

KIC 009093733

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})
009093733-01	OBS	No	568.547704	301.173220	89.6	8.834	7.6	7.2	2.54	8763	2.70	11.12

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
009093733-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—ALL_TRANS_CHASES—MOD_POS_DV—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.

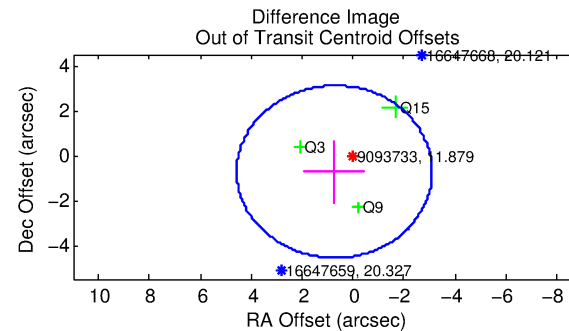
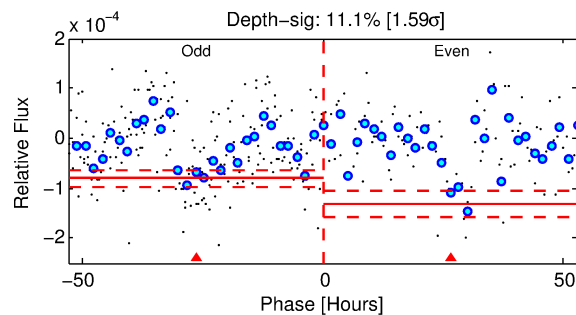
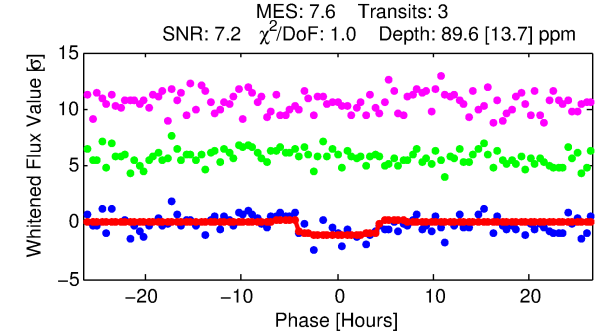
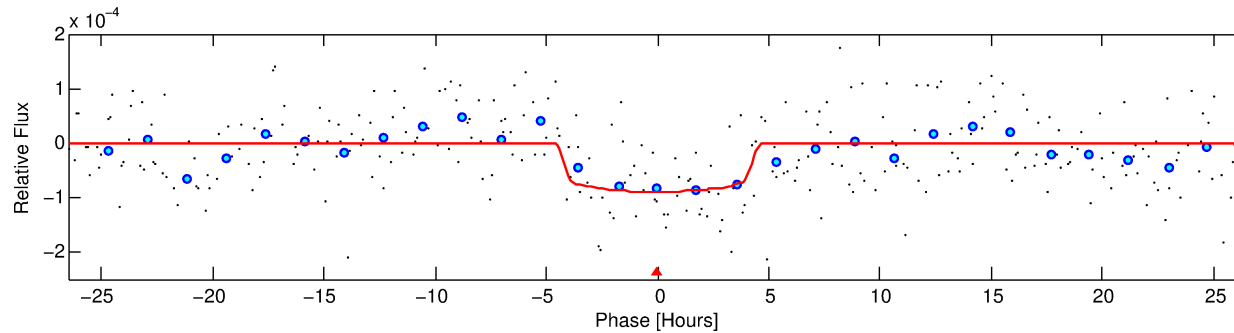
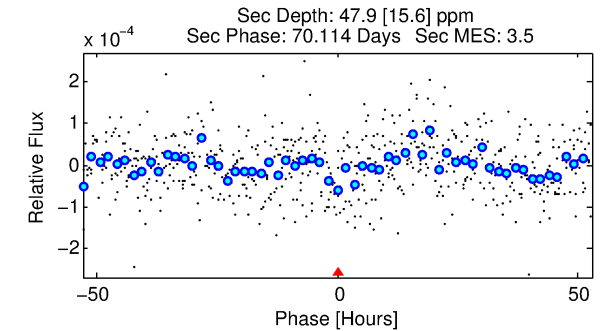
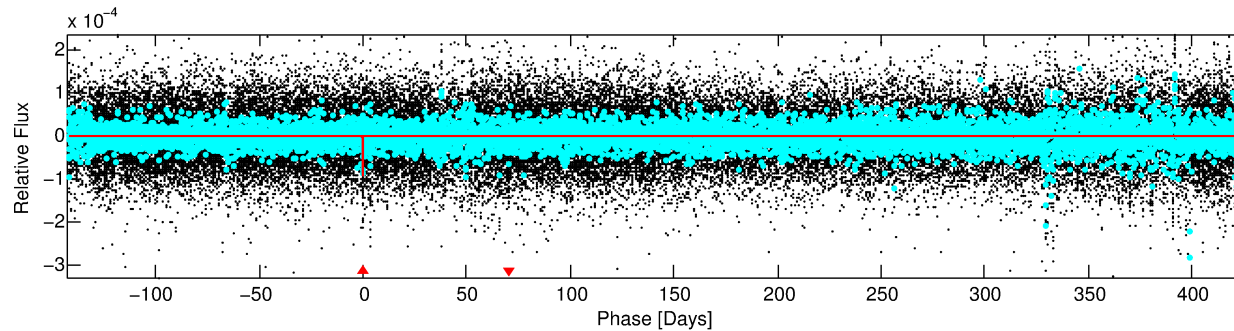
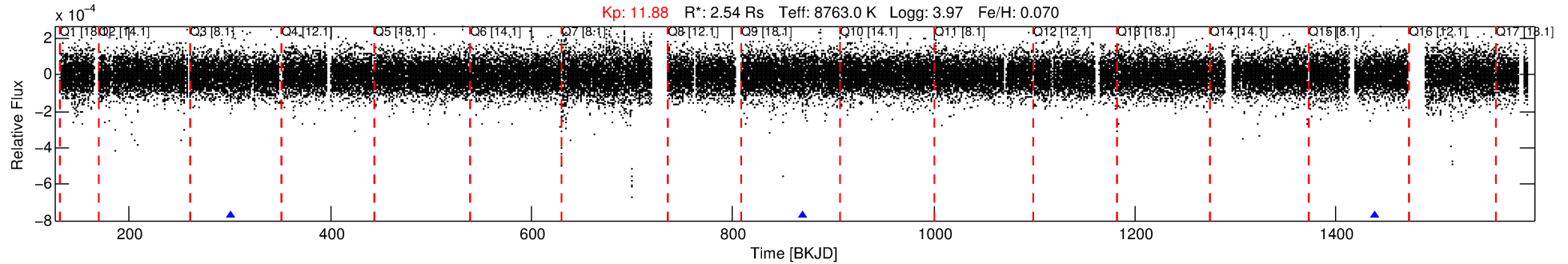
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 009093733-01

No Significant Match Found

DV One-Page Summary

KIC: 9093733 Candidate: 1 of 1 Period: 568.548 d



DV Fit Results:

Period = 568.54770 [0.01086] d
Epoch = 301.1732 [0.0151] BKJD
Rp/R* = 0.0098 [0.0032]
a/R* = 267.01 [563.15]
b = 0.85 [0.69]
Seff = 11.12 [4.95]
Teq = 466 [52] K
Rp = 2.70 [1.28] Re
a = 1.7489 [0.4960] AU
Ag = 11033.27 [9164.36] [1.20σ]
Teffp = 7378 [1387] K [4.98σ]

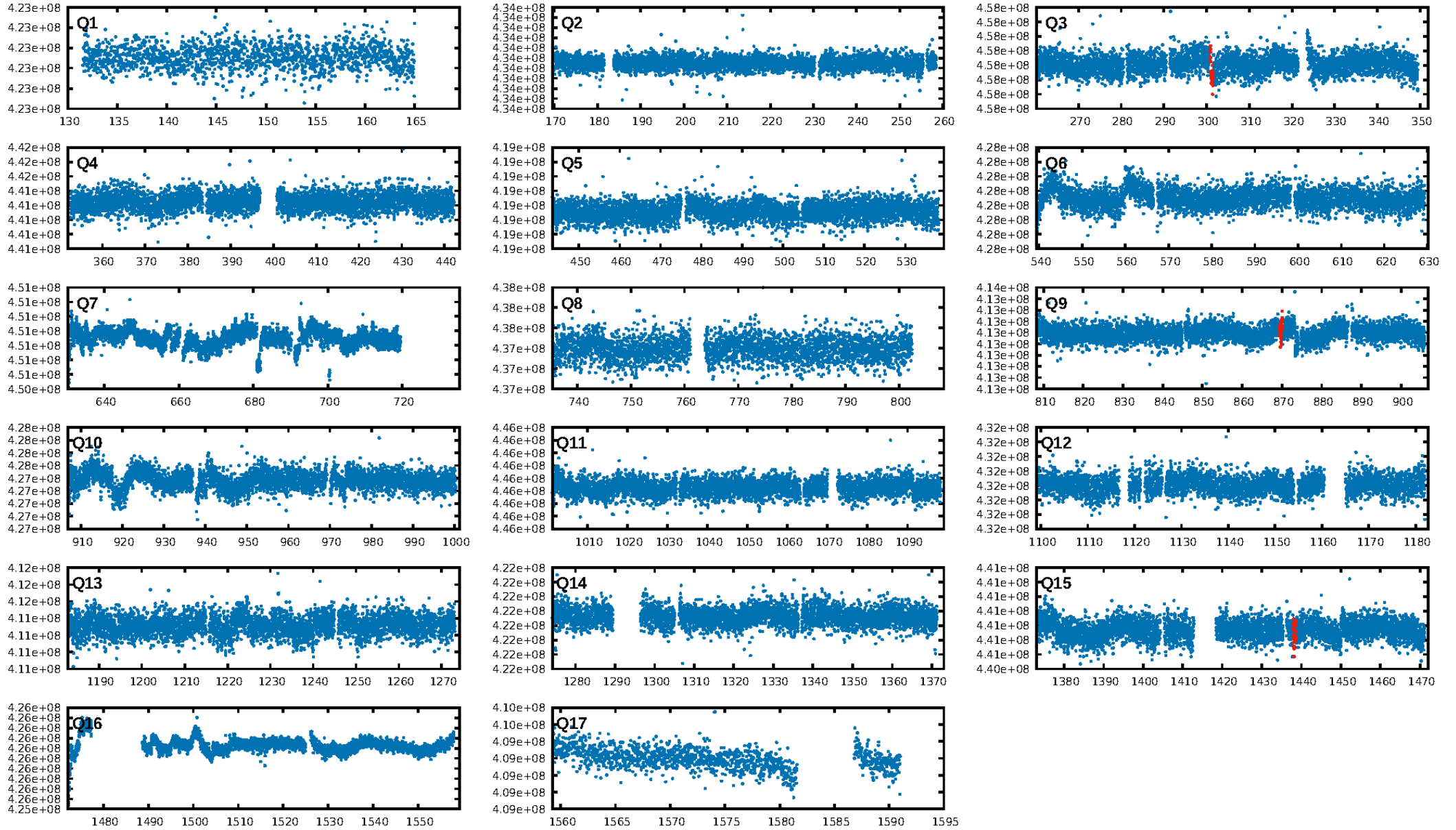
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: 73.7%
ModelChiSquareGof-sig: 91.3%
Bootstrap-pfa: 1.11e-11
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: 9.686
Centroid-sig: 65.5%
Centroid-so: 0.708 arcsec [0.39σ]
OotOffset-rm: 1.028 arcsec [0.80σ]
KicOffset-rm: 0.973 arcsec [0.76σ]
OotOffset-st: 0/2/0/1 [3]
KicOffset-st: 0/2/0/1 [3]
DiffImageQuality-fgm: 0.67 [2/3]
DiffImageOverlap-fno: 1.00 [3/3]

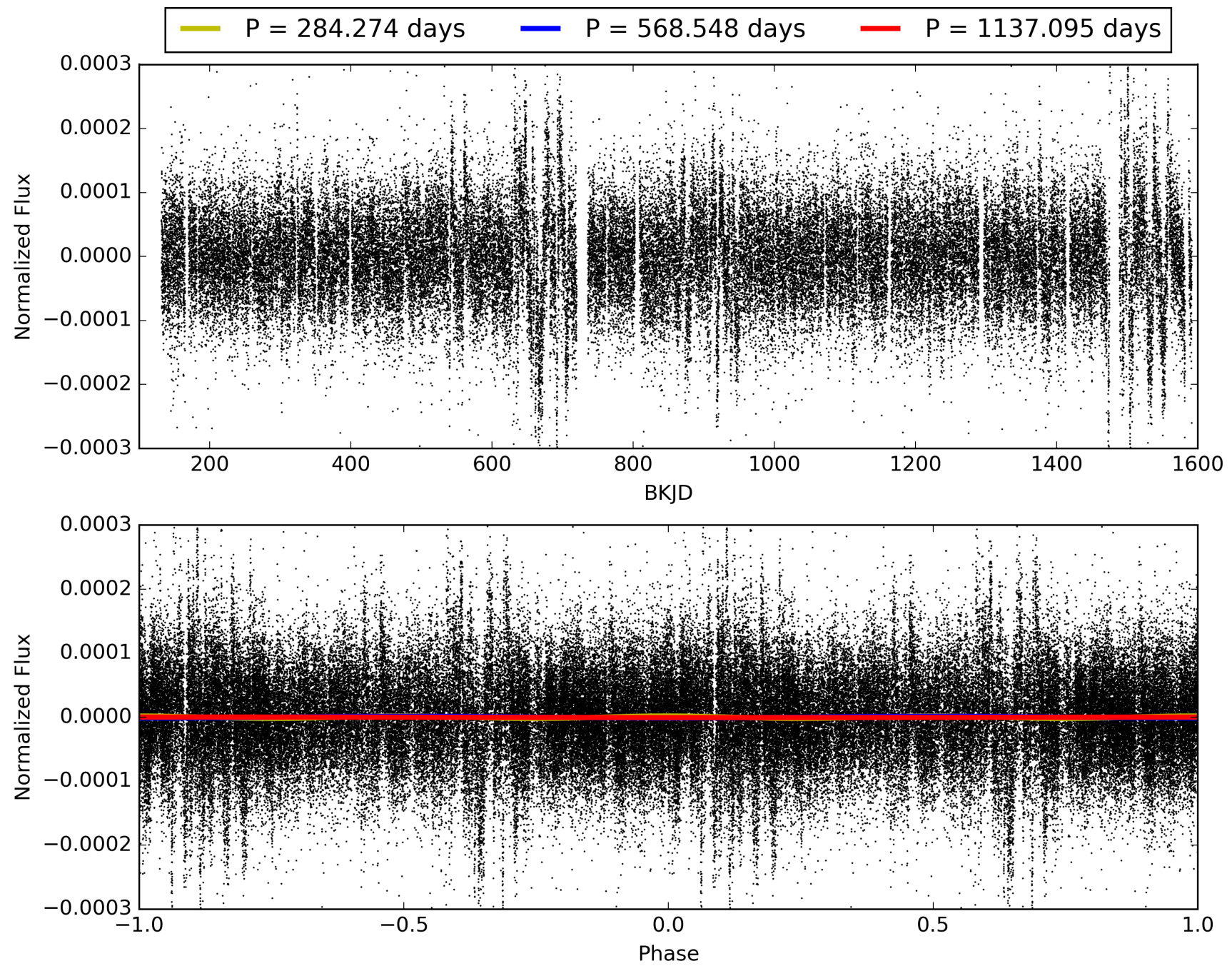
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 14:26:03 Z

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

TCE 009093733-01, PDC Light Curves

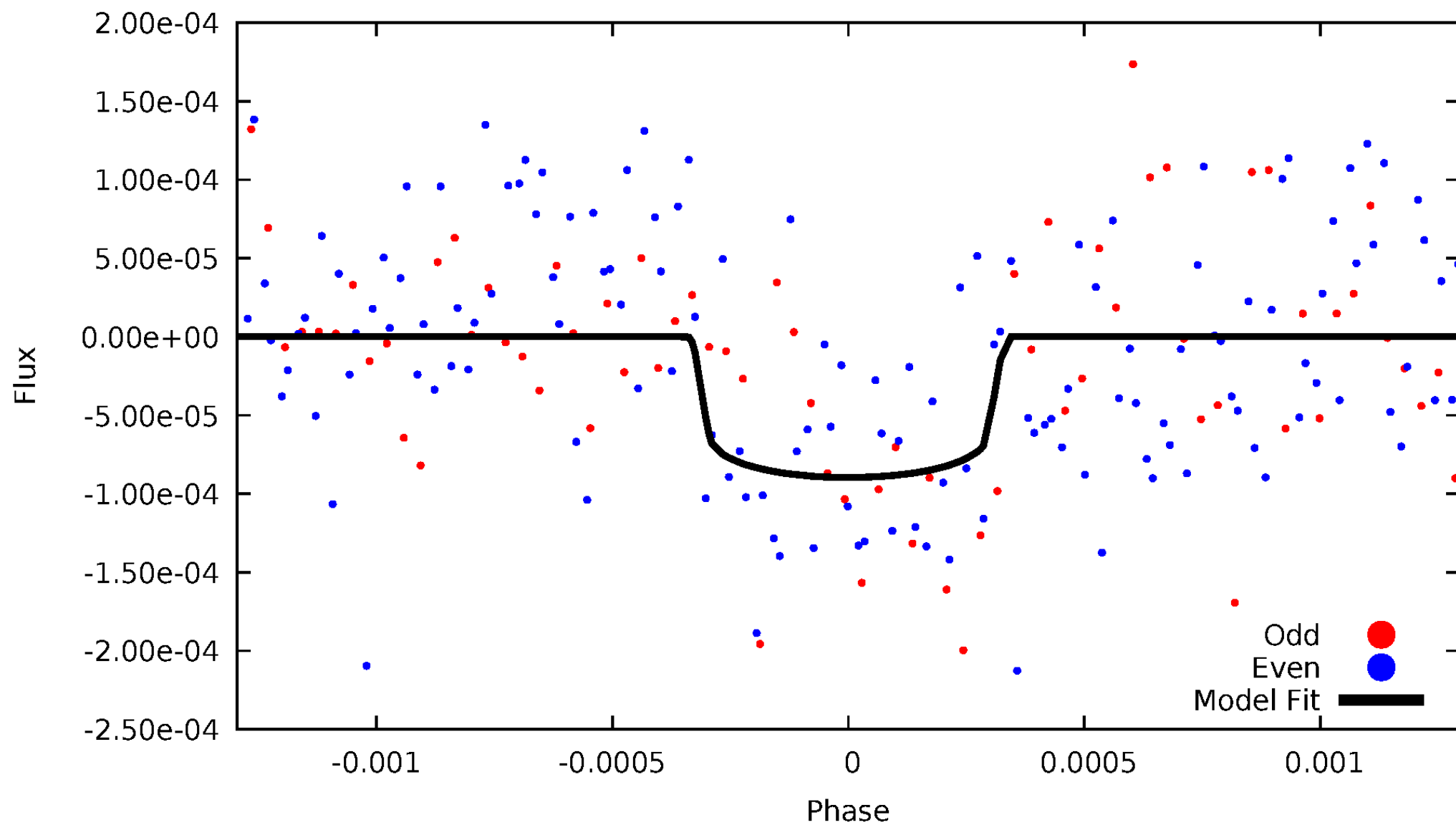


TCE 009093733-01



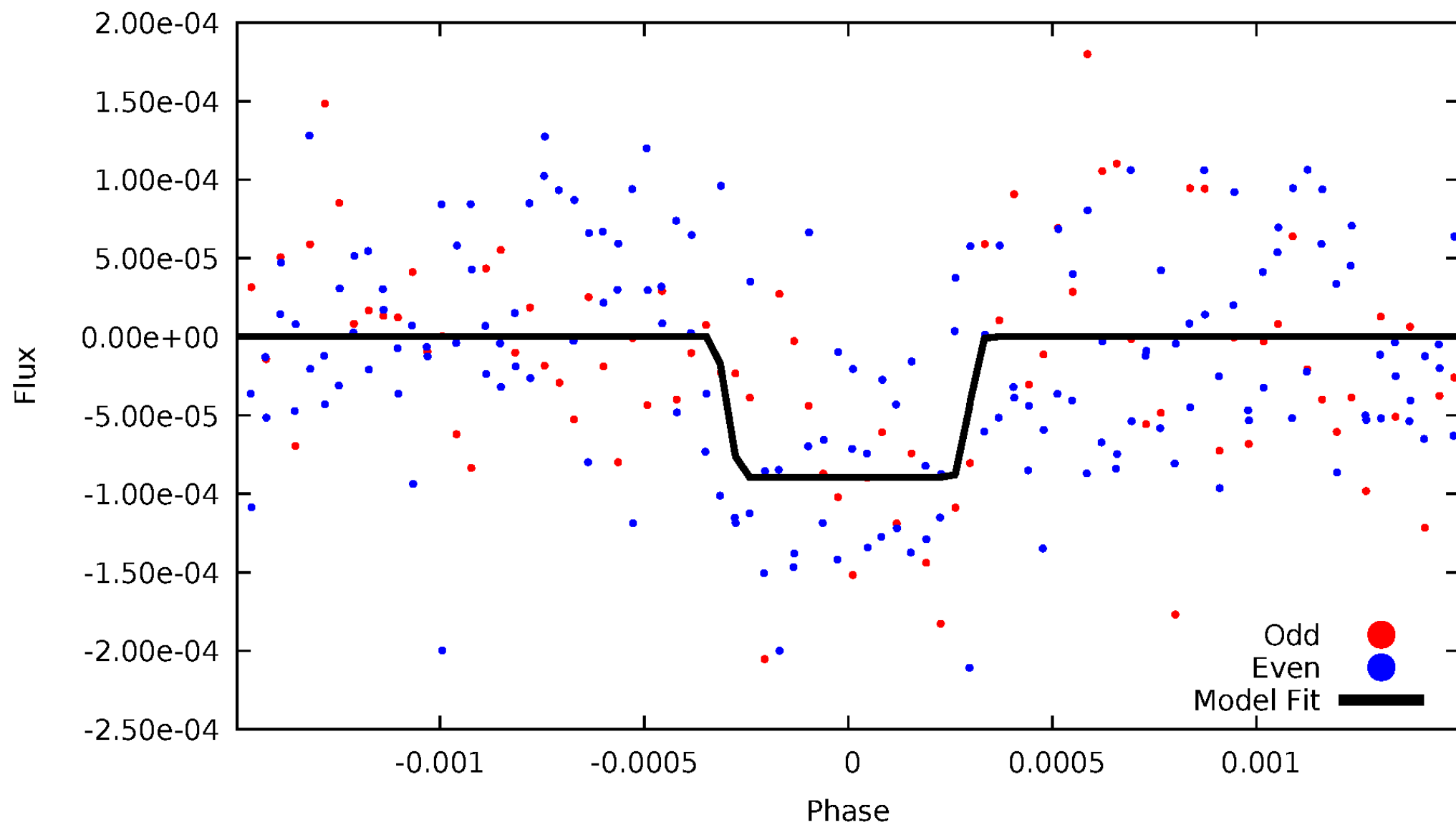
DV Odd/Even

TCE 009093733-01

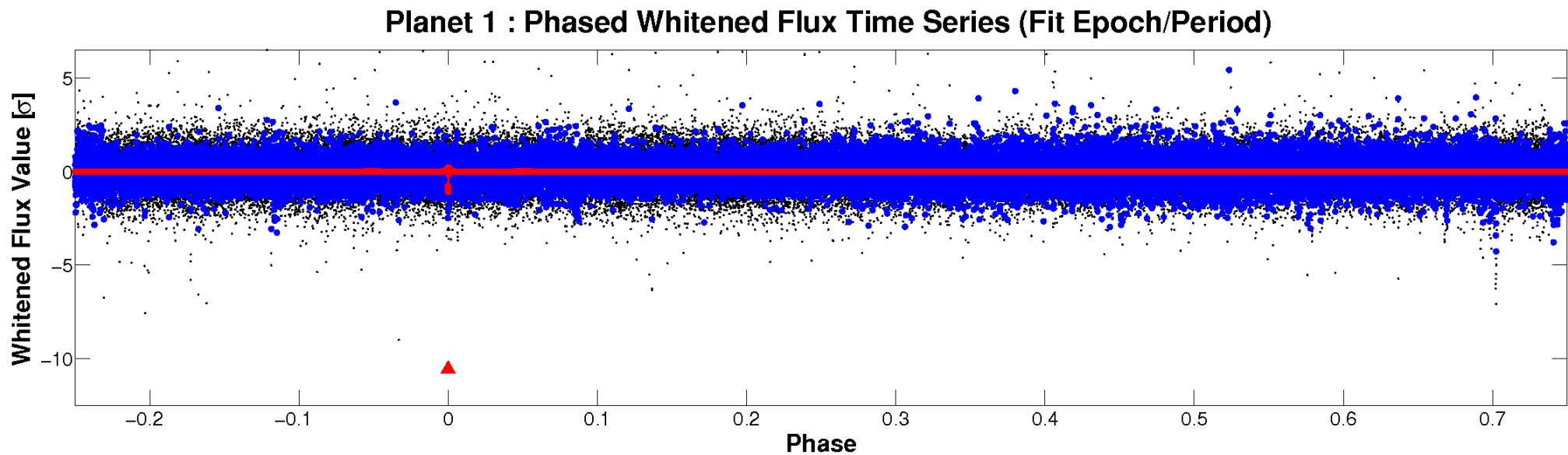
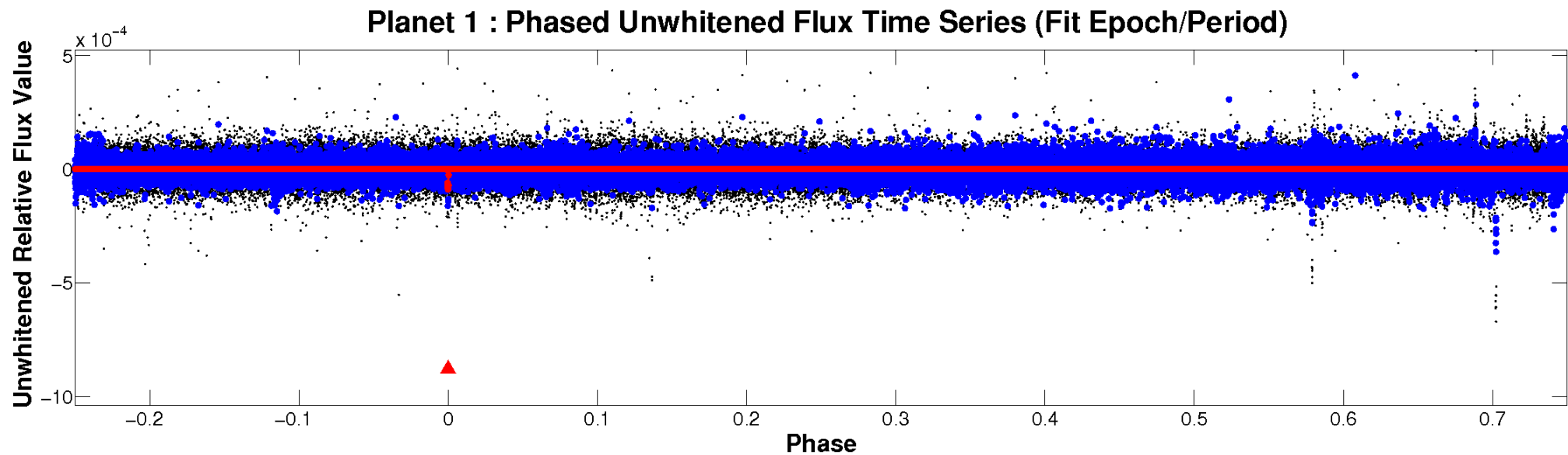


ALT Odd/Even

TCE 009093733-01

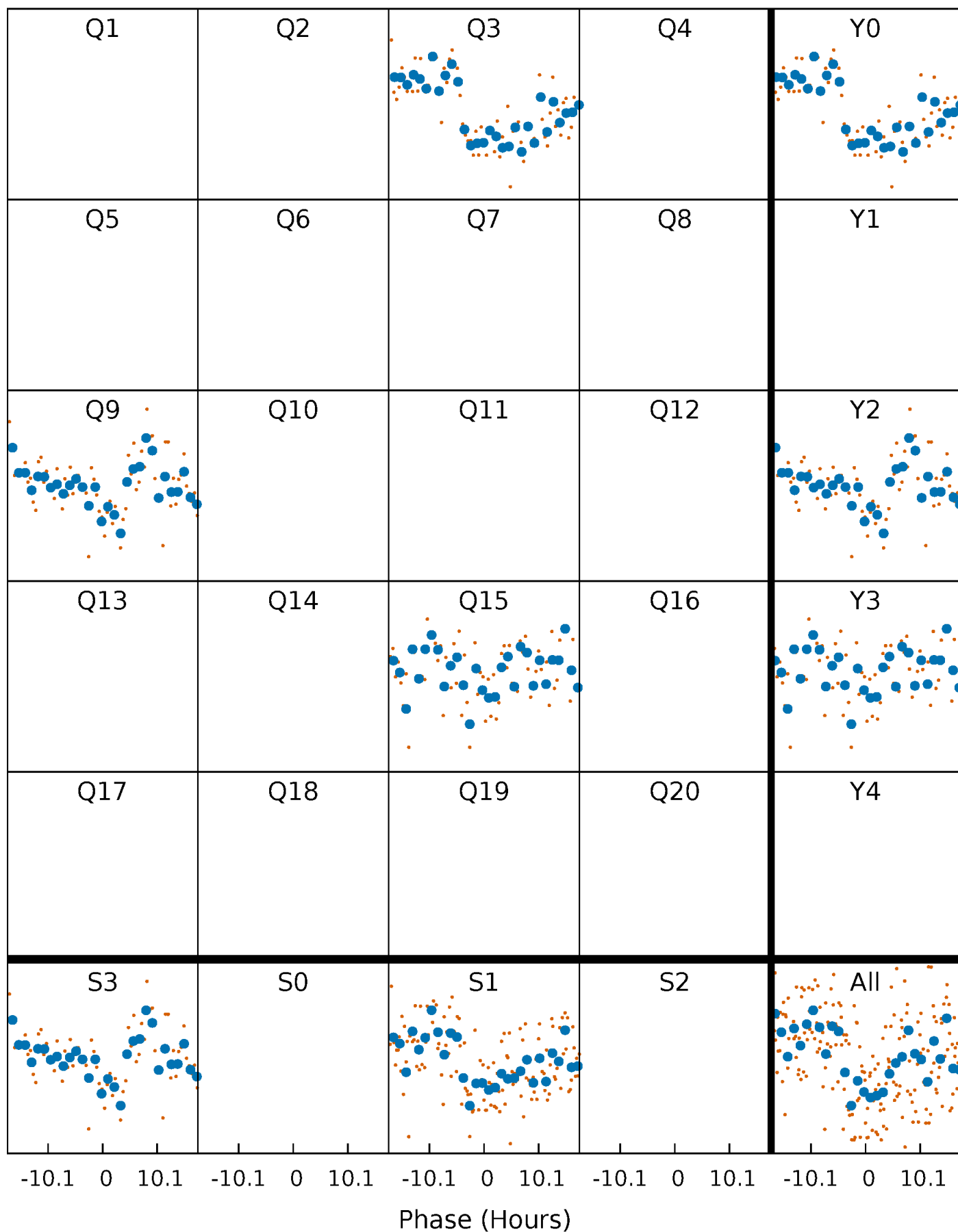


Non-Whitened Vs. Whitened Light Curve



PDC Quarter-Phased Transit Curves

TCE 009093733-01 P=568.547704 Days $T_0=301.173220$ (BKJD)



DV Quarter-Phased Transit Curves

TCE 009093733-01 P=568.547704 Days $T_0=301.173220$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

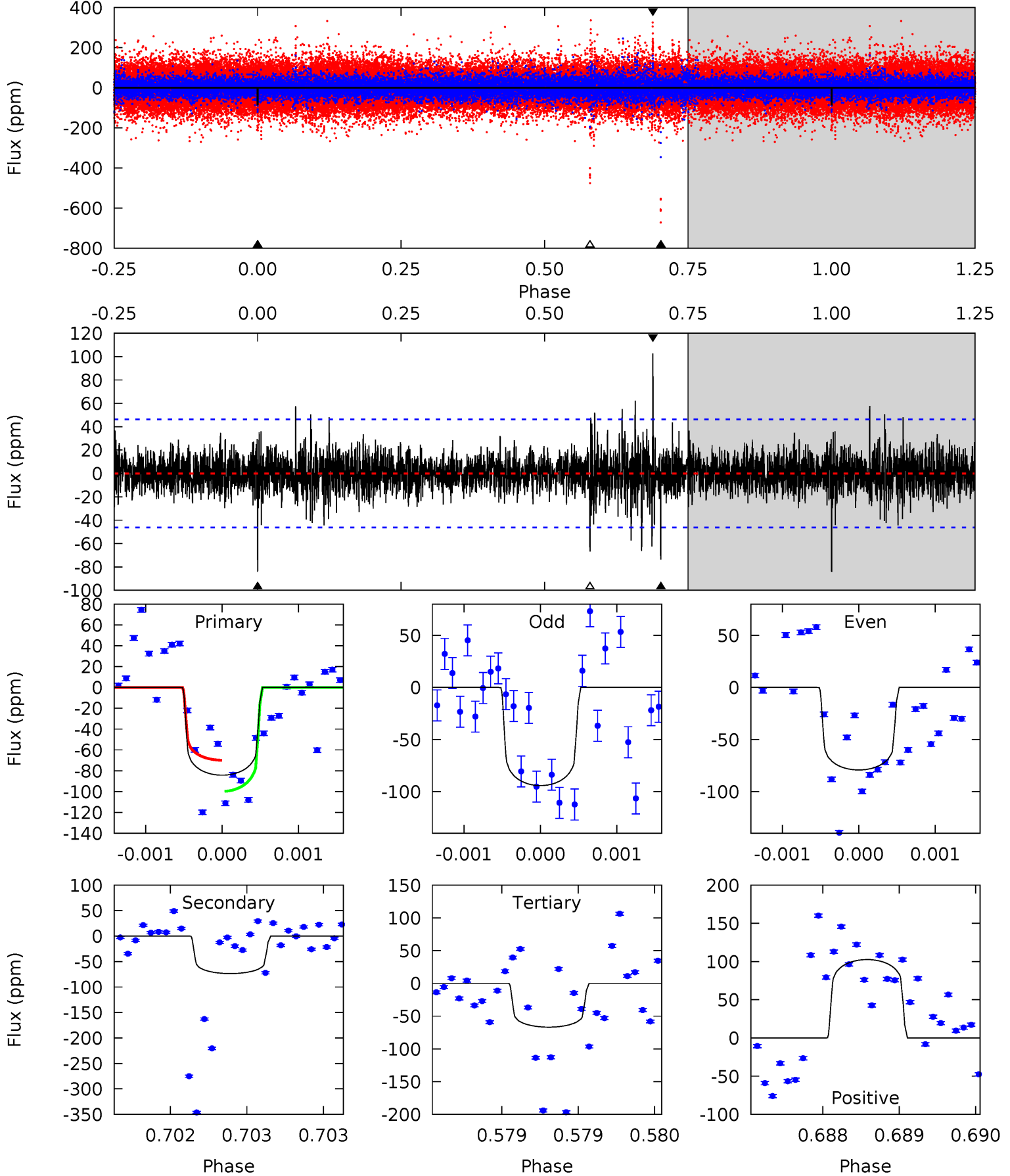
TCE 009093733-01 P=568.522940 Days $T_0=301.207994$ (BKJD)



DV Model-Shift Uniqueness Test

009093733-01, P = 568.547704 Days, E = 301.173220 Days

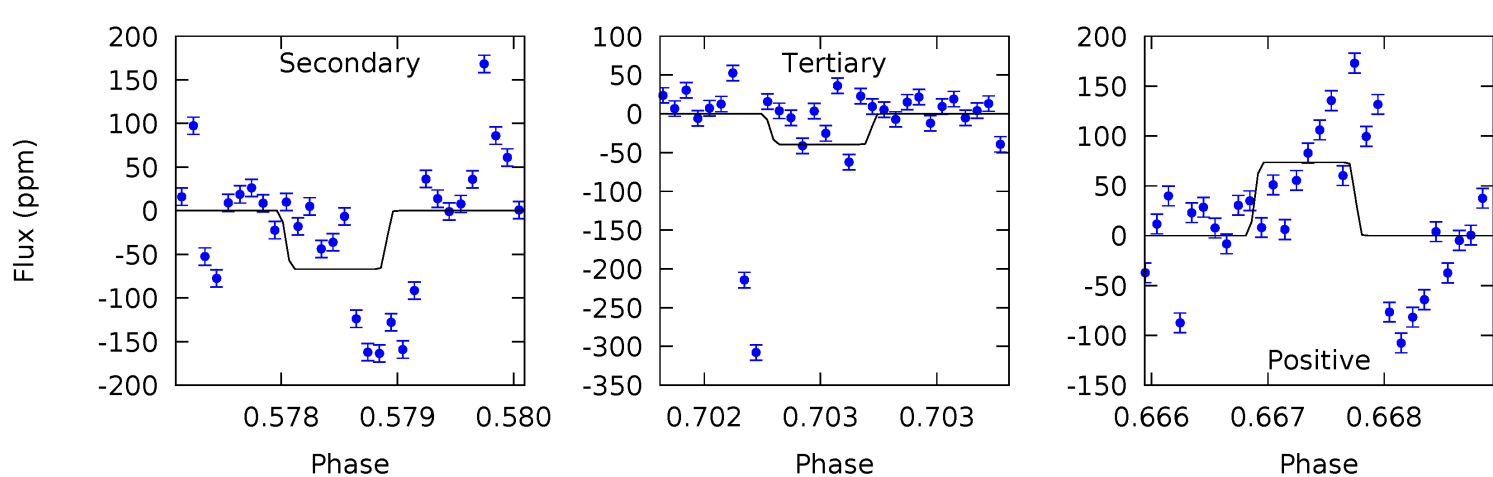
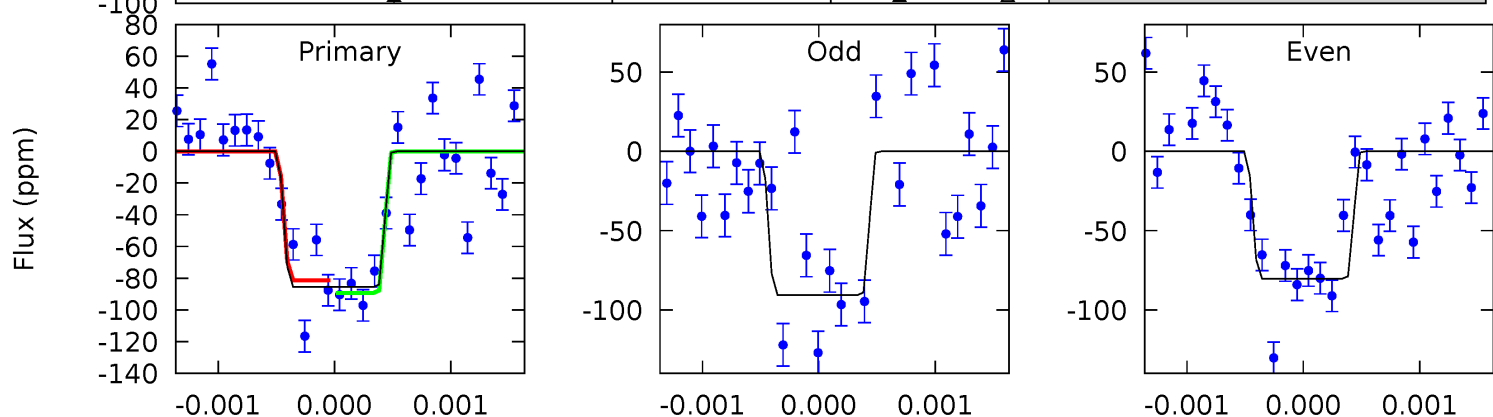
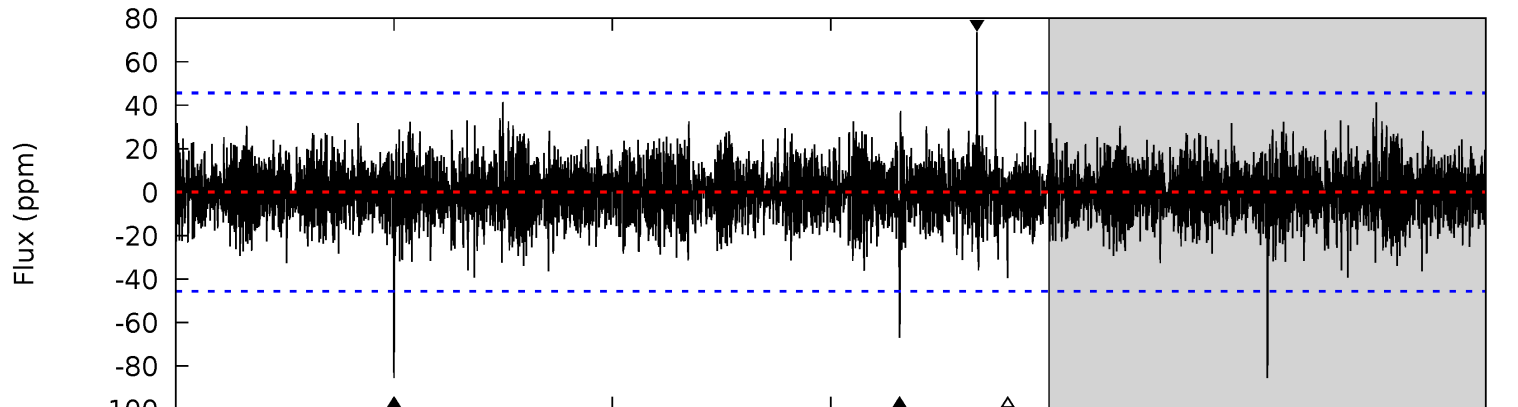
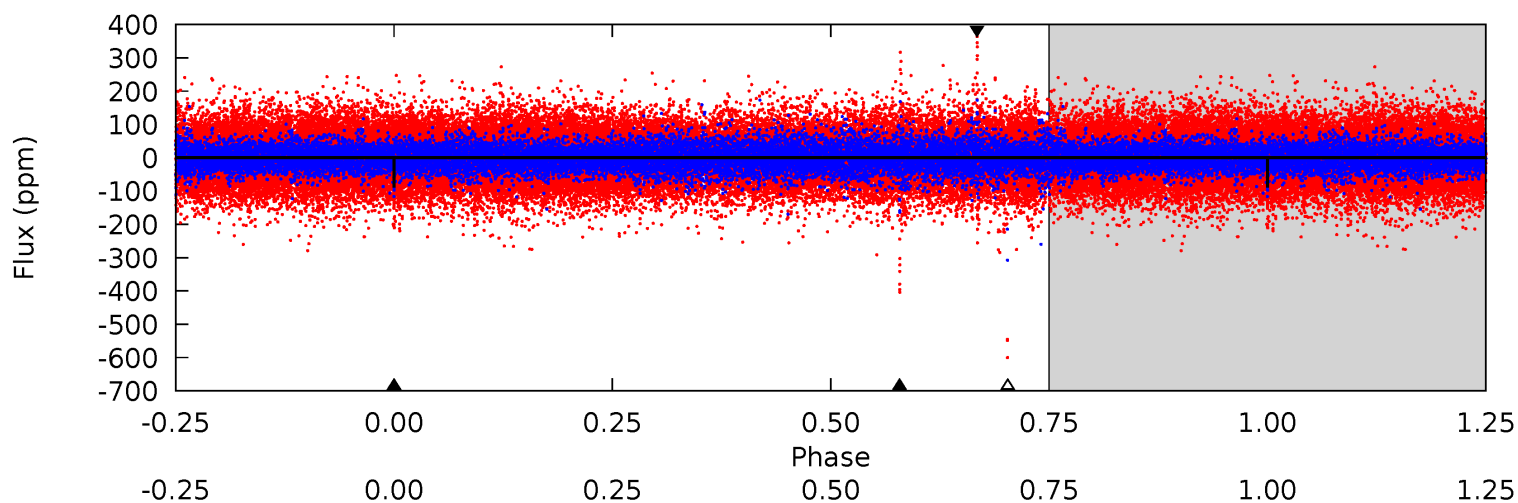
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
10.0	8.78	7.97	12.2	5.53	3.41	1.47	2.08	-2.18	0.81	-3.46	0.83	0.89	0.55	1.78



Alt Model-Shift Uniqueness Test

009093733-01, P = 568.522940 Days, E = 301.207994 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	8.09	4.78	8.89	5.52	3.40	1.29	5.57	1.46	3.32	-0.80	0.58	0.94	0.46	0.48



Stellar Parameters For KIC 009093733

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$\rho_{\star} (\text{g}\cdot\text{cm}^{-3})$
	8763^{+246}_{-422}	$3.973^{+0.214}_{-0.156}$	$0.070^{+0.300}_{-0.550}$	$2.537^{+0.800}_{-0.880}$	$2.206^{+0.337}_{-0.578}$	$0.190^{+0.293}_{-0.089}$
	+3%/-5%	+5%/-4%	+429%/-786%	+32%/-35%	+15%/-26%	+154%/-47%
Source	KIC0	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 009093733-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-74 ± 8	$2.59^{+1.03}_{-0.94}$	643^{+51}_{-53}	8059^{+2464}_{-1249}	18037^{+23704}_{-8646}
Alt.	-67 ± 8	$2.52^{+1.08}_{-0.86}$	641^{+56}_{-51}	7931^{+2601}_{-1290}	17296^{+22719}_{-8796}

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 $A_{\text{obs}} \gg 1.0$

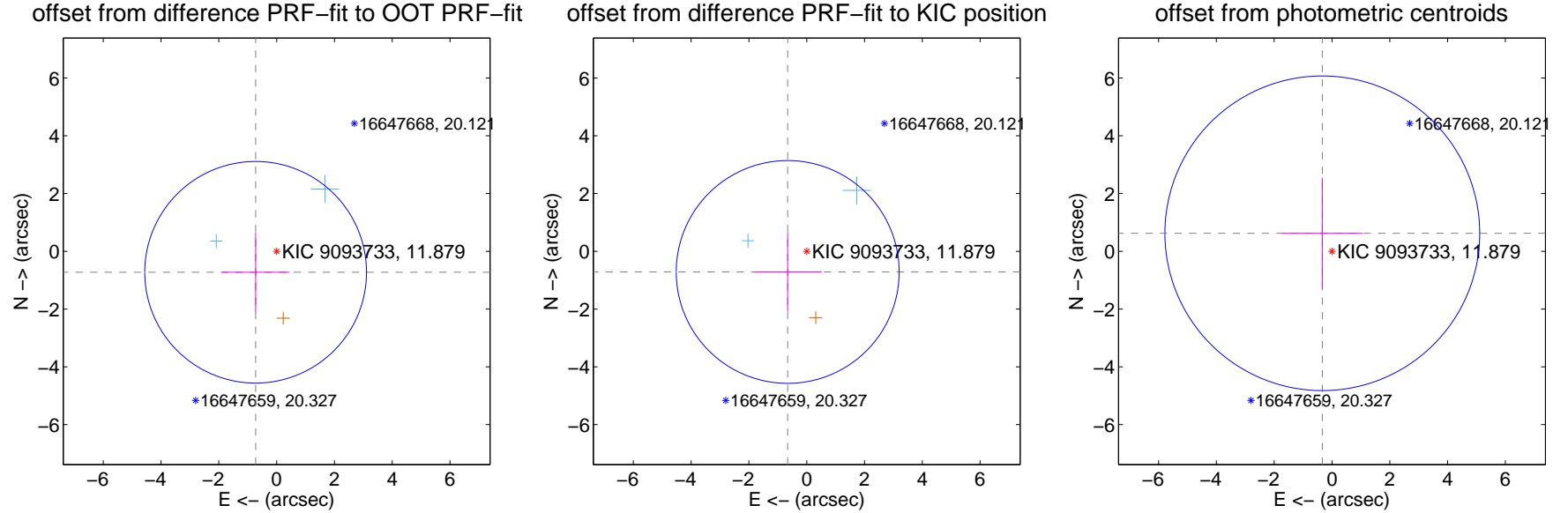
DV Centroid Data

Supplemental centroid analysis for 009093733-01. **Kepler magnitude: 11.88.** Transit SNR 7.22

There are 2 quarters with good PRF difference image offsets

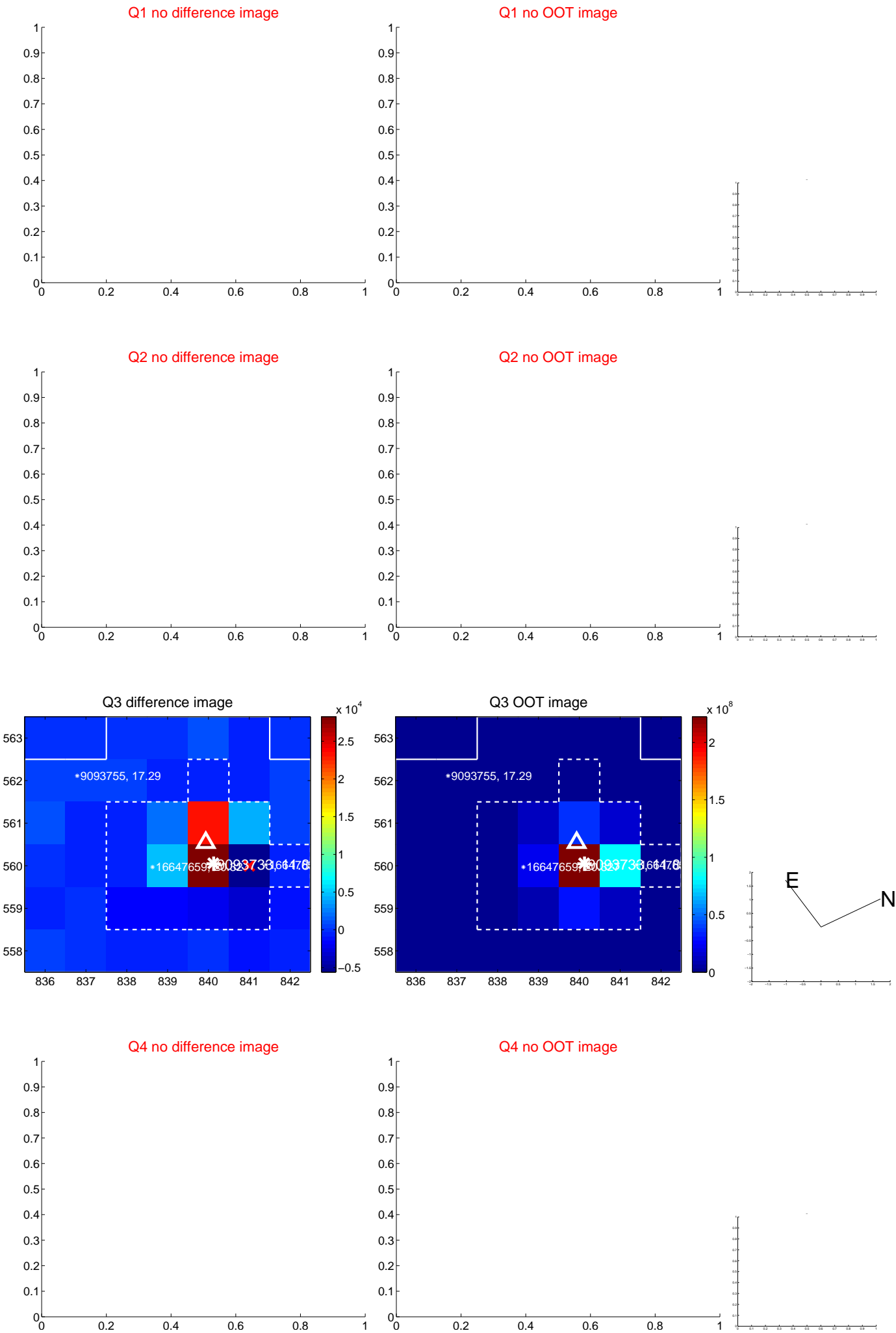
The direct PRF centroid is offset from the target star catalog position by about 0.08 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	1.028 ± 1.279	0.80	0.727 ± 1.173	-0.726 ± 1.377
PRF-fit source offset from KIC position	0.973 ± 1.286	0.76	0.658 ± 1.176	-0.716 ± 1.372
photometric centroid source offset	0.71 ± 1.82	0.39	0.33 ± 1.40	0.62 ± 1.92



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.

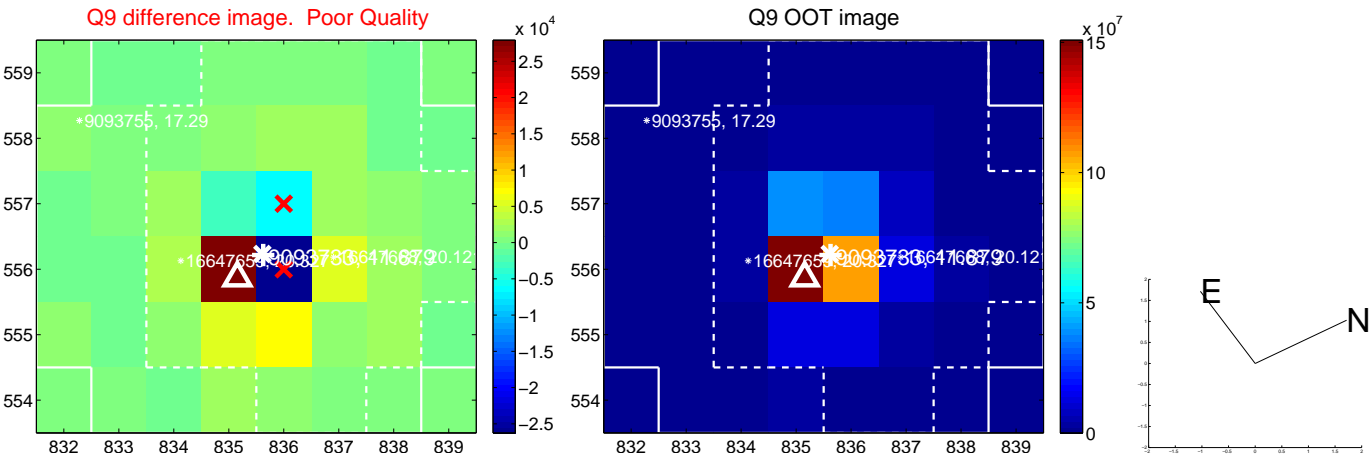
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



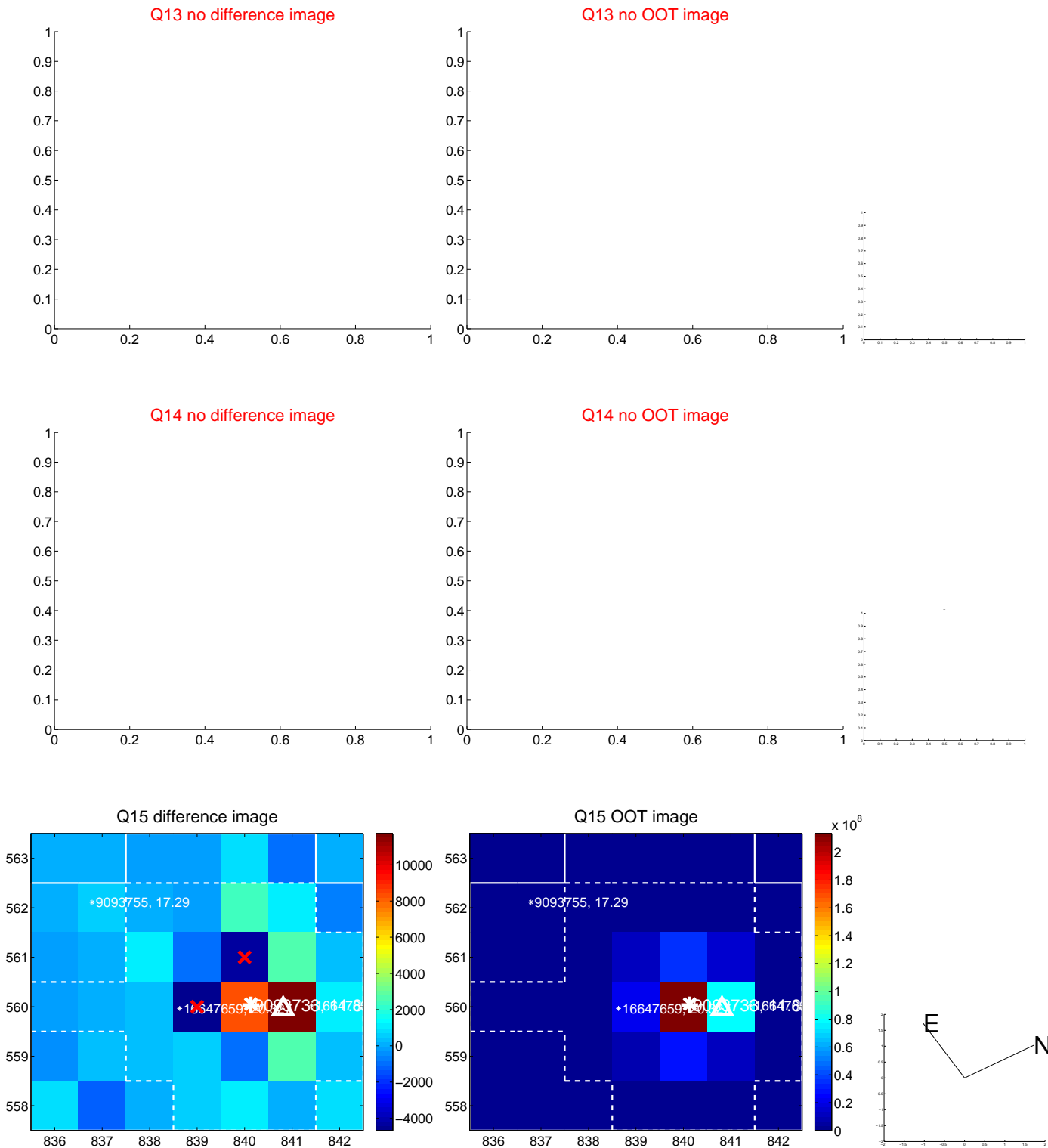
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



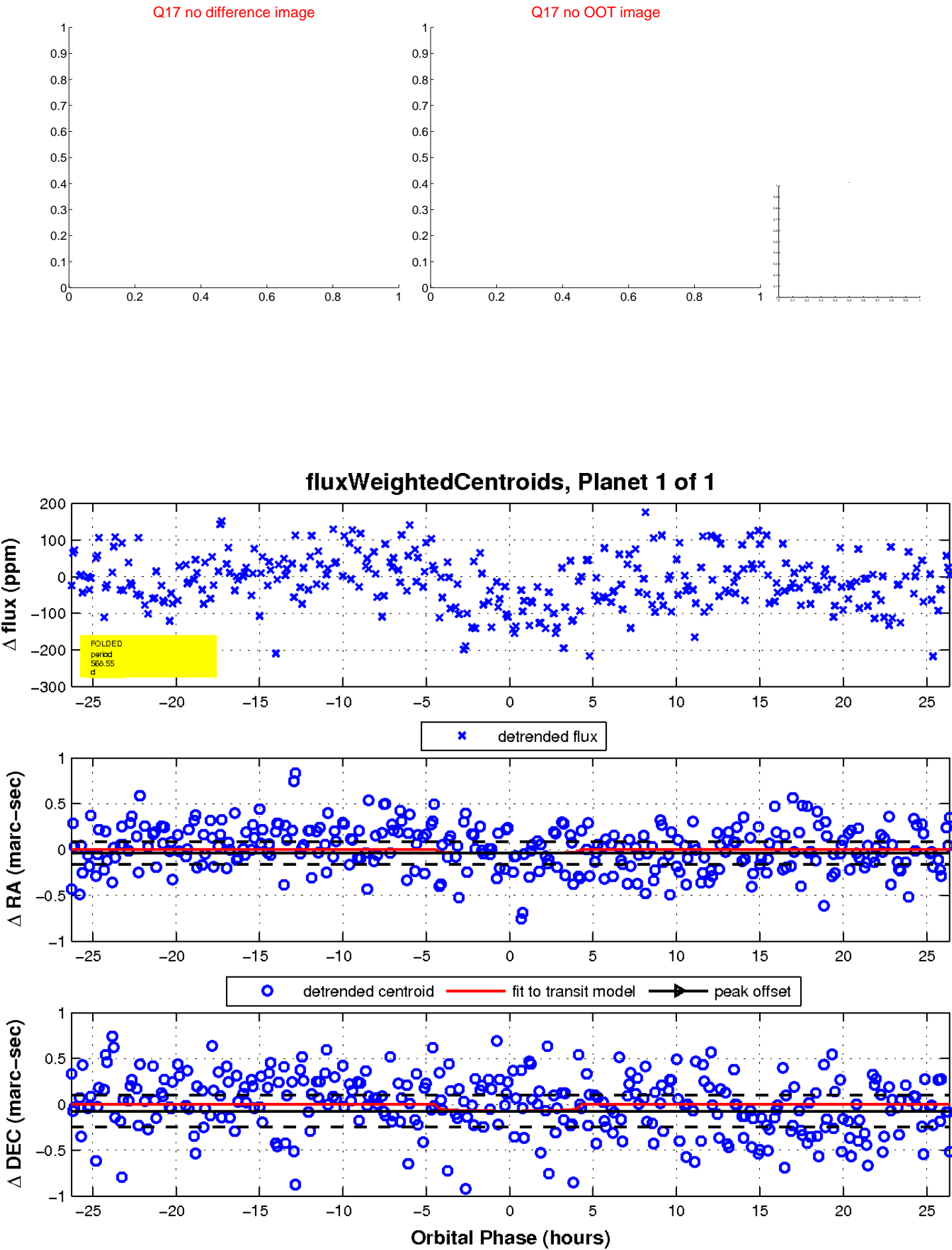
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

