

KIC 009716637

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})
009716637-01	OBS	No	361.480443	360.767037	183.7	12.913	14.0	13.1	1.72	8010	2.57	7.66

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
009716637-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL—ALL_TRANS_CHASES—INCONSISTENT_TRANS—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.

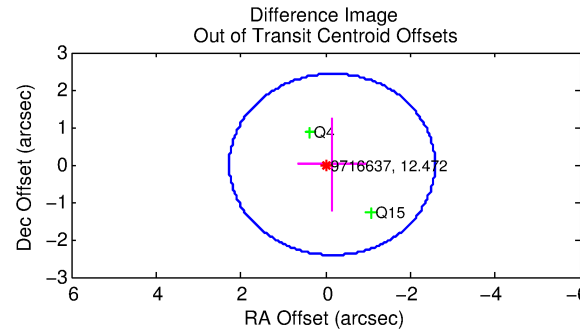
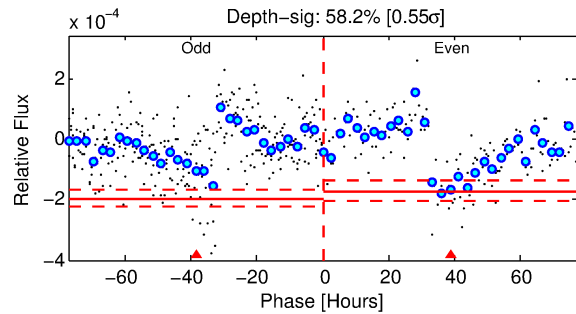
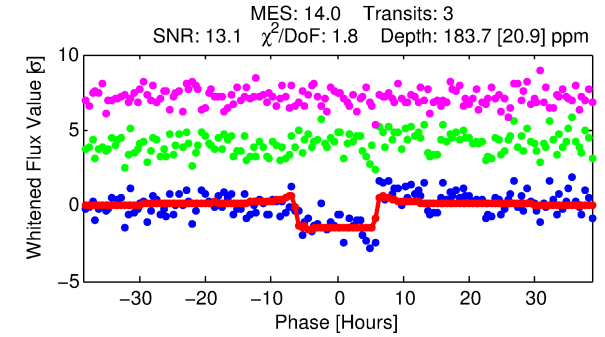
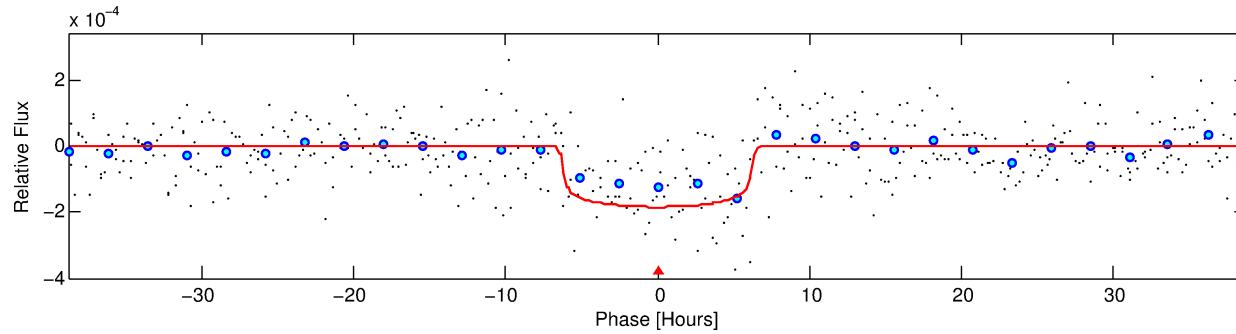
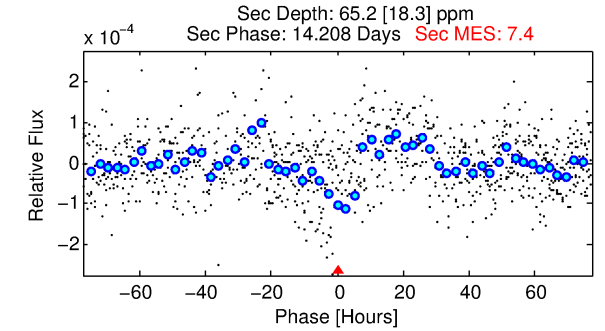
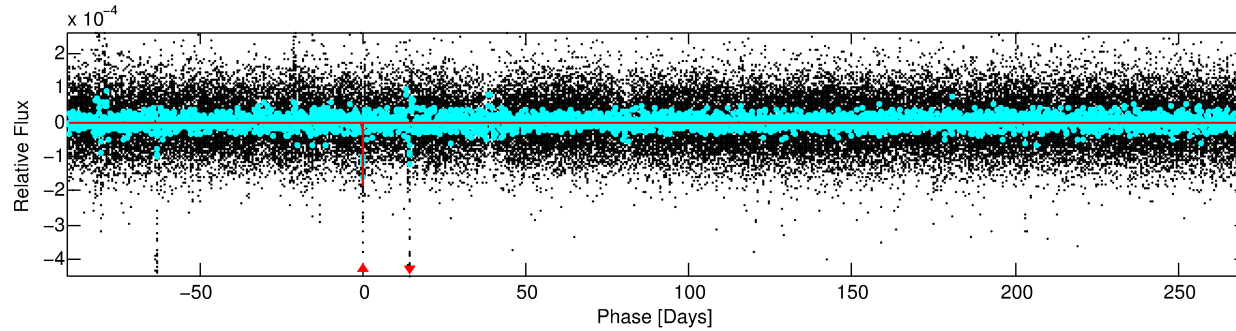
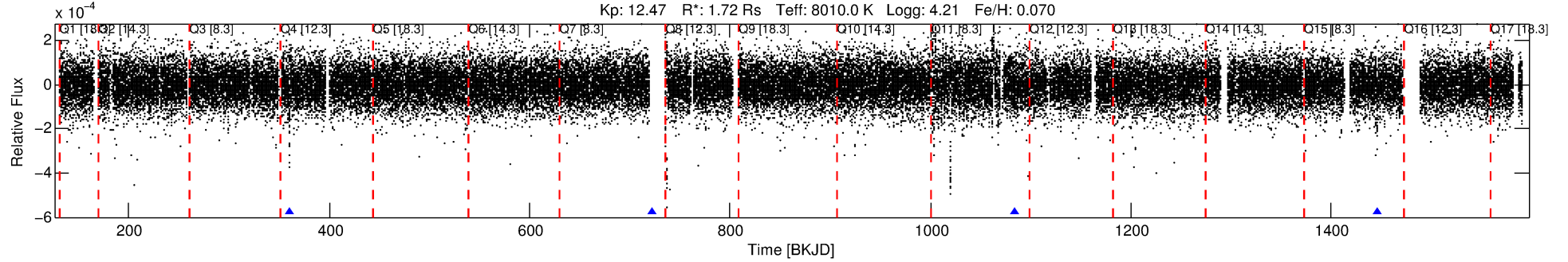
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 009716637-01

No Significant Match Found

DV One-Page Summary

KIC: 9716637 Candidate: 1 of 1 Period: 361.480 d



DV Fit Results:

Period = 361.48044 [0.00606] d
Epoch = 360.7670 [0.0124] BKJD
Rp/R* = 0.0136 [0.0026]
a/R* = 135.47 [148.92]
b = 0.79 [0.52]
Seff = 7.66 [3.05]
Teq = 424 [42] K
Rp = 2.57 [0.93] Re
a = 1.1961 [0.2996] AU
Ag = 7787.23 [4601.02] [1.69σ]
Teffp = 6162 [778] K [7.36σ]

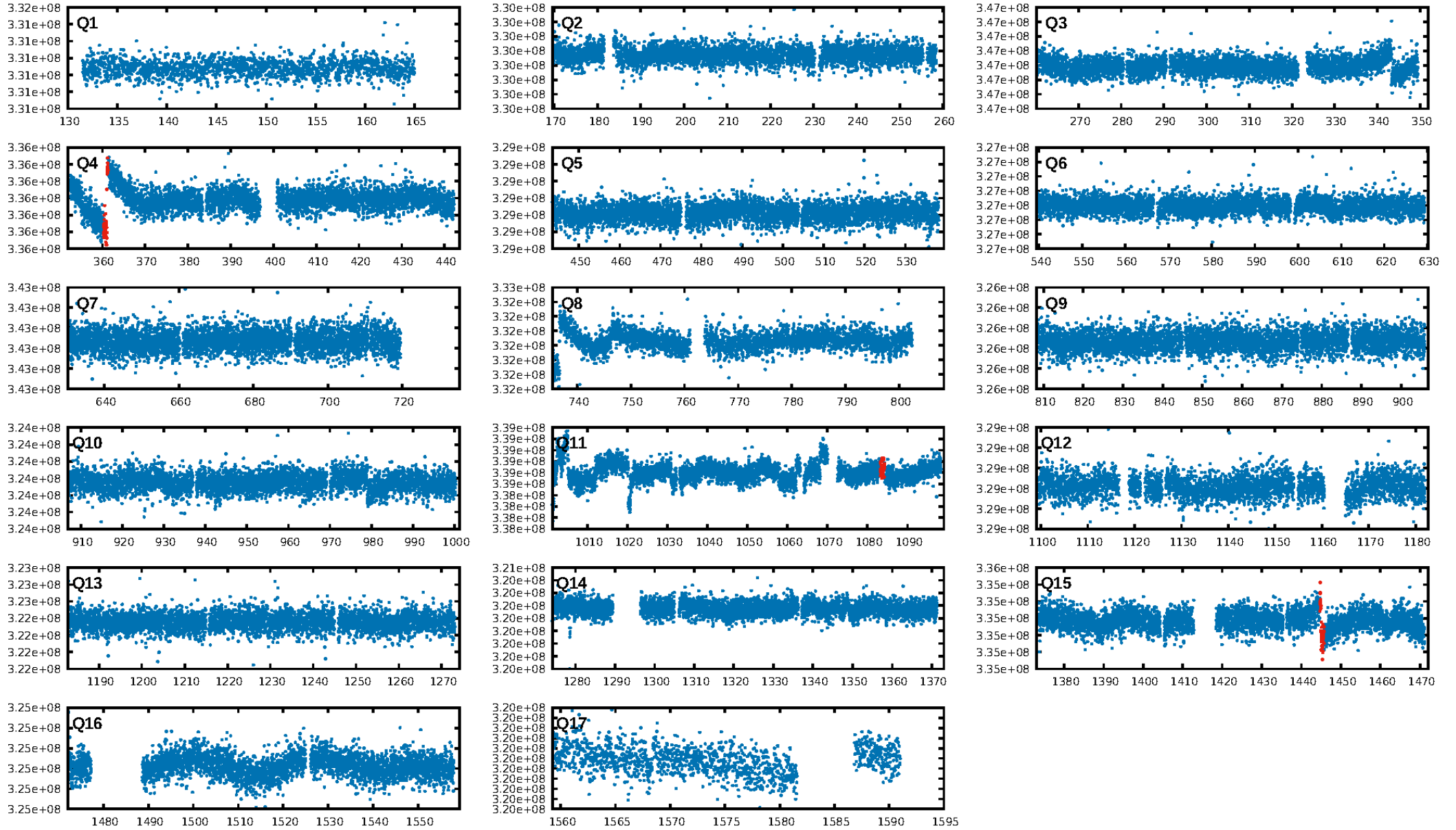
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: 0.0%
ModelChiSquareGof-sig: 57.2%
Bootstrap-pfa: 1.16e-27
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: -1.167
Centroid-sig: 28.9%
Centroid-so: 0.647 arcsec [0.86σ]
OotOffset-rm: 0.158 arcsec [0.20σ]
OotOffset-st: 0/1/1/0 [2]
KicOffset-rm: 0.175 arcsec [0.16σ]
KicOffset-st: 0/1/1/0 [2]
DiffImageQuality-fgm: 1.00 [2/2]
DiffImageOverlap-fno: 1.00 [2/2]

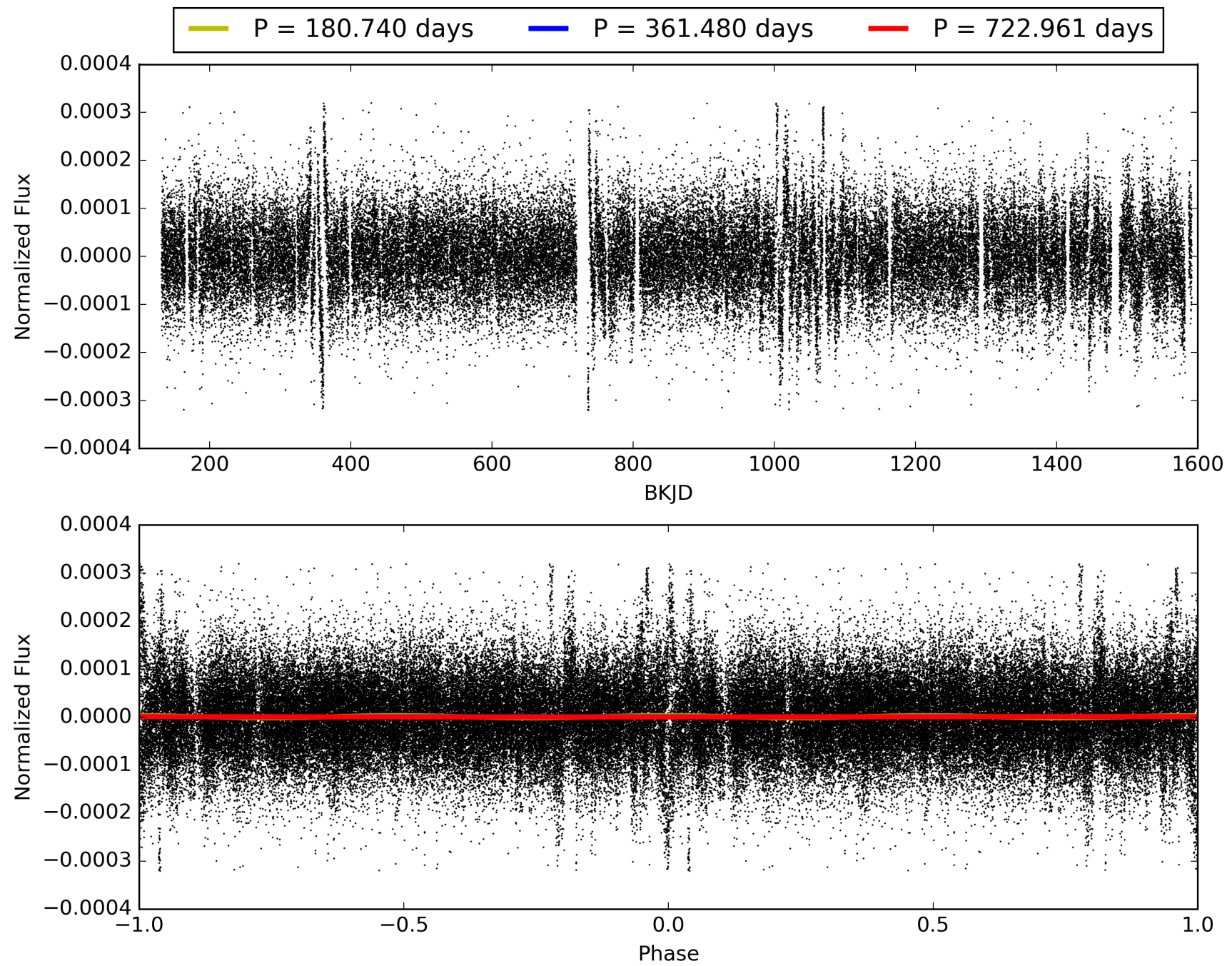
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 17:53:55 Z

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

TCE 009716637-01, PDC Light Curves

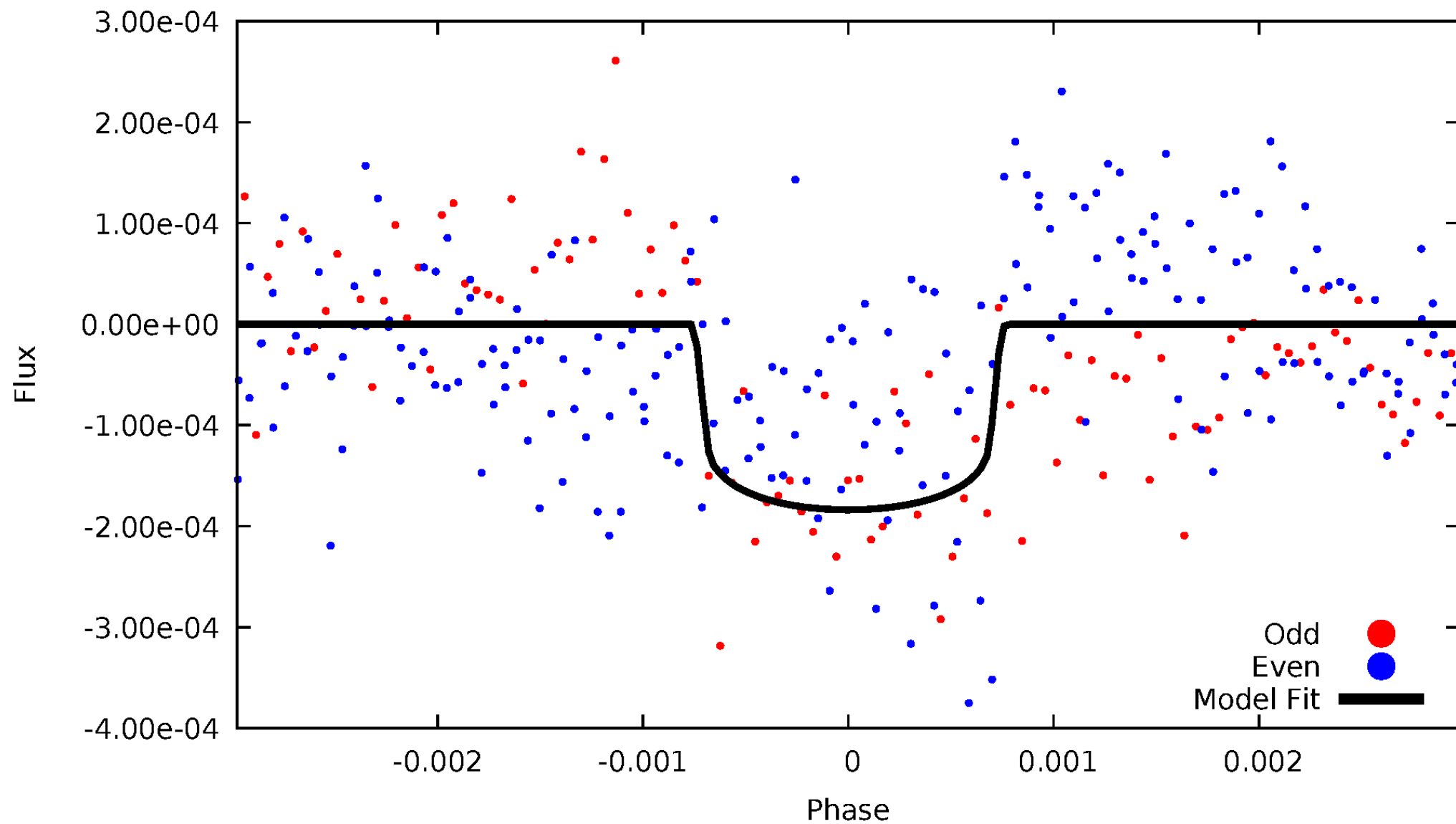


TCE 009716637-01



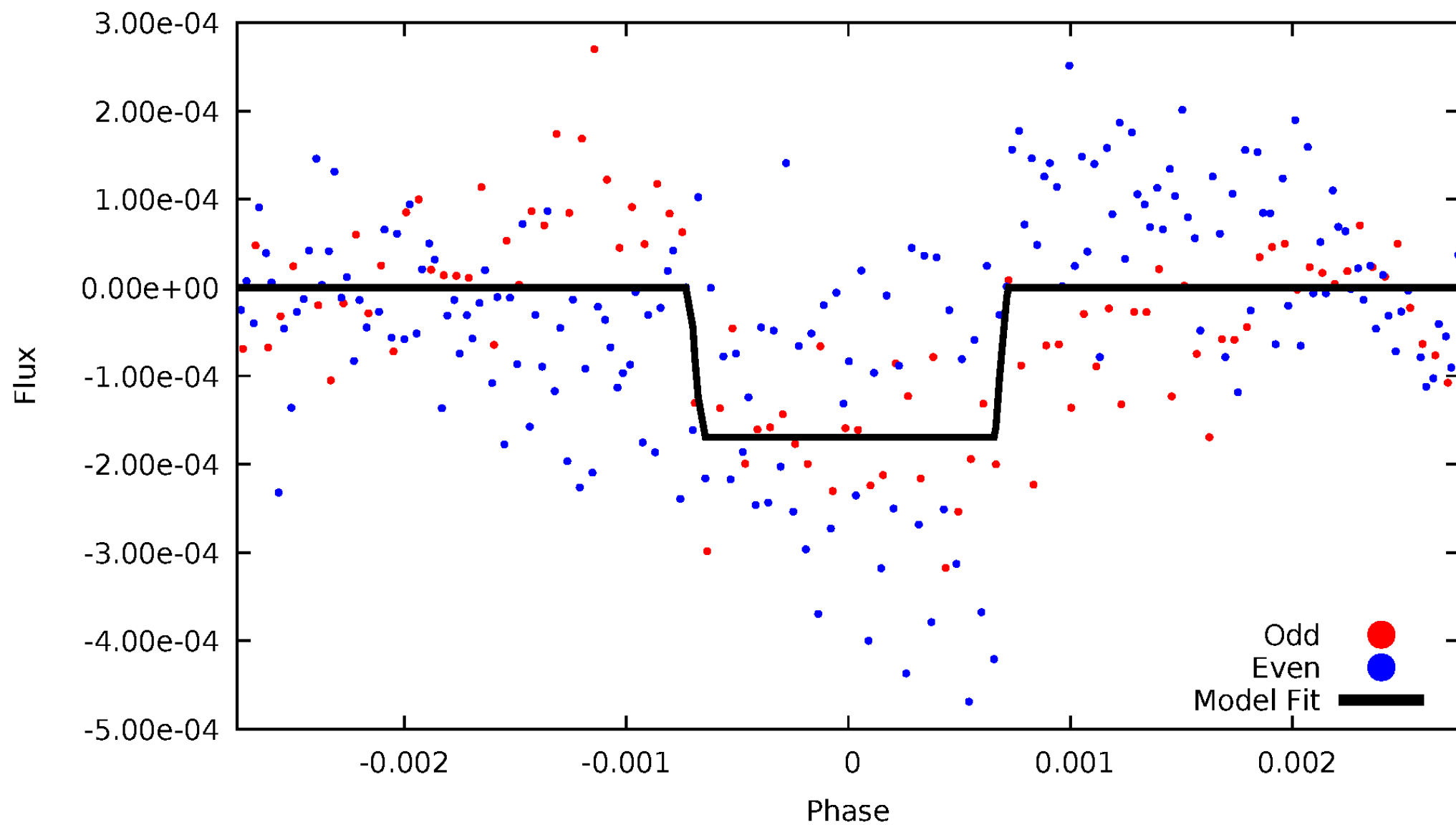
DV Odd/Even

TCE 009716637-01



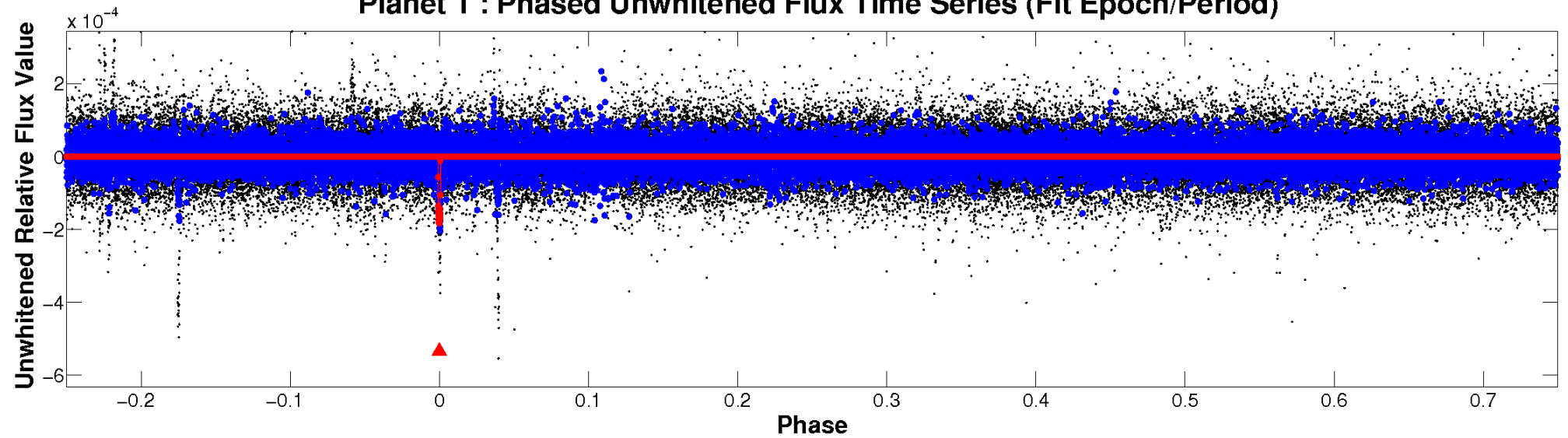
ALT Odd/Even

TCE 009716637-01

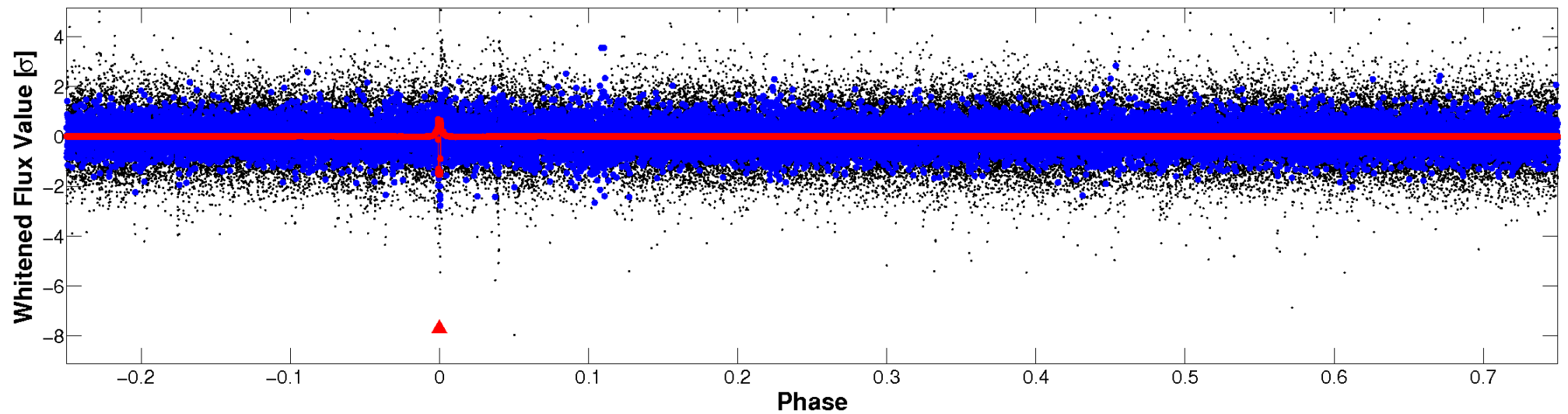


Non-Whitened Vs. Whitened Light Curve

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

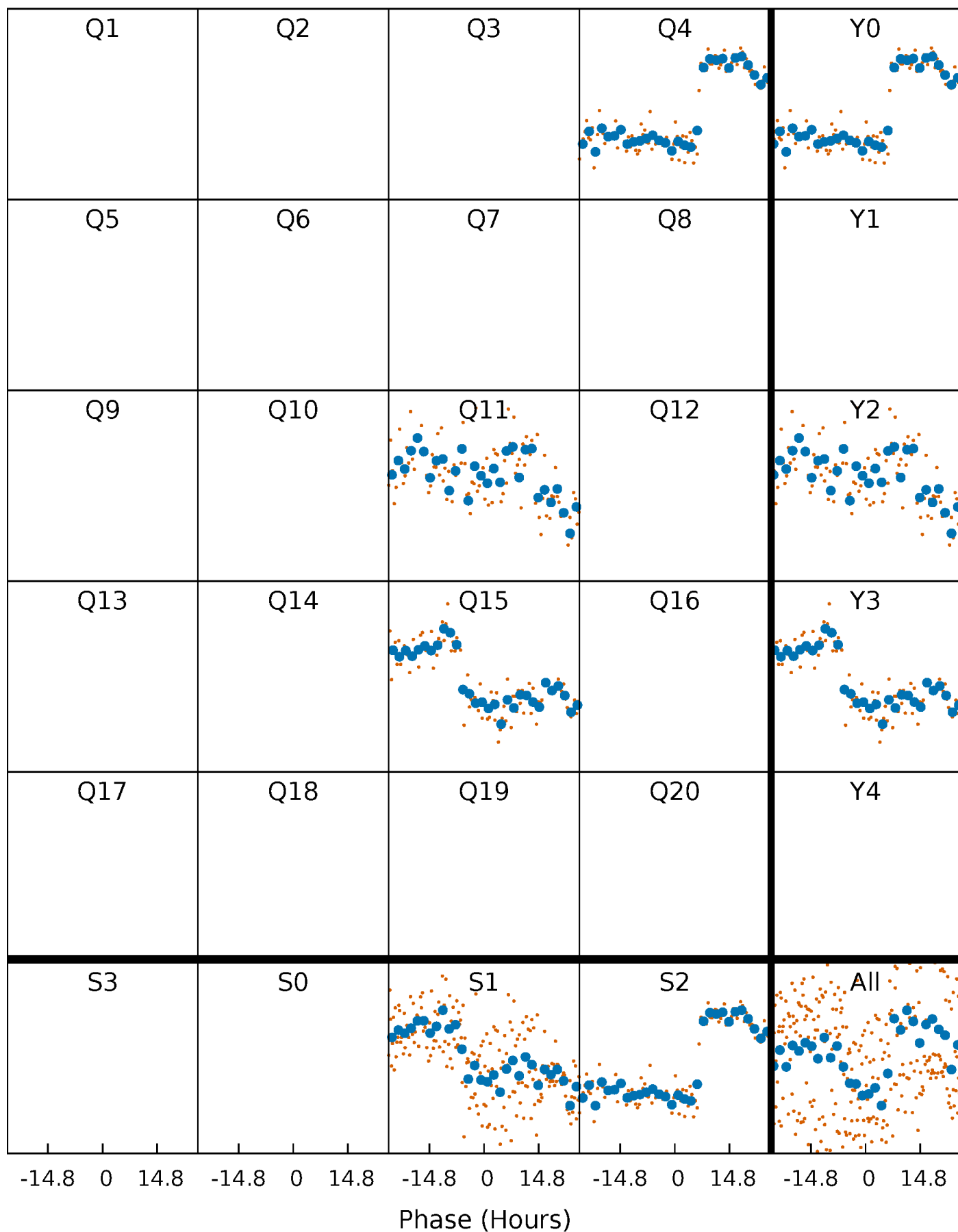


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



PDC Quarter-Phased Transit Curves

TCE 009716637-01 P=361.480443 Days $T_0=360.767037$ (BKJD)



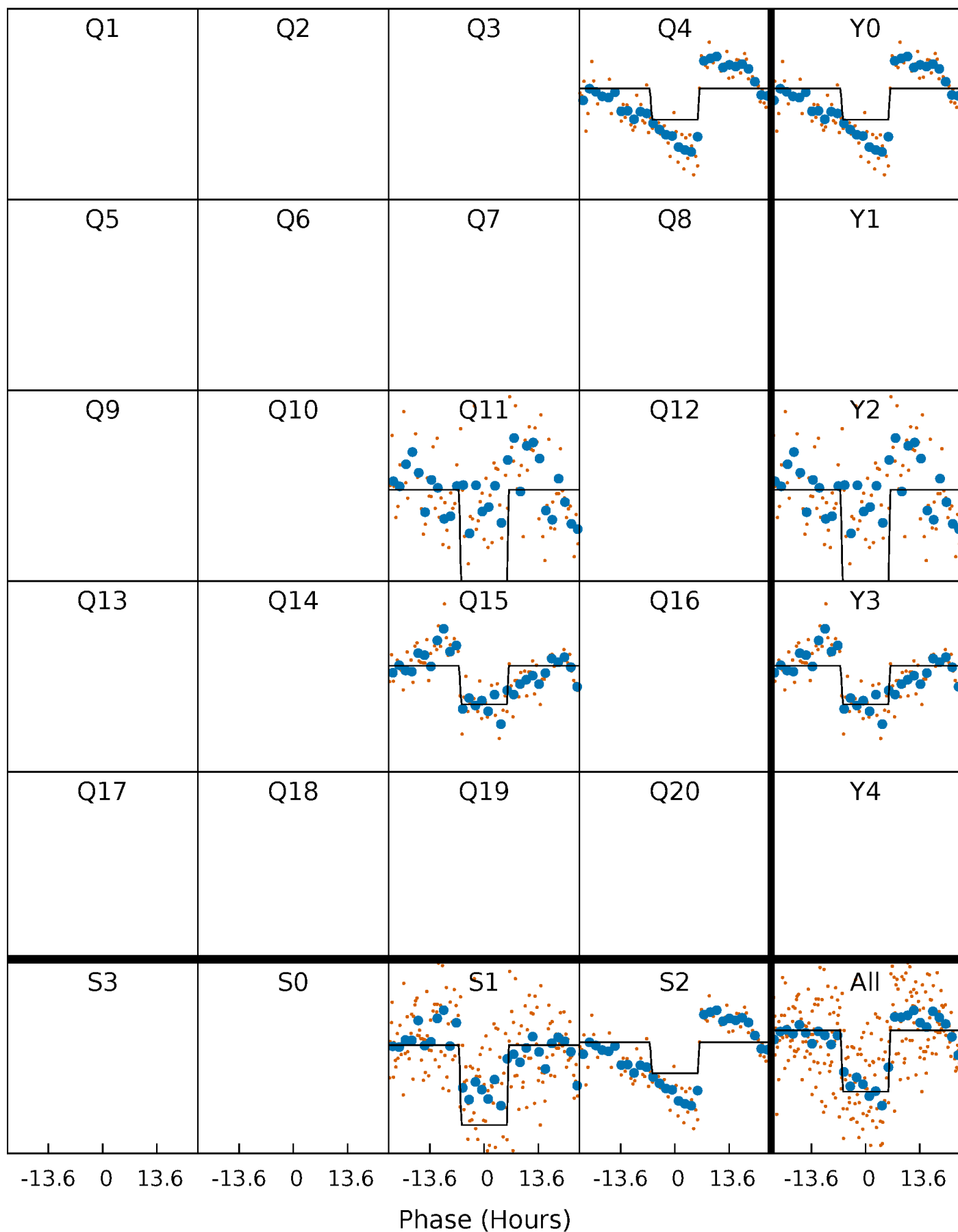
DV Quarter-Phased Transit Curves

TCE 009716637-01 $P=361.480443$ Days $T_0=360.767037$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

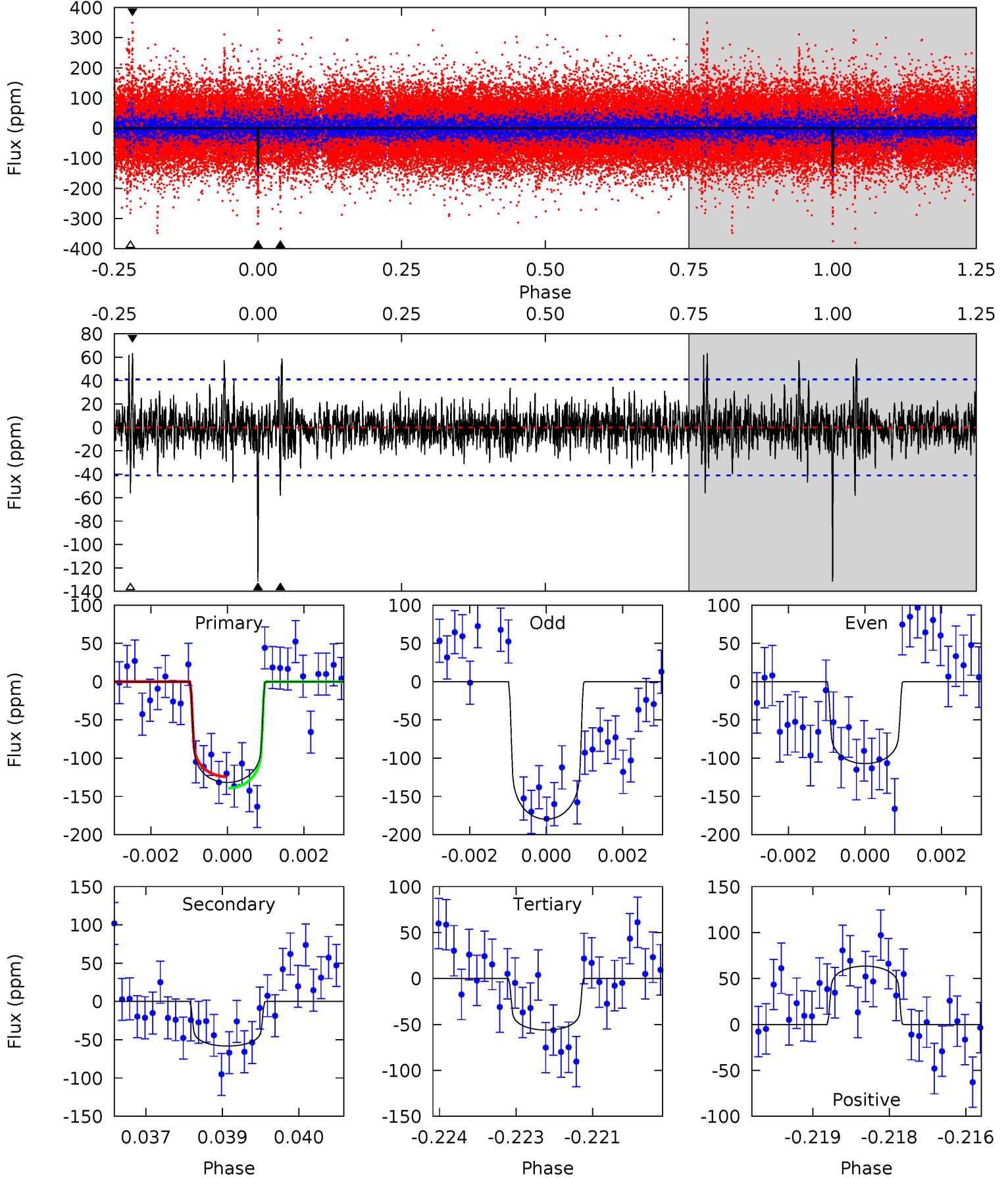
TCE 009716637-01 P=361.476488 Days $T_0=360.782949$ (BKJD)



DV Model-Shift Uniqueness Test

009716637-01, P = 361.480443 Days, E = 360.767037 Days

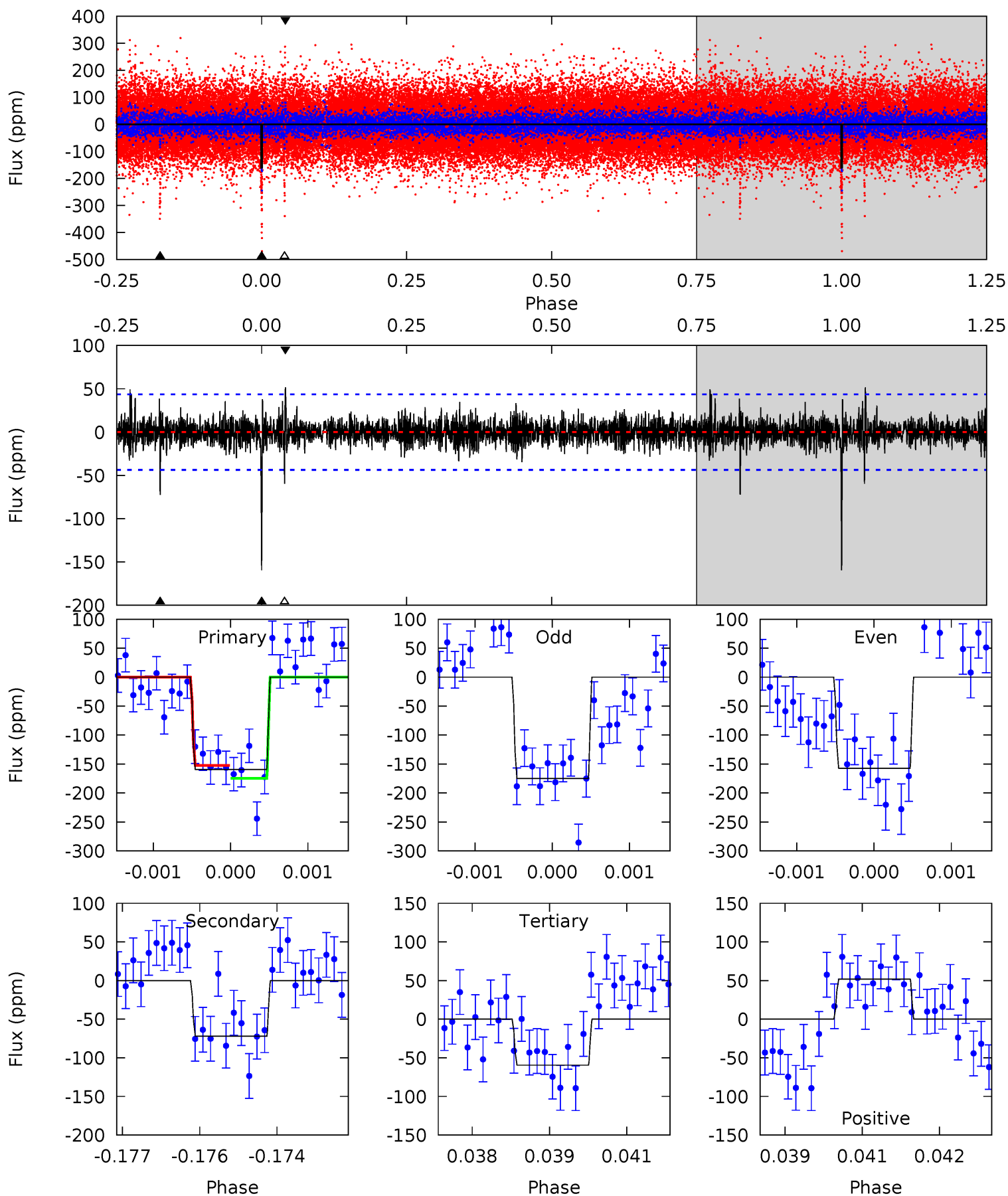
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
17.2	7.62	7.35	8.30	5.37	3.16	1.52	9.89	8.94	0.28	-0.68	4.56	0.75	0.33	0.98



Alt Model-Shift Uniqueness Test

009716637-01, P = 361.476488 Days, E = 360.782949 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
19.7	8.88	7.34	6.38	5.39	3.19	1.24	12.3	13.3	1.54	2.50	1.06	0.94	0.24	1.37



Stellar Parameters For KIC 009716637

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	8010^{+221}_{-359}	$4.207^{+0.081}_{-0.189}$	$0.070^{+0.250}_{-0.400}$	$1.724^{+0.528}_{-0.226}$	$1.747^{+0.182}_{-0.273}$	$0.480^{+0.175}_{-0.247}$
	+3%/-4%	+2%/-4%	+357%/-571%	+31%/-13%	+10%/-16%	+36%/-52%
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 009716637-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-58 ± 8	$2.66^{+0.56}_{-0.58}$	599^{+41}_{-34}	5819^{+714}_{-514}	6379^{+4114}_{-2192}
Alt.	-72 ± 8	$2.53^{+0.62}_{-0.55}$	600^{+42}_{-38}	6233^{+821}_{-574}	8595^{+5740}_{-3031}

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 $A_{obs} \gg 1.0$

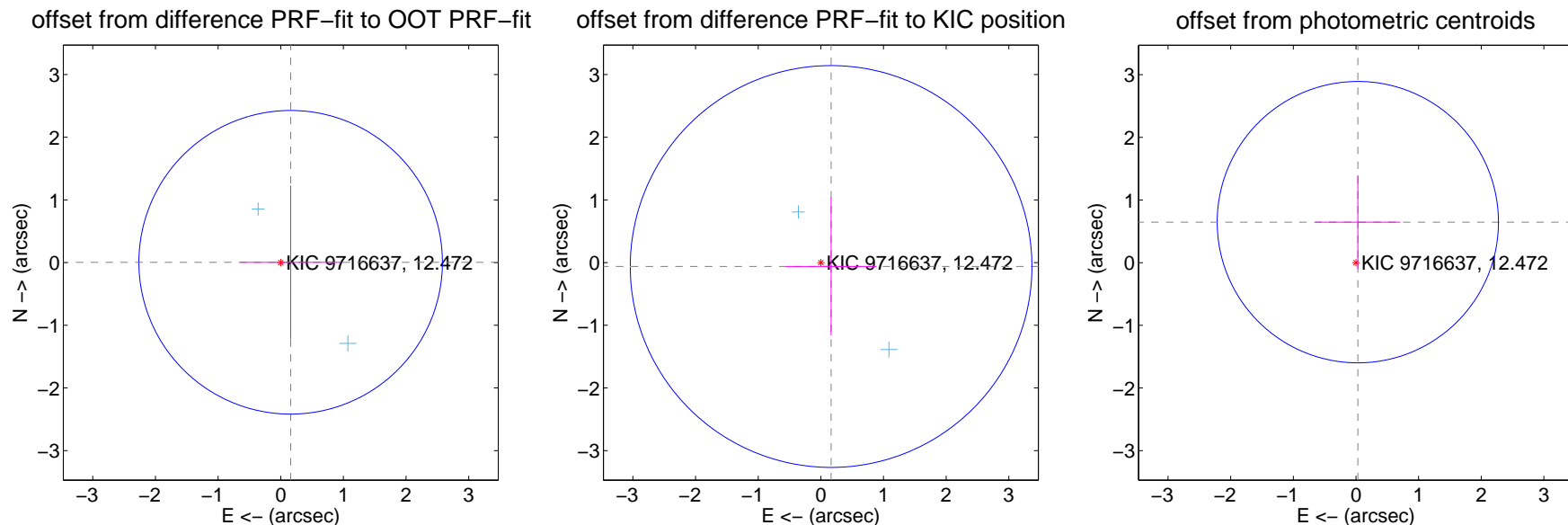
DV Centroid Data

Supplemental centroid analysis for 009716637-01. Kepler magnitude: 12.47. Transit SNR 13.08

There are 2 quarters with good PRF difference image offsets

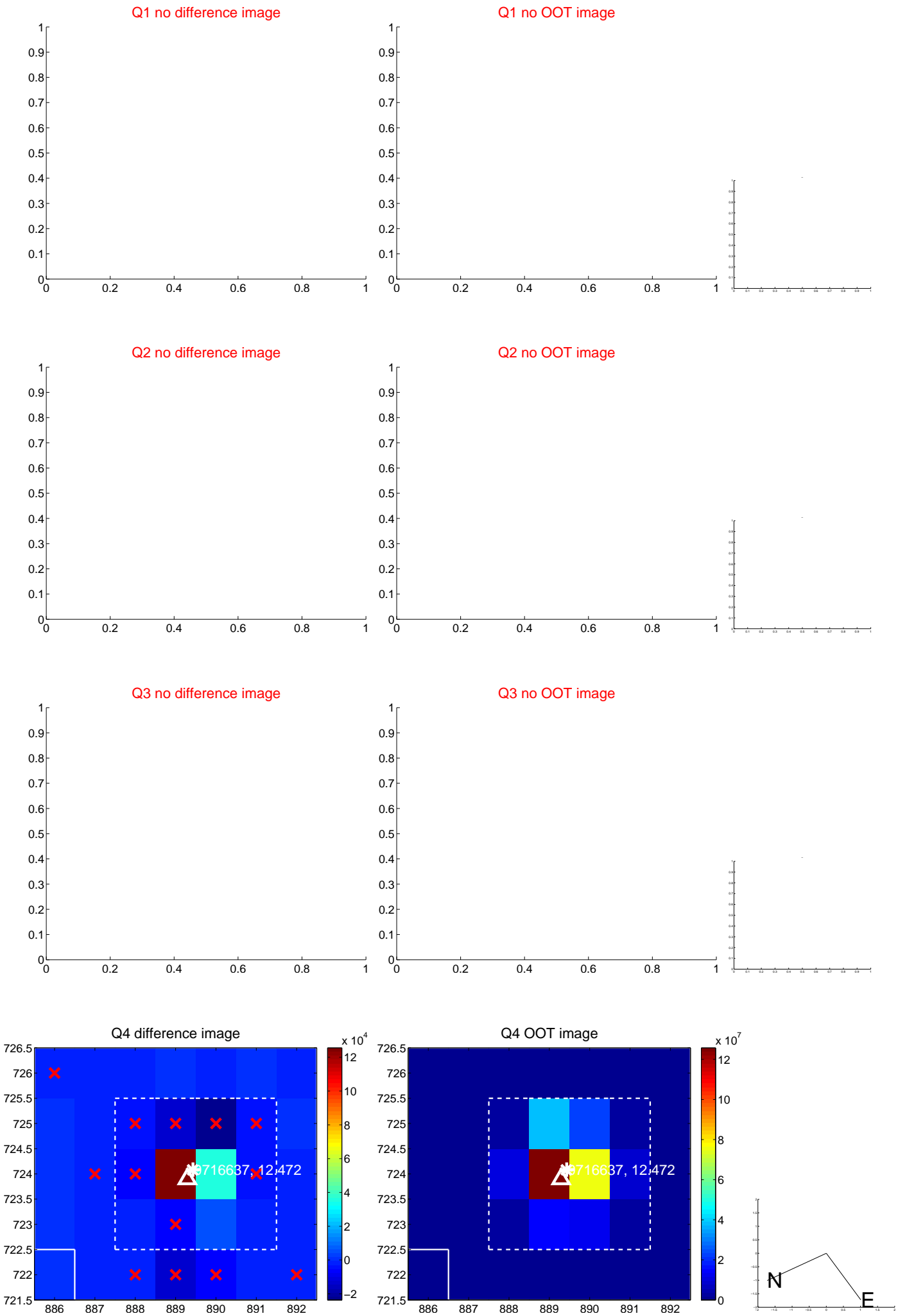
The direct PRF centroid is offset from the target star catalog position by about 0.10 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.158 ± 0.807	0.20	-0.158 ± 0.807	0.005 ± 1.226
PRF-fit source offset from KIC position	0.175 ± 1.068	0.16	-0.164 ± 0.726	-0.062 ± 1.100
photometric centroid source offset	0.65 ± 0.75	0.86	-0.03 ± 0.68	0.65 ± 0.75



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.



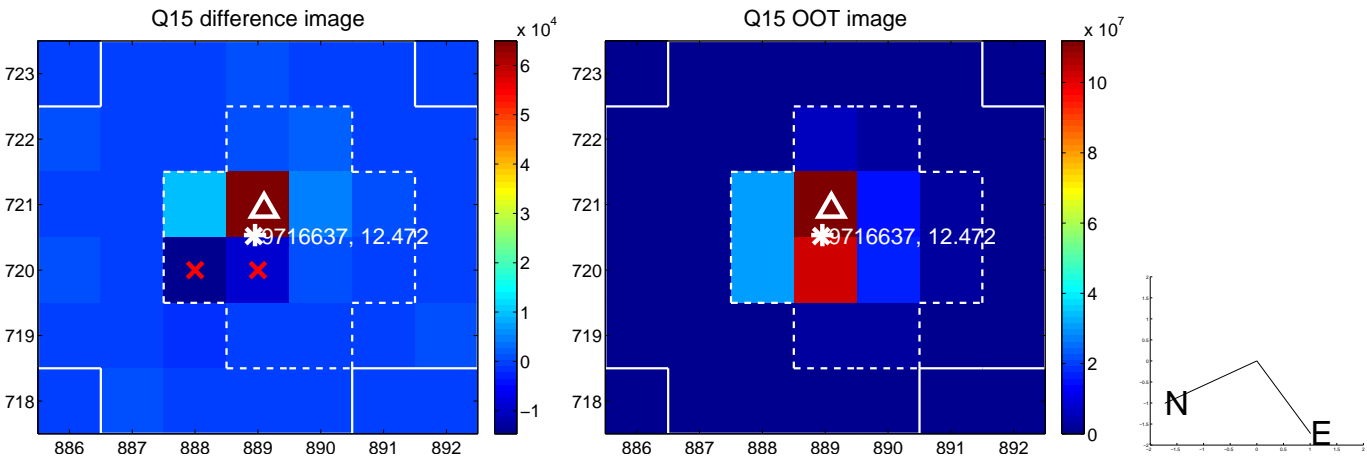
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



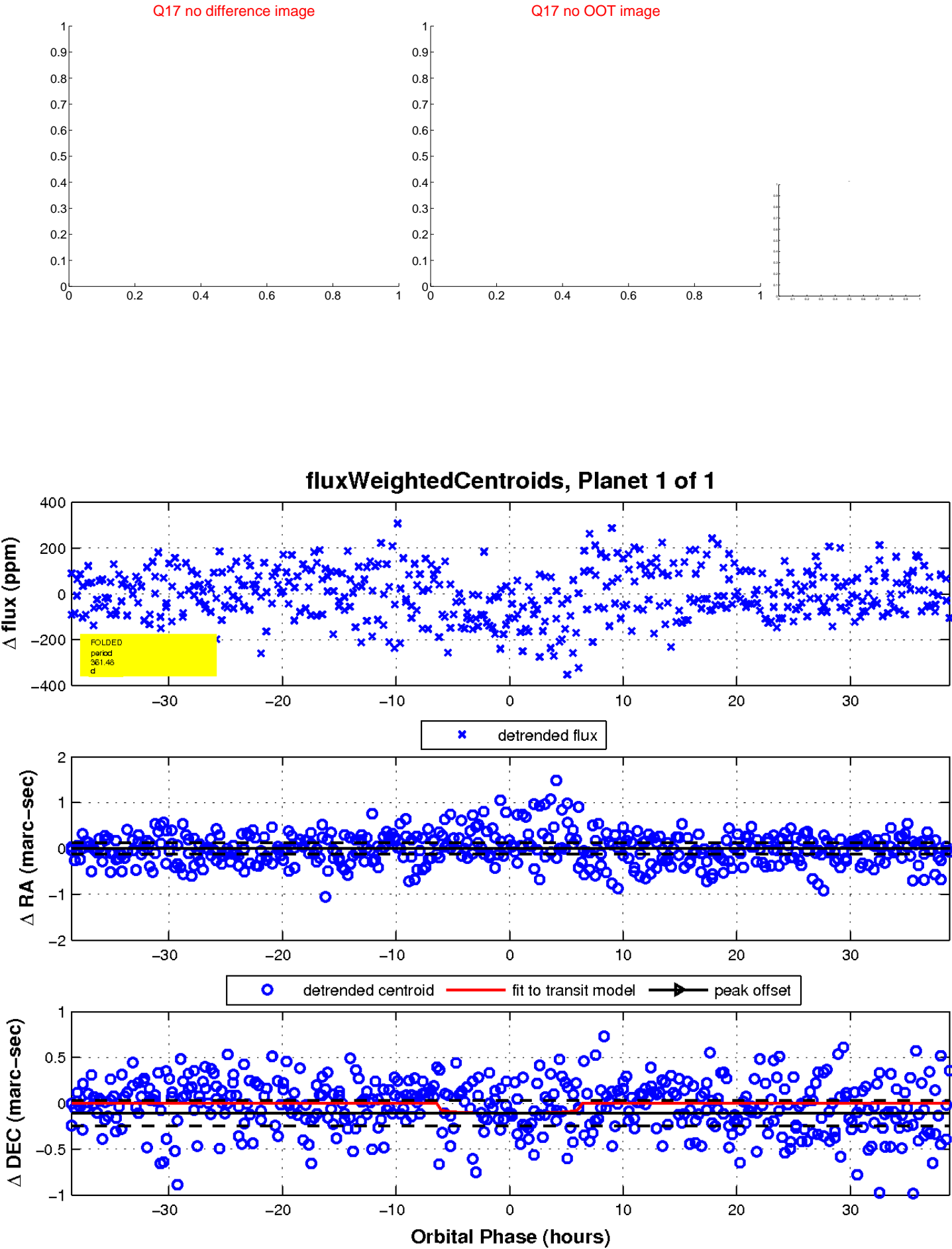
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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UKIRT Image

Declination

