

KIC 002708420

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})
002708420-01	OBS	4003.01	1.891243	132.696516	73.3	4.899	22.0	24.6	0.89	5806	0.76	947.63

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
002708420-01	OBS	FP	0.00	0	0	1	1	CENT_CROWDED—HALO_GHOST—EPHEM_MATCH

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 002708420-01

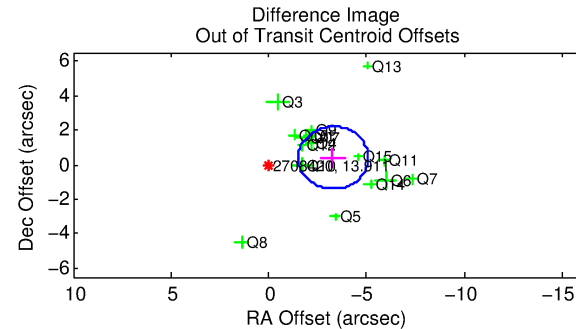
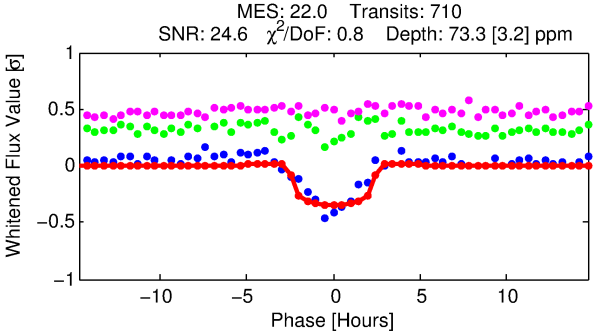
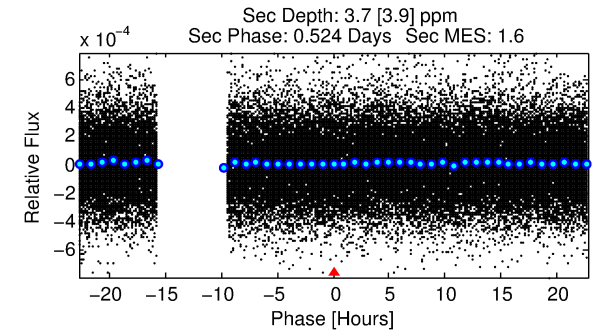
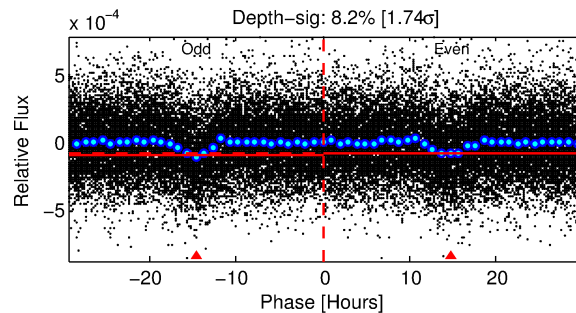
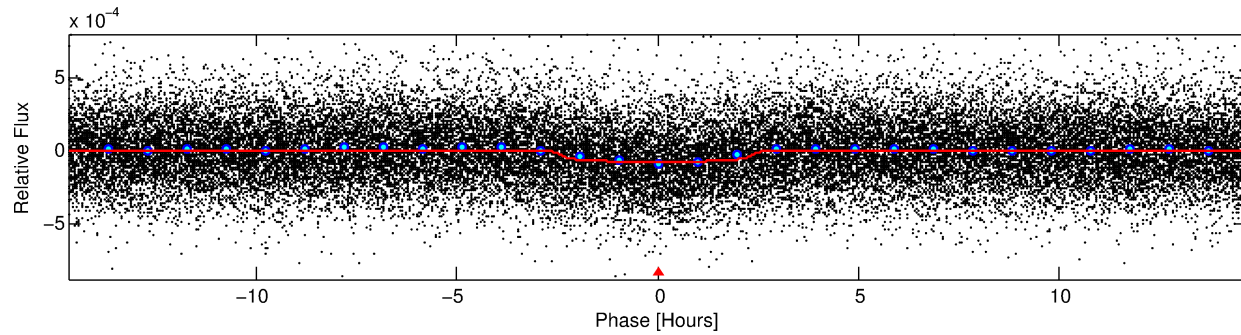
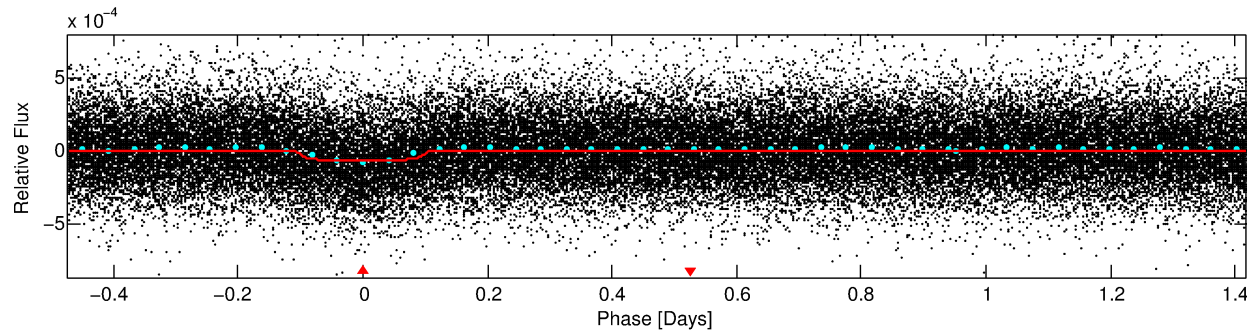
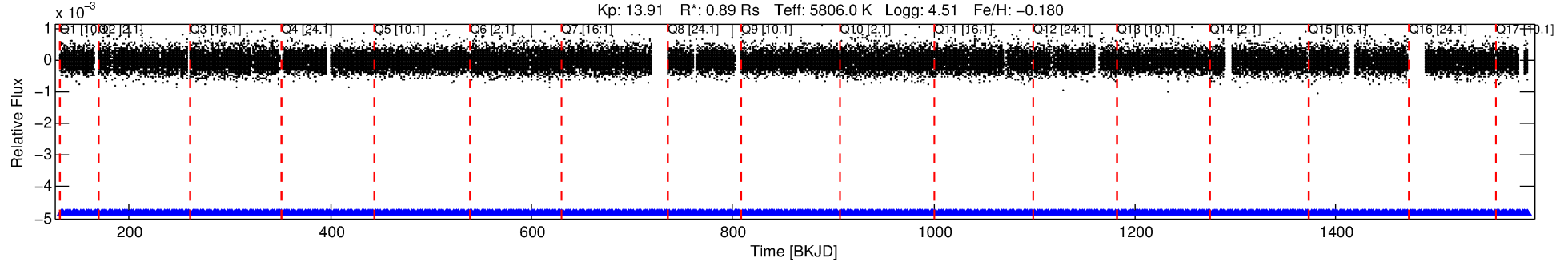
TCE (1)	KIC	Parent (2)	Parent KIC	$P_1:P_2$	Dist ($''$)	Δ Row	Δ Col	m_2	m_1	D_2/D_1	Mechanism	Flag	σ_P	σ_T
002708420-01	2708420	6286.01	2708156	1:1	187.9	16	45	10.67	13.91	8779.60	Direct-PRF	0	0.99	0.76

Notes: $P_1:P_2$ is the period ratio. Dist is the distance in arcseconds. Δ Row and Δ Col are the number of pixels apart in row and column. m_2 and m_1 are the magnitudes of the parent and child. D_2/D_1 is the parent's transit depth divided by the child's. σ_P and σ_T are the significance of the match in period and epoch. For a match to be considered significant $\sigma_P < 5.0$ and $\sigma_T < 5.0$. Matches which have σ_P and σ_T very close to this cutoff should receive extra scrutiny, especially if the period ratio is very large.

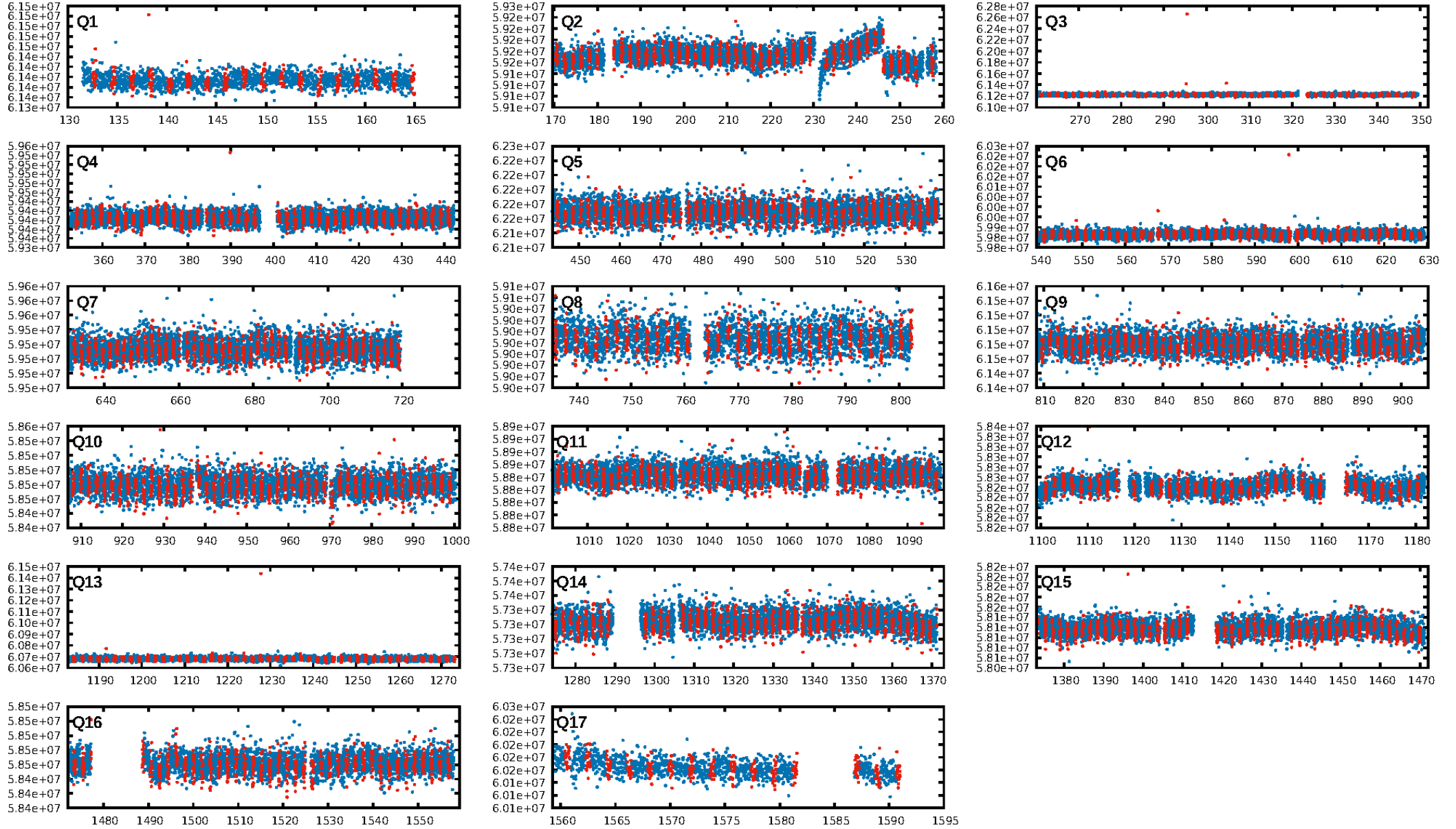
DV One-Page Summary

KIC: 2708420 Candidate: 1 of 1 Period: 1.891 d
KOI: K04003.01 Corr: 0.918

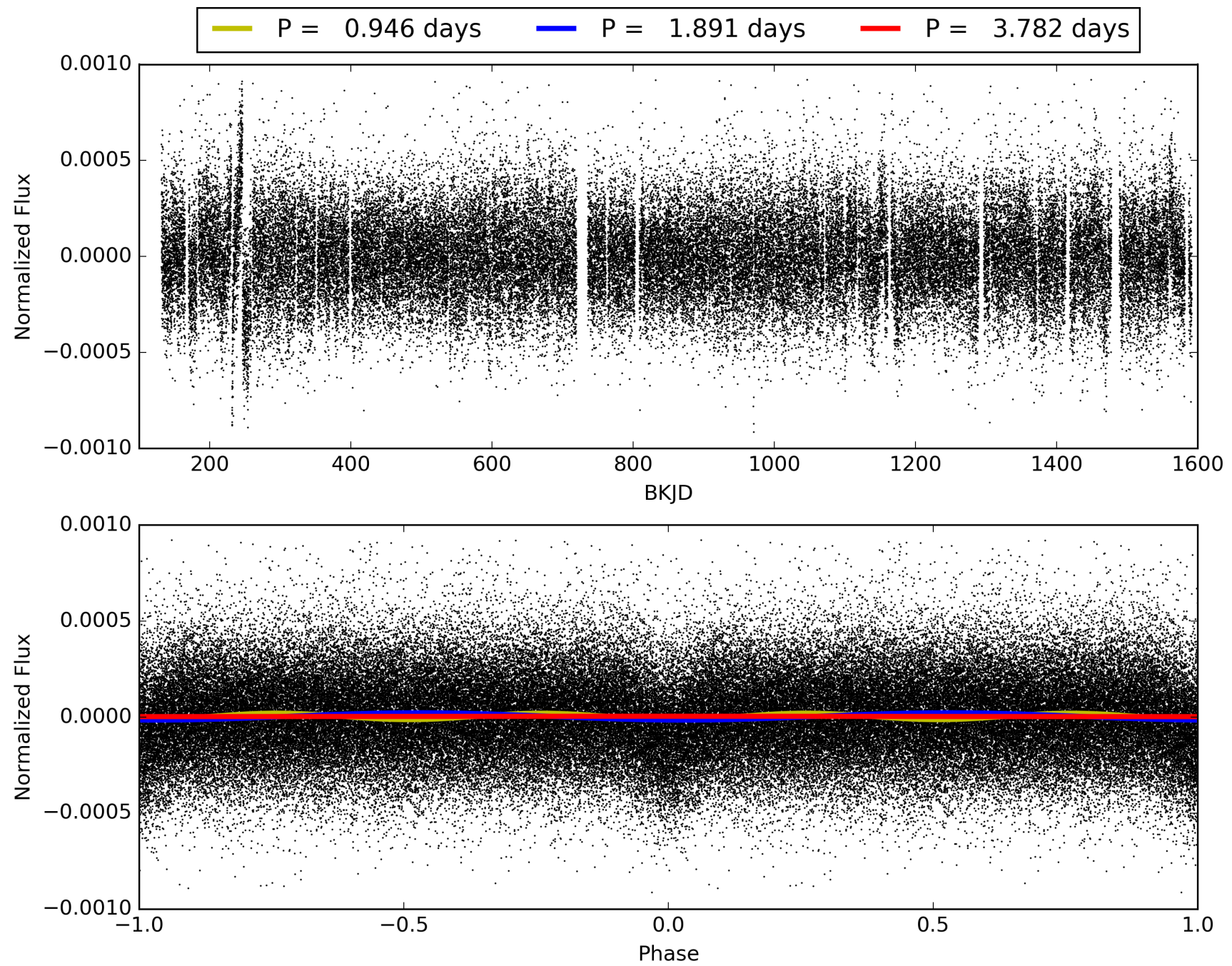
Kp: 13.91 R*: 0.89 Rs Teff: 5806.0 K Logg: 4.51 Fe/H: -0.180



TCE 002708420-01, PDC Light Curves

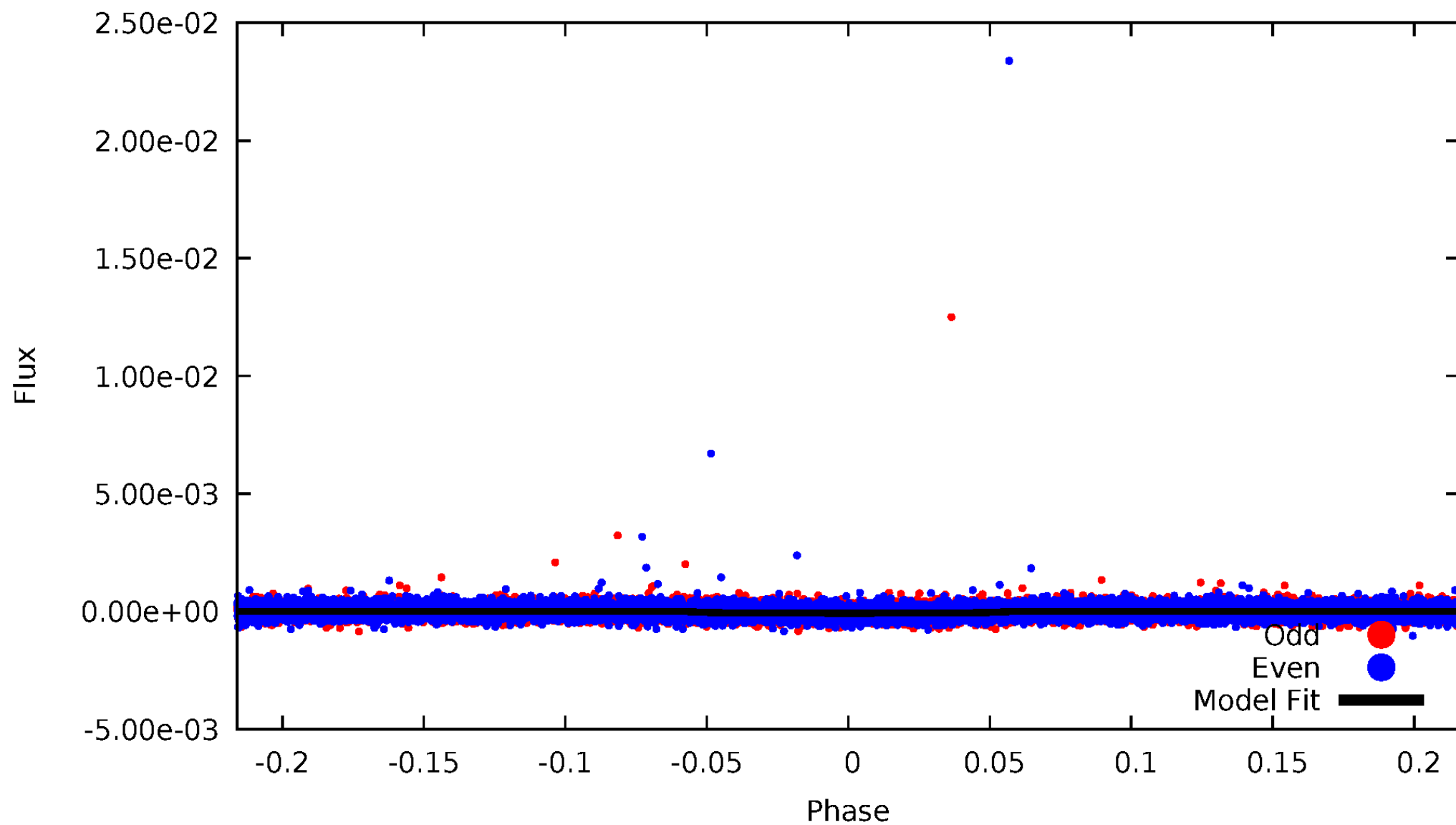


TCE 002708420-01



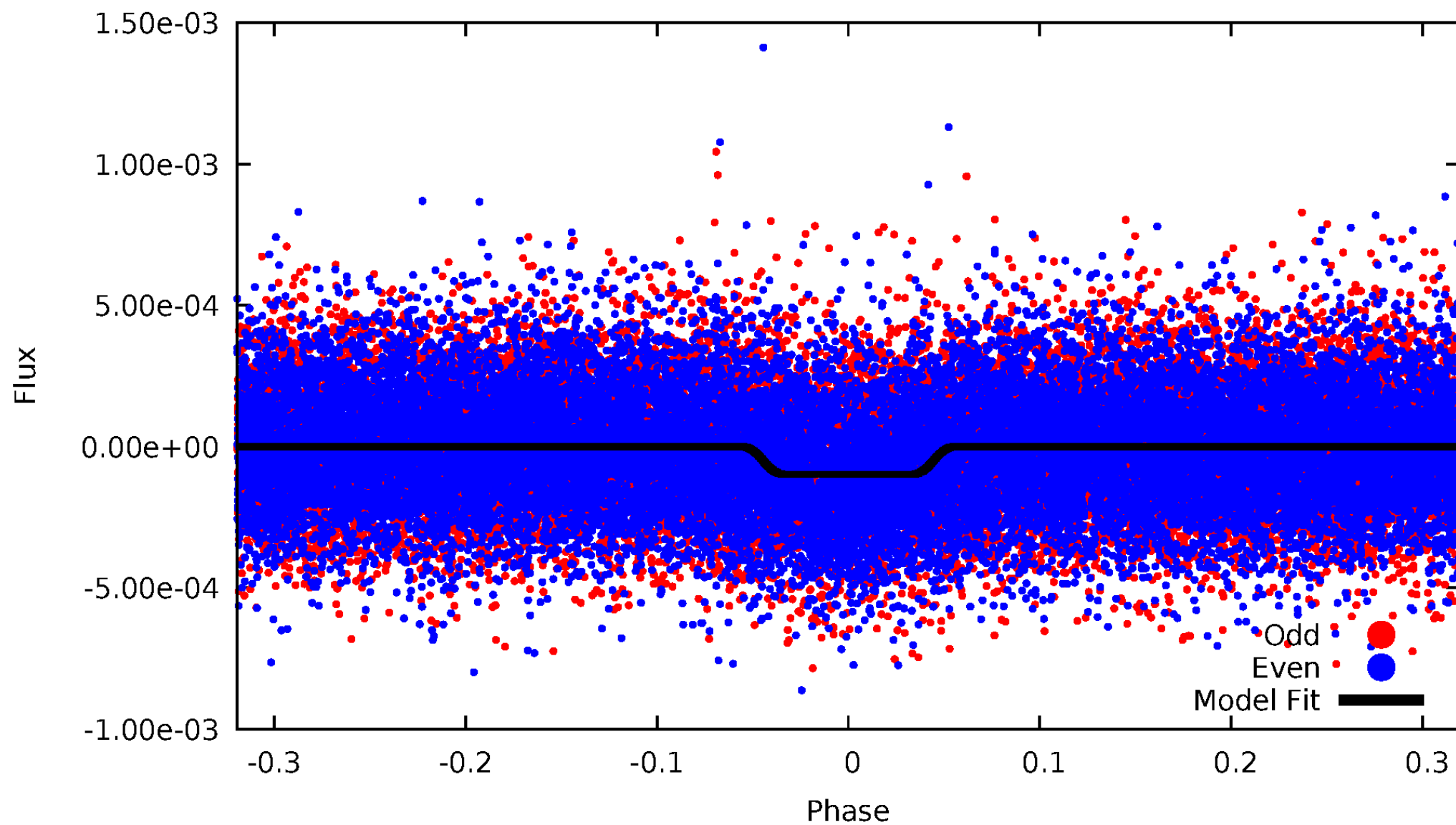
DV Odd/Even

TCE 002708420-01



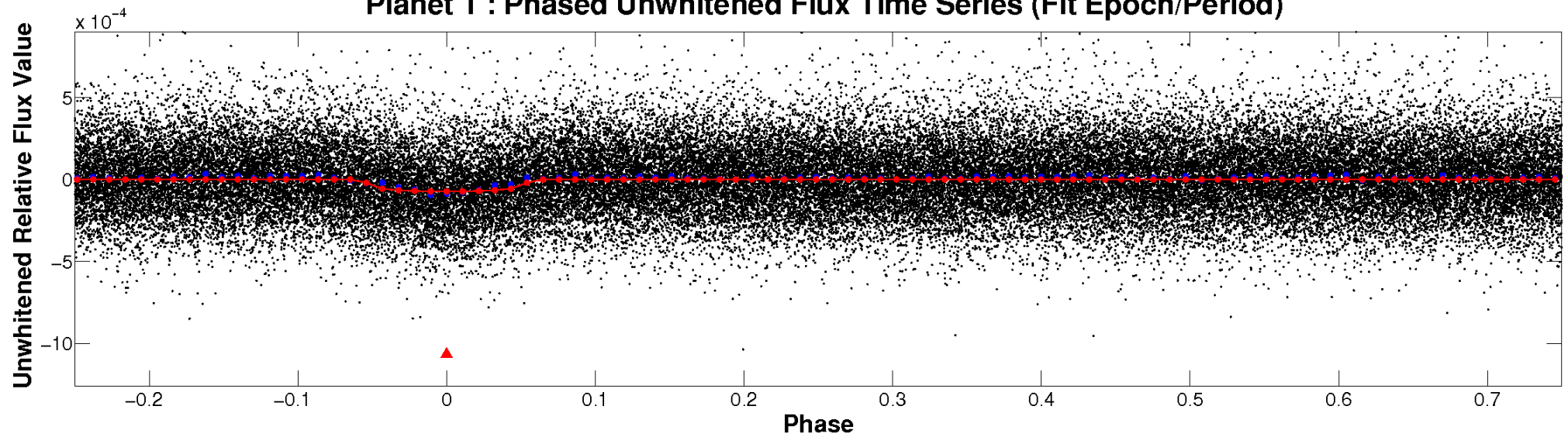
ALT Odd/Even

TCE 002708420-01

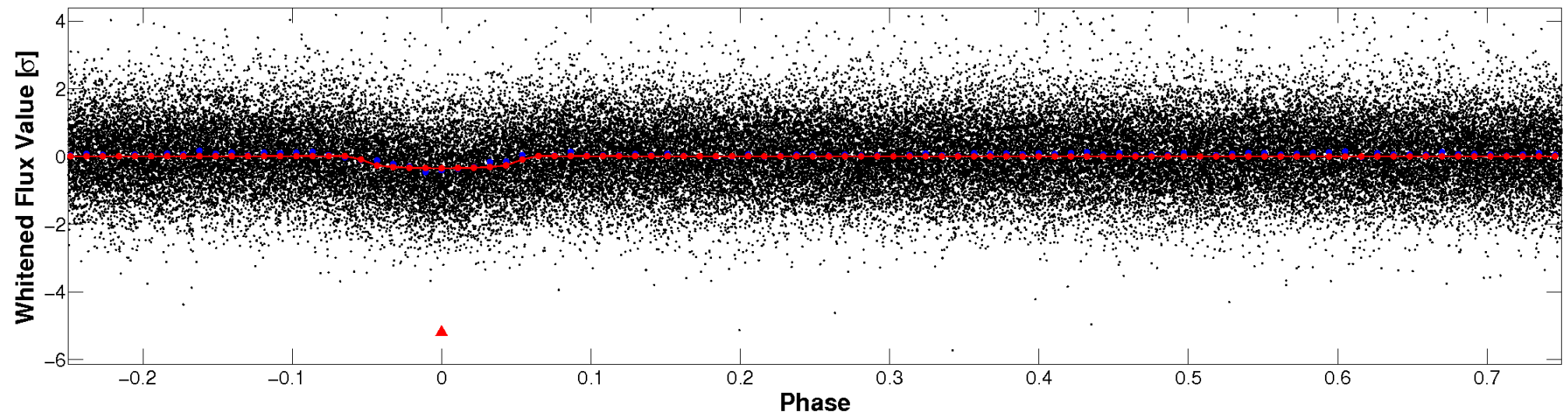


Non-Whitened Vs. Whitened Light Curve

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

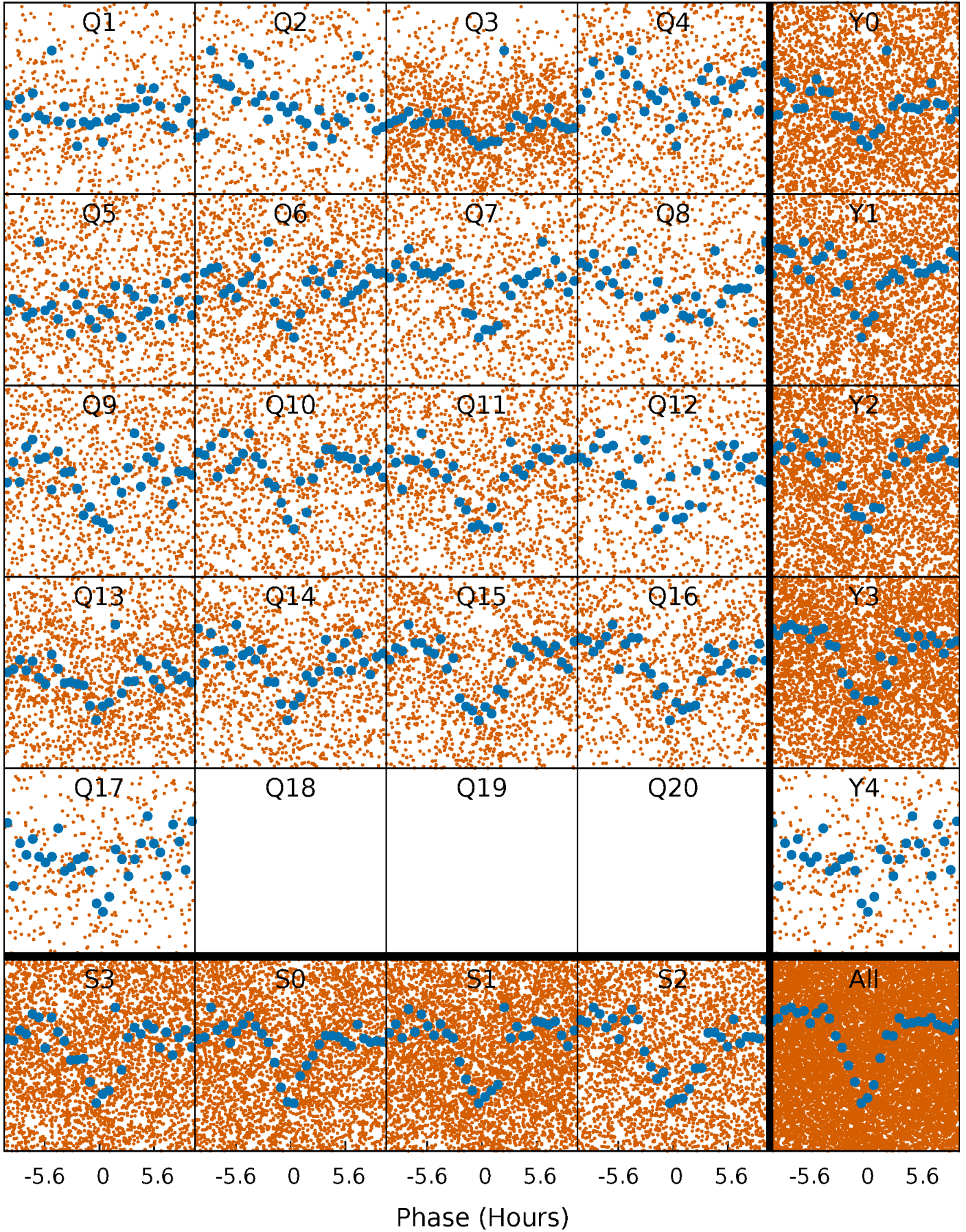


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



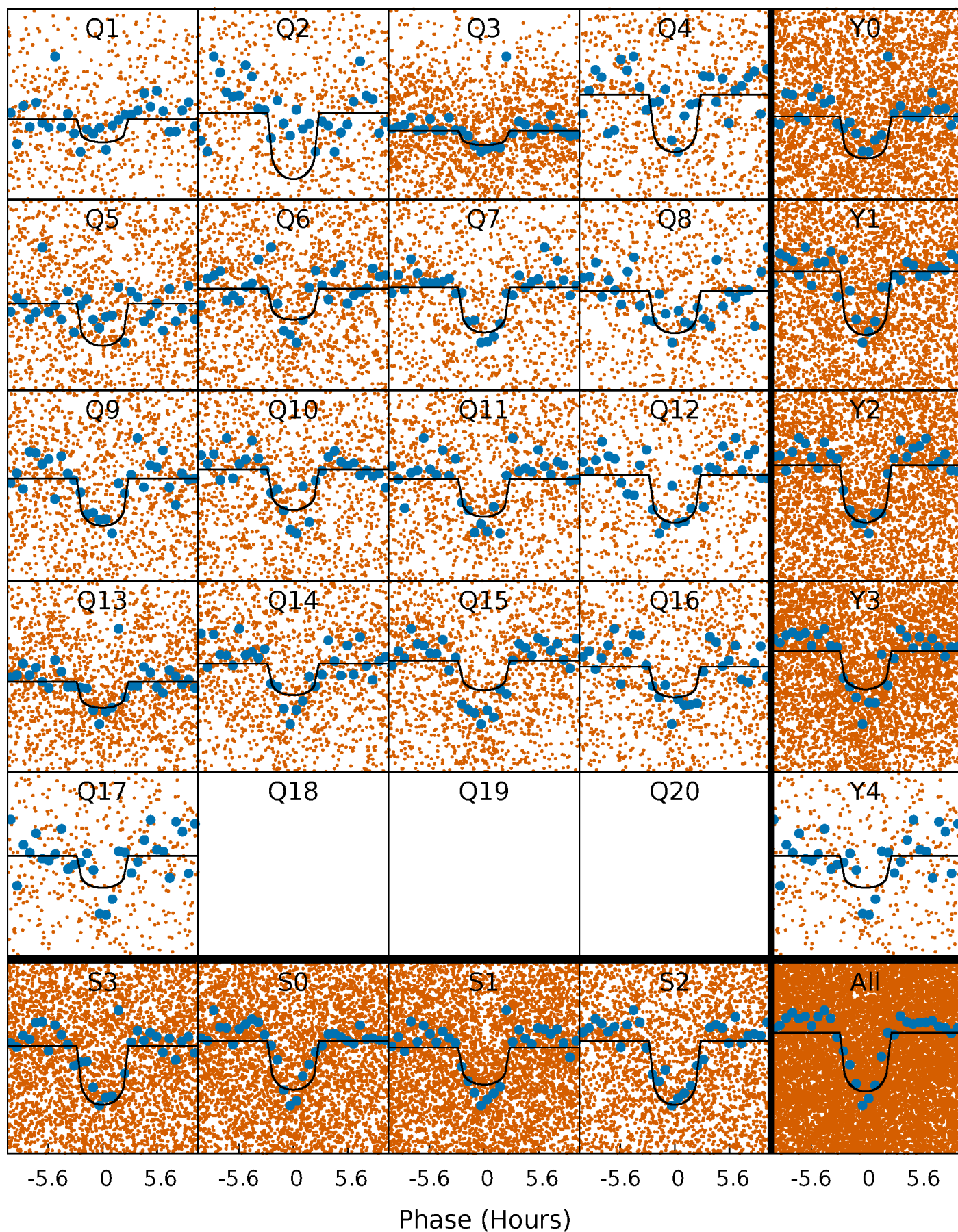
PDC Quarter-Phased Transit Curves

TCE 002708420-01 P= 1.891243 Days $T_0=132.696516$ (BKJD)



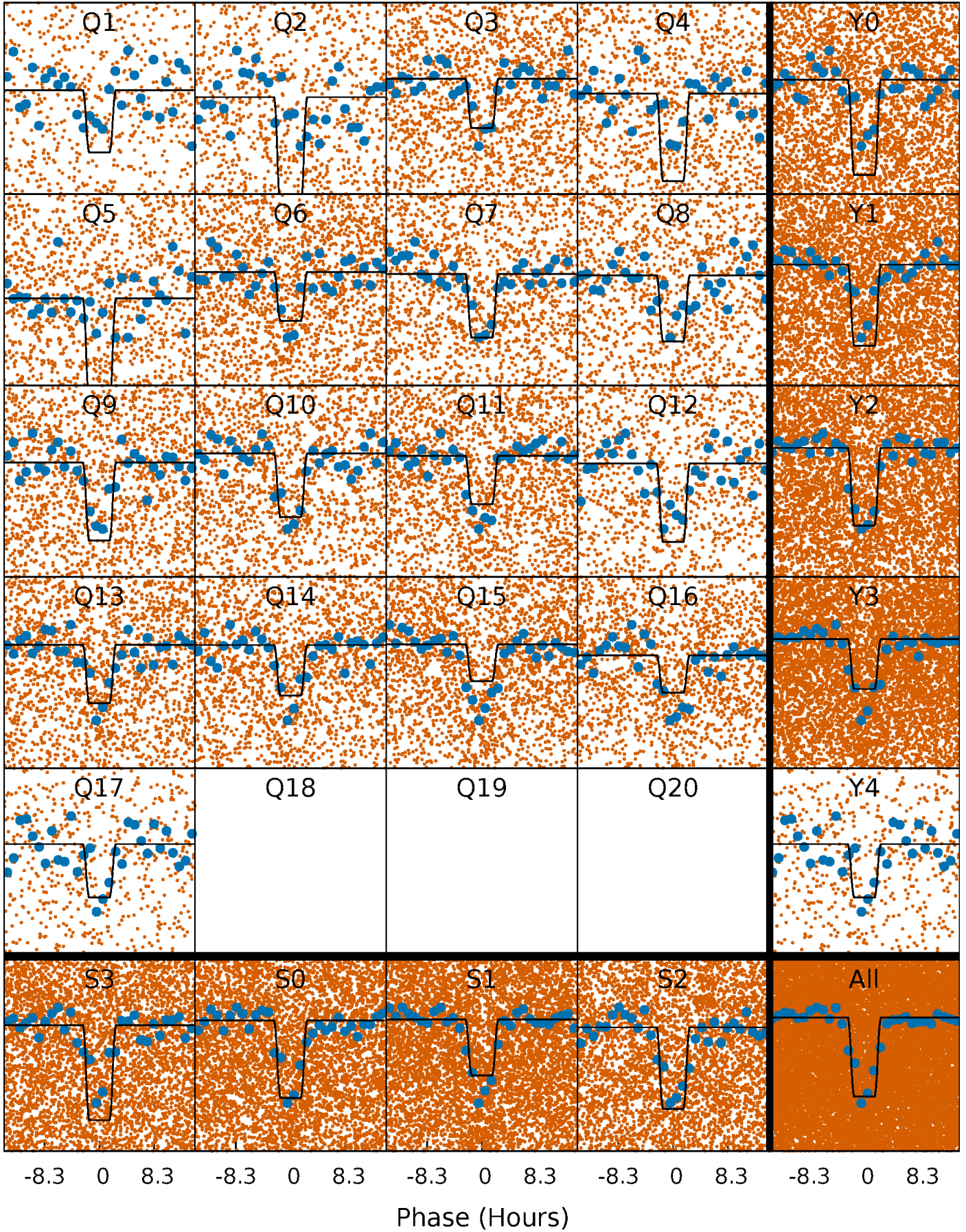
DV Quarter-Phased Transit Curves

TCE 002708420-01 P= 1.891243 Days $T_0=132.696516$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

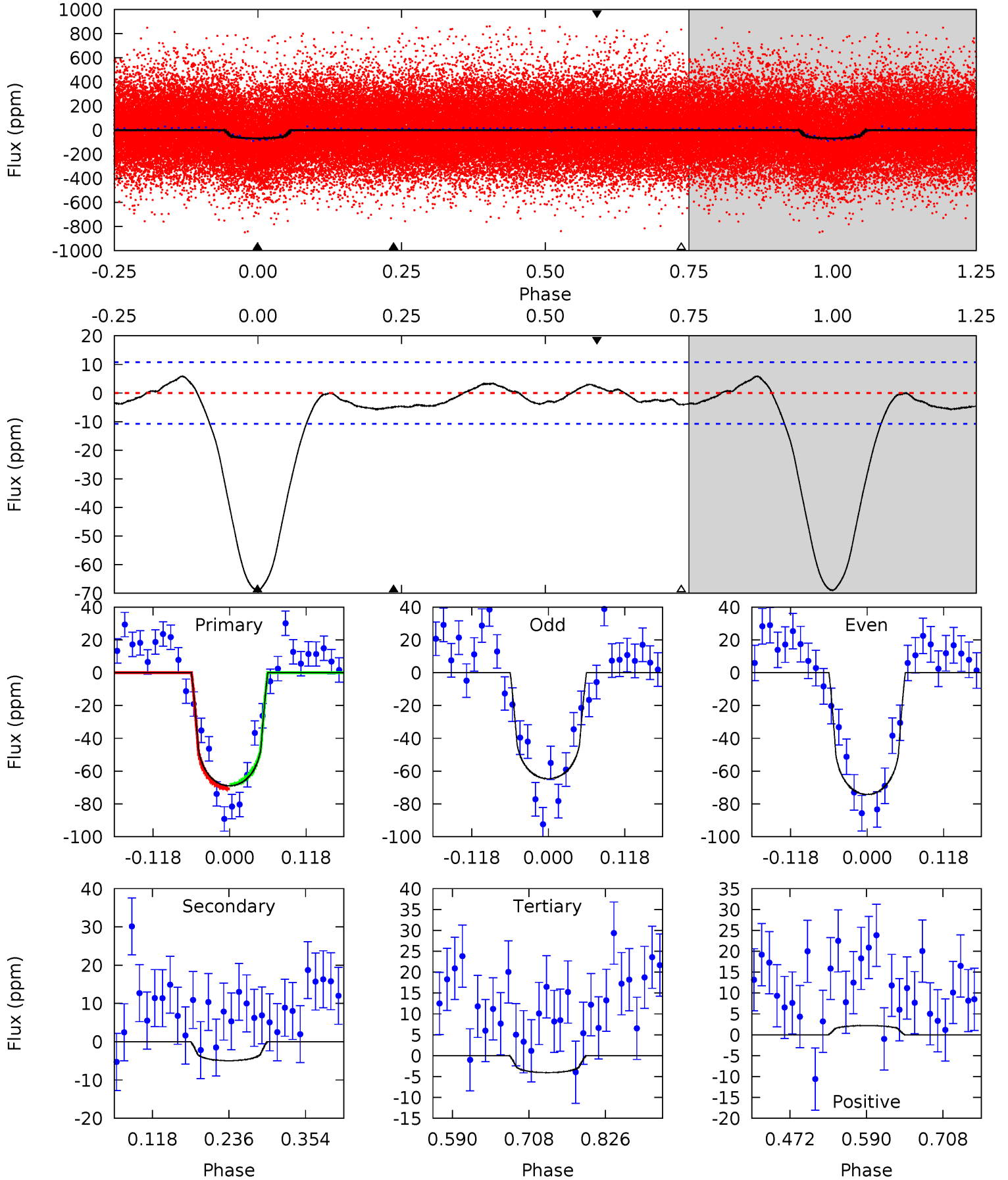
TCE 002708420-01 P= 1.891233 Days $T_0=132.700684$ (BKJD)



DV Model-Shift Uniqueness Test

002708420-01, P = 1.891243 Days, E = 130.805273 Days

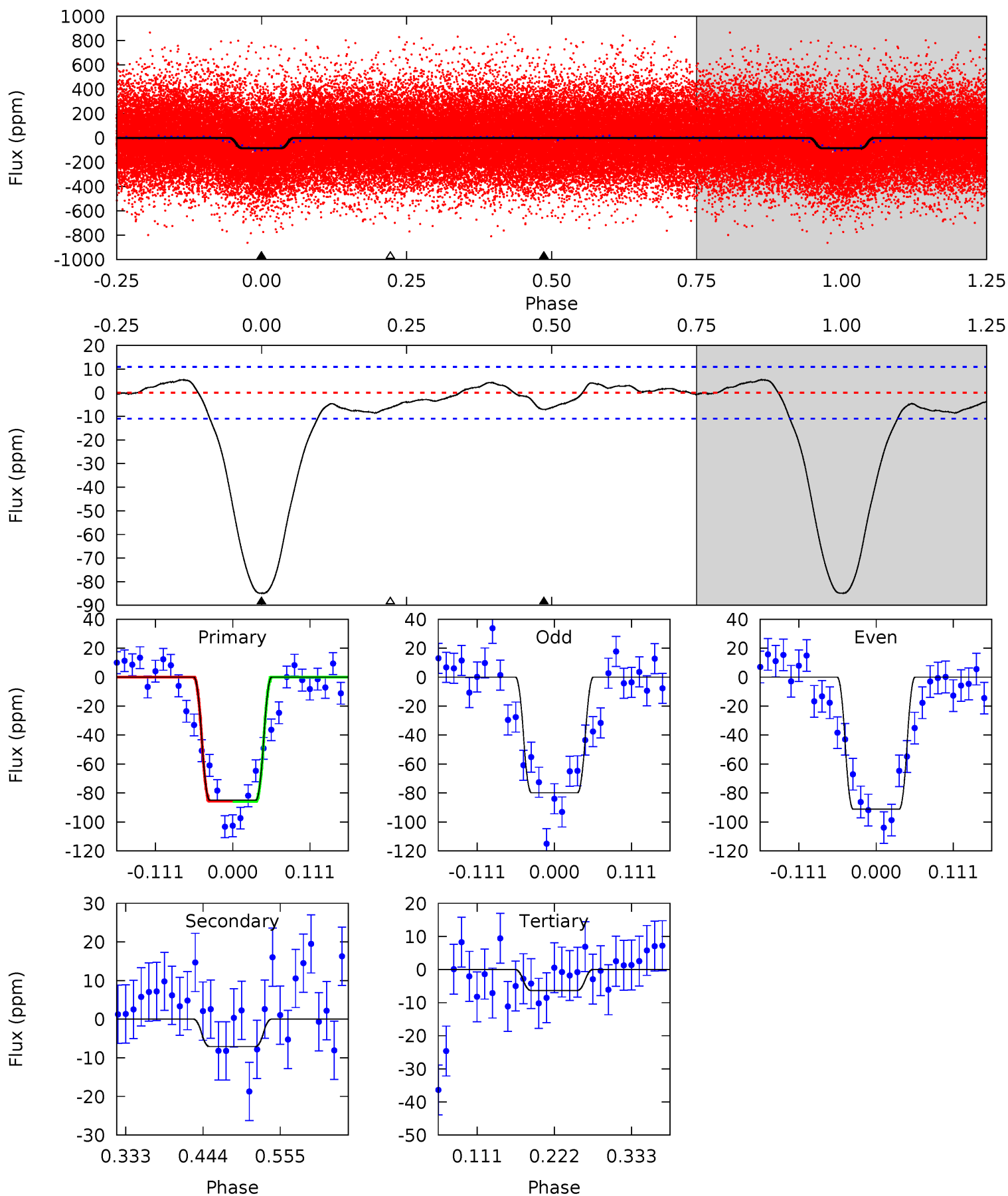
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
29.1	2.09	1.71	0.93	4.53	1.56	1.10	27.3	28.1	0.37	1.16	2.02	0.93	0.08	0.57



Alt Model-Shift Uniqueness Test

002708420-01, P = 1.891233 Days, E = 130.809451 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
35.2	2.93	2.63	0	4.54	1.59	1.63	32.6	35.2	0.31	2.93	2.33	0.96	0.06	0.02



Stellar Parameters For KIC 002708420

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	5806^{+78}_{-86}	$4.507^{+0.040}_{-0.120}$	$-0.180^{+0.150}_{-0.150}$	$0.893^{+0.120}_{-0.051}$	$0.935^{+0.051}_{-0.068}$	$1.848^{+0.315}_{-0.600}$
	+1%/-1%	+1%/-3%	+83%/-83%	+13%/-6%	+5%/-7%	+17%/-32%
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 002708420-01 / KOI 4003.01

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-5 ± 2	$0.83^{+0.54}_{-0.49}$	1995^{+74}_{-53}	3388^{+1405}_{-673}	$3.140^{+17.679}_{-2.254}$
Alt.	-7 ± 2	$1.05^{+0.61}_{-0.56}$	1997^{+76}_{-52}	3341^{+1045}_{-523}	$2.903^{+9.690}_{-1.813}$

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 $A_{obs} \gg 1.0$

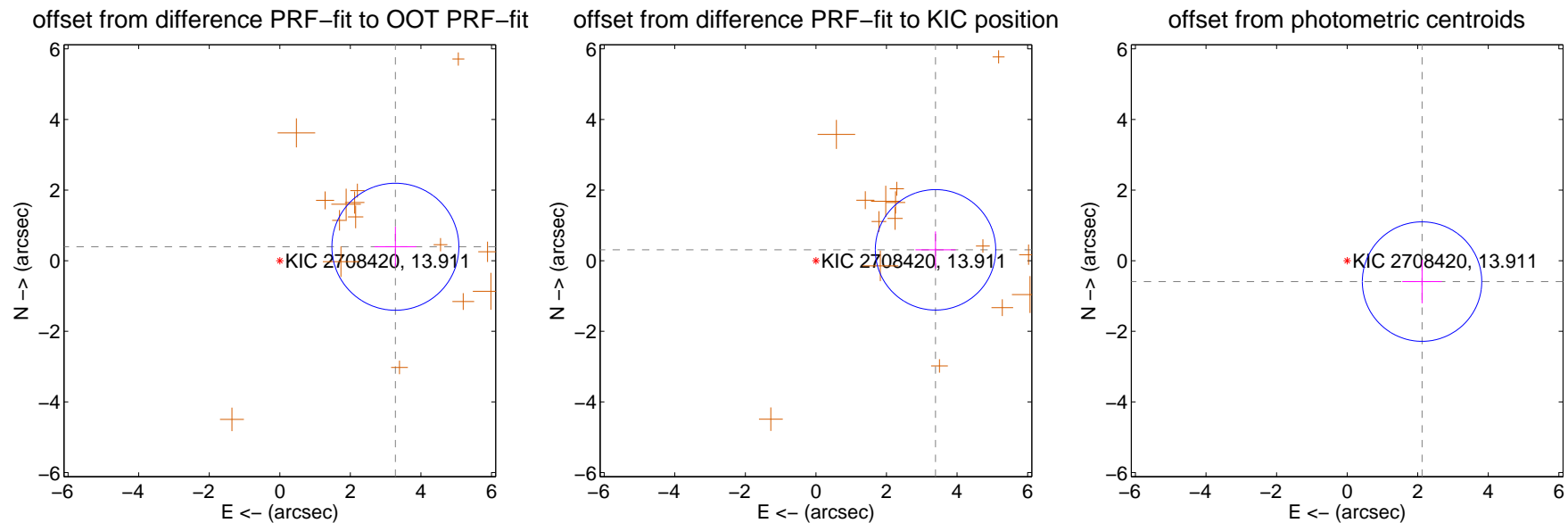
DV Centroid Data

Supplemental centroid analysis for 002708420-01. Kepler magnitude: 13.91. Transit SNR 24.57

There are 0 quarters with good PRF difference image offsets

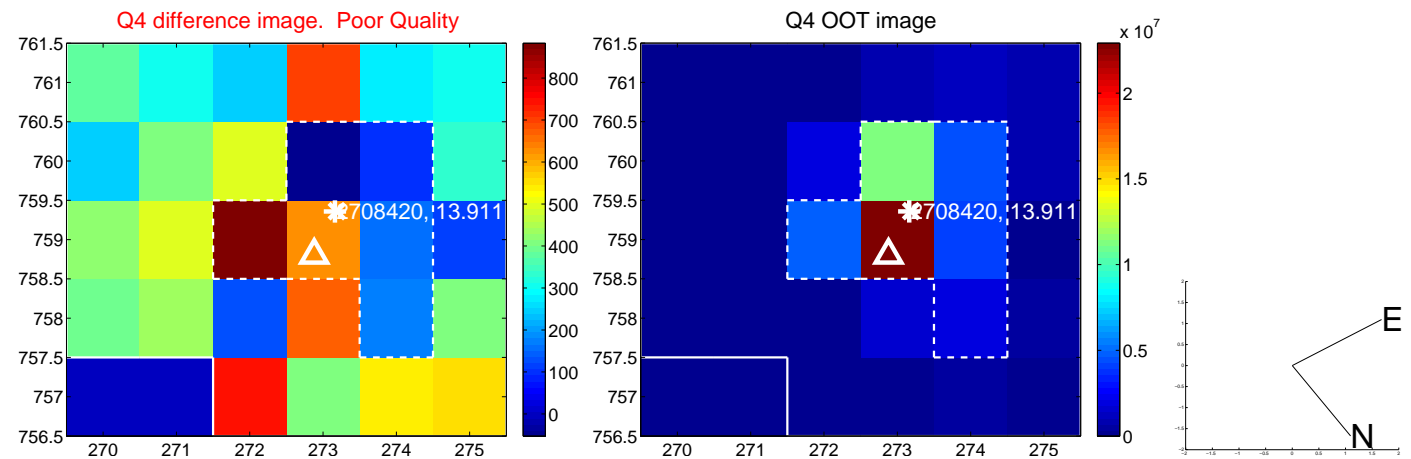
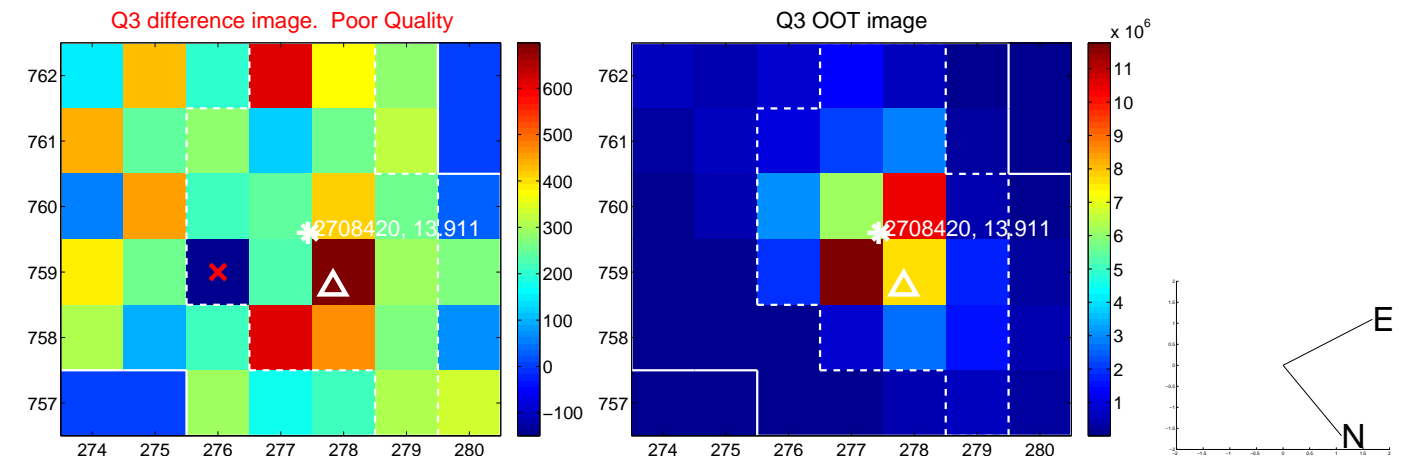
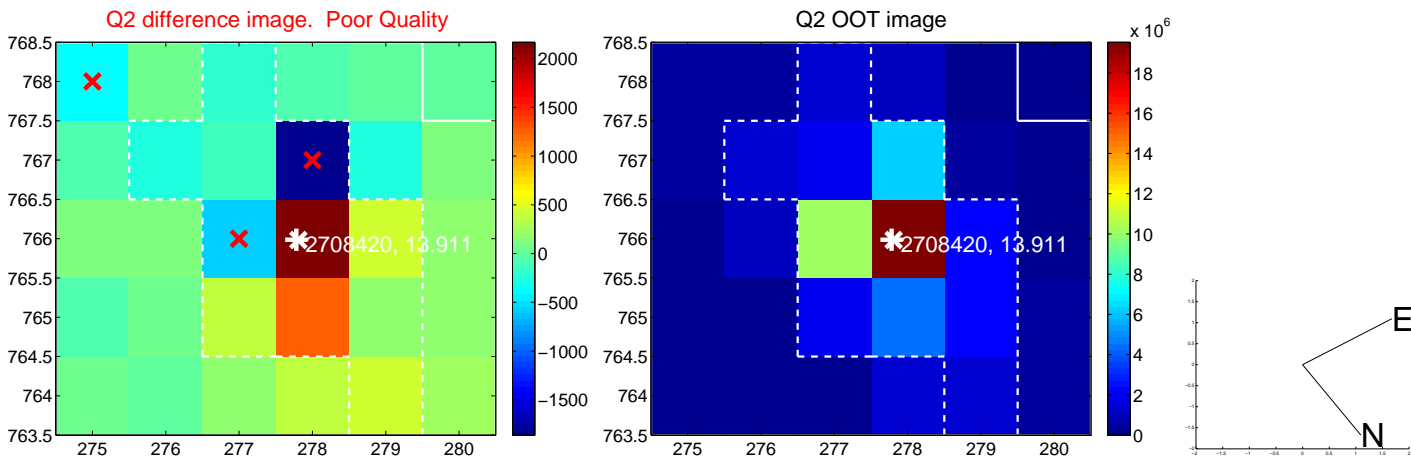
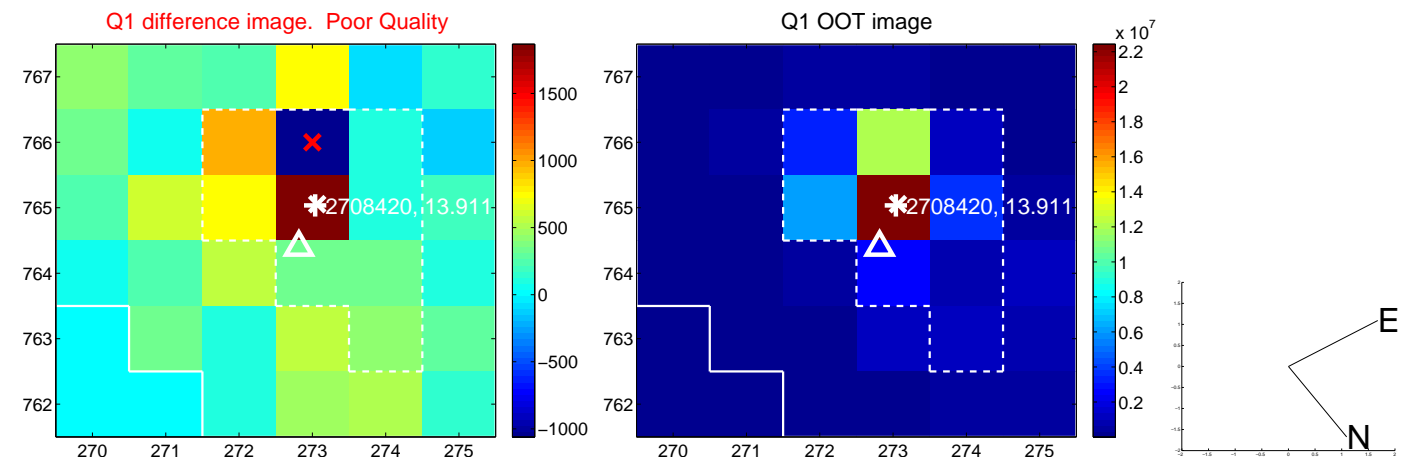
The direct PRF centroid is offset from the target star catalog position by about 0.13 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	3.299 ± 0.600	5.50	-3.275 ± 0.596	0.395 ± 0.566
PRF-fit source offset from KIC position	3.403 ± 0.569	5.98	-3.389 ± 0.569	0.308 ± 0.523
photometric centroid source offset	2.20 ± 0.56	3.91	-2.12 ± 0.56	-0.59 ± 0.61

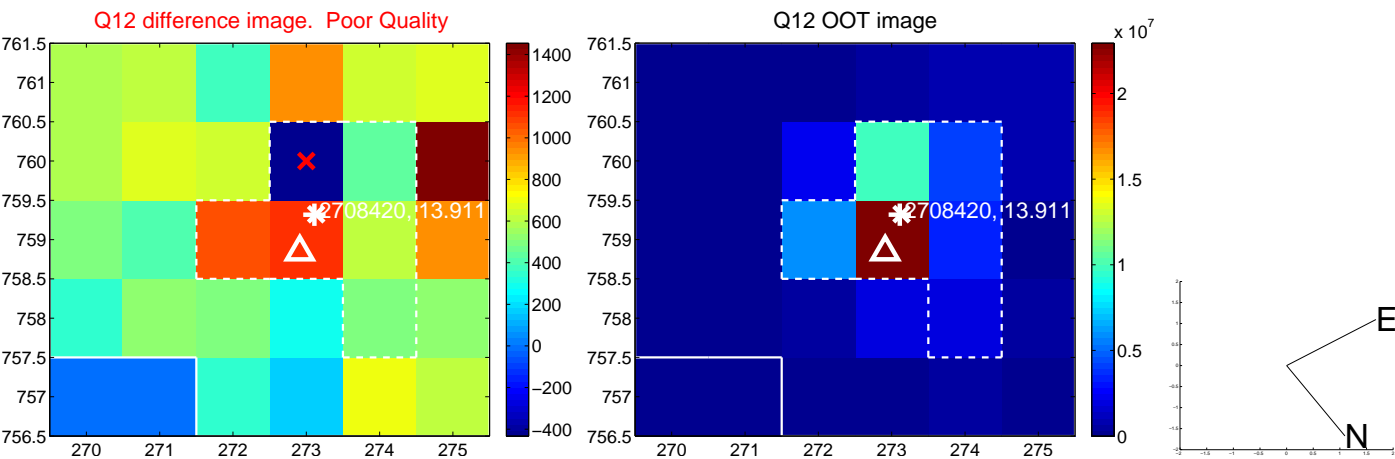
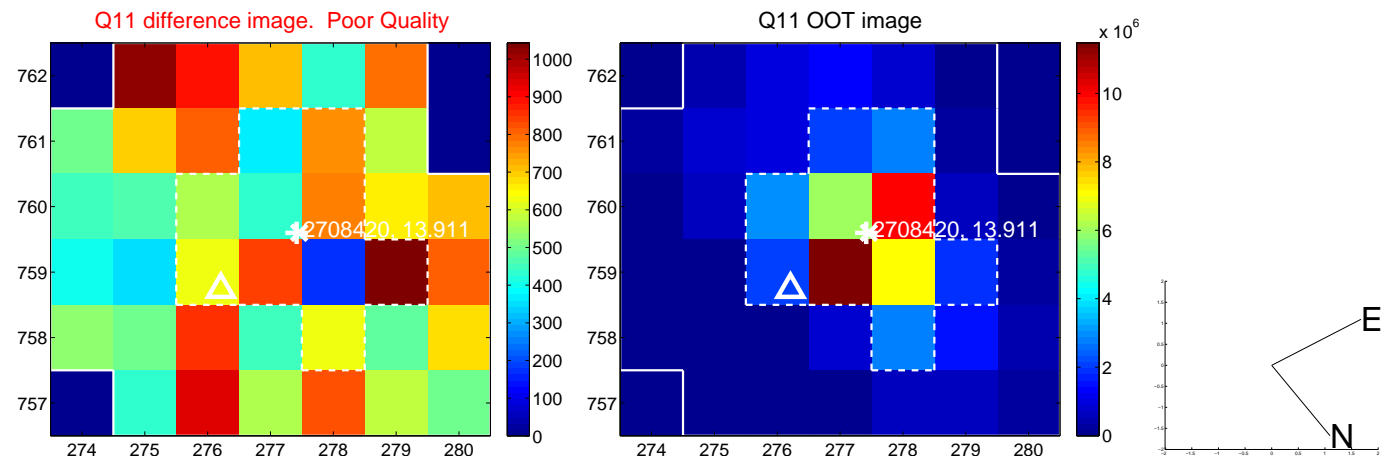
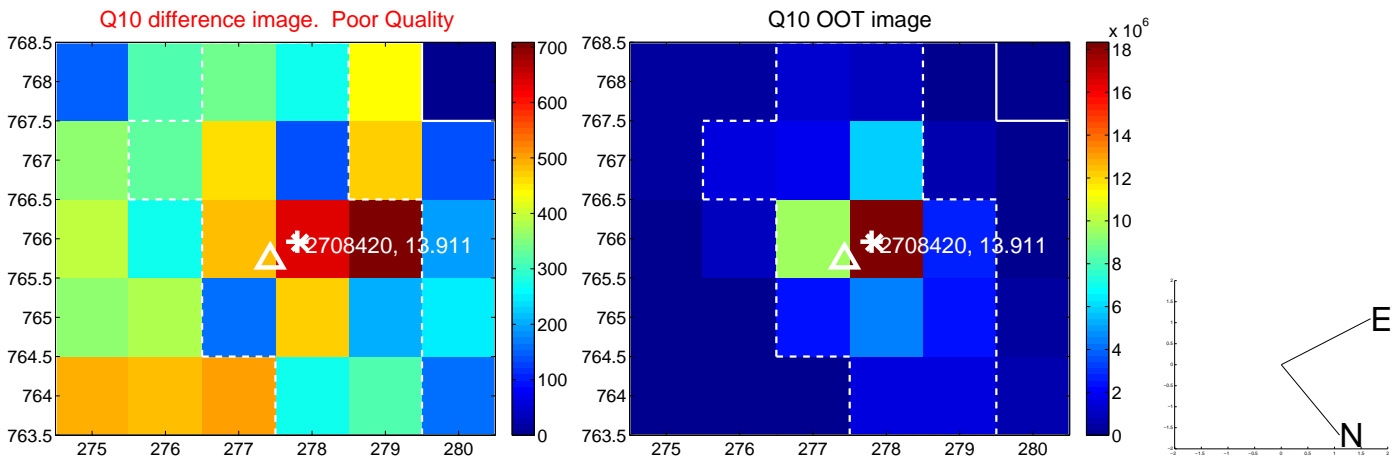
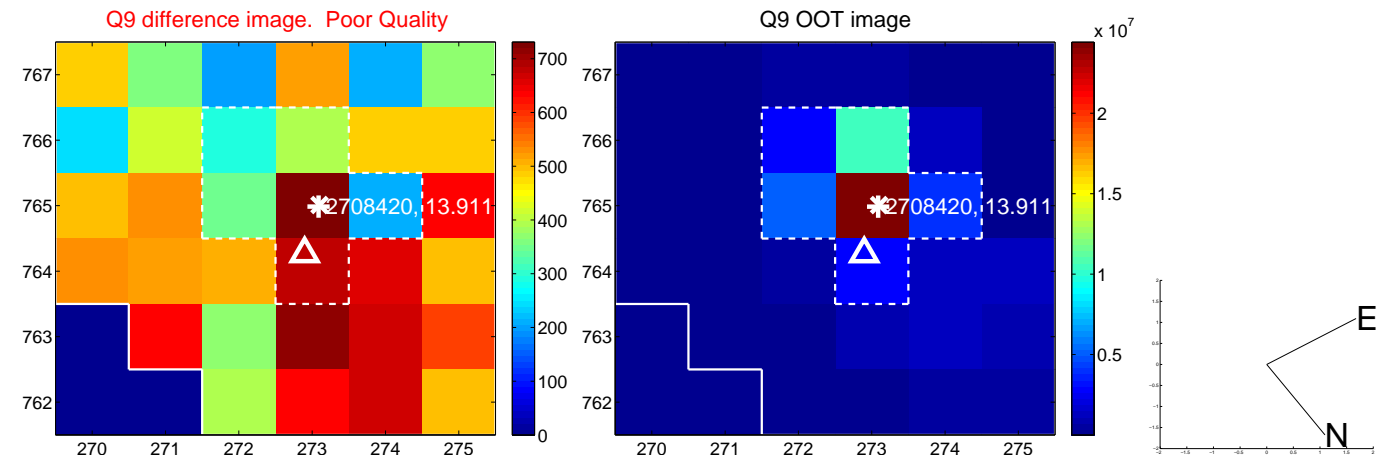


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

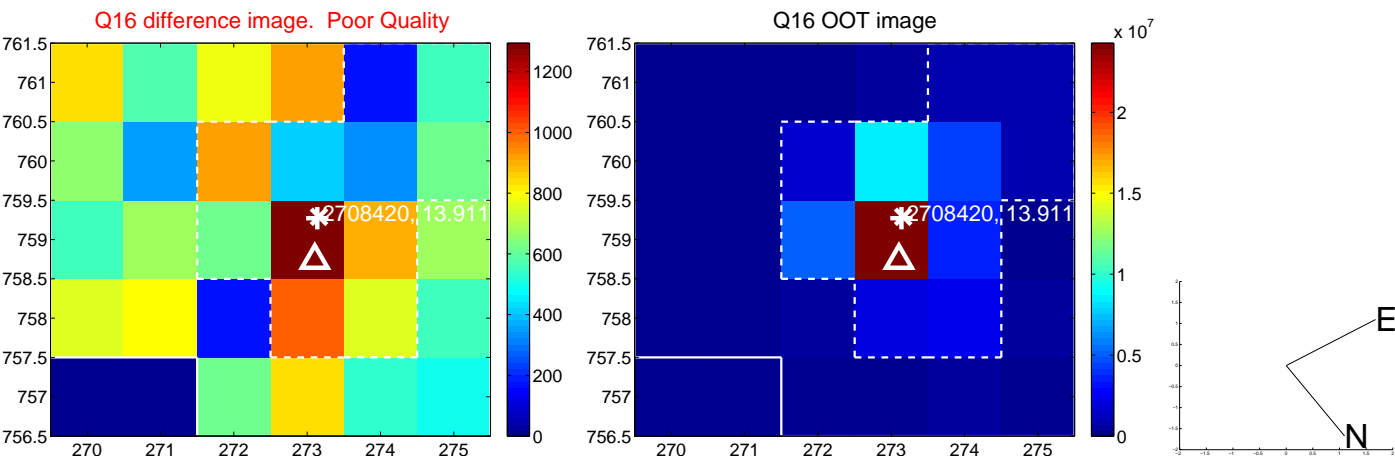
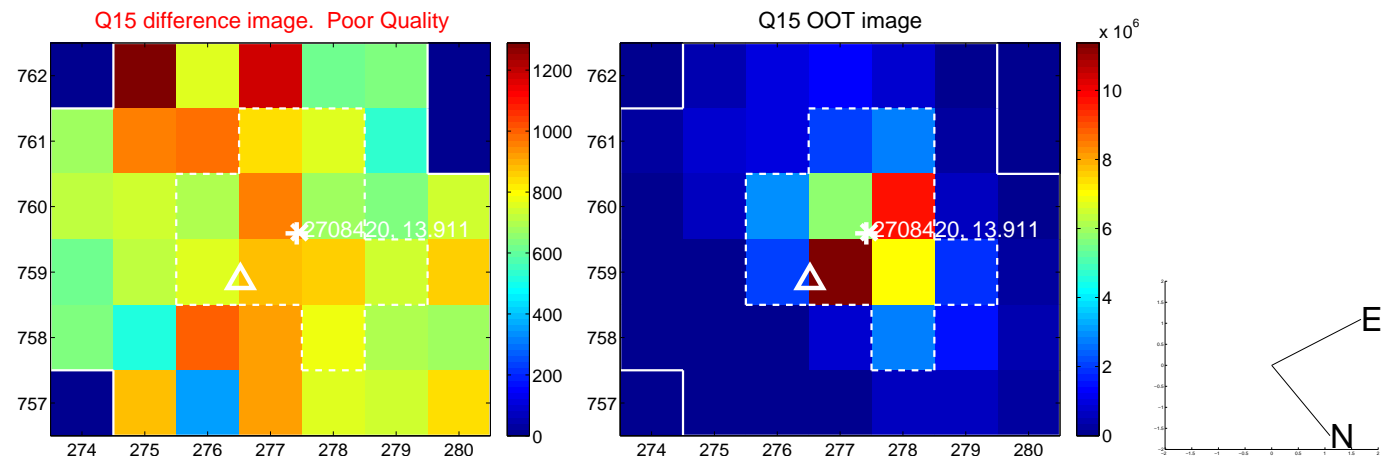
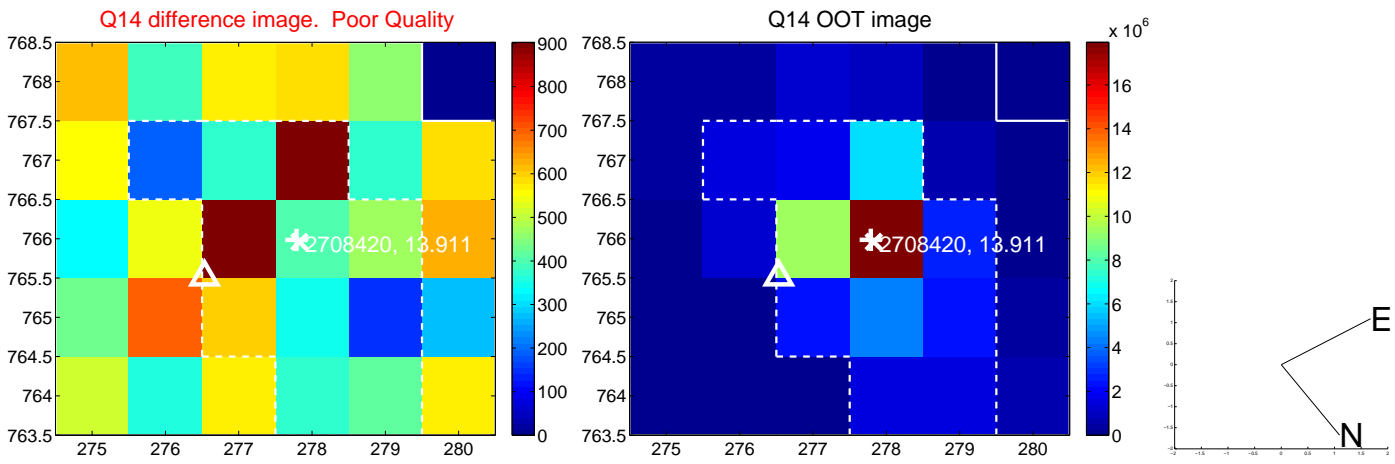
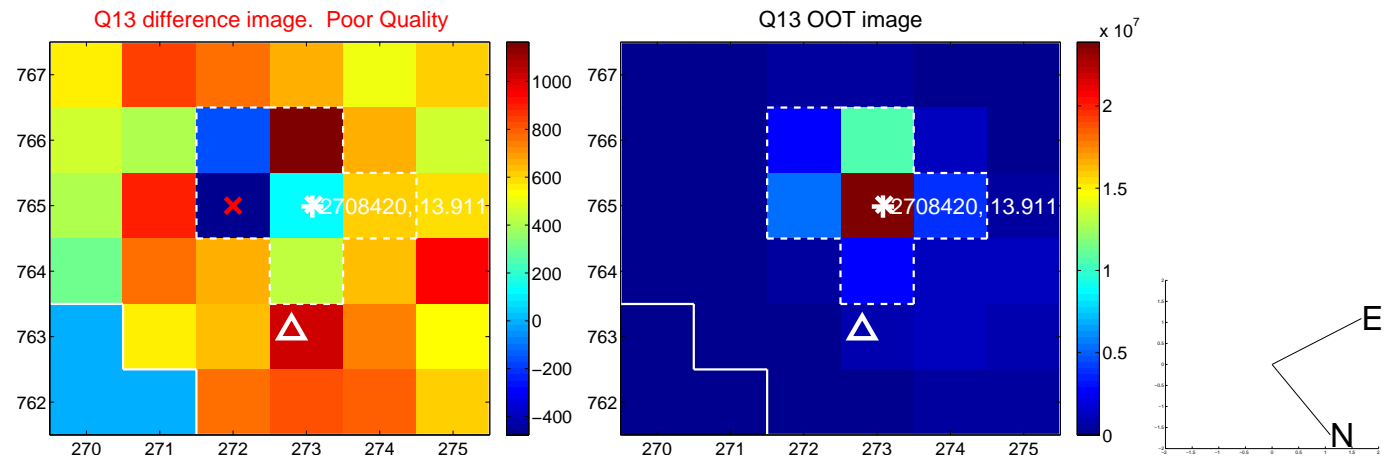
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



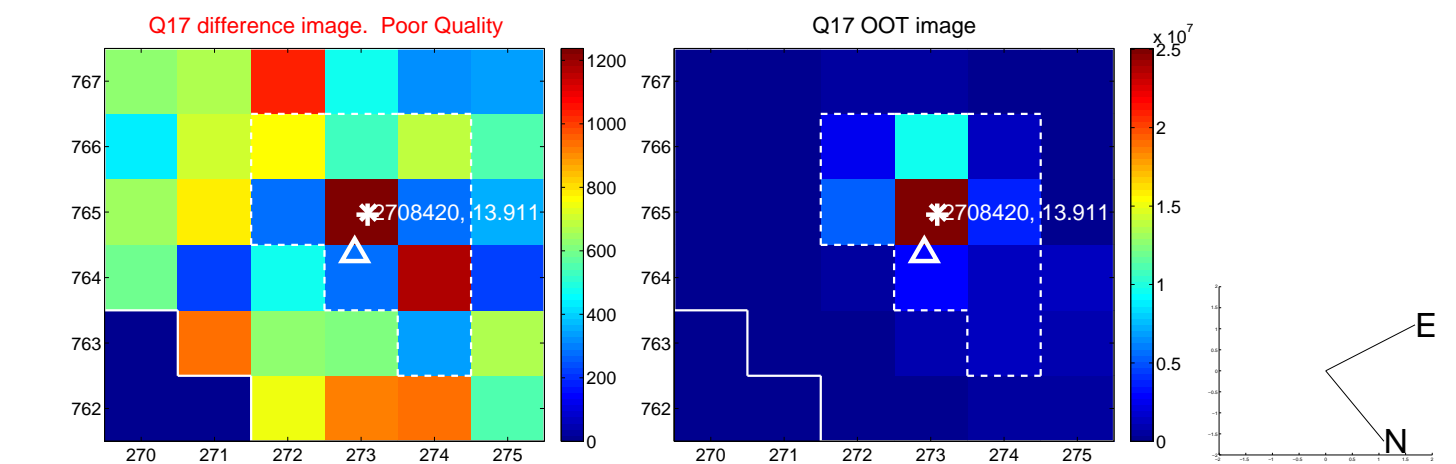
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



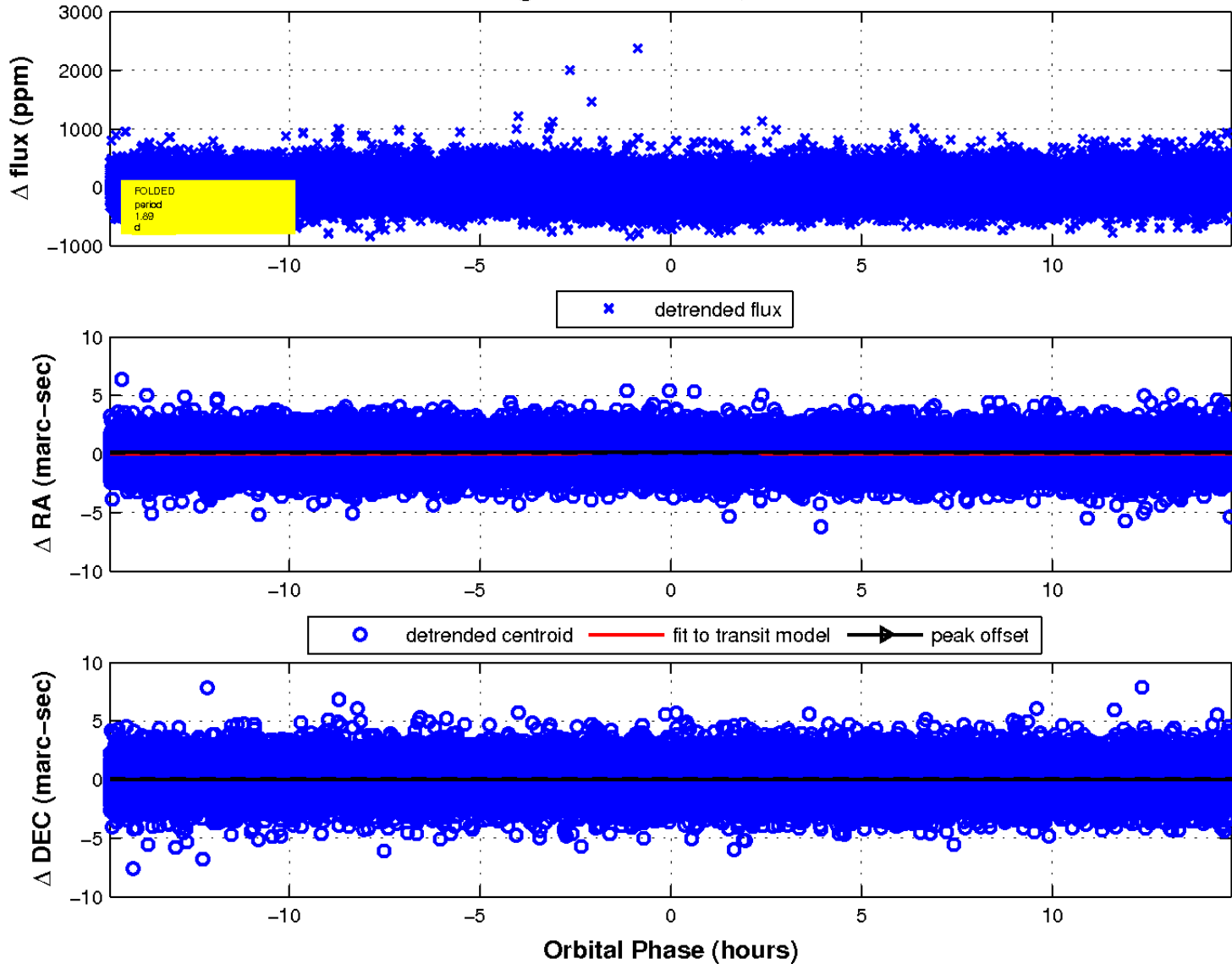
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



fluxWeightedCentroids, Planet 1 of 1



UKIRT Image

Declination

