

KIC 012407623

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})
012407623-01	OBS	4370.01	1.181169	132.423914	352.3	0.877	10.9	12.7	0.75	5203	1.73	905.82

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
012407623-01	OBS	FP	0.00	0	0	1	0	CENT_RESOLVED_OFFSET

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.

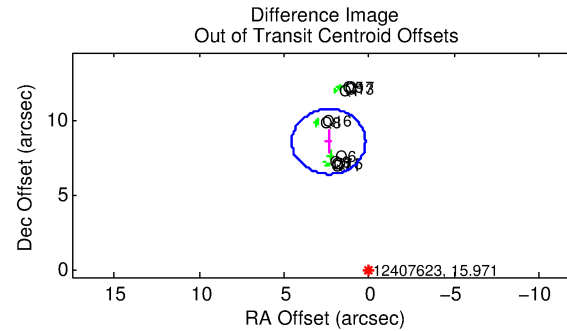
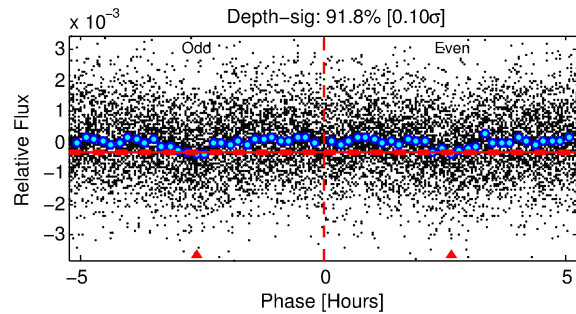
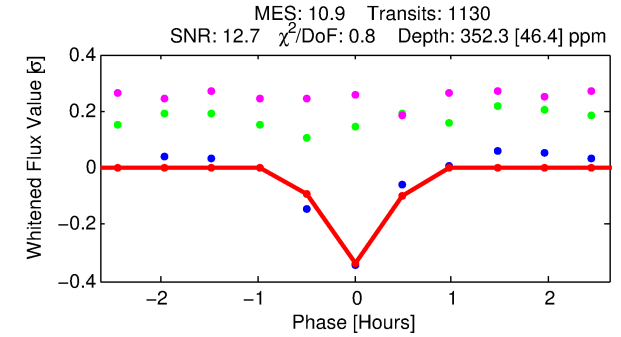
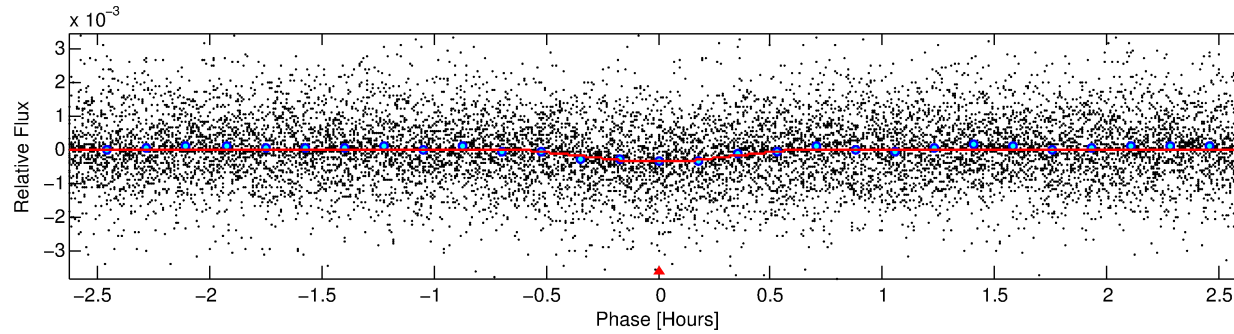
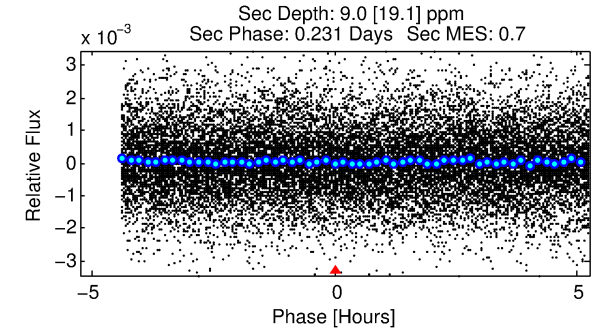
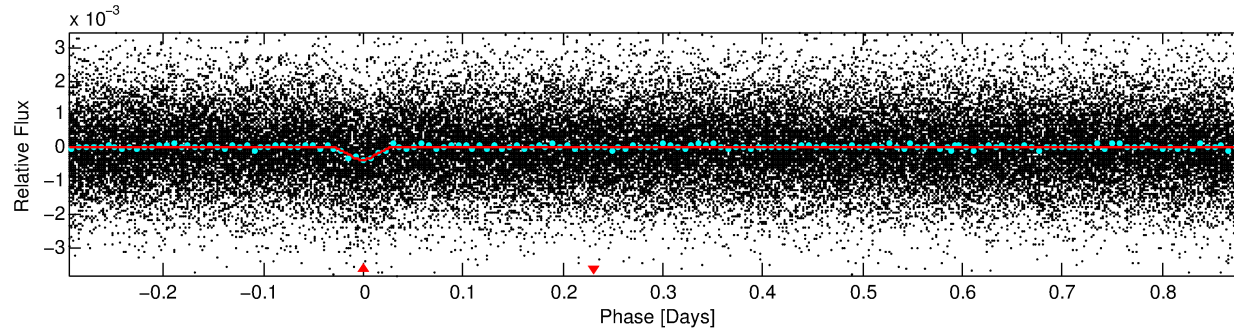
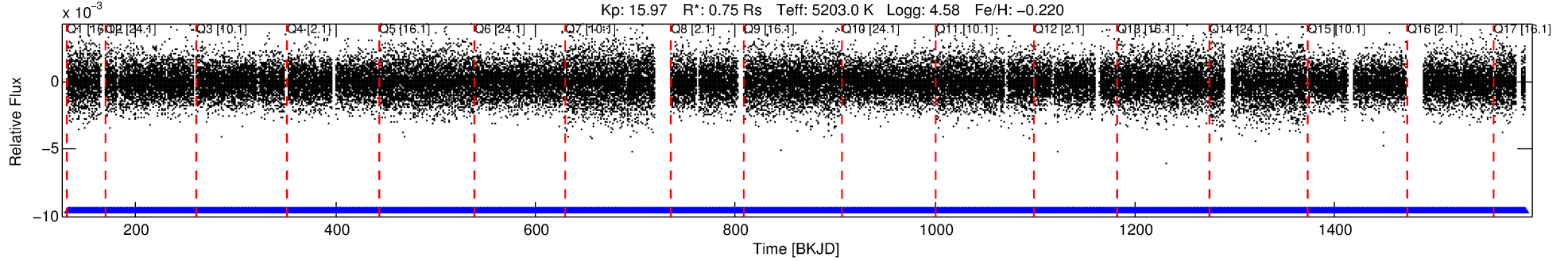
Ephemeris Match Information For 012407623-01

No Significant Match Found

DV One-Page Summary

KIC: 12407623 Candidate: 1 of 1 Period: 1.181 d
KOI: K04370.01 Corr: 0.945

Kp: 15.97 R*: 0.75 Rs Teff: 5203.0 K Logg: 4.58 Fe/H: -0.220



DV Fit Results:

Period = 1.18117 [0.00001] d
Epoch = 132.4239 [0.0012] BKJD
Rp/R* = 0.0212 [0.0128]
a/R* = 4.97 [11.87]
b = 0.90 [0.52]
Seff = 905.82 [178.58]
Teq = 1399 [69] K
Rp = 1.73 [1.07] Re
a = 0.0201 [0.0021] AU
Ag = 0.67 [1.64] [-0.20σ]
Teffp = 1960 [1191] K [0.47σ]

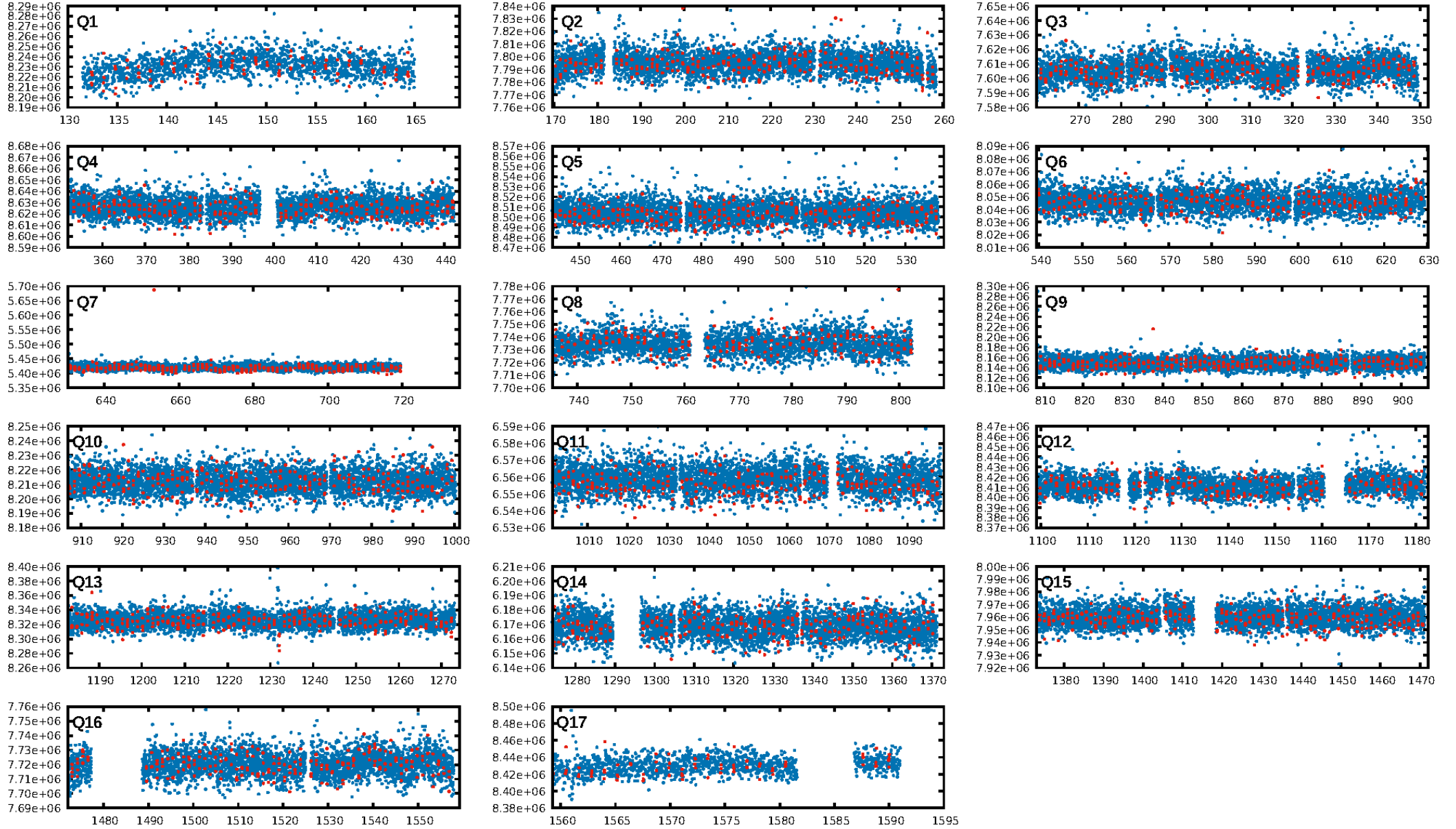
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 3.09e-27
RollingBand-fgt: 1.00 [1080/1080]
GhostDiagnostic-chr: -0.3022
Centroid-sig: 0.0%
Centroid-so: 14.220 arcsec [20.03σ]
OotOffset-rm: 8.863 arcsec [12.22σ]
KicOffset-rm: 8.937 arcsec [13.44σ]
OotOffset-st: 1/4/2/5 [12]
KicOffset-st: 1/4/2/5 [12]
DiffImageQuality-fgm: 1.00 [12/12]
DiffImageOverlap-fno: 1.00 [17/17]

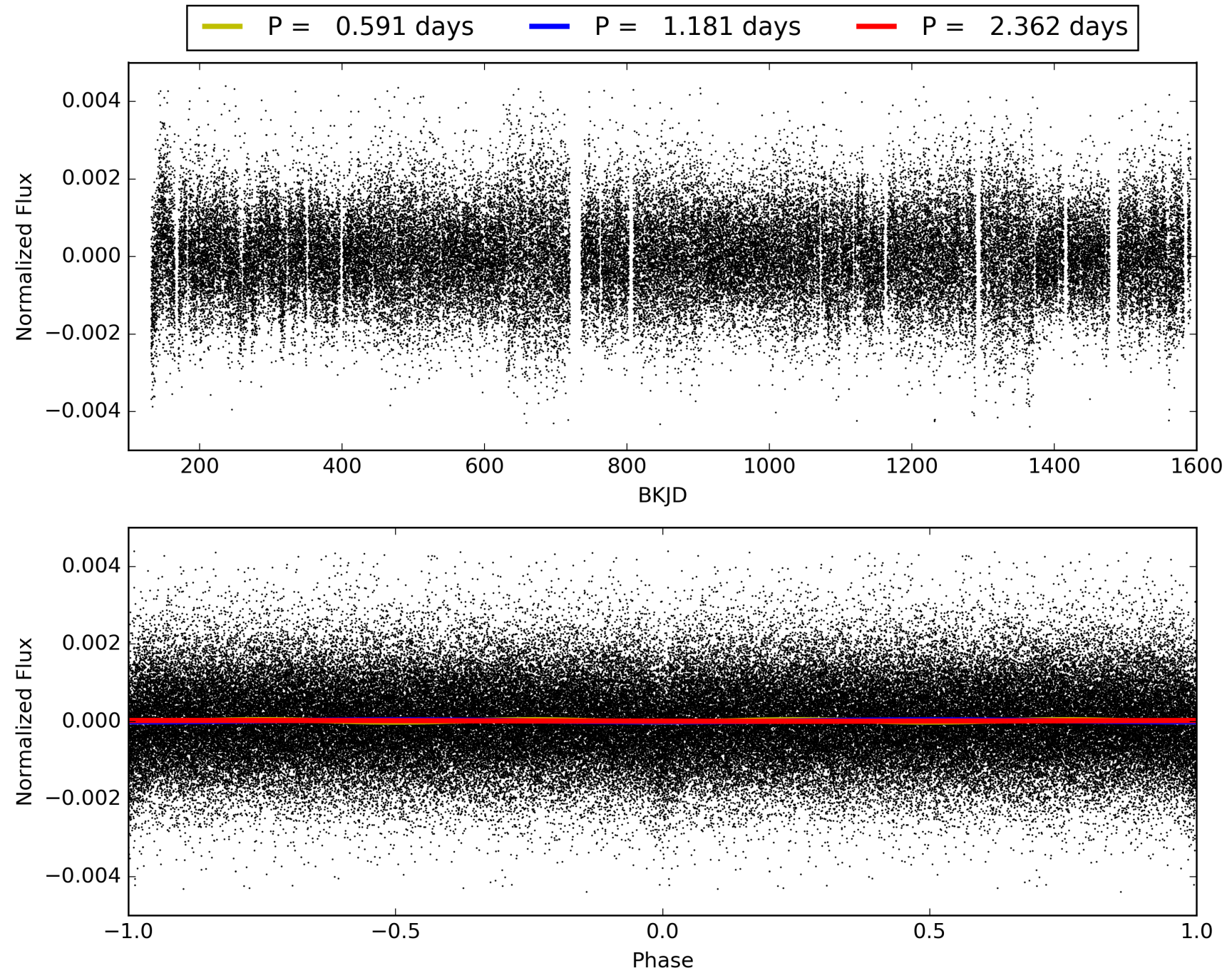
Software Revision: svn-ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 01:40:40 Z

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

TCE 012407623-01, PDC Light Curves

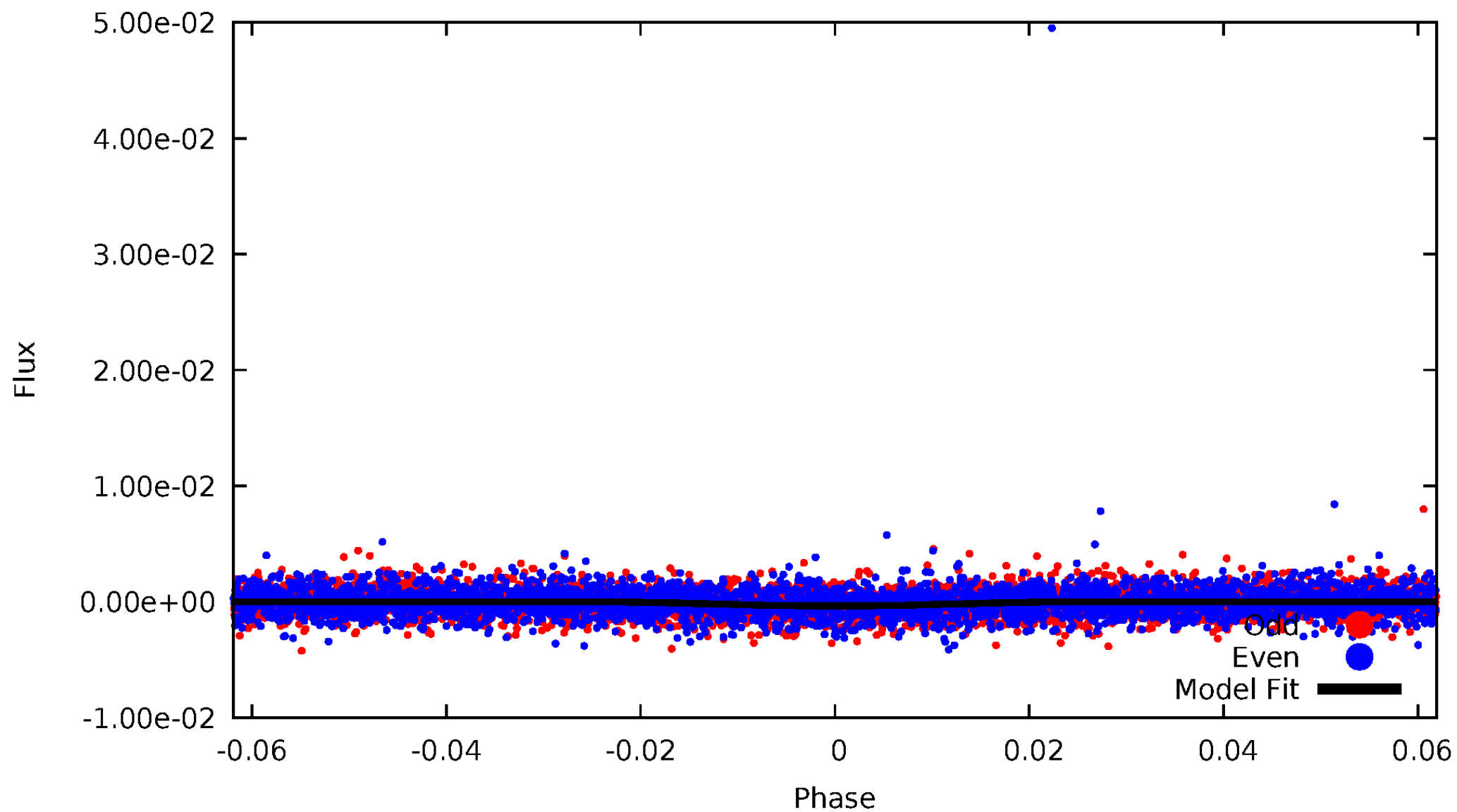


TCE 012407623-01



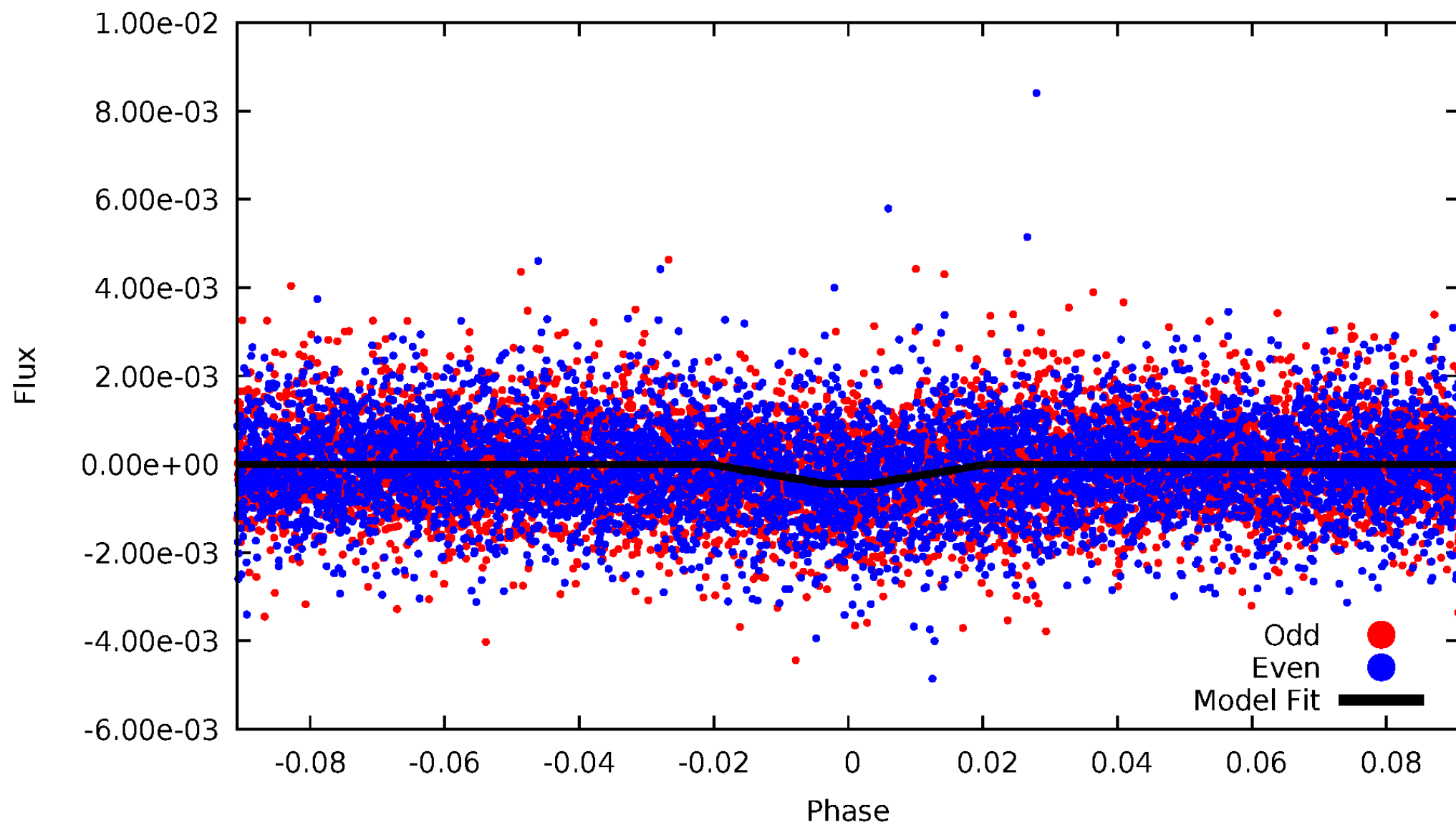
DV Odd/Even

TCE 012407623-01



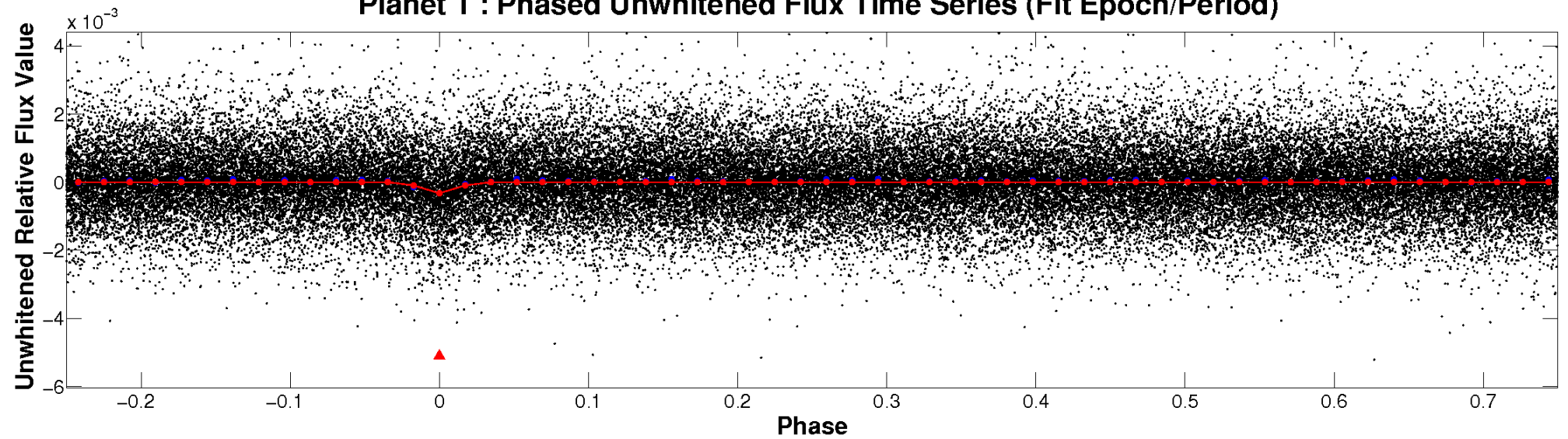
ALT Odd/Even

TCE 012407623-01

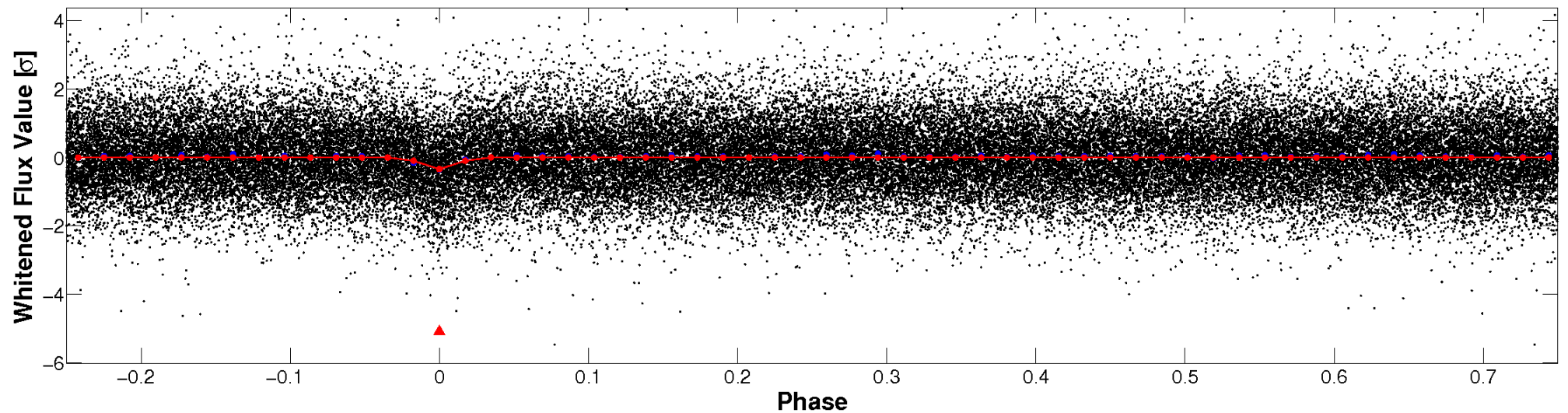


Non-Whitened Vs. Whitened Light Curve

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

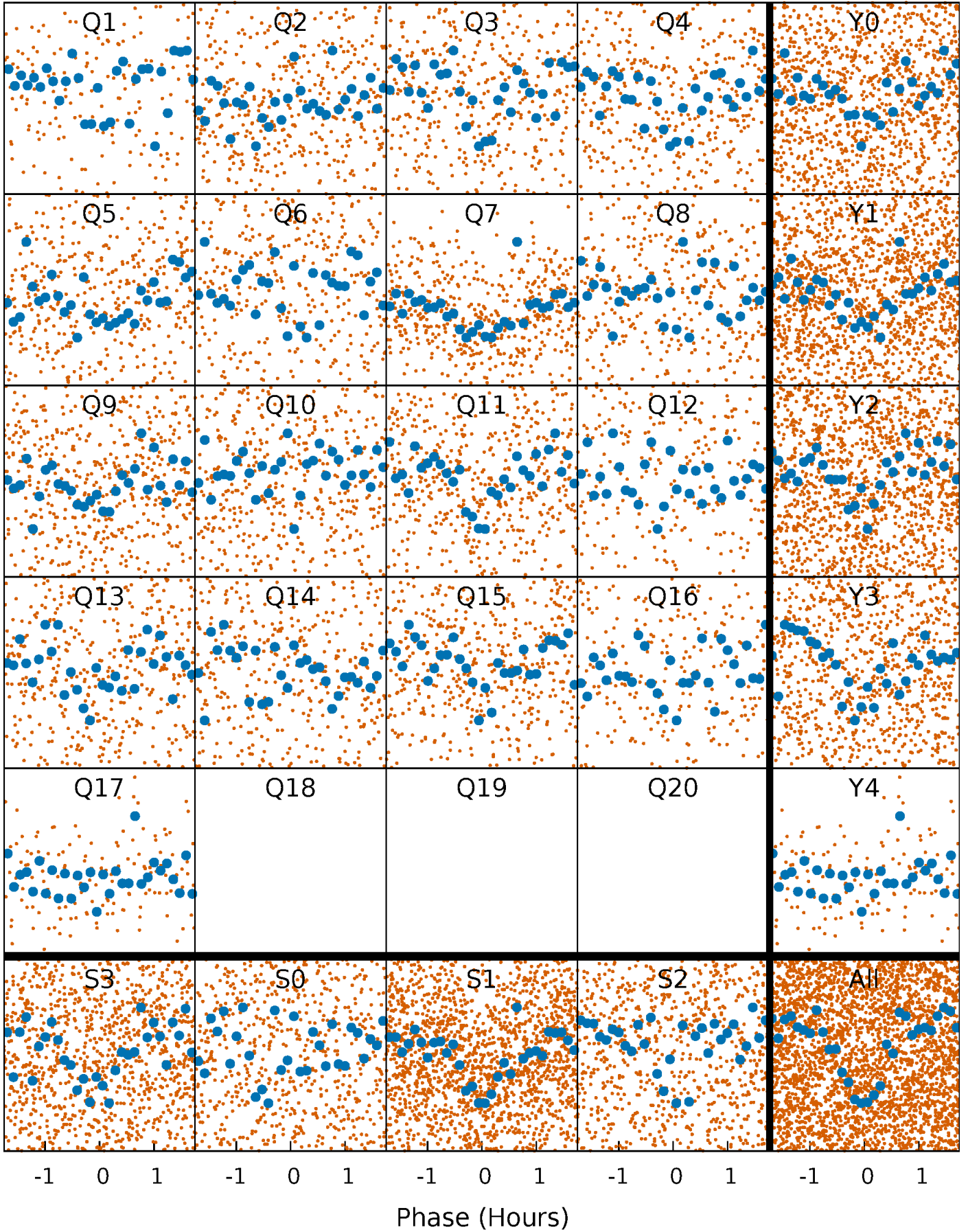


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



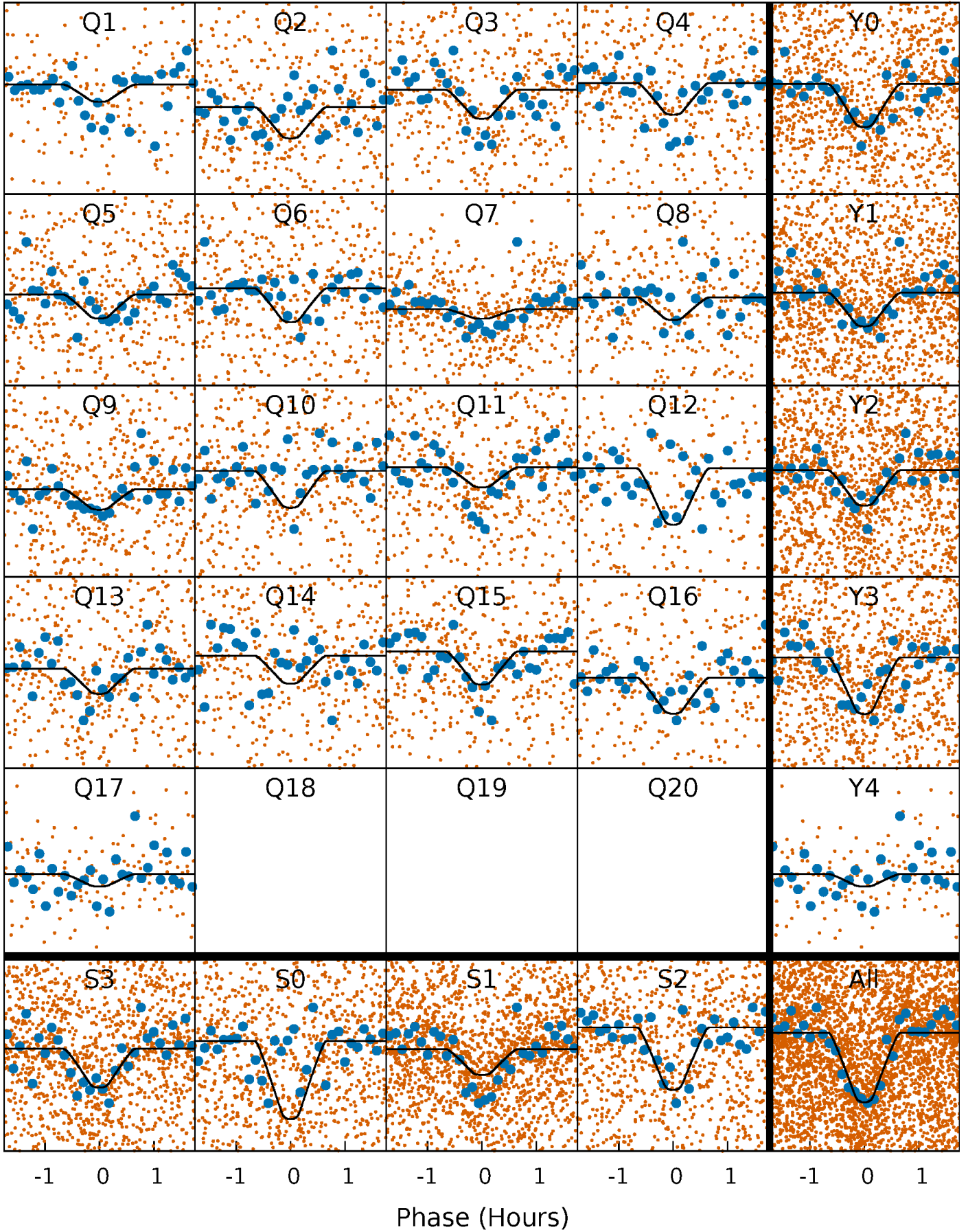
PDC Quarter-Phased Transit Curves

TCE 012407623-01 P= 1.181169 Days $T_0=132.423914$ (BKJD)



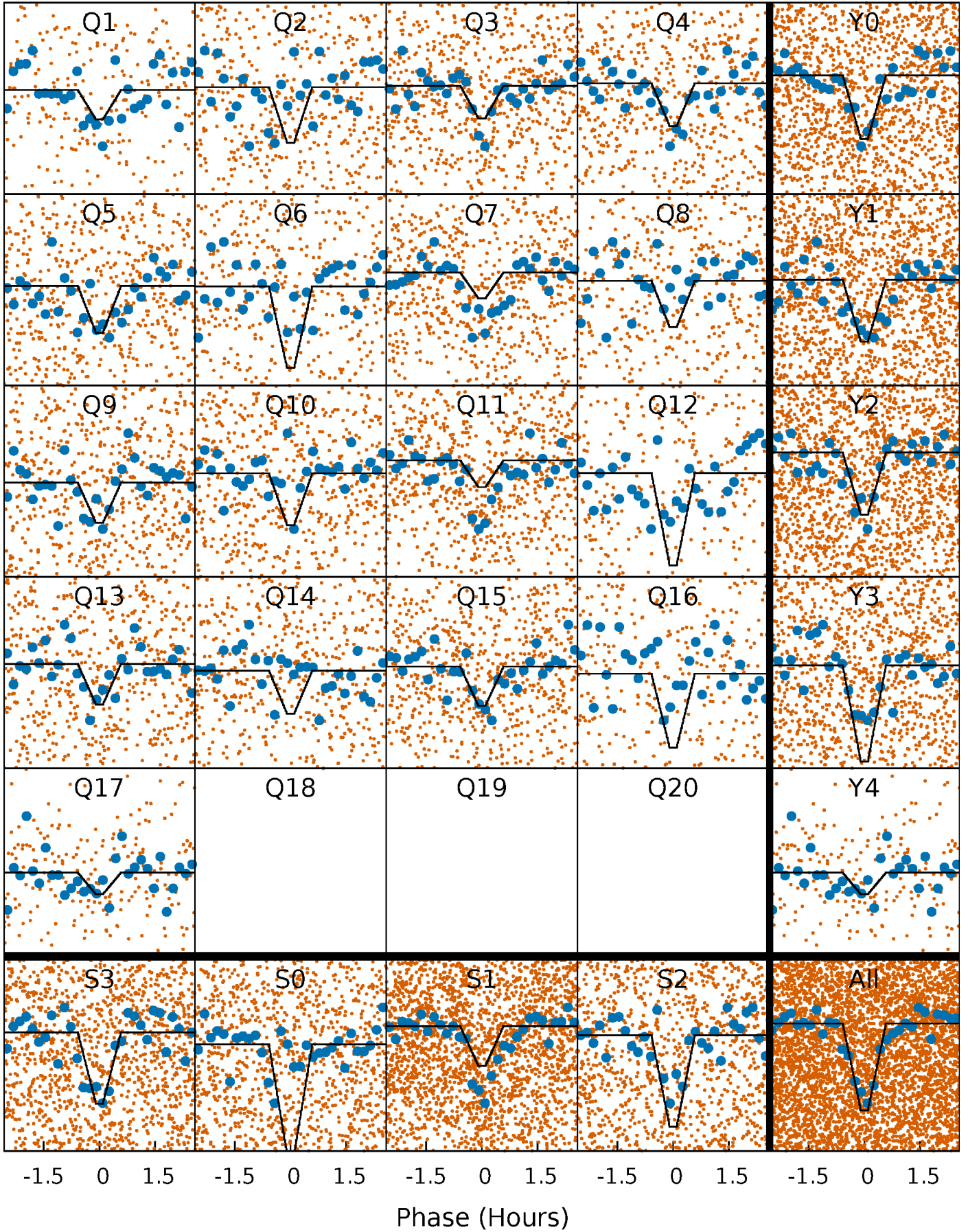
DV Quarter-Phased Transit Curves

TCE 012407623-01 P= 1.181169 Days $T_0=132.423914$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

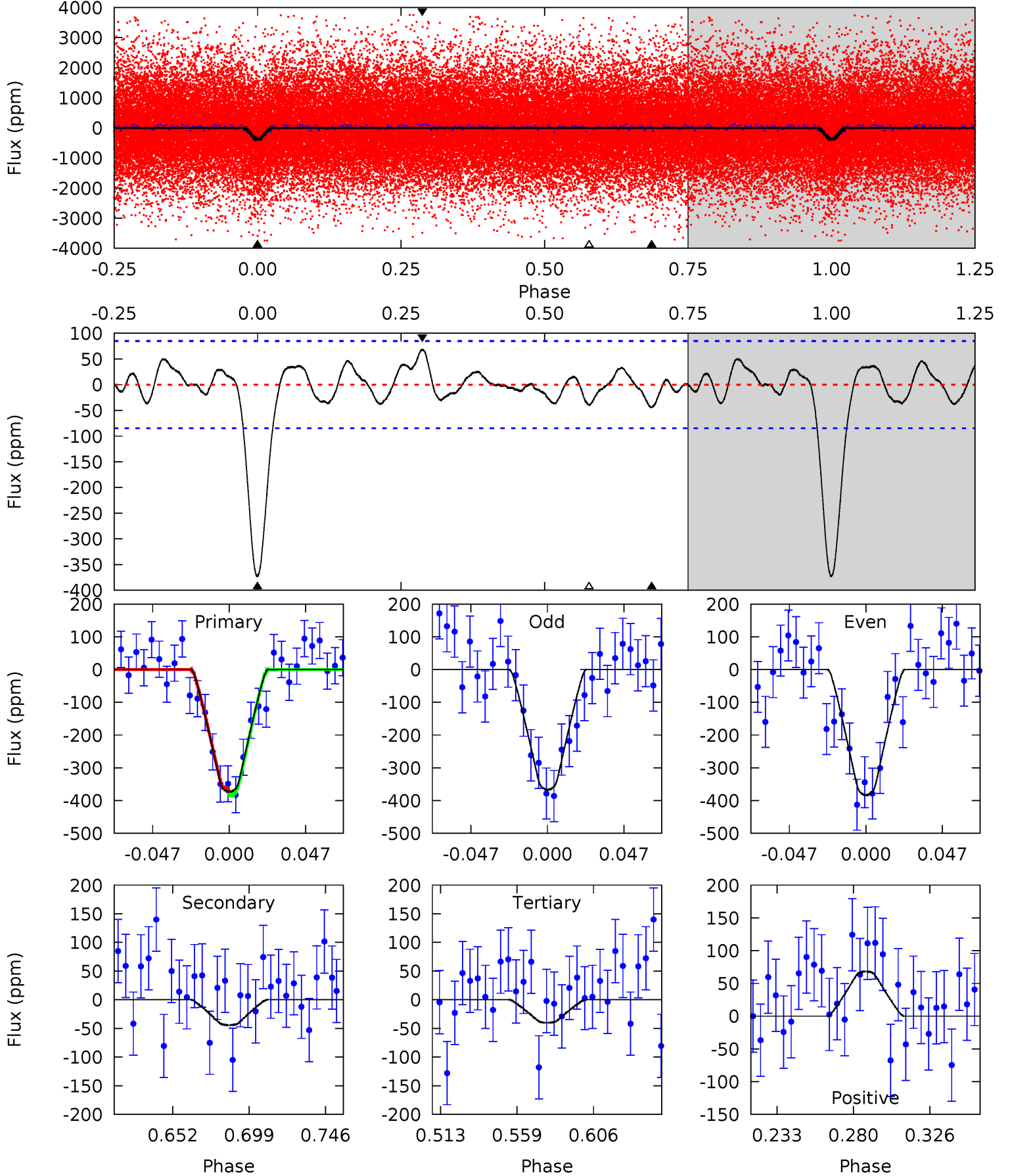
TCE 012407623-01 P= 1.181168 Days $T_0=132.424206$ (BKJD)



DV Model-Shift Uniqueness Test

012407623-01, P = 1.181169 Days, E = 131.242745 Days

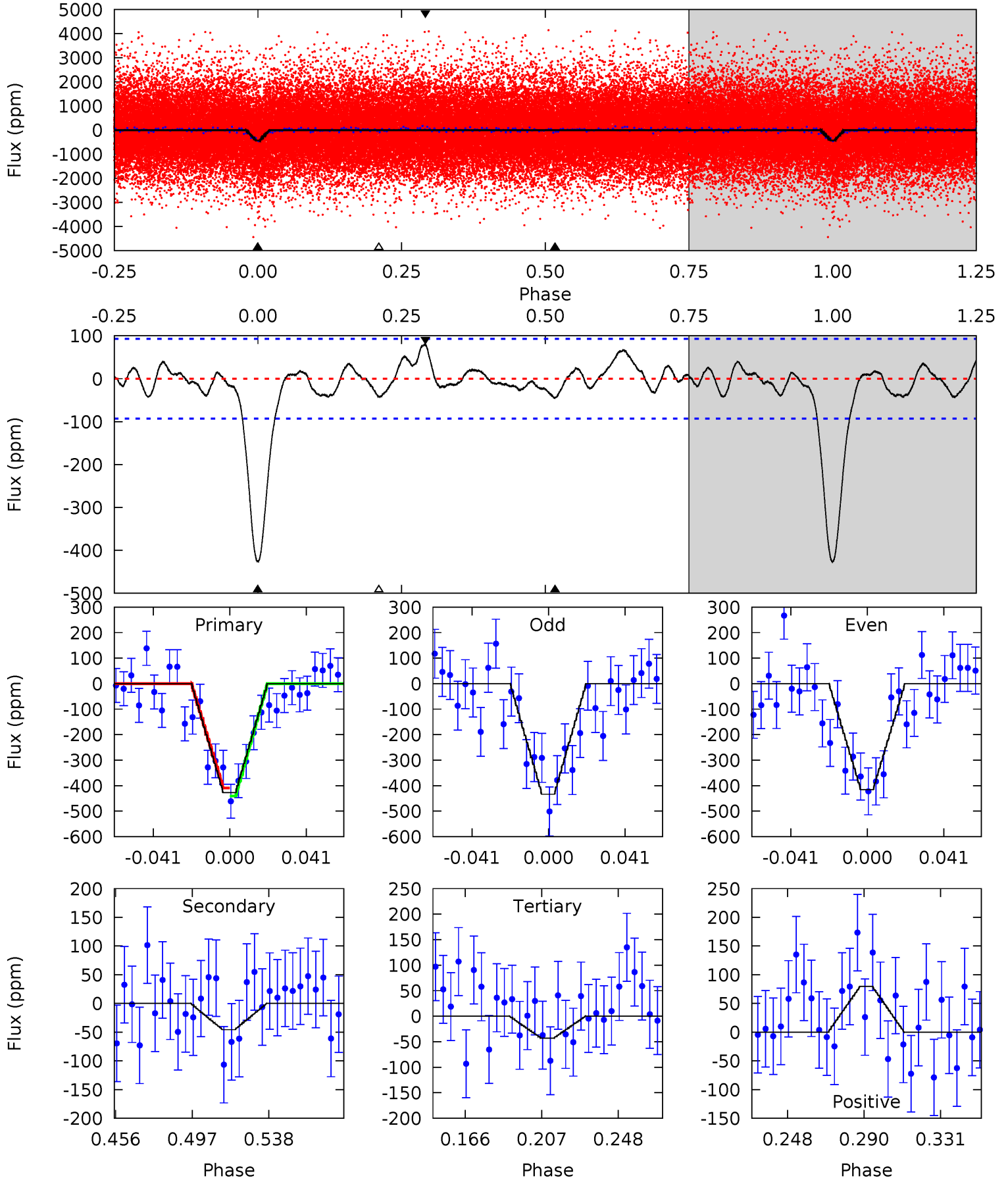
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
20.8	2.47	2.23	3.80	4.72	1.99	1.34	18.5	17.0	0.24	-1.33	0.46	0.97	0.15	0.38



Alt Model-Shift Uniqueness Test

012407623-01, P = 1.181168 Days, E = 131.243038 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
21.8	2.33	2.20	4.06	4.75	2.04	1.32	19.6	17.7	0.12	-1.73	0.45	0.98	0.16	0.81



Stellar Parameters For KIC 012407623

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5203^{+169}_{-154}	$4.582^{+0.048}_{-0.078}$	$-0.220^{+0.300}_{-0.300}$	$0.747^{+0.098}_{-0.066}$	$0.779^{+0.091}_{-0.074}$	$2.630^{+0.594}_{-0.693}$
	+3%/-3%	+1%/-2%	+136%/-136%	+13%/-9%	+12%/-9%	+23%/-26%
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 012407623-01 / KOI 4370.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-44 ± 18	$1.80^{+1.03}_{-0.99}$	1967^{+86}_{-74}	3292^{+1112}_{-566}	$2.869^{+12.457}_{-1.875}$
Alt.	-46 ± 20	$1.83^{+1.06}_{-1.02}$	1966^{+87}_{-73}	3272^{+1116}_{-547}	$2.698^{+12.038}_{-1.710}$

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

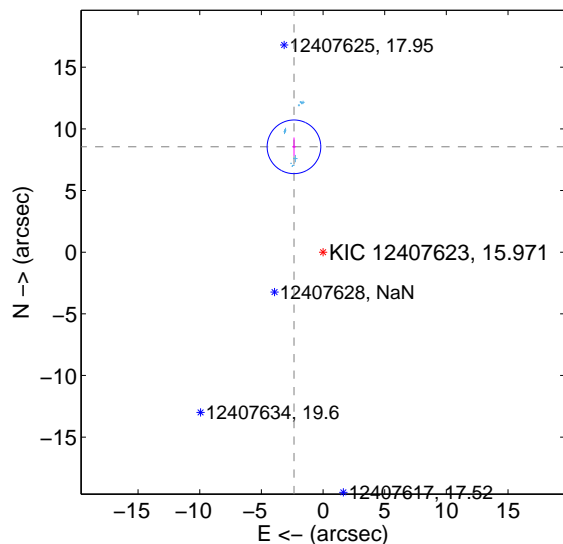
Supplemental centroid analysis for 012407623-01. Kepler magnitude: 15.97. Transit SNR 12.67

There are 12 quarters with good PRF difference image offsets

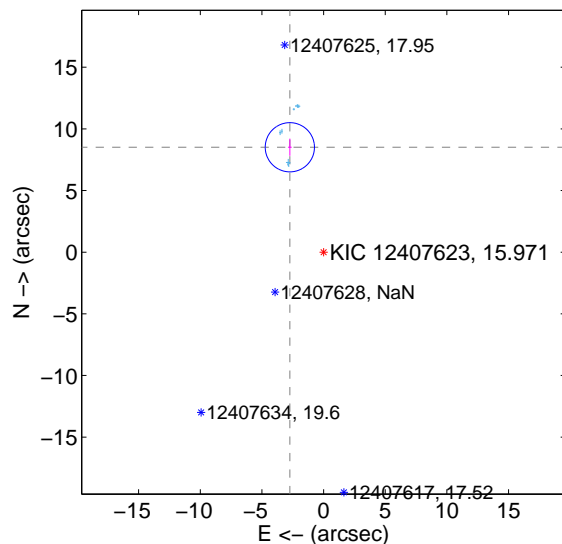
The direct PRF centroid is offset from the target star catalog position by about 0.50 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	8.863 ± 0.725	12.22	2.358 ± 0.149	8.544 ± 0.751
PRF-fit source offset from KIC position	8.937 ± 0.665	13.44	2.736 ± 0.147	8.508 ± 0.697
photometric centroid source offset	14.22 ± 0.71	20.03	3.18 ± 0.72	13.86 ± 0.71

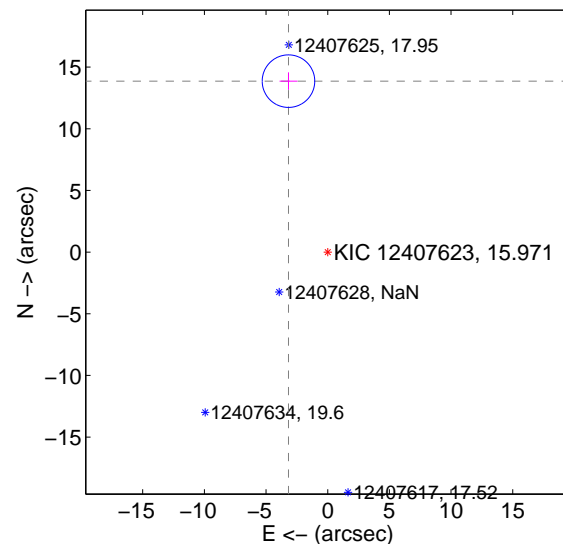
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

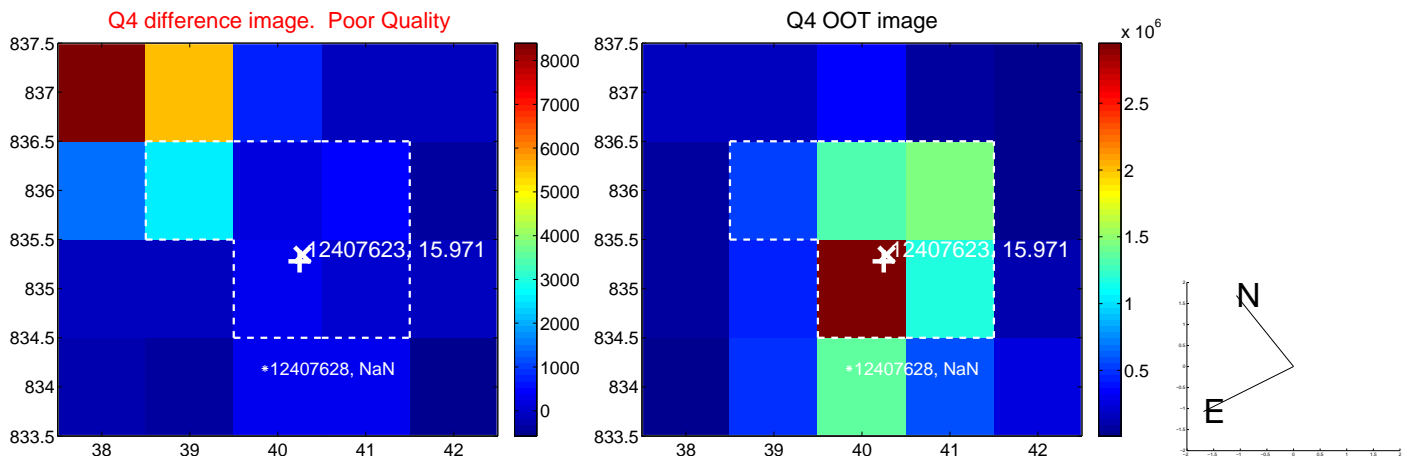
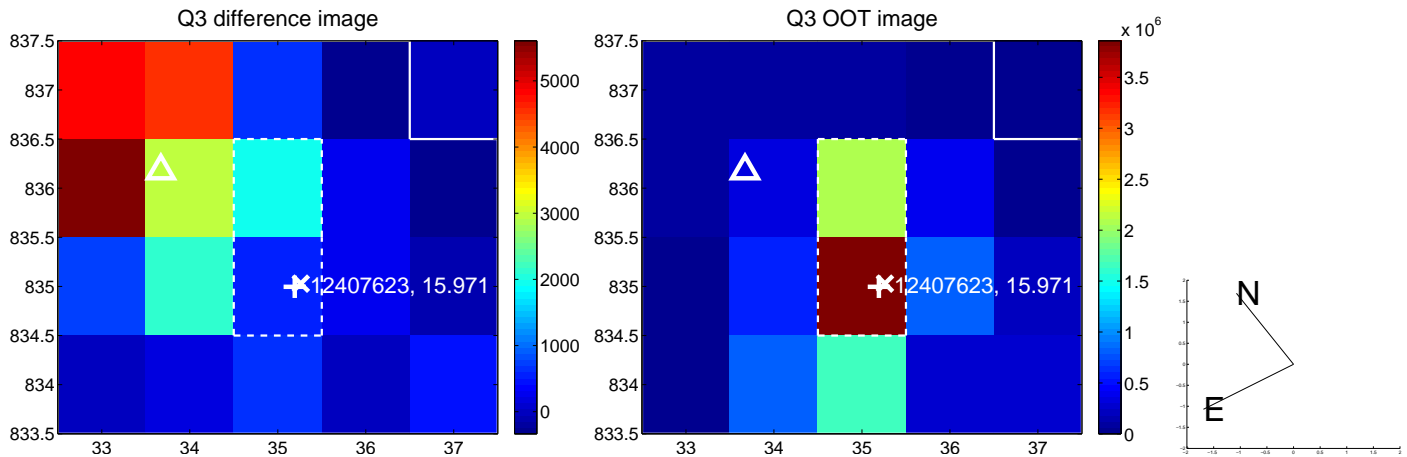
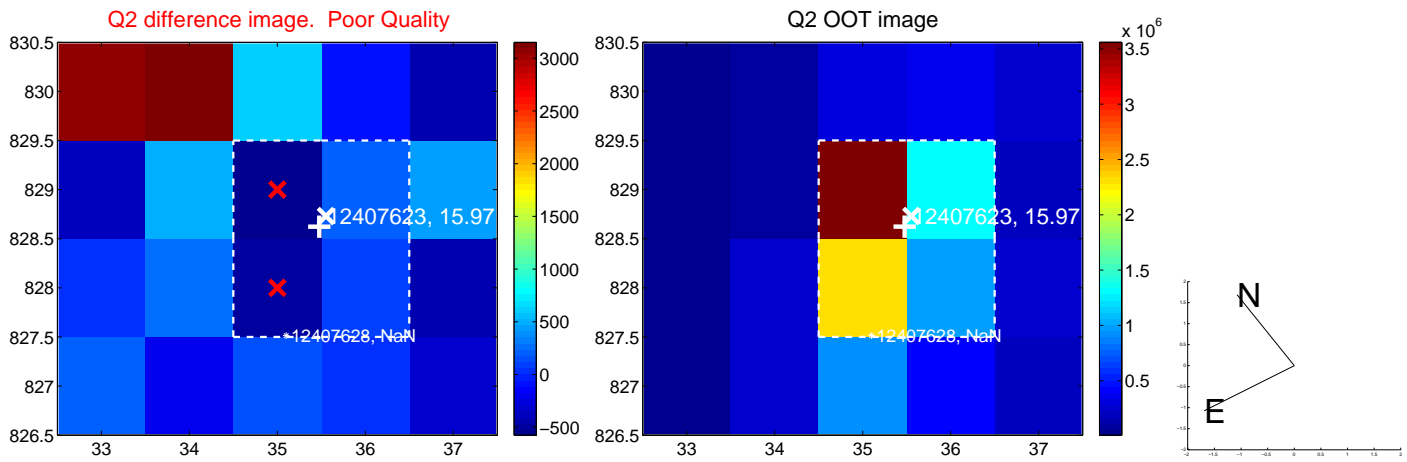
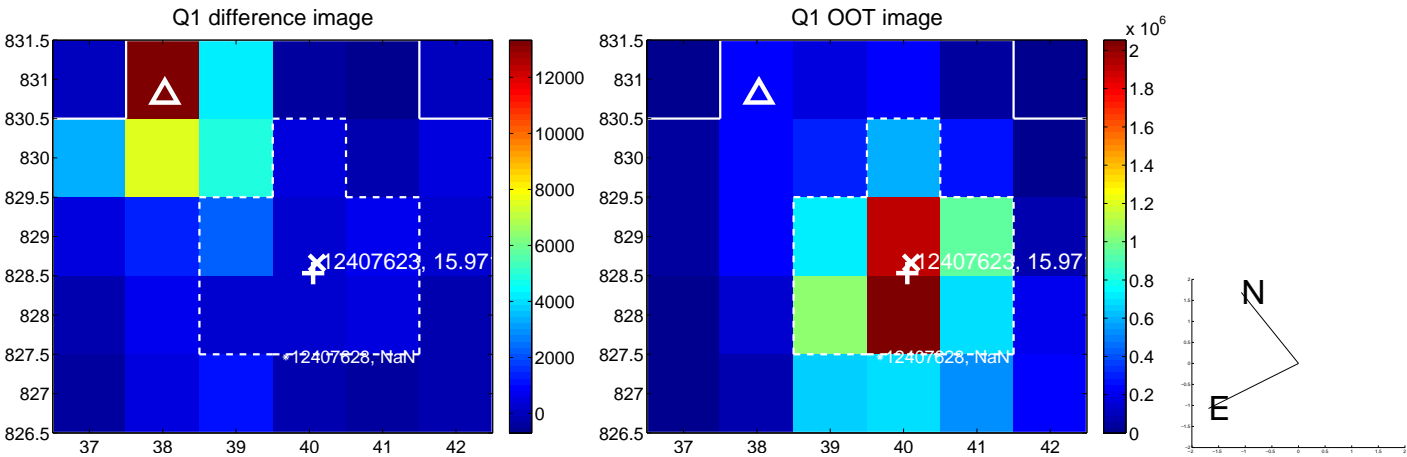


offset from photometric centroids

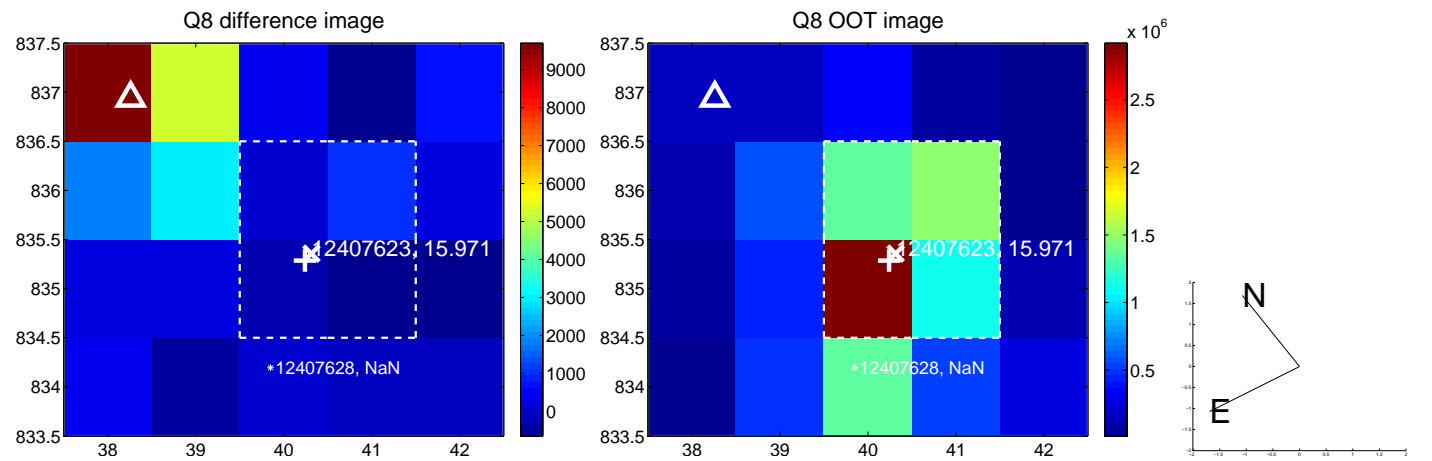
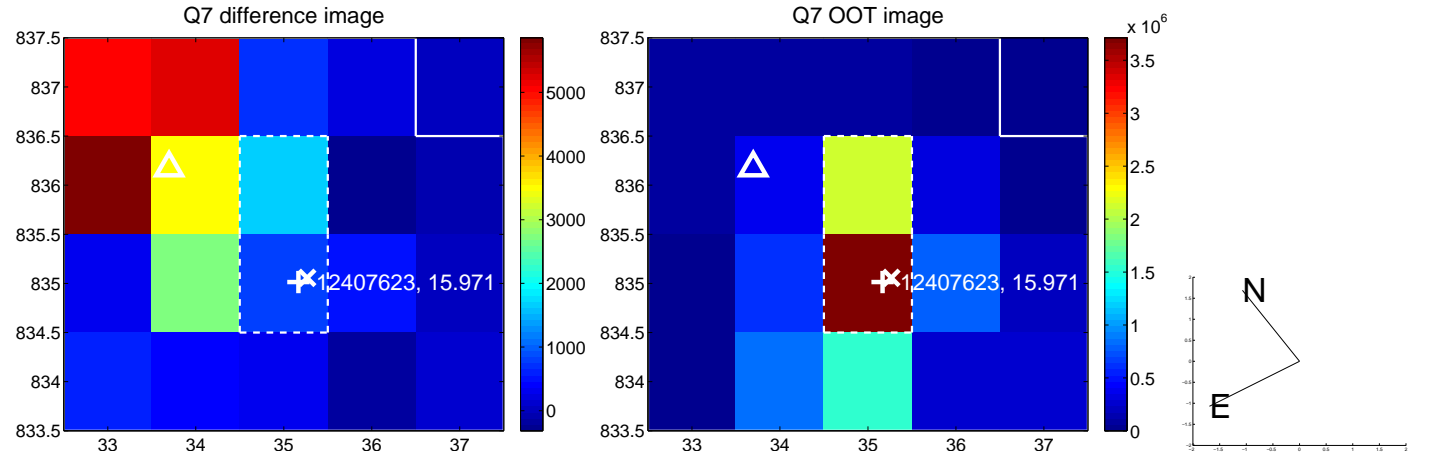
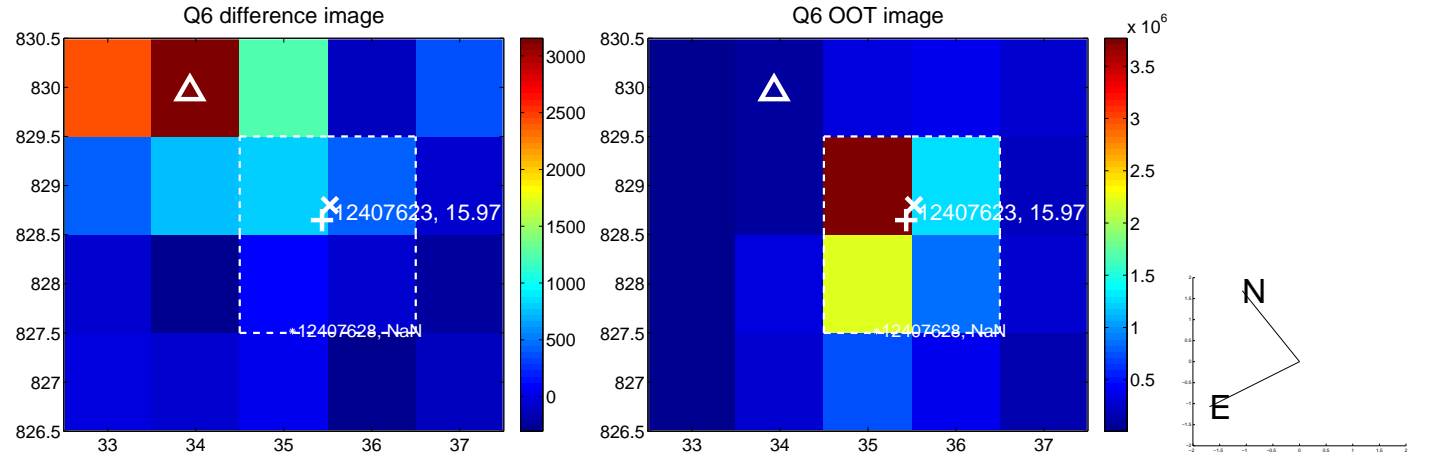
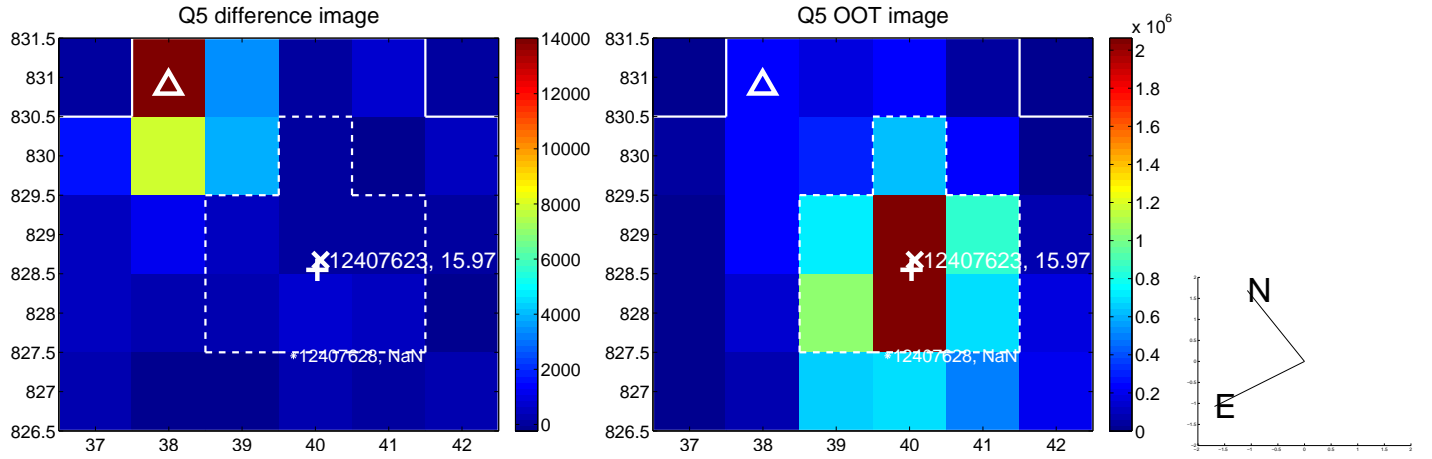


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

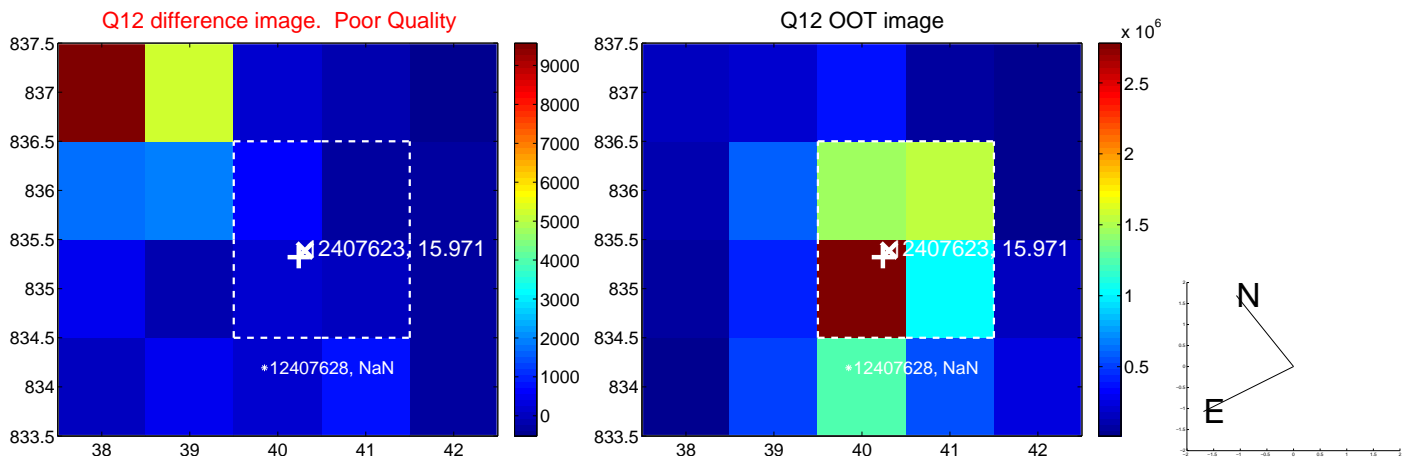
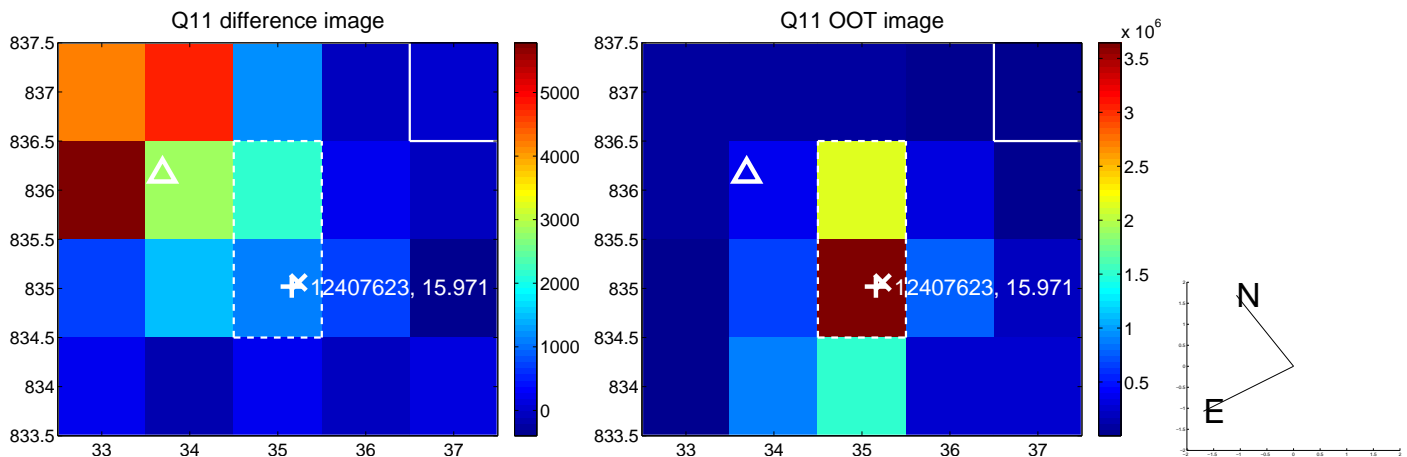
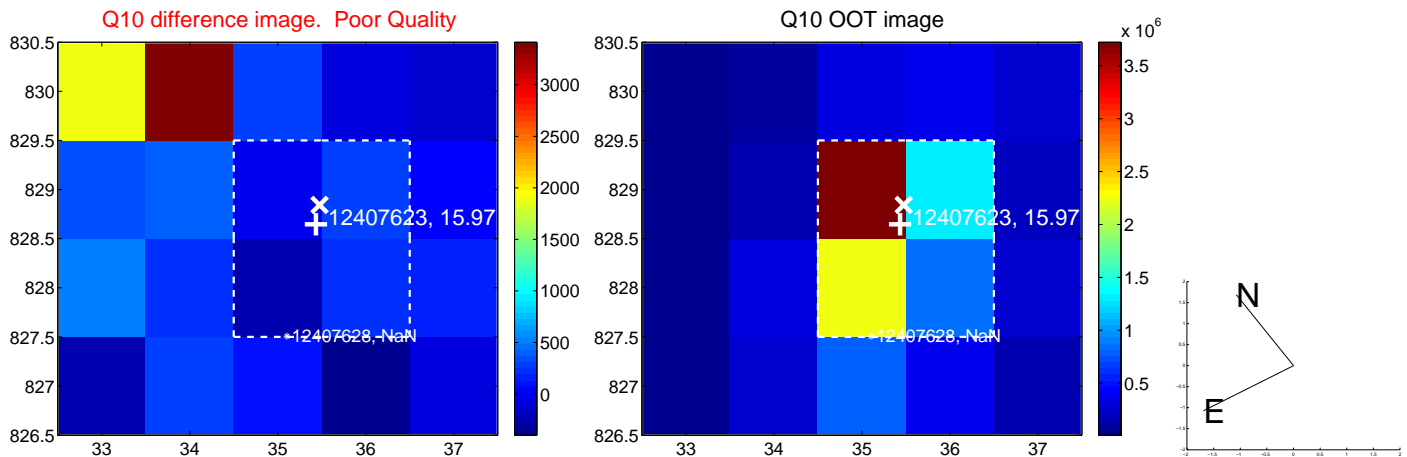
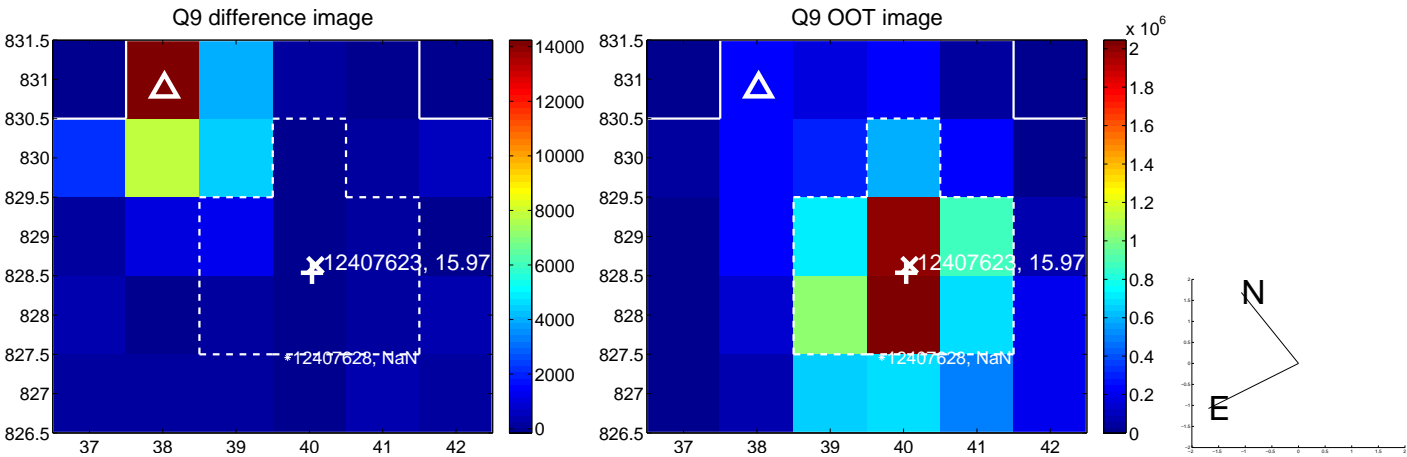
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



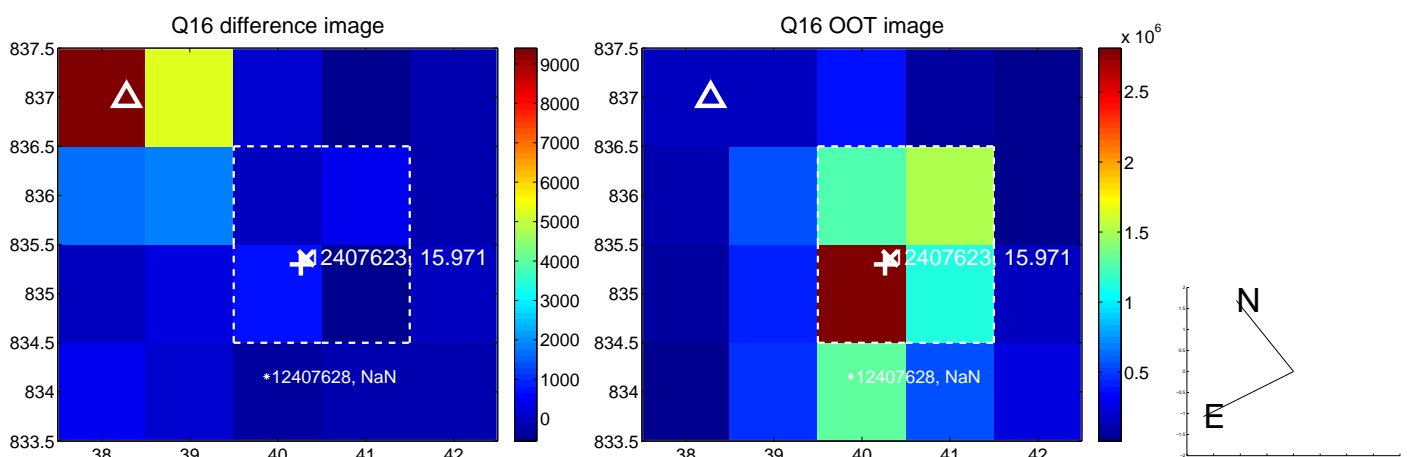
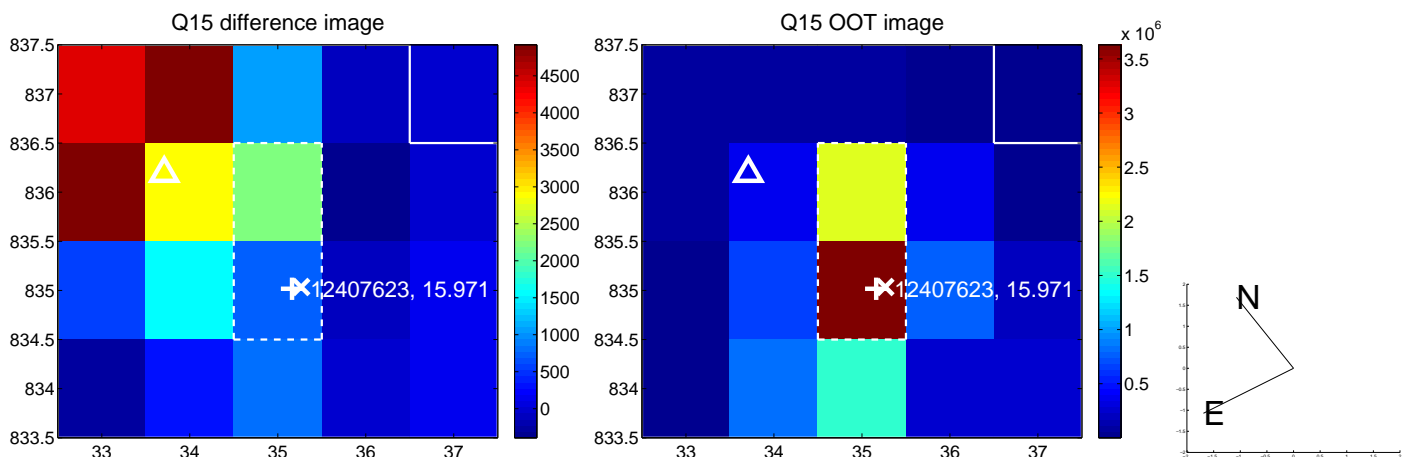
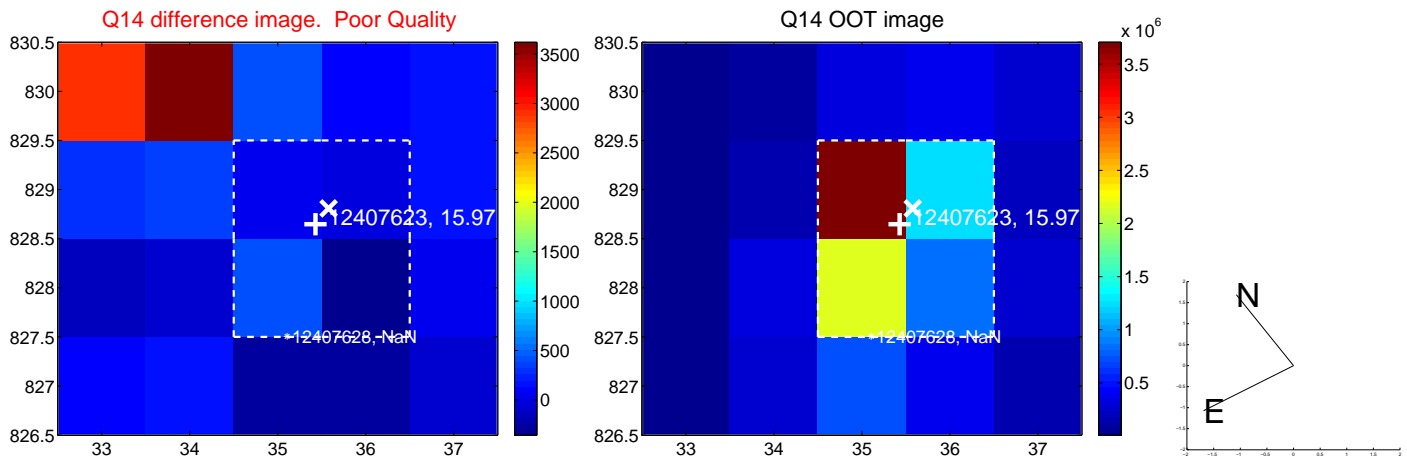
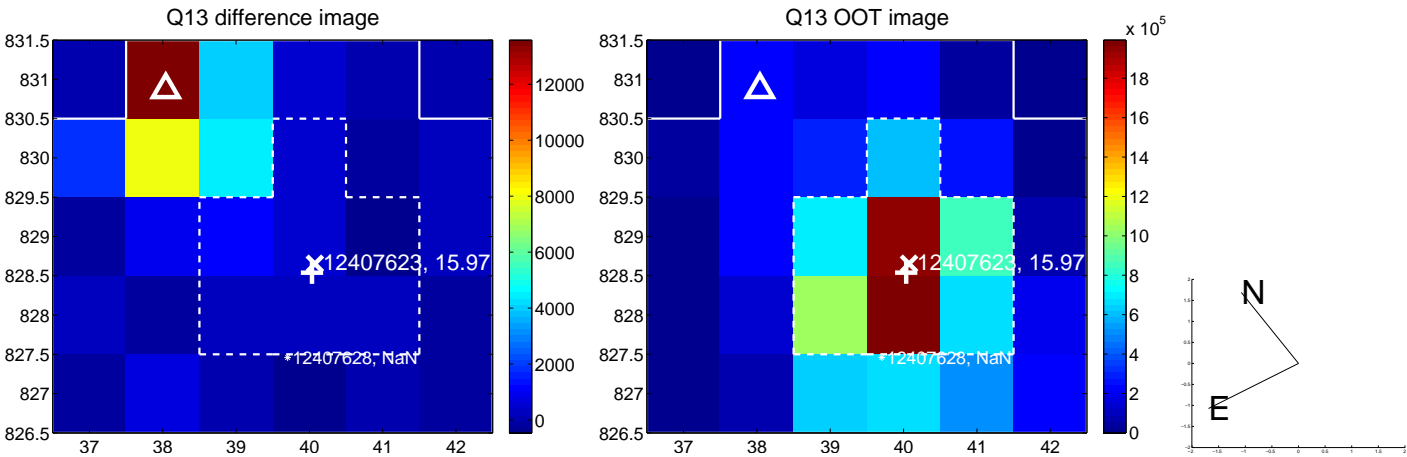
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



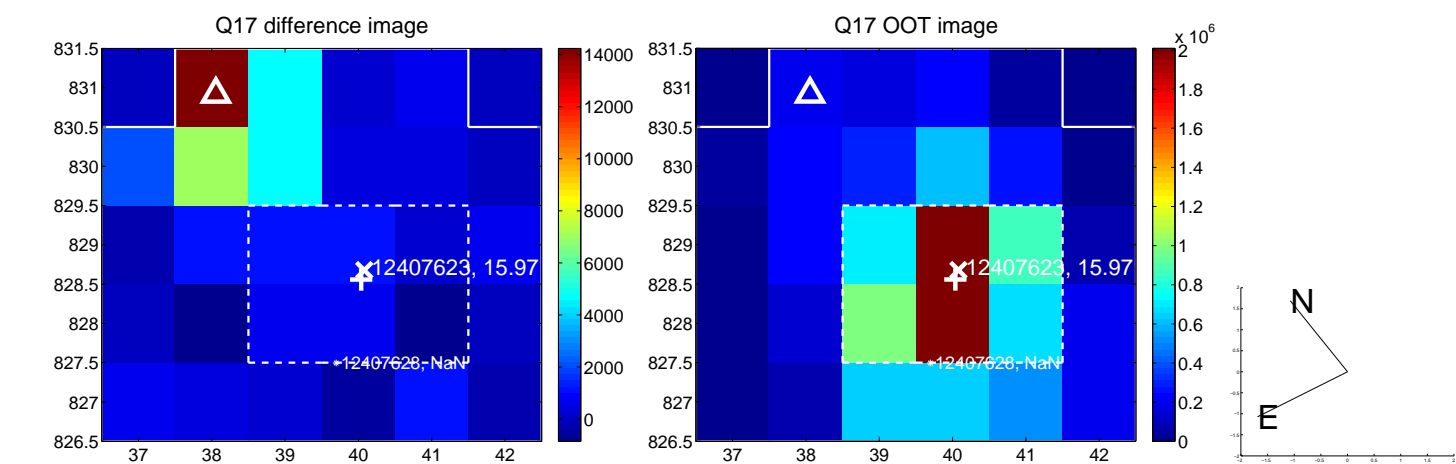
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



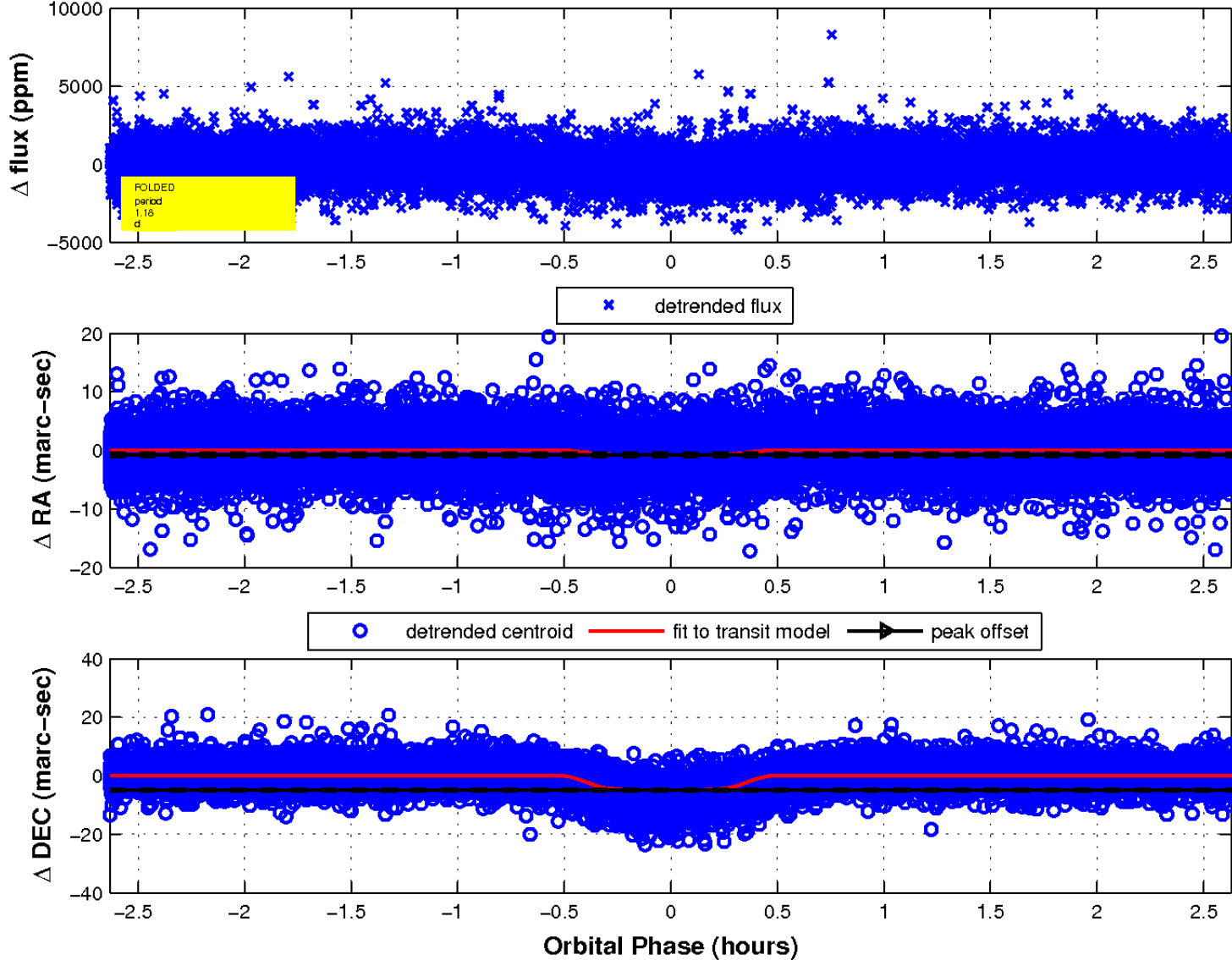
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



fluxWeightedCentroids, Planet 1 of 1



UKIRT Image

Declination

