

KIC 008743222

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}) |
|--------------|----------|------|---------------|--------------|-------------|------------------|------|------|-----------------------------|-----------------|------------------------|------------------------|
| 008743222-01 | OBS | No | 679.797296 | 178.024588 | 172.4 | 4.500 | 16.0 | -1.0 | 71.54 | 3790 | 87.18 | 284.43 |

Robovetter Results

| TCE | Run Type | Disp | Score | N | S | C | E | Comments |
|--------------|----------|------|-------|---|---|---|---|--|
| 008743222-01 | OBS | FP | 0.00 | 1 | 0 | 0 | 0 | INDIV_TRANS_CHASES_MARSHALL_SKYE—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT— INCONSISTENT_TRANS—CENT_SATURATED |

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

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

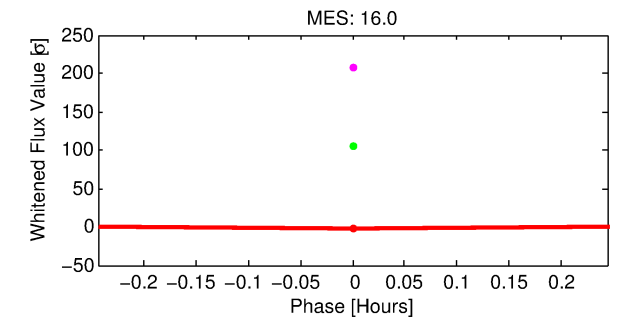
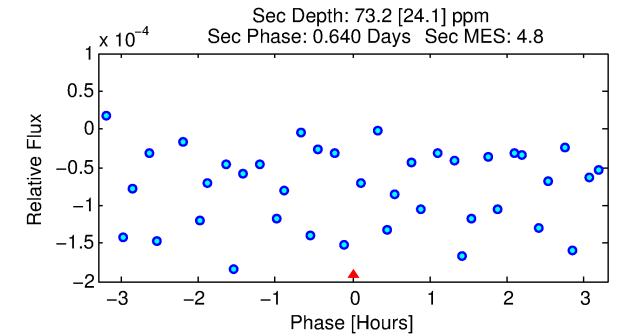
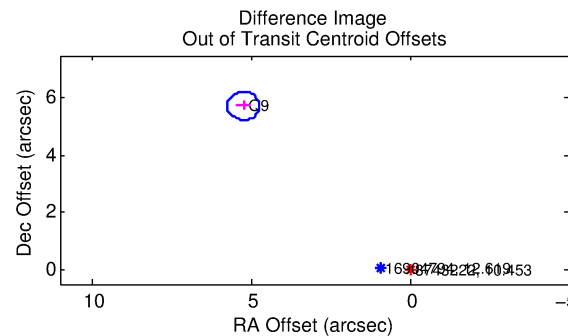
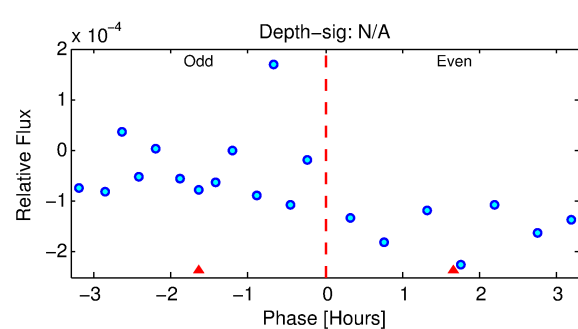
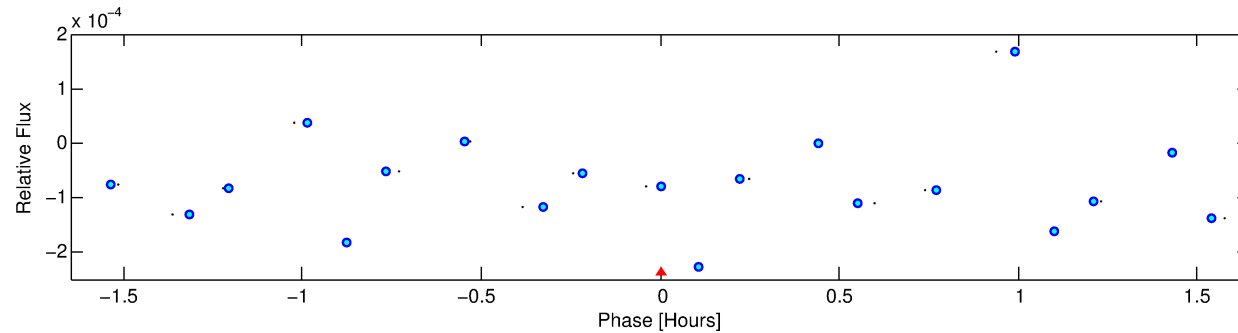
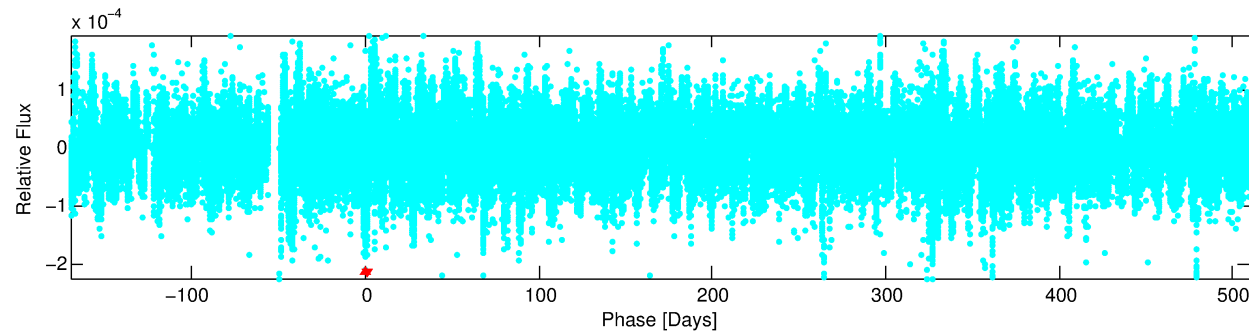
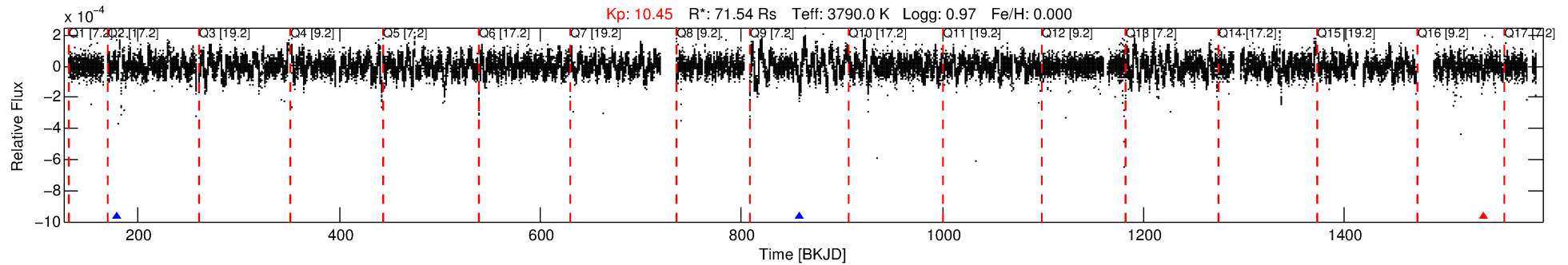
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 008743222-01

No Significant Match Found

DV One-Page Summary

KIC: 8743222 Candidate: 1 of 1 Period: 679.797 d



TPS TCE Results:

Period = 679.79730 d
Epoch = 178.0246 BKJD

DV fit results are unavailable

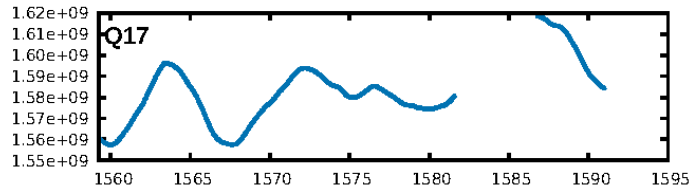
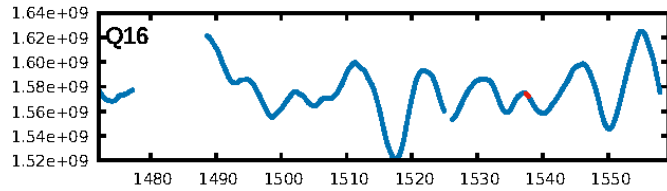
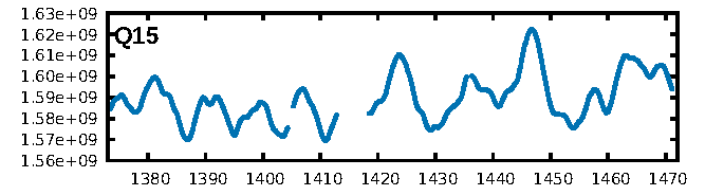
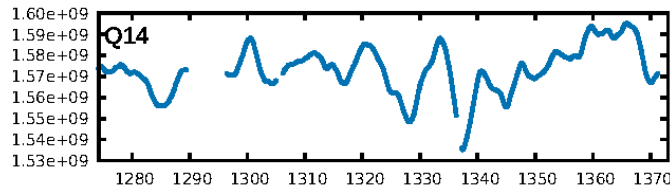
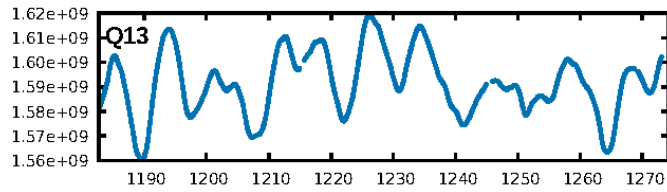
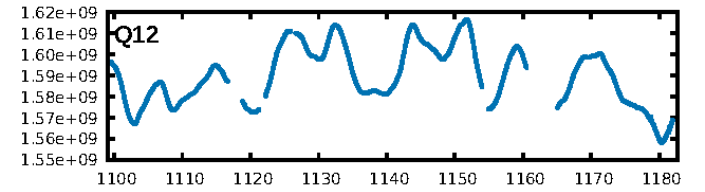
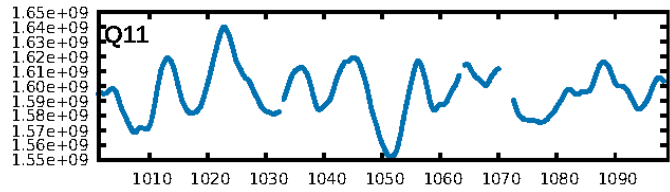
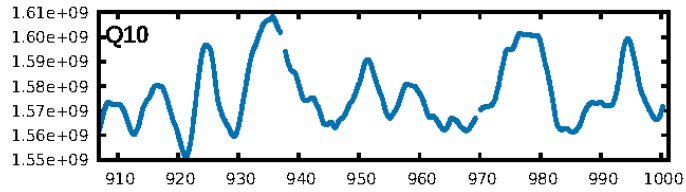
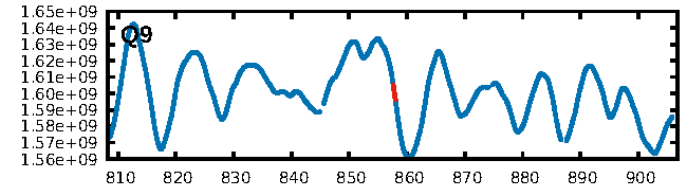
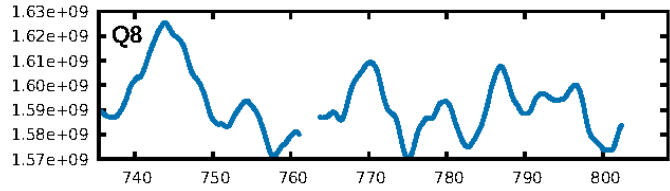
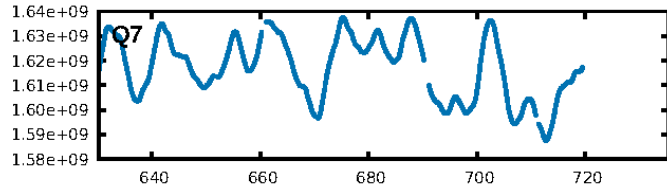
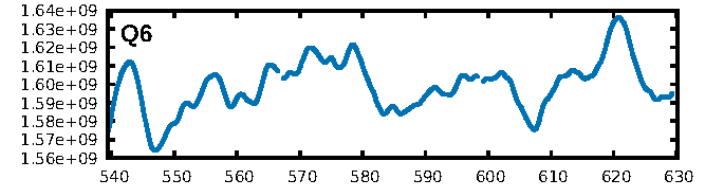
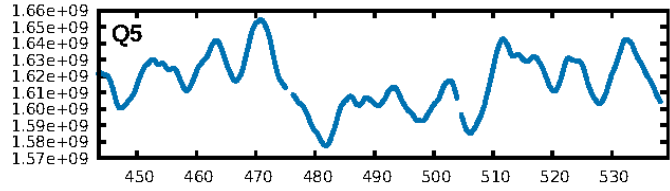
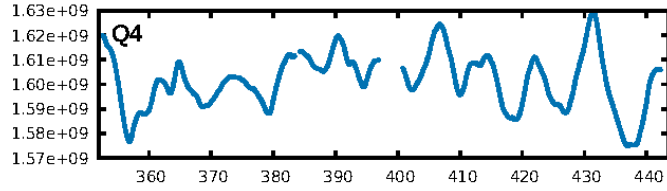
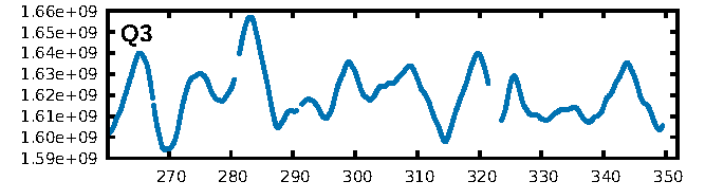
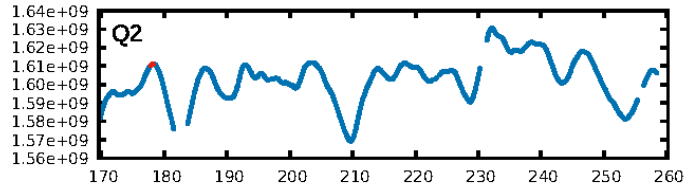
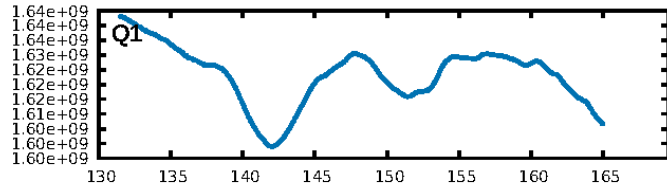
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 1.07e-05
RollingBand-fgt: 0.67 [2/3]
GhostDiagnostic-chr: -1.016
Centroid-sig: 83.6%
Centroid-so: 20.648 arcsec [0.71σ]
OotOffset-rm: 7.762 arcsec [47.20σ]
KicOffset-rm: 6.666 arcsec [41.15σ]
OotOffset-st: 0/0/0/1 [1]
KicOffset-st: 0/0/0/1 [1]
DiffImageQuality-fgm: 0.00 [0/1]
DiffImageOverlap-fno: 1.00 [2/2]

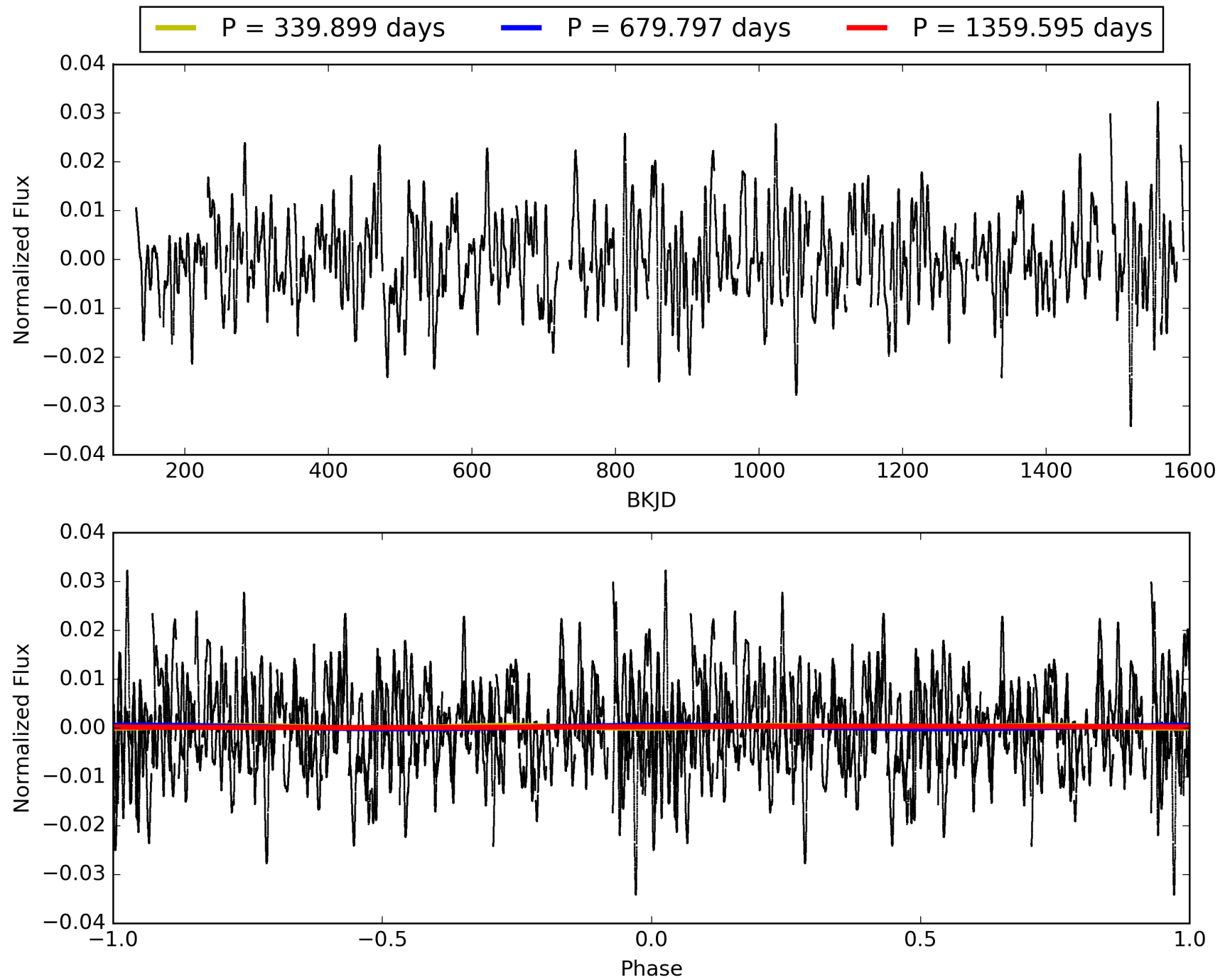
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 28-Jan-2016 21:49:20 Z

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

TCE 008743222-01, PDC Light Curves

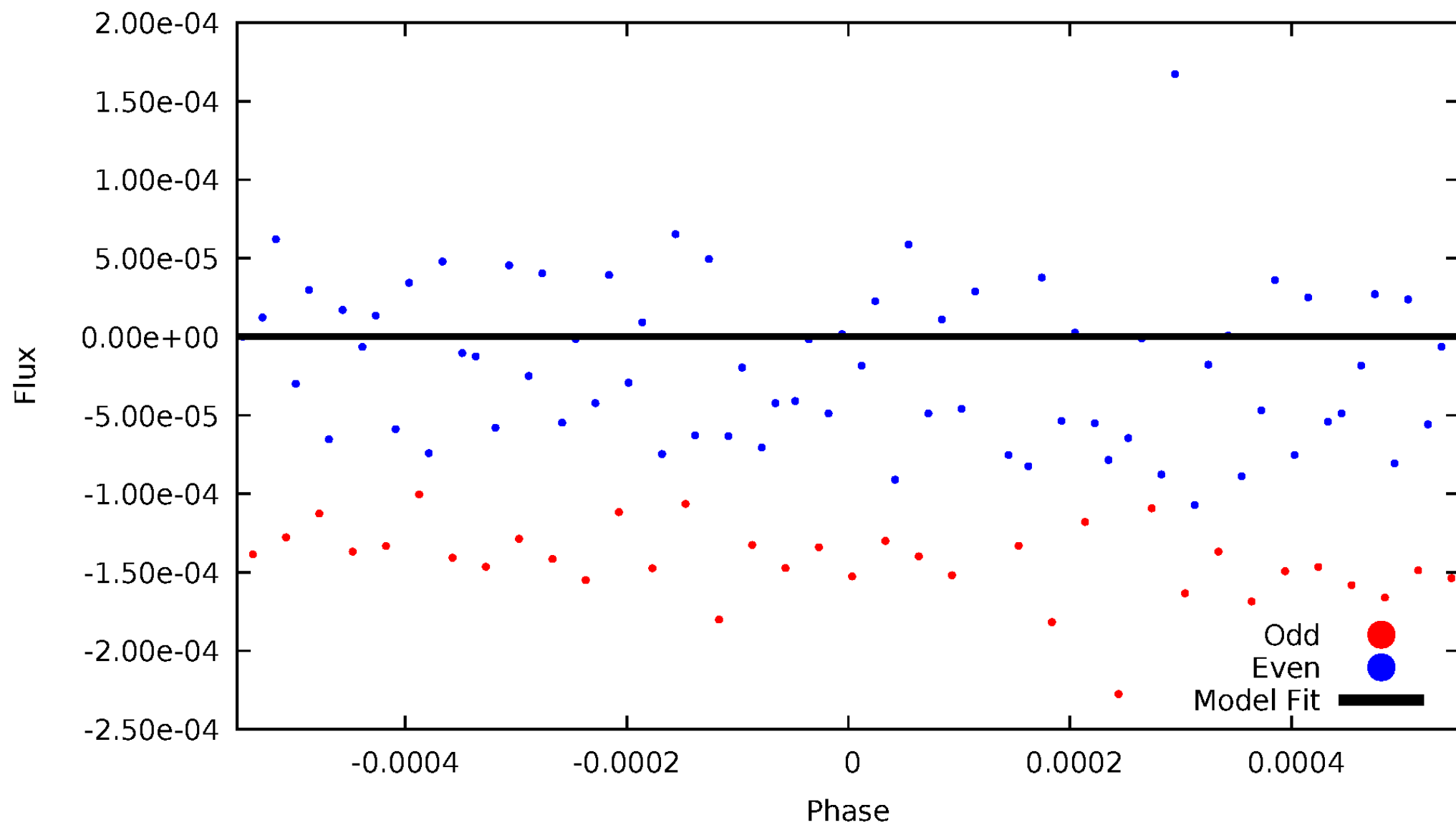


TCE 008743222-01



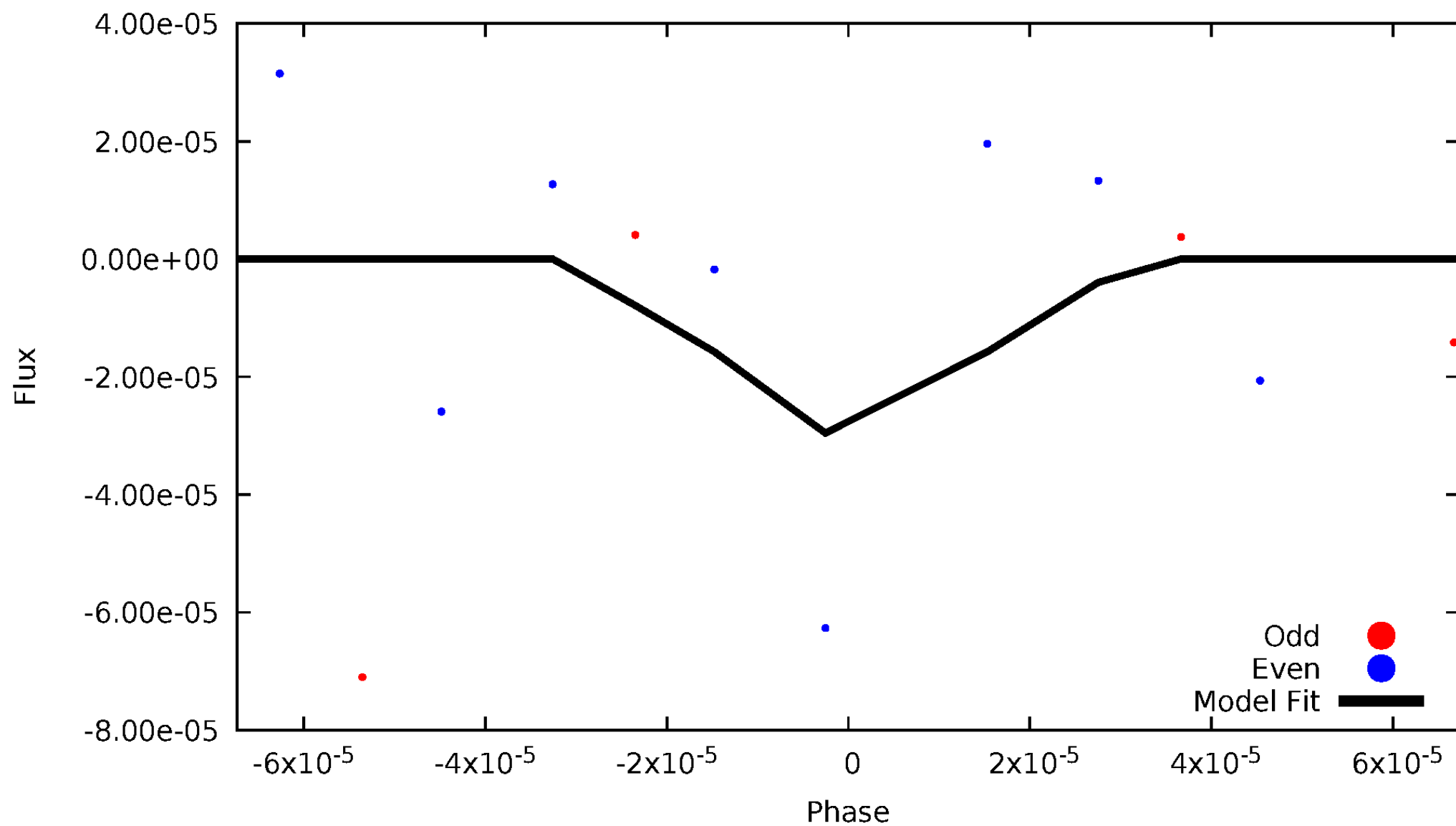
DV Odd/Even

TCE 008743222-01

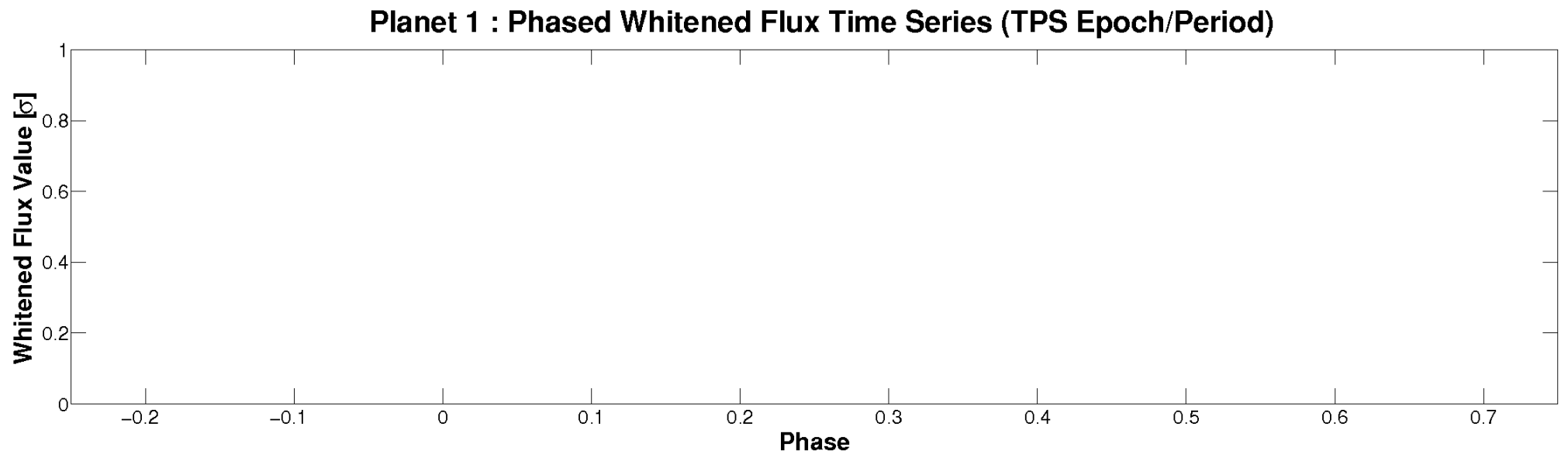
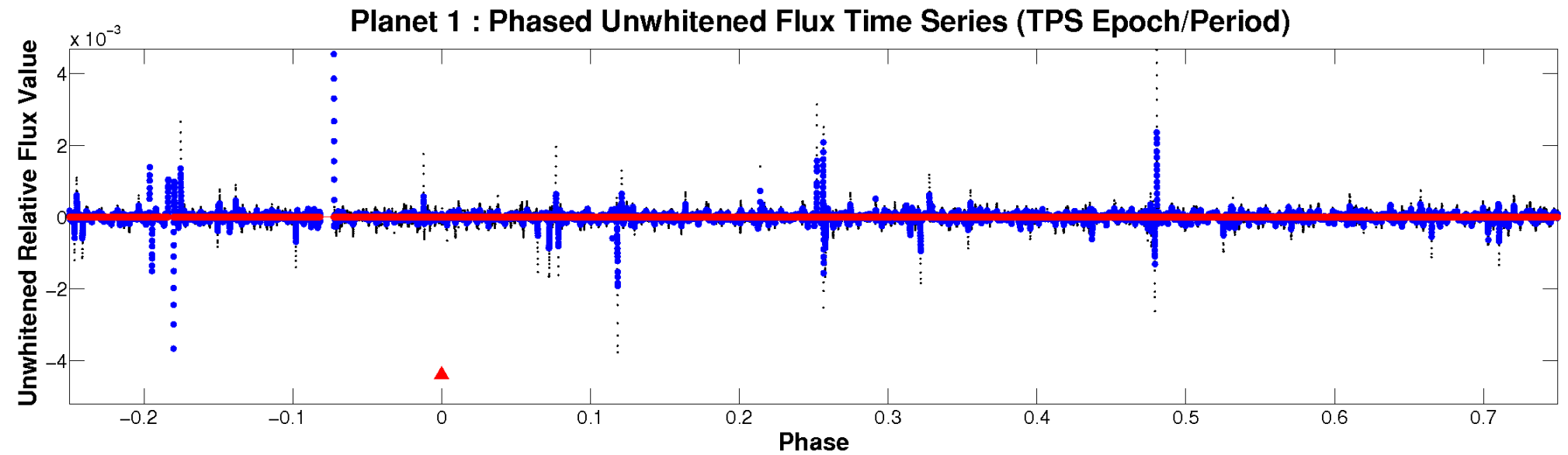


ALT Odd/Even

TCE 008743222-01

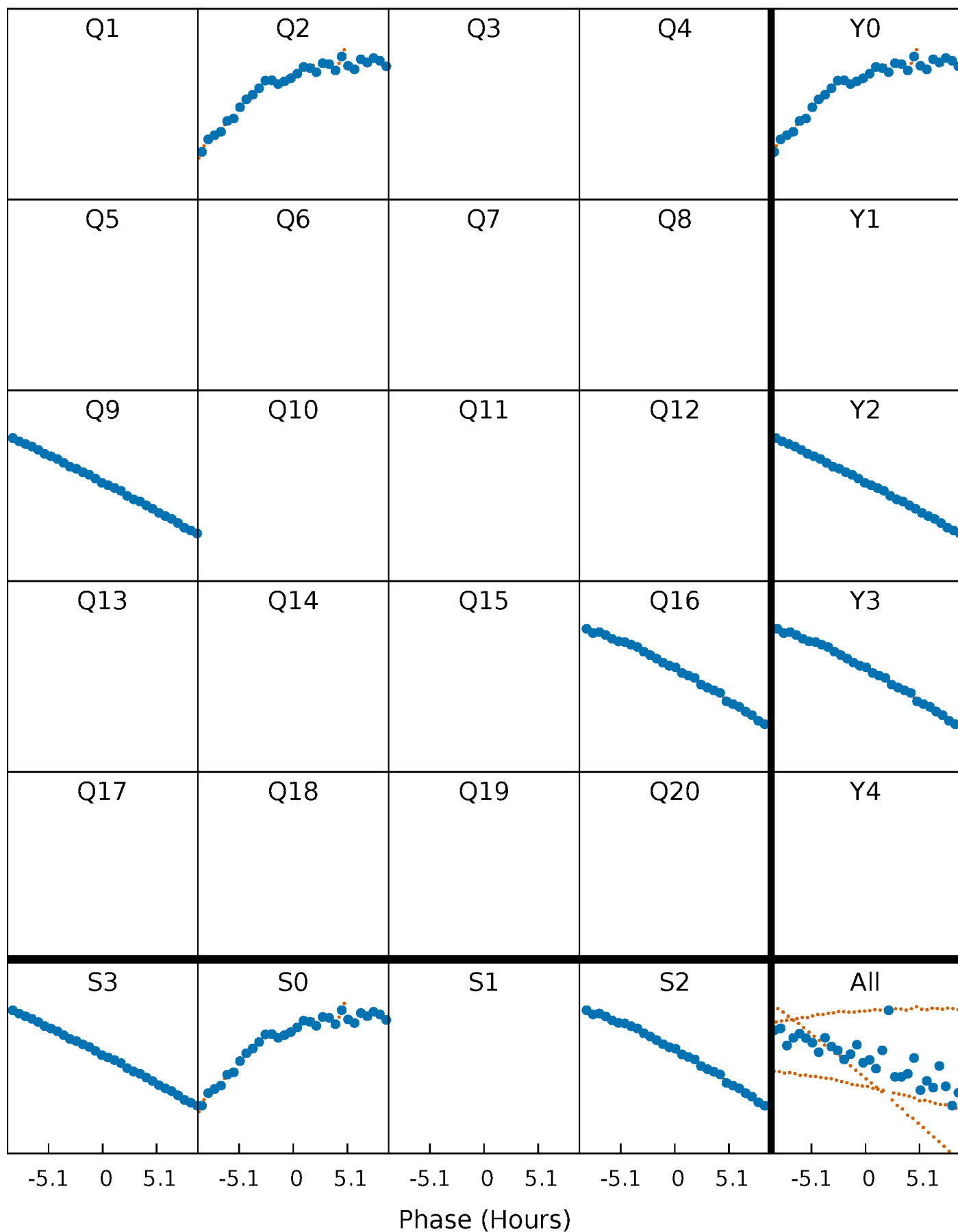


Non-Whitened Vs. Whitened Light Curve



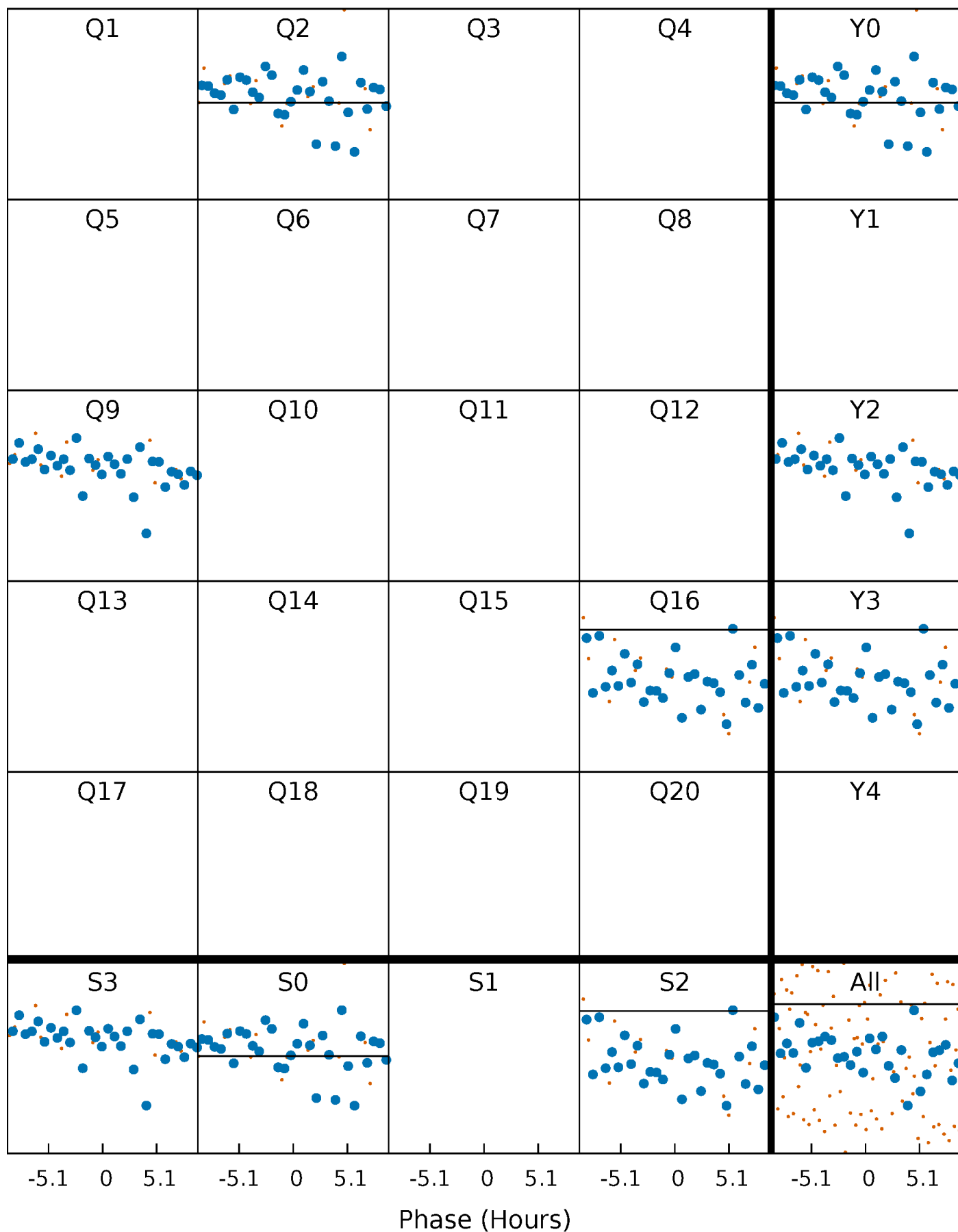
PDC Quarter-Phased Transit Curves

TCE 008743222-01 P=679.797296 Days $T_0=178.024588$ (BKJD)



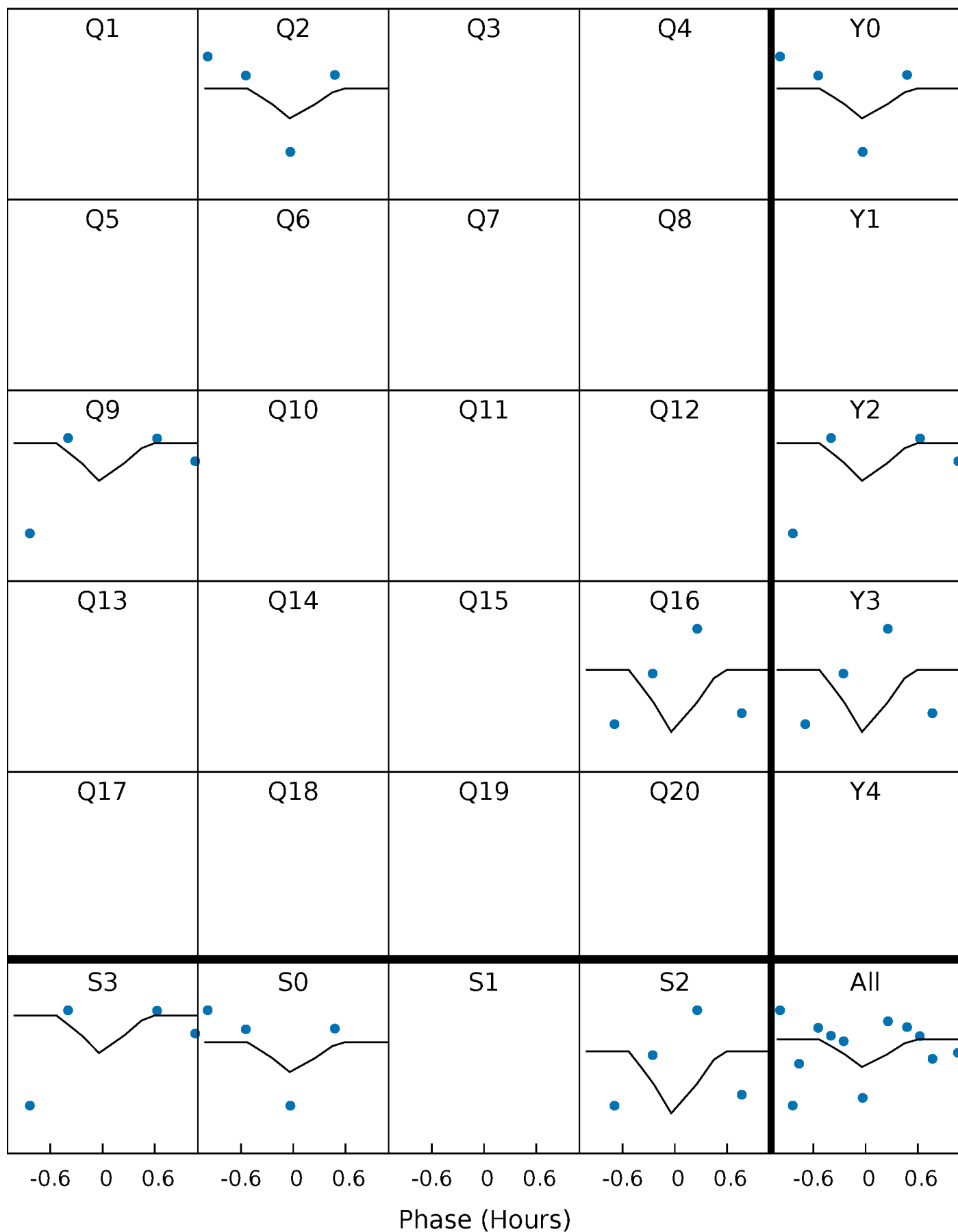
DV Quarter-Phased Transit Curves

TCE 008743222-01 P=679.797296 Days $T_0=178.024588$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

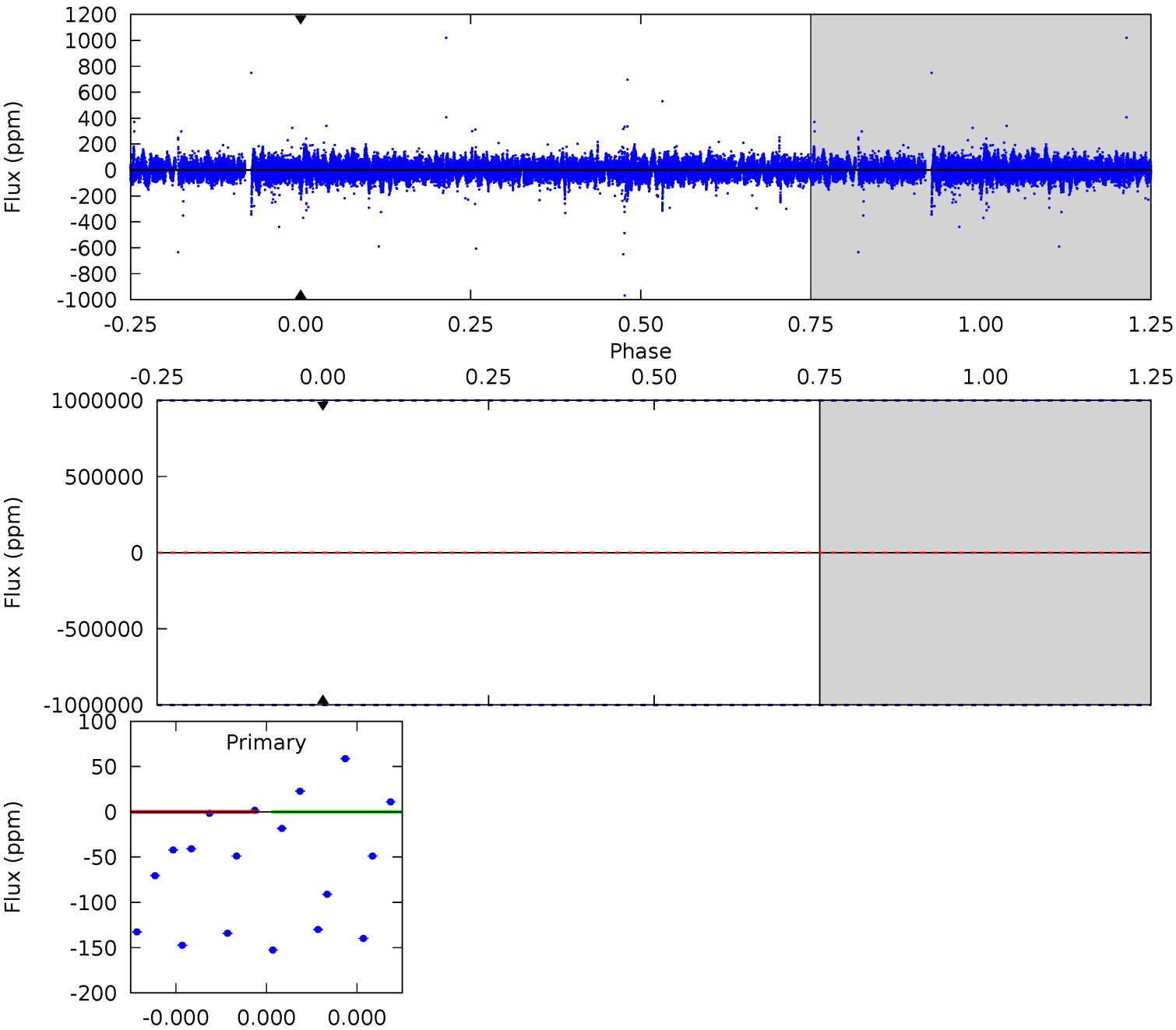
TCE 008743222-01 P=679.797296 Days $T_0=178.185900$ (BKJD)



DV Model-Shift Uniqueness Test

008743222-01, P = 679.797296 Days, E = 178.024588 Days

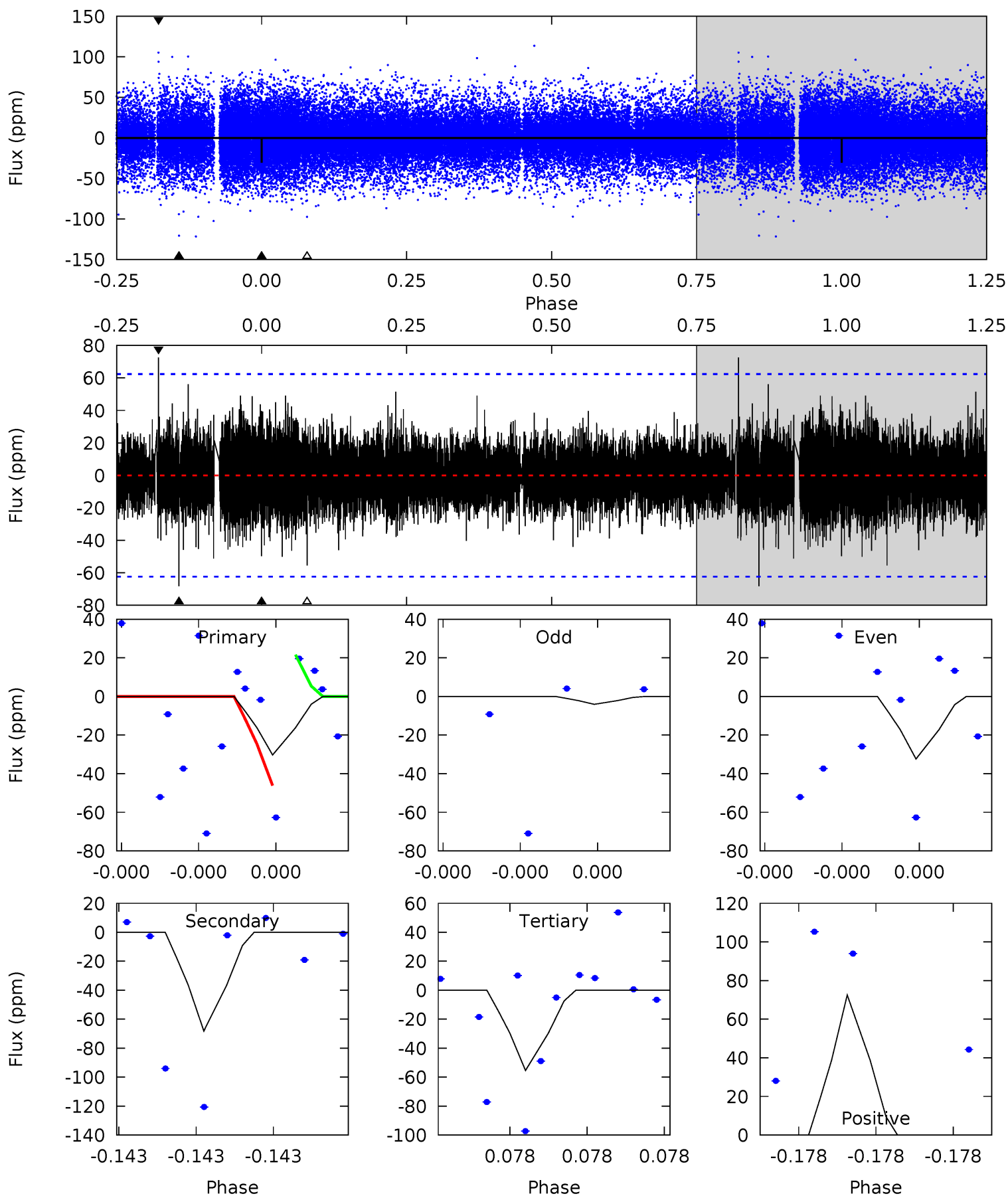
| Pri | Sec | Ter | Pos | FA ₁ | FA ₂ | F _{Red} | Pri-Ter | Pri-Pos | Sec-Ter | Sec-Pos | Odd-Evn | DMM | Shape | TAT |
|-----|-----|-----|-----|-----------------|-----------------|------------------|---------|---------|---------|---------|---------|-----|-------|-----|
| 0 | 0 | 0 | 0 | 1.00 | 1.00 | 1.00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |



Alt Model-Shift Uniqueness Test

008743222-01, P = 679.797296 Days, E = 178.185900 Days

| Pri | Sec | Ter | Pos | FA ₁ | FA ₂ | F _{Red} | Pri-Ter | Pri-Pos | Sec-Ter | Sec-Pos | Odd-Evn | DMM | Shape | TAT |
|------|------|------|------|-----------------|-----------------|------------------|---------|---------|---------|---------|---------|------|-------|------|
| 2.88 | 6.48 | 5.27 | 6.90 | 5.93 | 4.01 | 0.89 | -2.38 | -4.02 | 1.21 | -0.42 | 1.53 | 1.00 | 0.52 | 1.18 |



Stellar Parameters For KIC 008743222

| | $T_{\text{eff}}(K)$ | $\log(g)$ | [Fe/H] | R (R_{\odot}) | M (M_{\odot}) | p_{\star} ($\text{g}\cdot\text{cm}^{-3}$) |
|--------|---------------------|---------------------------|---------------------------|-----------------------------|---------------------------|---|
| | 3790^{+86}_{-105} | $0.972^{+0.030}_{-0.030}$ | $0.000^{+0.200}_{-0.250}$ | $71.541^{+2.601}_{-13.874}$ | $1.751^{+0.069}_{-0.585}$ | $0.000^{+0.000}_{-0.000}$ |
| | +2%/-3% | +3%/-3% | +inf%/-inf% | +4%/-19% | +4%/-33% | +27%/-9% |
| Source | PHO54 | AST54 | PHO54 | DSEP | | |

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

Secondary Eclipse Parameters for KIC 008743222-01 / KOI

| Detrend | Depth (ppm) | R_p (R_{\oplus}) | T_{max} (K) | T_{obs} (K) | A_{obs} |
|---------|-----------------|------------------------------|--------------------|-------------------------|--------------------------------|
| DV | 0 ± 1000000 | $552.87^{+574.05}_{-383.08}$ | 1463^{+41}_{-41} | 2845^{+5931}_{-10959} | $4.218^{+1100.146}_{-862.860}$ |
| Alt. | -68 ± 11 | $513.86^{+592.67}_{-337.69}$ | 1464^{+39}_{-48} | 1945^{+834}_{-3919} | $0.461^{+3.518}_{-0.360}$ |

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 $A_{obs} \gg 1.0$

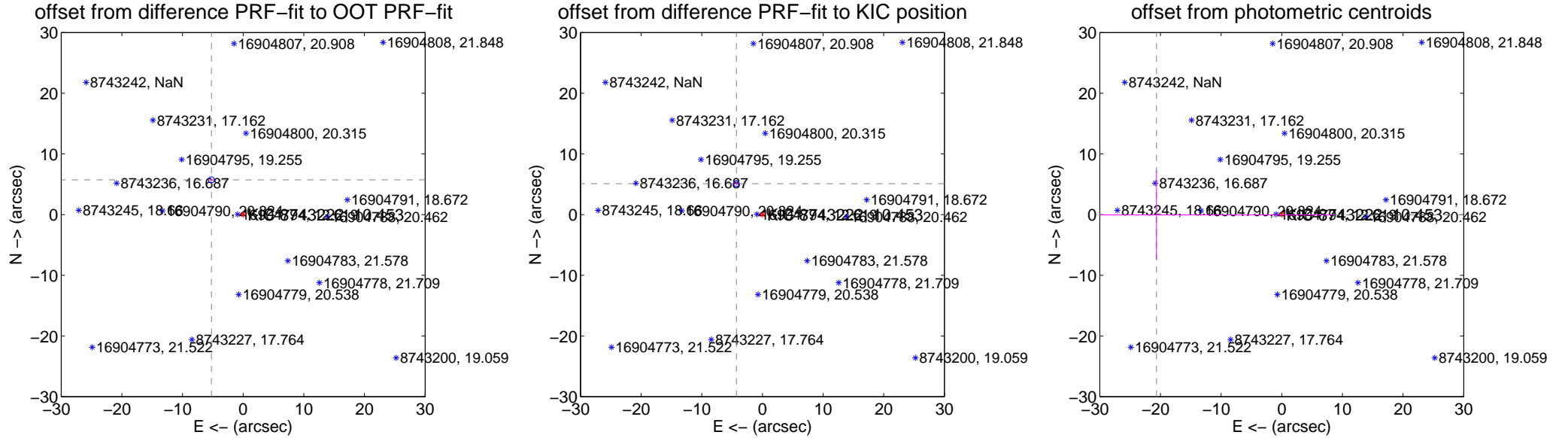
DV Centroid Data

Supplemental centroid analysis for 008743222-01. **Kepler magnitude: 10.45.** Transit SNR -1.00

There are 0 quarters with good PRF difference image offsets

The direct PRF centroid is offset from the target star catalog position by about 1.13 arcsec

| | Distance in arcsec | Distance / σ | Δ RA | Δ Dec |
|---|-------------------------------------|---------------------|-------------------|-------------------|
| PRF-fit source offset from OOT | 7.762 \pm 0.164 | 47.20 | 5.234 \pm 0.196 | 5.732 \pm 0.133 |
| PRF-fit source offset from KIC position | 6.666 \pm 0.162 | 41.15 | 4.297 \pm 0.196 | 5.096 \pm 0.133 |
| photometric centroid source offset | 20.65 \pm 29.22 | 0.71 | 20.65 \pm 29.22 | -0.05 \pm 7.36 |



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.

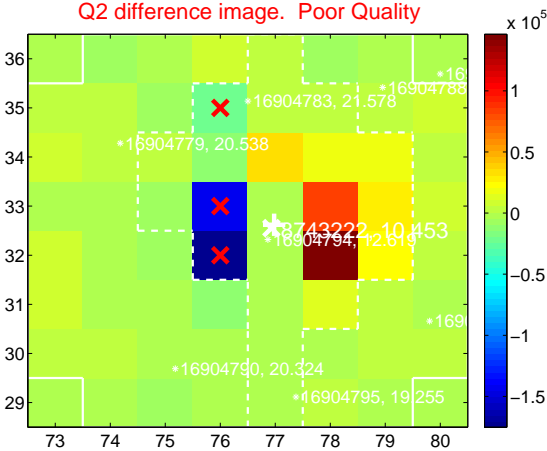
Q1 no difference image



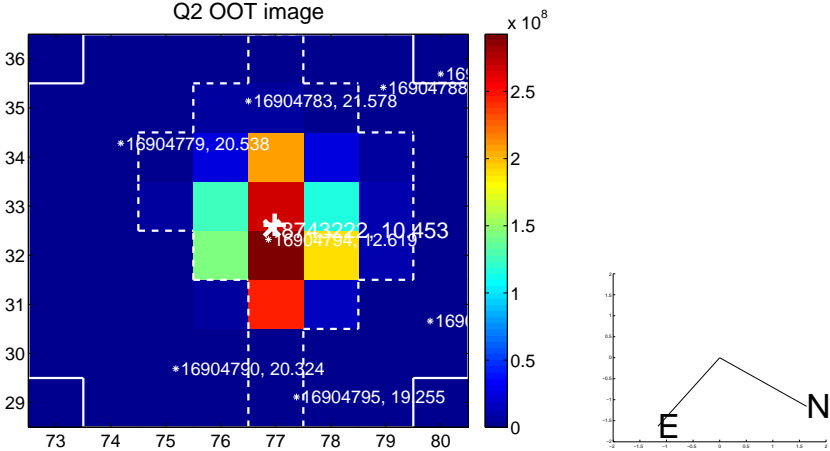
Q1 no OOT image



Q2 difference image. Poor Quality



Q2 OOT image



Q3 no difference image



Q3 no OOT image



Q4 no difference image



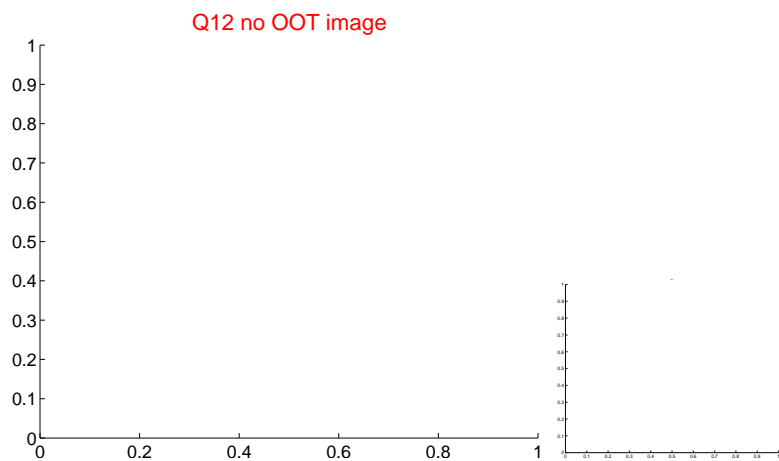
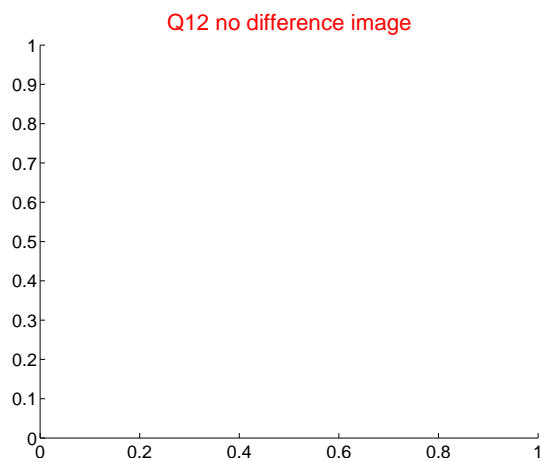
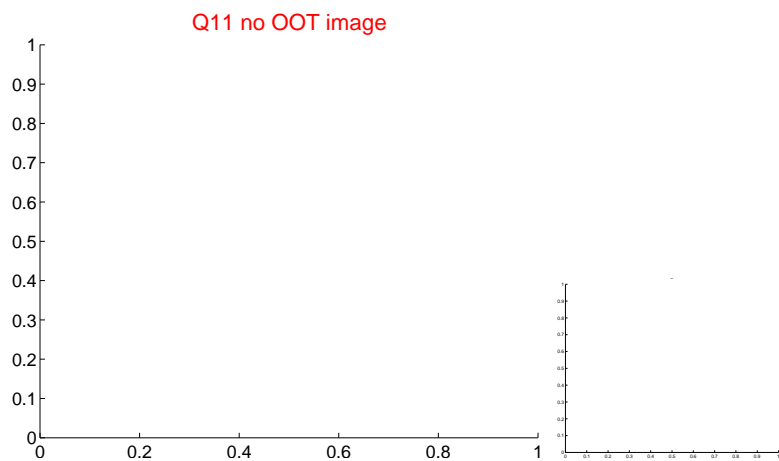
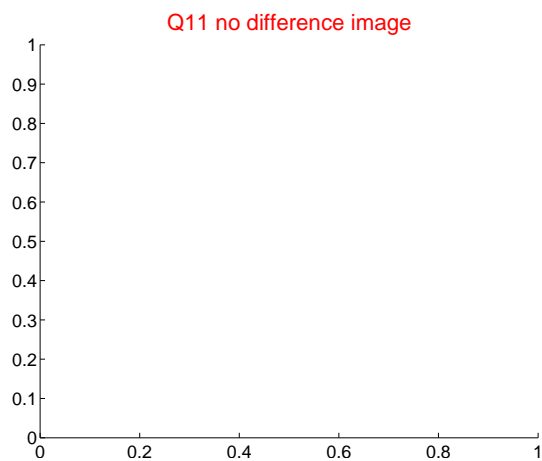
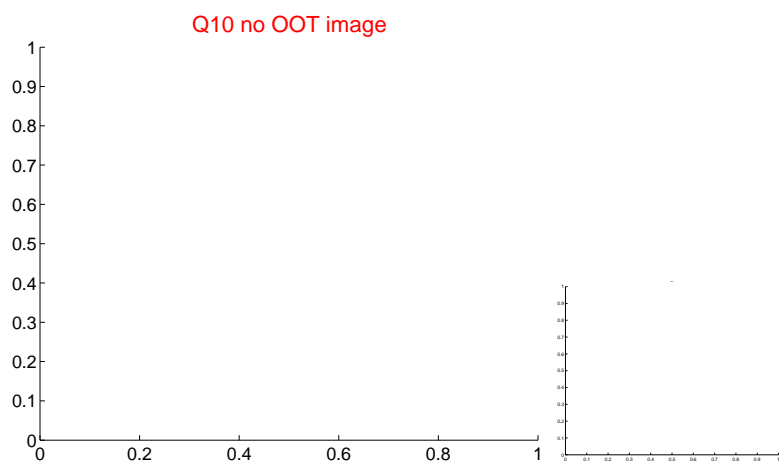
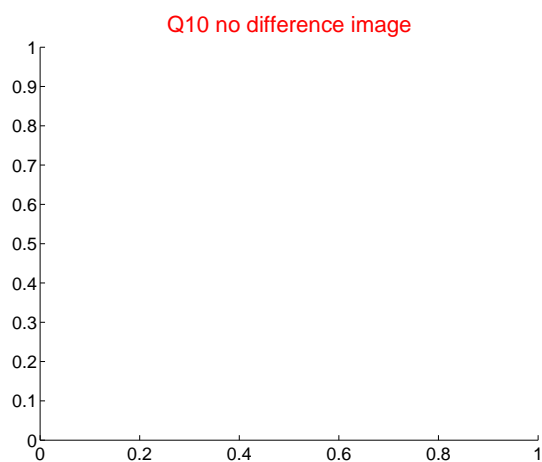
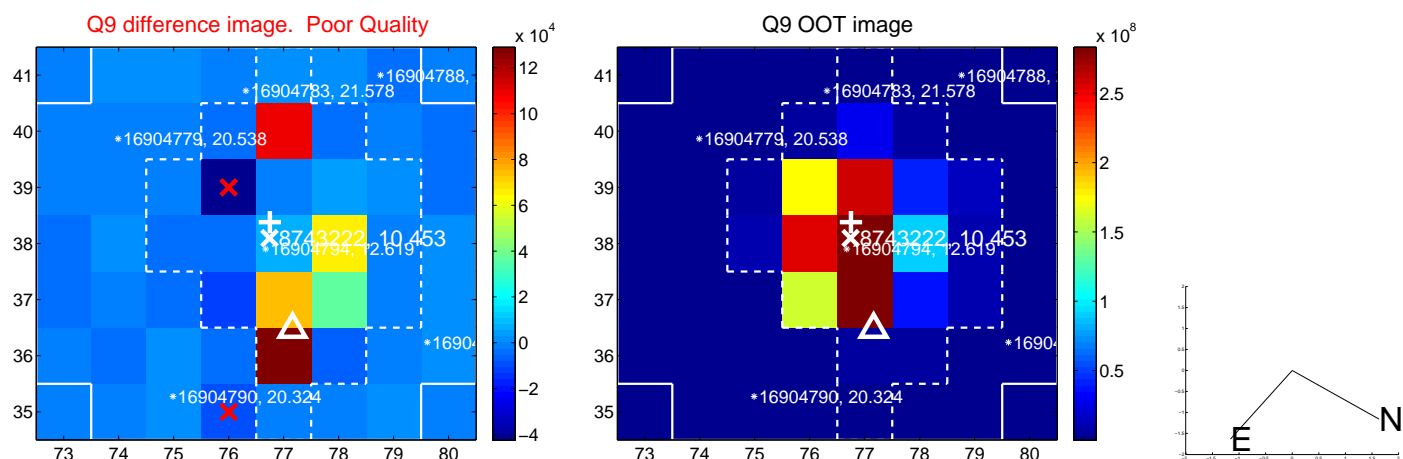
Q4 no OOT image



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



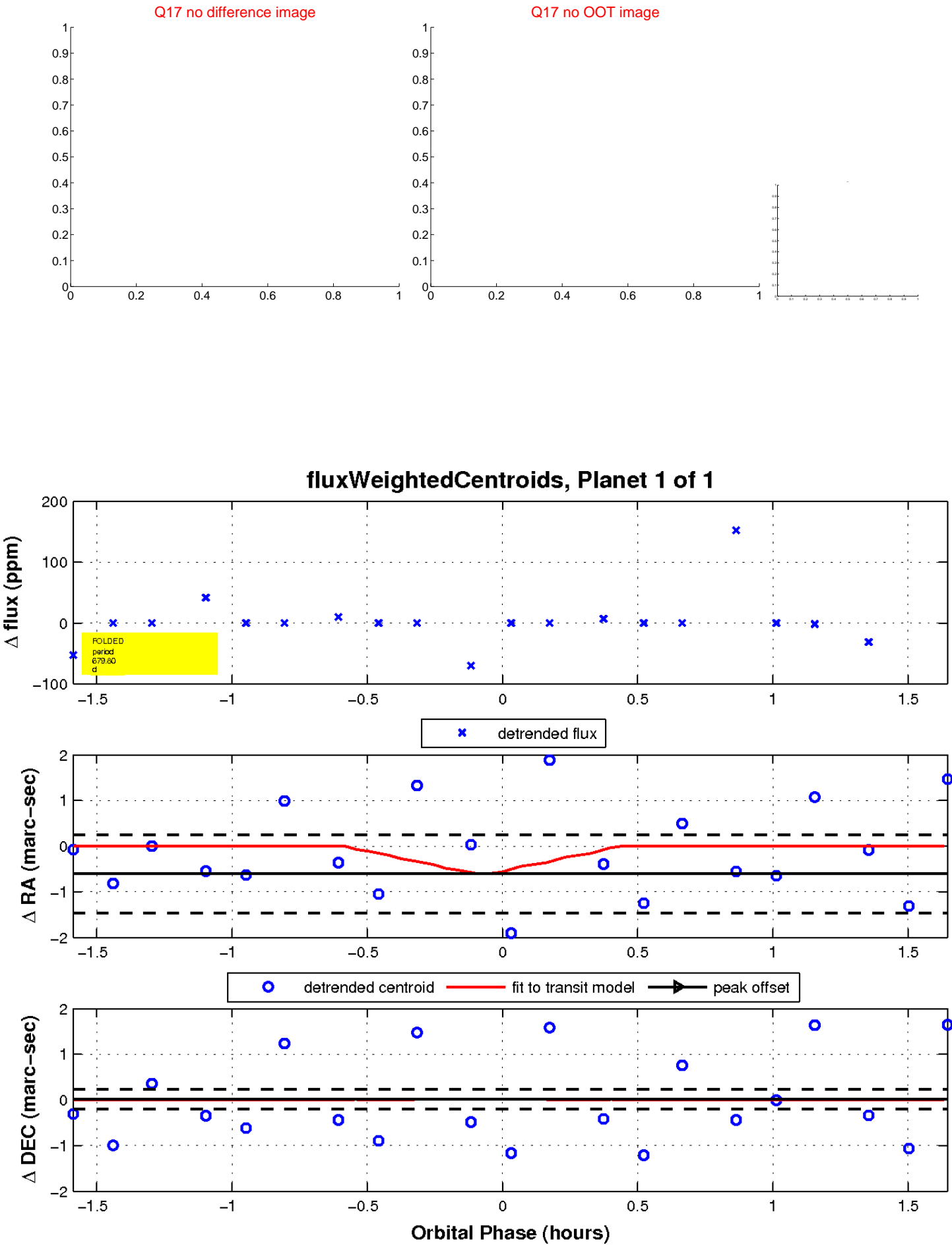
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value



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.



UKIRT Image

Declination

