

KIC 002837007

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})
002837007-01	OBS	No	538.304736	387.448841	473.5	10.335	8.5	7.6	0.94	5683	2.23	0.49

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
002837007-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_SKYE—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.

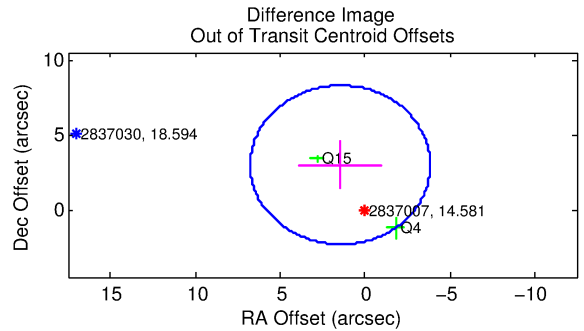
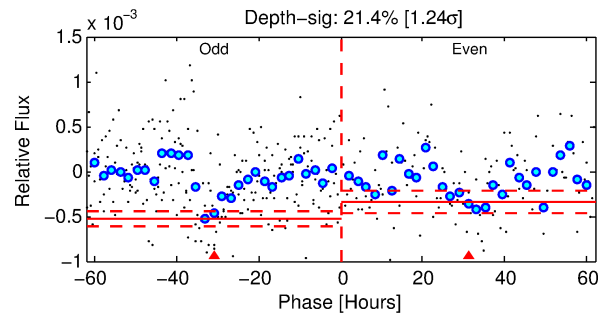
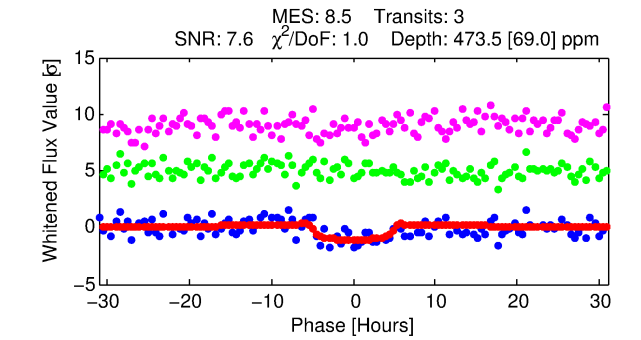
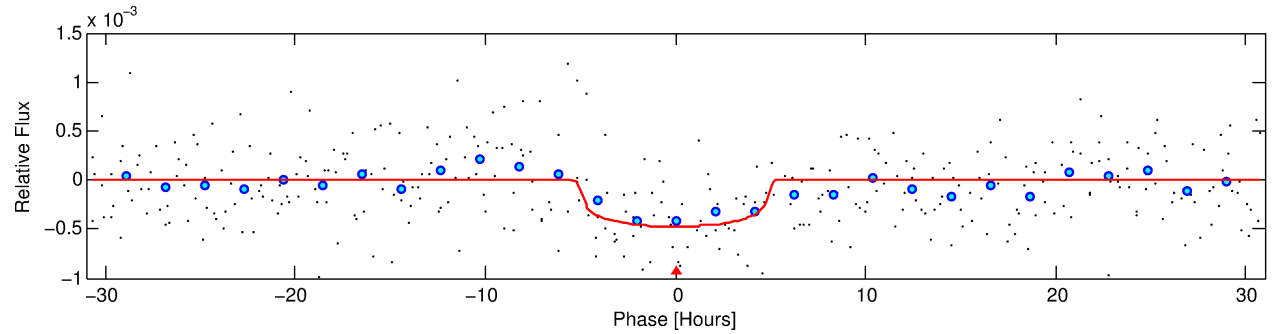
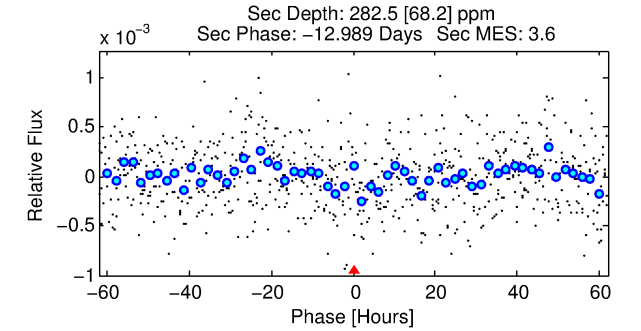
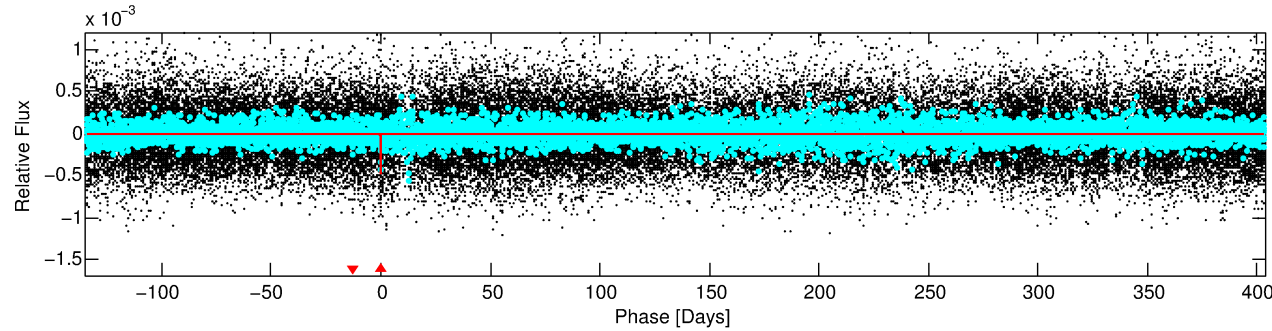
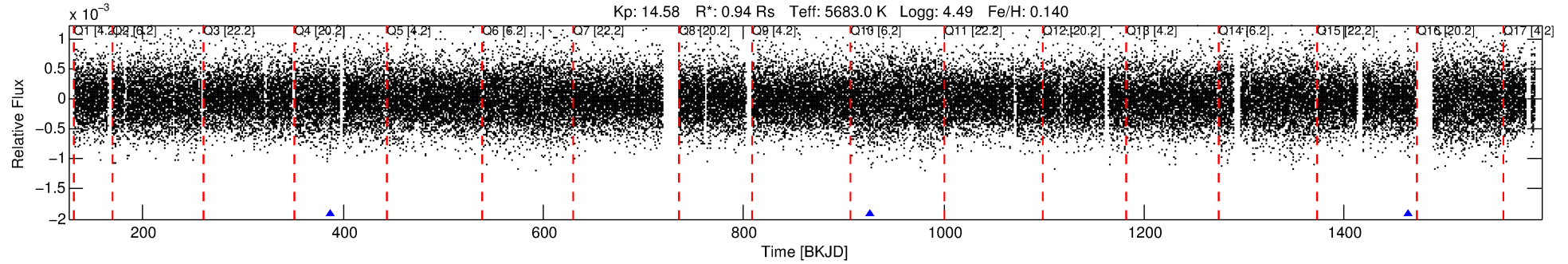
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 002837007-01

No Significant Match Found

DV One-Page Summary

KIC: 2837007 Candidate: 1 of 1 Period: 538.305 d



DV Fit Results:

Period = 538.30474 [0.01508] d
Epoch = 387.4488 [0.0205] BKJD
Rp/R* = 0.0217 [0.0095]
a/R* = 274.81 [500.74]
b = 0.75 [1.06]
Seff = 0.49 [0.19]
Teq = 214 [21] K
Rp = 2.23 [1.18] Re
a = 1.2973 [0.3240] AU
Ag = 52382.67 [51261.76] [1.02 σ]
Teff = 5002 [1146] K [4.18 σ]

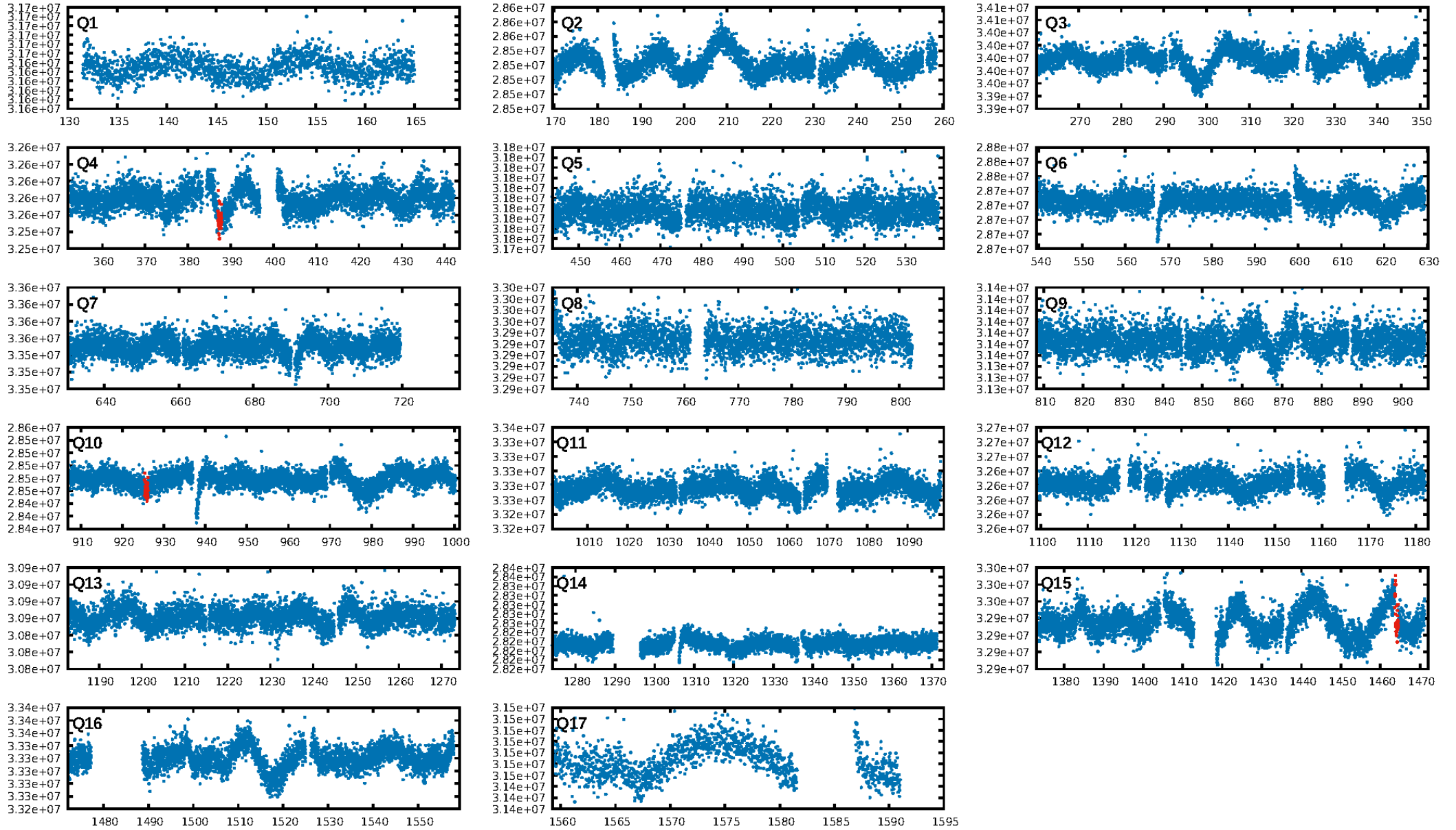
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: 7.5%
ModelChiSquareGof-sig: 99.8%
Bootstrap-pfa: 9.56e-13
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: -8.642
Centroid-sig: 64.2%
Centroid-so: 1.536 arcsec [0.92 σ]
OotOffset-rm: 3.314 arcsec [1.87 σ]
KicOffset-rm: 2.909 arcsec [1.65 σ]
OotOffset-st: 0/1/1/0 [2]
KicOffset-st: 0/1/1/0 [2]
DiffImageQuality-fgm: 0.50 [1/2]
DiffImageOverlap-fno: 1.00 [3/3]

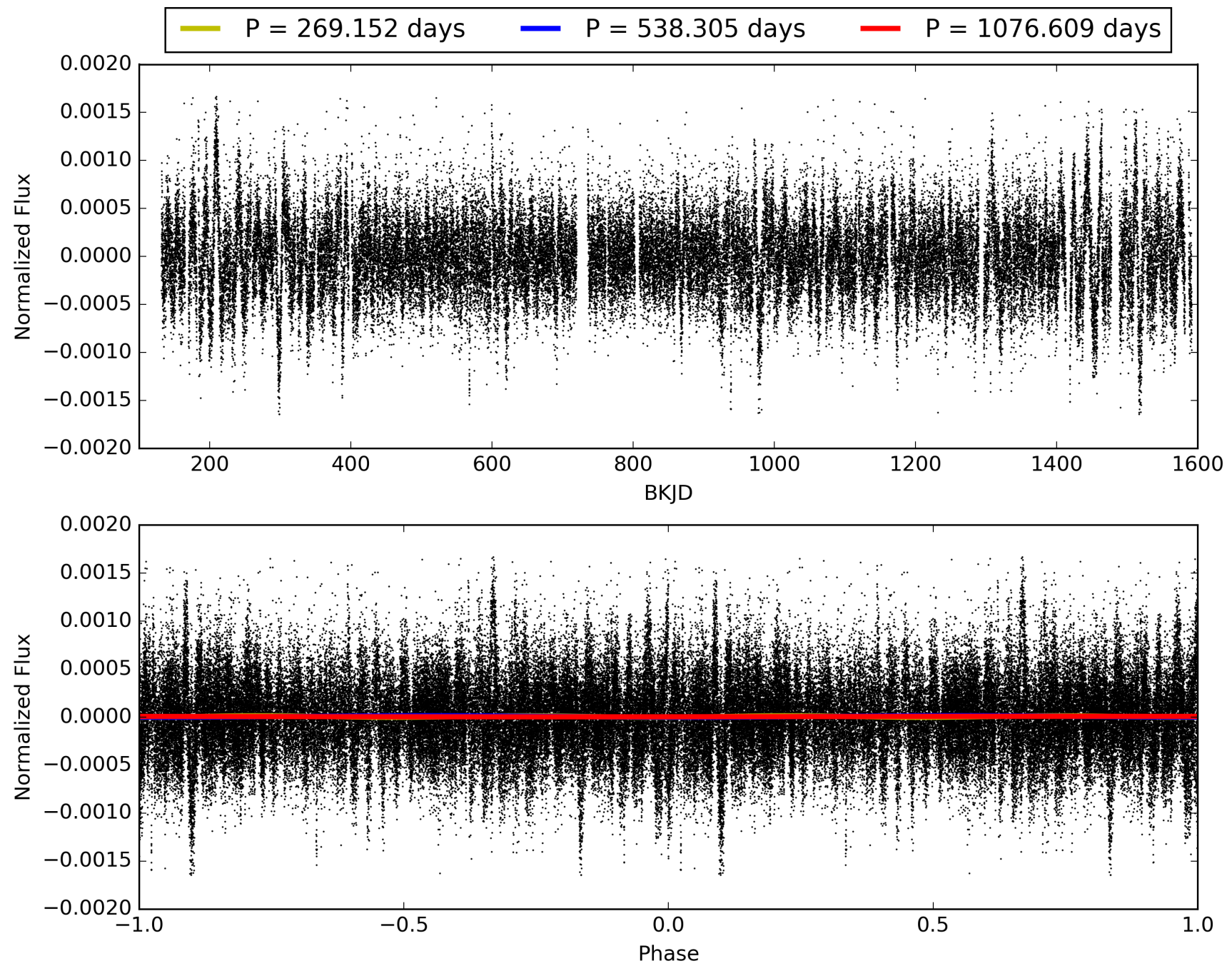
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 14:39:26 Z

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

TCE 002837007-01, PDC Light Curves

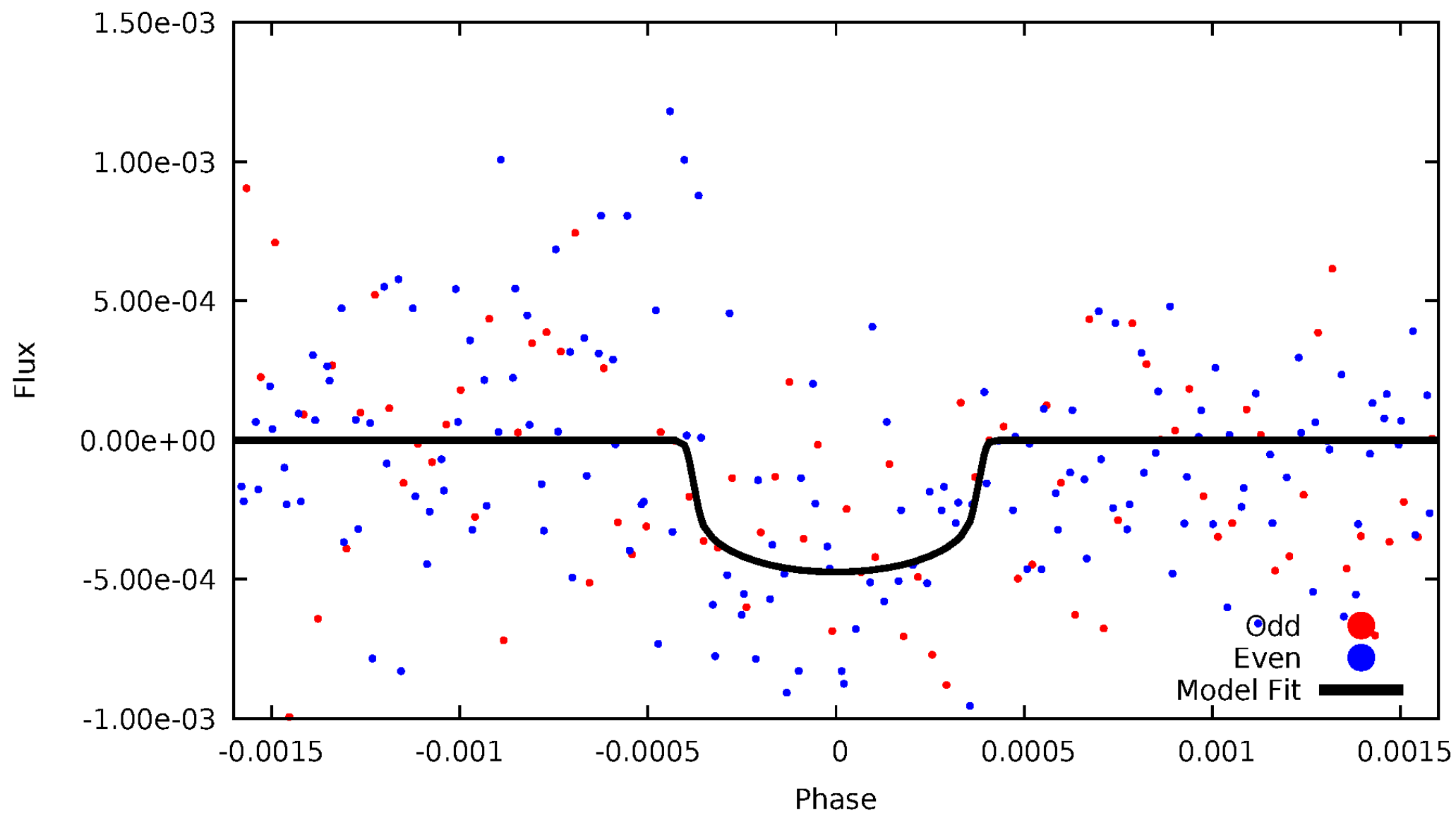


TCE 002837007-01



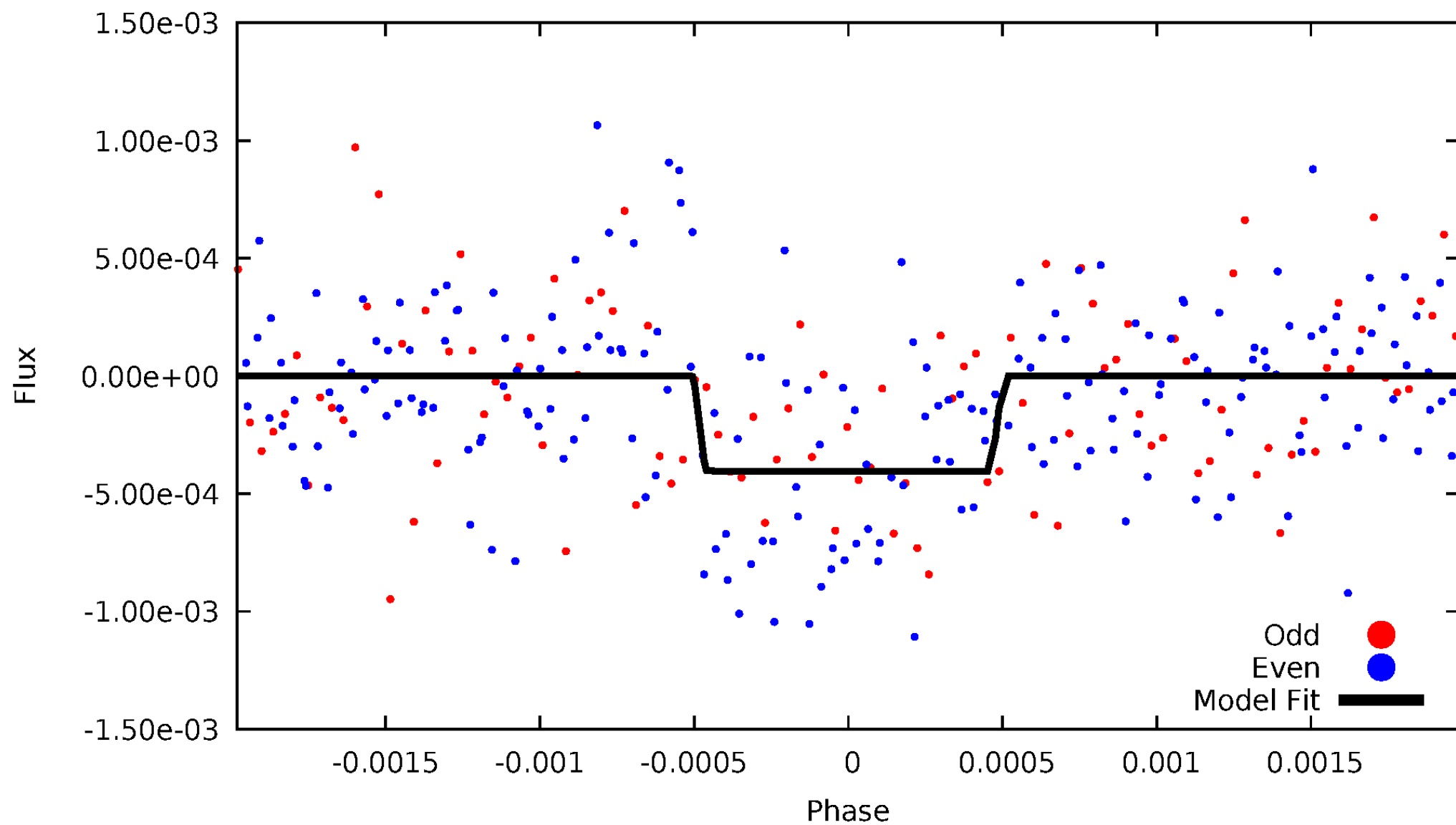
DV Odd/Even

TCE 002837007-01



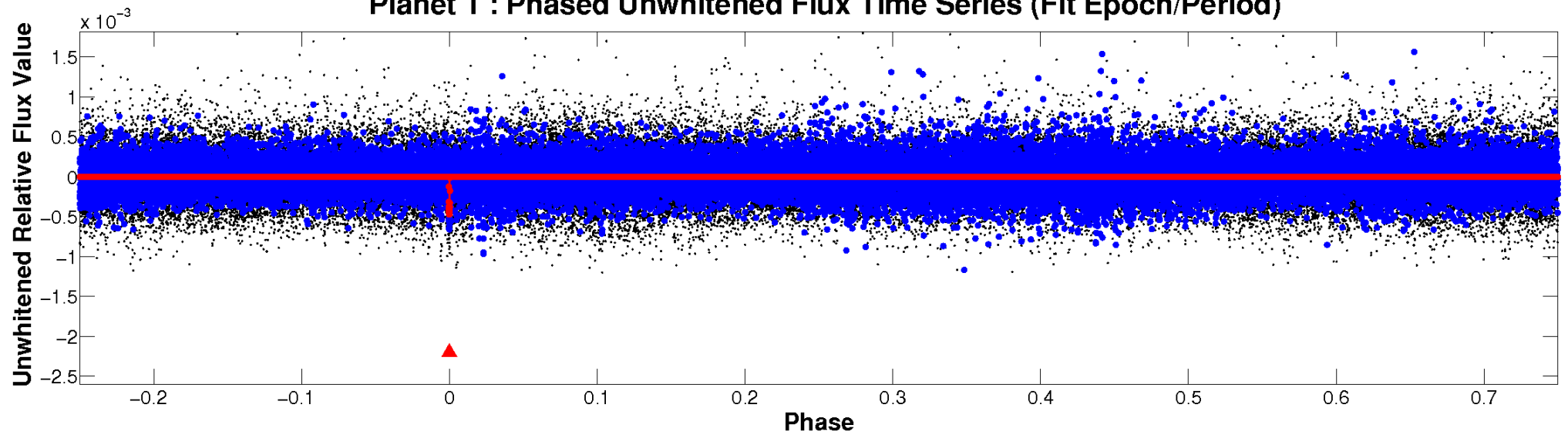
ALT Odd/Even

TCE 002837007-01

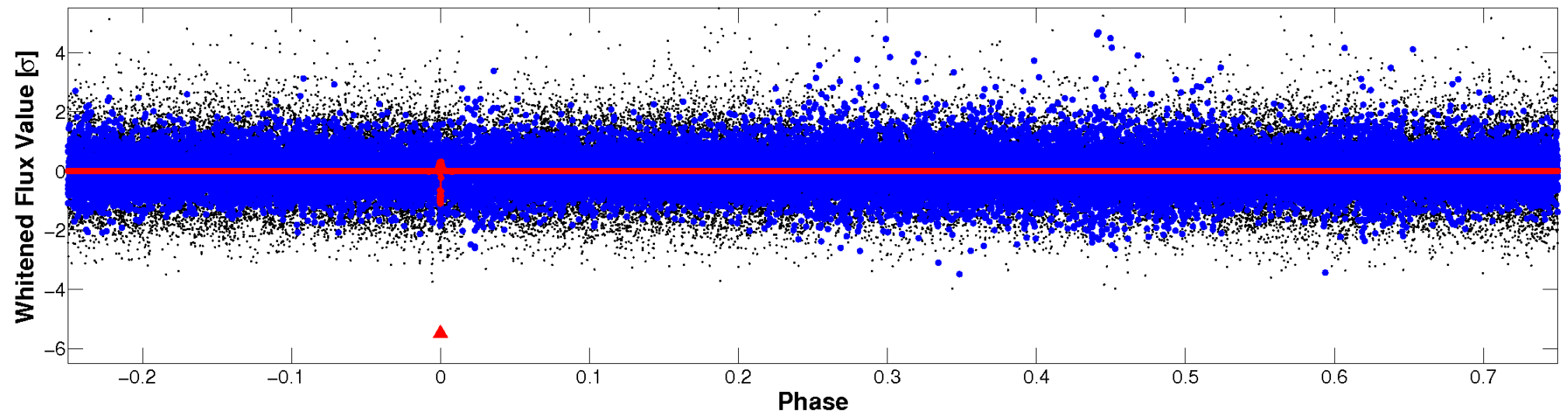


Non-Whitened Vs. Whitened Light Curve

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 002837007-01 P=538.304736 Days $T_0=387.448841$ (BKJD)



DV Quarter-Phased Transit Curves

TCE 002837007-01 P=538.304736 Days $T_0=387.448841$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

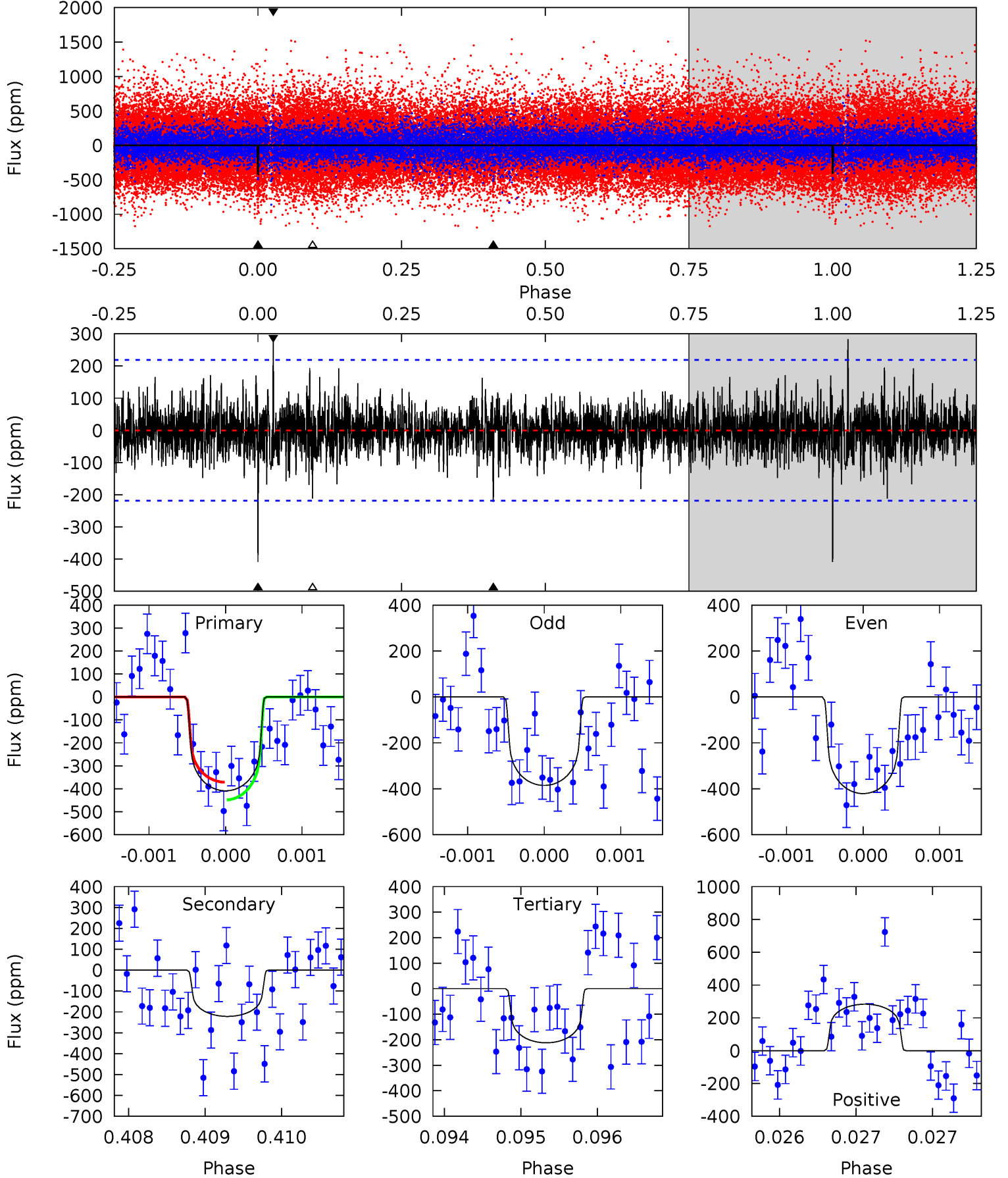
TCE 002837007-01 P=538.363005 Days $T_0=387.407954$ (BKJD)



DV Model-Shift Uniqueness Test

002837007-01, P = 538.304736 Days, E = 387.448841 Days

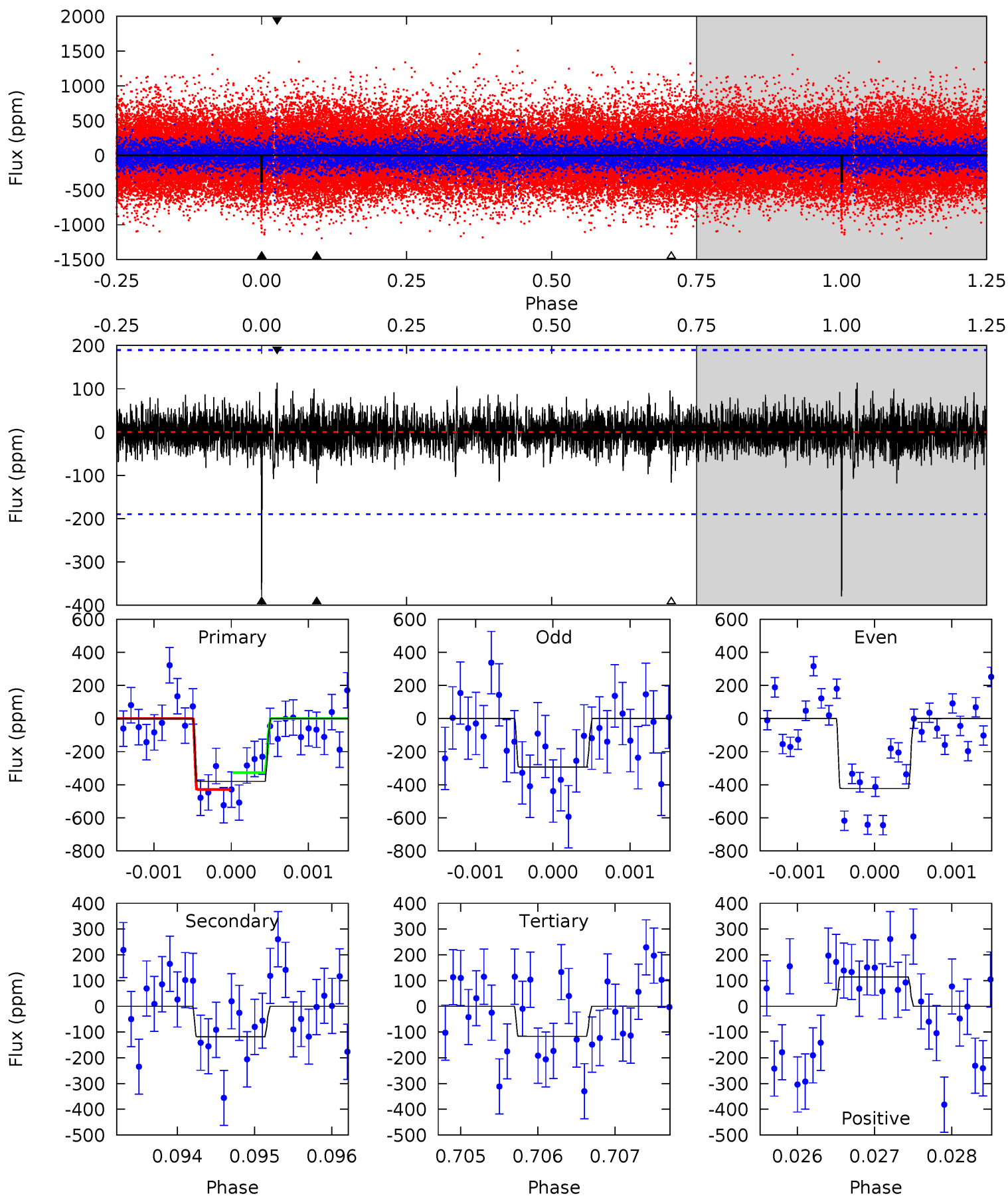
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
10.3	5.56	5.32	7.11	5.49	3.35	1.26	4.94	3.15	0.24	-1.55	0.43	1.06	0.41	0.96



Alt Model-Shift Uniqueness Test

002837007-01, P = 538.363005 Days, E = 387.407954 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
10.9	3.40	3.35	3.27	5.45	3.28	0.80	7.55	7.63	0.05	0.13	1.80	1.28	0.23	1.46



Stellar Parameters For KIC 002837007

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	5683^{+154}_{-171}	$4.490^{+0.050}_{-0.200}$	$0.140^{+0.250}_{-0.300}$	$0.944^{+0.279}_{-0.093}$	$1.005^{+0.100}_{-0.122}$	$1.682^{+0.449}_{-0.855}$
	+3%/-3%	+1%/-4%	+179%/-214%	+30%/-10%	+10%/-12%	+27%/-51%
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 002837007-01 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-222 ± 40	$2.33^{+1.04}_{-0.99}$	305^{+20}_{-14}	4840^{+1318}_{-690}	38208^{+74232}_{-21327}
Alt.	-118 ± 35	$2.18^{+1.03}_{-0.98}$	305^{+21}_{-14}	4329^{+1290}_{-577}	21158^{+54711}_{-11773}

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 $A_{obs} \gg 1.0$

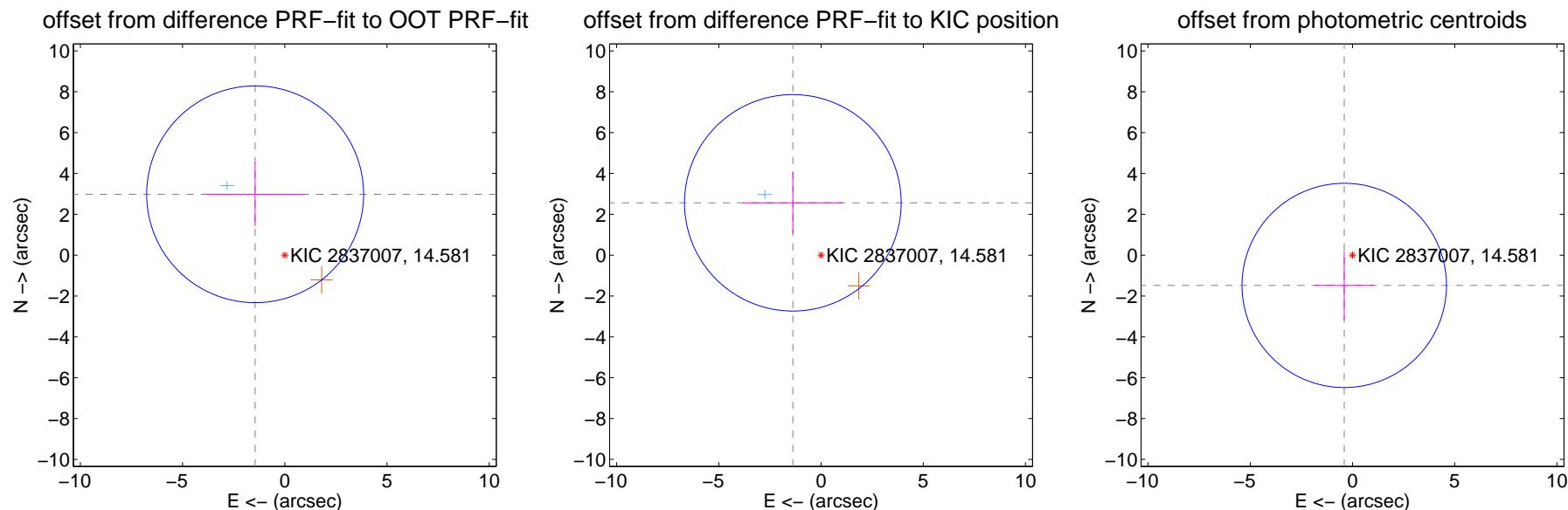
DV Centroid Data

Supplemental centroid analysis for 002837007-01. Kepler magnitude: 14.58. Transit SNR 7.57

There are 1 quarters with good PRF difference image offsets

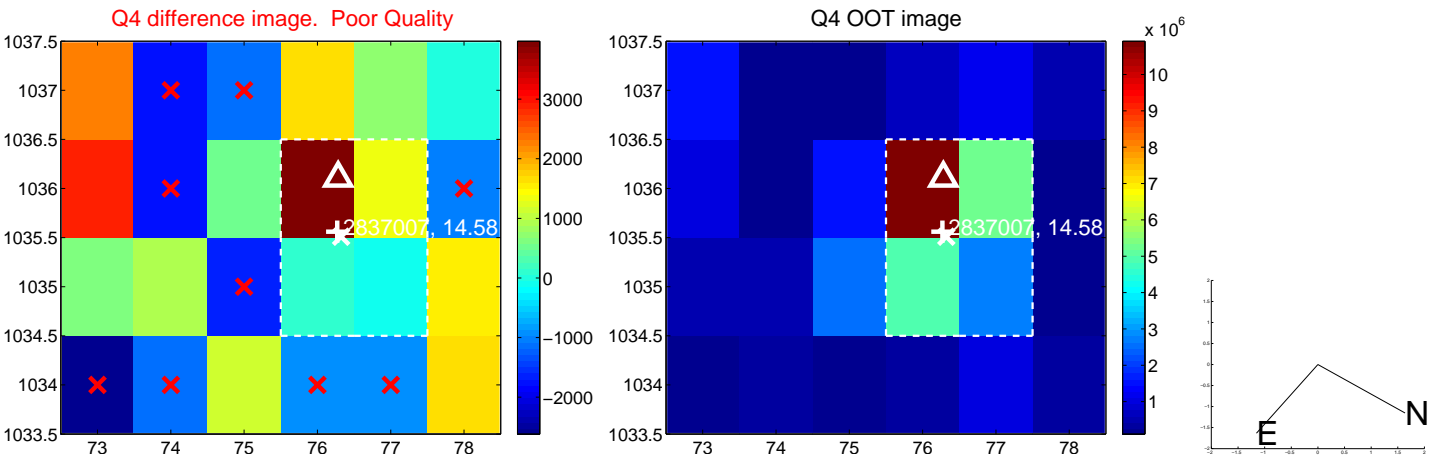
The direct PRF centroid is offset from the target star catalog position by about 0.44 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	3.314 ± 1.768	1.87	1.450 ± 2.472	2.980 ± 1.556
PRF-fit source offset from KIC position	2.909 ± 1.766	1.65	1.379 ± 2.453	2.561 ± 1.510
photometric centroid source offset	1.54 ± 1.67	0.92	0.40 ± 1.45	-1.48 ± 1.68



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.



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

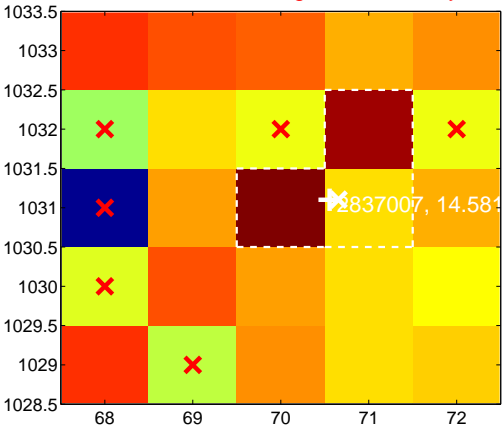
Q9 no difference image



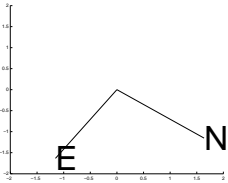
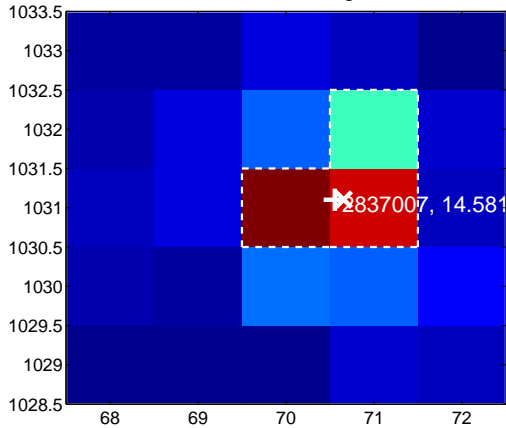
Q9 no OOT image



Q10 difference image. Poor Quality



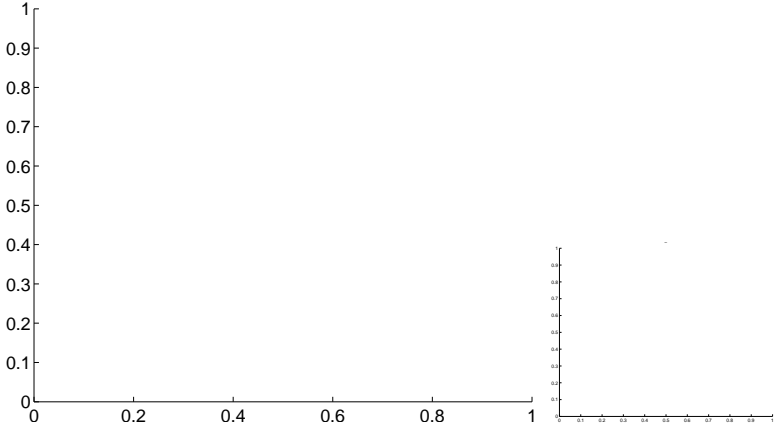
Q10 OOT image



Q11 no difference image



Q11 no OOT image



Q12 no difference image



Q12 no OOT image



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

Q13 no difference image



Q13 no OOT image



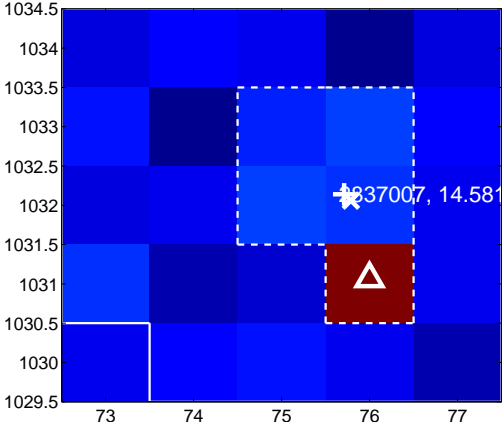
Q14 no difference image



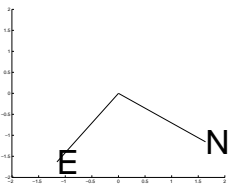
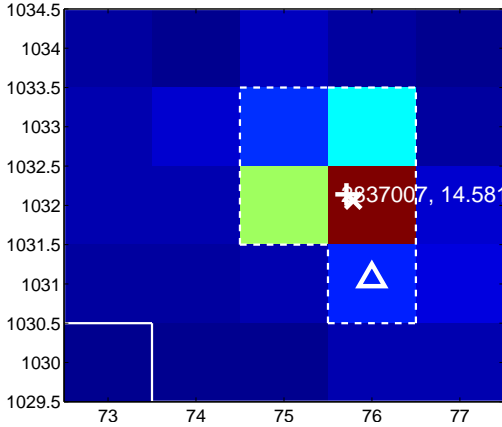
Q14 no OOT image



Q15 difference image



Q15 OOT image



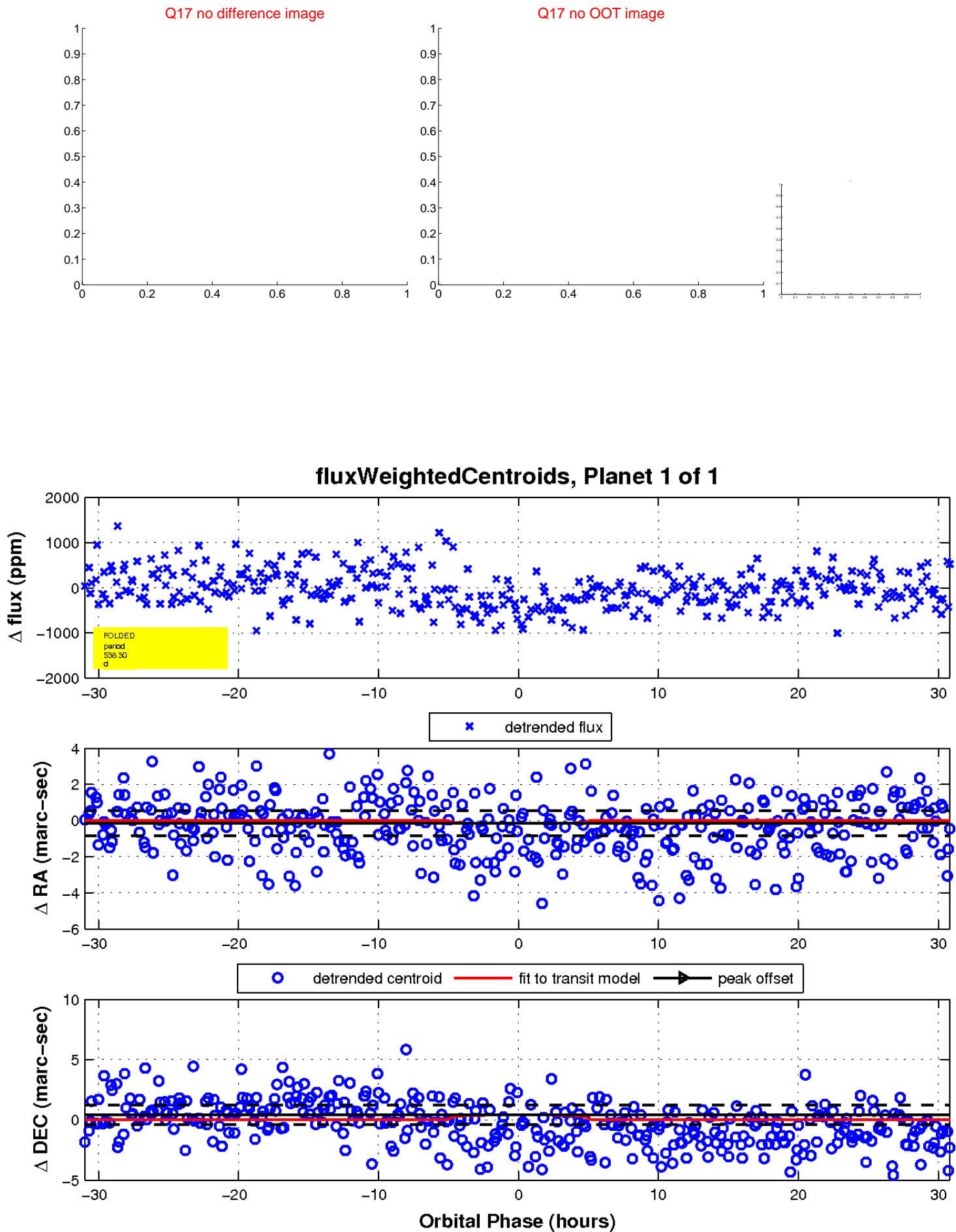
Q16 no difference image



Q16 no OOT image



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



UKIRT Image

Declination

