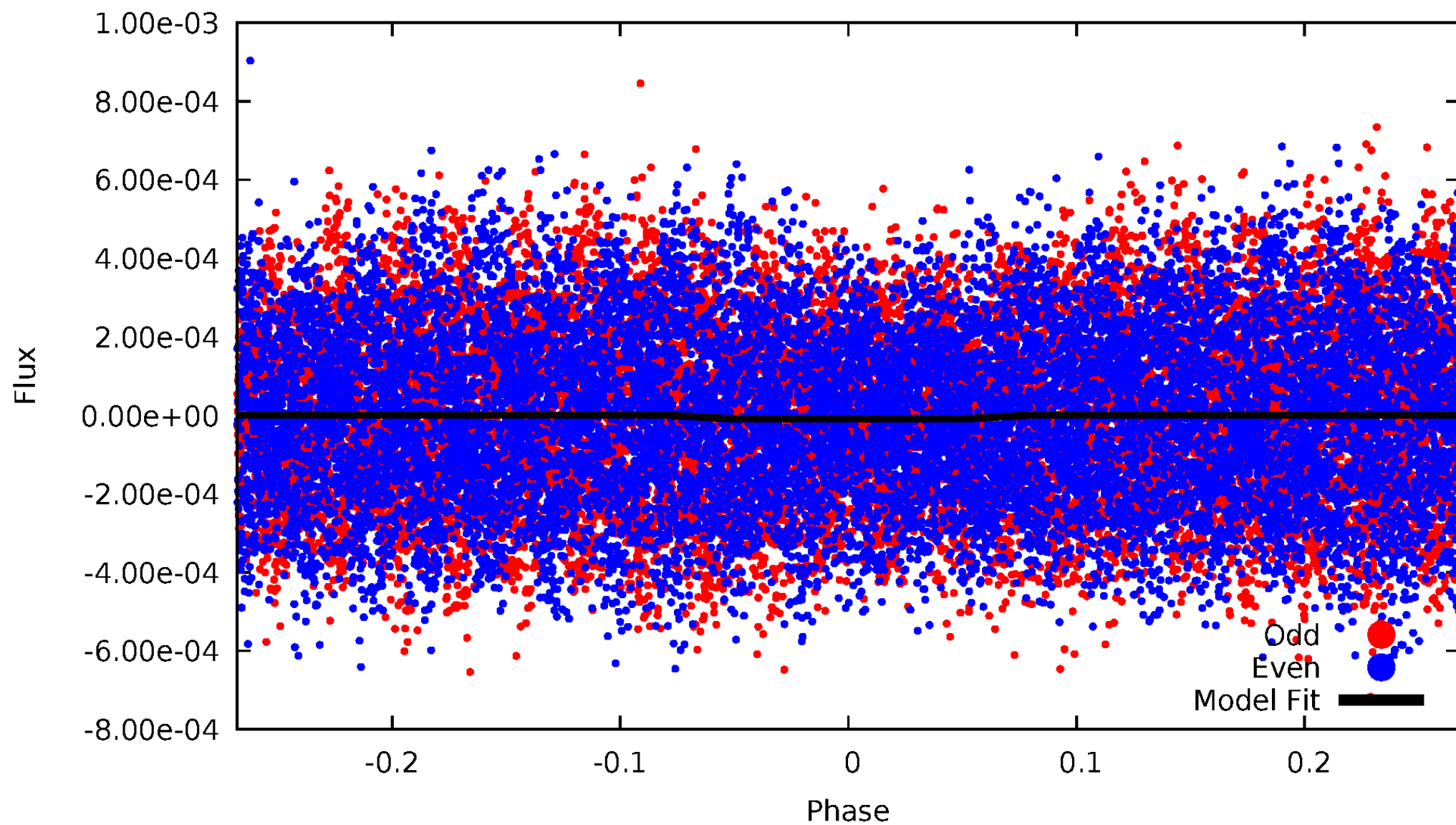
DV Odd/Even

TCE 003861139-01



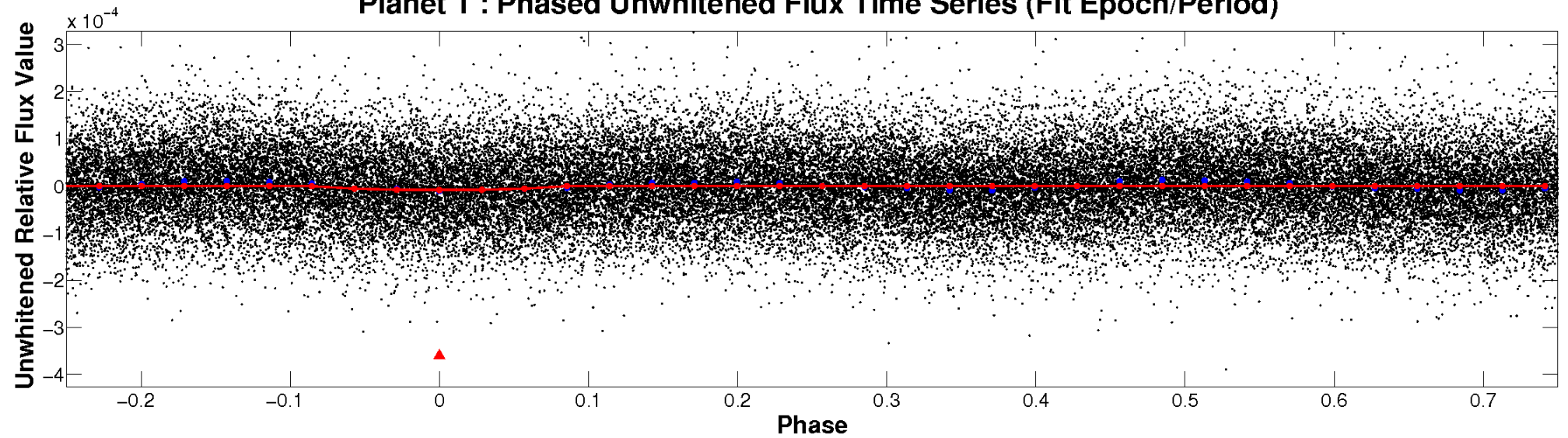
ALT Odd/Even

TCE 003861139-01

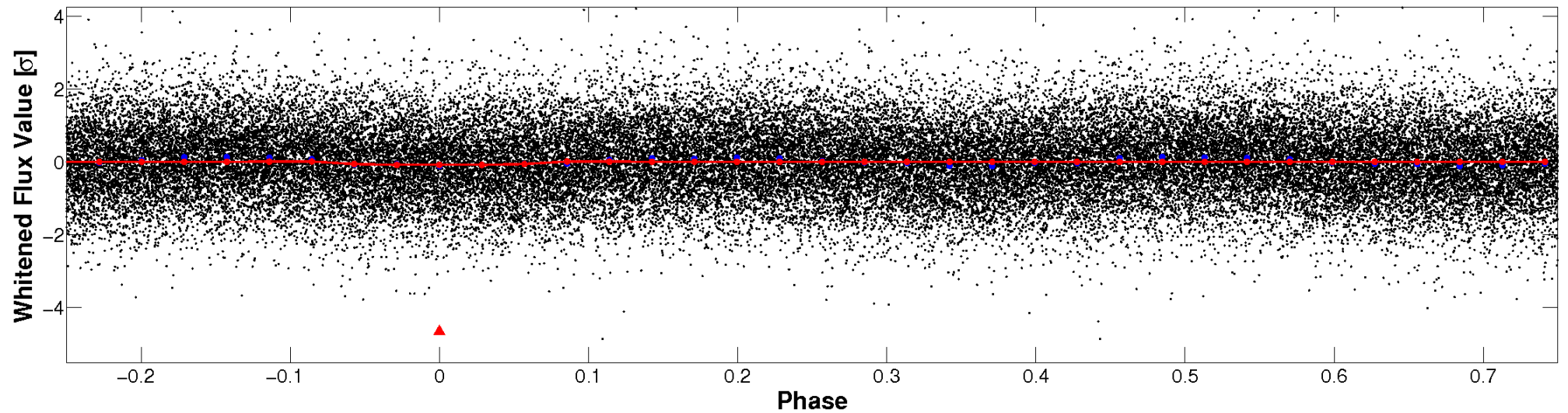


Non-Whitened Vs. Whitened Light Curve

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

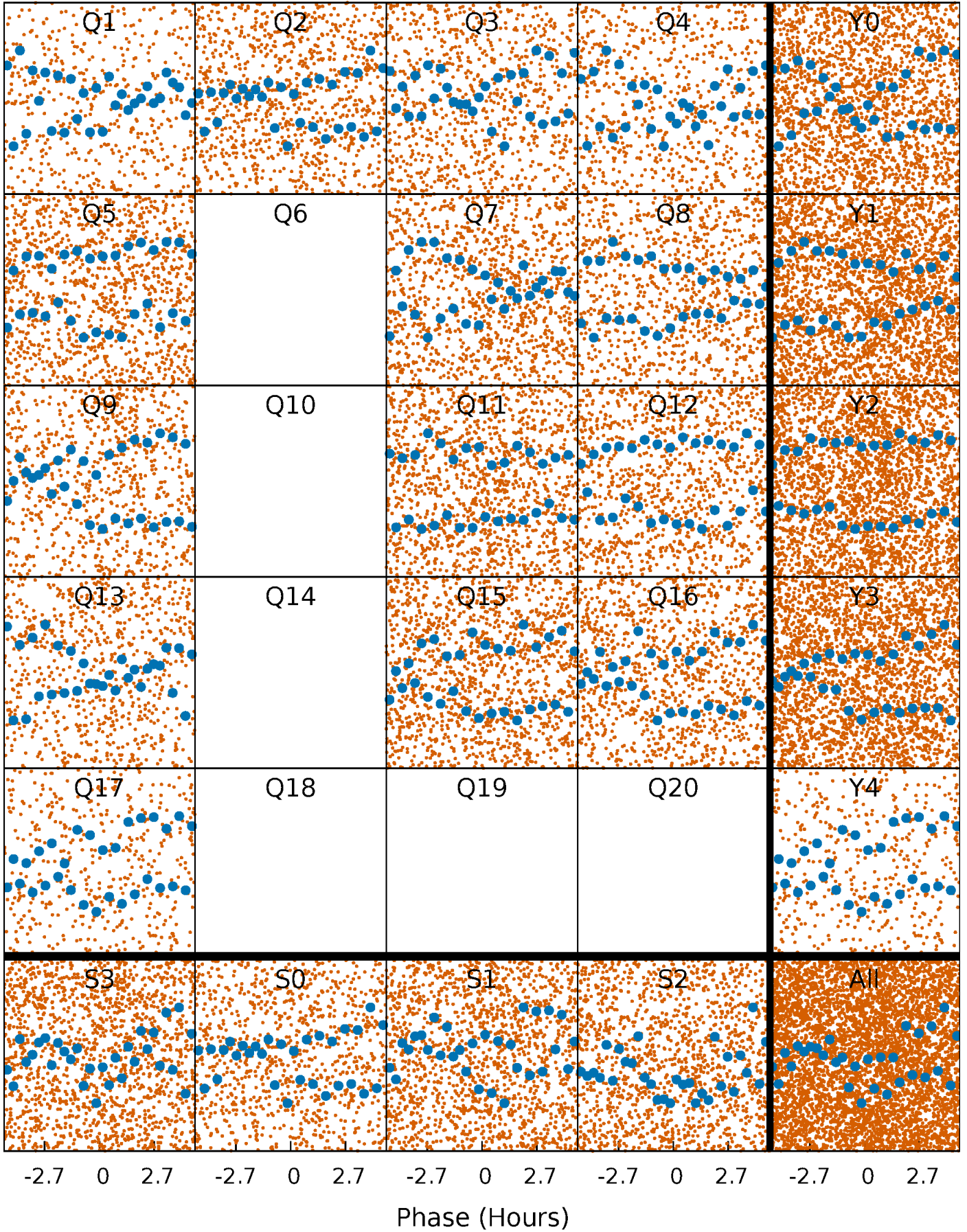


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



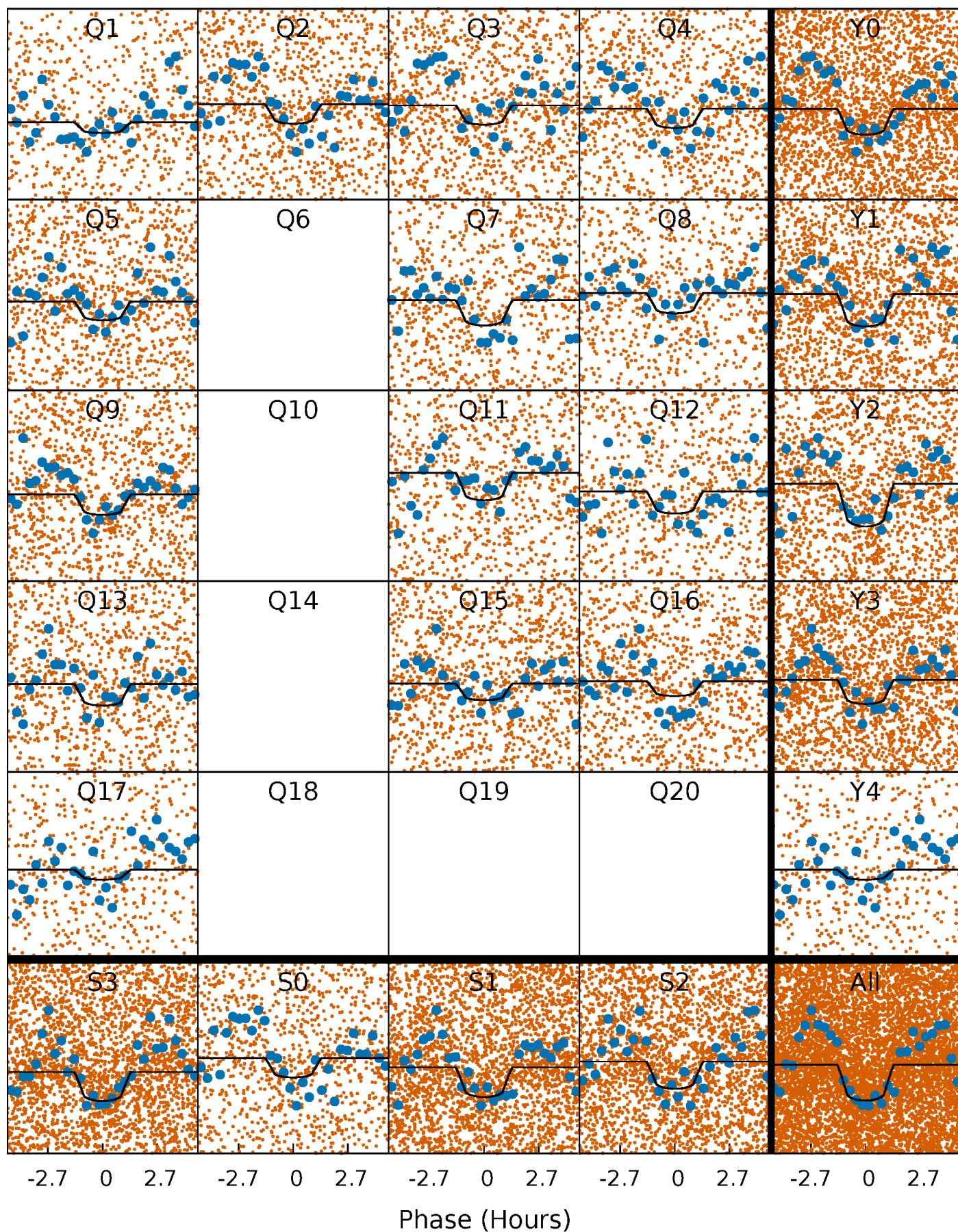
PDC Quarter-Phased Transit Curves

TCE 003861139-01 P= 0.716696 Days $T_0=131.562779$ (BKJD)



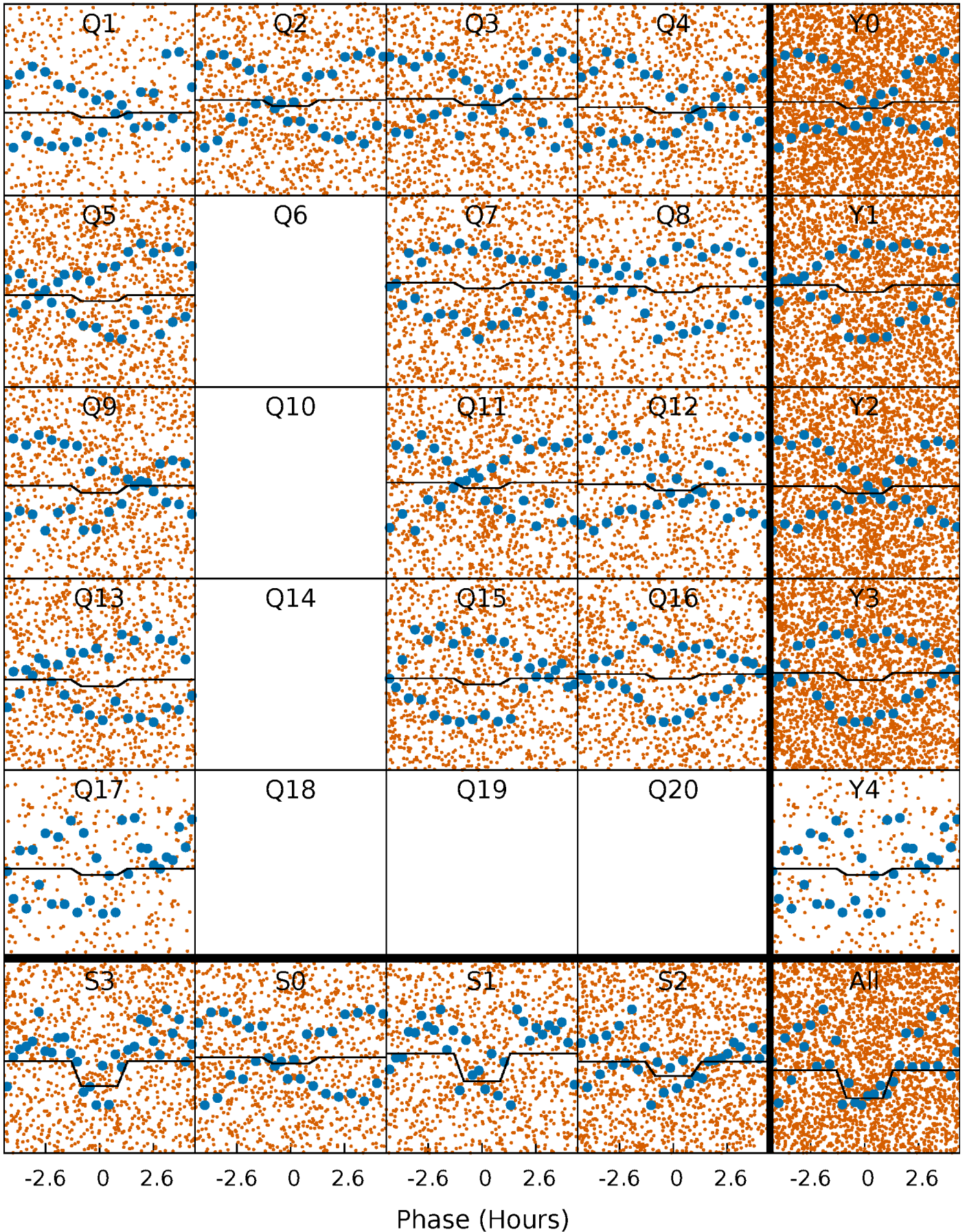
DV Quarter-Phased Transit Curves

TCE 003861139-01 P= 0.716696 Days $T_0=131.562779$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

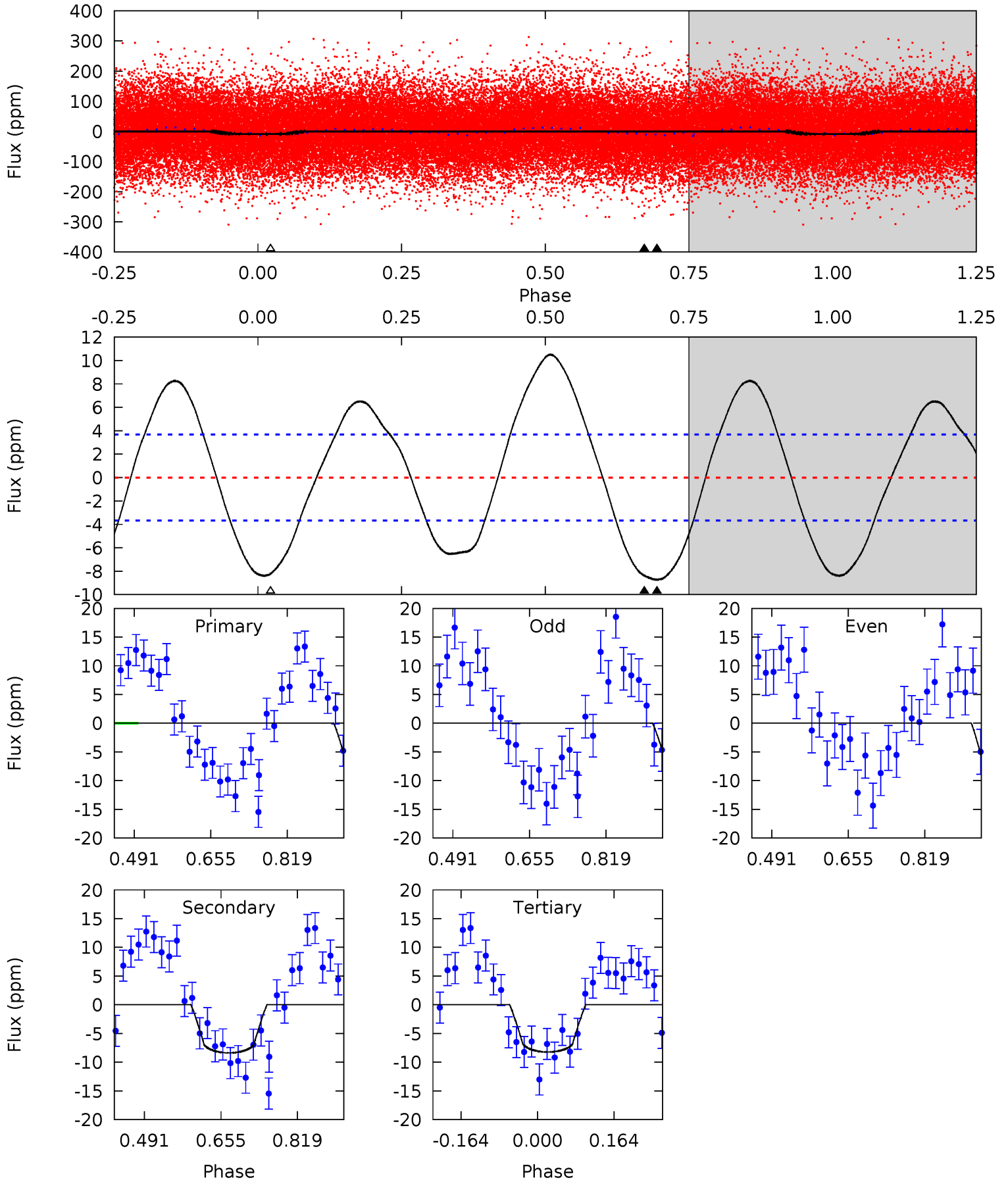
TCE 003861139-01 P= 0.716701 Days $T_0=131.562745$ (BKJD)



DV Model-Shift Uniqueness Test

003861139-01, P = 0.716696 Days, E = 130.846083 Days

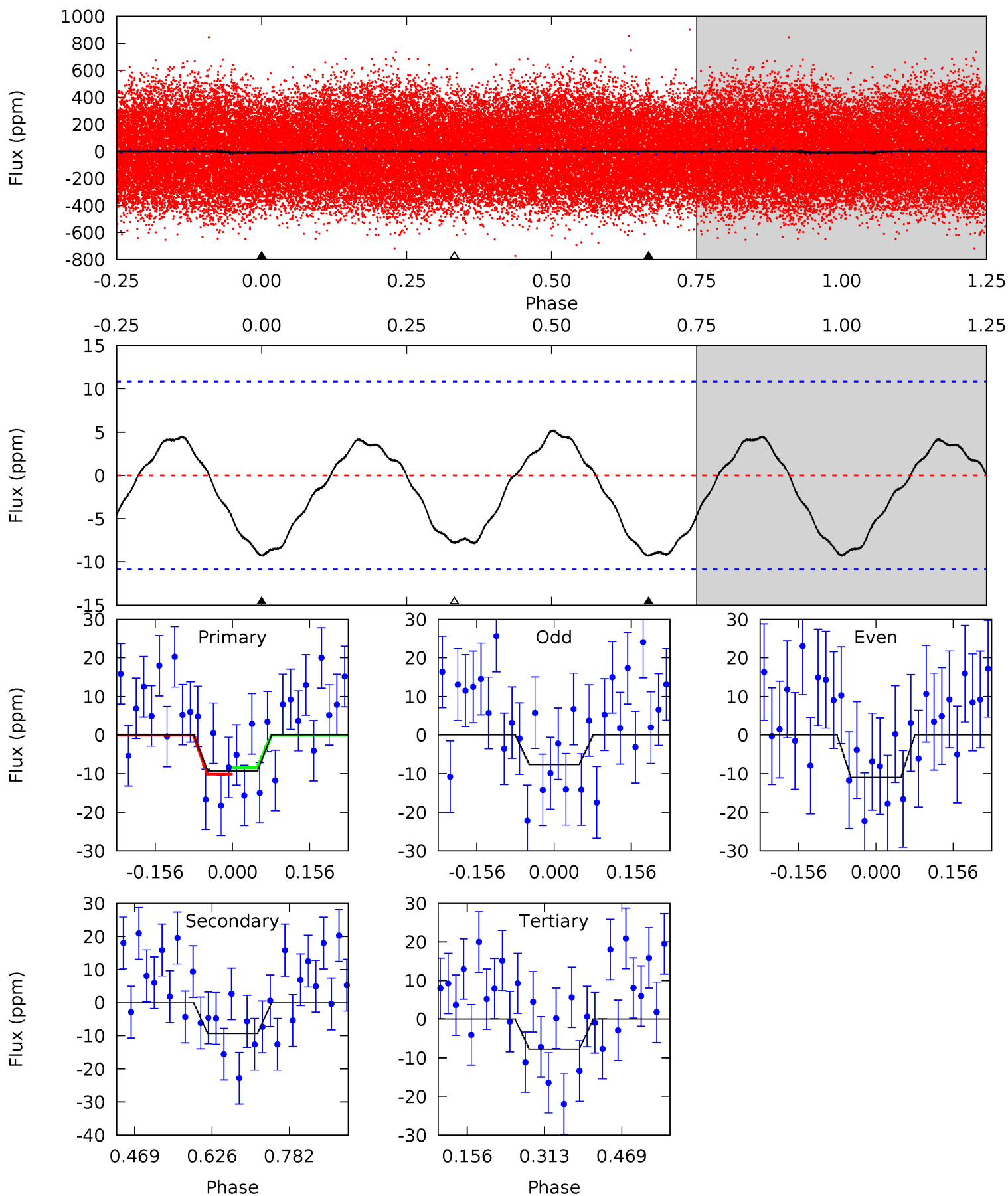
| Pri | Sec | Ter | Pos | FA ₁ | FA ₂ | F _{Red} | Pri-Ter | Pri-Pos | Sec-Ter | Sec-Pos | Odd-Evn | DMM | Shape | TAT |
|------|------|------|-----|-----------------|-----------------|------------------|---------|---------|---------|---------|---------|------|-------|------|
| 10.6 | 10.2 | 9.98 | 0 | 4.46 | 1.39 | 6.68 | 0.60 | 10.6 | 0.18 | 10.2 | 0.95 | 0.92 | 0.55 | 0.64 |



Alt Model-Shift Uniqueness Test

003861139-01, P = 0.716701 Days, E = 130.846044 Days

| Pri | Sec | Ter | Pos | FA ₁ | FA ₂ | F _{Red} | Pri-Ter | Pri-Pos | Sec-Ter | Sec-Pos | Odd-Evn | DMM | Shape | TAT |
|------|------|------|-----|-----------------|-----------------|------------------|---------|---------|---------|---------|---------|------|-------|------|
| 3.82 | 3.83 | 3.20 | 0 | 4.47 | 1.42 | 1.82 | 0.62 | 3.82 | 0.63 | 3.83 | 0.67 | 0.89 | 0.36 | 0.35 |



Stellar Parameters For KIC 003861139

| | $T_{\text{eff}} (K)$ | $\log(g)$ | $[\text{Fe}/\text{H}]$ | $R (R_{\odot})$ | $M (M_{\odot})$ | $p_{\star} (\text{g}\cdot\text{cm}^{-3})$ |
|--------|----------------------|---------------------------|---------------------------|---------------------------|---------------------------|---|
| | 7159^{+75}_{-85} | $3.497^{+0.214}_{-0.132}$ | $0.560^{+0.050}_{-0.200}$ | $4.653^{+0.215}_{-1.219}$ | $2.481^{+0.052}_{-0.310}$ | $0.035^{+0.042}_{-0.001}$ |
| | +1%/-1% | +6%/-4% | +9%/-36% | +5%/-26% | +2%/-12% | +121%/-4% |
| Source | SPE68 | SPE68 | SPE68 | DSEP | | |

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

Secondary Eclipse Parameters for KIC 003861139-01 / KOI

| Detrend | Depth (ppm) | $R_p (R_{\oplus})$ | $T_{max} (K)$ | $T_{obs} (K)$ | A_{obs} |
|---------|-------------|------------------------|----------------------|------------------------|---------------------------|
| DV | -8 ± 1 | $1.53^{+0.35}_{-0.35}$ | 6550^{+169}_{-385} | 6164^{+1201}_{-917} | $0.886^{+0.568}_{-0.316}$ |
| Alt. | -9 ± 2 | $1.50^{+0.38}_{-0.34}$ | 6561^{+170}_{-415} | 6501^{+1402}_{-1206} | $1.002^{+0.774}_{-0.407}$ |

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

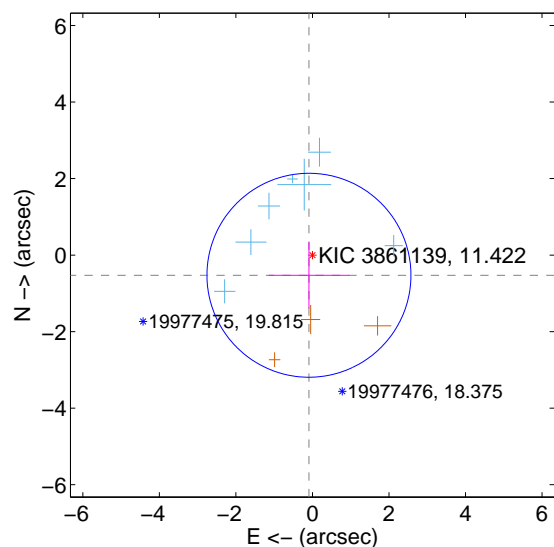
Supplemental centroid analysis for 003861139-01. **Kepler magnitude: 11.42.** Transit SNR 6.52

There are 7 quarters with good PRF difference image offsets

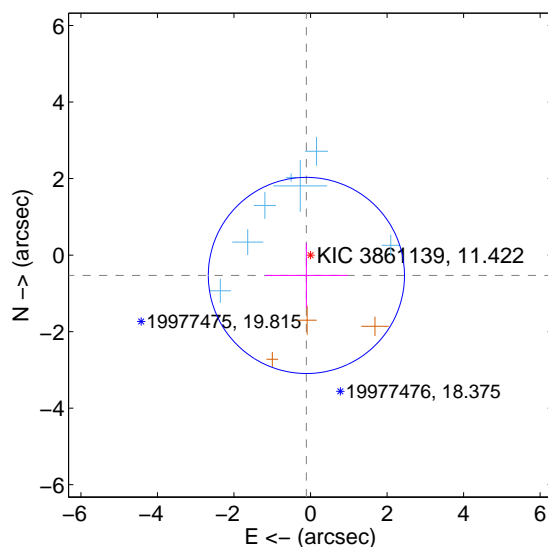
The direct PRF centroid is offset from the target star catalog position by about 0.07 arcsec

| | Distance in arcsec | Distance / σ | Δ RA | Δ Dec |
|---|--------------------|---------------------|-------------------|--------------------|
| PRF-fit source offset from OOT | 0.535 ± 0.888 | 0.60 | 0.091 ± 1.054 | -0.527 ± 0.866 |
| PRF-fit source offset from KIC position | 0.543 ± 0.854 | 0.64 | 0.108 ± 1.075 | -0.532 ± 0.846 |
| photometric centroid source offset | 1.52 ± 1.25 | 1.21 | -1.14 ± 1.13 | 1.00 ± 1.40 |

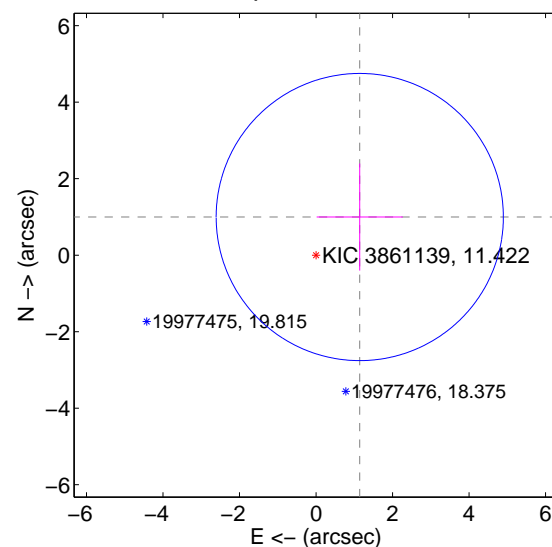
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

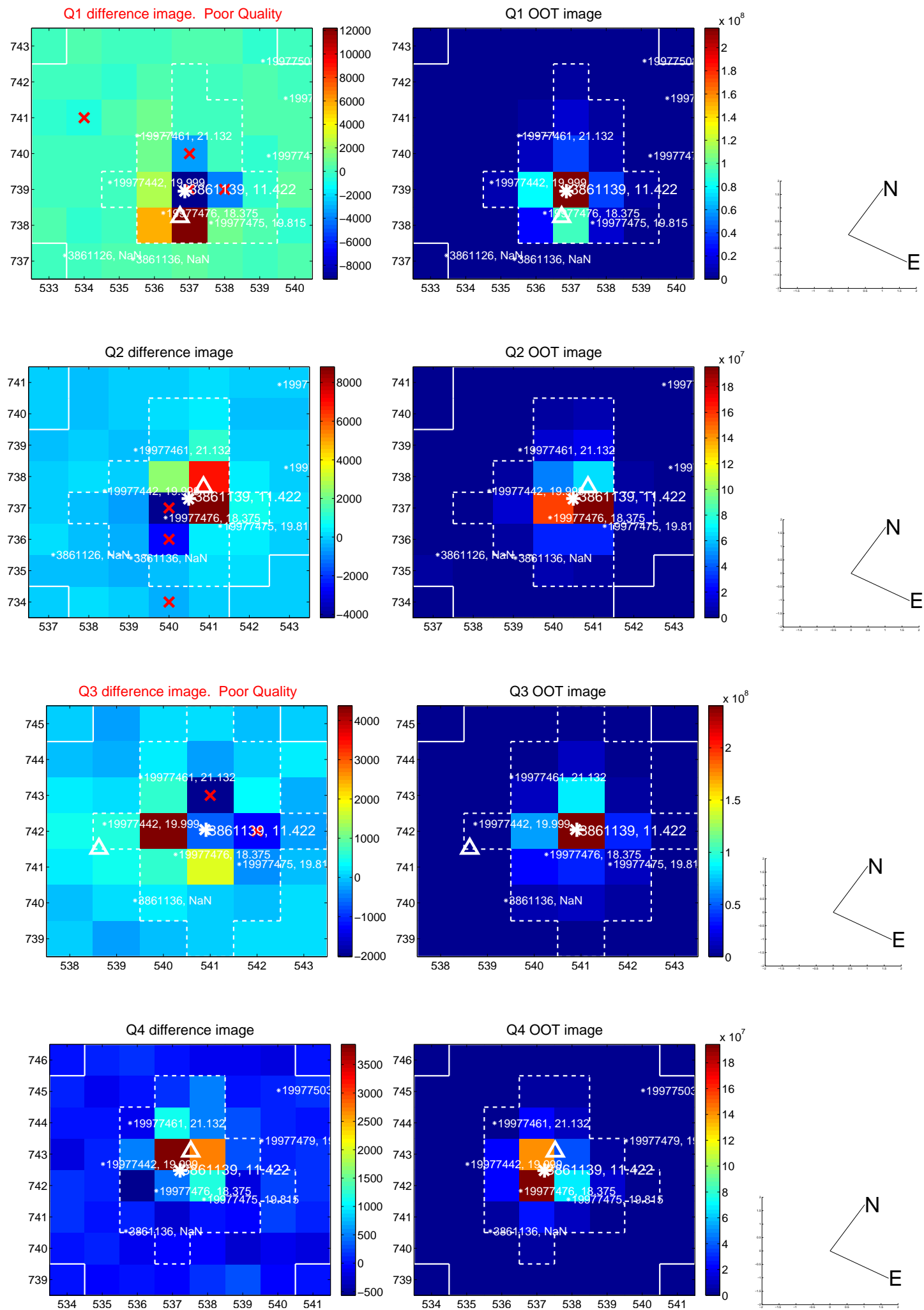


offset from photometric centroids

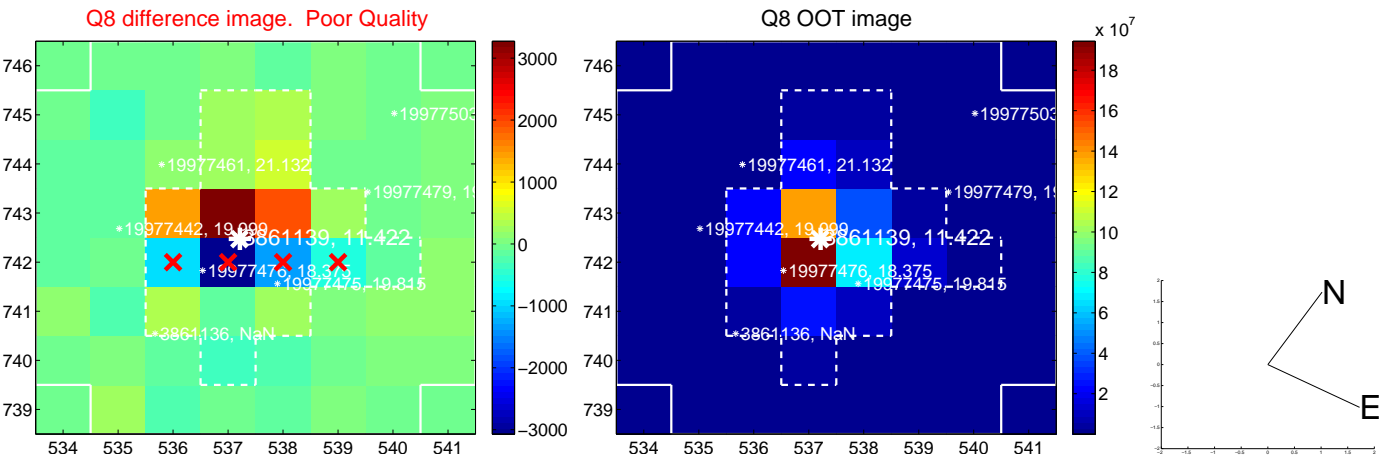
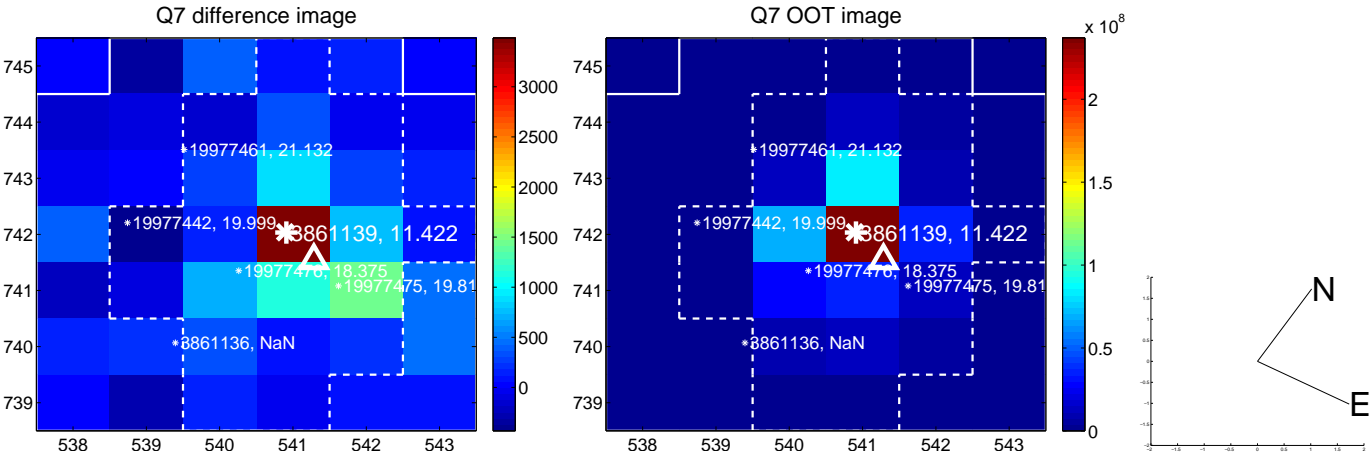
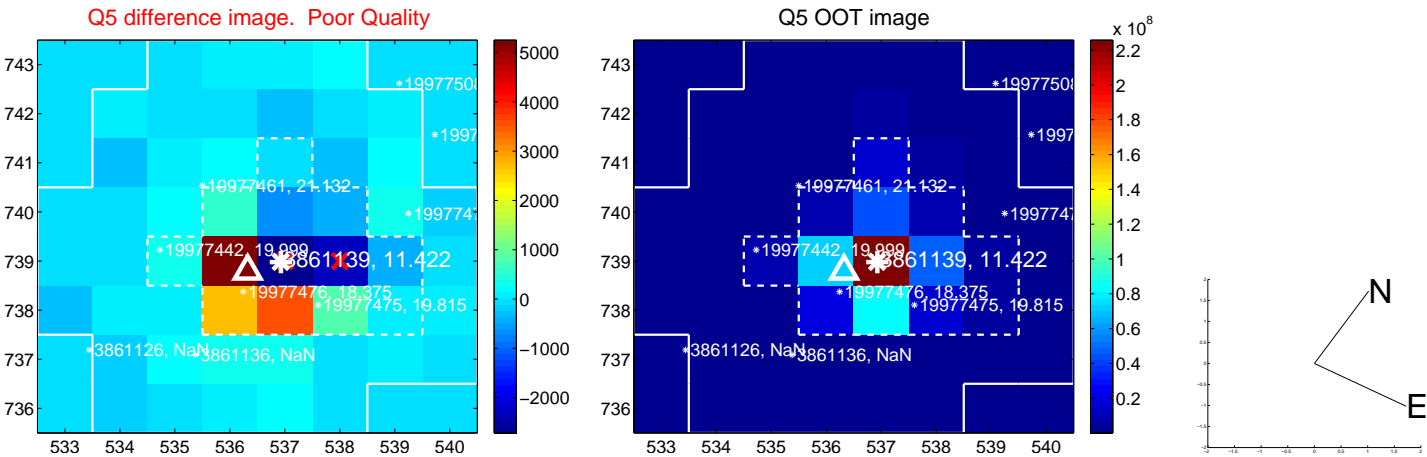


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

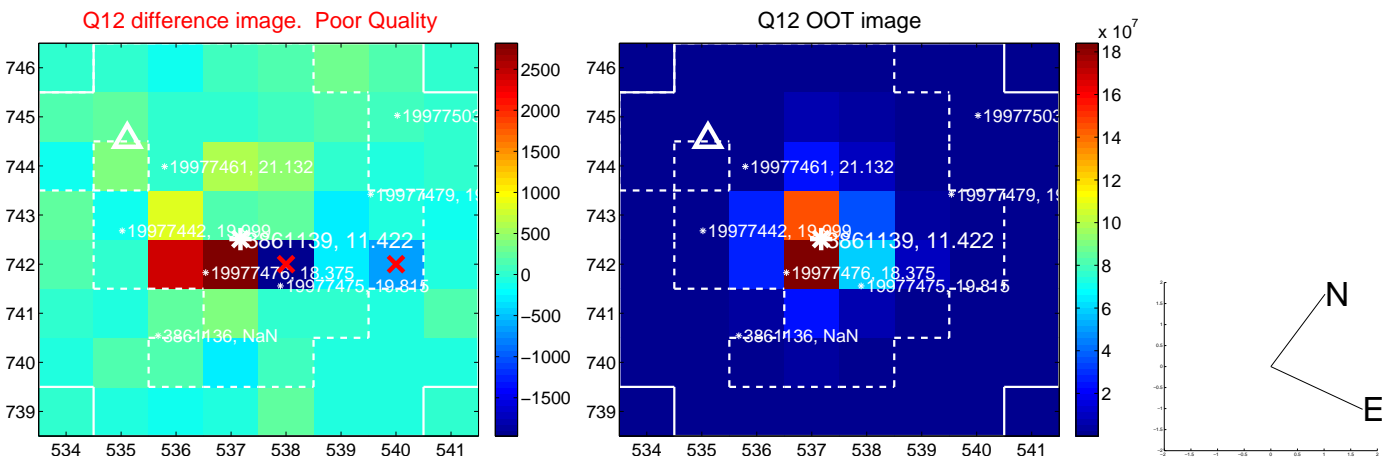
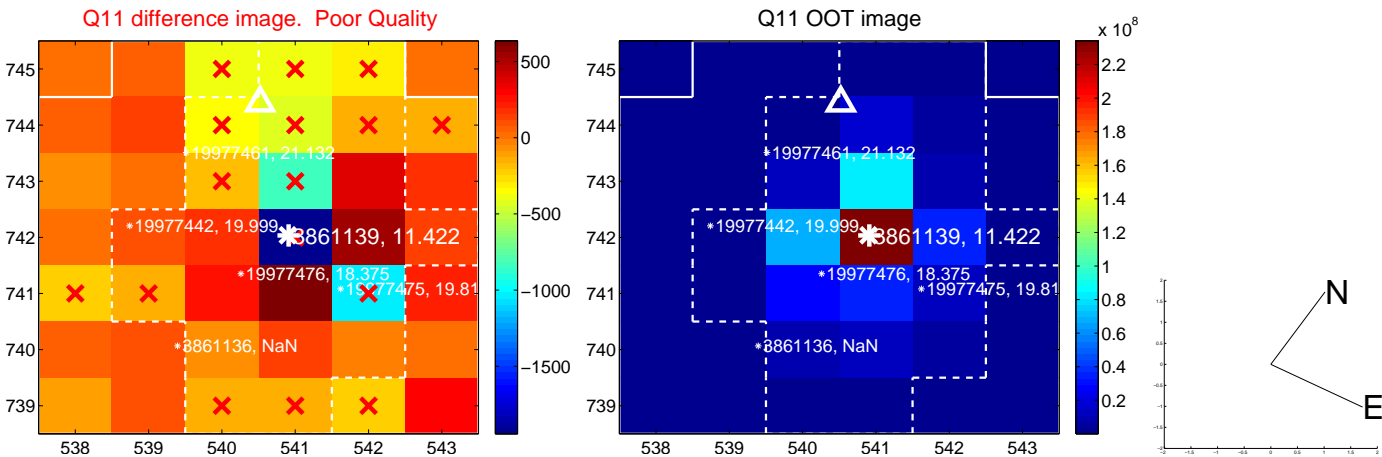
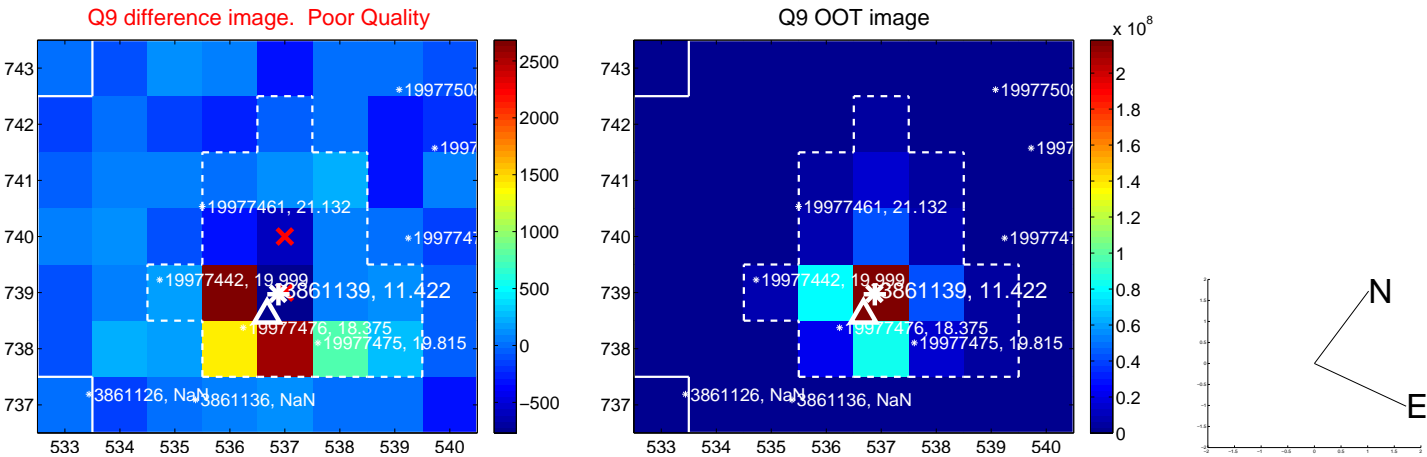
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



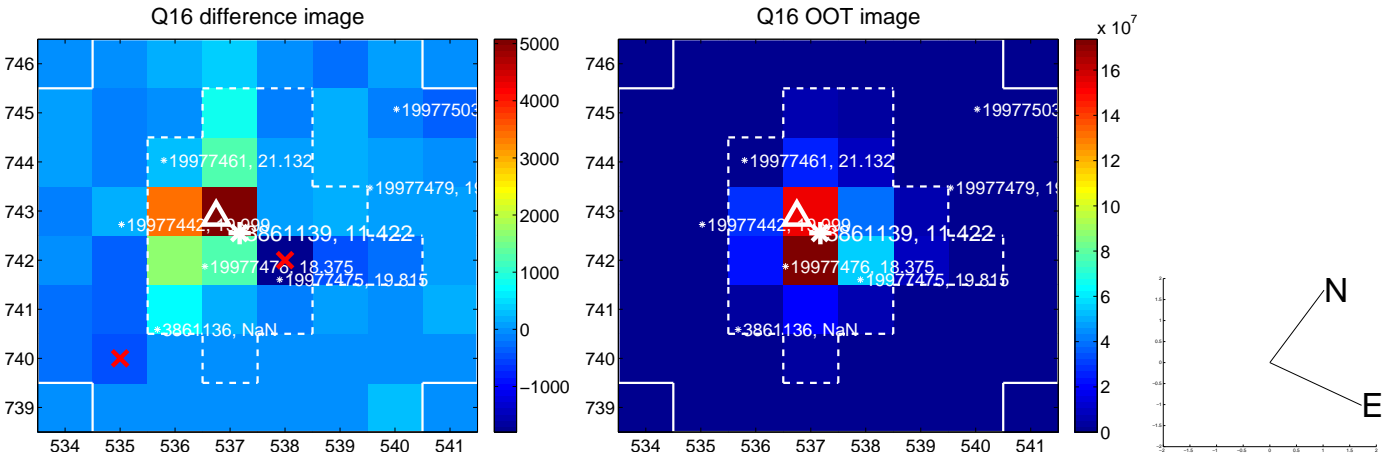
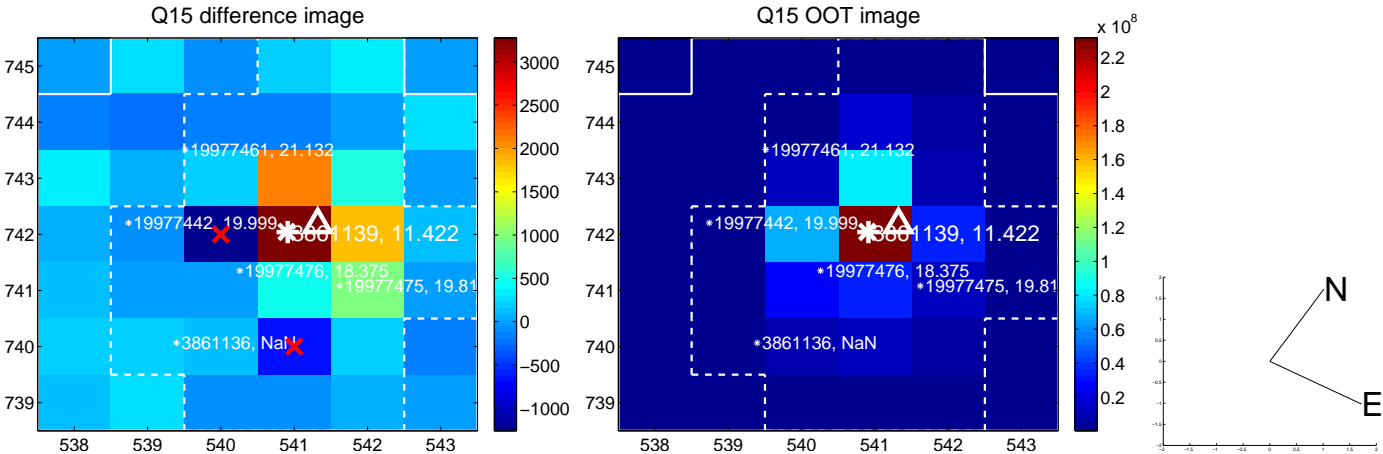
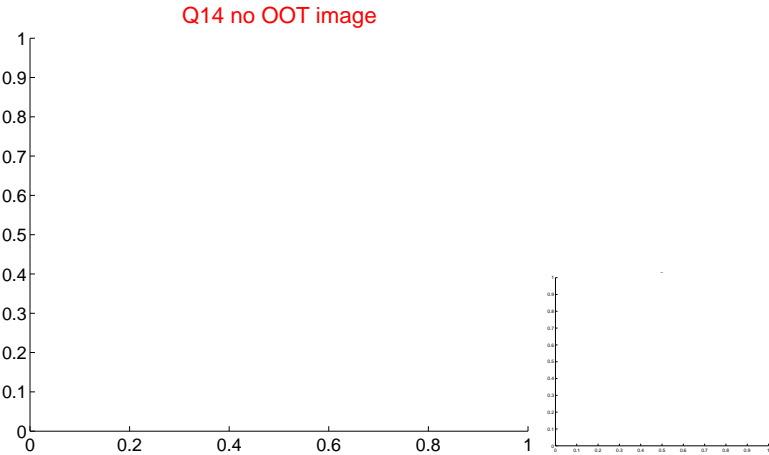
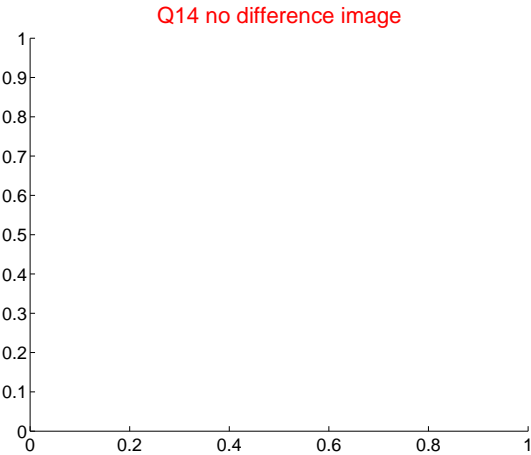
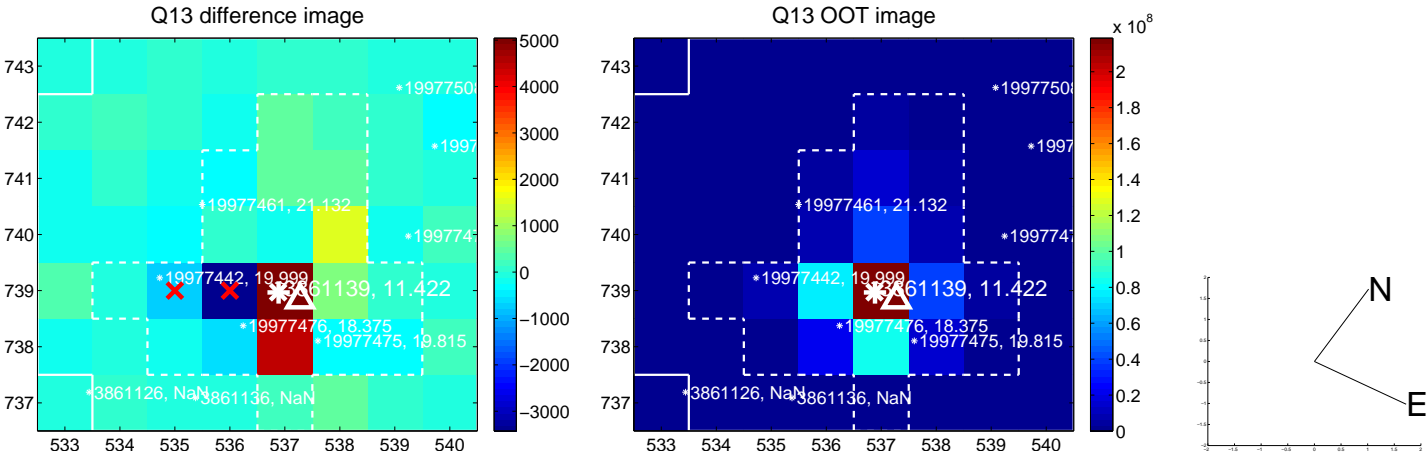
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



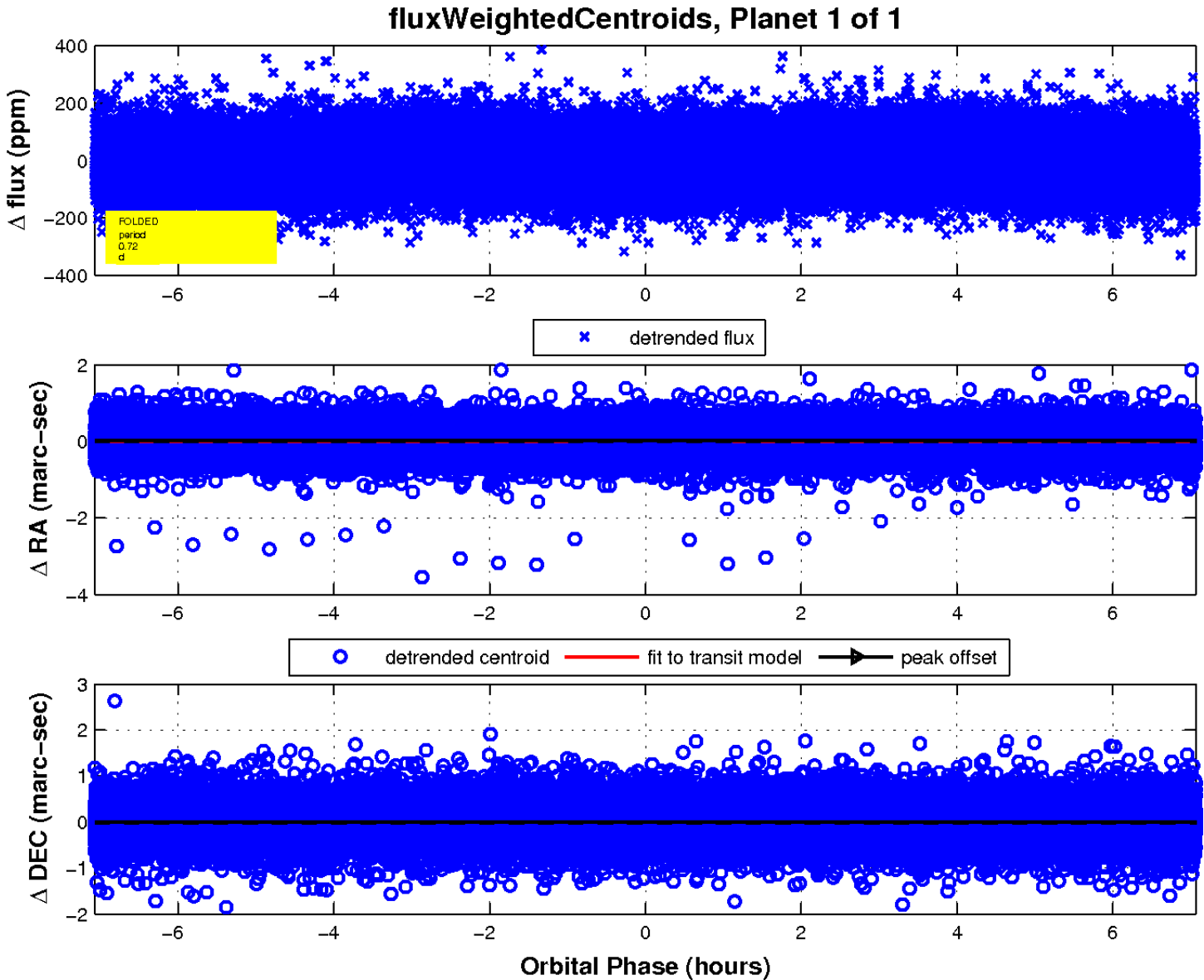
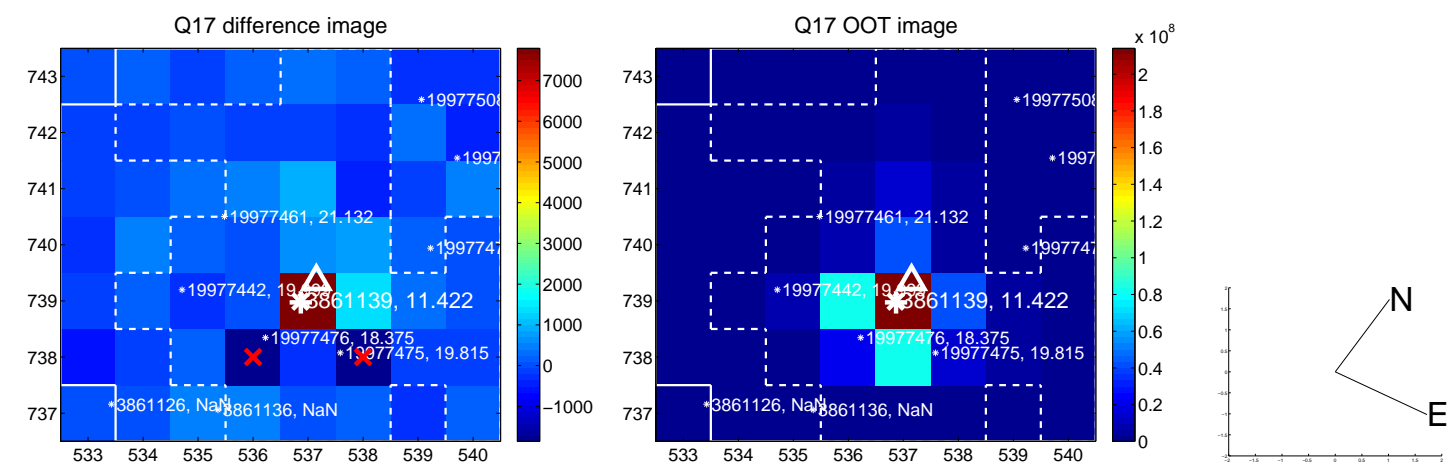
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



UKIRT Image

Declination

