

KIC 008160992

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}) |
|--------------|----------|------|---------------|--------------|-------------|------------------|------|------|-----------------------------|-----------------|------------------------|------------------------|
| 008160992-01 | OBS | No | 374.489088 | 262.024019 | 1825.4 | 59.002 | 10.2 | 17.7 | 1.00 | 5780 | 5.64 | 0.97 |

Robovetter Results

| TCE | Run Type | Disp | Score | N | S | C | E | Comments |
|--------------|----------|------|-------|---|---|---|---|------------------------------------------------------------------|
| 008160992-01 | OBS | FP | 0.00 | 1 | 0 | 0 | 0 | INDIV_TRANS_MARSHALL_SKYE—LPP_DV—ALL_TRANS_CHASES—CENT_SATURATED |

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

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

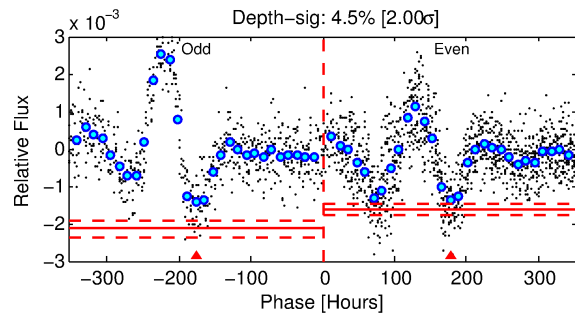
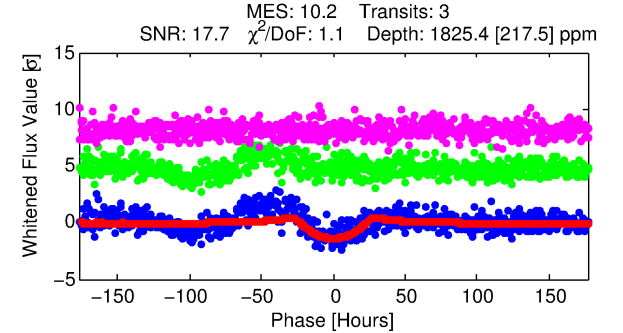
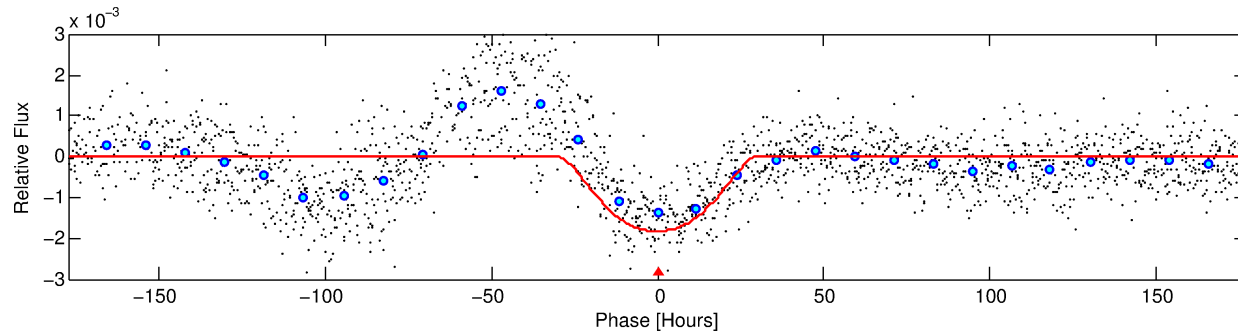
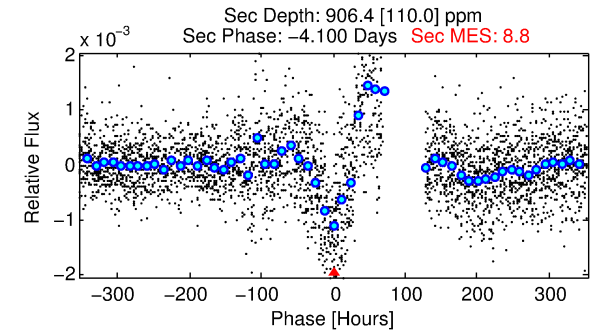
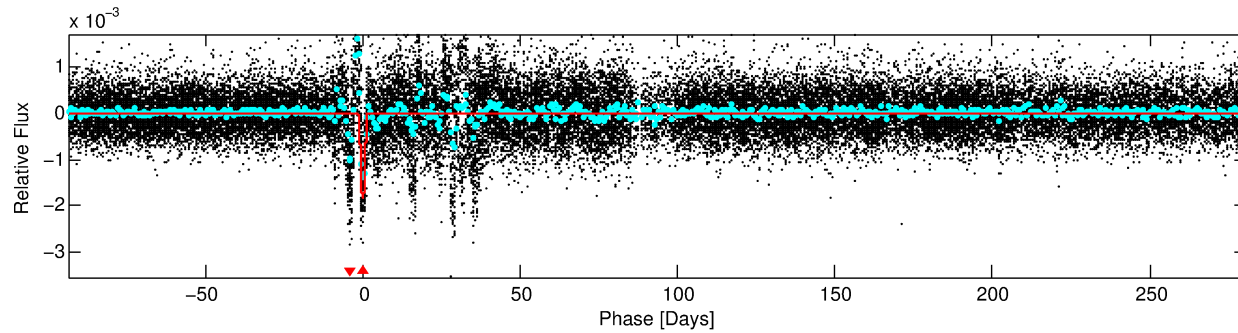
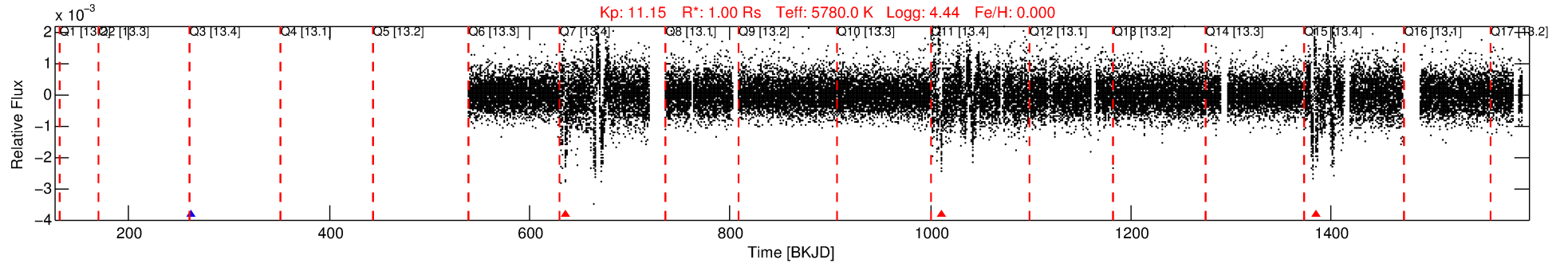
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 008160992-01

No Significant Match Found

DV One-Page Summary

KIC: 8160992 Candidate: 1 of 1 Period: 374.489 d



DV Fit Results:

Period = 374.48909 [0.04413] d
Epoch = 262.0240 [0.0937] BKJD
Rp/R* = 0.0517 [0.0091]
a/R* = 21.25 [2.63]
b = 0.96 [0.03]
Seff = 0.97 [0.00]
Teq = 253 [0] K
Rp = 5.64 [0.99] Re
a = 1.0170 [0.0001] AU
Ag = 16200.18 [6014.93] [2.69σ]
Teffp = 4410 [409] K [10.16σ]

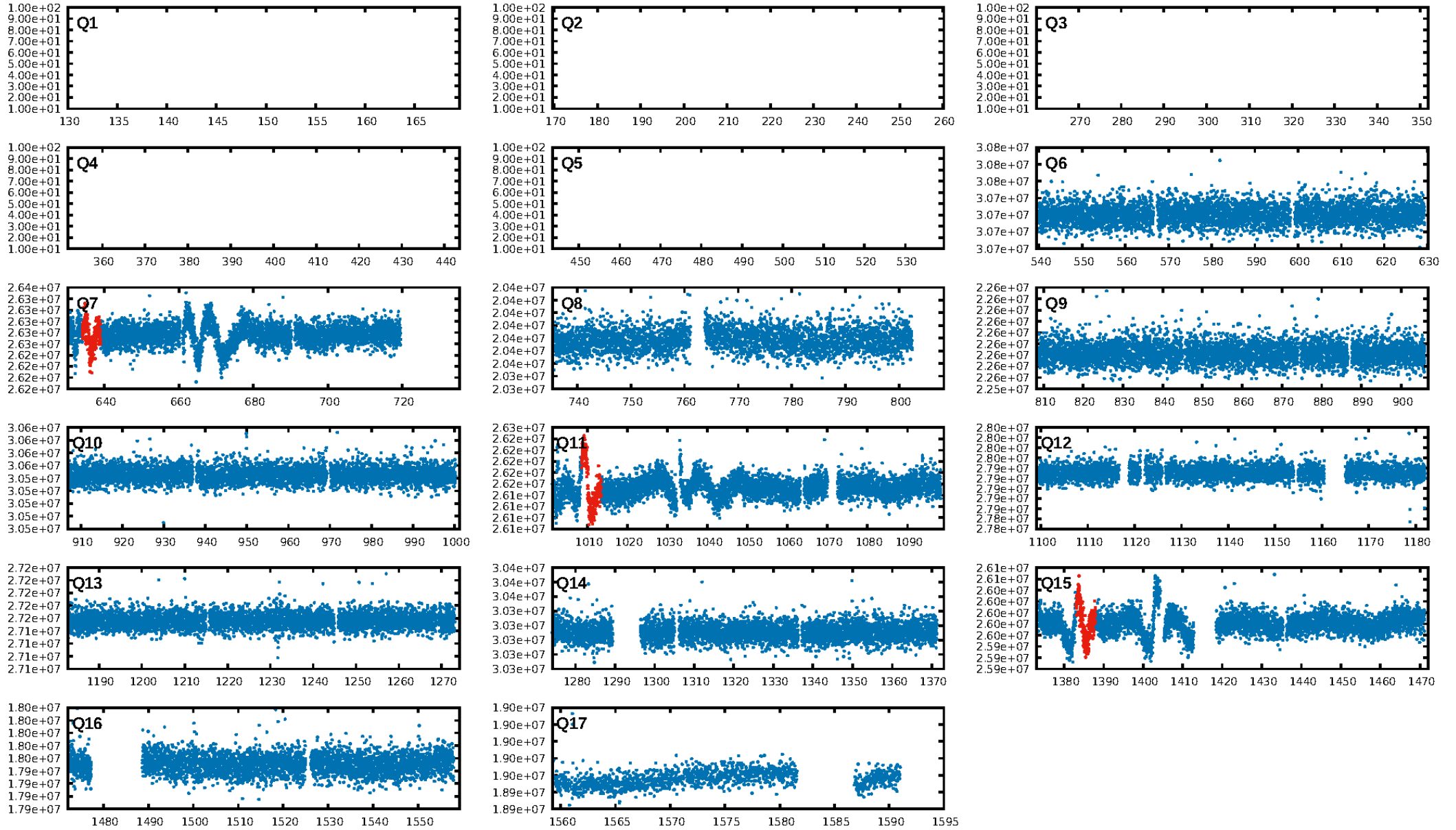
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: 8.2%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 3.01e-12
RollingBand-fgt: 0.00 [0/3]
GhostDiagnostic-chr: -0.9324
Centroid-sig: 39.5%
Centroid-so: 0.944 arcsec [1.07σ]
OotOffset-rm: N/A
KicOffset-rm: N/A
OotOffset-st: 0/0/0 [0]
KicOffset-st: 0/0/0 [0]
DiffImageQuality-fgm: N/A
DiffImageOverlap-fno: N/A

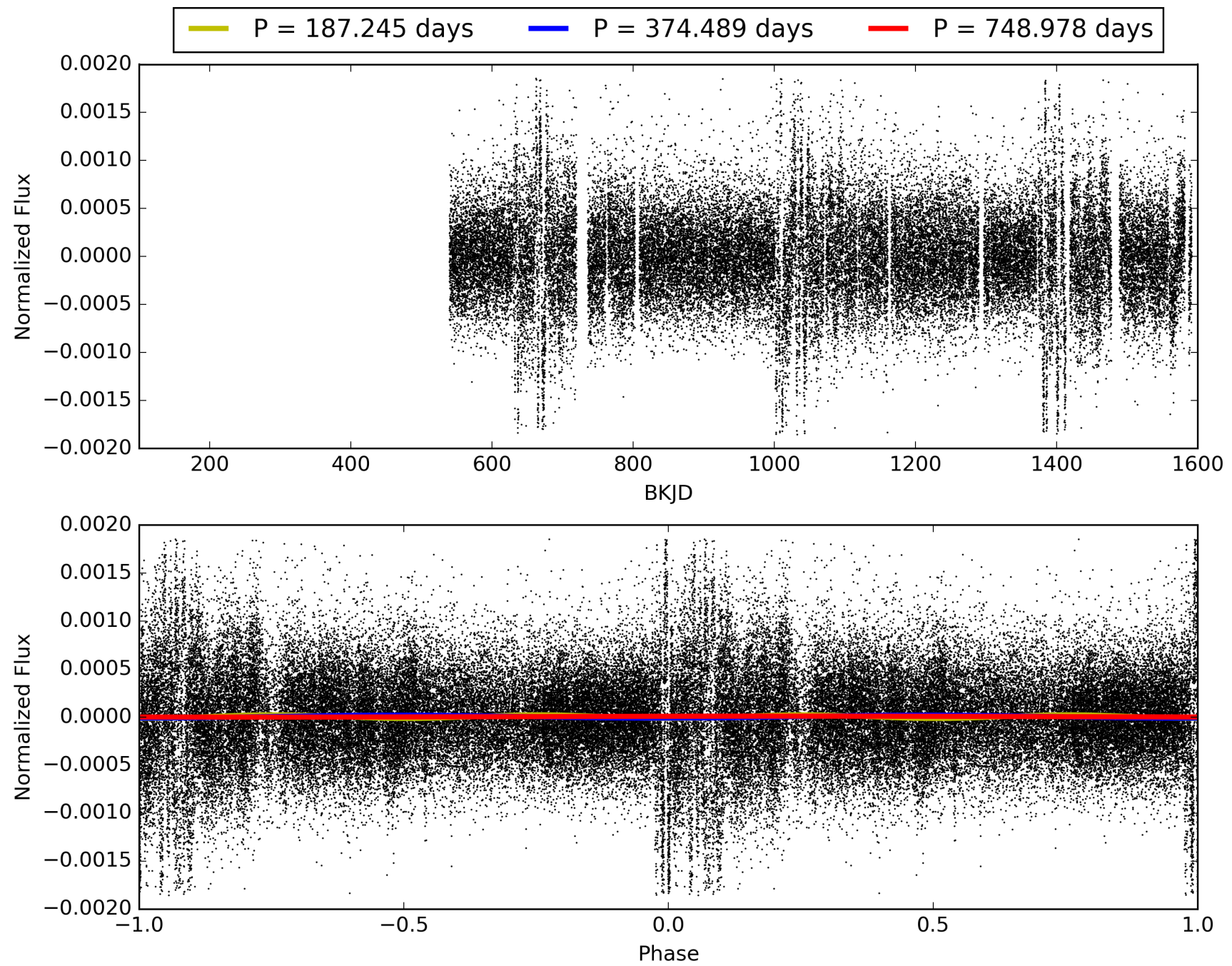
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 14:52:43 Z

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

TCE 008160992-01, PDC Light Curves

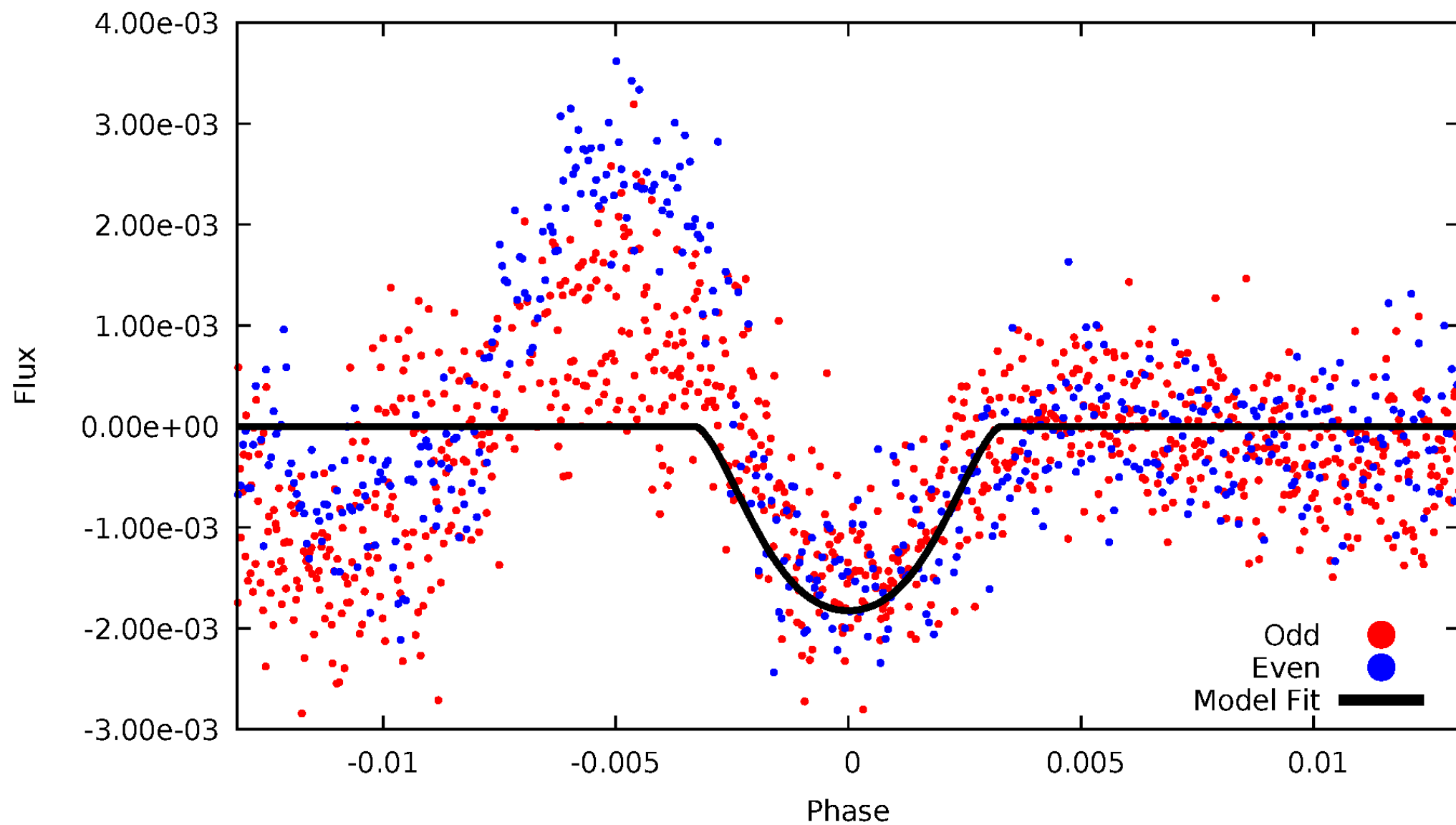


TCE 008160992-01



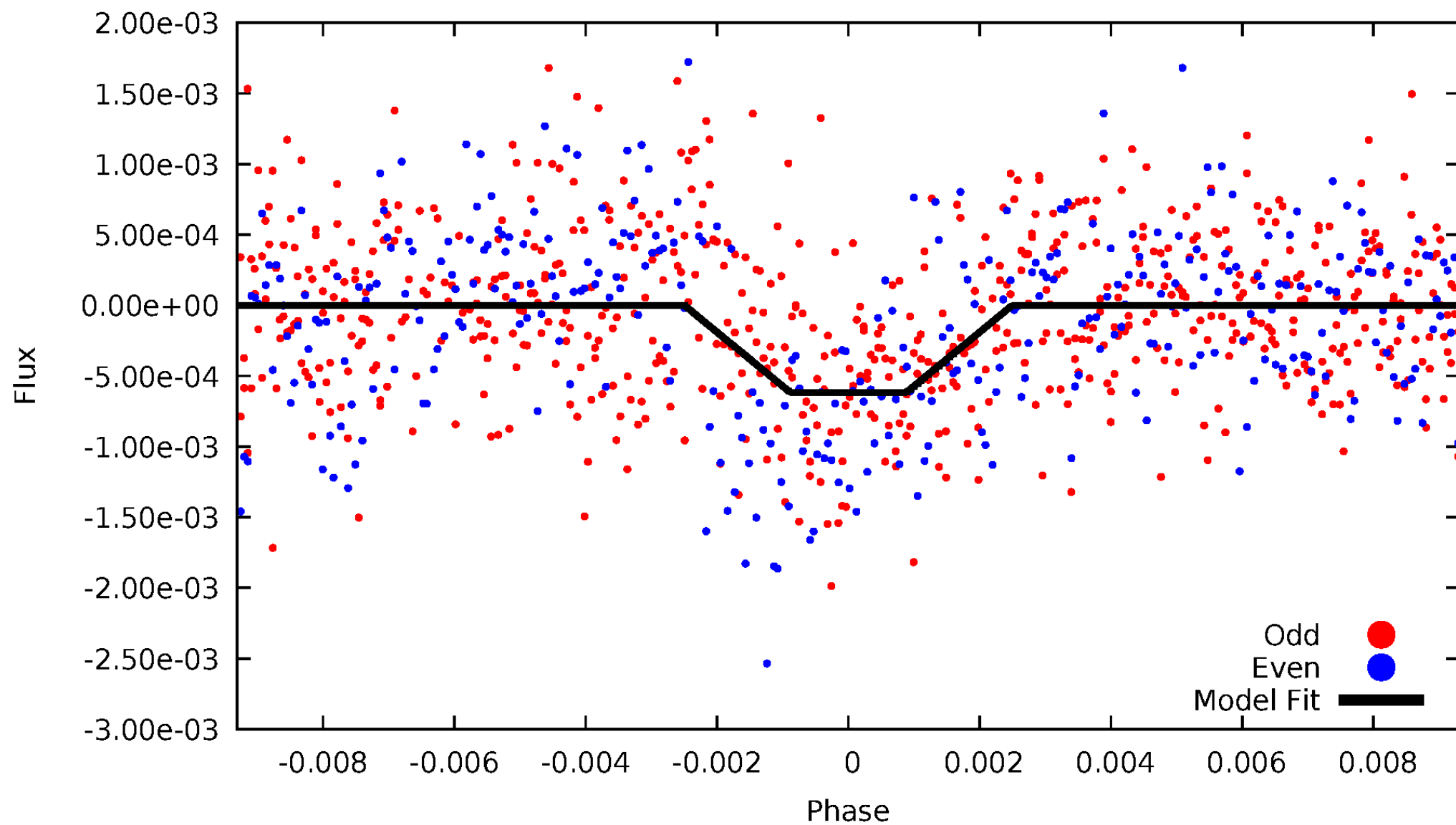
DV Odd/Even

TCE 008160992-01



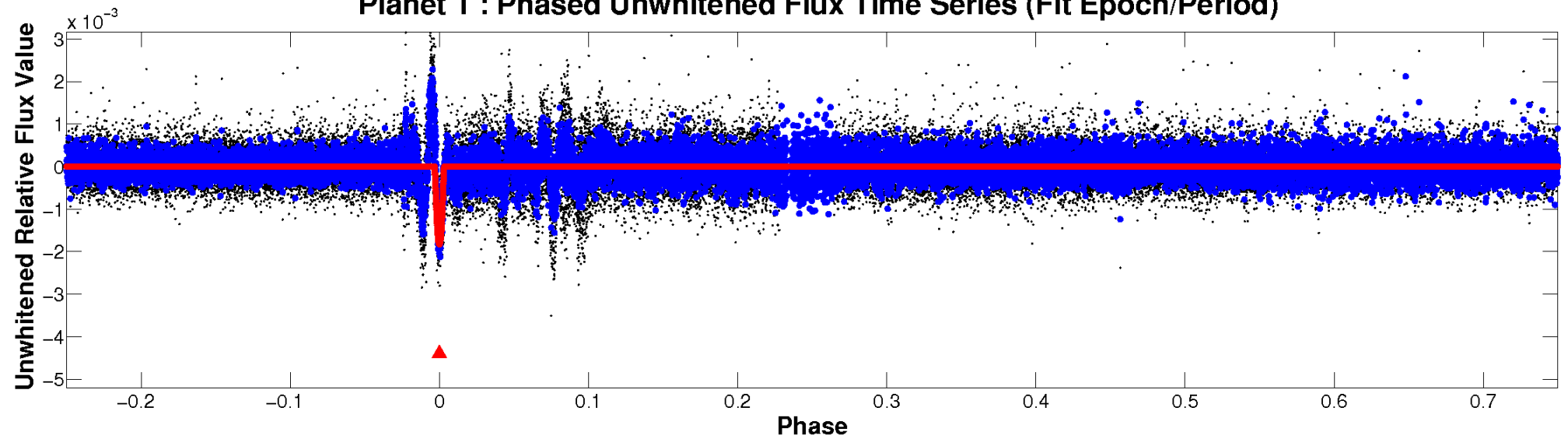
ALT Odd/Even

TCE 008160992-01

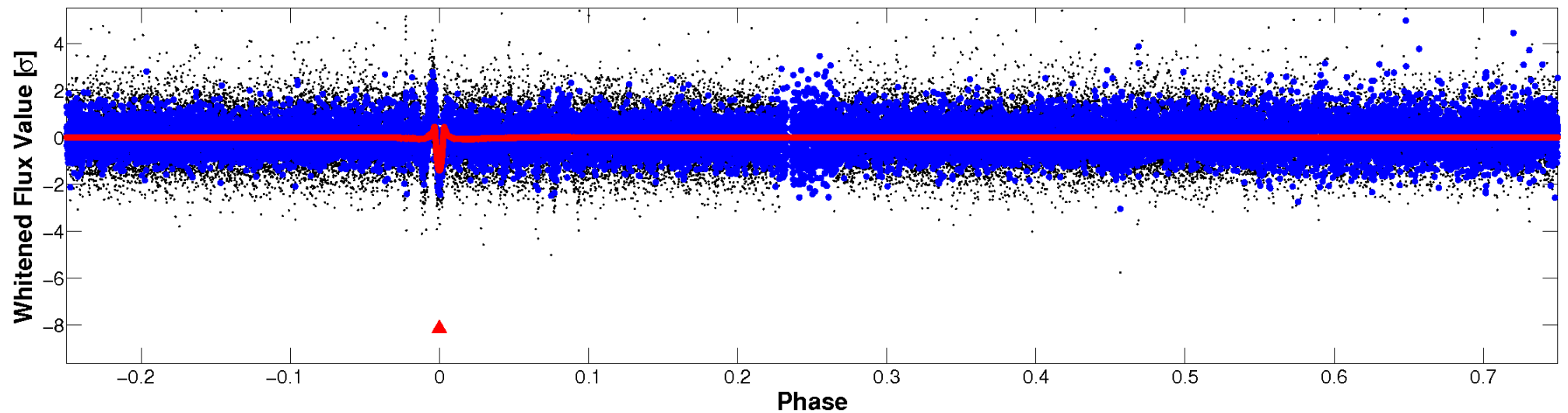


Non-Whitened Vs. Whitened Light Curve

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

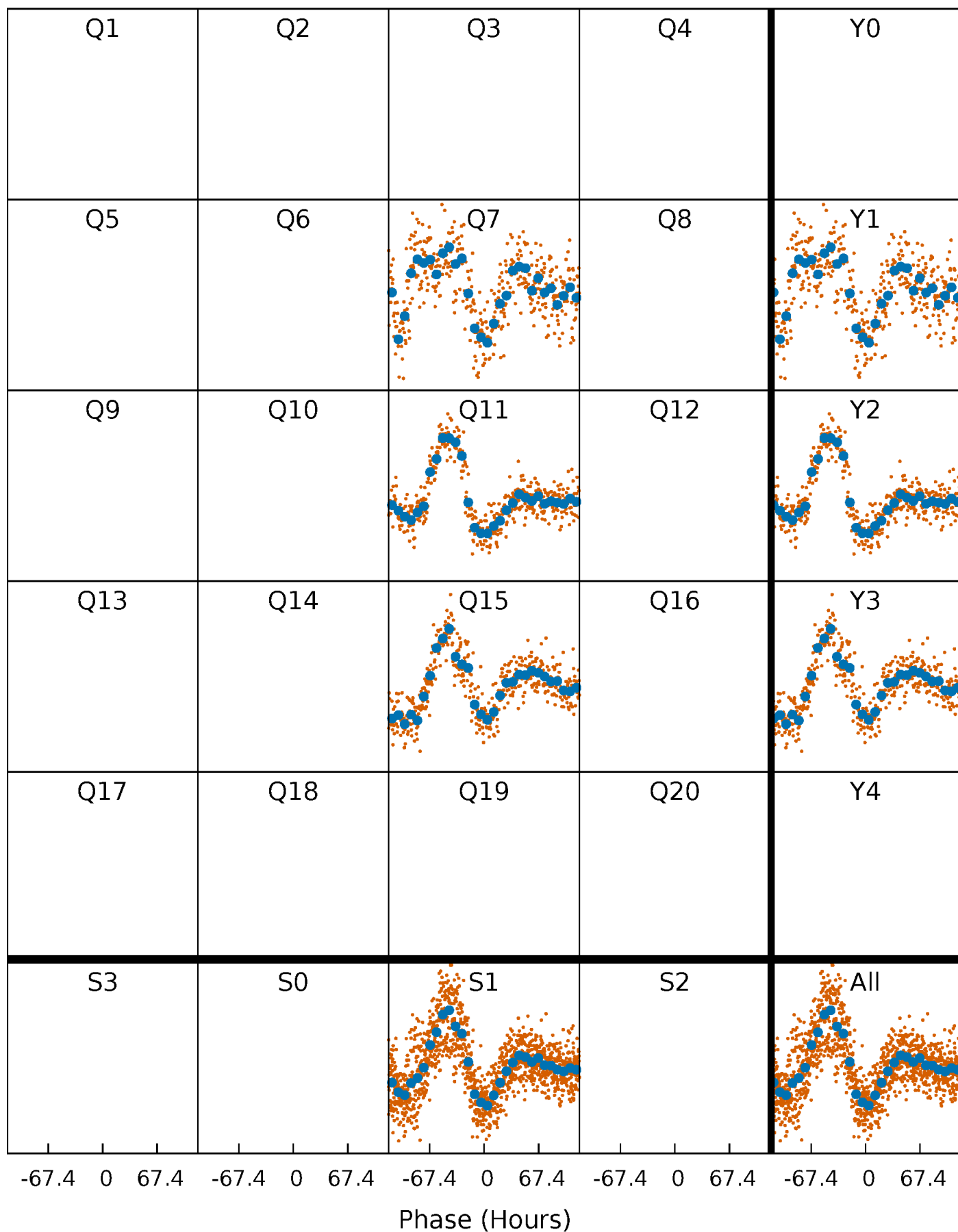


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



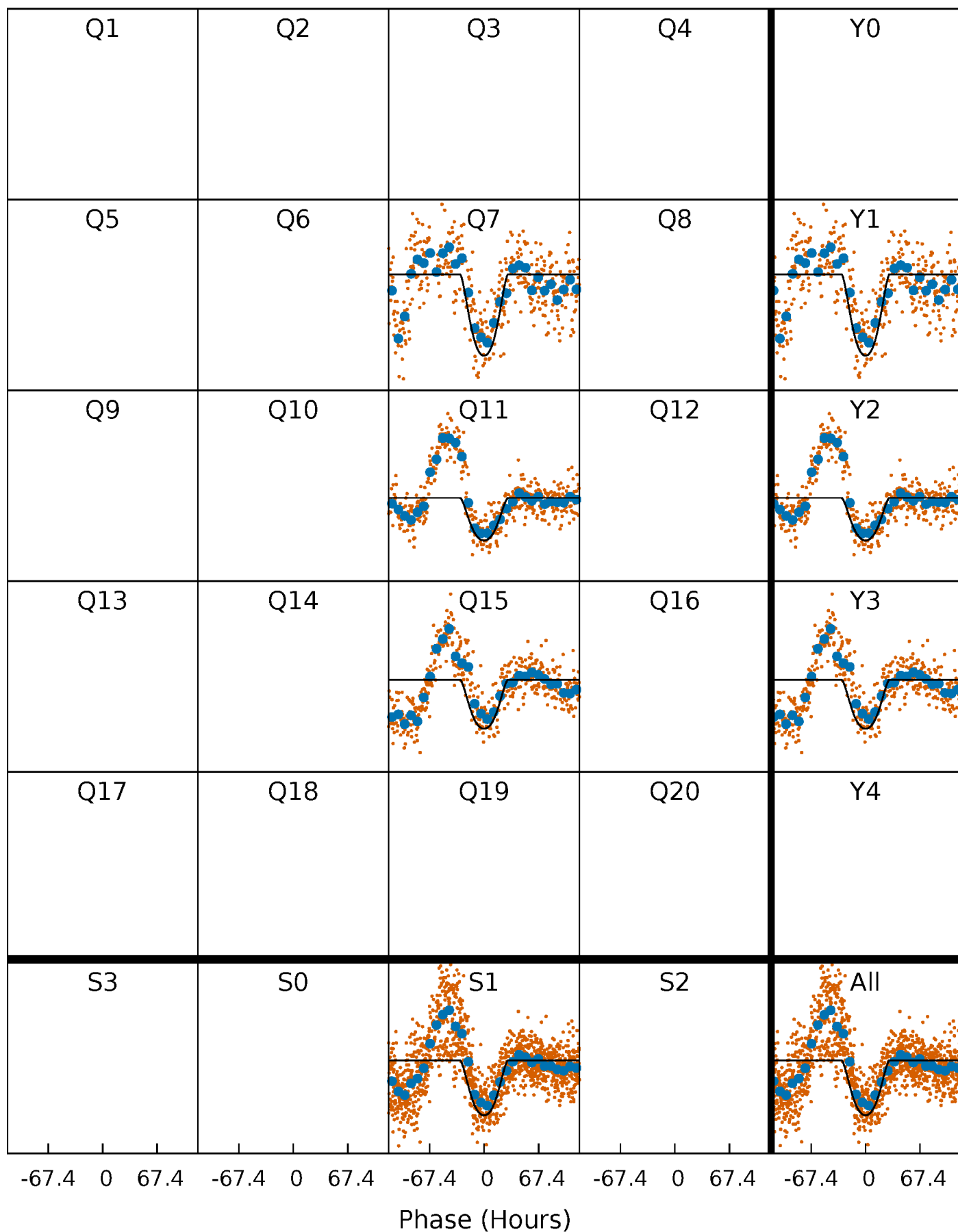
PDC Quarter-Phased Transit Curves

TCE 008160992-01 P=374.489088 Days $T_0=262.024019$ (BKJD)



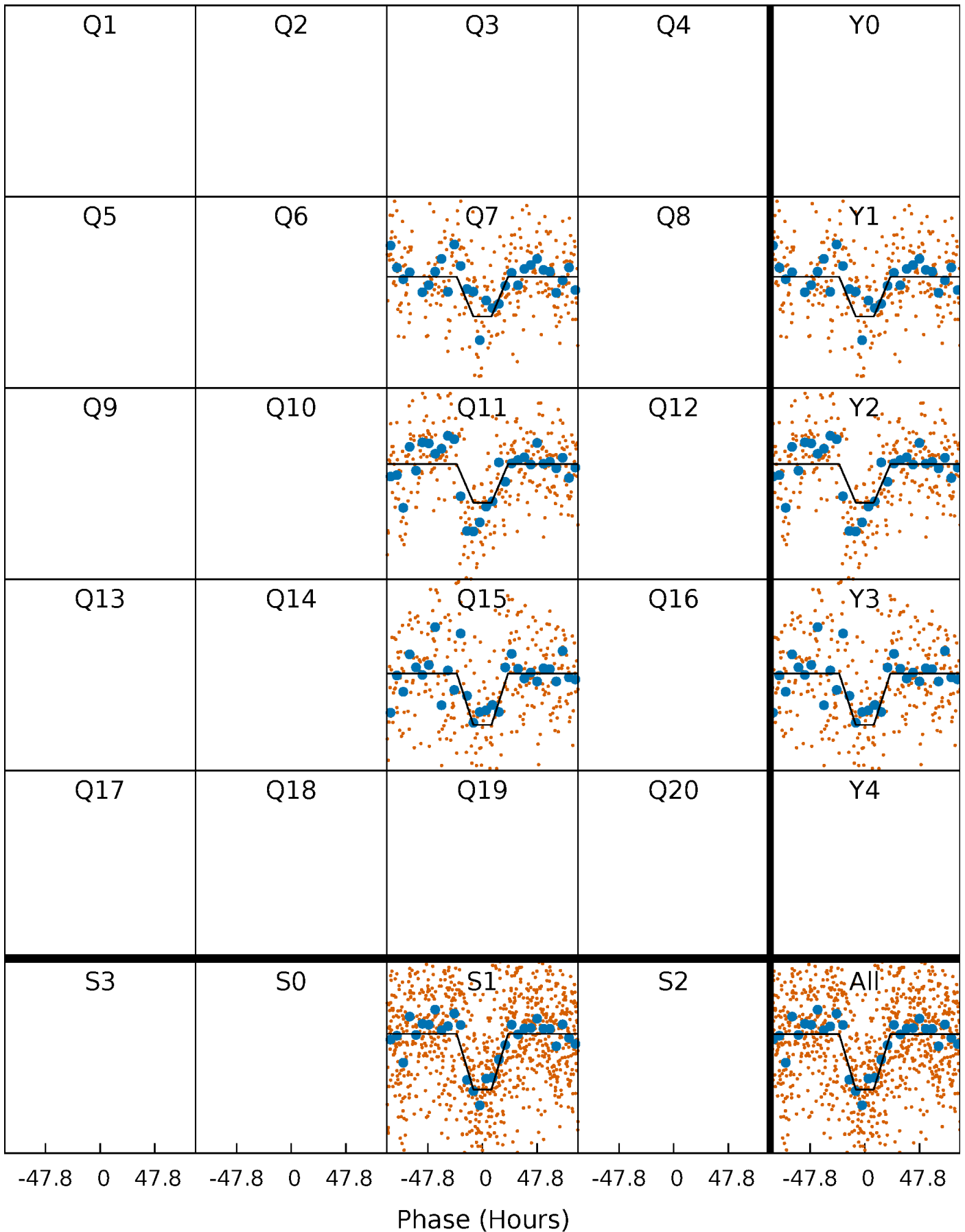
DV Quarter-Phased Transit Curves

TCE 008160992-01 $P=374.489088$ Days $T_0=262.024019$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

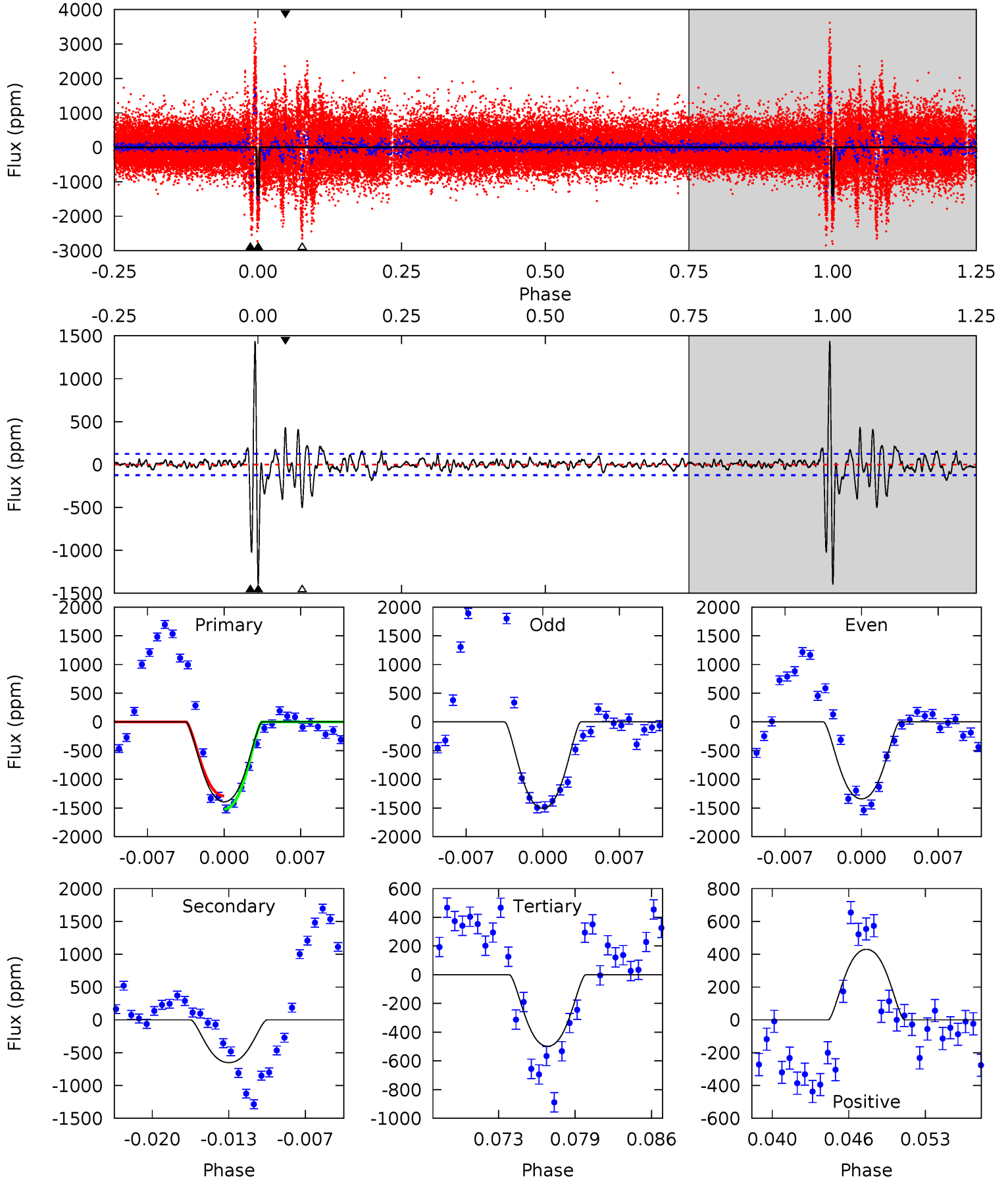
TCE 008160992-01 $P=374.608455$ Days $T_0=261.650223$ (BKJD)



DV Model-Shift Uniqueness Test

008160992-01, P = 374.489088 Days, E = 262.024019 Days

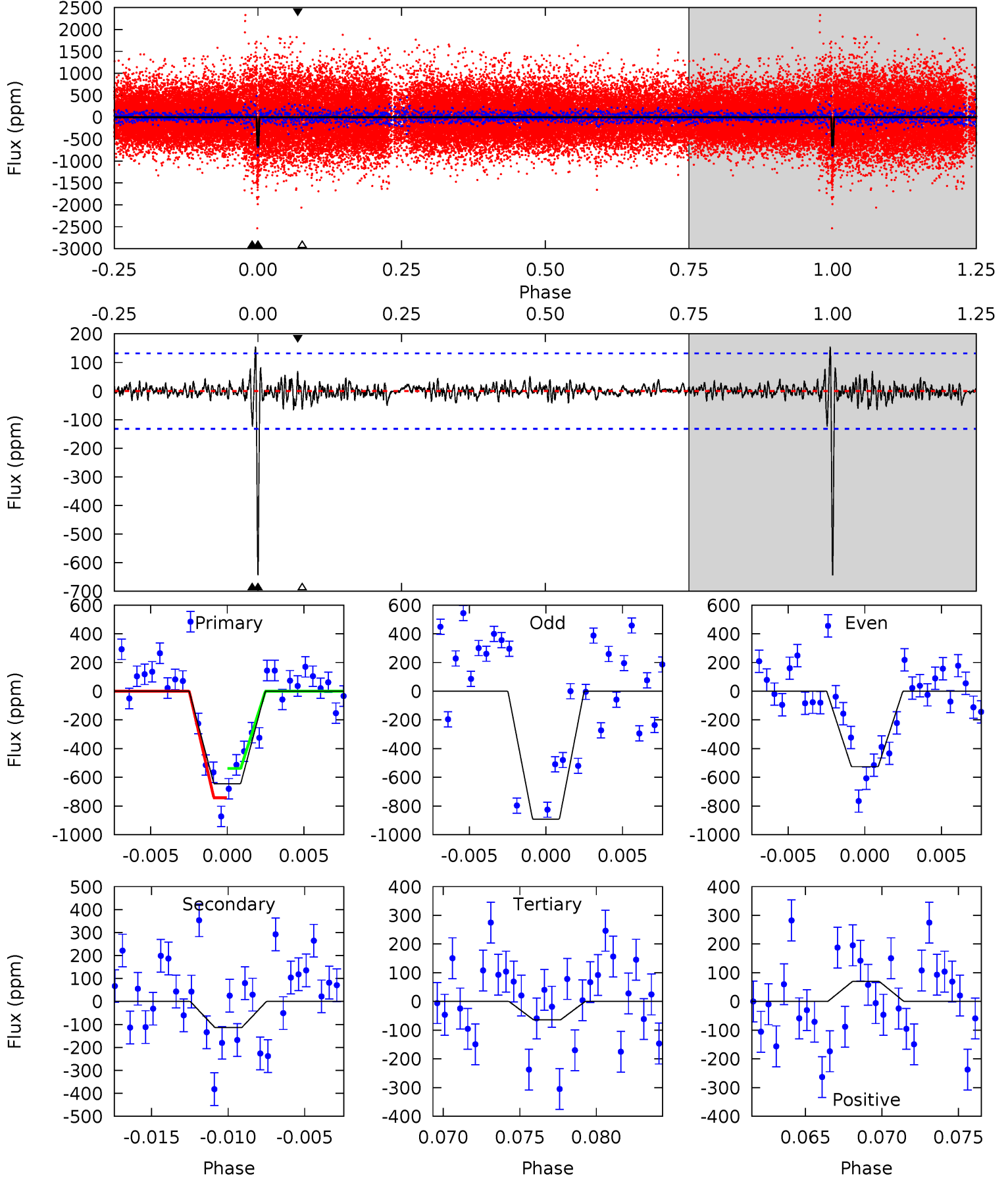
| Pri | Sec | Ter | Pos | FA ₁ | FA ₂ | F _{Red} | Pri-Ter | Pri-Pos | Sec-Ter | Sec-Pos | Odd-Evn | DMM | Shape | TAT |
|------|------|------|------|-----------------|-----------------|------------------|---------|---------|---------|---------|---------|------|-------|------|
| 57.1 | 26.7 | 20.4 | 17.6 | 5.11 | 2.72 | 3.50 | 36.7 | 39.5 | 6.29 | 9.10 | 3.17 | 0.96 | 0.51 | 4.71 |



Alt Model-Shift Uniqueness Test

008160992-01, P = 374.608455 Days, E = 261.650223 Days

| Pri | Sec | Ter | Pos | FA ₁ | FA ₂ | F _{Red} | Pri-Ter | Pri-Pos | Sec-Ter | Sec-Pos | Odd-Evn | DMM | Shape | TAT |
|------|------|------|------|-----------------|-----------------|------------------|---------|---------|---------|---------|---------|------|-------|------|
| 25.2 | 4.45 | 2.51 | 2.73 | 5.16 | 2.81 | 0.65 | 22.7 | 22.5 | 1.93 | 1.72 | 6.63 | 1.20 | 0.19 | 3.96 |



Stellar Parameters For KIC 008160992

| | $T_{\text{eff}}(K)$ | $\log(g)$ | [Fe/H] | $R (R_{\odot})$ | $M(M_{\odot})$ | $p_{\star} (\text{g}\cdot\text{cm}^{-3})$ |
|--------|---------------------|---------------------------|---------------------------|---------------------------|----------------------------|-------------------------------------------|
| | 5780^{+1}_{-1} | $4.438^{+1.000}_{-1.000}$ | $0.000^{+1.000}_{-1.000}$ | $1.000^{+1.000}_{-1.000}$ | $-1.000^{+1.000}_{-1.000}$ | $-1.000^{+1.000}_{-1.000}$ |
| | +0%/-0% | +23%/-23% | +inf%/-inf% | +100%/-100% | +100%/-100% | +100%/-100% |
| Source | Solar | Solar | Solar | Solar | | |

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

Secondary Eclipse Parameters for KIC 008160992-01 / KOI

| Detrend | Depth (ppm) | $R_p (R_{\oplus})$ | $T_{\text{max}} (K)$ | $T_{\text{obs}} (K)$ | A_{obs} |
|---------|---------------|------------------------|----------------------|----------------------|-------------------------|
| DV | -652 ± 24 | $5.61^{+1.06}_{-1.01}$ | 353^{+16}_{-17} | 4305^{+334}_{-263} | 11871^{+5671}_{-3453} |
| Alt. | -114 ± 26 | $2.66^{+1.03}_{-0.97}$ | 353^{+18}_{-16} | 4080^{+816}_{-443} | 8884^{+13464}_{-4510} |

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

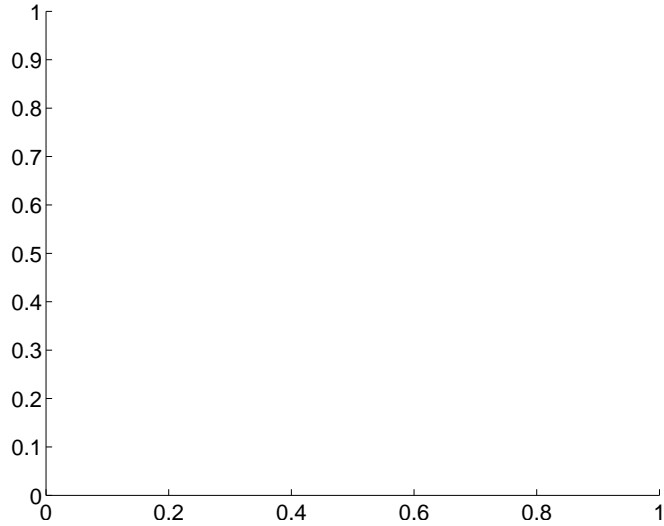
Supplemental centroid analysis for 008160992-01. **Kepler magnitude: 11.15.** Transit SNR 17.75

There are 0 quarters with good PRF difference image offsets

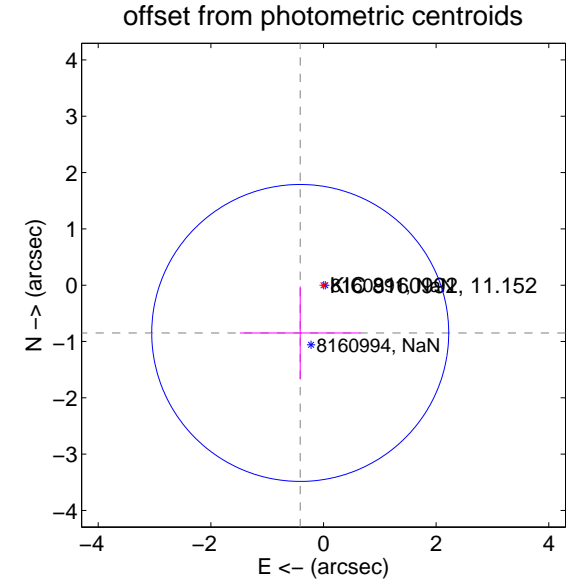
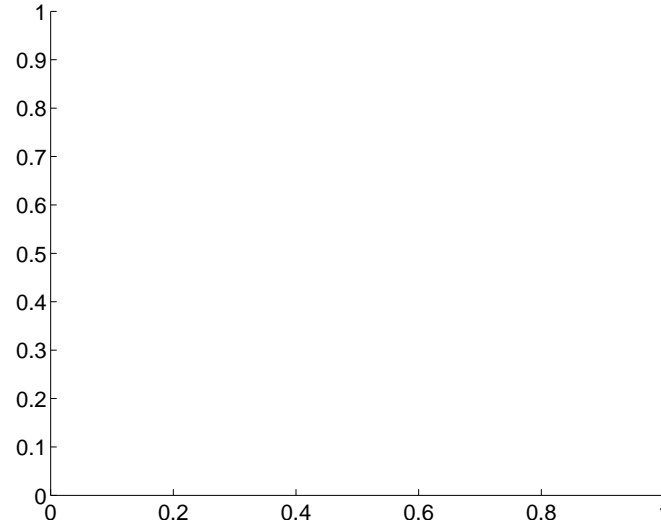
The direct PRF centroid is offset from the target star catalog position by about NaN arcsec

| | Distance in arcsec | Distance / σ | Δ RA | Δ Dec |
|-----------------------------------------|--------------------|---------------------|-----------------|------------------|
| PRF-fit source offset from OOT | — | — | — | — |
| PRF-fit source offset from KIC position | — | — | — | — |
| photometric centroid source offset | 0.94 ± 0.88 | 1.07 | 0.41 ± 1.07 | -0.85 ± 0.83 |

There is no PRF-fit offset from OOT-fit



There is no PRF-fit offset from KIC



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.



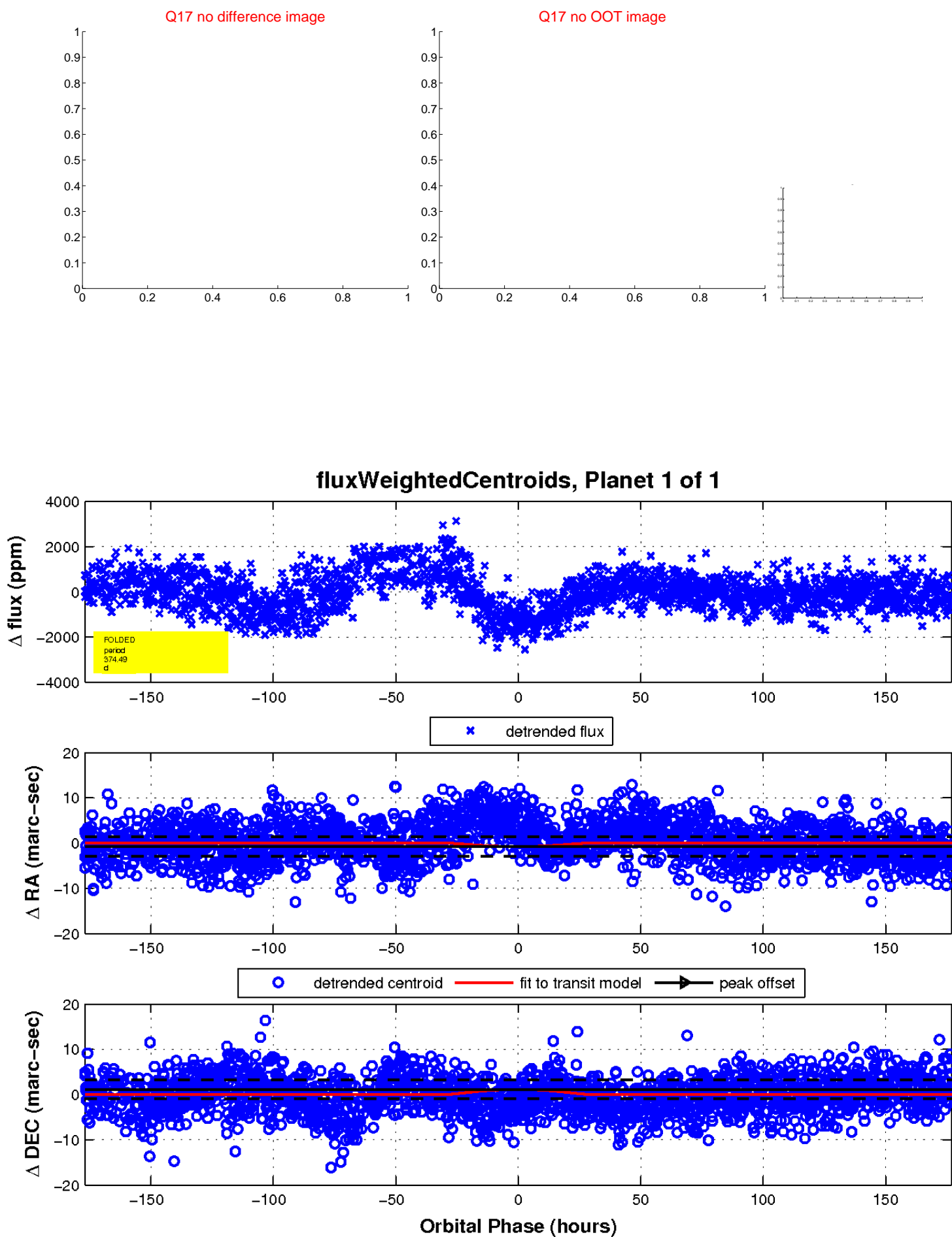
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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UKIRT Image

Declination

