

KIC 008712155

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}) |
|--------------|----------|------|---------------|--------------|-------------|------------------|-----|------|-----------------------------|-----------------|------------------------|------------------------|
| 008712155-01 | OBS | No | 5.660236 | 134.658544 | 46.2 | 19.739 | 8.8 | 8.4 | 3.00 | 6837 | 2.25 | 3427.95 |
| 008712155-02 | OBS | No | 136.194498 | 172.636925 | 353.8 | 13.062 | 9.6 | 6.1 | 3.00 | 6837 | 6.49 | 49.35 |
| 008712155-03 | OBS | No | 1.146999 | 132.192851 | 56.4 | 6.212 | 9.3 | 11.0 | 3.00 | 6837 | 2.63 | 28800.30 |

Robovetter Results

| TCE | Run Type | Disp | Score | N | S | C | E | Comments |
|--------------|----------|------|-------|---|---|---|---|--|
| 008712155-01 | OBS | FP | 0.00 | 1 | 0 | 1 | 0 | LPP_DV—MOD_NONUNIQ_DV—CENT_RESOLVED_OFFSET |
| 008712155-02 | OBS | FP | 0.00 | 1 | 0 | 1 | 0 | INDIV_TRANS_RUBBLE_SKYE—TRANS_GAPPED—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS—HALO_GHOST |
| 008712155-03 | OBS | FP | 0.00 | 1 | 0 | 0 | 0 | LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—CENT_FEW_MEAS |

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

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

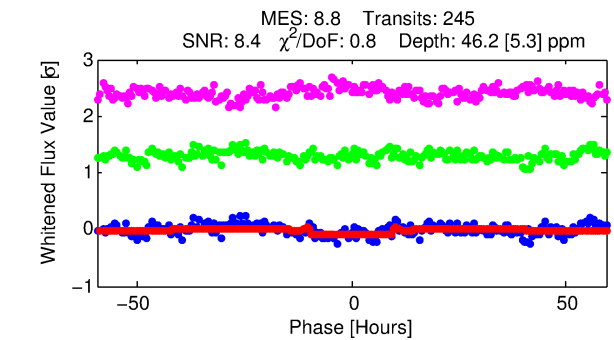
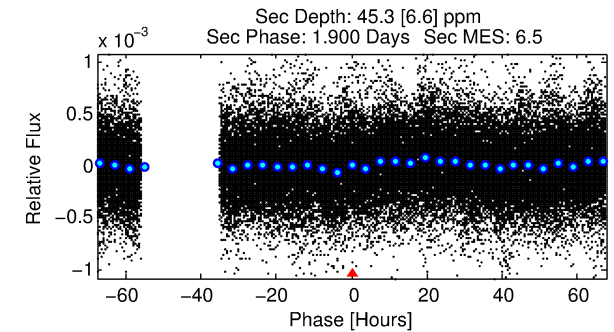
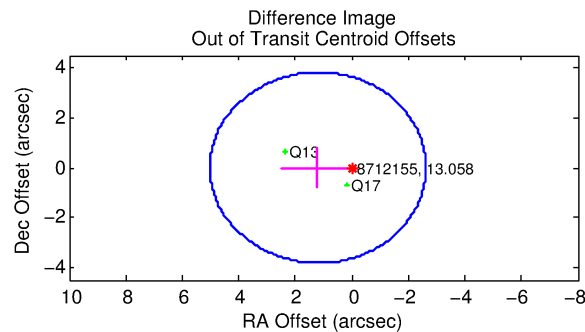
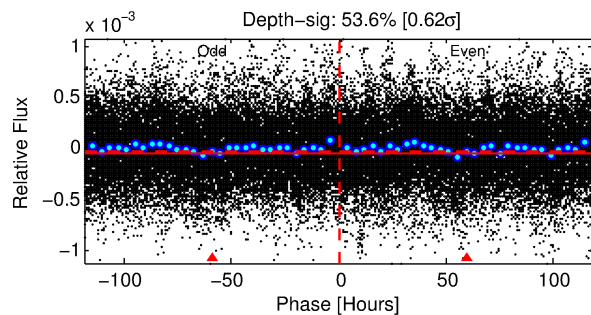
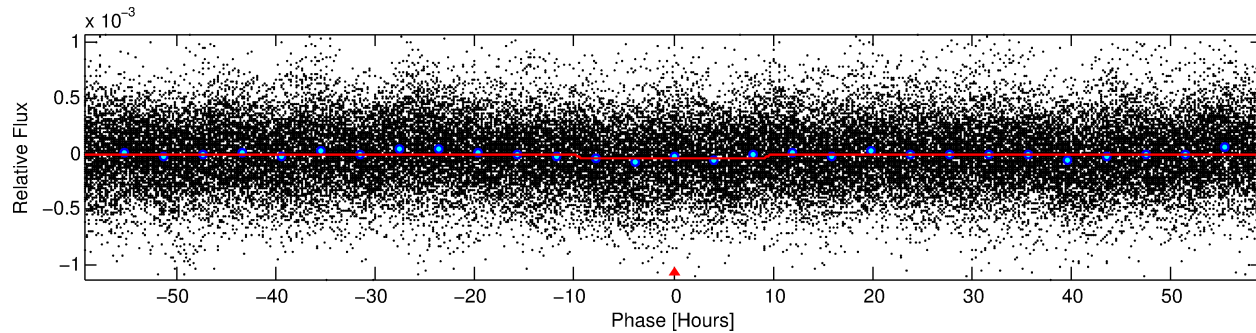
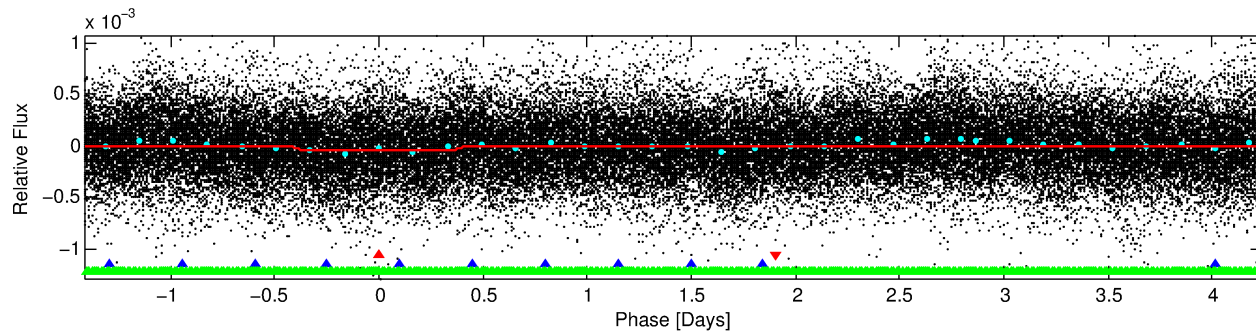
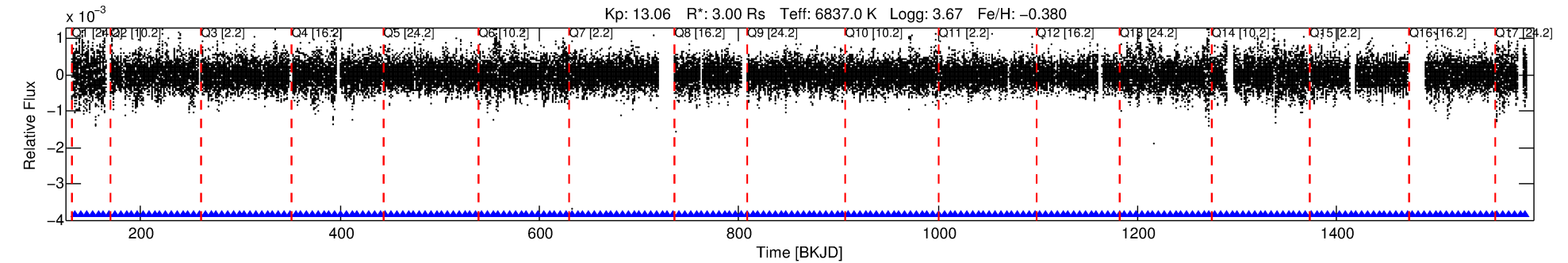
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 008712155-01

No Significant Match Found

DV One-Page Summary

KIC: 8712155 Candidate: 1 of 3 Period: 5.660 d



DV Fit Results:

Period = 5.66024 [0.00008] d
Epoch = 134.6585 [0.0090] BKJD
Rp/R* = 0.0069 [0.0008]
a/R* = 1.59 [0.56]
b = 0.81 [0.25]
Seff = 3427.96 [3281.61]
Teff = 1951 [467] K
Rp = 2.25 [1.23] Re
a = 0.0716 [0.0403] AU
Ag = 25.16 [24.70] [0.98 σ]
Teffp = 6756 [542] K [6.72 σ]

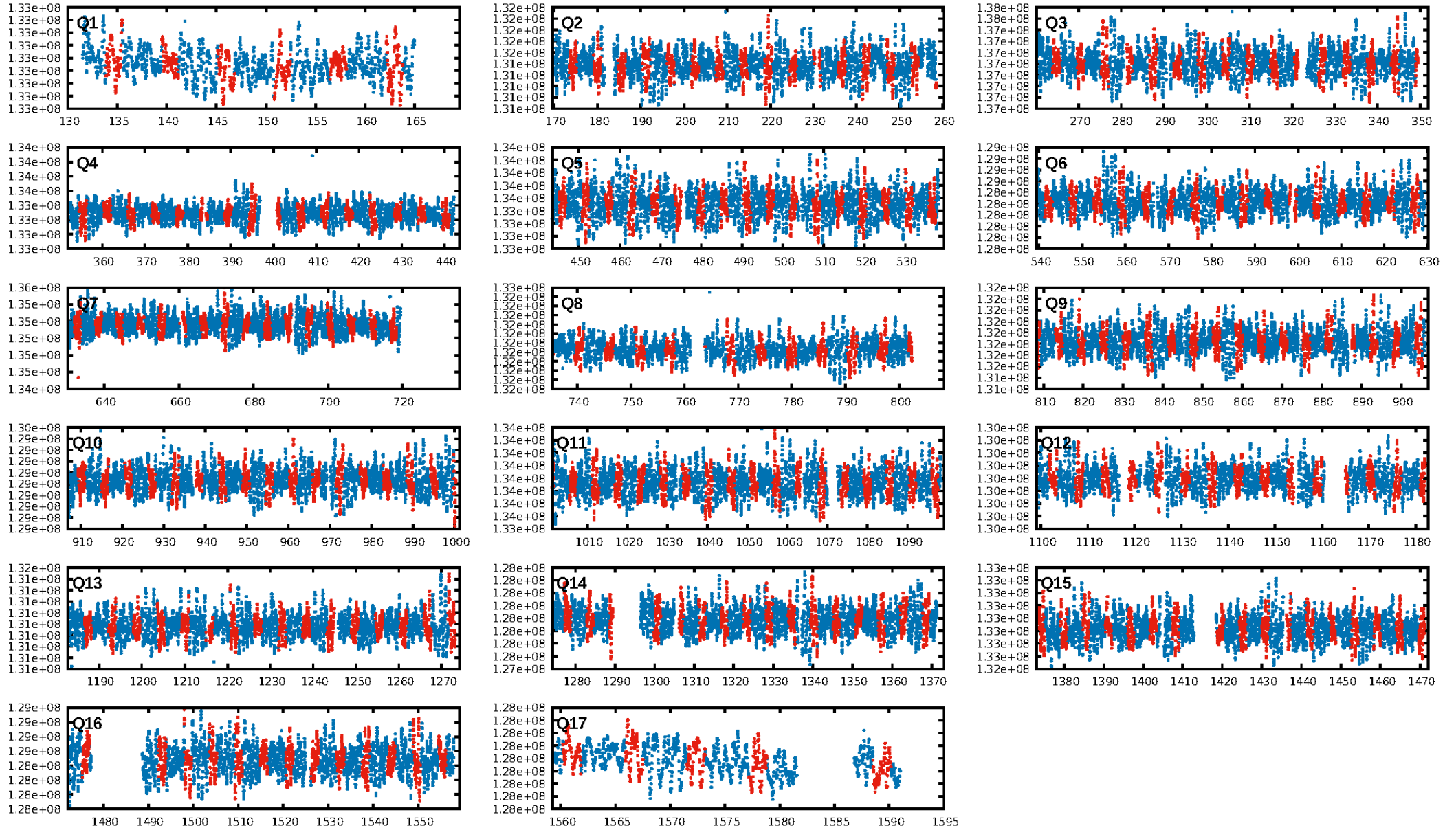
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [5.23 σ]
LongPeriod-sig: 100.0% [132.36 σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 1.06e-17
RollingBand-fgt: 1.00 [234/234]
GhostDiagnostic-chr: 0.2911
Centroid-sig: 1.6%
Centroid-so: 3.313 arcsec [3.14 σ]
OotOffset-rm: 1.199 arcsec [0.94 σ]
KicOffset-rm: 11.828 arcsec [5.65 σ]
OotOffset-st: 0/0/0/2 [2]
KicOffset-st: 0/4/2/2 [8]
DiffImageQuality-fgm: 0.38 [3/8]
DiffImageOverlap-fno: 0.00 [0/17]

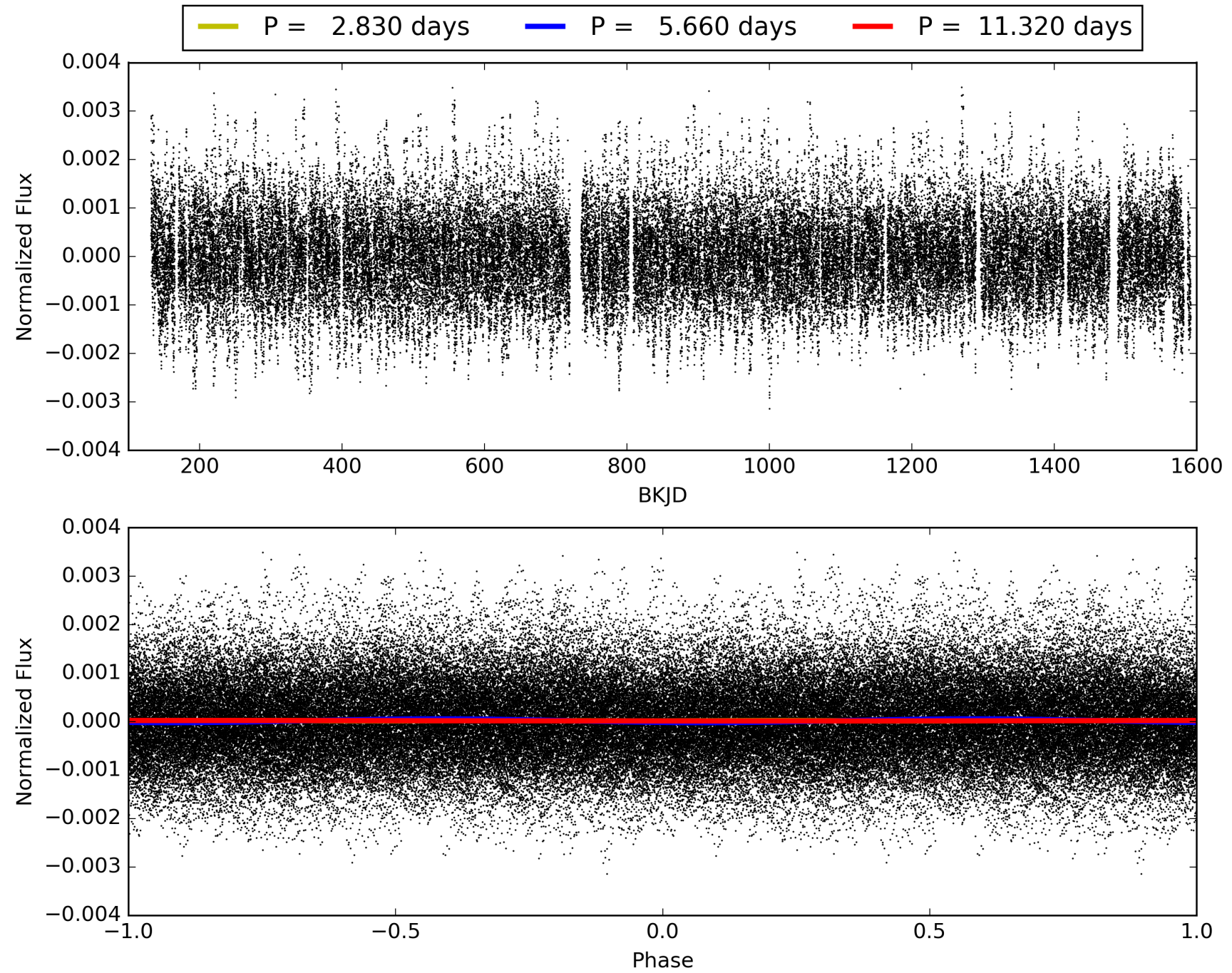
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 07:49:17 Z

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

TCE 008712155-01, PDC Light Curves

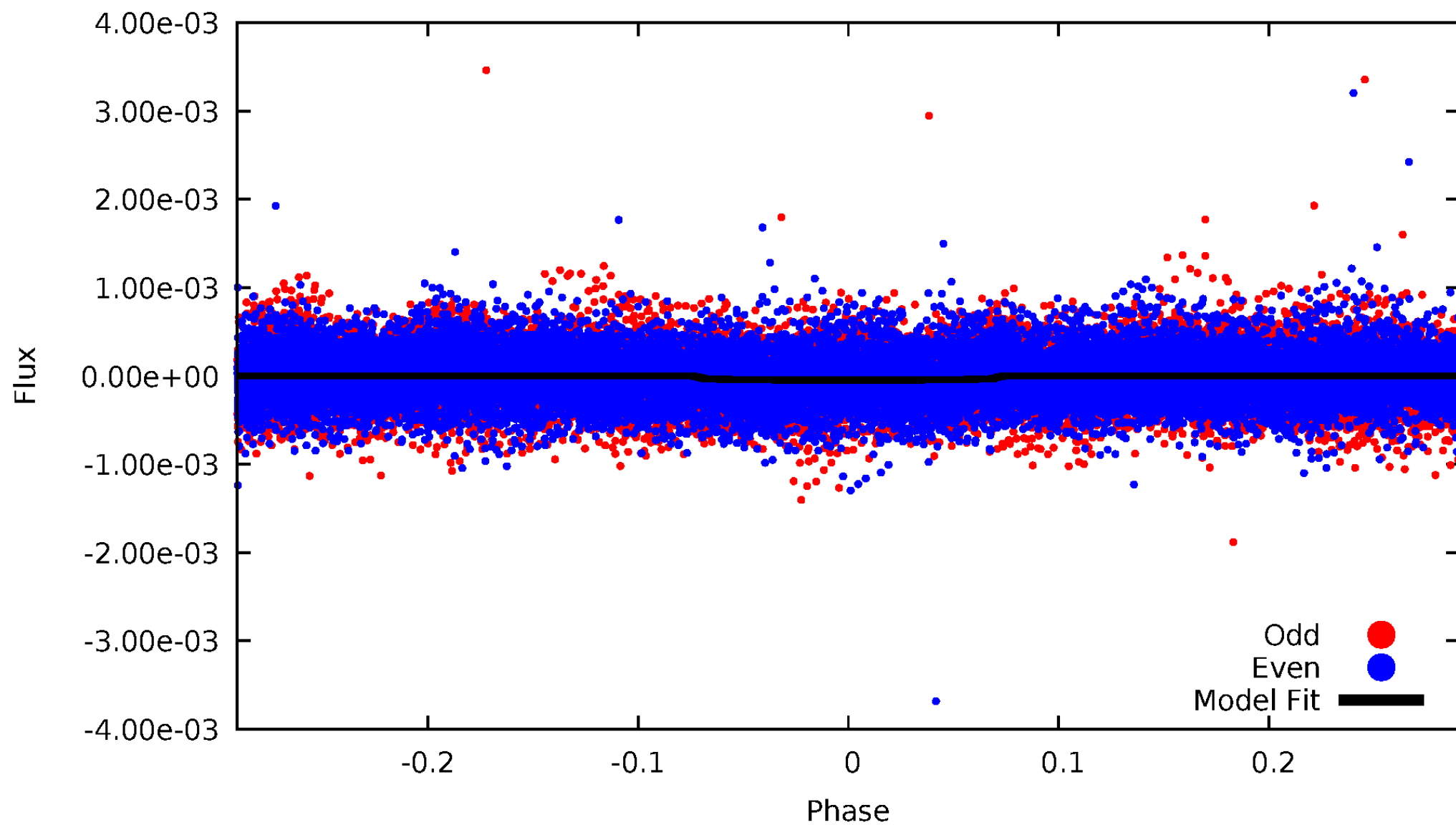


TCE 008712155-01



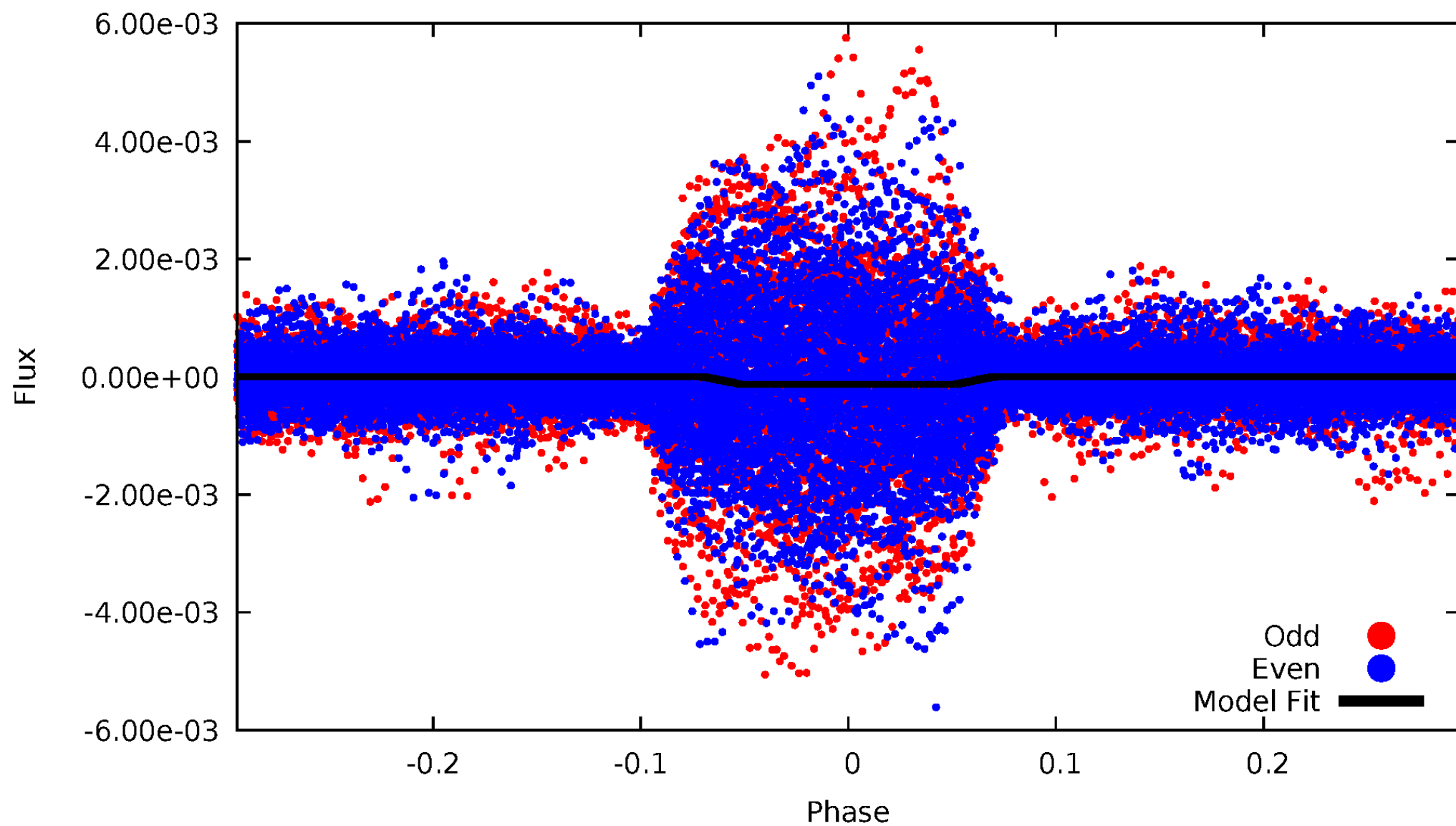
DV Odd/Even

TCE 008712155-01

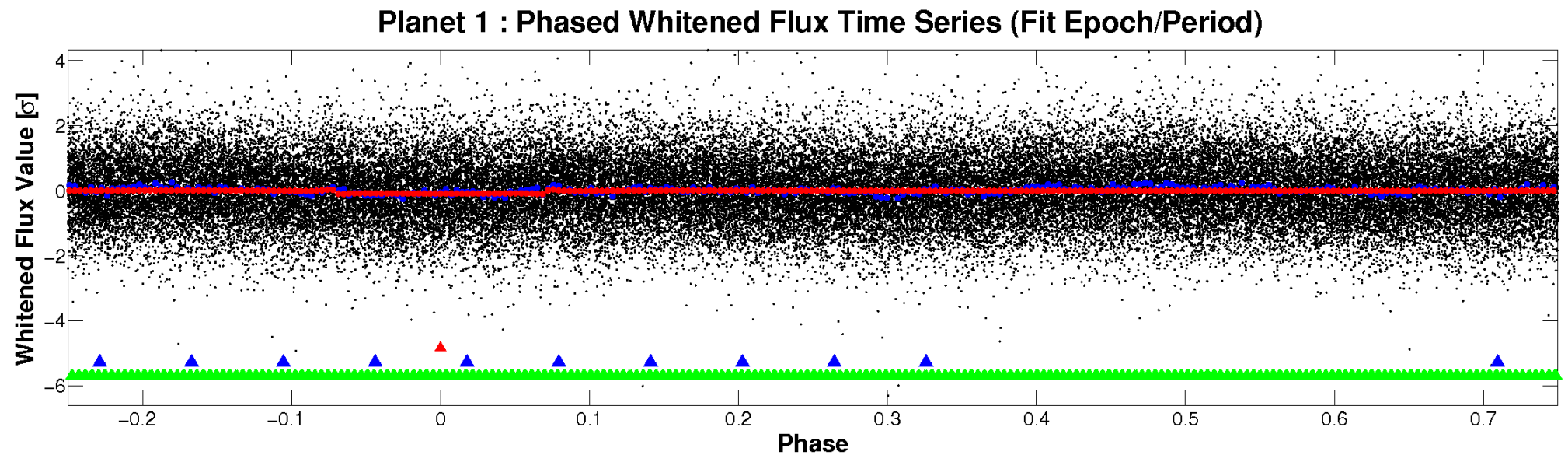
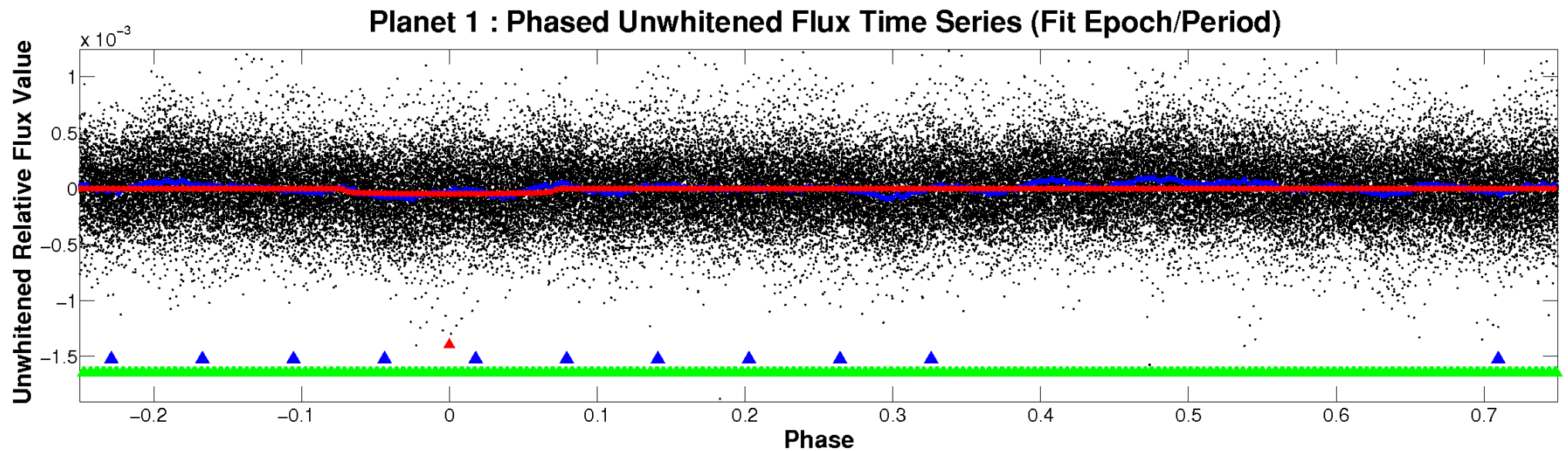


ALT Odd/Even

TCE 008712155-01

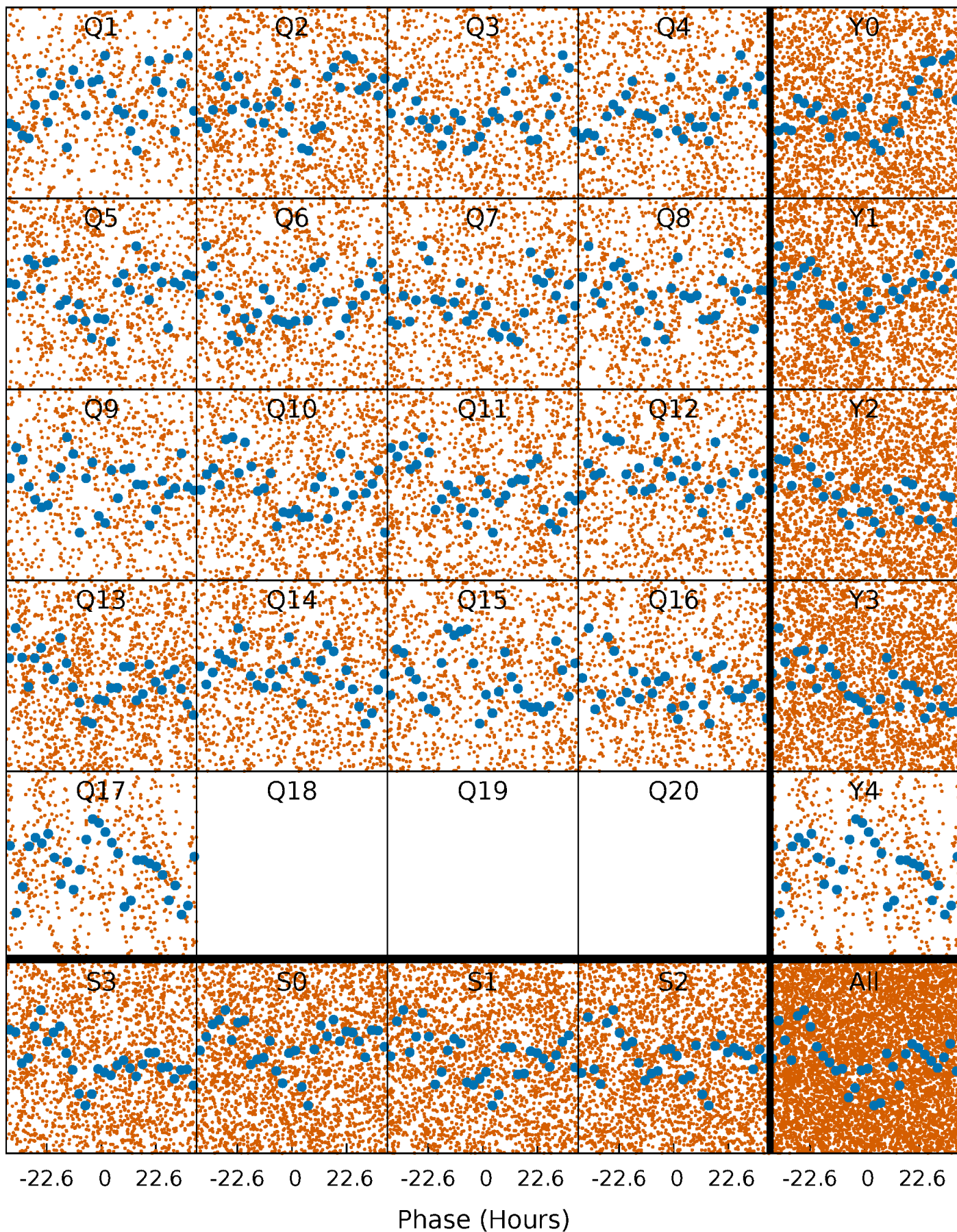


Non-Whitened Vs. Whitened Light Curve



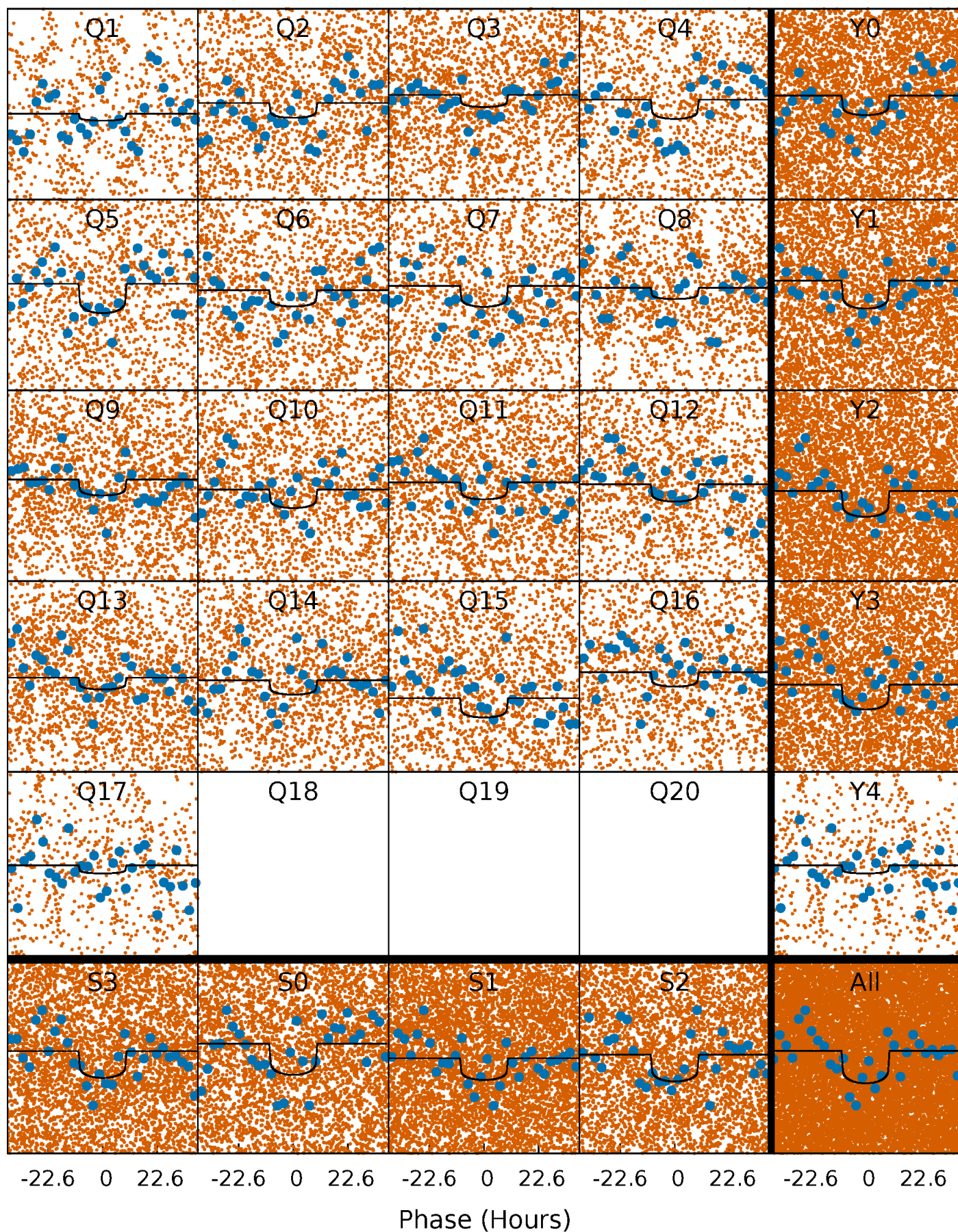
PDC Quarter-Phased Transit Curves

TCE 008712155-01 P= 5.660236 Days $T_0=134.658544$ (BKJD)



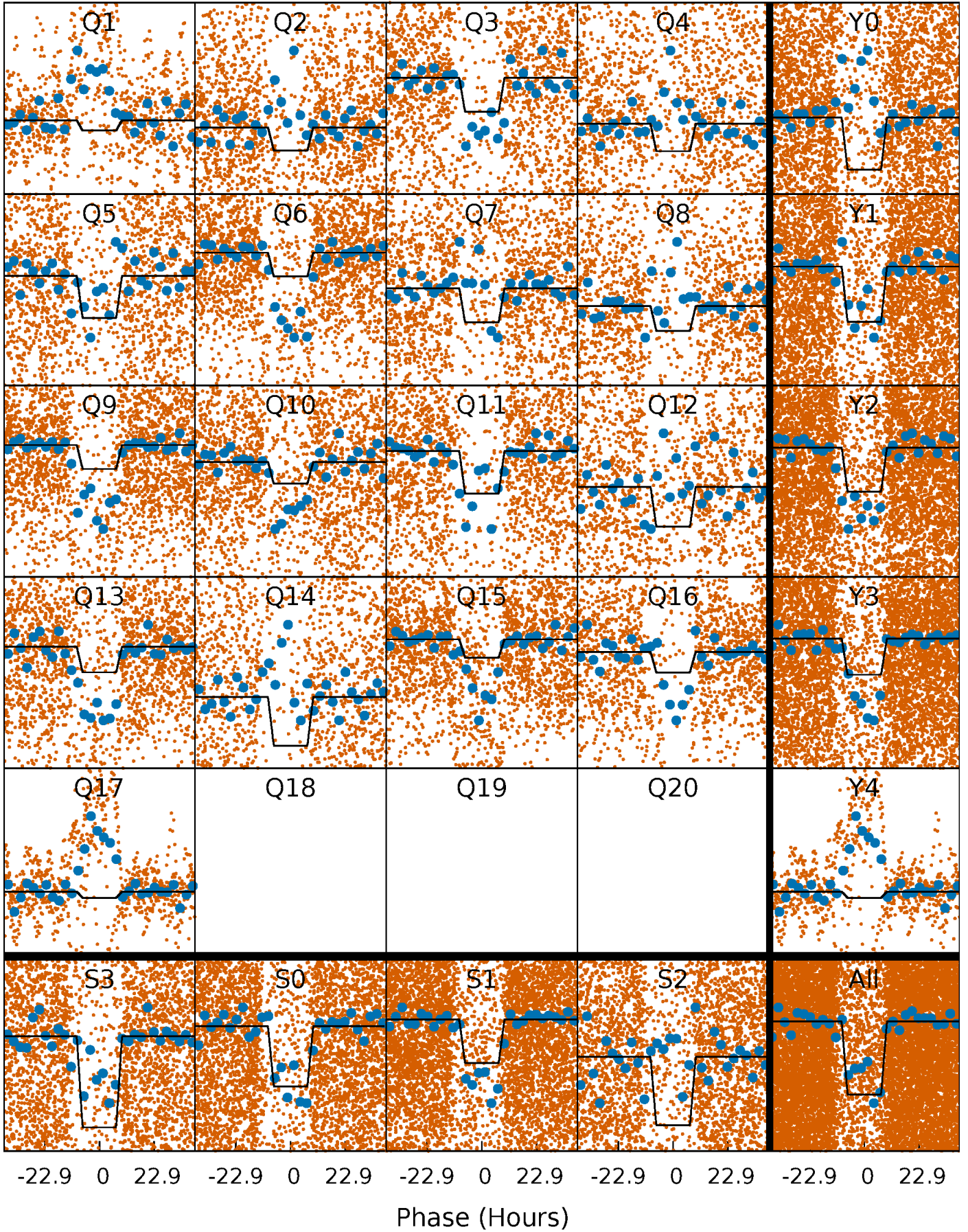
DV Quarter-Phased Transit Curves

TCE 008712155-01 P= 5.660236 Days $T_0=134.658544$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

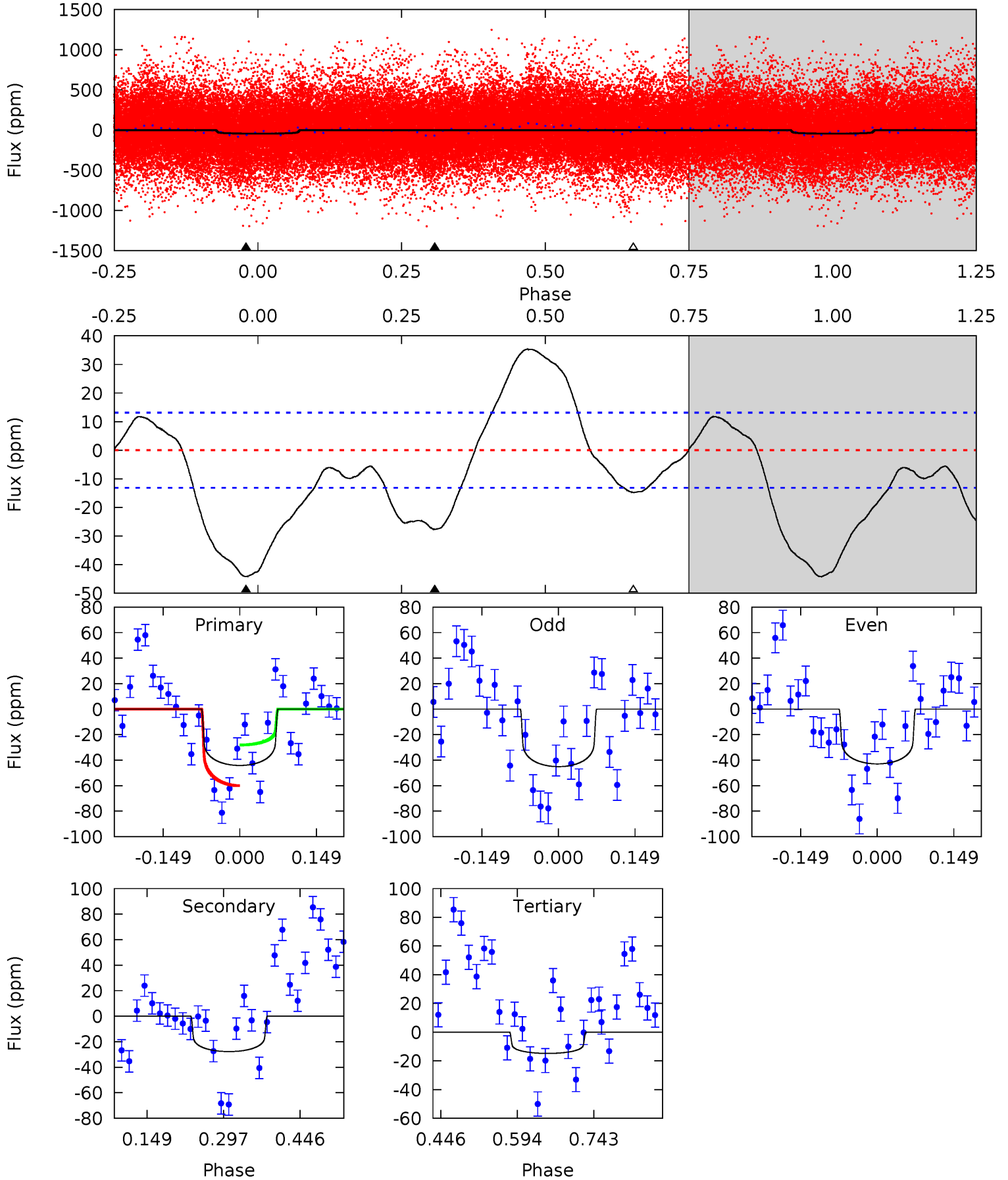
TCE 008712155-01 P= 5.660372 Days $T_0=134.643250$ (BKJD)



DV Model-Shift Uniqueness Test

008712155-01, P = 5.660236 Days, E = 128.998308 Days

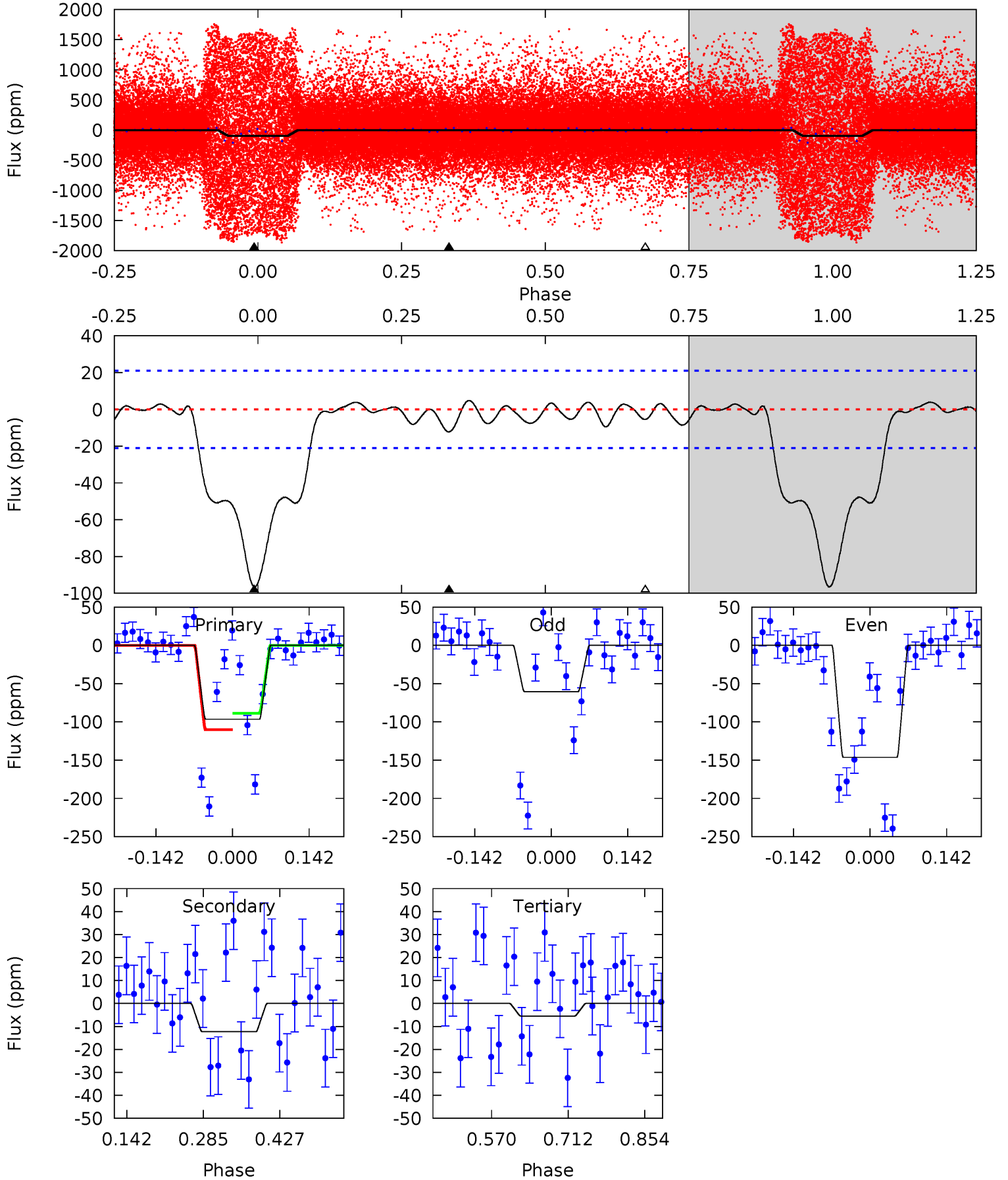
| Pri | Sec | Ter | Pos | FA ₁ | FA ₂ | F _{Red} | Pri-Ter | Pri-Pos | Sec-Ter | Sec-Pos | Odd-Evn | DMM | Shape | TAT |
|------|------|------|-----|-----------------|-----------------|------------------|---------|---------|---------|---------|---------|------|-------|------|
| 15.0 | 9.43 | 5.04 | 0 | 4.48 | 1.44 | 5.51 | 10.00 | 15.0 | 4.39 | 9.43 | 0.37 | 0.94 | 0.44 | 5.50 |



Alt Model-Shift Uniqueness Test

008712155-01, P = 5.660372 Days, E = 128.982878 Days

| Pri | Sec | Ter | Pos | FA ₁ | FA ₂ | F _{Red} | Pri-Ter | Pri-Pos | Sec-Ter | Sec-Pos | Odd-Evn | DMM | Shape | TAT |
|------|------|------|-----|-----------------|-----------------|------------------|---------|---------|---------|---------|---------|------|-------|------|
| 20.6 | 2.62 | 1.17 | 0 | 4.49 | 1.47 | 0.77 | 19.4 | 20.6 | 1.45 | 2.62 | 9.11 | 27.3 | 0.05 | 2.32 |



Stellar Parameters For KIC 008712155

| | $T_{\text{eff}} (K)$ | $\log(g)$ | [Fe/H] | $R (R_{\odot})$ | $M (M_{\odot})$ | $p_{\star} (\text{g}\cdot\text{cm}^{-3})$ |
|--------|----------------------|---------------------------|----------------------------|---------------------------|---------------------------|---|
| | 6837^{+214}_{-285} | $3.669^{+0.569}_{-0.100}$ | $-0.380^{+0.300}_{-0.300}$ | $2.997^{+0.425}_{-1.594}$ | $1.530^{+0.186}_{-0.435}$ | $0.080^{+0.566}_{-0.025}$ |
| | +3%/-4% | +16%/-3% | +79%/-79% | +14%/-53% | +12%/-28% | +707%/-31% |
| 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 008712155-01 / KOI

| Detrend | Depth (ppm) | $R_p (R_{\oplus})$ | $T_{\text{max}} (K)$ | $T_{\text{obs}} (K)$ | A_{obs} |
|---------|-------------|------------------------|----------------------|----------------------|---------------------------|
| DV | -28 ± 3 | $2.12^{+0.44}_{-0.64}$ | 2642^{+185}_{-355} | 5911^{+498}_{-385} | 18^{+17}_{-6} |
| Alt. | -12 ± 5 | $3.47^{+0.60}_{-0.96}$ | 2633^{+194}_{-388} | 4009^{+309}_{-392} | $3.034^{+2.487}_{-1.310}$ |

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

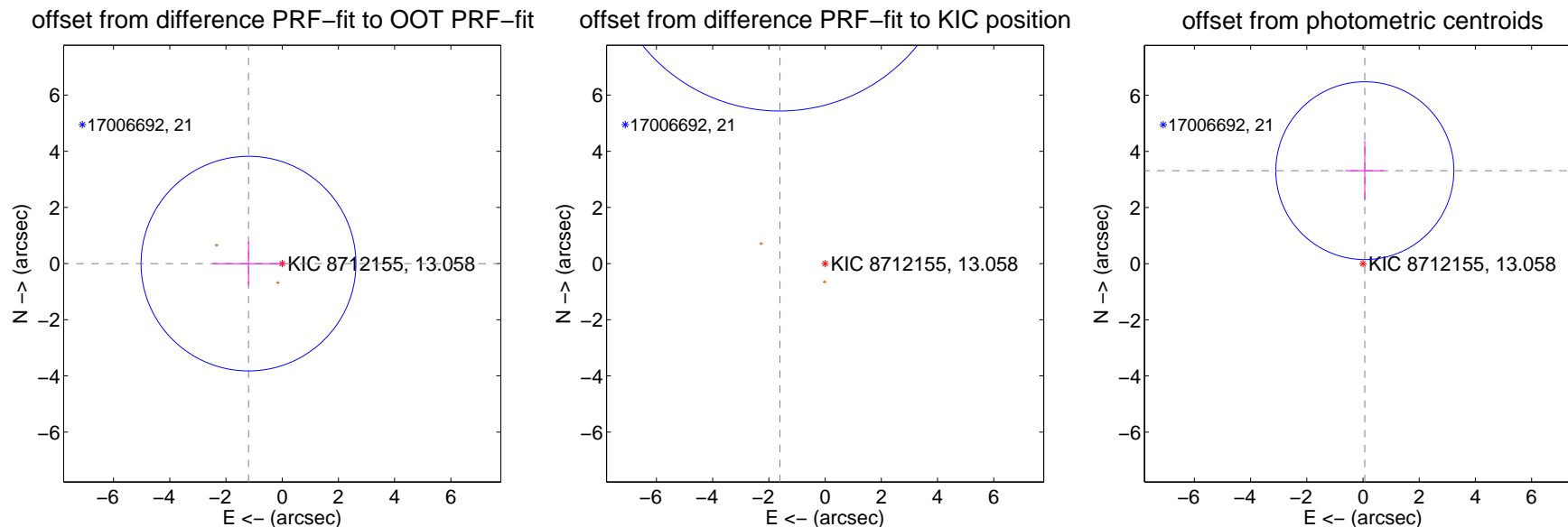
DV Centroid Data

Supplemental centroid analysis for 008712155-01. Kepler magnitude: 13.06. Transit SNR 8.39

There are 3 quarters with good PRF difference image offsets

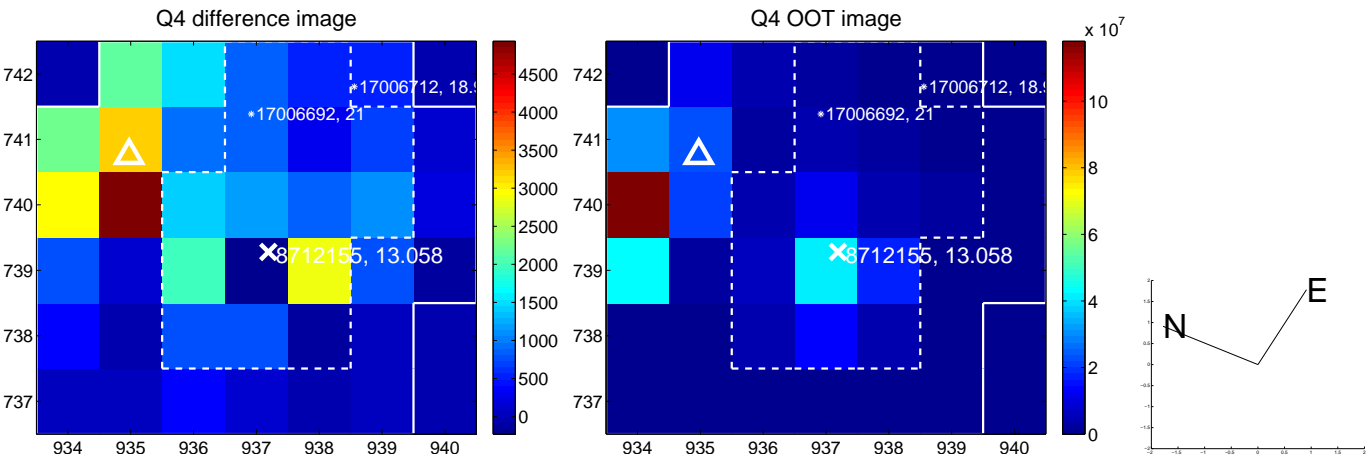
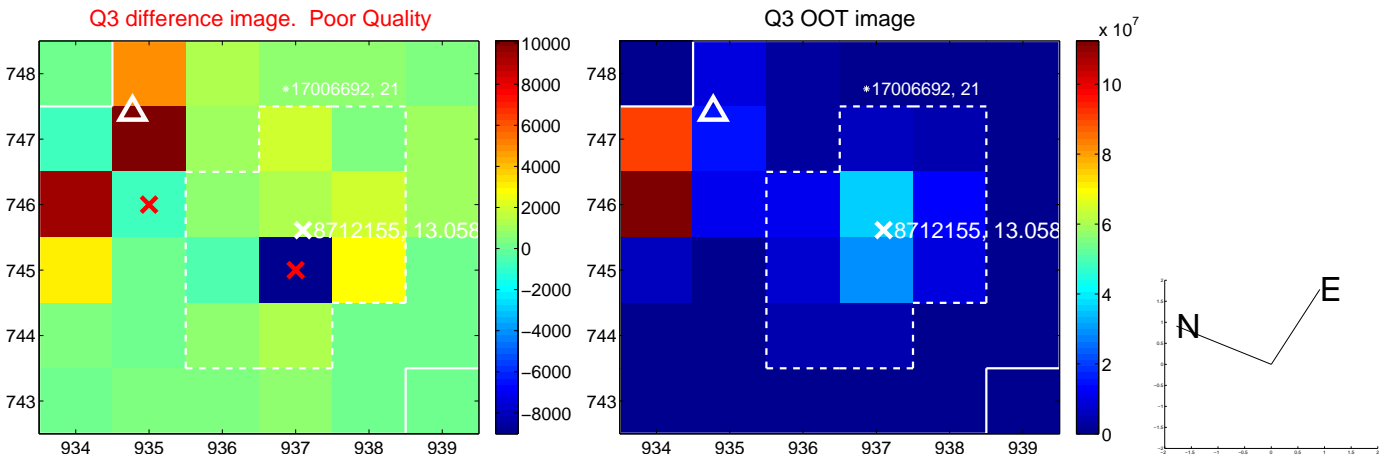
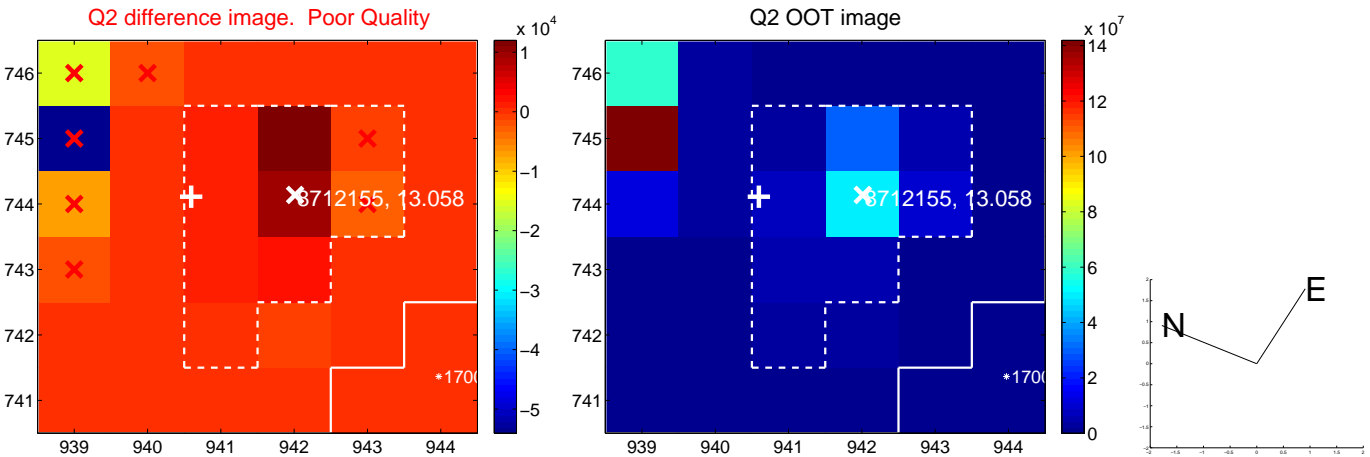
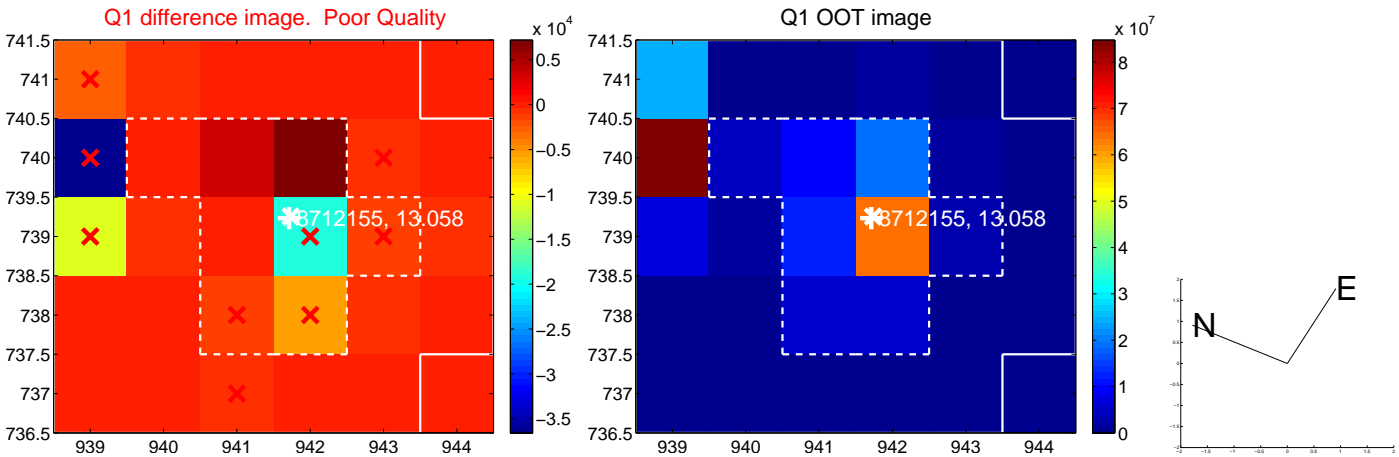
The direct PRF centroid is offset from the target star catalog position by about 0.14 arcsec

| | Distance in arcsec | Distance / σ | Δ RA | Δ Dec |
|---|--------------------------------------|---------------------|-------------------|--------------------|
| PRF-fit source offset from OOT | 1.199 ± 1.274 | 0.94 | 1.199 ± 1.274 | -0.001 ± 0.781 |
| PRF-fit source offset from KIC position | 11.828 ± 2.095 | 5.65 | 1.606 ± 0.268 | 11.719 ± 2.104 |
| photometric centroid source offset | 3.31 ± 1.06 | 3.14 | -0.07 ± 0.68 | 3.31 ± 1.06 |

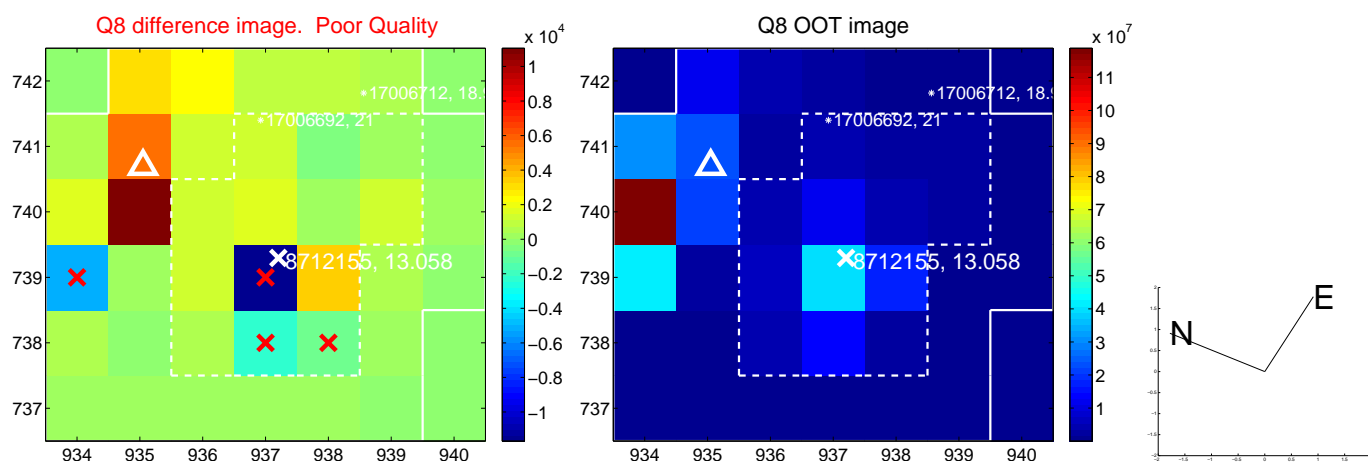
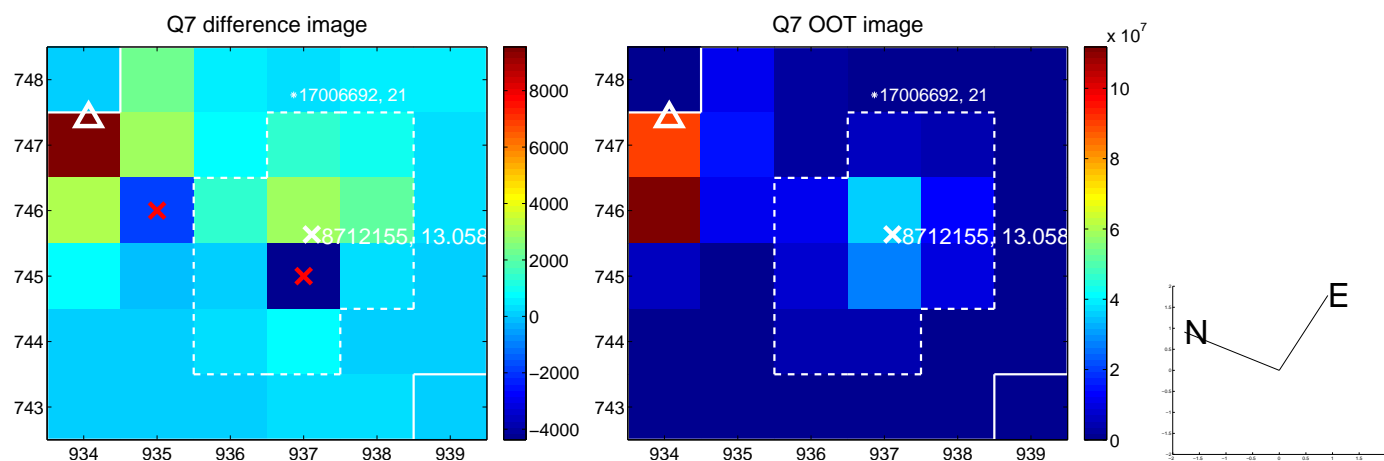
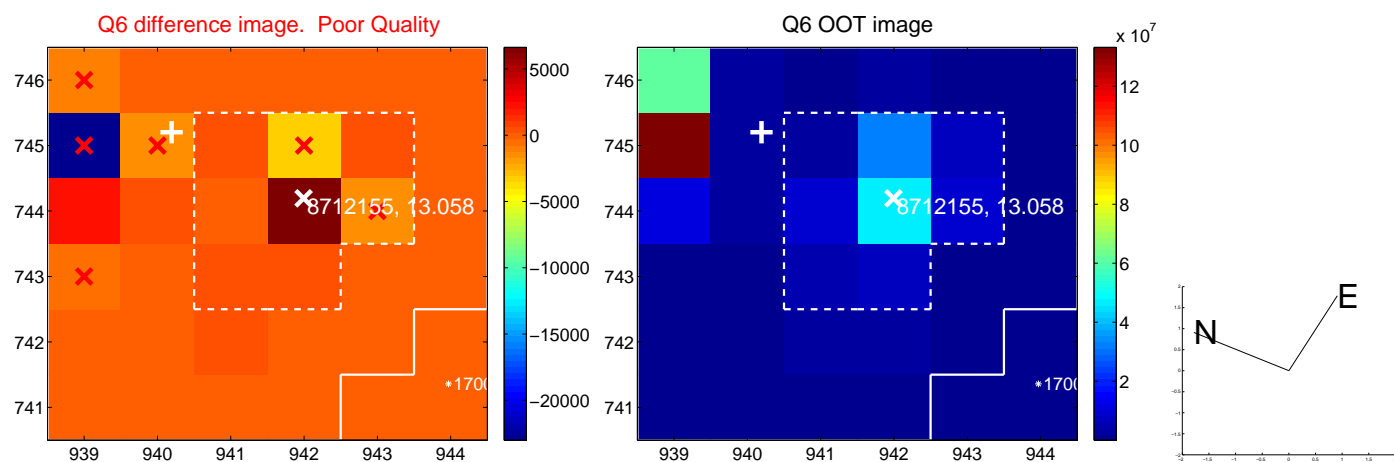
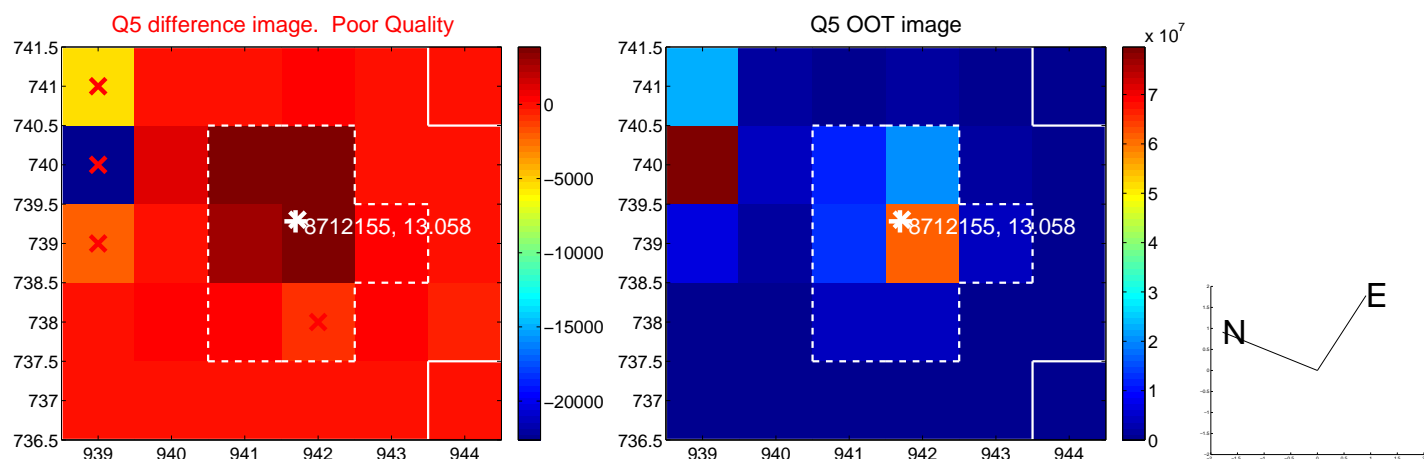


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

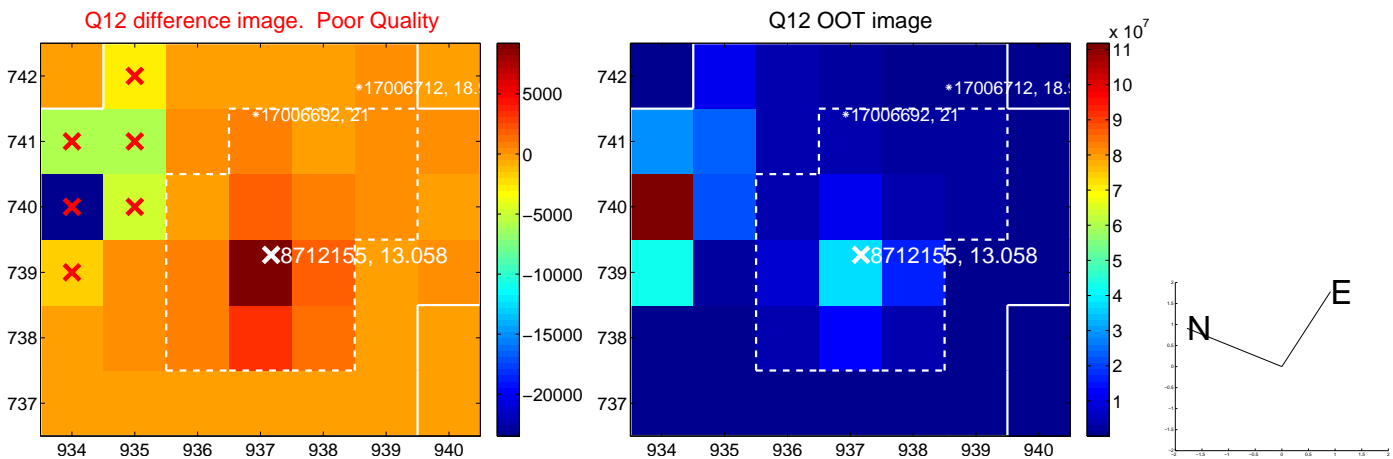
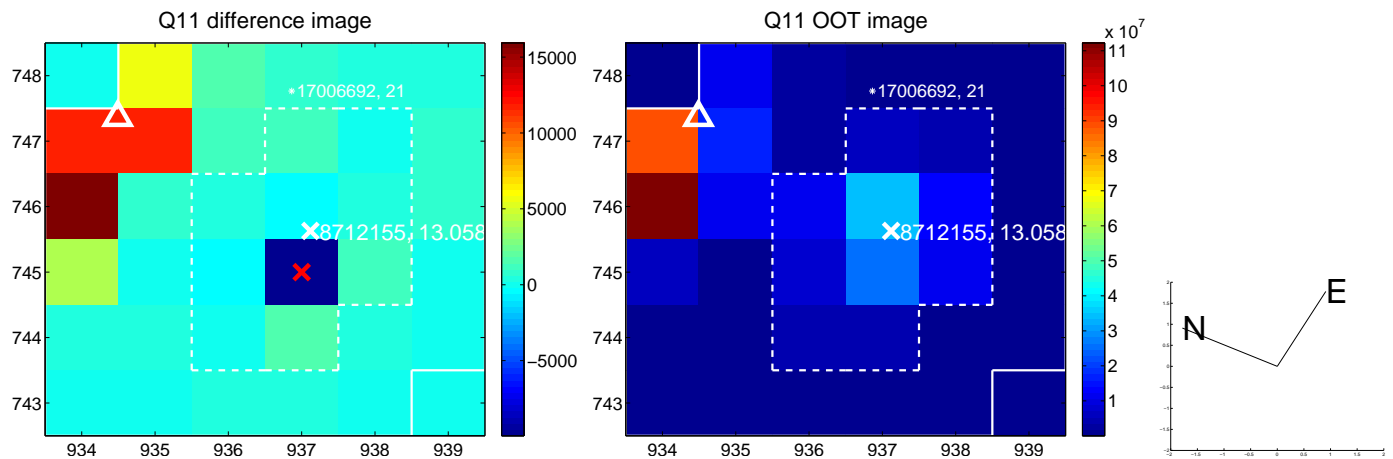
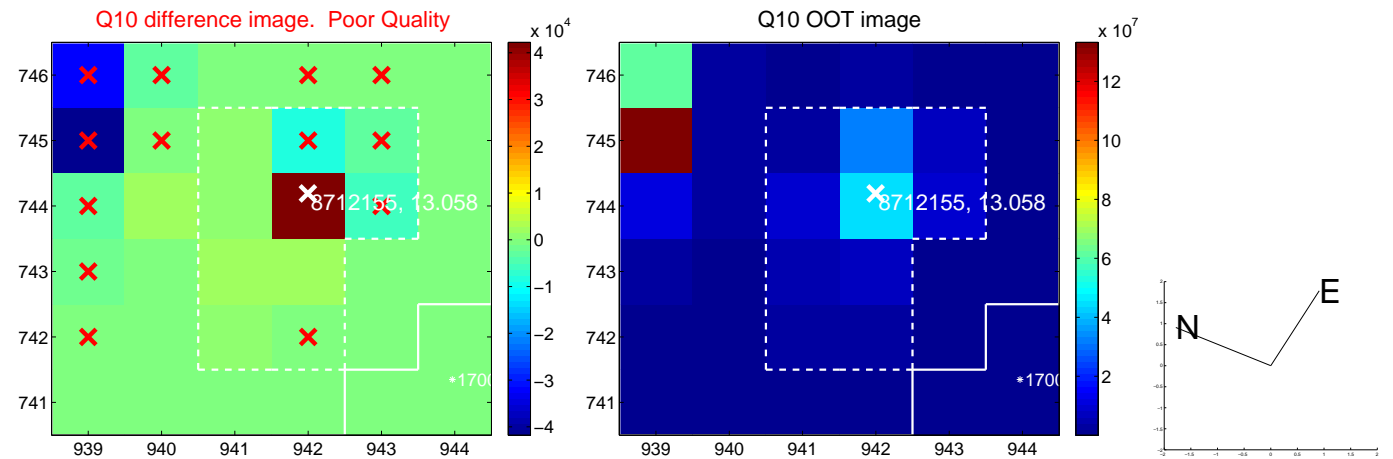
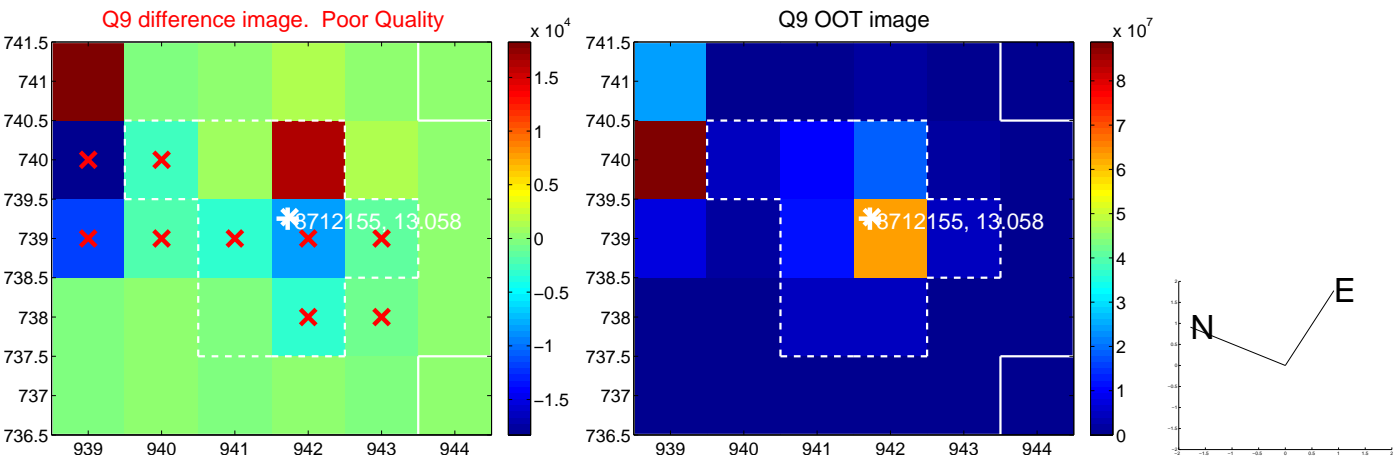
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



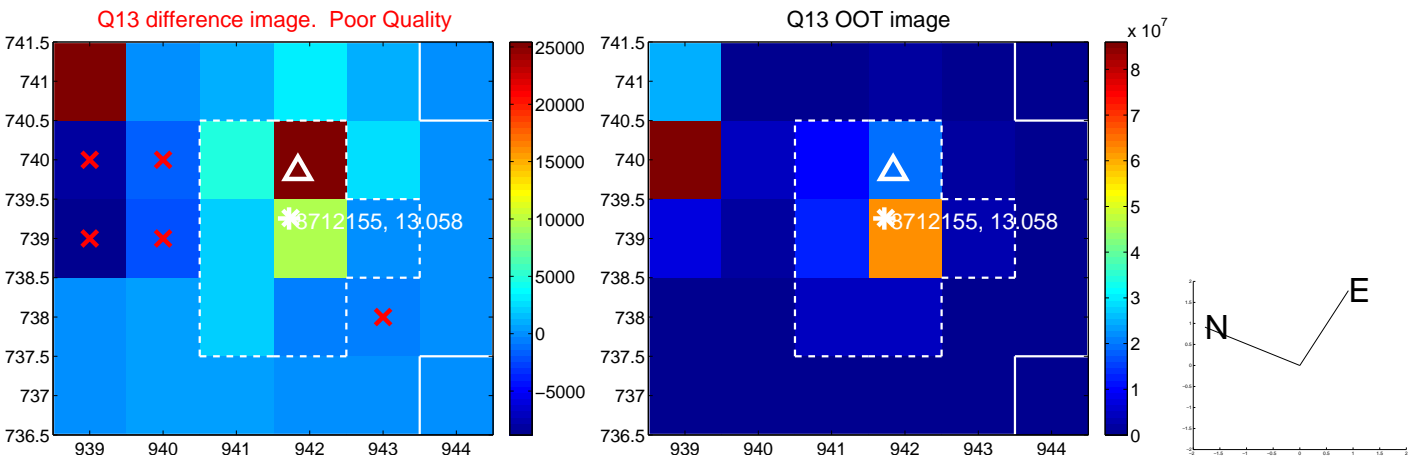
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



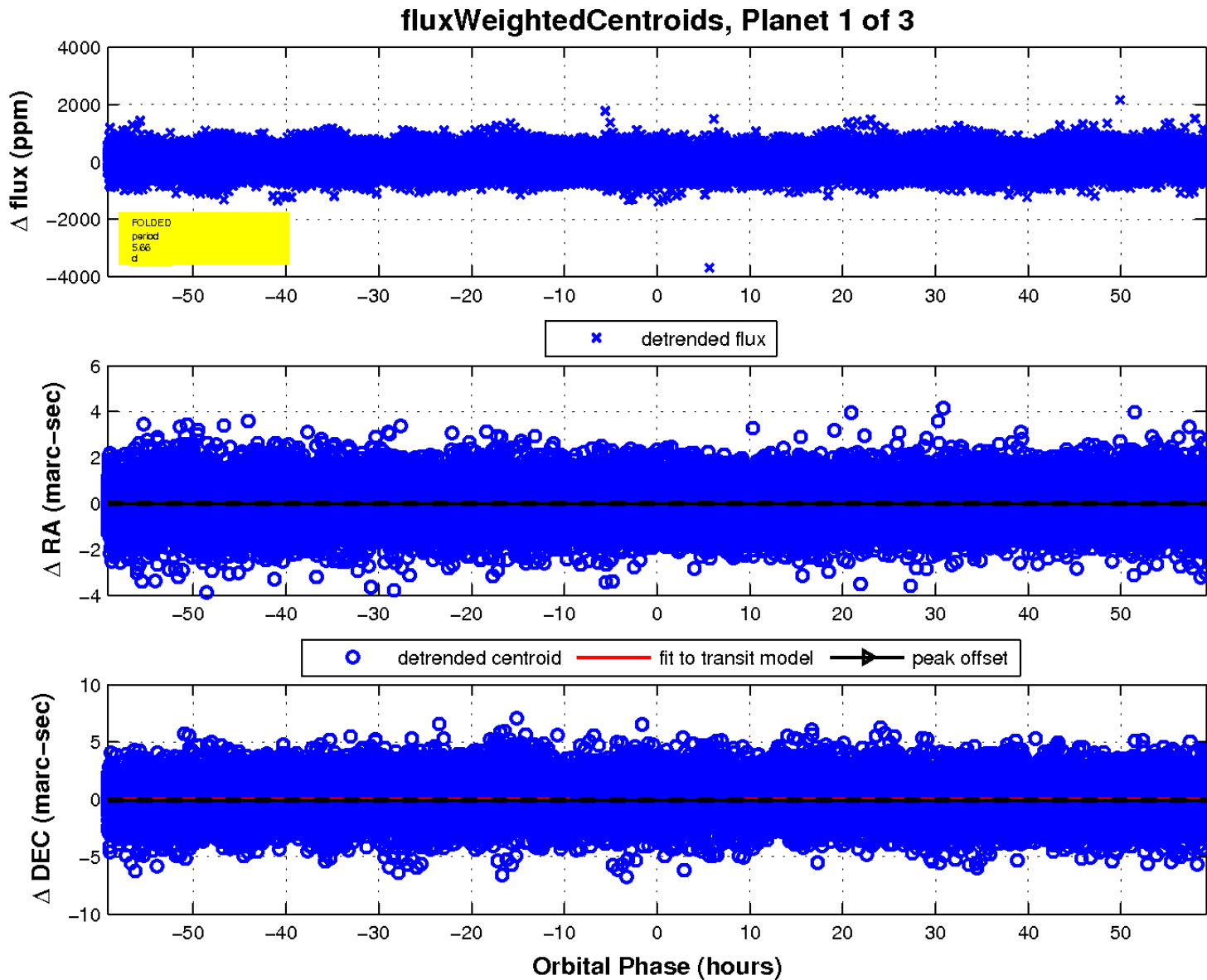
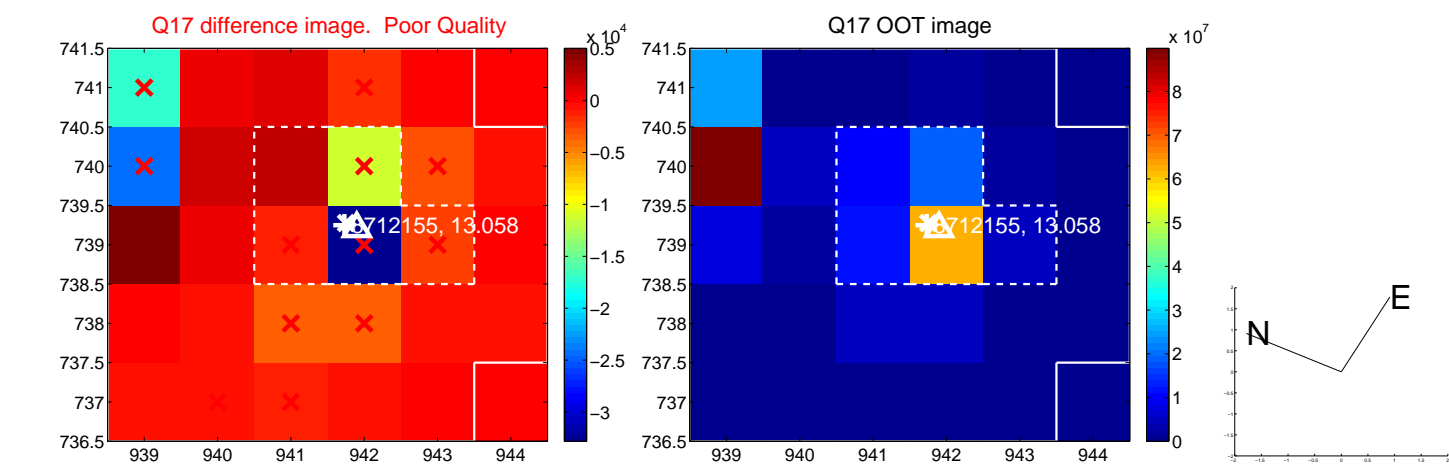
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



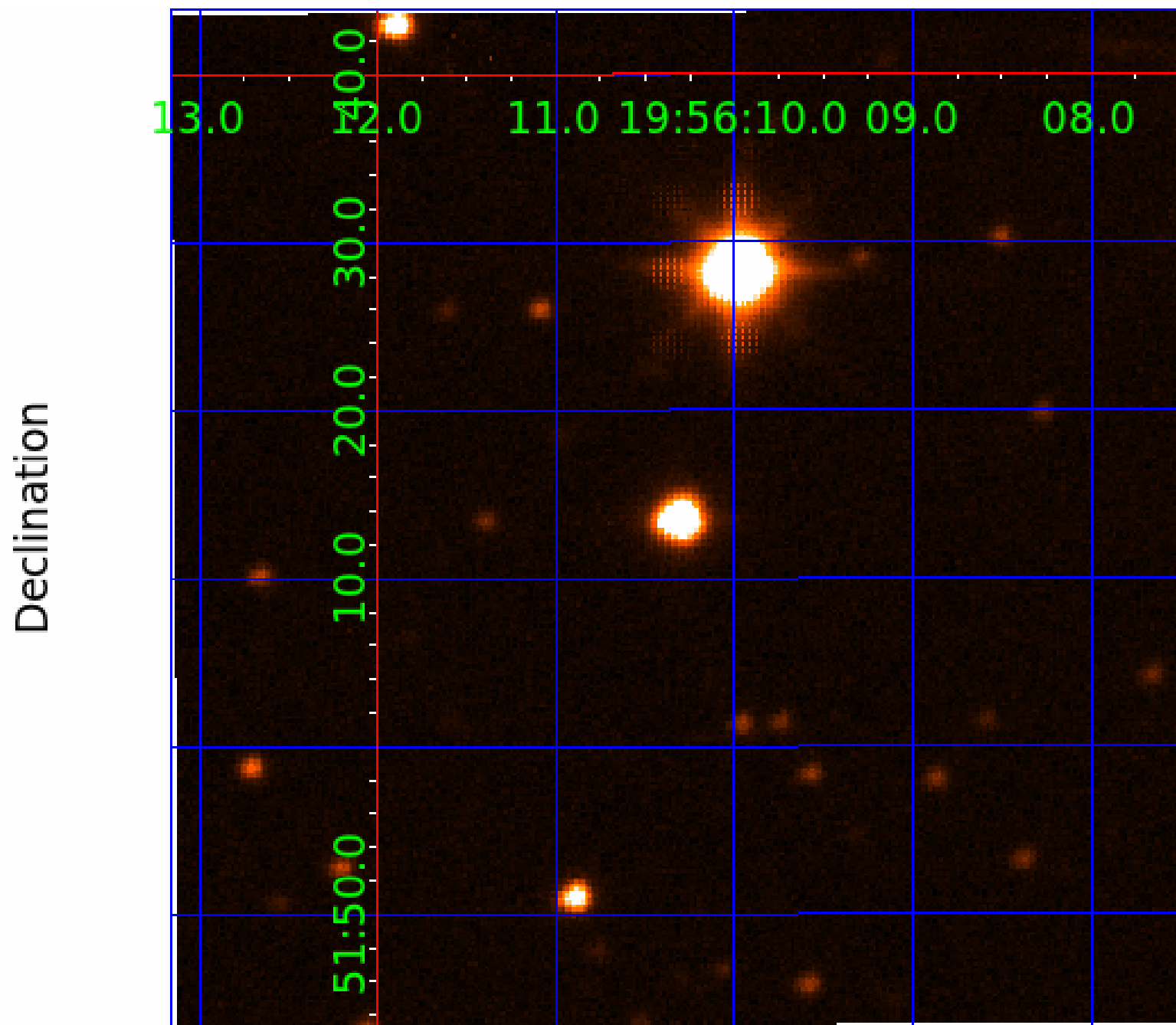
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



UKIRT Image



KIC 008712155

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}) |
|--------------|----------|------|---------------|--------------|-------------|------------------|-----|------|-----------------------------|-----------------|------------------------|------------------------|
| 008712155-01 | OBS | No | 5.660236 | 134.658544 | 46.2 | 19.739 | 8.8 | 8.4 | 3.00 | 6837 | 2.25 | 3427.95 |
| 008712155-02 | OBS | No | 136.194498 | 172.636925 | 353.8 | 13.062 | 9.6 | 6.1 | 3.00 | 6837 | 6.49 | 49.35 |
| 008712155-03 | OBS | No | 1.146999 | 132.192851 | 56.4 | 6.212 | 9.3 | 11.0 | 3.00 | 6837 | 2.63 | 28800.30 |

Robovetter Results

| TCE | Run Type | Disp | Score | N | S | C | E | Comments |
|--------------|----------|------|-------|---|---|---|---|--|
| 008712155-01 | OBS | FP | 0.00 | 1 | 0 | 1 | 0 | LPP_DV—MOD_NONUNIQ_DV—CENT_RESOLVED_OFFSET |
| 008712155-02 | OBS | FP | 0.00 | 1 | 0 | 1 | 0 | INDIV_TRANS_RUBBLE_SKYE—TRANS_GAPPED—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS—HALO_GHOST |
| 008712155-03 | OBS | FP | 0.00 | 1 | 0 | 0 | 0 | LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—CENT_FEW_MEAS |

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

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

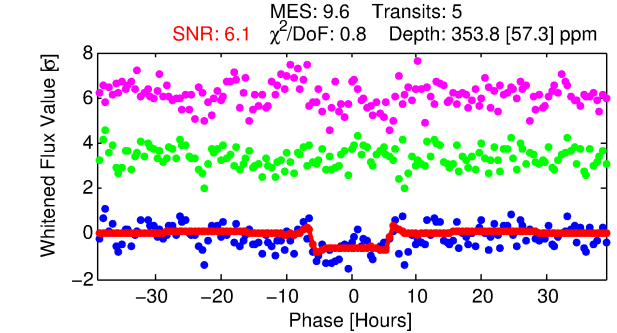
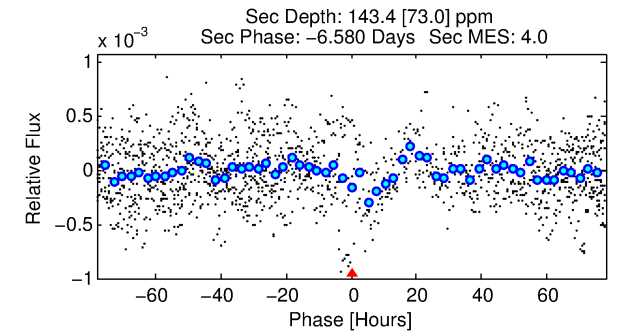
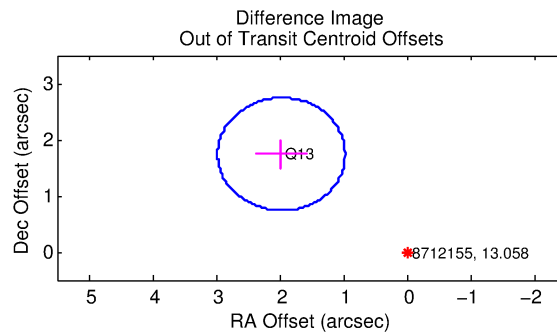
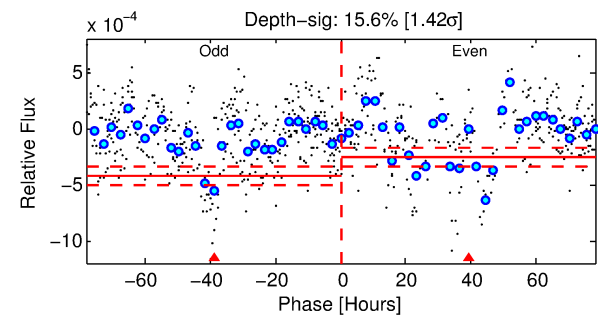
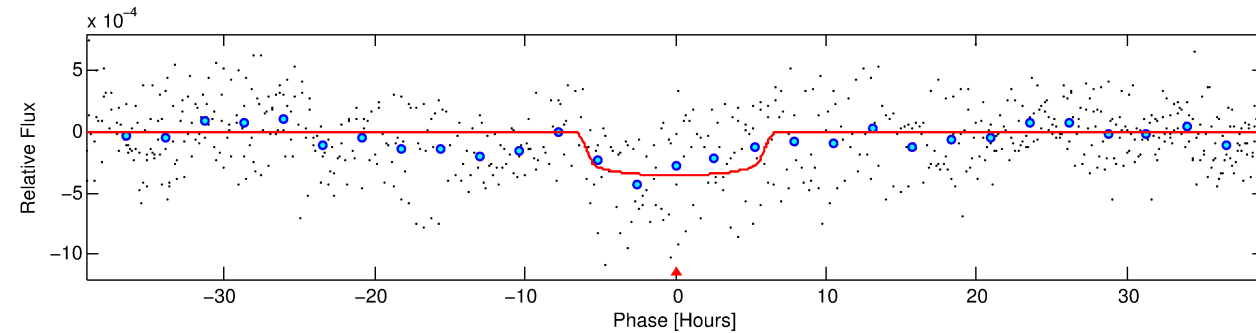
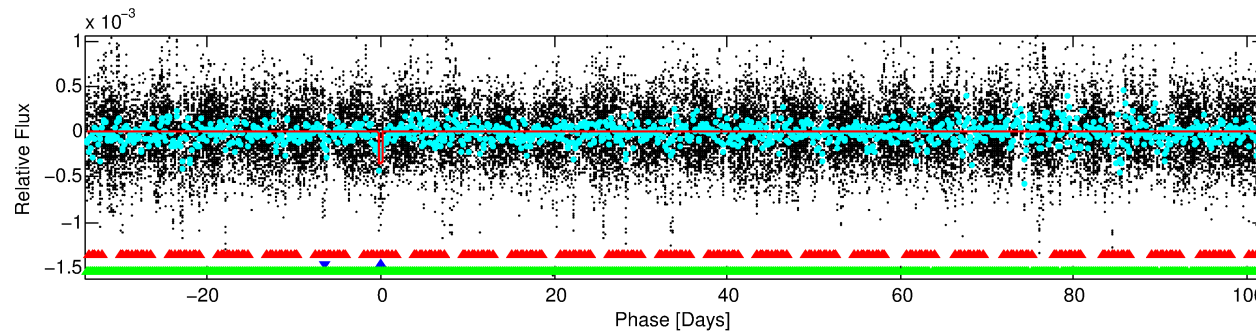
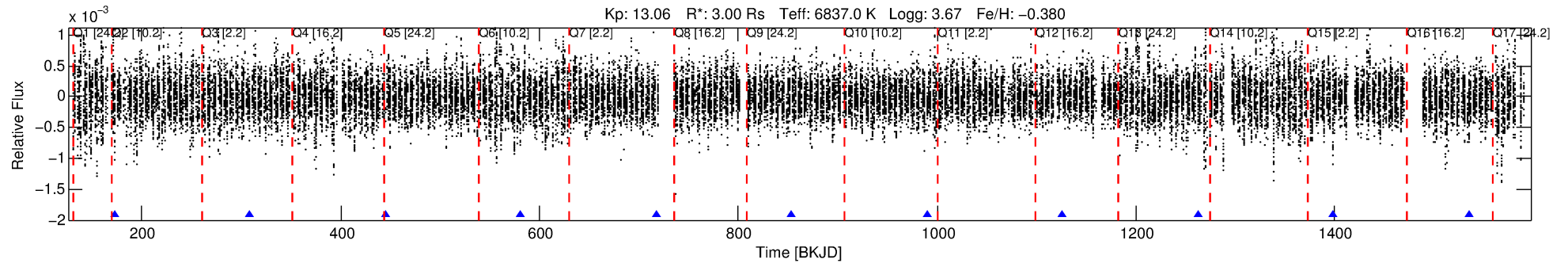
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 008712155-02

No Significant Match Found

DV One-Page Summary

KIC: 8712155 Candidate: 2 of 3 Period: 136.194 d



DV Fit Results:

Period = 136.19450 [0.00220] d
Epoch = 172.6369 [0.0158] BKJD
Rp/R* = 0.0198 [0.0022]
a/R* = 40.29 [15.34]
b = 0.89 [0.09]
Seff = 49.35 [47.24]
Teq = 676 [162] K
Rp = 6.49 [3.52] Re
a = 0.5969 [0.3358] AU
Ag = 667.93 [730.31] [0.91 σ]
Teffp = 5312 [768] K [5.91 σ]

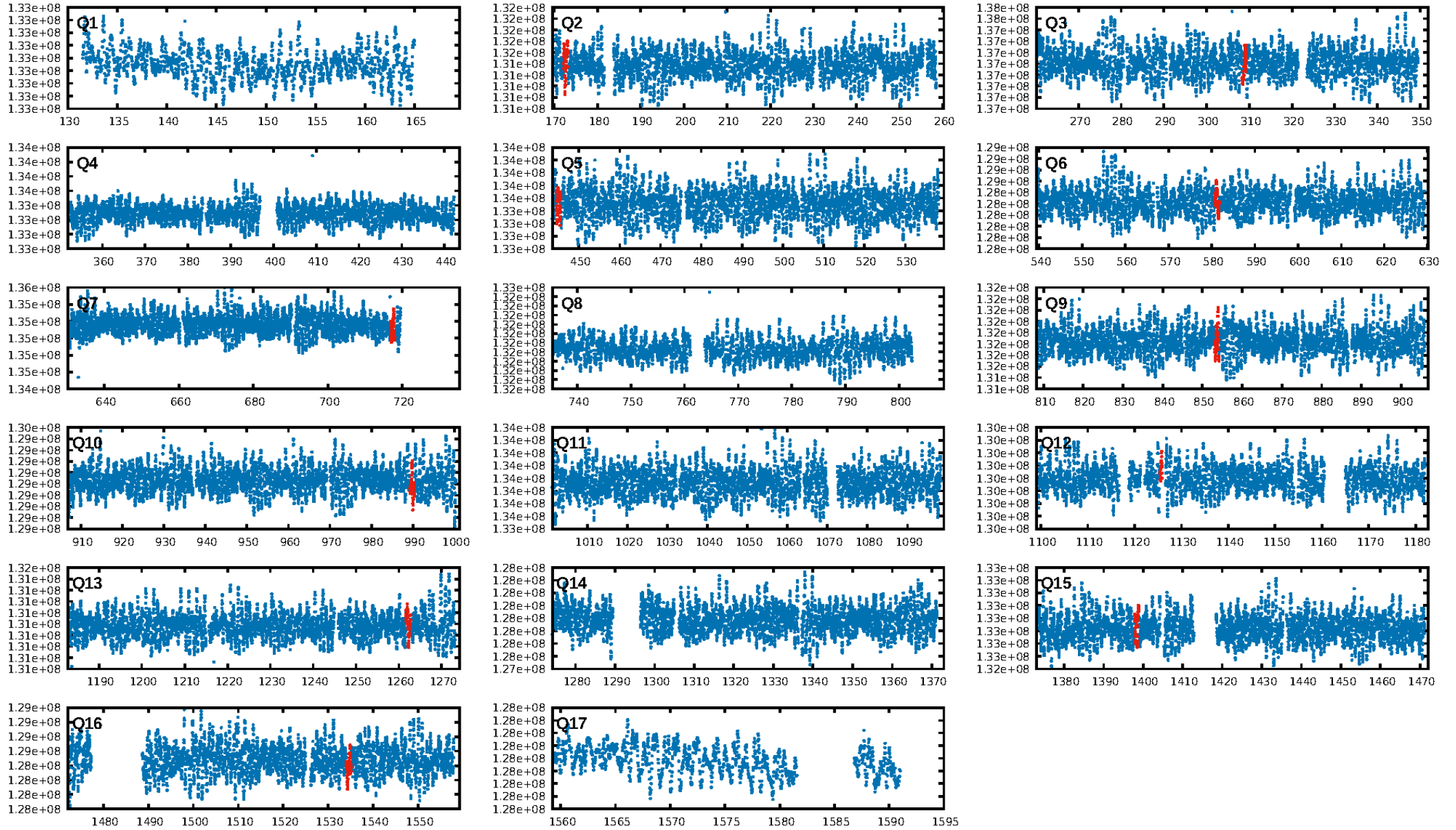
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [132.36 σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 10.8%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 1.55e-12
RollingBand-fgt: 1.00 [5/5]
GhostDiagnostic-chr: -0.2038
Centroid-sig: 64.1%
Centroid-so: 1.593 arcsec [1.94 σ]
OotOffset-rm: 2.630 arcsec [7.86 σ]
KicOffset-rm: 6.295 arcsec [1.38 σ]
OotOffset-st: 0/0/0/1 [1]
KicOffset-st: 0/2/0/1 [3]
DiffImageQuality-fgm: 0.00 [0/3]
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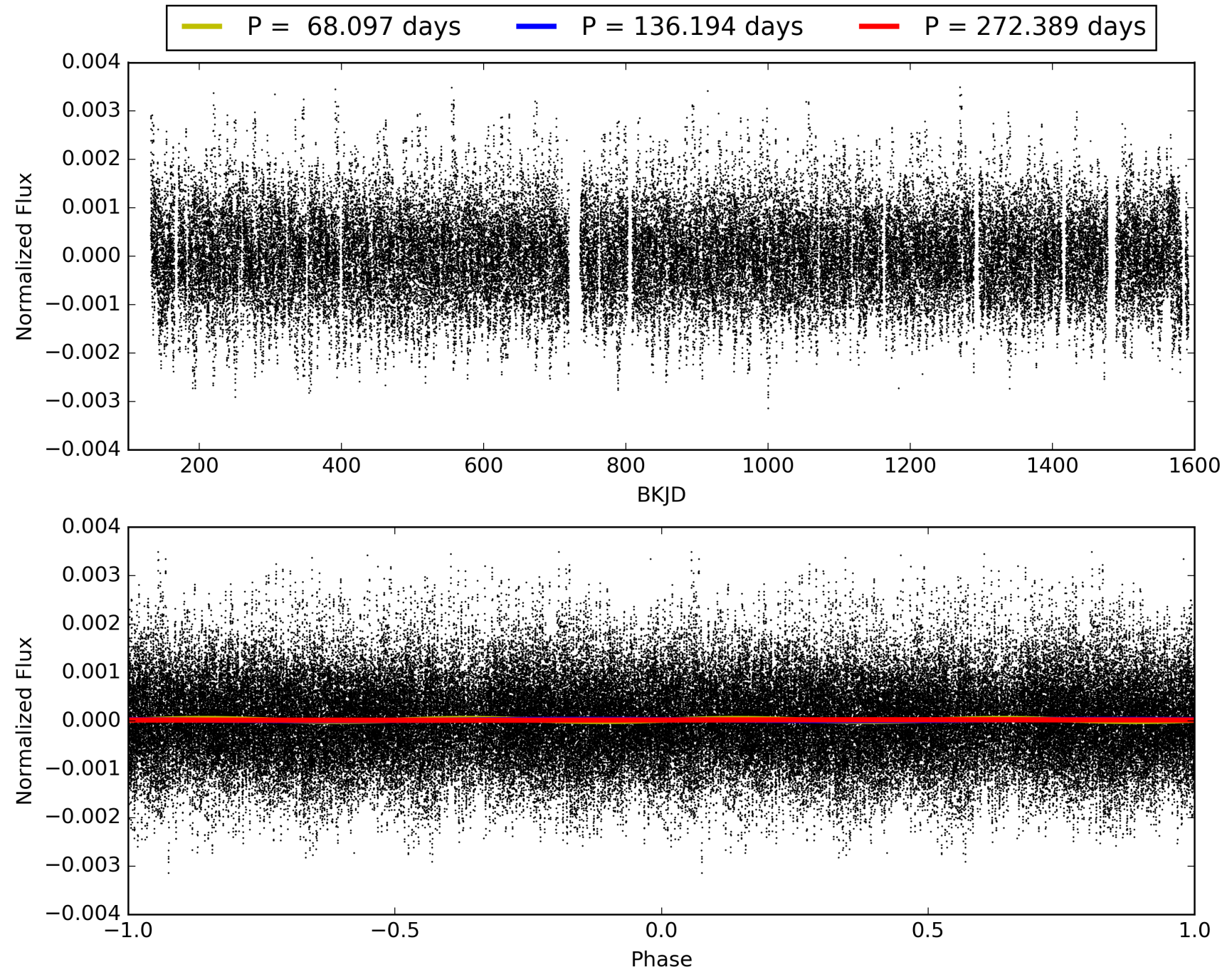
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 07:49:28 Z

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

TCE 008712155-02, PDC Light Curves

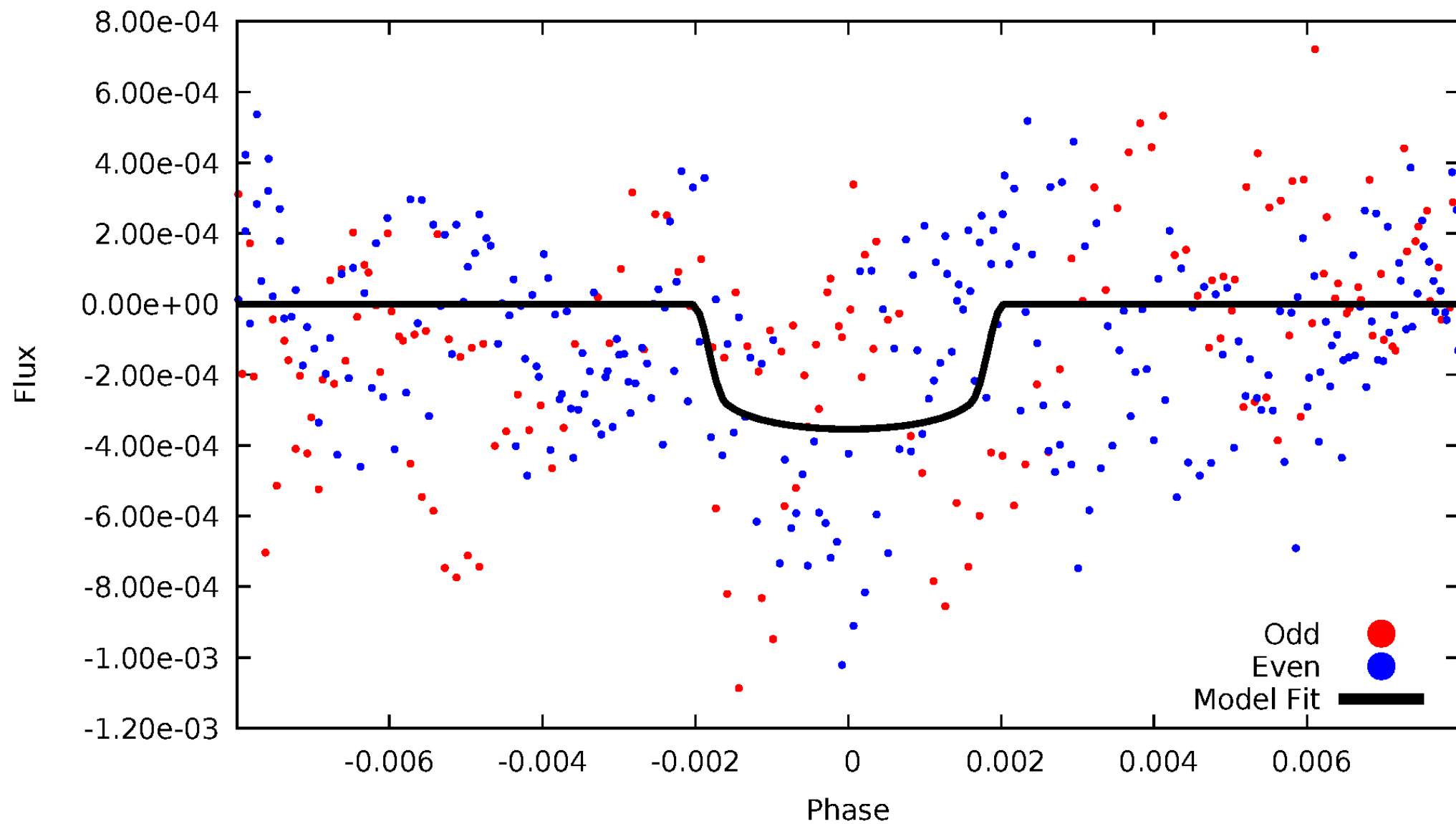


TCE 008712155-02



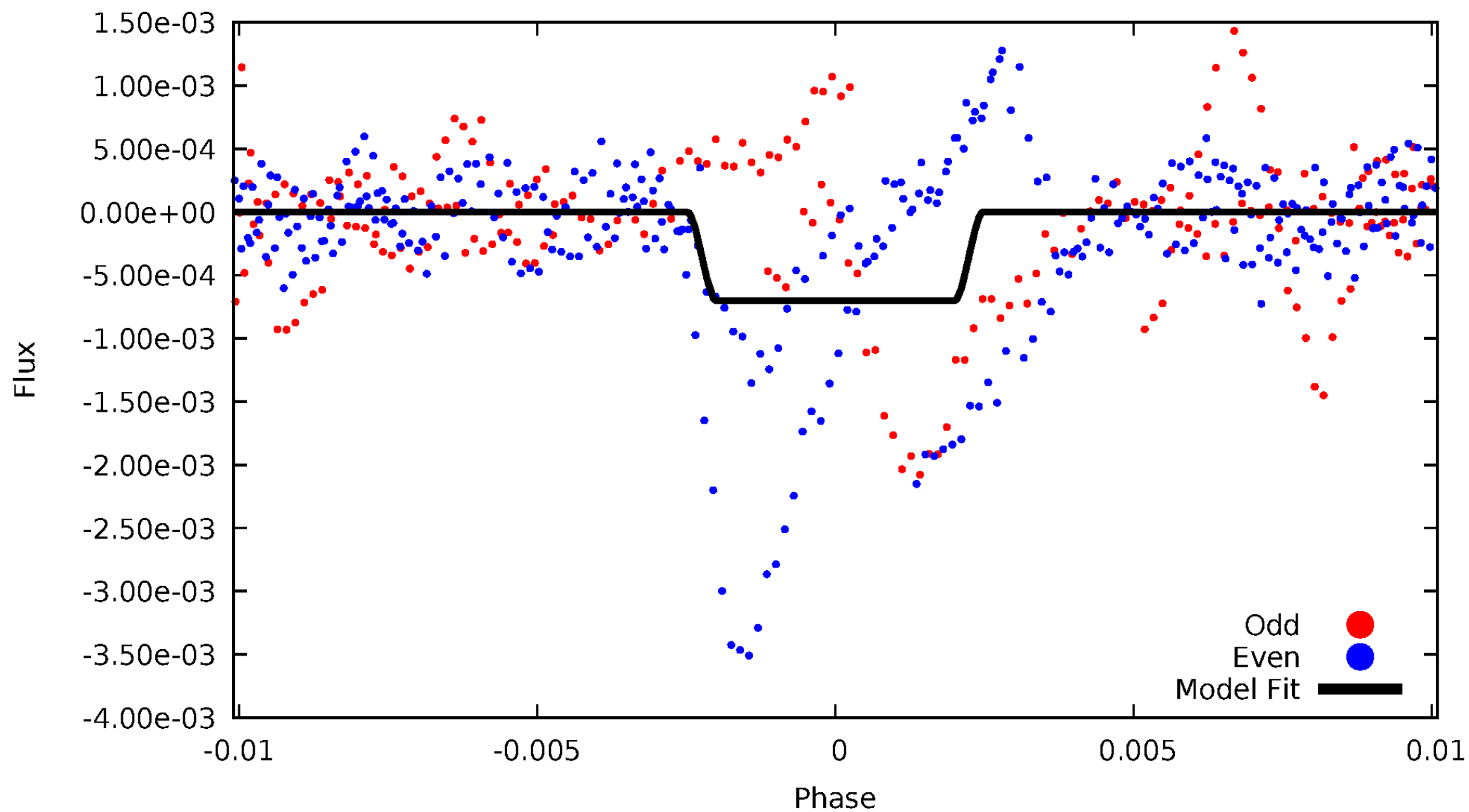
DV Odd/Even

TCE 008712155-02



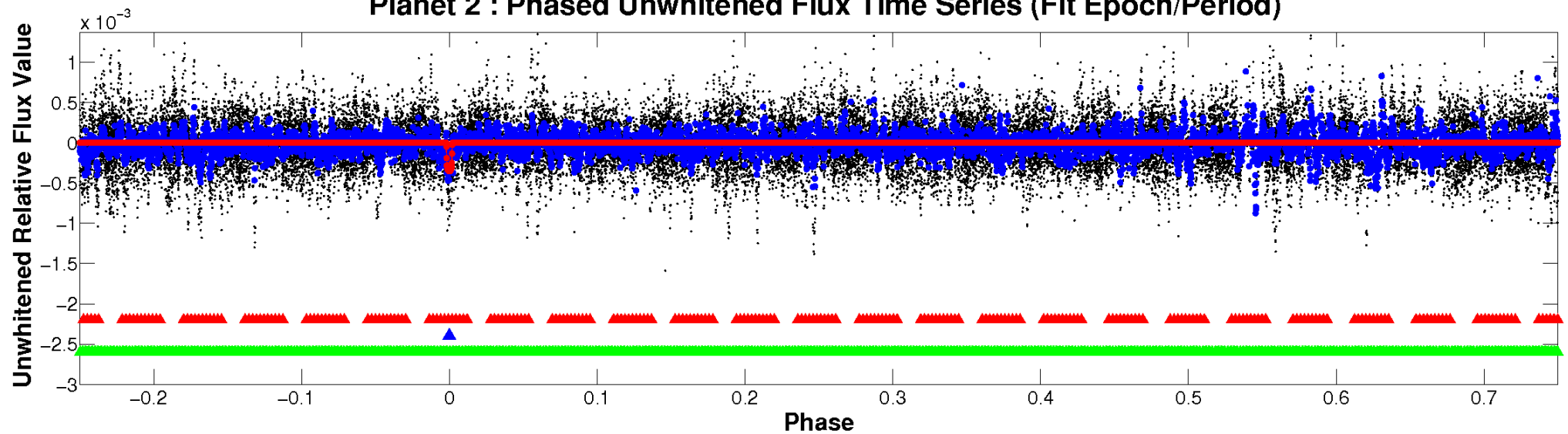
ALT Odd/Even

TCE 008712155-02

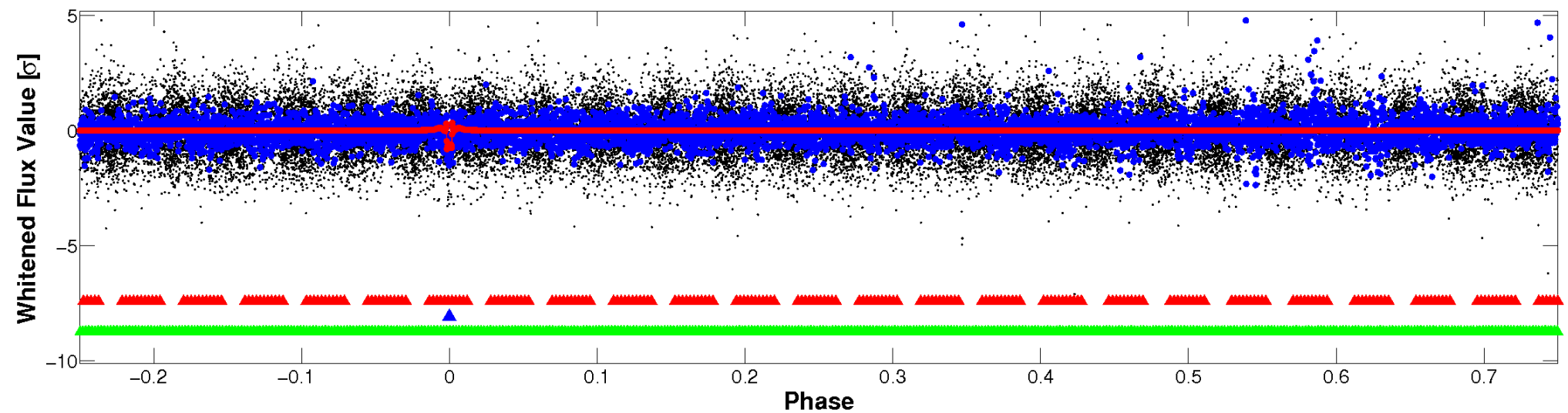


Non-Whitened Vs. Whitened Light Curve

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

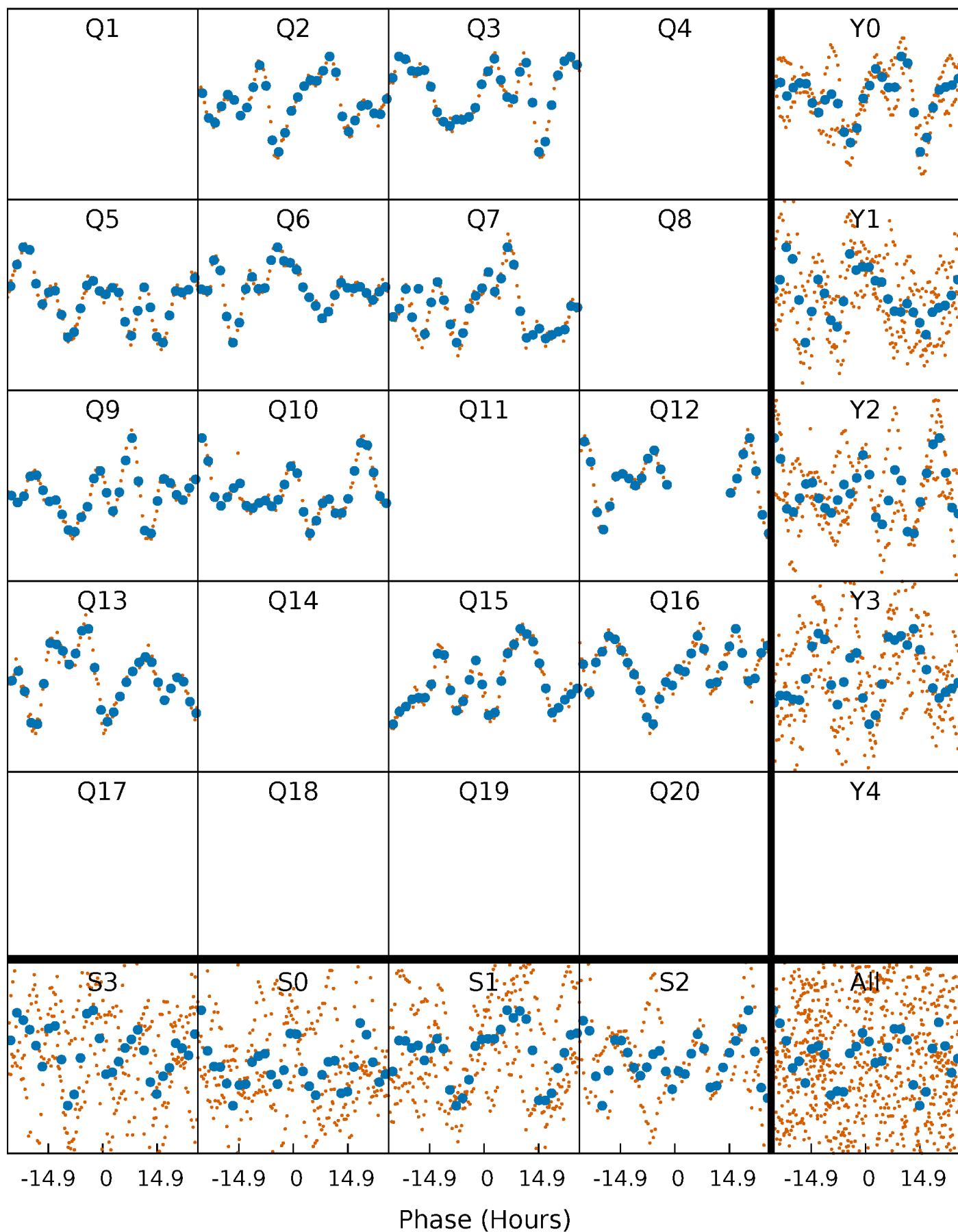


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



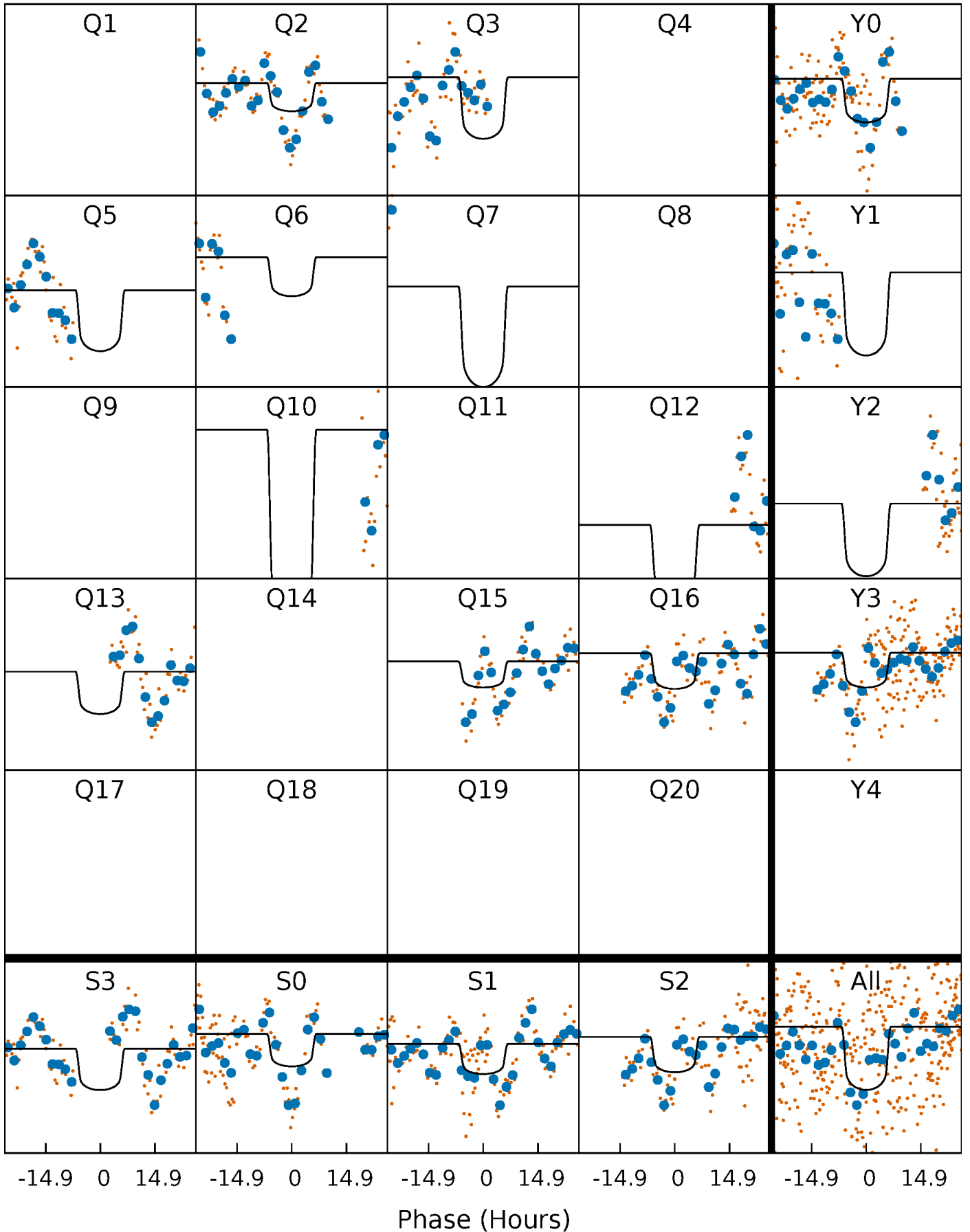
PDC Quarter-Phased Transit Curves

TCE 008712155-02 P=136.194498 Days $T_0=172.636925$ (BKJD)



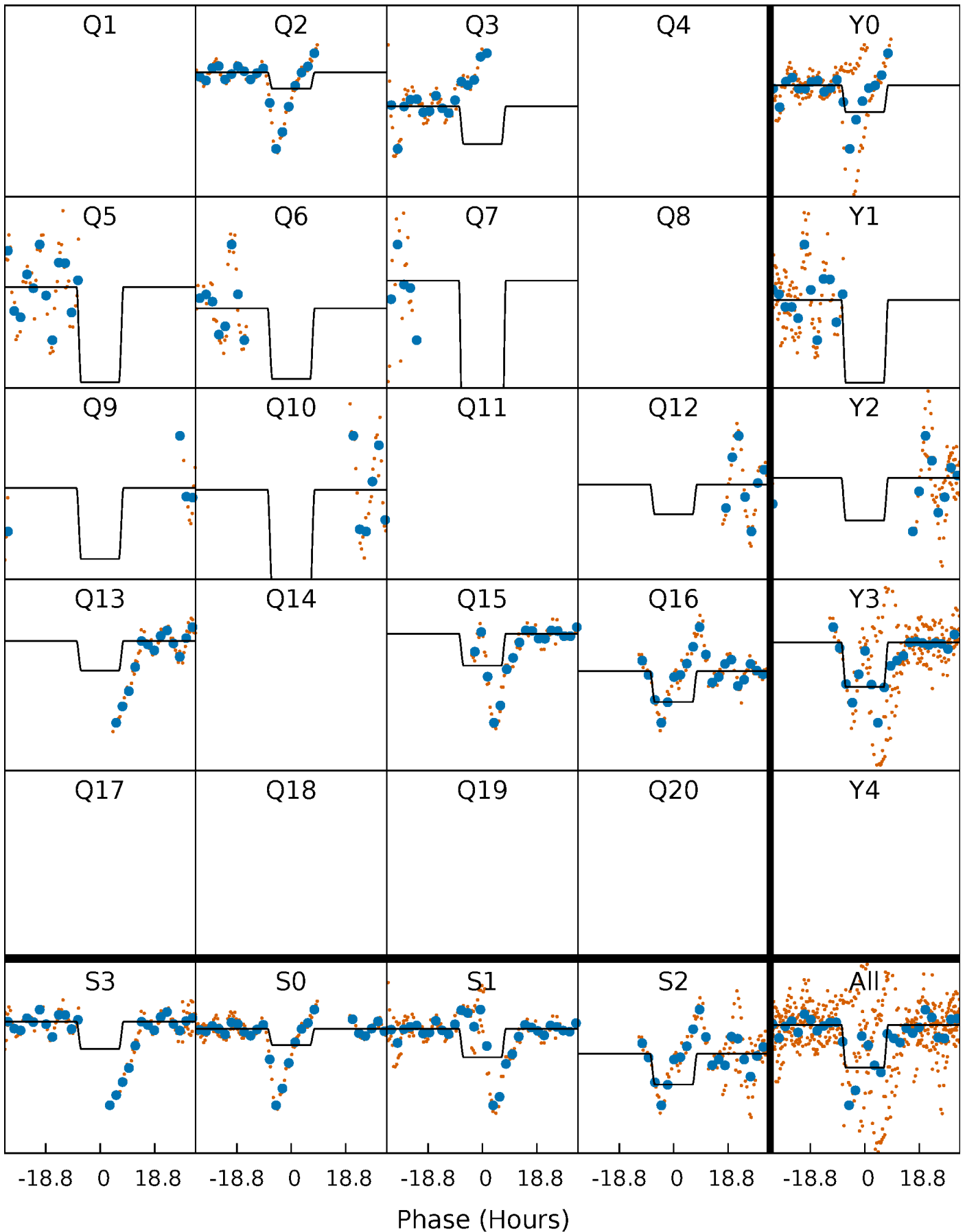
DV Quarter-Phased Transit Curves

TCE 008712155-02 P=136.194498 Days $T_0=172.636925$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

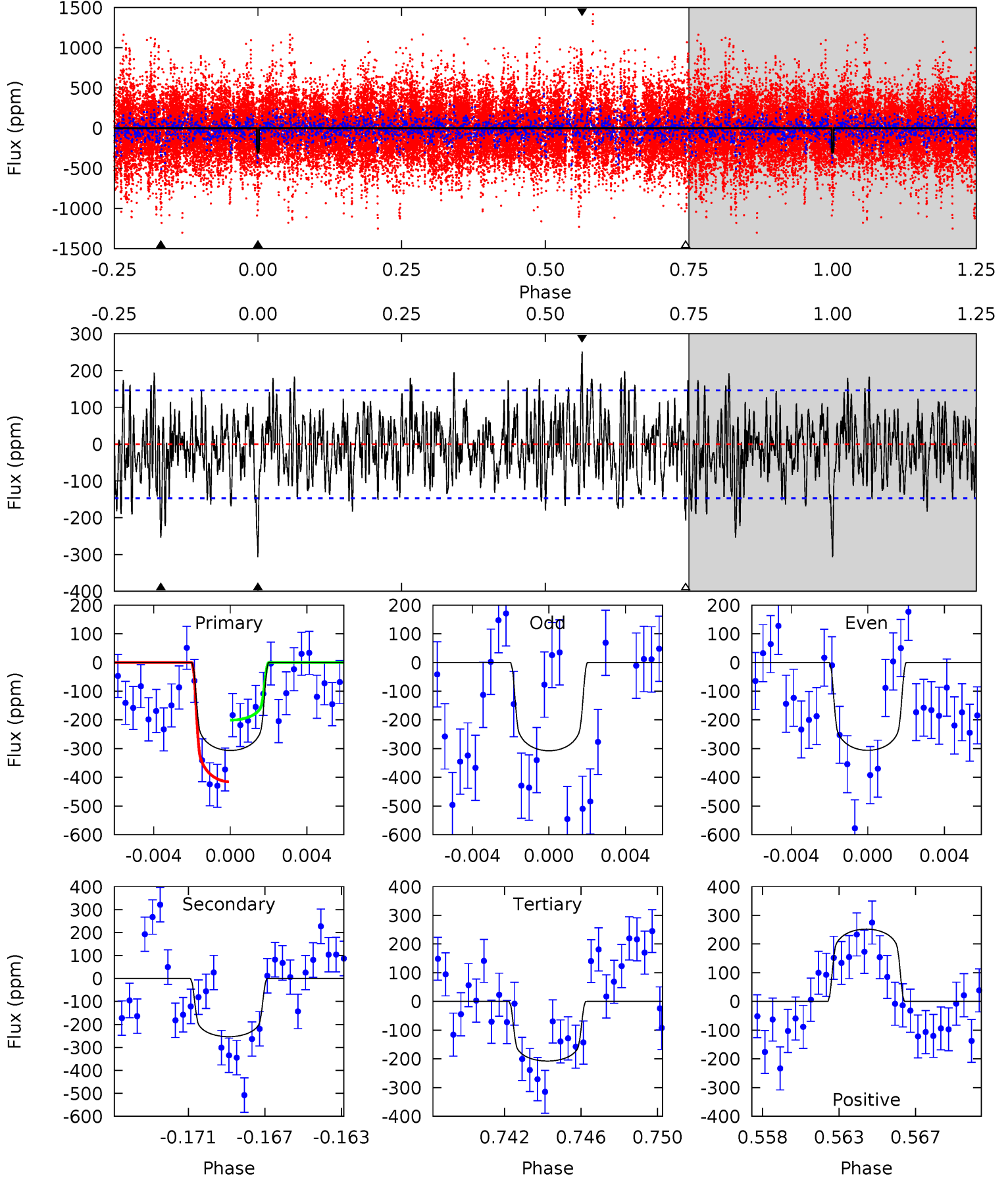
TCE 008712155-02 P=136.182866 Days $T_0=172.659569$ (BKJD)



DV Model-Shift Uniqueness Test

008712155-02, P = 136.194498 Days, E = 36.442427 Days

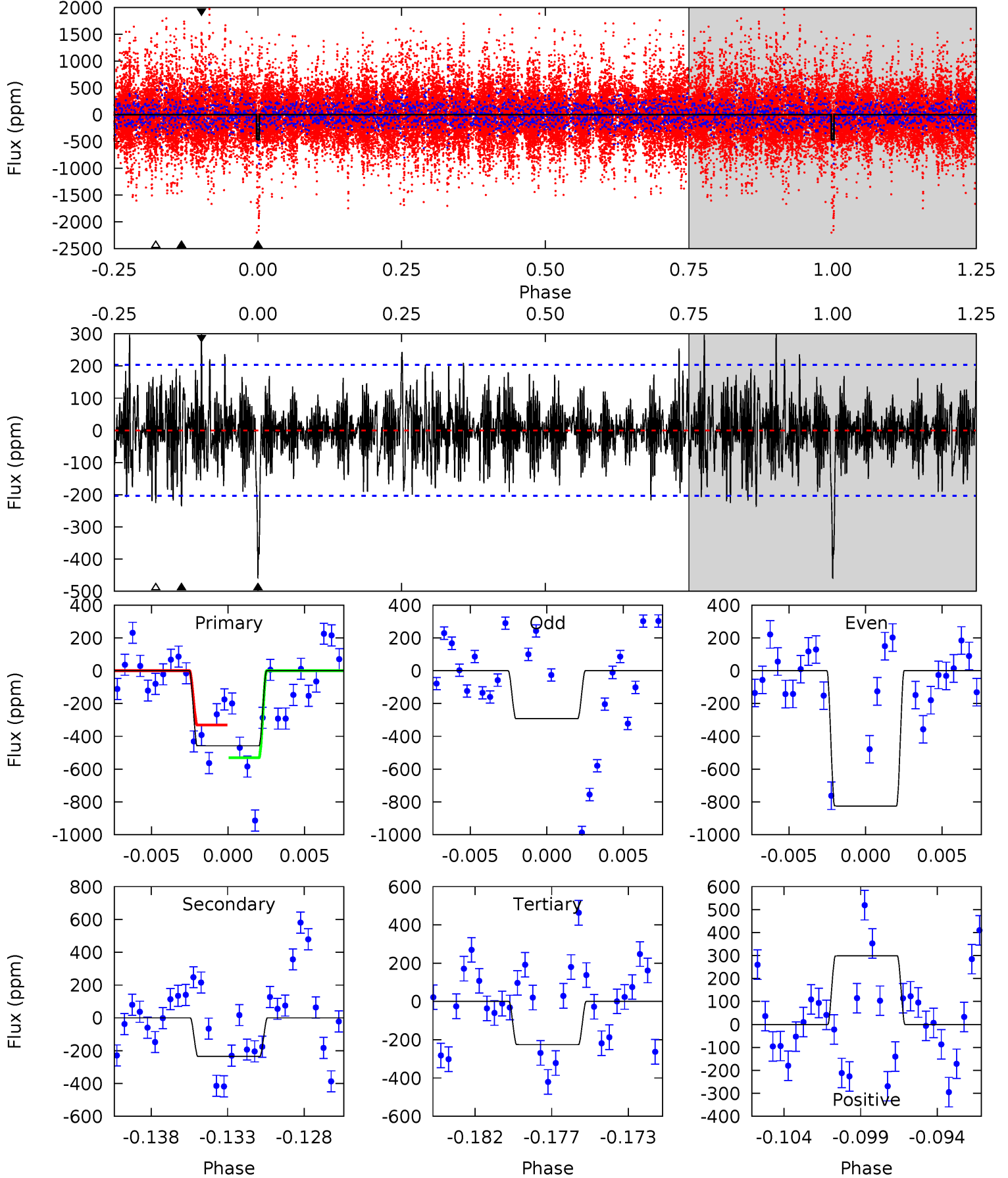
| Pri | Sec | Ter | Pos | FA ₁ | FA ₂ | F _{Red} | Pri-Ter | Pri-Pos | Sec-Ter | Sec-Pos | Odd-Evn | DMM | Shape | TAT |
|------|------|------|------|-----------------|-----------------|------------------|---------|---------|---------|---------|---------|------|-------|------|
| 10.9 | 8.97 | 7.35 | 8.92 | 5.20 | 2.87 | 2.51 | 3.51 | 1.94 | 1.62 | 0.05 | 0.03 | 0.71 | 0.45 | 3.80 |



Alt Model-Shift Uniqueness Test

008712155-02, P = 136.182866 Days, E = 36.476703 Days

| Pri | Sec | Ter | Pos | FA ₁ | FA ₂ | F _{Red} | Pri-Ter | Pri-Pos | Sec-Ter | Sec-Pos | Odd-Evn | DMM | Shape | TAT |
|------|------|------|------|-----------------|-----------------|------------------|---------|---------|---------|---------|---------|------|-------|------|
| 11.6 | 5.97 | 5.71 | 7.56 | 5.16 | 2.81 | 1.99 | 5.89 | 4.04 | 0.25 | -1.60 | 6.85 | 0.81 | 0.39 | 2.50 |



Stellar Parameters For KIC 008712155

| | $T_{\text{eff}} (K)$ | $\log(g)$ | [Fe/H] | $R (R_{\odot})$ | $M (M_{\odot})$ | $p_{\star} (\text{g}\cdot\text{cm}^{-3})$ |
|--------|----------------------|---------------------------|----------------------------|---------------------------|---------------------------|---|
| | 6837^{+214}_{-285} | $3.669^{+0.569}_{-0.100}$ | $-0.380^{+0.300}_{-0.300}$ | $2.997^{+0.425}_{-1.594}$ | $1.530^{+0.186}_{-0.435}$ | $0.080^{+0.566}_{-0.025}$ |
| | +3%/-4% | +16%/-3% | +79%/-79% | +14%/-53% | +12%/-28% | +707%/-31% |
| 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 008712155-02 / KOI

| Detrend | Depth (ppm) | $R_p (R_{\oplus})$ | $T_{max} (K)$ | $T_{obs} (K)$ | A_{obs} |
|---------|---------------|------------------------|--------------------|----------------------|-----------------------|
| DV | -253 ± 28 | $6.06^{+1.25}_{-1.74}$ | 910^{+72}_{-121} | 6076^{+479}_{-410} | 1347^{+1173}_{-417} |
| Alt. | -235 ± 39 | $8.16^{+1.33}_{-2.14}$ | 912^{+70}_{-118} | 5198^{+320}_{-297} | 700^{+524}_{-213} |

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 $A_{obs} \gg 1.0$

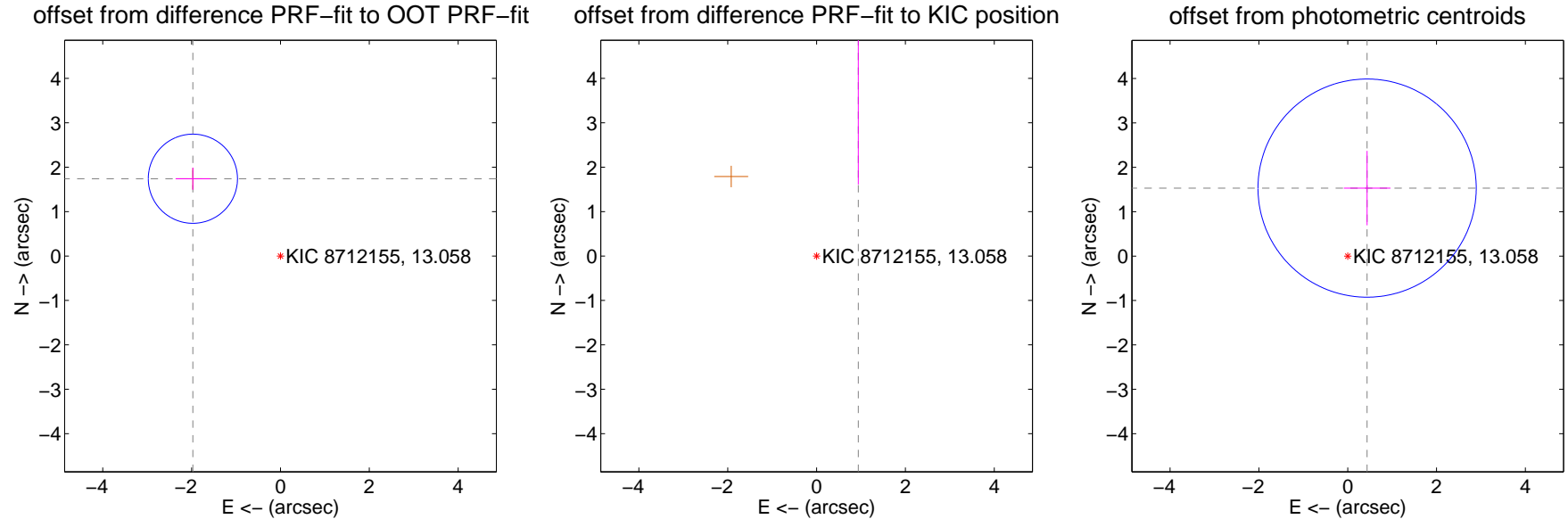
DV Centroid Data

Supplemental centroid analysis for 008712155-02. Kepler magnitude: 13.06. Transit SNR 6.13

There are 0 quarters with good PRF difference image offsets

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

| | Distance in arcsec | Distance / σ | Δ RA | Δ Dec |
|---|--------------------|---------------------|--------------------|-------------------|
| PRF-fit source offset from OOT | 2.630 ± 0.335 | 7.86 | 1.972 ± 0.388 | 1.741 ± 0.250 |
| PRF-fit source offset from KIC position | 6.295 ± 4.562 | 1.38 | -0.939 ± 0.576 | 6.224 ± 4.613 |
| photometric centroid source offset | 1.59 ± 0.82 | 1.94 | -0.44 ± 0.53 | 1.53 ± 0.84 |



Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ . Red *: target star. Blue *: Other stars. Text next to a star gives its KIC ID and kepmag. KIC IDs > 15,000,000 are from the UKIRT catalog.

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

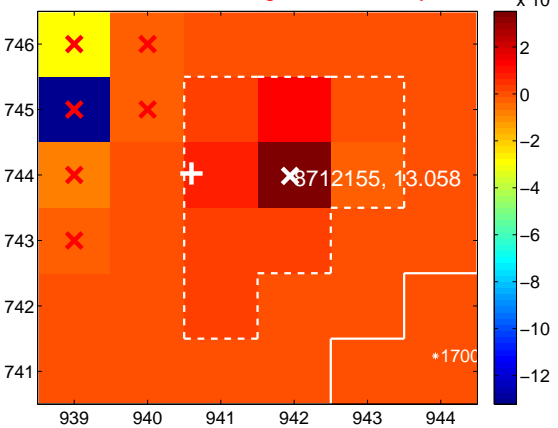
Q1 no difference image



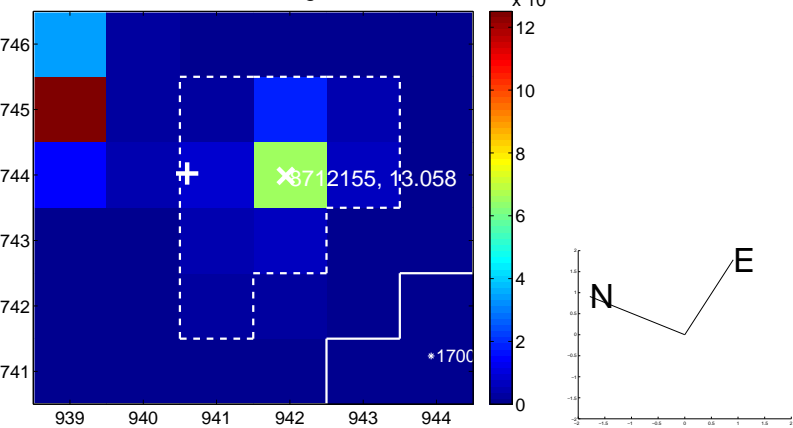
Q1 no OOT image



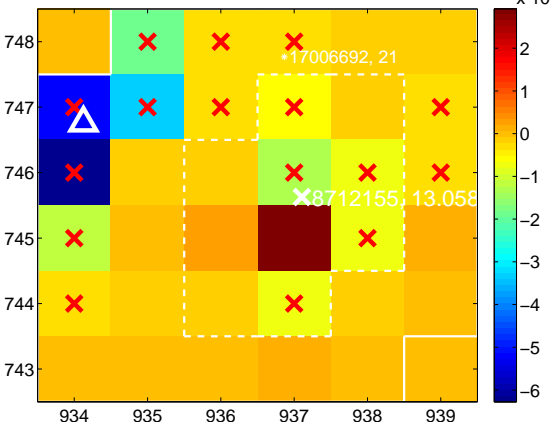
Q2 difference image. Poor Quality



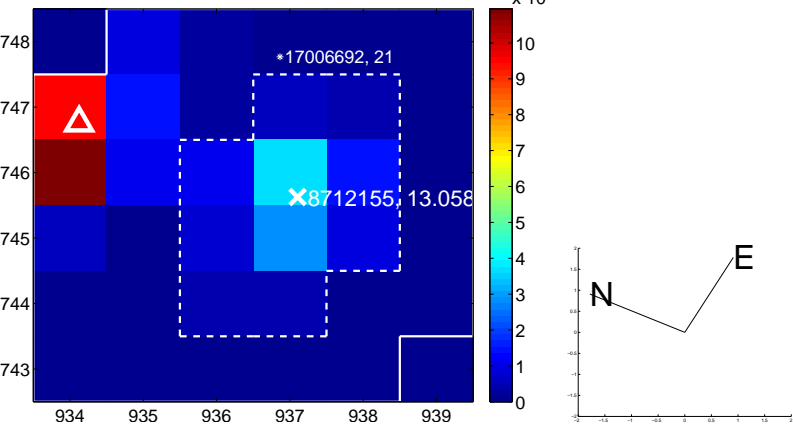
Q2 OOT image



Q3 difference image. Poor Quality



Q3 OOT image



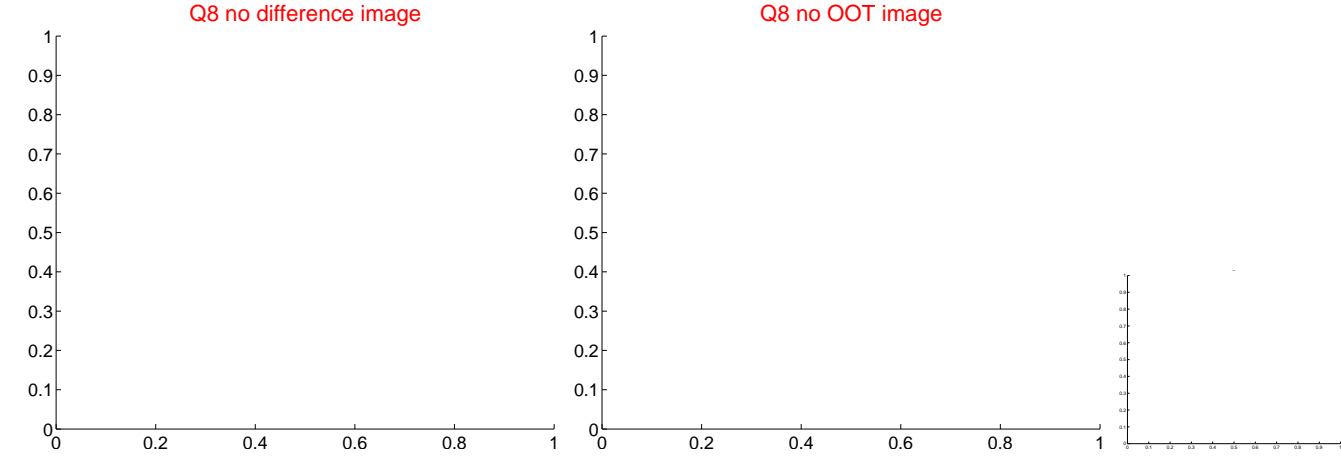
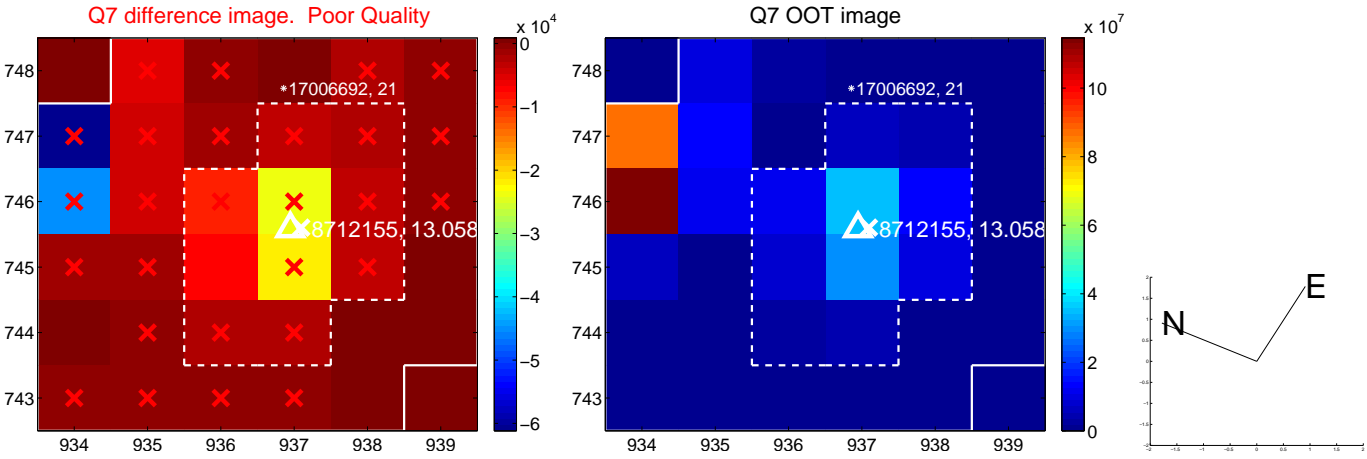
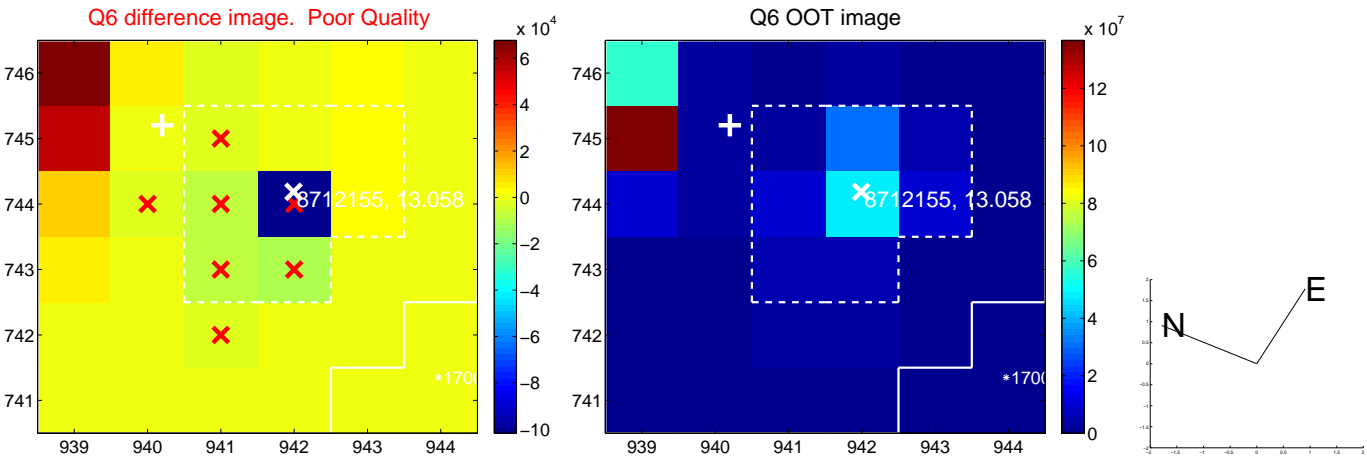
Q4 no difference image



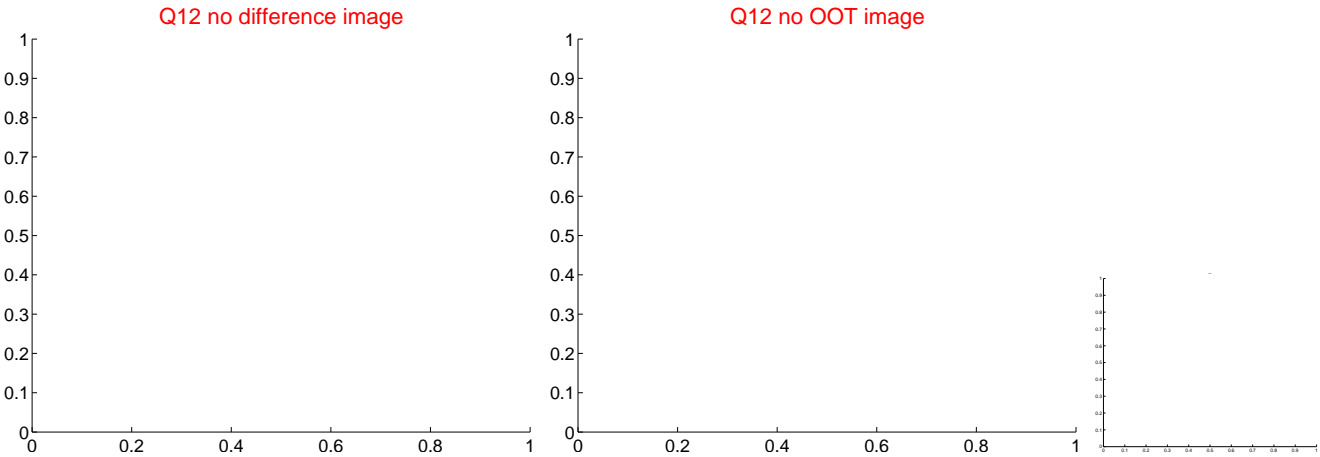
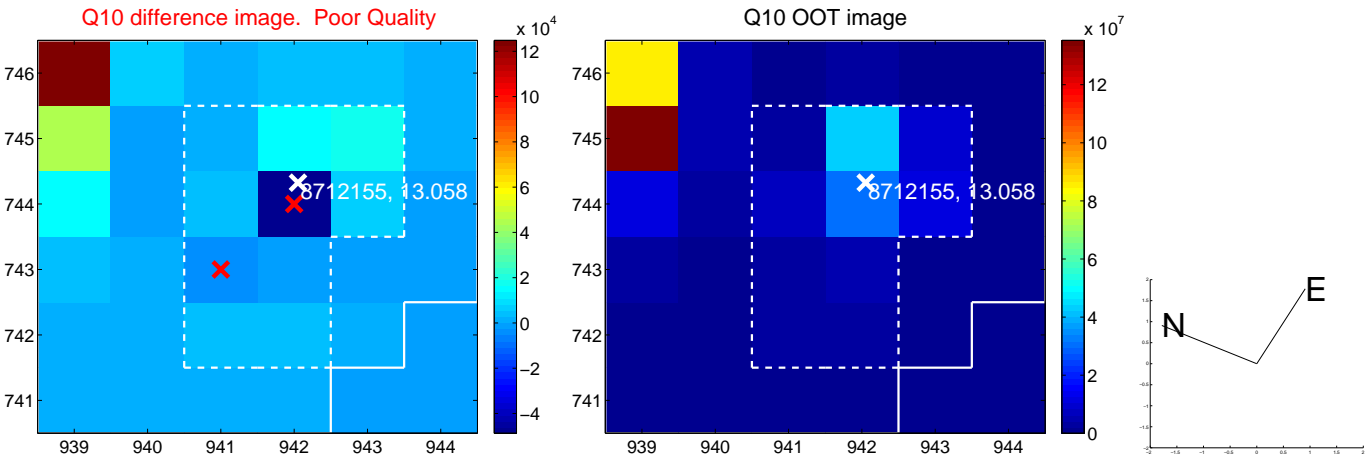
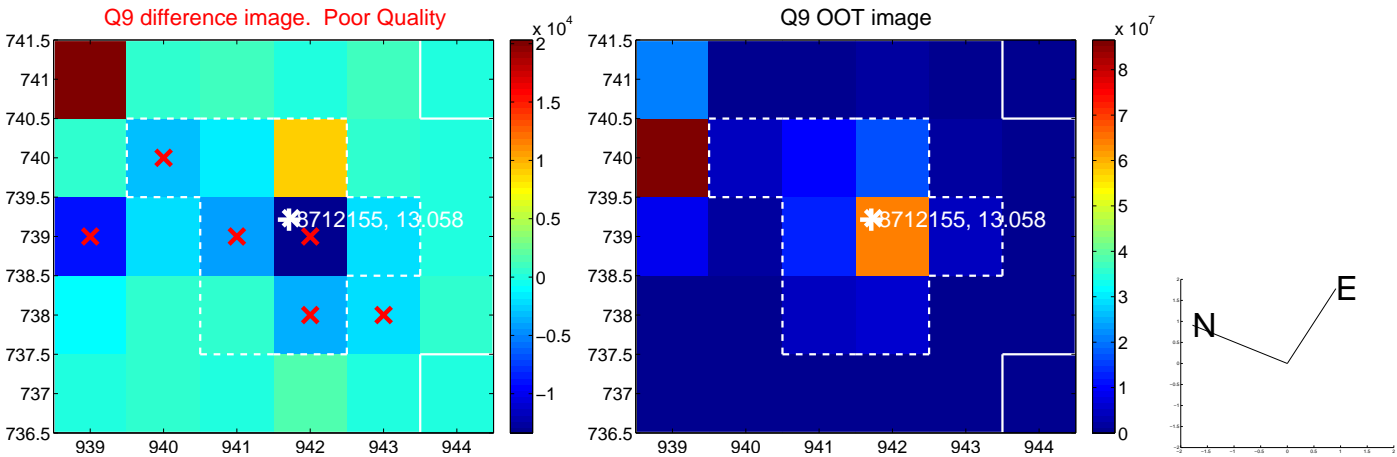
Q4 no OOT image



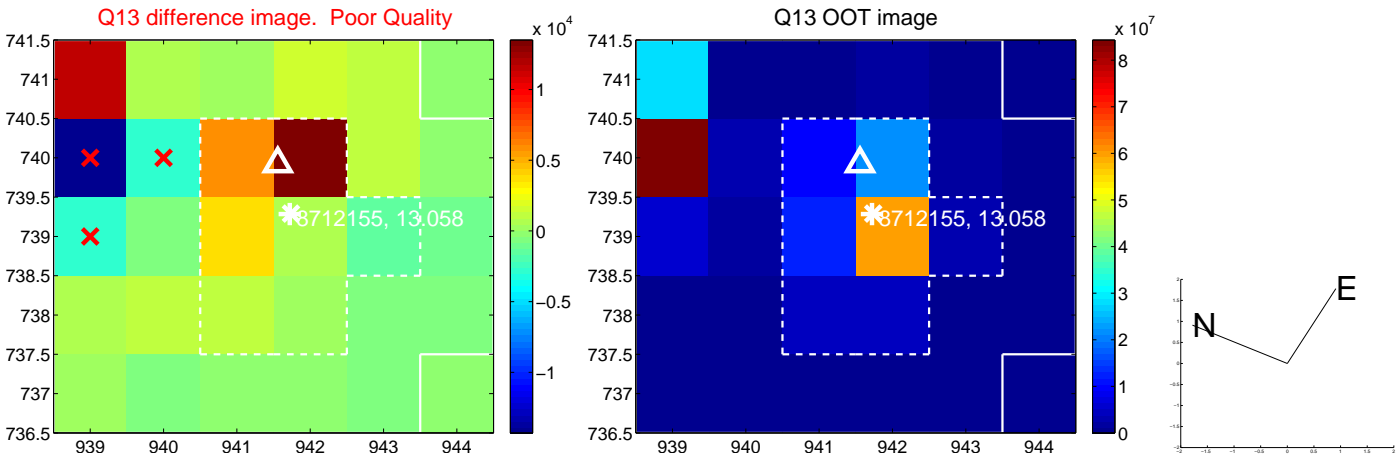
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



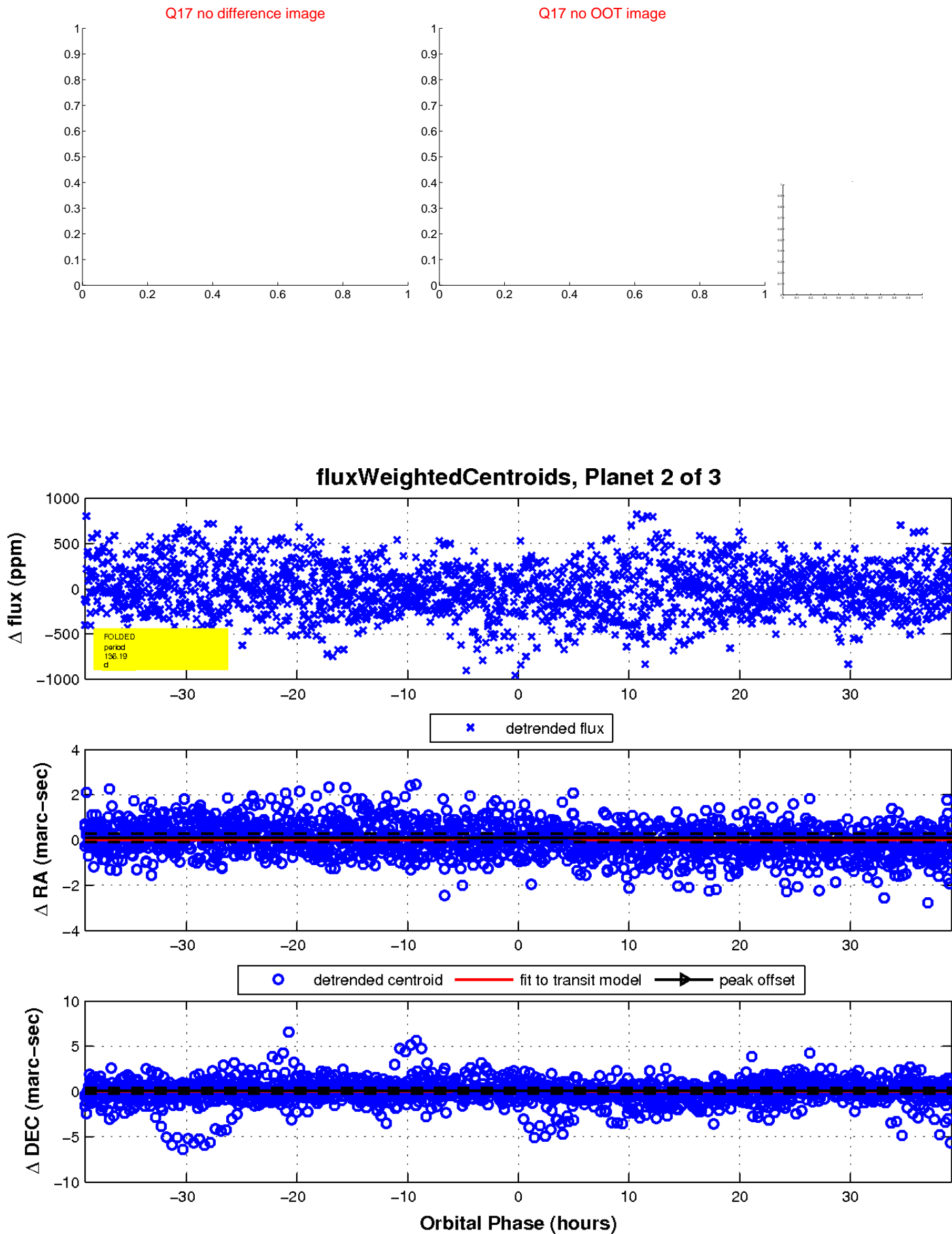
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



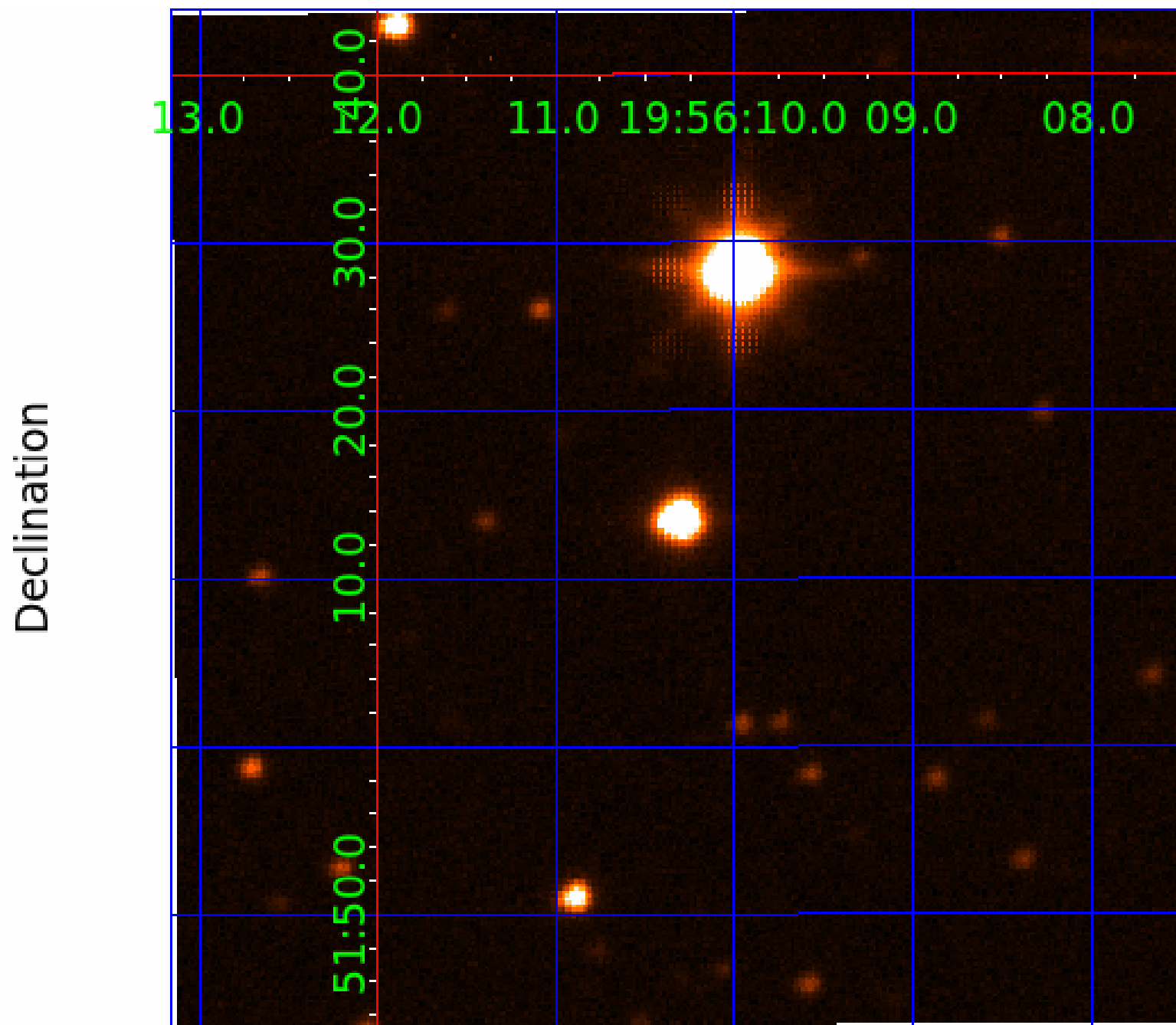
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



UKIRT Image



KIC 008712155

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}) |
|--------------|----------|------|---------------|--------------|-------------|------------------|-----|------|-----------------------------|-----------------|------------------------|------------------------|
| 008712155-01 | OBS | No | 5.660236 | 134.658544 | 46.2 | 19.739 | 8.8 | 8.4 | 3.00 | 6837 | 2.25 | 3427.95 |
| 008712155-02 | OBS | No | 136.194498 | 172.636925 | 353.8 | 13.062 | 9.6 | 6.1 | 3.00 | 6837 | 6.49 | 49.35 |
| 008712155-03 | OBS | No | 1.146999 | 132.192851 | 56.4 | 6.212 | 9.3 | 11.0 | 3.00 | 6837 | 2.63 | 28800.30 |

Robovetter Results

| TCE | Run Type | Disp | Score | N | S | C | E | Comments |
|--------------|----------|------|-------|---|---|---|---|--|
| 008712155-01 | OBS | FP | 0.00 | 1 | 0 | 1 | 0 | LPP_DV—MOD_NONUNIQ_DV—CENT_RESOLVED_OFFSET |
| 008712155-02 | OBS | FP | 0.00 | 1 | 0 | 1 | 0 | INDIV_TRANS_RUBBLE_SKYE—TRANS_GAPPED—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS—HALO_GHOST |
| 008712155-03 | OBS | FP | 0.00 | 1 | 0 | 0 | 0 | LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—CENT_FEW_MEAS |

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

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

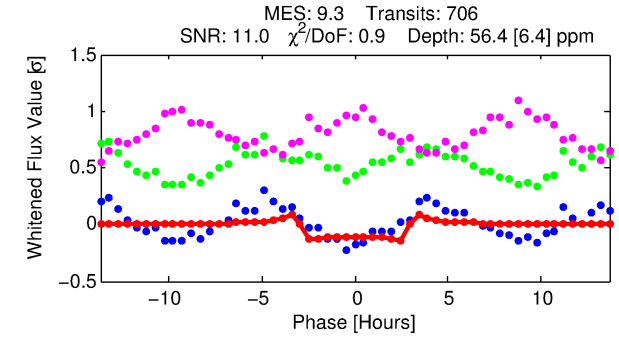
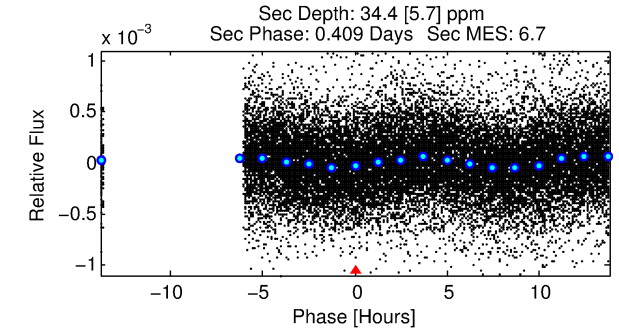
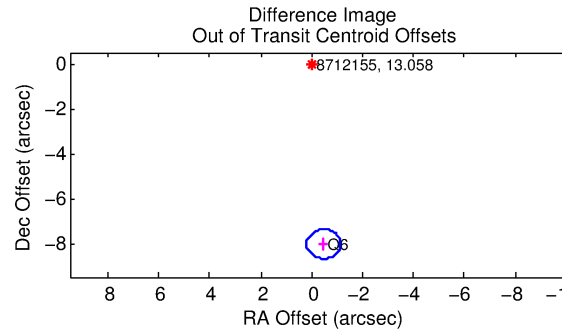
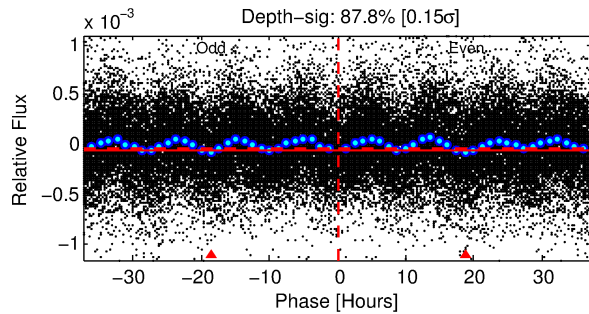
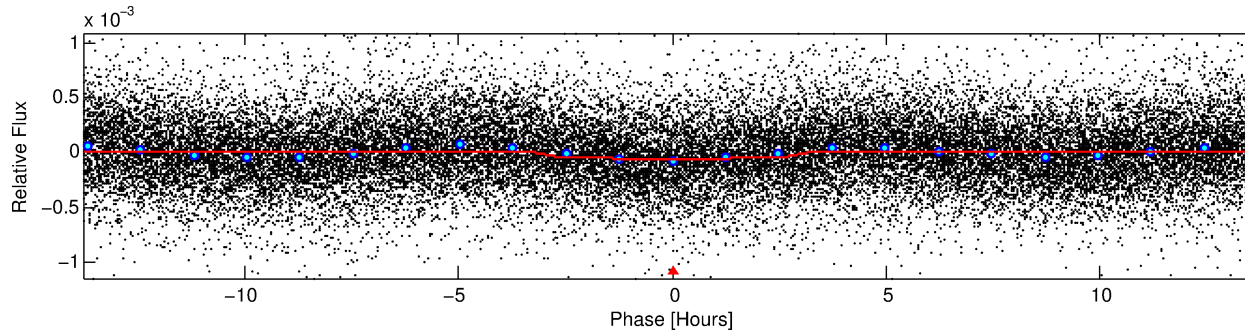
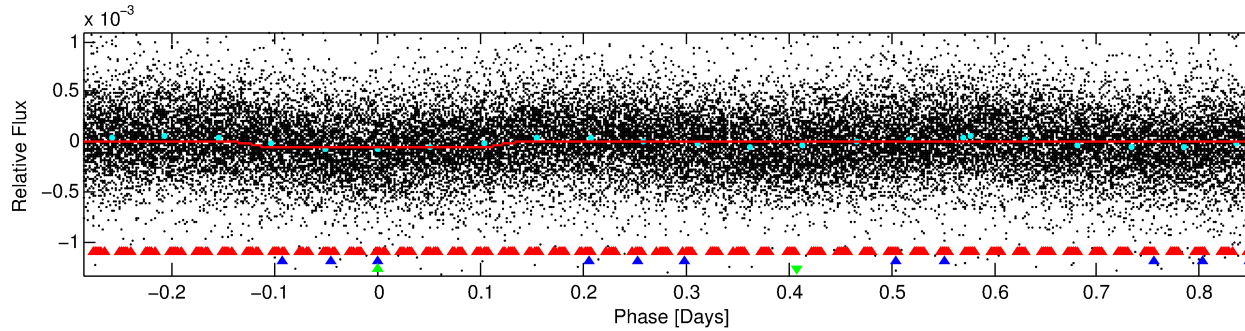
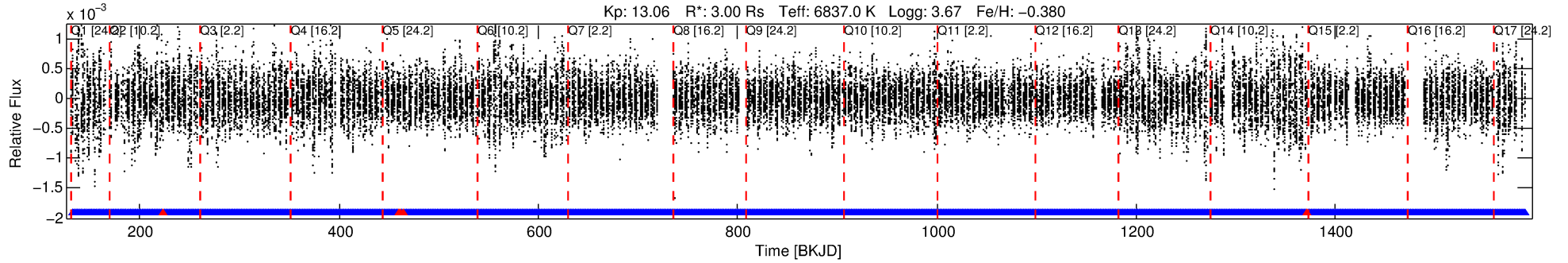
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 008712155-03

No Significant Match Found

DV One-Page Summary

KIC: 8712155 Candidate: 3 of 3 Period: 1.147 d



DV Fit Results:

Period = 1.14700 [0.00001] d
Epoch = 132.1929 [0.0027] BKJD
Rp/R* = 0.0081 [0.0012]
a/R* = 1.13 [0.19]
b = 0.91 [0.15]
Seff = 28800.30 [27570.74]
Teq = 3322 [795] K
Rp = 2.63 [1.45] Re
a = 0.0247 [0.0139] AU
Ag = 1.66 [1.67] [0.40 σ]
Teffp = 5834 [549] K [2.60 σ]

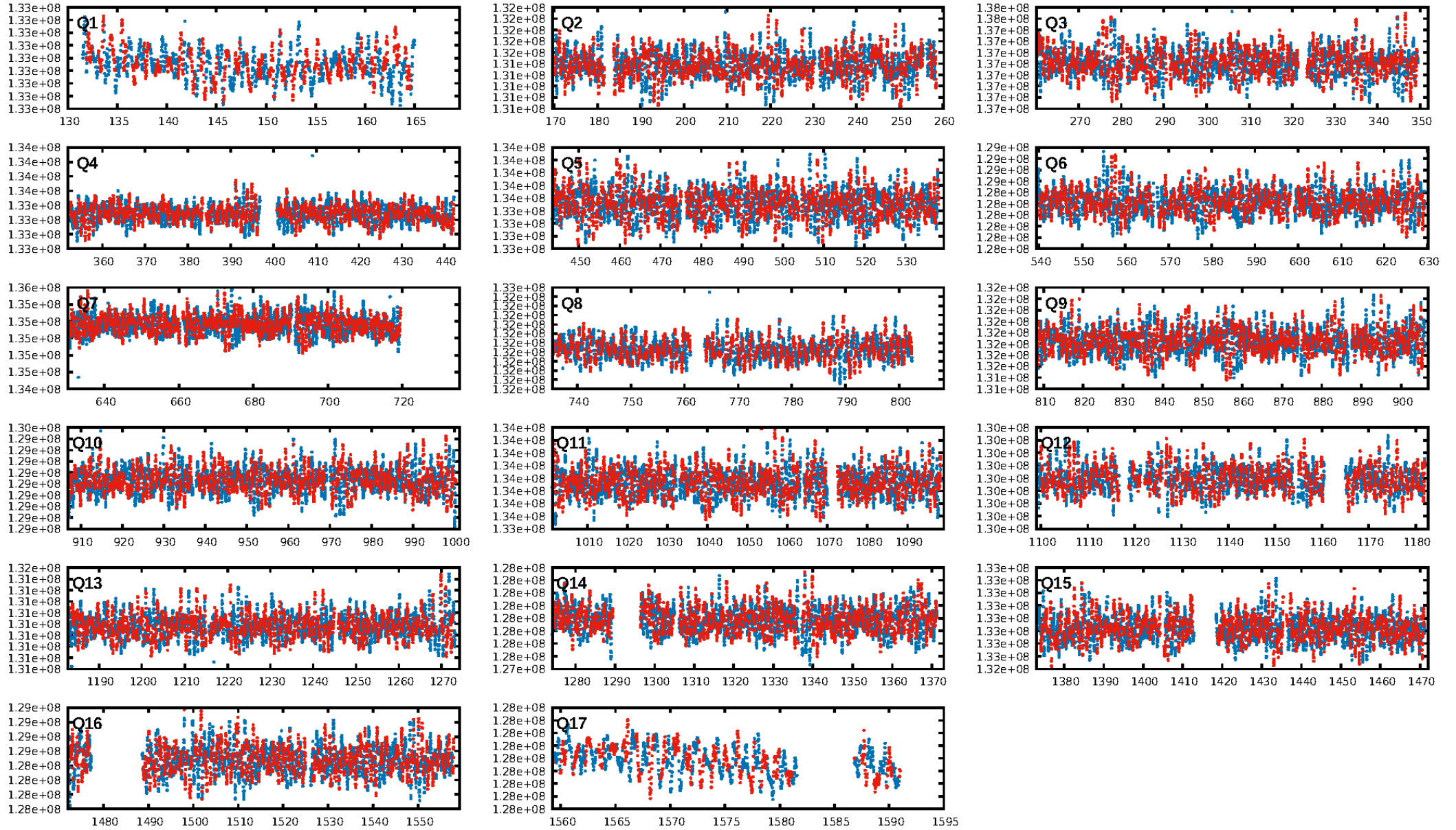
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 100.0% [5.23 σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 1.36e-10
RollingBand-fgt: 0.99 [671/676]
GhostDiagnostic-chr: 11.31
Centroid-sig: 5.9%
Centroid-so: 1.123 arcsec [1.91 σ]
OotOffset-rm: 8.047 arcsec [36.87 σ]
KicOffset-rm: 0.174 arcsec [0.80 σ]
OotOffset-st: 1/0/0/0 [1]
KicOffset-st: 2/3/1/0 [6]
DiffImageQuality-fgm: 0.50 [3/6]
DiffImageOverlap-fno: 1.00 [17/17]

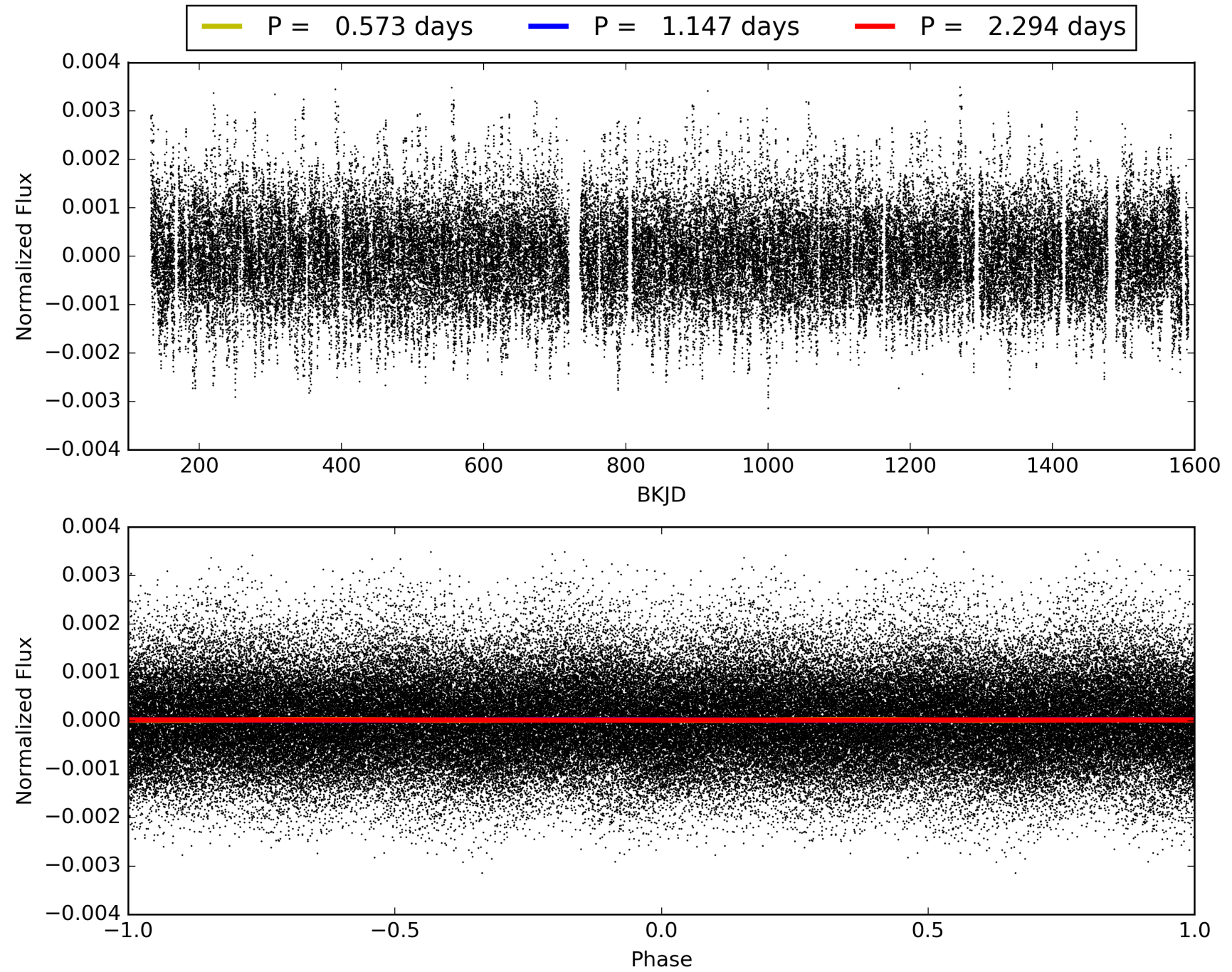
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 07:49:35 Z

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

TCE 008712155-03, PDC Light Curves

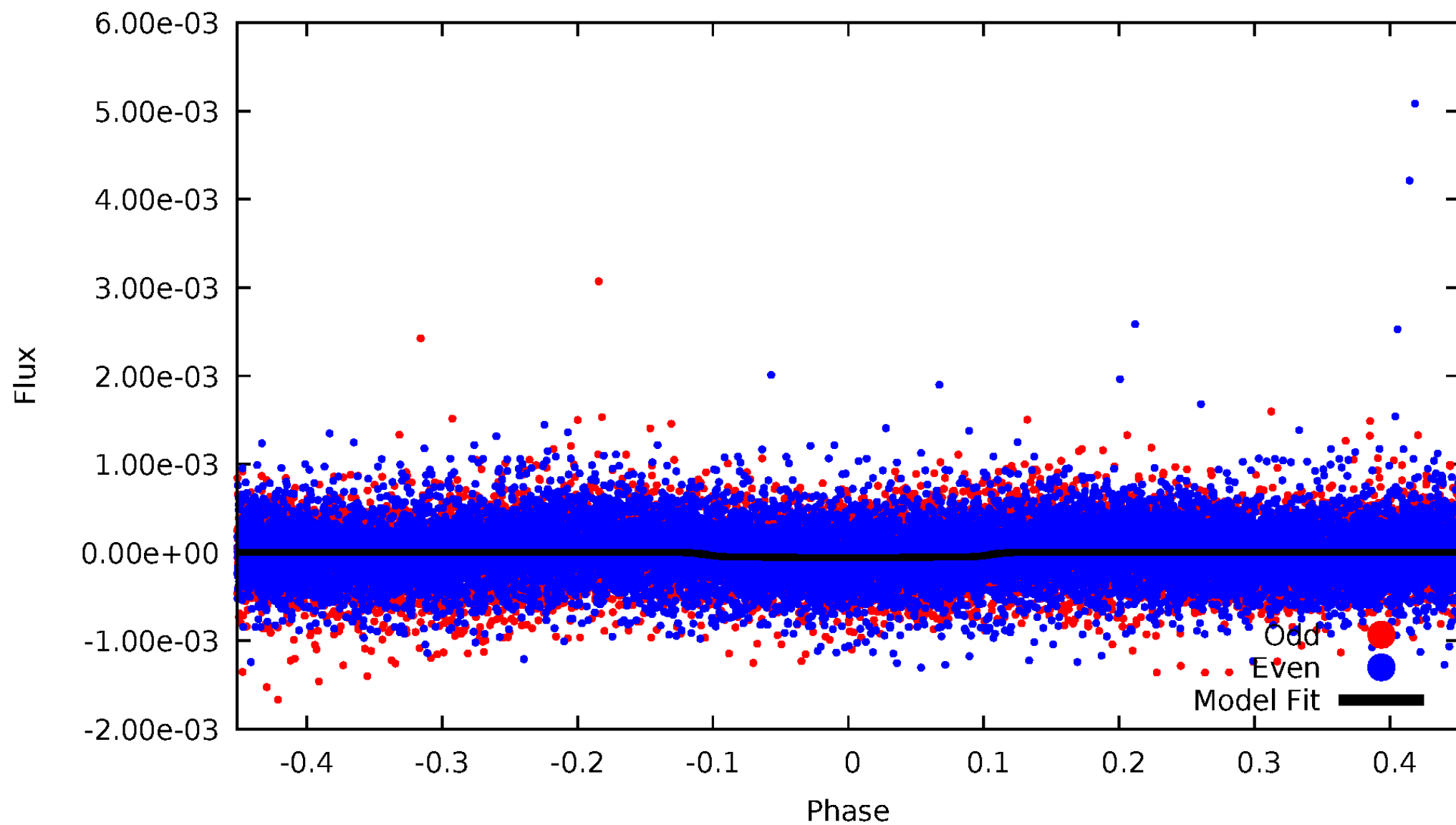


TCE 008712155-03



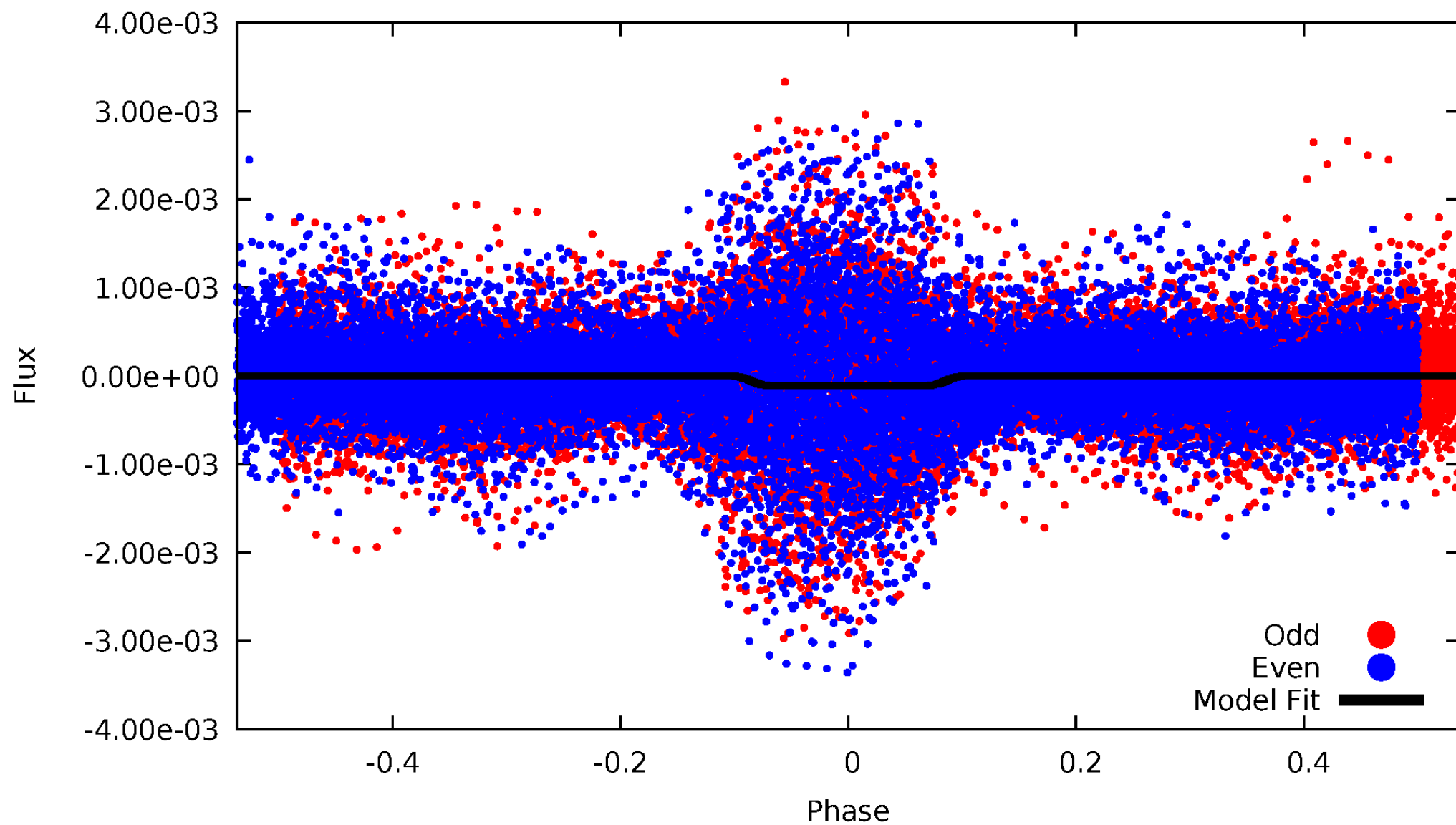
DV Odd/Even

TCE 008712155-03

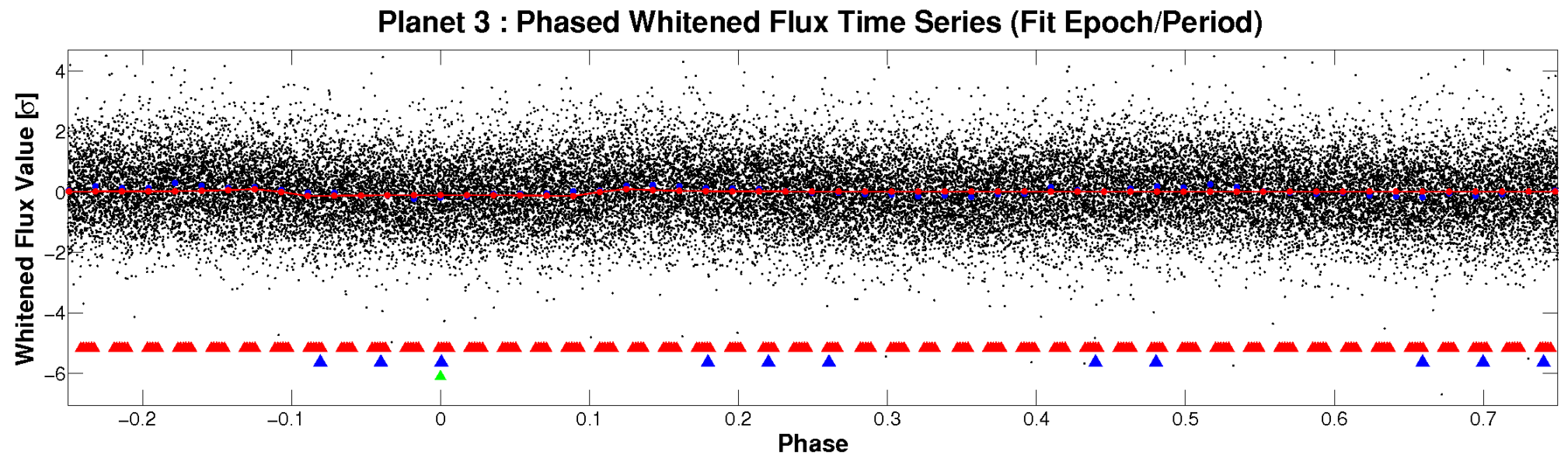
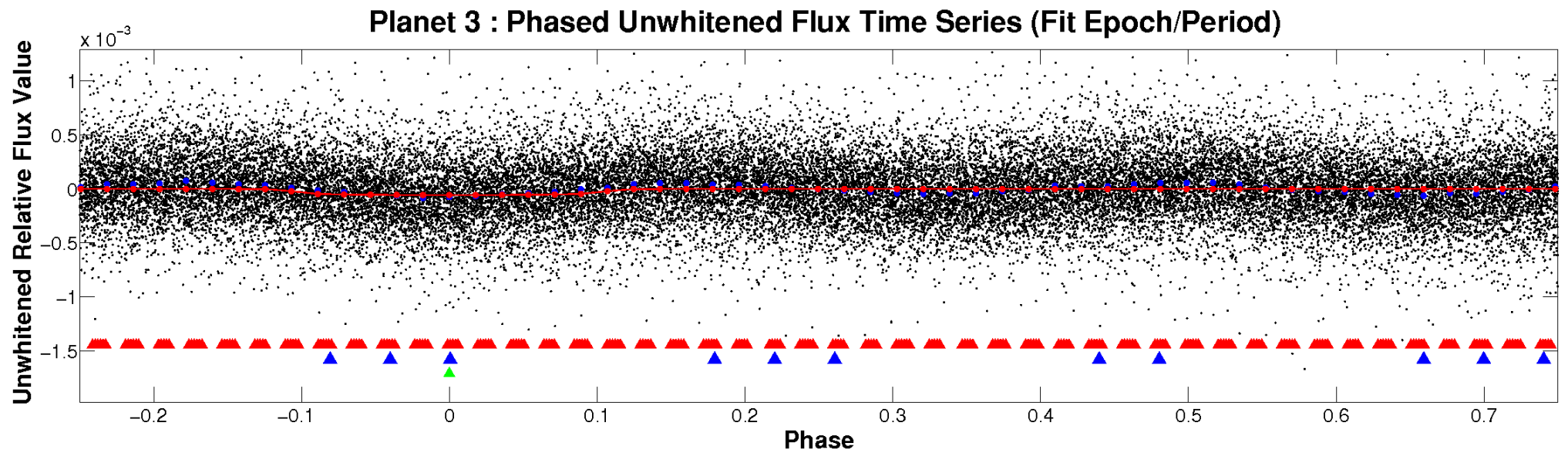


ALT Odd/Even

TCE 008712155-03

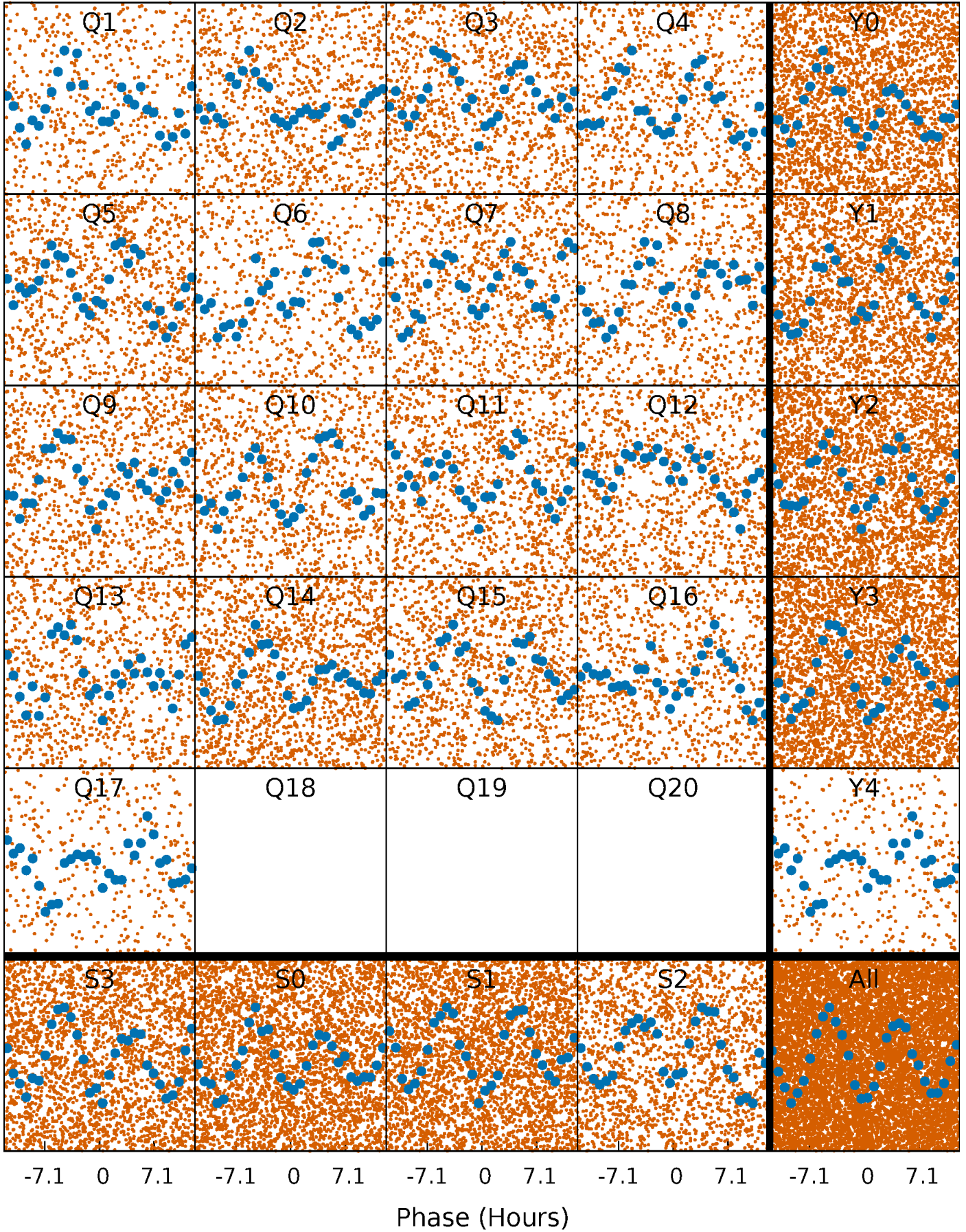


Non-Whitened Vs. Whitened Light Curve



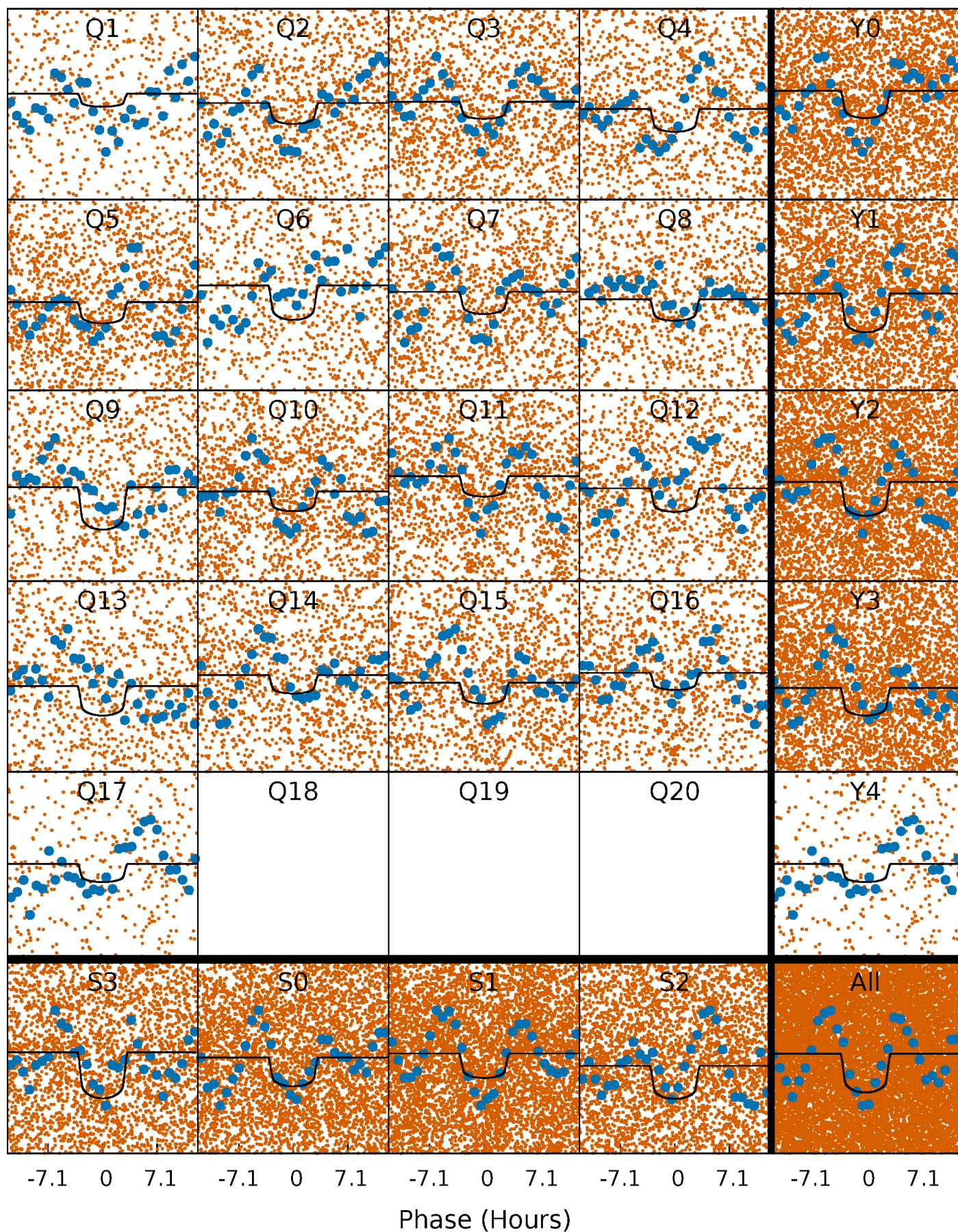
PDC Quarter-Phased Transit Curves

TCE 008712155-03 P= 1.146999 Days $T_0=132.192851$ (BKJD)



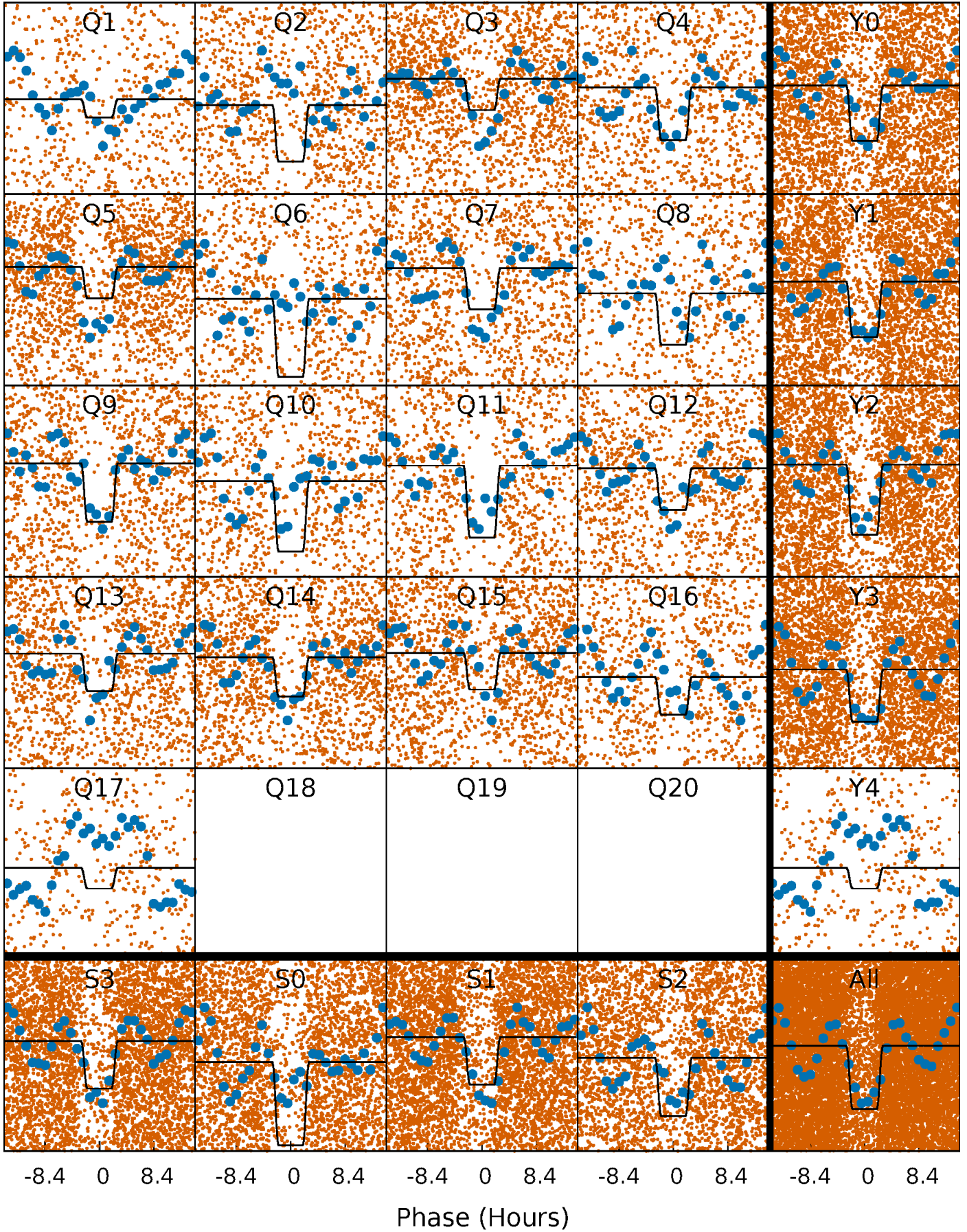
DV Quarter-Phased Transit Curves

TCE 008712155-03 P= 1.146999 Days $T_0=132.192851$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

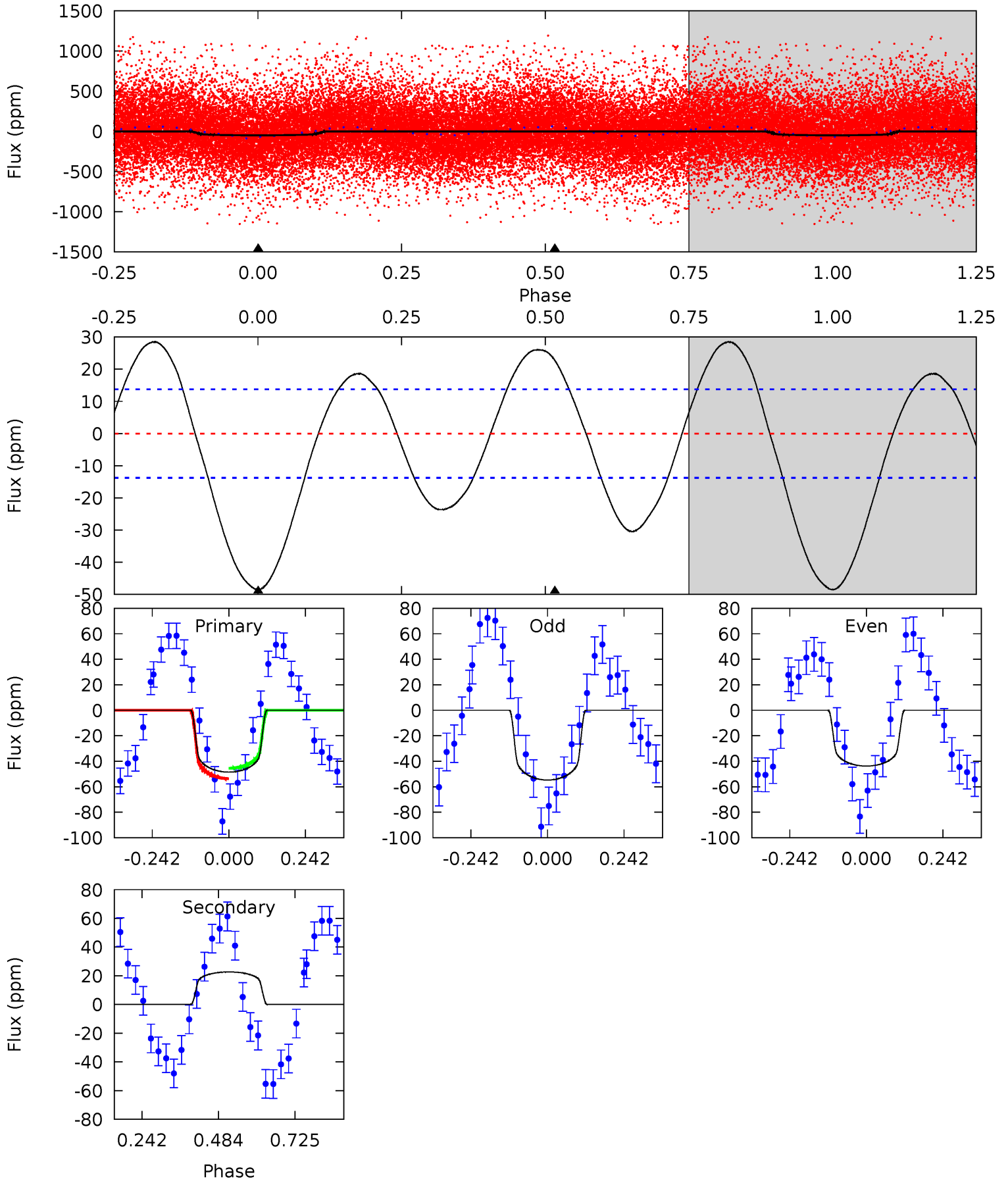
TCE 008712155-03 P= 1.147037 Days $T_0=132.165845$ (BKJD)



DV Model-Shift Uniqueness Test

008712155-03, P = 1.146999 Days, E = 131.045852 Days

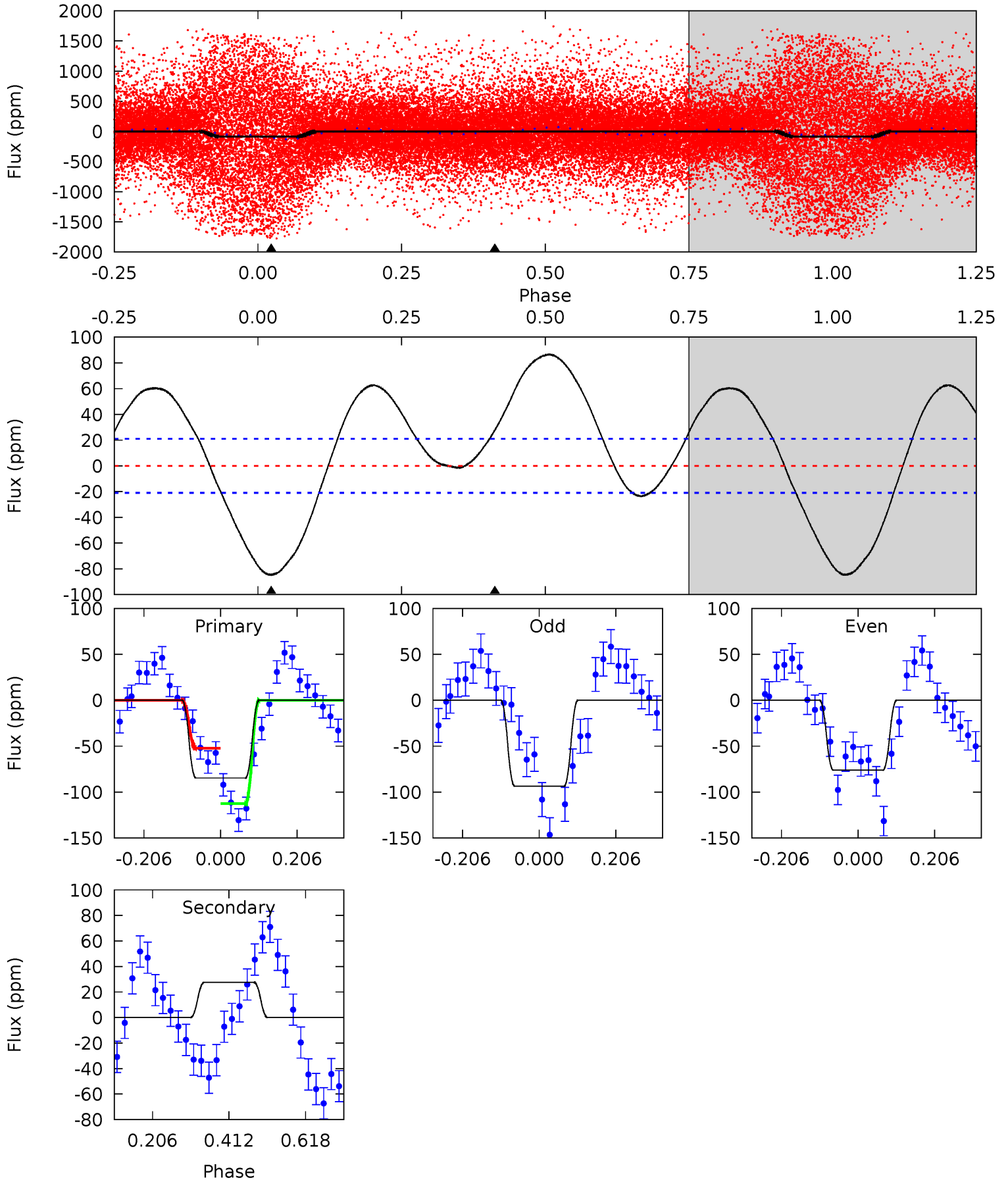
| Pri | Sec | Ter | Pos | FA ₁ | FA ₂ | F _{Red} | Pri-Ter | Pri-Pos | Sec-Ter | Sec-Pos | Odd-Evn | DMM | Shape | TAT |
|------|-------|-----|-----|-----------------|-----------------|------------------|---------|---------|---------|---------|---------|------|-------|------|
| 15.4 | -7.22 | 0 | 0 | 4.38 | 1.17 | 3.61 | 15.4 | 15.4 | -7.22 | -7.22 | 1.73 | 1.03 | 0.37 | 1.27 |



Alt Model-Shift Uniqueness Test

008712155-03, P = 1.147037 Days, E = 131.018808 Days

| Pri | Sec | Ter | Pos | FA ₁ | FA ₂ | F _{Red} | Pri-Ter | Pri-Pos | Sec-Ter | Sec-Pos | Odd-Evn | DMM | Shape | TAT |
|------|-------|-----|-----|-----------------|-----------------|------------------|---------|---------|---------|---------|---------|------|-------|------|
| 17.8 | -5.79 | 0 | 0 | 4.41 | 1.26 | 6.25 | 17.8 | 17.8 | -5.79 | -5.79 | 1.82 | 1.52 | 0.51 | 4.02 |



Stellar Parameters For KIC 008712155

| | $T_{\text{eff}} (K)$ | $\log(g)$ | $[\text{Fe}/\text{H}]$ | $R (R_{\odot})$ | $M (M_{\odot})$ | $p_{\star} (\text{g}\cdot\text{cm}^{-3})$ |
|--------|----------------------|---------------------------|----------------------------|---------------------------|---------------------------|---|
| | 6837^{+214}_{-285} | $3.669^{+0.569}_{-0.100}$ | $-0.380^{+0.300}_{-0.300}$ | $2.997^{+0.425}_{-1.594}$ | $1.530^{+0.186}_{-0.435}$ | $0.080^{+0.566}_{-0.025}$ |
| | +3%/-4% | +16%/-3% | +79%/-79% | +14%/-53% | +12%/-28% | +707%/-31% |
| 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 008712155-03 / KOI

| Detrend | Depth (ppm) | $R_p (R_{\oplus})$ | $T_{\text{max}} (K)$ | $T_{\text{obs}} (K)$ | A_{obs} |
|---------|-------------|------------------------|----------------------|-----------------------|----------------------------|
| DV | 23 ± 3 | $2.39^{+0.60}_{-0.64}$ | 4509^{+326}_{-596} | -5547^{+363}_{-447} | $-1.338^{+0.490}_{-1.068}$ |
| Alt. | 28 ± 5 | $3.23^{+0.64}_{-0.88}$ | 4489^{+326}_{-613} | -5203^{+322}_{-336} | $-0.916^{+0.318}_{-0.747}$ |

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

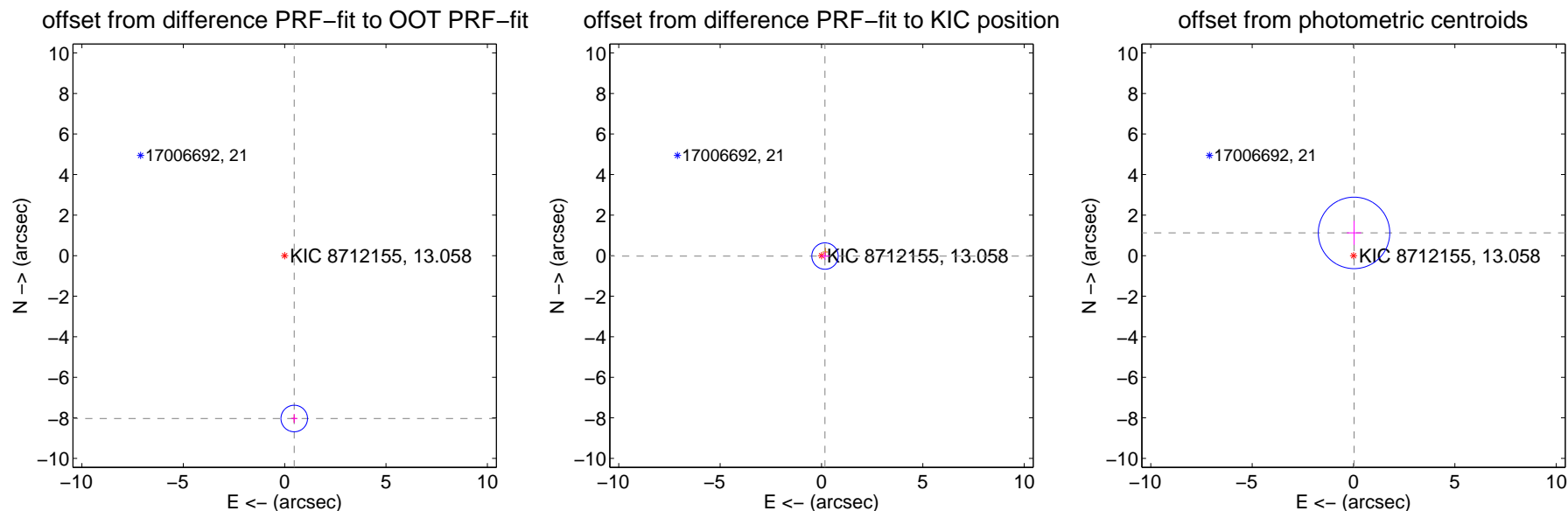
DV Centroid Data

Supplemental centroid analysis for 008712155-03. Kepler magnitude: 13.06. Transit SNR 10.95

There are 3 quarters with good PRF difference image offsets

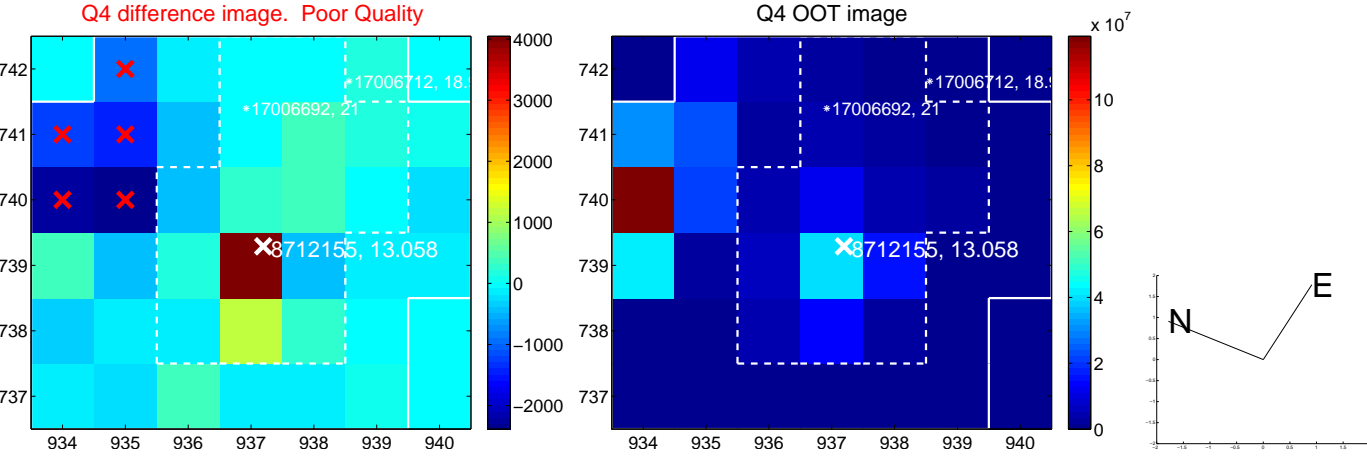
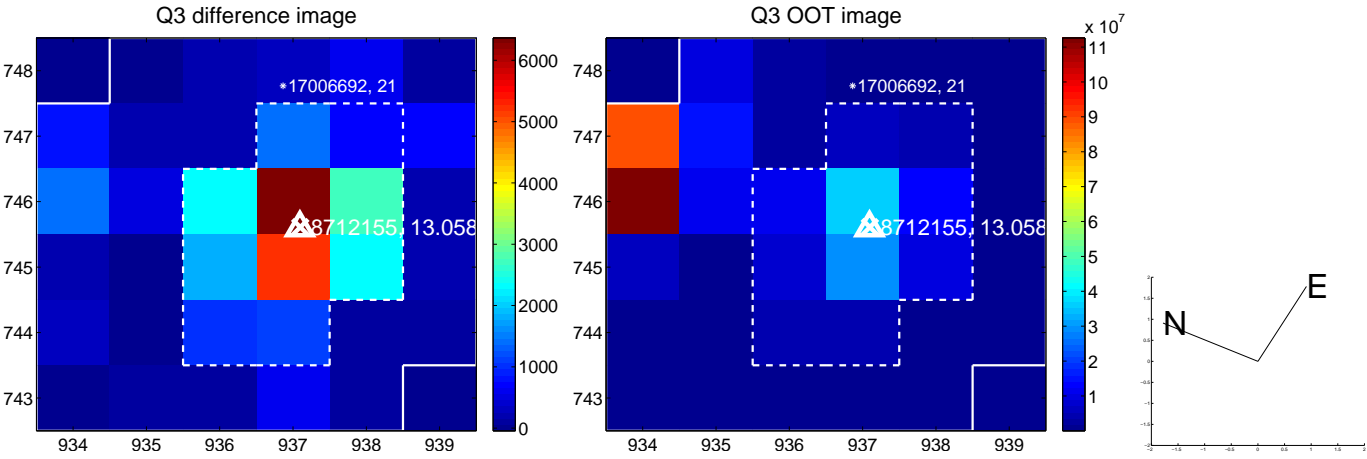
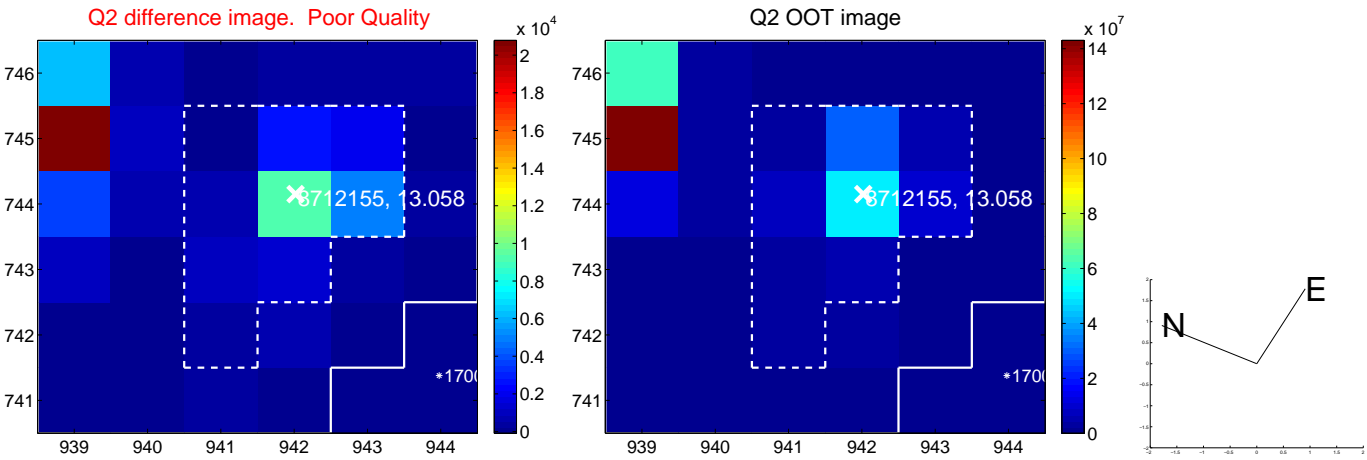
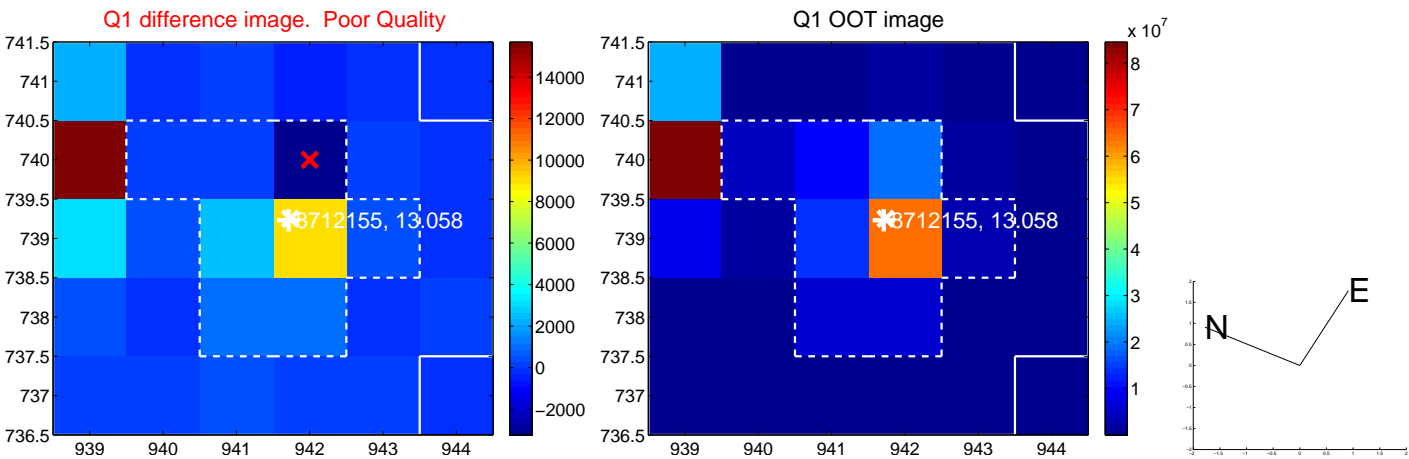
The OOT PRF centroid is offset from the target star catalog position by about 8.22 arcsec so the offset from difference PRF-fit to OOT-fit may be invalid.

| | Distance in arcsec | Distance / σ | Δ RA | Δ Dec |
|---|--------------------|---------------------|--------------------|--------------------|
| PRF-fit source offset from OOT | 8.047 ± 0.218 | 36.87 | -0.473 ± 0.156 | -8.034 ± 0.218 |
| PRF-fit source offset from KIC position | 0.174 ± 0.217 | 0.80 | -0.173 ± 0.225 | -0.020 ± 0.190 |
| photometric centroid source offset | 1.12 ± 0.59 | 1.91 | -0.02 ± 0.35 | 1.12 ± 0.59 |

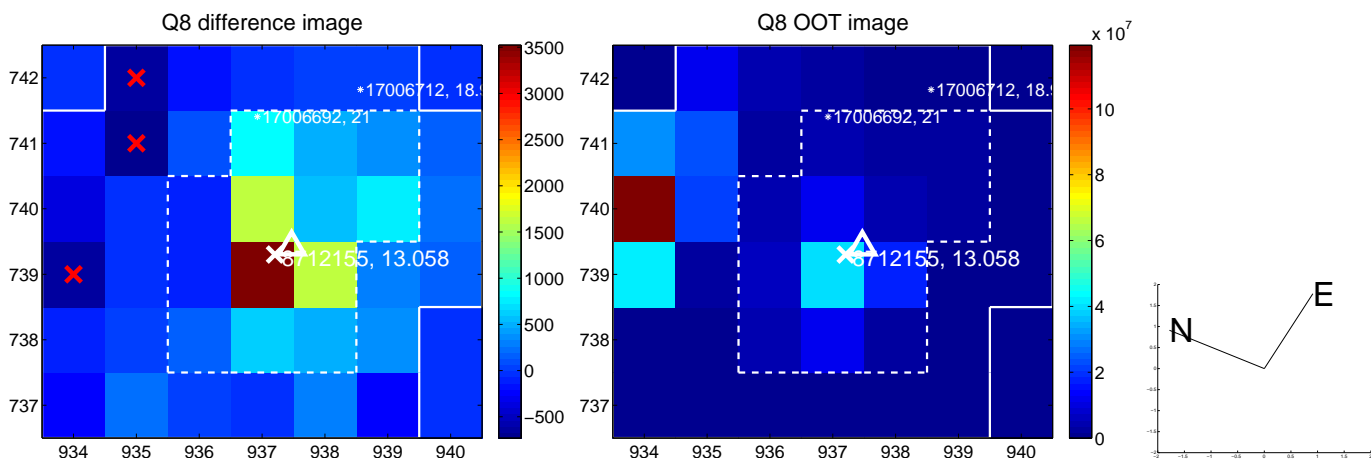
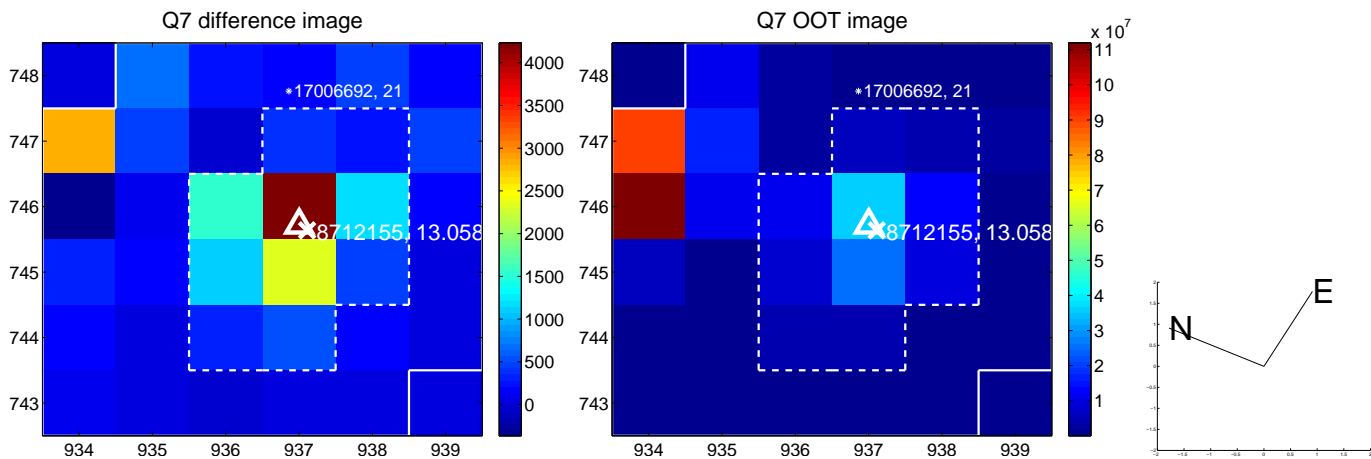
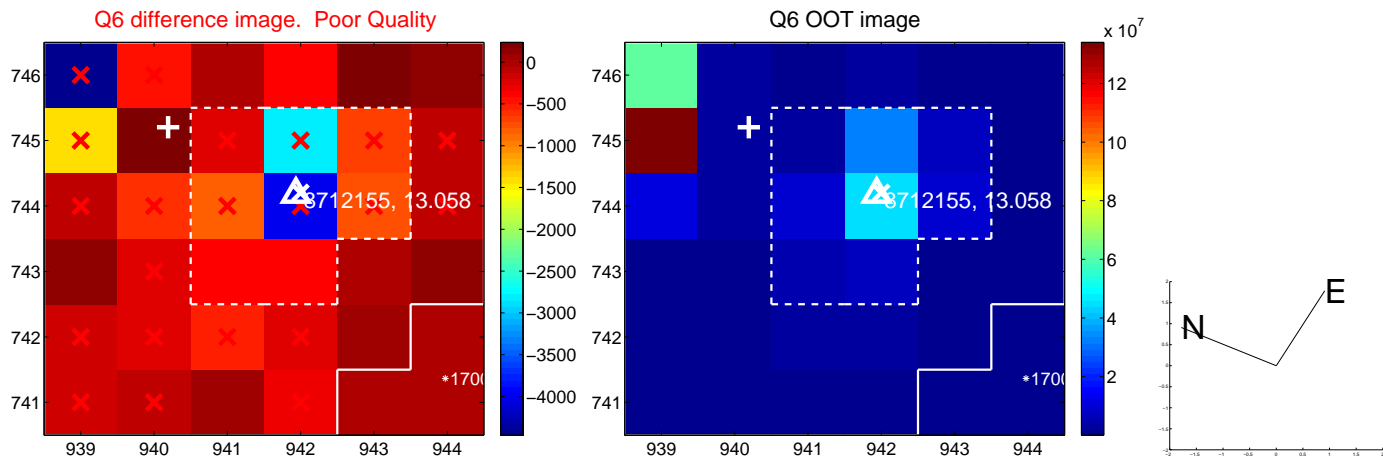
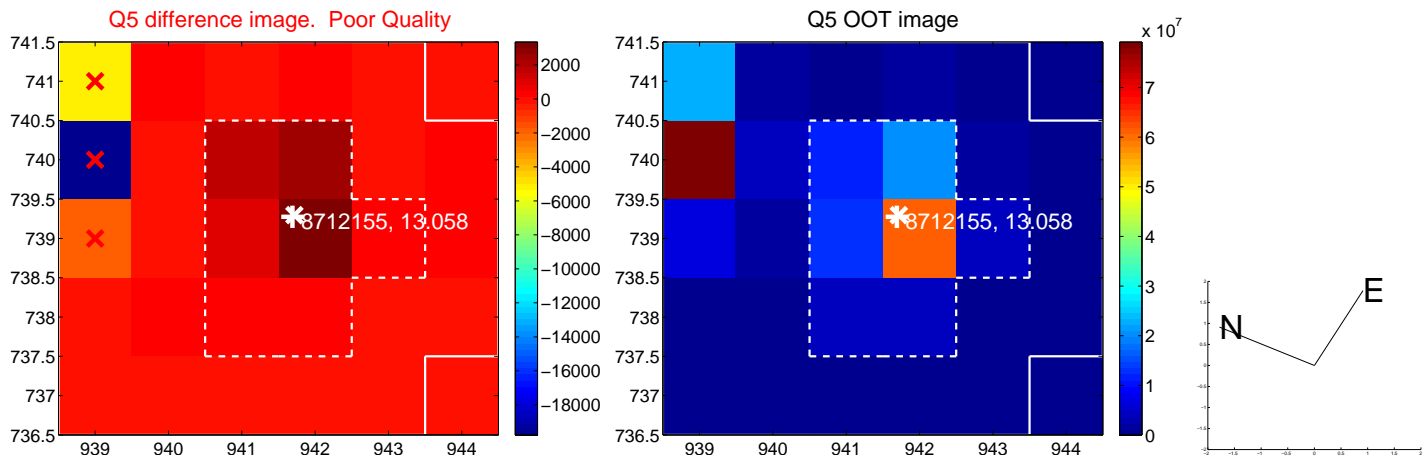


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

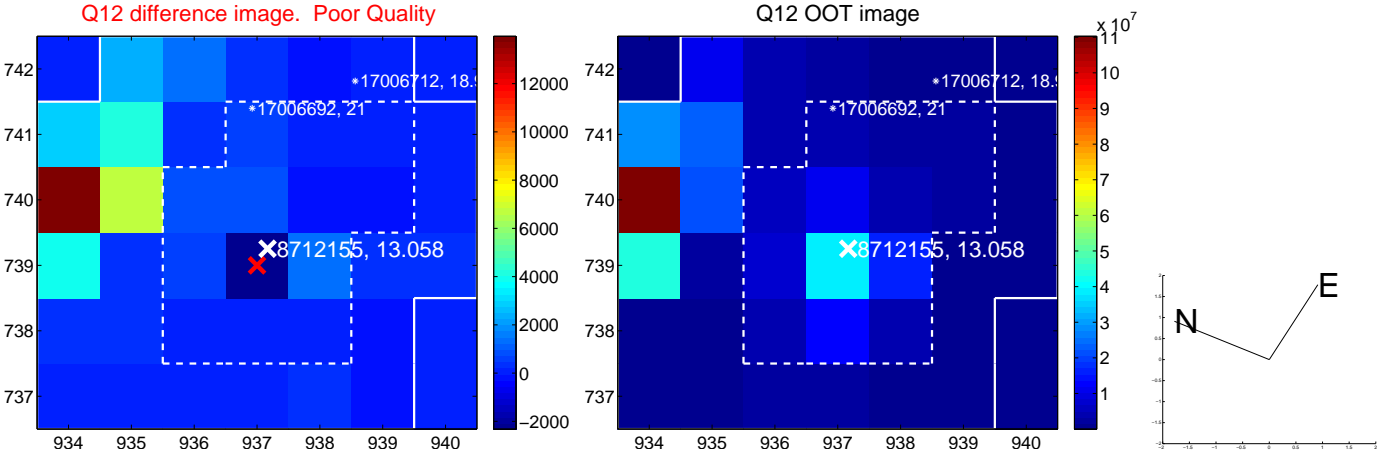
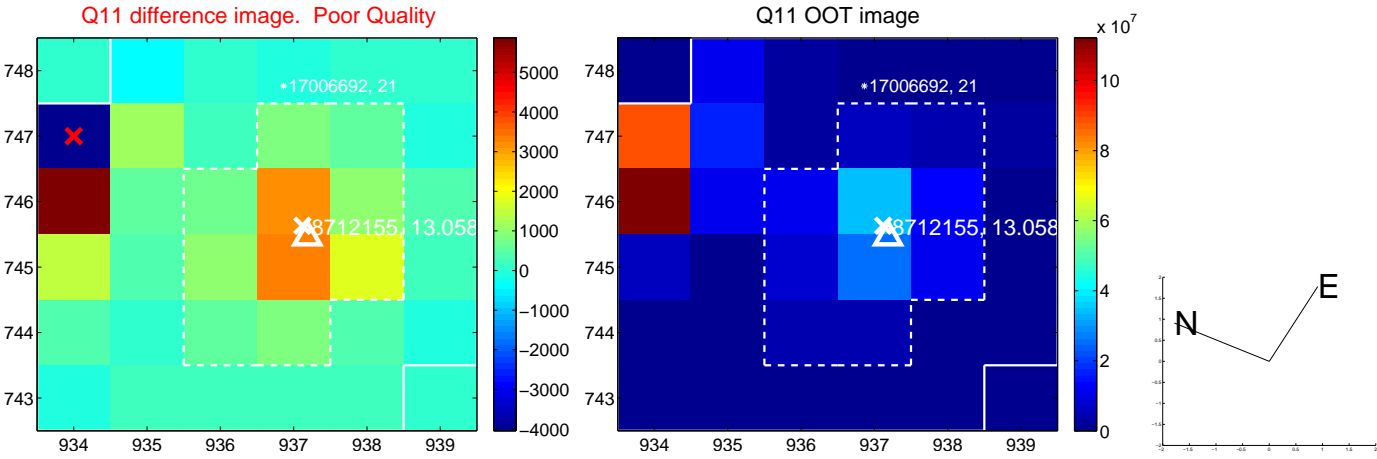
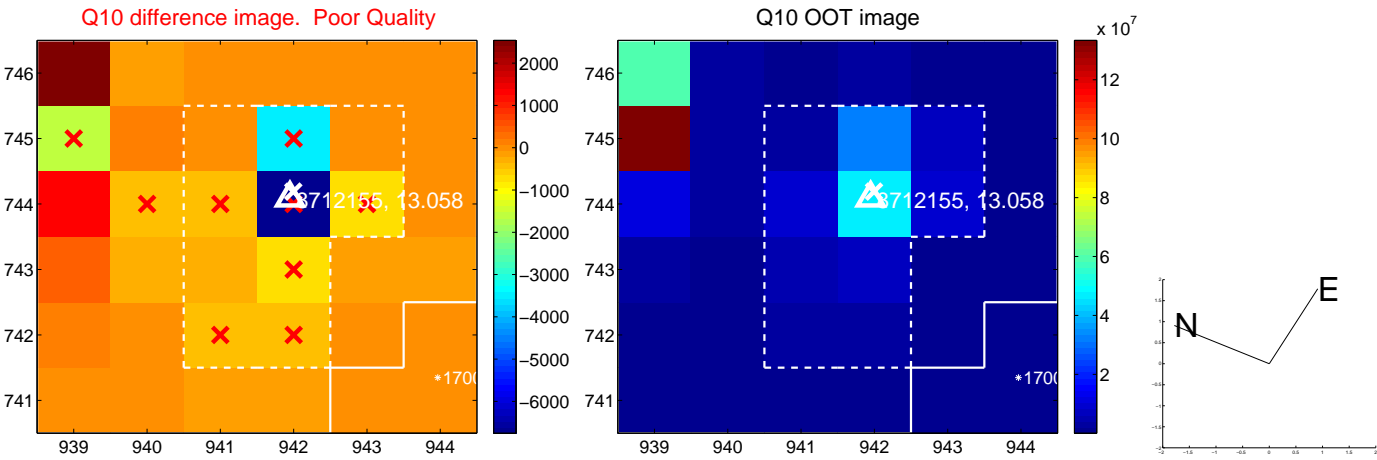
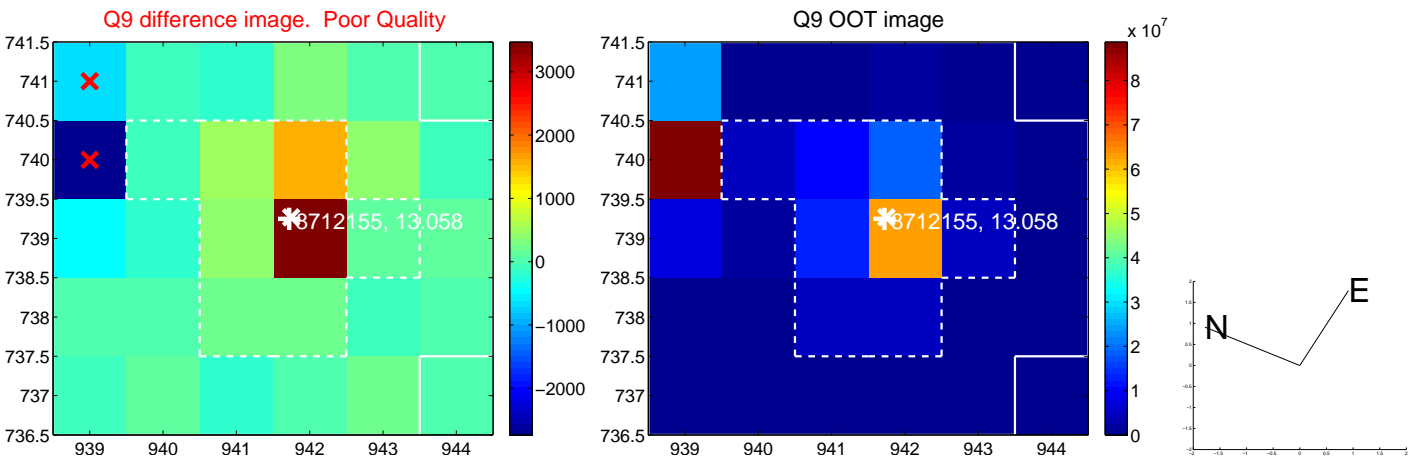
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



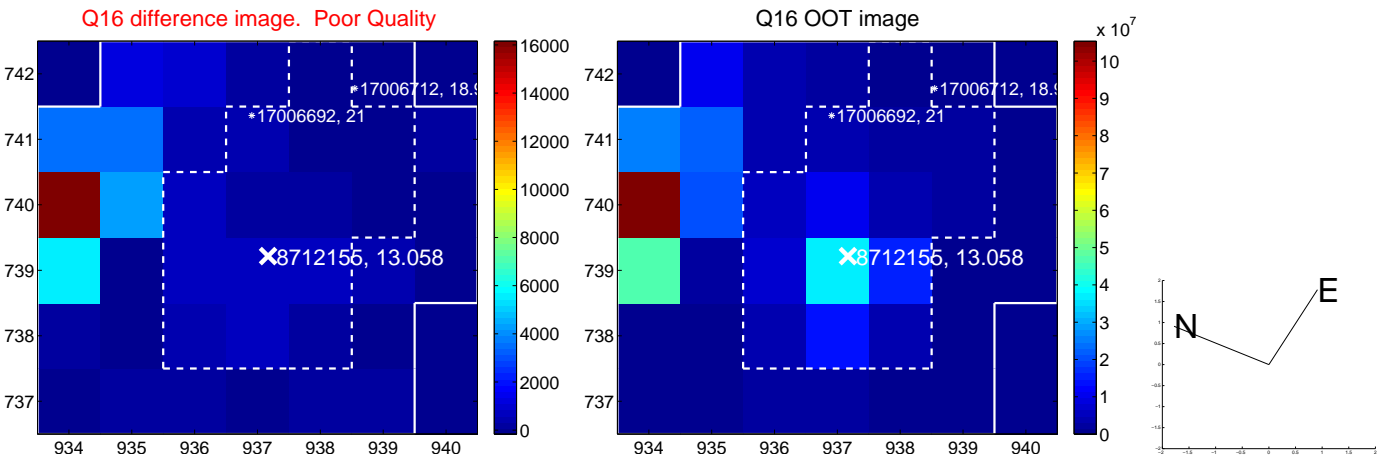
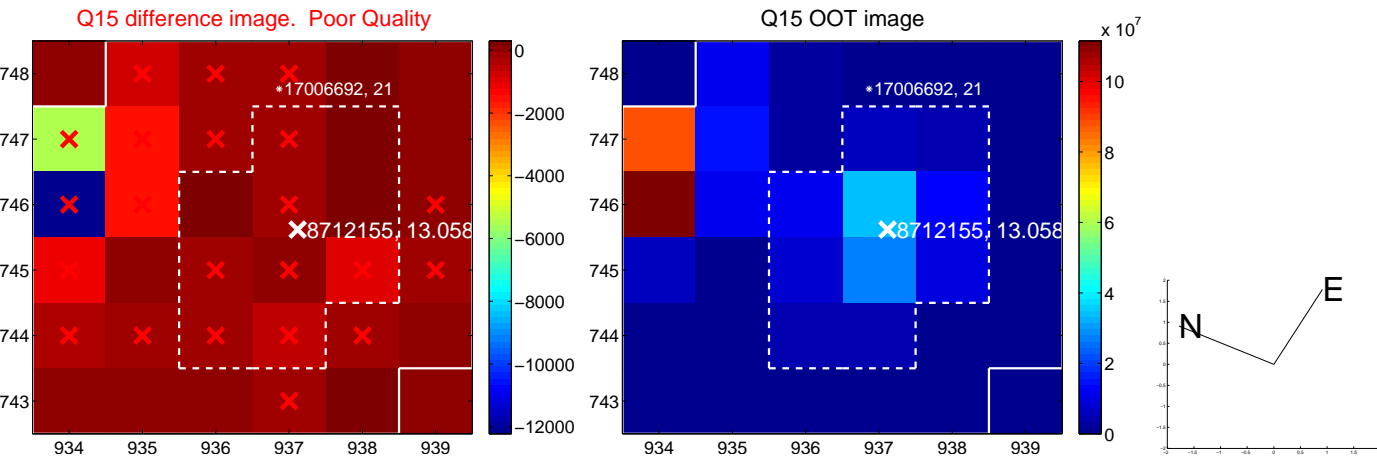
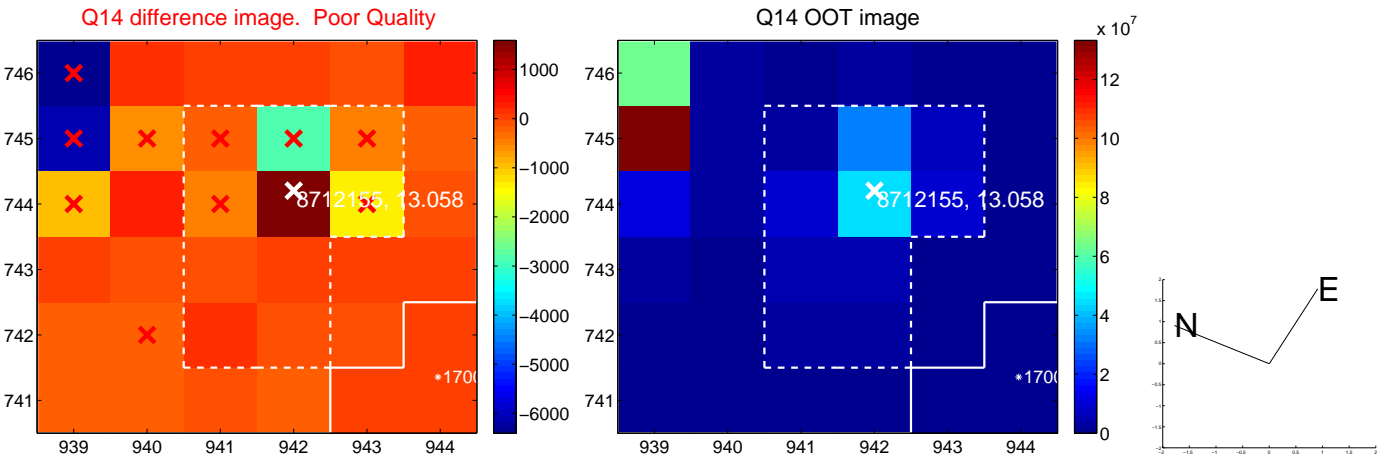
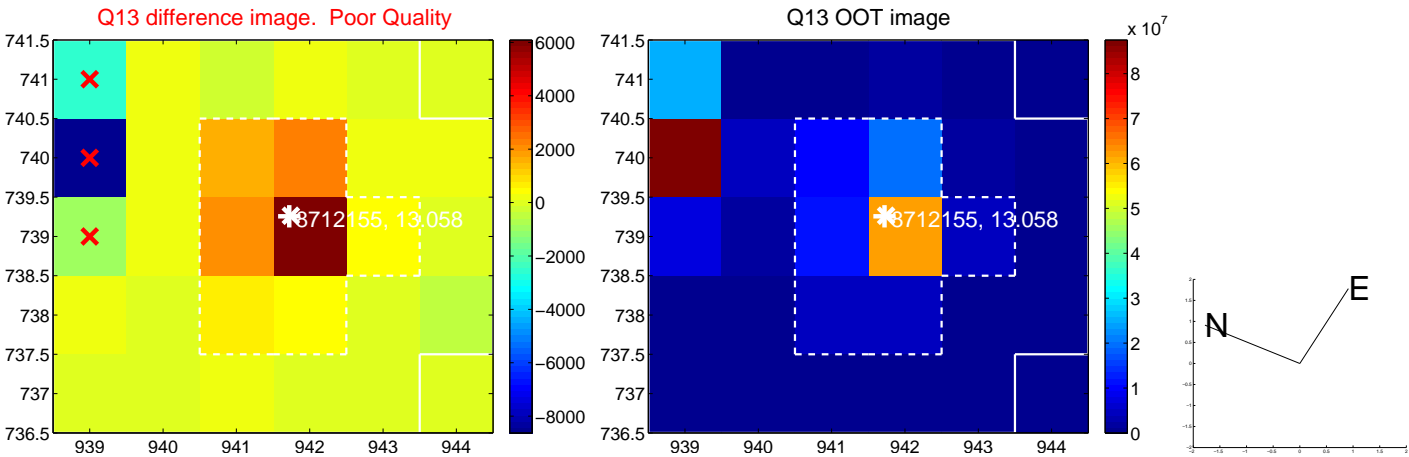
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



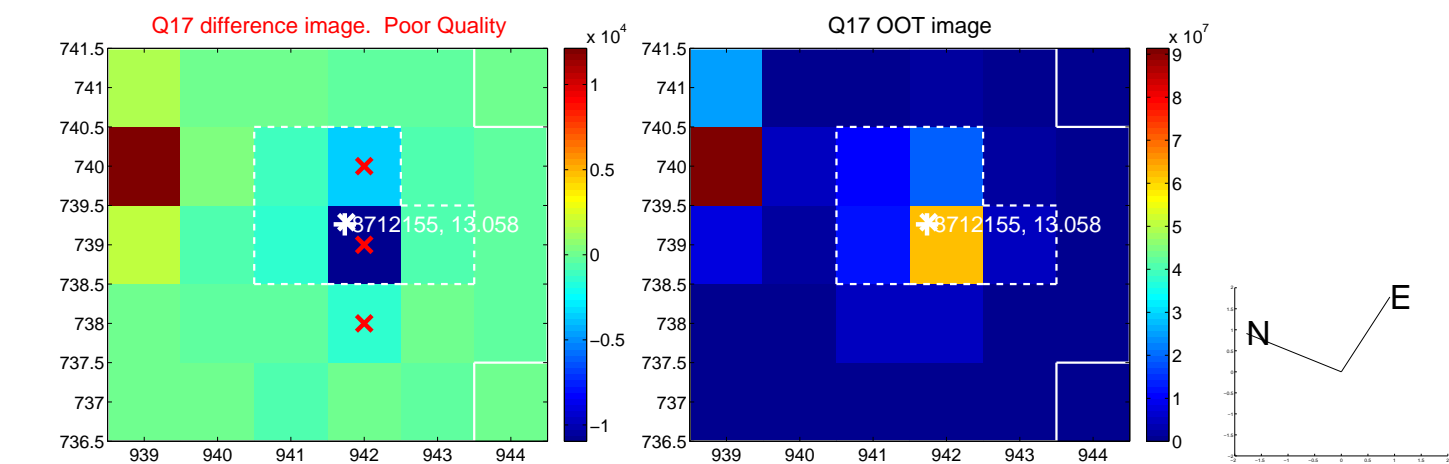
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



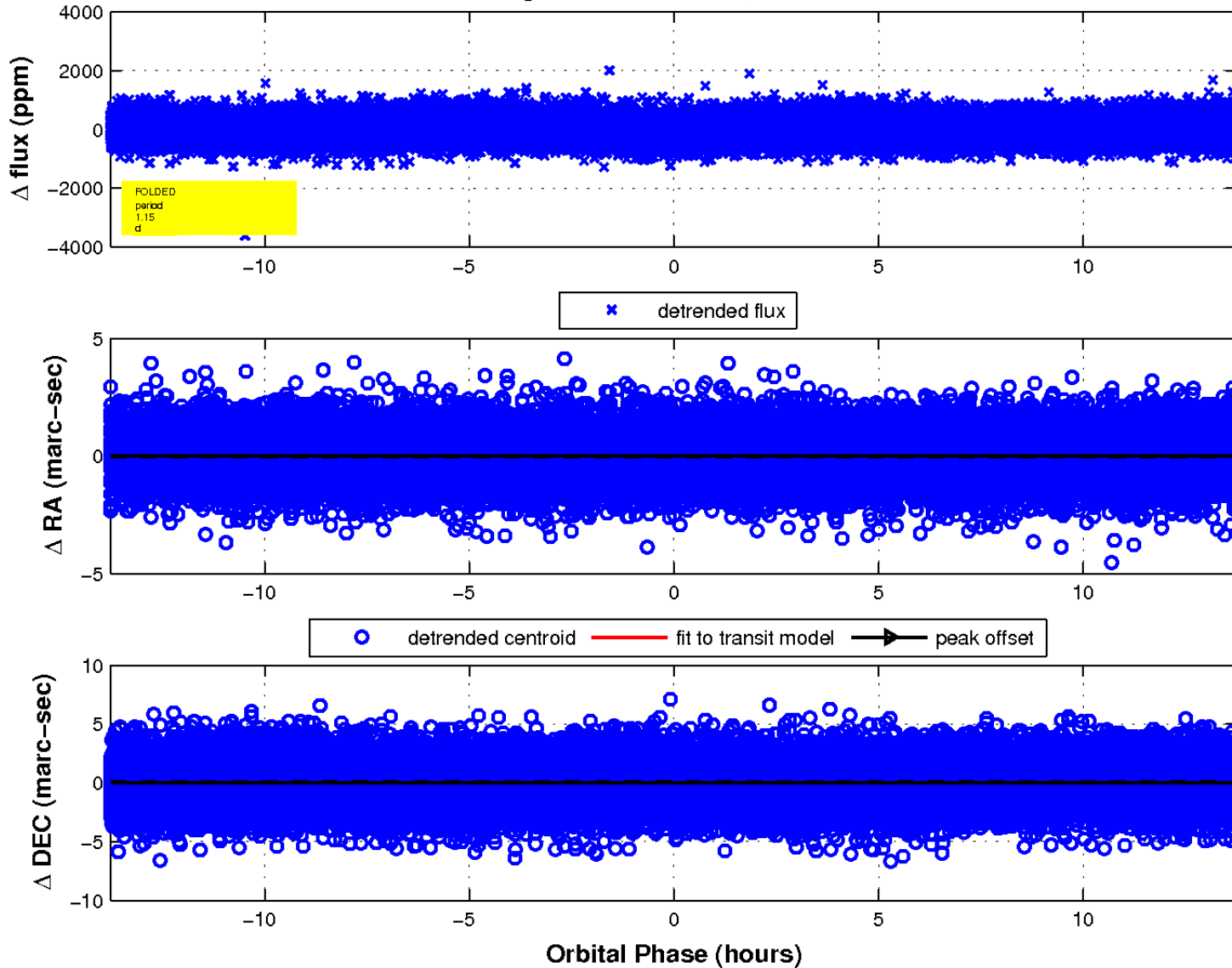
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



fluxWeightedCentroids, Planet 3 of 3



UKIRT Image

