

KIC 004043227

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})
004043227-01	OBS	No	4.420183	134.260040	85.5	26.879	13.0	14.7	1.73	7504	2.60	2480.34

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
004043227-01	OBS	FP	0.00	1	0	0	0	LPP_DV—CENT_KIC_POS

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

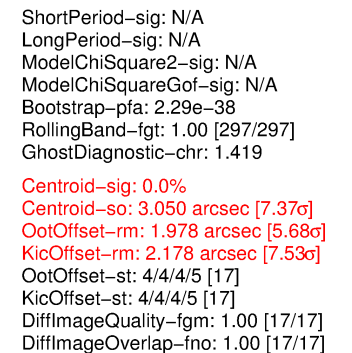
N = Not Transit-Like. S = Stellar Eclipse. C = Centroid Offset. E = Ephemeris Match.

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

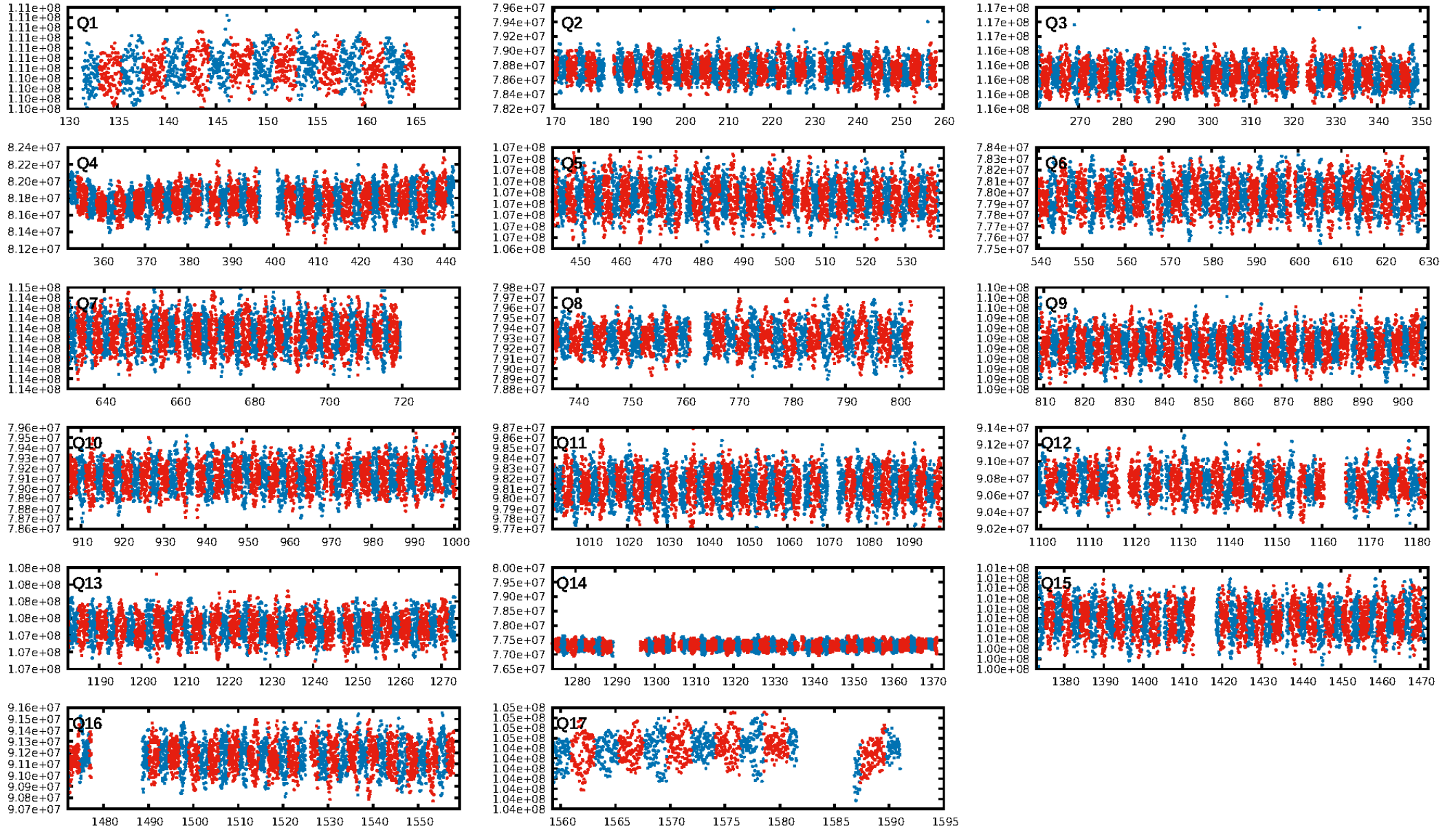
Ephemeris Match Information For 004043227-01

No Significant Match Found

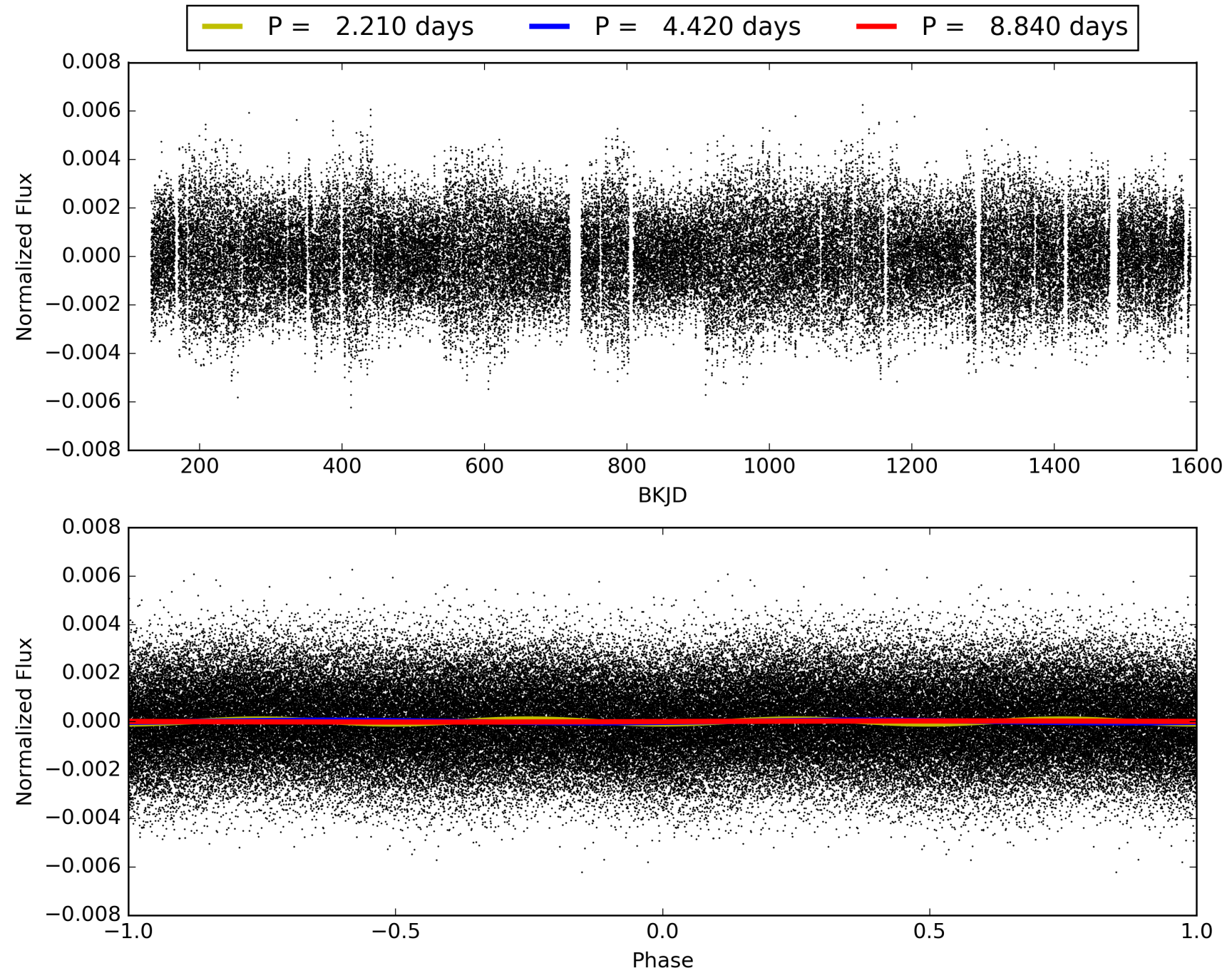
KIC: 4043227 Candidate: 1 of 1 Period: 4.420 d



TCE 004043227-01, PDC Light Curves

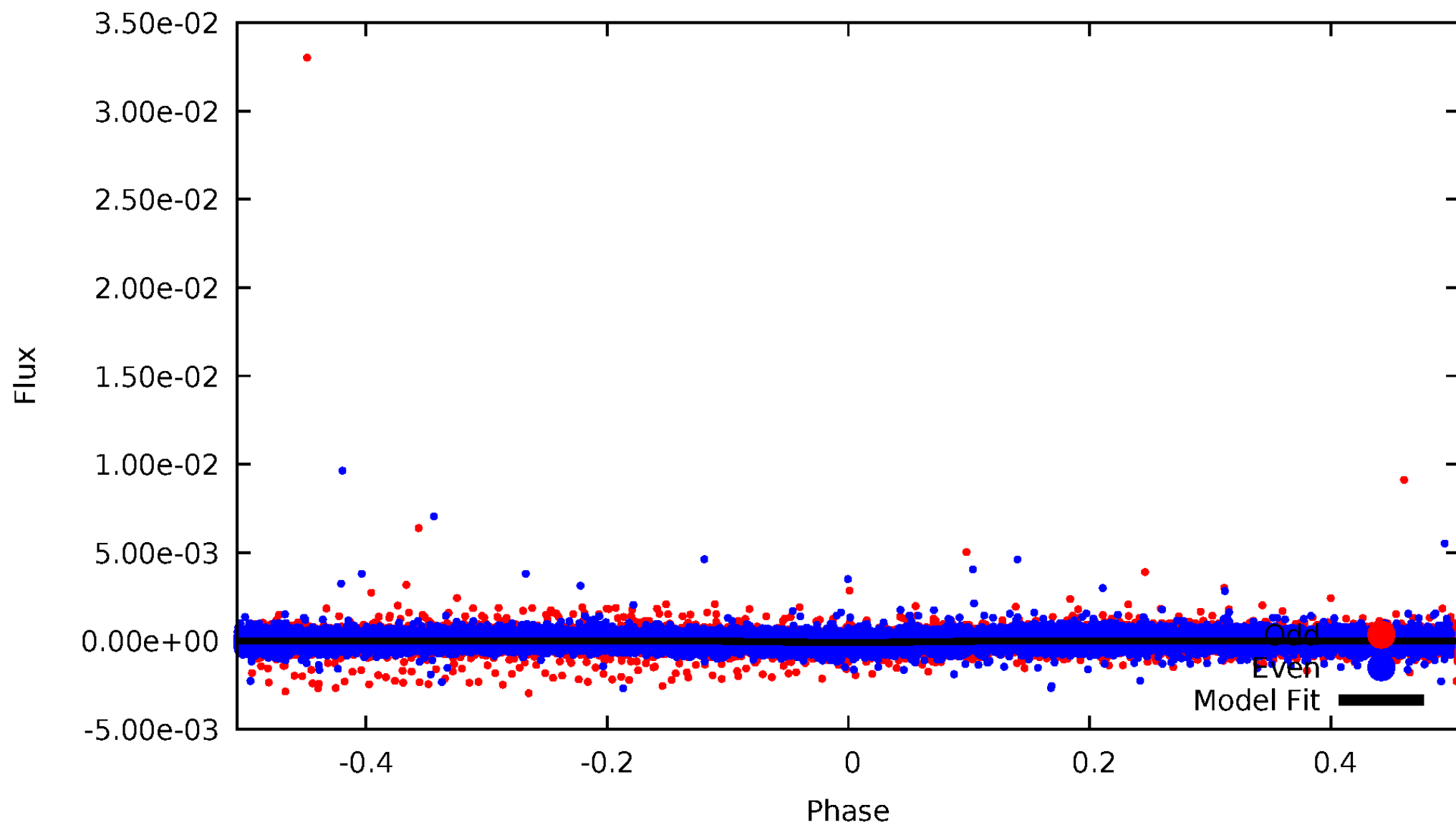


TCE 004043227-01



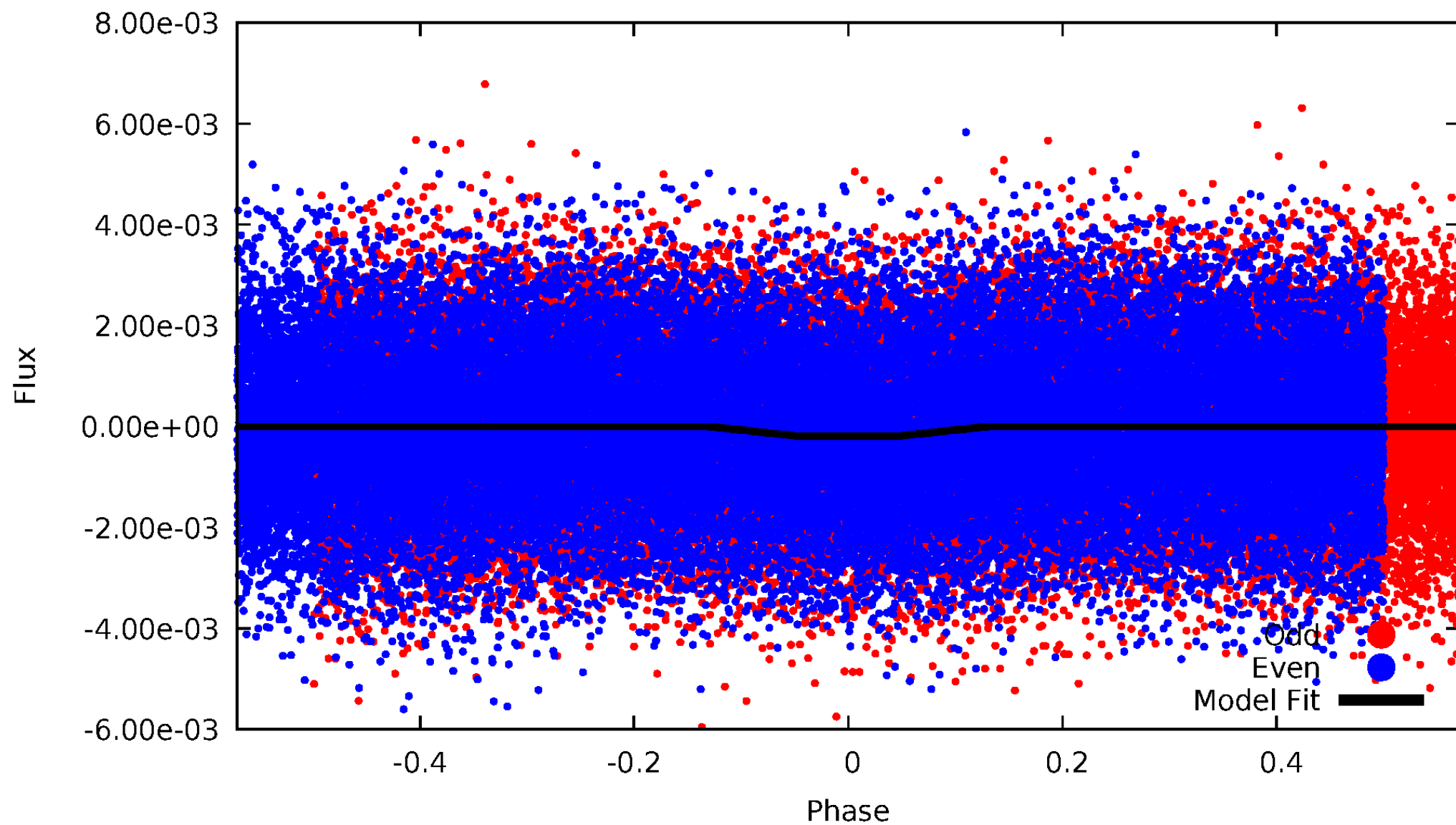
DV Odd/Even

TCE 004043227-01



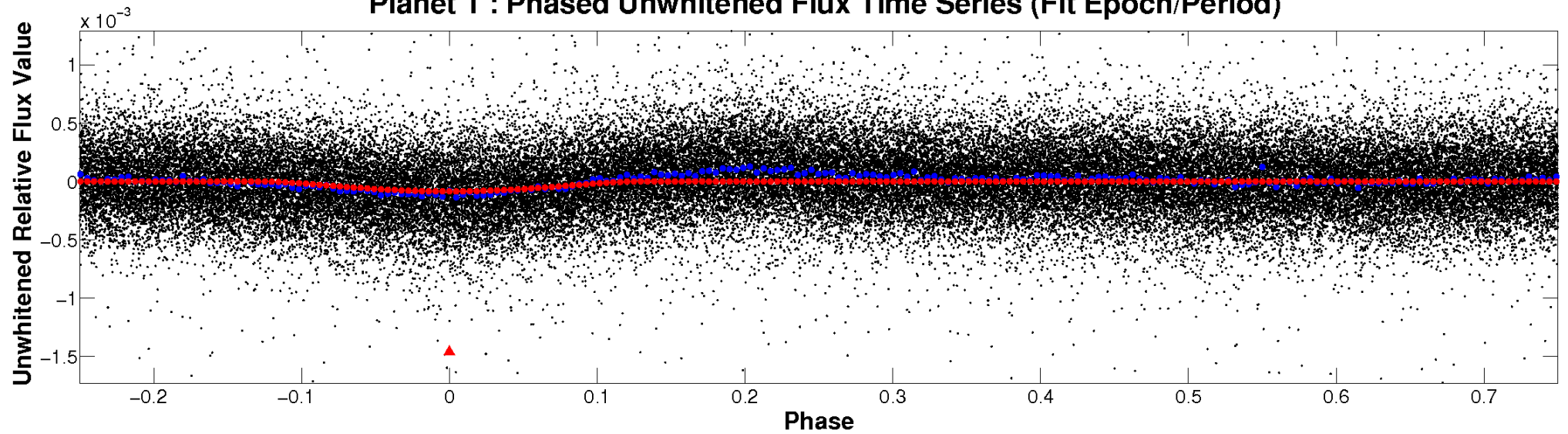
ALT Odd/Even

TCE 004043227-01

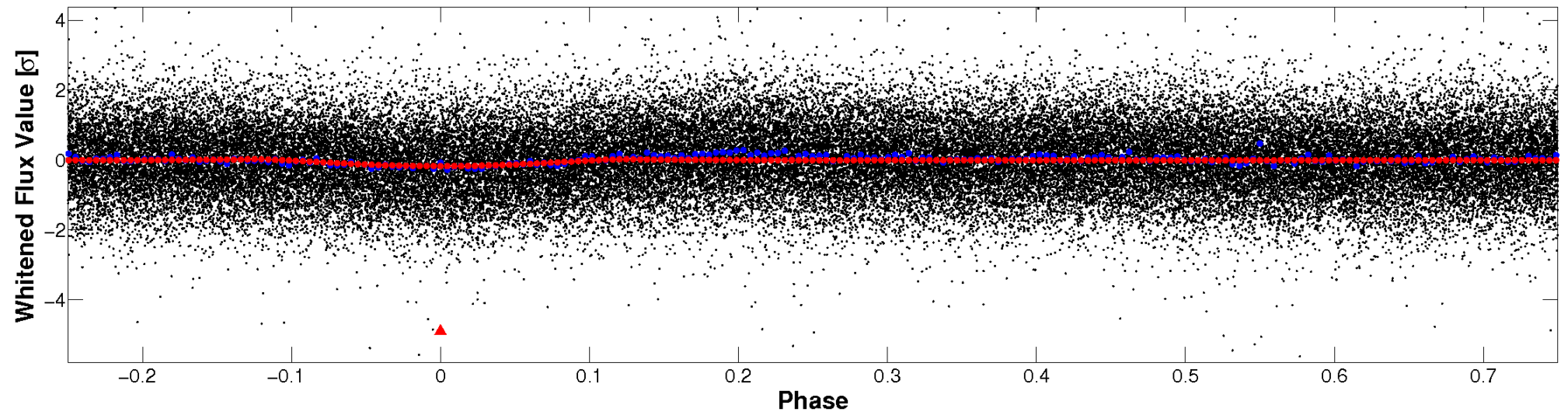


Non-Whitened Vs. Whitened Light Curve

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

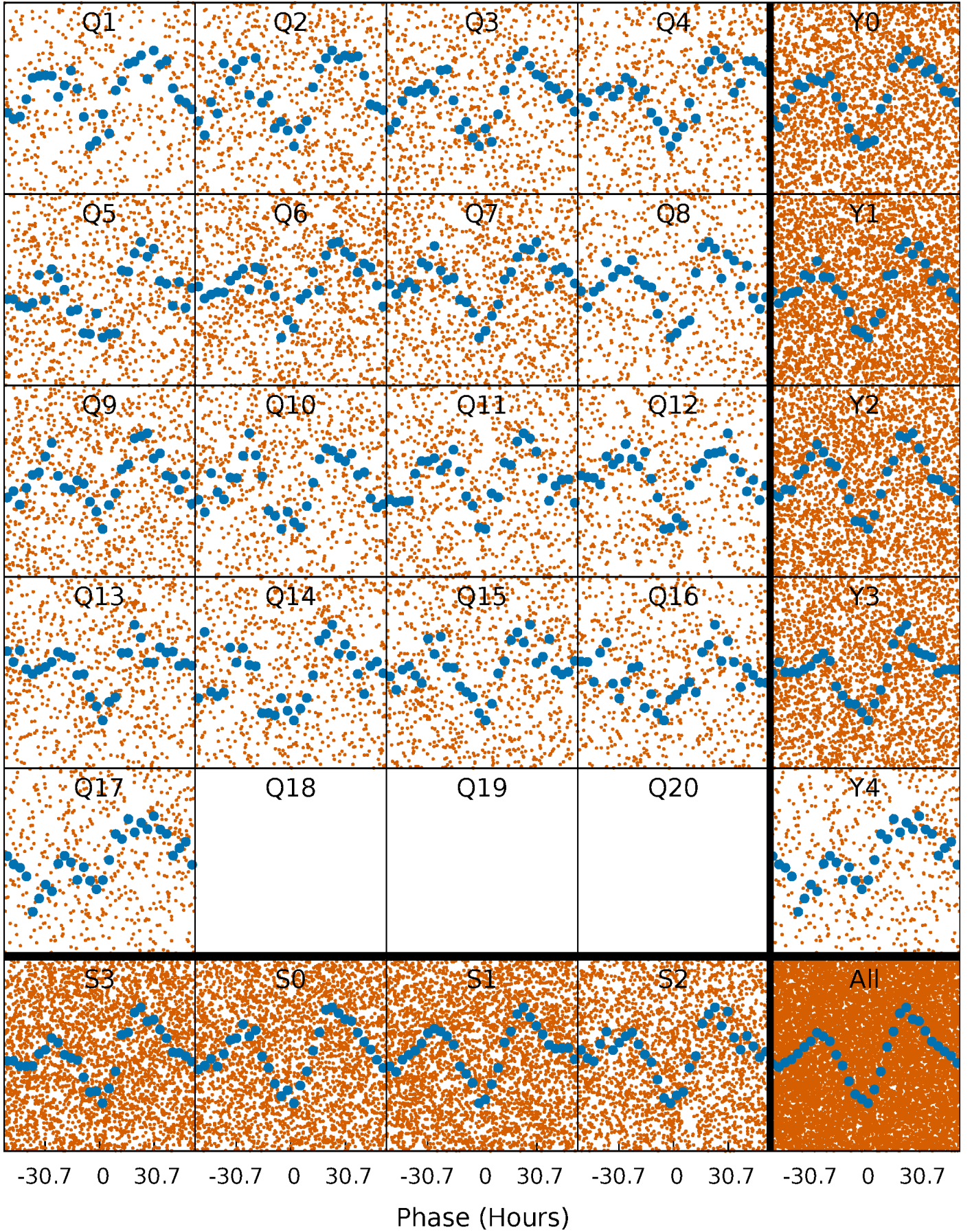


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



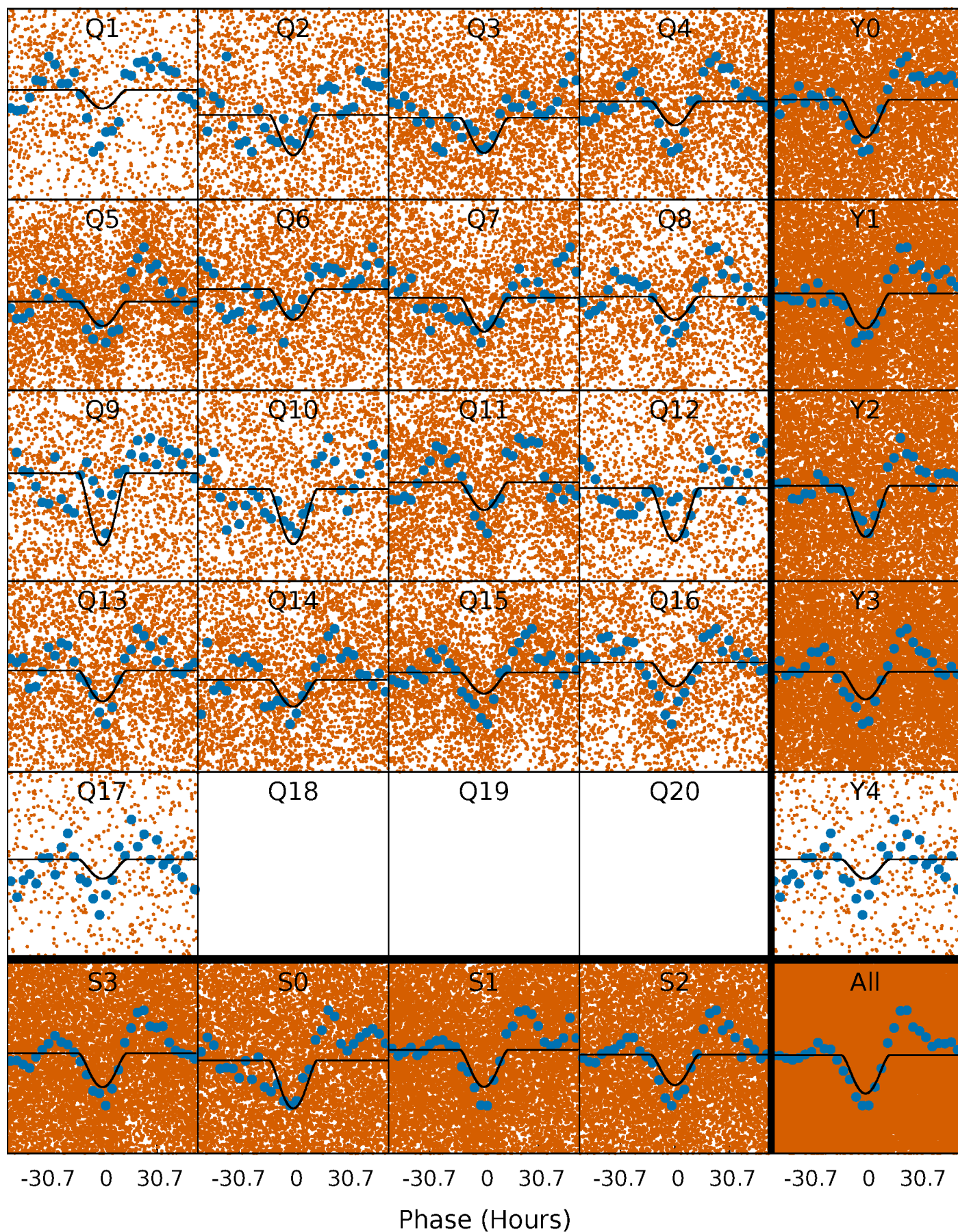
PDC Quarter-Phased Transit Curves

TCE 004043227-01 P= 4.420183 Days $T_0=134.260040$ (BKJD)



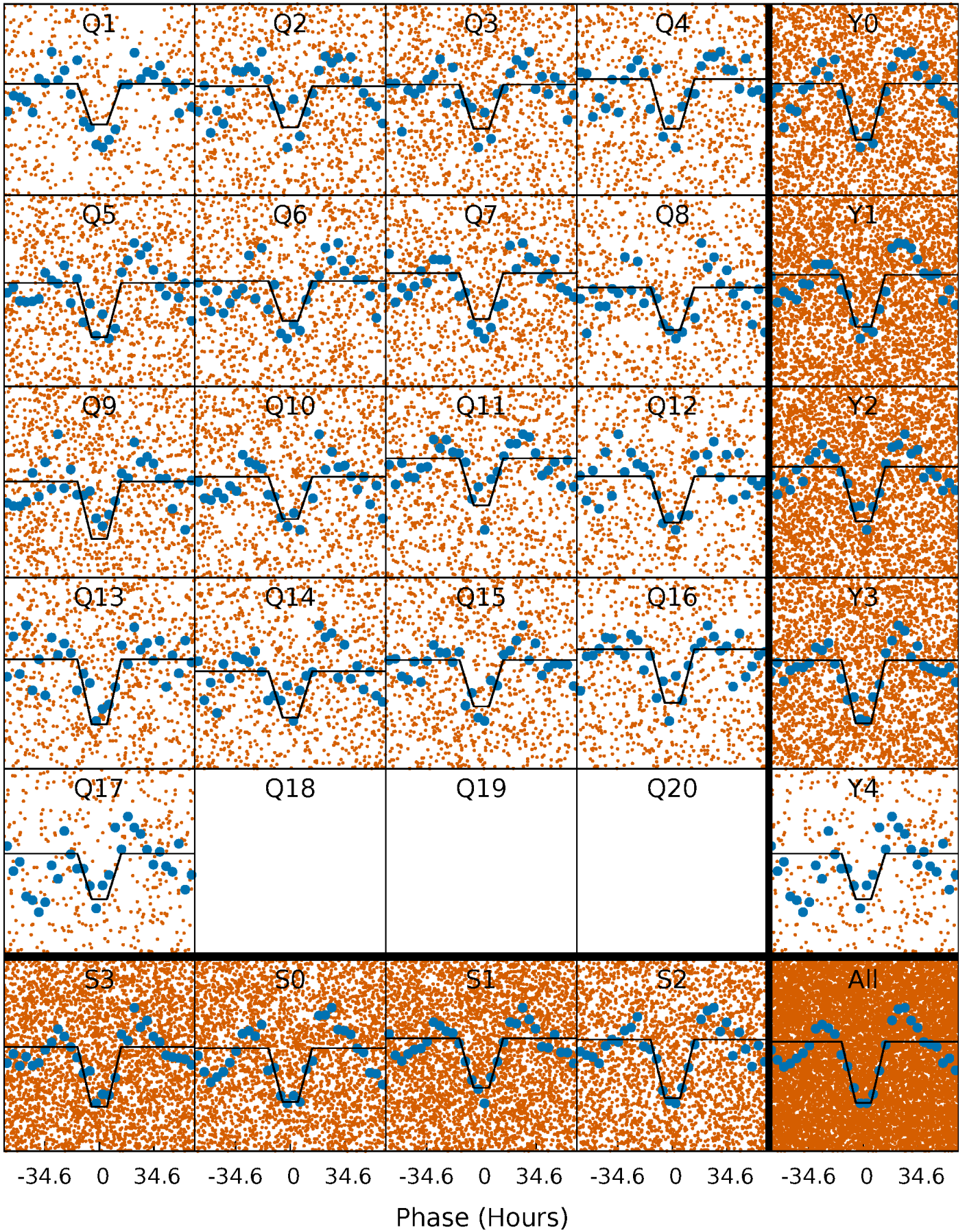
DV Quarter-Phased Transit Curves

TCE 004043227-01 P= 4.420183 Days $T_0=134.260040$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

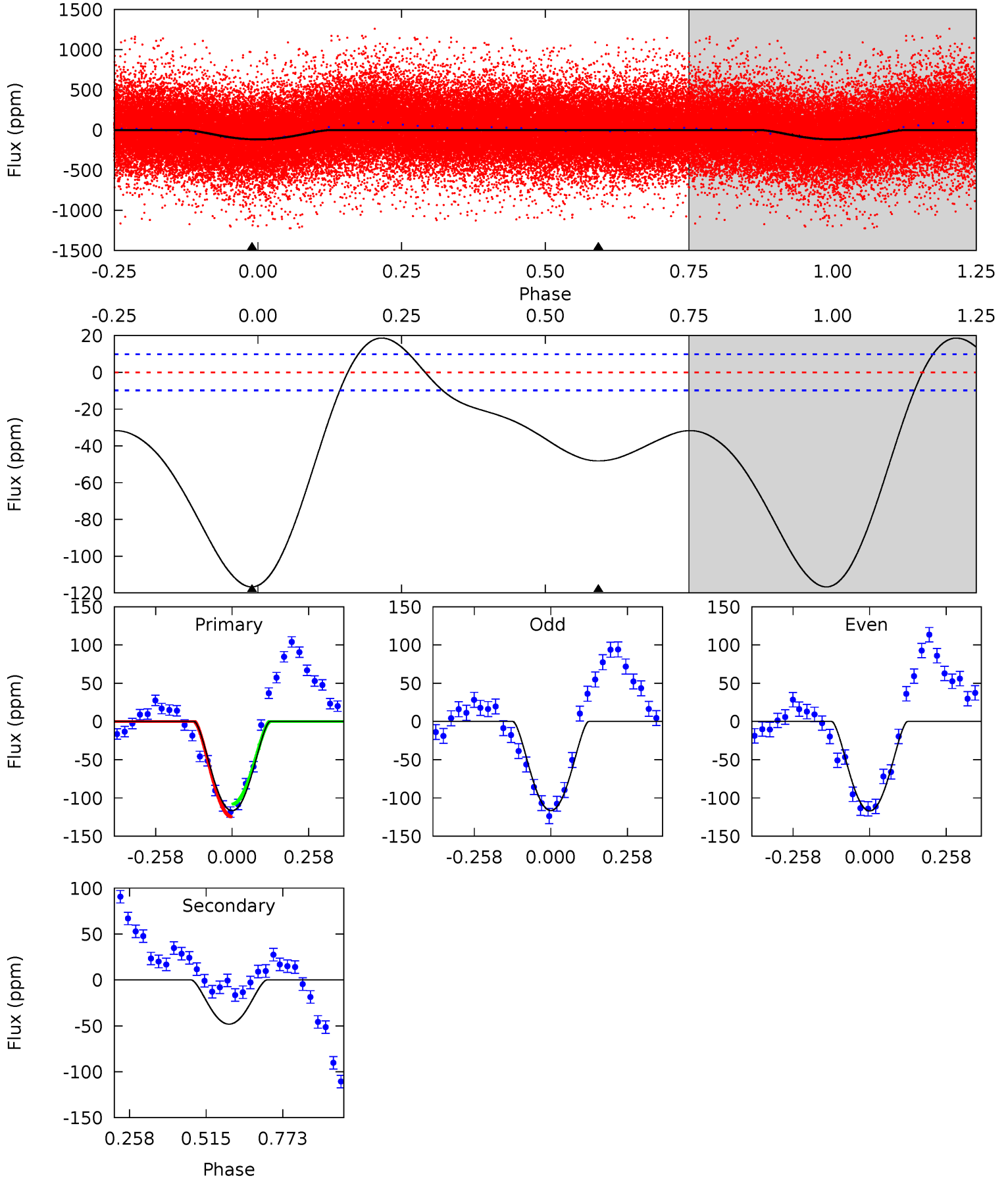
TCE 004043227-01 P= 4.420437 Days $T_0=134.179834$ (BKJD)



DV Model-Shift Uniqueness Test

004043227-01, P = 4.420183 Days, E = 129.839857 Days

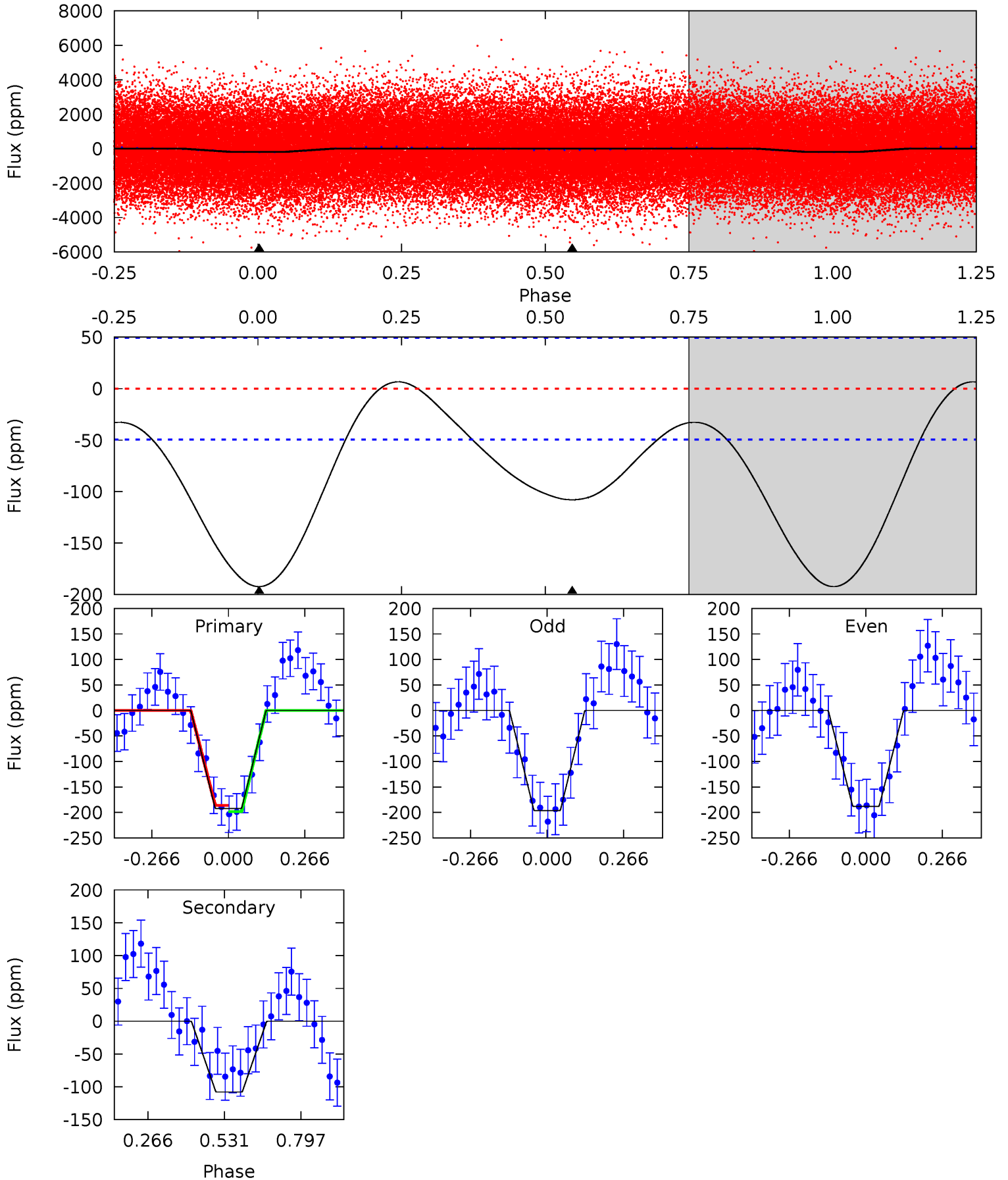
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
51.7	21.3	0	0	4.36	1.13	4.16	51.7	51.7	21.3	21.3	0.11	1.04	0.14	3.70



Alt Model-Shift Uniqueness Test

004043227-01, P = 4.420437 Days, E = 129.759397 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
17.0	9.52	0	0	4.36	1.11	1.02	17.0	17.0	9.52	9.52	0.36	0.98	0.03	0.54



Stellar Parameters For KIC 004043227

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	7504^{+234}_{-313}	$4.099^{+0.216}_{-0.162}$	$-0.520^{+0.250}_{-0.300}$	$1.732^{+0.470}_{-0.470}$	$1.376^{+0.205}_{-0.225}$	$0.373^{+0.439}_{-0.178}$
	+3%/-4%	+5%/-4%	+48%/-58%	+27%/-27%	+15%/-16%	+118%/-48%
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 004043227-01 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-48 ± 2	$2.79^{+1.75}_{-1.57}$	2499^{+181}_{-194}	5065^{+2462}_{-869}	12^{+48}_{-7}
Alt.	-108 ± 11	$2.70^{+1.76}_{-1.52}$	2492^{+178}_{-199}	6098^{+4170}_{-1157}	27^{+120}_{-17}

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

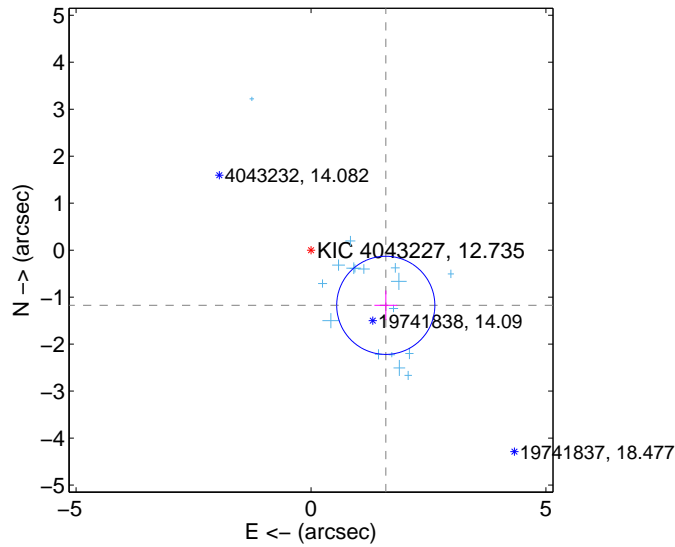
Supplemental centroid analysis for 004043227-01. Kepler magnitude: 12.73. Transit SNR 14.73

There are 17 quarters with good PRF difference image offsets

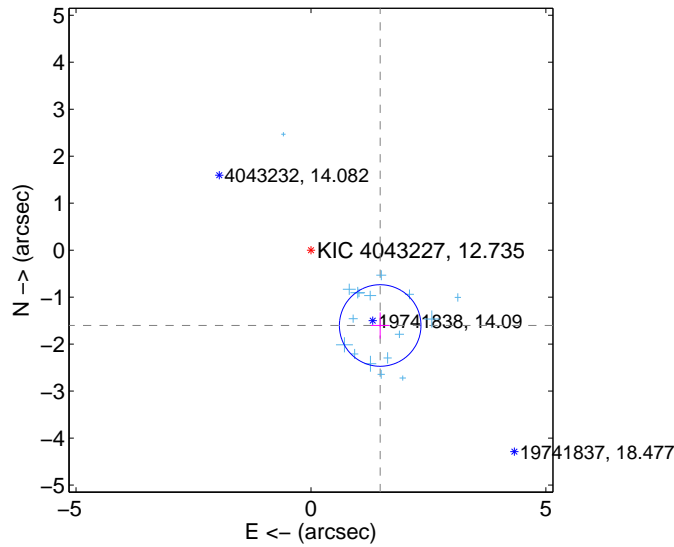
The direct PRF centroid is offset from the target star catalog position by about 0.59 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	1.978 ± 0.348	5.68	-1.591 ± 0.243	-1.174 ± 0.314
PRF-fit source offset from KIC position	2.178 ± 0.289	7.53	-1.474 ± 0.197	-1.603 ± 0.278
photometric centroid source offset	3.05 ± 0.41	7.37	-2.25 ± 0.36	-2.06 ± 0.47

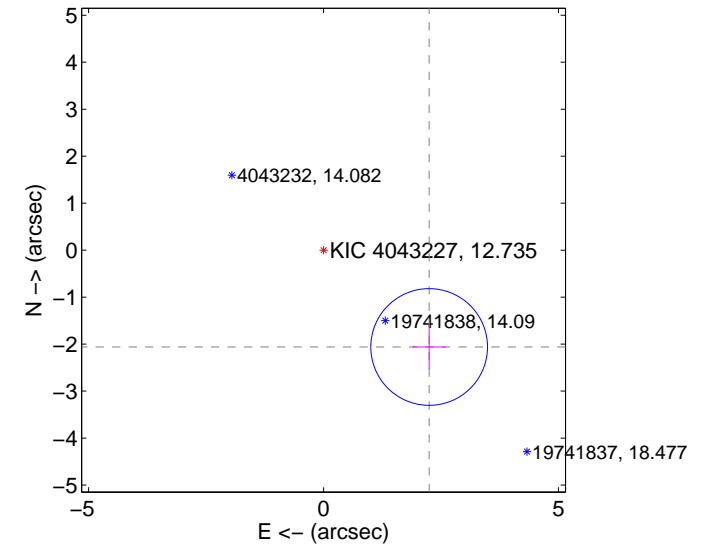
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

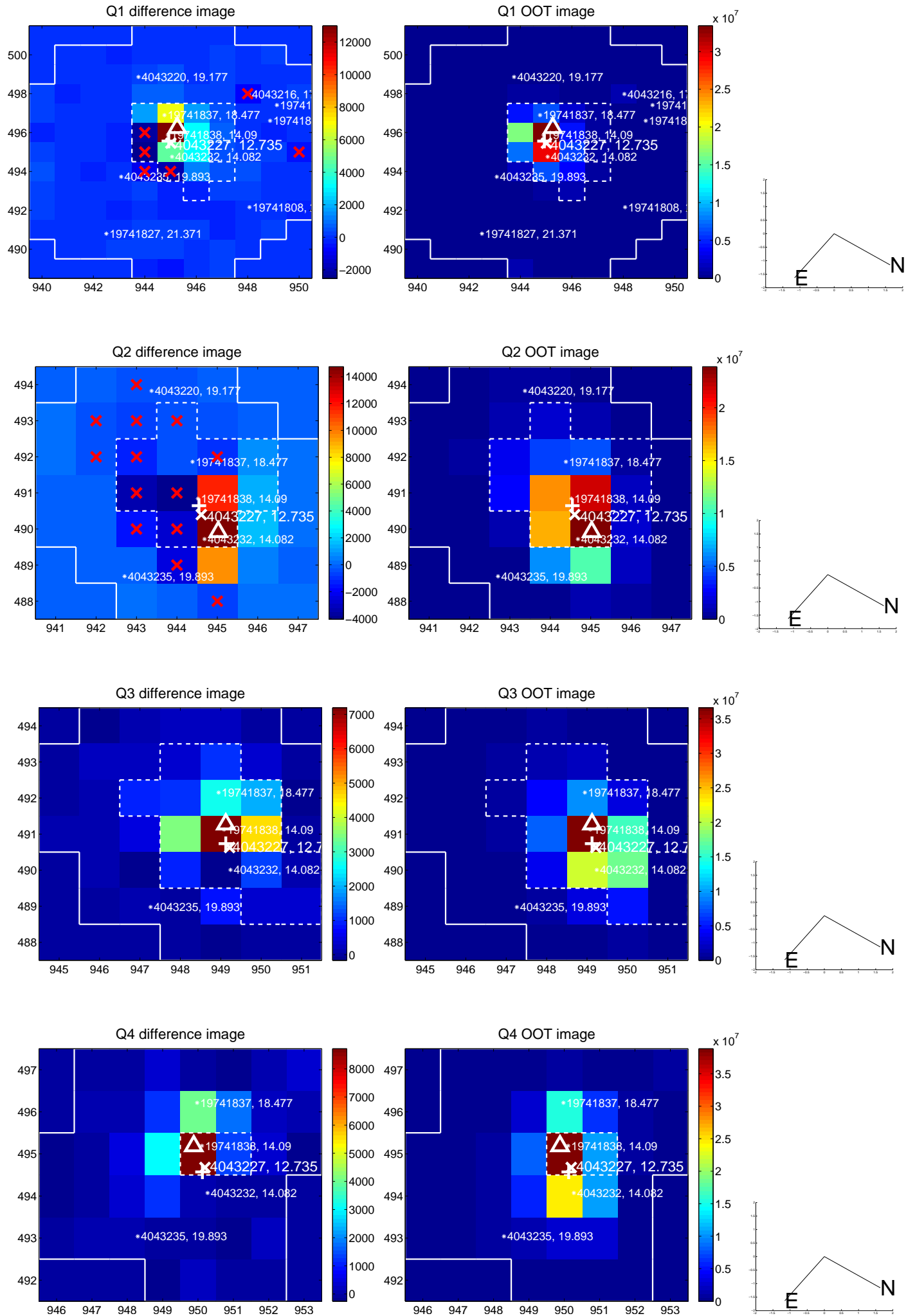


offset from photometric centroids

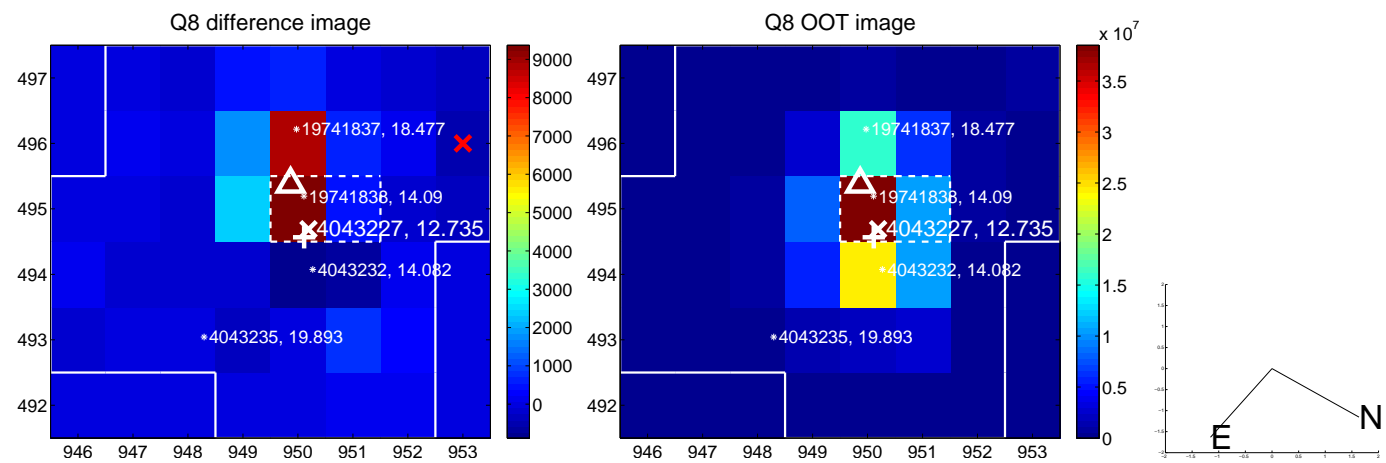
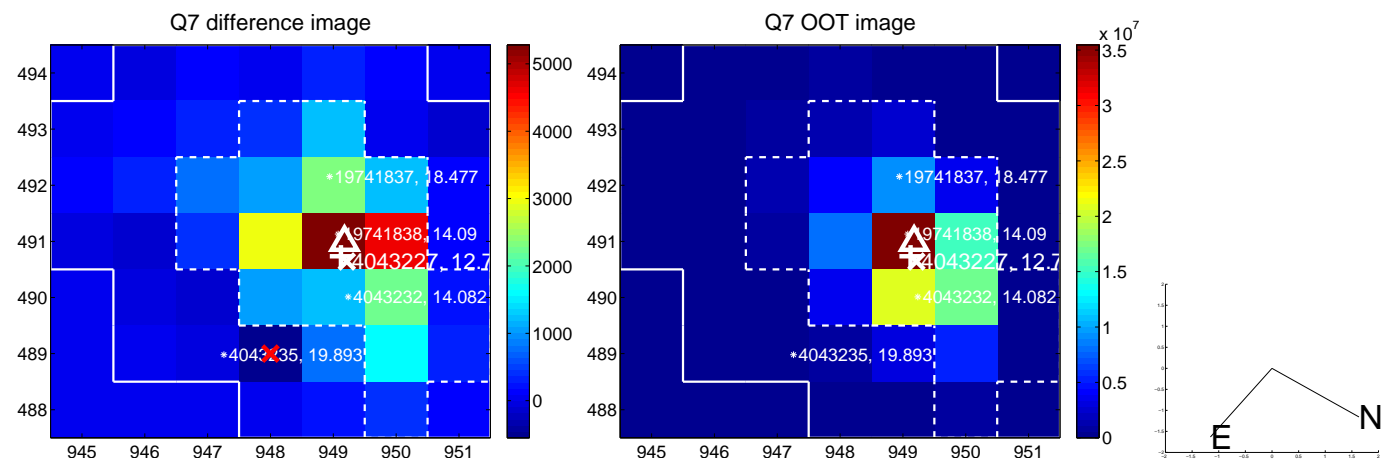
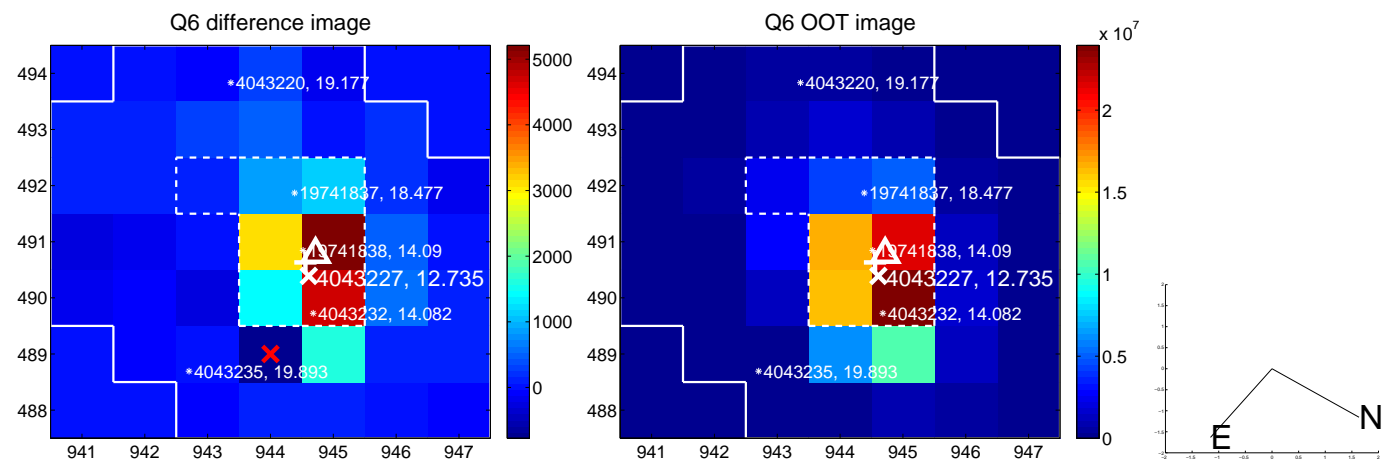
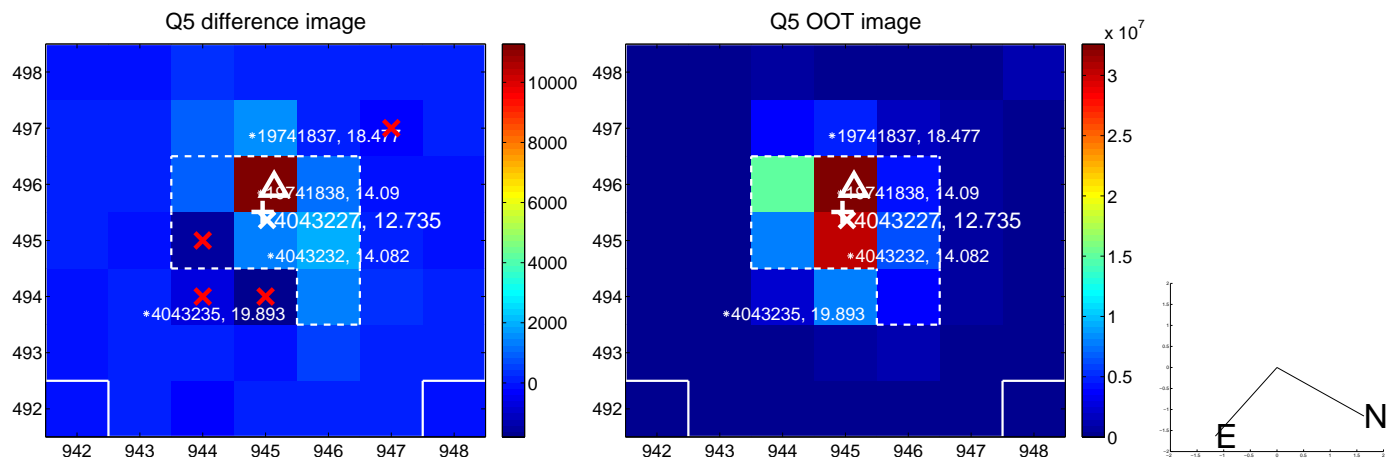


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

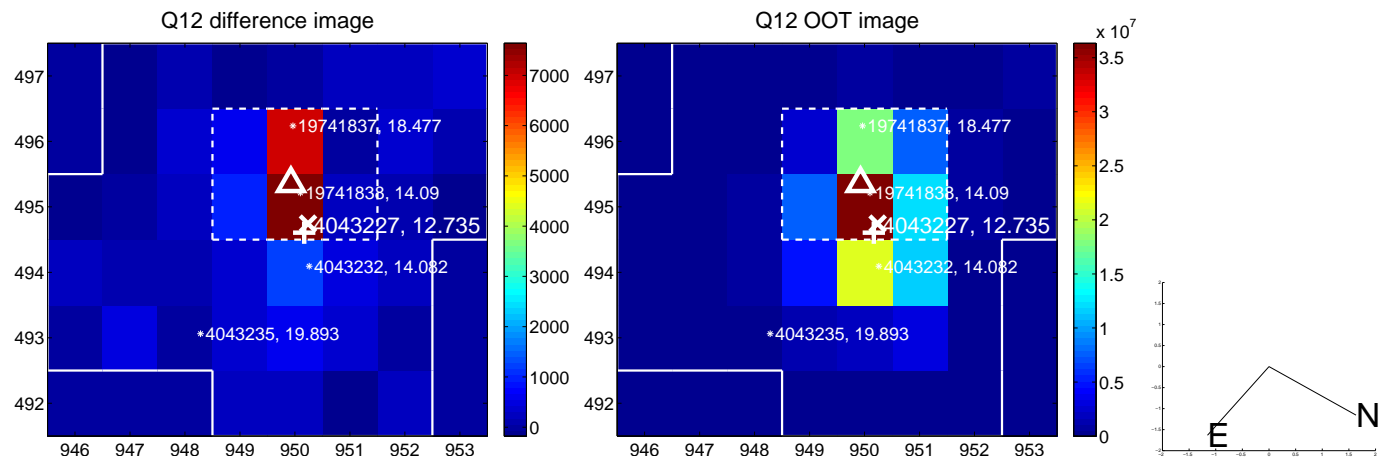
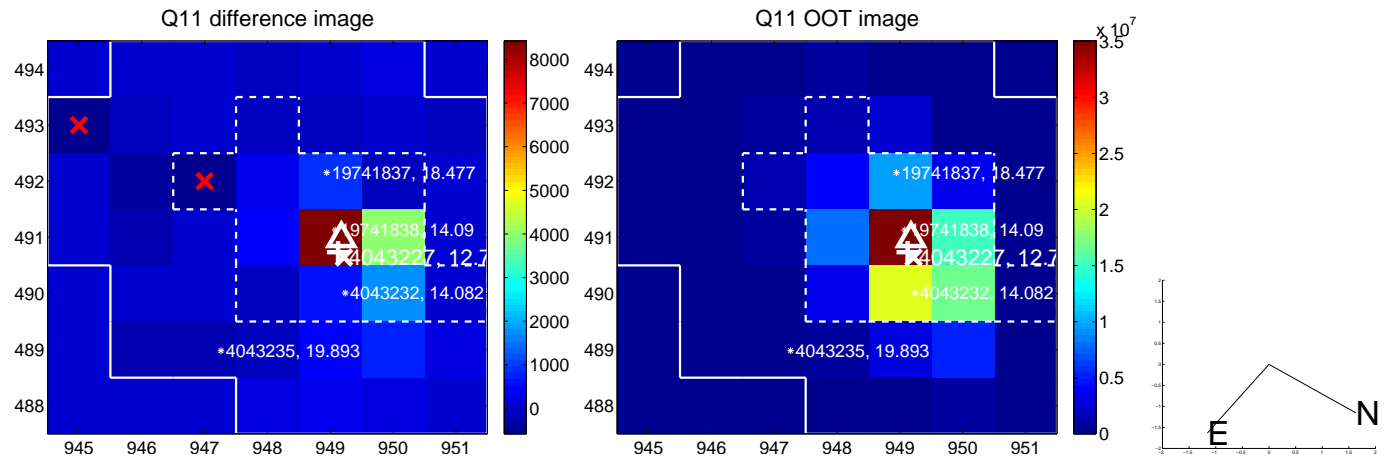
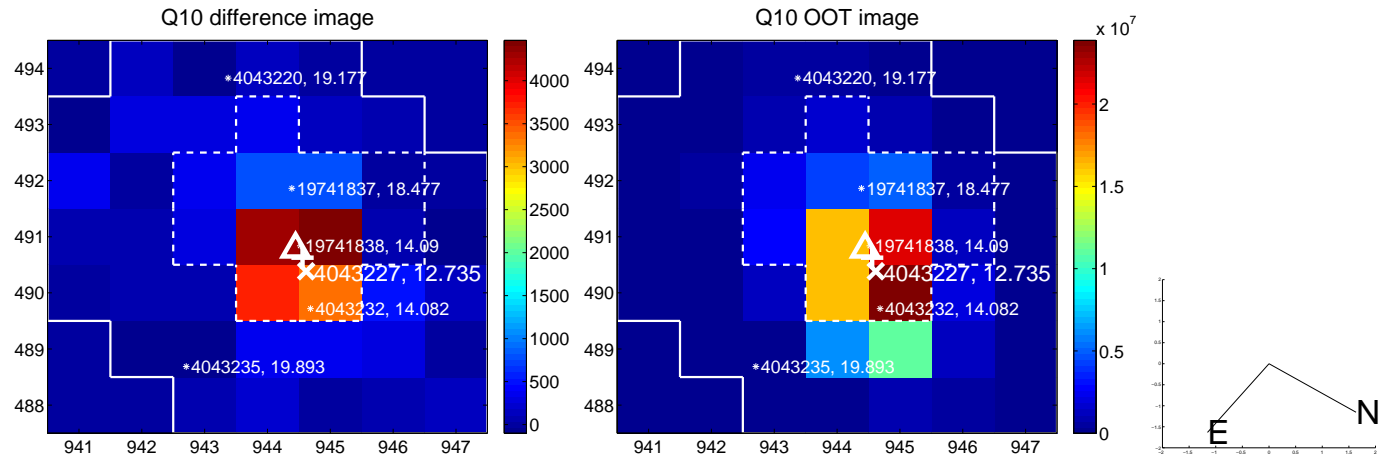
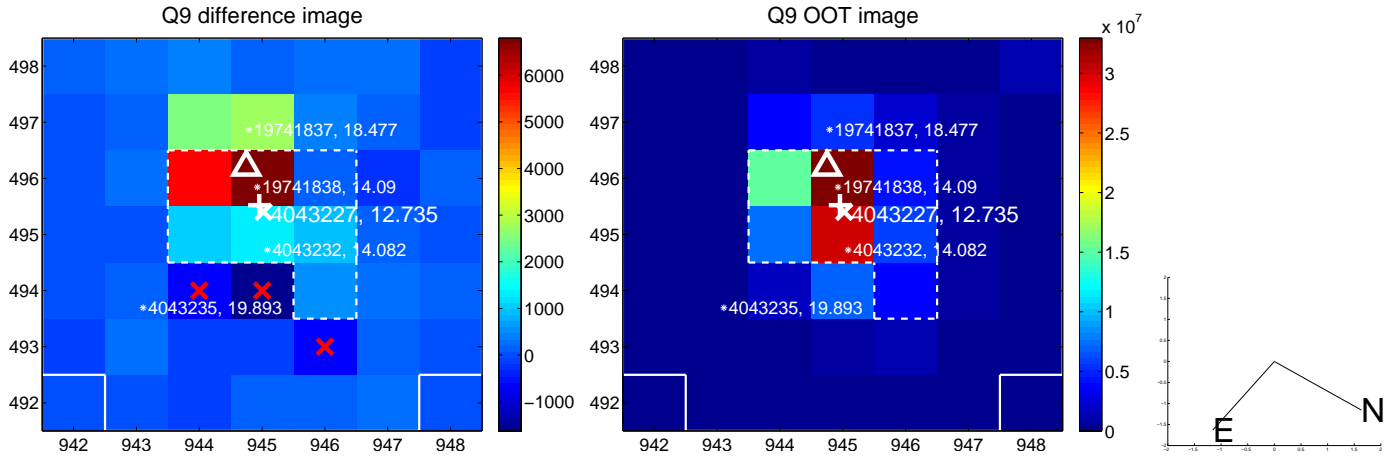
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



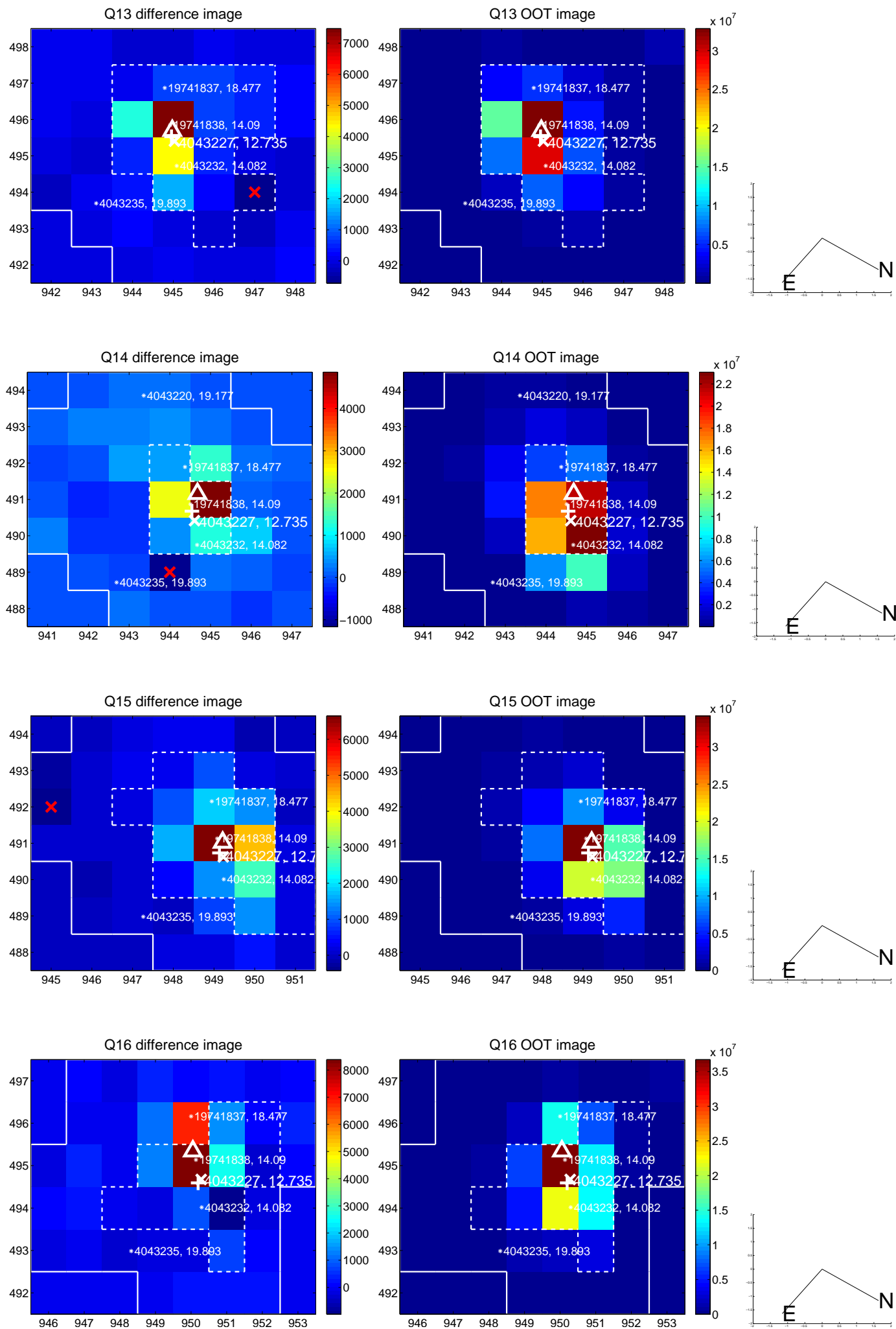
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



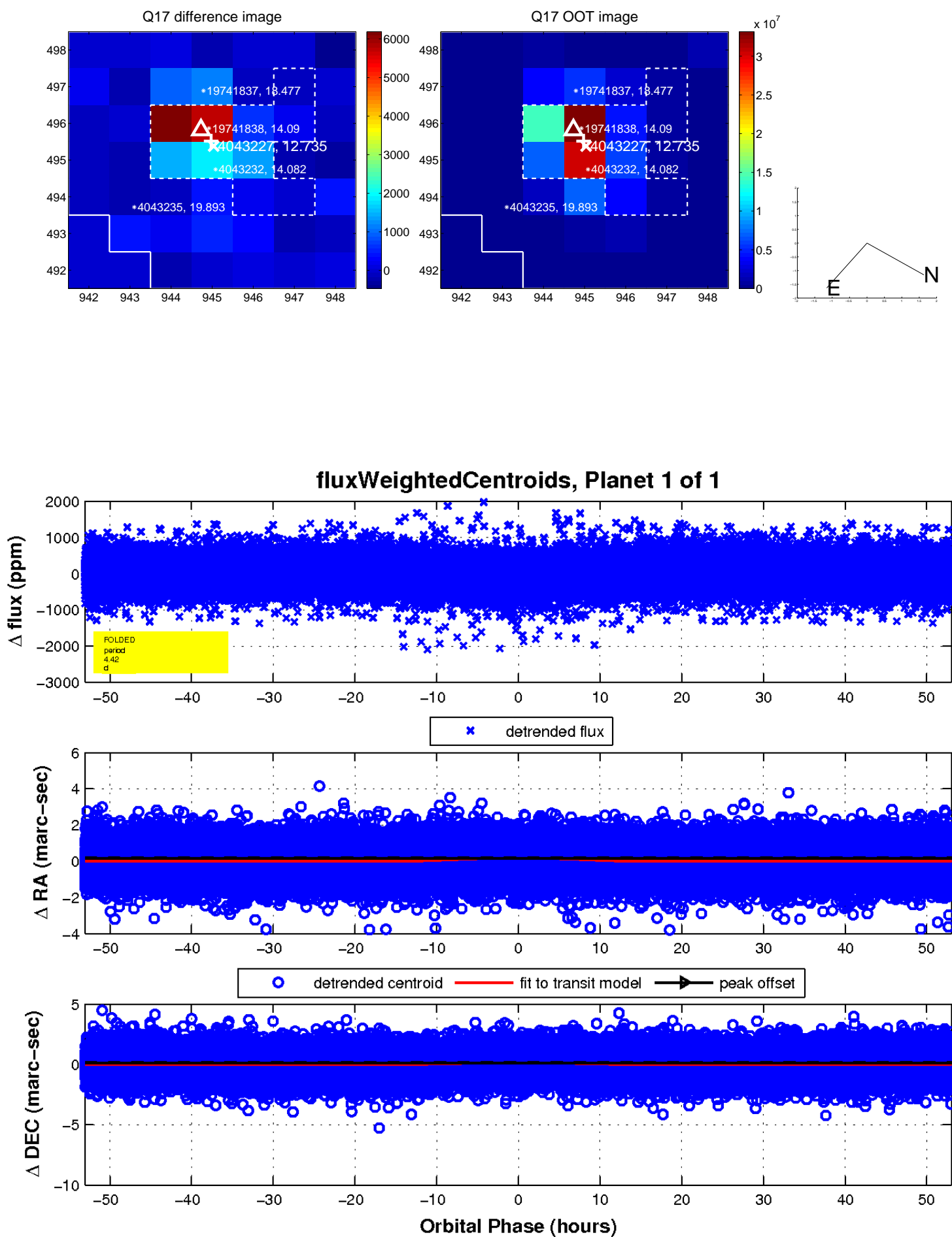
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



UKIRT Image

