

KIC 008098120

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}) |
|--------------|----------|------|---------------|--------------|-------------|------------------|------|------|-----------------------------|-----------------|------------------------|------------------------|
| 008098120-01 | OBS | No | 1.217044 | 131.614325 | 504.6 | 6.298 | 12.5 | 16.6 | 1.57 | 7203 | 6.31 | 9342.70 |
| 008098120-02 | OBS | No | 389.483158 | 357.216237 | 3573.2 | 3.514 | 11.0 | 11.0 | 1.57 | 7203 | 10.87 | 4.27 |
| 008098120-03 | OBS | No | 110.756481 | 171.098902 | 2015.4 | 4.947 | 9.8 | 11.3 | 1.57 | 7203 | 10.69 | 22.82 |

Robovetter Results

| TCE | Run Type | Disp | Score | N | S | C | E | Comments |
|--------------|----------|------|-------|---|---|---|---|---|
| 008098120-01 | OBS | FP | 0.00 | 1 | 0 | 0 | 0 | LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT |
| 008098120-02 | OBS | FP | 0.00 | 1 | 0 | 0 | 0 | INDIV_TRANS_RUBBLE_CHASES_MARSHALL_SKYE—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT— MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS |
| 008098120-03 | OBS | FP | 0.00 | 1 | 0 | 0 | 0 | LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT |

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

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

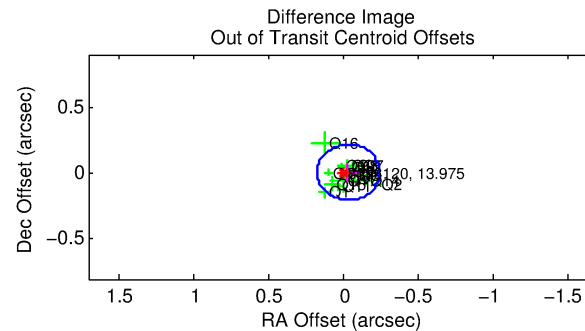
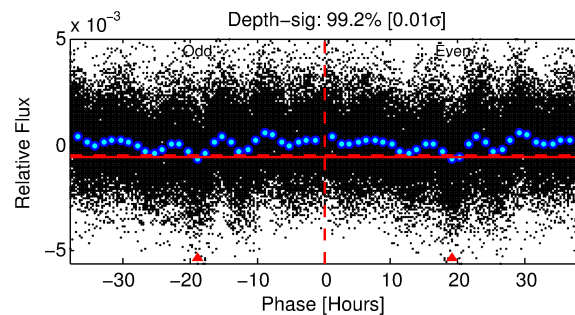
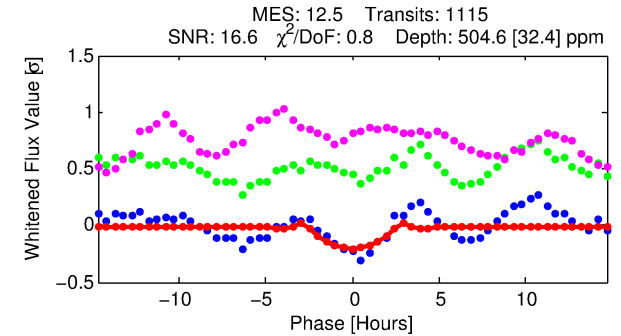
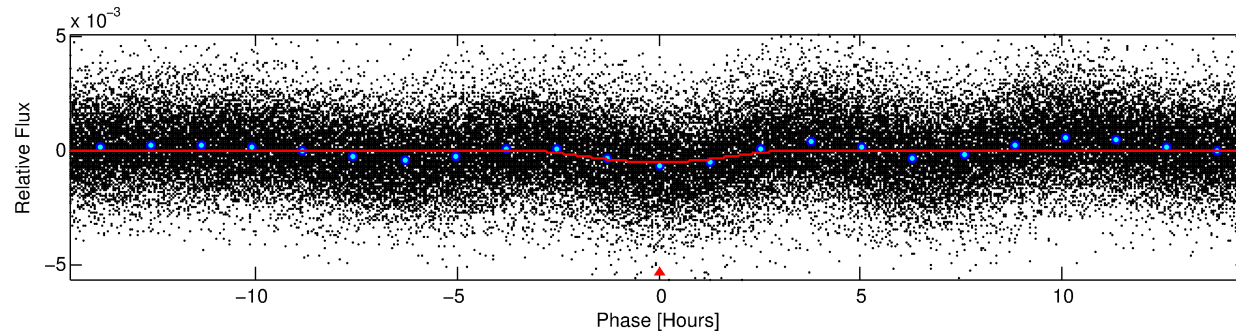
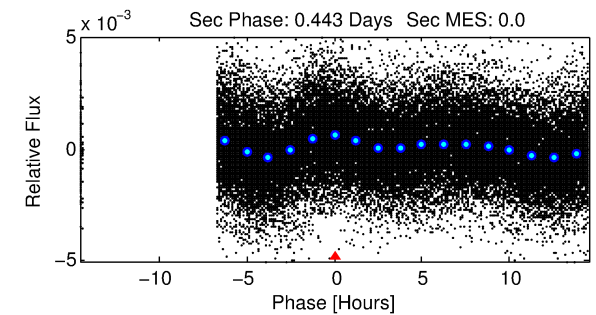
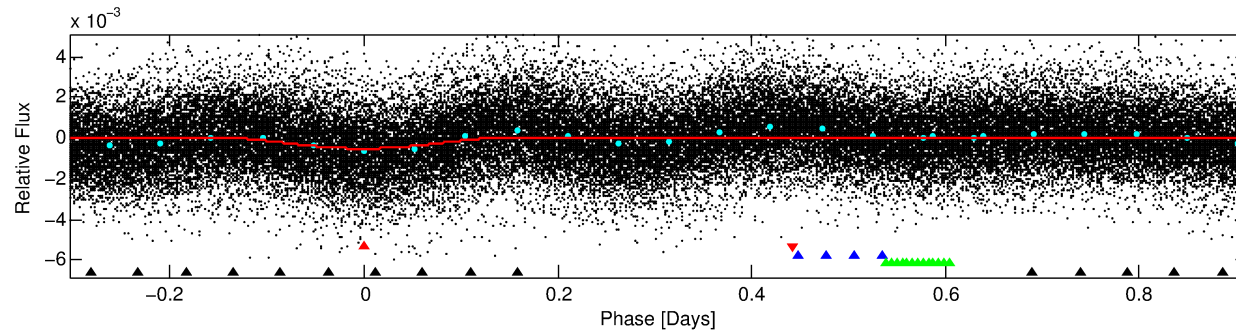
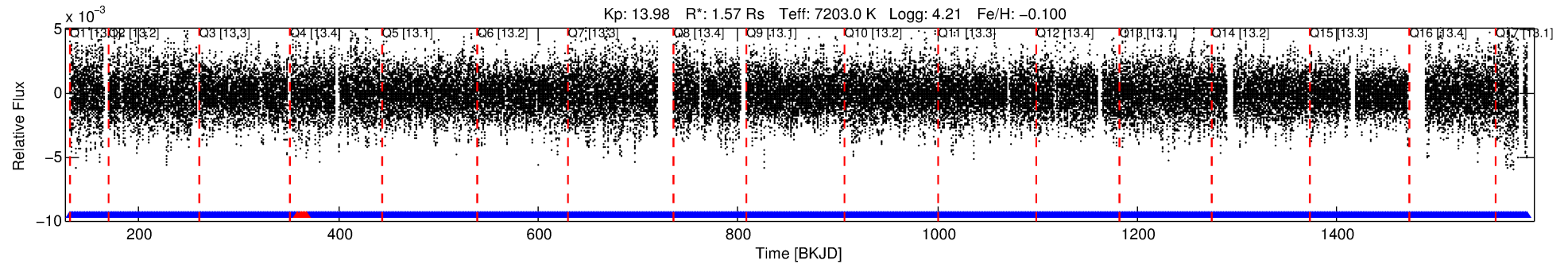
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 008098120-01

No Significant Match Found

DV One-Page Summary

KIC: 8098120 Candidate: 1 of 4 Period: 1.217 d



DV Fit Results:

Period = 1.21704 [0.00001] d
Epoch = 131.6143 [0.0037] BKJD
Rp/R* = 0.0368 [0.0177]
a/R* = 1.10 [0.01]
b = 1.00 [0.03]
Seff = 9342.70 [3972.35]
Teff = 2507 [266] K
Rp = 6.31 [3.69] Re
a = 0.0252 [0.0068] AU
Ag = N/A
Teffp = N/A

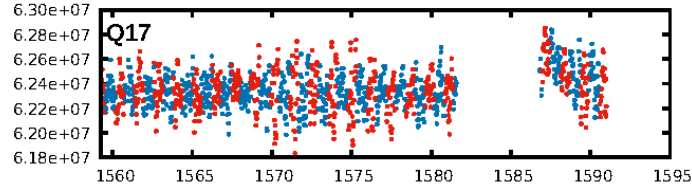
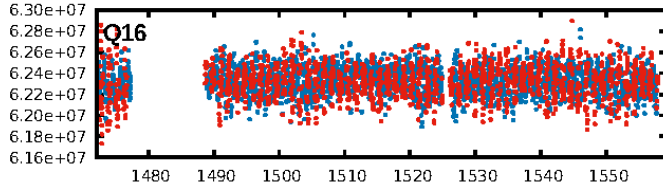
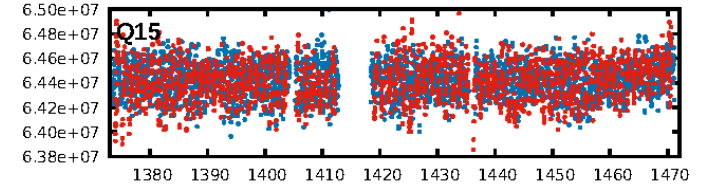
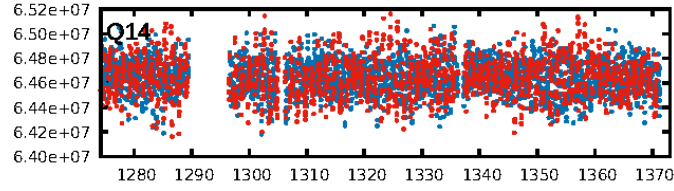
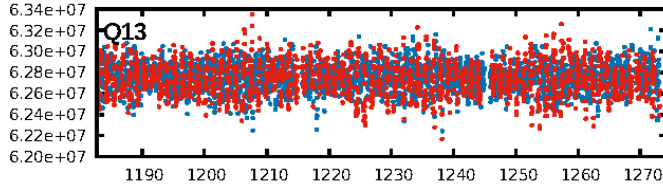
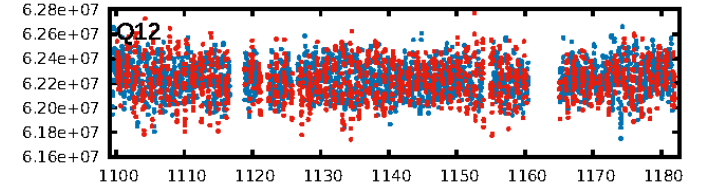
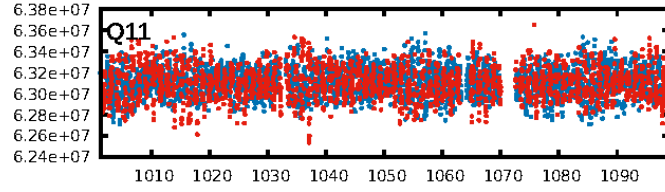
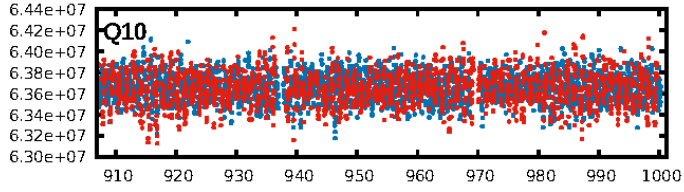
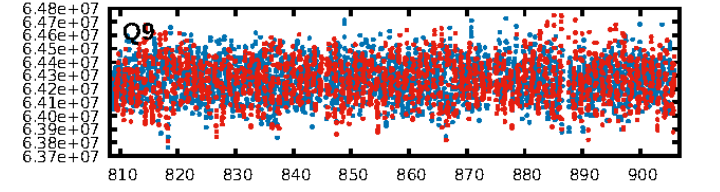
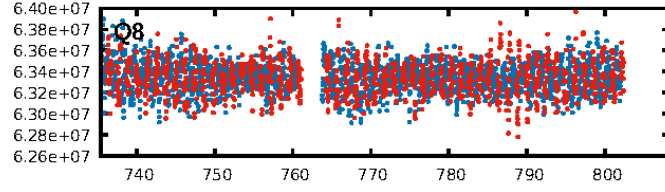
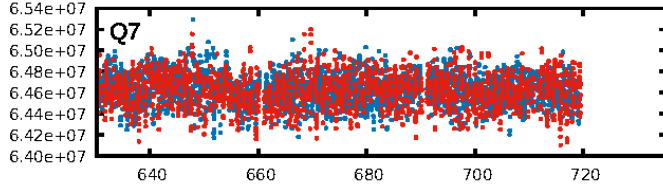
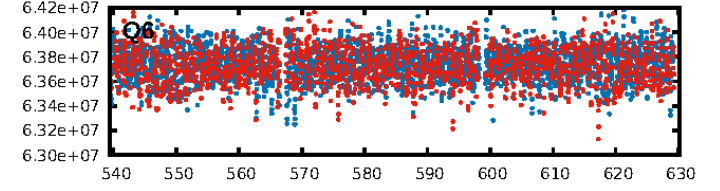
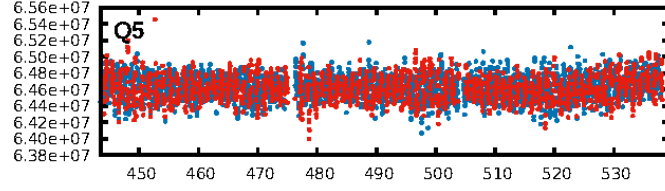
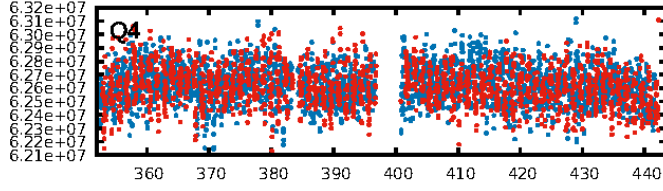
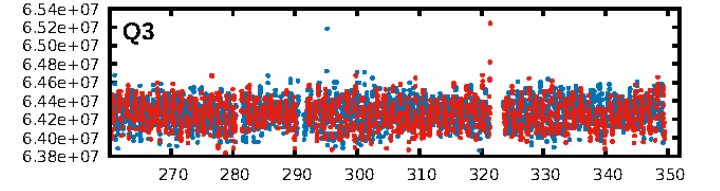
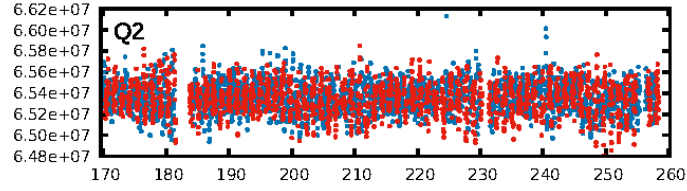
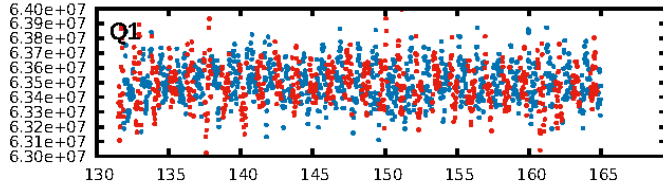
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 100.0% [265.13σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: N/A
RollingBand-fgt: 0.99 [1058/1064]
GhostDiagnostic-chr: 1.427
Centroid-sig: 0.2%
Centroid-so: 0.039 arcsec [0.54σ]
OotOffset-rm: 0.038 arcsec [0.53σ]
KicOffset-rm: 0.098 arcsec [1.39σ]
OotOffset-st: 4/4/4/5 [17]
KicOffset-st: 4/4/4/5 [17]
DiffImageQuality-fgm: 1.00 [17/17]
DiffImageOverlap-fno: 1.00 [17/17]

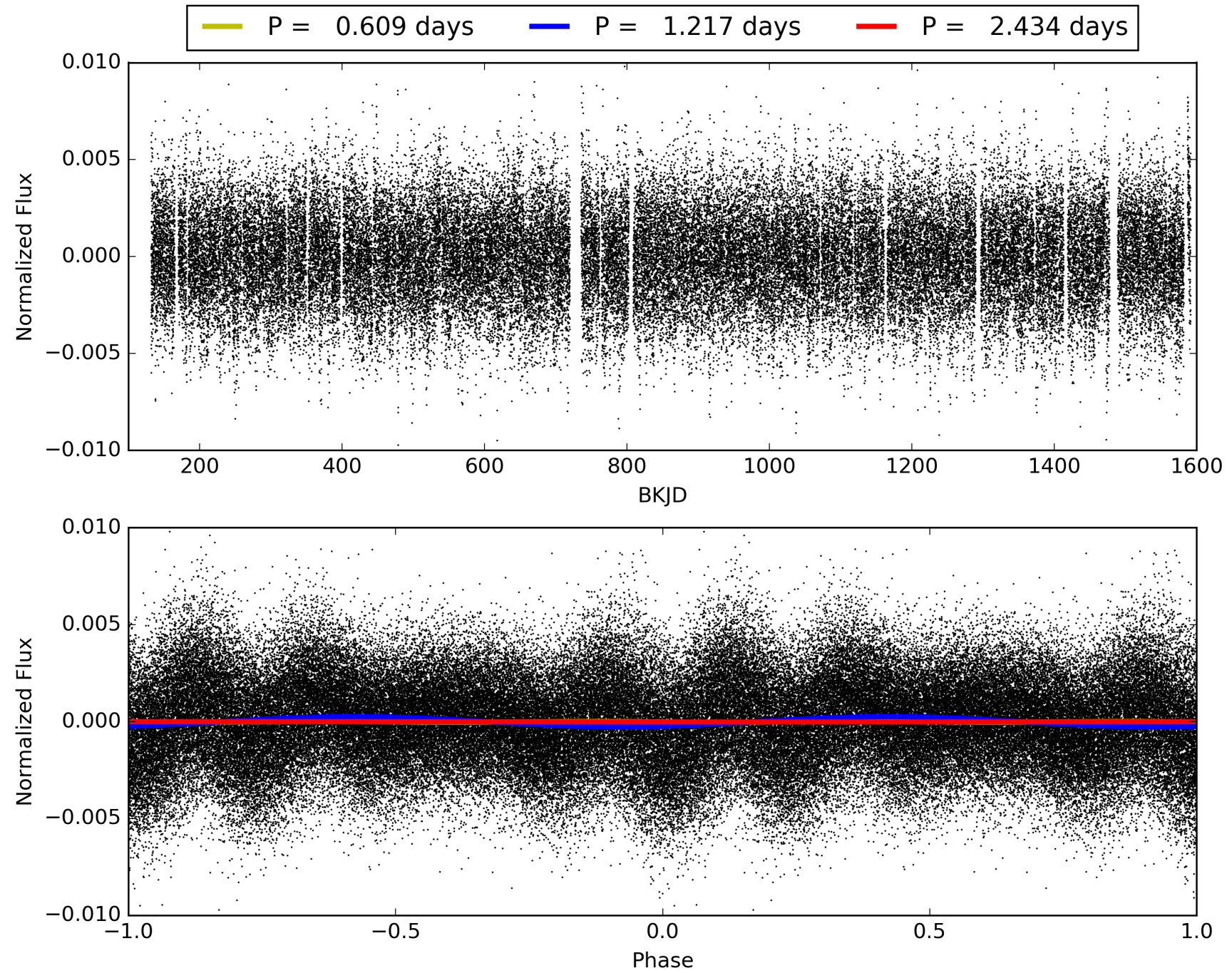
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 18:12:32 Z

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

TCE 008098120-01, PDC Light Curves

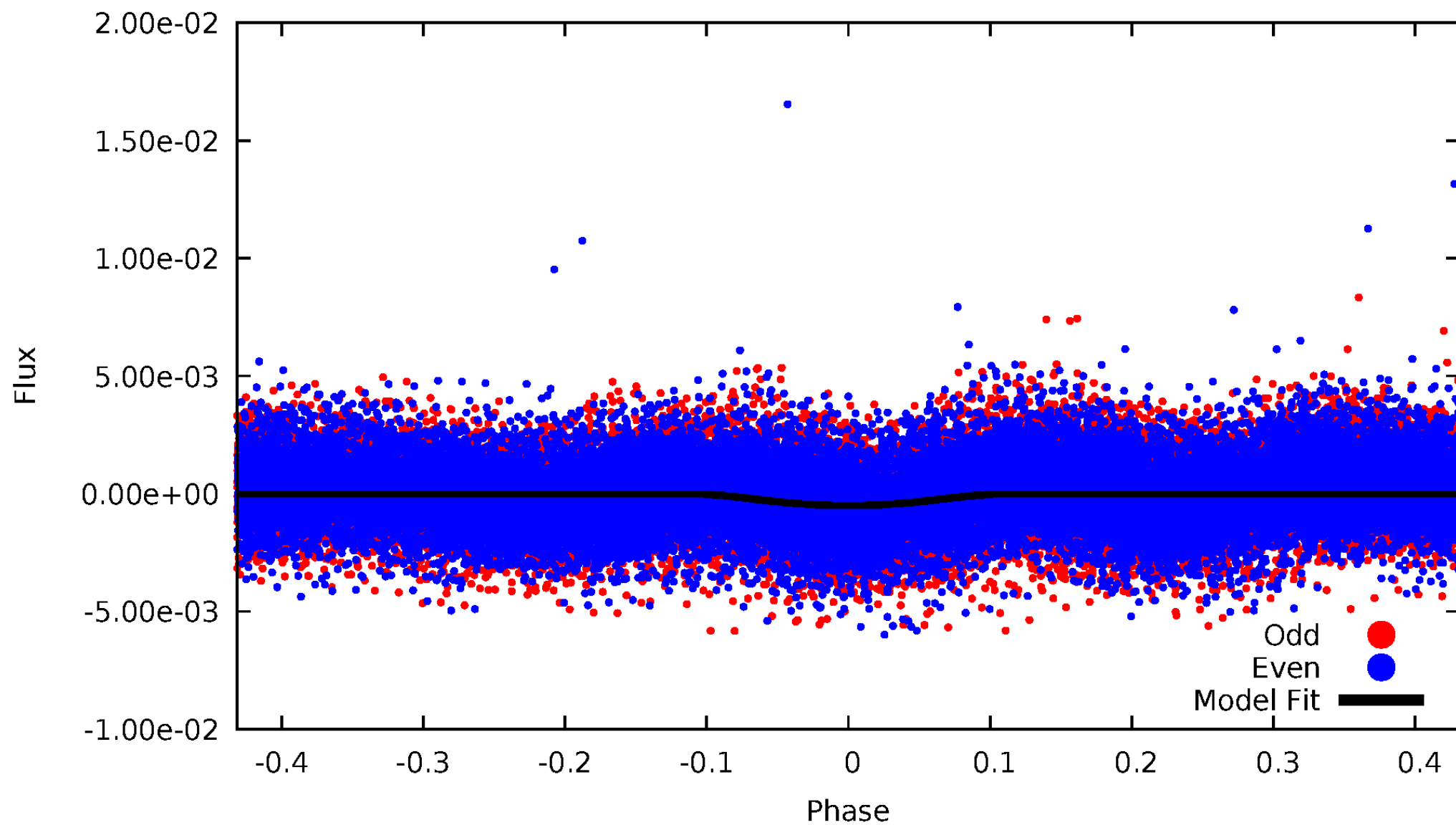


TCE 008098120-01



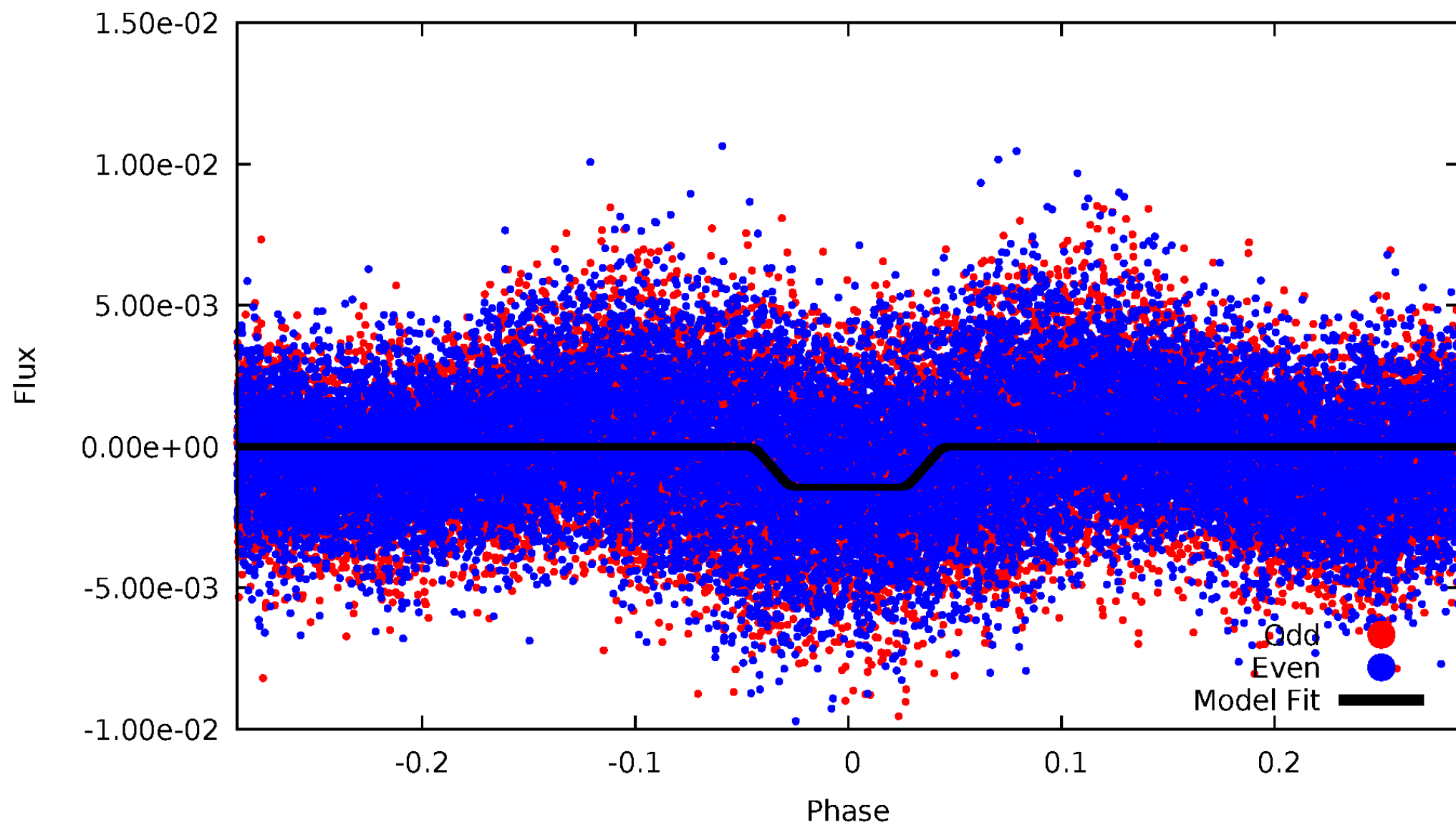
DV Odd/Even

TCE 008098120-01

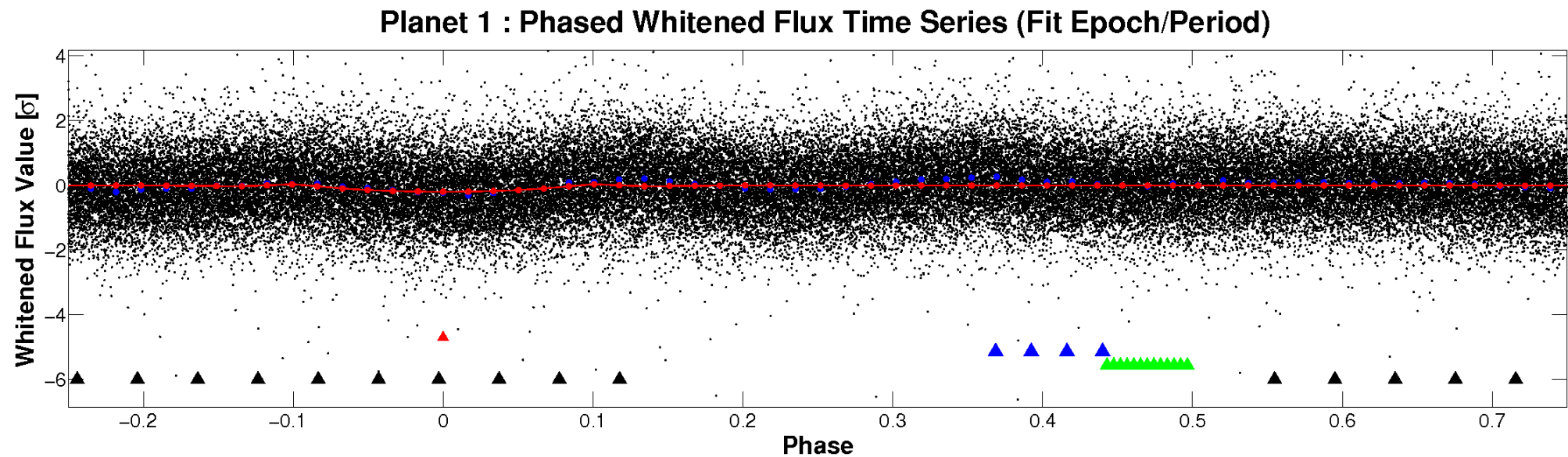
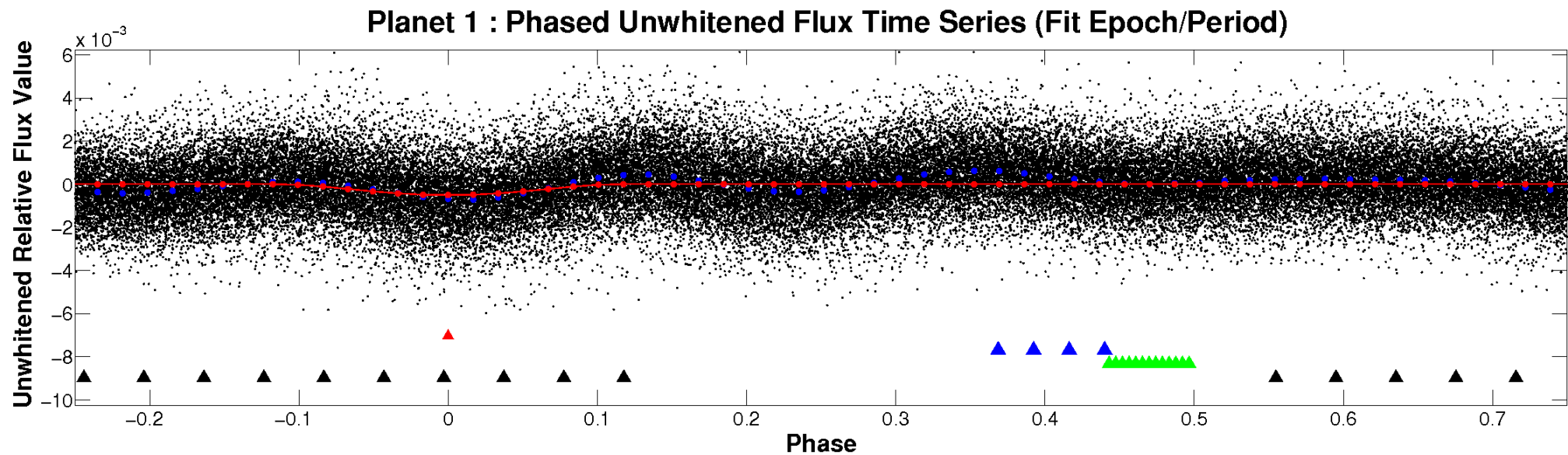


ALT Odd/Even

TCE 008098120-01

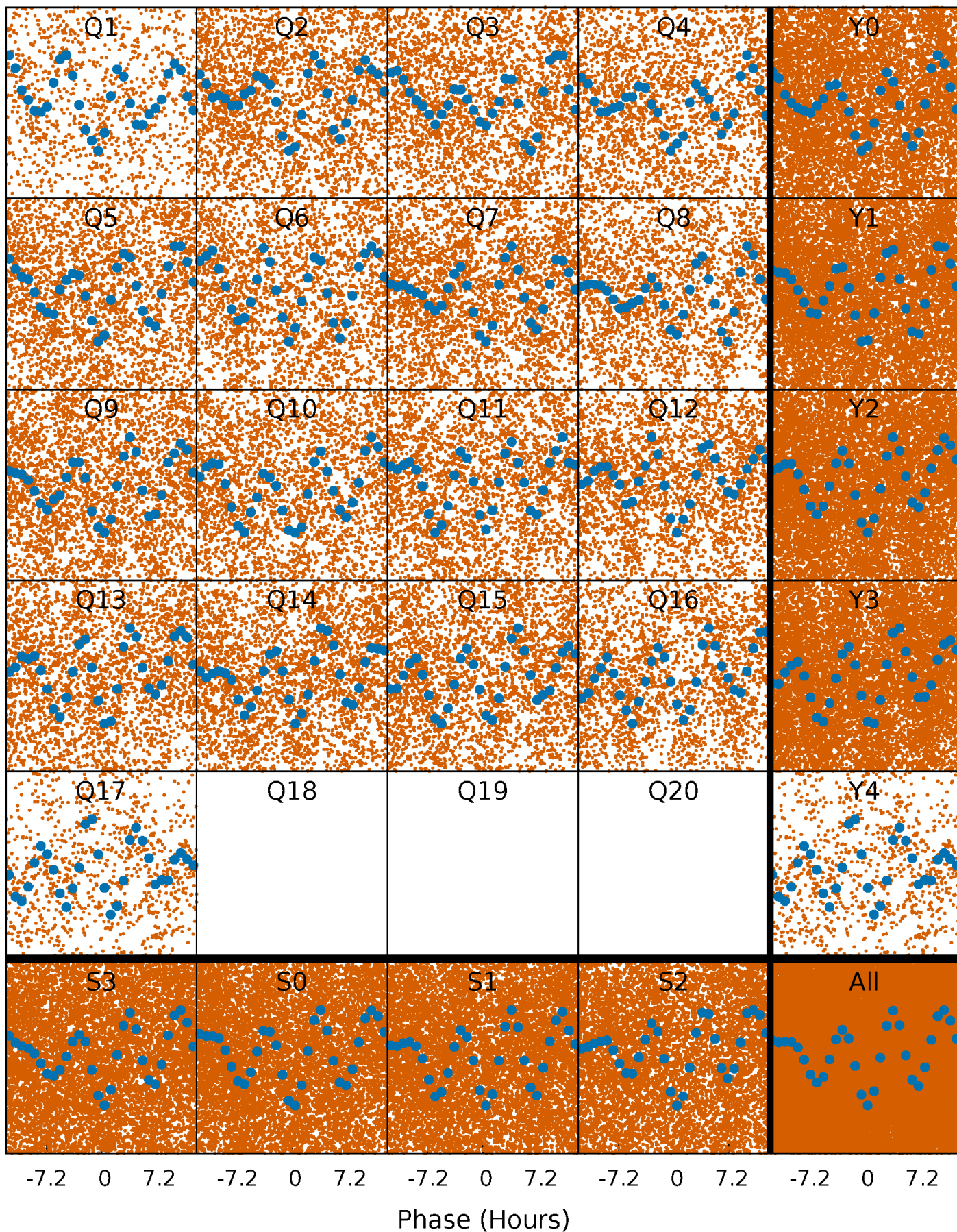


Non-Whitened Vs. Whitened Light Curve



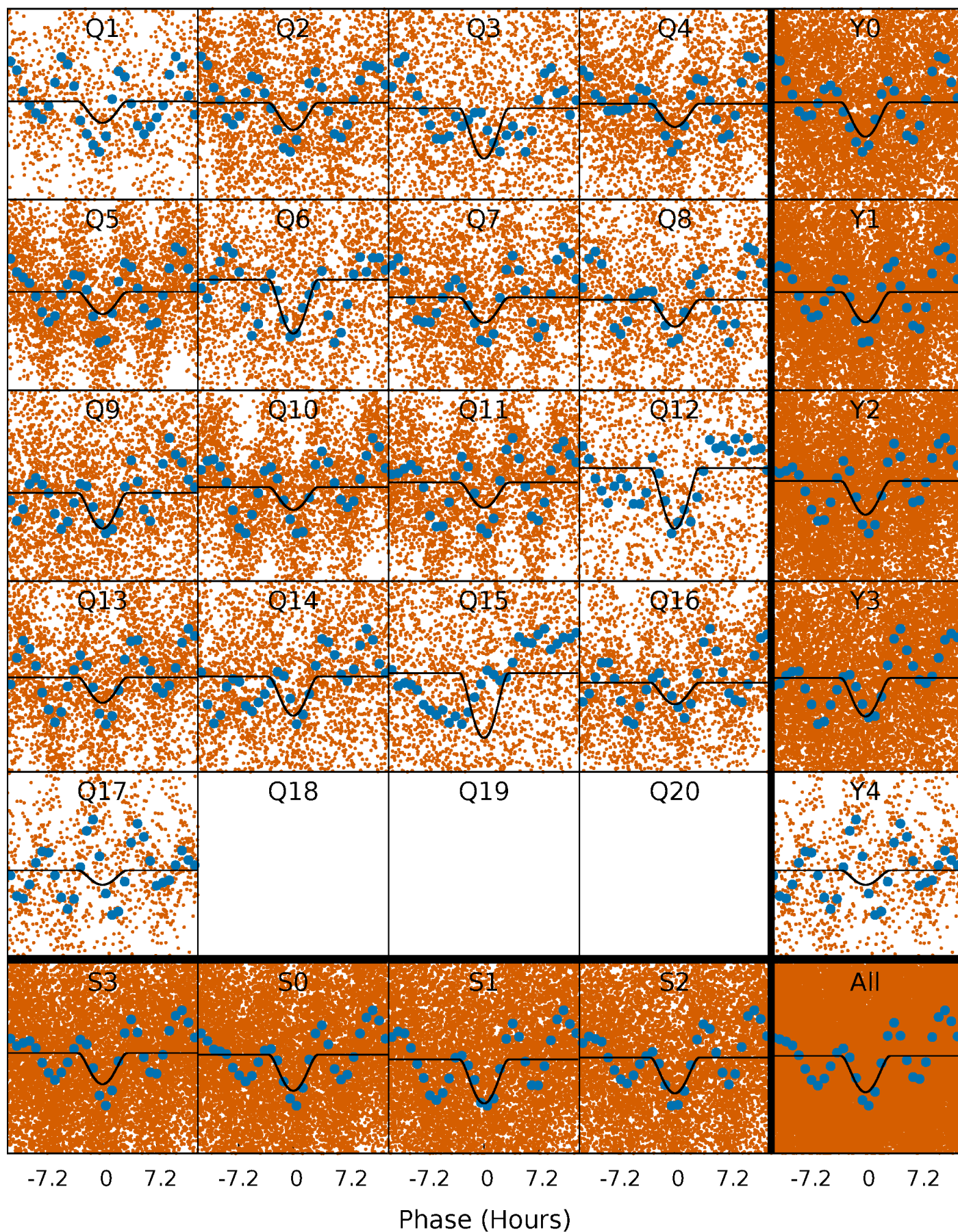
PDC Quarter-Phased Transit Curves

TCE 008098120-01 P= 1.217044 Days $T_0=131.614325$ (BKJD)



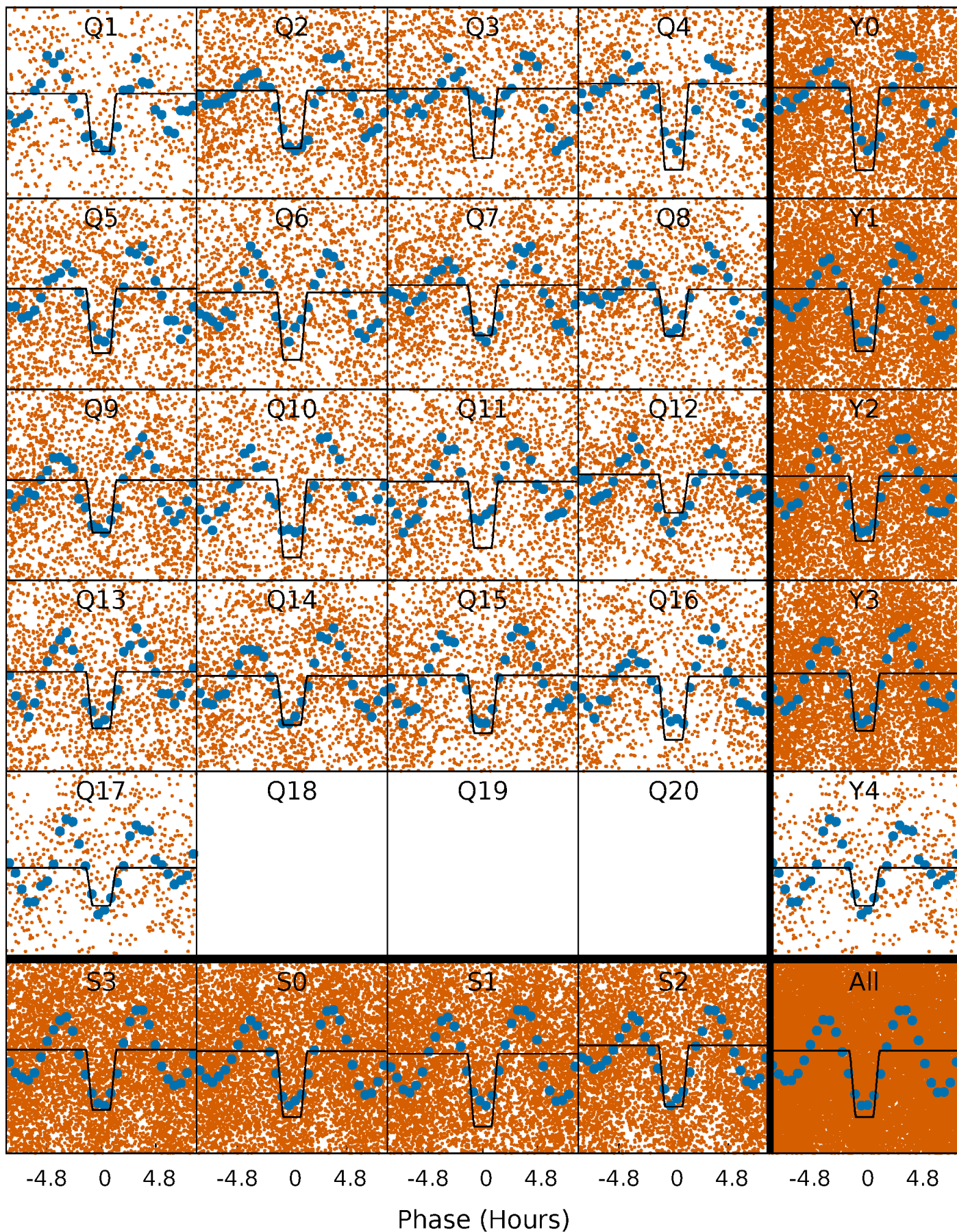
DV Quarter-Phased Transit Curves

TCE 008098120-01 P= 1.217044 Days $T_0=131.614325$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

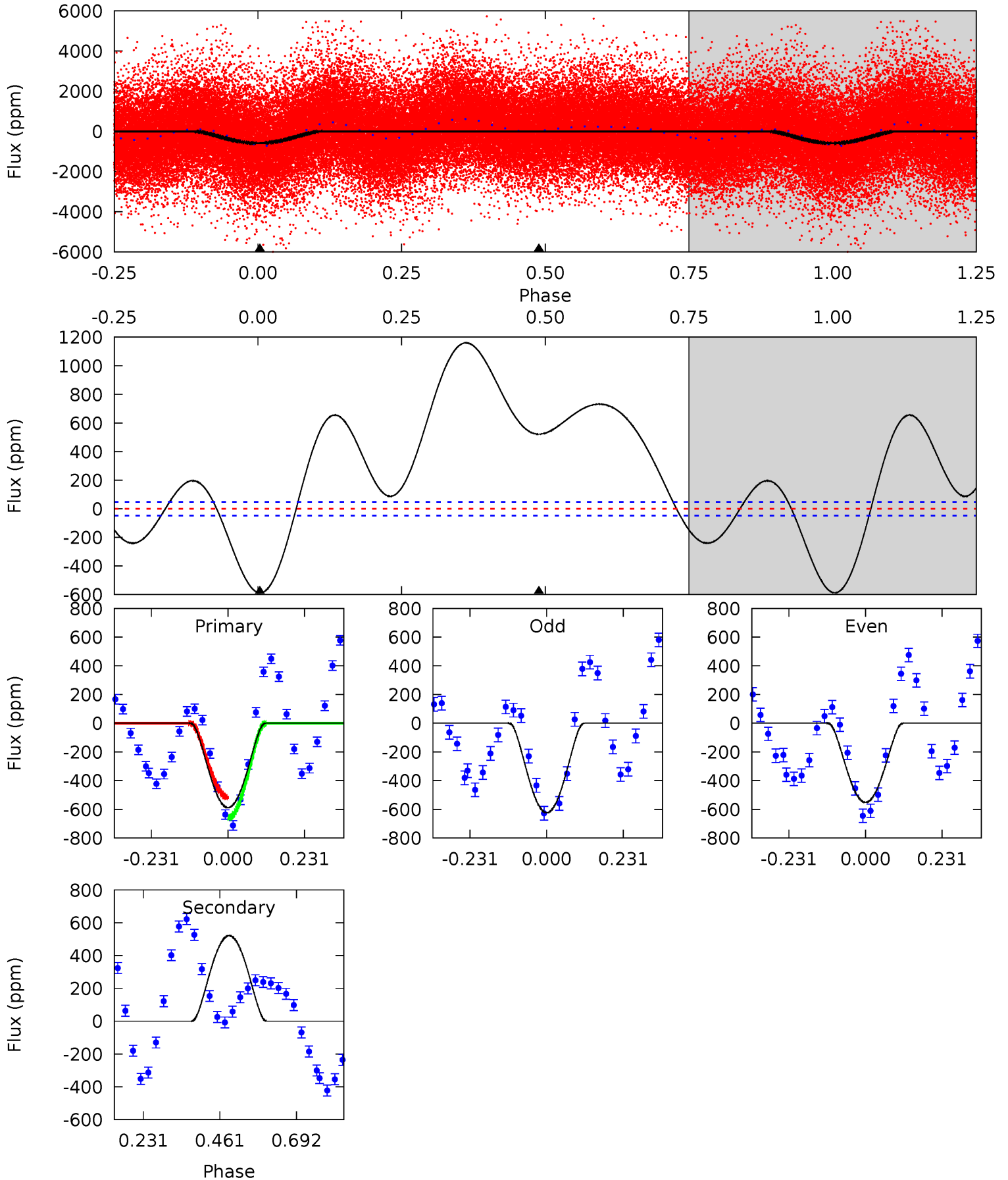
TCE 008098120-01 P= 1.217120 Days $T_0=131.581573$ (BKJD)



DV Model-Shift Uniqueness Test

008098120-01, P = 1.217044 Days, E = 130.397281 Days

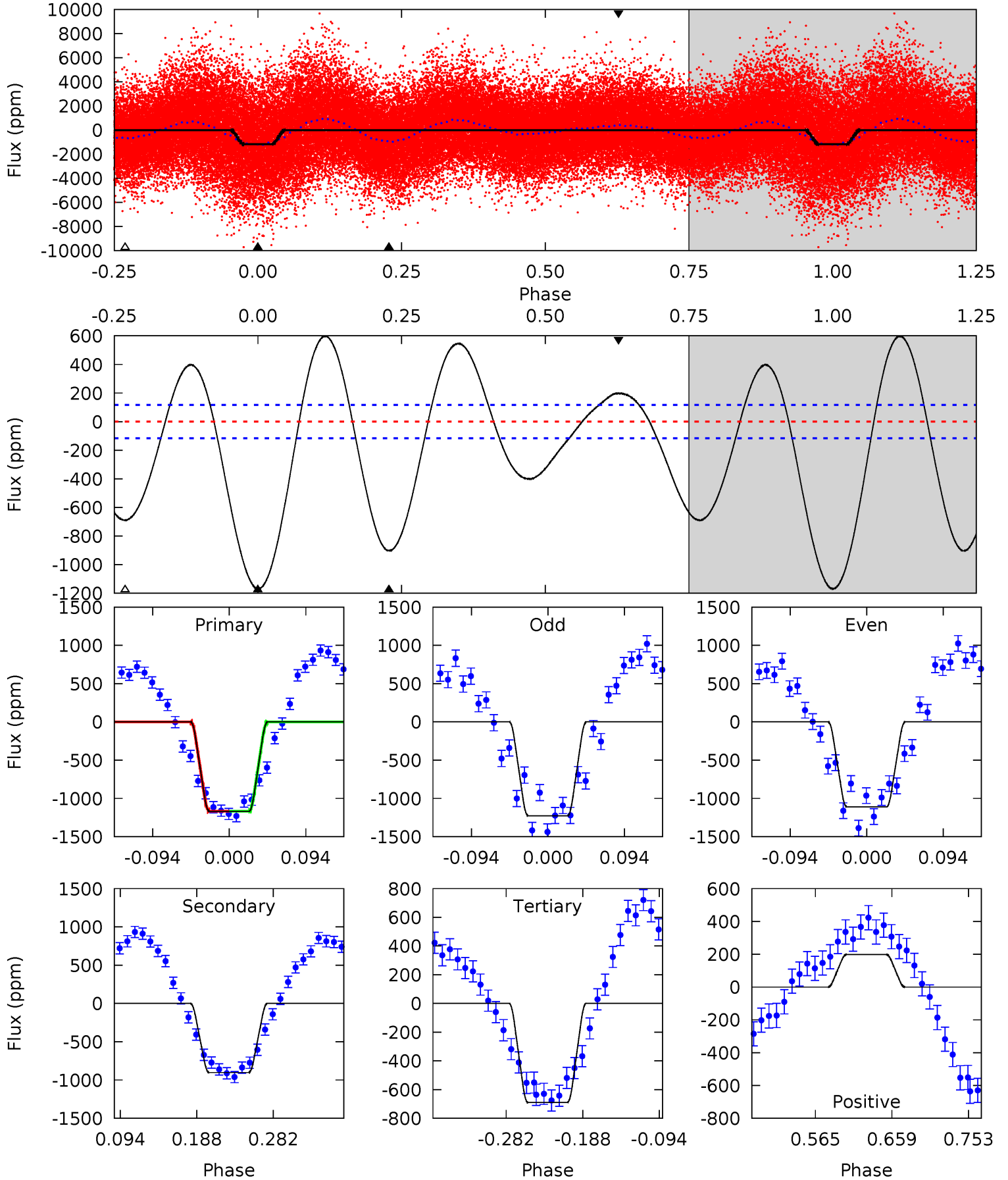
| Pri | Sec | Ter | Pos | FA ₁ | FA ₂ | F _{Red} | Pri-Ter | Pri-Pos | Sec-Ter | Sec-Pos | Odd-Evn | DMM | Shape | TAT |
|------|-------|-----|-----|-----------------|-----------------|------------------|---------|---------|---------|---------|---------|------|-------|------|
| 54.1 | -48.0 | 0 | 0 | 4.39 | 1.20 | 13.8 | 54.1 | 54.1 | -48.0 | -48.0 | 3.31 | 0.89 | 0.66 | 6.47 |



Alt Model-Shift Uniqueness Test

008098120-01, P = 1.217120 Days, E = 130.364453 Days

| Pri | Sec | Ter | Pos | FA ₁ | FA ₂ | F _{Red} | Pri-Ter | Pri-Pos | Sec-Ter | Sec-Pos | Odd-Evn | DMM | Shape | TAT |
|------|------|------|------|-----------------|-----------------|------------------|---------|---------|---------|---------|---------|------|-------|------|
| 45.9 | 35.4 | 27.0 | 7.78 | 4.58 | 1.67 | 14.3 | 18.8 | 38.1 | 8.37 | 27.6 | 2.24 | 1.09 | 0.34 | 0.02 |



Stellar Parameters For KIC 008098120

| | $T_{\text{eff}}(K)$ | $\log(g)$ | [Fe/H] | $R (R_{\odot})$ | $M(M_{\odot})$ | $p_{\star} (\text{g}\cdot\text{cm}^{-3})$ |
|--------|----------------------|---------------------------|----------------------------|---------------------------|---------------------------|---|
| | 7203^{+200}_{-342} | $4.206^{+0.108}_{-0.201}$ | $-0.100^{+0.250}_{-0.350}$ | $1.570^{+0.524}_{-0.282}$ | $1.448^{+0.218}_{-0.239}$ | $0.527^{+0.265}_{-0.278}$ |
| | +3%/-5% | +3%/-5% | +250%/-350% | +33%/-18% | +15%/-17% | +50%/-53% |
| 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 008098120-01 / KOI

| Detrend | Depth (ppm) | $R_p (R_{\oplus})$ | $T_{max} (K)$ | $T_{obs} (K)$ | A_{obs} |
|---------|---------------|------------------------|----------------------|------------------------|----------------------------|
| DV | 521 ± 11 | $6.50^{+3.40}_{-2.92}$ | 3524^{+292}_{-221} | -5643^{+816}_{-2192} | $-4.157^{+2.340}_{-9.828}$ |
| Alt. | -903 ± 26 | $6.90^{+3.41}_{-3.15}$ | 3539^{+284}_{-239} | 6053^{+2723}_{-940} | $6.645^{+15.395}_{-3.660}$ |

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 $A_{obs} \gg 1.0$

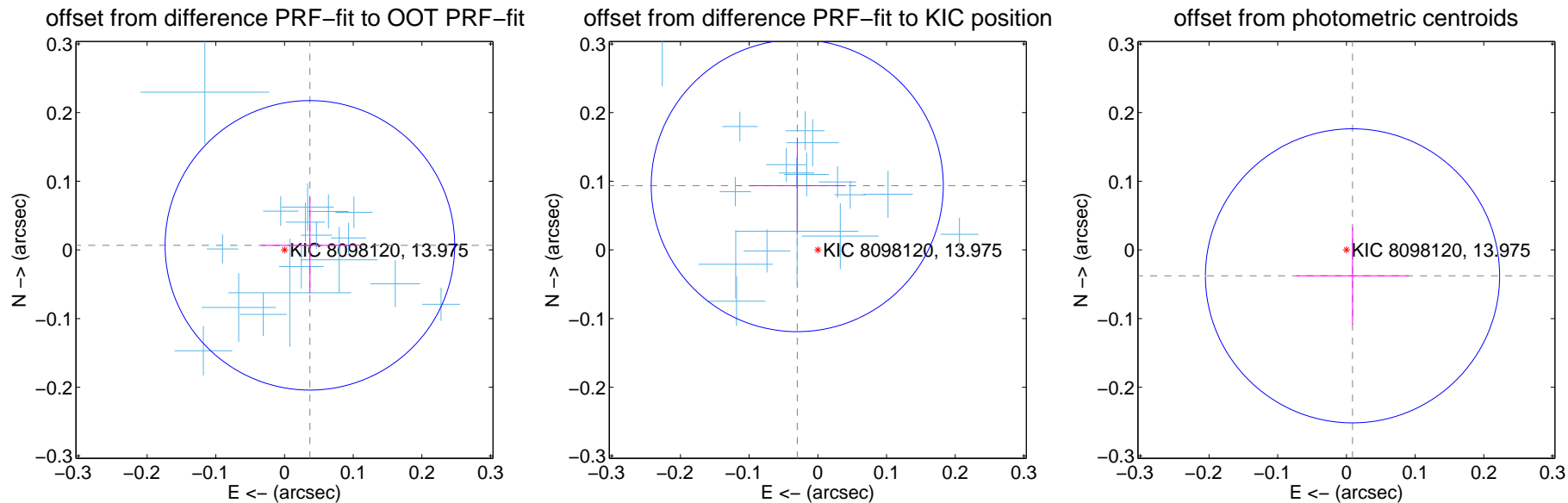
DV Centroid Data

Supplemental centroid analysis for 008098120-01. Kepler magnitude: 13.97. Transit SNR 16.60

There are 17 quarters with good PRF difference image offsets

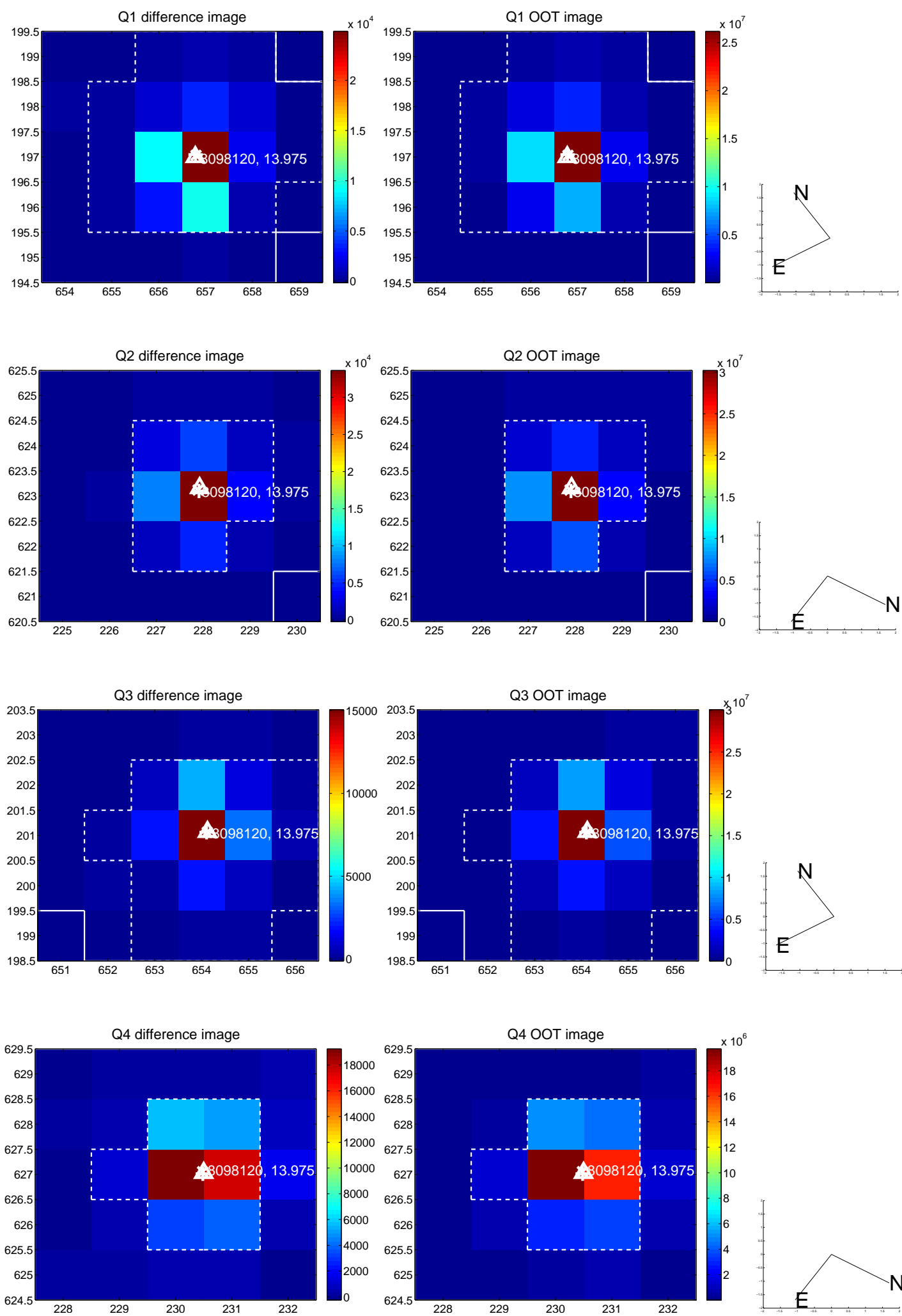
The direct PRF centroid is offset from the target star catalog position by about 0.10 arcsec

| | Distance in arcsec | Distance / σ | Δ RA | Δ Dec |
|---|--------------------|---------------------|--------------------|-------------------|
| PRF-fit source offset from OOT | 0.038 ± 0.070 | 0.53 | -0.037 ± 0.071 | 0.007 ± 0.070 |
| PRF-fit source offset from KIC position | 0.098 ± 0.071 | 1.39 | 0.030 ± 0.071 | 0.094 ± 0.070 |
| photometric centroid source offset | 0.04 ± 0.07 | 0.54 | -0.01 ± 0.08 | -0.04 ± 0.07 |

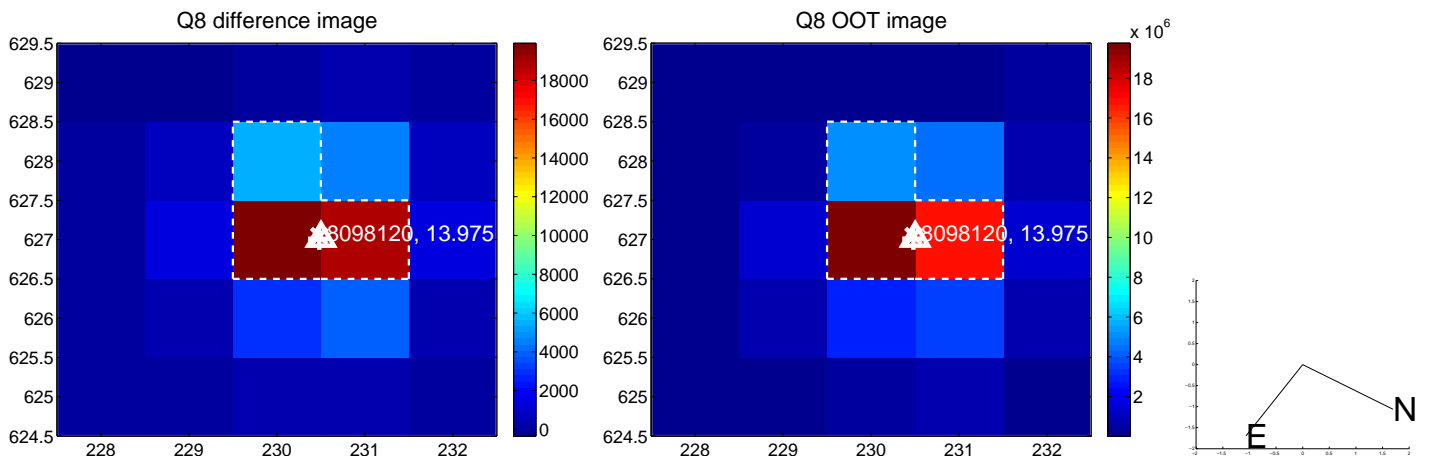
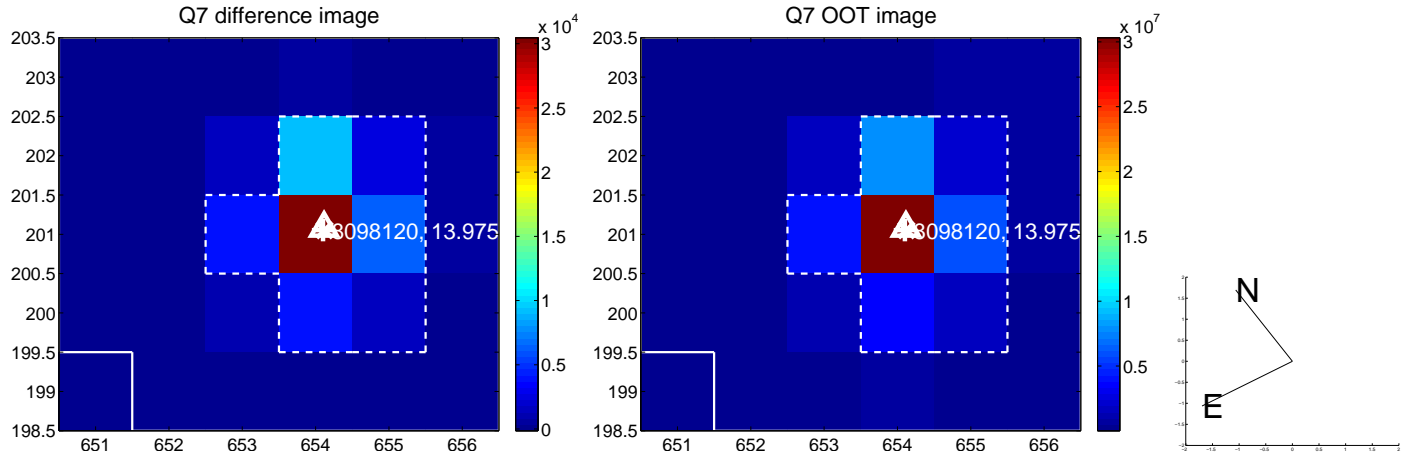
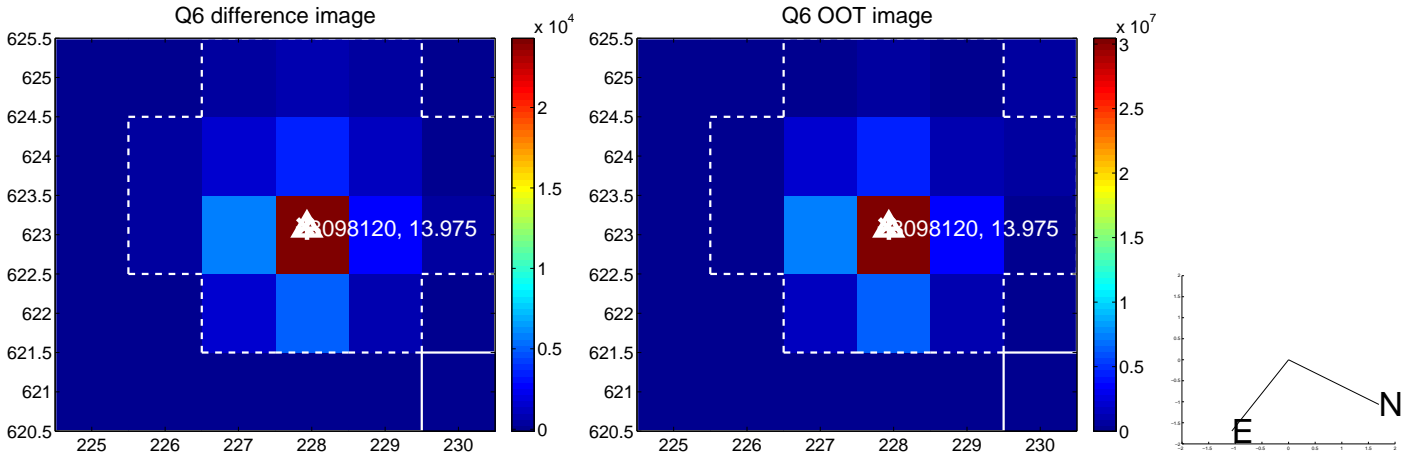
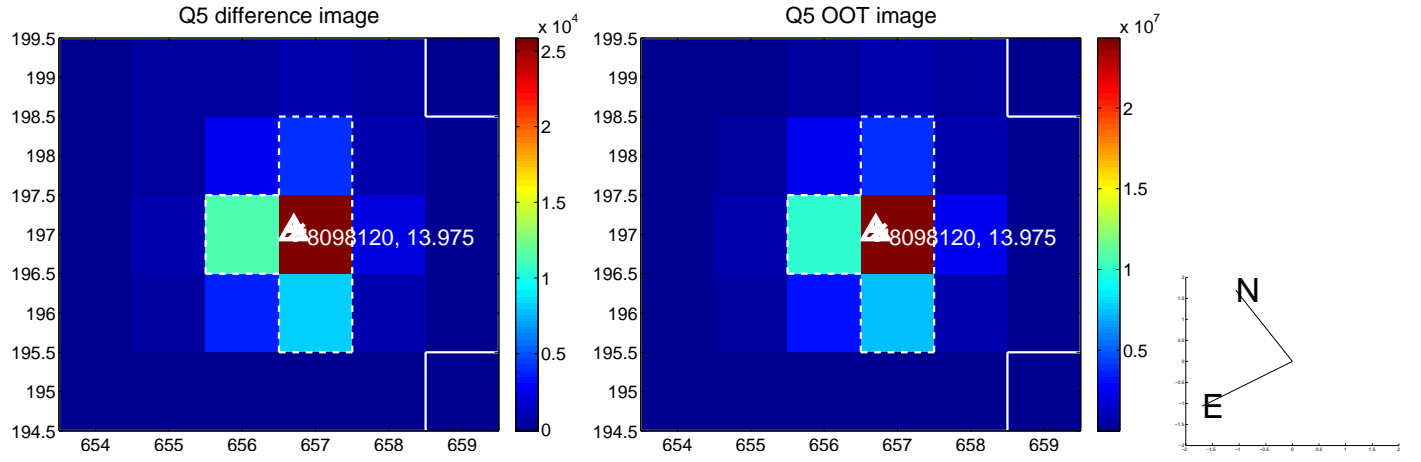


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

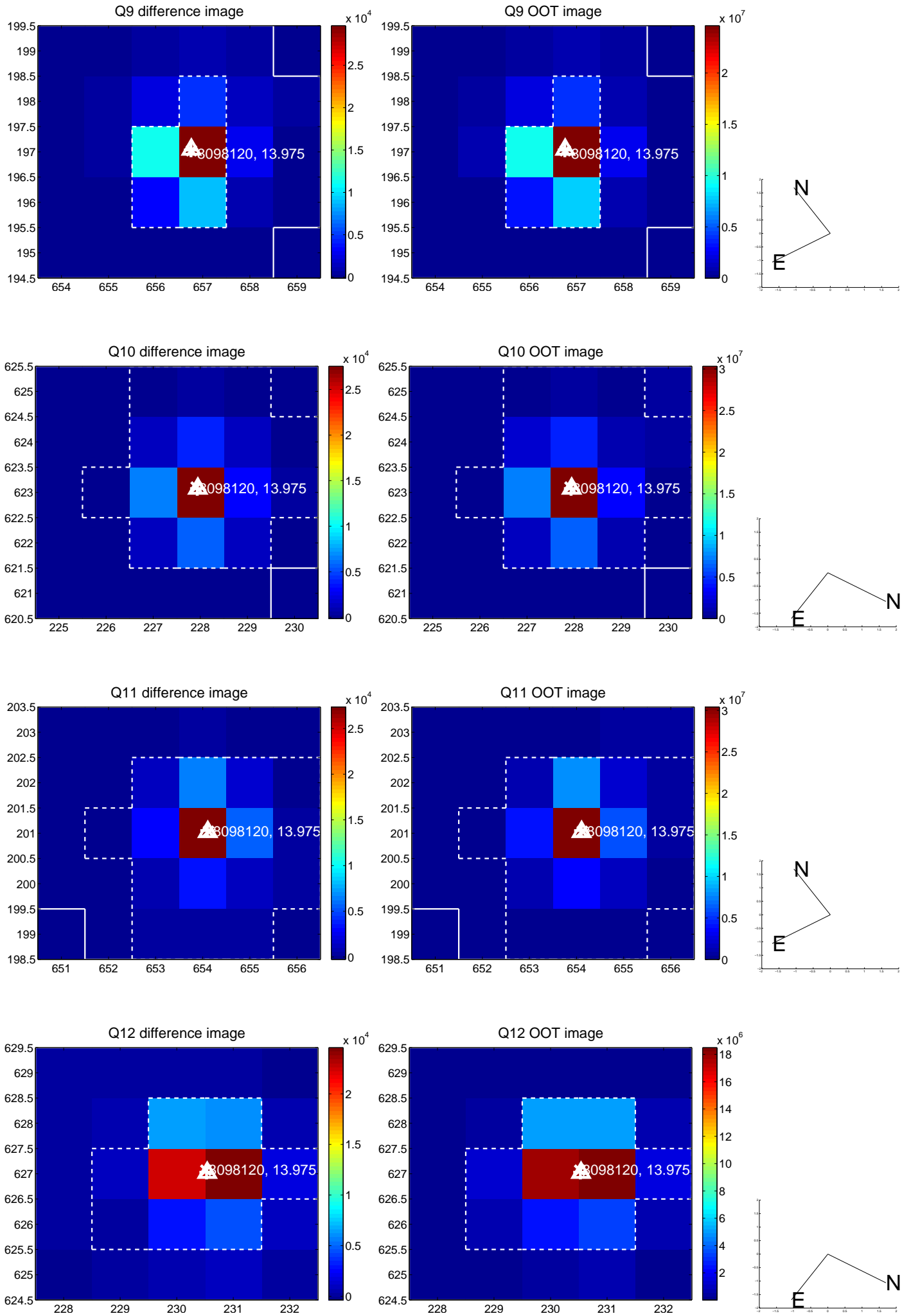
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



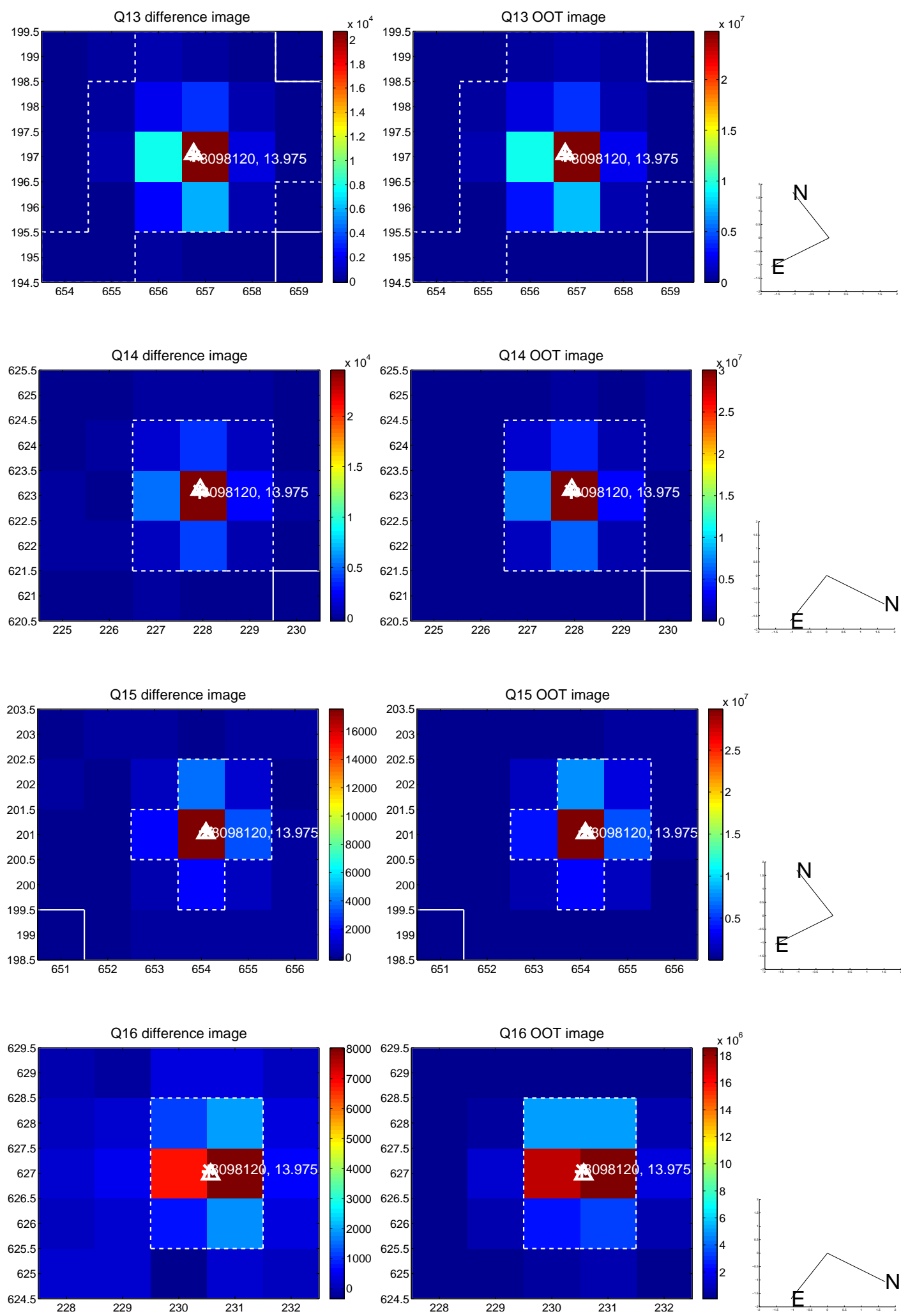
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



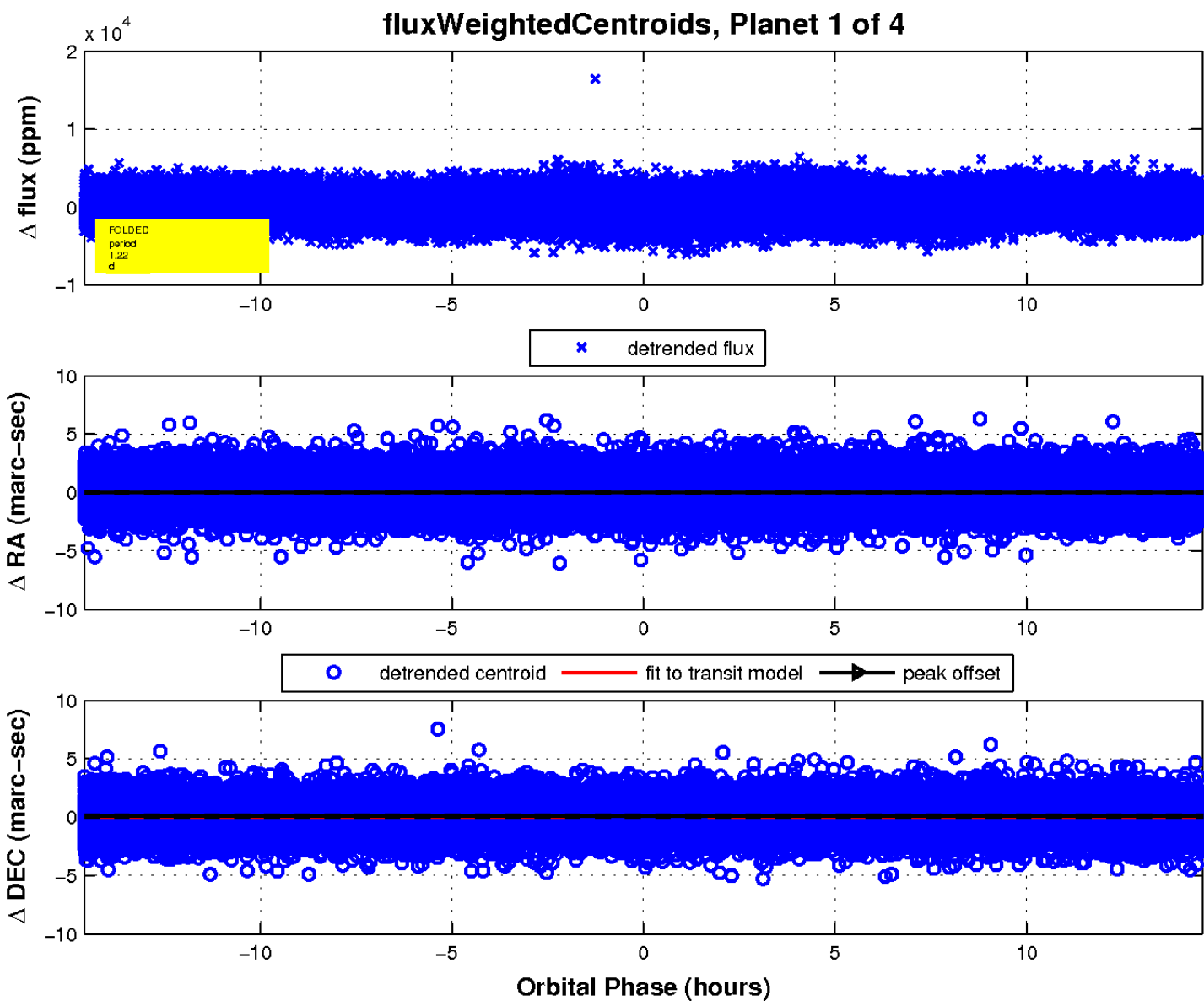
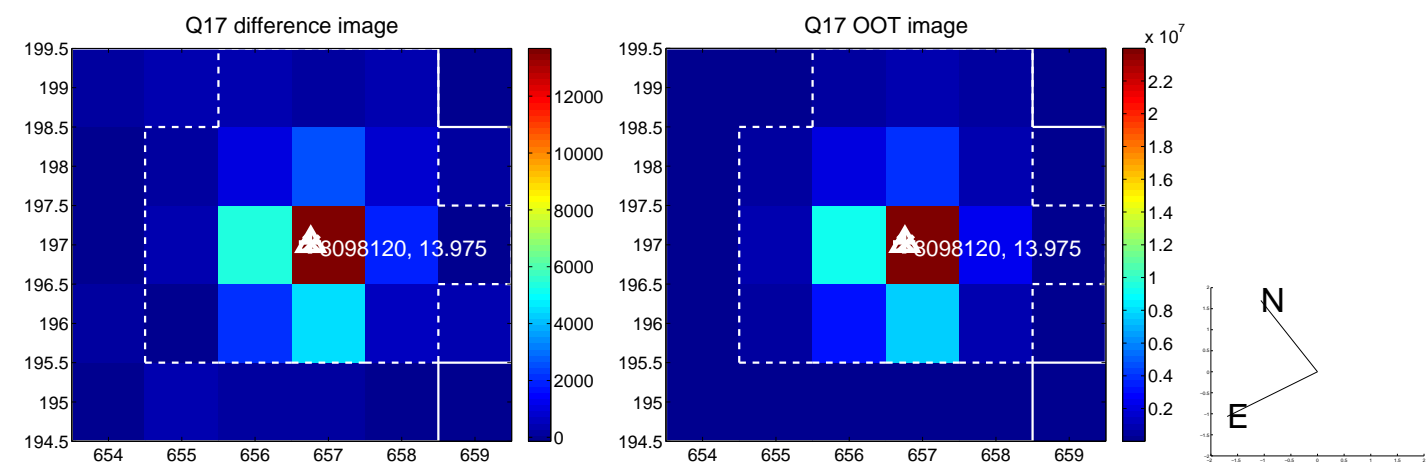
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



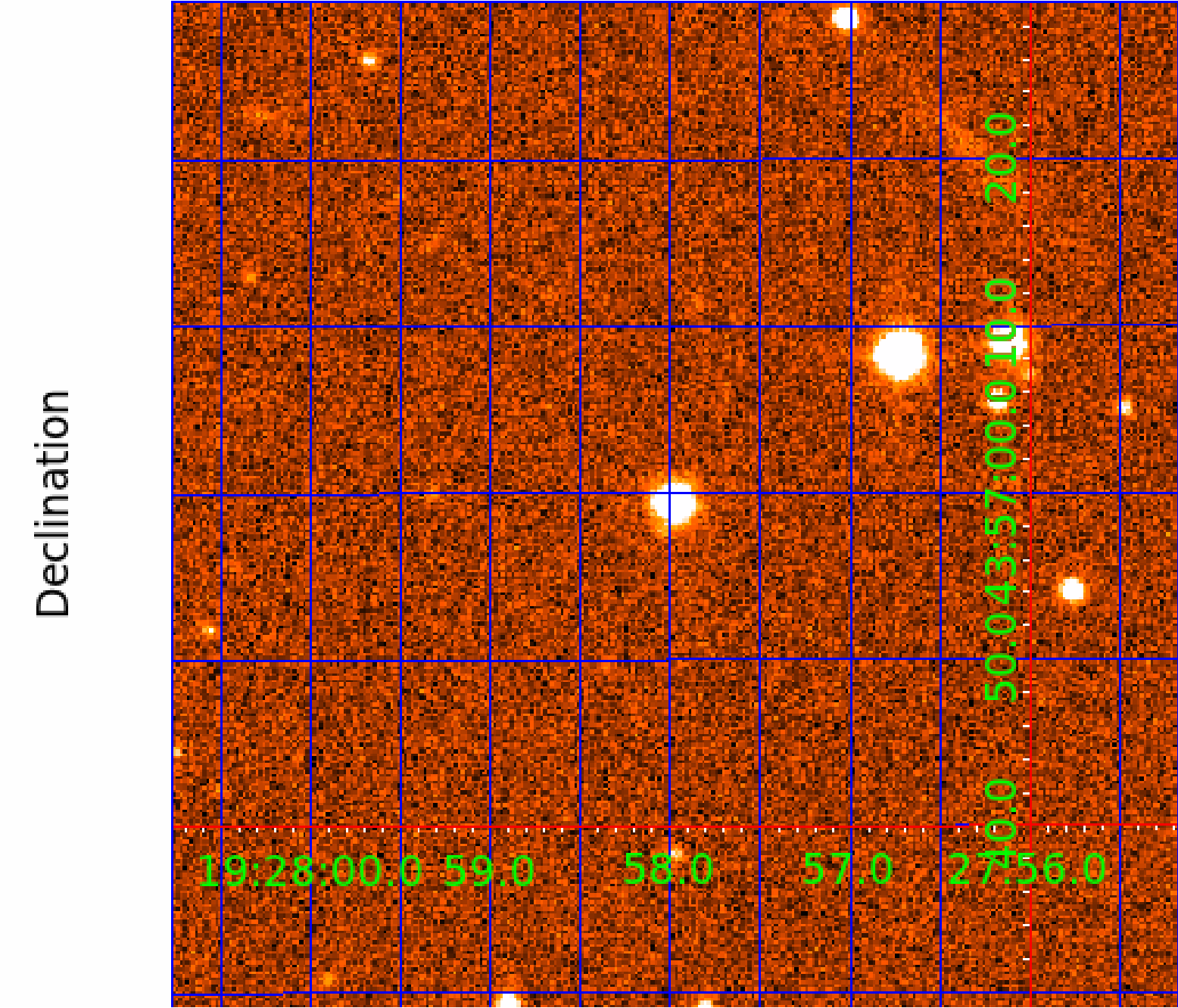
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



UKIRT Image



KIC 008098120

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}) |
|--------------|----------|------|---------------|--------------|-------------|------------------|------|------|-----------------------------|-----------------|------------------------|------------------------|
| 008098120-01 | OBS | No | 1.217044 | 131.614325 | 504.6 | 6.298 | 12.5 | 16.6 | 1.57 | 7203 | 6.31 | 9342.70 |
| 008098120-02 | OBS | No | 389.483158 | 357.216237 | 3573.2 | 3.514 | 11.0 | 11.0 | 1.57 | 7203 | 10.87 | 4.27 |
| 008098120-03 | OBS | No | 110.756481 | 171.098902 | 2015.4 | 4.947 | 9.8 | 11.3 | 1.57 | 7203 | 10.69 | 22.82 |

Robovetter Results

| TCE | Run Type | Disp | Score | N | S | C | E | Comments |
|--------------|----------|------|-------|---|---|---|---|---|
| 008098120-01 | OBS | FP | 0.00 | 1 | 0 | 0 | 0 | LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT |
| 008098120-02 | OBS | FP | 0.00 | 1 | 0 | 0 | 0 | INDIV_TRANS_RUBBLE_CHASES_MARSHALL_SKYE—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS |
| 008098120-03 | OBS | FP | 0.00 | 1 | 0 | 0 | 0 | LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT |

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

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

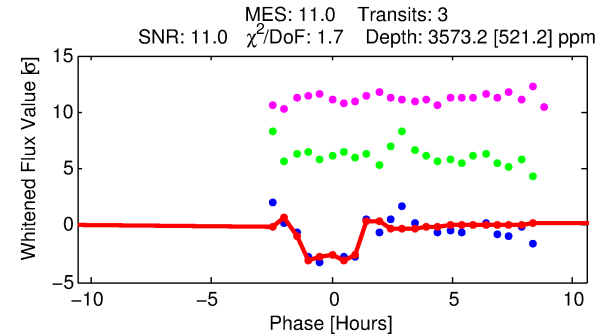
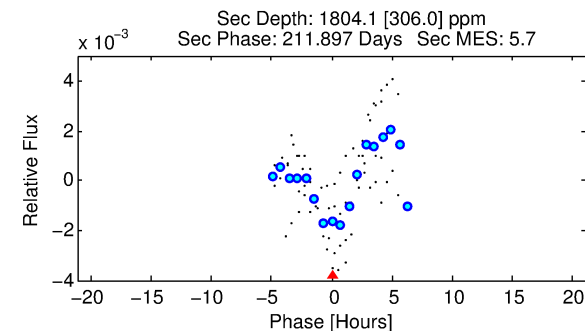
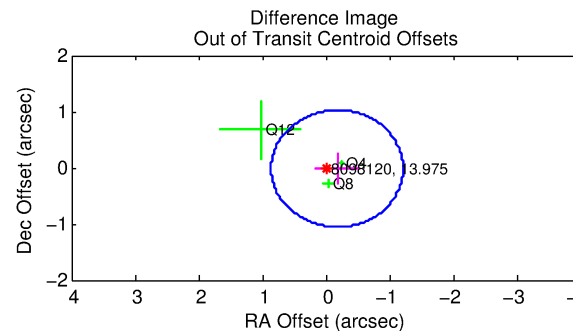
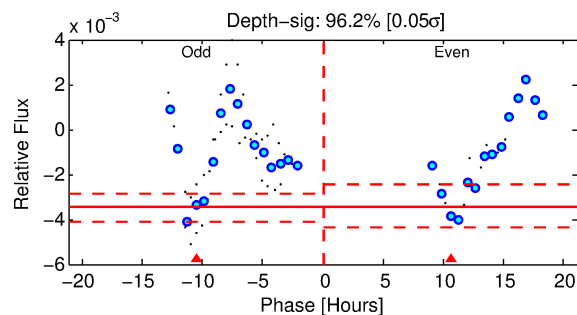
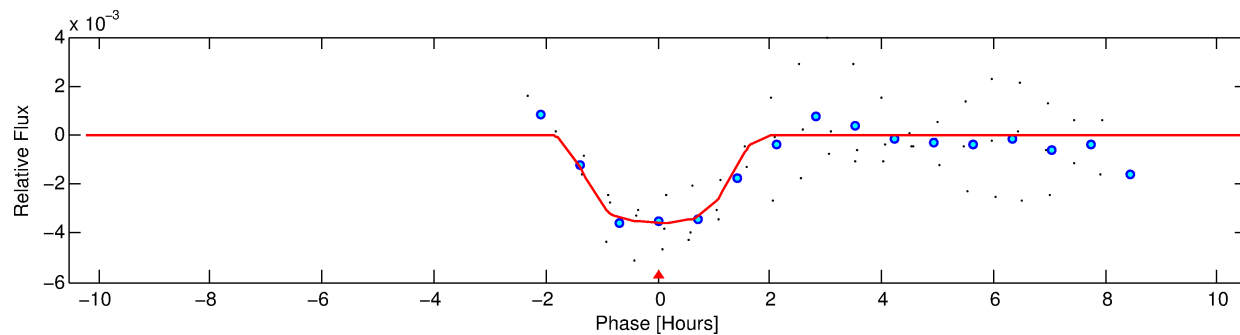
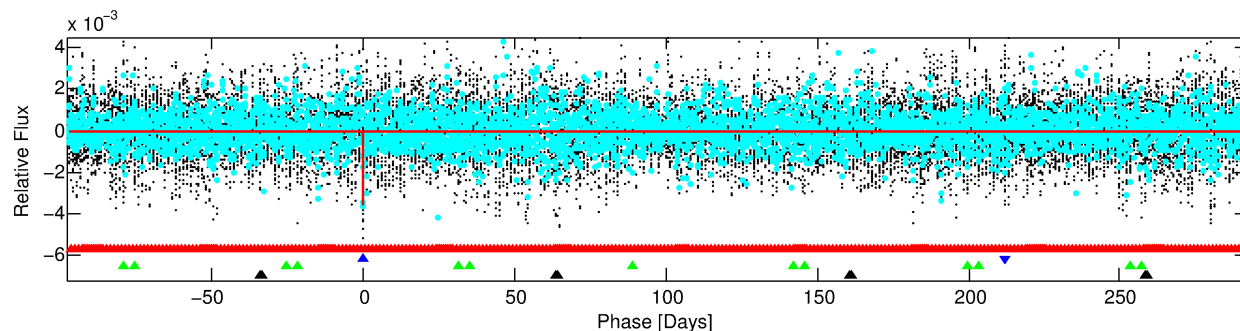
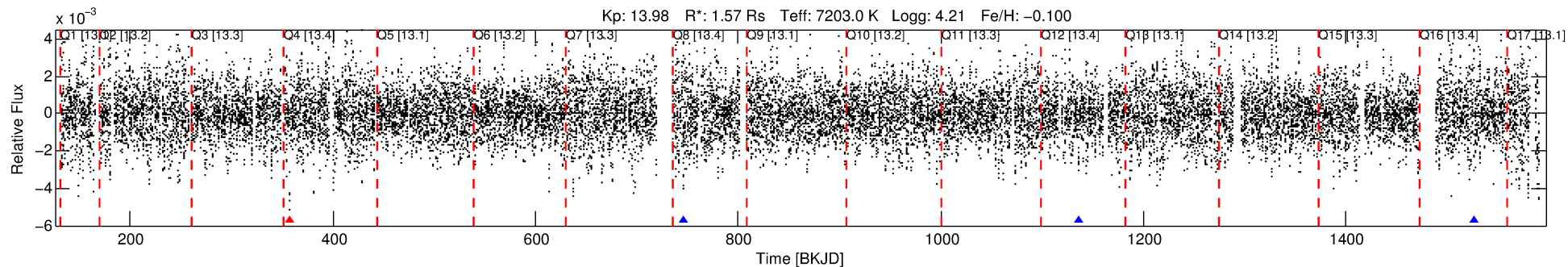
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 008098120-02

No Significant Match Found

DV One-Page Summary

KIC: 8098120 Candidate: 2 of 4 Period: 389.483 d



DV Fit Results:

Period = 389.48316 [0.00568] d
Epoch = 357.2162 [0.0076] BKJD
Rp/R* = 0.0634 [0.0058]
a/R* = 489.53 [108.62]
b = 0.89 [0.05]
Seff = 4.27 [1.81]
Teq = 367 [39] K
Rp = 10.87 [3.76] Re
a = 1.1802 [0.3195] AU
Ag = 11701.34 [5321.96] [2.20 σ]
Teff = 5894 [462] K [11.93 σ]

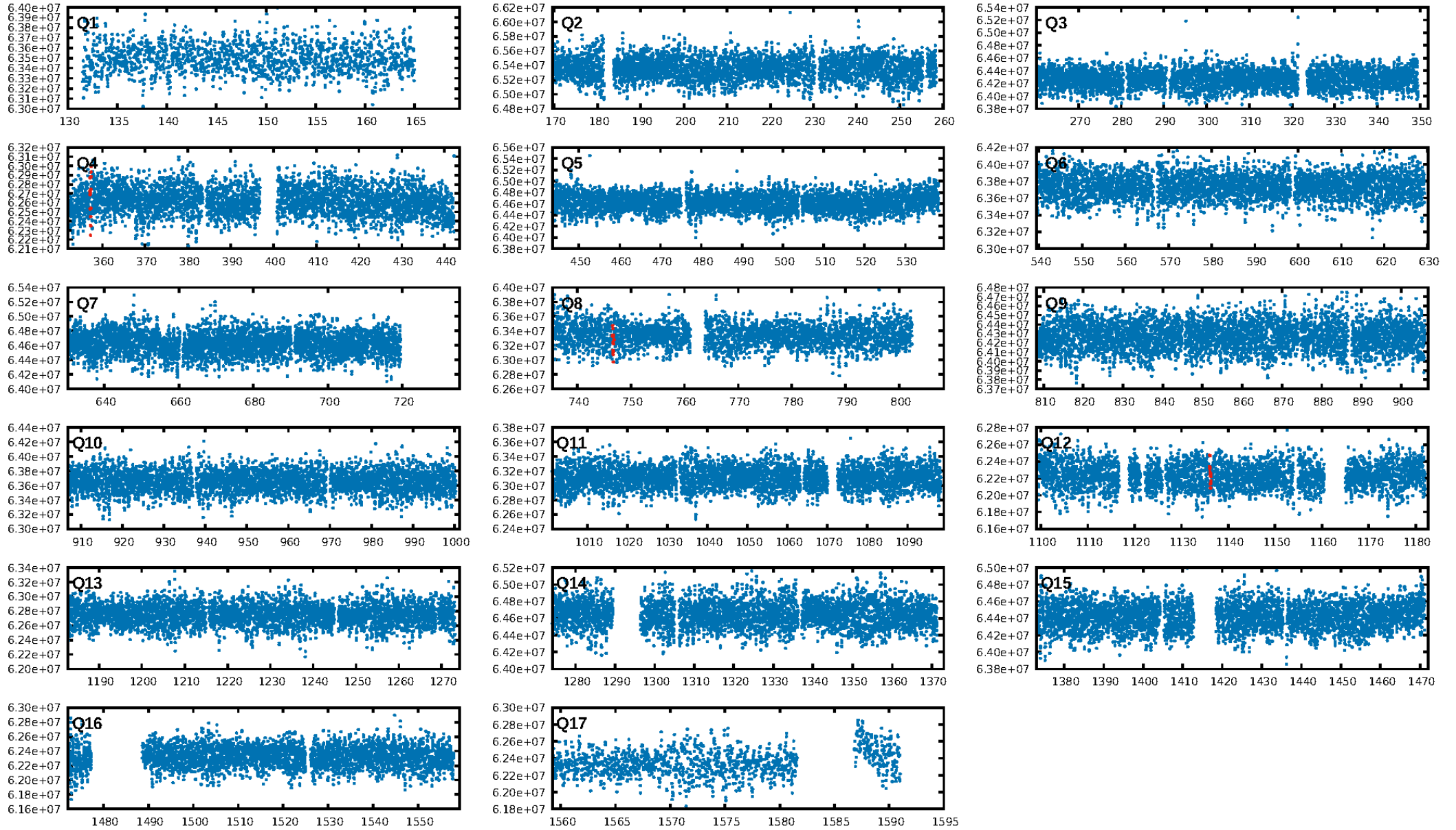
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [1102.40 σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 0.5%
ModelChiSquareGof-sig: 81.4%
Bootstrap-pfa: N/A
RollingBand-fgt: 0.67 [2/3]
GhostDiagnostic-chr: 0.6853
Centroid-sig: 35.0%
Centroid-so: 0.277 arcsec [1.12 σ]
OotOffset-rm: 0.179 arcsec [0.52 σ]
OotOffset-st: 0/0/3/0 [3]
KicOffset-rm: 0.088 arcsec [0.44 σ]
KicOffset-st: 0/0/3/0 [3]
DiffImageQuality-fgm: 0.67 [2/3]
DiffImageOverlap-fno: 0.33 [1/3]

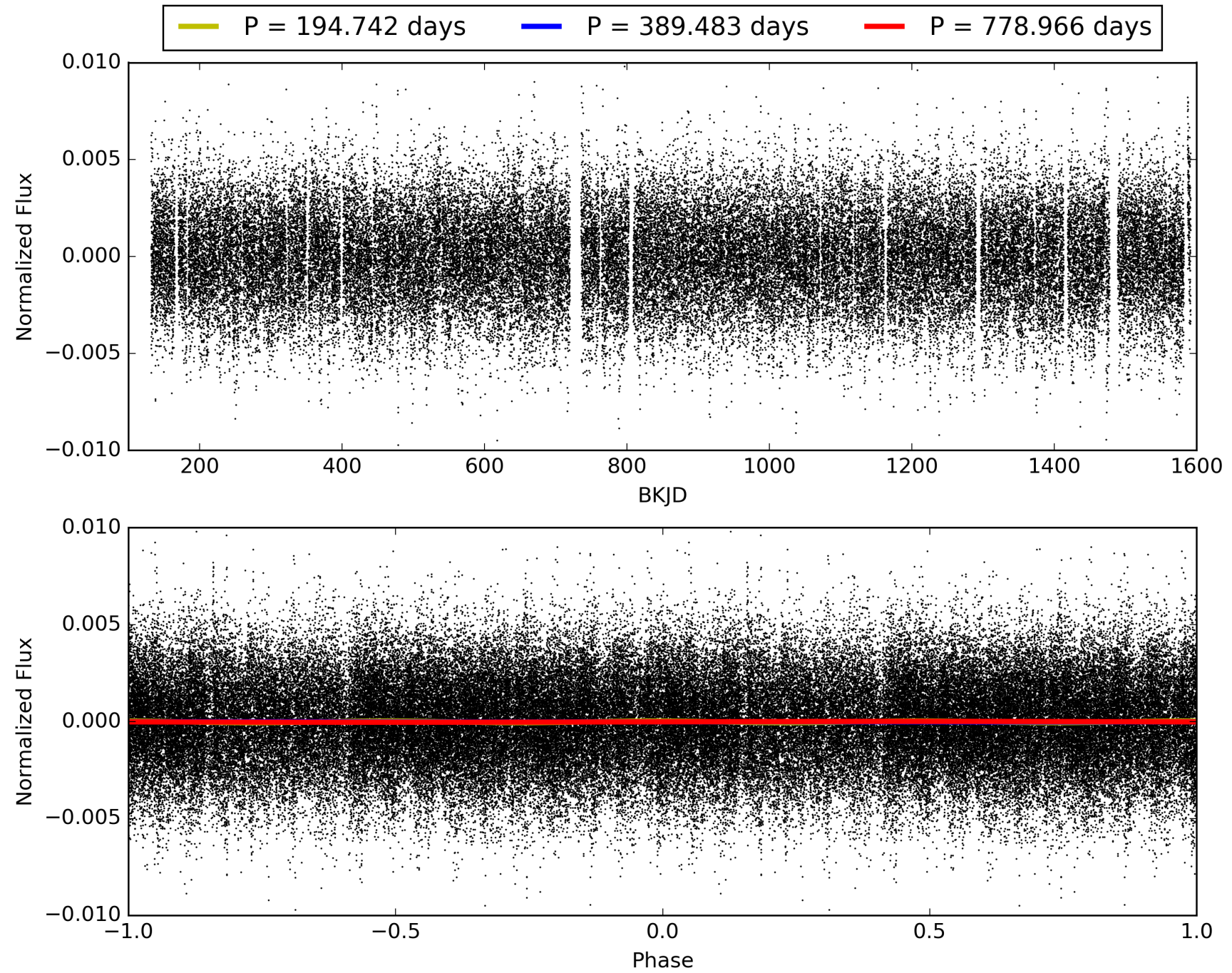
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 18:12:46 Z

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

TCE 008098120-02, PDC Light Curves

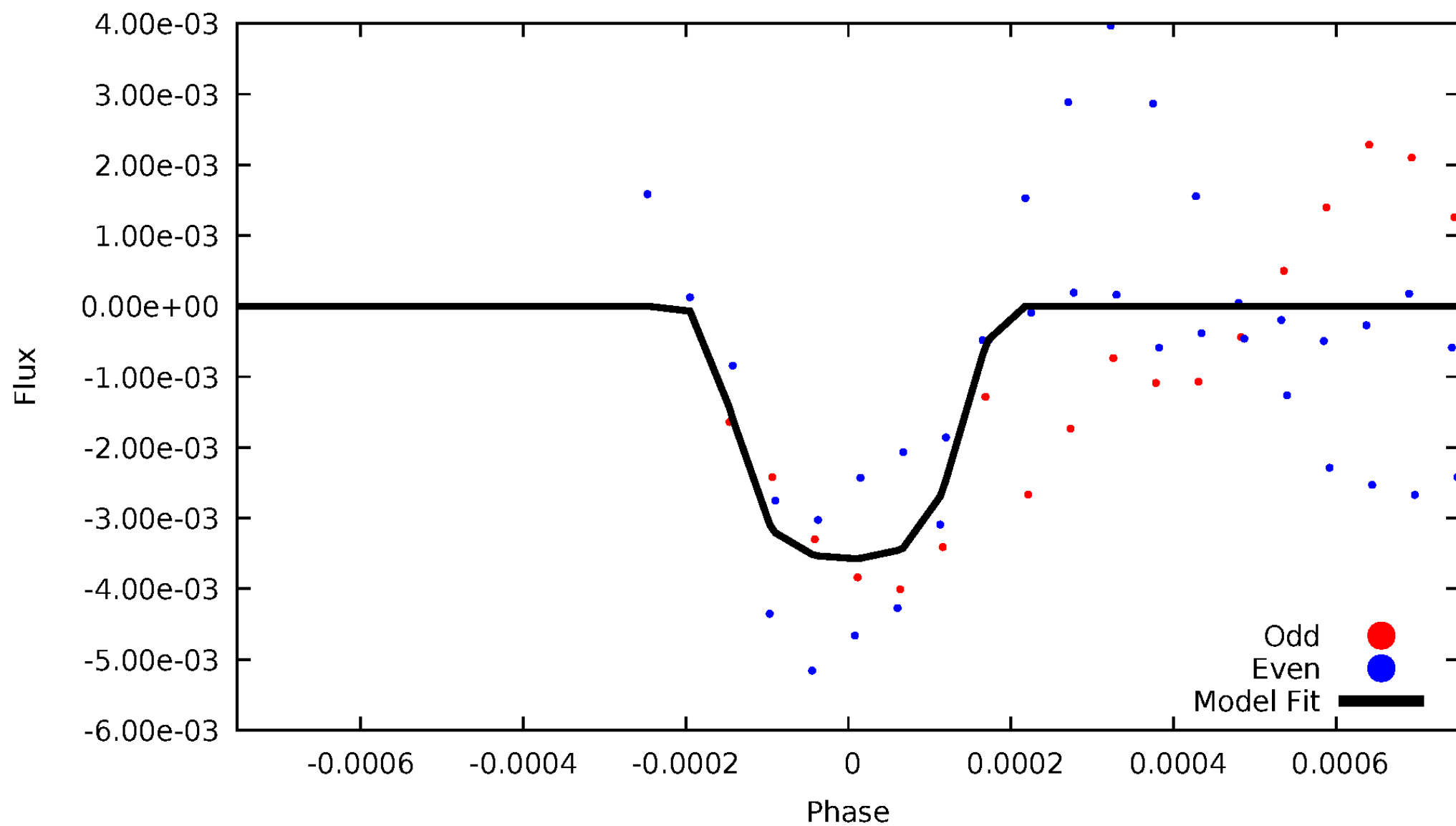


TCE 008098120-02



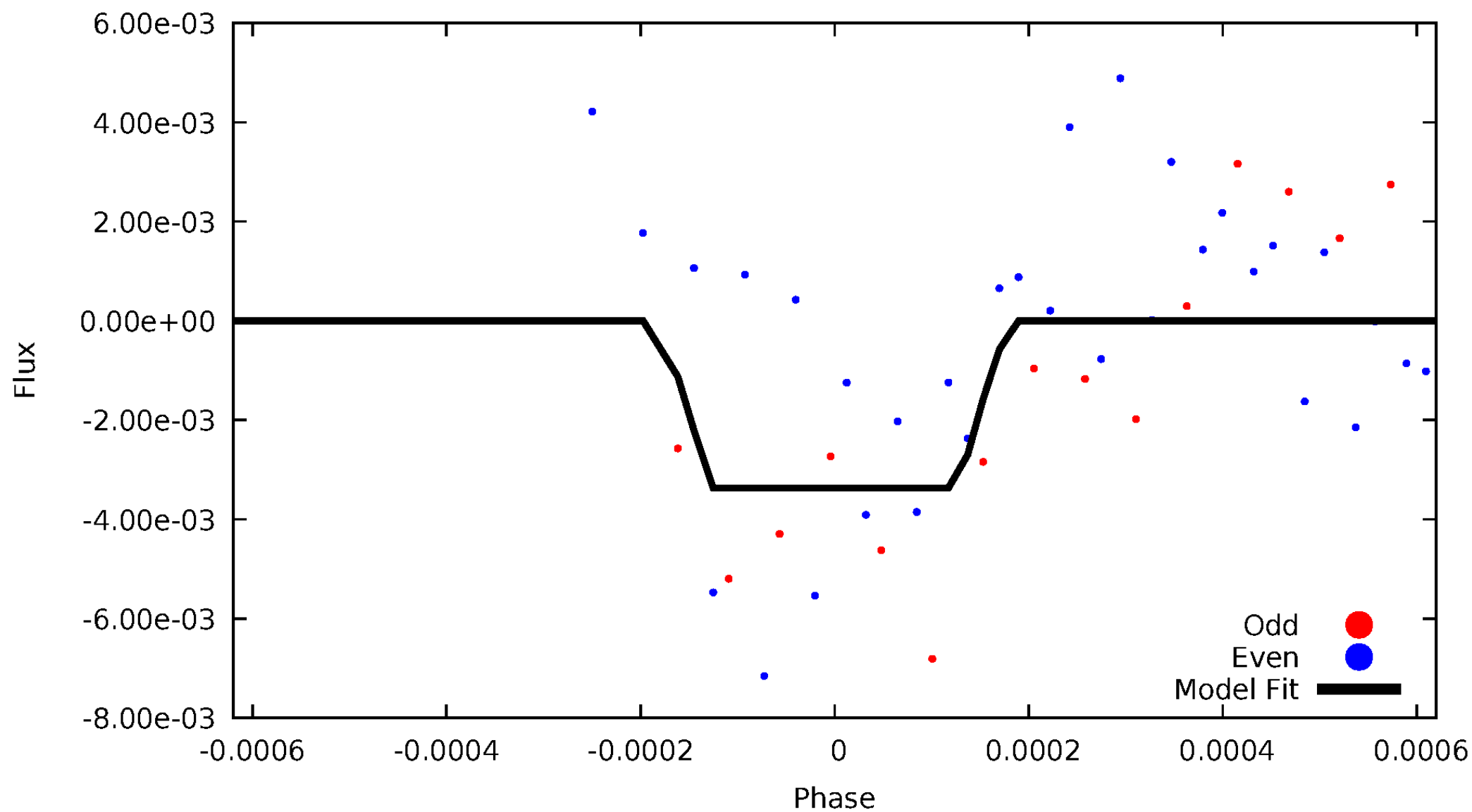
DV Odd/Even

TCE 008098120-02



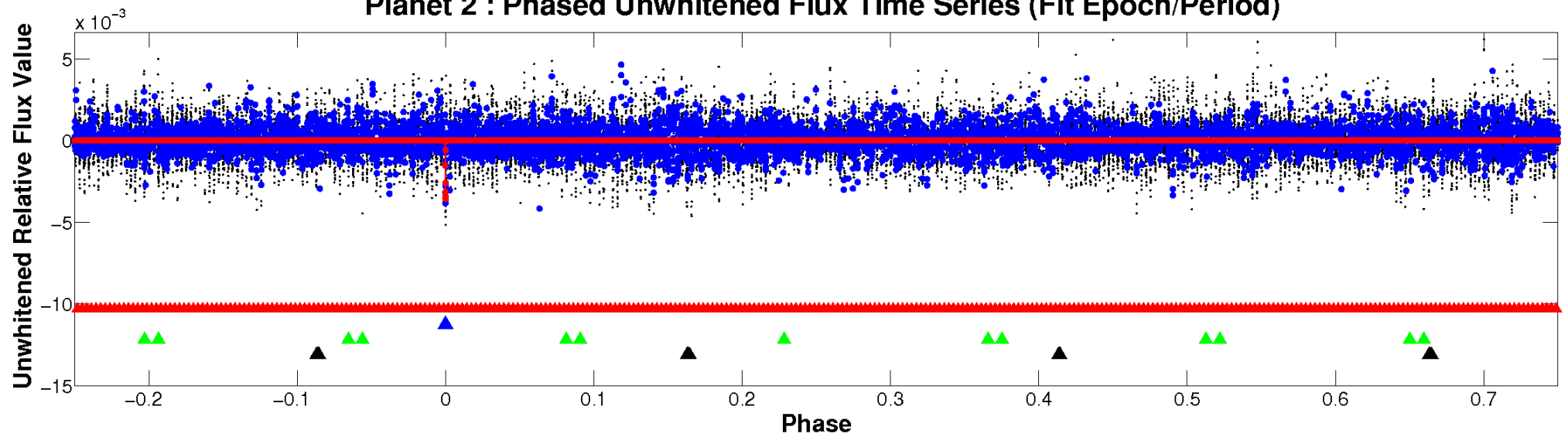
ALT Odd/Even

TCE 008098120-02

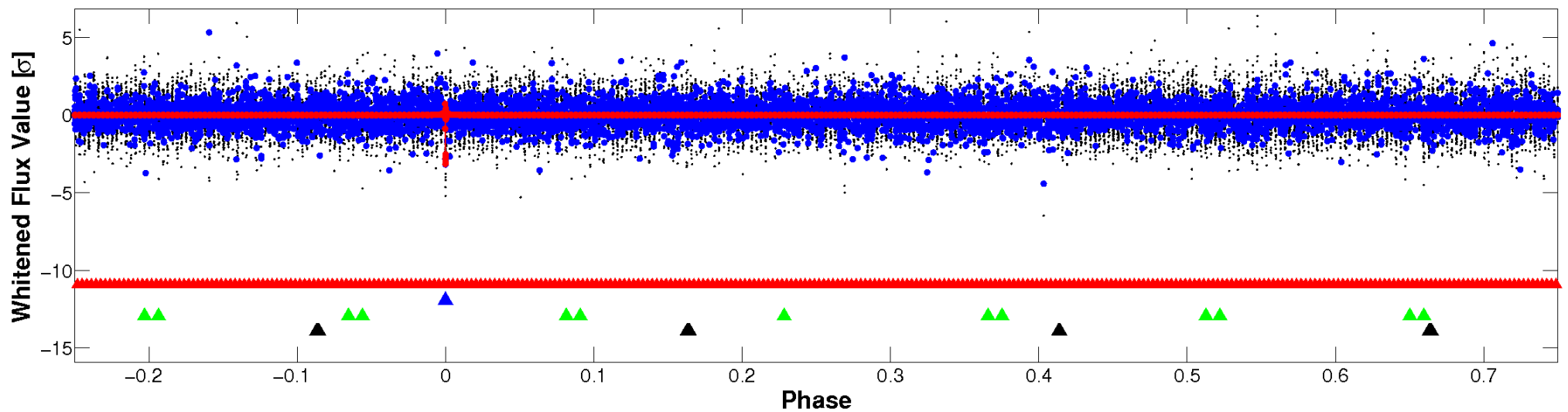


Non-Whitened Vs. Whitened Light Curve

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

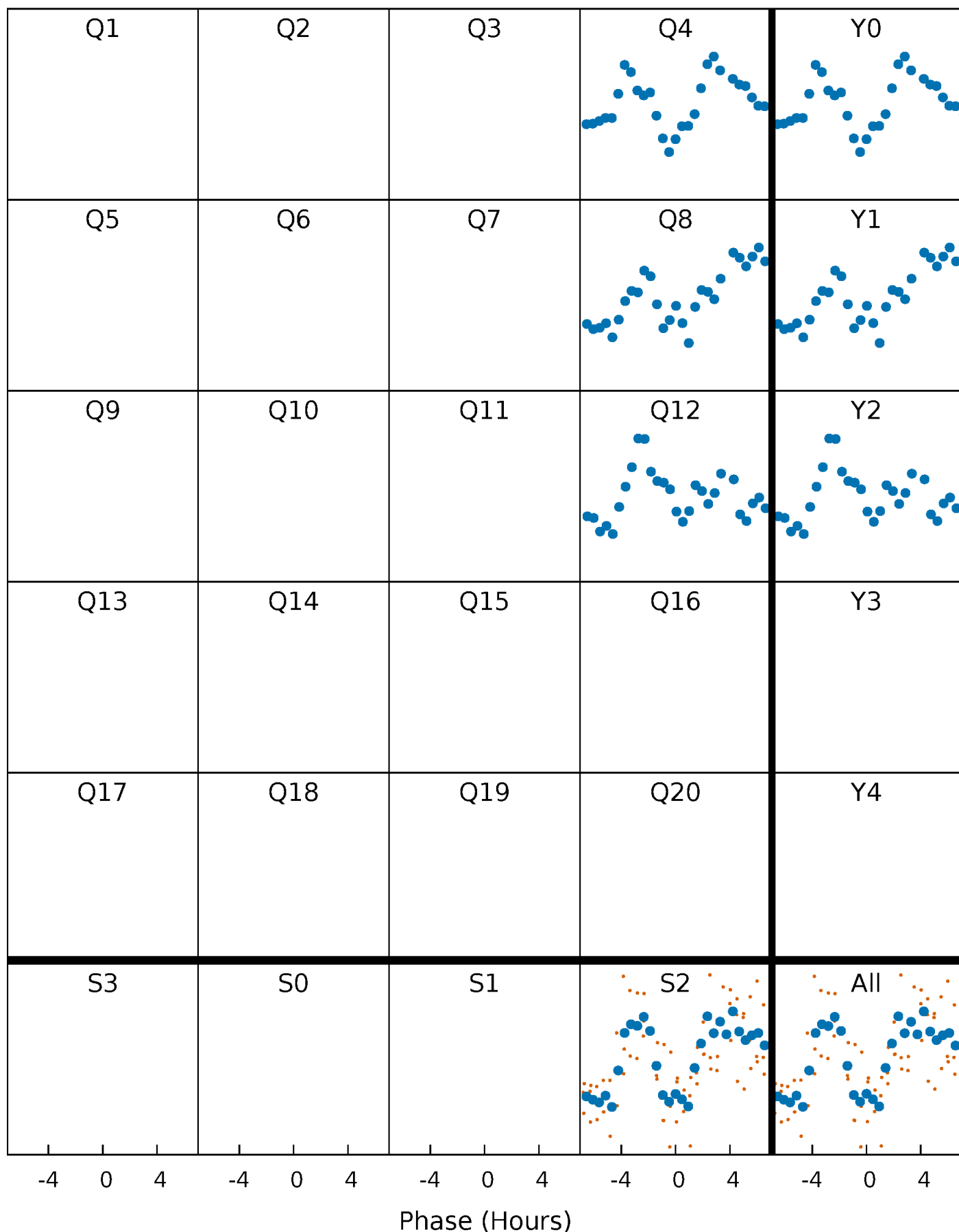


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



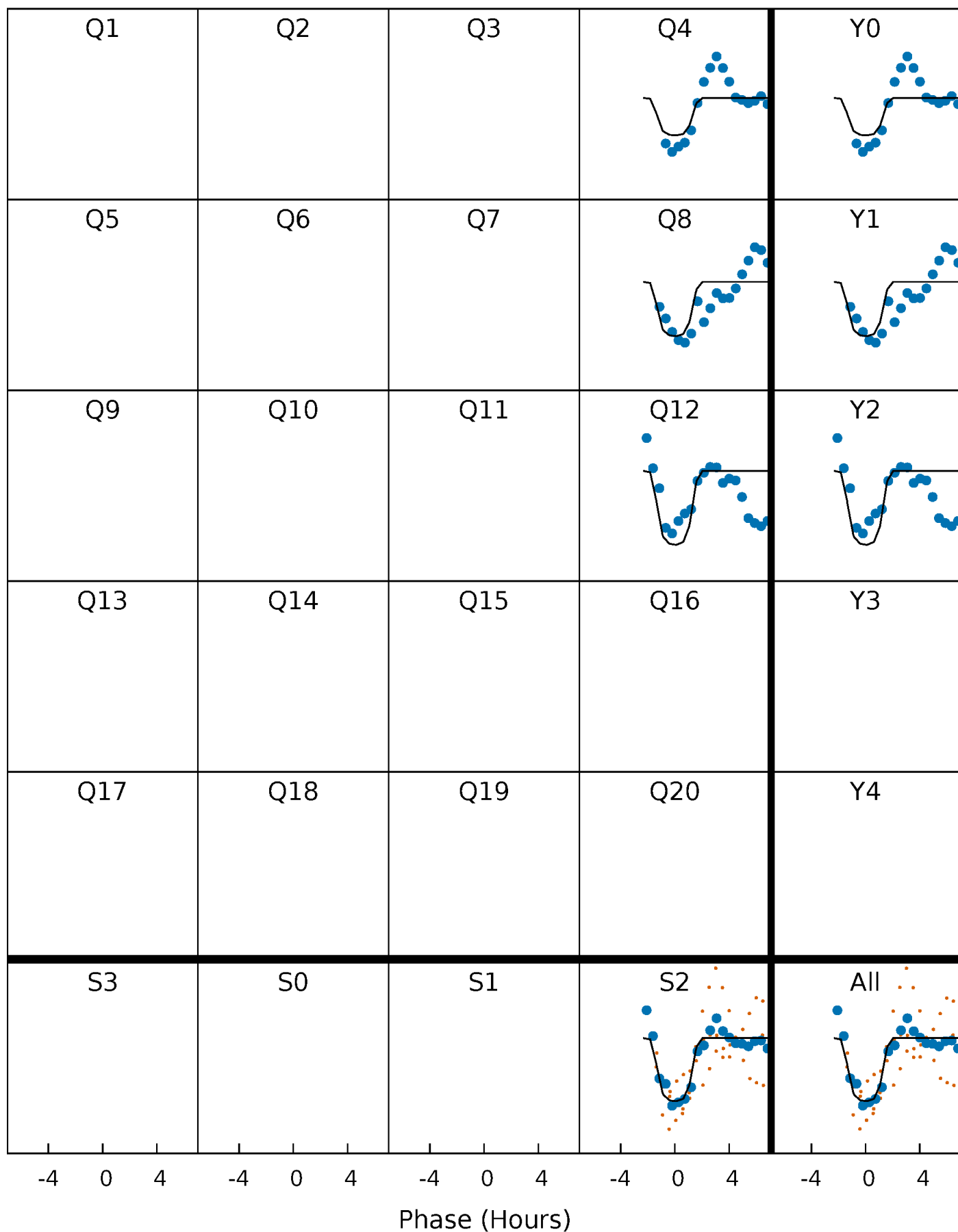
PDC Quarter-Phased Transit Curves

TCE 008098120-02 P=389.483158 Days $T_0=357.216237$ (BKJD)



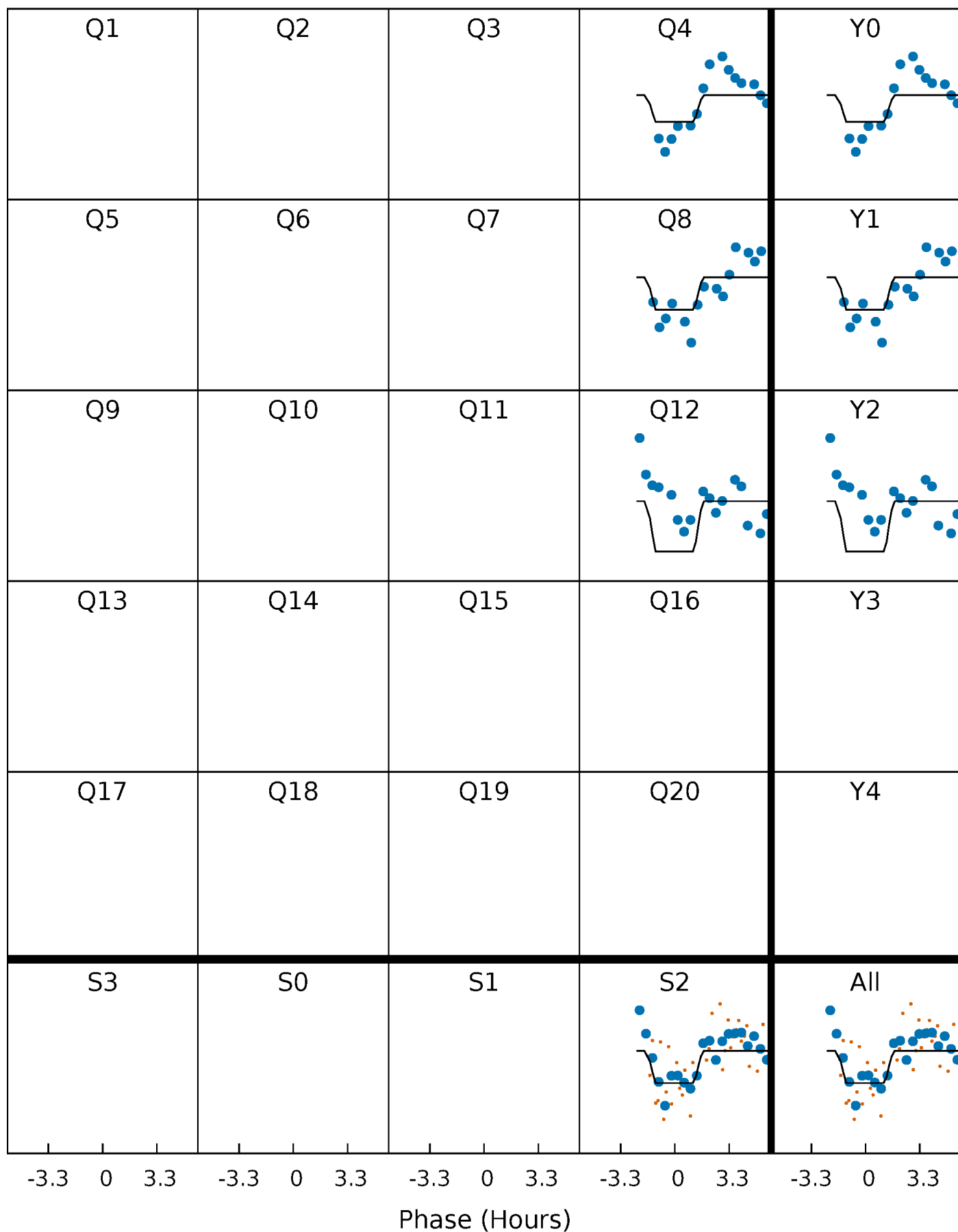
DV Quarter-Phased Transit Curves

TCE 008098120-02 $P=389.483158$ Days $T_0=357.216237$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

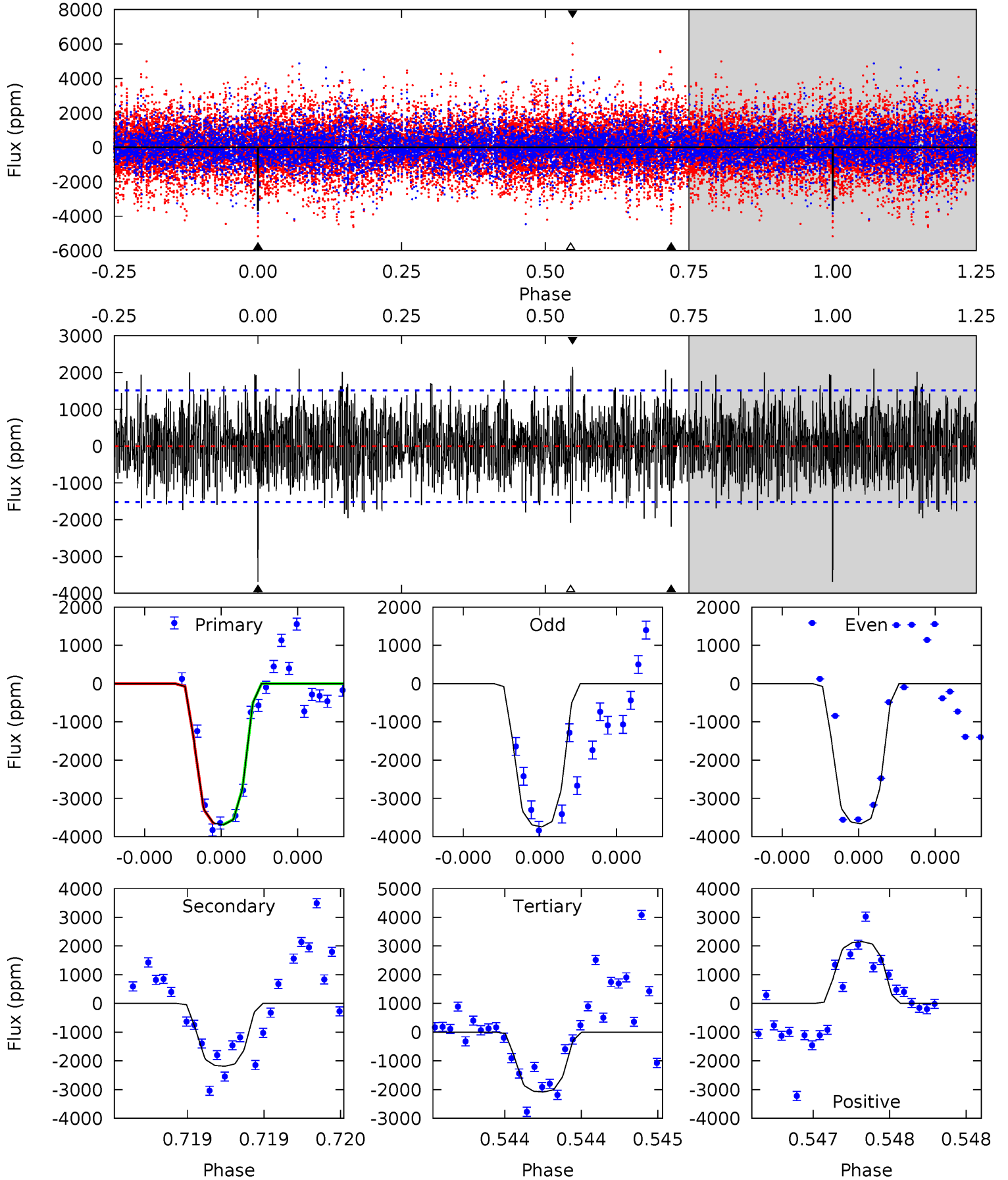
TCE 008098120-02 P=389.478193 Days $T_0=357.227253$ (BKJD)



DV Model-Shift Uniqueness Test

008098120-02, P = 389.483158 Days, E = 357.216237 Days

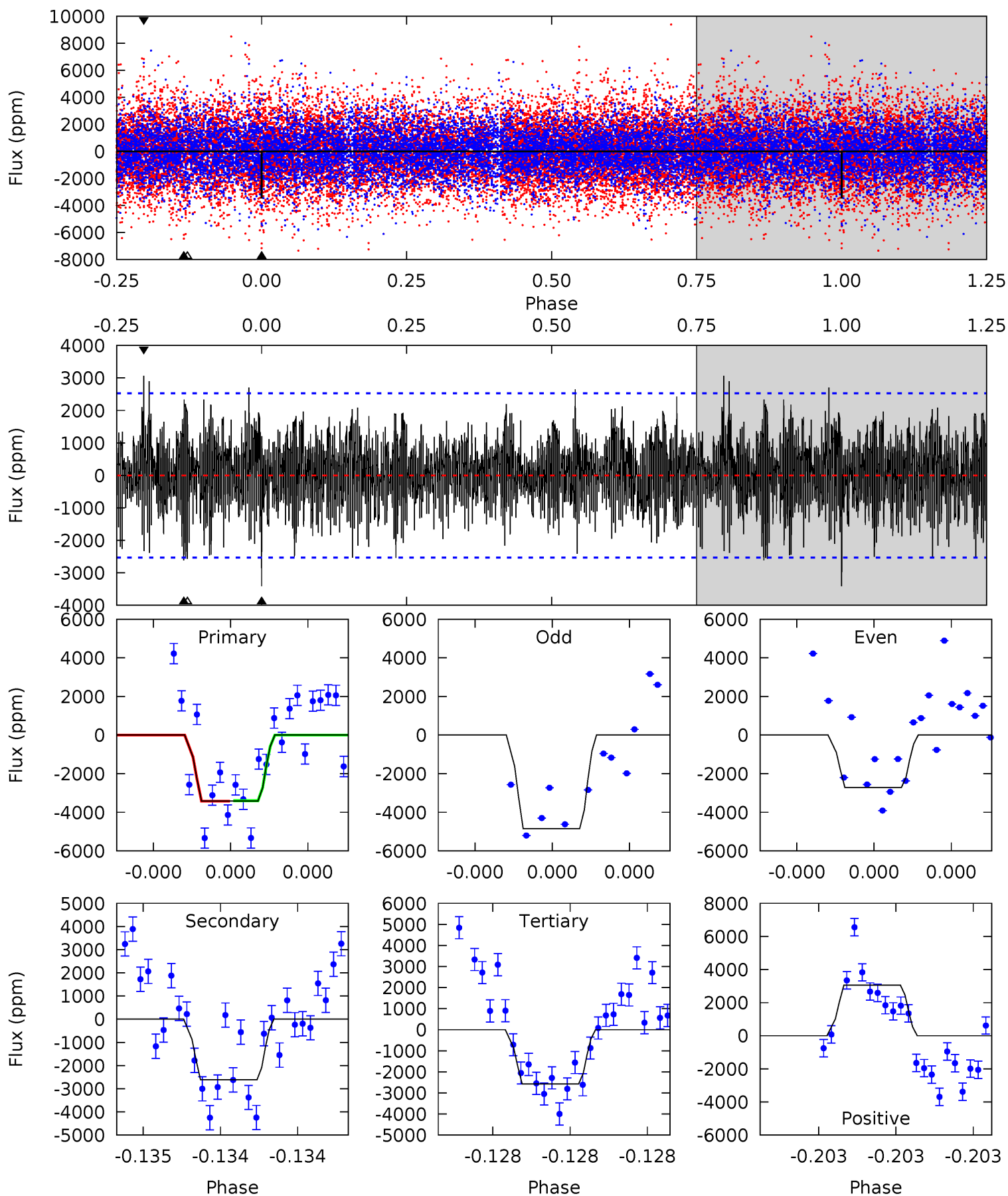
| Pri | Sec | Ter | Pos | FA ₁ | FA ₂ | F _{Red} | Pri-Ter | Pri-Pos | Sec-Ter | Sec-Pos | Odd-Evn | DMM | Shape | TAT |
|------|------|------|------|-----------------|-----------------|------------------|---------|---------|---------|---------|---------|------|-------|------|
| 13.6 | 8.08 | 7.69 | 7.94 | 5.61 | 3.53 | 2.31 | 5.93 | 5.68 | 0.38 | 0.13 | 0.14 | 0.99 | 0.37 | 0.05 |



Alt Model-Shift Uniqueness Test

008098120-02, P = 389.478193 Days, E = 357.227253 Days

| Pri | Sec | Ter | Pos | FA ₁ | FA ₂ | F _{Red} | Pri-Ter | Pri-Pos | Sec-Ter | Sec-Pos | Odd-Evn | DMM | Shape | TAT |
|------|------|------|------|-----------------|-----------------|------------------|---------|---------|---------|---------|---------|------|-------|------|
| 7.60 | 5.83 | 5.73 | 6.83 | 5.64 | 3.59 | 1.76 | 1.87 | 0.78 | 0.10 | -1.00 | 2.24 | 0.70 | 0.47 | 0.02 |



Stellar Parameters For KIC 008098120

| | $T_{\text{eff}}(K)$ | $\log(g)$ | [Fe/H] | $R (R_{\odot})$ | $M(M_{\odot})$ | $p_{\star} (\text{g}\cdot\text{cm}^{-3})$ |
|--------|----------------------|---------------------------|----------------------------|---------------------------|---------------------------|---|
| | 7203^{+200}_{-342} | $4.206^{+0.108}_{-0.201}$ | $-0.100^{+0.250}_{-0.350}$ | $1.570^{+0.524}_{-0.282}$ | $1.448^{+0.218}_{-0.239}$ | $0.527^{+0.265}_{-0.278}$ |
| | +3%/-5% | +3%/-5% | +250%/-350% | +33%/-18% | +15%/-17% | +50%/-53% |
| 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 008098120-02 / KOI

| Detrend | Depth (ppm) | $R_p (R_{\oplus})$ | $T_{\text{max}} (K)$ | $T_{\text{obs}} (K)$ | A_{obs} |
|---------|-----------------|-------------------------|----------------------|----------------------|-------------------------|
| DV | -2187 ± 271 | $11.03^{+2.27}_{-1.46}$ | 518^{+37}_{-33} | 6086^{+418}_{-367} | 13213^{+5024}_{-3834} |
| Alt. | -2614 ± 448 | $10.26^{+1.83}_{-1.55}$ | 516^{+45}_{-32} | 6678^{+525}_{-514} | 18696^{+7563}_{-6004} |

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

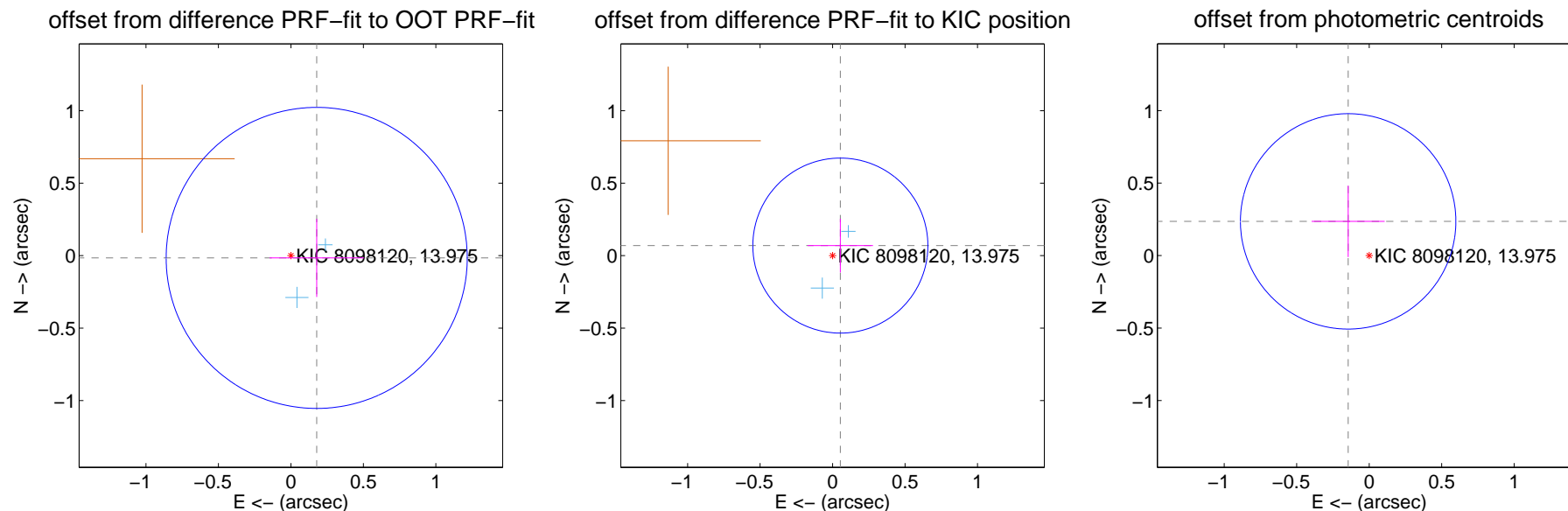
DV Centroid Data

Supplemental centroid analysis for 008098120-02. Kepler magnitude: 13.97. Transit SNR 10.95

There are 2 quarters with good PRF difference image offsets

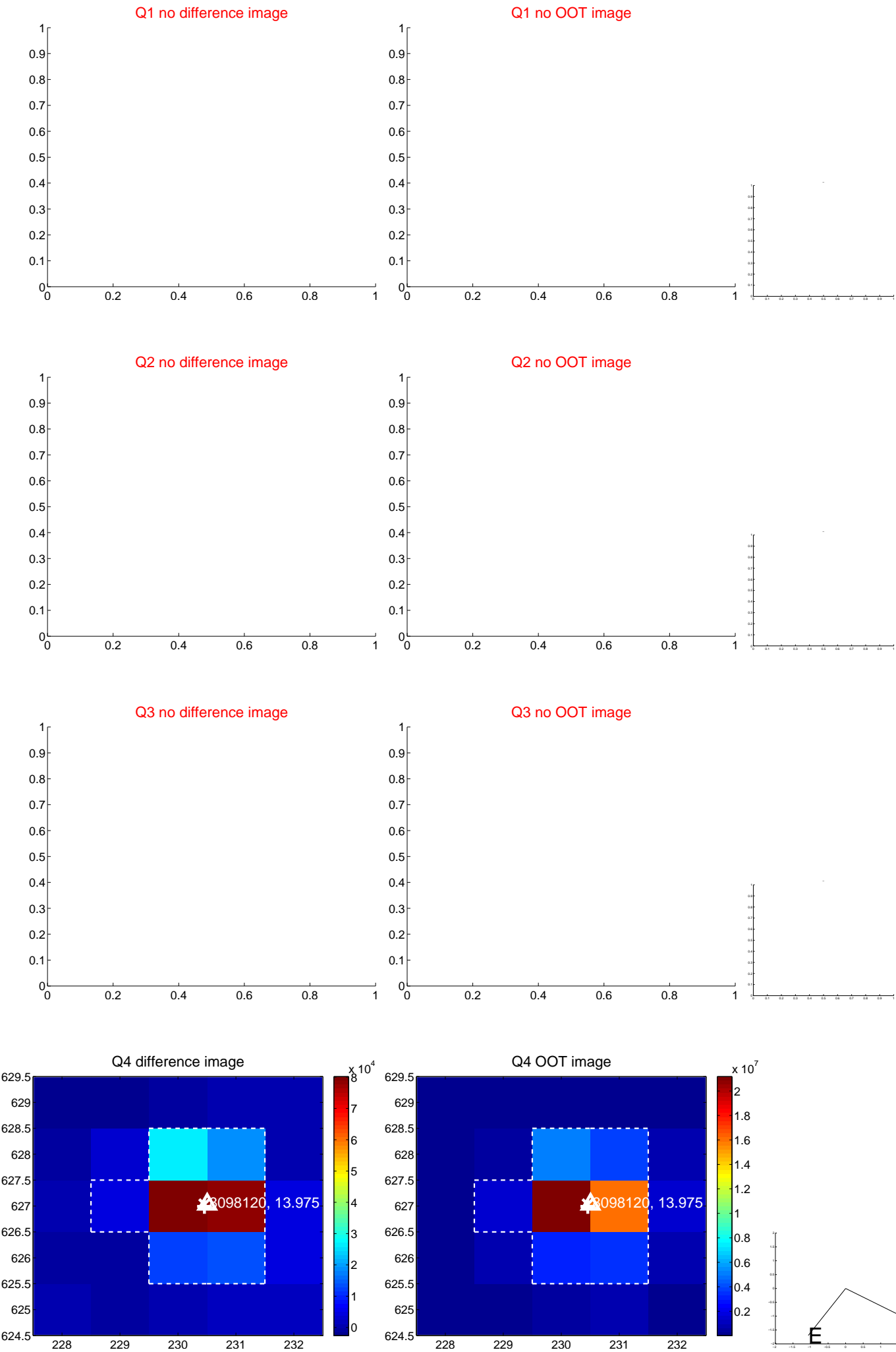
The direct PRF centroid is offset from the target star catalog position by about 0.16 arcsec

| | Distance in arcsec | Distance / σ | Δ RA | Δ Dec |
|---|--------------------|---------------------|--------------------|--------------------|
| PRF-fit source offset from OOT | 0.179 ± 0.346 | 0.52 | -0.178 ± 0.325 | -0.016 ± 0.270 |
| PRF-fit source offset from KIC position | 0.088 ± 0.201 | 0.44 | -0.054 ± 0.225 | 0.069 ± 0.185 |
| photometric centroid source offset | 0.28 ± 0.25 | 1.12 | 0.15 ± 0.25 | 0.24 ± 0.25 |

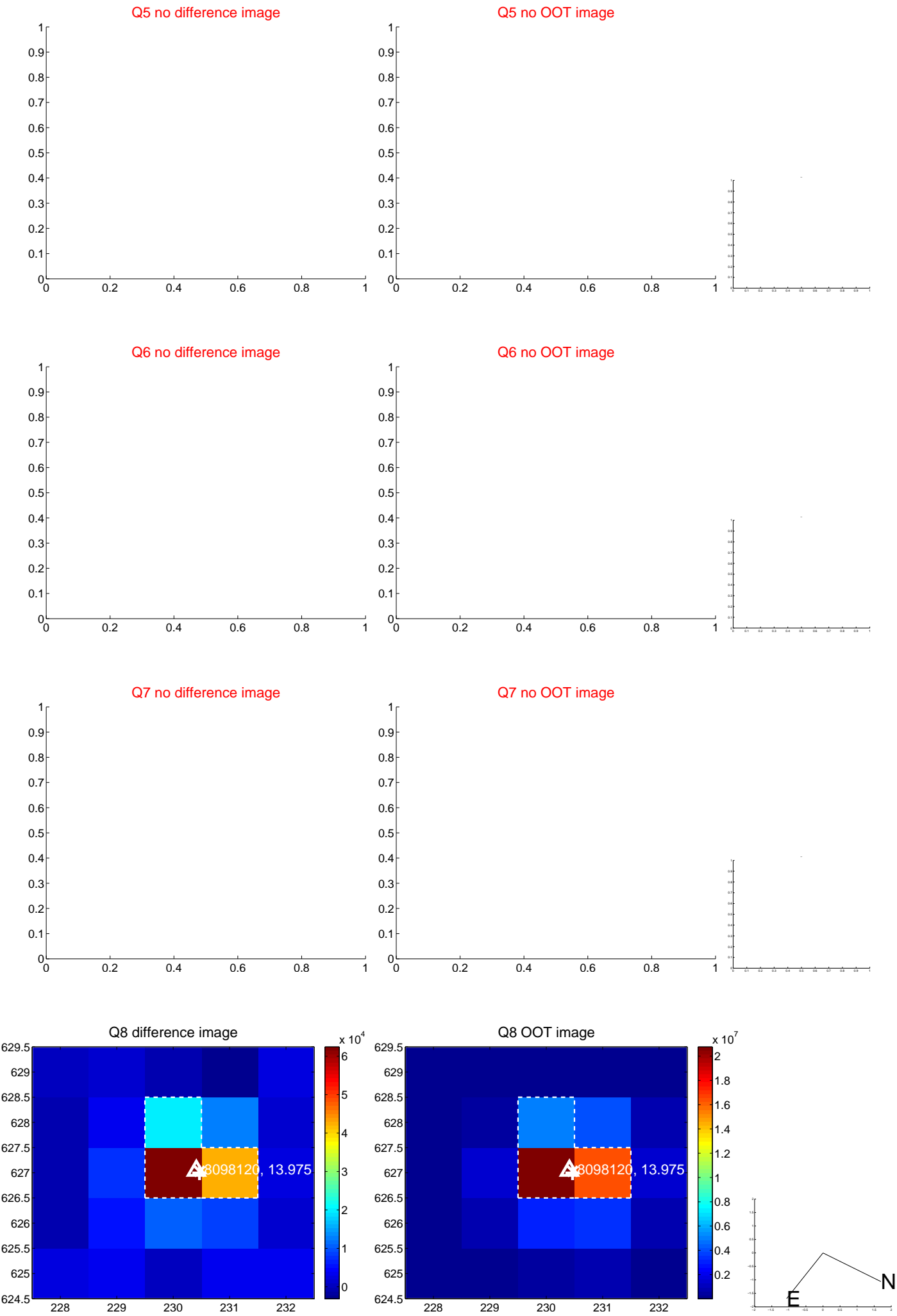


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

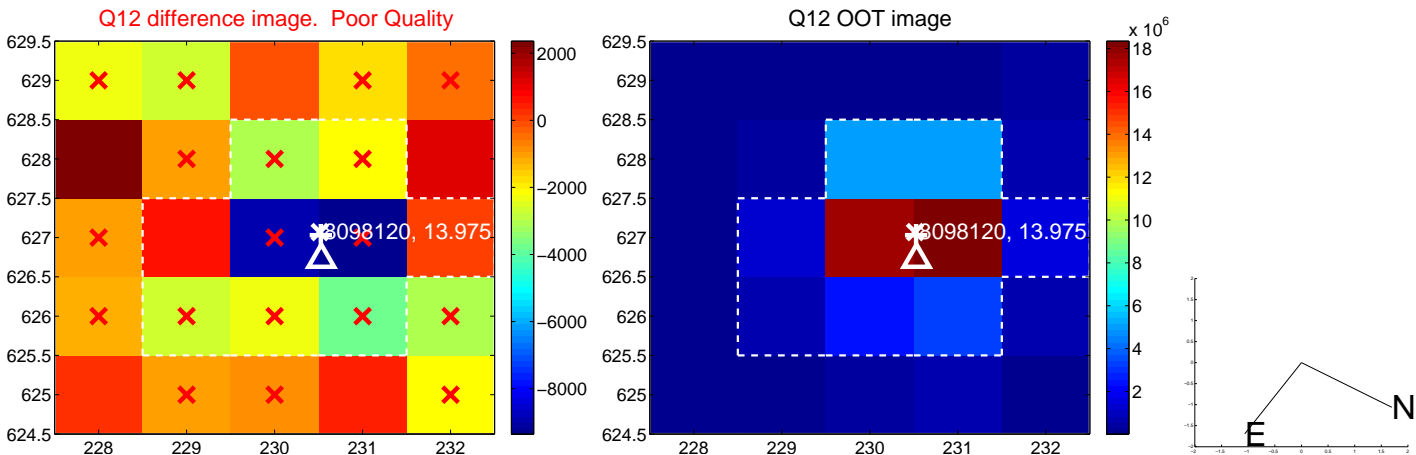
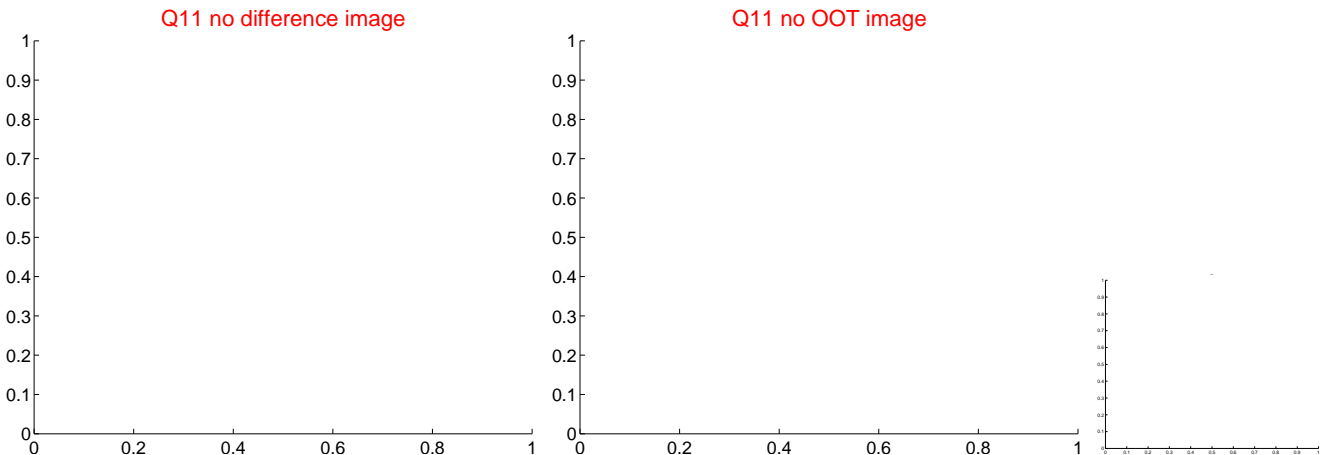
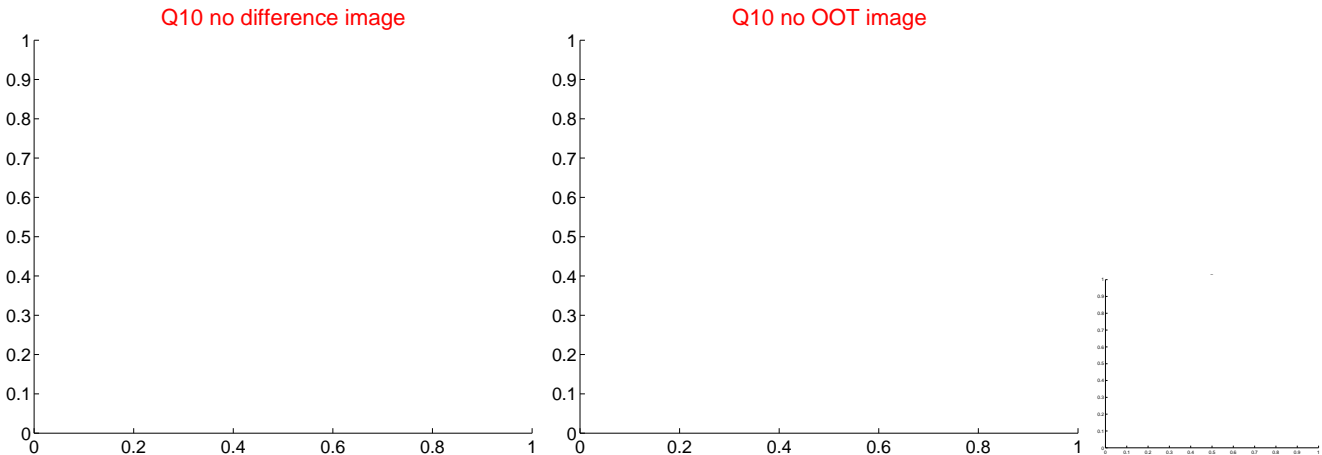
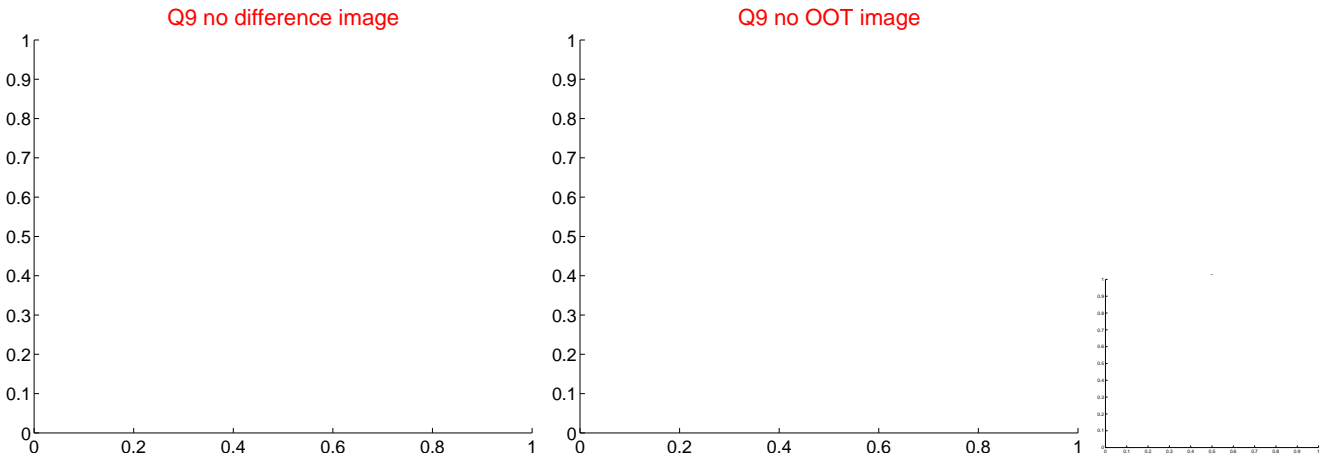
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



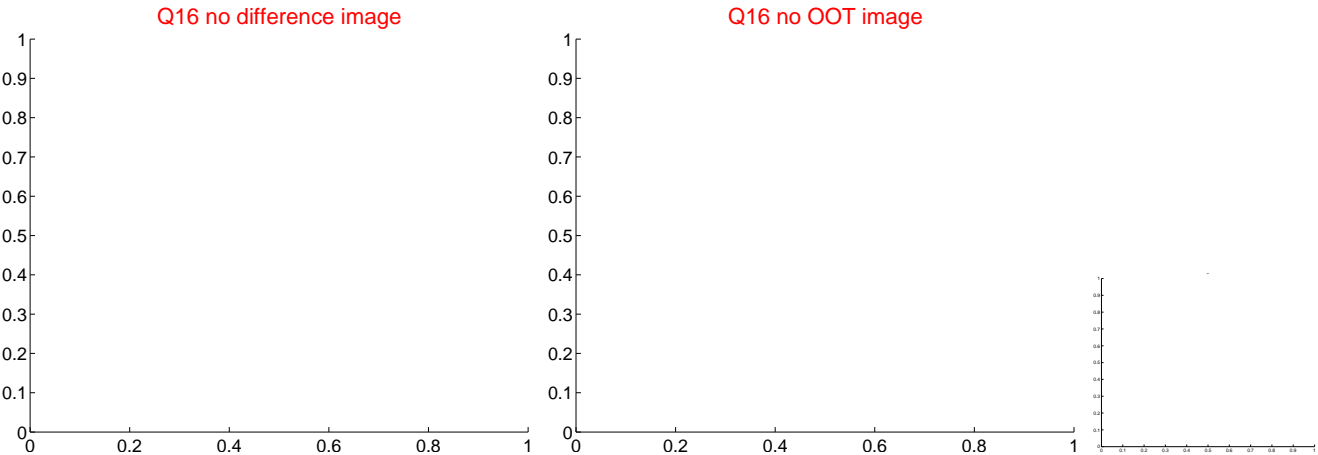
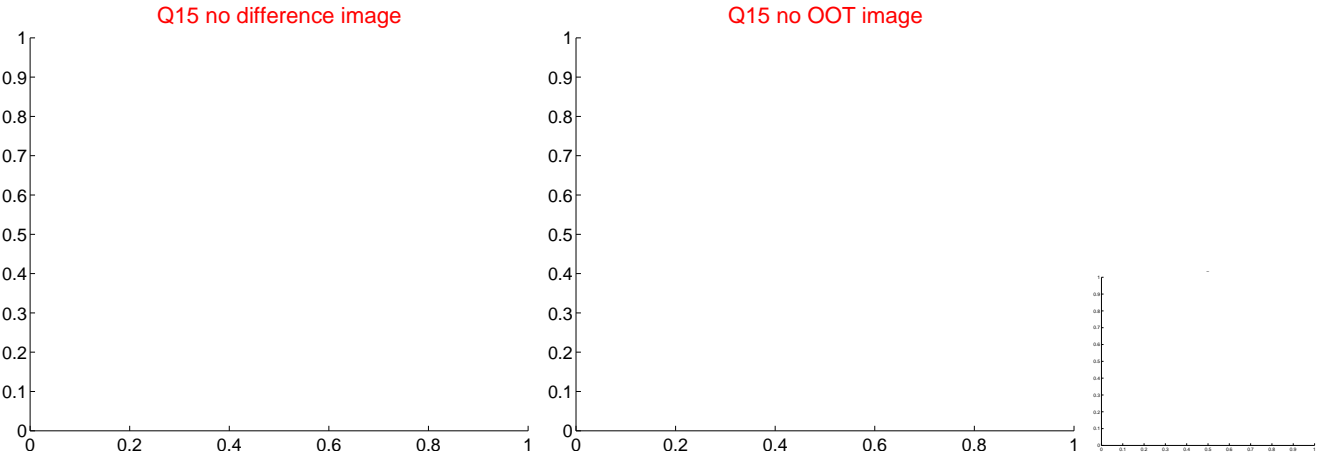
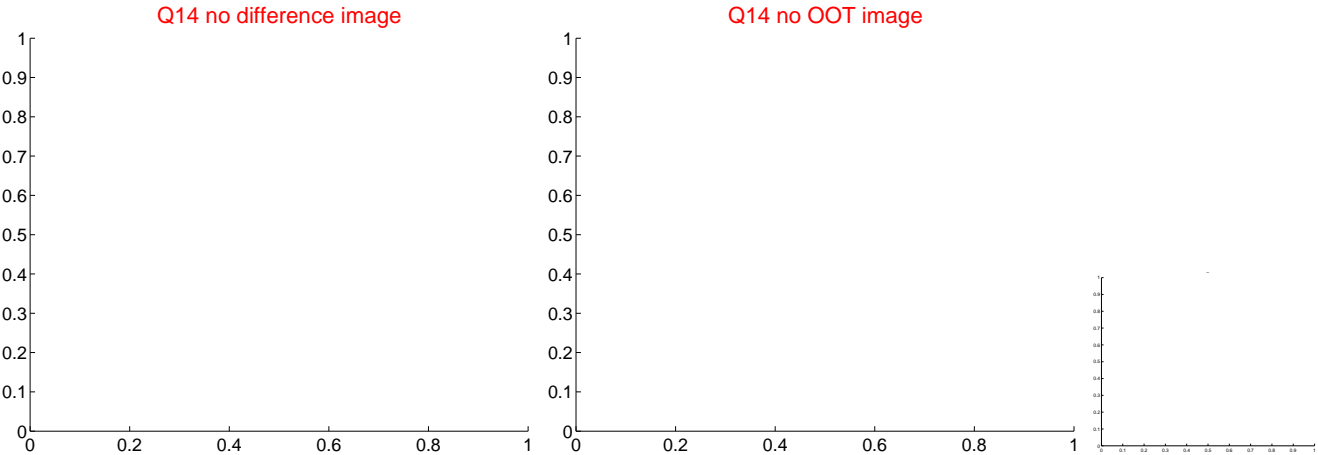
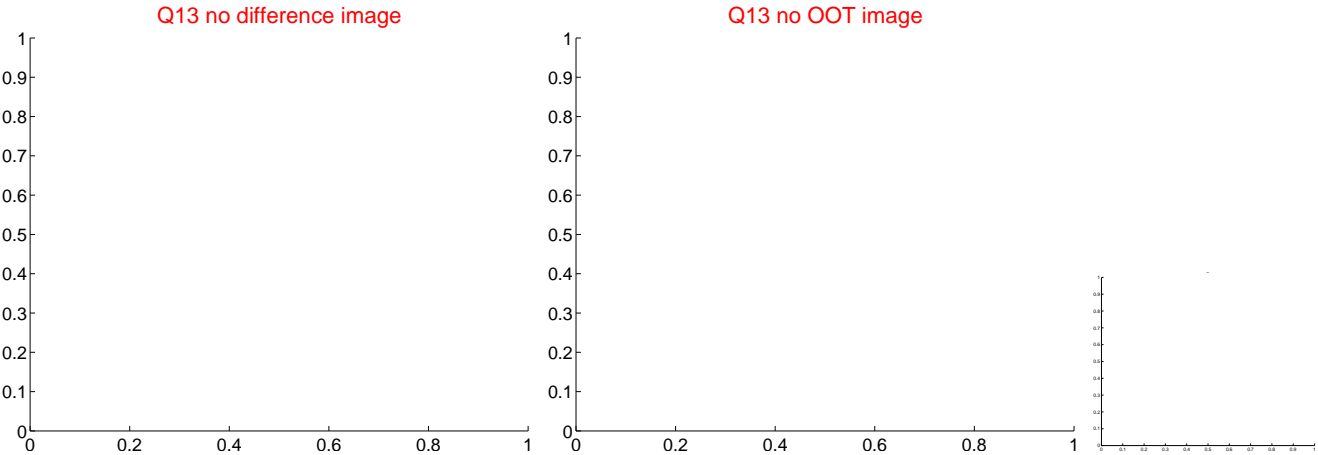
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



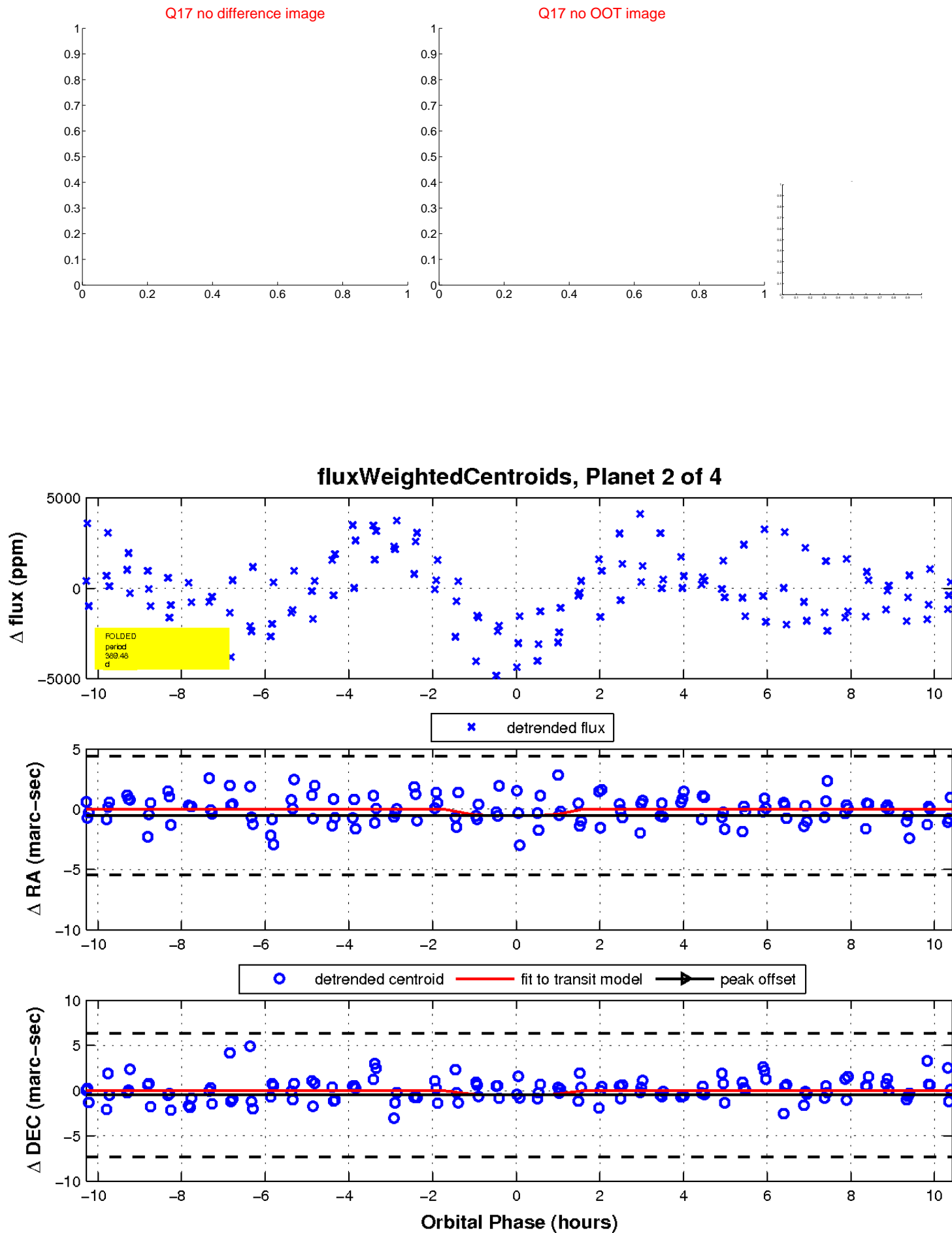
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value



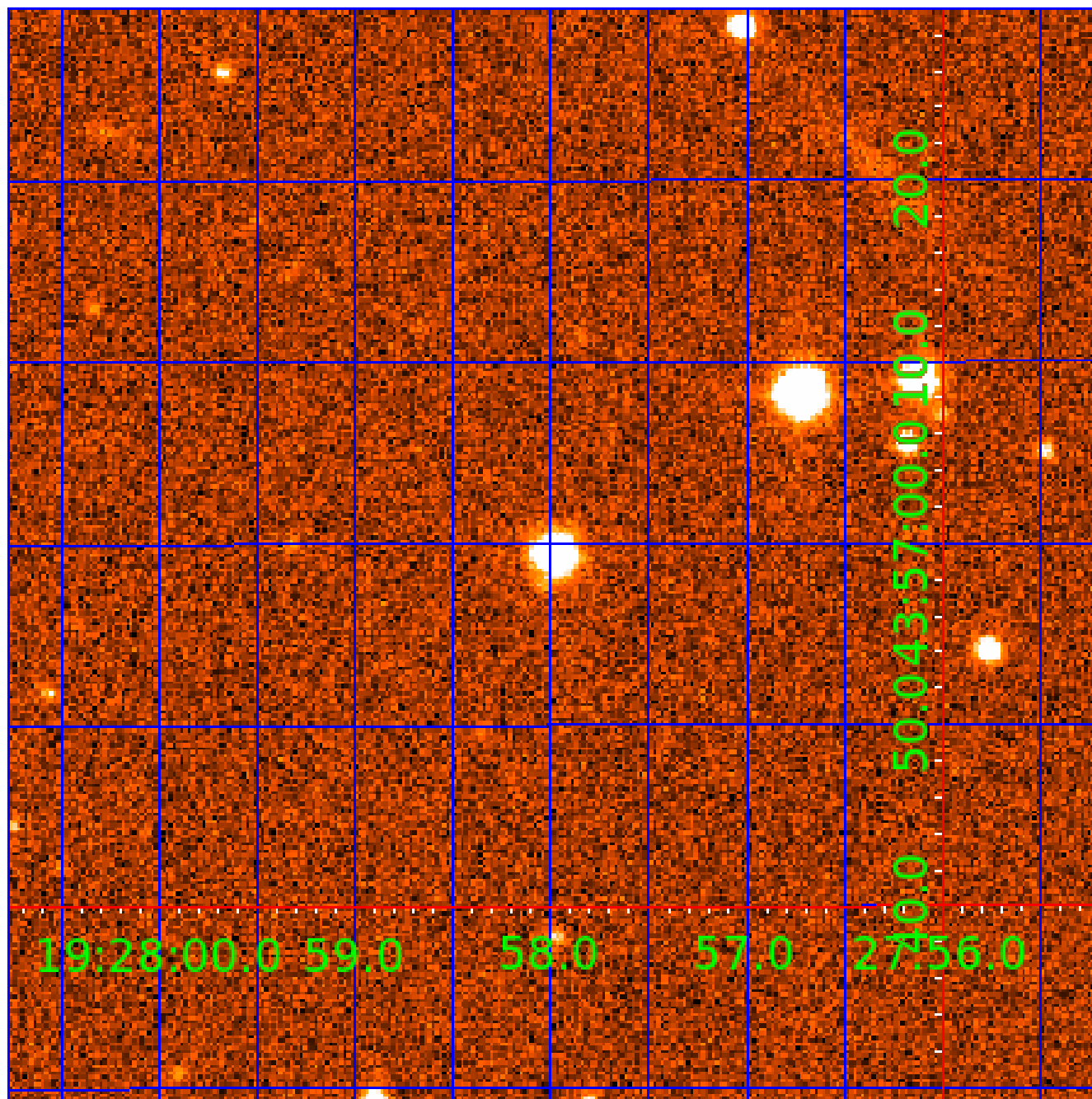
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



UKIRT Image



KIC 008098120

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}) |
|--------------|----------|------|---------------|--------------|-------------|------------------|------|------|-----------------------------|-----------------|------------------------|------------------------|
| 008098120-01 | OBS | No | 1.217044 | 131.614325 | 504.6 | 6.298 | 12.5 | 16.6 | 1.57 | 7203 | 6.31 | 9342.70 |
| 008098120-02 | OBS | No | 389.483158 | 357.216237 | 3573.2 | 3.514 | 11.0 | 11.0 | 1.57 | 7203 | 10.87 | 4.27 |
| 008098120-03 | OBS | No | 110.756481 | 171.098902 | 2015.4 | 4.947 | 9.8 | 11.3 | 1.57 | 7203 | 10.69 | 22.82 |

Robovetter Results

| TCE | Run Type | Disp | Score | N | S | C | E | Comments |
|--------------|----------|------|-------|---|---|---|---|---|
| 008098120-01 | OBS | FP | 0.00 | 1 | 0 | 0 | 0 | LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT |
| 008098120-02 | OBS | FP | 0.00 | 1 | 0 | 0 | 0 | INDIV_TRANS_RUBBLE_CHASES_MARSHALL_SKYE—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS |
| 008098120-03 | OBS | FP | 0.00 | 1 | 0 | 0 | 0 | LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT |

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

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

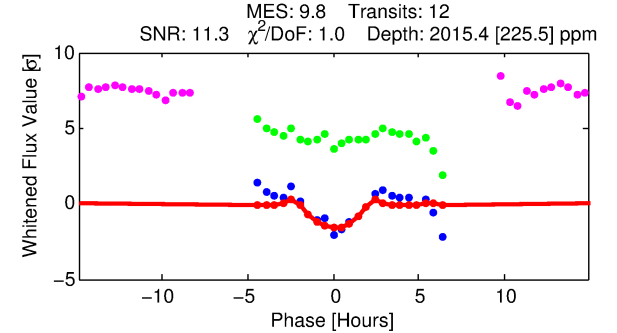
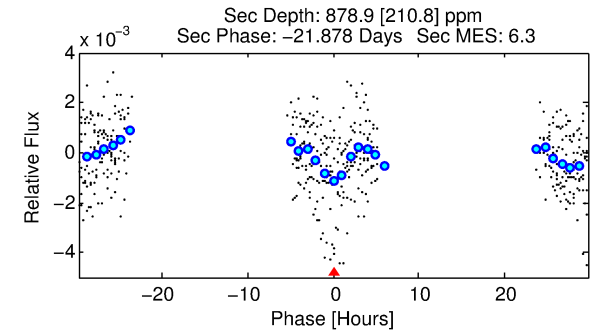
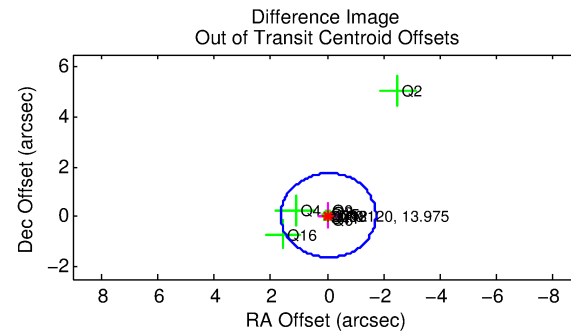
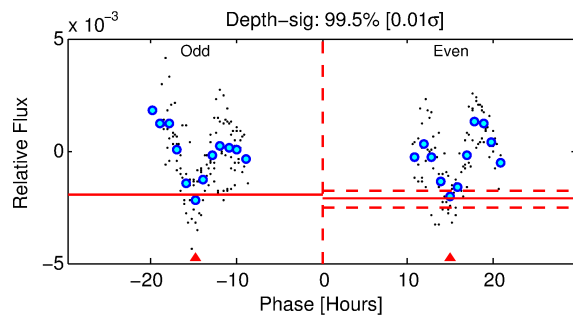
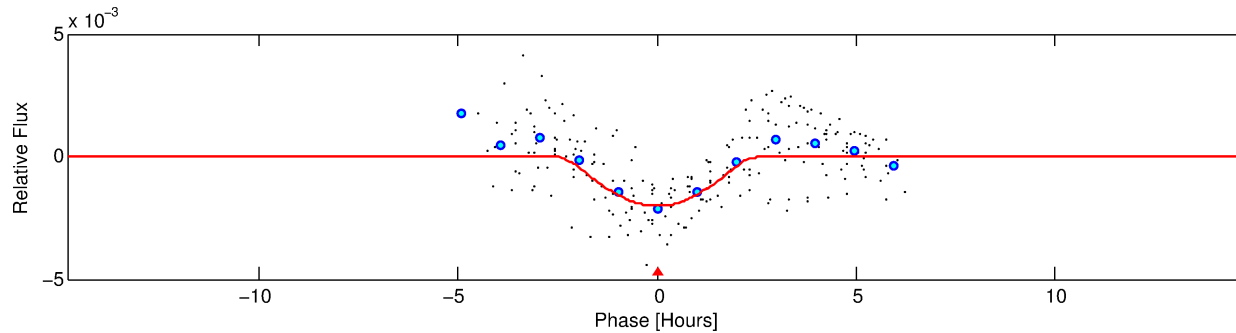
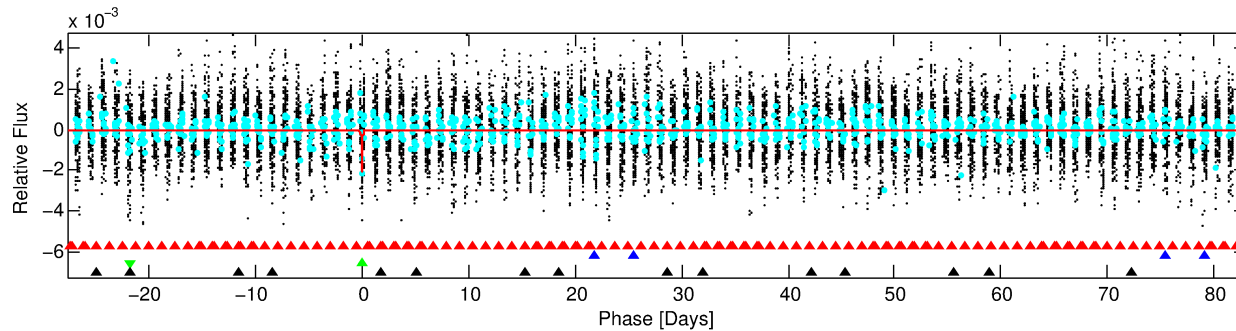
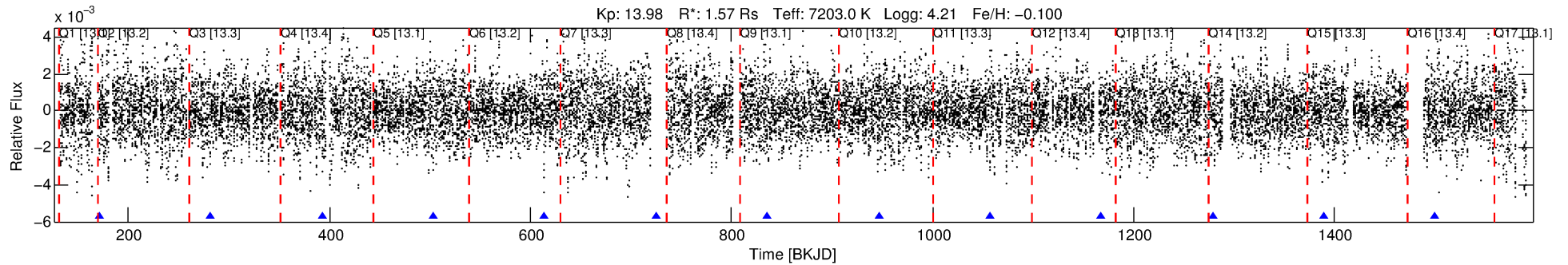
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 008098120-03

No Significant Match Found

DV One-Page Summary

KIC: 8098120 Candidate: 3 of 4 Period: 110.756 d



DV Fit Results:

Period = 110.75648 [0.00121] d
Epoch = 171.0989 [0.0083] BKJD
Rp/R* = 0.0624 [0.0488]
a/R* = 70.39 [17.76]
b = 0.98 [0.09]
Seff = 22.82 [9.70]
Teq = 557 [59] K
Rp = 10.69 [9.09] Re
a = 0.5104 [0.1382] AU
Ag = 1102.59 [1795.17] [0.61 σ]
Teffp = 4966 [1979] K [2.23 σ]

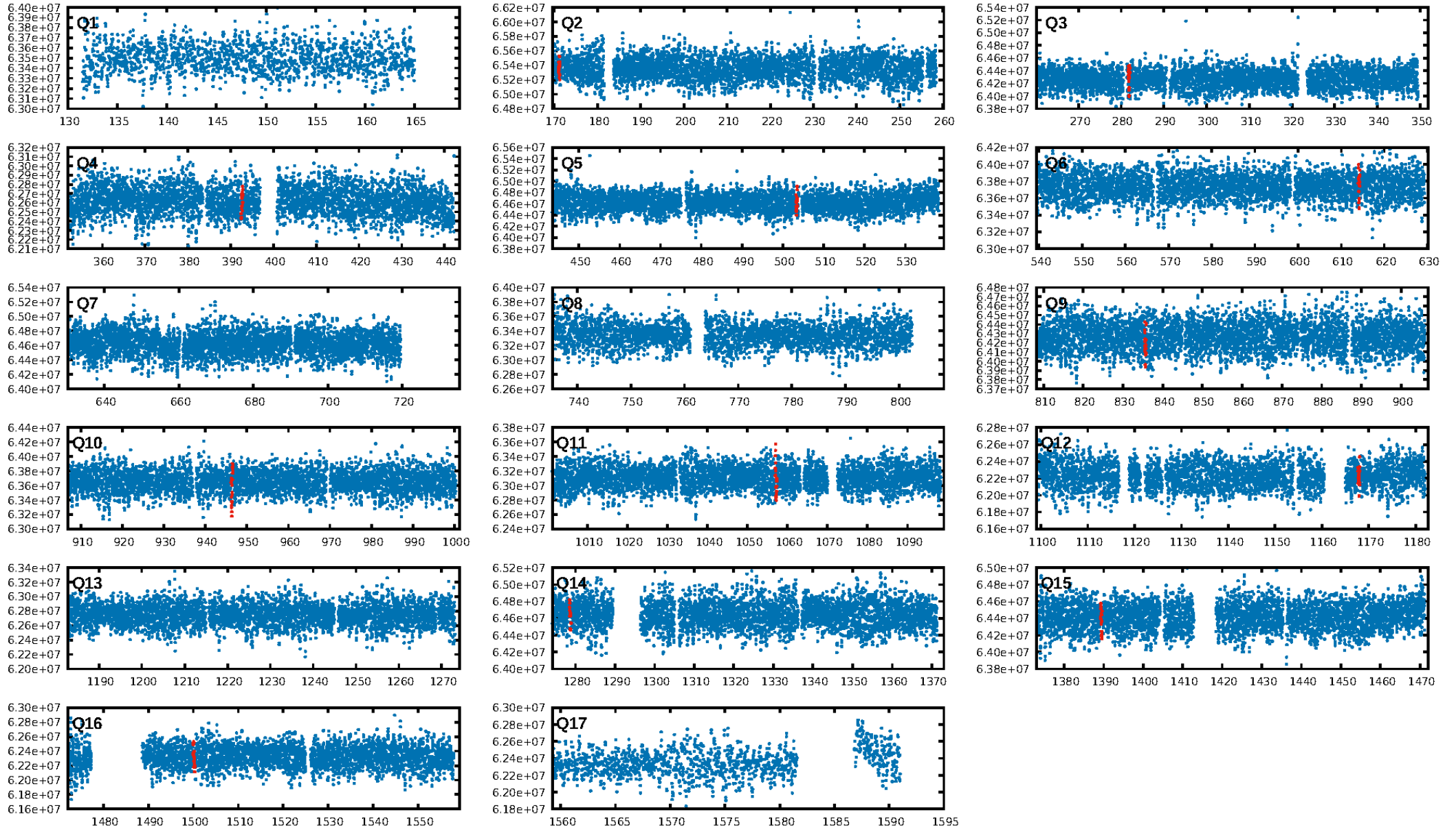
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [41.49 σ]
LongPeriod-sig: 100.0% [1102.40 σ]
ModelChiSquare2-sig: 5.8%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [12/12]
GhostDiagnostic-chr: 1.185
Centroid-sig: 45.5%
Centroid-so: 0.141 arcsec [0.62 σ]
OotOffset-rm: 0.064 arcsec [0.11 σ]
KicOffset-rm: 0.152 arcsec [0.34 σ]
OotOffset-st: 3/3/3/1 [10]
KicOffset-st: 3/3/3/1 [10]
DiffImageQuality-fgm: 0.80 [8/10]
DiffImageOverlap-fno: 0.36 [4/11]

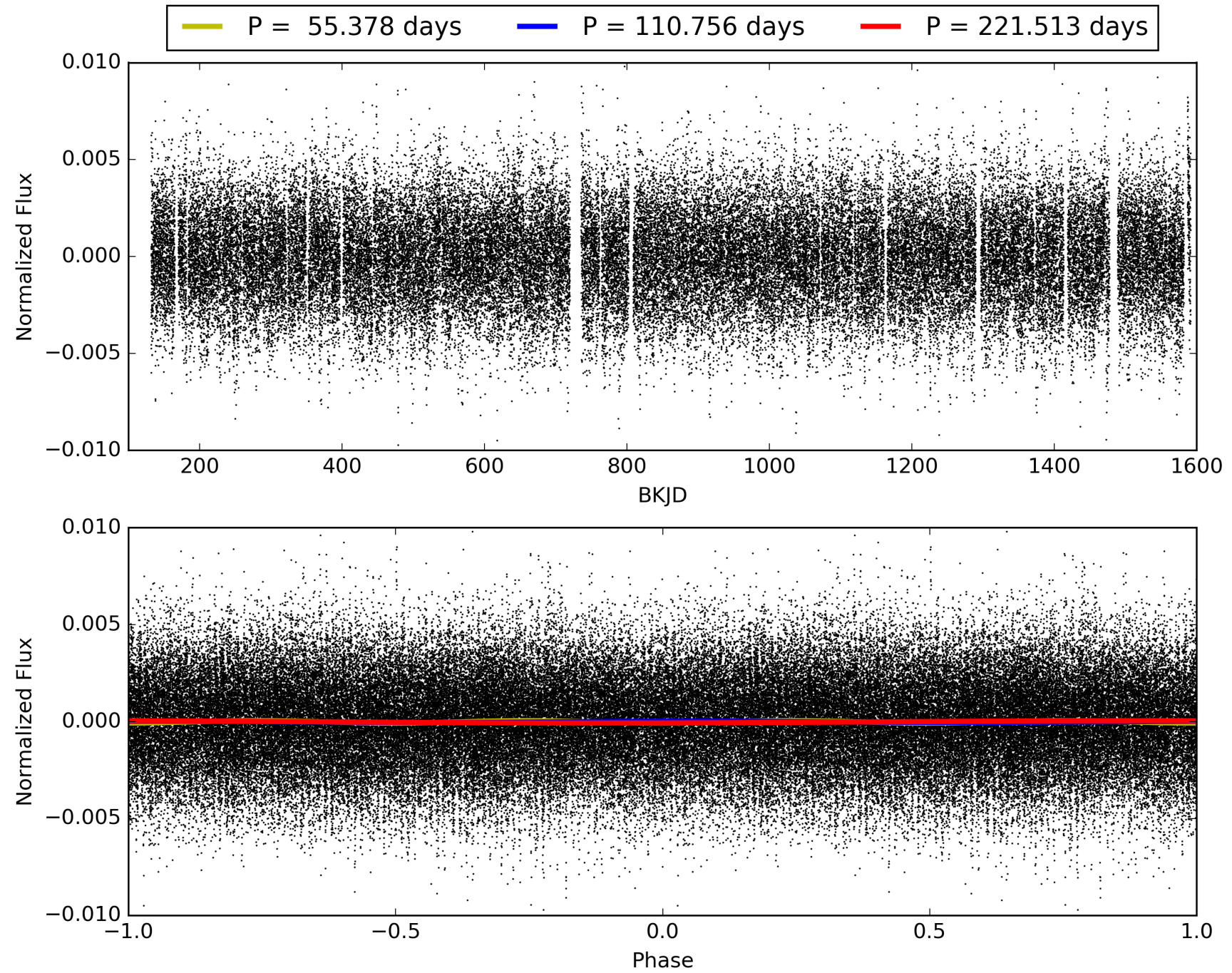
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 18:12:51 Z

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

TCE 008098120-03, PDC Light Curves

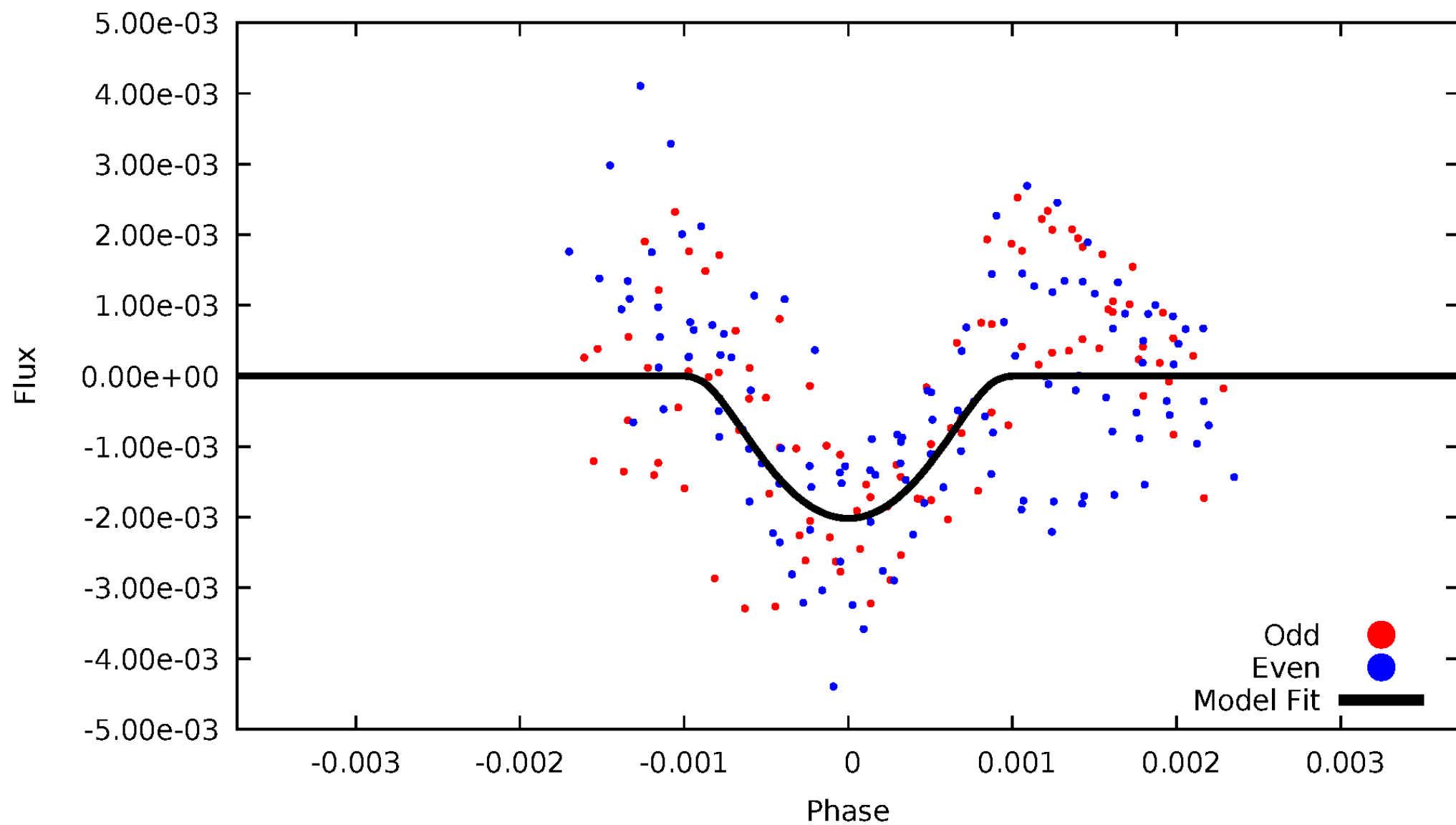


TCE 008098120-03



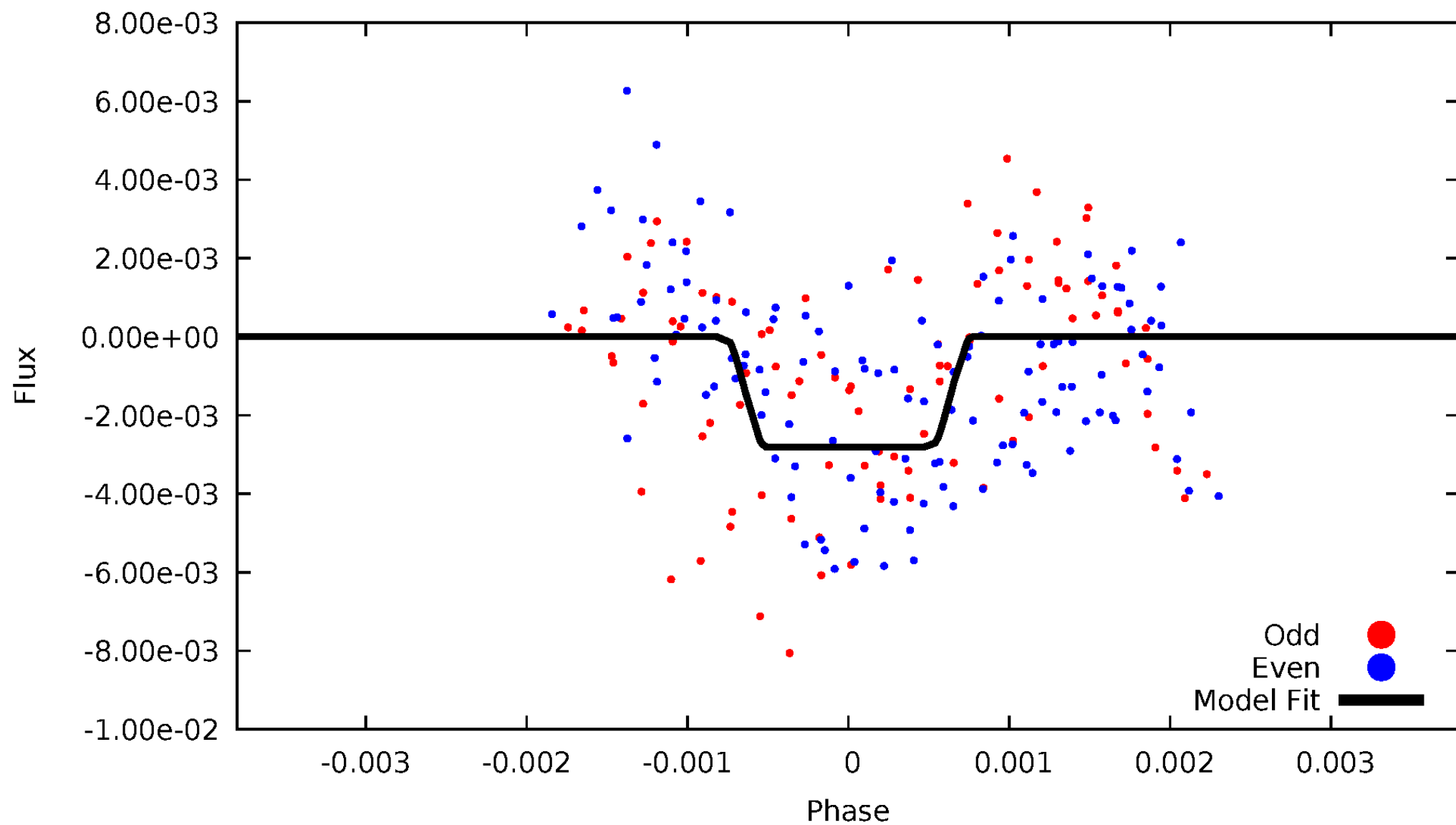
DV Odd/Even

TCE 008098120-03



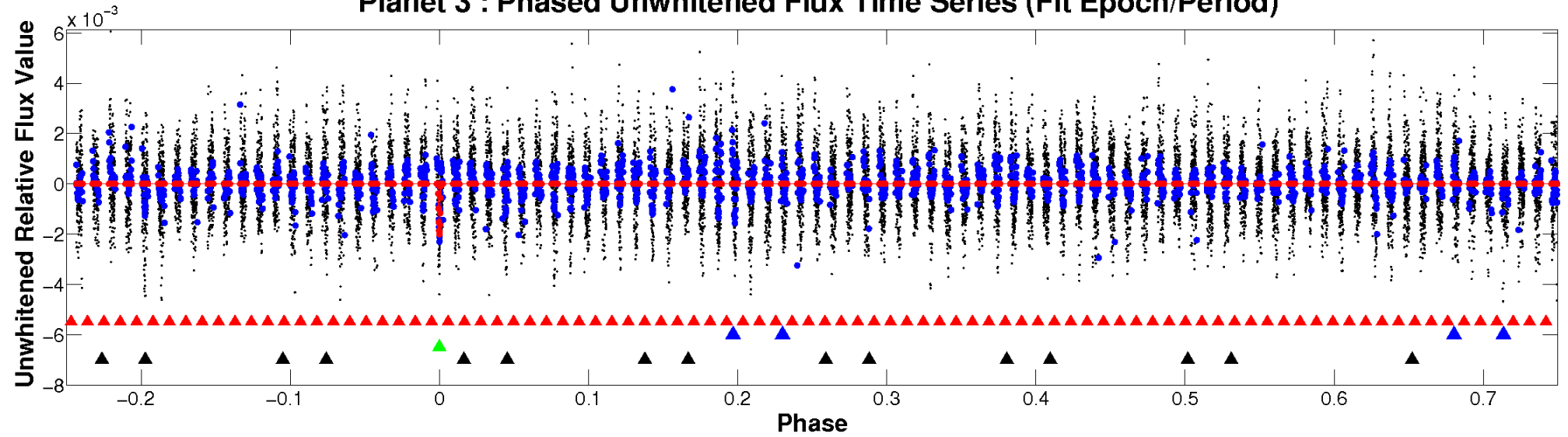
ALT Odd/Even

TCE 008098120-03

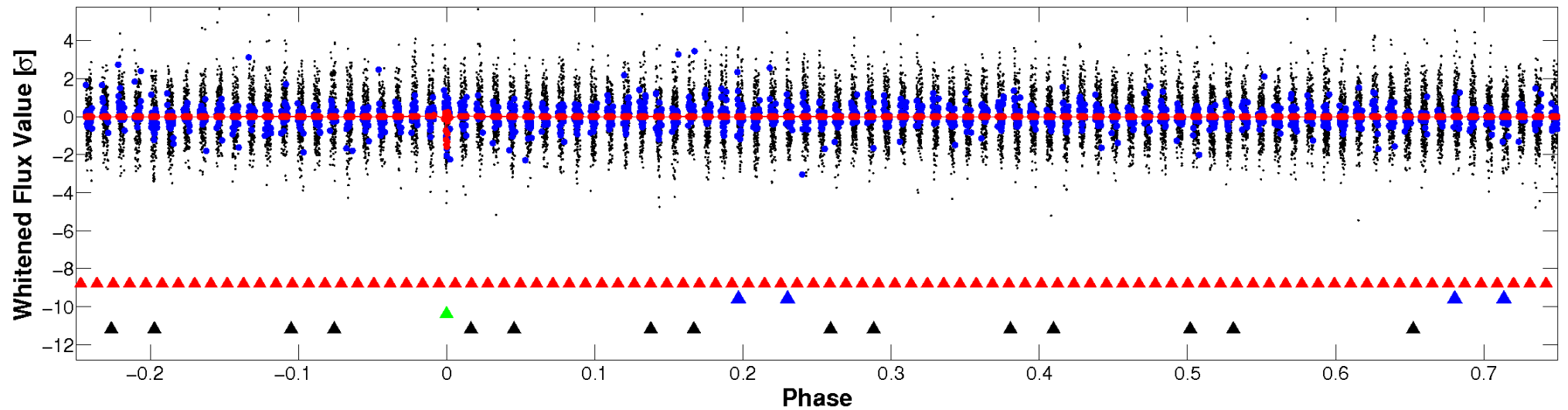


Non-Whitened Vs. Whitened Light Curve

Planet 3 : Phased Unwhitened Flux Time Series (Fit Epoch/Period)

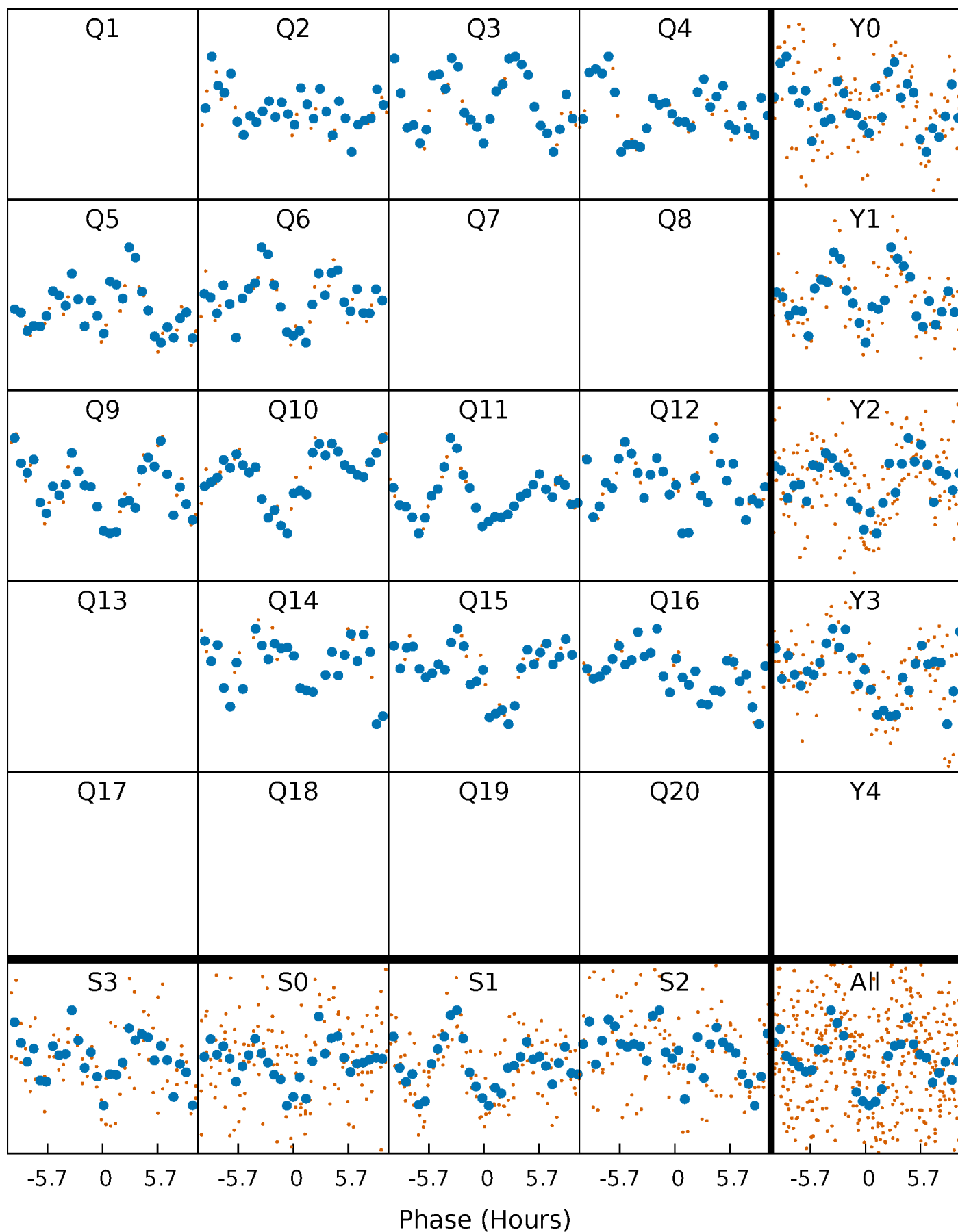


Planet 3 : Phased Whitened Flux Time Series (Fit Epoch/Period)



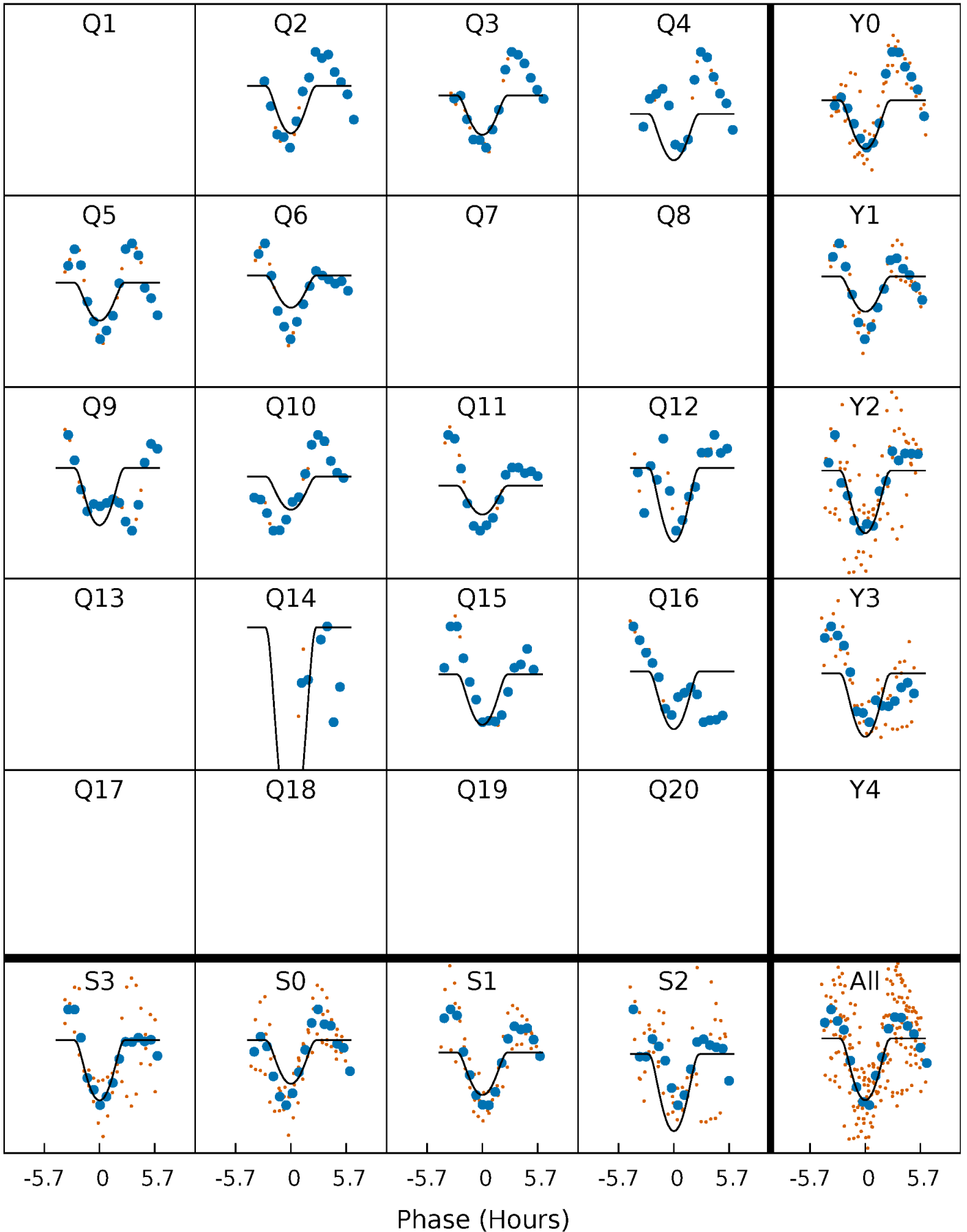
PDC Quarter-Phased Transit Curves

TCE 008098120-03 P=110.756481 Days $T_0=171.098902$ (BKJD)



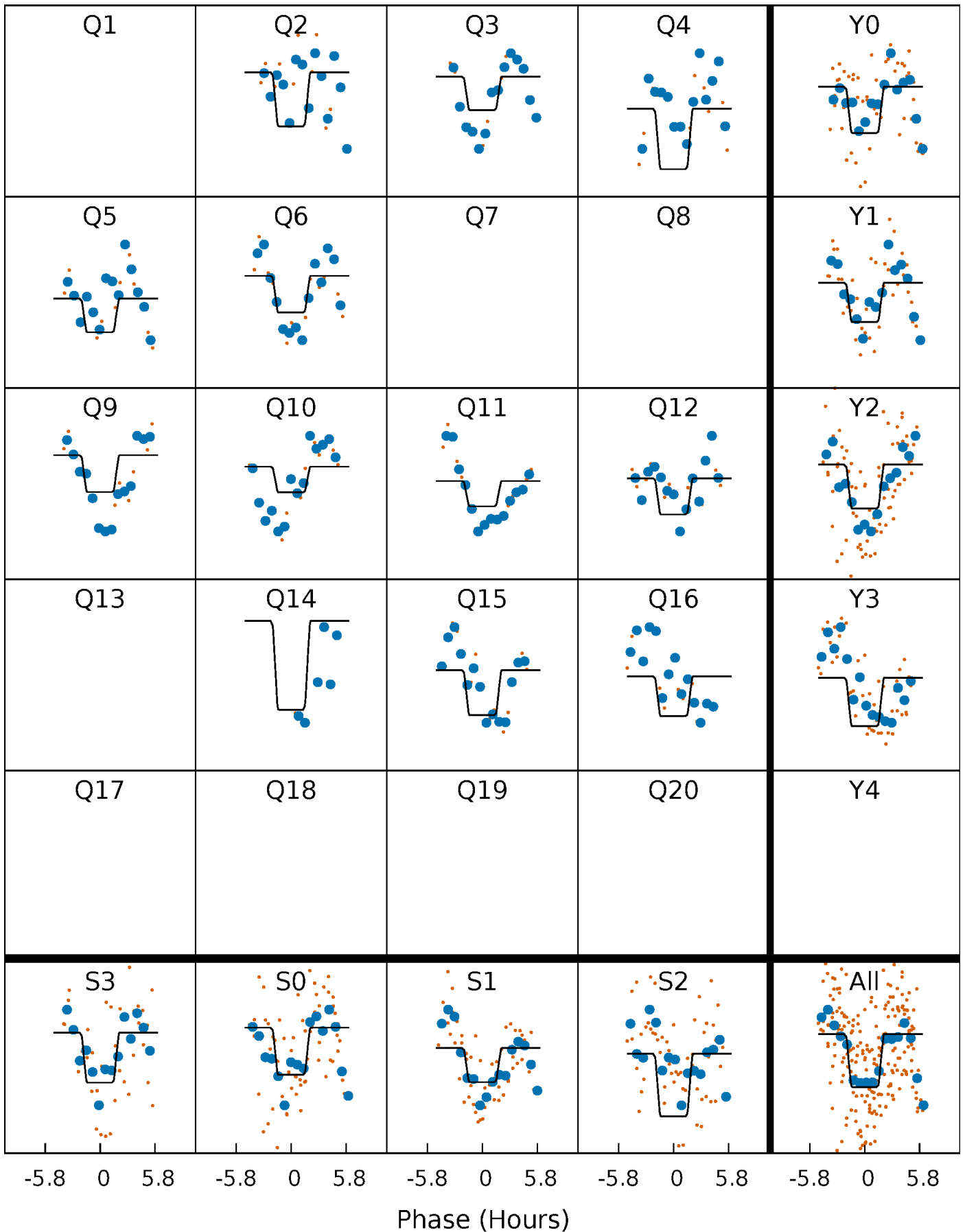
DV Quarter-Phased Transit Curves

TCE 008098120-03 P=110.756481 Days $T_0=171.098902$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

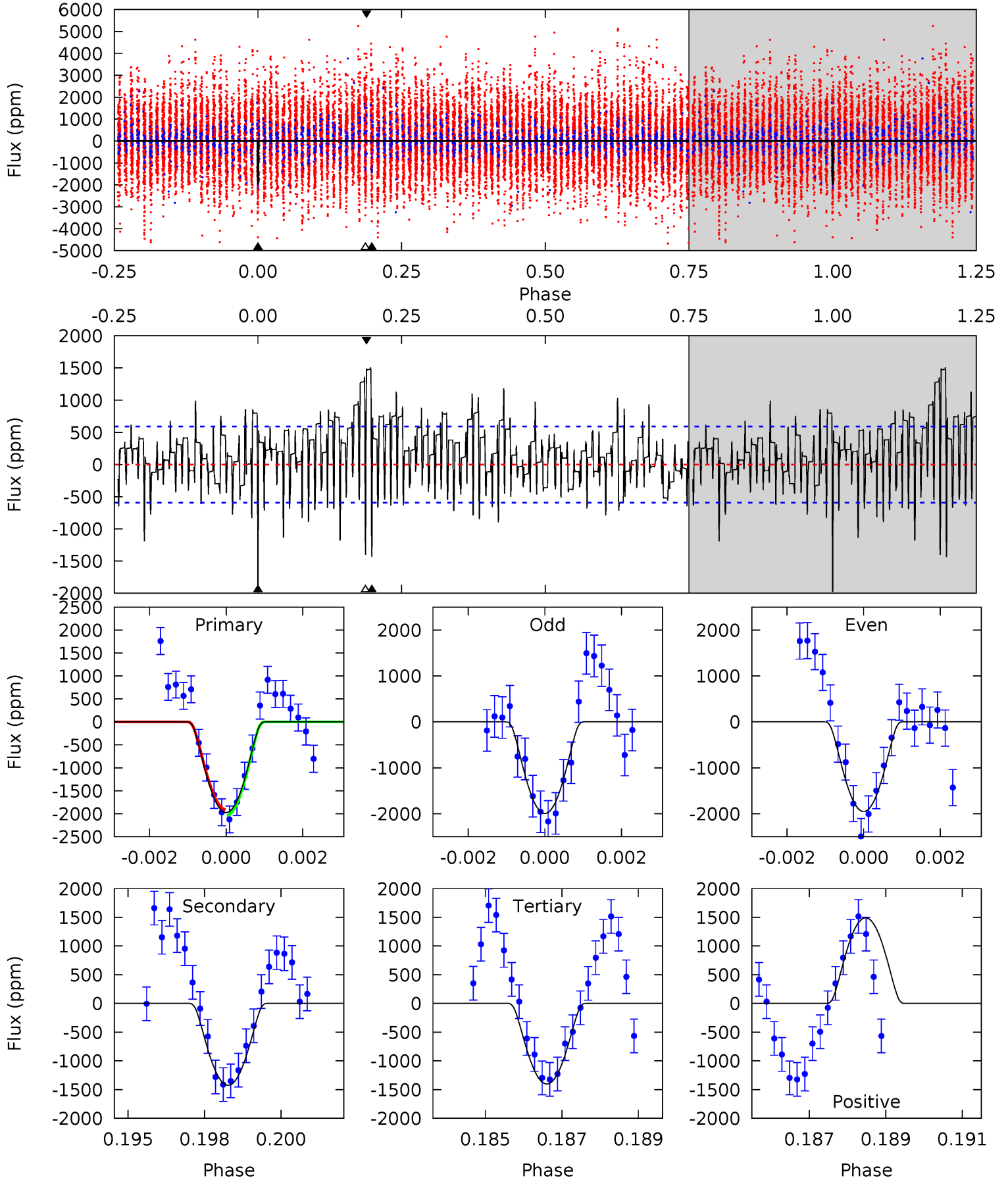
TCE 008098120-03 P=110.757346 Days $T_0=171.104255$ (BKJD)



DV Model-Shift Uniqueness Test

008098120-03, P = 110.756481 Days, E = 60.342421 Days

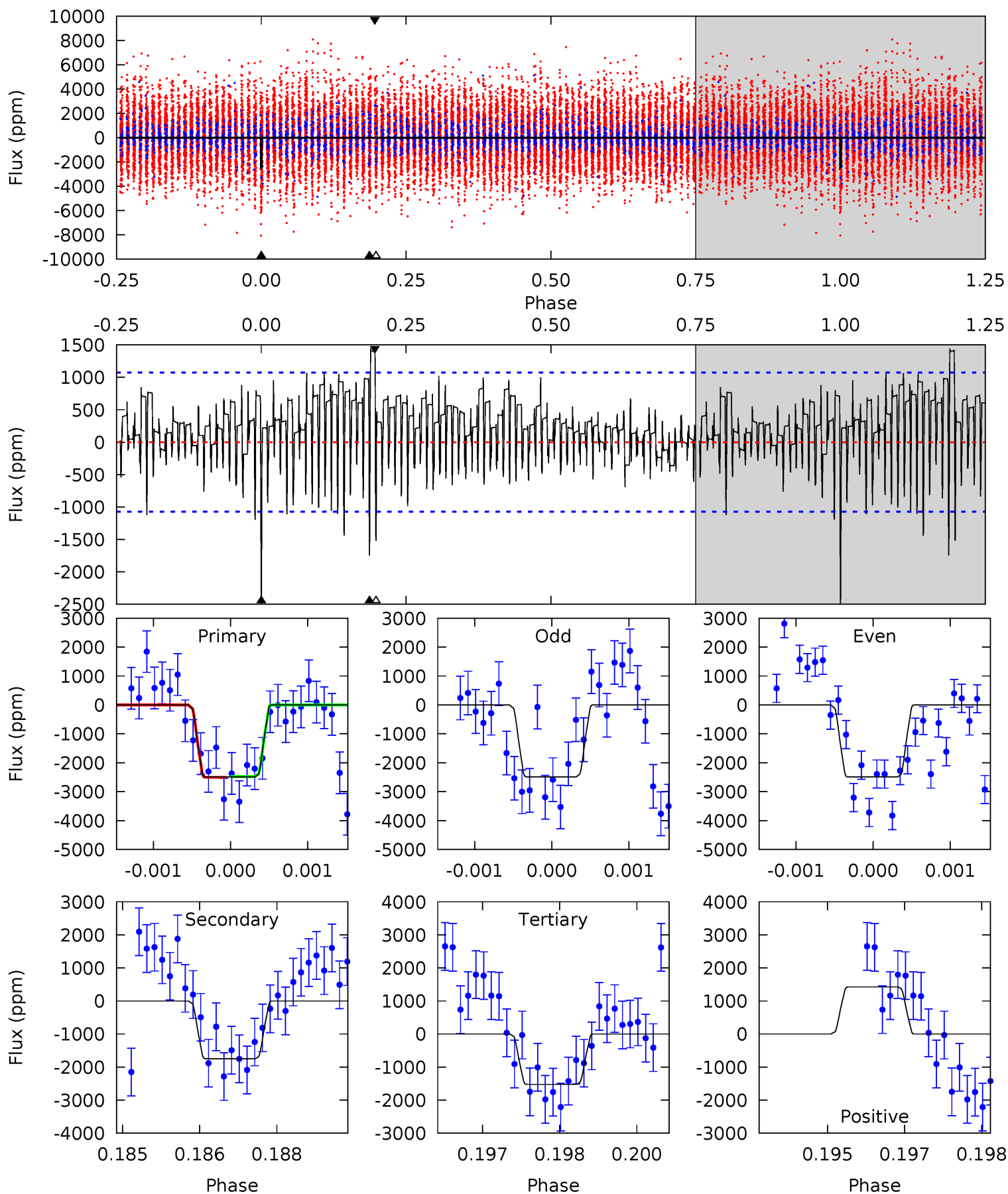
| Pri | Sec | Ter | Pos | FA ₁ | FA ₂ | F _{Red} | Pri-Ter | Pri-Pos | Sec-Ter | Sec-Pos | Odd-Evn | DMM | Shape | TAT |
|------|------|------|------|-----------------|-----------------|------------------|---------|---------|---------|---------|---------|------|-------|------|
| 17.7 | 12.8 | 12.6 | 13.4 | 5.33 | 3.09 | 3.65 | 5.14 | 4.34 | 0.20 | -0.60 | 0.20 | 1.01 | 0.43 | 0.59 |



Alt Model-Shift Uniqueness Test

008098120-03, $P = 110.757346$ Days, $E = 60.346909$ Days

| Pri | Sec | Ter | Pos | FA ₁ | FA ₂ | F _{Red} | Pri-Ter | Pri-Pos | Sec-Ter | Sec-Pos | Odd-Evn | DMM | Shape | TAT |
|------|------|------|------|-----------------|-----------------|------------------|---------|---------|---------|---------|---------|------|-------|------|
| 12.5 | 8.75 | 7.63 | 7.14 | 5.38 | 3.18 | 2.03 | 4.84 | 5.33 | 1.12 | 1.61 | 0.01 | 1.02 | 0.37 | 0.06 |



Stellar Parameters For KIC 008098120

| | $T_{\text{eff}}(K)$ | $\log(g)$ | [Fe/H] | $R (R_{\odot})$ | $M(M_{\odot})$ | $p_{\star} (\text{g}\cdot\text{cm}^{-3})$ |
|--------|----------------------|---------------------------|----------------------------|---------------------------|---------------------------|---|
| | 7203^{+200}_{-342} | $4.206^{+0.108}_{-0.201}$ | $-0.100^{+0.250}_{-0.350}$ | $1.570^{+0.524}_{-0.282}$ | $1.448^{+0.218}_{-0.239}$ | $0.527^{+0.265}_{-0.278}$ |
| | +3%/-5% | +3%/-5% | +250%/-350% | +33%/-18% | +15%/-17% | +50%/-53% |
| 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 008098120-03 / KOI

| Detrend | Depth (ppm) | $R_p (R_{\oplus})$ | $T_{max} (K)$ | $T_{obs} (K)$ | A_{obs} |
|---------|-----------------|-------------------------|-------------------|------------------------|-------------------------|
| DV | -1424 ± 111 | $12.37^{+8.47}_{-7.17}$ | 781^{+61}_{-47} | 5249^{+3071}_{-985} | 1326^{+6119}_{-870} |
| Alt. | -1747 ± 200 | $10.48^{+8.50}_{-6.23}$ | 783^{+60}_{-51} | 5840^{+4477}_{-1222} | 2198^{+12172}_{-1509} |

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 $A_{obs} \gg 1.0$

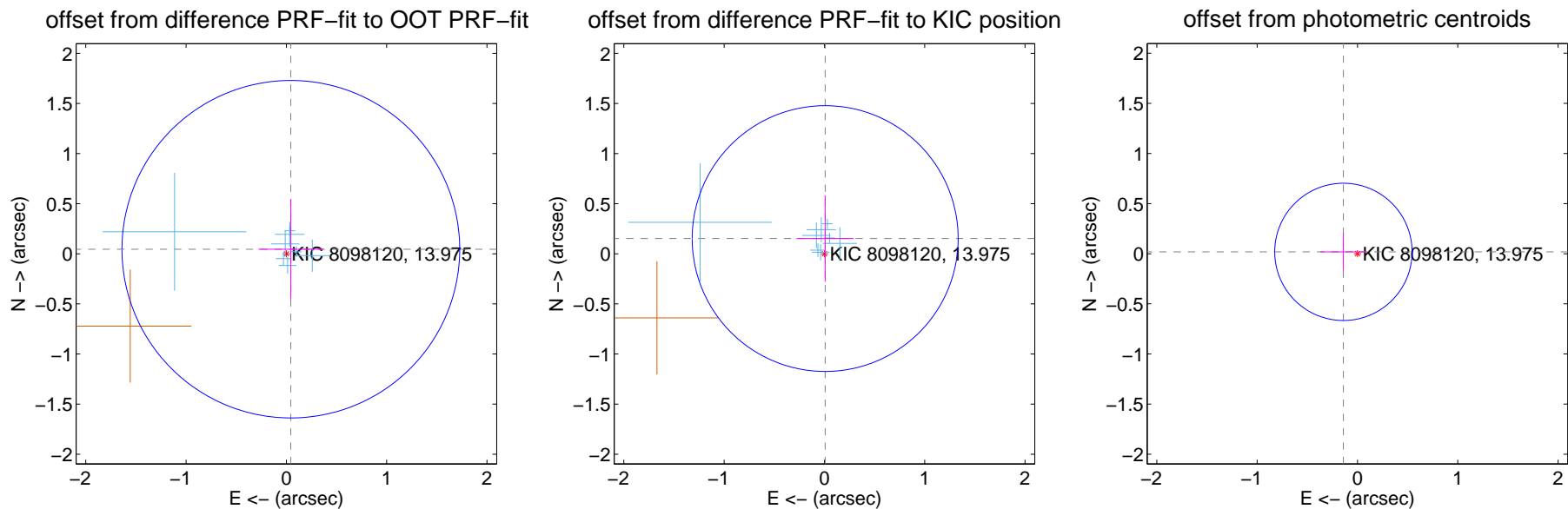
DV Centroid Data

Supplemental centroid analysis for 008098120-03. Kepler magnitude: 13.97. Transit SNR 11.30

There are 8 quarters with good PRF difference image offsets

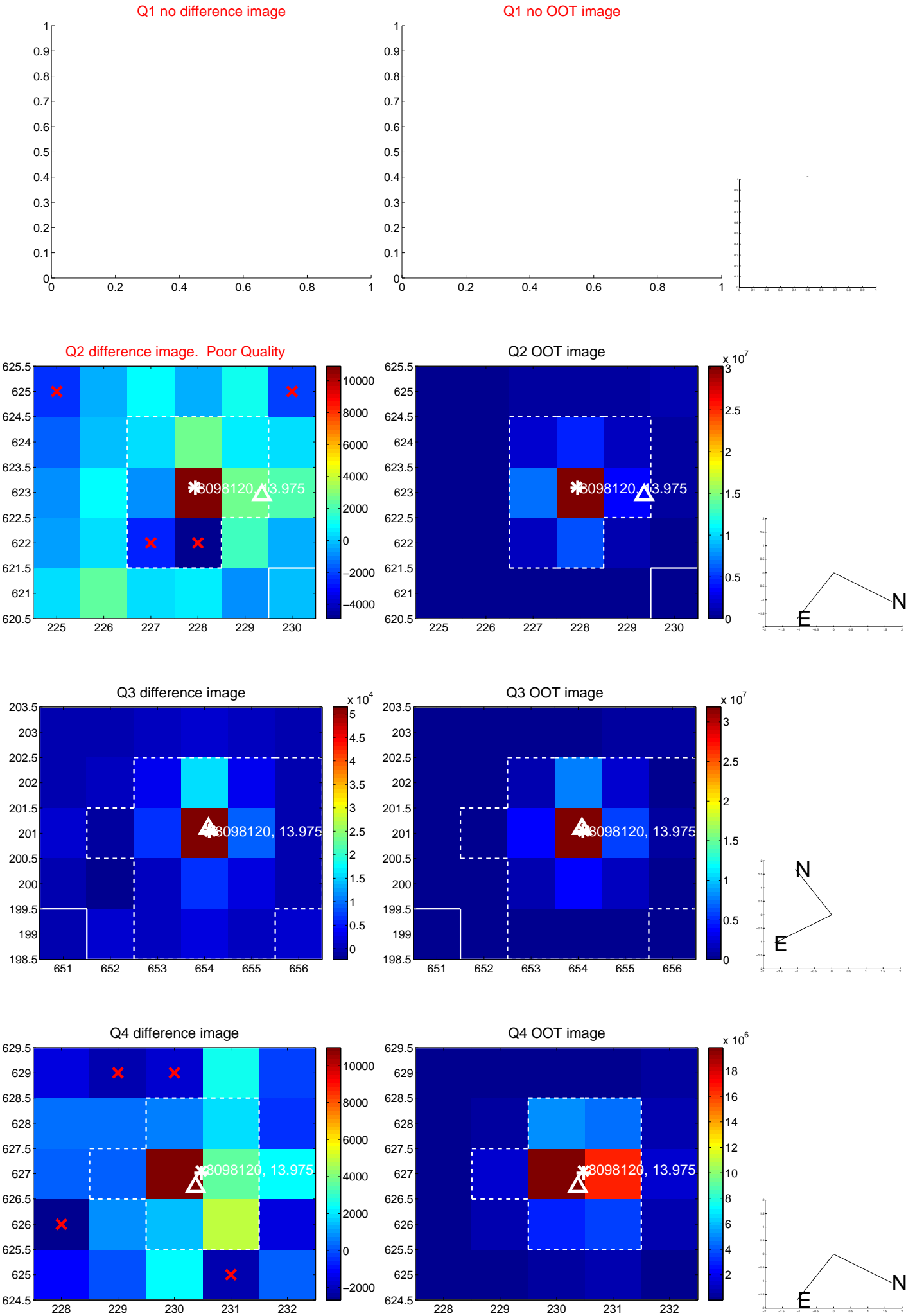
The direct PRF centroid is offset from the target star catalog position by about 0.14 arcsec

| | Distance in arcsec | Distance / σ | Δ RA | Δ Dec |
|---|--------------------|---------------------|--------------------|-------------------|
| PRF-fit source offset from OOT | 0.064 ± 0.561 | 0.11 | -0.045 ± 0.324 | 0.046 ± 0.501 |
| PRF-fit source offset from KIC position | 0.152 ± 0.442 | 0.34 | -0.007 ± 0.286 | 0.152 ± 0.431 |
| photometric centroid source offset | 0.14 ± 0.23 | 0.62 | 0.14 ± 0.23 | 0.02 ± 0.19 |

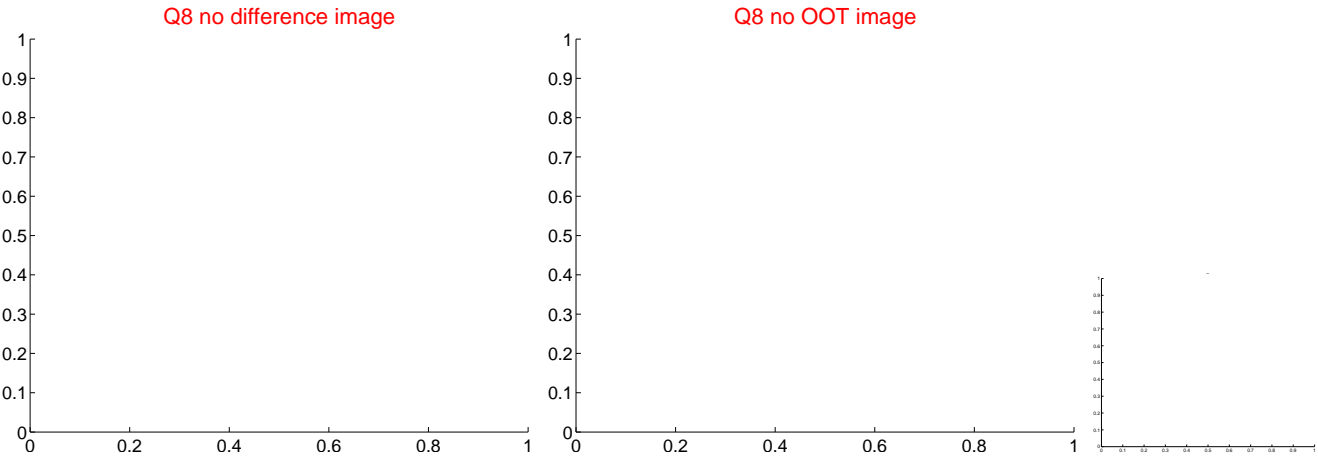
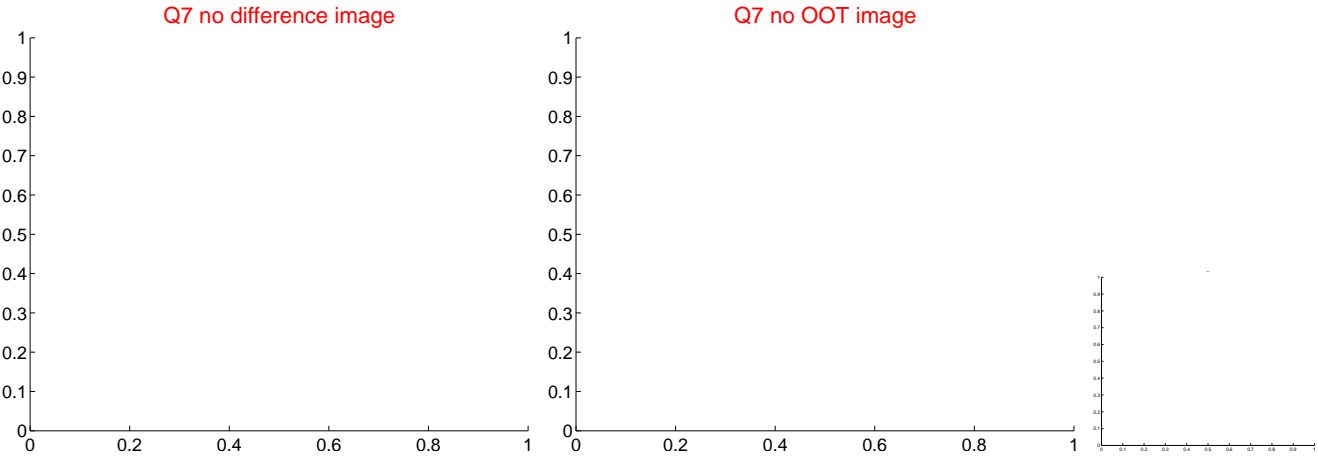
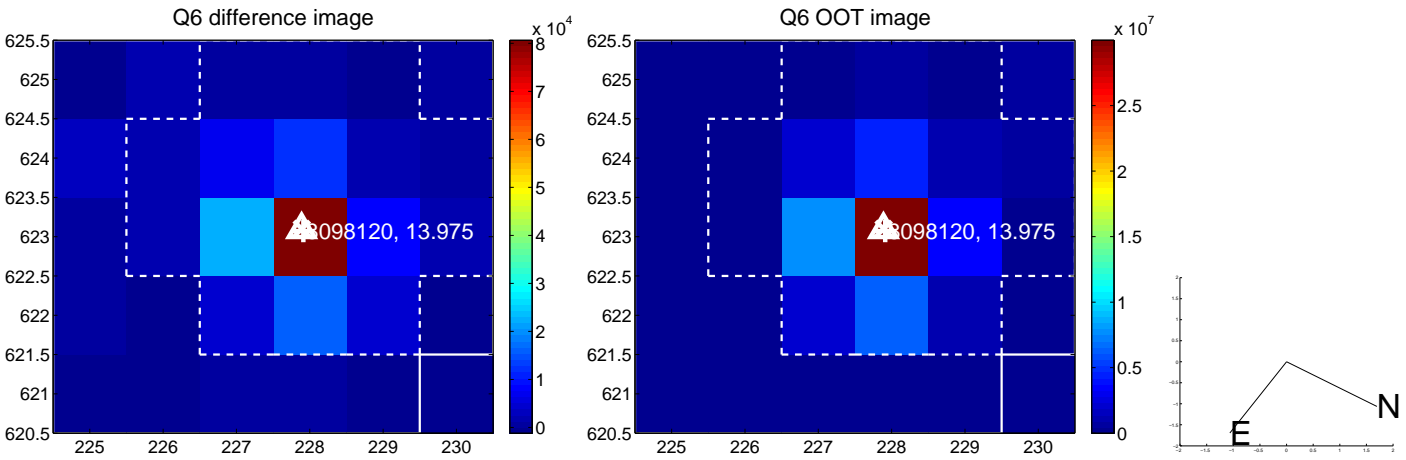
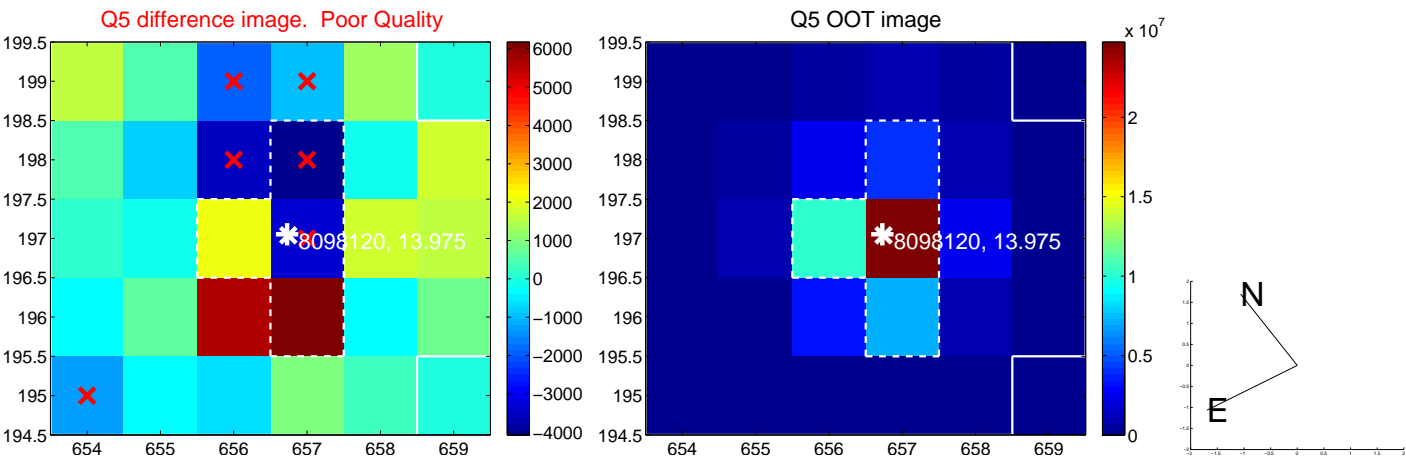


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets**; **Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

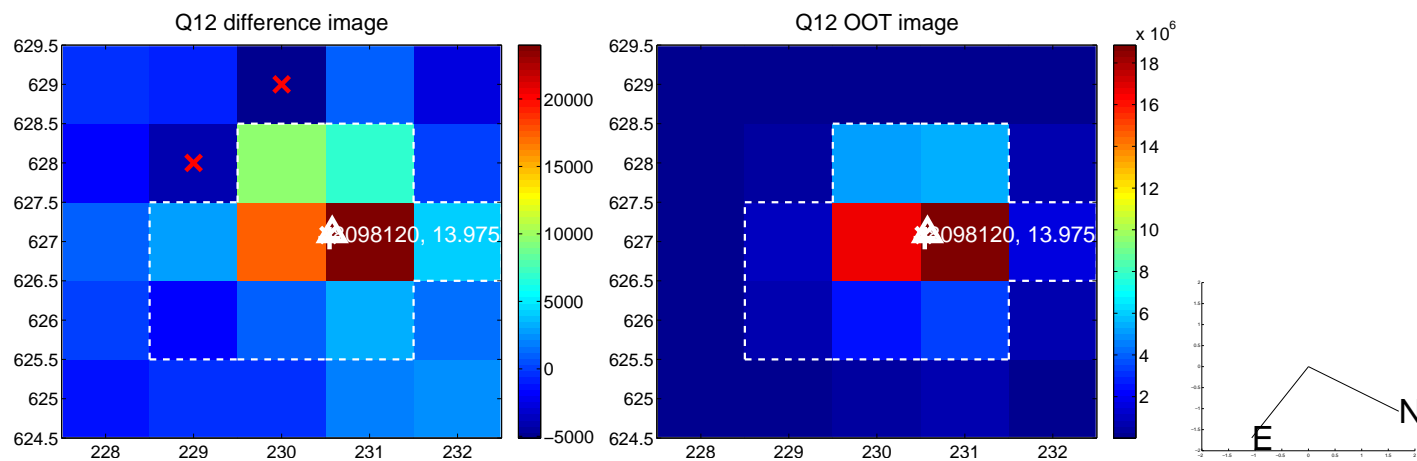
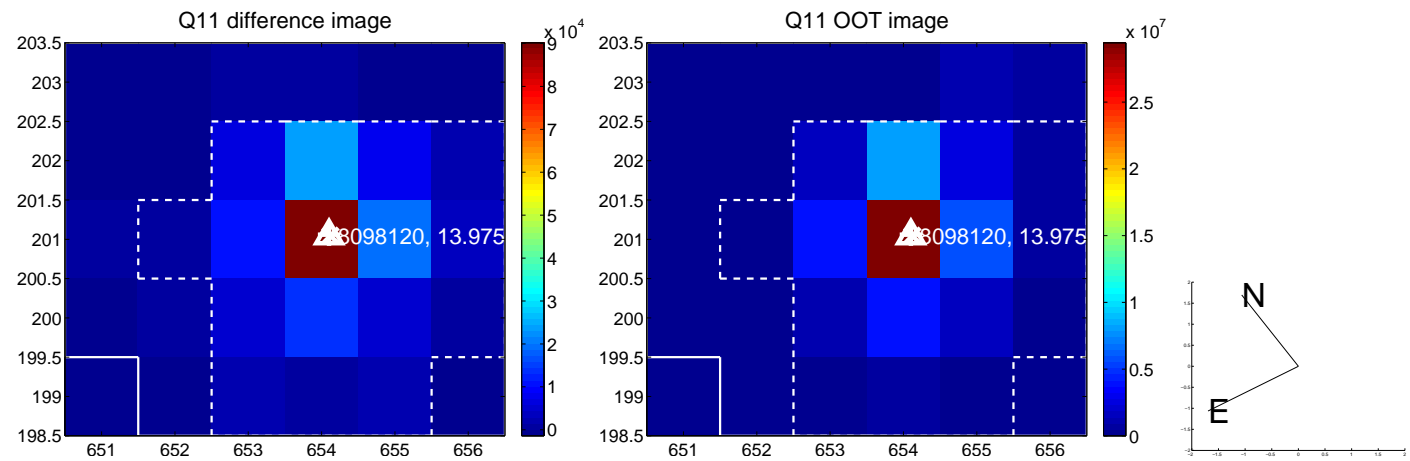
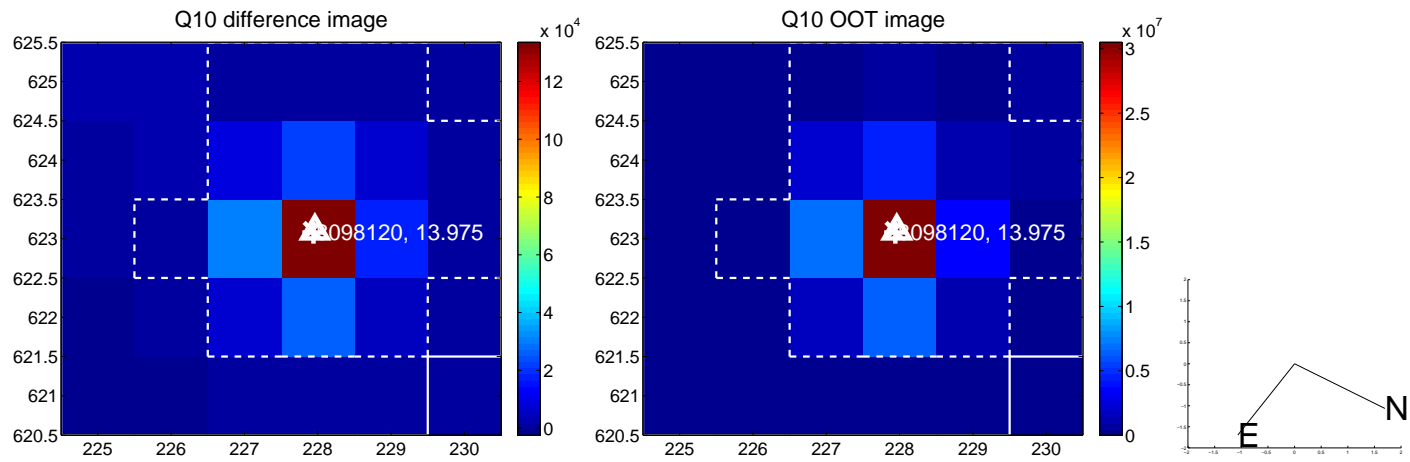
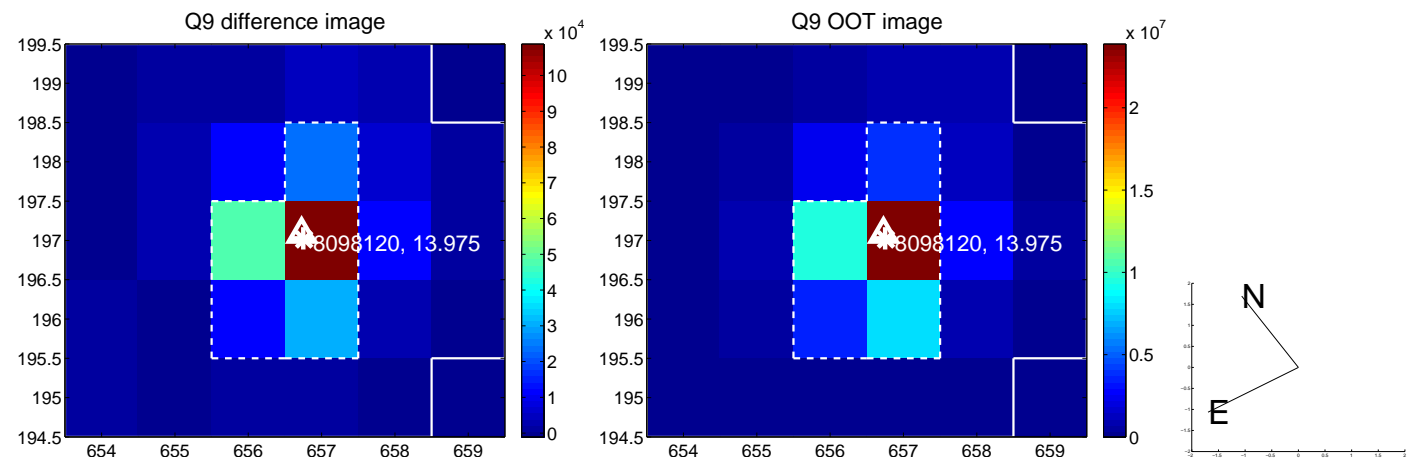
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



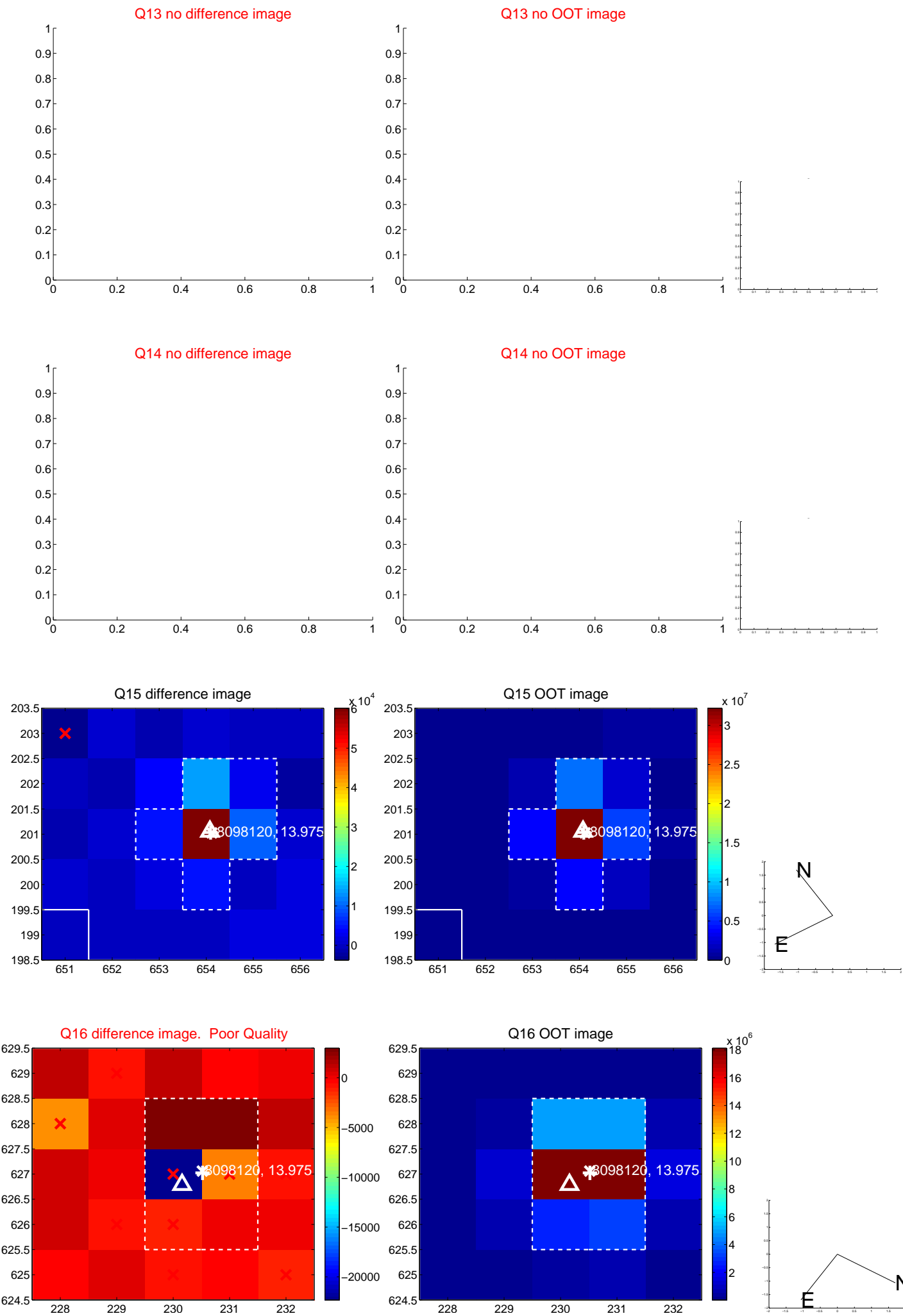
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



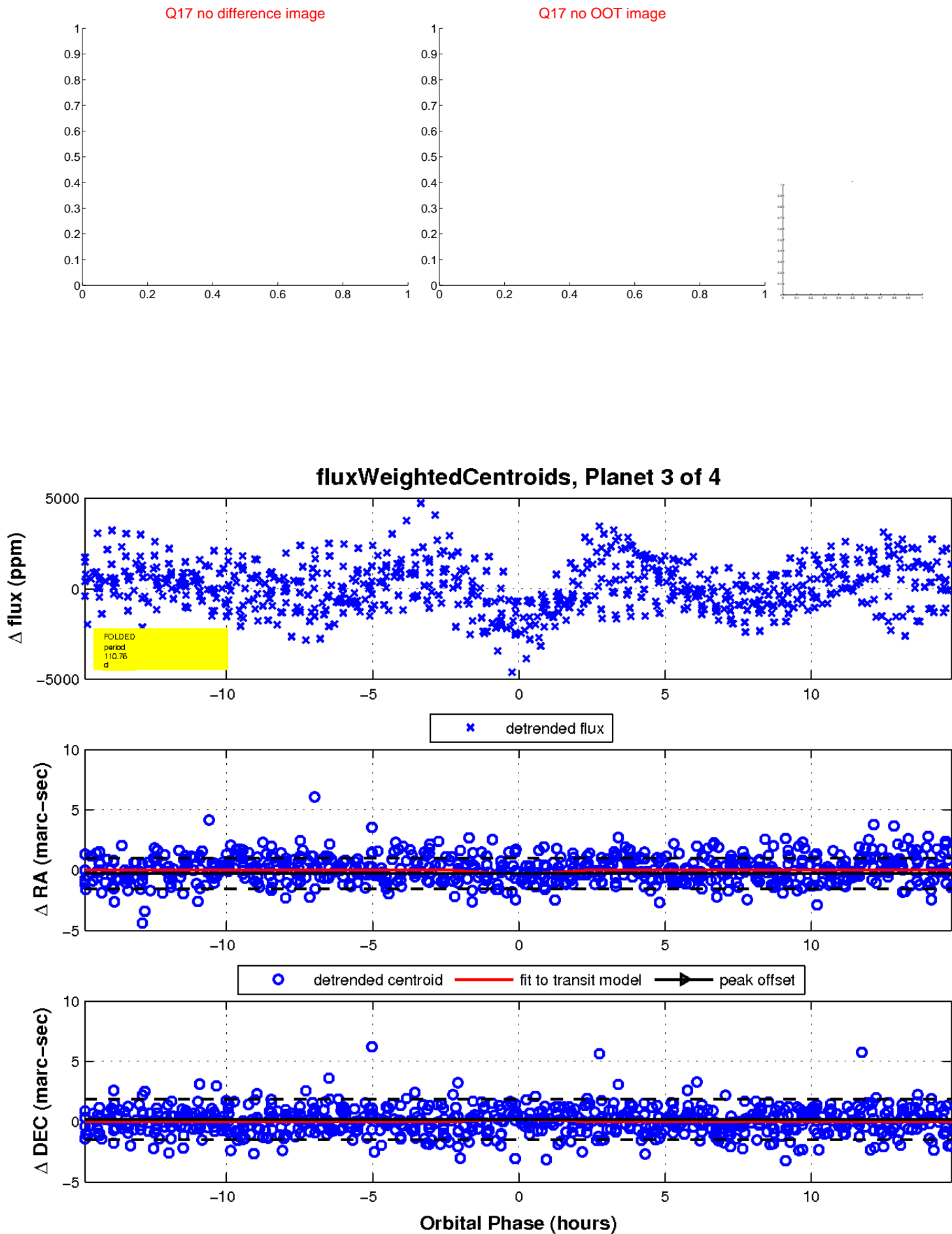
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

