

KIC 009333457

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})
009333457-01	OBS	No	226.022992	259.499638	248.2	13.088	12.6	11.1	1.60	6365	2.77	6.48

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
009333457-01	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.

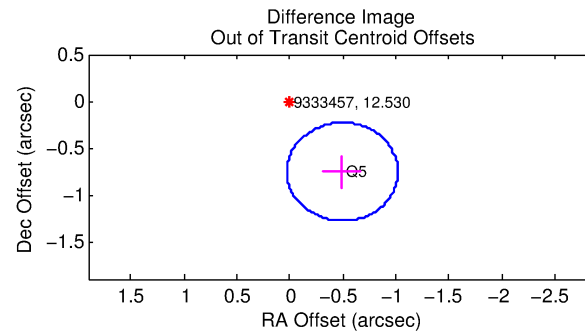
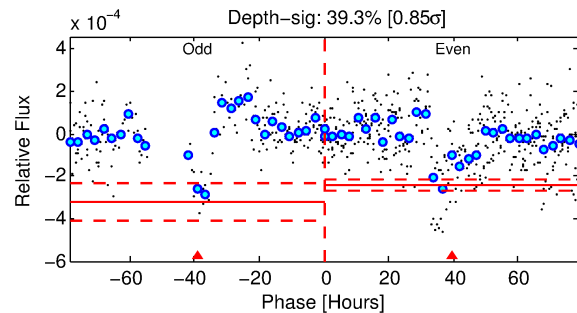
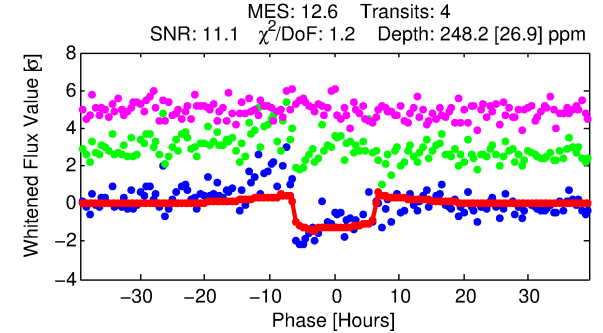
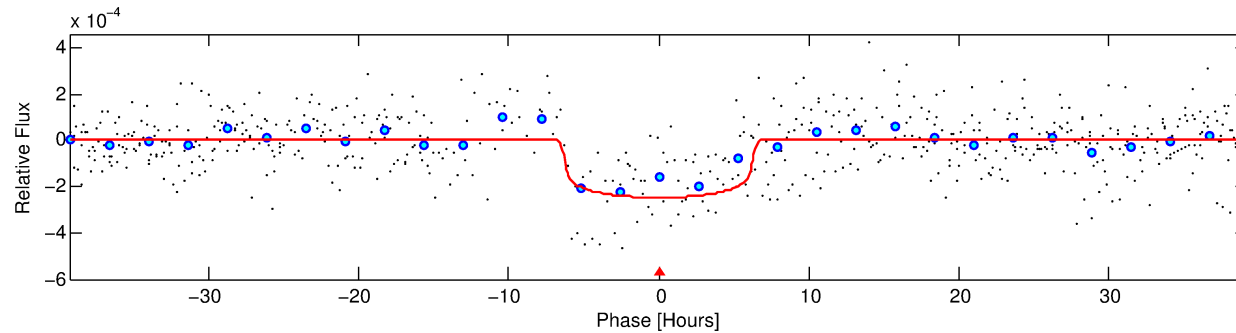
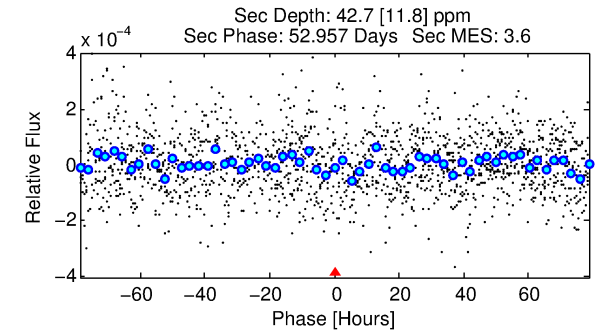
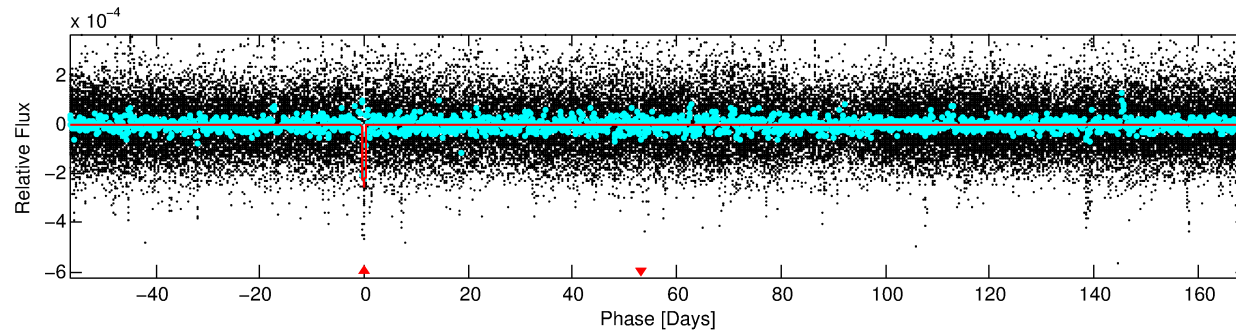
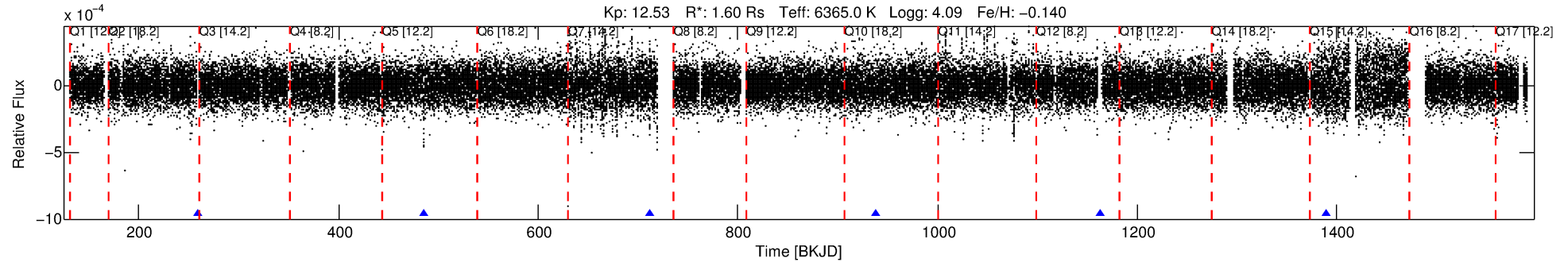
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 009333457-01

No Significant Match Found

DV One-Page Summary

KIC: 9333457 Candidate: 1 of 1 Period: 226.023 d



DV Fit Results:

Period = 226.02299 [0.00470] d
Epoch = 259.4996 [0.0143] BKJD
Rp/R* = 0.0158 [0.0031]
a/R* = 86.07 [85.86]
b = 0.78 [0.51]
Seff = 6.48 [2.98]
Teq = 407 [47] K
Rp = 2.77 [0.94] Re
a = 0.7634 [0.2067] AU
Ag = 1788.08 [1163.10] [1.54σ]
Teffp = 4091 [514] K [7.14σ]

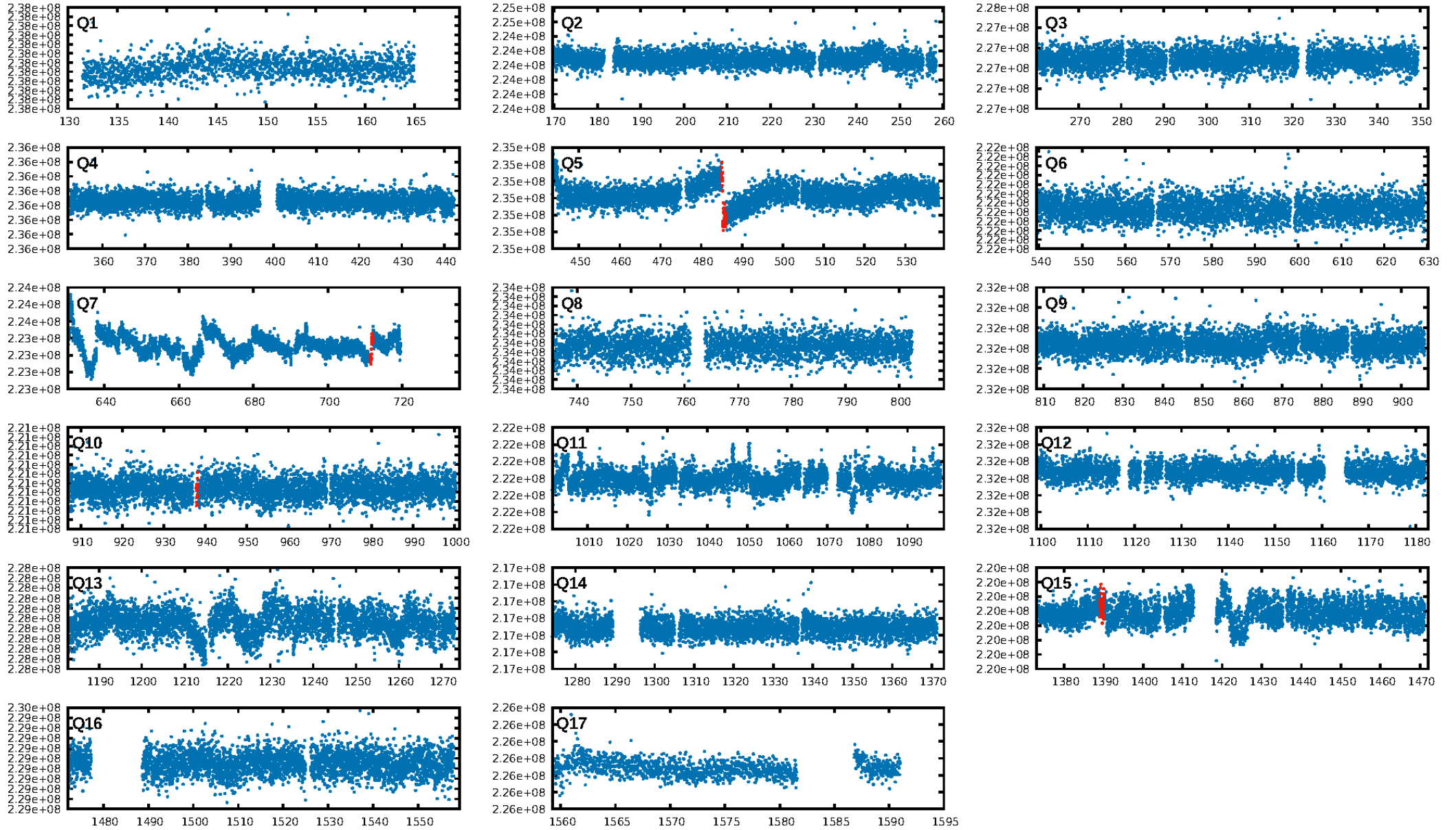
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: 0.8%
ModelChiSquareGof-sig: 99.8%
Bootstrap-pfa: 7.80e-24
RollingBand-fgt: 1.00 [4/4]
GhostDiagnostic-chr: -0.9154
Centroid-sig: 23.8%
Centroid-so: 0.796 arcsec [1.03σ]
OotOffset-rm: 0.903 arcsec [5.16σ]
KicOffset-rm: 0.871 arcsec [4.98σ]
OotOffset-st: 0/0/0/1 [1]
KicOffset-st: 0/0/0/1 [1]
DiffImageQuality-fgm: 1.00 [1/1]
DiffImageOverlap-fno: 1.00 [2/2]

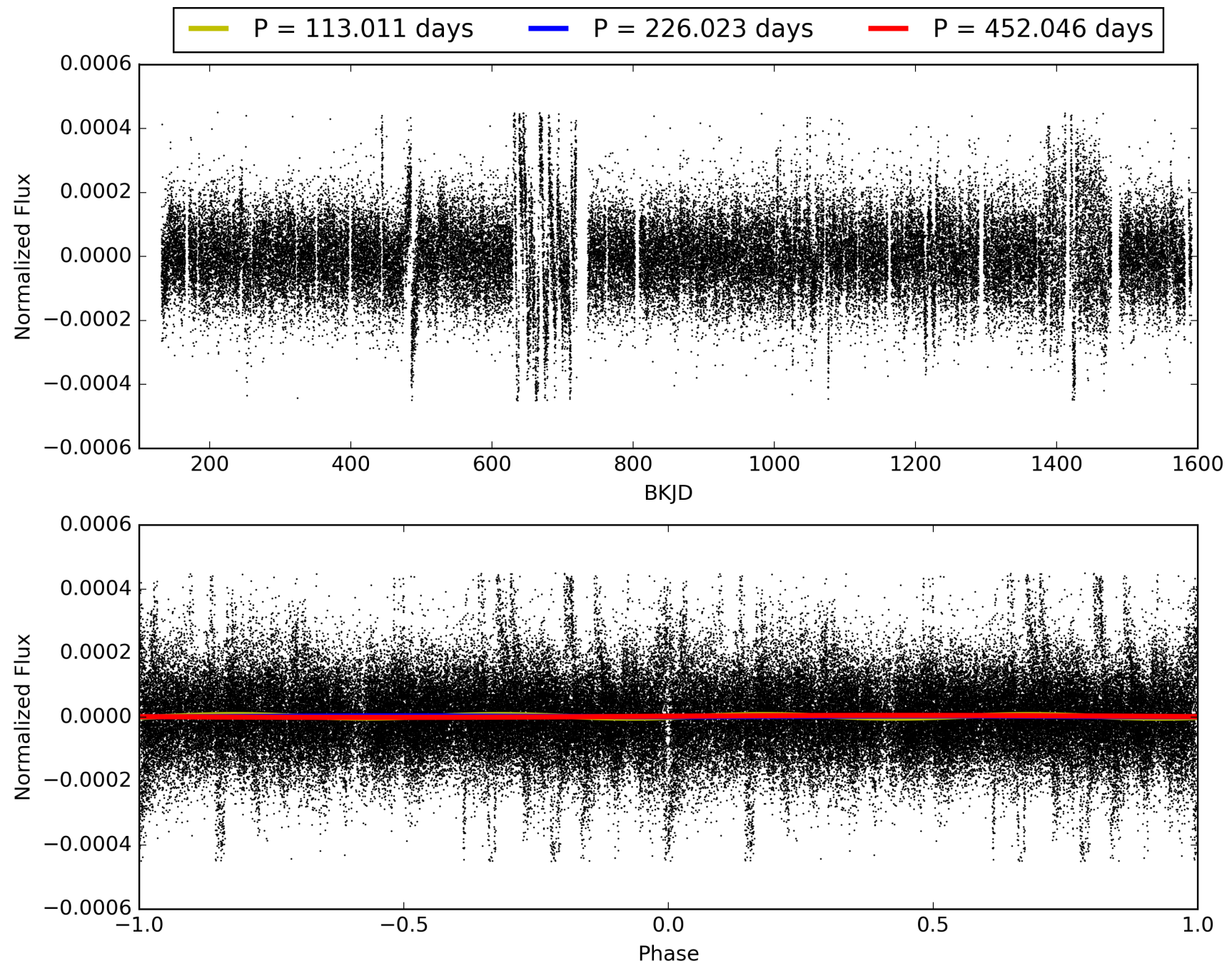
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 28-Jan-2016 20:56:20 Z

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

TCE 009333457-01, PDC Light Curves

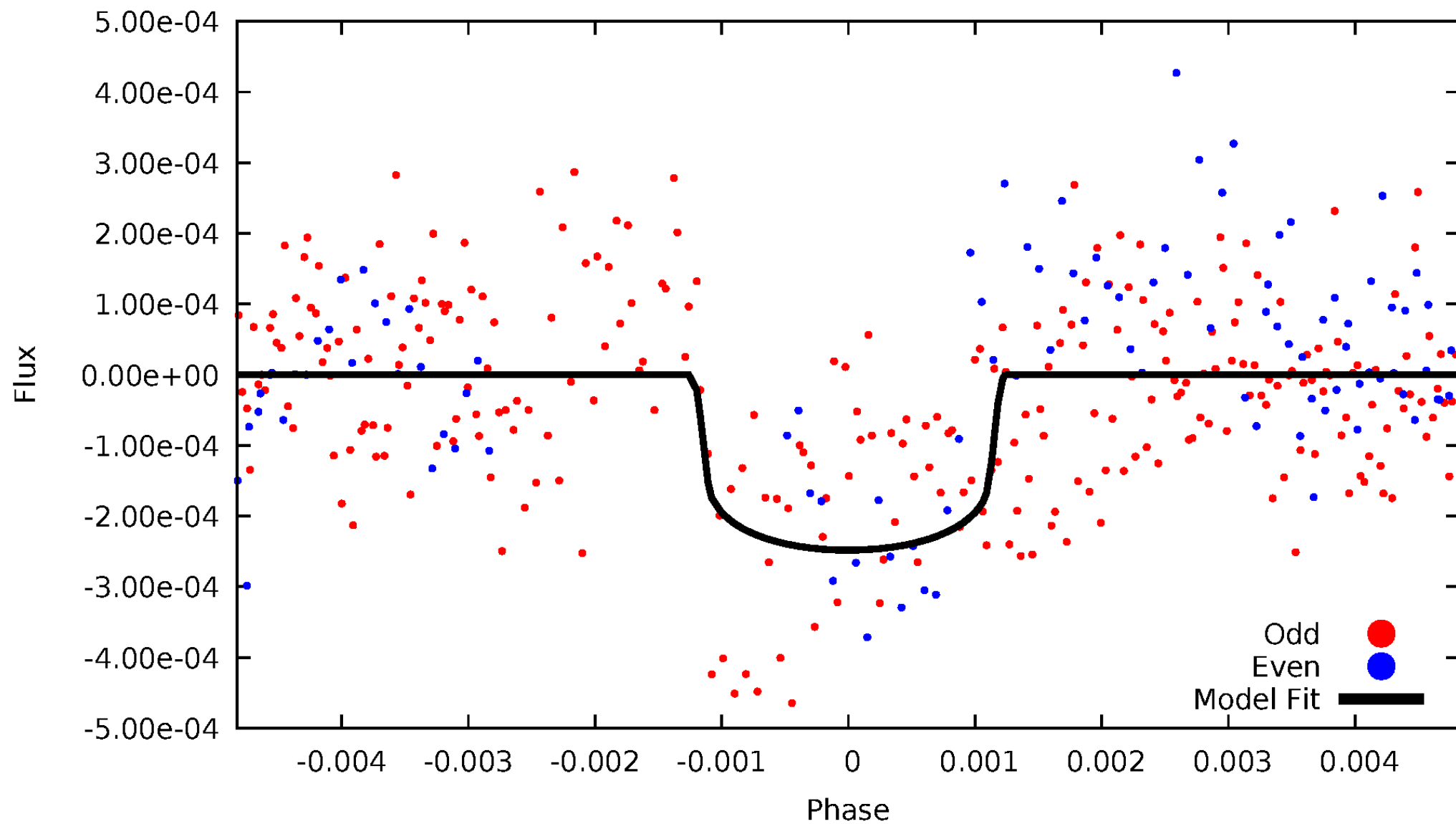


TCE 009333457-01



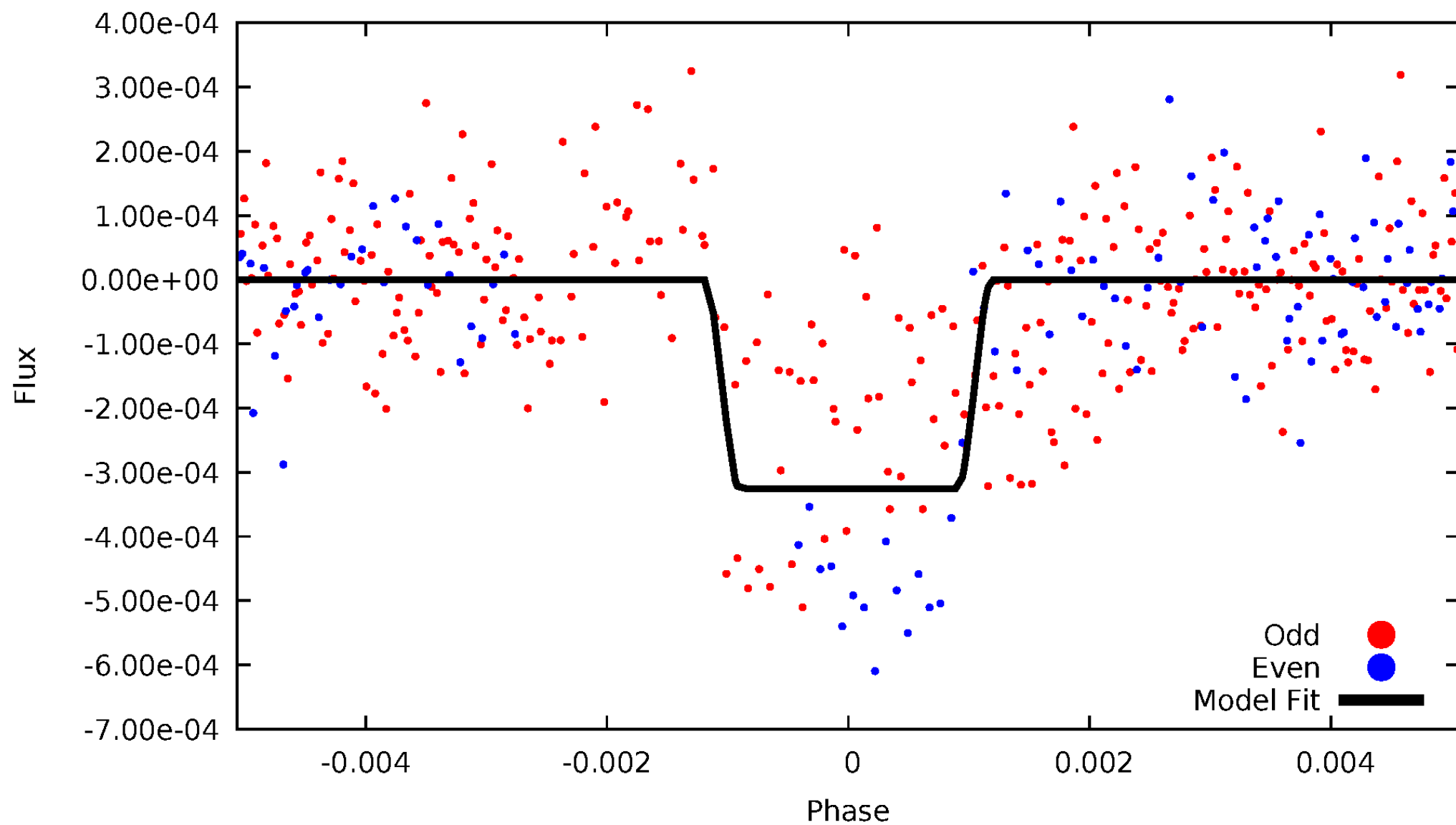
DV Odd/Even

TCE 009333457-01



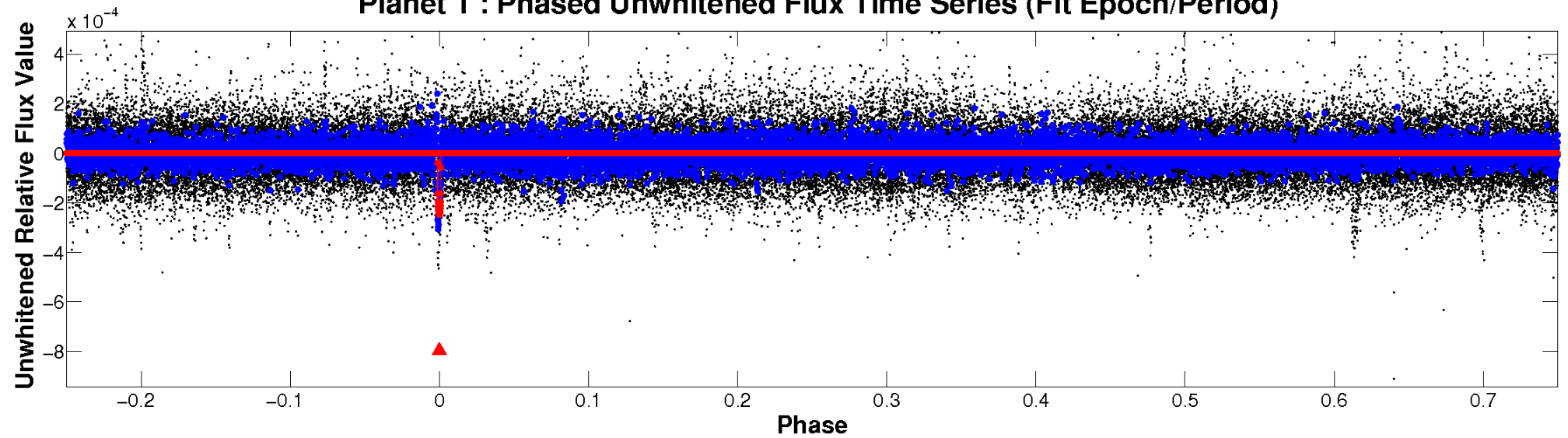
ALT Odd/Even

TCE 009333457-01

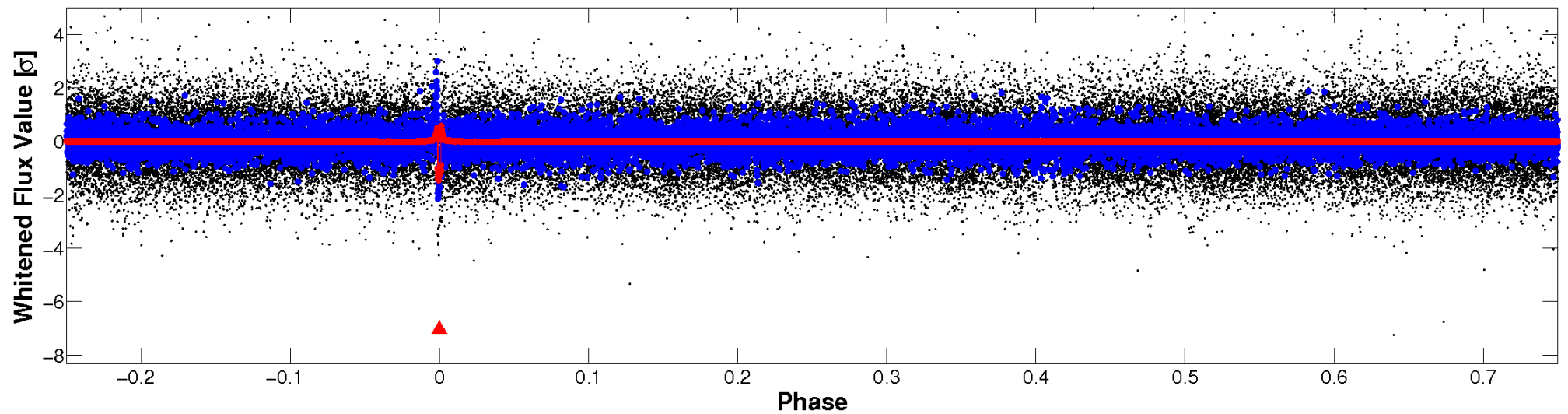


Non-Whitened Vs. Whitened Light Curve

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



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



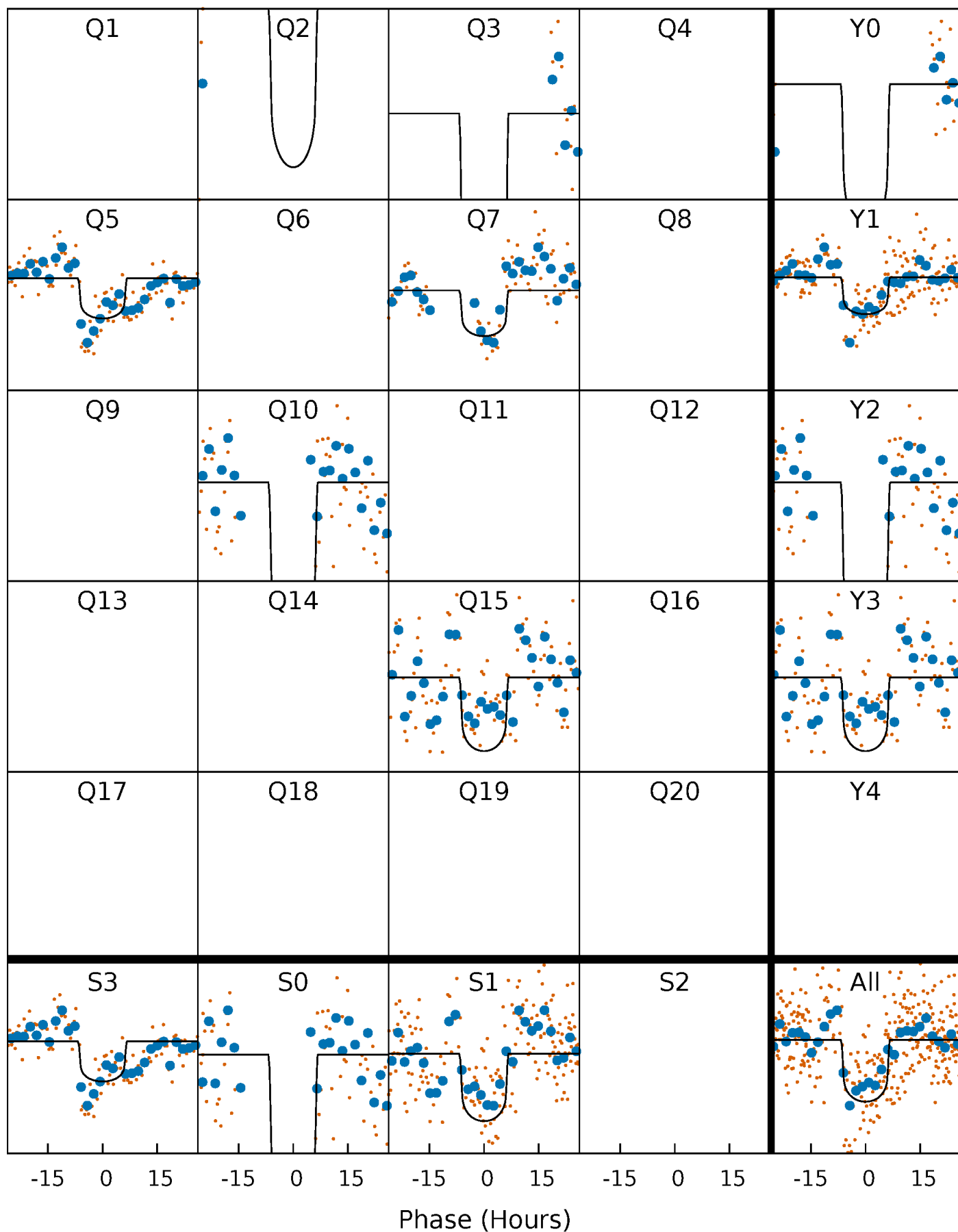
PDC Quarter-Phased Transit Curves

TCE 009333457-01 P=226.022992 Days $T_0=259.499638$ (BKJD)



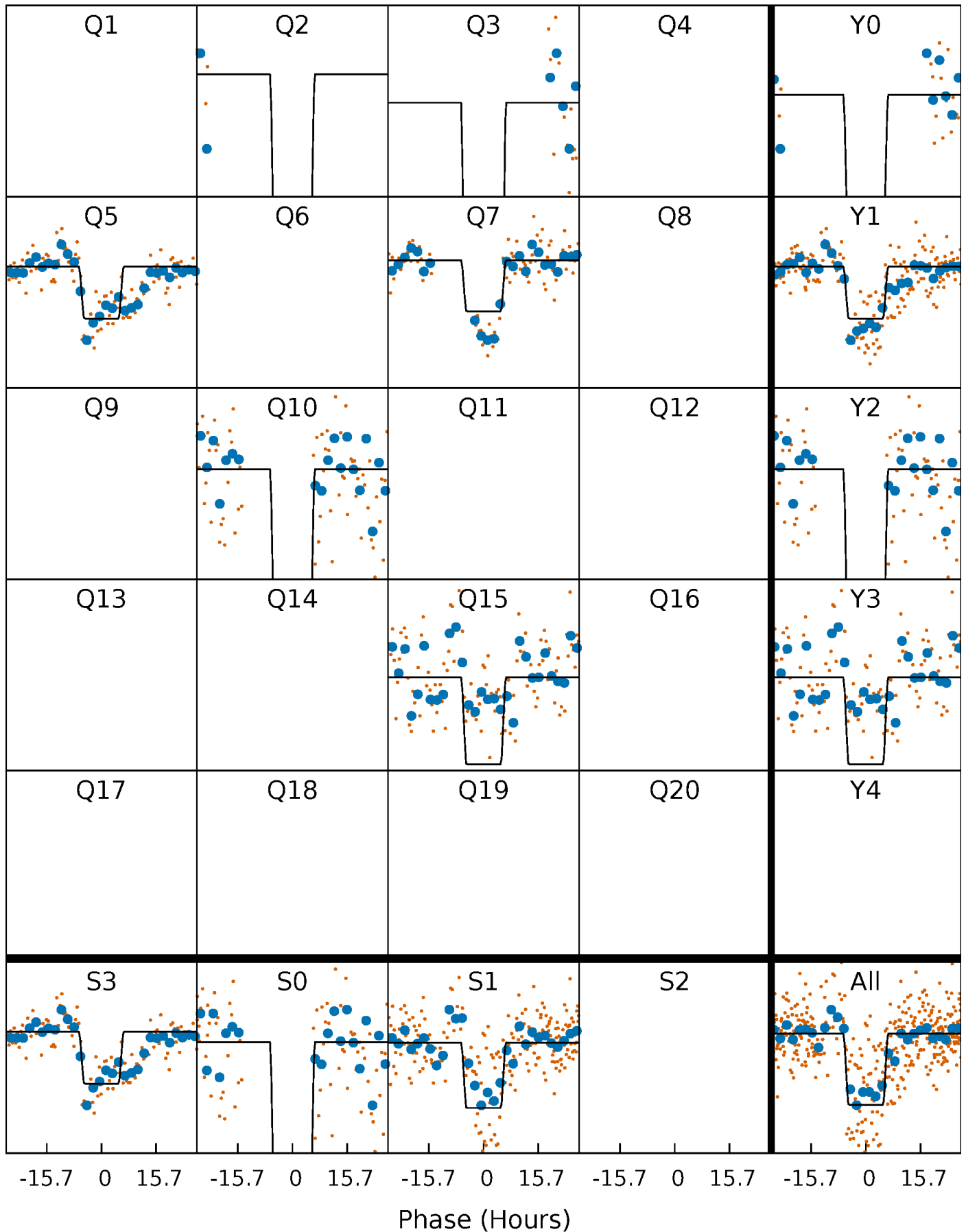
DV Quarter-Phased Transit Curves

TCE 009333457-01 P=226.022992 Days $T_0=259.499638$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

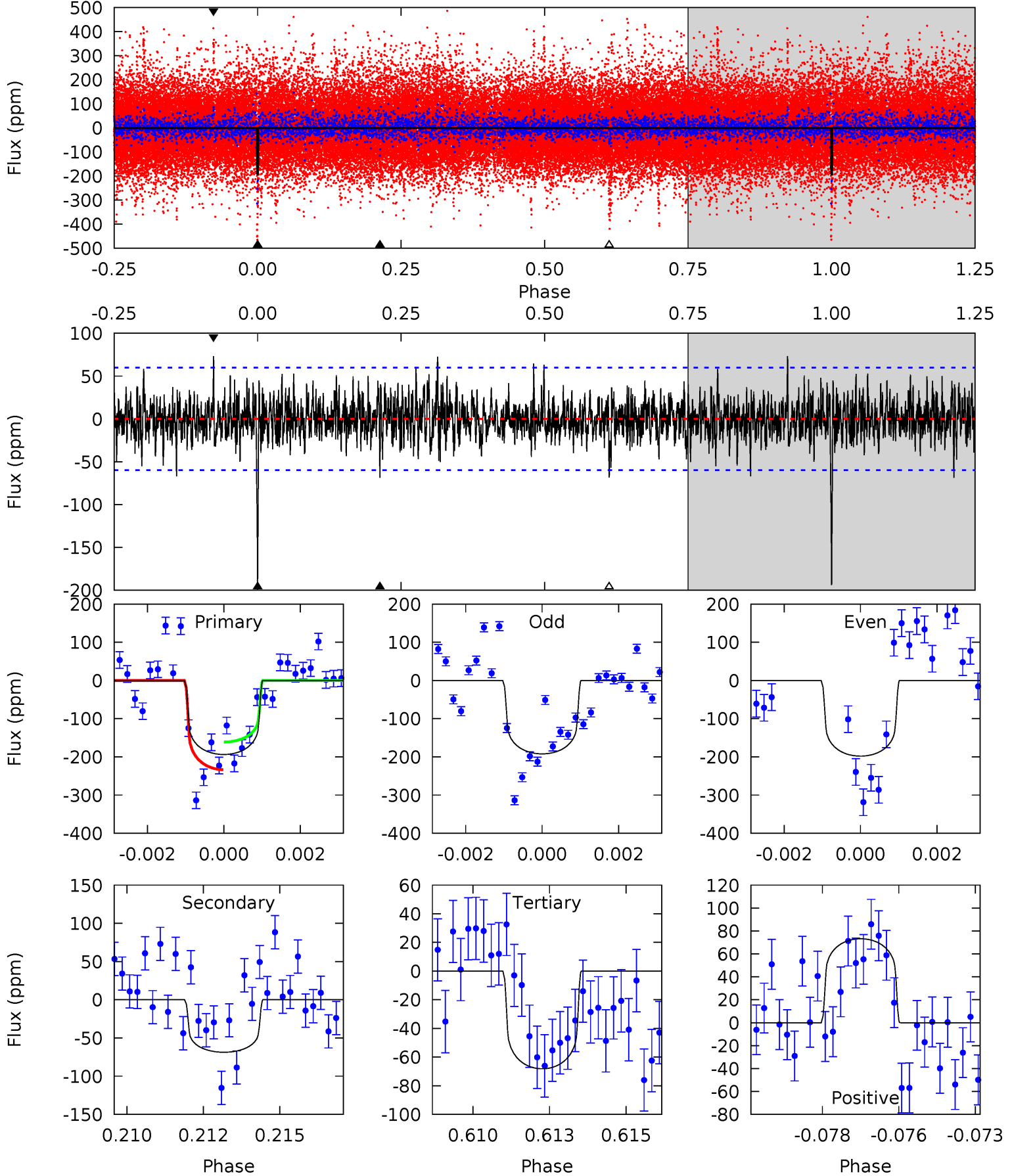
TCE 009333457-01 P=226.022418 Days $T_0=259.484694$ (BKJD)



DV Model-Shift Uniqueness Test

009333457-01, $P = 226.022992$ Days, $E = 33.476646$ Days

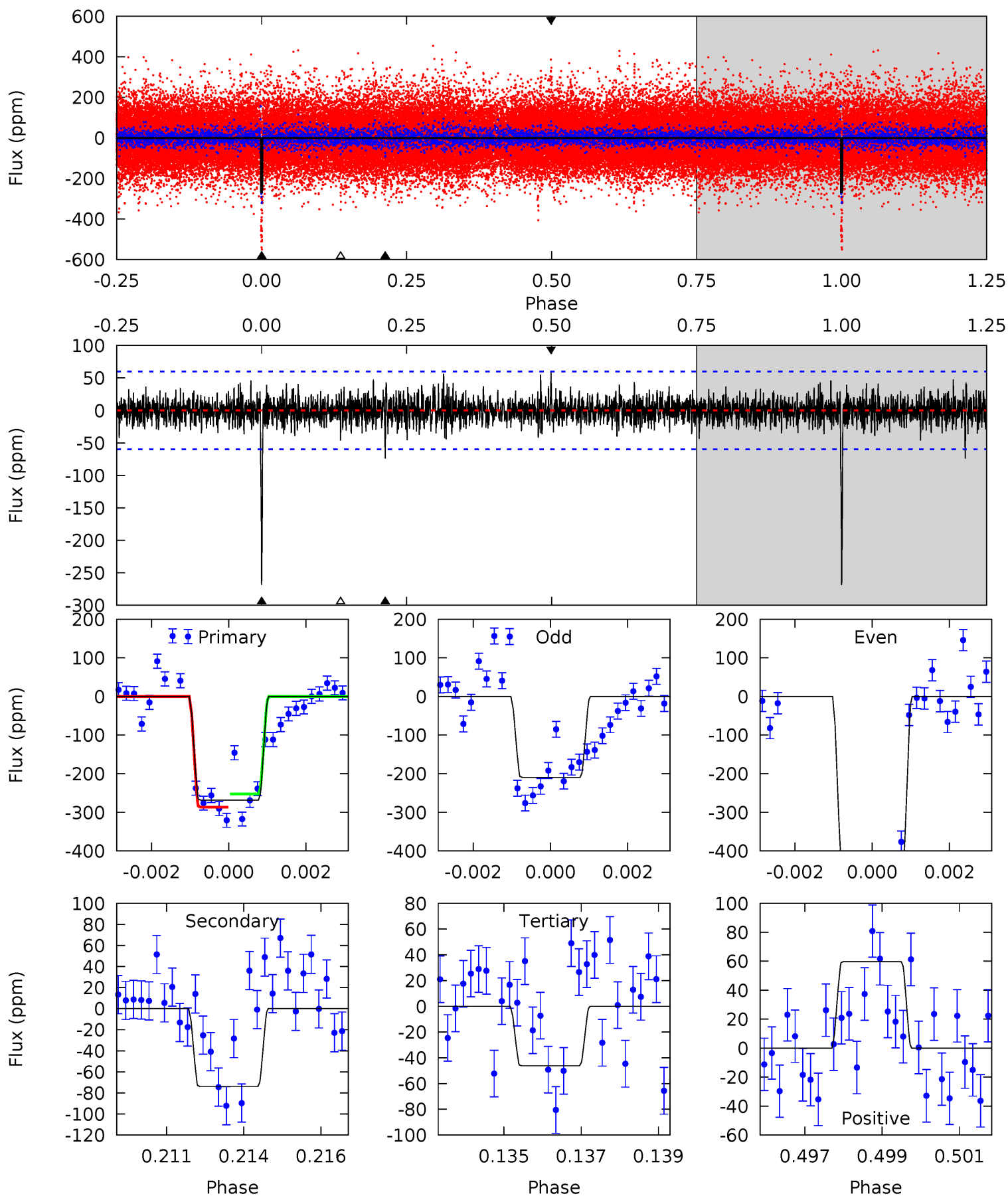
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
17.1	6.07	6.03	6.47	5.29	3.03	1.55	11.1	10.7	0.04	-0.40	0.23	0.98	0.27	3.16



Alt Model-Shift Uniqueness Test

009333457-01, $P = 226.022418$ Days, $E = 33.462276$ Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
23.7	6.53	4.08	5.28	5.30	3.05	1.17	19.6	18.4	2.45	1.25	9.61	0.89	0.18	1.51



Stellar Parameters For KIC 009333457

	$T_{\text{eff}} (K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6365^{+181}_{-227}	$4.093^{+0.258}_{-0.172}$	$-0.140^{+0.250}_{-0.300}$	$1.603^{+0.444}_{-0.444}$	$1.160^{+0.188}_{-0.169}$	$0.397^{+0.649}_{-0.192}$
	+3%/-4%	+6%/-4%	+179%/-214%	+28%/-28%	+16%/-15%	+164%/-48%
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 009333457-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-69 ± 11	$2.71^{+0.77}_{-0.63}$	562^{+45}_{-45}	4695^{+503}_{-355}	2846^{+2170}_{-1051}
Alt.	-74 ± 11	$3.15^{+0.71}_{-0.69}$	563^{+47}_{-46}	4518^{+434}_{-299}	2390^{+1638}_{-866}

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

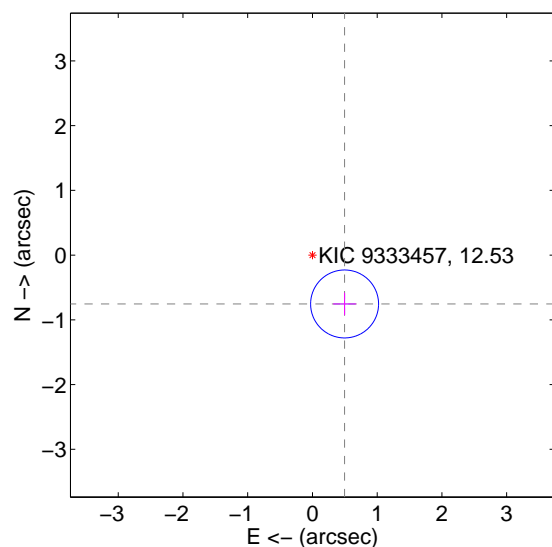
Supplemental centroid analysis for 009333457-01. Kepler magnitude: 12.53. Transit SNR 11.10

There are 1 quarters with good PRF difference image offsets

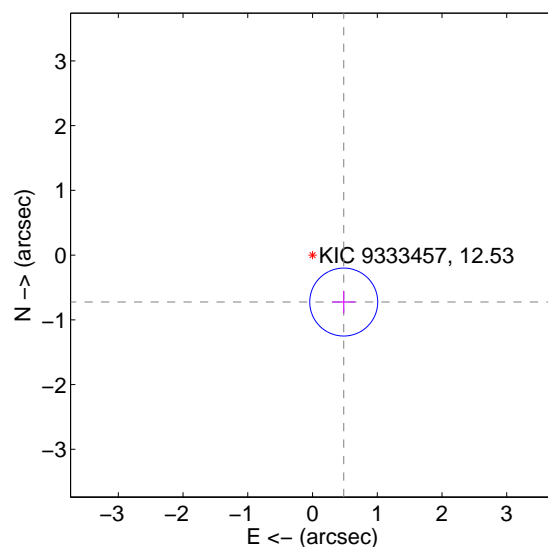
The direct PRF centroid is offset from the target star catalog position by about 0.03 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.903 ± 0.175	5.16	-0.496 ± 0.179	-0.755 ± 0.173
PRF-fit source offset from KIC position	0.871 ± 0.175	4.98	-0.482 ± 0.179	-0.725 ± 0.173
photometric centroid source offset	0.80 ± 0.77	1.03	-0.69 ± 0.81	-0.40 ± 0.66

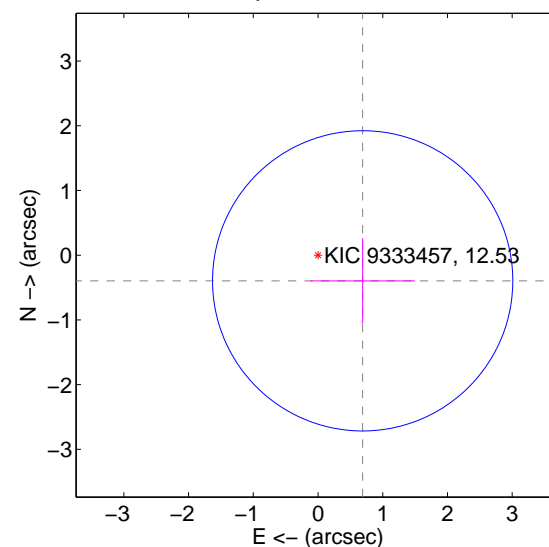
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position



offset from photometric centroids

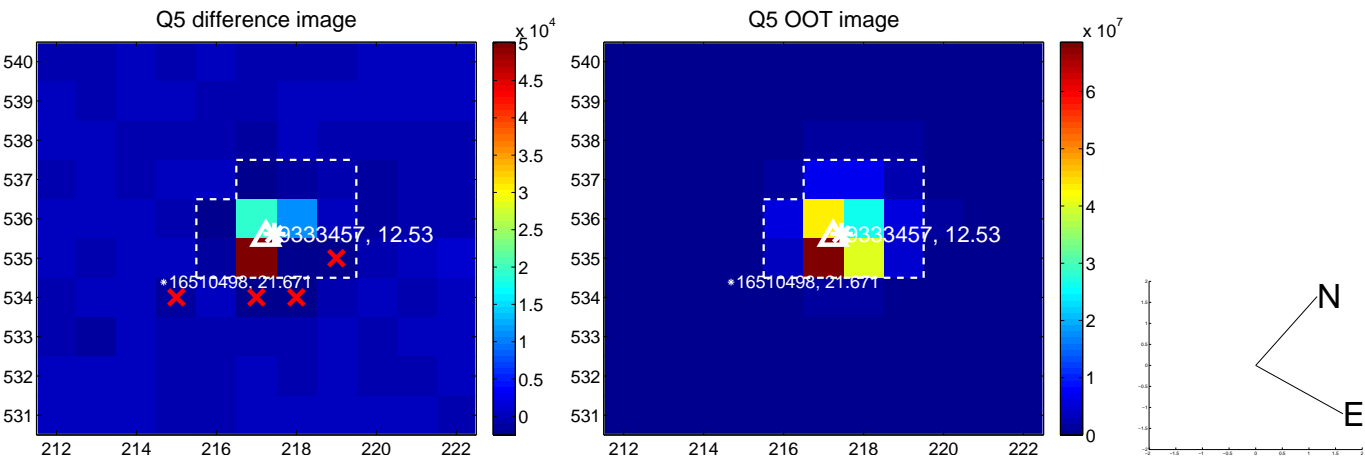


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

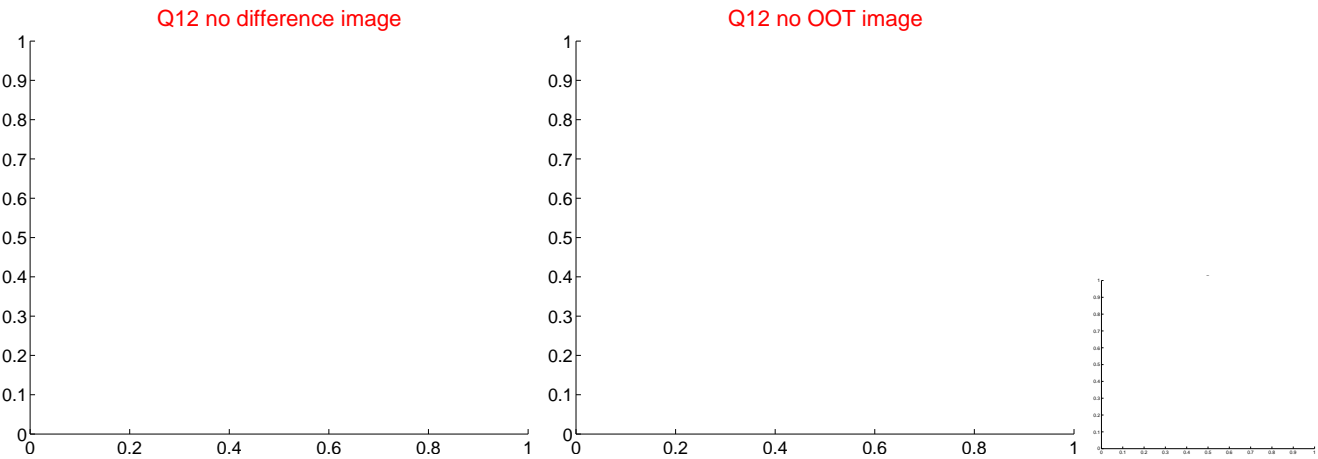
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



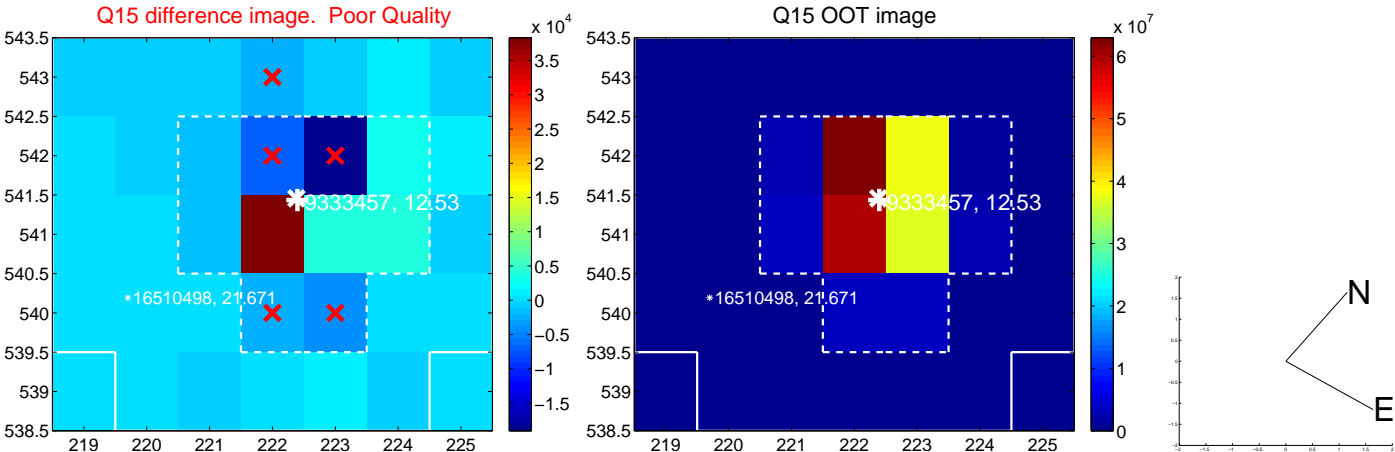
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



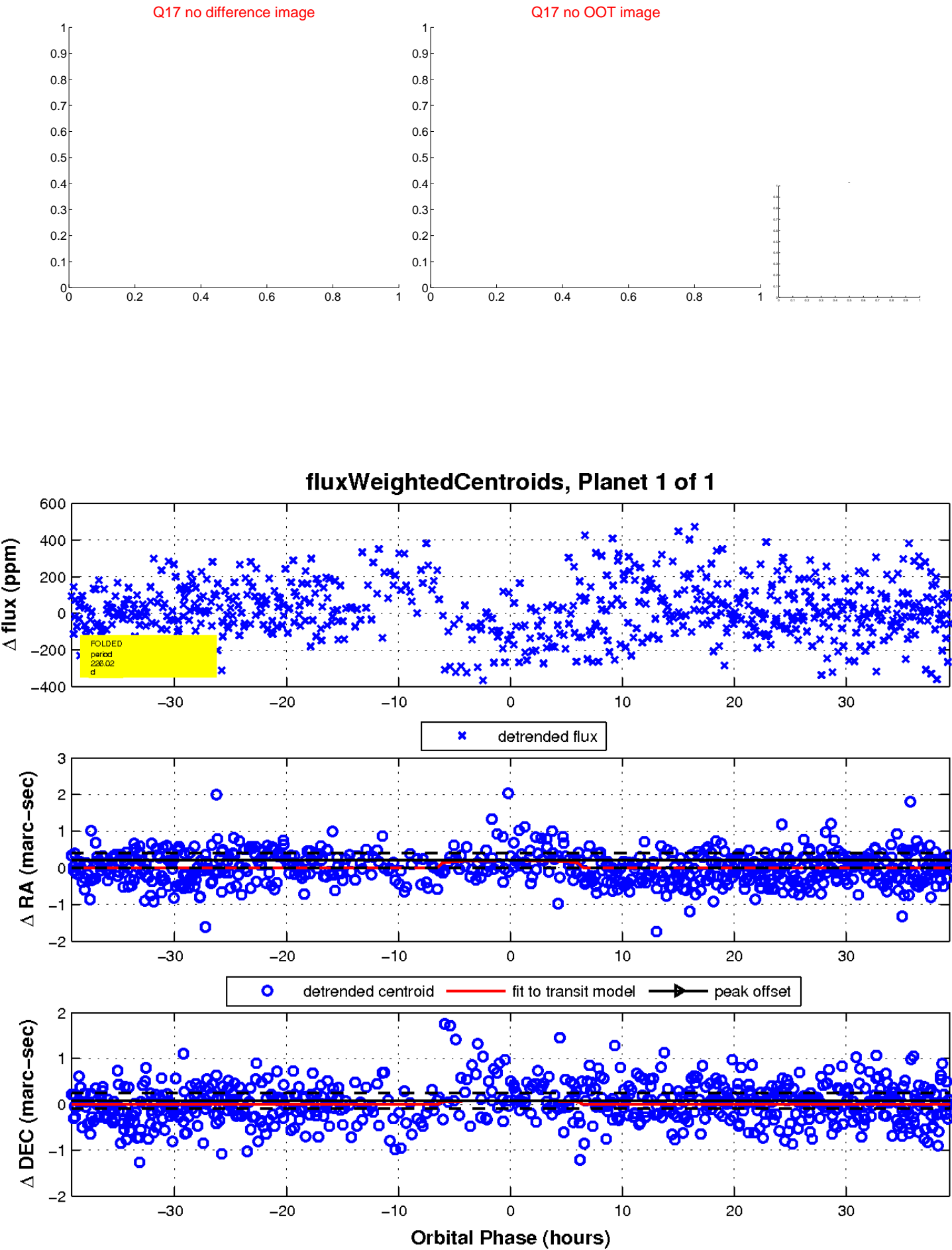
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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.



UKIRT Image

Declination

