

KIC 009362370

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})
009362370-01	OBS	No	594.752476	309.258800	215.3	31.293	8.1	10.2	2.65	5902	4.66	3.32

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
009362370-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES—ALL_TRANS_CHASES—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.

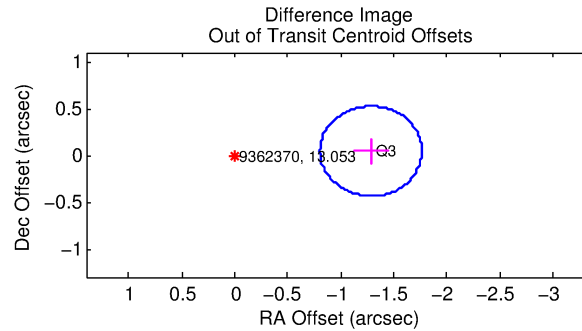
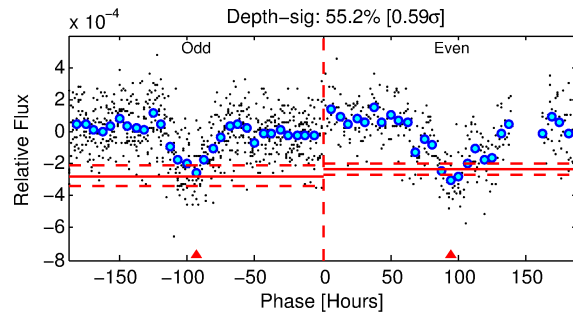
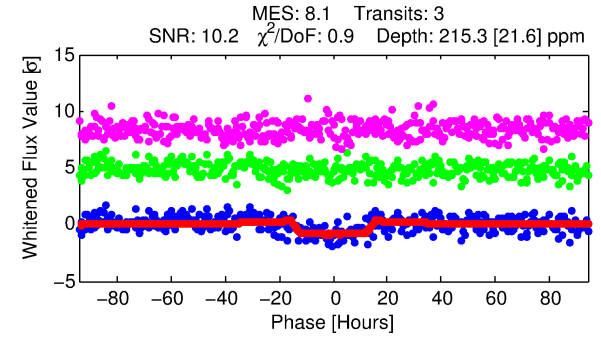
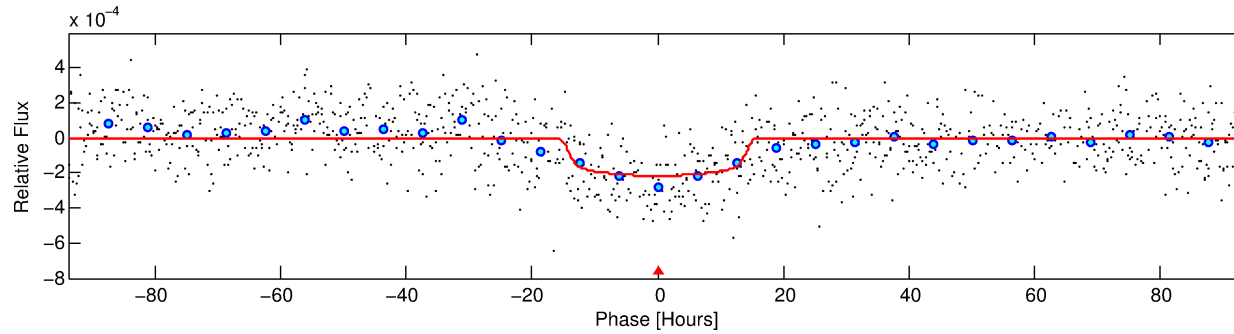
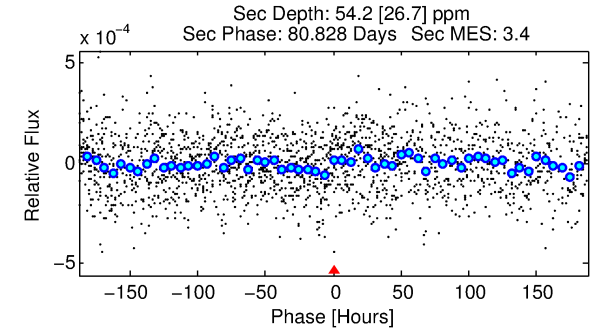
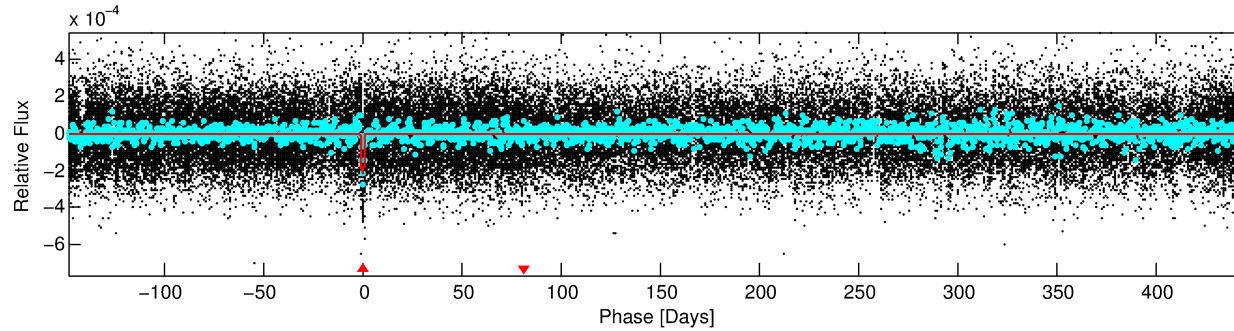
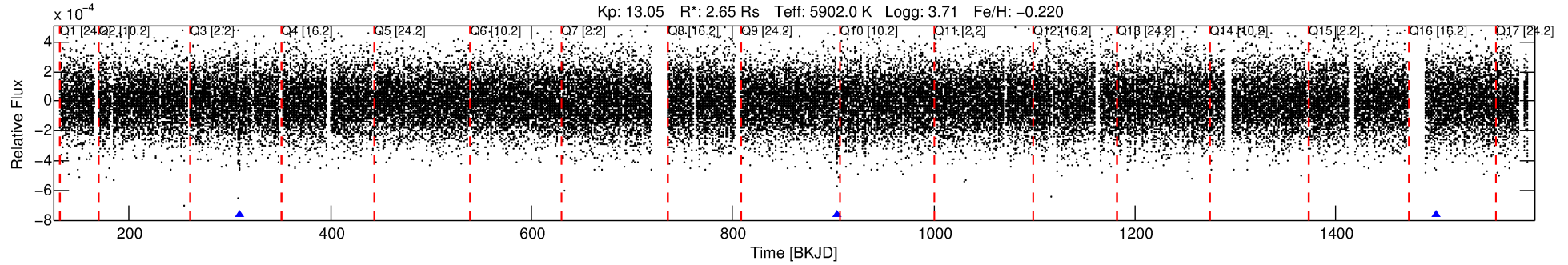
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 009362370-01

No Significant Match Found

DV One-Page Summary

KIC: 9362370 Candidate: 1 of 1 Period: 594.752 d



DV Fit Results:

Period = 594.75248 [0.02371] d
Epoch = 309.2588 [0.0290] BKJD
Rp/R* = 0.0161 [0.0013]
a/R* = 63.61 [20.53]
b = 0.92 [0.06]
Seff = 3.32 [1.96]
Teq = 344 [51] K
Rp = 4.66 [1.89] Re
a = 1.5162 [0.5549] AU
Ag = 3151.57 [2436.59] [1.29σ]
Teffp = 3988 [539] K [6.73σ]

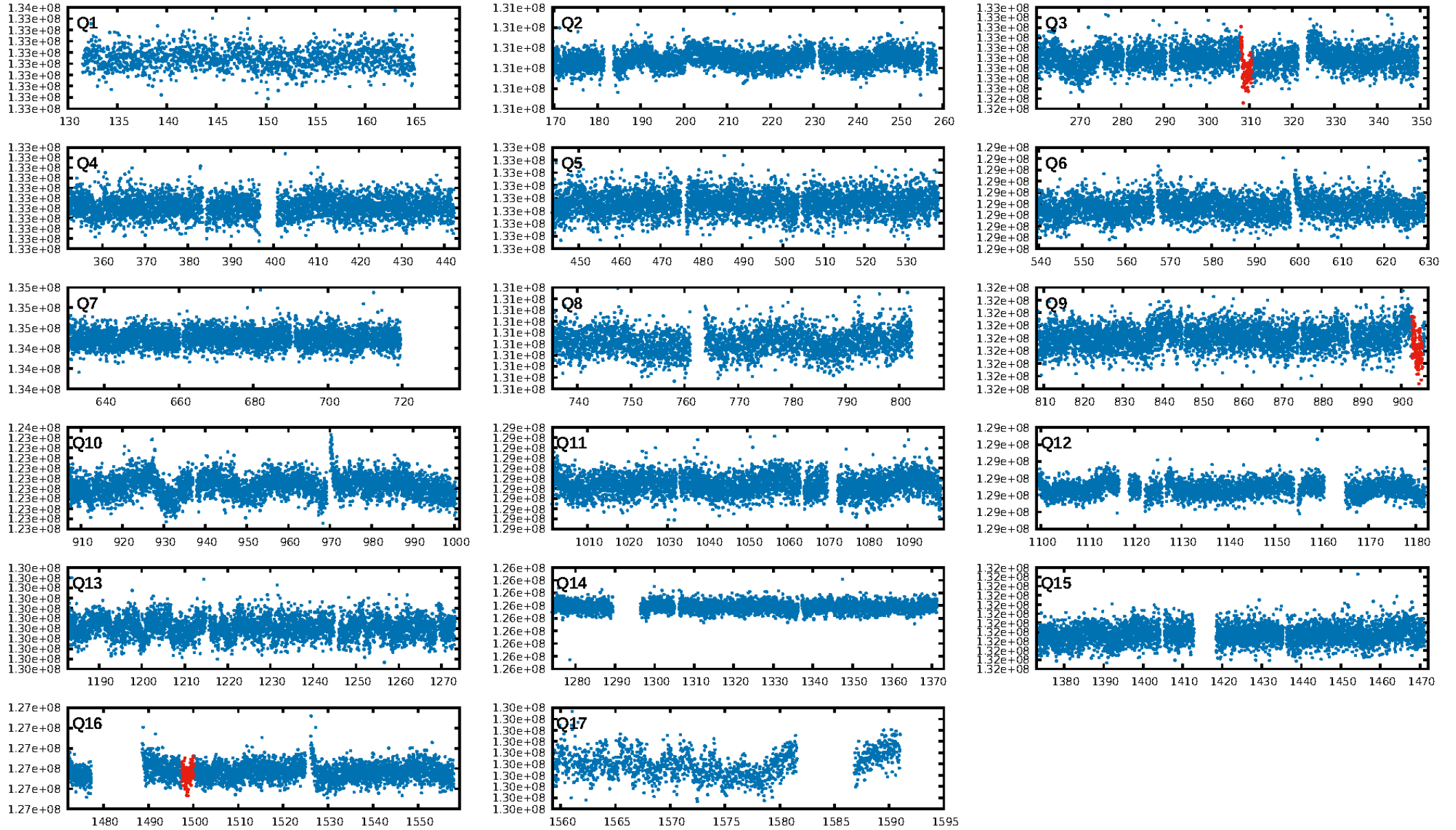
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: 34.7%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 1.38e-14
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: -0.809
Centroid-sig: 1.4%
Centroid-so: 1.388 arcsec [1.50σ]
OotOffset-rm: 1.287 arcsec [8.03σ]
KicOffset-rm: 1.310 arcsec [8.17σ]
OotOffset-st: 0/1/0/0 [1]
KicOffset-st: 0/1/0/0 [1]
DiffImageQuality-fgm: 1.00 [1/1]
DiffImageOverlap-fno: 1.00 [1/1]

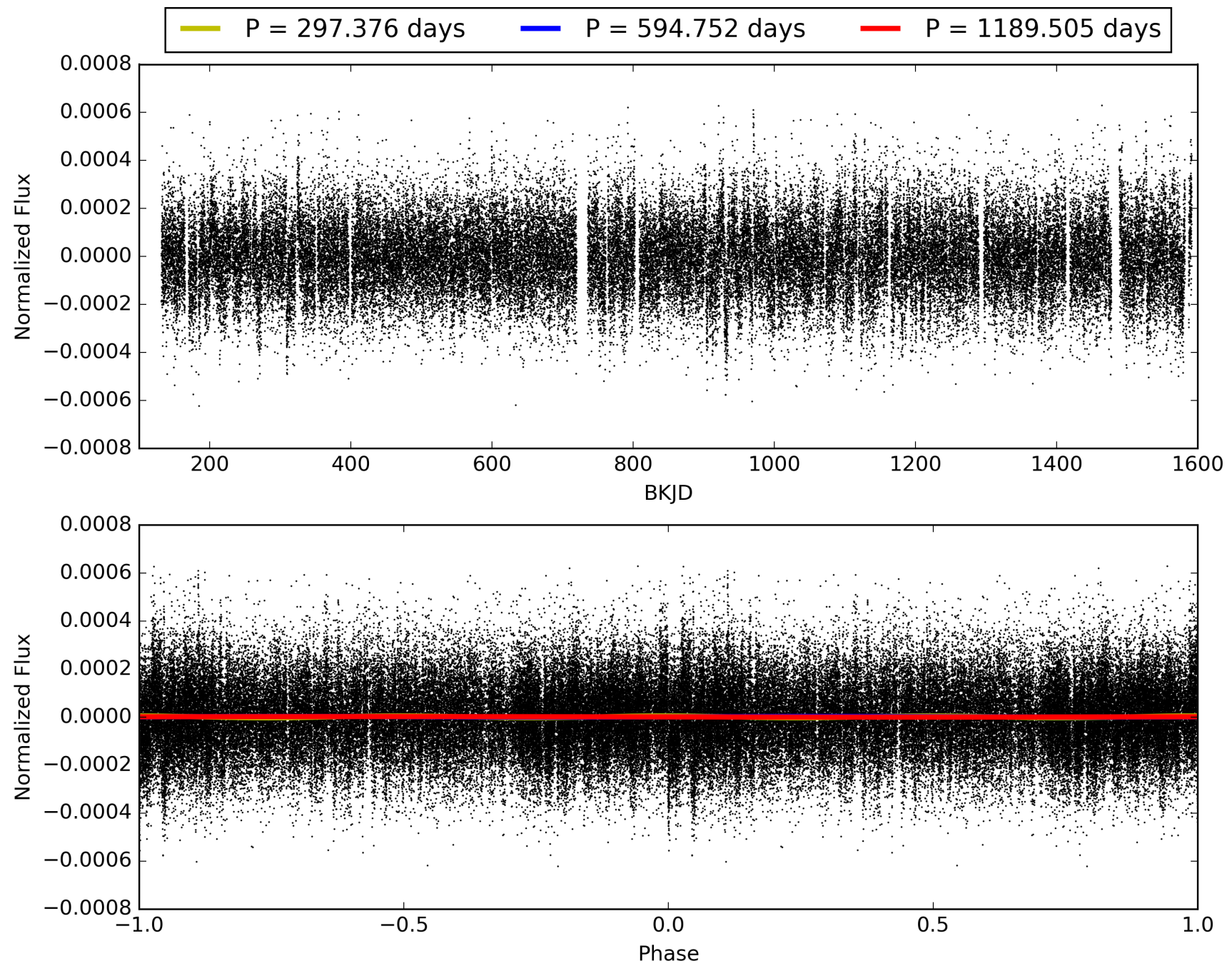
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 14:53:54 Z

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

TCE 009362370-01, PDC Light Curves

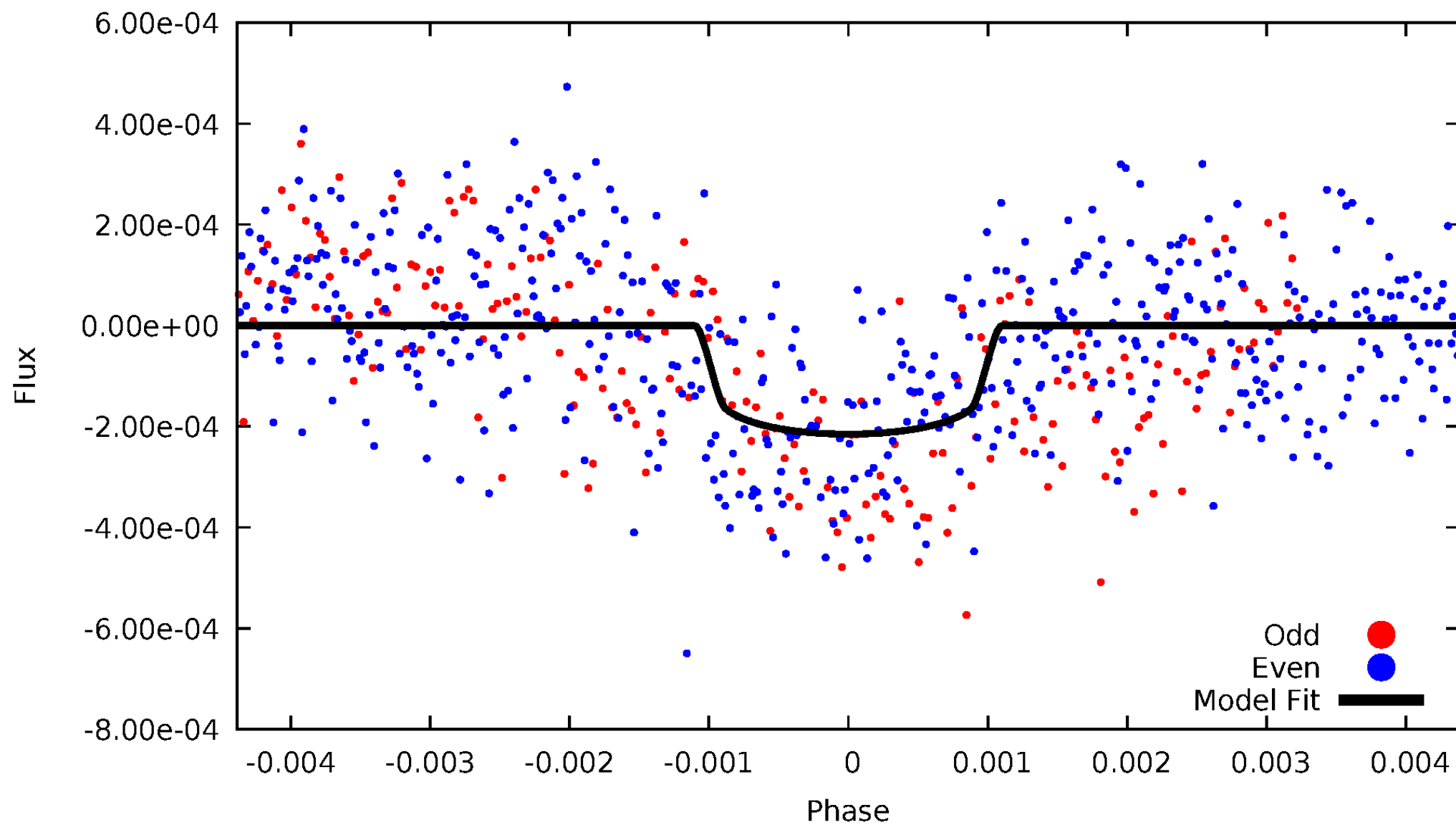


TCE 009362370-01



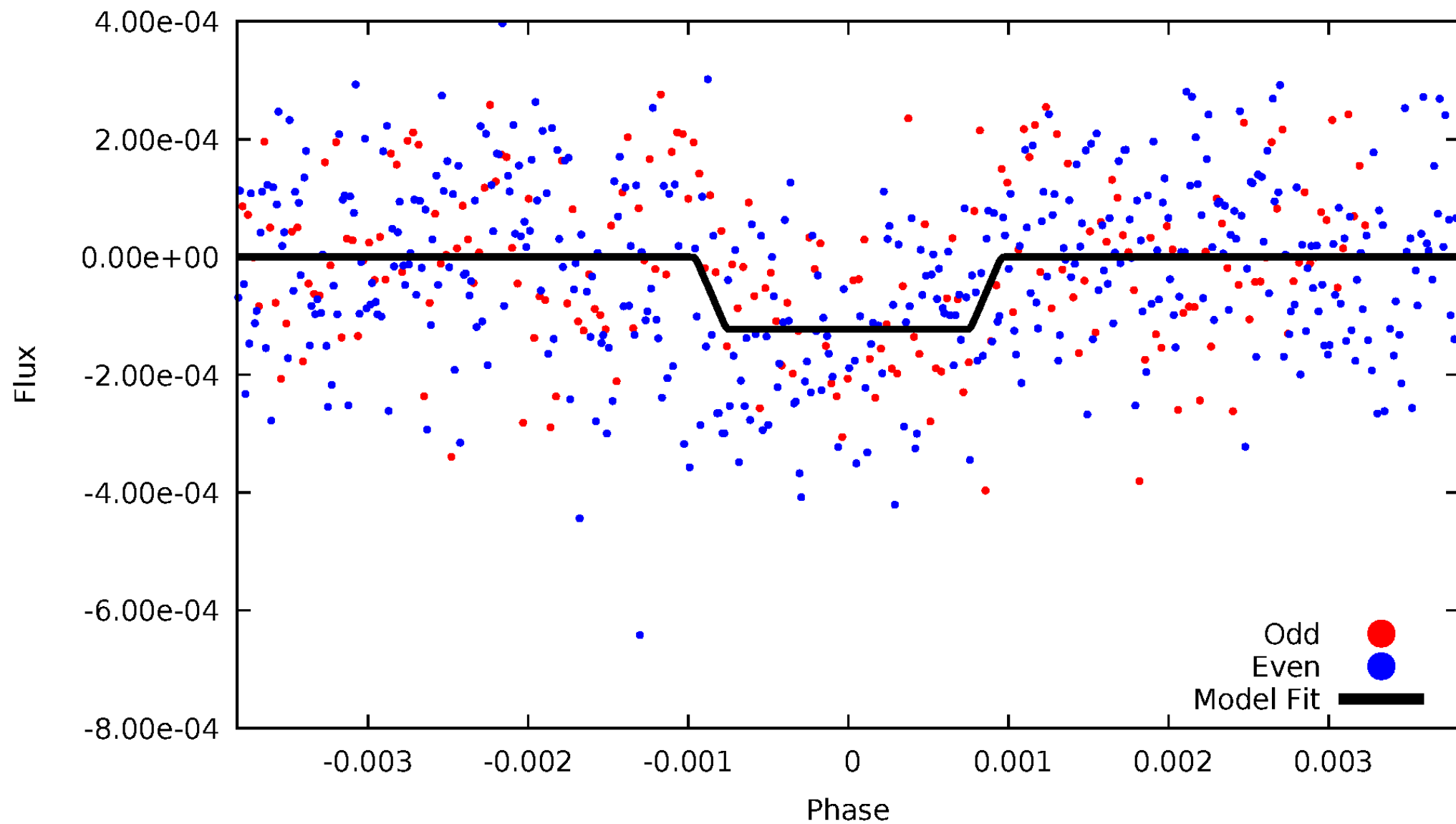
DV Odd/Even

TCE 009362370-01

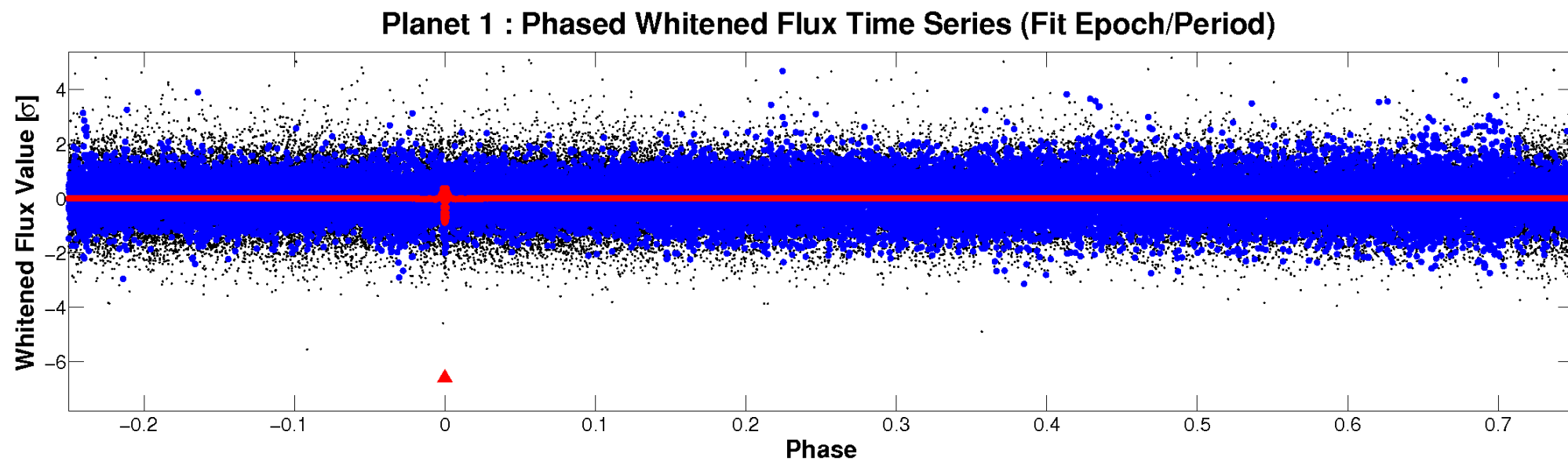
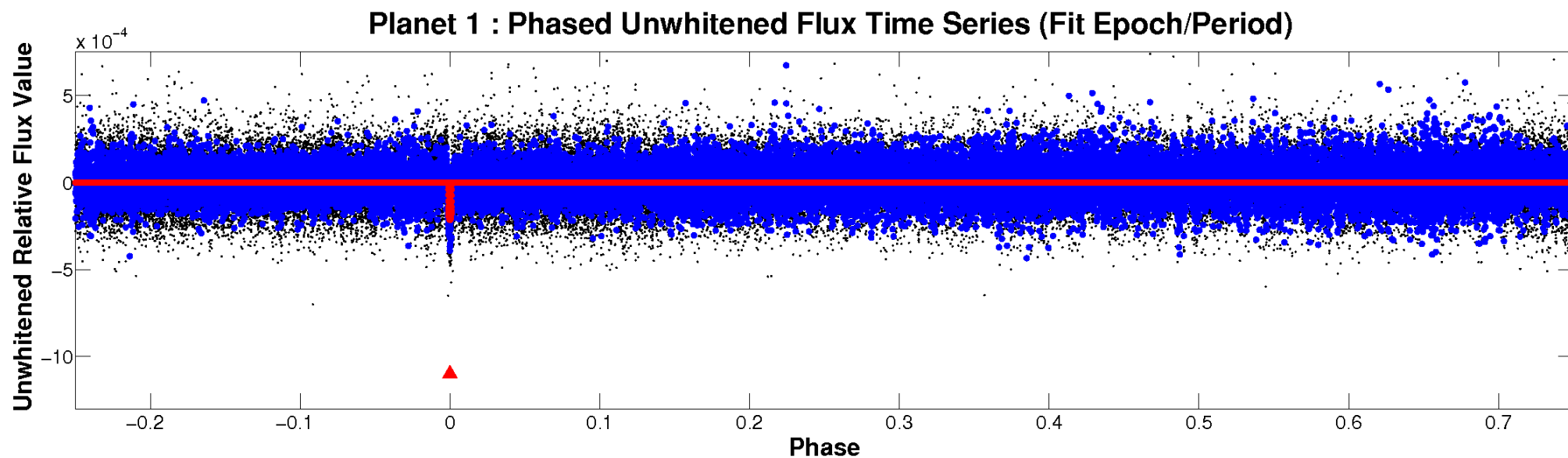


ALT Odd/Even

TCE 009362370-01



Non-Whitened Vs. Whitened Light Curve



PDC Quarter-Phased Transit Curves

TCE 009362370-01 P=594.752476 Days $T_0=309.258800$ (BKJD)



DV Quarter-Phased Transit Curves

TCE 009362370-01 $P=594.752476$ Days $T_0=309.258800$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

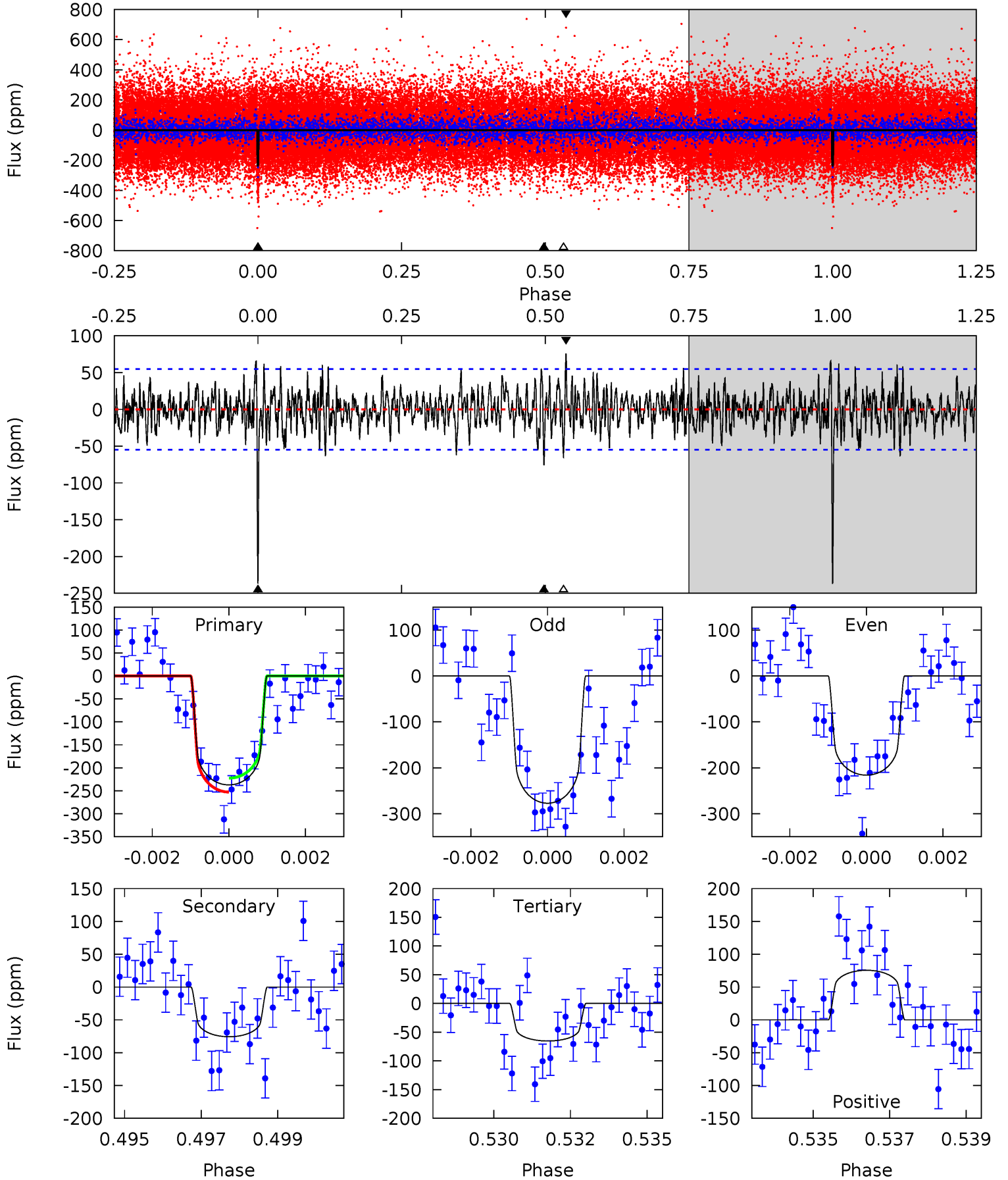
TCE 009362370-01 P=594.664274 Days $T_0=309.342858$ (BKJD)



DV Model-Shift Uniqueness Test

009362370-01, $P = 594.752476$ Days, $E = 309.258800$ Days

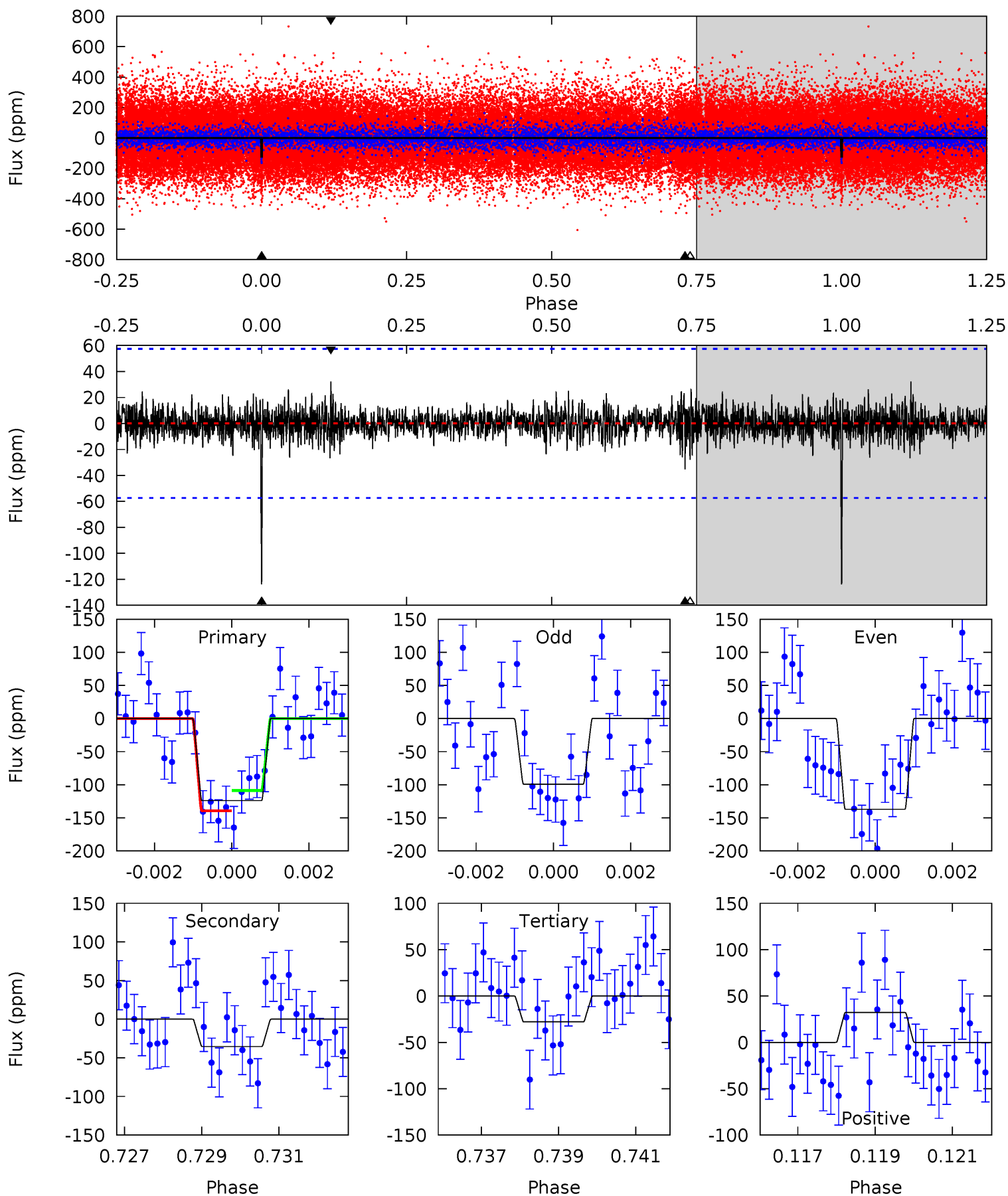
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
23.0	7.33	6.33	7.31	5.31	3.06	1.95	16.6	15.6	1.00	0.01	2.79	0.88	0.24	1.47



Alt Model-Shift Uniqueness Test

009362370-01, P = 594.664274 Days, E = 309.342858 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
11.5	3.29	2.59	2.99	5.33	3.10	0.71	8.93	8.53	0.70	0.30	1.67	1.01	0.21	1.42



Stellar Parameters For KIC 009362370

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$\rho_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5902^{+213}_{-177}	$3.710^{+0.330}_{-0.110}$	$-0.220^{+0.350}_{-0.300}$	$2.650^{+0.450}_{-1.050}$	$1.313^{+0.181}_{-0.310}$	$0.099^{+0.236}_{-0.033}$
	+4%/-3%	+9%/-3%	+159%/-136%	+17%/-40%	+14%/-24%	+238%/-33%
Source	PHO1	FLK73	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 009362370-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-76 ± 10	$4.46^{+0.74}_{-0.93}$	474^{+33}_{-46}	4536^{+238}_{-229}	4869^{+2472}_{-1368}
Alt.	-35 ± 11	$3.05^{+0.62}_{-0.65}$	472^{+33}_{-43}	4507^{+373}_{-350}	4865^{+3088}_{-1983}

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

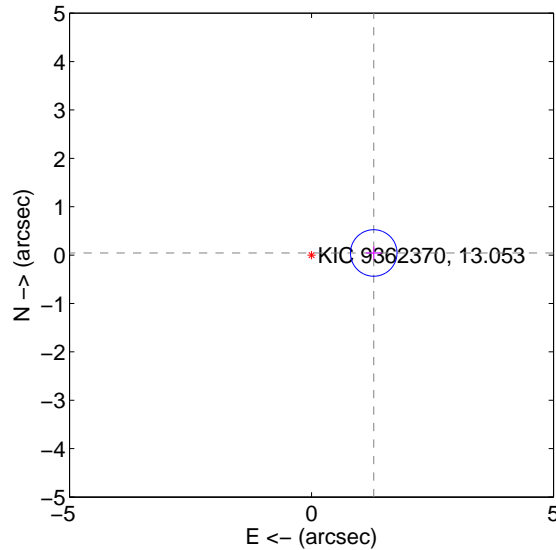
Supplemental centroid analysis for 009362370-01. Kepler magnitude: 13.05. Transit SNR 10.24

There are 1 quarters with good PRF difference image offsets

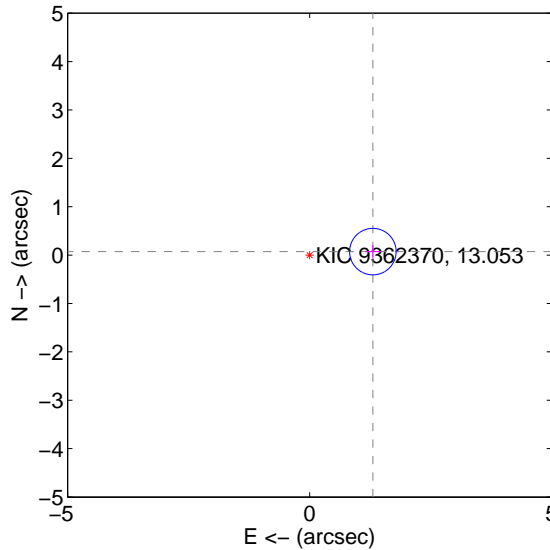
The direct PRF centroid is offset from the target star catalog position by about 0.04 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	1.287 ± 0.160	8.03	-1.286 ± 0.160	0.044 ± 0.135
PRF-fit source offset from KIC position	1.310 ± 0.160	8.17	-1.308 ± 0.160	0.072 ± 0.135
photometric centroid source offset	1.39 ± 0.93	1.50	-0.26 ± 1.15	1.36 ± 0.92

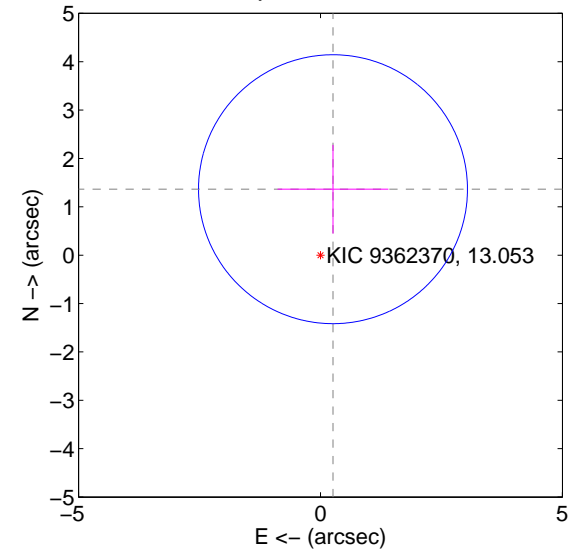
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

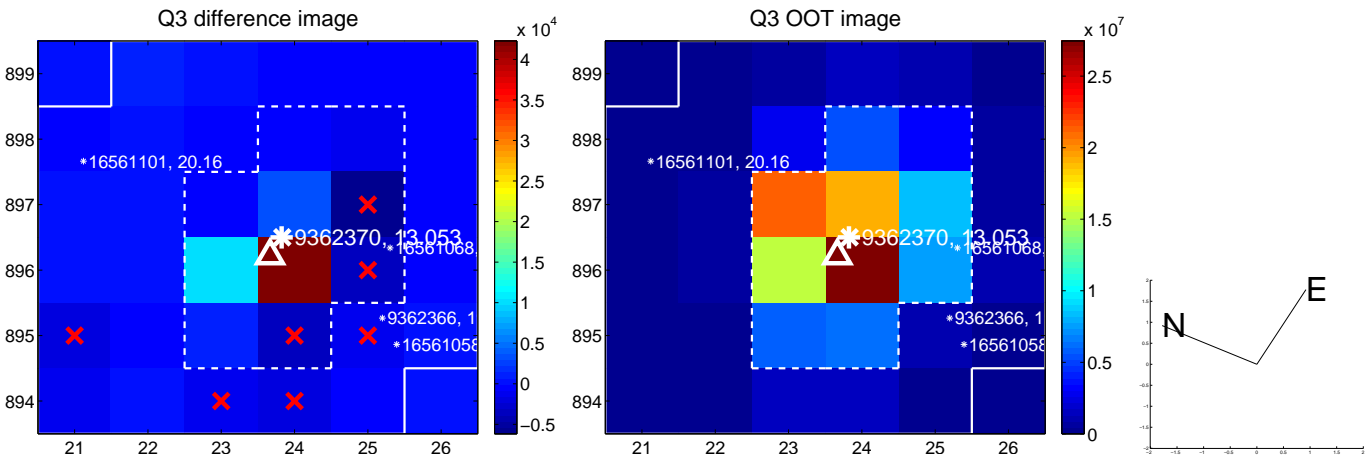


offset from photometric centroids



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.



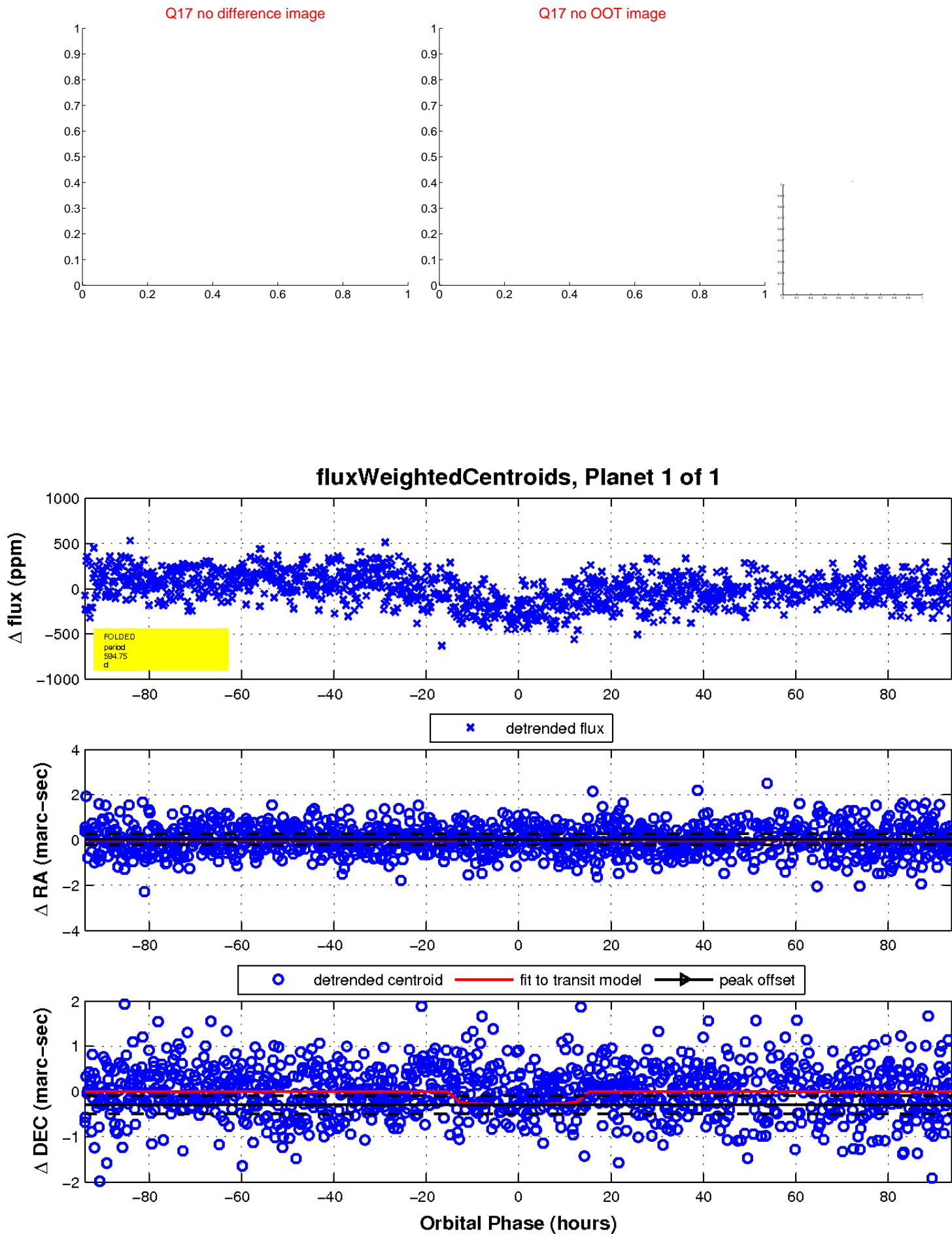
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



UKIRT Image

Declination

