

KIC 008086490

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})
008086490-01	OBS	No	0.579007	131.904439	80.3	2.091	13.7	10.0	2.77	7693	2.86	80074.79
008086490-02	OBS	No	0.972841	131.978967	193.3	5.515	11.0	13.3	2.77	7693	4.50	40088.36

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008086490-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT
008086490-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA—TRANS_GAPPED—LPP_DV—LPP_ALT

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

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

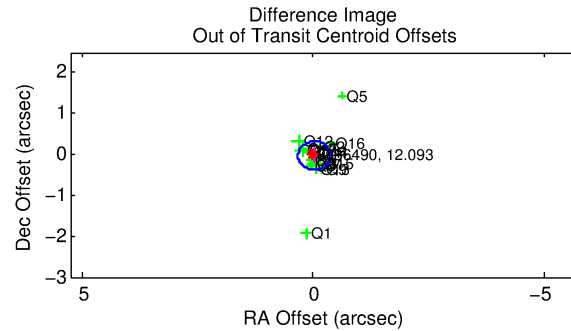
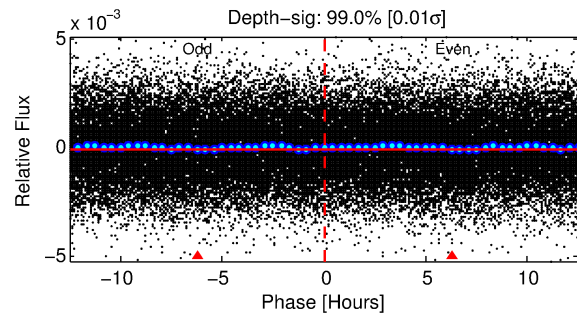
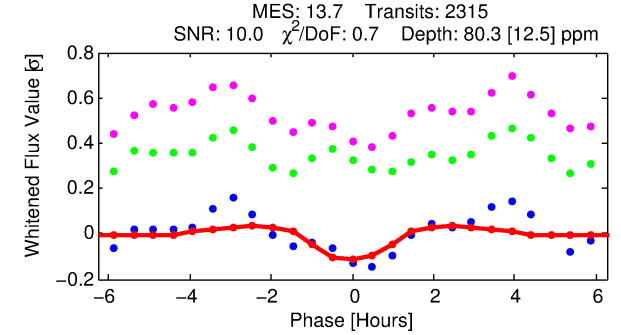
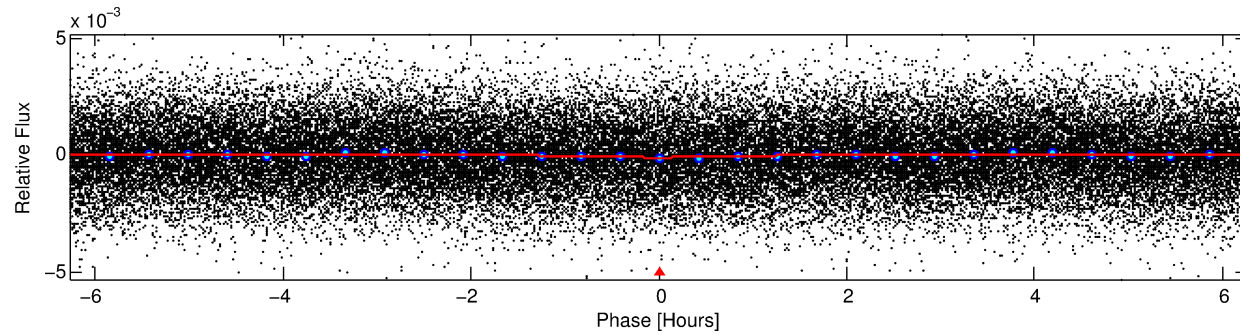
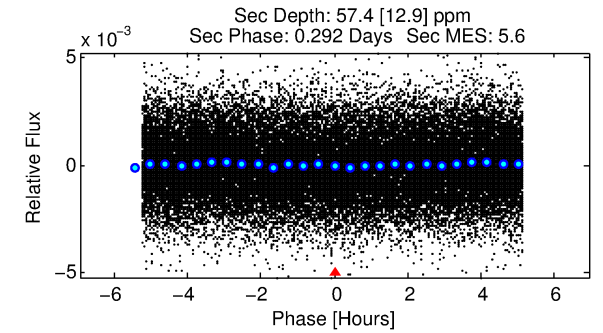
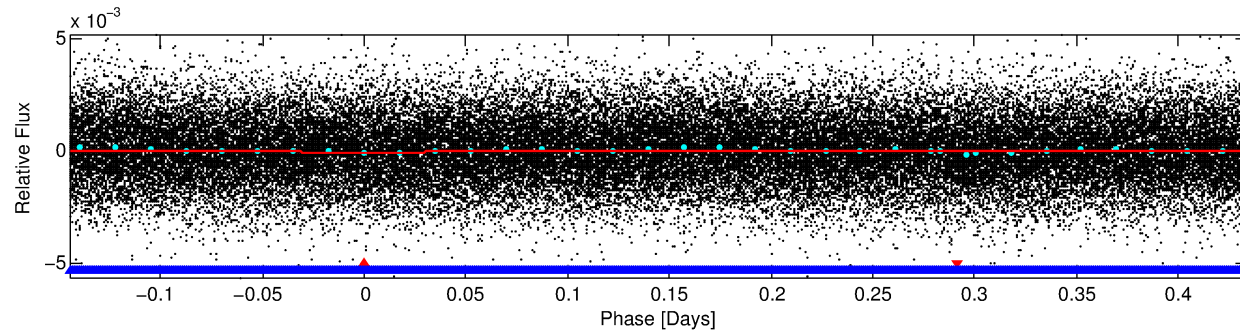
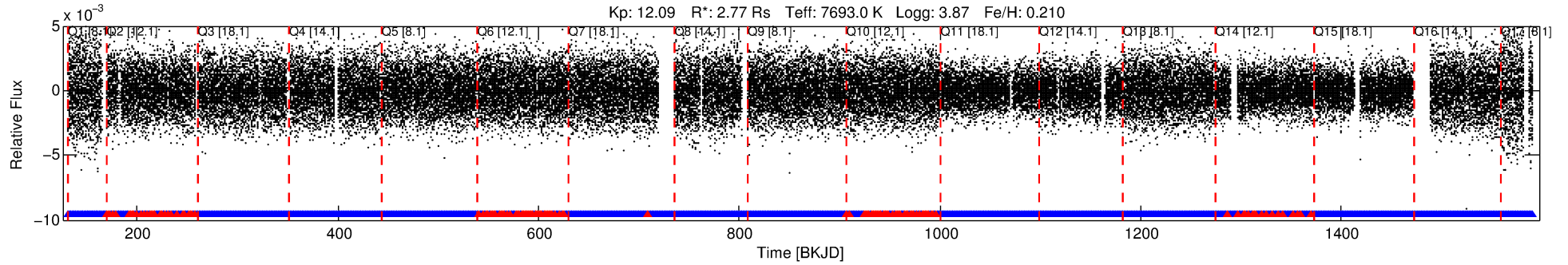
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 008086490-01

No Significant Match Found

DV One-Page Summary

KIC: 8086490 Candidate: 1 of 2 Period: 0.579 d



DV Fit Results:

Period = 0.57901 [0.00001] d
Epoch = 131.9044 [0.0031] BKJD
Rp/R* = 0.0095 [0.0089]
a/R* = 1.37 [3.78]
b = 0.89 [1.39]
Seff = 80074.79 [39561.34]
Teff = 4289 [530] K
Rp = 2.86 [2.85] Re
a = 0.0173 [0.0053] AU
Ag = 1.16 [2.24] [0.07σ]
Teffp = 6878 [3251] K [0.79σ]

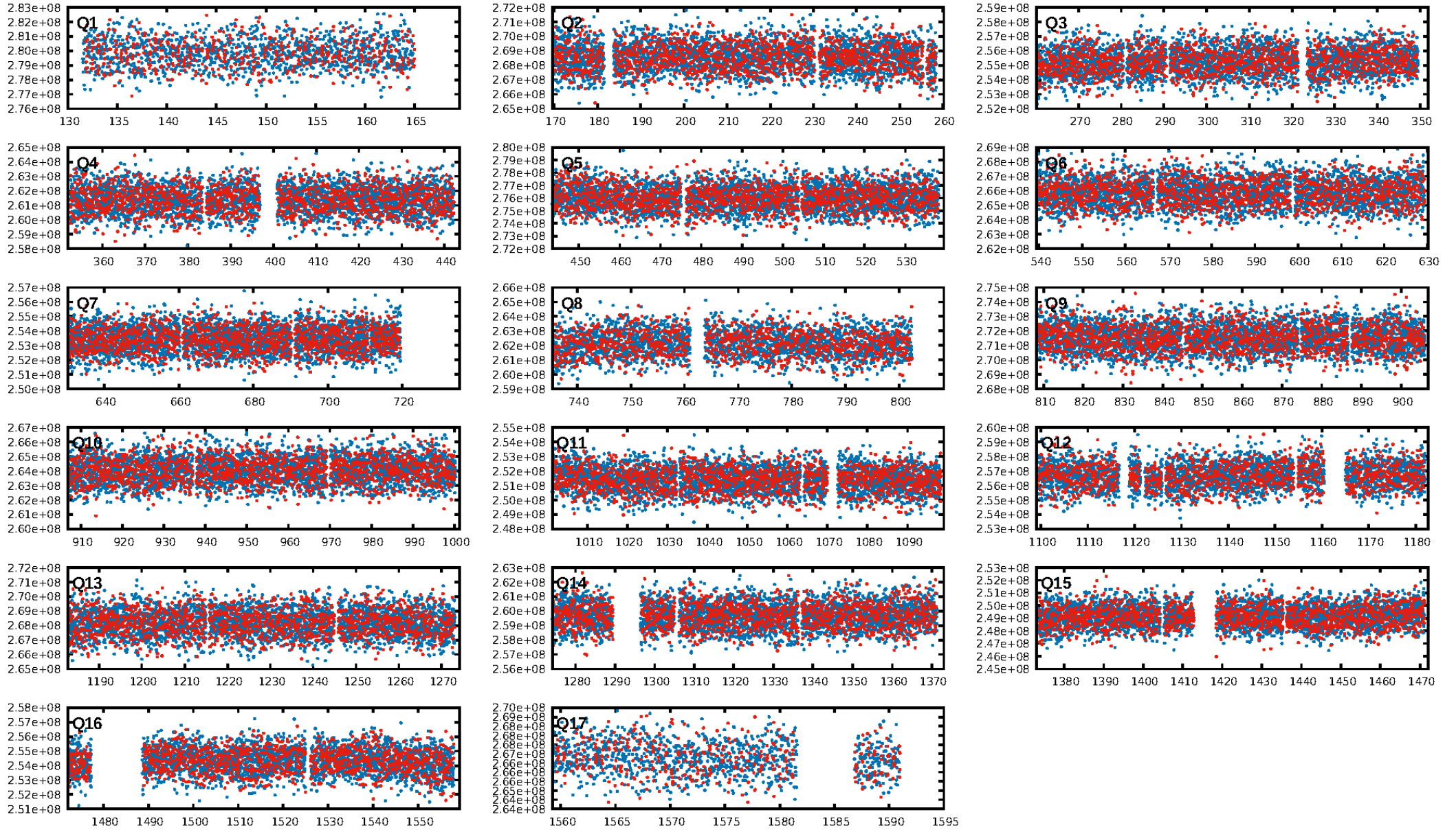
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 89.1% [1.60σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 6.87e-19
RollingBand-fgt: 0.93 [2063/2211]
GhostDiagnostic-chr: 1.504
Centroid-sig: 27.7%
Centroid-so: 0.244 arcsec [1.59σ]
OotOffset-rm: 0.037 arcsec [0.32σ]
OotOffset-st: 4/4/4/5 [17]
KicOffset-rm: 0.043 arcsec [0.47σ]
KicOffset-st: 4/4/4/5 [17]
DiffImageQuality-fgm: 1.00 [17/17]
DiffImageOverlap-fno: 1.00 [17/17]

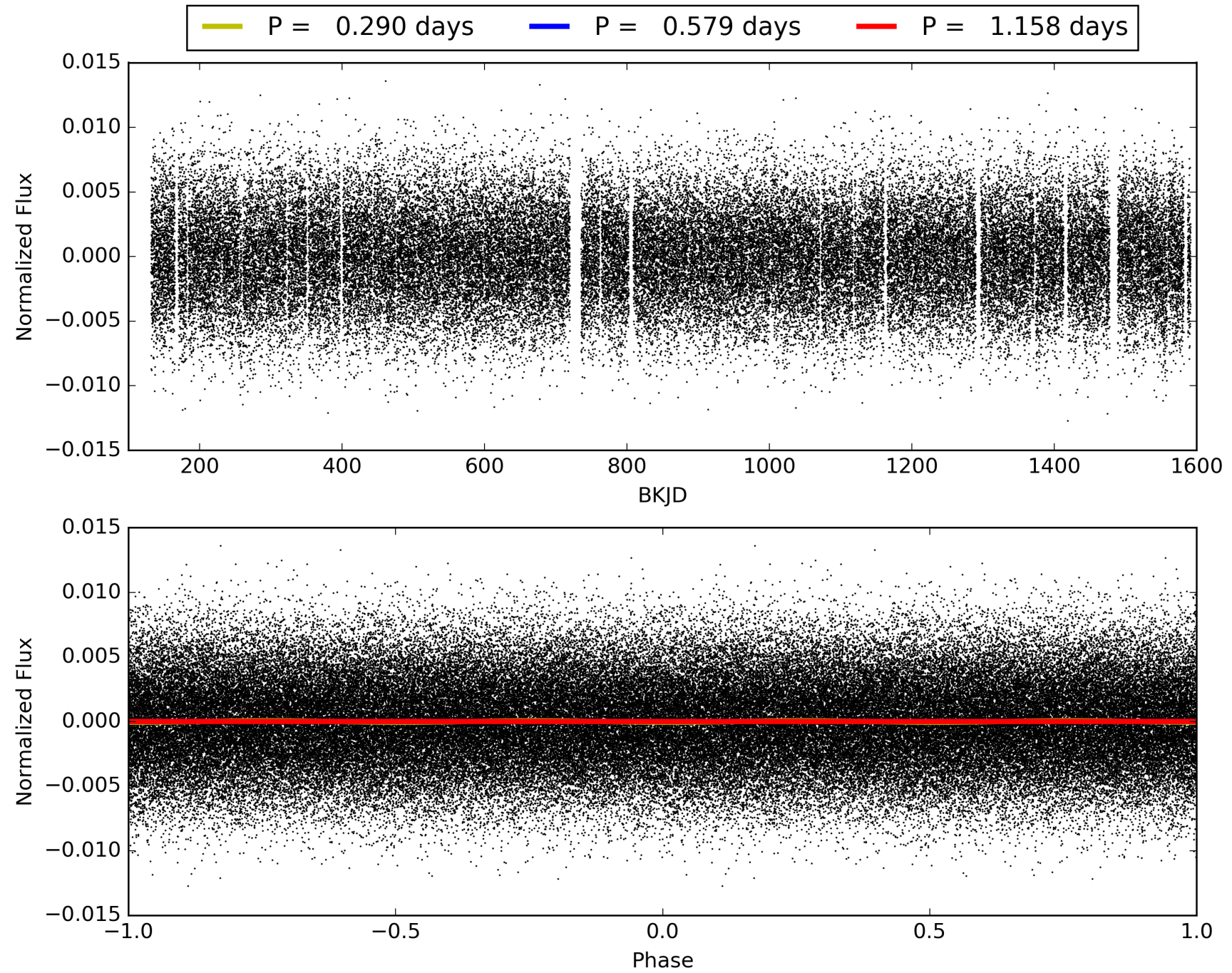
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 23:53:52 Z

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

TCE 008086490-01, PDC Light Curves

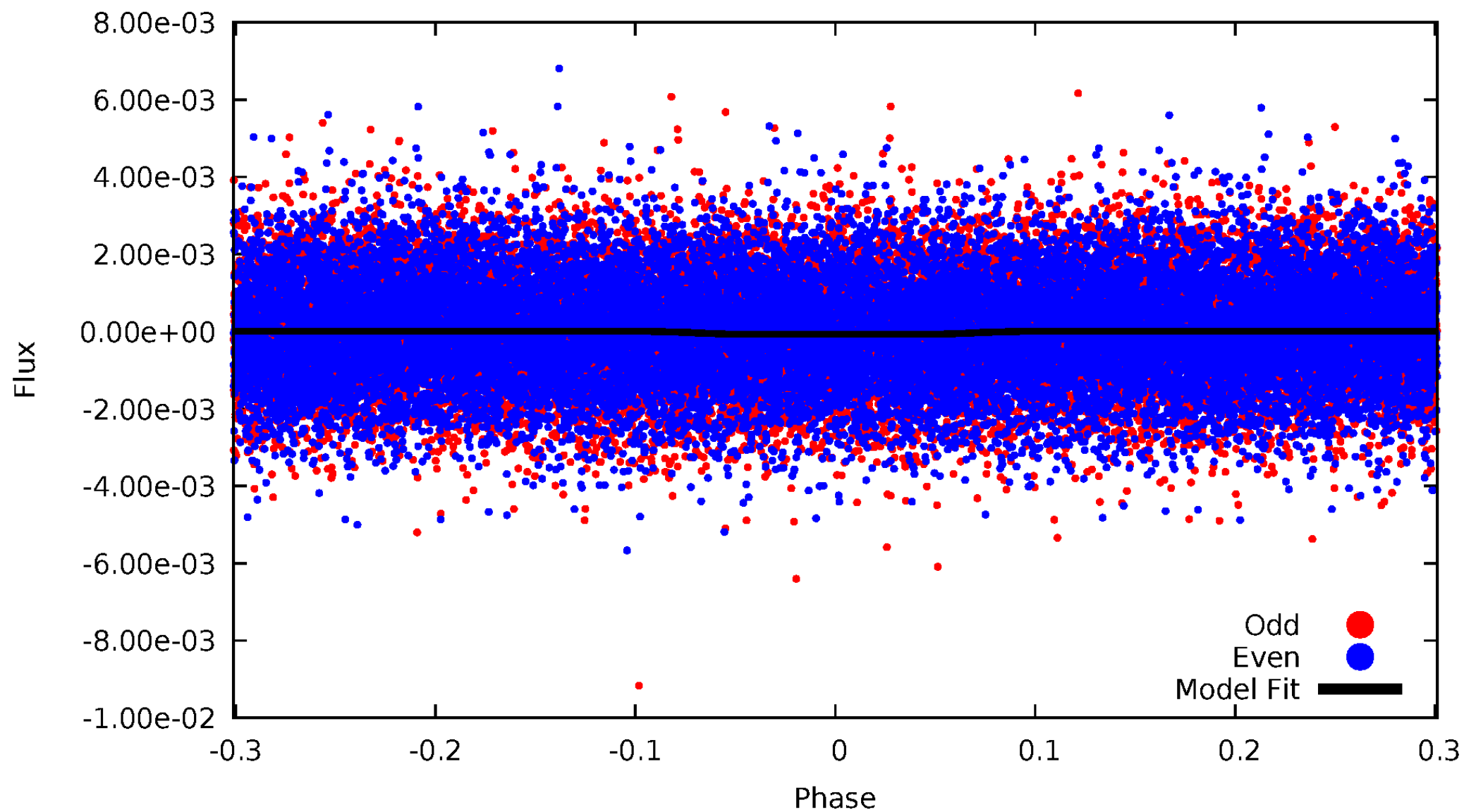


TCE 008086490-01



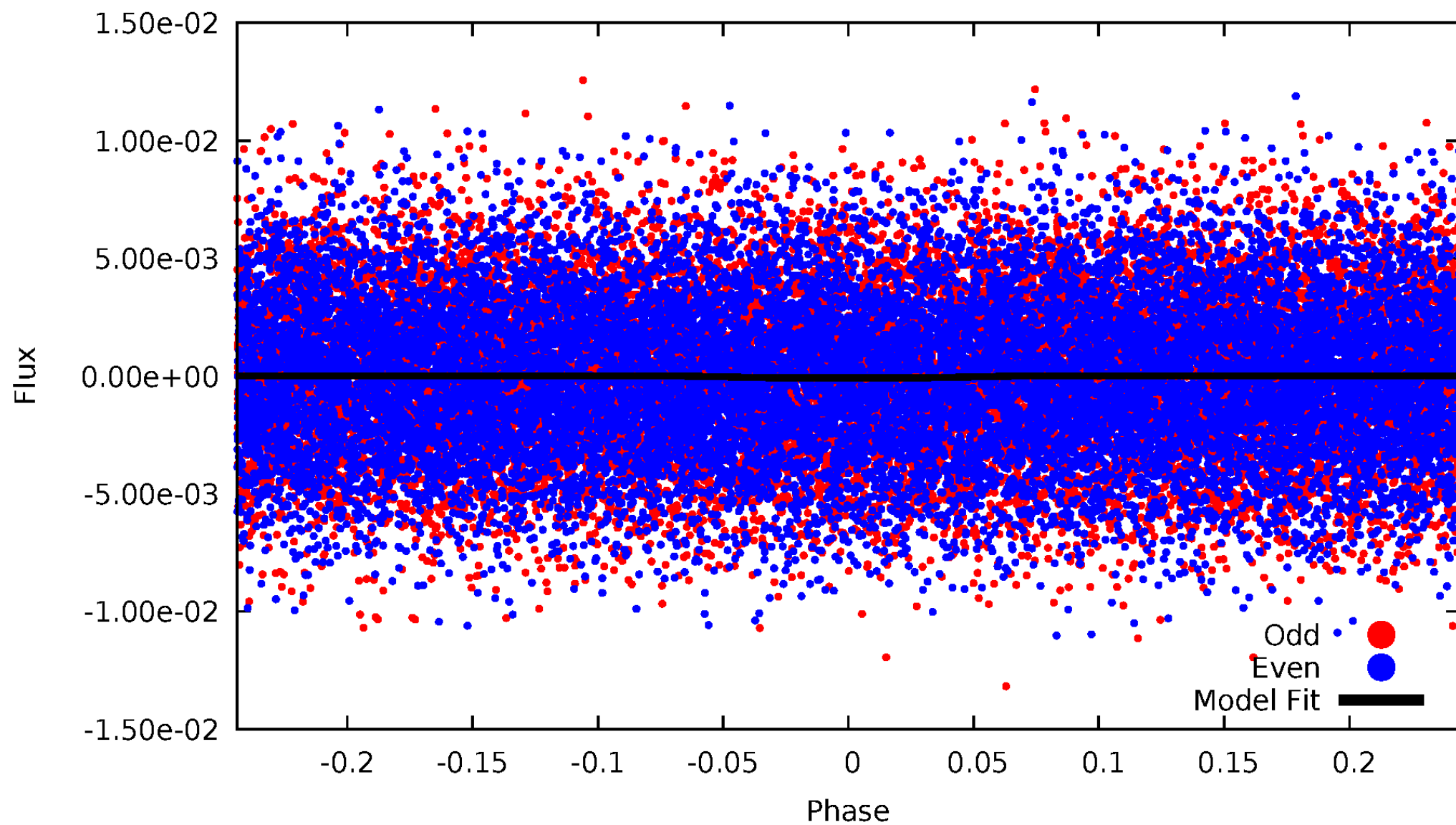
DV Odd/Even

TCE 008086490-01



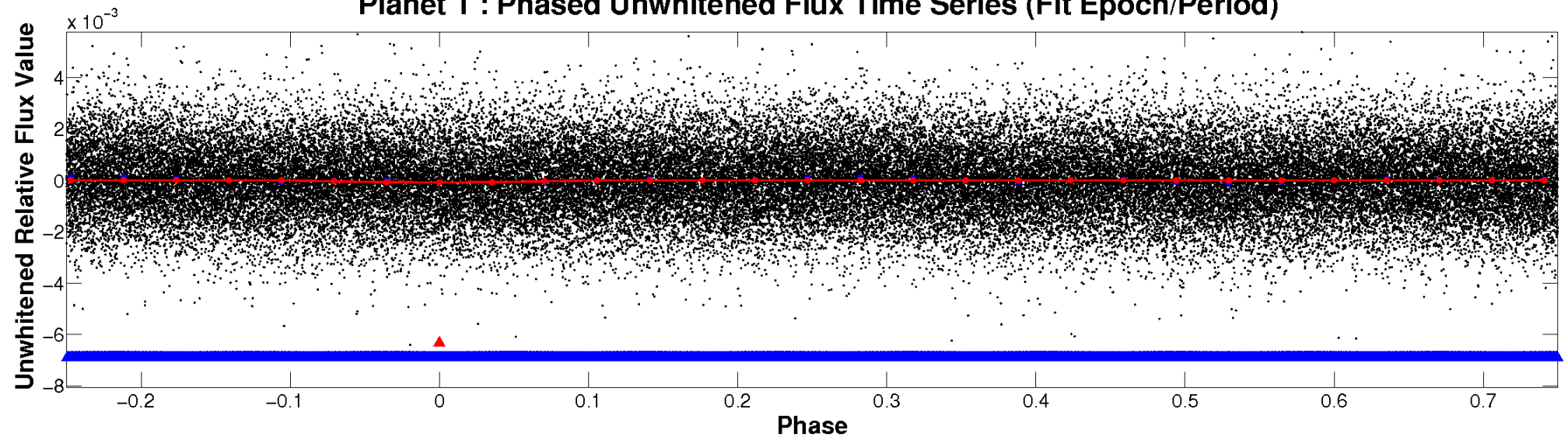
ALT Odd/Even

TCE 008086490-01

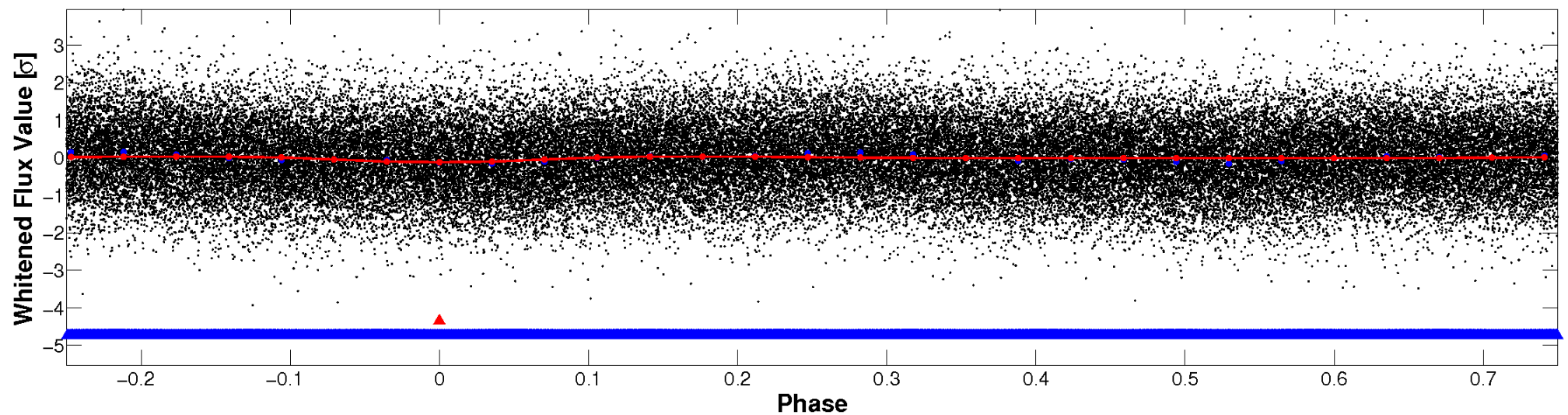


Non-Whitened Vs. Whitened Light Curve

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

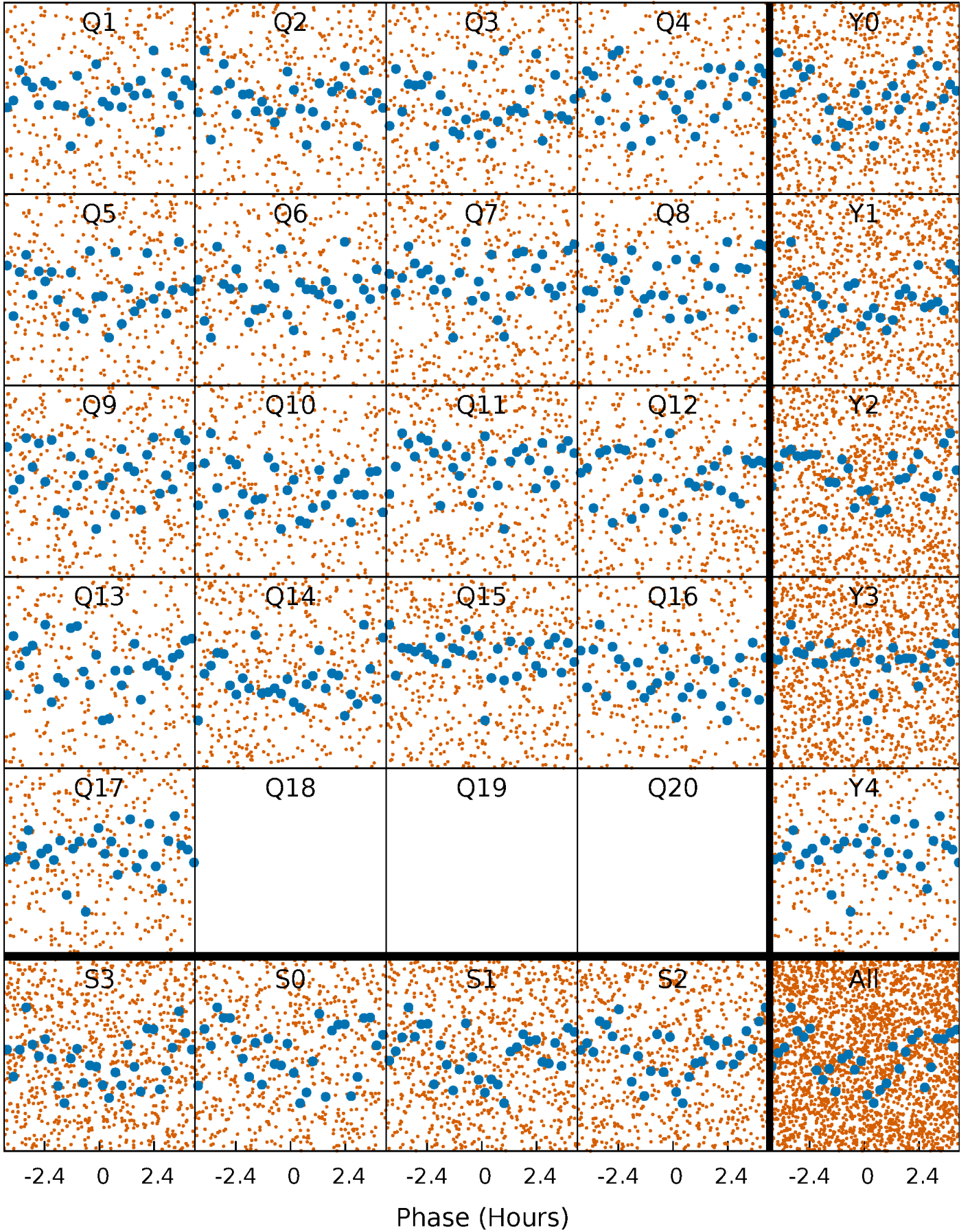


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



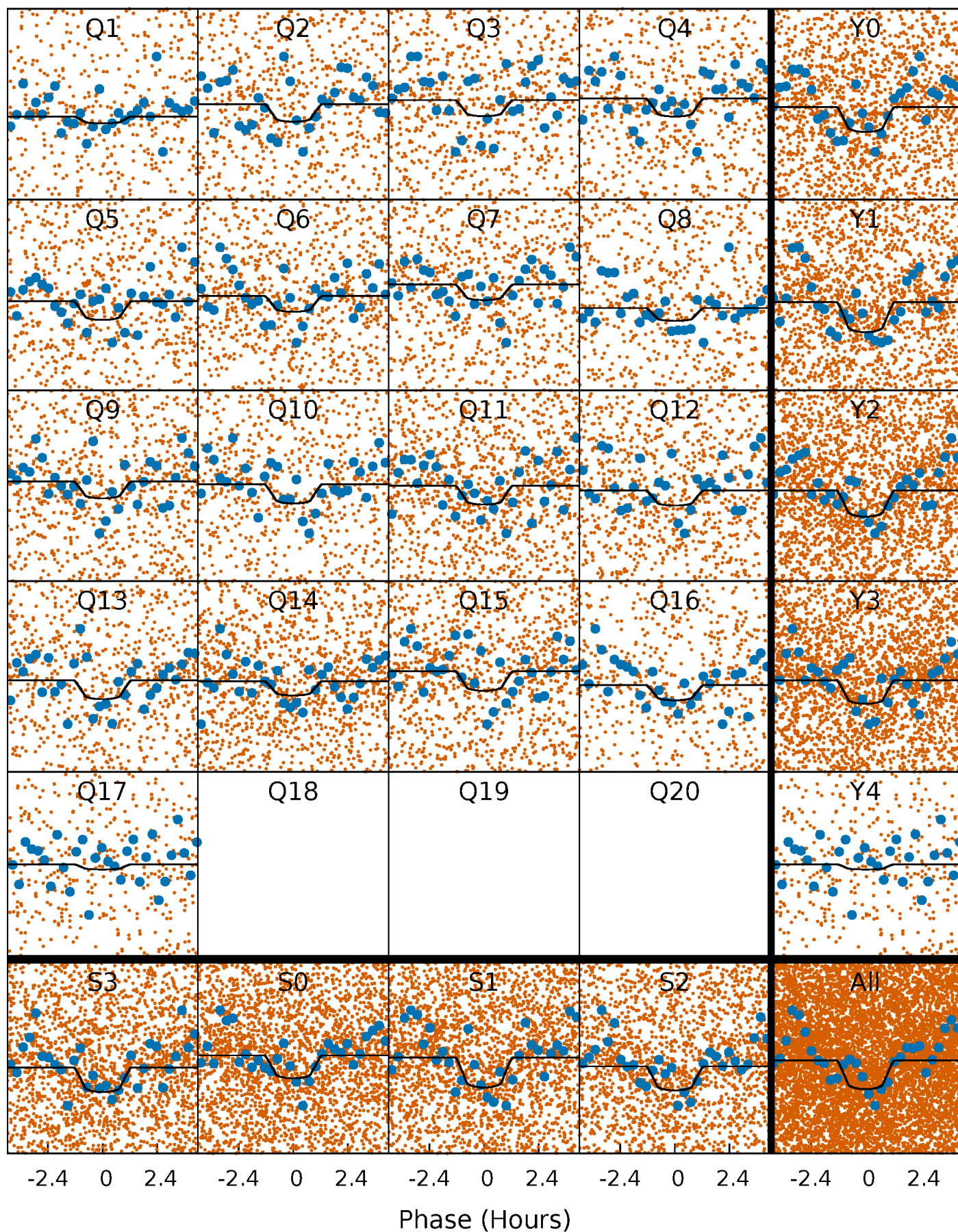
PDC Quarter-Phased Transit Curves

TCE 008086490-01 P= 0.579007 Days $T_0=131.904439$ (BKJD)



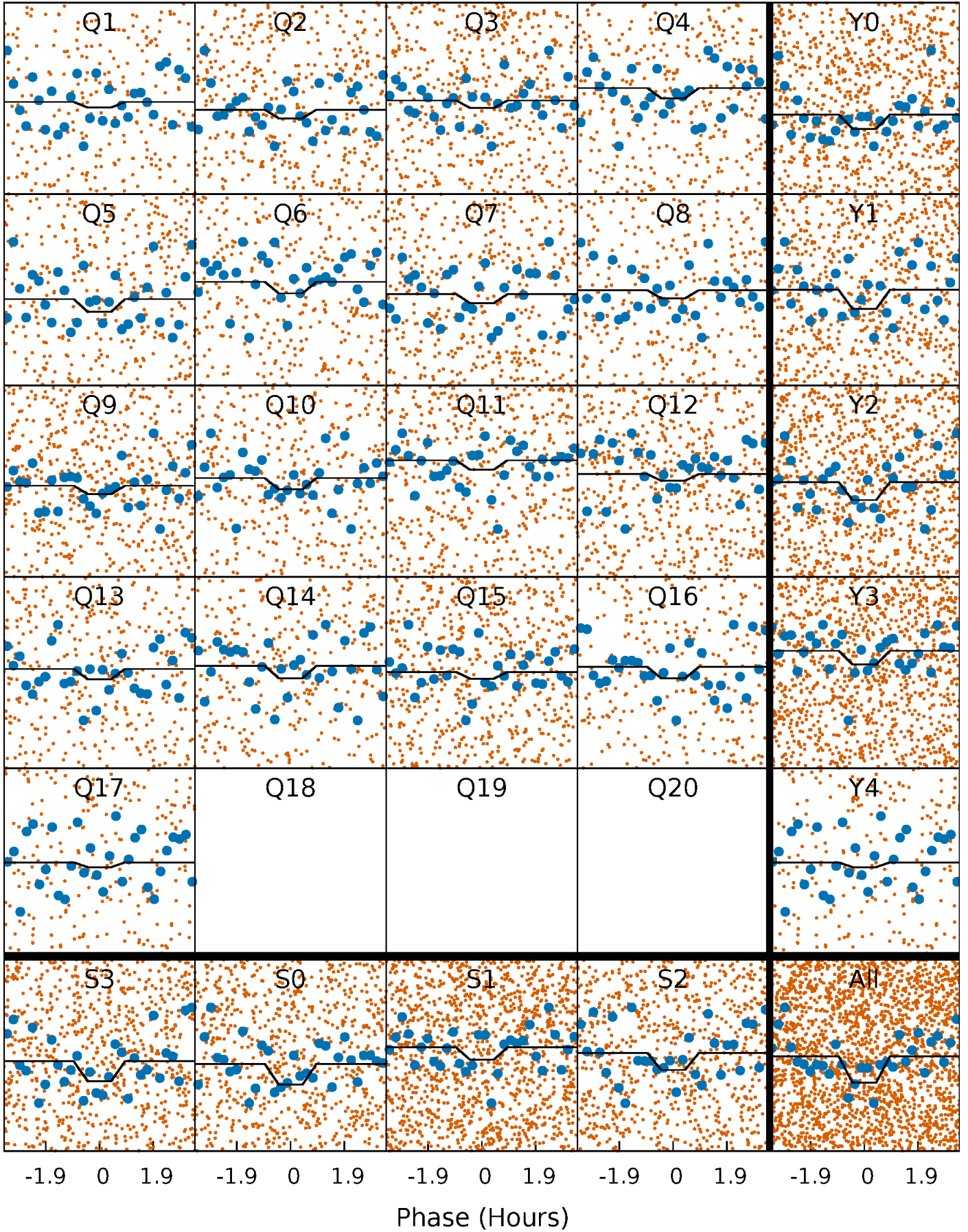
DV Quarter-Phased Transit Curves

TCE 008086490-01 P= 0.579007 Days $T_0=131.904439$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

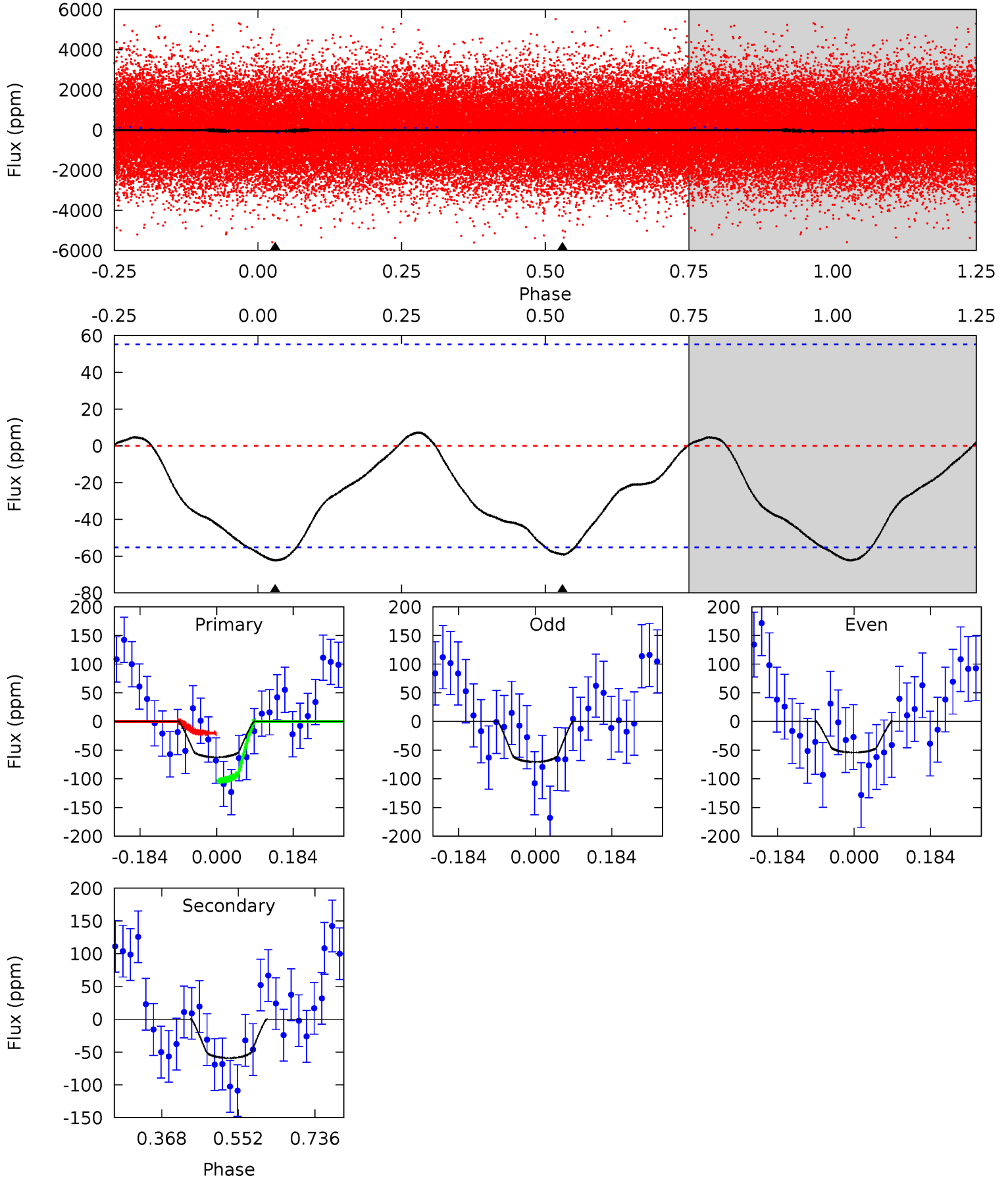
TCE 008086490-01 P= 0.579019 Days $T_0=131.904624$ (BKJD)



DV Model-Shift Uniqueness Test

008086490-01, P = 0.579007 Days, E = 131.325432 Days

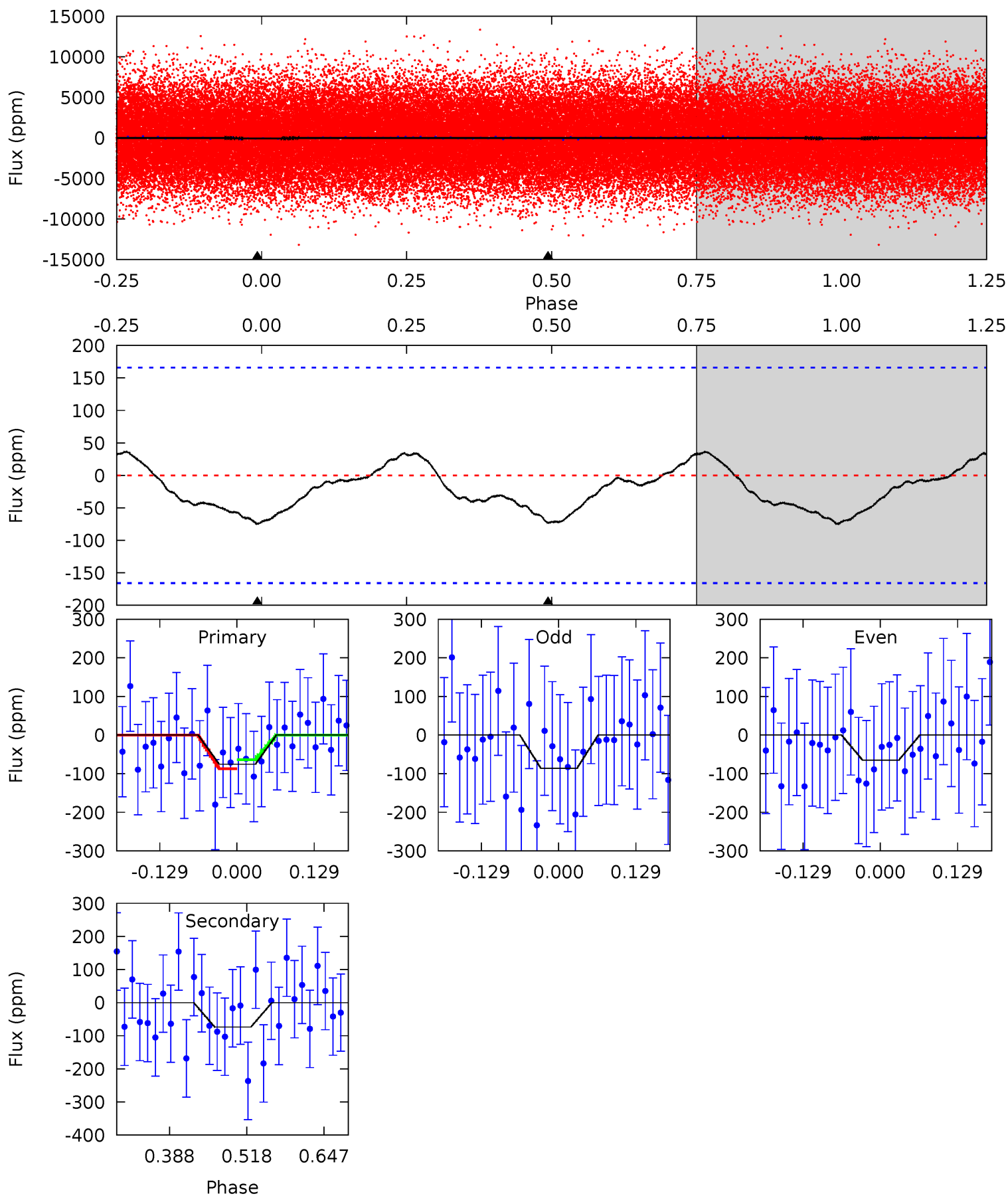
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
5.01	4.75	0	0	4.44	1.33	0.53	5.01	5.01	4.75	4.75	0.66	0.85	0.11	3.32



Alt Model-Shift Uniqueness Test

008086490-01, P = 0.579019 Days, E = 131.325605 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
2.05	2.00	0	0	4.51	1.52	0.58	2.05	2.05	2.00	2.00	0.28	1.35	0.33	0.32



Stellar Parameters For KIC 008086490

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	7693^{+213}_{-347}	$3.869^{+0.260}_{-0.140}$	$0.210^{+0.150}_{-0.400}$	$2.765^{+0.583}_{-0.948}$	$2.059^{+0.295}_{-0.443}$	$0.137^{+0.230}_{-0.050}$
	+3%/-5%	+7%/-4%	+71%/-190%	+21%/-34%	+14%/-22%	+168%/-36%
Source	PHO54	PHO54	PHO54	DSEP		

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

Secondary Eclipse Parameters for KIC 008086490-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-59 ± 12	$3.31^{+2.44}_{-2.13}$	5917^{+399}_{-493}	5512^{+5817}_{-8501}	$0.904^{+5.240}_{-0.620}$
Alt.	-74 ± 37	$3.08^{+2.37}_{-1.85}$	5910^{+402}_{-536}	6239^{+5644}_{-3694}	$1.262^{+6.331}_{-0.957}$

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 $A_{obs} \gg 1.0$

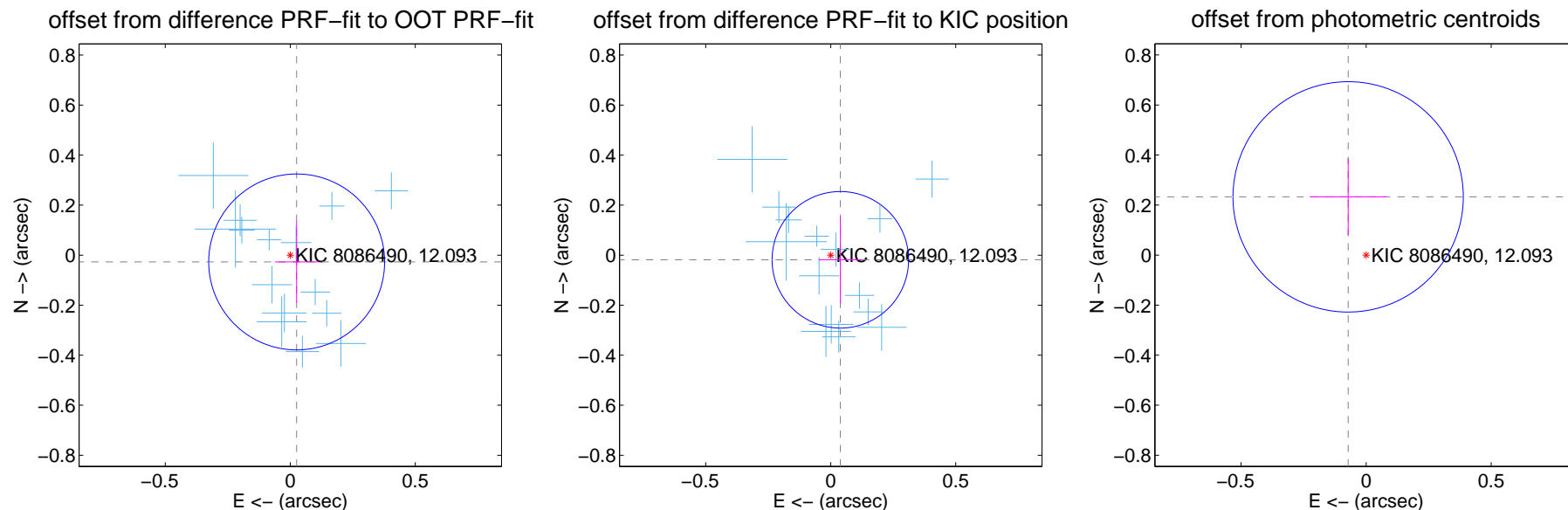
DV Centroid Data

Supplemental centroid analysis for 008086490-01. Kepler magnitude: 12.09. Transit SNR 9.96

There are 17 quarters with good PRF difference image offsets

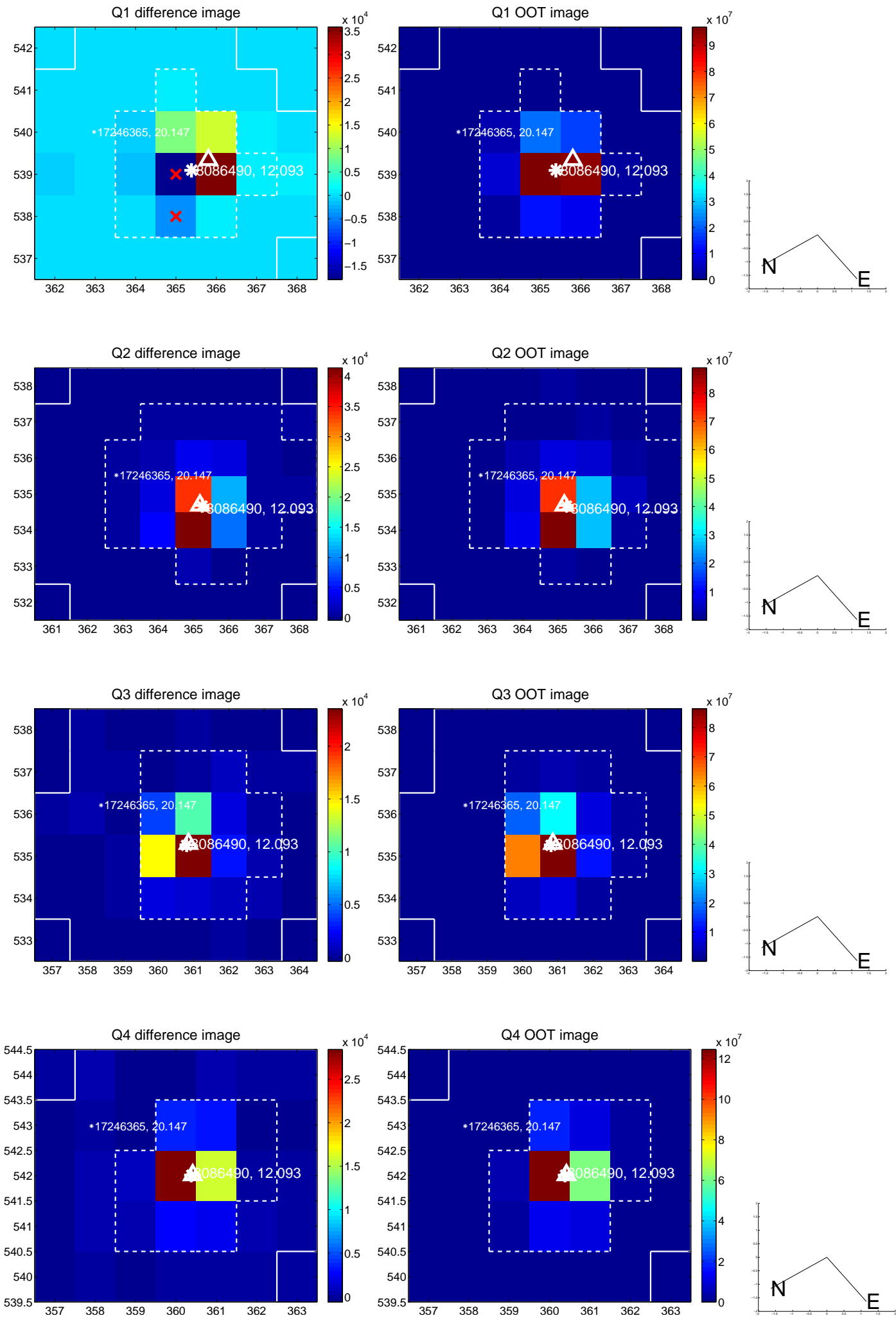
The direct PRF centroid is offset from the target star catalog position by about 0.05 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.037 ± 0.117	0.32	-0.026 ± 0.087	-0.027 ± 0.163
PRF-fit source offset from KIC position	0.043 ± 0.091	0.47	-0.038 ± 0.087	-0.019 ± 0.173
photometric centroid source offset	0.24 ± 0.15	1.59	0.07 ± 0.15	0.23 ± 0.15

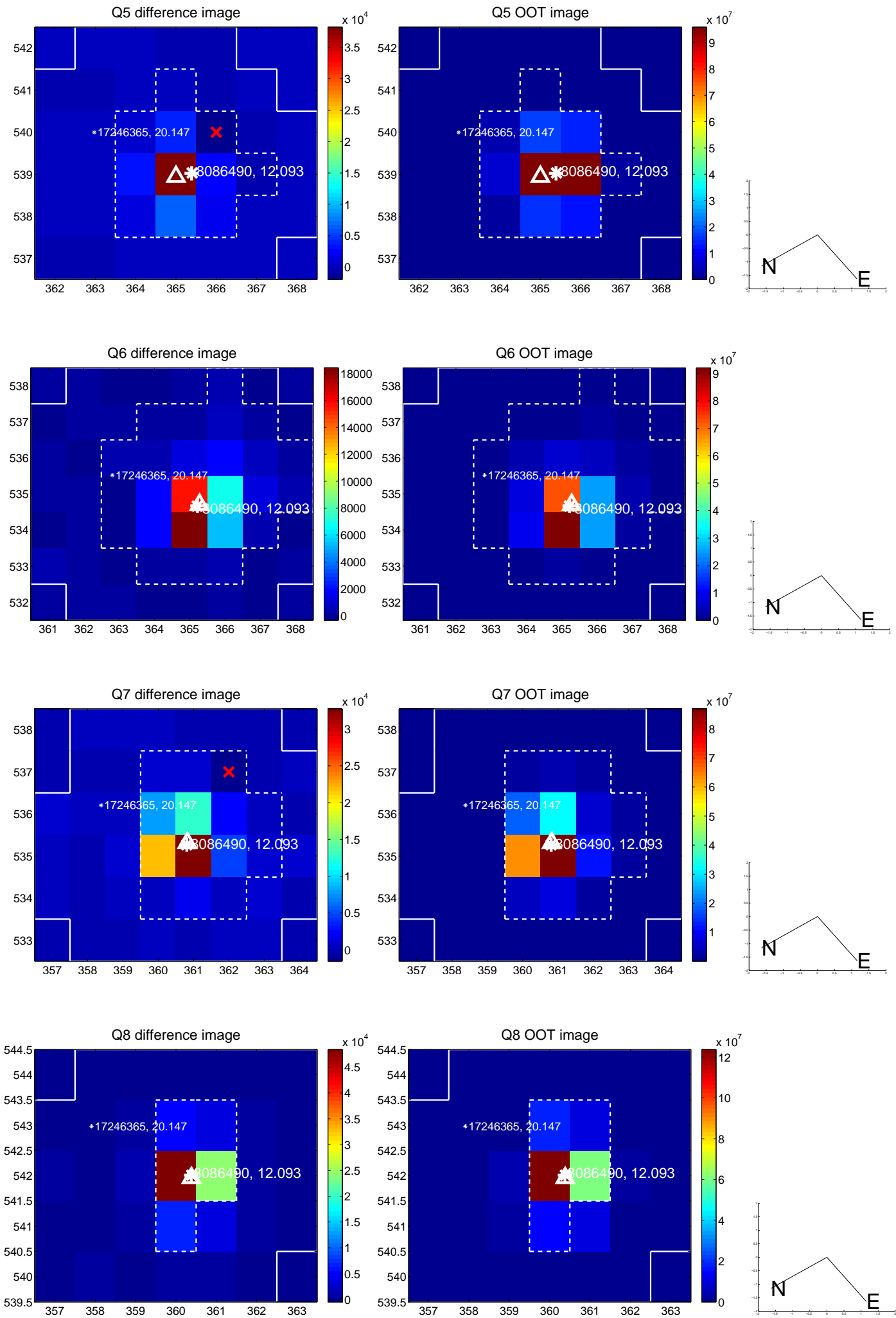


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

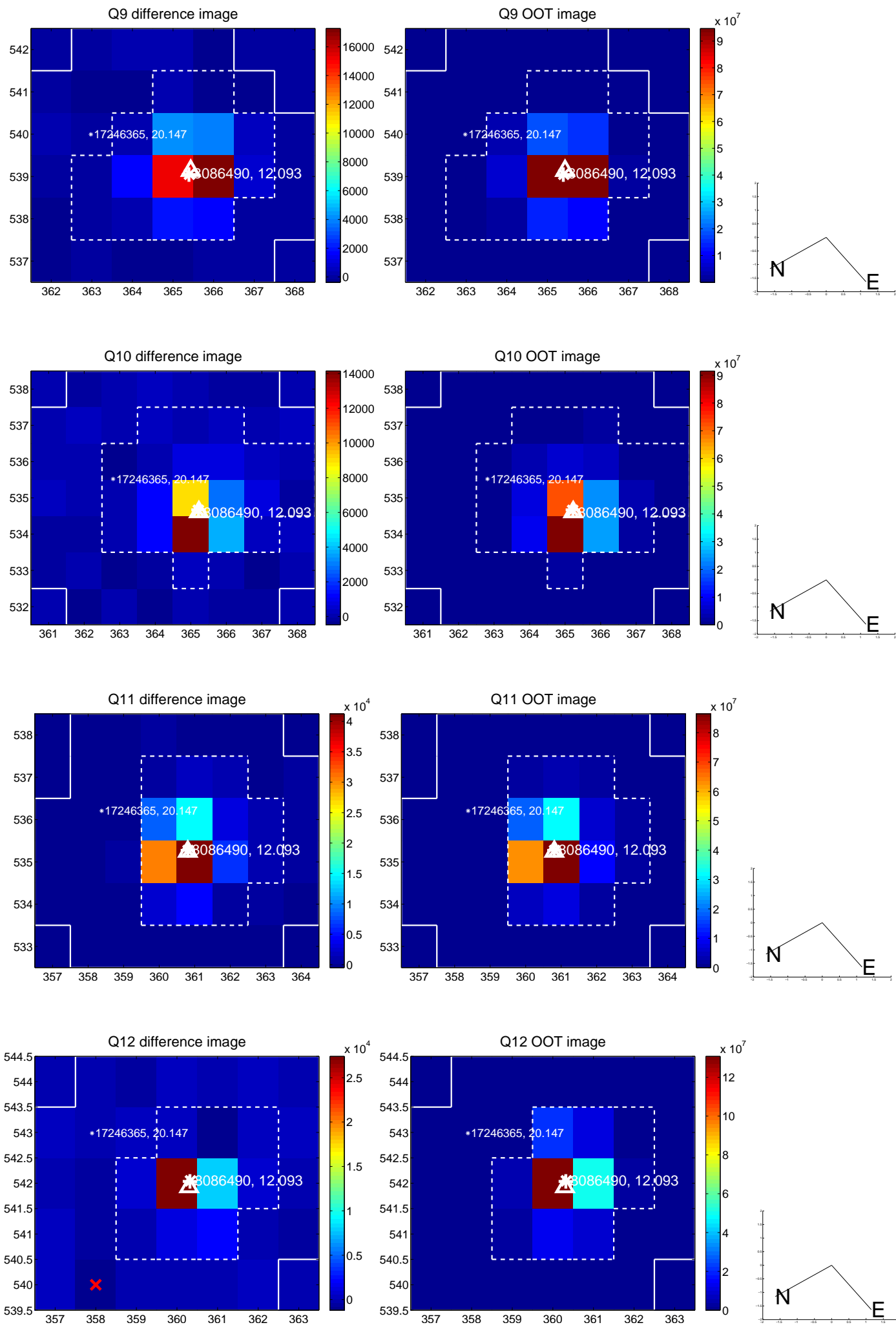
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



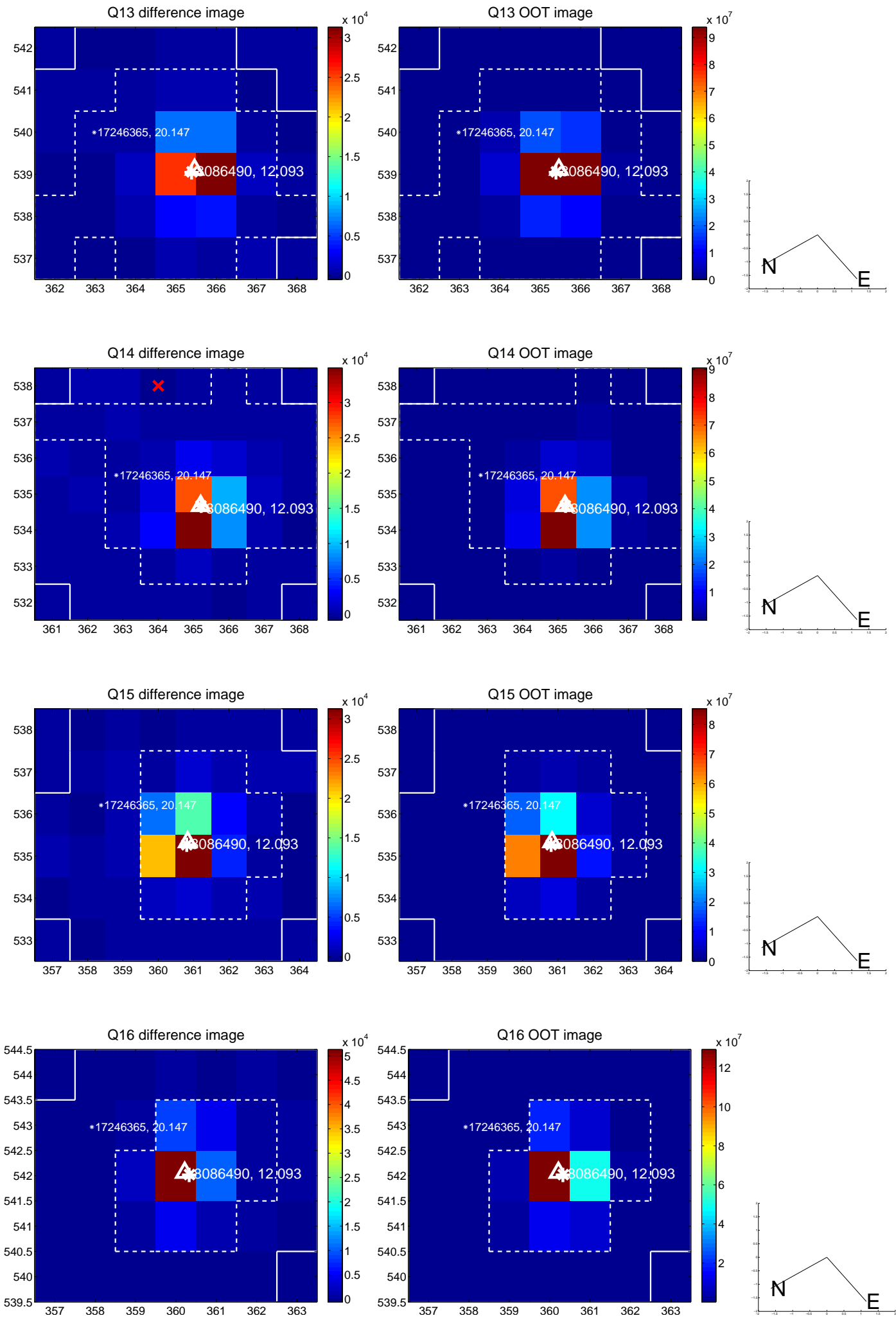
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



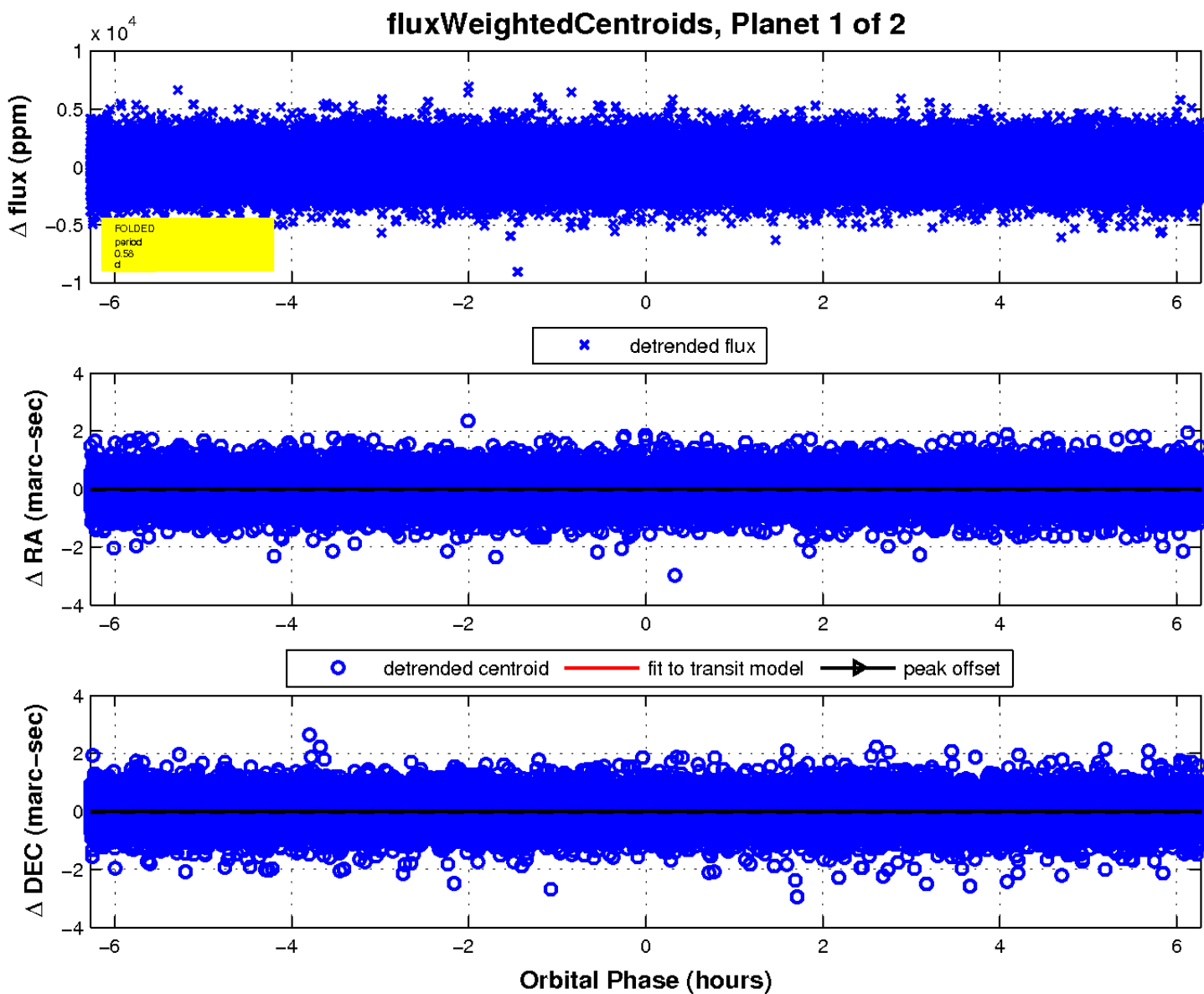
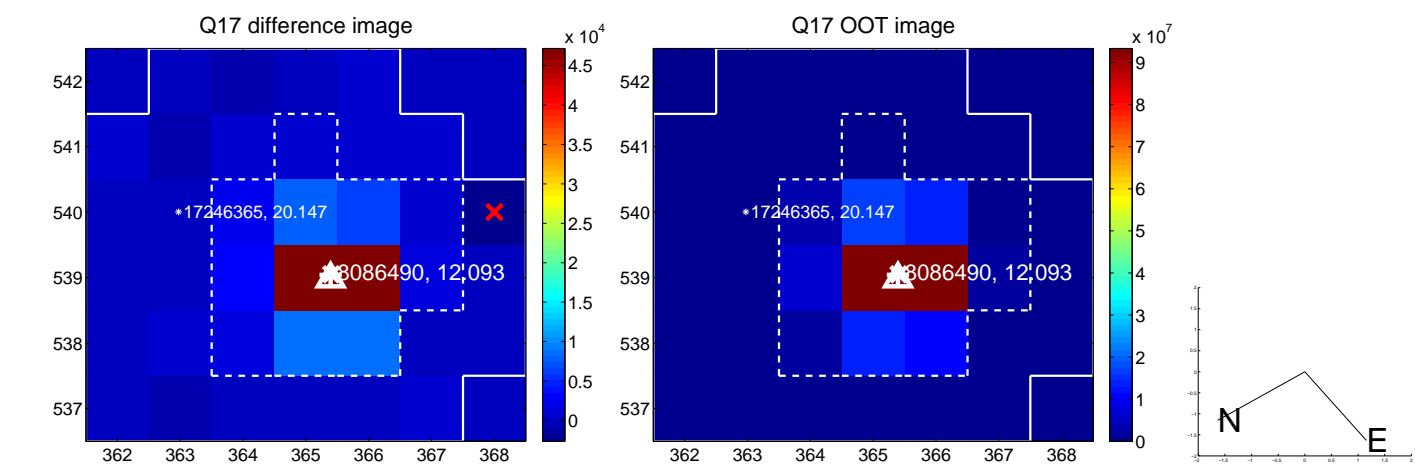
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white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.

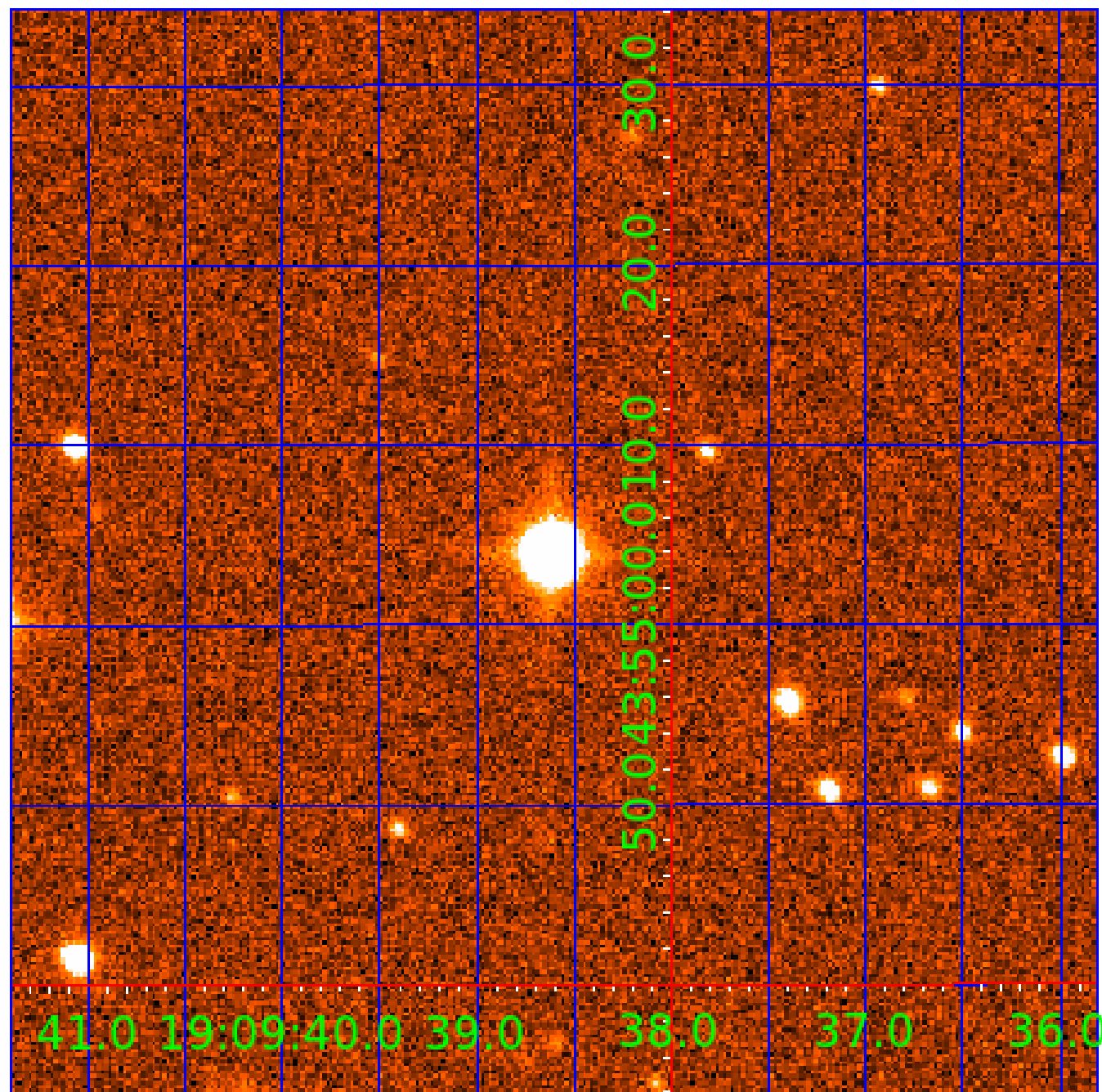


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 008086490

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})
008086490-01	OBS	No	0.579007	131.904439	80.3	2.091	13.7	10.0	2.77	7693	2.86	80074.79
008086490-02	OBS	No	0.972841	131.978967	193.3	5.515	11.0	13.3	2.77	7693	4.50	40088.36

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008086490-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT
008086490-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA—TRANS_GAPPED—LPP_DV—LPP_ALT

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

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

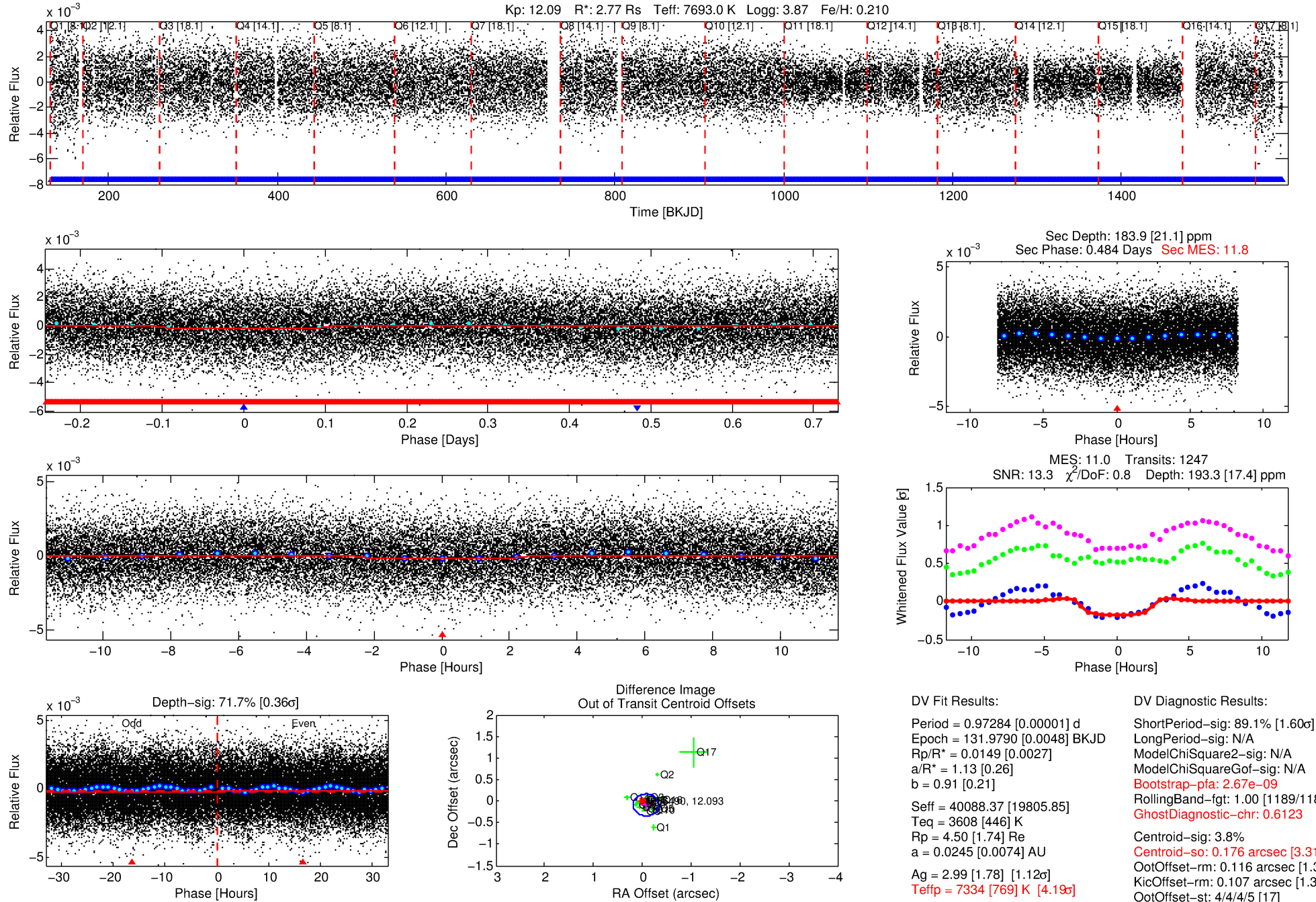
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 008086490-02

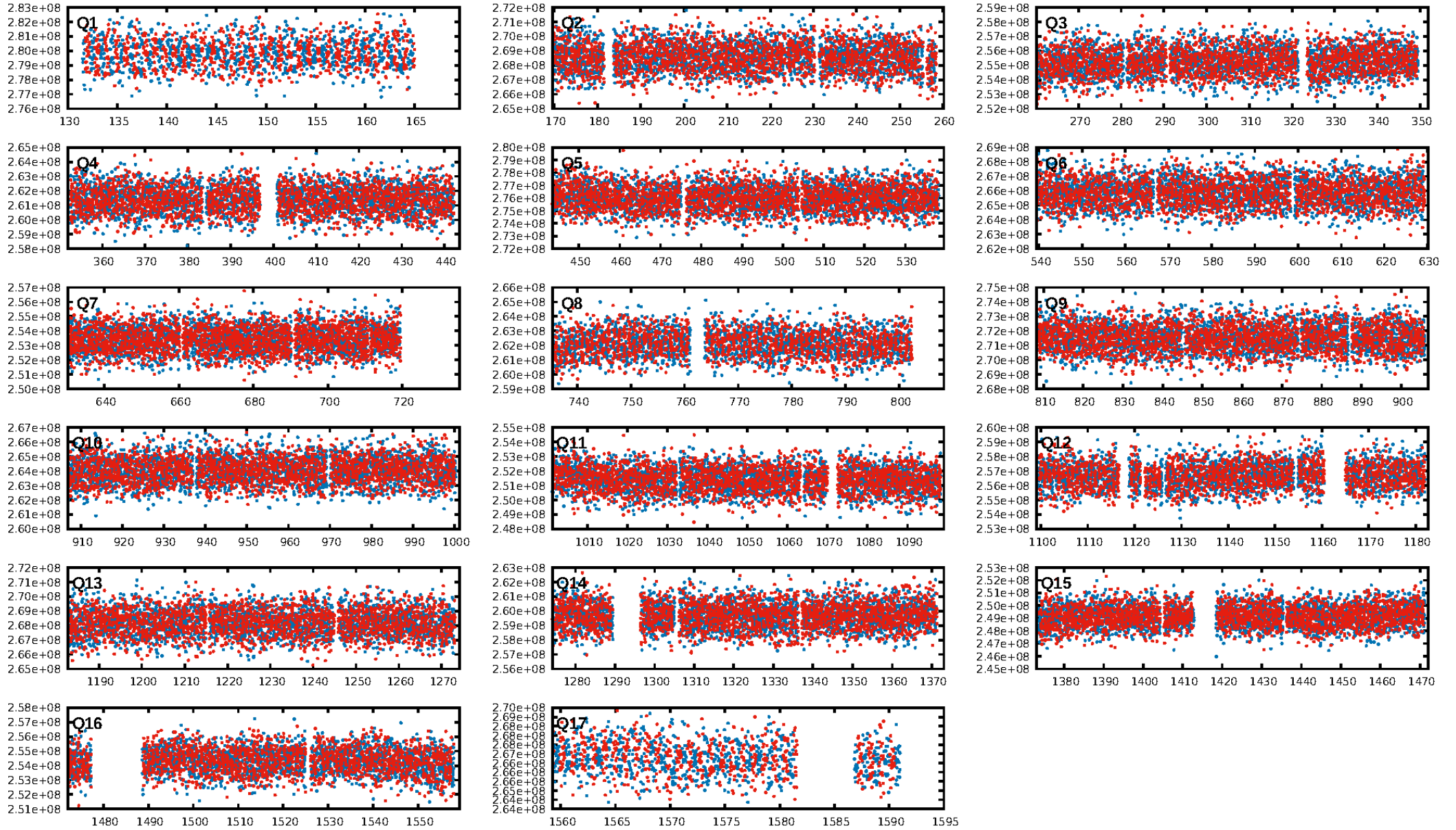
No Significant Match Found

DV One-Page Summary

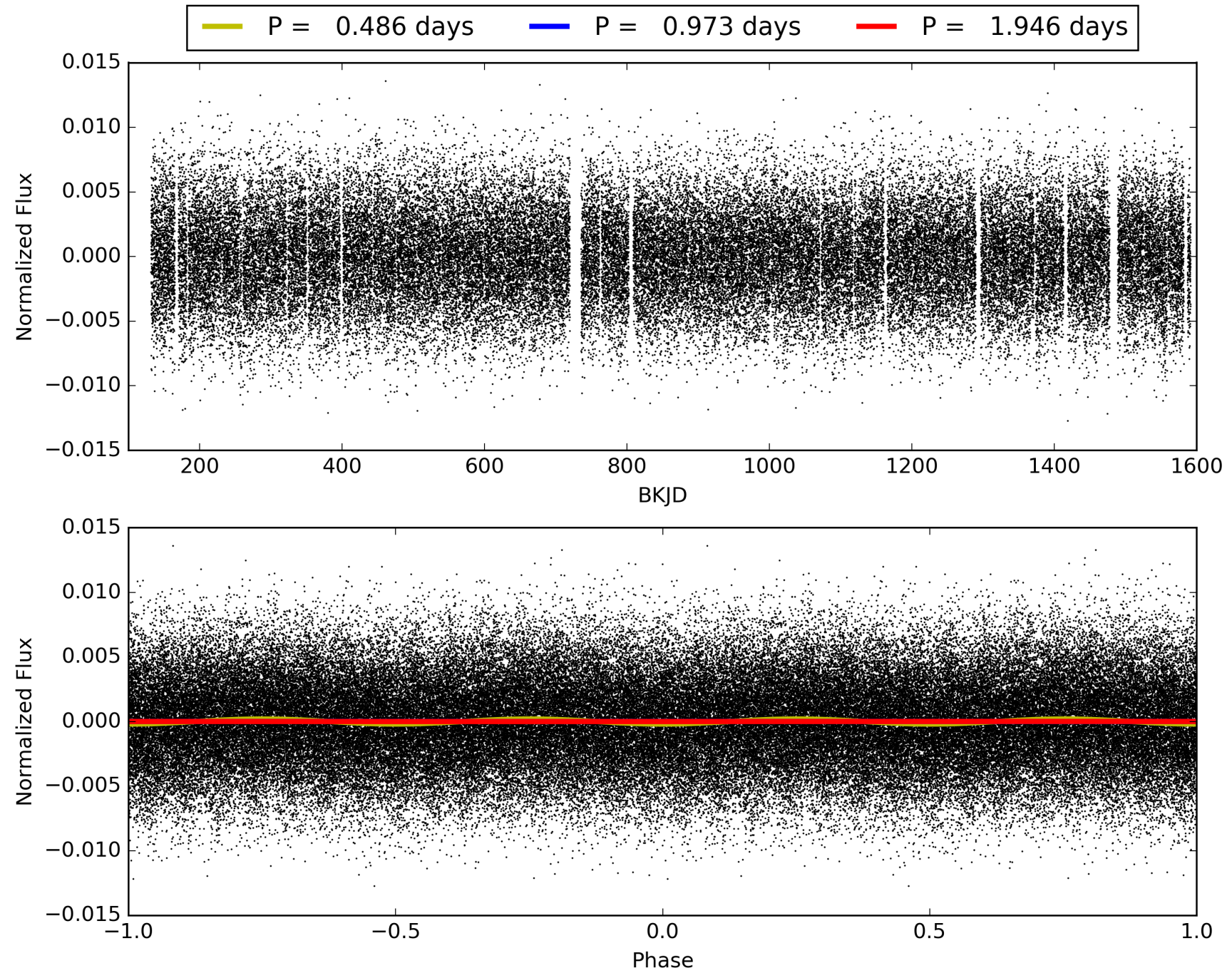
KIC: 8086490 Candidate: 2 of 2 Period: 0.973 d



TCE 008086490-02, PDC Light Curves

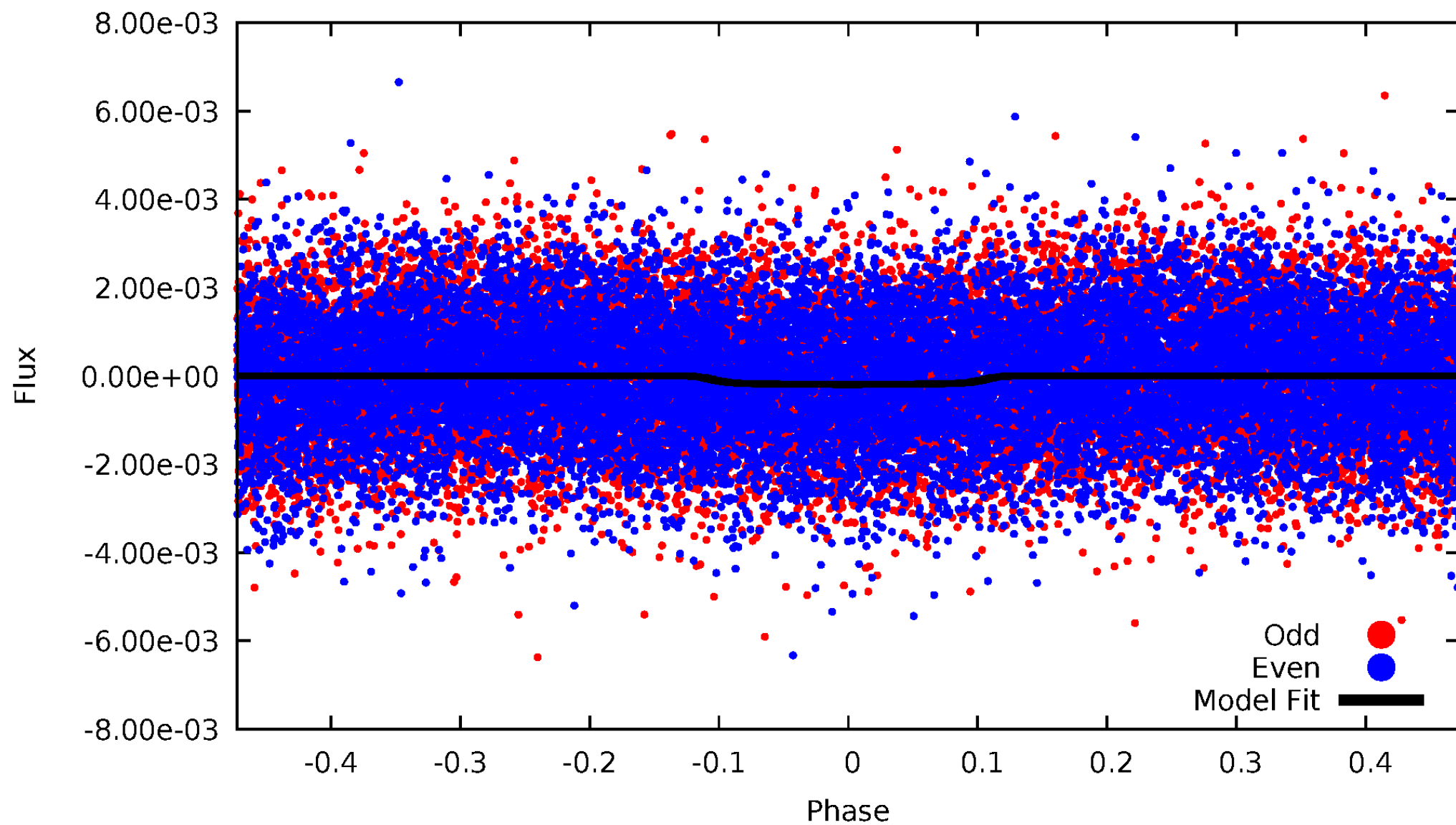


TCE 008086490-02



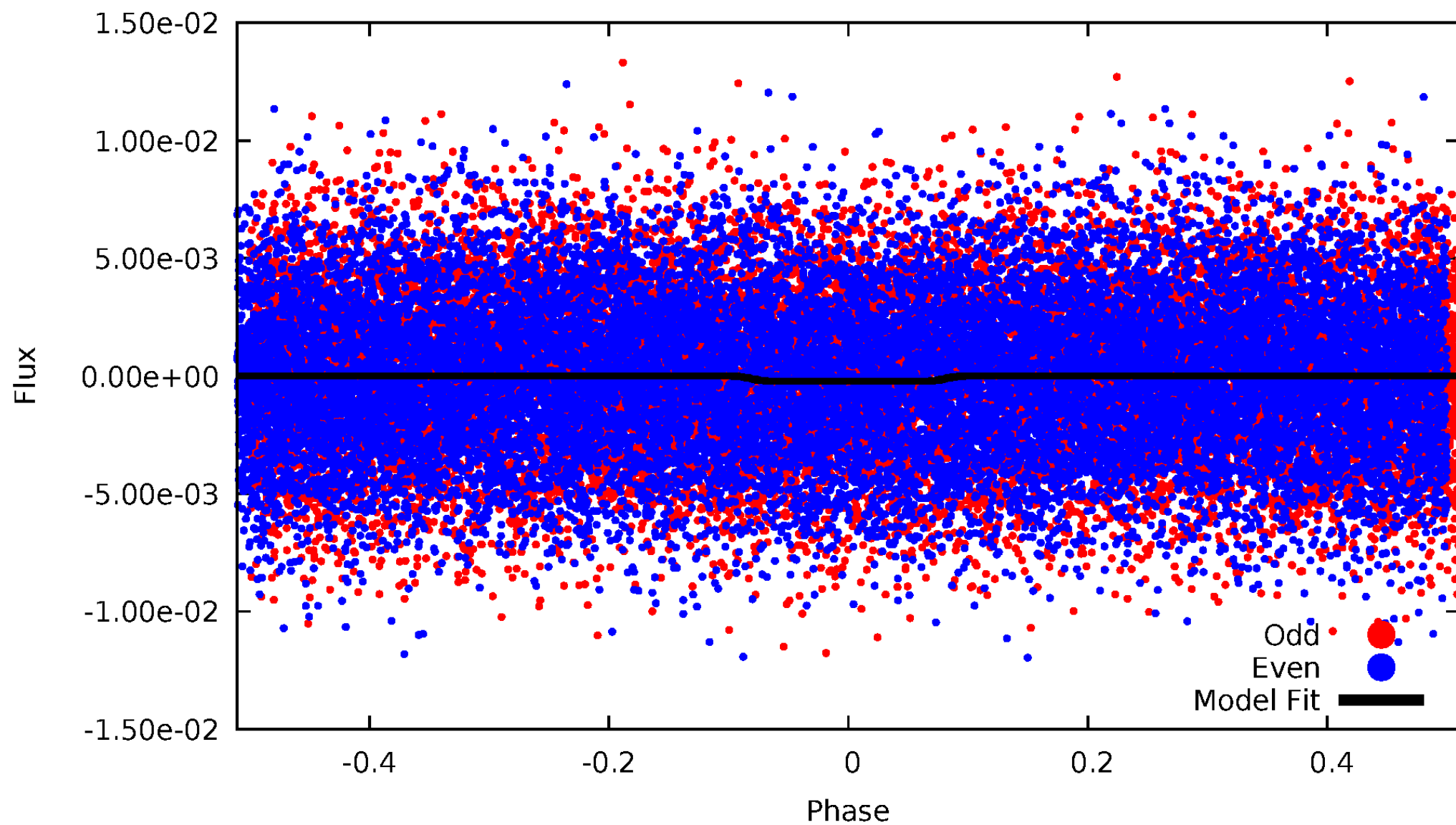
DV Odd/Even

TCE 008086490-02



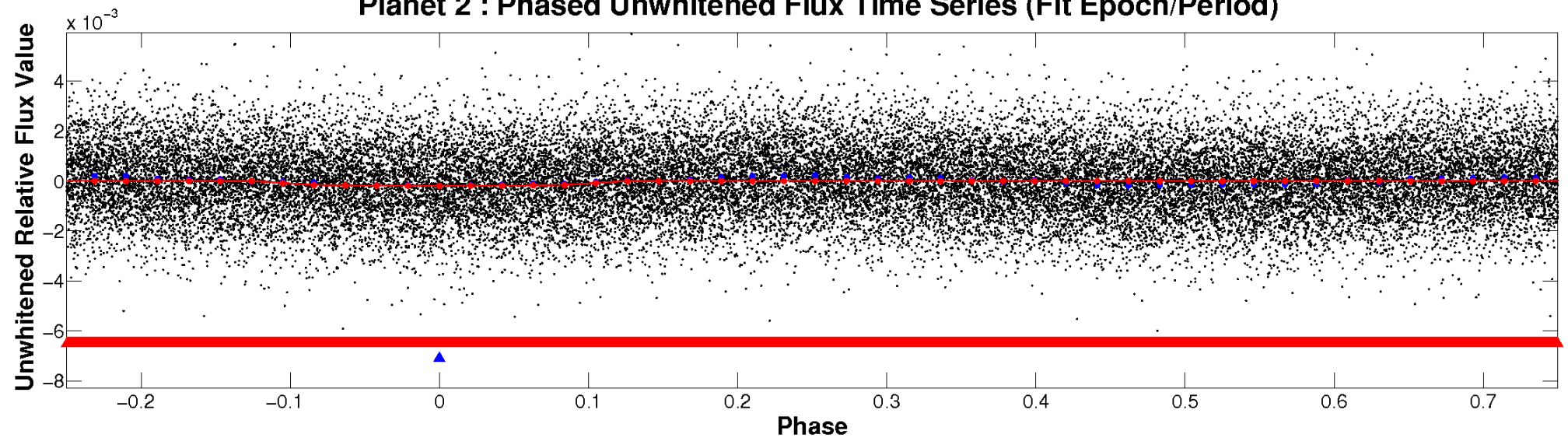
ALT Odd/Even

TCE 008086490-02

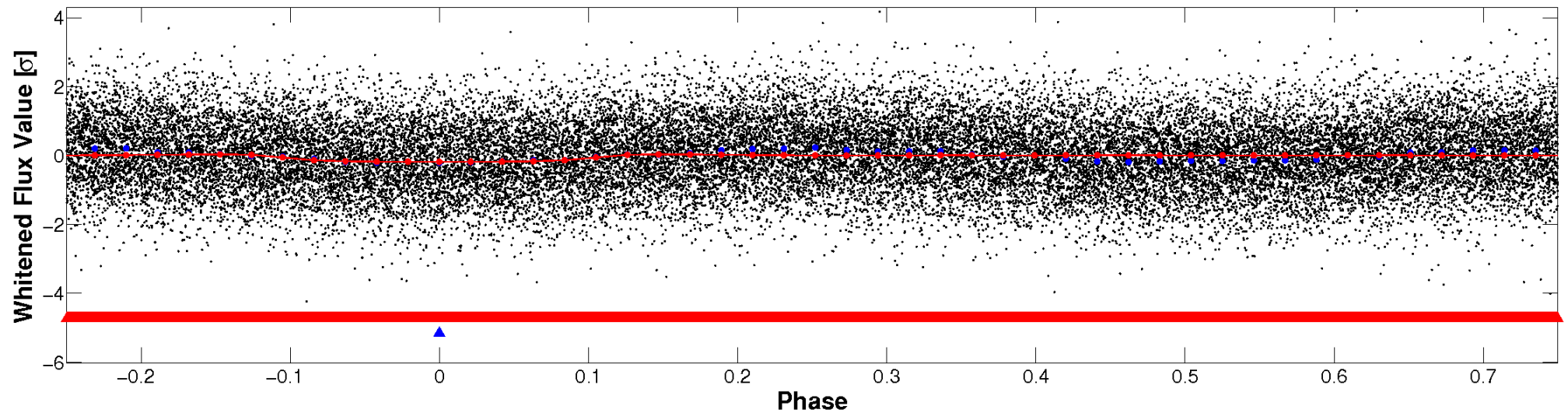


Non-Whitened Vs. Whitened Light Curve

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

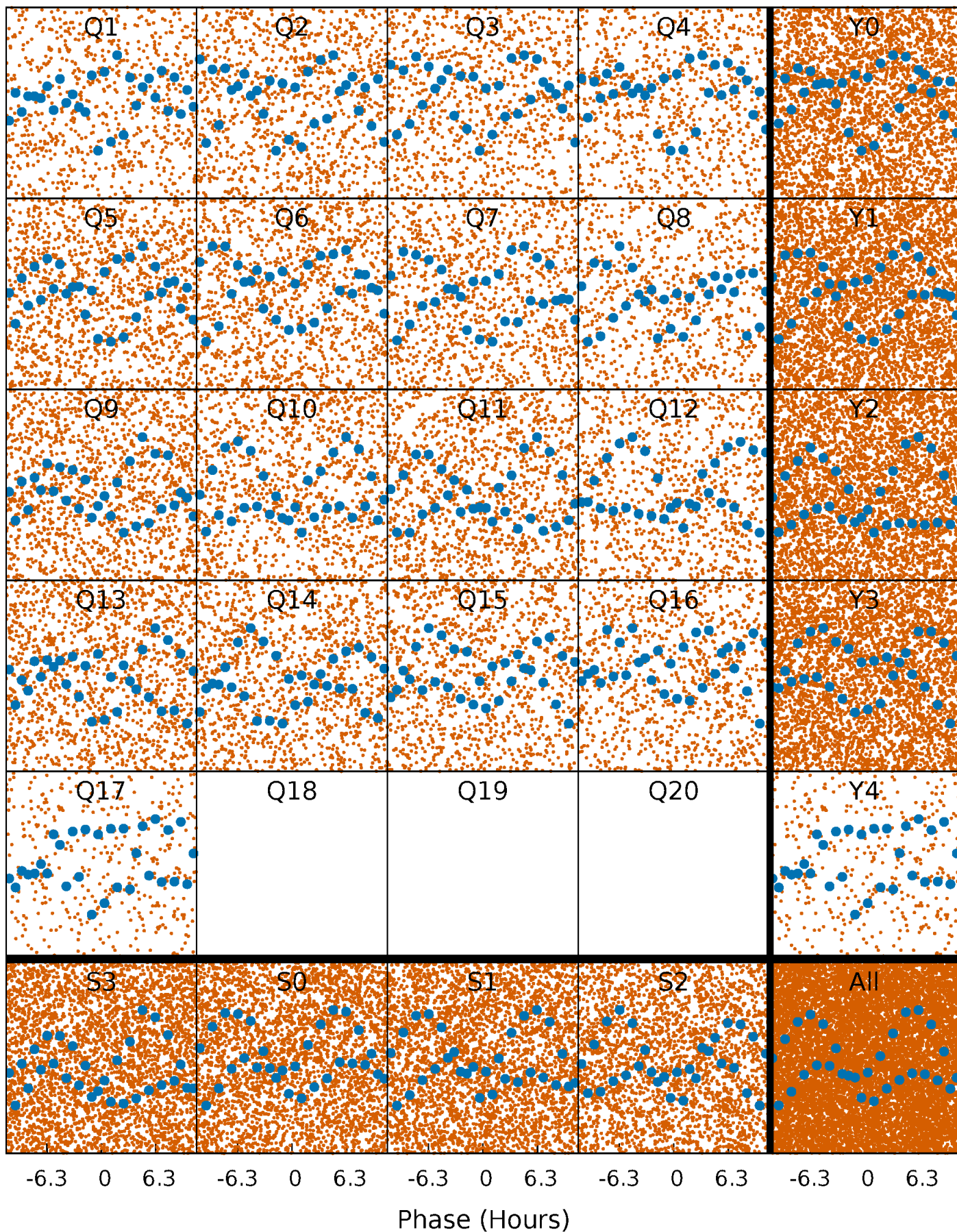


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



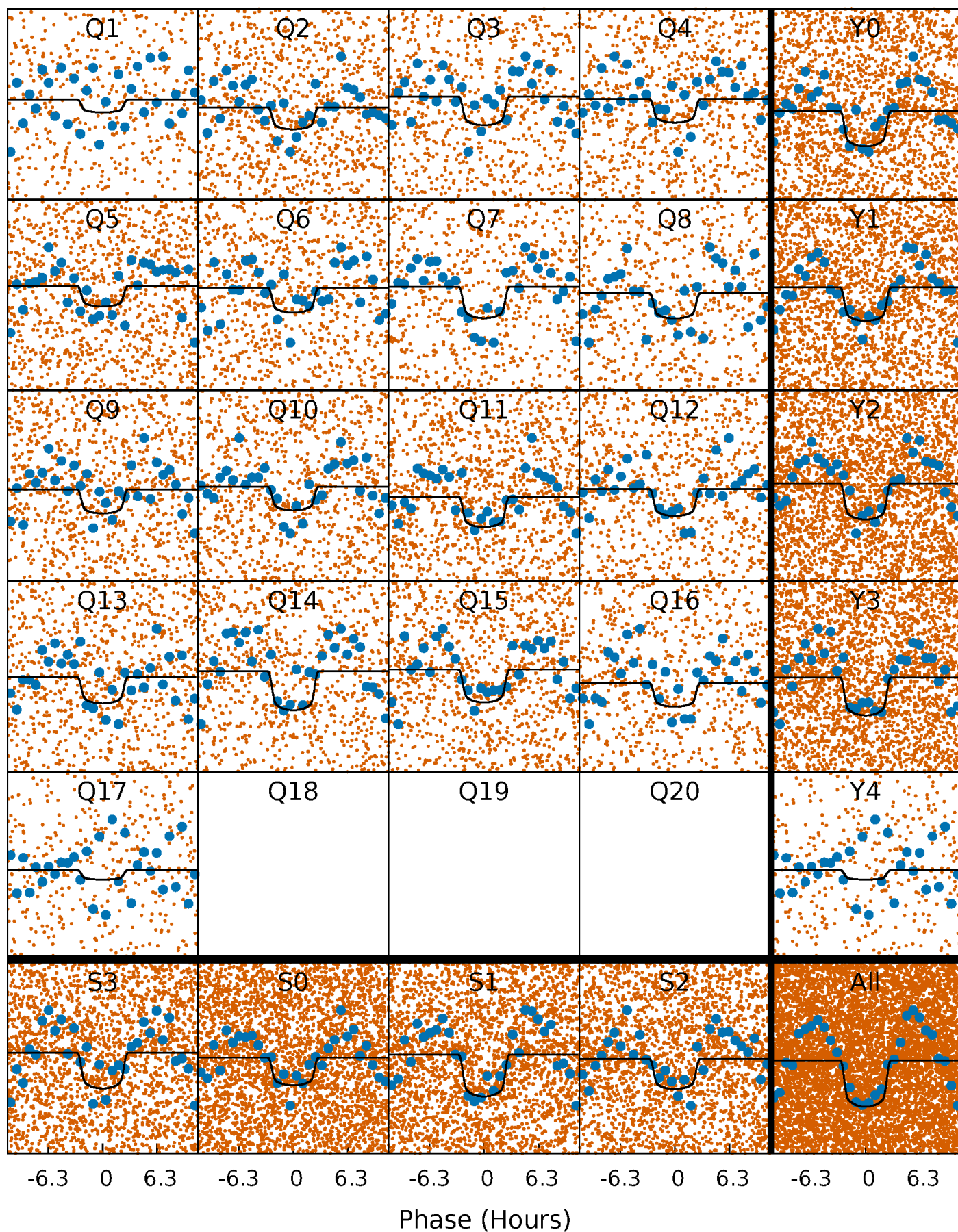
PDC Quarter-Phased Transit Curves

TCE 008086490-02 P= 0.972841 Days $T_0=131.978967$ (BKJD)



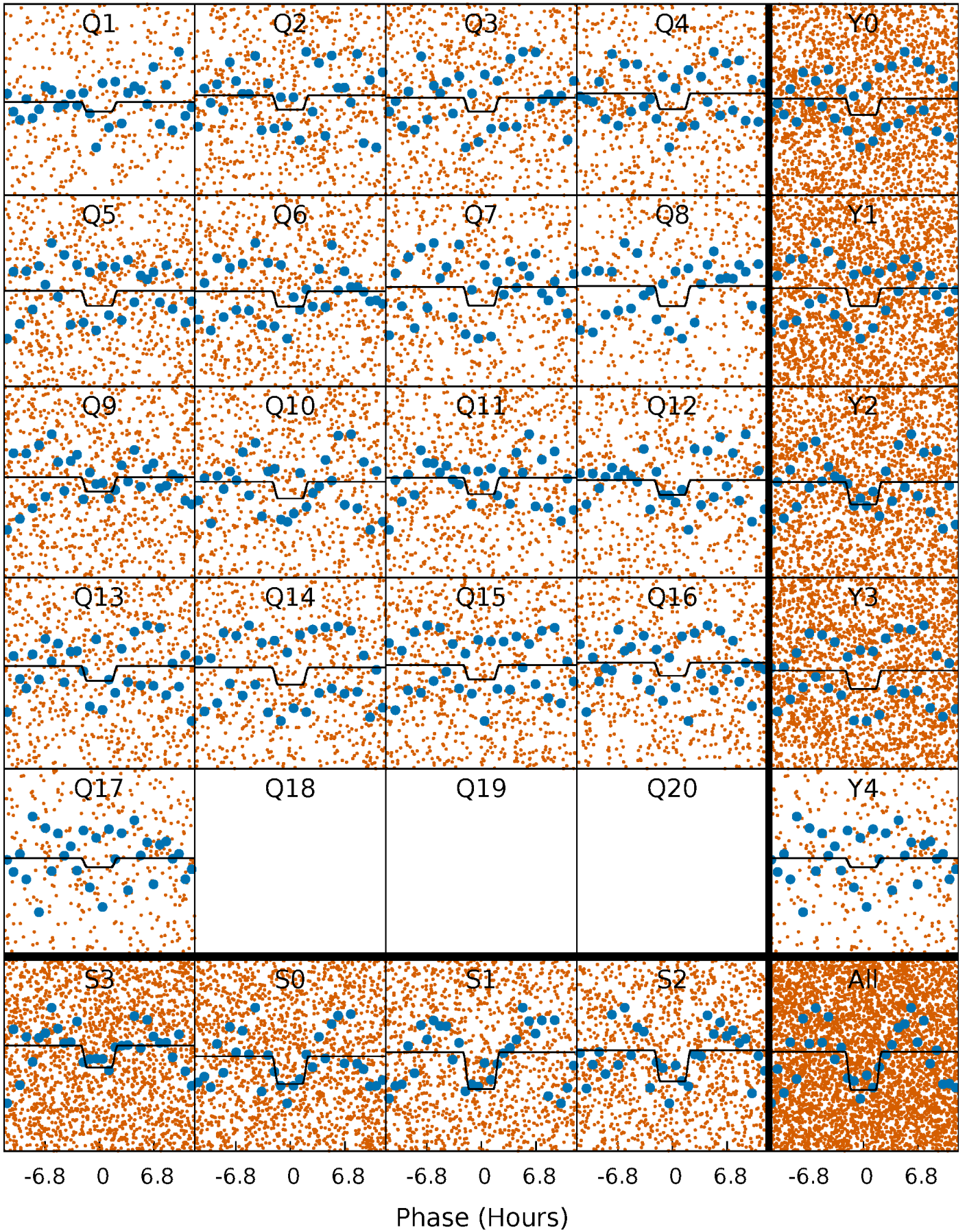
DV Quarter-Phased Transit Curves

TCE 008086490-02 P= 0.972841 Days $T_0=131.978967$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

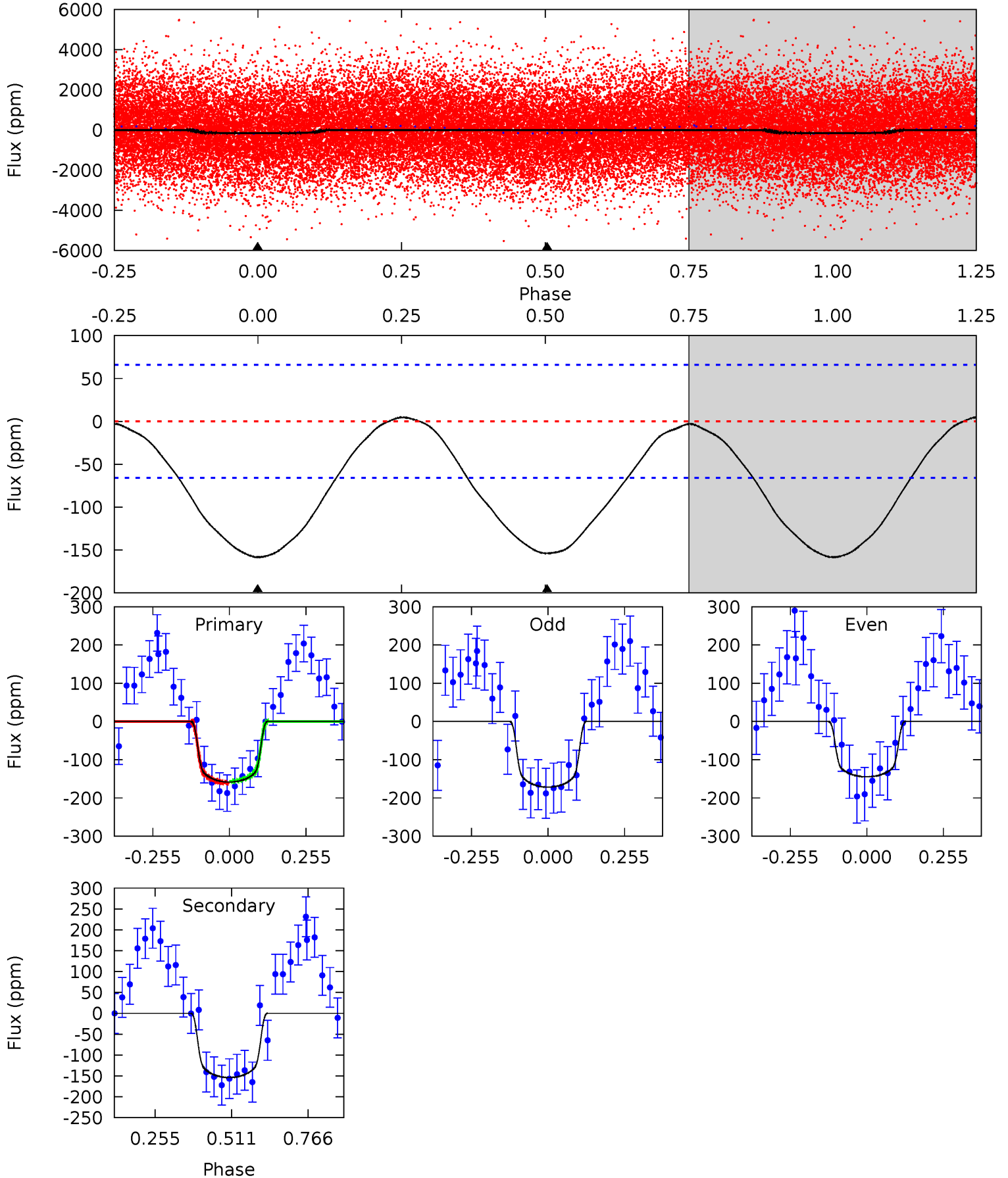
TCE 008086490-02 P= 0.972852 Days $T_0=131.971957$ (BKJD)



DV Model-Shift Uniqueness Test

008086490-02, P = 0.972841 Days, E = 131.006126 Days

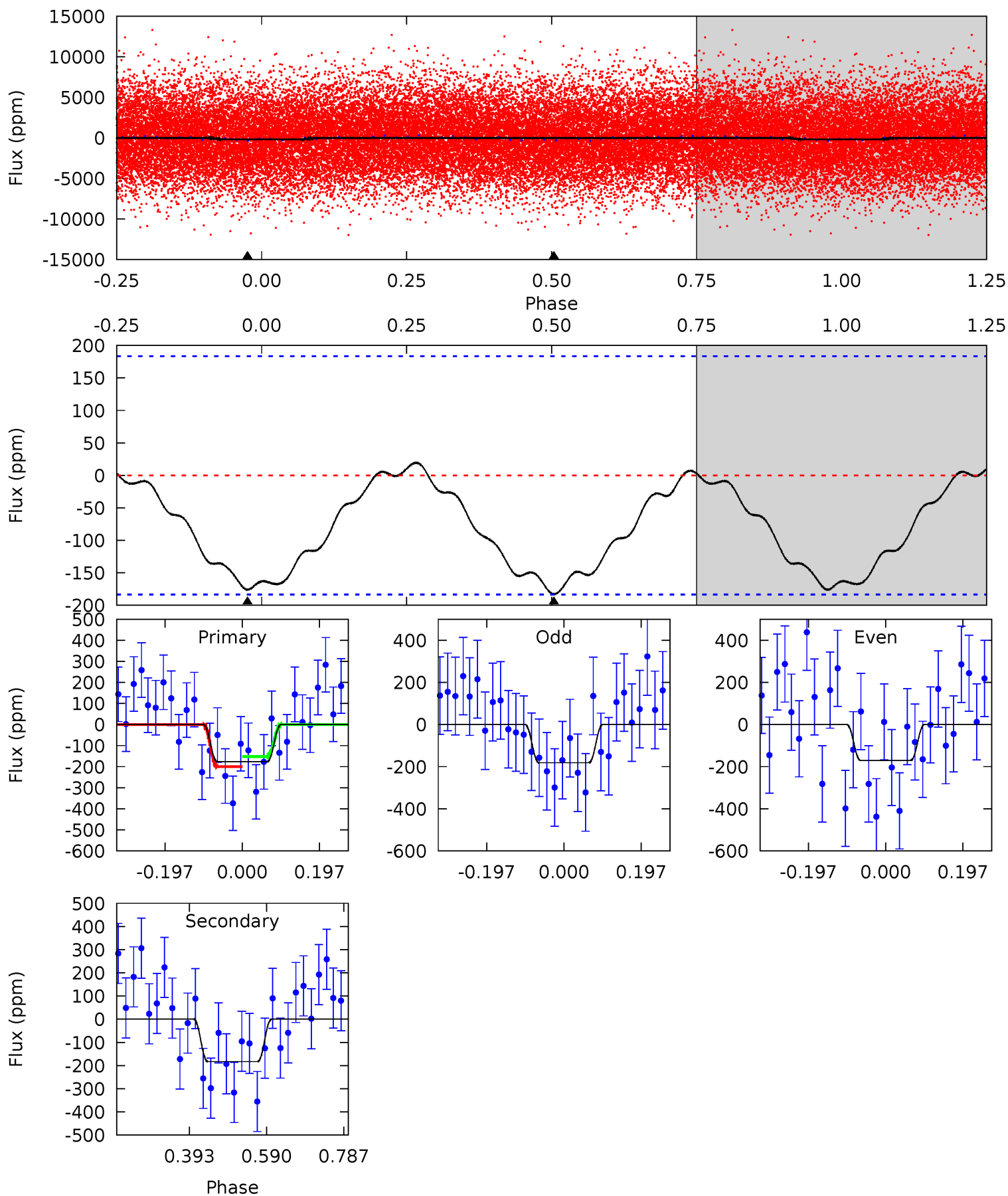
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
10.5	10.2	0	0	4.36	1.14	0.29	10.5	10.5	10.2	10.2	0.90	0.82	0.03	0.12



Alt Model-Shift Uniqueness Test

008086490-02, P = 0.972852 Days, E = 130.999105 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
4.24	4.41	0	0	4.42	1.29	0.31	4.24	4.24	4.41	4.41	0.13	0.97	0.10	0.57



Stellar Parameters For KIC 008086490

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	7693^{+213}_{-347}	$3.869^{+0.260}_{-0.140}$	$0.210^{+0.150}_{-0.400}$	$2.765^{+0.583}_{-0.948}$	$2.059^{+0.295}_{-0.443}$	$0.137^{+0.230}_{-0.050}$
	+3%/-5%	+7%/-4%	+71%/-190%	+21%/-34%	+14%/-22%	+168%/-36%
Source	PHO54	PHO54	PHO54	DSEP		

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

Secondary Eclipse Parameters for KIC 008086490-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-154 ± 15	$4.47^{+1.08}_{-1.12}$	4983^{+349}_{-447}	6587^{+953}_{-698}	$2.541^{+1.936}_{-0.888}$
Alt.	-183 ± 41	$4.29^{+1.13}_{-1.11}$	4967^{+370}_{-469}	7091^{+1260}_{-895}	$3.216^{+2.881}_{-1.244}$

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 $A_{obs} \gg 1.0$

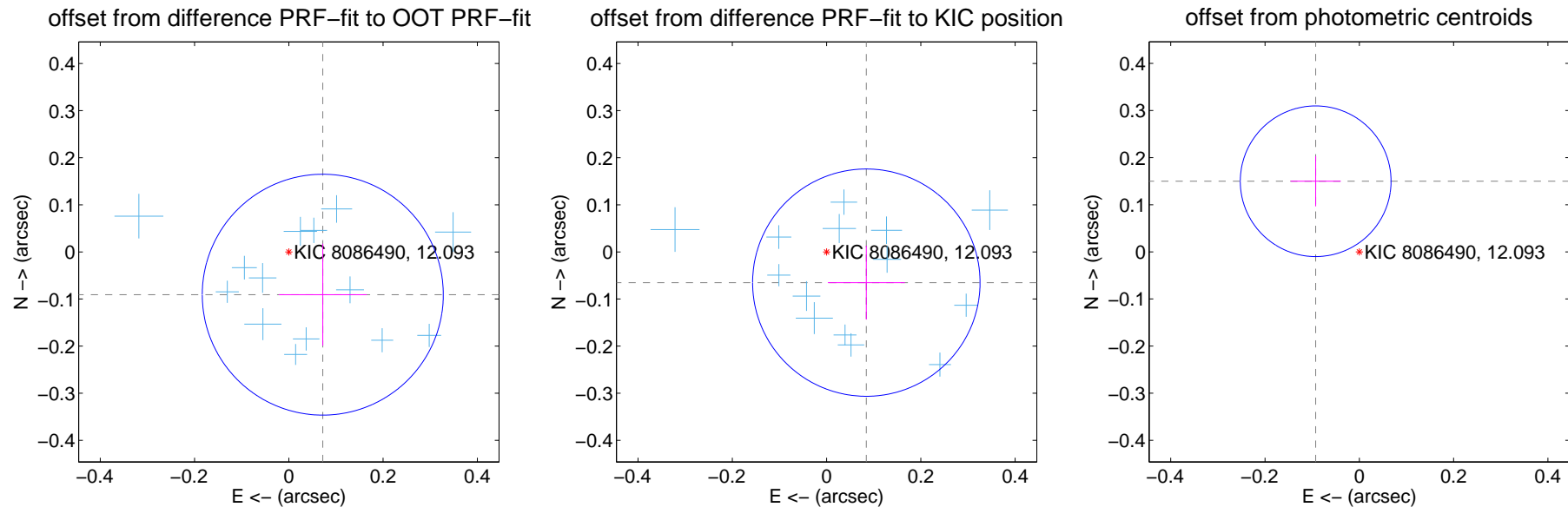
DV Centroid Data

Supplemental centroid analysis for 008086490-02. Kepler magnitude: 12.09. Transit SNR 13.28

There are 17 quarters with good PRF difference image offsets

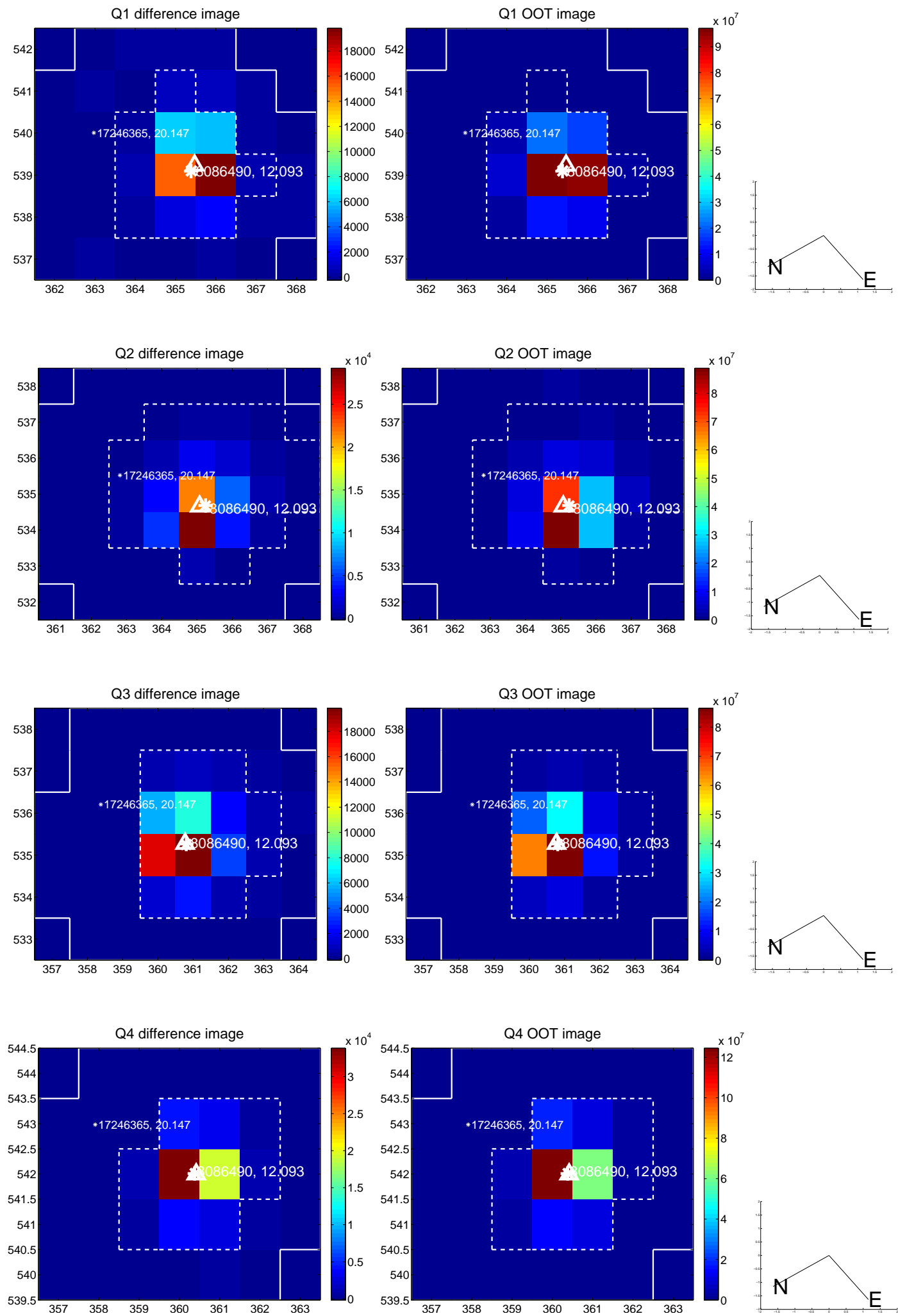
The direct PRF centroid is offset from the target star catalog position by about 0.05 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.116 ± 0.085	1.36	-0.072 ± 0.093	-0.091 ± 0.108
PRF-fit source offset from KIC position	0.107 ± 0.080	1.33	-0.084 ± 0.082	-0.065 ± 0.078
photometric centroid source offset	0.18 ± 0.05	3.31	0.09 ± 0.05	0.15 ± 0.05

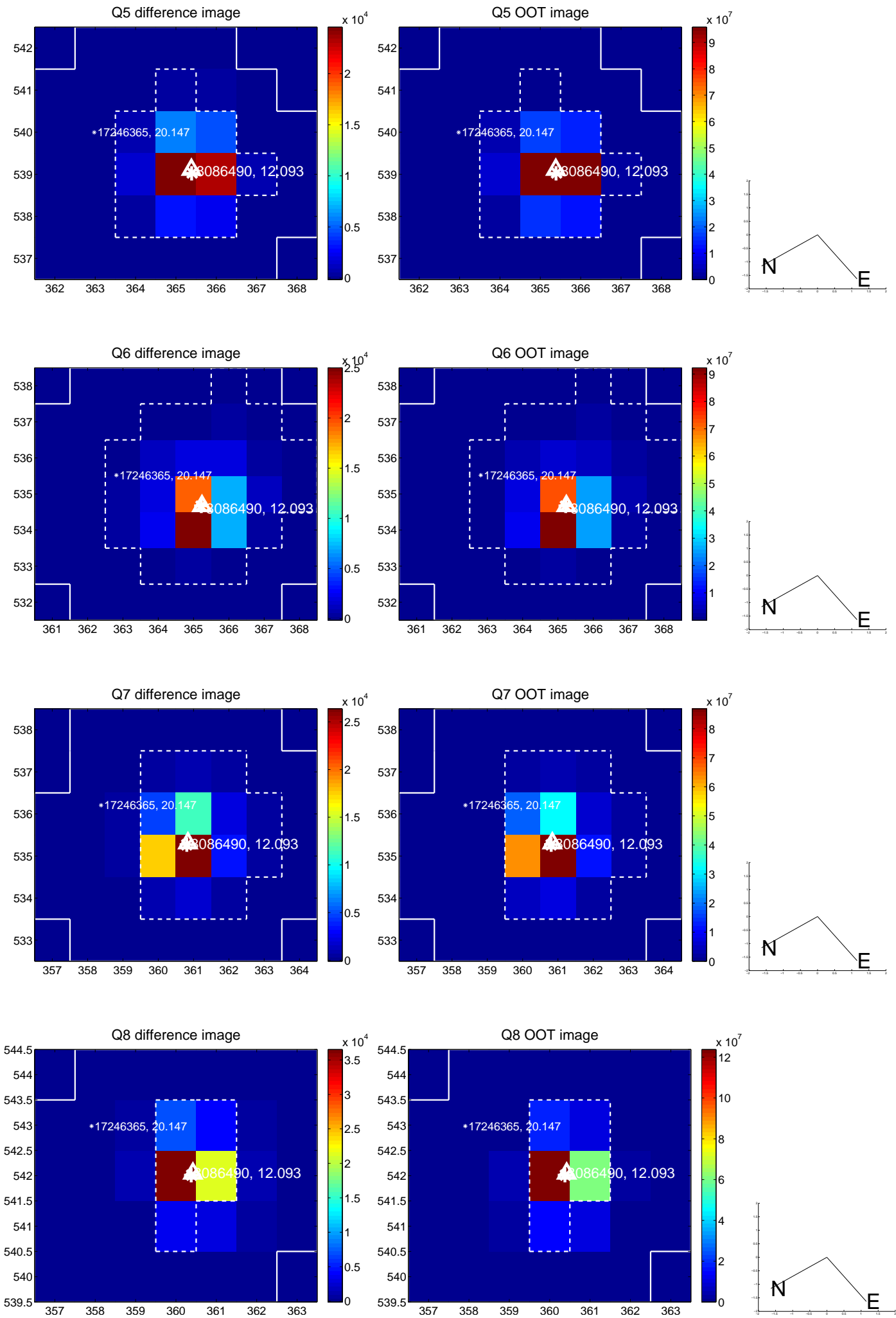


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

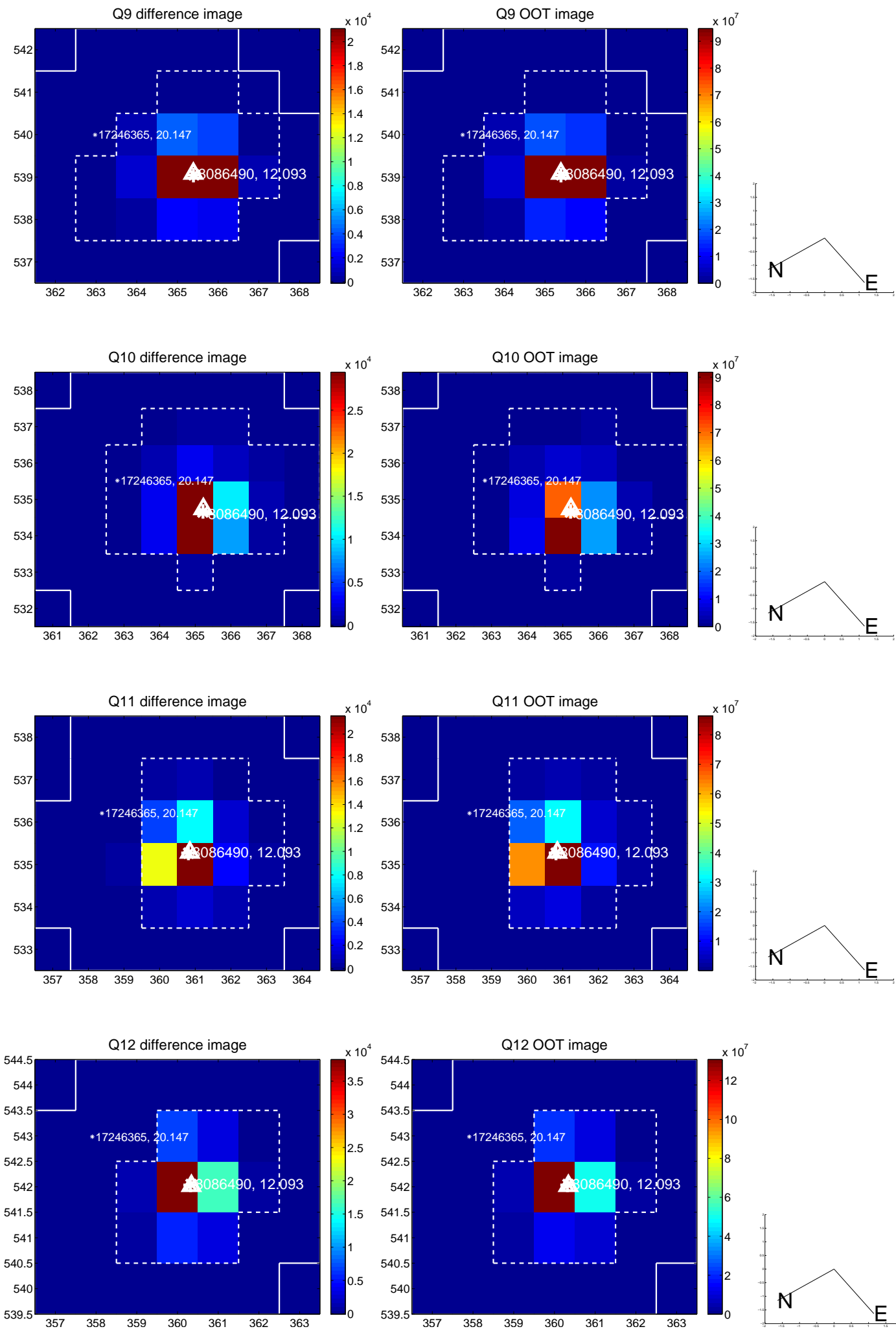
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



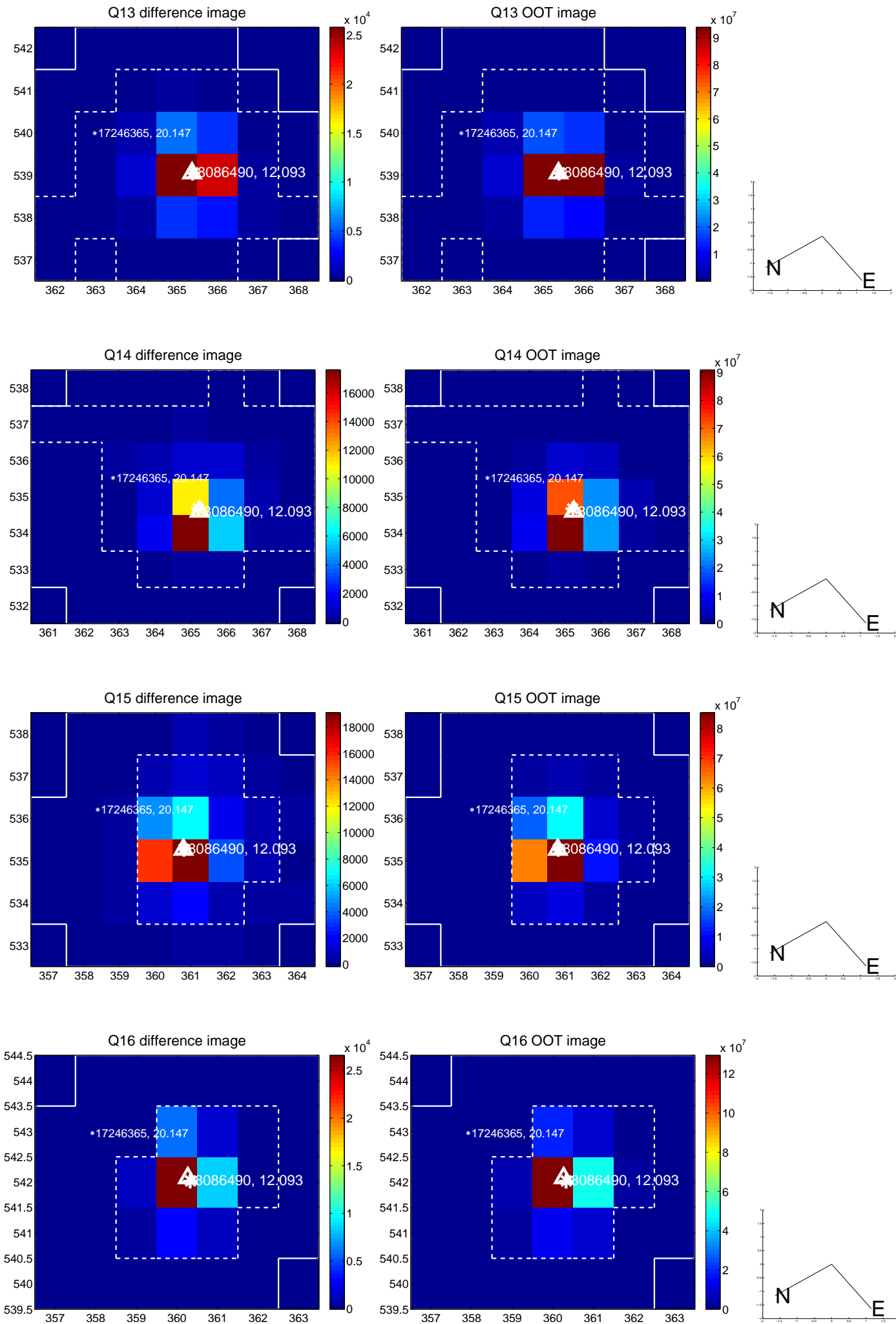
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



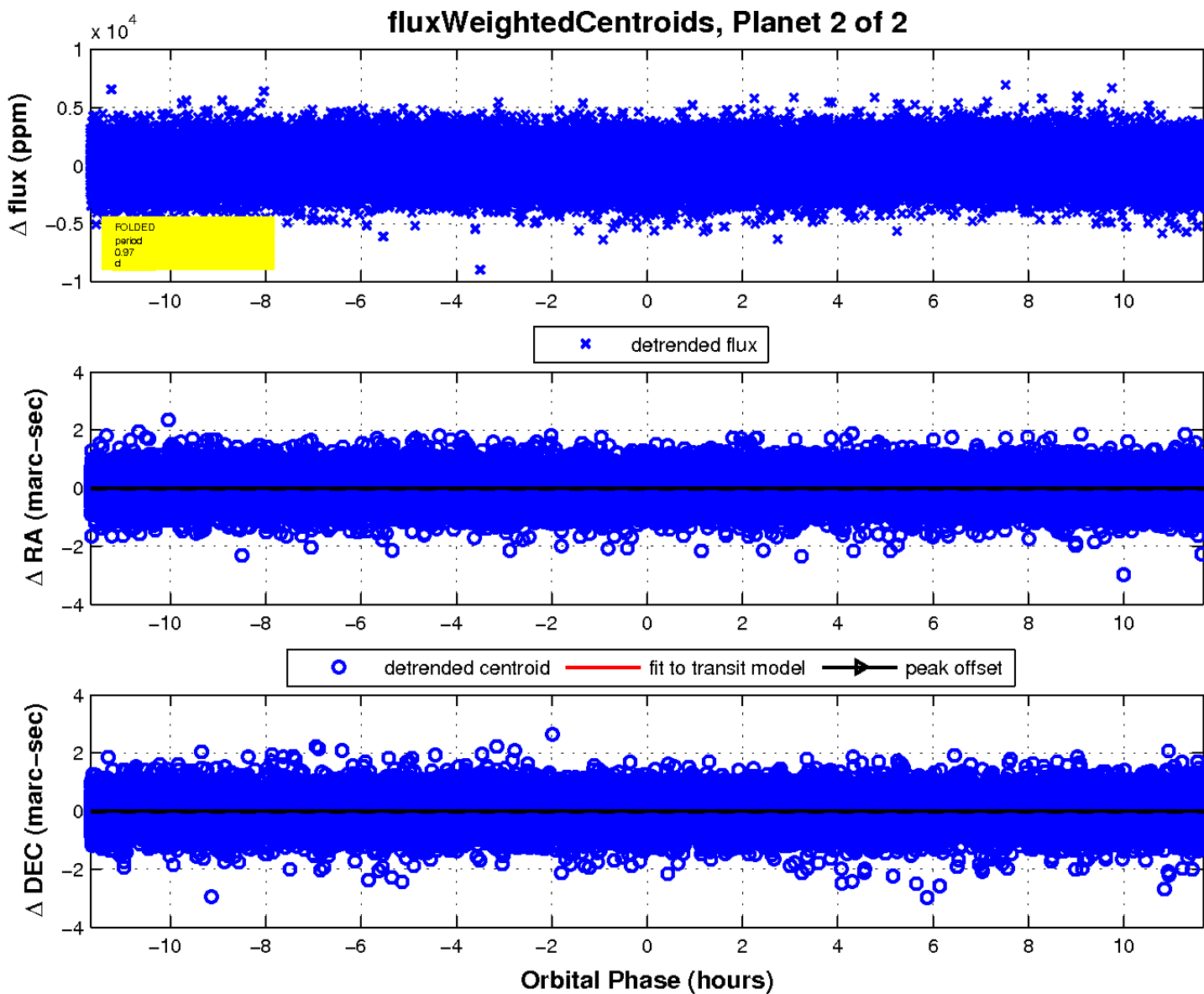
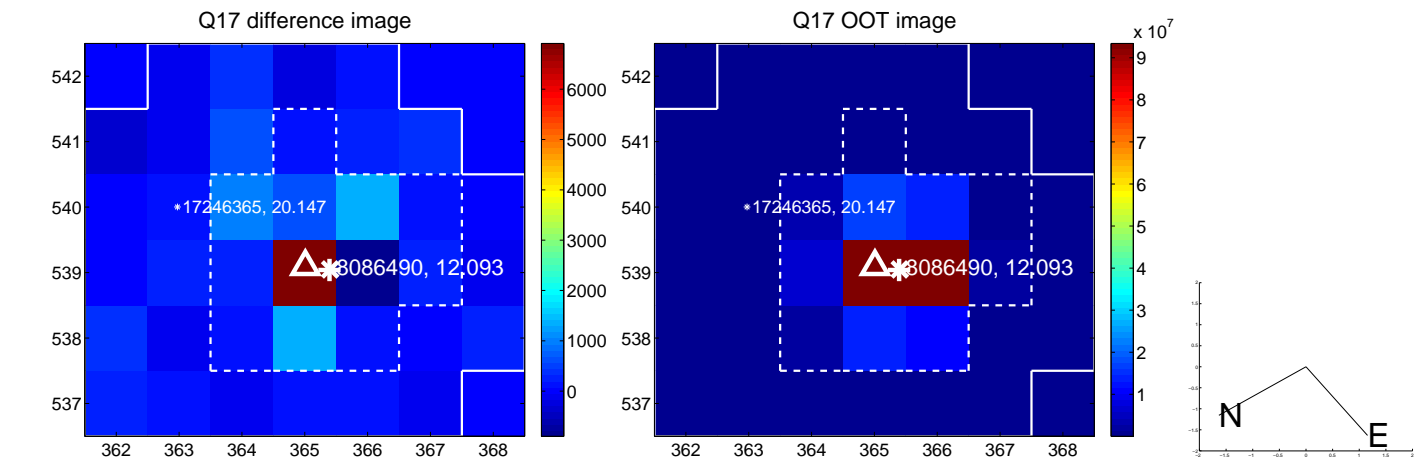
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

