

KIC 009468717

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})
009468717-01	OBS	1954.01	7.373425	134.006738	112.5	2.088	30.0	33.9	1.09	6484	1.36	344.45
009468717-02	OBS	No	7.373451	137.701928	33.5	2.241	9.4	10.5	1.09	6484	0.76	344.44

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
009468717-01	OBS	FP	0.00	0	1	0	0	MOD_SEC_DV—MOD_SEC_ALT—HAS_SEC_TCE—CENT_KIC_POS
009468717-02	OBS	FP	0.00	1	1	1	0	IS_SEC_TCE—CENT_RESOLVED_OFFSET

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

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

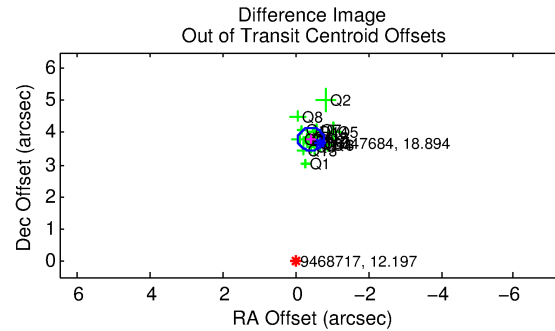
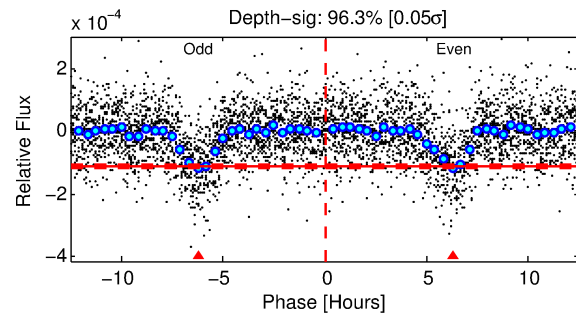
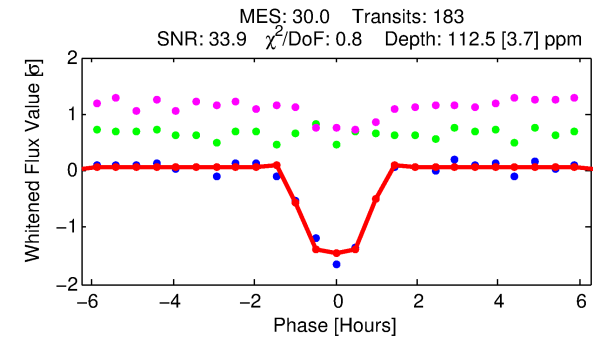
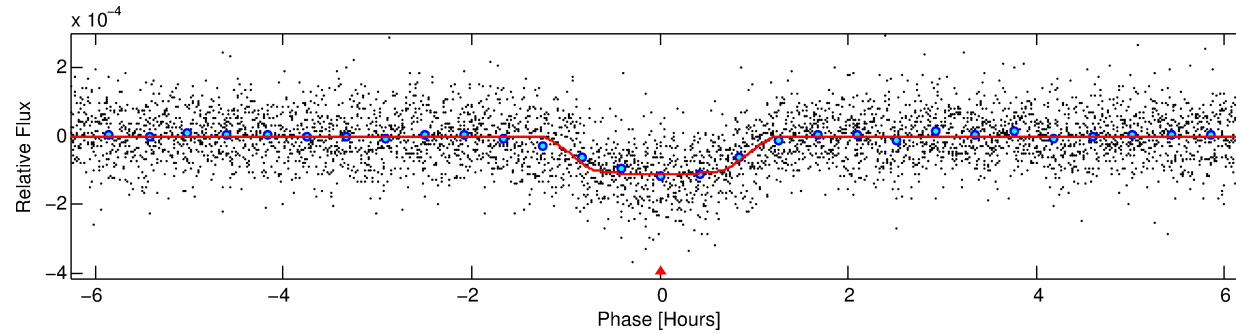
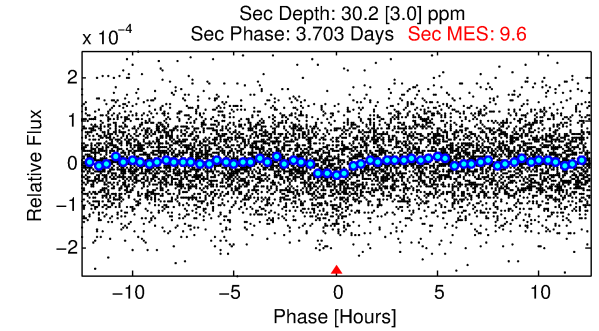
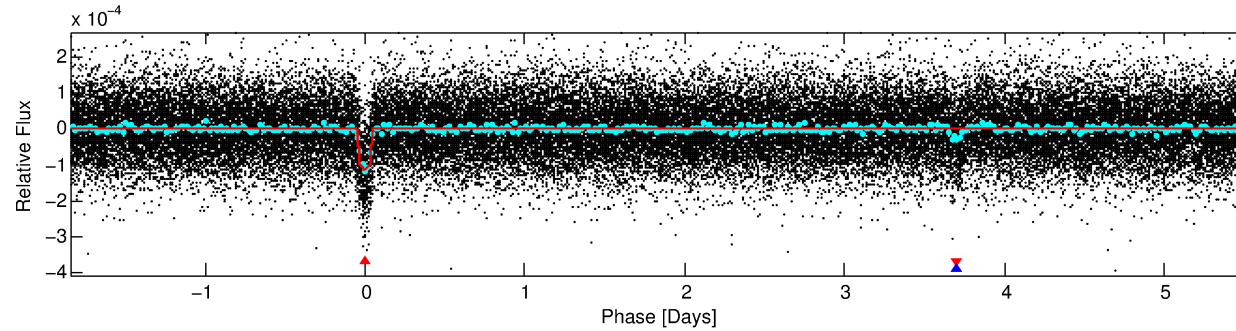
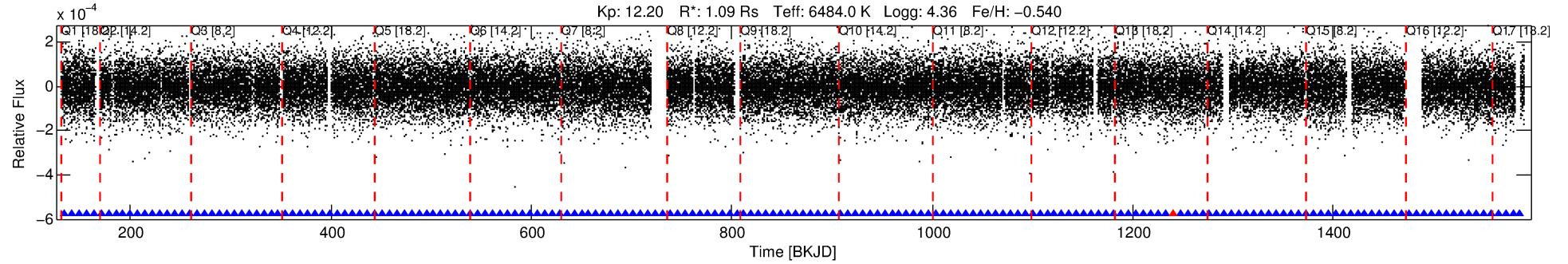
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 009468717-01

No Significant Match Found

DV One-Page Summary

KIC: 9468717 Candidate: 1 of 2 Period: 7.373 d
KOI: K01954.01 Corr: 0.839



DV Fit Results:

Period = 7.37343 [0.00001] d
Epoch = 134.0067 [0.0013] BKJD
Rp/R* = 0.0114 [0.0017]
a/R* = 12.07 [10.57]
b = 0.91 [0.17]
Seff = 344.45 [95.59]
Teq = 1099 [76] K
Rp = 1.36 [0.34] Re
a = 0.0741 [0.0126] AU
Ag = 49.08 [19.79] [2.43σ]
Teff = 4495 [381] K [8.75σ]

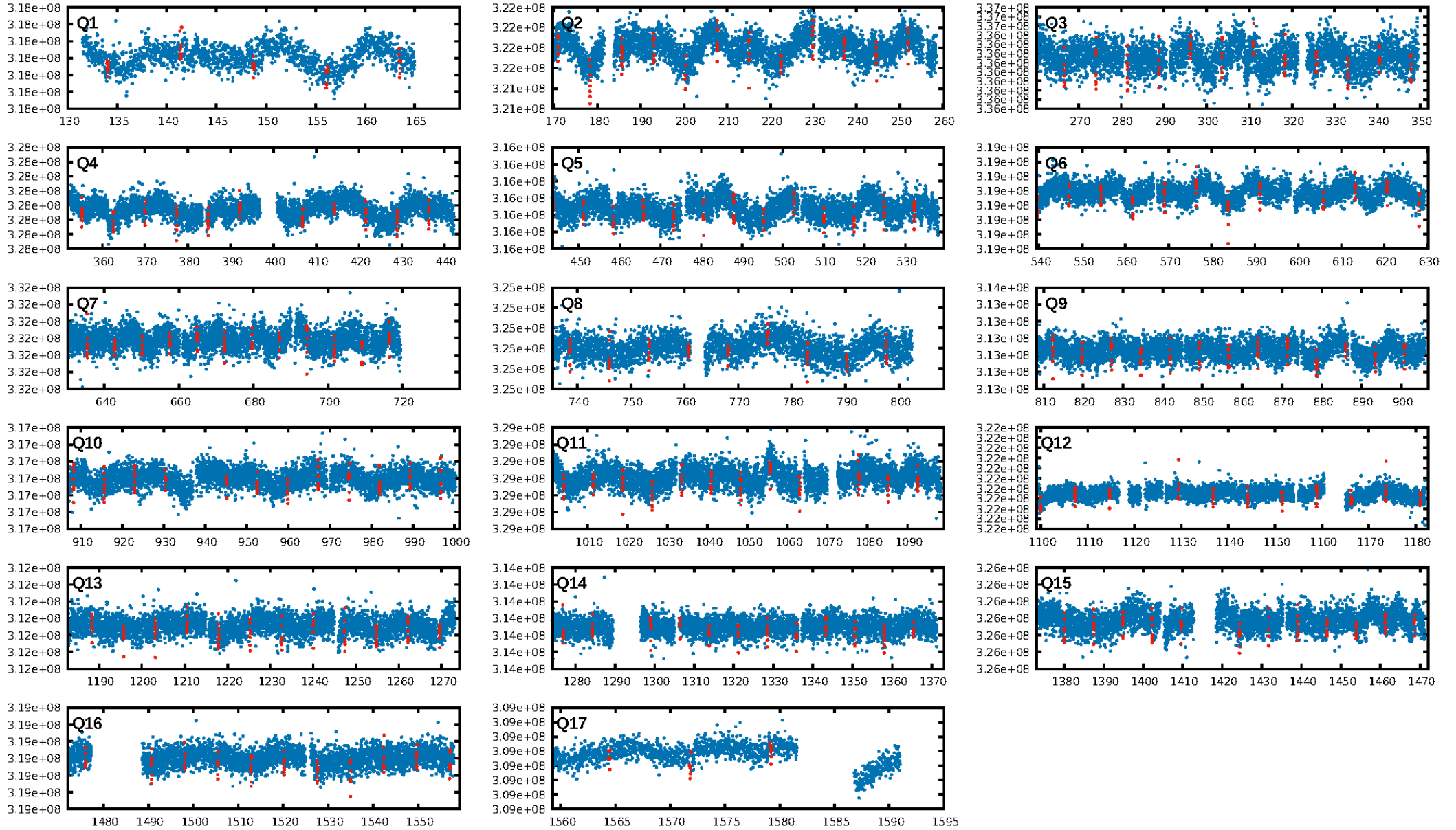
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 0.0% [0.00σ]
ModelChiSquare2-sig: 100.0%
ModelChiSquareGoF-sig: 100.0%
Bootstrap-pfa: 2.19e-192
RollingBand-fgt: 0.99 [174/175]
GhostDiagnostic-chr: 2.5
Centroid-sig: 0.0%
Centroid-so: 4.359 arcsec [12.10σ]
OotOffset-rm: 3.823 arcsec [31.89σ]
KicOffset-rm: 3.671 arcsec [29.32σ]
OotOffset-st: 4/4/4/5 [17]
KicOffset-st: 4/4/4/5 [17]
DiffImageQuality-fgm: 0.94 [16/17]
DiffImageOverlap-fno: 1.00 [17/17]

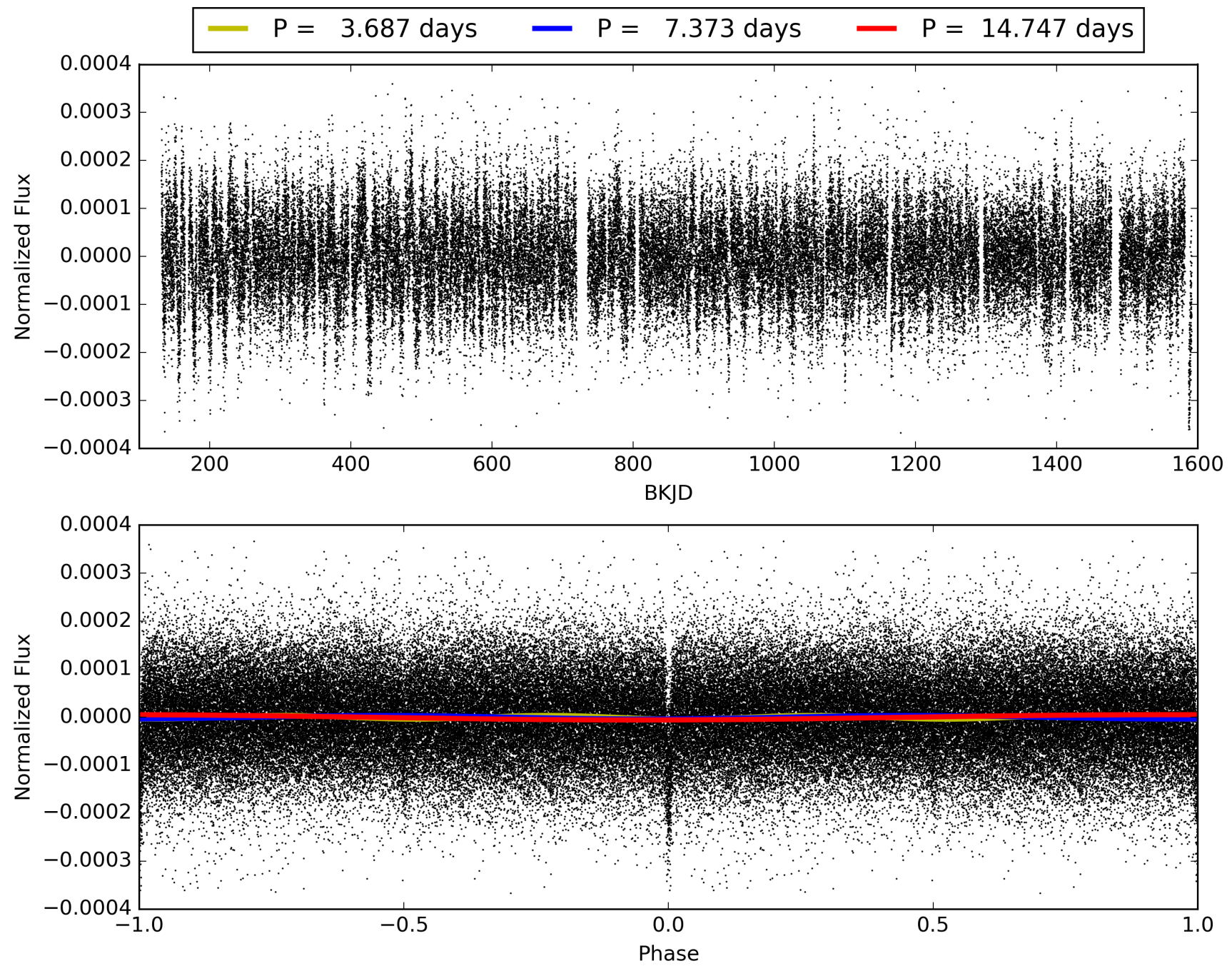
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 16:58:33 Z

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

TCE 009468717-01, PDC Light Curves

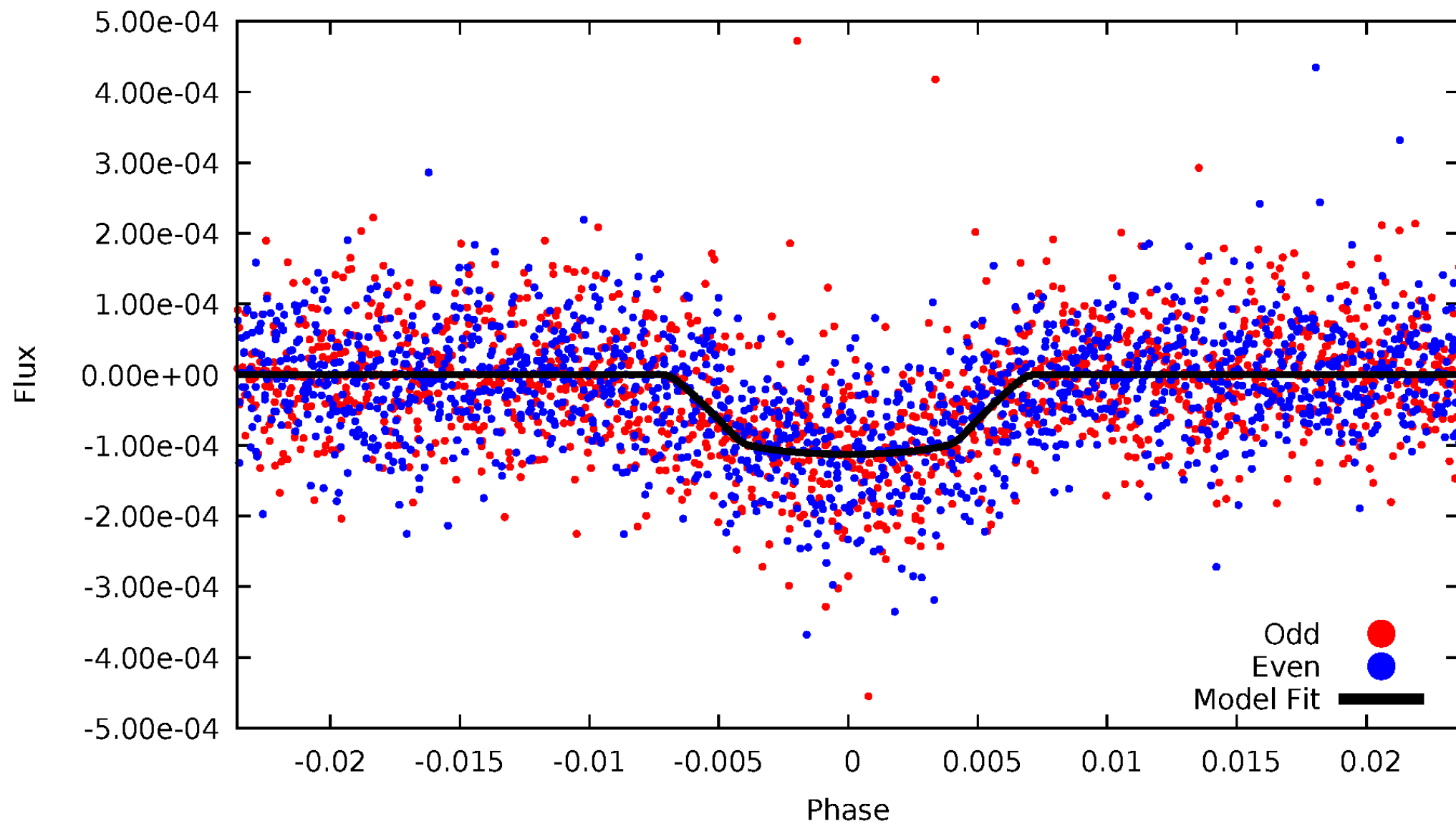


TCE 009468717-01



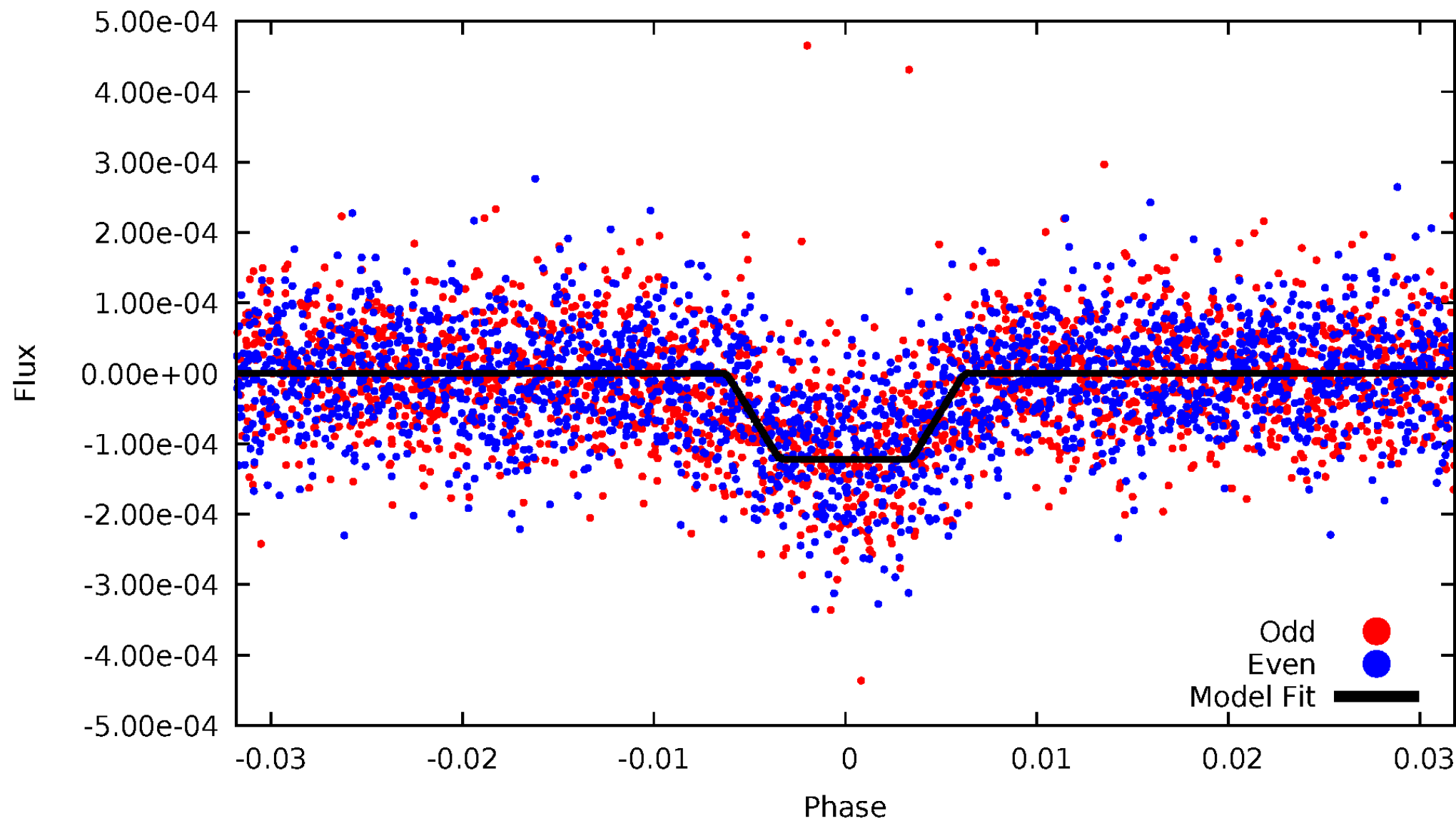
DV Odd/Even

TCE 009468717-01



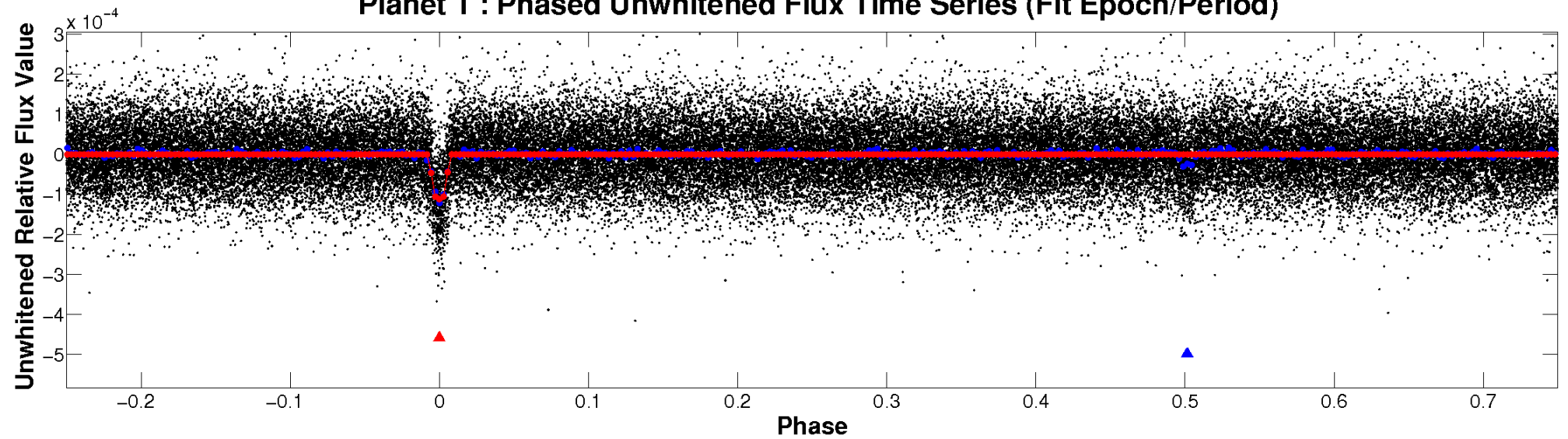
ALT Odd/Even

TCE 009468717-01

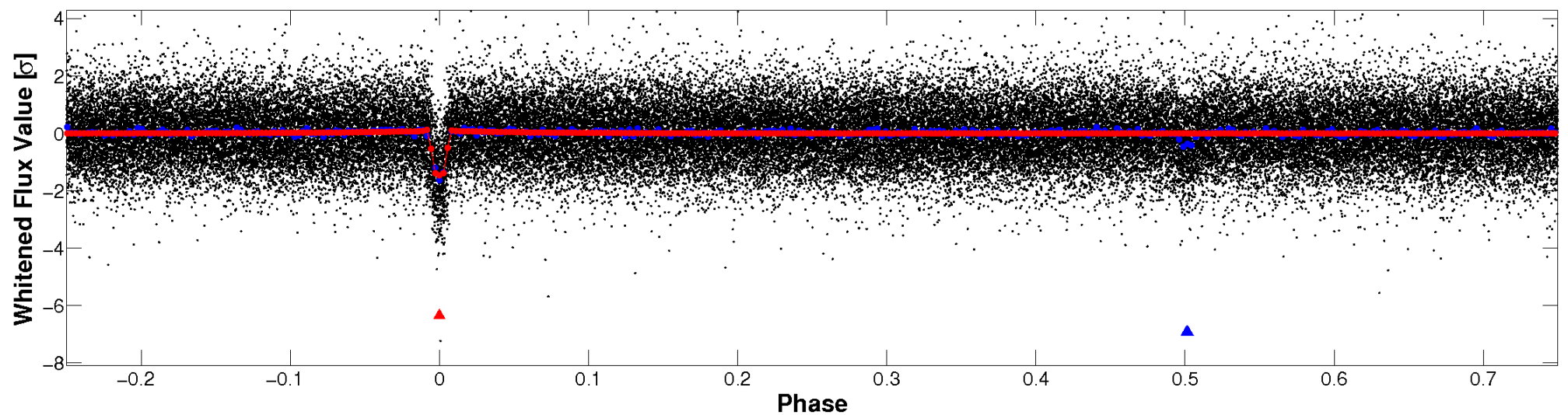


Non-Whitened Vs. Whitened Light Curve

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

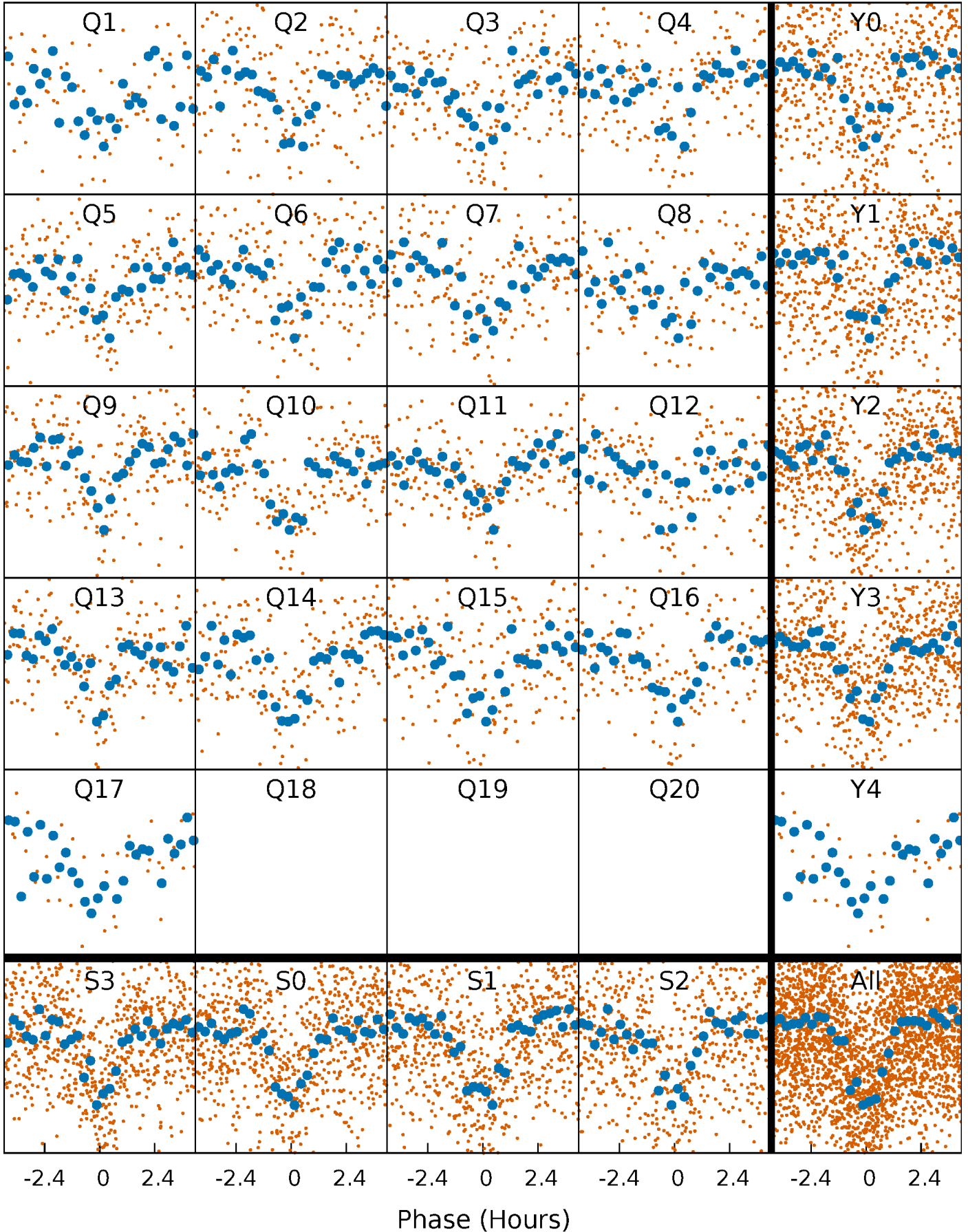


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



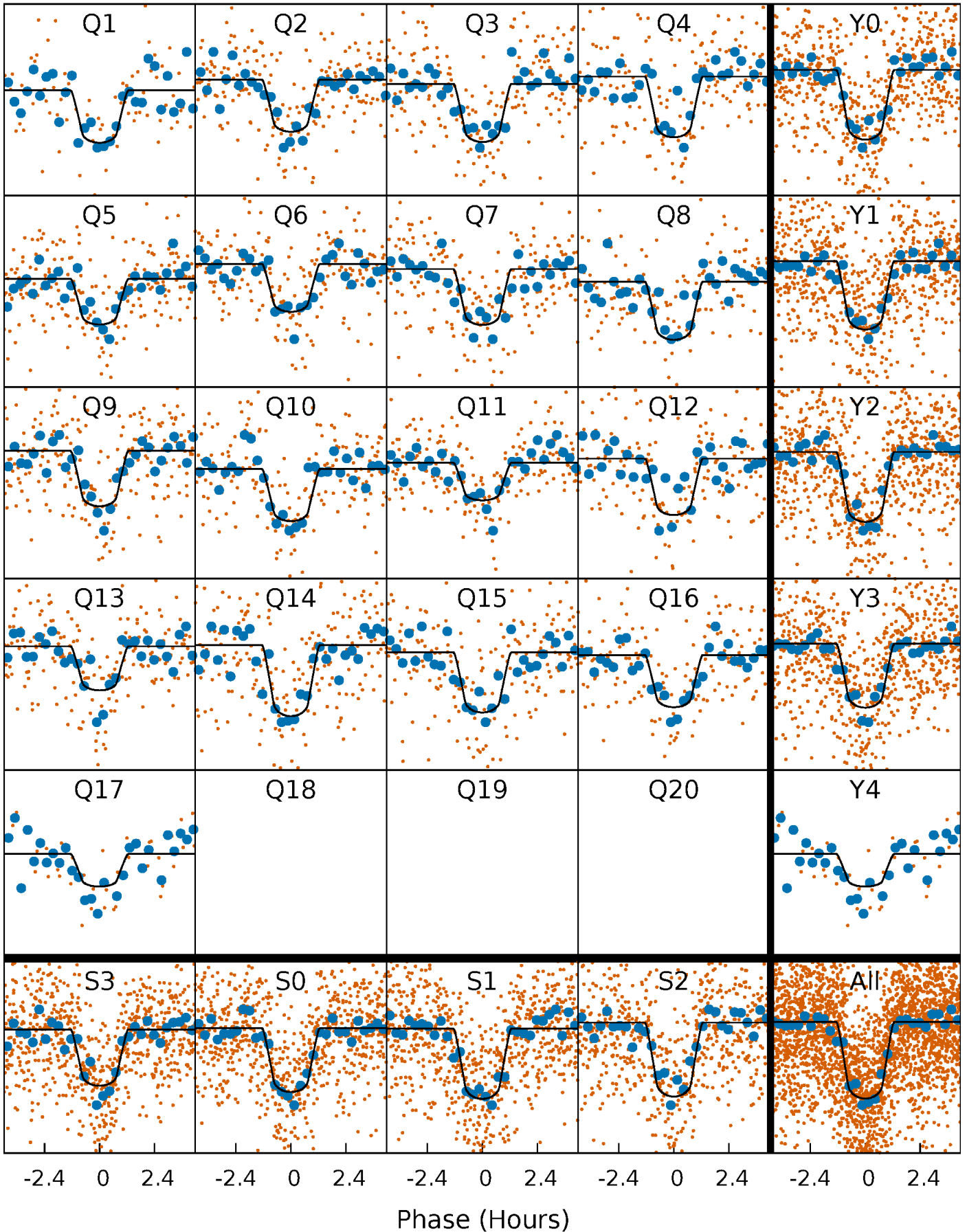
PDC Quarter-Phased Transit Curves

TCE 009468717-01 P= 7.373425 Days $T_0=134.006738$ (BKJD)



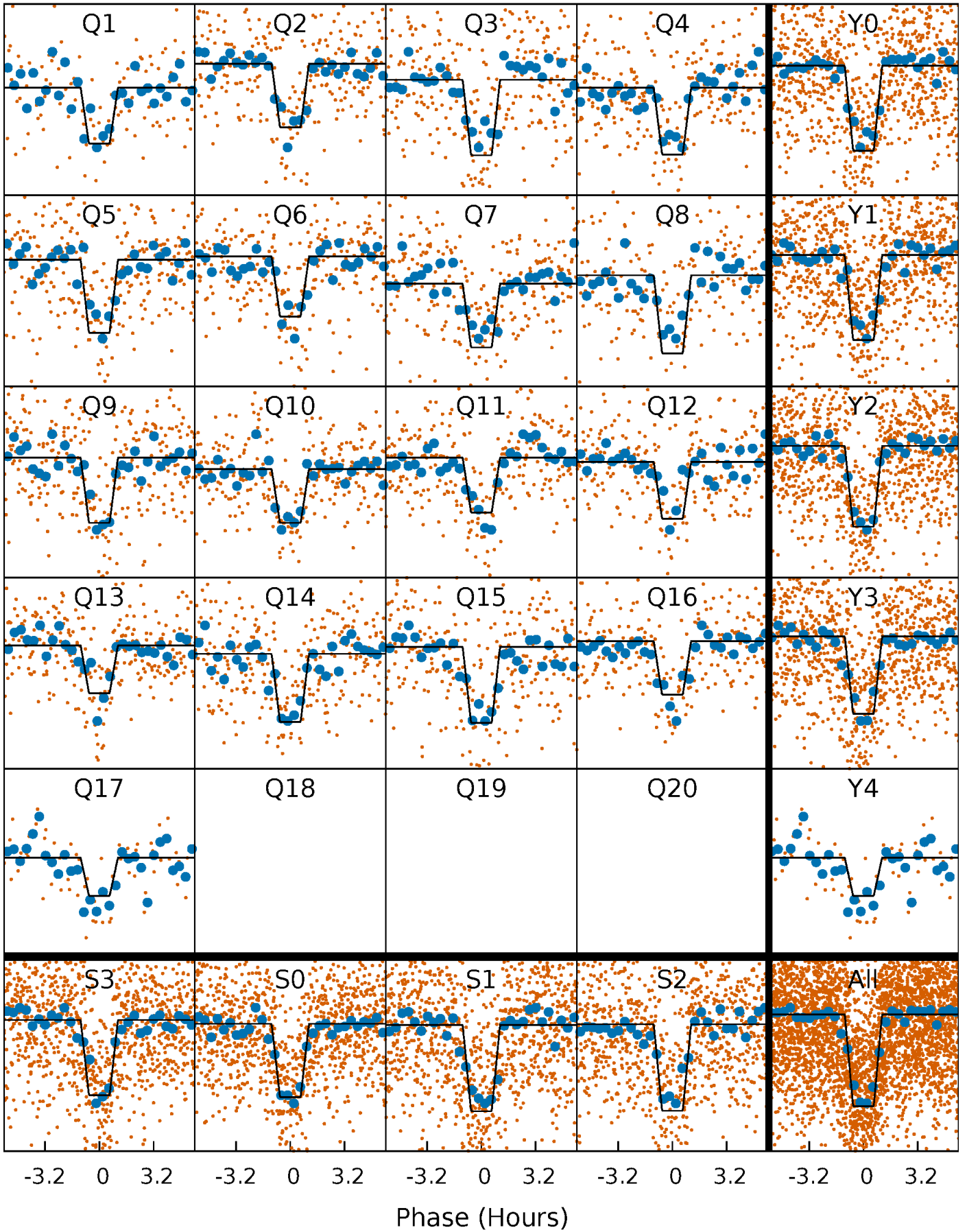
DV Quarter-Phased Transit Curves

TCE 009468717-01 P= 7.373425 Days $T_0=134.006738$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

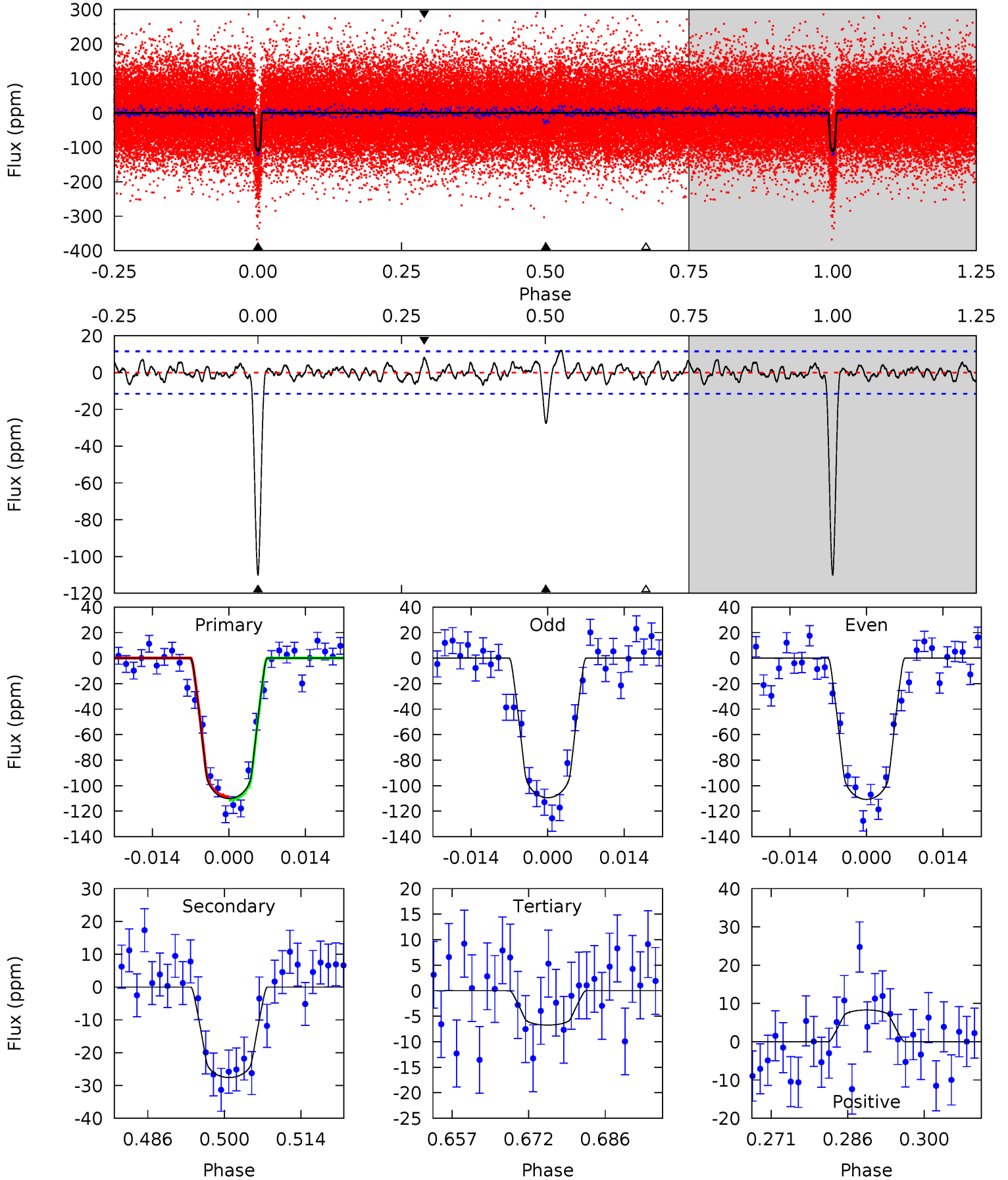
TCE 009468717-01 P= 7.373433 Days $T_0=134.005932$ (BKJD)



DV Model-Shift Uniqueness Test

009468717-01, P = 7.373425 Days, E = 126.633313 Days

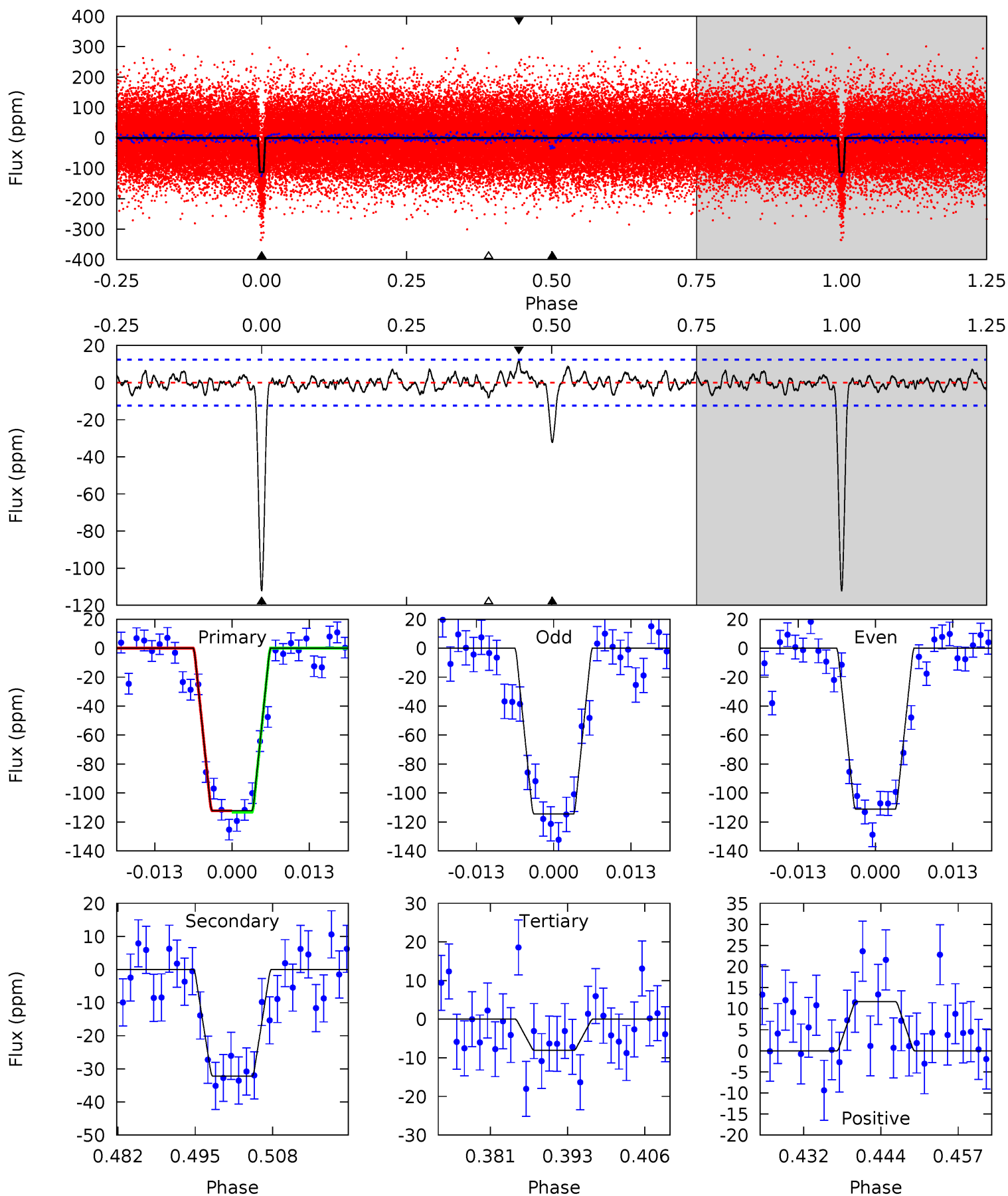
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
47.3	11.9	2.90	3.56	4.96	2.45	1.32	44.4	43.8	8.96	8.29	0.28	0.95	0.10	0.60



Alt Model-Shift Uniqueness Test

009468717-01, P = 7.373433 Days, E = 126.632499 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
45.2	13.0	3.25	4.69	4.98	2.49	1.25	42.0	40.5	9.73	8.29	0.66	0.96	0.09	0.18



Stellar Parameters For KIC 009468717

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6484^{+147}_{-196}	$4.360^{+0.104}_{-0.138}$	$-0.540^{+0.300}_{-0.300}$	$1.093^{+0.217}_{-0.145}$	$0.998^{+0.126}_{-0.103}$	$1.076^{+0.511}_{-0.405}$
	+2%/-3%	+2%/-3%	+56%/-56%	+20%/-13%	+13%/-10%	+48%/-38%
Source	PHO1	FLK73	KIC0	DSEP		

KIC = Kepler Input Catalog; PHO = Photometry; SPE = Spectroscopy; AST = Asteroseismology
 TRA = Transits; DESP = Dartmouth Models; MULT = Multiple Models

Secondary Eclipse Parameters for KIC 009468717-01 / KOI 1954.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-28 ± 2	$1.37^{+0.26}_{-0.24}$	1535^{+90}_{-71}	4559^{+323}_{-261}	45^{+21}_{-13}
Alt.	-32 ± 2	$1.31^{+0.28}_{-0.23}$	1536^{+79}_{-73}	4775^{+404}_{-327}	56^{+27}_{-18}

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

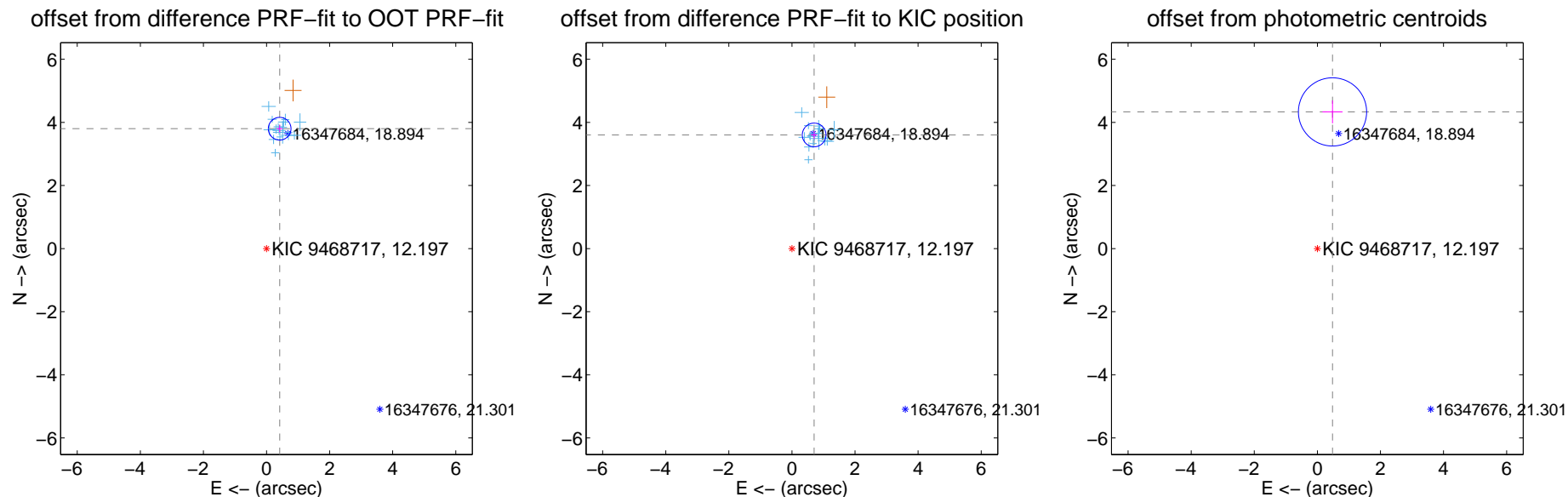
DV Centroid Data

Supplemental centroid analysis for 009468717-01. Kepler magnitude: 12.20. Transit SNR 33.90

There are 16 quarters with good PRF difference image offsets

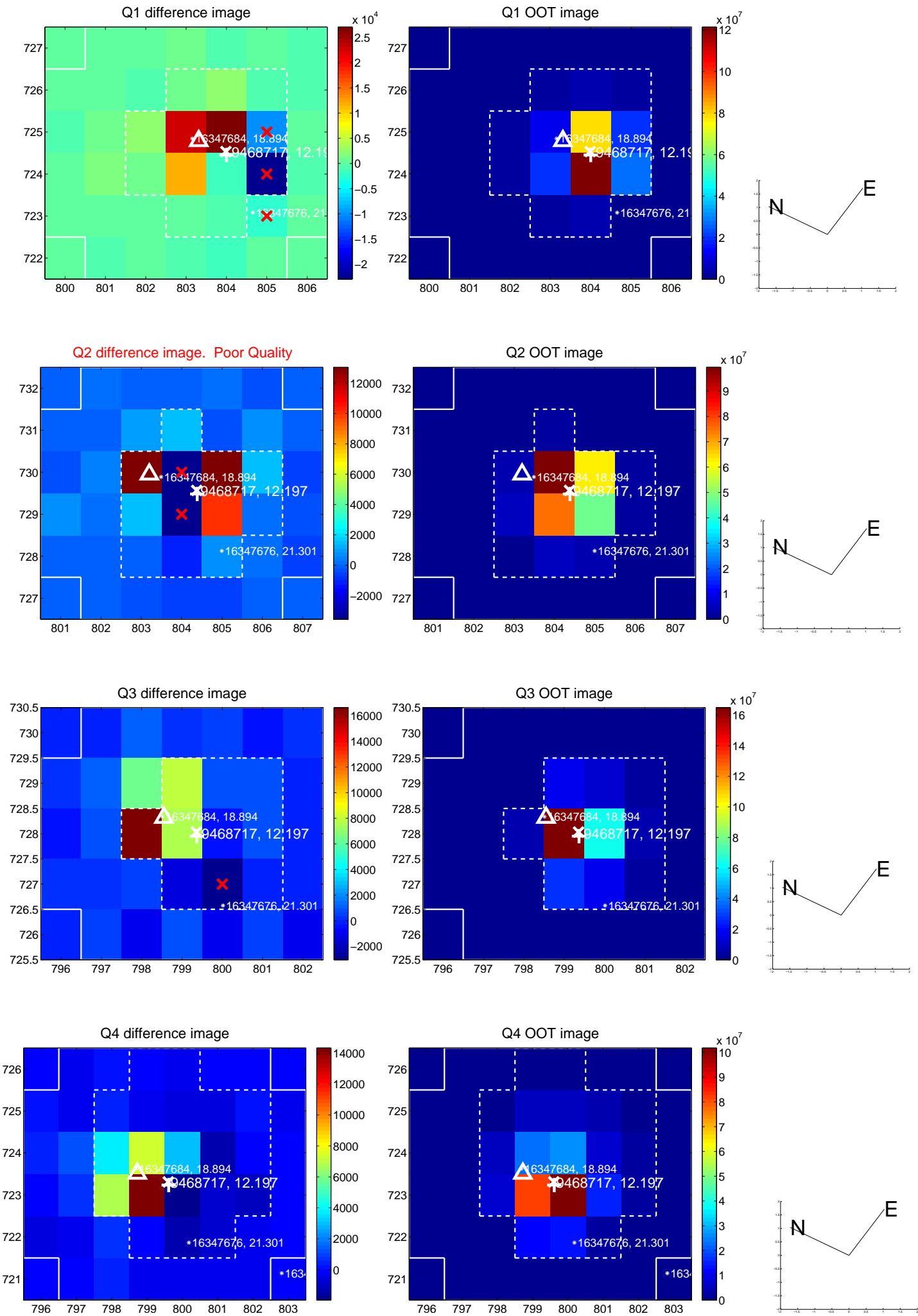
The direct PRF centroid is offset from the target star catalog position by about 0.39 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	3.823 ± 0.120	31.89	-0.417 ± 0.093	3.800 ± 0.119
PRF-fit source offset from KIC position	3.671 ± 0.125	29.32	-0.704 ± 0.093	3.602 ± 0.124
photometric centroid source offset	4.36 ± 0.36	12.10	-0.48 ± 0.32	4.33 ± 0.36

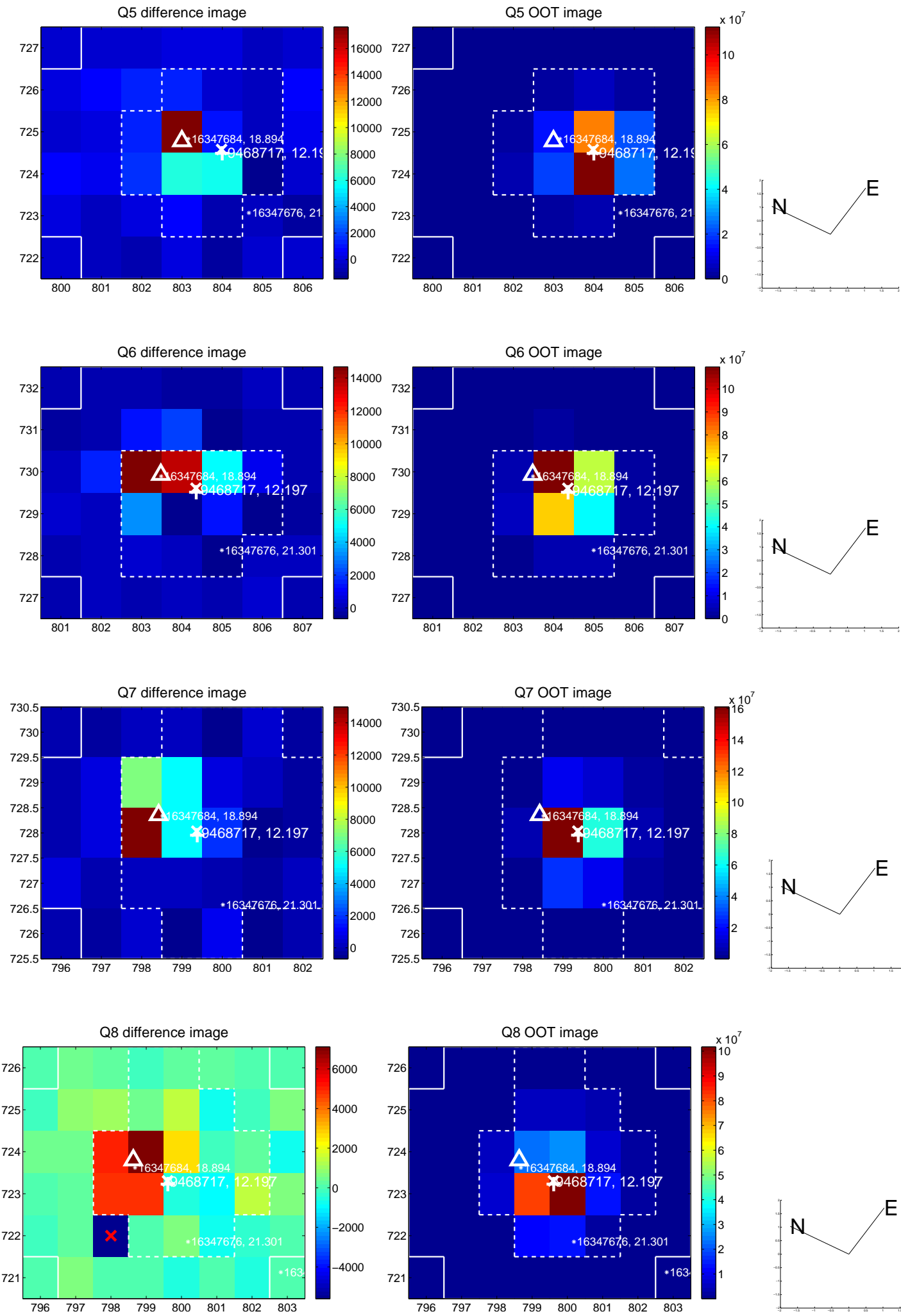


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

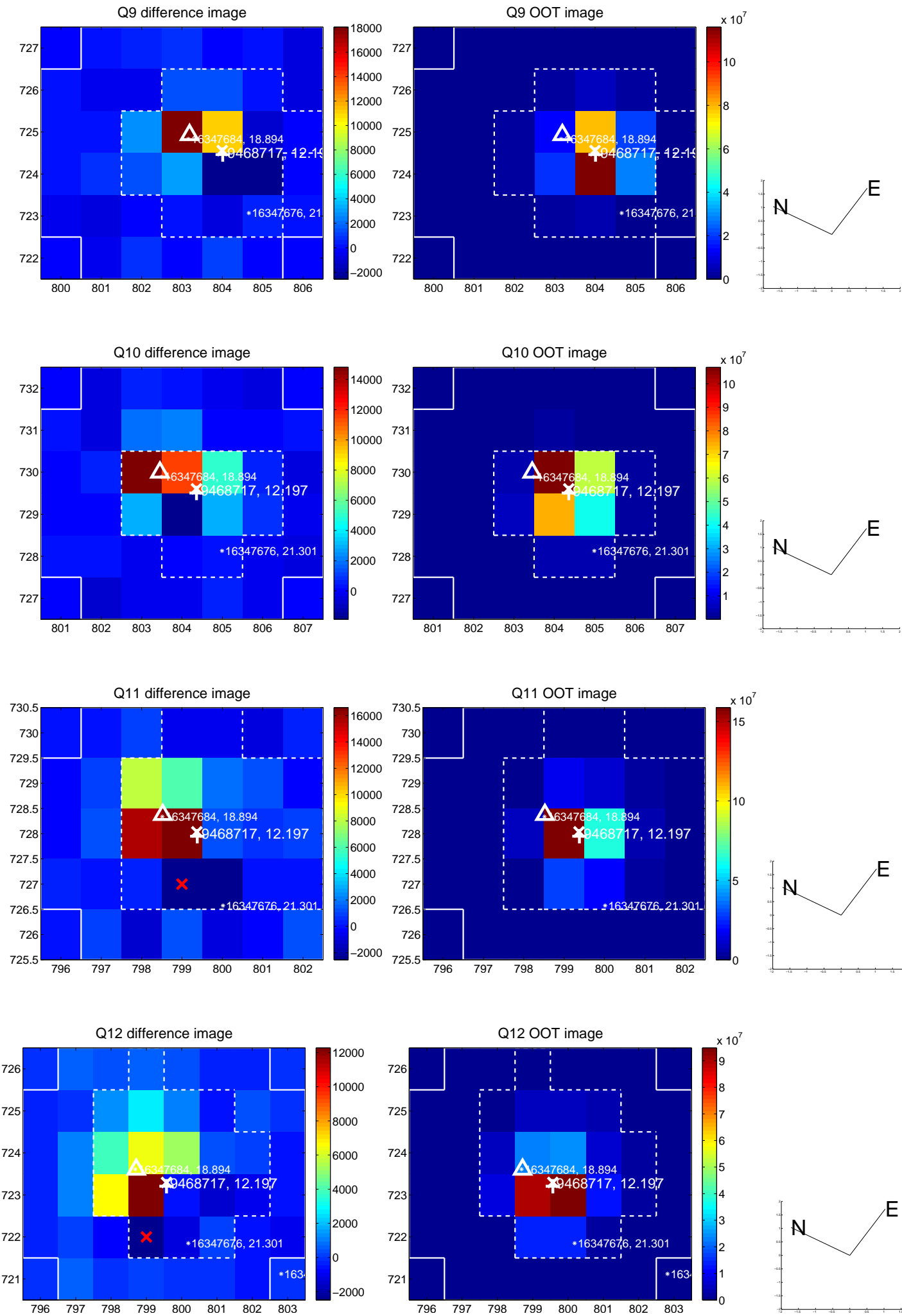
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



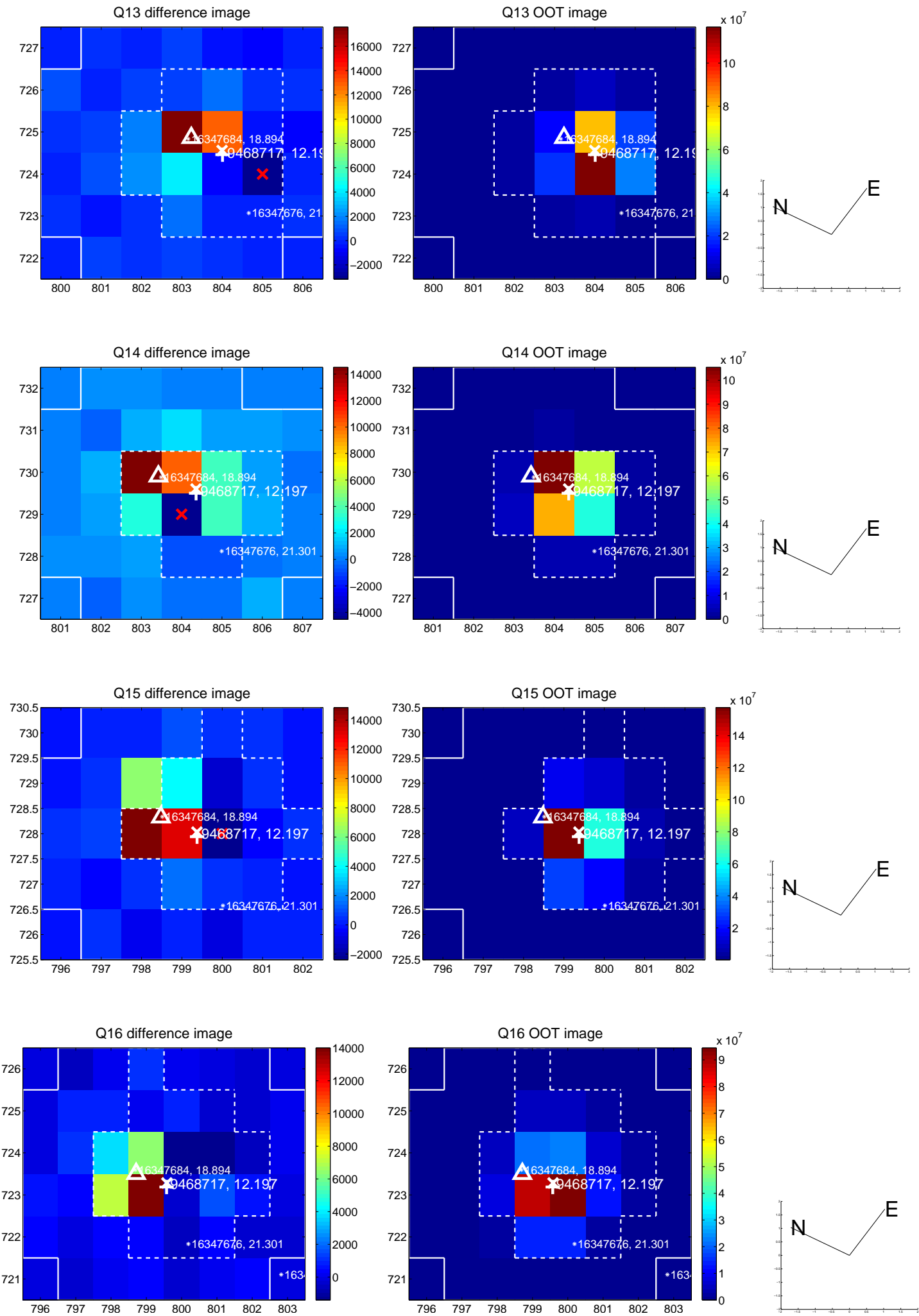
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



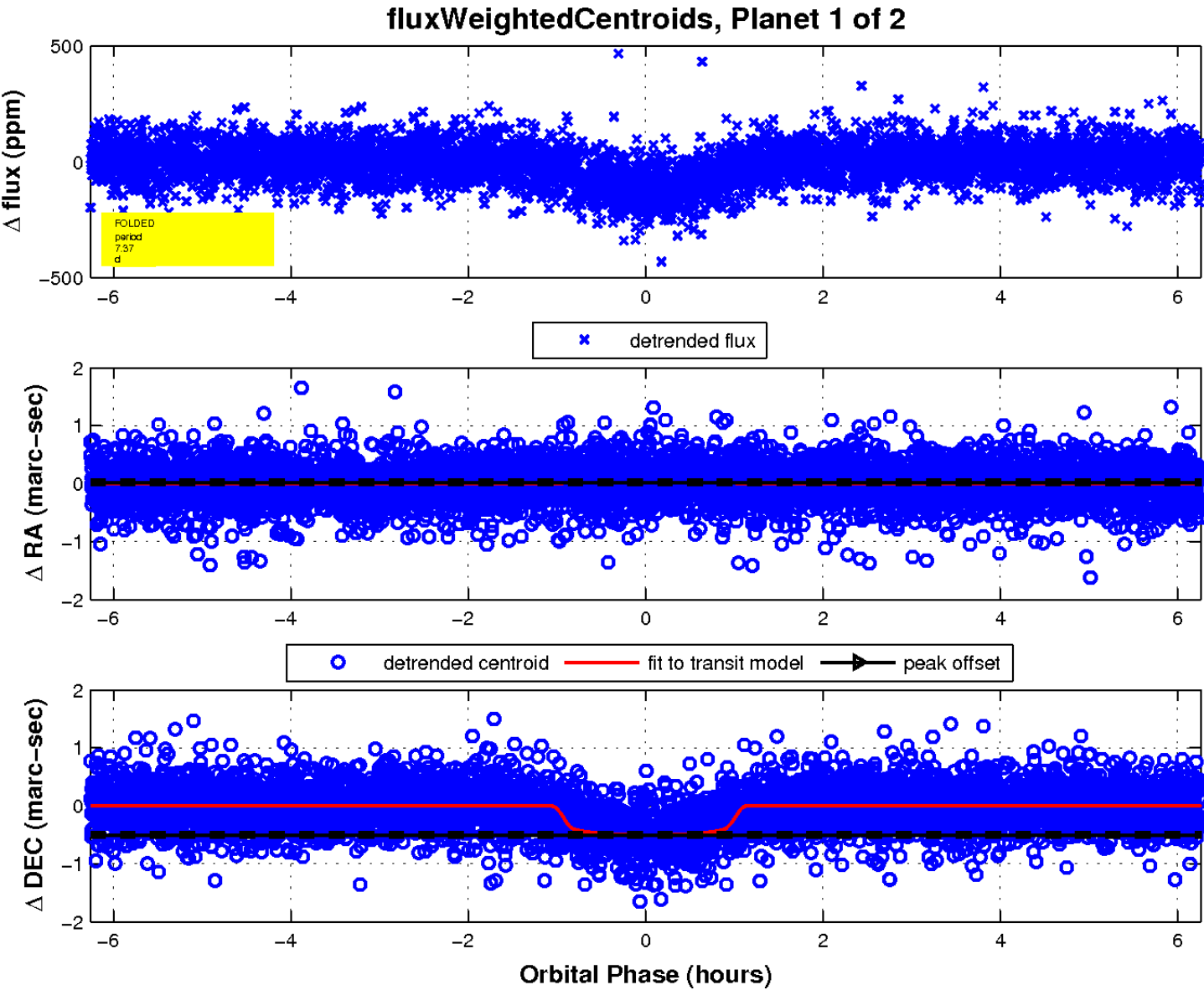
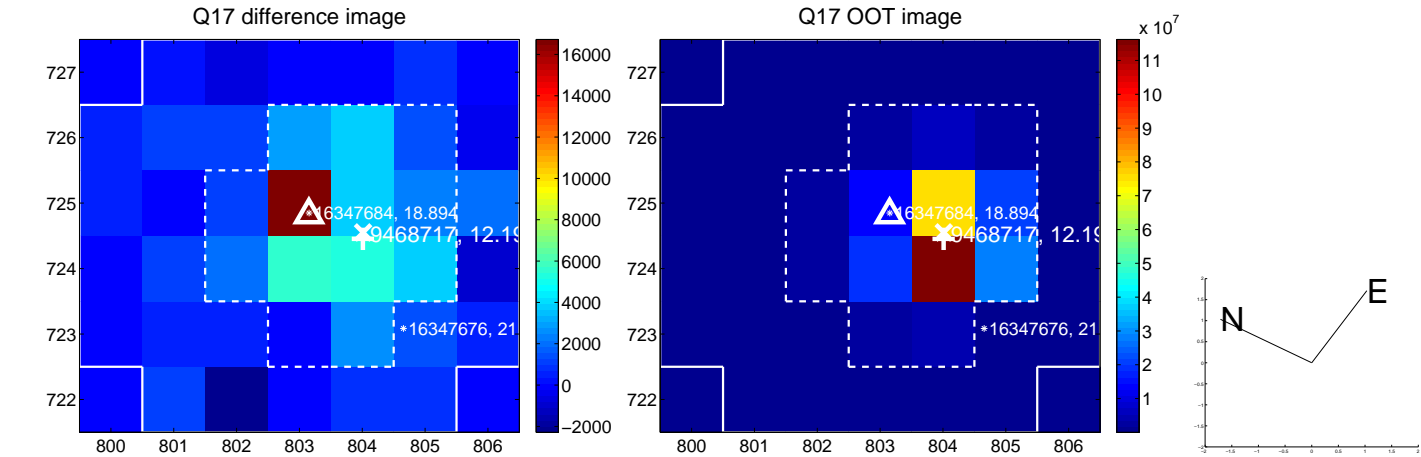
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

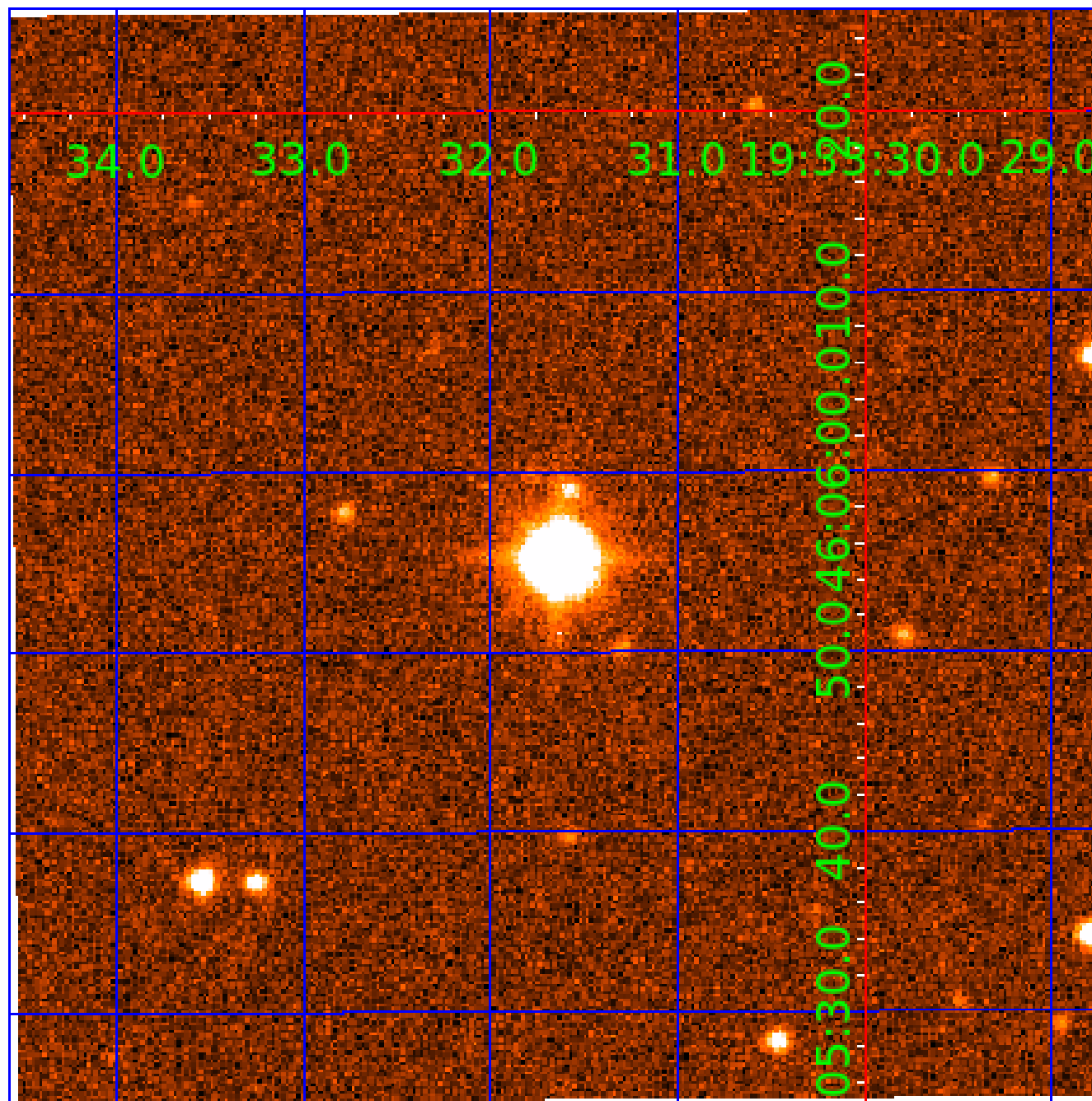


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 009468717

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})
009468717-01	OBS	1954.01	7.373425	134.006738	112.5	2.088	30.0	33.9	1.09	6484	1.36	344.45
009468717-02	OBS	No	7.373451	137.701928	33.5	2.241	9.4	10.5	1.09	6484	0.76	344.44

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
009468717-01	OBS	FP	0.00	0	1	0	0	MOD_SEC_DV—MOD_SEC_ALT—HAS_SEC_TCE—CENT_KIC_POS
009468717-02	OBS	FP	0.00	1	1	1	0	IS_SEC_TCE—CENT_RESOLVED_OFFSET

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.

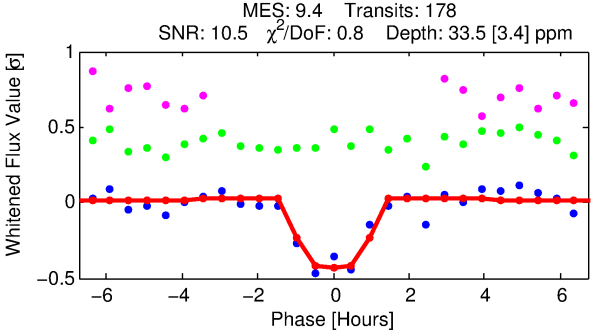
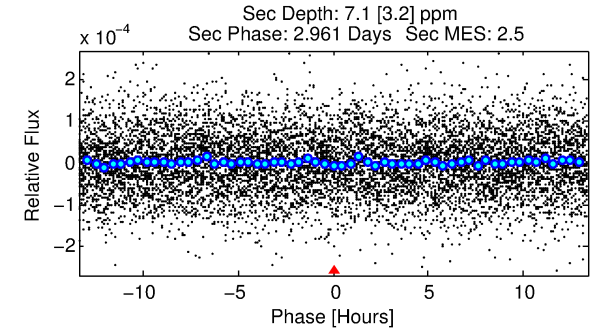
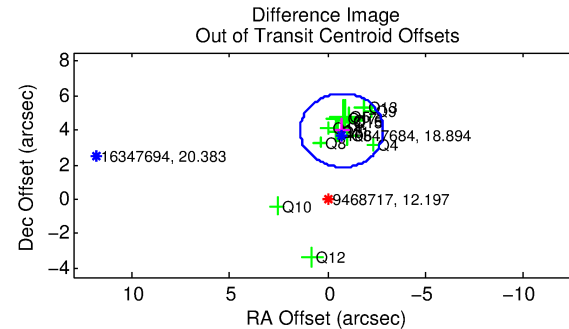
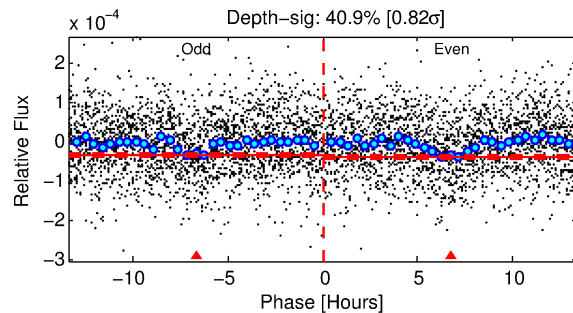
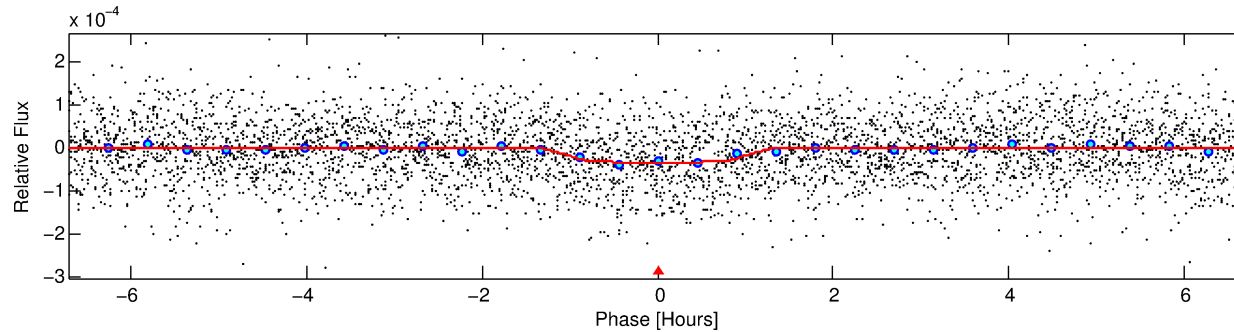
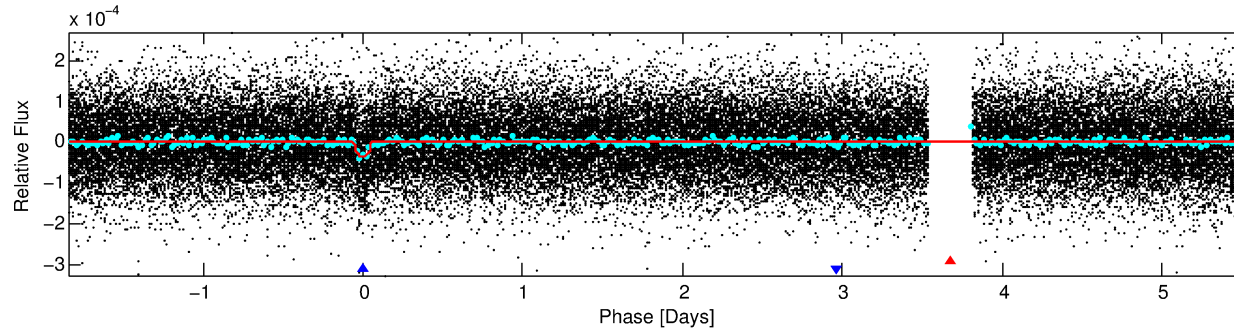
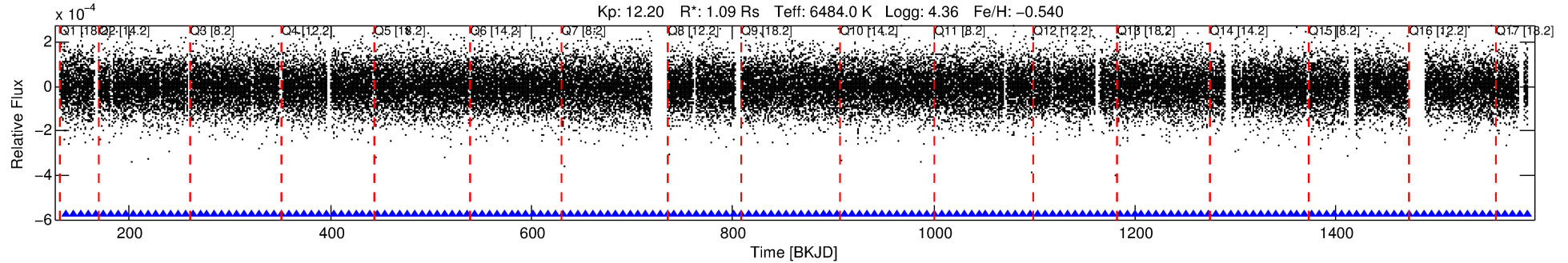
Ephemeris Match Information For 009468717-02

No Significant Match Found

DV One-Page Summary

KIC: 9468717 Candidate: 2 of 2 Period: 7.373 d
KOI: K01954 Corr: No Ephemeris Match

Kp: 12.20 R*: 1.09 Rs Teff: 6484.0 K Logg: 4.36 Fe/H: -0.540



DV Fit Results:

Period = 7.37345 [0.00004] d
Epoch = 137.7019 [0.0043] BKJD
Rp/R* = 0.0063 [0.0023]
a/R* = 10.08 [21.90]
b = 0.92 [0.35]
Seff = 344.44 [95.59]
Teq = 1099 [76] K
Rp = 0.75 [0.31] Re
a = 0.0741 [0.0126] AU
Ag = 37.52 [33.64] [1.09σ]
Teffp = 4203 [914] K [3.39σ]

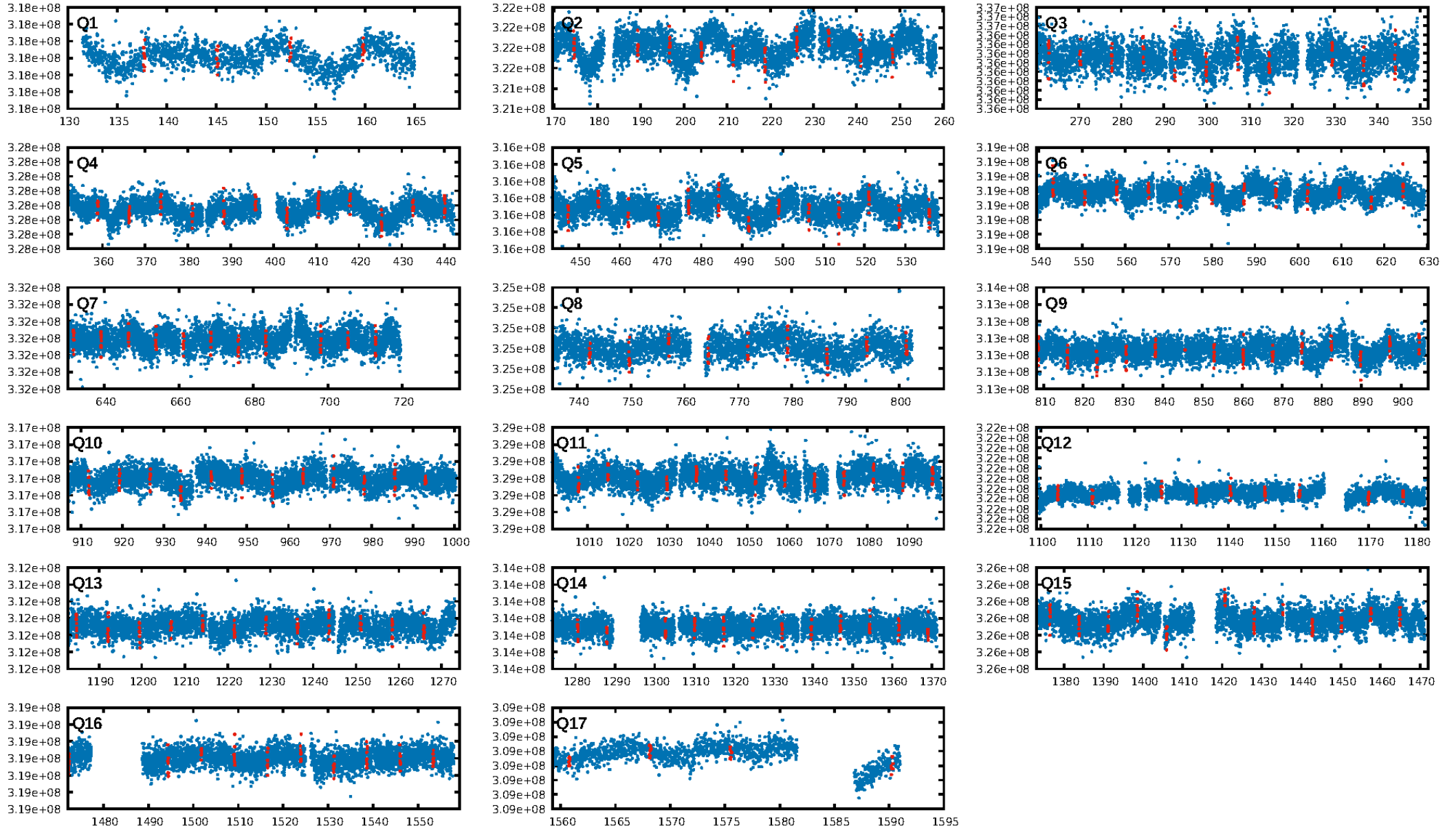
DV Diagnostic Results:

ShortPeriod-sig: 0.0% [0.00σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 100.0%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 7.67e-21
RollingBand-fgt: 1.00 [170/170]
GhostDiagnostic-chr: 1.782
Centroid-sig: 0.0%
Centroid-so: 4.396 arcsec [3.90σ]
OotOffset-rm: 4.047 arcsec [5.70σ]
KicOffset-rm: 3.914 arcsec [6.26σ]
OotOffset-st: 3/3/4/4 [14]
KicOffset-st: 3/3/4/4 [14]
DiffImageQuality-fgm: 0.43 [6/14]
DiffImageOverlap-fno: 1.00 [17/17]

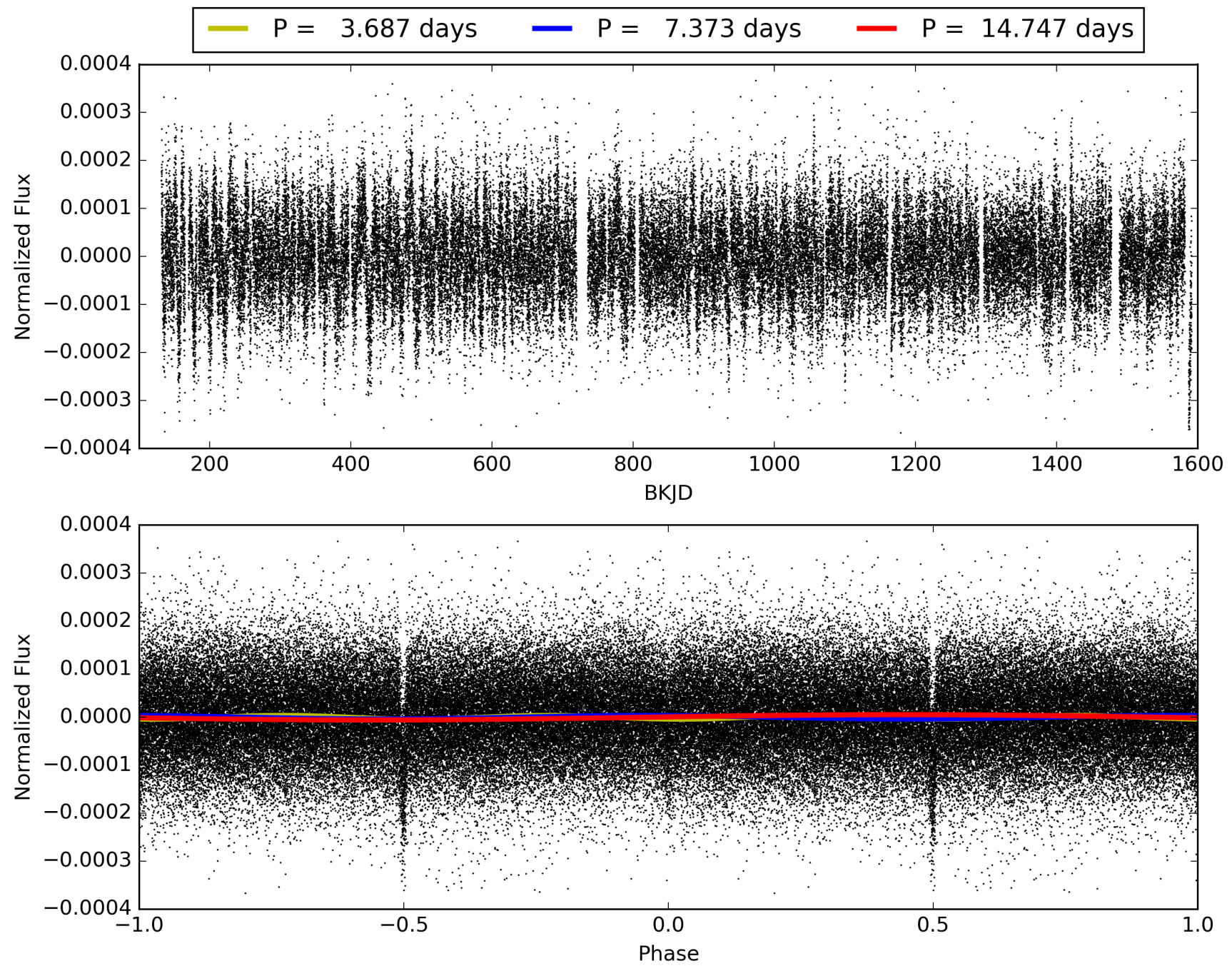
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 16:58:39 Z

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

TCE 009468717-02, PDC Light Curves

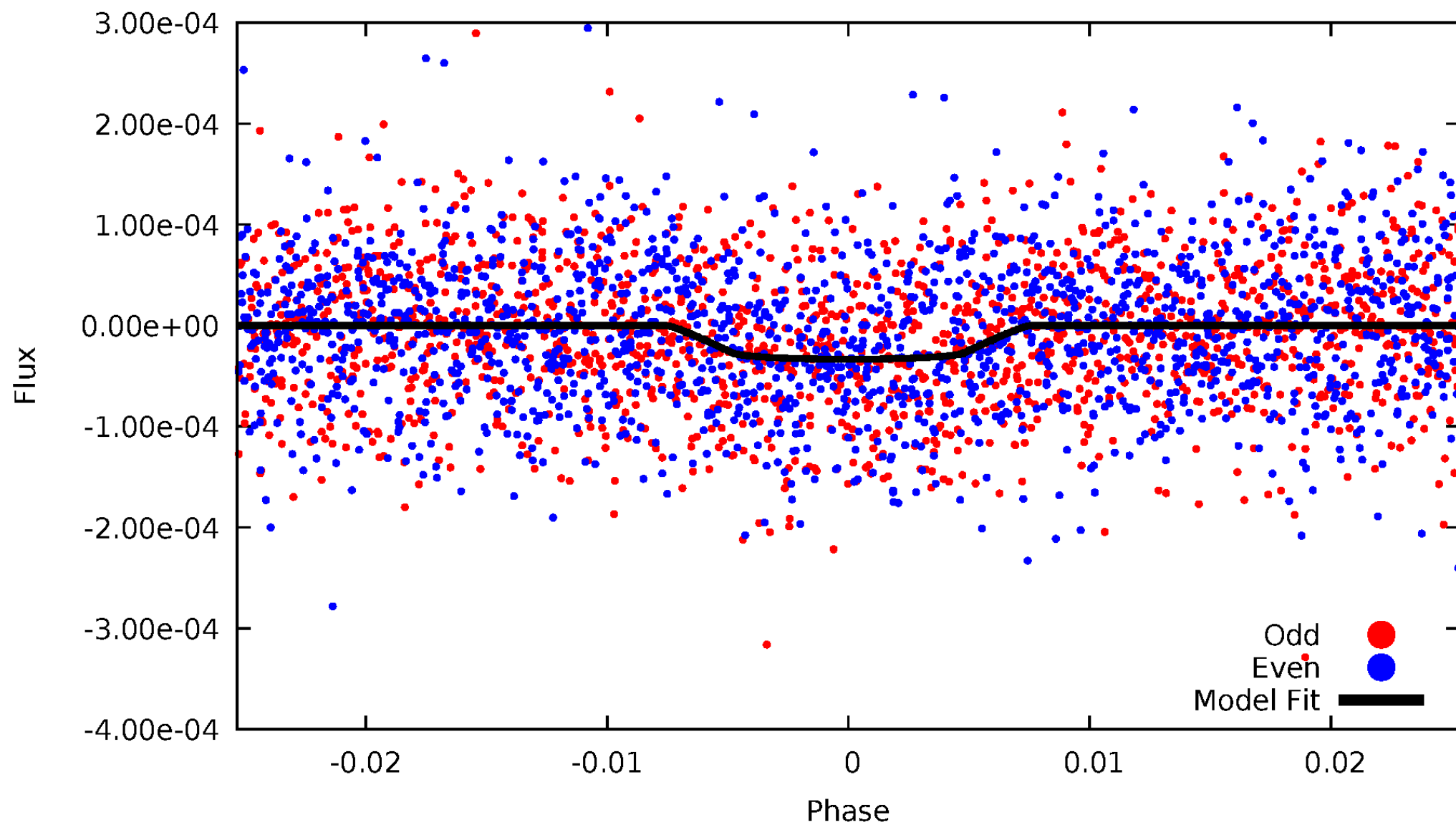


TCE 009468717-02



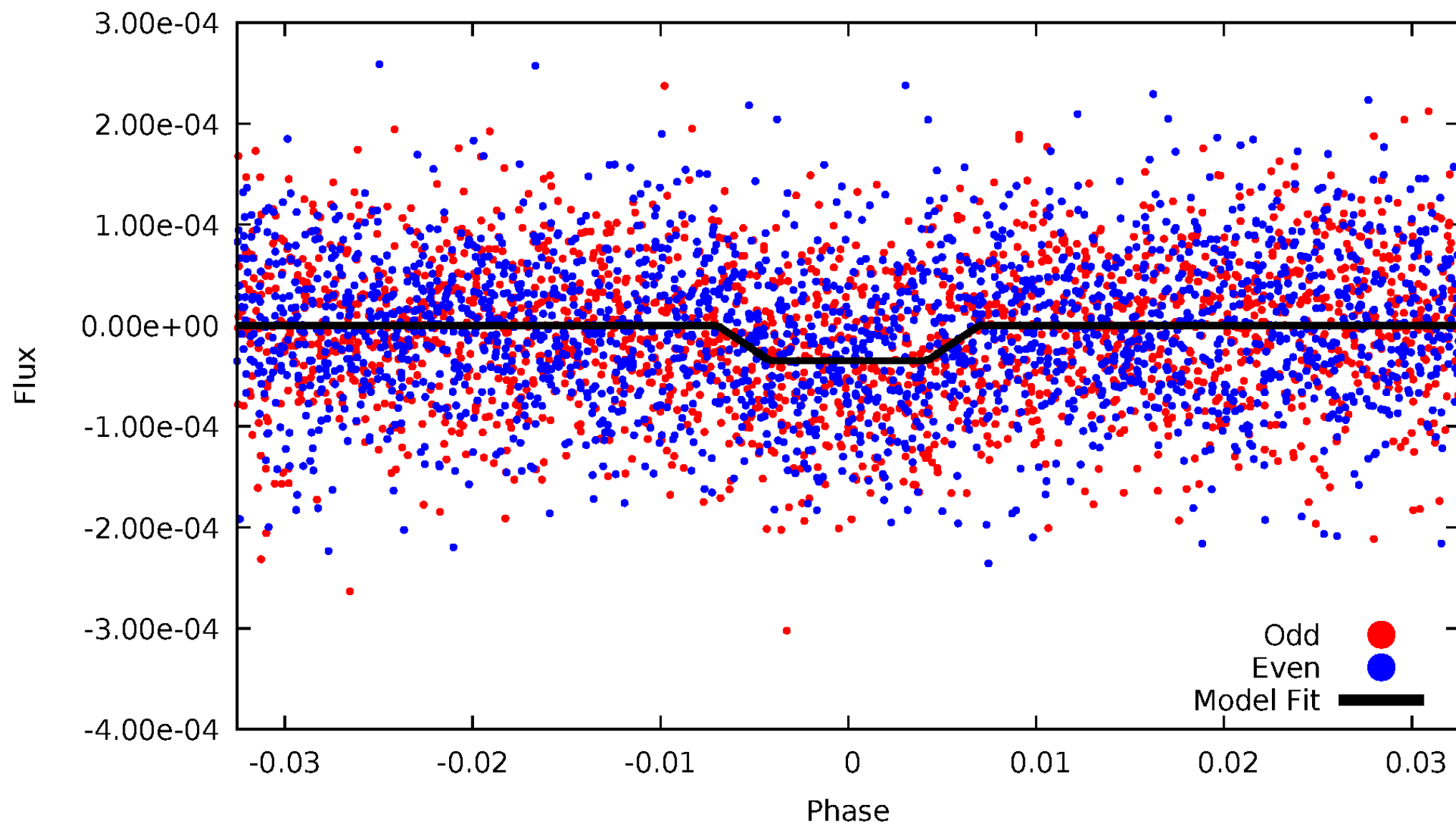
DV Odd/Even

TCE 009468717-02



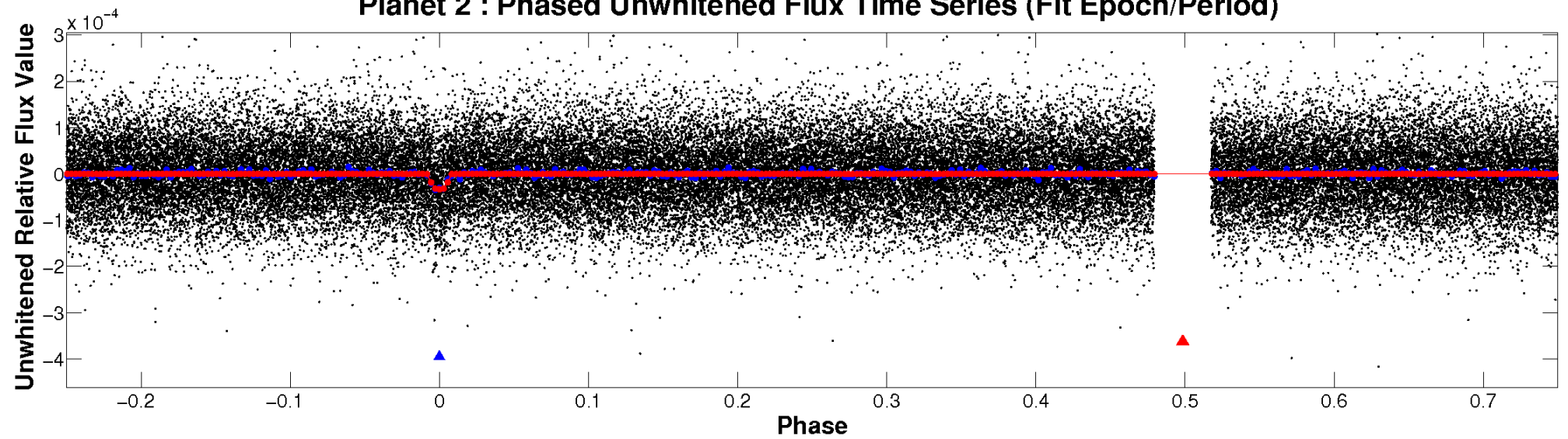
ALT Odd/Even

TCE 009468717-02

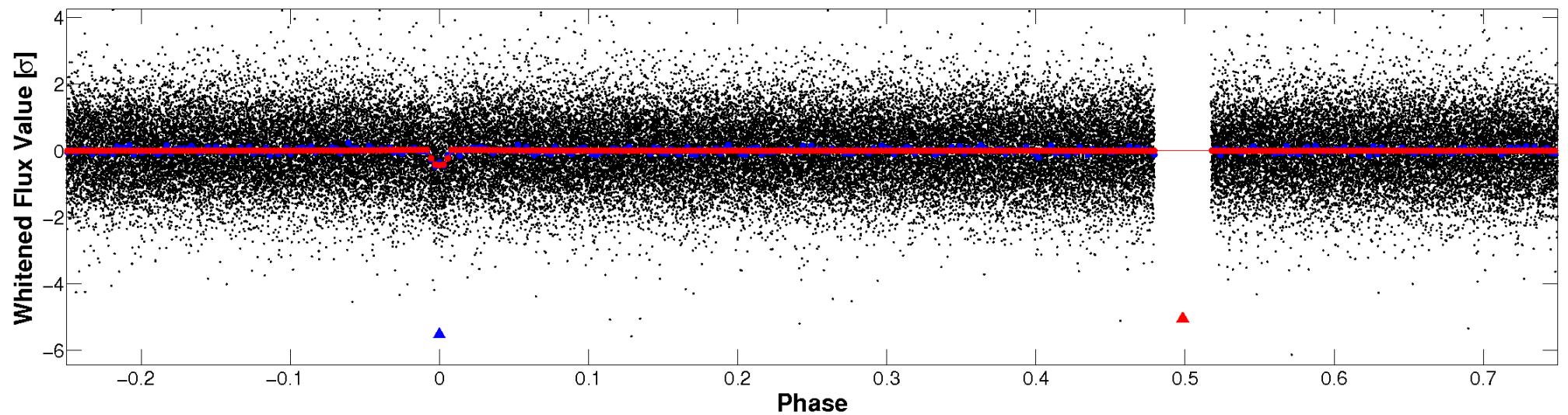


Non-Whitened Vs. Whitened Light Curve

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

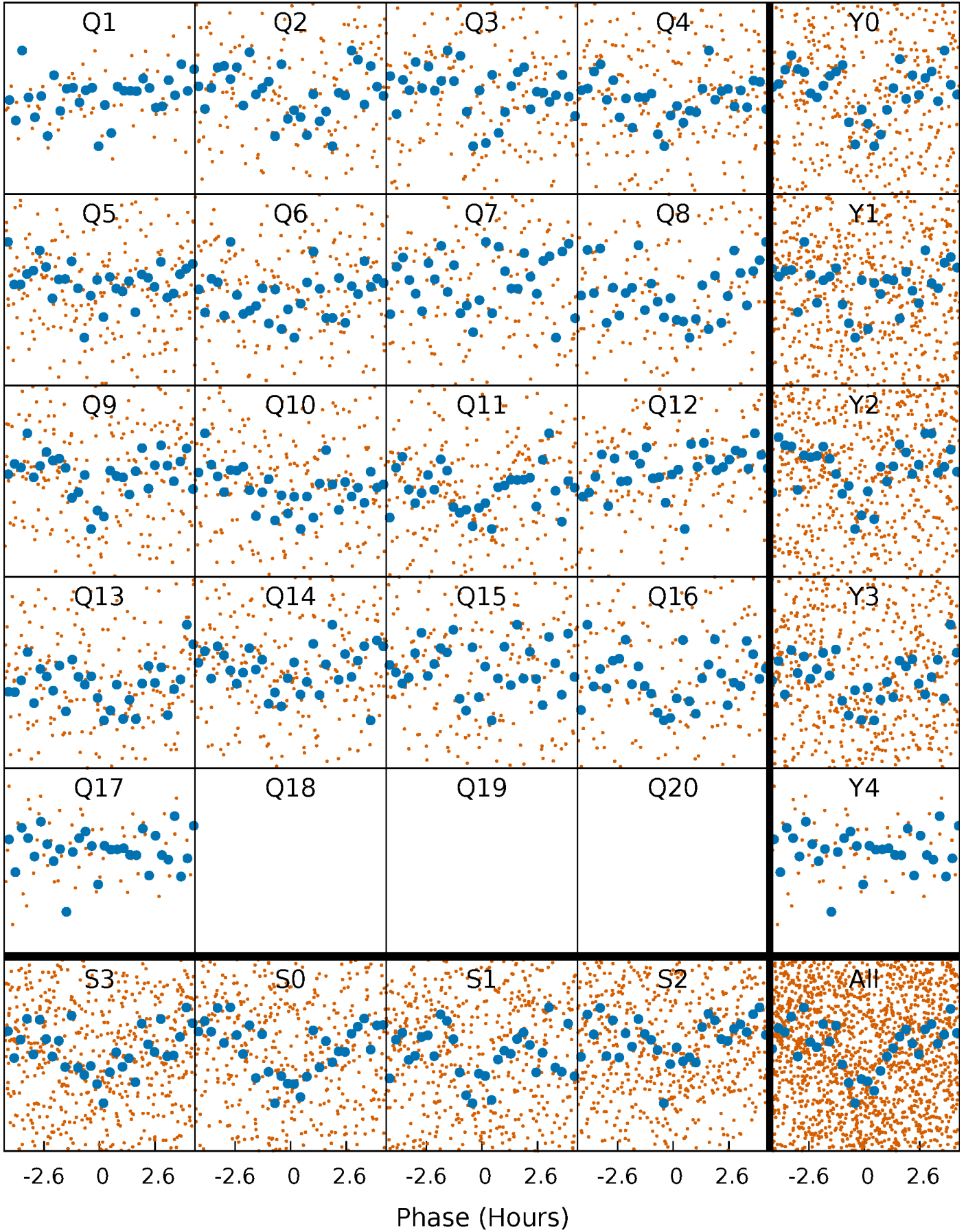


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



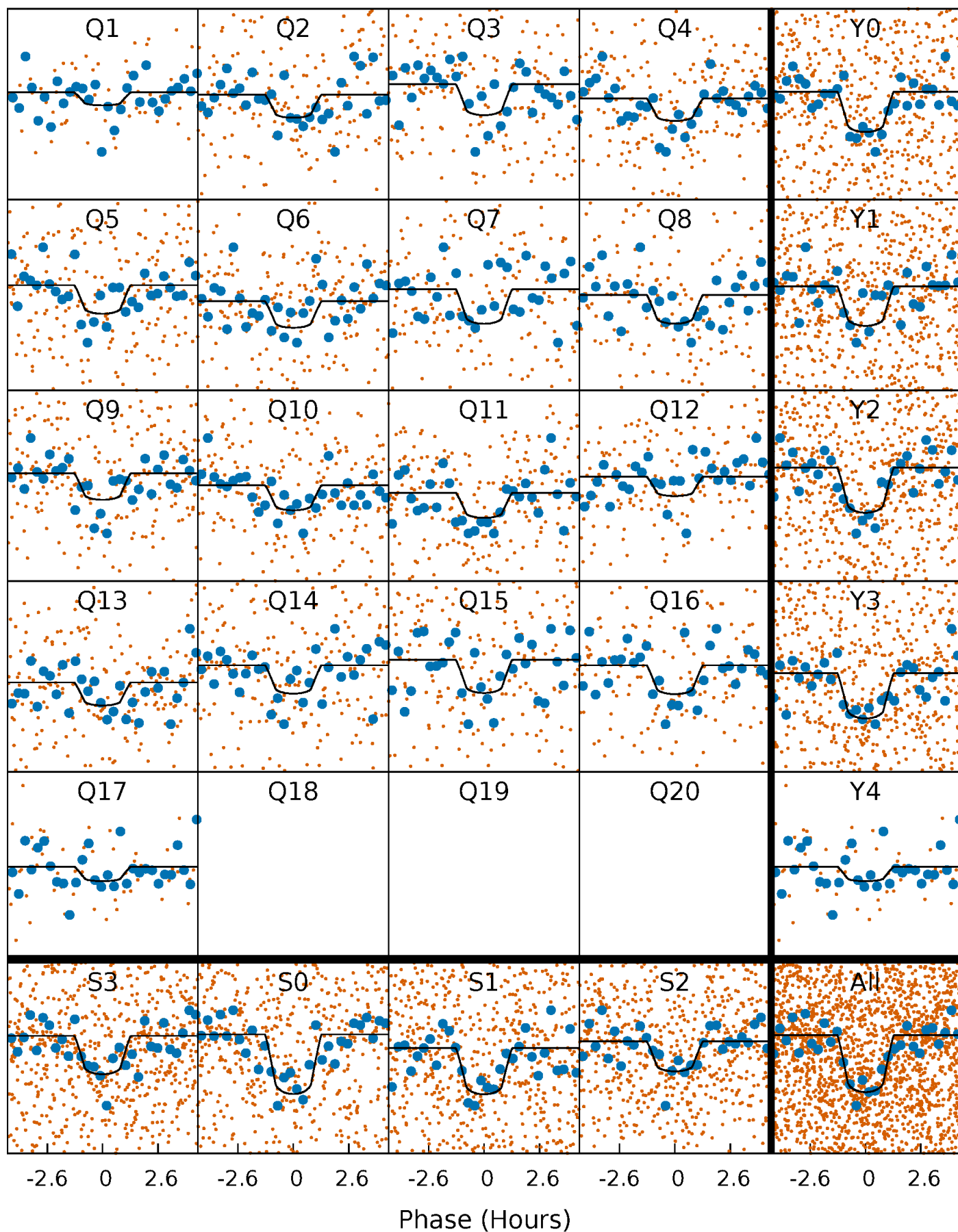
PDC Quarter-Phased Transit Curves

TCE 009468717-02 P= 7.373451 Days $T_0=137.701928$ (BKJD)



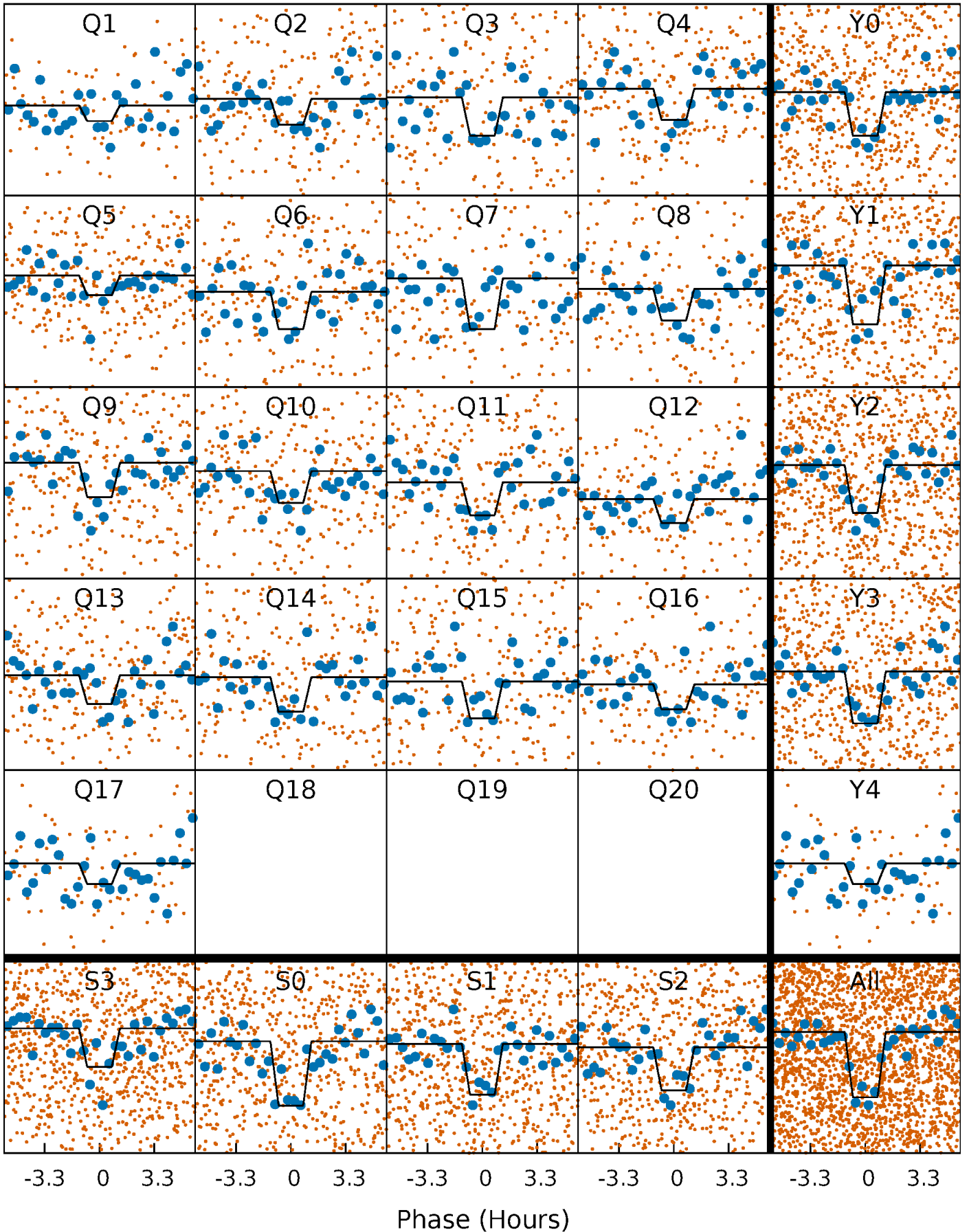
DV Quarter-Phased Transit Curves

TCE 009468717-02 $P = 7.373451$ Days $T_0 = 137.701928$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

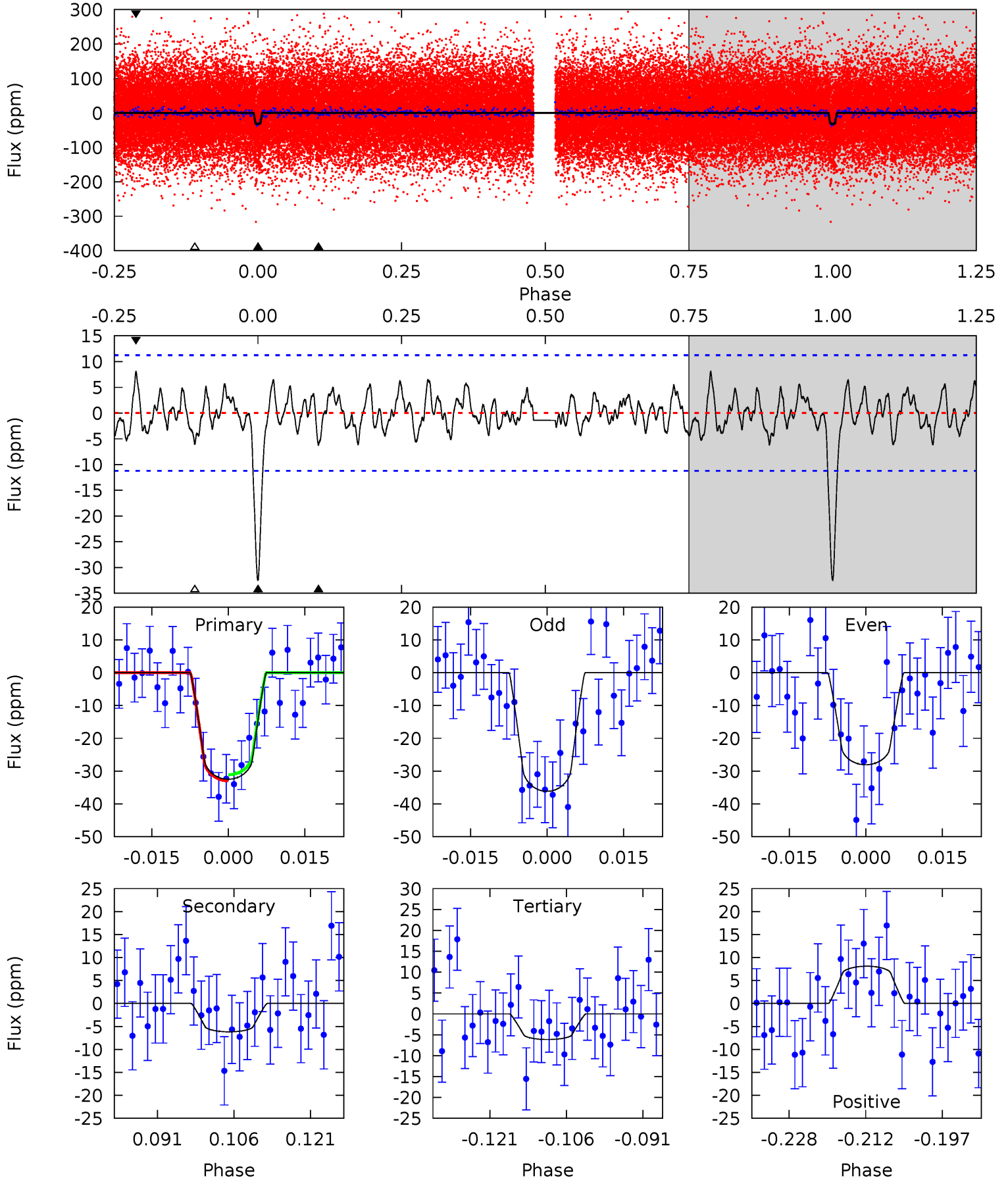
TCE 009468717-02 $P = 7.373436$ Days $T_0 = 137.701931$ (BKJD)



DV Model-Shift Uniqueness Test

009468717-02, P = 7.373451 Days, E = 130.328477 Days

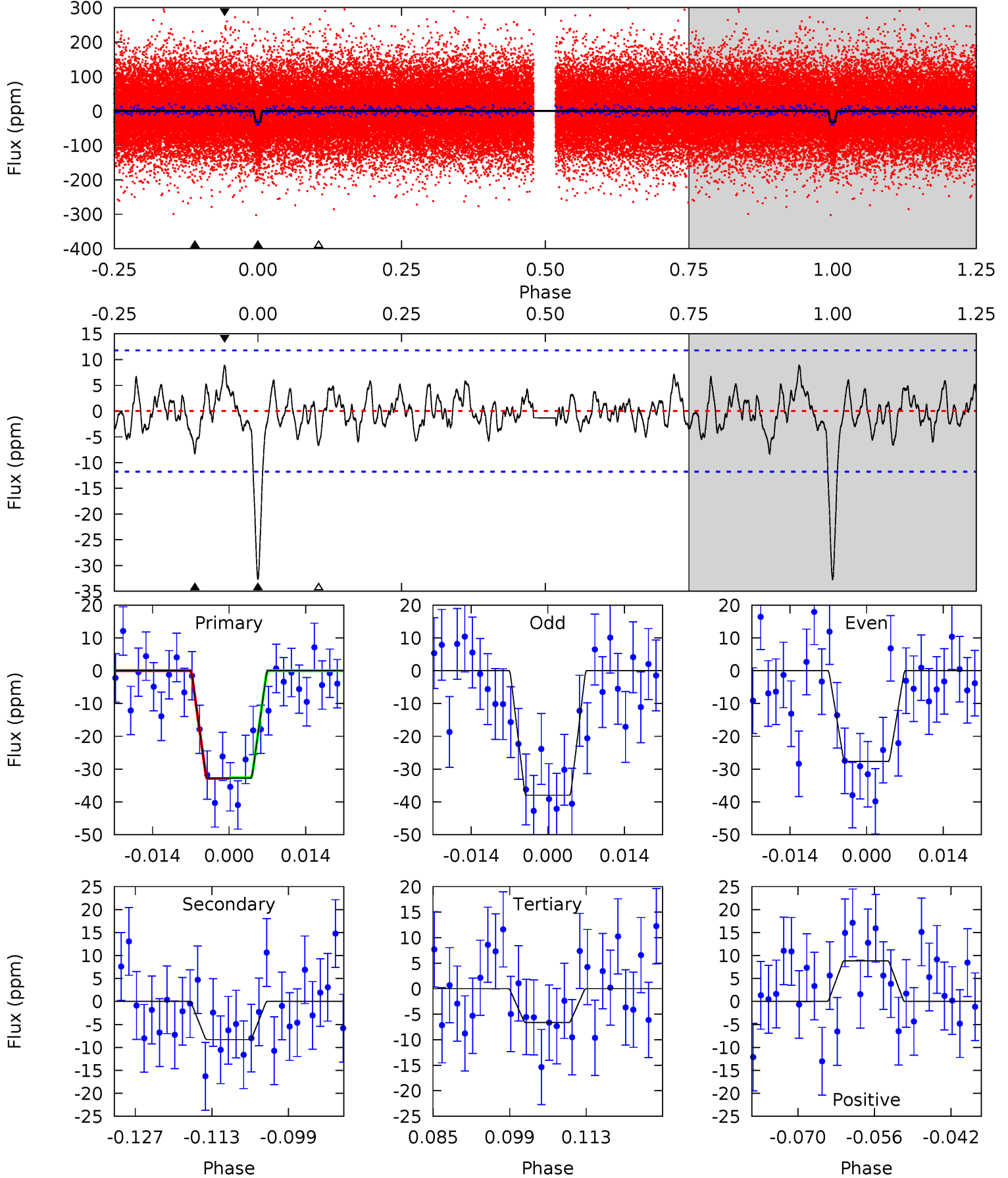
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
14.3	2.72	2.70	3.57	4.95	2.43	1.17	11.6	10.7	0.02	-0.85	1.78	0.95	0.20	0.41



Alt Model-Shift Uniqueness Test

009468717-02, P = 7.373436 Days, E = 130.328495 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
13.8	3.49	2.78	3.72	4.96	2.45	1.13	11.0	10.1	0.71	-0.23	2.18	0.99	0.21	0.06



Stellar Parameters For KIC 009468717

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6484^{+147}_{-196}	$4.360^{+0.104}_{-0.138}$	$-0.540^{+0.300}_{-0.300}$	$1.093^{+0.217}_{-0.145}$	$0.998^{+0.126}_{-0.103}$	$1.076^{+0.511}_{-0.405}$
	+2%/-3%	+2%/-3%	+56%/-56%	+20%/-13%	+13%/-10%	+48%/-38%
Source	PHO1	FLK73	KIC0	DSEP		

KIC = Kepler Input Catalog; PHO = Photometry; SPE = Spectroscopy; AST = Asteroseismology
 TRA = Transits; DESP = Dartmouth Models; MULT = Multiple Models

Secondary Eclipse Parameters for KIC 009468717-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-6 ± 2	$0.77^{+0.29}_{-0.30}$	1539^{+82}_{-68}	4247^{+928}_{-518}	31^{+55}_{-16}
Alt.	-8 ± 2	$0.73^{+0.27}_{-0.29}$	1540^{+81}_{-74}	4607^{+1156}_{-587}	47^{+81}_{-24}

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

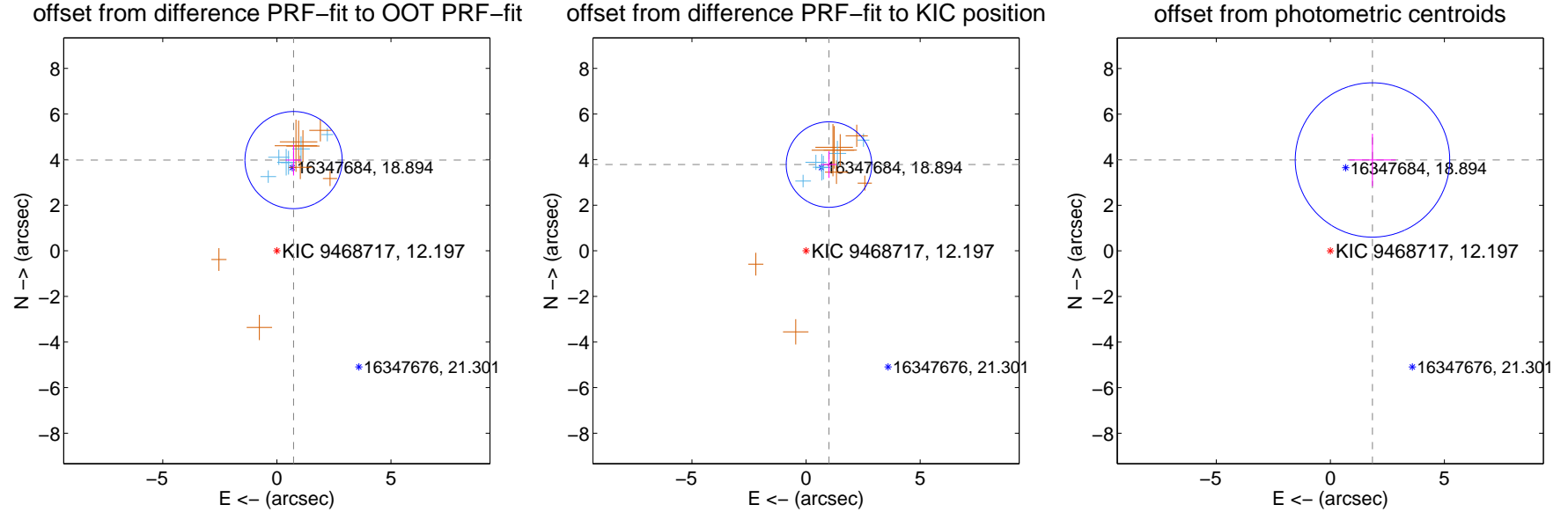
DV Centroid Data

Supplemental centroid analysis for 009468717-02. Kepler magnitude: 12.20. Transit SNR 10.51

There are 6 quarters with good PRF difference image offsets

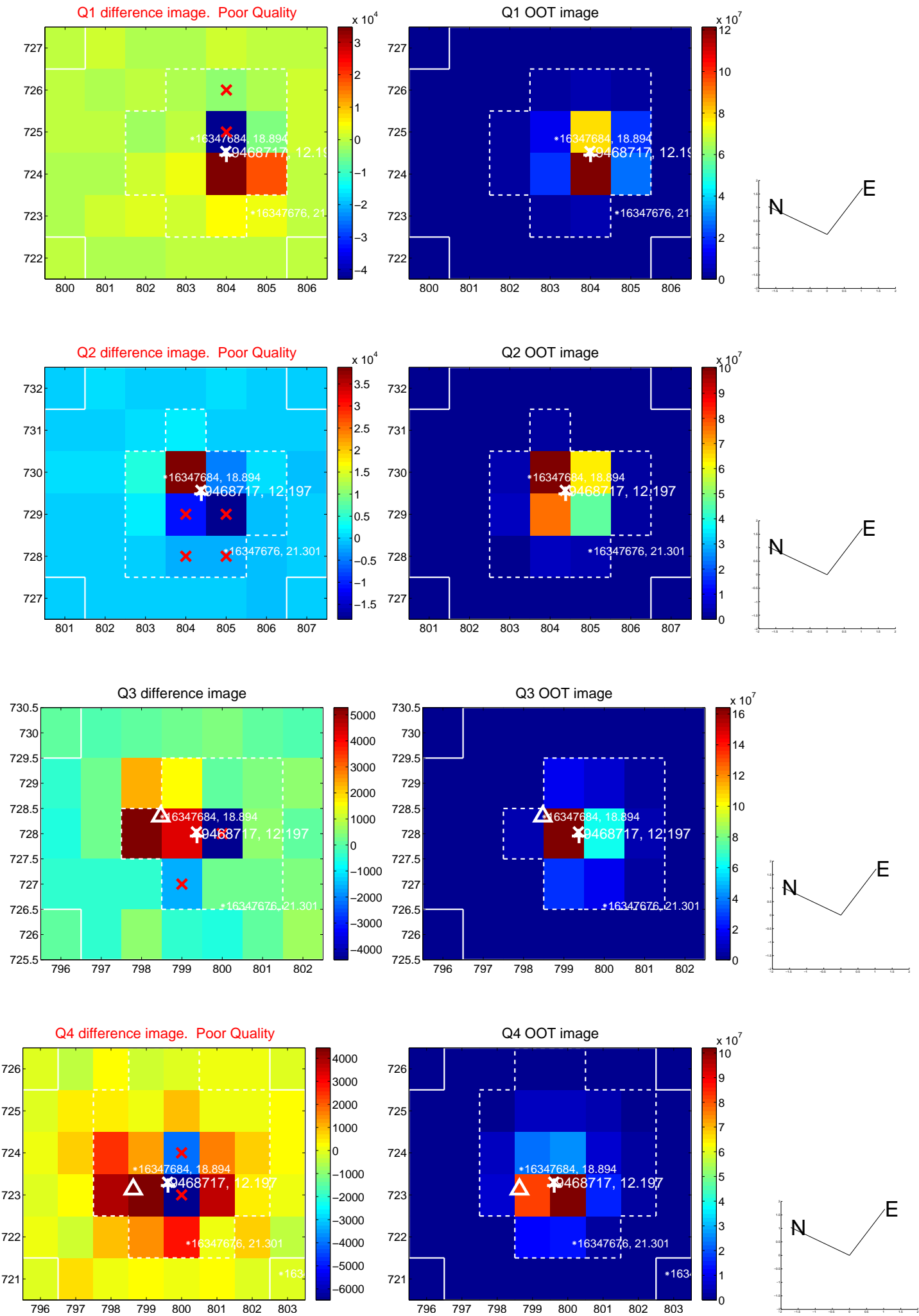
The direct PRF centroid is offset from the target star catalog position by about 0.39 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	4.047 ± 0.710	5.70	-0.732 ± 0.339	3.980 ± 0.674
PRF-fit source offset from KIC position	3.914 ± 0.625	6.26	-1.004 ± 0.324	3.783 ± 0.588
photometric centroid source offset	4.40 ± 1.13	3.90	-1.85 ± 1.02	3.99 ± 1.15

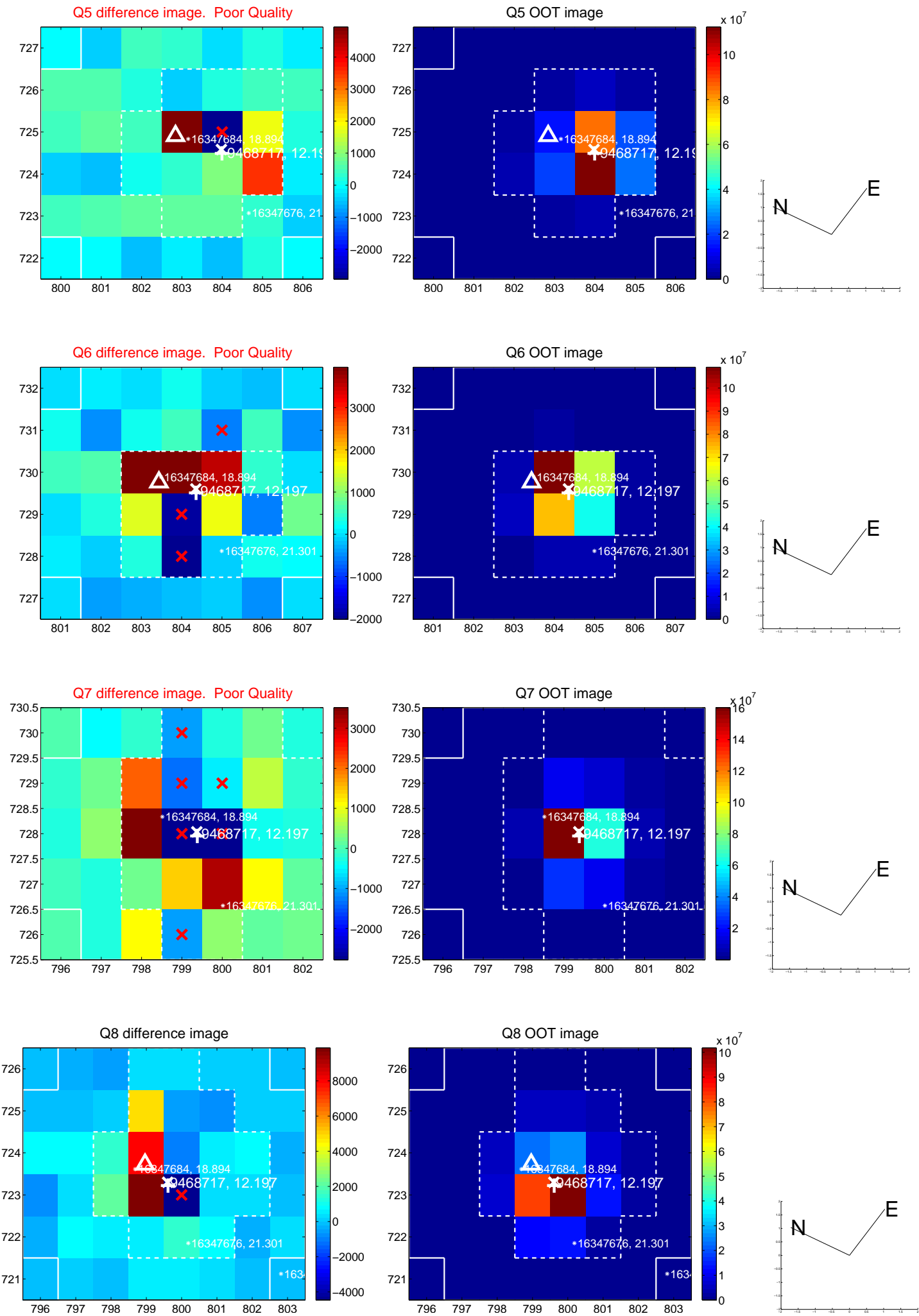


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

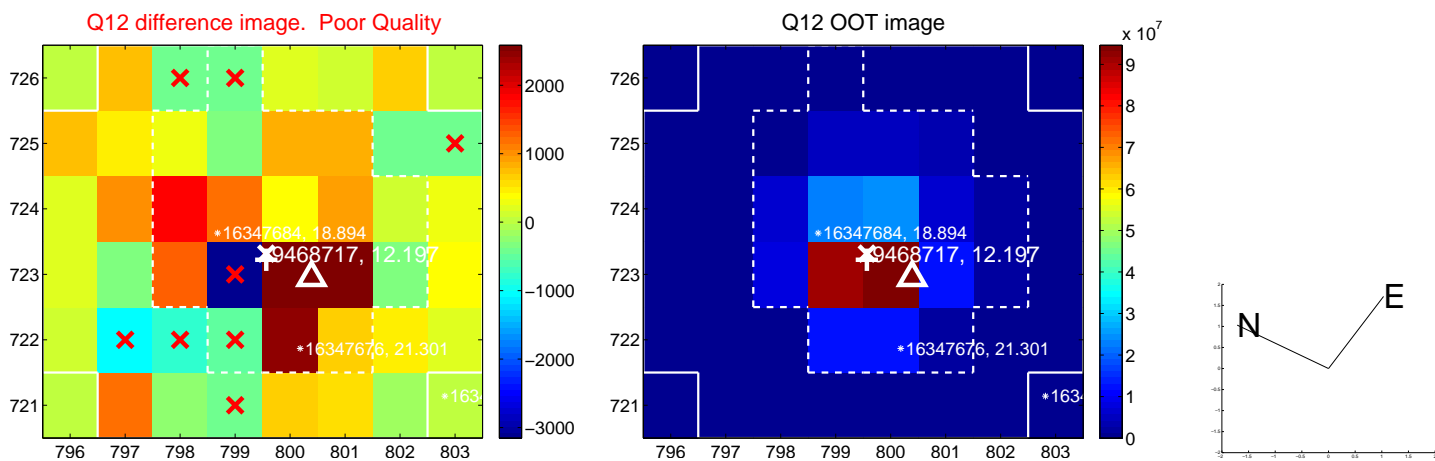
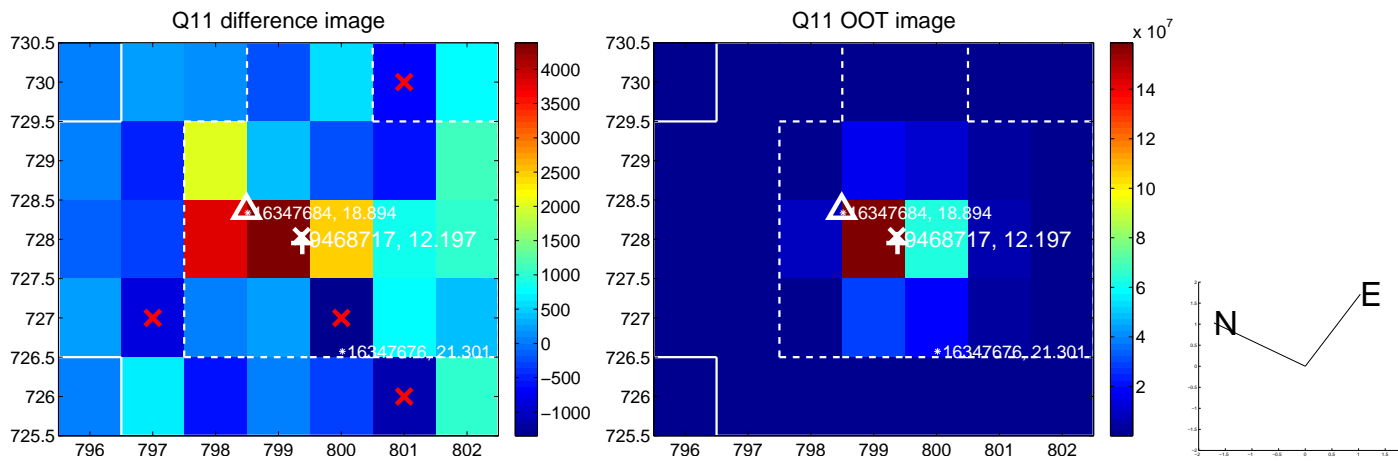
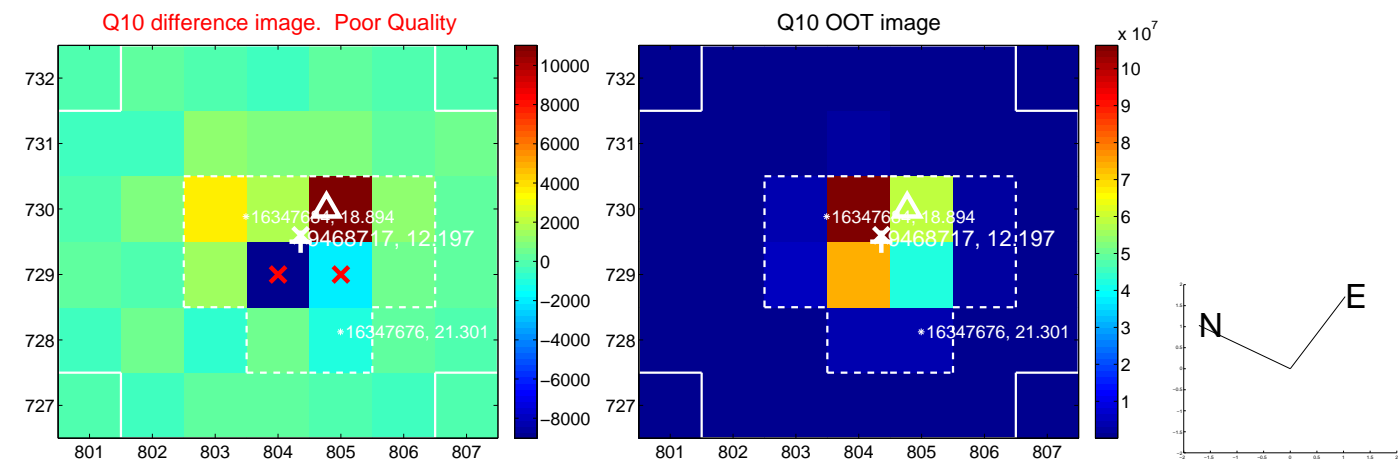
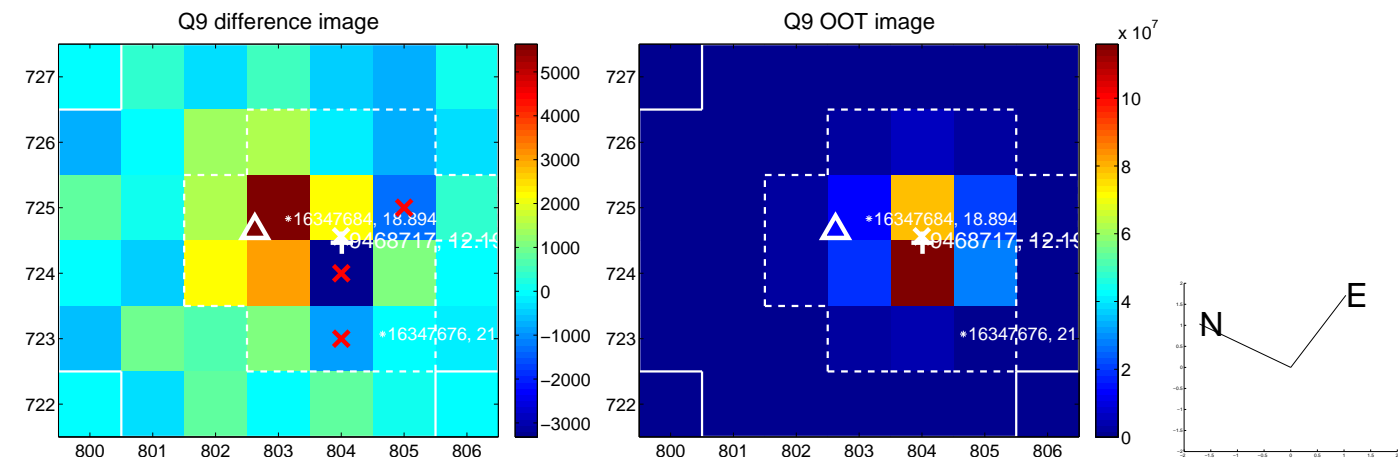
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



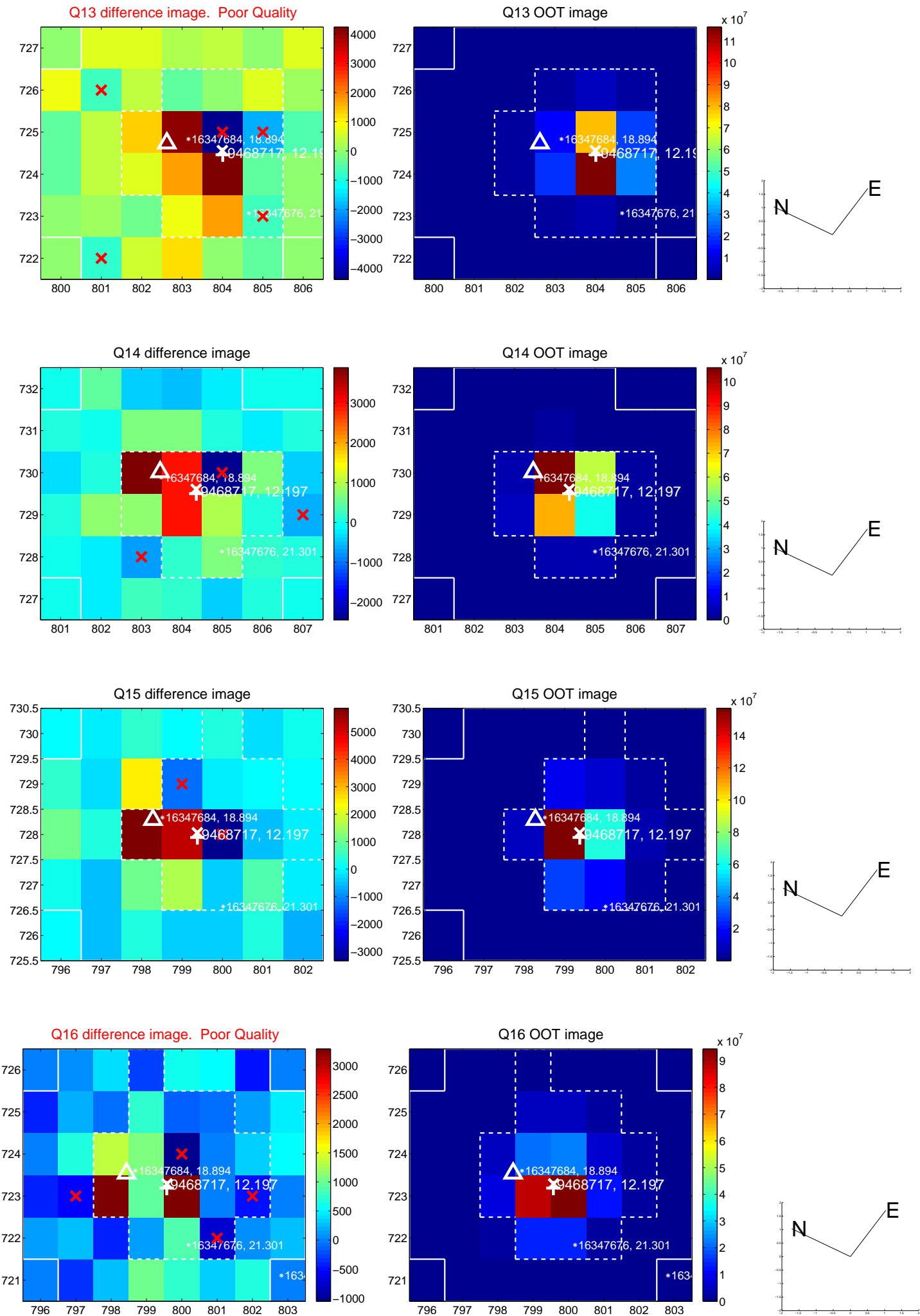
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



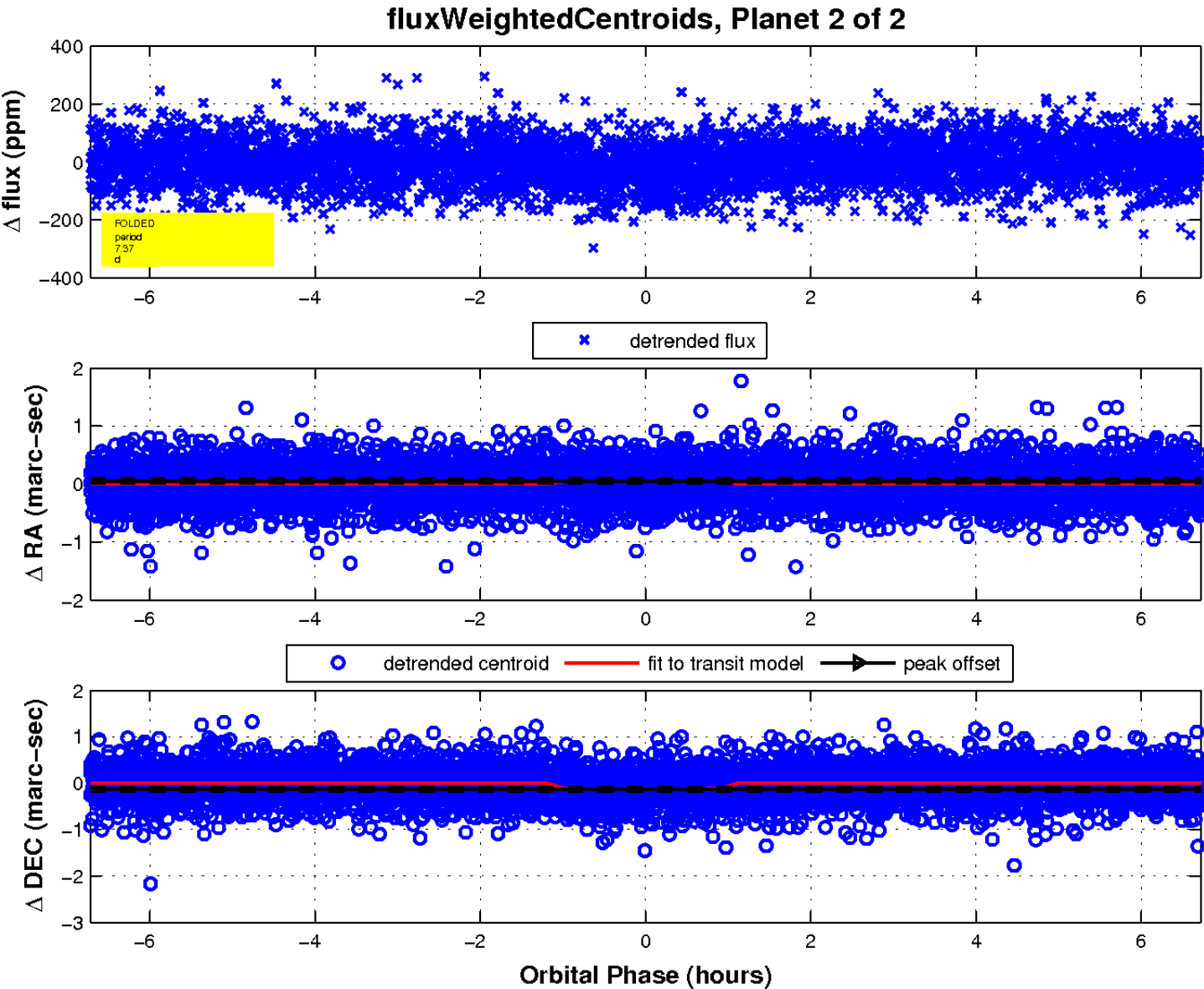
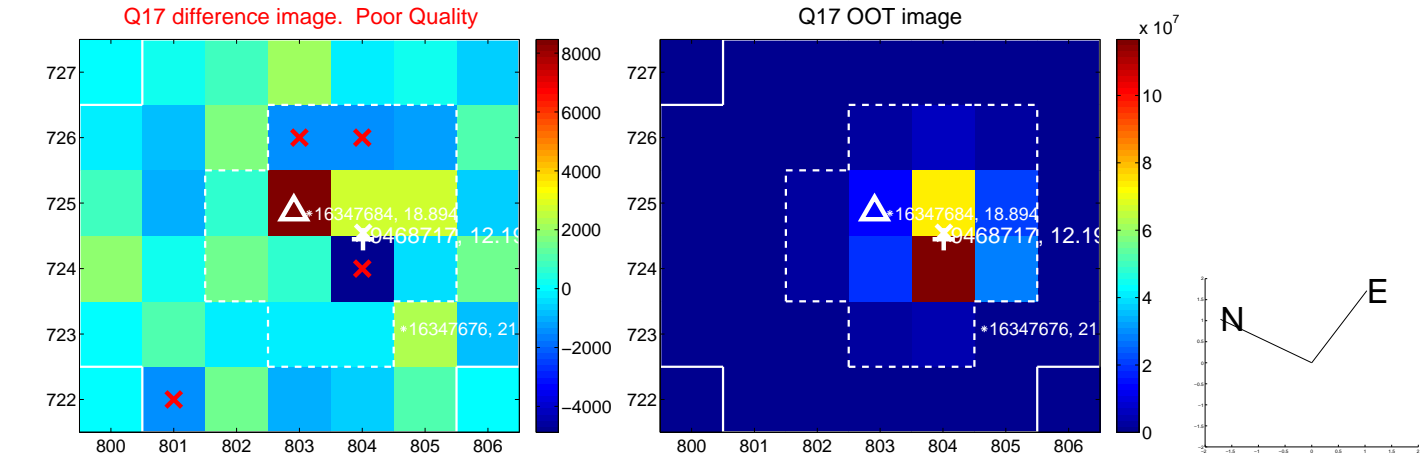
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

