

KIC 007198817

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}) |
|--------------|----------|------|---------------|--------------|-------------|------------------|------|------|-----------------------------|-----------------|------------------------|------------------------|
| 007198817-01 | OBS | No | 0.566796 | 131.679255 | 17.3 | 3.313 | 13.5 | 13.6 | 2.10 | 6513 | 1.02 | 31237.48 |
| 007198817-04 | OBS | No | 179.199044 | 152.941813 | 314.3 | 3.442 | 8.7 | 6.4 | 2.10 | 6513 | 4.11 | 14.50 |
| 007198817-05 | OBS | No | 54.324382 | 141.025928 | 324.8 | 12.673 | 8.6 | 7.4 | 2.10 | 6513 | 6.99 | 71.22 |

Robovetter Results

| TCE | Run Type | Disp | Score | N | S | C | E | Comments |
|--------------|----------|------|-------|---|---|---|---|--|
| 007198817-01 | OBS | FP | 0.00 | 1 | 0 | 0 | 1 | LPP_DV—MOD_NONUNIQ_ALT—EPHEM_MATCH |
| 007198817-04 | OBS | FP | 0.00 | 1 | 0 | 0 | 0 | INDIV_TRANS_RUBBLE_MARSHALL—TRANS_GAPPED—ALL_TRANS_CHASES—MOD_POS_ALT |
| 007198817-05 | OBS | FP | 0.00 | 1 | 0 | 1 | 0 | INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_NONUNIQ_ALT—MOD_POS_ALT—HALO_GHOST |

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.

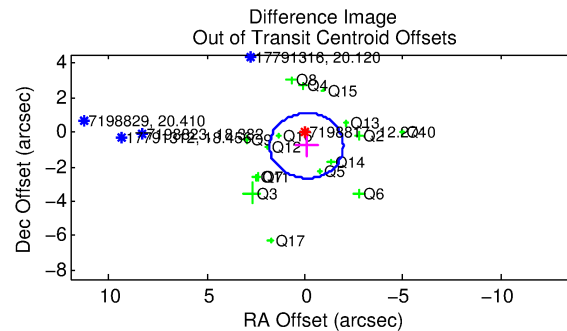
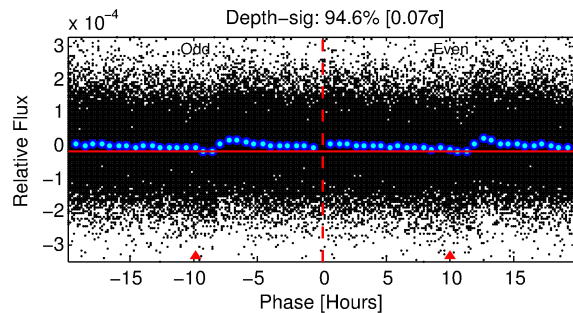
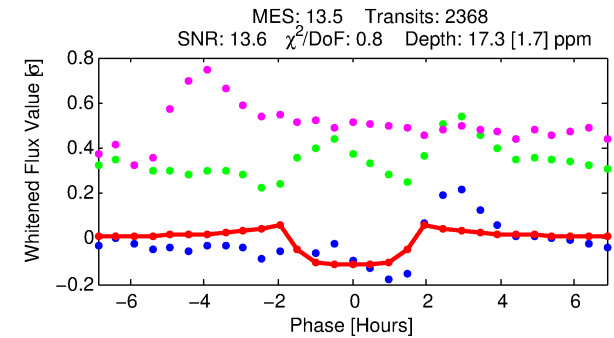
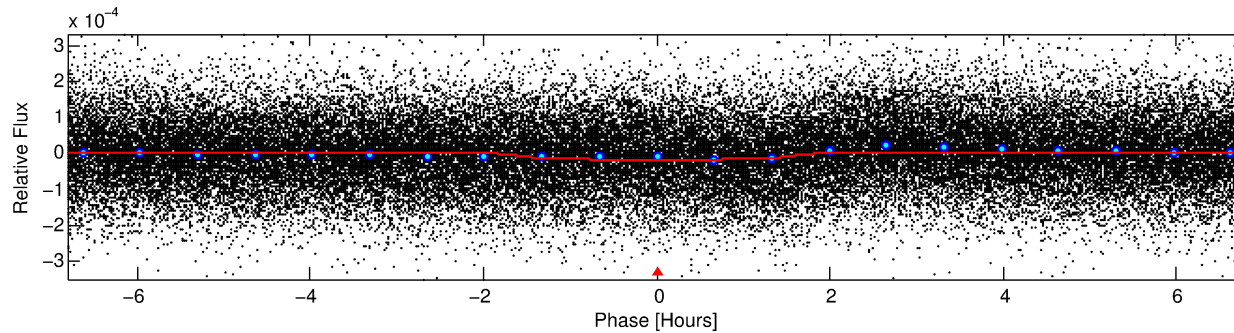
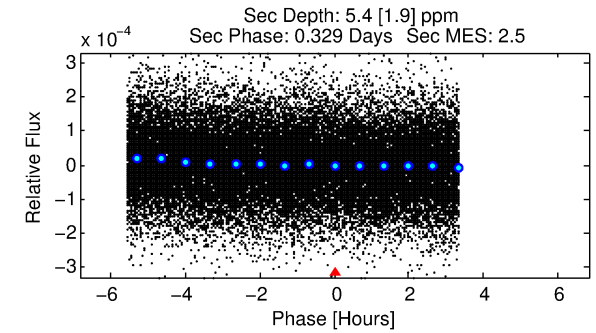
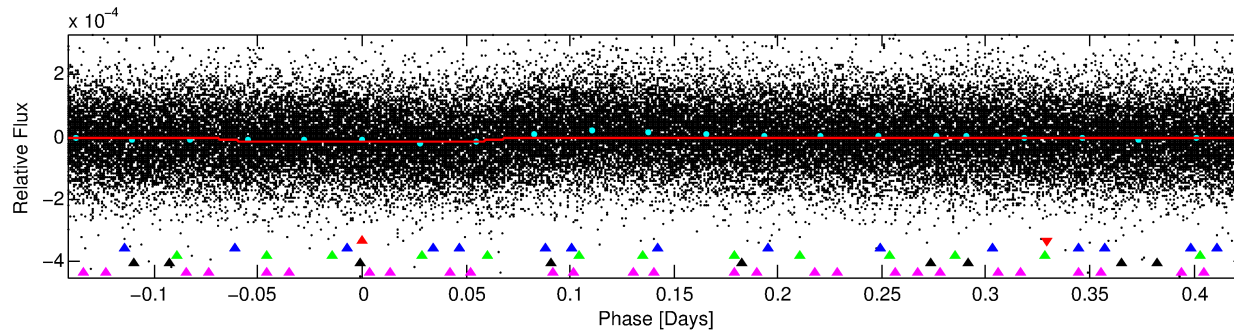
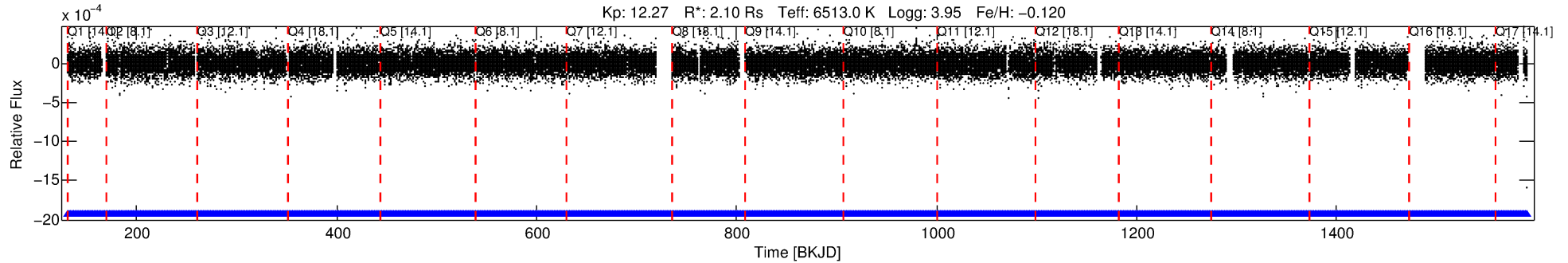
Ephemeris Match Information For 007198817-01

| TCE (1) | KIC | Parent (2) | Parent KIC | P ₁ :P ₂ | Dist (μ) | Δ Row | Δ Col | m ₂ | m ₁ | D ₂ /D ₁ | Mechanism | Flag | σ_P | σ_T |
|--------------|---------|------------|------------|--------------------------------|----------------|--------------|--------------|----------------|----------------|--------------------------------|------------|------|------------|------------|
| 007198817-01 | 7198817 | RR-Lyr-pri | 7198959 | 1:1 | 237.7 | 31 | -51 | 7.86 | 12.27 | 36664.00 | Direct-PRF | 0 | 0.41 | 18.61 |

Notes: P₁:P₂ is the period ratio. Dist is the distance in arcseconds. Δ Row and Δ Col are the number of pixels apart in row and column. m₂ and m₁ are the magnitudes of the parent and child. D₂/D₁ is the parent's transit depth divided by the child's. σ_P and σ_T are the significance of the match in period and epoch. For a match to be considered significant $\sigma_P < 5.0$ and $\sigma_T < 5.0$. Matches which have σ_P and σ_T very close to this cutoff should receive extra scrutiny, especially if the period ratio is very large.

DV One-Page Summary

KIC: 7198817 Candidate: 1 of 5 Period: 0.567 d



DV Fit Results:

Period = 0.56680 [0.00001] d
Epoch = 131.6793 [0.0019] BKJD
Rp/R* = 0.0044 [0.0012]
a/R* = 1.11 [0.32]
b = 0.90 [0.34]
Seff = 31237.48 [14968.48]
Teq = 3390 [406] K
Rp = 1.02 [0.44] Re
a = 0.0151 [0.0046] AU
Ag = 0.65 [0.52] [-0.67σ]
Teffp = 4710 [768] K [1.52σ]

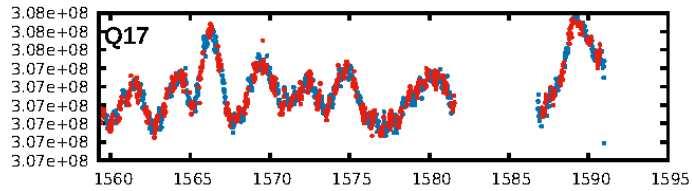
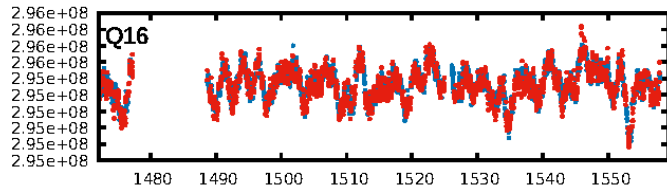
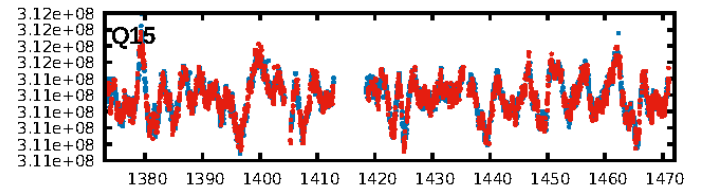
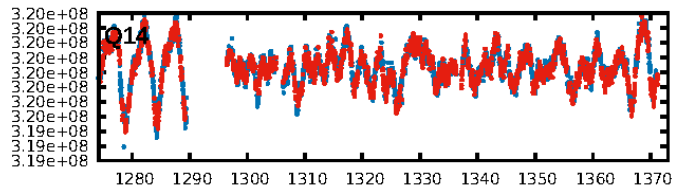
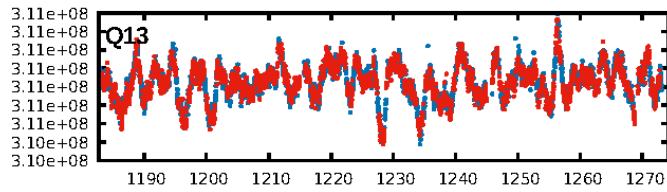
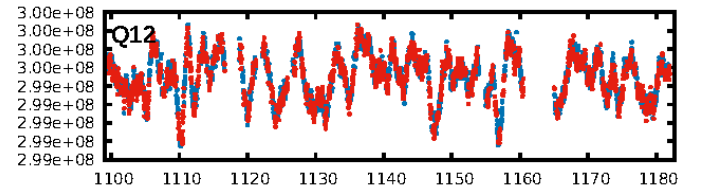
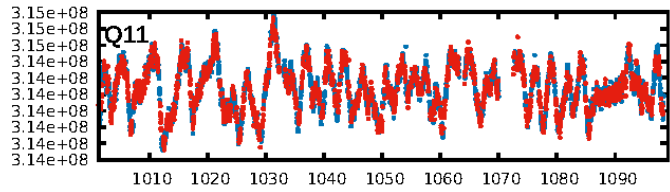
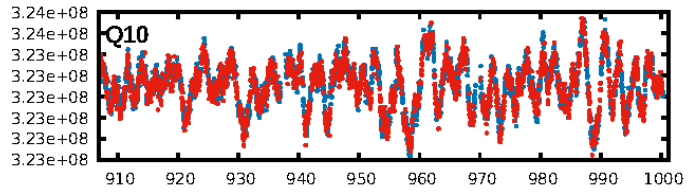
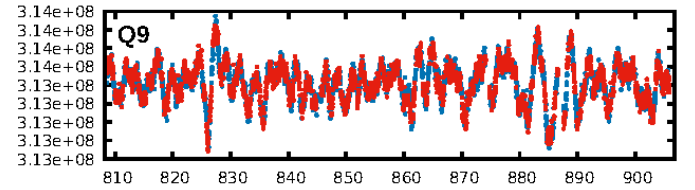
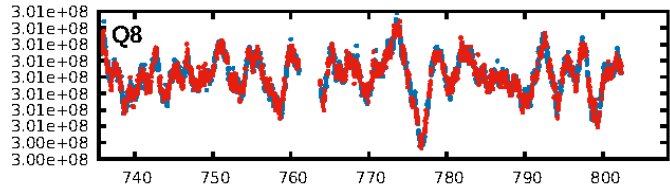
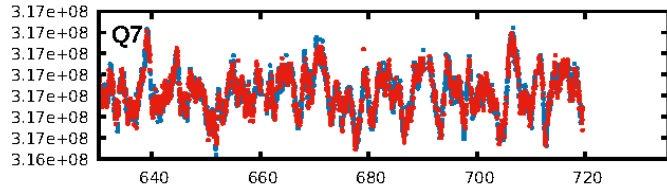
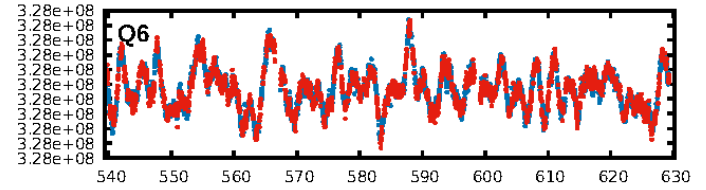
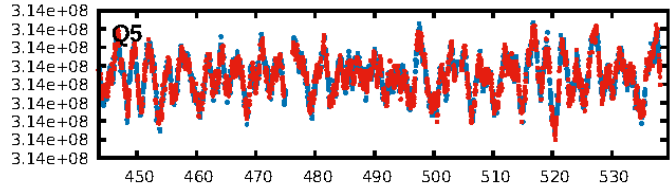
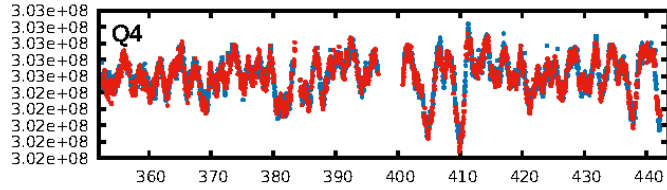
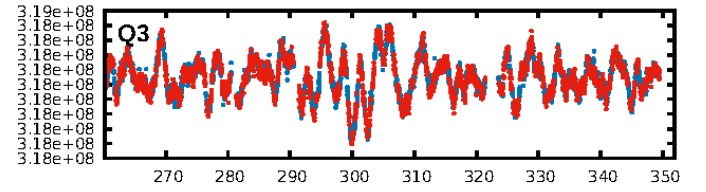
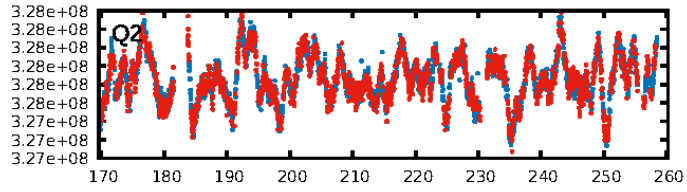
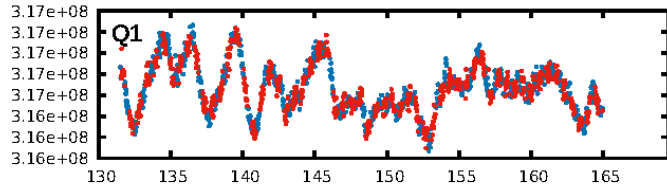
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 100.0% [98.50σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 4.49e-42
RollingBand-fgt: 1.00 [2262/2262]
GhostDiagnostic-chr: -0.4543
Centroid-sig: 0.0%
Centroid-so: 1.713 arcsec [3.84σ]
OotOffset-rm: 0.793 arcsec [1.26σ]
KicOffset-rm: 0.787 arcsec [1.27σ]
OotOffset-st: 4/4/4/4 [16]
KicOffset-st: 4/4/4/4 [16]
DiffImageQuality-fgm: 0.00 [0/16]
DiffImageOverlap-fno: 1.00 [17/17]

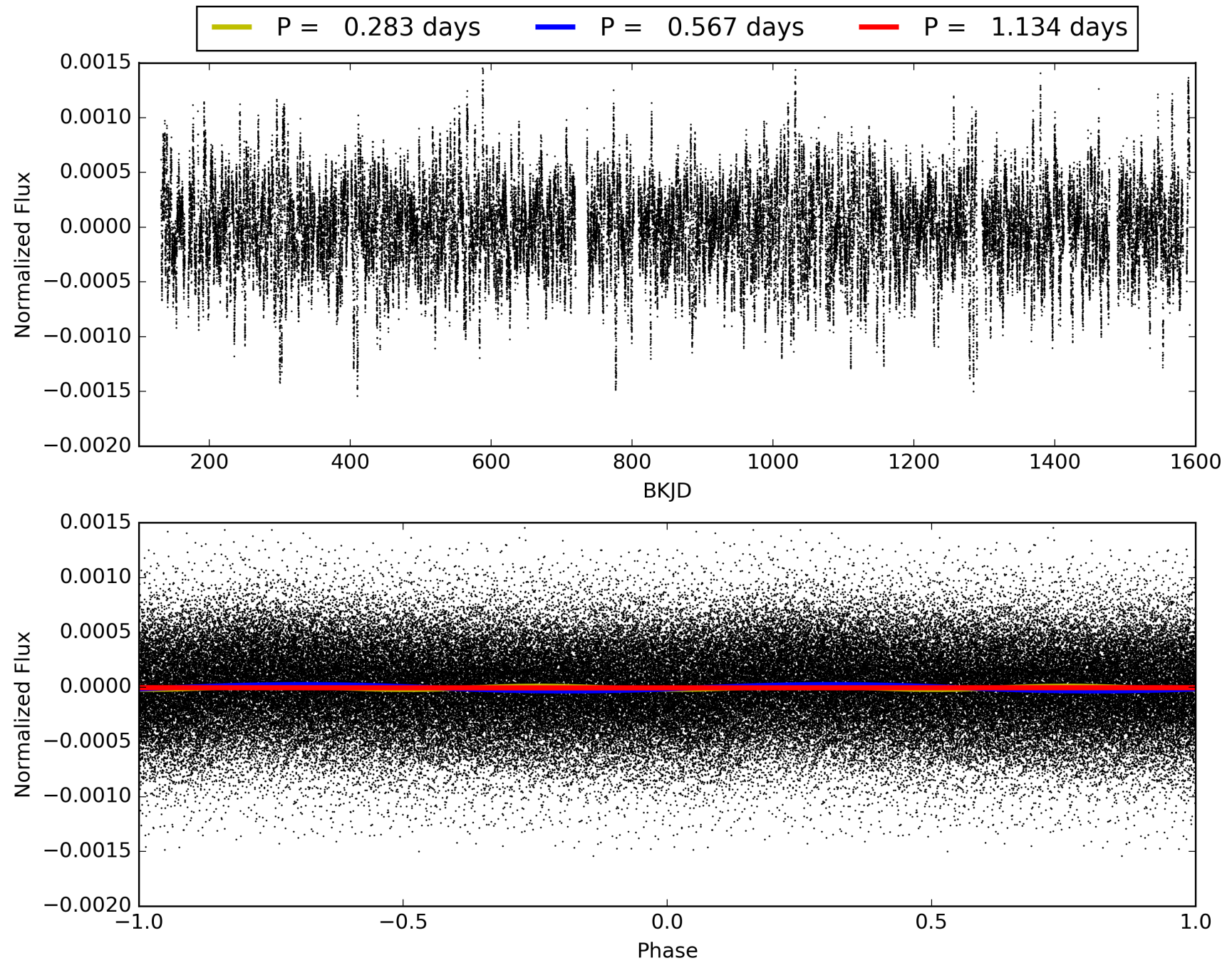
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 22:07:56 Z

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

TCE 007198817-01, PDC Light Curves

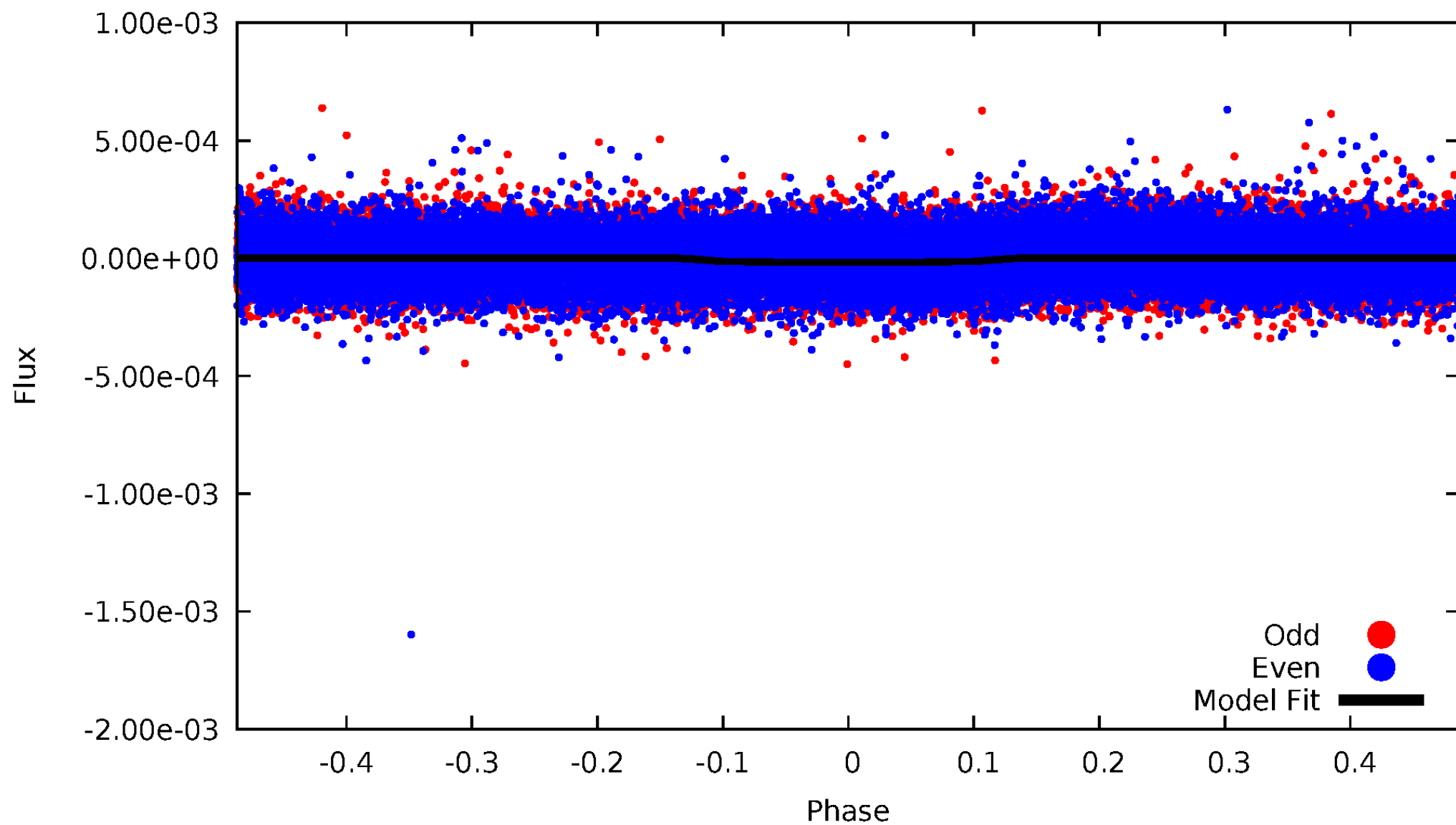


TCE 007198817-01



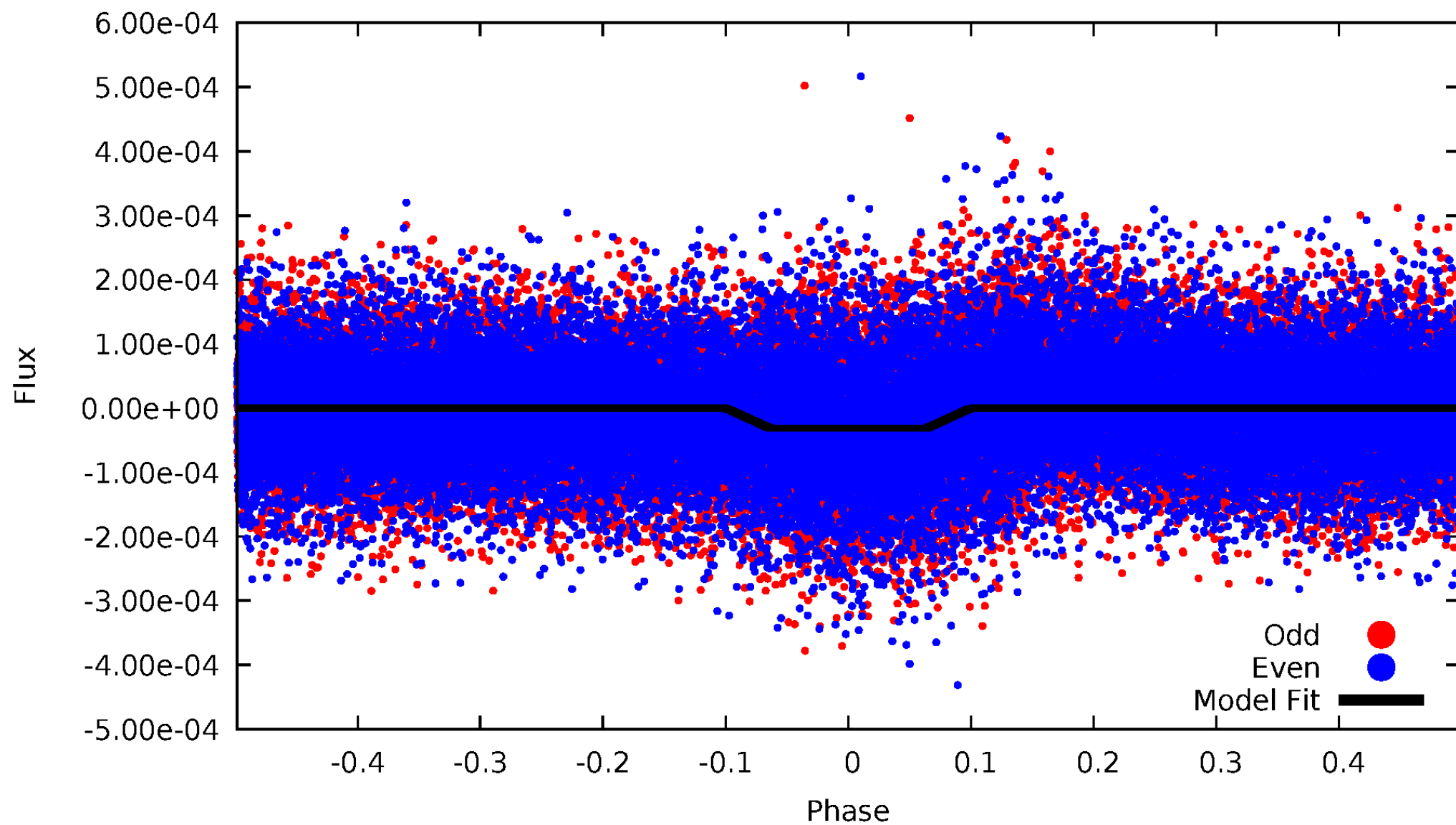
DV Odd/Even

TCE 007198817-01

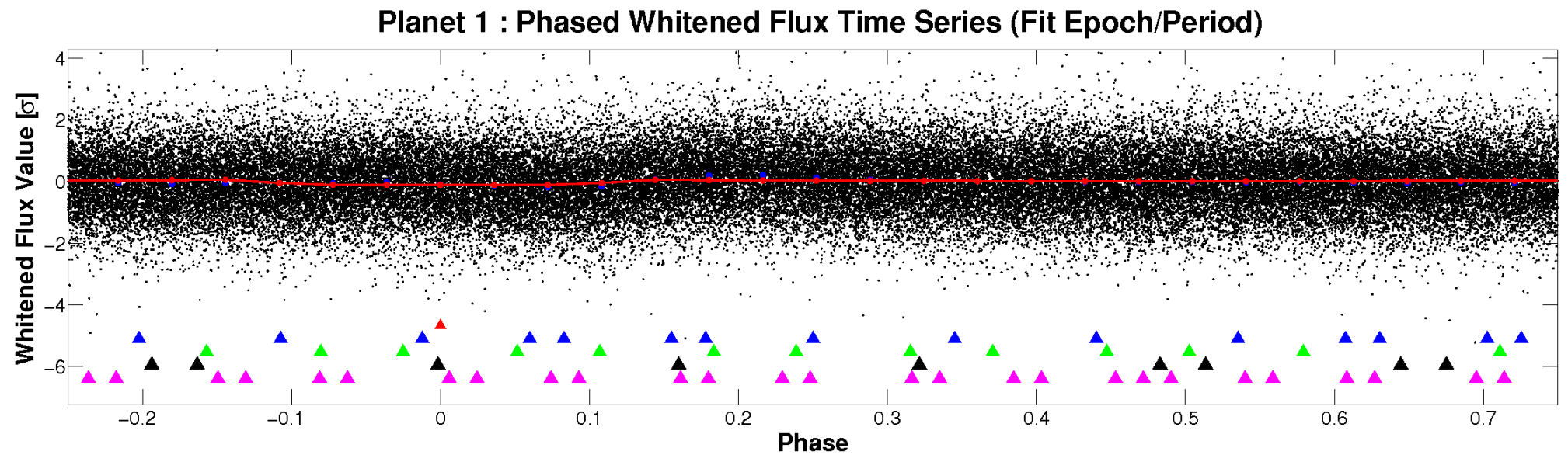
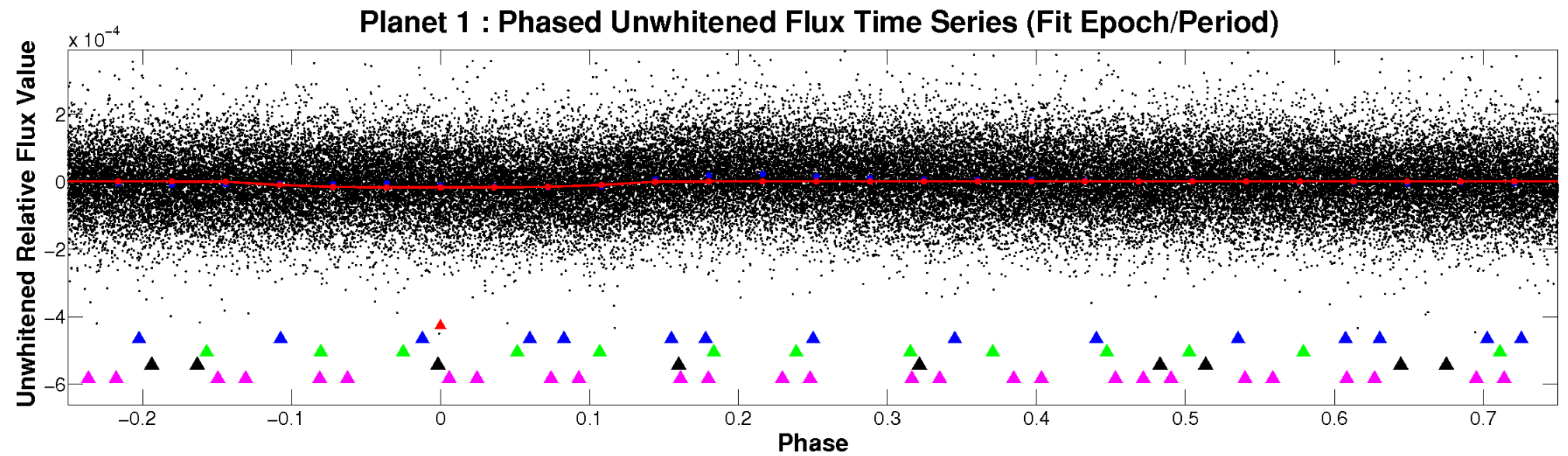


ALT Odd/Even

TCE 007198817-01

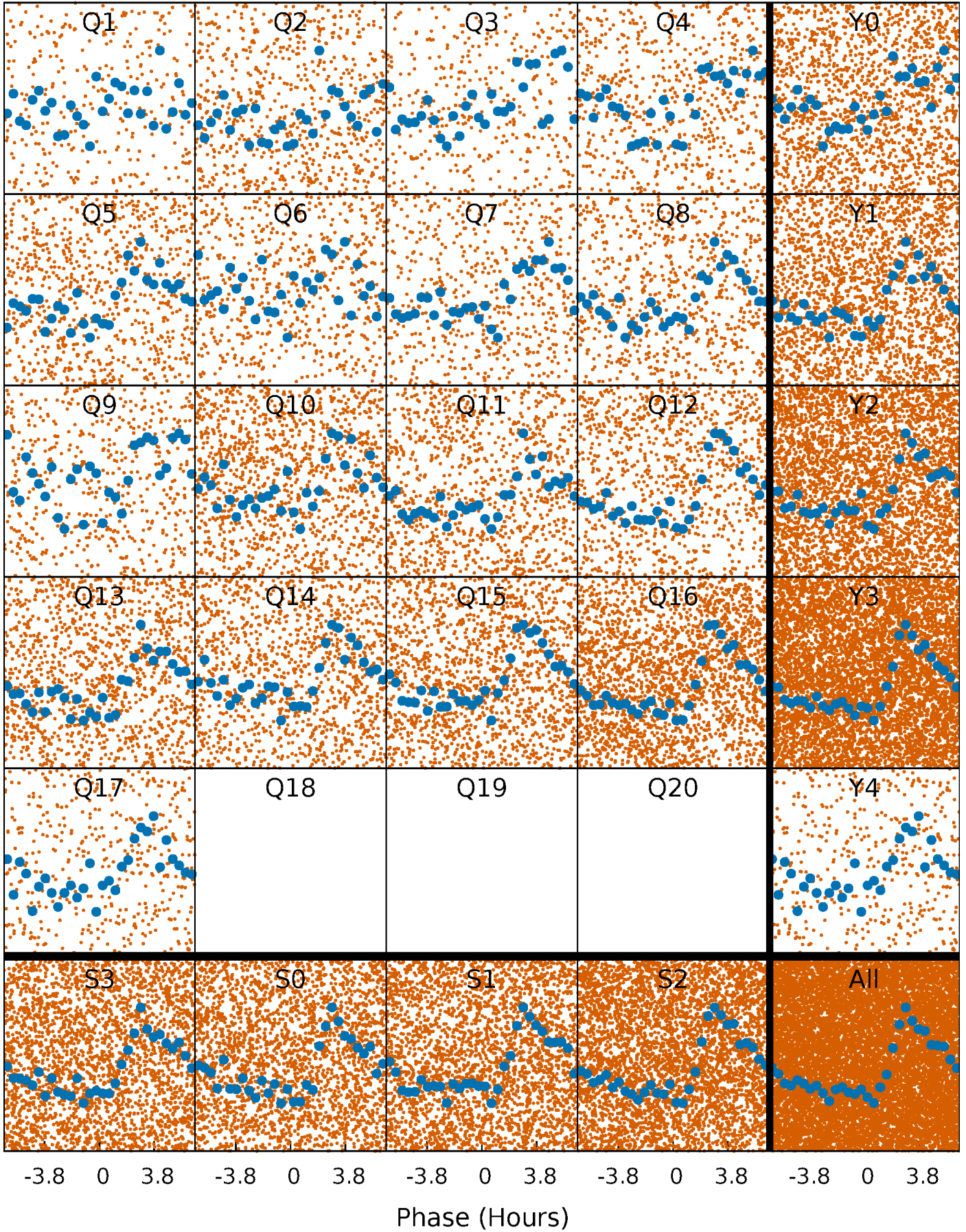


Non-Whitened Vs. Whitened Light Curve



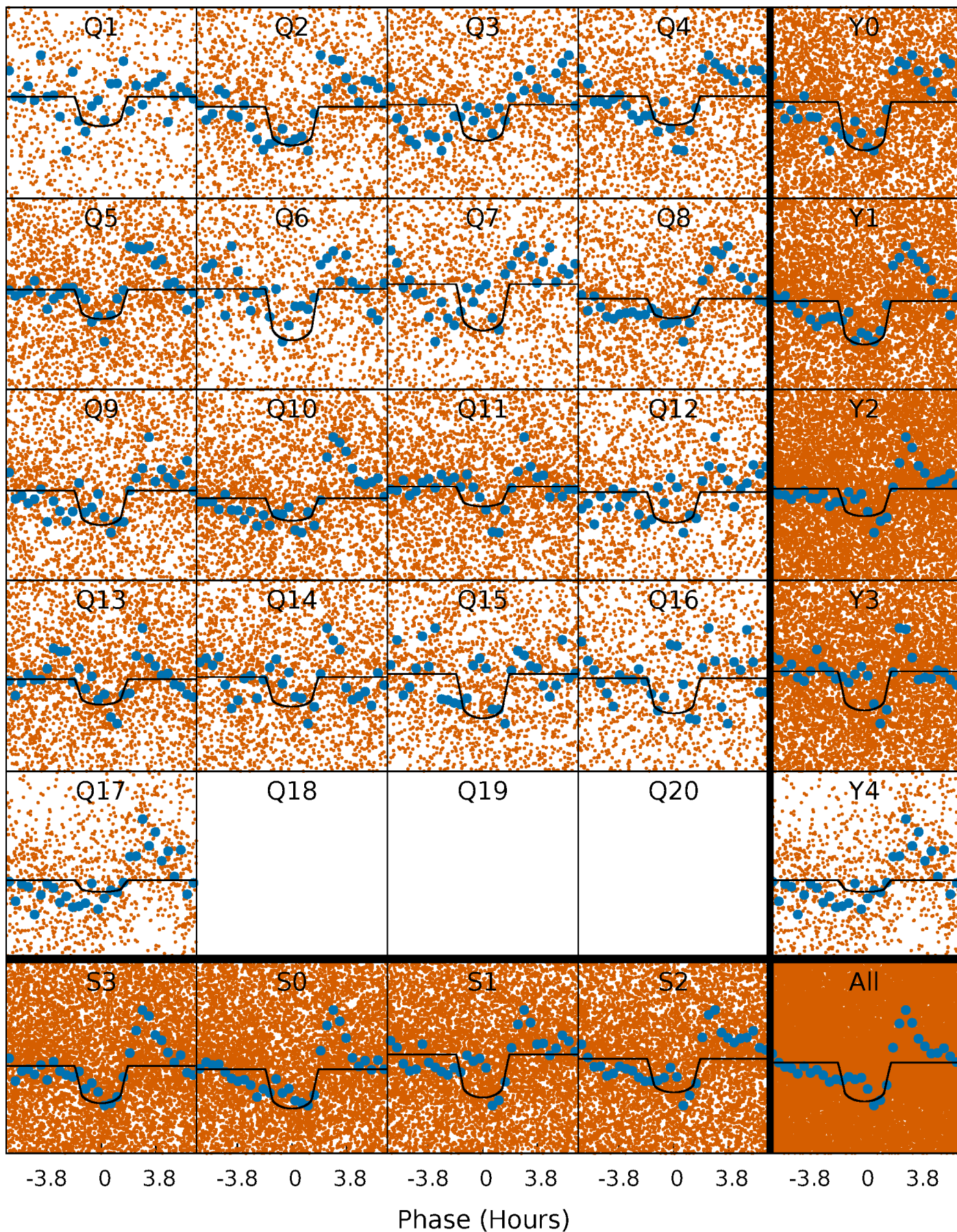
PDC Quarter-Phased Transit Curves

TCE 007198817-01 P= 0.566796 Days $T_0=131.679255$ (BKJD)



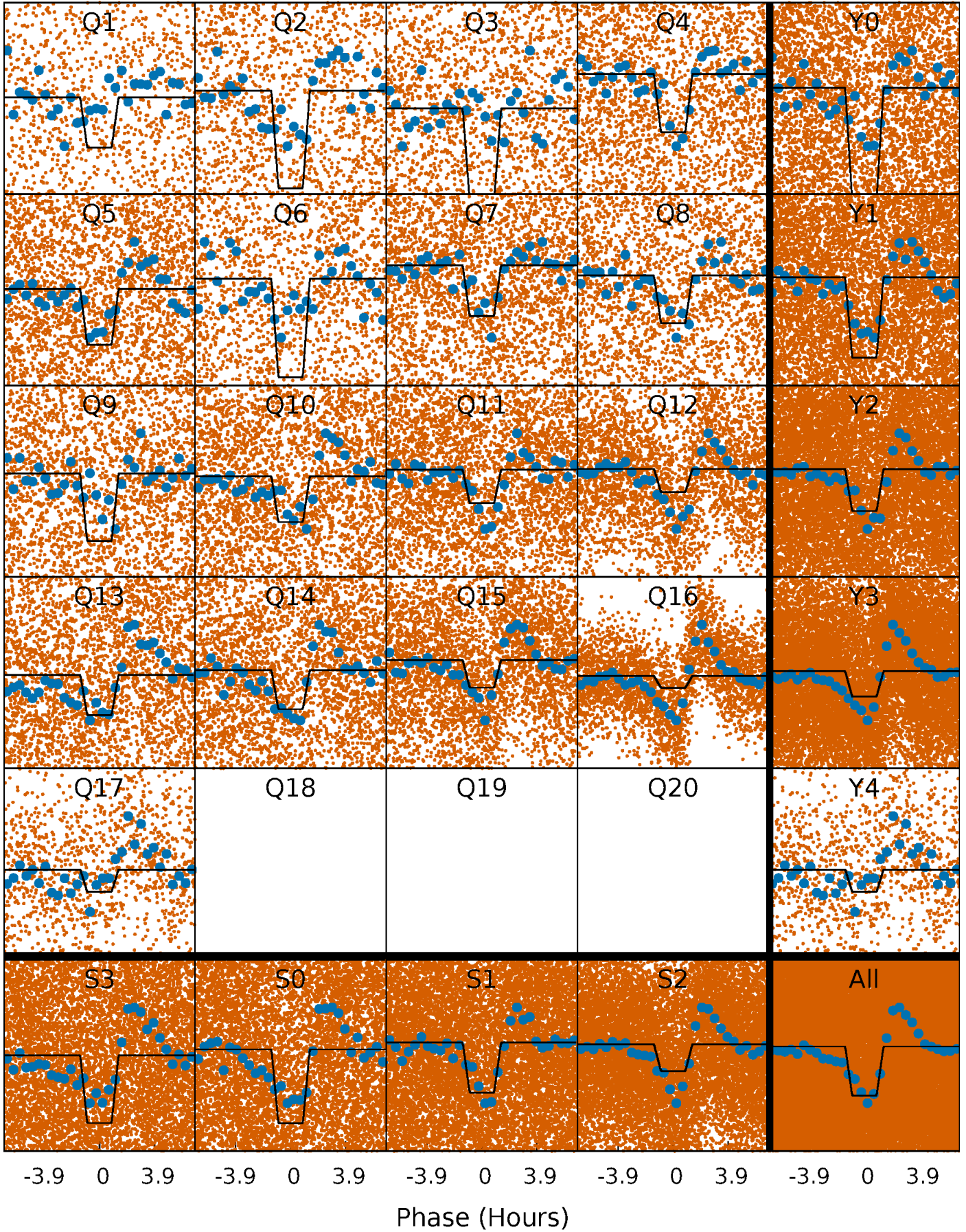
DV Quarter-Phased Transit Curves

TCE 007198817-01 P= 0.566796 Days $T_0=131.679255$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

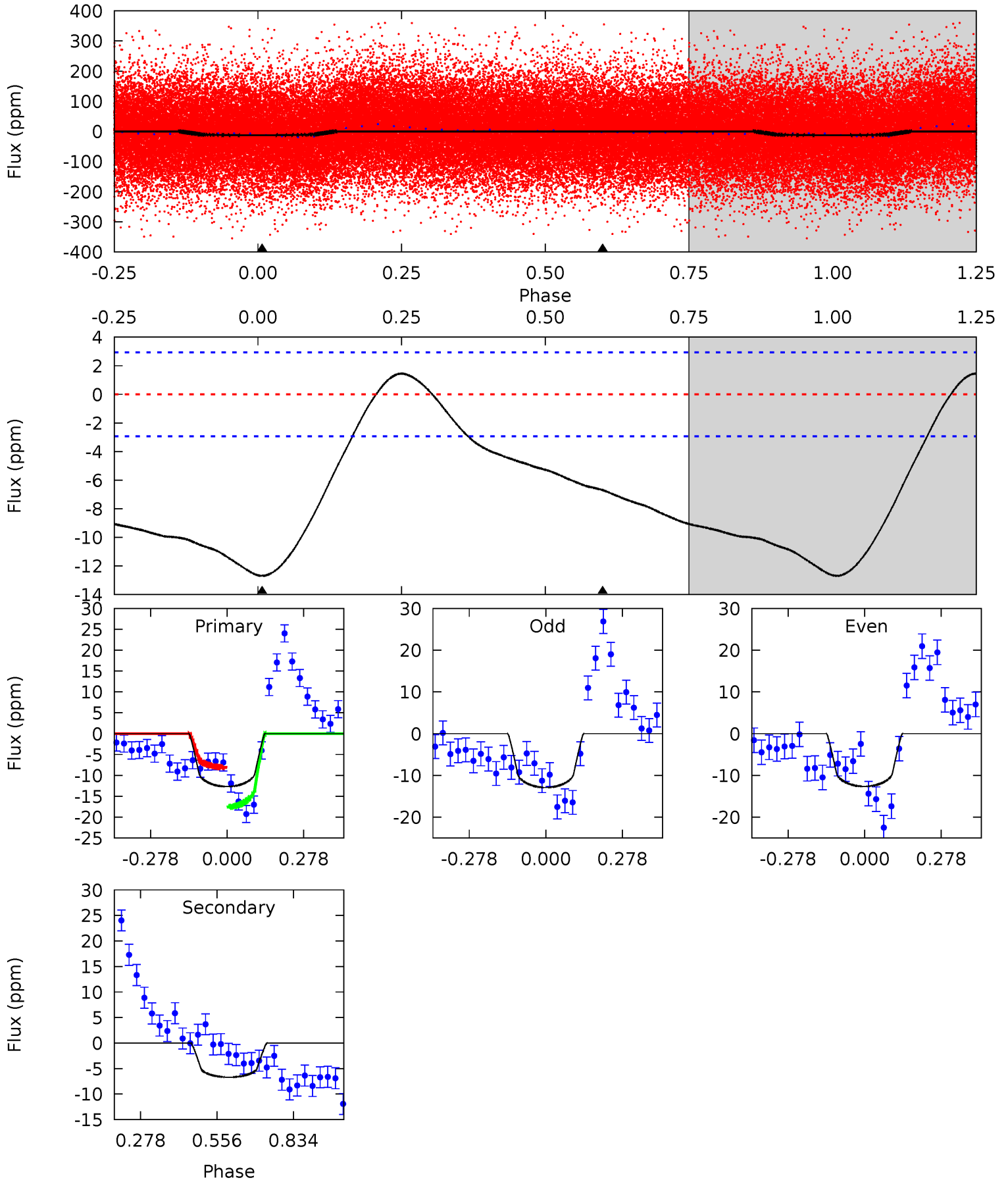
TCE 007198817-01 P= 0.566808 Days $T_0=131.678988$ (BKJD)



DV Model-Shift Uniqueness Test

007198817-01, P = 0.566796 Days, E = 131.112459 Days

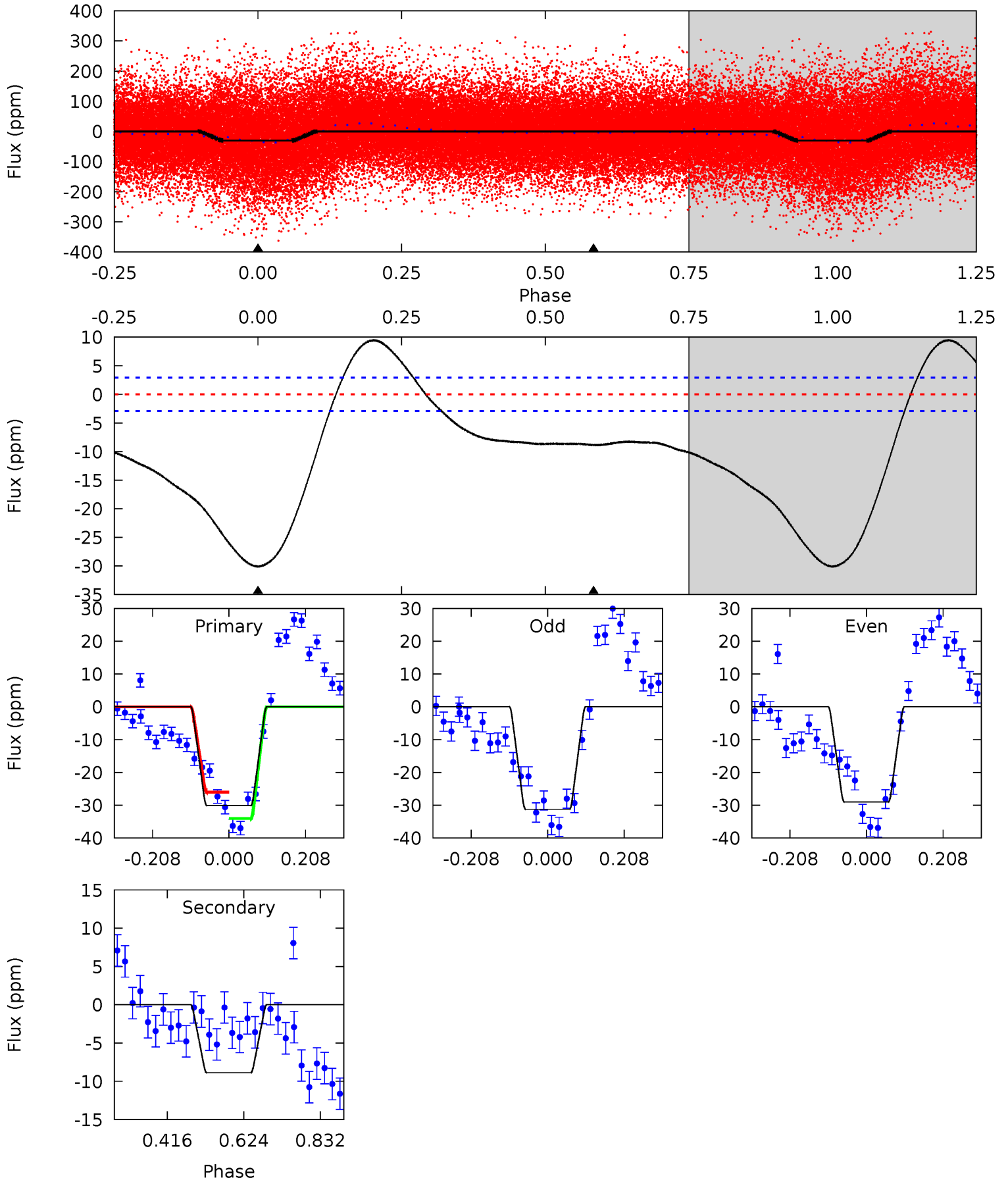
| Pri | Sec | Ter | Pos | FA ₁ | FA ₂ | F _{Red} | Pri-Ter | Pri-Pos | Sec-Ter | Sec-Pos | Odd-Evn | DMM | Shape | TAT |
|------|------|-----|-----|-----------------|-----------------|------------------|---------|---------|---------|---------|---------|------|-------|------|
| 18.8 | 9.92 | 0 | 0 | 4.35 | 1.08 | 1.79 | 18.8 | 18.8 | 9.92 | 9.92 | 0.19 | 1.03 | 0.10 | 7.22 |



Alt Model-Shift Uniqueness Test

007198817-01, P = 0.566808 Days, E = 131.112180 Days

| Pri | Sec | Ter | Pos | FA ₁ | FA ₂ | F _{Red} | Pri-Ter | Pri-Pos | Sec-Ter | Sec-Pos | Odd-Evn | DMM | Shape | TAT |
|------|------|-----|-----|-----------------|-----------------|------------------|---------|---------|---------|---------|---------|------|-------|------|
| 45.6 | 13.4 | 0 | 0 | 4.41 | 1.26 | 8.01 | 45.6 | 45.6 | 13.4 | 13.4 | 1.70 | 1.06 | 0.24 | 6.15 |



Stellar Parameters For KIC 007198817

| | $T_{\text{eff}}(K)$ | $\log(g)$ | $[\text{Fe}/\text{H}]$ | $R (R_{\odot})$ | $M(M_{\odot})$ | $p_{\star} (\text{g}\cdot\text{cm}^{-3})$ |
|--------|----------------------|---------------------------|----------------------------|---------------------------|---------------------------|---|
| | 6513^{+162}_{-179} | $3.948^{+0.266}_{-0.114}$ | $-0.120^{+0.300}_{-0.250}$ | $2.103^{+0.438}_{-0.711}$ | $1.433^{+0.163}_{-0.303}$ | $0.217^{+0.377}_{-0.076}$ |
| | +2%/-3% | +7%/-3% | +250%/-208% | +21%/-34% | +11%/-21% | +174%/-35% |
| 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 007198817-01 / KOI

| Detrend | Depth (ppm) | $R_p (R_{\oplus})$ | $T_{\text{max}} (K)$ | $T_{\text{obs}} (K)$ | A_{obs} |
|---------|-------------|------------------------|----------------------|----------------------|---------------------------|
| DV | -7 ± 1 | $0.94^{+0.32}_{-0.27}$ | 4646^{+296}_{-373} | 4672^{+897}_{-746} | $0.941^{+0.915}_{-0.413}$ |
| Alt. | -9 ± 1 | $1.23^{+0.35}_{-0.31}$ | 4679^{+280}_{-420} | 4347^{+705}_{-650} | $0.730^{+0.577}_{-0.277}$ |

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

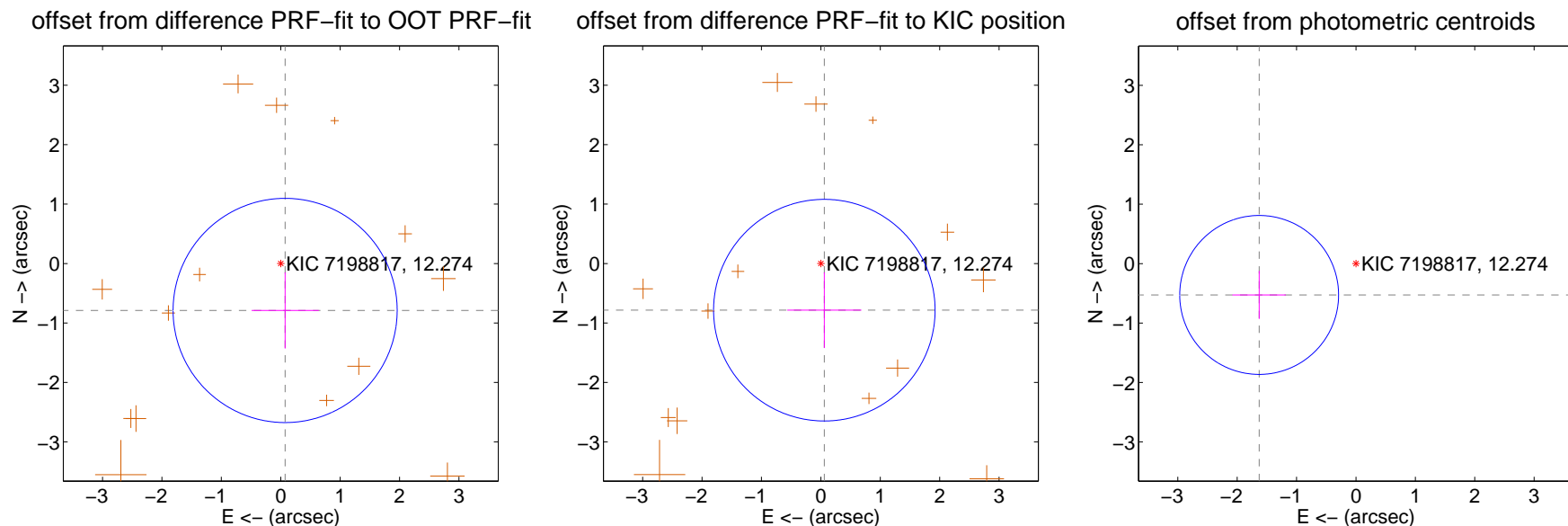
DV Centroid Data

Supplemental centroid analysis for 007198817-01. Kepler magnitude: 12.27. Transit SNR 13.64

There are 0 quarters with good PRF difference image offsets

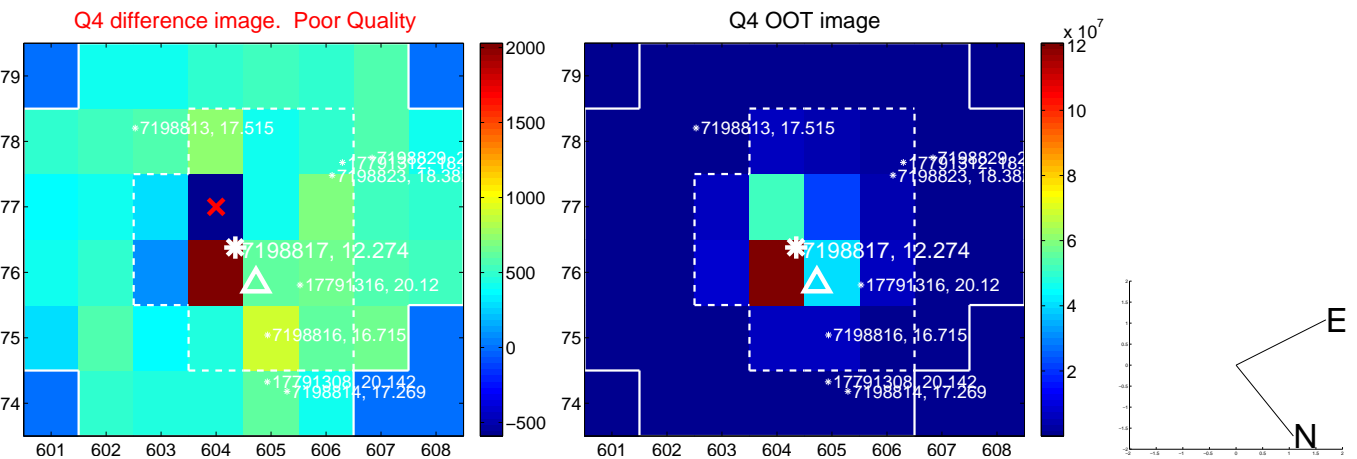
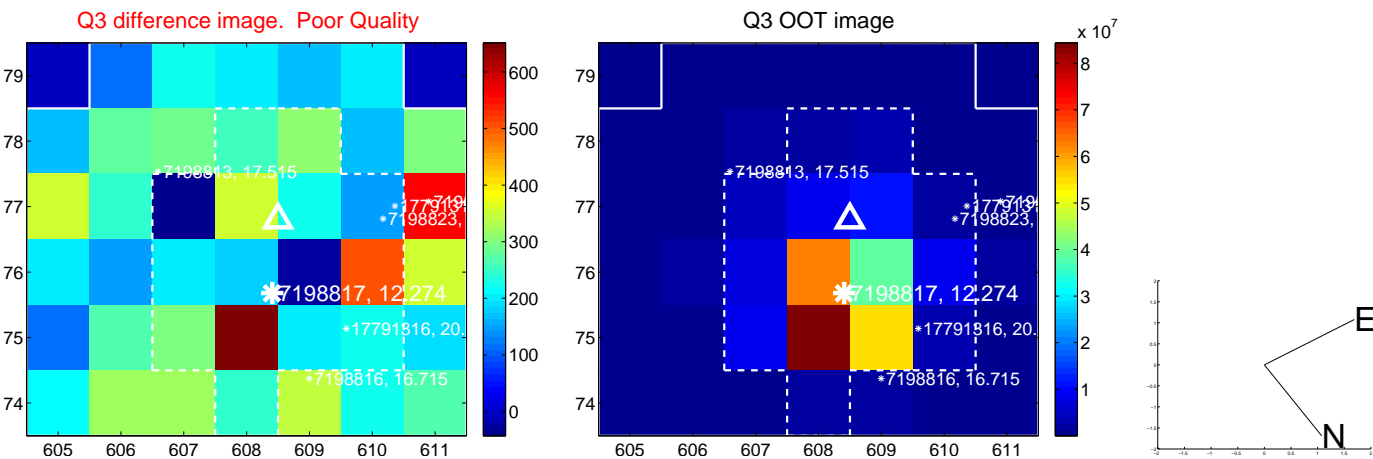
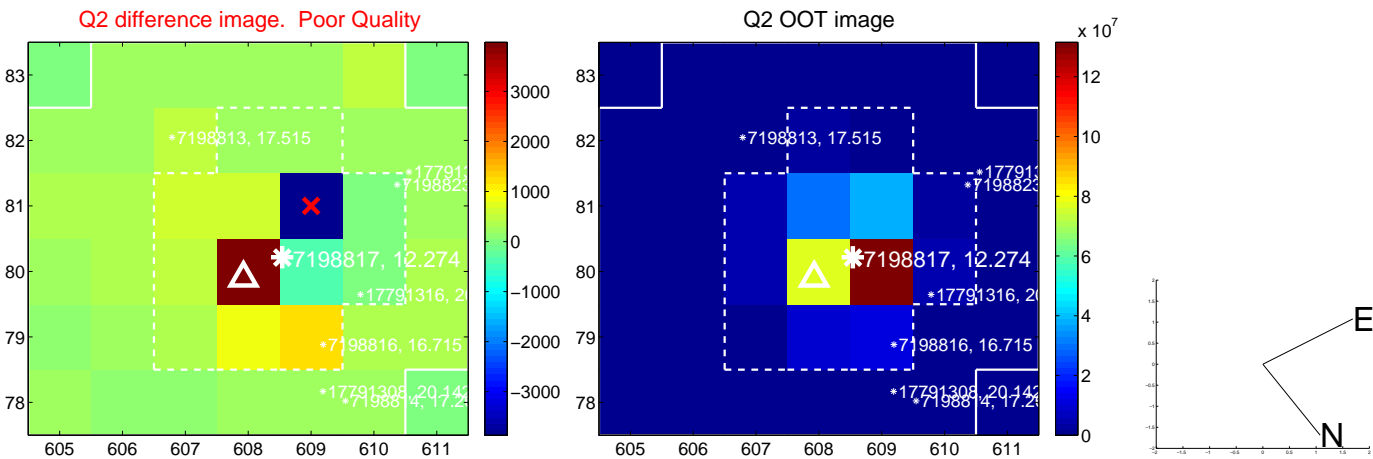
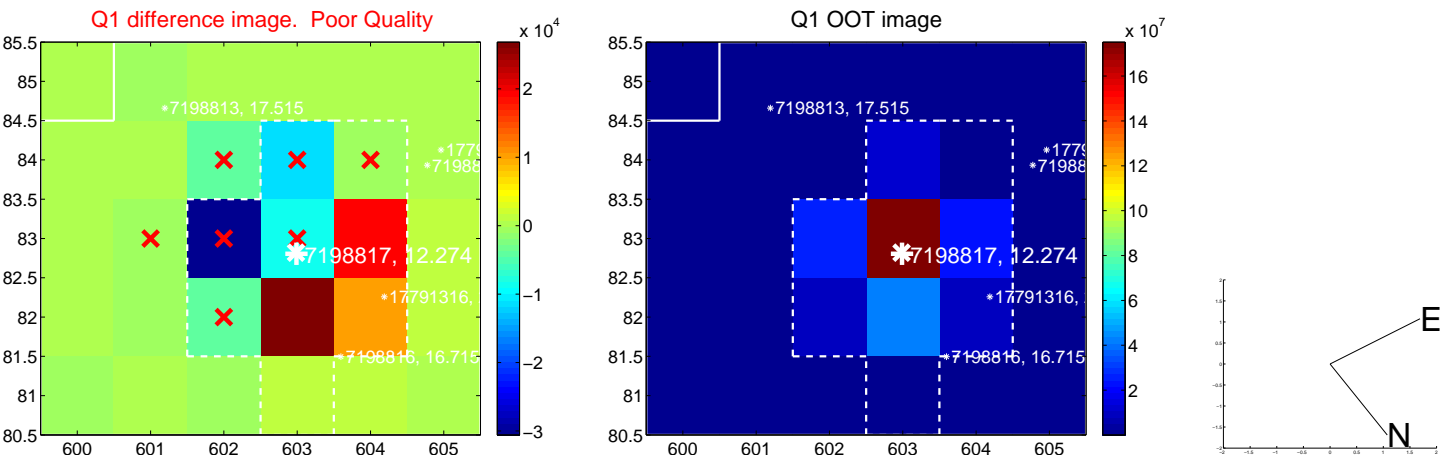
The direct PRF centroid is offset from the target star catalog position by about 0.04 arcsec

| | Distance in arcsec | Distance / σ | Δ RA | Δ Dec |
|---|--------------------|---------------------|--------------------|--------------------|
| PRF-fit source offset from OOT | 0.793 ± 0.629 | 1.26 | -0.074 ± 0.566 | -0.789 ± 0.641 |
| PRF-fit source offset from KIC position | 0.787 ± 0.621 | 1.27 | -0.058 ± 0.624 | -0.784 ± 0.637 |
| photometric centroid source offset | 1.71 ± 0.45 | 3.84 | 1.63 ± 0.45 | -0.53 ± 0.40 |

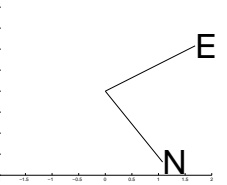
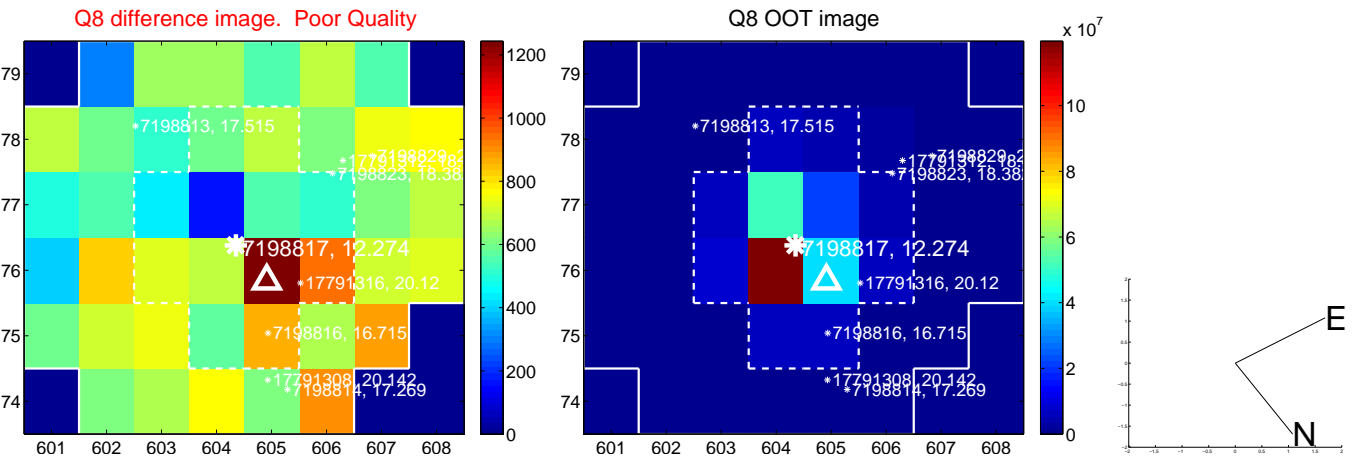
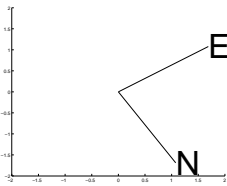
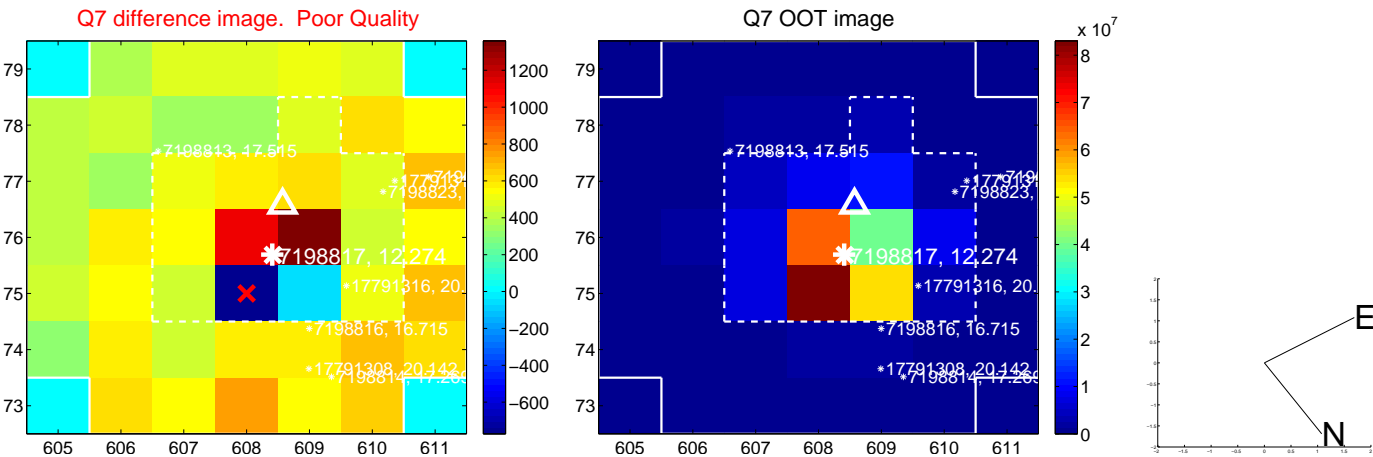
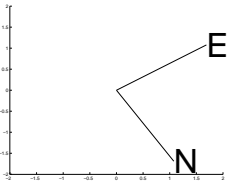
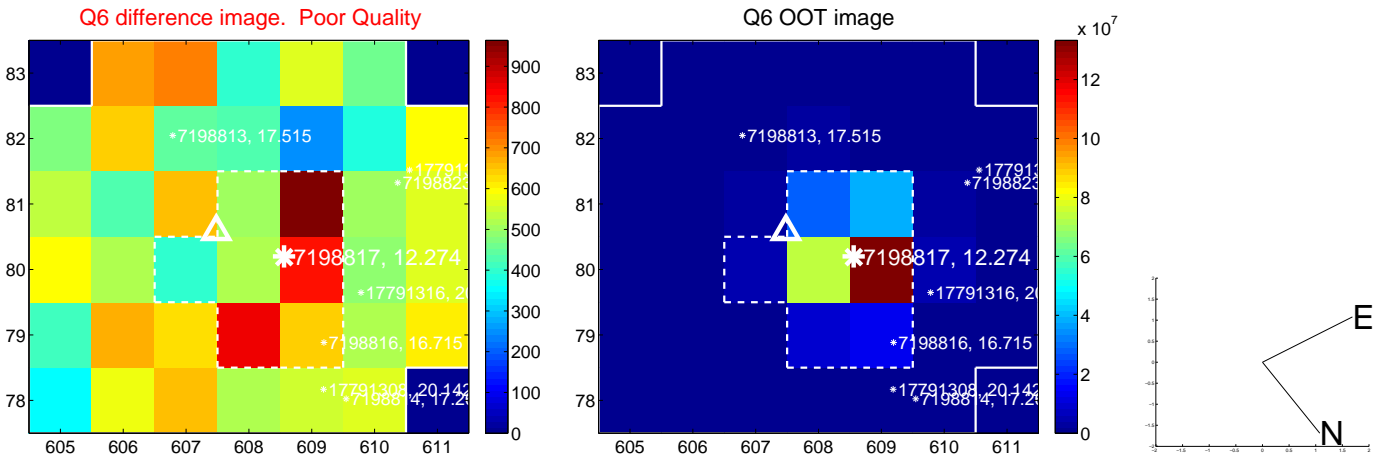
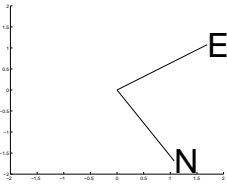
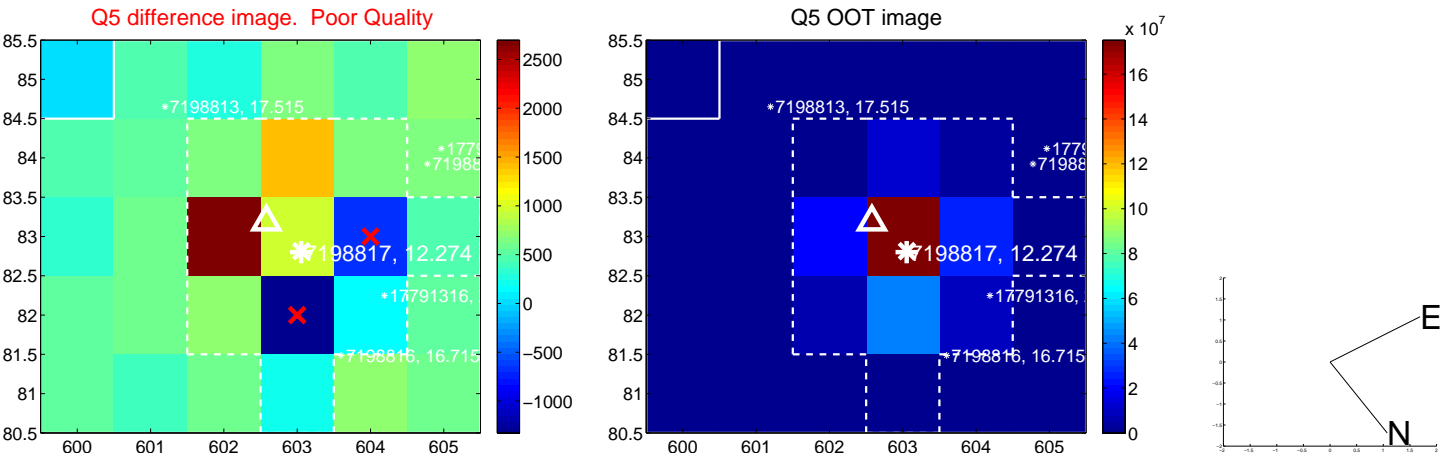


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

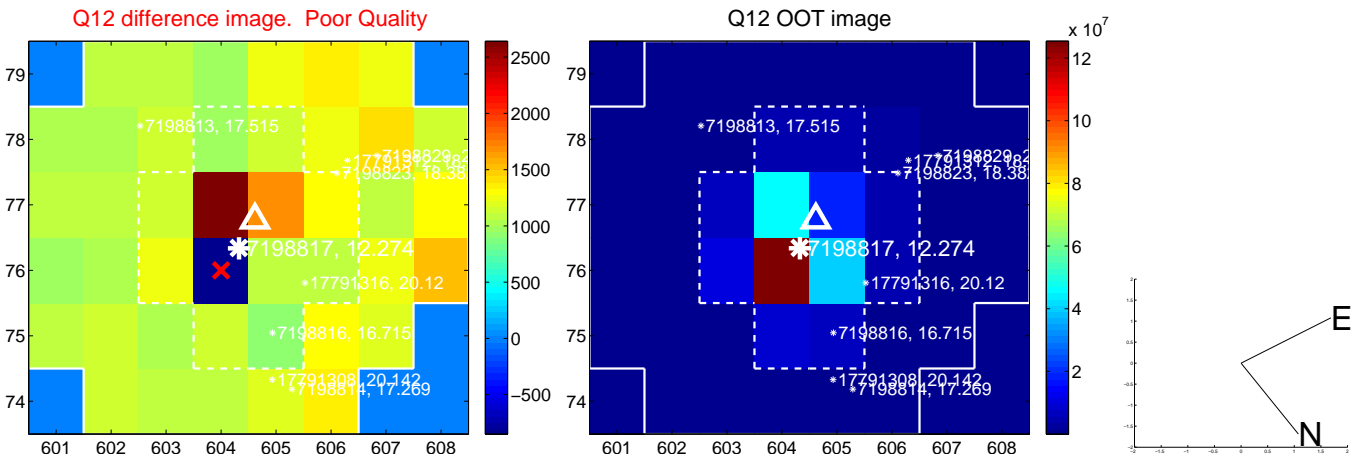
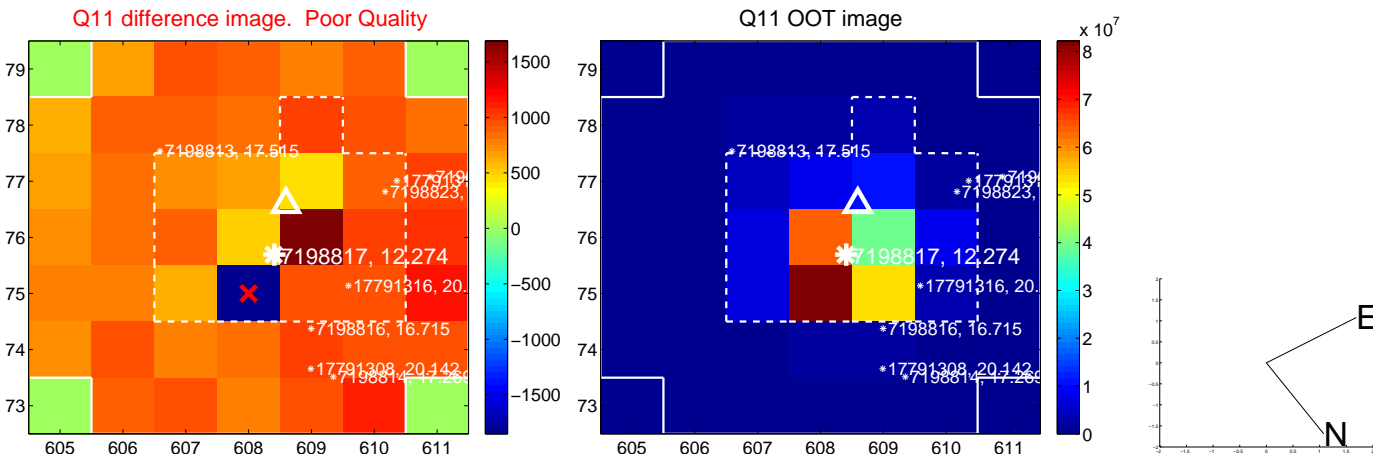
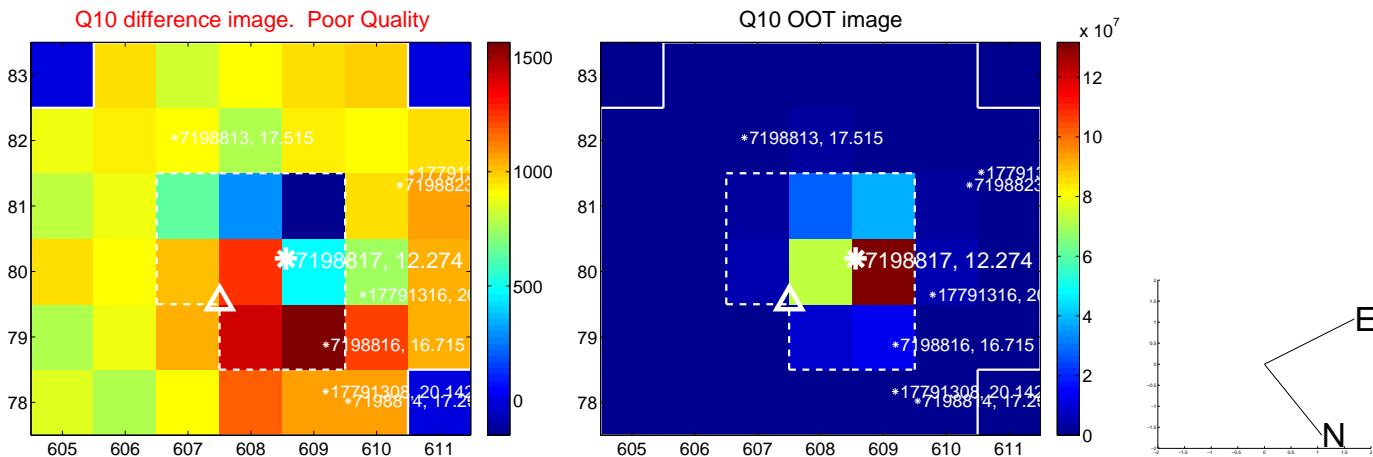
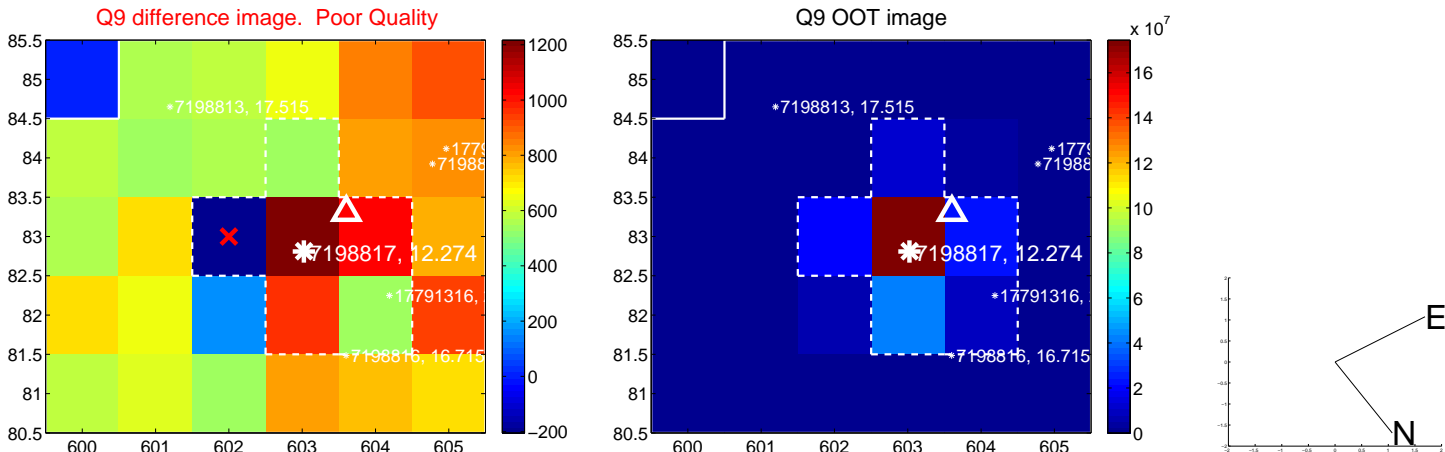
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



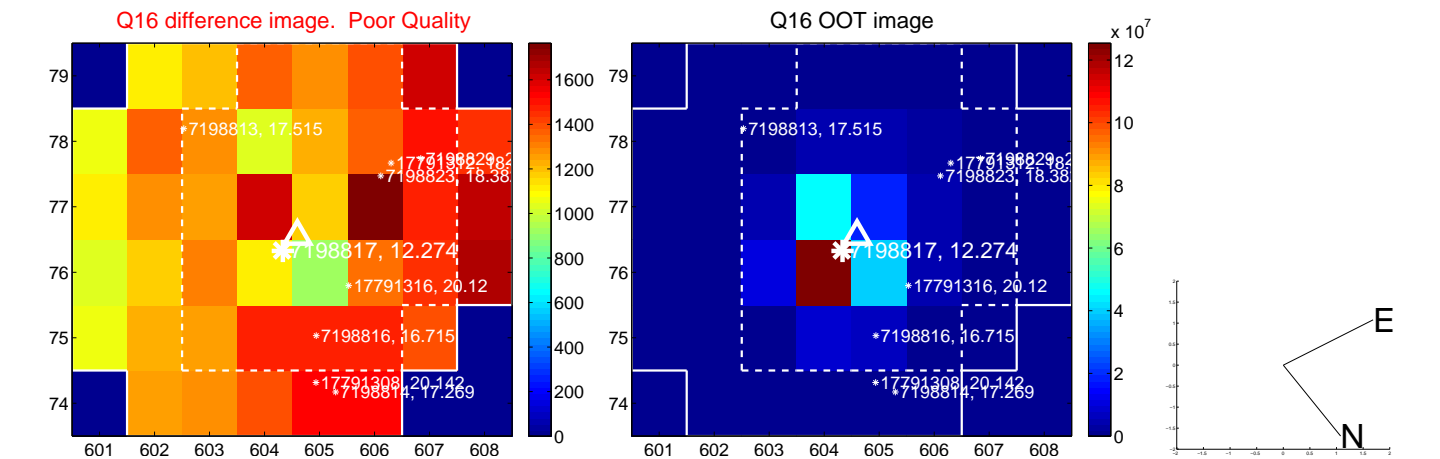
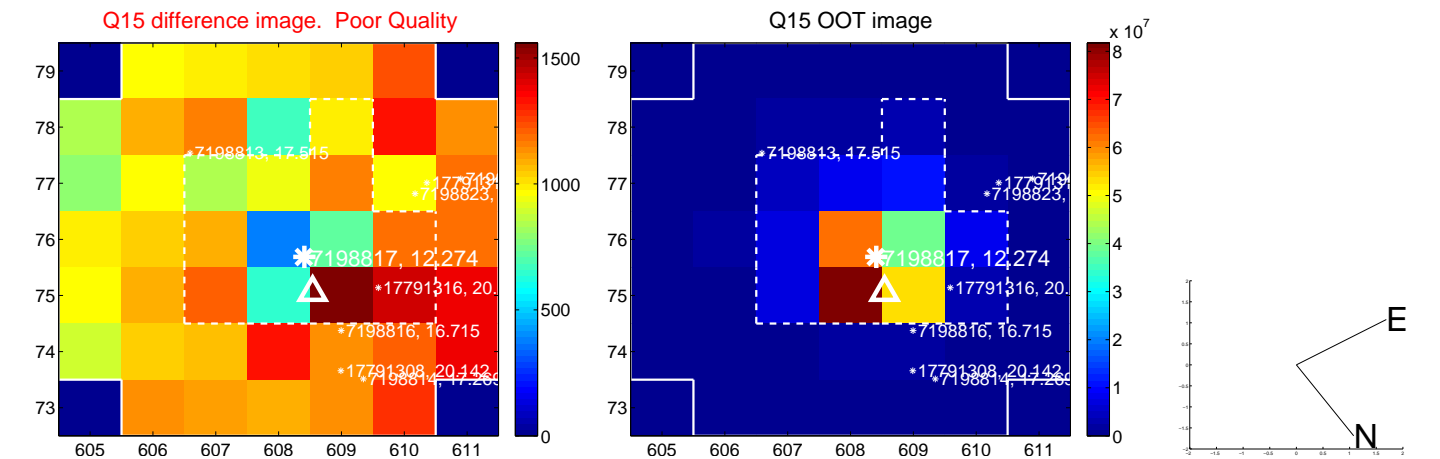
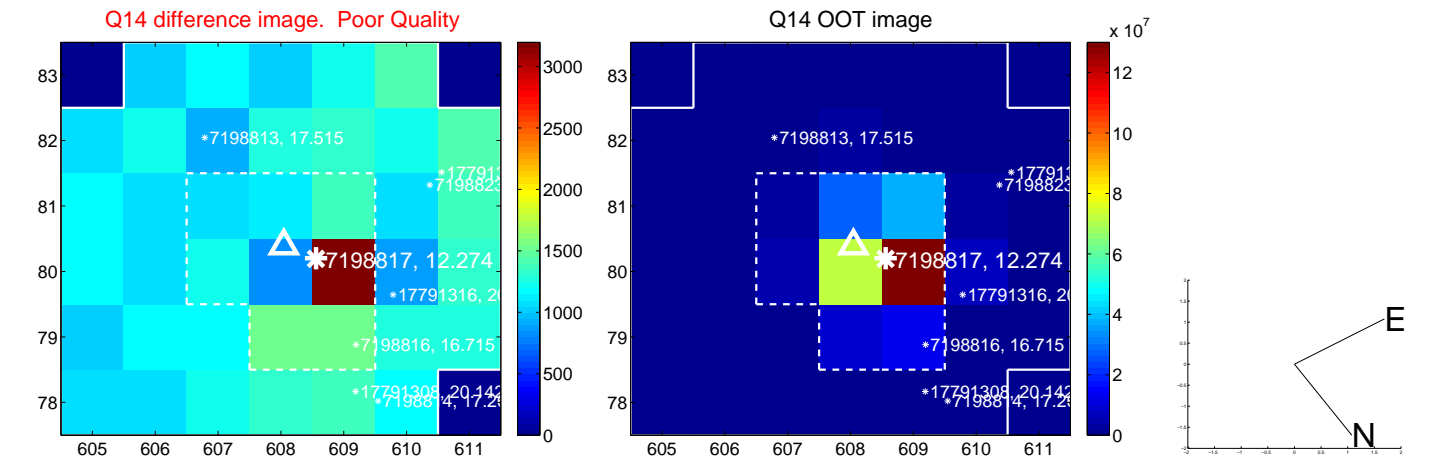
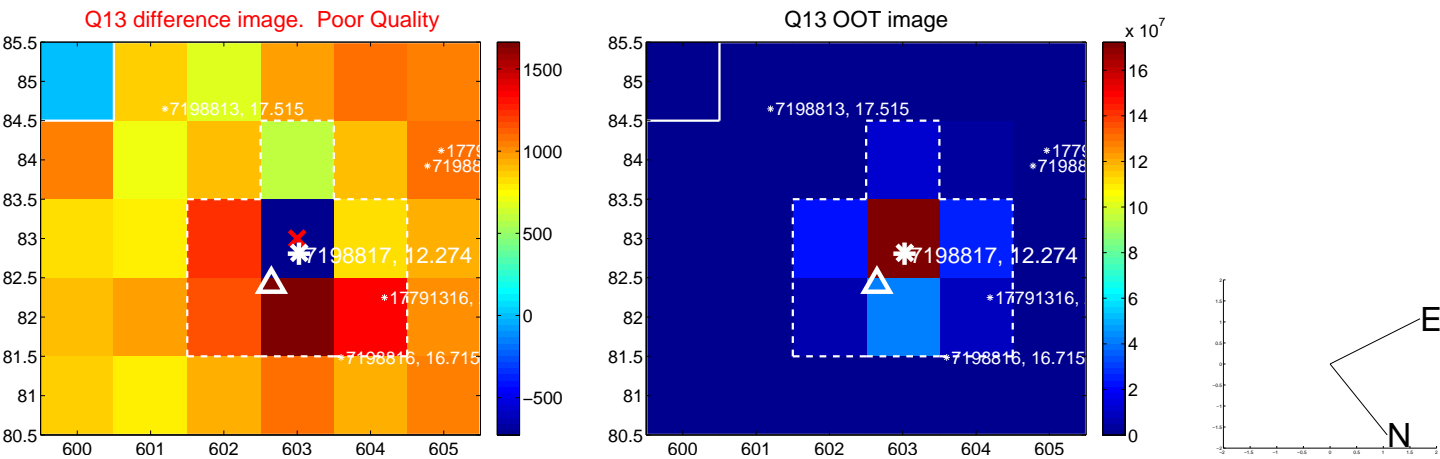
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



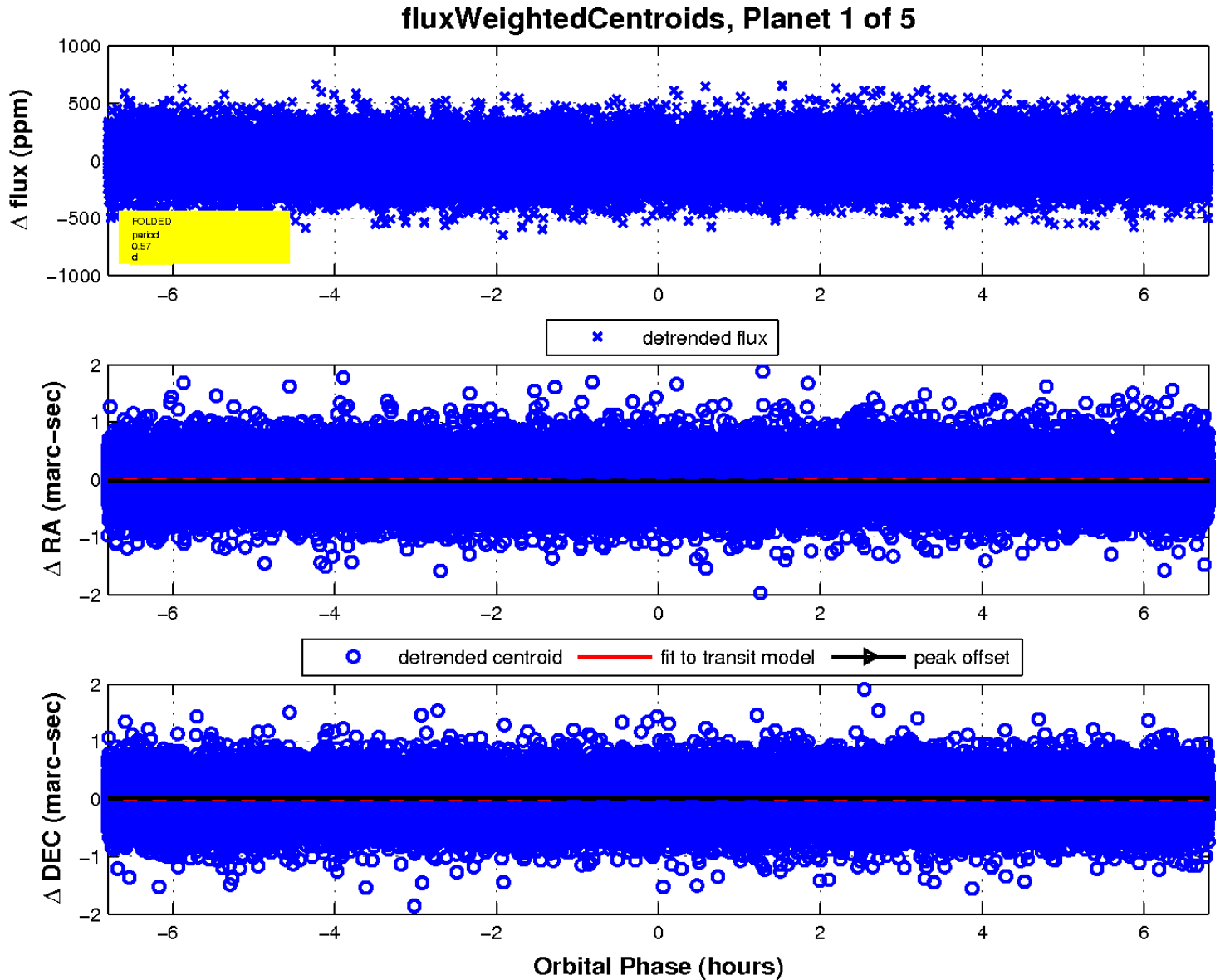
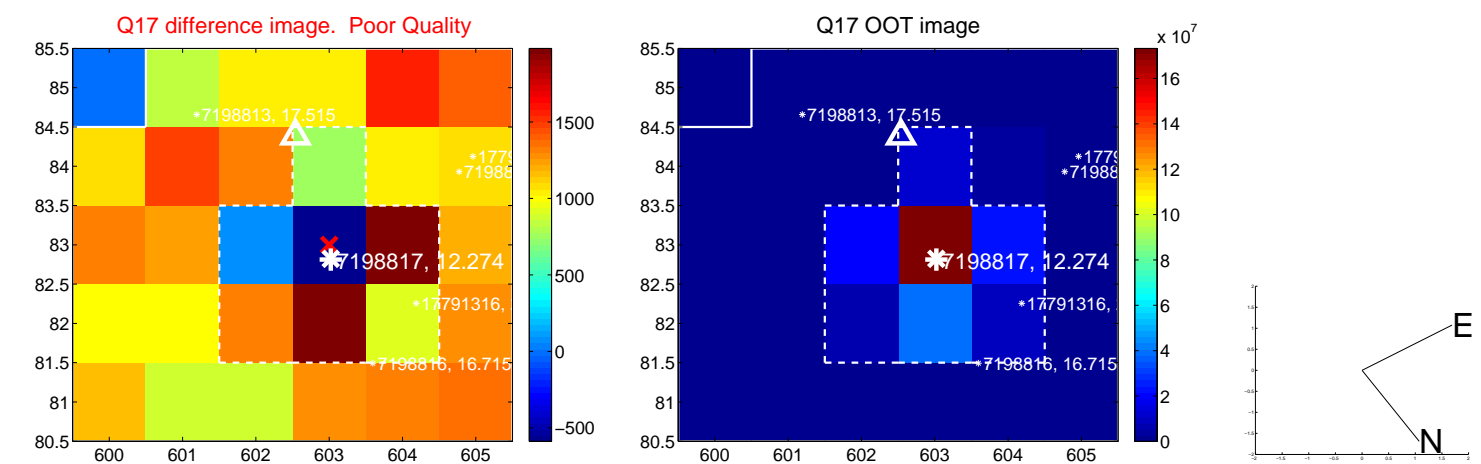
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

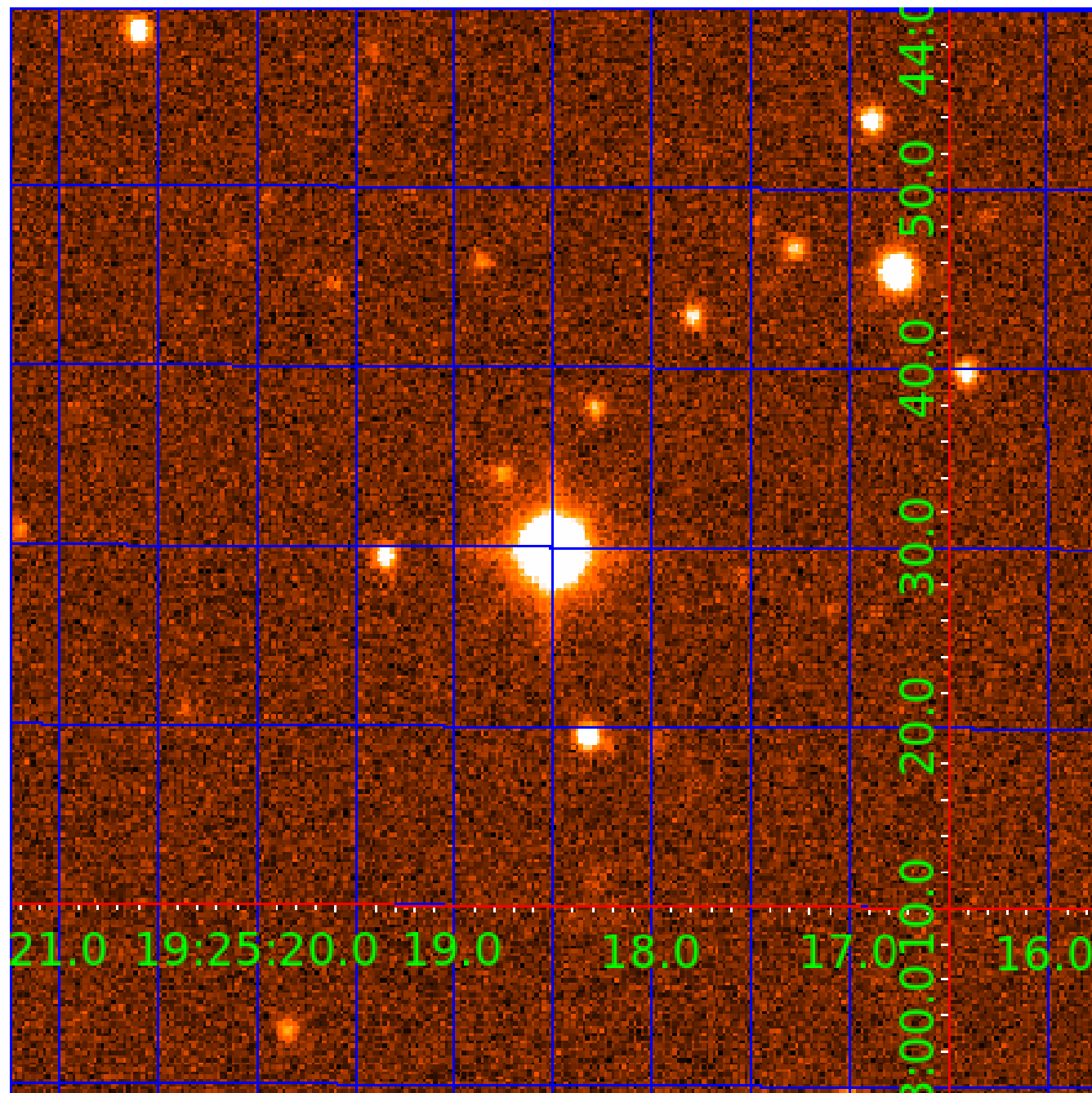


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 007198817

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}) |
|--------------|----------|------|---------------|--------------|-------------|------------------|------|------|-----------------------------|-----------------|------------------------|------------------------|
| 007198817-01 | OBS | No | 0.566796 | 131.679255 | 17.3 | 3.313 | 13.5 | 13.6 | 2.10 | 6513 | 1.02 | 31237.48 |
| 007198817-04 | OBS | No | 179.199044 | 152.941813 | 314.3 | 3.442 | 8.7 | 6.4 | 2.10 | 6513 | 4.11 | 14.50 |
| 007198817-05 | OBS | No | 54.324382 | 141.025928 | 324.8 | 12.673 | 8.6 | 7.4 | 2.10 | 6513 | 6.99 | 71.22 |

Robovetter Results

| TCE | Run Type | Disp | Score | N | S | C | E | Comments |
|--------------|----------|------|-------|---|---|---|---|--|
| 007198817-01 | OBS | FP | 0.00 | 1 | 0 | 0 | 1 | LPP_DV—MOD_NONUNIQ_ALT—EPHEM_MATCH |
| 007198817-04 | OBS | FP | 0.00 | 1 | 0 | 0 | 0 | INDIV_TRANS_RUBBLE_MARSHALL—TRANS_GAPPED—ALL_TRANS_CHASES—MOD_POS_ALT |
| 007198817-05 | OBS | FP | 0.00 | 1 | 0 | 1 | 0 | INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_NONUNIQ_ALT—MOD_POS_ALT—HALO_GHOST |

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

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

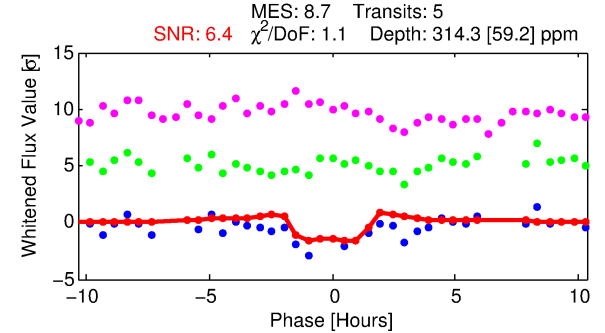
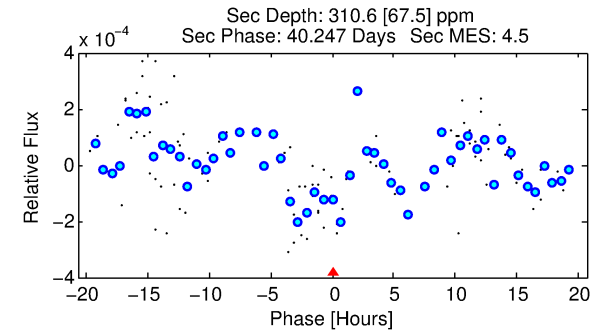
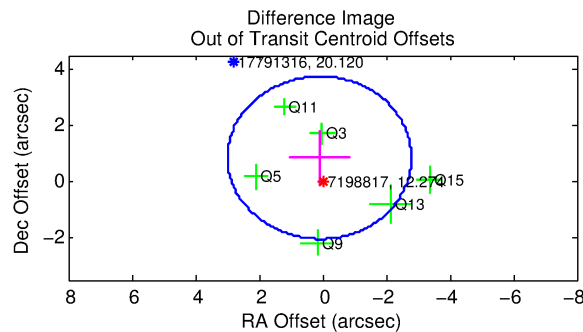
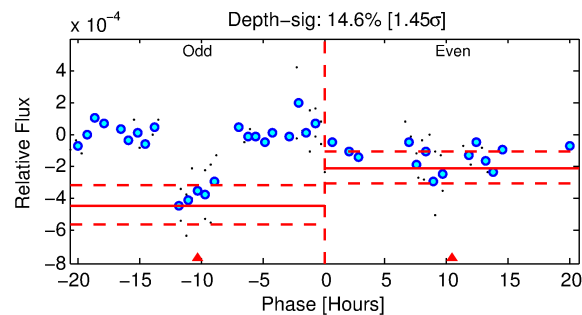
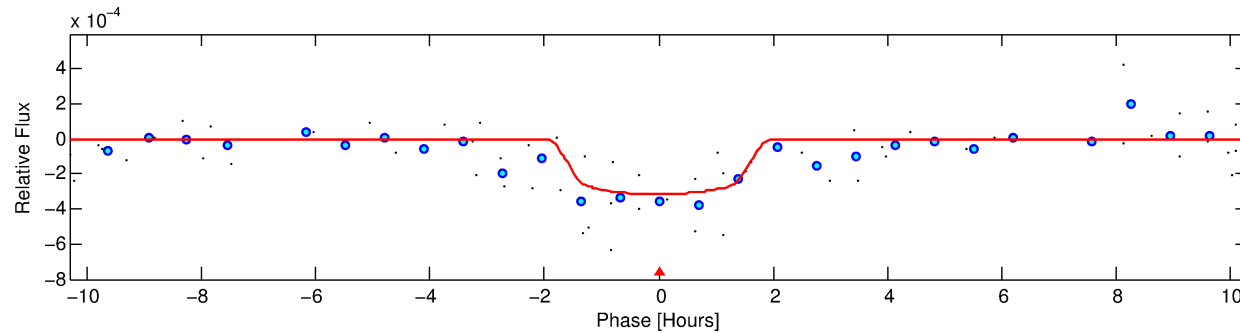
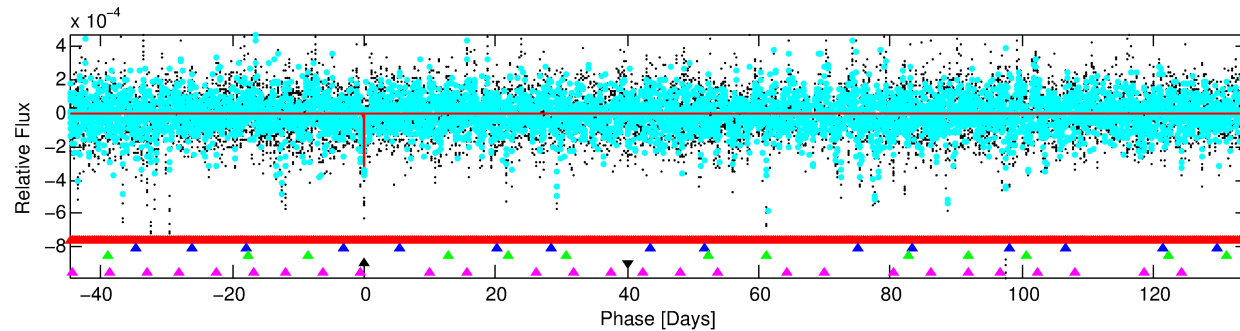
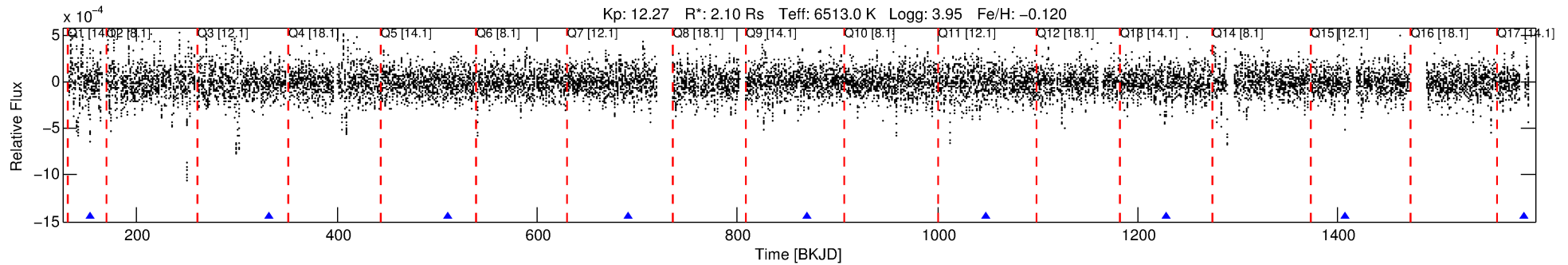
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 007198817-04

No Significant Match Found

DV One-Page Summary

KIC: 7198817 Candidate: 4 of 5 Period: 179.199 d



DV Fit Results:

Period = 179.19904 [0.00254] d
Epoch = 152.9418 [0.0122] BKJD
Rp/R* = 0.0179 [0.0515]
a/R* = 252.42 [4097.91]
b = 0.80 [7.56]
Seff = 14.50 [6.95]
Teq = 498 [60] K
Rp = 4.11 [11.89] Re
a = 0.7012 [0.2132] AU
Ag = 4965.88 [28638.21] [0.17 σ]
Teffp = 6459 [9283] K [0.64 σ]

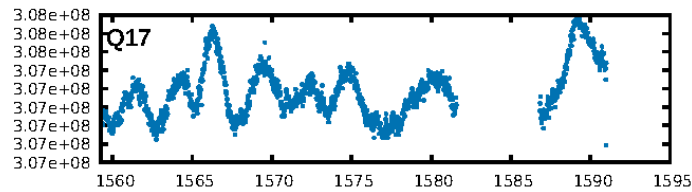
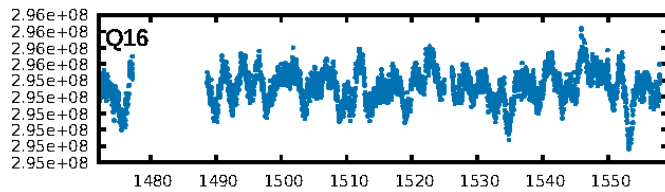
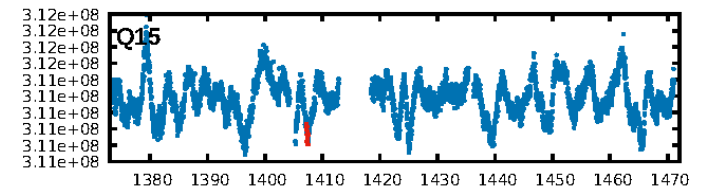
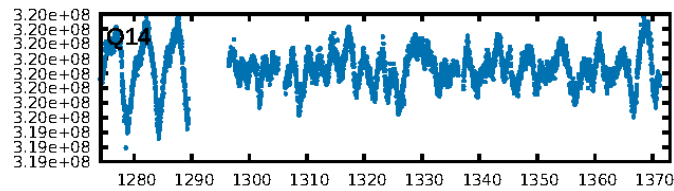
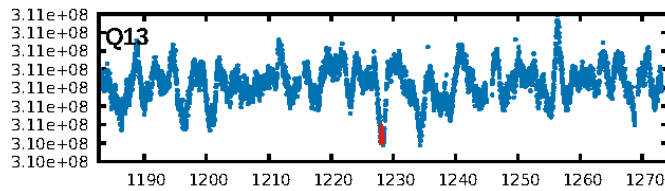
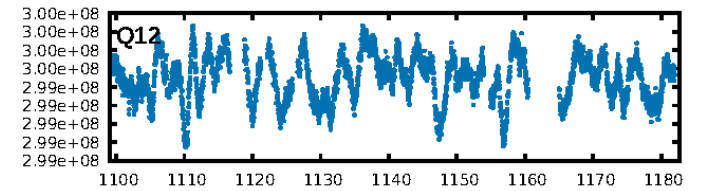
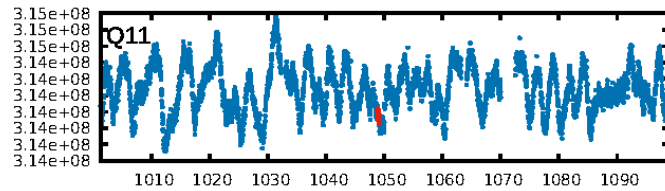
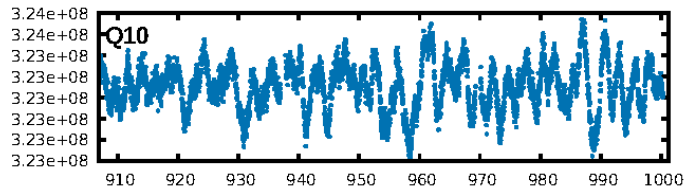
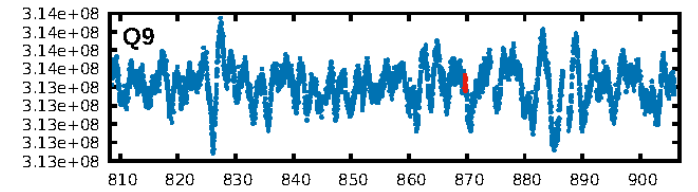
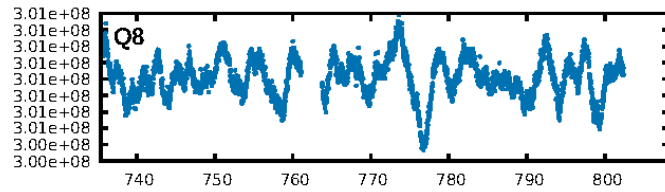
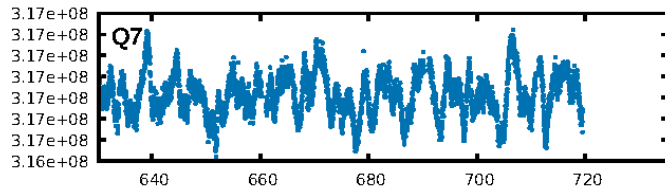
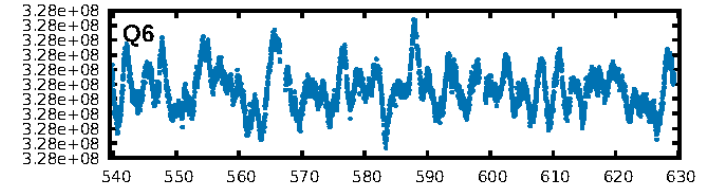
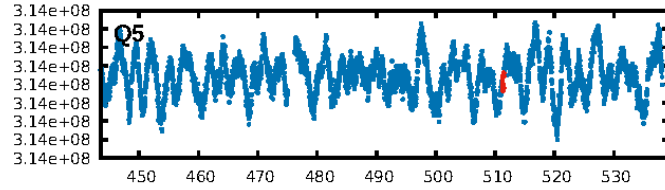
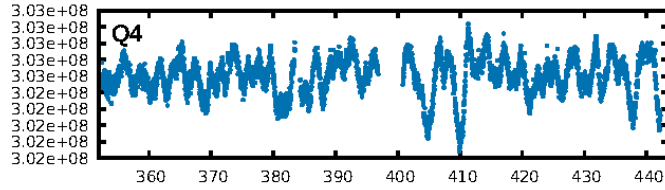
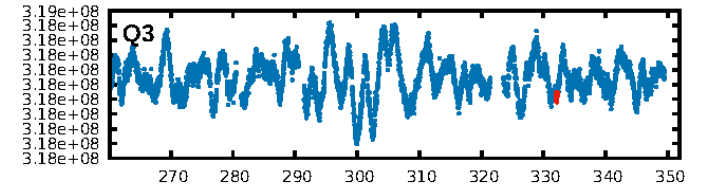
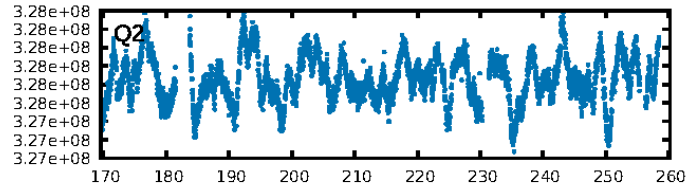
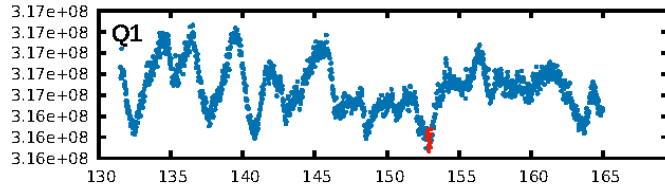
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [351.72 σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 44.6%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 9.84e-11
RollingBand-fgt: 1.00 [4/4]
GhostDiagnostic-chr: 1.254
Centroid-sig: 62.4%
Centroid-so: 0.289 arcsec [0.68 σ]
OotOffset-rm: 0.859 arcsec [0.89 σ]
OotOffset-st: 0/3/0/3 [6]
KicOffset-rm: 0.880 arcsec [0.91 σ]
KicOffset-st: 0/3/0/3 [6]
DiffImageQuality-fgm: 0.50 [3/6]
DiffImageOverlap-fno: 0.00 [0/7]

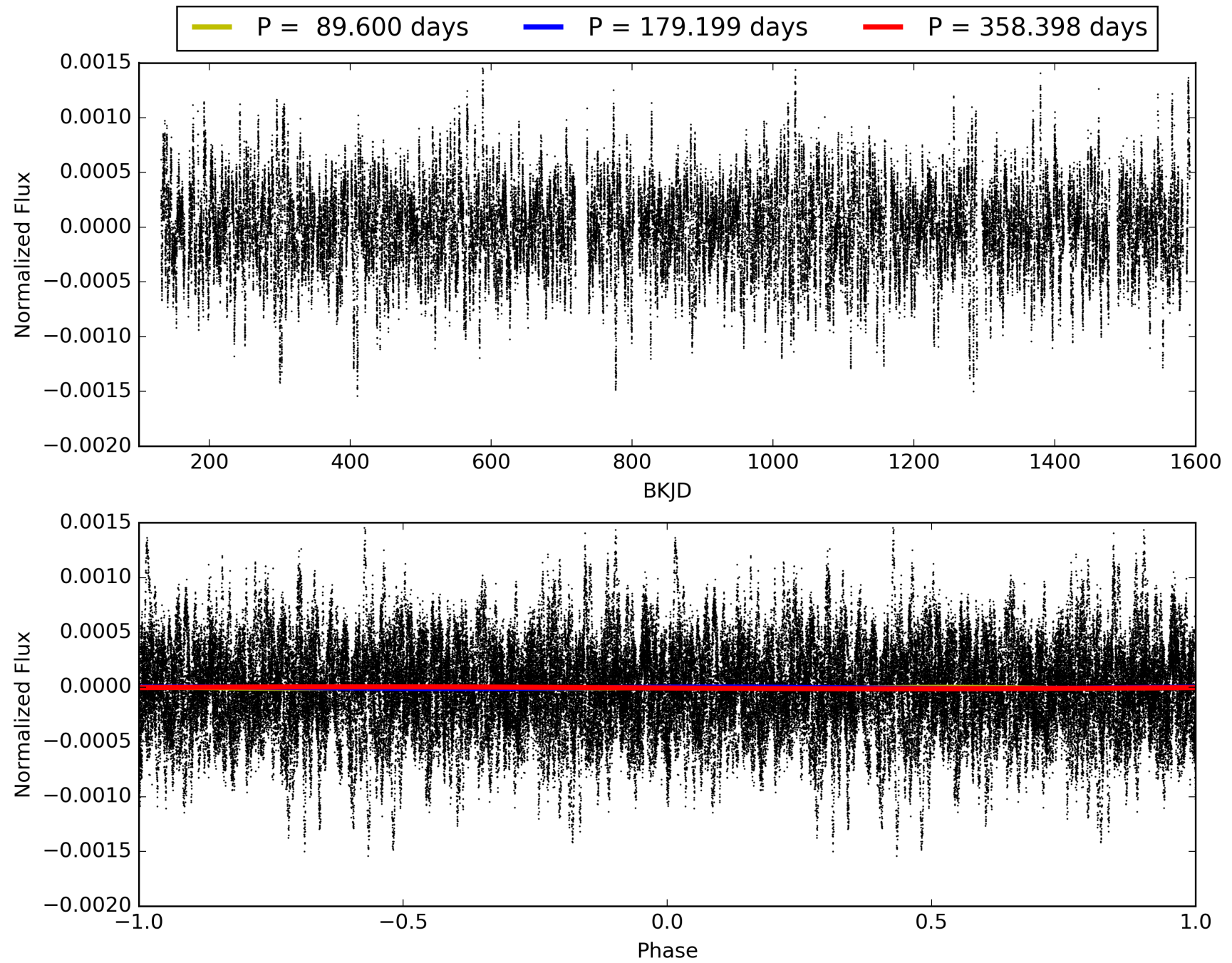
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 22:08:17 Z

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

TCE 007198817-04, PDC Light Curves

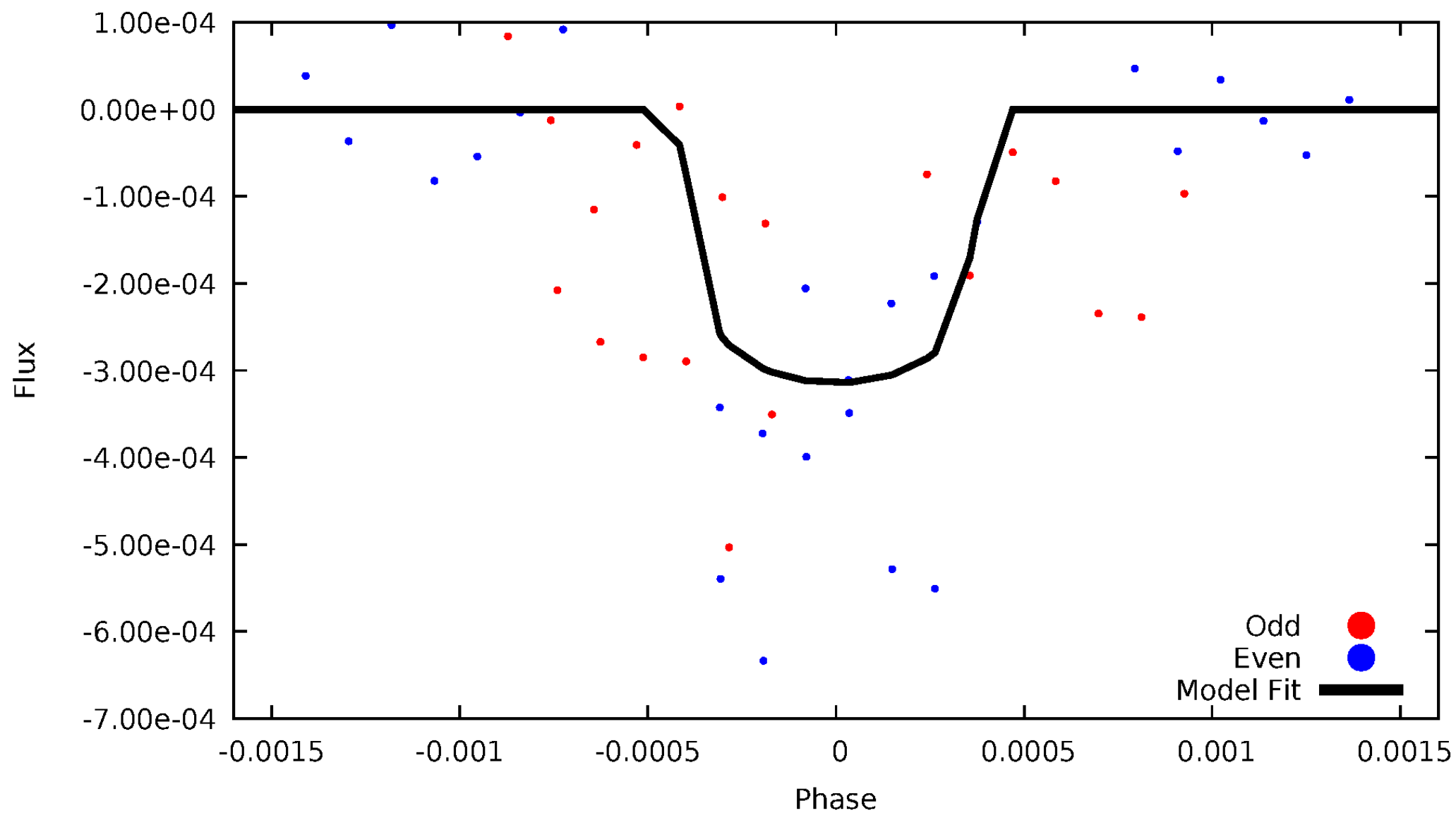


TCE 007198817-04



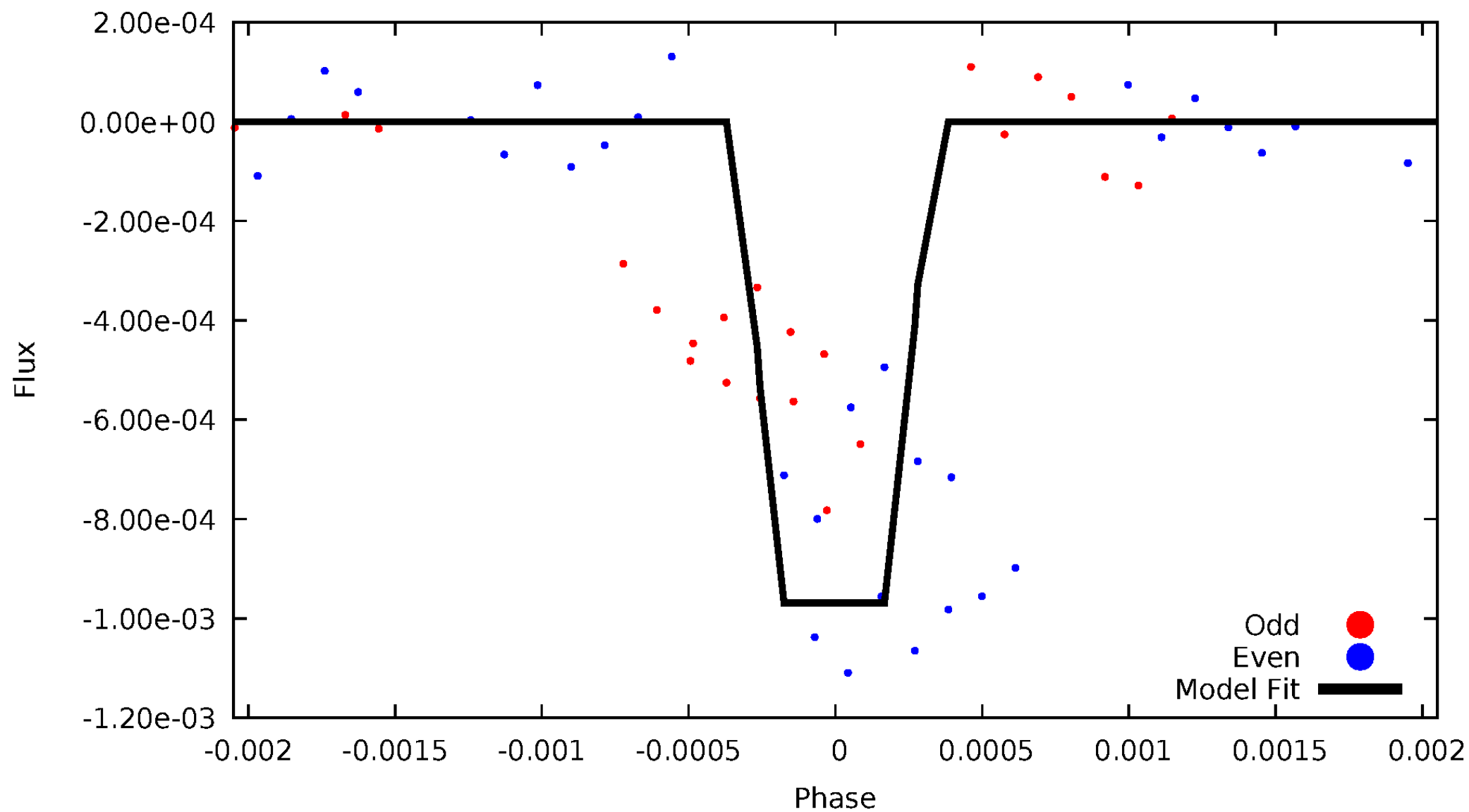
DV Odd/Even

TCE 007198817-04



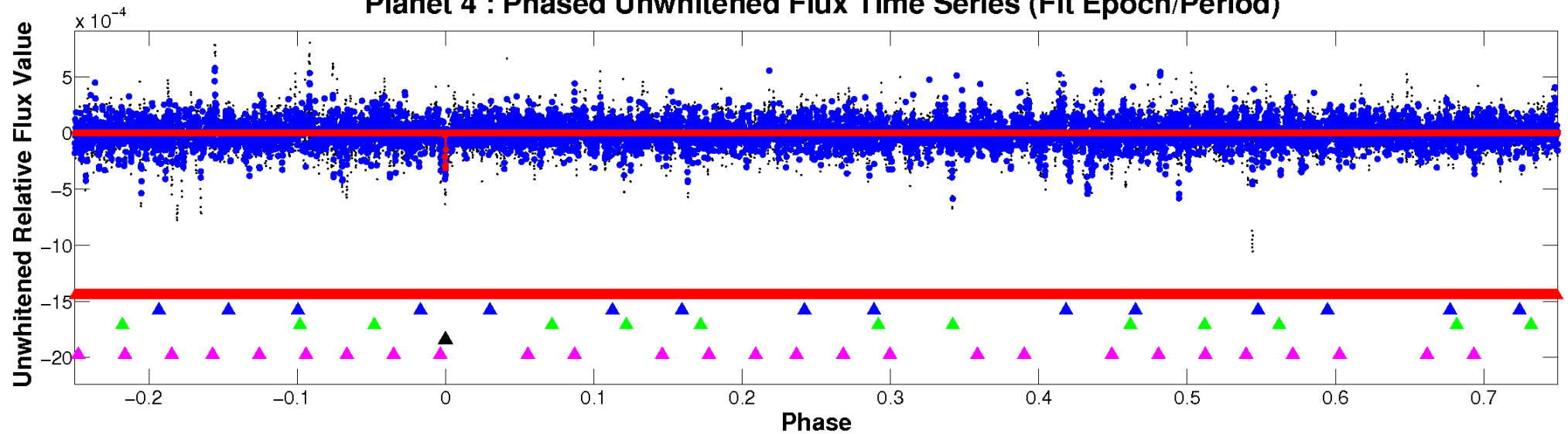
ALT Odd/Even

TCE 007198817-04

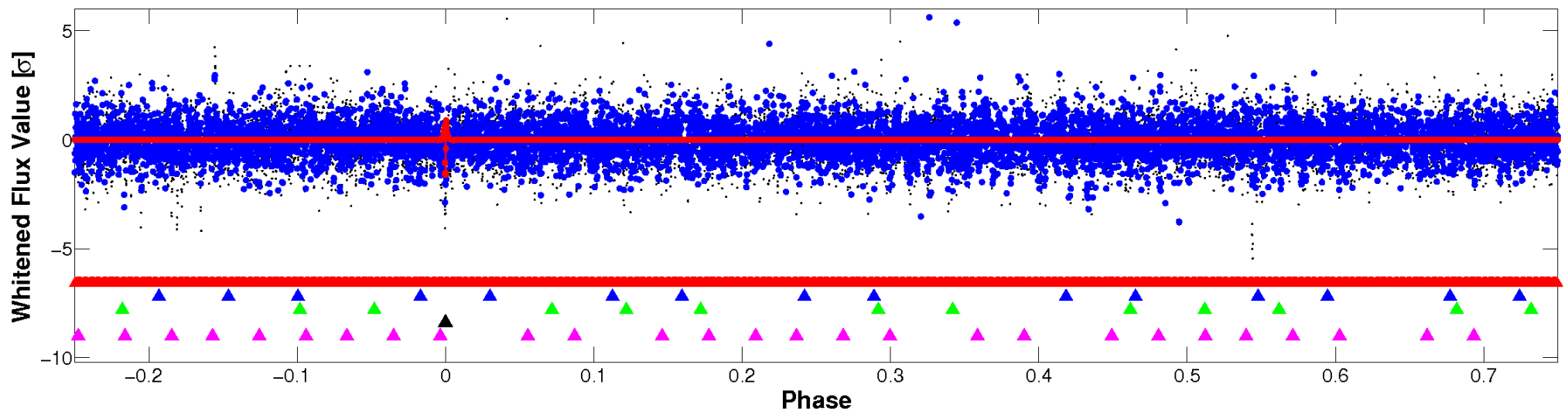


Non-Whitened Vs. Whitened Light Curve

Planet 4 : Phased Unwhitened Flux Time Series (Fit Epoch/Period)

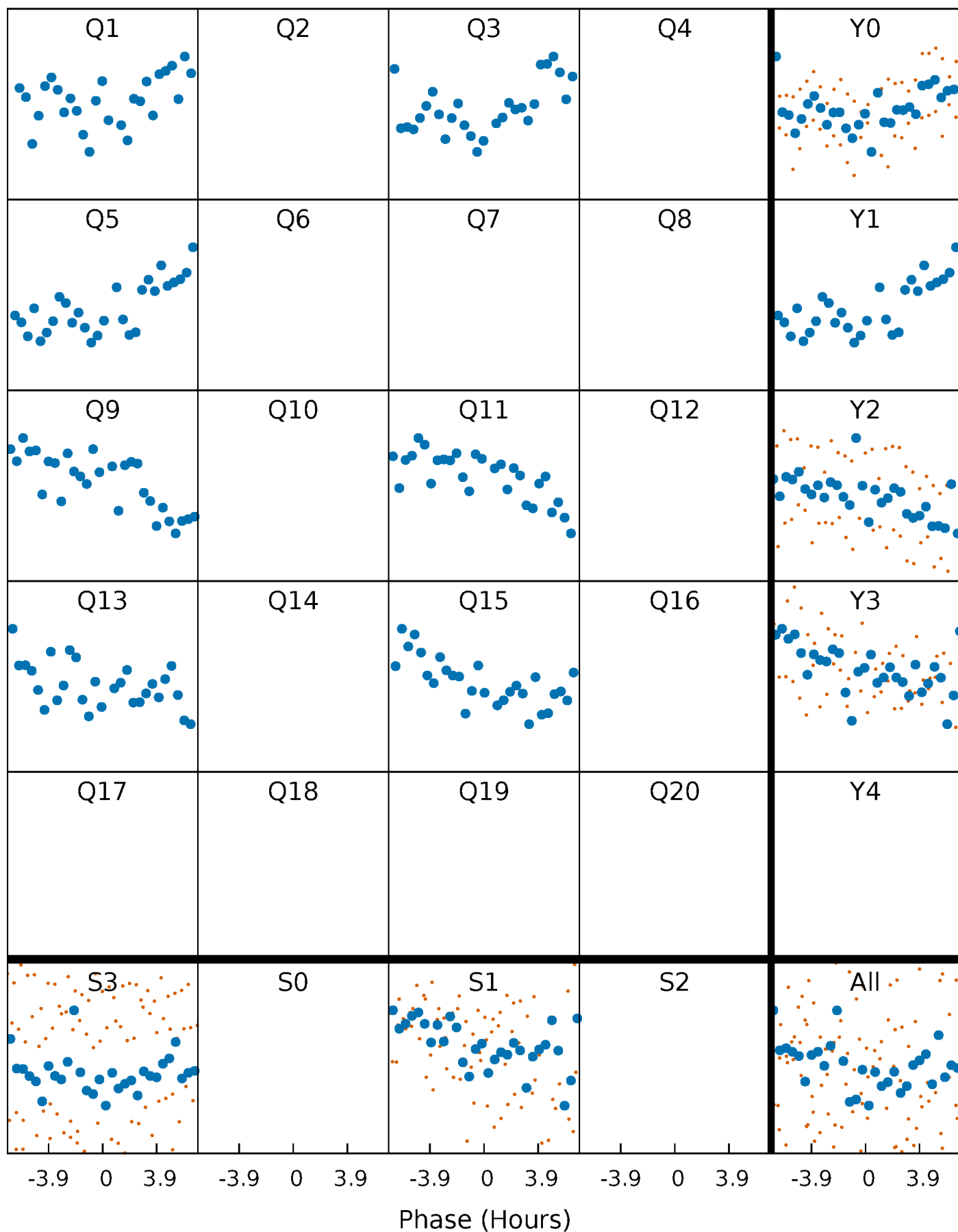


Planet 4 : Phased Whitened Flux Time Series (Fit Epoch/Period)



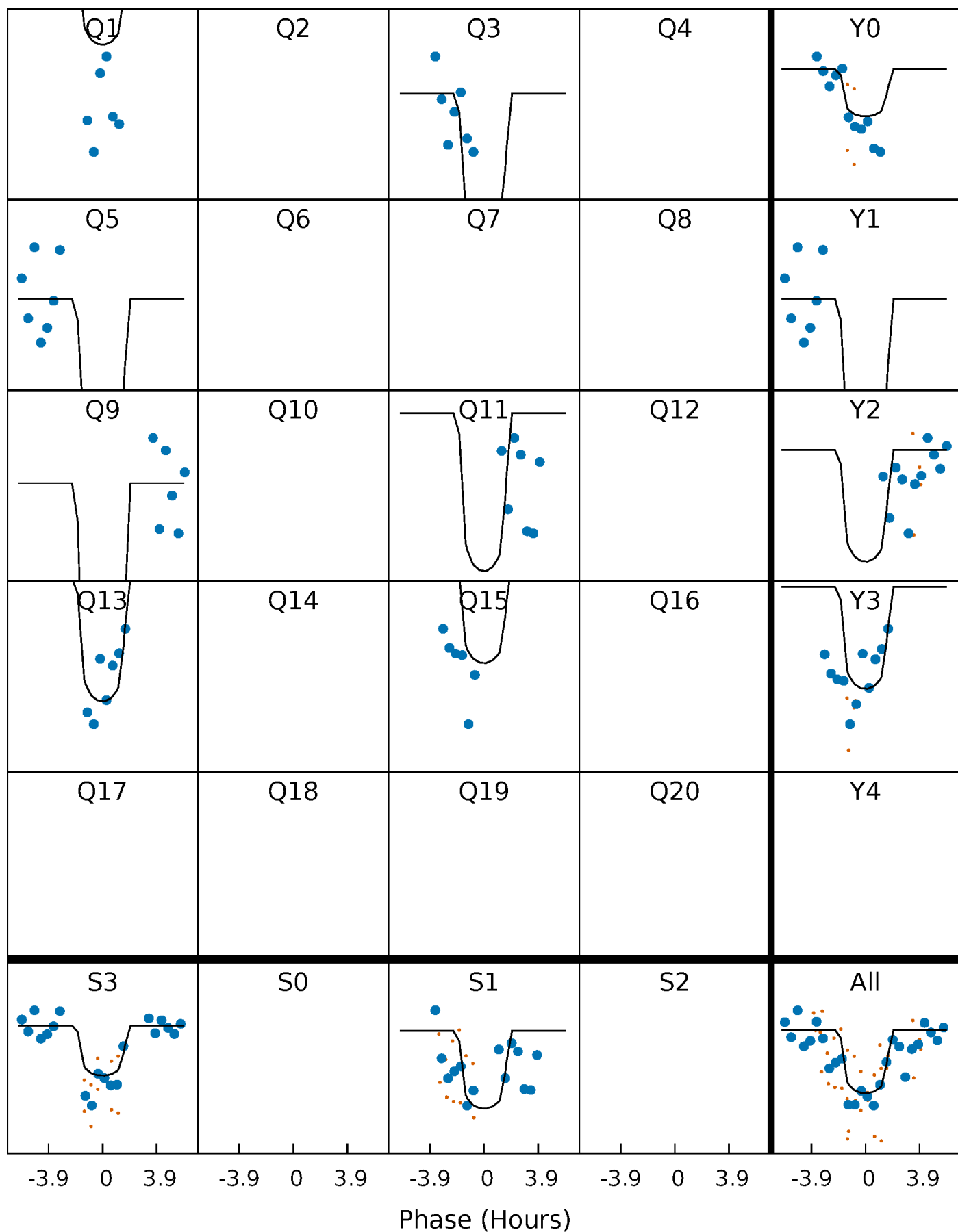
PDC Quarter-Phased Transit Curves

TCE 007198817-04 $P=179.199044$ Days $T_0=152.941813$ (BKJD)



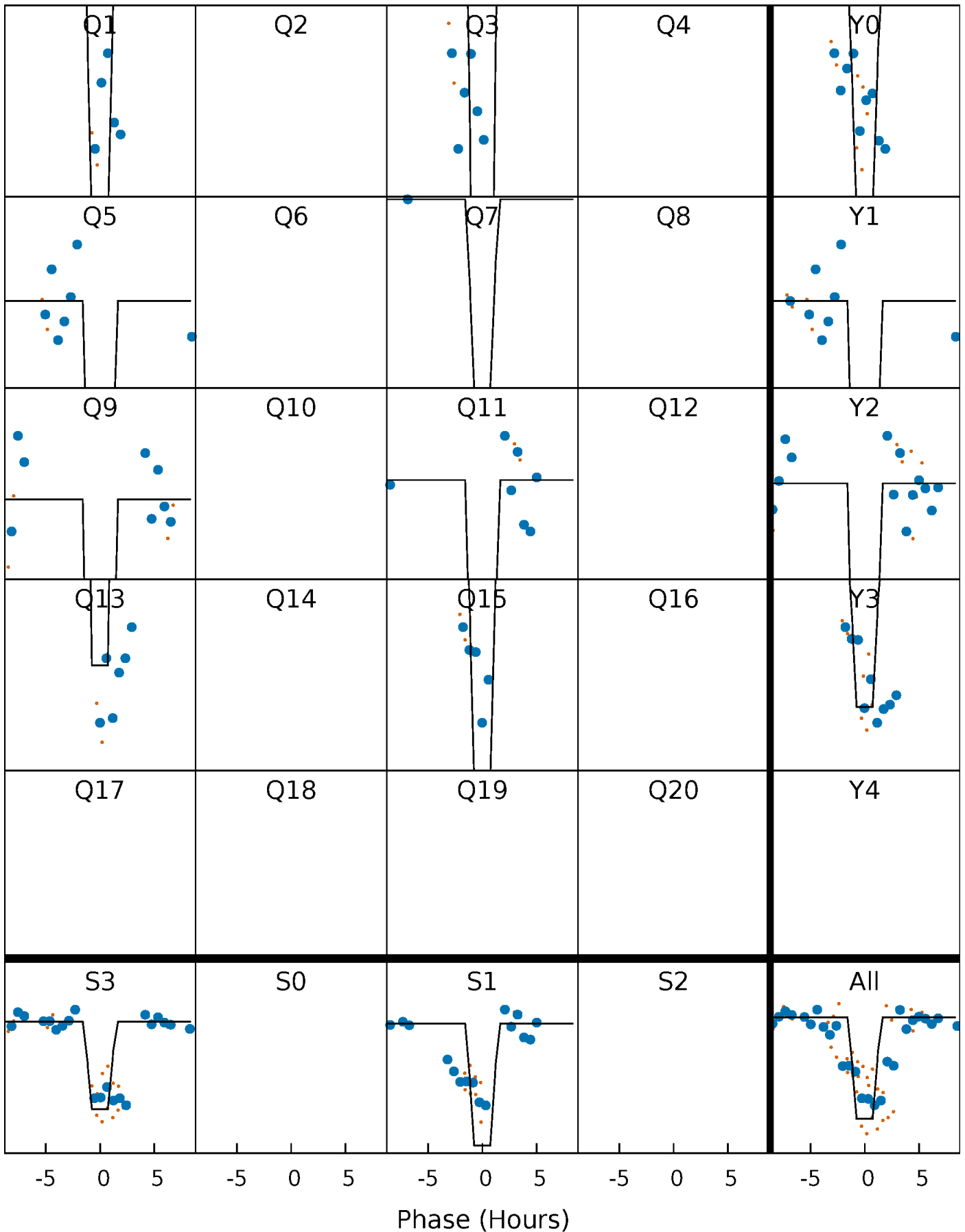
DV Quarter-Phased Transit Curves

TCE 007198817-04 $P=179.199044$ Days $T_0=152.941813$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

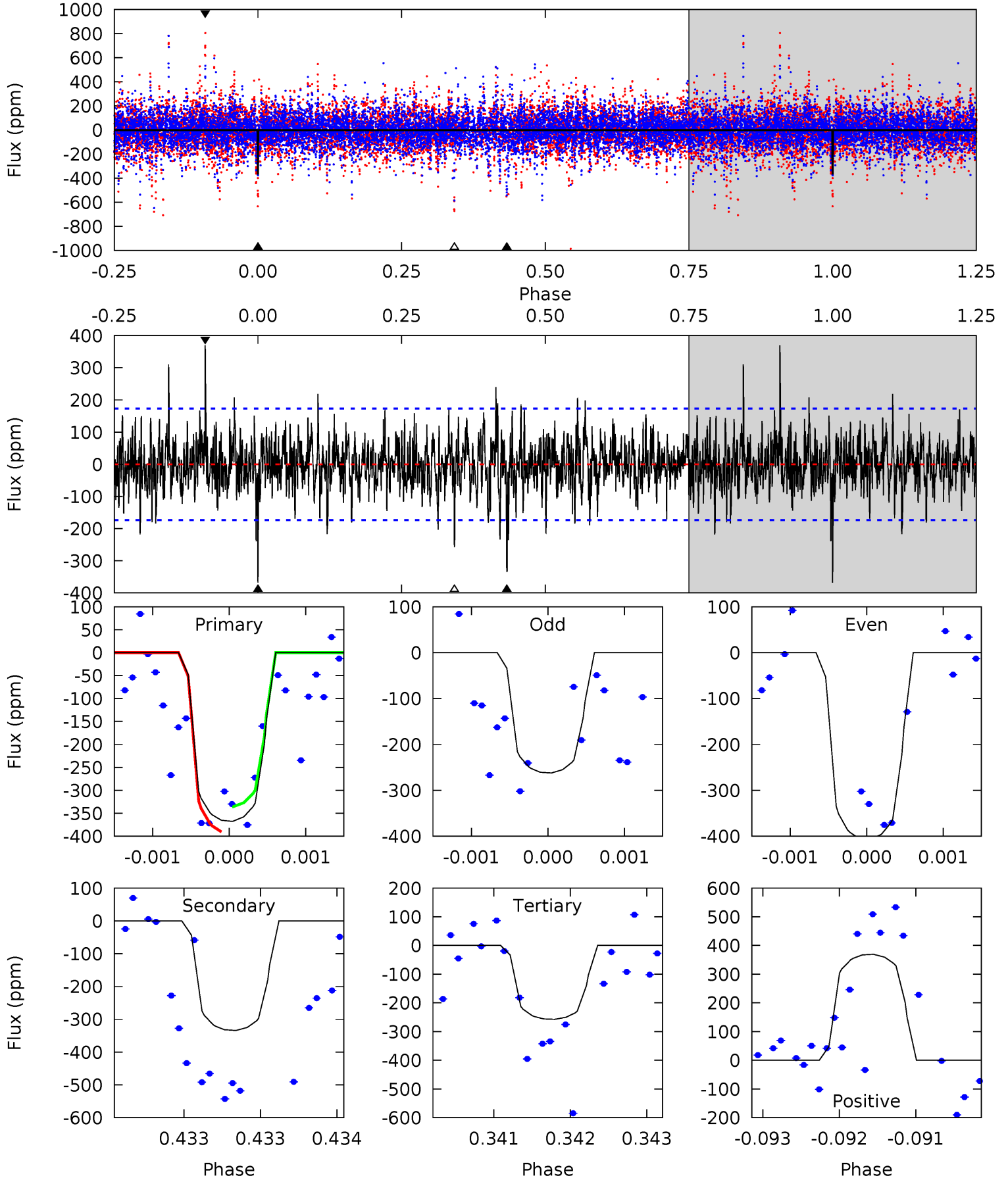
TCE 007198817-04 P=179.195872 Days $T_0=152.918179$ (BKJD)



DV Model-Shift Uniqueness Test

007198817-04, P = 179.199044 Days, E = 152.941813 Days

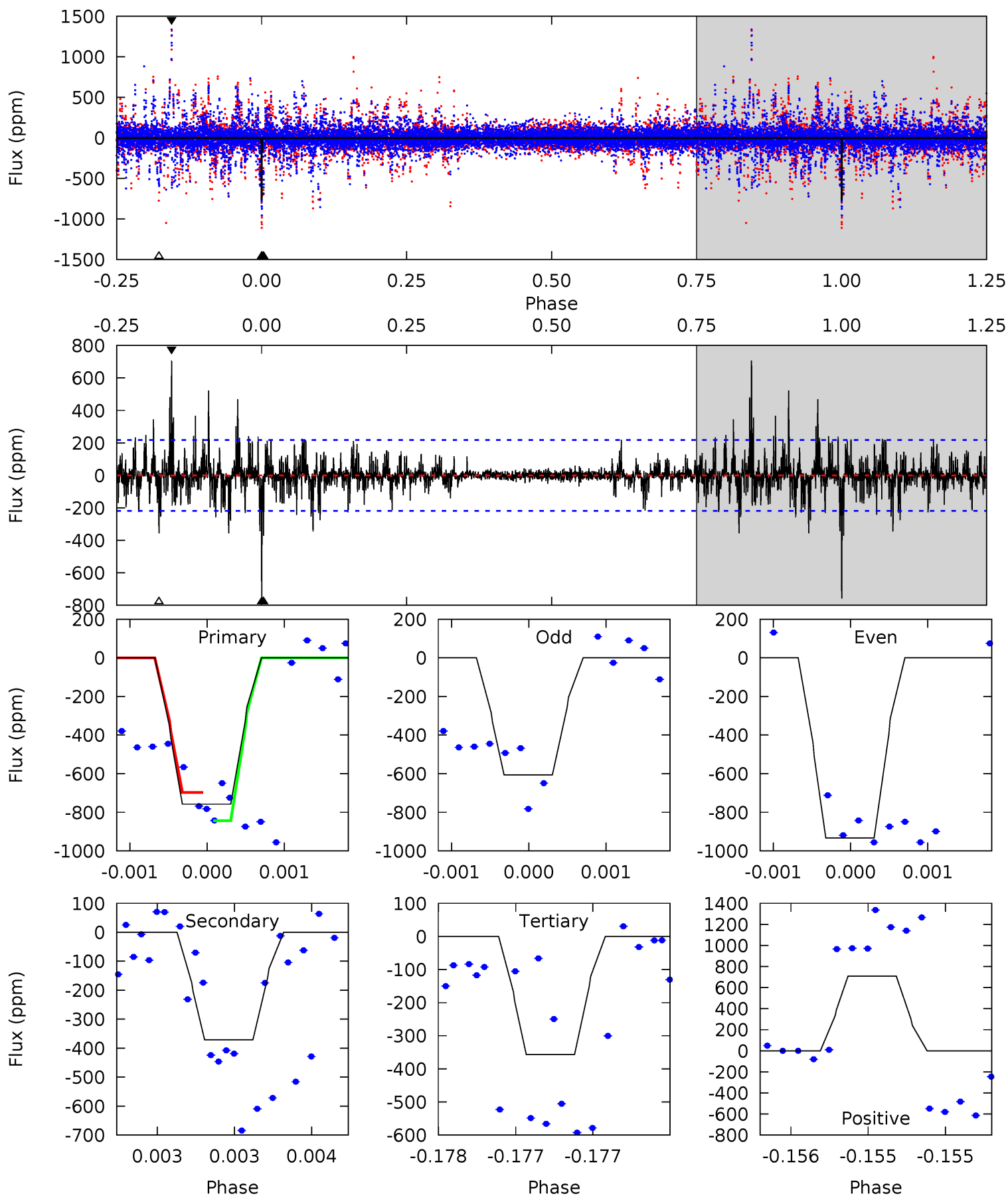
| Pri | Sec | Ter | Pos | FA ₁ | FA ₂ | F _{Red} | Pri-Ter | Pri-Pos | Sec-Ter | Sec-Pos | Odd-Evn | DMM | Shape | TAT |
|------|------|------|------|-----------------|-----------------|------------------|---------|---------|---------|---------|---------|------|-------|------|
| 11.7 | 10.6 | 8.16 | 11.7 | 5.50 | 3.36 | 2.08 | 3.49 | -0.05 | 2.43 | -1.11 | 2.11 | 1.09 | 0.50 | 0.86 |



Alt Model-Shift Uniqueness Test

007198817-04, P = 179.195872 Days, E = 152.918179 Days

| Pri | Sec | Ter | Pos | FA ₁ | FA ₂ | F _{Red} | Pri-Ter | Pri-Pos | Sec-Ter | Sec-Pos | Odd-Evn | DMM | Shape | TAT |
|------|------|------|------|-----------------|-----------------|------------------|---------|---------|---------|---------|---------|------|-------|------|
| 19.3 | 9.45 | 9.08 | 18.0 | 5.56 | 3.46 | 1.79 | 10.2 | 1.27 | 0.37 | -8.57 | 3.41 | 1.08 | 0.48 | 1.88 |



Stellar Parameters For KIC 007198817

| | $T_{\text{eff}}(K)$ | $\log(g)$ | [Fe/H] | $R (R_{\odot})$ | $M(M_{\odot})$ | $p_{\star} (\text{g}\cdot\text{cm}^{-3})$ |
|--------|----------------------|---------------------------|----------------------------|---------------------------|---------------------------|---|
| | 6513^{+162}_{-179} | $3.948^{+0.266}_{-0.114}$ | $-0.120^{+0.300}_{-0.250}$ | $2.103^{+0.438}_{-0.711}$ | $1.433^{+0.163}_{-0.303}$ | $0.217^{+0.377}_{-0.076}$ |
| | +2%/-3% | +7%/-3% | +250%/-208% | +21%/-34% | +11%/-21% | +174%/-35% |
| 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 007198817-04 / KOI

| Detrend | Depth (ppm) | $R_p (R_{\oplus})$ | $T_{max} (K)$ | $T_{obs} (K)$ | A_{obs} |
|---------|---------------|--------------------------|-------------------|-----------------------|-----------------------|
| DV | -334 ± 32 | $8.76^{+9.81}_{-5.81}$ | 684^{+44}_{-54} | 4513^{+3233}_{-992} | 1143^{+8647}_{-886} |
| Alt. | -371 ± 39 | $10.23^{+10.08}_{-7.23}$ | 685^{+43}_{-59} | 4364^{+3657}_{-908} | 961^{+10670}_{-716} |

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 $A_{obs} \gg 1.0$

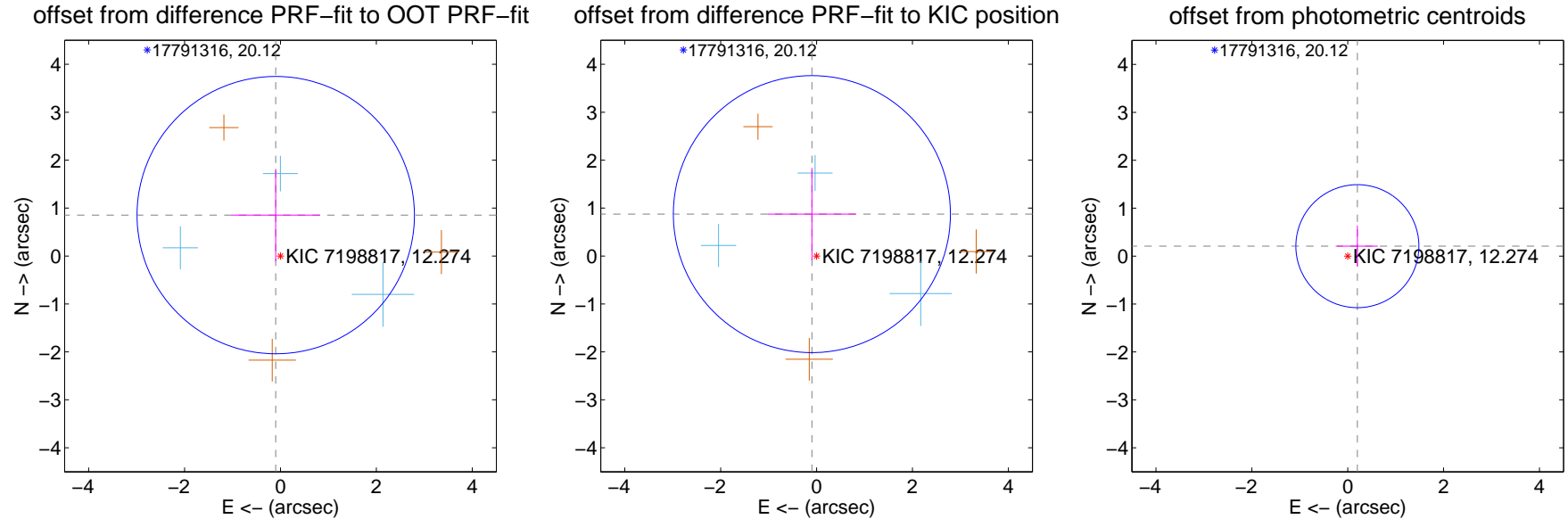
DV Centroid Data

Supplemental centroid analysis for 007198817-04. Kepler magnitude: 12.27. Transit SNR 6.37

There are 3 quarters with good PRF difference image offsets

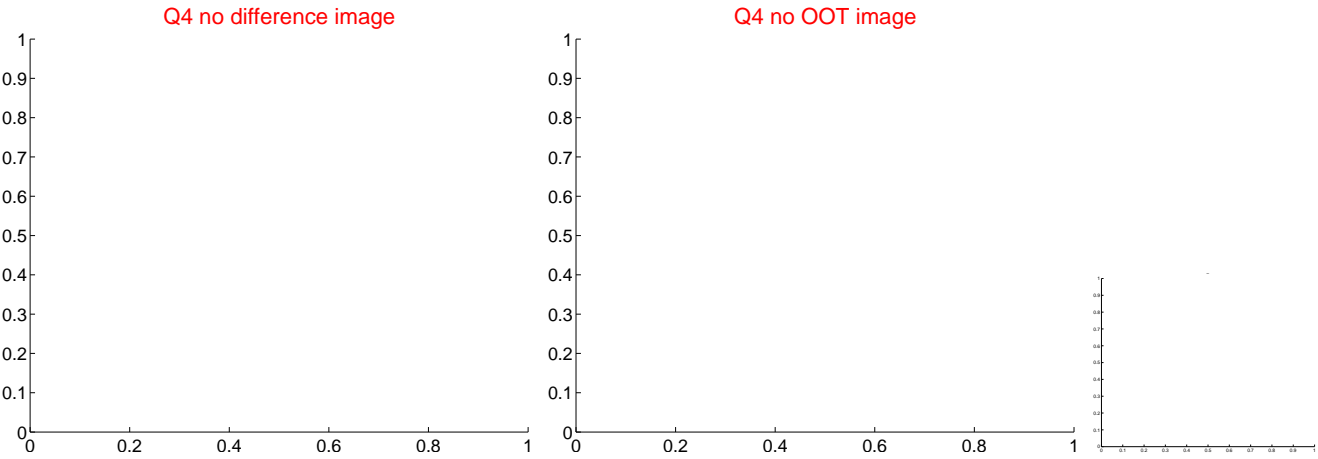
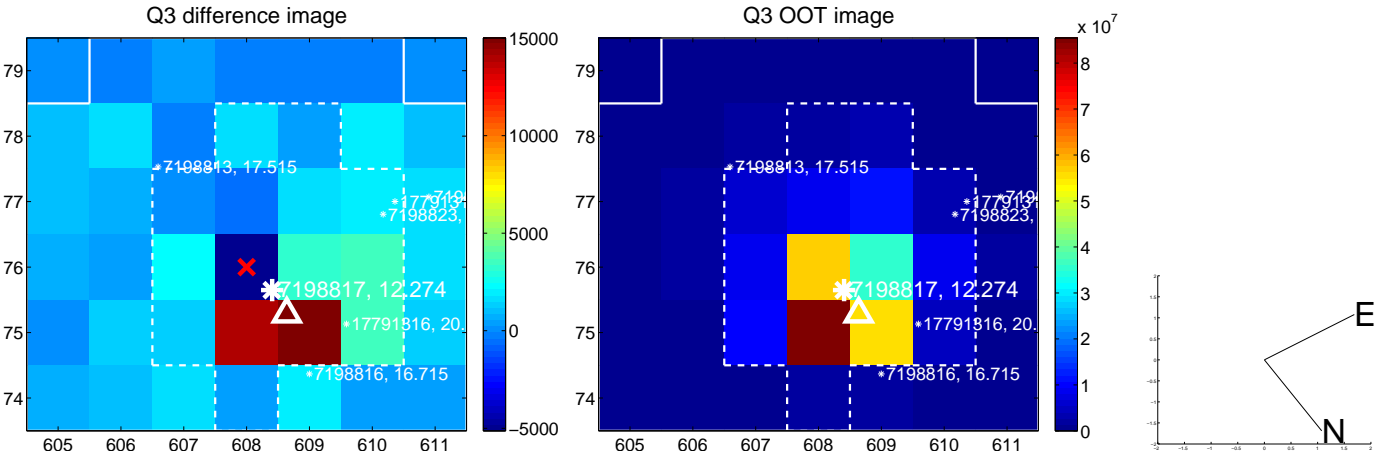
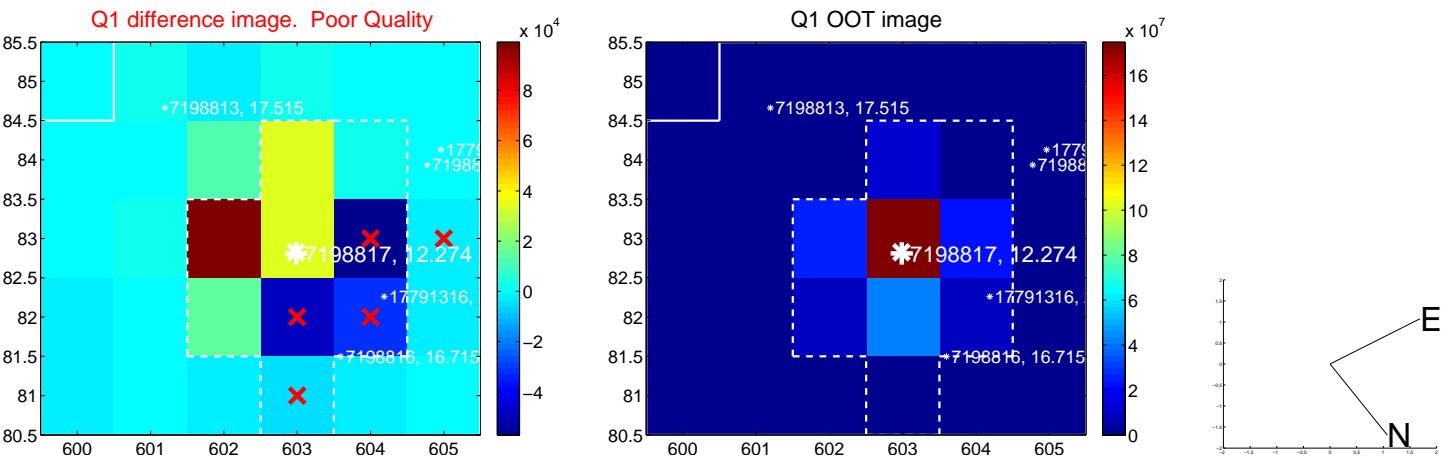
The direct PRF centroid is offset from the target star catalog position by about 0.03 arcsec

| | Distance in arcsec | Distance / σ | Δ RA | Δ Dec |
|---|--------------------|---------------------|-------------------|-------------------|
| PRF-fit source offset from OOT | 0.859 ± 0.964 | 0.89 | 0.098 ± 0.928 | 0.854 ± 0.965 |
| PRF-fit source offset from KIC position | 0.880 ± 0.963 | 0.91 | 0.098 ± 0.921 | 0.874 ± 0.964 |
| photometric centroid source offset | 0.29 ± 0.43 | 0.68 | -0.20 ± 0.43 | 0.21 ± 0.43 |

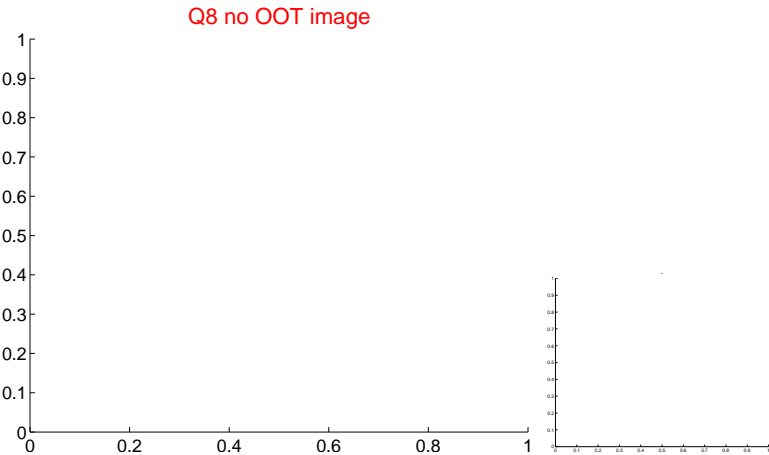
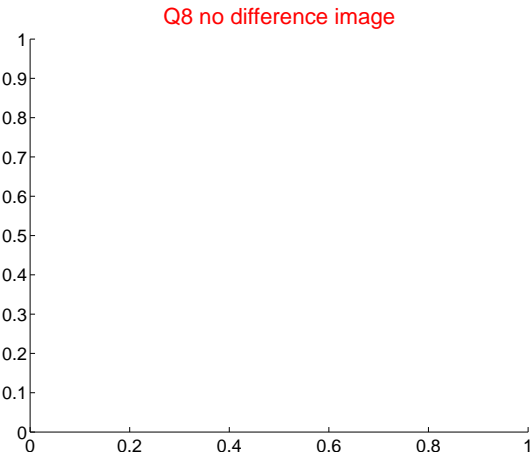
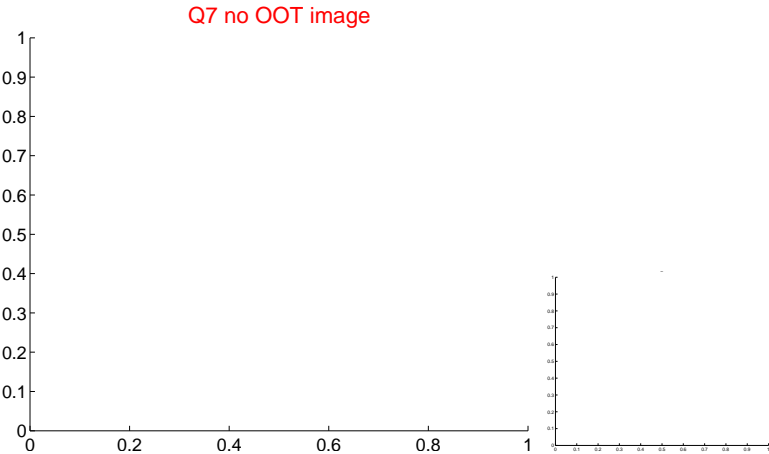
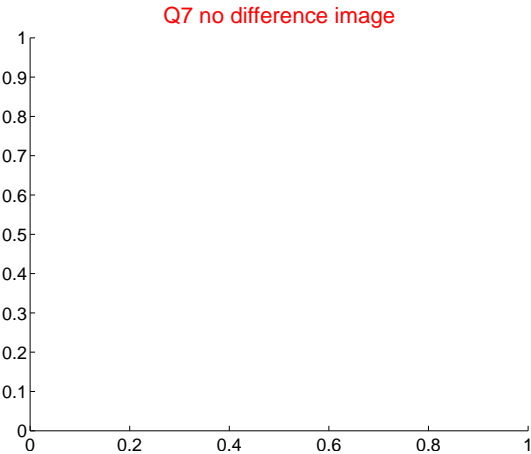
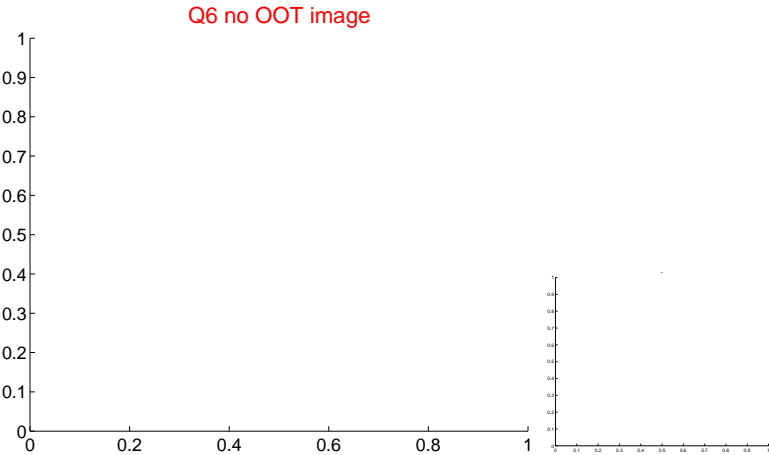
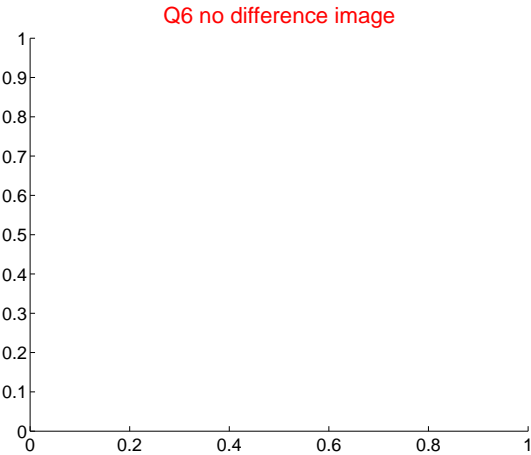
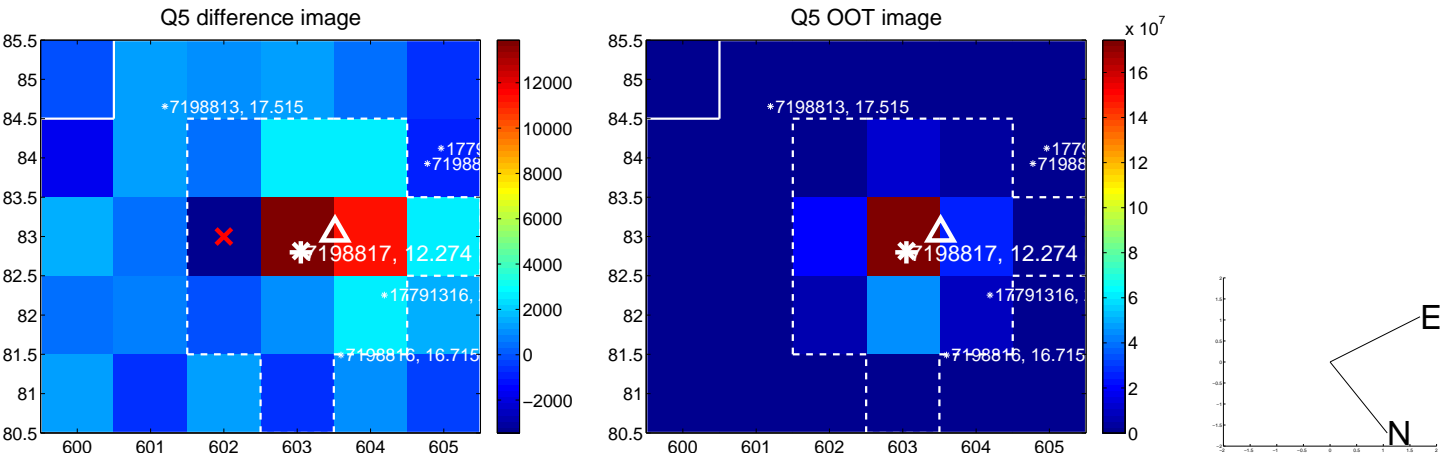


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

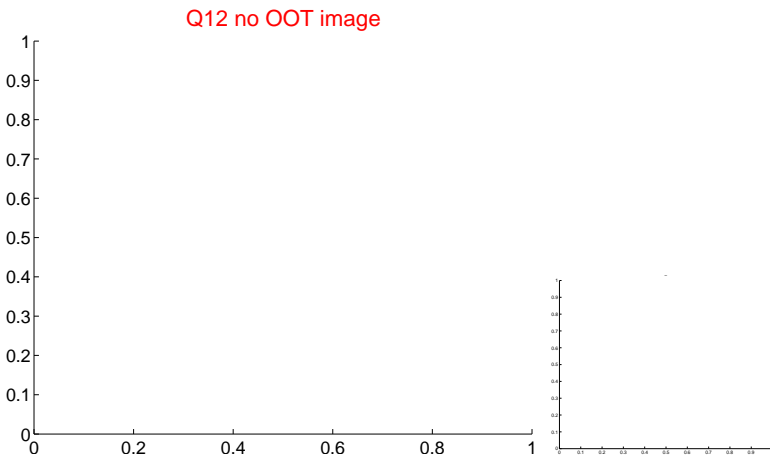
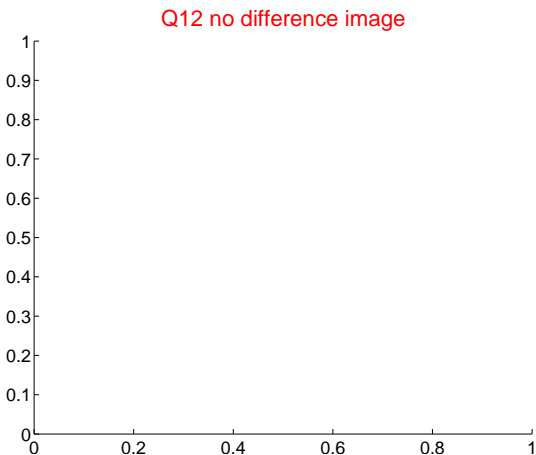
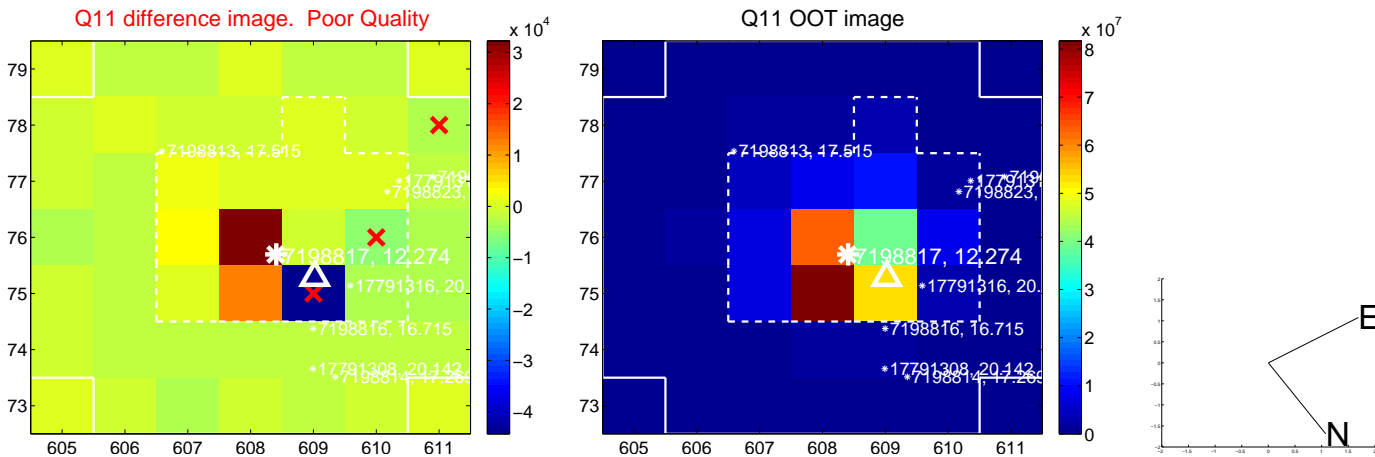
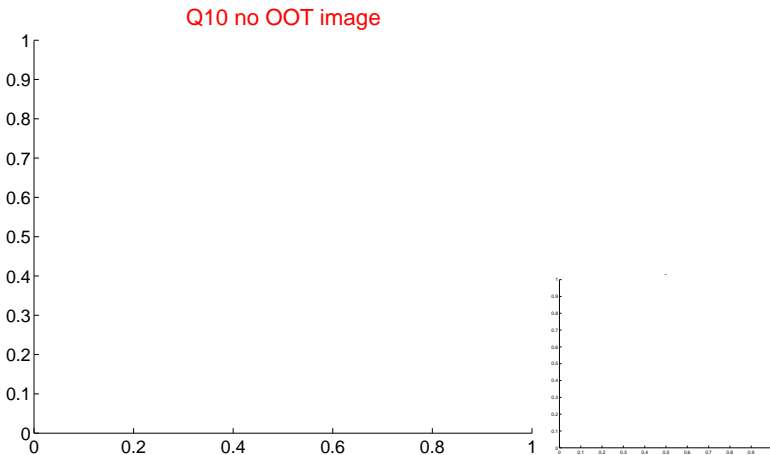
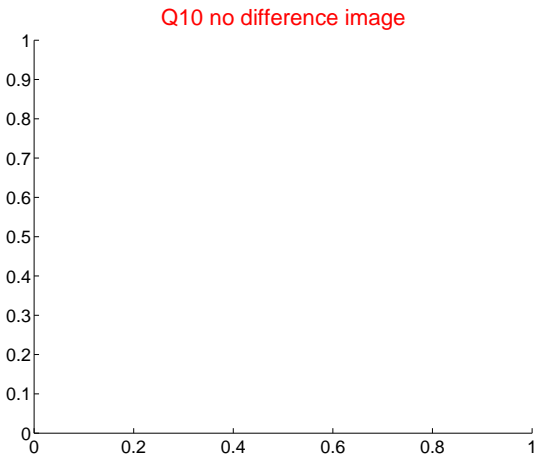
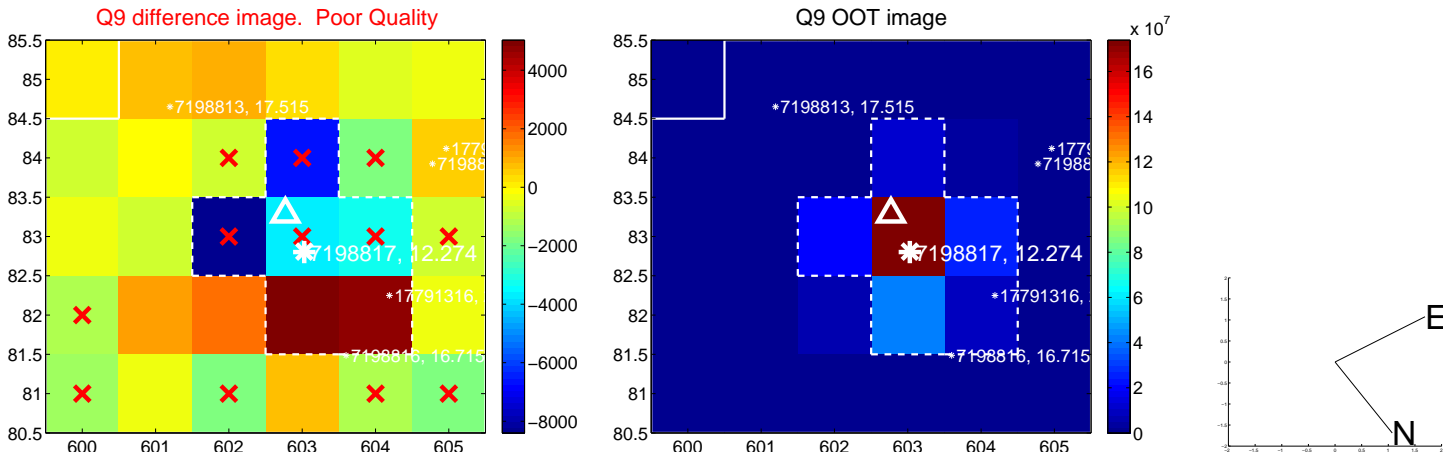
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



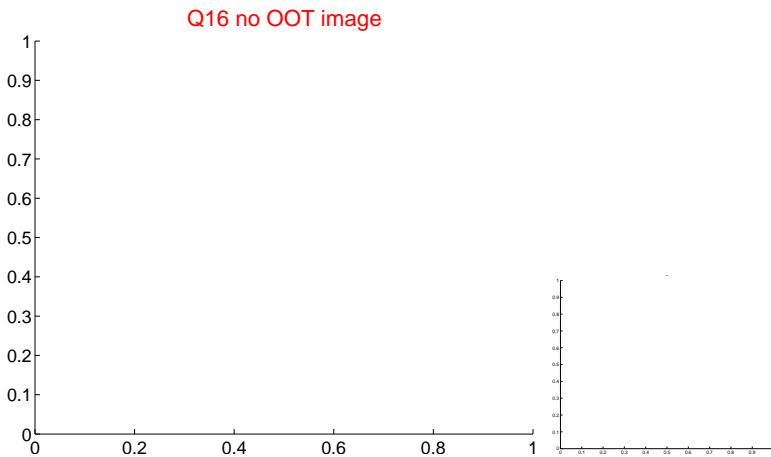
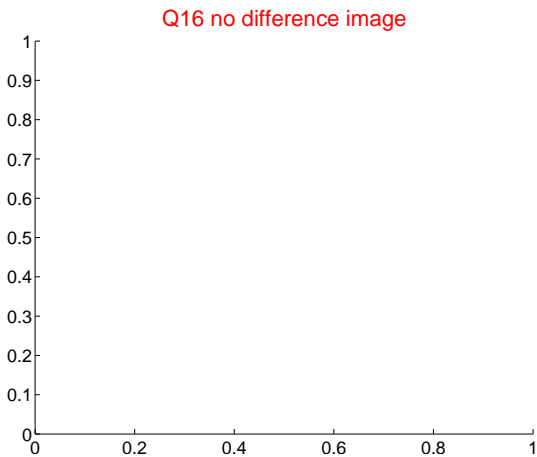
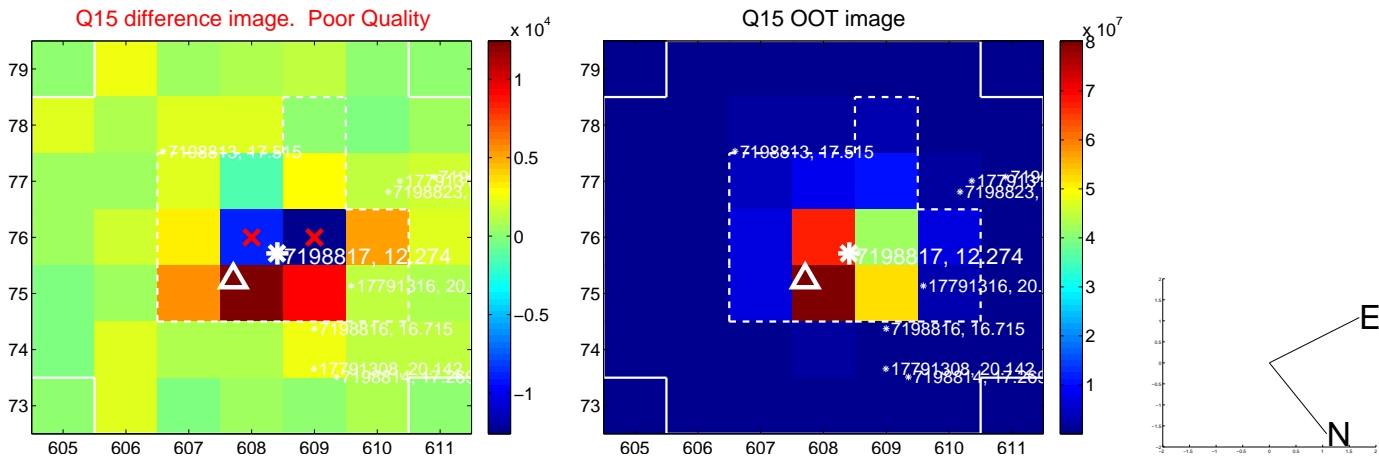
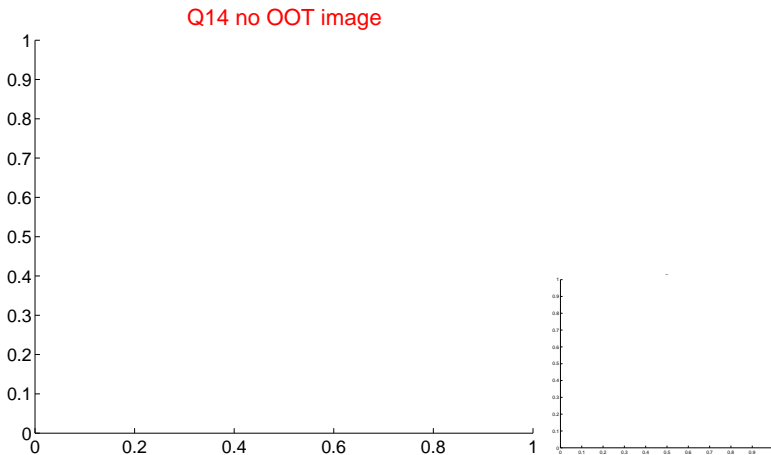
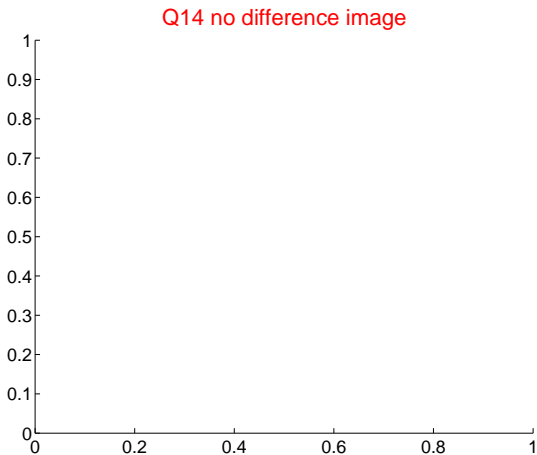
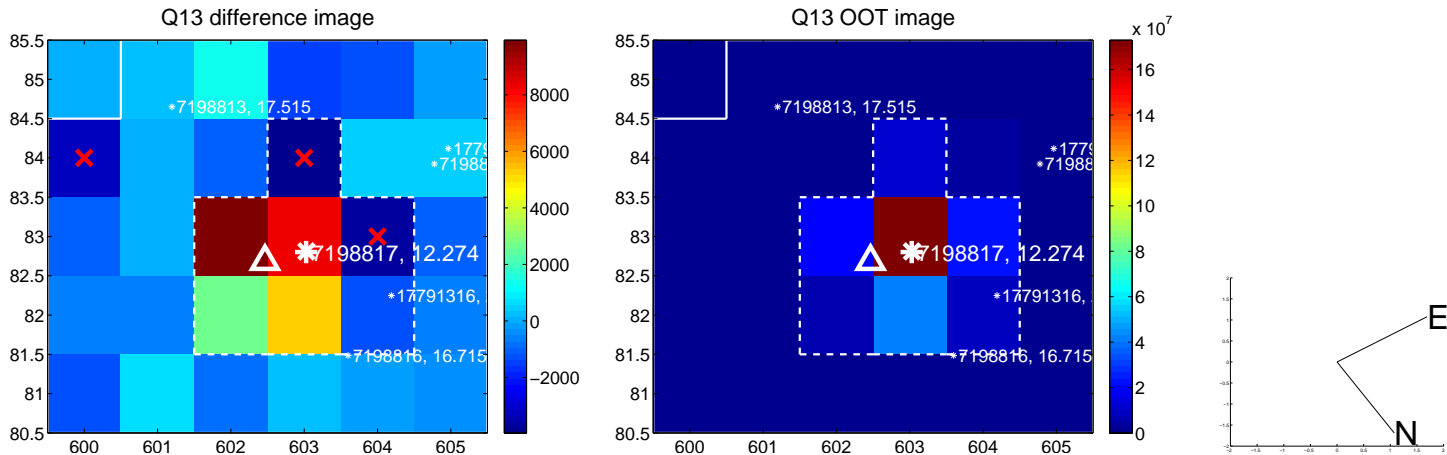
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



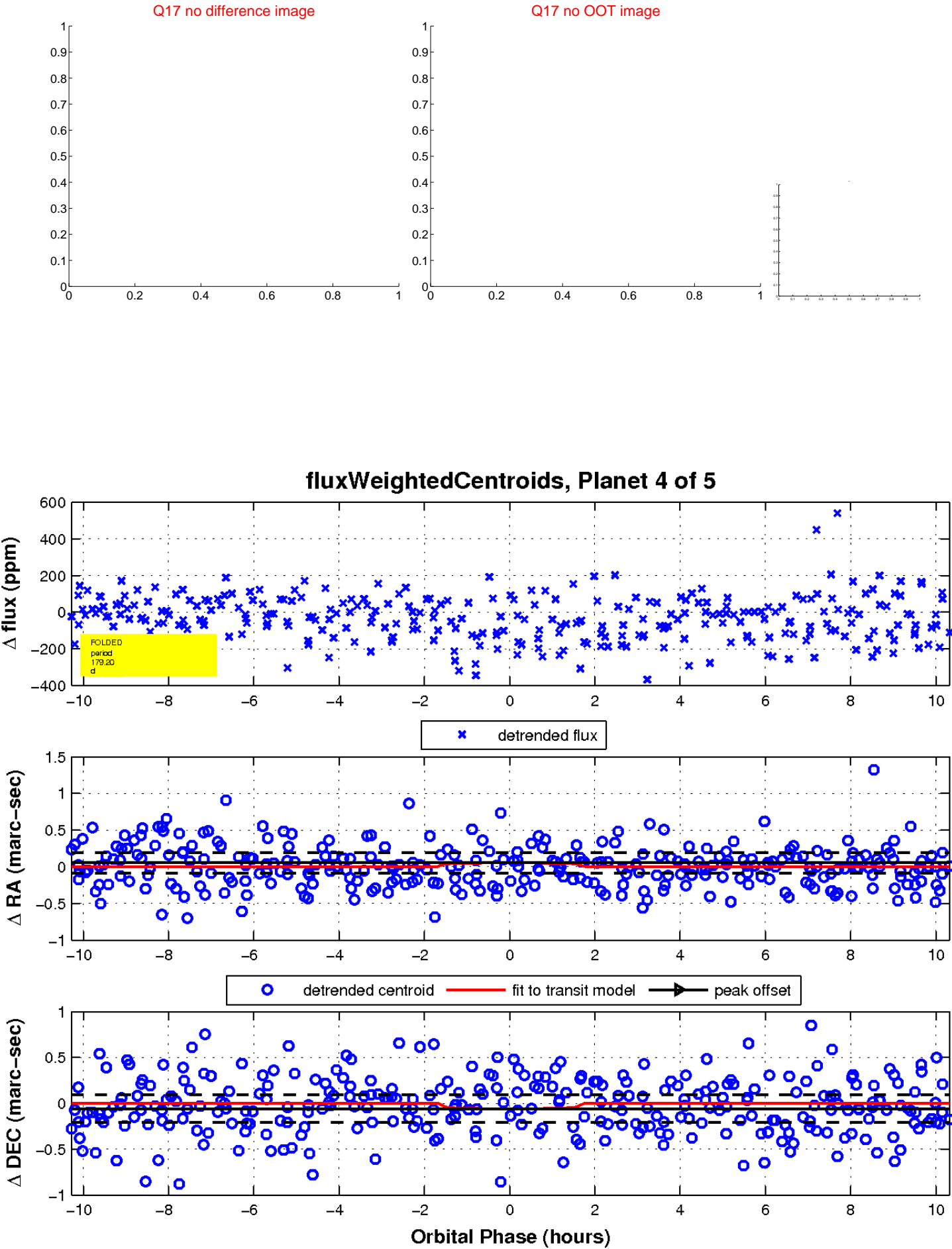
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

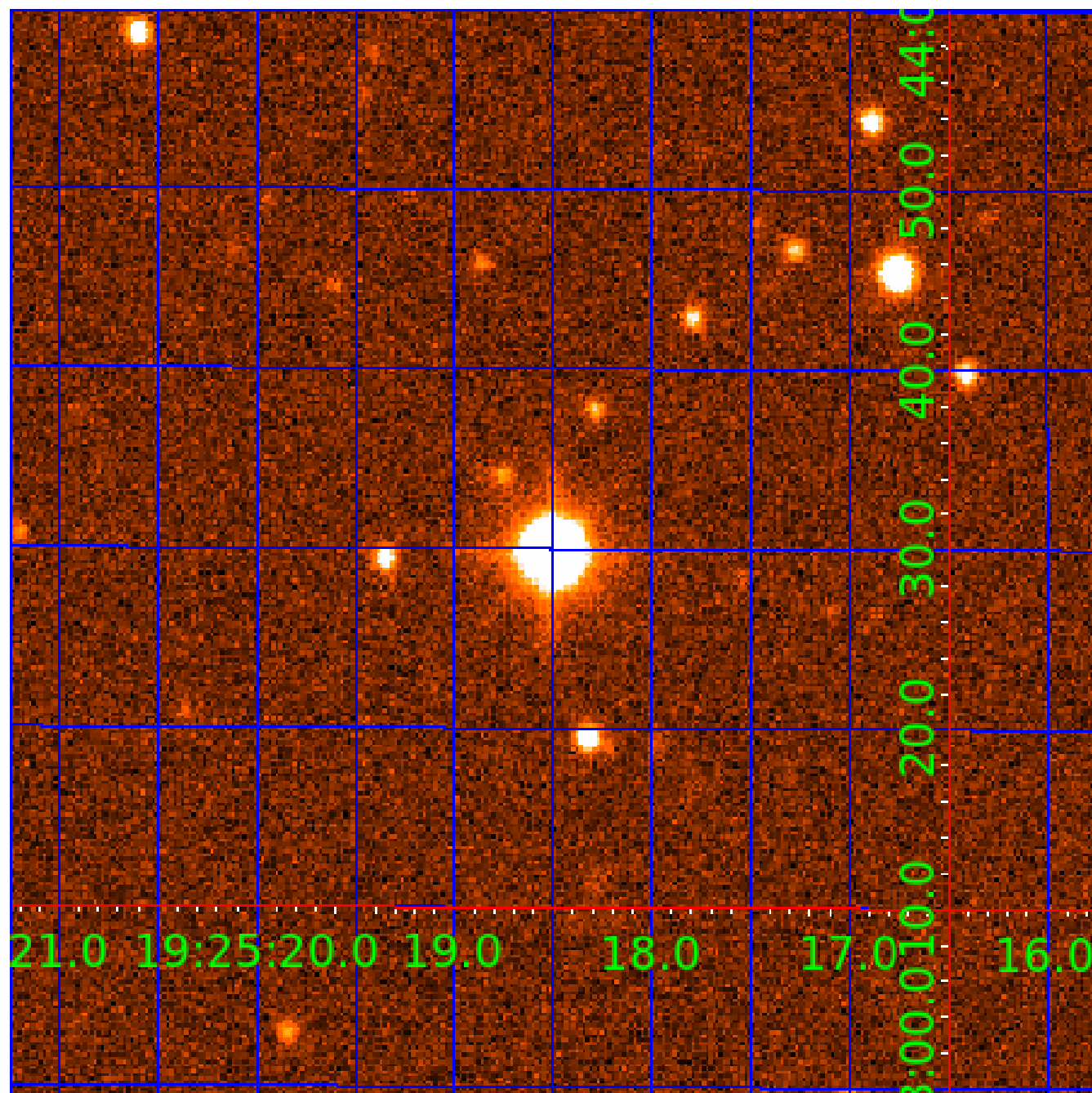


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 007198817

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}) |
|--------------|----------|------|---------------|--------------|-------------|------------------|------|------|-----------------------------|-----------------|------------------------|------------------------|
| 007198817-01 | OBS | No | 0.566796 | 131.679255 | 17.3 | 3.313 | 13.5 | 13.6 | 2.10 | 6513 | 1.02 | 31237.48 |
| 007198817-04 | OBS | No | 179.199044 | 152.941813 | 314.3 | 3.442 | 8.7 | 6.4 | 2.10 | 6513 | 4.11 | 14.50 |
| 007198817-05 | OBS | No | 54.324382 | 141.025928 | 324.8 | 12.673 | 8.6 | 7.4 | 2.10 | 6513 | 6.99 | 71.22 |

Robovetter Results

| TCE | Run Type | Disp | Score | N | S | C | E | Comments |
|--------------|----------|------|-------|---|---|---|---|--|
| 007198817-01 | OBS | FP | 0.00 | 1 | 0 | 0 | 1 | LPP_DV—MOD_NONUNIQ_ALT—EPHEM_MATCH |
| 007198817-04 | OBS | FP | 0.00 | 1 | 0 | 0 | 0 | INDIV_TRANS_RUBBLE_MARSHALL—TRANS_GAPPED—ALL_TRANS_CHASES—MOD_POS_ALT |
| 007198817-05 | OBS | FP | 0.00 | 1 | 0 | 1 | 0 | INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_NONUNIQ_ALT—MOD_POS_ALT—HALO_GHOST |

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

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

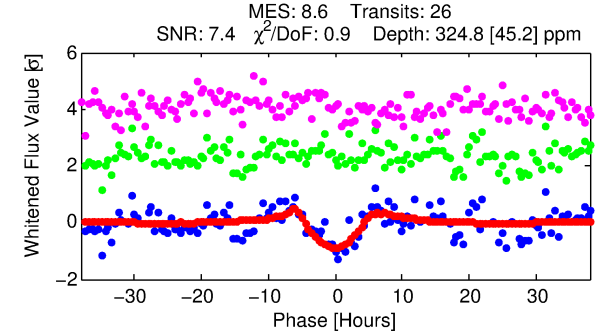
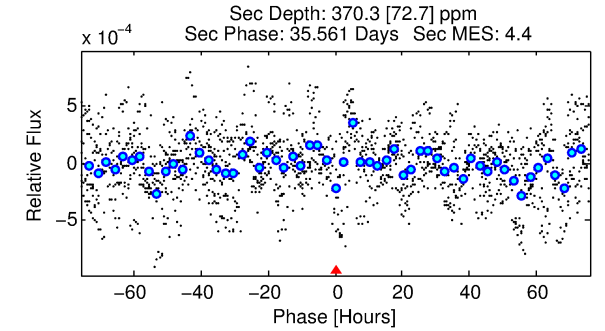
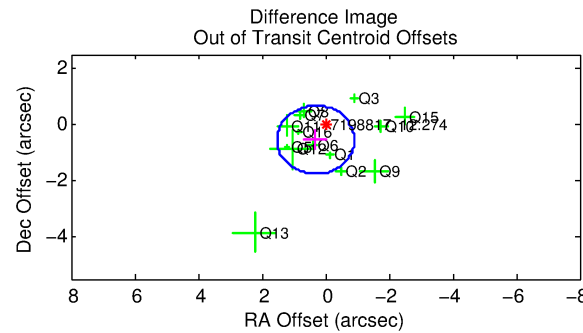
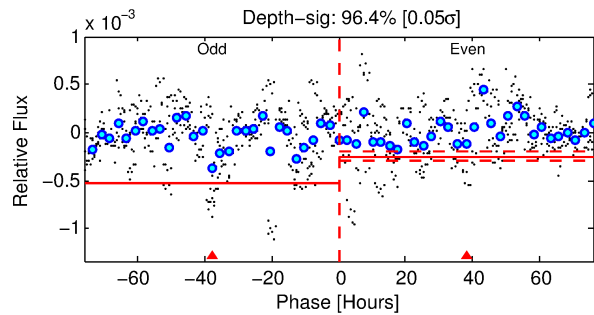
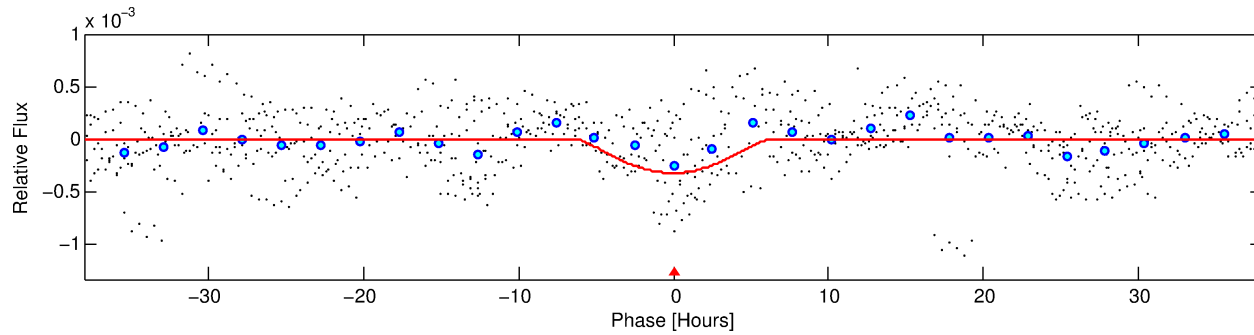
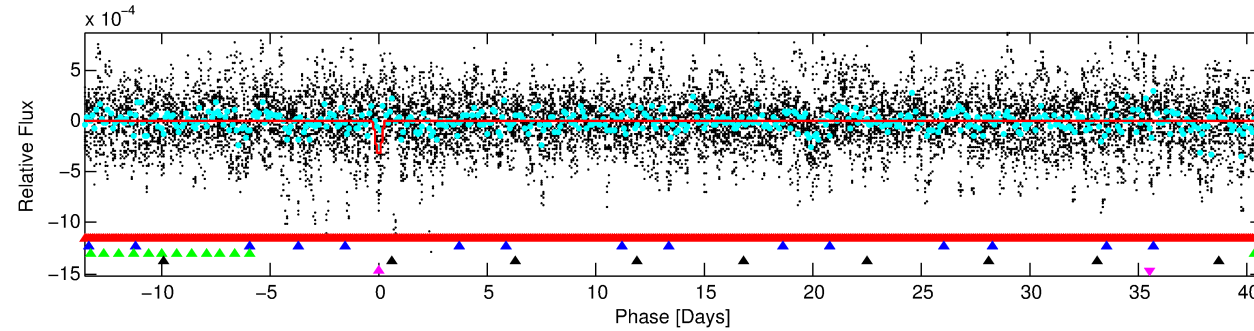
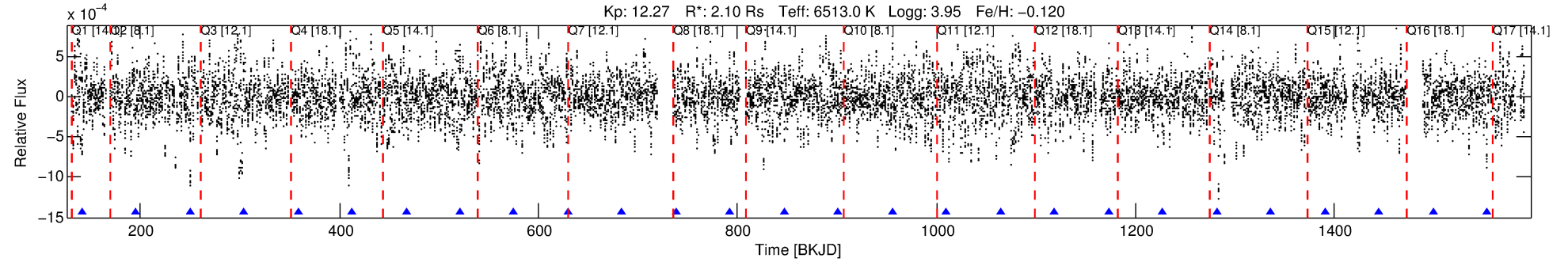
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 007198817-05

No Significant Match Found

DV One-Page Summary

KIC: 7198817 Candidate: 5 of 5 Period: 54.324 d



DV Fit Results:

Period = 54.32438 [0.00205] d
Epoch = 141.0259 [0.0292] BKJD
Rp/R* = 0.0305 [0.0477]
a/R* = 8.54 [3.76]
b = 1.00 [0.07]
Seff = 71.22 [34.13]
Teff = 741 [89] K
Rp = 6.99 [11.20] Re
a = 0.3164 [0.0962] AU
Ag = 417.60 [1324.91] [0.31 σ]
Teffp = 5177 [4064] K [1.09 σ]

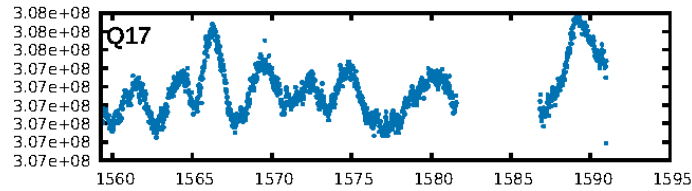
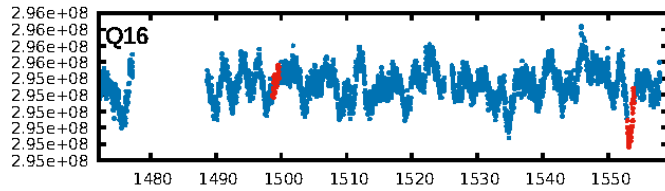
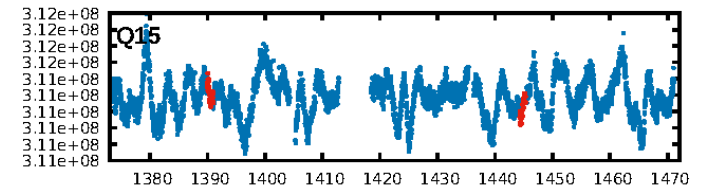
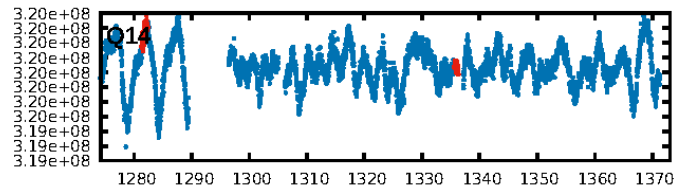
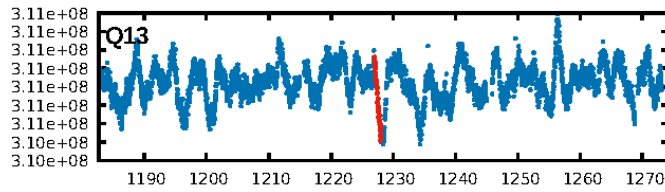
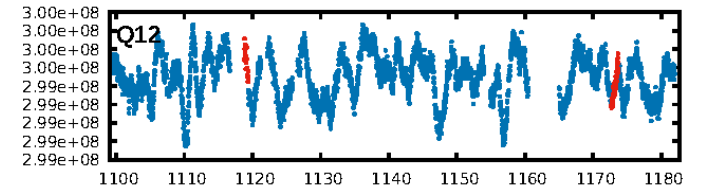
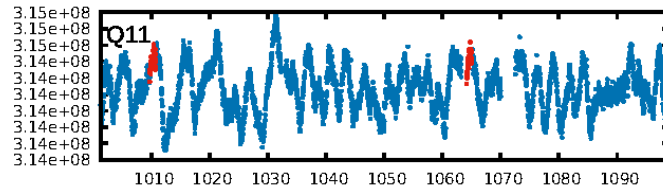
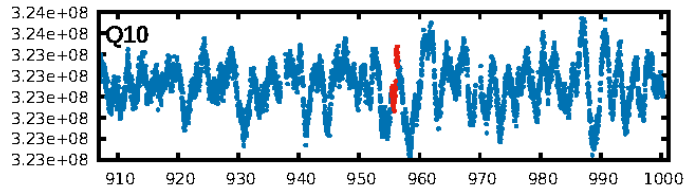
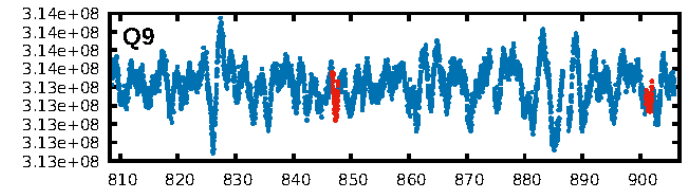
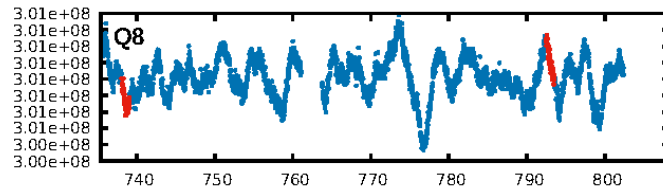
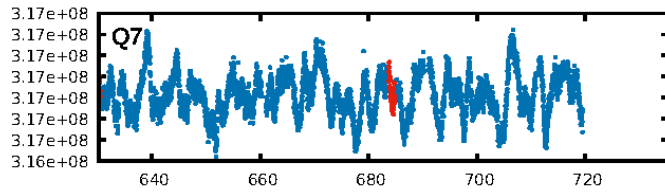
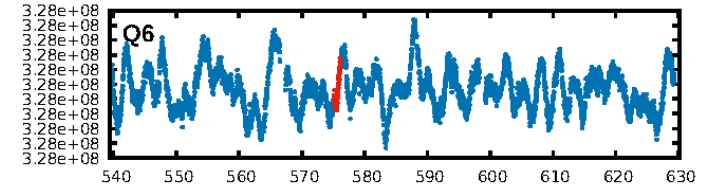
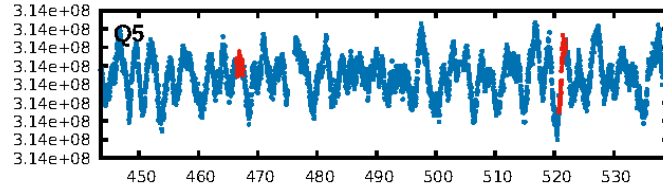
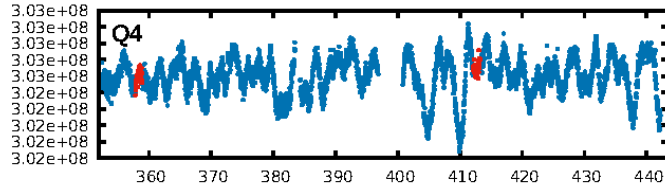
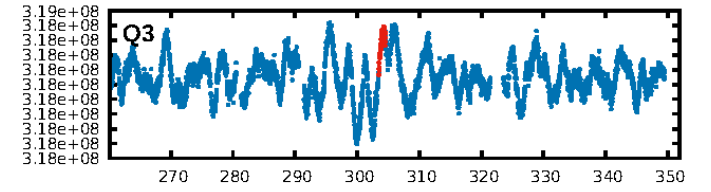
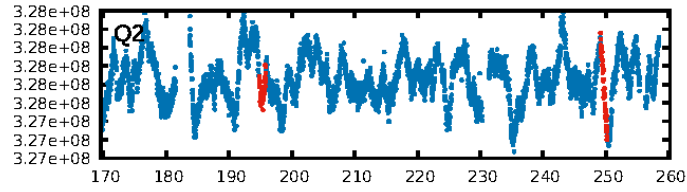
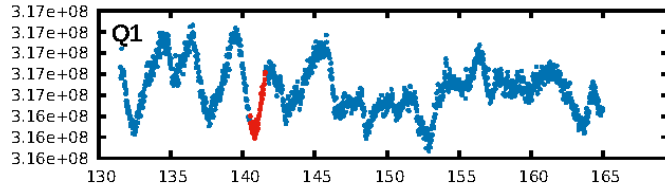
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [98.50 σ]
LongPeriod-sig: 100.0% [87.46 σ]
ModelChiSquare2-sig: 0.3%
ModelChiSquareGo-sig: 100.0%
Bootstrap-pfa: 1.27e-12
RollingBand-fgt: 1.00 [25/25]
GhostDiagnostic-chr: 0.06148
Centroid-sig: 1.9%
Centroid-so: 0.266 arcsec [1.50 σ]
OotOffset-rm: 0.627 arcsec [1.55 σ]
KicOffset-rm: 0.610 arcsec [1.57 σ]
OotOffset-st: 3/4/3/4 [14]
KicOffset-st: 3/4/3/4 [14]
DiffImageQuality-fgm: 0.71 [10/14]
DiffImageOverlap-fno: 0.00 [0/15]

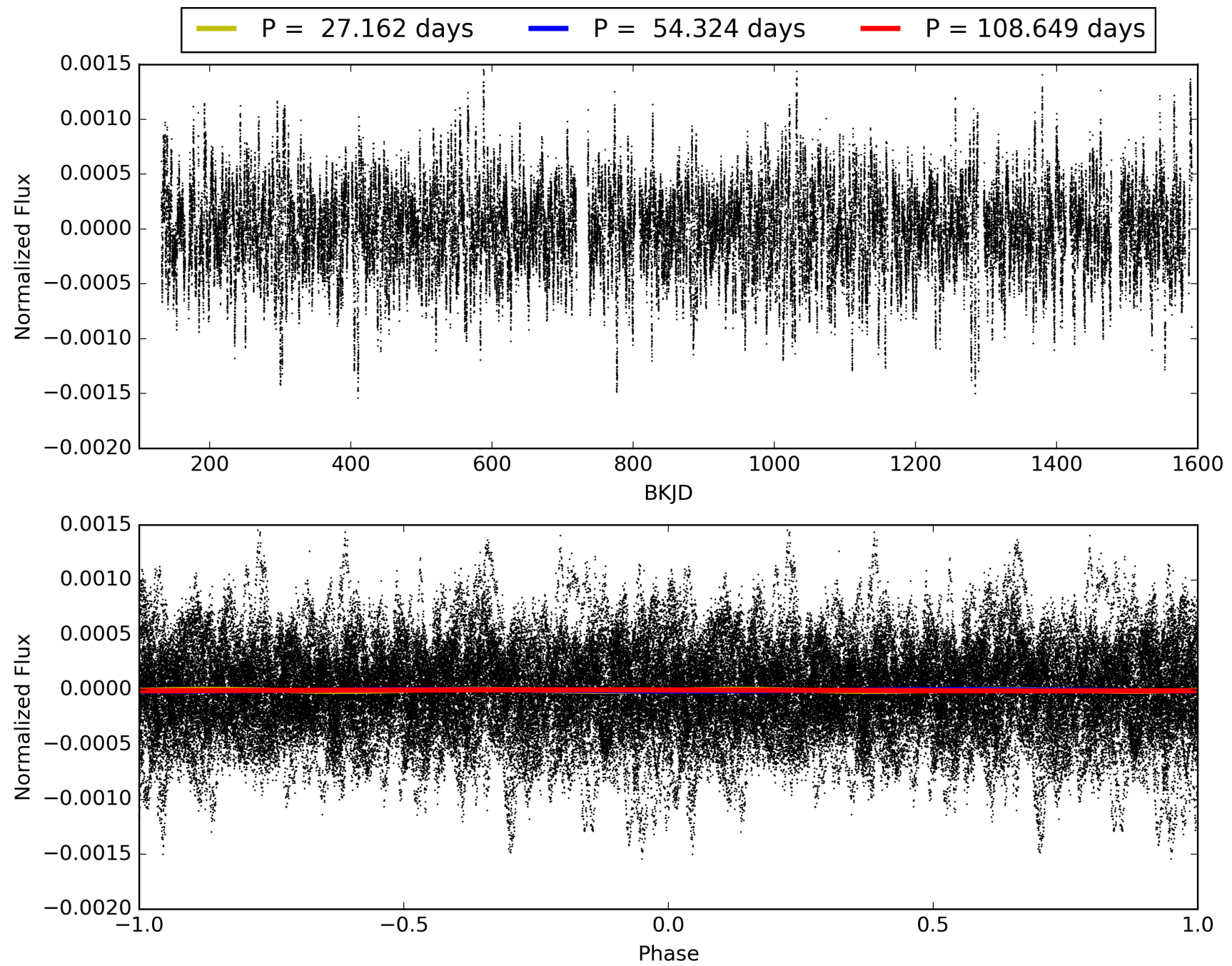
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 22:08:21 Z

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

TCE 007198817-05, PDC Light Curves

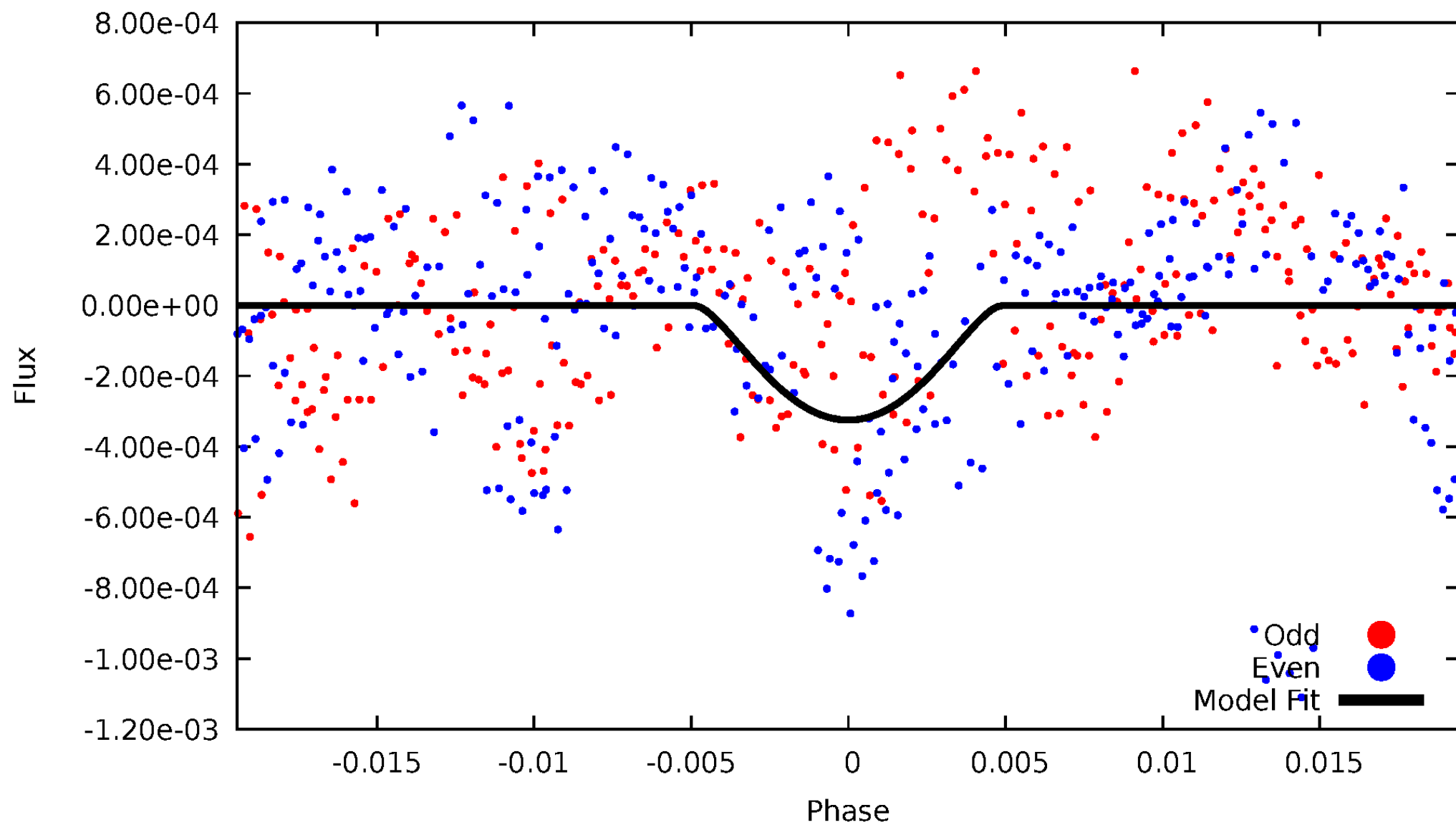


TCE 007198817-05



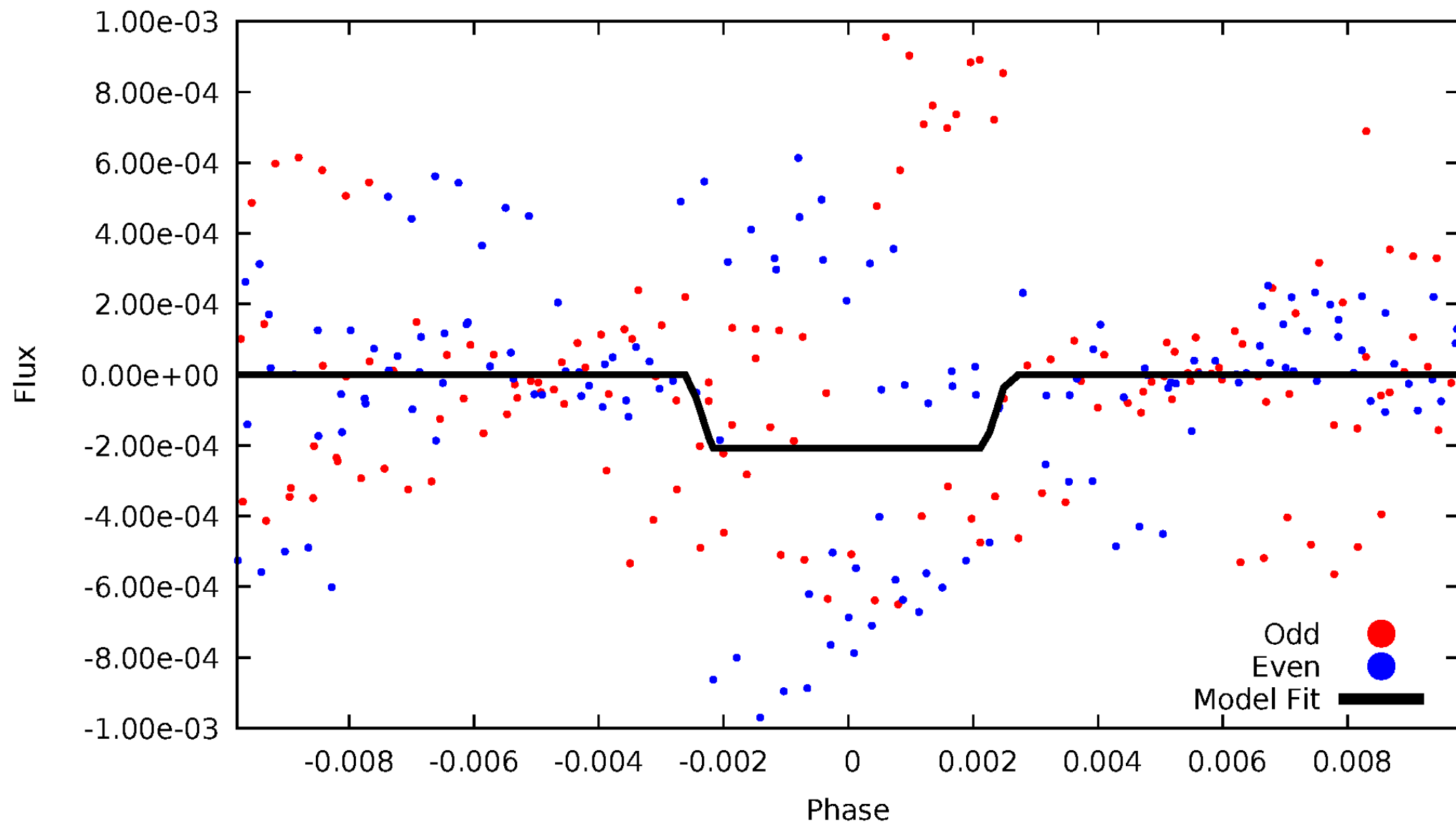
DV Odd/Even

TCE 007198817-05



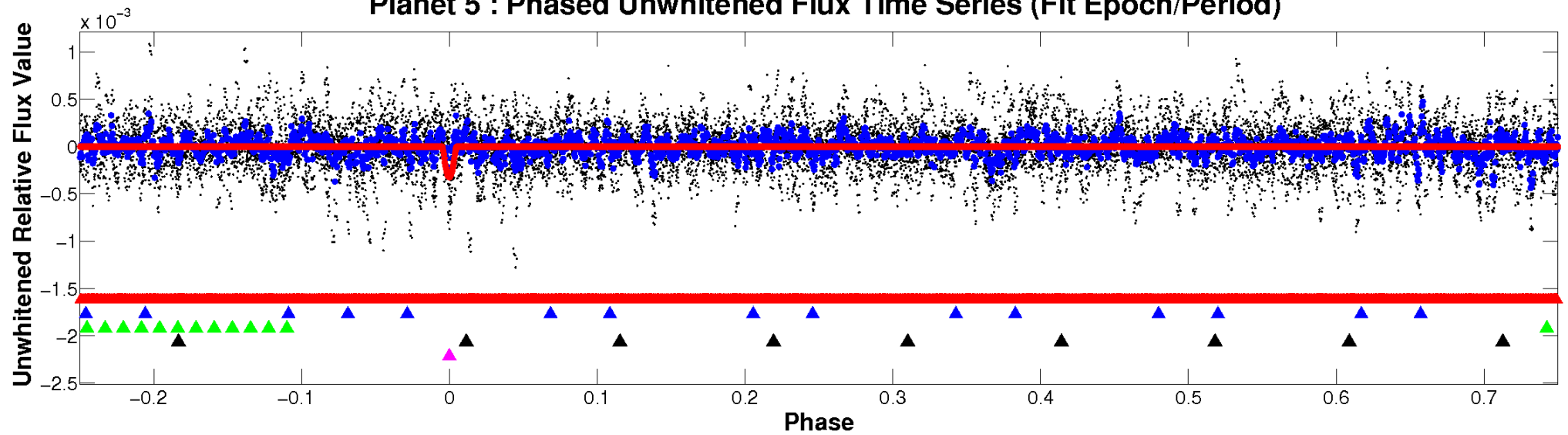
ALT Odd/Even

TCE 007198817-05

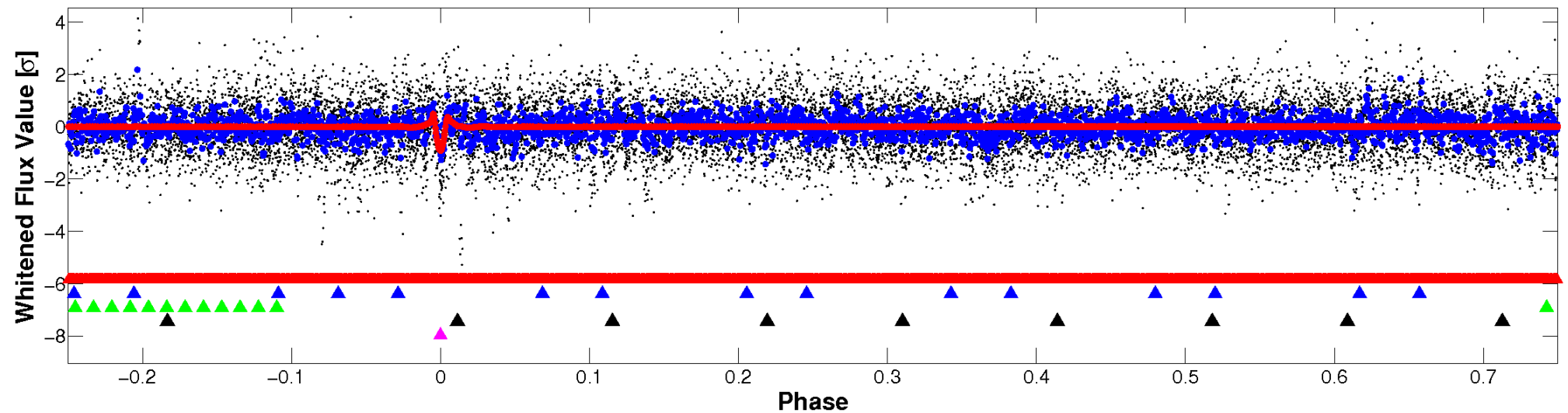


Non-Whitened Vs. Whitened Light Curve

Planet 5 : Phased Unwhitened Flux Time Series (Fit Epoch/Period)

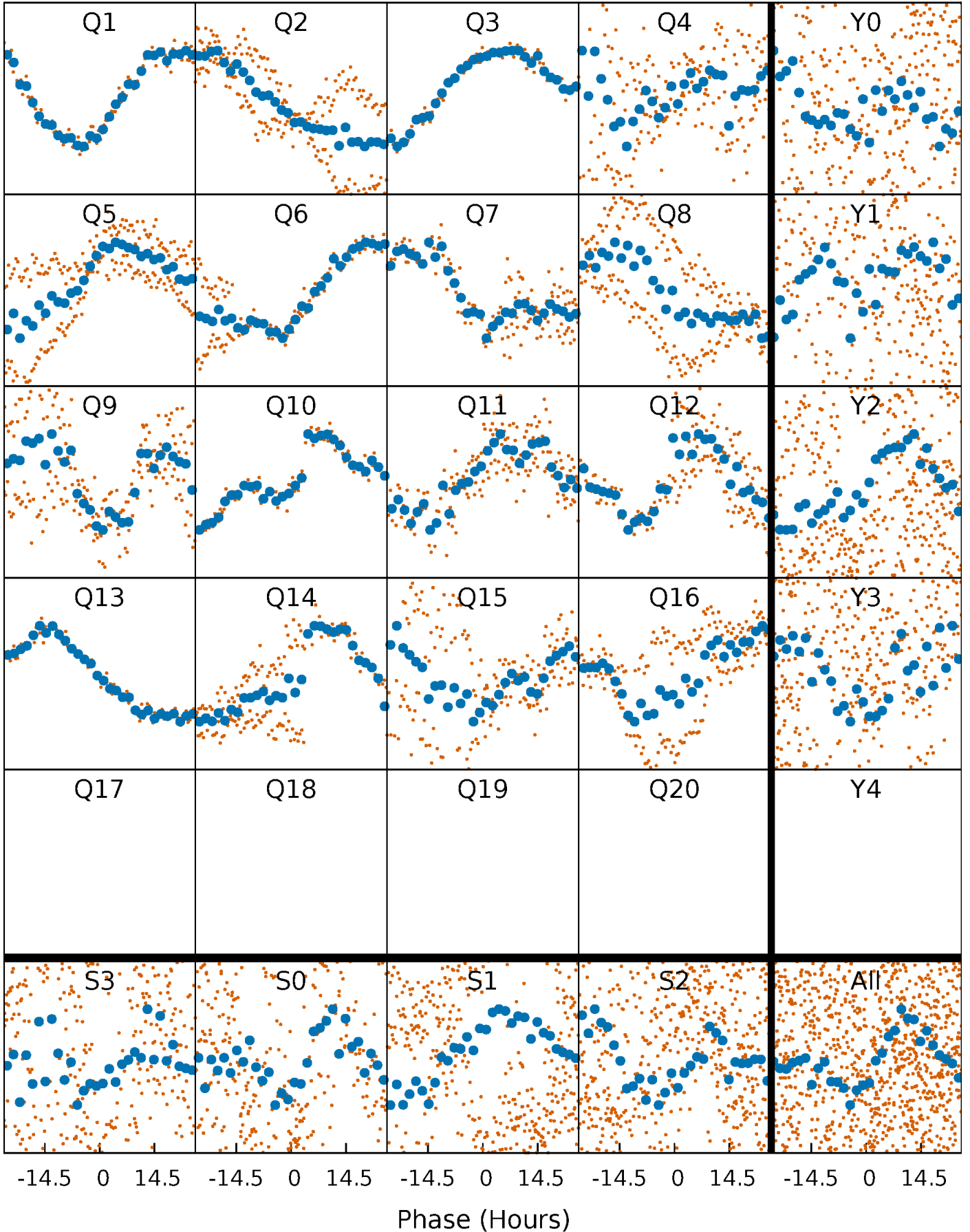


Planet 5 : Phased Whitened Flux Time Series (Fit Epoch/Period)



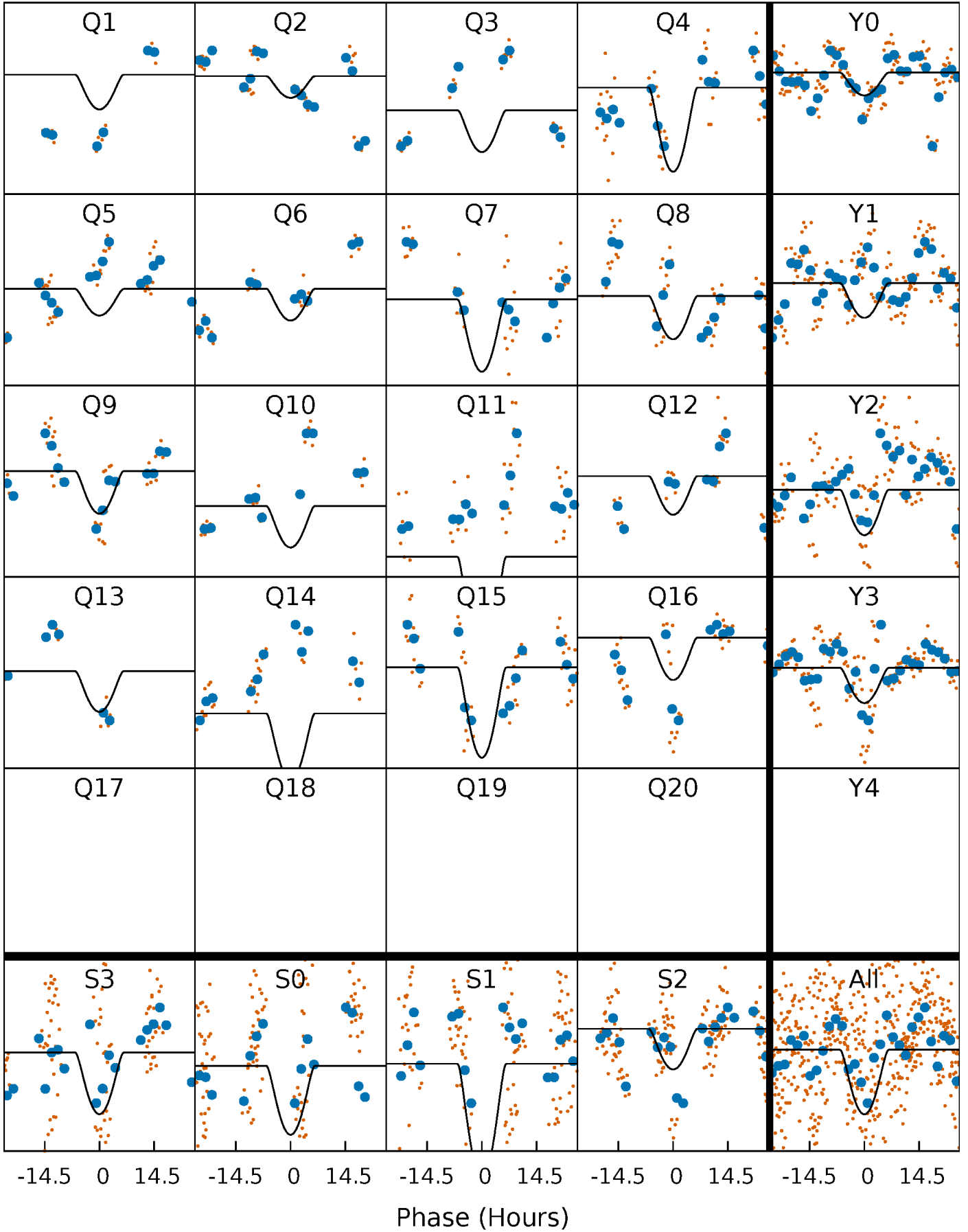
PDC Quarter-Phased Transit Curves

TCE 007198817-05 P= 54.324382 Days $T_0=141.025928$ (BKJD)



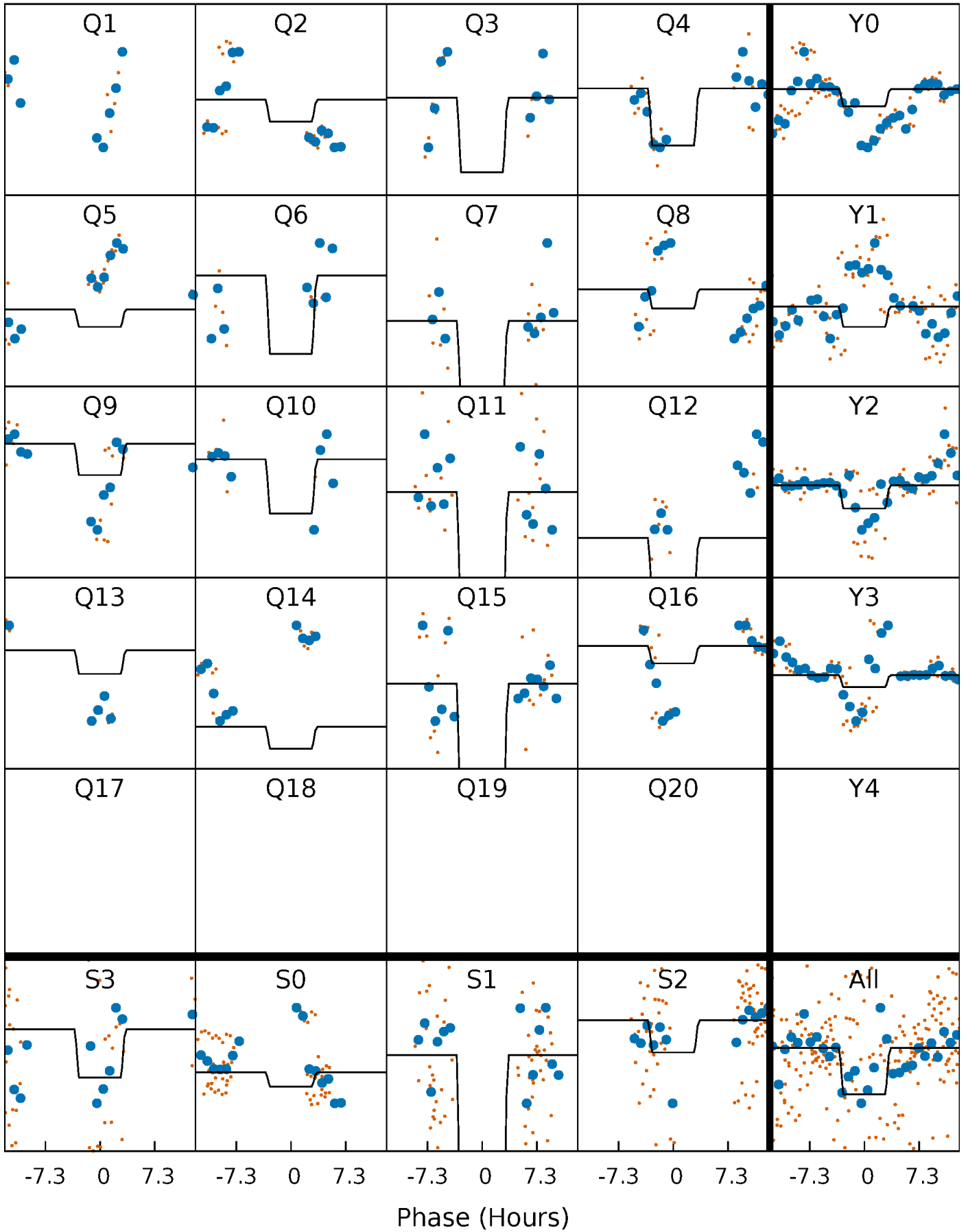
DV Quarter-Phased Transit Curves

TCE 007198817-05 P= 54.324382 Days $T_0=141.025928$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

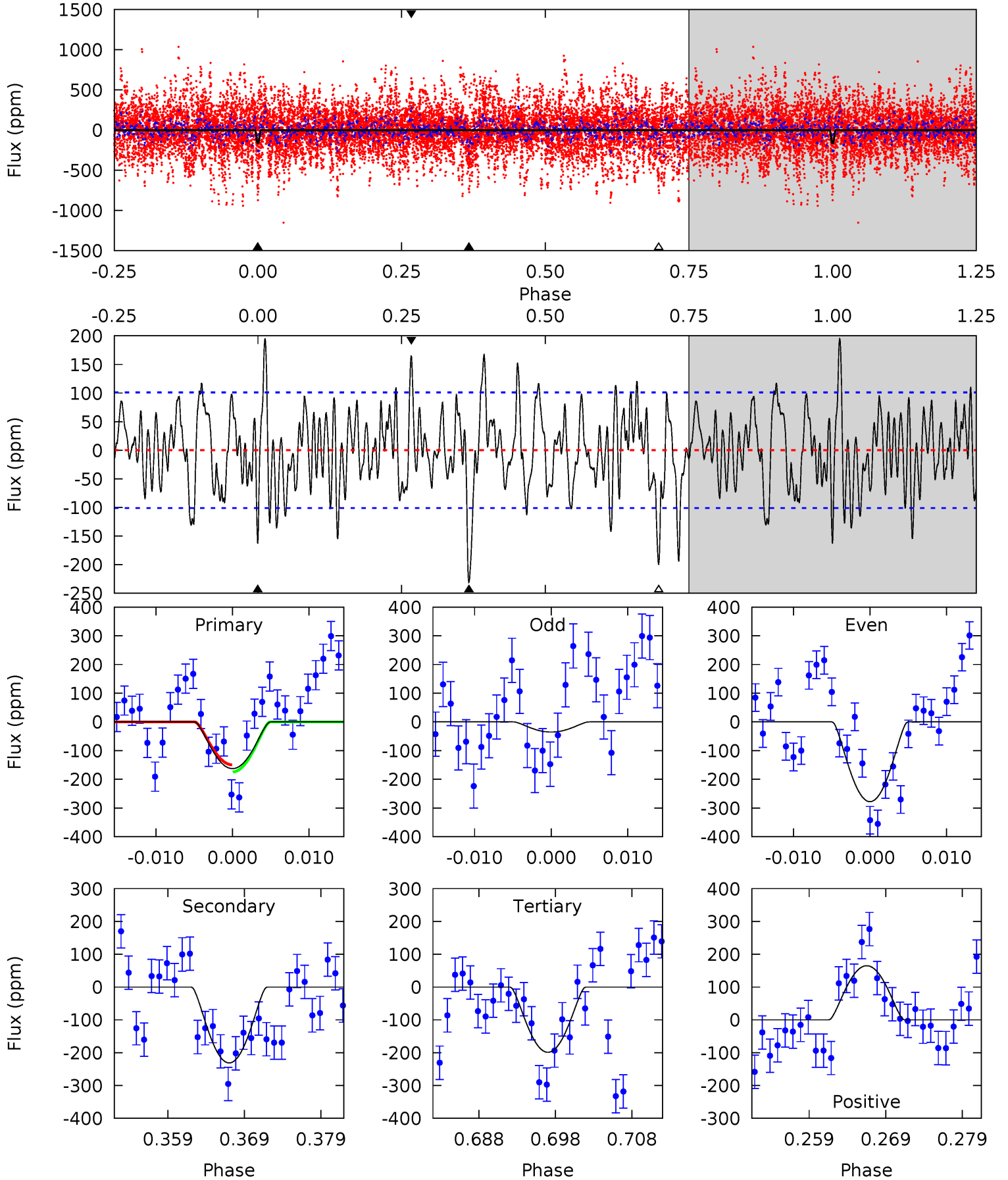
TCE 007198817-05 $P = 54.329489$ Days $T_0 = 140.973442$ (BKJD)



DV Model-Shift Uniqueness Test

007198817-05, P = 54.324382 Days, E = 86.701546 Days

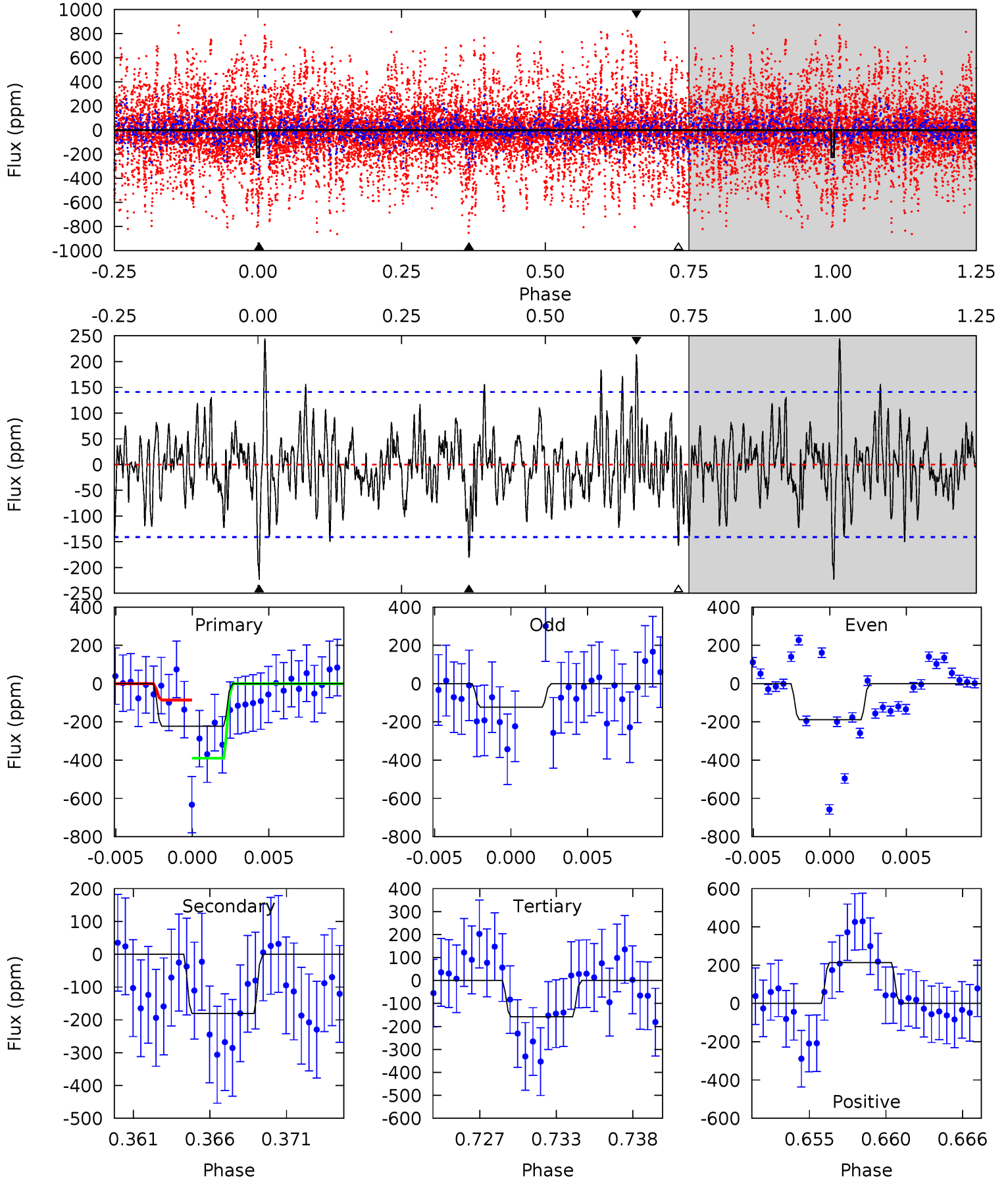
| Pri | Sec | Ter | Pos | FA ₁ | FA ₂ | F _{Red} | Pri-Ter | Pri-Pos | Sec-Ter | Sec-Pos | Odd-Evn | DMM | Shape | TAT |
|------|------|------|------|-----------------|-----------------|------------------|---------|---------|---------|---------|---------|-------|-------|------|
| 8.10 | 11.5 | 9.89 | 8.21 | 5.03 | 2.58 | 3.08 | -1.80 | -0.11 | 1.61 | 3.29 | 5.98 | -5.17 | 0.46 | 0.61 |



Alt Model-Shift Uniqueness Test

007198817-05, P = 54.329489 Days, E = 86.643953 Days

| Pri | Sec | Ter | Pos | FA ₁ | FA ₂ | F _{Red} | Pri-Ter | Pri-Pos | Sec-Ter | Sec-Pos | Odd-Evn | DMM | Shape | TAT |
|------|------|------|------|-----------------|-----------------|------------------|---------|---------|---------|---------|---------|------|-------|------|
| 8.13 | 6.60 | 5.75 | 7.82 | 5.15 | 2.80 | 1.96 | 2.38 | 0.31 | 0.85 | -1.22 | 1.20 | 0.67 | 0.52 | 5.59 |



Stellar Parameters For KIC 007198817

| | $T_{\text{eff}}(K)$ | $\log(g)$ | [Fe/H] | R (R_{\odot}) | M (M_{\odot}) | p_{\star} ($\text{g}\cdot\text{cm}^{-3}$) |
|--------|----------------------|---------------------------|----------------------------|---------------------------|---------------------------|---|
| | 6513^{+162}_{-179} | $3.948^{+0.266}_{-0.114}$ | $-0.120^{+0.300}_{-0.250}$ | $2.103^{+0.438}_{-0.711}$ | $1.433^{+0.163}_{-0.303}$ | $0.217^{+0.377}_{-0.076}$ |
| | +2%/-3% | +7%/-3% | +250%/-208% | +21%/-34% | +11%/-21% | +174%/-35% |
| 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 007198817-05 / KOI

| Detrend | Depth (ppm) | R_p (R_{\oplus}) | T_{max} (K) | T_{obs} (K) | A_{obs} |
|---------|---------------|------------------------|----------------------|-----------------------|----------------------|
| DV | -231 ± 20 | $9.59^{+9.59}_{-6.30}$ | 1015^{+69}_{-77} | 4094^{+2344}_{-805} | 132^{+972}_{-97} |
| Alt. | -181 ± 27 | $8.15^{+8.33}_{-5.44}$ | 1021^{+64}_{-79} | 4149^{+2624}_{-850} | 152^{+1120}_{-117} |

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

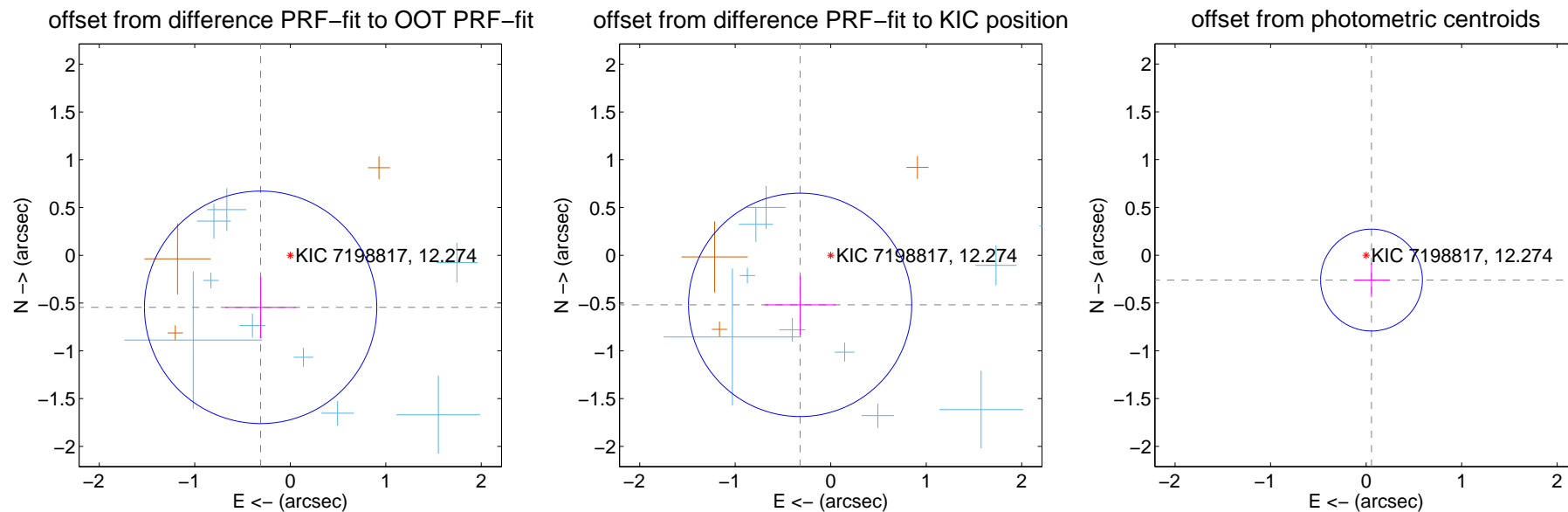
DV Centroid Data

Supplemental centroid analysis for 007198817-05. Kepler magnitude: 12.27. Transit SNR 7.35

There are 10 quarters with good PRF difference image offsets

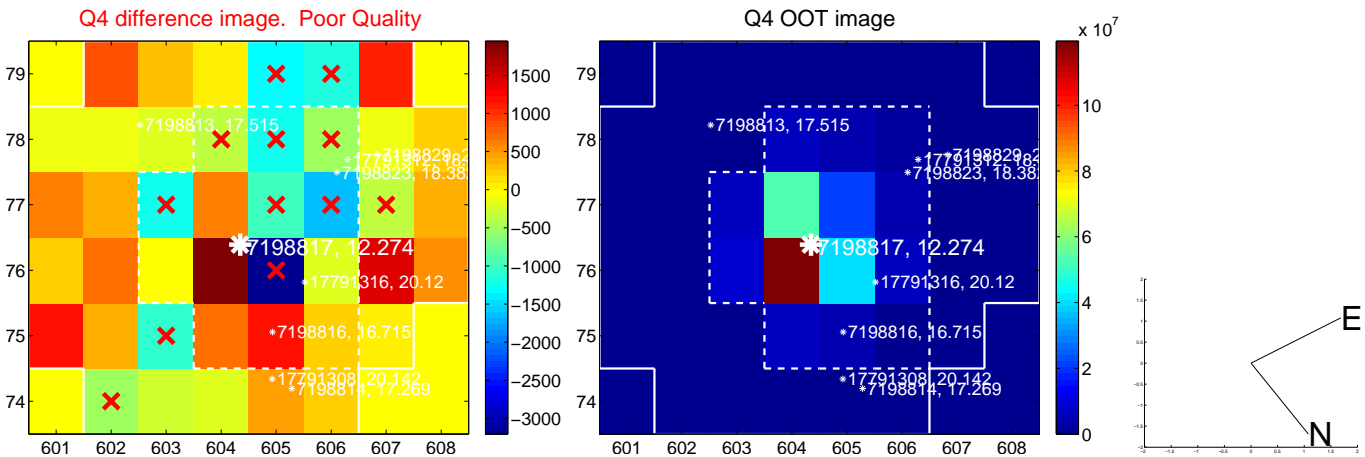
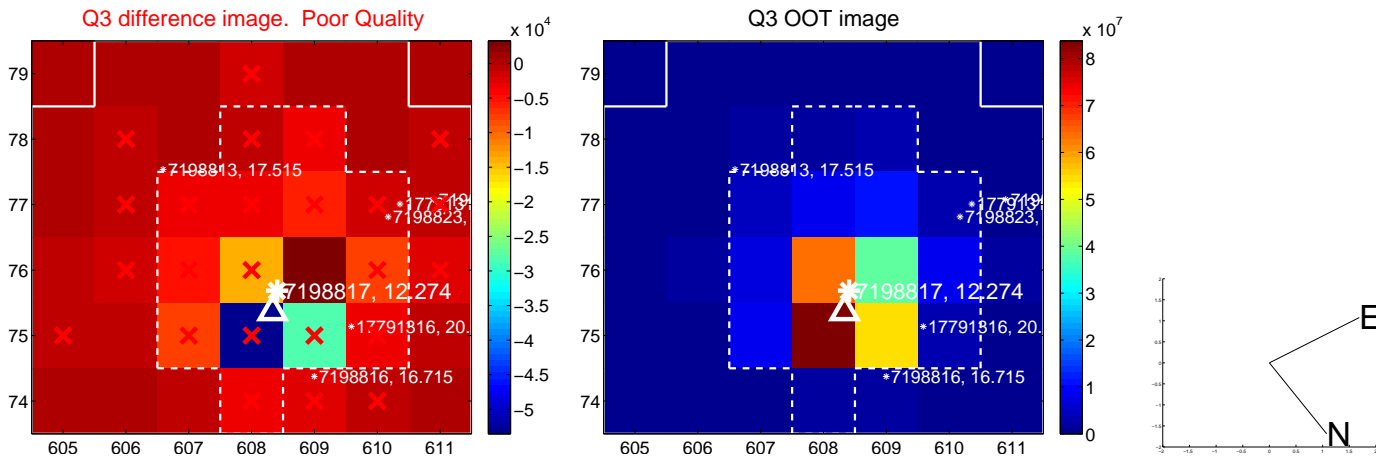
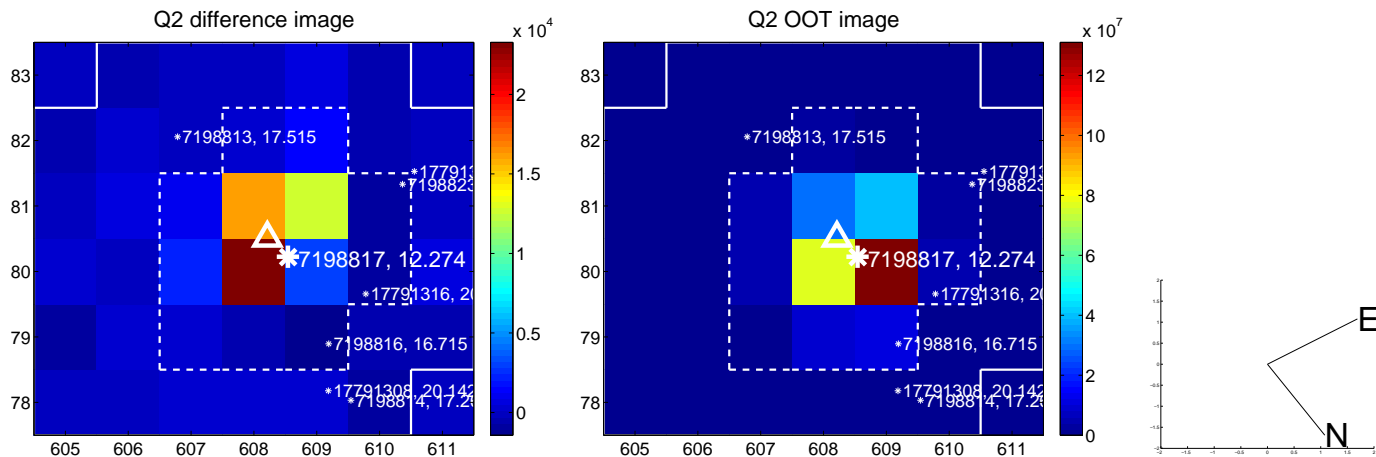
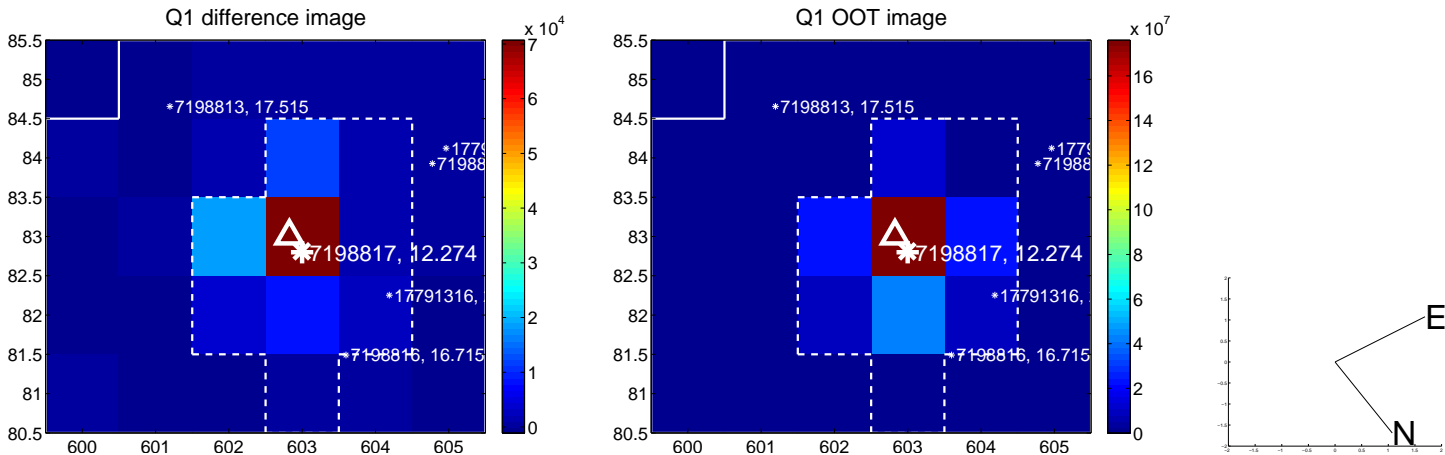
The direct PRF centroid is offset from the target star catalog position by about 0.07 arcsec

| | Distance in arcsec | Distance / σ | Δ RA | Δ Dec |
|---|--------------------|---------------------|-------------------|--------------------|
| PRF-fit source offset from OOT | 0.627 ± 0.406 | 1.55 | 0.310 ± 0.369 | -0.545 ± 0.323 |
| PRF-fit source offset from KIC position | 0.610 ± 0.390 | 1.57 | 0.321 ± 0.373 | -0.519 ± 0.310 |
| photometric centroid source offset | 0.27 ± 0.18 | 1.50 | -0.06 ± 0.19 | -0.26 ± 0.18 |

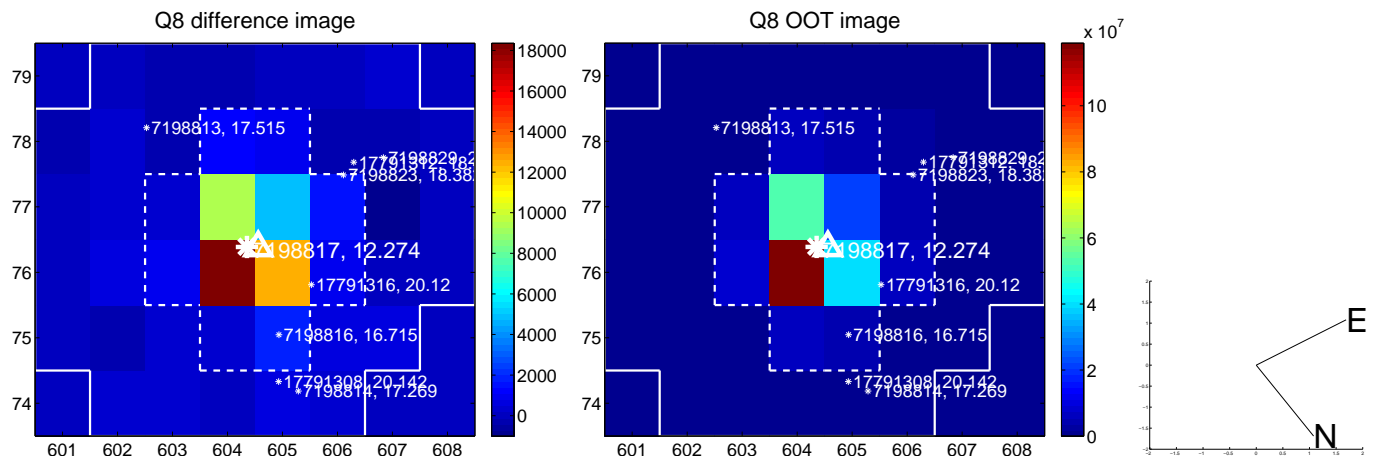
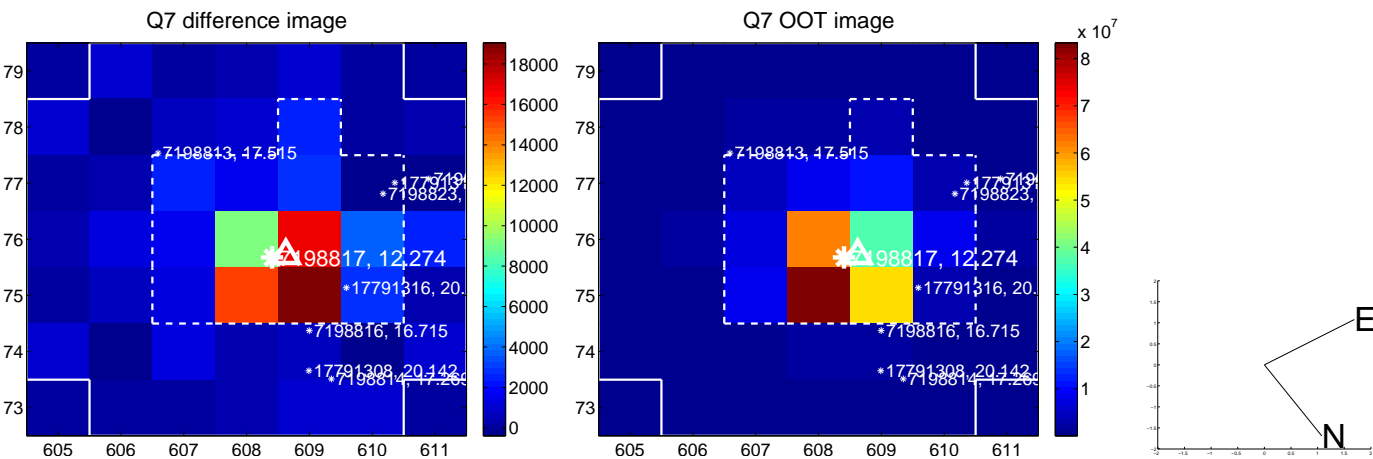
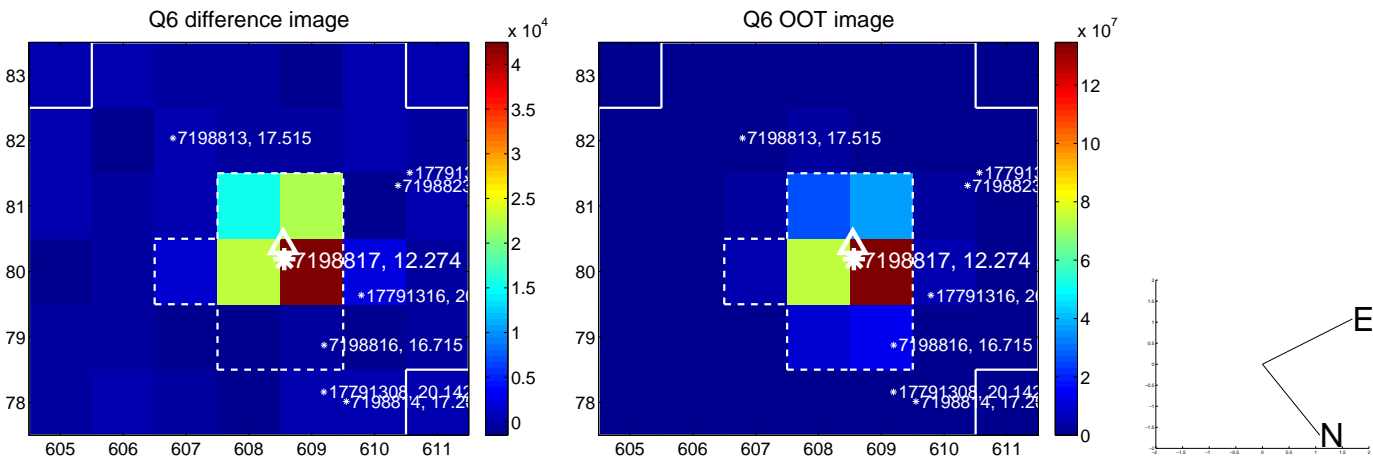
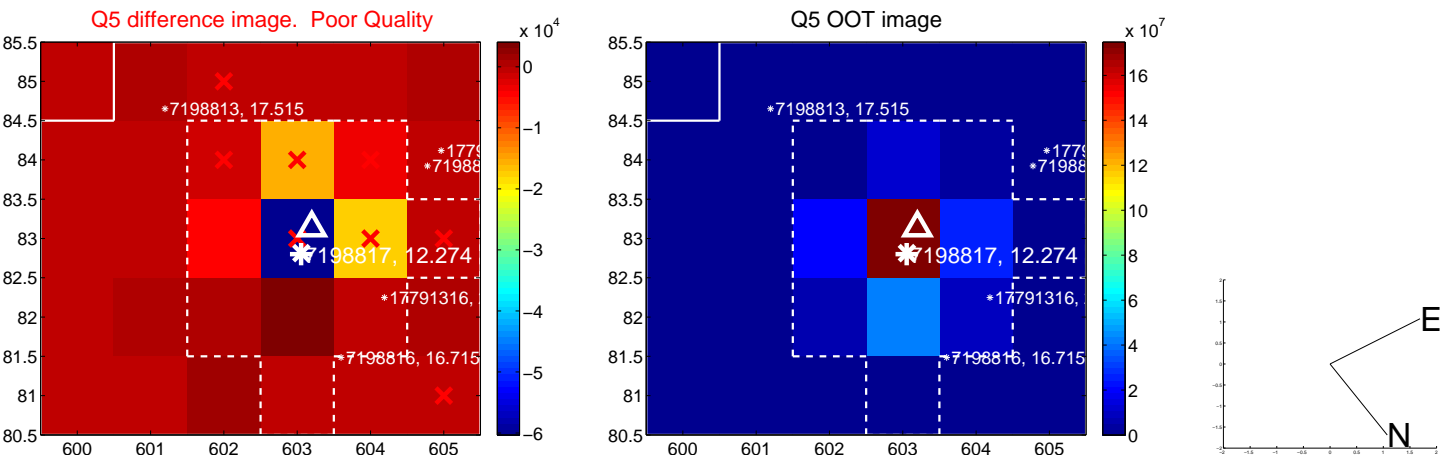


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

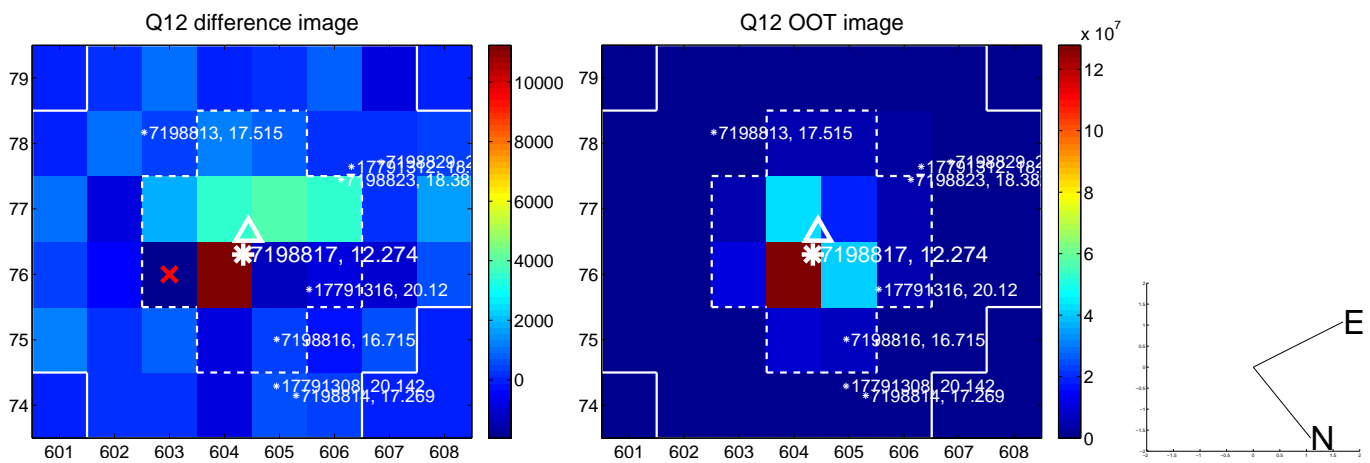
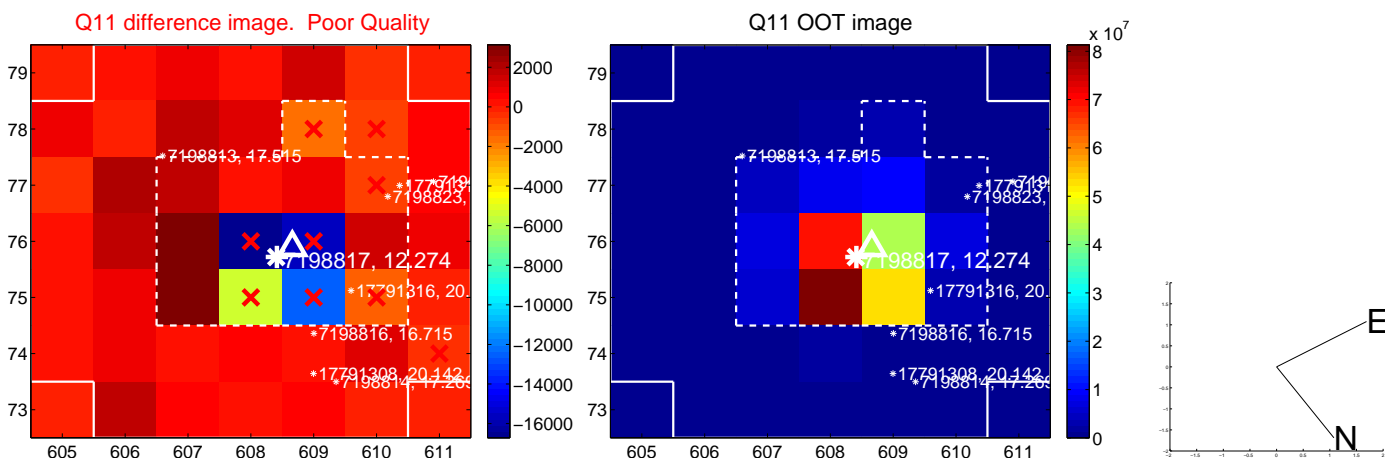
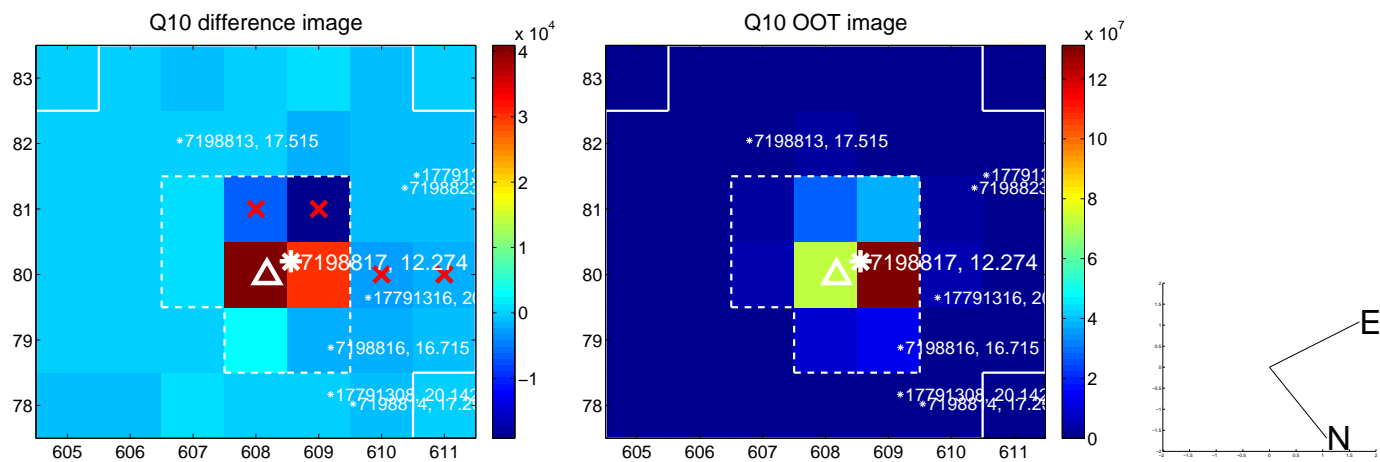
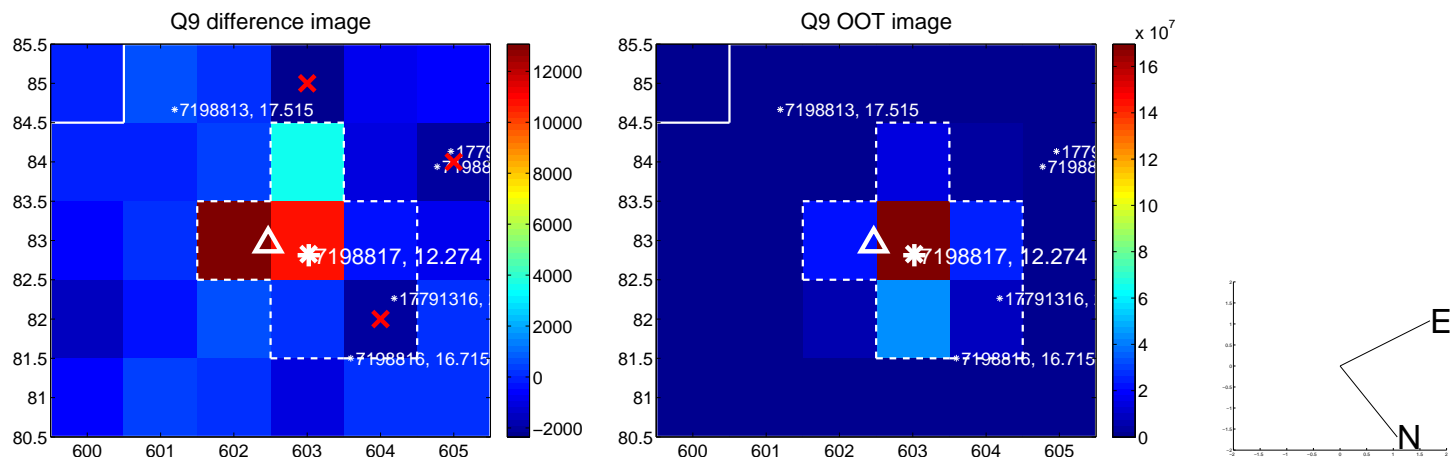
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



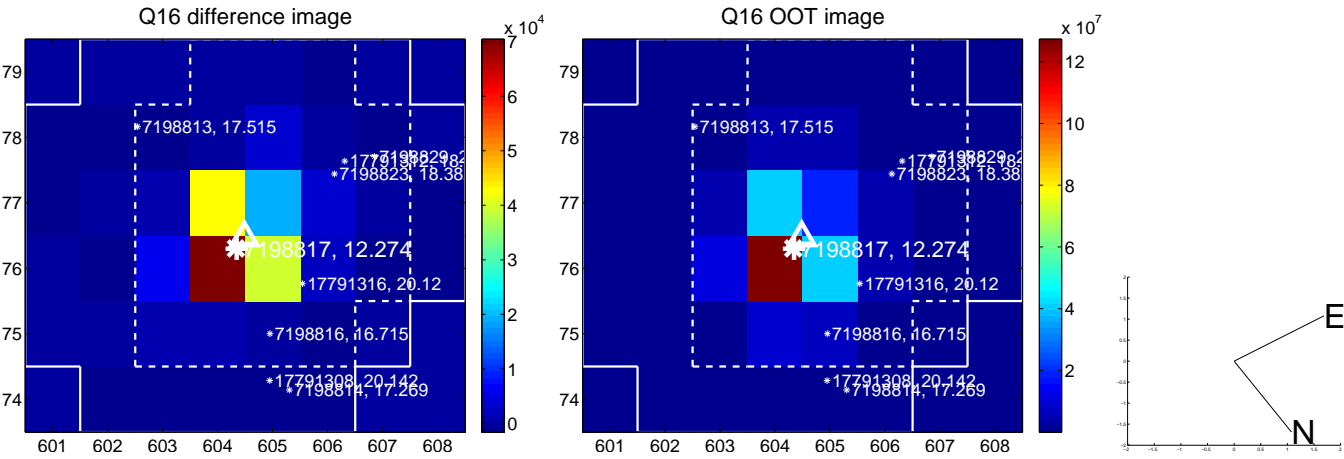
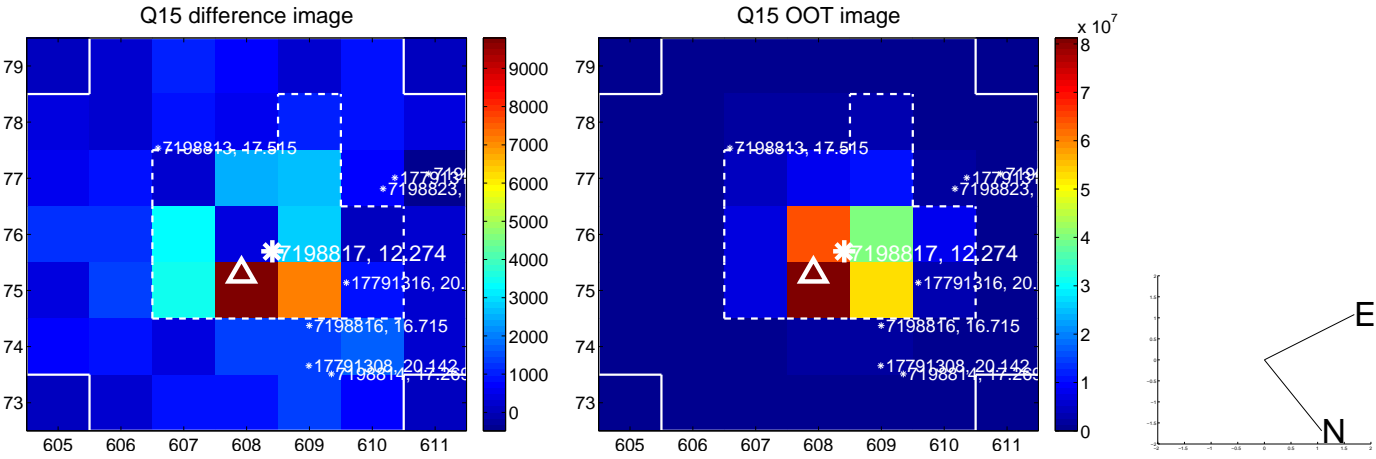
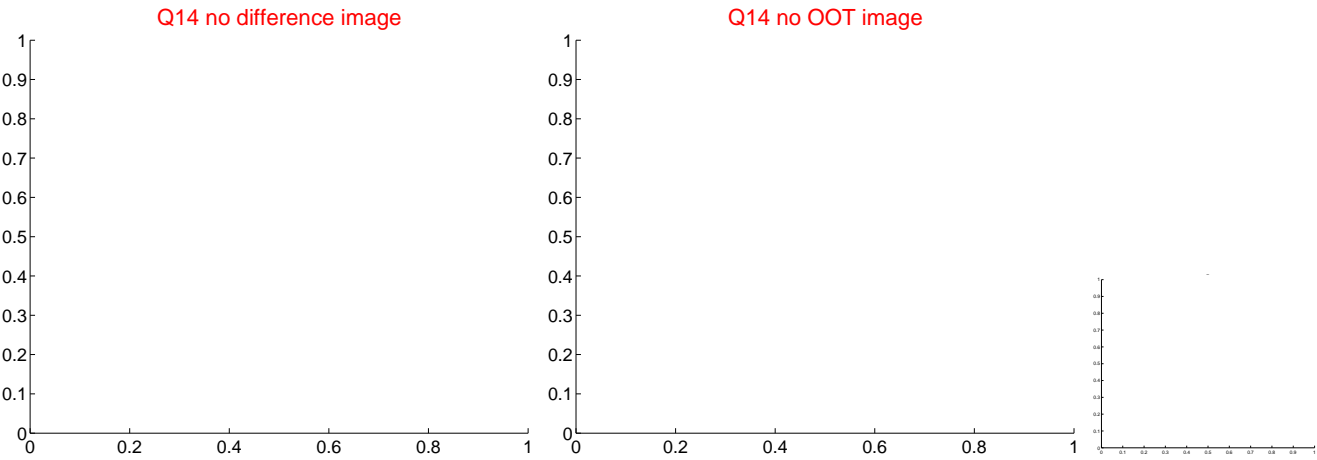
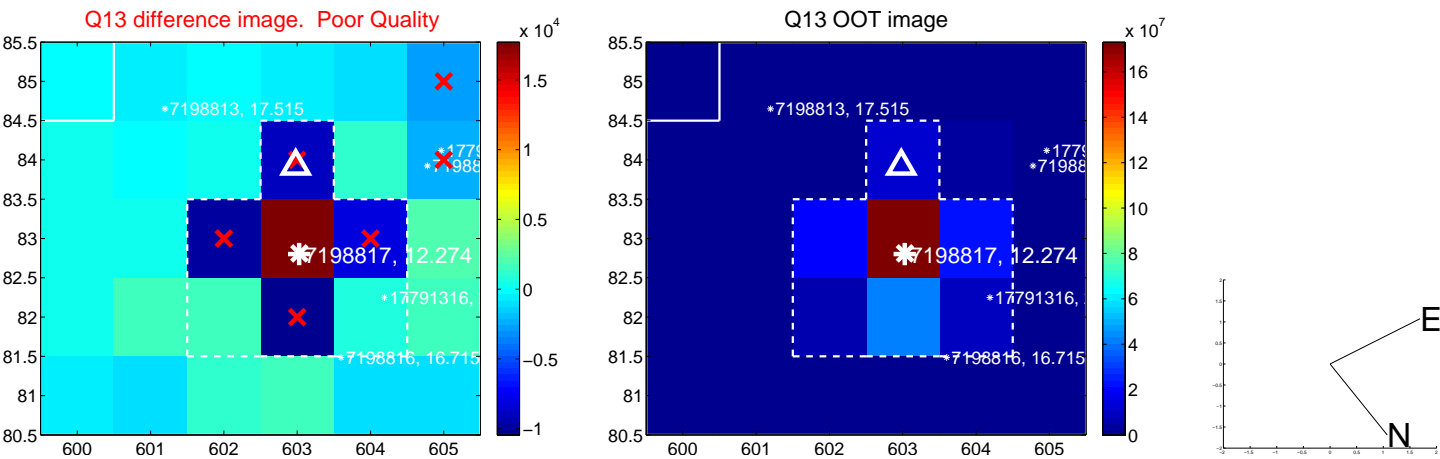
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



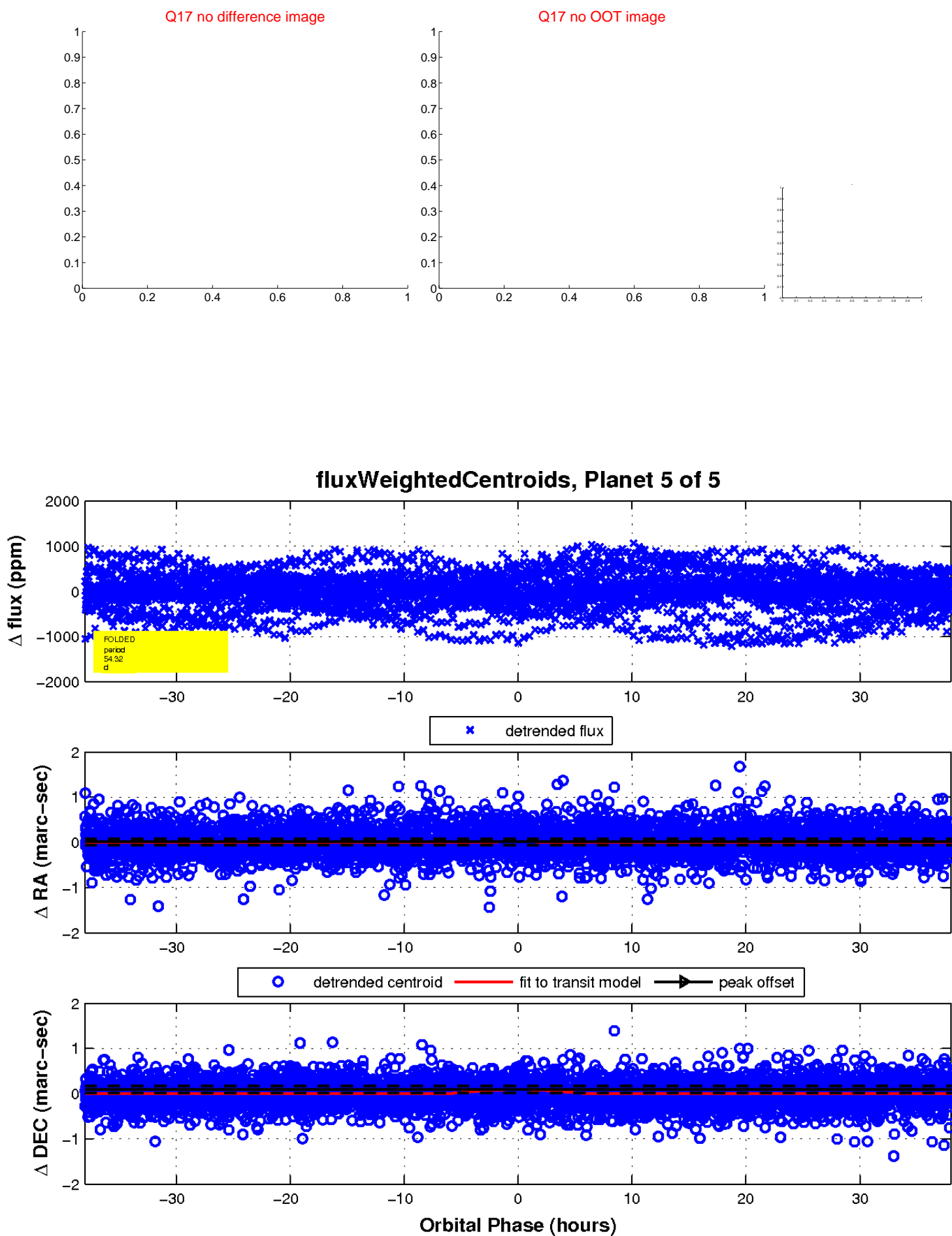
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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.



UKIRT Image

Declination

