

KIC 008176072

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})
008176072-01	OBS	No	368.904992	233.833671	1244.4	32.492	9.8	12.3	0.89	5907	5.64	0.87

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008176072-01	OBS	FP	0.00	1	0	0	1	INDIV_TRANS_MARSHALL_SKYE—LPP_DV—ALL_TRANS_CHASES—CENT_FEW_DIFFS—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.

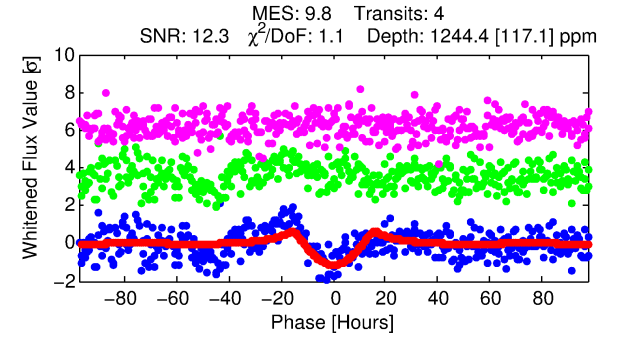
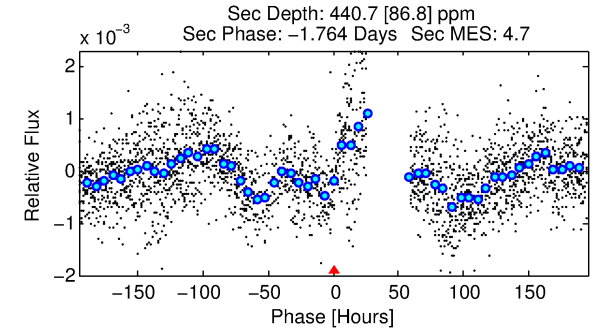
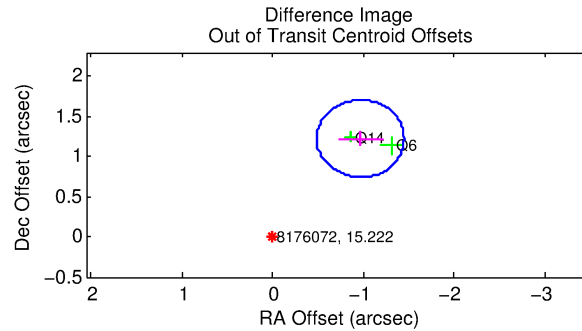
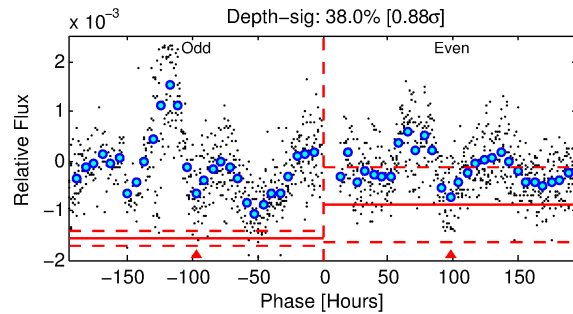
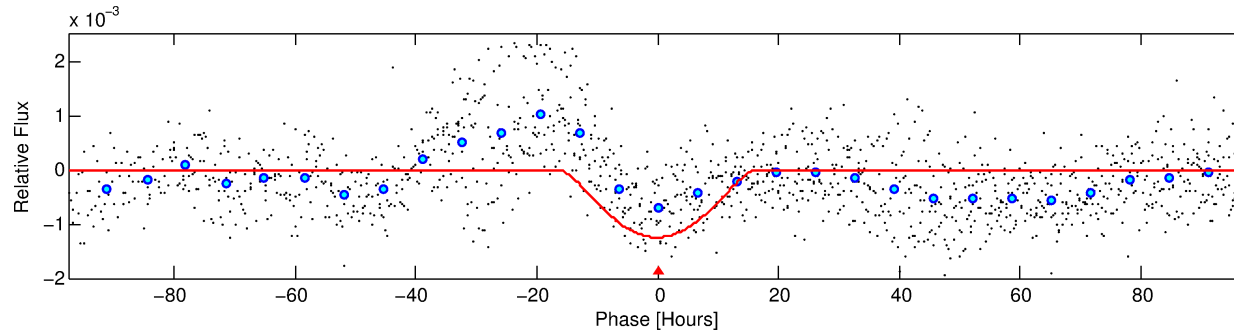
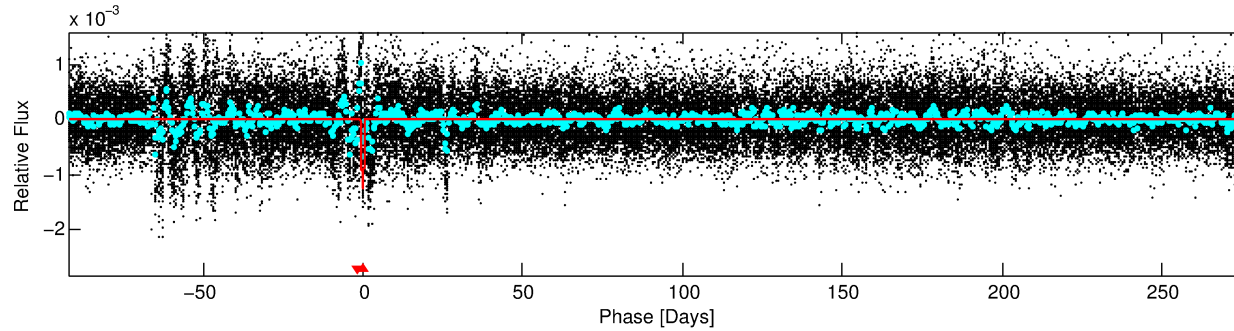
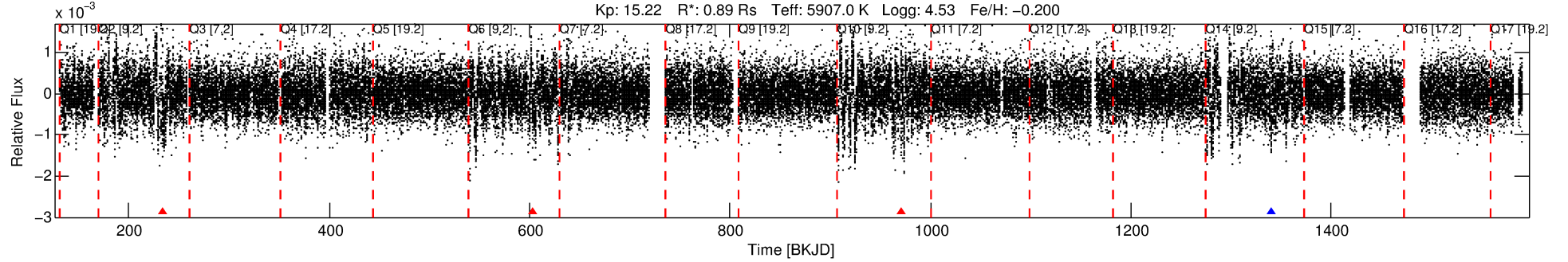
Ephemeris Match Information For 008176072-01

TCE (1)	KIC	Parent (2)	Parent KIC	$P_1:P_2$	Dist (\prime)	Δ Row	Δ Col	m_2	m_1	D_2/D_1	Mechanism	Flag	σ_P	σ_T
008176072-01	8176072	008176161-01	8176161	1:1	86.7	-21	-2	14.88	15.22	0.61	Col-Anomaly	1	4.70	0.03

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: 8176072 Candidate: 1 of 1 Period: 368.905 d



DV Fit Results:

Period = 368.90499 [0.02243] d
Epoch = 233.8337 [0.0399] BKJD
Rp/R* = 0.0581 [0.0756]
a/R* = 31.43 [10.32]
b = 0.99 [0.12]
Seff = 0.87 [0.35]
Teq = 246 [24] K
Rp = 5.64 [7.53] Re
a = 0.9960 [0.2586] AU
Ag = 7562.24 [19920.95] [0.38 σ]
Teffp = 3550 [2316] K [1.43 σ]

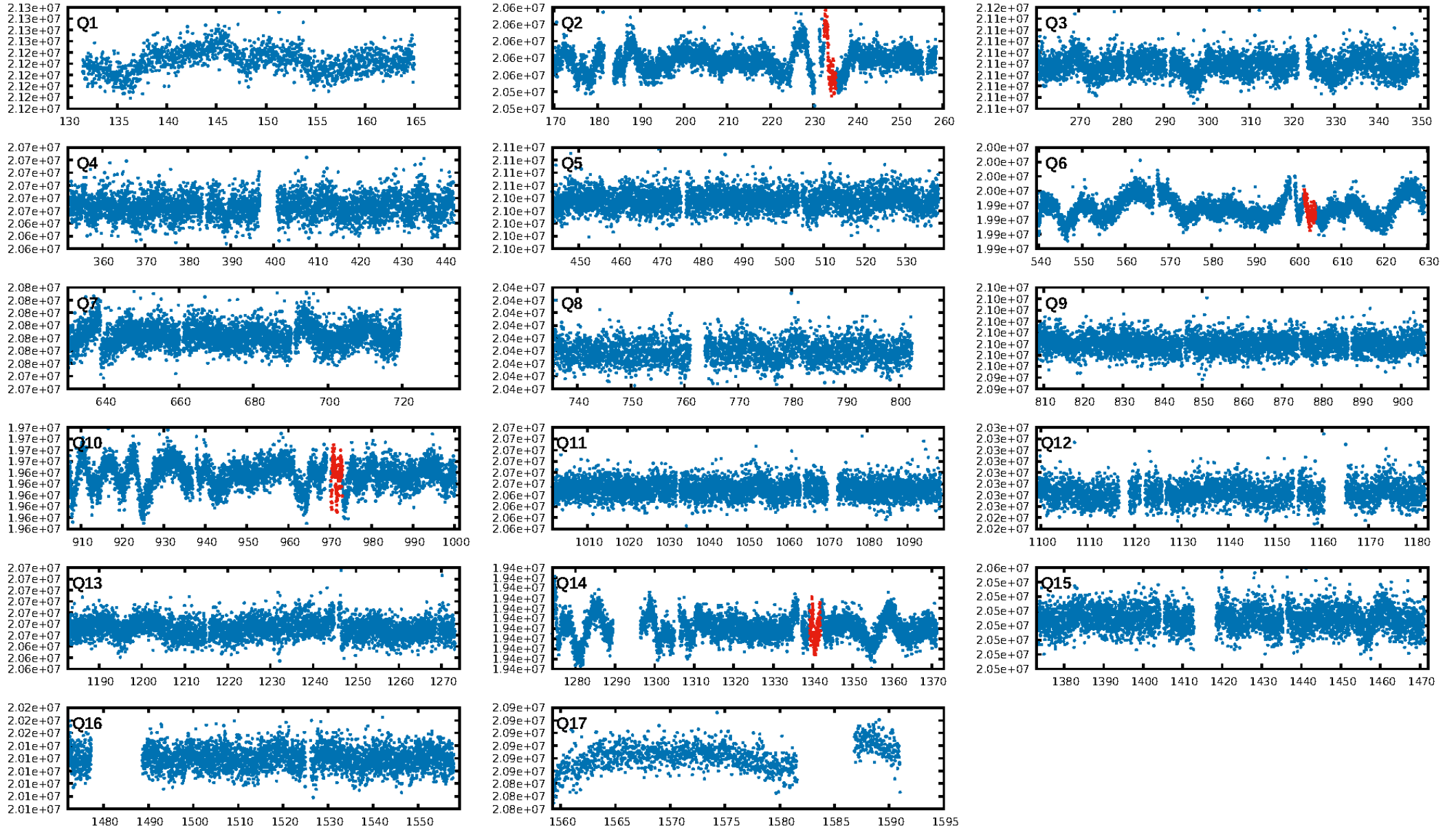
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: 6.3%
ModelChiSquareGof-sig: 99.1%
Bootstrap-pfa: 4.34e-12
RollingBand-fgt: 0.25 [1/4]
GhostDiagnostic-chr: 1.117
Centroid-sig: 0.0%
Centroid-so: 4.382 arcsec [2.90 σ]
OotOffset-rm: 1.562 arcsec [9.73 σ]
KicOffset-rm: 1.549 arcsec [9.20 σ]
OotOffset-st: 2/0/0/0 [2]
KicOffset-st: 2/0/0/0 [2]
DiffImageQuality-fgm: 0.50 [1/2]
DiffImageOverlap-fno: 1.00 [2/2]

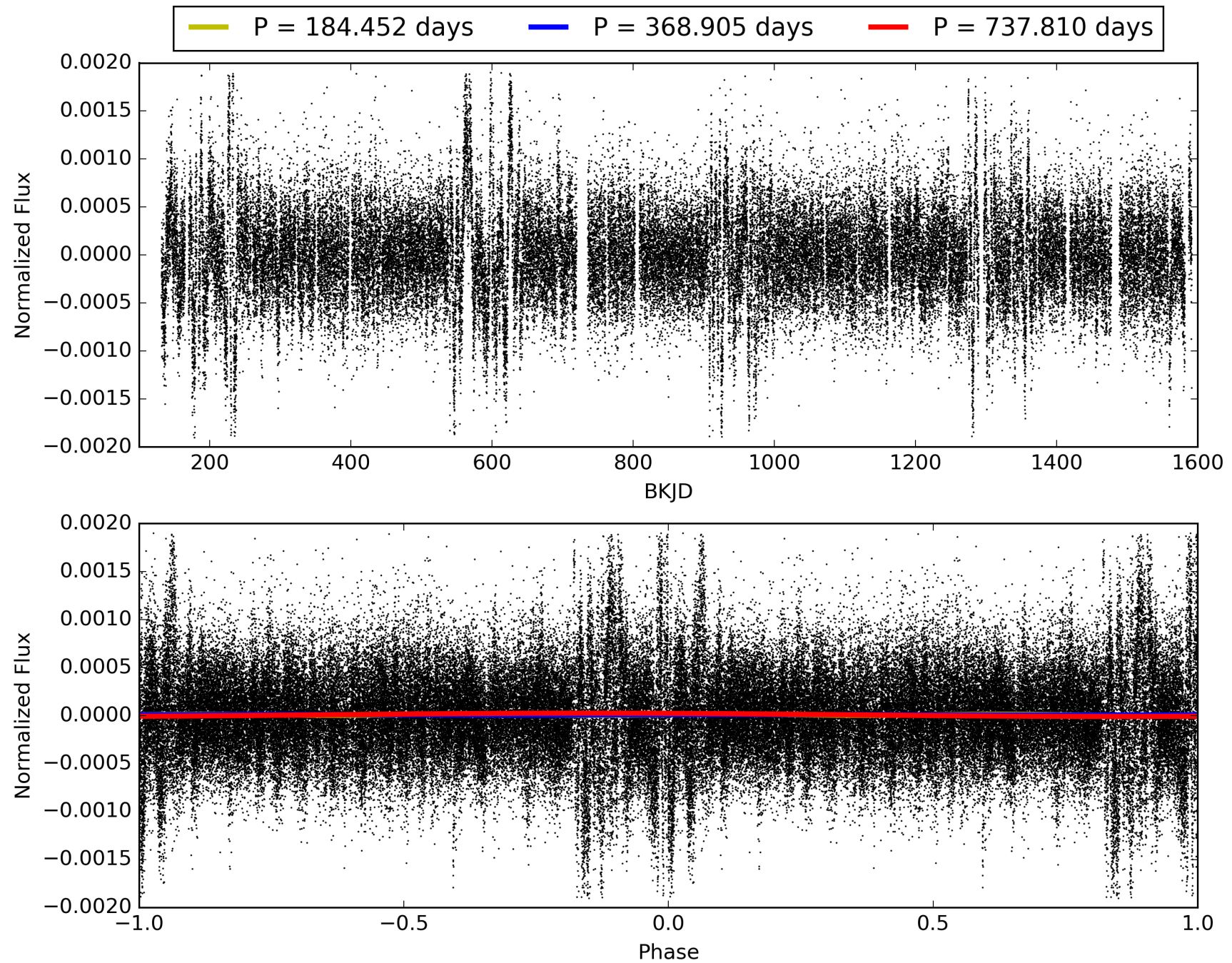
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 02:47:35 Z

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

TCE 008176072-01, PDC Light Curves

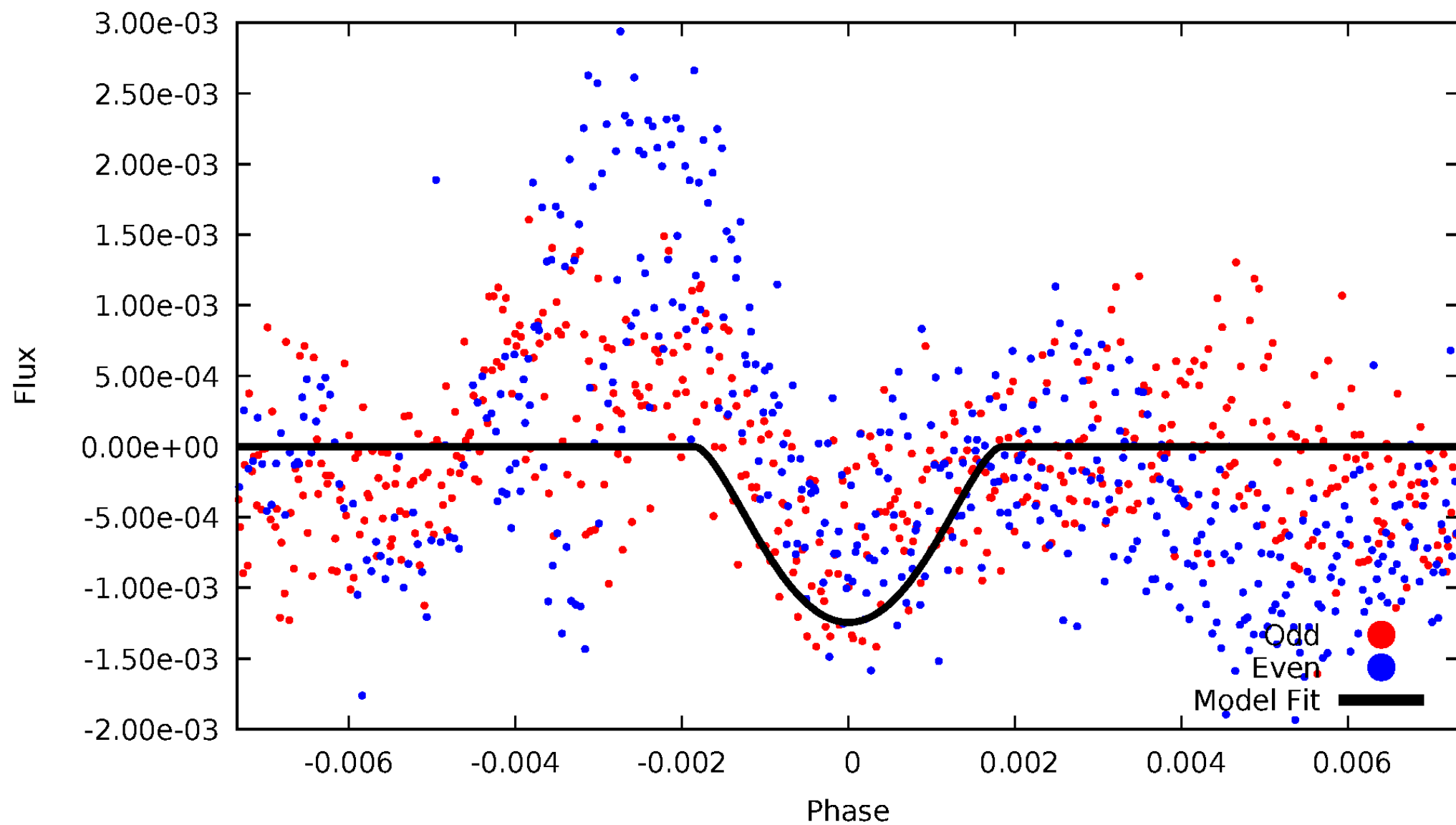


TCE 008176072-01



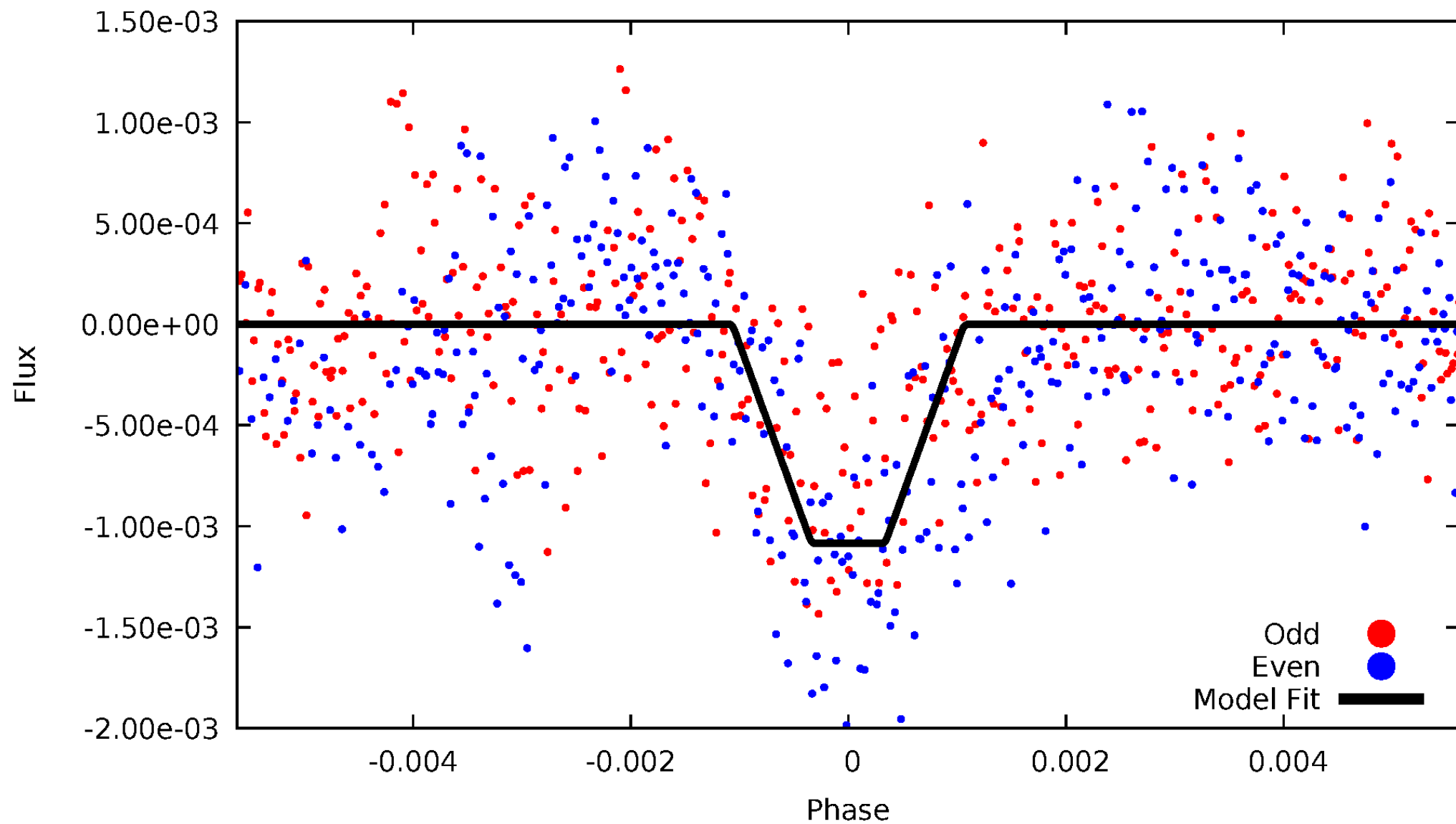
DV Odd/Even

TCE 008176072-01



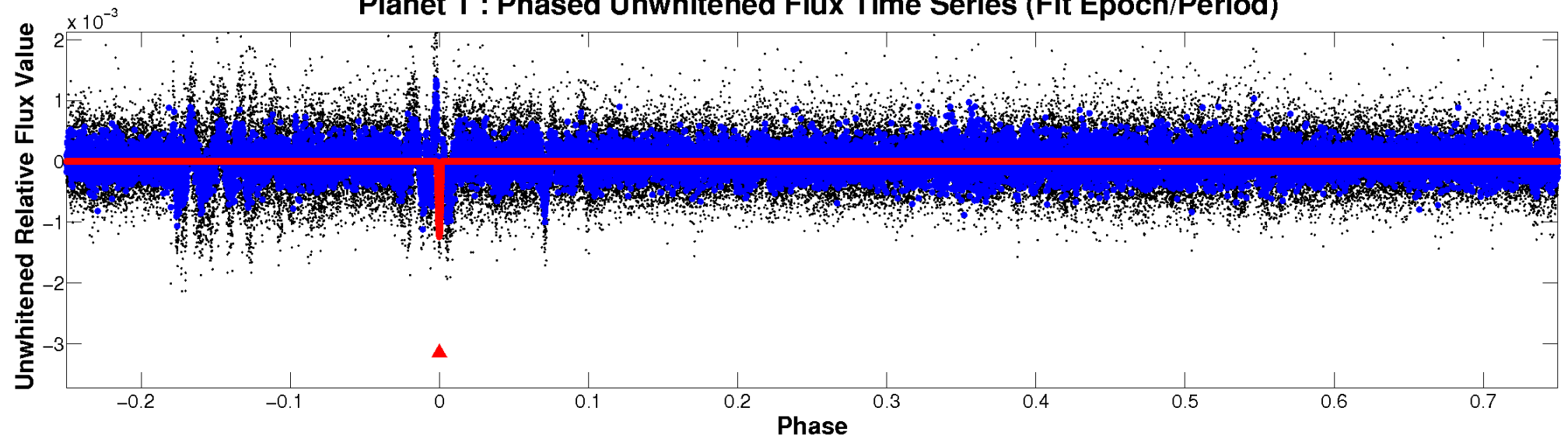
ALT Odd/Even

TCE 008176072-01

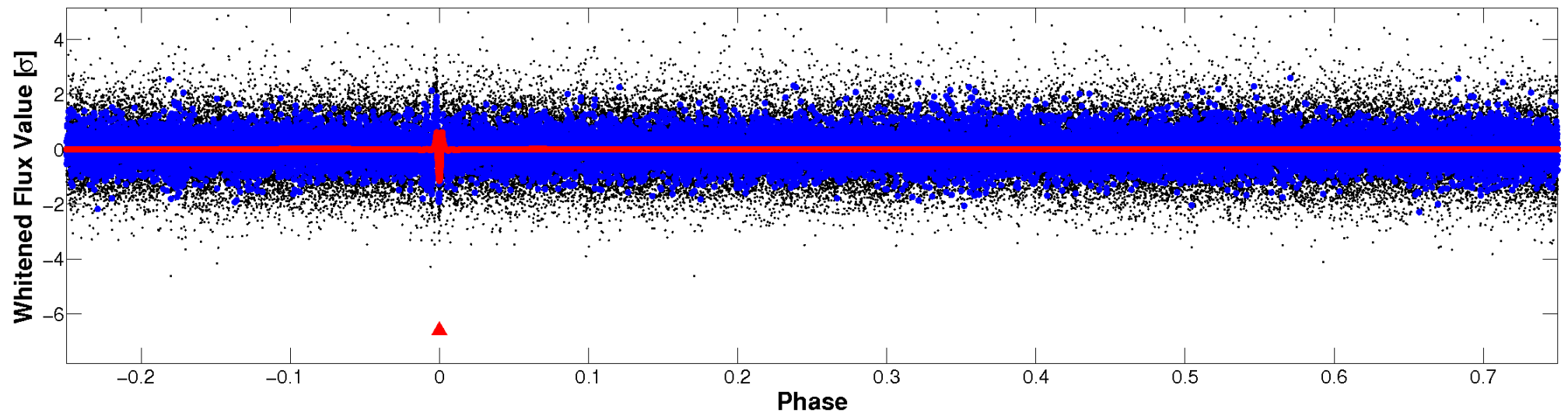


Non-Whitened Vs. Whitened Light Curve

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

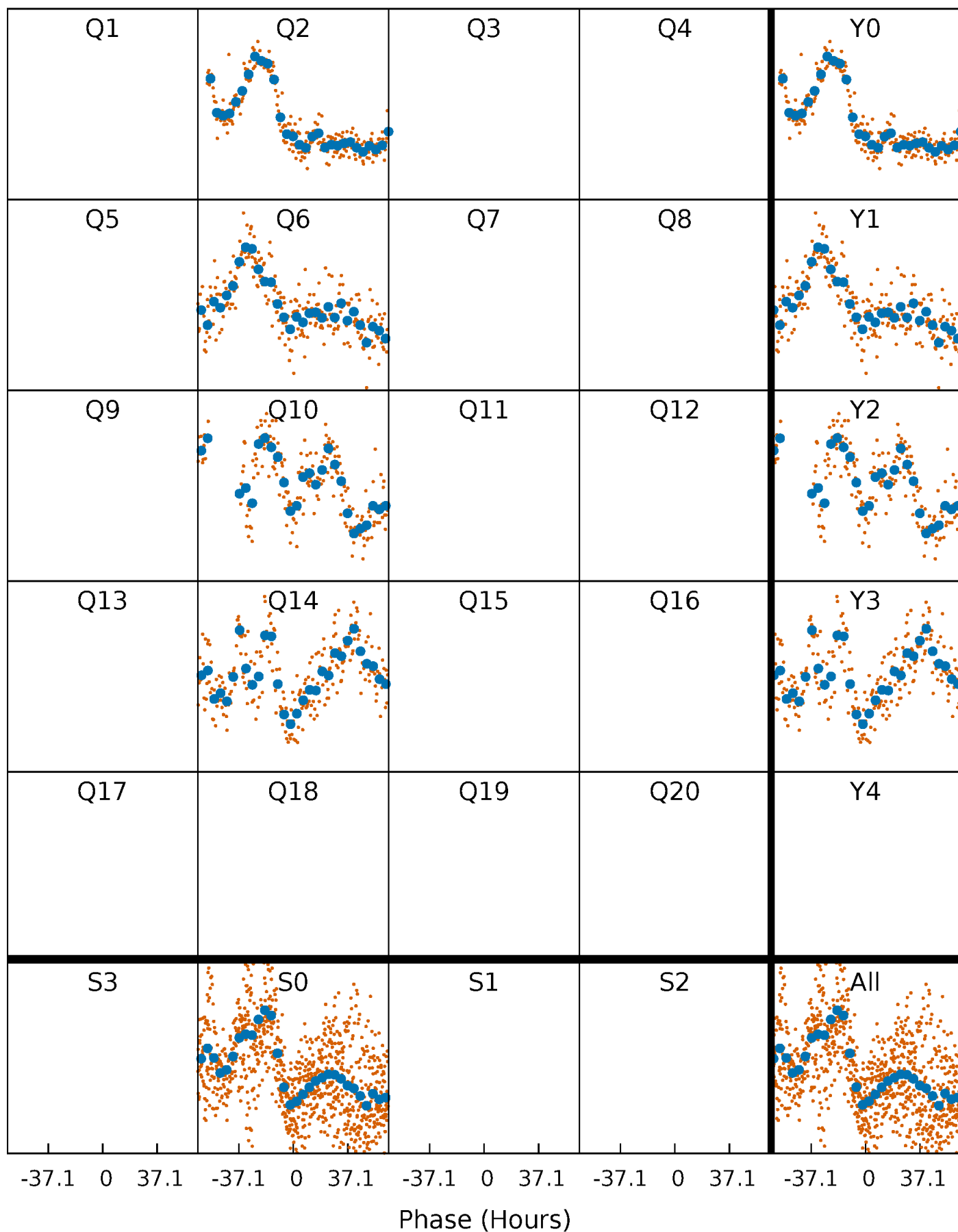


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



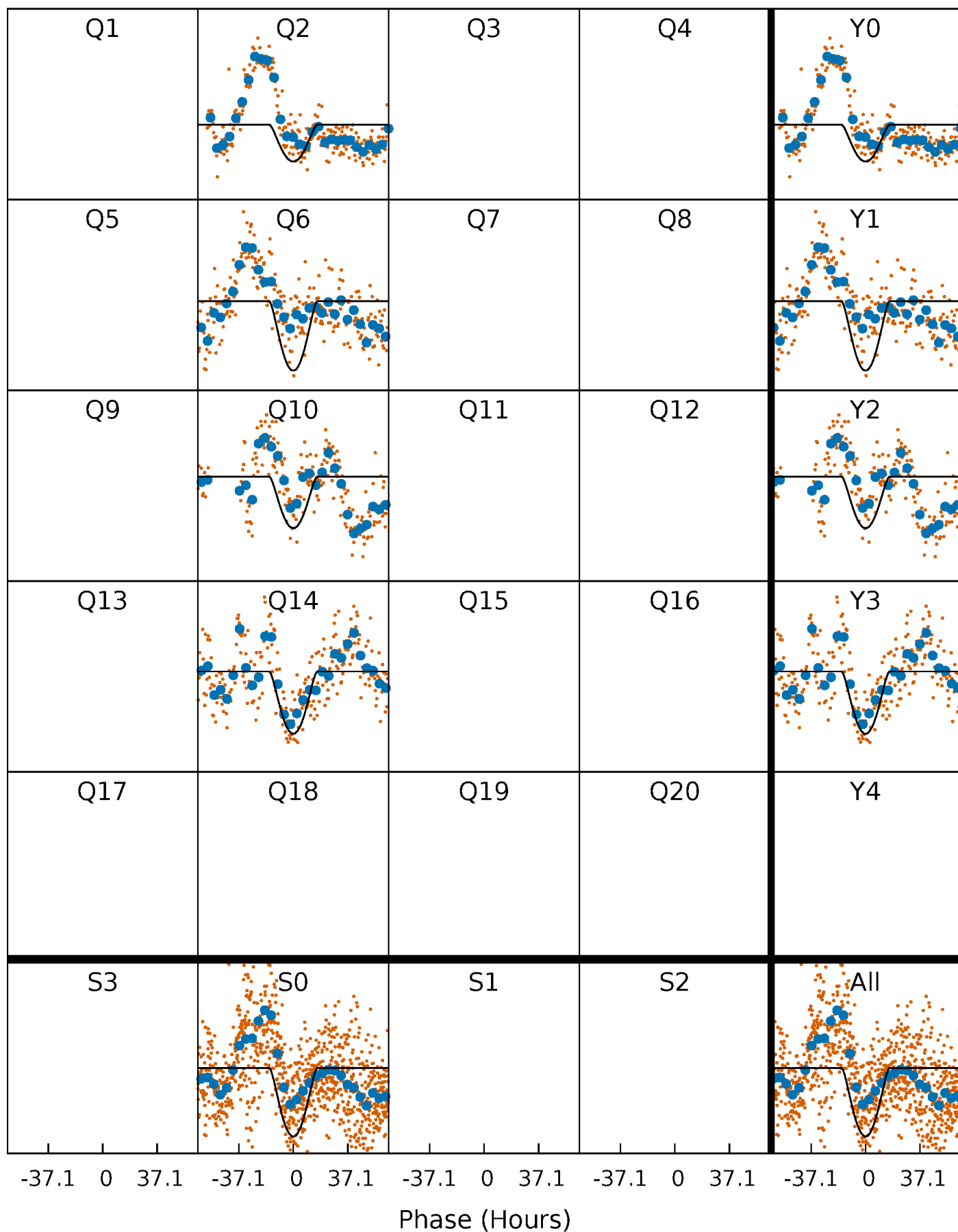
PDC Quarter-Phased Transit Curves

TCE 008176072-01 P=368.904992 Days $T_0=233.833671$ (BKJD)



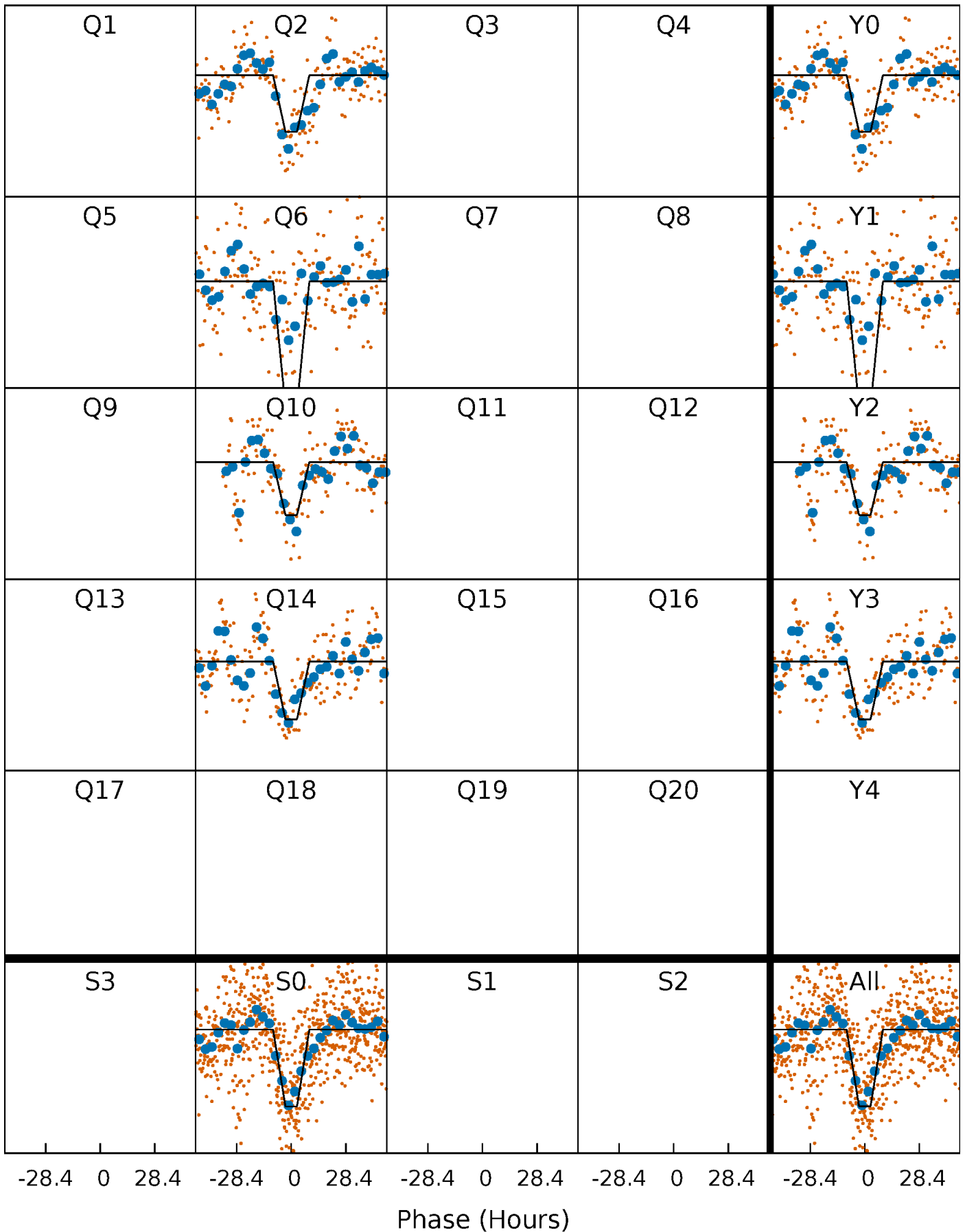
DV Quarter-Phased Transit Curves

TCE 008176072-01 P=368.904992 Days $T_0=233.833671$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

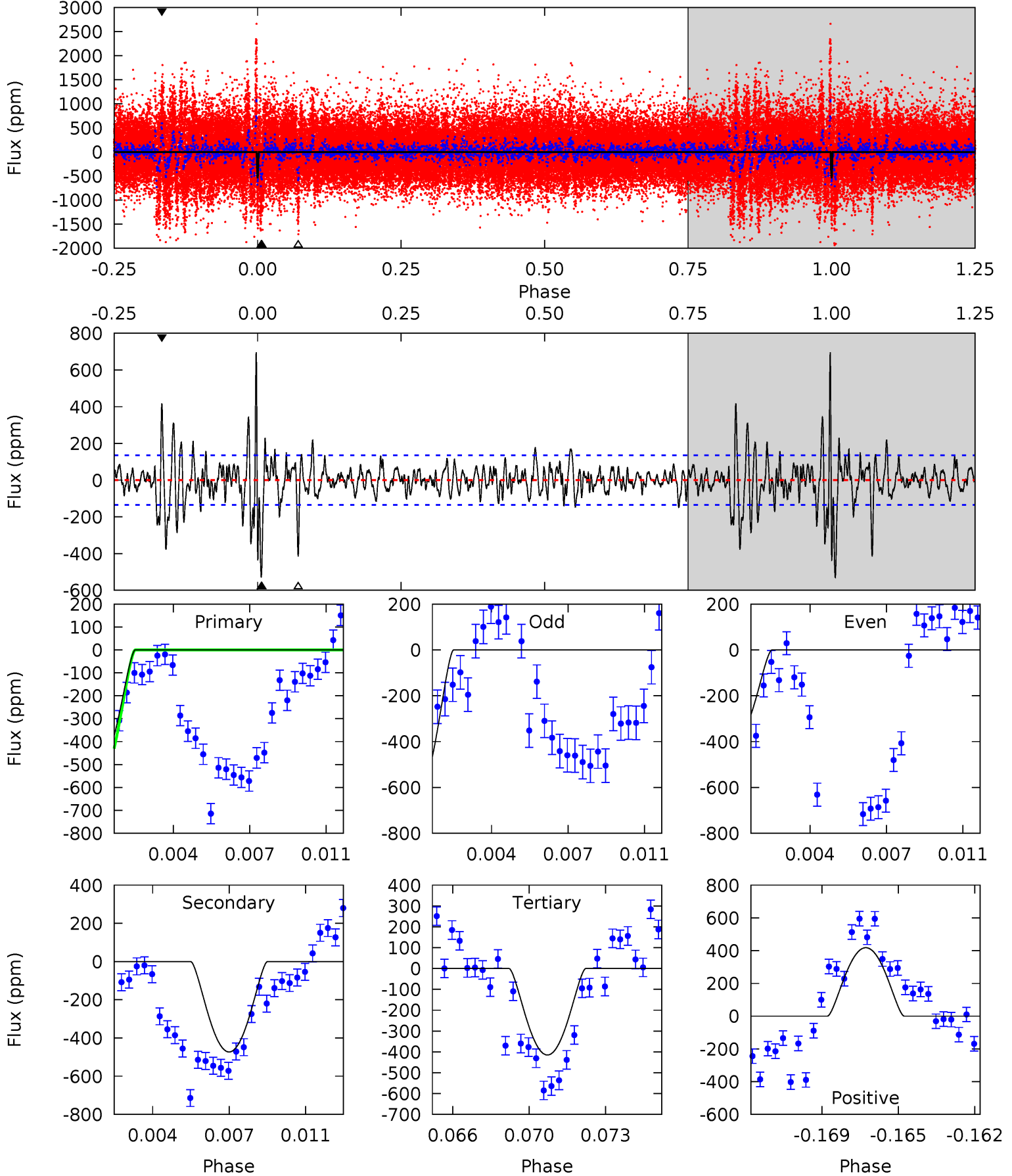
TCE 008176072-01 P=368.941548 Days $T_0=233.682491$ (BKJD)



DV Model-Shift Uniqueness Test

008176072-01, P = 368.904992 Days, E = 233.833671 Days

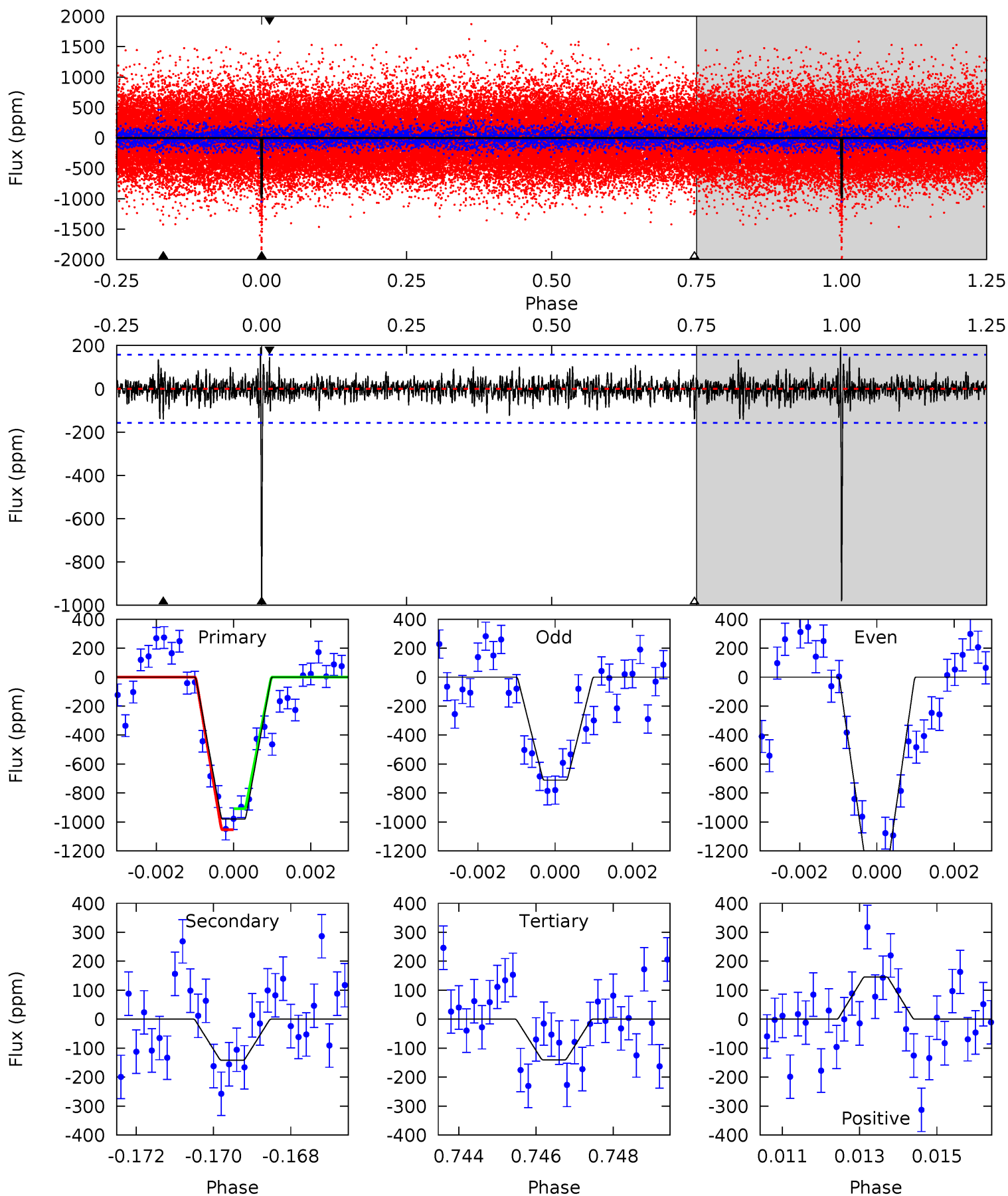
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
20.5	18.3	16.0	16.2	5.22	2.90	3.44	4.41	4.31	2.25	2.14	4.93	1.32	0.57	3.03



Alt Model-Shift Uniqueness Test

008176072-01, P = 368.941548 Days, E = 233.682491 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
33.0	4.76	4.72	4.90	5.31	3.06	1.10	28.3	28.1	0.04	-0.14	9.11	0.87	0.16	2.45



Stellar Parameters For KIC 008176072

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5907^{+159}_{-177}	$4.526^{+0.052}_{-0.208}$	$-0.200^{+0.300}_{-0.300}$	$0.889^{+0.273}_{-0.091}$	$0.968^{+0.107}_{-0.131}$	$1.943^{+0.398}_{-1.027}$
	+3%/-3%	+1%/-5%	+150%/-150%	+31%/-10%	+11%/-14%	+21%/-53%
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 008176072-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-473 ± 26	$8.01^{+7.67}_{-5.04}$	351^{+23}_{-16}	3519^{+1638}_{-592}	3847^{+26214}_{-2818}
Alt.	-142 ± 30	$6.68^{+6.00}_{-4.27}$	350^{+24}_{-16}	3138^{+1246}_{-517}	1730^{+11970}_{-1267}

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

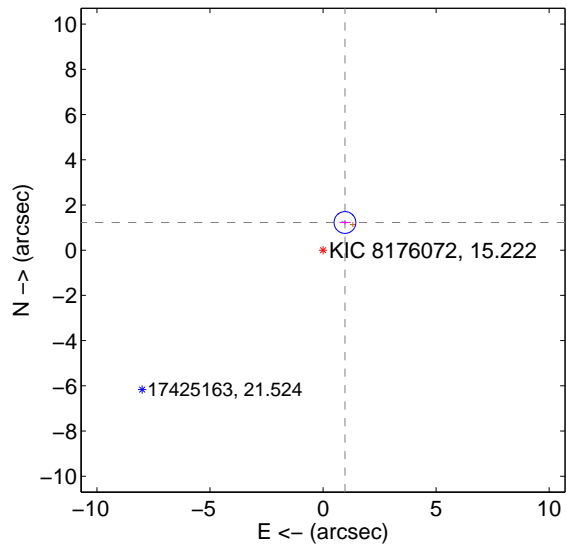
Supplemental centroid analysis for 008176072-01. Kepler magnitude: 15.22. Transit SNR 12.34

There are 1 quarters with good PRF difference image offsets

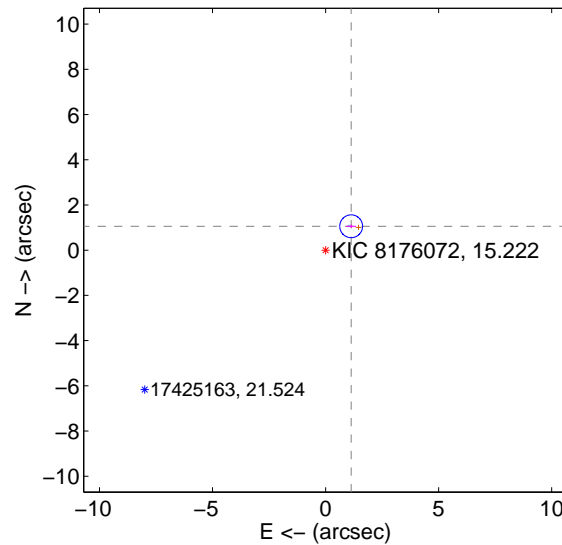
The direct PRF centroid is offset from the target star catalog position by about 0.25 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	1.562 ± 0.161	9.73	-0.969 ± 0.235	1.225 ± 0.086
PRF-fit source offset from KIC position	1.549 ± 0.168	9.20	-1.132 ± 0.220	1.058 ± 0.073
photometric centroid source offset	4.38 ± 1.51	2.90	-4.03 ± 1.56	1.72 ± 1.25

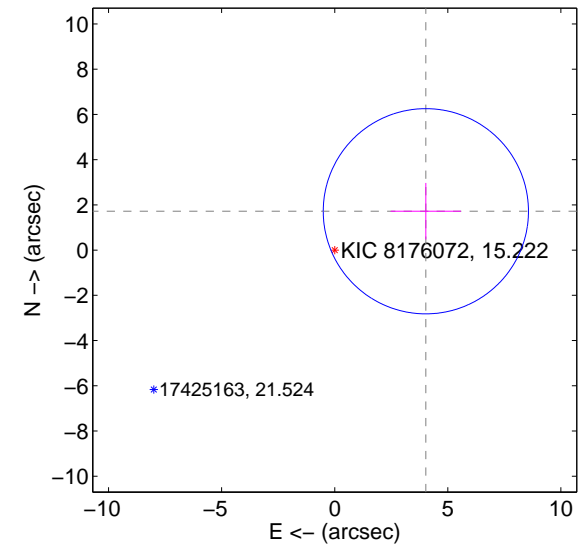
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

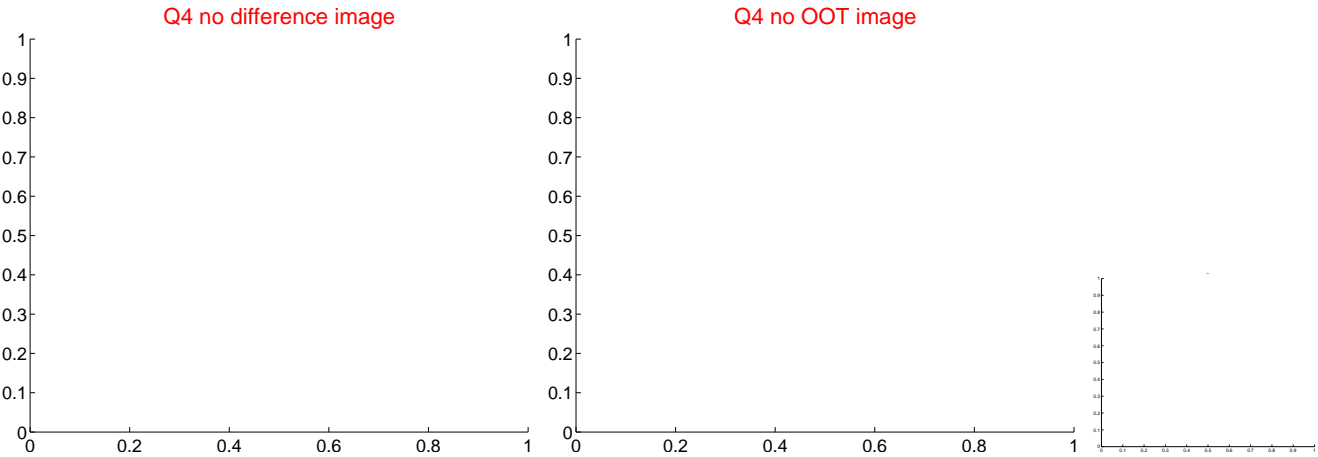
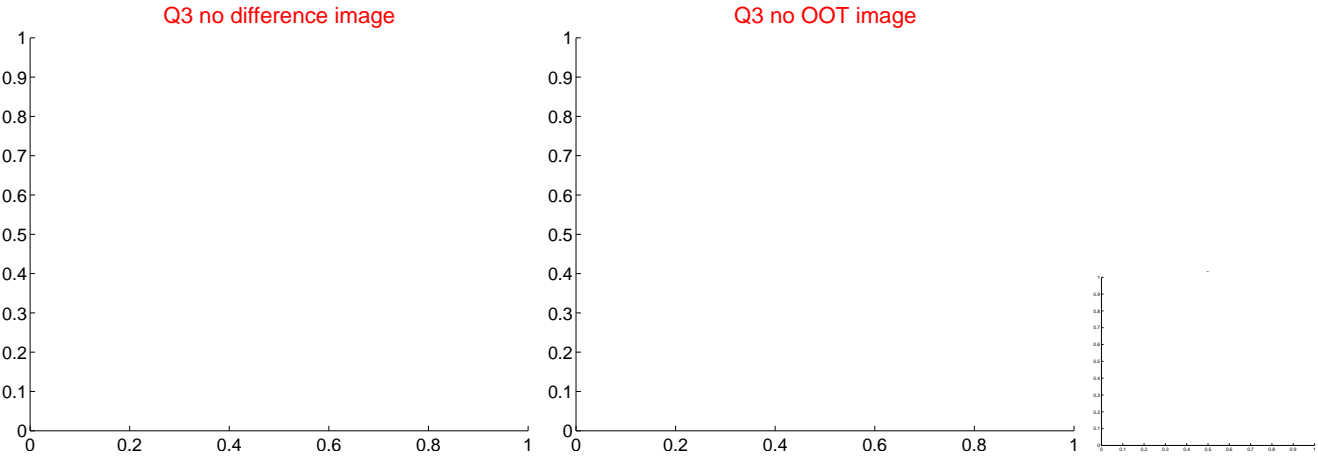
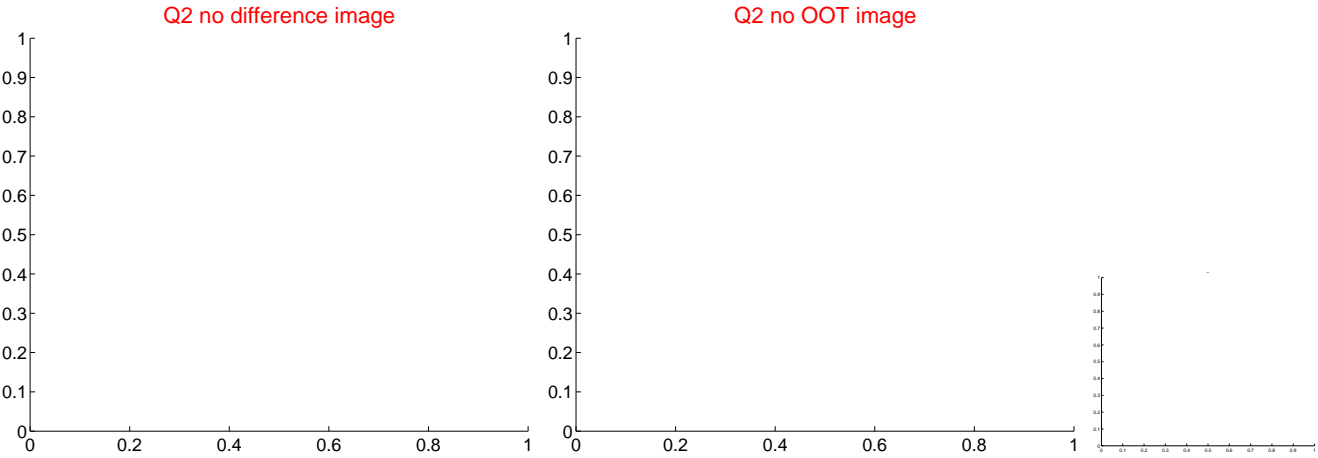
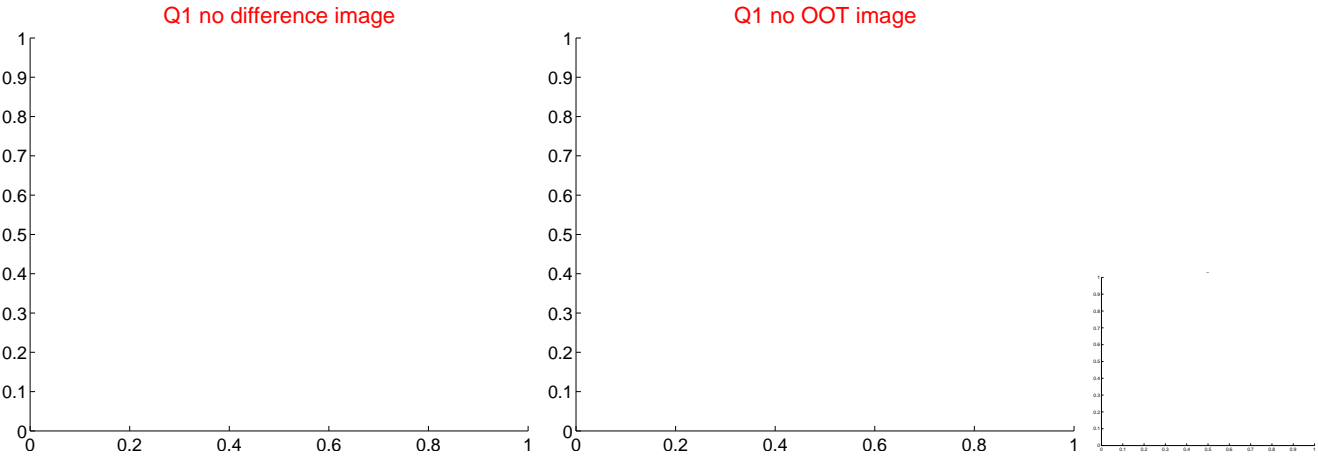


offset from photometric centroids

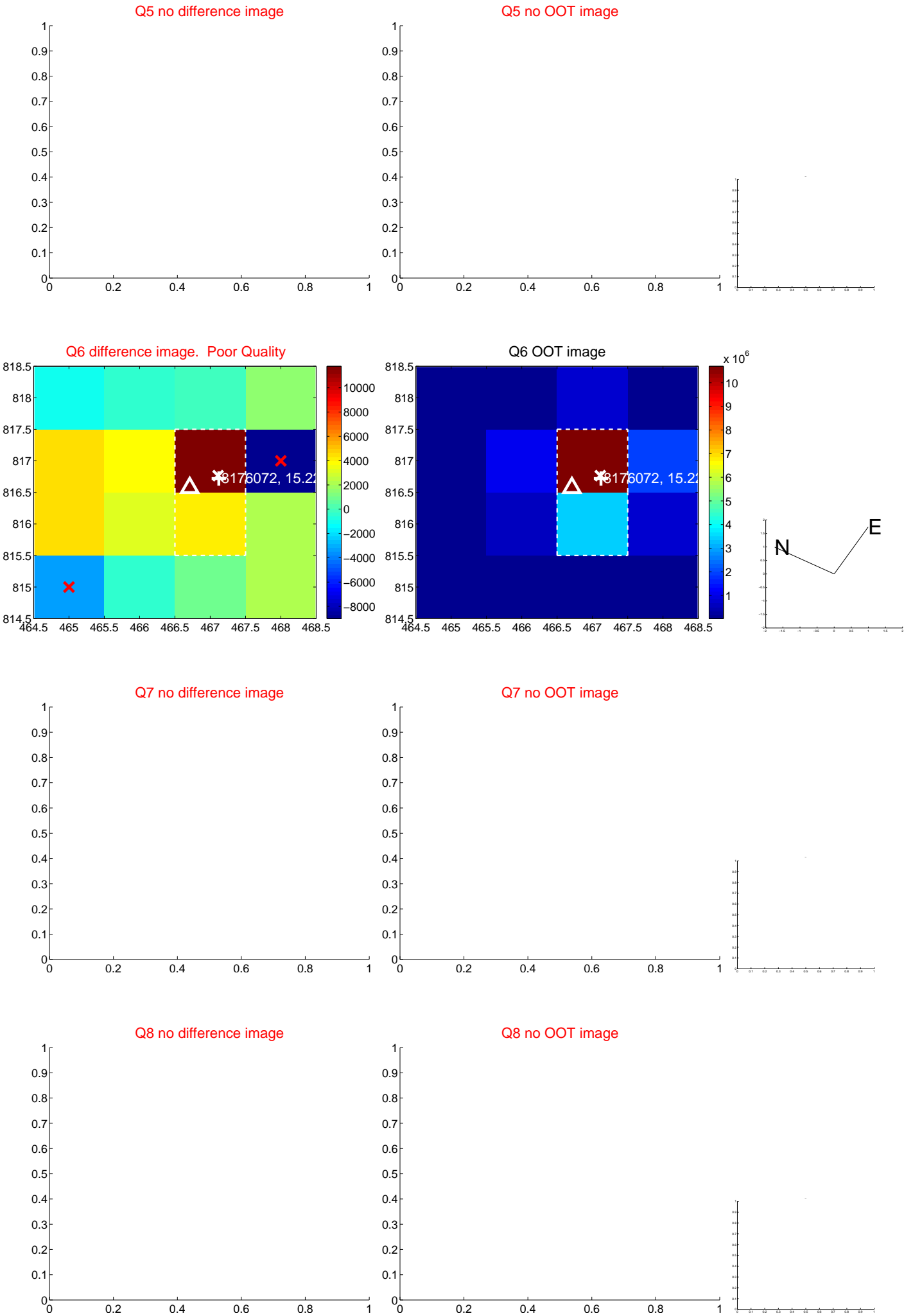


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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



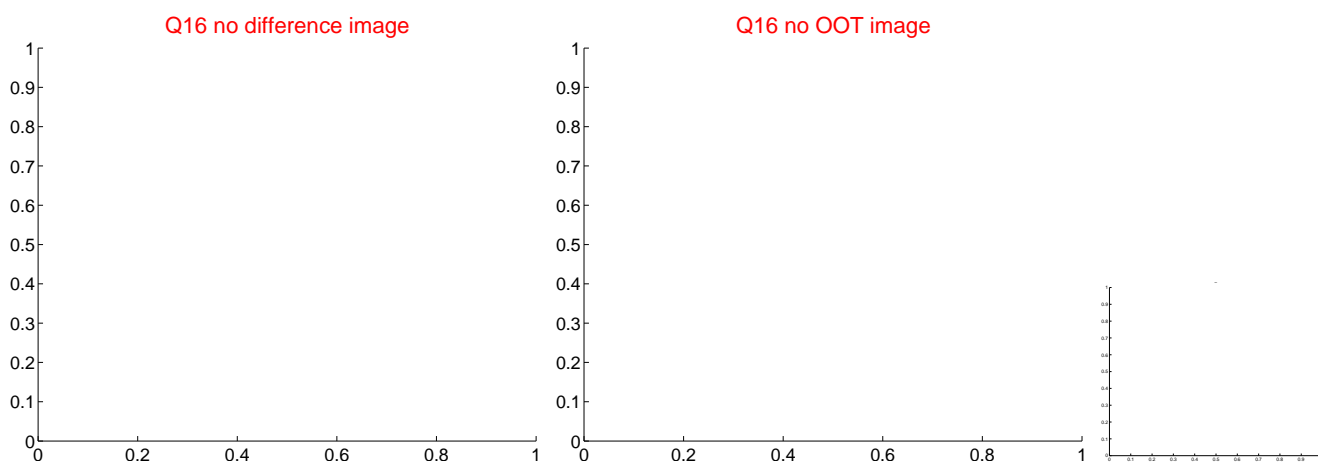
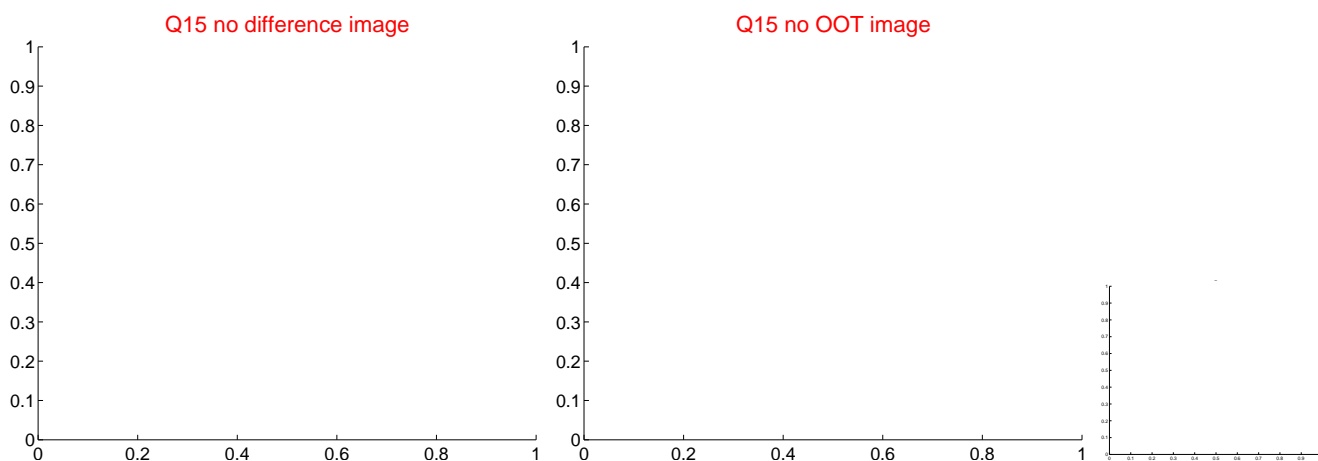
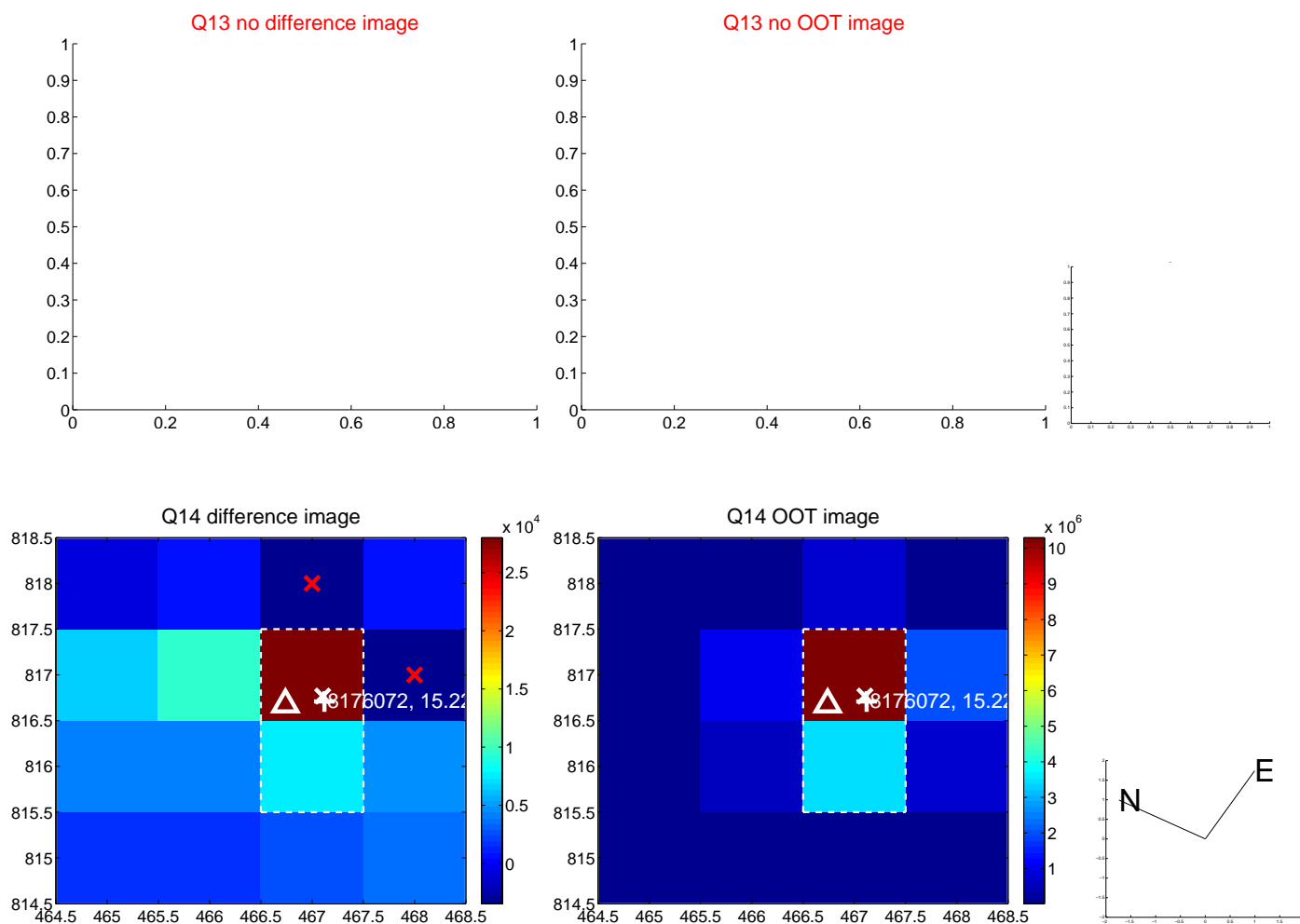
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



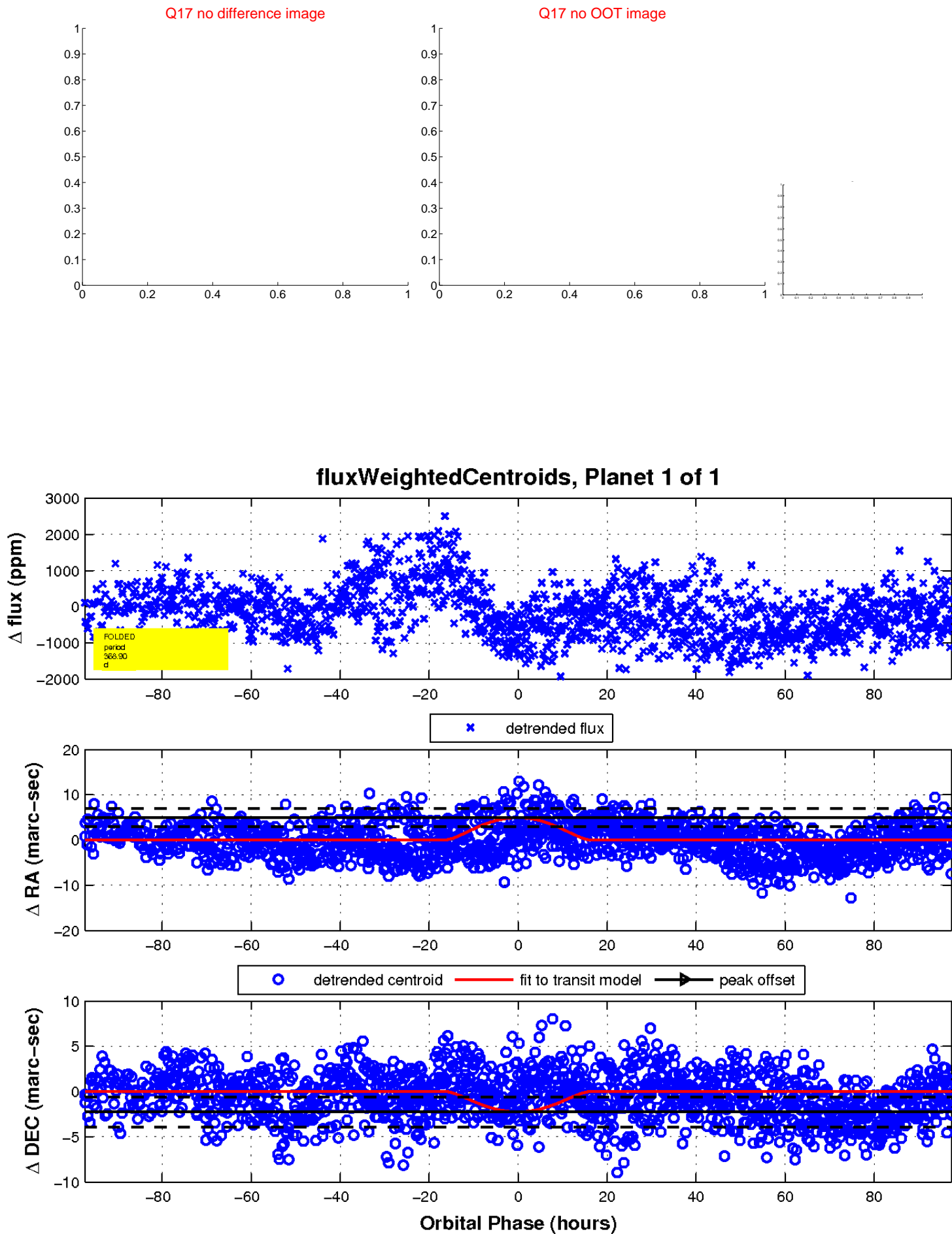
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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UKIRT Image

Declination

