

KIC 005956171

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}) |
|--------------|----------|---------|---------------|--------------|-------------|------------------|-----|-----|-----------------------------|-----------------|------------------------|------------------------|
| 005956171-01 | OBS | 8259.01 | 402.274327 | 369.672172 | 289.8 | 15.710 | 7.5 | 7.0 | 0.95 | 6299 | 1.72 | 1.11 |

Robovetter Results

| TCE | Run Type | Disp | Score | N | S | C | E | Comments |
|--------------|----------|------|-------|---|---|---|---|----------------|
| 005956171-01 | OBS | PC | 0.31 | 0 | 0 | 0 | 0 | CENT_FEW_DIFFS |

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

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

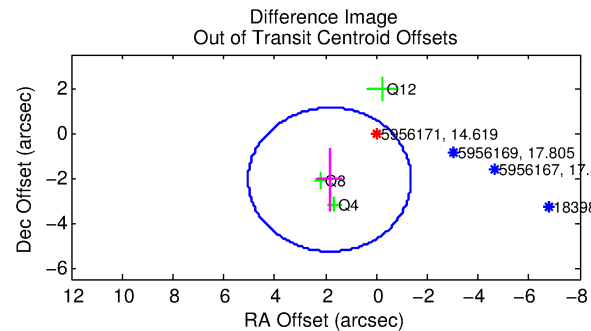
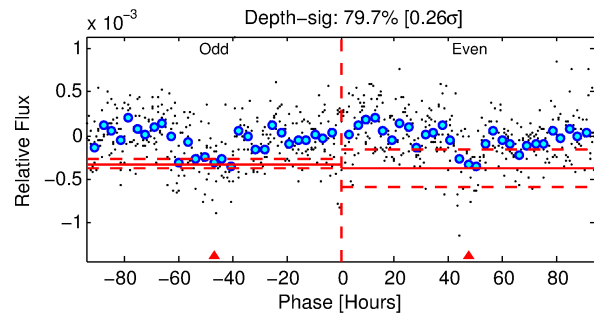
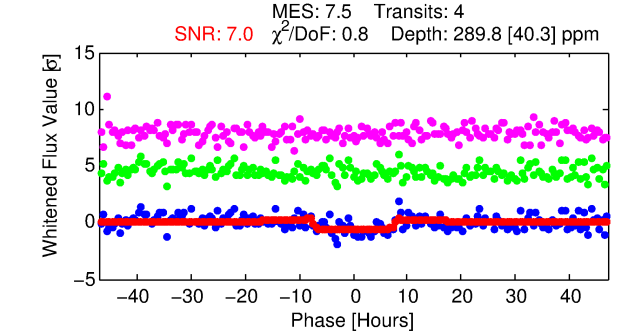
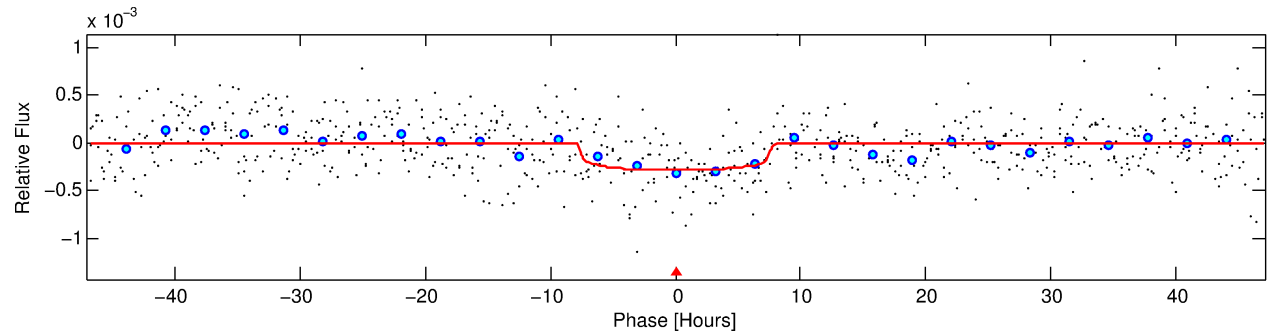
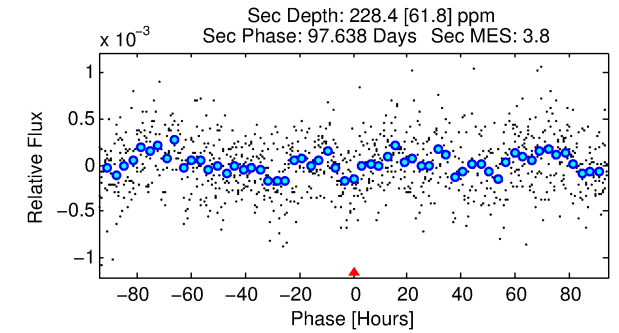
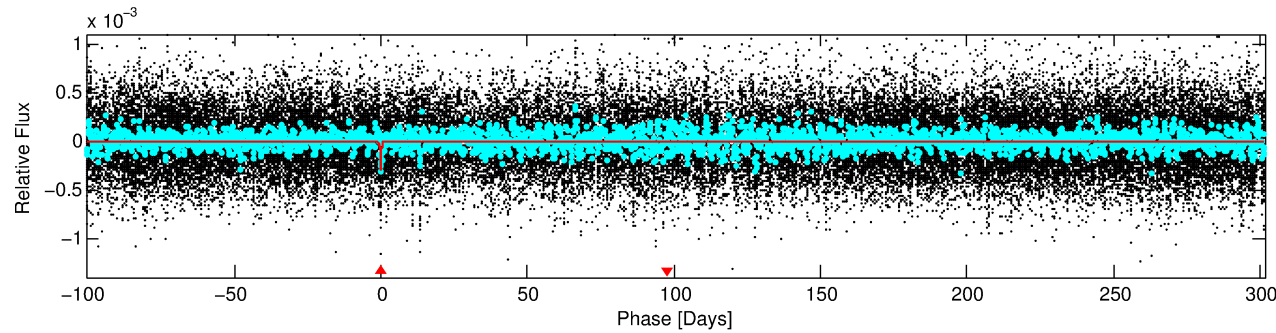
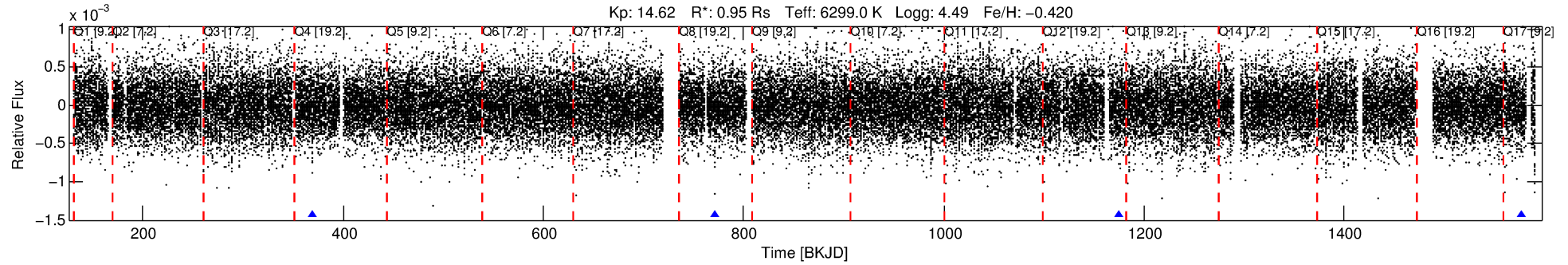
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 005956171-01

No Significant Match Found

DV One-Page Summary

KIC: 5956171 Candidate: 1 of 1 Period: 402.274 d



DV Fit Results:

Period = 402.27433 [0.01016] d
Epoch = 369.6722 [0.0172] BKJD
Rp/R* = 0.0165 [0.0071]
a/R* = 150.54 [339.66]
b = 0.66 [1.91]
Seff = 1.11 [0.46]
Teq = 262 [27] K
Rp = 1.72 [0.90] Re
a = 1.0695 [0.2807] AU
Ag = 48849.09 [47848.54] [1.02 σ]
Teffp = 6020 [1370] K [4.20 σ]

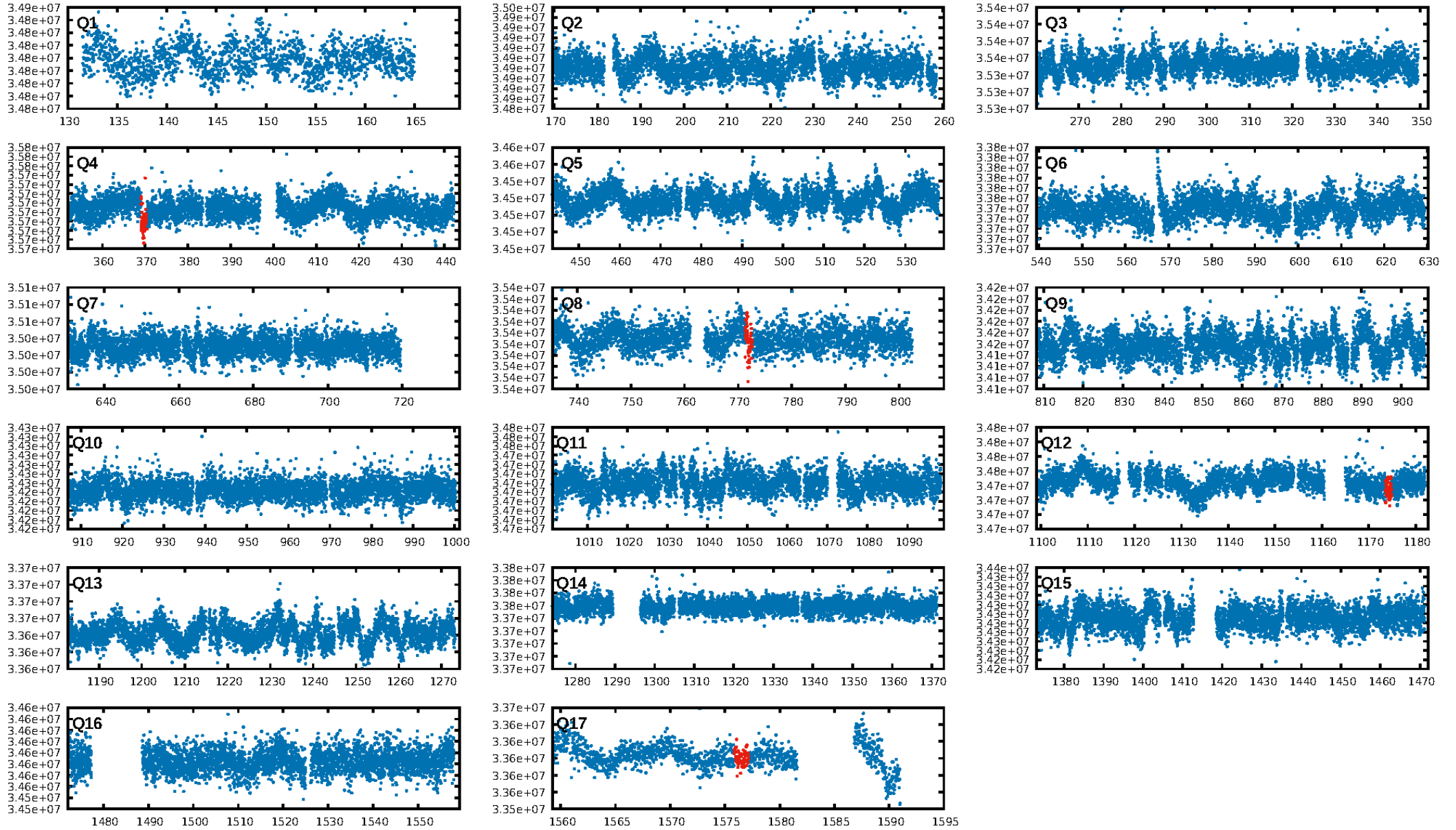
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: 22.3%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 2.10e-09
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: -9.441
Centroid-sig: 0.5%
Centroid-so: 3.168 arcsec [2.06 σ]
OotOffset-rm: 2.770 arcsec [2.60 σ]
KicOffset-rm: 2.643 arcsec [2.47 σ]
OotOffset-st: 0/0/3/0 [3]
KicOffset-st: 0/0/3/0 [3]
DiffImageQuality-fgm: 0.67 [2/3]
DiffImageOverlap-fno: 1.00 [4/4]

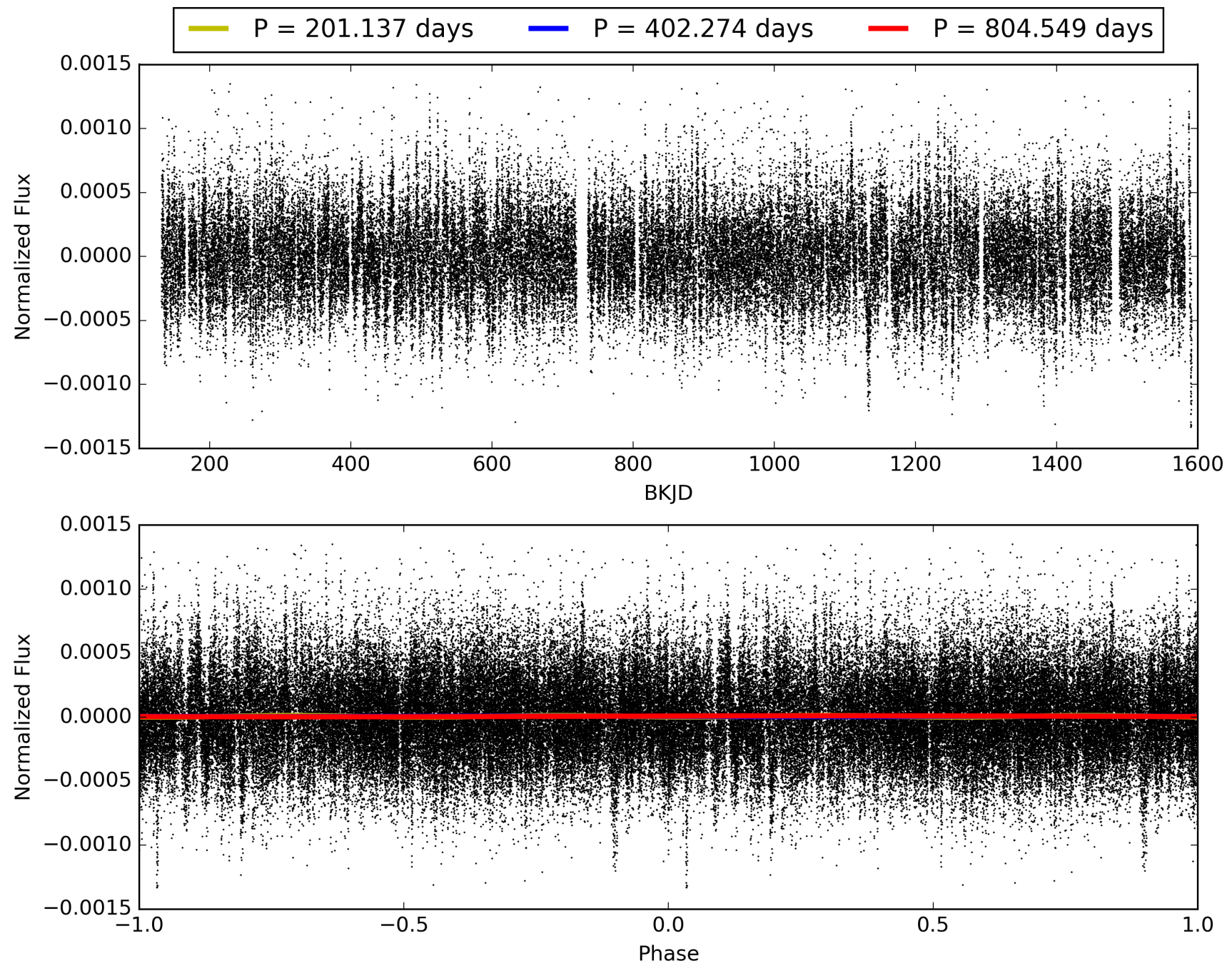
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 16:10:53 Z

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

TCE 005956171-01, PDC Light Curves

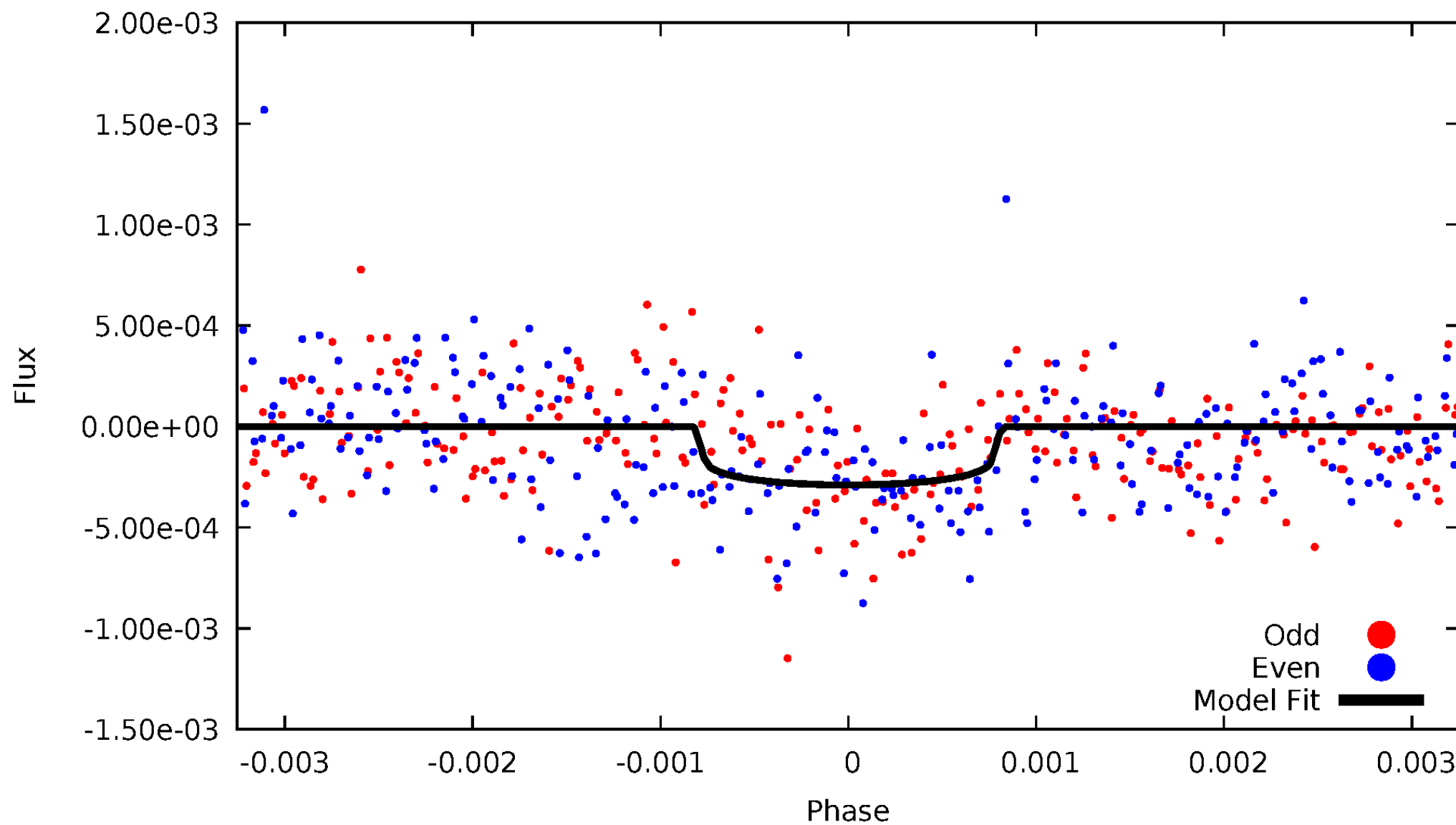


TCE 005956171-01



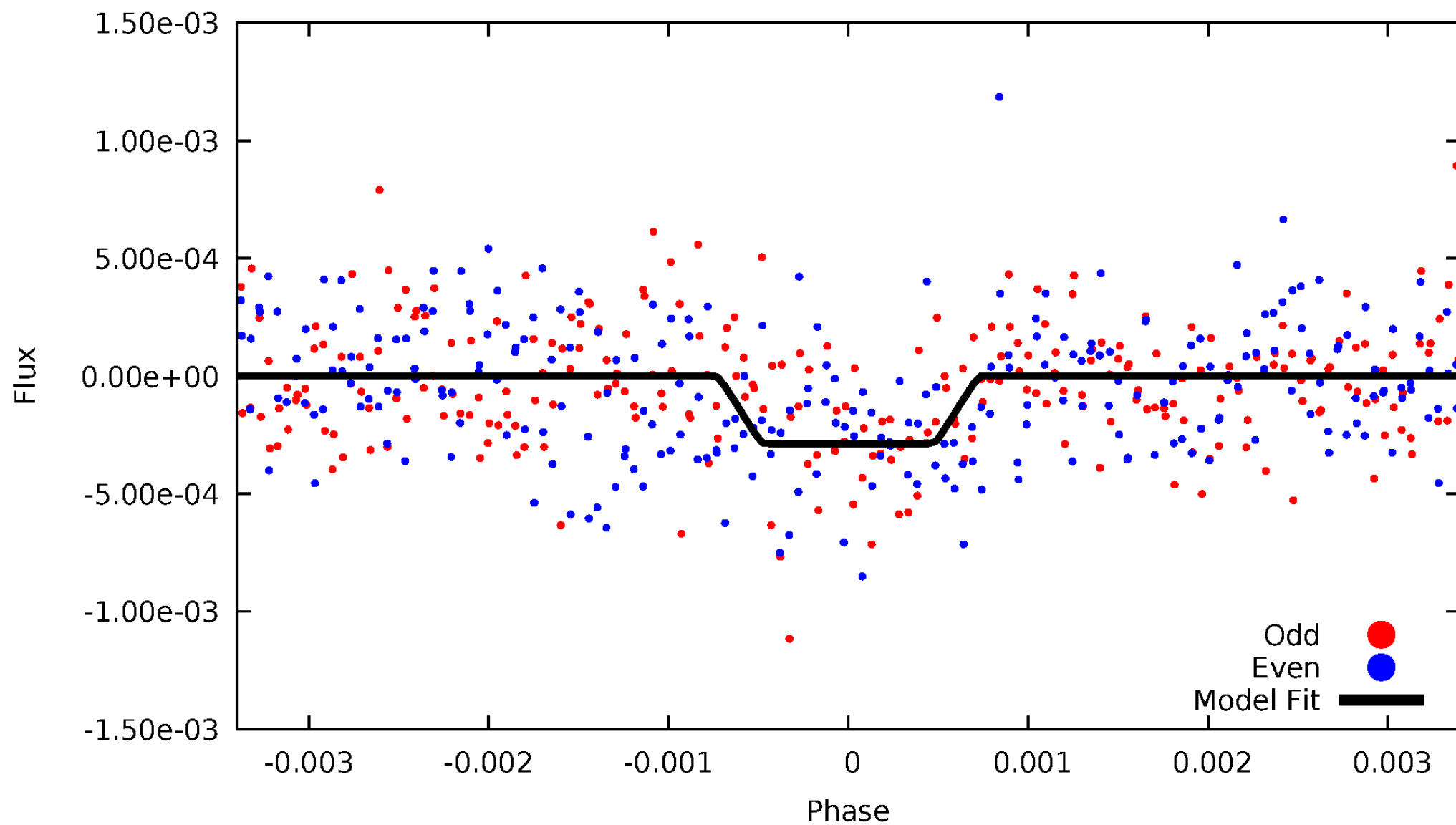
DV Odd/Even

TCE 005956171-01



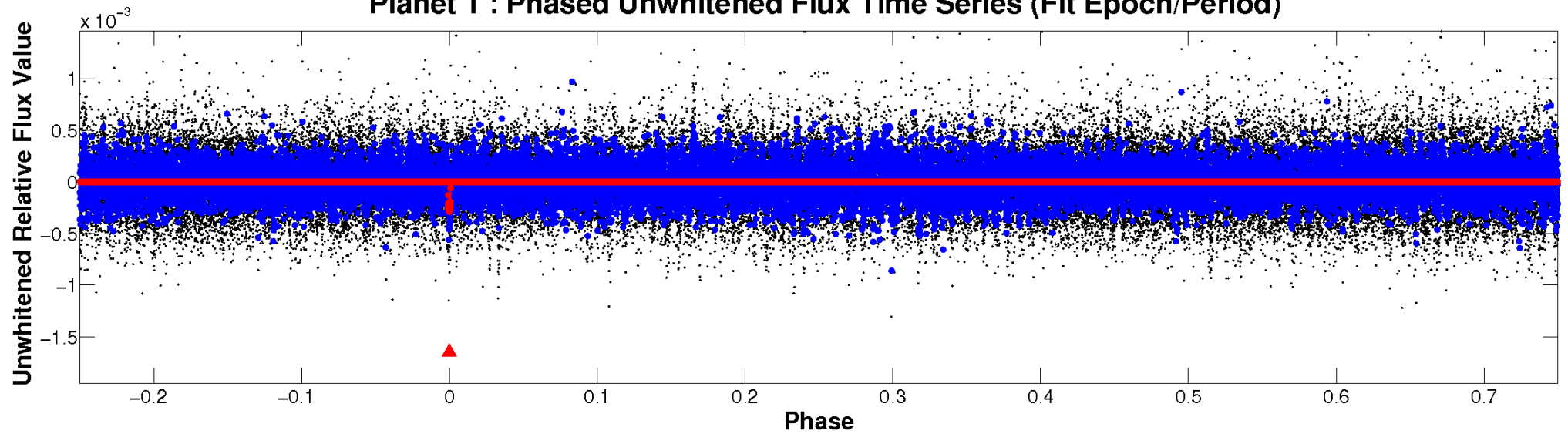
ALT Odd/Even

TCE 005956171-01

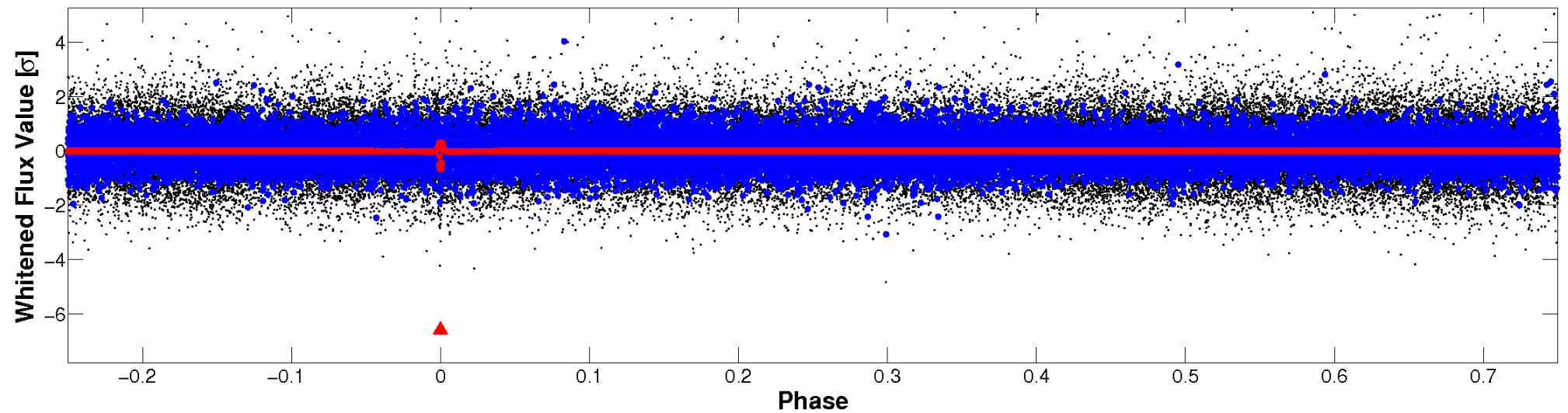


Non-Whitened Vs. Whitened Light Curve

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 005956171-01 P=402.274327 Days $T_0=369.672172$ (BKJD)



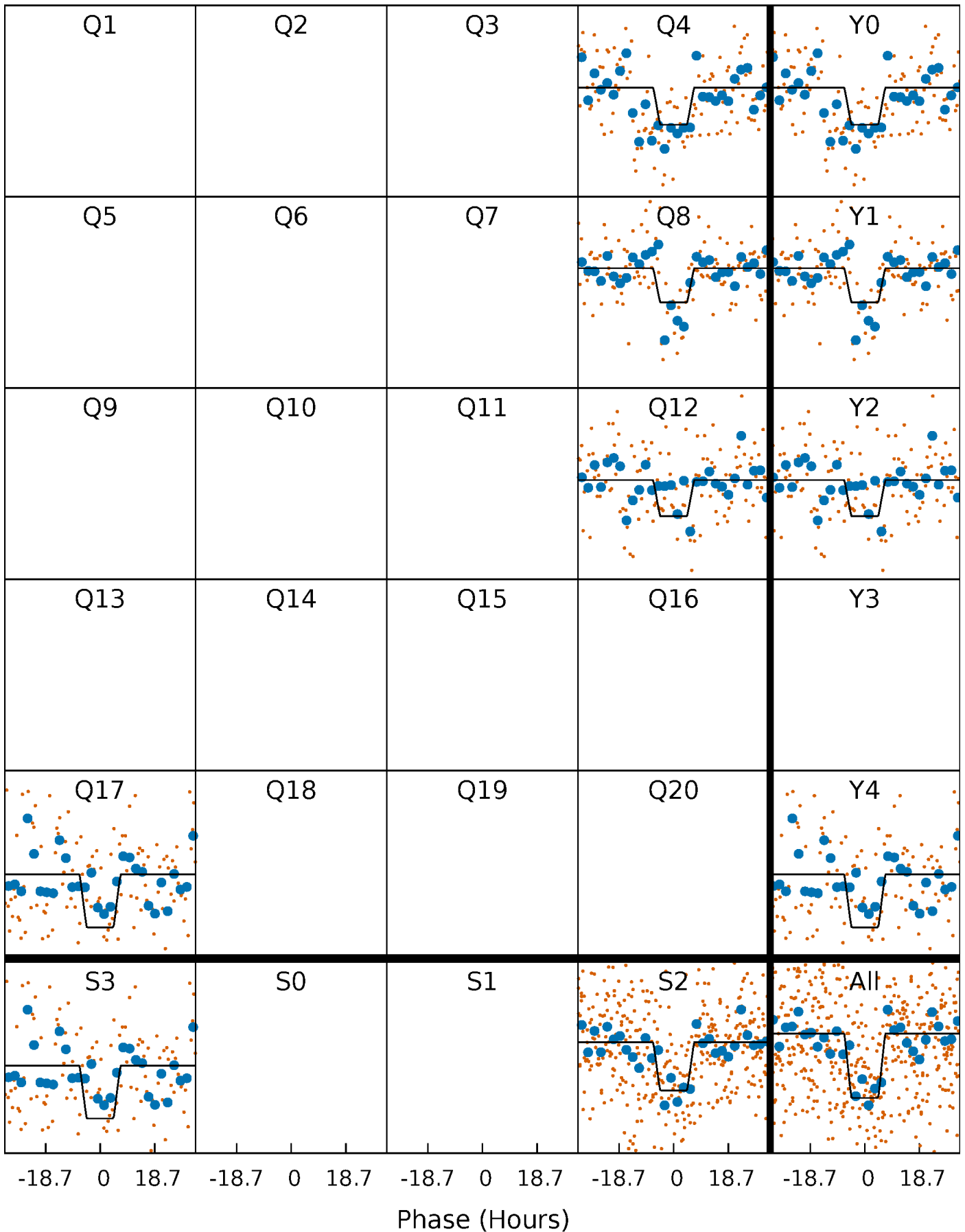
DV Quarter-Phased Transit Curves

TCE 005956171-01 P=402.274327 Days $T_0=369.672172$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

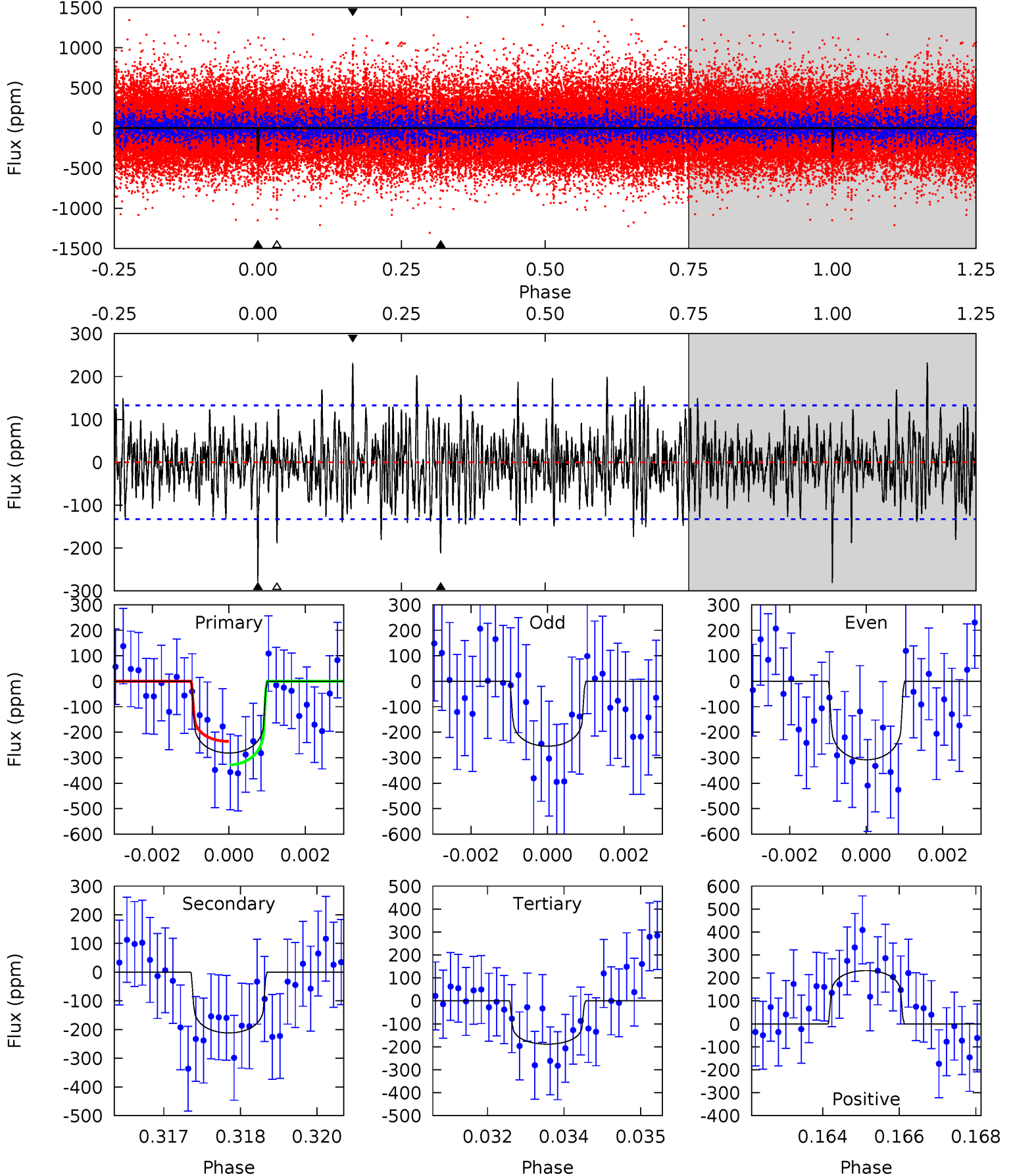
TCE 005956171-01 P=402.275496 Days $T_0=369.672648$ (BKJD)



DV Model-Shift Uniqueness Test

005956171-01, P = 402.274327 Days, E = 369.672172 Days

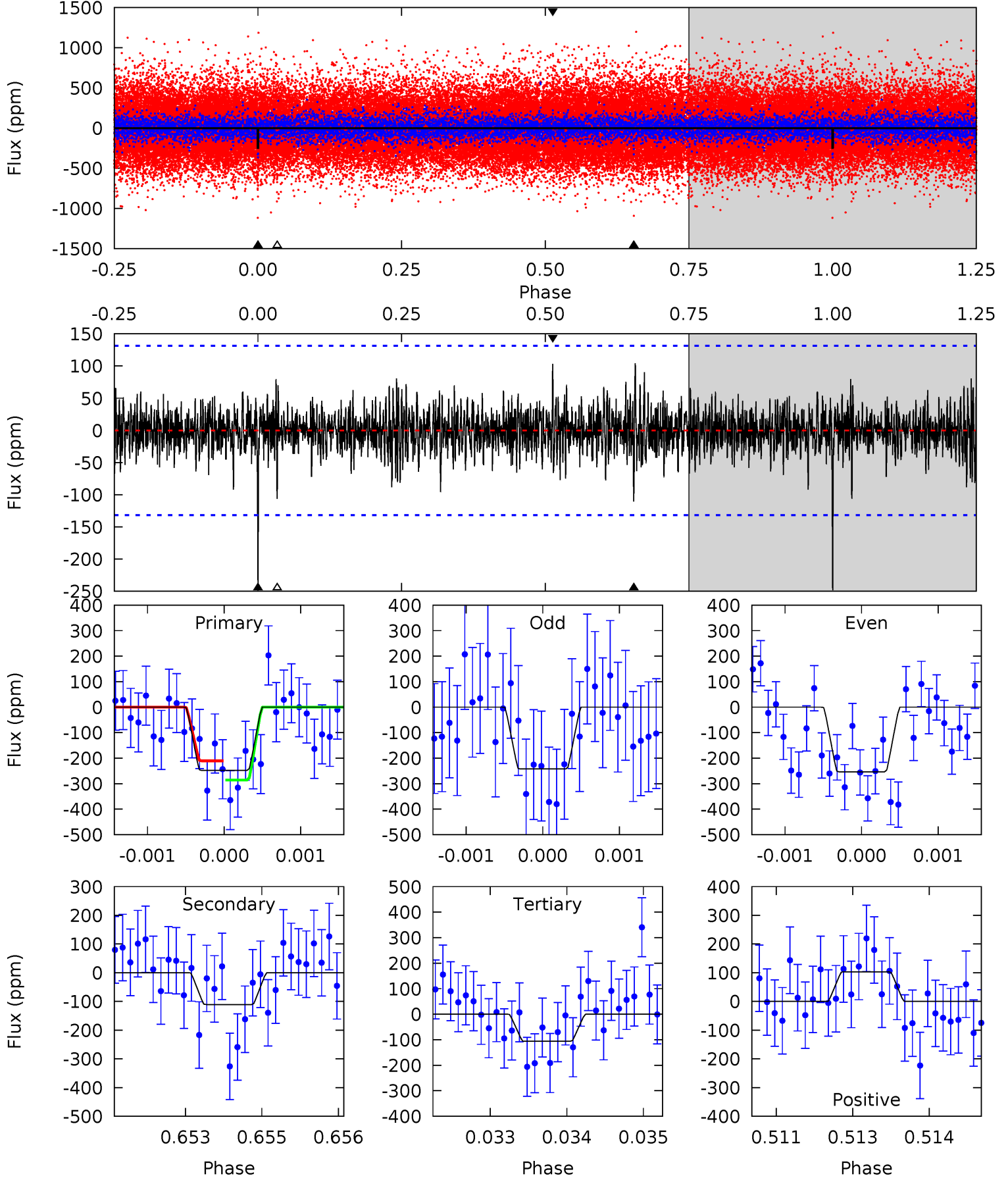
| Pri | Sec | Ter | Pos | FA ₁ | FA ₂ | F _{Red} | Pri-Ter | Pri-Pos | Sec-Ter | Sec-Pos | Odd-Evn | DMM | Shape | TAT |
|------|------|------|------|-----------------|-----------------|------------------|---------|---------|---------|---------|---------|------|-------|------|
| 11.4 | 8.56 | 7.62 | 9.39 | 5.36 | 3.14 | 2.31 | 3.77 | 2.00 | 0.94 | -0.83 | 1.08 | 1.00 | 0.45 | 1.86 |



Alt Model-Shift Uniqueness Test

005956171-01, P = 402.275496 Days, E = 369.672648 Days

| Pri | Sec | Ter | Pos | FA ₁ | FA ₂ | F _{Red} | Pri-Ter | Pri-Pos | Sec-Ter | Sec-Pos | Odd-Evn | DMM | Shape | TAT |
|------|------|------|------|-----------------|-----------------|------------------|---------|---------|---------|---------|---------|------|-------|------|
| 10.2 | 4.53 | 4.34 | 4.22 | 5.38 | 3.18 | 1.05 | 5.81 | 5.93 | 0.18 | 0.30 | 0.23 | 1.01 | 0.30 | 1.53 |



Stellar Parameters For KIC 005956171

| | $T_{\text{eff}} (K)$ | $\log(g)$ | $[\text{Fe}/\text{H}]$ | $R (R_{\odot})$ | $M (M_{\odot})$ | $p_{\star} (\text{g}\cdot\text{cm}^{-3})$ |
|--------|----------------------|---------------------------|----------------------------|---------------------------|---------------------------|---|
| | 6299^{+170}_{-226} | $4.486^{+0.054}_{-0.216}$ | $-0.420^{+0.300}_{-0.350}$ | $0.950^{+0.290}_{-0.097}$ | $1.008^{+0.135}_{-0.123}$ | $1.654^{+0.467}_{-0.872}$ |
| | +3%/-4% | +1%/-5% | +71%/-83% | +31%/-10% | +13%/-12% | +28%/-53% |
| 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 005956171-01 / KOI 8259.01

| Detrend | Depth (ppm) | $R_p (R_{\oplus})$ | $T_{\text{max}} (K)$ | $T_{\text{obs}} (K)$ | A_{obs} |
|---------|---------------|------------------------|----------------------|-----------------------|---------------------------|
| DV | -212 ± 25 | $1.85^{+0.77}_{-0.77}$ | 373^{+29}_{-18} | 5802^{+1782}_{-821} | 37412^{+67596}_{-18393} |
| Alt. | -111 ± 24 | $1.83^{+0.77}_{-0.79}$ | 373^{+26}_{-20} | 5049^{+1551}_{-667} | 20483^{+44536}_{-10575} |

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 $A_{\text{obs}} \gg 1.0$

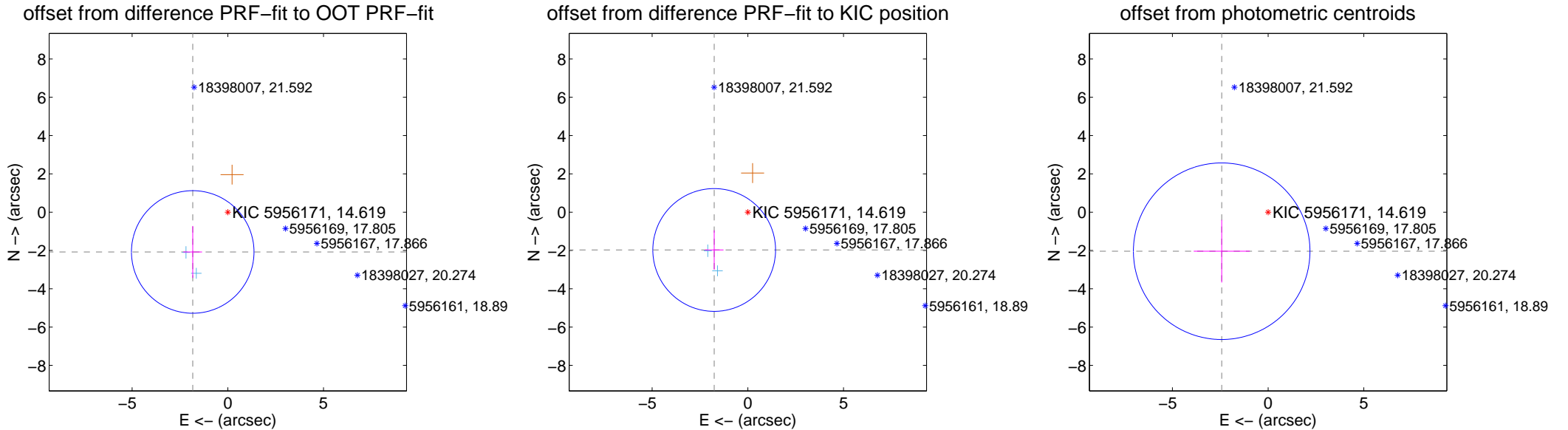
DV Centroid Data

Supplemental centroid analysis for 005956171-01. Kepler magnitude: 14.62. Transit SNR 7.04

There are 2 quarters with good PRF difference image offsets

The direct PRF centroid is offset from the target star catalog position by about 0.09 arcsec

| | Distance in arcsec | Distance / σ | Δ RA | Δ Dec |
|---|--------------------|---------------------|-------------------|--------------------|
| PRF-fit source offset from OOT | 2.770 ± 1.067 | 2.60 | 1.832 ± 0.489 | -2.078 ± 1.355 |
| PRF-fit source offset from KIC position | 2.643 ± 1.068 | 2.47 | 1.757 ± 0.486 | -1.974 ± 1.027 |
| photometric centroid source offset | 3.17 ± 1.54 | 2.06 | 2.42 ± 1.46 | -2.04 ± 1.64 |



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.

Q1 no difference image



Q1 no OOT image



Q2 no difference image



Q2 no OOT image



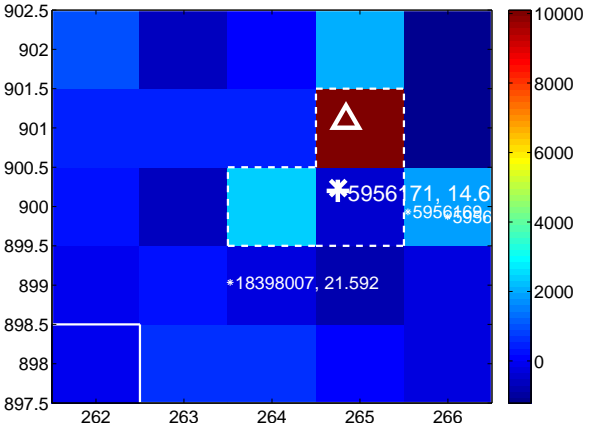
Q3 no difference image



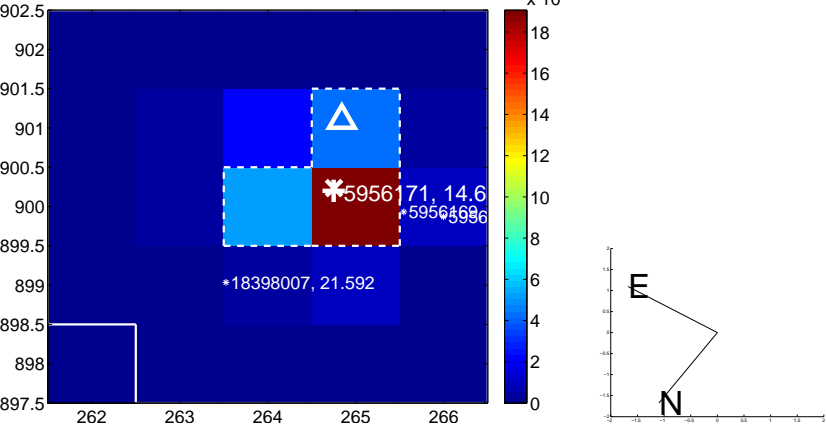
Q3 no OOT image



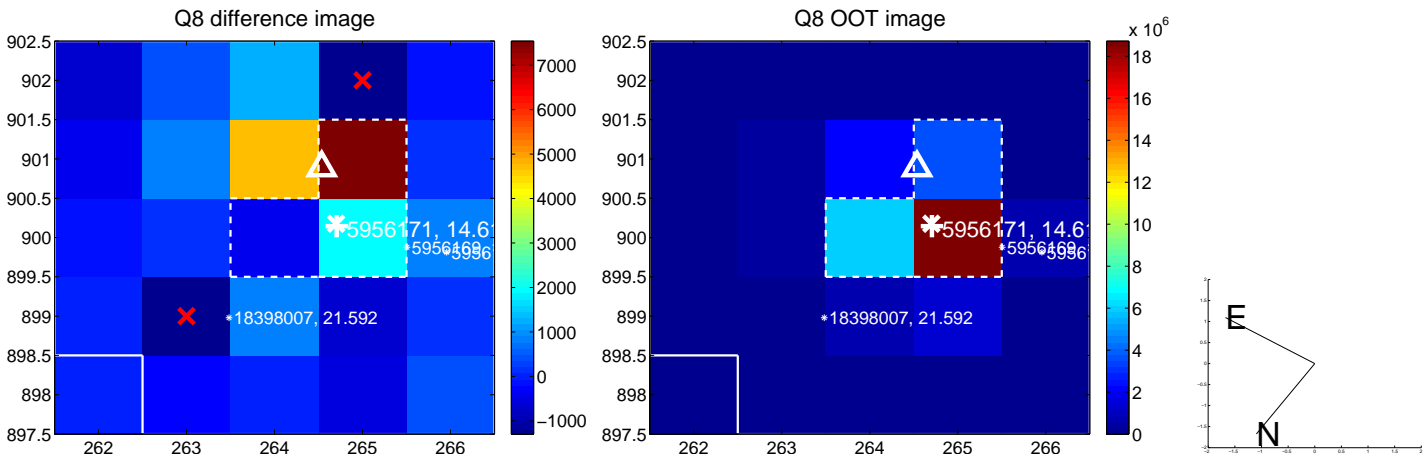
Q4 difference image



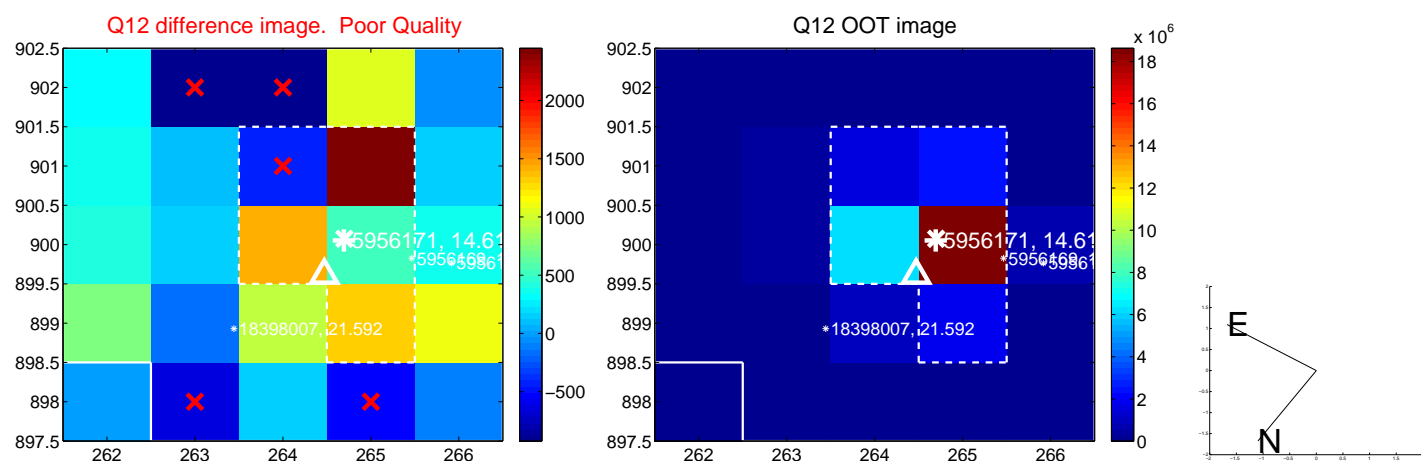
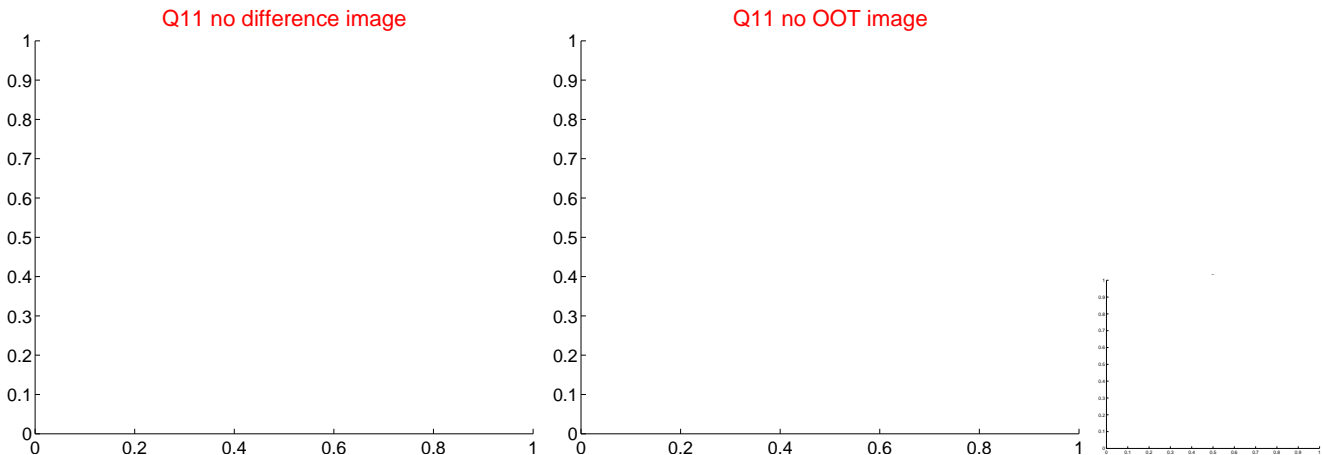
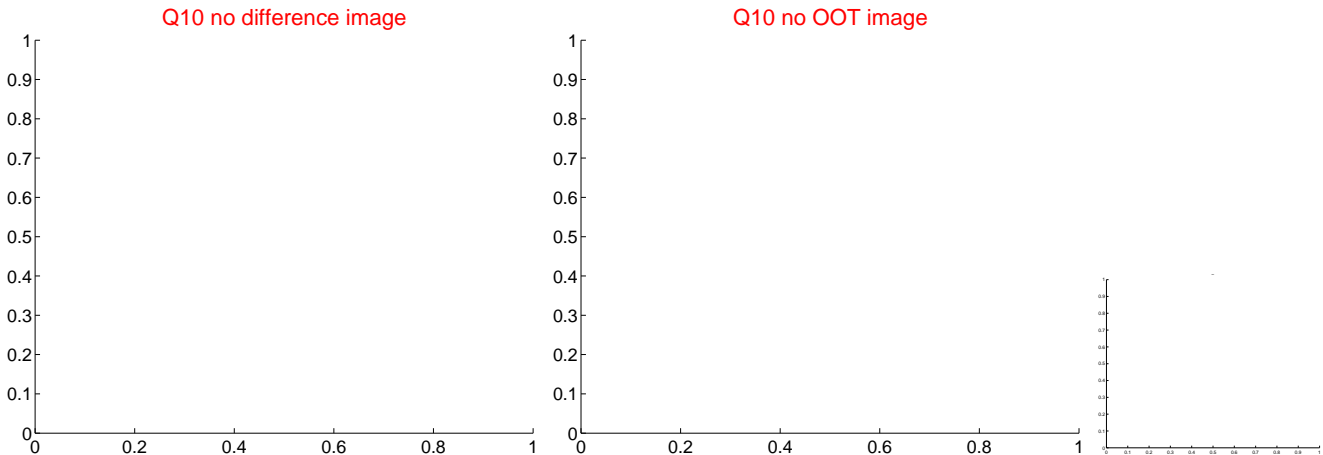
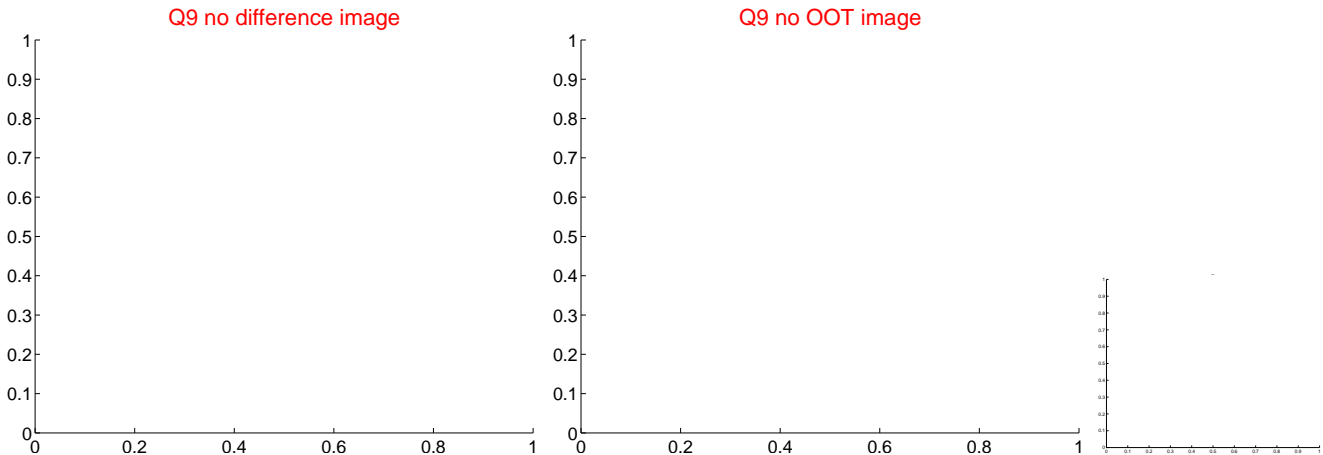
Q4 OOT image



white ×: KIC target position; +: OOT centroid; △: difference centroid. red ✕: large negative pixel value.



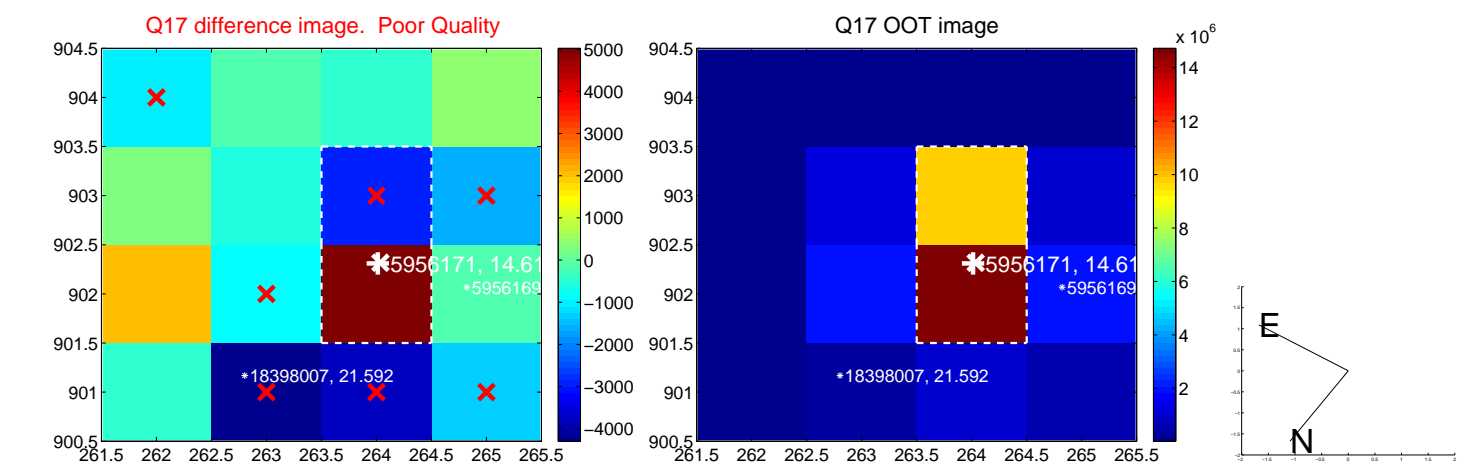
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value



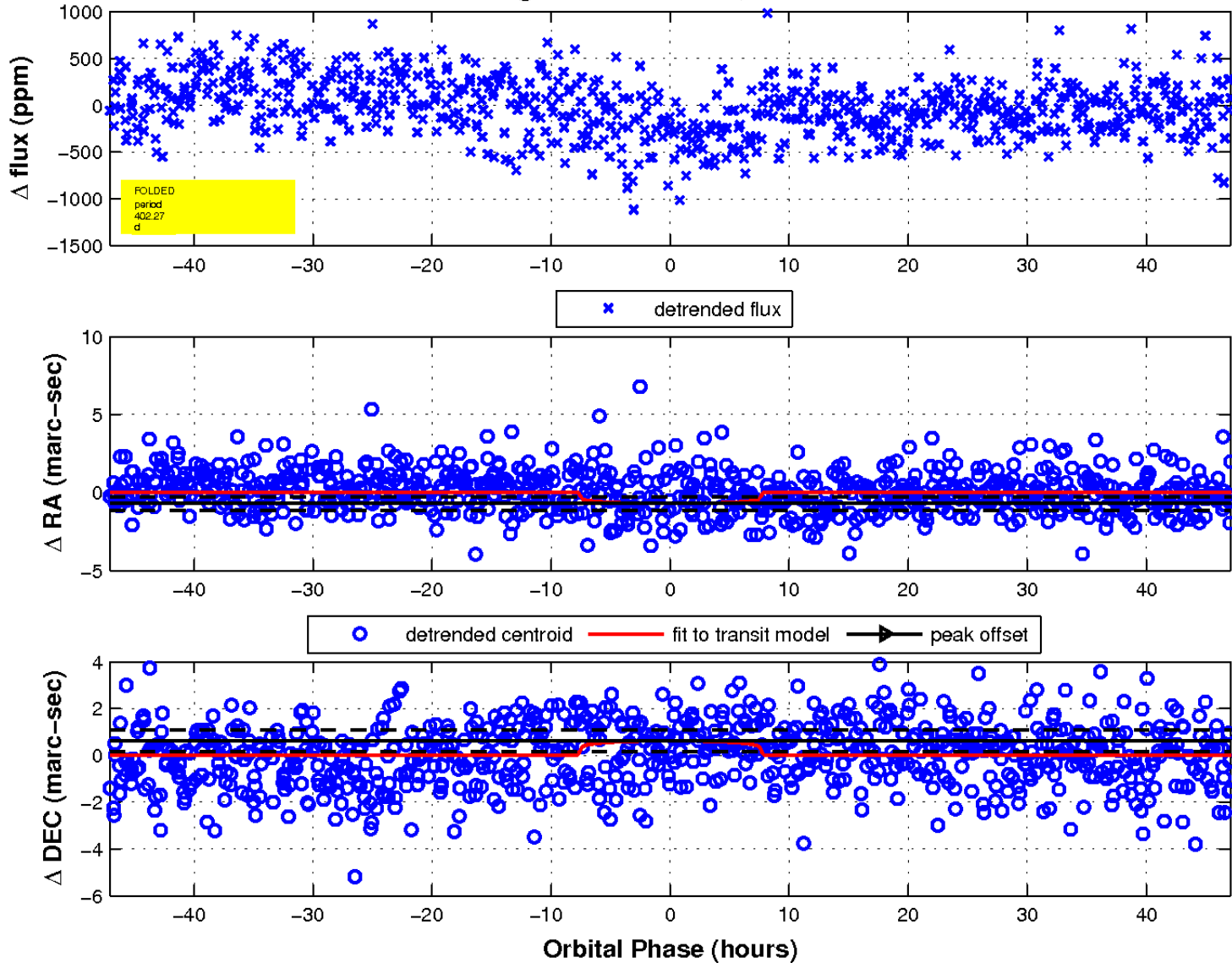
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



fluxWeightedCentroids, Planet 1 of 1



UKIRT Image

Declination

