

KIC 003458919

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}) |
|--------------|----------|---------|---------------|--------------|-------------|------------------|--------|-------|-----------------------------|-----------------|------------------------|------------------------|
| 003458919-01 | OBS | 6337.01 | 0.892084 | 131.807596 | 61066.1 | 2.215 | 1812.5 | 999.6 | 0.85 | 5561 | 28.02 | 2093.83 |
| 003458919-02 | OBS | No | 0.892056 | 132.267444 | 12787.7 | 2.000 | 1146.9 | -1.0 | 0.85 | 5561 | 9.57 | 2093.92 |

Robovetter Results

| TCE | Run Type | Disp | Score | N | S | C | E | Comments |
|--------------|----------|------|-------|---|---|---|---|--|
| 003458919-01 | OBS | FP | 0.00 | 0 | 1 | 1 | 0 | SWEET_EB—MOD_SEC_DV—MOD_SEC_ALT—DEEP_V_SHAPED—HAS_SEC_TCE—CENT_UNRESOLVED_OFFSET |
| 003458919-02 | OBS | FP | 0.00 | 1 | 1 | 0 | 0 | IS_SEC_TCE—CENT_NOFITS |

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.

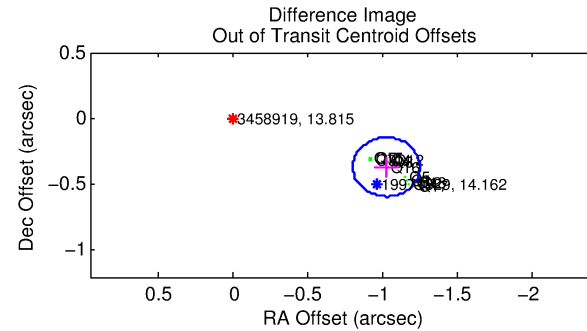
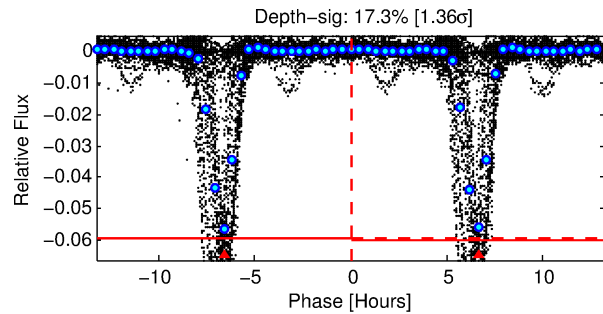
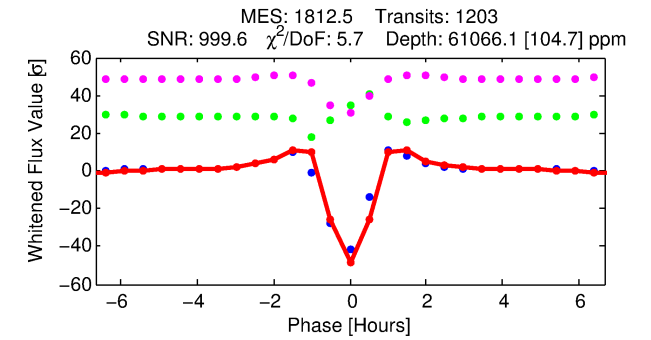
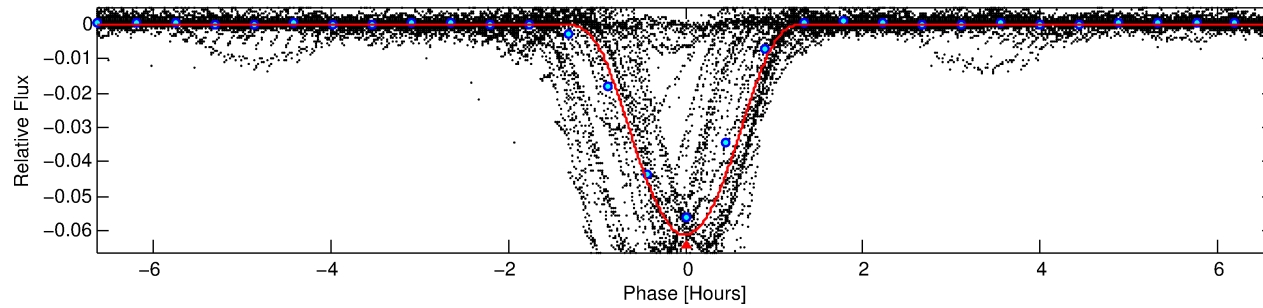
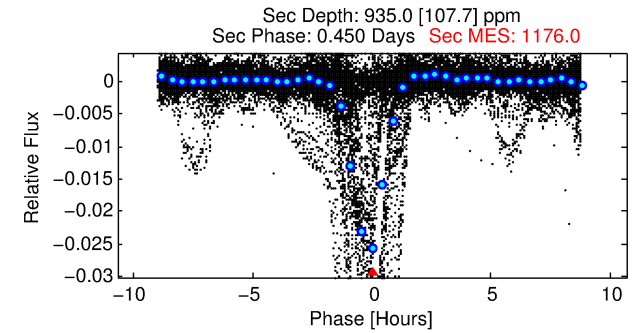
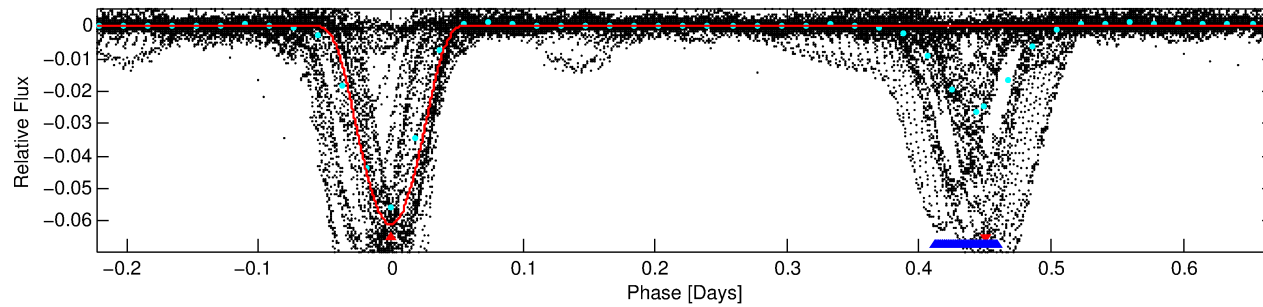
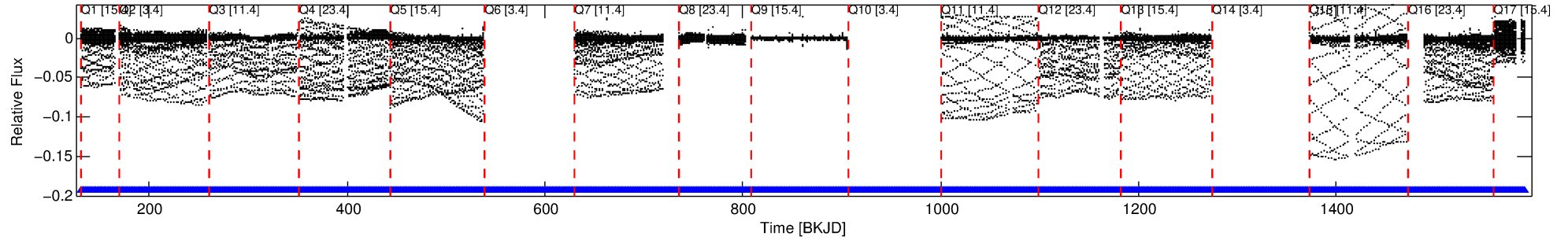
Ephemeris Match Information For 003458919-01

No Significant Match Found

DV One-Page Summary

KIC: 3458919 Candidate: 1 of 2 Period: 0.892 d
KOI: K06337.01 Corr: 0.868

Kp: 13.81 R*: 0.85 Rs Teff: 5561.0 K Logg: 4.51 Fe/H: -0.160



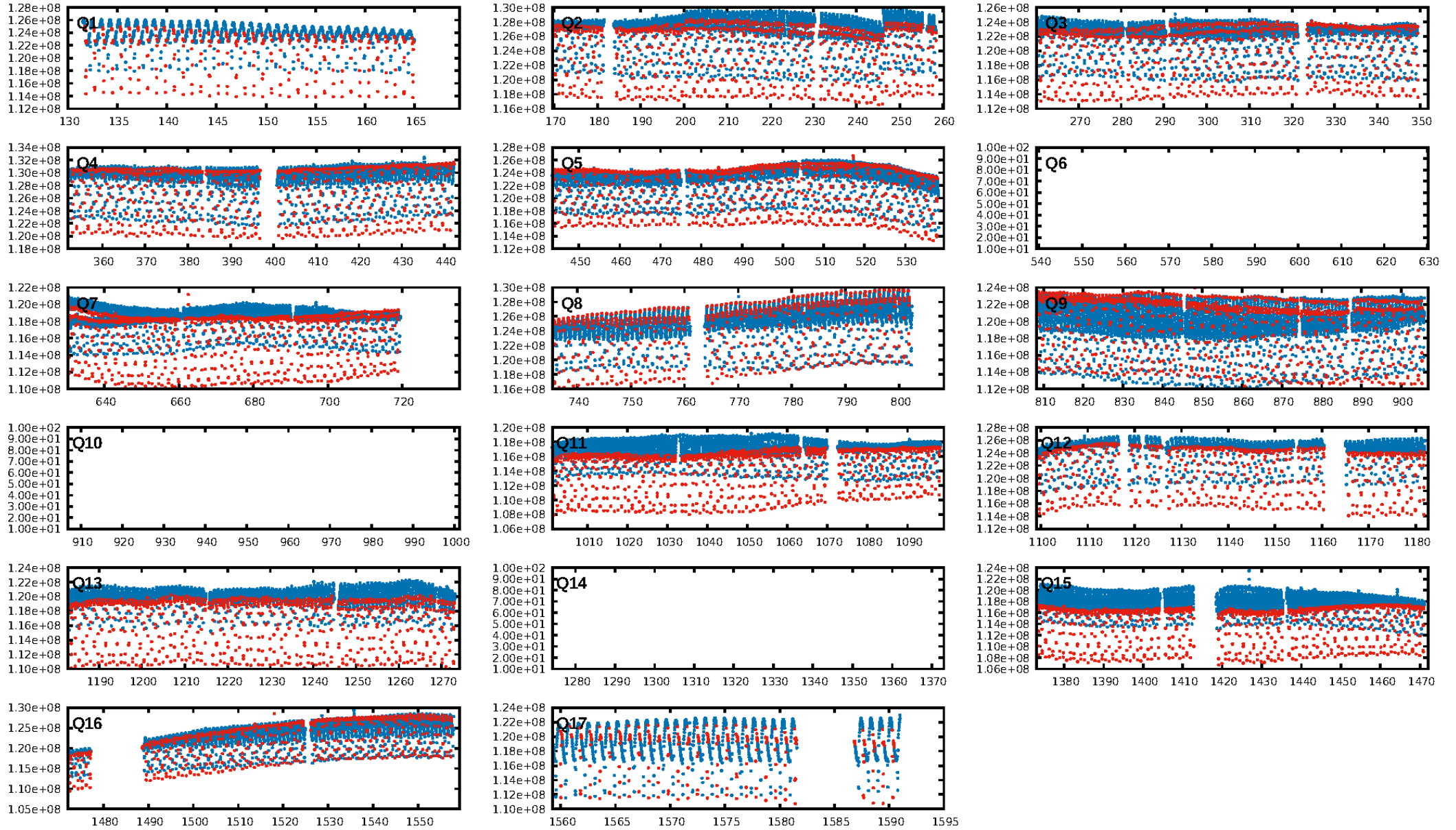
DV Fit Results:

Period = 0.89208 [0.00000] d
Epoch = 131.8076 [0.0000] BKJD
Rp/R* = 0.3004 [0.0061]
a/R* = 3.18 [0.01]
b = 0.86 [0.01]
Seff = 2093.83 [640.24]
Teff = 1725 [132] K
Rp = 28.02 [6.45] Re
a = 0.0173 [0.0033] AU
Ag = 0.20 [0.06] [-13.37σ]
Teffp = 1774 [76] K [0.33σ]

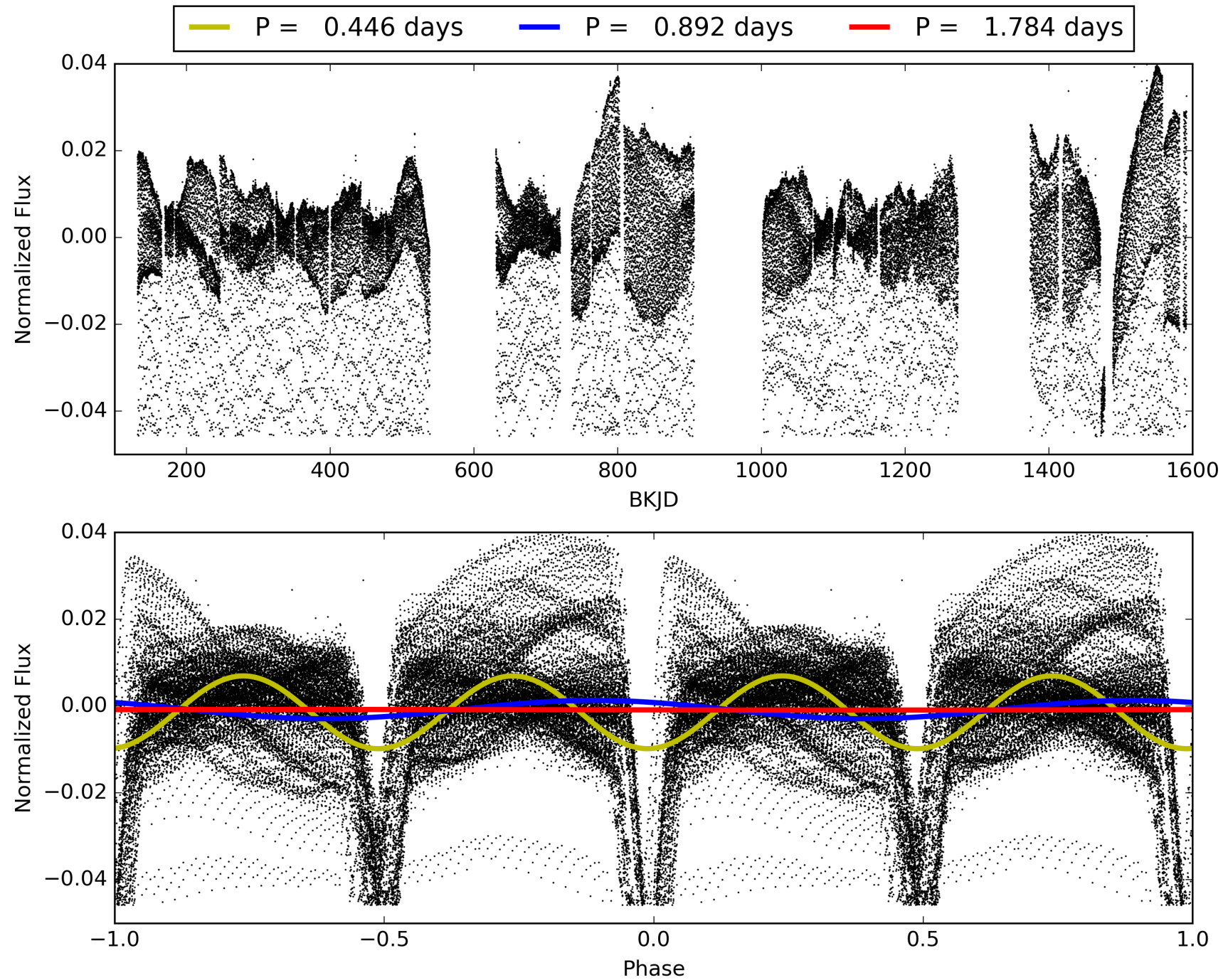
DV Diagnostic Results:

ShortPeriod-sig: 0.0% [0.00σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [1135/1135]
GhostDiagnostic-chr: N/A
Centroid-sig: N/A
Centroid-so: N/A
OotOffset-rm: 1.094 arcsec [14.69σ]
KicOffset-rm: 1.087 arcsec [15.93σ]
OotOffset-st: 1/4/4/5 [14]
KicOffset-st: 1/4/4/5 [14]
DiffImageQuality-fgm: 1.00 [14/14]
DiffImageOverlap-fno: 1.00 [14/14]

TCE 003458919-01, PDC Light Curves

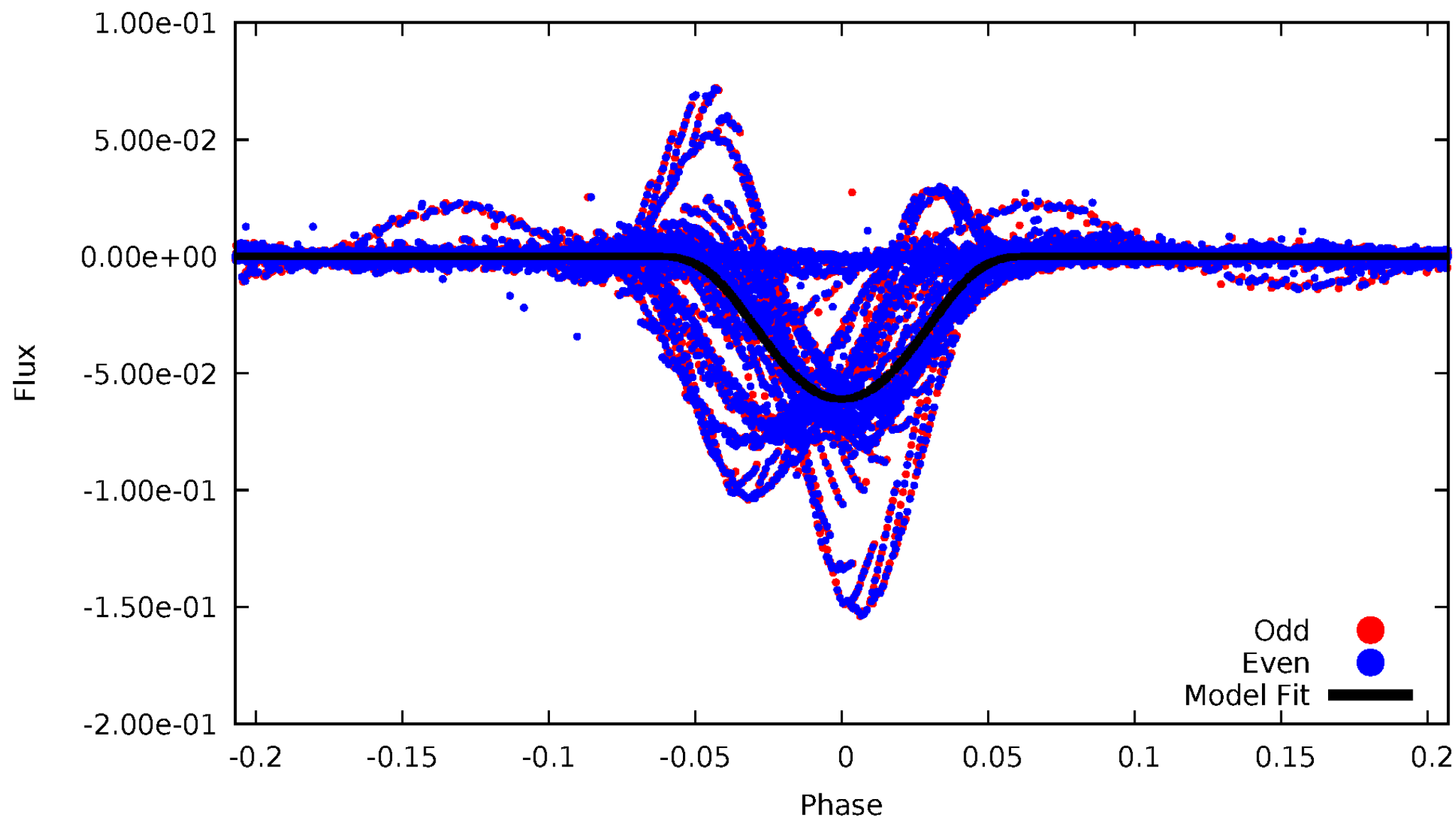


TCE 003458919-01



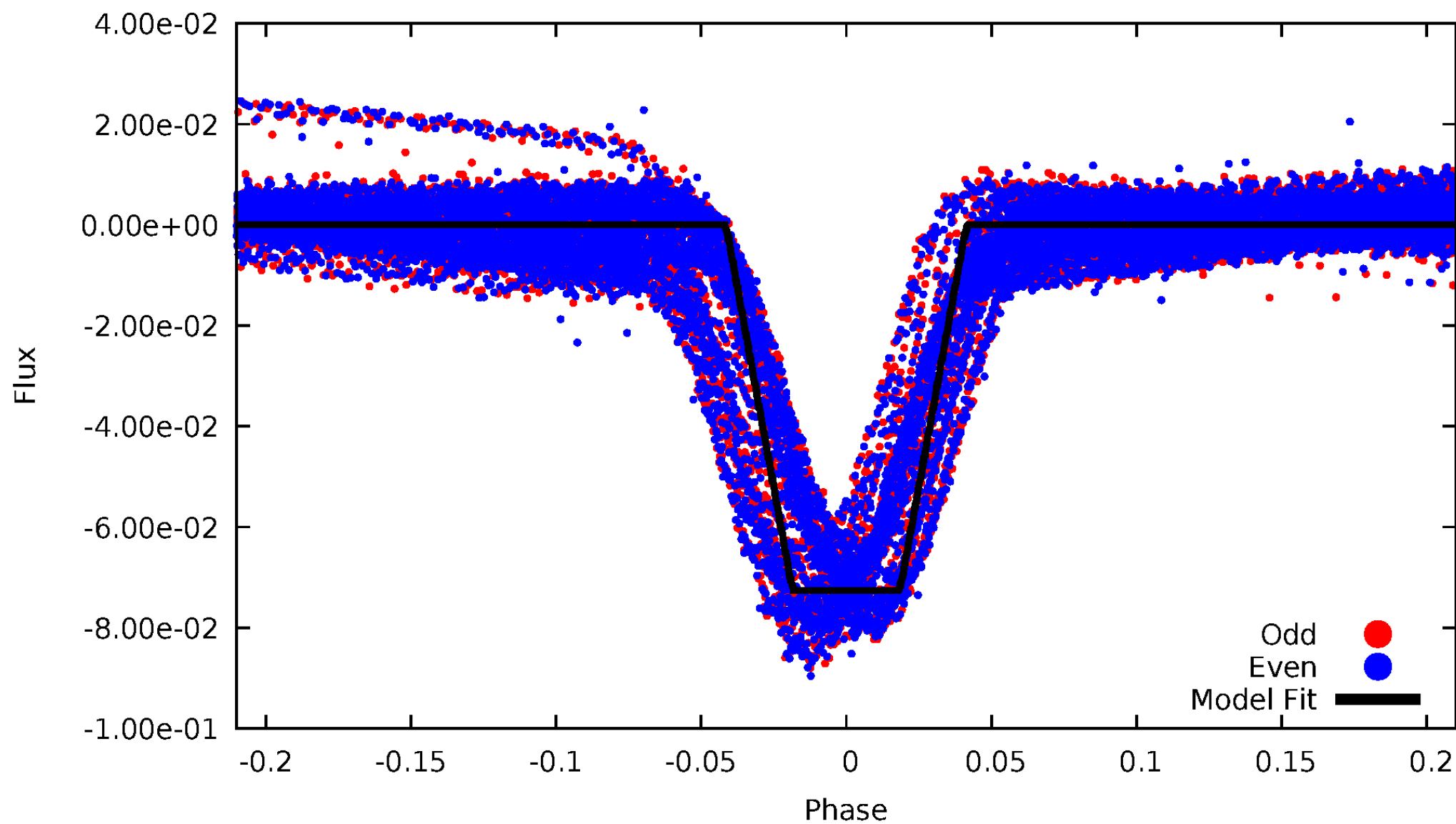
DV Odd/Even

TCE 003458919-01



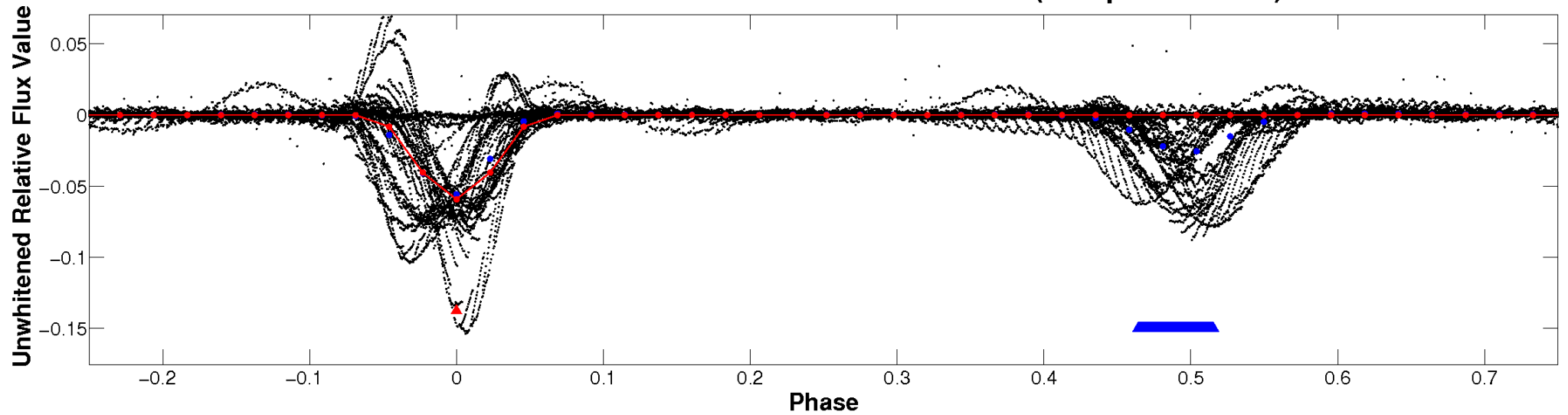
ALT Odd/Even

TCE 003458919-01

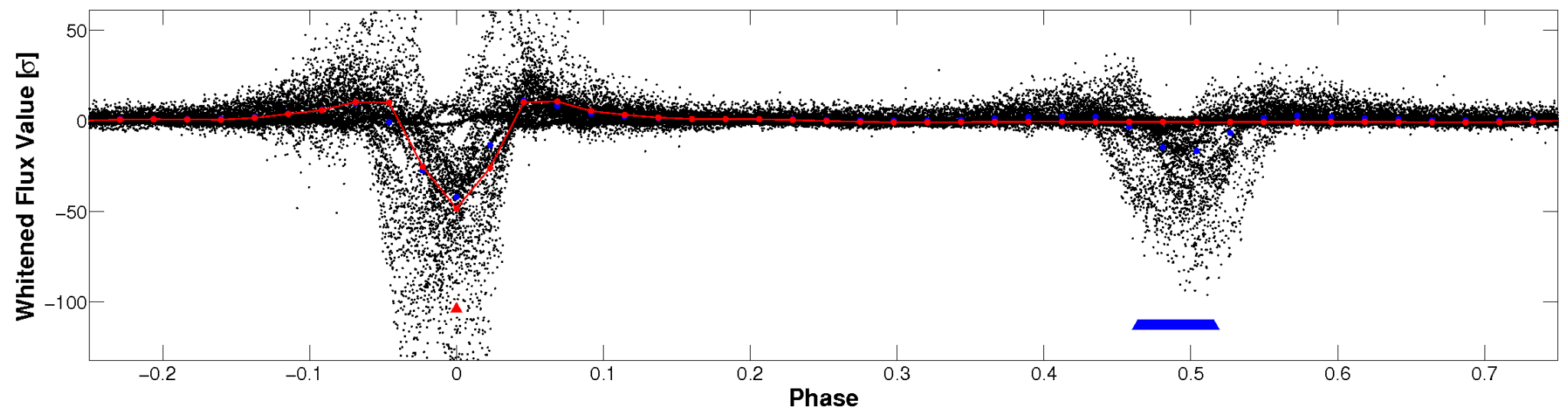


Non-Whitened Vs. Whitened Light Curve

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

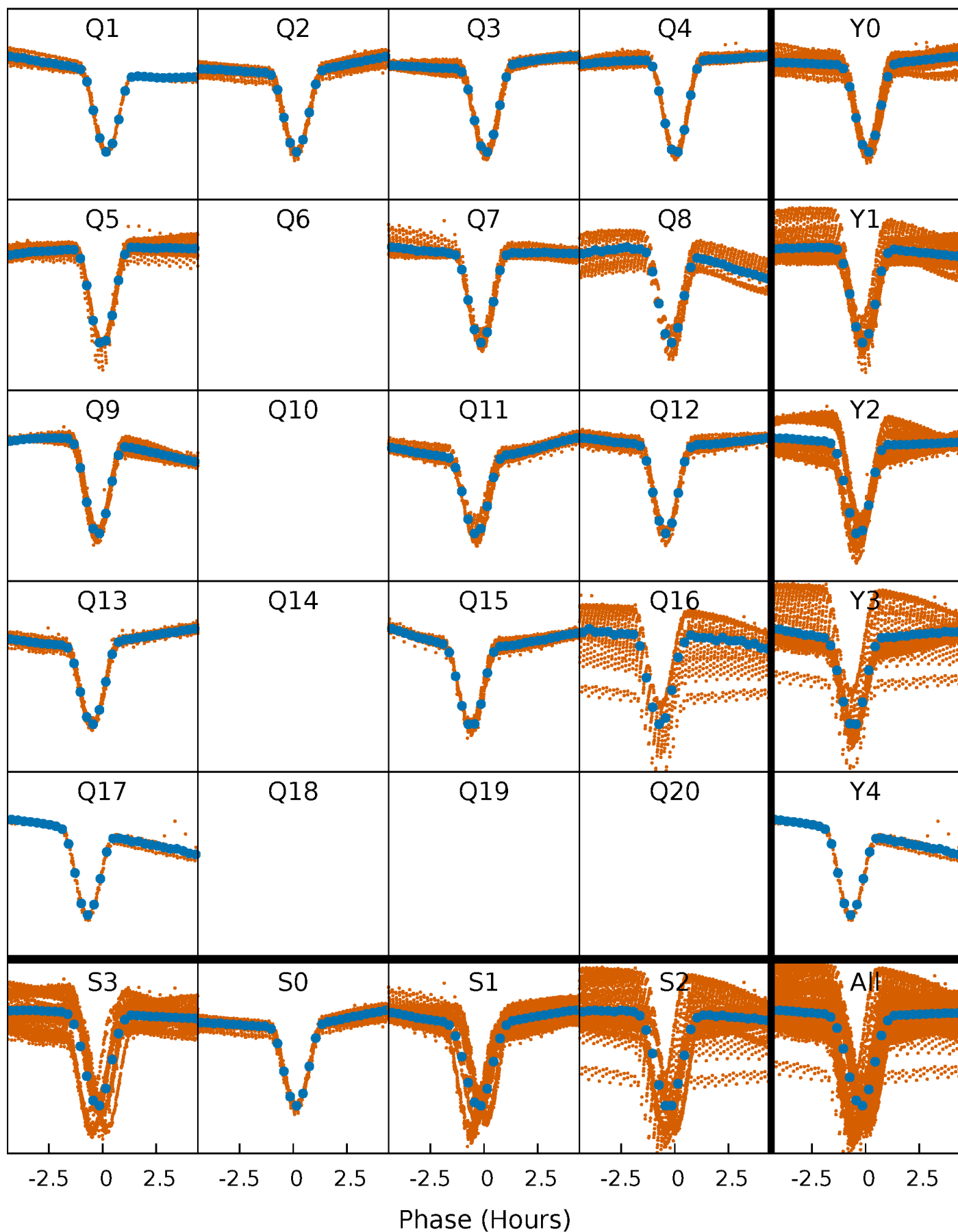


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



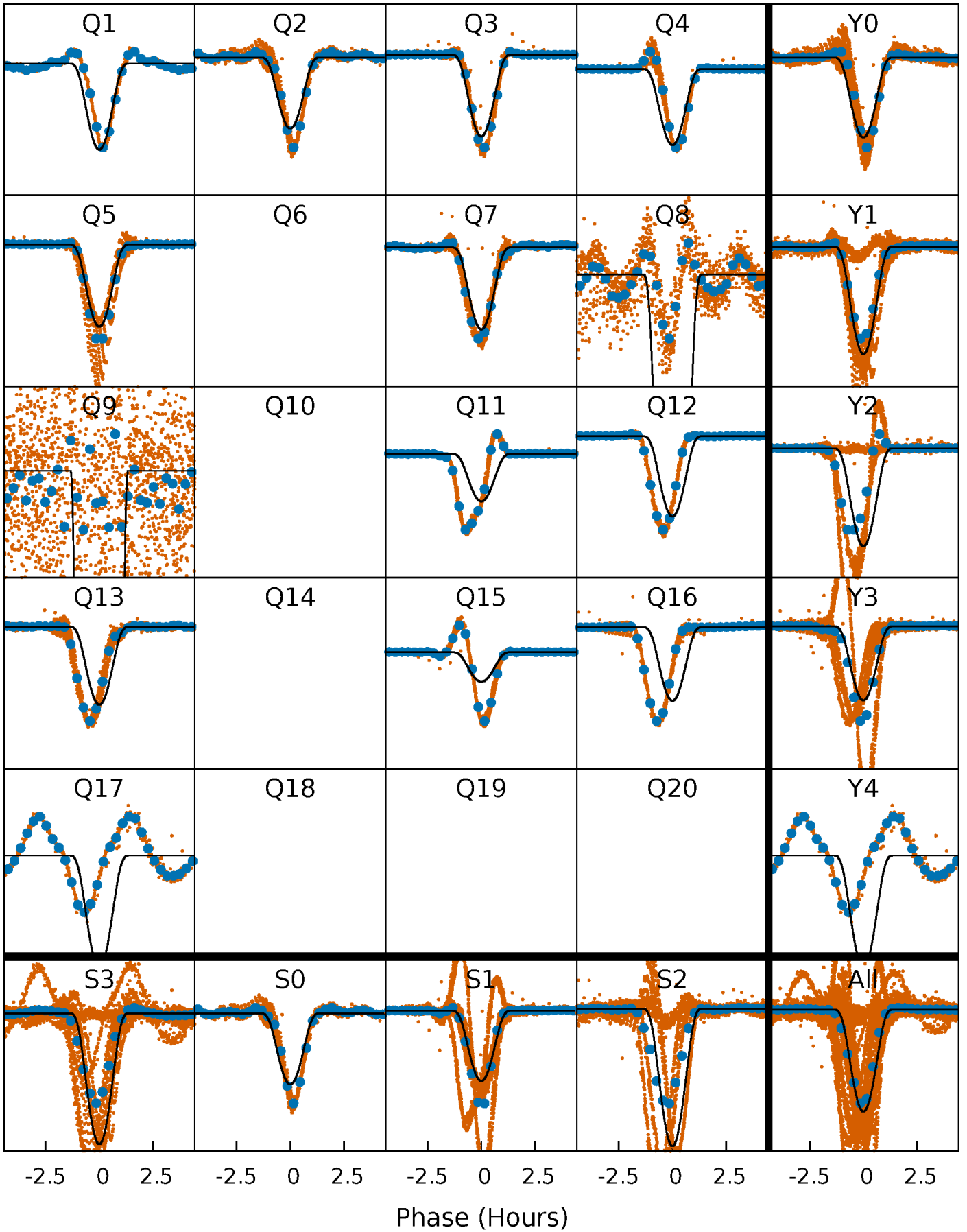
PDC Quarter-Phased Transit Curves

TCE 003458919-01 P= 0.892084 Days $T_0=131.807596$ (BKJD)



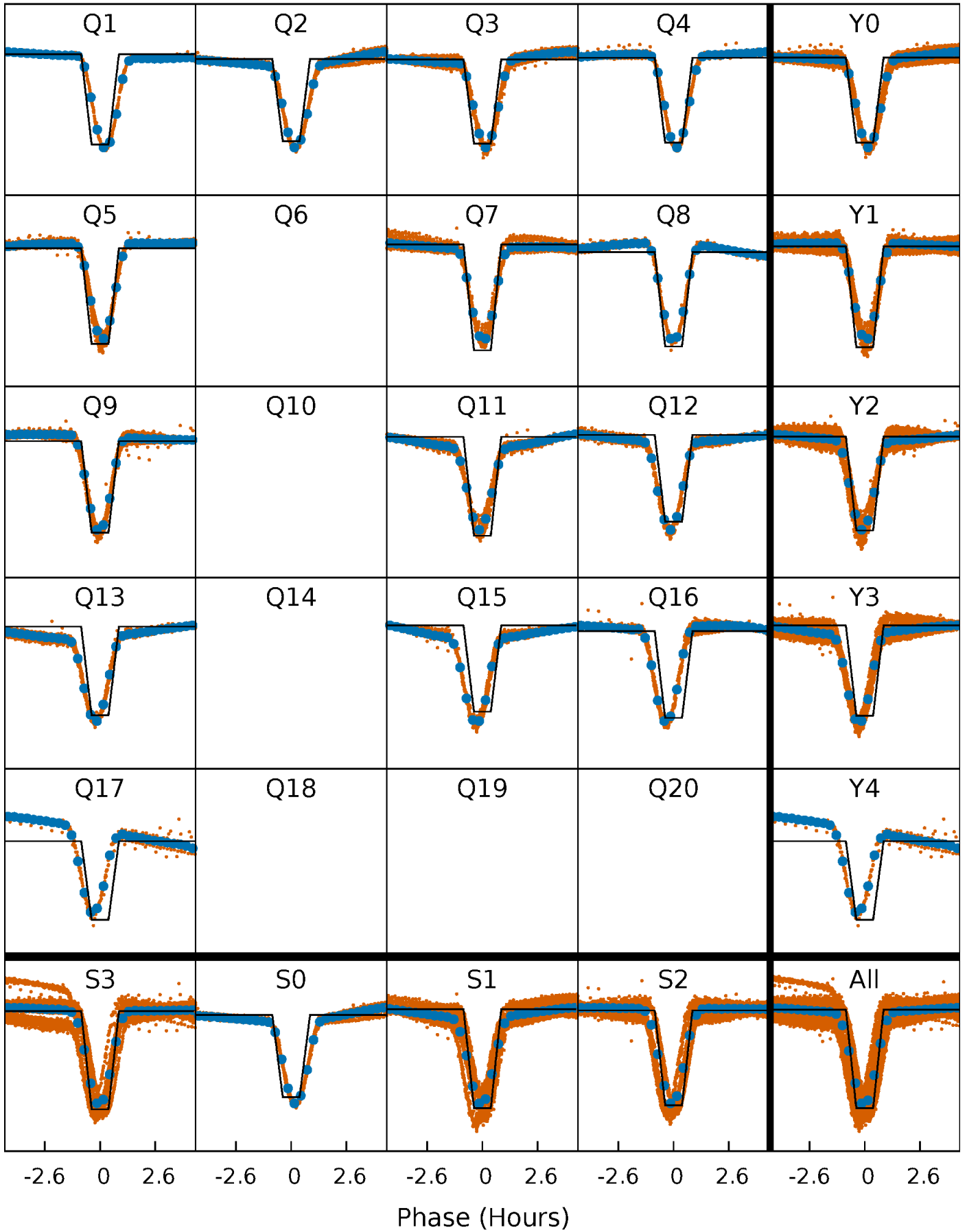
DV Quarter-Phased Transit Curves

TCE 003458919-01 P= 0.892084 Days $T_0=131.807596$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

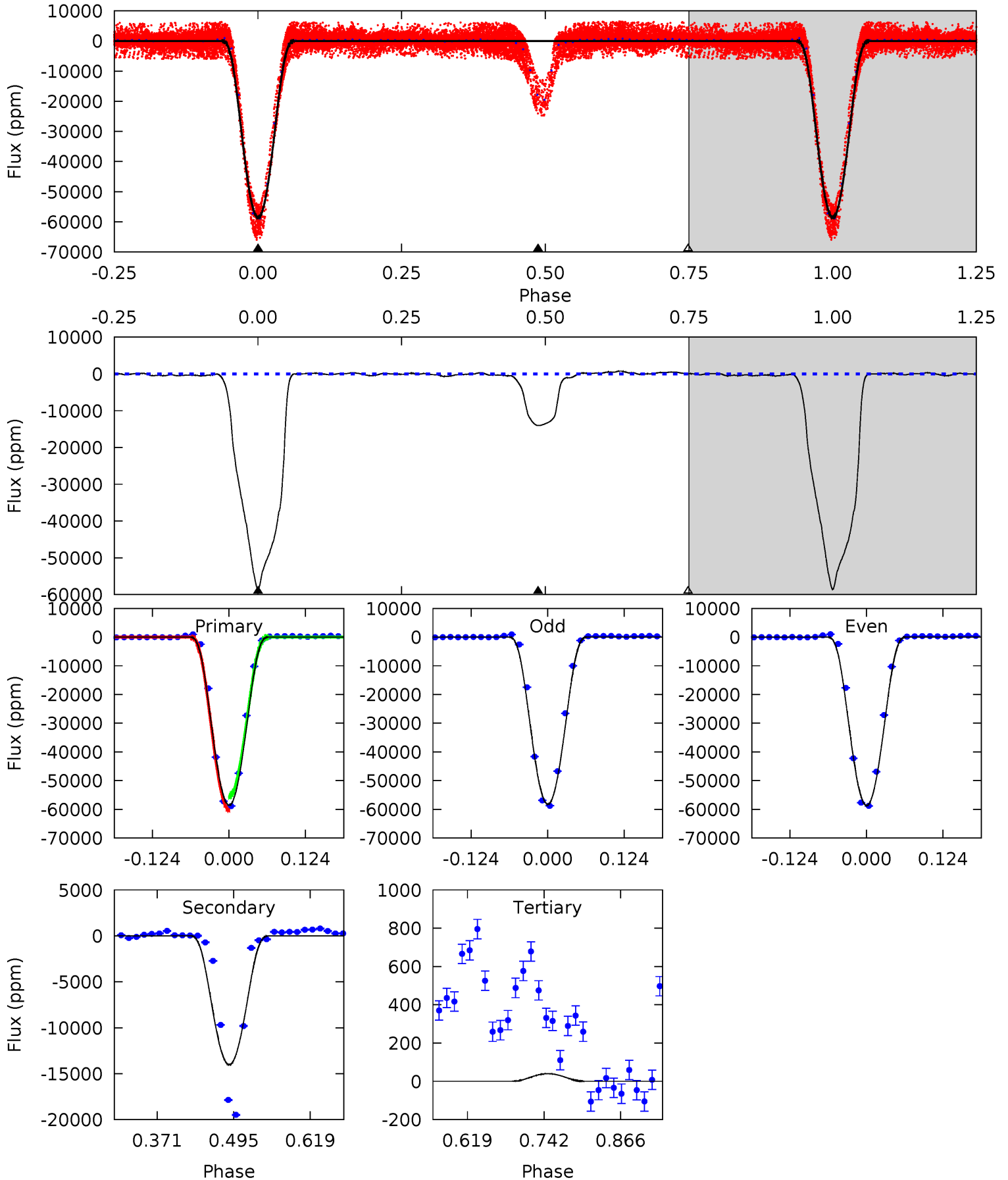
TCE 003458919-01 P= 0.892077 Days $T_0=131.805486$ (BKJD)



DV Model-Shift Uniqueness Test

003458919-01, P = 0.892084 Days, E = 130.915512 Days

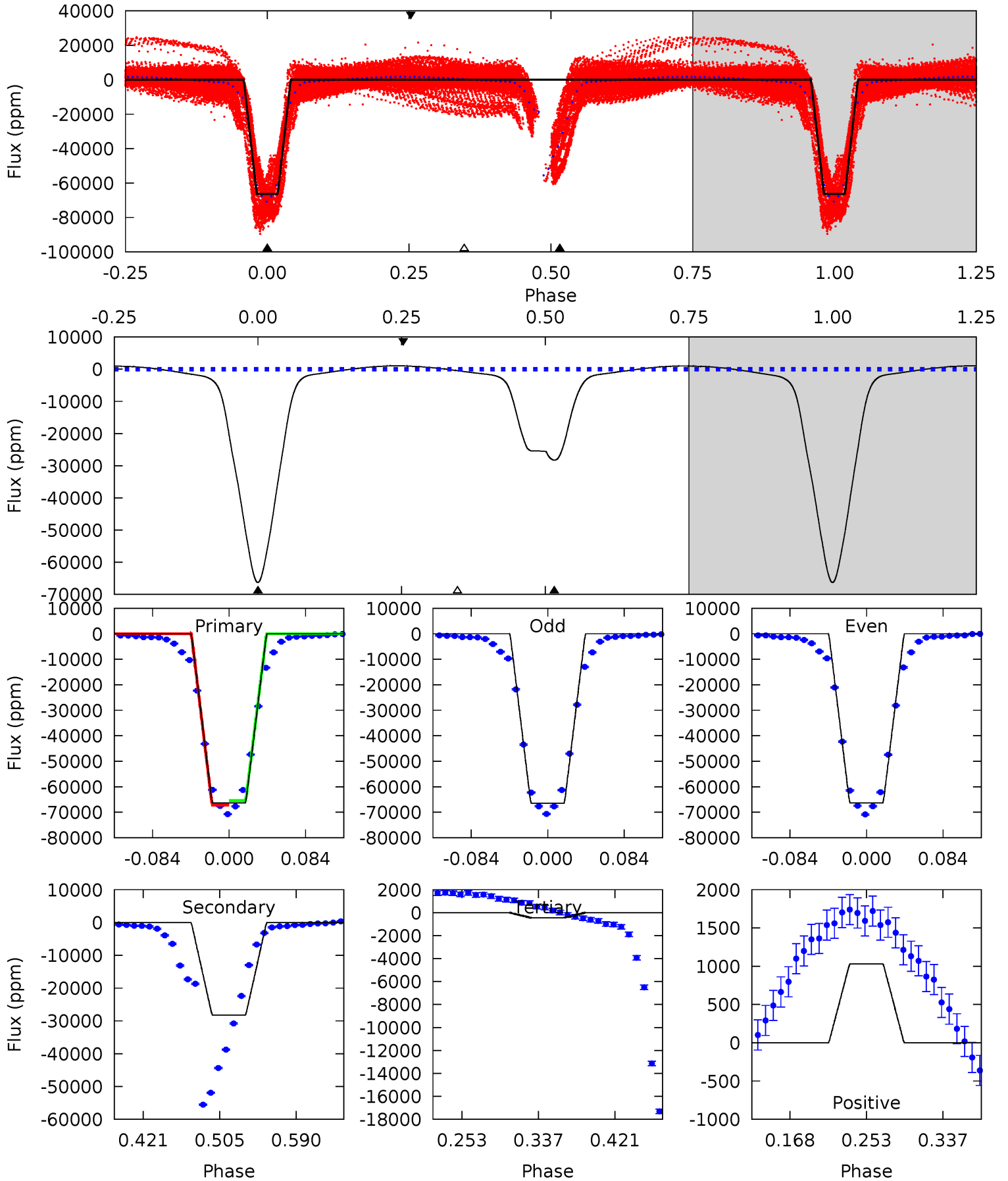
| Pri | Sec | Ter | Pos | FA ₁ | FA ₂ | F _{Red} | Pri-Ter | Pri-Pos | Sec-Ter | Sec-Pos | Odd-Evn | DMM | Shape | TAT |
|------|-------|-------|-----|-----------------|-----------------|------------------|---------|---------|---------|---------|---------|------|-------|-----|
| 1796 | 430.3 | -1.22 | 0 | 4.52 | 1.54 | 9.48 | 1797 | 1796 | 431.6 | 430.3 | 6.98 | 0.93 | 0.01 | 0 |



Alt Model-Shift Uniqueness Test

003458919-01, P = 0.892077 Days, E = 130.913409 Days

| Pri | Sec | Ter | Pos | FA ₁ | FA ₂ | F _{Red} | Pri-Ter | Pri-Pos | Sec-Ter | Sec-Pos | Odd-Evn | DMM | Shape | TAT |
|-------|-------|------|------|-----------------|-----------------|------------------|---------|---------|---------|---------|---------|------|-------|------|
| 818.7 | 348.8 | 5.53 | 12.7 | 4.60 | 1.73 | 13.0 | 813.2 | 806.0 | 343.2 | 336.1 | 0.82 | 0.99 | 0.02 | 11.0 |



Stellar Parameters For KIC 003458919

| | $T_{\text{eff}}(K)$ | $\log(g)$ | [Fe/H] | $R (R_{\odot})$ | $M(M_{\odot})$ | $p_{\star} (\text{g}\cdot\text{cm}^{-3})$ |
|--------|----------------------|---------------------------|----------------------------|---------------------------|---------------------------|---|
| | 5561^{+166}_{-166} | $4.512^{+0.066}_{-0.154}$ | $-0.160^{+0.300}_{-0.300}$ | $0.855^{+0.196}_{-0.090}$ | $0.866^{+0.102}_{-0.083}$ | $1.952^{+0.561}_{-0.874}$ |
| | +3%/-3% | +1%/-3% | +188%/-188% | +23%/-11% | +12%/-10% | +29%/-45% |
| 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 003458919-01 / KOI 6337.01

| Detrend | Depth (ppm) | $R_p (R_{\oplus})$ | $T_{max} (K)$ | $T_{obs} (K)$ | A_{obs} |
|---------|-----------------|-------------------------|----------------------|----------------------|---------------------------|
| DV | -14037 ± 33 | $28.32^{+3.72}_{-1.92}$ | 2436^{+140}_{-111} | 3776^{+97}_{-87} | $2.886^{+0.425}_{-0.540}$ |
| Alt. | -28250 ± 81 | $25.52^{+3.11}_{-1.90}$ | 2433^{+143}_{-111} | 4533^{+134}_{-130} | $7.316^{+1.100}_{-1.343}$ |

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 $A_{obs} \gg 1.0$

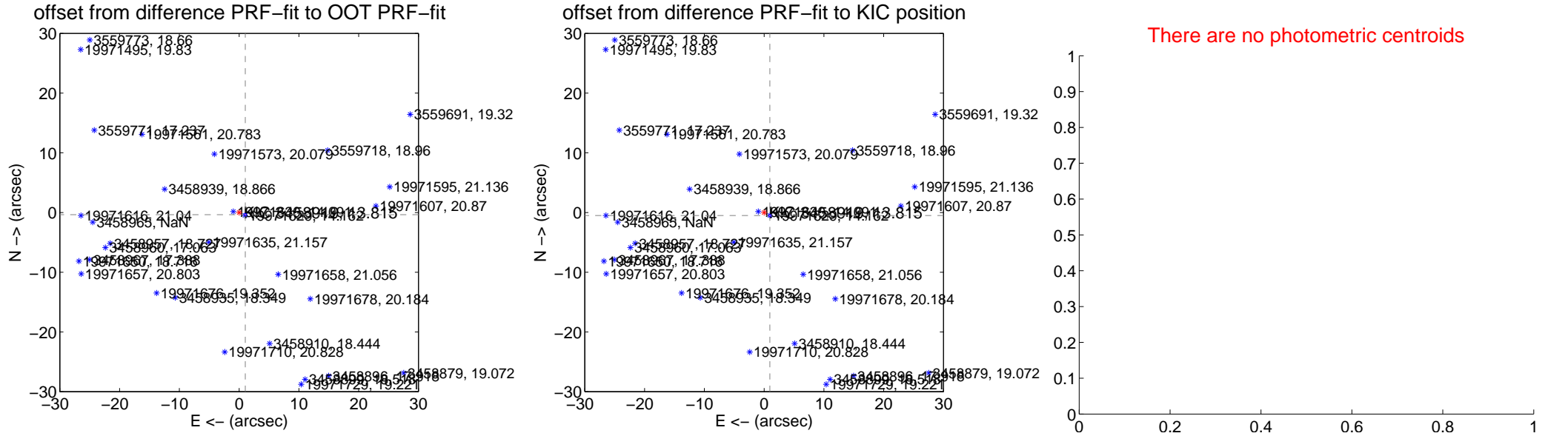
DV Centroid Data

Supplemental centroid analysis for 003458919-01. Kepler magnitude: 13.81. Transit SNR 999.58

There are 14 quarters with good PRF difference image offsets

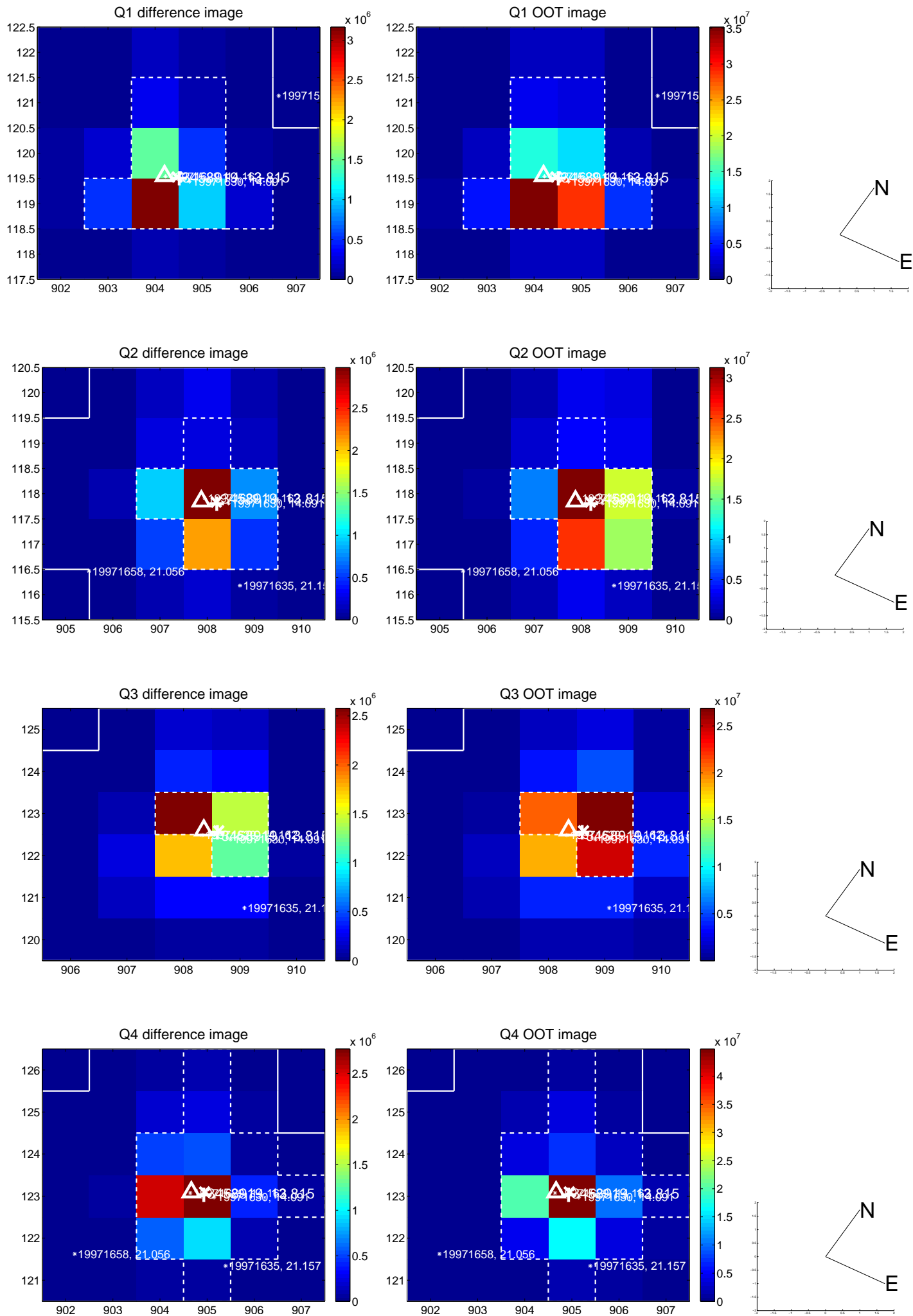
The direct PRF centroid is offset from the target star catalog position by about 0.19 arcsec

| | Distance in arcsec | Distance / σ | Δ RA | Δ Dec |
|---|--------------------|---------------------|--------------------|--------------------|
| PRF-fit source offset from OOT | 1.094 ± 0.074 | 14.69 | -1.030 ± 0.072 | -0.368 ± 0.070 |
| PRF-fit source offset from KIC position | 1.087 ± 0.068 | 15.93 | -0.961 ± 0.068 | -0.507 ± 0.068 |
| photometric centroid source offset | — | — | — | — |

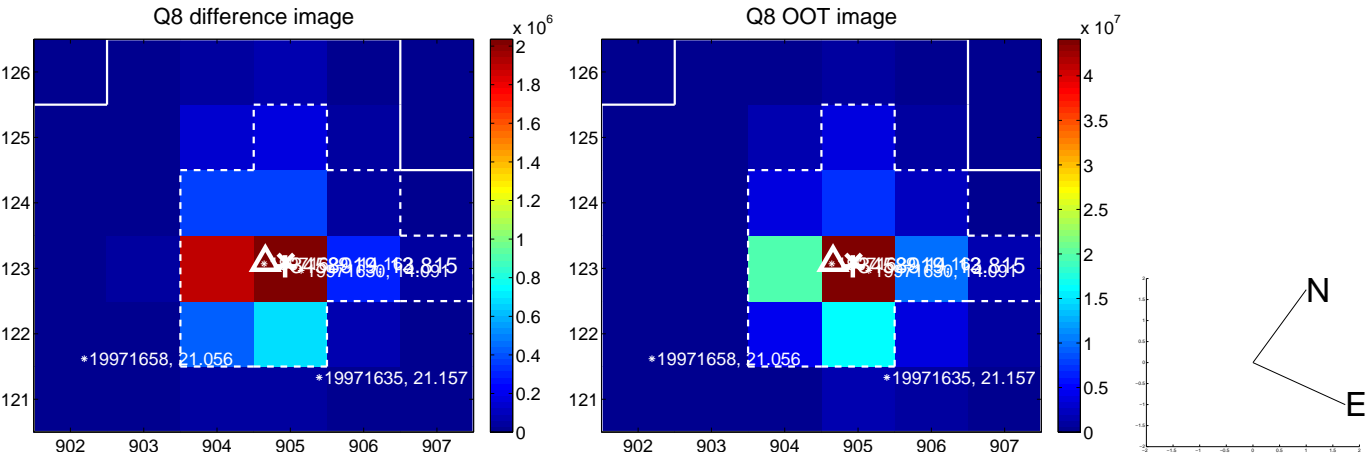
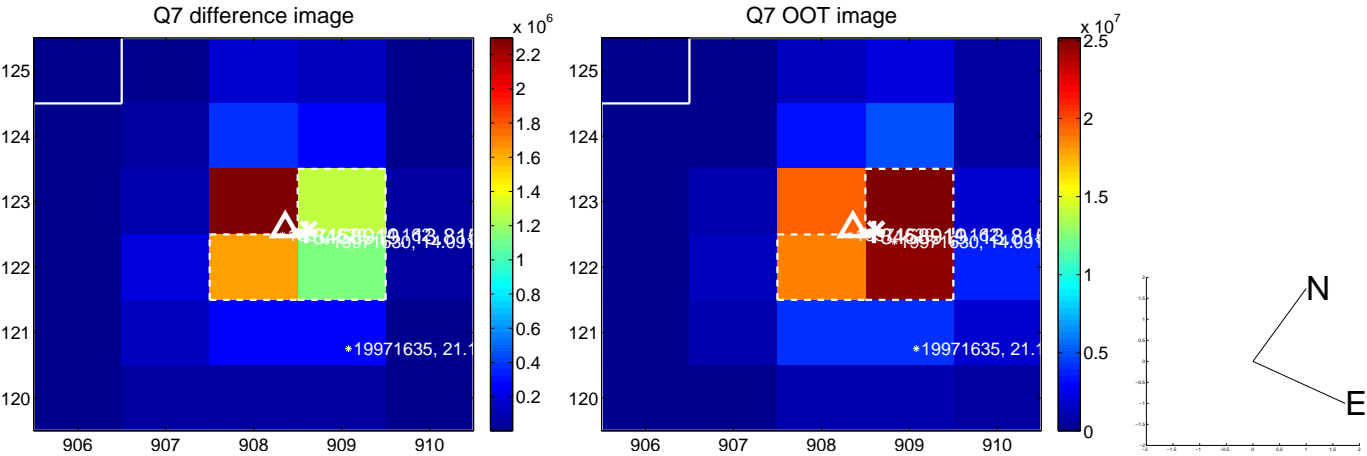
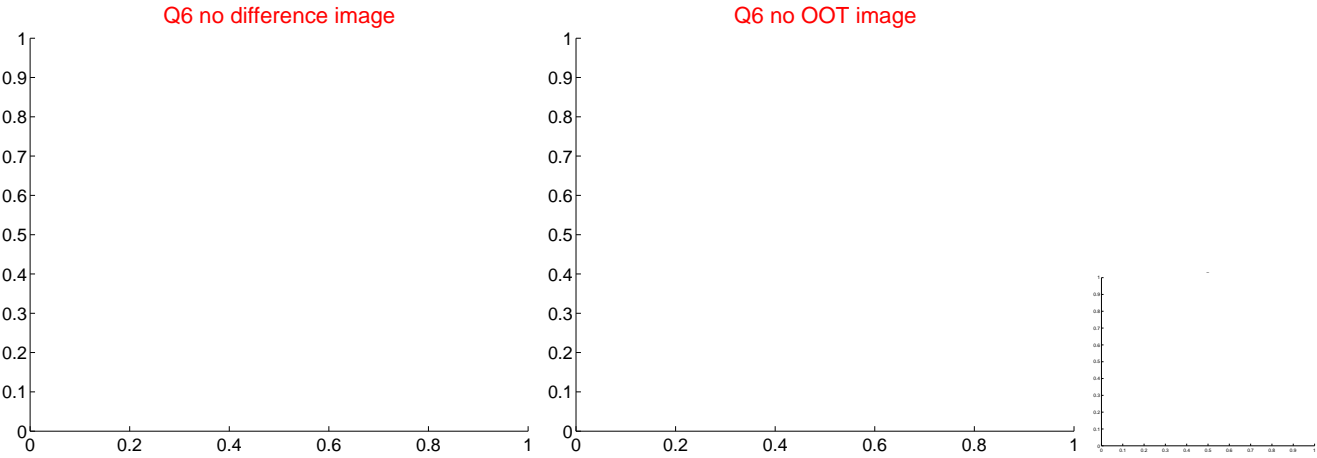
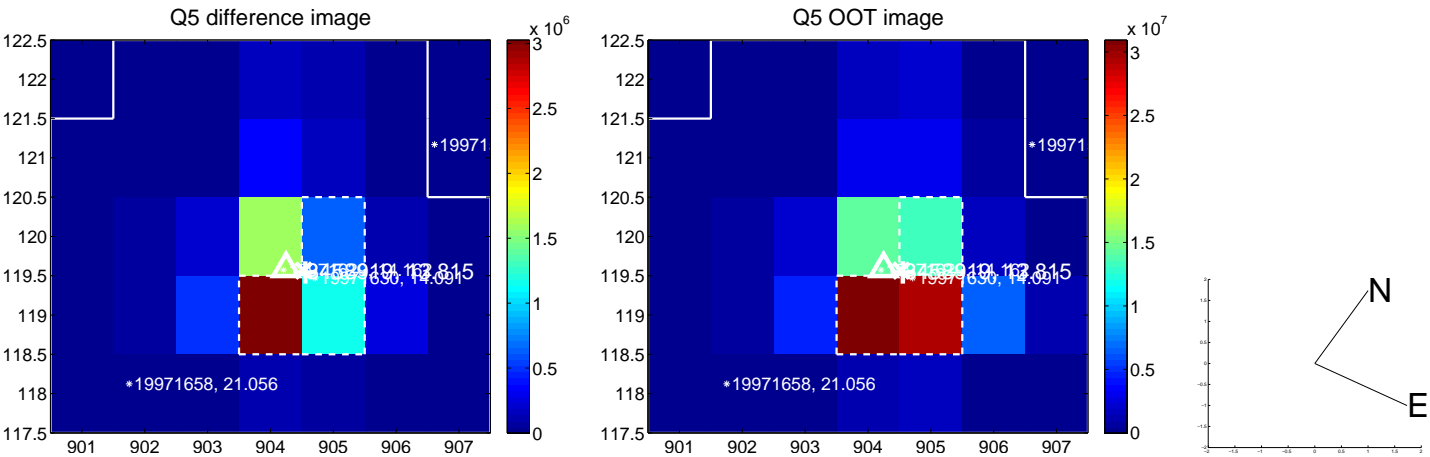


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

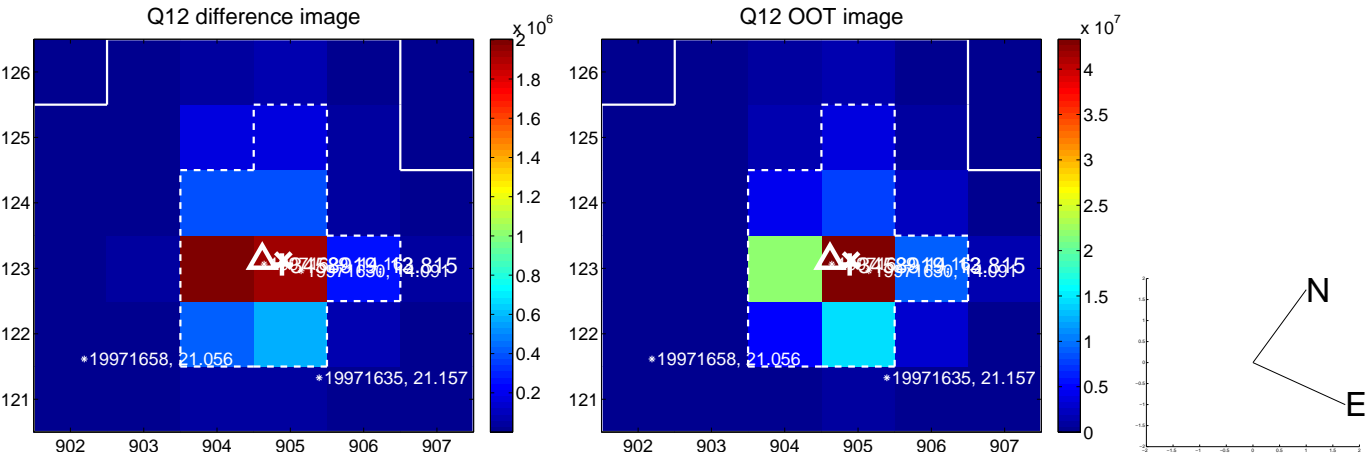
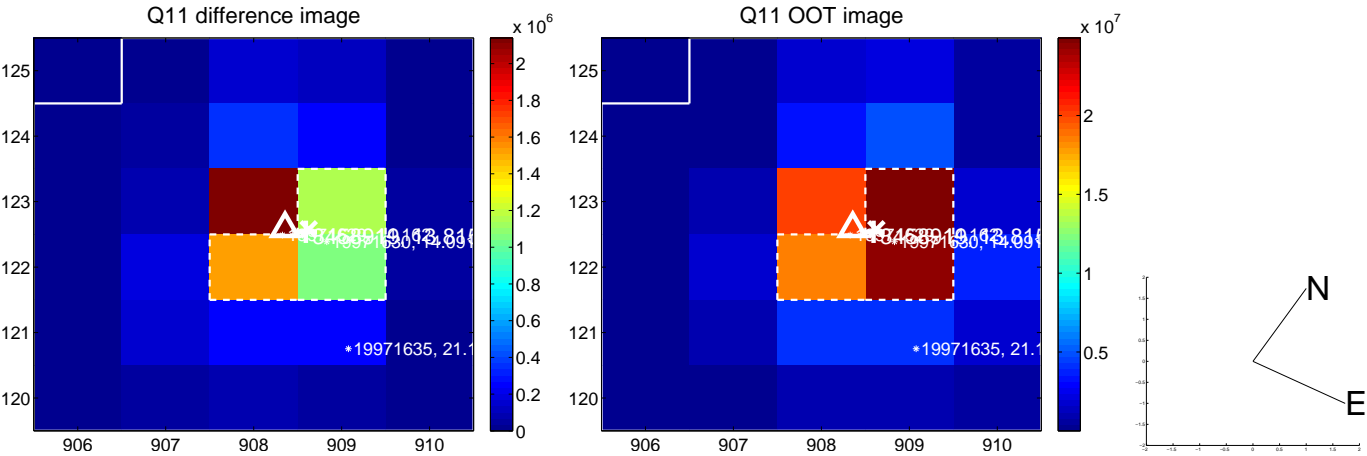
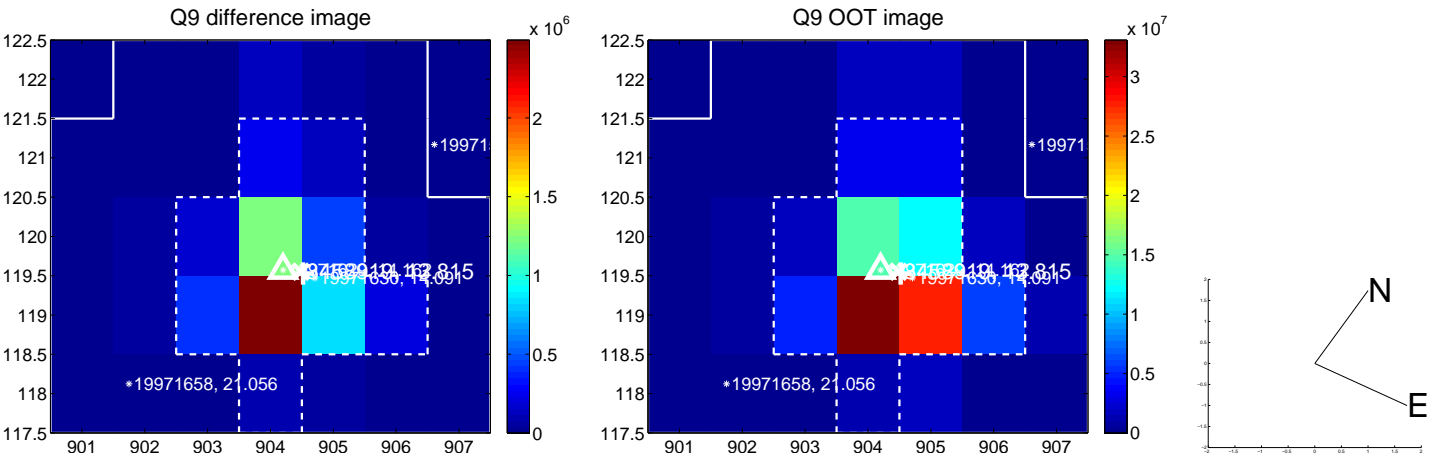
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



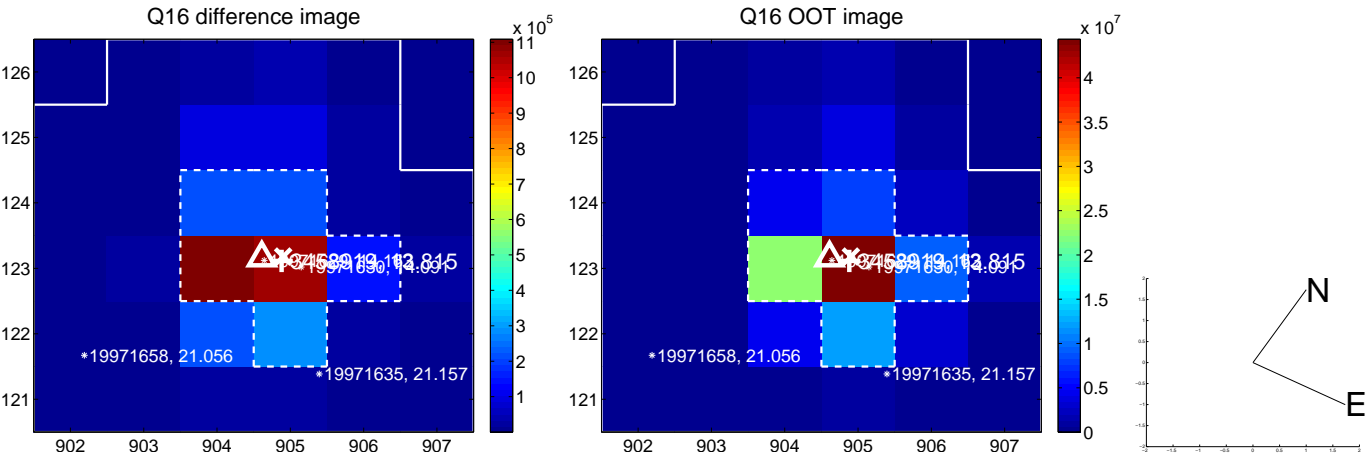
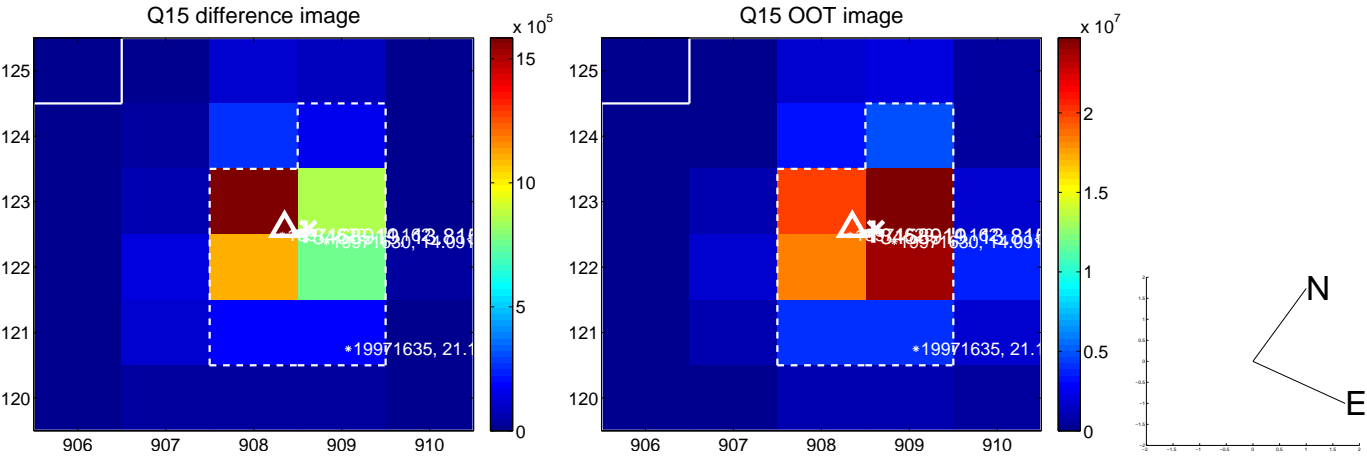
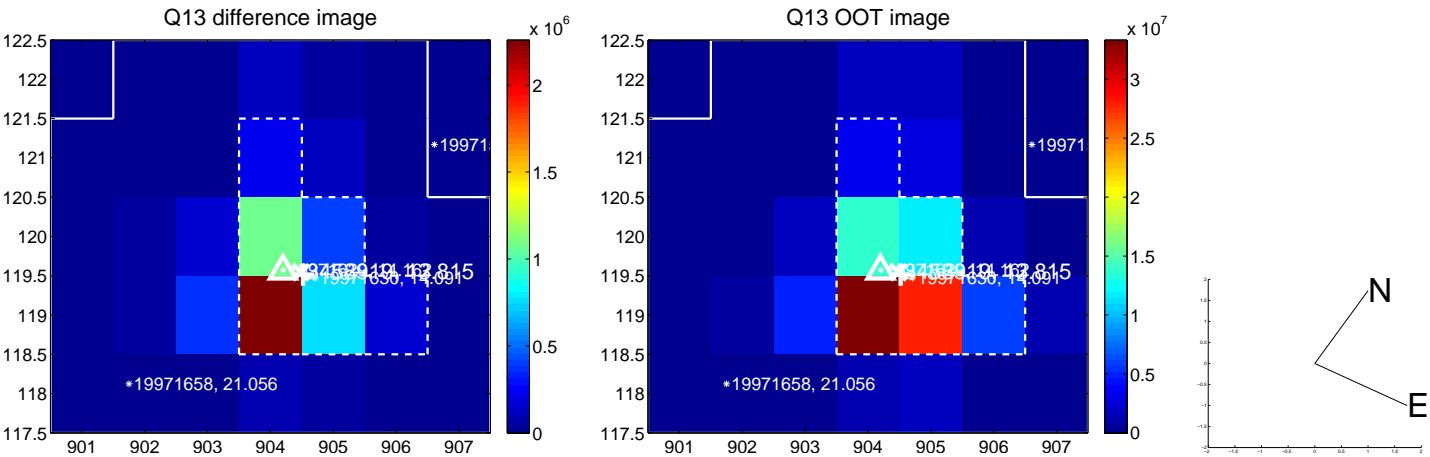
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



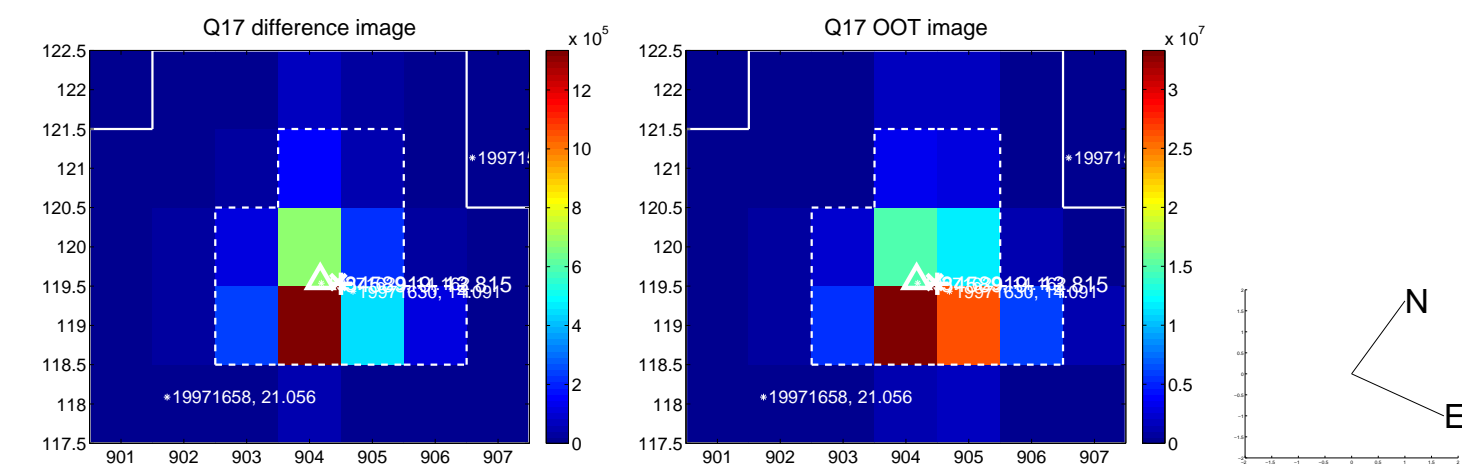
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



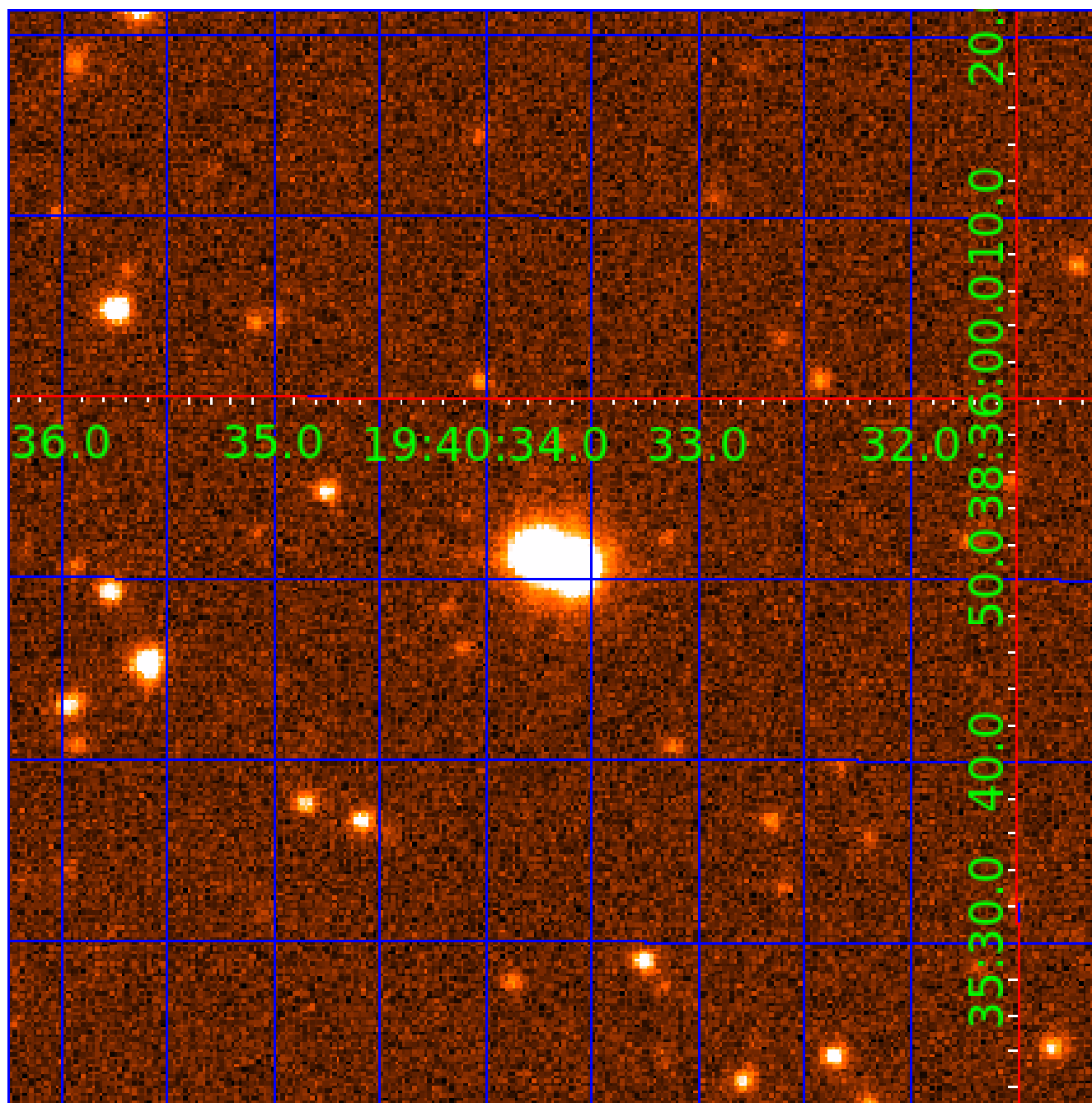
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



folded centroid time series figure for this object.

UKIRT Image

Declination



KIC 003458919

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}) |
|--------------|----------|---------|---------------|--------------|-------------|------------------|--------|-------|-----------------------------|-----------------|------------------------|------------------------|
| 003458919-01 | OBS | 6337.01 | 0.892084 | 131.807596 | 61066.1 | 2.215 | 1812.5 | 999.6 | 0.85 | 5561 | 28.02 | 2093.83 |
| 003458919-02 | OBS | No | 0.892056 | 132.267444 | 12787.7 | 2.000 | 1146.9 | -1.0 | 0.85 | 5561 | 9.57 | 2093.92 |

Robovetter Results

| TCE | Run Type | Disp | Score | N | S | C | E | Comments |
|--------------|----------|------|-------|---|---|---|---|--|
| 003458919-01 | OBS | FP | 0.00 | 0 | 1 | 1 | 0 | SWEET_EB—MOD_SEC_DV—MOD_SEC_ALT—DEEP_V_SHAPED—HAS_SEC_TCE—CENT_UNRESOLVED_OFFSET |
| 003458919-02 | OBS | FP | 0.00 | 1 | 1 | 0 | 0 | IS_SEC_TCE—CENT_NOFITS |

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 003458919-02

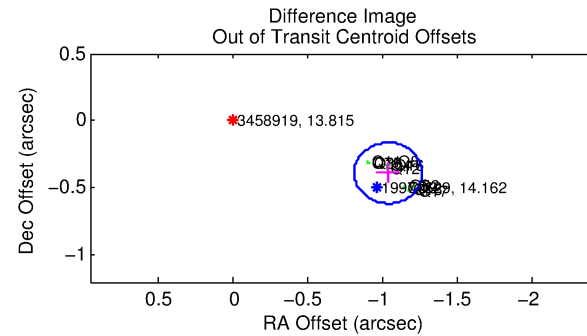
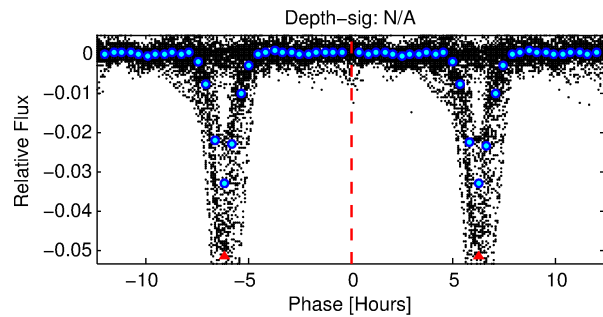
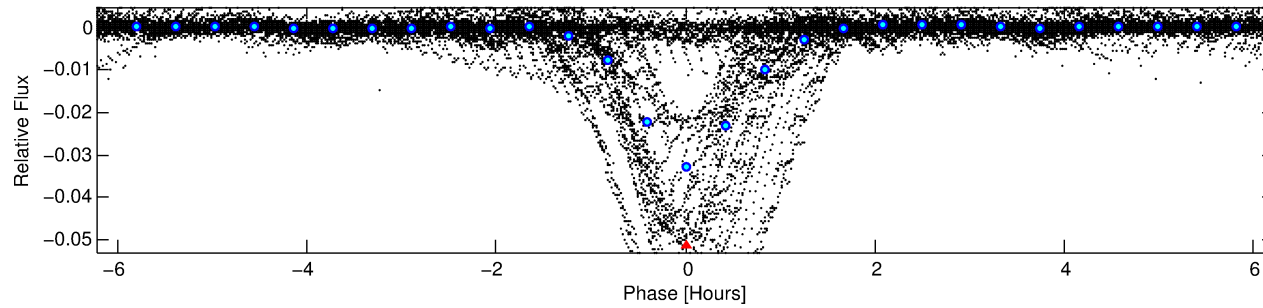
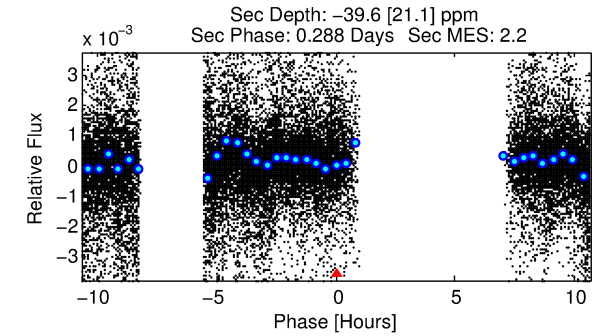
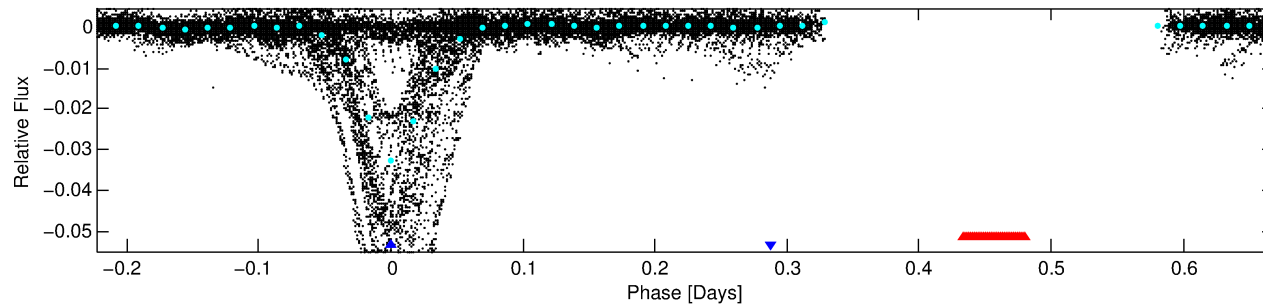
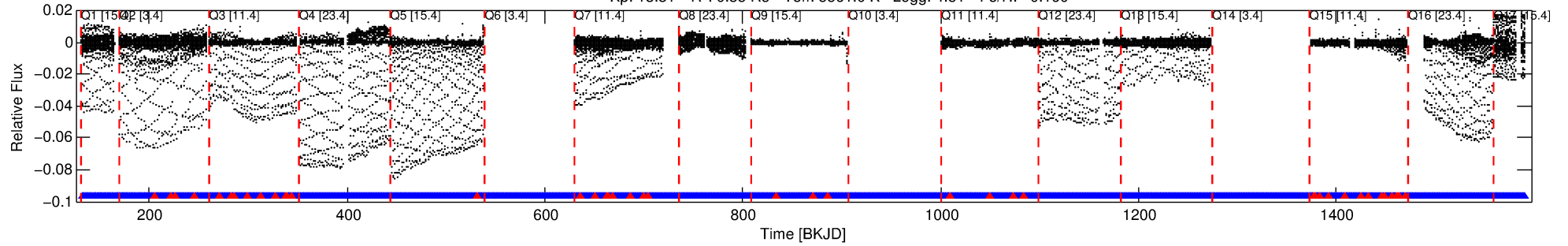
No Significant Match Found

DV One-Page Summary

KIC: 3458919 Candidate: 2 of 2 Period: 0.892 d

KOI: K06337 Corr: No Ephemeris Match

Kp: 13.81 R*: 0.85 Rs Teff: 5561.0 K Logg: 4.51 Fe/H: -0.160



TPS TCE Results:

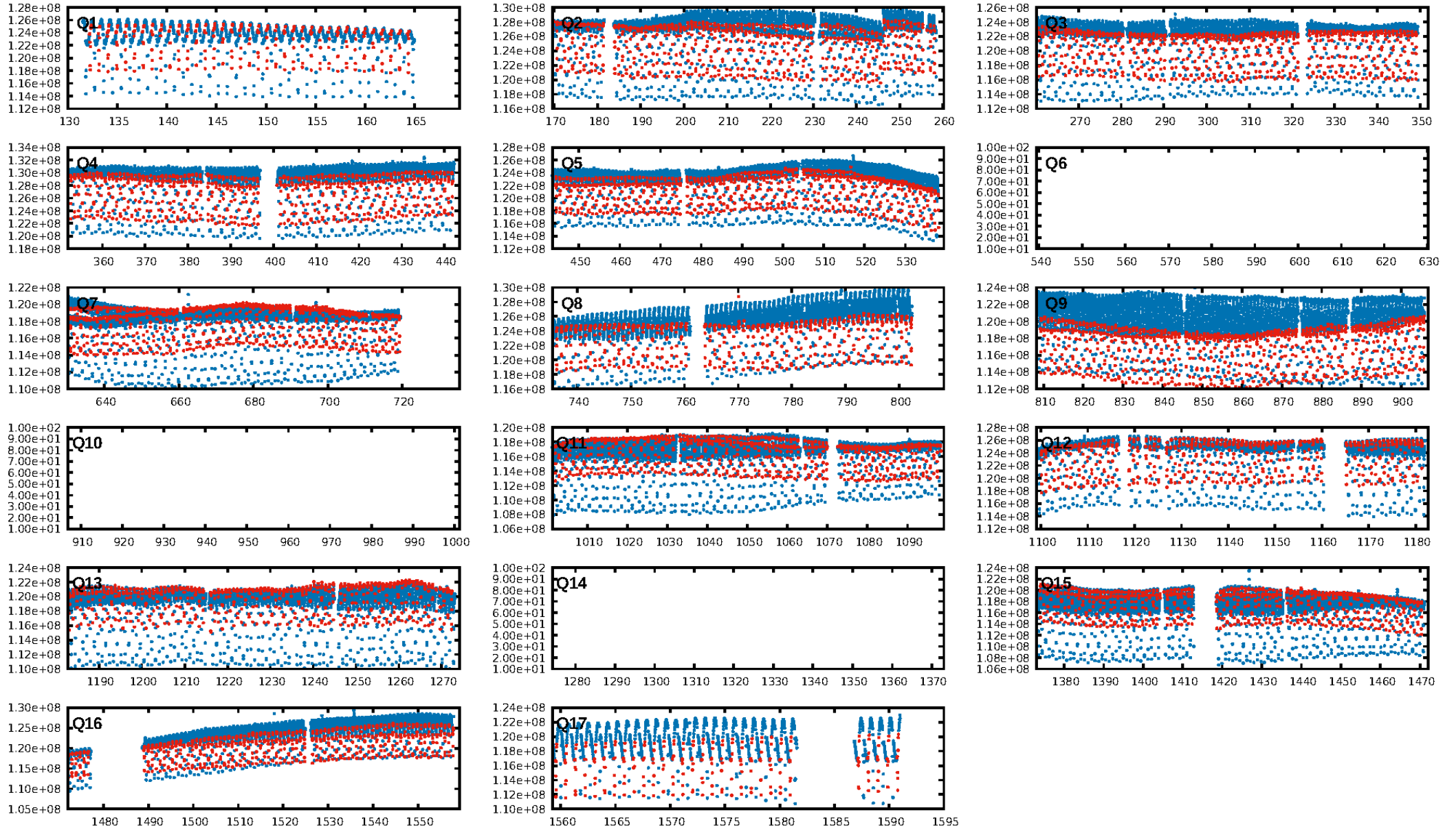
Period = 0.89206 d
Epoch = 132.2674 BKJD

DV fit results are unavailable

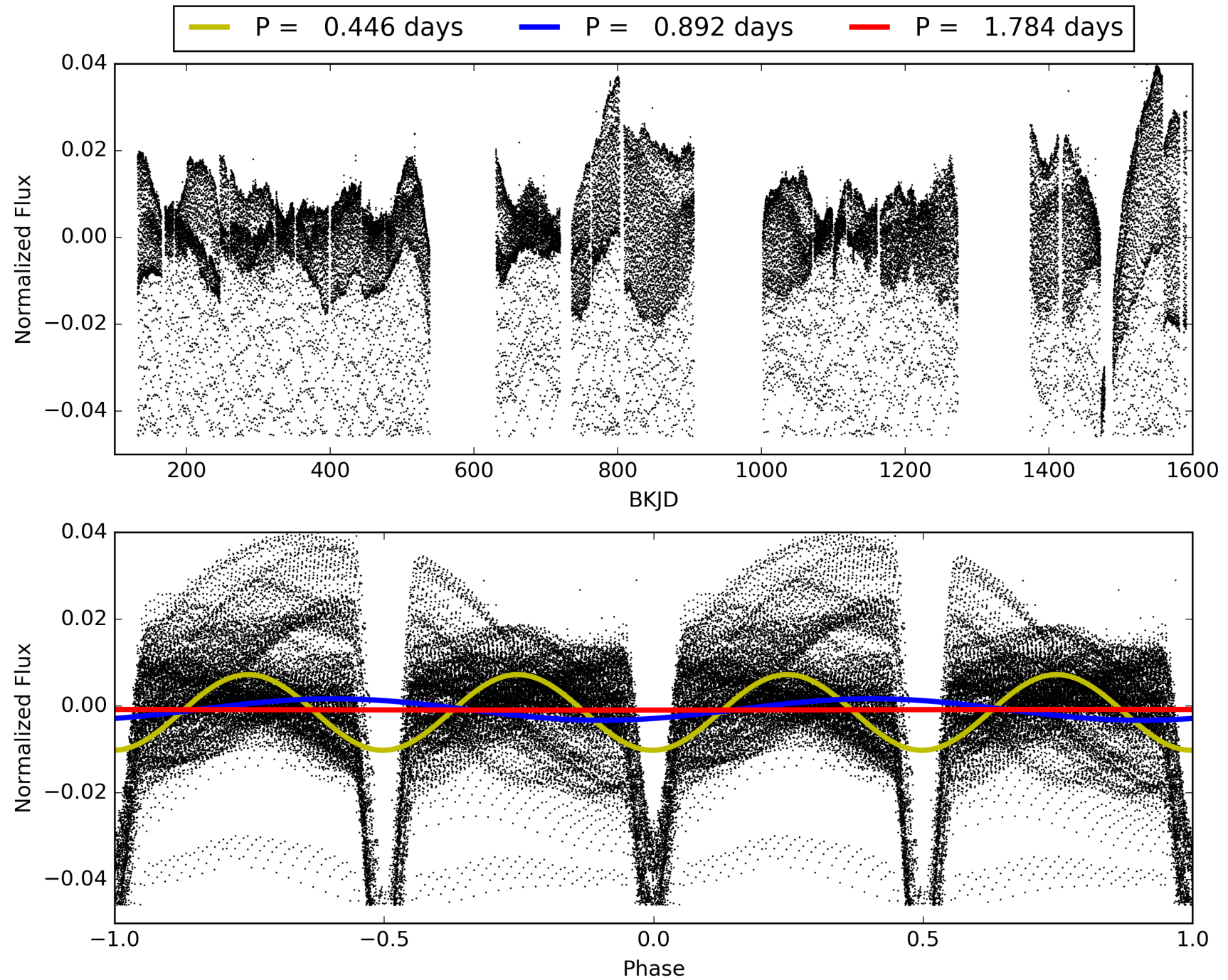
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 0.0% [0.00σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: N/A
RollingBand-fgt: 0.96 [1086/1129]
GhostDiagnostic-chr: N/A
Centroid-sig: N/A
Centroid-so: N/A
OotOffset-rm: 1.112 arcsec [14.71σ]
KicOffset-rm: 1.098 arcsec [16.15σ]
OotOffset-st: 1/4/4/5 [14]
KicOffset-st: 1/4/4/5 [14]
DiffImageQuality-fgm: 1.00 [14/14]
DiffImageOverlap-fno: 1.00 [14/14]

TCE 003458919-02, PDC Light Curves

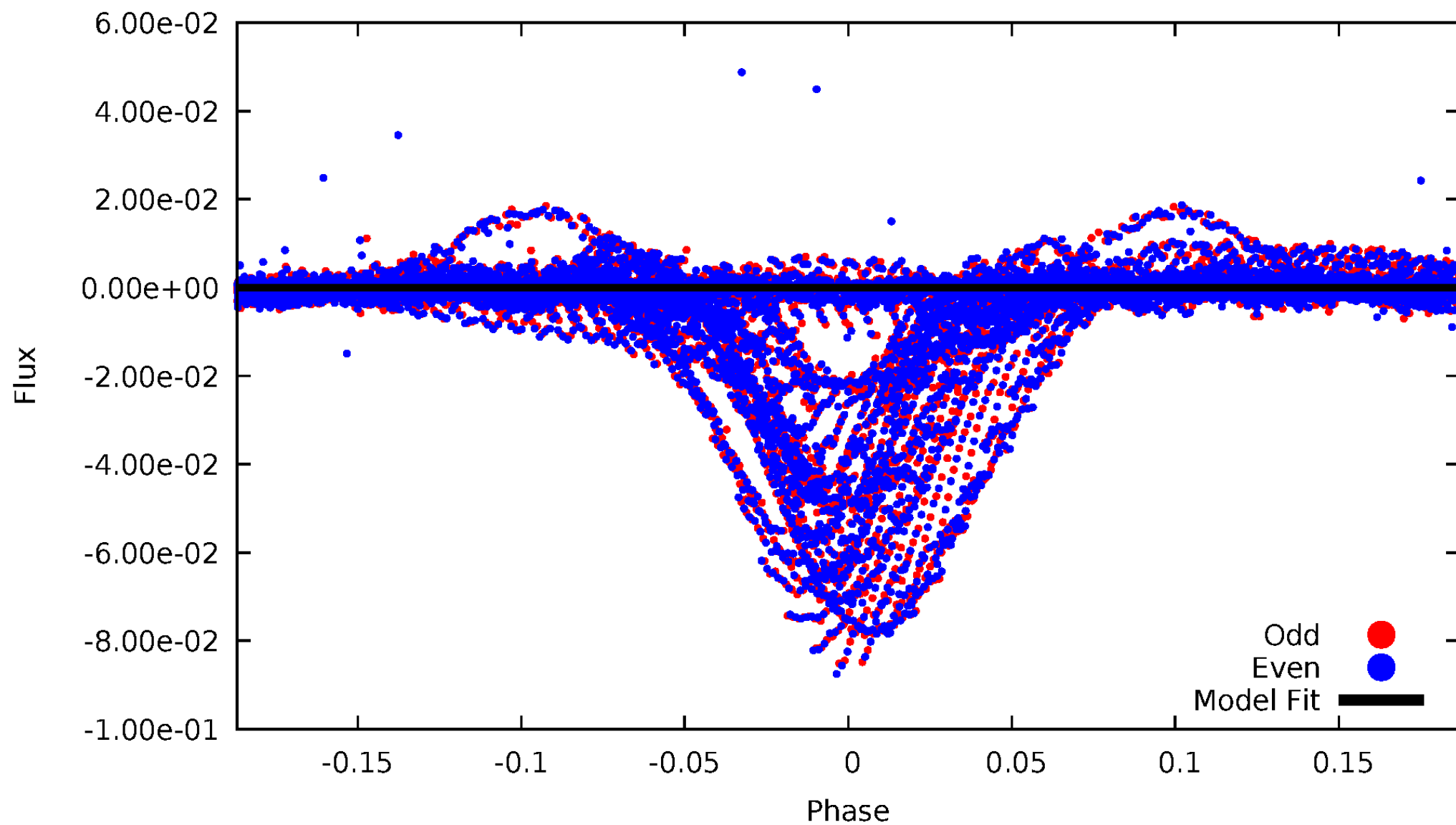


TCE 003458919-02



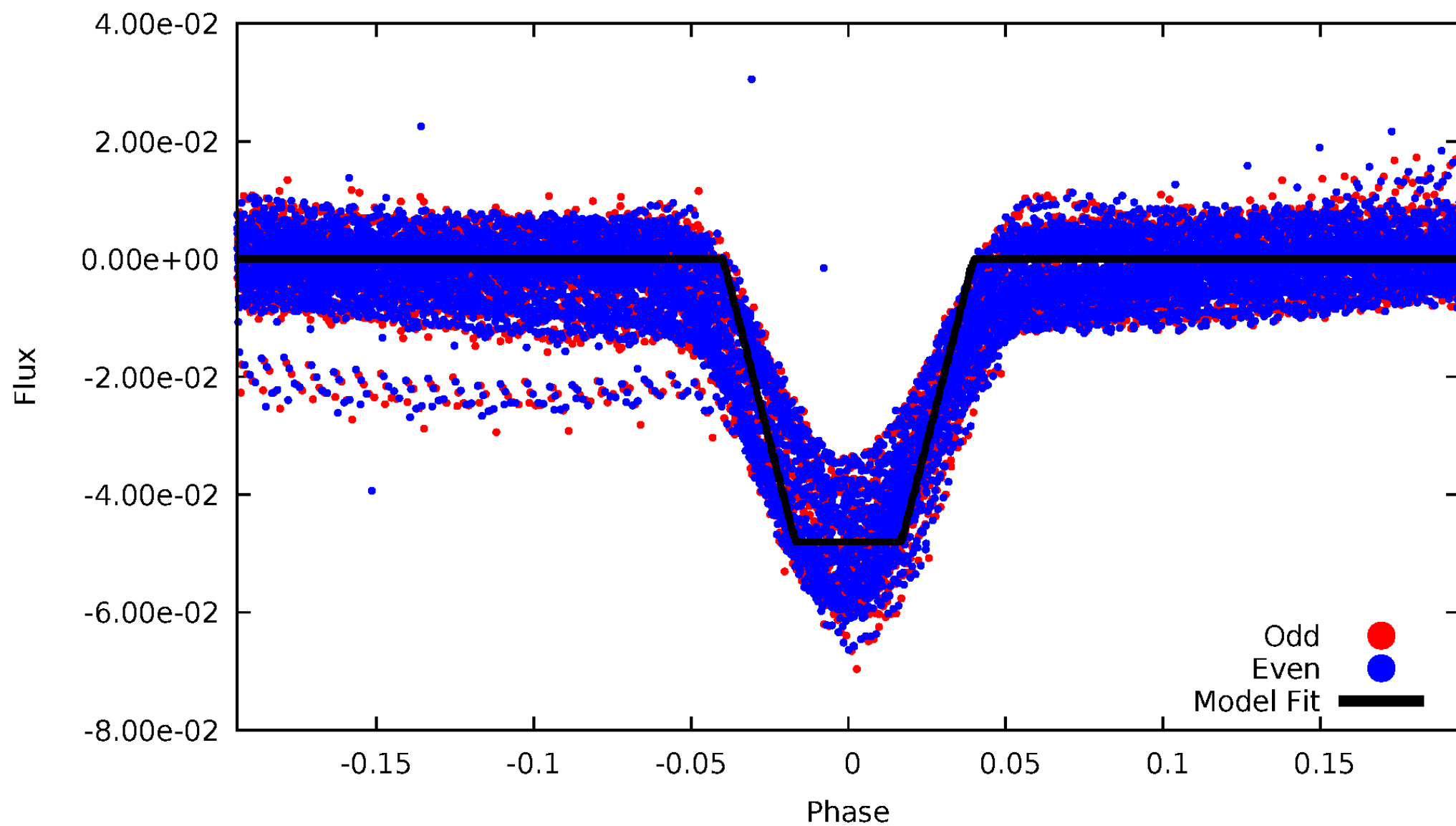
DV Odd/Even

TCE 003458919-02



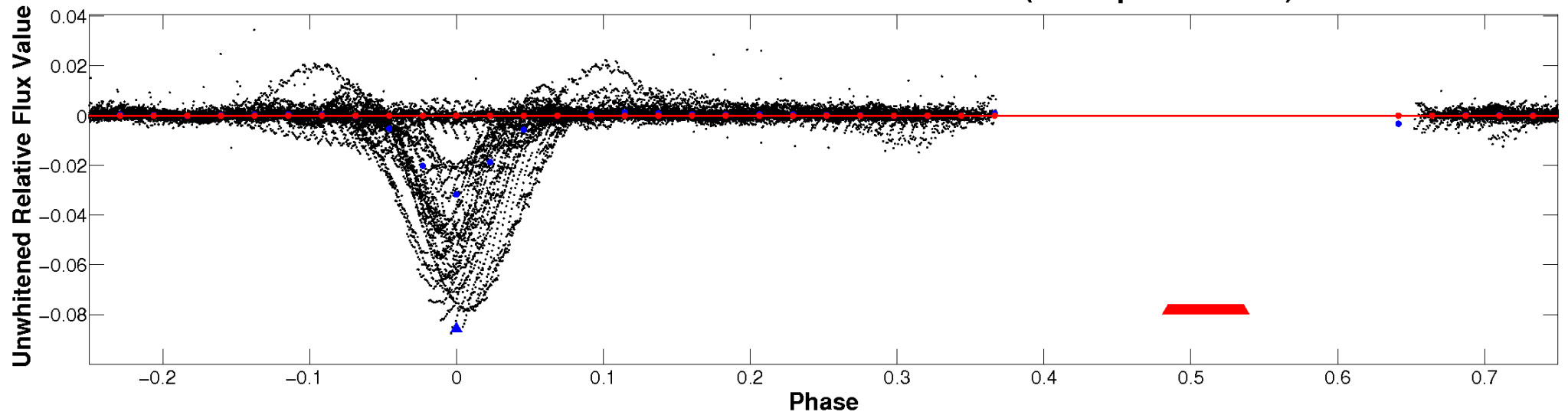
ALT Odd/Even

TCE 003458919-02



Non-Whitened Vs. Whitened Light Curve

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

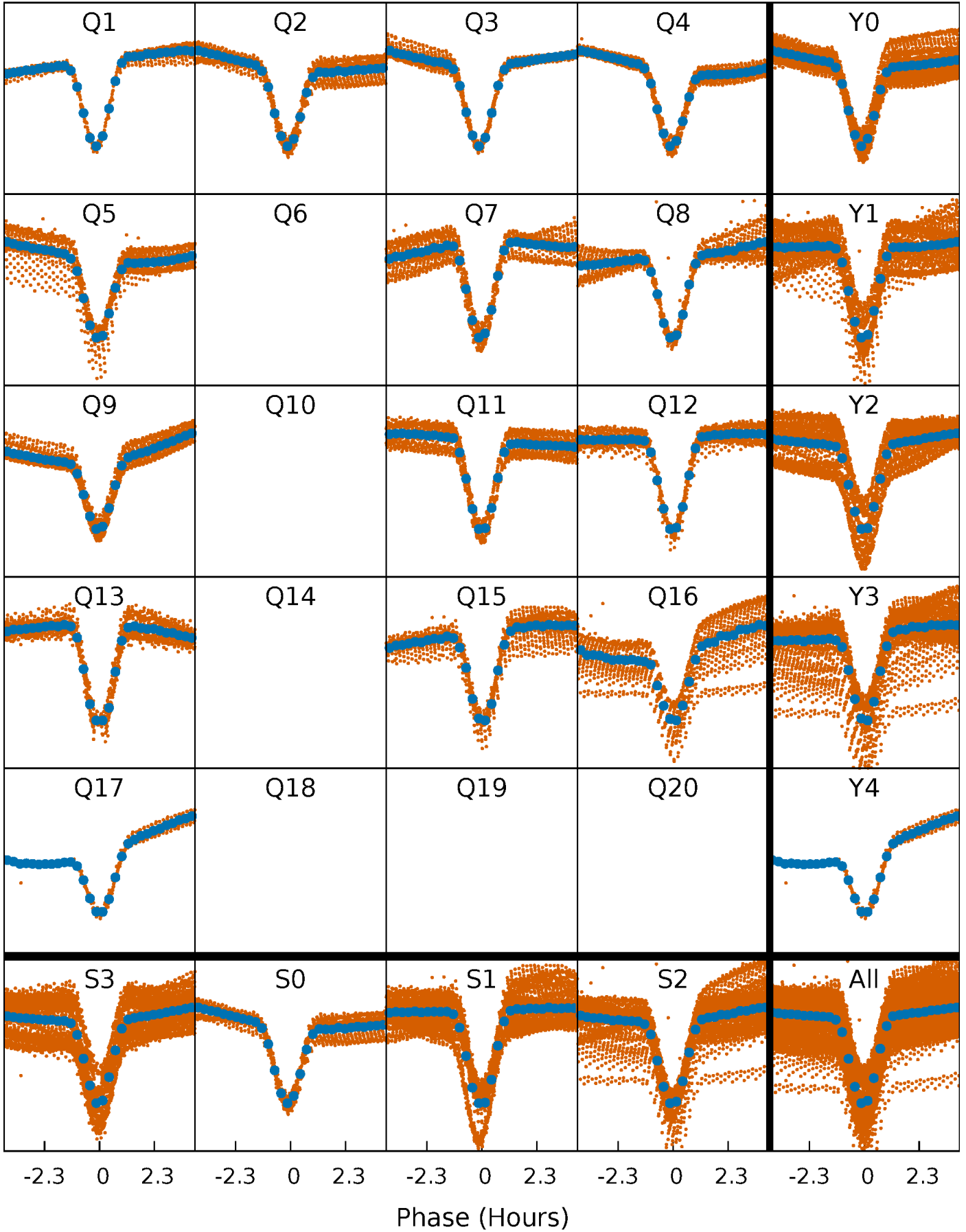


Planet 2 : Phased Whitened Flux Time Series (TPS Epoch/Period)



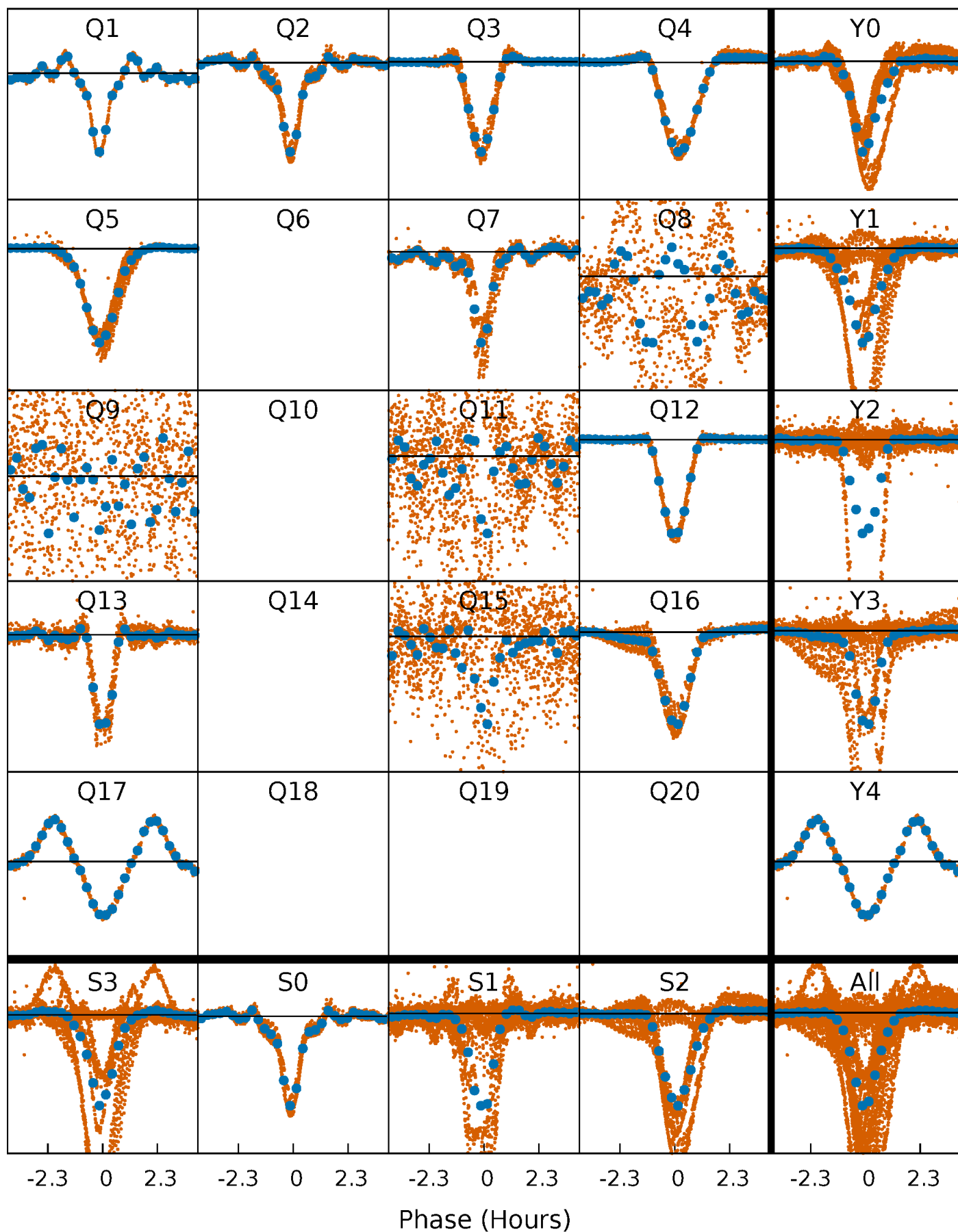
PDC Quarter-Phased Transit Curves

TCE 003458919-02 P= 0.892056 Days $T_0=132.267444$ (BKJD)



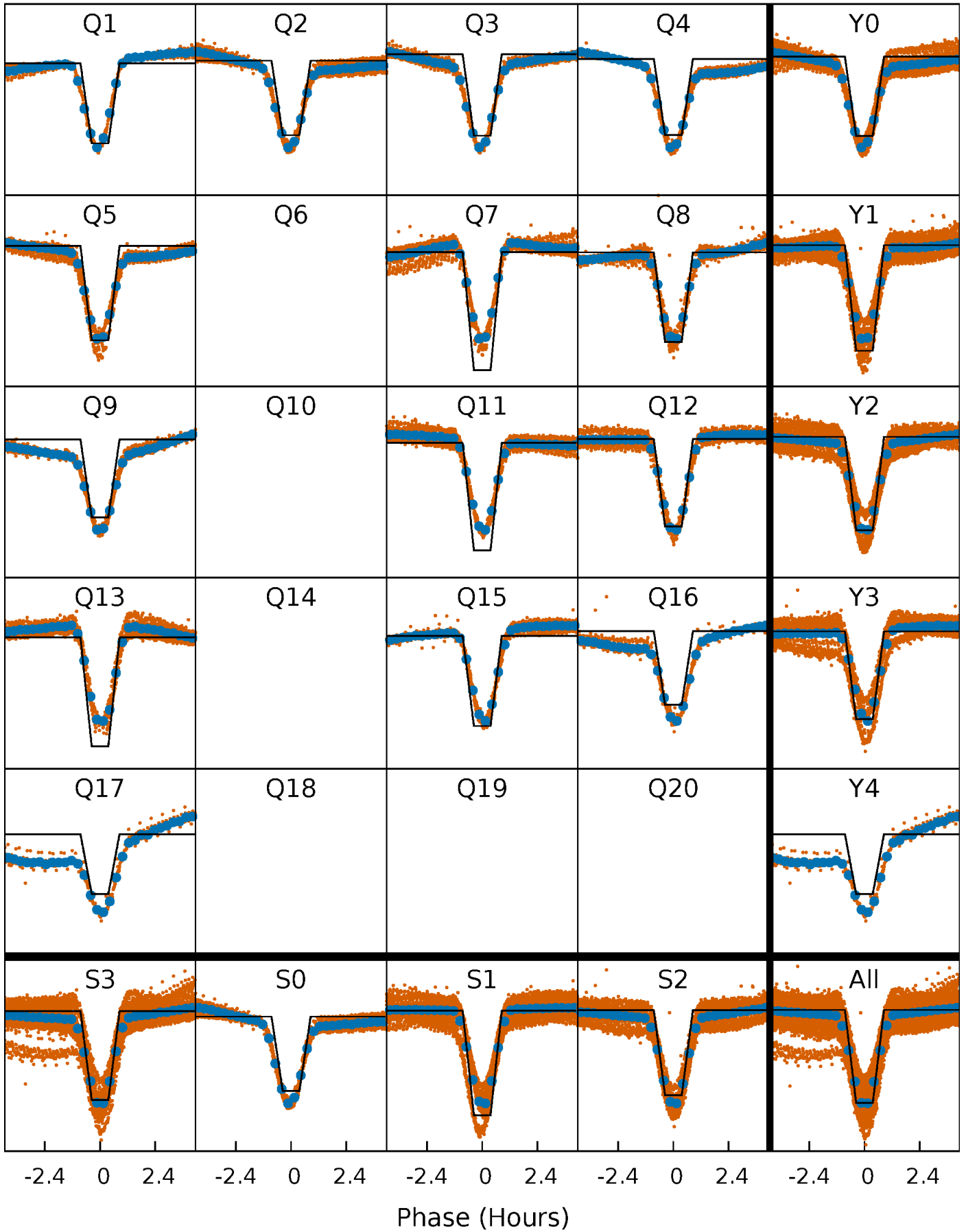
DV Quarter-Phased Transit Curves

TCE 003458919-02 P= 0.892056 Days $T_0=132.267444$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

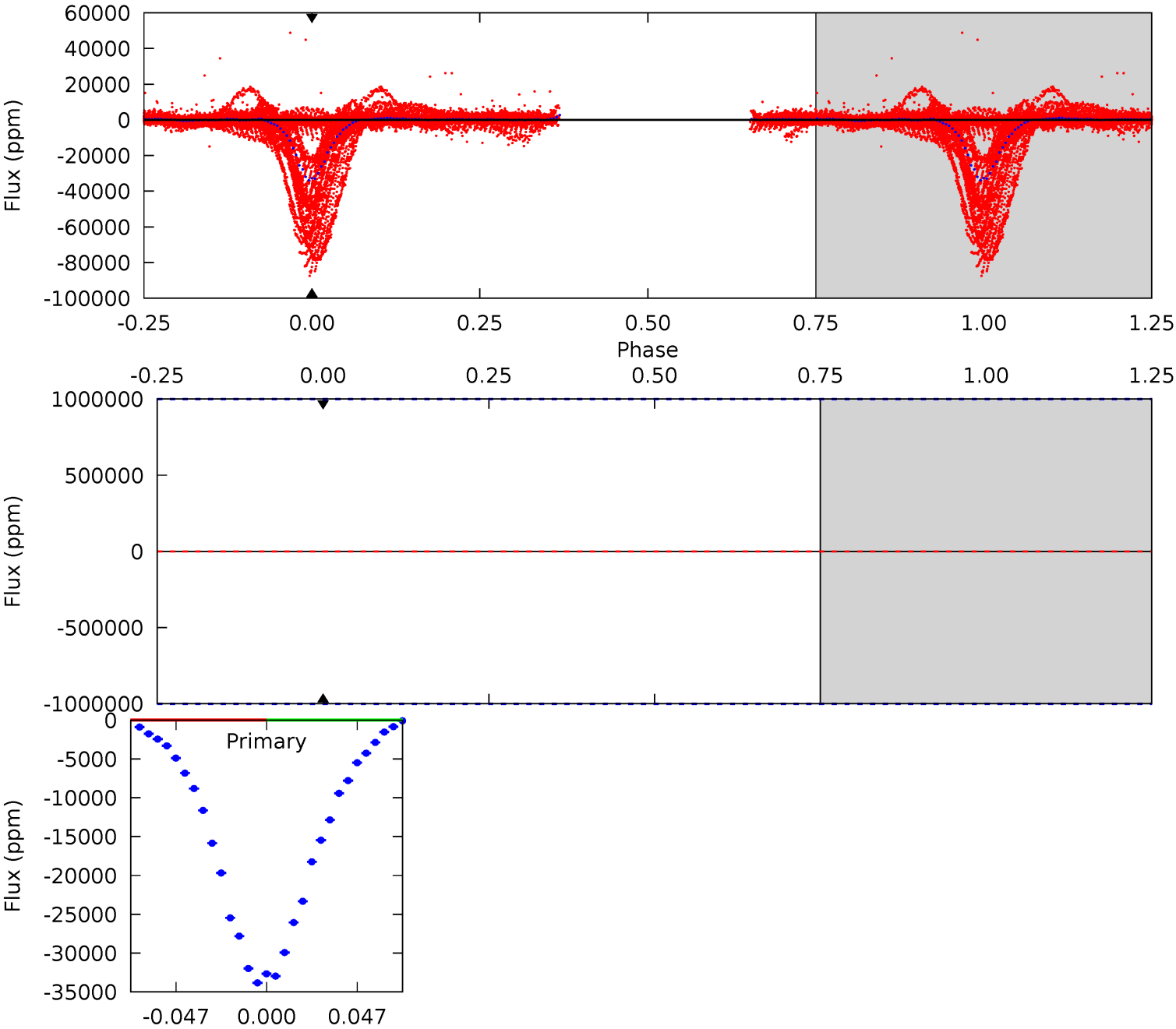
TCE 003458919-02 P= 0.892056 Days $T_0=132.265748$ (BKJD)



DV Model-Shift Uniqueness Test

003458919-02, P = 0.892056 Days, E = 131.375388 Days

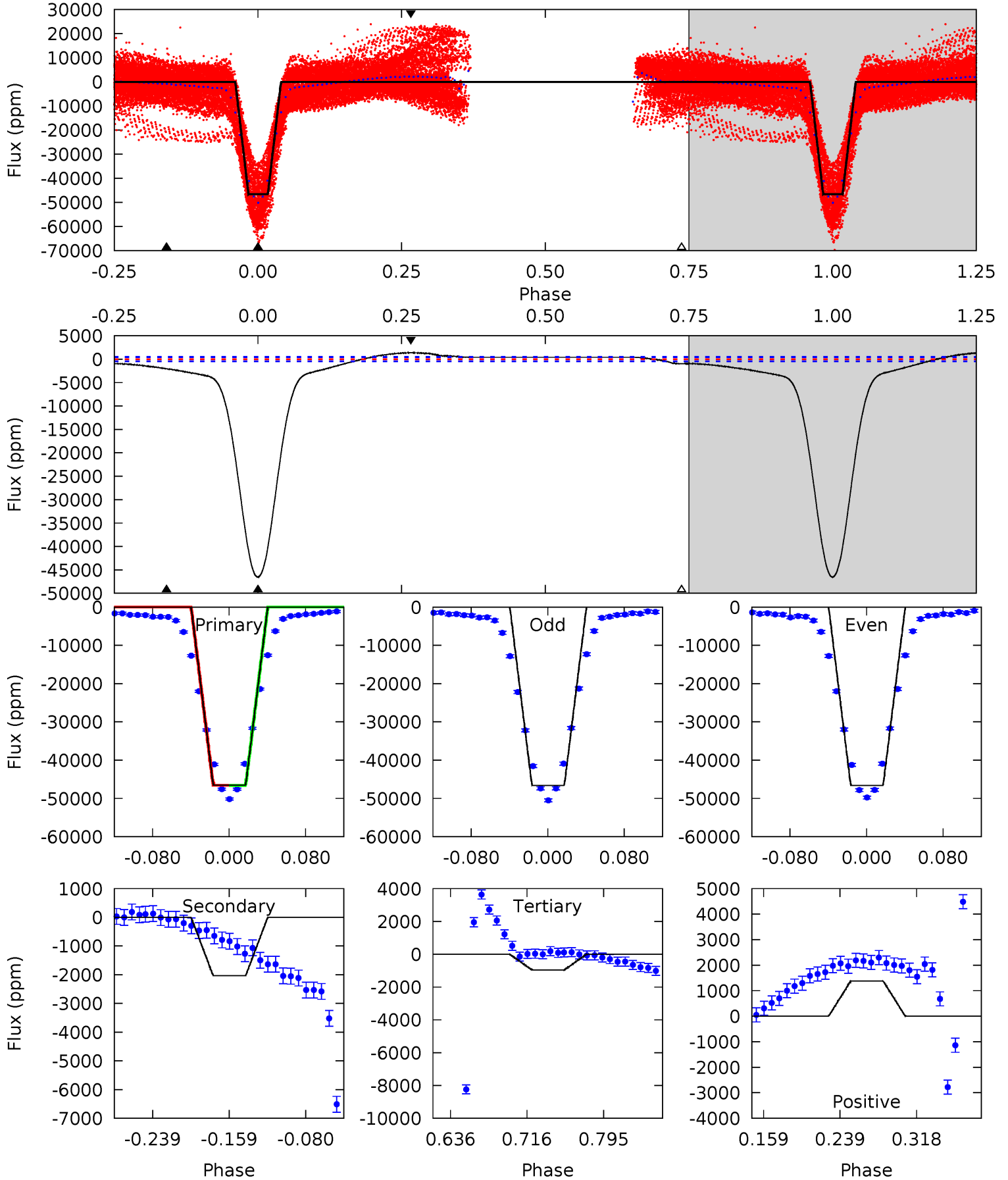
| Pri | Sec | Ter | Pos | FA ₁ | FA ₂ | F _{Red} | Pri-Ter | Pri-Pos | Sec-Ter | Sec-Pos | Odd-Evn | DMM | Shape | TAT |
|-----|-----|-----|-----|-----------------|-----------------|------------------|---------|---------|---------|---------|---------|-----|-------|-----|
| 0 | 0 | 0 | 0 | 1.00 | 1.00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



Alt Model-Shift Uniqueness Test

003458919-02, P = 0.892056 Days, E = 131.373692 Days

| Pri | Sec | Ter | Pos | FA ₁ | FA ₂ | F _{Red} | Pri-Ter | Pri-Pos | Sec-Ter | Sec-Pos | Odd-Evn | DMM | Shape | TAT |
|-------|------|------|------|-----------------|-----------------|------------------|---------|---------|---------|---------|---------|------|-------|------|
| 468.5 | 20.5 | 9.63 | 13.9 | 4.61 | 1.75 | 12.9 | 458.8 | 454.6 | 10.9 | 6.61 | 0.03 | 0.98 | 0.03 | 0.24 |



Stellar Parameters For KIC 003458919

| | $T_{\text{eff}}(K)$ | $\log(g)$ | [Fe/H] | $R (R_{\odot})$ | $M(M_{\odot})$ | $p_{\star} (\text{g}\cdot\text{cm}^{-3})$ |
|--------|----------------------|---------------------------|----------------------------|---------------------------|---------------------------|---|
| | 5561^{+166}_{-166} | $4.512^{+0.066}_{-0.154}$ | $-0.160^{+0.300}_{-0.300}$ | $0.855^{+0.196}_{-0.090}$ | $0.866^{+0.102}_{-0.083}$ | $1.952^{+0.561}_{-0.874}$ |
| | +3%/-3% | +1%/-3% | +188%/-188% | +23%/-11% | +12%/-10% | +29%/-45% |
| 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 003458919-02 / KOI

| Detrend | Depth (ppm) | $R_p (R_{\oplus})$ | $T_{max} (K)$ | $T_{obs} (K)$ | A_{obs} |
|---------|-----------------|--------------------------|----------------------|-------------------------|-------------------------------|
| DV | 0 ± 1000000 | $11.79^{+8.70}_{-7.54}$ | 2447^{+149}_{-110} | 3780^{+8553}_{-14852} | $3.356^{+220.915}_{-180.076}$ |
| Alt. | -2036 ± 99 | $21.66^{+10.42}_{-9.33}$ | 2444^{+141}_{-118} | 2864^{+722}_{-878} | $0.698^{+1.463}_{-0.382}$ |

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 $A_{obs} \gg 1.0$

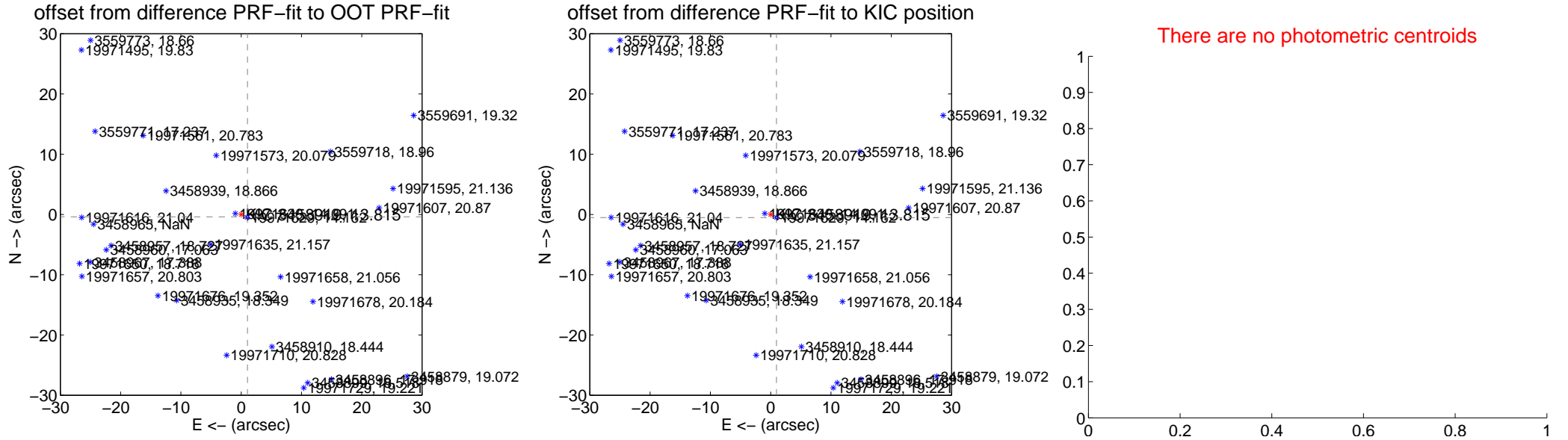
DV Centroid Data

Supplemental centroid analysis for 003458919-02. Kepler magnitude: 13.81. Transit SNR -1.00

There are 14 quarters with good PRF difference image offsets

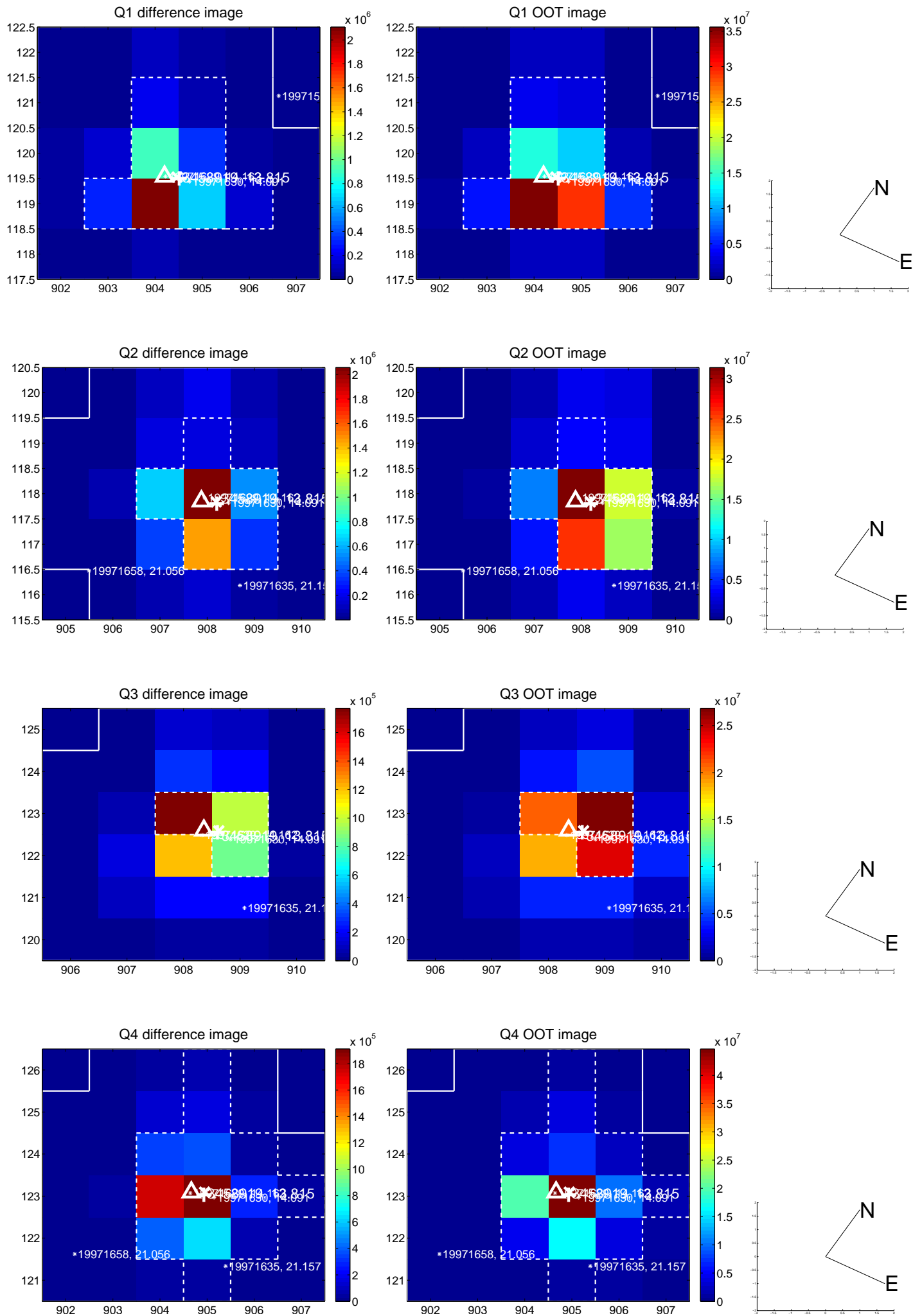
The direct PRF centroid is offset from the target star catalog position by about 0.20 arcsec

| | Distance in arcsec | Distance / σ | Δ RA | Δ Dec |
|---|-------------------------------------|---------------------|--------------------|--------------------|
| PRF-fit source offset from OOT | 1.112 \pm 0.076 | 14.71 | -1.041 \pm 0.073 | -0.390 \pm 0.071 |
| PRF-fit source offset from KIC position | 1.098 \pm 0.068 | 16.15 | -0.965 \pm 0.068 | -0.524 \pm 0.068 |
| photometric centroid source offset | — | — | — | — |

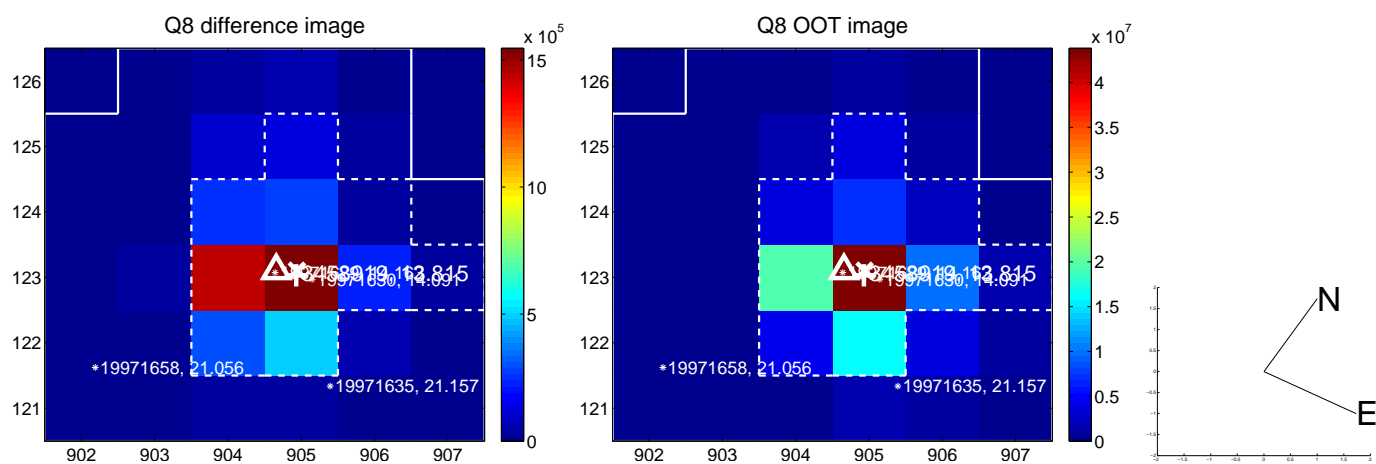
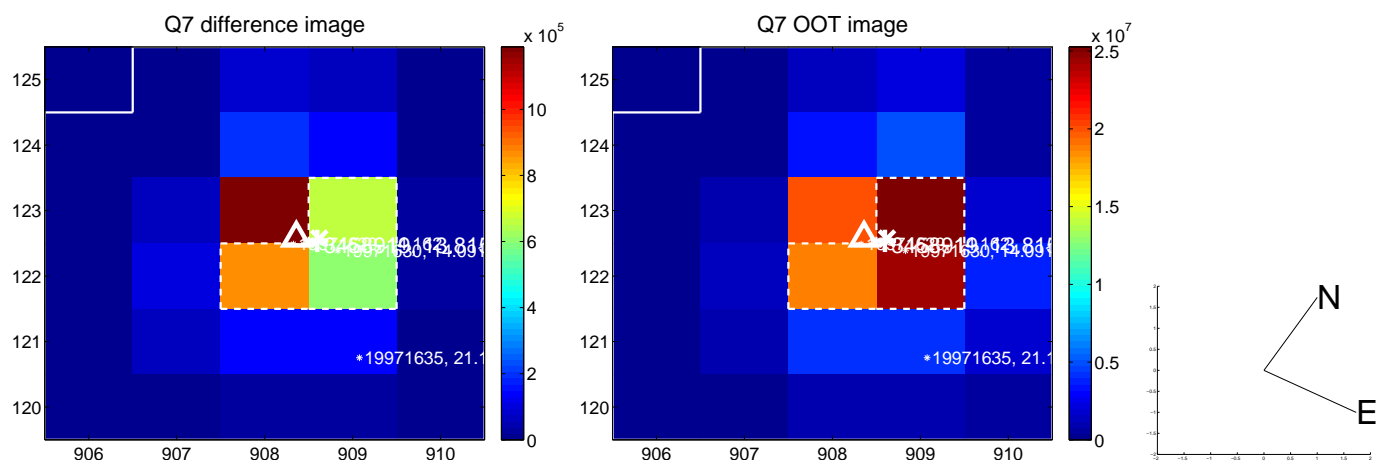
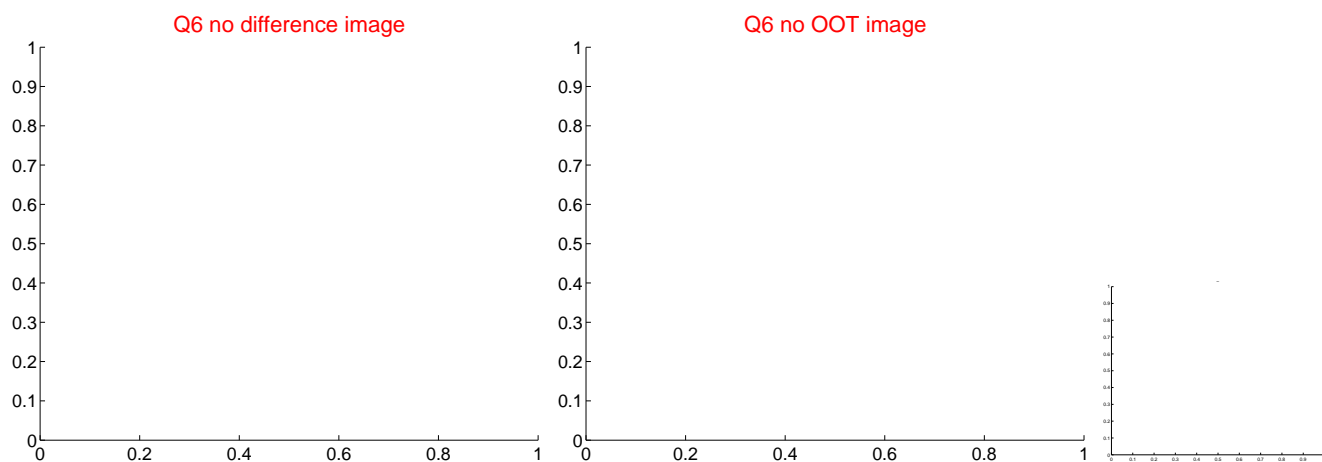
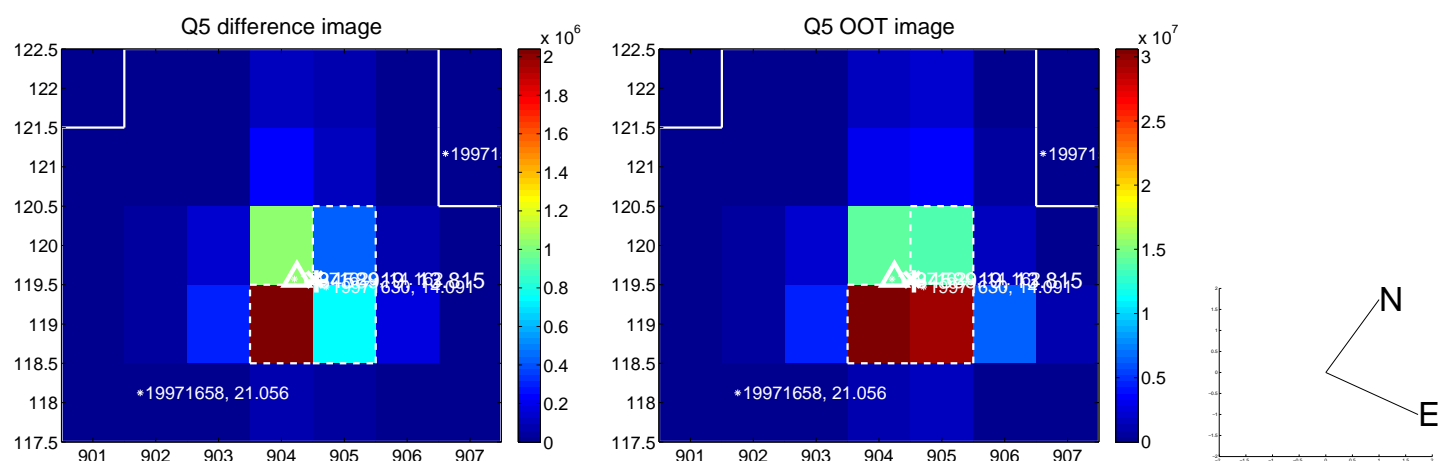


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

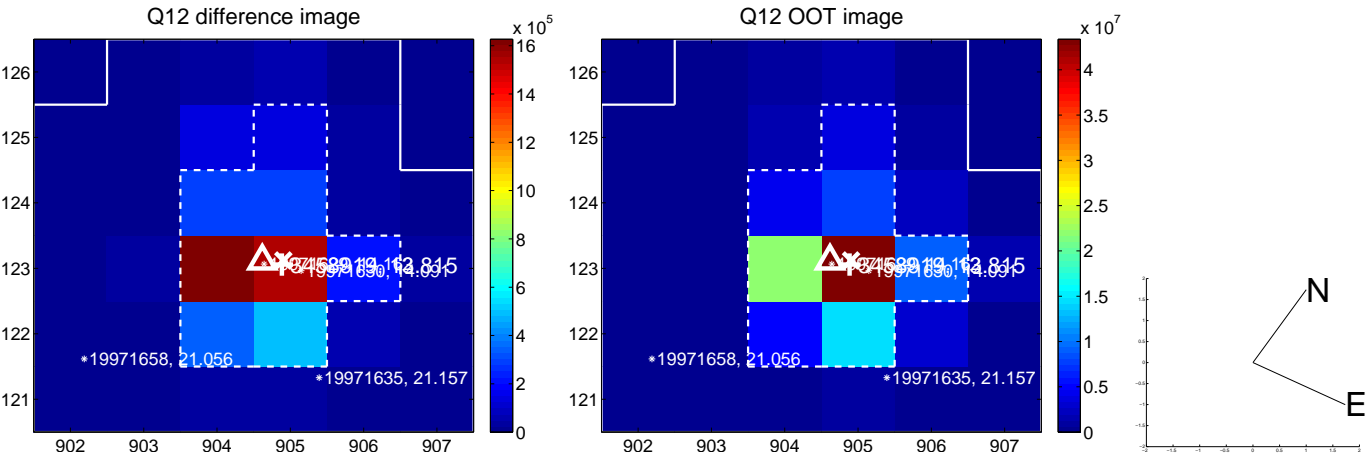
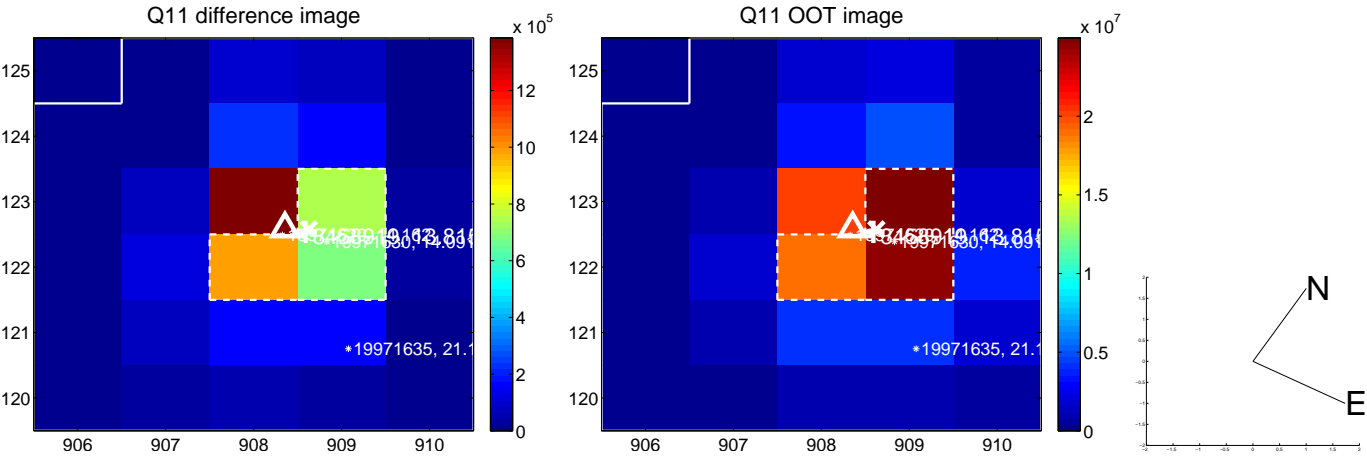
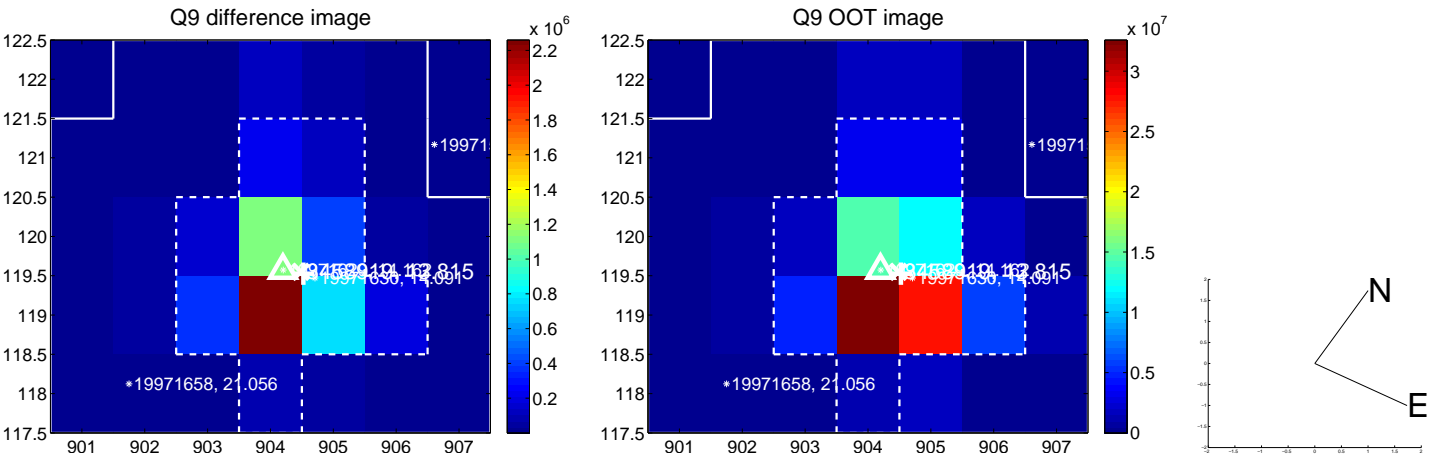
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



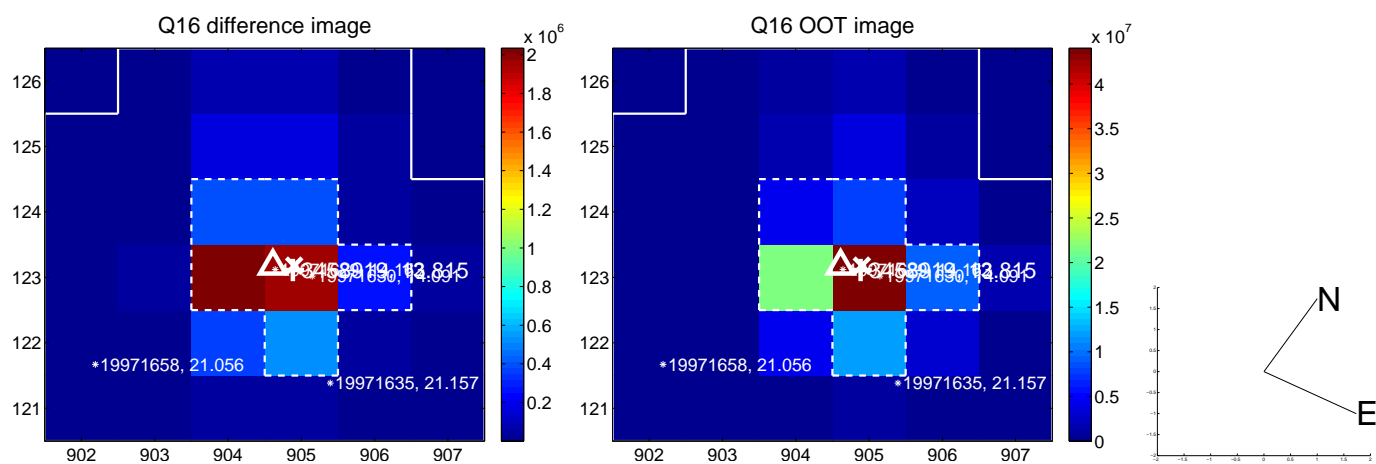
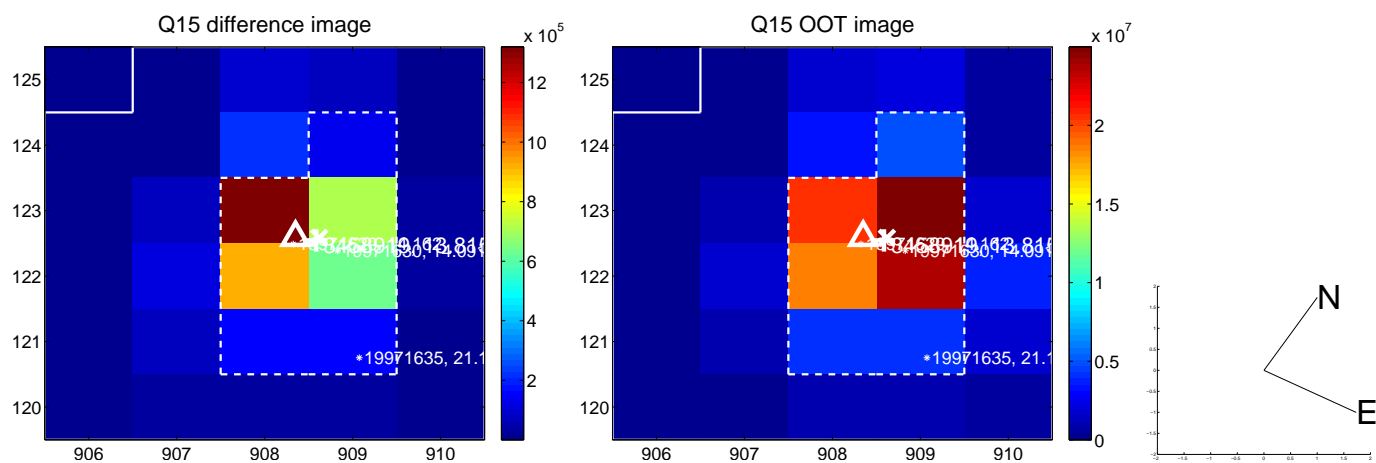
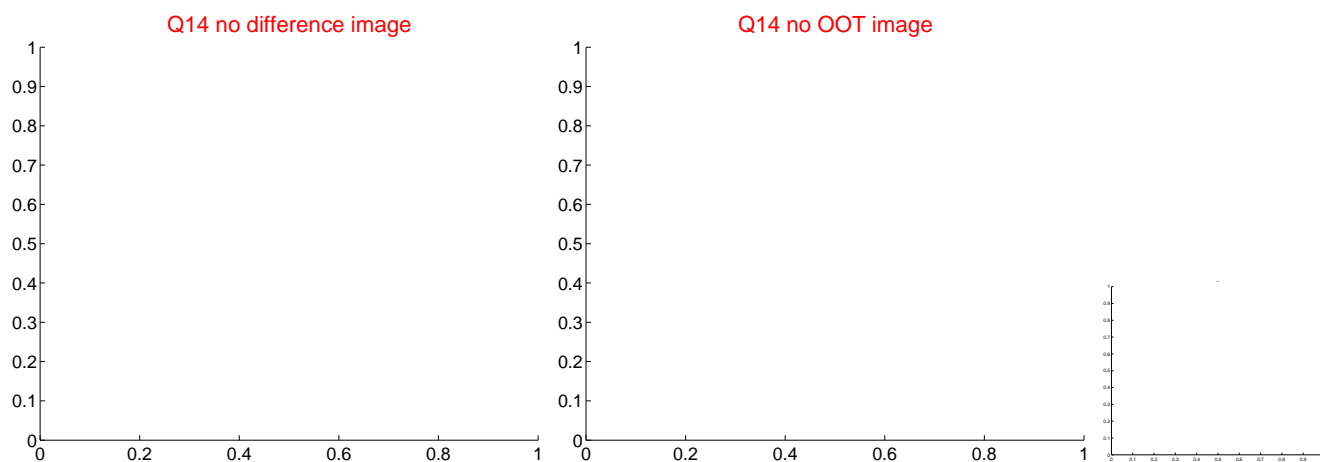
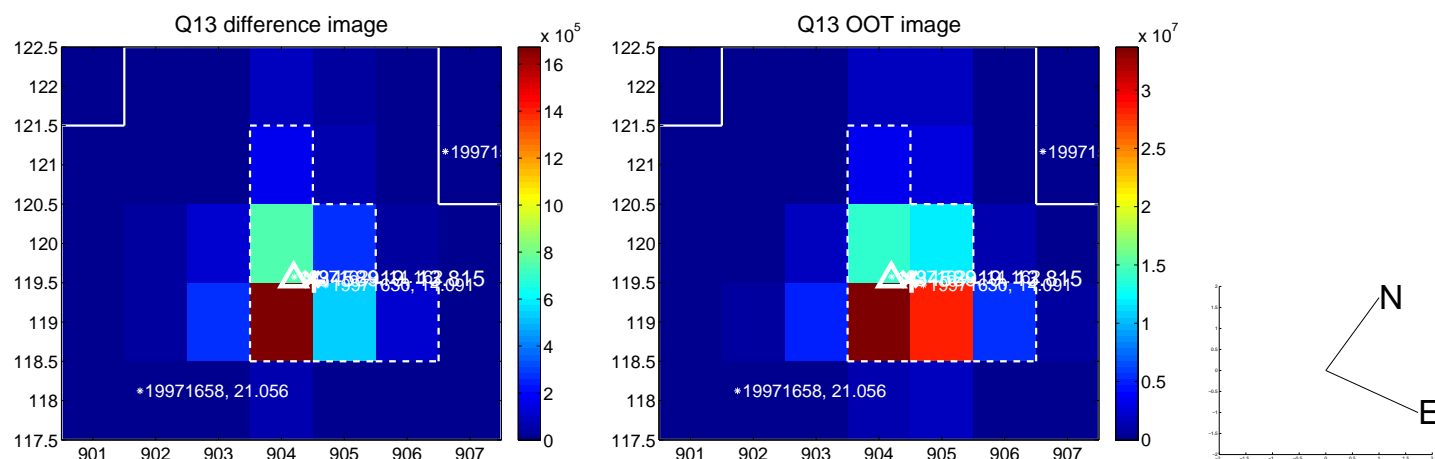
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



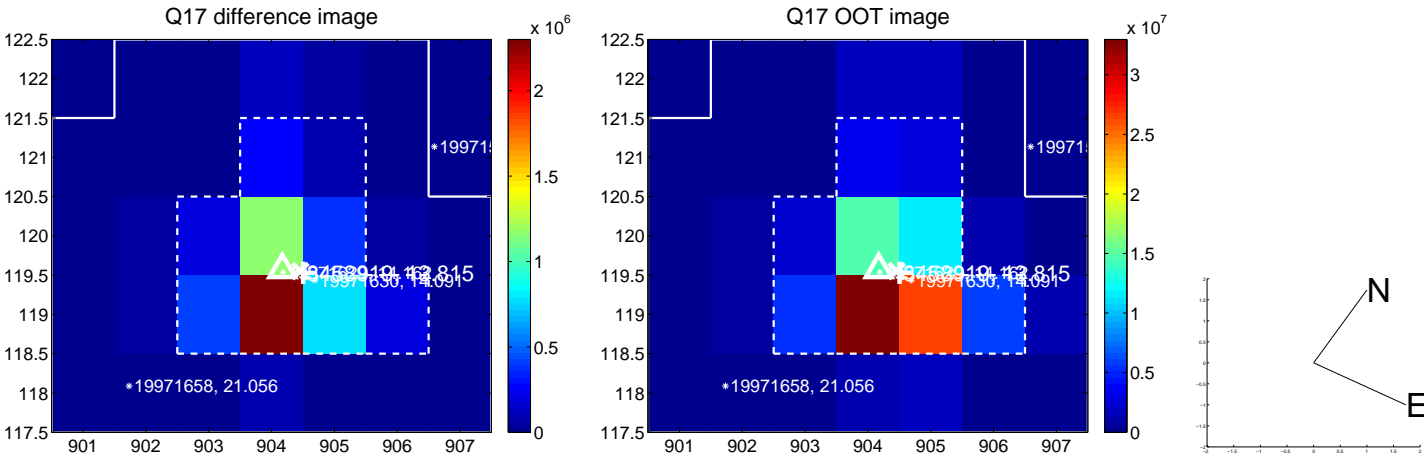
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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.



folded centroid time series figure for this object.

UKIRT Image

Declination

