

KIC 009899607

Q1-17 DR25 TCE Parameters

TCE	Run Type	KOI?	Period (Days)	Epoch (BKJD)	Depth (ppm)	Duration (Hours)	MES	SNR	R _★ (R _☉)	T _★ (K)	R _p (R _⊕)	S _p (S _⊕)
009899607-01	OBS	5730.01	1.332542	132.049940	71.6	4.110	13.1	13.4	0.97	6091	0.96	1990.79

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
009899607-01	OBS	FP	0.00	0	1	1	1	MOD_SEC_DV—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.

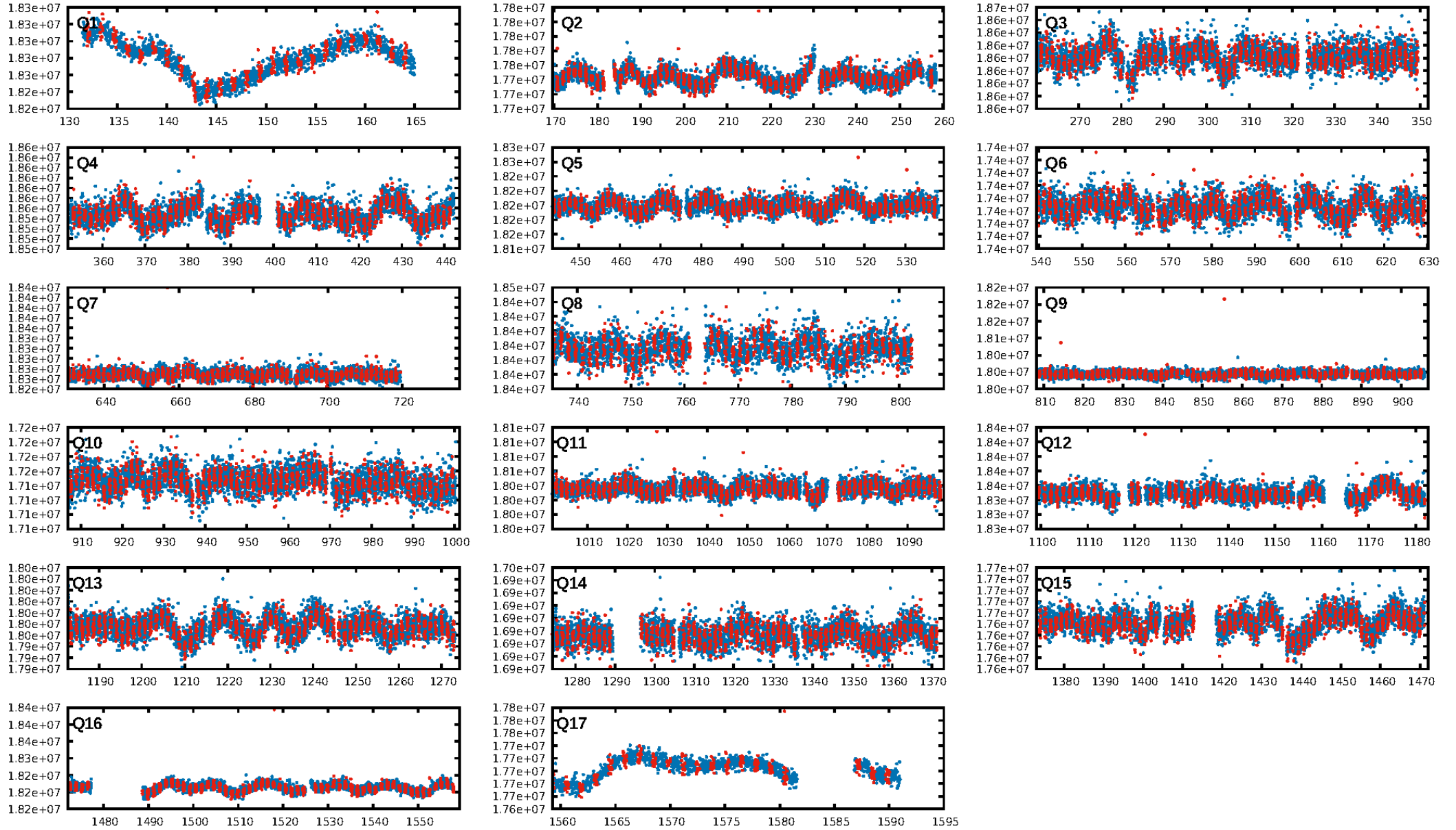
Ephemeris Match Information For 009899607-01

TCE (1)	KIC	Parent (2)	Parent KIC	P ₁ :P ₂	Dist (″)	ΔRow	ΔCol	m ₂	m ₁	D ₂ /D ₁	Mechanism	Flag	σ _P	σ _T
009899607-01	9899607	BR-Cyg-pri	9899416	1:1	168.4	-32	27	10.03	15.30	9289.80	Direct-PRF	0	1.37	0.08

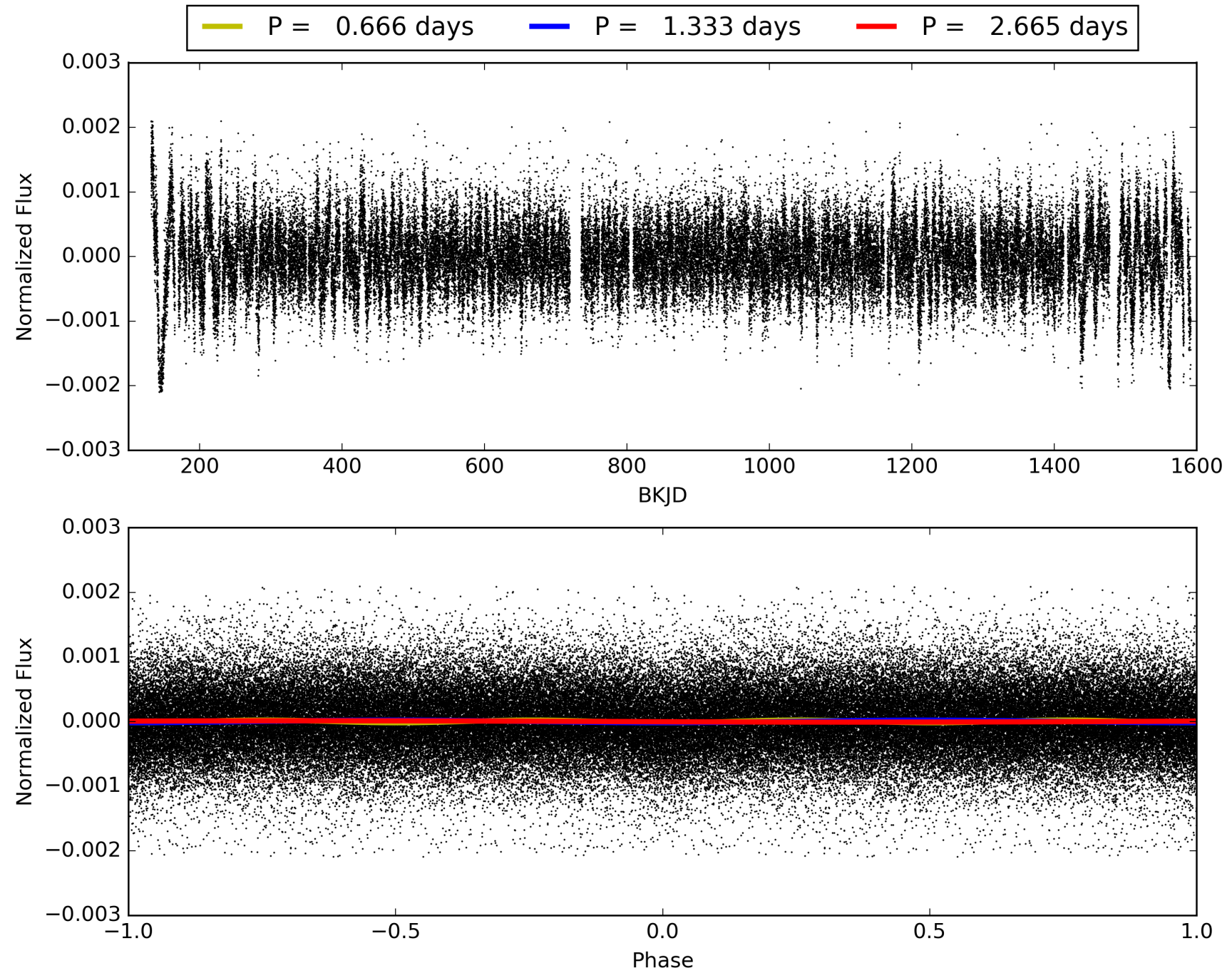
Notes: P₁:P₂ is the period ratio. Dist is the distance in arcseconds. ΔRow and ΔCol are the number of pixels apart in row and column. m₂ and m₁ are the magnitudes of the parent and child. D₂/D₁ is the parent's transit depth divided by the child's. σ_P and σ_T are the significance of the match in period and epoch. For a match to be considered significant σ_P < 5.0 and σ_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.

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

TCE 009899607-01, PDC Light Curves

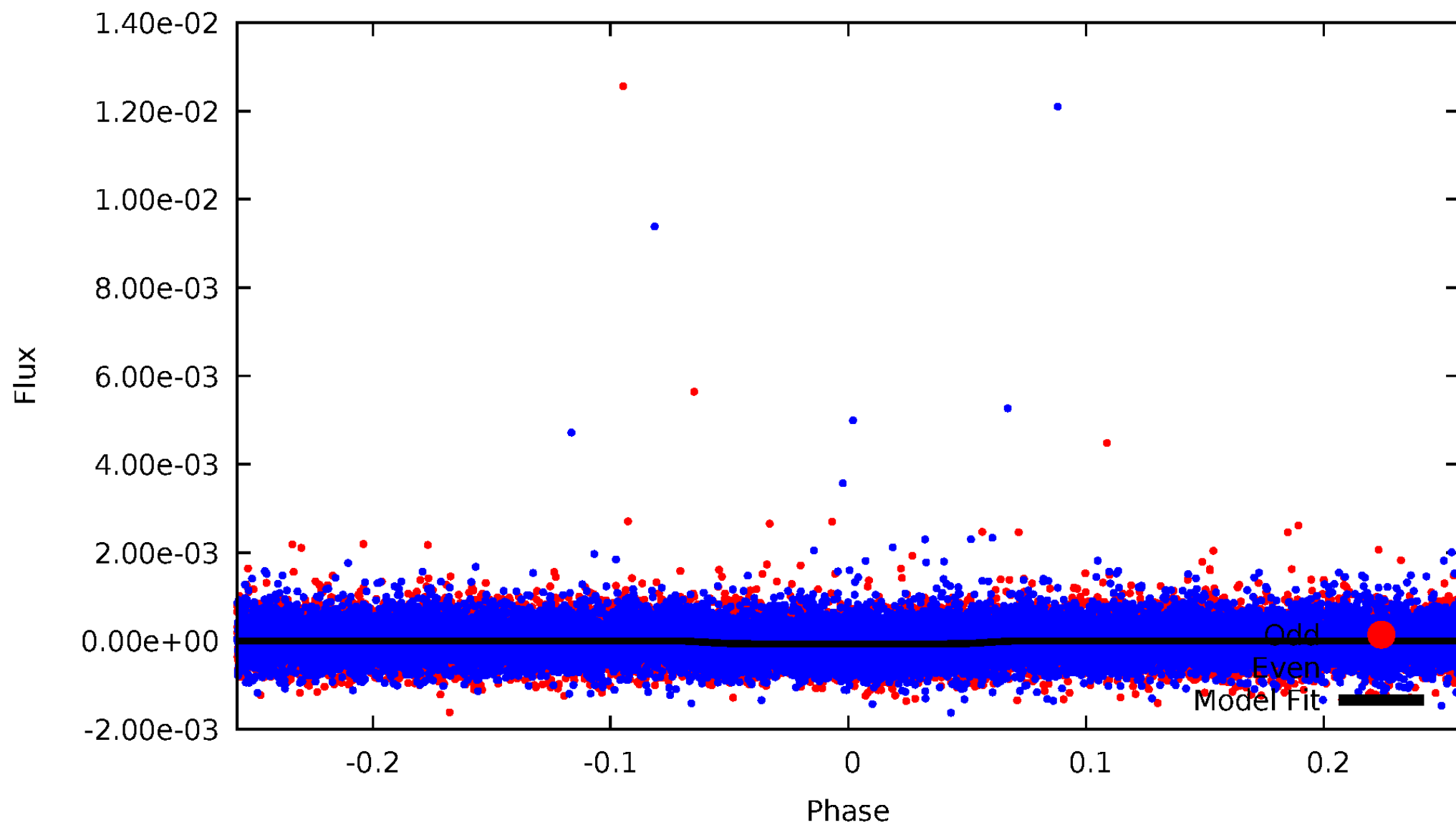


TCE 009899607-01



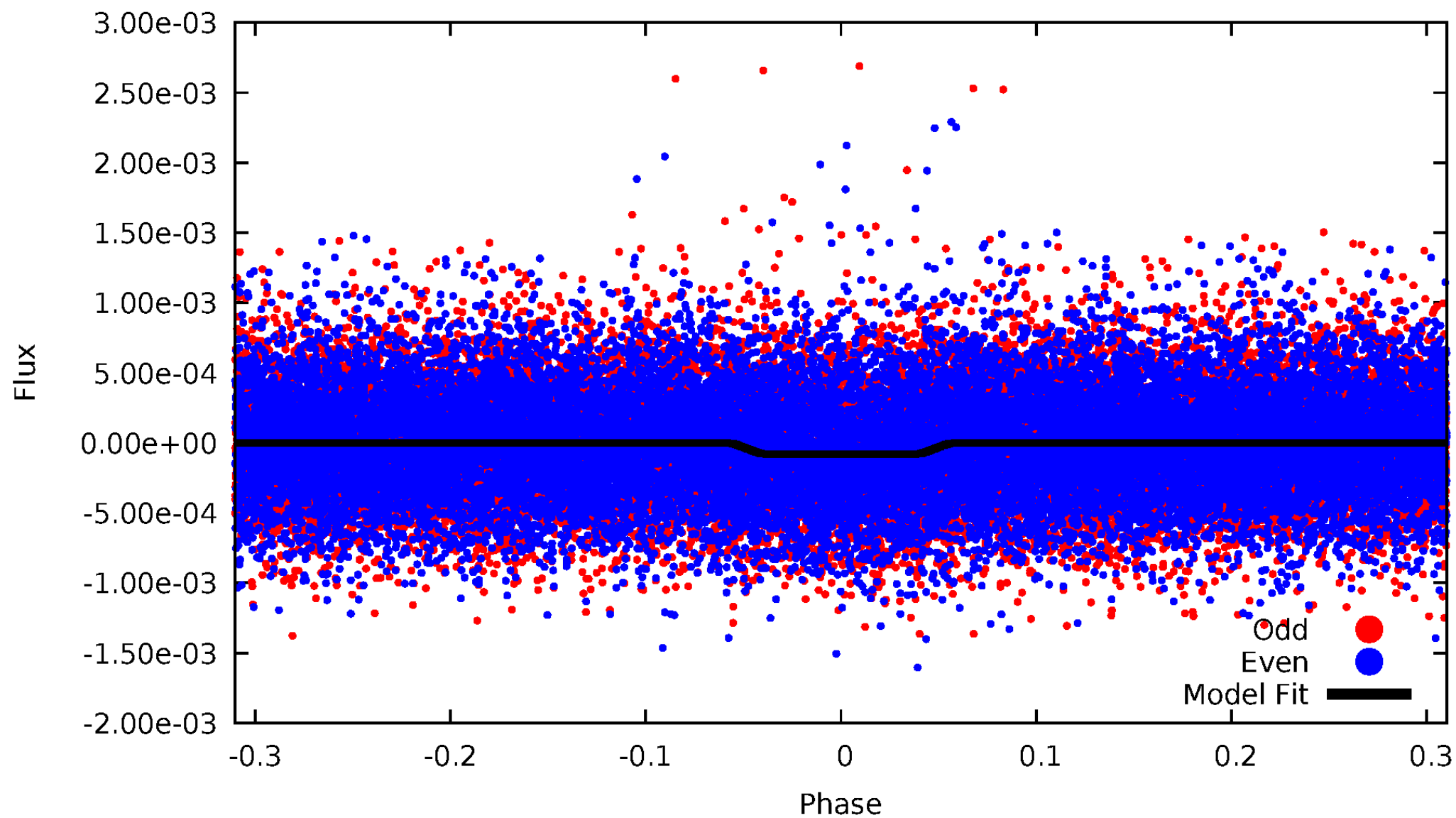
DV Odd/Even

TCE 009899607-01



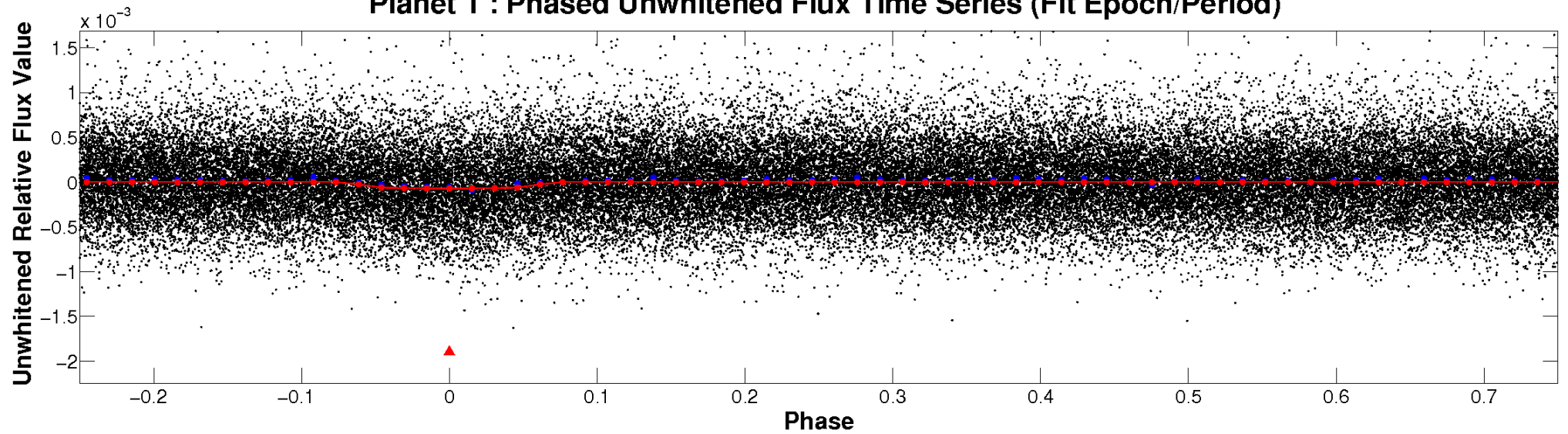
ALT Odd/Even

TCE 009899607-01

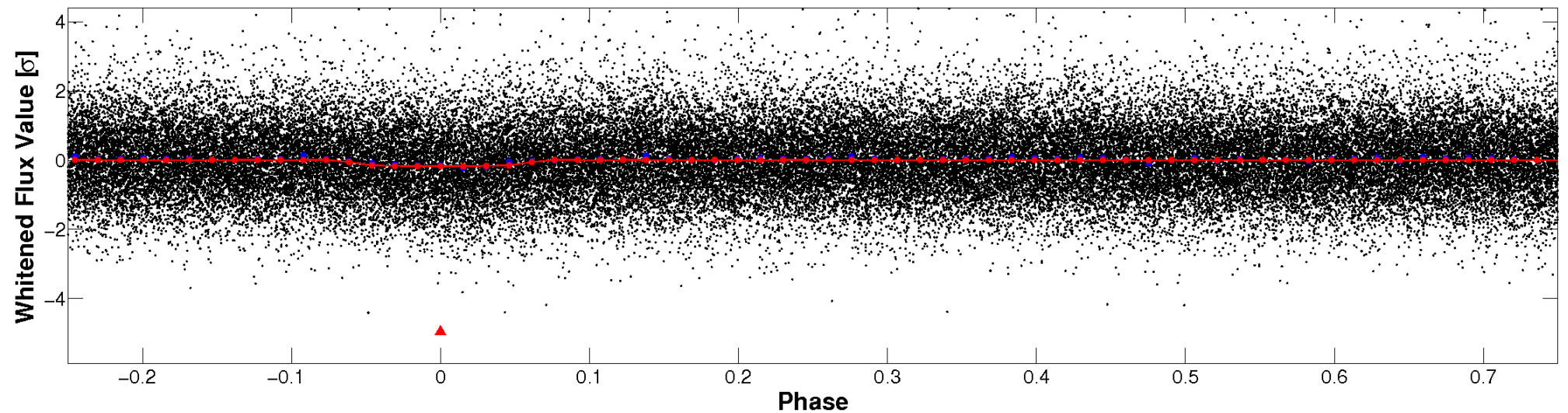


Non-Whitened Vs. Whitened Light Curve

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

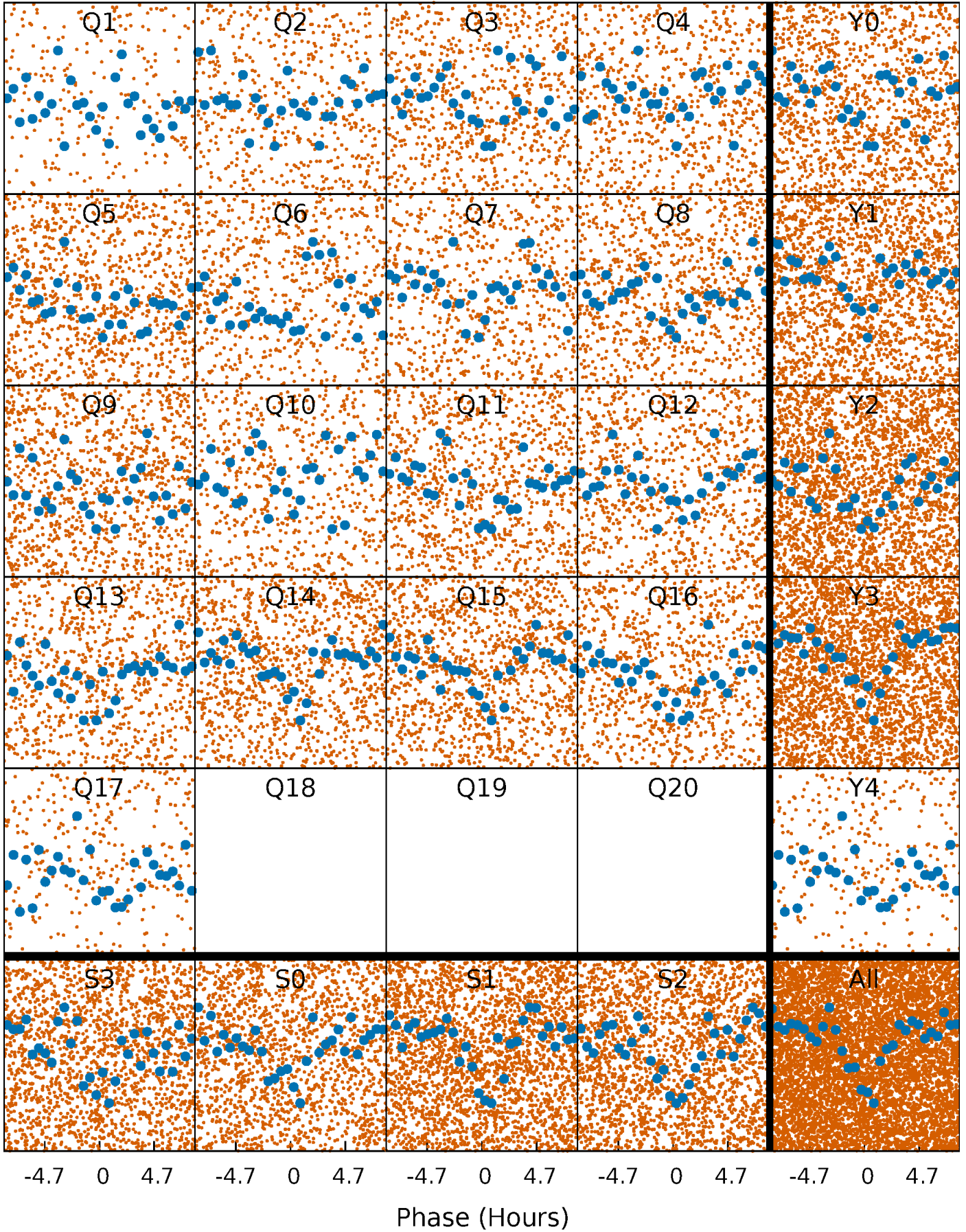


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



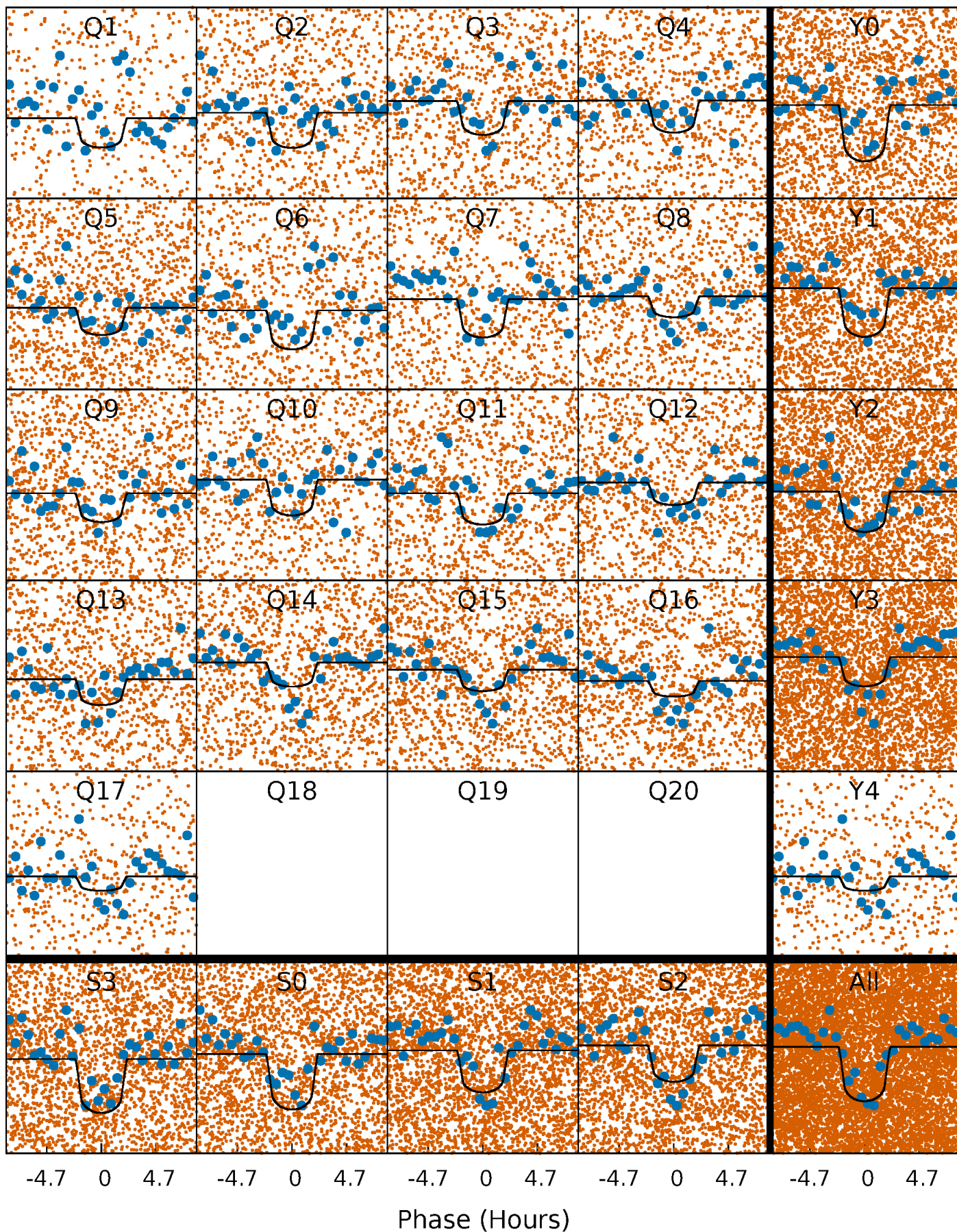
PDC Quarter-Phased Transit Curves

TCE 009899607-01 P= 1.332542 Days $T_0=132.049940$ (BKJD)



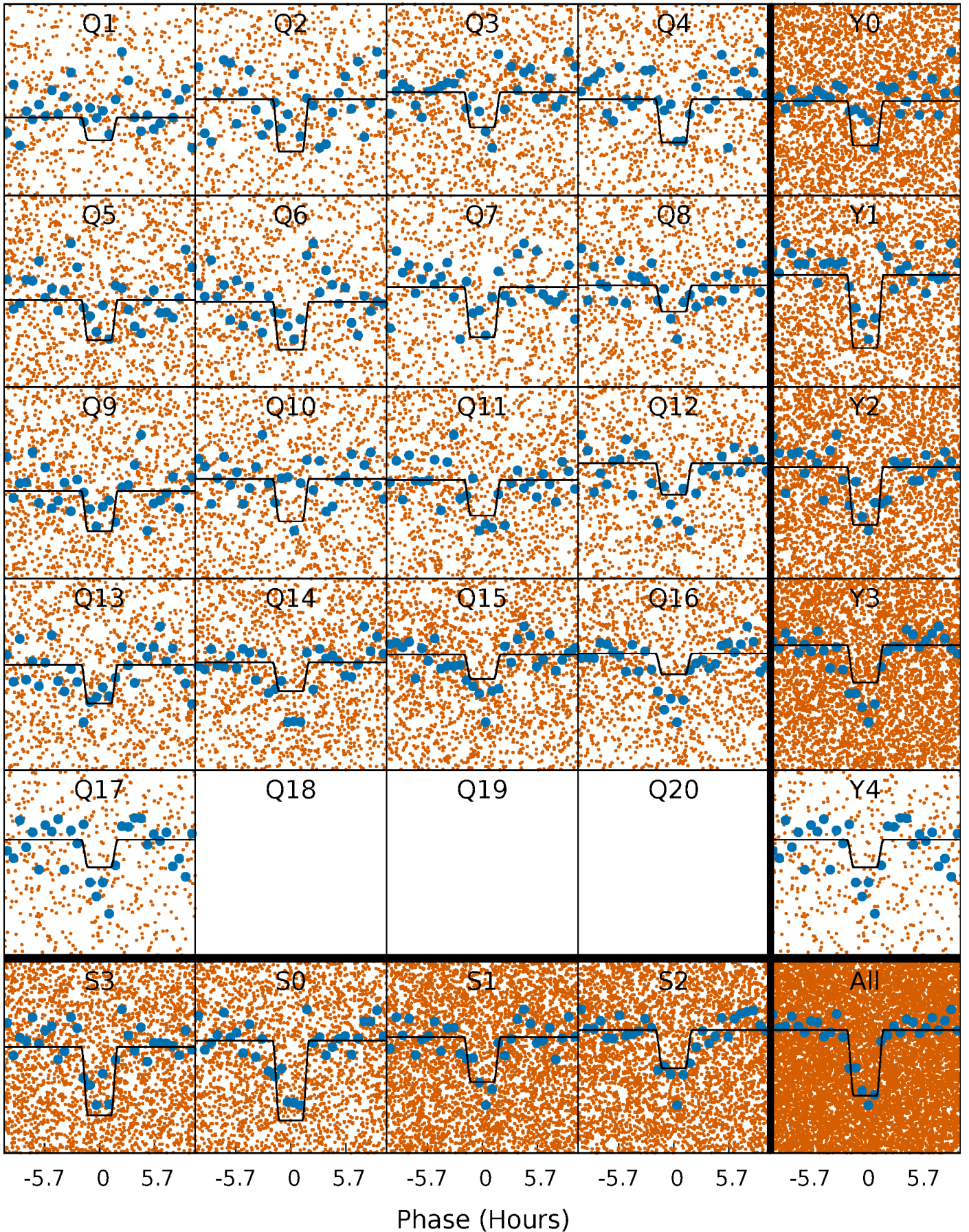
DV Quarter-Phased Transit Curves

TCE 009899607-01 P= 1.332542 Days $T_0=132.049940$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

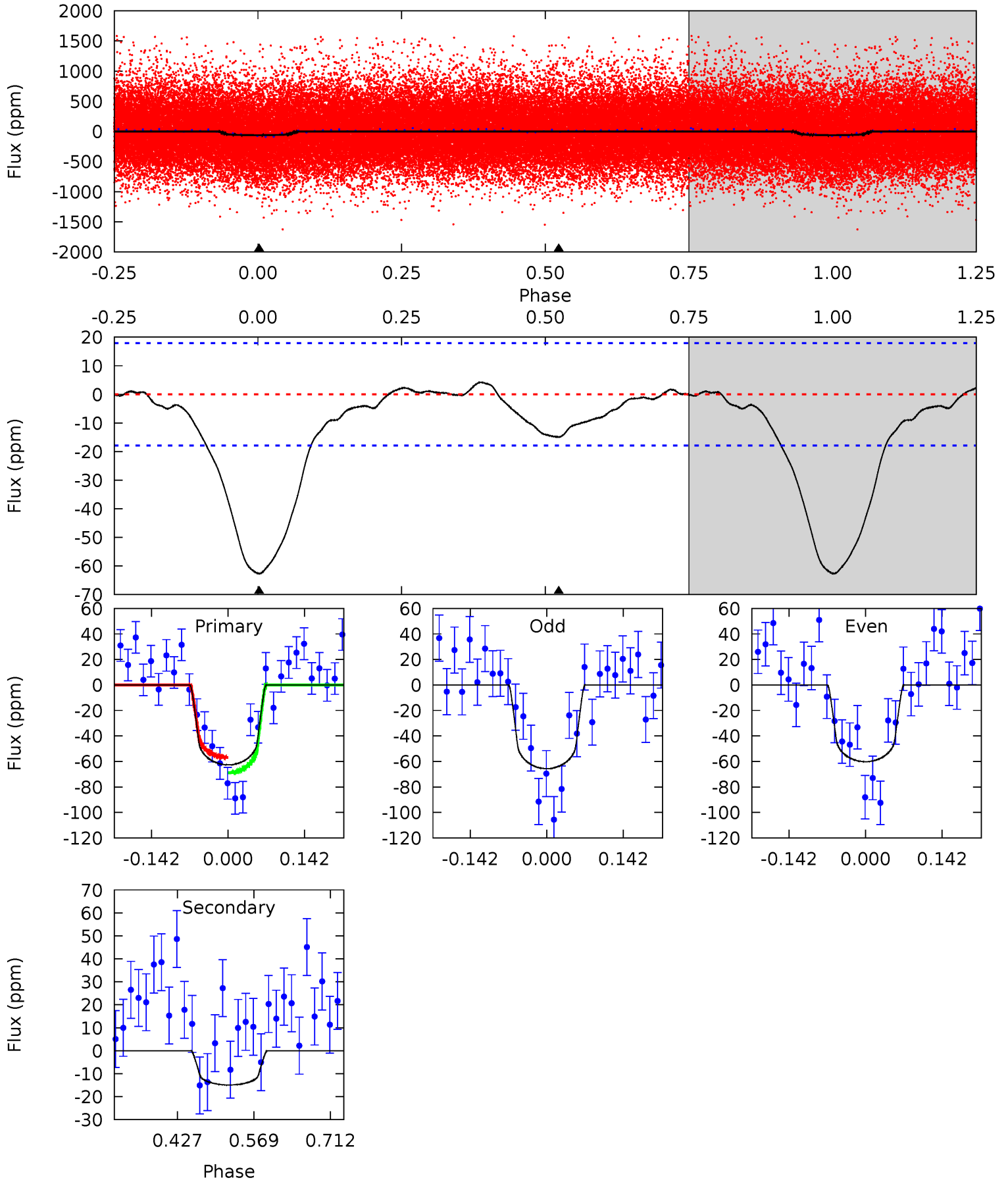
TCE 009899607-01 P= 1.332583 Days $T_0=132.026931$ (BKJD)



DV Model-Shift Uniqueness Test

009899607-01, P = 1.332542 Days, E = 130.717398 Days

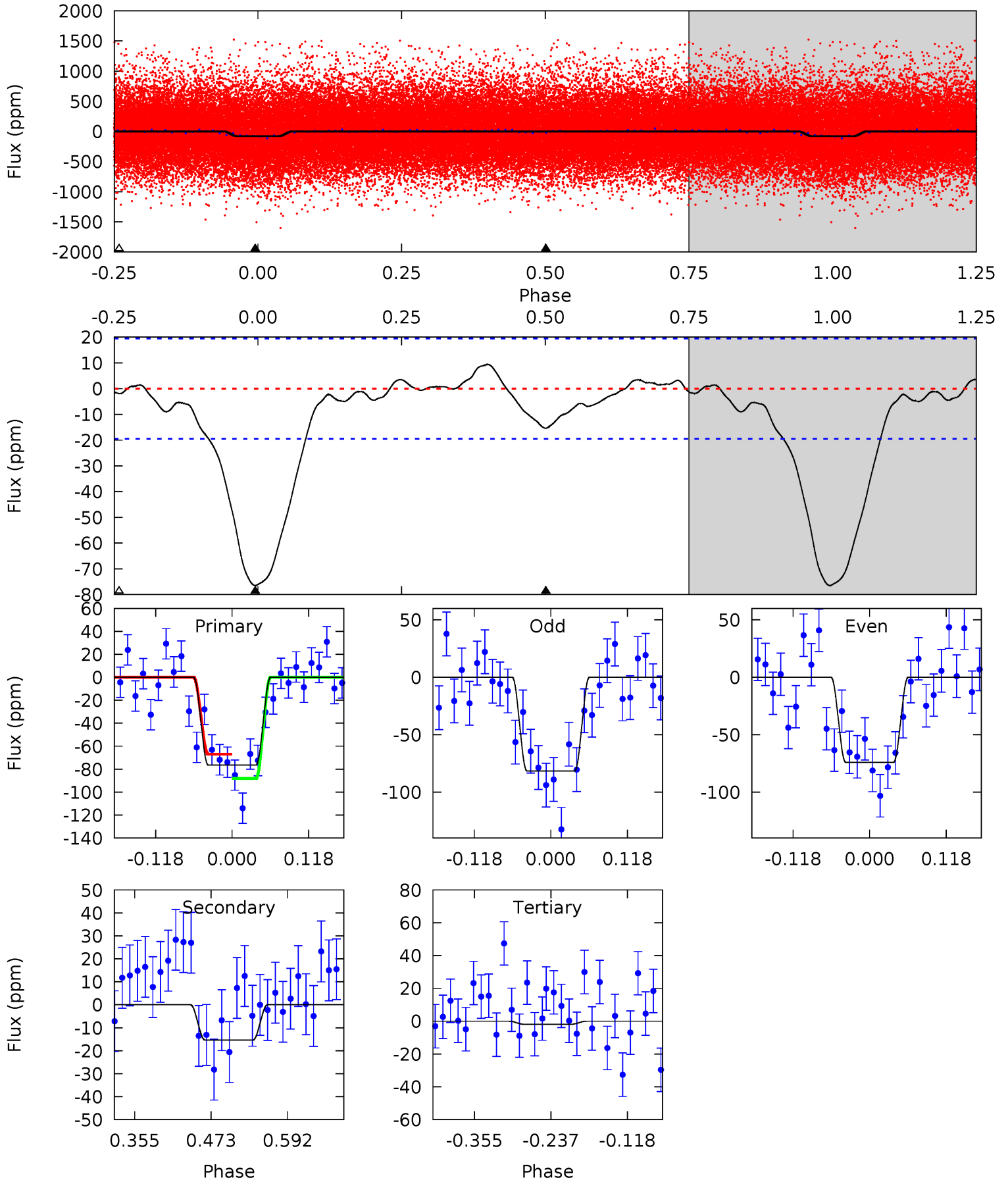
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
15.7	3.75	0	0	4.49	1.47	0.60	15.7	15.7	3.75	3.75	0.69	0.89	0.06	1.50



Alt Model-Shift Uniqueness Test

009899607-01, P = 1.332583 Days, E = 130.694348 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
17.8	3.58	0.44	0	4.53	1.56	0.75	17.3	17.8	3.15	3.58	0.87	0.93	0.11	2.45



Stellar Parameters For KIC 009899607

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6091^{+180}_{-198}	$4.487^{+0.052}_{-0.208}$	$-0.140^{+0.300}_{-0.300}$	$0.967^{+0.300}_{-0.100}$	$1.045^{+0.142}_{-0.142}$	$1.627^{+0.423}_{-0.807}$
	+3%/-3%	+1%/-5%	+214%/-214%	+31%/-10%	+14%/-14%	+26%/-50%
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 009899607-01 / KOI 5730.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-15 ± 4	$1.00^{+0.46}_{-0.44}$	2425^{+192}_{-116}	4162^{+1155}_{-611}	$4.632^{+9.901}_{-2.679}$
Alt.	-15 ± 4	$0.98^{+0.43}_{-0.43}$	2432^{+161}_{-122}	4197^{+1122}_{-587}	$4.956^{+10.139}_{-2.901}$

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 $T_{\text{obs}} \gg T_{\text{max}}$ AND $A_{\text{obs}} \gg 1.0$

DV Centroid Data

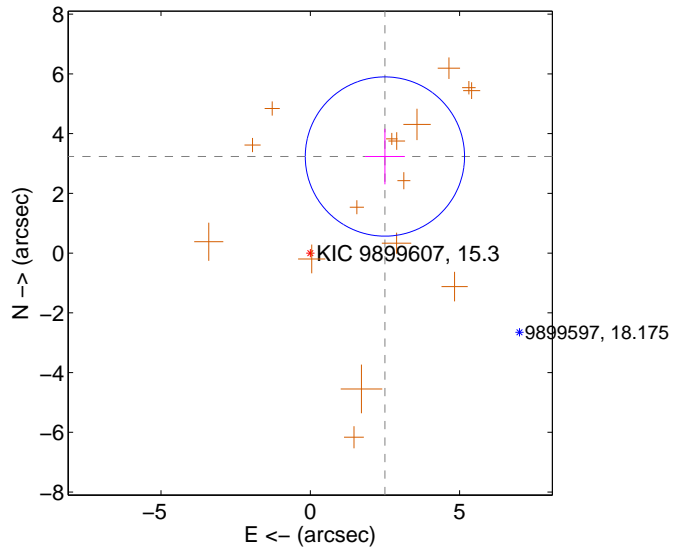
Supplemental centroid analysis for 009899607-01. Kepler magnitude: 15.30. Transit SNR 13.38

There are 0 quarters with good PRF difference image offsets

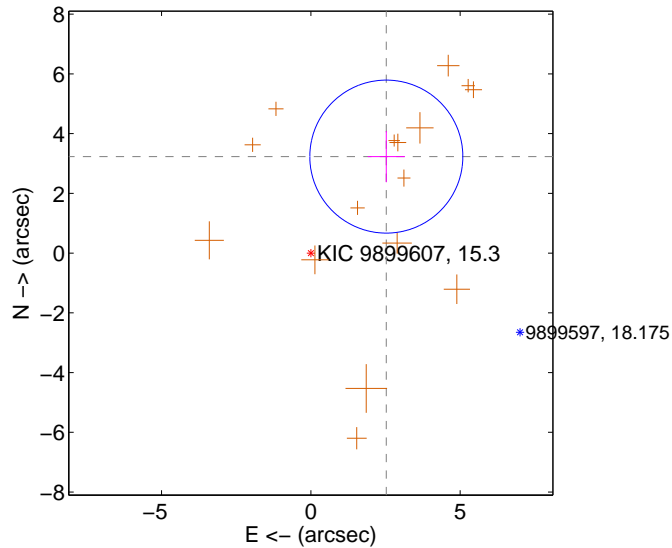
The direct PRF centroid is offset from the target star catalog position by about 0.10 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	4.086 ± 0.889	4.60	-2.498 ± 0.669	3.234 ± 0.930
PRF-fit source offset from KIC position	4.102 ± 0.854	4.80	-2.527 ± 0.624	3.231 ± 0.859
photometric centroid source offset	3.14 ± 1.02	3.08	-1.91 ± 0.99	-2.49 ± 1.04

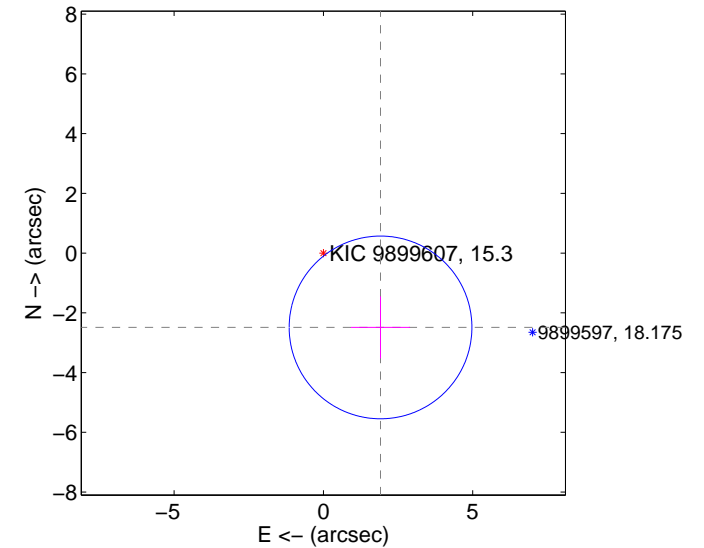
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

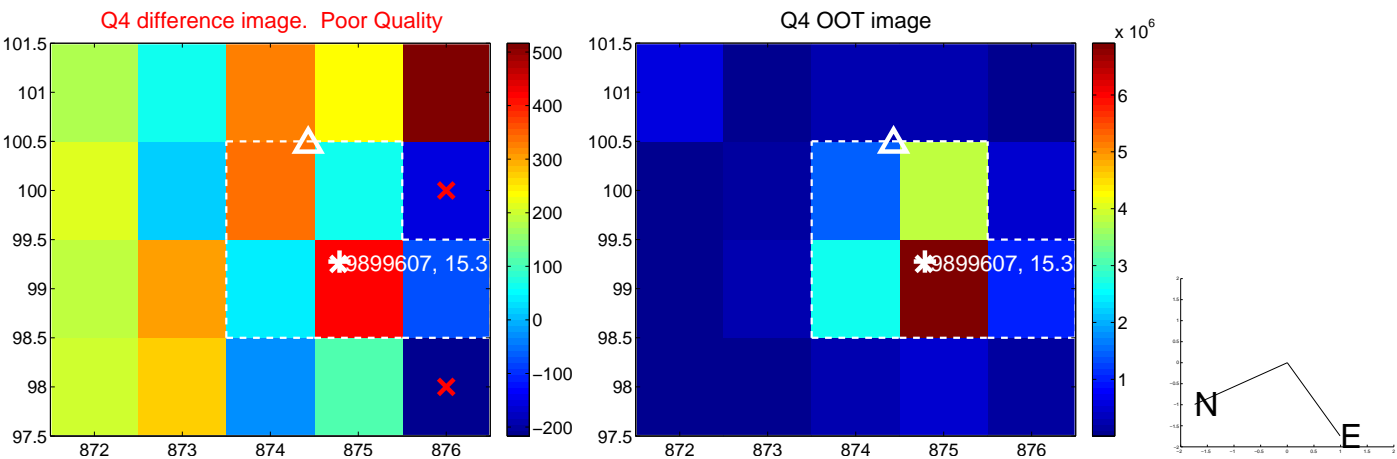
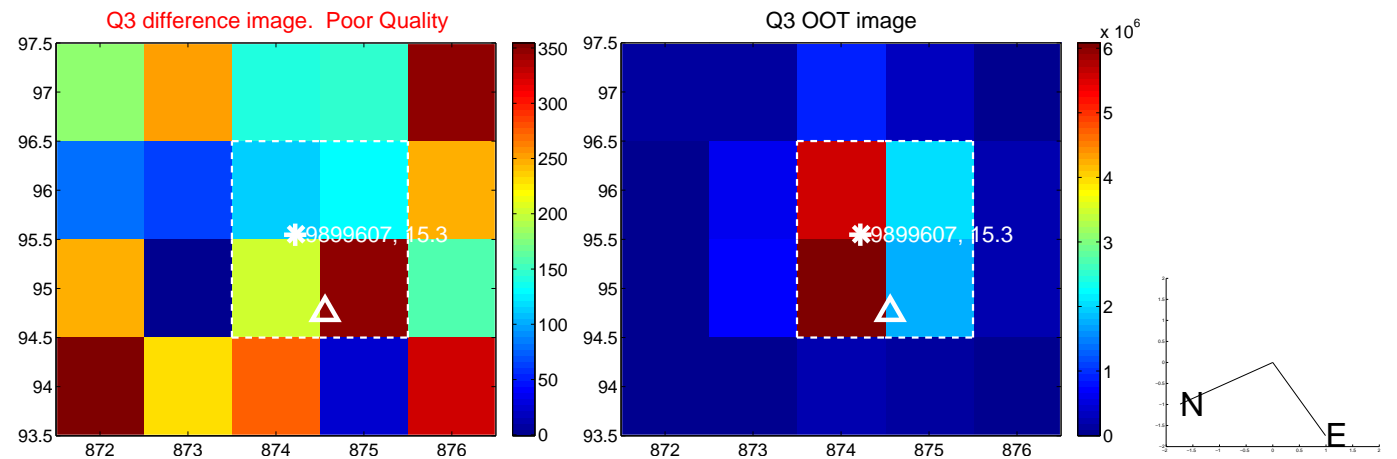
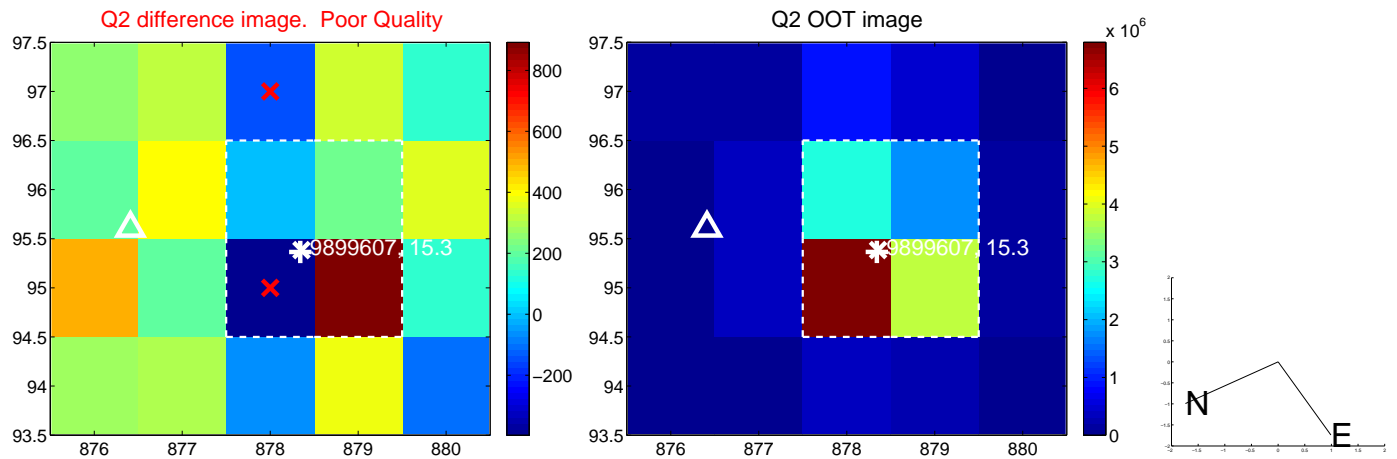
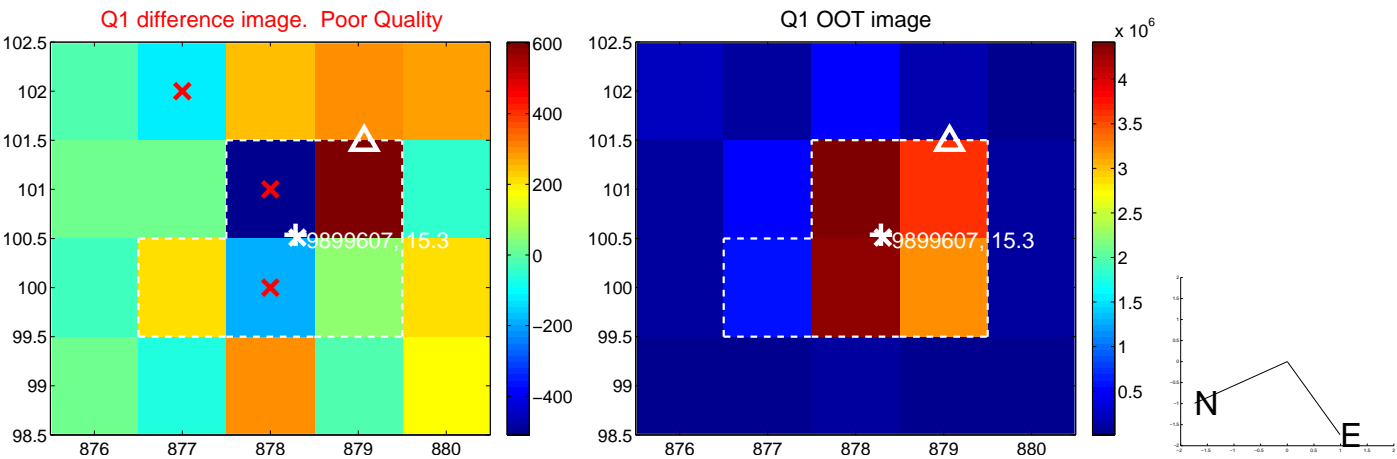


offset from photometric centroids

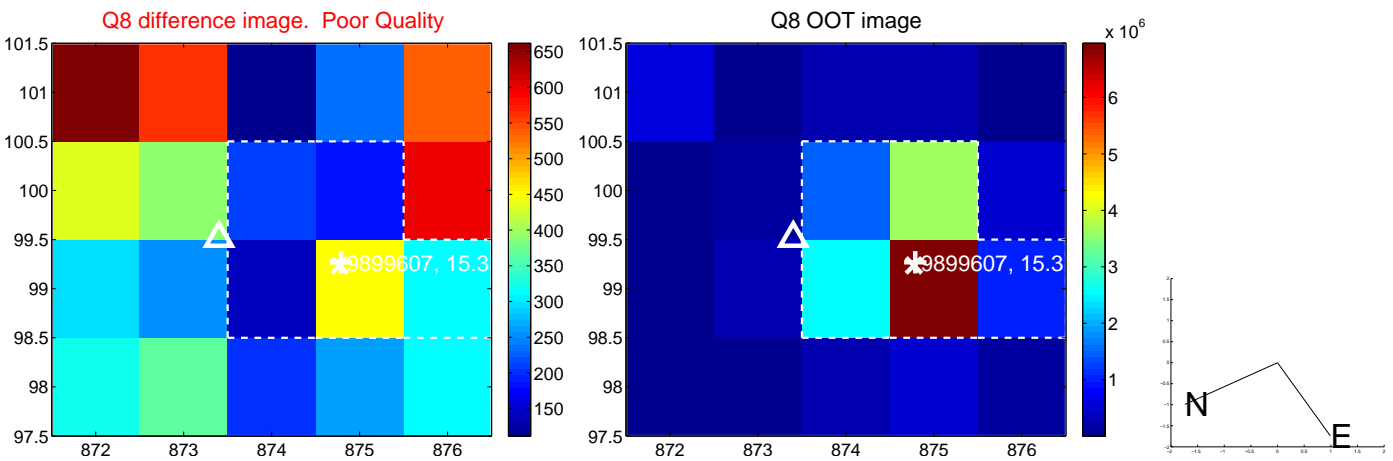
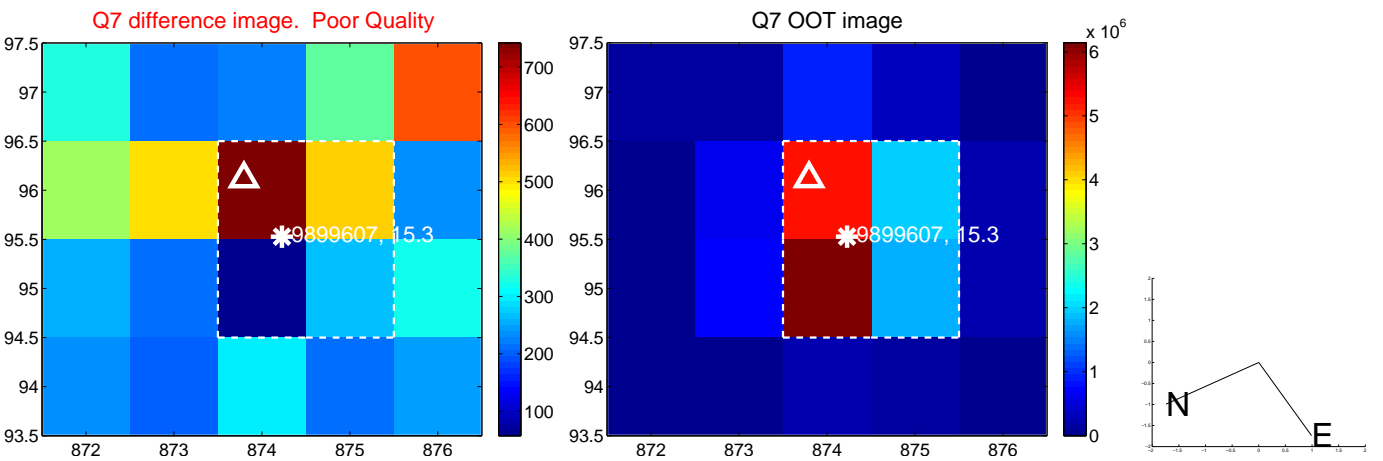
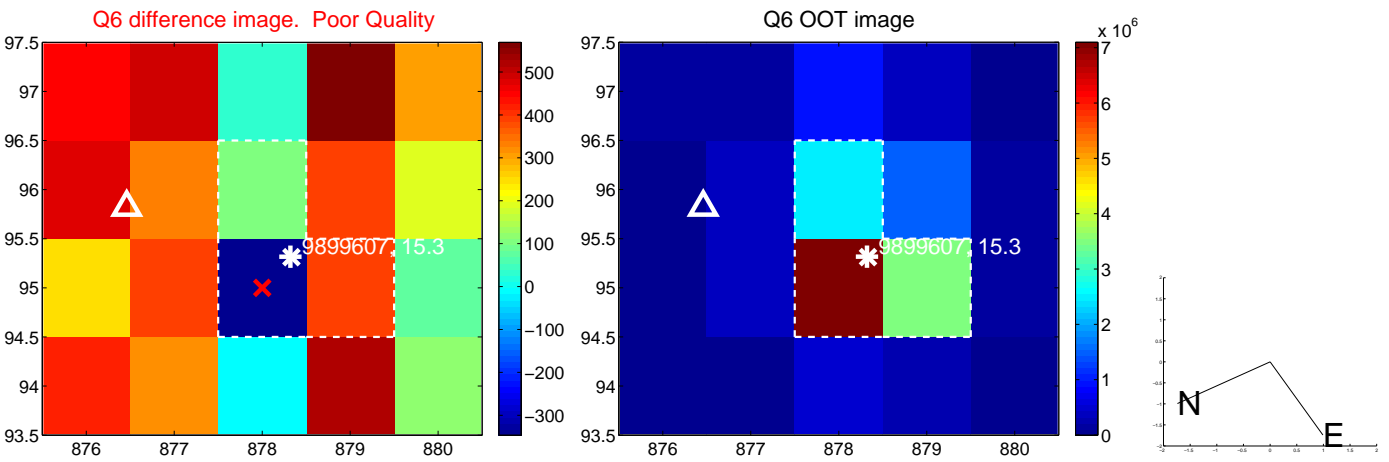
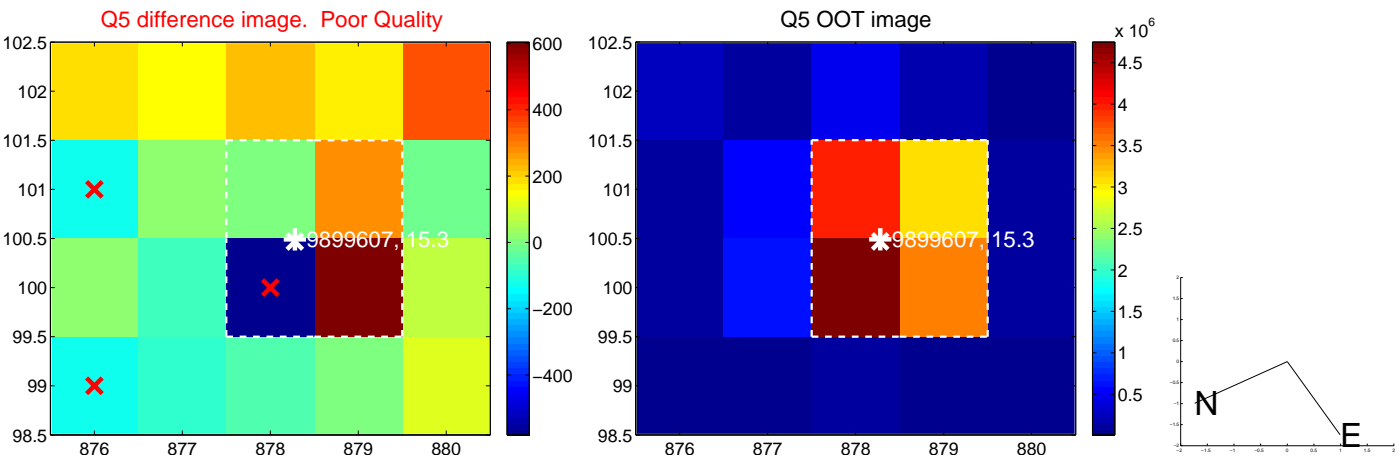


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

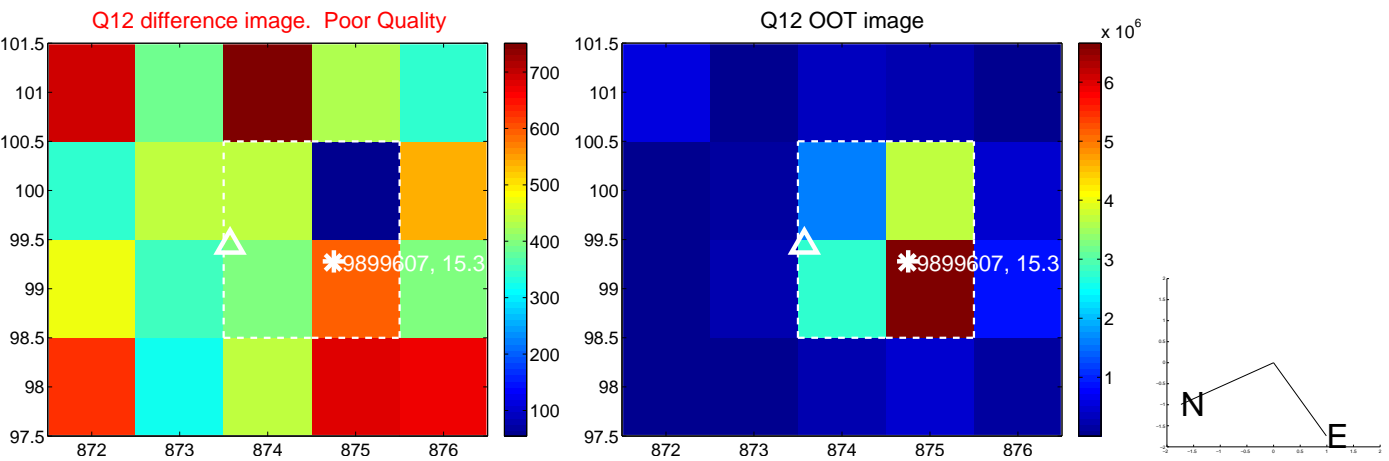
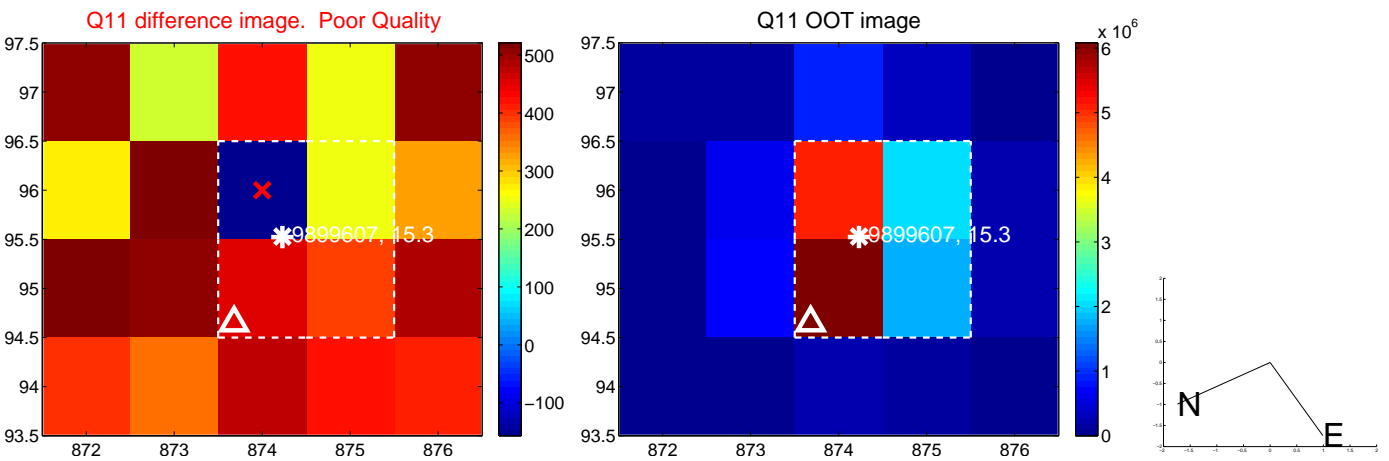
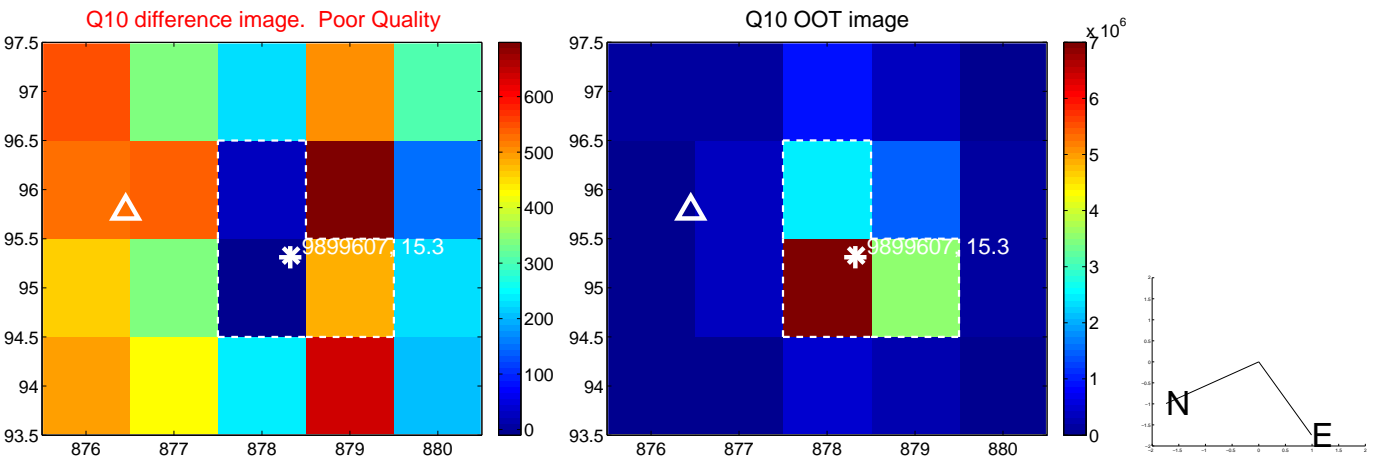
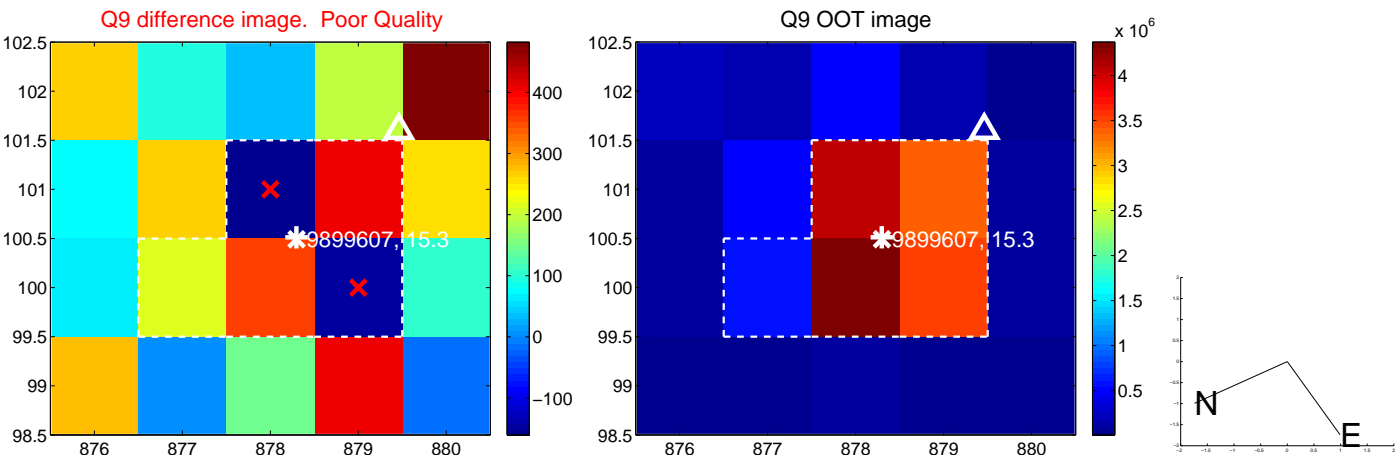
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



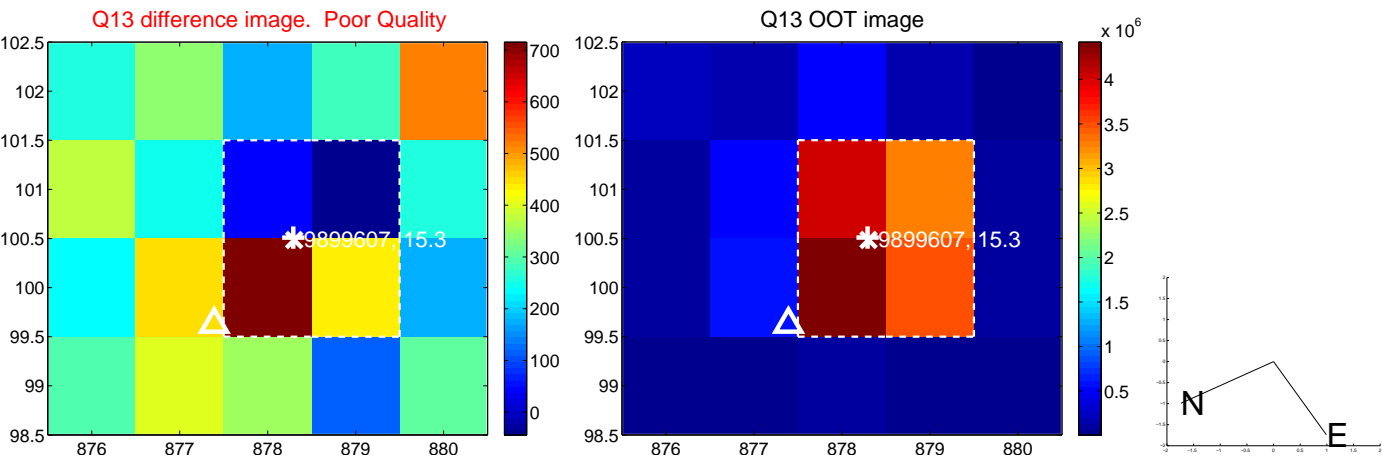
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



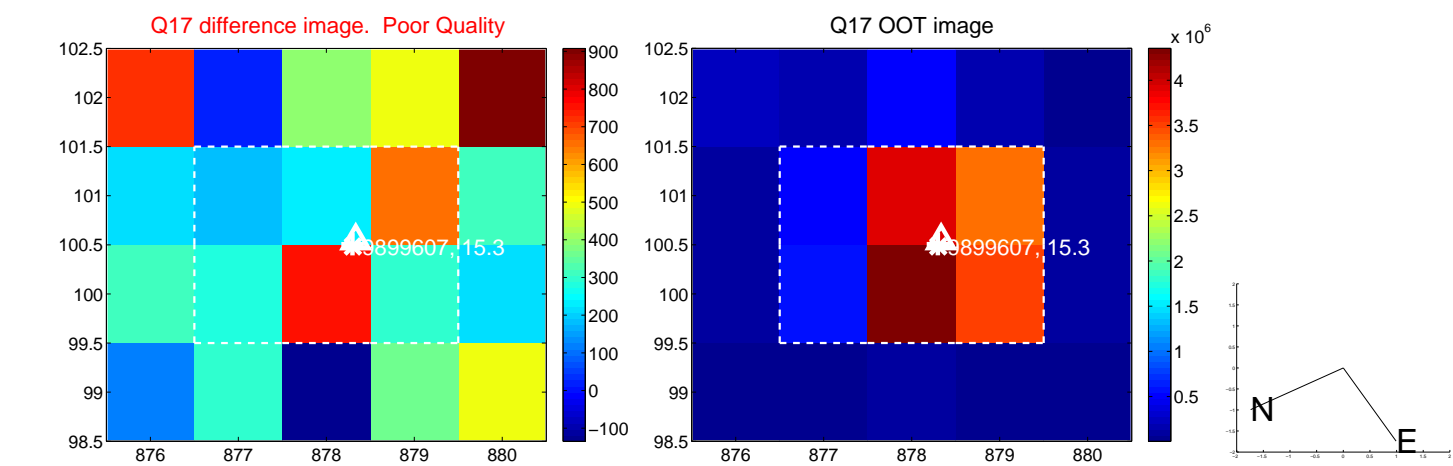
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



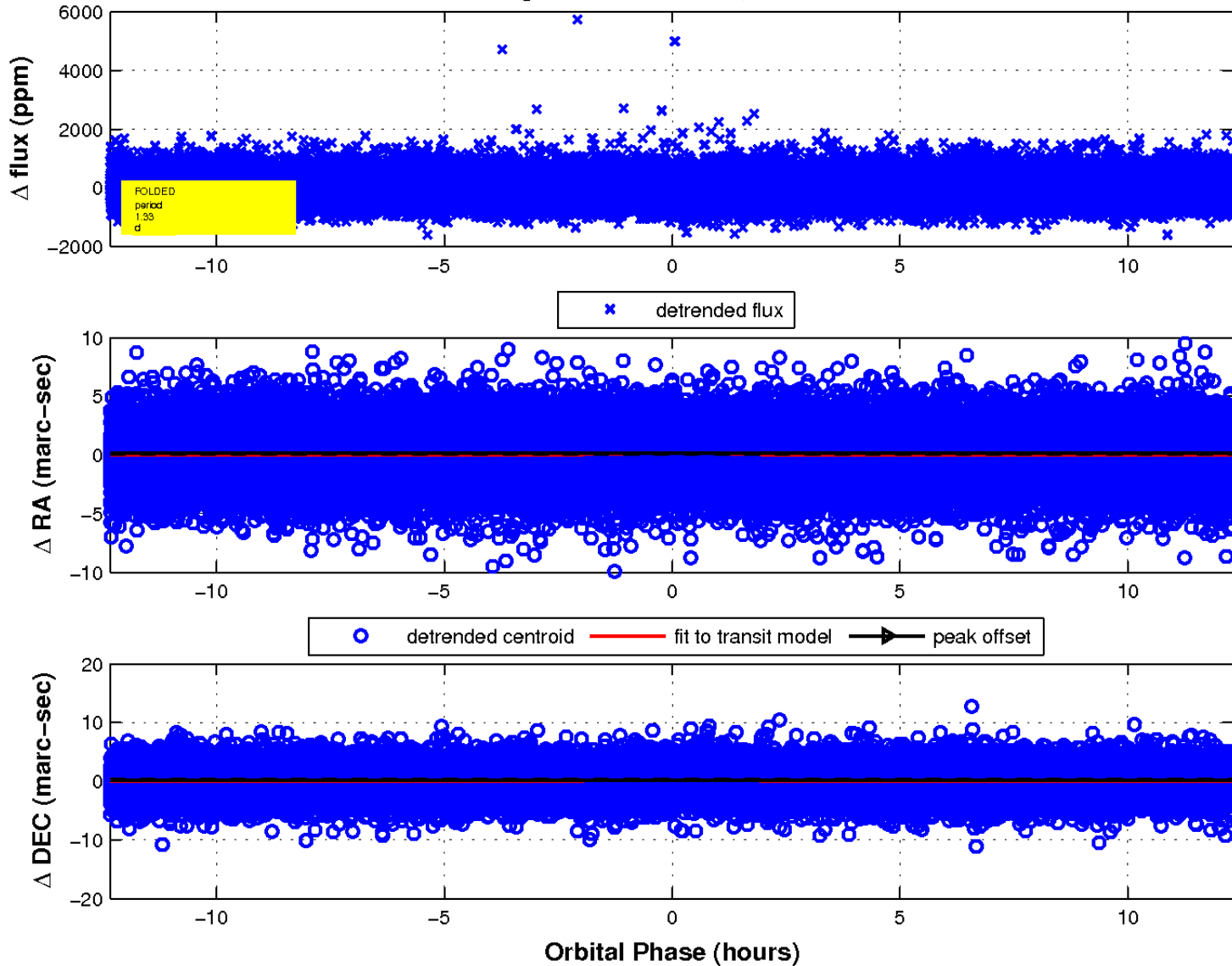
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



fluxWeightedCentroids, Planet 1 of 1



UKIRT Image

Declination

