

KIC 008043714

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})
008043714-01	OBS	1765.01	6.814983	134.212559	23942.9	3.072	843.1	788.1	0.82	5465	14.24	115.91
008043714-02	OBS	No	3.407470	134.238897	1081.5	2.845	37.3	39.8	0.82	5465	3.36	292.07

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008043714-01	OBS	FP	0.00	0	1	0	0	MOD_SEC_DV—MOD_SEC_ALT—HAS_SEC_TCE
008043714-02	OBS	FP	0.00	1	1	0	0	IS_SEC_TCE

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.

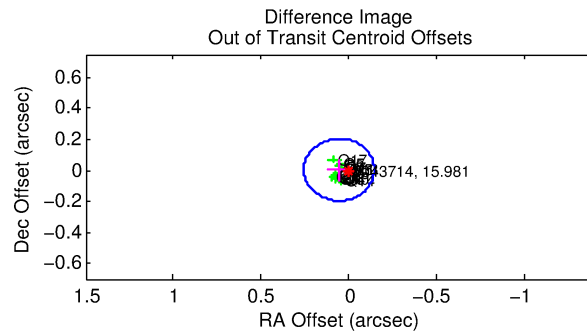
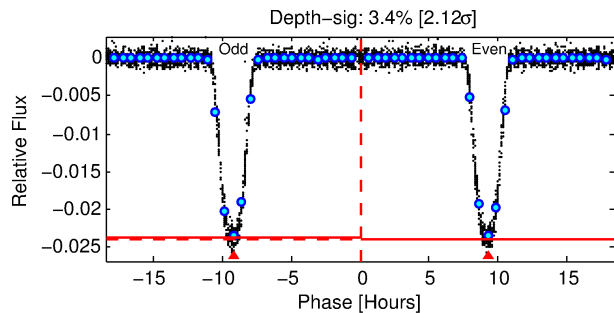
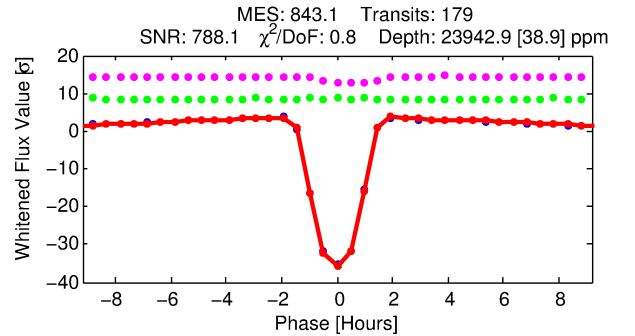
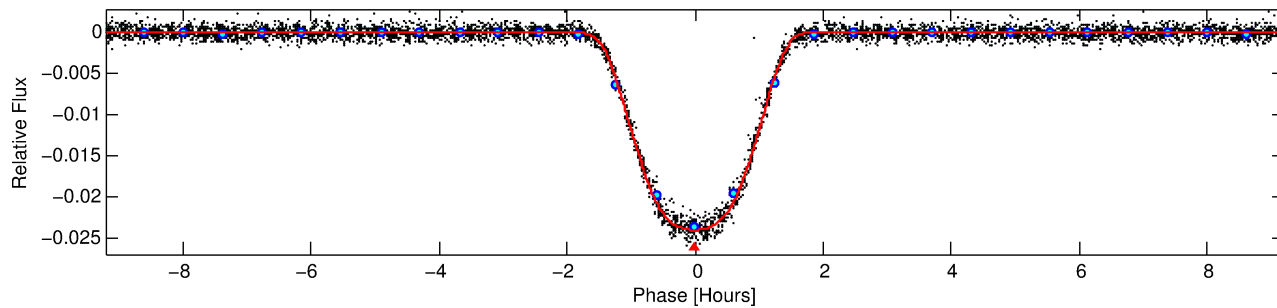
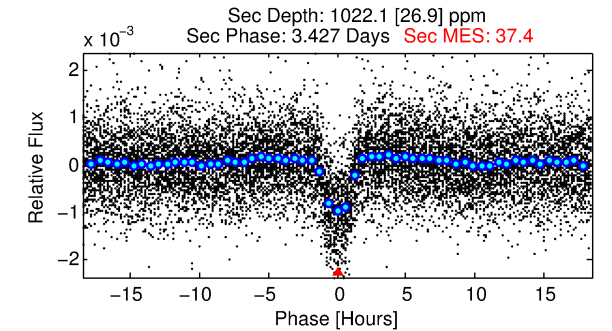
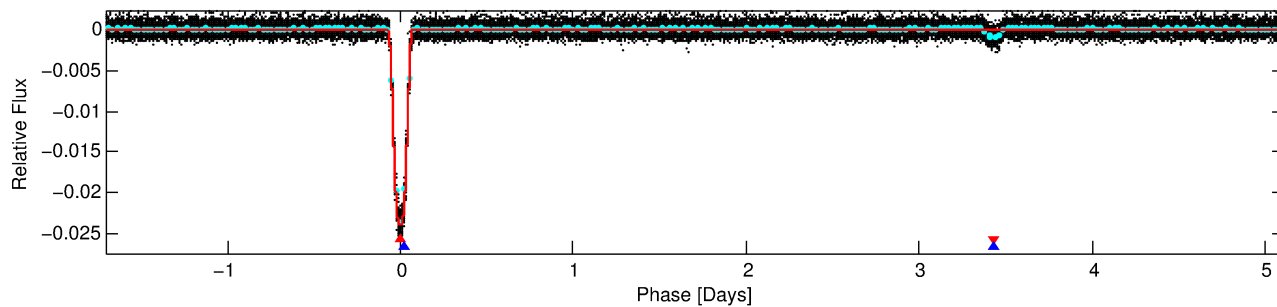
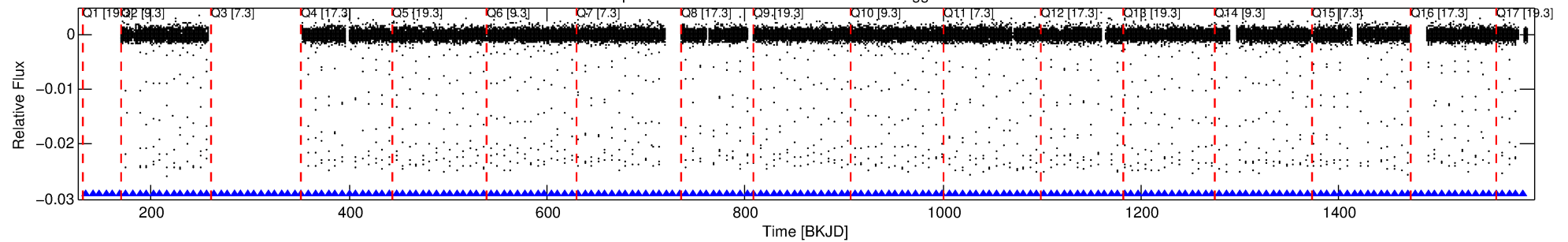
Ephemeris Match Information For 008043714-01

No Significant Match Found

DV One-Page Summary

KIC: 8043714 Candidate: 1 of 2 Period: 6.815 d
KOI: K01765.01 Corr: 0.998

Kp: 15.98 R*: 0.82 Rs Teff: 5465.0 K Logg: 4.57 Fe/H: -0.060



DV Fit Results:

Period = 6.81498 [0.00000] d
Epoch = 134.2126 [0.0001] BKJD
Rp/R* = 0.1598 [0.0003]
a/R* = 14.27 [0.05]
b = 0.80 [0.00]
Seff = 115.91 [35.23]
Teq = 837 [64] K
Rp = 14.24 [3.28] Re
a = 0.0678 [0.0131] AU
Ag = 12.75 [3.58] [3.29σ]
Teffp = 2445 [75] K [16.34σ]

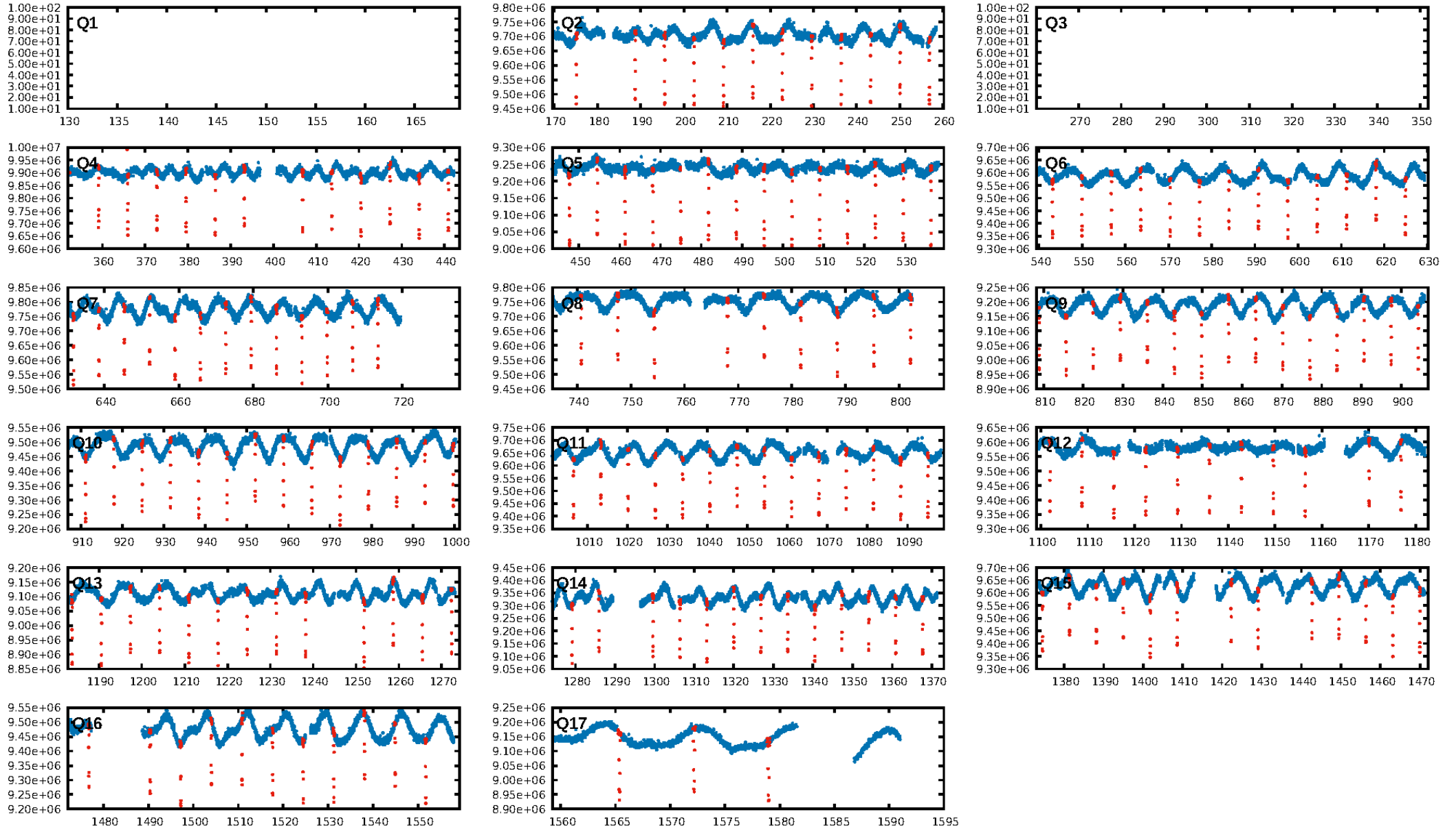
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [19.53σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 0.0%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 0.00e+00
RollingBand-fgt: 1.00 [176/176]
GhostDiagnostic-chr: 3.92
Centroid-sig: 0.0%
Centroid-so: 0.054 arcsec [2.83σ]
OotOffset-rm: 0.057 arcsec [0.85σ]
KicOffset-rm: 0.120 arcsec [1.73σ]
OotOffset-st: 4/3/4/4 [15]
KicOffset-st: 4/3/4/4 [15]
DiffImageQuality-fgm: 1.00 [15/15]
DiffImageOverlap-fno: 0.00 [0/15]

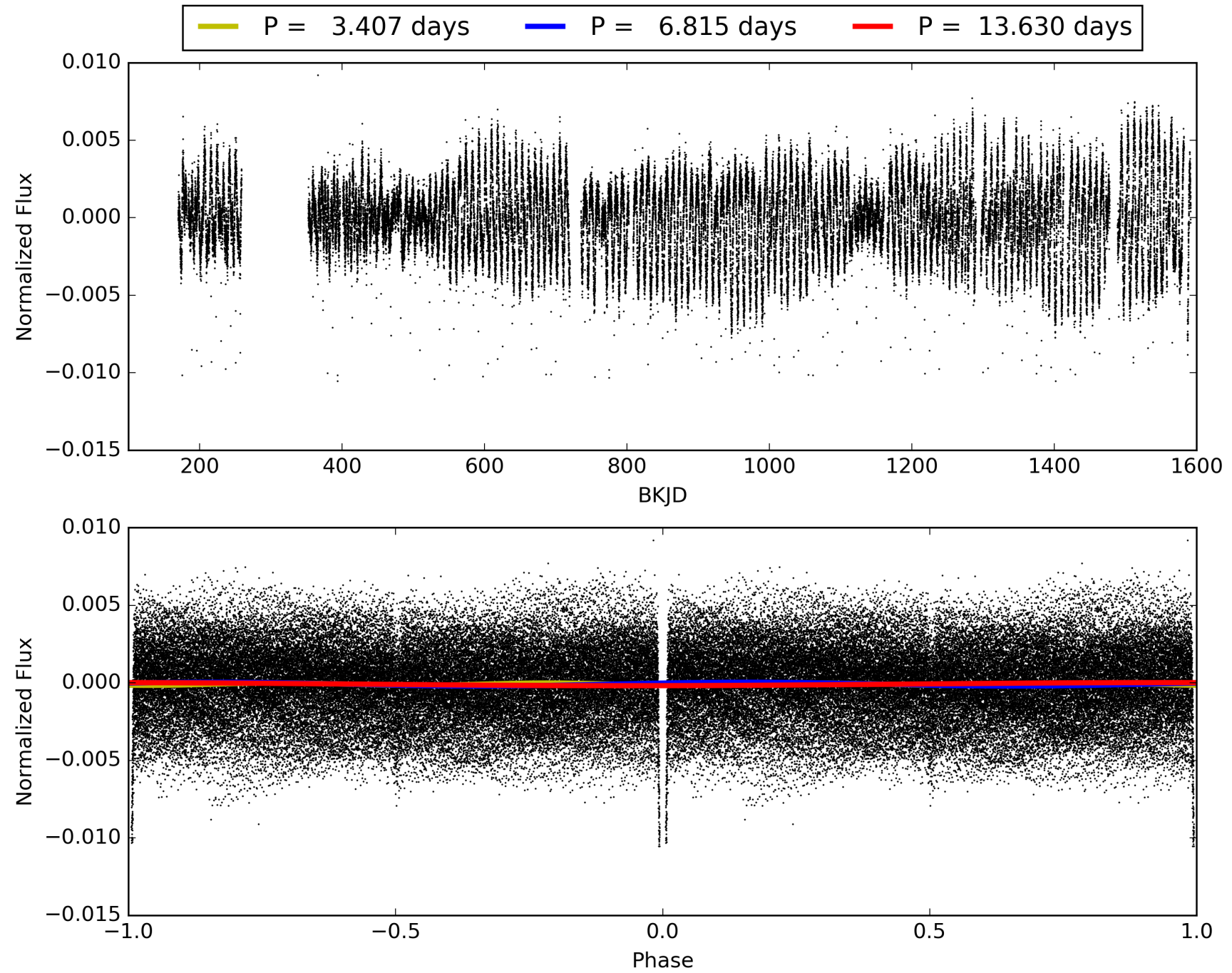
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 22:25:24 Z

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

TCE 008043714-01, PDC Light Curves

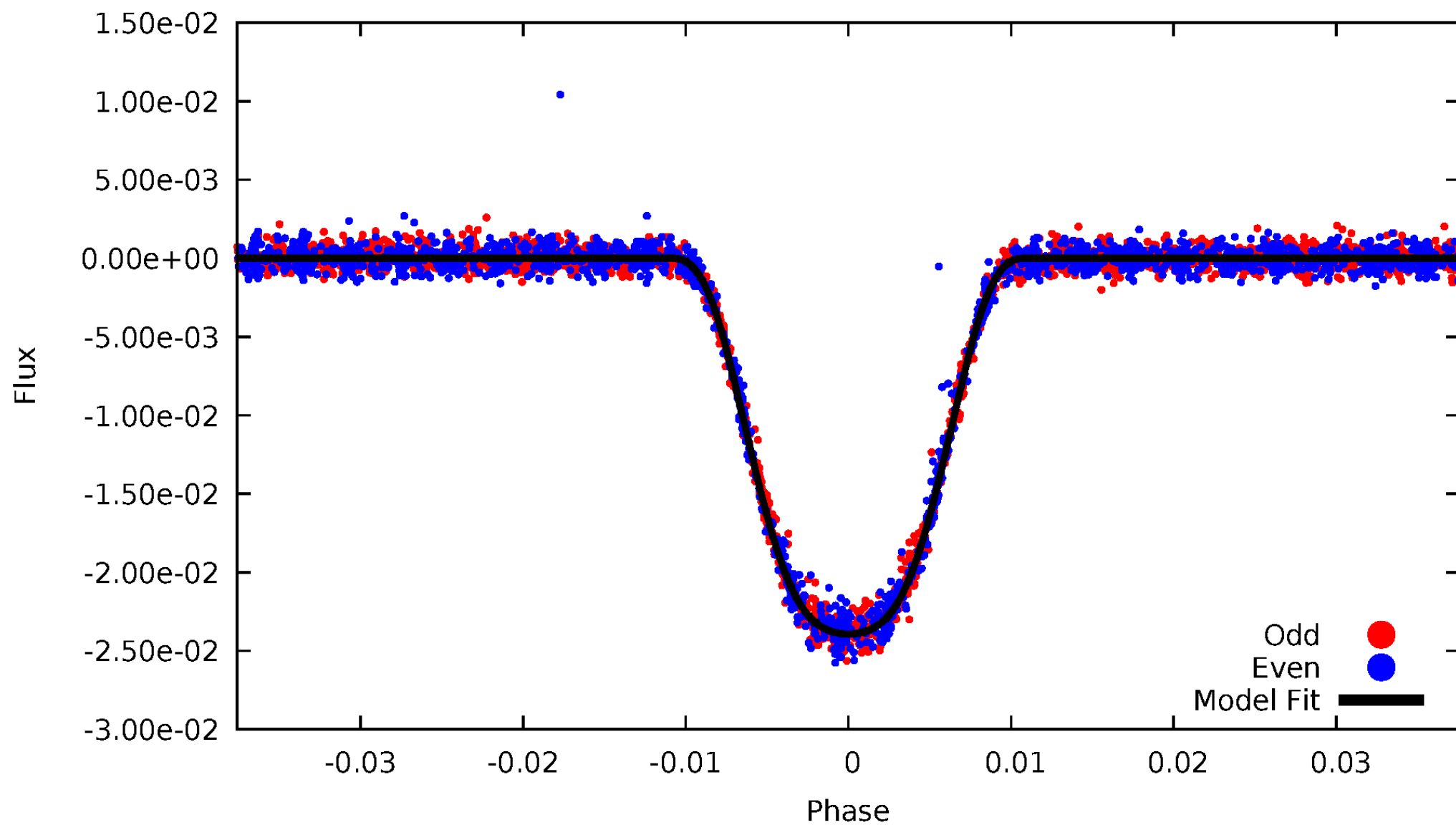


TCE 008043714-01



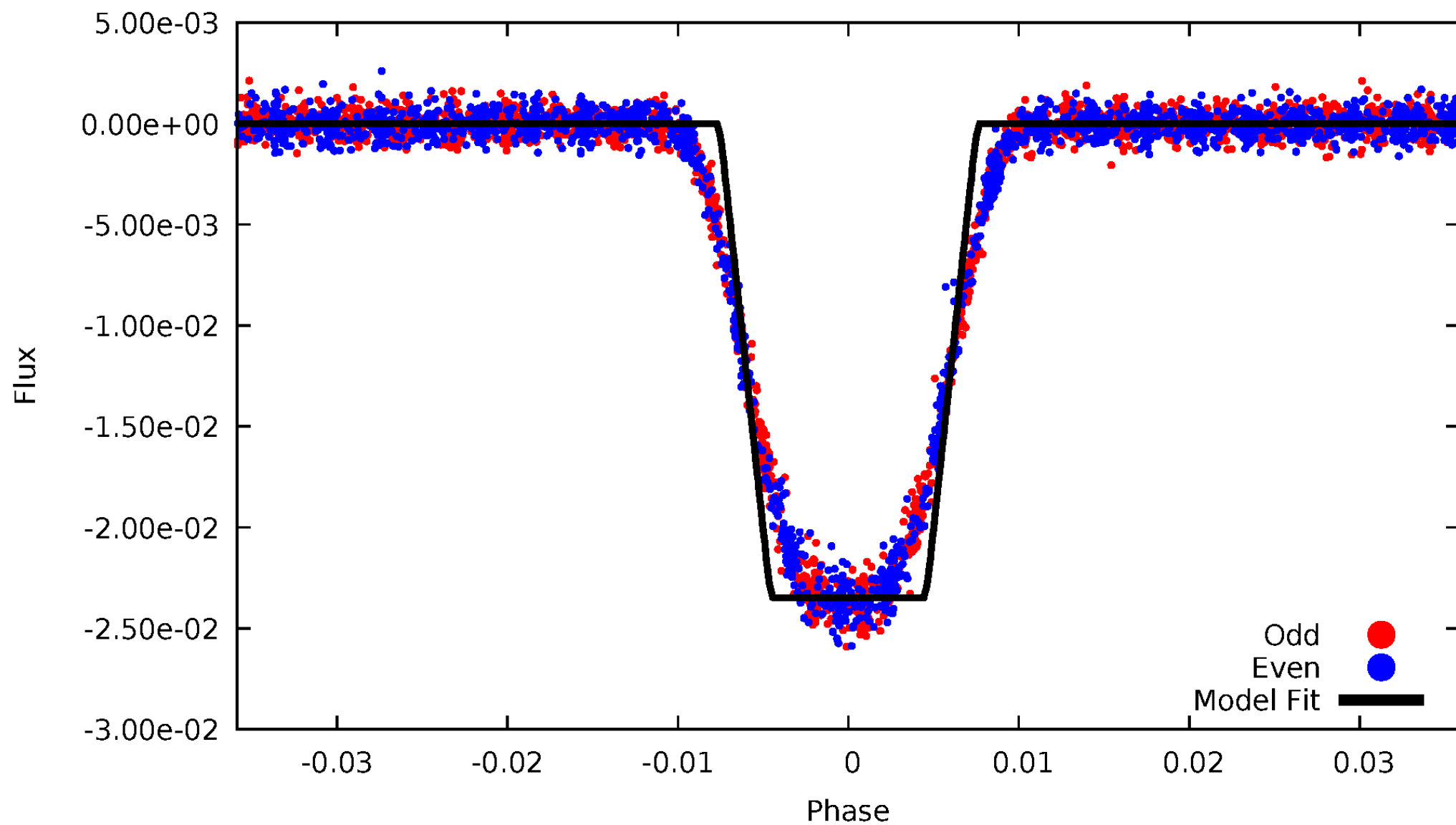
DV Odd/Even

TCE 008043714-01



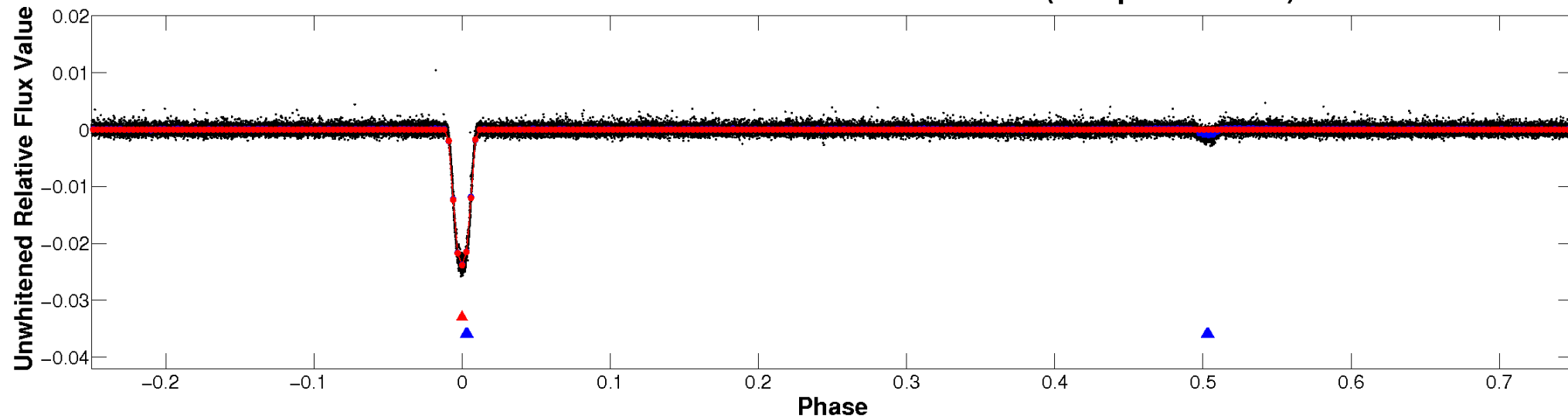
ALT Odd/Even

TCE 008043714-01

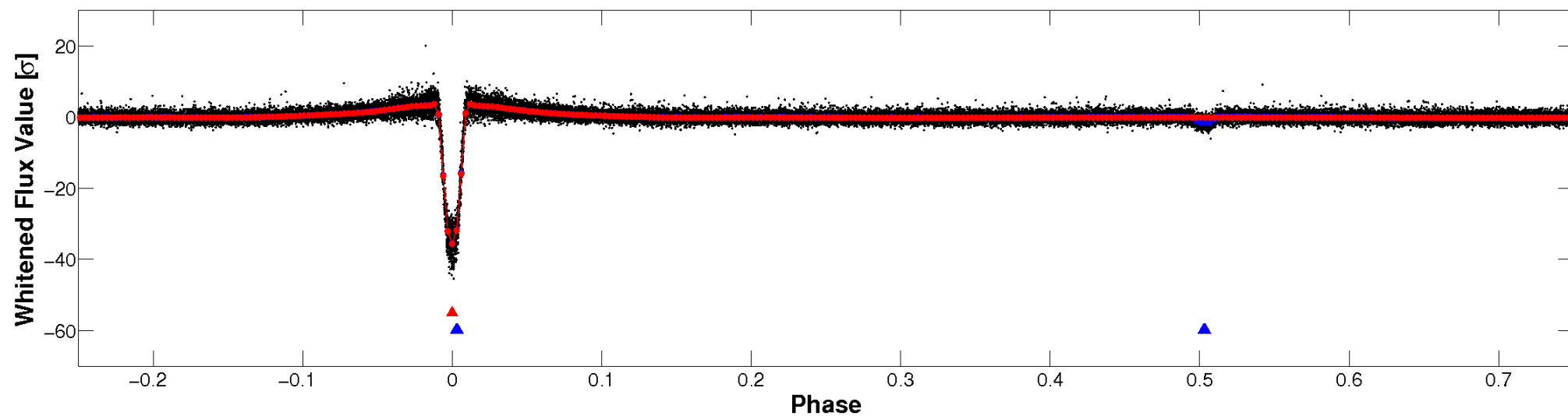


Non-Whitened Vs. Whitened Light Curve

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

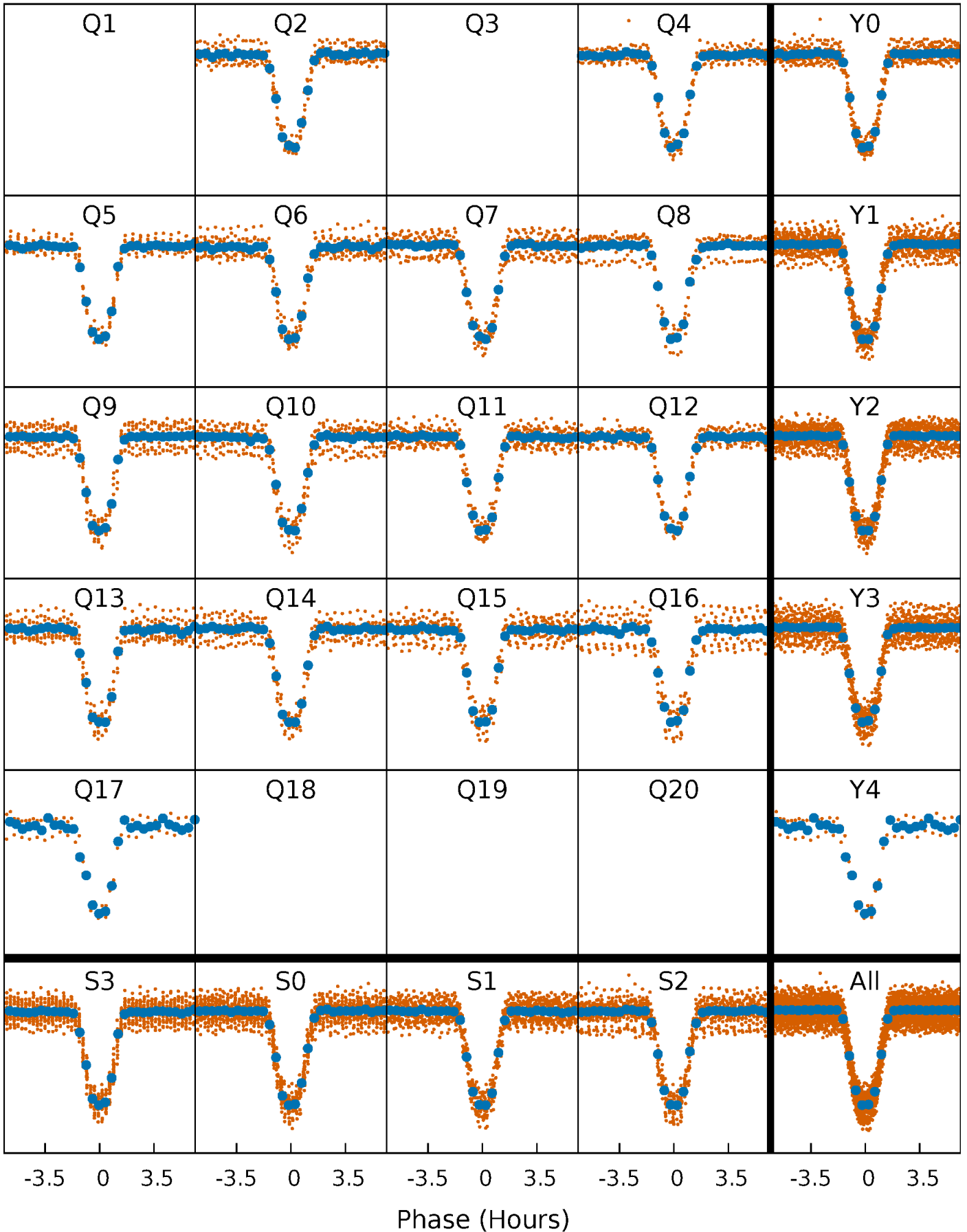


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



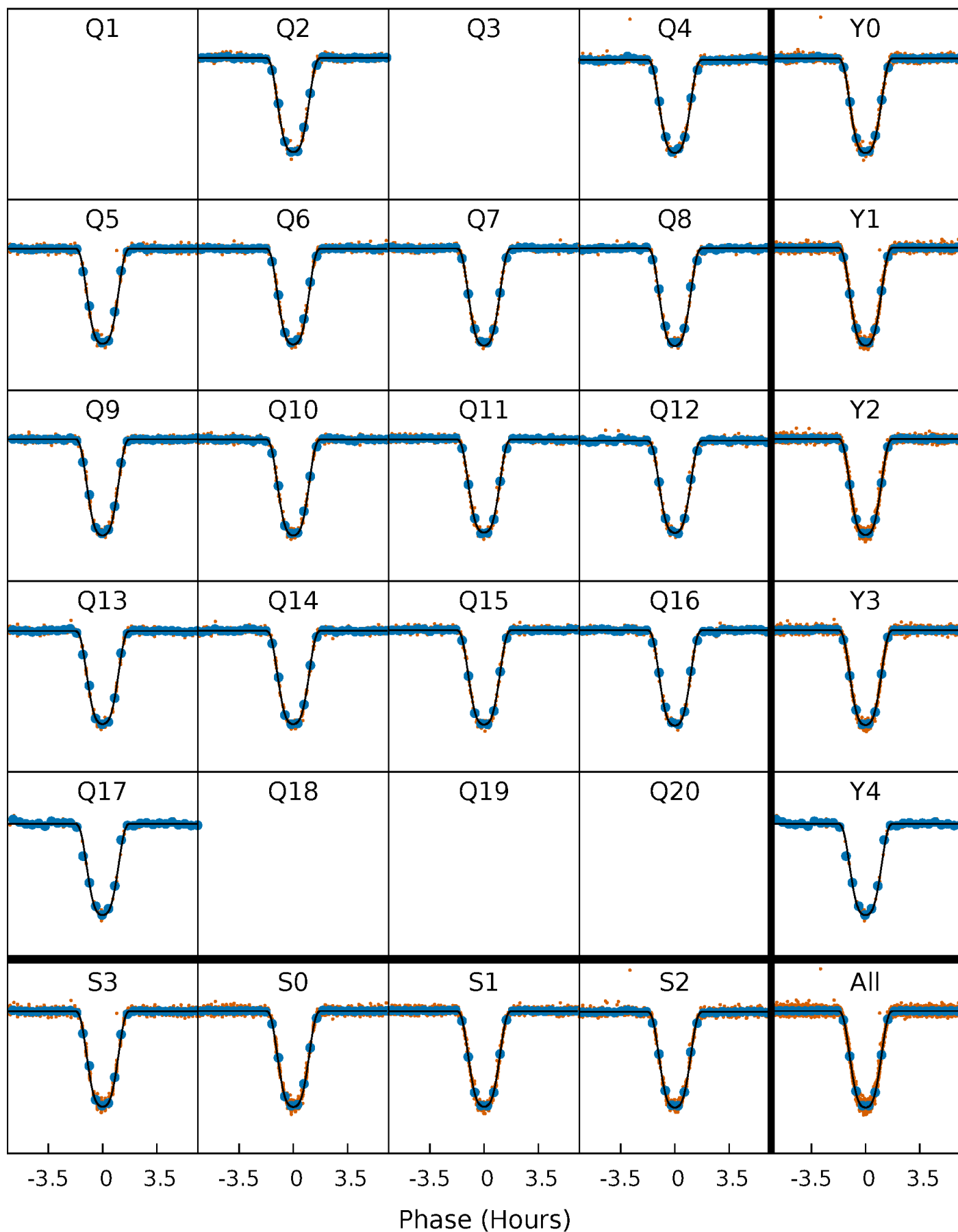
PDC Quarter-Phased Transit Curves

TCE 008043714-01 P= 6.814983 Days $T_0=134.212559$ (BKJD)



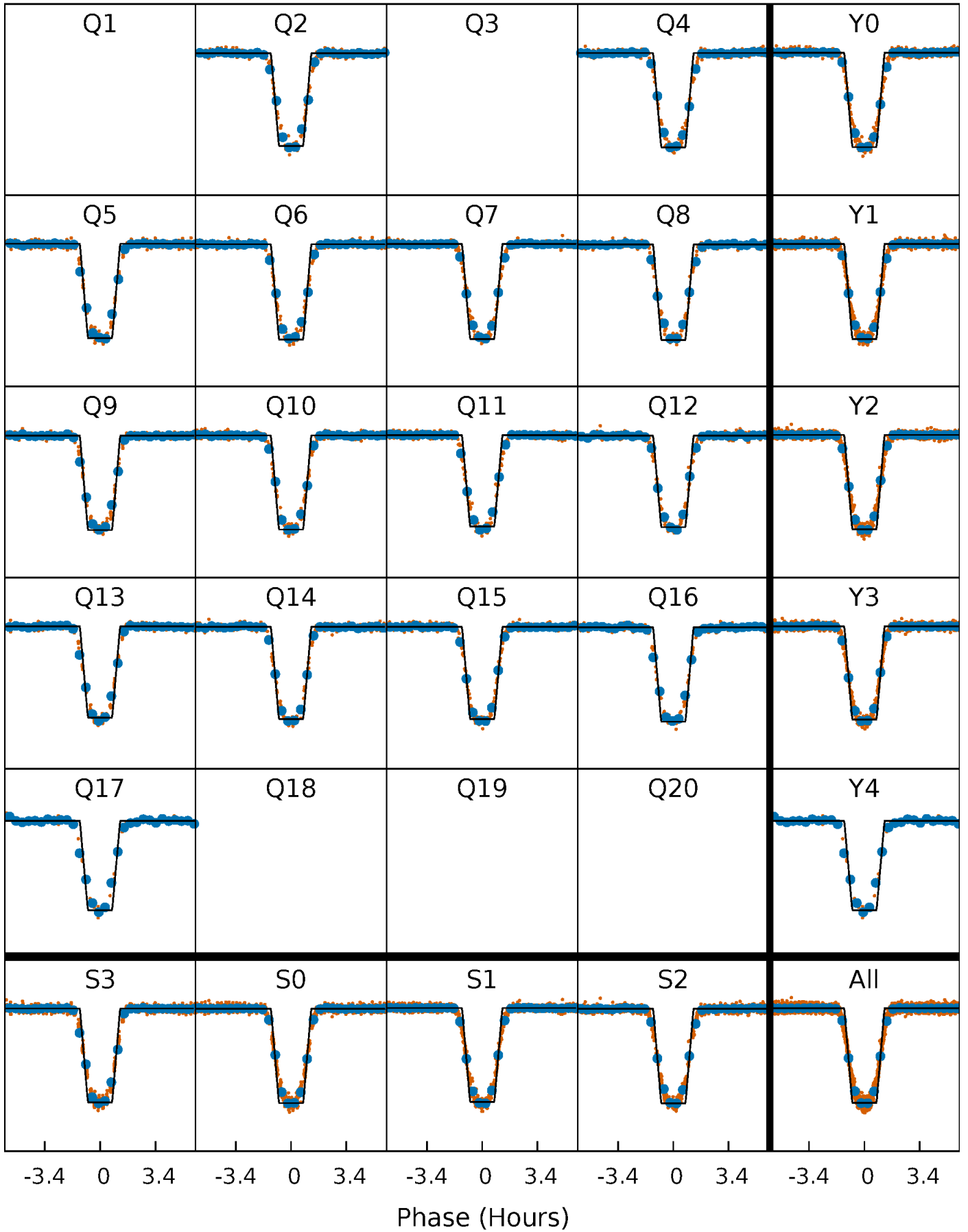
DV Quarter-Phased Transit Curves

TCE 008043714-01 P= 6.814983 Days $T_0=134.212559$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

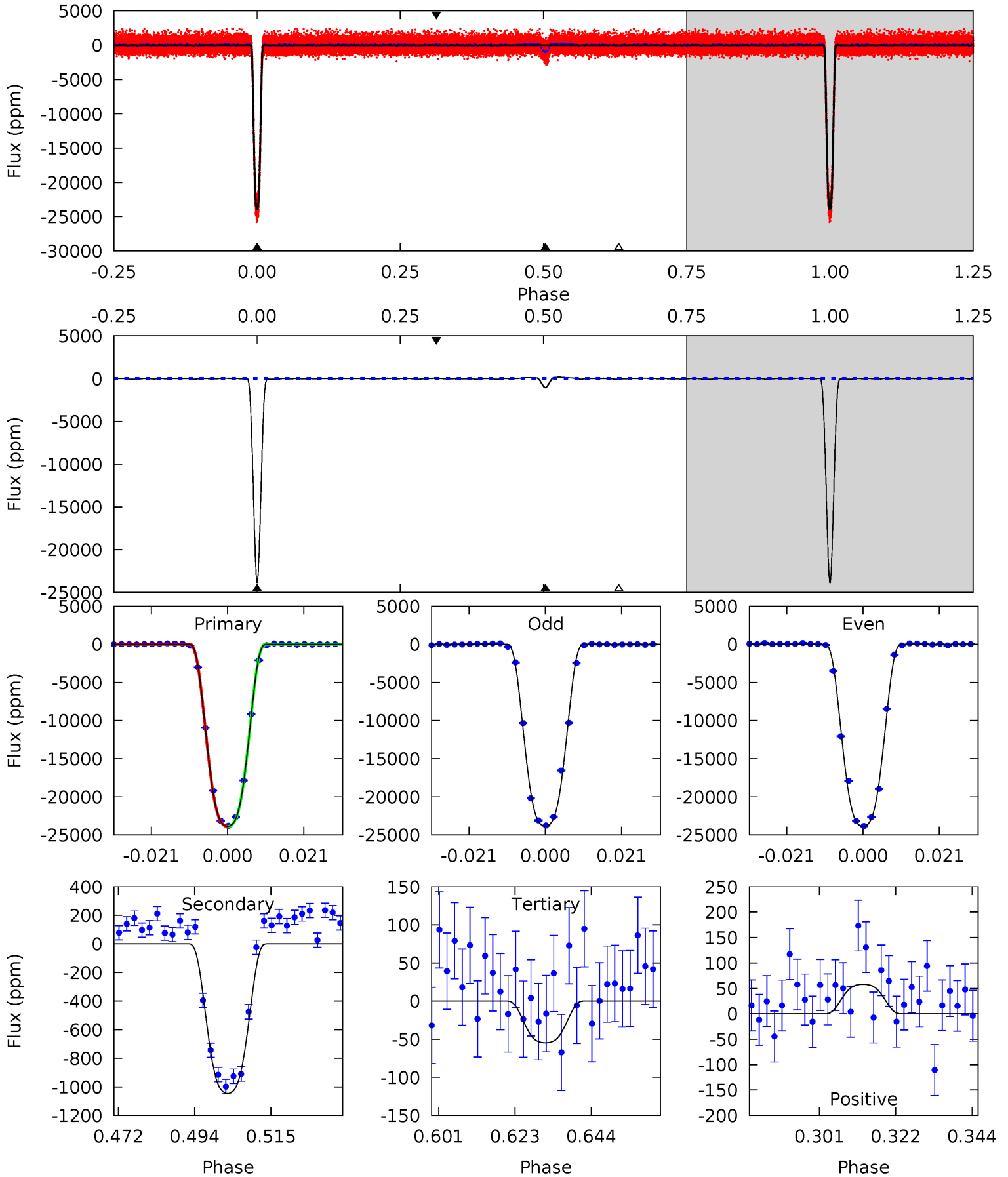
TCE 008043714-01 P= 6.814997 Days $T_0=134.210923$ (BKJD)



DV Model-Shift Uniqueness Test

008043714-01, P = 6.814983 Days, E = 134.212559 Days

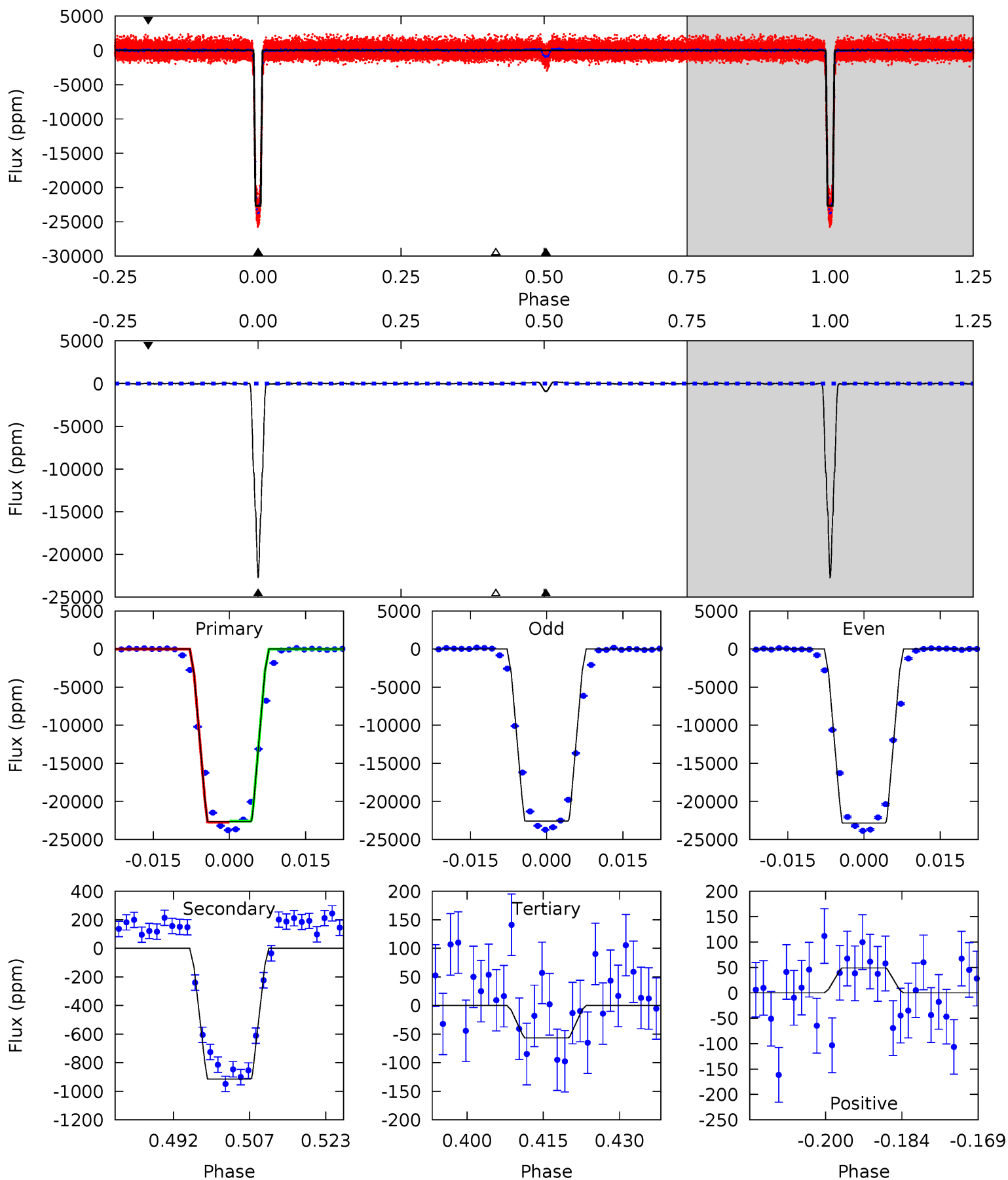
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
1427	62.6	3.27	3.47	4.88	2.30	2.27	1424	1424	59.3	59.1	1.03	1.00	0.01	0.28



Alt Model-Shift Uniqueness Test

008043714-01, P = 6.814997 Days, E = 134.210923 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
1042	42.1	2.60	2.26	4.94	2.42	1.60	1040	1040	39.5	39.8	6.08	0.99	0.01	2.90



Stellar Parameters For KIC 008043714

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5465^{+164}_{-164}	$4.566^{+0.038}_{-0.152}$	$-0.060^{+0.300}_{-0.300}$	$0.817^{+0.188}_{-0.063}$	$0.897^{+0.082}_{-0.099}$	$2.320^{+0.459}_{-0.974}$
	+3%/-3%	+1%/-3%	+500%/-500%	+23%/-8%	+9%/-11%	+20%/-42%
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 008043714-01 / KOI 1765.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-1046 ± 17	$14.49^{+1.69}_{-0.81}$	1189^{+65}_{-51}	3072^{+56}_{-58}	12^{+1}_{-2}
Alt.	-914 ± 22	$13.87^{+1.56}_{-0.79}$	1188^{+63}_{-49}	3048^{+63}_{-56}	12^{+1}_{-2}

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

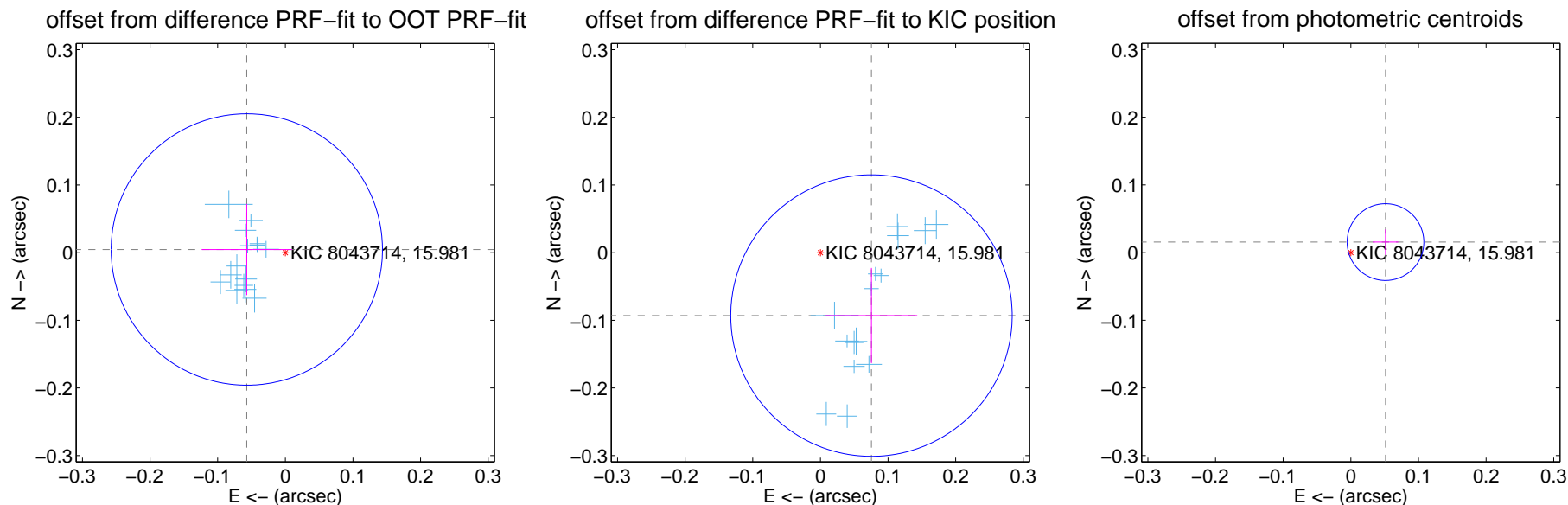
DV Centroid Data

Supplemental centroid analysis for 008043714-01. Kepler magnitude: 15.98. Transit SNR 788.13

There are 15 quarters with good PRF difference image offsets

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

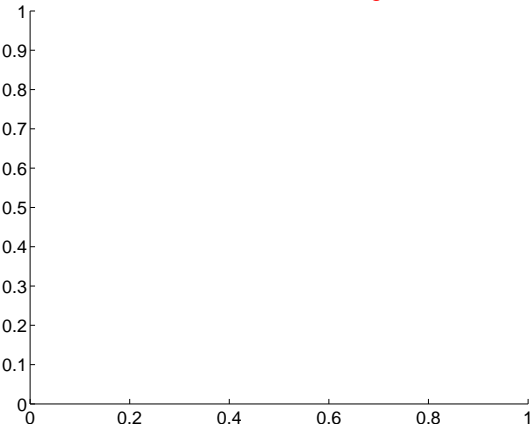
	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.057 ± 0.067	0.85	0.057 ± 0.067	0.005 ± 0.067
PRF-fit source offset from KIC position	0.120 ± 0.069	1.73	-0.076 ± 0.068	-0.093 ± 0.070
photometric centroid source offset	0.05 ± 0.02	2.83	-0.05 ± 0.02	0.02 ± 0.02



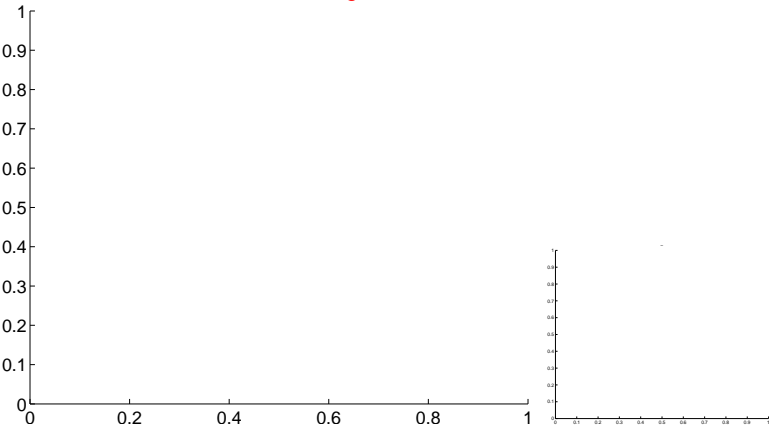
Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

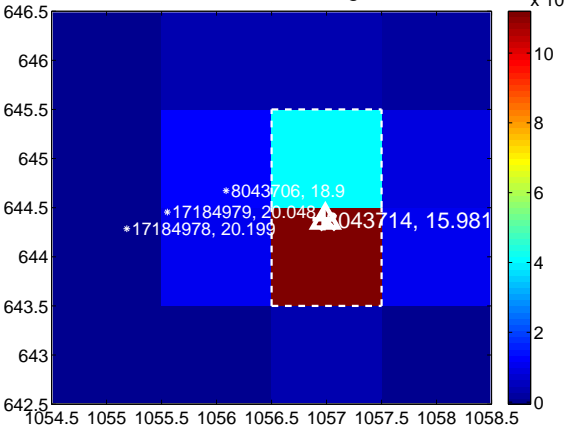
Q1 no difference image



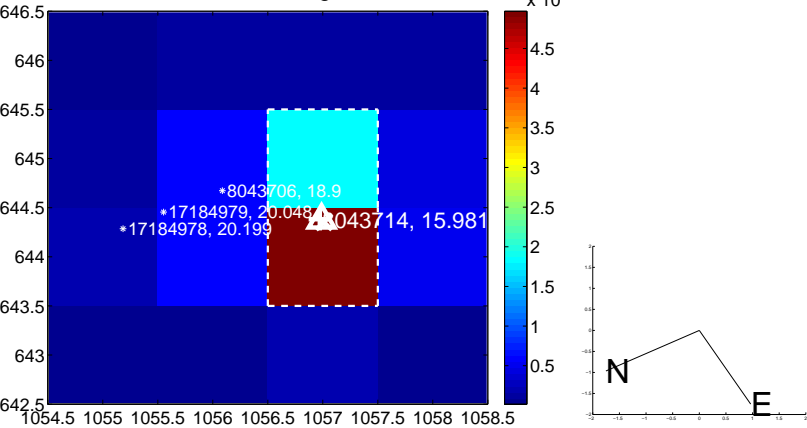
Q1 no OOT image



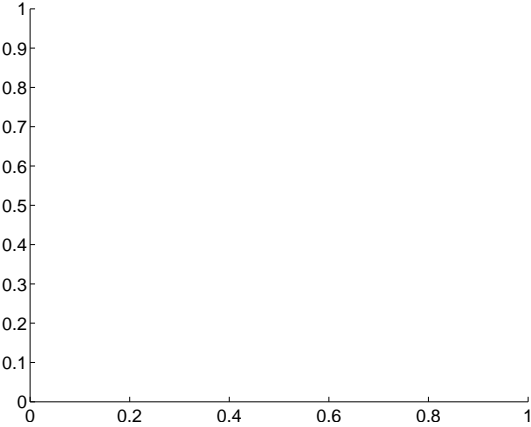
Q2 difference image



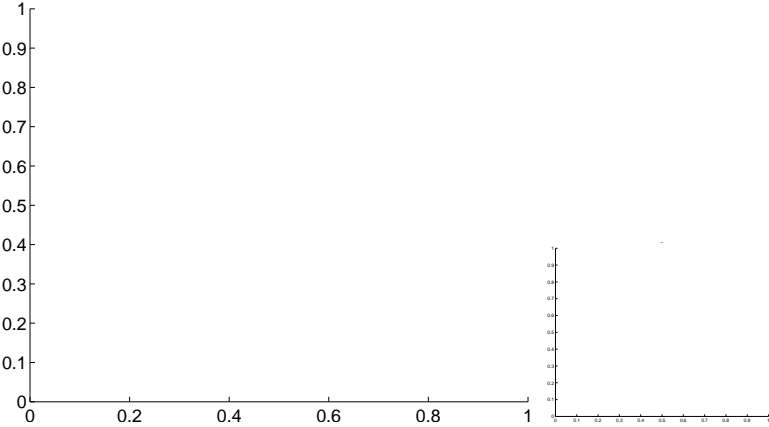
Q2 OOT image



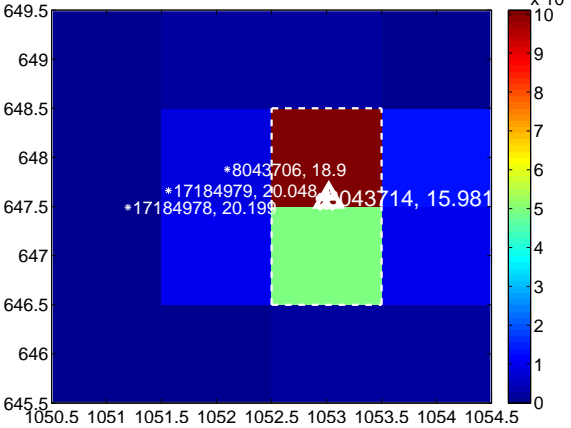
Q3 no difference image



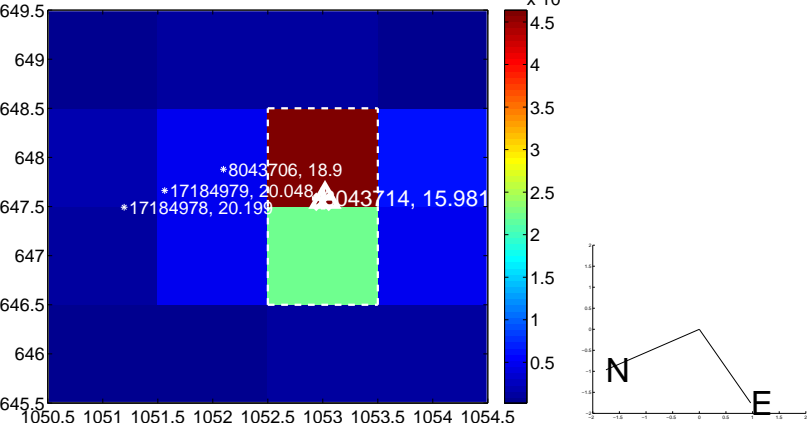
Q3 no OOT image



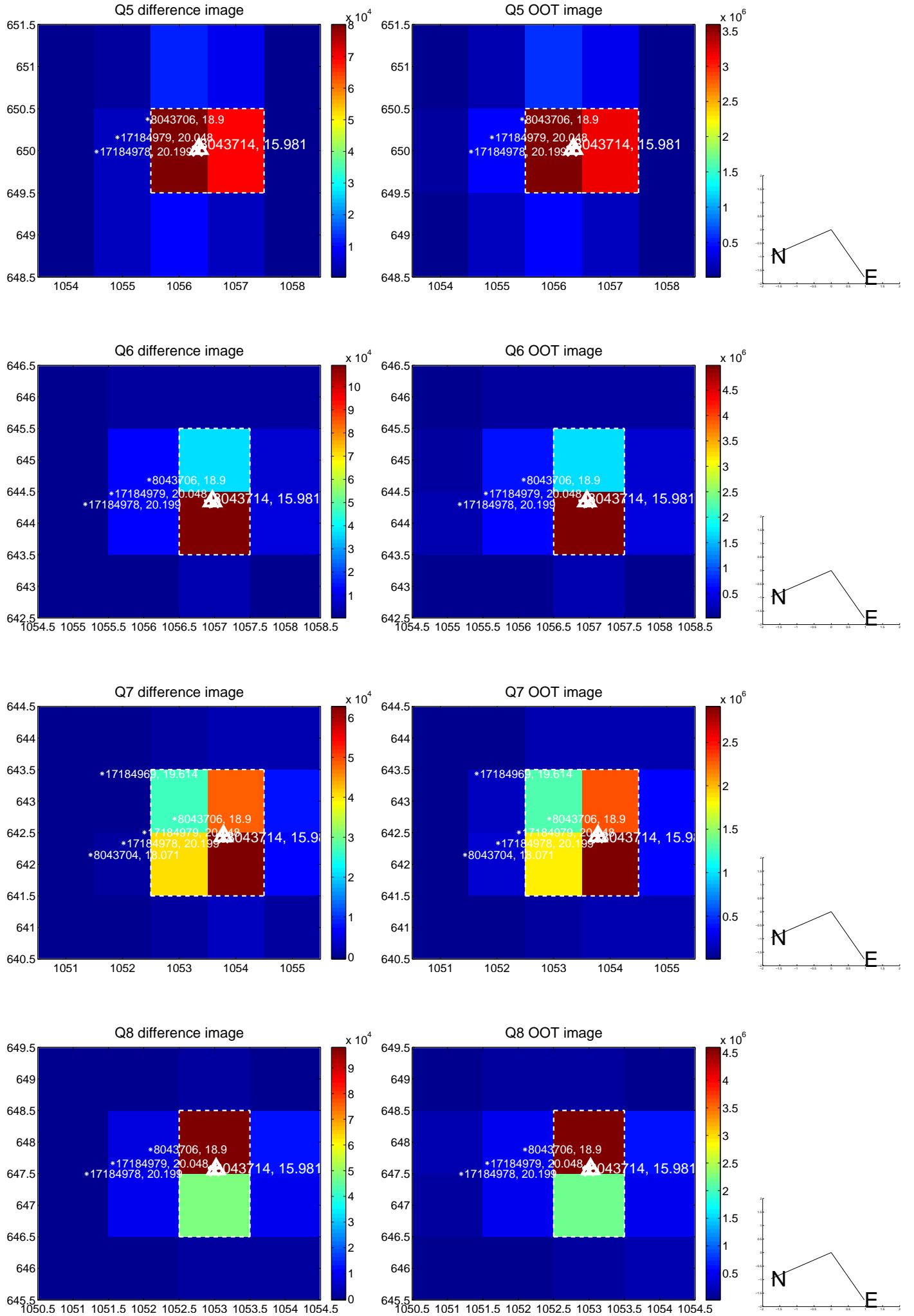
Q4 difference image



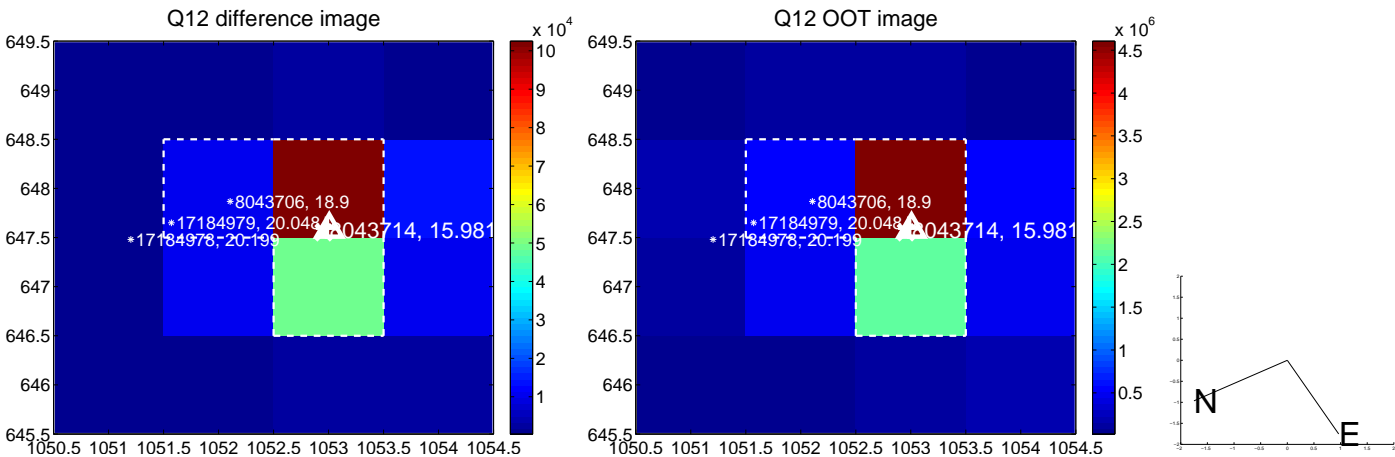
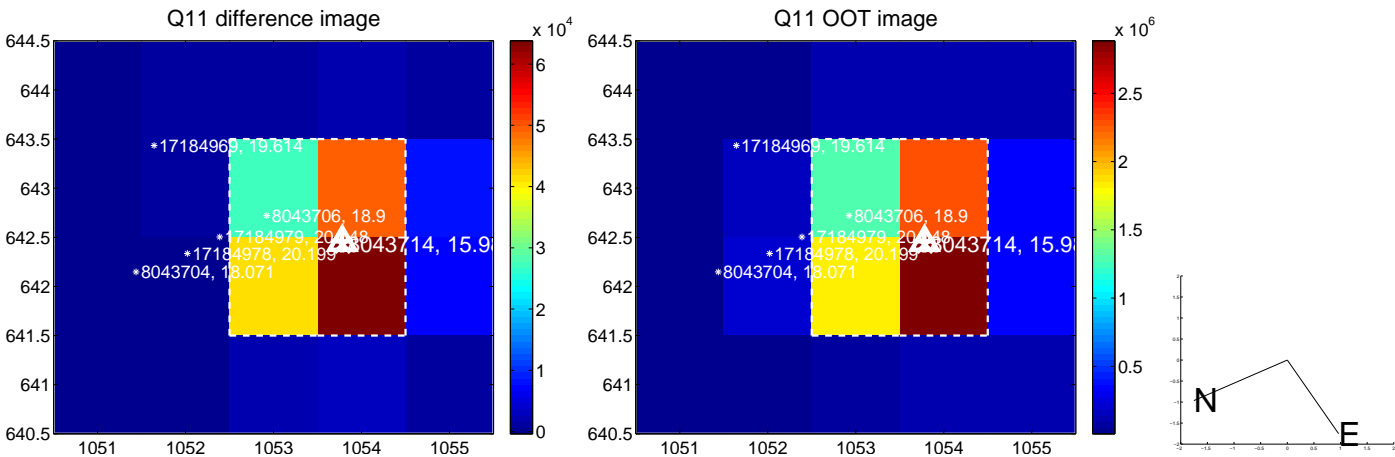
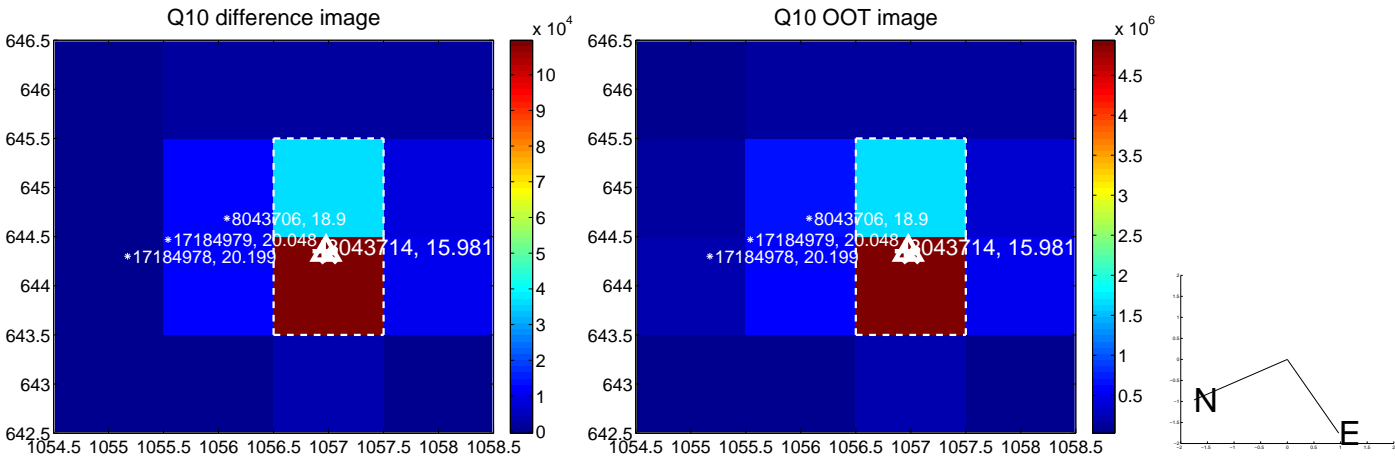
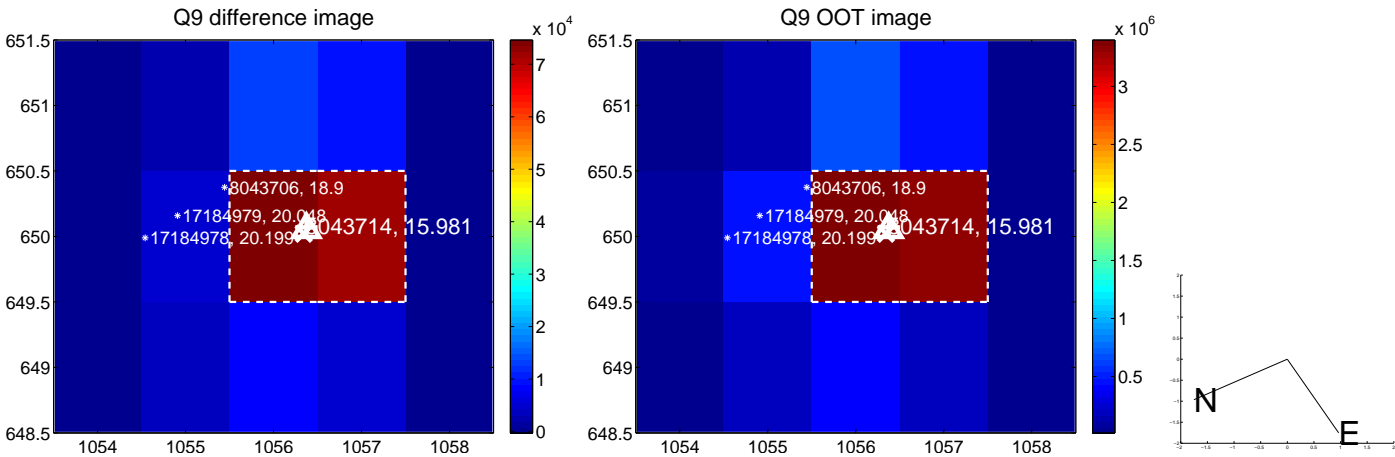
Q4 OOT image



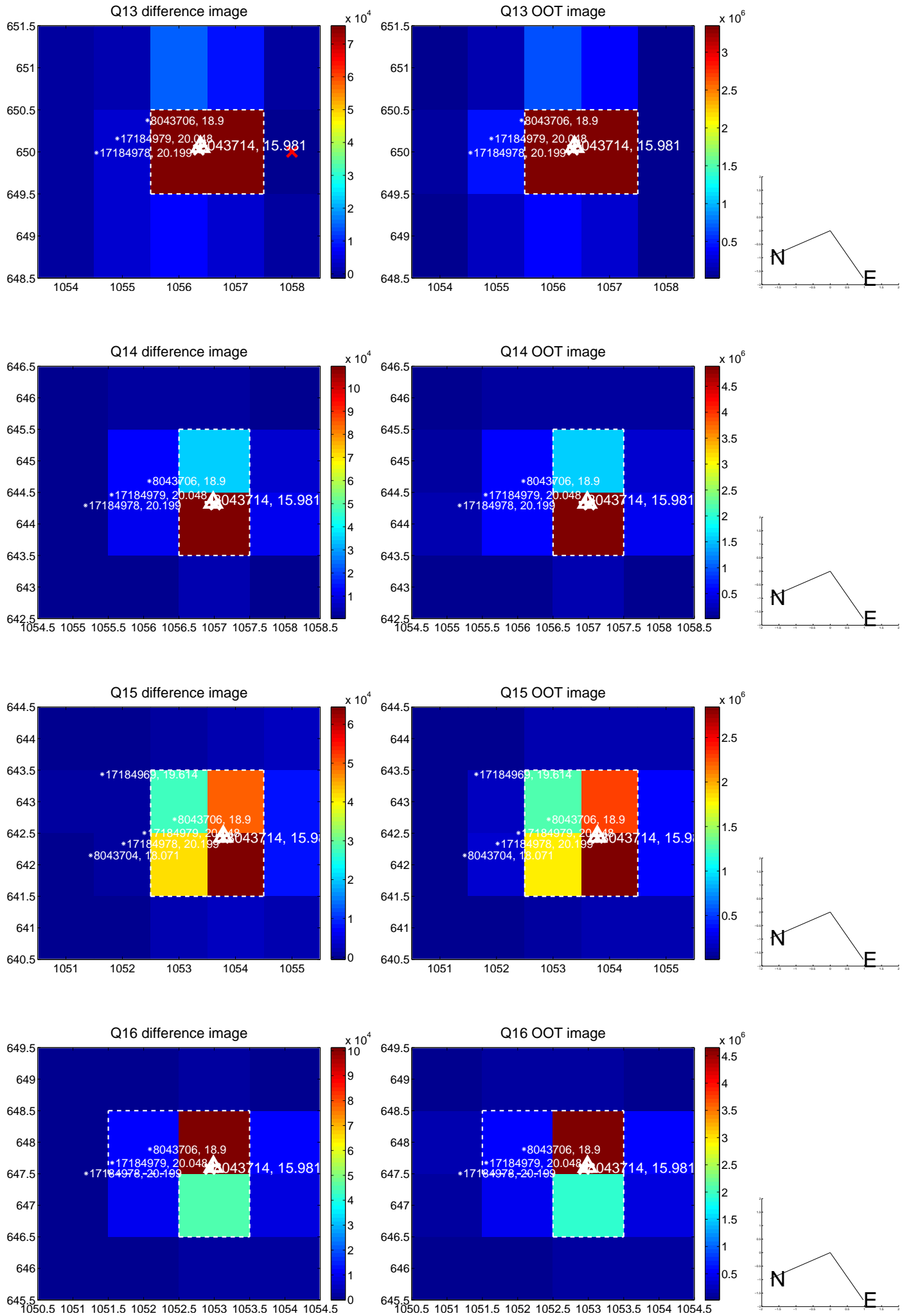
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



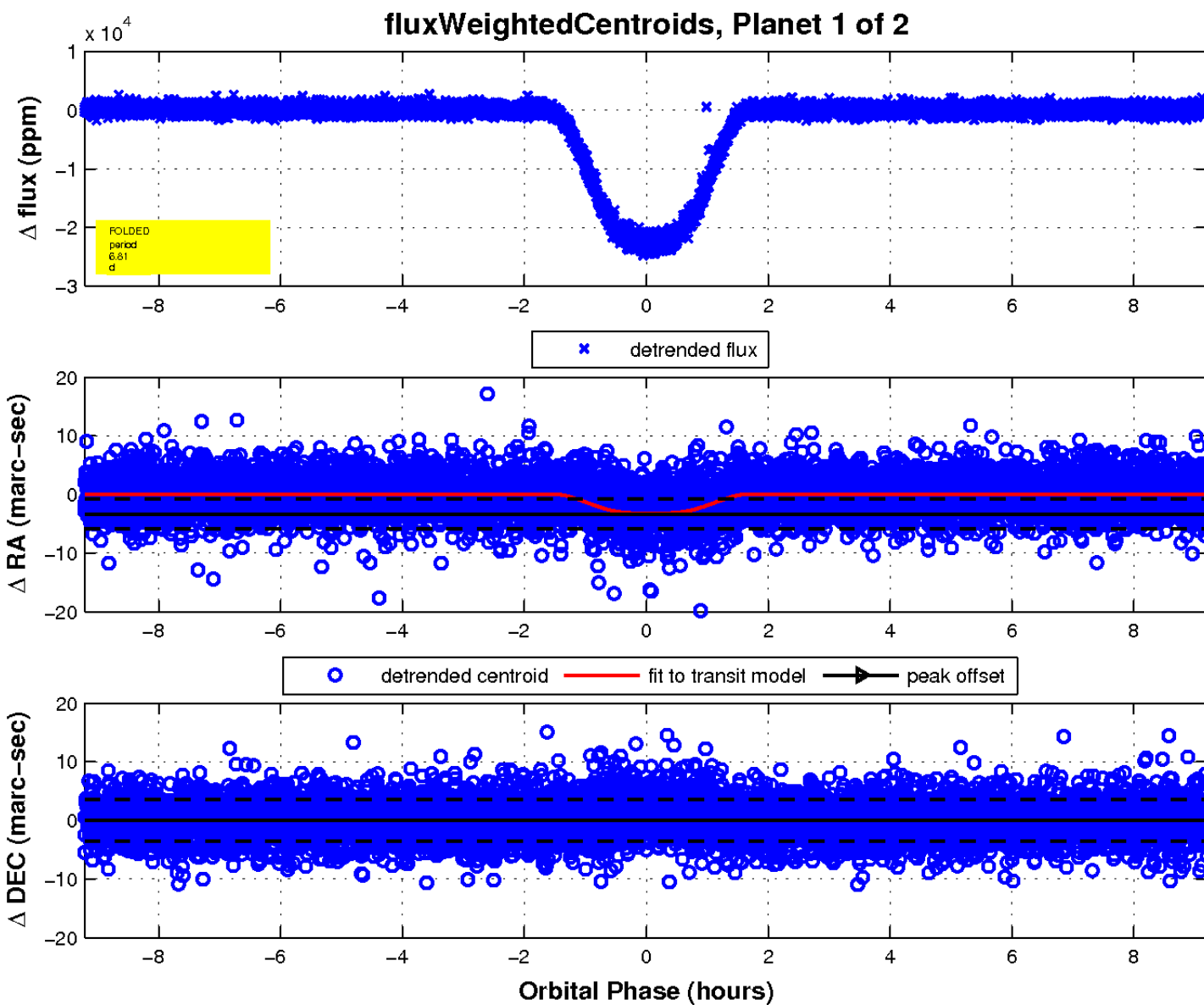
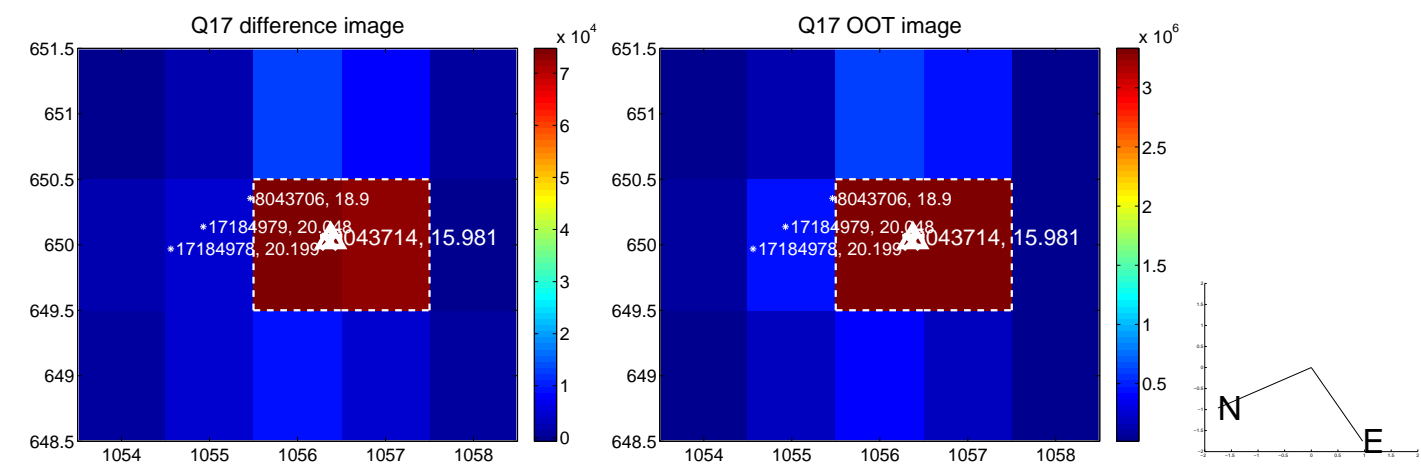
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

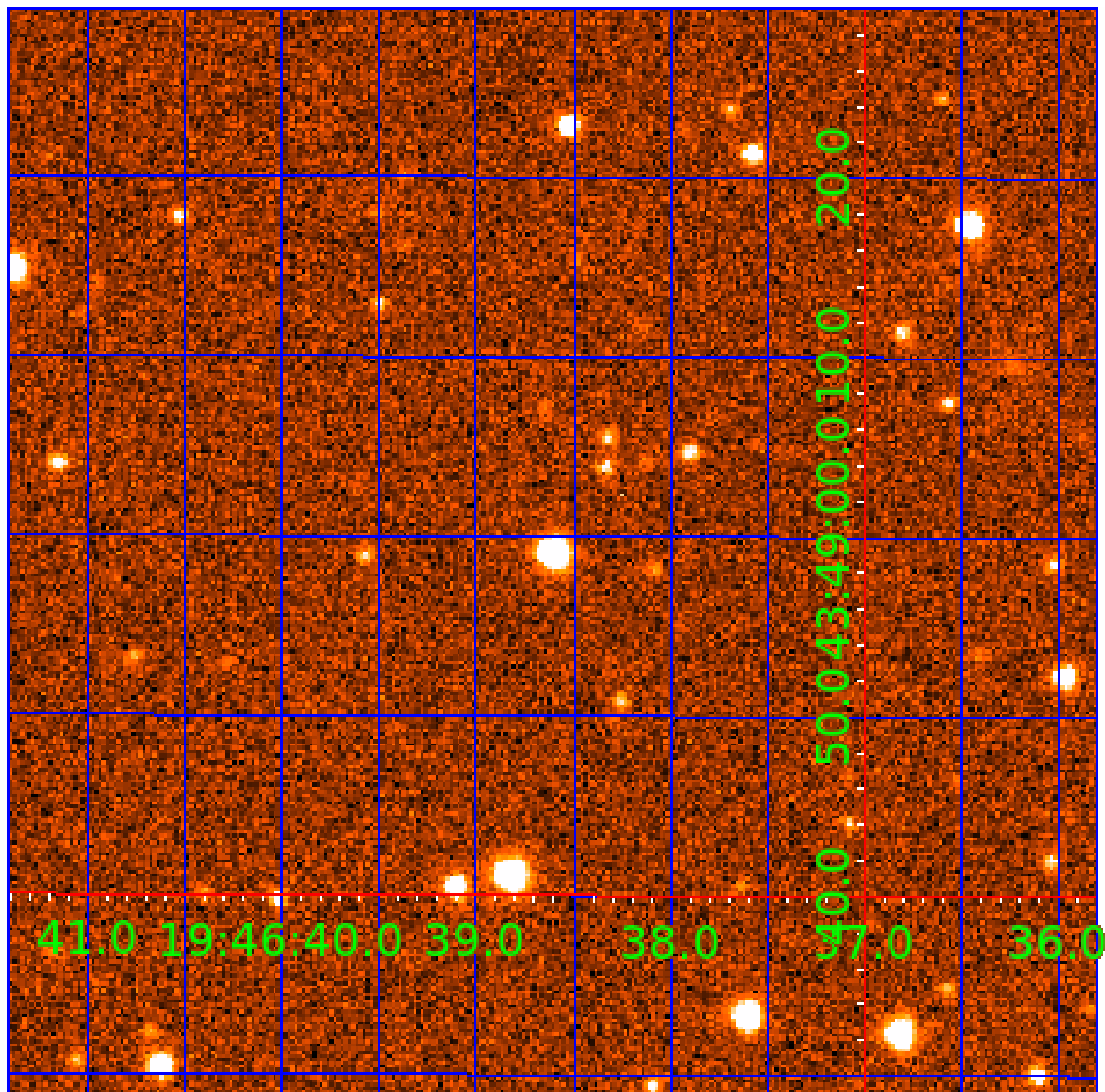


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 008043714

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})
008043714-01	OBS	1765.01	6.814983	134.212559	23942.9	3.072	843.1	788.1	0.82	5465	14.24	115.91
008043714-02	OBS	No	3.407470	134.238897	1081.5	2.845	37.3	39.8	0.82	5465	3.36	292.07

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008043714-01	OBS	FP	0.00	0	1	0	0	MOD_SEC_DV—MOD_SEC_ALT—HAS_SEC_TCE
008043714-02	OBS	FP	0.00	1	1	0	0	IS_SEC_TCE

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.

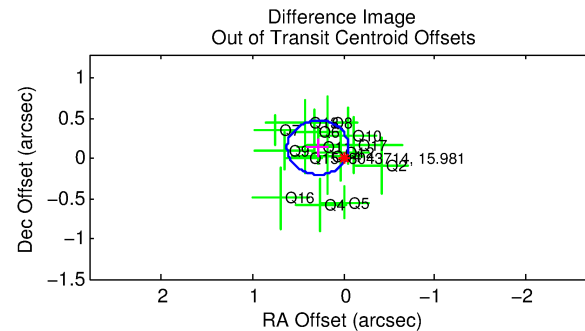
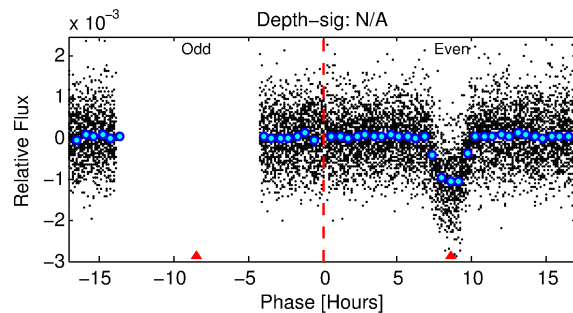
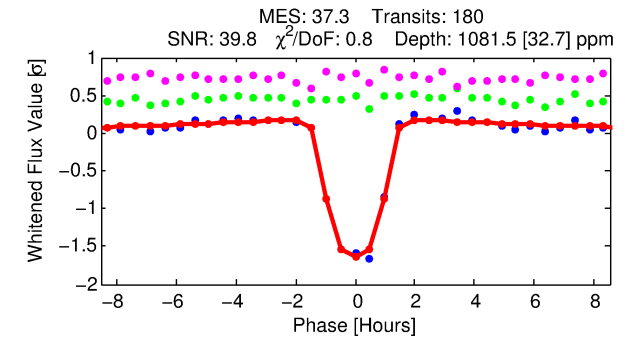
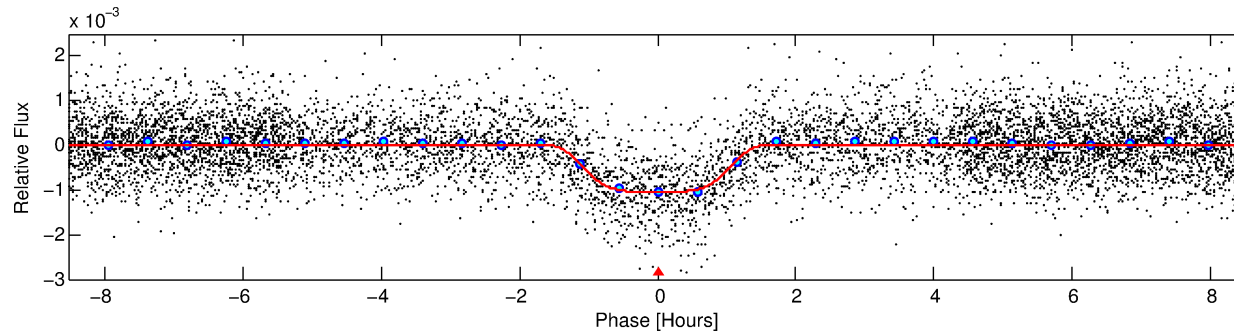
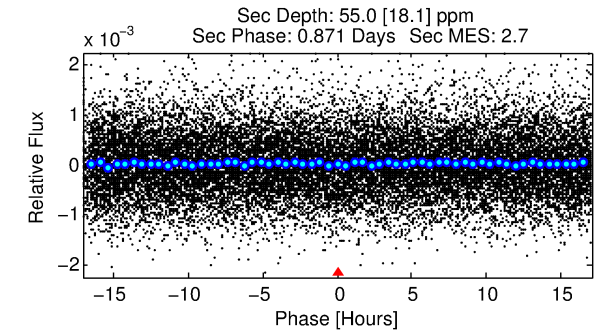
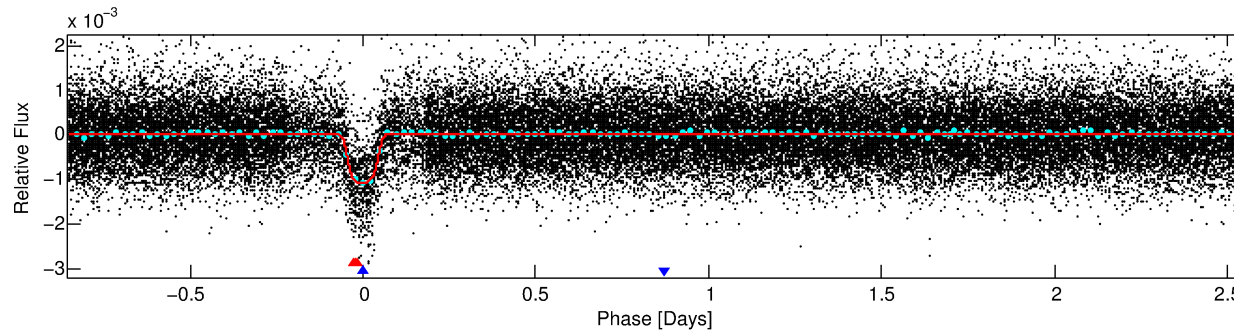
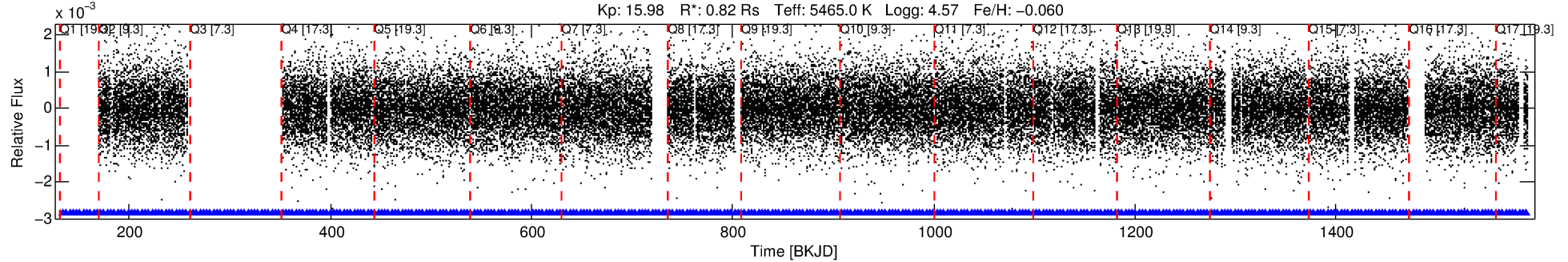
Ephemeris Match Information For 008043714-02

No Significant Match Found

DV One-Page Summary

KIC: 8043714 Candidate: 2 of 2 Period: 3.407 d
KOI: K01765 Corr: No Ephemeris Match

Kp: 15.98 R*: 0.82 Rs Teff: 5465.0 K Logg: 4.57 Fe/H: -0.060



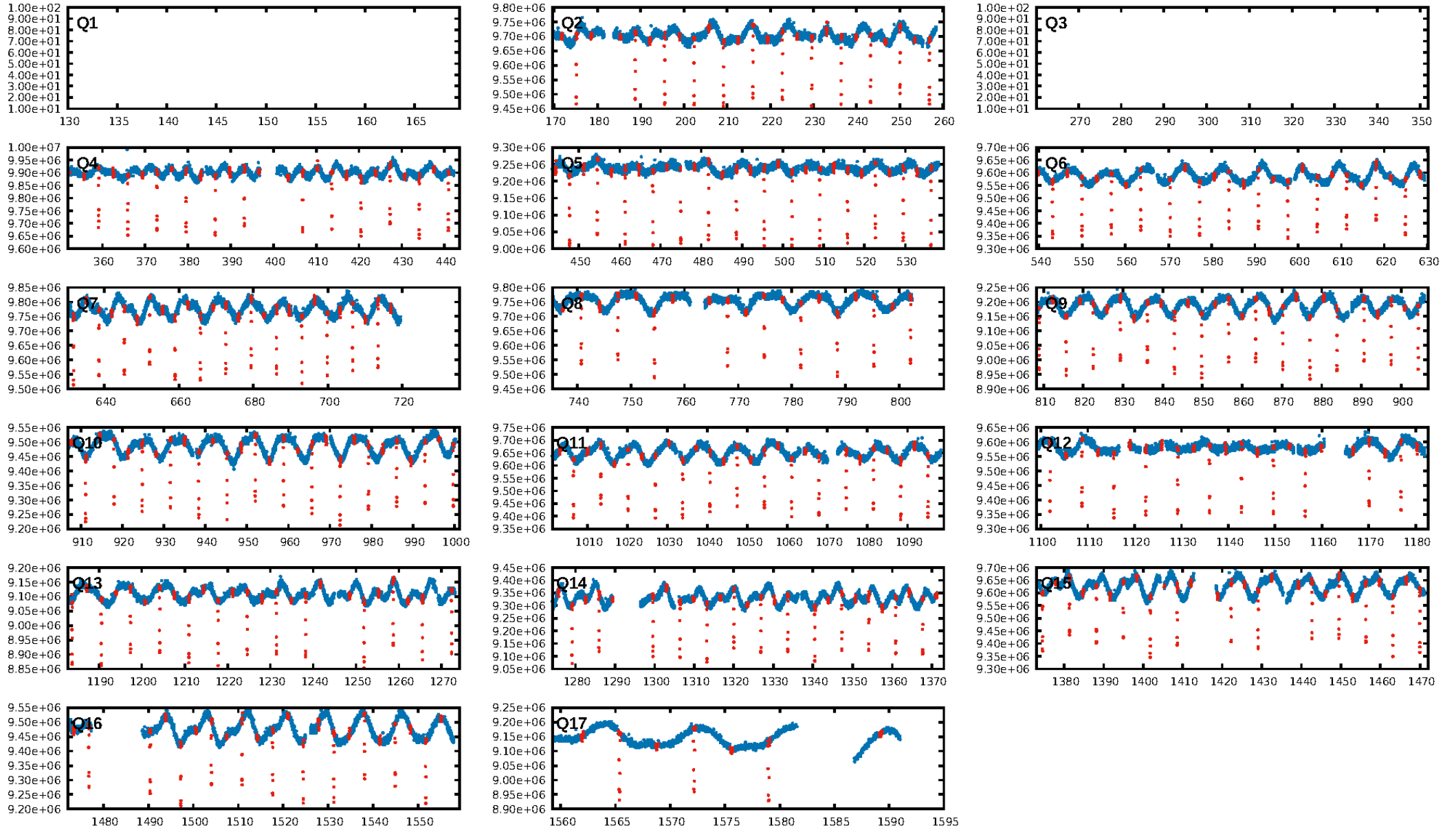
DV Fit Results:

Period = 3.40747 [0.00001] d
Epoch = 134.2389 [0.0012] BKJD
Rp/R* = 0.0377 [0.0013]
a/R* = 4.29 [0.47]
b = 0.93 [0.02]
Seff = 292.07 [88.78]
Teff = 1054 [80] K
Rp = 3.36 [0.78] Re
a = 0.0427 [0.0082] AU
Ag = 4.89 [2.14] [1.82σ]
Teffp = 2423 [216] K [5.93σ]

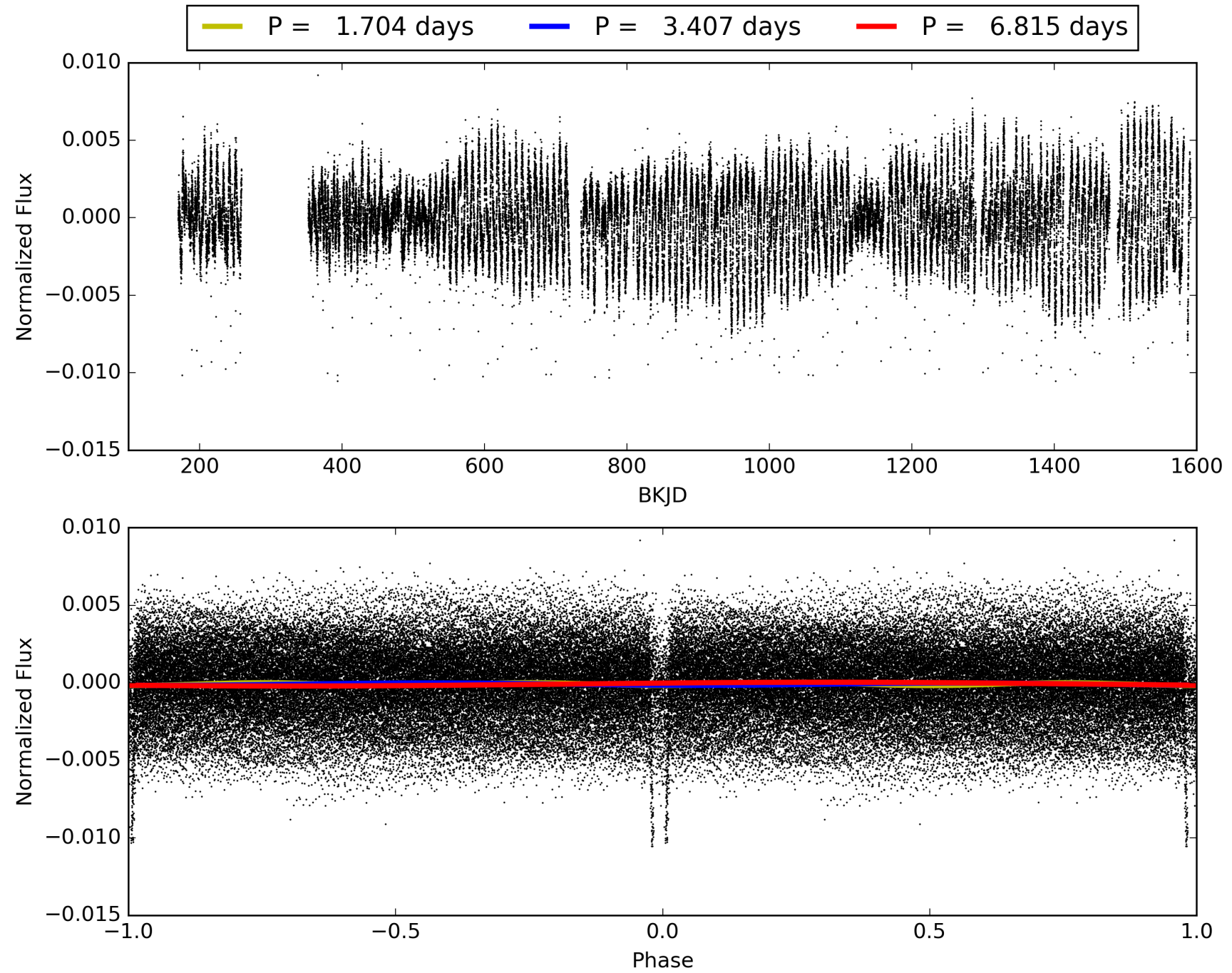
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 100.0% [19.53σ]
ModelChiSquare2-sig: 100.0%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 1.76e-297
RollingBand-fgt: 1.00 [176/176]
GhostDiagnostic-chr: 3.315
Centroid-sig: 0.2%
Centroid-so: 0.545 arcsec [1.95σ]
OotOffset-rm: 0.314 arcsec [2.79σ]
KicOffset-rm: 0.149 arcsec [1.32σ]
OotOffset-st: 4/3/4/4 [15]
KicOffset-st: 4/3/4/4 [15]
DiffImageQuality-fgm: 1.00 [15/15]
DiffImageOverlap-fno: 1.00 [15/15]

TCE 008043714-02, PDC Light Curves

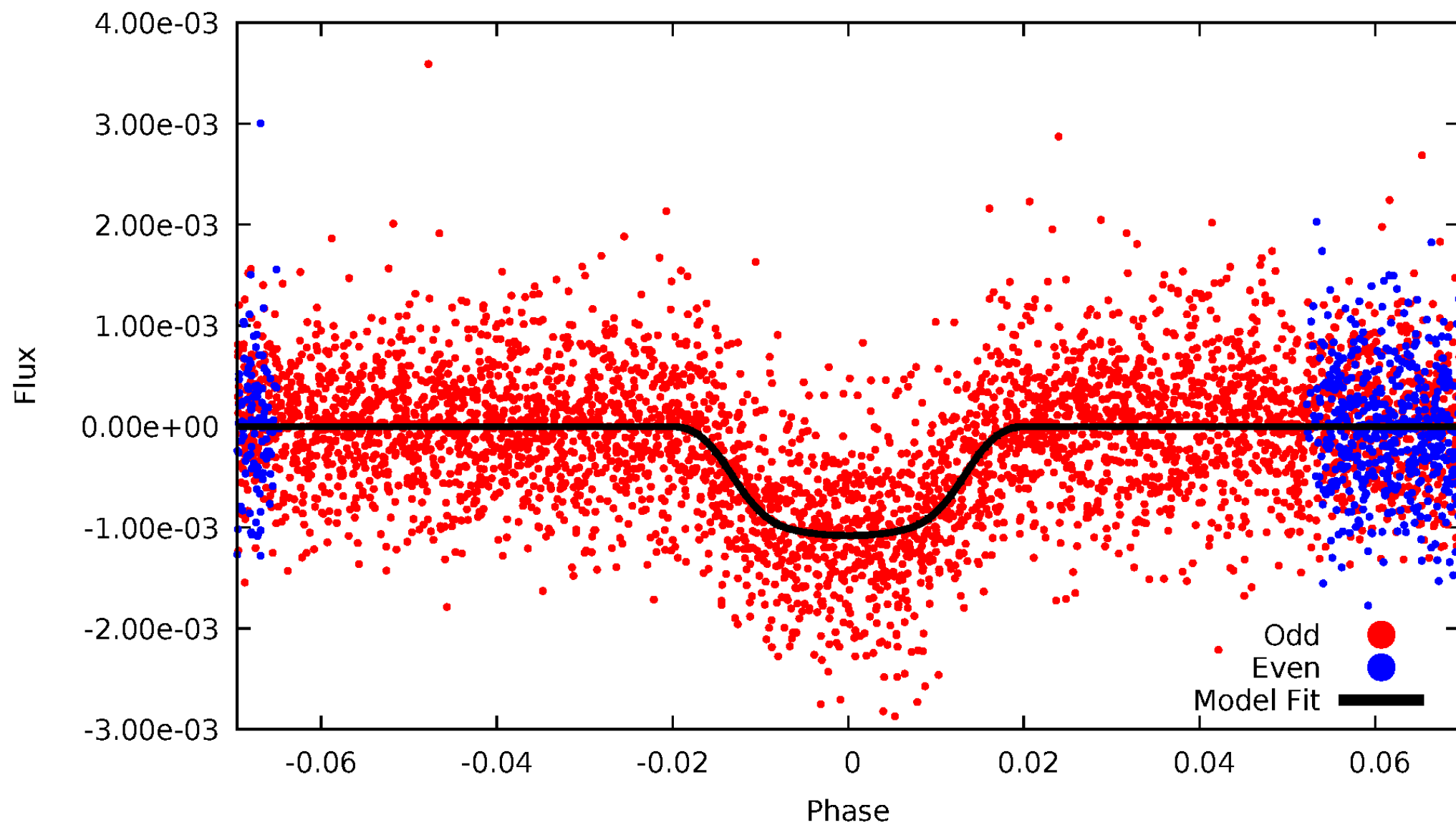


TCE 008043714-02



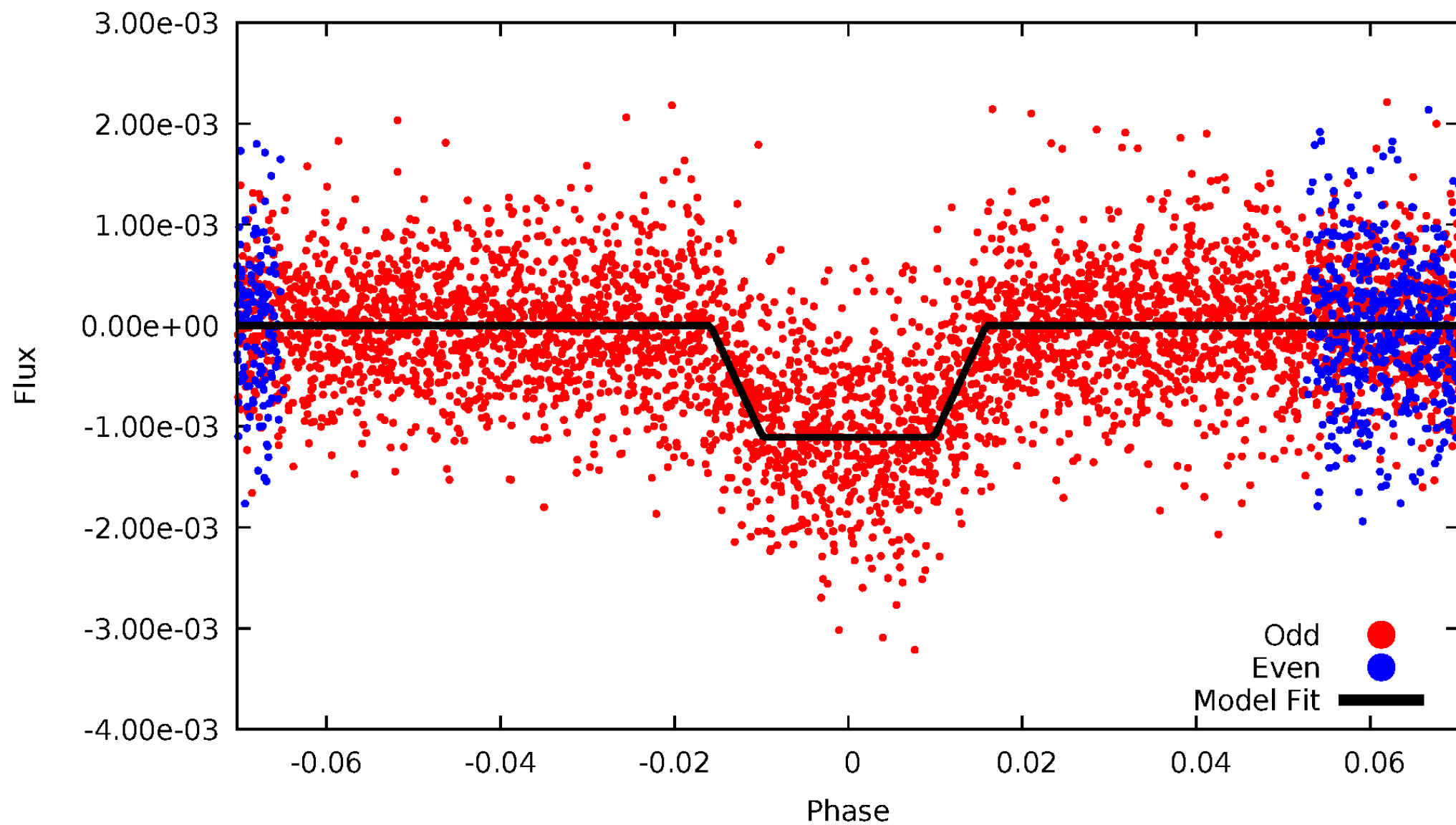
DV Odd/Even

TCE 008043714-02



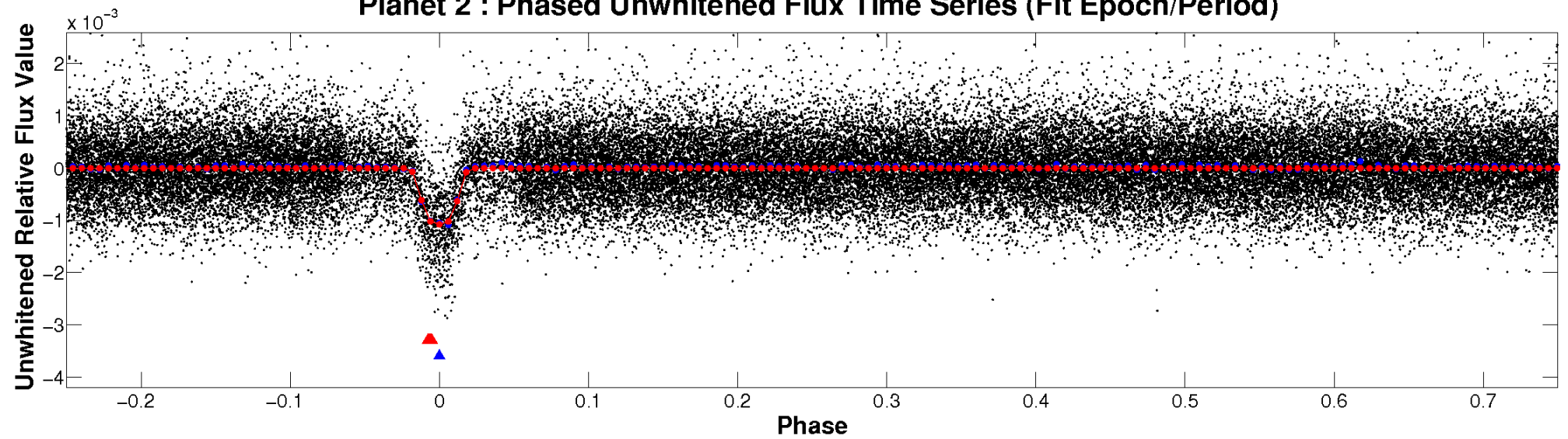
ALT Odd/Even

TCE 008043714-02

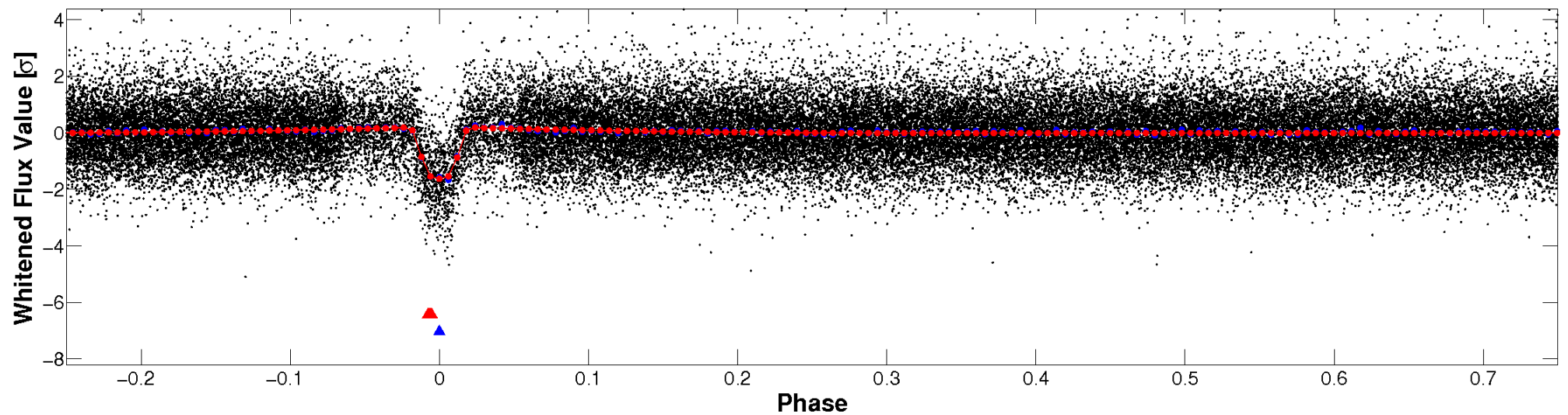


Non-Whitened Vs. Whitened Light Curve

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

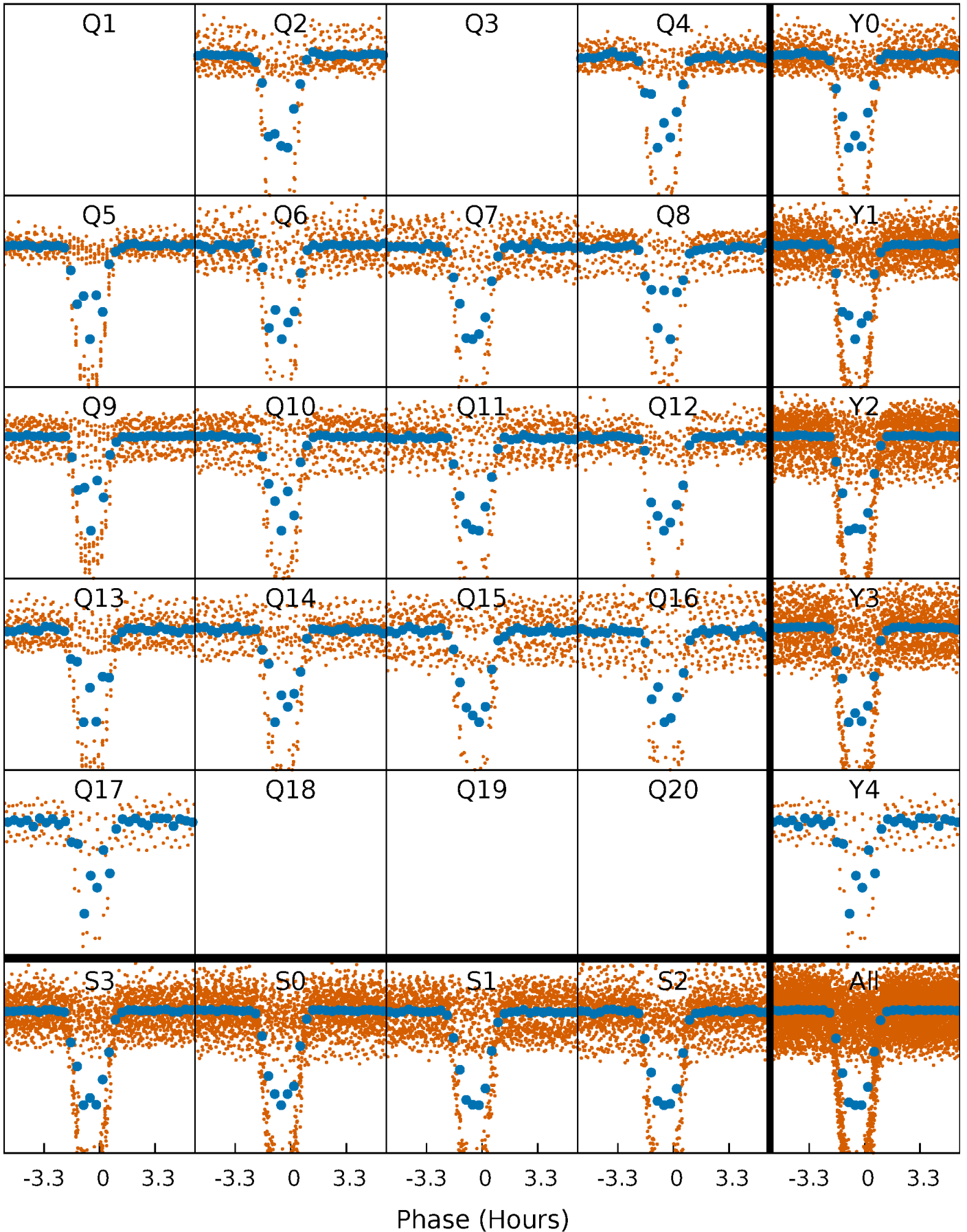


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



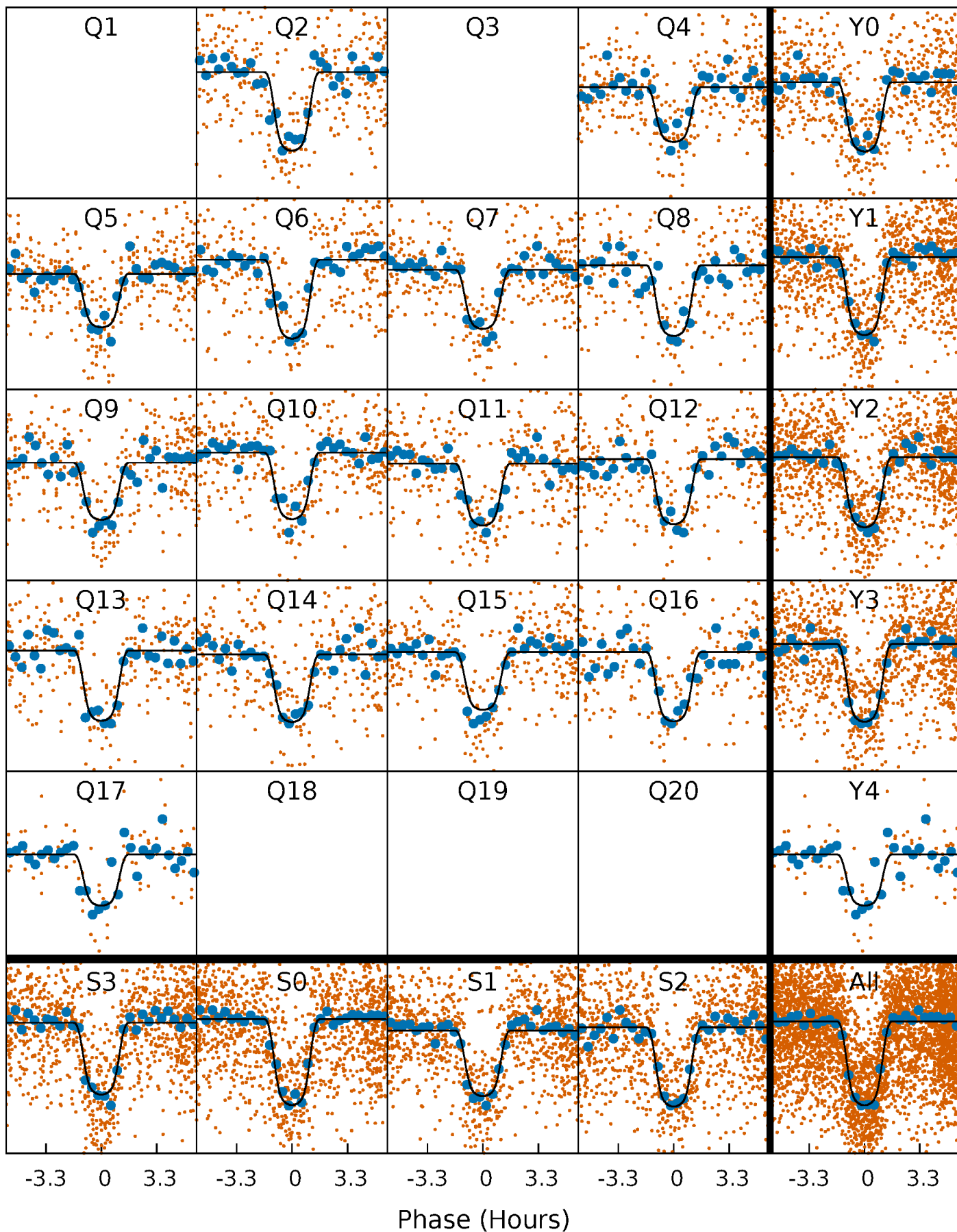
PDC Quarter-Phased Transit Curves

TCE 008043714-02 P= 3.407470 Days $T_0=134.238897$ (BKJD)



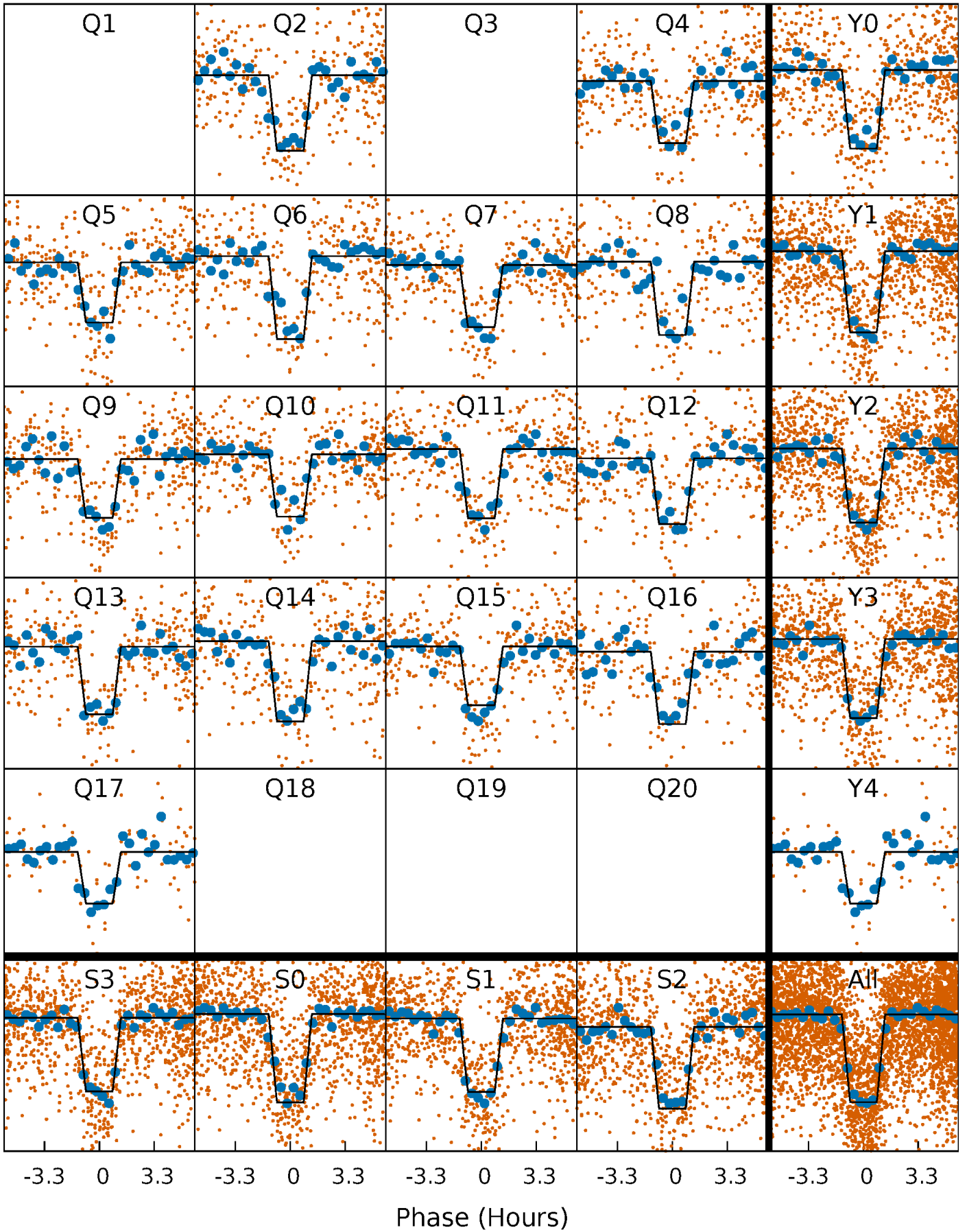
DV Quarter-Phased Transit Curves

TCE 008043714-02 P= 3.407470 Days $T_0=134.238897$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

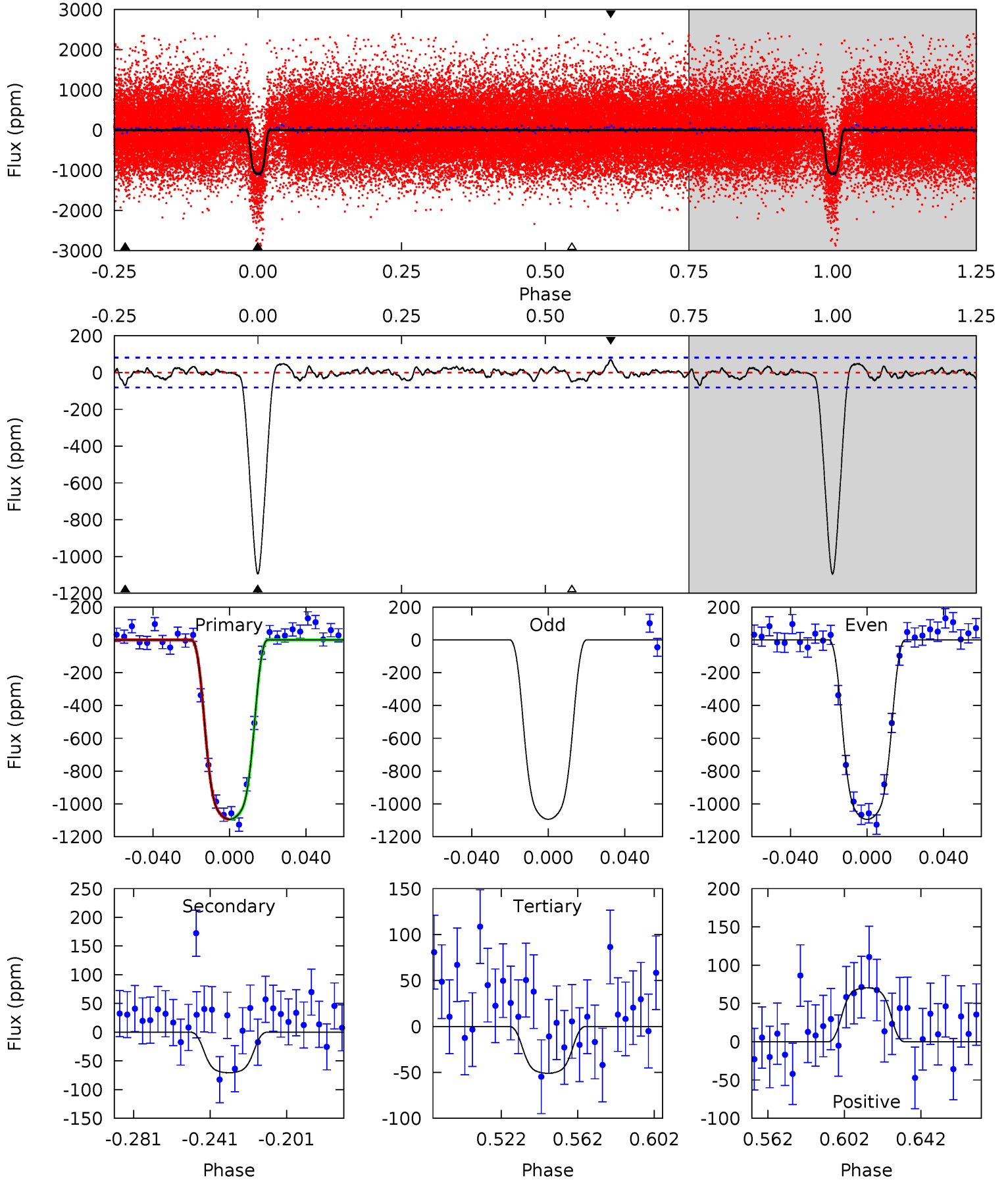
TCE 008043714-02 P= 3.407476 Days $T_0=134.236996$ (BKJD)



DV Model-Shift Uniqueness Test

008043714-02, P = 3.407470 Days, E = 134.238897 Days

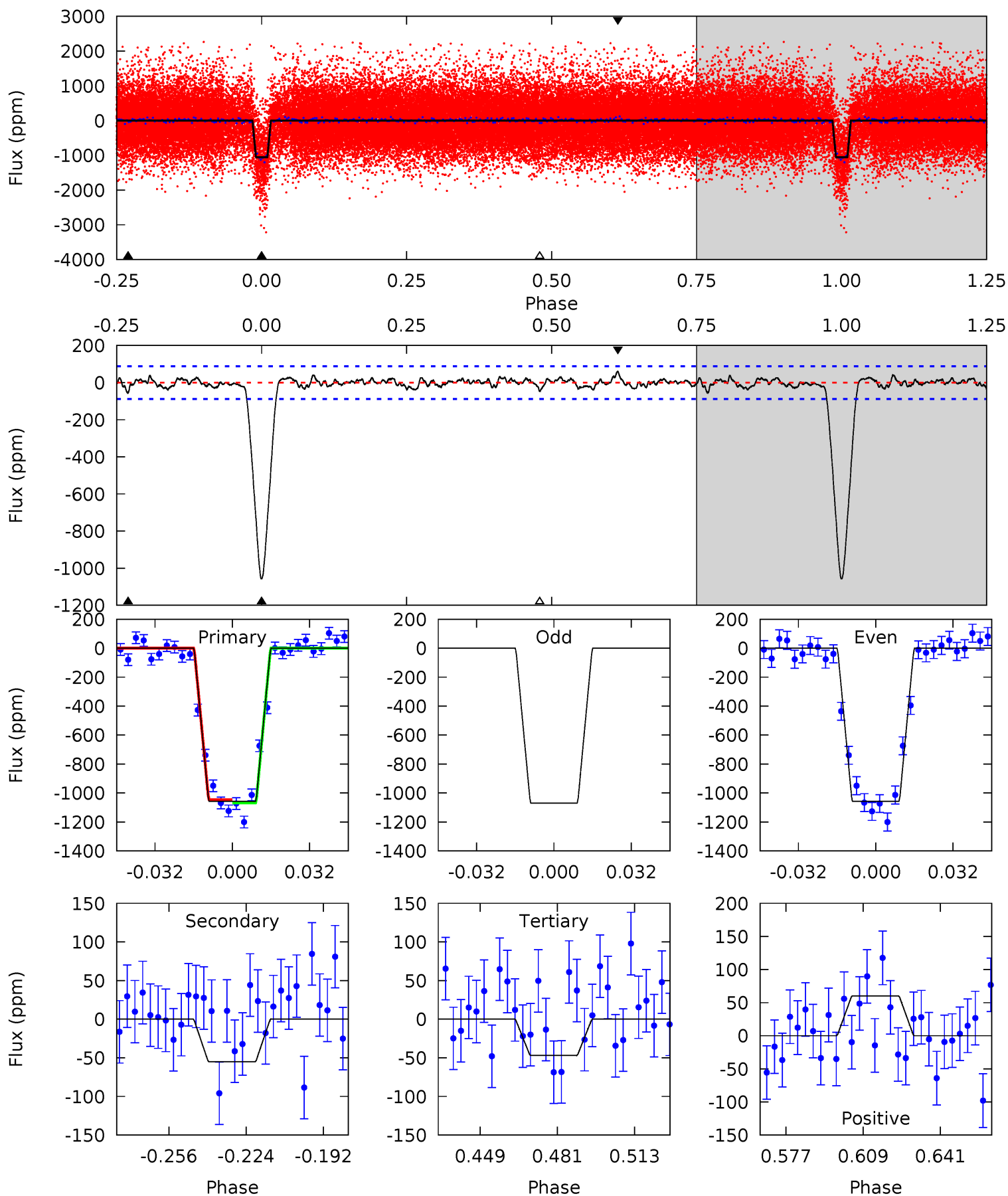
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
63.9	4.13	2.98	4.12	4.75	2.05	1.17	60.9	59.8	1.15	0.01	0.02	1.02	0.06	0.00



Alt Model-Shift Uniqueness Test

008043714-02, P = 3.407476 Days, E = 134.236996 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
57.7	3.01	2.55	3.28	4.80	2.14	0.92	55.1	54.4	0.45	-0.27	0.35	1.02	0.05	0.61



Stellar Parameters For KIC 008043714

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5465^{+164}_{-164}	$4.566^{+0.038}_{-0.152}$	$-0.060^{+0.300}_{-0.300}$	$0.817^{+0.188}_{-0.063}$	$0.897^{+0.082}_{-0.099}$	$2.320^{+0.459}_{-0.974}$
	+3%/-3%	+1%/-3%	+500%/-500%	+23%/-8%	+9%/-11%	+20%/-42%
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 008043714-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-71 ± 17	$3.46^{+0.43}_{-0.26}$	1501^{+85}_{-63}	3138^{+143}_{-144}	$5.707^{+1.878}_{-1.677}$
Alt.	-55 ± 18	$3.01^{+0.38}_{-0.21}$	1499^{+84}_{-61}	3154^{+158}_{-195}	$5.851^{+2.254}_{-2.063}$

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

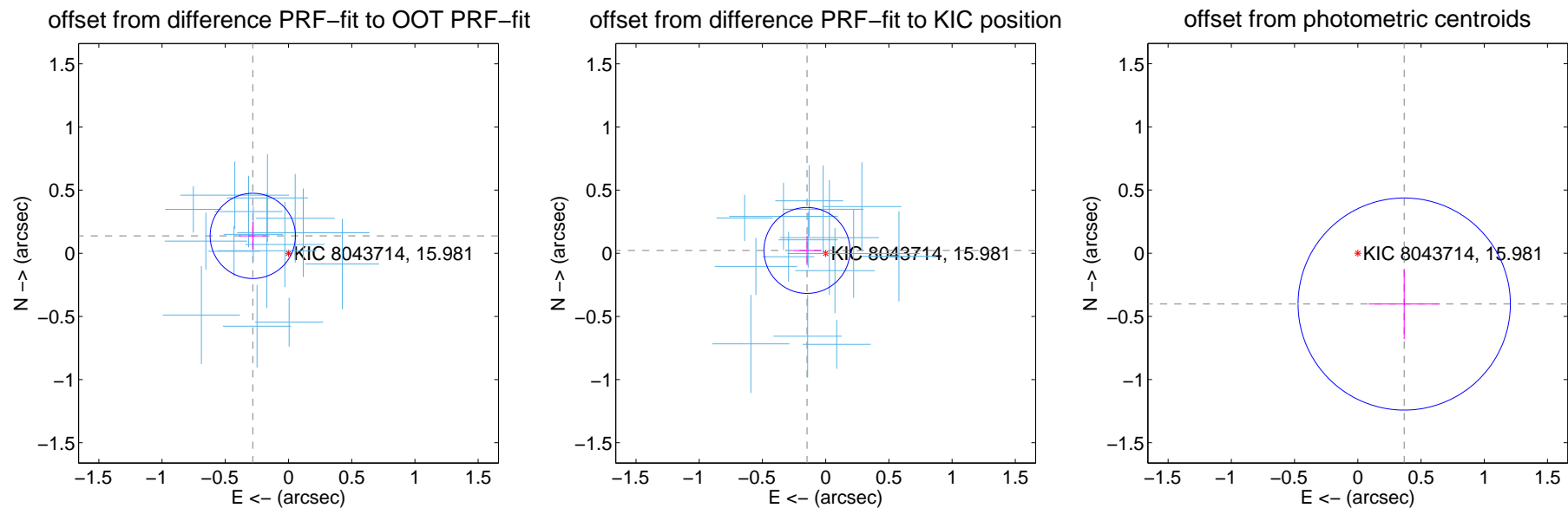
DV Centroid Data

Supplemental centroid analysis for 008043714-02. Kepler magnitude: 15.98. Transit SNR 39.82

There are 15 quarters with good PRF difference image offsets

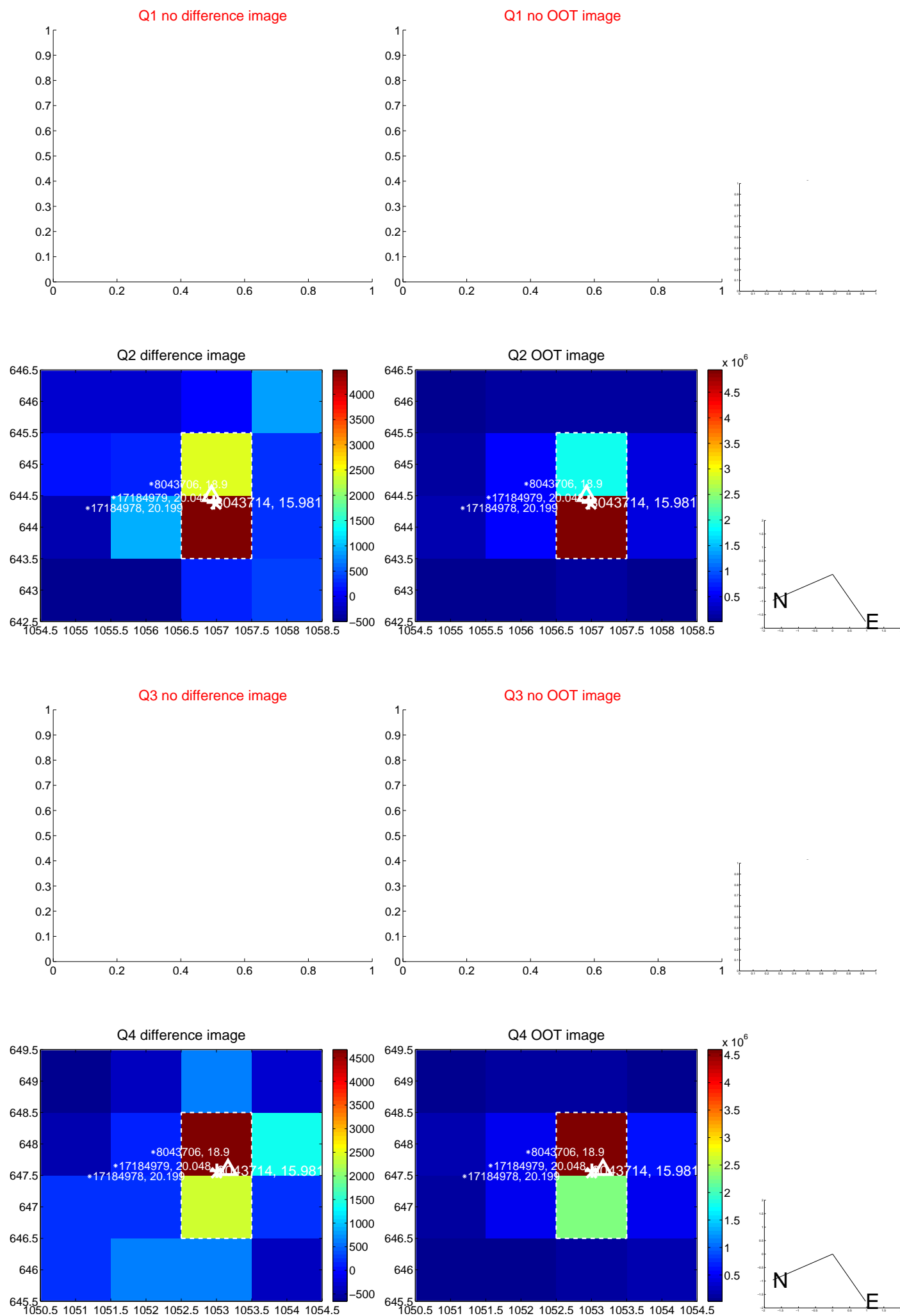
The direct PRF centroid is offset from the target star catalog position by about 0.19 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.314 ± 0.112	2.79	0.282 ± 0.109	0.138 ± 0.110
PRF-fit source offset from KIC position	0.149 ± 0.113	1.32	0.148 ± 0.113	0.023 ± 0.115
photometric centroid source offset	0.54 ± 0.28	1.95	-0.37 ± 0.28	-0.40 ± 0.28

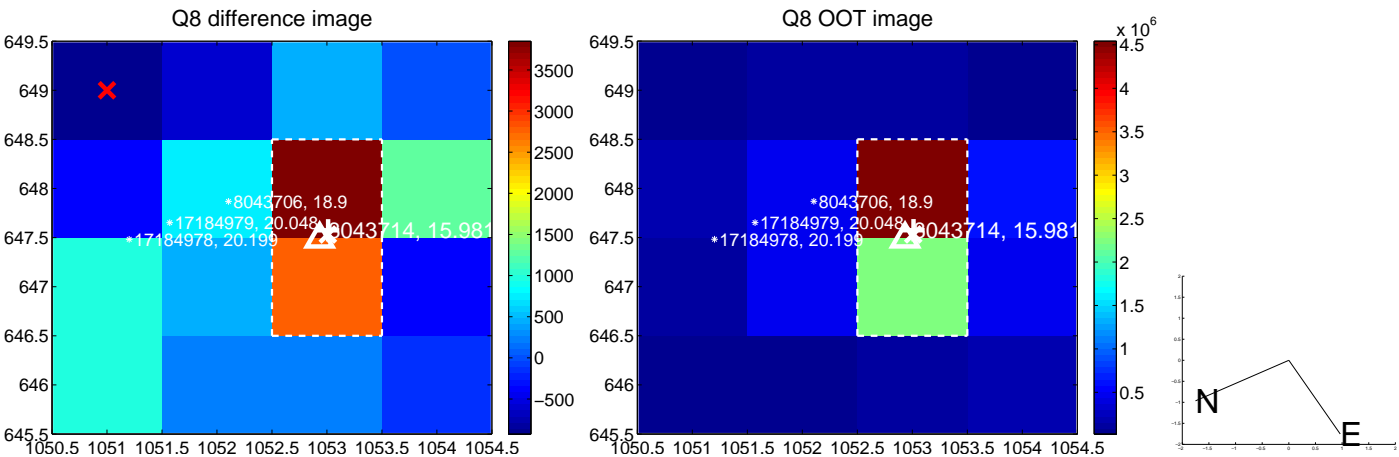
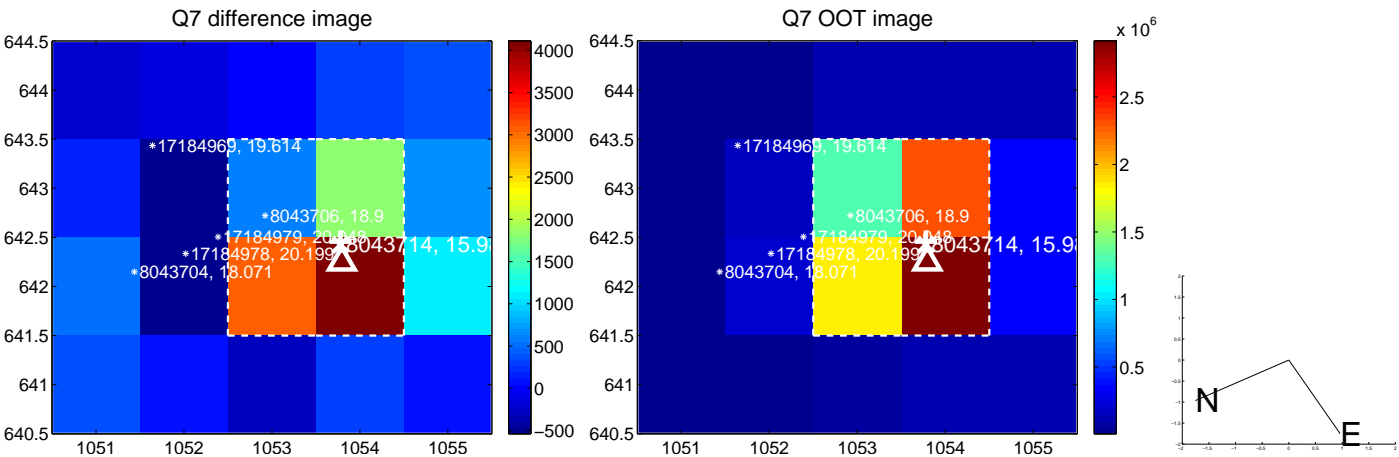
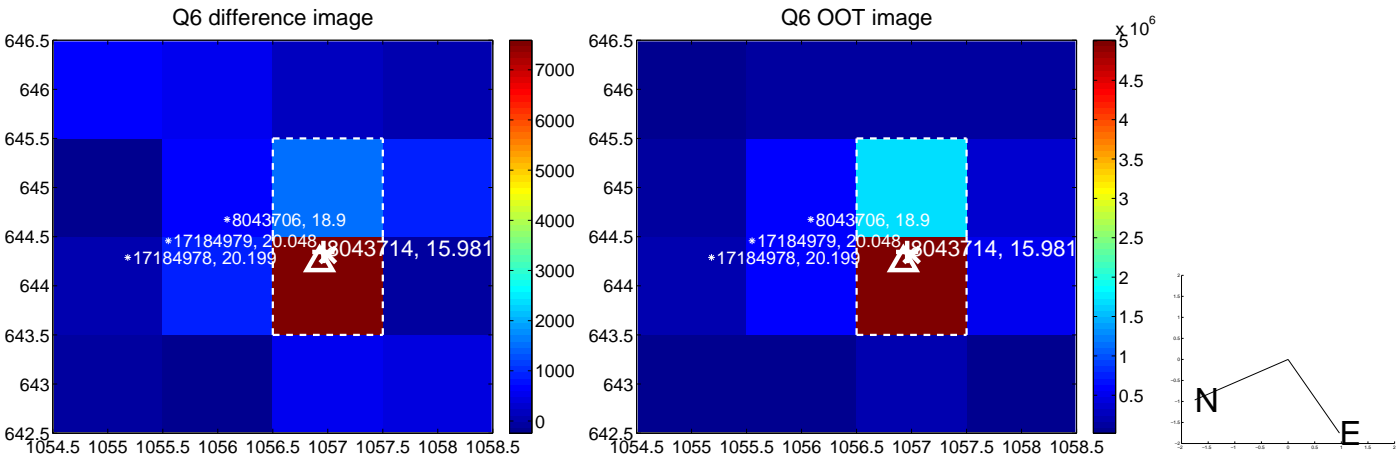
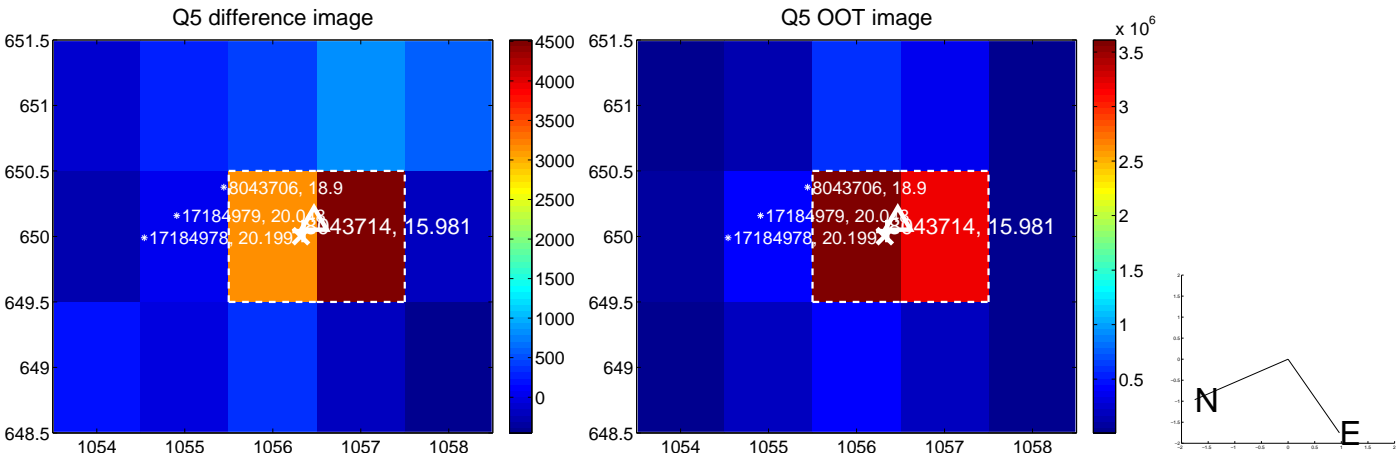


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

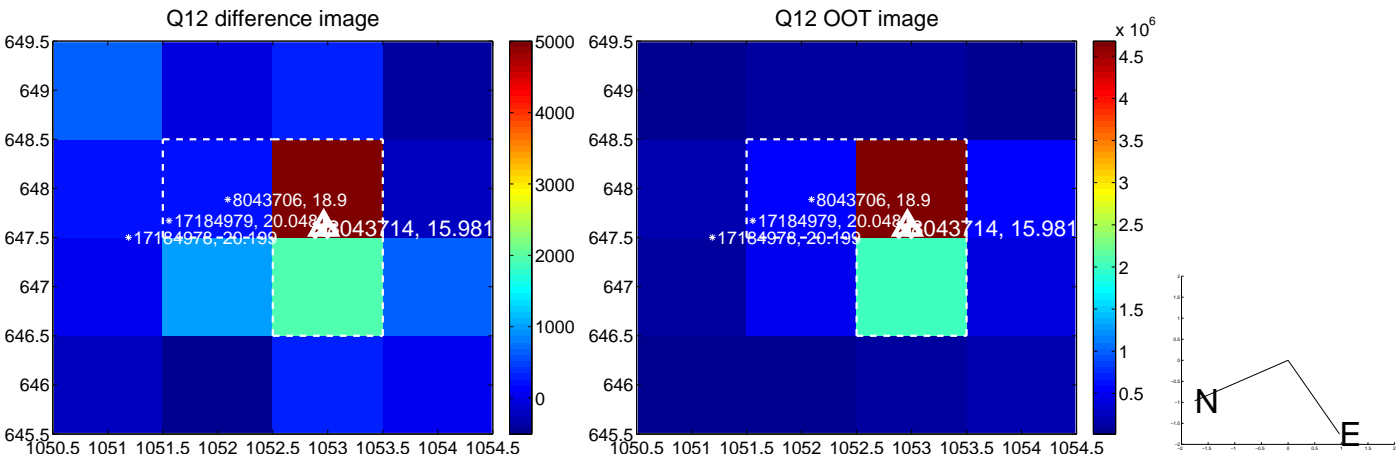
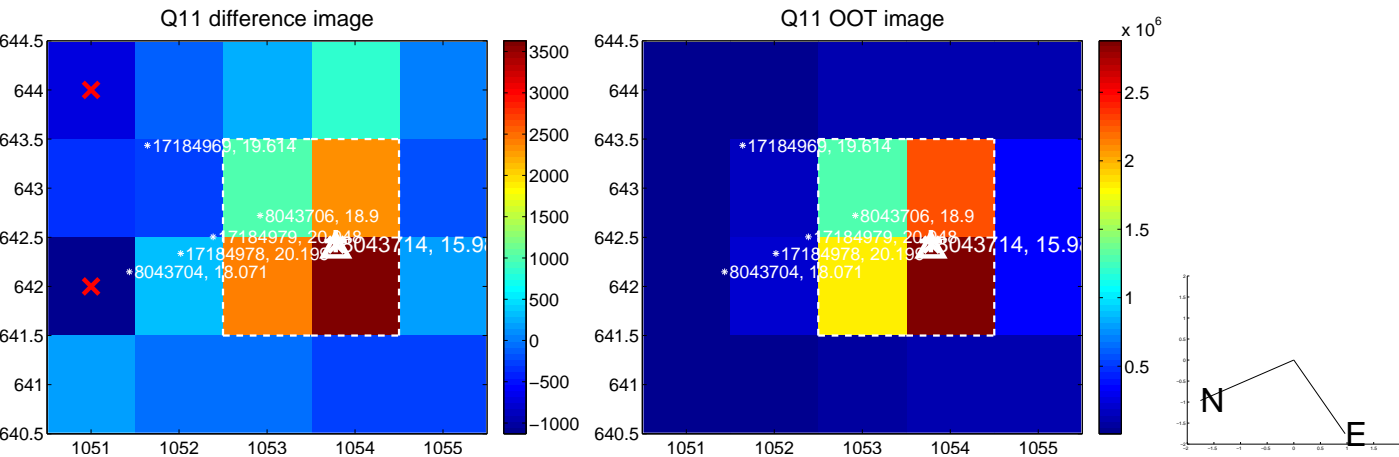
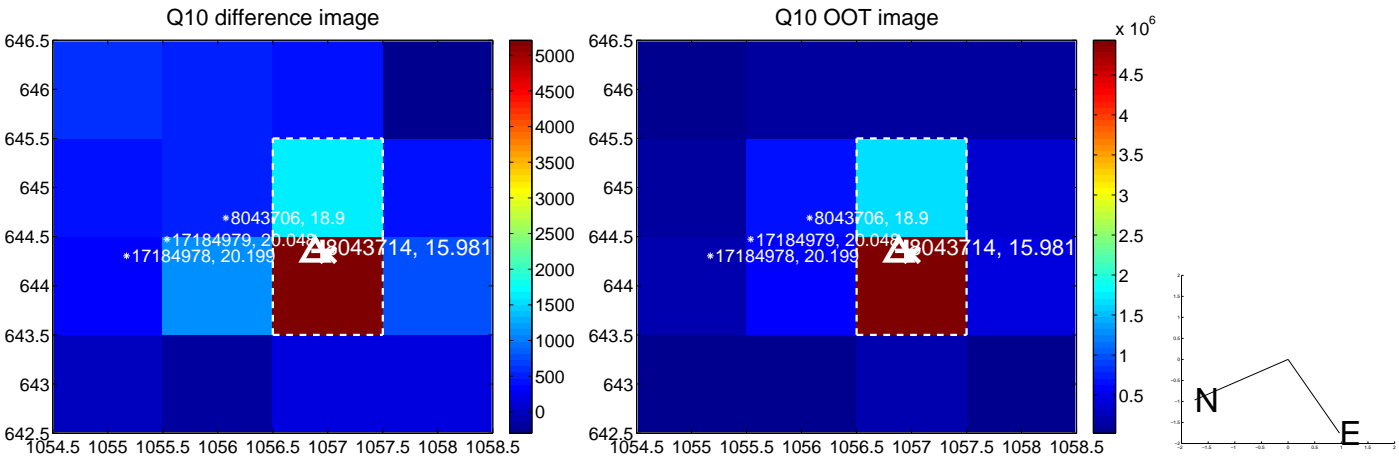
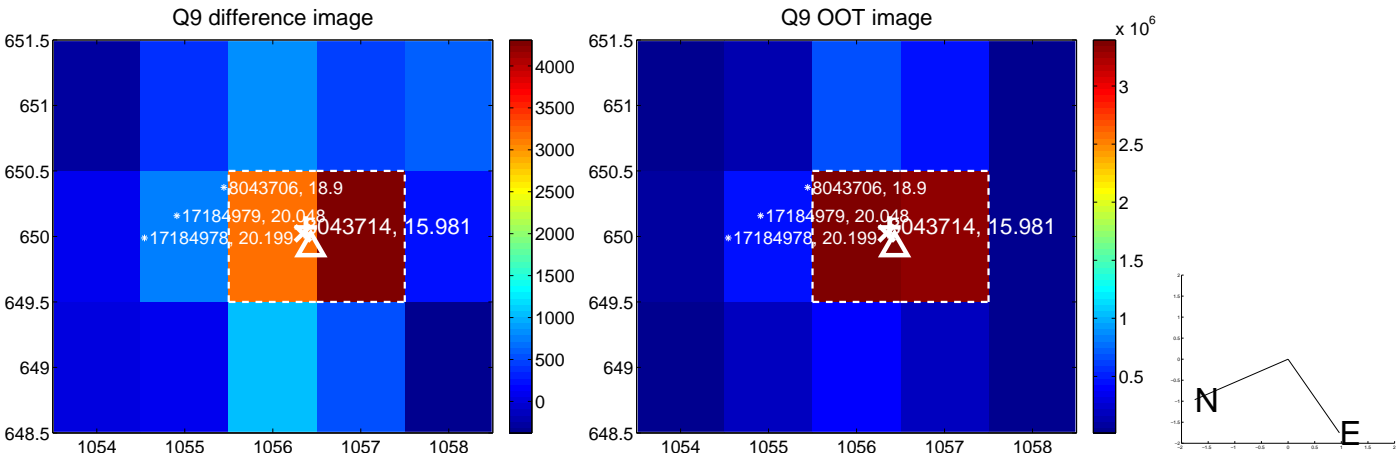
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value



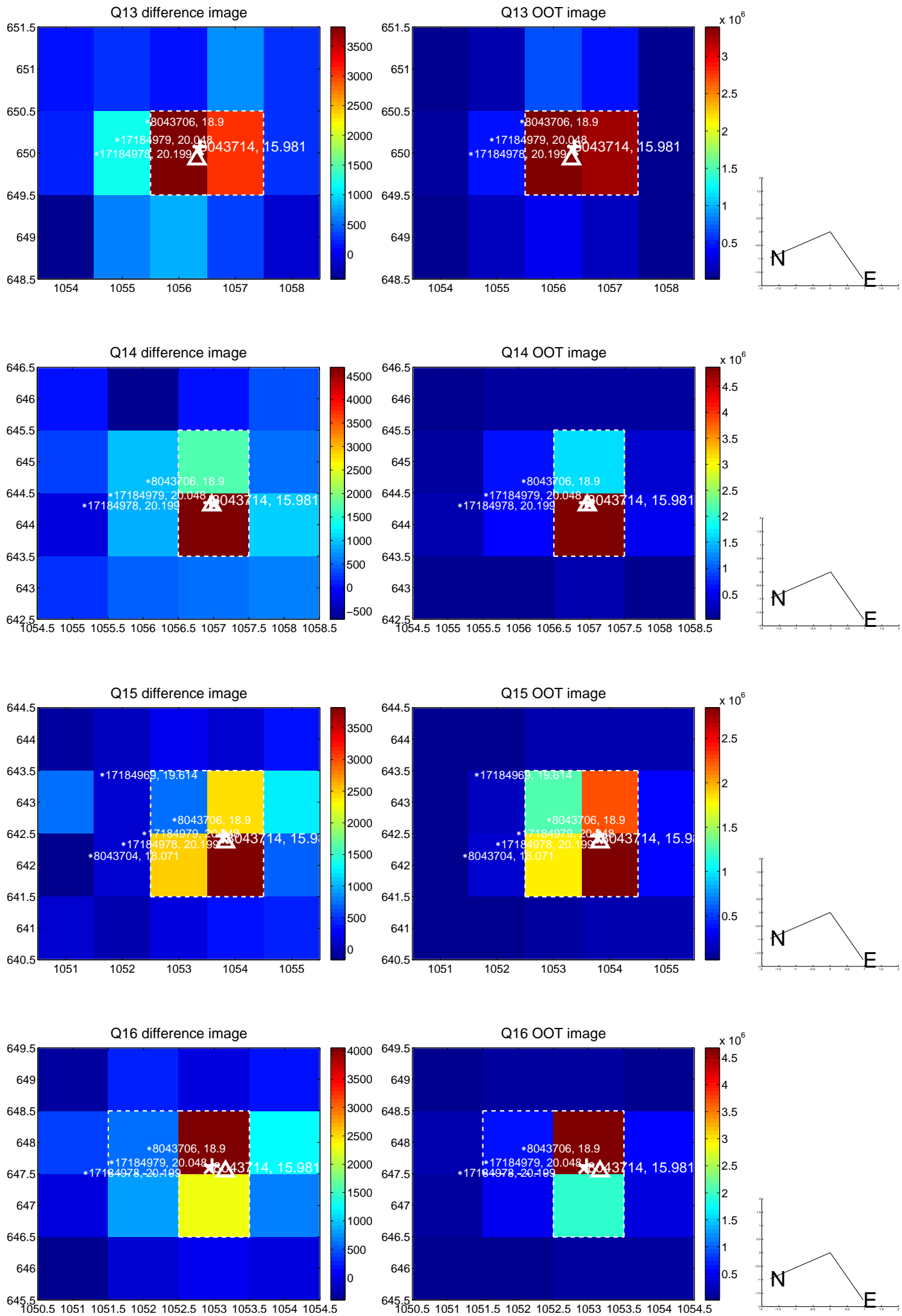
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



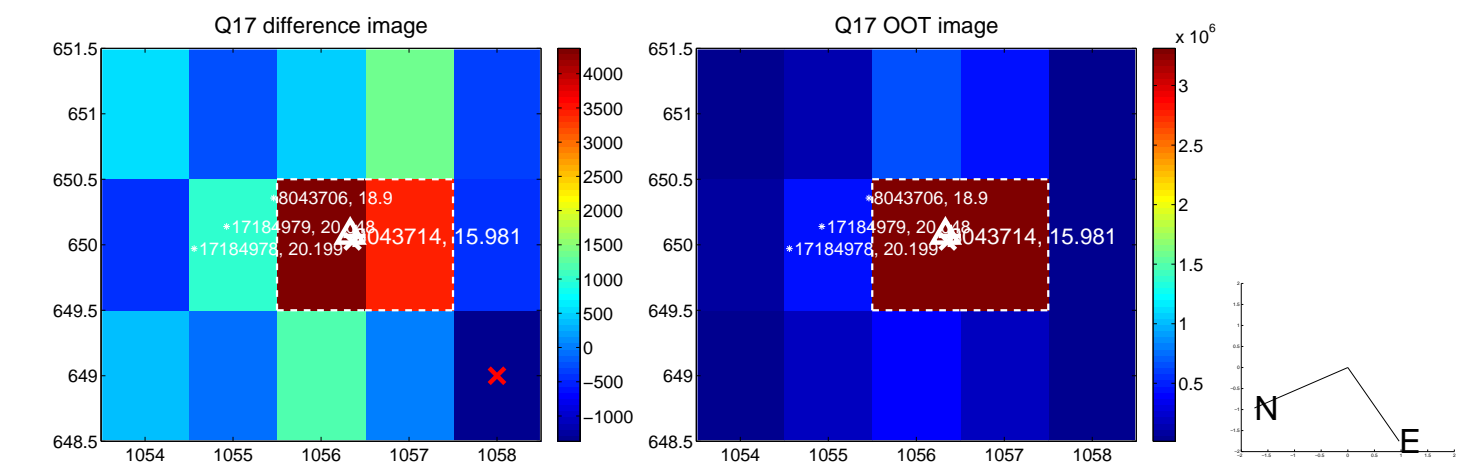
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



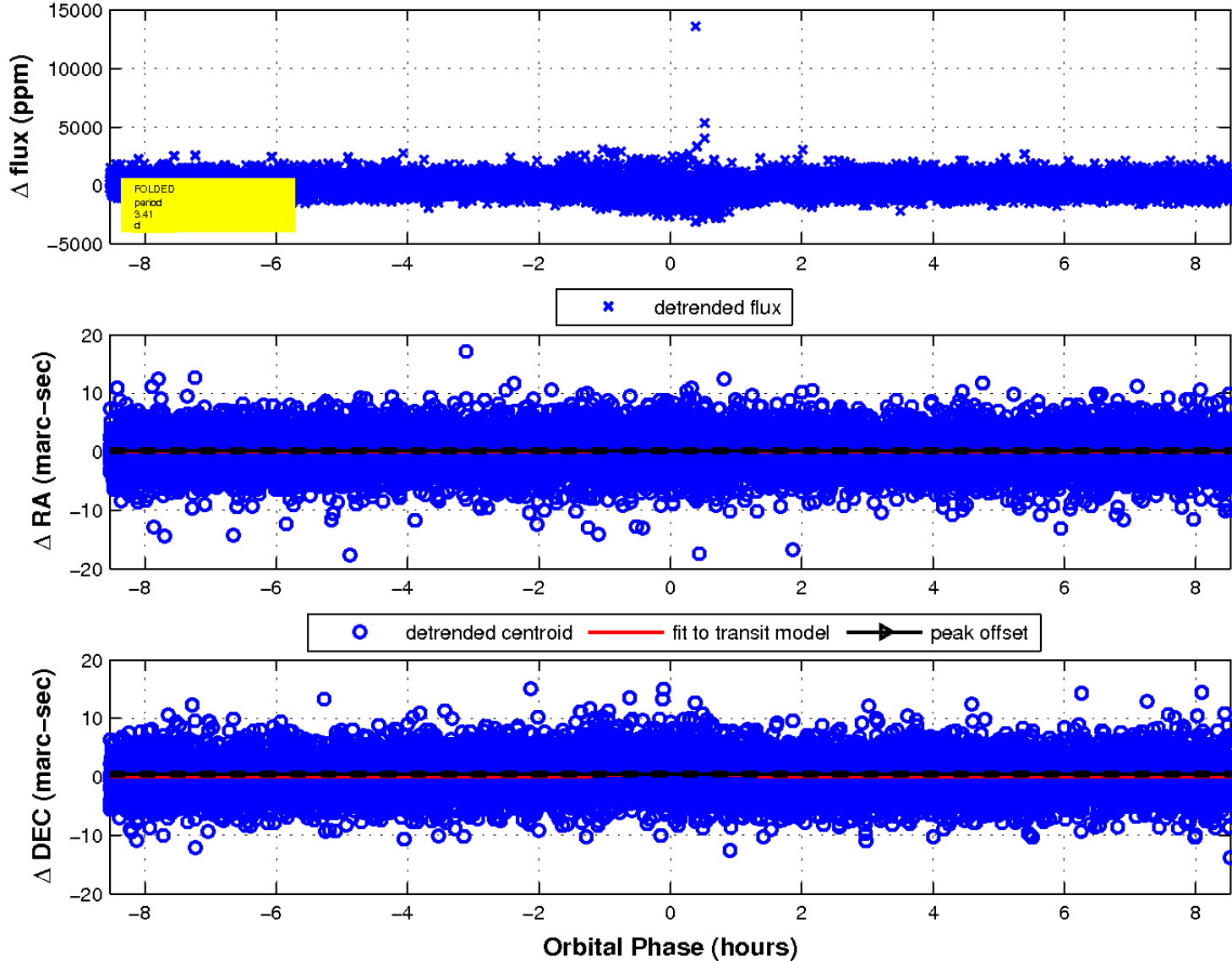
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



fluxWeightedCentroids, Planet 2 of 2



UKIRT Image

Declination

