

KIC 009590227

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})
009590227-01	OBS	No	521.133209	193.337936	553.9	30.707	26.9	11.5	2.37	5546	11.26	2.47

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
009590227-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL_SKYE—LPP_DV—LPP_ALT—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.

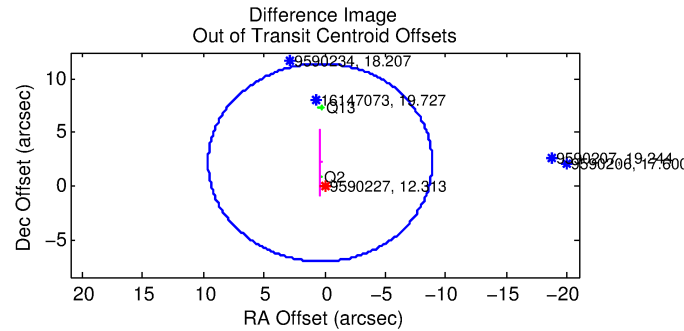
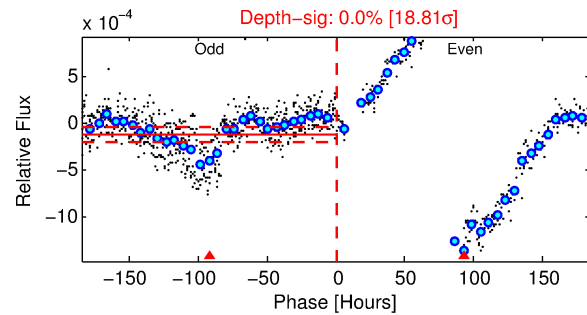
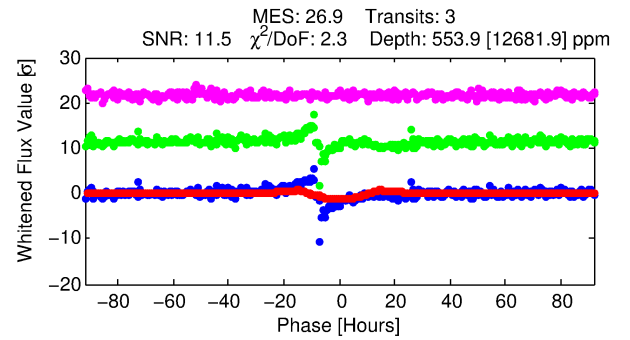
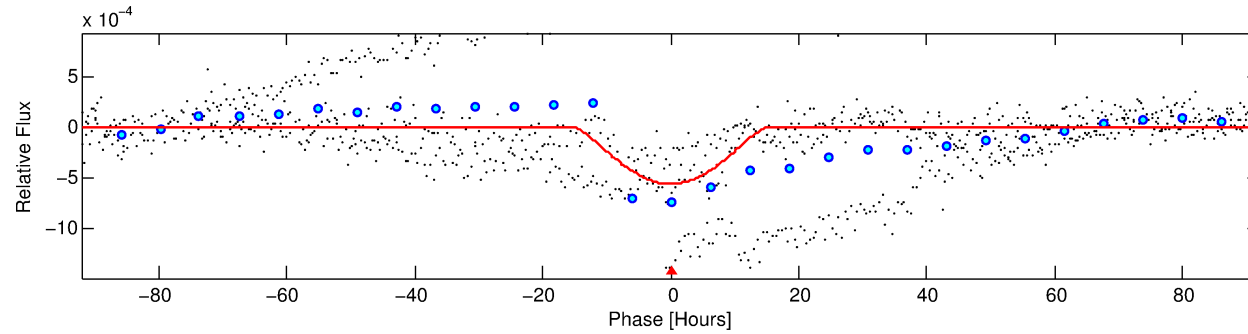
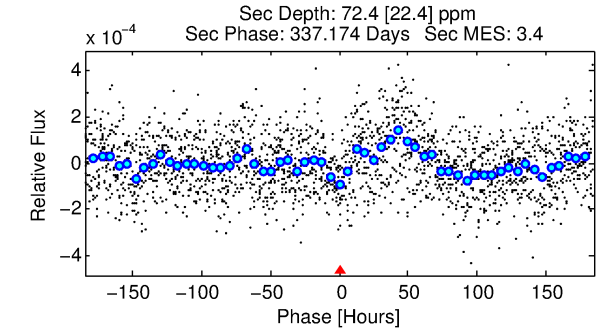
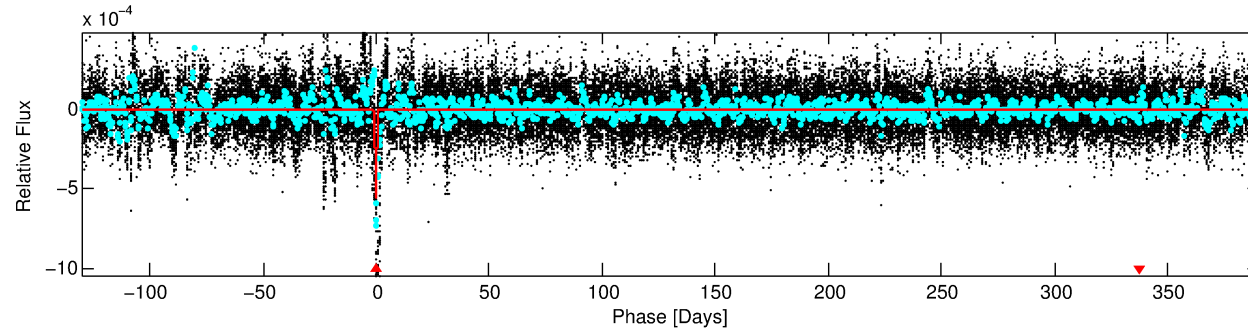
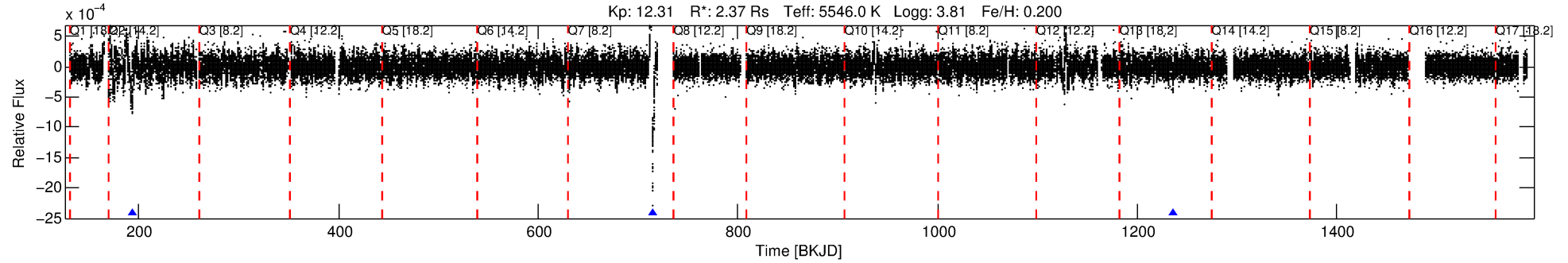
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 009590227-01

No Significant Match Found

DV One-Page Summary

KIC: 9590227 Candidate: 1 of 1 Period: 521.133 d



DV Fit Results:

Period = 521.13321 [0.04638] d
Epoch = 193.3379 [0.0671] BKJD
Rp/R* = 0.0436 [0.1080]
a/R* = 38.72 [23.09]
b = 1.00 [0.51]
Seff = 2.47 [1.40]
Teq = 320 [45] K
Rp = 11.26 [28.17] Re
a = 1.3864 [0.4840] AU
Ag = 604.45 [3016.59] [0.20 σ]
Teffp = 2450 [3039] K [0.70 σ]

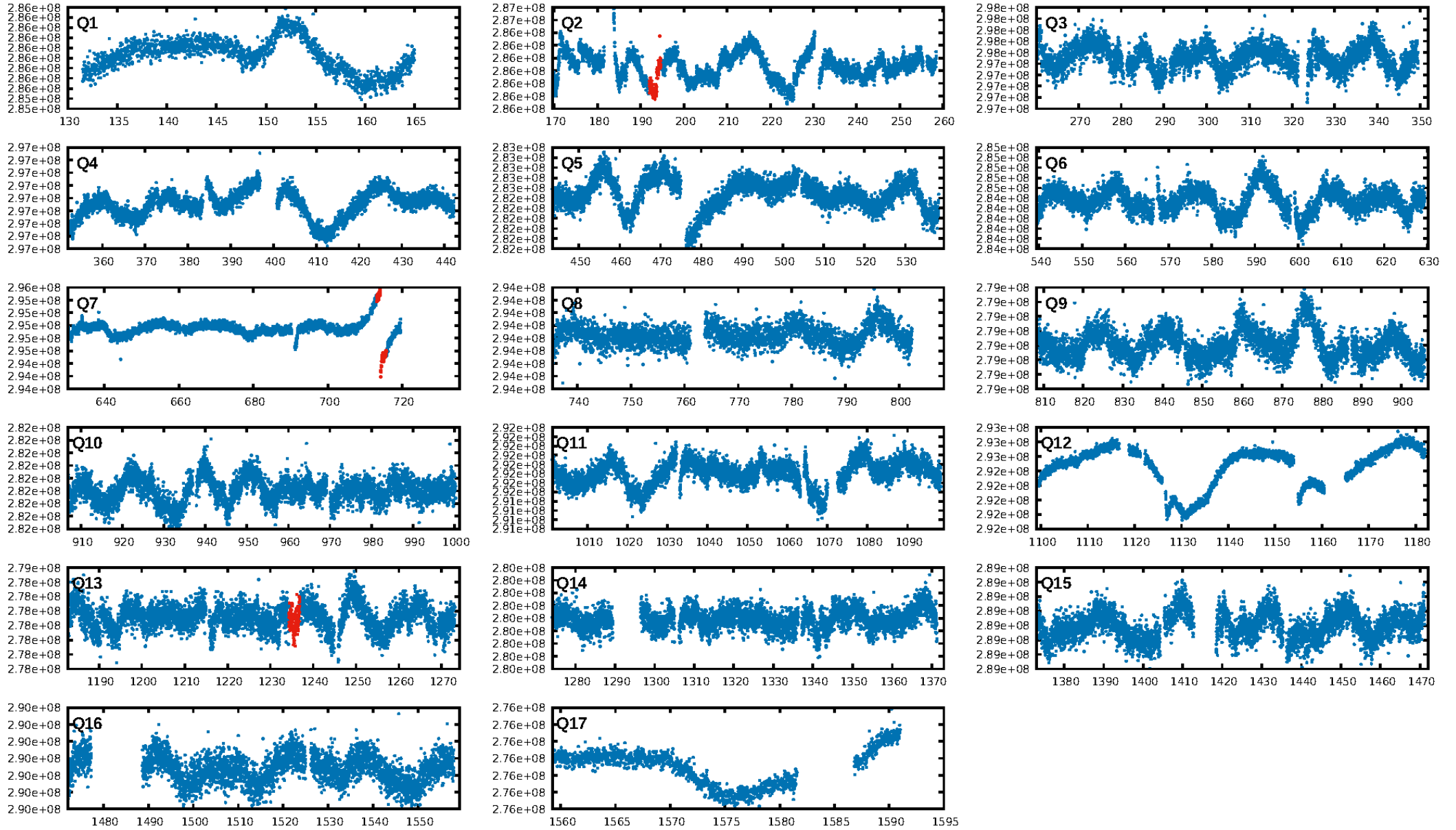
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: 0.0%
ModelChiSquareGof-sig: 1.5%
Bootstrap-pfa: 1.79e-79
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: 3.972
Centroid-sig: 5.6%
Centroid-so: 0.838 arcsec [1.90 σ]
OotOffset-rm: 2.218 arcsec [0.72 σ]
KicOffset-rm: 2.220 arcsec [0.72 σ]
OotOffset-st: 1/0/0/1 [2]
KicOffset-st: 1/0/0/1 [2]
DiffImageQuality-fgm: 0.50 [1/2]
DiffImageOverlap-fno: 1.00 [2/2]

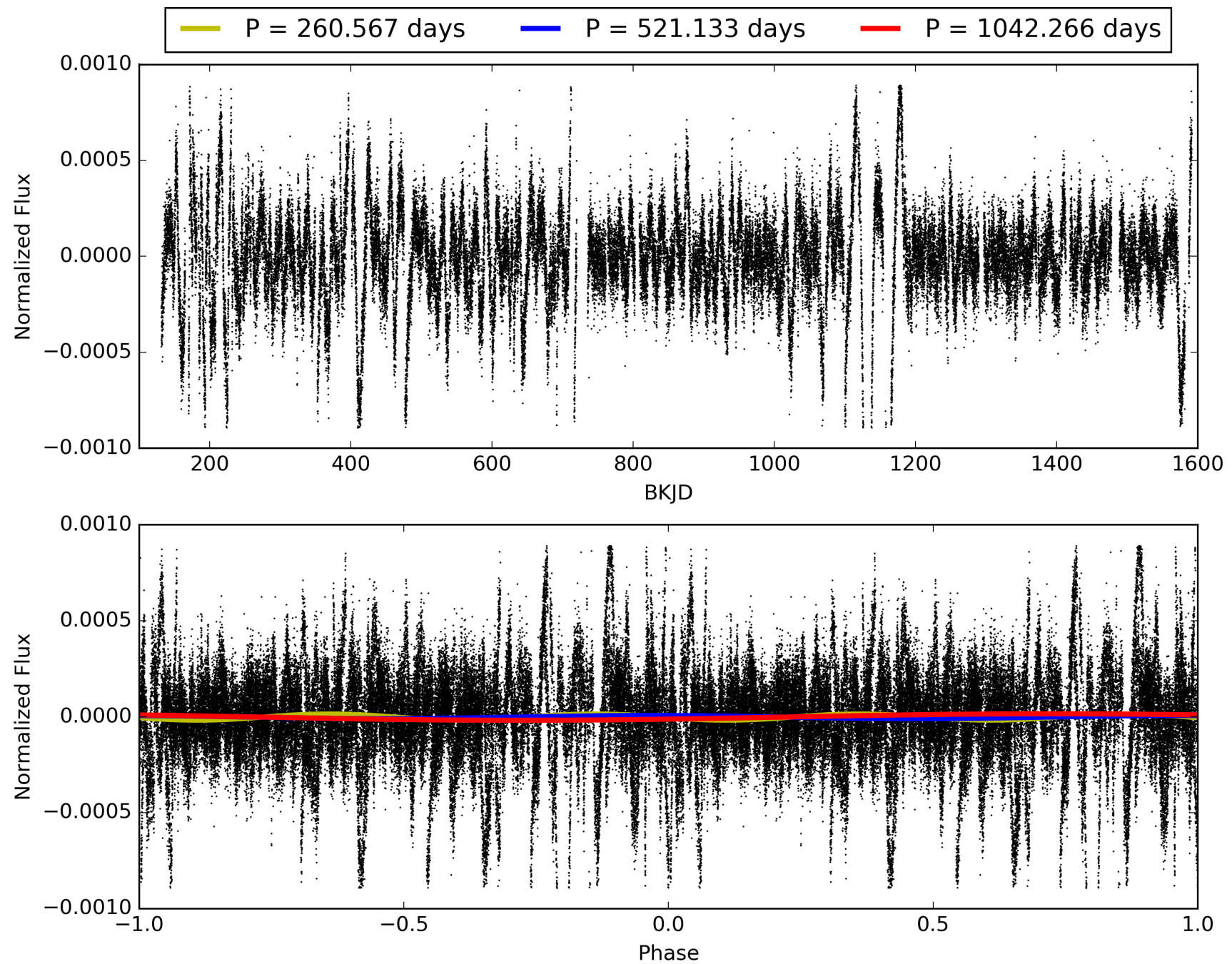
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 14:45:25 Z

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

TCE 009590227-01, PDC Light Curves

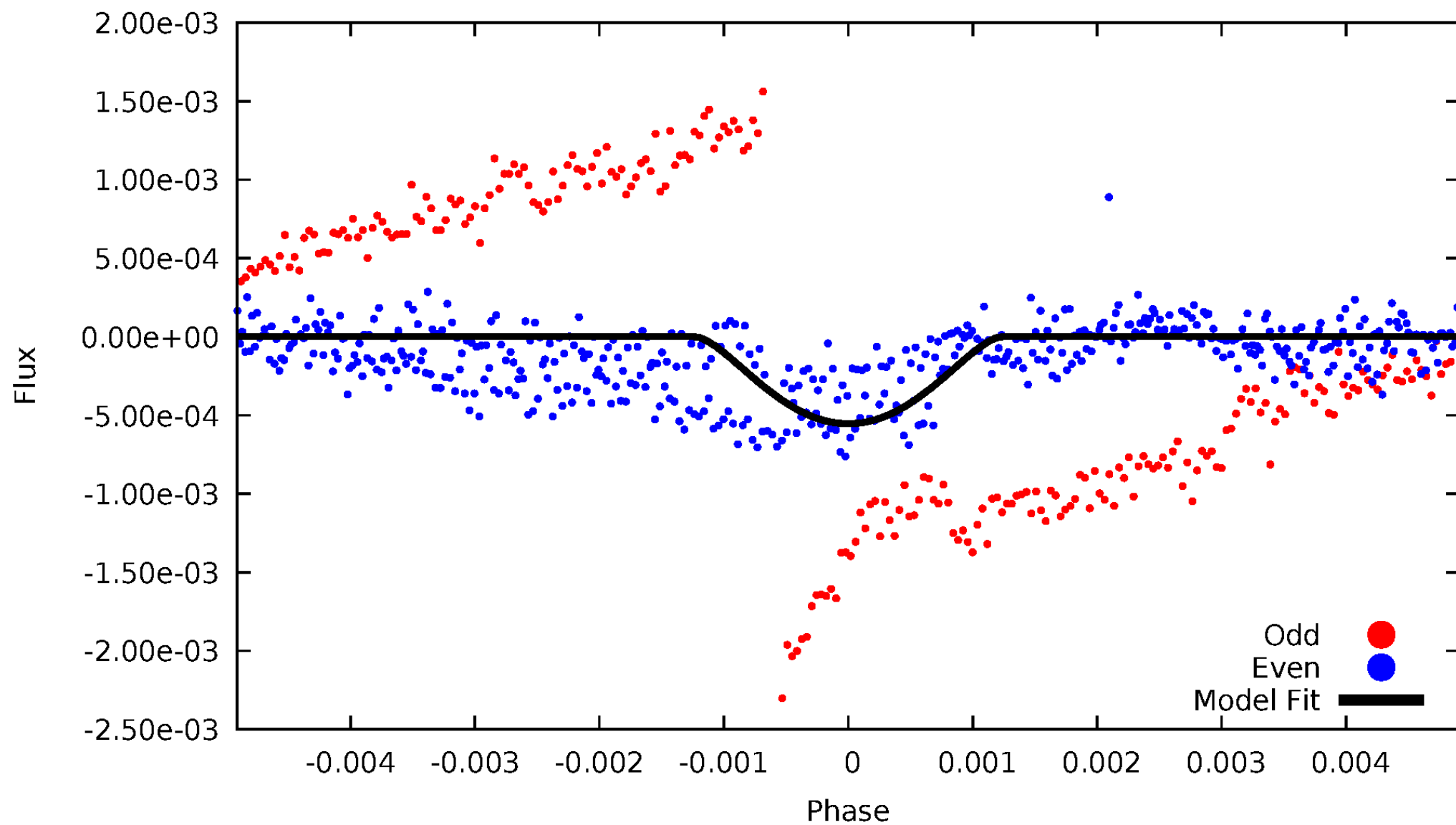


TCE 009590227-01



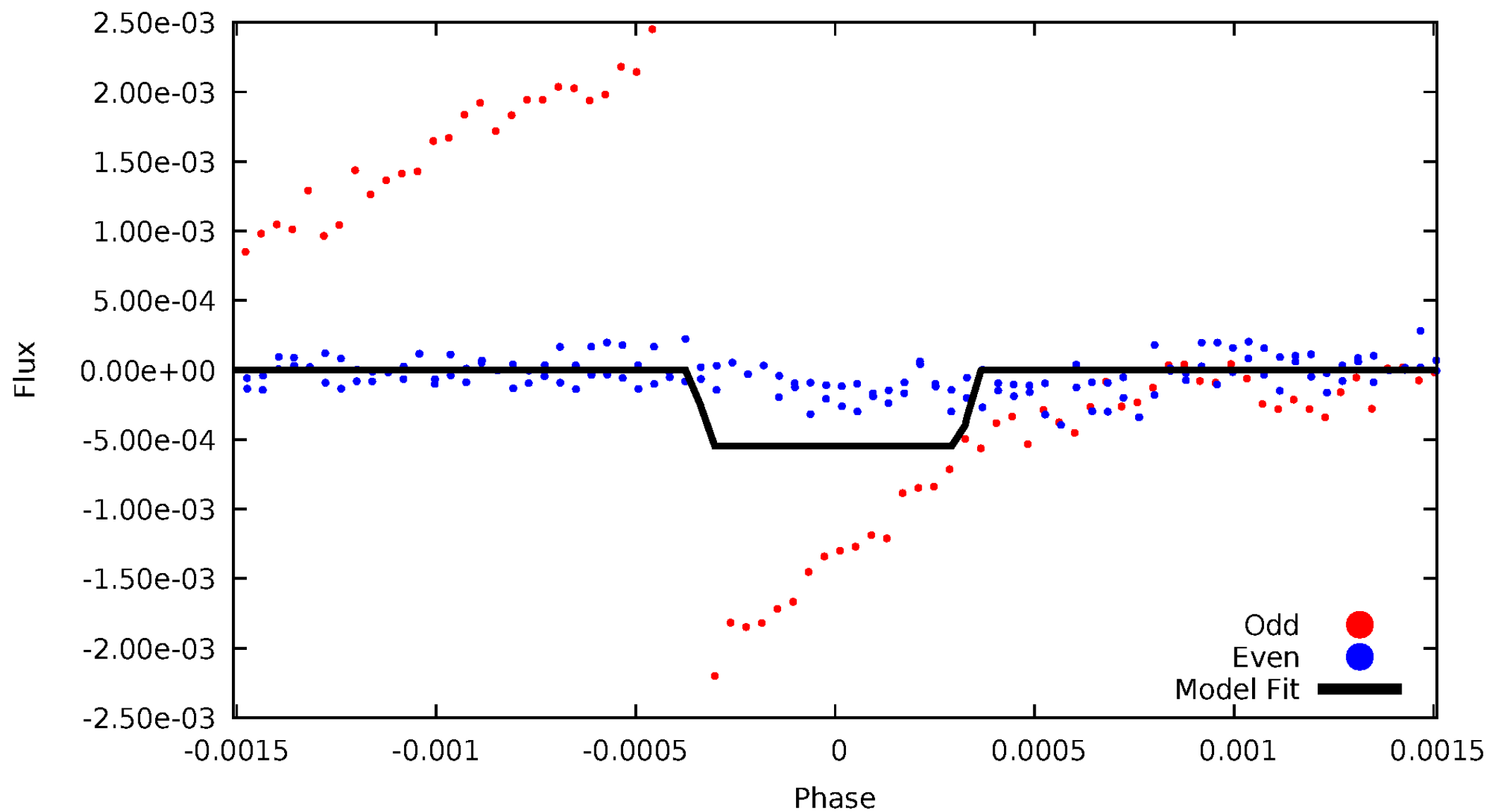
DV Odd/Even

TCE 009590227-01



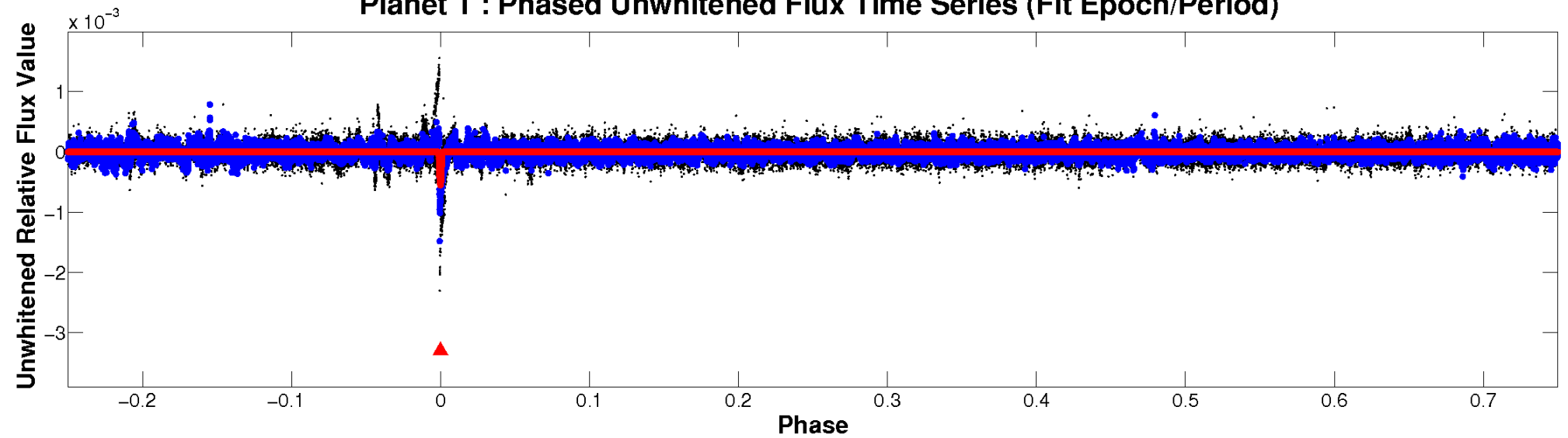
ALT Odd/Even

TCE 009590227-01

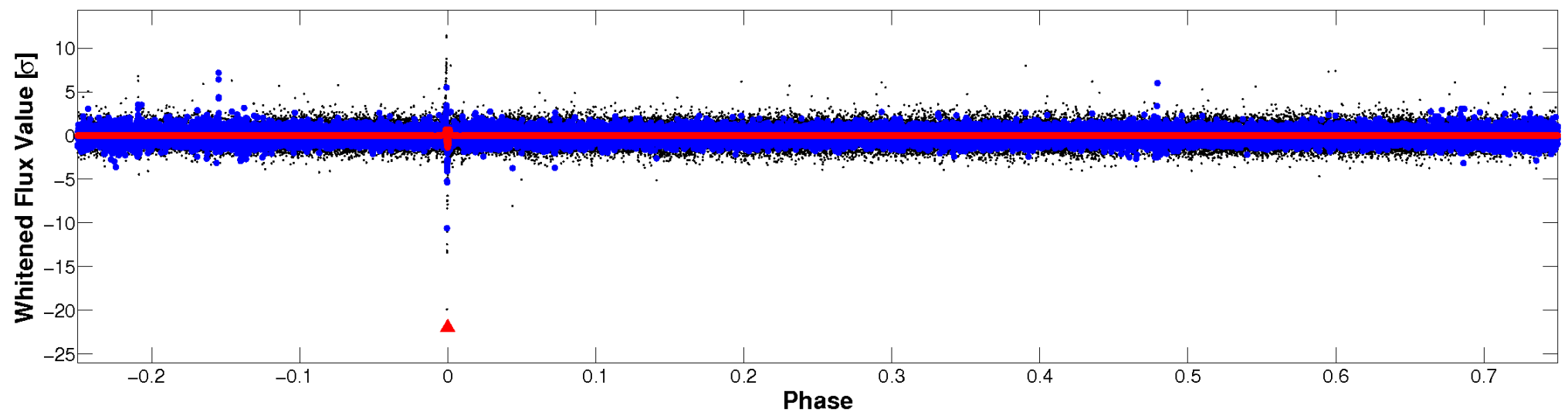


Non-Whitened Vs. Whitened Light Curve

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

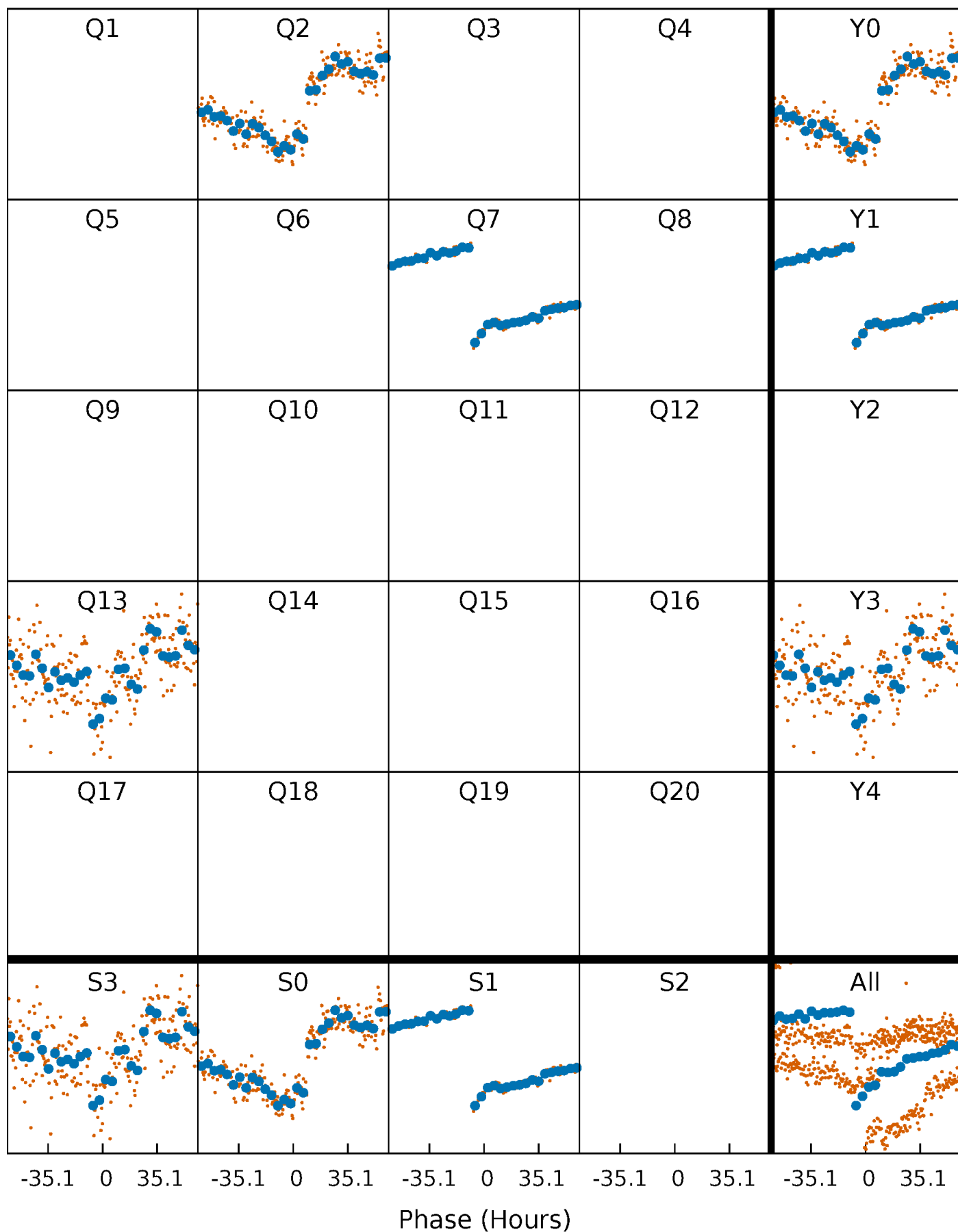


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



PDC Quarter-Phased Transit Curves

TCE 009590227-01 P=521.133209 Days $T_0=193.337936$ (BKJD)



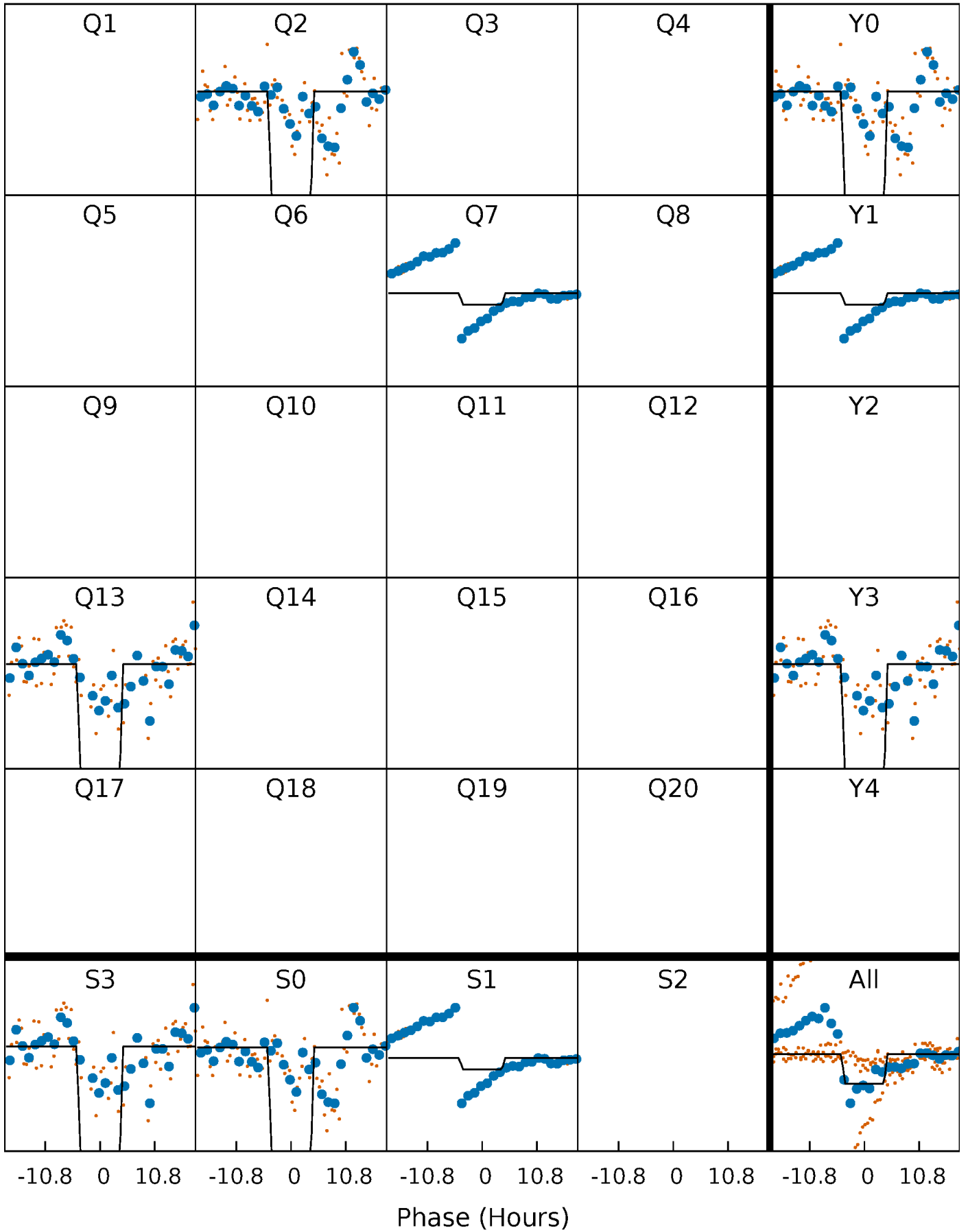
DV Quarter-Phased Transit Curves

TCE 009590227-01 P=521.133209 Days $T_0=193.337936$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

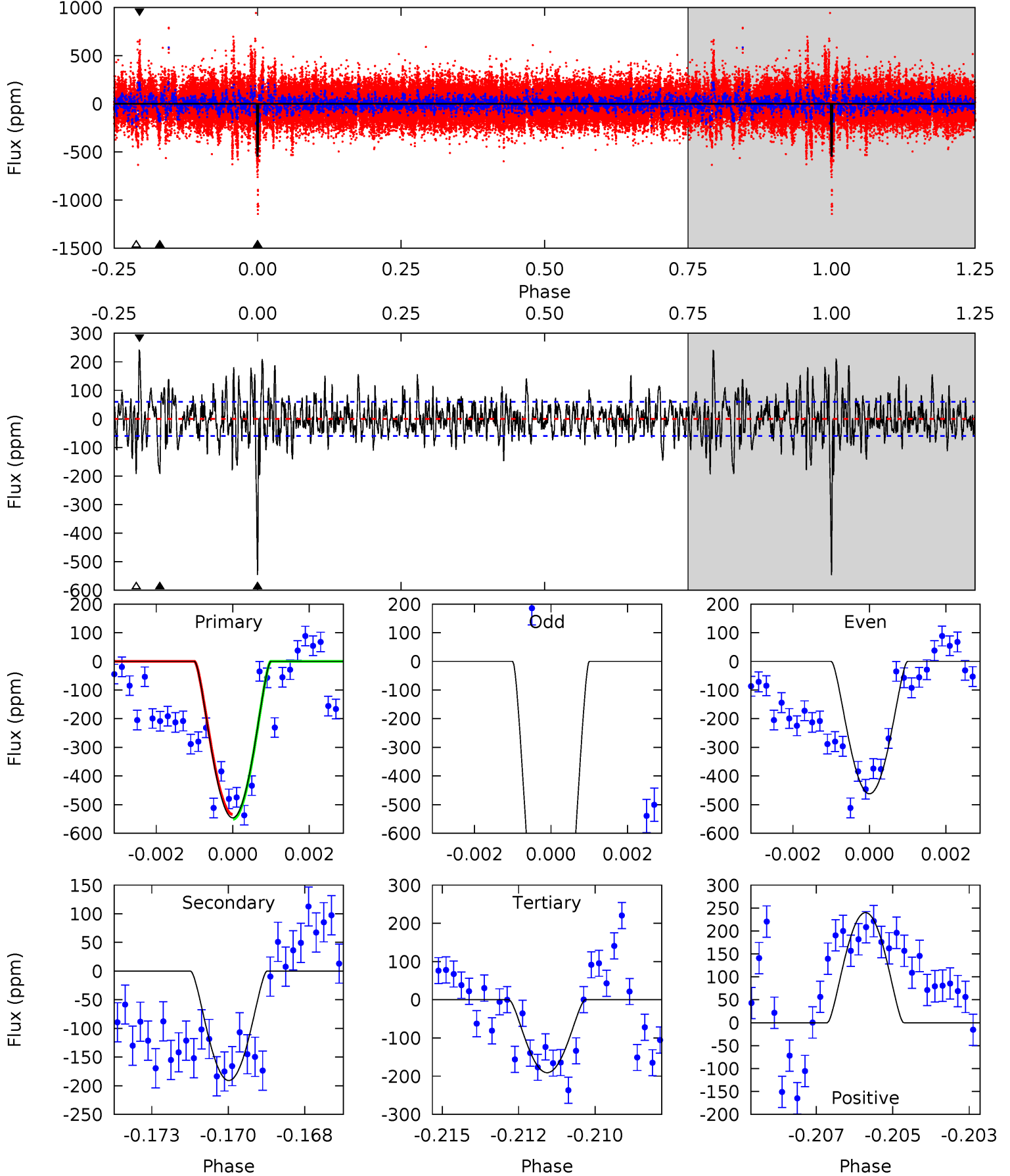
TCE 009590227-01 $P=521.055780$ Days $T_0=193.296327$ (BKJD)



DV Model-Shift Uniqueness Test

009590227-01, P = 521.133209 Days, E = 193.337936 Days

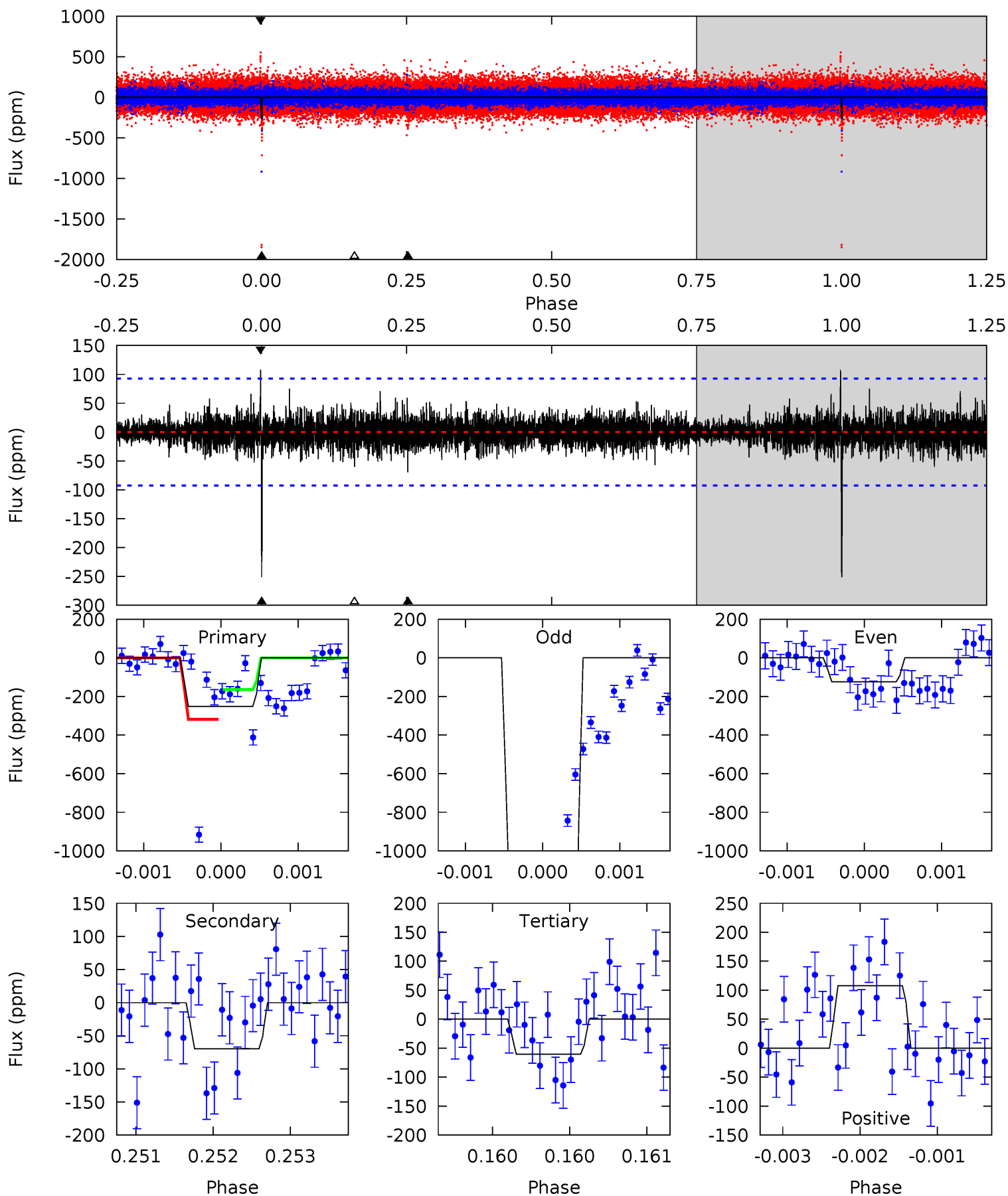
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
48.2	16.9	16.9	21.2	5.29	3.03	4.74	31.4	27.0	0.01	-4.34	46.0	1.16	0.31	0.73



Alt Model-Shift Uniqueness Test

009590227-01, P = 521.055780 Days, E = 193.296327 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
14.9	4.14	3.59	6.40	5.51	3.39	0.96	11.3	8.54	0.55	-2.26	39.6	3.34	0.30	4.55



Stellar Parameters For KIC 009590227

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$\rho_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5546^{+181}_{-148}	$3.807^{+0.323}_{-0.108}$	$0.200^{+0.200}_{-0.250}$	$2.365^{+0.403}_{-0.872}$	$1.308^{+0.131}_{-0.305}$	$0.139^{+0.333}_{-0.046}$
	+3%/-3%	+8%/-3%	+100%/-125%	+17%/-37%	+10%/-23%	+239%/-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 009590227-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-191 ± 11	$22.10^{+21.49}_{-14.80}$	441^{+29}_{-41}	2866^{+1215}_{-453}	395^{+3330}_{-289}
Alt.	-70 ± 17	$20.03^{+20.07}_{-14.08}$	440^{+29}_{-41}	2602^{+963}_{-428}	195^{+1514}_{-154}

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

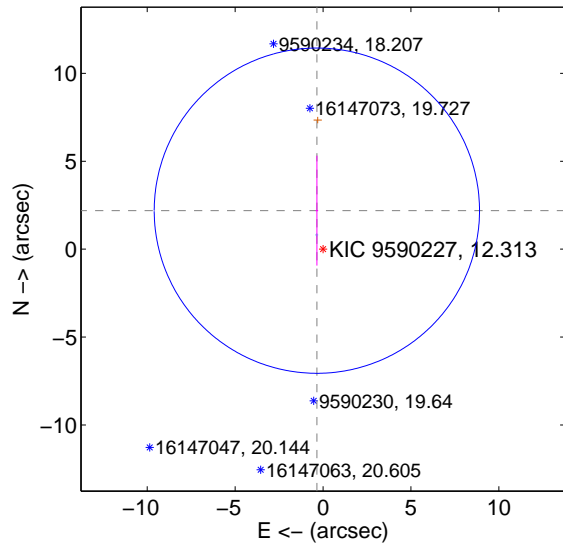
Supplemental centroid analysis for 009590227-01. Kepler magnitude: 12.31. Transit SNR 11.52

There are 1 quarters with good PRF difference image offsets

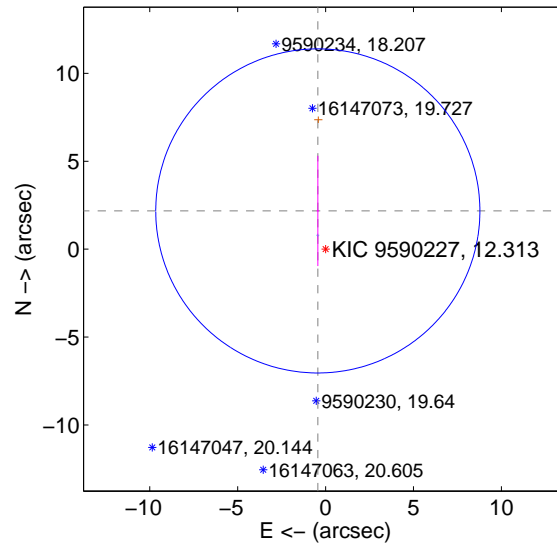
The direct PRF centroid is offset from the target star catalog position by about 0.12 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	2.218 ± 3.084	0.72	0.351 ± 0.072	2.190 ± 3.127
PRF-fit source offset from KIC position	2.220 ± 3.073	0.72	0.441 ± 0.068	2.176 ± 3.135
photometric centroid source offset	0.84 ± 0.44	1.90	0.75 ± 0.43	-0.38 ± 0.48

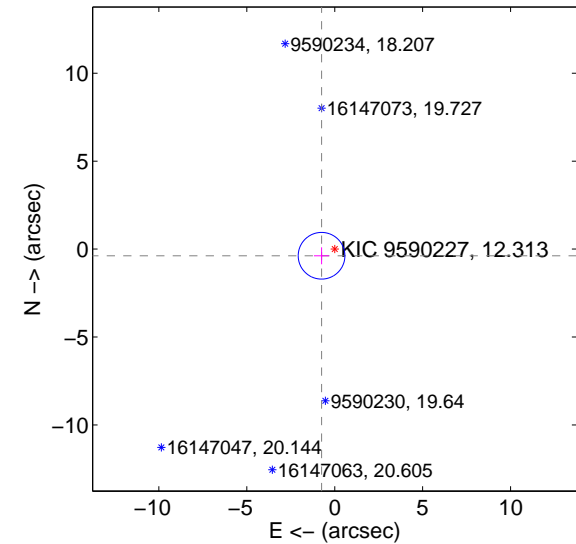
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

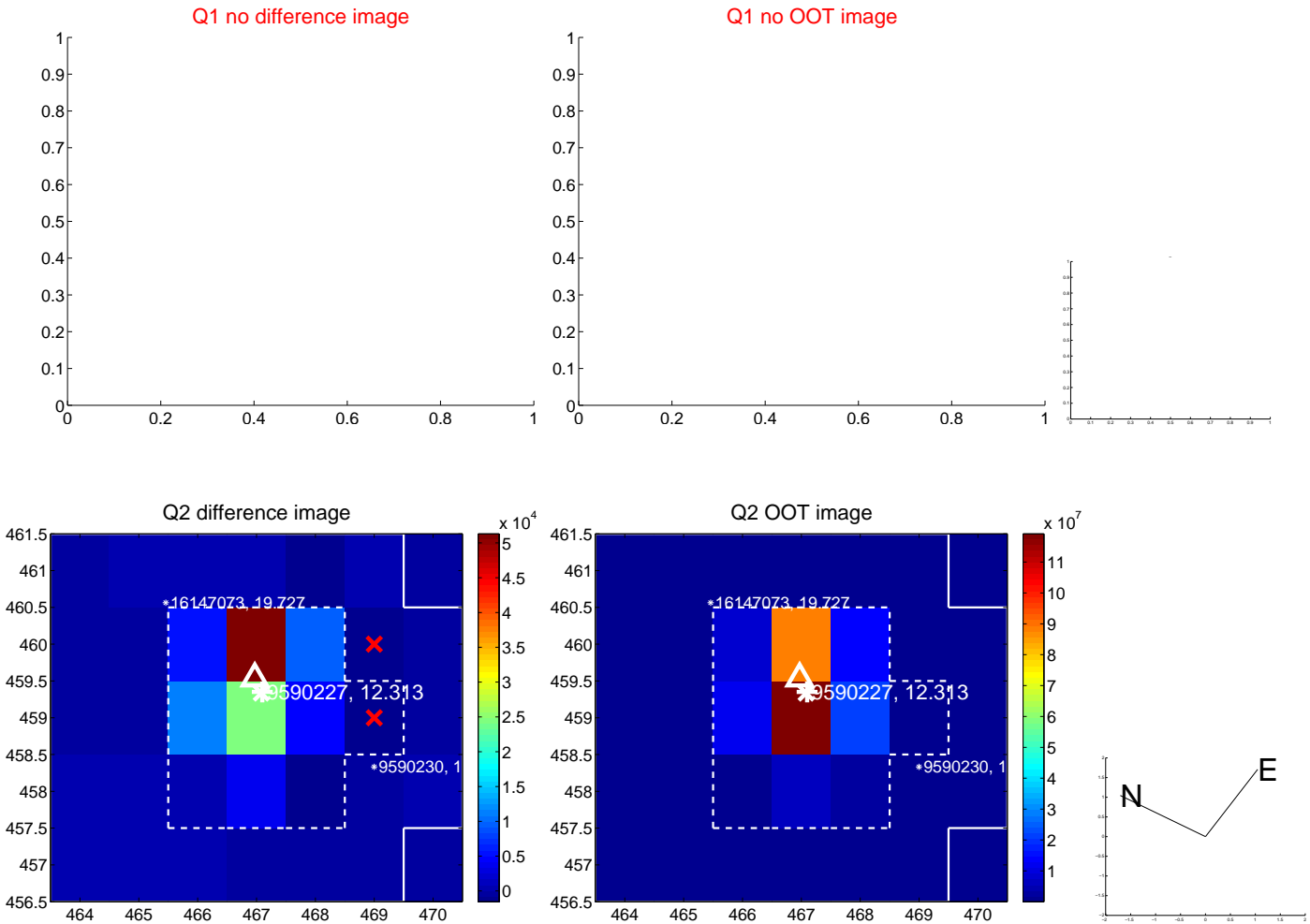


offset from photometric centroids



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.



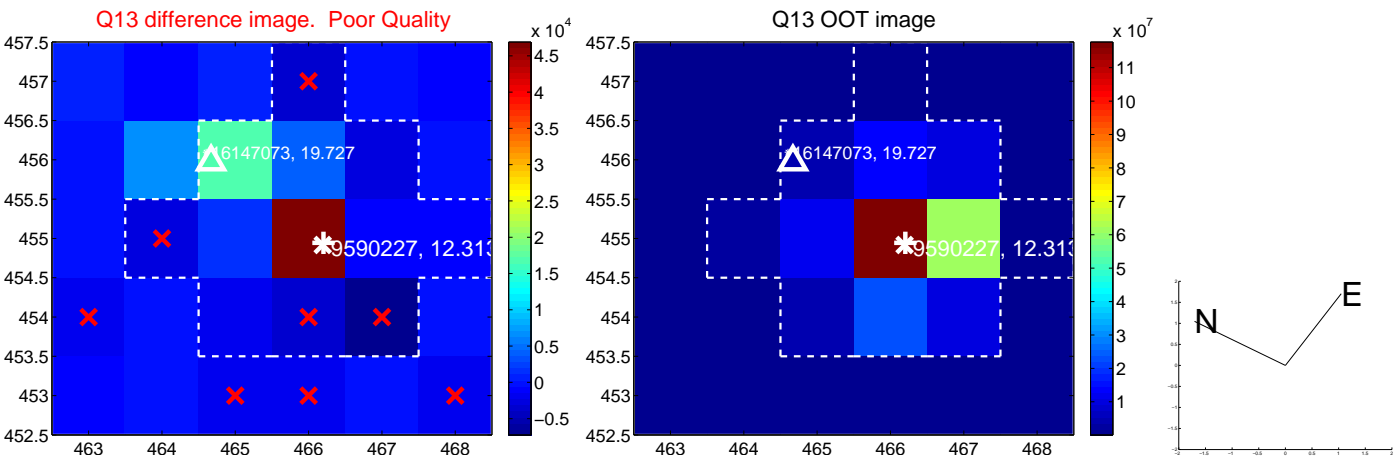
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



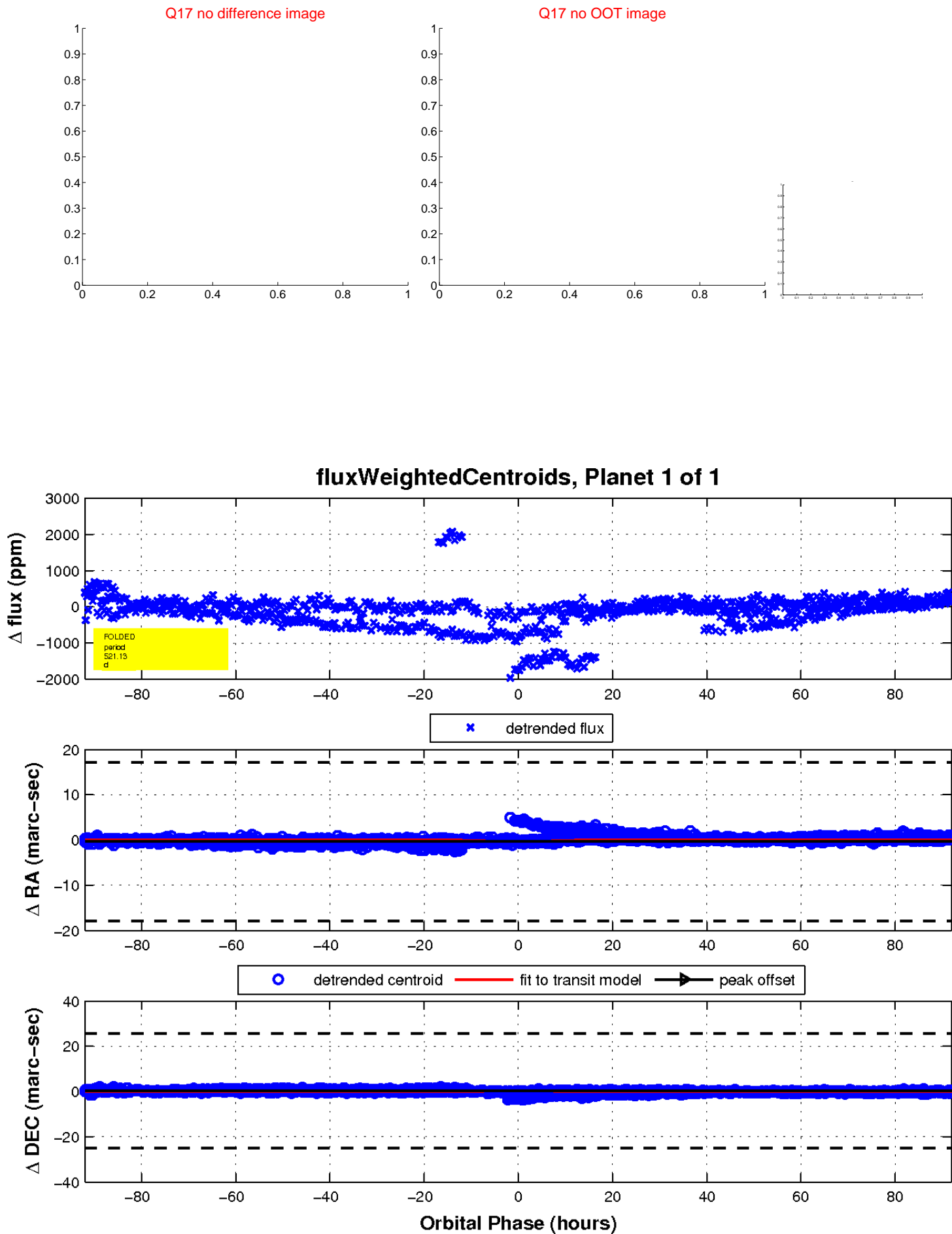
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



white \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.



UKIRT Image

Declination

