

KIC 003232859

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})
003232859-01	OBS	1090.01	8.387224	138.902559	4193.9	1.763	230.3	183.4	1.79	6089	17.17	510.07
003232859-02	OBS	No	8.387169	132.943415	819.5	1.788	83.4	52.1	1.79	6089	6.14	510.07

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
003232859-01	OBS	FP	0.00	0	1	1	0	MOD_SEC_DV—MOD_SEC_ALT—DEEP_V_SHAPED—HAS_SEC_TCE—CENT_UNRESOLVED_OFFSET—HALO_GHOST
003232859-02	OBS	FP	0.00	1	1	1	0	IS_SEC_TCE—CENT_UNRESOLVED_OFFSET—HALO_GHOST

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

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

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

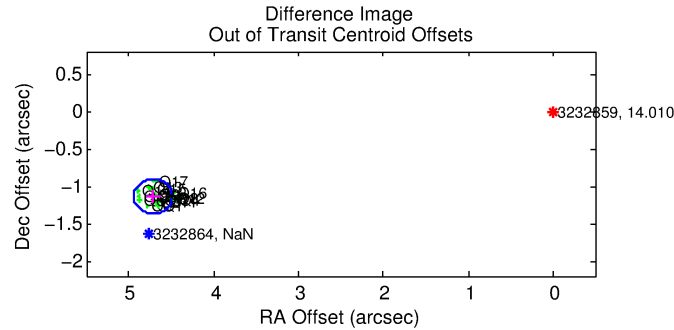
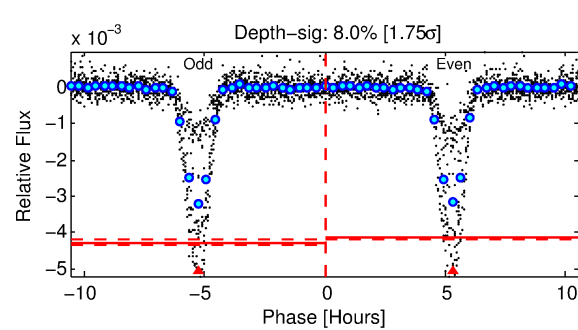
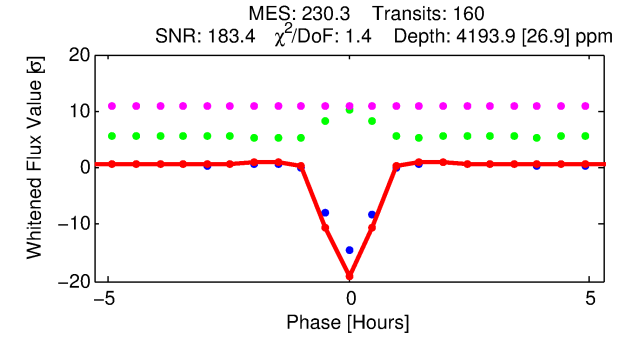
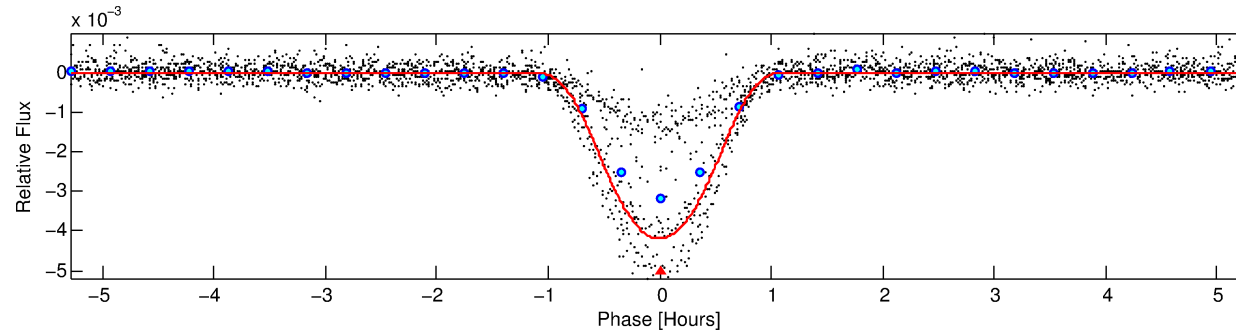
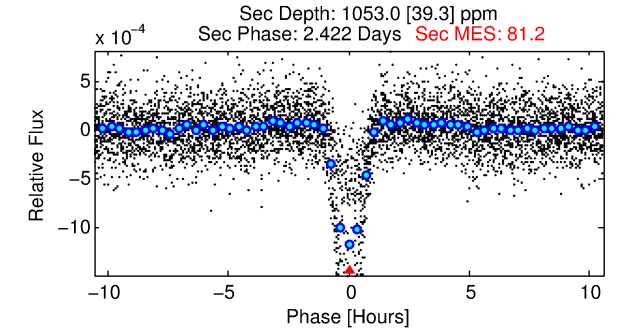
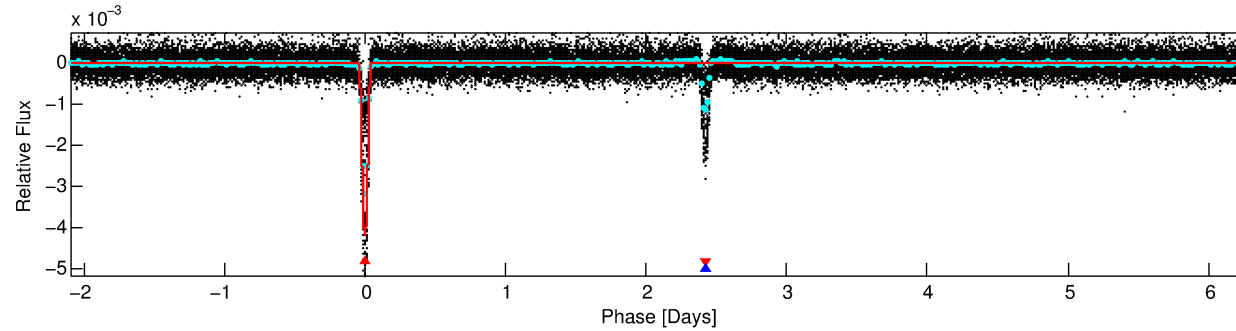
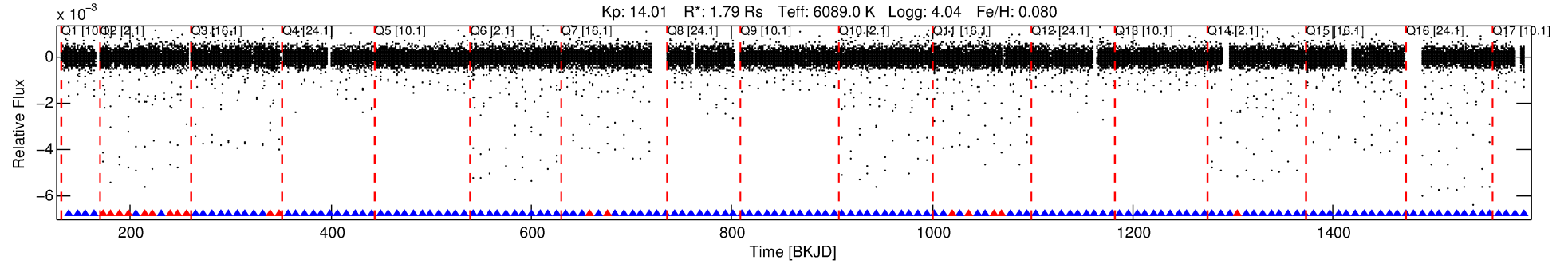
Ephemeris Match Information For 003232859-01

No Significant Match Found

DV One-Page Summary

KIC: 3232859 Candidate: 1 of 2 Period: 8.387 d

KOI: K01090.01 Corr: 0.980



DV Fit Results:

Period = 8.38722 [0.00000] d
Epoch = 138.9026 [0.0002] BKJD
Rp/R* = 0.0877 [0.0105]
a/R* = 18.45 [0.75]
b = 0.96 [0.02]
Seff = 510.07 [165.69]
Teq = 1212 [98] K
Rp = 17.17 [4.53] Re
a = 0.0882 [0.0185] AU
Ag = 15.28 [6.14] [2.33σ]
Teff = 3705 [230] K [9.96σ]

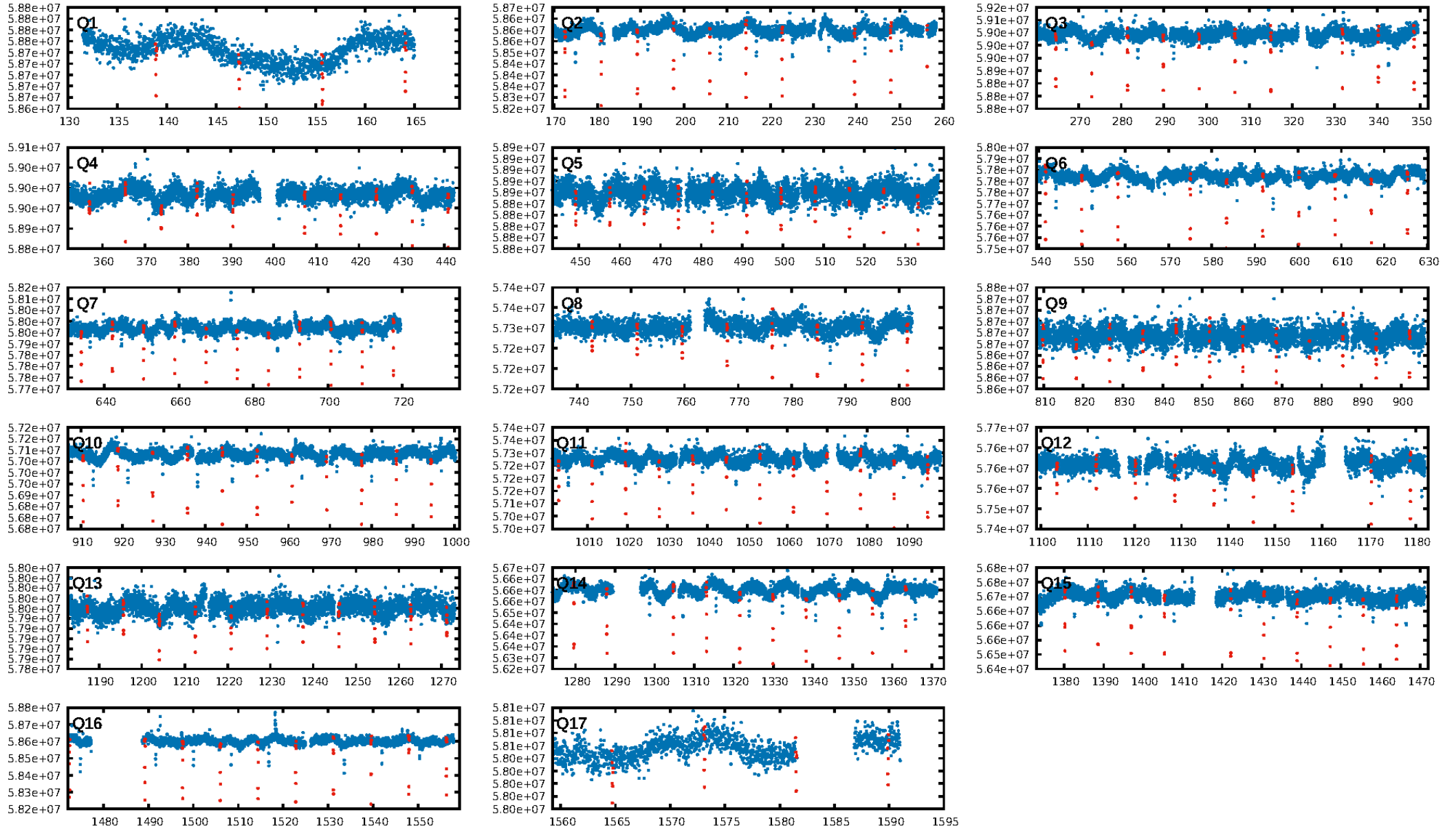
DV Diagnostic Results:

ShortPeriod-sig: 0.0% [0.00σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 0.0%
ModelChiSquareGoF-sig: 93.1%
Bootstrap-pfa: 0.00e+00
RollingBand-fgt: 0.88 [134/152]
GhostDiagnostic-chr: 0.1869
Centroid-sig: 0.0%
Centroid-so: 7.309 arcsec [178.79σ]
OotOffset-rm: 4.851 arcsec [62.79σ]
KicOffset-rm: 5.086 arcsec [59.41σ]
OotOffset-st: 4/4/4/5 [17]
KicOffset-st: 4/4/4/5 [17]
DiffImageQuality-fgm: 1.00 [17/17]
DiffImageOverlap-fno: 1.00 [17/17]

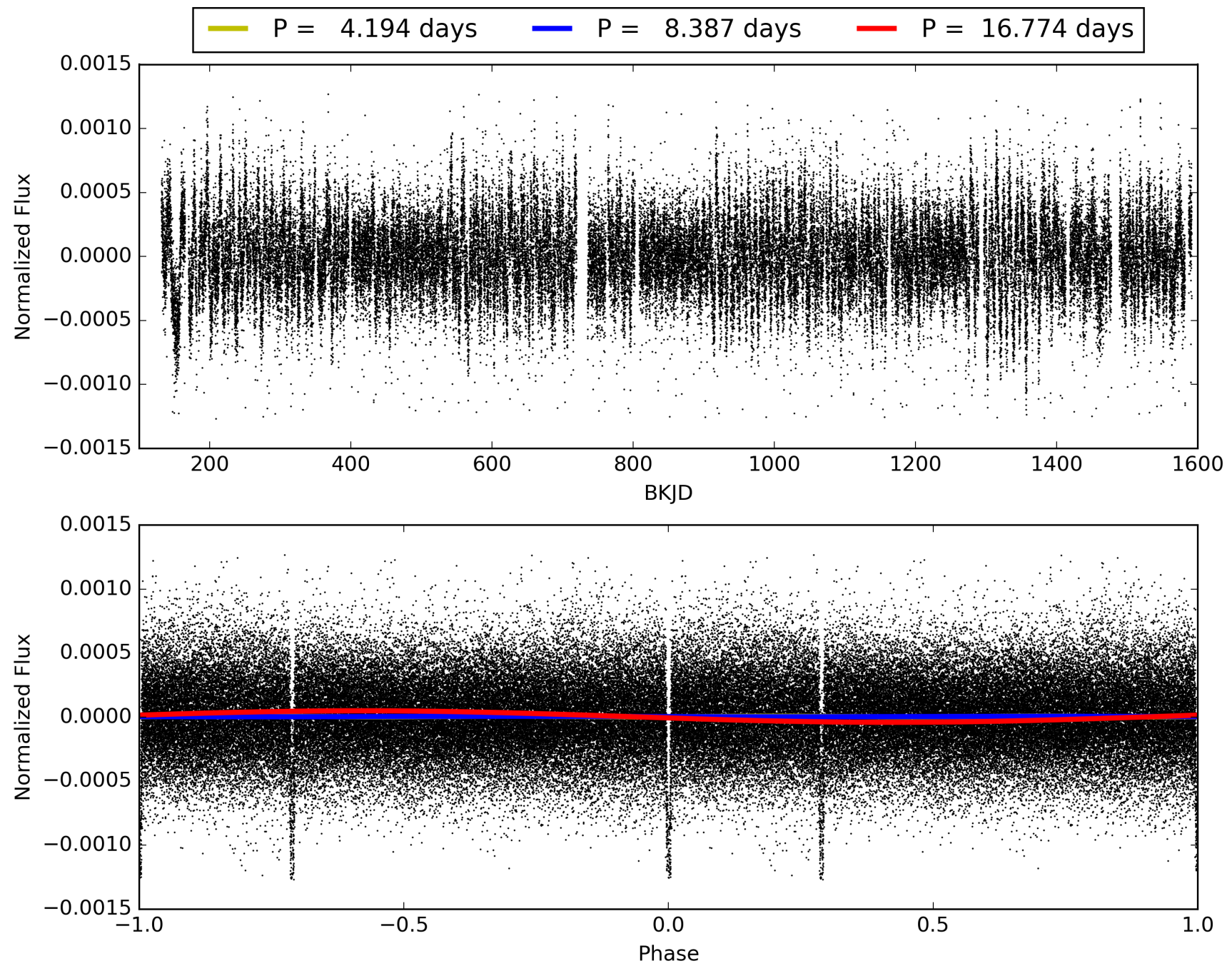
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 08:44:51 Z

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

TCE 003232859-01, PDC Light Curves

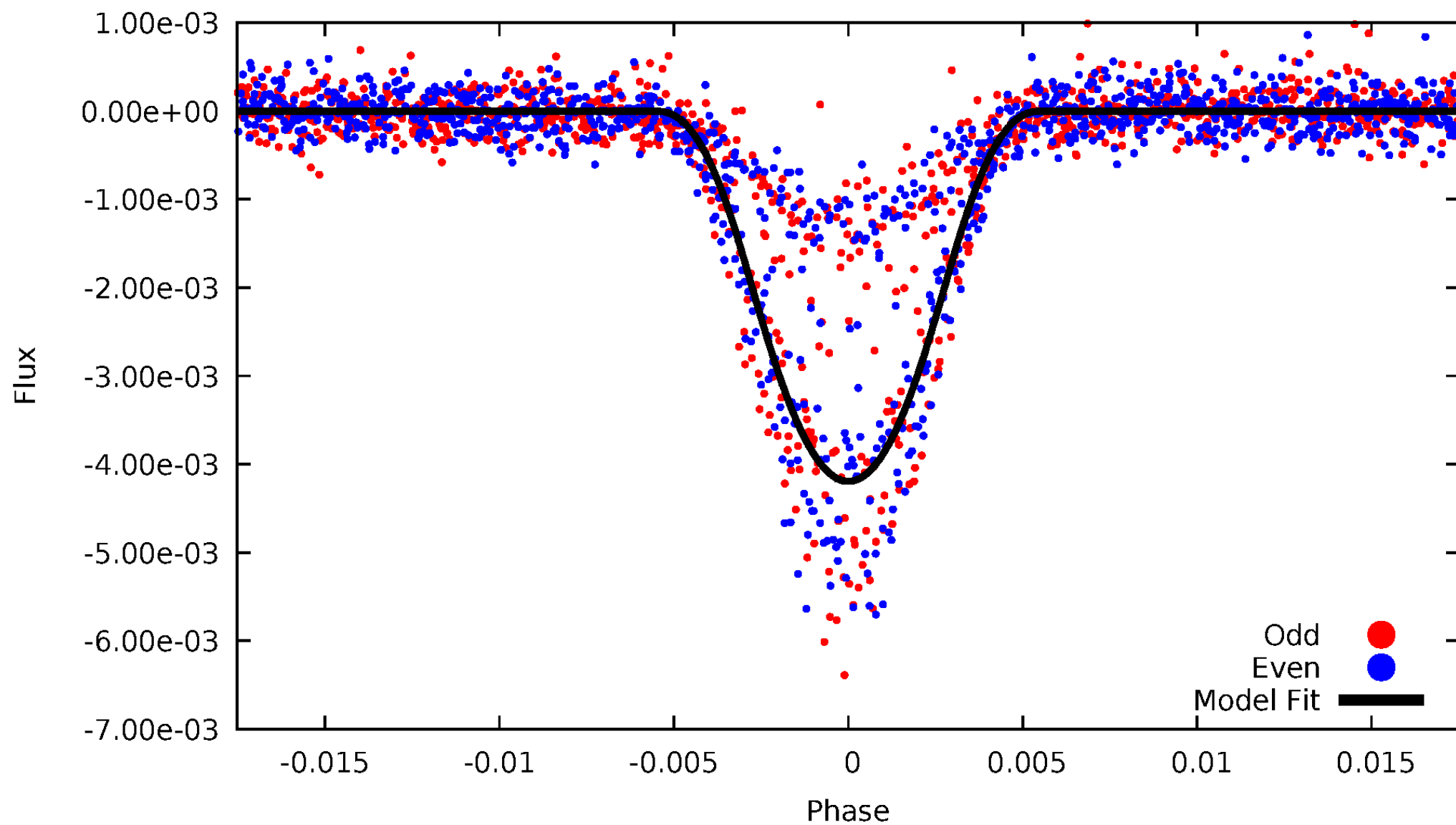


TCE 003232859-01



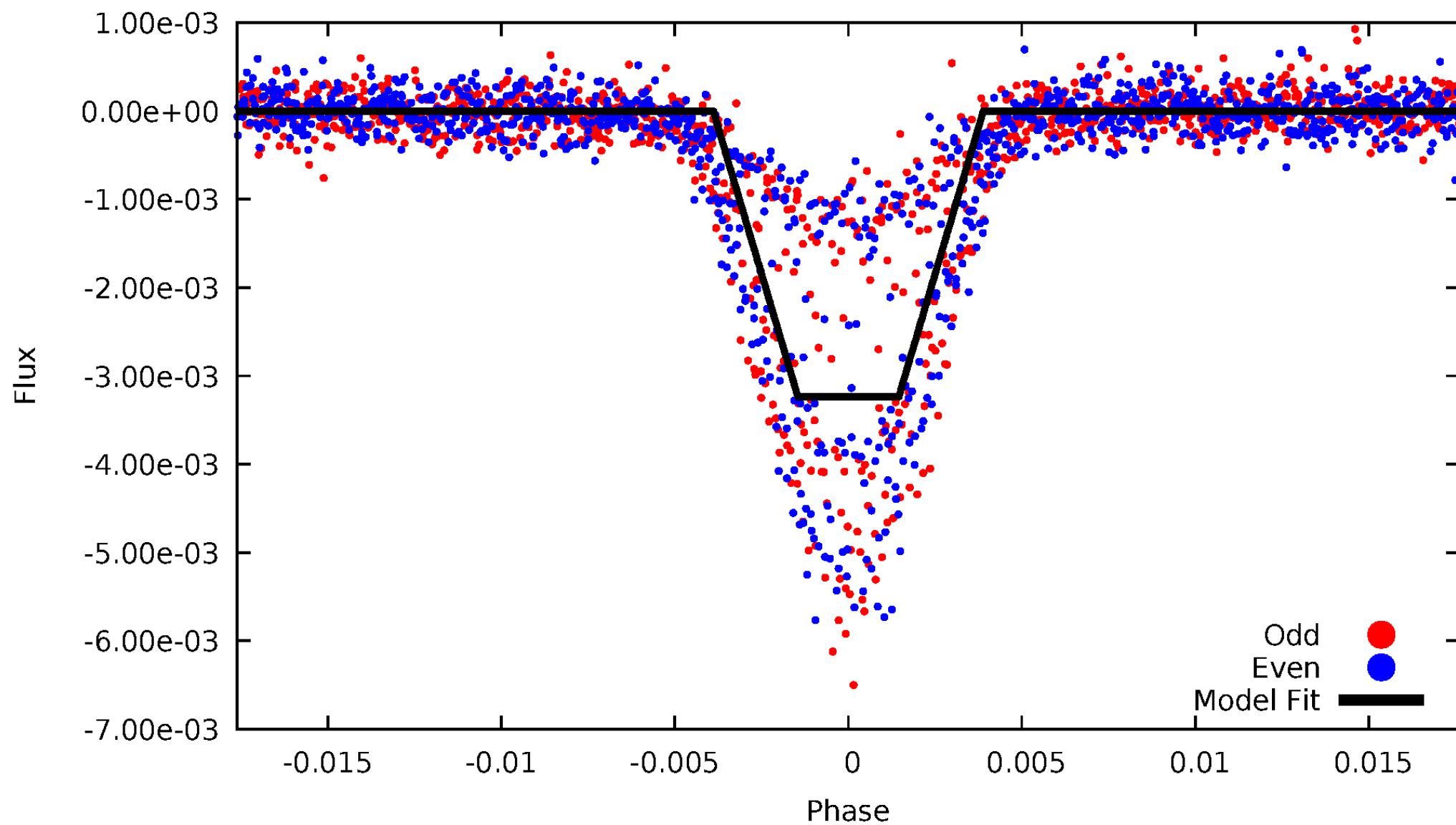
DV Odd/Even

TCE 003232859-01



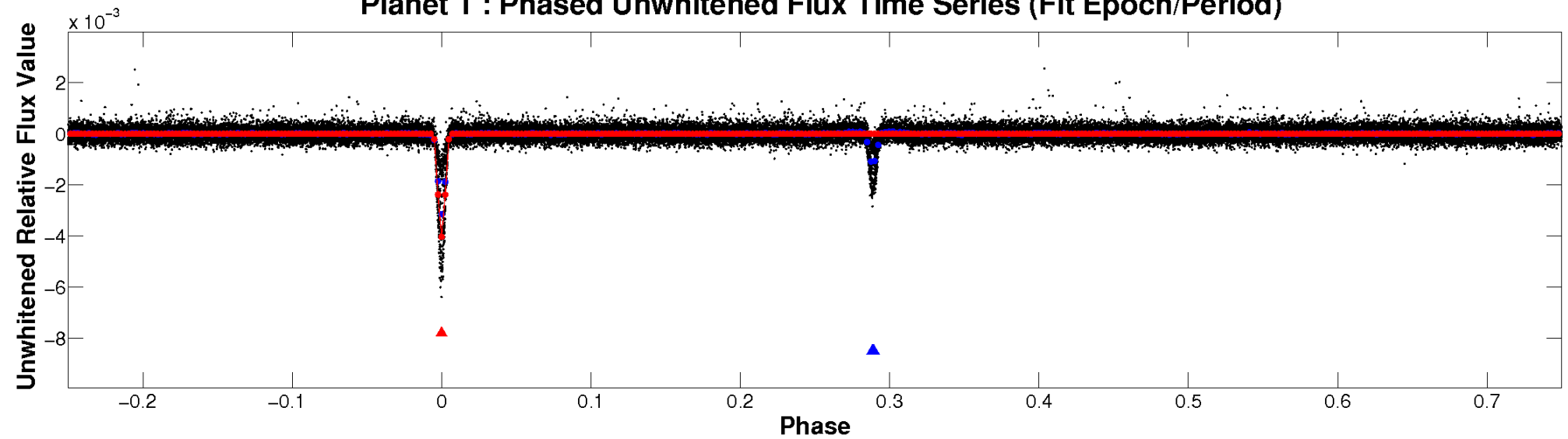
ALT Odd/Even

TCE 003232859-01

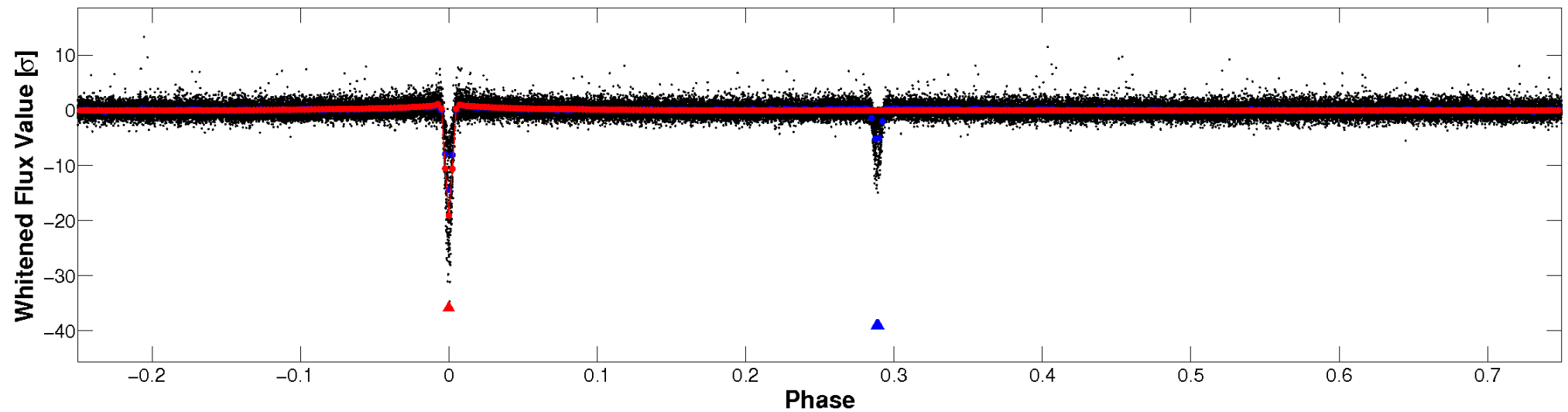


Non-Whitened Vs. Whitened Light Curve

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

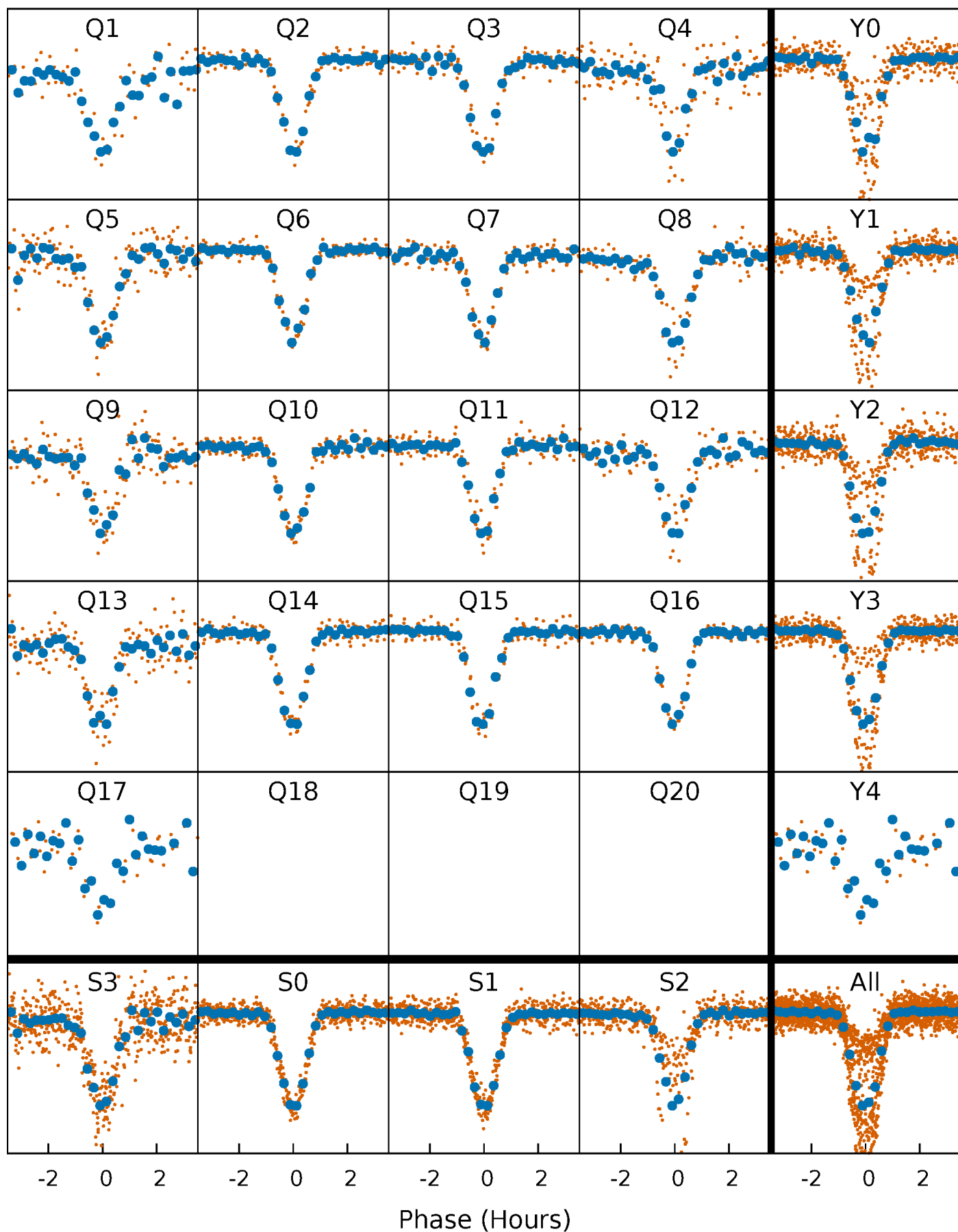


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



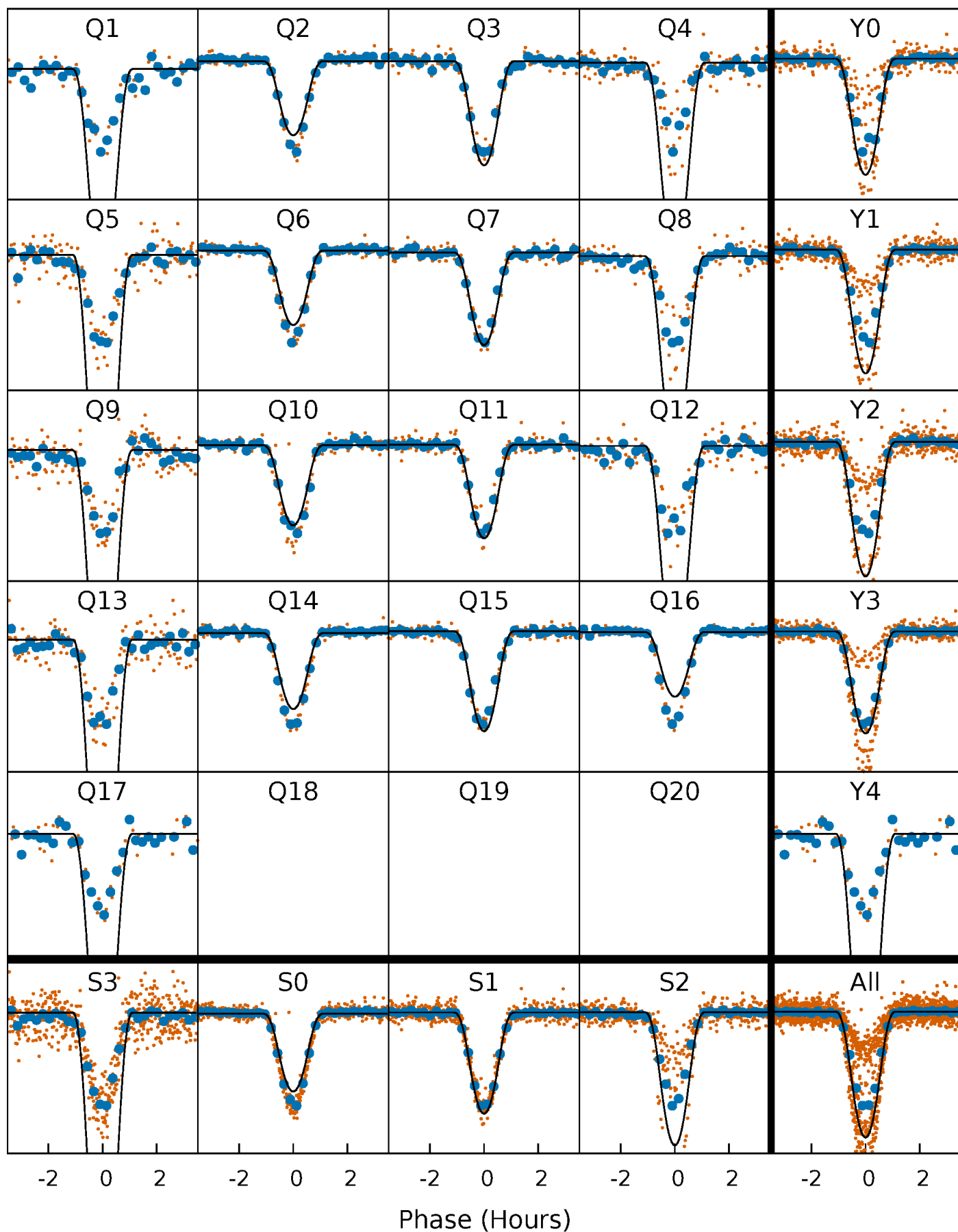
PDC Quarter-Phased Transit Curves

TCE 003232859-01 P= 8.387224 Days $T_0=138.902559$ (BKJD)



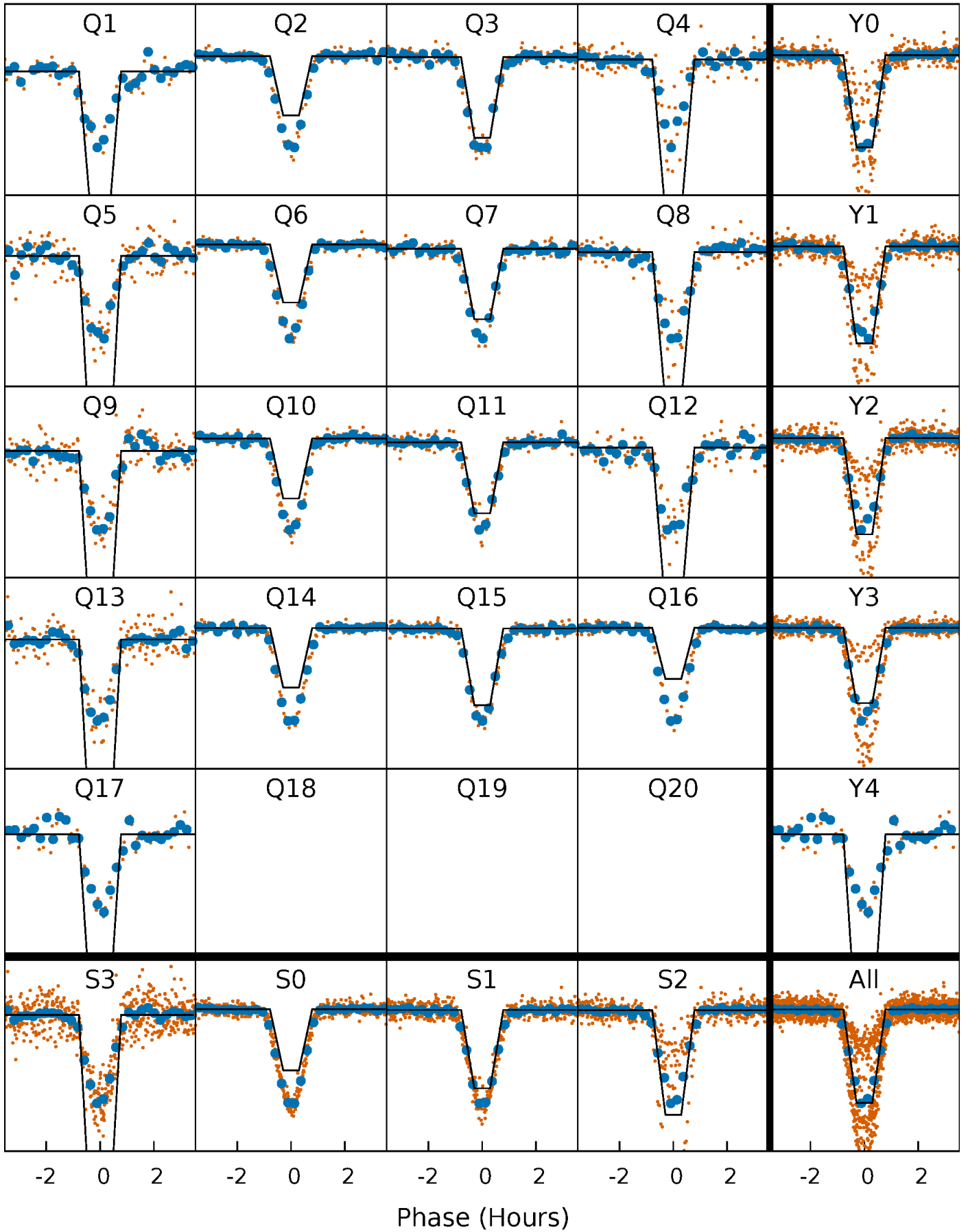
DV Quarter-Phased Transit Curves

TCE 003232859-01 P= 8.387224 Days $T_0=138.902559$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

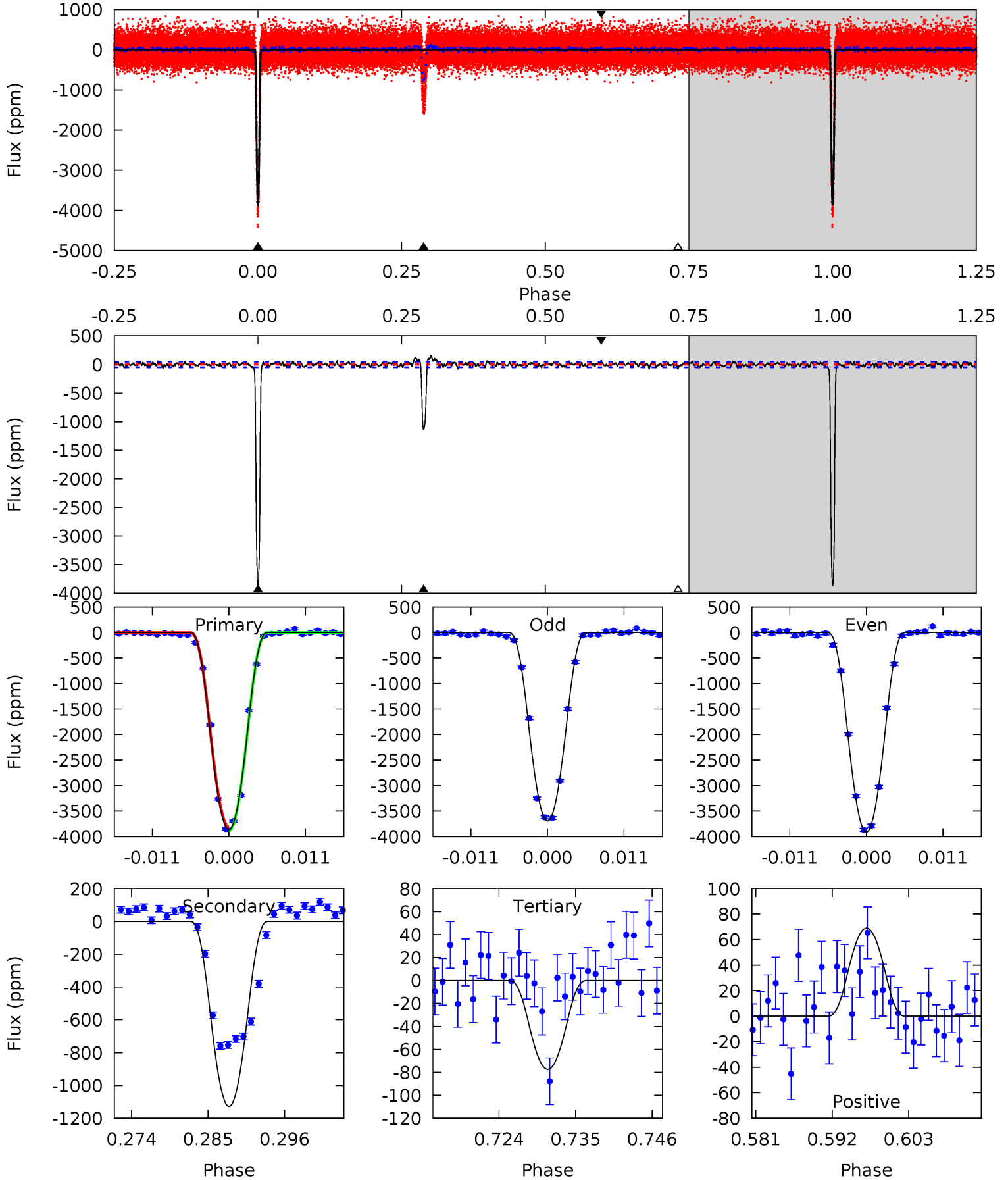
TCE 003232859-01 P= 8.387197 Days $T_0=138.904833$ (BKJD)



DV Model-Shift Uniqueness Test

003232859-01, P = 8.387224 Days, E = 130.515335 Days

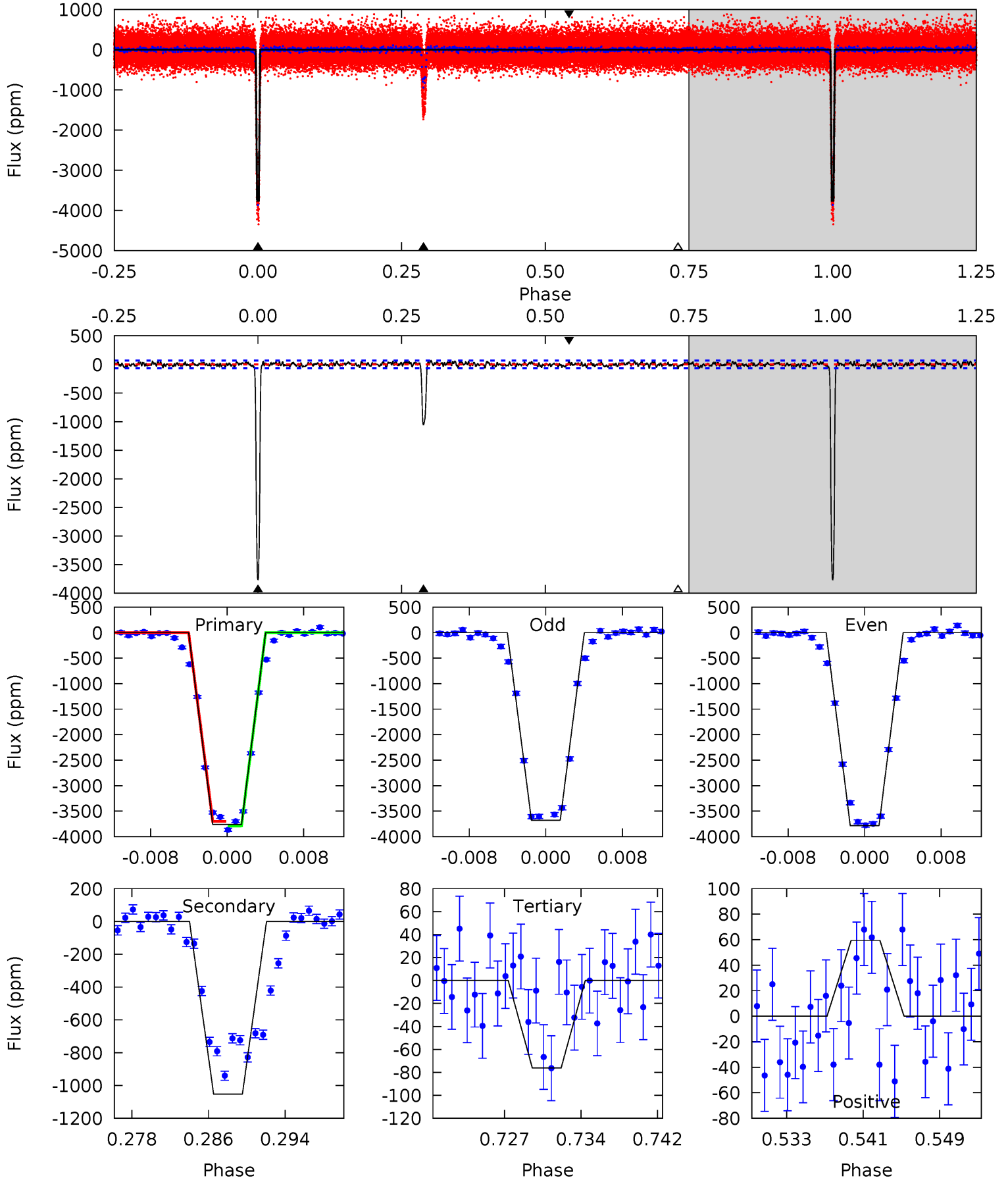
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
396.4	115.8	7.94	7.08	5.01	2.54	2.65	388.5	389.4	107.8	108.7	11.1	0.85	0.04	3.31



Alt Model-Shift Uniqueness Test

003232859-01, P = 8.387197 Days, E = 130.517636 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
281.3	78.7	5.70	4.44	5.08	2.66	1.65	275.6	276.9	73.0	74.3	3.88	0.87	0.02	0



Stellar Parameters For KIC 003232859

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6089^{+82}_{-82}	$4.044^{+0.182}_{-0.098}$	$0.080^{+0.150}_{-0.100}$	$1.795^{+0.281}_{-0.422}$	$1.299^{+0.116}_{-0.174}$	$0.317^{+0.322}_{-0.099}$
	+1%/-1%	+5%/-2%	+188%/-125%	+16%/-24%	+9%/-13%	+102%/-31%
Source	SPE68	SPE68	SPE68	DSEP		

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

Secondary Eclipse Parameters for KIC 003232859-01 / KOI 1090.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-1128 ± 10	$16.87^{+2.79}_{-2.91}$	1687^{+74}_{-104}	4049^{+203}_{-158}	17^{+7}_{-4}
Alt.	-1053 ± 13	$10.81^{+2.57}_{-2.54}$	1688^{+73}_{-105}	4729^{+470}_{-326}	39^{+26}_{-13}

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 $A_{obs} \gg 1.0$

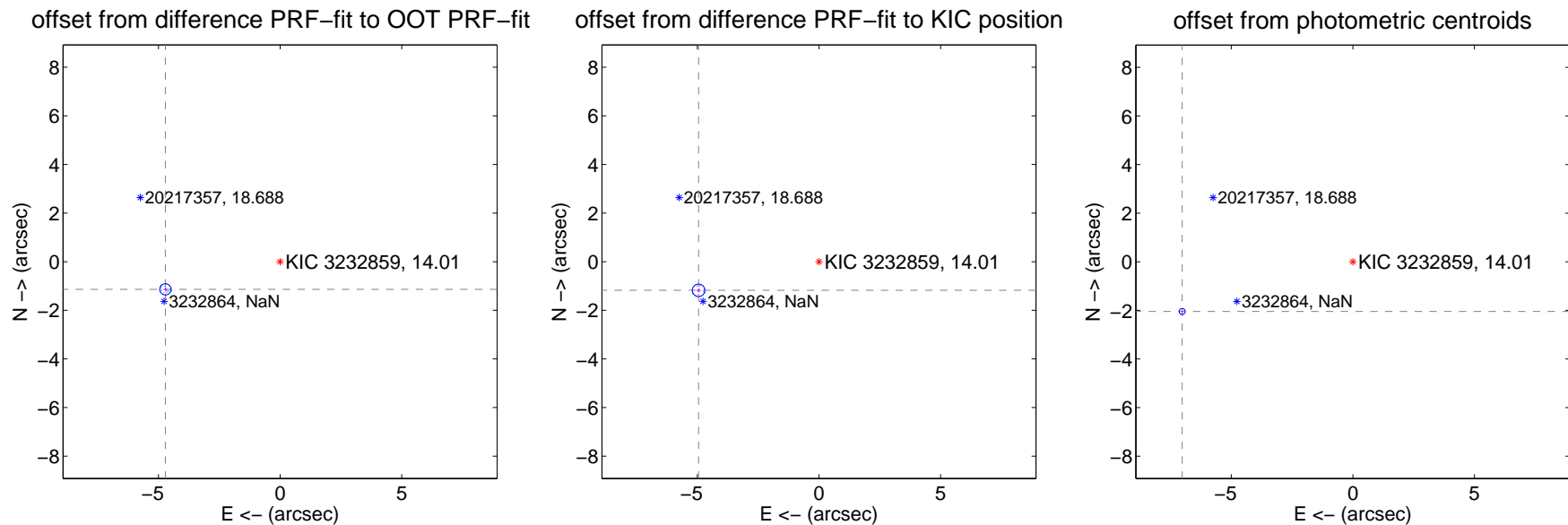
DV Centroid Data

Supplemental centroid analysis for 003232859-01. Kepler magnitude: 14.01. Transit SNR 183.35

There are 17 quarters with good PRF difference image offsets

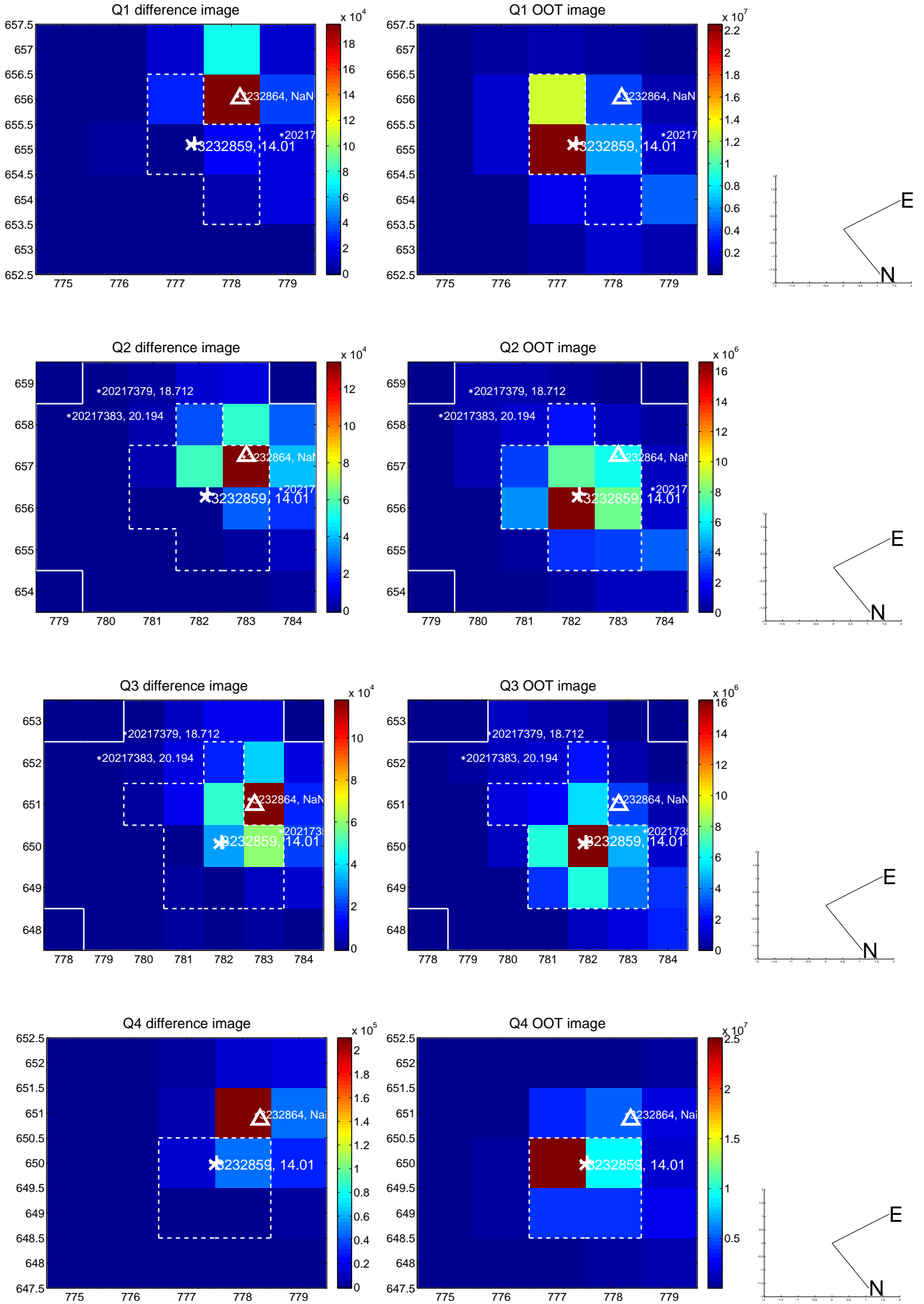
The direct PRF centroid is offset from the target star catalog position by about 0.21 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	4.851 \pm 0.077	62.79	4.715 \pm 0.078	-1.137 \pm 0.070
PRF-fit source offset from KIC position	5.086 \pm 0.086	59.41	4.948 \pm 0.086	-1.177 \pm 0.073
photometric centroid source offset	7.31 \pm 0.04	178.79	7.02 \pm 0.04	-2.05 \pm 0.04

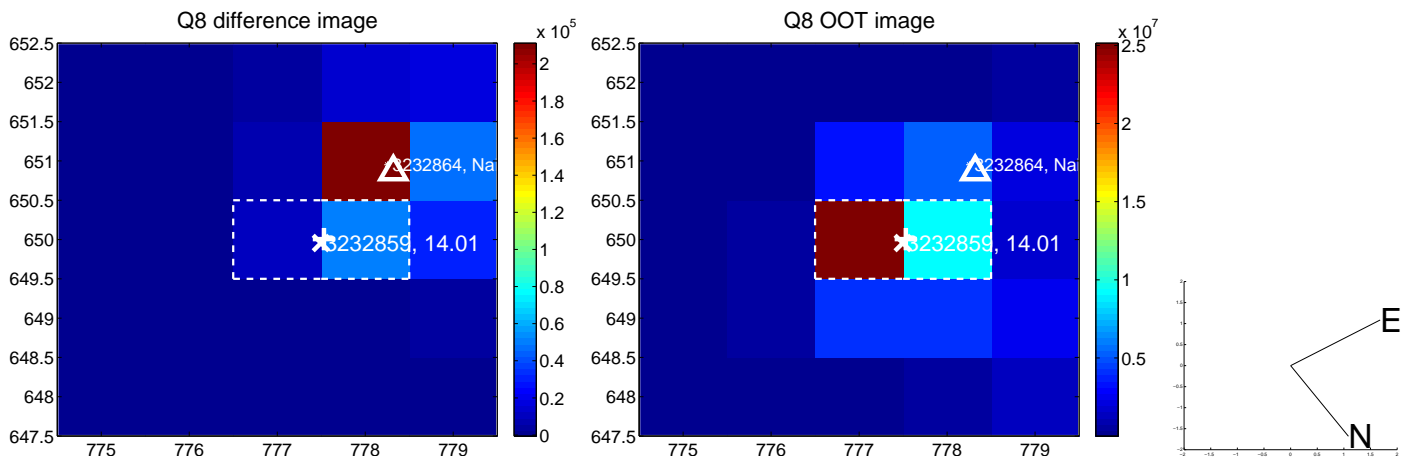
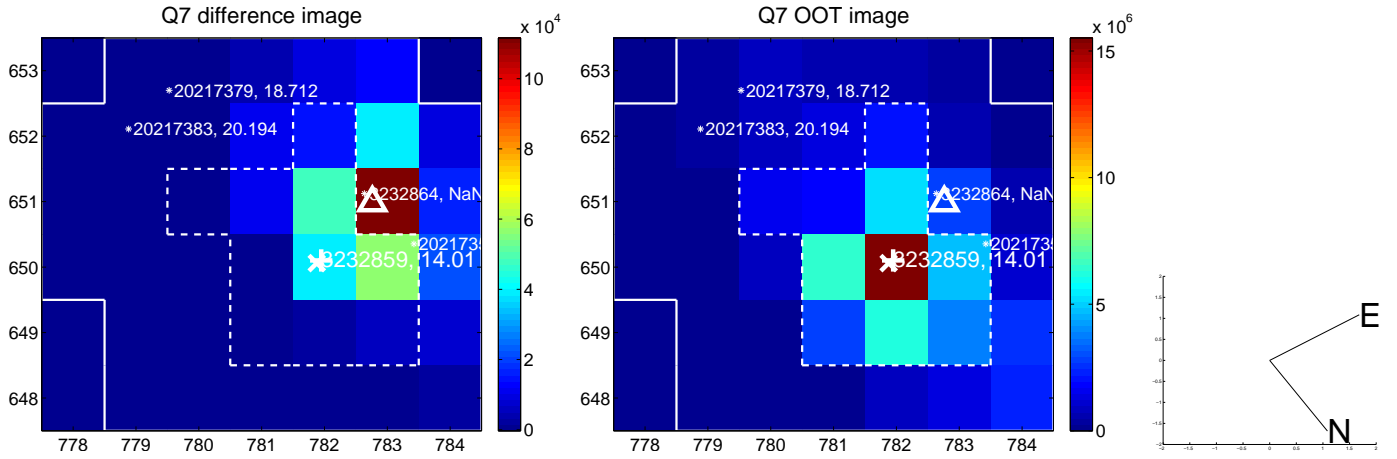
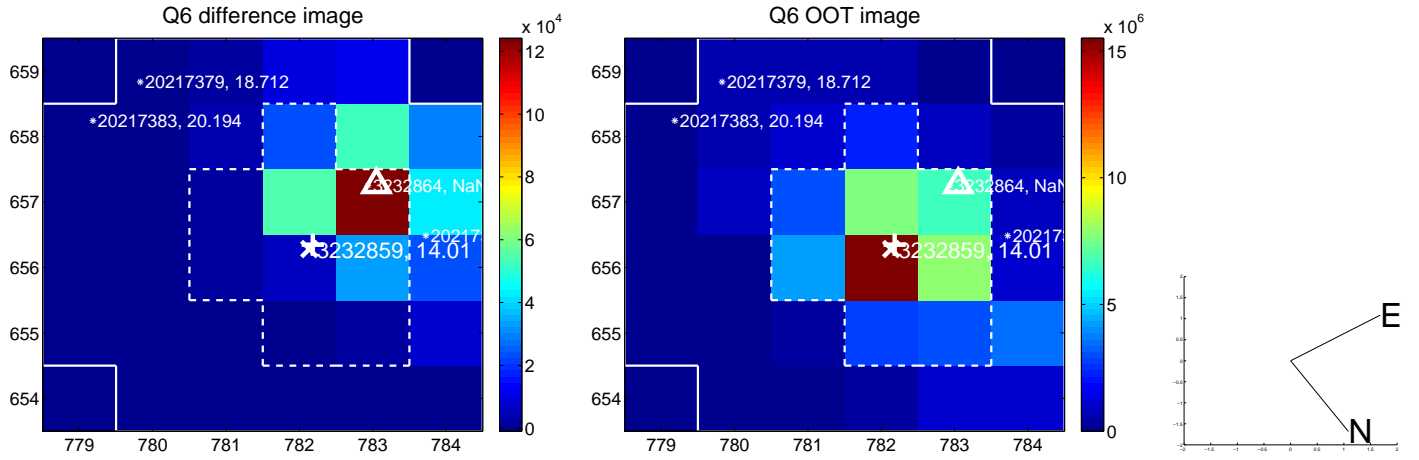
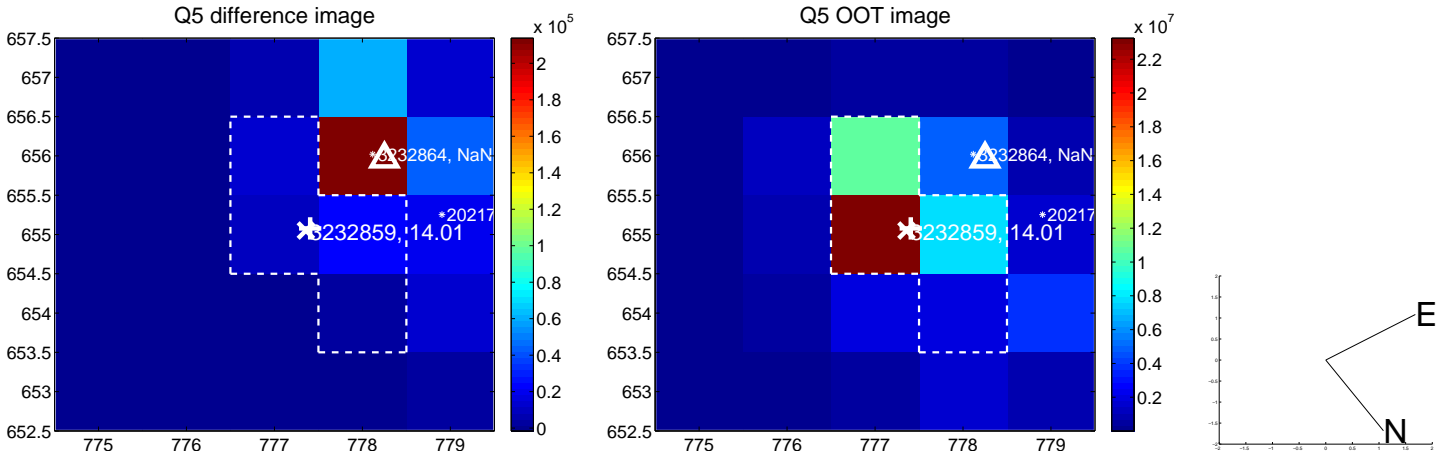


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

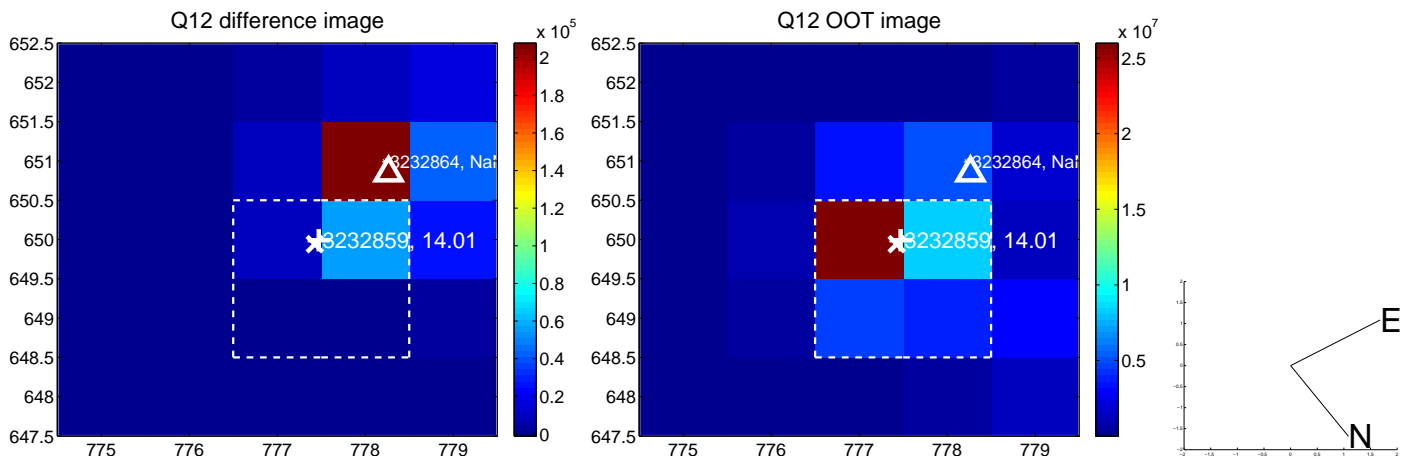
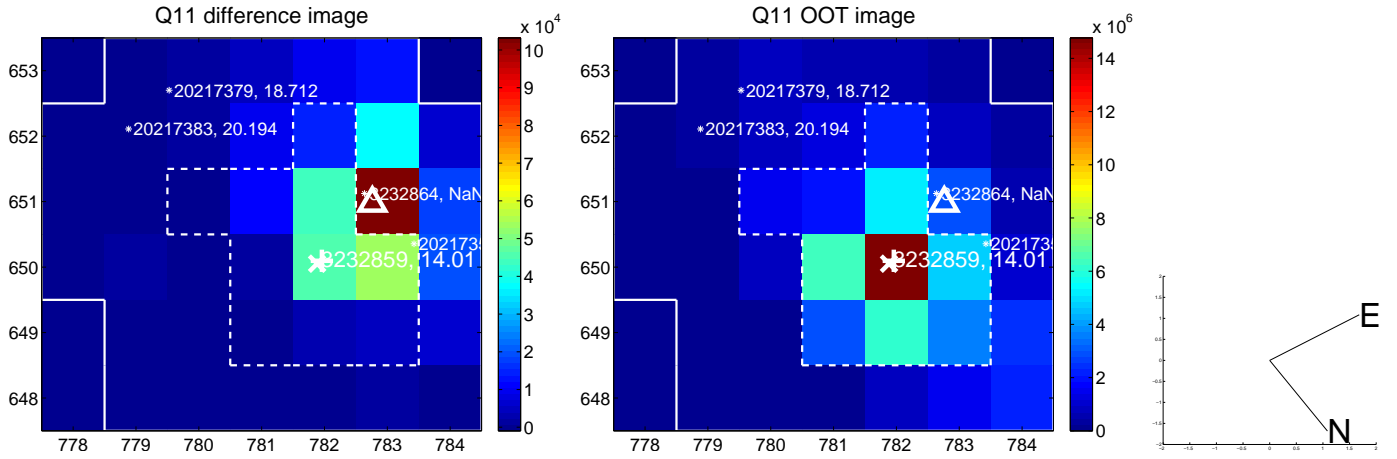
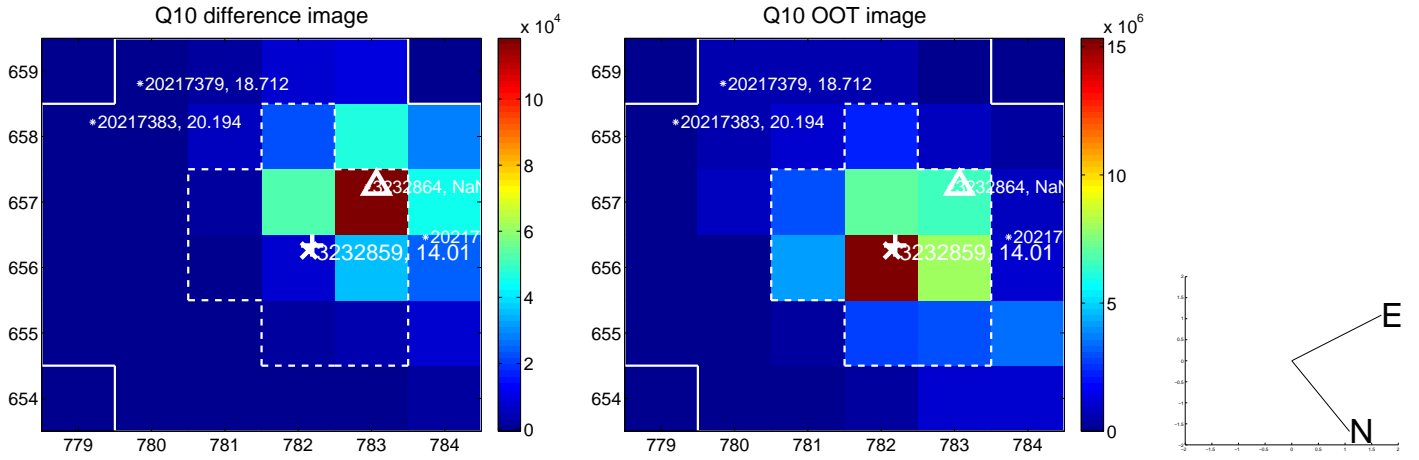
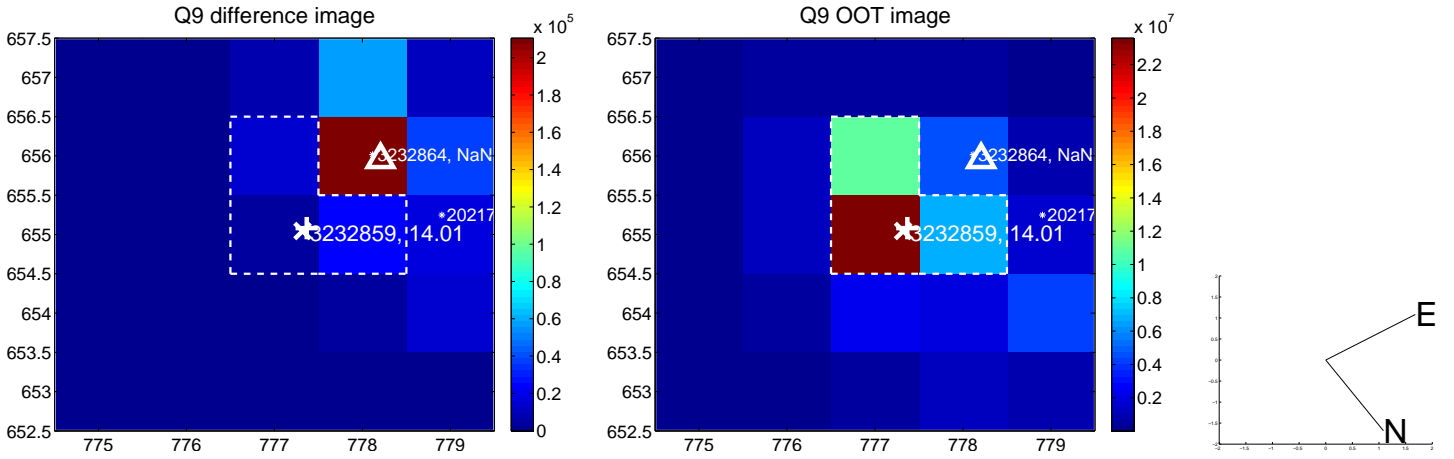
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



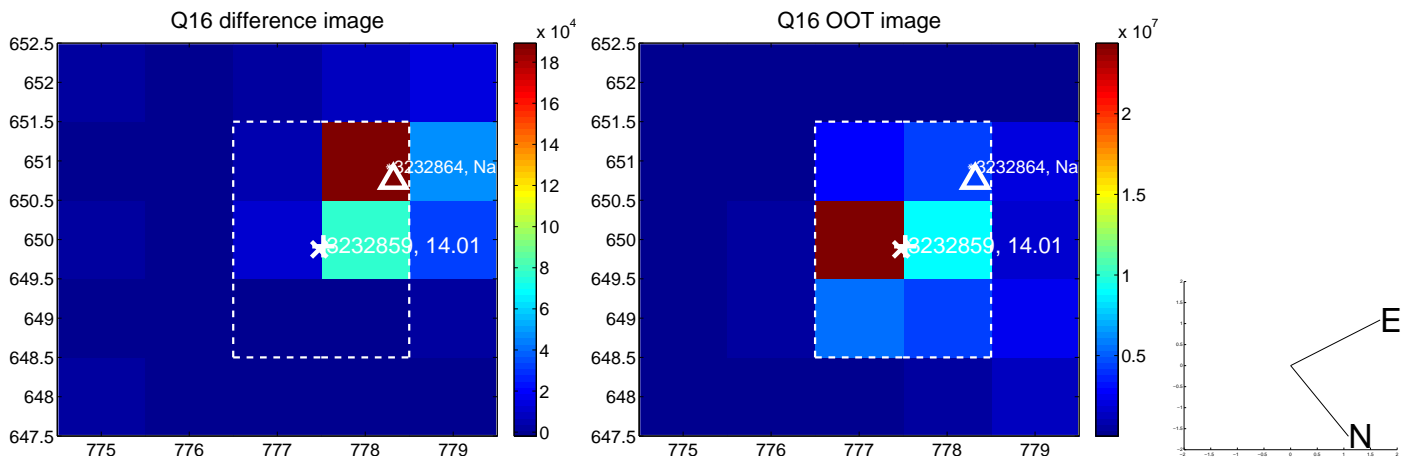
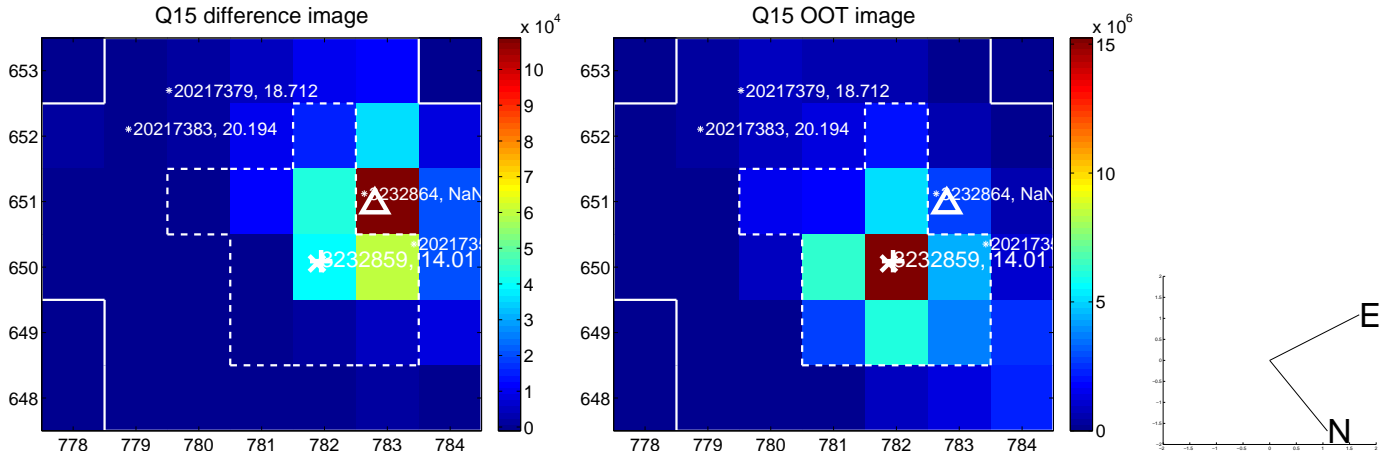
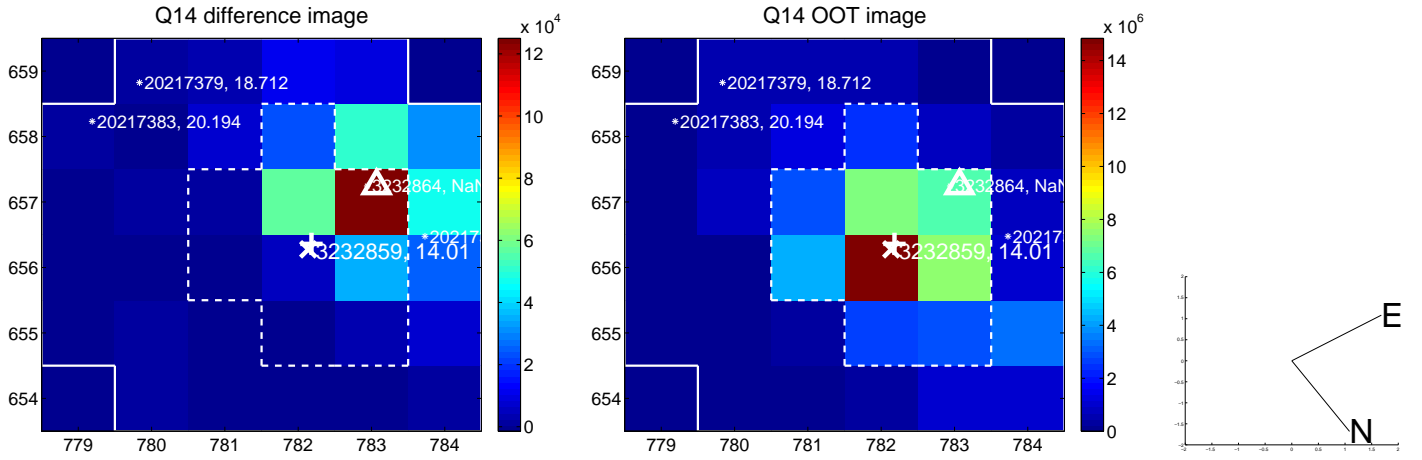
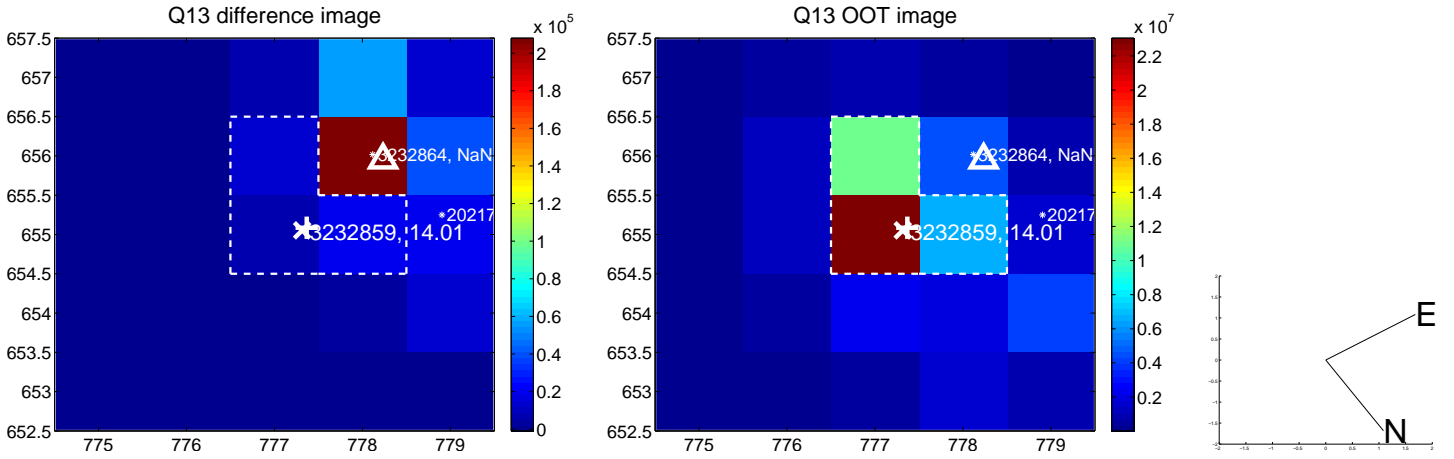
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



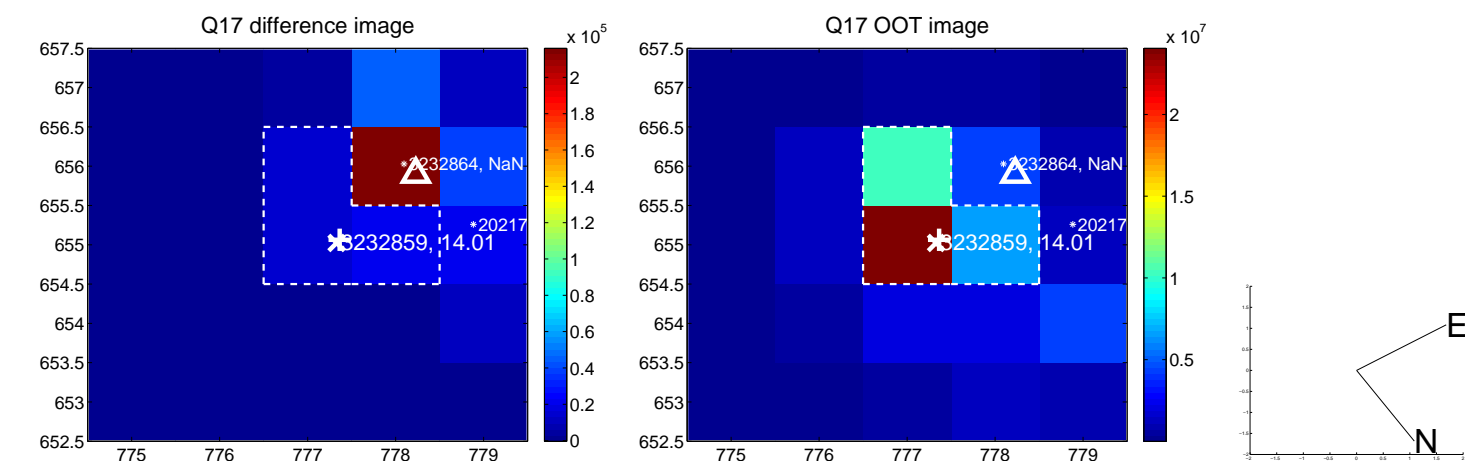
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



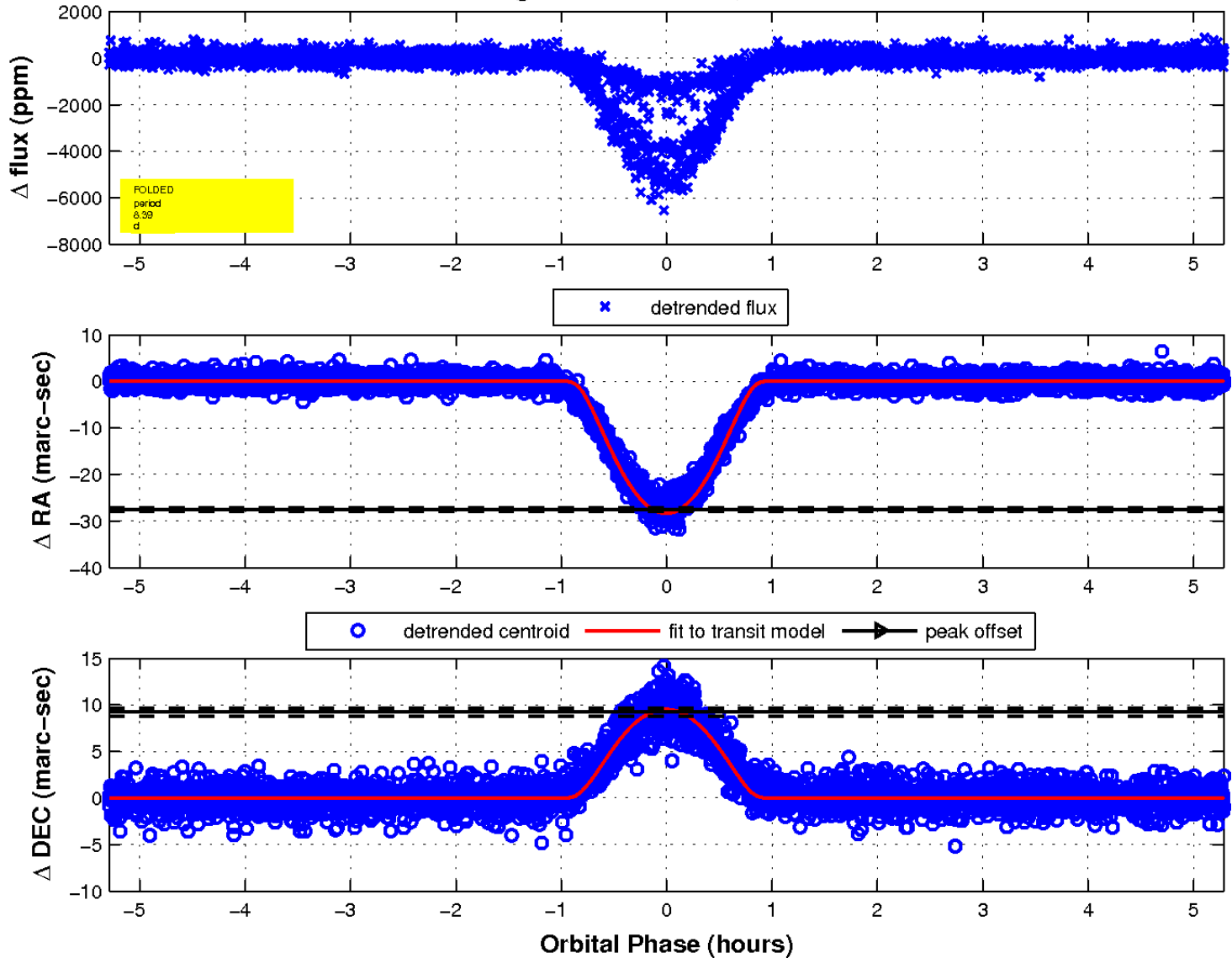
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



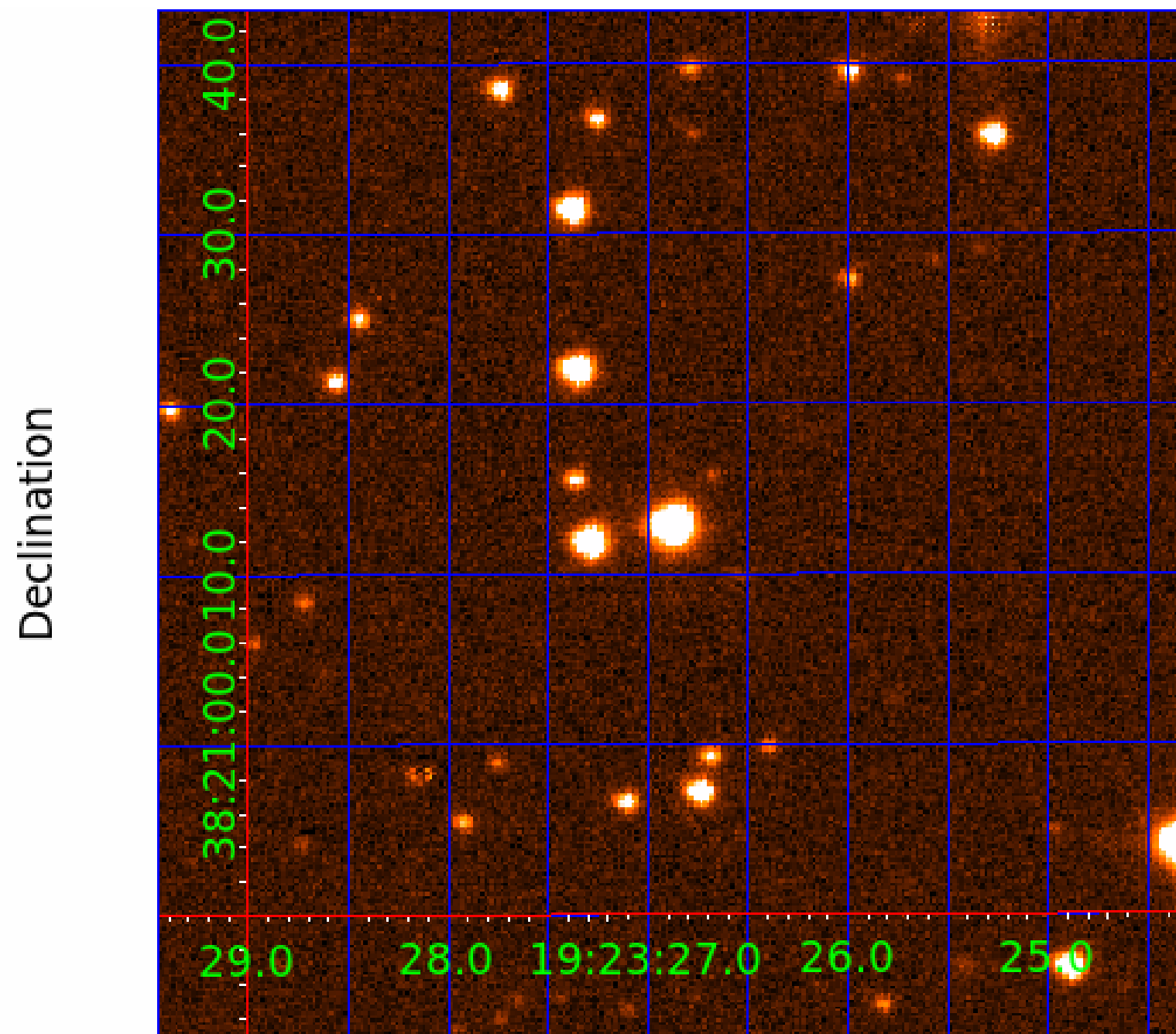
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



fluxWeightedCentroids, Planet 1 of 2



UKIRT Image



KIC 003232859

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})
003232859-01	OBS	1090.01	8.387224	138.902559	4193.9	1.763	230.3	183.4	1.79	6089	17.17	510.07
003232859-02	OBS	No	8.387169	132.943415	819.5	1.788	83.4	52.1	1.79	6089	6.14	510.07

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
003232859-01	OBS	FP	0.00	0	1	1	0	MOD_SEC_DV—MOD_SEC_ALT—DEEP_V_SHAPED—HAS_SEC_TCE—CENT_UNRESOLVED_OFFSET—HALO_GHOST
003232859-02	OBS	FP	0.00	1	1	1	0	IS_SEC_TCE—CENT_UNRESOLVED_OFFSET—HALO_GHOST

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

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

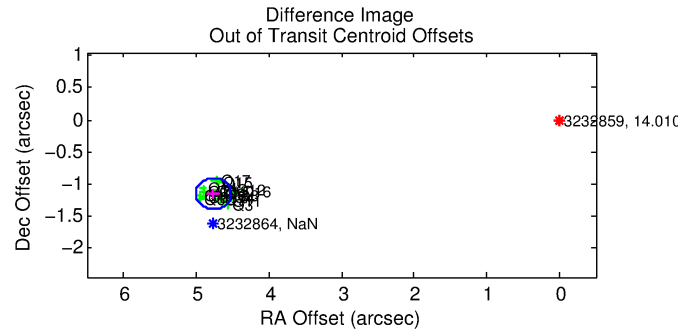
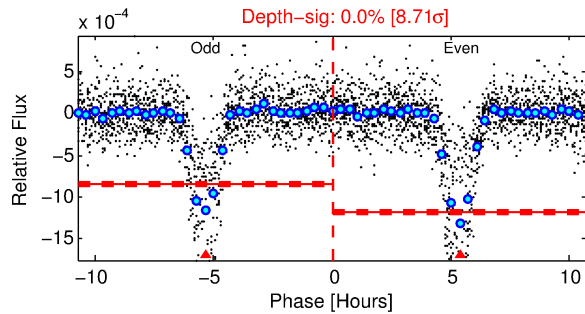
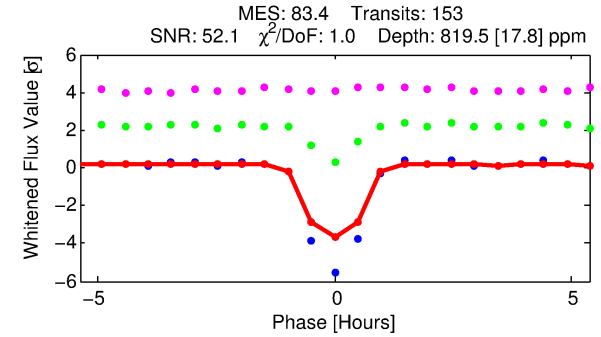
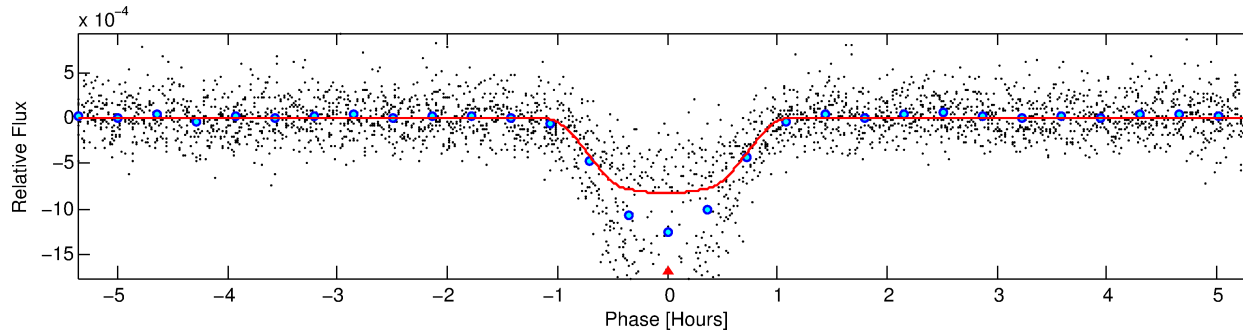
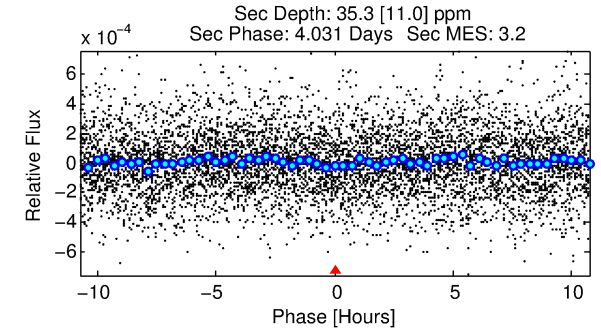
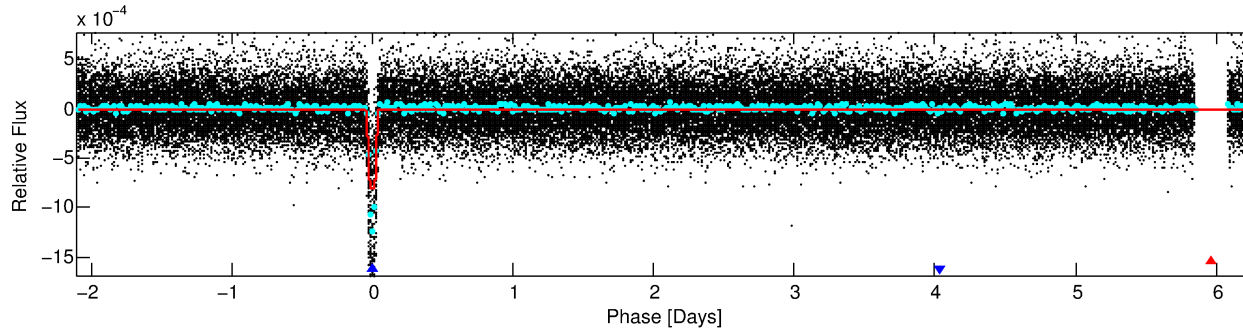
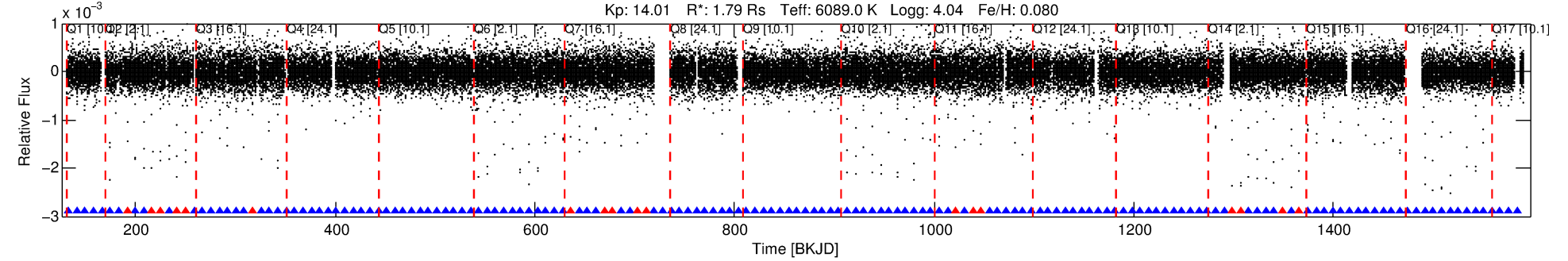
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 003232859-02

No Significant Match Found

DV One-Page Summary

KIC: 3232859 Candidate: 2 of 2 Period: 8.387 d
KOI: K01090 Corr: No Ephemeris Match



DV Fit Results:

Period = 8.38717 [0.00001] d
Epoch = 132.9434 [0.0007] BKJD
Rp/R* = 0.0314 [0.0016]
a/R* = 17.43 [4.09]
b = 0.91 [0.05]
Seff = 510.07 [165.69]
Teq = 1212 [98] K
Rp = 6.14 [1.48] Re
a = 0.0882 [0.0185] AU
Ag = 4.00 [1.83] [1.64σ]
Teffp = 2650 [219] K [5.98σ]

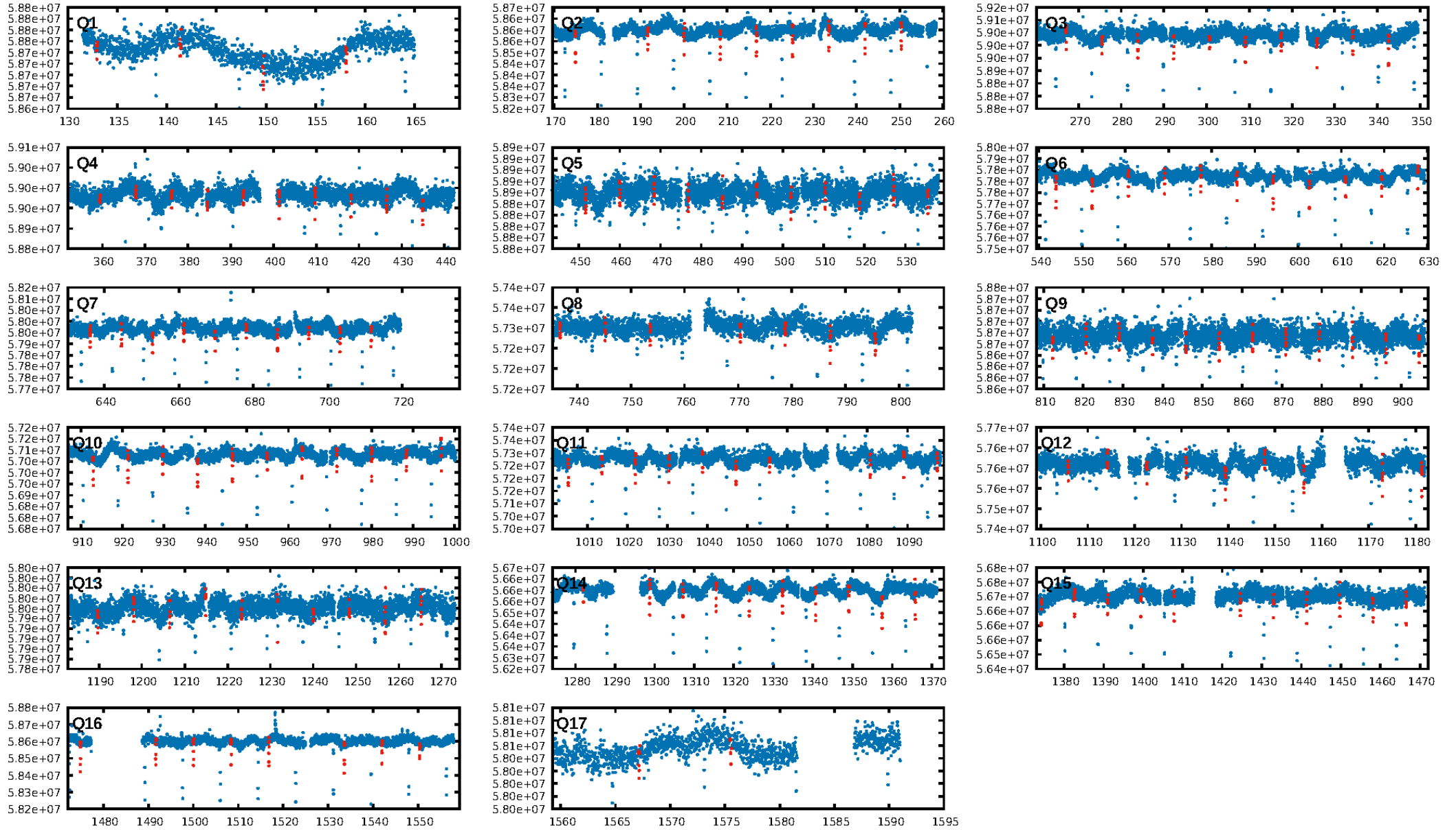
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 0.0% [0.00σ]
ModelChiSquare2-sig: 0.0%
ModelChiSquareGof-sig: 99.9%
Bootstrap-pfa: 0.00e+00
RollingBand-fgt: 0.88 [129/147]
GhostDiagnostic-chr: 0.2465
Centroid-sig: 0.0%
Centroid-so: 13.202 arcsec [74.38σ]
OotOffset-rm: 4.898 arcsec [60.89σ]
KicOffset-rm: 5.177 arcsec [60.72σ]
OotOffset-st: 4/4/4/5 [17]
KicOffset-st: 4/4/4/5 [17]
DiffImageQuality-fgm: 1.00 [17/17]
DiffImageOverlap-fno: 1.00 [17/17]

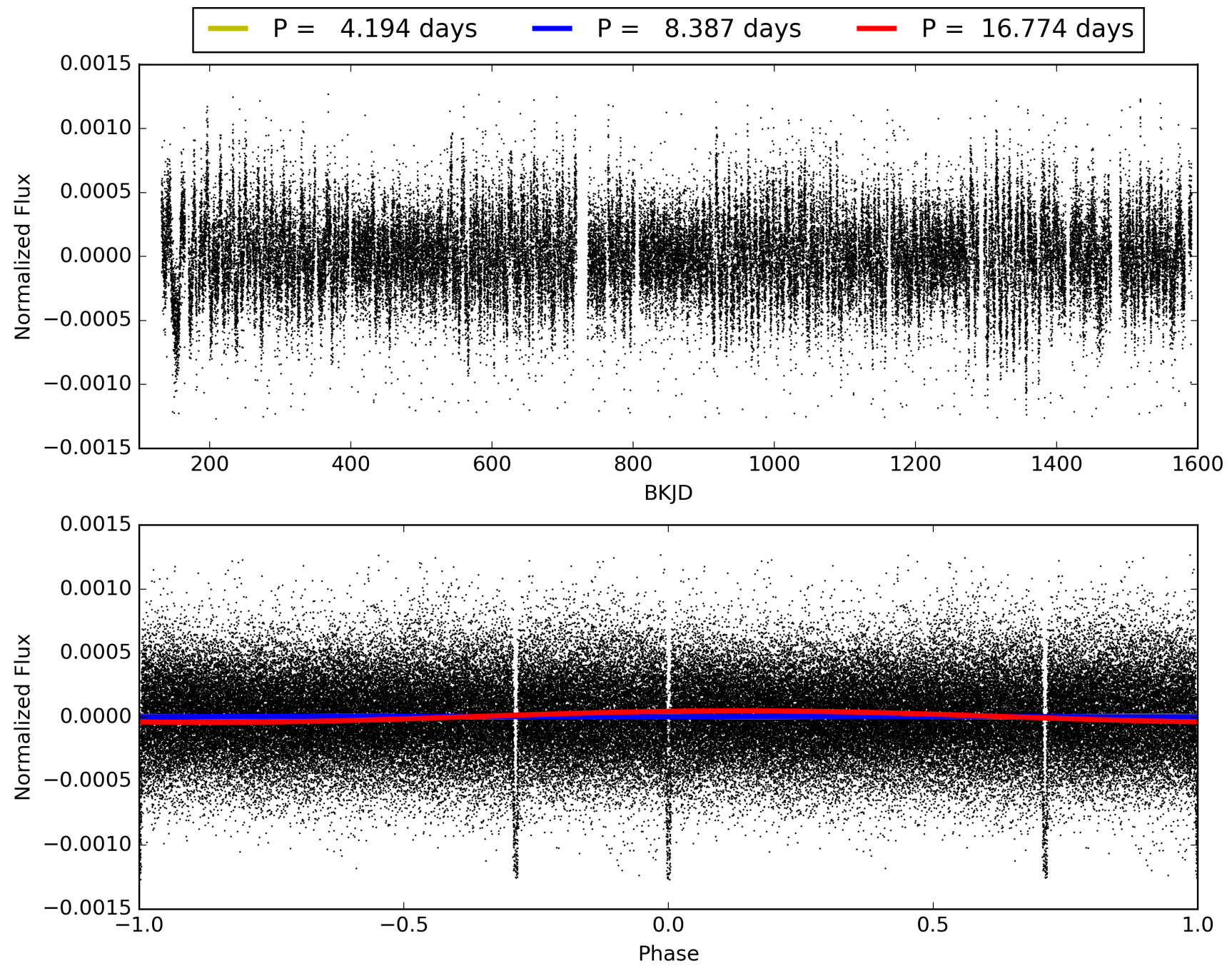
Software Revision: svn-ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 08:44:57 Z

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

TCE 003232859-02, PDC Light Curves

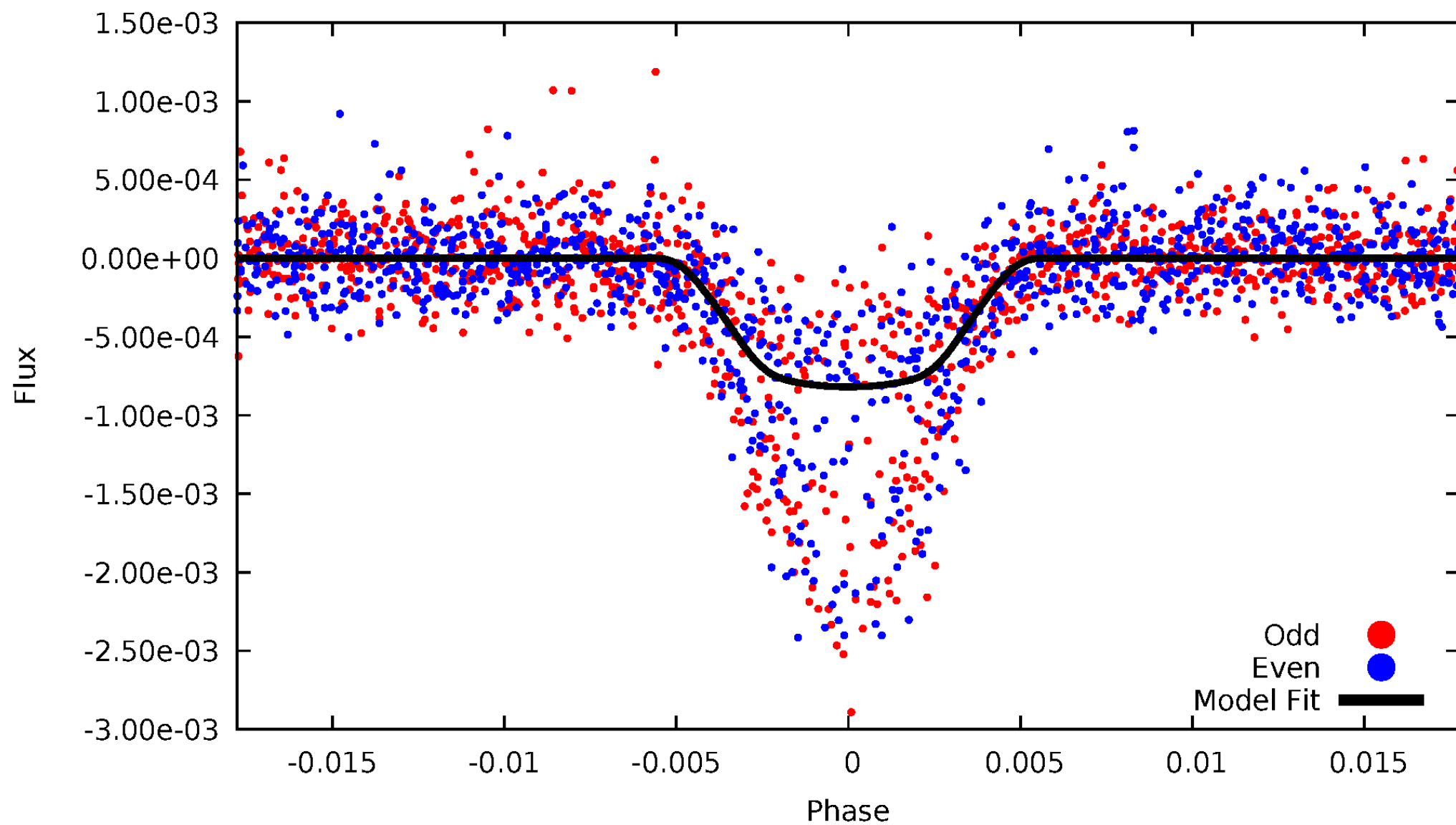


TCE 003232859-02



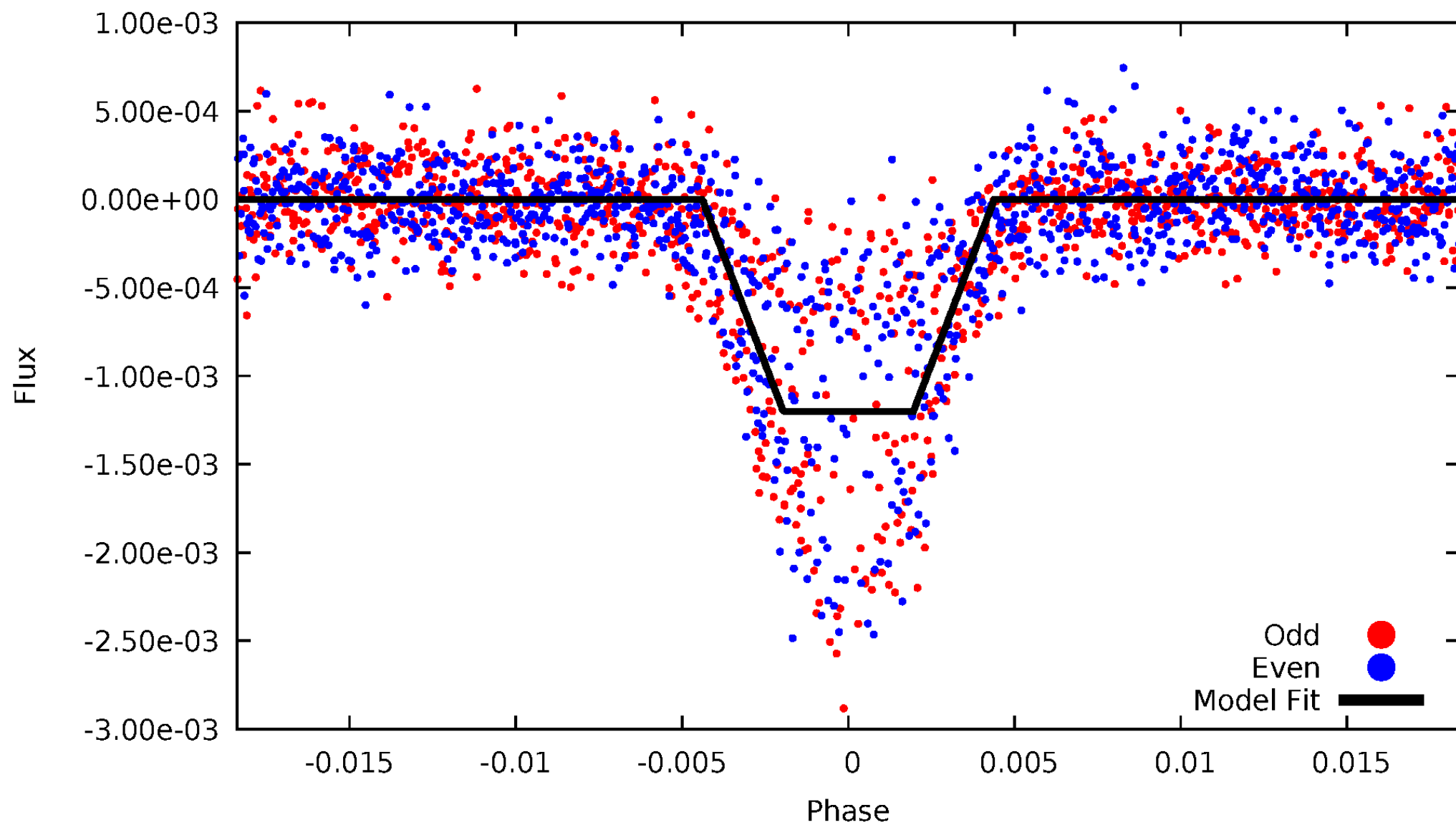
DV Odd/Even

TCE 003232859-02



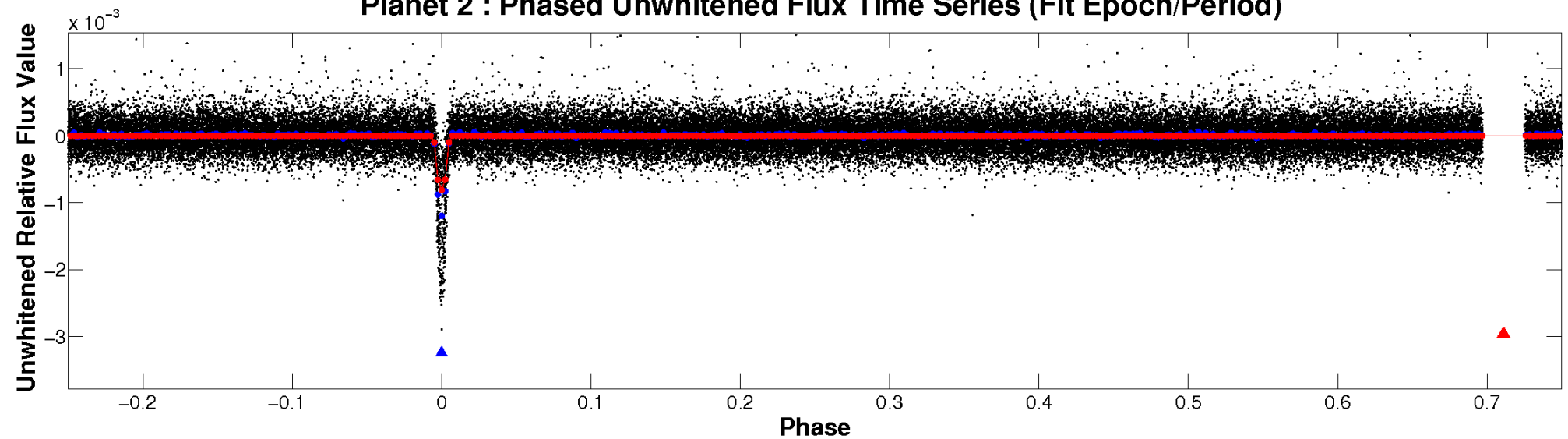
ALT Odd/Even

TCE 003232859-02

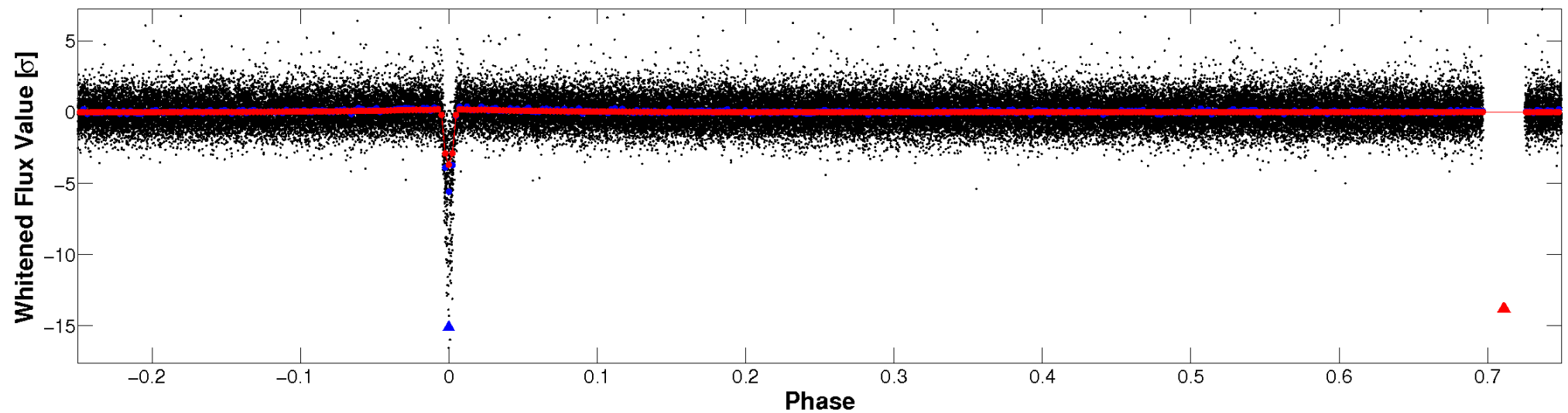


Non-Whitened Vs. Whitened Light Curve

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

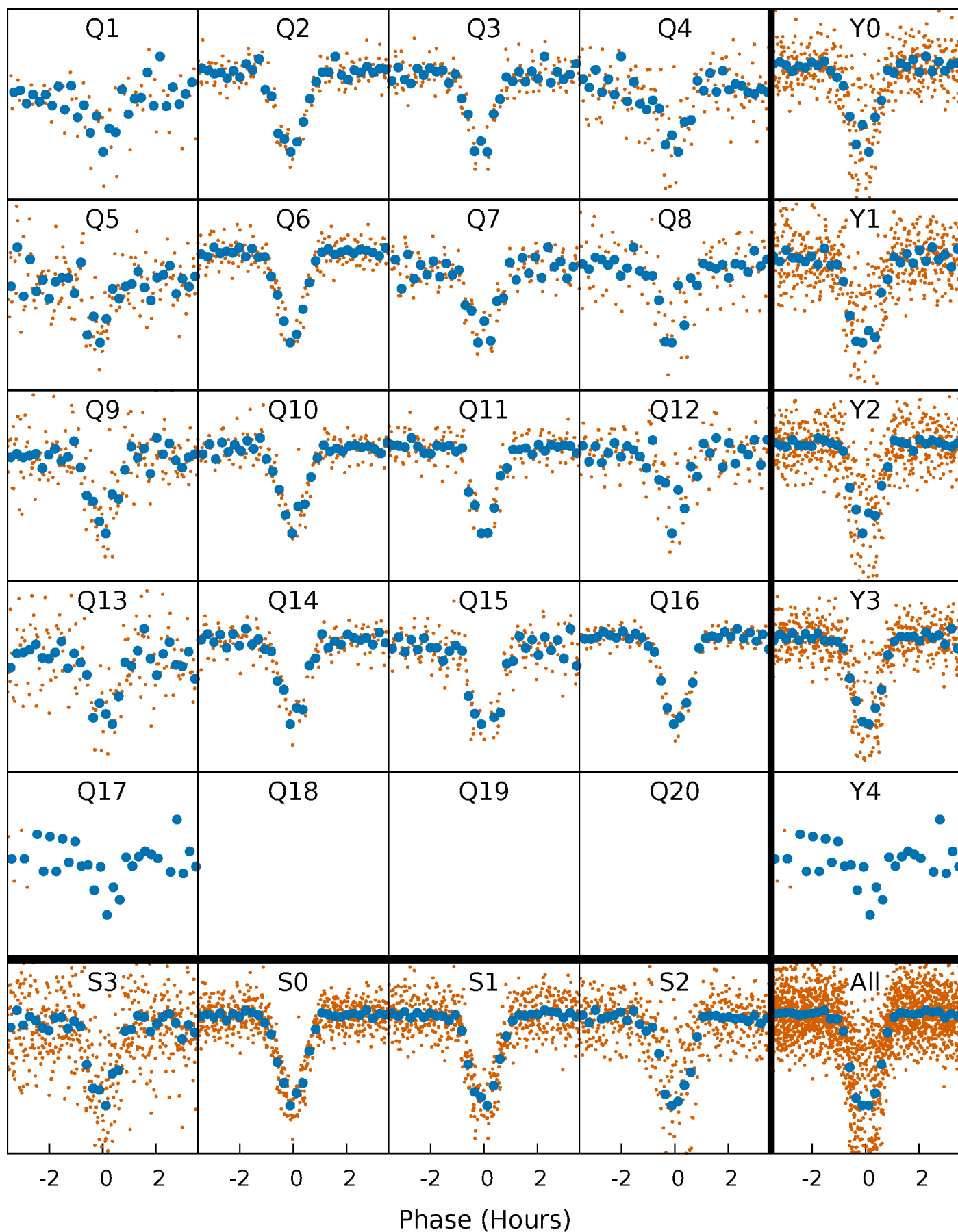


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



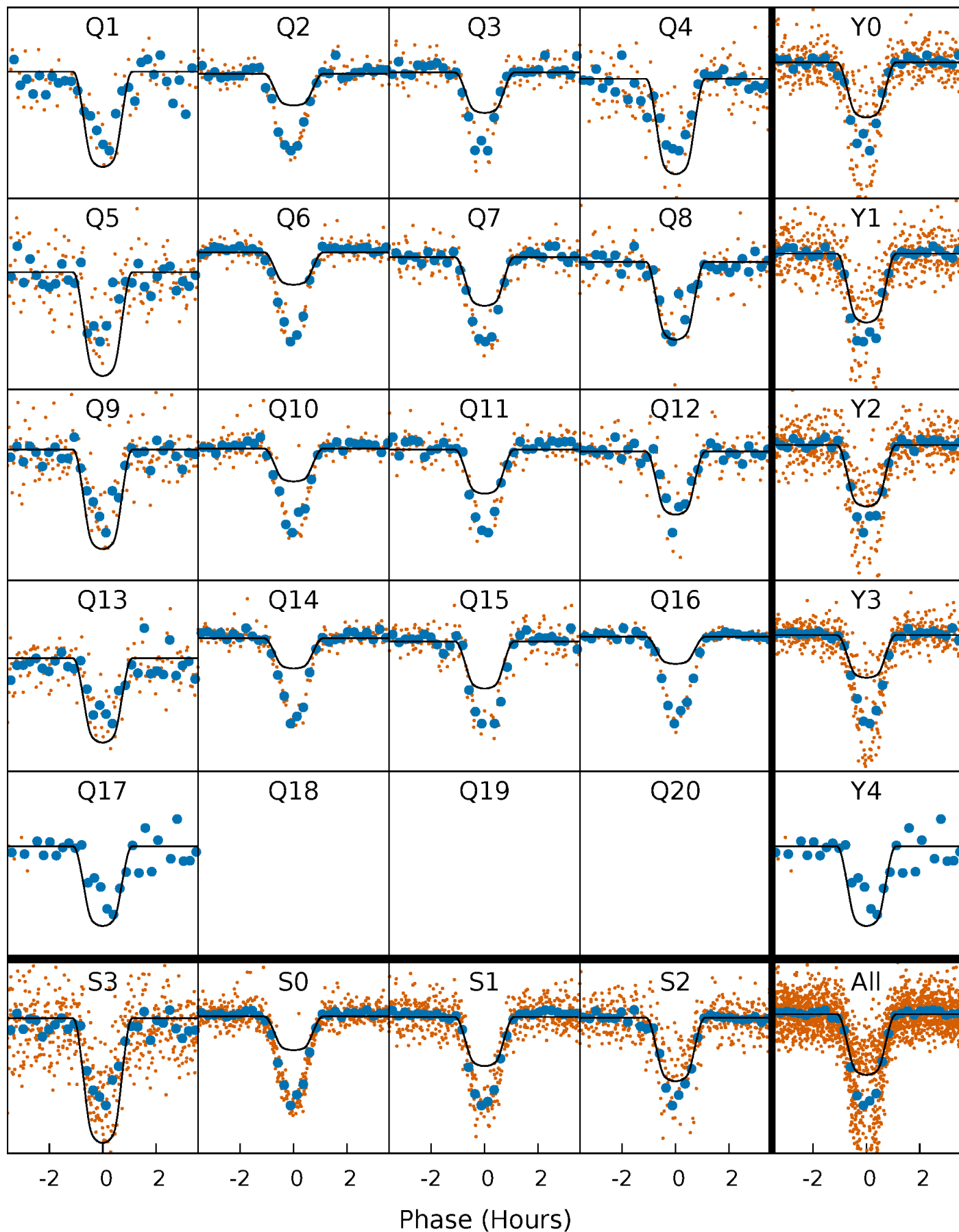
PDC Quarter-Phased Transit Curves

TCE 003232859-02 P= 8.387169 Days $T_0=132.943415$ (BKJD)



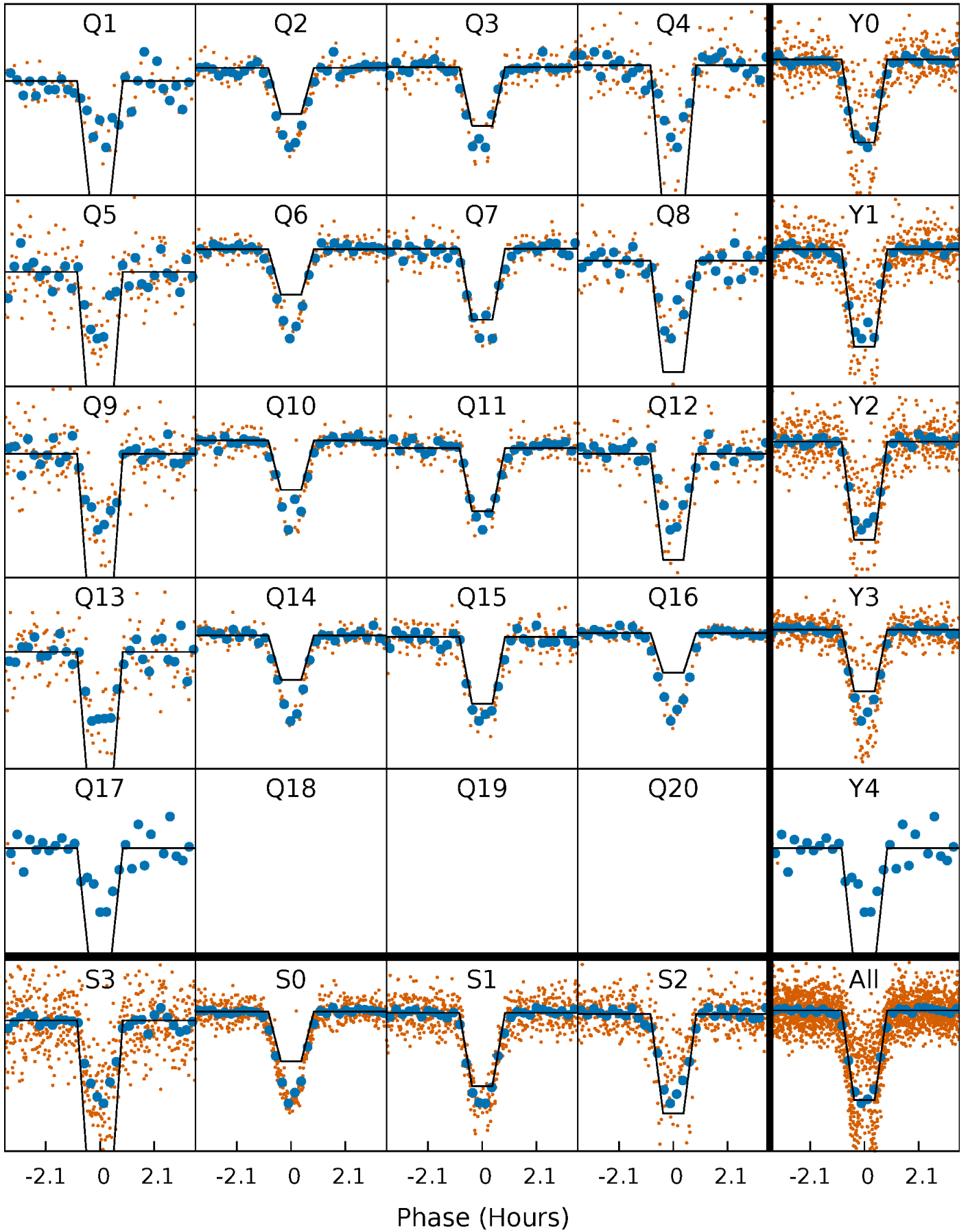
DV Quarter-Phased Transit Curves

TCE 003232859-02 P= 8.387169 Days $T_0=132.943415$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

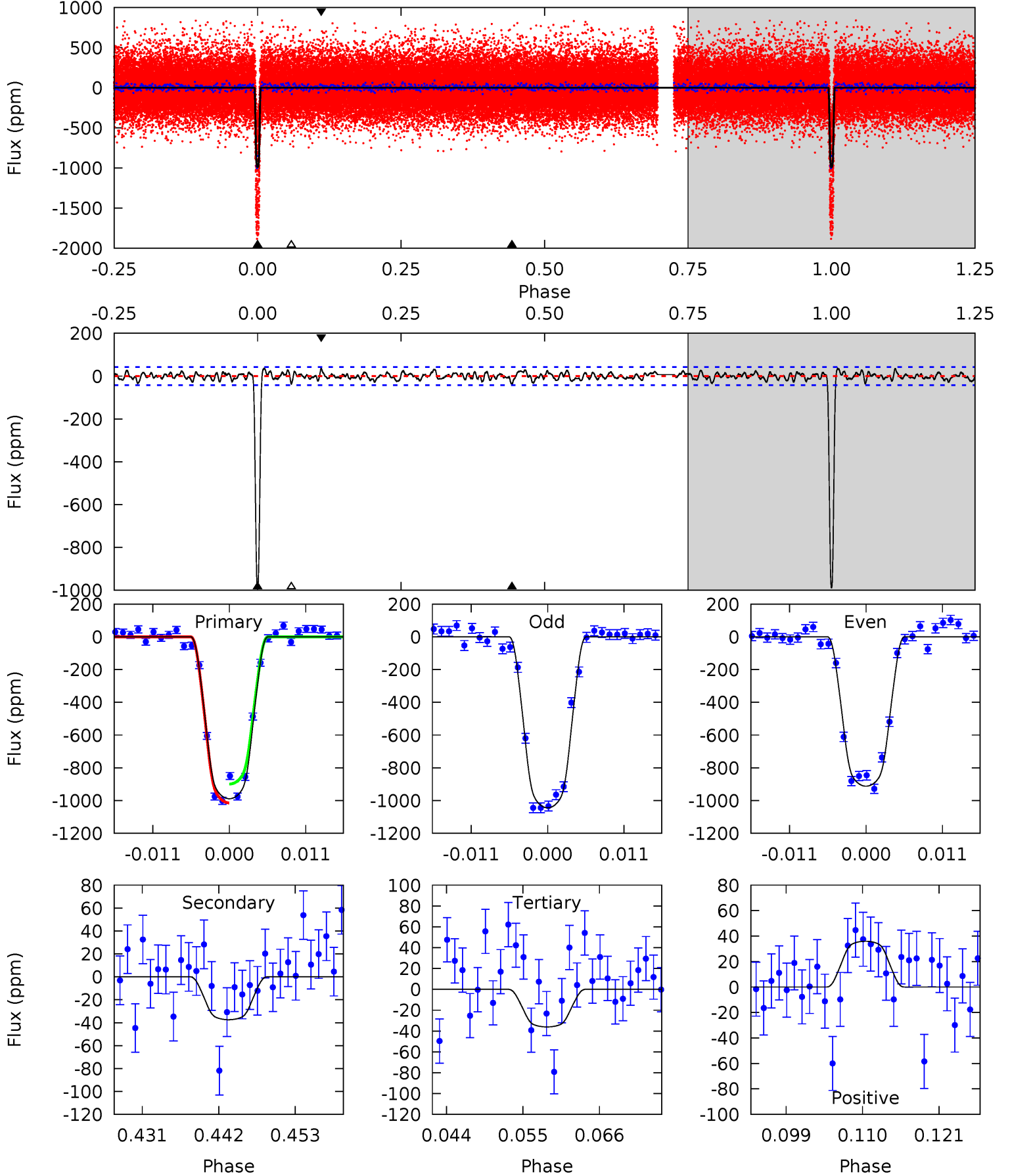
TCE 003232859-02 P= 8.387197 Days $T_0=132.940498$ (BKJD)



DV Model-Shift Uniqueness Test

003232859-02, P = 8.387169 Days, E = 124.556246 Days

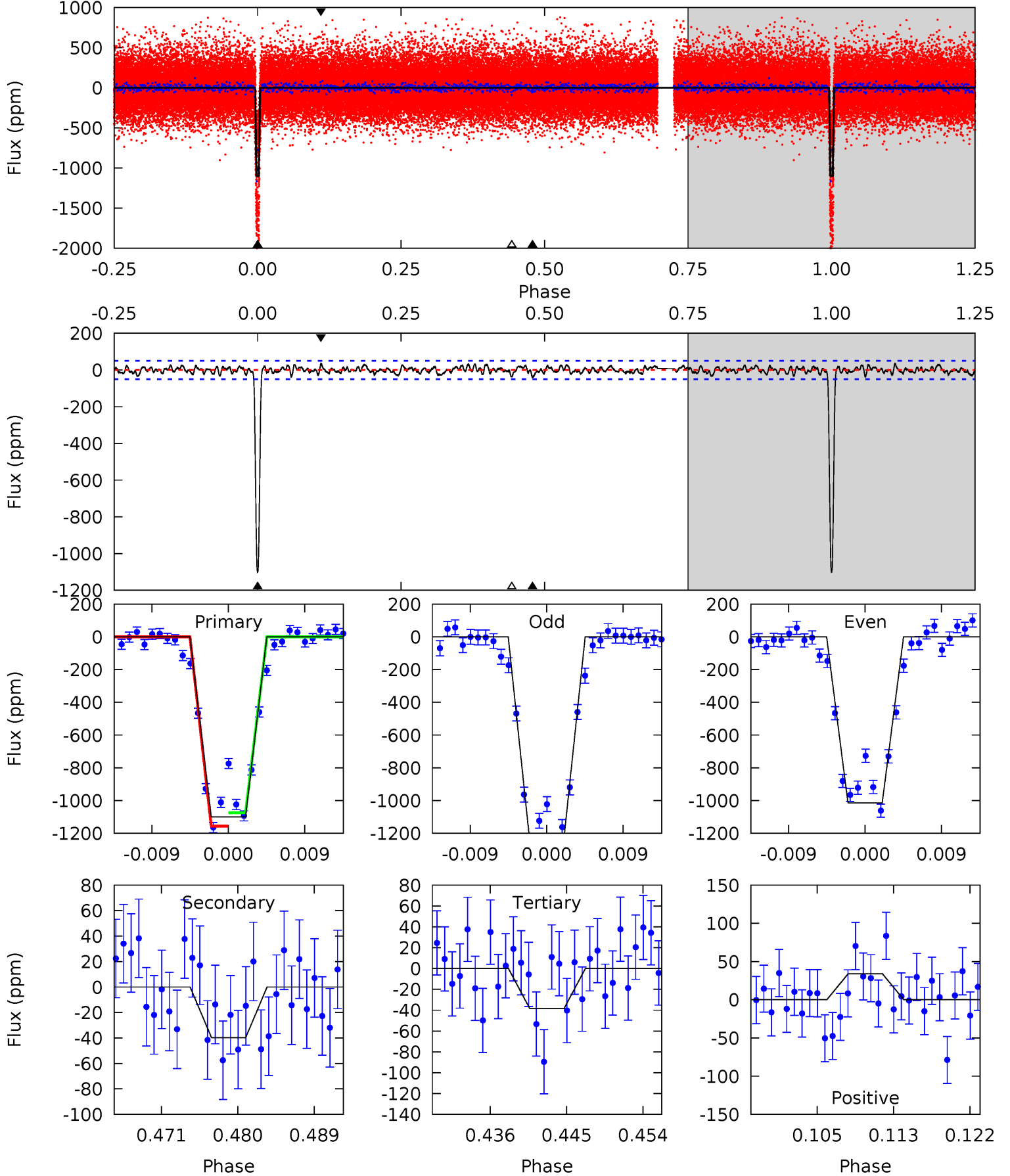
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
116.7	4.41	4.26	4.24	5.01	2.54	1.49	112.4	112.4	0.16	0.17	7.74	1.01	0.04	6.75



Alt Model-Shift Uniqueness Test

003232859-02, P = 8.387197 Days, E = 124.553301 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
111.6	4.03	3.90	3.45	5.05	2.62	1.36	107.7	108.2	0.12	0.57	11.3	0.98	0.03	0



Stellar Parameters For KIC 003232859

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6089^{+82}_{-82}	$4.044^{+0.182}_{-0.098}$	$0.080^{+0.150}_{-0.100}$	$1.795^{+0.281}_{-0.422}$	$1.299^{+0.116}_{-0.174}$	$0.317^{+0.322}_{-0.099}$
	+1%/-1%	+5%/-2%	+188%/-125%	+16%/-24%	+9%/-13%	+102%/-31%
Source	SPE68	SPE68	SPE68	DSEP		

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

Secondary Eclipse Parameters for KIC 003232859-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-37 ± 8	$6.05^{+0.70}_{-0.74}$	1685^{+78}_{-98}	3222^{+128}_{-141}	$4.315^{+1.616}_{-1.175}$
Alt.	-40 ± 10	$6.74^{+0.74}_{-0.93}$	1688^{+84}_{-109}	3158^{+123}_{-150}	$3.775^{+1.561}_{-1.107}$

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 $A_{obs} \gg 1.0$

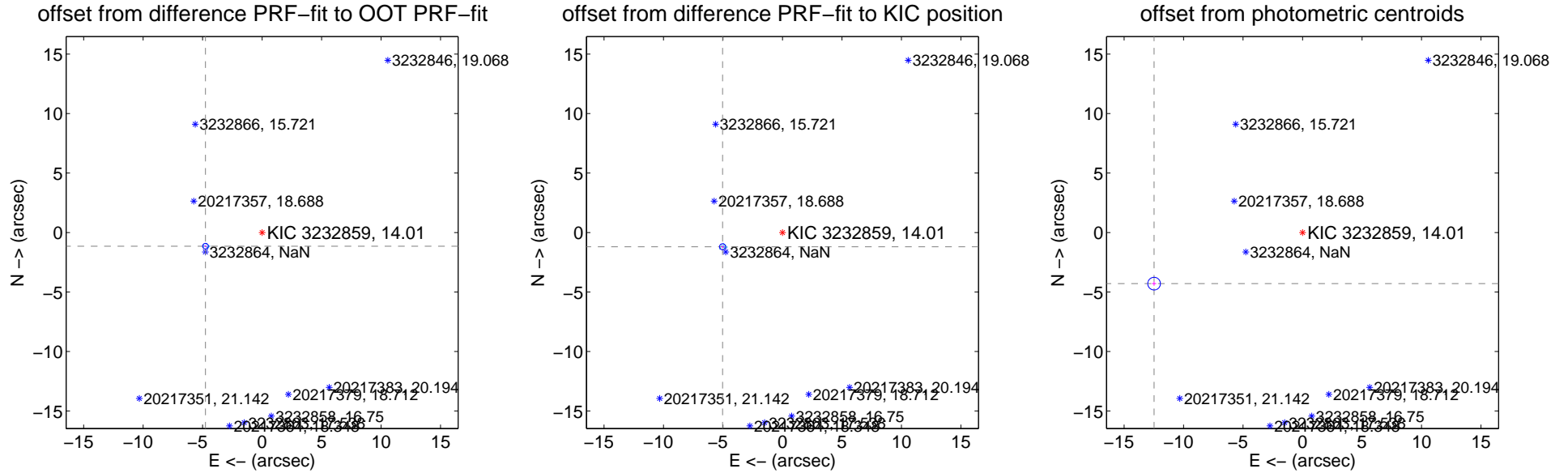
DV Centroid Data

Supplemental centroid analysis for 003232859-02. Kepler magnitude: 14.01. Transit SNR 52.13

There are 17 quarters with good PRF difference image offsets

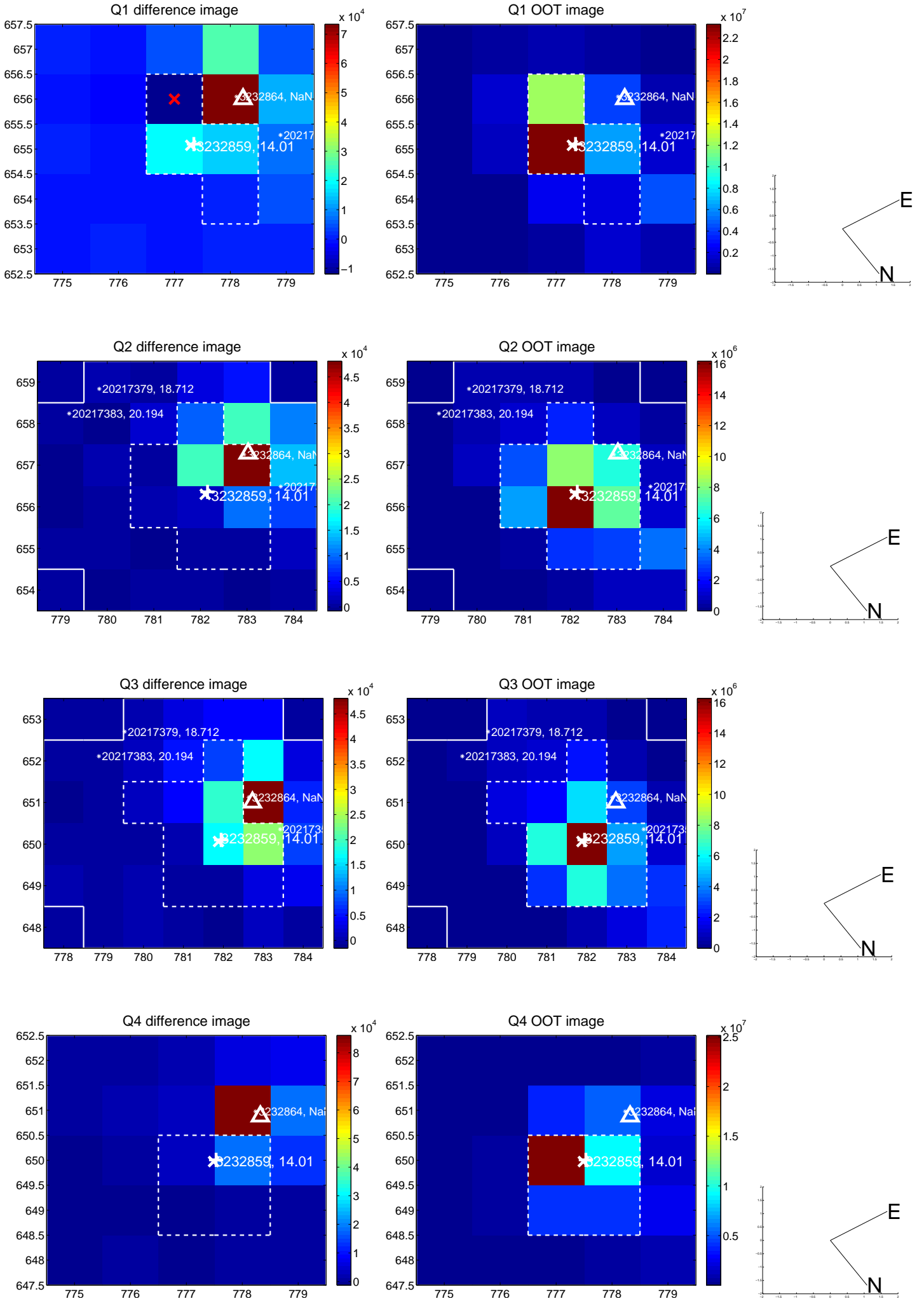
The direct PRF centroid is offset from the target star catalog position by about 0.21 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	4.898 \pm 0.080	60.89	4.761 \pm 0.081	-1.152 \pm 0.070
PRF-fit source offset from KIC position	5.177 \pm 0.085	60.72	5.037 \pm 0.086	-1.199 \pm 0.074
photometric centroid source offset	13.20 \pm 0.18	74.38	12.48 \pm 0.18	-4.30 \pm 0.18

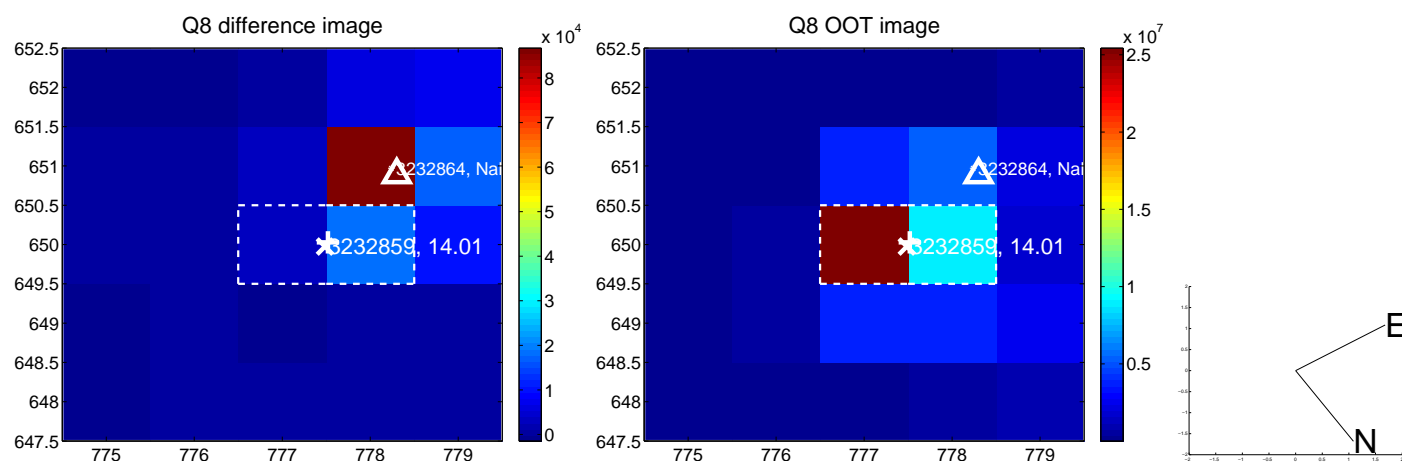
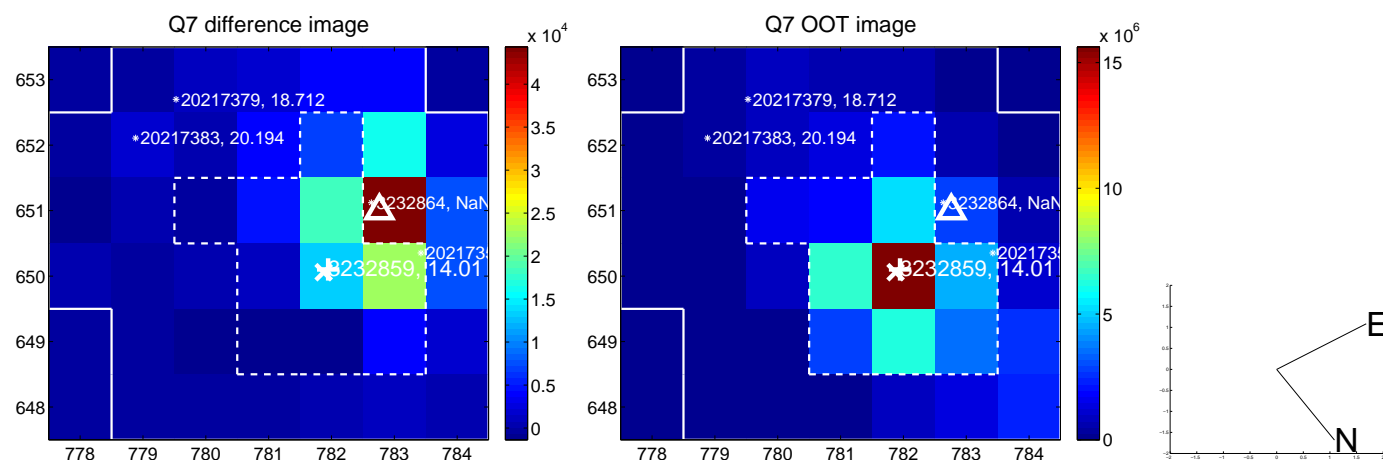
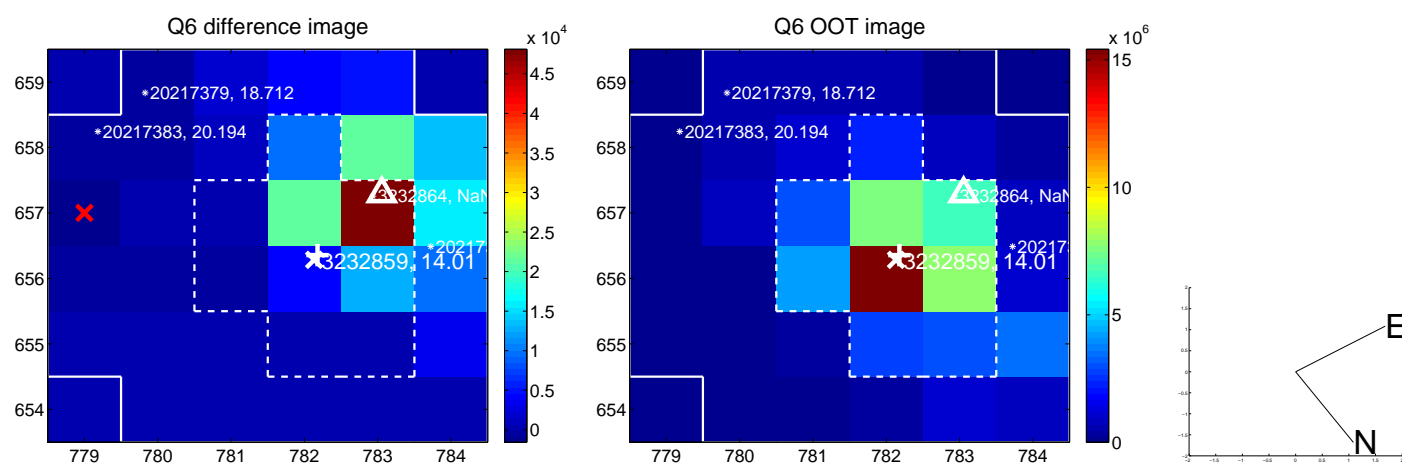
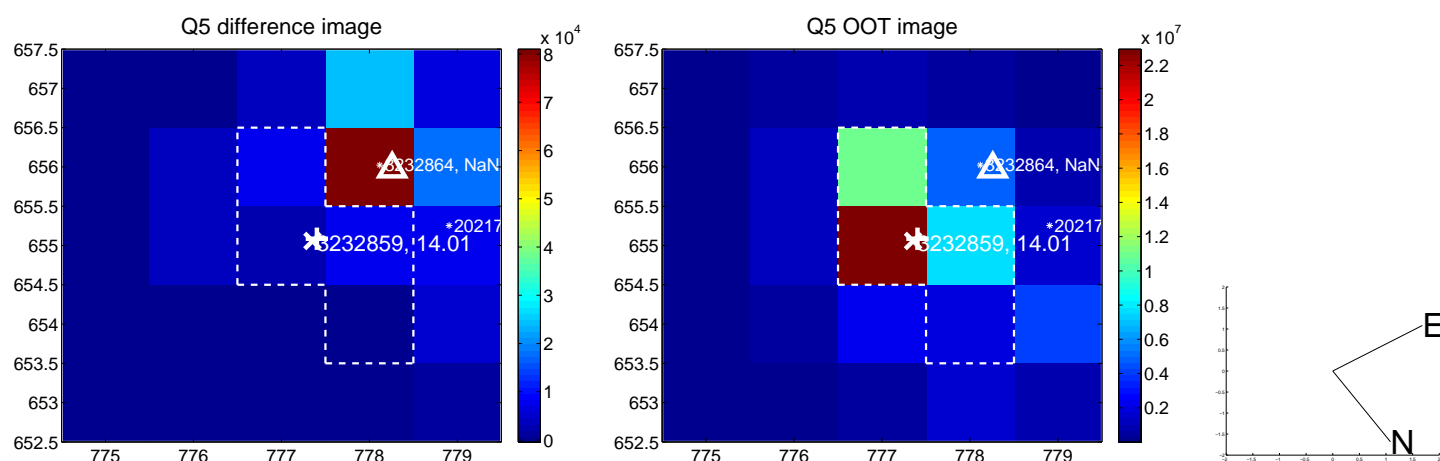


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

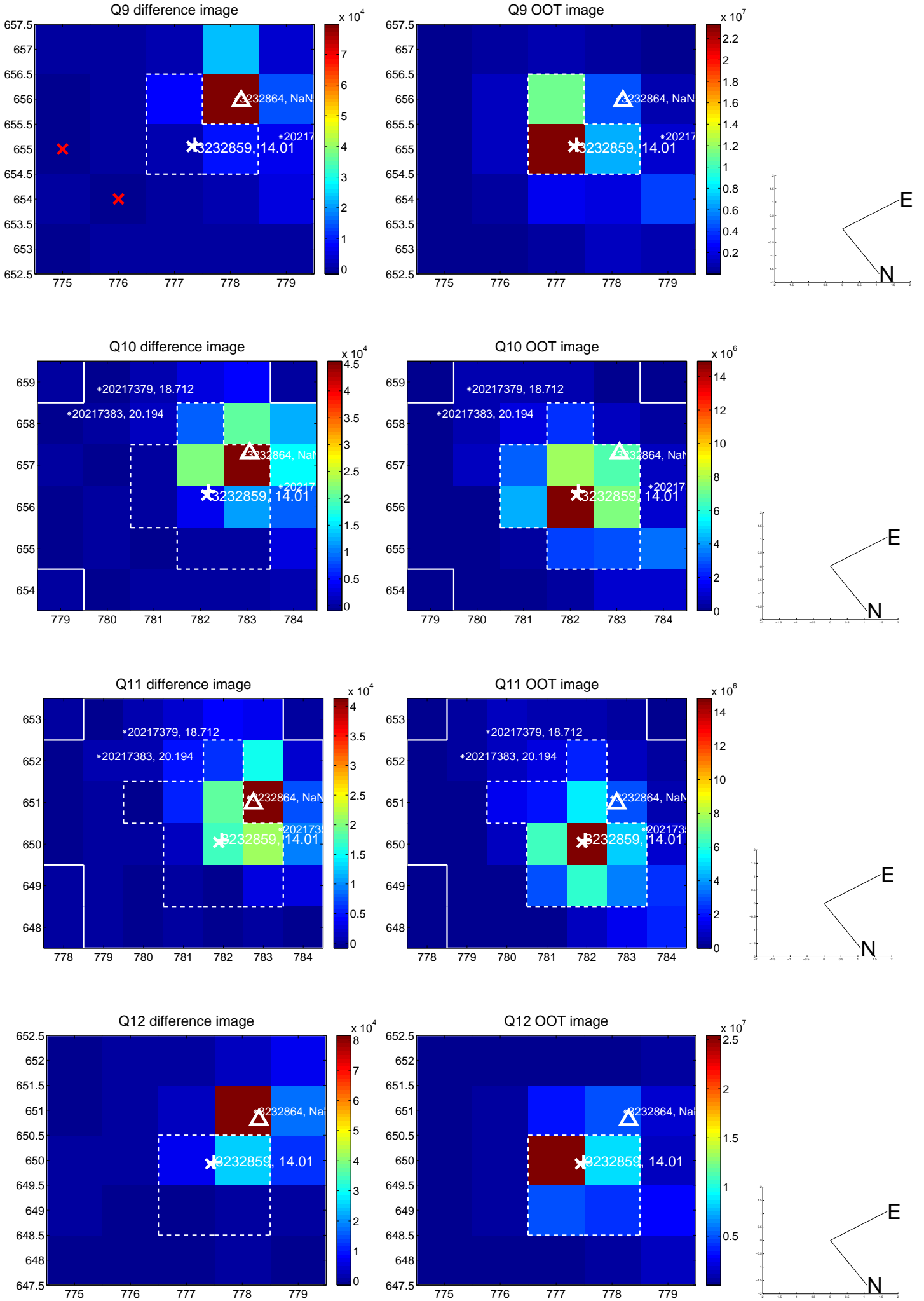
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



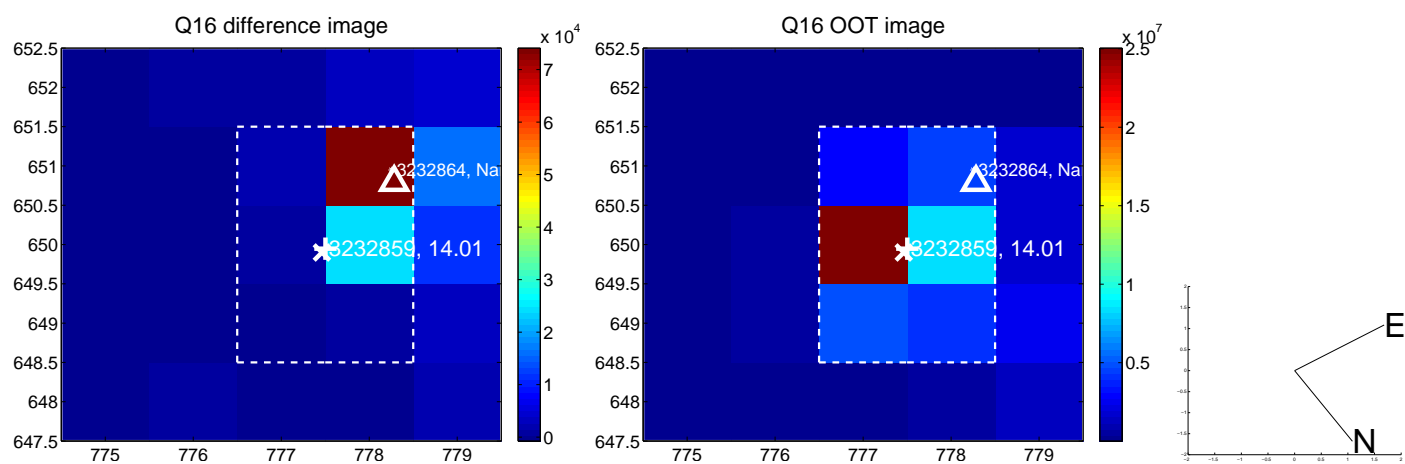
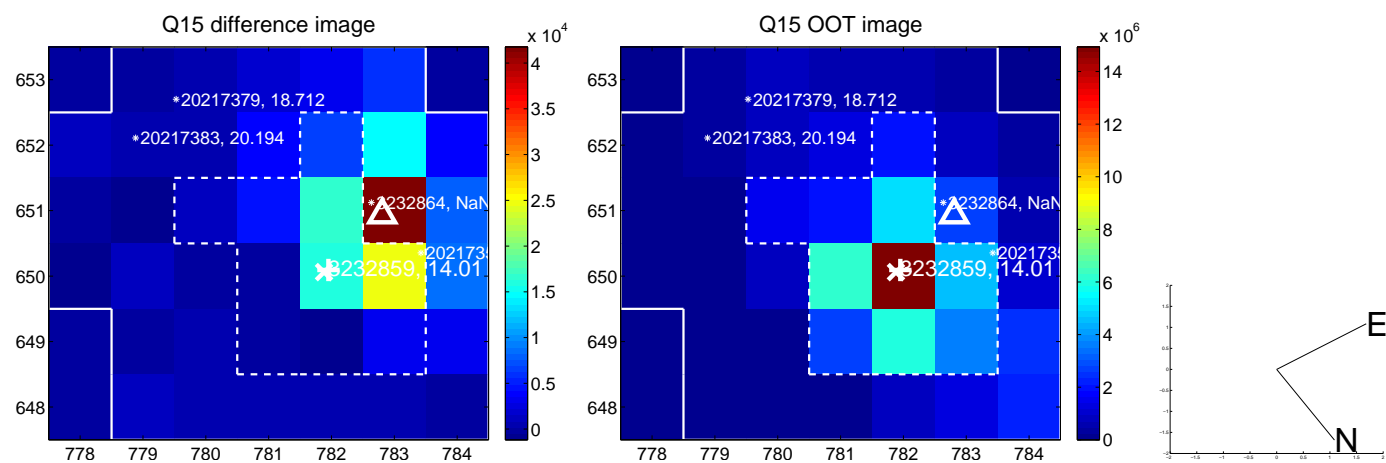
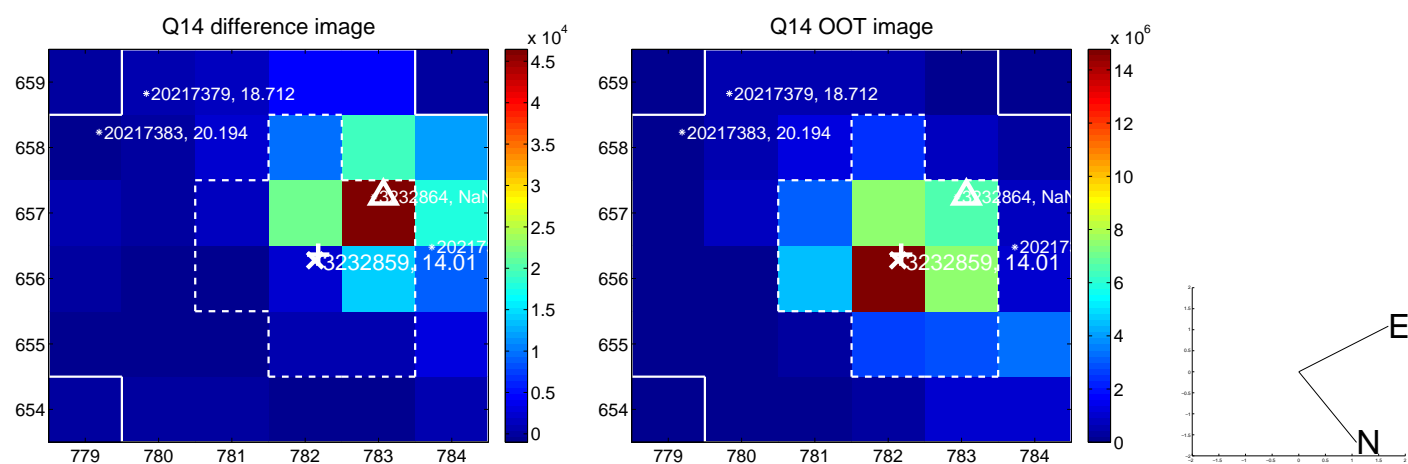
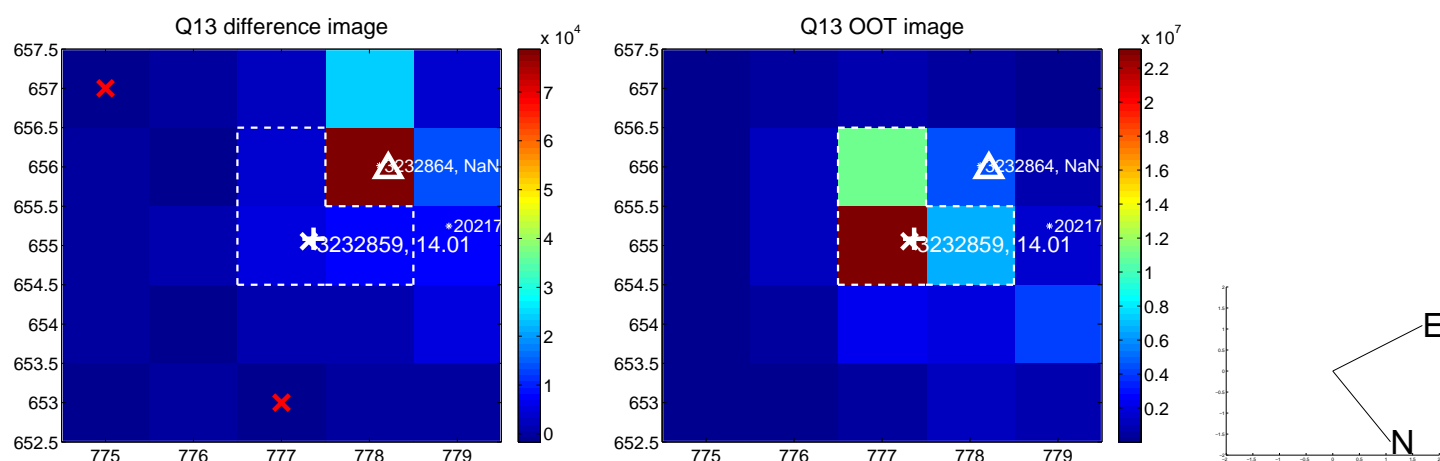
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



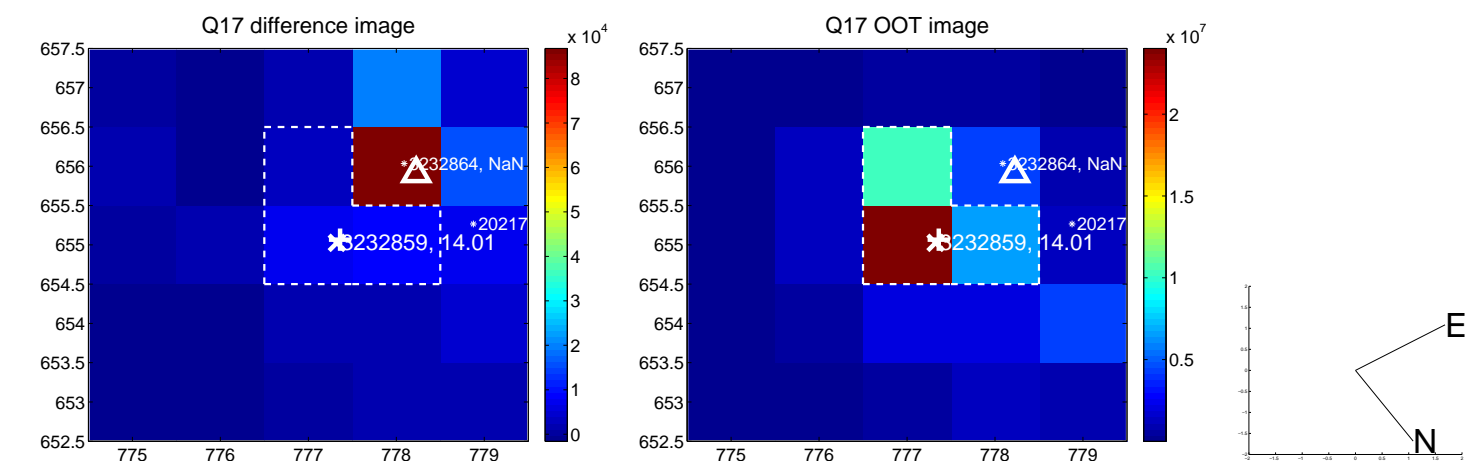
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



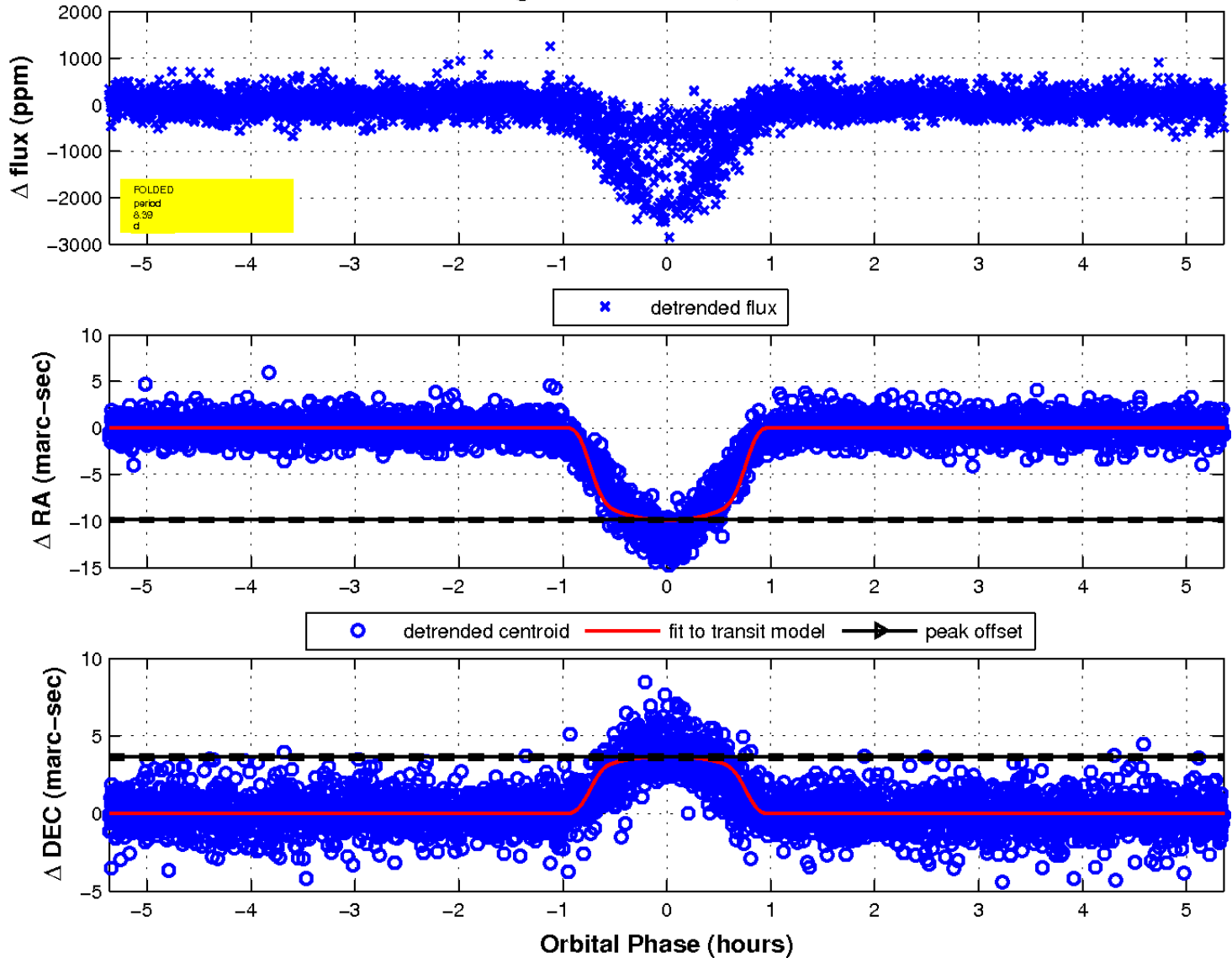
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



fluxWeightedCentroids, Planet 2 of 2



UKIRT Image

