

KIC 008410668

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})
008410668-01	OBS	No	408.355969	157.586995	936.3	51.202	7.6	12.9	0.63	4678	2.09	0.20

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008410668-01	OBS	FP	0.00	1	0	1	1	INDIV_TRANS_MARSHALL_SKYE—CENT_SATURATED—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.

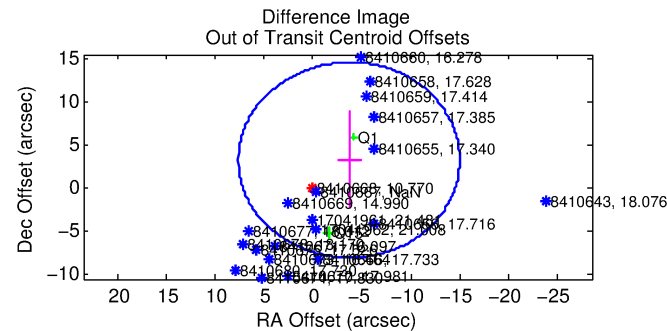
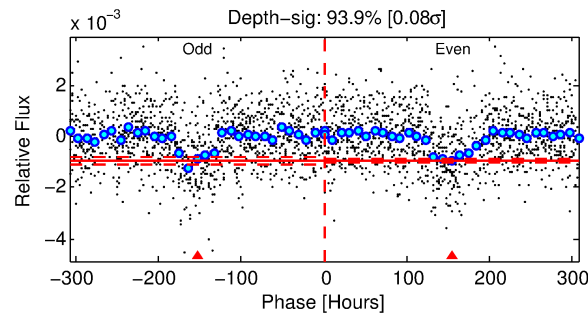
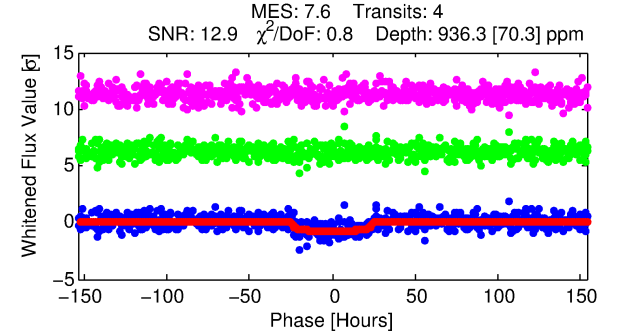
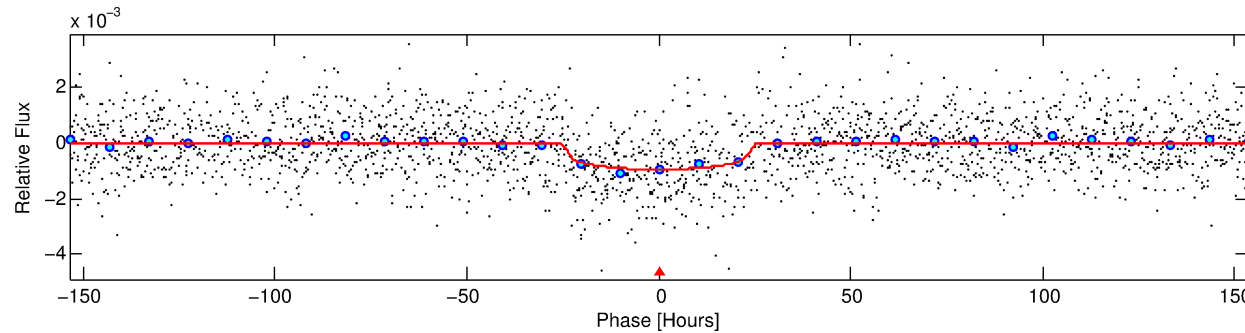
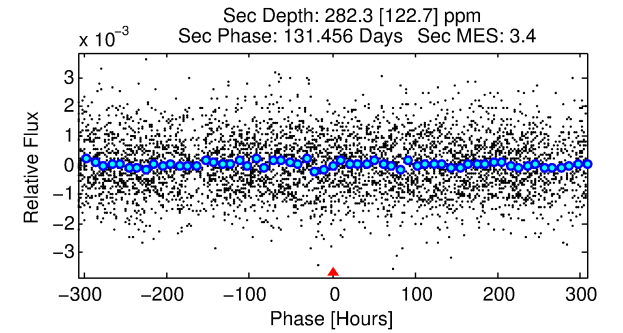
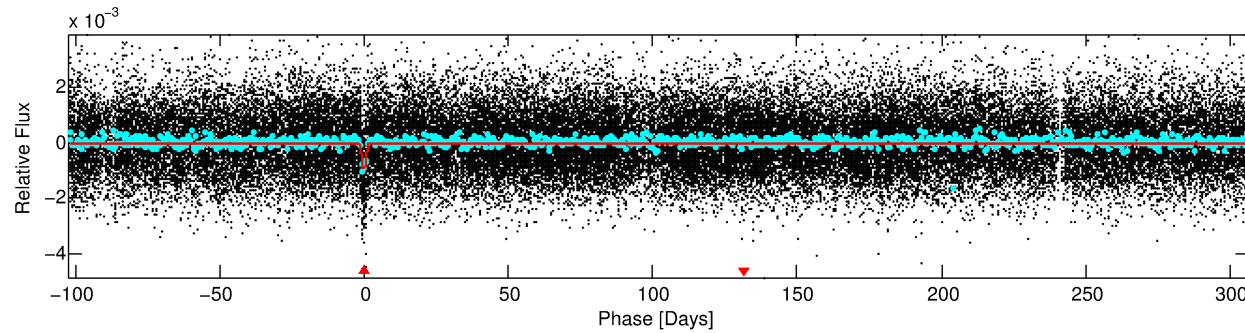
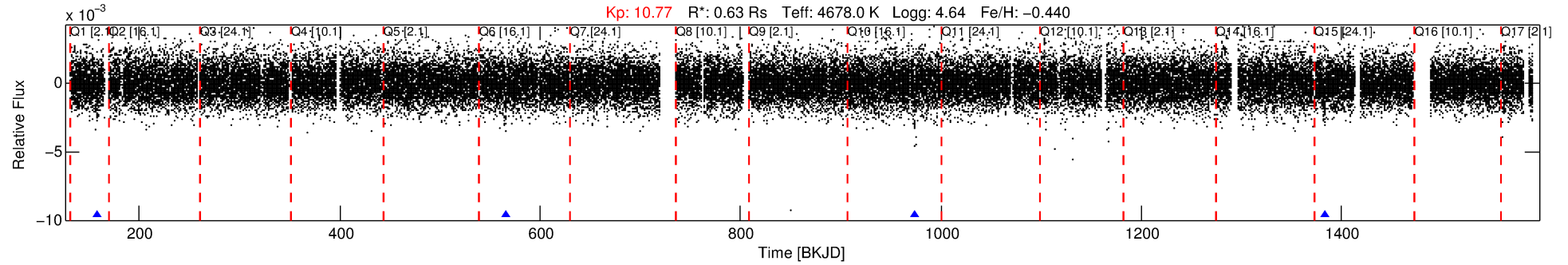
Ephemeris Match Information For 008410668-01

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
008410668-01	8410668	008410637-pri	8410637	1:1	52.4	-1	13	10.77	10.77	111.86	Direct-PRF	0	0.84	0.11

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: 8410668 Candidate: 1 of 1 Period: 408.356 d



DV Fit Results:

Period = 408.35597 [0.02752] d
Epoch = 157.5870 [0.0561] BKJD
Rp/R* = 0.0304 [0.0057]
a/R* = 43.75 [27.52]
b = 0.74 [0.39]
Seff = 0.20 [0.03]
Teq = 170 [7] K
Rp = 2.09 [0.43] Re
a = 0.9256 [0.0643] AU
Ag = 30354.41 [17582.30] [1.73σ]
Teffp = 3477 [512] K [6.45σ]

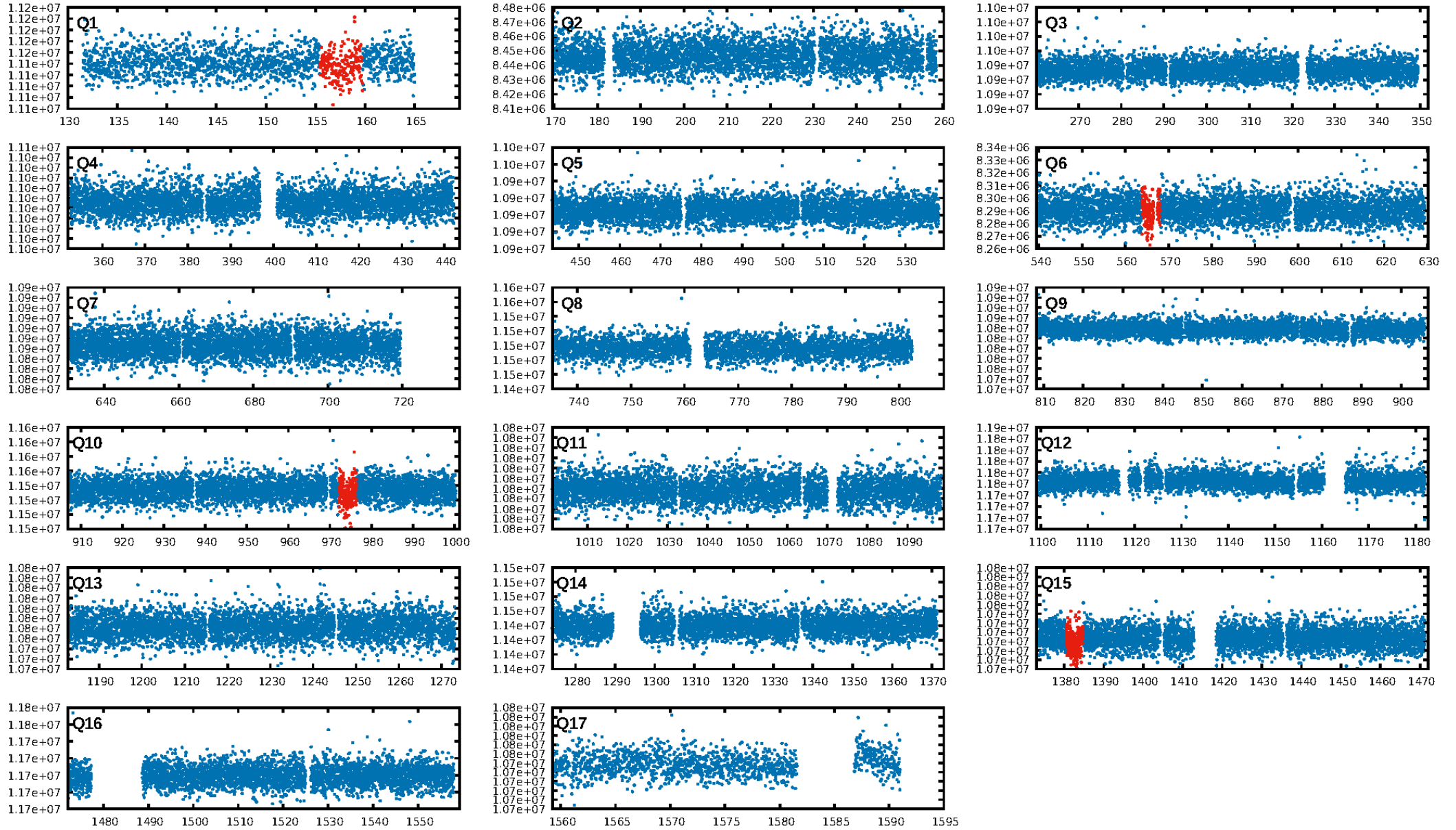
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: 33.1%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 4.60e-17
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: -0.05043
Centroid-sig: 0.7%
Centroid-so: 2.108 arcsec [1.76σ]
OotOffset-rm: 4.915 arcsec [1.30σ]
OotOffset-st: 0/1/0/1 [2]
KicOffset-rm: 4.383 arcsec [1.06σ]
KicOffset-st: 0/1/0/1 [2]
DiffImageQuality-fgm: 0.00 [0/2]
DiffImageOverlap-fno: 1.00 [2/2]

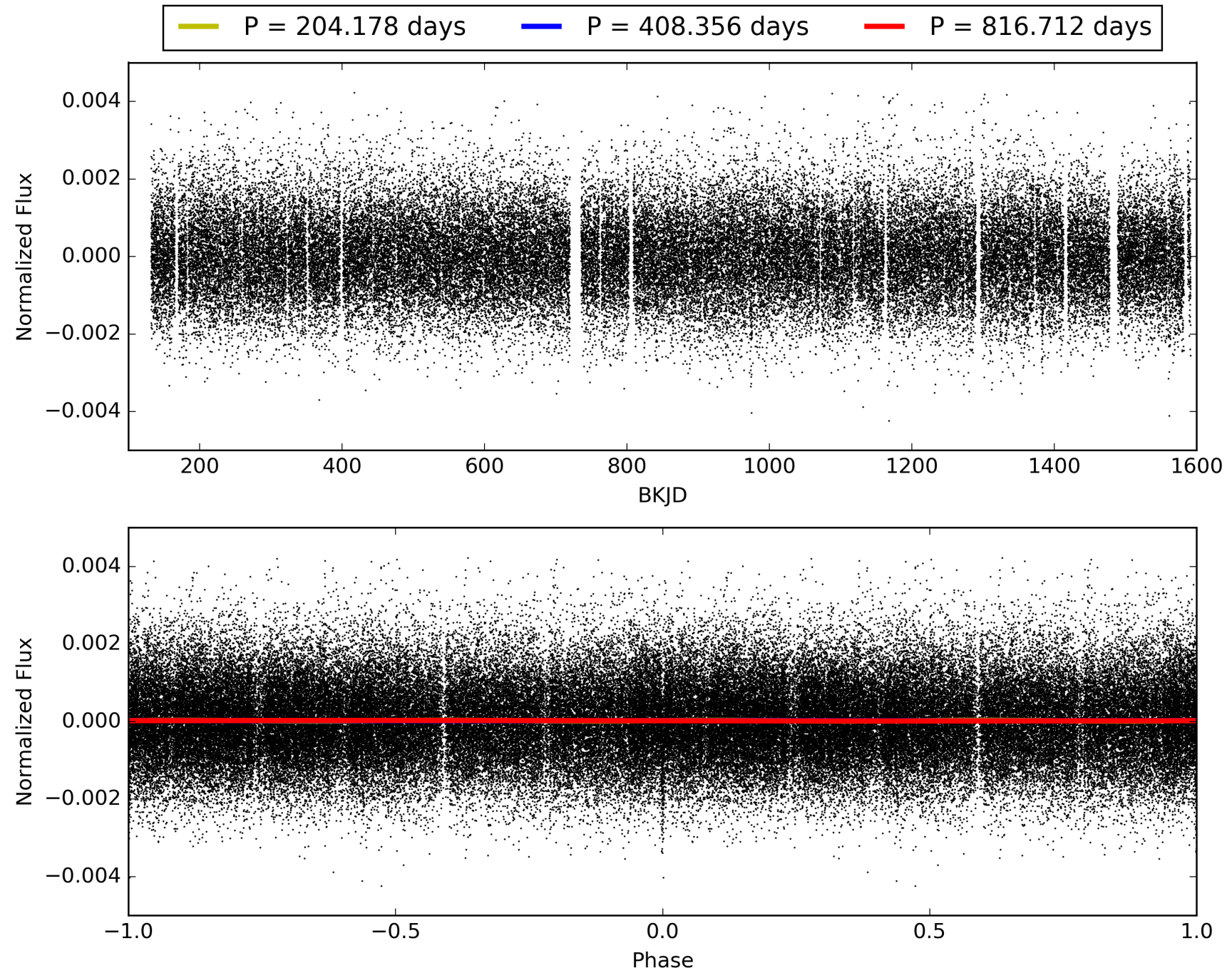
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 22:55:01 Z

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

TCE 008410668-01, PDC Light Curves

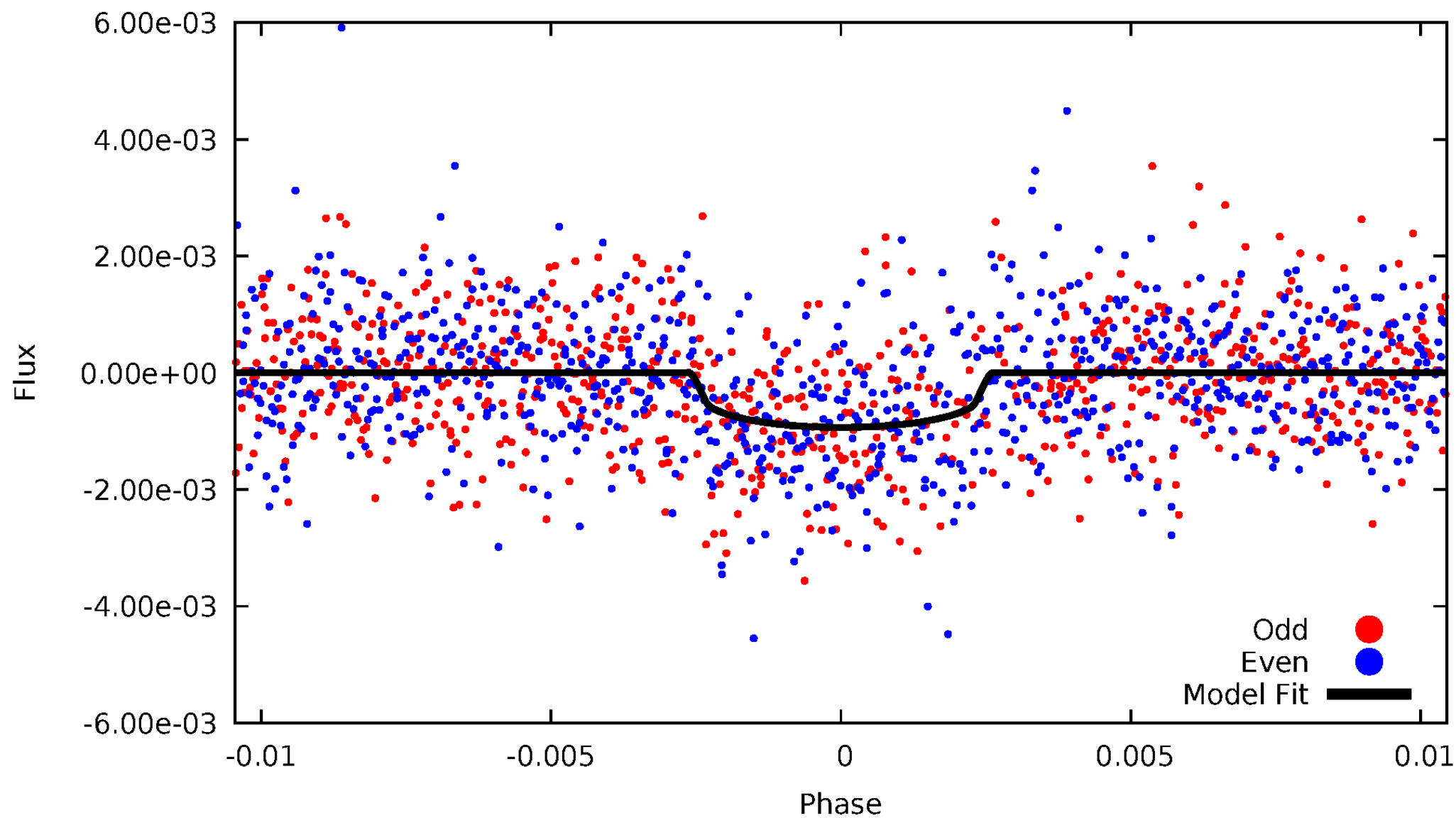


TCE 008410668-01



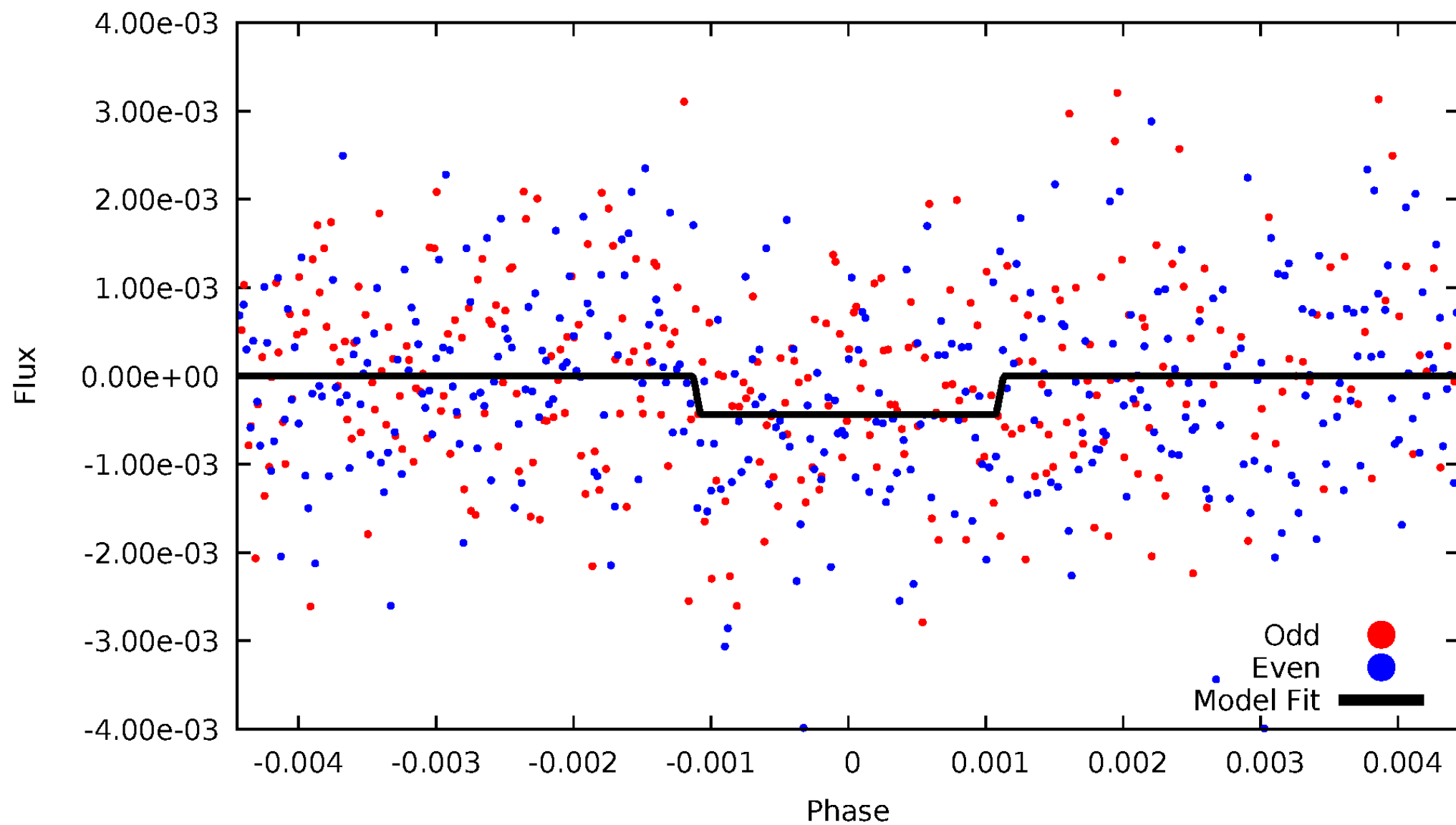
DV Odd/Even

TCE 008410668-01

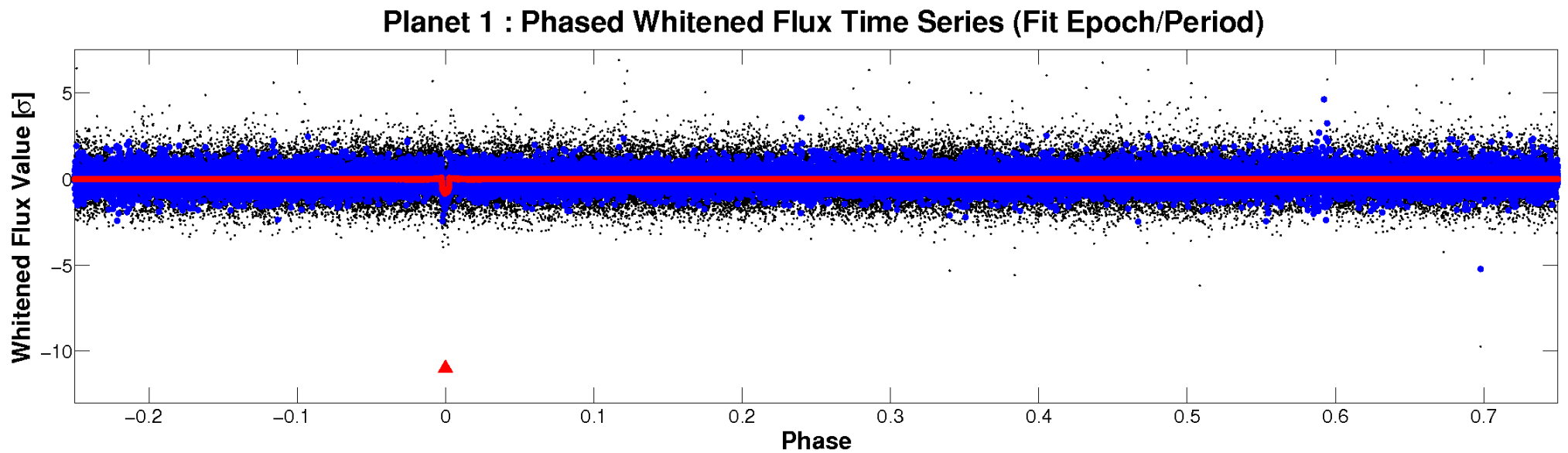
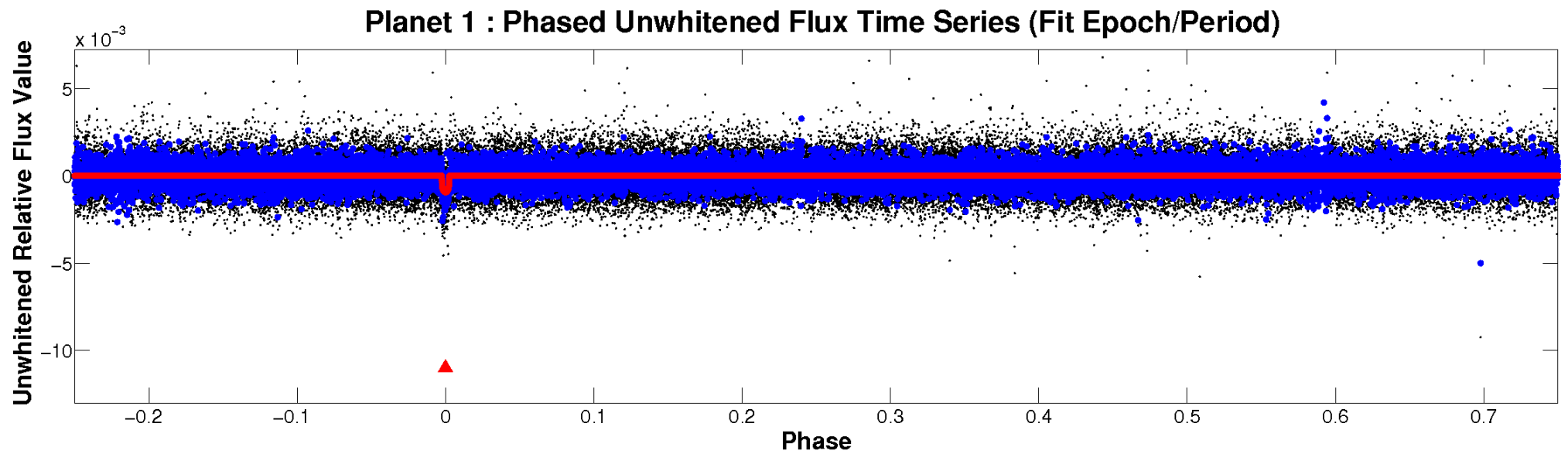


ALT Odd/Even

TCE 008410668-01

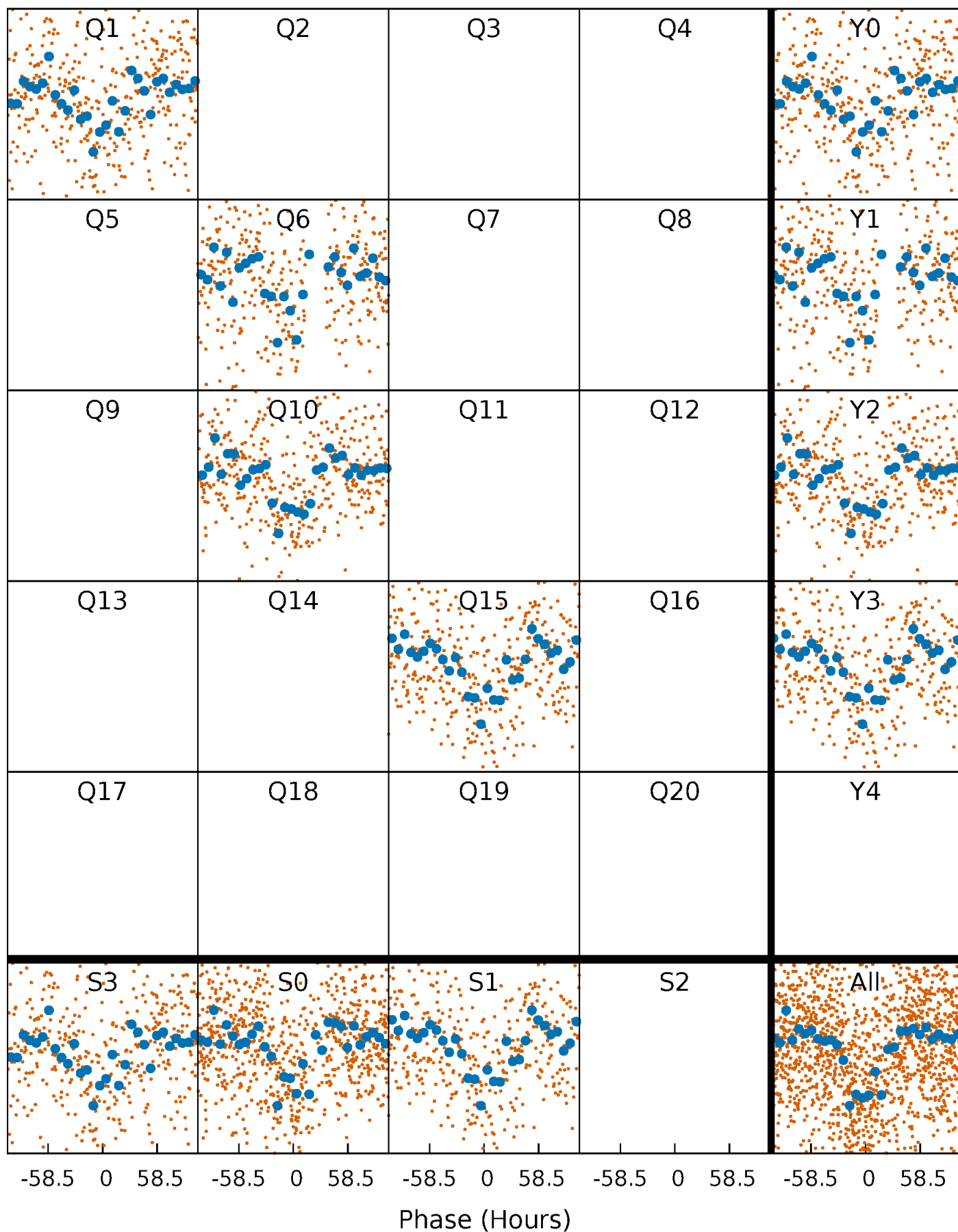


Non-Whitened Vs. Whitened Light Curve



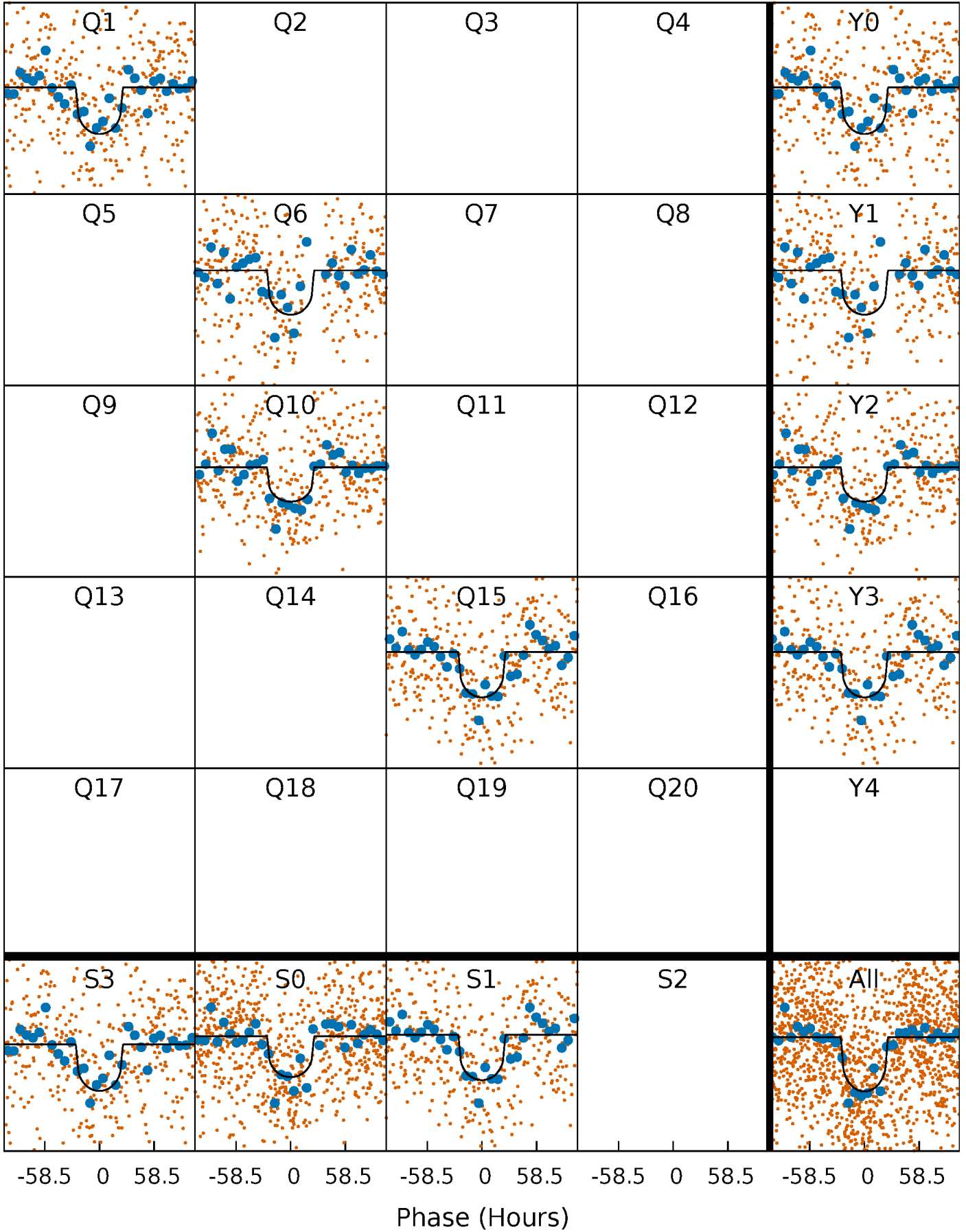
PDC Quarter-Phased Transit Curves

TCE 008410668-01 P=408.355969 Days $T_0=157.586995$ (BKJD)



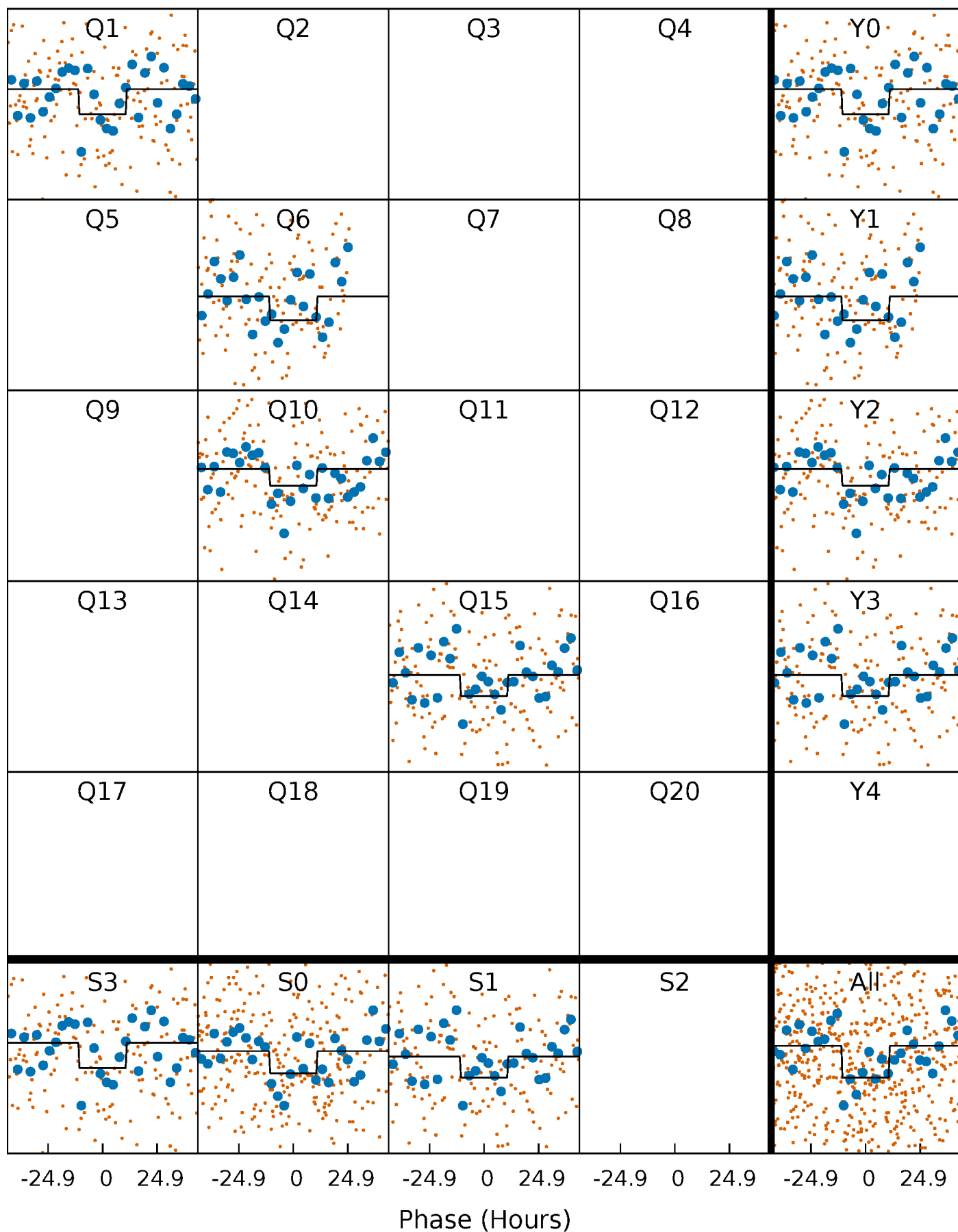
DV Quarter-Phased Transit Curves

TCE 008410668-01 P=408.355969 Days $T_0=157.586995$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

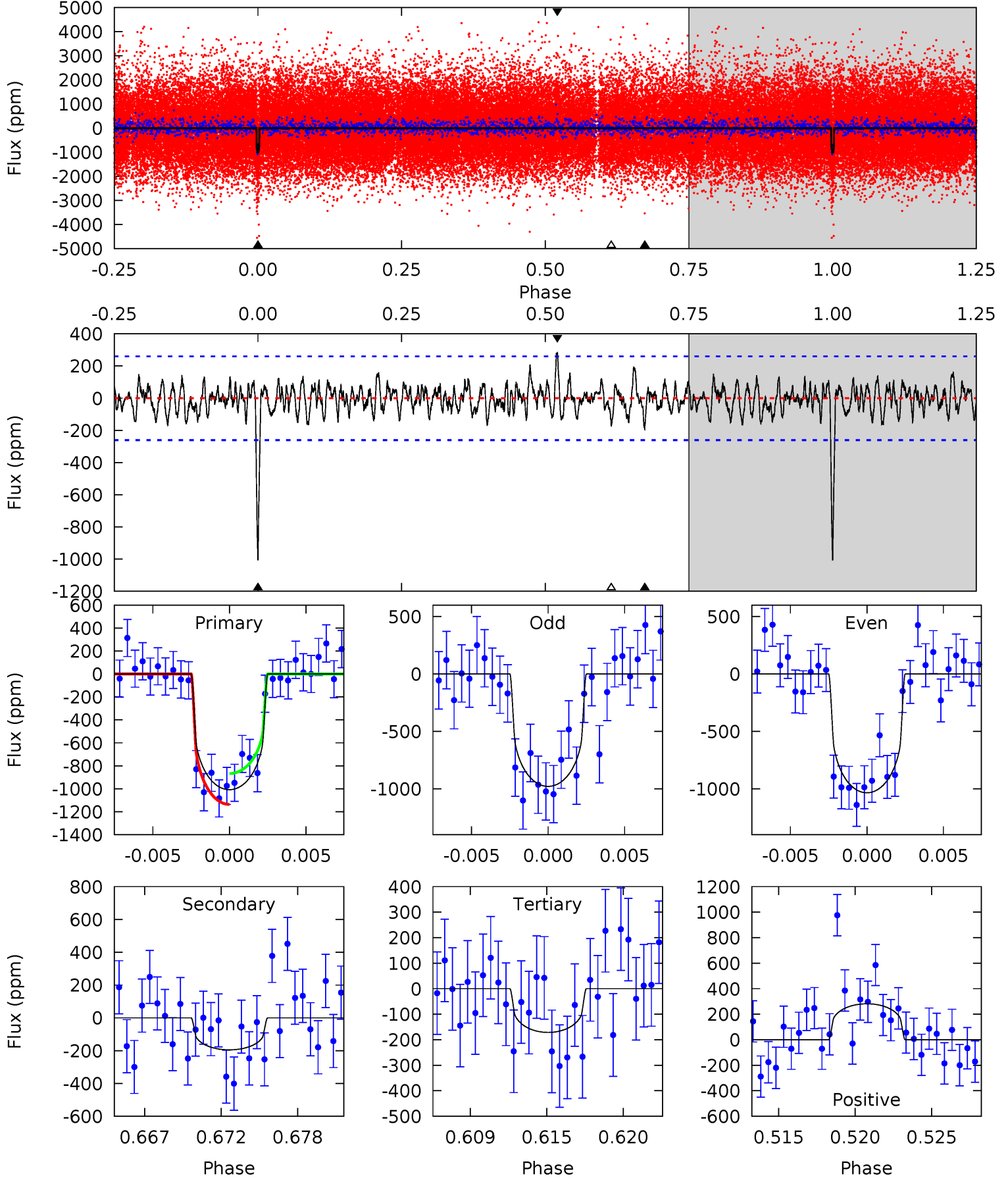
TCE 008410668-01 P=408.351074 Days $T_0=157.115772$ (BKJD)



DV Model-Shift Uniqueness Test

008410668-01, P = 408.355969 Days, E = 157.586995 Days

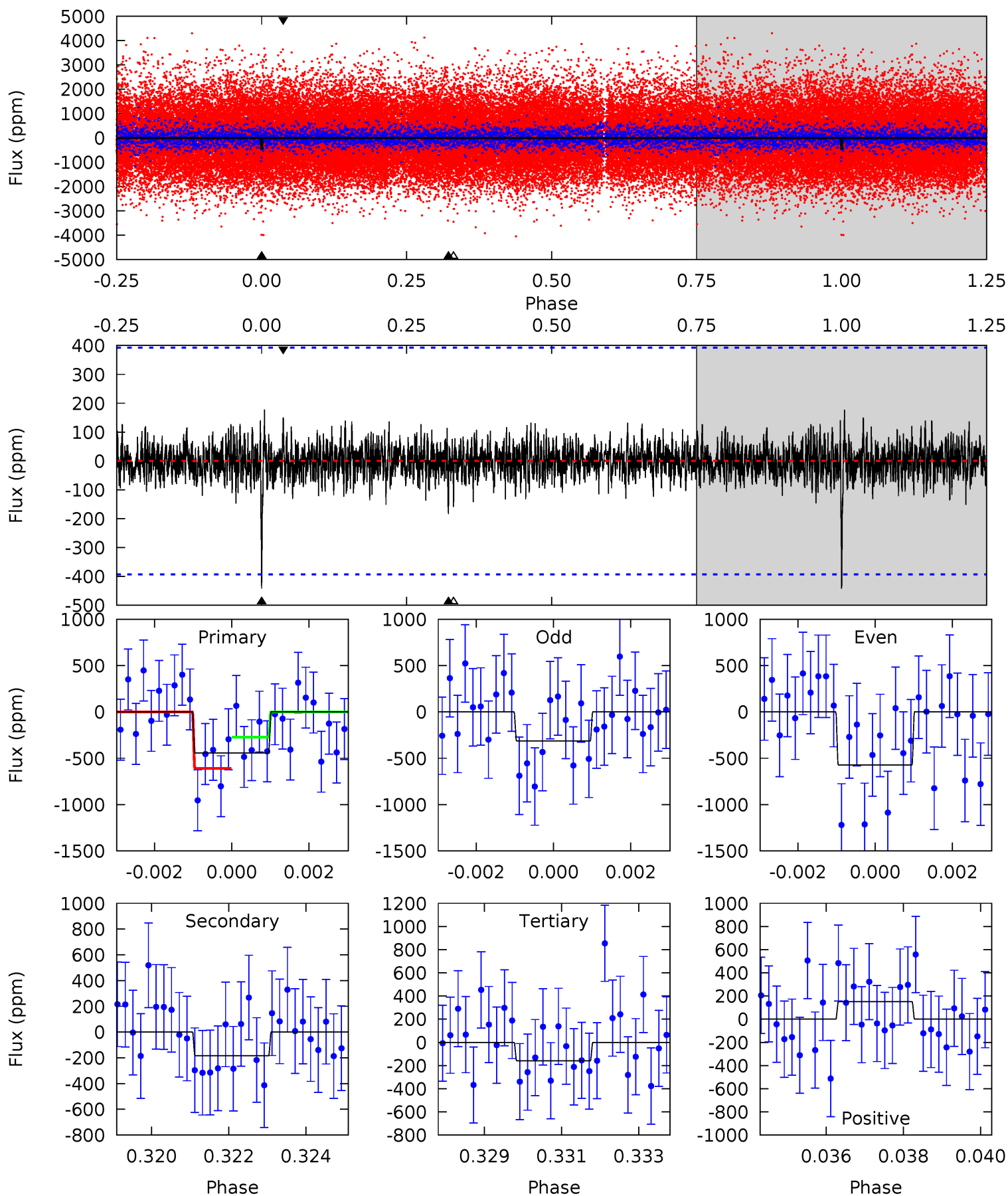
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
19.9	3.86	3.39	5.58	5.15	2.79	1.35	16.5	14.4	0.47	-1.72	0.55	1.03	0.22	2.65



Alt Model-Shift Uniqueness Test

008410668-01, P = 408.351074 Days, E = 157.115772 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
5.97	2.48	2.15	2.03	5.31	3.06	0.58	3.82	3.94	0.33	0.45	1.76	1.04	0.29	2.28



Stellar Parameters For KIC 008410668

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	M (M_{\odot})	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	4678^{+167}_{-167}	$4.640^{+0.045}_{-0.036}$	$-0.440^{+0.300}_{-0.300}$	$0.631^{+0.057}_{-0.051}$	$0.635^{+0.076}_{-0.044}$	$3.555^{+0.741}_{-0.562}$
	+4%/-4%	+1%/-1%	+68%/-68%	+9%/-8%	+12%/-7%	+21%/-16%
Source	PHO54	PHO54	PHO54	DSEP		

KIC = Kepler Input Catalog; PHO = Photometry; SPE = Spectroscopy; AST = Asteroseismology
 TRA = Transits; DESP = Dartmouth Models; MULT = Multiple Models

Secondary Eclipse Parameters for KIC 008410668-01 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-195 ± 51	$2.07^{+0.42}_{-0.41}$	237^{+10}_{-9}	3538^{+318}_{-259}	21042^{+13978}_{-7675}
Alt.	-184 ± 74	$1.43^{+0.38}_{-0.41}$	237^{+10}_{-9}	4000^{+594}_{-491}	43703^{+44687}_{-23896}

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

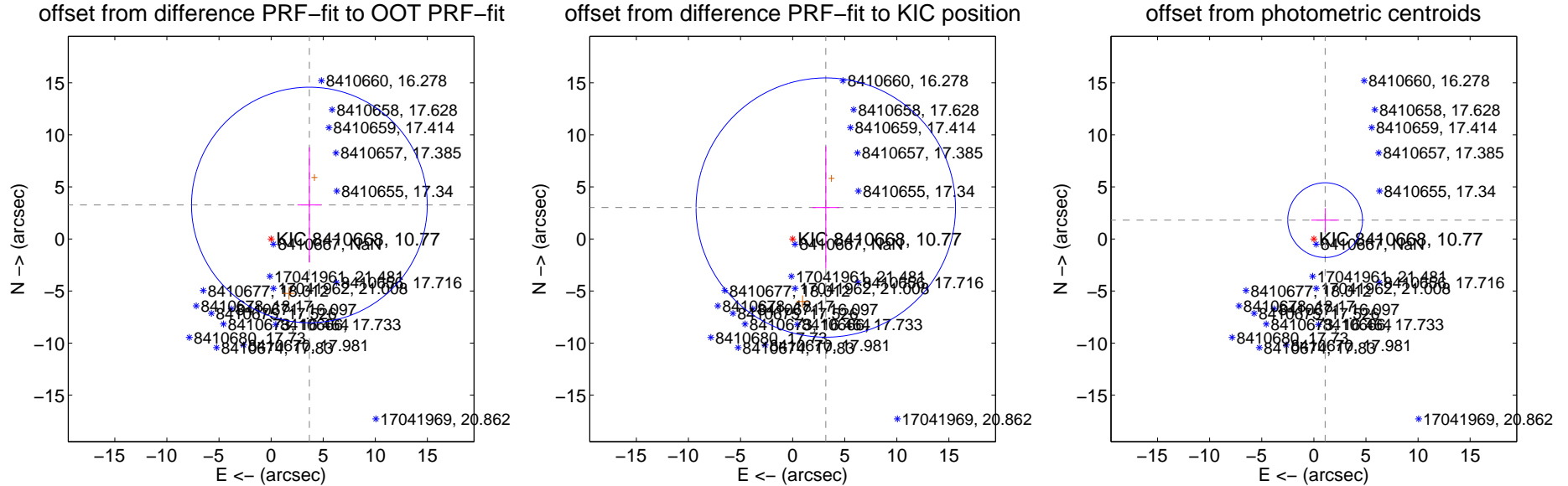
DV Centroid Data

Supplemental centroid analysis for 008410668-01. **Kepler magnitude: 10.77.** Transit SNR 12.95

There are 0 quarters with good PRF difference image offsets

The direct PRF centroid is offset from the target star catalog position by about 1.08 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	4.915 ± 3.771	1.30	-3.674 ± 1.144	3.264 ± 5.529
PRF-fit source offset from KIC position	4.383 ± 4.151	1.06	-3.181 ± 1.291	3.016 ± 5.877
photometric centroid source offset	2.11 ± 1.20	1.76	-1.08 ± 1.33	1.81 ± 1.15



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.

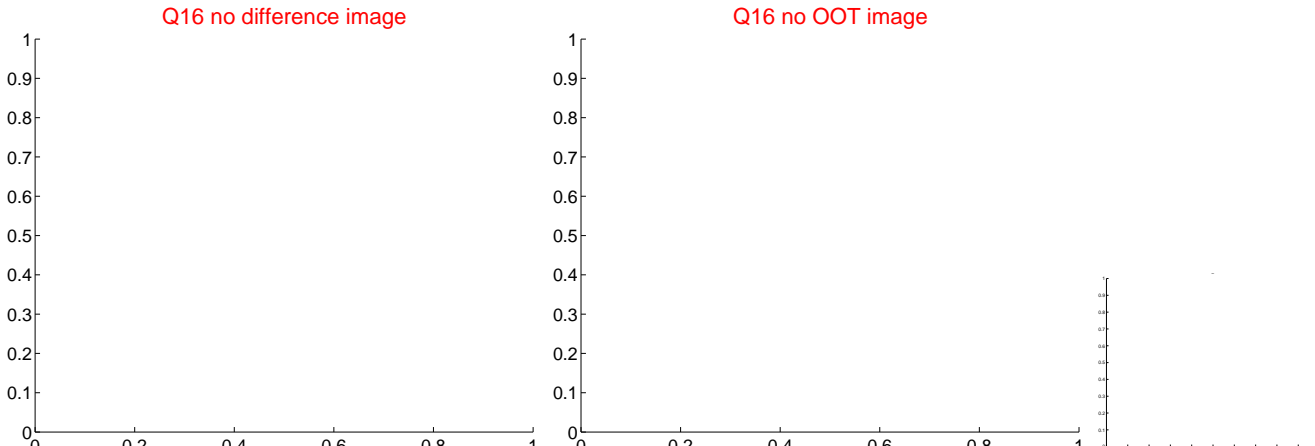
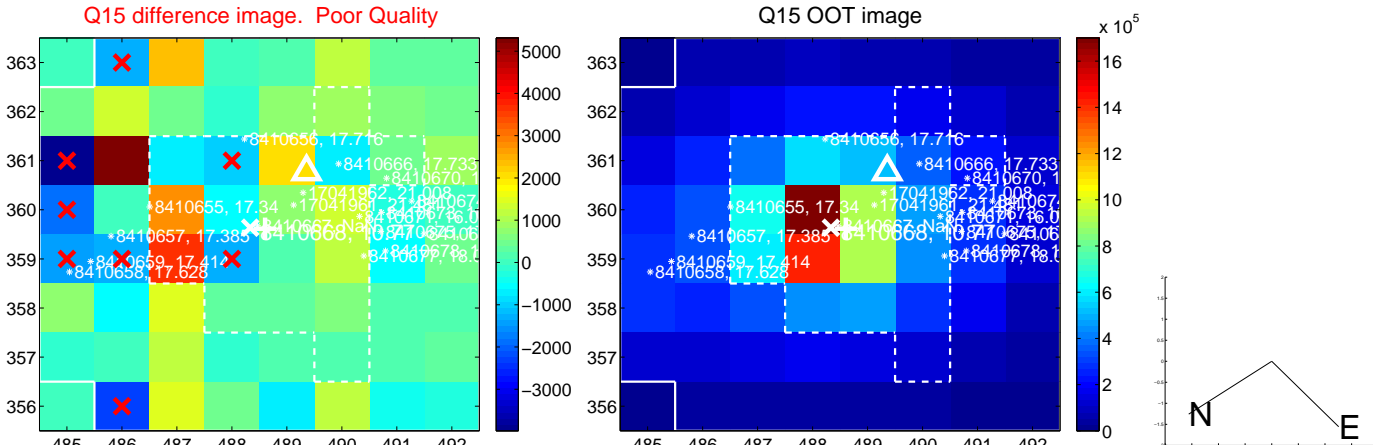
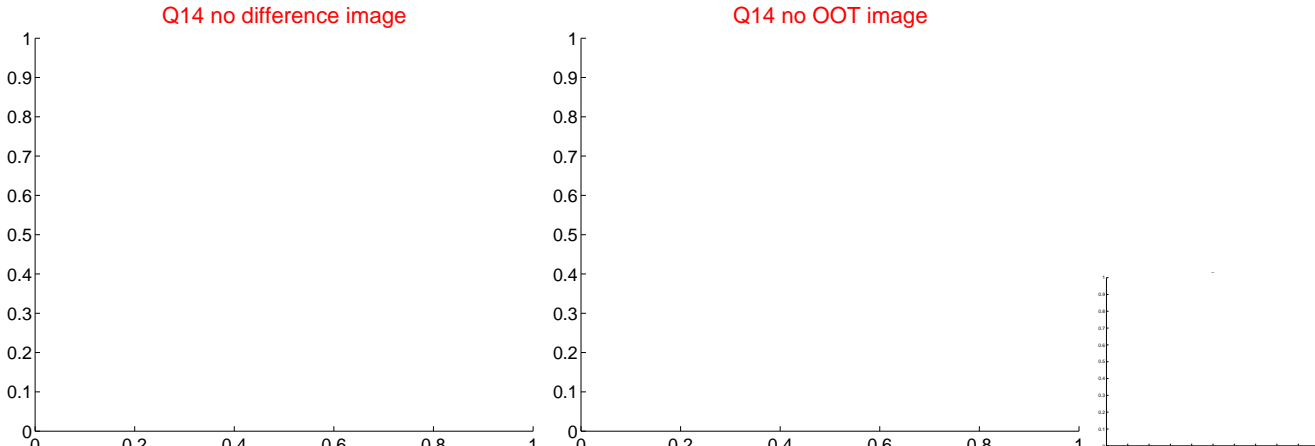
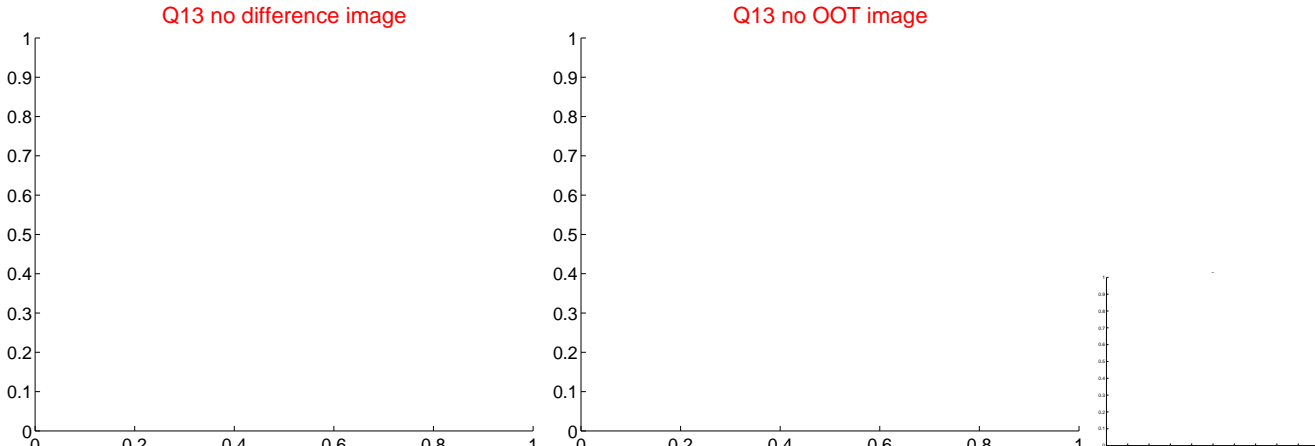
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



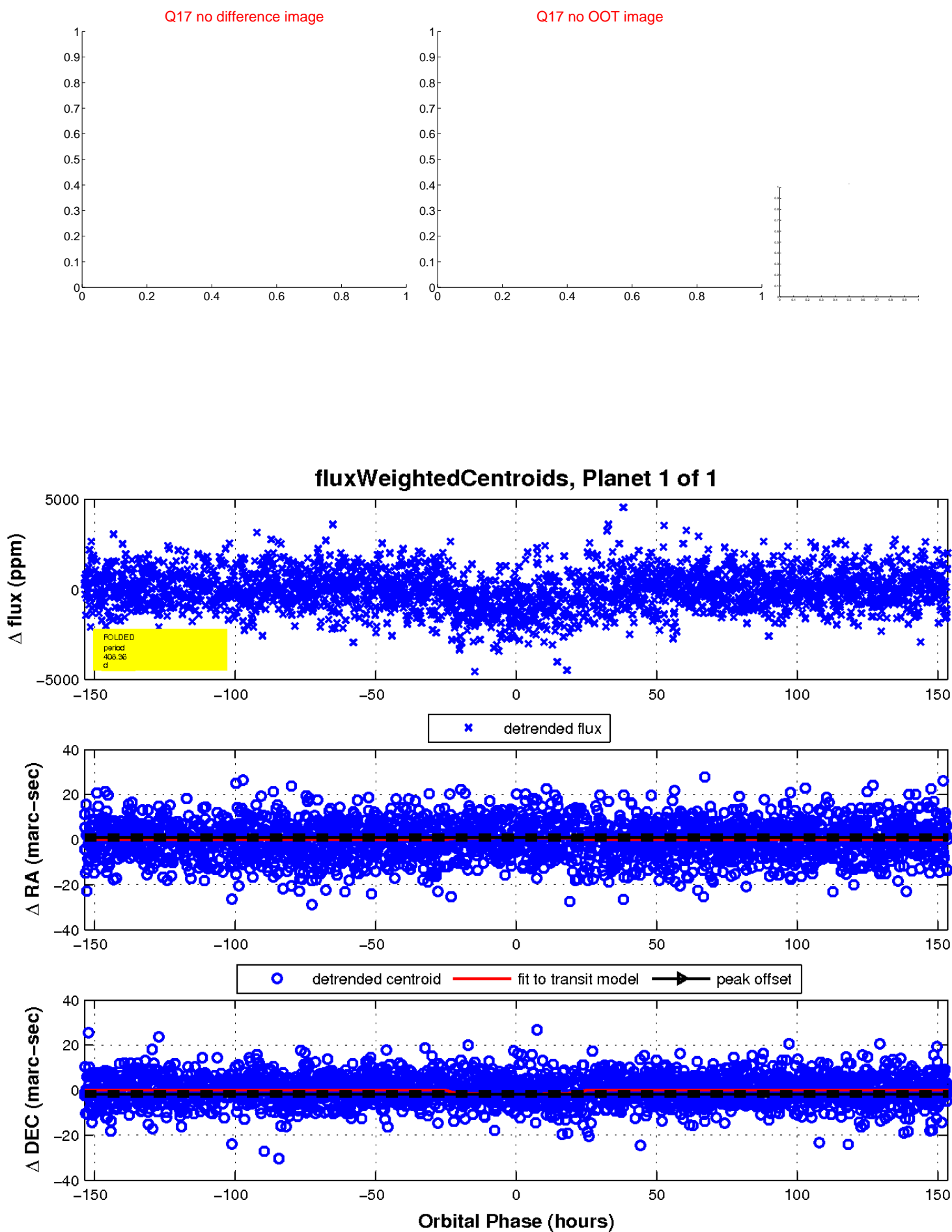
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



UKIRT Image

