

KIC 010918580

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}) |
|--------------|----------|------|---------------|--------------|-------------|------------------|------|-----|-----------------------------|-----------------|------------------------|------------------------|
| 010918580-01 | OBS | No | 497.621243 | 199.236217 | 306.0 | 5.137 | 12.0 | 6.1 | 1.53 | 6289 | 3.15 | 2.17 |

Robovetter Results

| TCE | Run Type | Disp | Score | N | S | C | E | Comments |
|--------------|----------|------|-------|---|---|---|---|--|
| 010918580-01 | OBS | FP | 0.00 | 1 | 0 | 0 | 0 | INDIV_TRANS_CHASES_MARSHALL—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS |

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

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

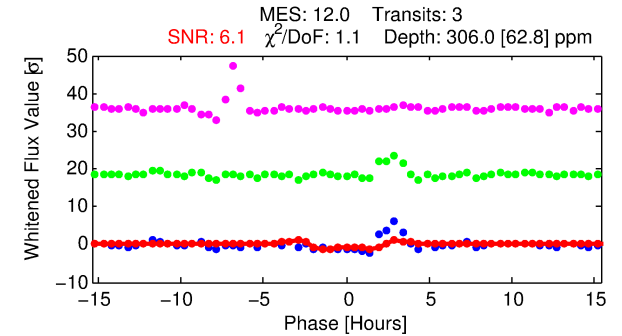
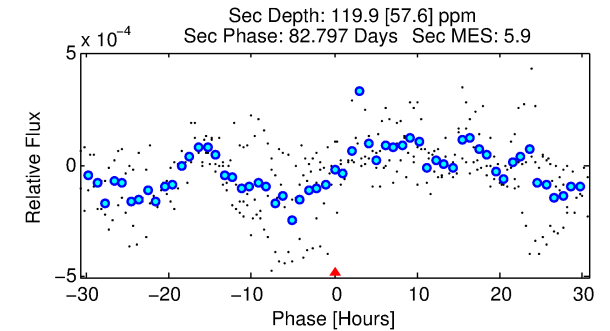
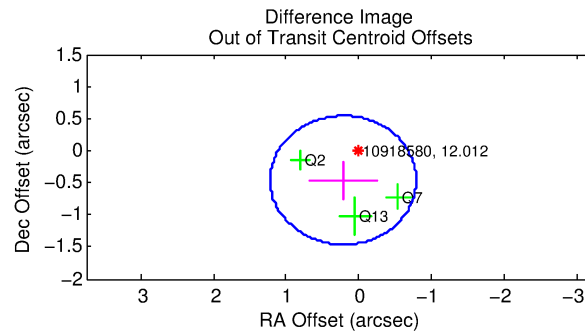
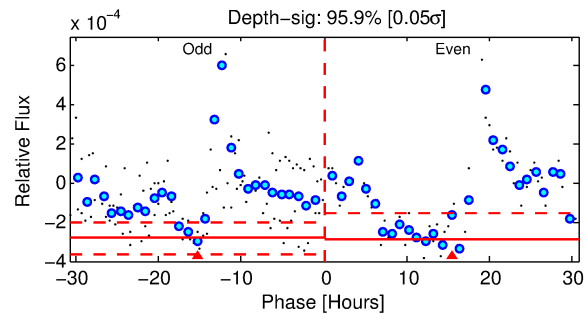
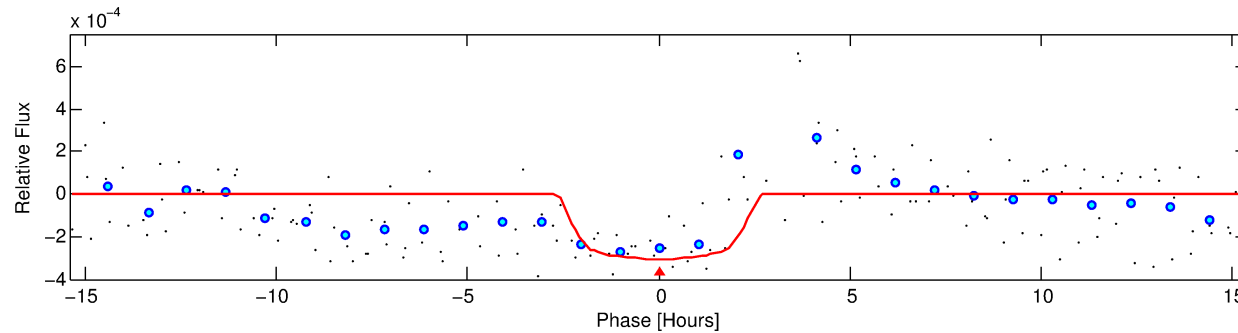
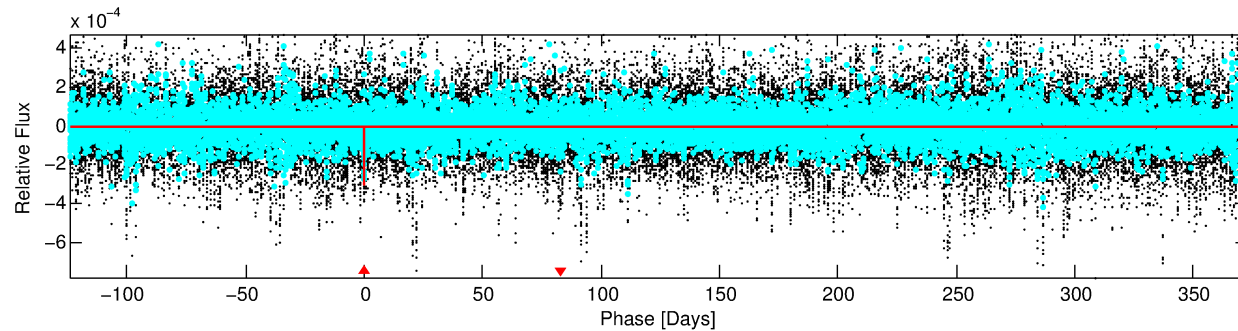
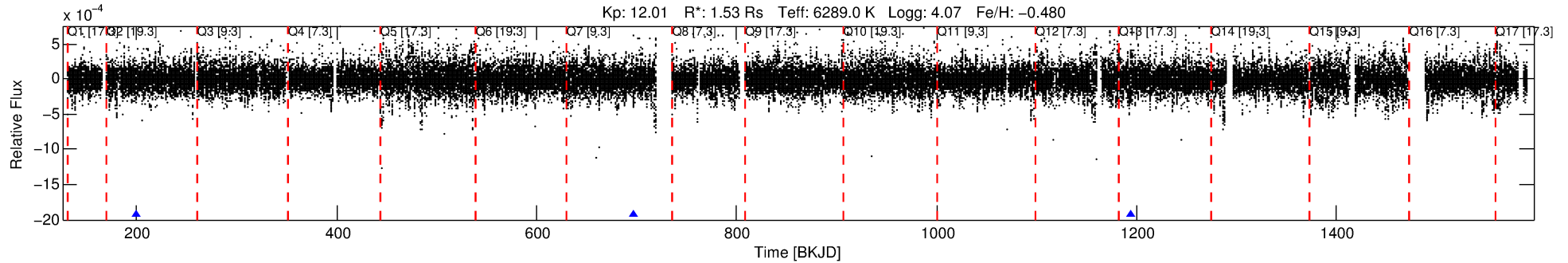
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 010918580-01

No Significant Match Found

DV One-Page Summary

KIC: 10918580 Candidate: 1 of 1 Period: 497.621 d



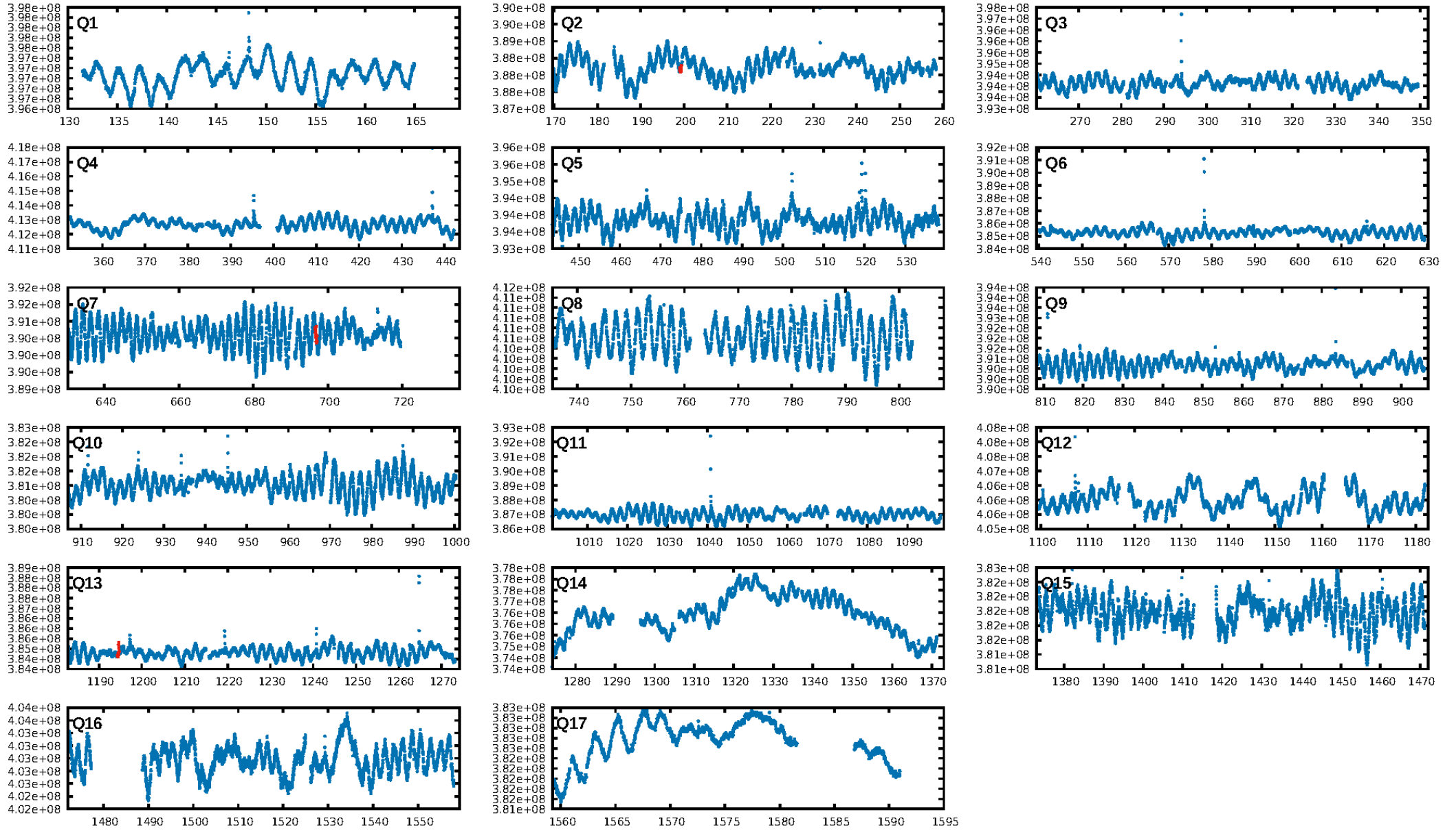
DV Fit Results:

Period = 497.62124 [0.00599] d
Epoch = 199.2362 [0.0075] BKJD
Rp/R* = 0.0189 [0.0043]
a/R* = 339.88 [352.58]
b = 0.91 [0.19]
Seff = 2.17 [1.00]
Teq = 309 [36] K
Rp = 3.15 [1.13] Re
a = 1.2285 [0.3377] AU
Ag = 10012.42 [7994.85] [1.25 σ]
Teffp = 4786 [802] K [5.57 σ]

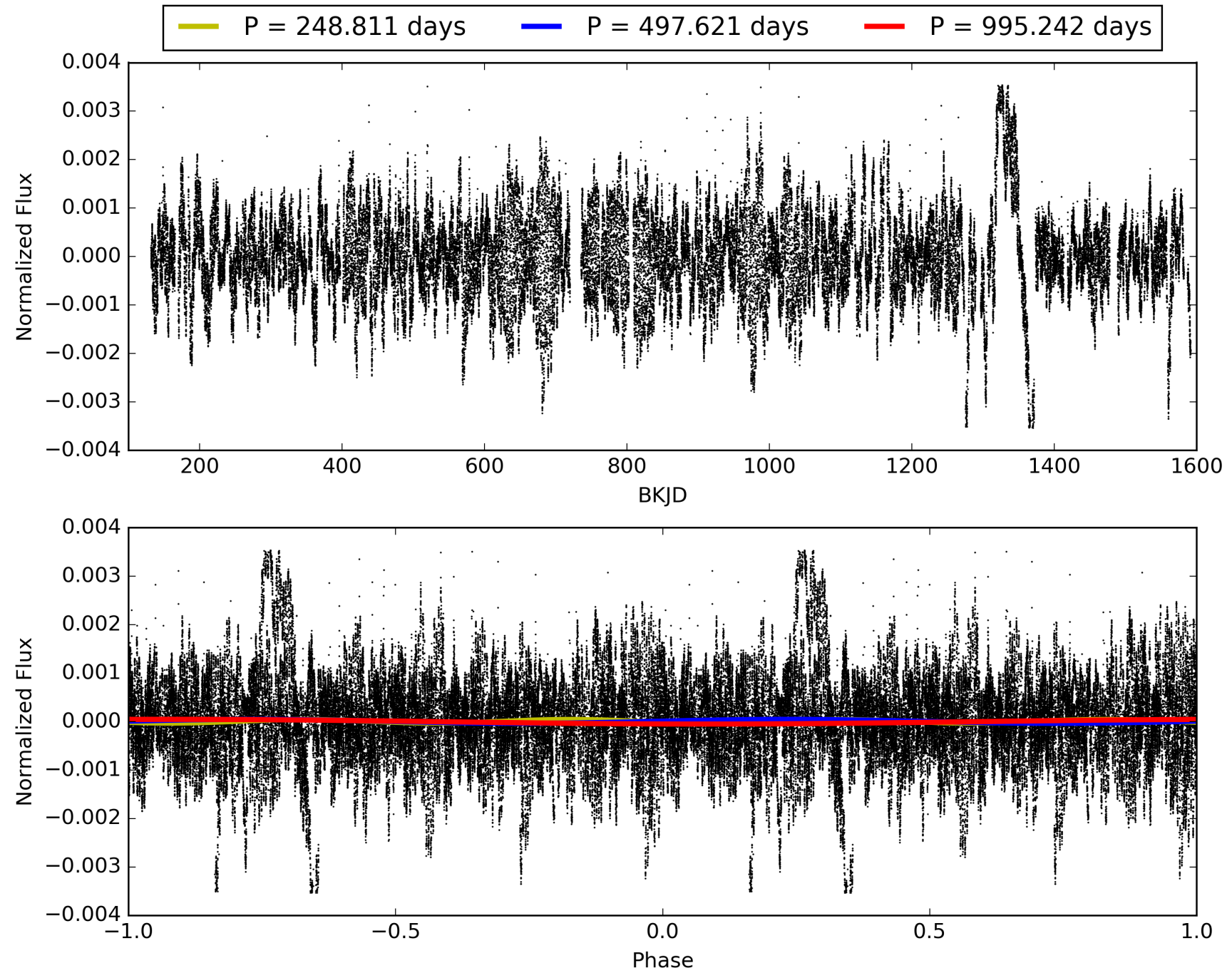
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: 4.3%
ModelChiSquareGof-sig: 85.3%
Bootstrap-pfa: 1.17e-11
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: 7.407
Centroid-sig: 33.5%
Centroid-so: 0.413 arcsec [0.78 σ]
OotOffset-rm: 0.509 arcsec [1.52 σ]
OotOffset-st: 1/1/0/1 [3]
KicOffset-rm: 0.417 arcsec [1.17 σ]
KicOffset-st: 1/1/0/1 [3]
DiffImageQuality-fgm: 1.00 [3/3]
DiffImageOverlap-fno: 1.00 [3/3]

TCE 010918580-01, PDC Light Curves

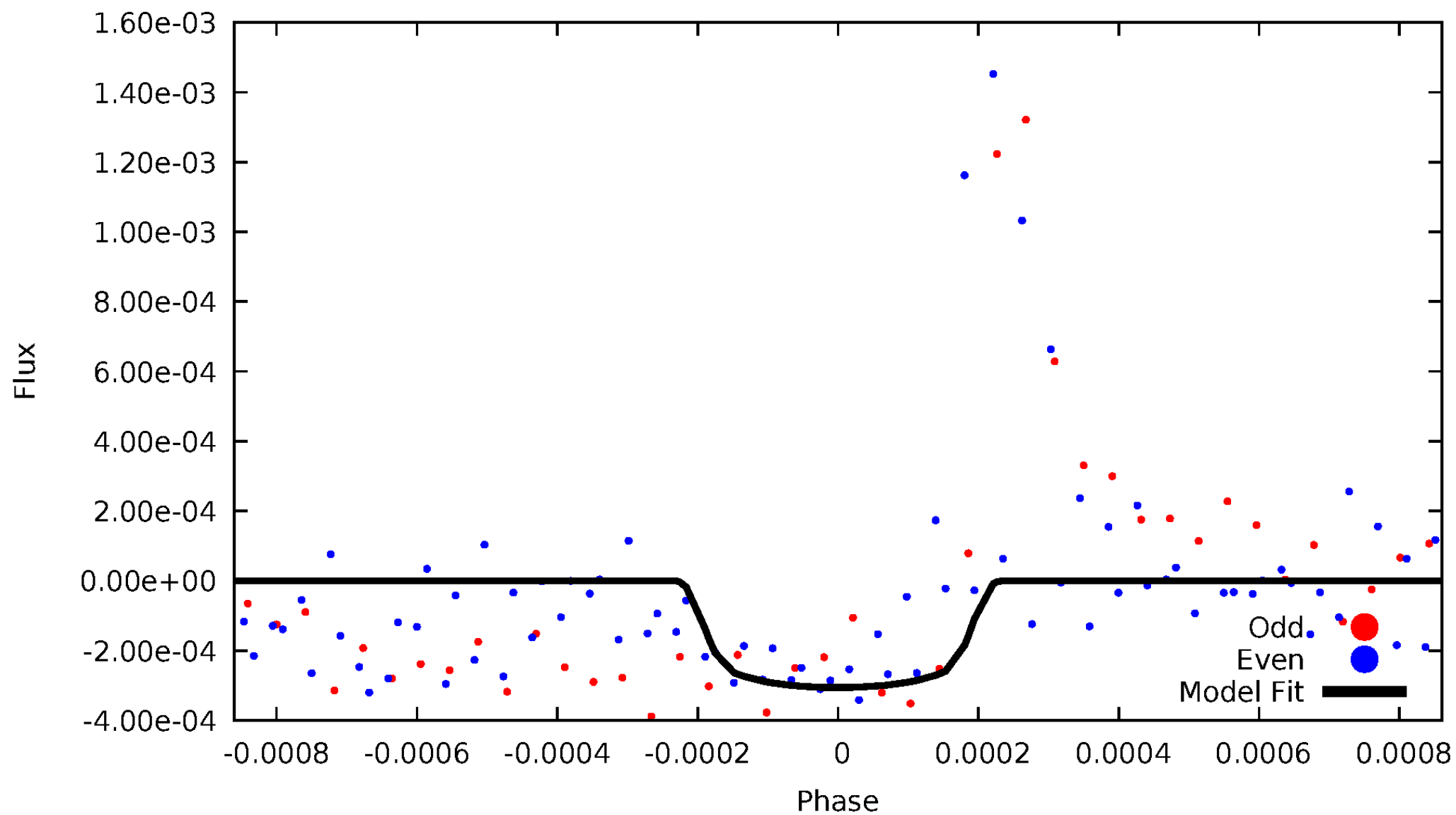


TCE 010918580-01



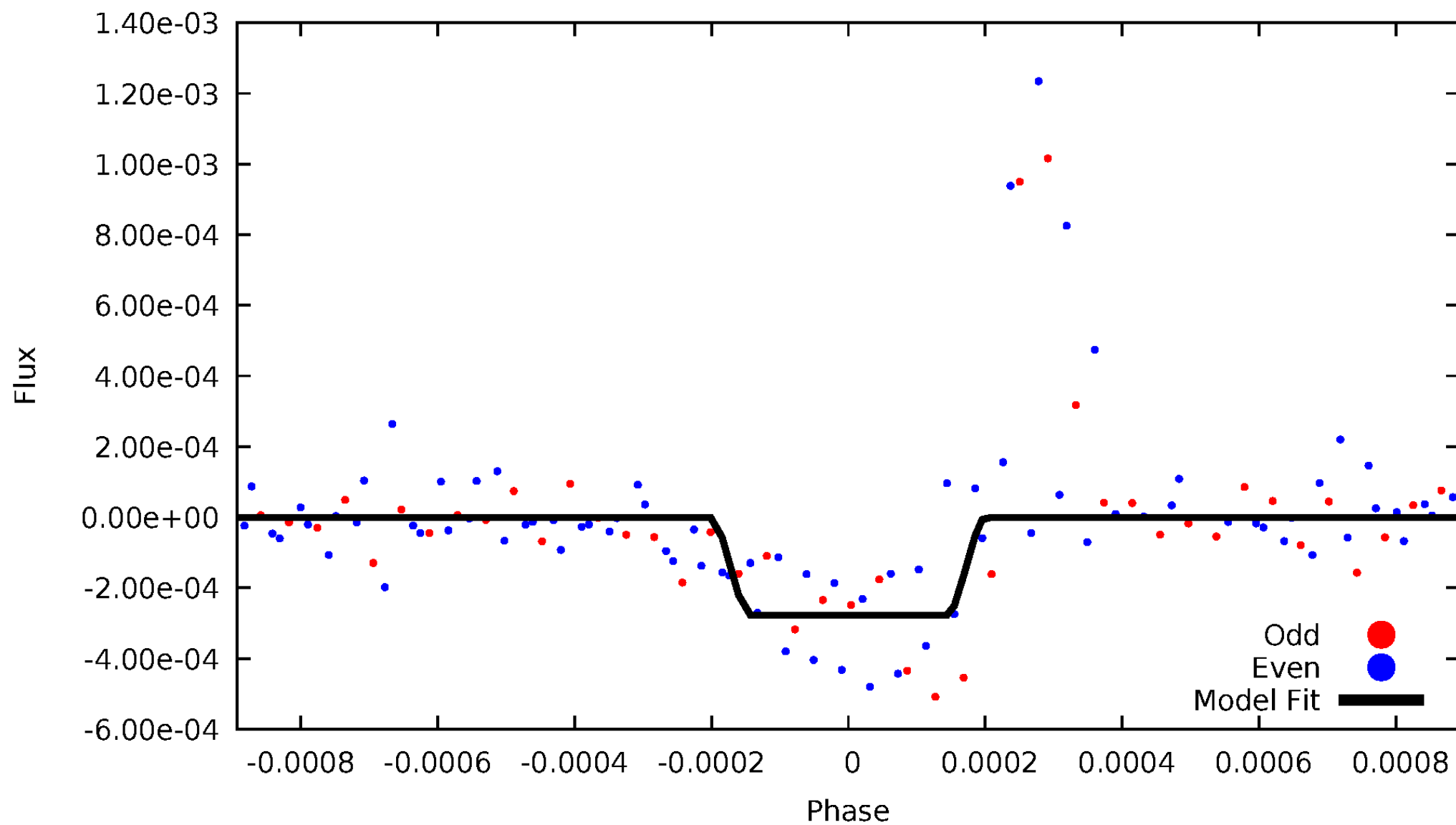
DV Odd/Even

TCE 010918580-01



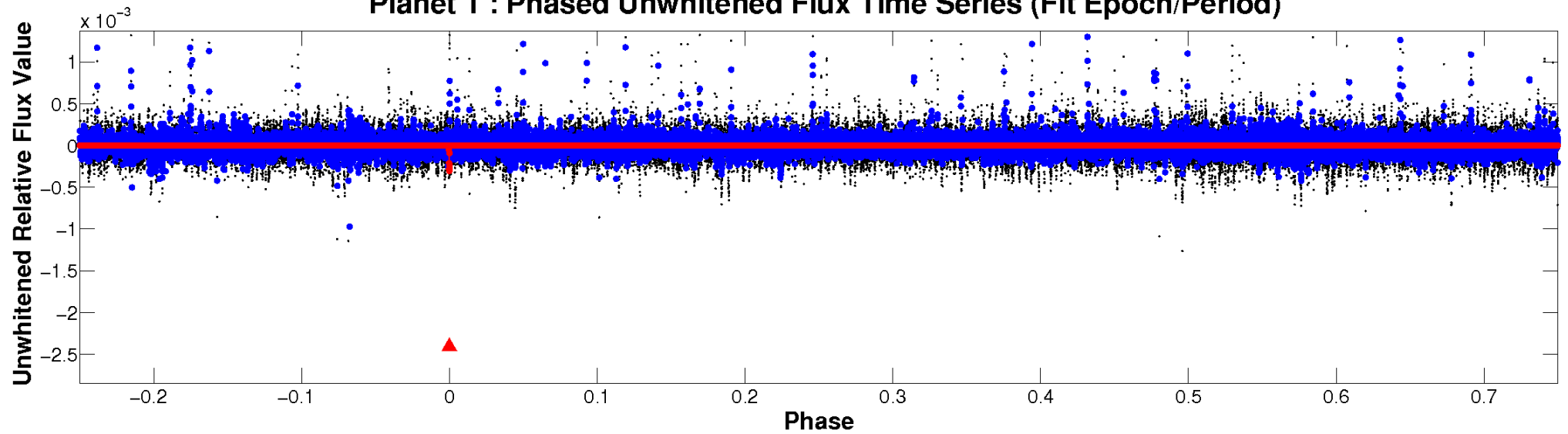
ALT Odd/Even

TCE 010918580-01

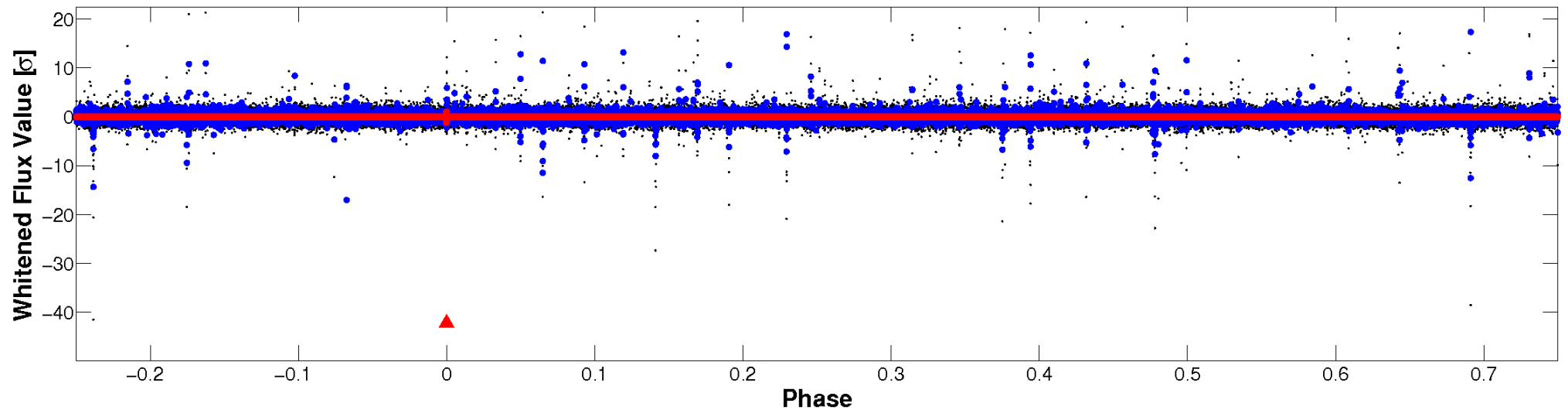


Non-Whitened Vs. Whitened Light Curve

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

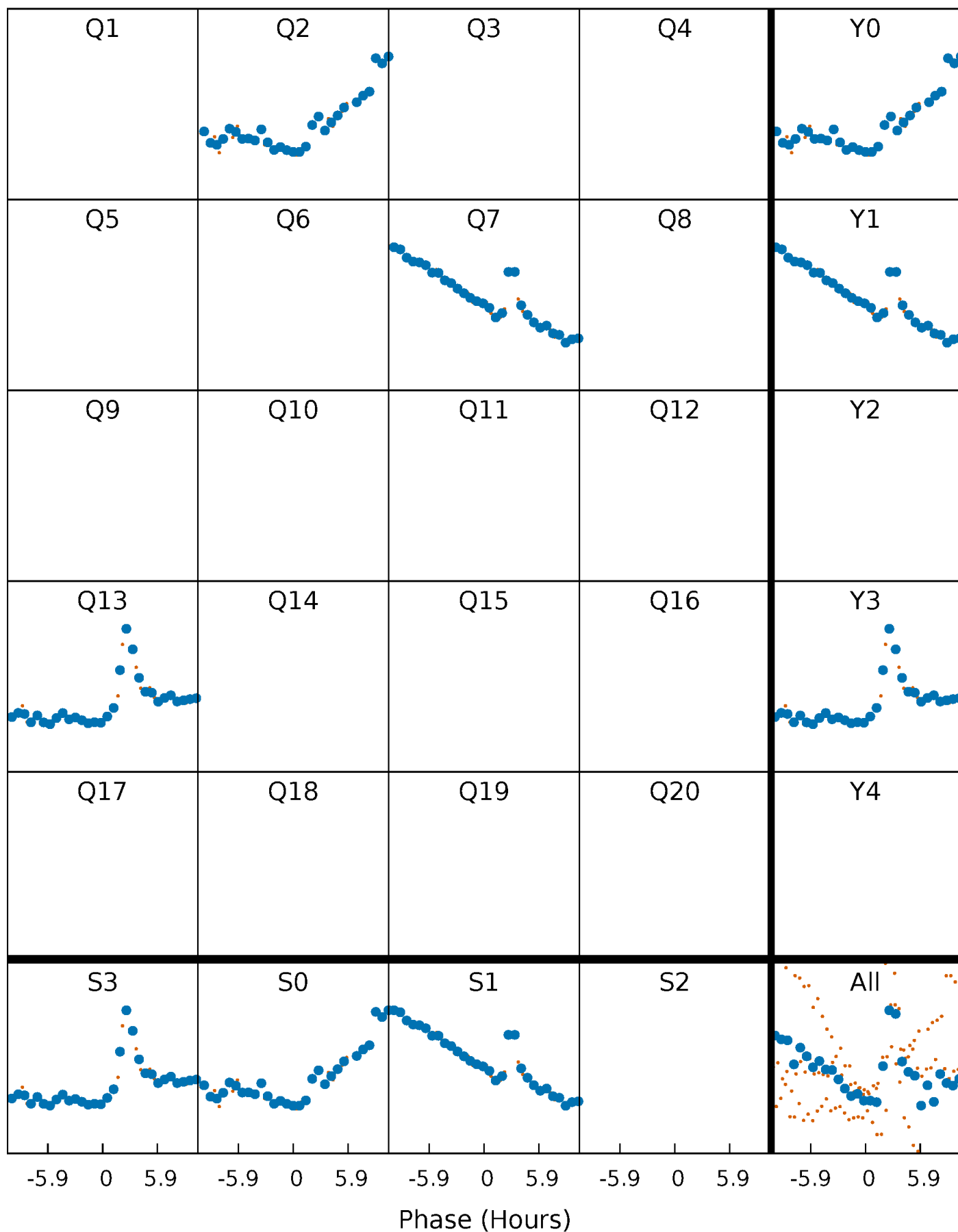


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



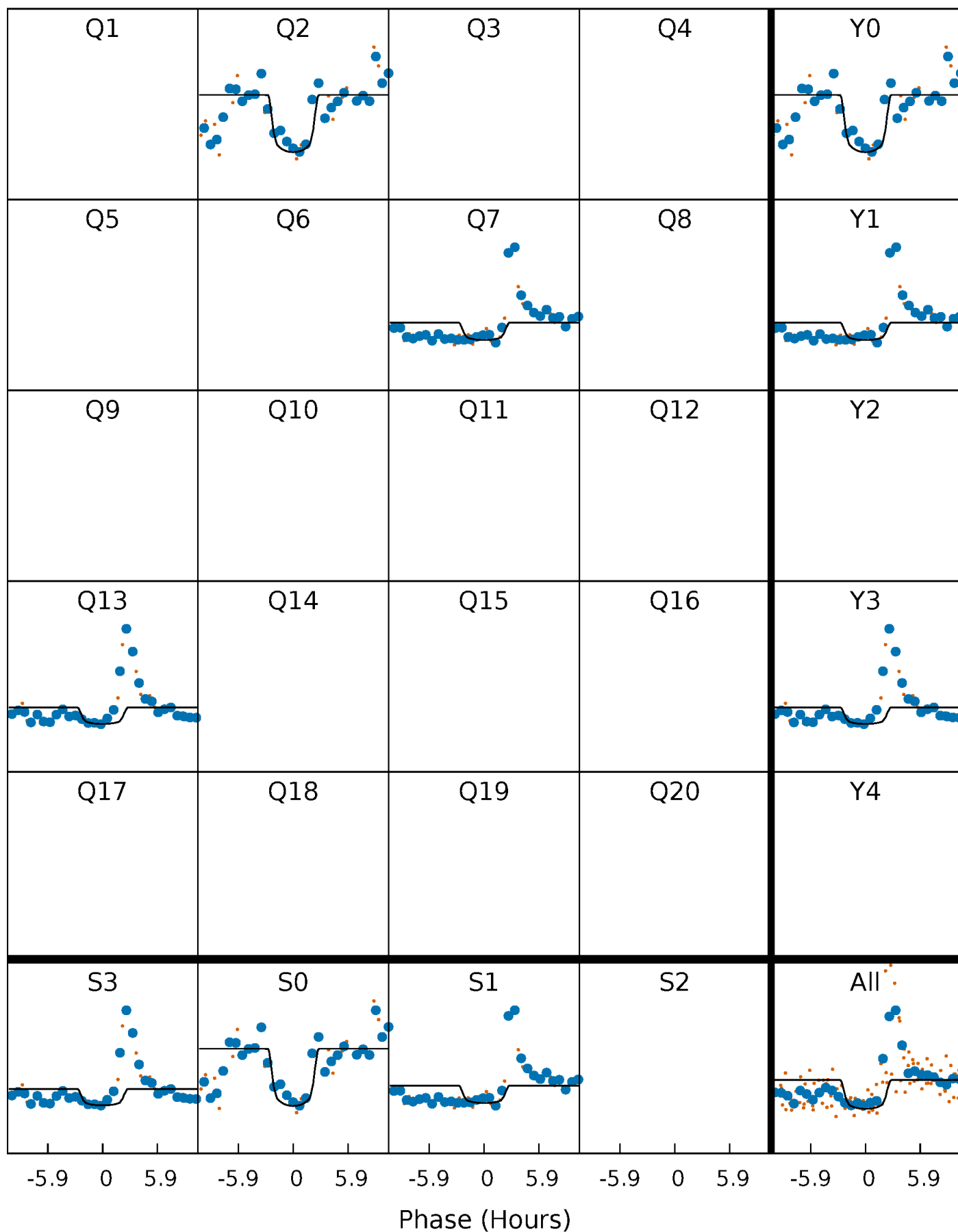
PDC Quarter-Phased Transit Curves

TCE 010918580-01 P=497.621243 Days $T_0=199.236217$ (BKJD)



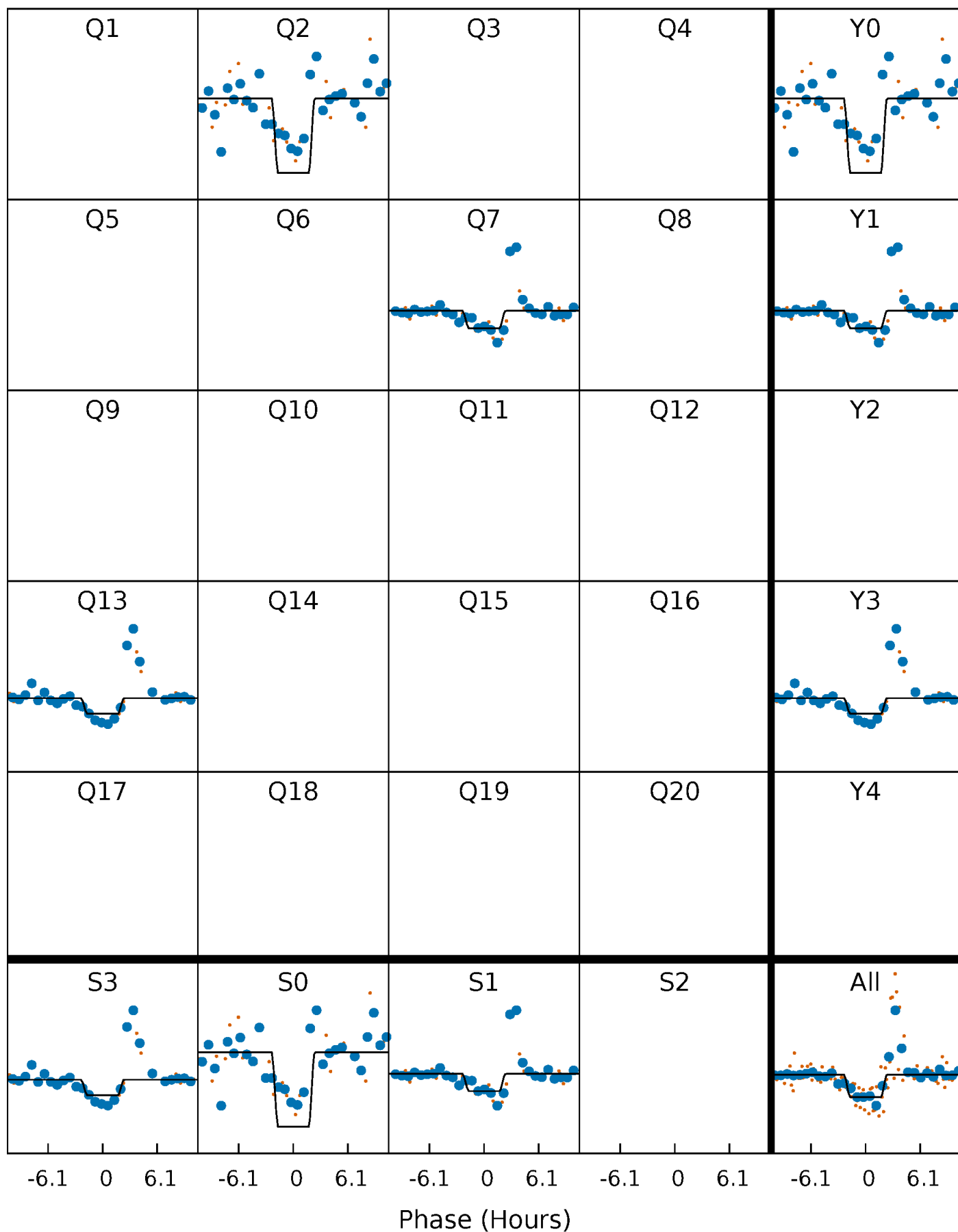
DV Quarter-Phased Transit Curves

TCE 010918580-01 P=497.621243 Days $T_0=199.236217$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

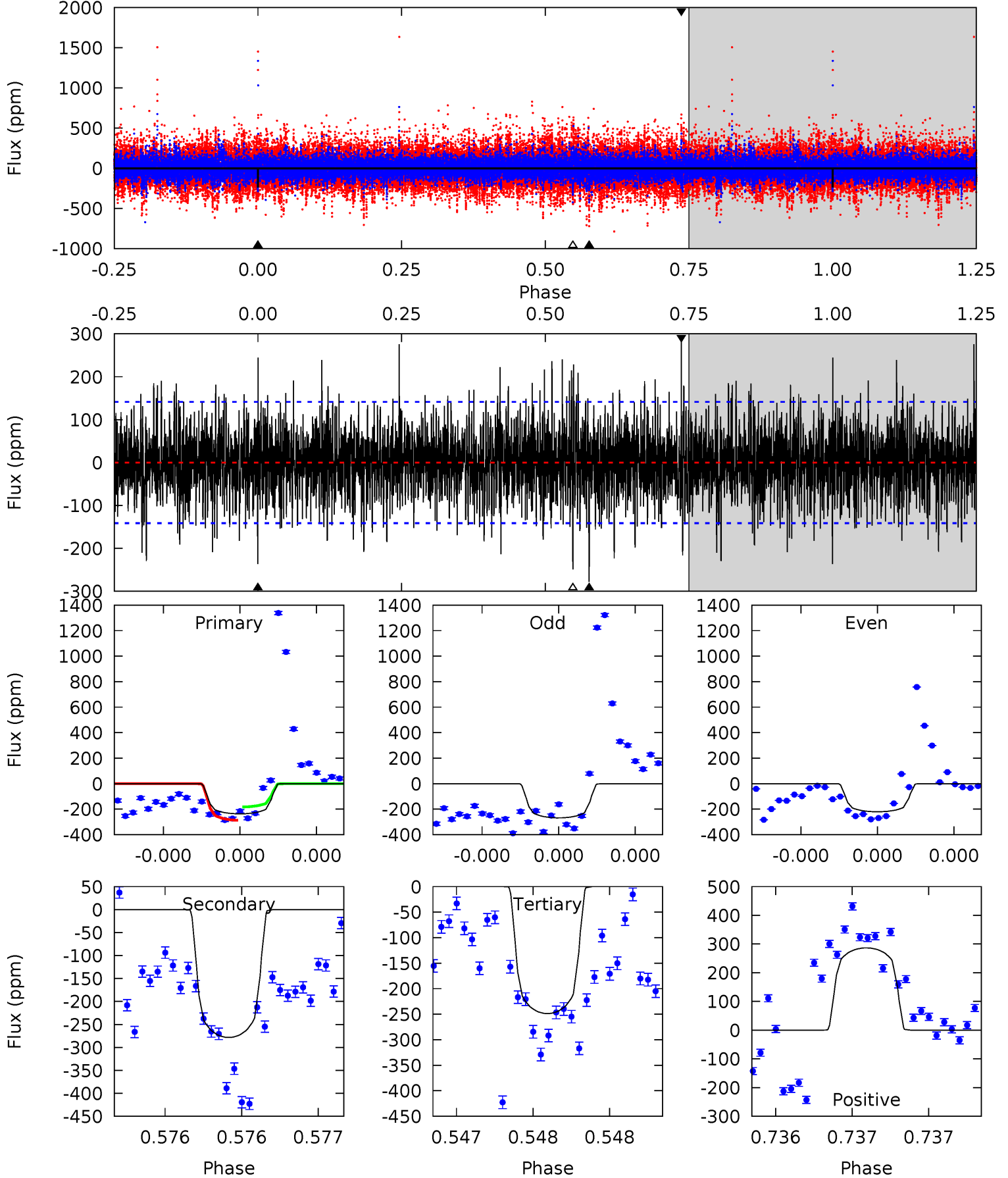
TCE 010918580-01 P=497.604864 Days $T_0=199.240745$ (BKJD)



DV Model-Shift Uniqueness Test

010918580-01, P = 497.621243 Days, E = 199.236217 Days

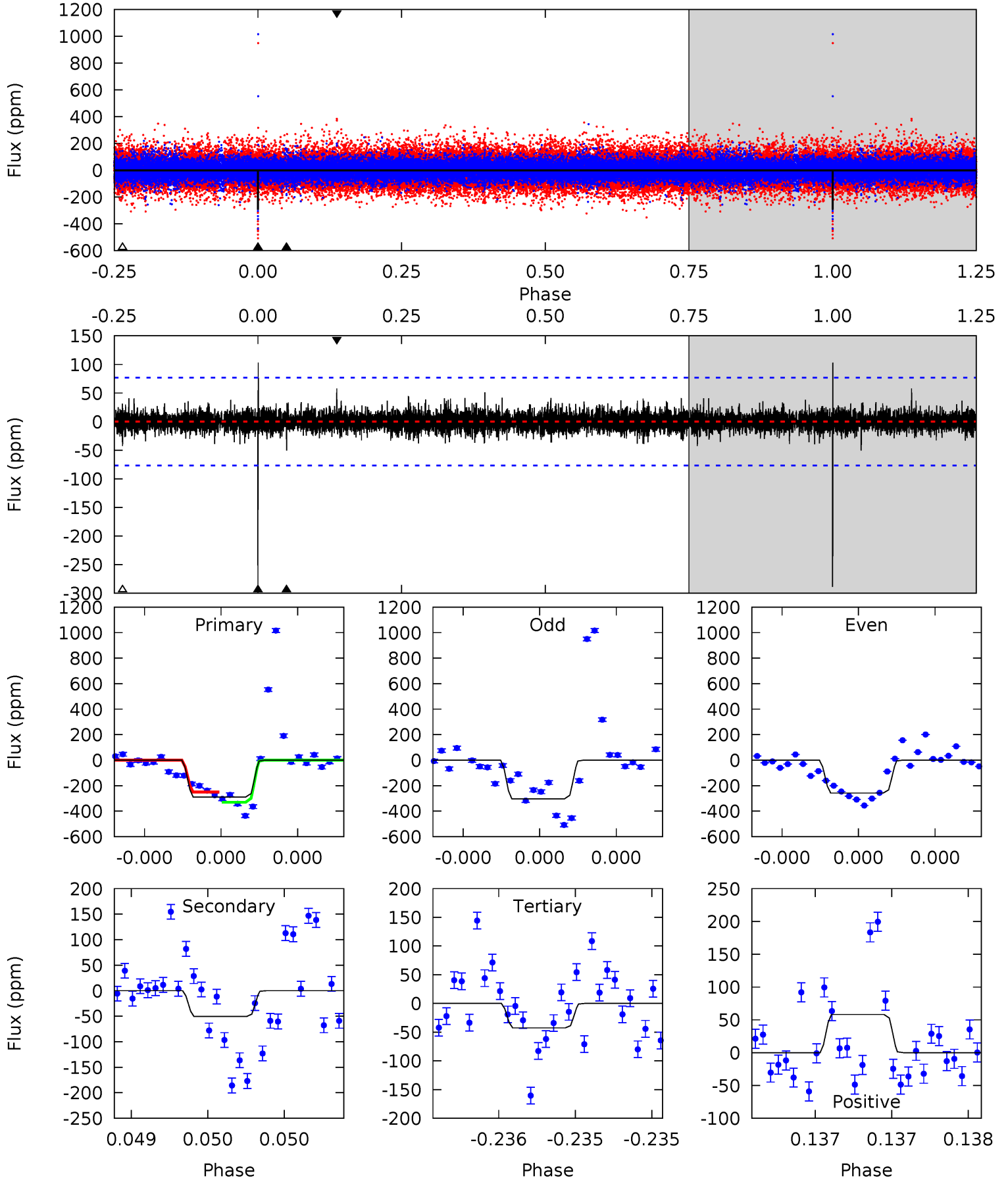
| Pri | Sec | Ter | Pos | FA ₁ | FA ₂ | F _{Red} | Pri-Ter | Pri-Pos | Sec-Ter | Sec-Pos | Odd-Evn | DMM | Shape | TAT |
|------|------|------|------|-----------------|-----------------|------------------|---------|---------|---------|---------|---------|------|-------|------|
| 9.36 | 11.0 | 9.84 | 11.3 | 5.59 | 3.51 | 2.49 | -0.48 | -1.97 | 1.17 | -0.33 | 0.78 | 0.83 | 0.51 | 2.08 |



Alt Model-Shift Uniqueness Test

010918580-01, P = 497.604864 Days, E = 199.240745 Days

| Pri | Sec | Ter | Pos | FA ₁ | FA ₂ | F _{Red} | Pri-Ter | Pri-Pos | Sec-Ter | Sec-Pos | Odd-Evn | DMM | Shape | TAT |
|------|------|------|------|-----------------|-----------------|------------------|---------|---------|---------|---------|---------|------|-------|------|
| 21.1 | 3.70 | 3.12 | 4.25 | 5.61 | 3.54 | 0.75 | 18.0 | 16.9 | 0.58 | -0.55 | 1.57 | 0.90 | 0.26 | 2.92 |



Stellar Parameters For KIC 010918580

| | $T_{\text{eff}}(K)$ | $\log(g)$ | [Fe/H] | R (R_{\odot}) | $M(M_{\odot})$ | ρ_{\star} ($\text{g}\cdot\text{cm}^{-3}$) |
|--------|----------------------|---------------------------|----------------------------|---------------------------|---------------------------|--|
| | 6289^{+162}_{-178} | $4.069^{+0.266}_{-0.114}$ | $-0.480^{+0.300}_{-0.300}$ | $1.528^{+0.307}_{-0.422}$ | $0.999^{+0.162}_{-0.118}$ | $0.394^{+0.562}_{-0.148}$ |
| | +3%/-3% | +7%/-3% | +62%/-62% | +20%/-28% | +16%/-12% | +143%/-38% |
| Source | PHO1 | FLK73 | 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 010918580-01 / KOI

| Detrend | Depth (ppm) | R_p (R_{\oplus}) | T_{max} (K) | T_{obs} (K) | A_{obs} |
|---------|---------------|------------------------|----------------------|----------------------|--------------------------|
| DV | -278 ± 25 | $2.99^{+0.81}_{-0.76}$ | 426^{+27}_{-34} | 5949^{+814}_{-557} | 25596^{+21913}_{-9214} |
| Alt. | -51 ± 14 | $2.66^{+0.84}_{-0.76}$ | 426^{+28}_{-34} | 4337^{+596}_{-437} | 5975^{+5739}_{-2815} |

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

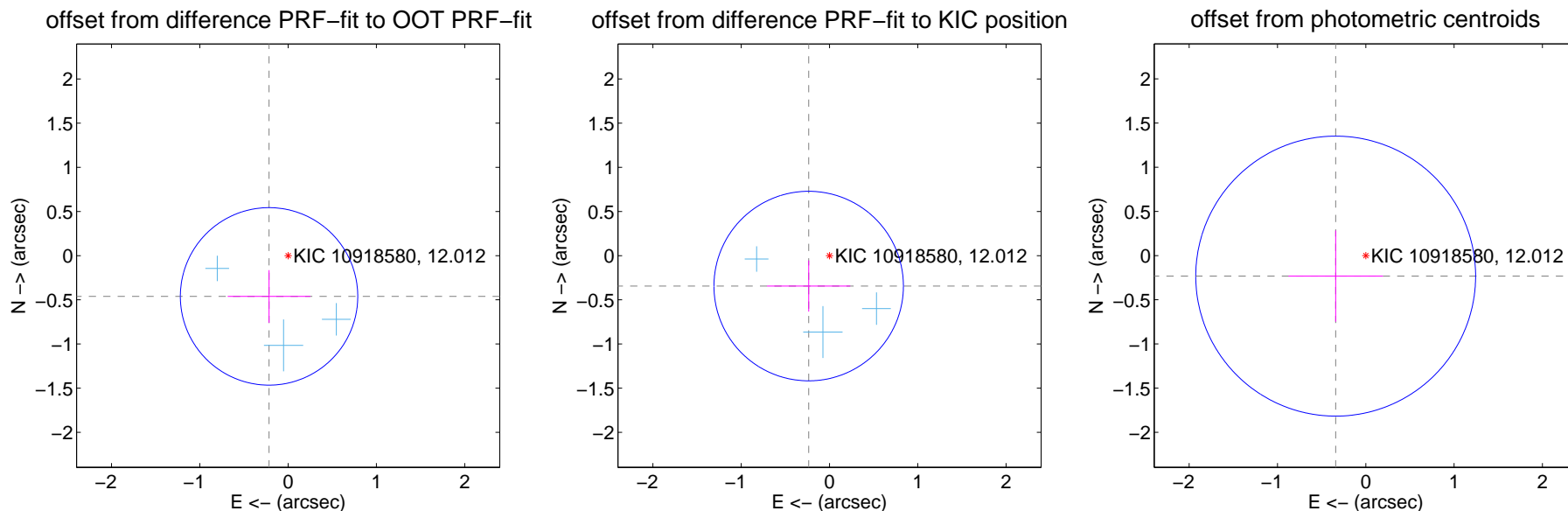
DV Centroid Data

Supplemental centroid analysis for 010918580-01. Kepler magnitude: 12.01. Transit SNR 6.14

There are 3 quarters with good PRF difference image offsets

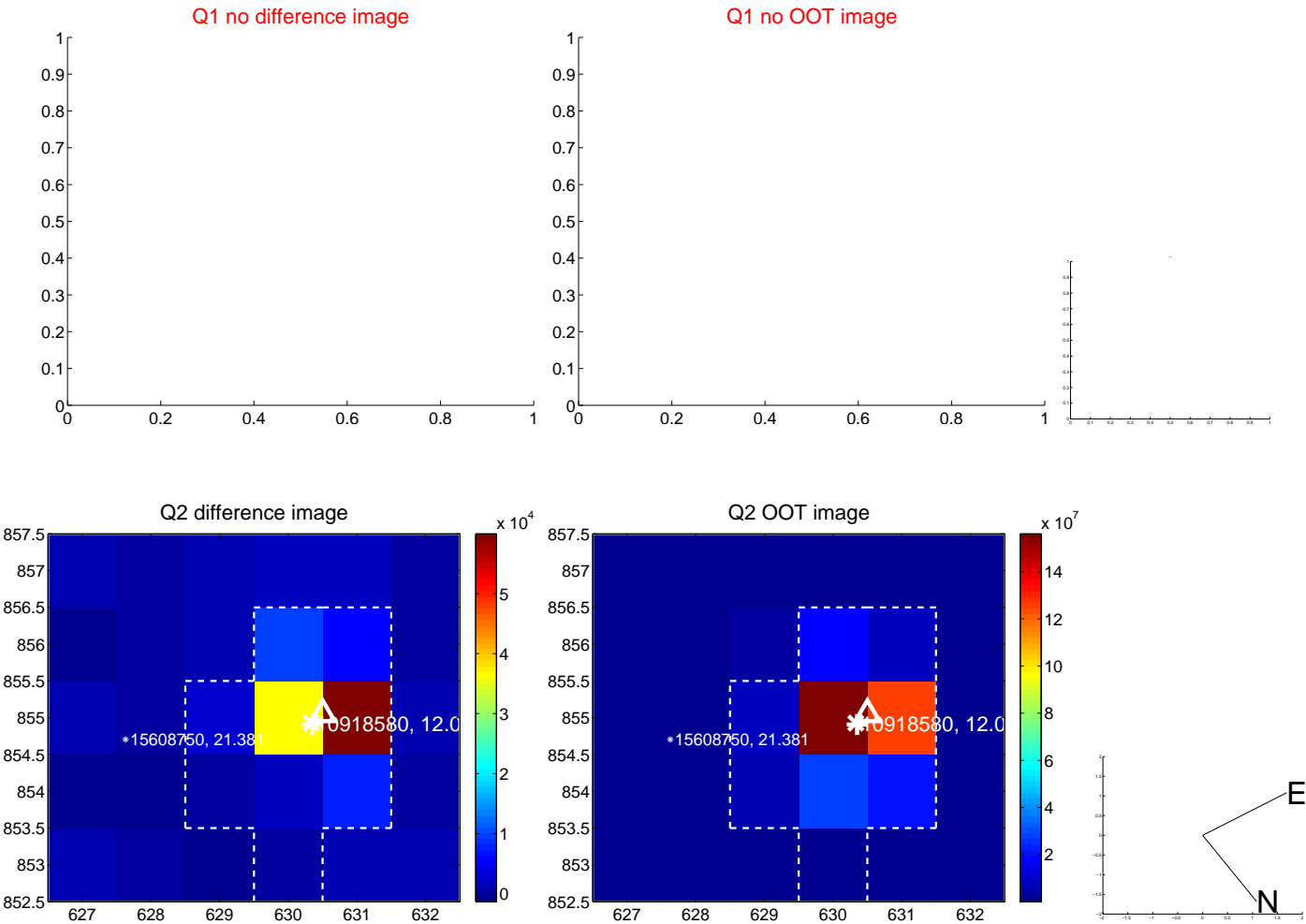
The direct PRF centroid is offset from the target star catalog position by about 0.15 arcsec

| | Distance in arcsec | Distance / σ | Δ RA | Δ Dec |
|---|--------------------|---------------------|-------------------|--------------------|
| PRF-fit source offset from OOT | 0.509 ± 0.335 | 1.52 | 0.216 ± 0.468 | -0.461 ± 0.298 |
| PRF-fit source offset from KIC position | 0.417 ± 0.358 | 1.17 | 0.236 ± 0.471 | -0.344 ± 0.290 |
| photometric centroid source offset | 0.41 ± 0.53 | 0.78 | 0.34 ± 0.53 | -0.23 ± 0.52 |

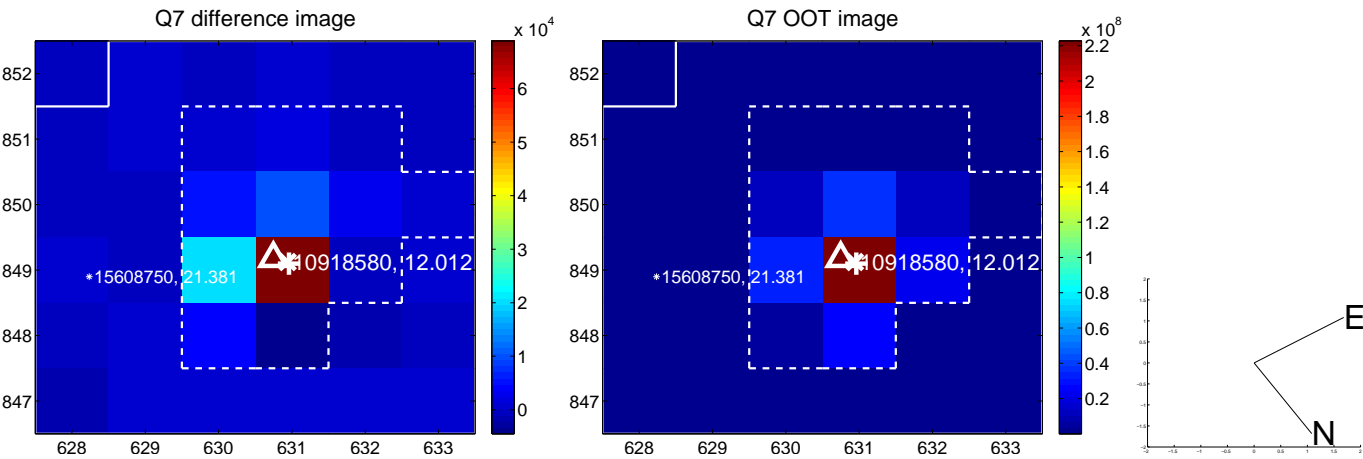


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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



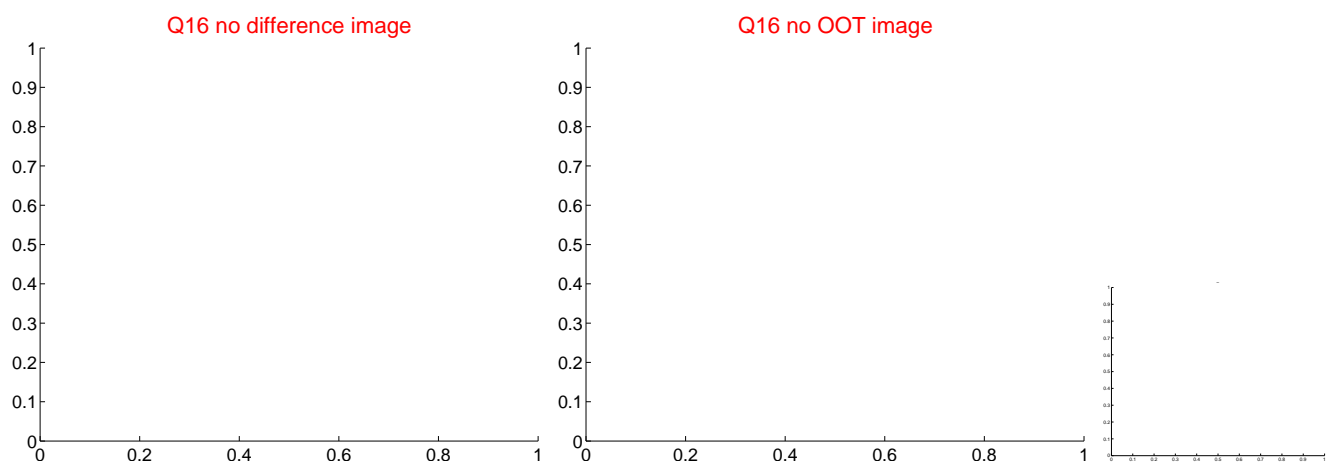
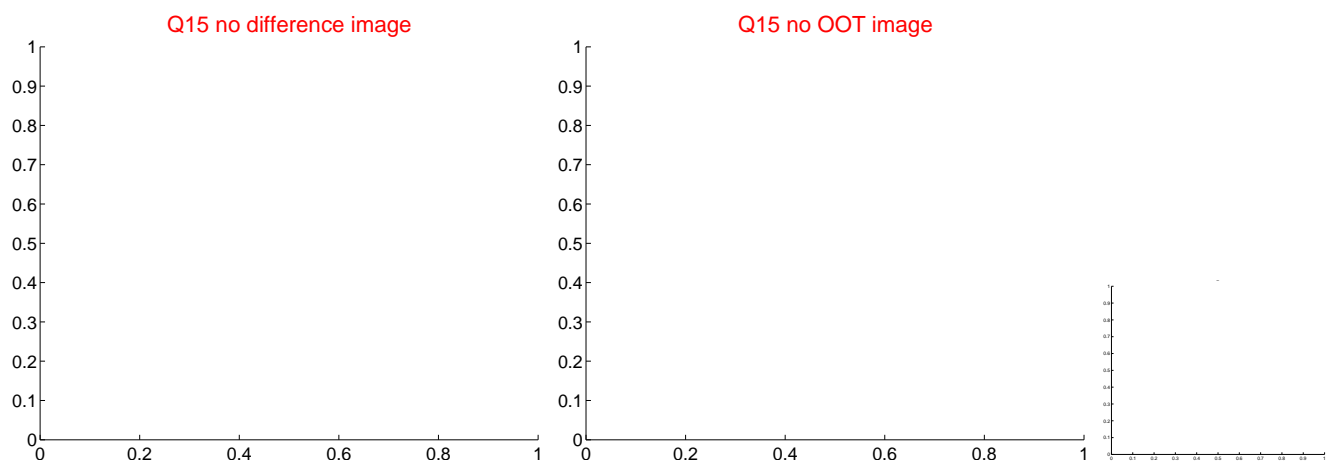
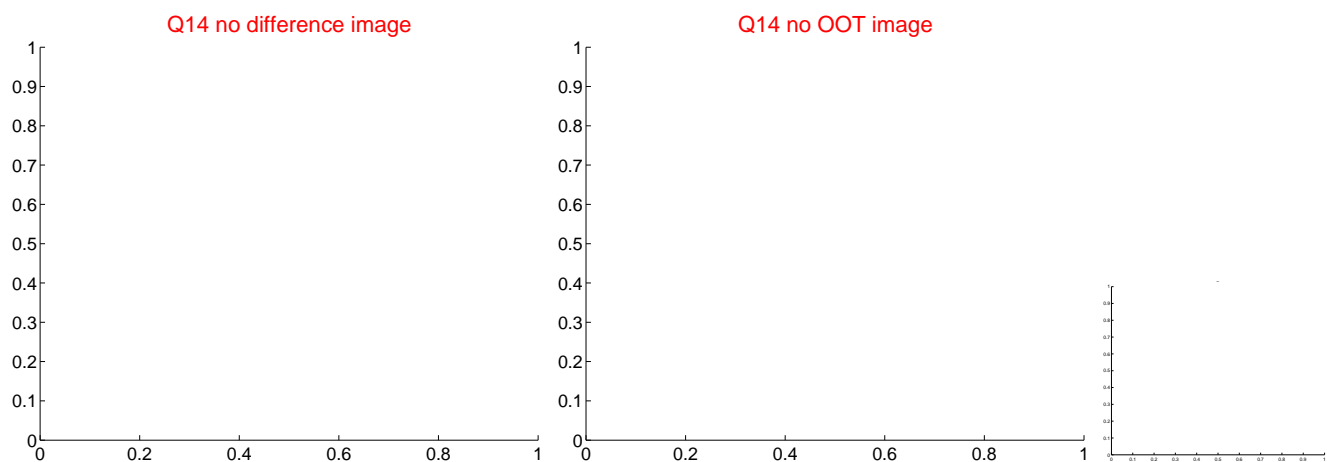
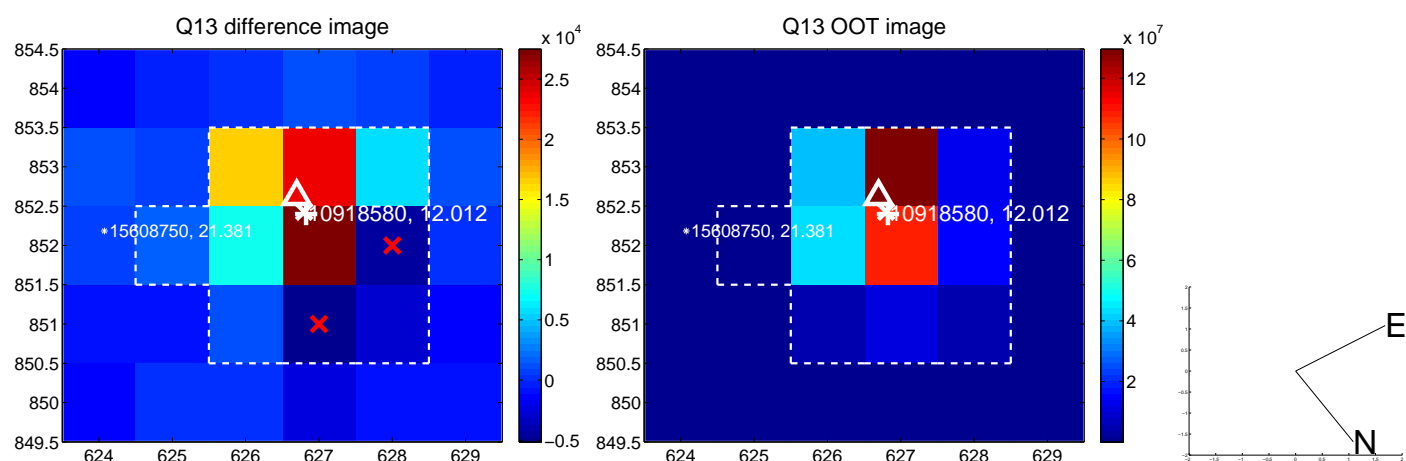
white \times : KIC target position; $+$: OOT centroid; Δ : difference centroid. red \times : large negative pixel value.



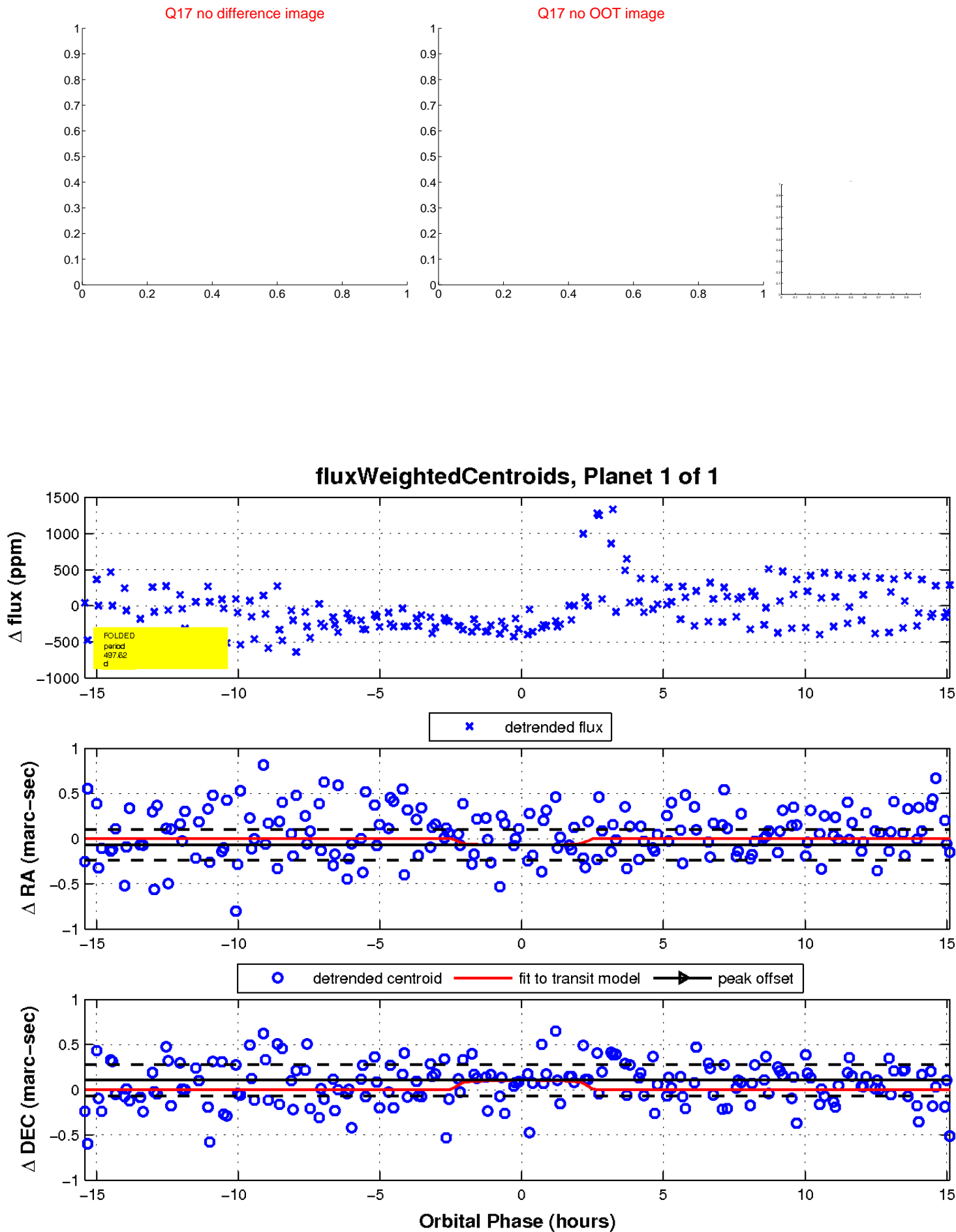
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UKIRT Image

Declination

