

KIC 009333505

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})
009333505-01	OBS	No	304.600065	373.837926	262.4	14.674	9.1	8.4	0.28	3348	0.47	0.03

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
009333505-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL—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.

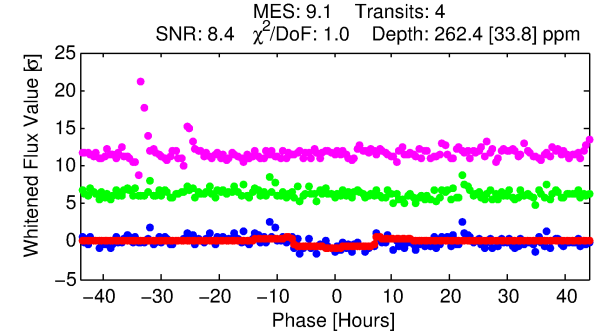
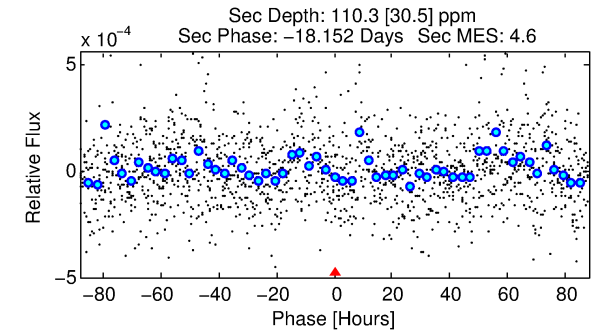
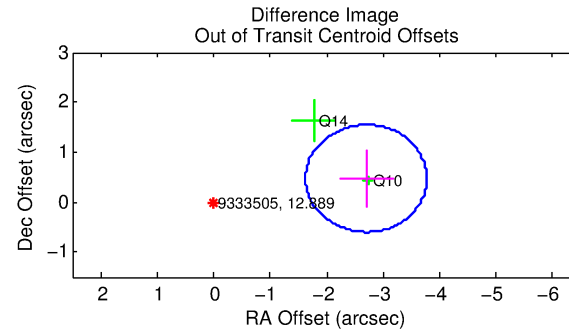
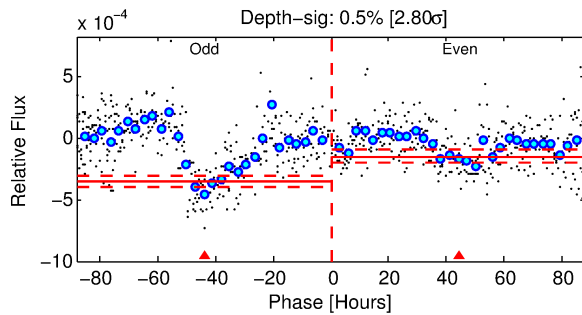
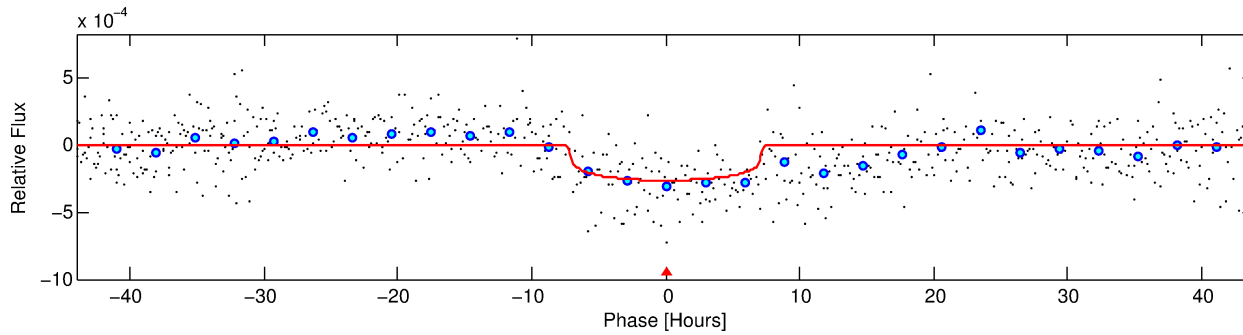
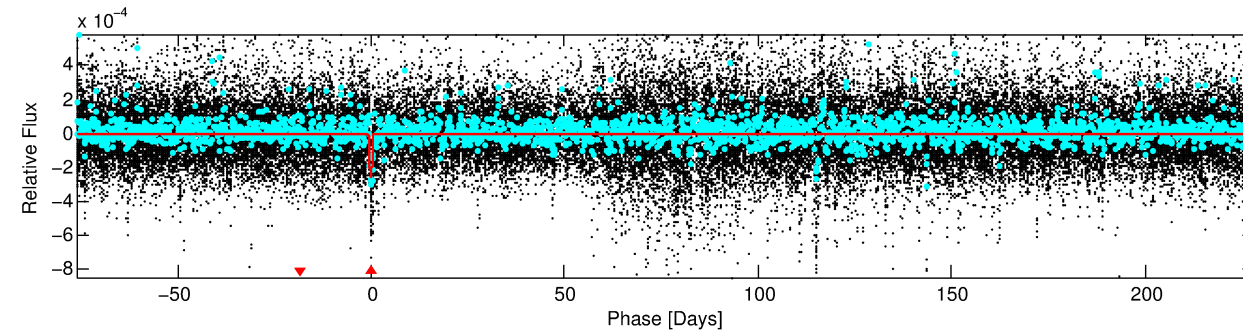
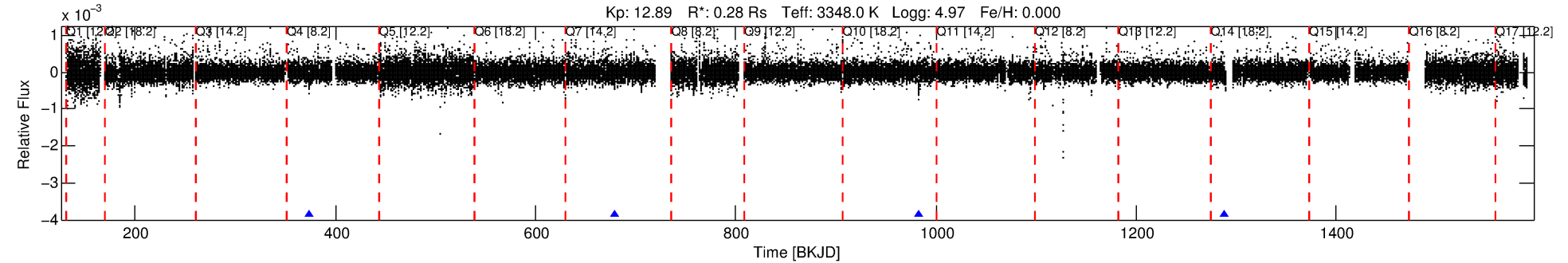
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 009333505-01

No Significant Match Found

DV One-Page Summary

KIC: 9333505 Candidate: 1 of 1 Period: 304.600 d



DV Fit Results:

Period = 304.60007 [0.00648] d
Epoch = 373.8379 [0.0127] BKJD
Rp/R* = 0.0156 [0.0080]
a/R* = 124.16 [272.03]
b = 0.65 [1.98]
Seff = 0.03 [0.00]
Teq = 103 [4] K
Rp = 0.47 [0.25] Re
a = 0.5673 [0.0626] AU
Ag = 88240.27 [94991.97] [0.93 σ]
Teffp = 2750 [736] K [3.60 σ]

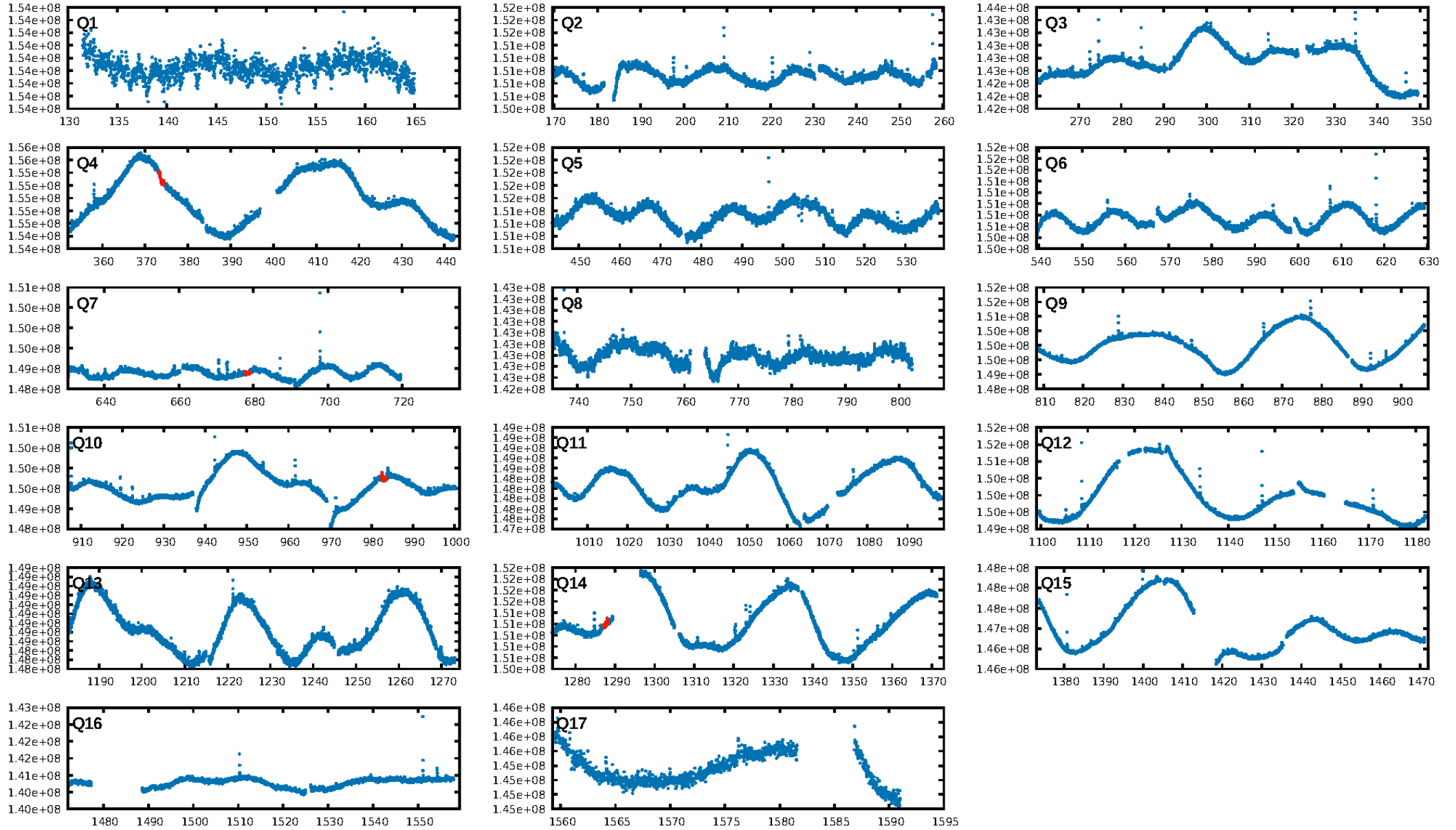
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: 1.8%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 1.02e-10
RollingBand-fgt: 1.00 [4/4]
GhostDiagnostic-chr: 1.601
Centroid-sig: 55.7%
Centroid-so: 1.492 arcsec [1.83 σ]
OotOffset-rm: 2.741 arcsec [7.66 σ]
KicOffset-rm: 2.226 arcsec [4.66 σ]
OotOffset-st: 2/0/0/0 [2]
KicOffset-st: 2/0/0/0 [2]
DiffImageQuality-fgm: 0.50 [1/2]
DiffImageOverlap-fno: 1.00 [3/3]

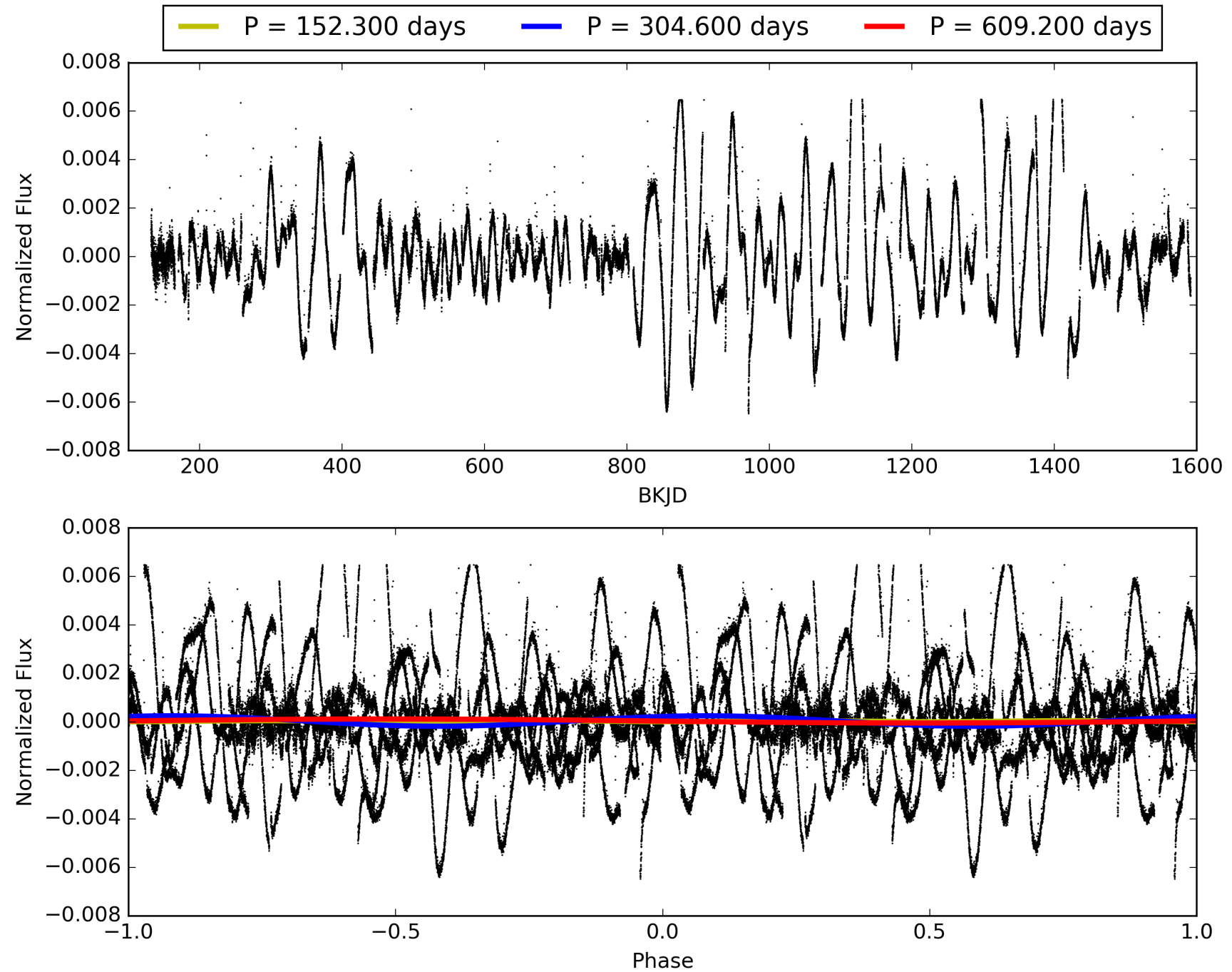
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 28-Jan-2016 22:39:11 Z

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

TCE 009333505-01, PDC Light Curves

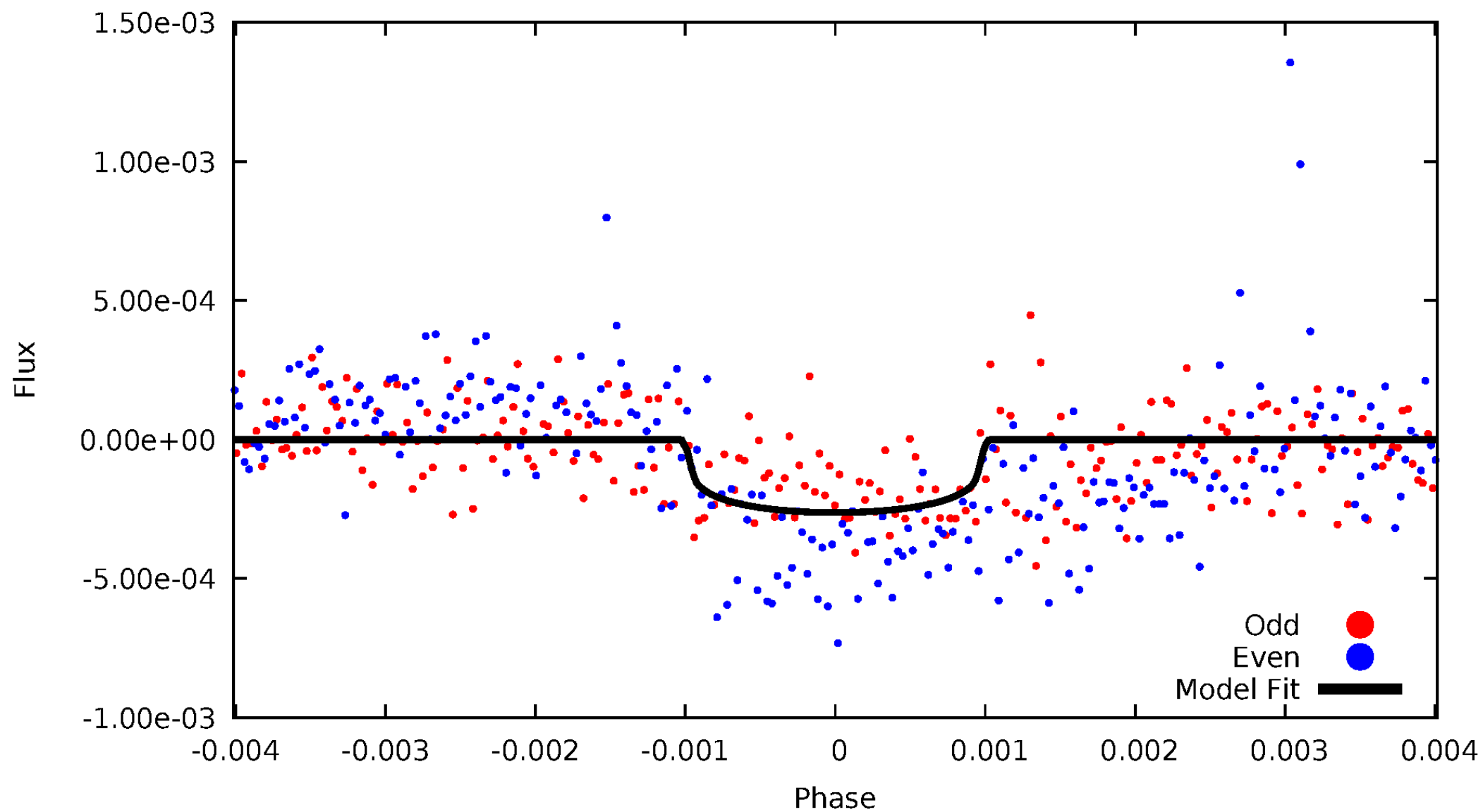


TCE 009333505-01



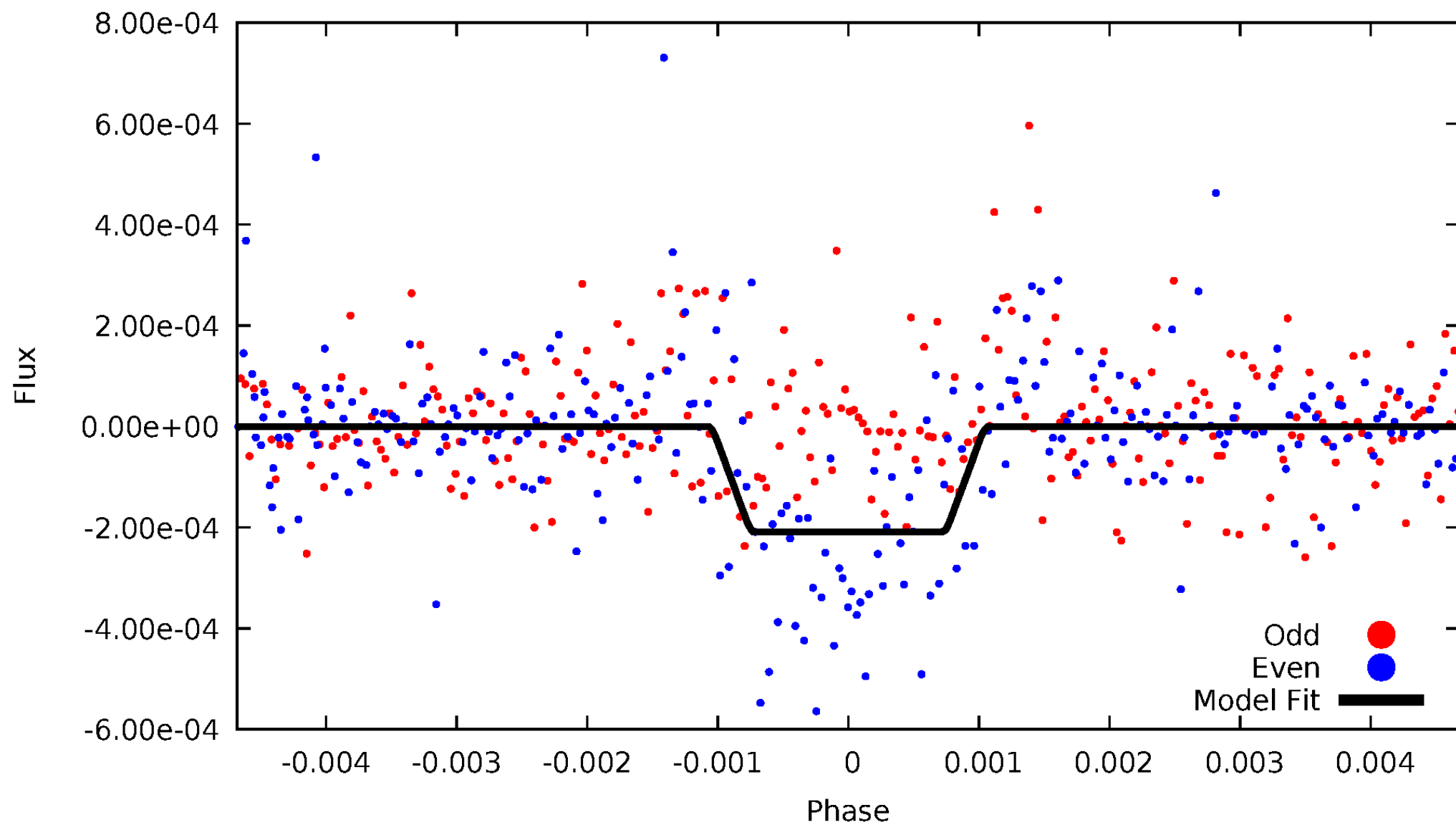
DV Odd/Even

TCE 009333505-01



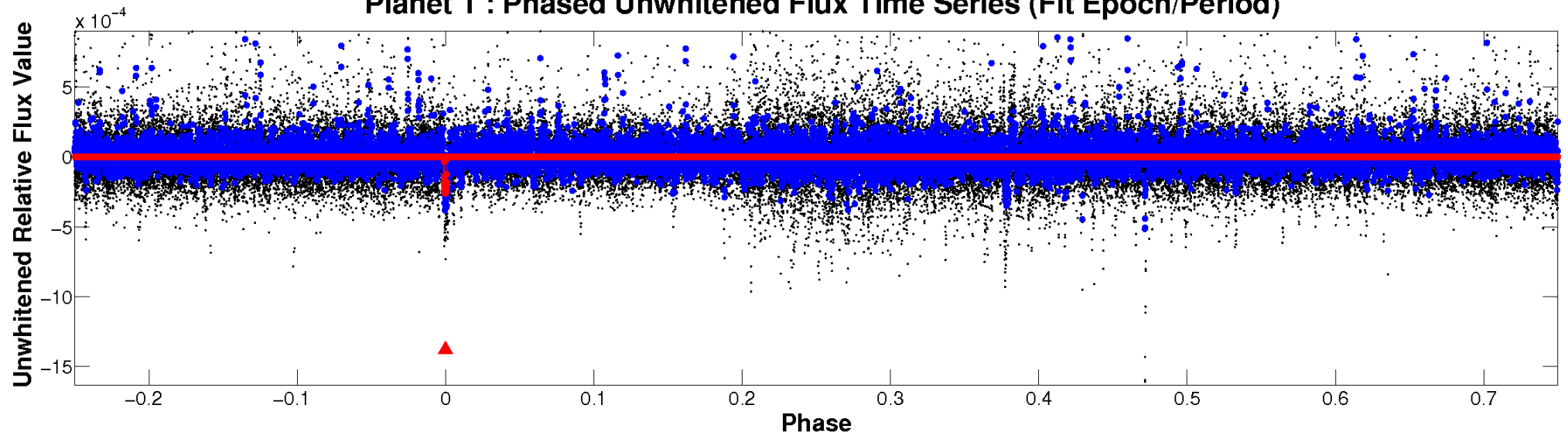
ALT Odd/Even

TCE 009333505-01

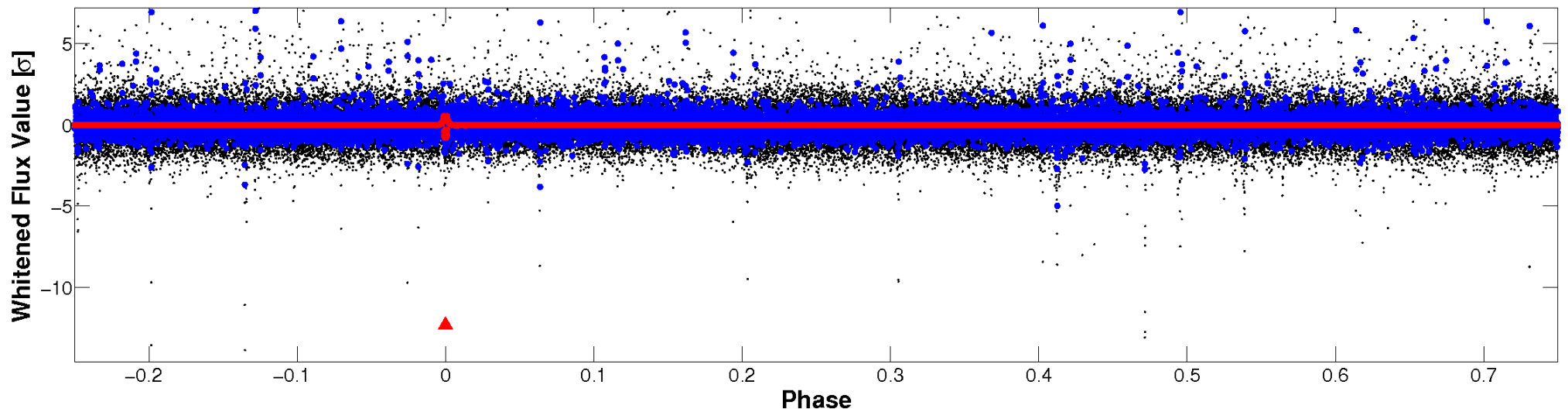


Non-Whitened Vs. Whitened Light Curve

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

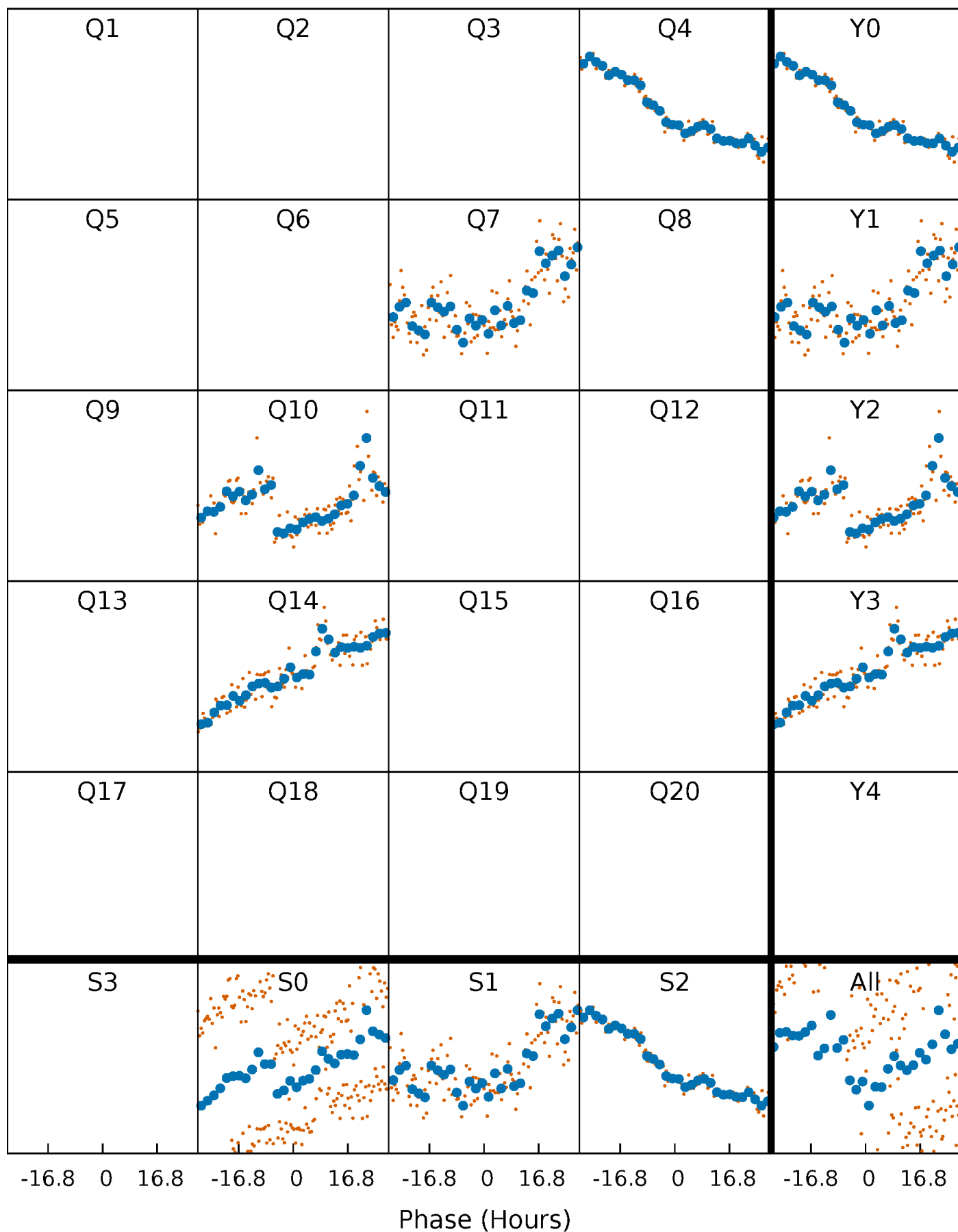


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



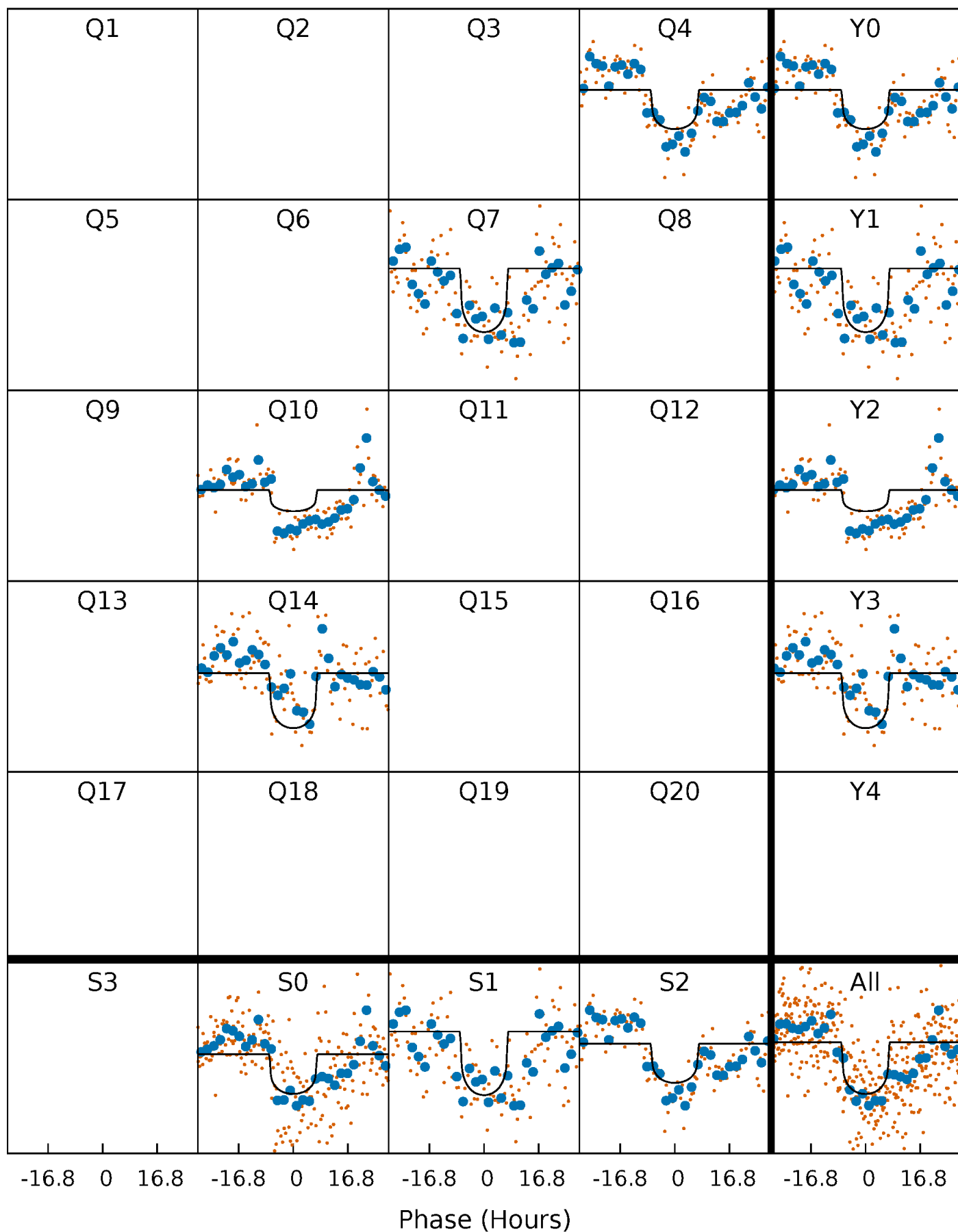
PDC Quarter-Phased Transit Curves

TCE 009333505-01 P=304.600065 Days $T_0=373.837926$ (BKJD)



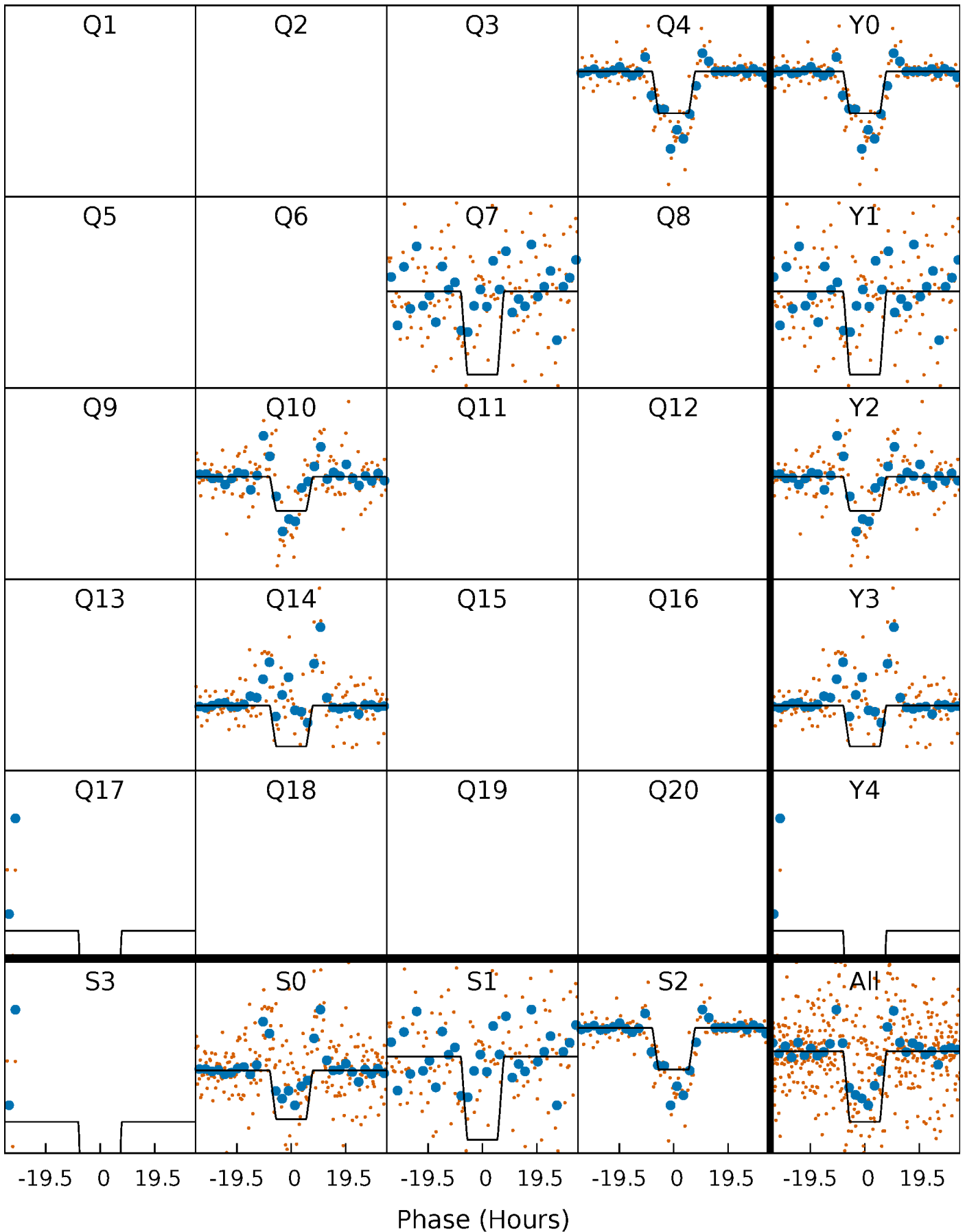
DV Quarter-Phased Transit Curves

TCE 009333505-01 P=304.600065 Days $T_0=373.837926$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

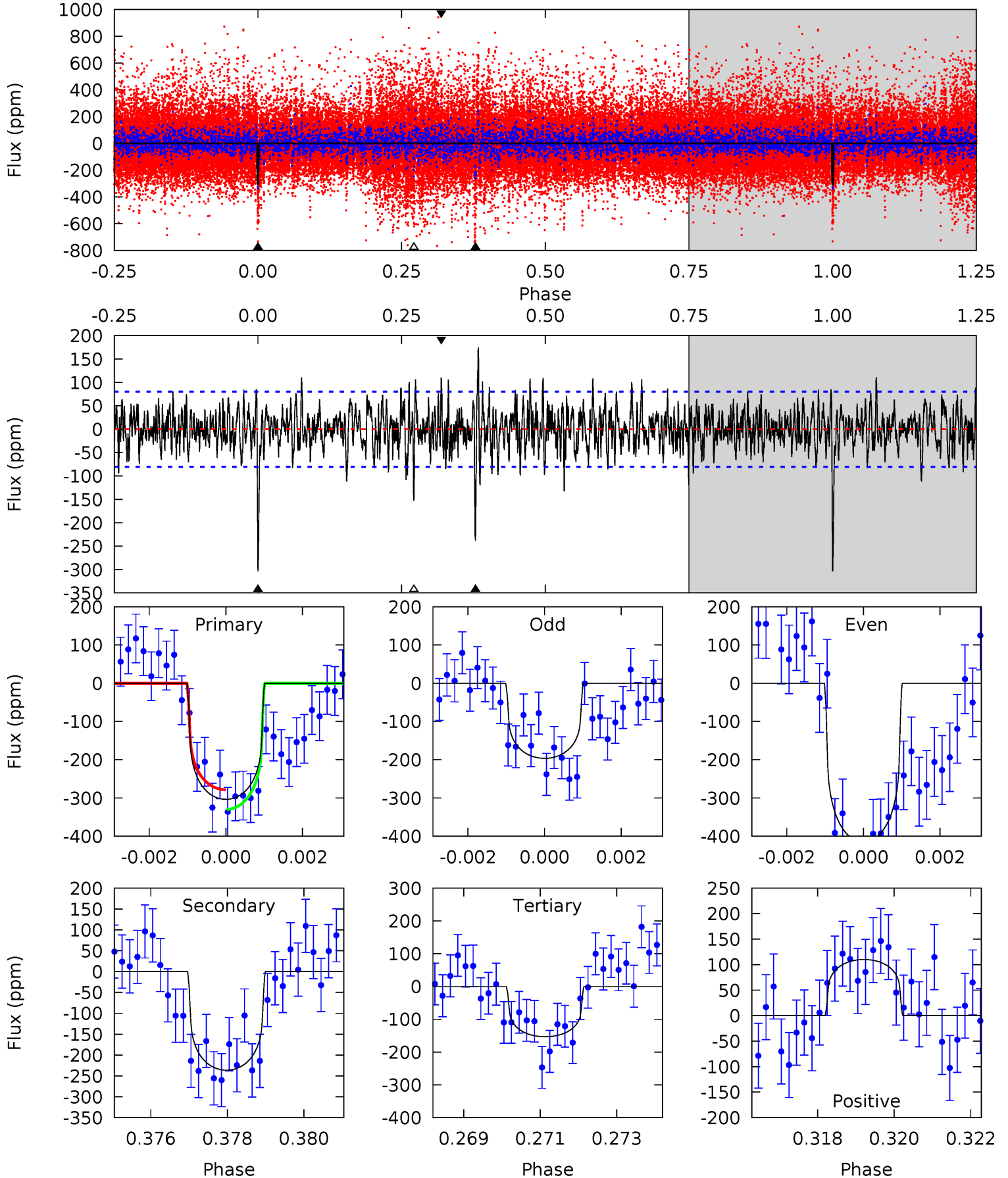
TCE 009333505-01 P=304.609890 Days $T_0=373.783386$ (BKJD)



DV Model-Shift Uniqueness Test

009333505-01, P = 304.600065 Days, E = 69.237861 Days

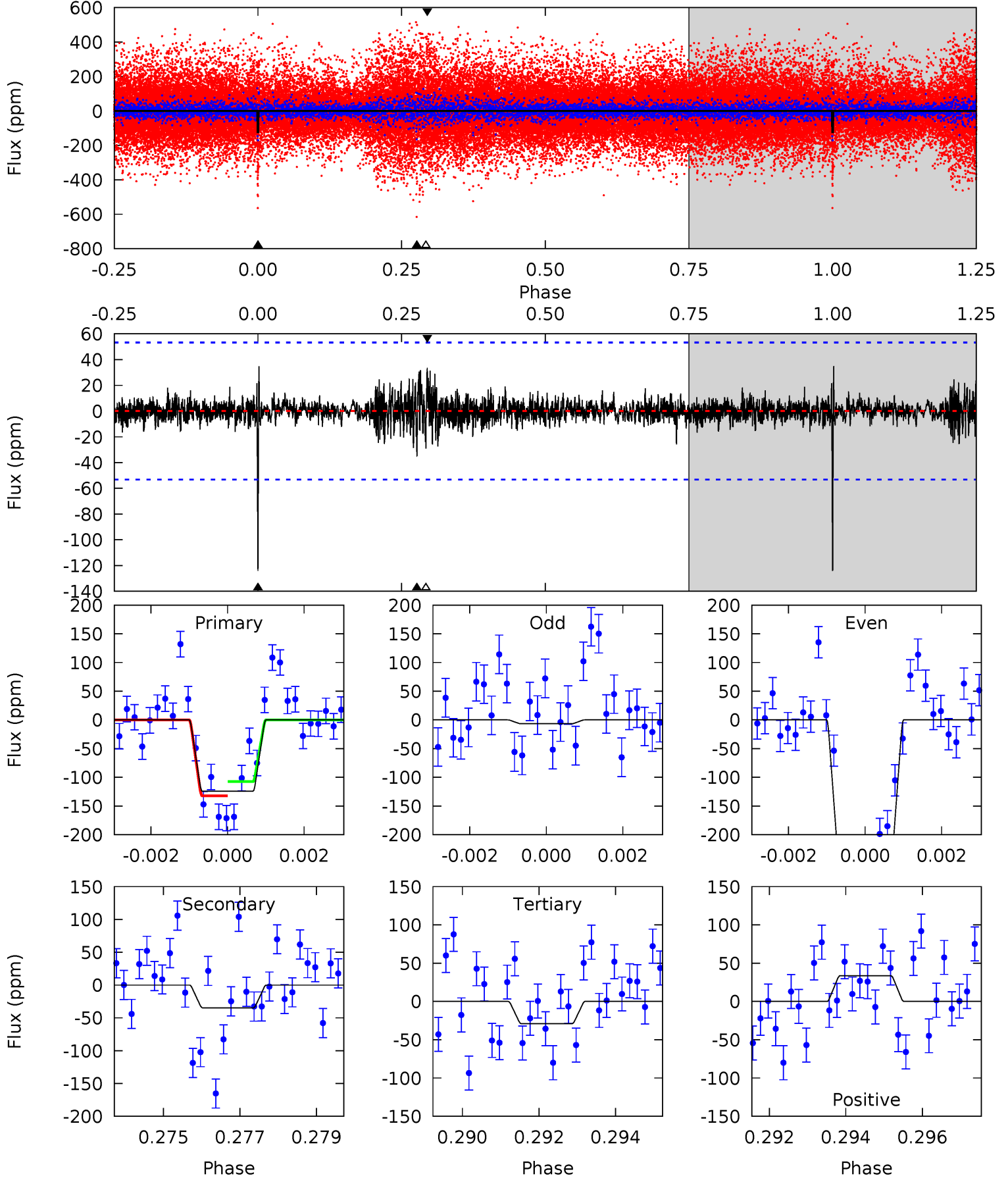
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
20.1	15.6	10.1	7.28	5.32	3.09	2.40	9.97	12.8	5.50	8.36	6.93	1.02	0.36	1.70



Alt Model-Shift Uniqueness Test

009333505-01, P = 304.609890 Days, E = 69.173496 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
12.4	3.46	2.89	3.36	5.31	3.07	0.63	9.50	9.03	0.58	0.10	12.1	1.14	0.22	1.24



Stellar Parameters For KIC 009333505

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	3348^{+50}_{-40}	$4.972^{+0.045}_{-0.050}$	$0.000^{+0.100}_{-0.100}$	$0.277^{+0.043}_{-0.032}$	$0.263^{+0.055}_{-0.037}$	$17.380^{+4.261}_{-4.094}$
	+1%/-1%	+1%/-1%	+inf%/-inf%	+16%/-12%	+21%/-14%	+25%/-24%
Source	PHO2	PHO2	PHO2	DSEP		

KIC = Kepler Input Catalog; PHO = Photometry; SPE = Spectroscopy; AST = Asteroseismology
 TRA = Transits; DESP = Dartmouth Models; MULT = Multiple Models

Secondary Eclipse Parameters for KIC 009333505-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-236 ± 15	$0.48^{+0.25}_{-0.23}$	144^{+4}_{-3}	3331^{+809}_{-383}	$182027^{+498419}_{-102486}$
Alt.	-35 ± 10	$0.45^{+0.23}_{-0.23}$	145^{+4}_{-4}	2595^{+540}_{-264}	30560^{+94818}_{-18333}

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

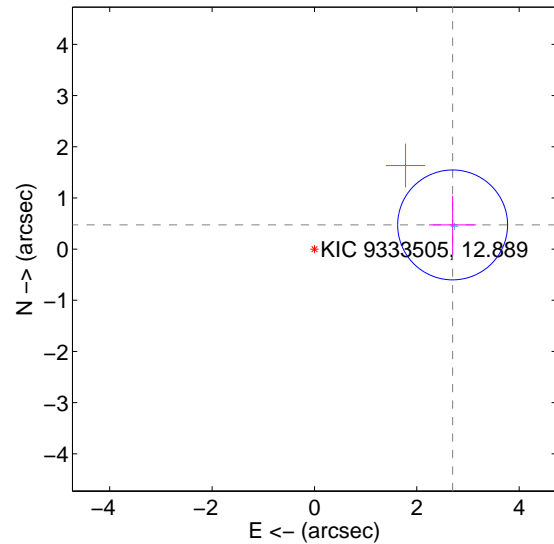
Supplemental centroid analysis for 009333505-01. Kepler magnitude: 12.89. Transit SNR 8.39

There are 1 quarters with good PRF difference image offsets

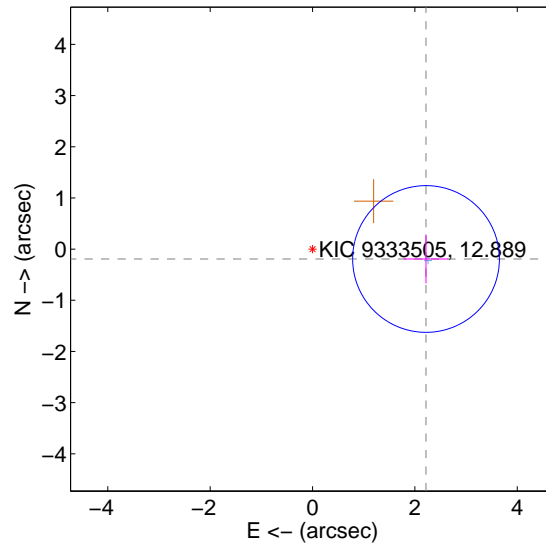
The direct PRF centroid is offset from the target star catalog position by about 0.91 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	2.741 ± 0.358	7.66	-2.699 ± 0.462	0.473 ± 0.574
PRF-fit source offset from KIC position	2.226 ± 0.478	4.66	-2.217 ± 0.439	-0.193 ± 0.478
photometric centroid source offset	1.49 ± 0.82	1.83	1.17 ± 0.87	-0.92 ± 0.73

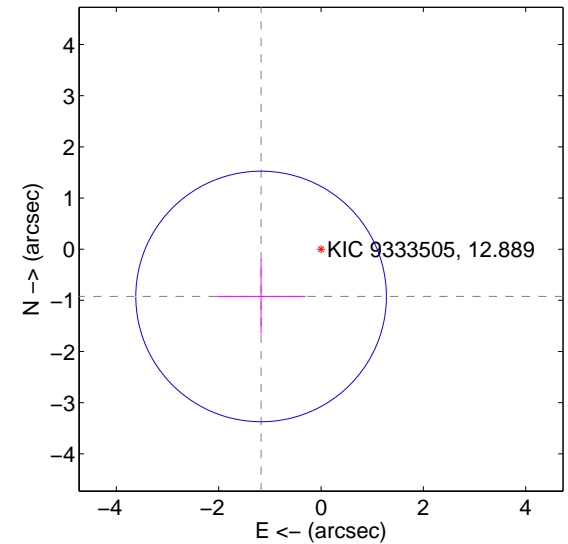
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position



offset from photometric centroids



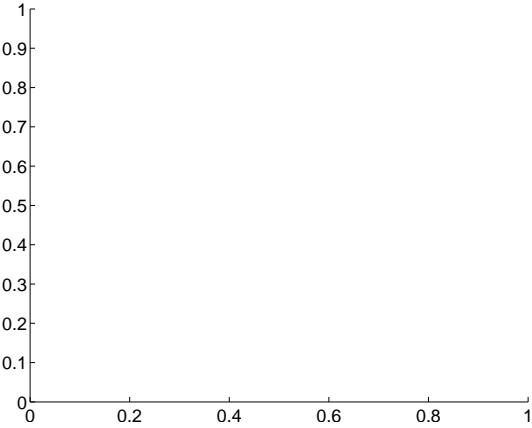
Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

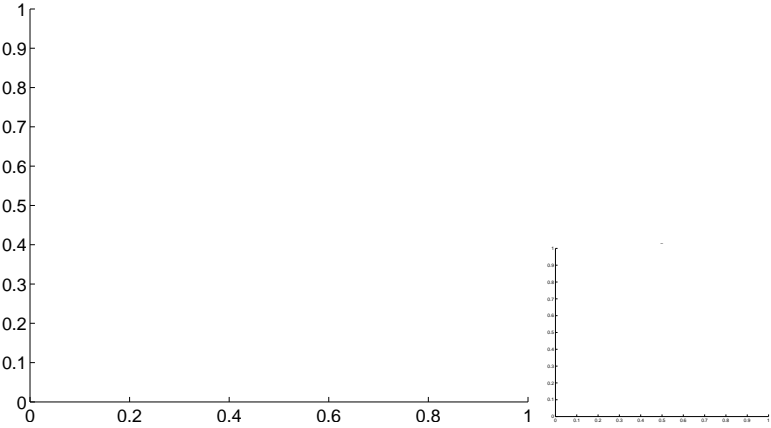


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.

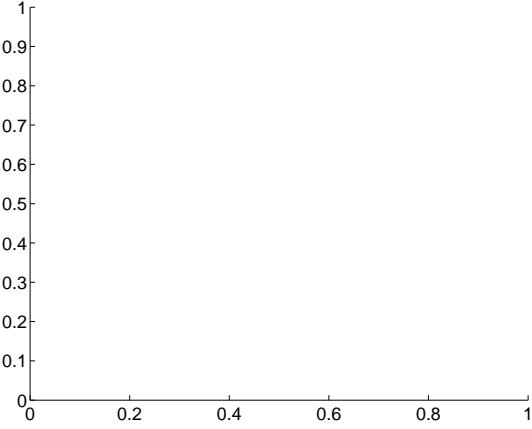
Q5 no difference image



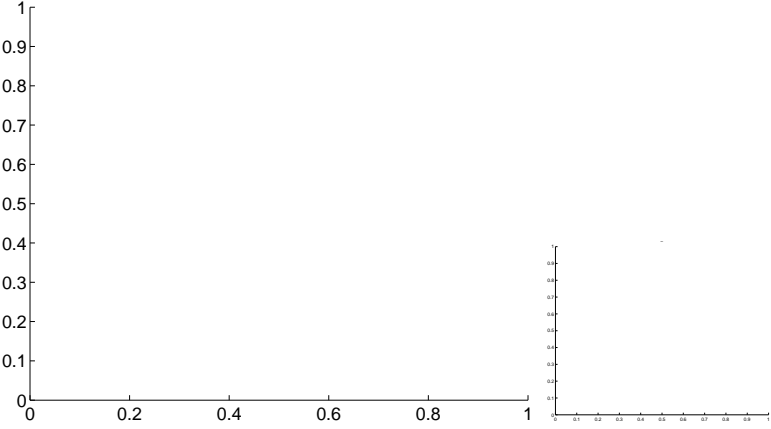
Q5 no OOT image



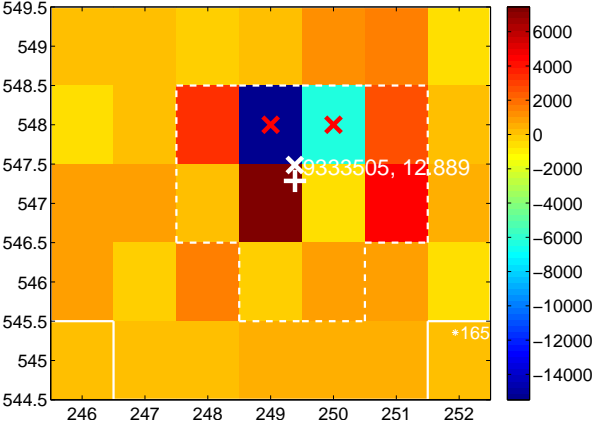
Q6 no difference image



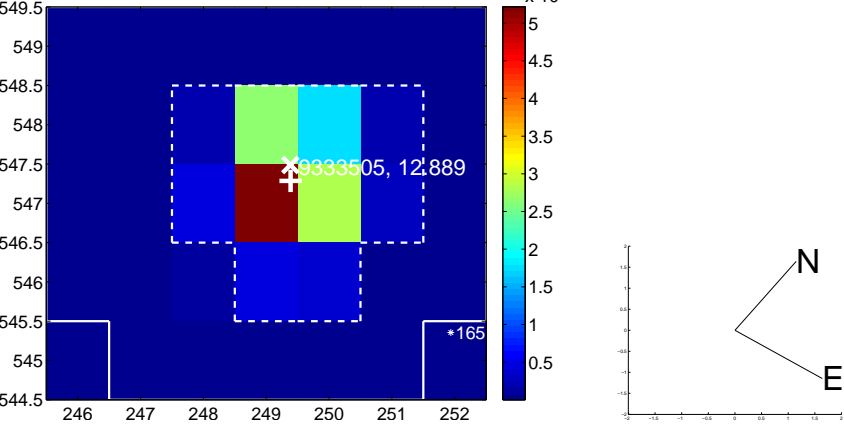
Q6 no OOT image



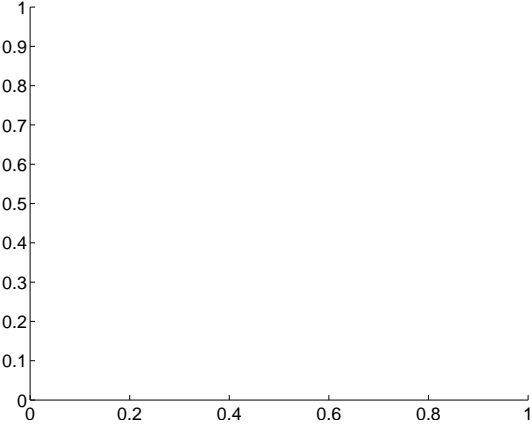
Q7 difference image. Poor Quality



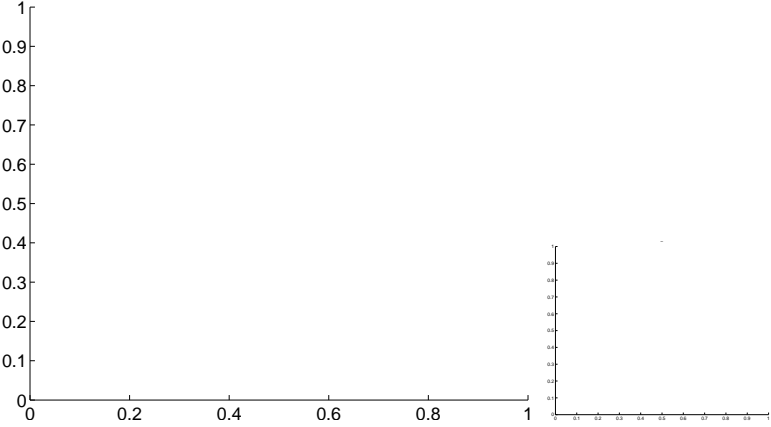
Q7 OOT image



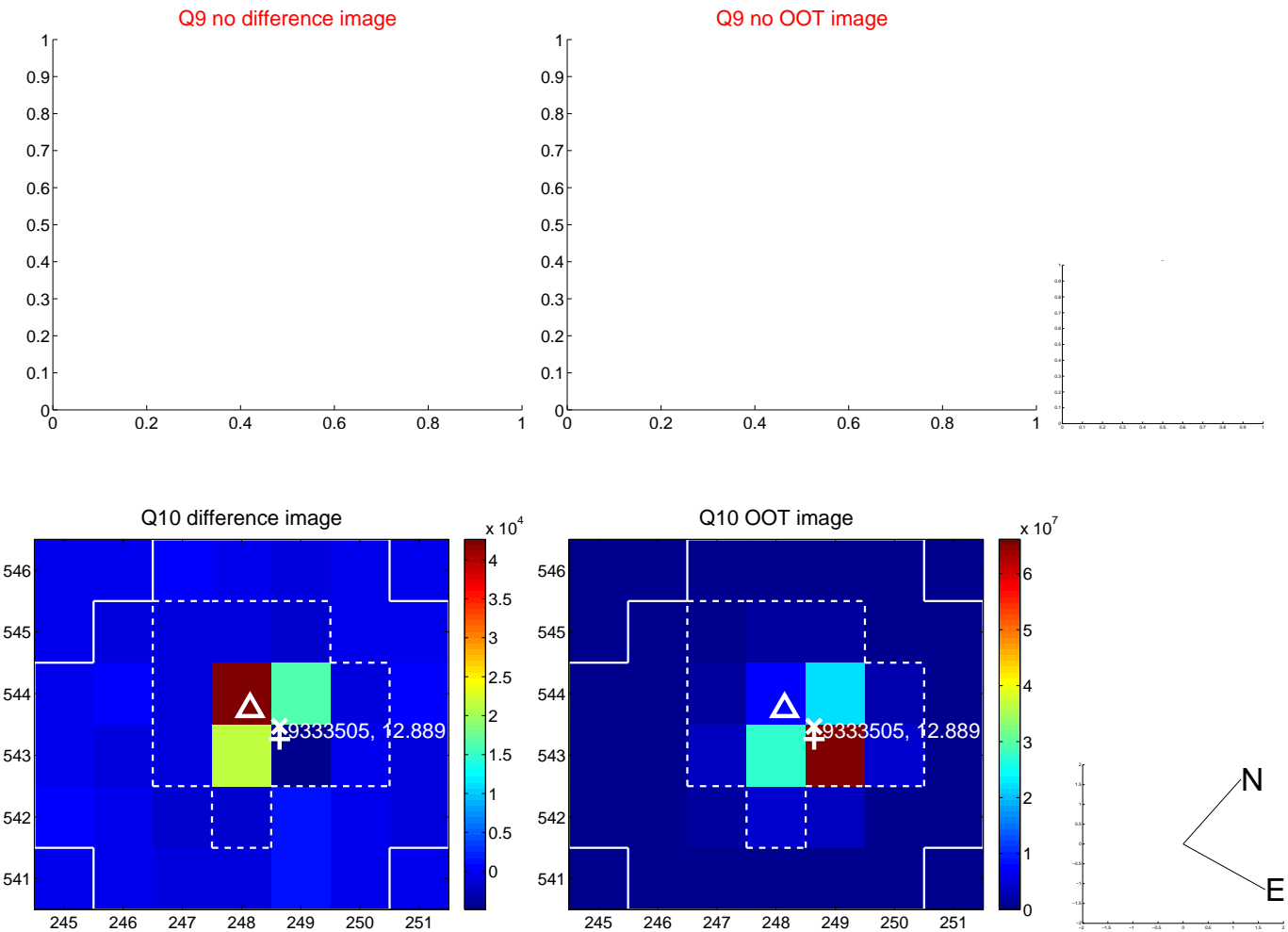
Q8 no difference image



Q8 no OOT image

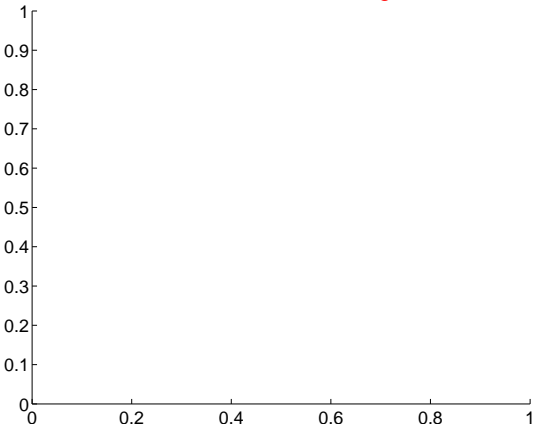


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.

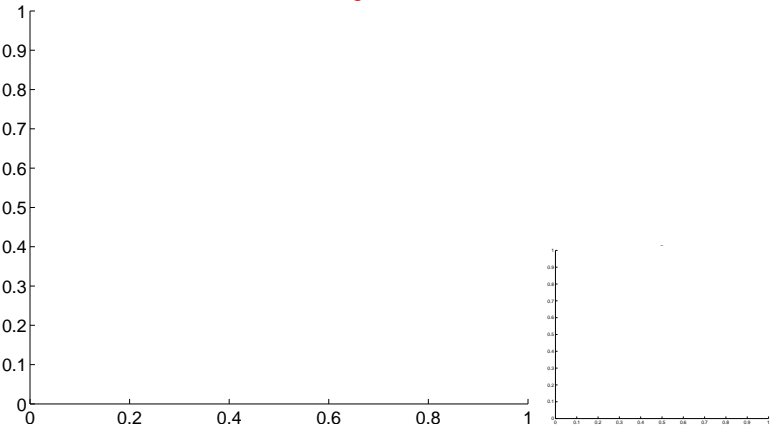


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.

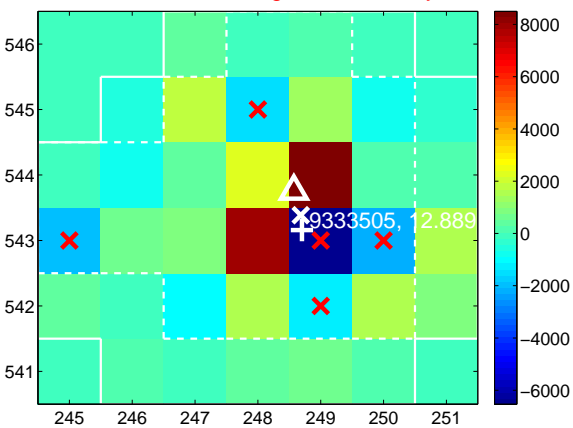
Q13 no difference image



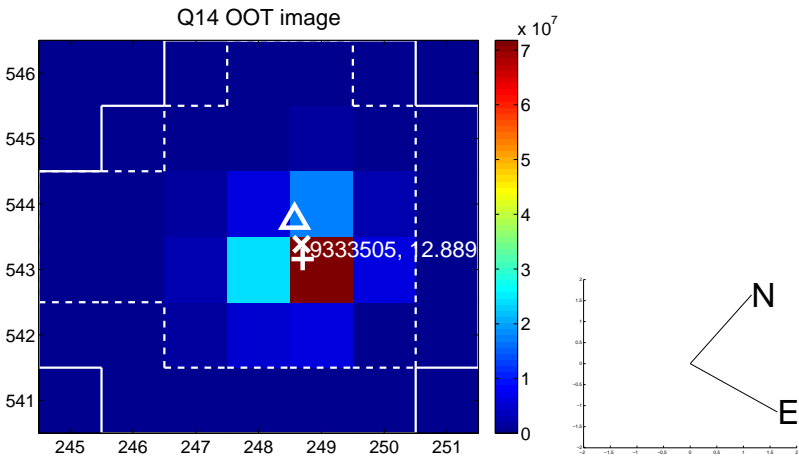
Q13 no OOT image



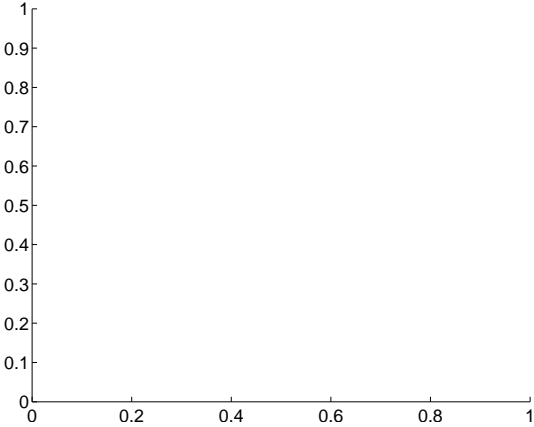
Q14 difference image. Poor Quality



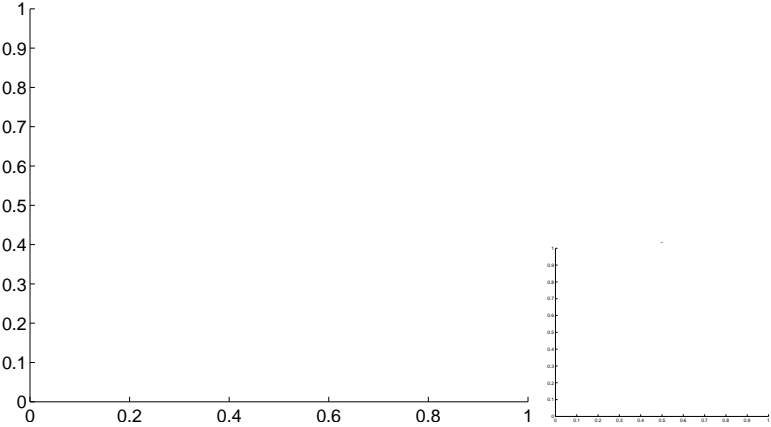
Q14 OOT image



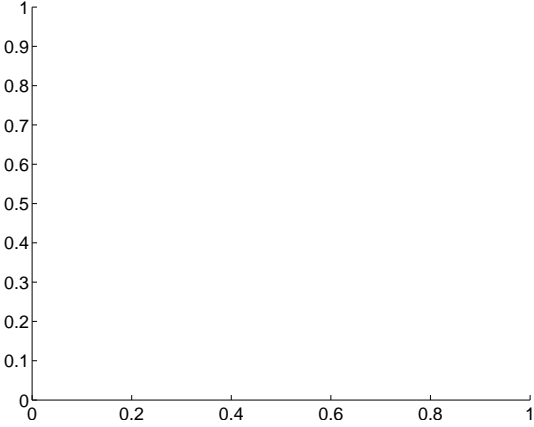
Q15 no difference image



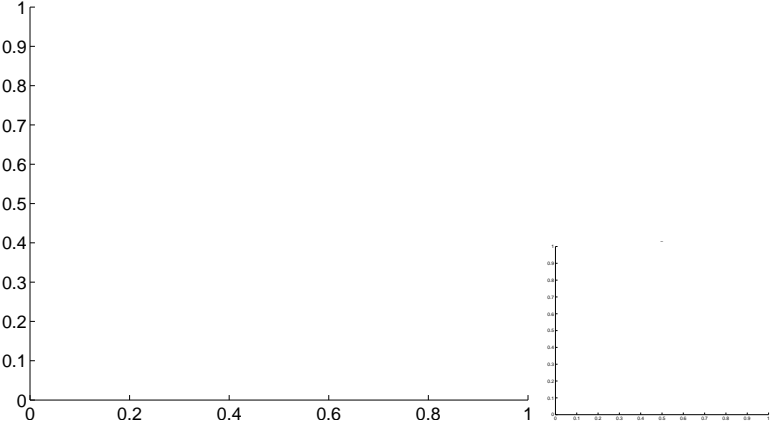
Q15 no OOT image



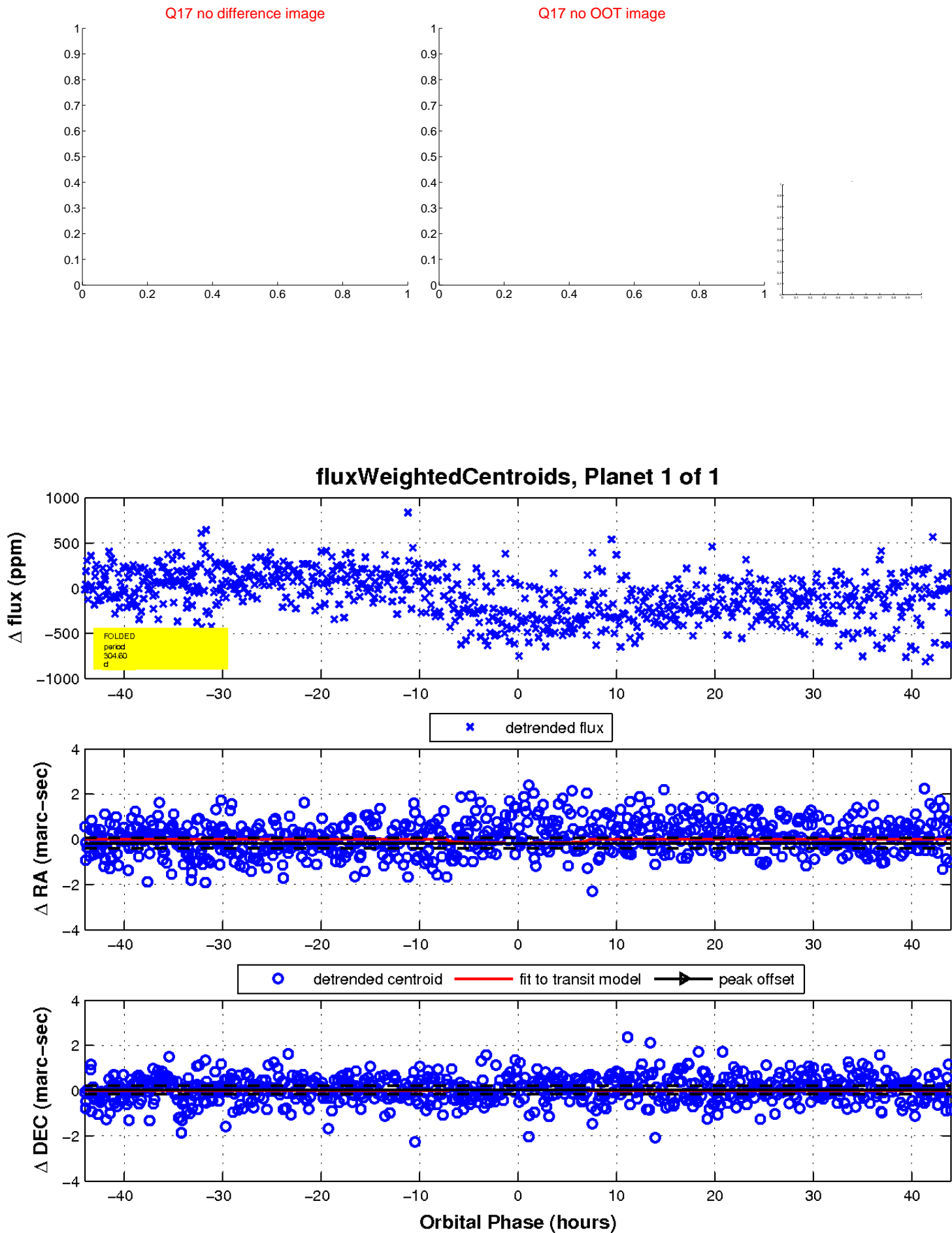
Q16 no difference image



Q16 no OOT image



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



UKIRT Image

Declination

