

KIC 008176865

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})
008176865-01	OBS	No	368.955059	233.069243	1135.6	20.021	8.5	9.0	0.86	5448	3.07	0.58

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008176865-01	OBS	FP	0.00	1	0	0	1	INDIV_TRANS_MARSHALL_SKYE—LPP_DV—ALL_TRANS_CHASES—MOD_POS_DV—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.

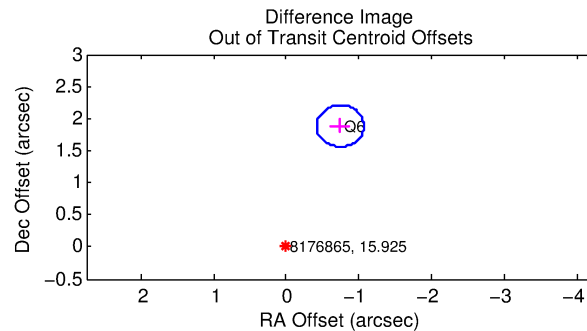
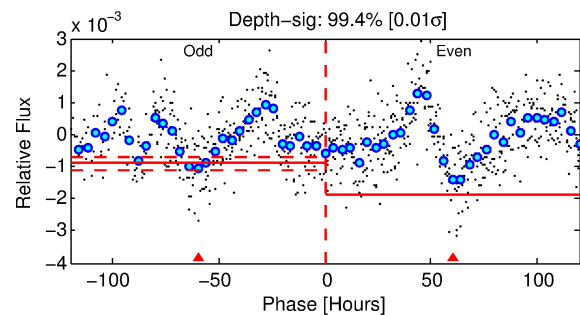
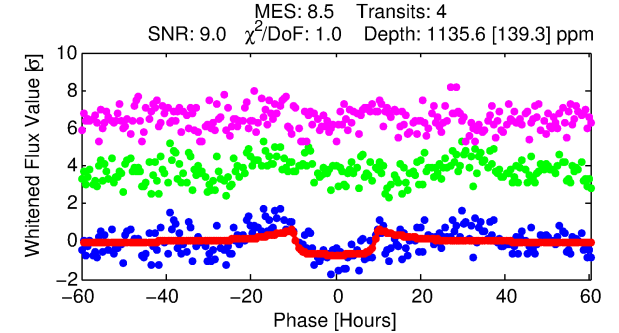
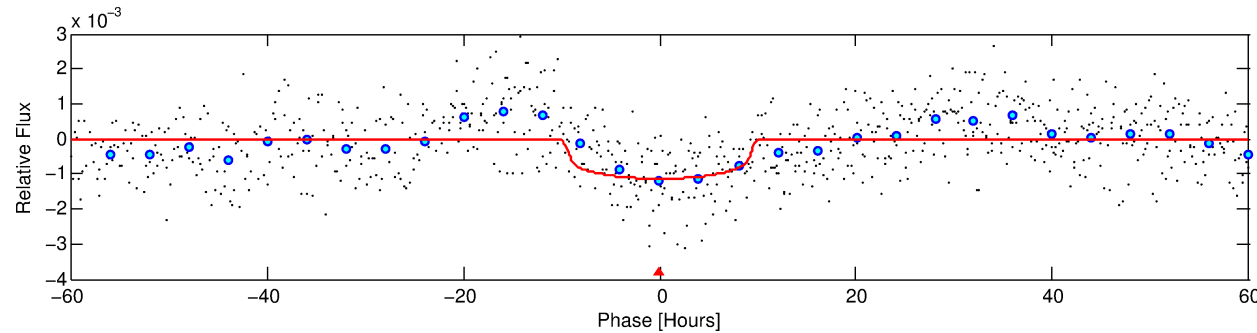
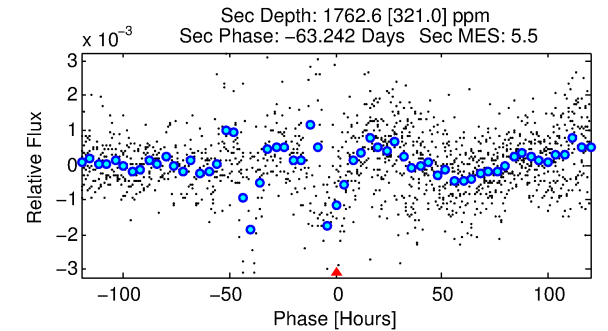
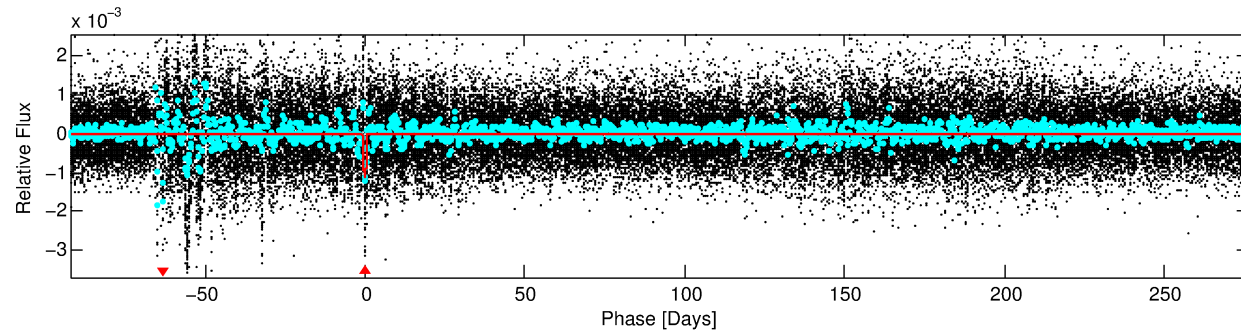
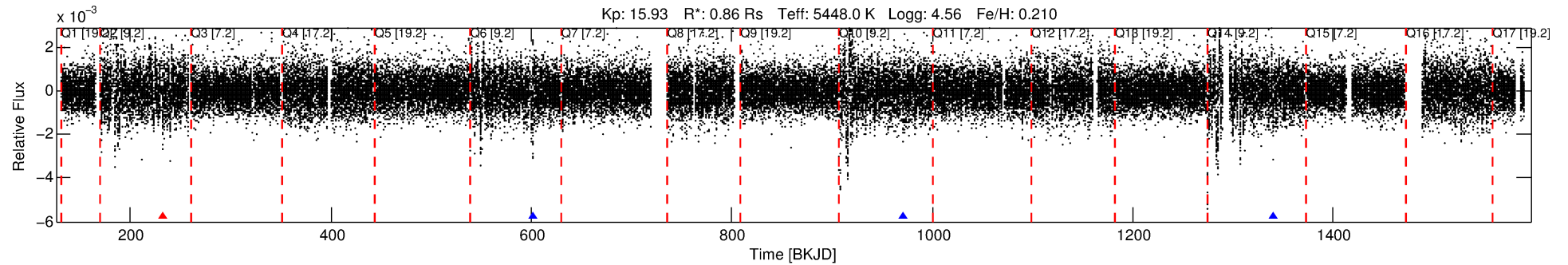
Ephemeris Match Information For 008176865-01

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
008176865-01	8176865	008038392-01	8038392	1:1	1455.2	366	2	15.35	15.92	0.85	Col-Anomaly	1	2.96	1.98

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: 8176865 Candidate: 1 of 1 Period: 368.955 d



DV Fit Results:

Period = 368.95506 [0.01110] d
Epoch = 233.0692 [0.0213] BKJD
Rp/R* = 0.0328 [0.0066]
a/R* = 107.95 [77.00]
b = 0.69 [0.54]
Seff = 0.58 [0.18]
Teq = 223 [17] K
Rp = 3.07 [0.91] Re
a = 0.9992 [0.1906] AU
Ag = 102624.09 [53958.39] [1.90σ]
Teff = 6159 [703] K [8.45σ]

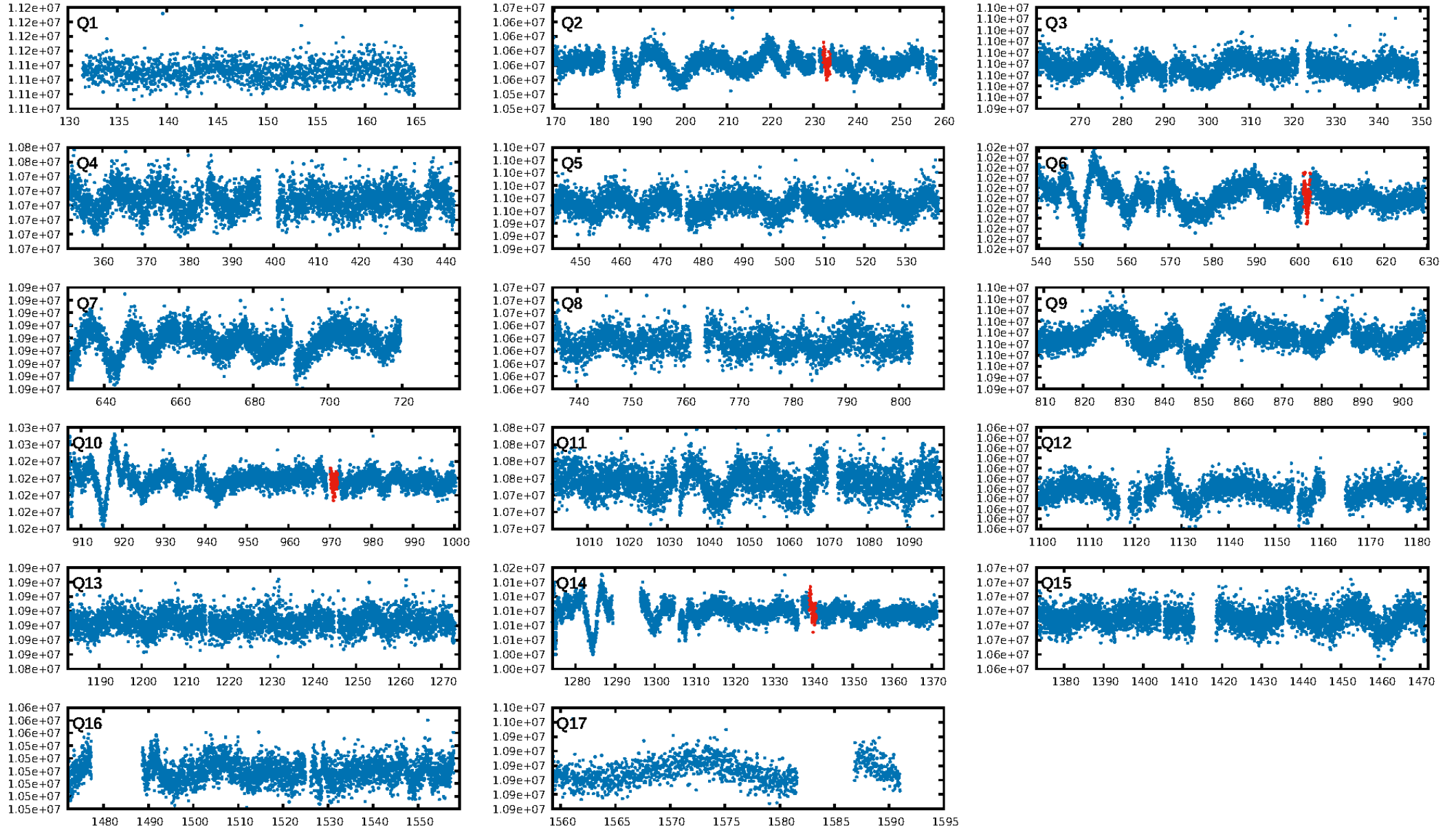
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: 51.9%
ModelChiSquareGoF-sig: 100.0%
Bootstrap-pfa: 4.84e-15
RollingBand-fgt: 0.75 [3/4]
GhostDiagnostic-chr: 0.8364
Centroid-sig: 0.0%
Centroid-so: 6.190 arcsec [2.69σ]
OotOffset-rm: 2.025 arcsec [18.83σ]
KicOffset-rm: 1.866 arcsec [17.09σ]
OotOffset-st: 1/0/0/0 [1]
KicOffset-st: 1/0/0/0 [1]
DiffImageQuality-fgm: 0.00 [0/1]
DiffImageOverlap-fno: 1.00 [2/2]

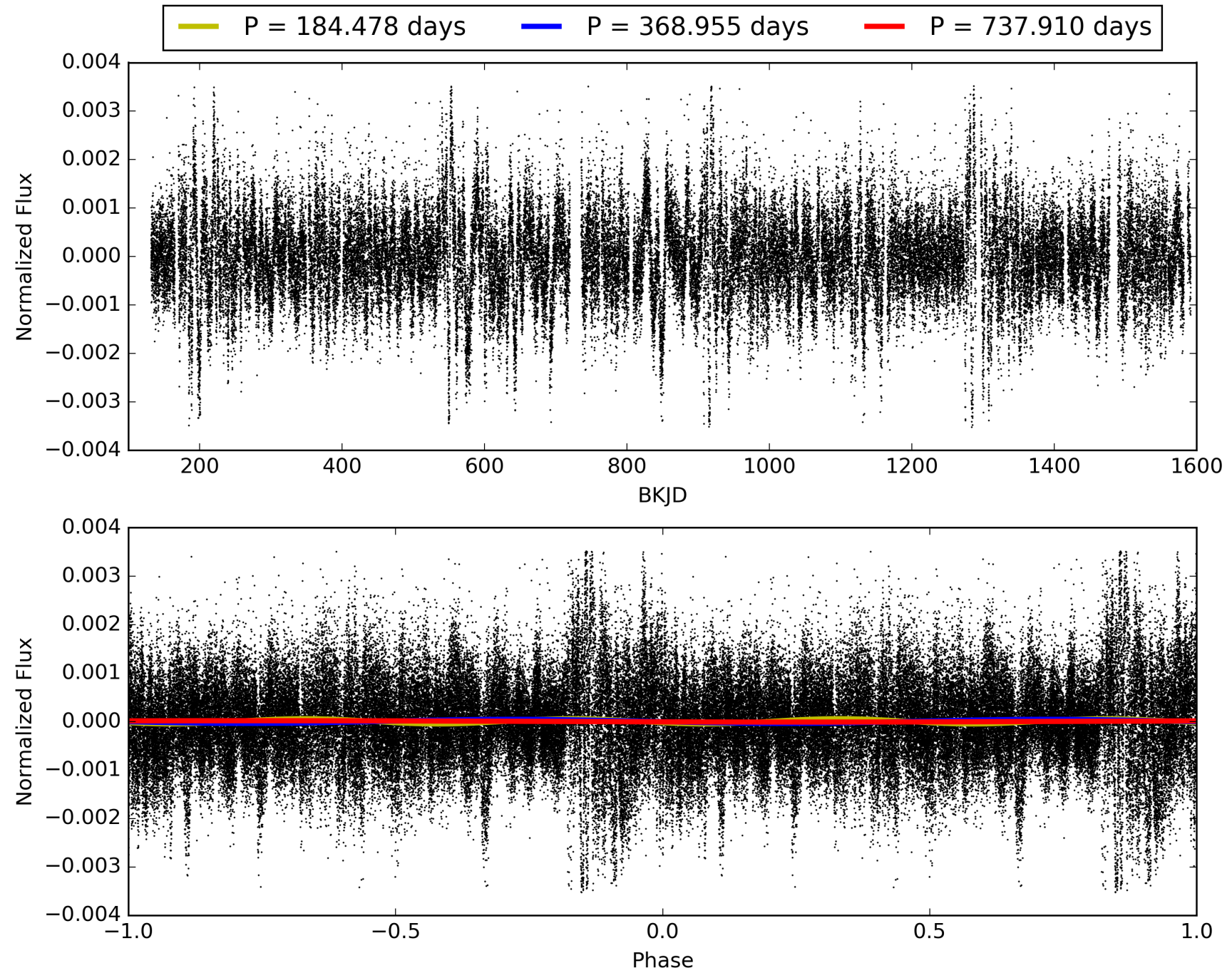
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 00:56:27 Z

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

TCE 008176865-01, PDC Light Curves

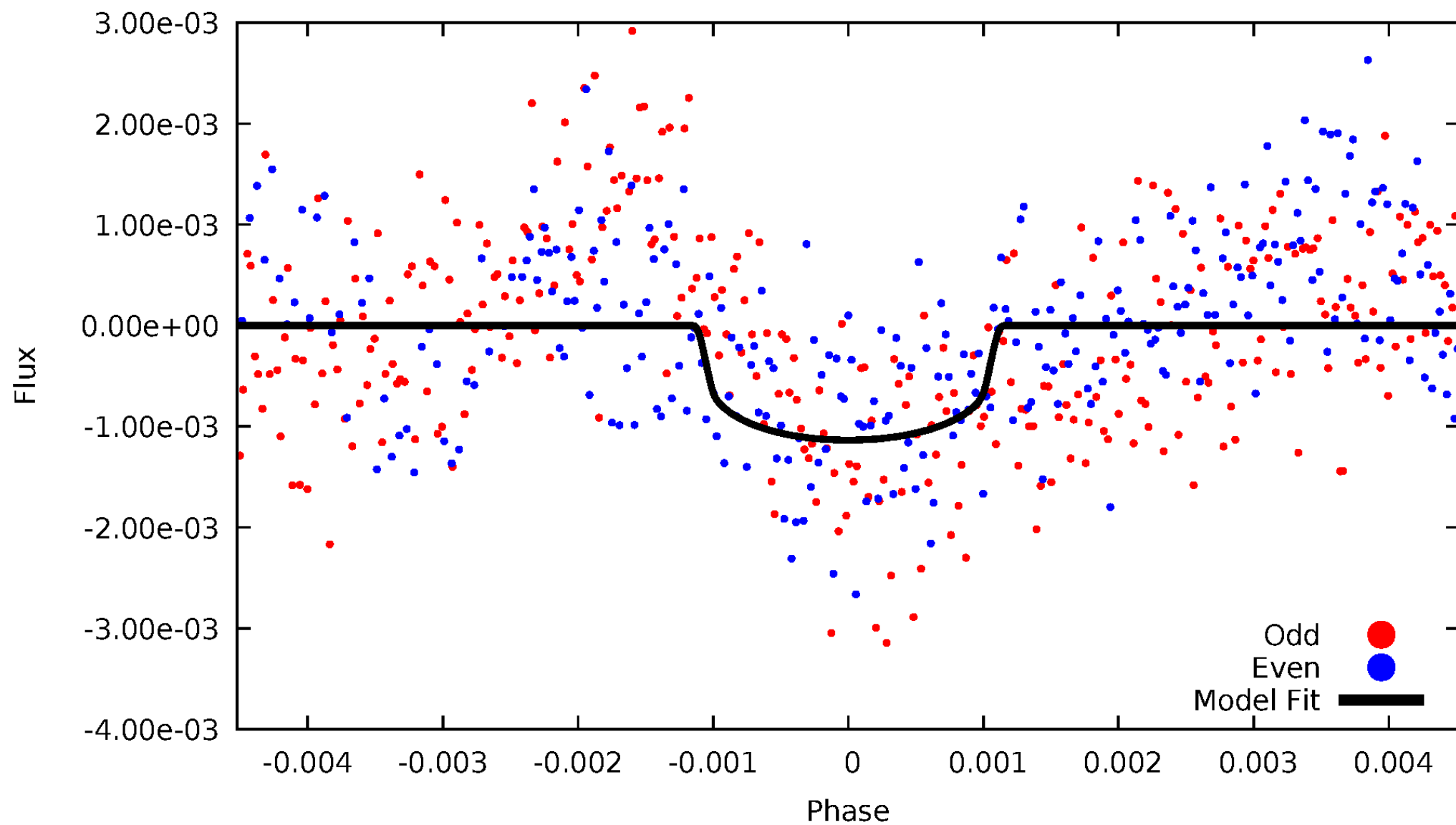


TCE 008176865-01



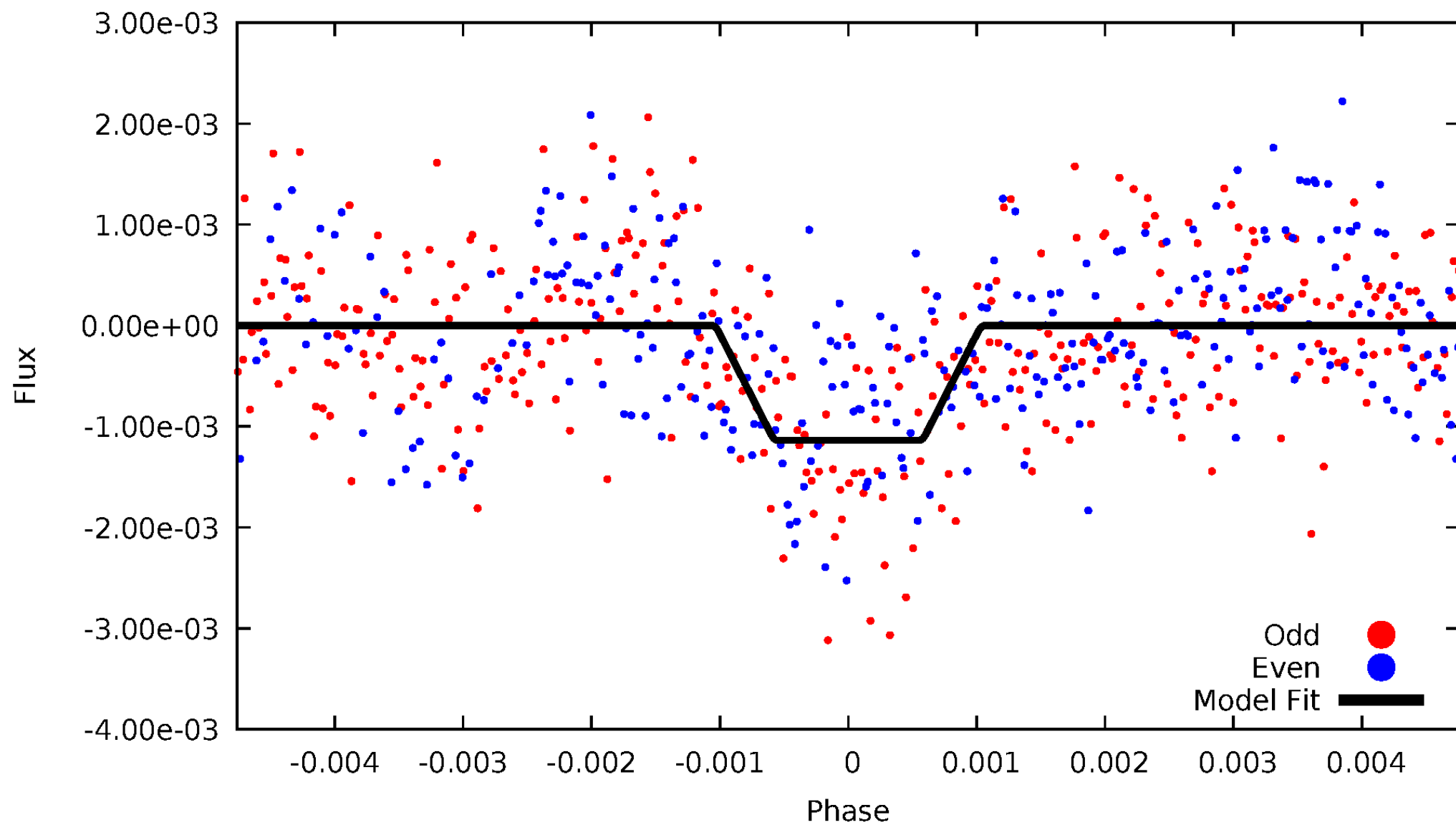
DV Odd/Even

TCE 008176865-01



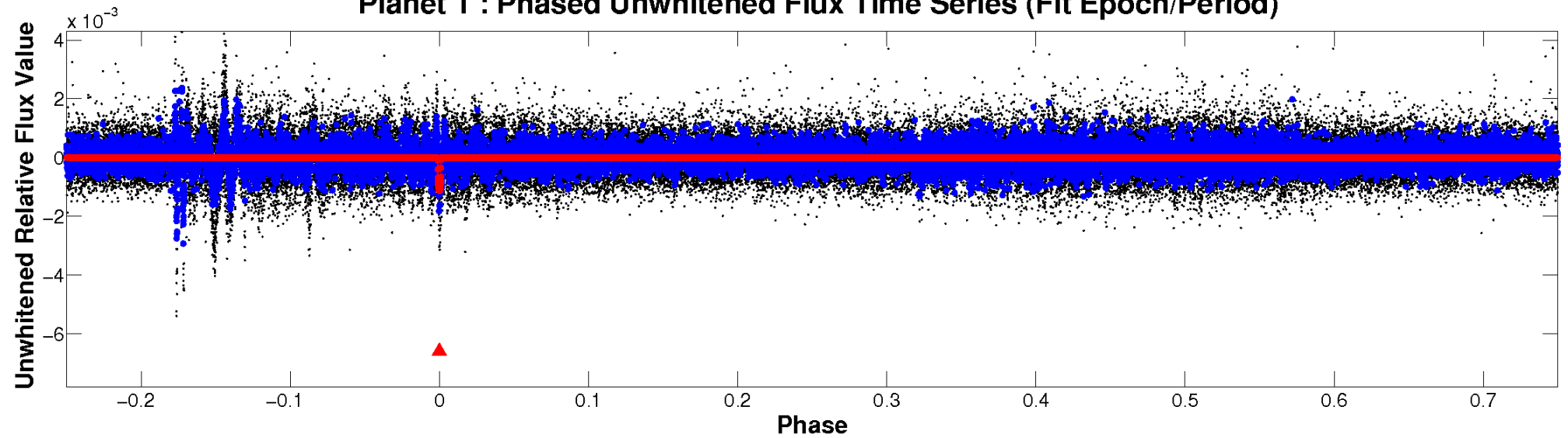
ALT Odd/Even

TCE 008176865-01

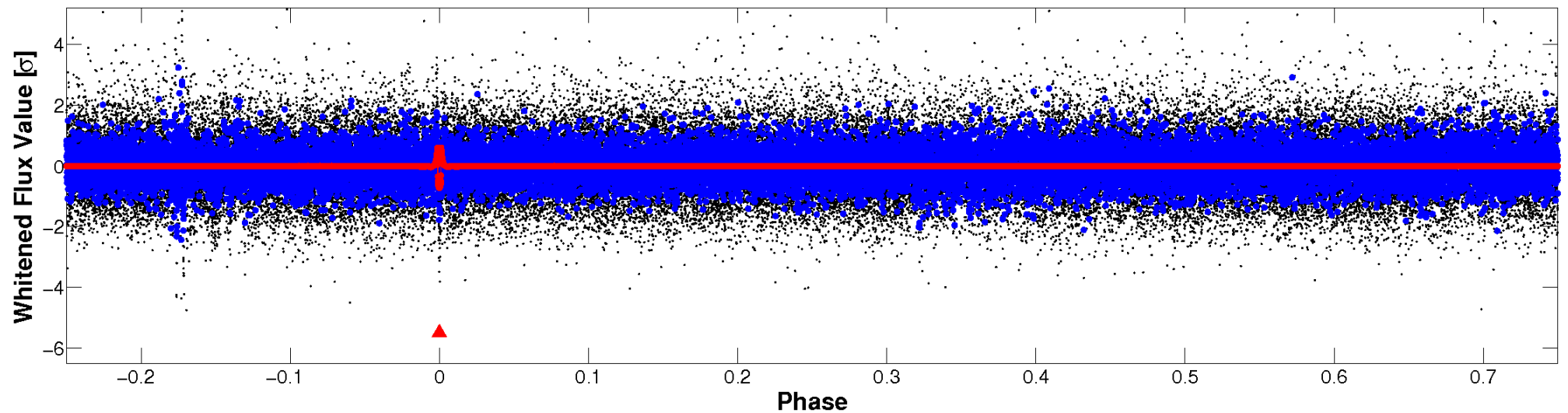


Non-Whitened Vs. Whitened Light Curve

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

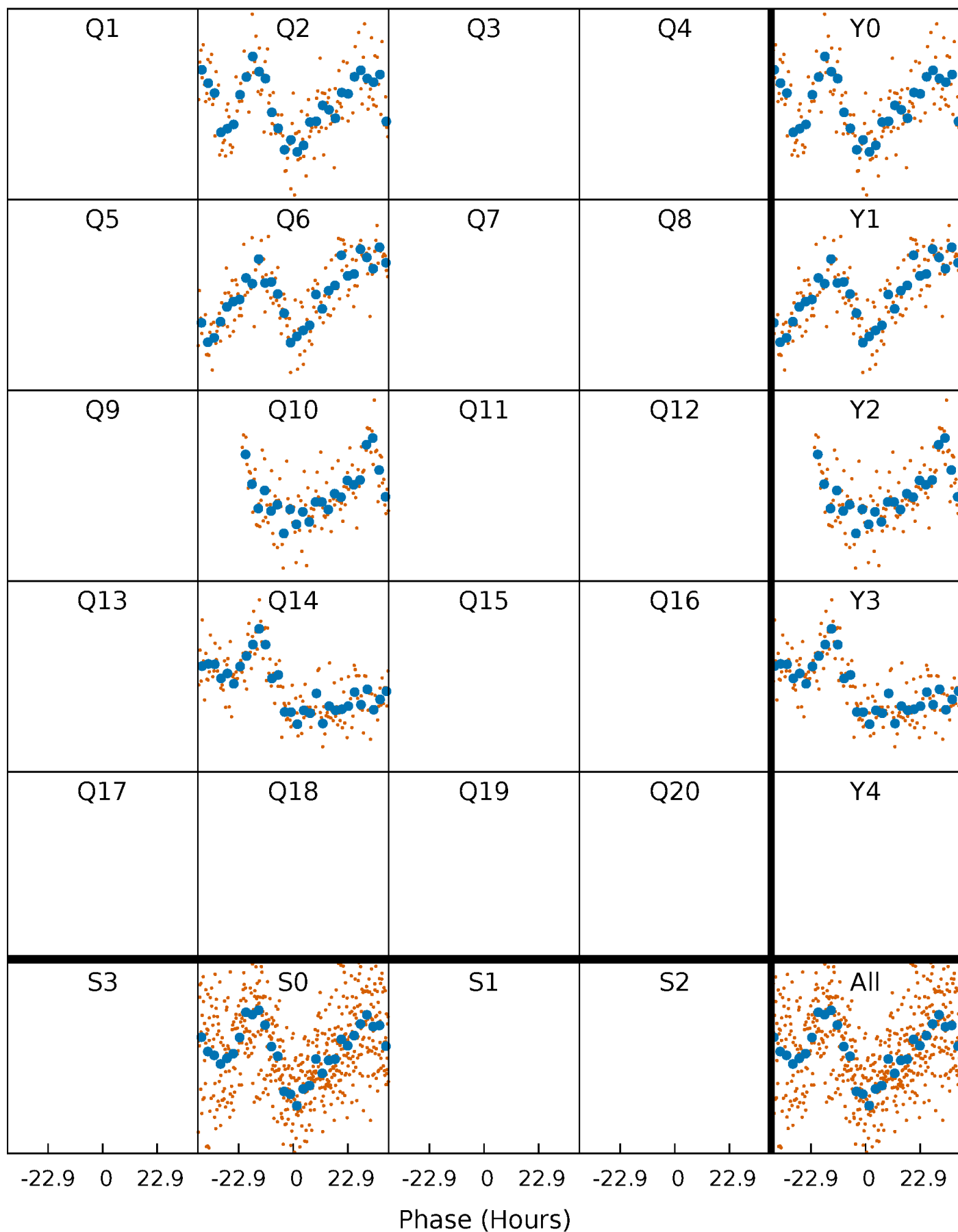


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



PDC Quarter-Phased Transit Curves

TCE 008176865-01 P=368.955059 Days $T_0=233.069243$ (BKJD)



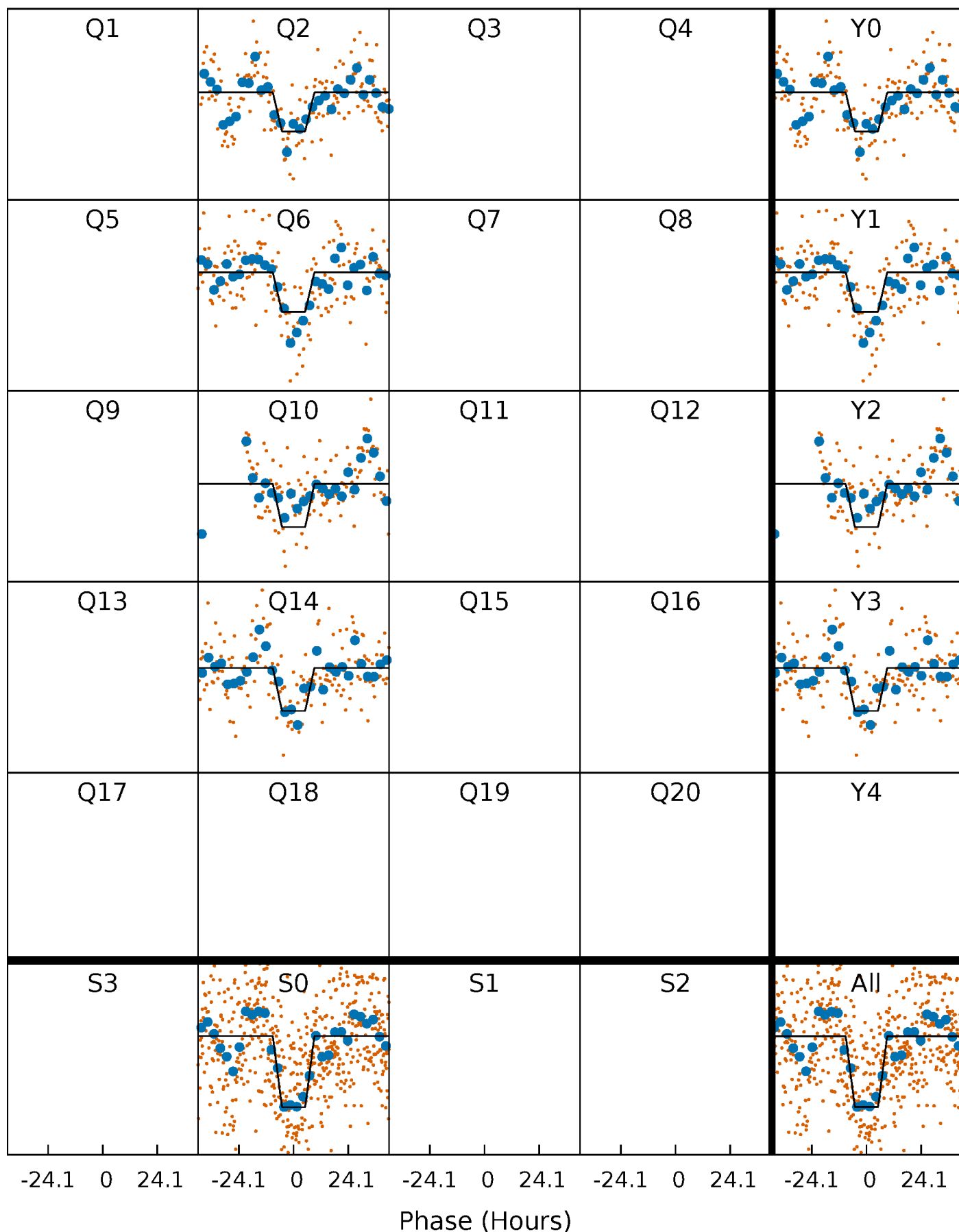
DV Quarter-Phased Transit Curves

TCE 008176865-01 P=368.955059 Days $T_0=233.069243$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

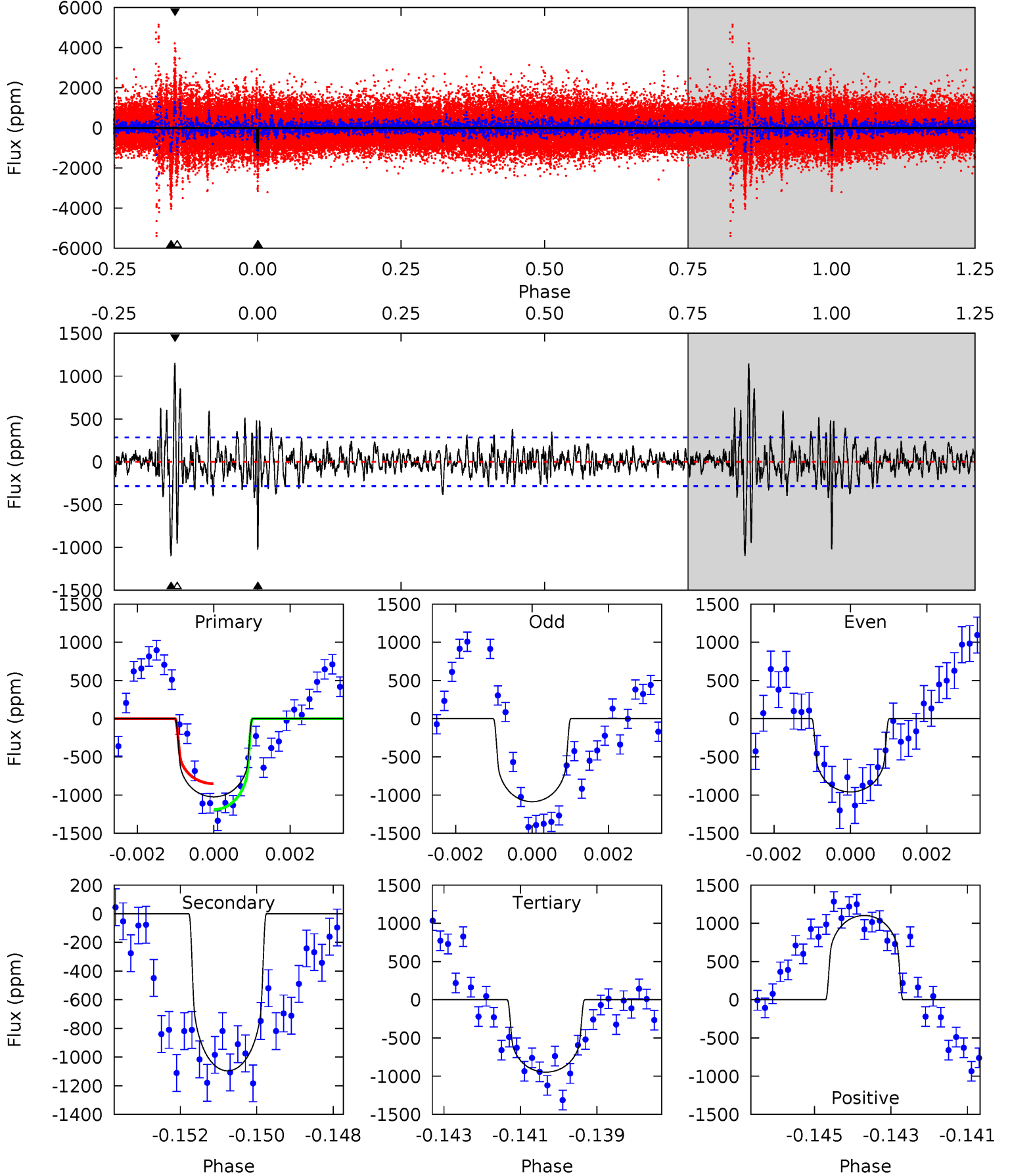
TCE 008176865-01 P=368.941548 Days $T_0=233.094880$ (BKJD)



DV Model-Shift Uniqueness Test

008176865-01, P = 368.955059 Days, E = 233.069243 Days

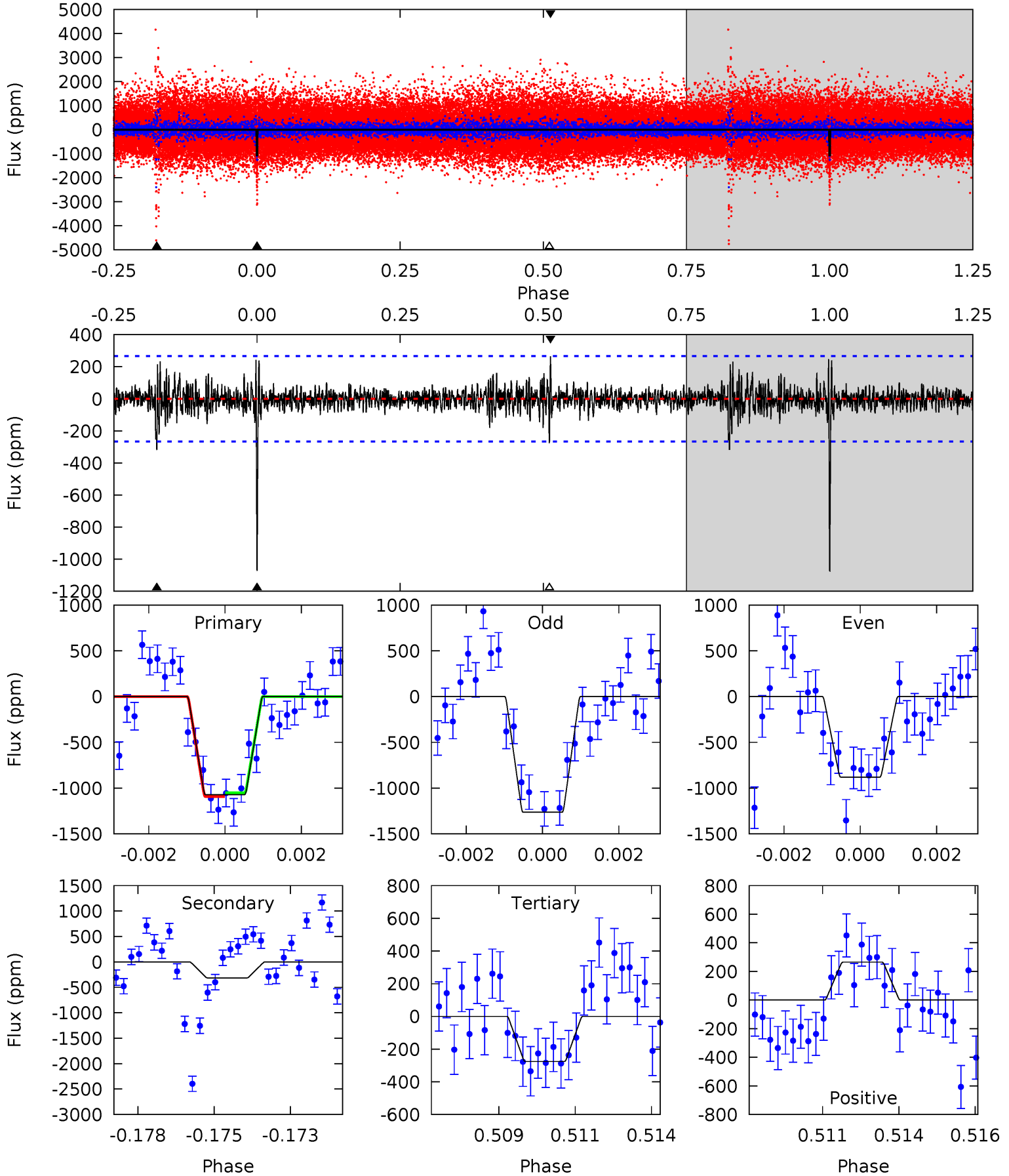
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
19.2	20.6	17.8	20.7	5.30	3.05	2.77	1.43	-1.49	2.79	-0.13	1.18	0.98	0.51	3.18



Alt Model-Shift Uniqueness Test

008176865-01, P = 368.941548 Days, E = 233.094880 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
21.4	6.28	5.50	5.29	5.31	3.07	0.98	15.9	16.1	0.78	0.99	3.83	0.96	0.20	0.40



Stellar Parameters For KIC 008176865

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5448^{+164}_{-164}	$4.562^{+0.029}_{-0.162}$	$0.210^{+0.200}_{-0.300}$	$0.857^{+0.186}_{-0.062}$	$0.977^{+0.065}_{-0.106}$	$2.186^{+0.329}_{-0.942}$
	+3%/-3%	+1%/-4%	+95%/-143%	+22%/-7%	+7%/-11%	+15%/-43%
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 008176865-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-1096 ± 53	$3.20^{+0.72}_{-0.70}$	317^{+18}_{-13}	5465^{+677}_{-458}	57785^{+35691}_{-19175}
Alt.	-315 ± 50	$3.28^{+0.67}_{-0.67}$	317^{+19}_{-13}	4197^{+366}_{-318}	15768^{+8576}_{-5379}

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

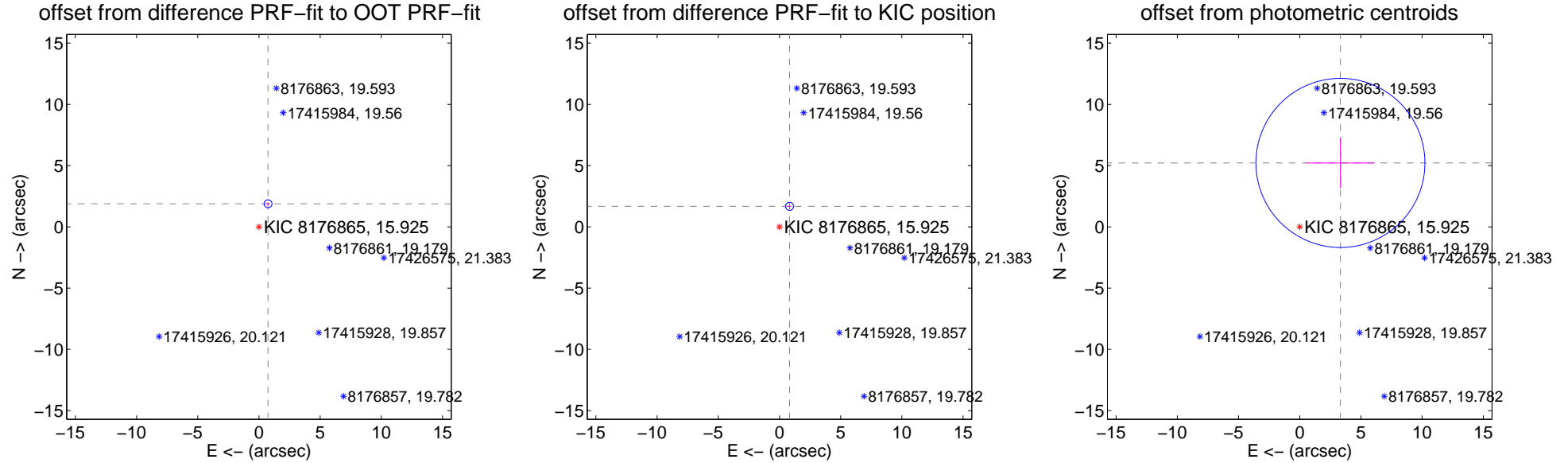
DV Centroid Data

Supplemental centroid analysis for 008176865-01. Kepler magnitude: 15.93. Transit SNR 8.97

There are 0 quarters with good PRF difference image offsets

The direct PRF centroid is offset from the target star catalog position by about 0.22 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	2.025 ± 0.108	18.83	-0.742 ± 0.130	1.884 ± 0.104
PRF-fit source offset from KIC position	1.866 ± 0.109	17.09	-0.821 ± 0.130	1.676 ± 0.104
photometric centroid source offset	6.19 ± 2.30	2.69	-3.33 ± 2.80	5.22 ± 2.07

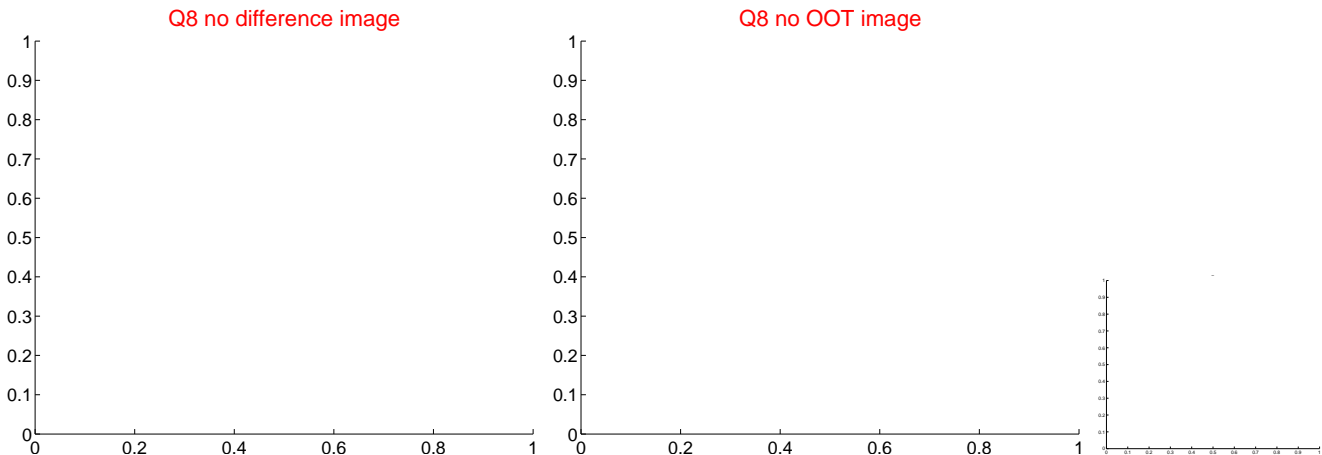
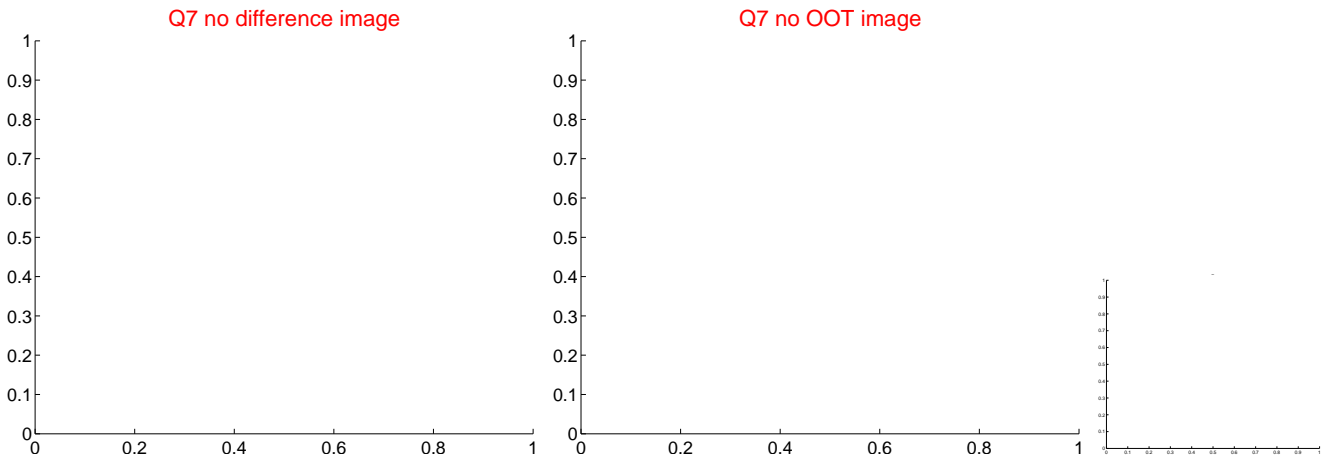
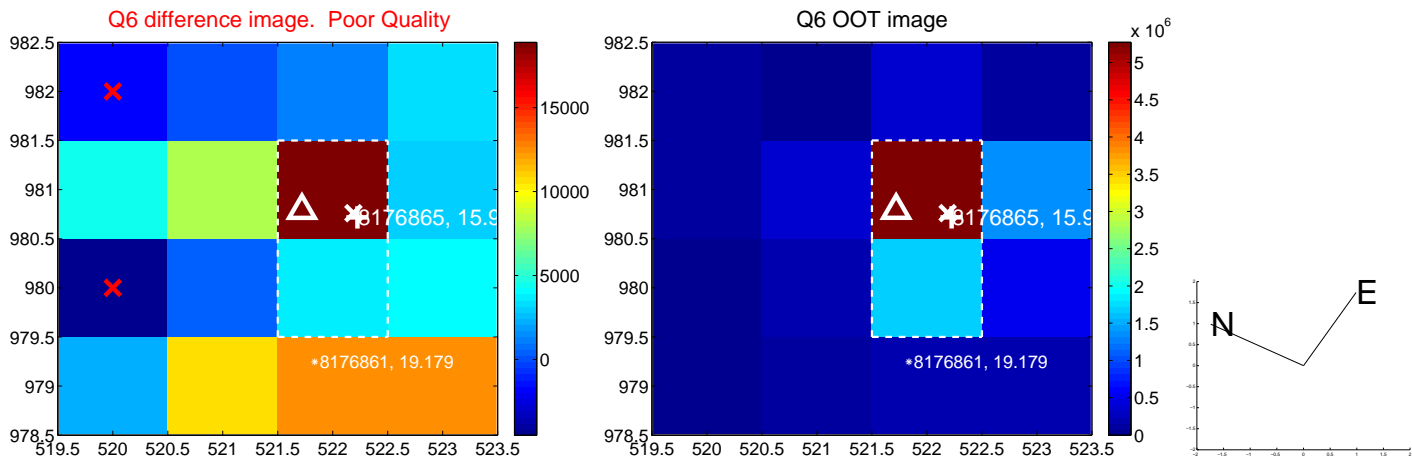
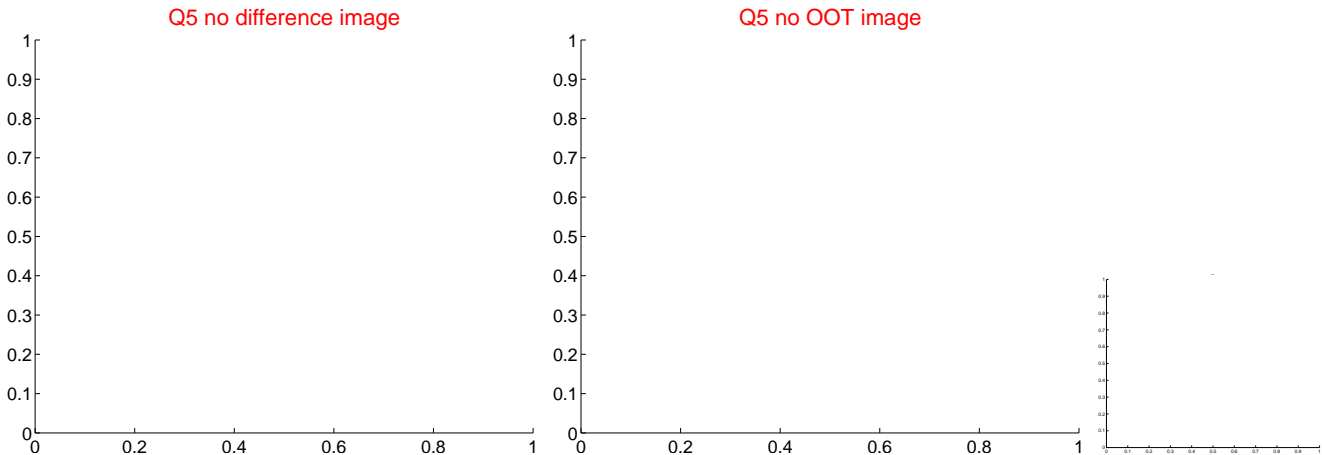


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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



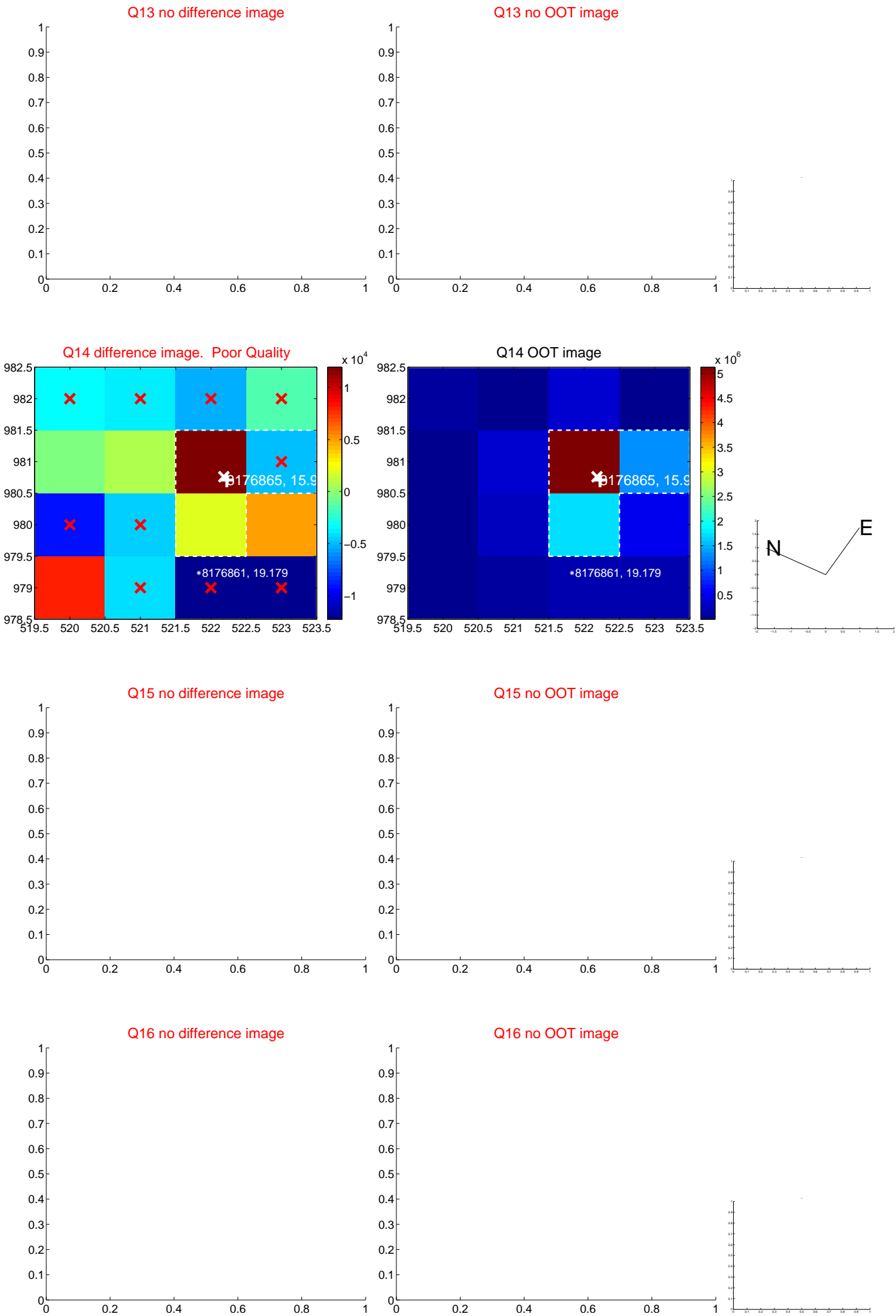
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value



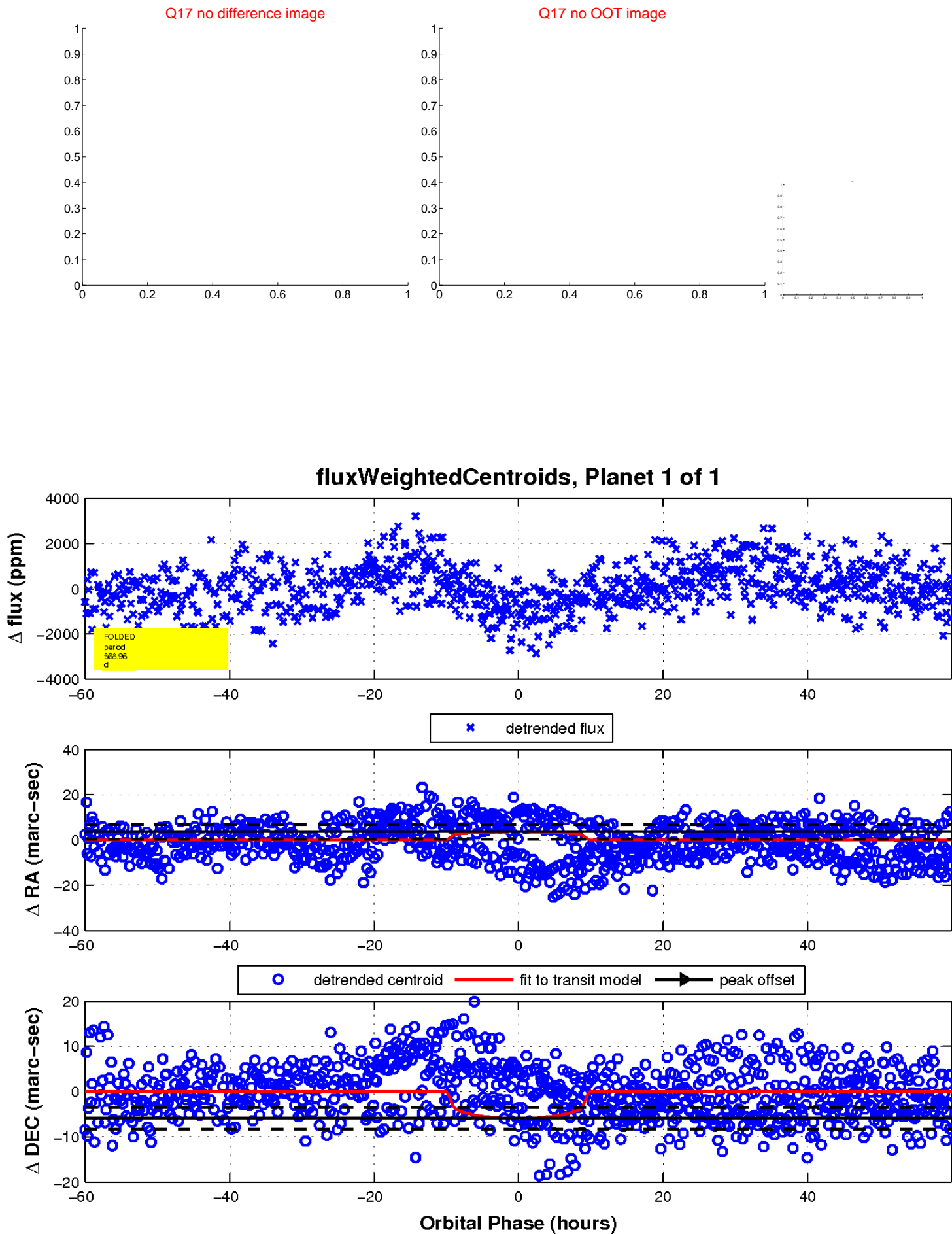
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



white ×: KIC target position; +: OOT centroid; △: difference centroid. red ✕: large negative pixel value.



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



UKIRT Image

Declination

