

KIC 004138848

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})
004138848-01	OBS	No	0.585764	131.899228	182.7	7.029	24.9	27.2	1.73	6869	3.00	24709.58

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
004138848-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT

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

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

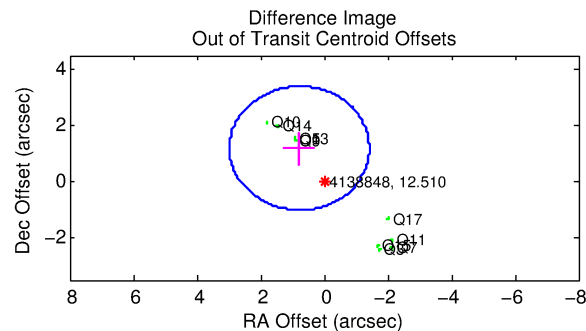
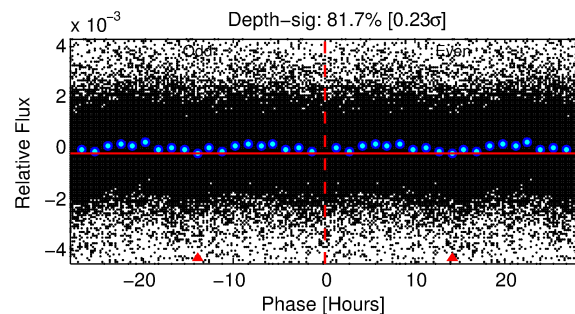
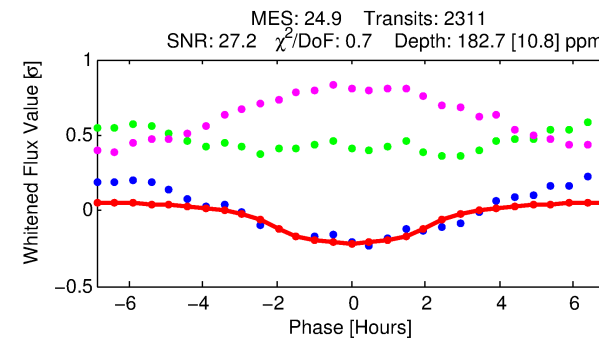
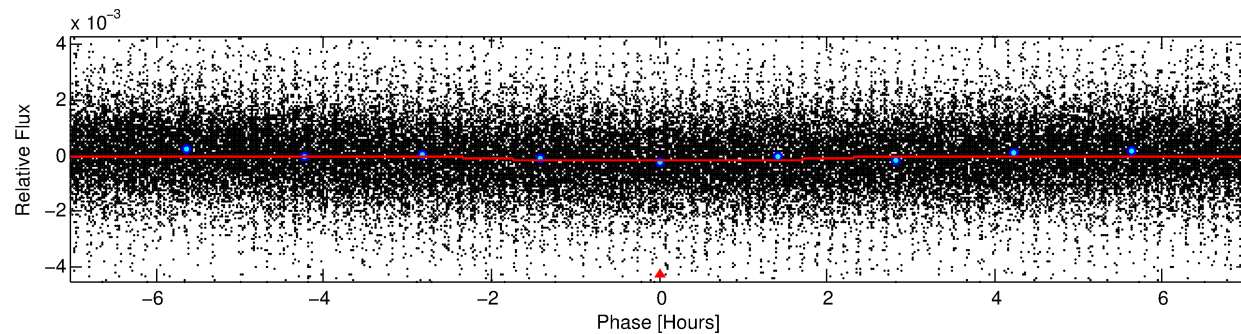
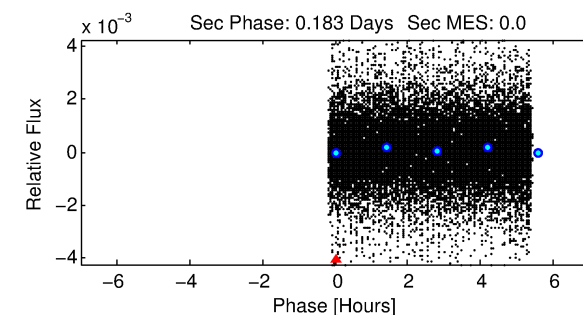
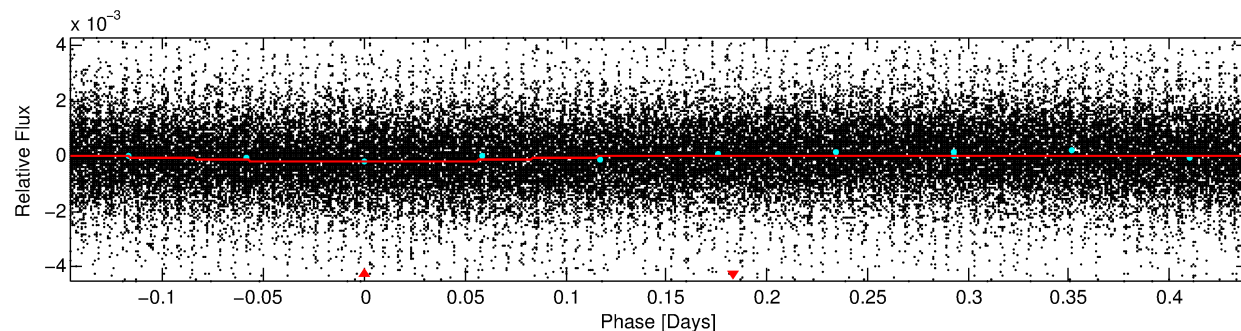
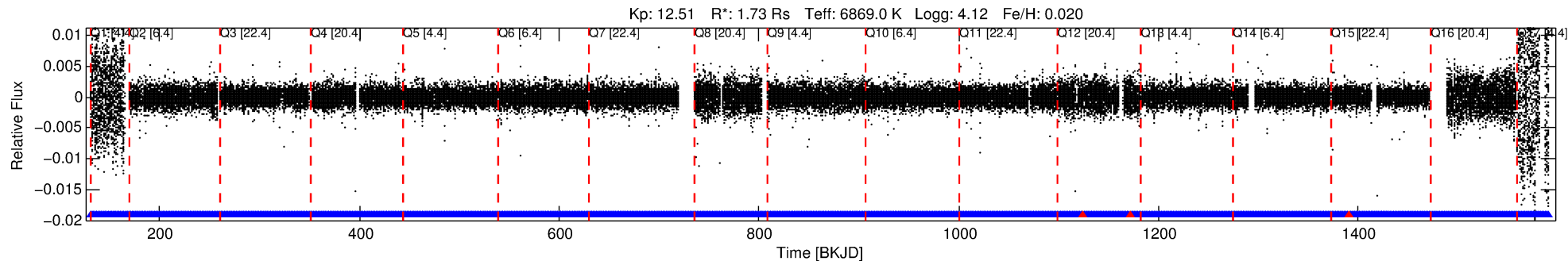
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 004138848-01

No Significant Match Found

DV One-Page Summary

KIC: 4138848 Candidate: 1 of 1 Period: 0.586 d



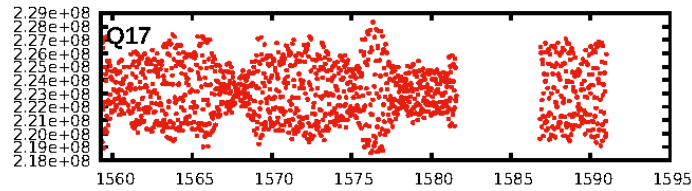
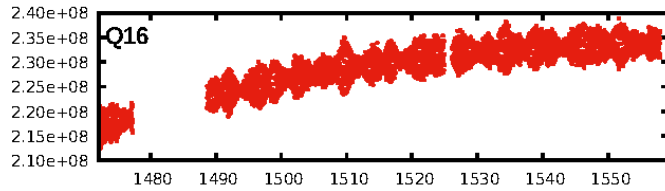
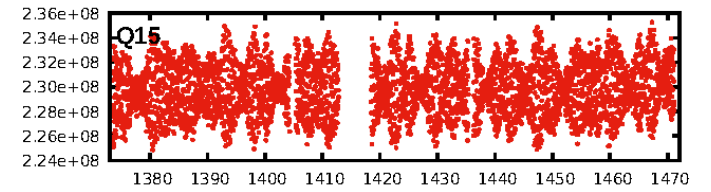
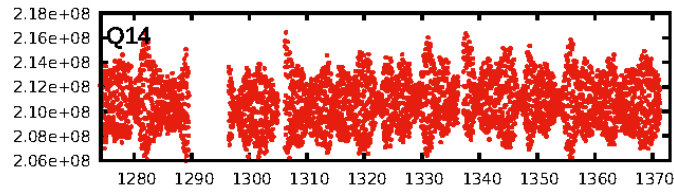
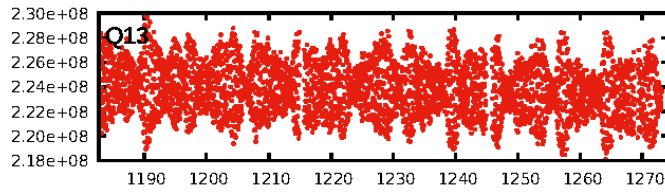
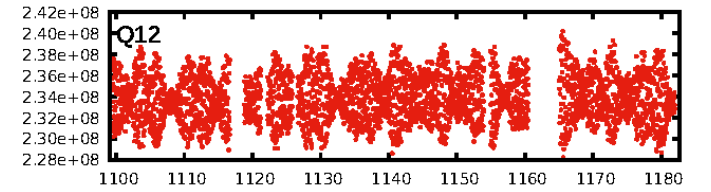
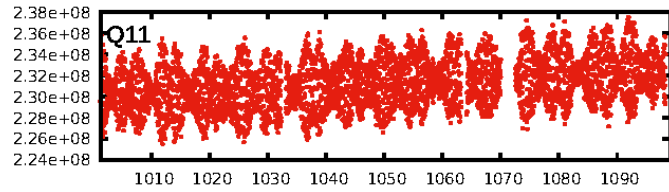
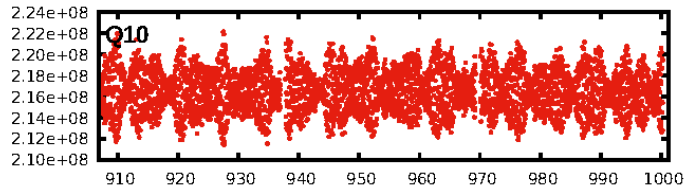
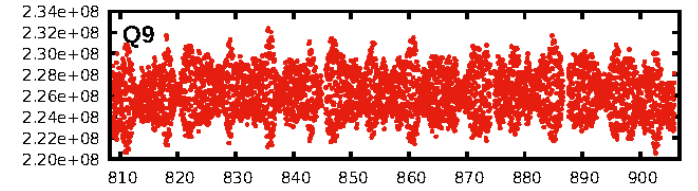
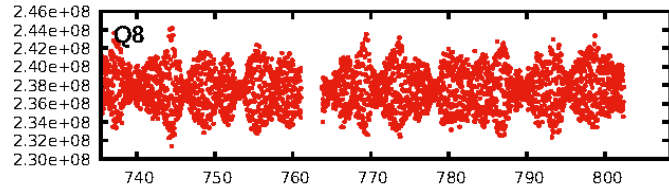
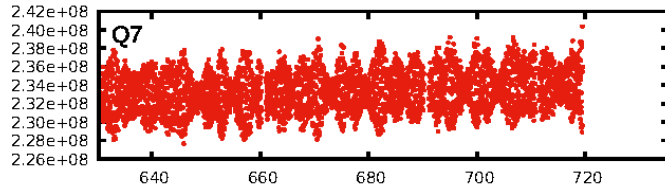
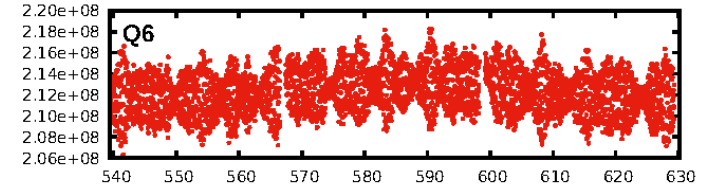
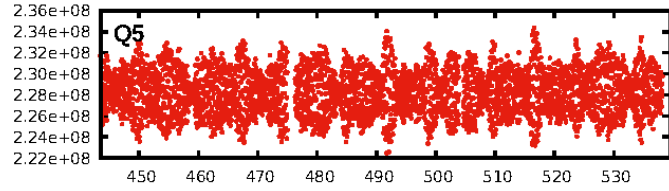
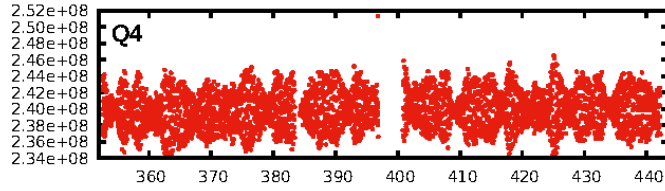
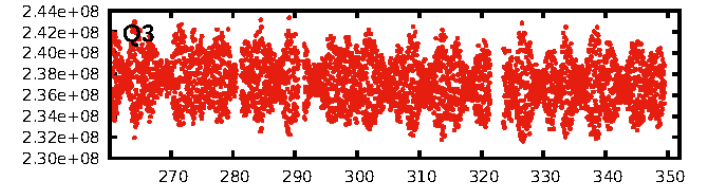
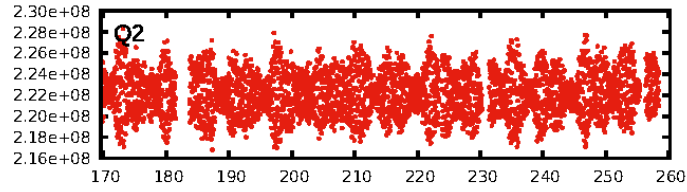
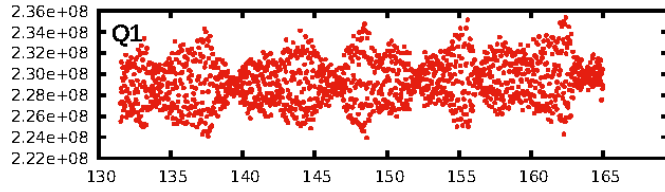
DV Fit Results:

Period = 0.58576 [0.00000] d
Epoch = 131.8992 [0.0034] BKJD
Rp/R* = 0.0159 [0.0006]
a/R* = 1.01 [0.00]
b = 0.97 [0.01]
Seff = 24709.58 [9534.20]
Teff = 3197 [308] K
Rp = 3.00 [0.97] Re
a = 0.0155 [0.0040] AU
Ag = N/A
Teffp = N/A

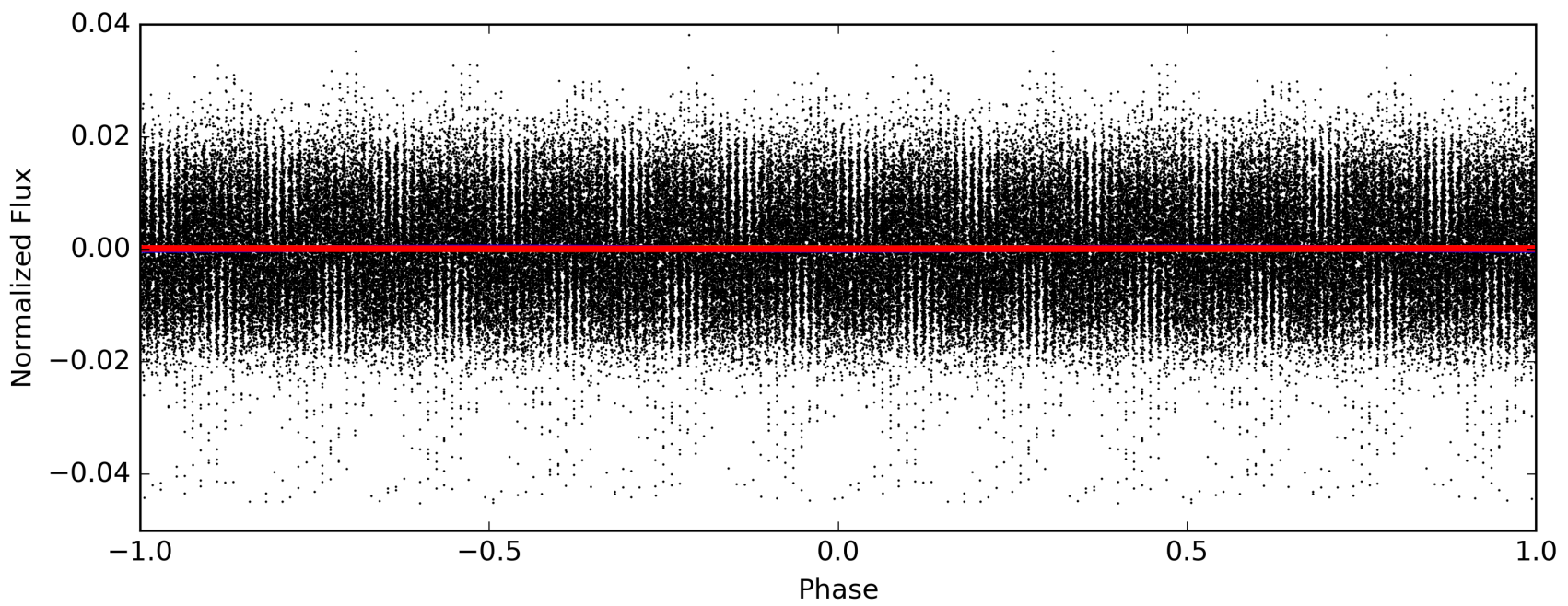
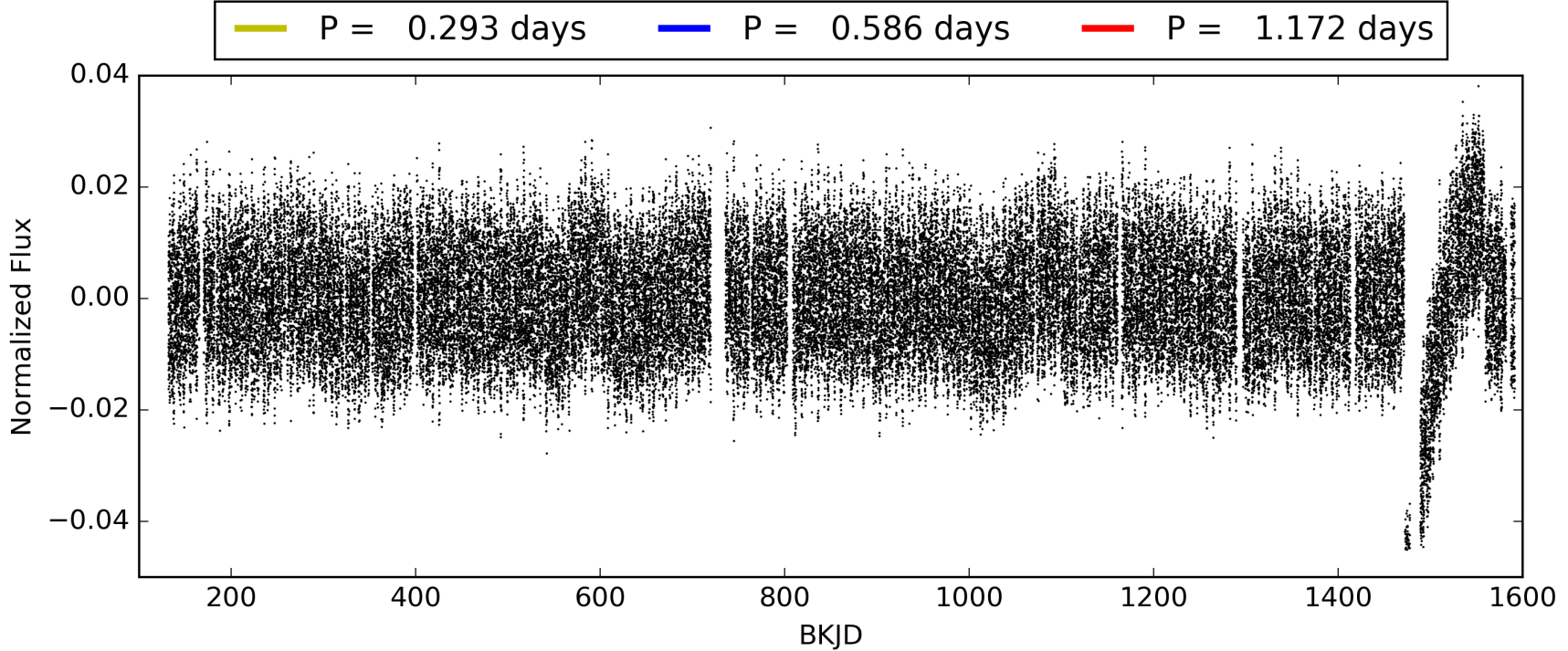
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [2204/2207]
GhostDiagnostic-chr: 1.203
Centroid-sig: 0.0%
Centroid-so: 0.135 arcsec [2.16σ]
OotOffset-rm: 1.424 arcsec [1.94σ]
KicOffset-rm: 1.425 arcsec [1.64σ]
OotOffset-st: 2/4/0/4 [10]
KicOffset-st: 2/4/0/4 [10]
DiffImageQuality-fgm: 0.60 [6/10]
DiffImageOverlap-fno: 1.00 [17/17]

TCE 004138848-01, PDC Light Curves

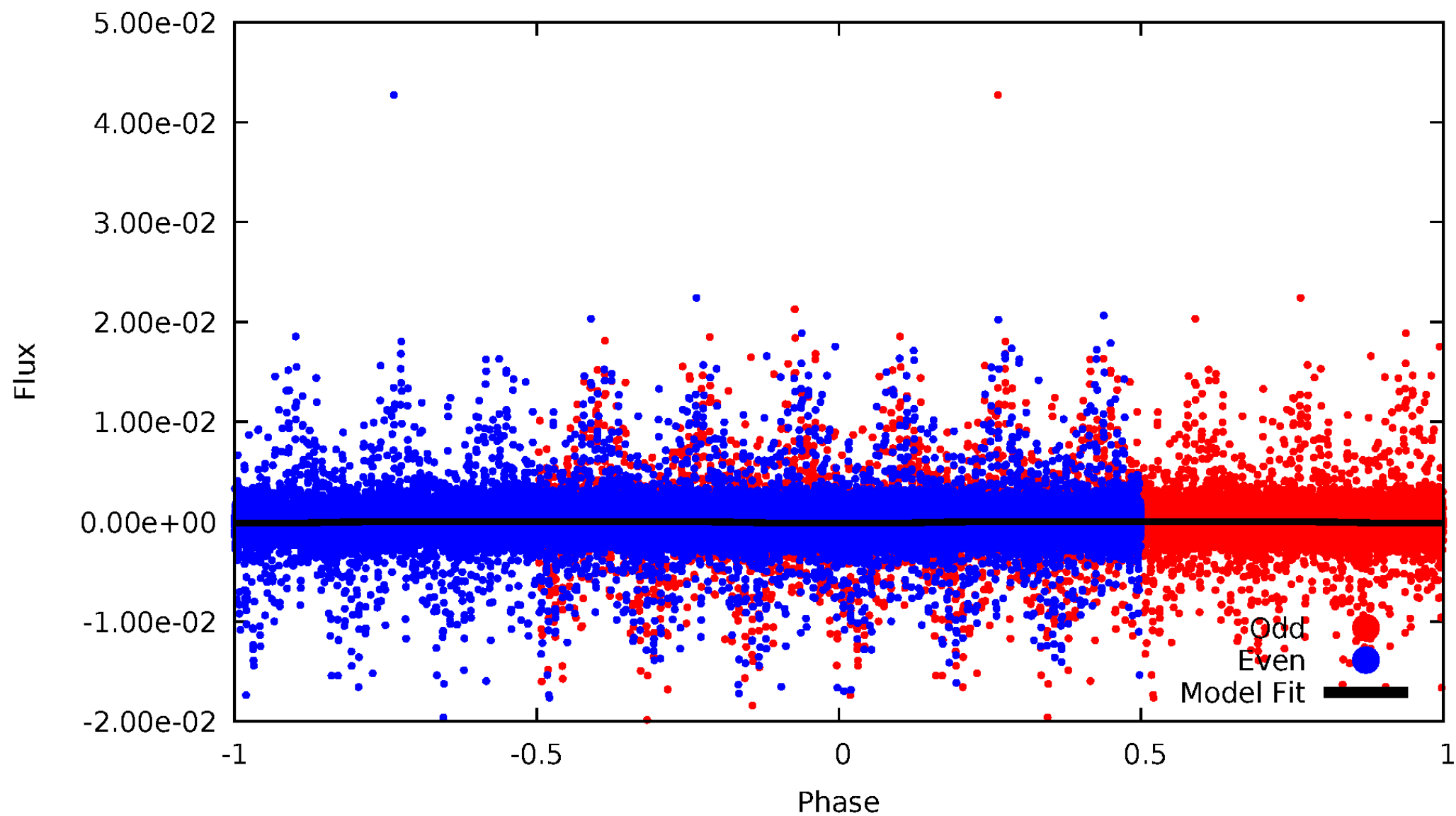


TCE 004138848-01



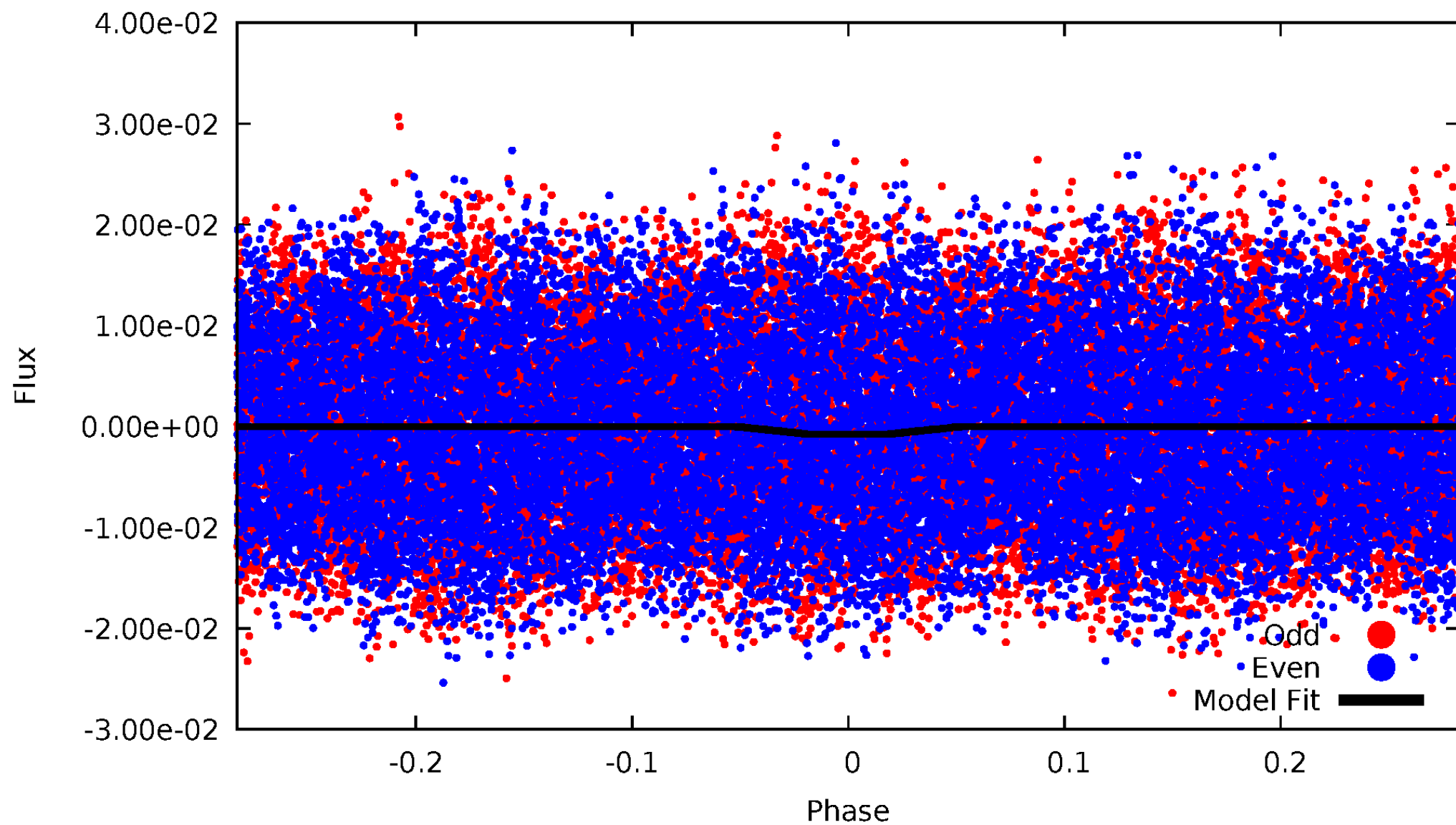
DV Odd/Even

TCE 004138848-01



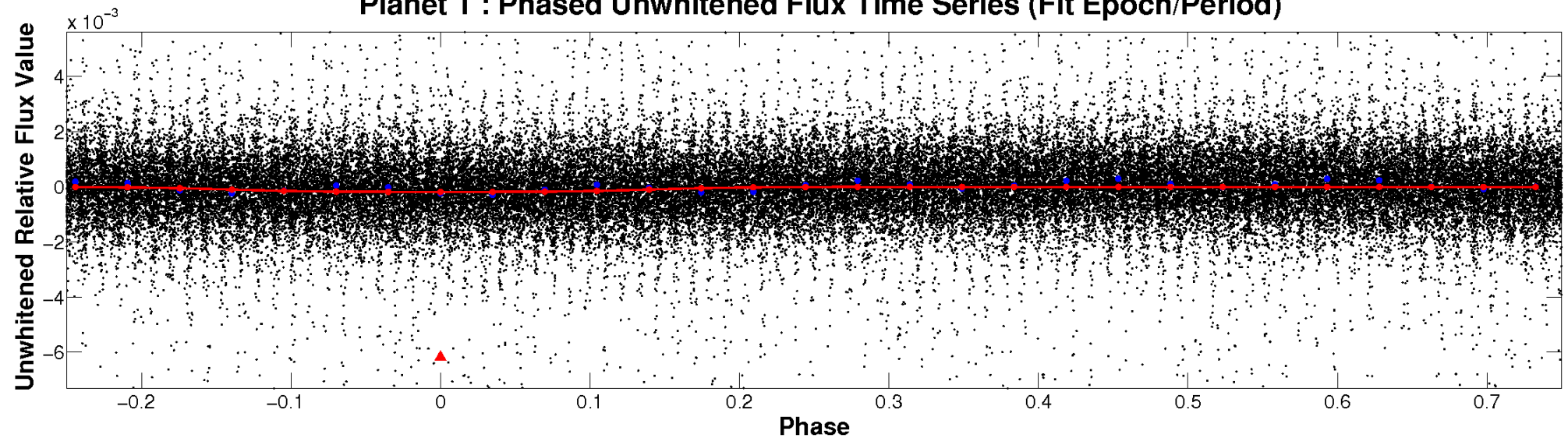
ALT Odd/Even

TCE 004138848-01

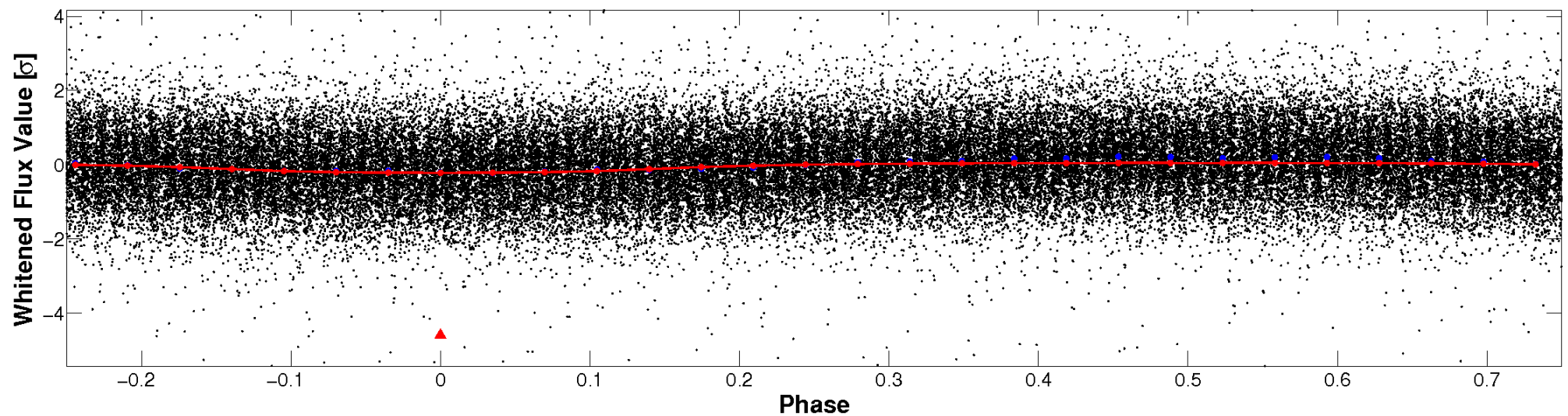


Non-Whitened Vs. Whitened Light Curve

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

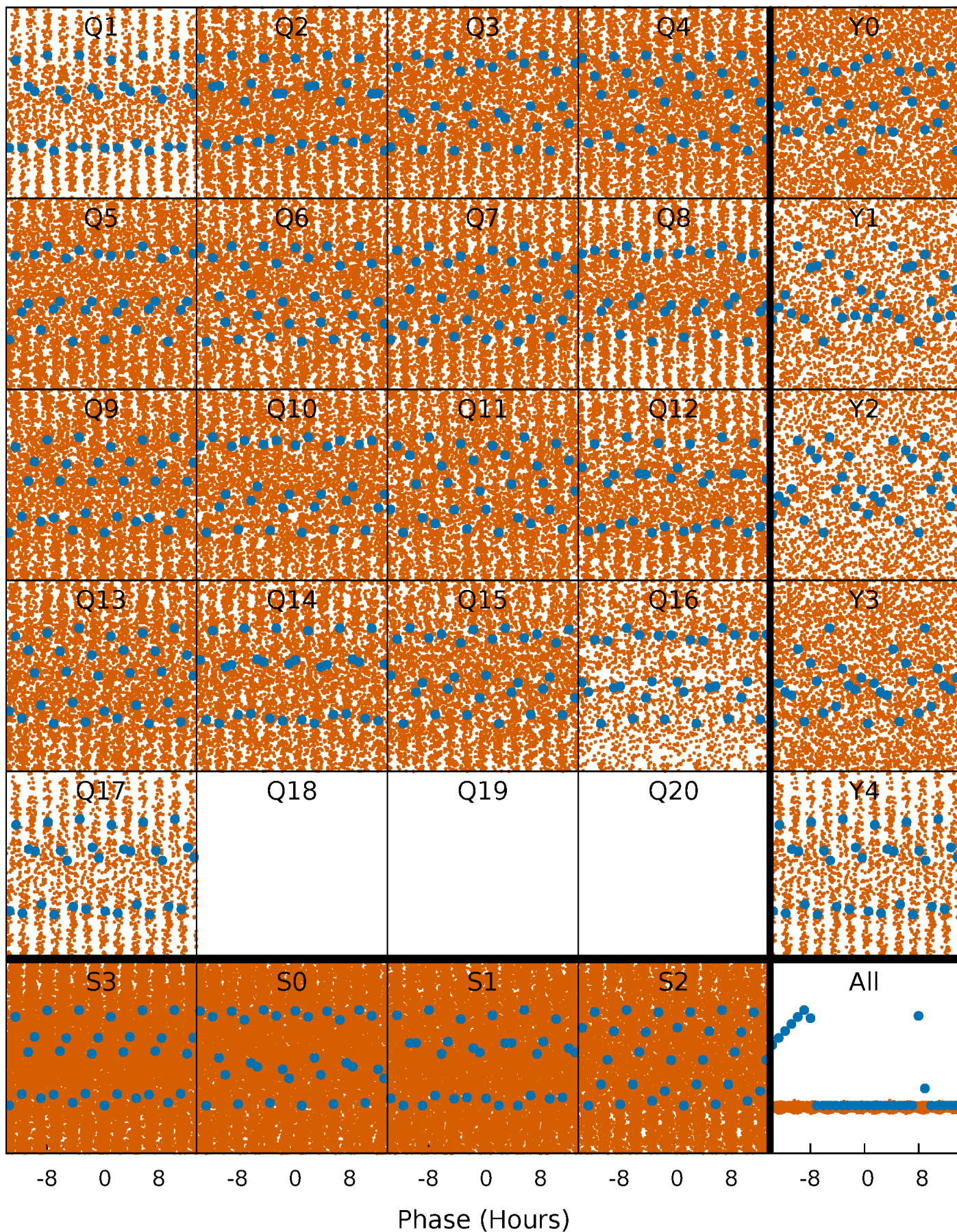


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



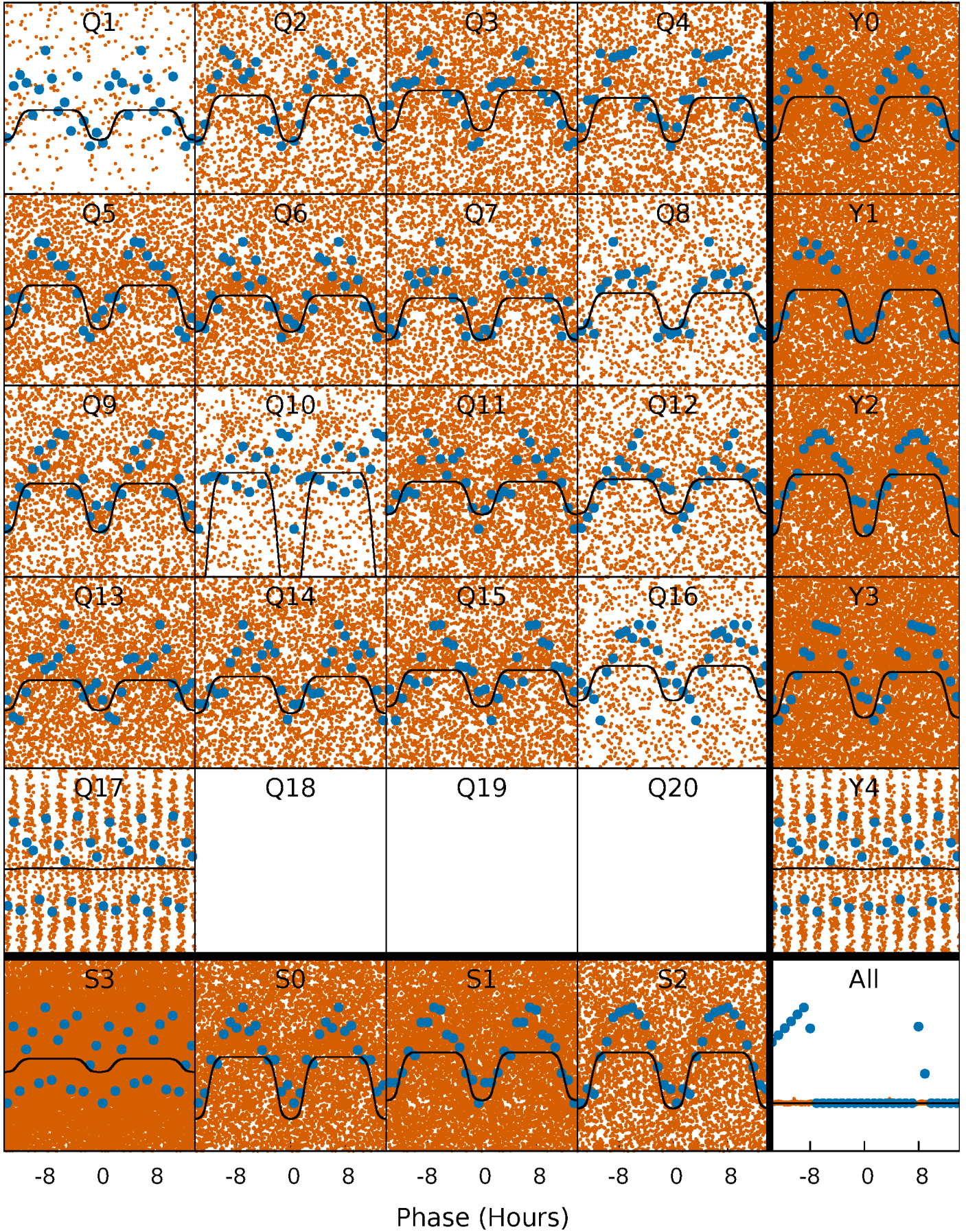
PDC Quarter-Phased Transit Curves

TCE 004138848-01 P= 0.585764 Days $T_0=131.899227$ (BKJD)



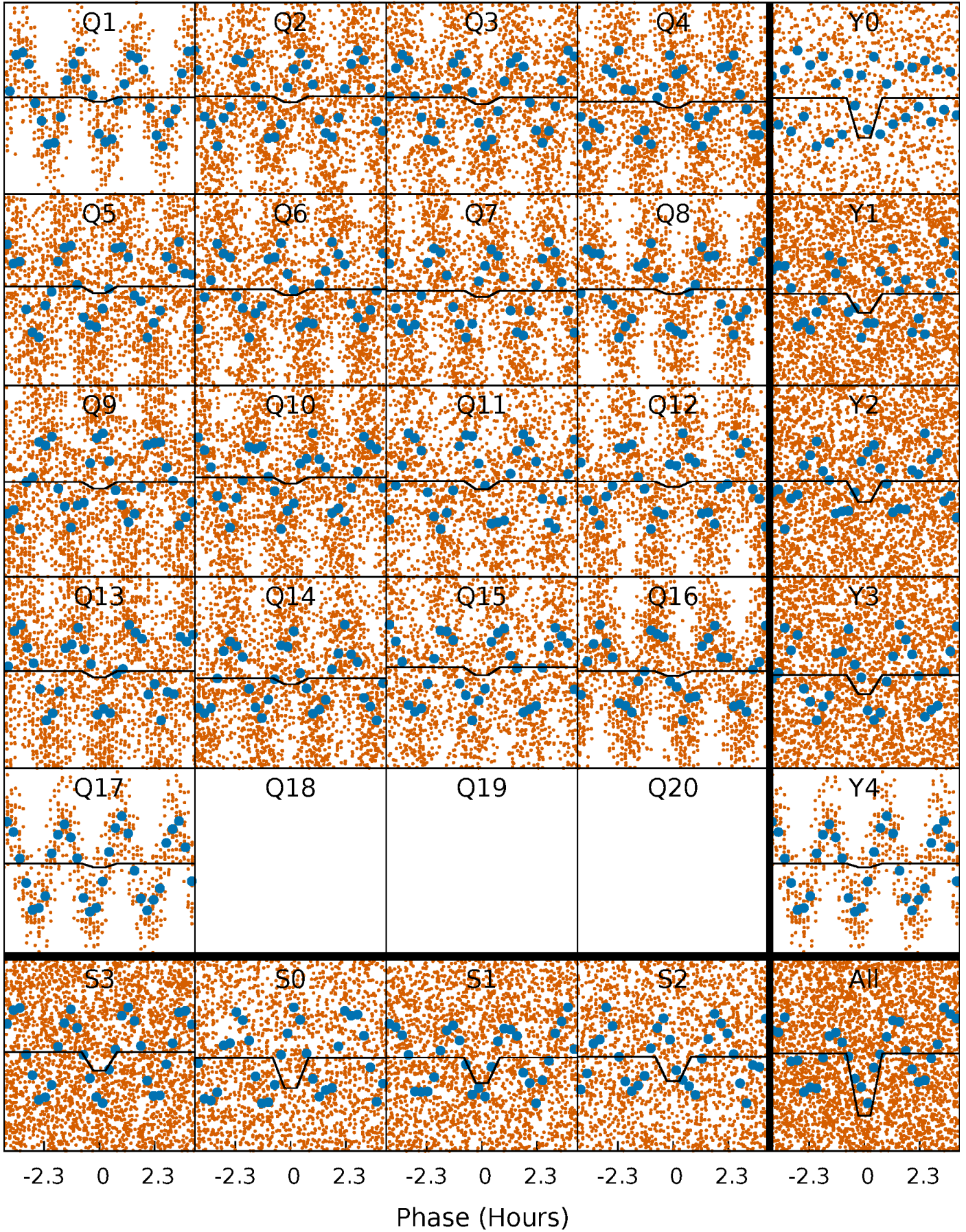
DV Quarter-Phased Transit Curves

TCE 004138848-01 P= 0.585764 Days $T_0=131.899227$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

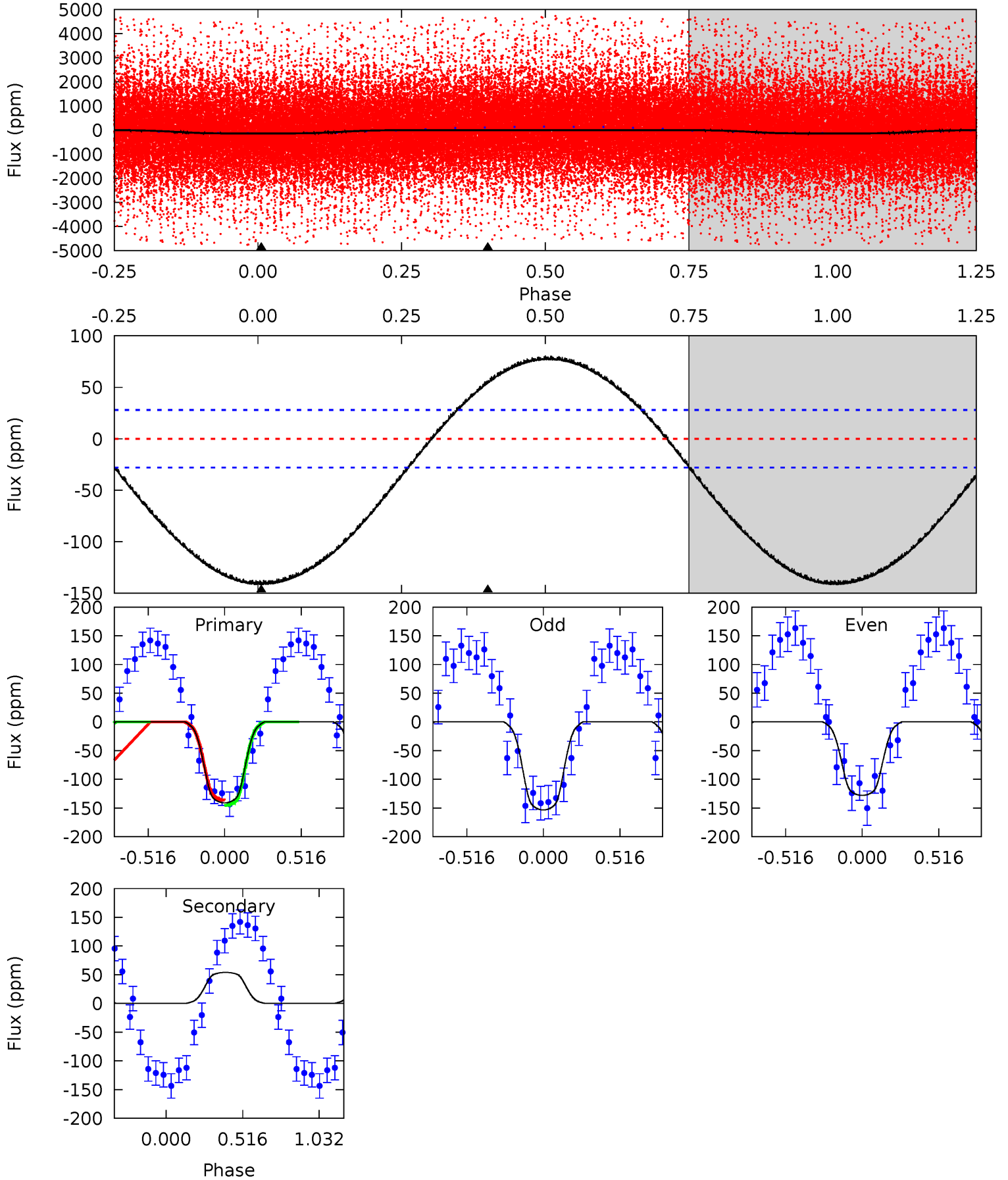
TCE 004138848-01 P= 0.585815 Days $T_0=131.896930$ (BKJD)



DV Model-Shift Uniqueness Test

004138848-01, P = 0.585764 Days, E = 131.313463 Days

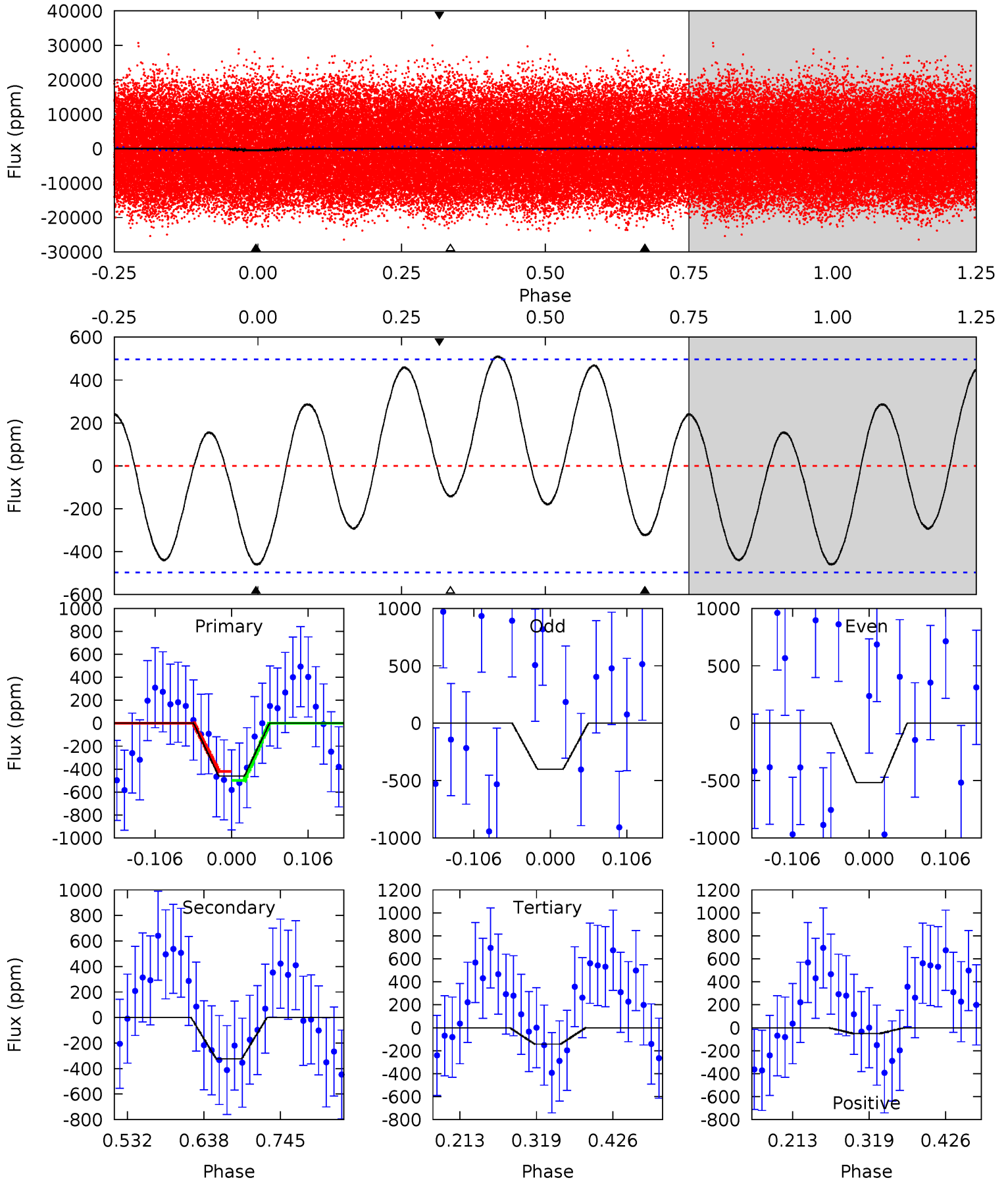
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
21.2	-8.12	0	0	4.21	0.65	3.09	21.2	21.2	-8.12	-8.12	1.99	1.45	0.36	0.71



Alt Model-Shift Uniqueness Test

004138848-01, P = 0.585815 Days, E = 131.311115 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
4.21	2.96	1.31	-0.46	4.55	1.61	2.44	2.90	4.68	1.65	3.42	0.54	0.98	0.53	0.35



Stellar Parameters For KIC 004138848

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	6869^{+165}_{-248}	$4.125^{+0.136}_{-0.187}$	$0.020^{+0.250}_{-0.350}$	$1.726^{+0.553}_{-0.369}$	$1.450^{+0.213}_{-0.234}$	$0.397^{+0.316}_{-0.204}$
	+2%/-4%	+3%/-5%	+1250%/-1750%	+32%/-21%	+15%/-16%	+80%/-51%
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 004138848-01 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	54 ± 7	$3.04^{+0.53}_{-0.38}$	4480^{+342}_{-282}	-5108^{+189}_{-198}	$-0.762^{+0.192}_{-0.233}$
Alt.	-323 ± 109	$5.28^{+0.82}_{-0.60}$	4487^{+313}_{-288}	5244^{+452}_{-574}	$1.504^{+0.661}_{-0.589}$

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 $A_{obs} \gg 1.0$

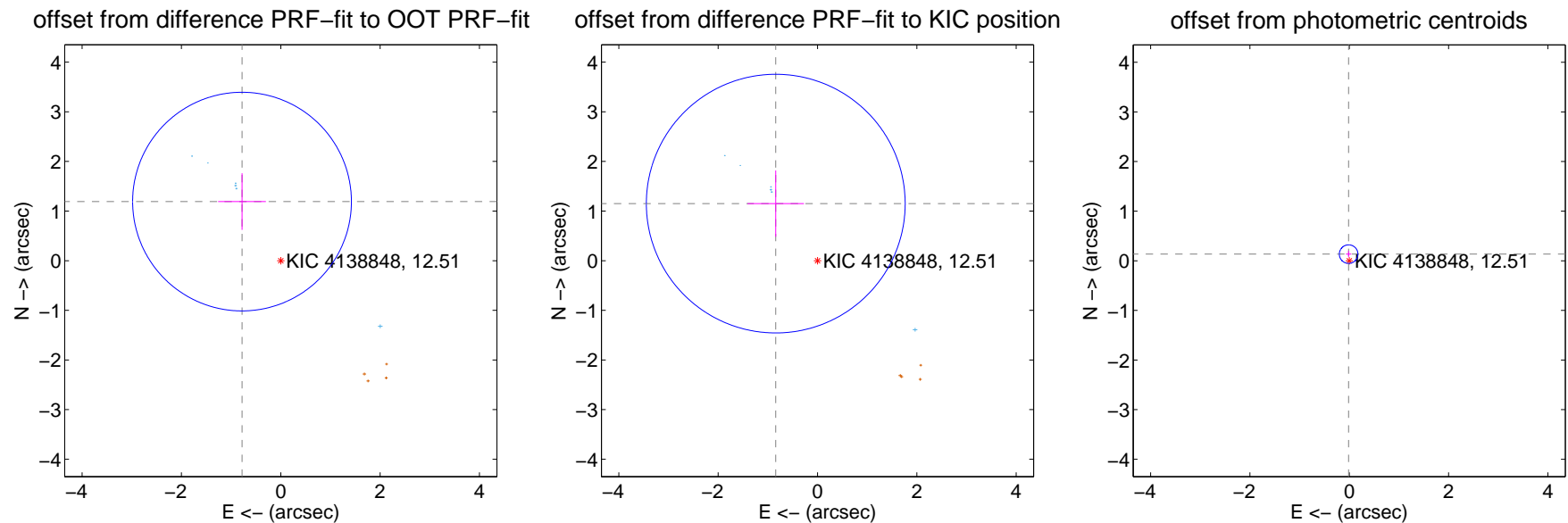
DV Centroid Data

Supplemental centroid analysis for 004138848-01. Kepler magnitude: 12.51. Transit SNR 27.22

There are 6 quarters with good PRF difference image offsets

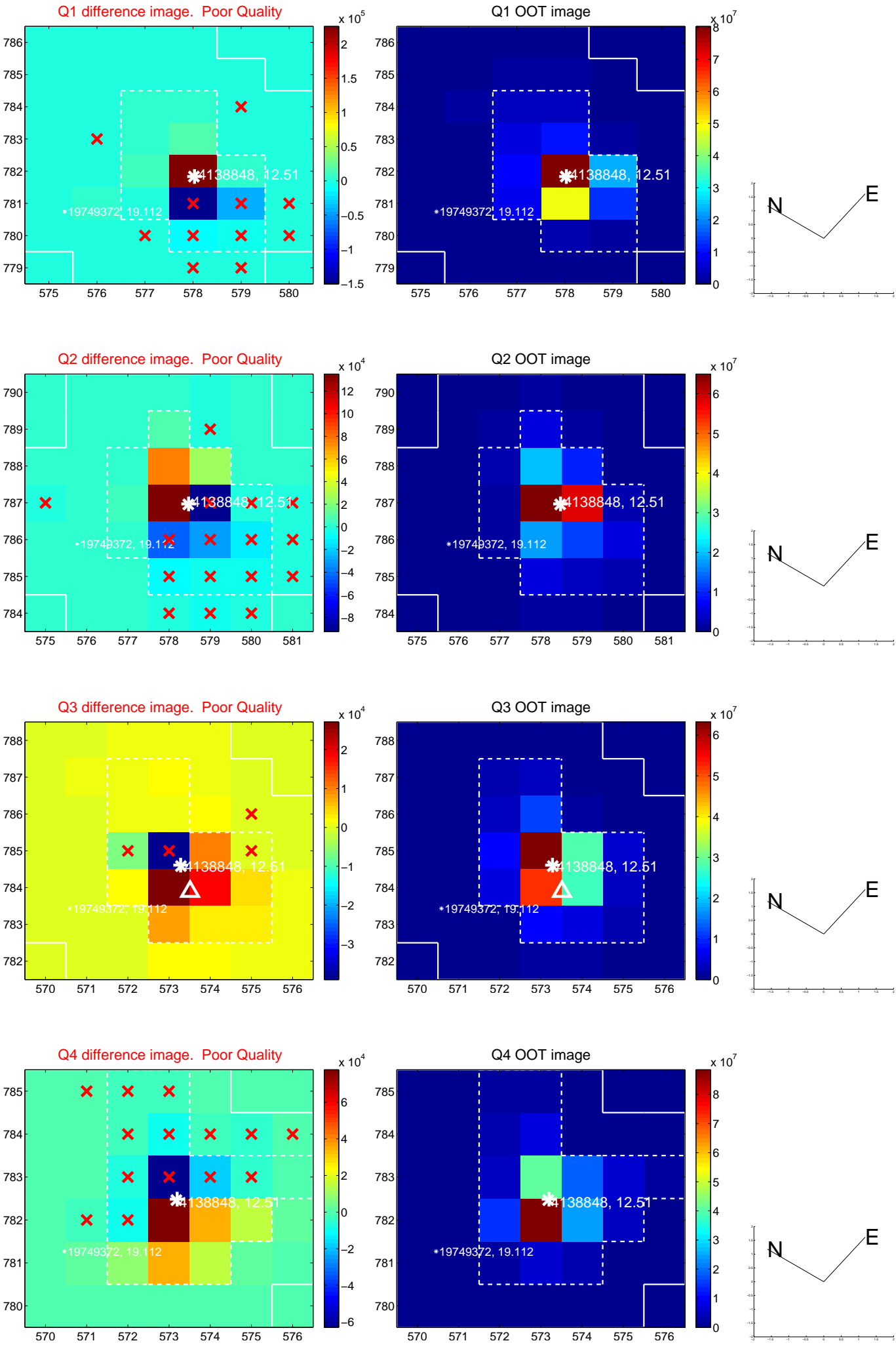
The direct PRF centroid is offset from the target star catalog position by about 0.08 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	1.424 ± 0.734	1.94	0.780 ± 0.480	1.191 ± 0.570
PRF-fit source offset from KIC position	1.425 ± 0.869	1.64	0.841 ± 0.569	1.150 ± 0.668
photometric centroid source offset	0.13 ± 0.06	2.16	0.01 ± 0.05	0.13 ± 0.06

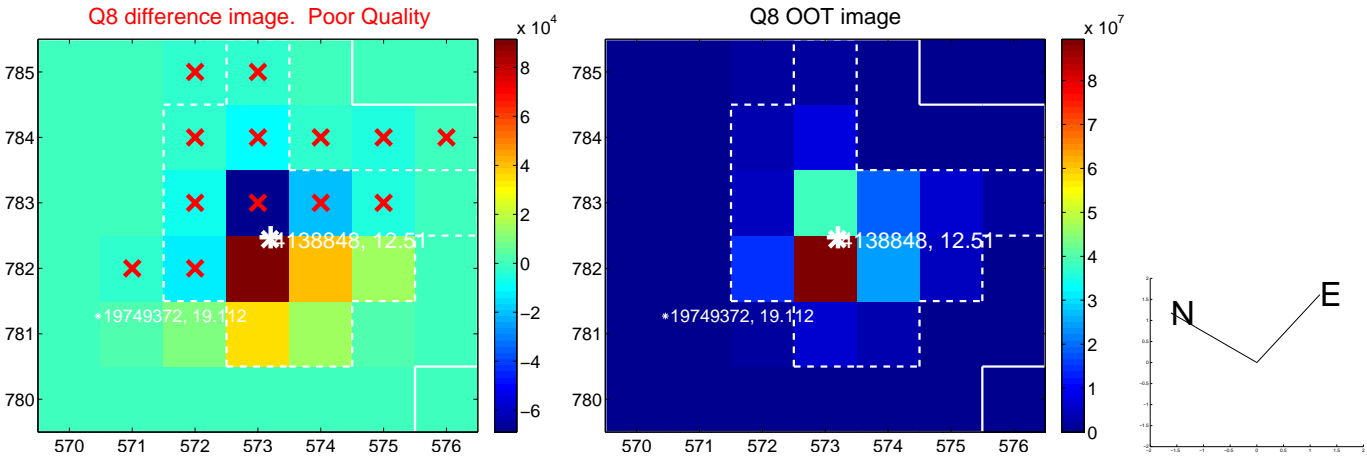
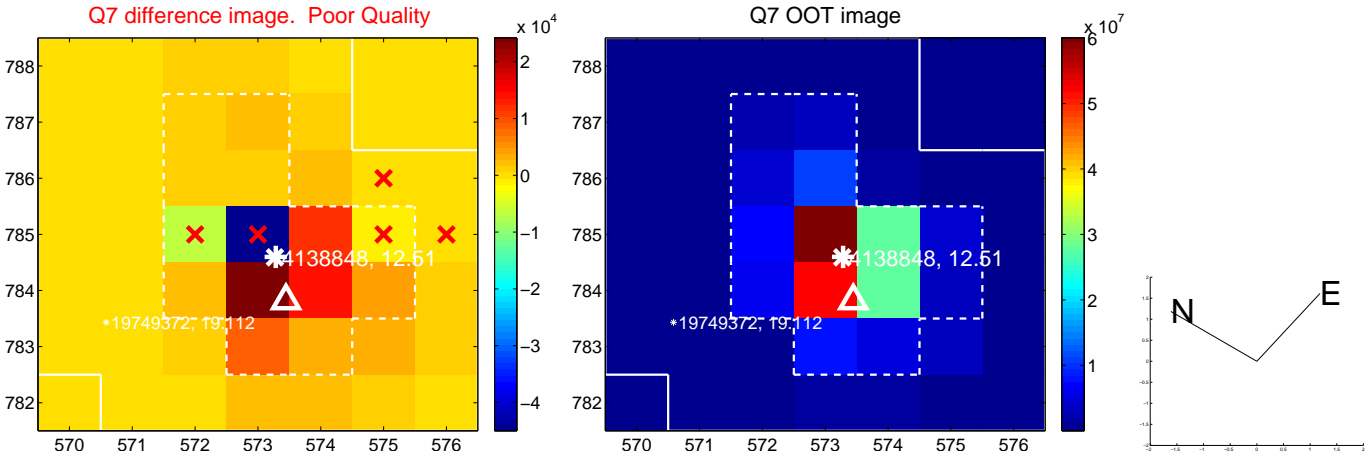
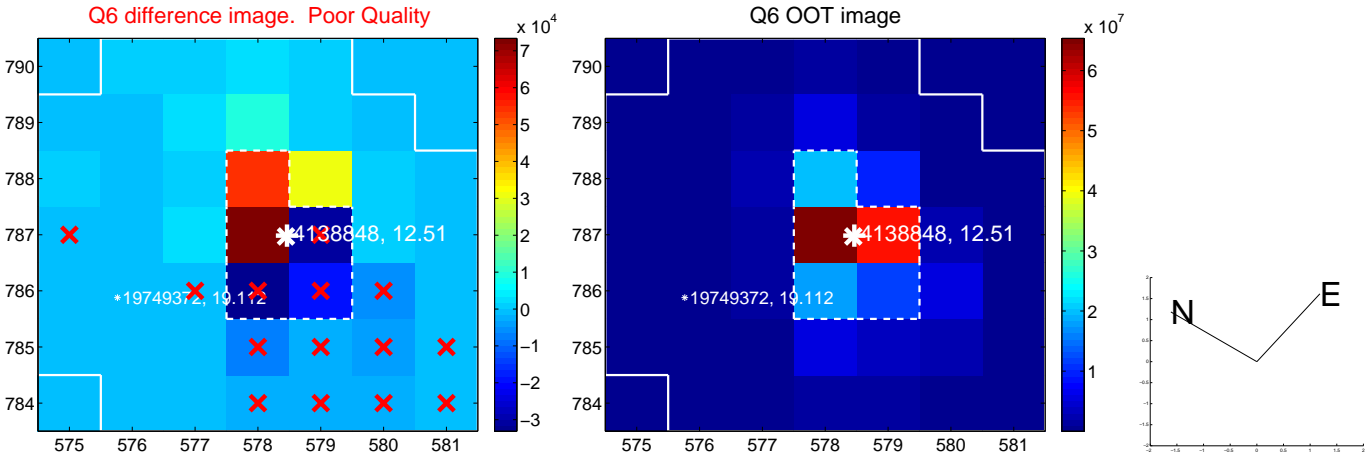
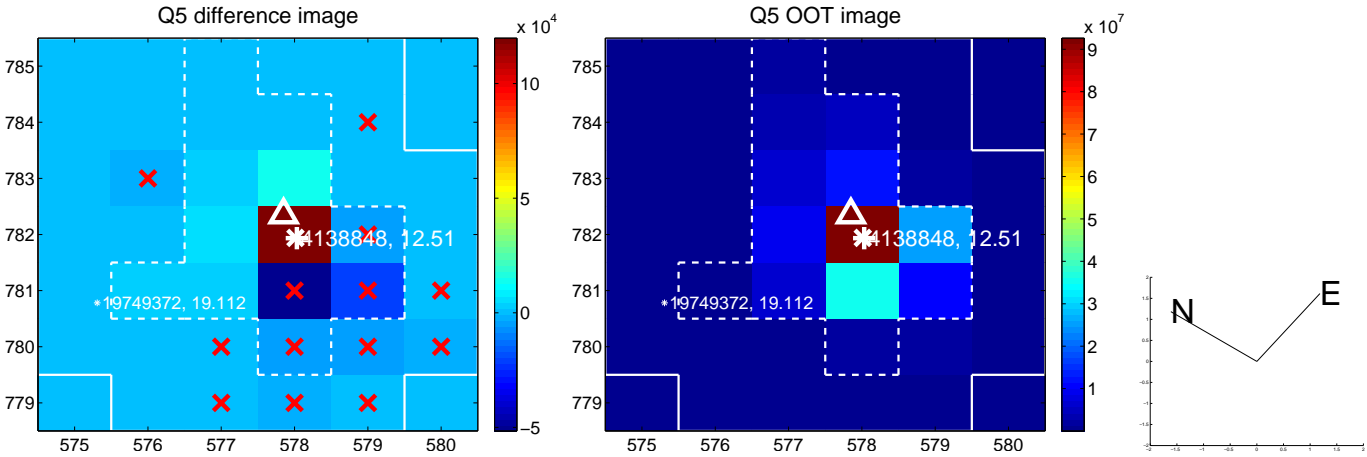


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

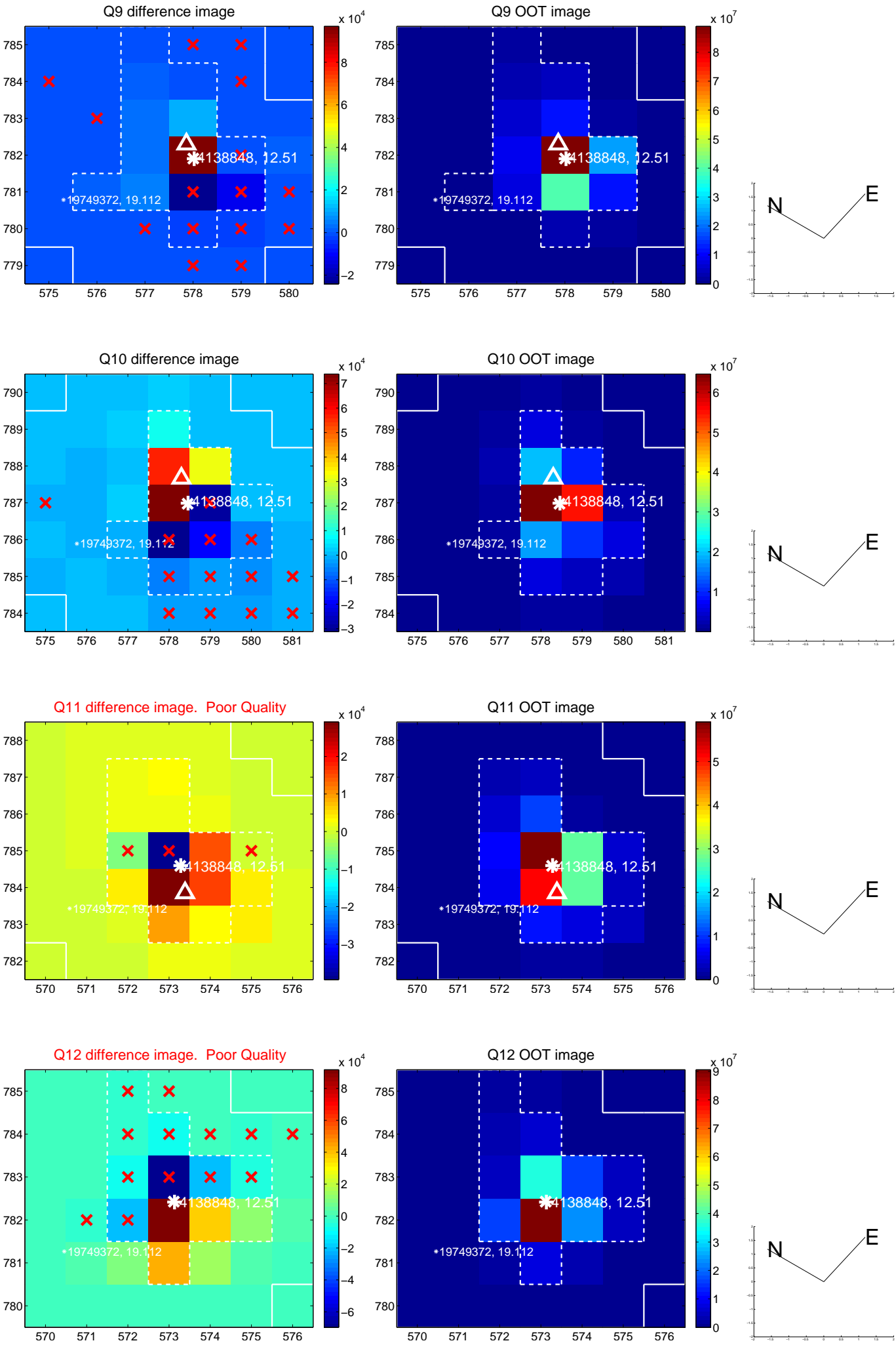
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



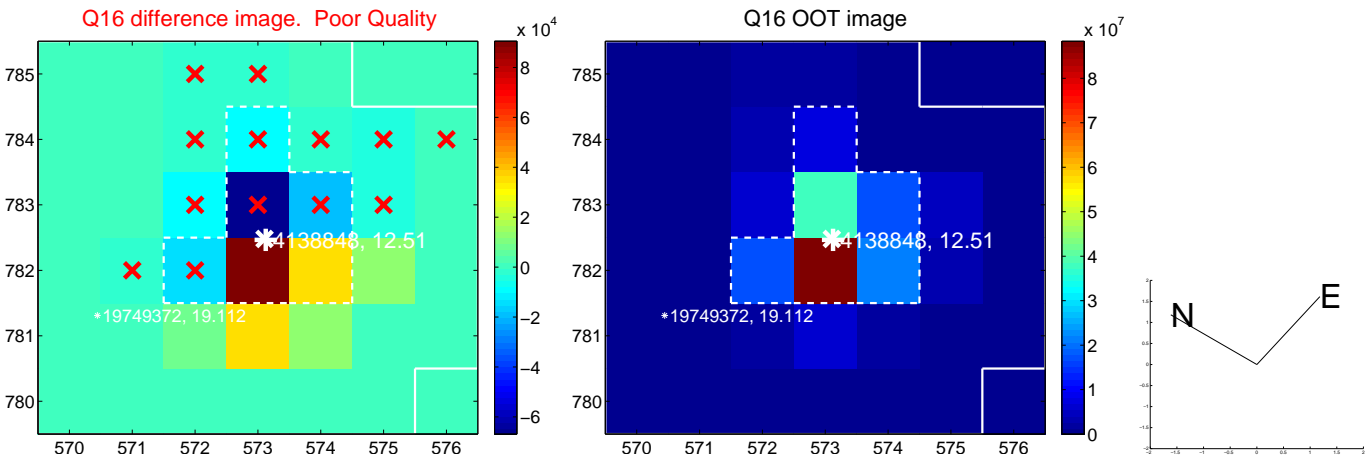
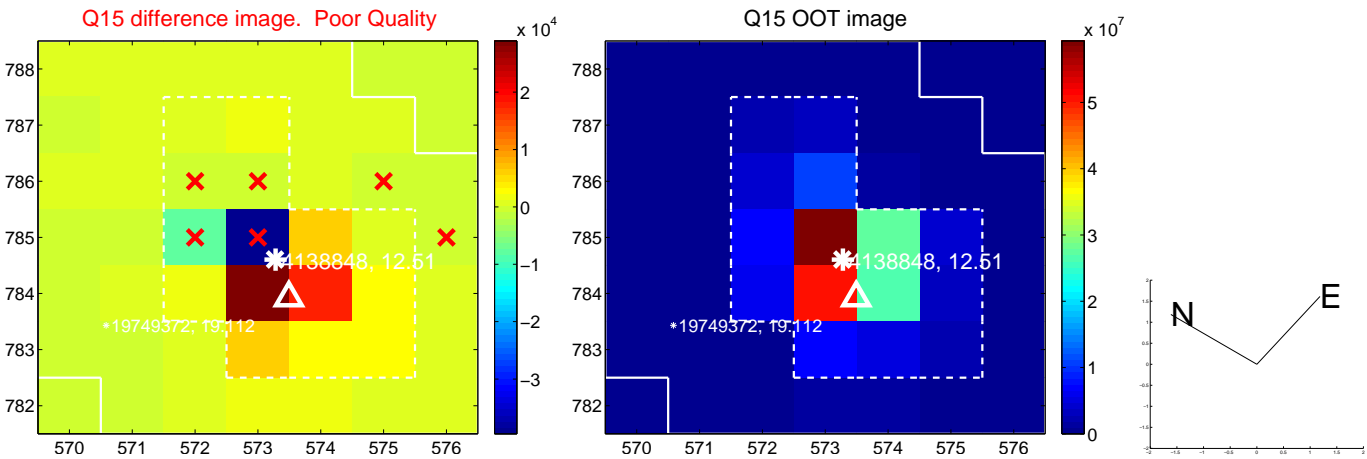
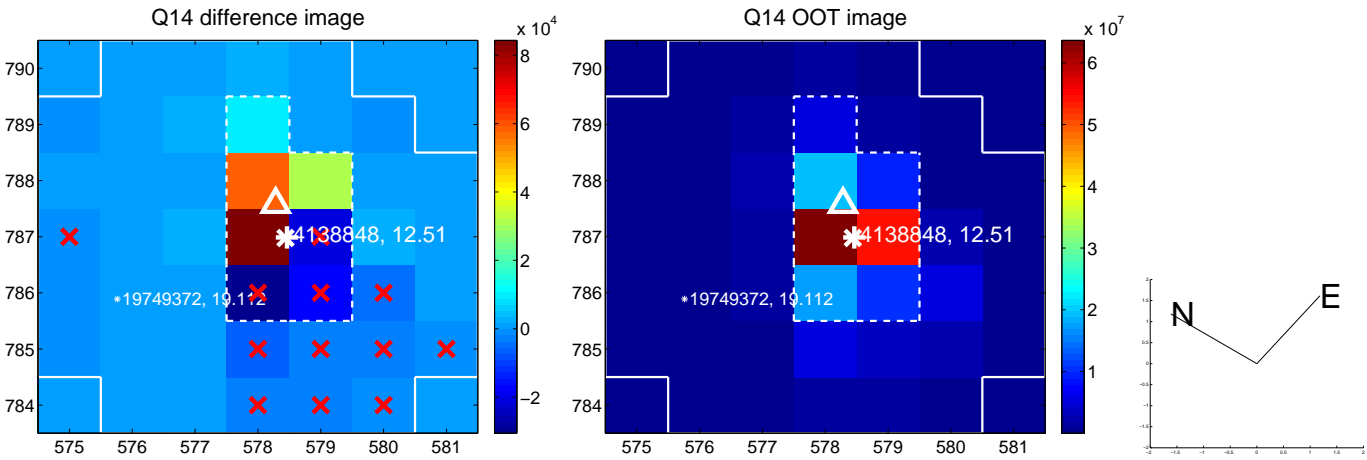
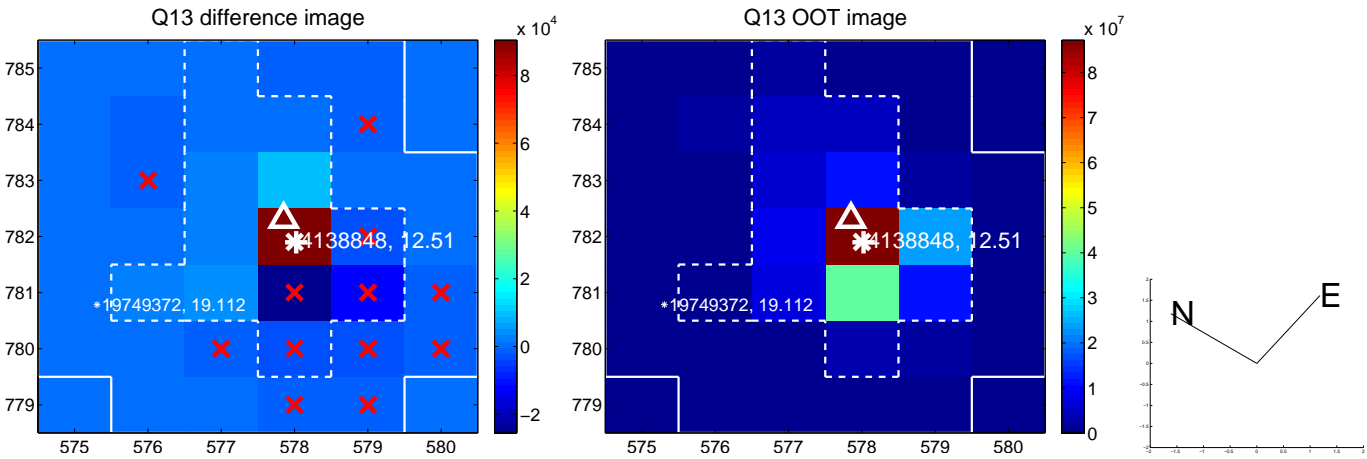
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



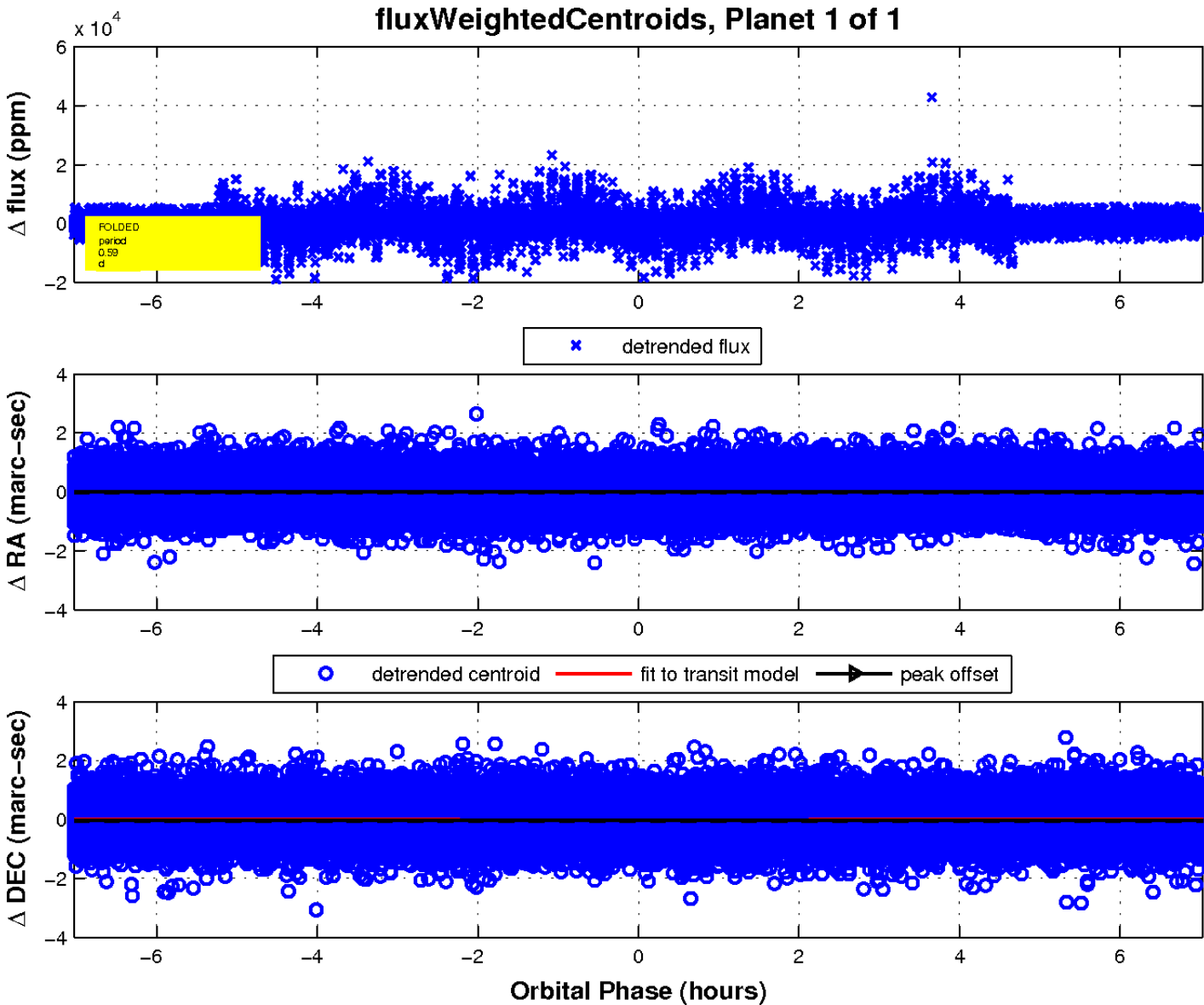
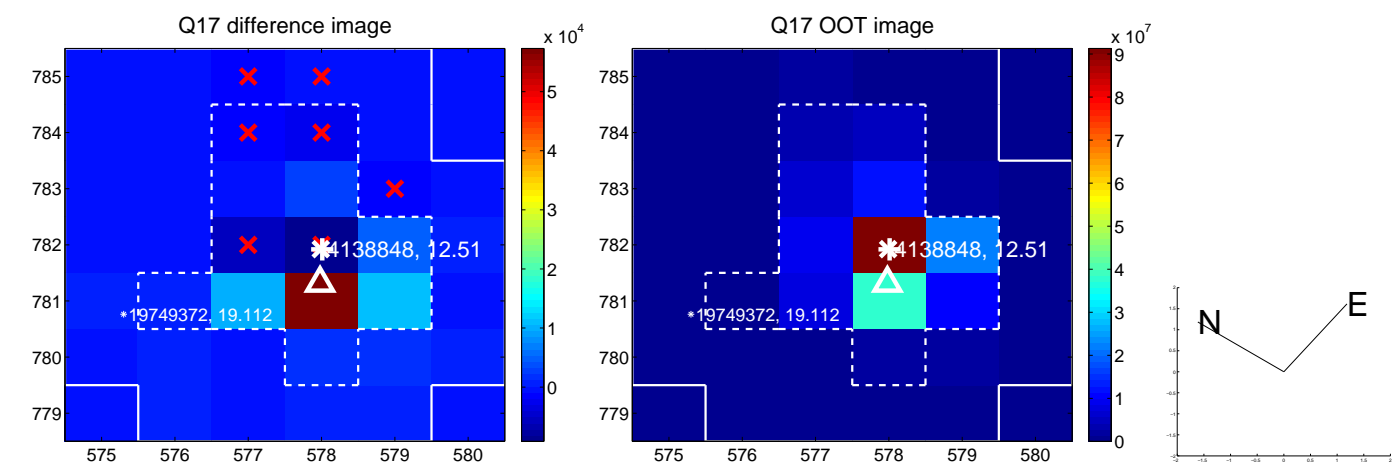
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white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination

