

KIC 009590720

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})
009590720-01	OBS	No	499.305008	389.801249	550.0	18.150	9.7	5.9	0.73	5565	1.85	0.36

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
009590720-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL—LPP_DV—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—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.

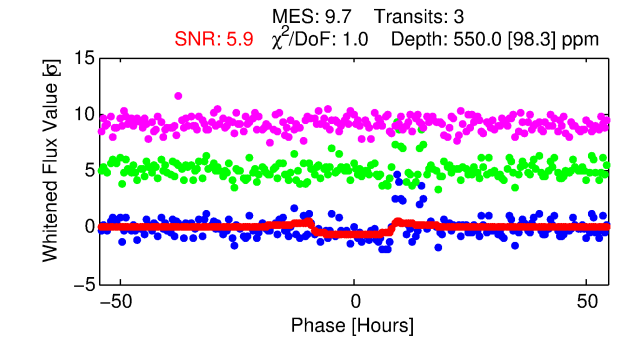
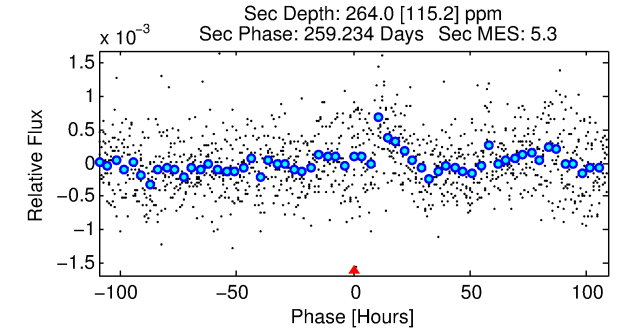
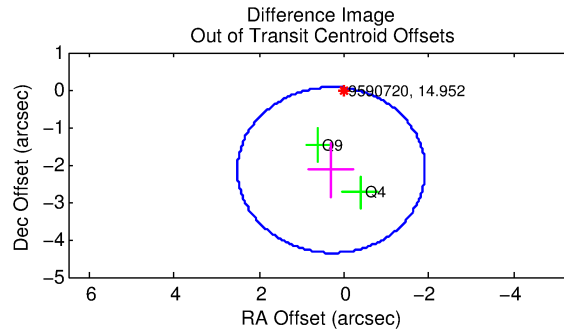
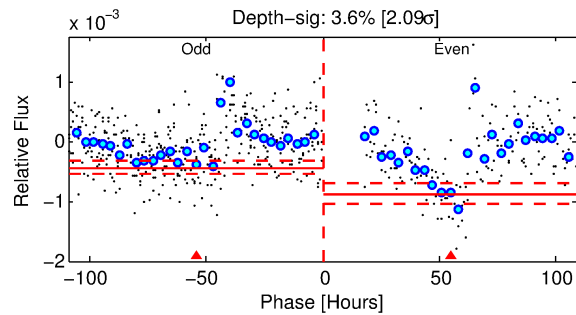
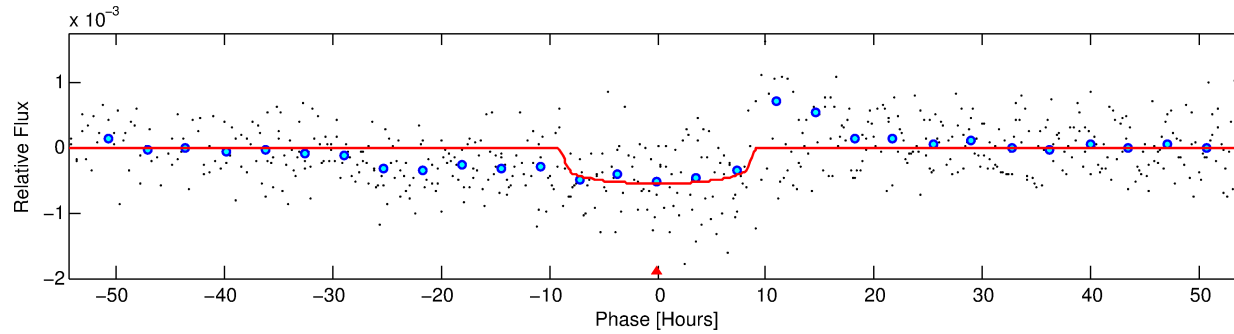
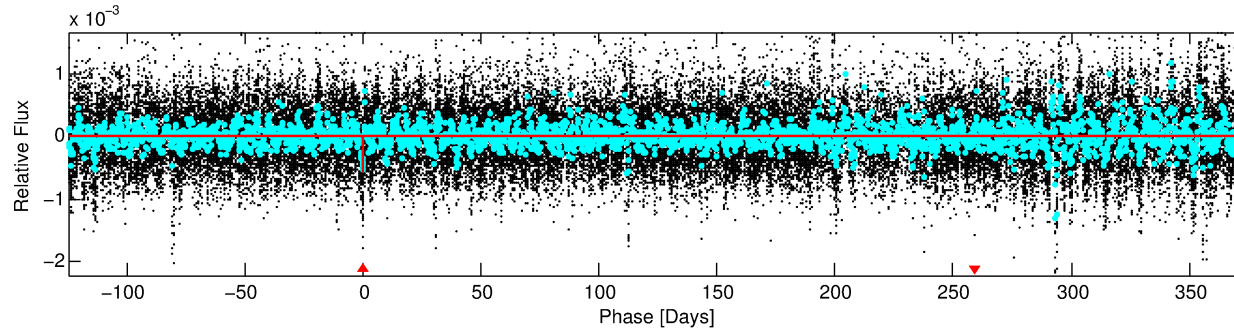
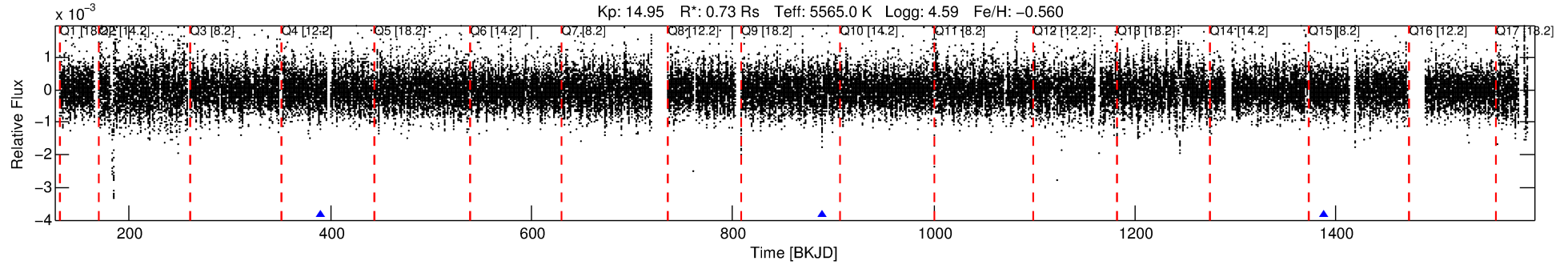
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 009590720-01

No Significant Match Found

DV One-Page Summary

KIC: 9590720 Candidate: 1 of 1 Period: 499.305 d



DV Fit Results:

Period = 499.30501 [0.01690] d
Epoch = 389.8012 [0.0214] BKJD
Rp/R* = 0.0230 [0.0062]
a/R* = 153.80 [171.28]
b = 0.71 [0.77]
Seff = 0.36 [0.09]
Teq = 198 [12] K
Rp = 1.85 [0.60] Re
a = 1.1309 [0.1702] AU
Ag = 54511.03 [39420.90] [1.38 σ]
Teffp = 4673 [820] K [5.46 σ]

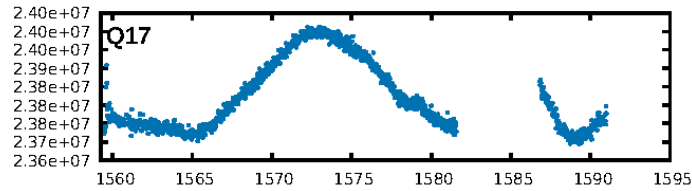
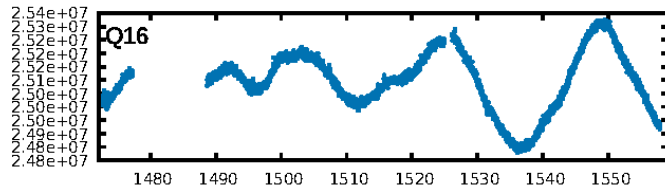
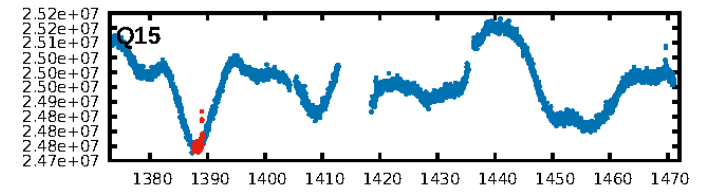
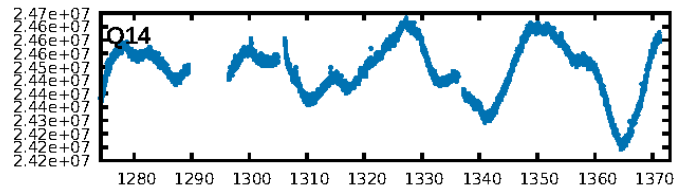
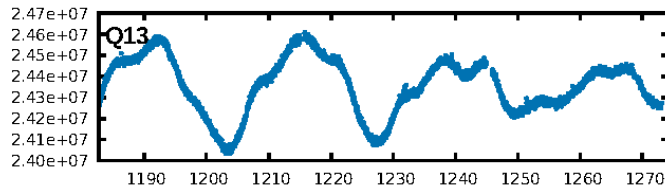
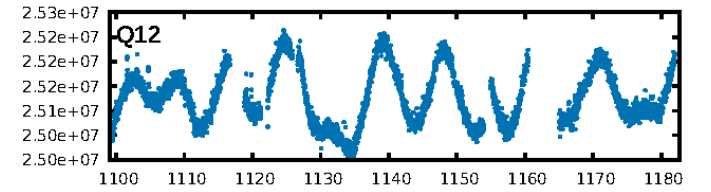
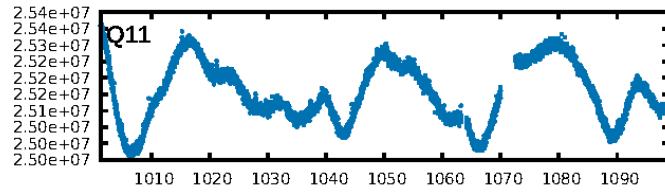
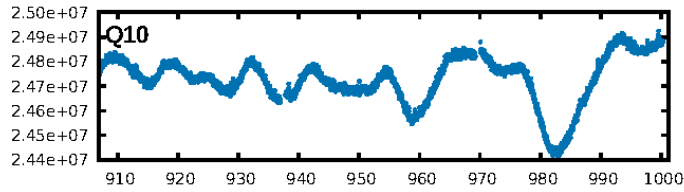
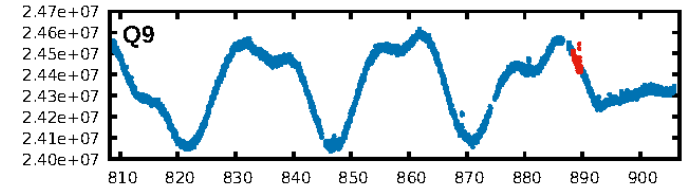
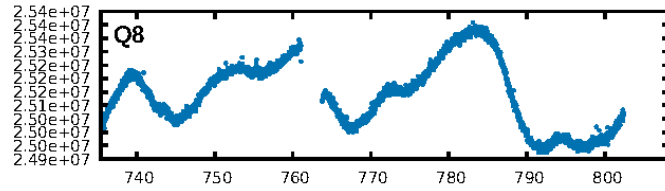
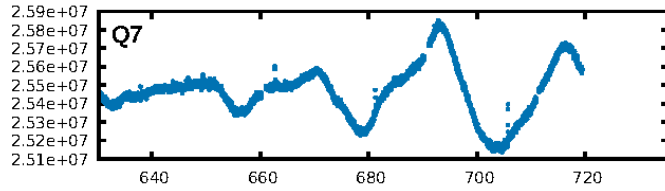
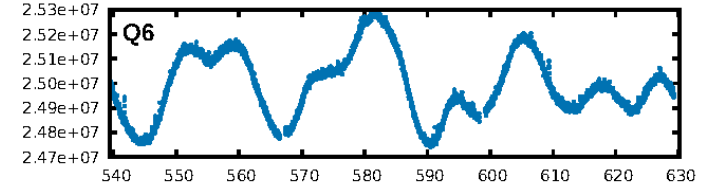
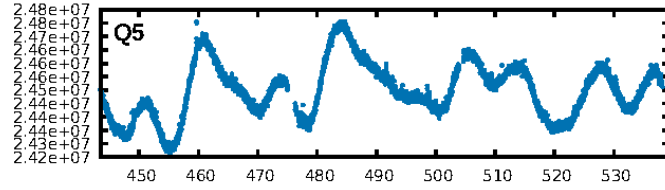
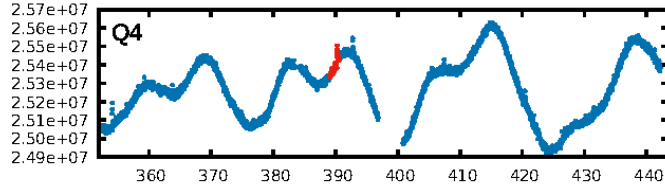
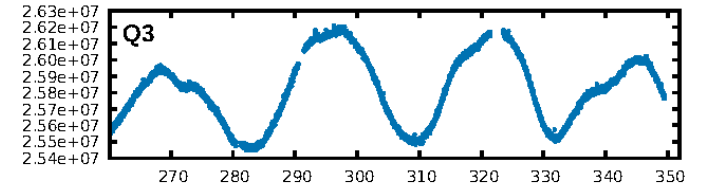
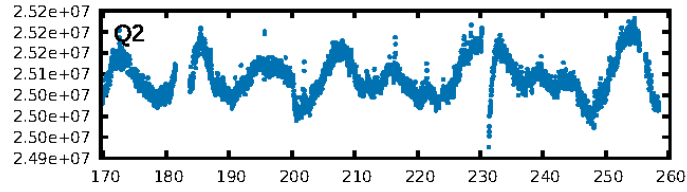
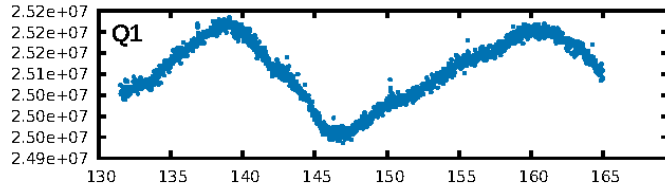
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: 5.0%
ModelChiSquareGof-sig: 99.4%
Bootstrap-pfa: 5.28e-10
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: -6.196
Centroid-sig: 0.7%
Centroid-so: 2.122 arcsec [1.80 σ]
OotOffset-rm: 2.165 arcsec [2.94 σ]
OotOffset-st: 0/0/1/1 [2]
KicOffset-rm: 2.178 arcsec [2.82 σ]
KicOffset-st: 0/0/1/1 [2]
DiffImageQuality-fgm: 0.50 [1/2]
DiffImageOverlap-fno: 1.00 [2/2]

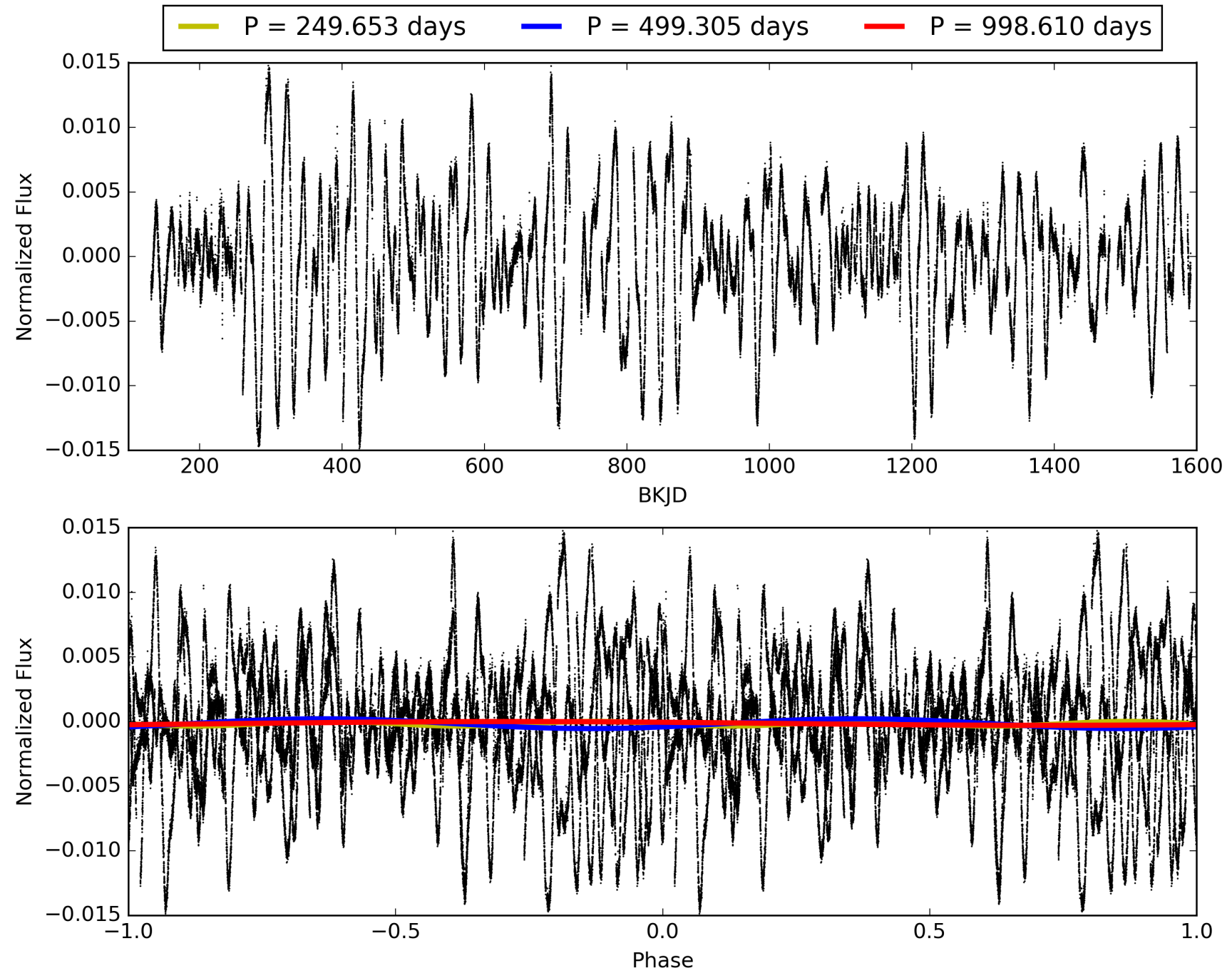
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 12:53:56 Z

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

TCE 009590720-01, PDC Light Curves

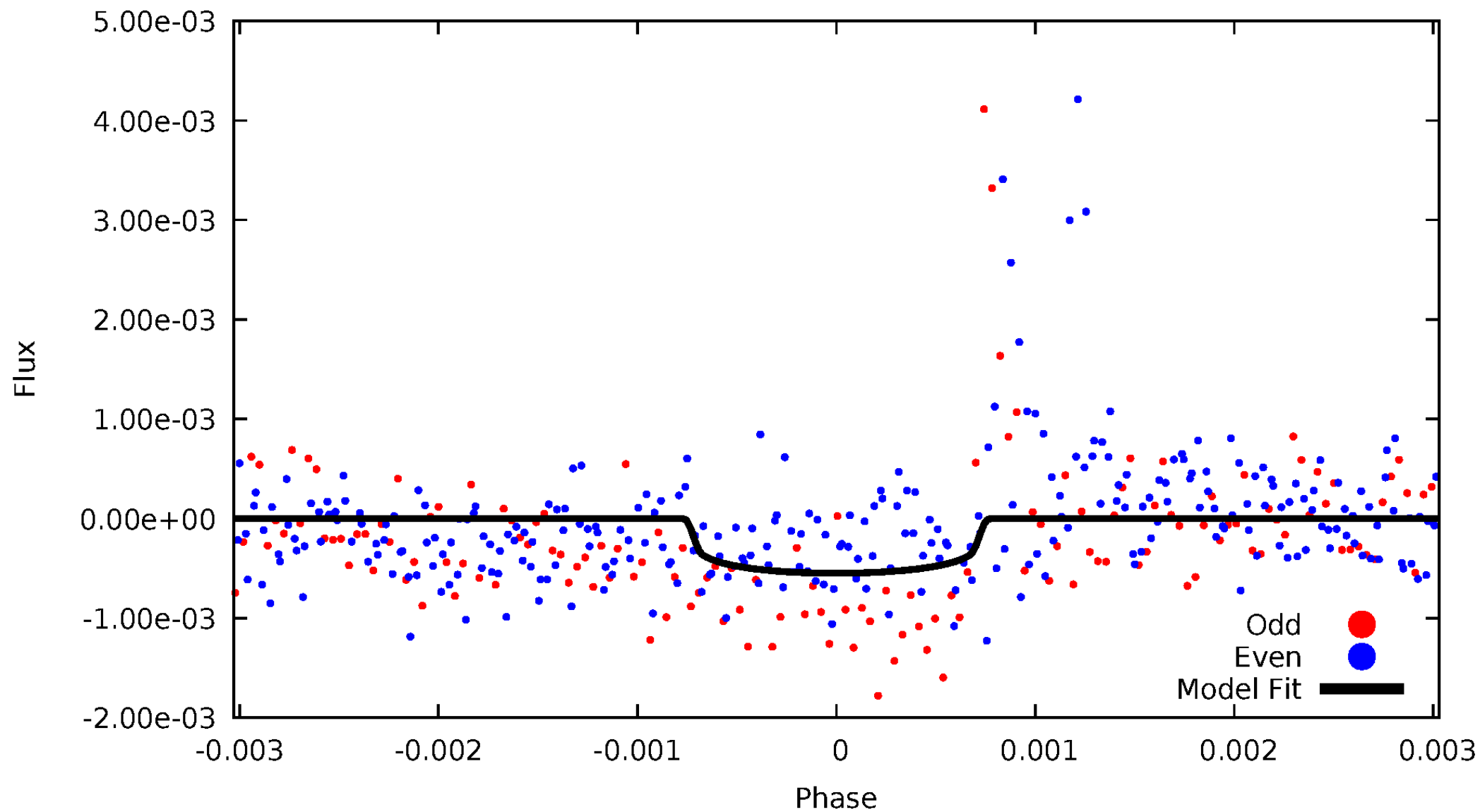


TCE 009590720-01



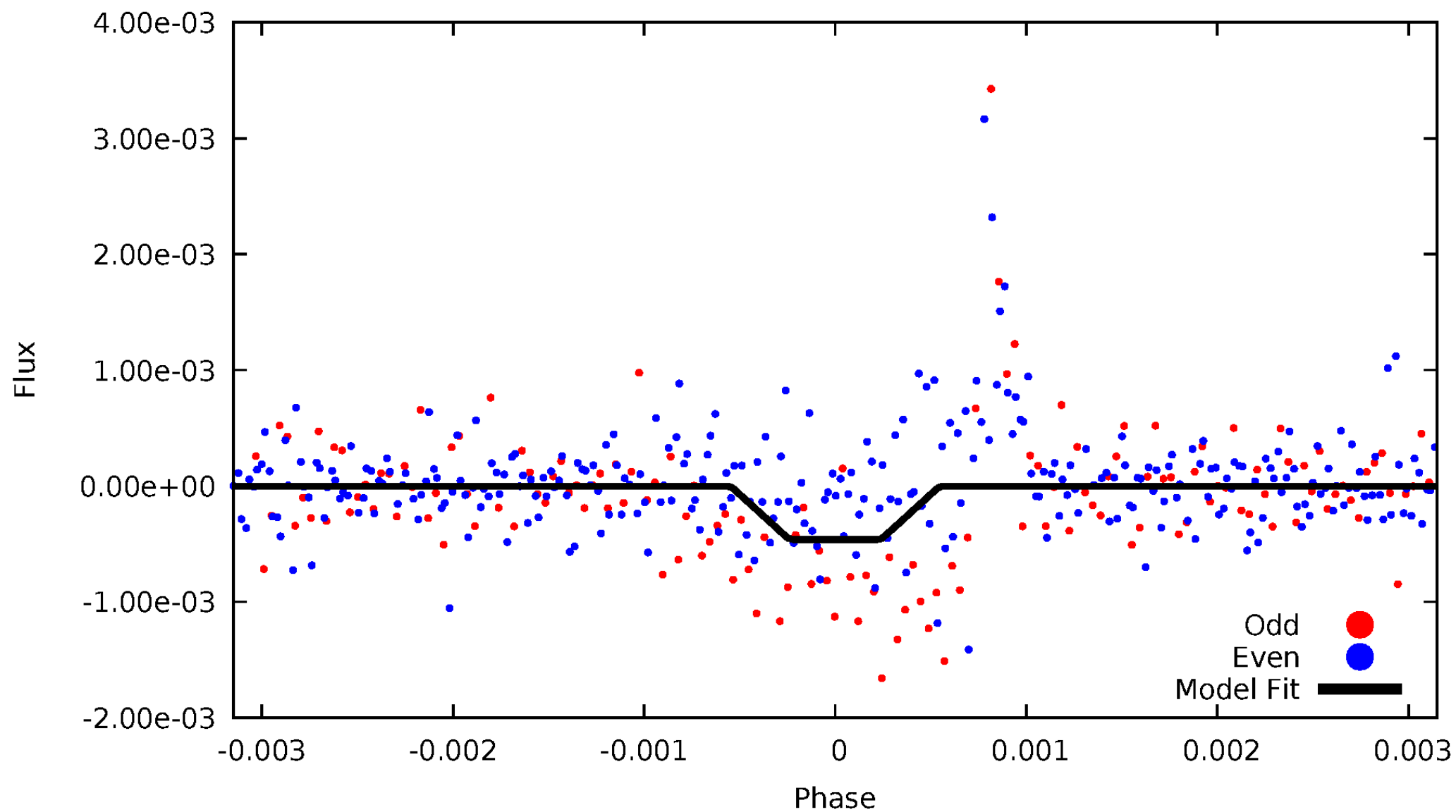
DV Odd/Even

TCE 009590720-01



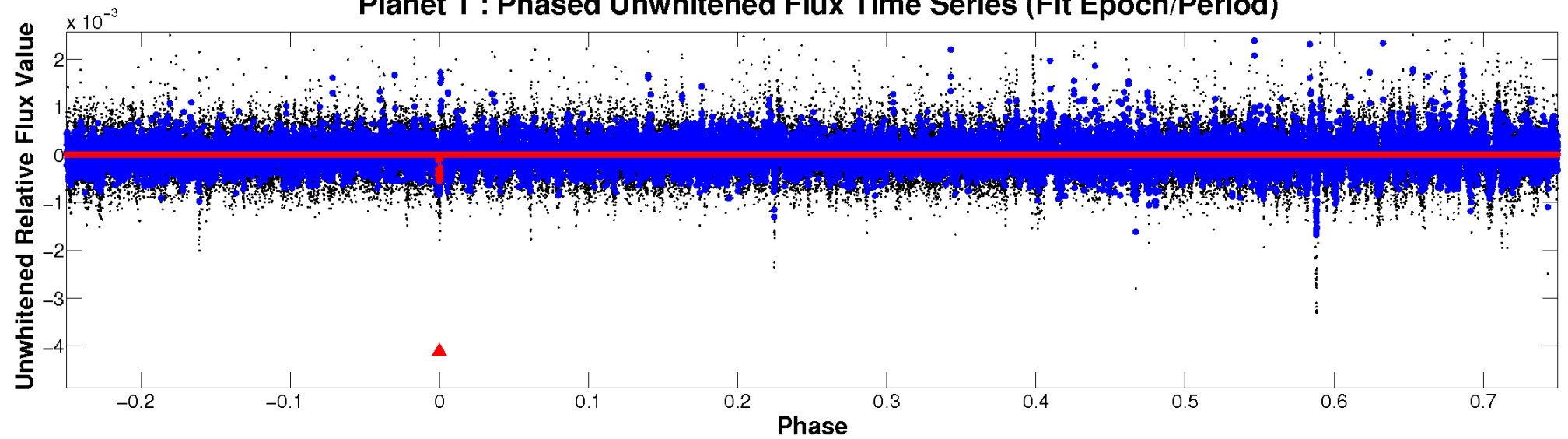
ALT Odd/Even

TCE 009590720-01

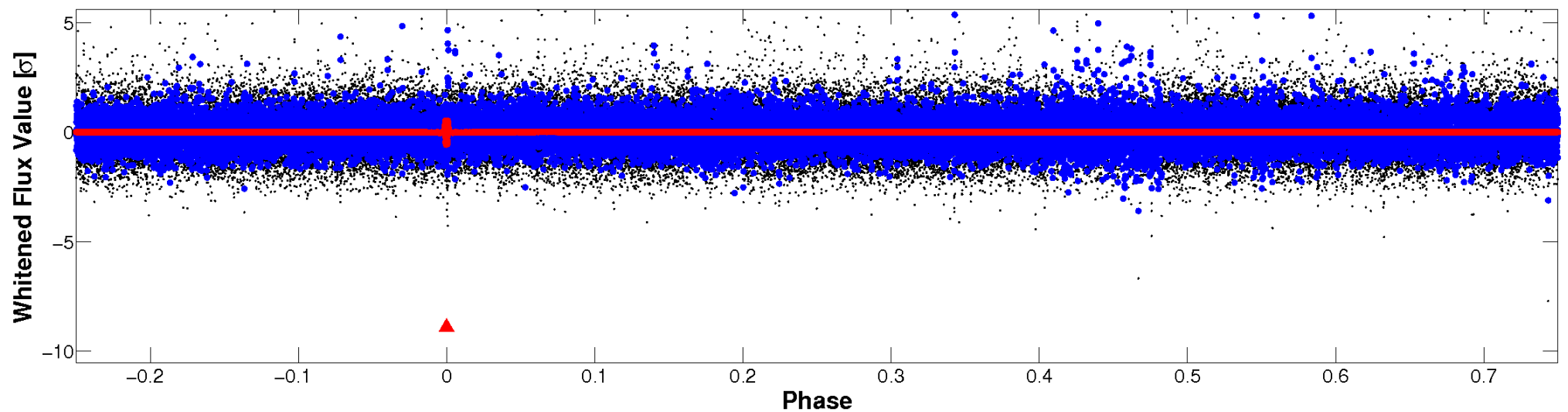


Non-Whitened Vs. Whitened Light Curve

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

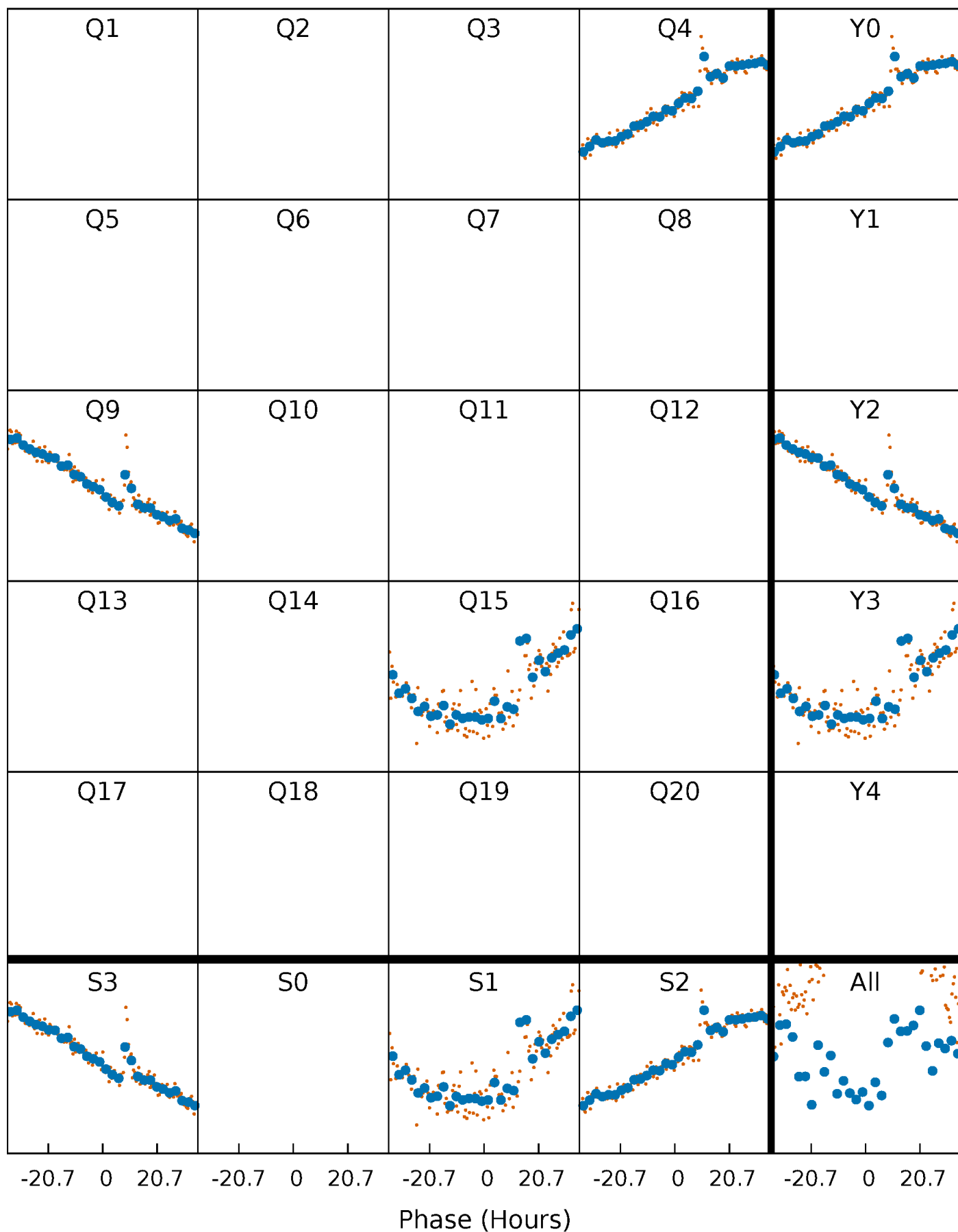


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



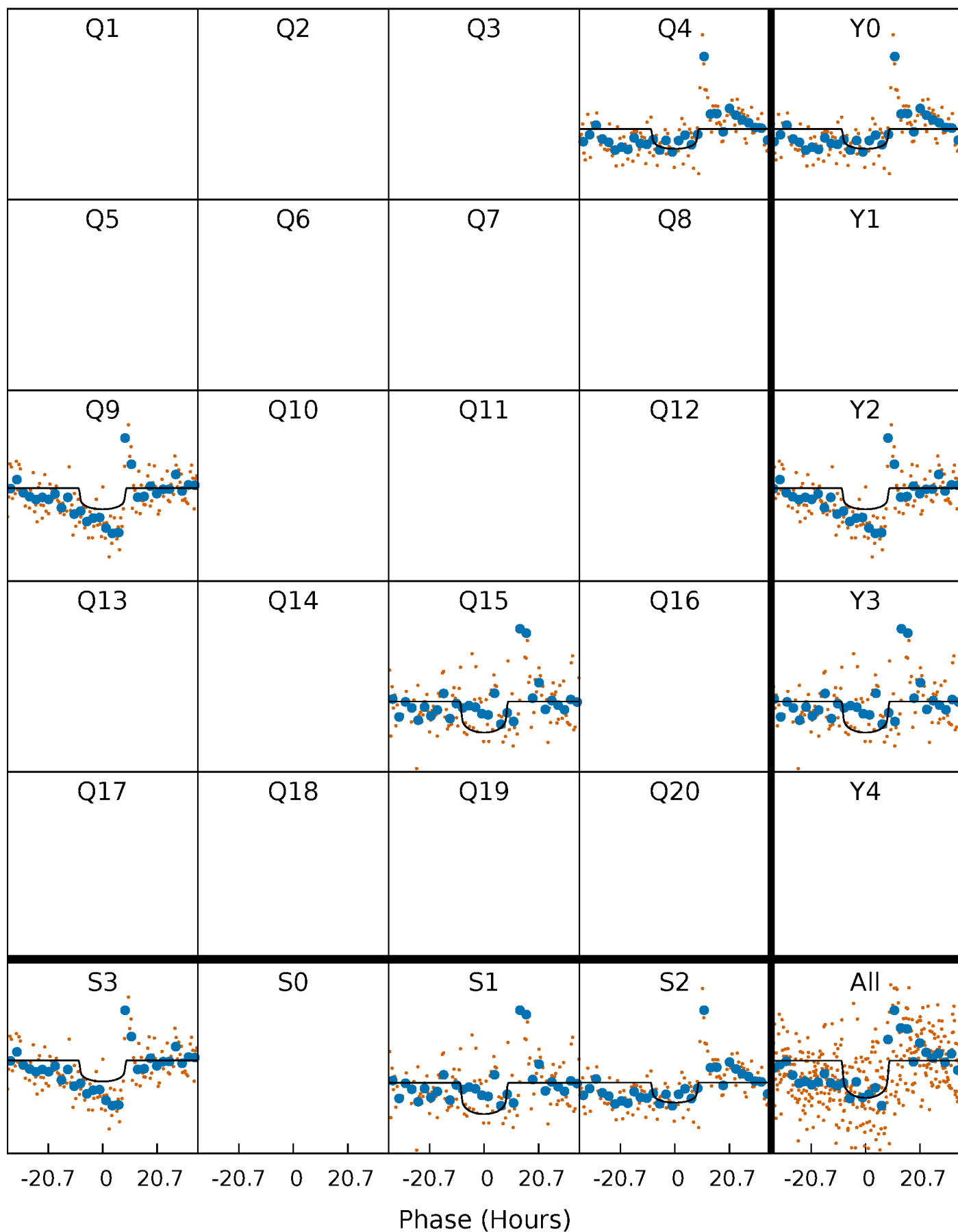
PDC Quarter-Phased Transit Curves

TCE 009590720-01 P=499.305008 Days $T_0=389.801249$ (BKJD)



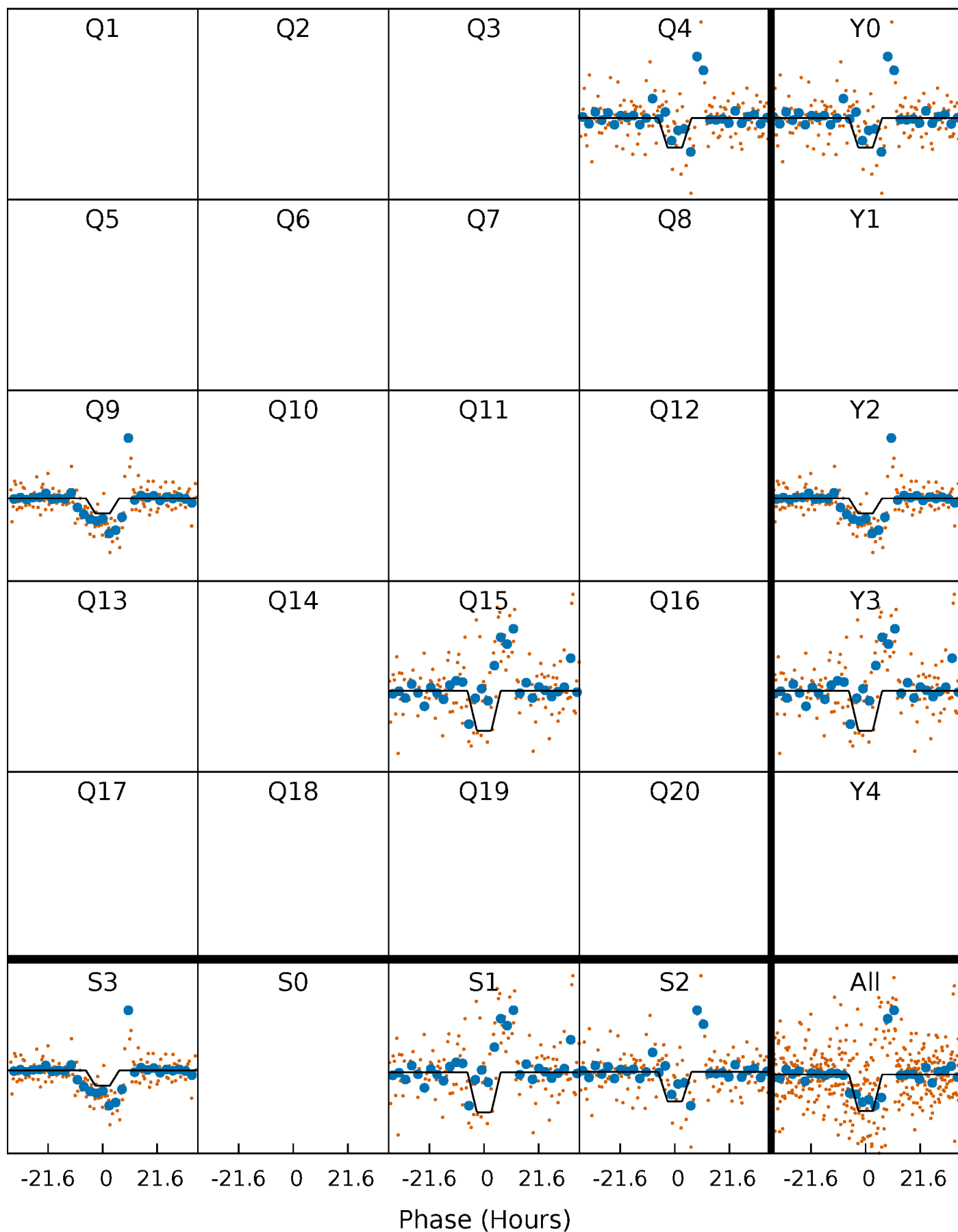
DV Quarter-Phased Transit Curves

TCE 009590720-01 P=499.305008 Days $T_0=389.801249$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

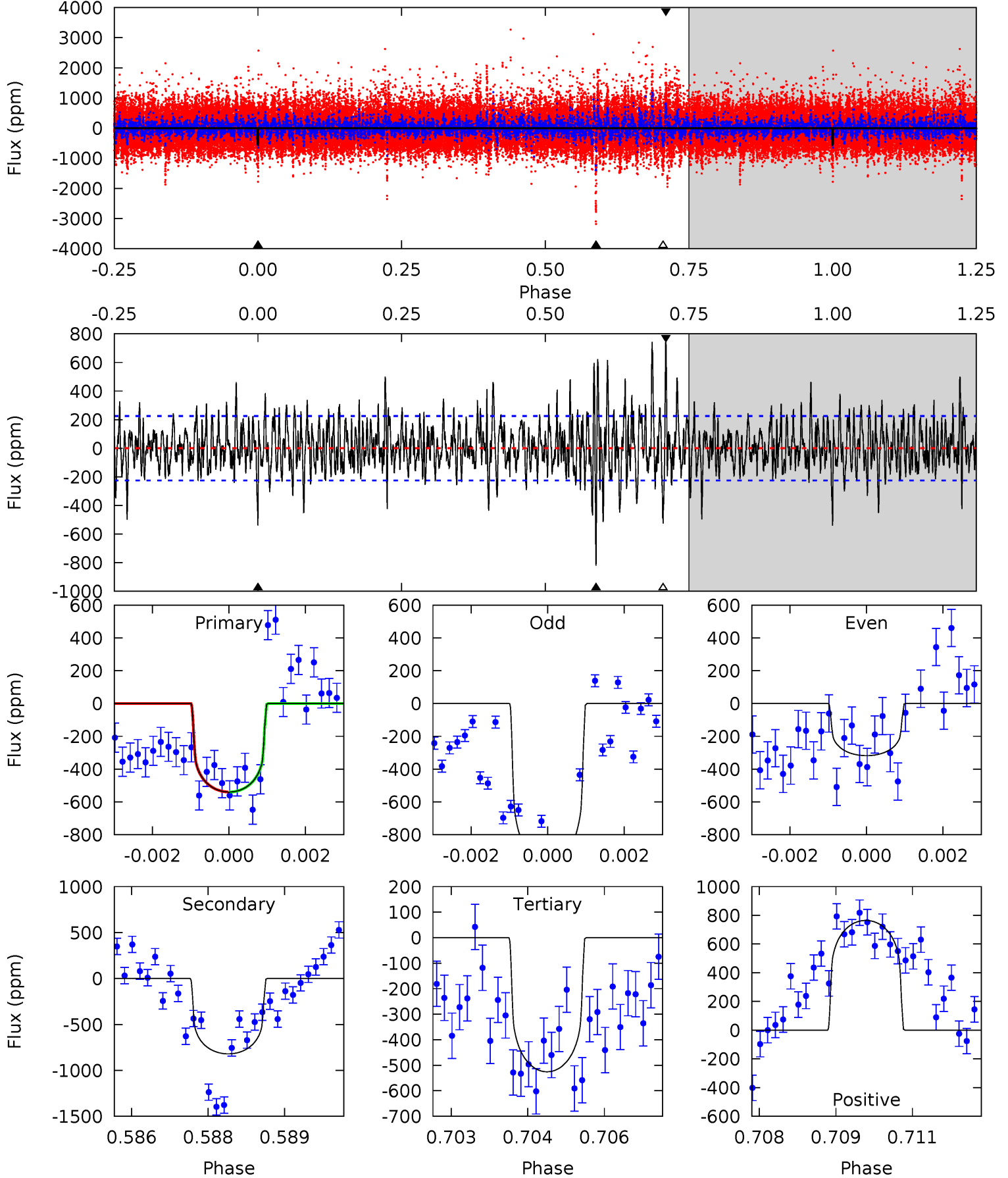
TCE 009590720-01 P=499.259983 Days $T_0=389.829514$ (BKJD)



DV Model-Shift Uniqueness Test

009590720-01, P = 499.305008 Days, E = 389.801249 Days

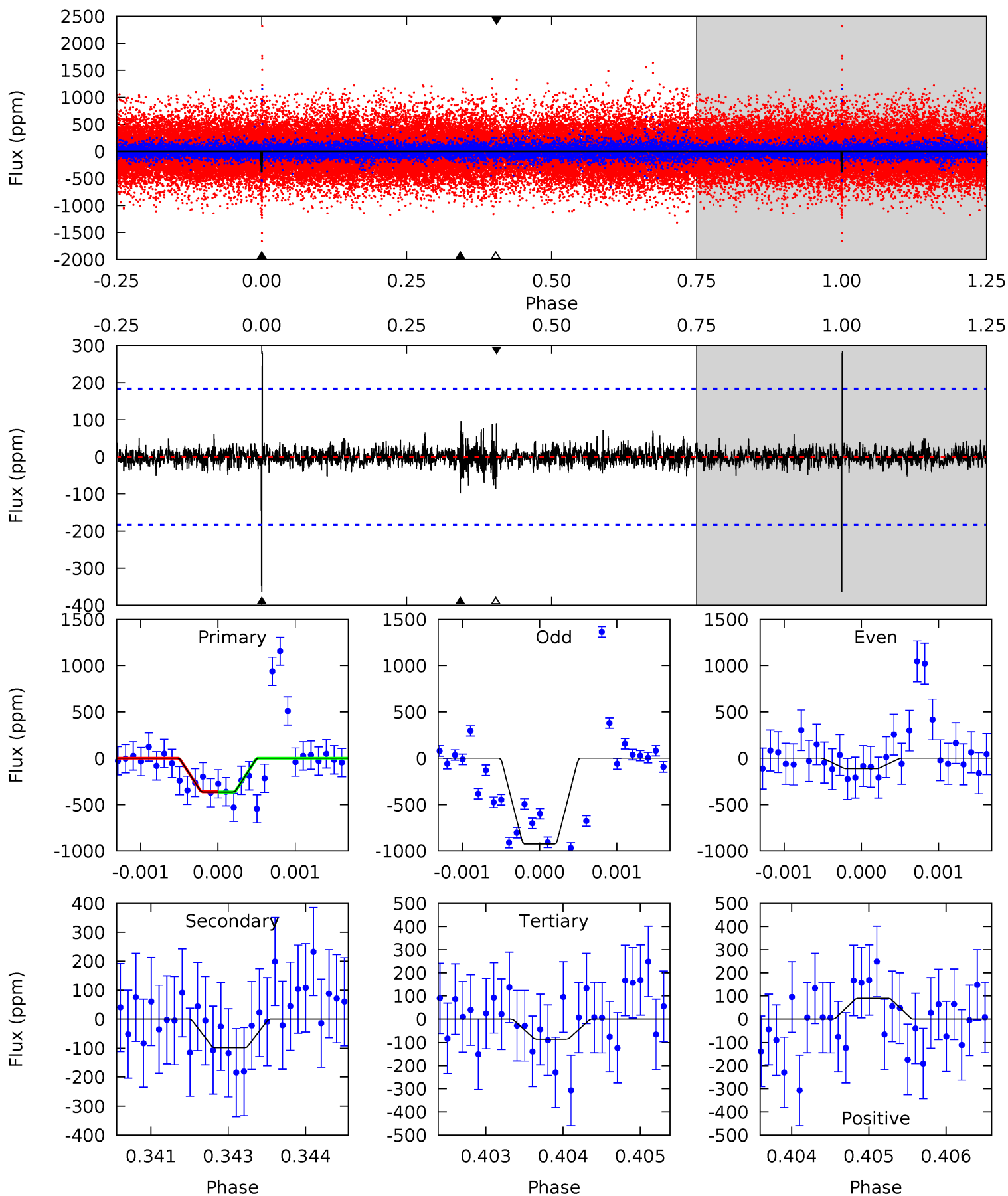
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
12.9	19.6	12.6	18.3	5.37	3.16	3.80	0.34	-5.37	7.05	1.34	7.47	1.20	0.48	0.01



Alt Model-Shift Uniqueness Test

009590720-01, P = 499.259983 Days, E = 389.829514 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
10.8	2.91	2.55	2.67	5.44	3.27	0.49	8.23	8.11	0.36	0.24	11.8	1.92	0.44	0.04



Stellar Parameters For KIC 009590720

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	M (M_{\odot})	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	5565^{+167}_{-150}	$4.595^{+0.048}_{-0.112}$	$-0.560^{+0.300}_{-0.300}$	$0.734^{+0.136}_{-0.058}$	$0.772^{+0.086}_{-0.062}$	$2.749^{+0.546}_{-0.951}$
	+3%/-3%	+1%/-2%	+54%/-54%	+19%/-8%	+11%/-8%	+20%/-35%
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 009590720-01 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-821 ± 42	$1.89^{+0.51}_{-0.52}$	279^{+12}_{-11}	6161^{+1172}_{-676}	$162239^{+140100}_{-63202}$
Alt.	-98 ± 34	$1.75^{+0.55}_{-0.51}$	280^{+13}_{-10}	4049^{+619}_{-409}	21900^{+24468}_{-10910}

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

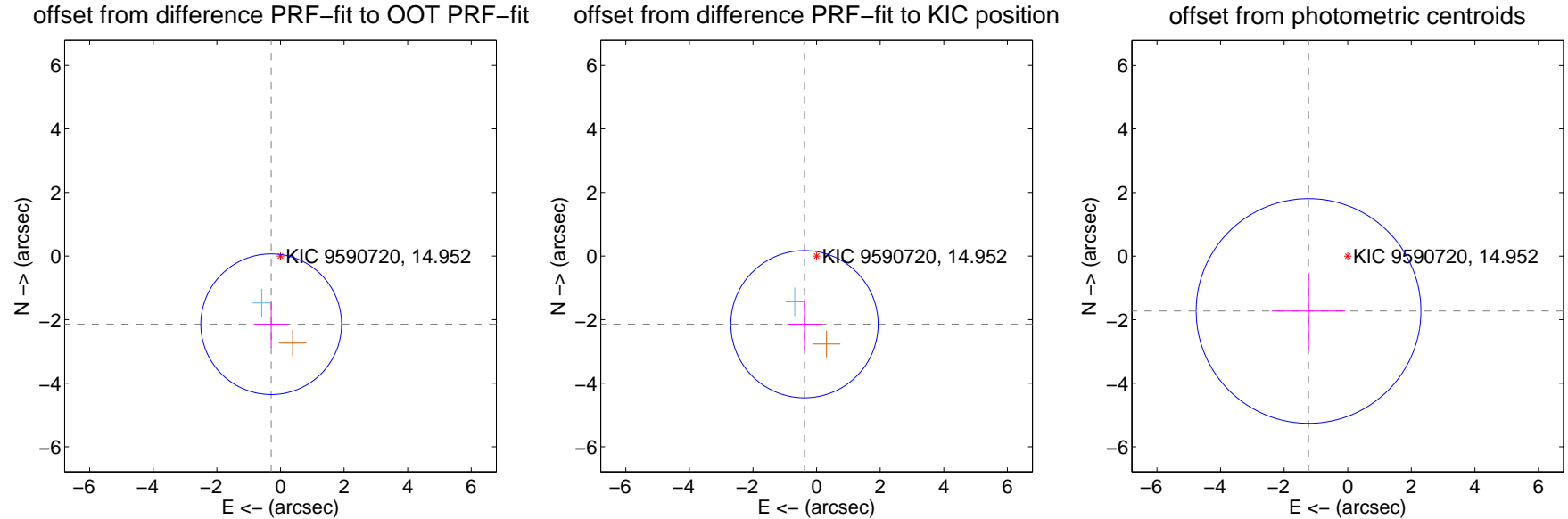
DV Centroid Data

Supplemental centroid analysis for 009590720-01. Kepler magnitude: 14.95. Transit SNR 5.91

There are 1 quarters with good PRF difference image offsets

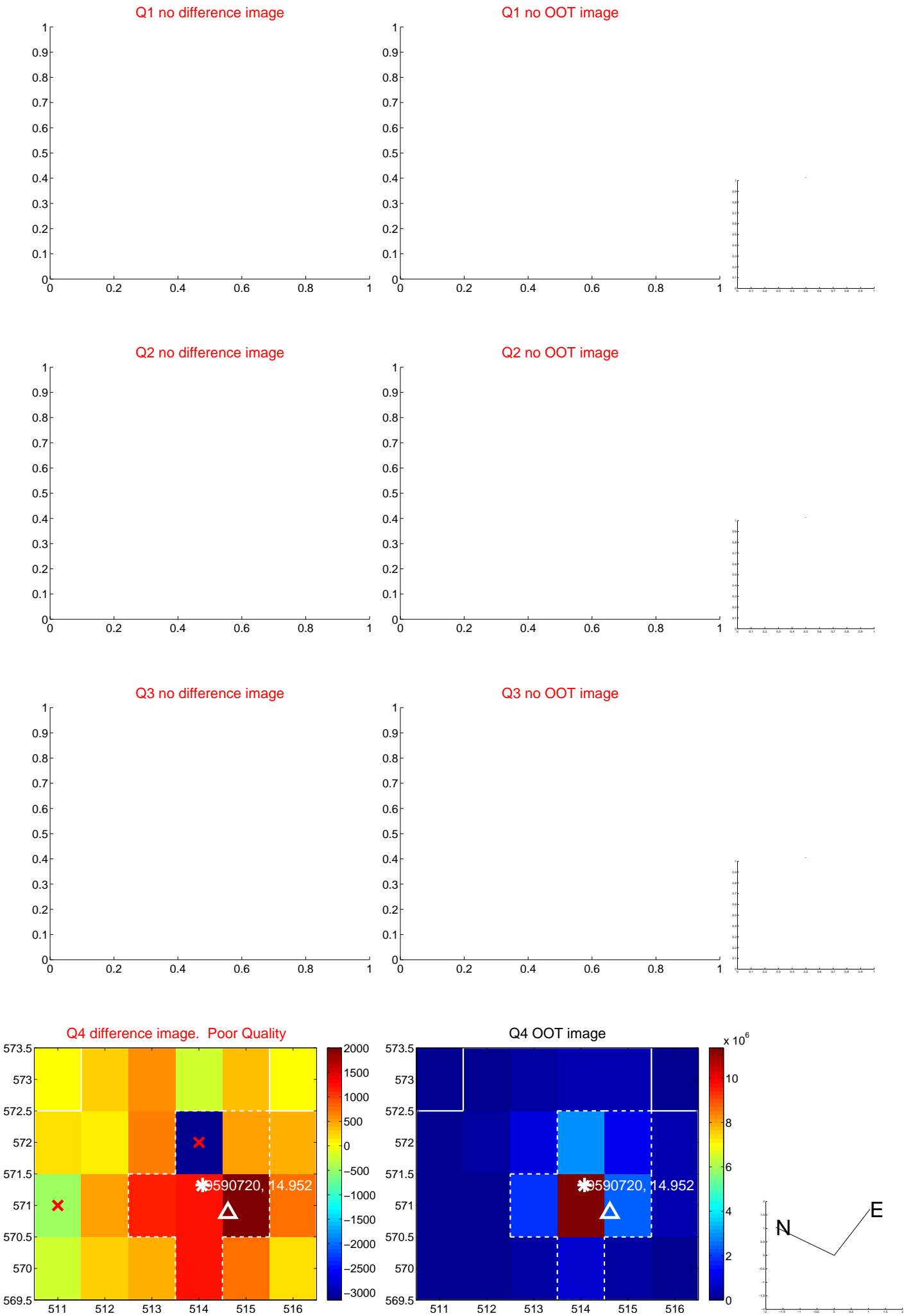
The direct PRF centroid is offset from the target star catalog position by about 0.10 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	2.165 ± 0.738	2.94	0.291 ± 0.528	-2.145 ± 0.741
PRF-fit source offset from KIC position	2.178 ± 0.772	2.82	0.381 ± 0.543	-2.144 ± 0.778
photometric centroid source offset	2.12 ± 1.18	1.80	1.23 ± 1.16	-1.73 ± 1.19



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.

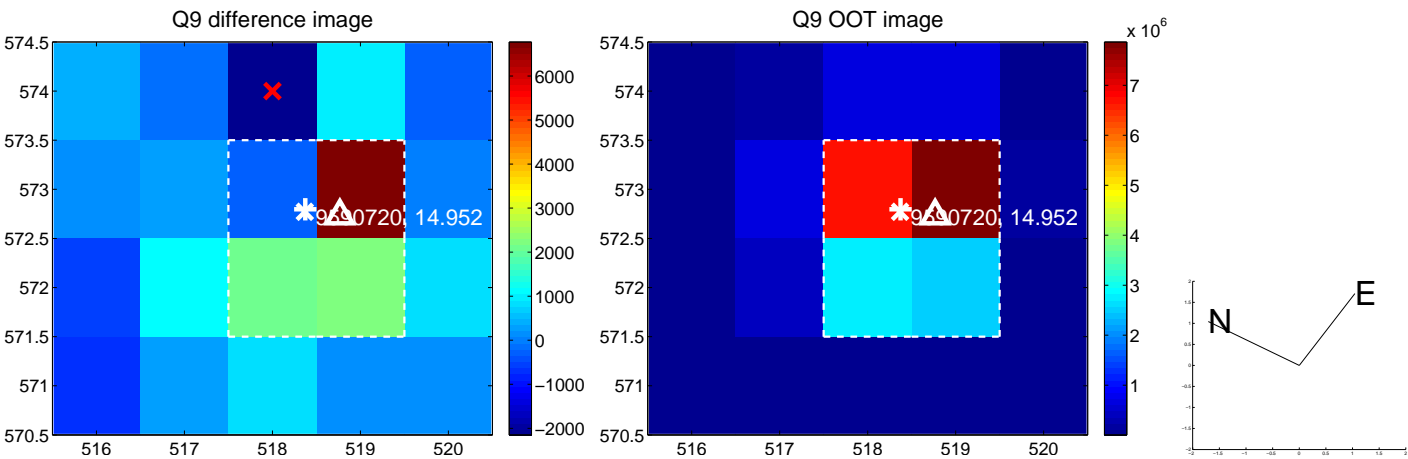
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



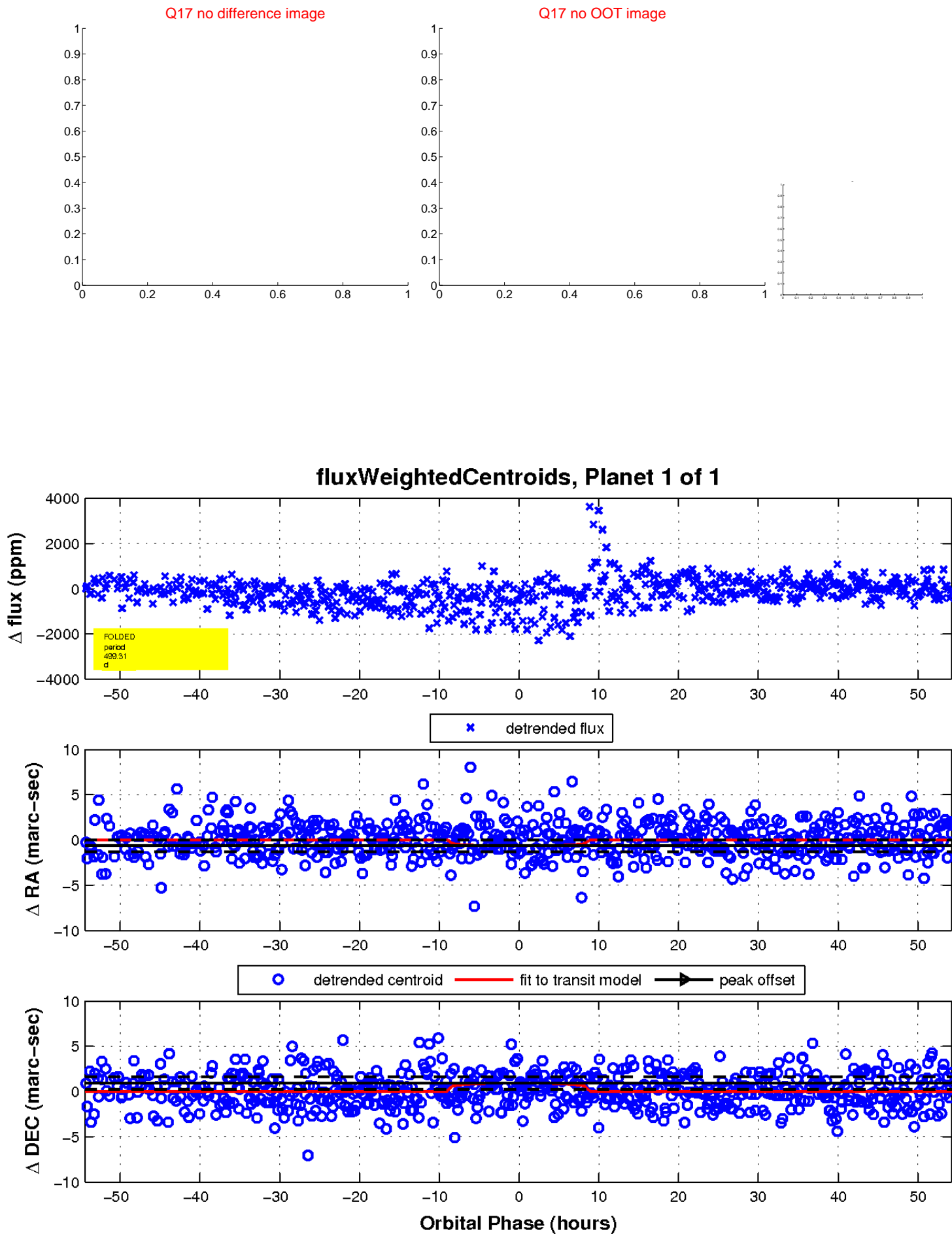
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

