

KIC 008517859

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})
008517859-01	OBS	No	0.523583	131.795306	201.8	1.936	13.6	13.5	4.23	7209	7.01	0.00
008517859-02	OBS	No	0.523585	131.536265	199.5	1.671	11.7	12.0	4.23	7209	6.05	0.00

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008517859-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT
008517859-02	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—SAME_NTL_PERIOD

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

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

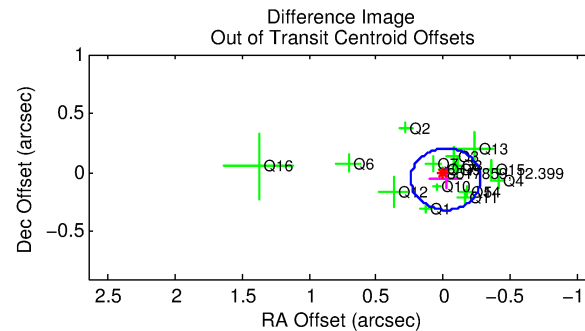
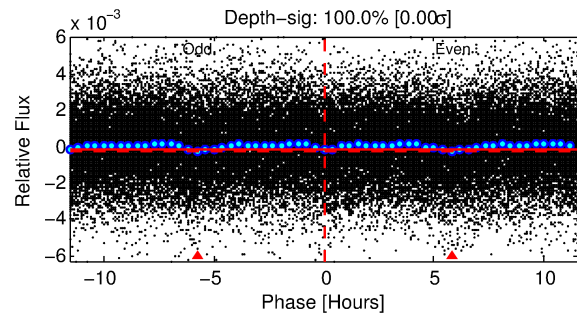
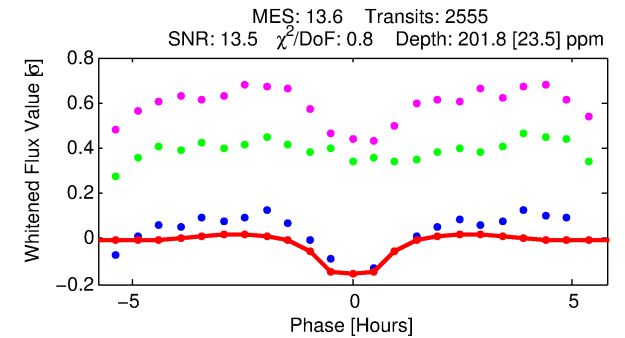
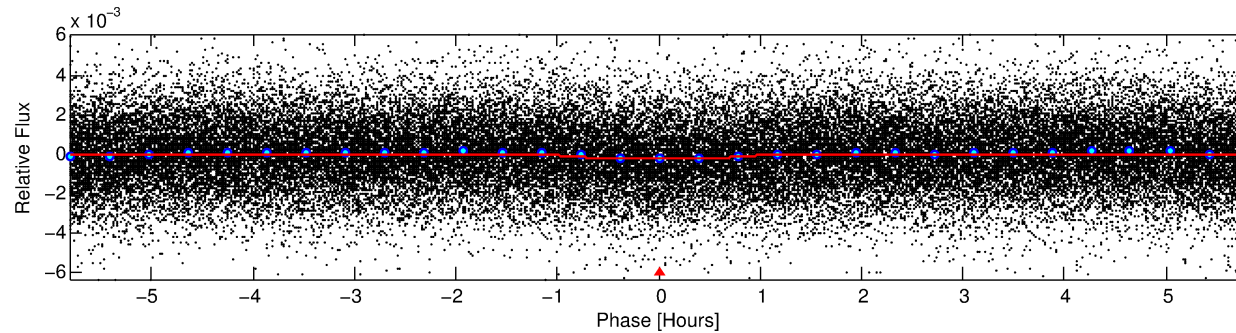
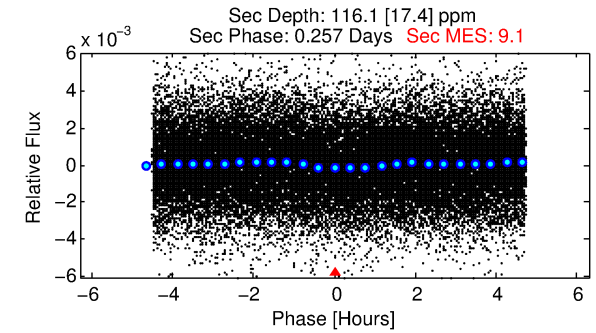
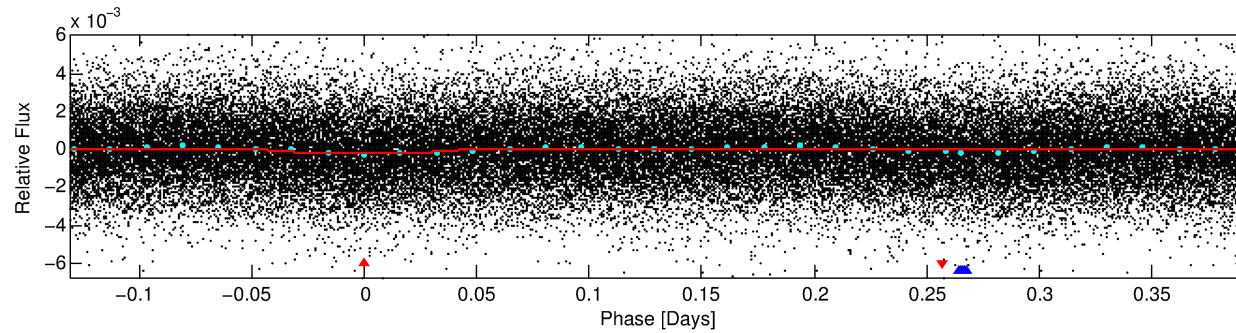
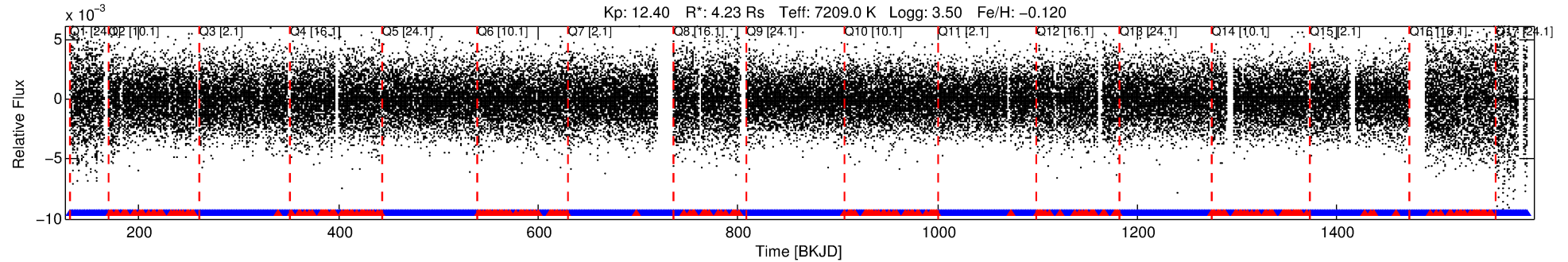
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 008517859-01

No Significant Match Found

DV One-Page Summary

KIC: 8517859 Candidate: 1 of 2 Period: 0.524 d



DV Fit Results:

Period = 0.52358 [0.00001] d
Epoch = 131.7953 [0.0022] BKJD
Rp/R* = 0.0152 [0.0080]
a/R* = 1.35 [1.99]
b = 0.90 [0.70]
Seff = N/A
Teq = N/A
Rp = 7.01 [5.42] Re
a = N/A
Ag = N/A
Teffp = N/A

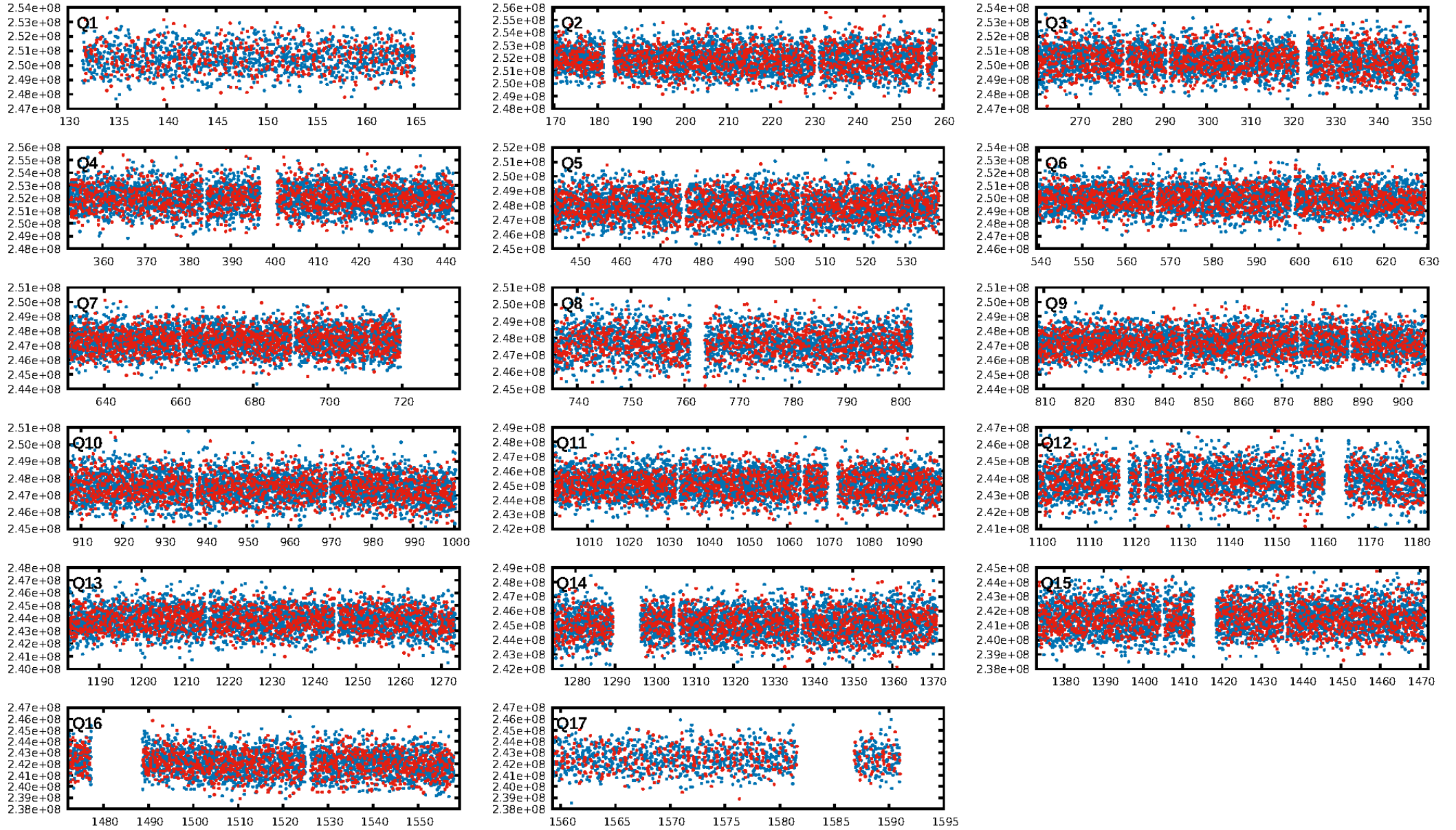
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 0.0% [0.00σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 3.49e-91
RollingBand-fgt: 0.89 [2168/2439]
GhostDiagnostic-chr: 1.341
Centroid-sig: 2.3%
Centroid-so: 0.074 arcsec [1.04σ]
OotOffset-rm: 0.059 arcsec [0.68σ]
KicOffset-rm: 0.156 arcsec [1.52σ]
OotOffset-st: 4/4/4/5 [17]
KicOffset-st: 4/4/4/5 [17]
DiffImageQuality-fgm: 1.00 [17/17]
DiffImageOverlap-fno: 0.00 [0/17]

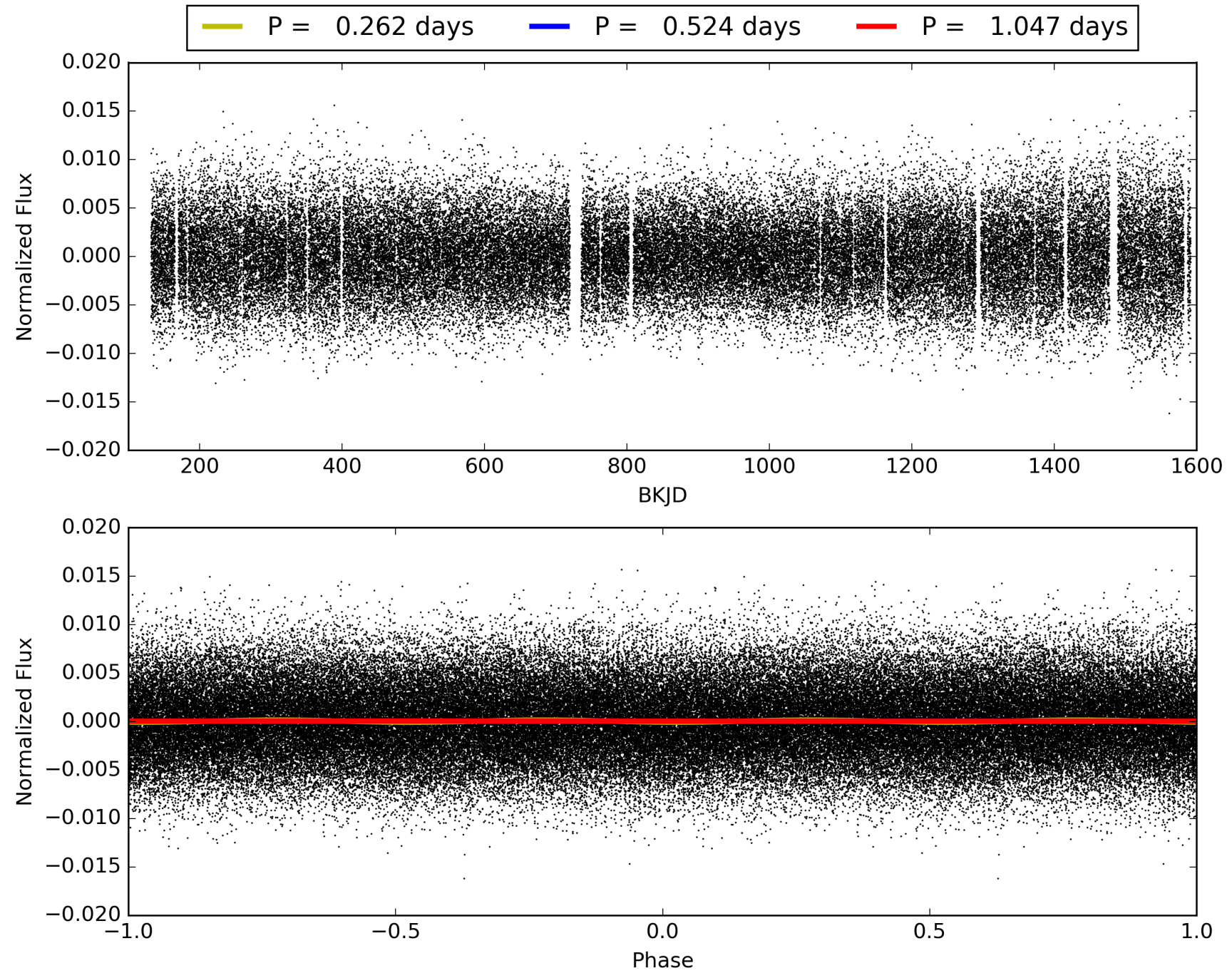
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 11:30:35 Z

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

TCE 008517859-01, PDC Light Curves

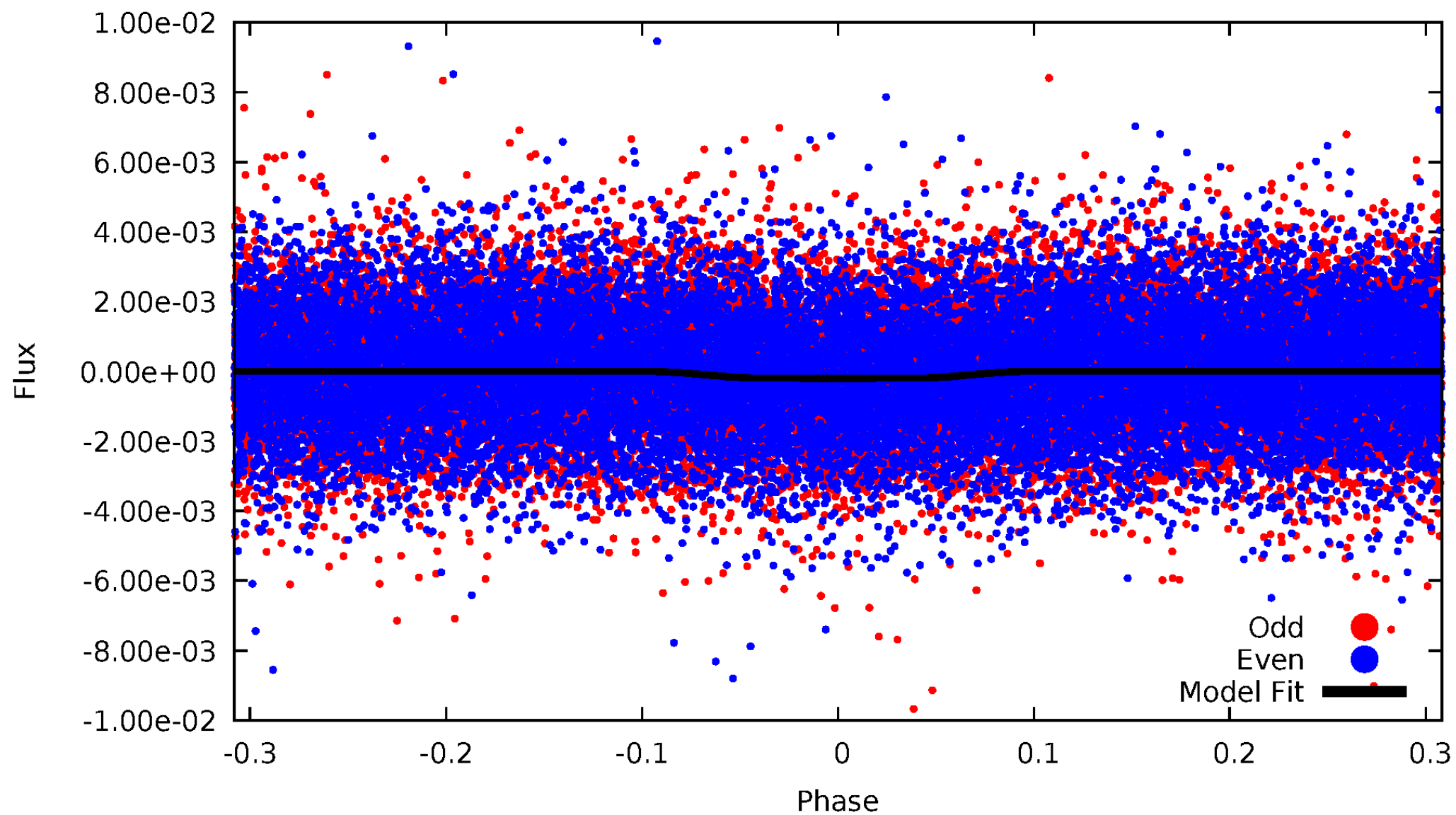


TCE 008517859-01



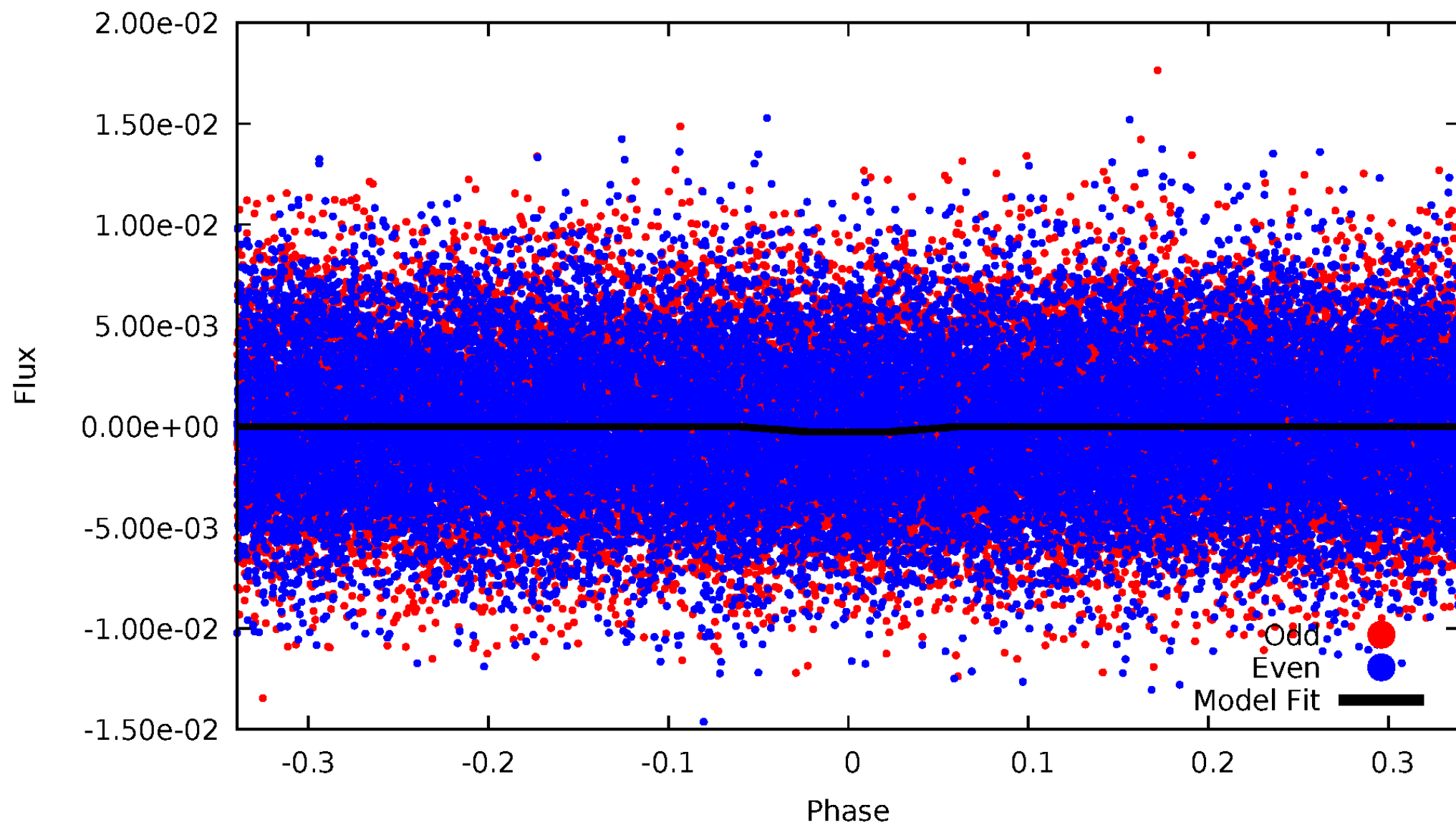
DV Odd/Even

TCE 008517859-01



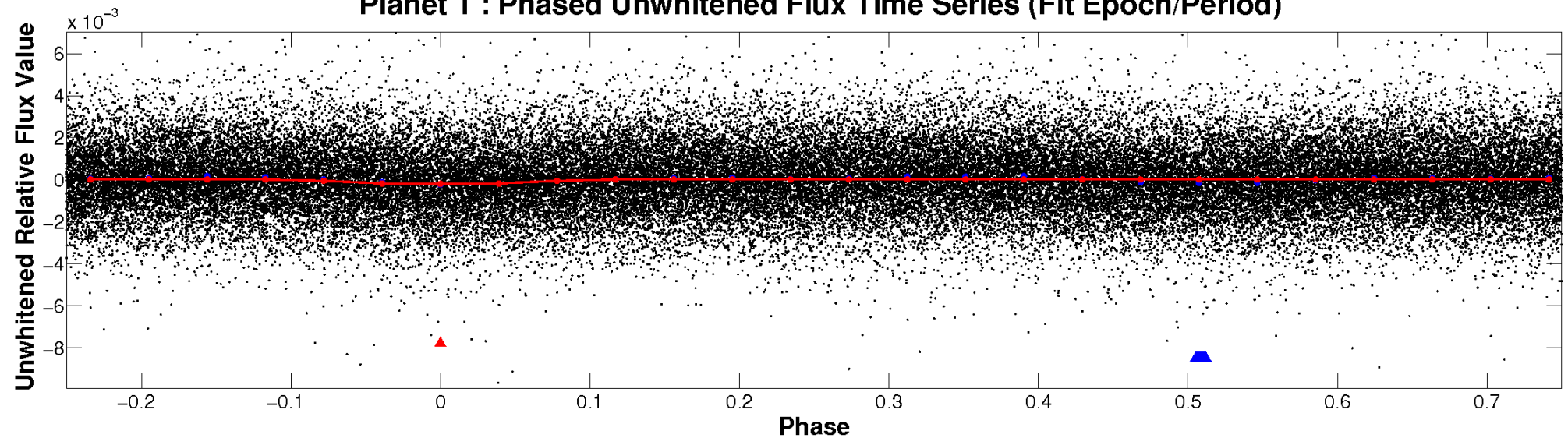
ALT Odd/Even

TCE 008517859-01

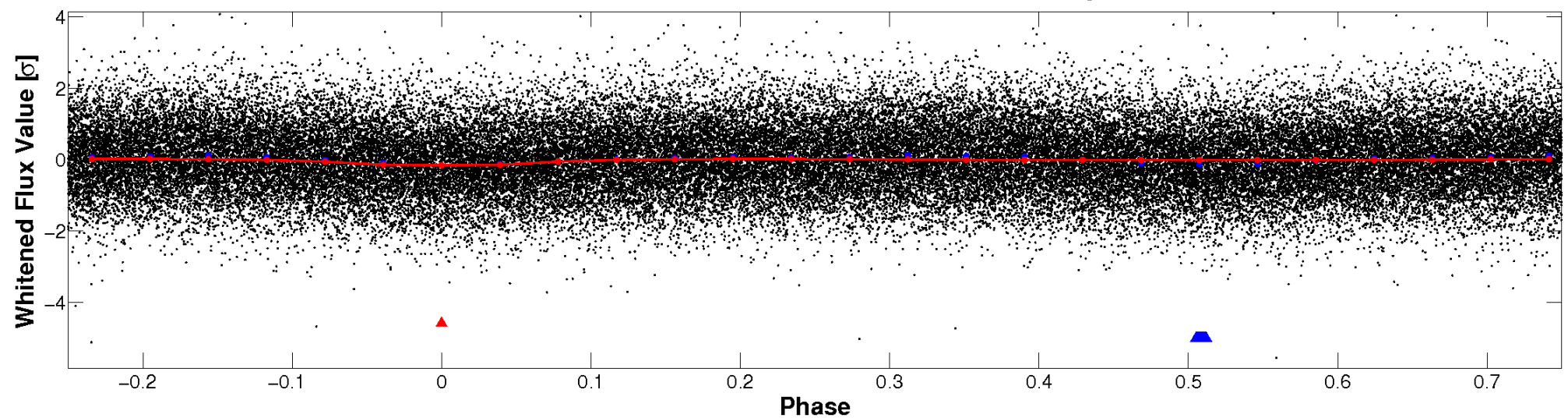


Non-Whitened Vs. Whitened Light Curve

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

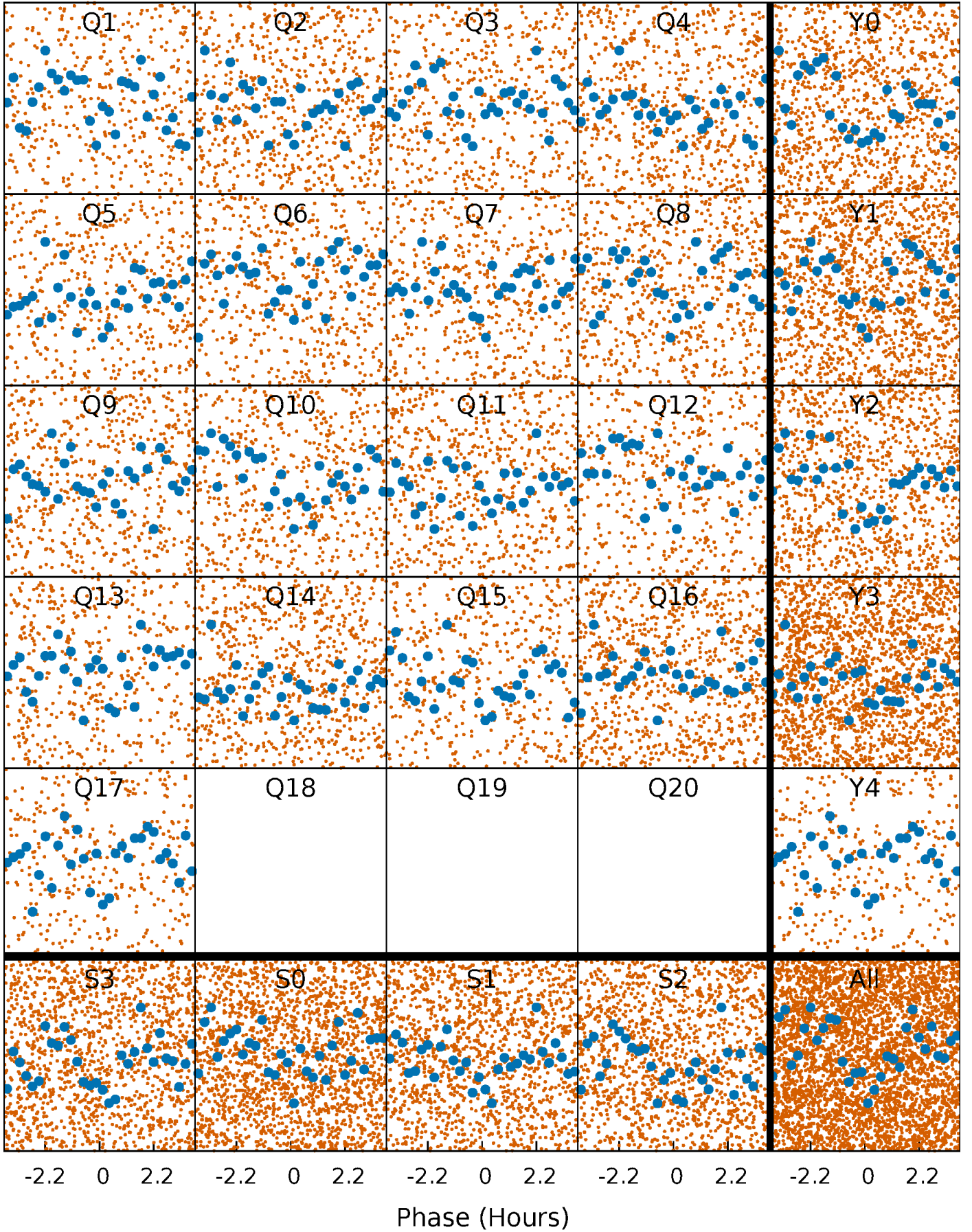


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



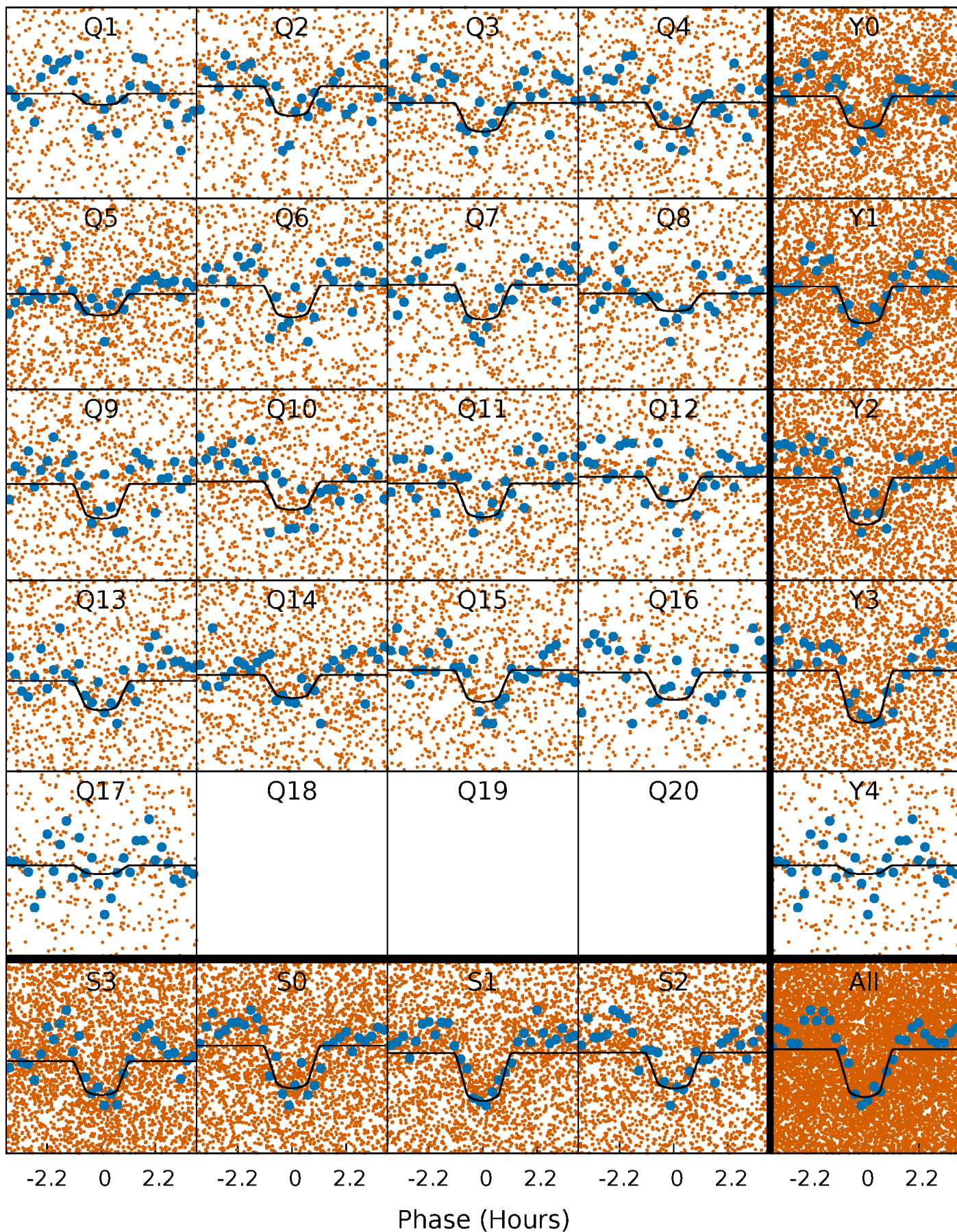
PDC Quarter-Phased Transit Curves

TCE 008517859-01 P= 0.523583 Days $T_0=131.795306$ (BKJD)



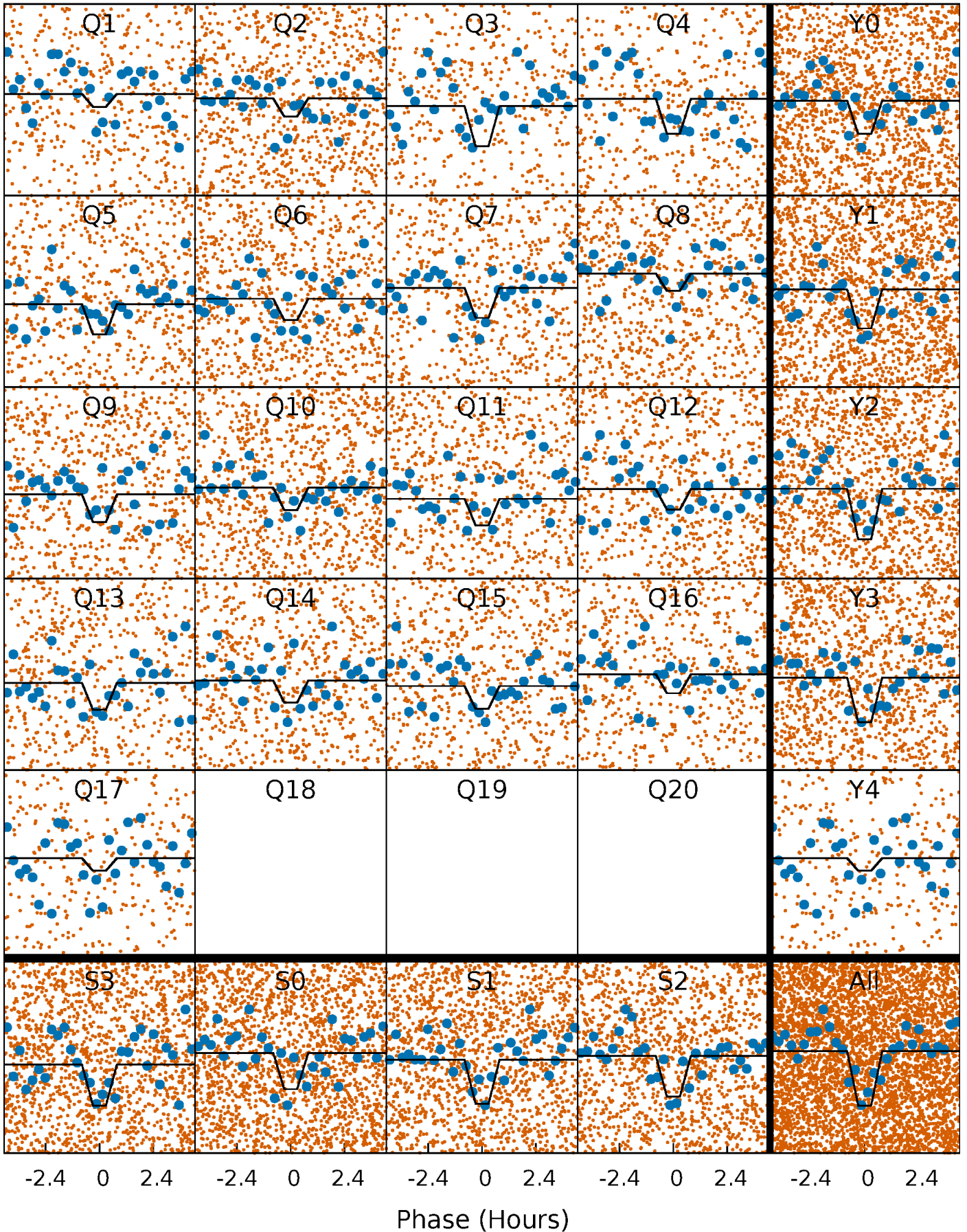
DV Quarter-Phased Transit Curves

TCE 008517859-01 P= 0.523583 Days $T_0=131.795306$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

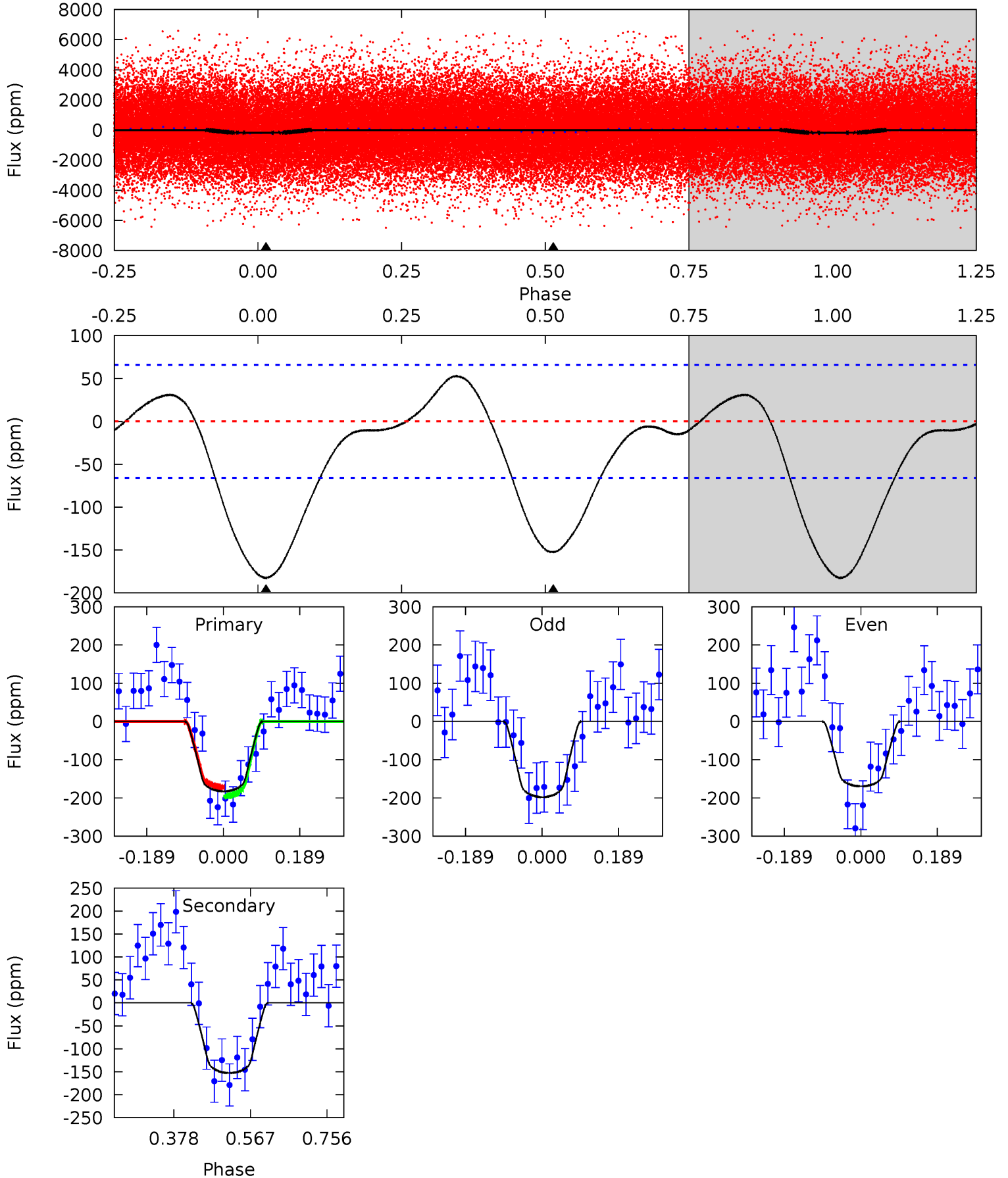
TCE 008517859-01 P= 0.523588 Days $T_0=131.792040$ (BKJD)



DV Model-Shift Uniqueness Test

008517859-01, $P = 0.523583$ Days, $E = 131.271723$ Days

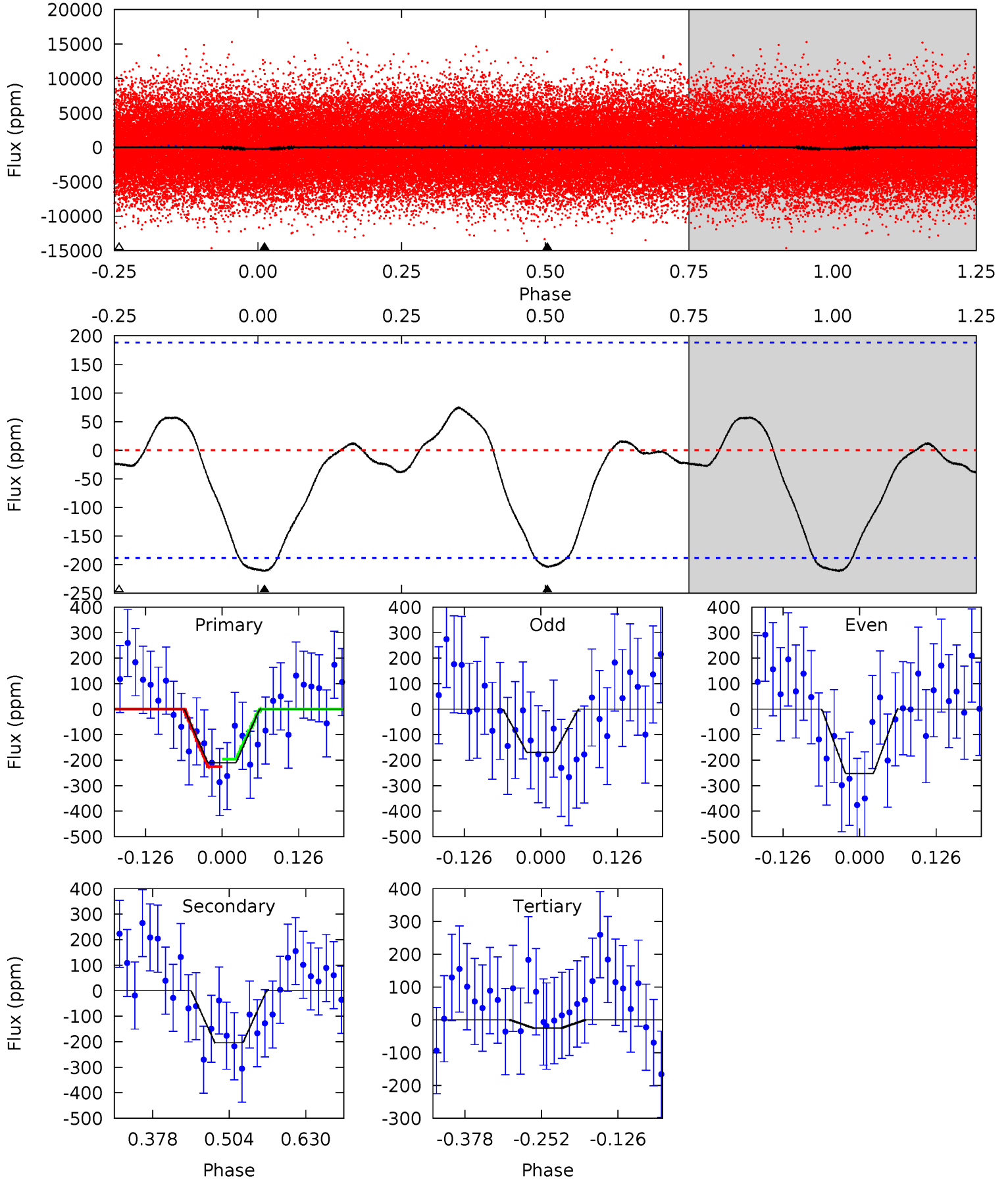
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
12.3	10.3	0	0	4.43	1.31	1.09	12.3	12.3	10.3	10.3	0.95	0.99	0.23	0.80



Alt Model-Shift Uniqueness Test

008517859-01, P = 0.523588 Days, E = 131.268452 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
5.07	4.90	0.60	0	4.52	1.53	0.76	4.46	5.07	4.30	4.90	0.99	0.77	0.26	0.35



Stellar Parameters For KIC 008517859

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	7209^{+230}_{-345}	$3.495^{+0.578}_{-0.068}$	$-0.120^{+0.250}_{-0.300}$	$4.232^{+0.422}_{-2.393}$	$2.040^{+0.071}_{-0.601}$	$0.038^{+0.331}_{-0.009}$
	+3%/-5%	+17%/-2%	+208%/-250%	+10%/-57%	+3%/-29%	+872%/-23%
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 008517859-01 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-153 ± 15	$5.86^{+3.88}_{-3.24}$	6884^{+544}_{-942}	5457^{+4184}_{-9660}	$0.618^{+2.258}_{-0.385}$
Alt.	-204 ± 42	$6.38^{+4.01}_{-3.10}$	6928^{+488}_{-1014}	5631^{+3441}_{-9549}	$0.686^{+1.875}_{-0.427}$

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 $A_{obs} \gg 1.0$

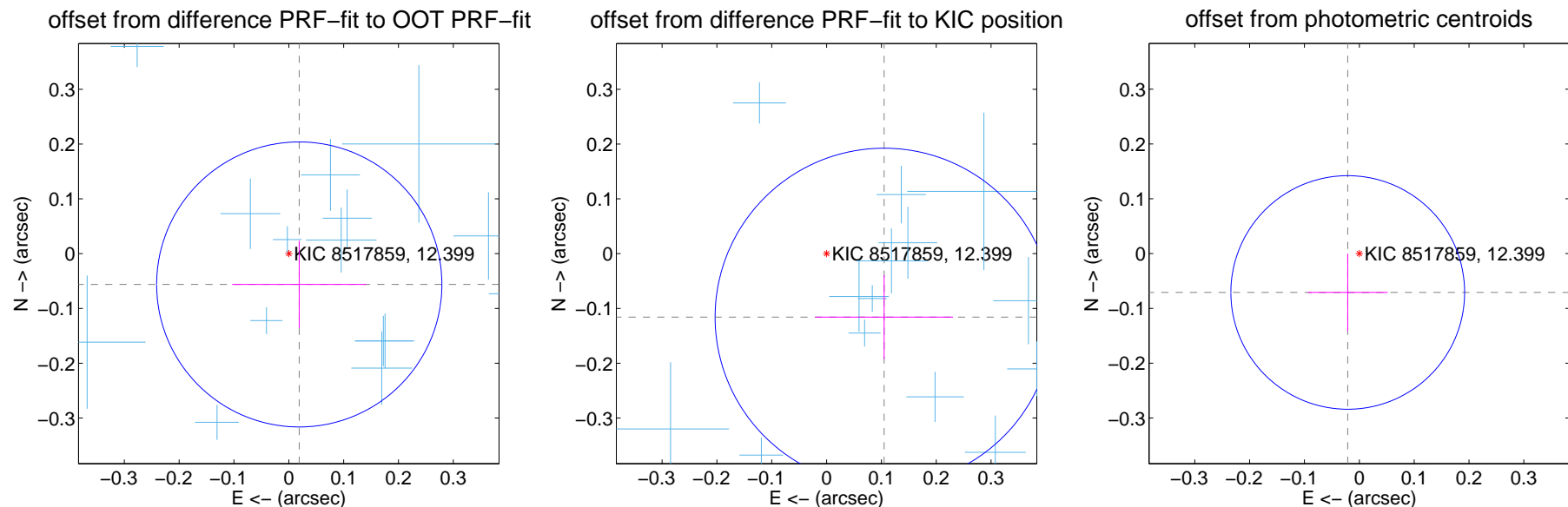
DV Centroid Data

Supplemental centroid analysis for 008517859-01. Kepler magnitude: 12.40. Transit SNR 13.46

There are 17 quarters with good PRF difference image offsets

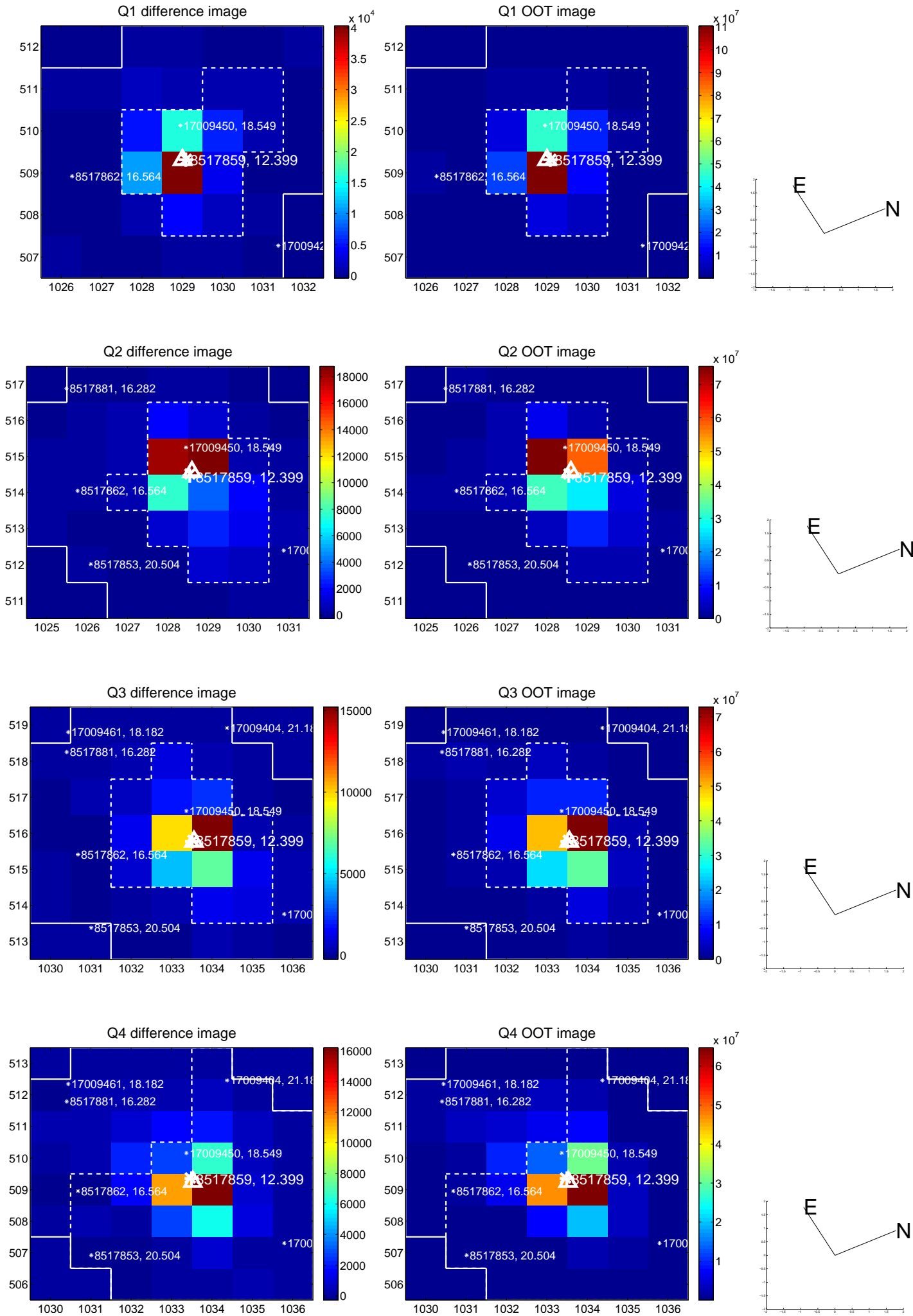
The direct PRF centroid is offset from the target star catalog position by about 0.14 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.059 ± 0.087	0.68	-0.019 ± 0.122	-0.056 ± 0.080
PRF-fit source offset from KIC position	0.156 ± 0.103	1.52	-0.105 ± 0.126	-0.116 ± 0.077
photometric centroid source offset	0.07 ± 0.07	1.04	0.02 ± 0.07	-0.07 ± 0.07

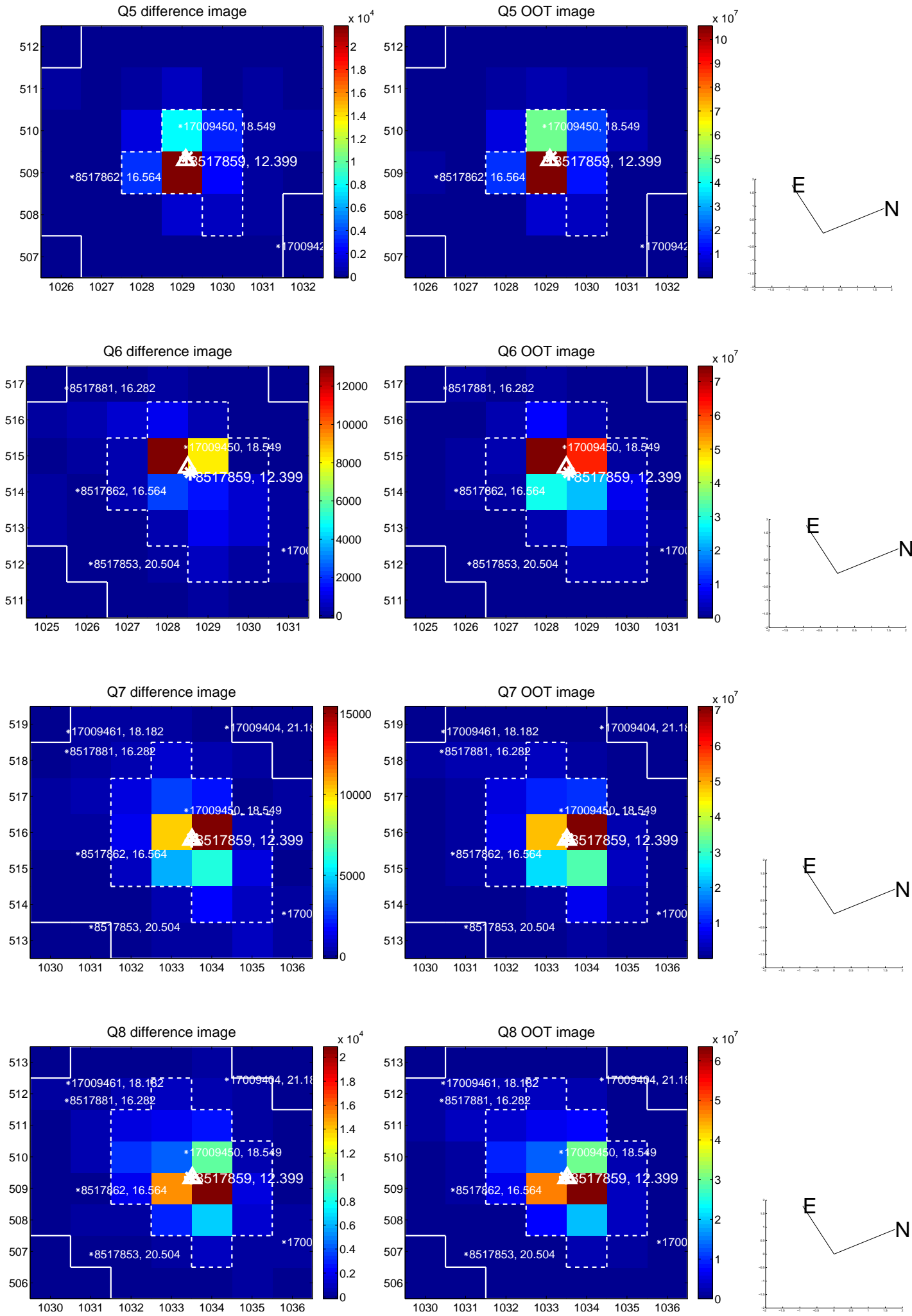


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

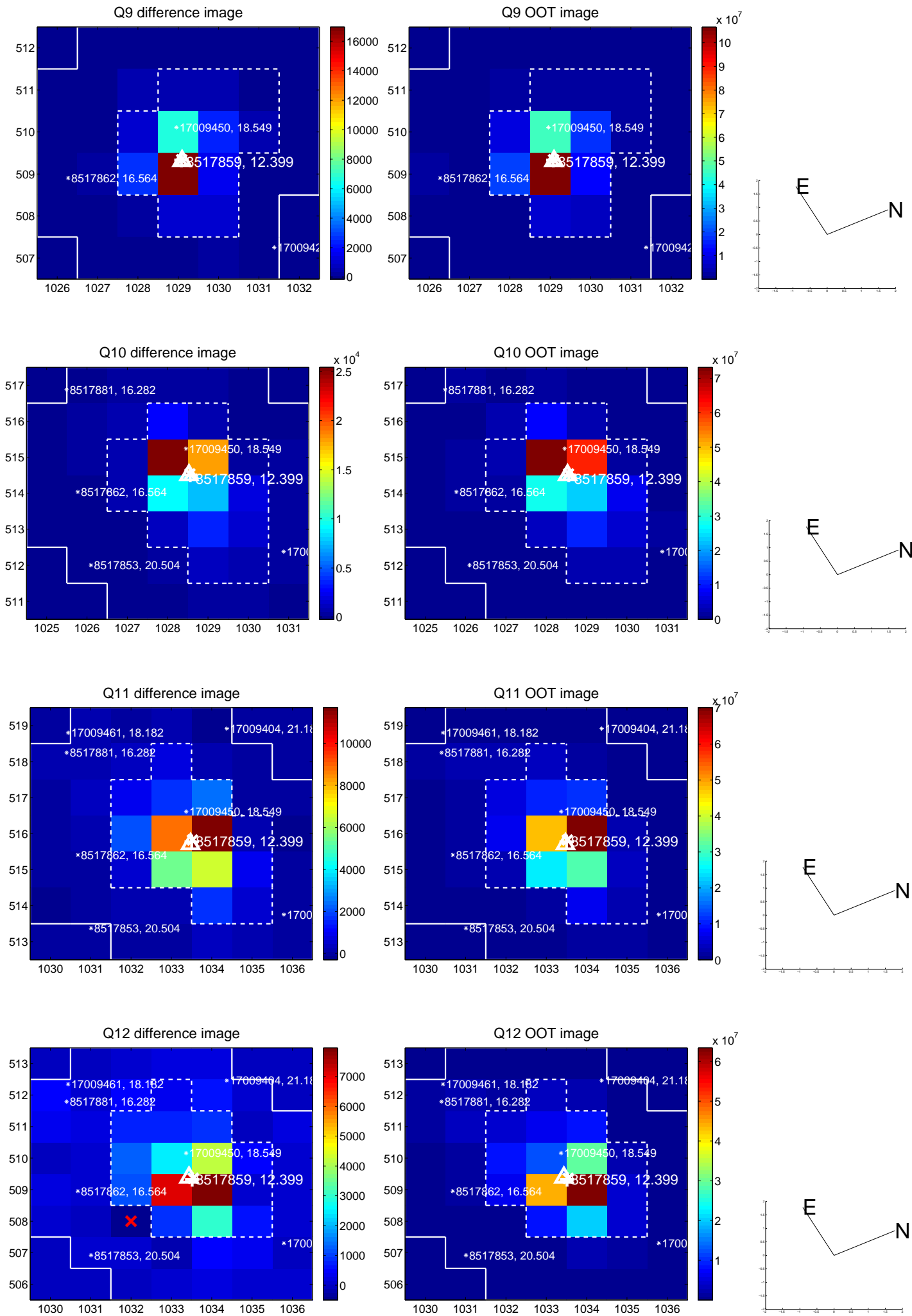
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



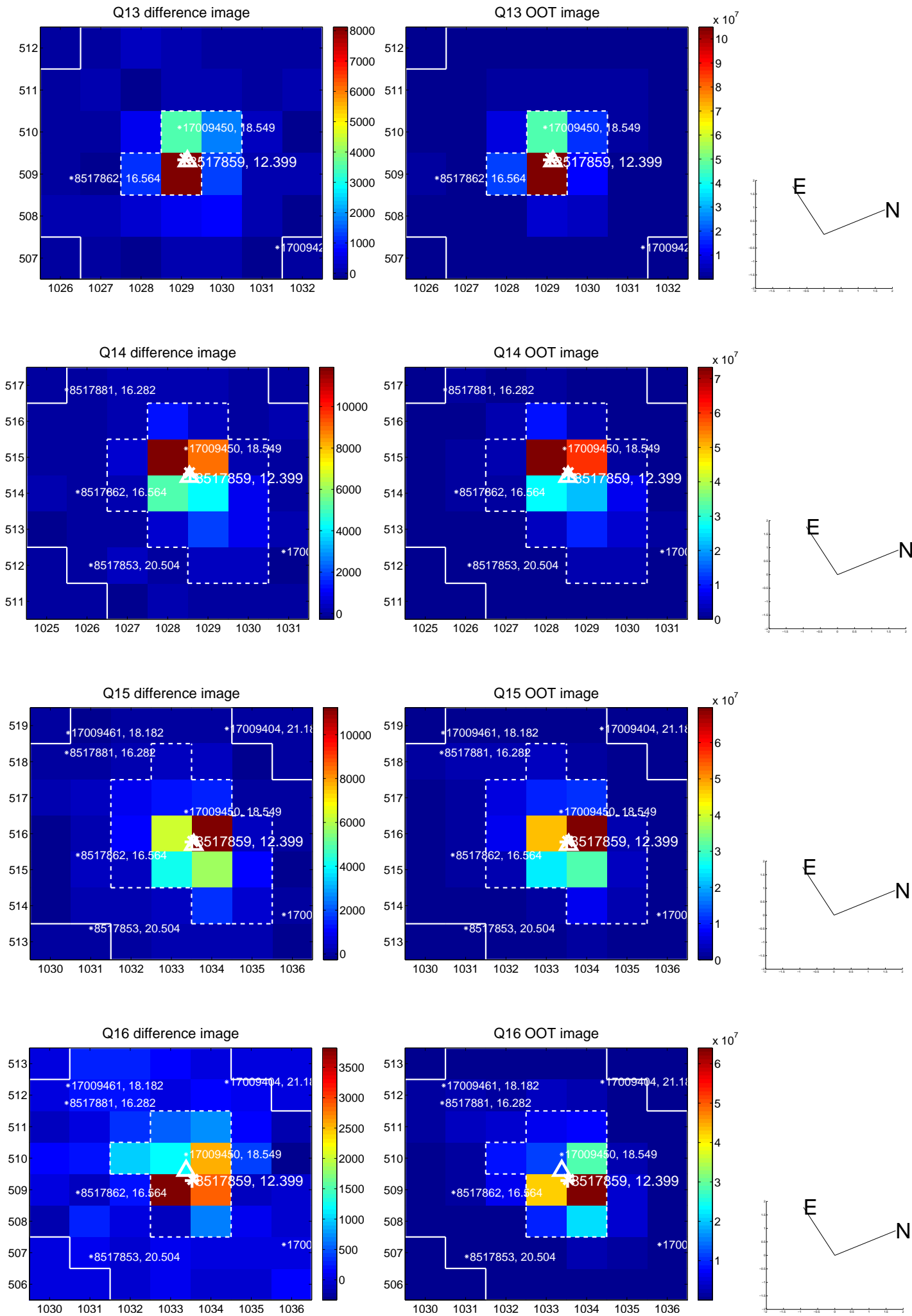
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



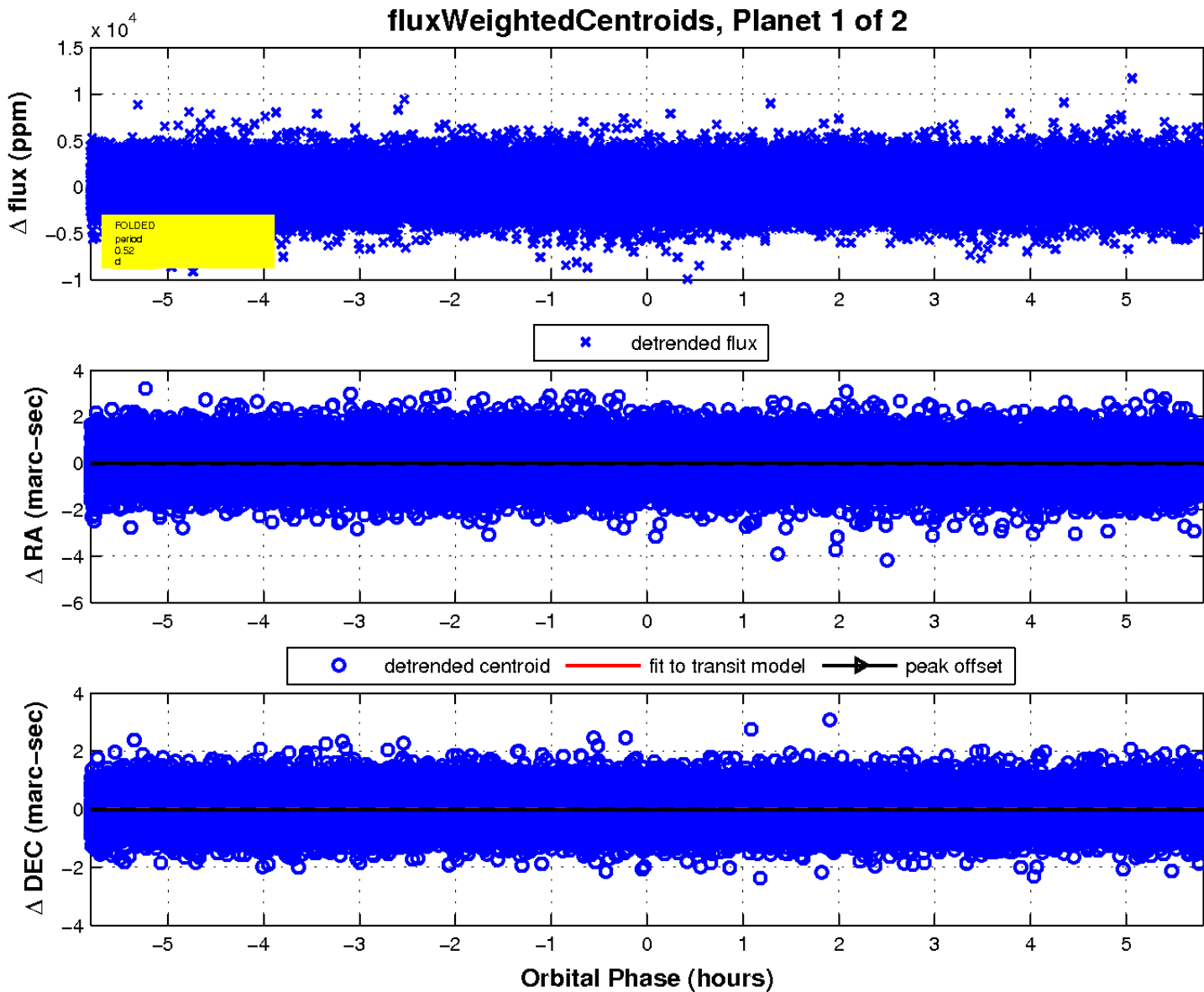
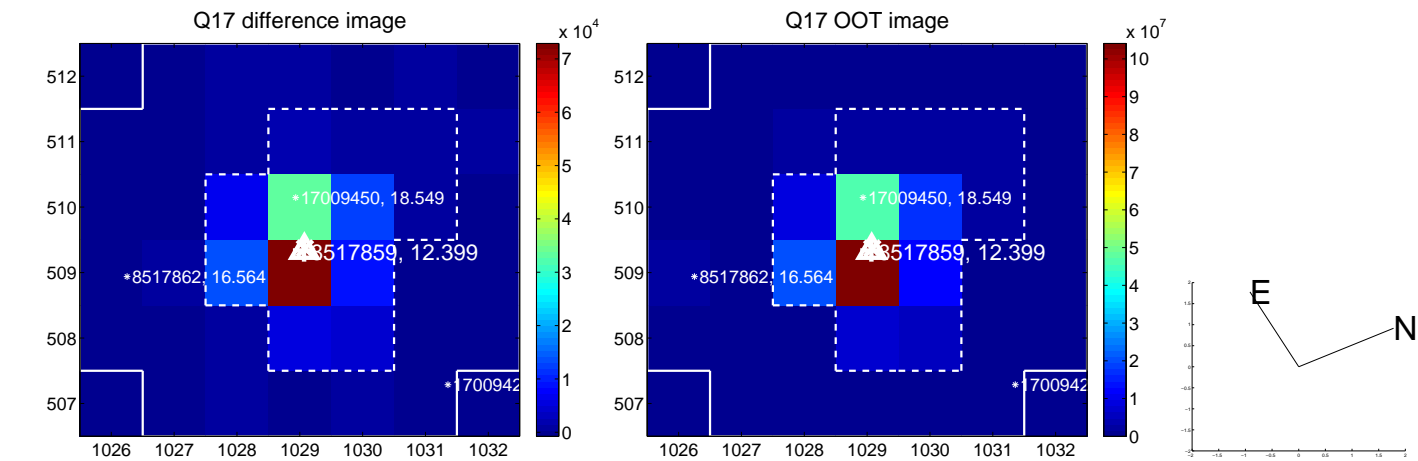
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

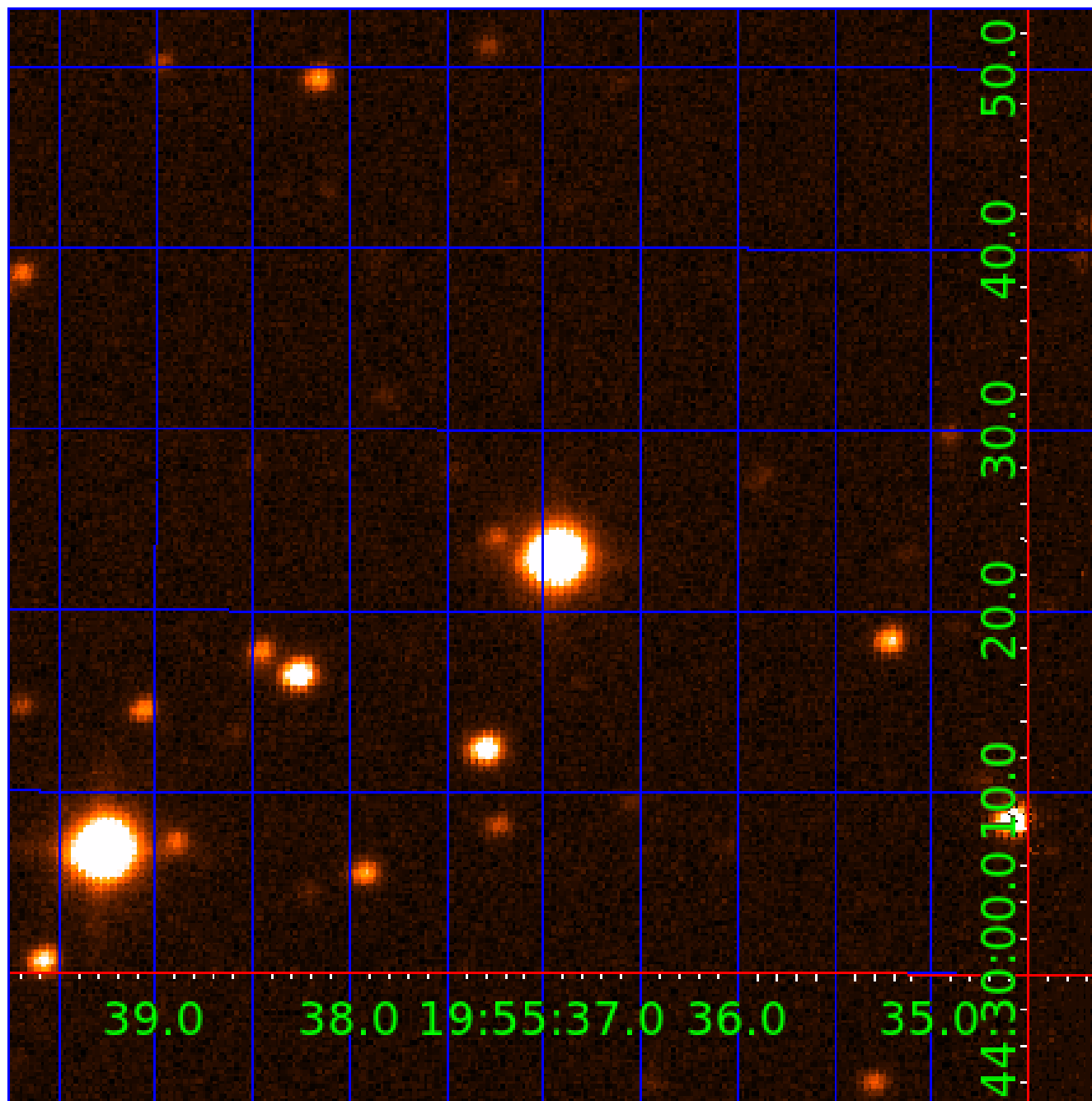


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 008517859

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})
008517859-01	OBS	No	0.523583	131.795306	201.8	1.936	13.6	13.5	4.23	7209	7.01	0.00
008517859-02	OBS	No	0.523585	131.536265	199.5	1.671	11.7	12.0	4.23	7209	6.05	0.00

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008517859-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT
008517859-02	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—SAME_NTL_PERIOD

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

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

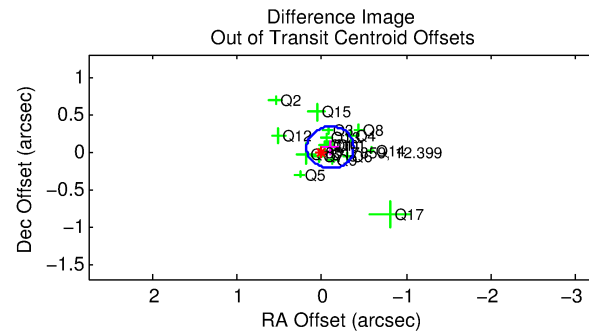
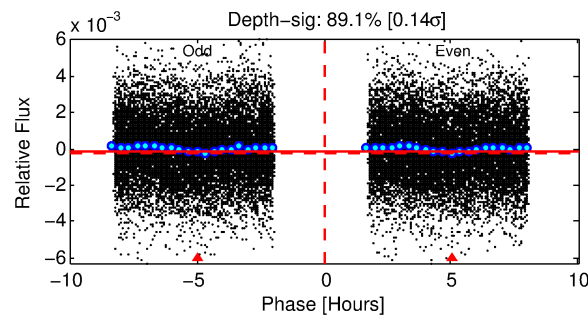
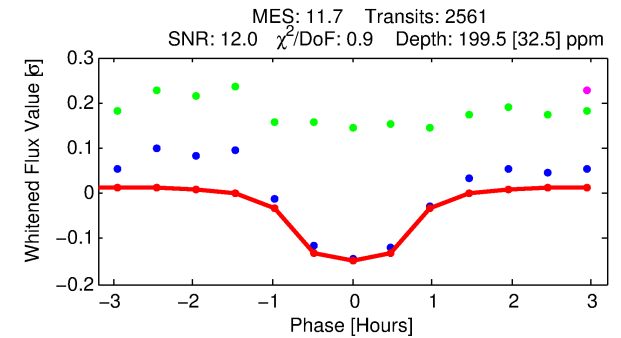
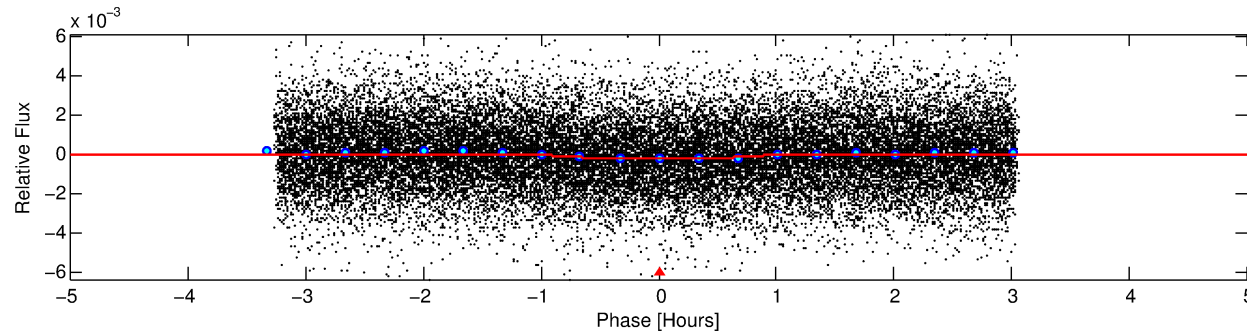
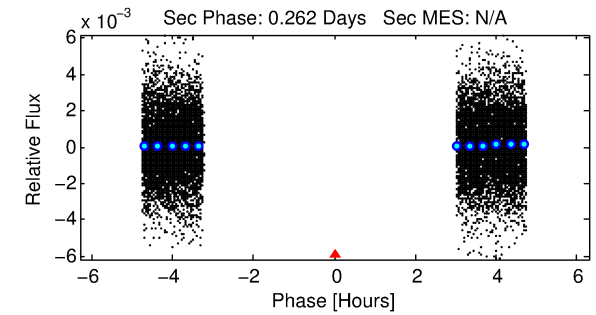
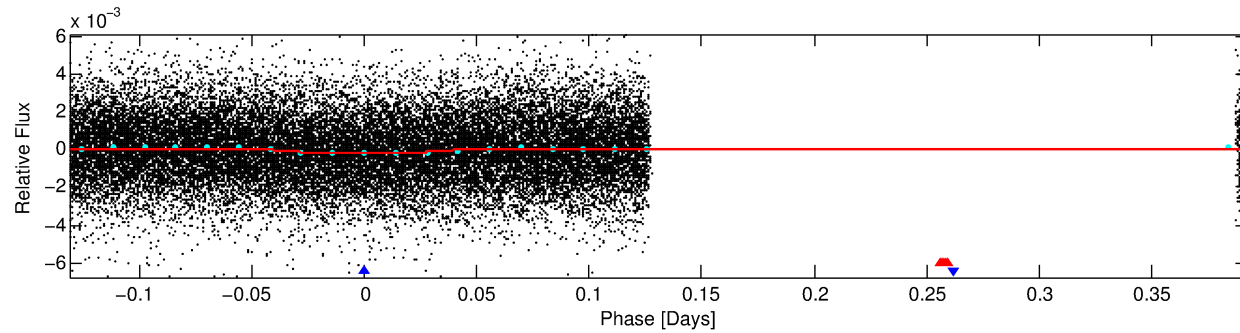
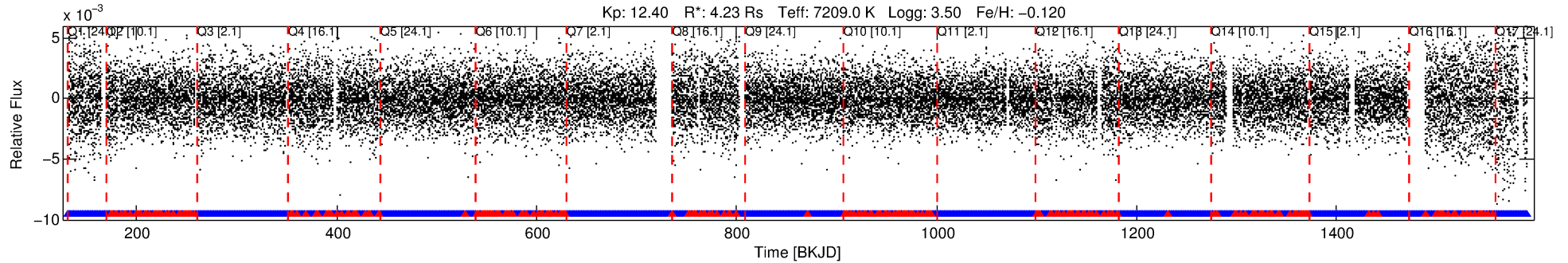
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 008517859-02

No Significant Match Found

DV One-Page Summary

KIC: 8517859 Candidate: 2 of 2 Period: 0.524 d



DV Fit Results:

Period = 0.52358 [0.00001] d
Epoch = 131.5363 [0.0025] BKJD
Rp/R* = 0.0131 [0.0129]
a/R* = 2.49 [11.32]
b = 0.08 [66.23]
Seff = N/A
Teq = N/A
Rp = 6.05 [6.88] Re
a = N/A

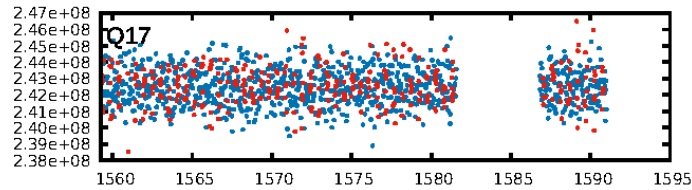
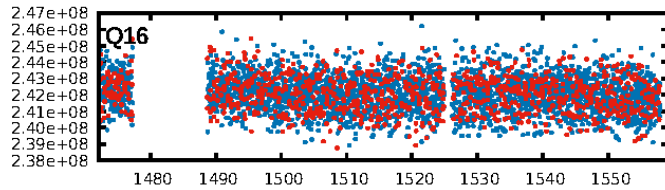
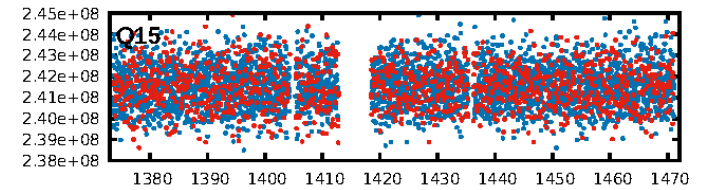
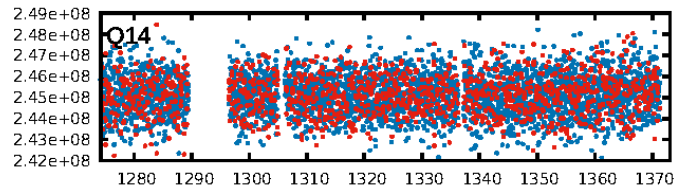
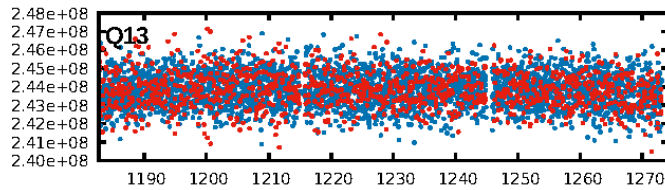
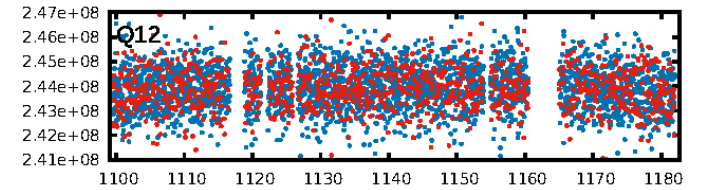
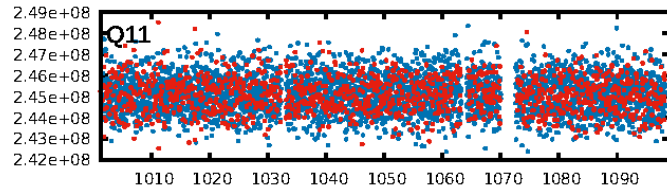
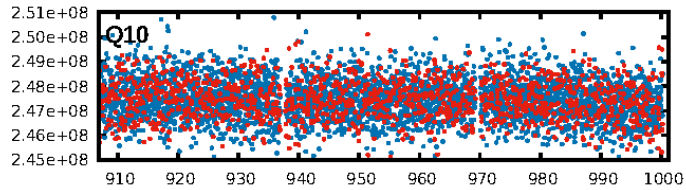
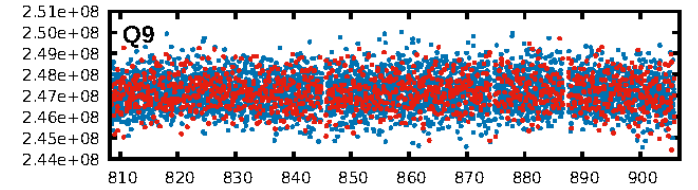
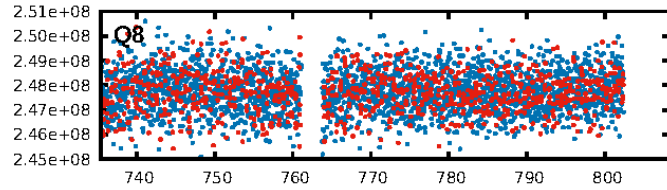
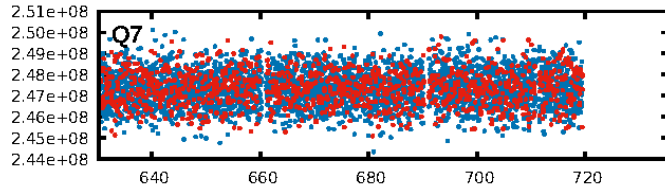
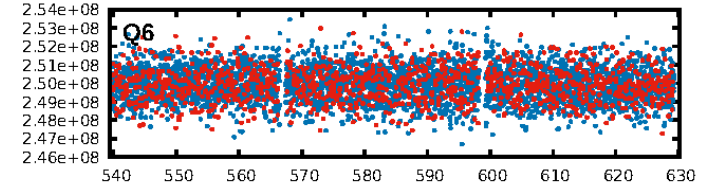
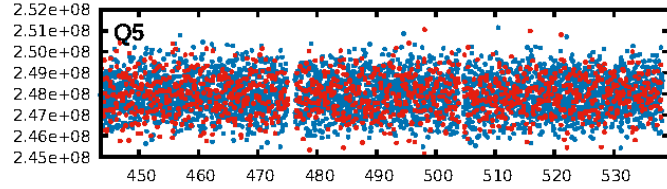
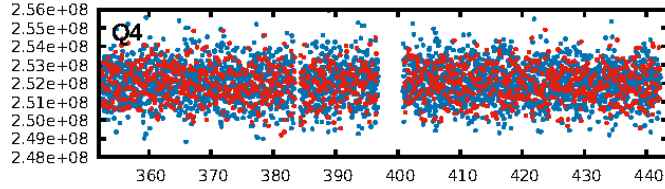
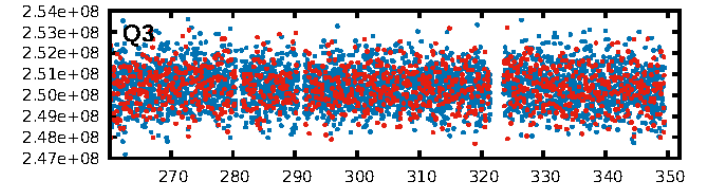
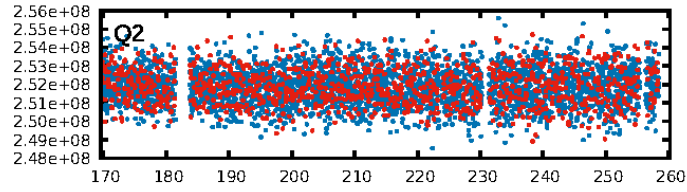
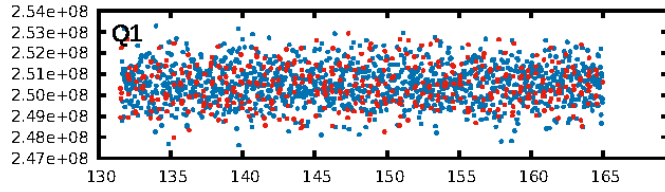
DV Diagnostic Results:

ShortPeriod-sig: 0.0% [0.00σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 2.91e-73
RollingBand-fgt: 0.89 [2189/2446]
GhostDiagnostic-chr: 0.8201
Centroid-sig: 0.0%
Centroid-so: 0.218 arcsec [2.84σ]
OotOffset-rm: 0.117 arcsec [1.25σ]
KicOffset-rm: 0.164 arcsec [1.44σ]
OotOffset-st: 4/4/4/5 [17]
KicOffset-st: 4/4/4/5 [17]
DiffImageQuality-fgm: 1.00 [17/17]
DiffImageOverlap-fno: 0.00 [0/17]

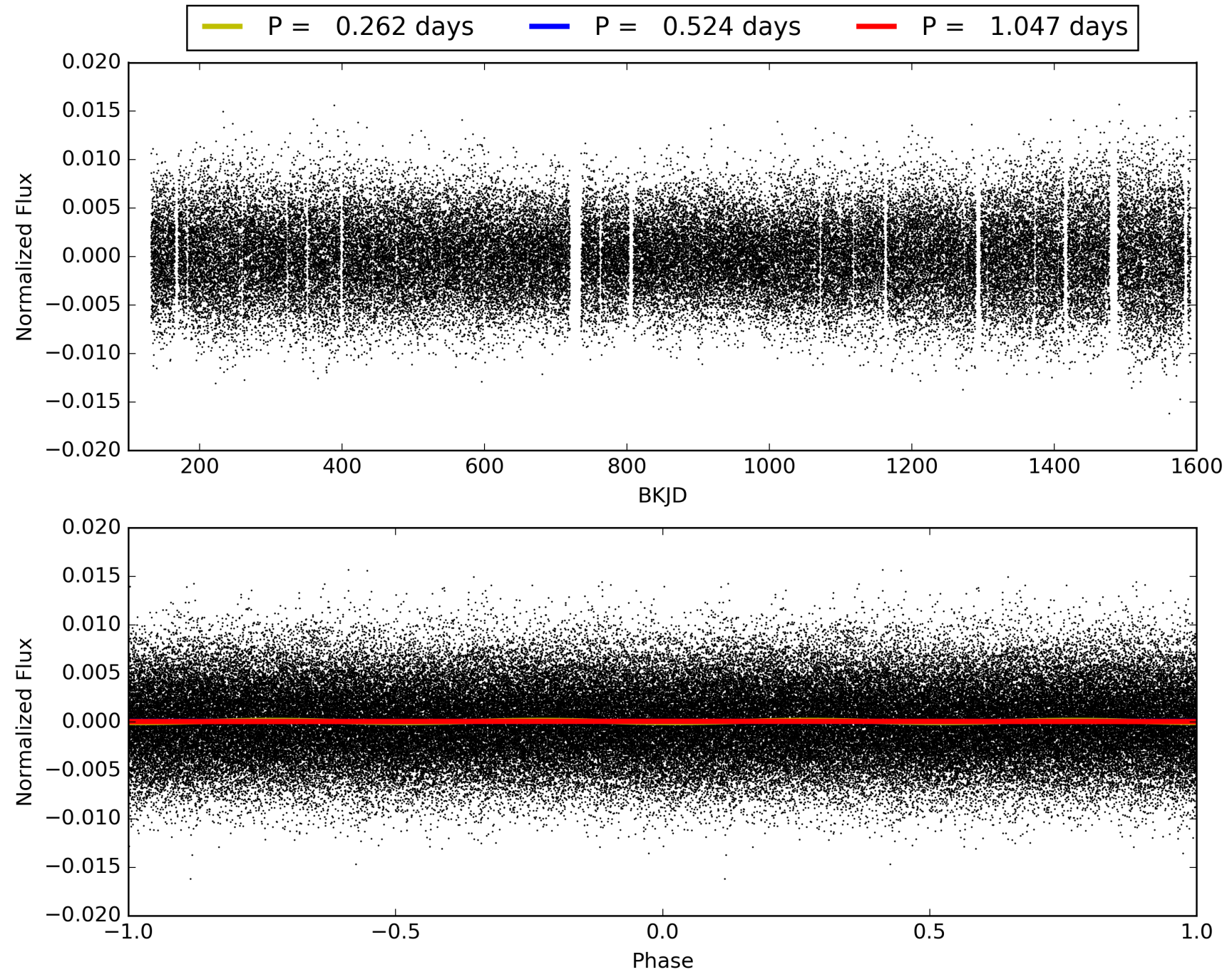
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 11:30:47 Z

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

TCE 008517859-02, PDC Light Curves

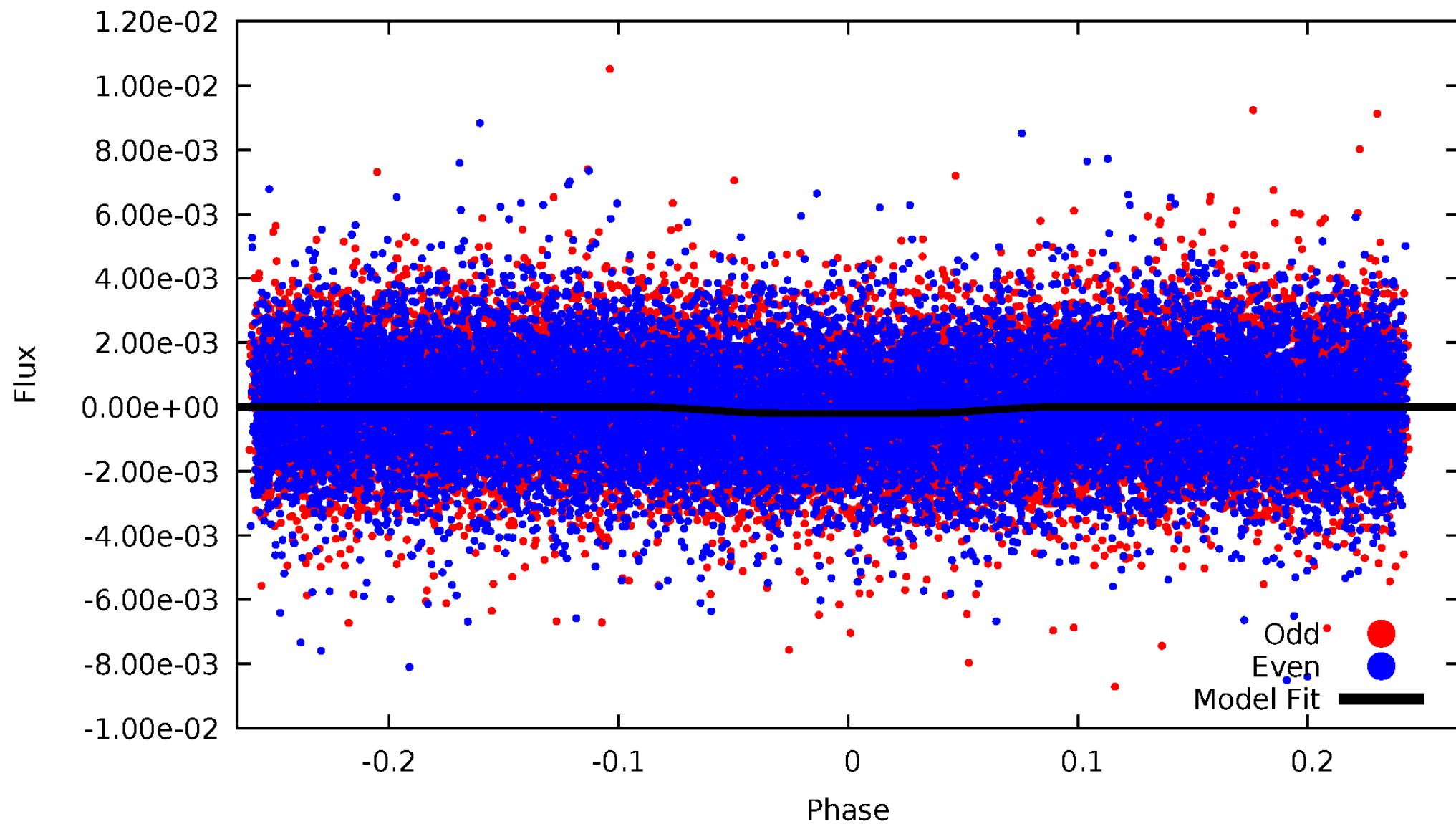


TCE 008517859-02



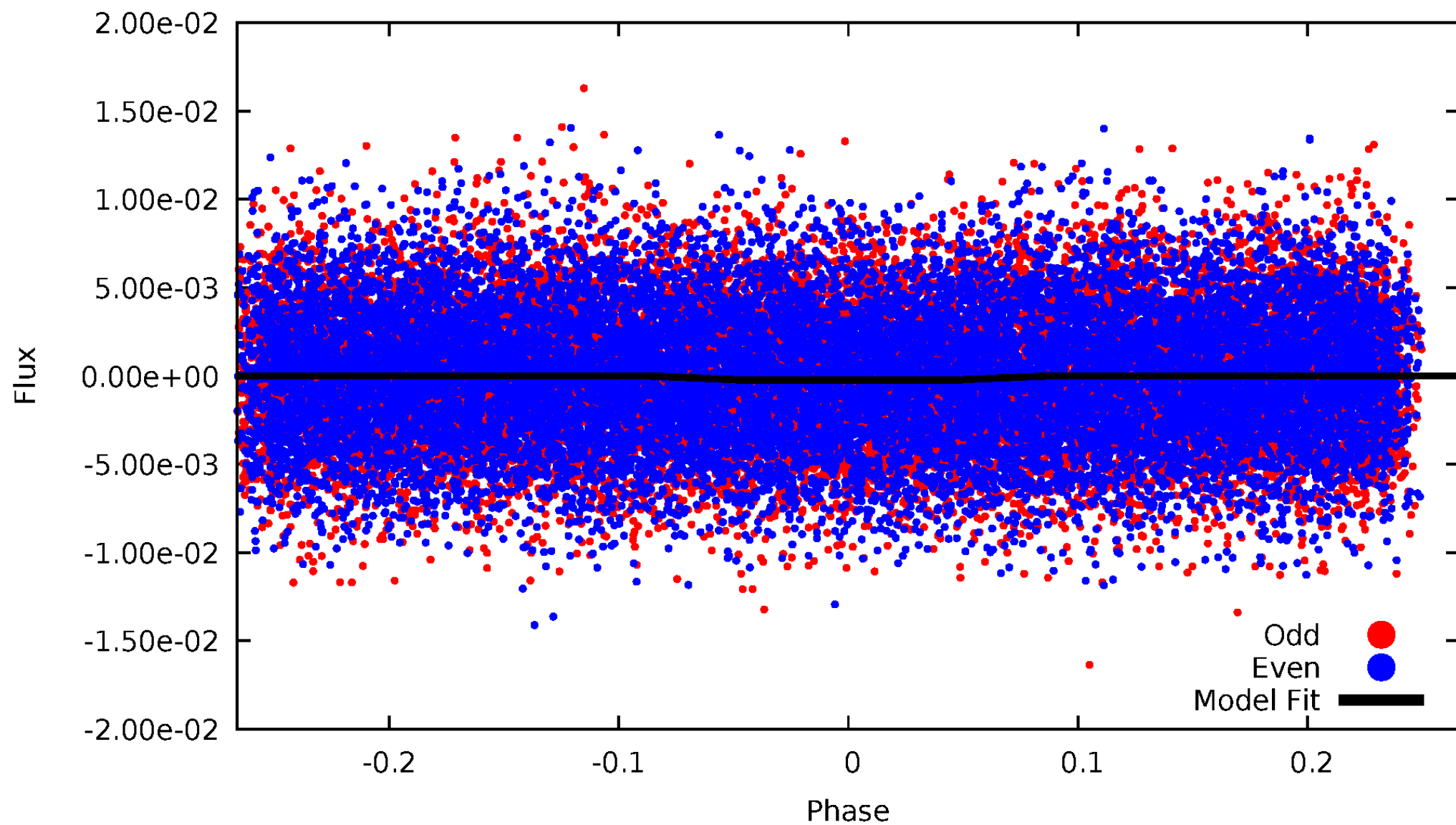
DV Odd/Even

TCE 008517859-02



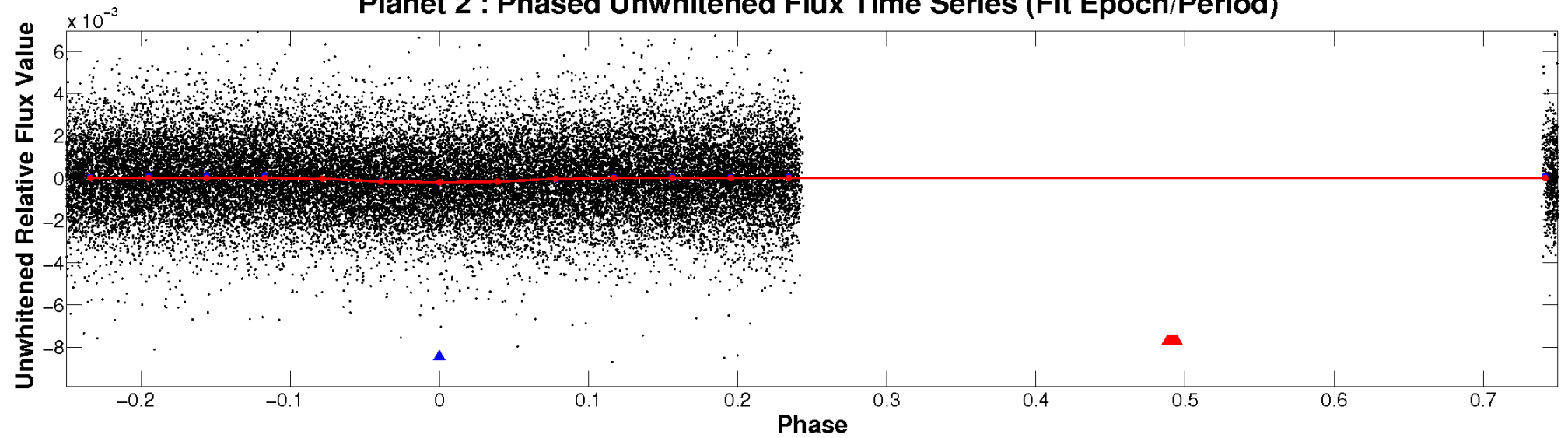
ALT Odd/Even

TCE 008517859-02

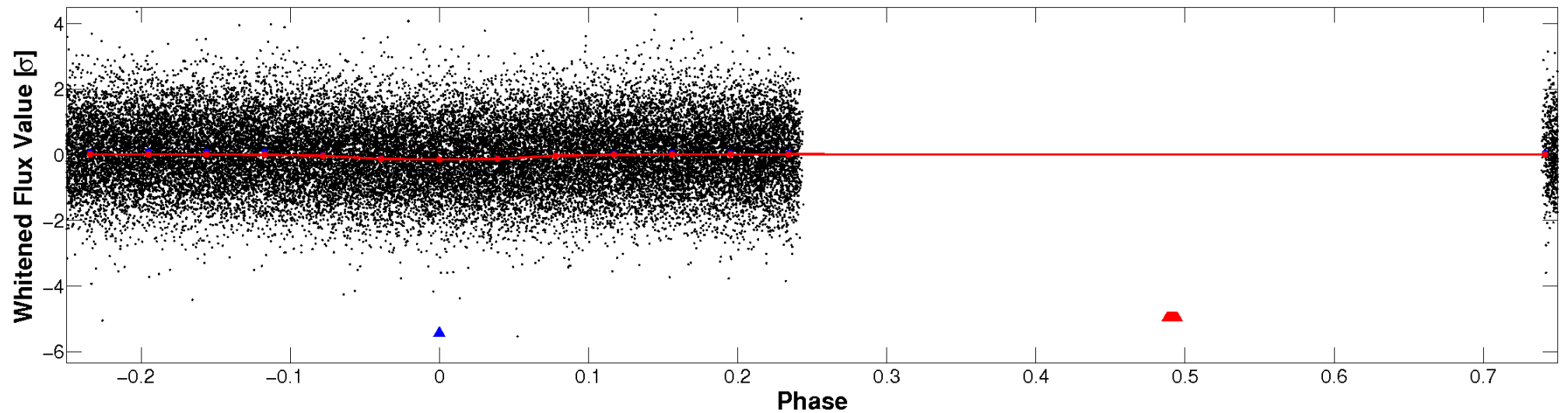


Non-Whitened Vs. Whitened Light Curve

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

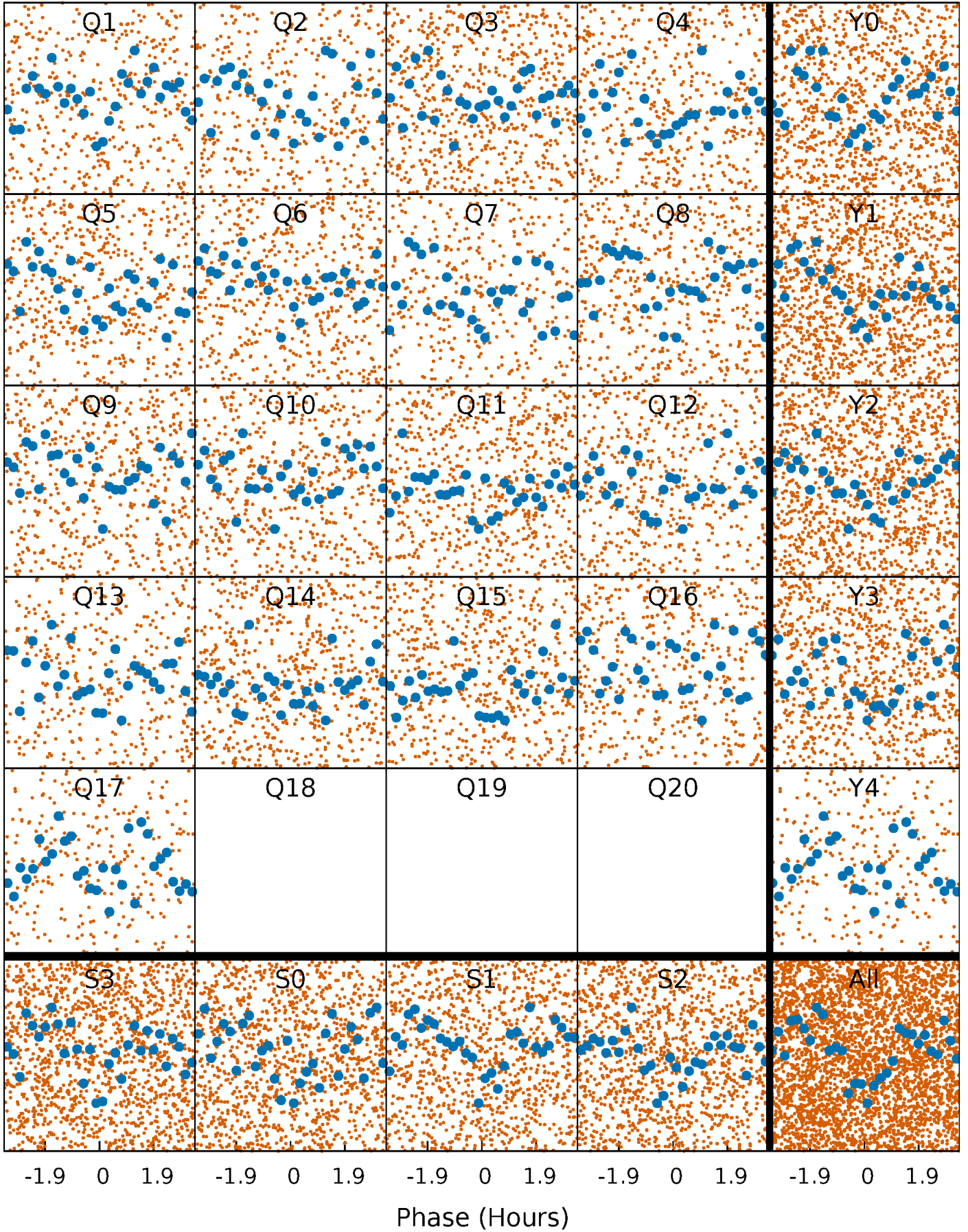


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



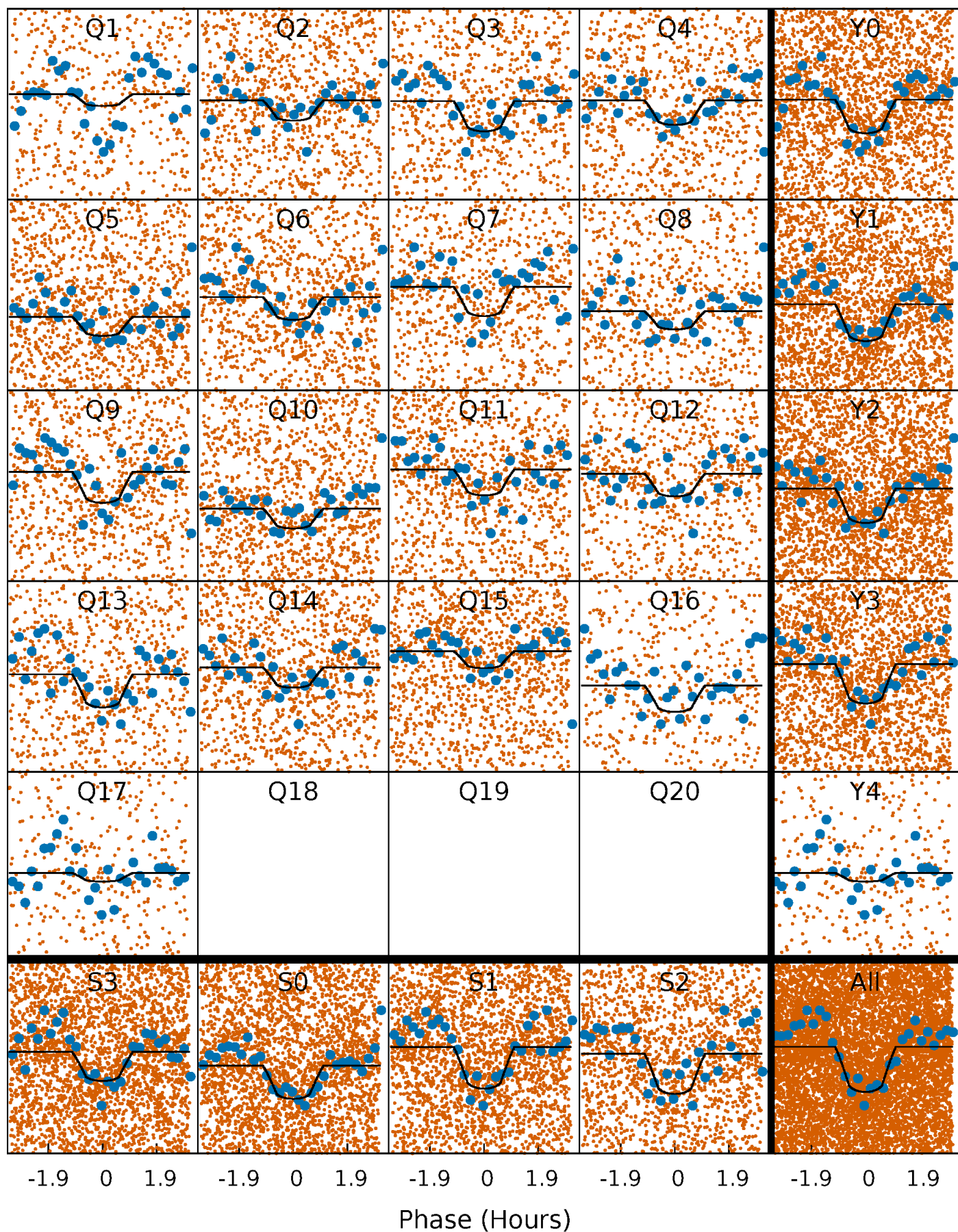
PDC Quarter-Phased Transit Curves

TCE 008517859-02 P= 0.523585 Days $T_0=131.536265$ (BKJD)



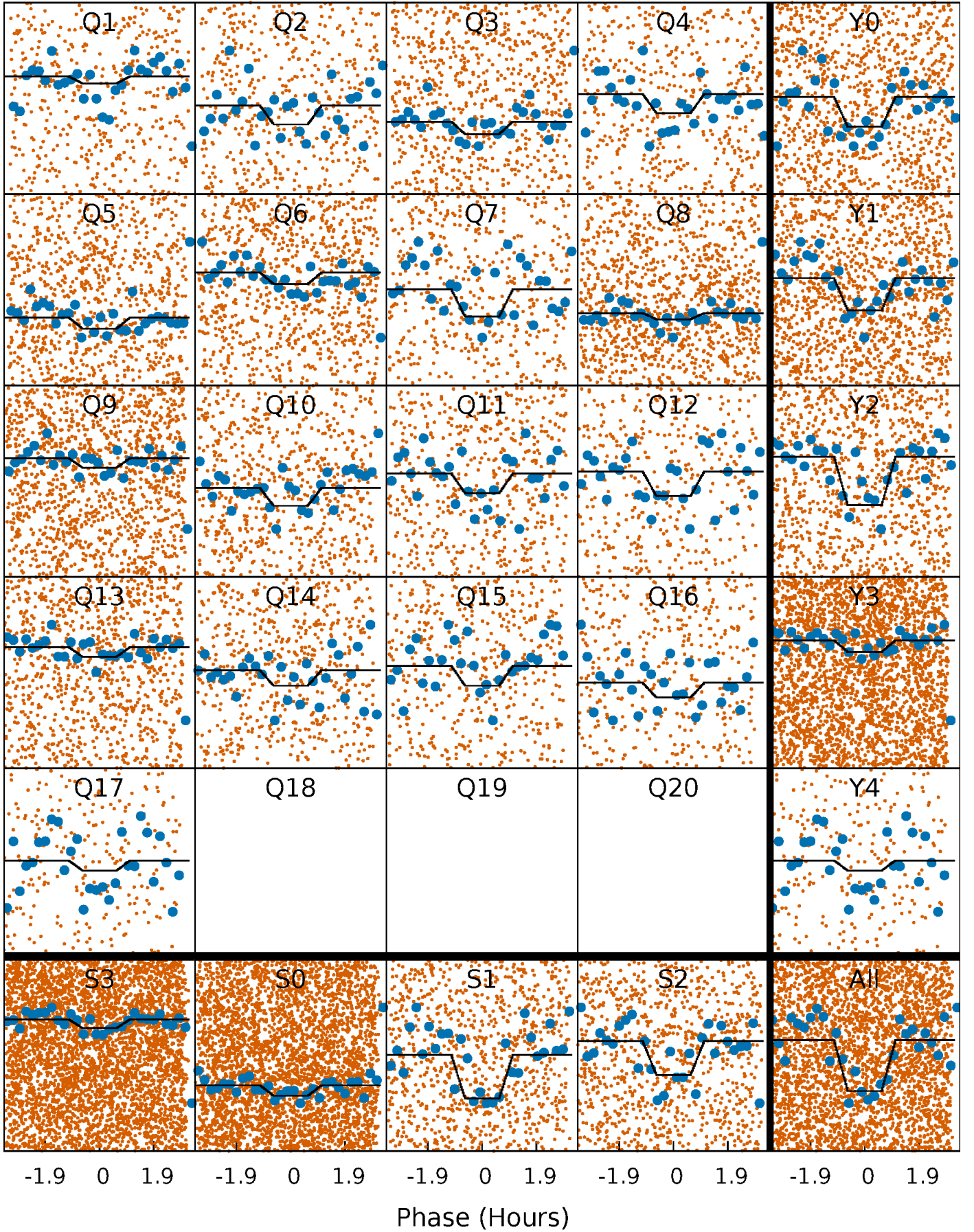
DV Quarter-Phased Transit Curves

TCE 008517859-02 P= 0.523585 Days $T_0=131.536265$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

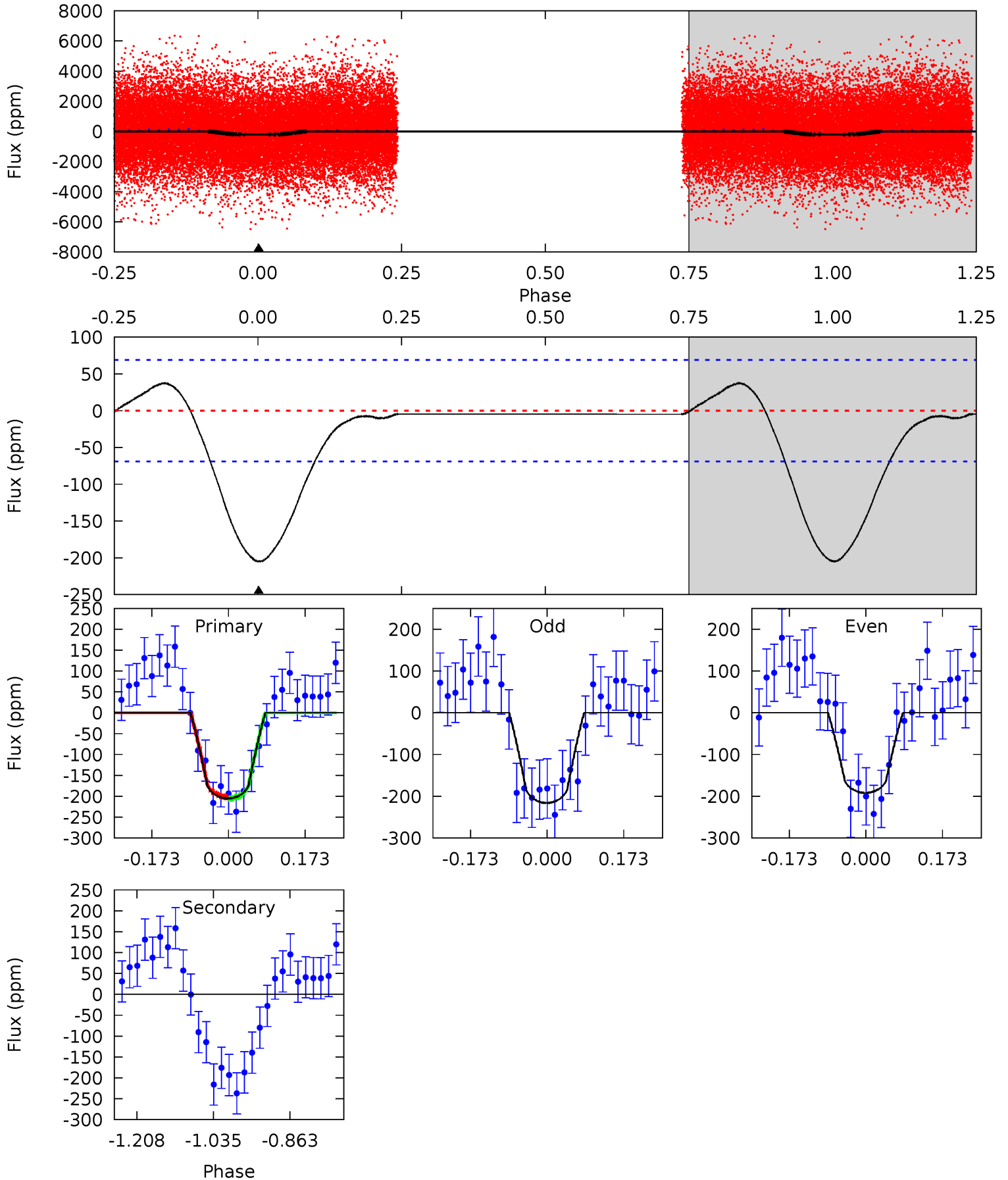
TCE 008517859-02 P= 0.523588 Days $T_0=131.532921$ (BKJD)



DV Model-Shift Uniqueness Test

008517859-02, P = 0.523585 Days, E = 131.012680 Days

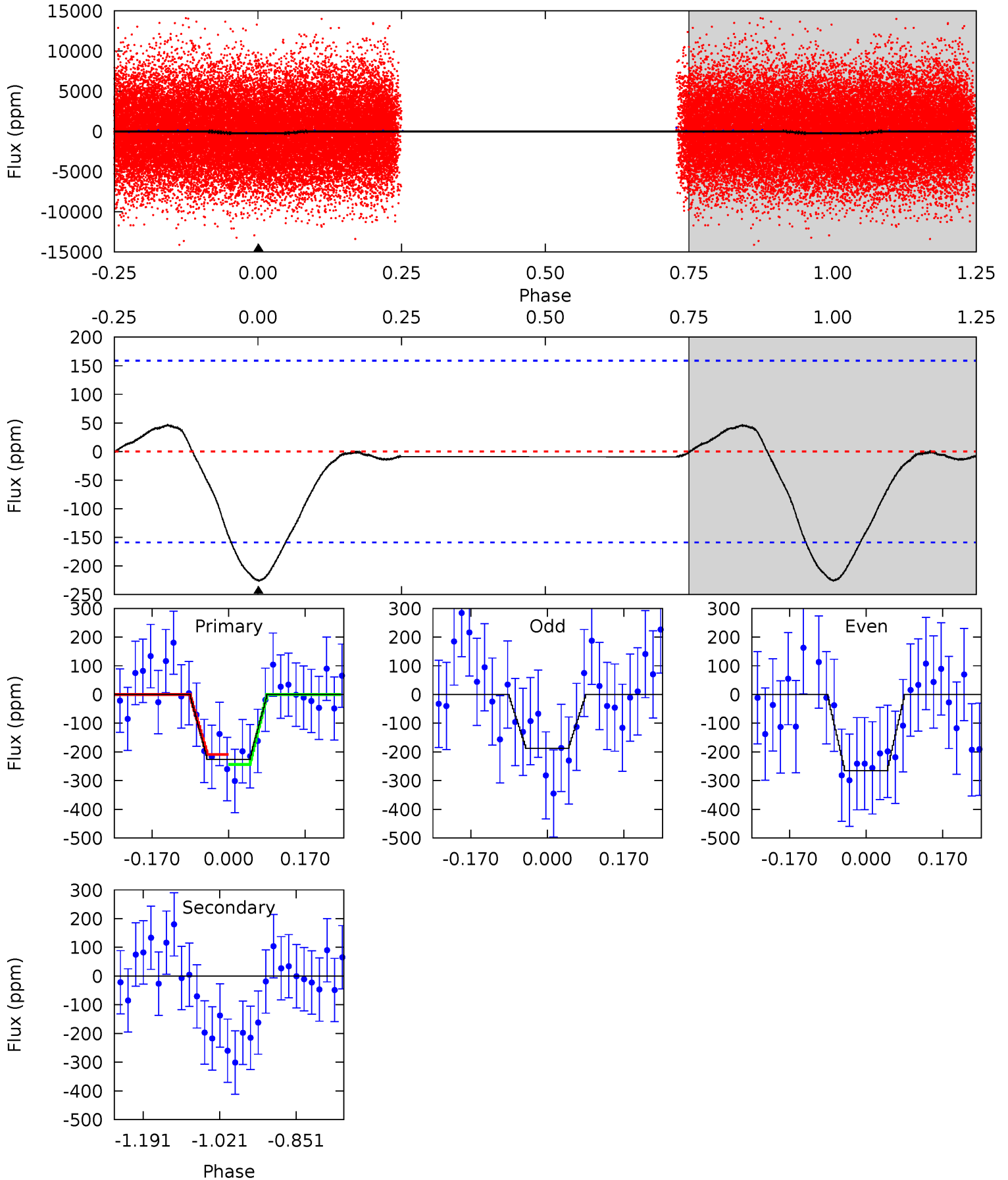
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
13.2	0	0	0	4.45	1.36	0.97	13.2	13.2	0	0	0.79	1.11	0.16	0.12



Alt Model-Shift Uniqueness Test

008517859-02, P = 0.523588 Days, E = 131.009333 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
6.35	0	0	0	4.45	1.37	0.51	6.35	6.35	0	0	1.09	1.12	0.17	0.48



Stellar Parameters For KIC 008517859

	$T_{\text{eff}}(K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	7209^{+230}_{-345}	$3.495^{+0.578}_{-0.068}$	$-0.120^{+0.250}_{-0.300}$	$4.232^{+0.422}_{-2.393}$	$2.040^{+0.071}_{-0.601}$	$0.038^{+0.331}_{-0.009}$
	+3%/-5%	+17%/-2%	+208%/-250%	+10%/-57%	+3%/-29%	+872%/-23%
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 008517859-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	0 ± 15	$6.03^{+5.63}_{-3.89}$	6915^{+527}_{-1027}	-5630^{+1001}_{-529}	$-0.002^{+0.087}_{-0.092}$
Alt.	0 ± 36	$6.55^{+5.99}_{-4.01}$	6864^{+538}_{-956}	-5536^{+1403}_{-774}	$-0.002^{+0.202}_{-0.176}$

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 $A_{obs} \gg 1.0$

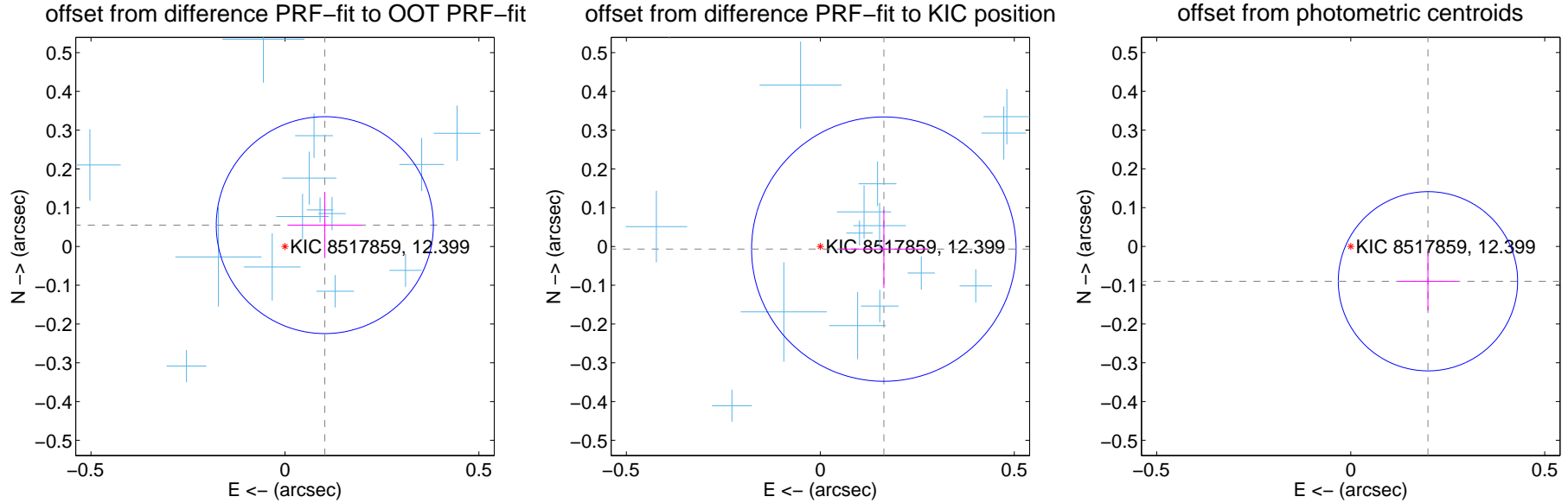
DV Centroid Data

Supplemental centroid analysis for 008517859-02. Kepler magnitude: 12.40. Transit SNR 11.99

There are 17 quarters with good PRF difference image offsets

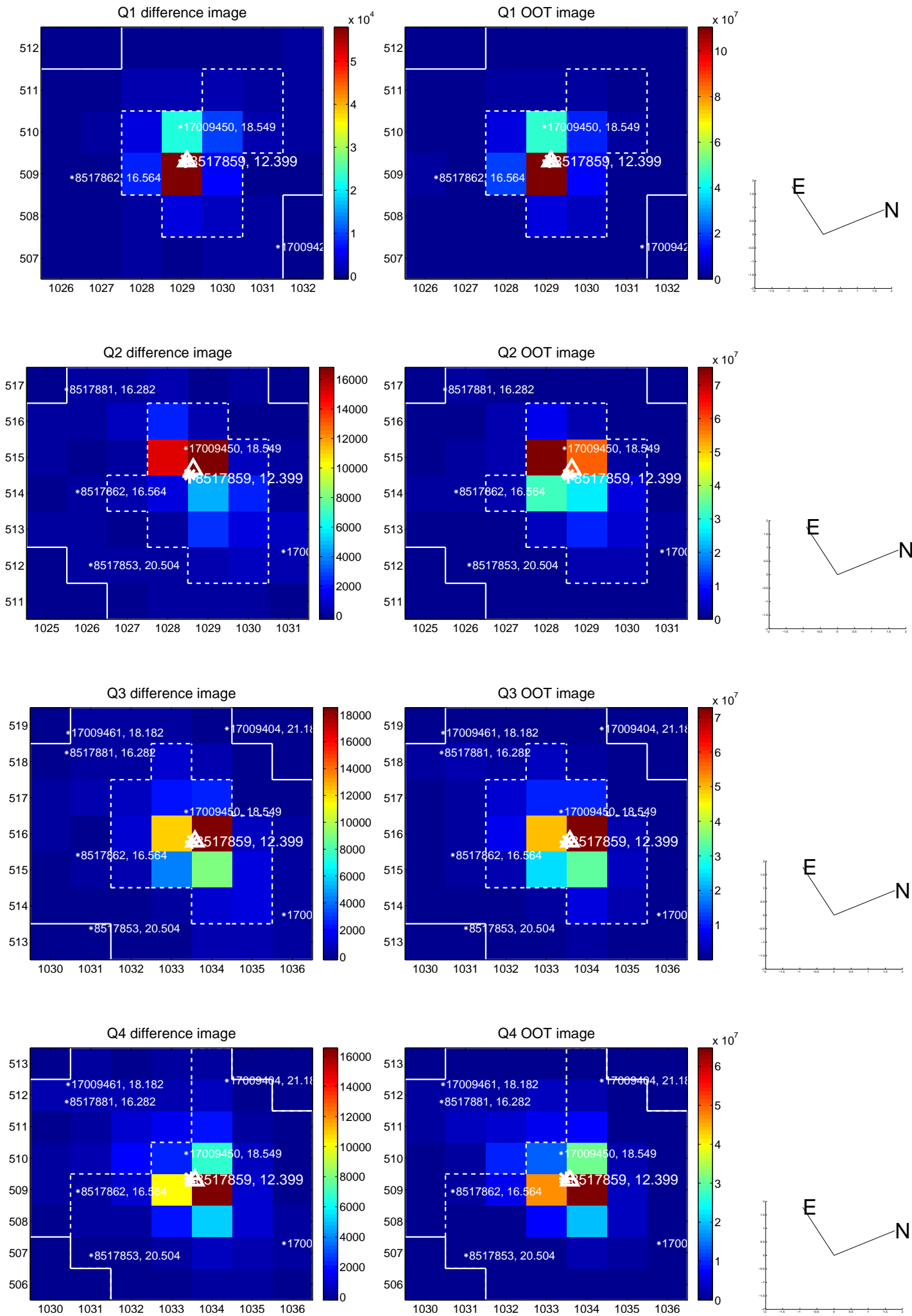
The direct PRF centroid is offset from the target star catalog position by about 0.14 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.117 ± 0.093	1.25	-0.103 ± 0.095	0.055 ± 0.085
PRF-fit source offset from KIC position	0.164 ± 0.114	1.44	-0.164 ± 0.113	-0.007 ± 0.100
photometric centroid source offset	0.22 ± 0.08	2.84	-0.20 ± 0.08	-0.09 ± 0.08

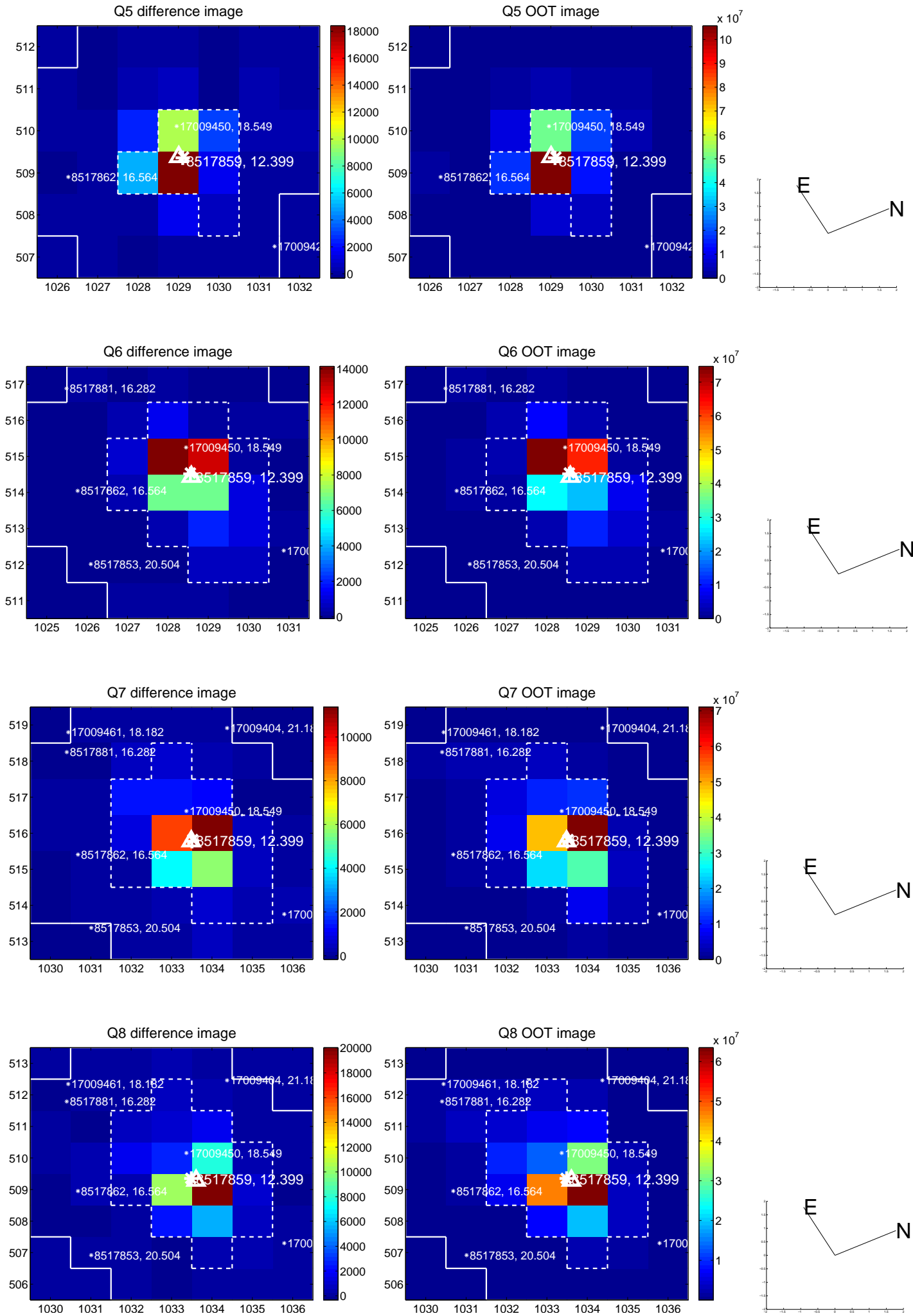


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

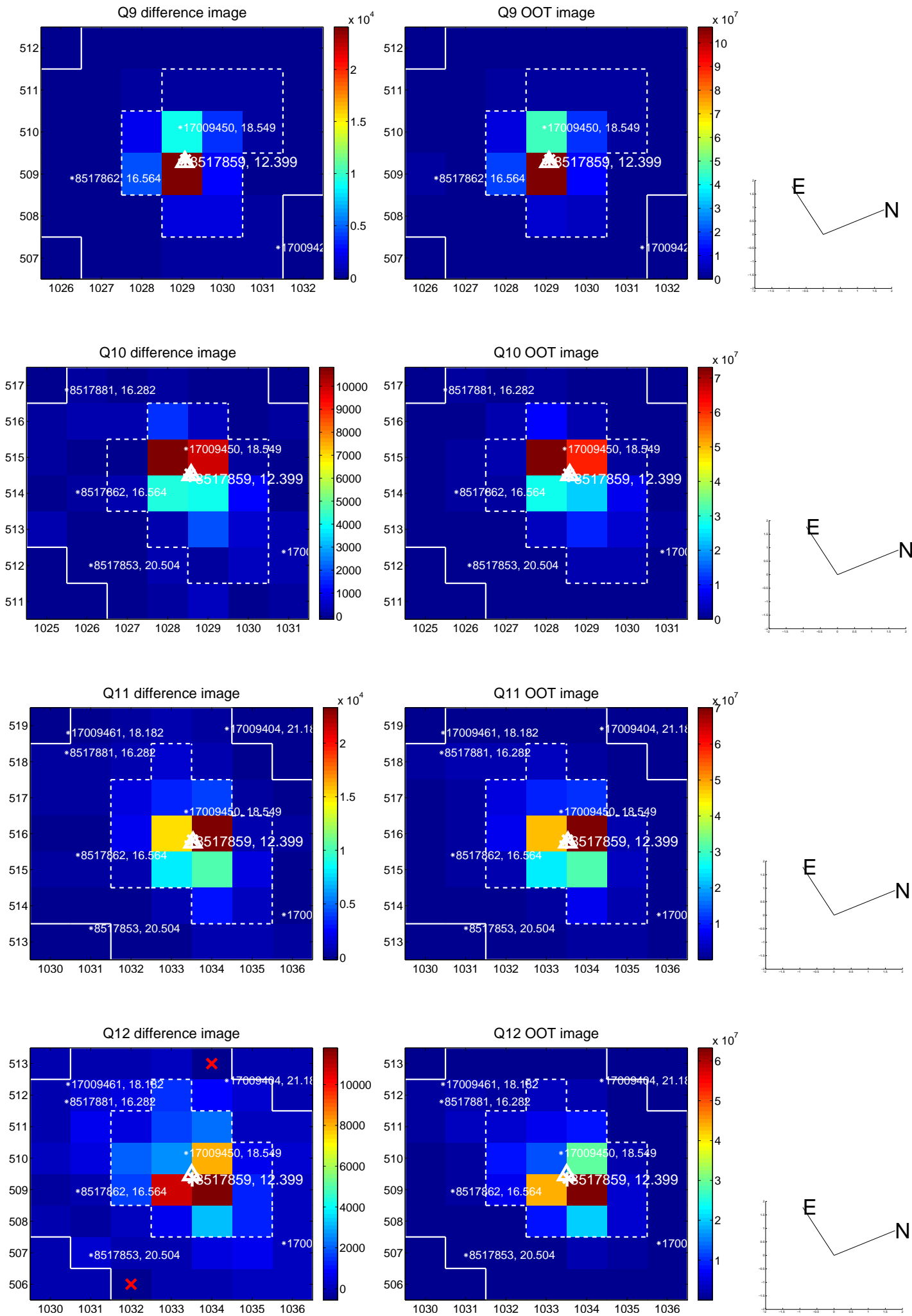
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



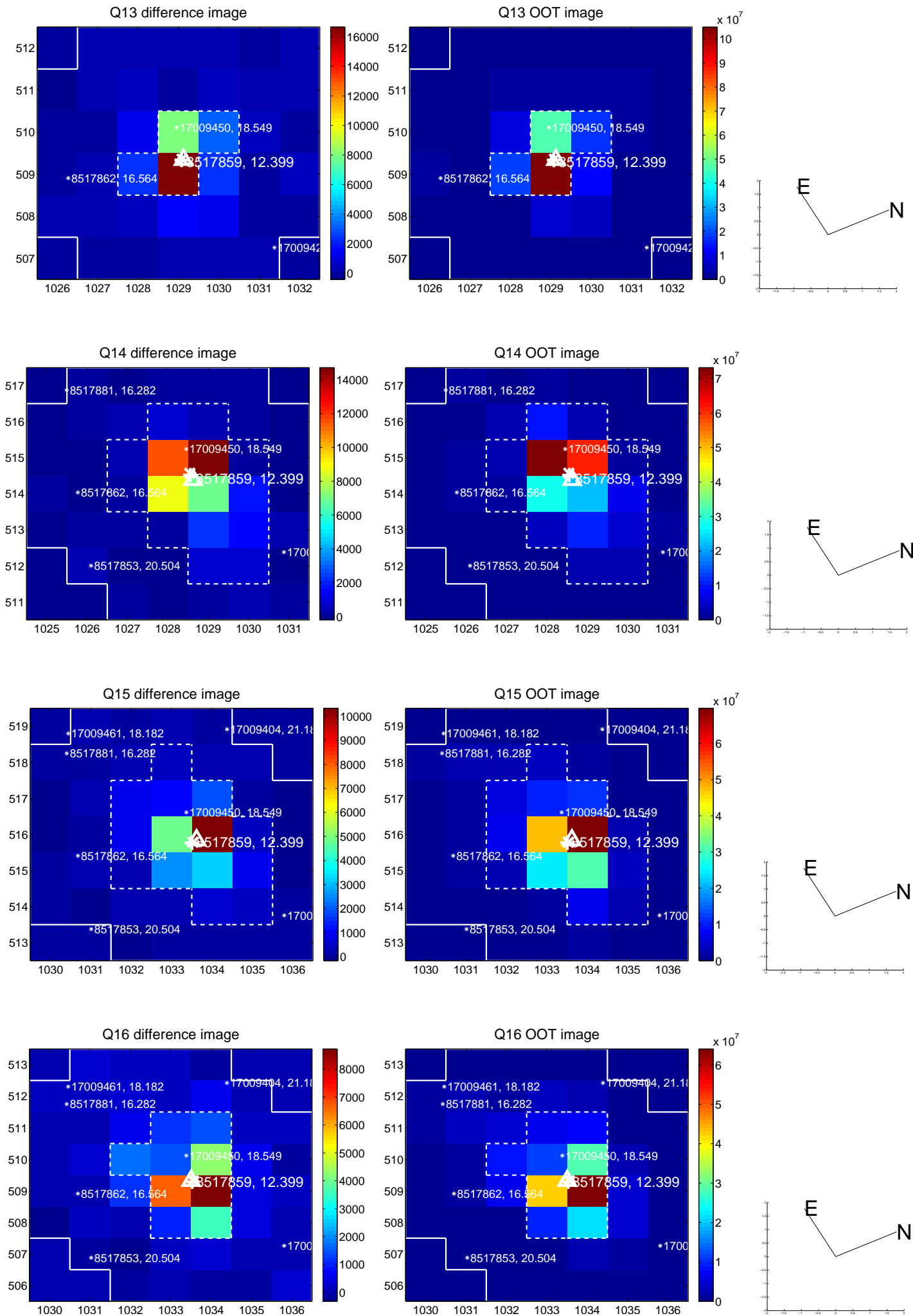
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



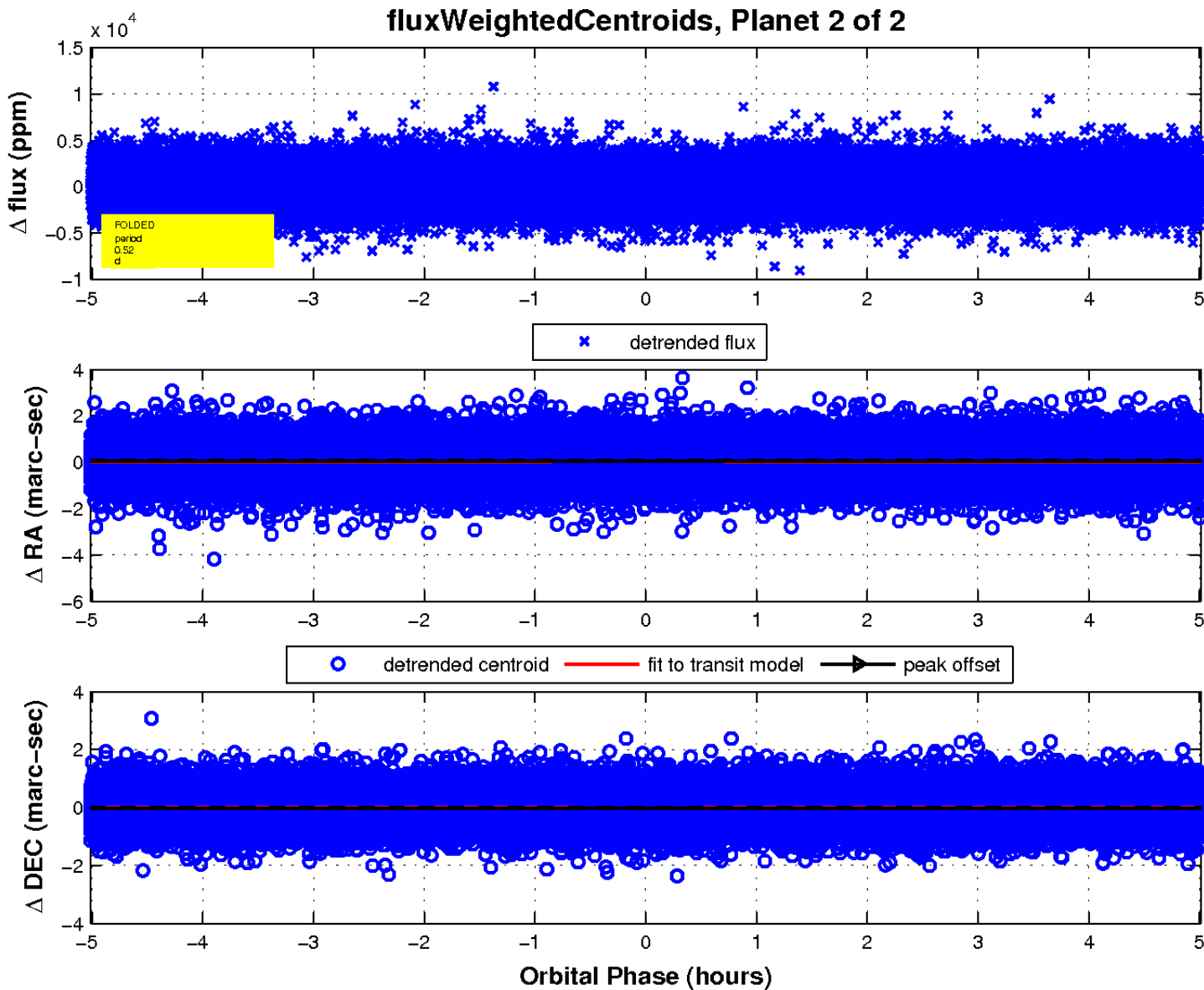
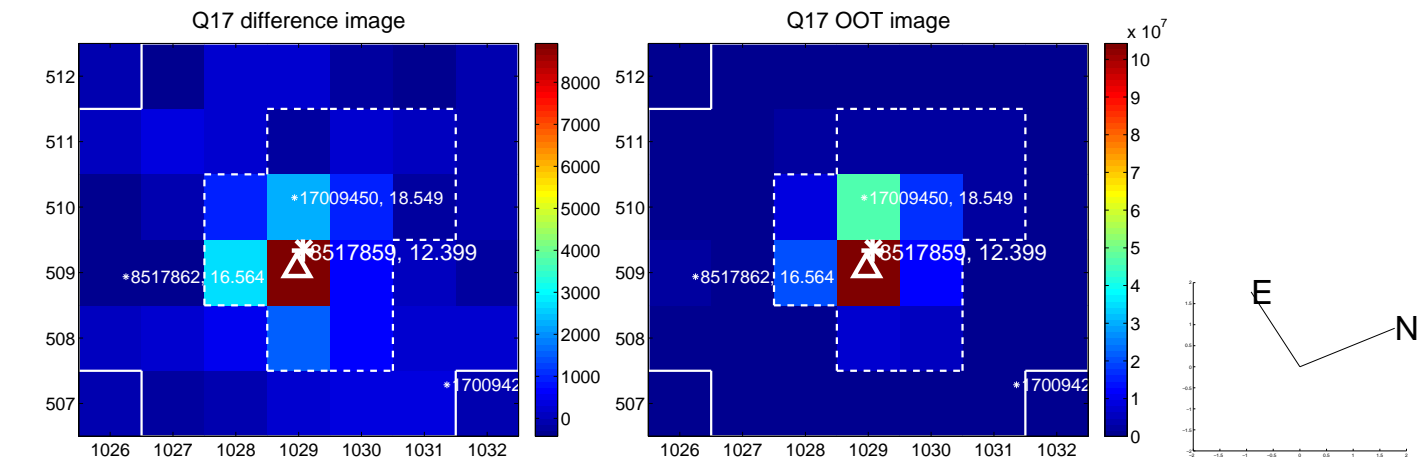
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

