

KIC 009936408

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})
009936408-01	OBS	No	294.744614	238.143824	592.1	19.563	7.6	6.2	0.88	5307	2.67	0.74

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
009936408-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—MOD_POS_ALT—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.

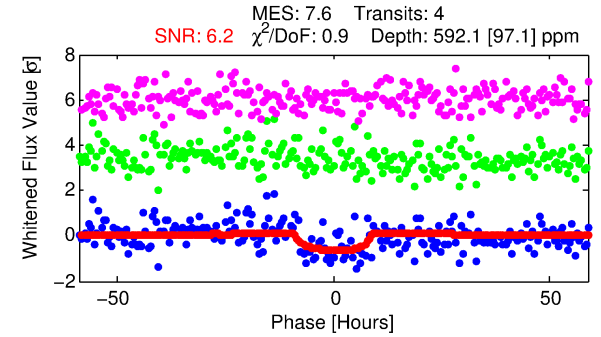
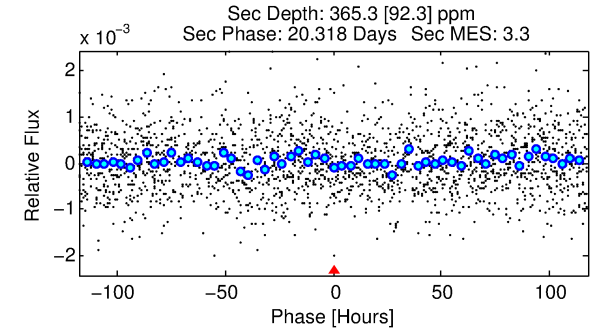
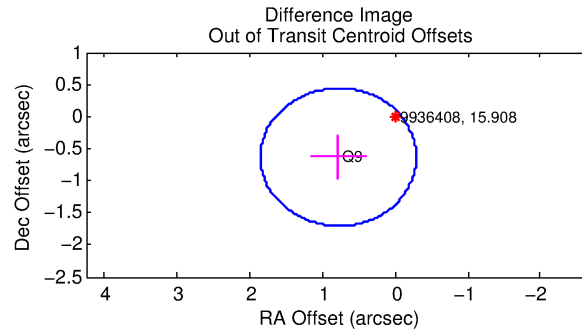
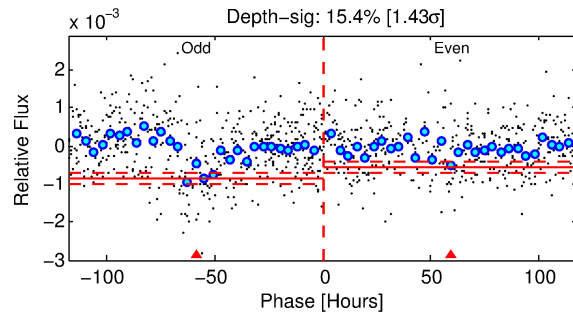
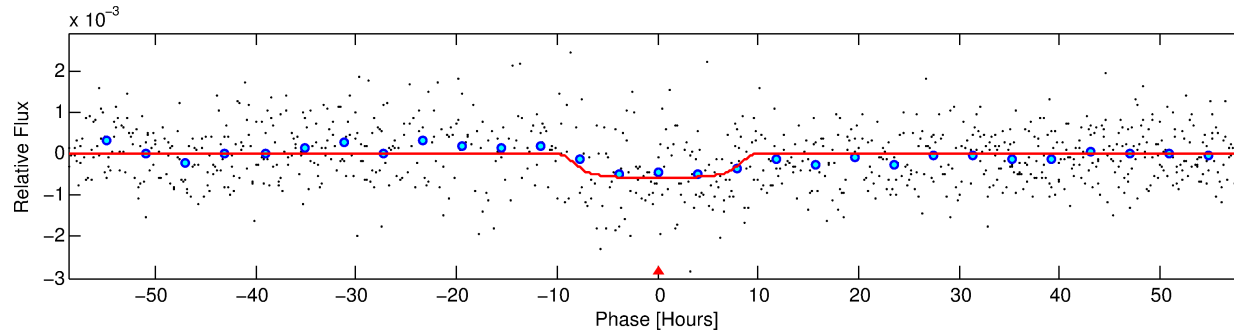
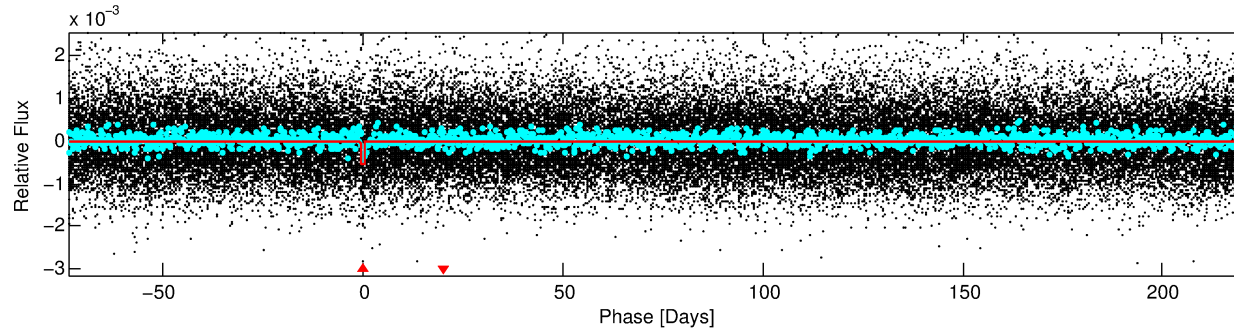
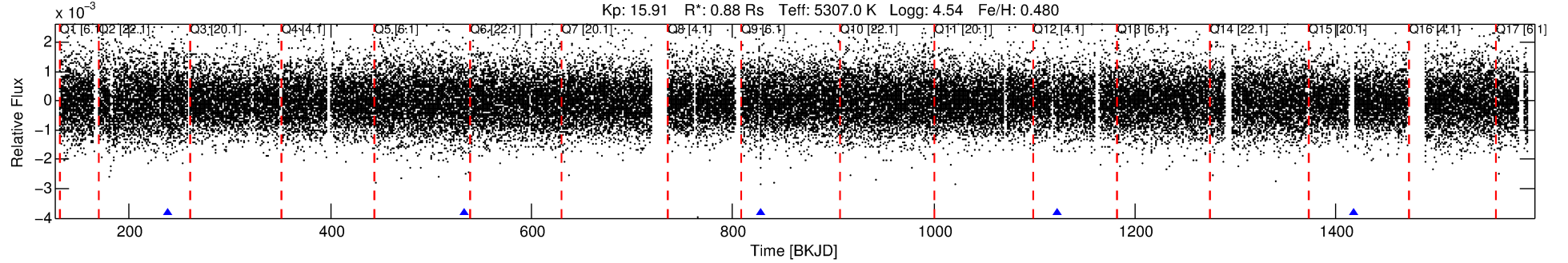
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 009936408-01

No Significant Match Found

DV One-Page Summary

KIC: 9936408 Candidate: 1 of 1 Period: 294.745 d



DV Fit Results:

Period = 294.74461 [0.02864] d
Epoch = 238.1438 [0.0498] BKJD
Rp/R* = 0.0277 [0.0048]
a/R* = 52.76 [30.71]
b = 0.92 [0.10]
Seff = 0.74 [0.19]
Teq = 237 [16] K
Rp = 2.67 [0.64] Re
a = 0.8623 [0.1289] AU
Ag = 20962.73 [10129.84] [2.07 σ]
Teffp = 4405 [492] K [8.47 σ]

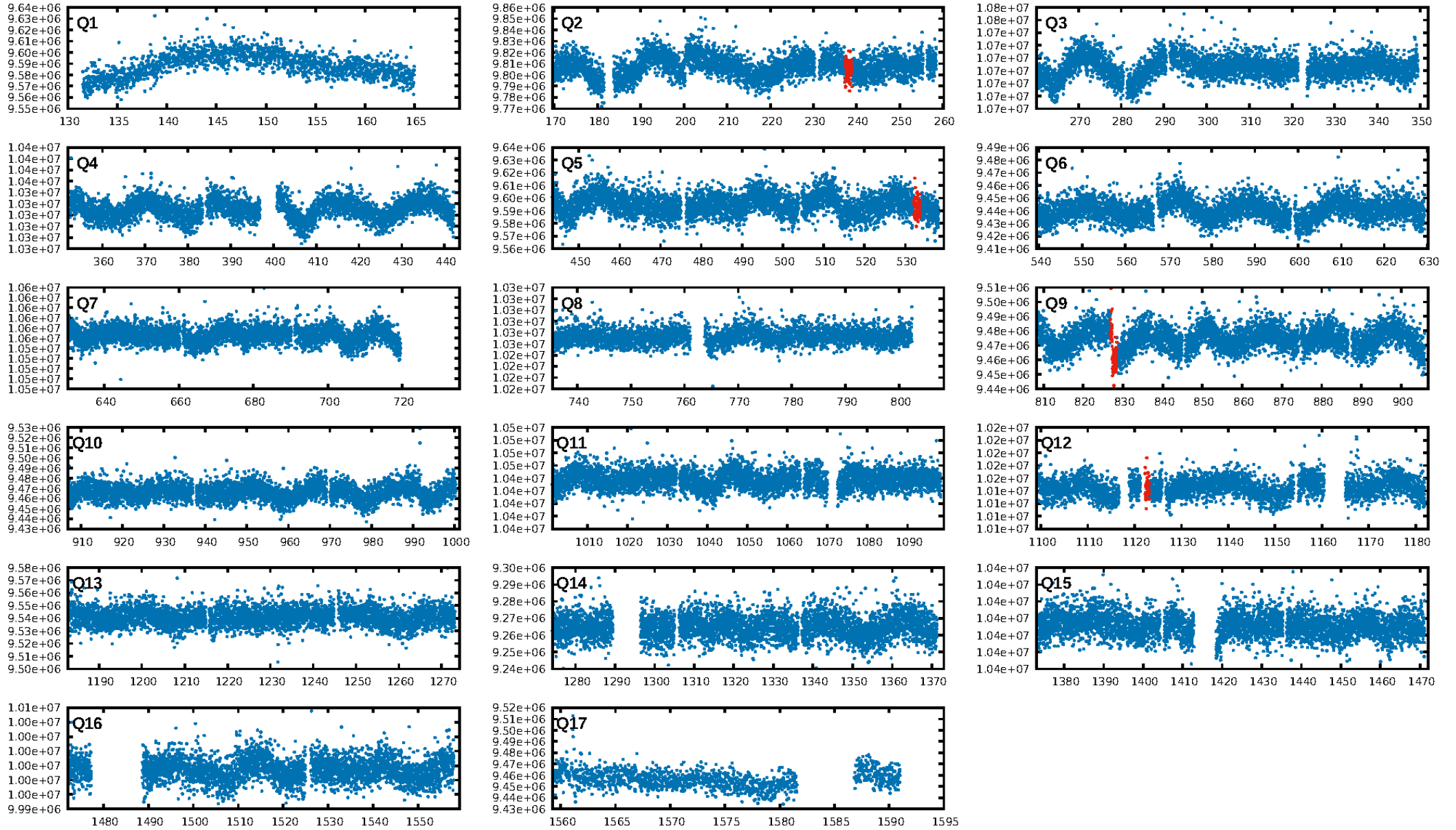
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: 0.4%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 2.74e-14
RollingBand-fgt: 1.00 [4/4]
GhostDiagnostic-chr: -7.612
Centroid-sig: 12.7%
Centroid-so: 2.345 arcsec [1.29 σ]
OotOffset-rm: 1.004 arcsec [2.81 σ]
OotOffset-st: 0/0/0/1 [1]
KicOffset-rm: 0.942 arcsec [2.74 σ]
KicOffset-st: 0/0/0/1 [1]
DiffImageQuality-fgm: 1.00 [1/1]
DiffImageOverlap-fno: 1.00 [3/3]

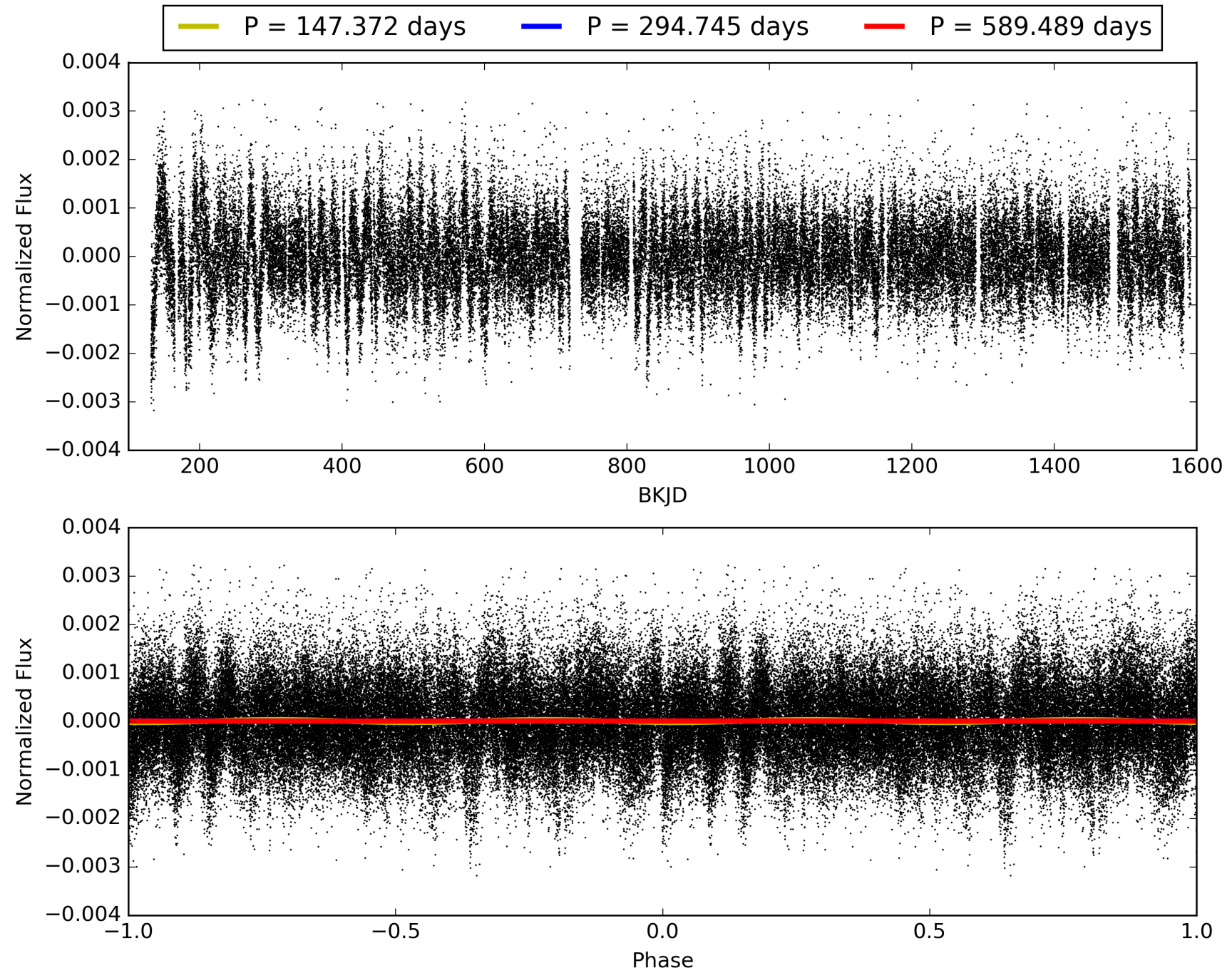
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 28-Jan-2016 20:32:03 Z

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

TCE 009936408-01, PDC Light Curves

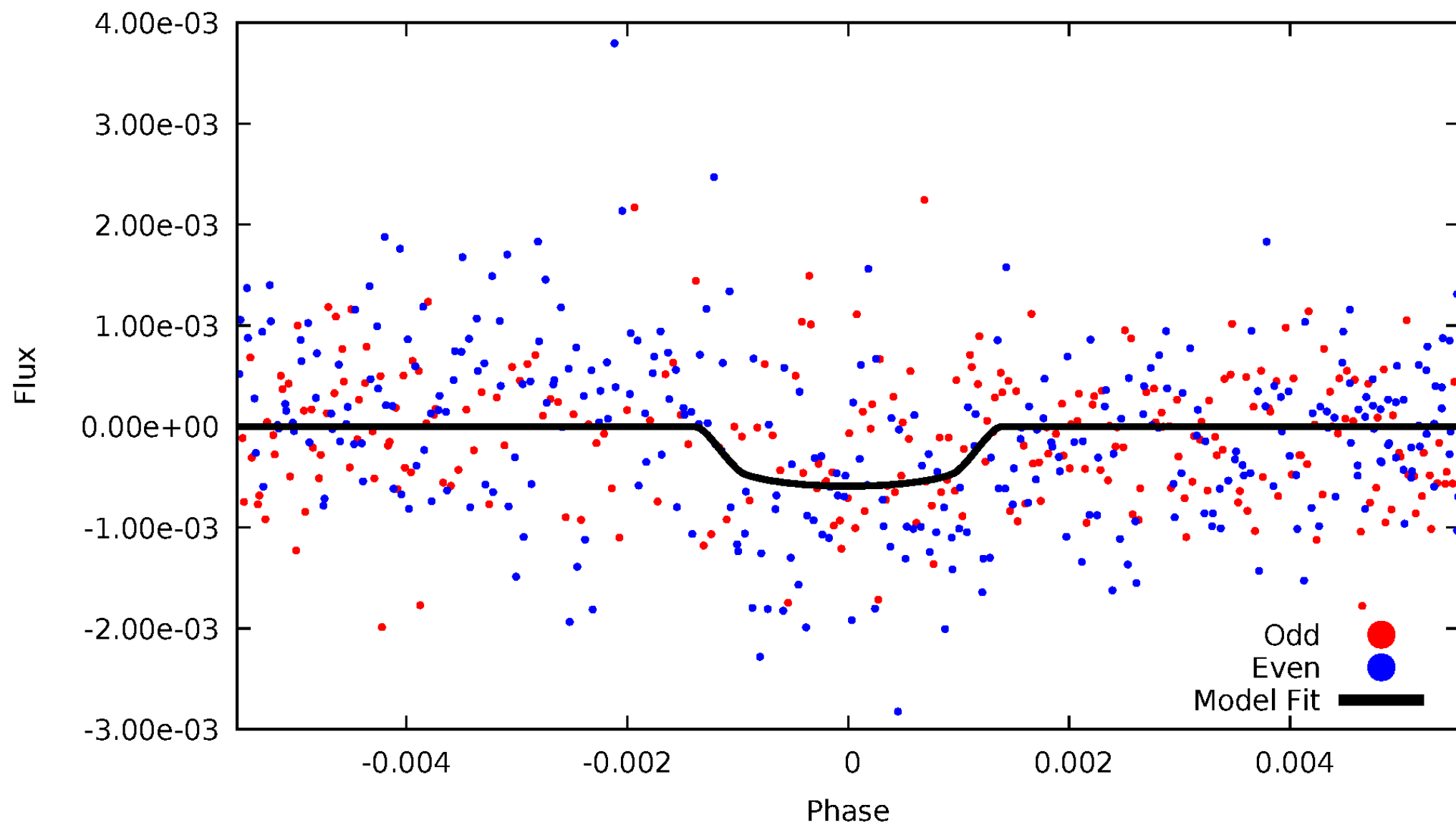


TCE 009936408-01



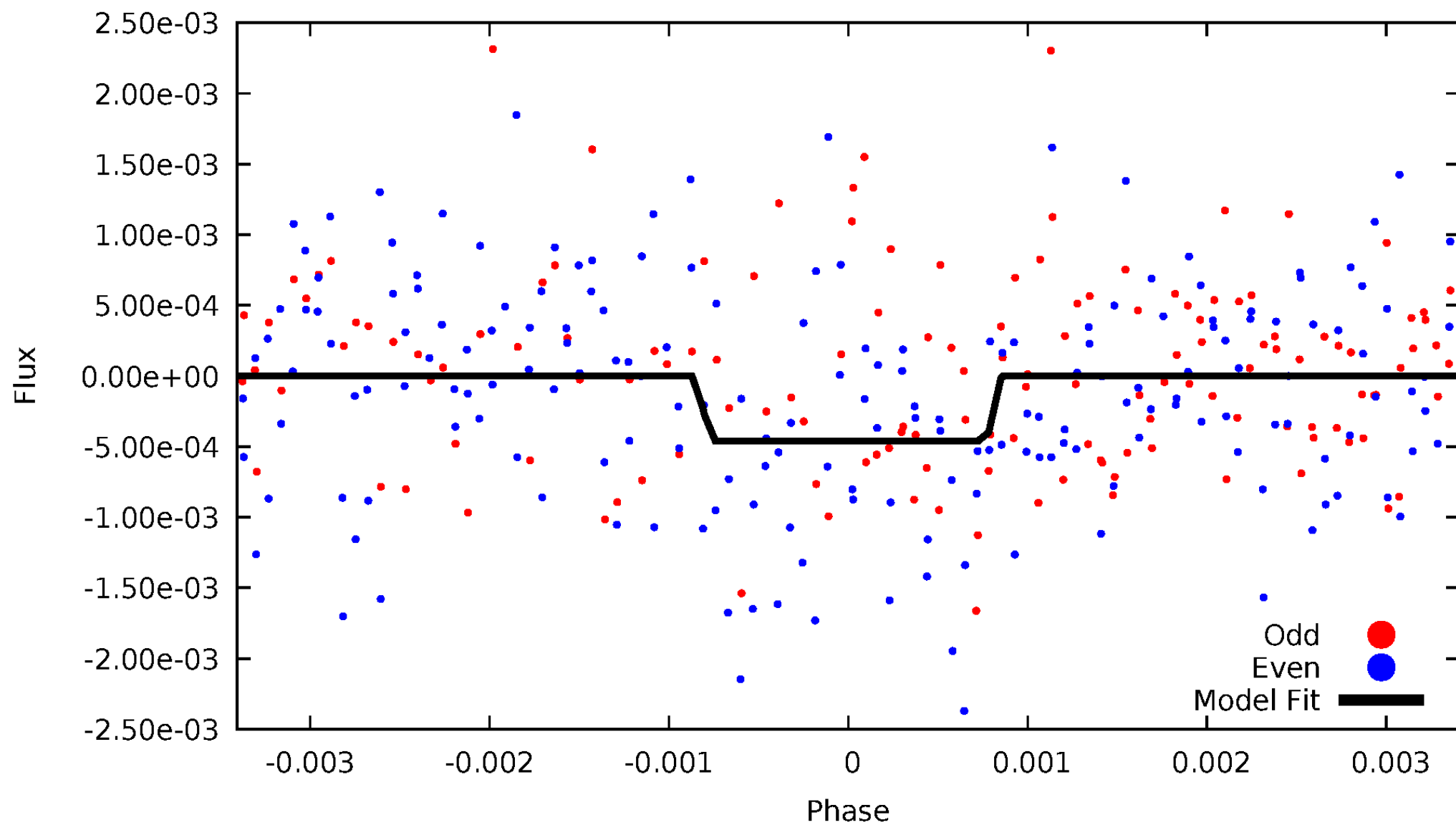
DV Odd/Even

TCE 009936408-01

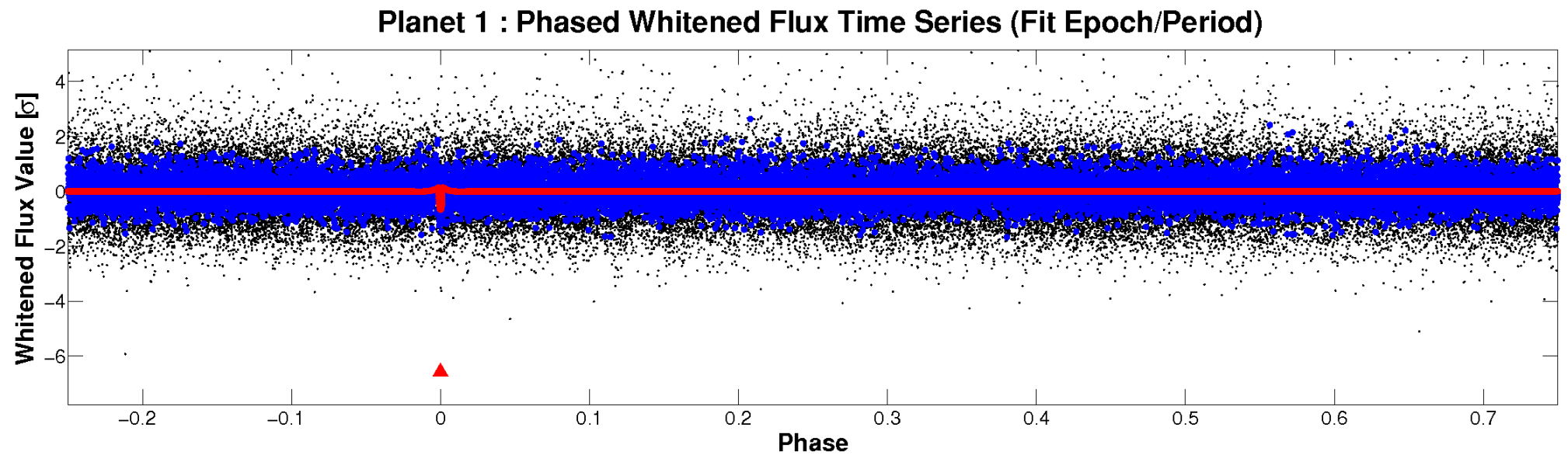
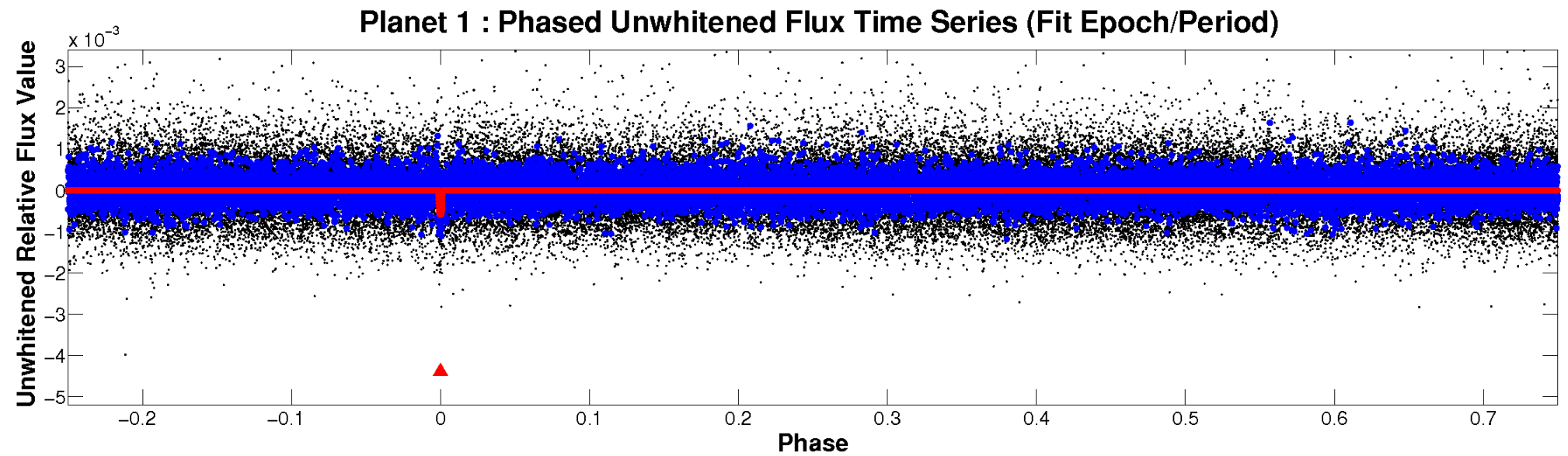


ALT Odd/Even

TCE 009936408-01



Non-Whitened Vs. Whitened Light Curve



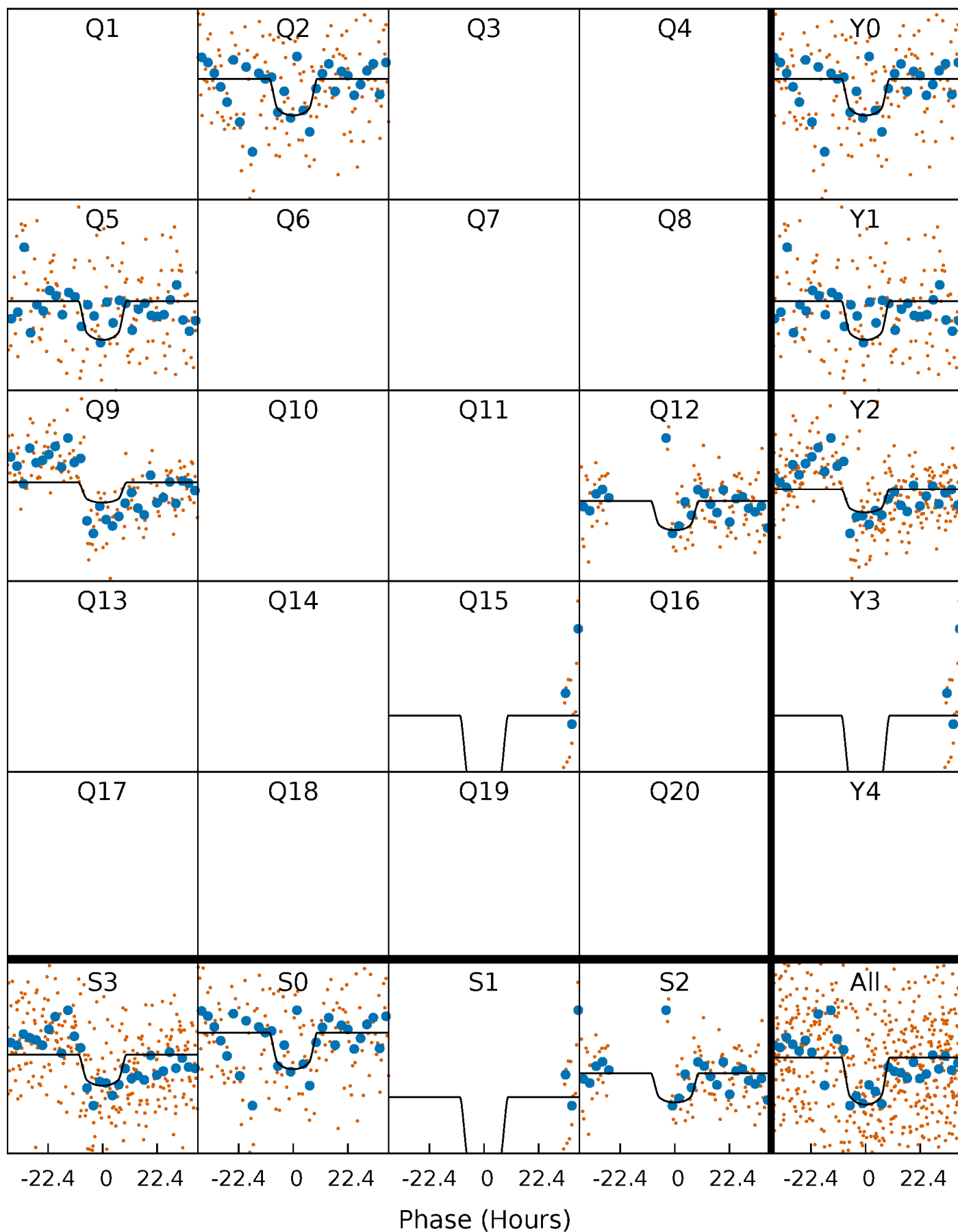
PDC Quarter-Phased Transit Curves

TCE 009936408-01 P=294.744614 Days $T_0=238.143824$ (BKJD)



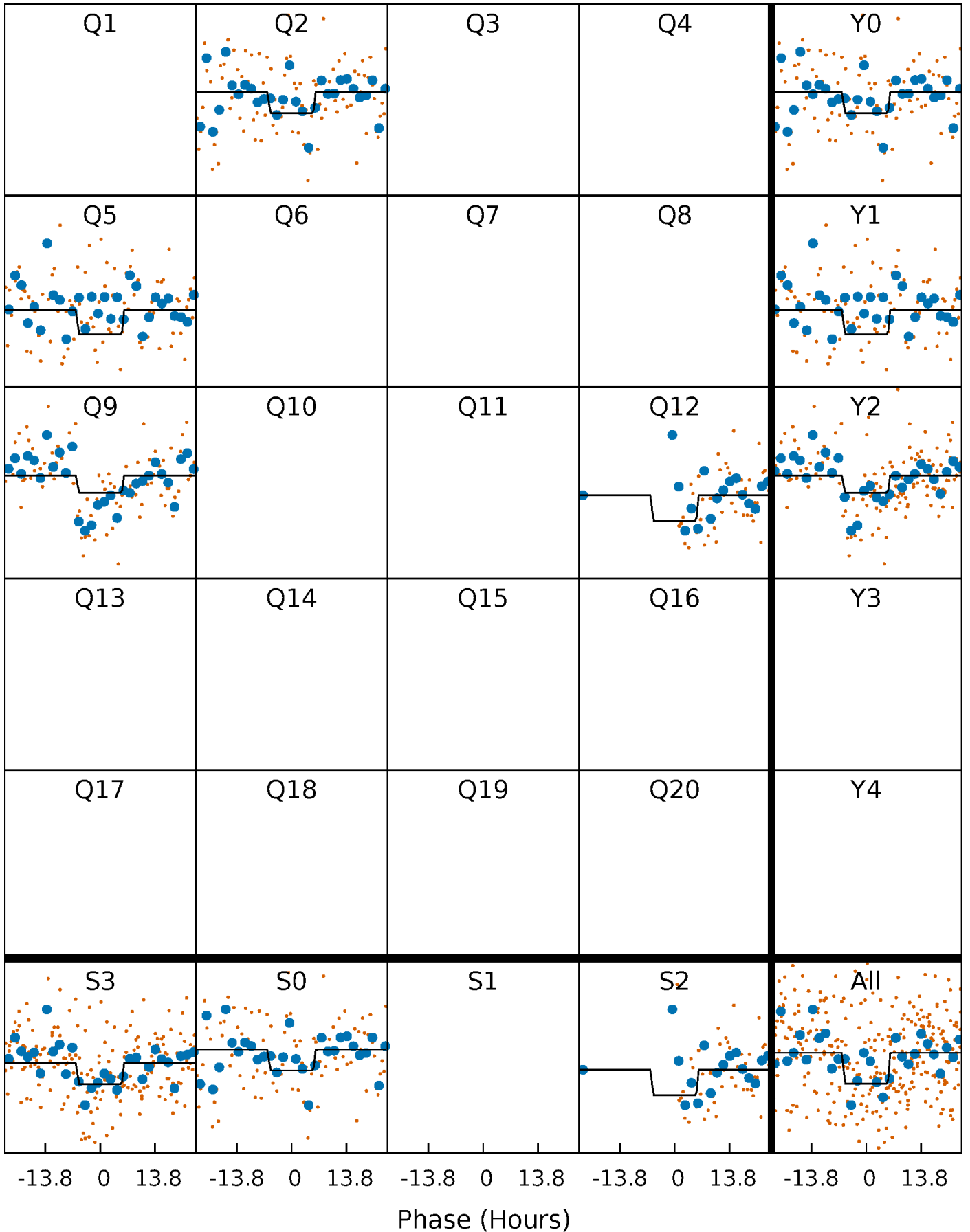
DV Quarter-Phased Transit Curves

TCE 009936408-01 $P=294.744614$ Days $T_0=238.143824$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

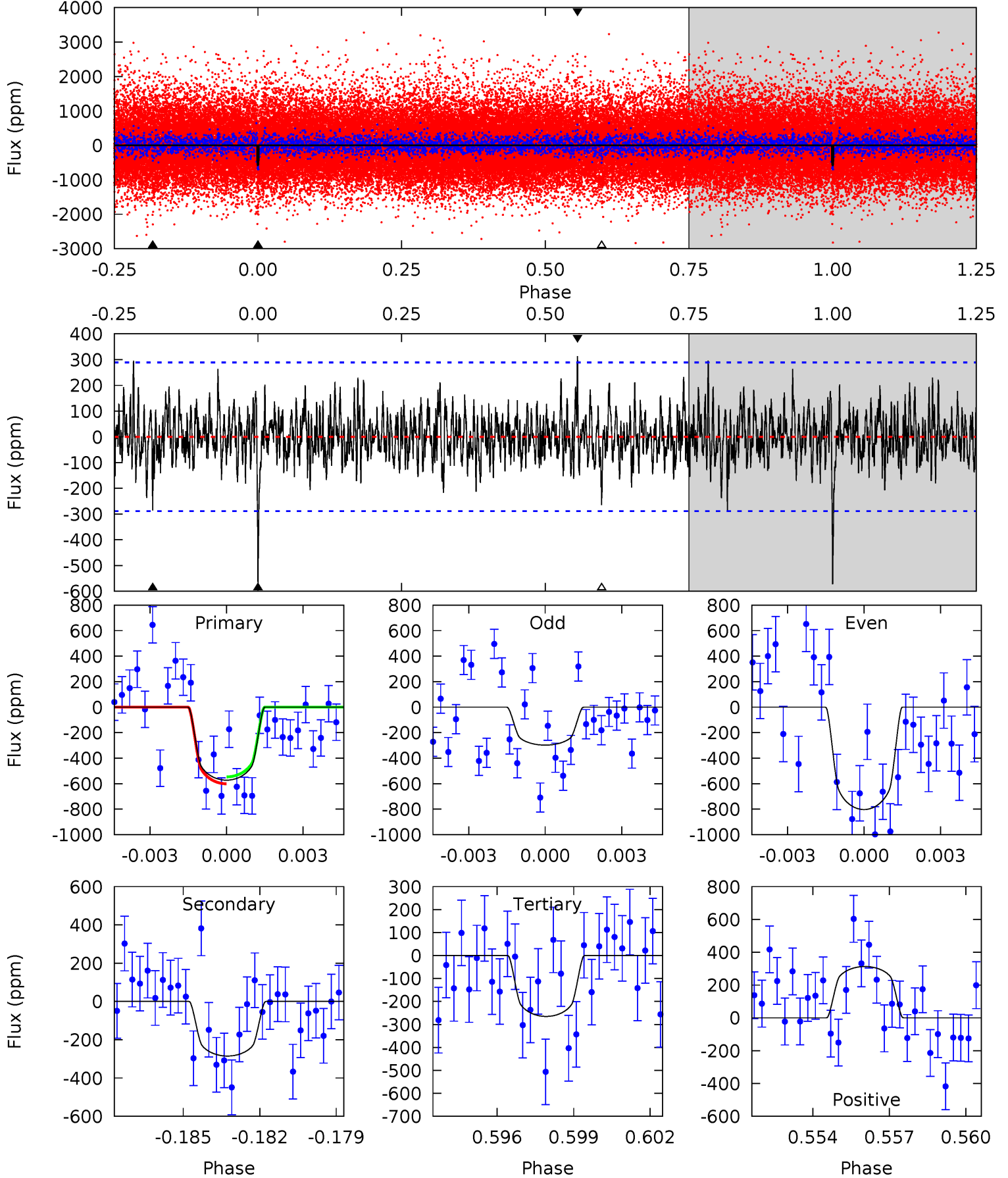
TCE 009936408-01 P=294.672369 Days $T_0=238.230238$ (BKJD)



DV Model-Shift Uniqueness Test

009936408-01, P = 294.744614 Days, E = 238.143824 Days

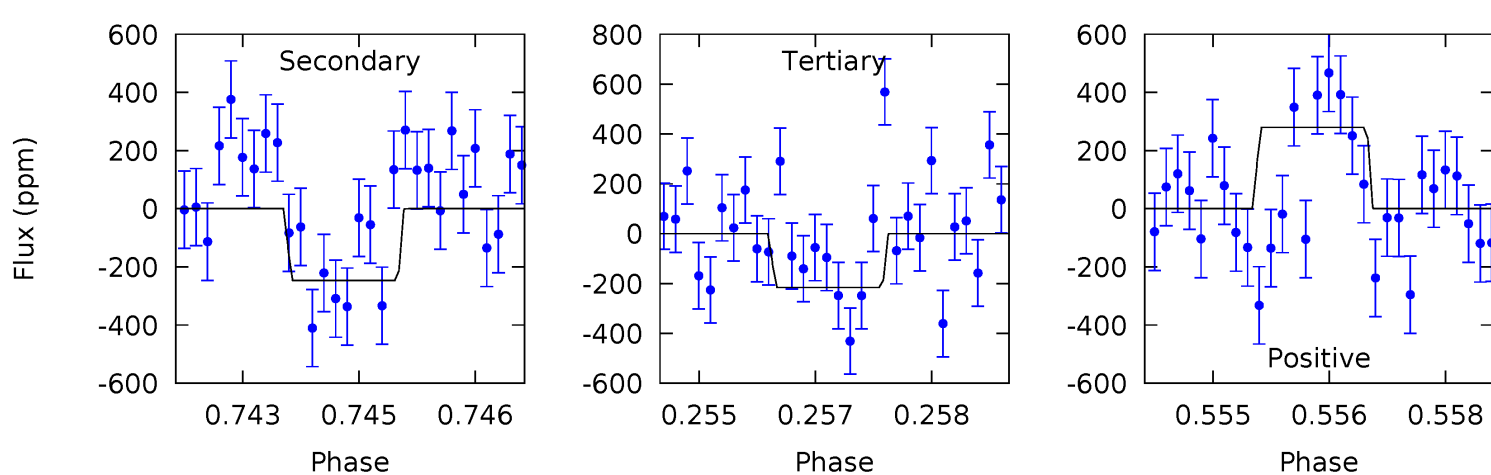
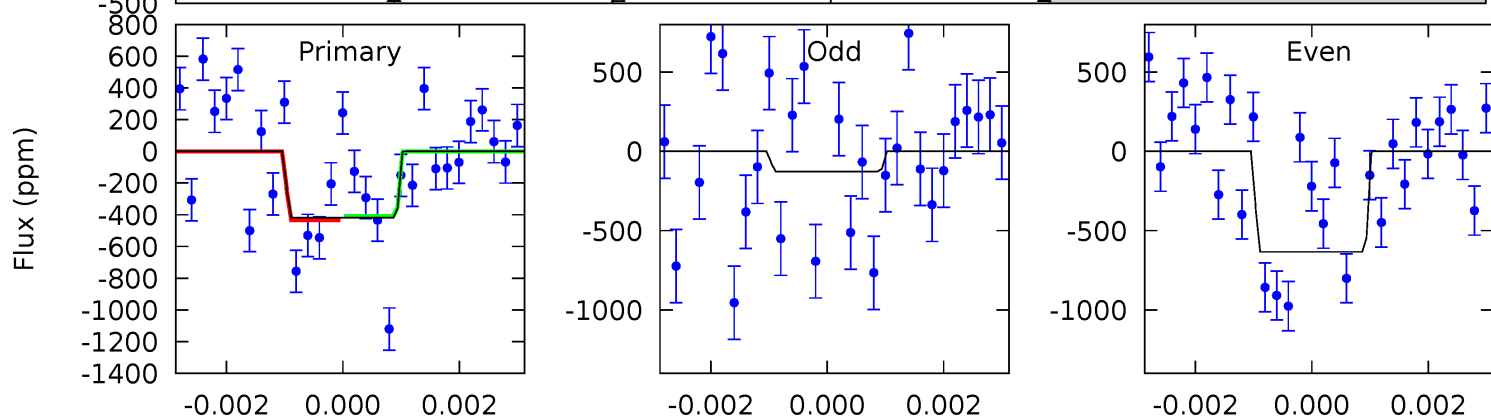
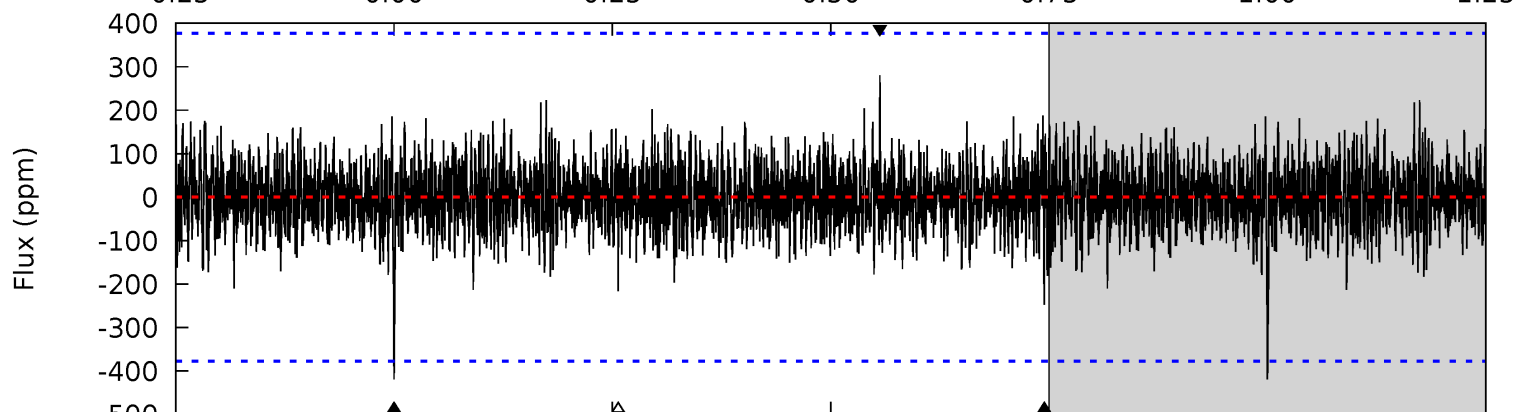
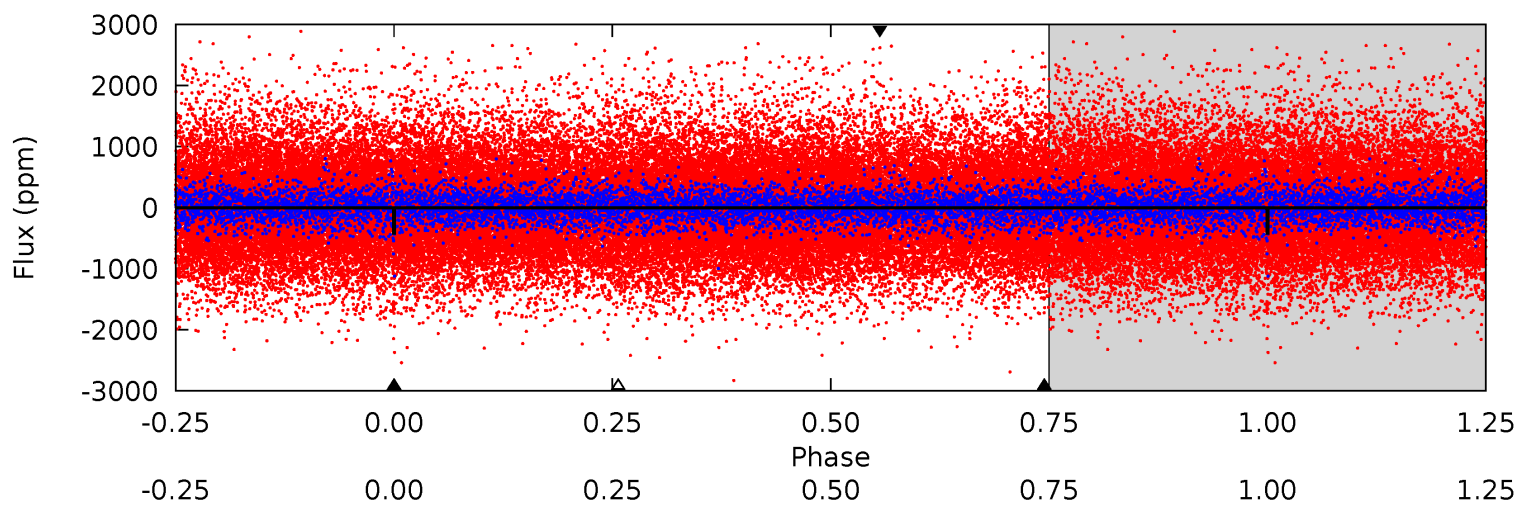
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
10.4	5.20	4.84	5.71	5.27	2.99	1.43	5.61	4.74	0.37	-0.51	4.61	1.65	0.35	0.49



Alt Model-Shift Uniqueness Test

009936408-01, P = 294.672369 Days, E = 238.230238 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
5.96	3.51	3.07	3.98	5.36	3.14	0.87	2.88	1.98	0.44	-0.47	3.59	1.48	0.40	0.16



Stellar Parameters For KIC 009936408

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	M (M_{\odot})	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	5307^{+175}_{-159}	$4.540^{+0.032}_{-0.128}$	$0.480^{+0.050}_{-0.300}$	$0.882^{+0.149}_{-0.064}$	$0.983^{+0.047}_{-0.102}$	$2.020^{+0.313}_{-0.708}$
	+3%/-3%	+1%/-3%	+10%/-62%	+17%/-7%	+5%/-10%	+15%/-35%
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 009936408-01 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-285 ± 55	$2.70^{+0.54}_{-0.44}$	336^{+16}_{-14}	4342^{+361}_{-326}	15472^{+7720}_{-5346}
Alt.	-247 ± 70	$2.10^{+0.55}_{-0.48}$	336^{+16}_{-13}	4657^{+642}_{-473}	21762^{+18491}_{-9581}

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

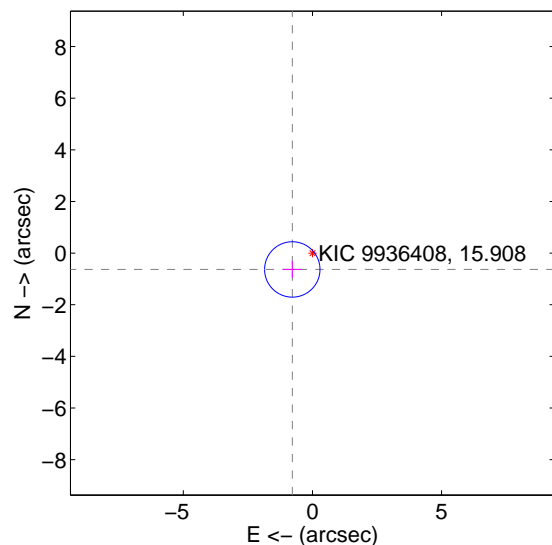
Supplemental centroid analysis for 009936408-01. Kepler magnitude: 15.91. Transit SNR 6.20

There are 1 quarters with good PRF difference image offsets

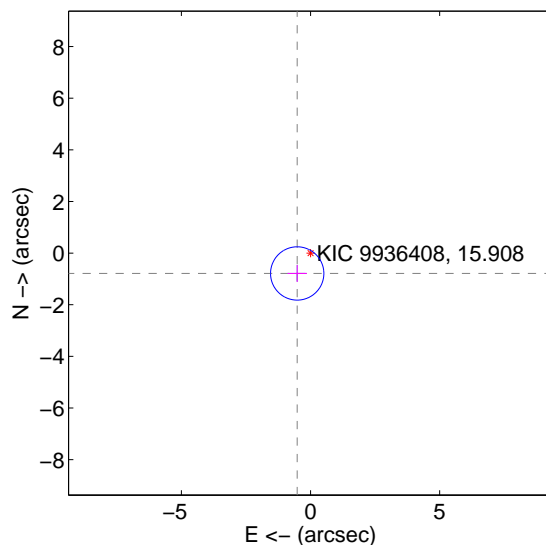
The direct PRF centroid is offset from the target star catalog position by about 0.31 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	1.004 ± 0.358	2.81	0.780 ± 0.374	-0.633 ± 0.330
PRF-fit source offset from KIC position	0.942 ± 0.344	2.74	0.516 ± 0.374	-0.788 ± 0.330
photometric centroid source offset	2.35 ± 1.82	1.29	1.62 ± 1.90	-1.69 ± 1.74

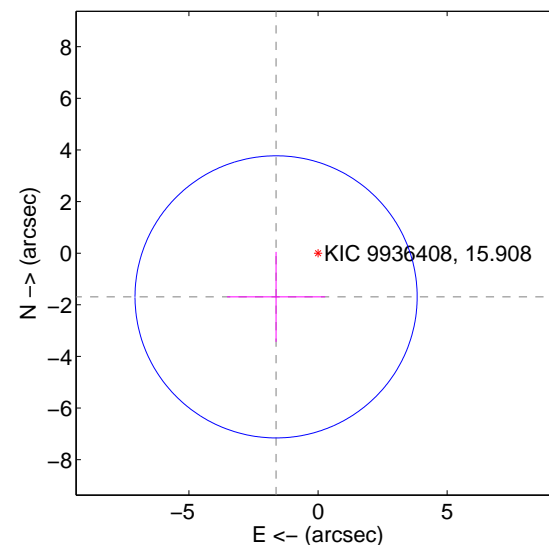
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

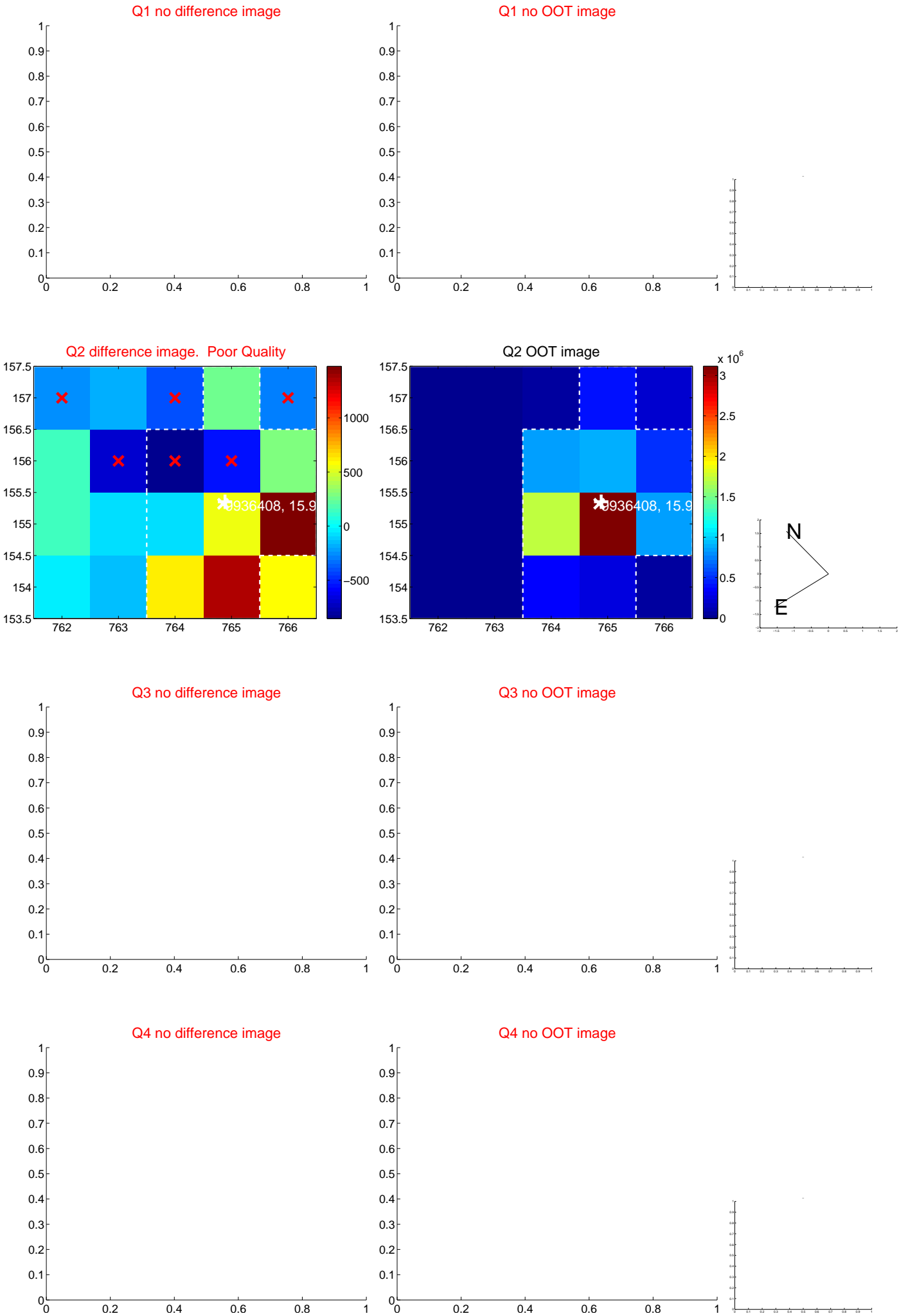


offset from photometric centroids

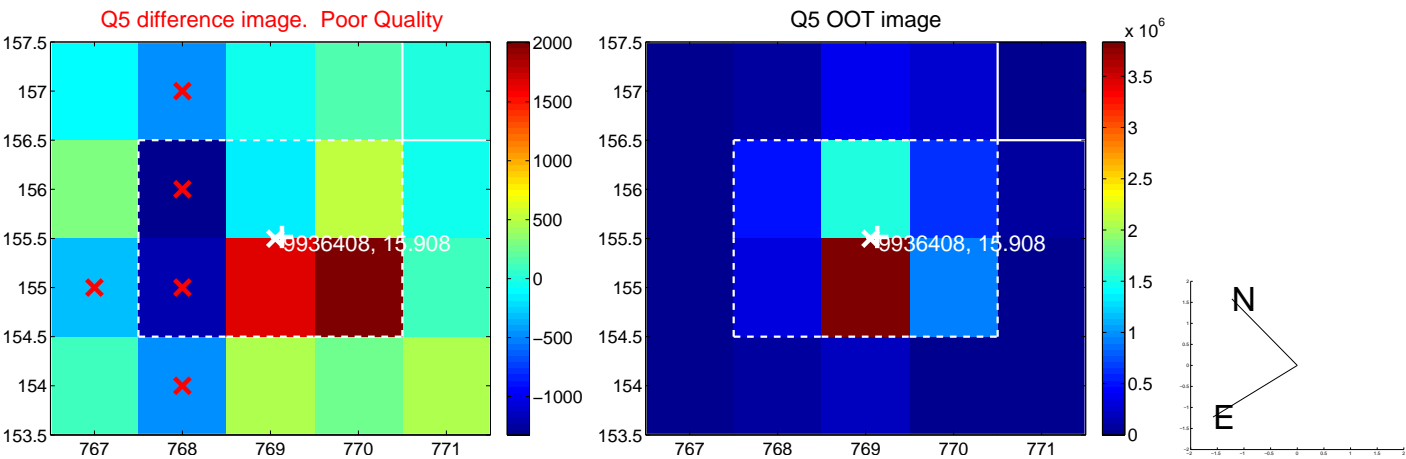


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

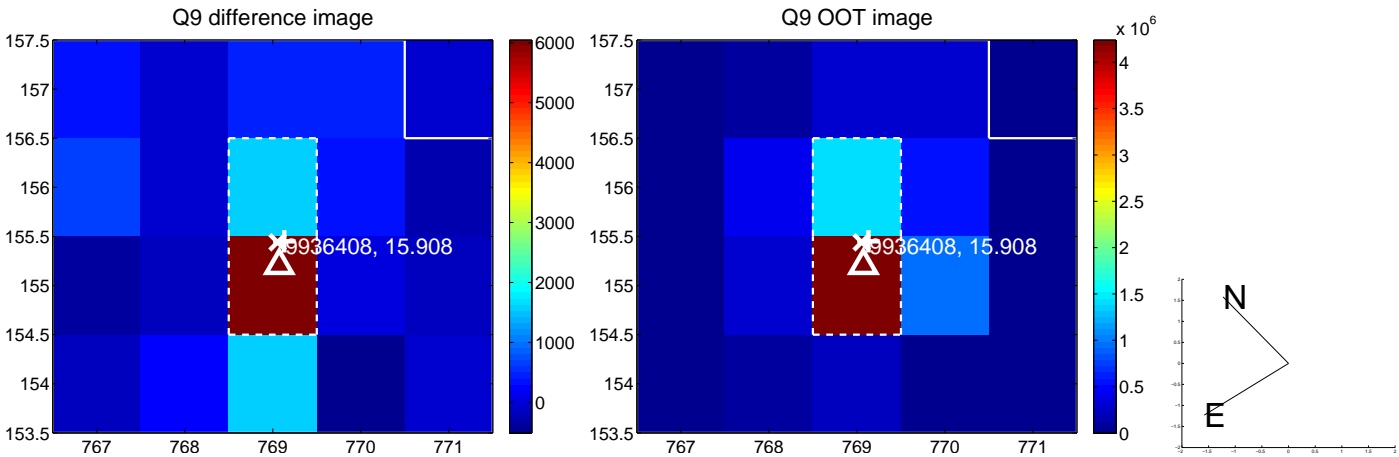
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ✕: large negative pixel value.



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



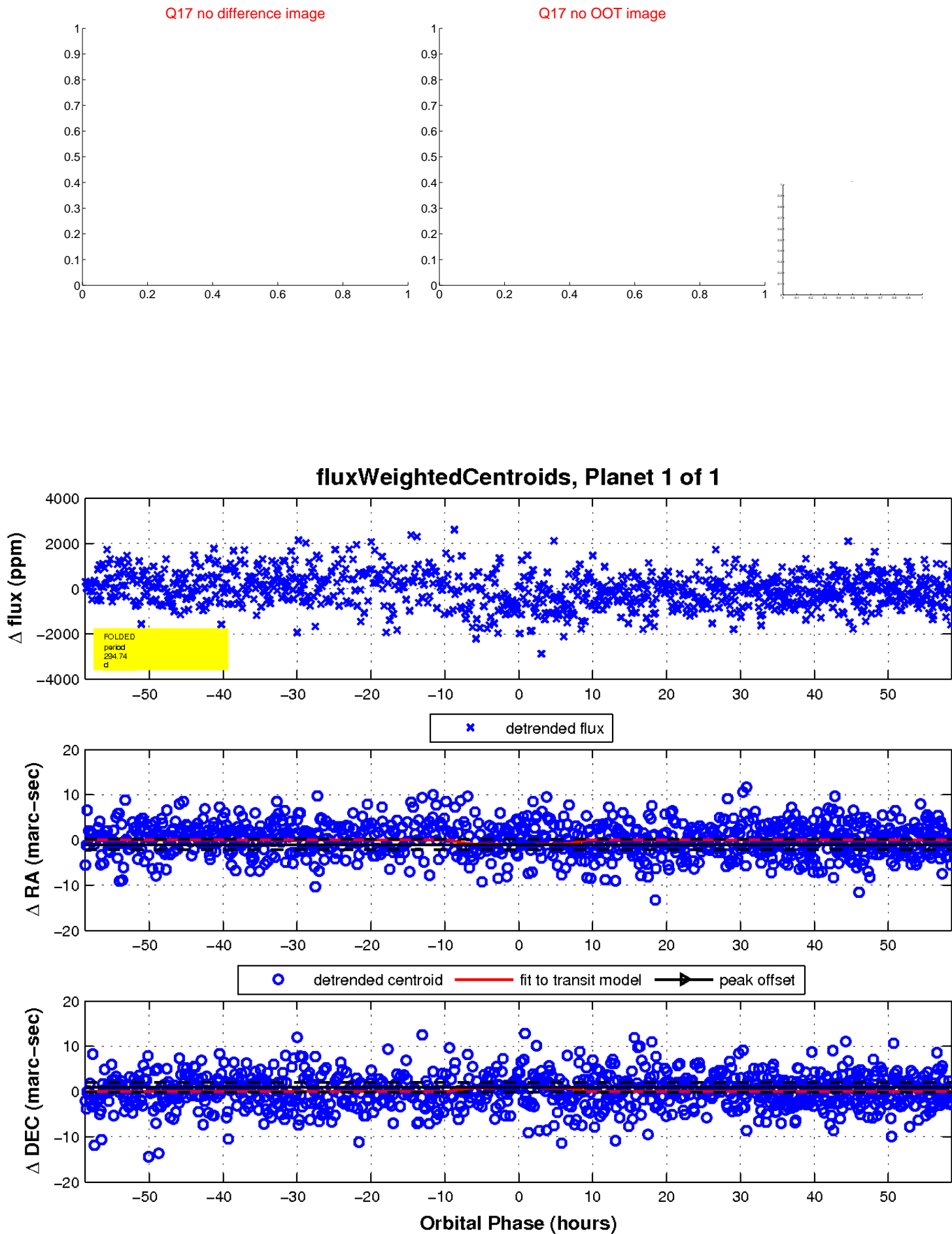
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



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



UKIRT Image

Declination

