

KIC 002708176

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})
002708176-01	OBS	No	1.890958	132.815641	163.4	4.692	8.1	8.7	0.94	6529	1.35	1881.18

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
002708176-01	OBS	FP	0.00	1	0	0	0	LPP_DV—CENT_FEW_DIFFS

Notes: OBS = Observed. INJ = Injected. INV = Inverted. SCR = Scrambled.

N = Not Transit-Like. S = Stellar Eclipse. C = Centroid Offset. E = Ephemeris Match.

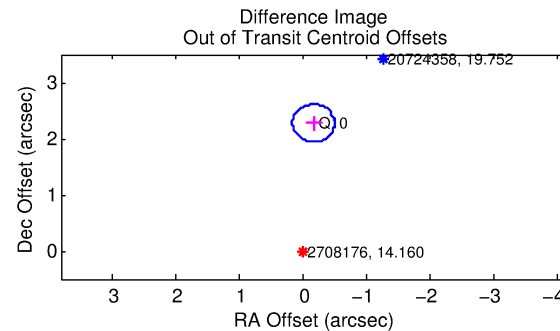
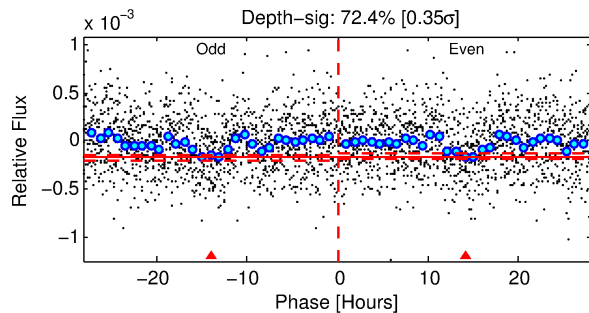
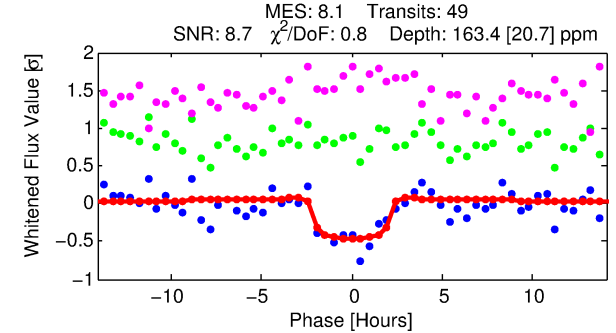
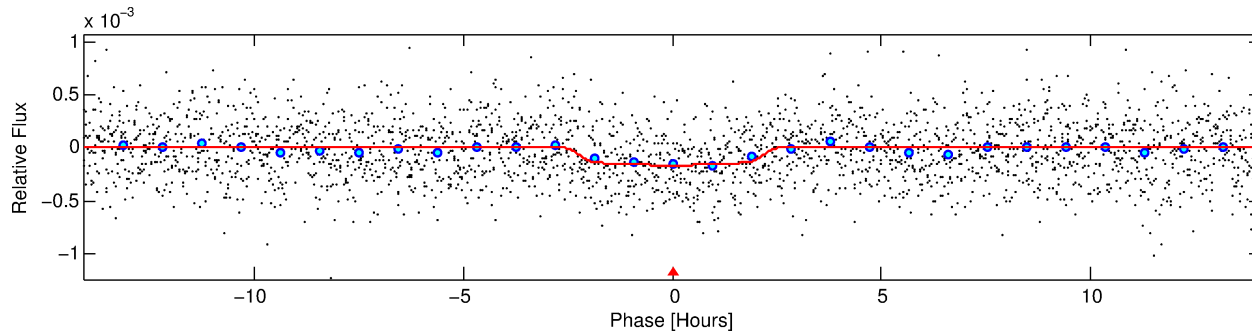
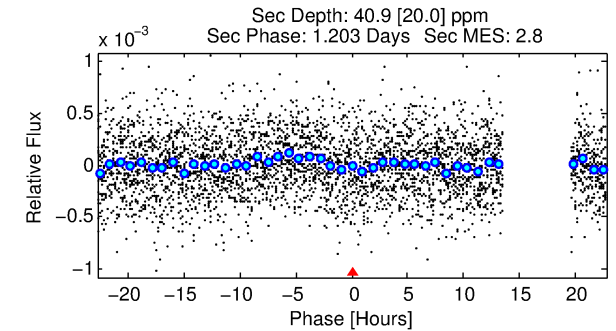
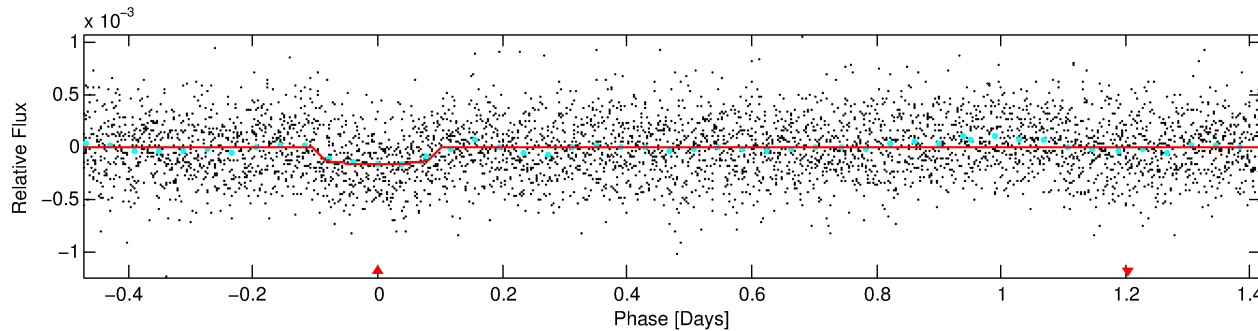
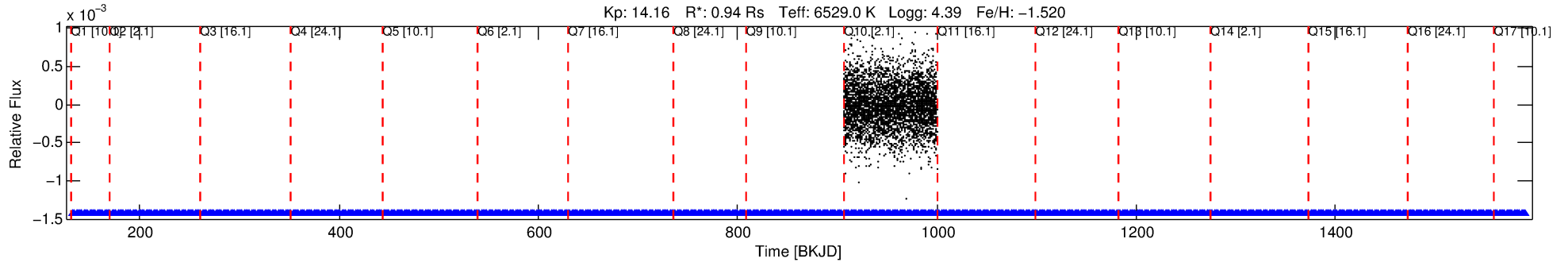
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 002708176-01

No Significant Match Found

DV One-Page Summary

KIC: 2708176 Candidate: 1 of 1 Period: 1.891 d



DV Fit Results:

Period = 1.89096 [0.00002] d
Epoch = 132.8156 [0.0058] BKJD
Rp/R* = 0.0131 [0.0068]
a/R* = 1.96 [4.36]
b = 0.84 [1.06]
Seff = 1881.19 [592.55]
Teq = 1679 [132] K
Rp = 1.35 [0.75] Re
a = 0.0277 [0.0051] AU
Ag = 9.45 [11.16] [0.76σ]
Teffp = 4553 [1313] K [2.18σ]

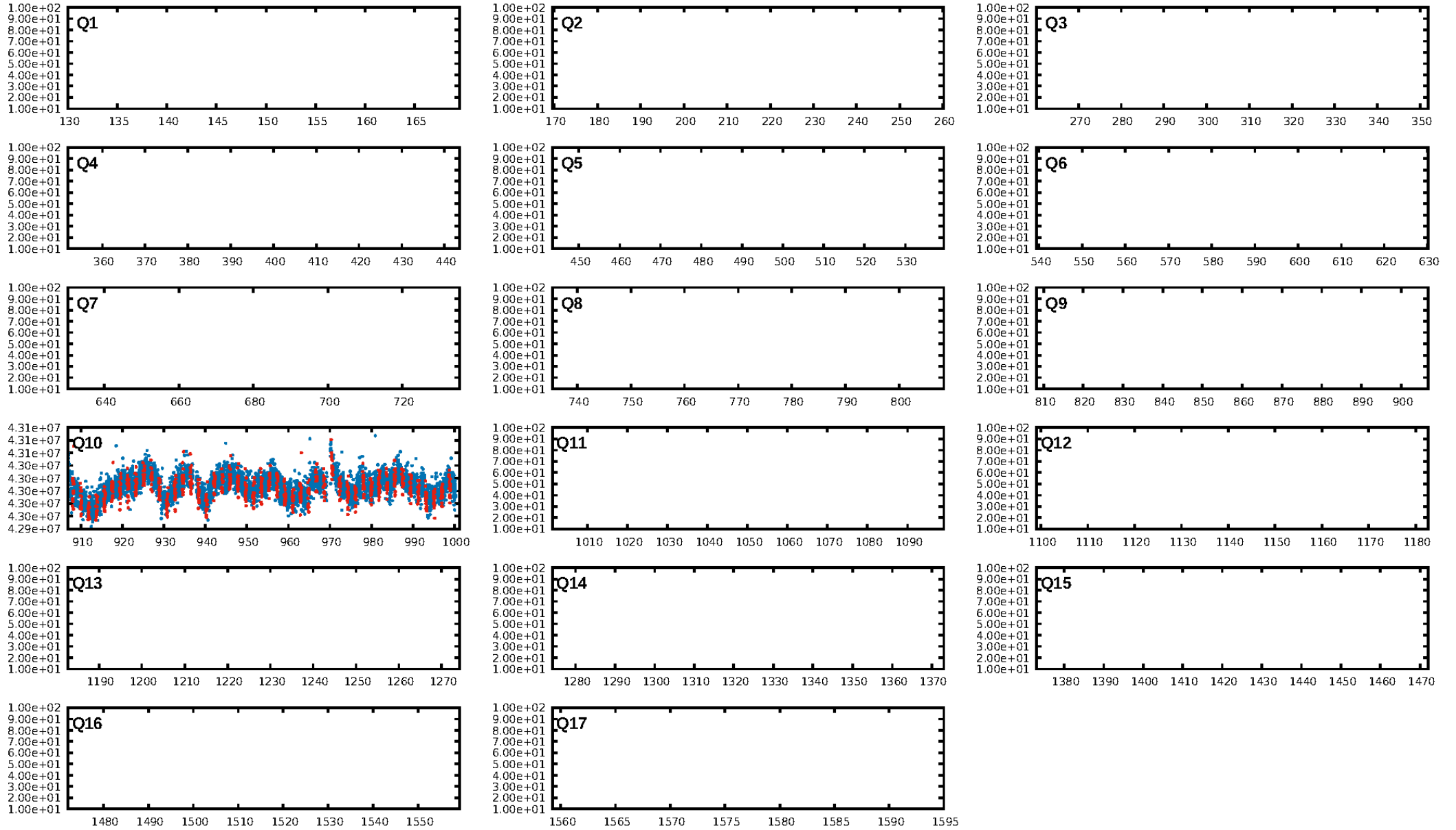
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: 94.3%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 1.28e-15
RollingBand-fgt: 1.00 [49/49]
GhostDiagnostic-chr: -0.4198
Centroid-sig: 23.8%
Centroid-so: 0.623 arcsec [0.74σ]
OotOffset-rm: 2.283 arcsec [20.62σ]
KicOffset-rm: 2.138 arcsec [19.31σ]
OotOffset-st: 1/0/0/0 [1]
KicOffset-st: 1/0/0/0 [1]
DiffImageQuality-fgm: 0.00 [0/1]
DiffImageOverlap-fno: 1.00 [1/1]

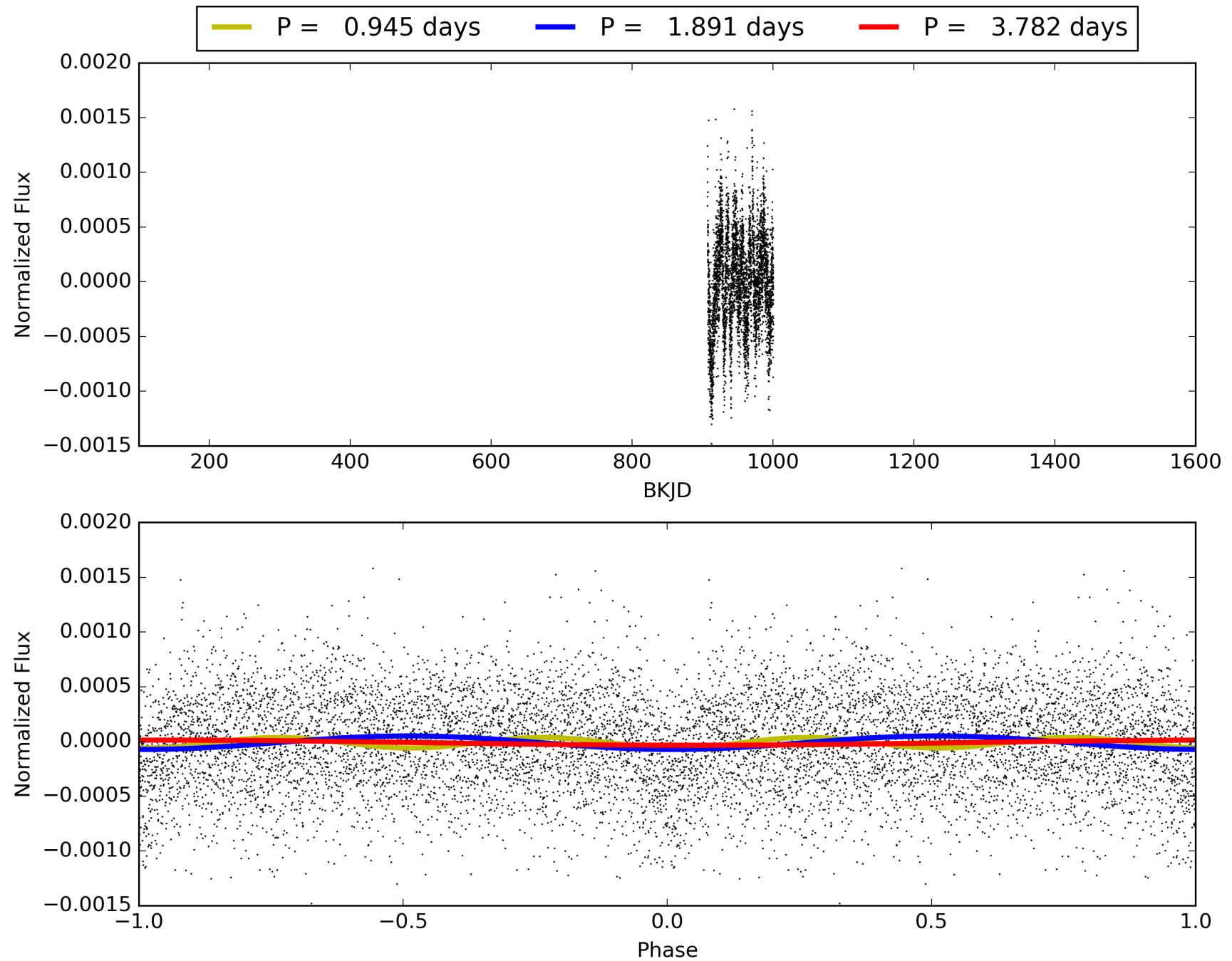
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 10:03:32 Z

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

TCE 002708176-01, PDC Light Curves

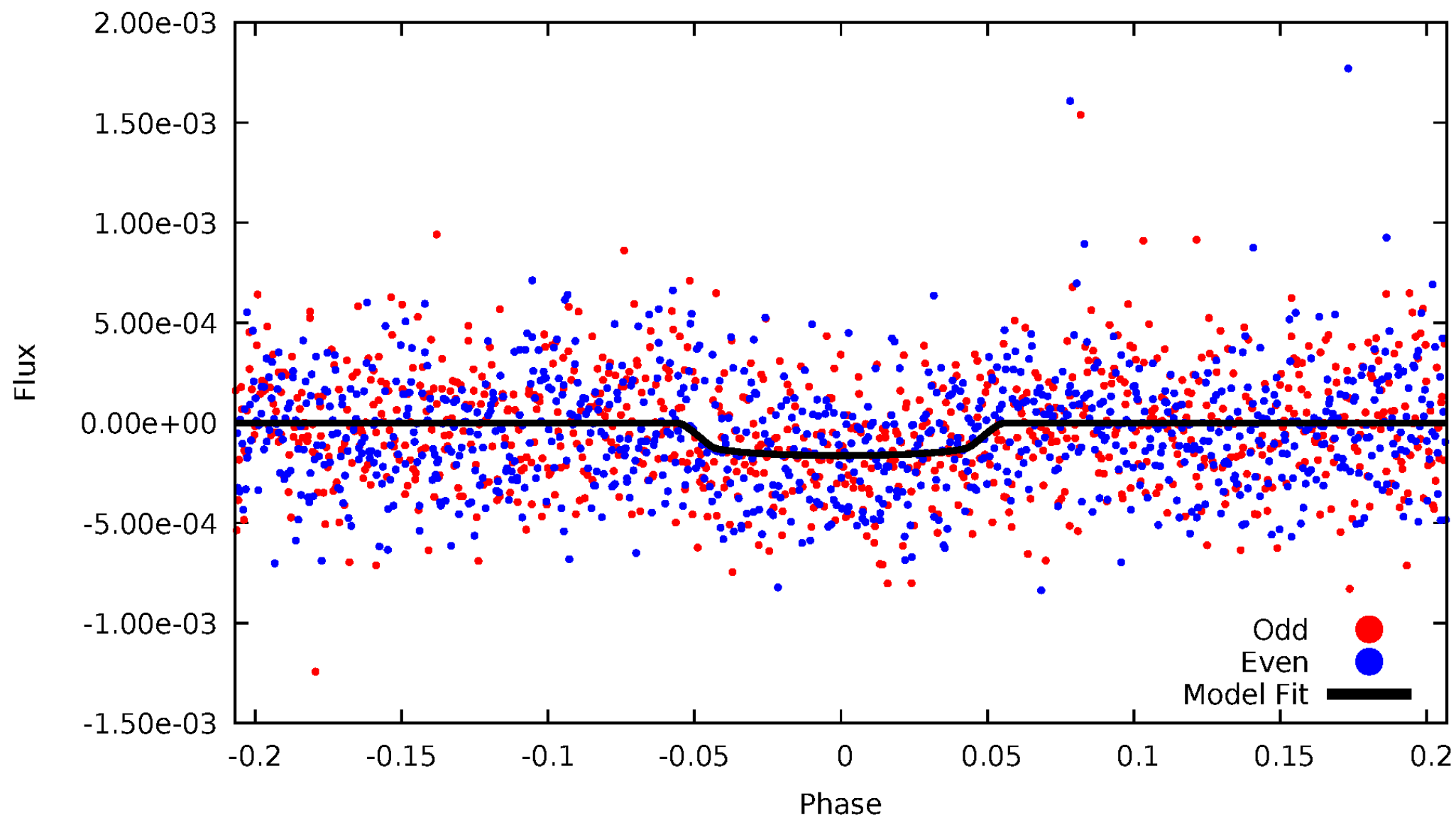


TCE 002708176-01



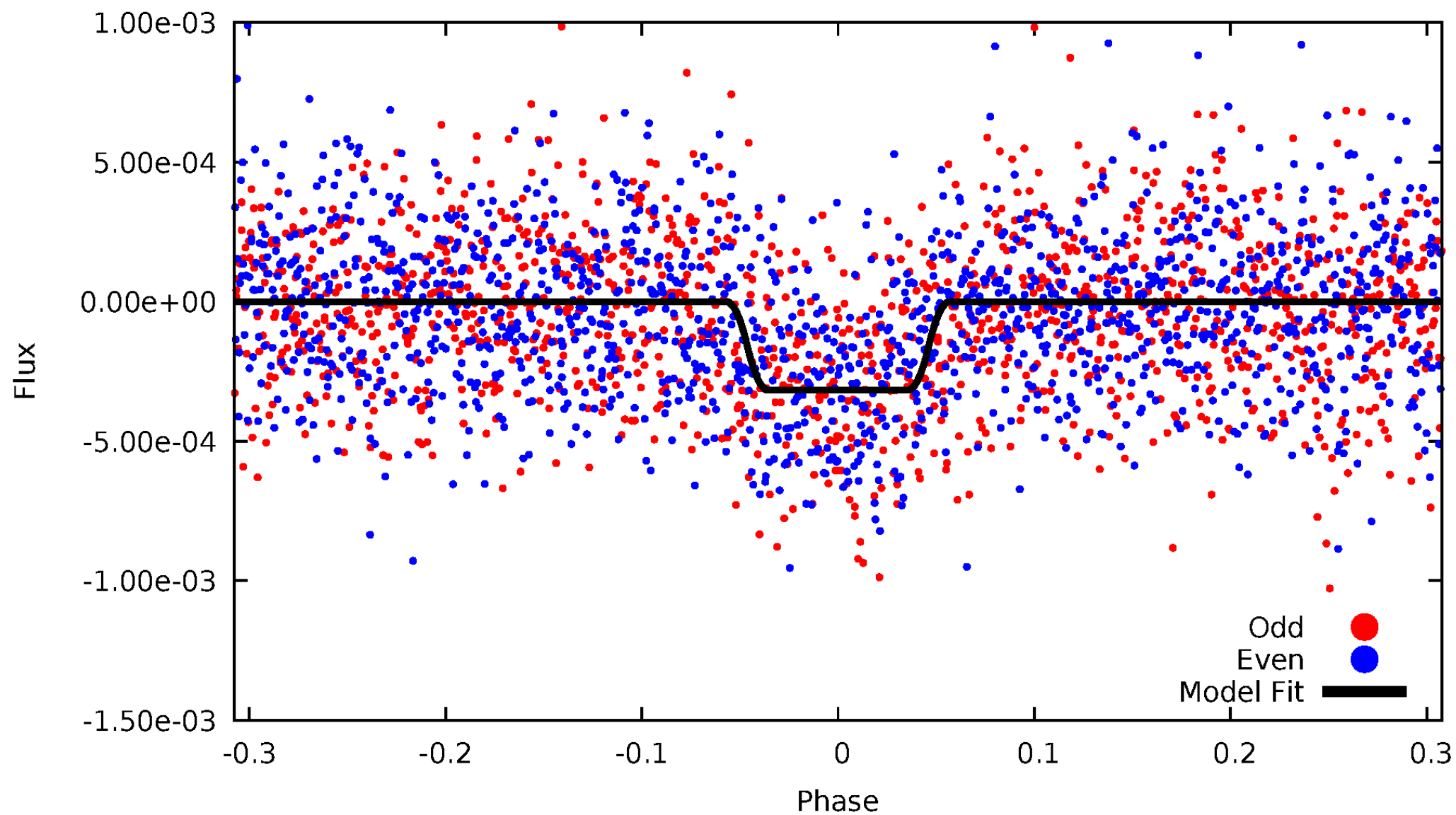
DV Odd/Even

TCE 002708176-01



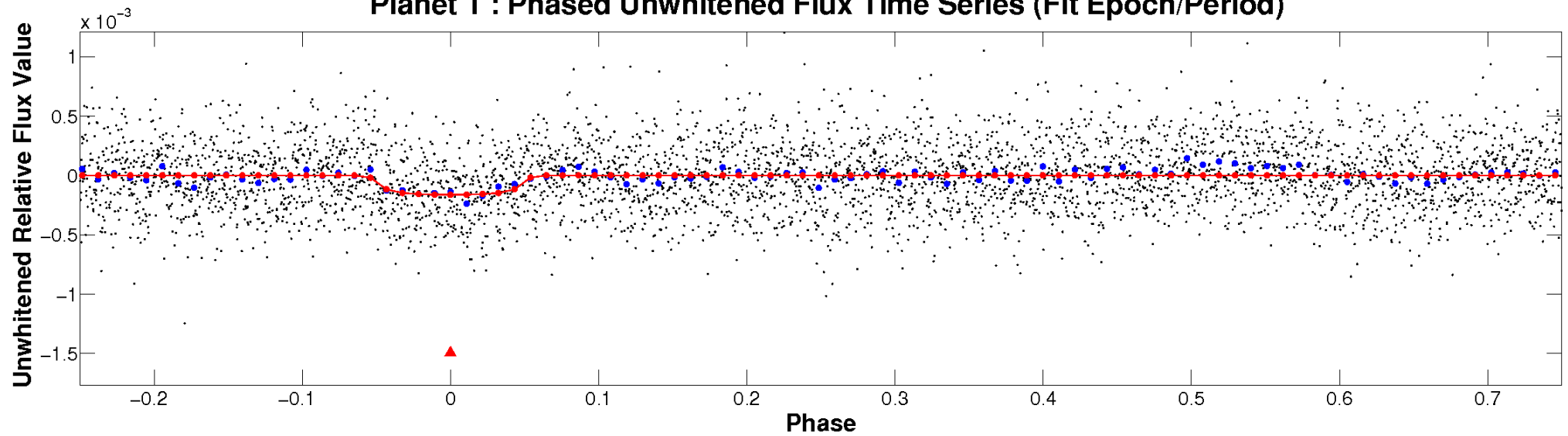
ALT Odd/Even

TCE 002708176-01

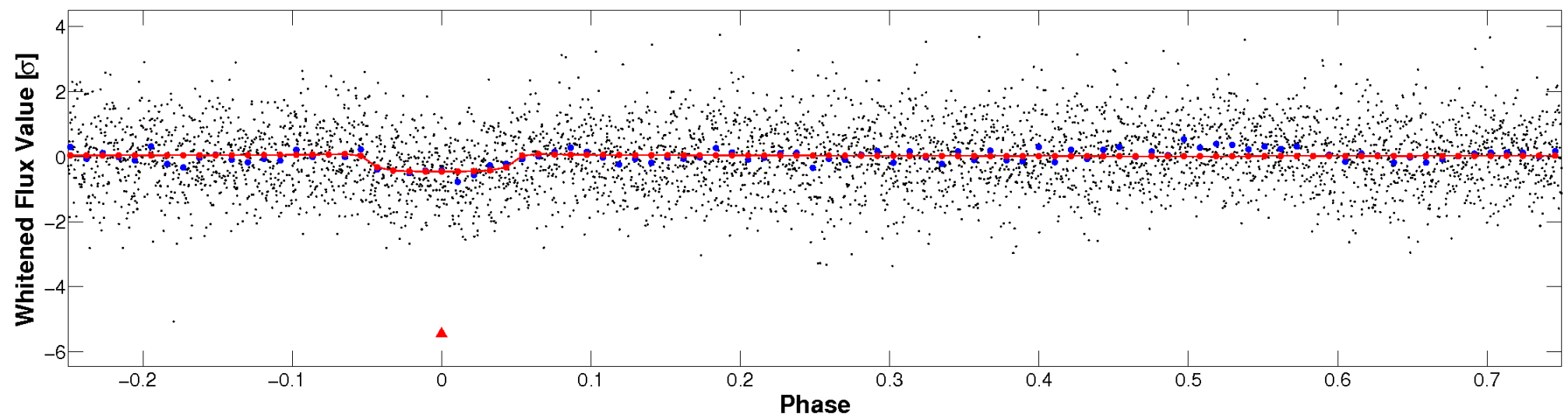


Non-Whitened Vs. Whitened Light Curve

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

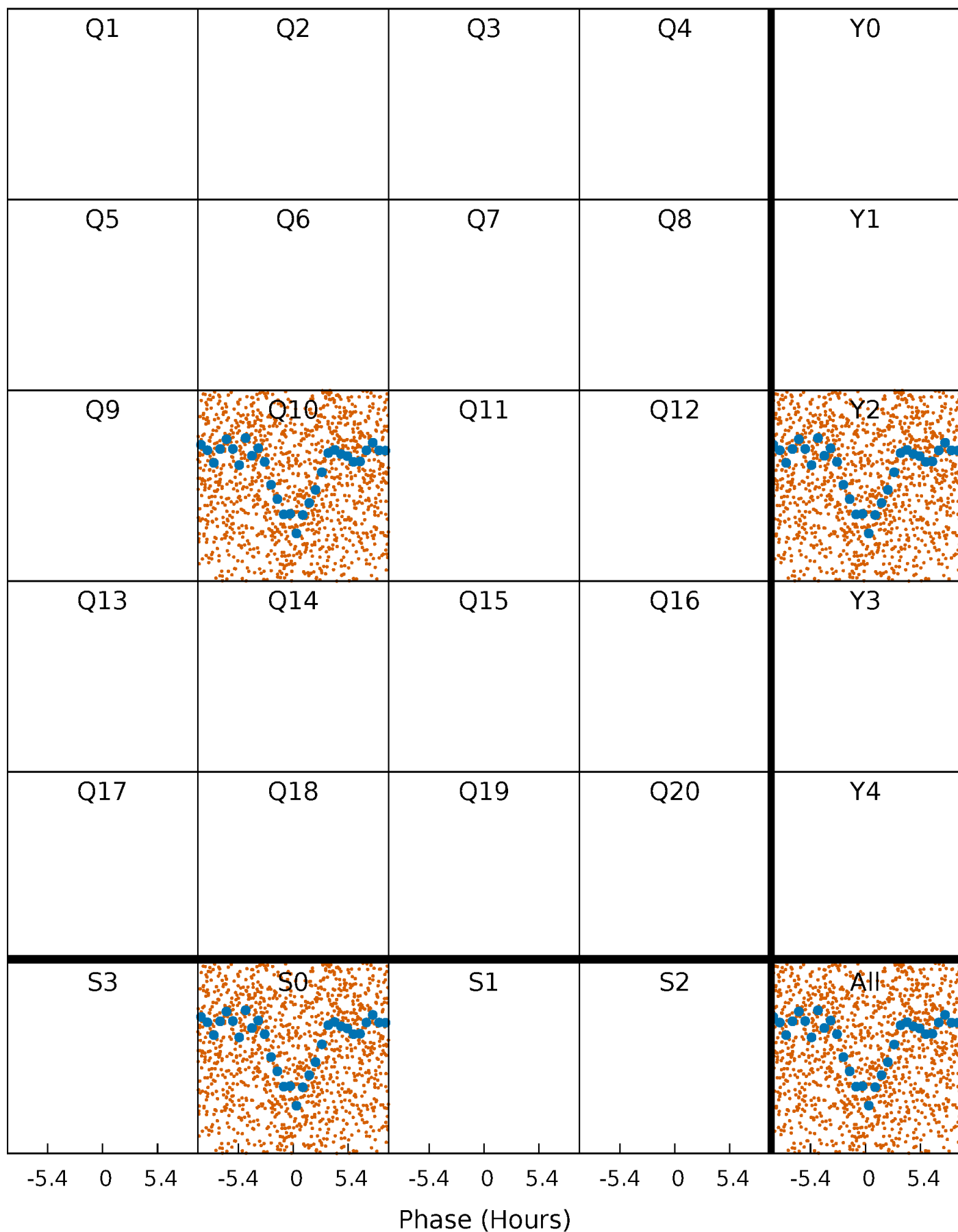


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



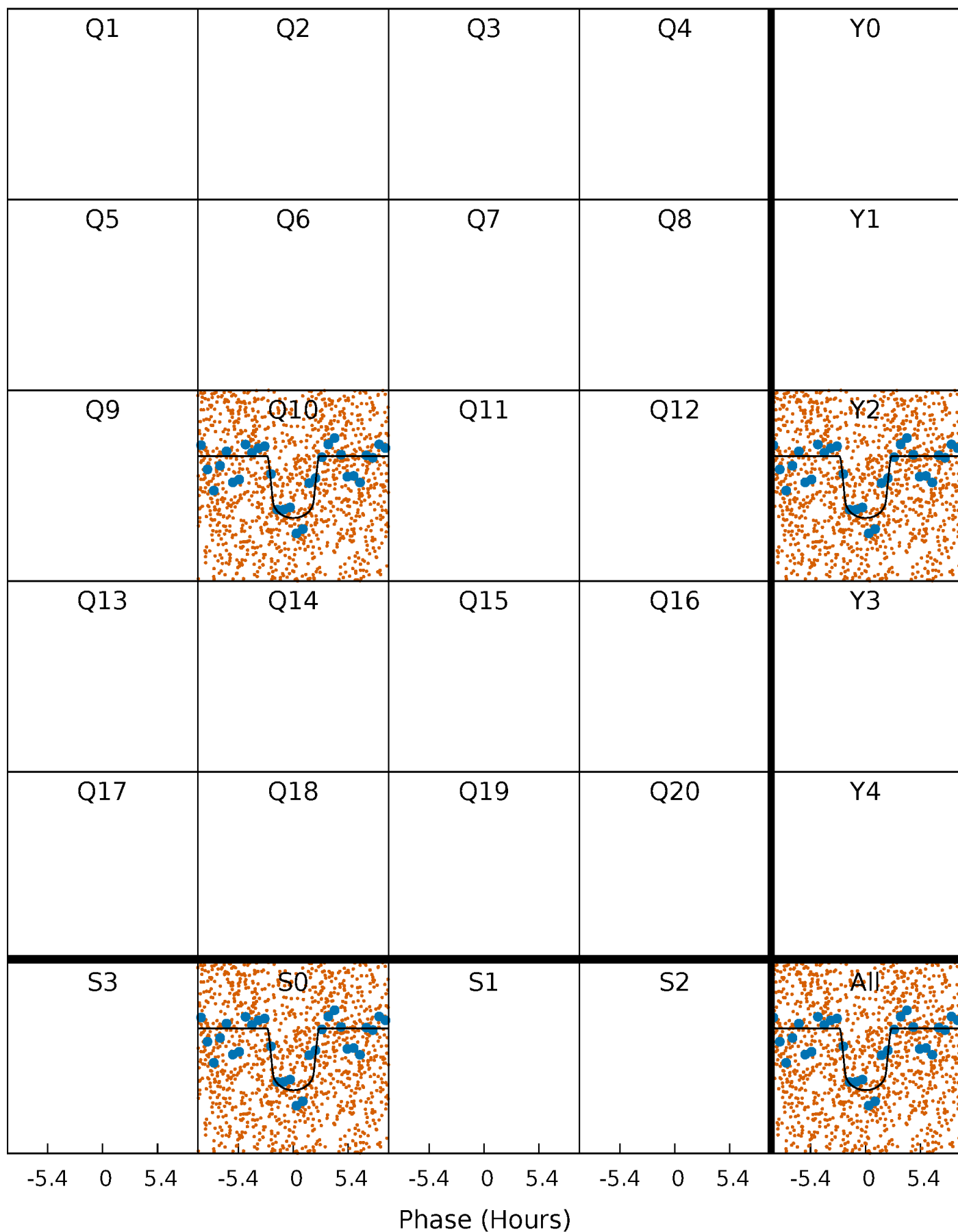
PDC Quarter-Phased Transit Curves

TCE 002708176-01 P= 1.890958 Days $T_0=132.815641$ (BKJD)



DV Quarter-Phased Transit Curves

TCE 002708176-01 P= 1.890958 Days $T_0=132.815641$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

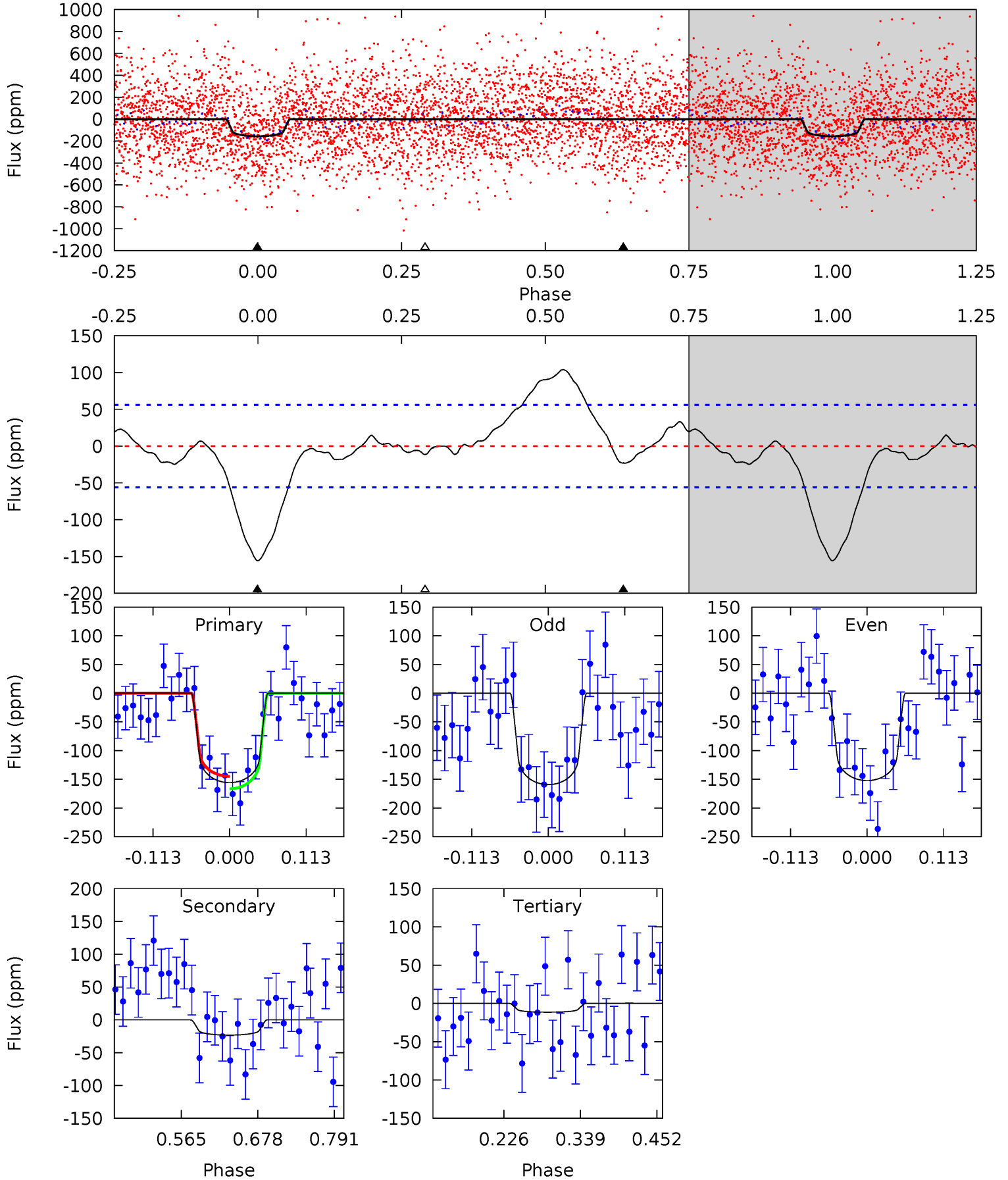
TCE 002708176-01 P= 1.890943 Days $T_0=132.827726$ (BKJD)



DV Model-Shift Uniqueness Test

002708176-01, P = 1.890958 Days, E = 132.815641 Days

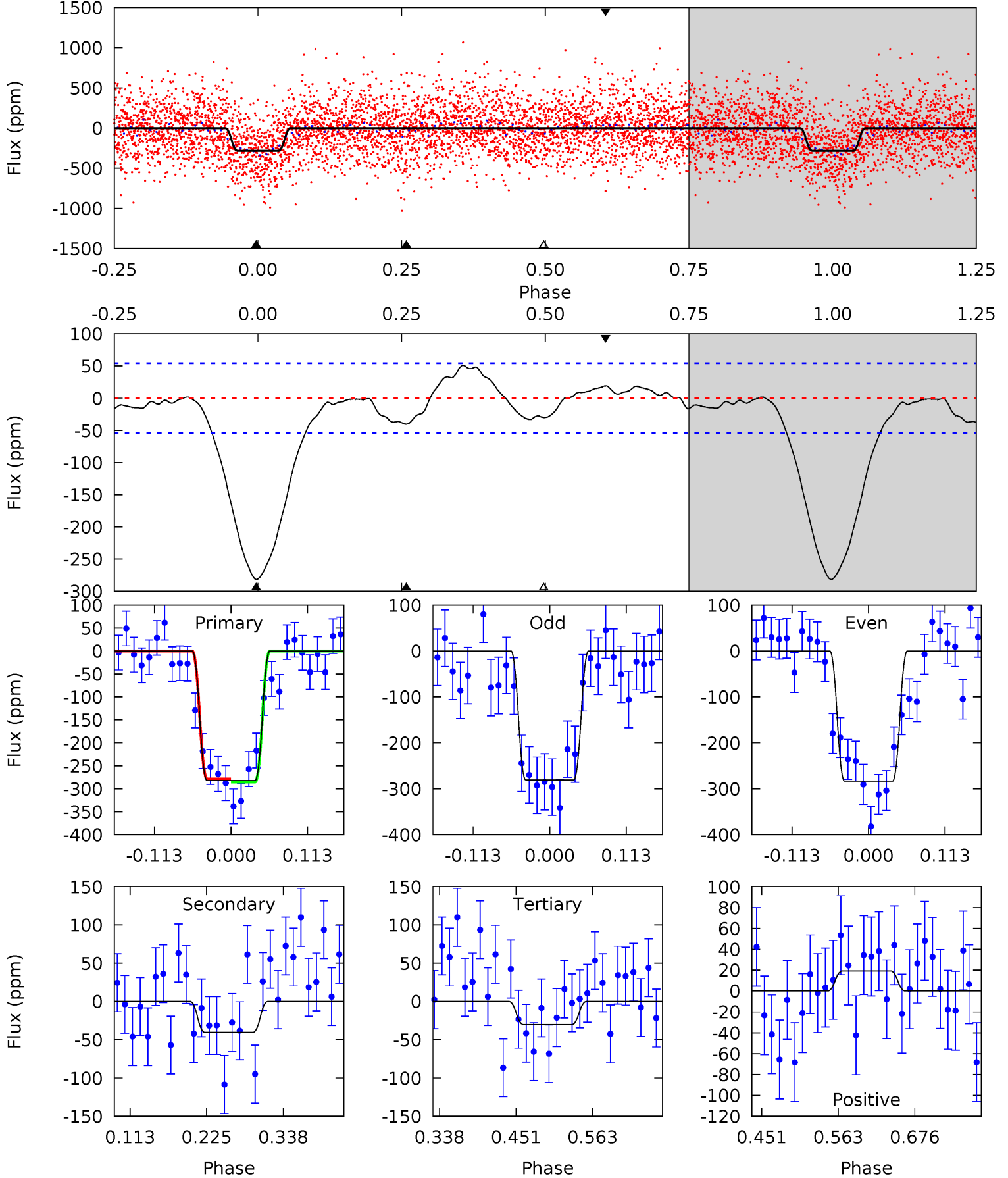
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
12.6	1.88	0.92	0	4.54	1.58	2.46	11.7	12.6	0.95	1.88	0.29	1.03	0.40	0.88



Alt Model-Shift Uniqueness Test

002708176-01, P = 1.890943 Days, E = 132.827726 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
23.6	3.38	2.53	1.61	4.54	1.59	1.44	21.1	22.0	0.84	1.76	0.11	1.03	0.15	0.28



Stellar Parameters For KIC 002708176

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	6529^{+197}_{-216}	$4.389^{+0.165}_{-0.165}$	$-1.520^{+0.300}_{-0.250}$	$0.941^{+0.187}_{-0.153}$	$0.791^{+0.080}_{-0.040}$	$1.336^{+1.010}_{-0.581}$
	+3%/-3%	+4%/-4%	+20%/-16%	+20%/-16%	+10%/-5%	+76%/-43%
Source	KIC0	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 002708176-01 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-23 ± 12	$1.37^{+0.71}_{-0.62}$	2356^{+152}_{-164}	4085^{+1239}_{-755}	$4.868^{+13.631}_{-3.315}$
Alt.	-40 ± 12	$1.85^{+0.77}_{-0.71}$	2357^{+146}_{-139}	4076^{+1032}_{-505}	$4.809^{+9.992}_{-2.490}$

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

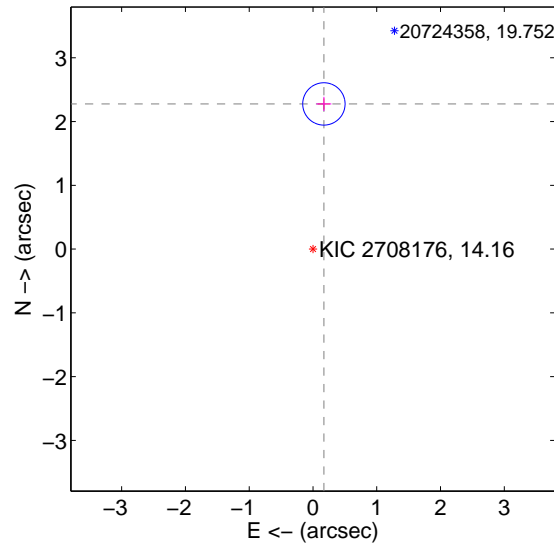
Supplemental centroid analysis for 002708176-01. Kepler magnitude: 14.16. Transit SNR 8.70

There are 0 quarters with good PRF difference image offsets

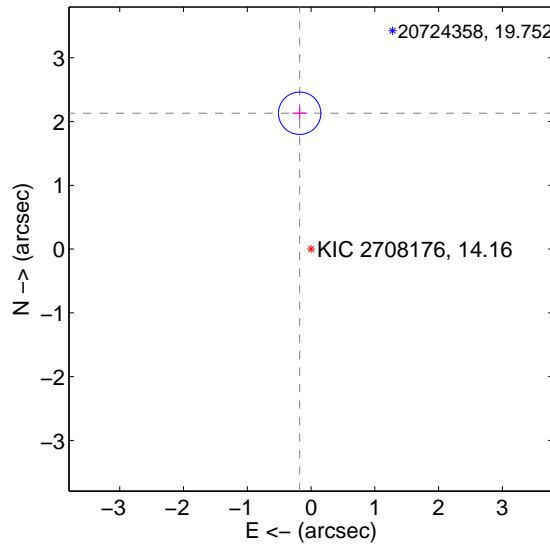
The direct PRF centroid is offset from the target star catalog position by about 0.38 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	2.283 ± 0.111	20.62	-0.171 ± 0.118	2.276 ± 0.111
PRF-fit source offset from KIC position	2.138 ± 0.111	19.31	0.179 ± 0.118	2.130 ± 0.111
photometric centroid source offset	0.62 ± 0.85	0.74	-0.55 ± 0.77	-0.29 ± 1.09

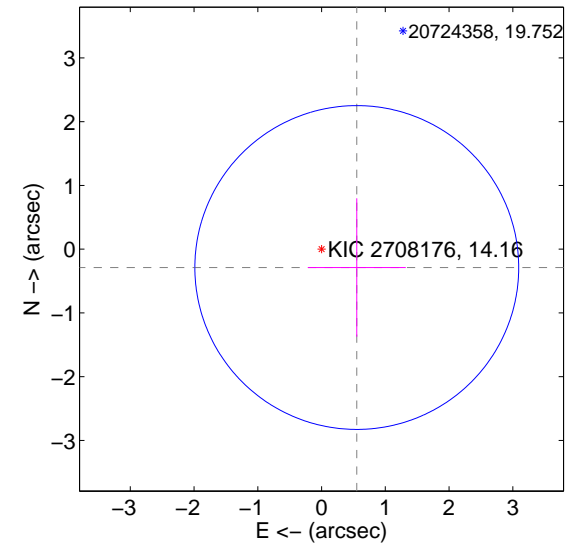
offset from difference PRF-fit to OOT PRF-fit



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.

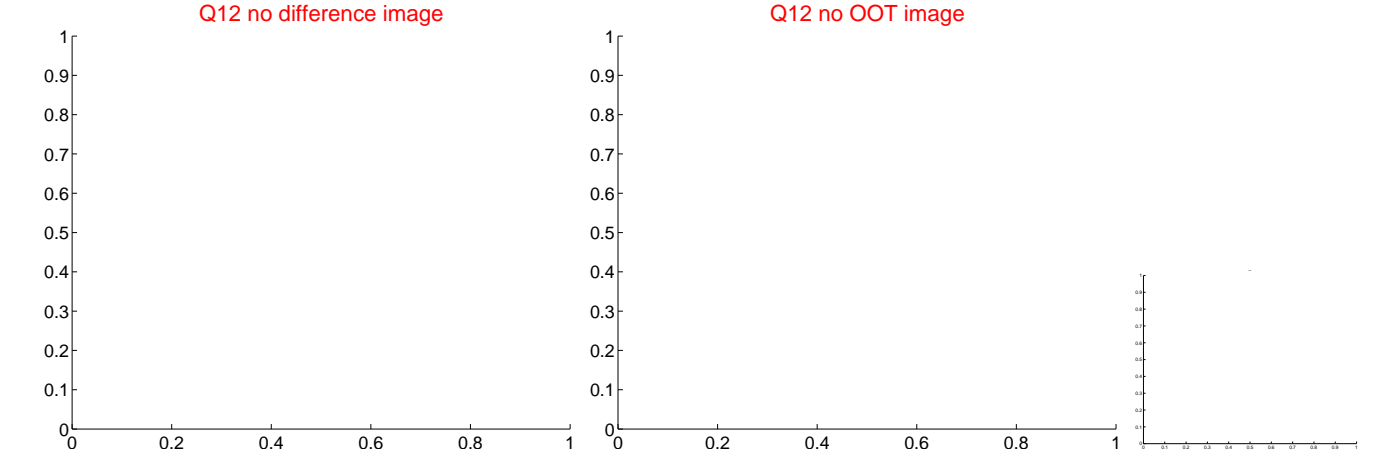
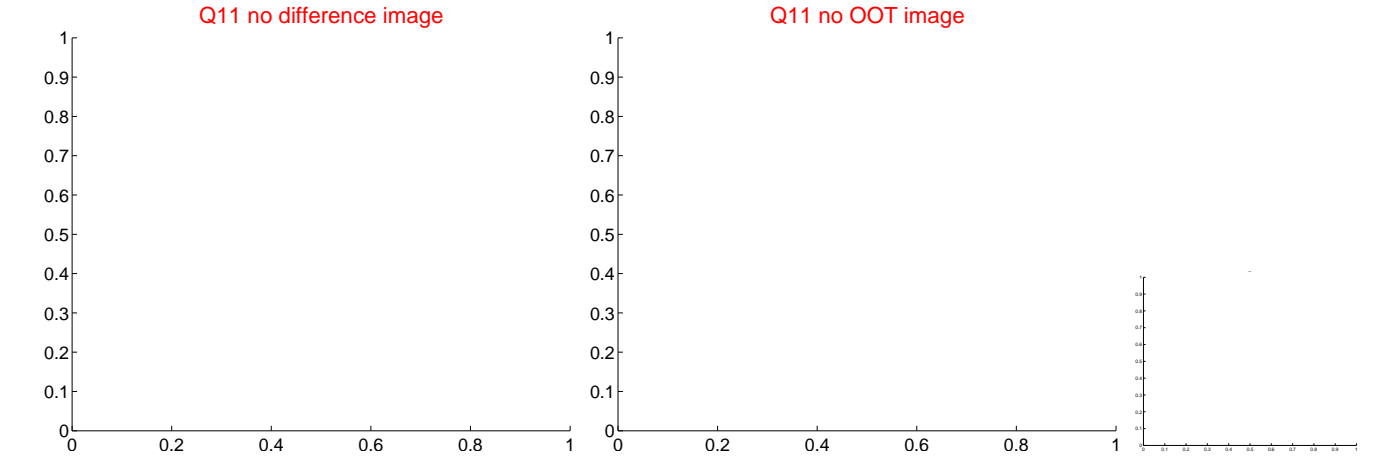
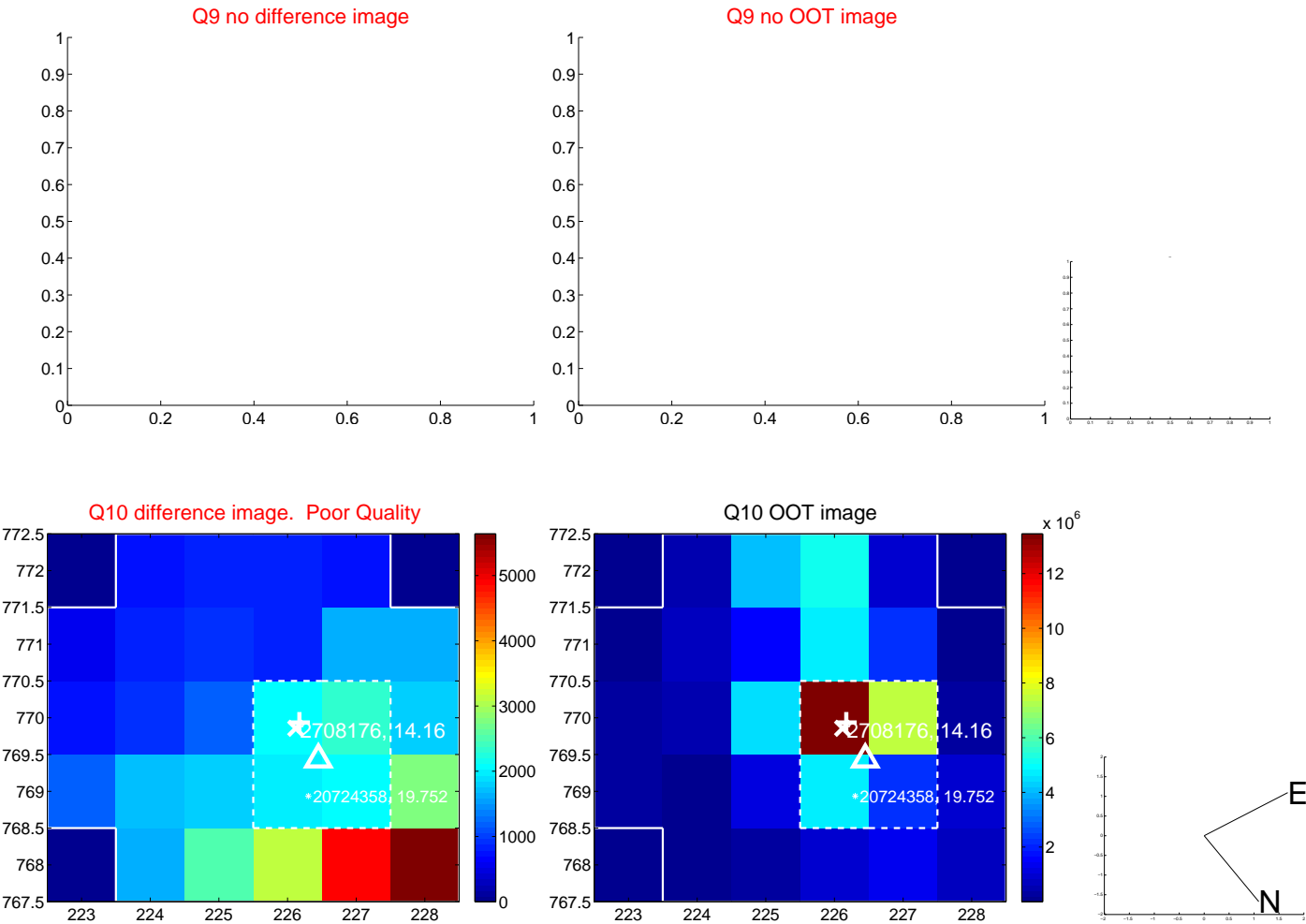
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



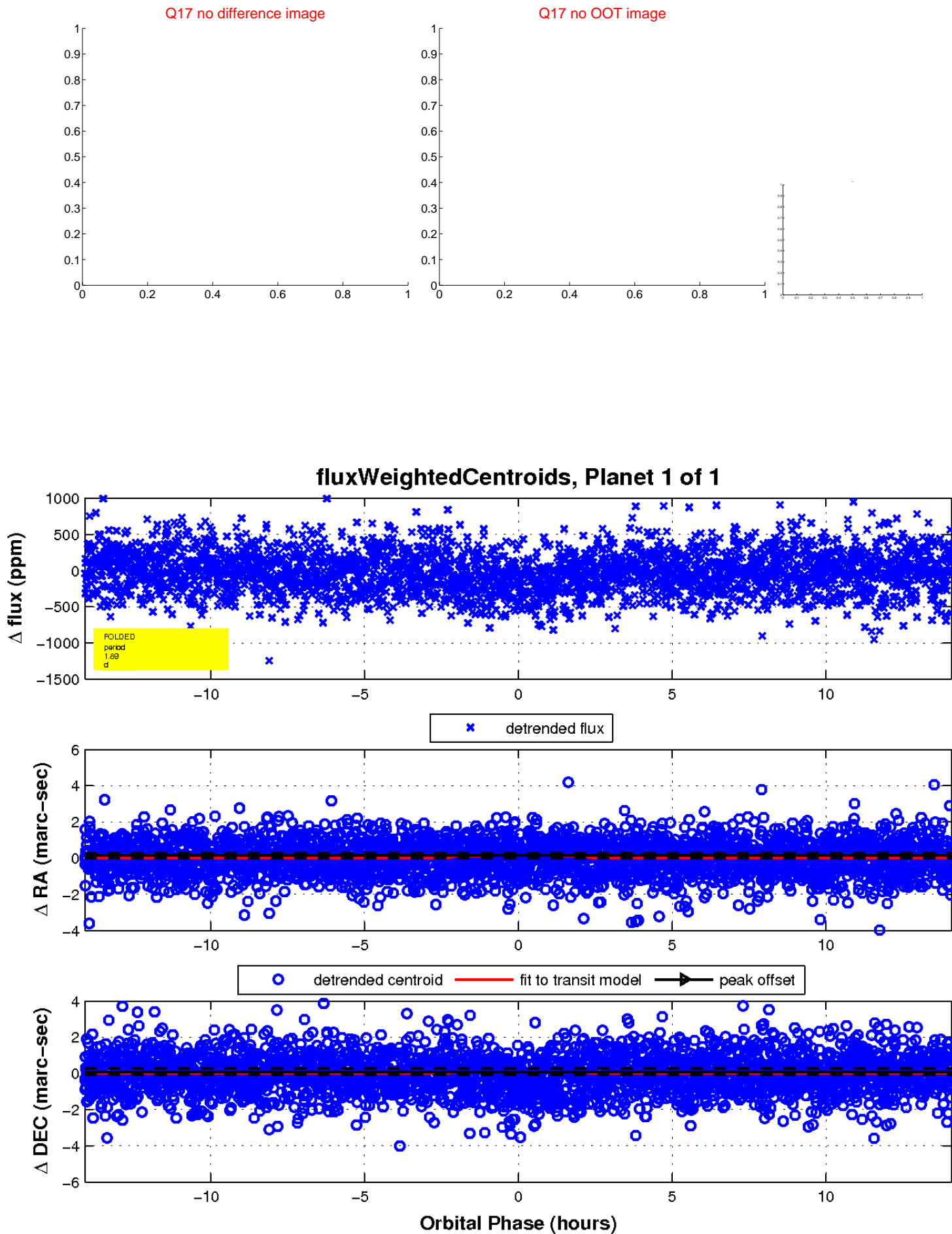
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ✕: large negative pixel value.



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



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



UKIRT Image

