

KIC 010676923

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})
010676923-01	OBS	1297.01	1.031086	131.877885	116.0	2.103	16.4	17.0	1.07	6371	1.36	3945.74

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
010676923-01	OBS	FP	0.00	0	0	1	1	CENT_RESOLVED_OFFSET—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 010676923-01

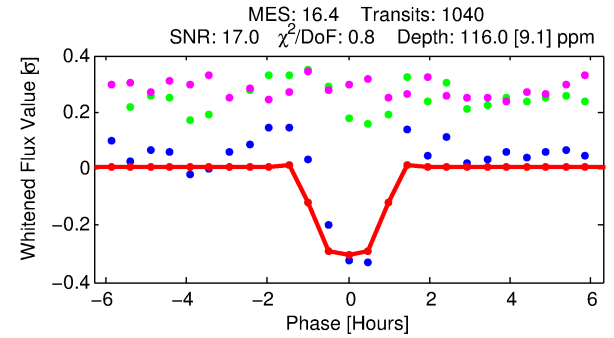
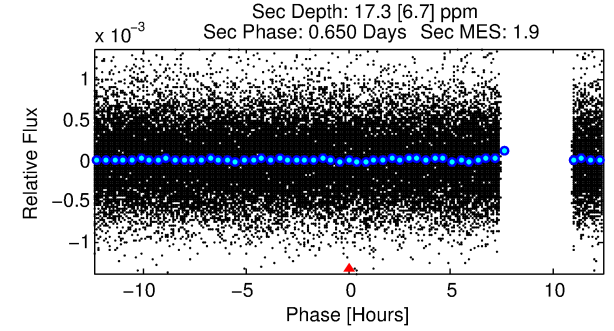
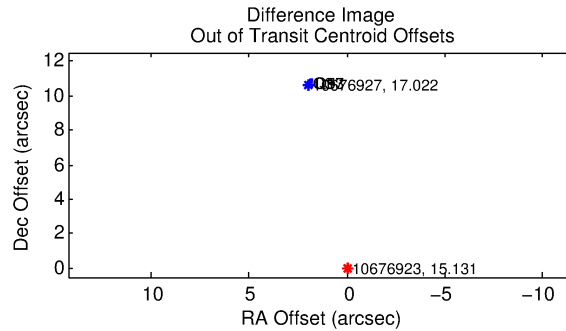
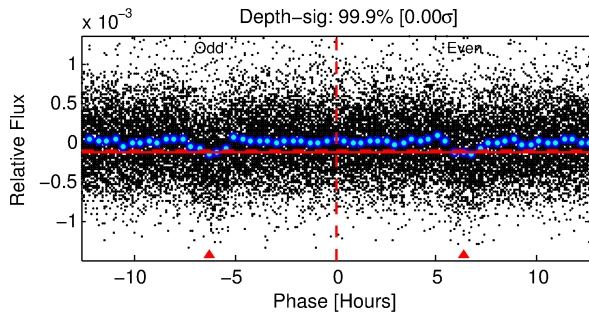
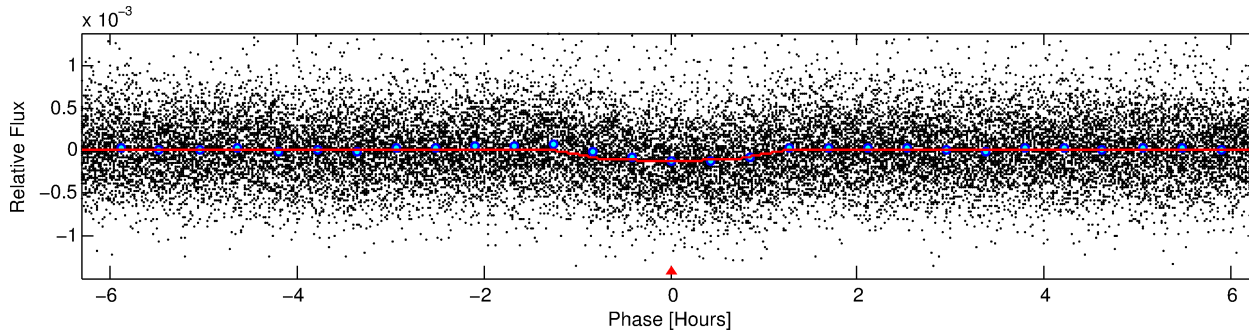
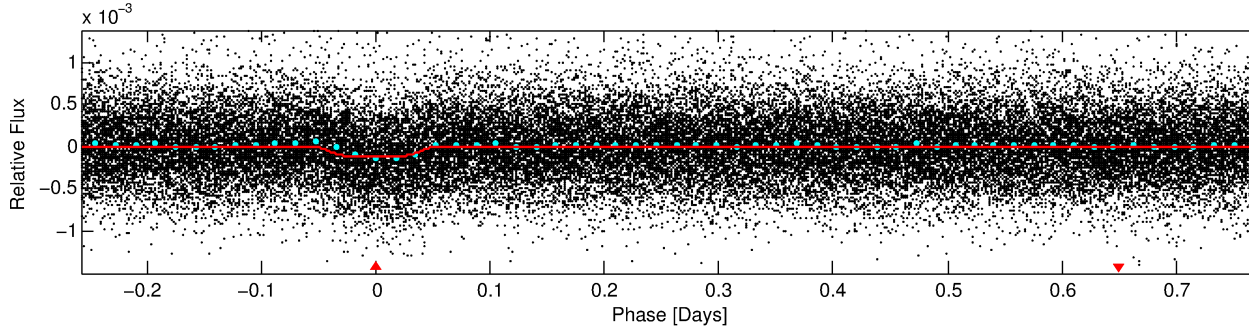
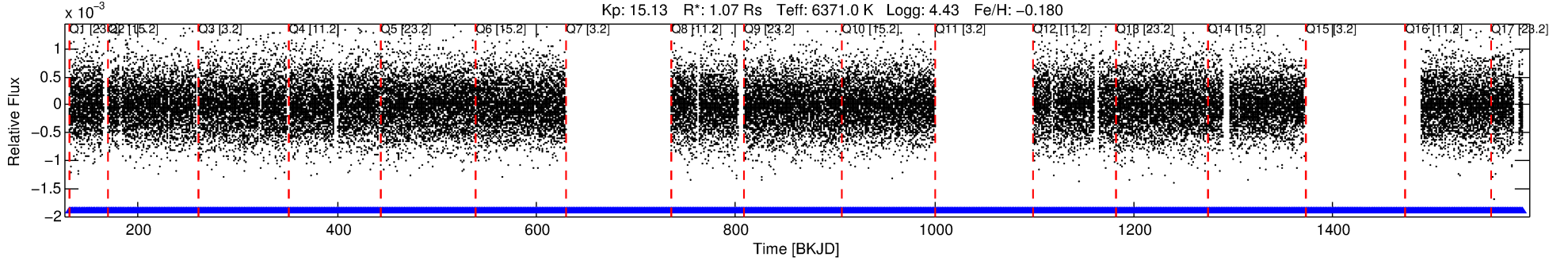
TCE (1)	KIC	Parent (2)	Parent KIC	$P_1:P_2$	Dist ($''$)	Δ Row	Δ Col	m_2	m_1	D_2/D_1	Mechanism	Flag	σ_P	σ_T
010676923-01	10676923	010676927-pri	10676927	1:1	10.8	-2	2	17.02	15.13	1429.30	Direct-PRF	0	1.30	0.25

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: 10676923 Candidate: 1 of 1 Period: 1.031 d
KOI: K01297.01 Corr: 0.879

Kp: 15.13 R*: 1.07 Rs Teff: 6371.0 K Logg: 4.43 Fe/H: -0.180



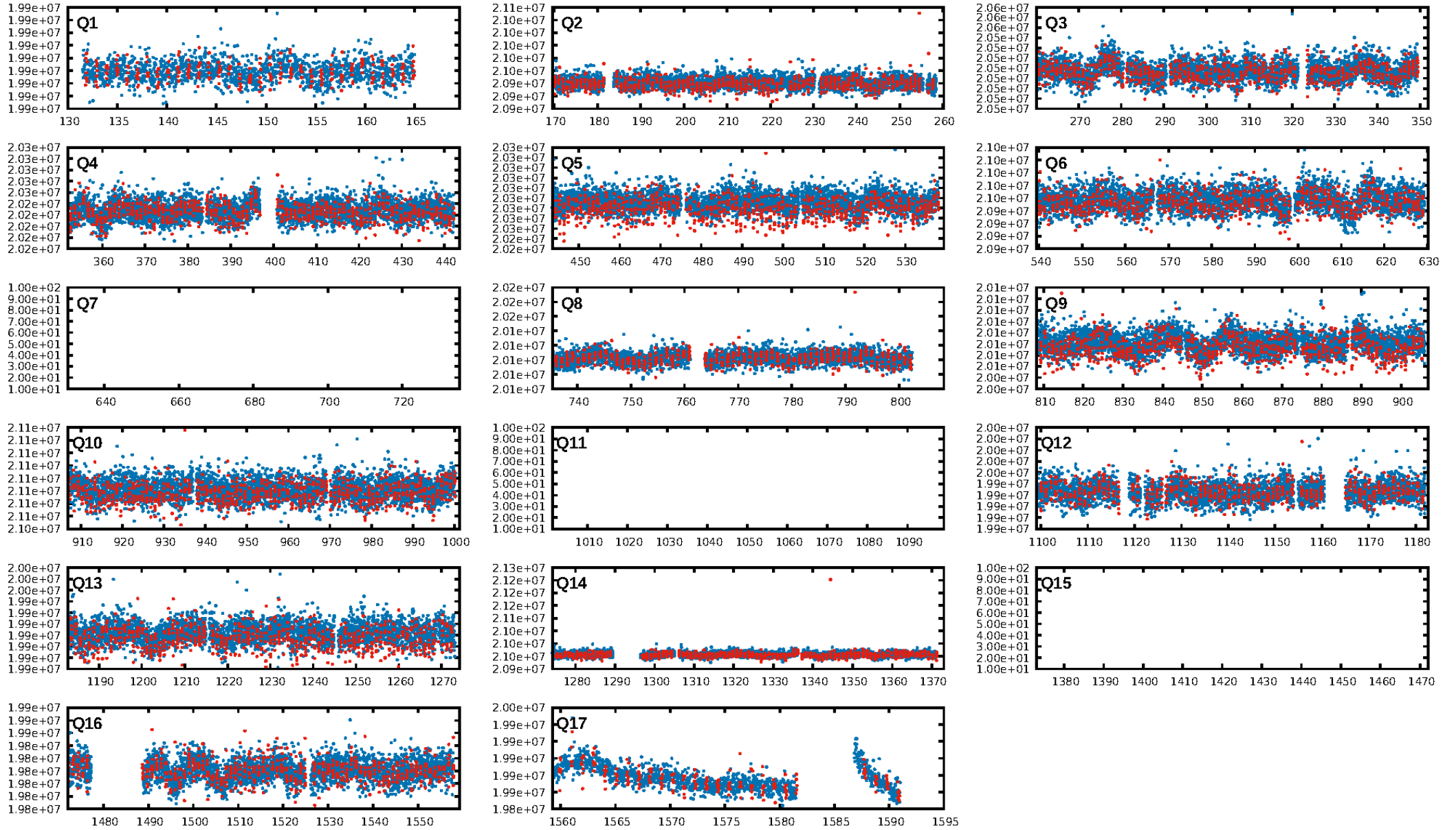
DV Fit Results:

Period = 1.03109 [0.00001] d
Epoch = 131.8779 [0.0017] BKJD
Rp/R* = 0.0116 [0.0040]
a/R* = 1.94 [2.74]
b = 0.91 [0.39]
Seff = 3945.74 [1712.08]
Teq = 2021 [219] K
Rp = 1.36 [0.66] Re
a = 0.0207 [0.0059] AU
Ag = 2.22 [1.97] [0.62σ]
Teff = 3814 [763] K [2.26σ]

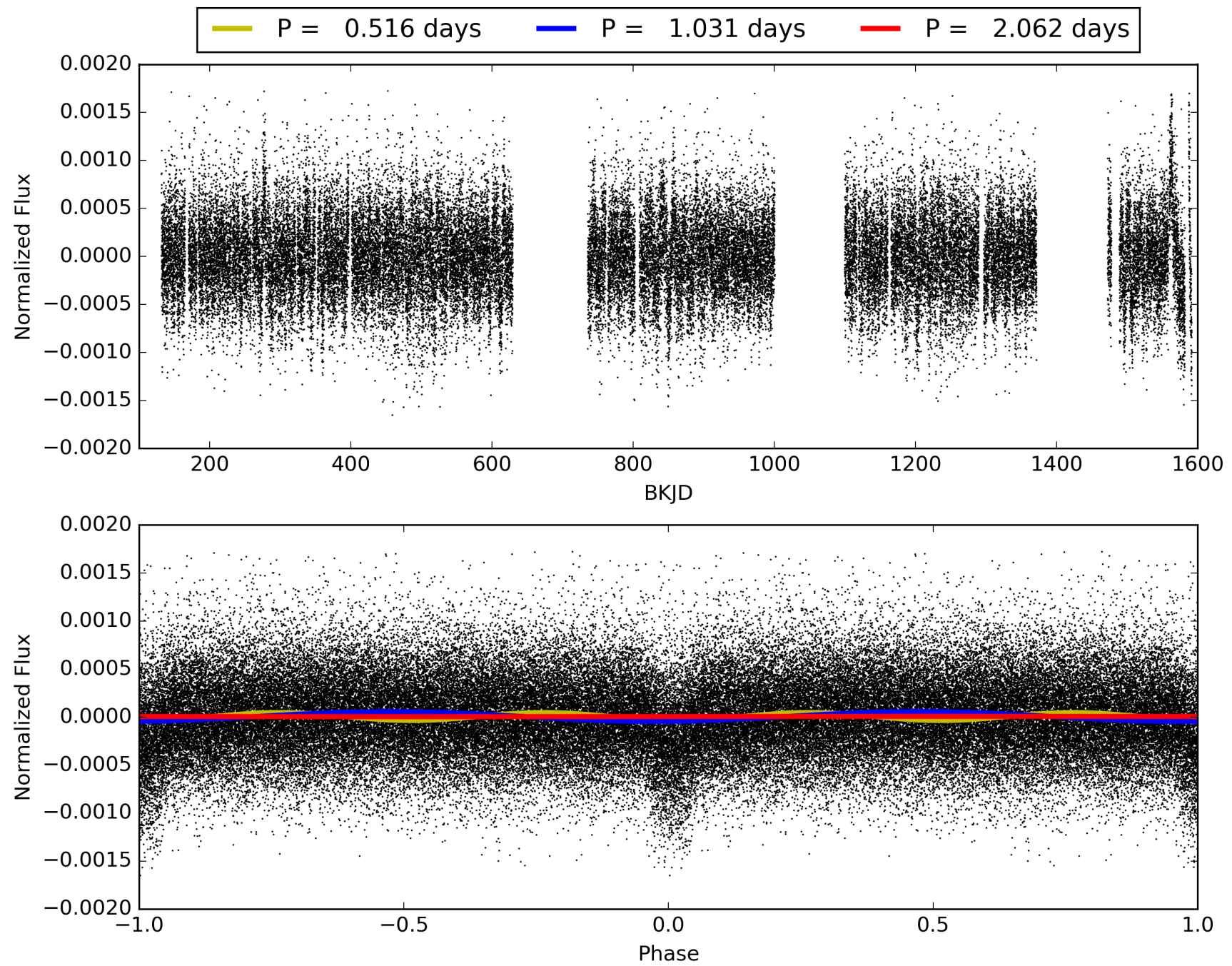
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: N/A
ModelChiSquareGoF-sig: N/A
Bootstrap-pfa: 9.48e-59
RollingBand-fgt: 1.00 [981/981]
GhostDiagnostic-chr: -0.6609
Centroid-sig: 0.0%
Centroid-so: 71.470 arcsec [52.04σ]
OotOffset-rm: 10.867 arcsec [160.93σ]
KicOffset-rm: 10.864 arcsec [159.94σ]
OotOffset-st: 0/1/0/5 [6]
KicOffset-st: 0/1/0/5 [6]
DiffImageQuality-fgm: 1.00 [6/6]
DiffImageOverlap-fno: 1.00 [14/14]

TCE 010676923-01, PDC Light Curves

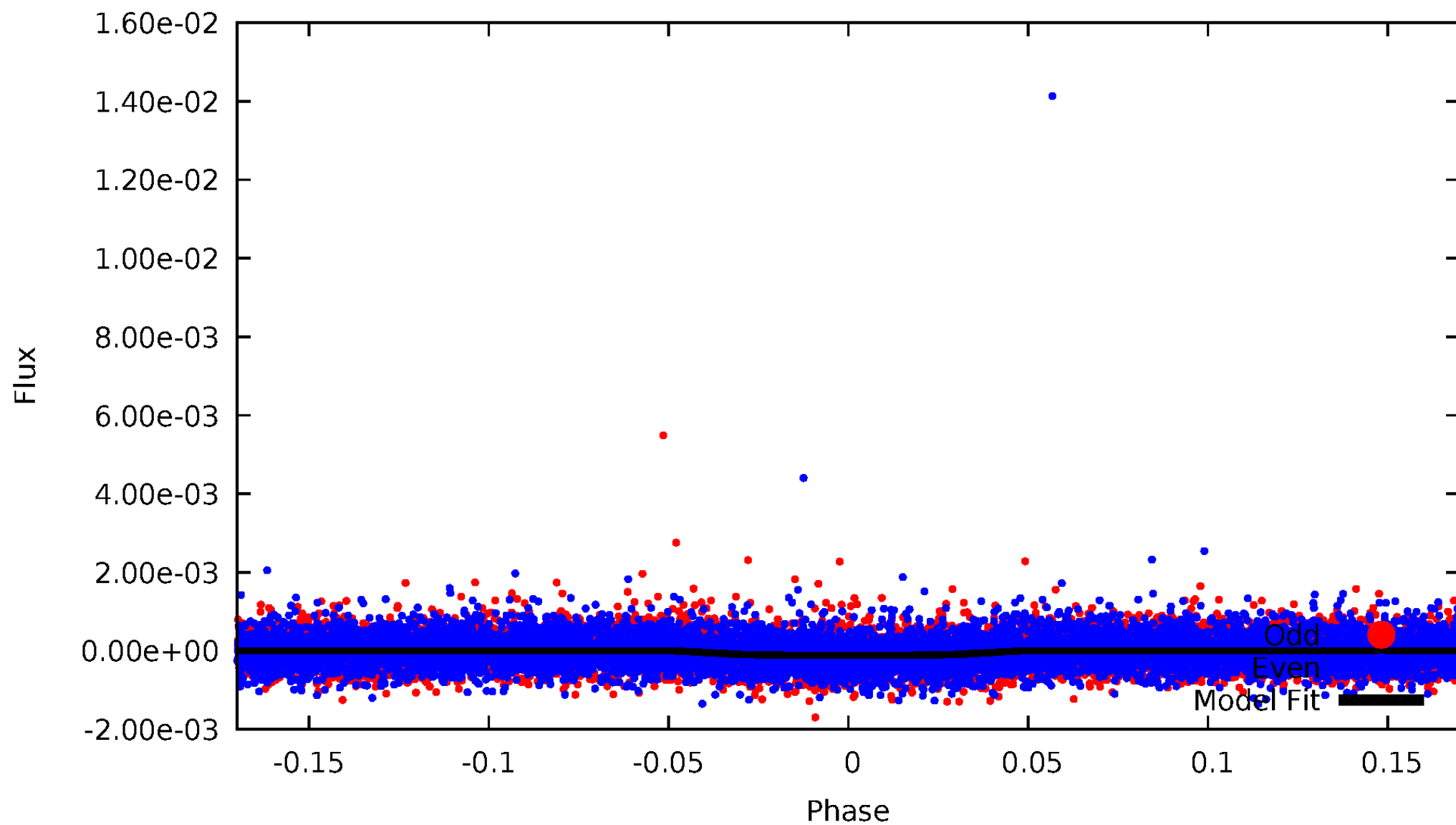


TCE 010676923-01



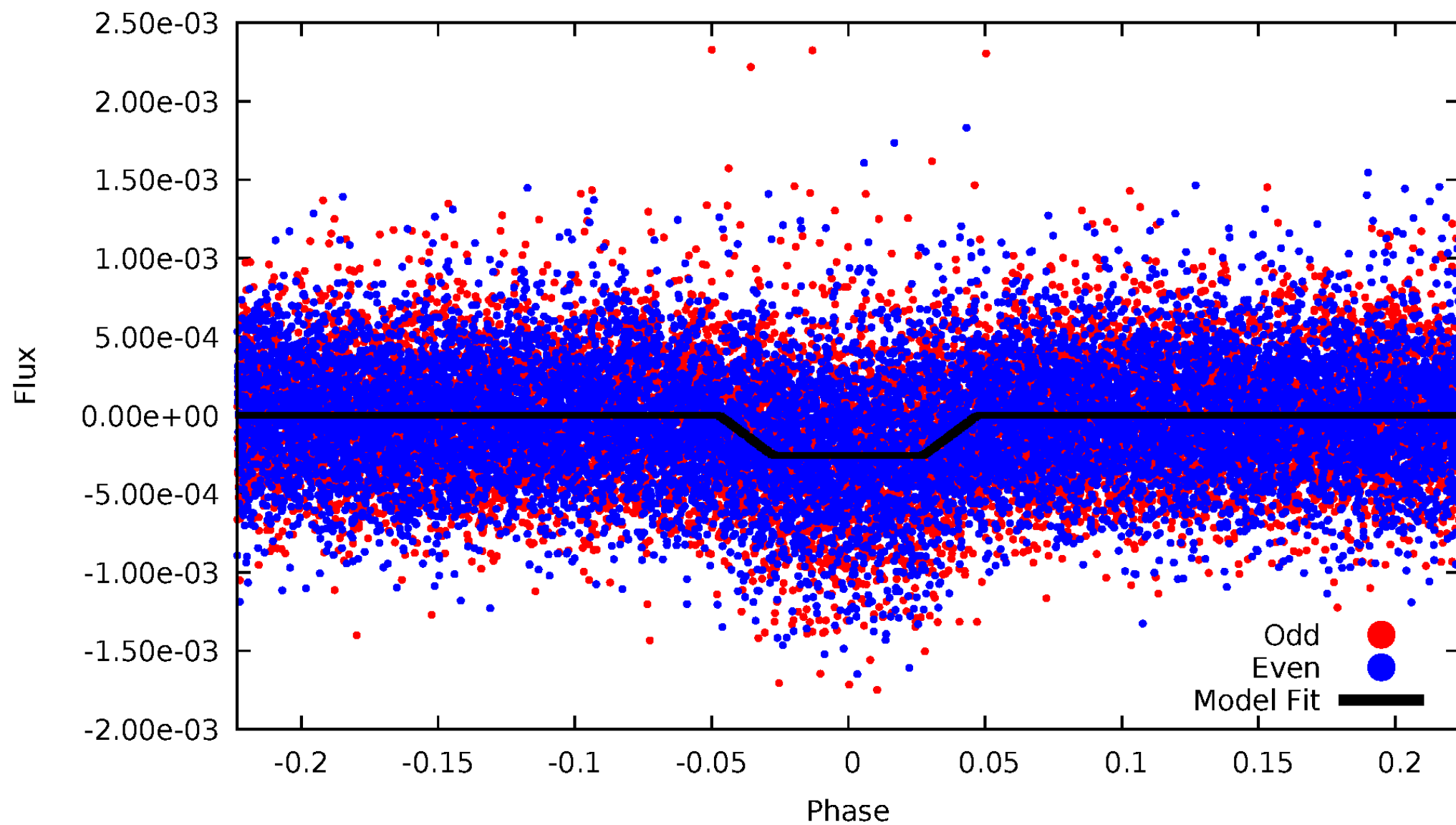
DV Odd/Even

TCE 010676923-01



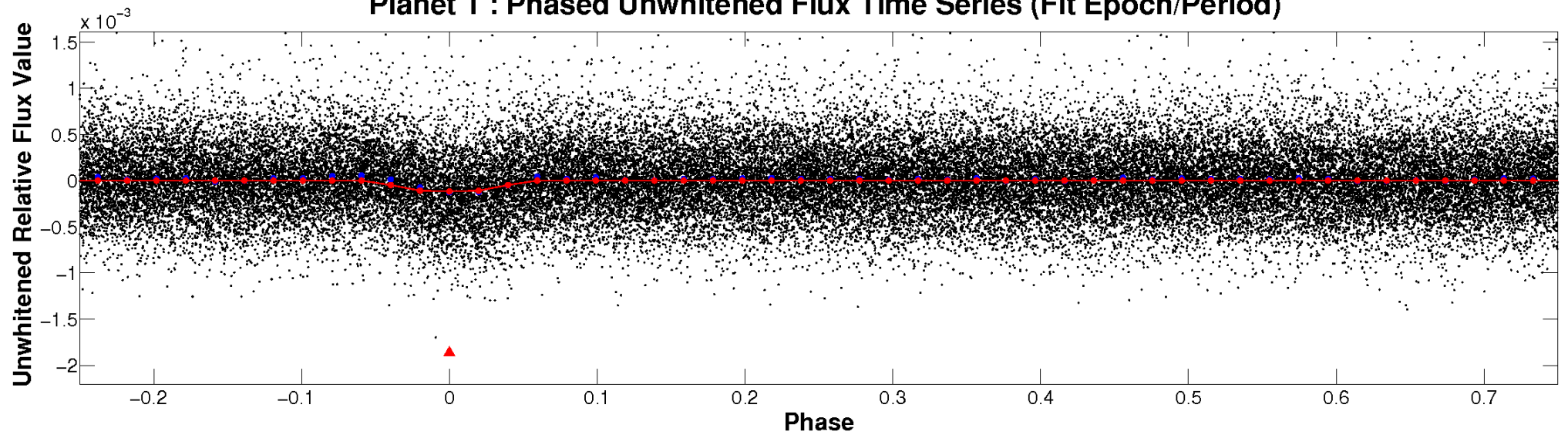
ALT Odd/Even

TCE 010676923-01

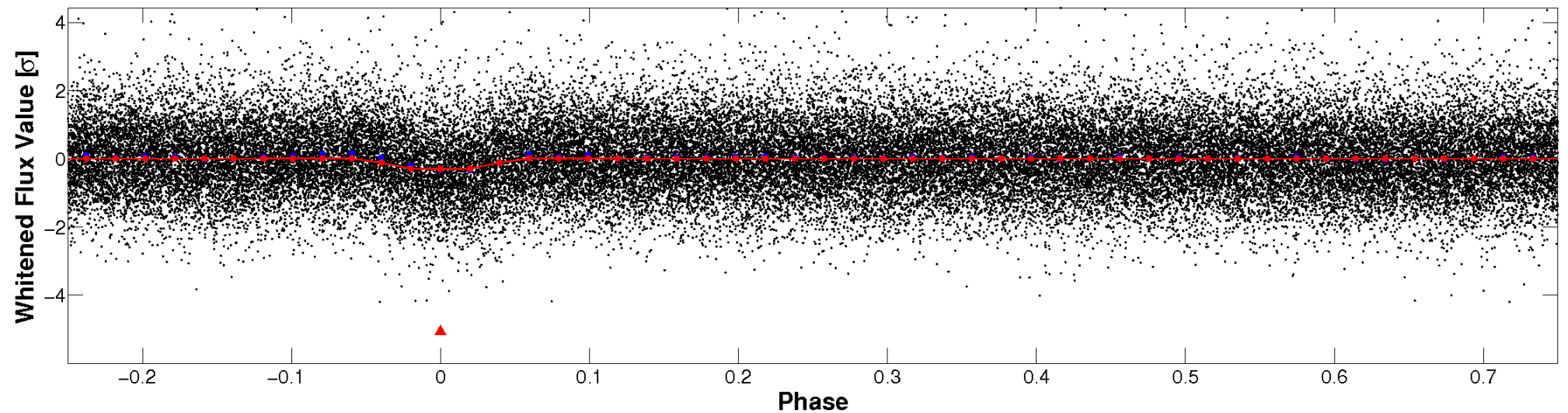


Non-Whitened Vs. Whitened Light Curve

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

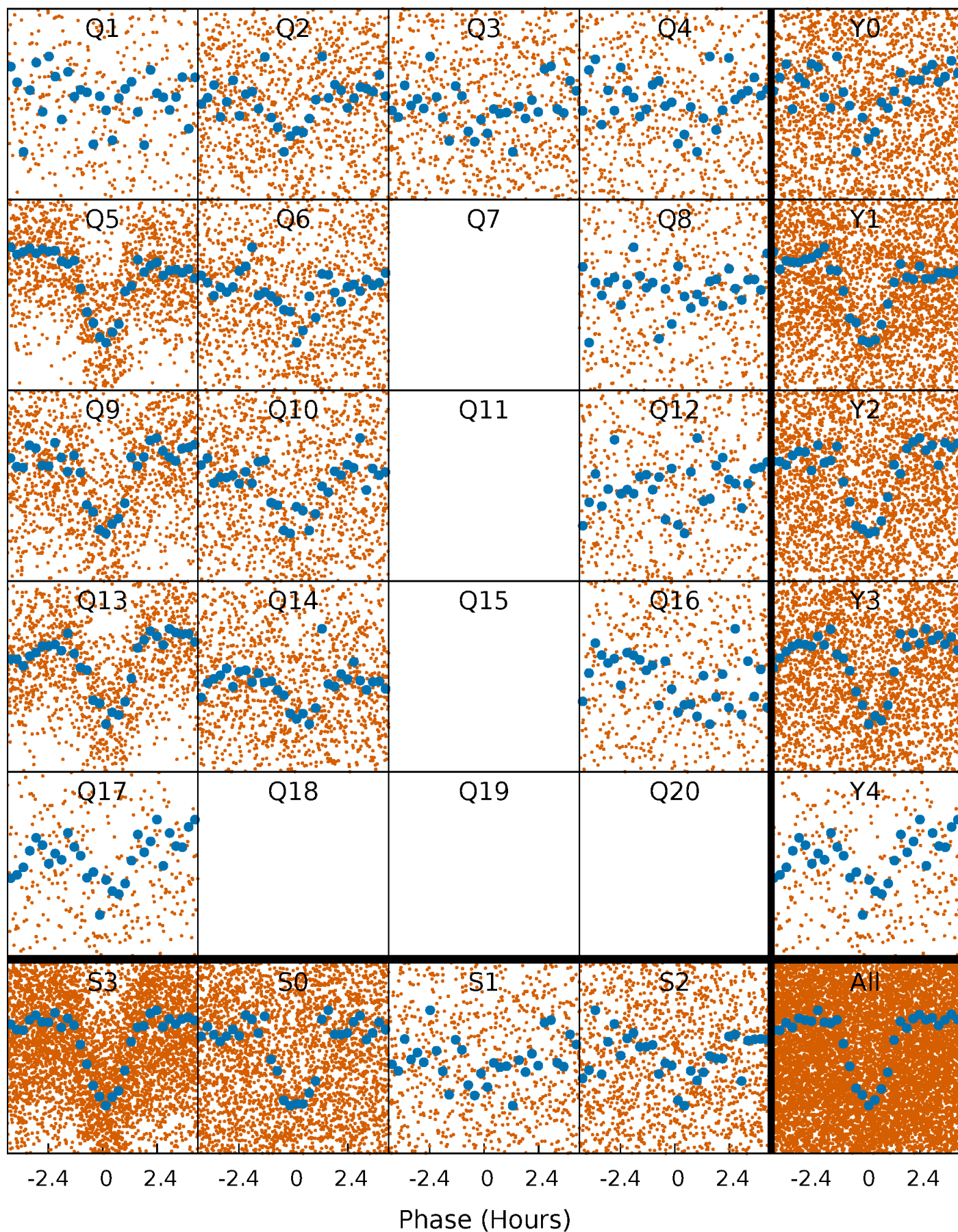


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



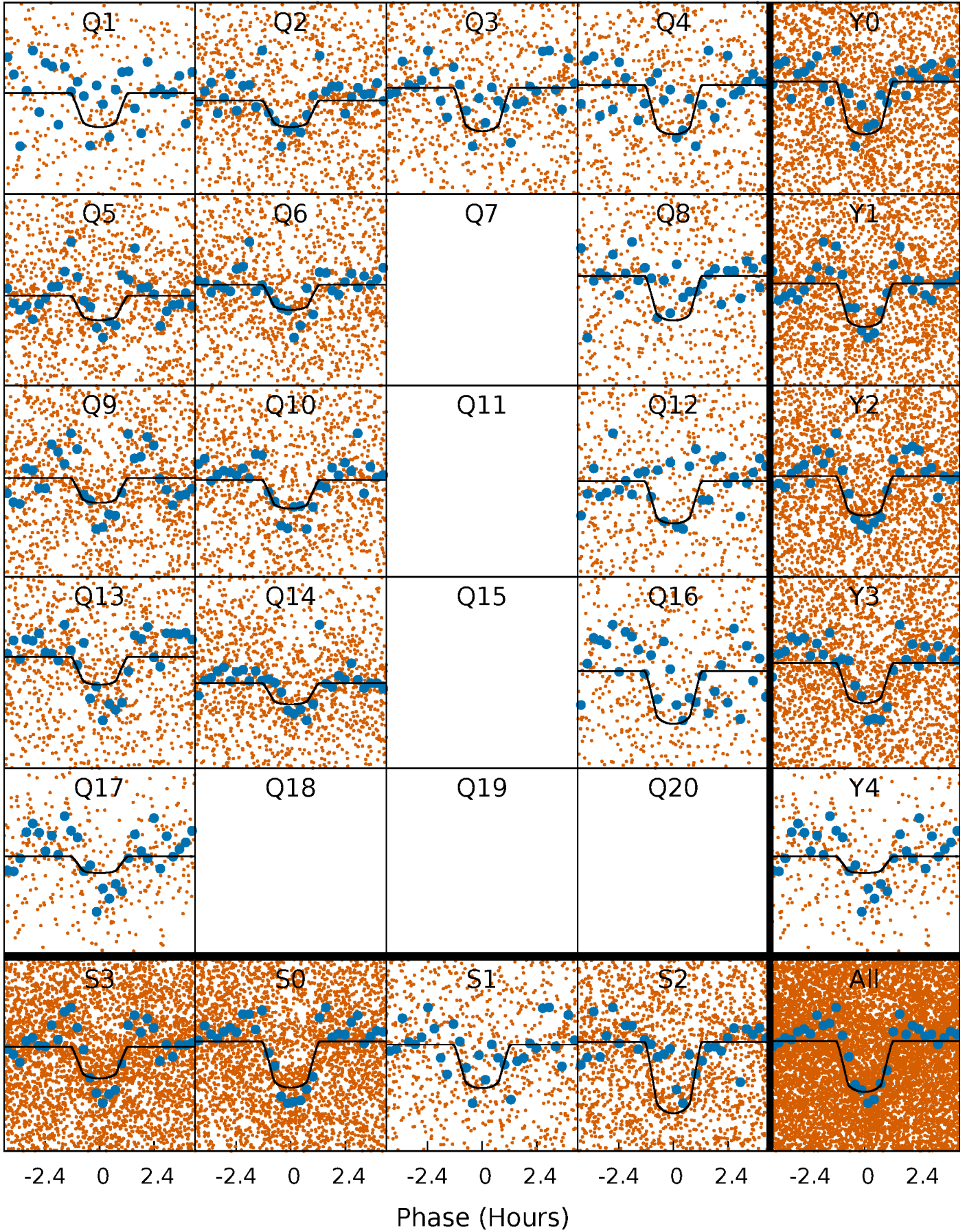
PDC Quarter-Phased Transit Curves

TCE 010676923-01 P= 1.031086 Days $T_0=131.877885$ (BKJD)



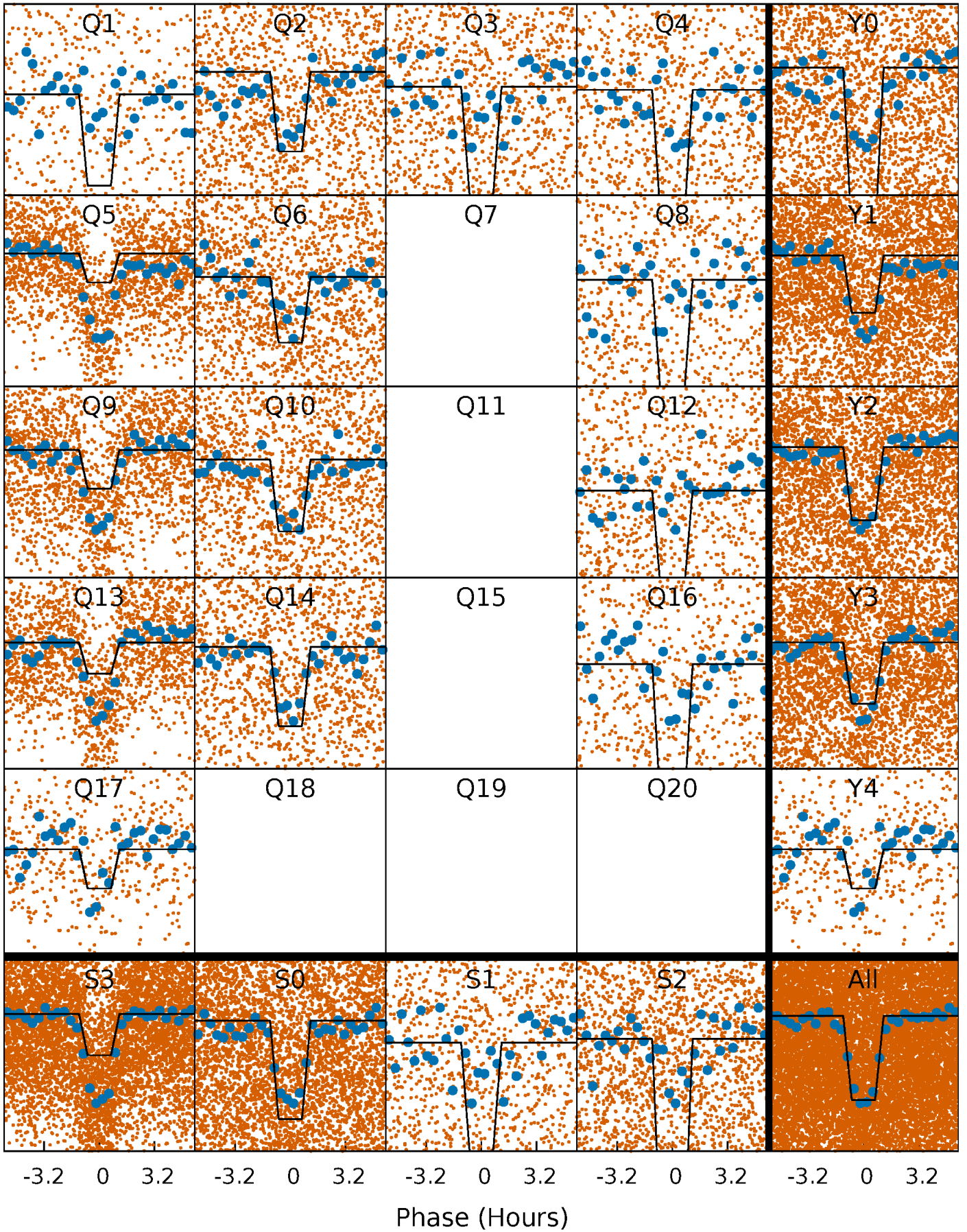
DV Quarter-Phased Transit Curves

TCE 010676923-01 P= 1.031086 Days $T_0=131.877885$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

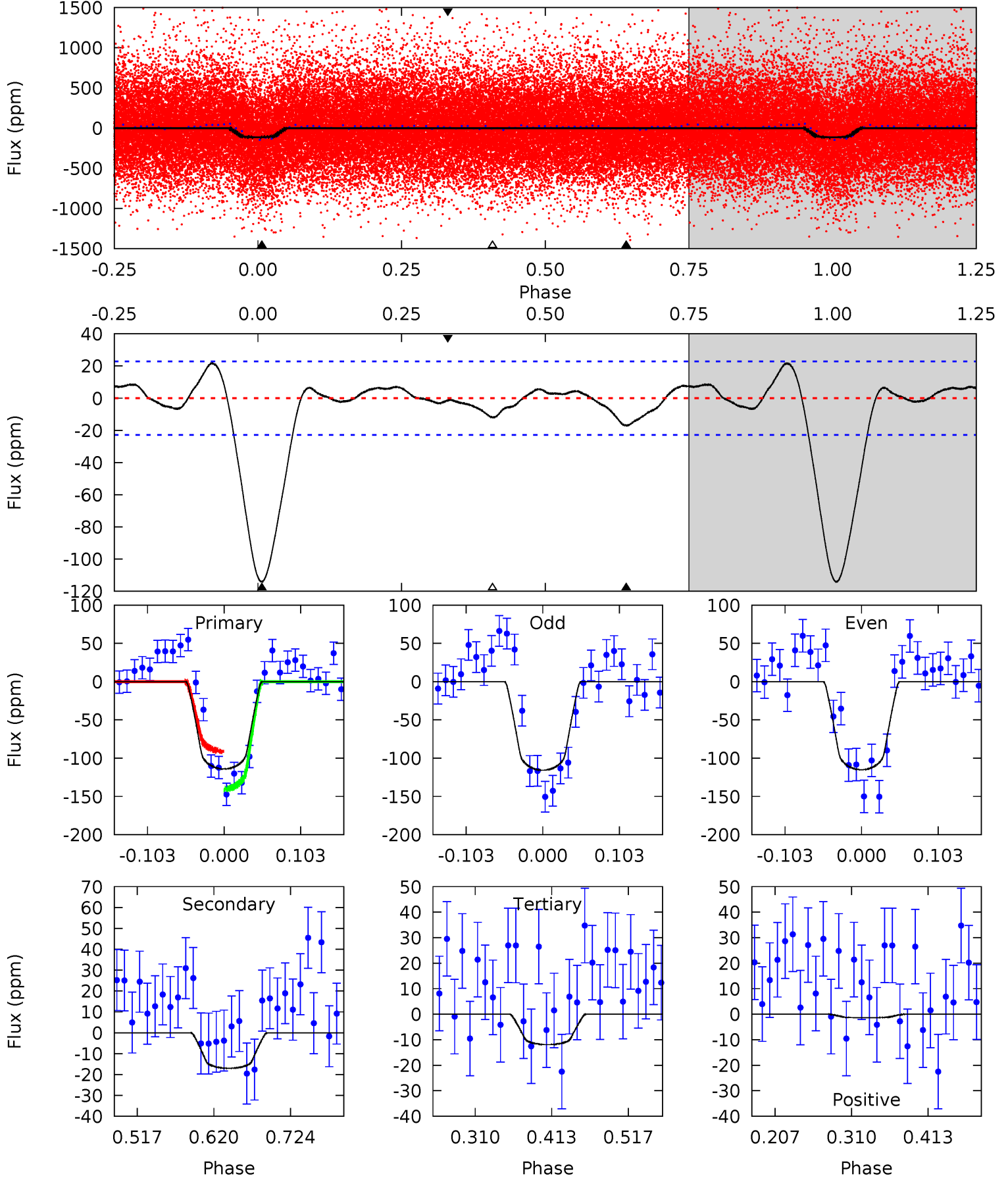
TCE 010676923-01 P= 1.031100 Days $T_0=131.874919$ (BKJD)



DV Model-Shift Uniqueness Test

010676923-01, P = 1.031086 Days, E = 130.846799 Days

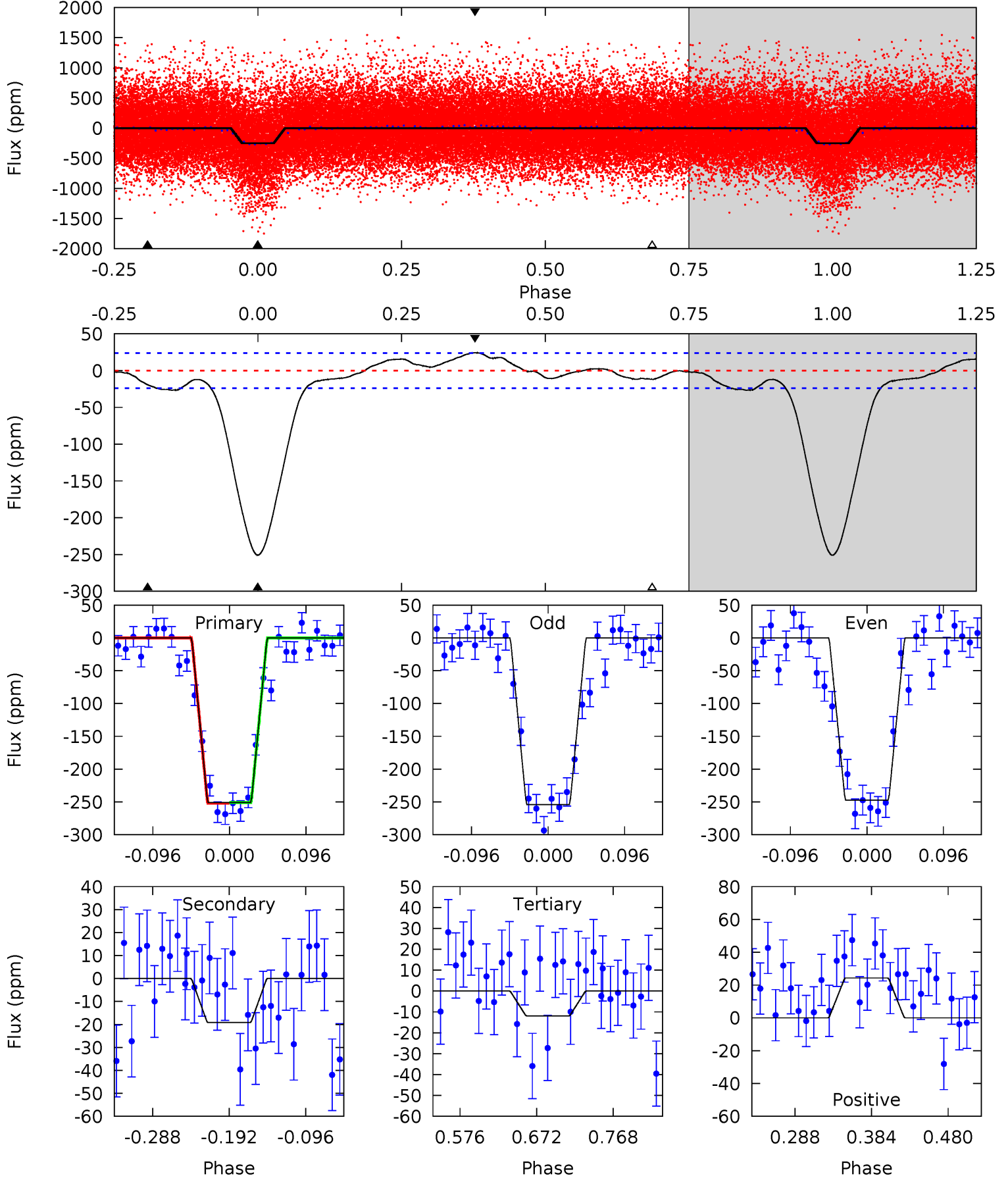
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
22.8	3.40	2.38	-0.28	4.56	1.63	1.04	20.4	23.1	1.01	3.67	0.07	0.97	0.16	4.95



Alt Model-Shift Uniqueness Test

010676923-01, P = 1.031100 Days, E = 130.843819 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
47.9	3.66	2.28	4.64	4.57	1.66	2.06	45.6	43.2	1.38	-0.98	0.64	1.08	0.09	0.10



Stellar Parameters For KIC 010676923

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6371^{+176}_{-220}	$4.426^{+0.056}_{-0.224}$	$-0.180^{+0.250}_{-0.300}$	$1.072^{+0.363}_{-0.121}$	$1.117^{+0.169}_{-0.154}$	$1.277^{+0.388}_{-0.702}$
	+3%/-3%	+1%/-5%	+139%/-167%	+34%/-11%	+15%/-14%	+30%/-55%
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 010676923-01 / KOI 1297.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-17 ± 5	$1.43^{+0.48}_{-0.49}$	2886^{+224}_{-150}	3913^{+852}_{-498}	$1.855^{+2.807}_{-0.886}$
Alt.	-19 ± 5	$1.95^{+0.62}_{-0.54}$	2893^{+225}_{-147}	3564^{+502}_{-487}	$1.182^{+1.072}_{-0.565}$

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 $A_{\text{obs}} \gg 1.0$

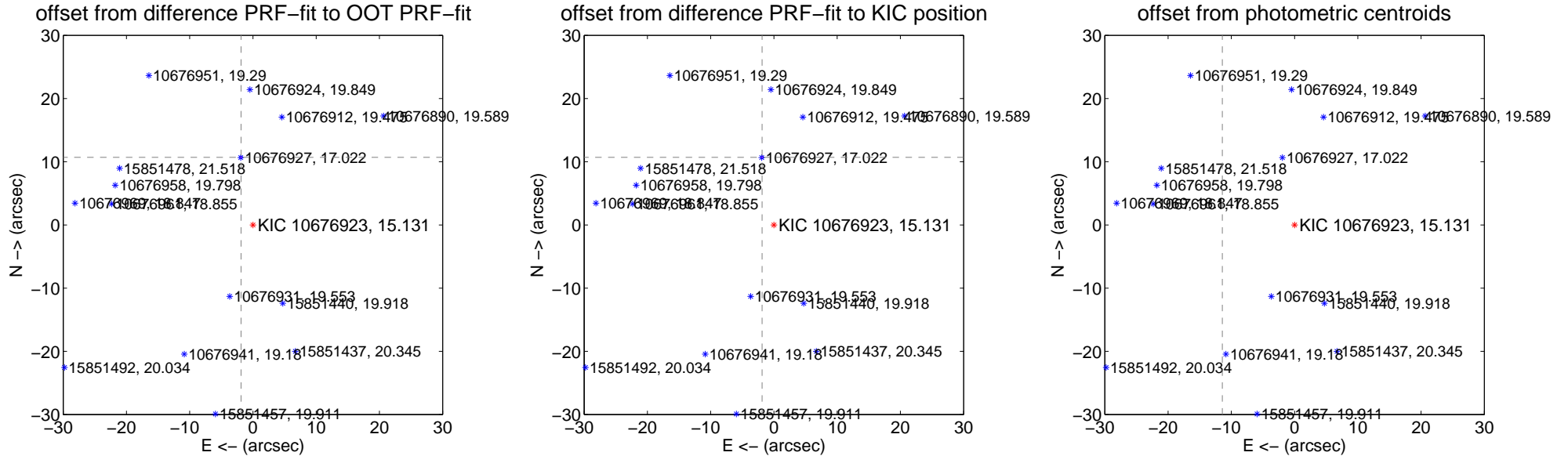
DV Centroid Data

Supplemental centroid analysis for 010676923-01. Kepler magnitude: 15.13. Transit SNR 16.97

There are 6 quarters with good PRF difference image offsets

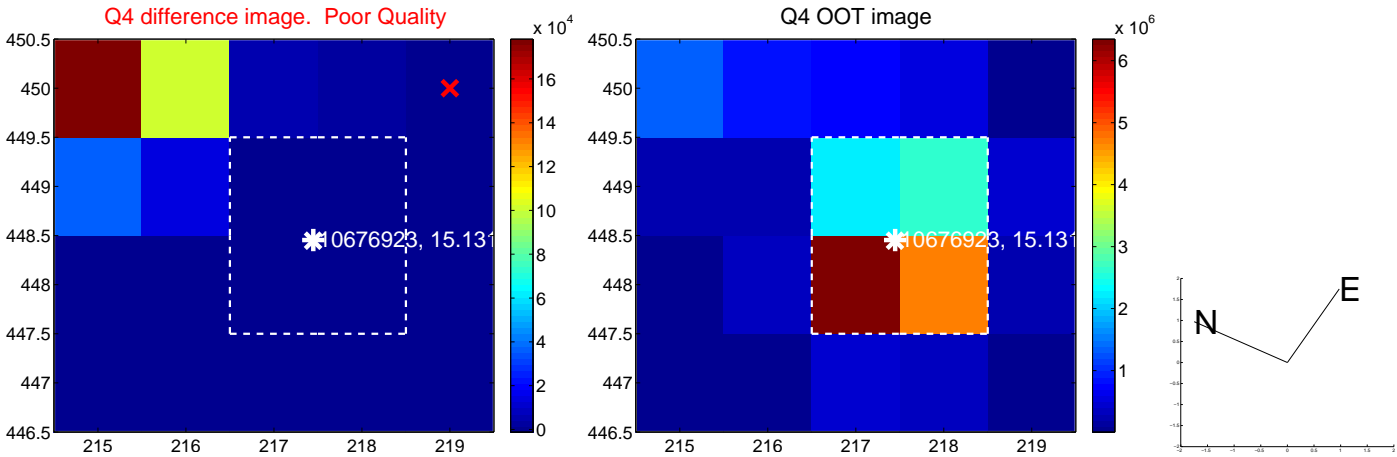
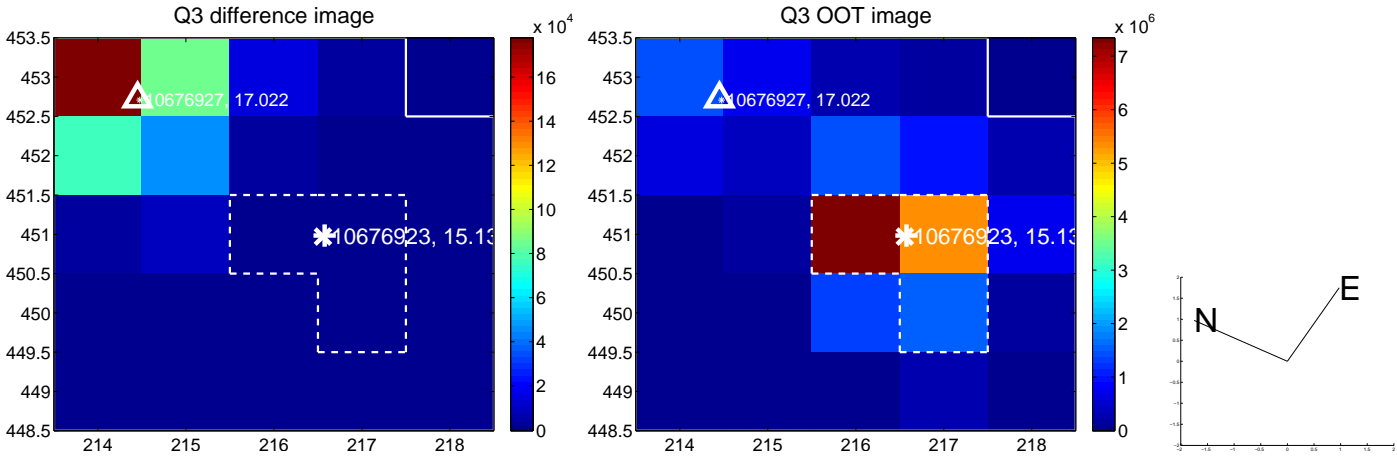
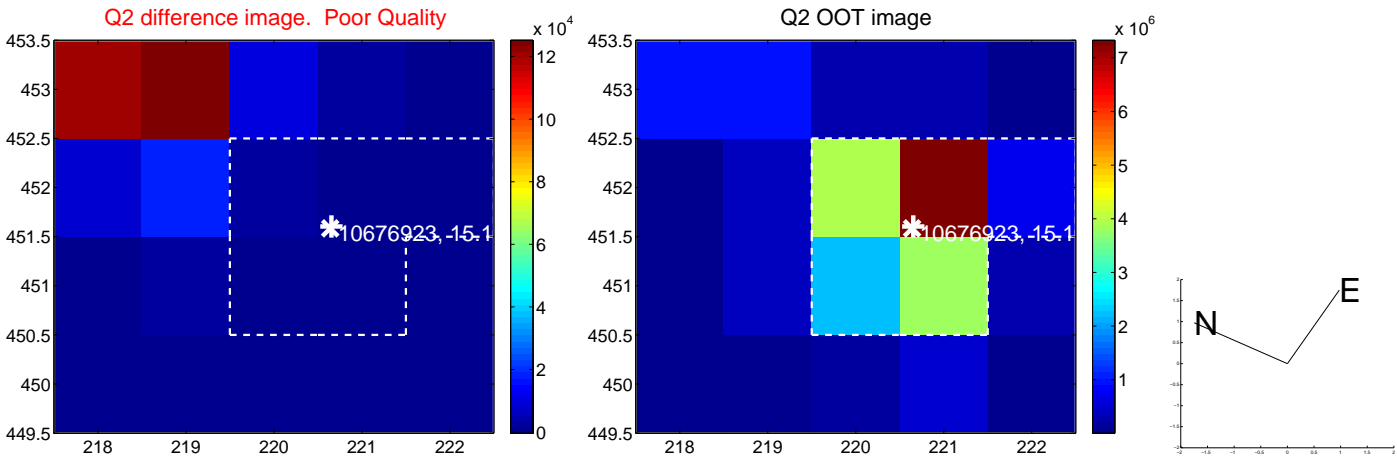
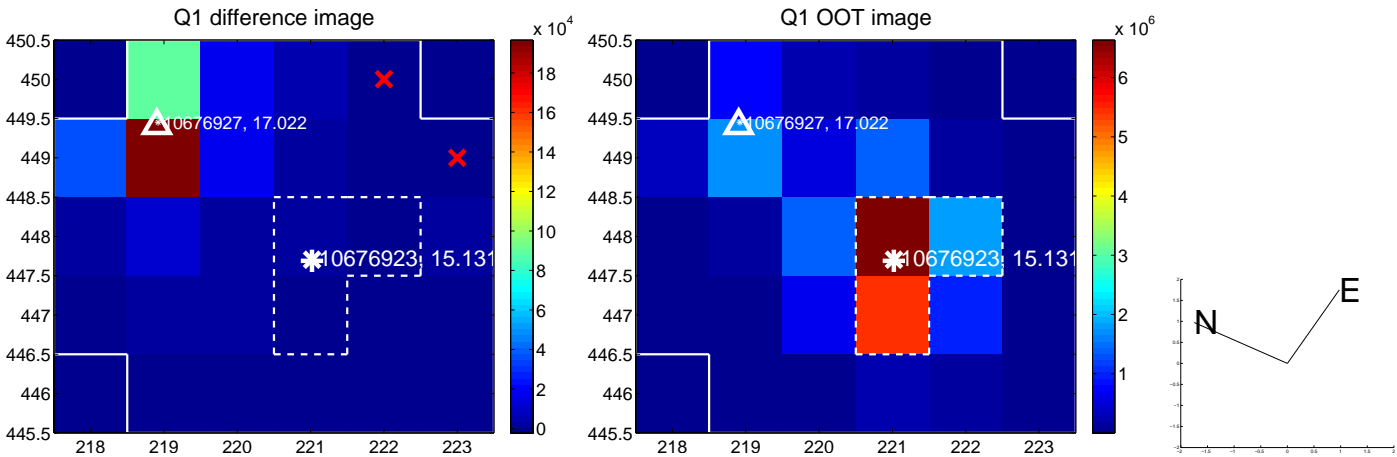
The direct PRF centroid is offset from the target star catalog position by about 0.02 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	10.867 \pm 0.068	160.93	1.881 \pm 0.067	10.703 \pm 0.067
PRF-fit source offset from KIC position	10.864 \pm 0.068	159.94	1.867 \pm 0.071	10.702 \pm 0.068
photometric centroid source offset	71.47 \pm 1.37	52.04	11.42 \pm 0.86	70.55 \pm 1.38

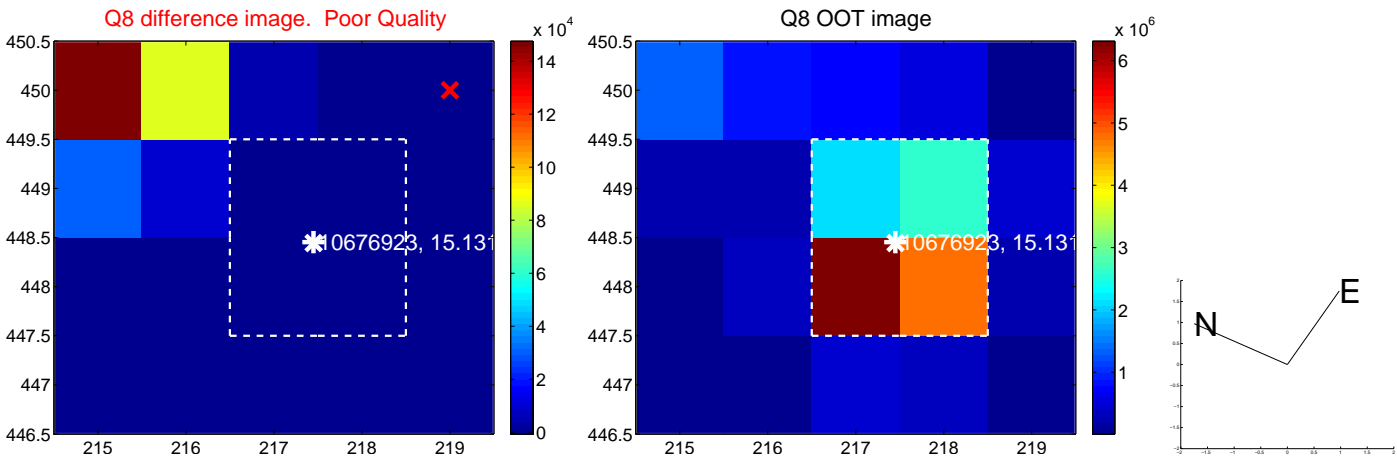
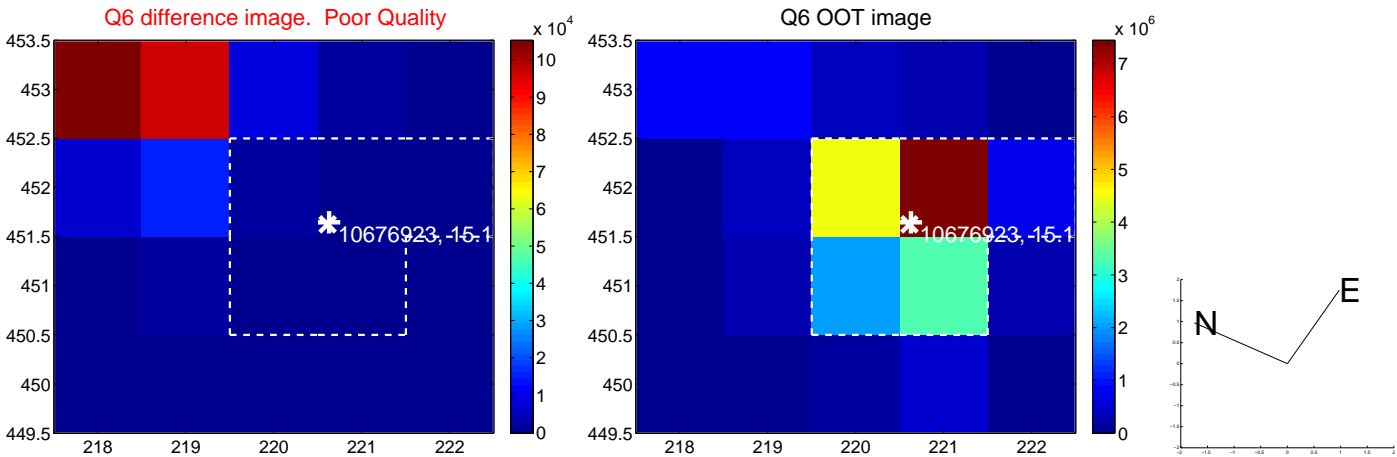
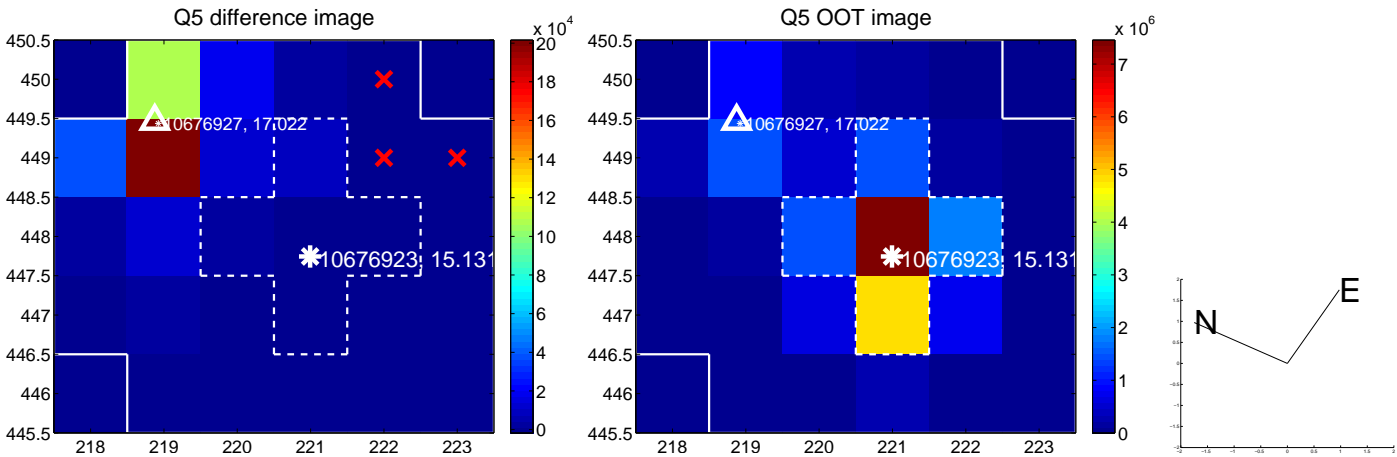


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

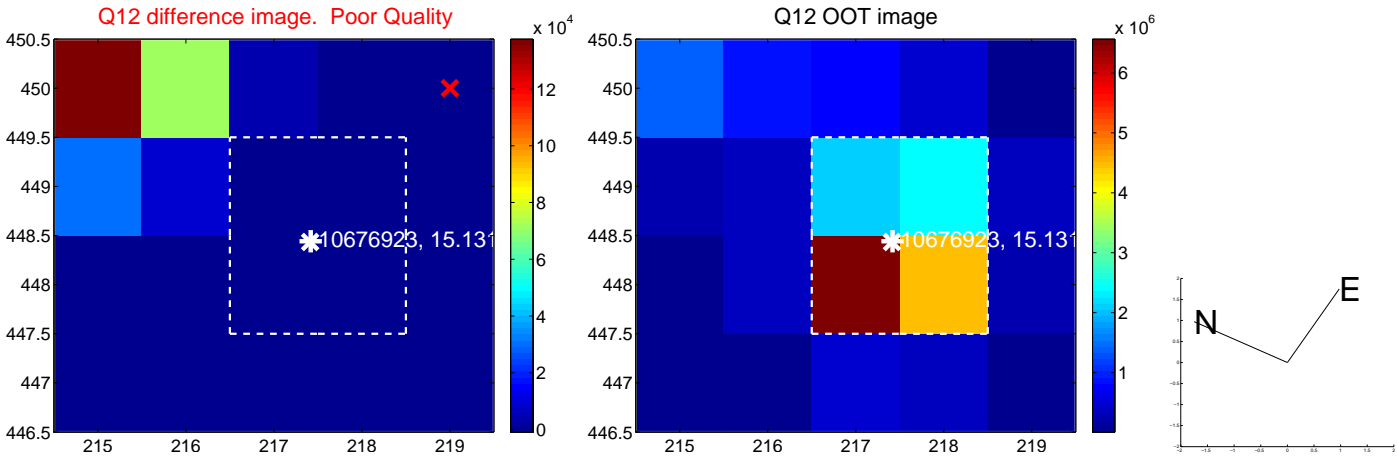
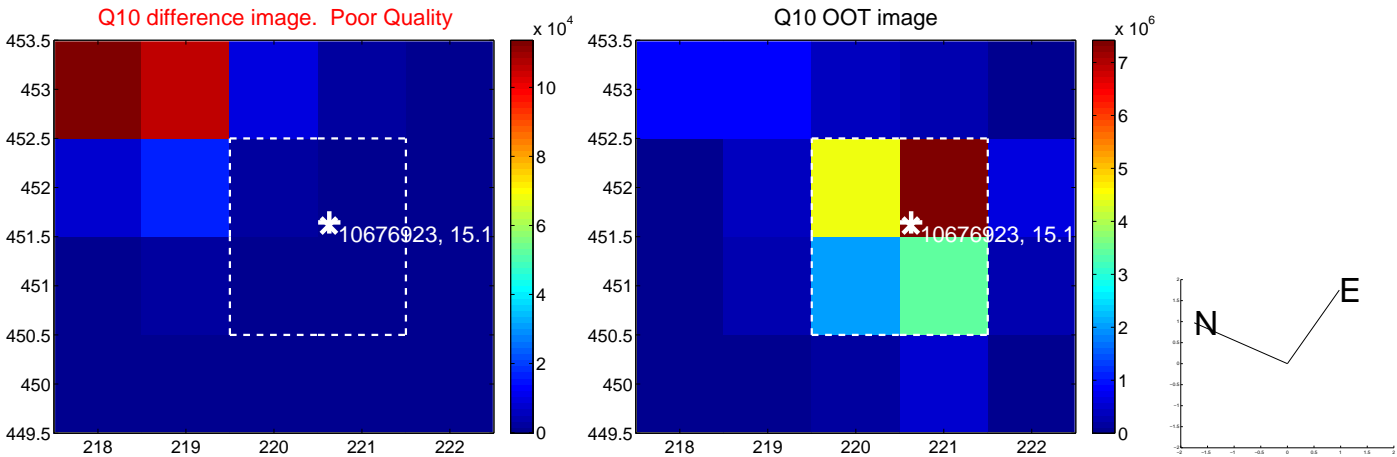
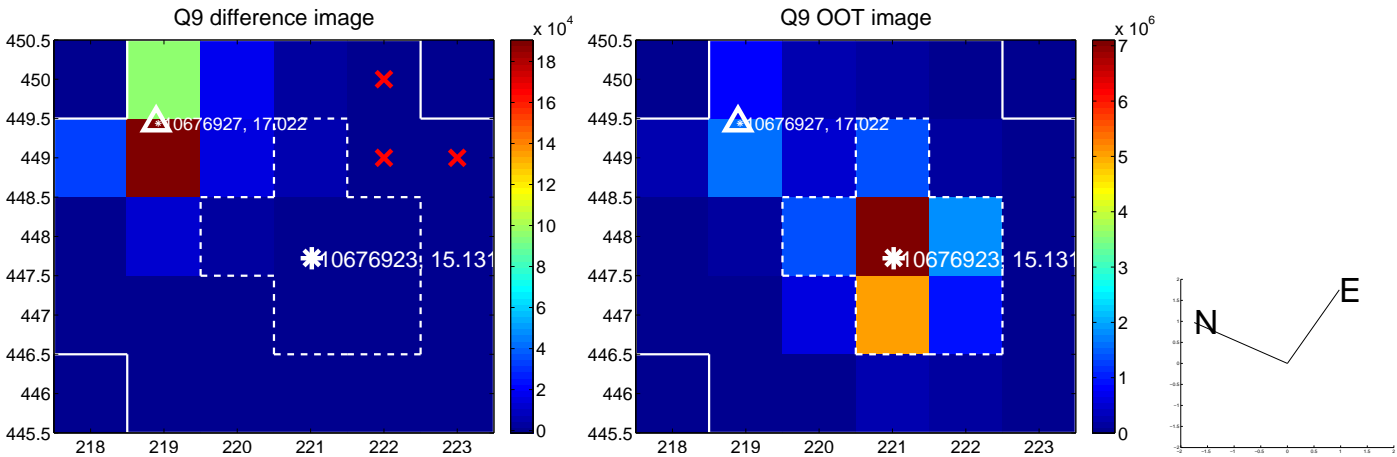
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



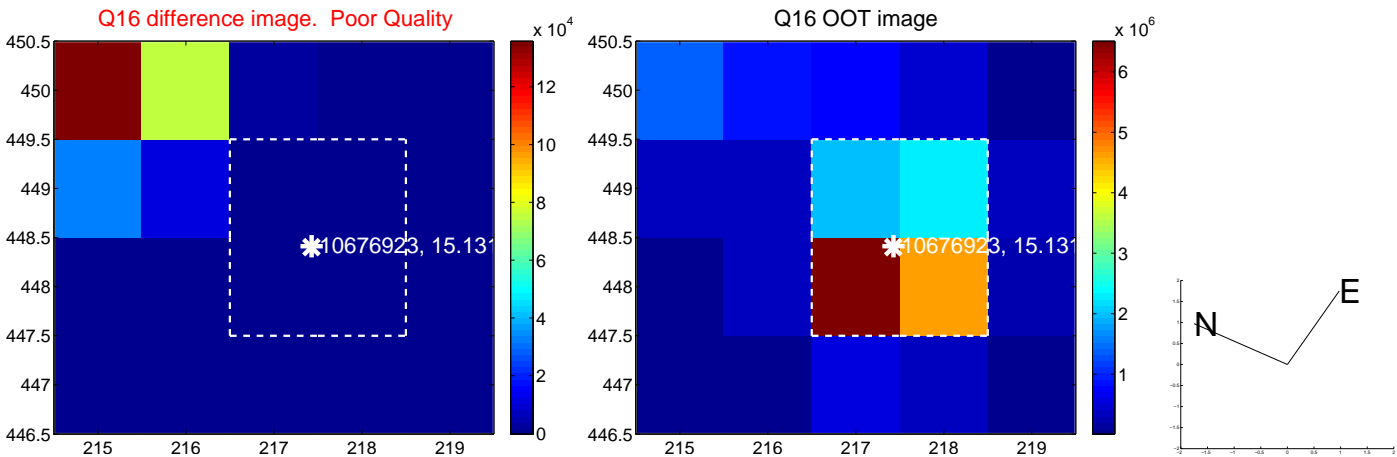
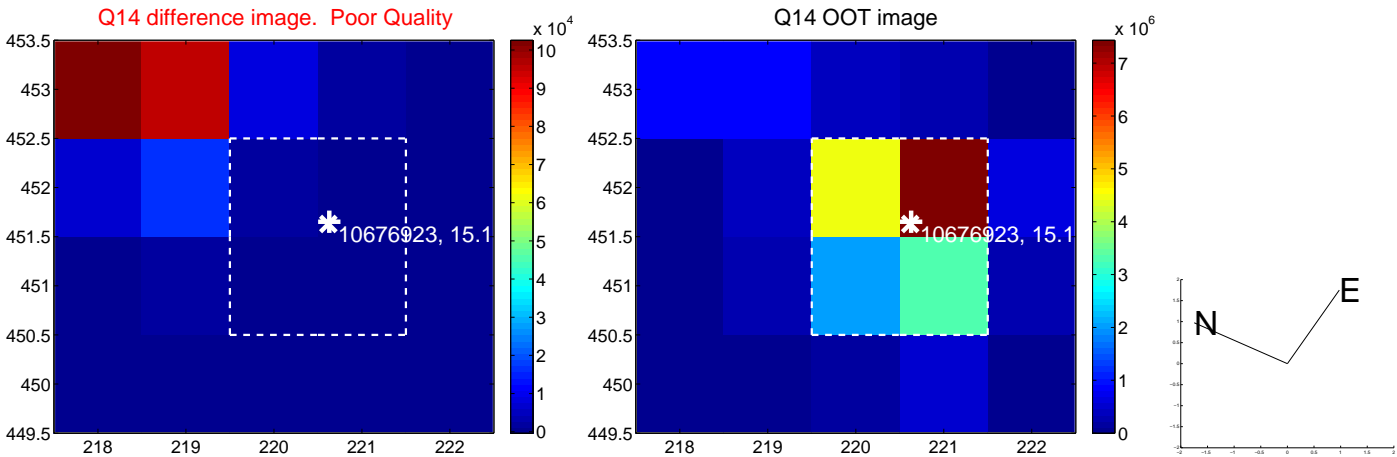
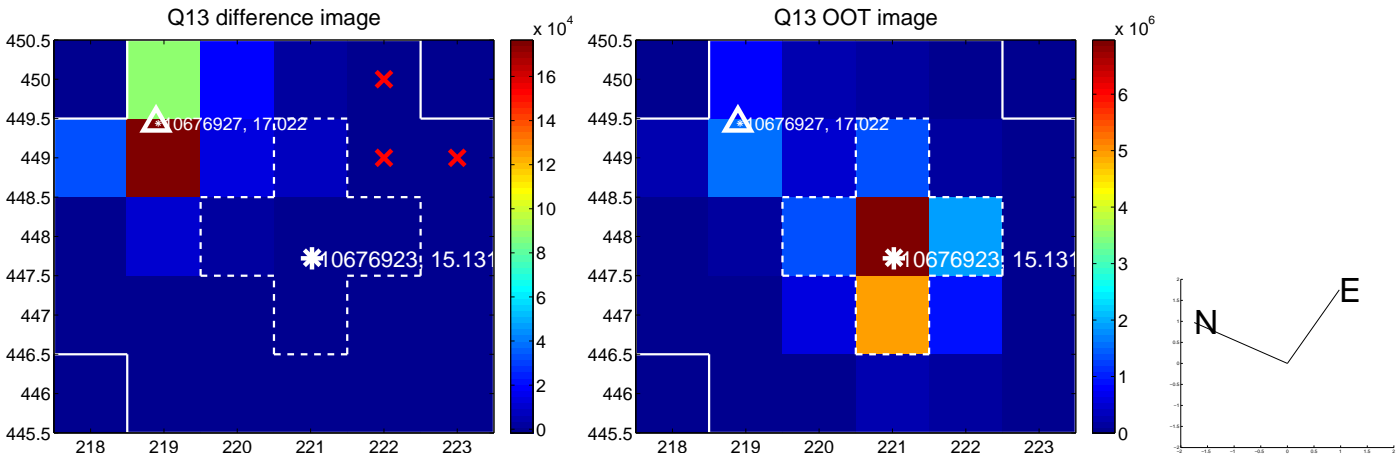
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



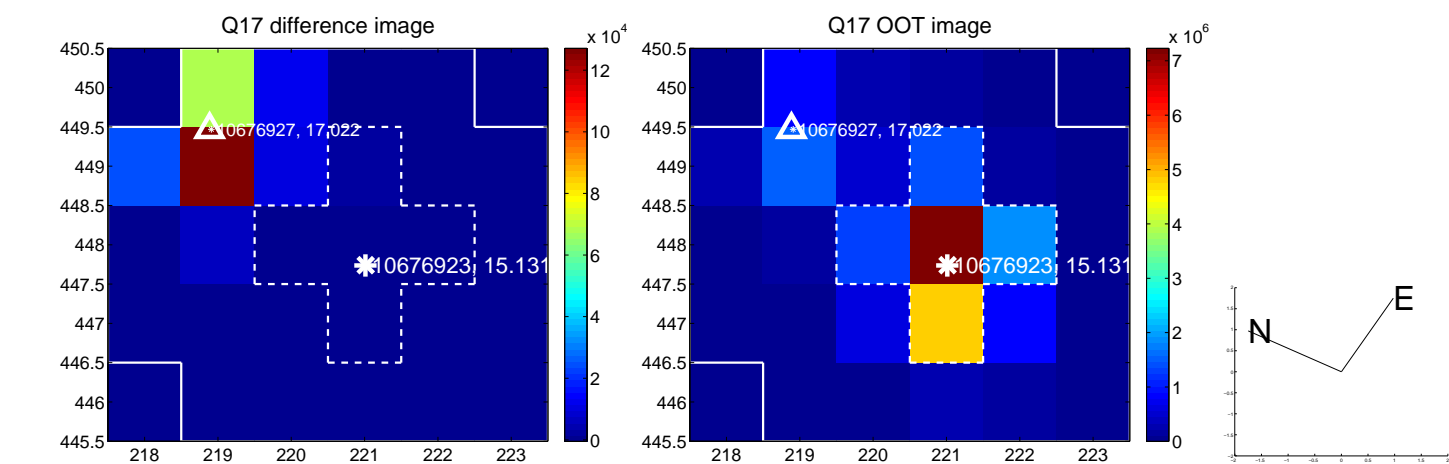
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



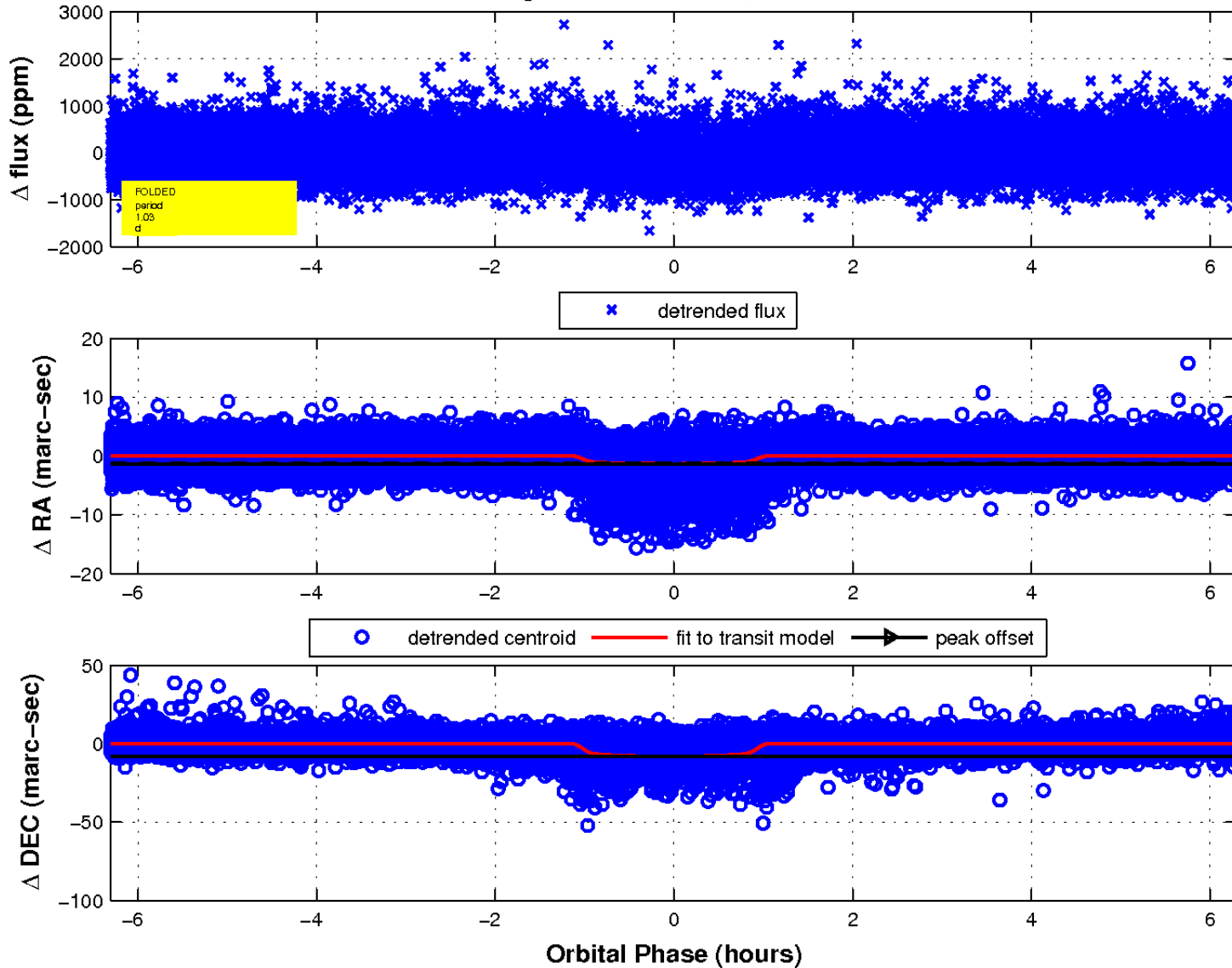
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



fluxWeightedCentroids, Planet 1 of 1



UKIRT Image

Declination

