

KIC 002447707

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}) |
|--------------|----------|------|---------------|--------------|-------------|------------------|------|------|-----------------------------|-----------------|------------------------|------------------------|
| 002447707-02 | OBS | No | 67.078217 | 183.665314 | 1889.6 | 22.306 | 11.7 | 11.9 | 155.19 | 3266 | 1079.89 | 0.00 |

Robovetter Results

| TCE | Run Type | Disp | Score | N | S | C | E | Comments |
|--------------|----------|------|-------|---|---|---|---|-----------------------|
| 002447707-02 | OBS | FP | 0.00 | 1 | 0 | 0 | 0 | LPP_DV—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.

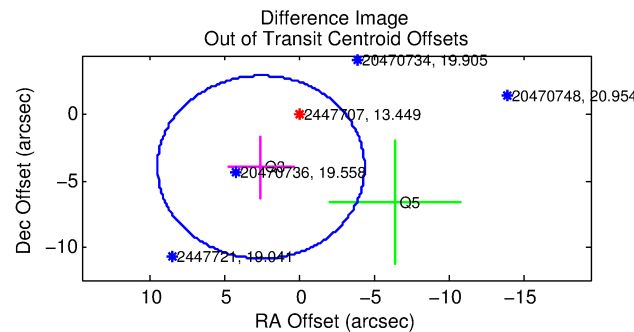
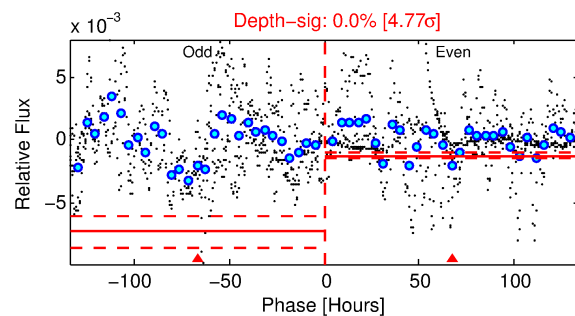
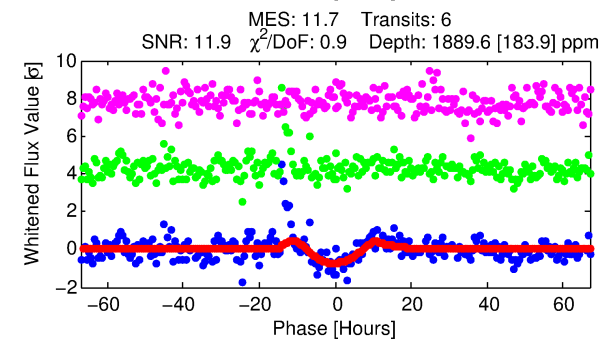
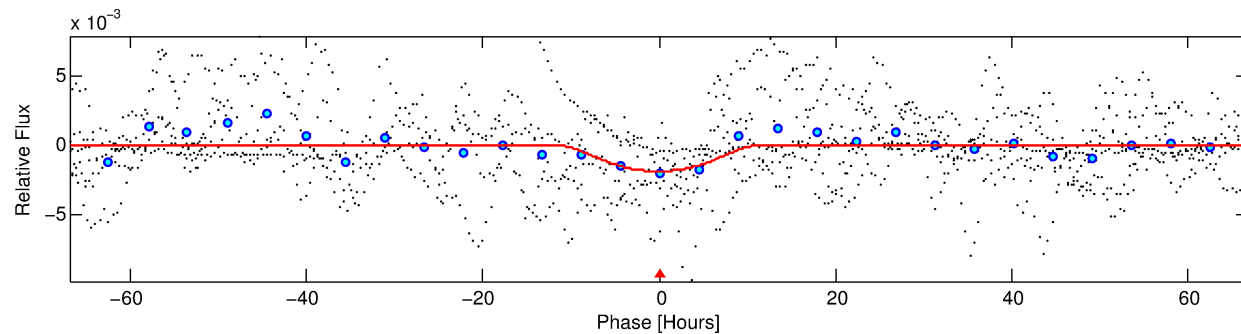
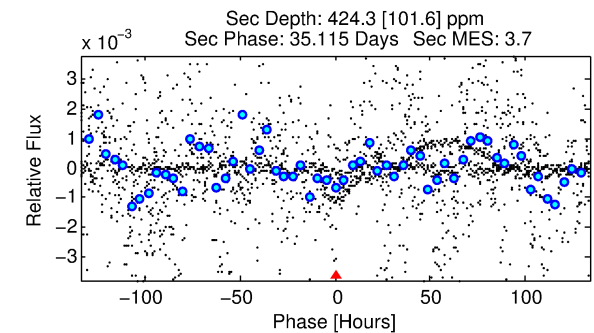
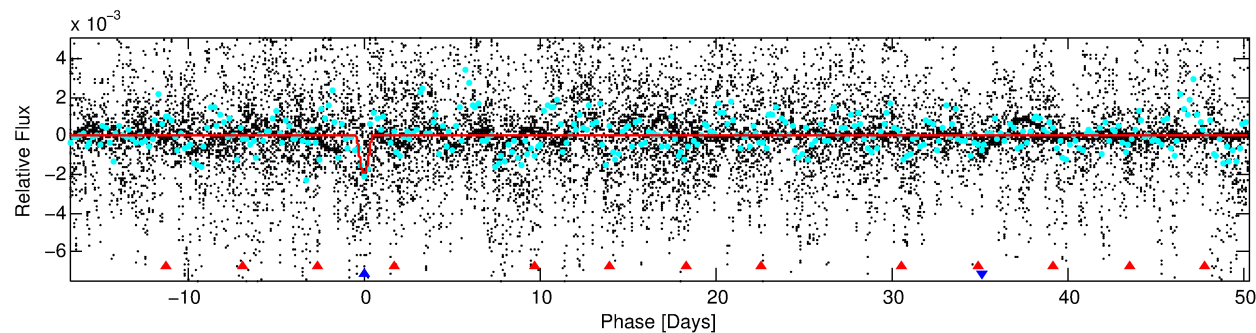
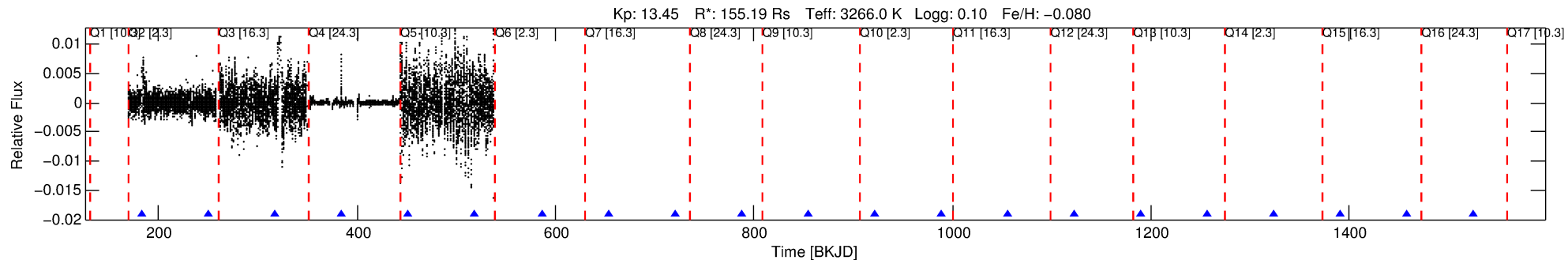
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 002447707-02

No Significant Match Found

DV One-Page Summary

KIC: 2447707 Candidate: 2 of 2 Period: 67.078 d



DV Fit Results:

Period = 67.07822 [0.02321] d
Epoch = 183.6653 [0.0679] BKJD
Rp/R* = 0.0638 [0.0270]
a/R* = 10.37 [1.61]
b = 0.96 [0.05]
Seff = N/A
Teq = N/A
Rp = 1079.89 [490.90] Re
a = N/A
Ag = N/A
Teffp = N/A

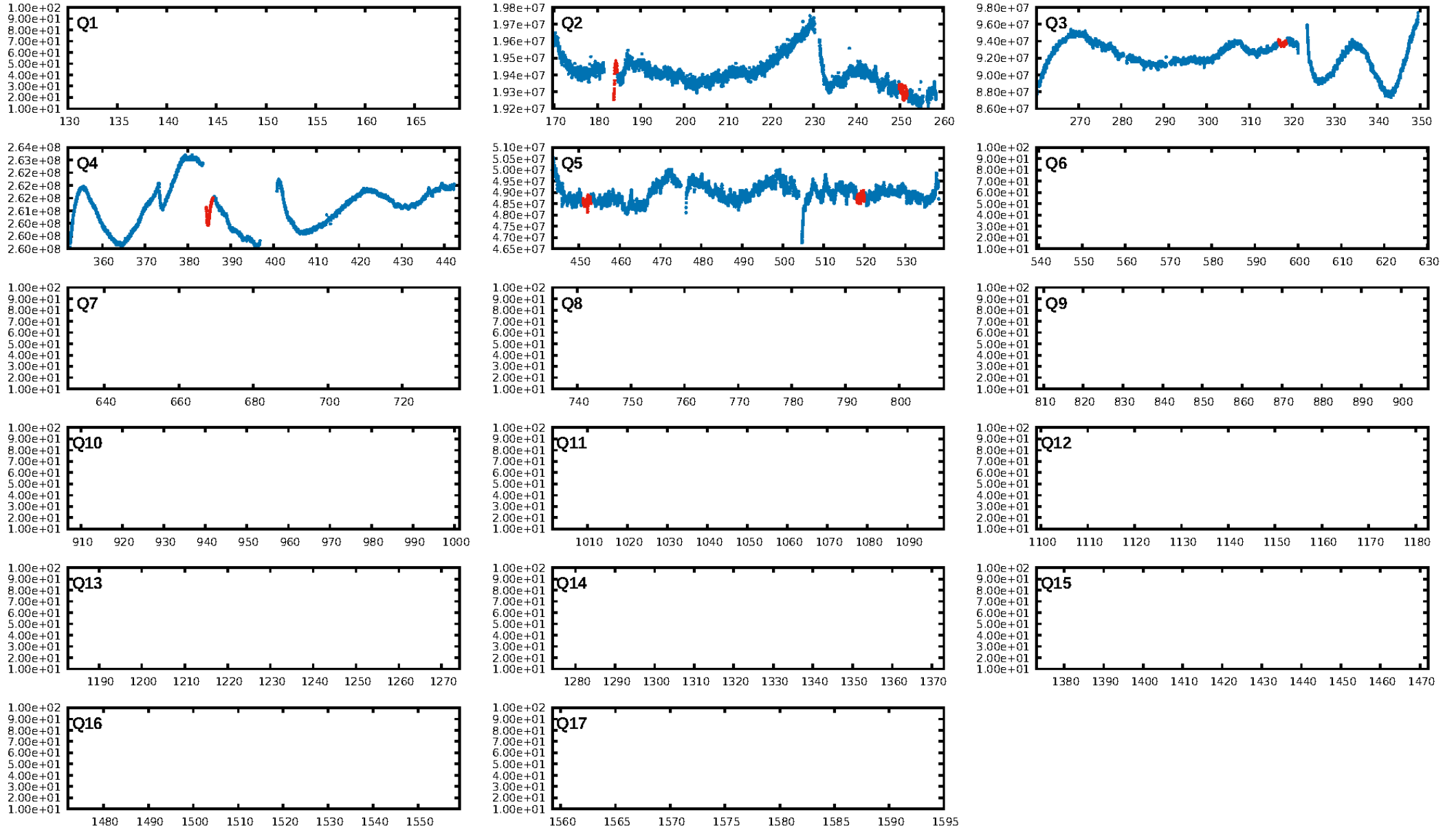
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 100.0% [41.21σ]
ModelChiSquare2-sig: 82.1%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 7.74e-24
RollingBand-fgt: 1.00 [6/6]
GhostDiagnostic-chr: -0.2906
Centroid-sig: 10.0%
Centroid-so: 0.750 arcsec [3.54σ]
OotOffset-rm: 4.694 arcsec [2.03σ]
KicOffset-rm: 5.010 arcsec [2.17σ]
OotOffset-st: 0/1/0/1 [2]
KicOffset-st: 0/1/0/1 [2]
DiffImageQuality-fgm: 0.00 [0/2]
DiffImageOverlap-fno: 1.00 [3/3]

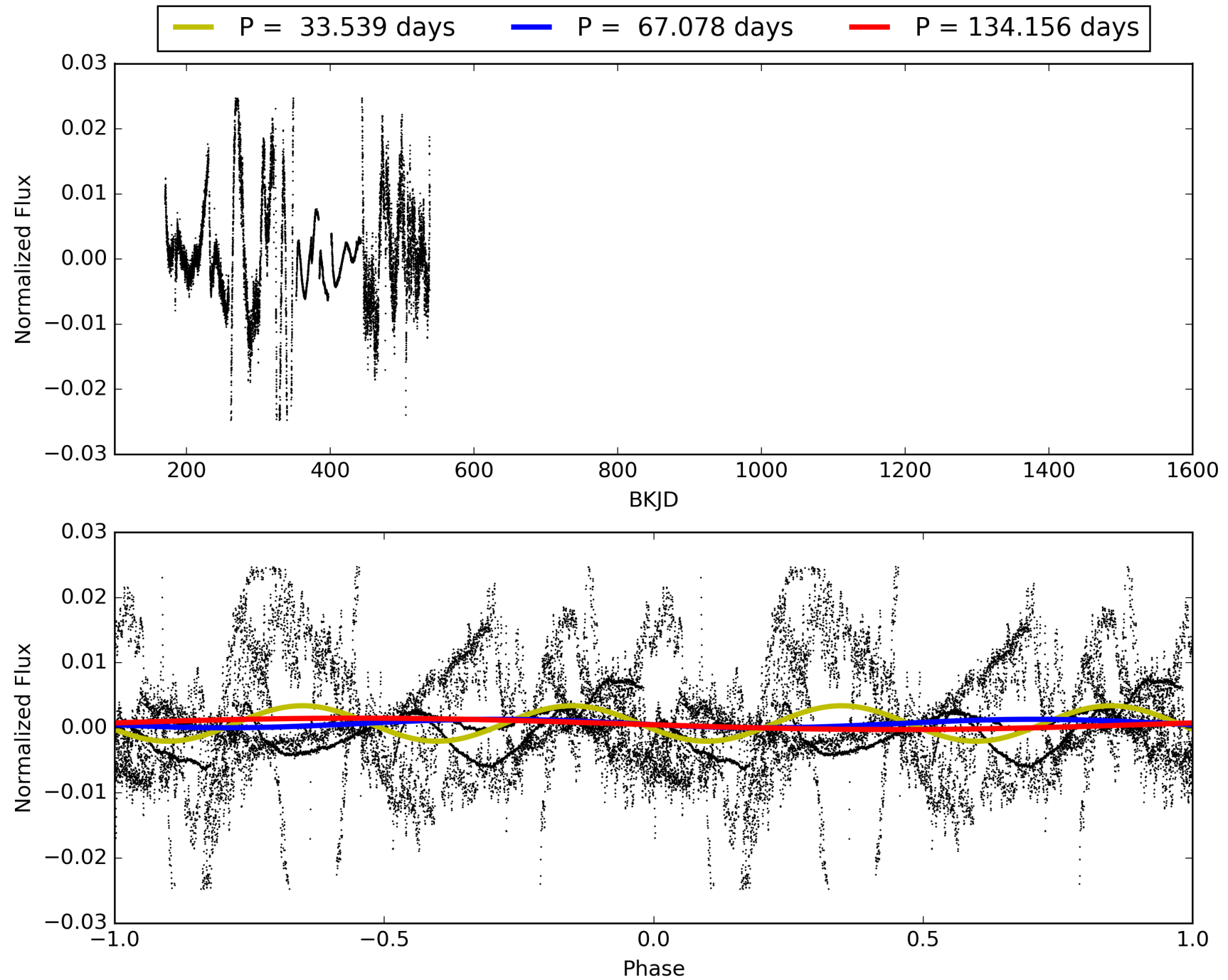
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 21:31:15 Z

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

TCE 002447707-02, PDC Light Curves

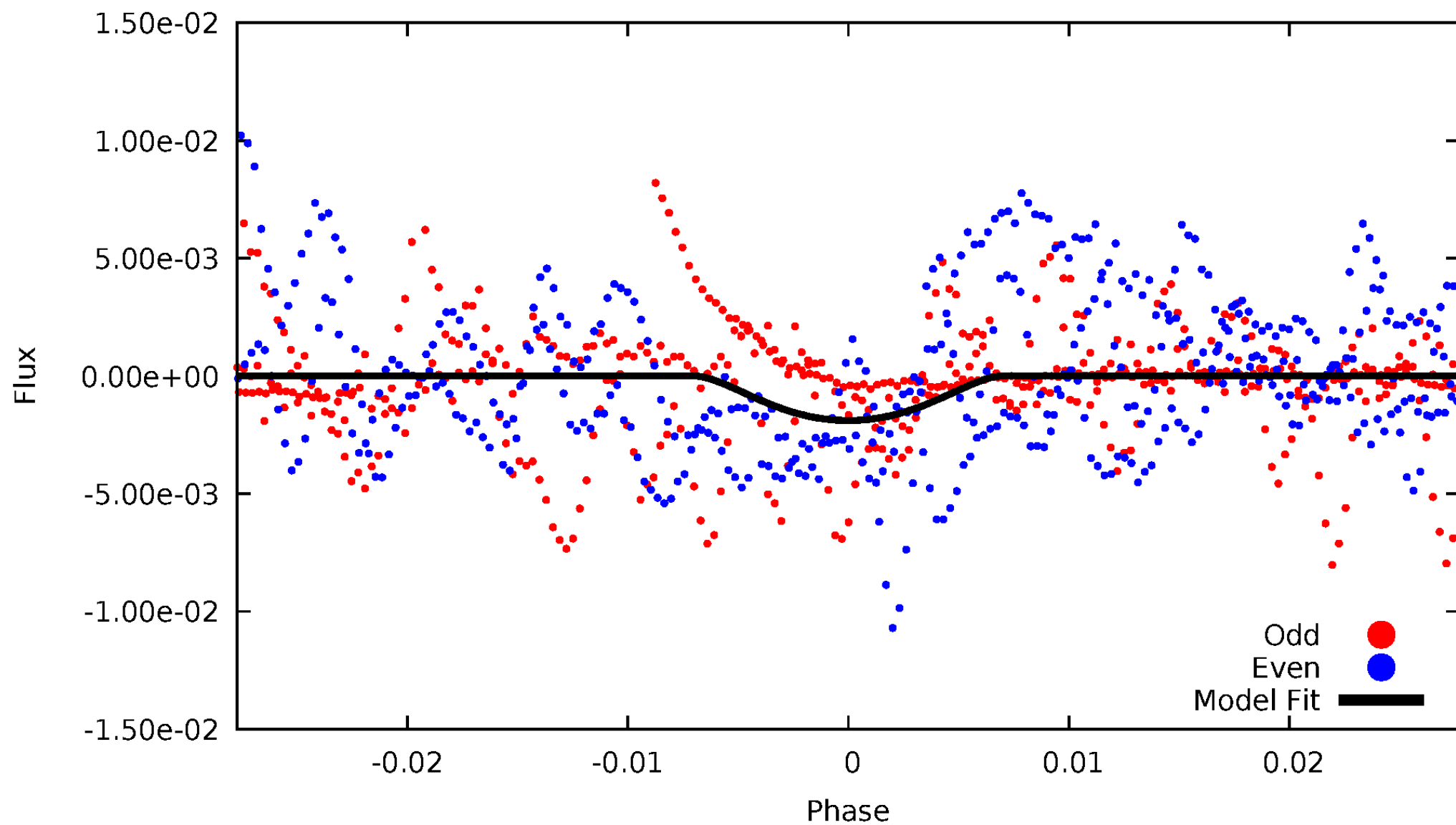


TCE 002447707-02



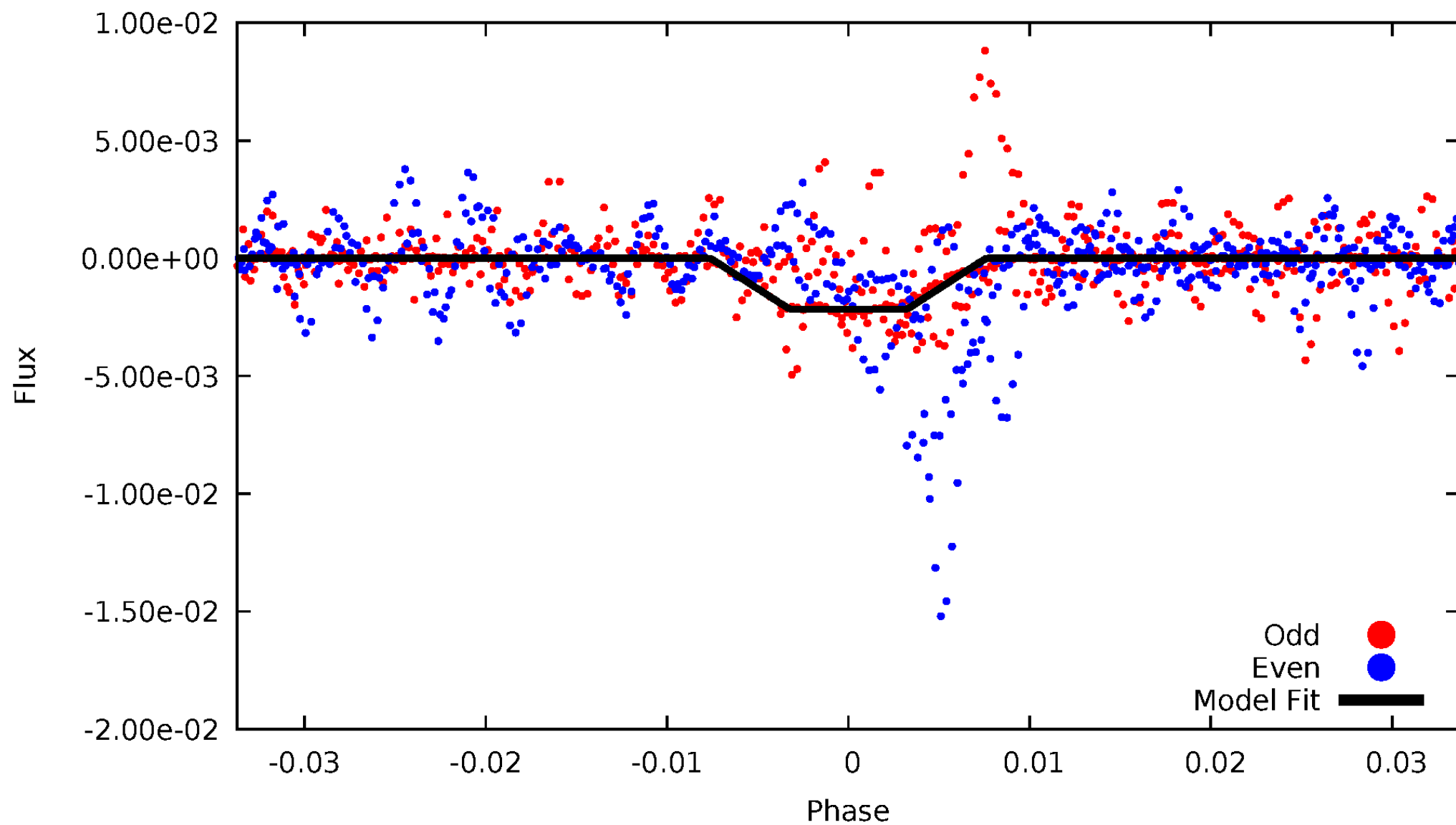
DV Odd/Even

TCE 002447707-02



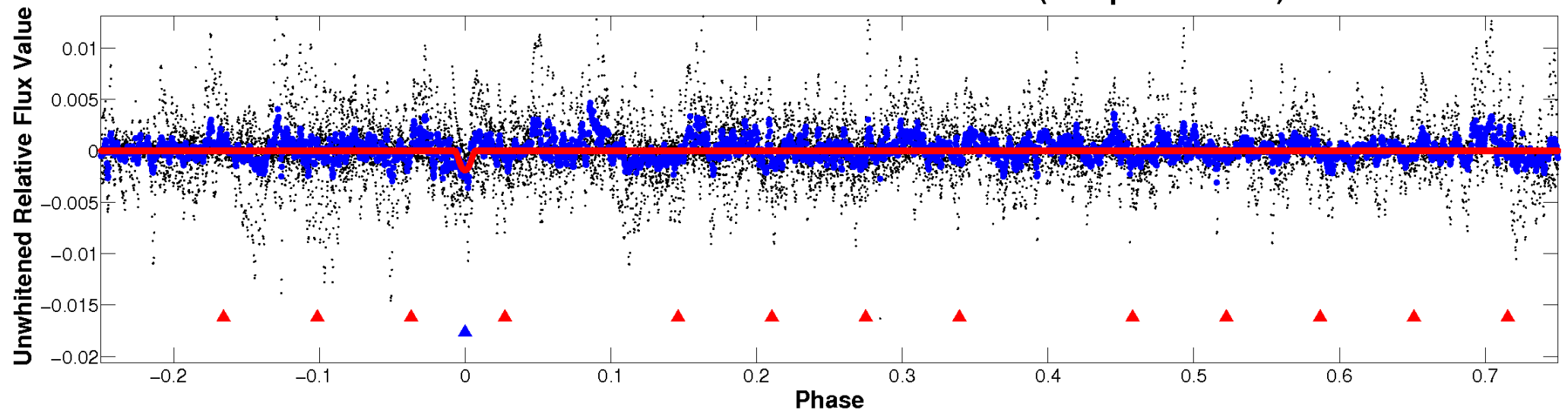
ALT Odd/Even

TCE 002447707-02

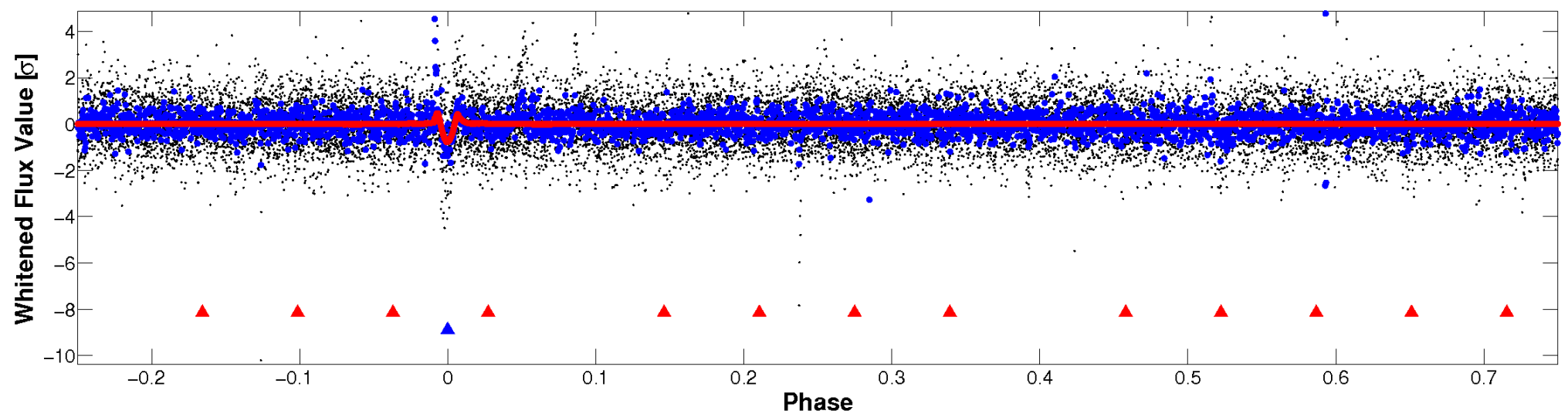


Non-Whitened Vs. Whitened Light Curve

Planet 2 : Phased Unwhitened Flux Time Series (Fit Epoch/Period)

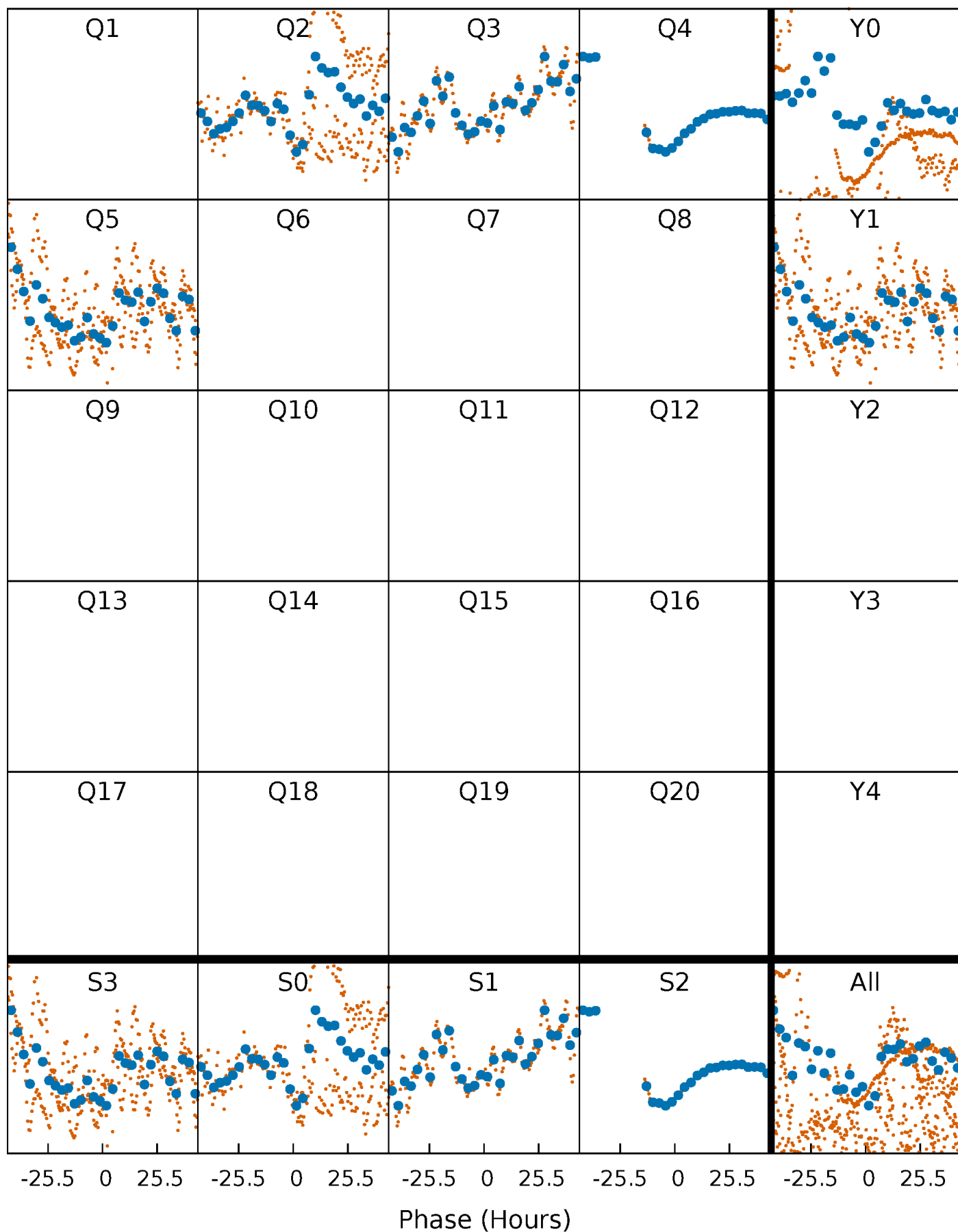


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



PDC Quarter-Phased Transit Curves

TCE 002447707-02 $P = 67.078217$ Days $T_0 = 183.665314$ (BKJD)



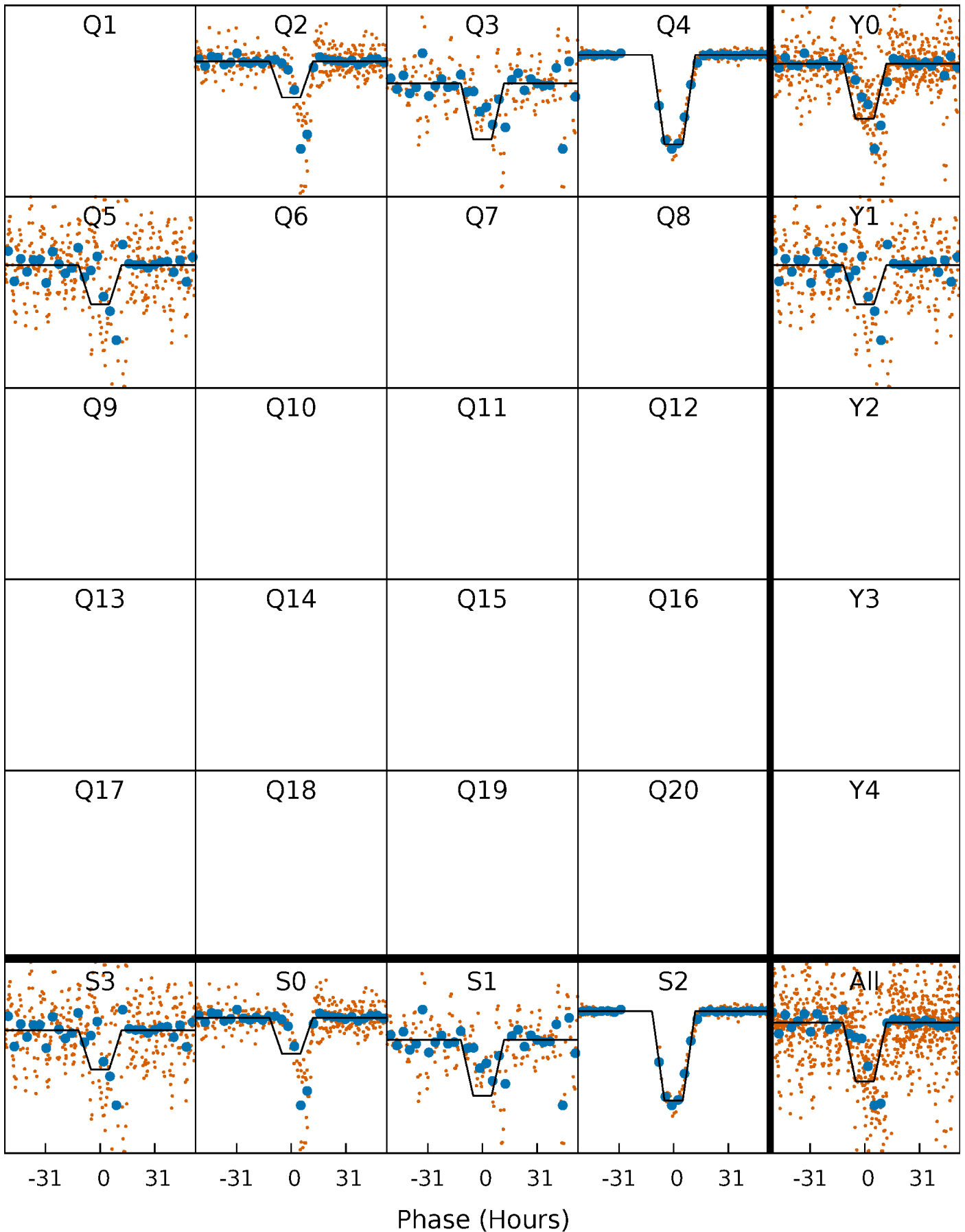
DV Quarter-Phased Transit Curves

TCE 002447707-02 P= 67.078217 Days $T_0=183.665314$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

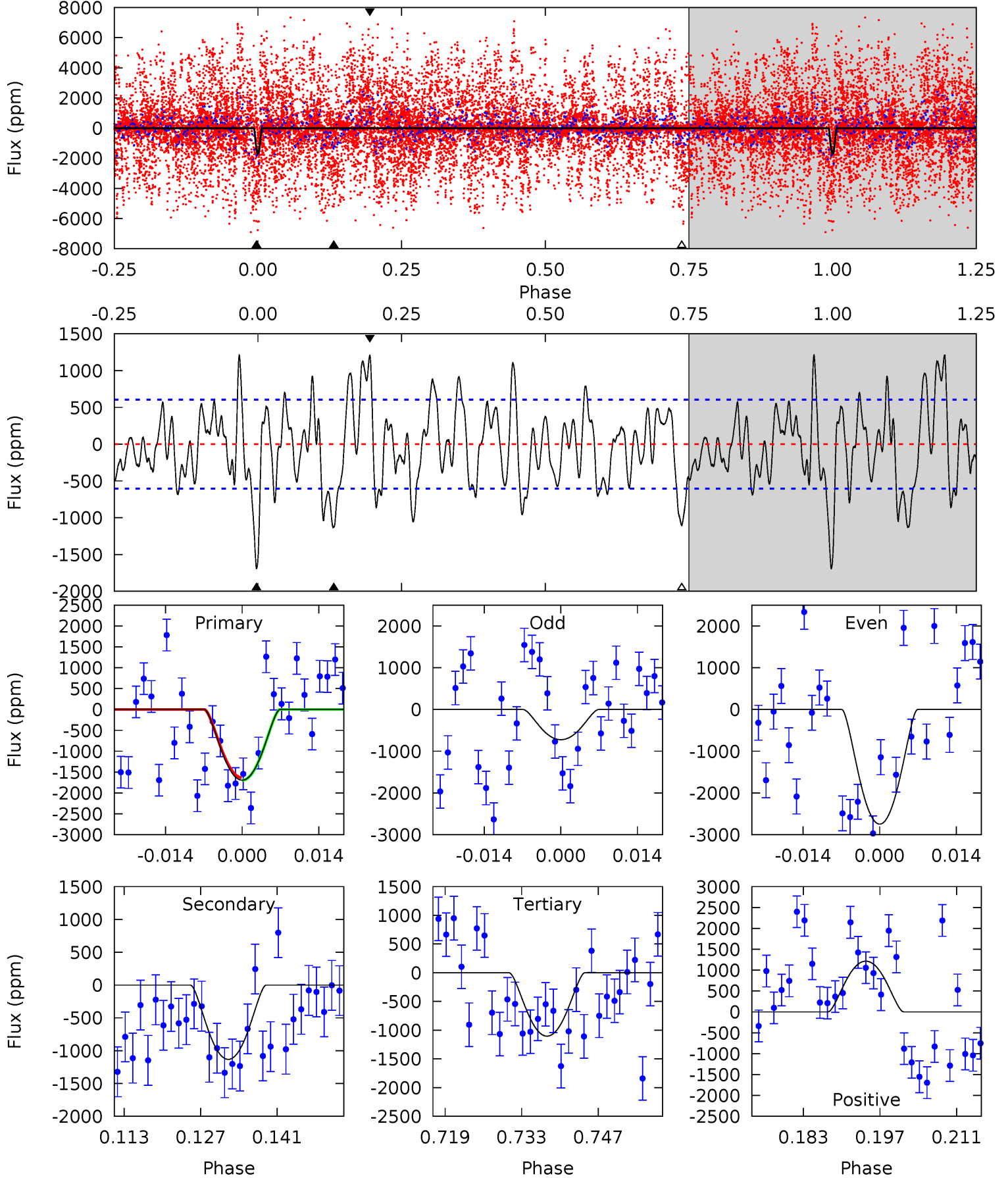
TCE 002447707-02 $P = 67.066158$ Days $T_0 = 183.506270$ (BKJD)



DV Model-Shift Uniqueness Test

002447707-02, $P = 67.078217$ Days, $E = 116.587097$ Days

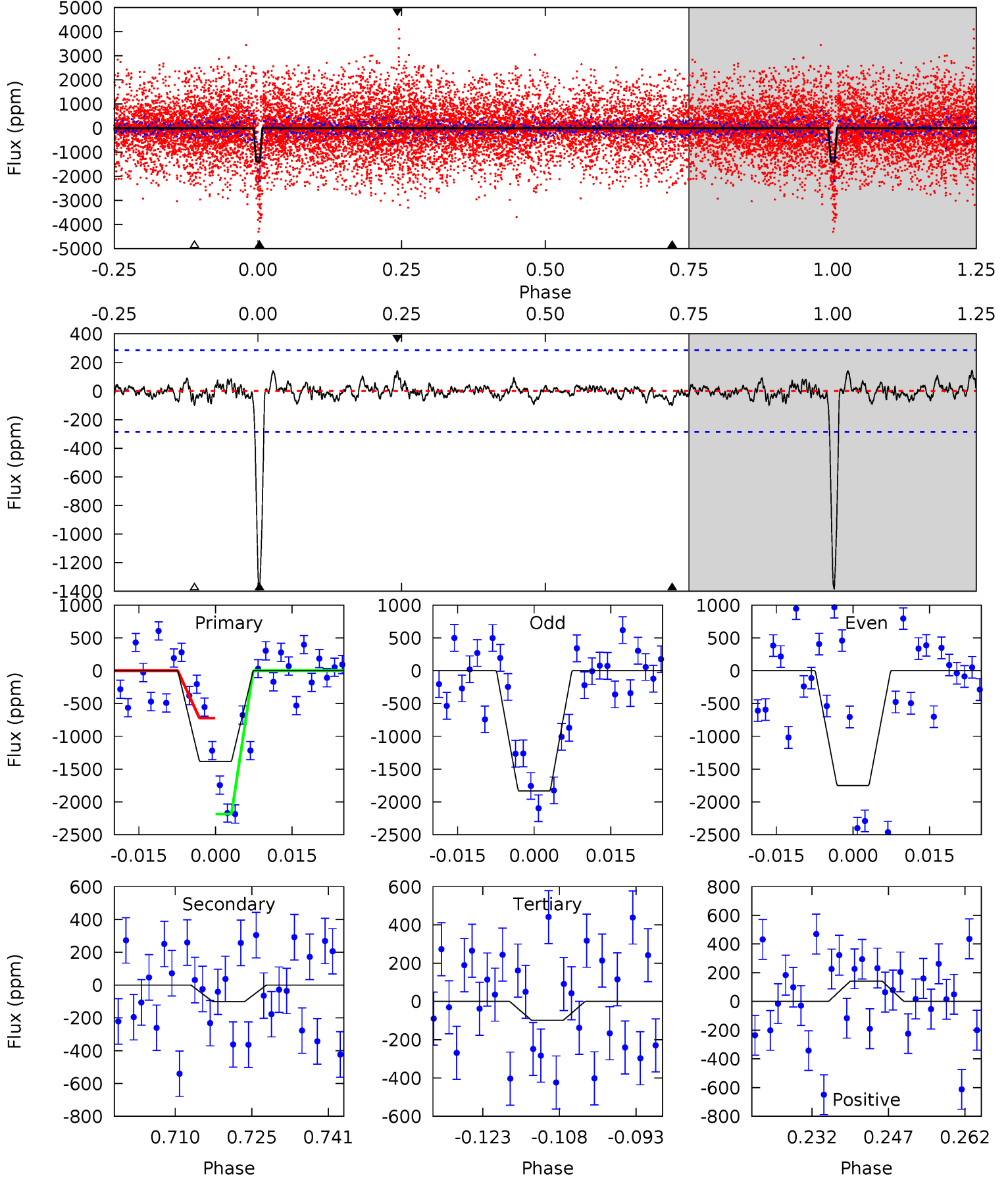
| Pri | Sec | Ter | Pos | FA ₁ | FA ₂ | F _{Red} | Pri-Ter | Pri-Pos | Sec-Ter | Sec-Pos | Odd-Evn | DMM | Shape | TAT |
|------|------|------|------|-----------------|-----------------|------------------|---------|---------|---------|---------|---------|------|-------|------|
| 13.9 | 9.30 | 9.07 | 9.98 | 4.96 | 2.45 | 3.77 | 4.84 | 3.93 | 0.23 | -0.68 | 7.53 | 1.04 | 0.42 | 0.27 |



Alt Model-Shift Uniqueness Test

002447707-02, P = 67.066158 Days, E = 116.440112 Days

| Pri | Sec | Ter | Pos | FA ₁ | FA ₂ | F _{Red} | Pri-Ter | Pri-Pos | Sec-Ter | Sec-Pos | Odd-Evn | DMM | Shape | TAT |
|------|------|------|------|-----------------|-----------------|------------------|---------|---------|---------|---------|---------|------|-------|------|
| 23.9 | 1.74 | 1.69 | 2.45 | 4.94 | 2.42 | 0.62 | 22.2 | 21.5 | 0.05 | -0.70 | 0.69 | 1.65 | 0.09 | 12.9 |



Stellar Parameters For KIC 002447707

| | $T_{\text{eff}}(K)$ | $\log(g)$ | [Fe/H] | $R (R_{\odot})$ | $M(M_{\odot})$ | $p_{\star} (g \cdot \text{cm}^{-3})$ |
|--------|---------------------|---------------------------|----------------------------|------------------------------|---------------------------|--------------------------------------|
| | 3266^{+117}_{-78} | $0.095^{+0.208}_{-0.065}$ | $-0.080^{+0.250}_{-0.100}$ | $155.187^{+9.192}_{-25.737}$ | $1.095^{+0.206}_{-0.120}$ | $0.000^{+0.000}_{-0.000}$ |
| | +4%/-2% | +219%/-68% | +312%/-125% | +6%/-17% | +19%/-11% | +86%/-14% |
| Source | KIC0 | 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 002447707-02 / KOI

| Detrend | Depth (ppm) | $R_p (R_{\oplus})$ | $T_{max} (K)$ | $T_{obs} (K)$ | A_{obs} |
|---------|-----------------|-------------------------------|----------------------|-----------------------|---------------------------|
| DV | -1133 ± 122 | $1053.52^{+449.60}_{-450.07}$ | 4293^{+197}_{-232} | -3263^{+367}_{-168} | $0.065^{+0.123}_{-0.034}$ |
| Alt. | -101 ± 58 | $803.96^{+455.30}_{-417.11}$ | 4294^{+204}_{-204} | -3379^{+163}_{-143} | $0.009^{+0.029}_{-0.007}$ |

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 $A_{obs} \gg 1.0$

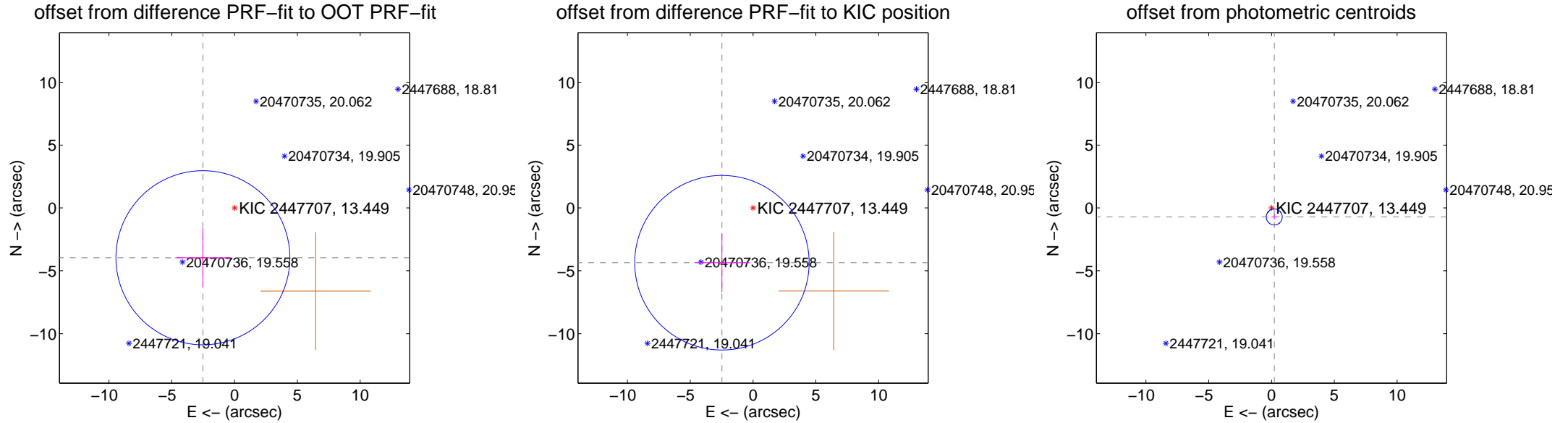
DV Centroid Data

Supplemental centroid analysis for 002447707-02. Kepler magnitude: 13.45. Transit SNR 11.88

There are 0 quarters with good PRF difference image offsets

The direct PRF centroid is offset from the target star catalog position by about 0.02 arcsec

| | Distance in arcsec | Distance / σ | Δ RA | Δ Dec |
|---|--------------------|---------------------|-------------------|--------------------|
| PRF-fit source offset from OOT | 4.694 ± 2.307 | 2.03 | 2.521 ± 2.197 | -3.959 ± 2.351 |
| PRF-fit source offset from KIC position | 5.010 ± 2.314 | 2.17 | 2.478 ± 2.197 | -4.355 ± 2.351 |
| photometric centroid source offset | 0.75 ± 0.21 | 3.54 | -0.22 ± 0.23 | -0.72 ± 0.21 |



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.

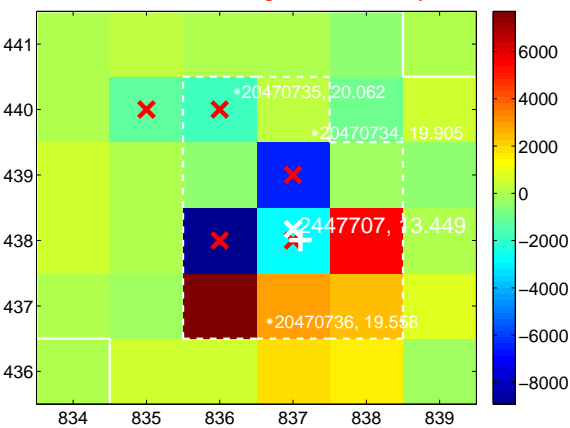
Q1 no difference image



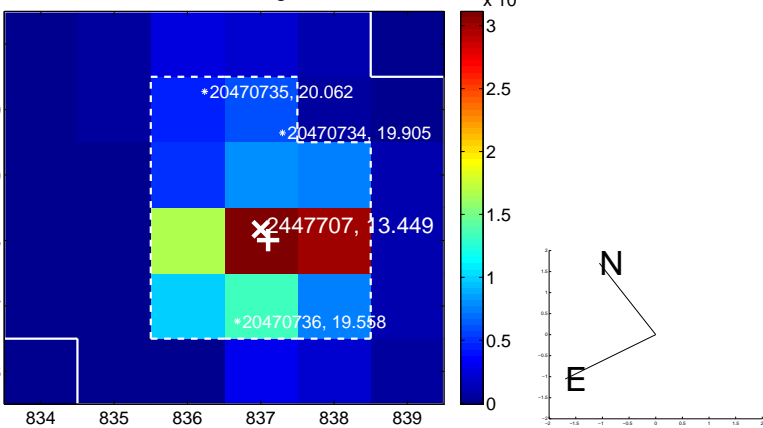
Q1 no OOT image



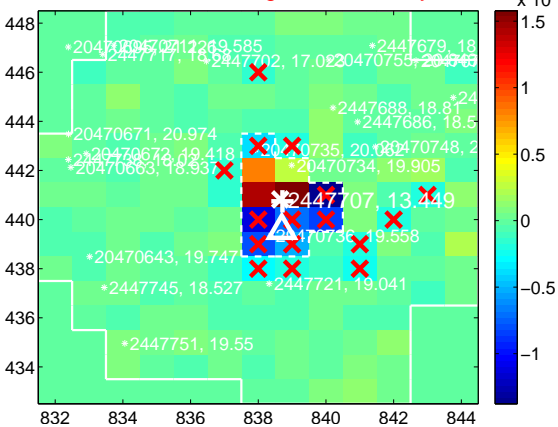
Q2 difference image. Poor Quality



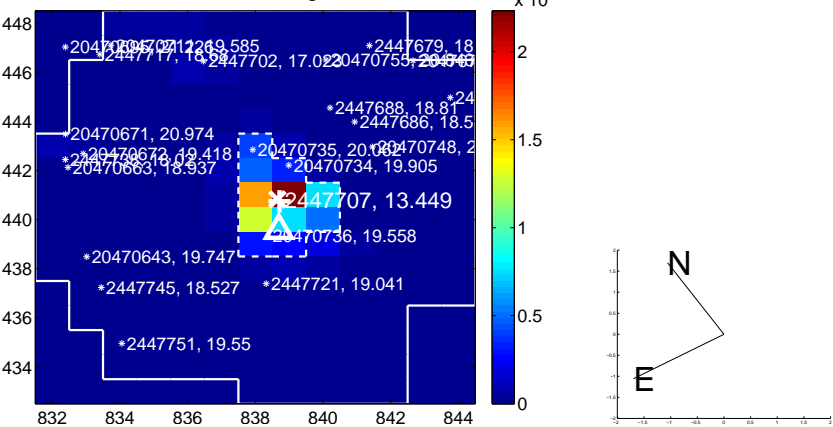
Q2 OOT image



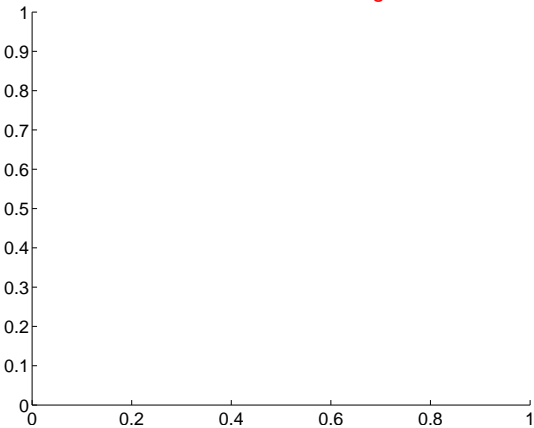
Q3 difference image. Poor Quality



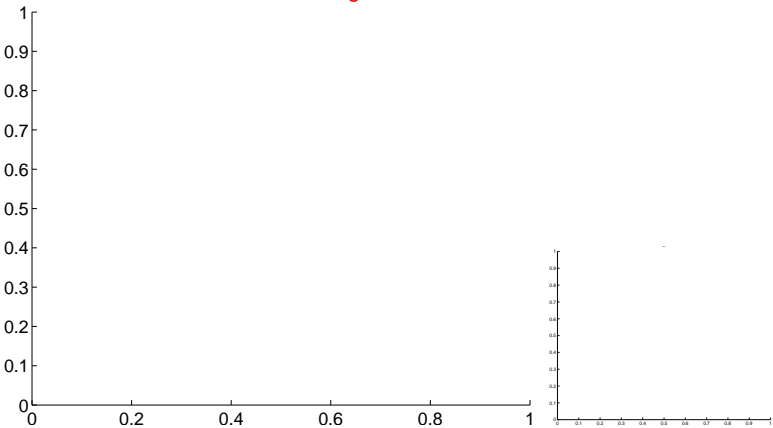
Q3 OOT image



Q4 no difference image



Q4 no OOT image



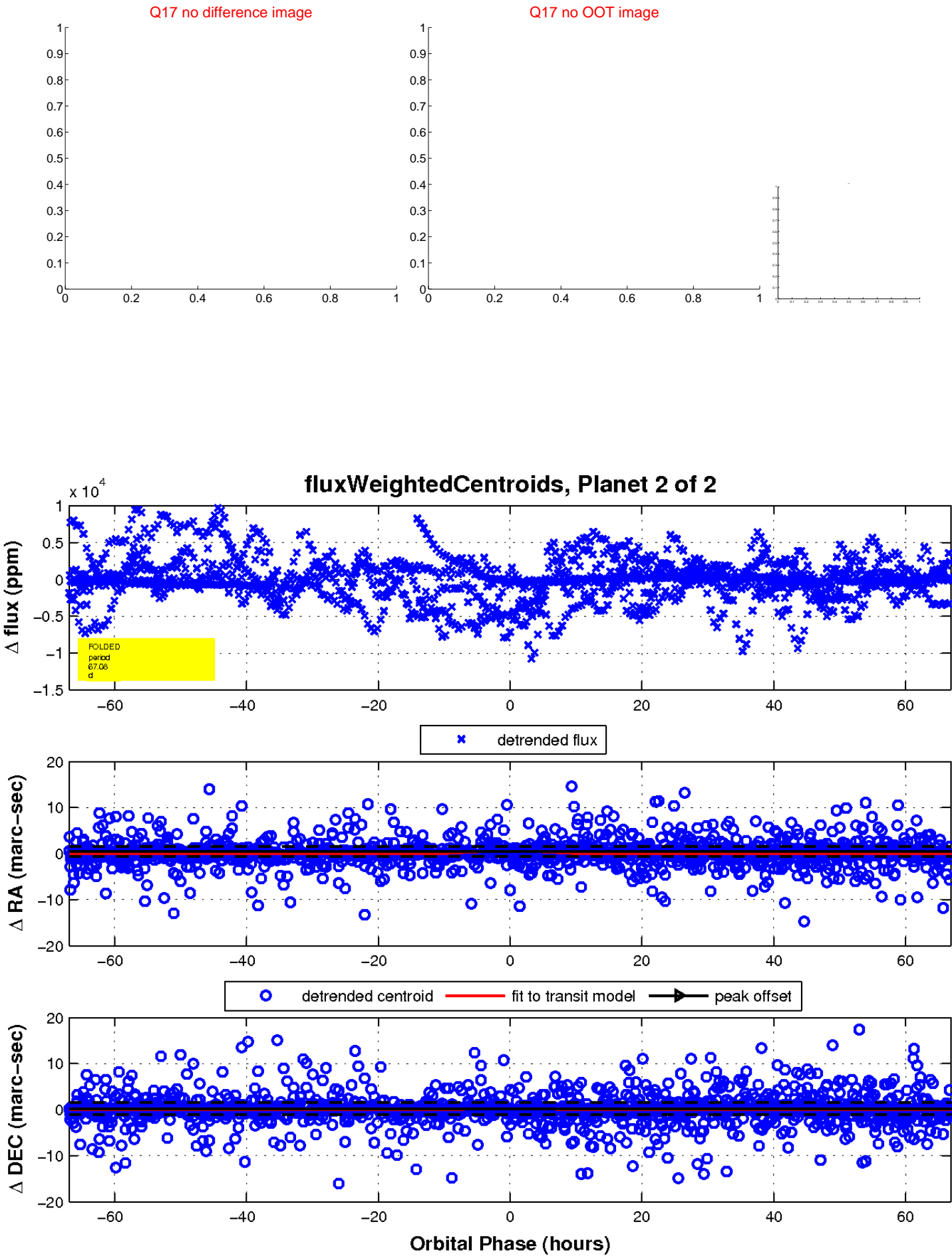
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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.



UKIRT Image

