

KIC 009893365

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})
009893365-01	OBS	No	0.691277	131.934762	19.0	8.127	7.8	8.9	1.00	6063	0.43	4924.90

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
009893365-01	OBS	FP	0.00	1	0	0	1	LPP_DV—CENT_FEW_DIFFS—EPHEM_MATCH

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.

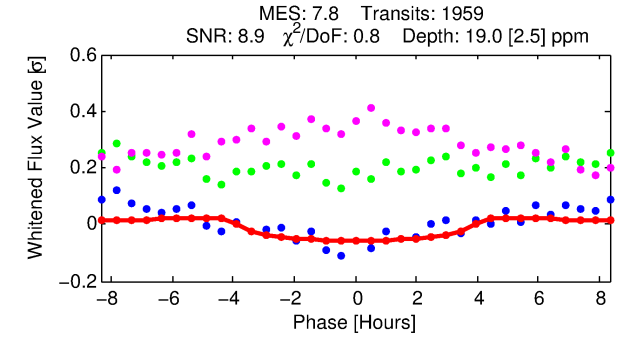
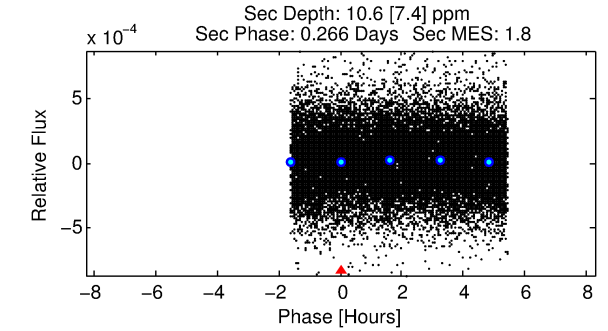
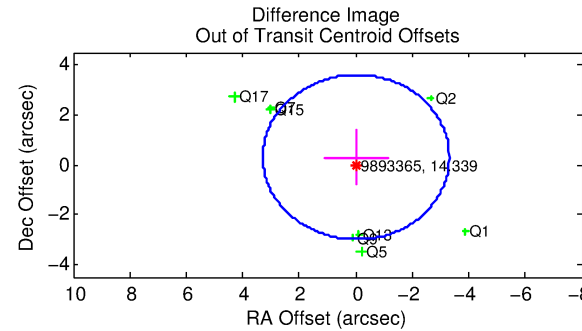
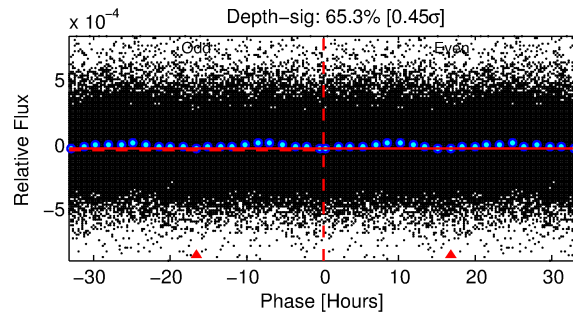
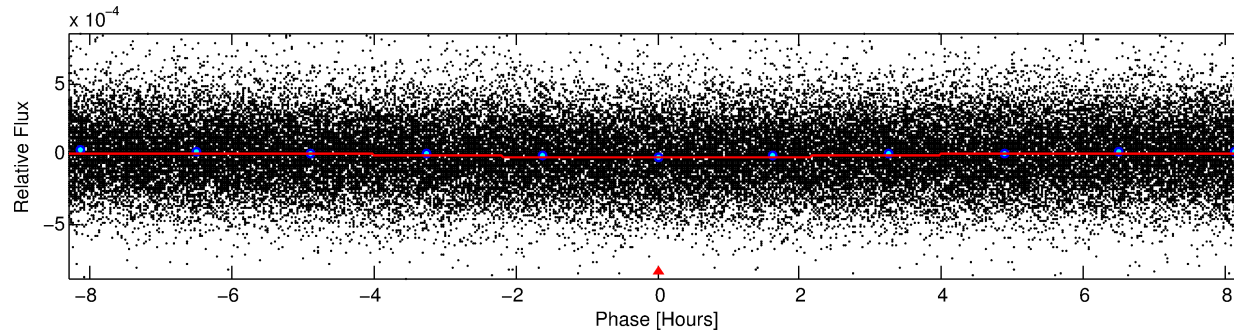
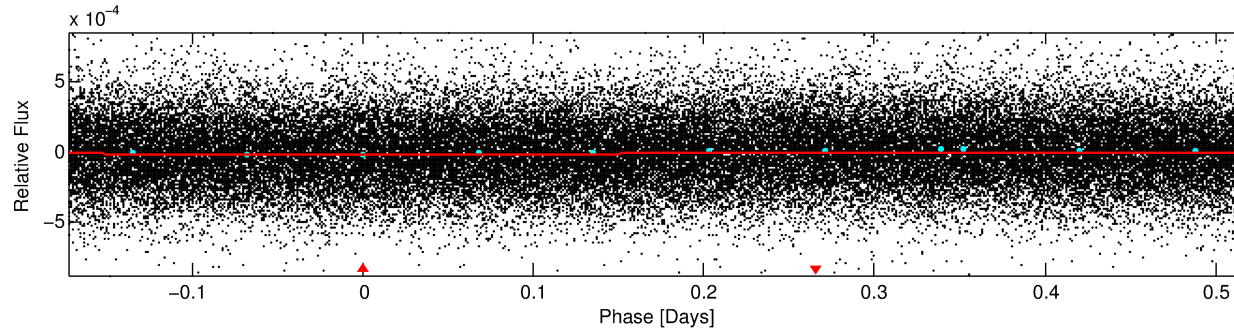
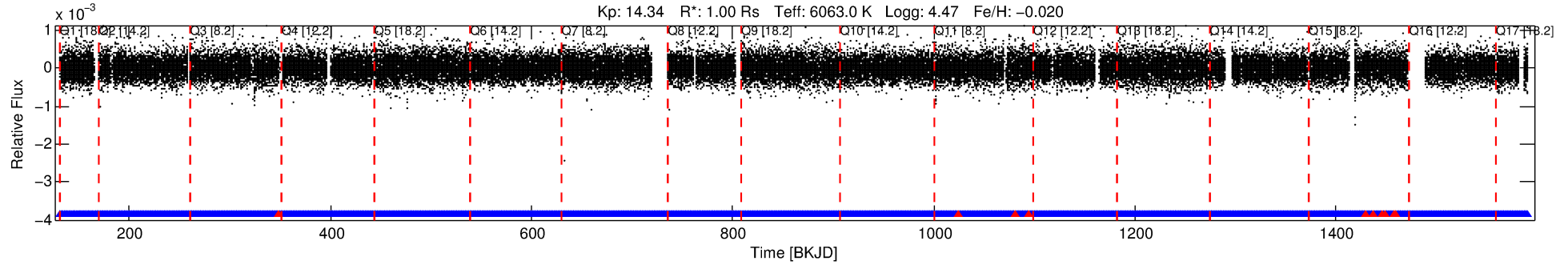
Ephemeris Match Information For 009893365-01

TCE (1)	KIC	Parent (2)	Parent KIC	P ₁ :P ₂	Dist (″)	Δ Row	Δ Col	m ₂	m ₁	D ₂ /D ₁	Mechanism	Flag	σ_P	σ_T
009893365-01	9893365	009893419-01	9893419	1:1	71.2	-3	-17	15.04	14.33	1.21	Direct-PRF	1	2.78	0.95

Notes: P₁:P₂ is the period ratio. Dist is the distance in arcseconds. Δ Row and Δ Col are the number of pixels apart in row and column. m₂ and m₁ are the magnitudes of the parent and child. D₂/D₁ is the parent's transit depth divided by the child's. σ_P and σ_T are the significance of the match in period and epoch. For a match to be considered significant $\sigma_P < 5.0$ and $\sigma_T < 5.0$. Matches which have σ_P and σ_T very close to this cutoff should receive extra scrutiny, especially if the period ratio is very large.

DV One-Page Summary

KIC: 9893365 Candidate: 1 of 1 Period: 0.691 d



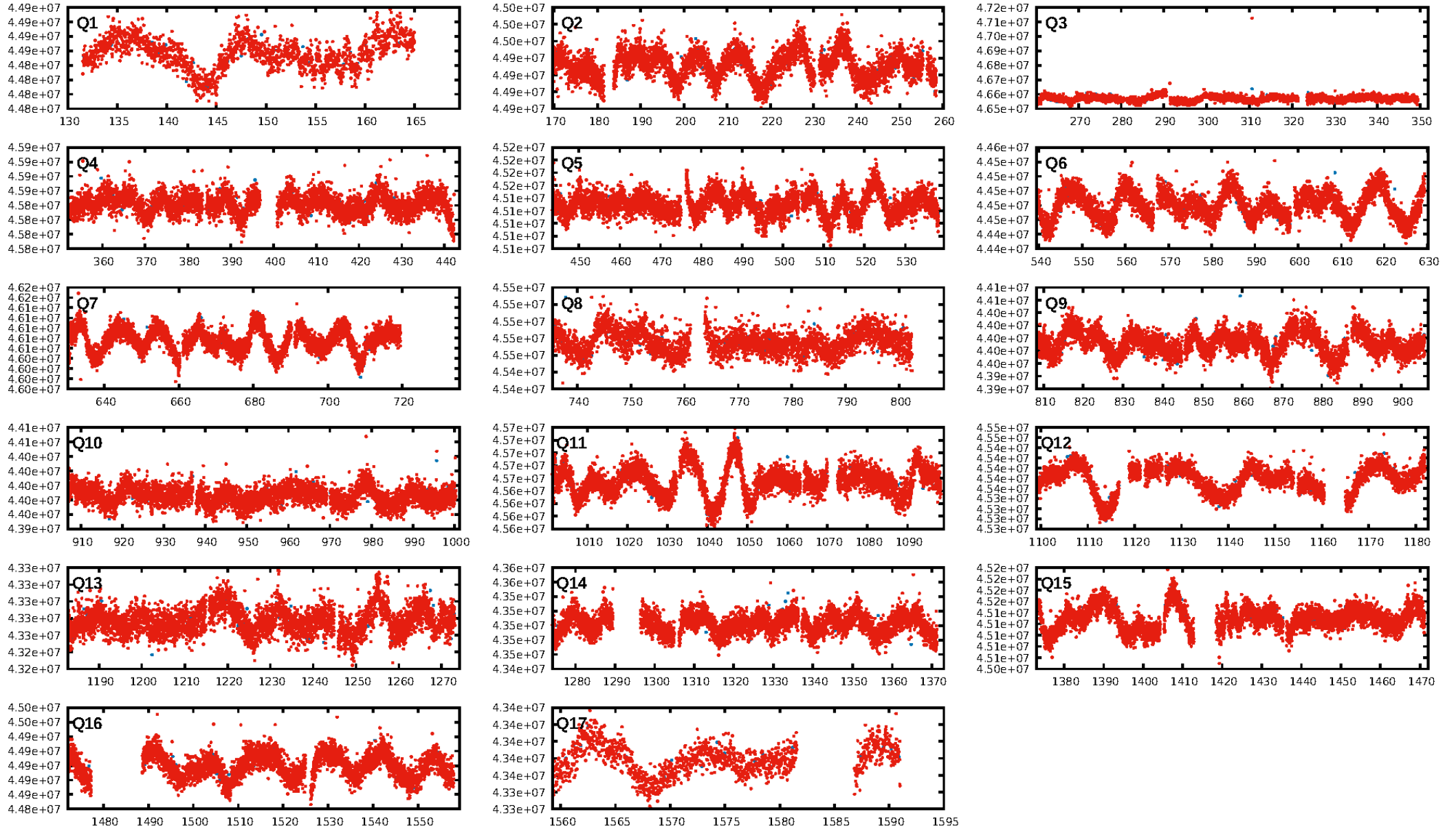
DV Fit Results:

Period = 0.69128 [0.00001] d
Epoch = 131.9348 [0.0082] BKJD
Rp/R* = 0.0040 [0.0034]
a/R* = 1.00 [0.03]
b = 0.03 [126.82]
Seff = 4924.90 [2016.39]
Teq = 2136 [219] K
Rp = 0.43 [0.39] Re
a = 0.0157 [0.0041] AU
Ag = 7.60 [14.39] [0.46 σ]
Teffp = 5483 [2547] K [1.31 σ]

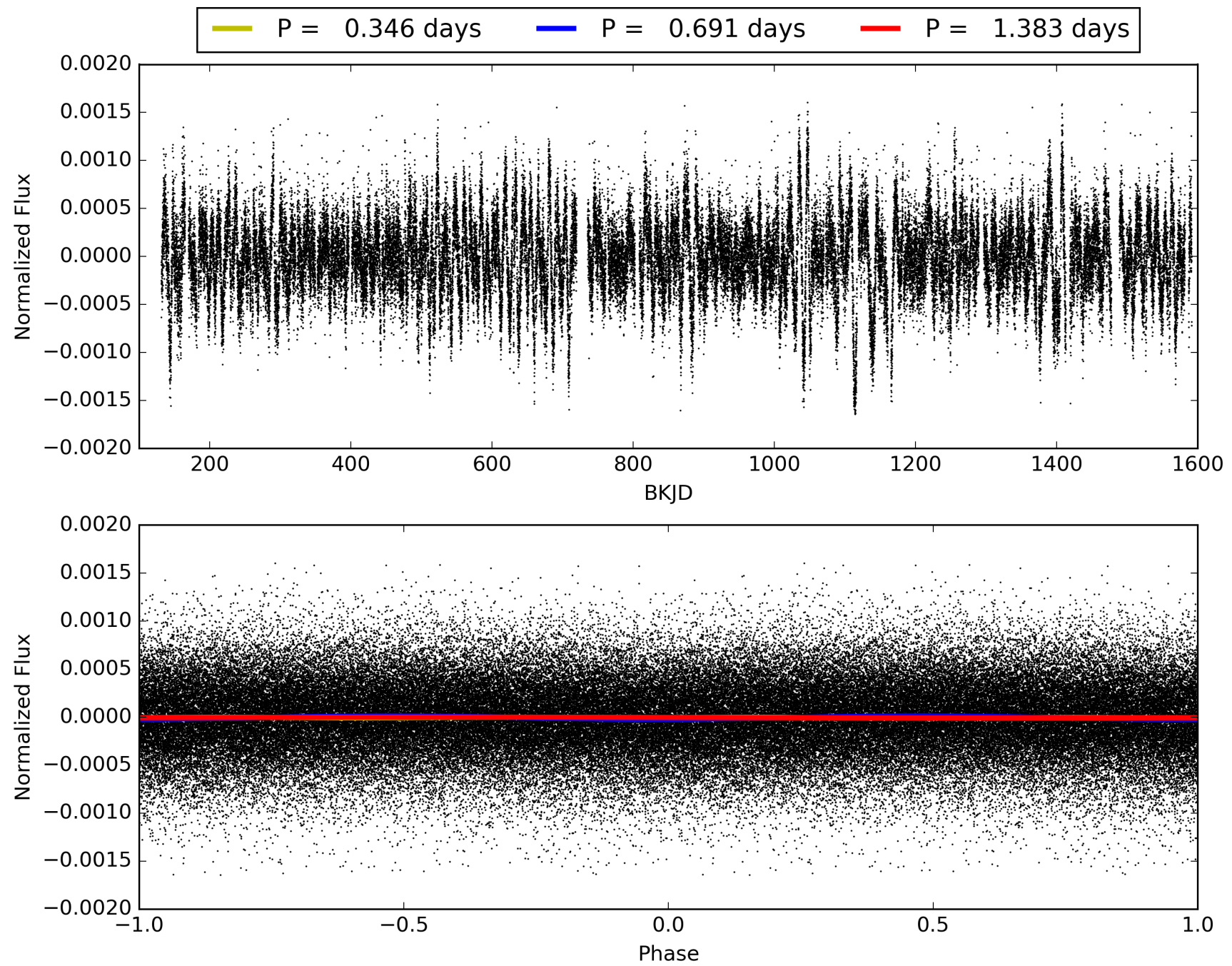
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: N/A
RollingBand-fgt: 0.99 [1861/1871]
GhostDiagnostic-chr: 0.2859
Centroid-sig: 7.2%
Centroid-so: 1.469 arcsec [1.13 σ]
OotOffset-rm: 0.299 arcsec [0.27 σ]
KicOffset-rm: 0.383 arcsec [0.35 σ]
OotOffset-st: 1/2/0/5 [8]
KicOffset-st: 1/2/0/5 [8]
DiffImageQuality-fgm: 0.25 [2/8]
DiffImageOverlap-fno: 1.00 [17/17]

TCE 009893365-01, PDC Light Curves

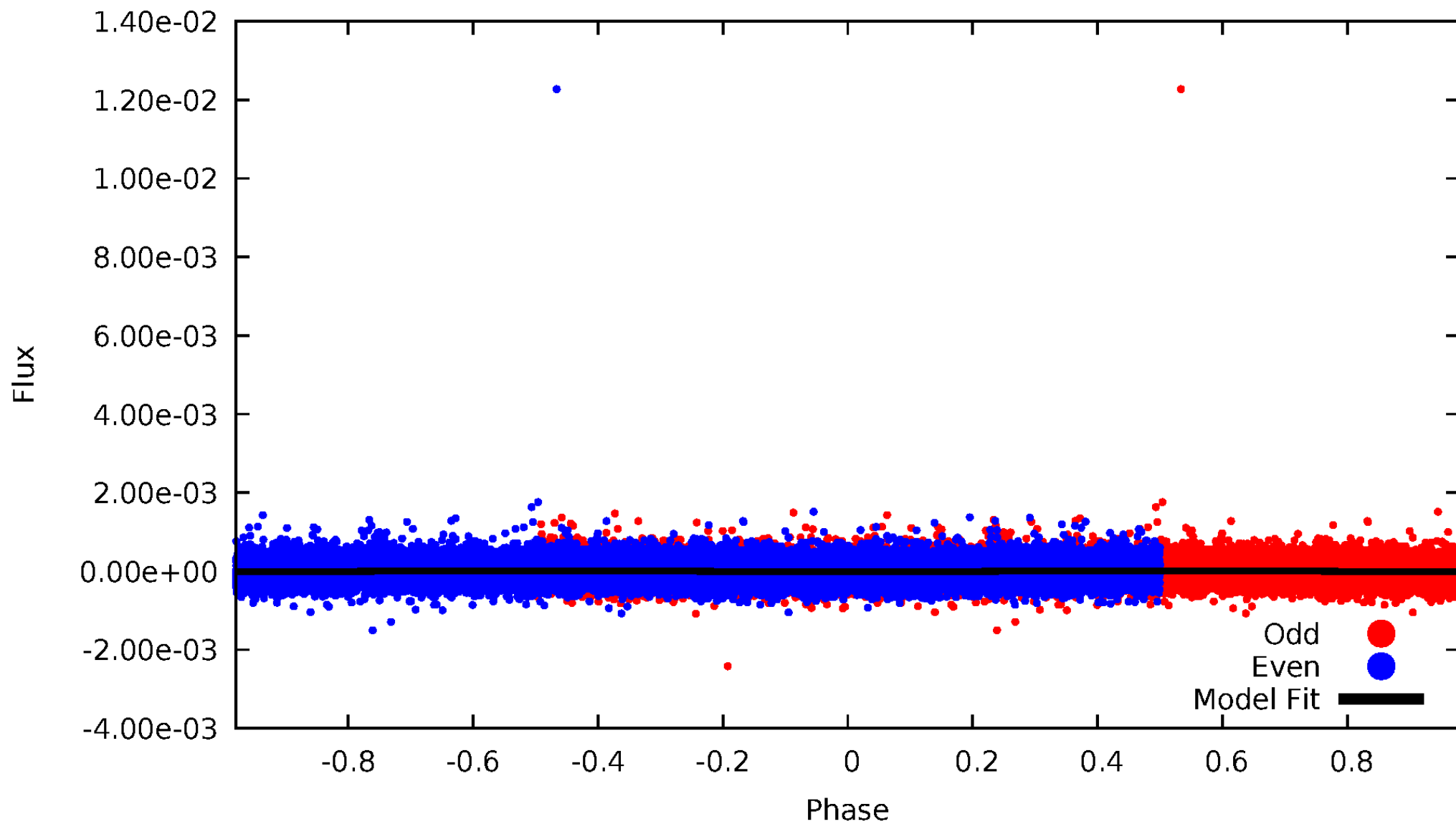


TCE 009893365-01



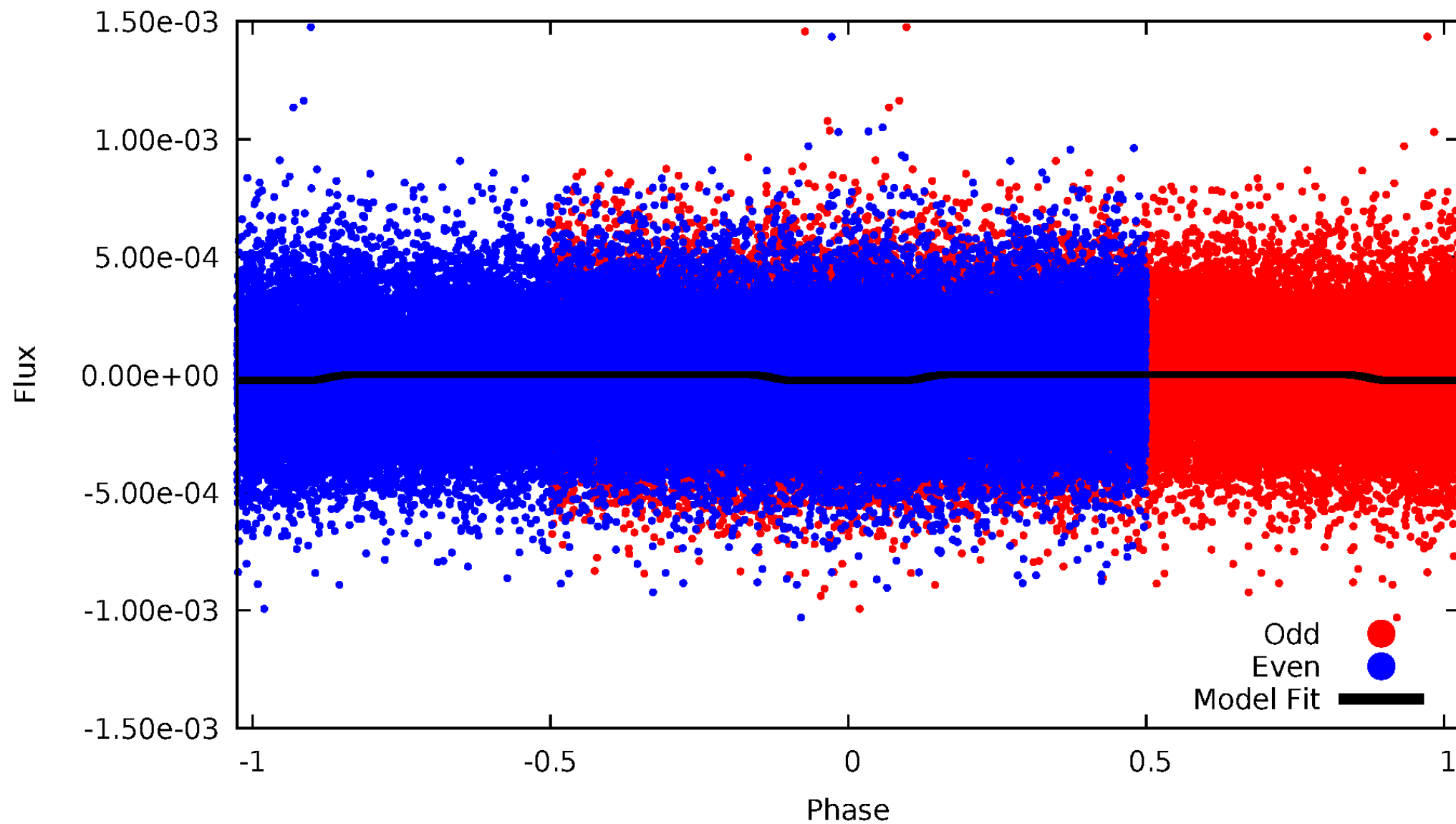
DV Odd/Even

TCE 009893365-01

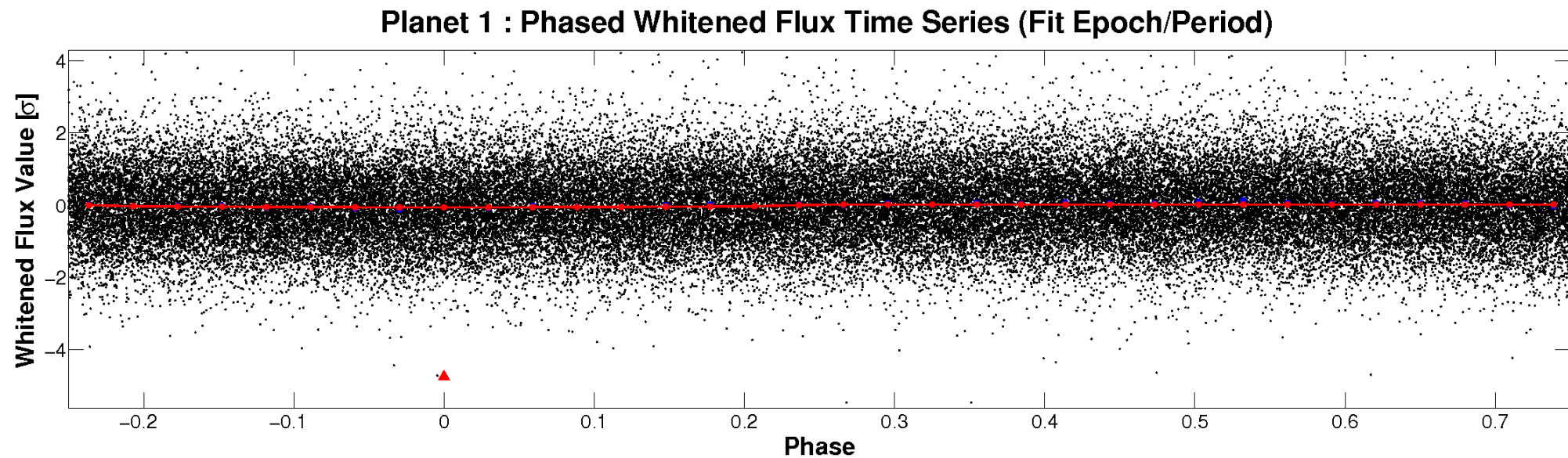
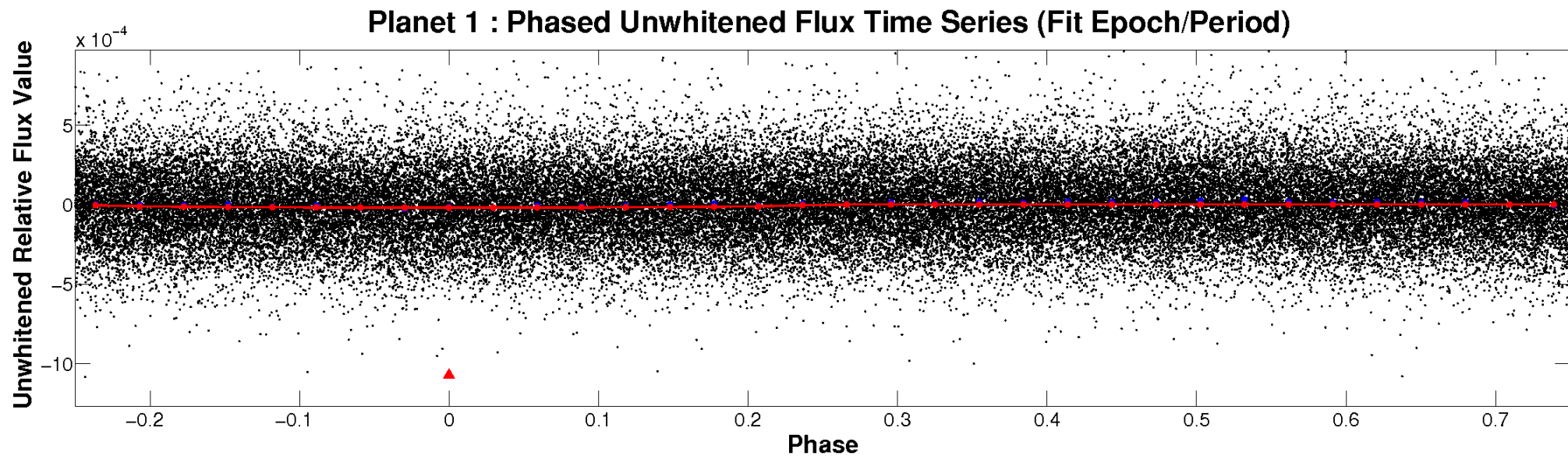


ALT Odd/Even

TCE 009893365-01

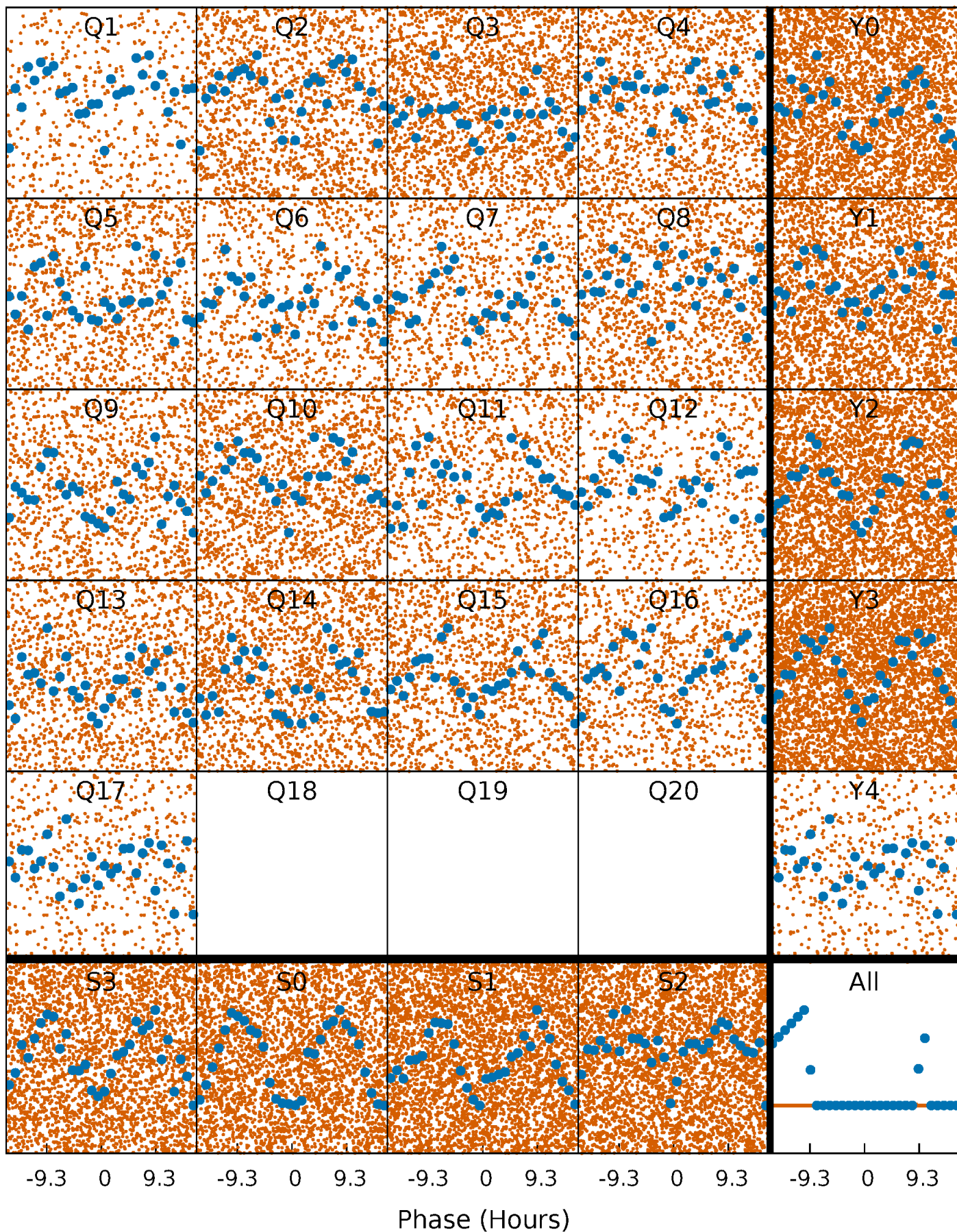


Non-Whitened Vs. Whitened Light Curve



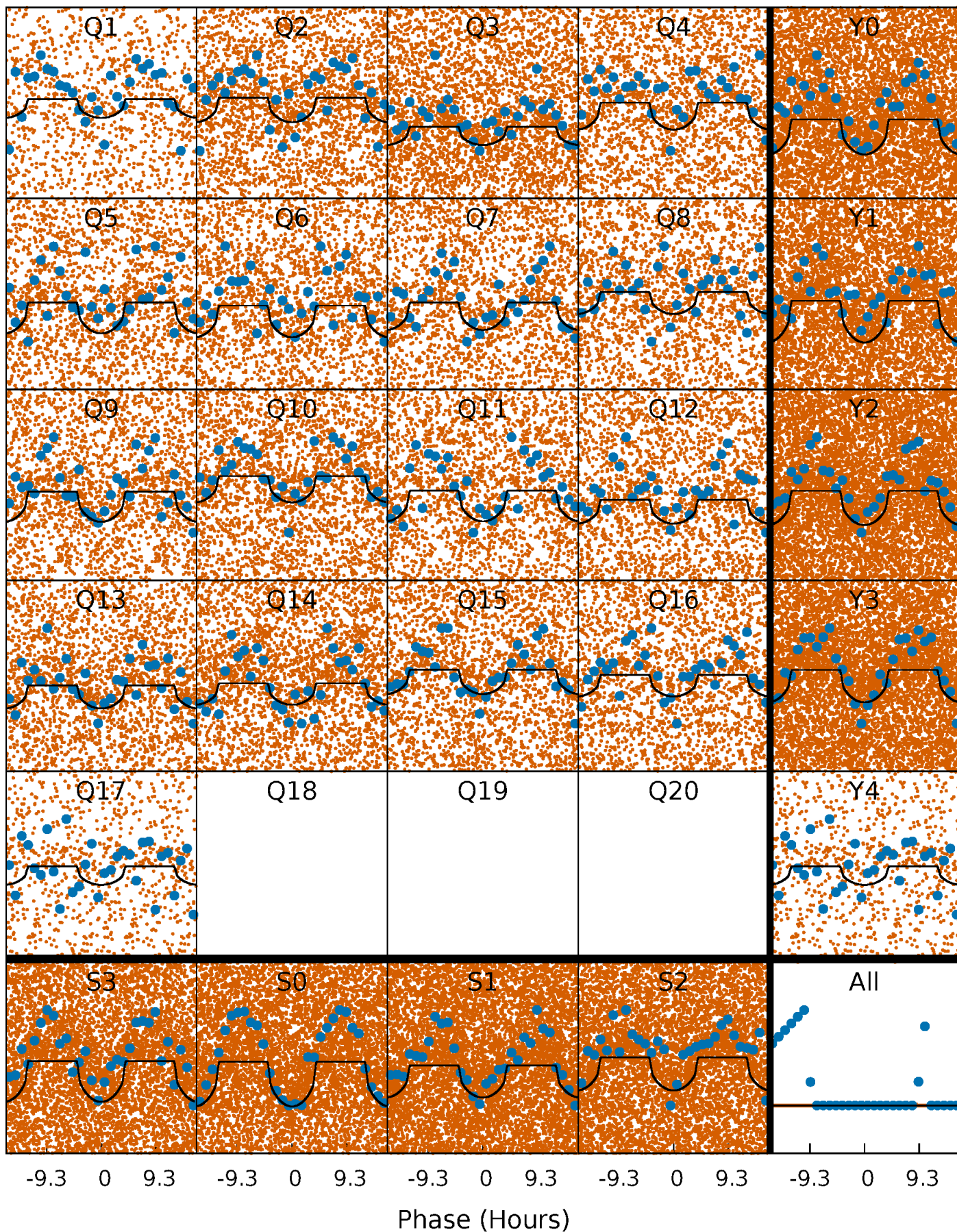
PDC Quarter-Phased Transit Curves

TCE 009893365-01 P= 0.691277 Days $T_0=131.934762$ (BKJD)



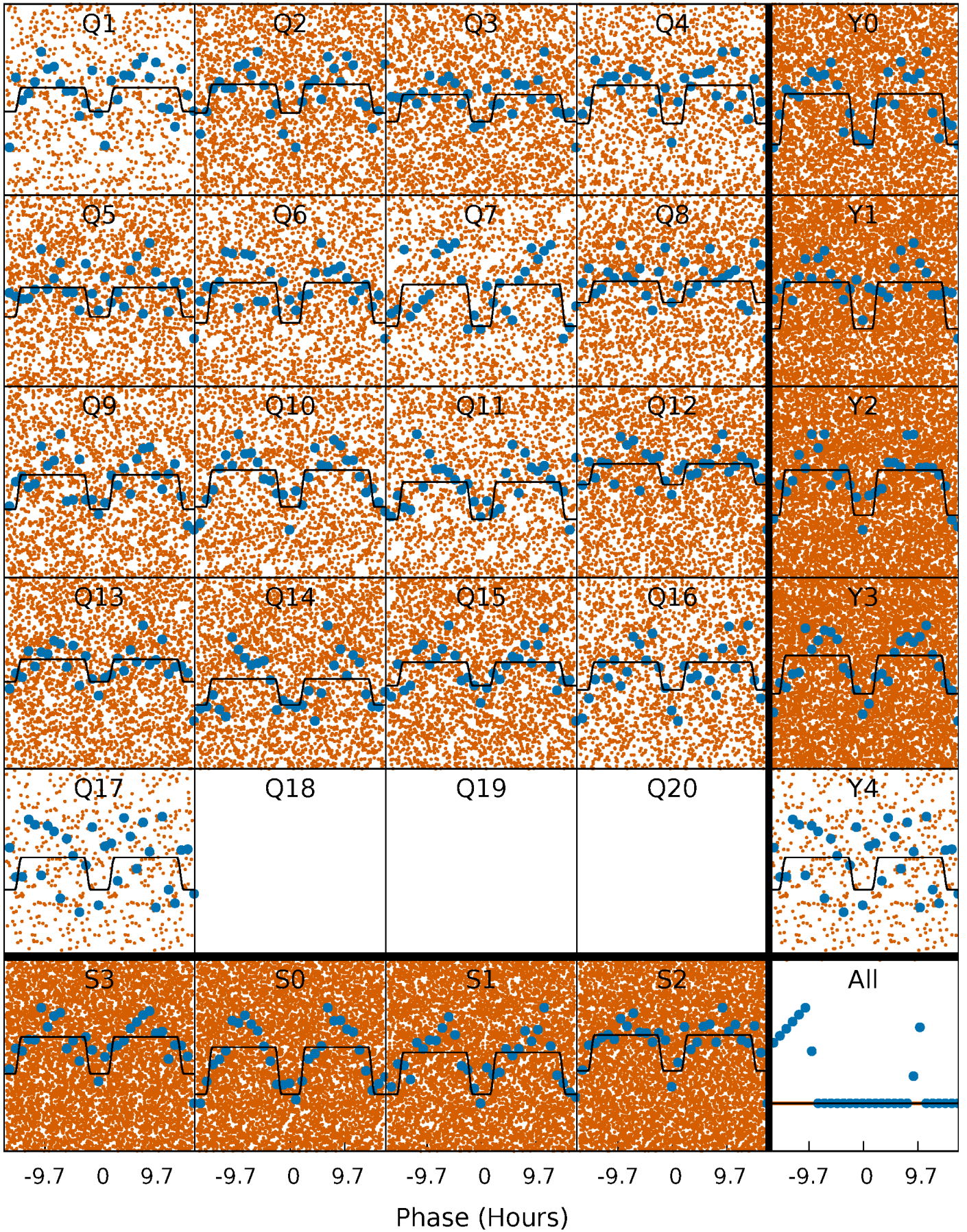
DV Quarter-Phased Transit Curves

TCE 009893365-01 P= 0.691277 Days $T_0=131.934762$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

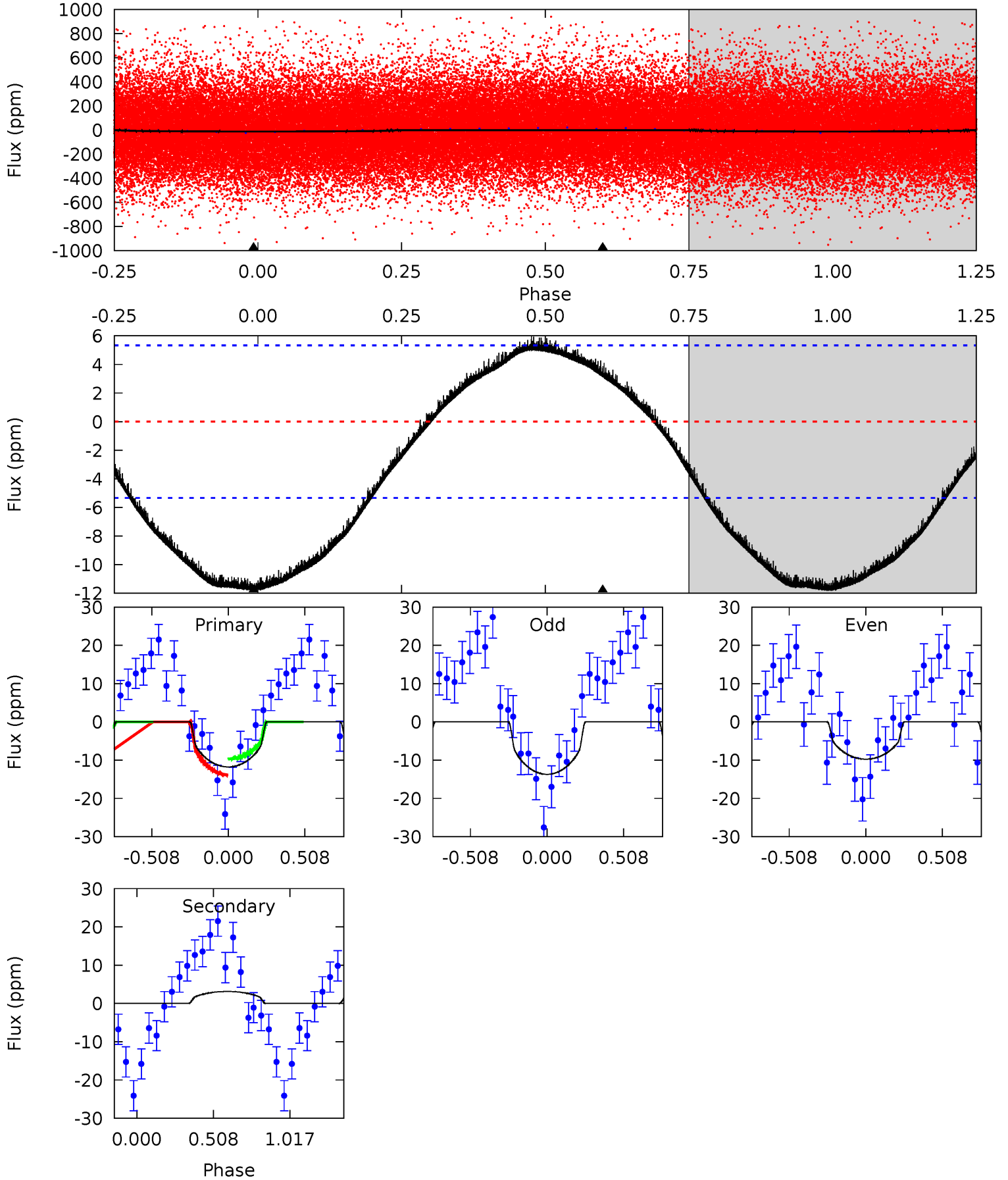
TCE 009893365-01 P= 0.691267 Days $T_0=131.929190$ (BKJD)



DV Model-Shift Uniqueness Test

009893365-01, P = 0.691277 Days, E = 131.243485 Days

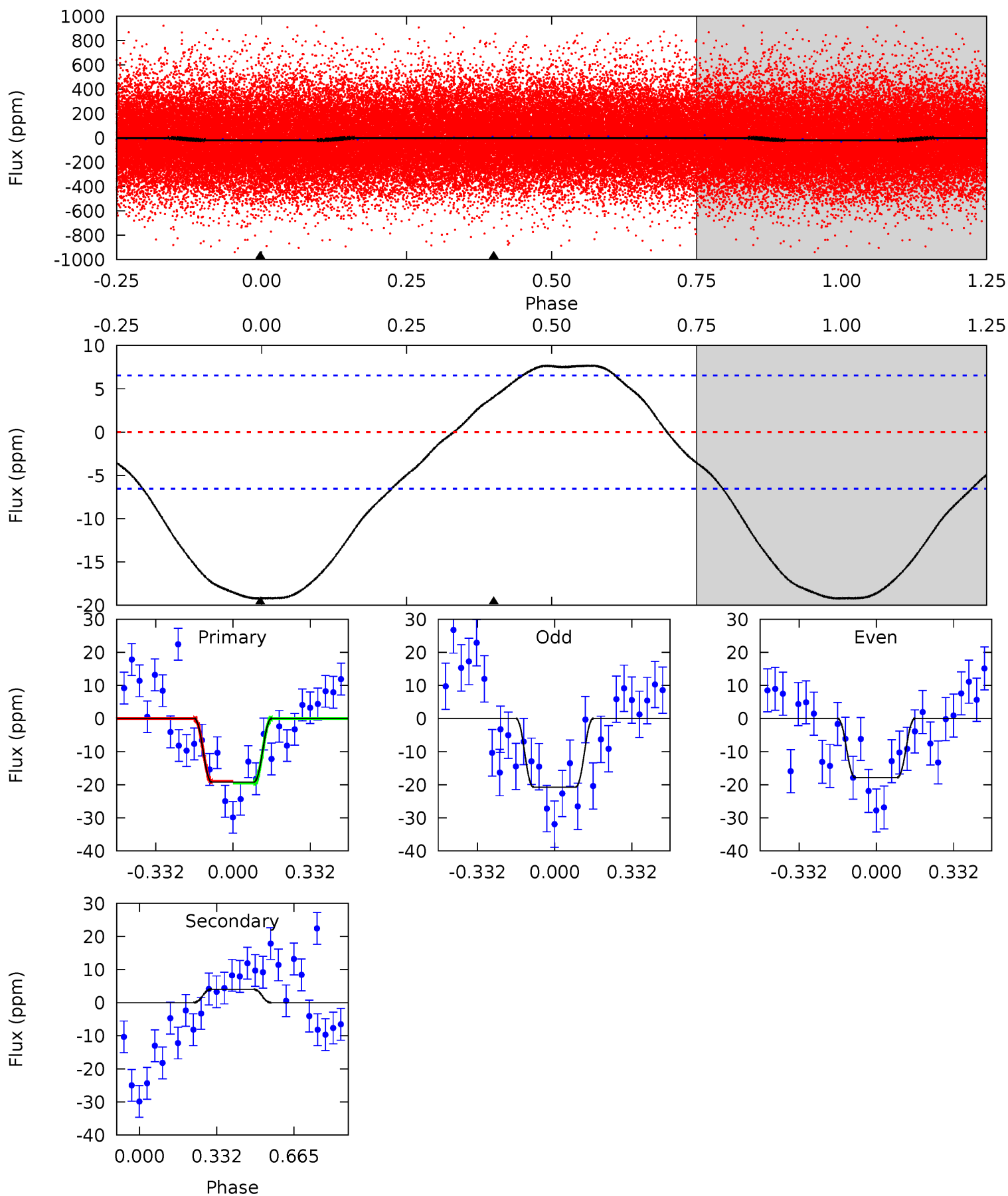
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
9.29	-2.48	0	0	4.21	0.66	1.08	9.29	9.29	-2.48	-2.48	1.57	0.52	0.34	1.64



Alt Model-Shift Uniqueness Test

009893365-01, P = 0.691267 Days, E = 131.237923 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
12.6	-2.66	0	0	4.31	0.97	1.59	12.6	12.6	-2.66	-2.66	0.94	0.91	0.29	0.18



Stellar Parameters For KIC 009893365

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	6063^{+163}_{-199}	$4.470^{+0.054}_{-0.216}$	$-0.020^{+0.250}_{-0.300}$	$1.001^{+0.302}_{-0.121}$	$1.079^{+0.130}_{-0.159}$	$1.517^{+0.414}_{-0.780}$
	+3%/-3%	+1%/-5%	+1250%/-1500%	+30%/-12%	+12%/-15%	+27%/-51%
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 009893365-01 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	3 ± 1	$0.50^{+0.38}_{-0.29}$	3035^{+213}_{-135}	-4198^{+613}_{-1777}	$-1.523^{+1.107}_{-7.182}$
Alt.	4 ± 2	$0.61^{+0.39}_{-0.35}$	3053^{+225}_{-155}	-4156^{+532}_{-1600}	$-1.361^{+0.884}_{-6.187}$

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 $A_{obs} \gg 1.0$

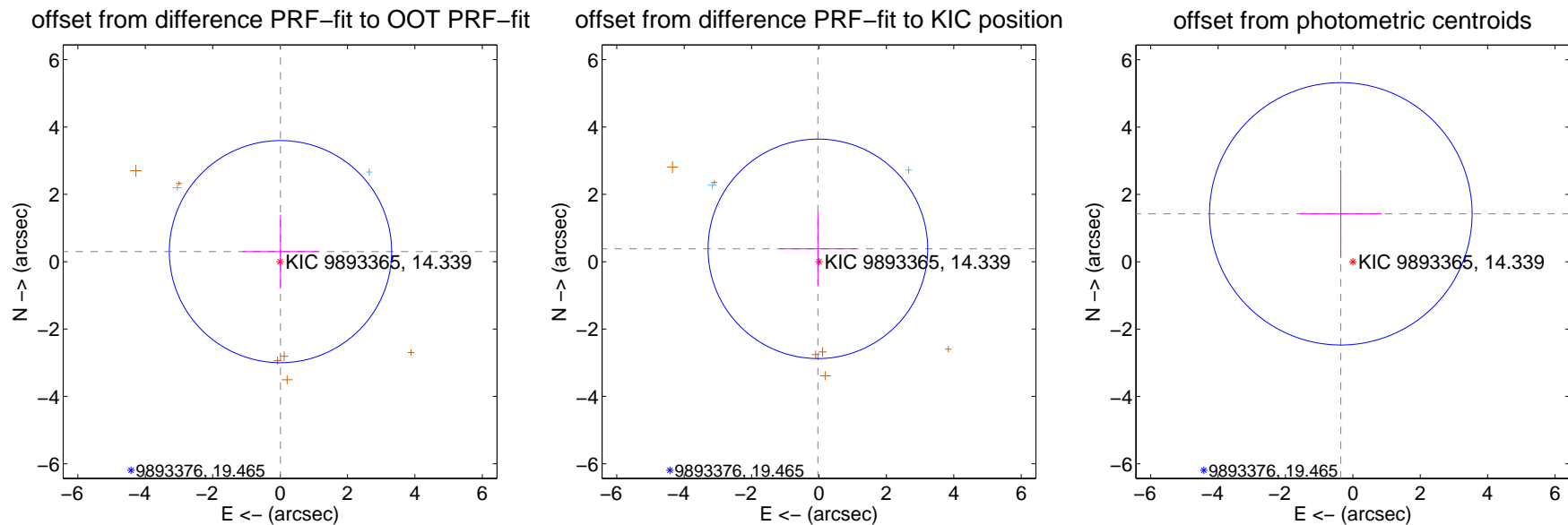
DV Centroid Data

Supplemental centroid analysis for 009893365-01. Kepler magnitude: 14.34. Transit SNR 8.92

There are 2 quarters with good PRF difference image offsets

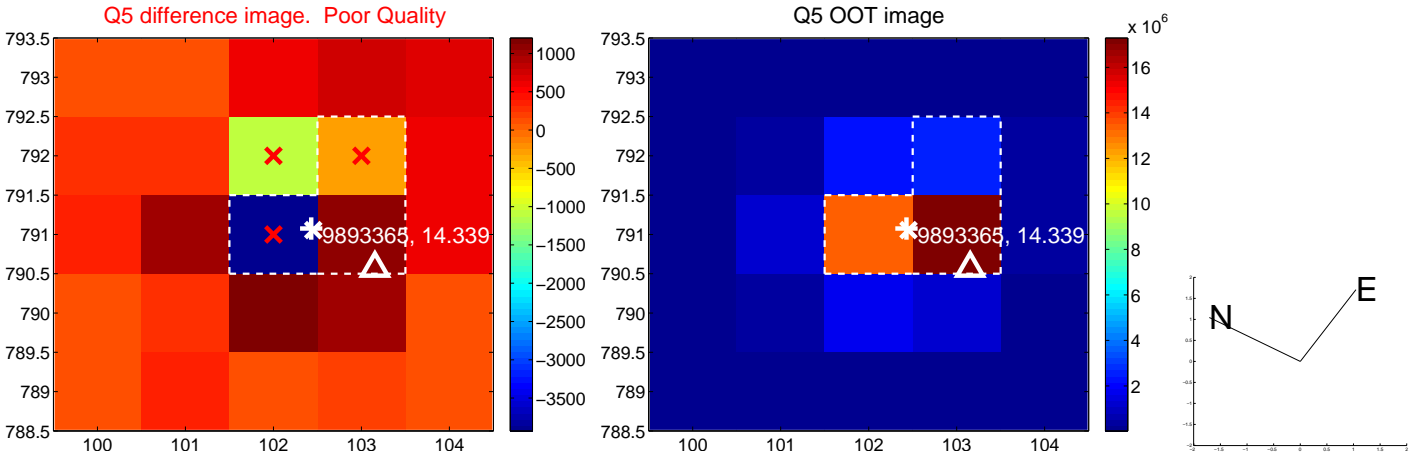
The direct PRF centroid is offset from the target star catalog position by about 0.13 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.299 ± 1.099	0.27	-0.012 ± 1.126	0.299 ± 1.099
PRF-fit source offset from KIC position	0.383 ± 1.086	0.35	0.033 ± 1.140	0.382 ± 1.086
photometric centroid source offset	1.47 ± 1.30	1.13	0.36 ± 1.22	1.42 ± 1.30

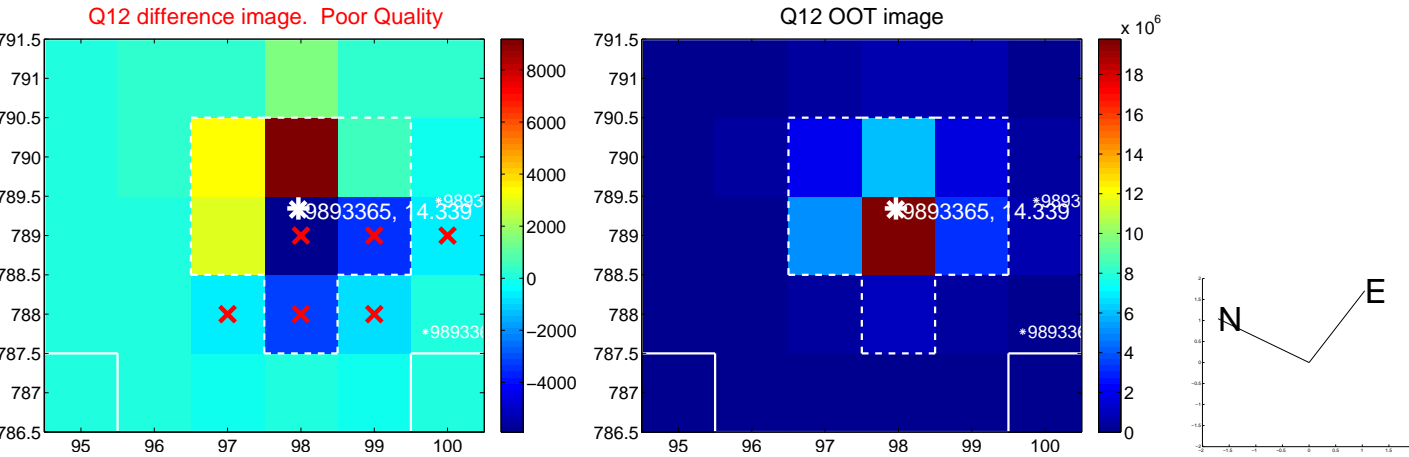
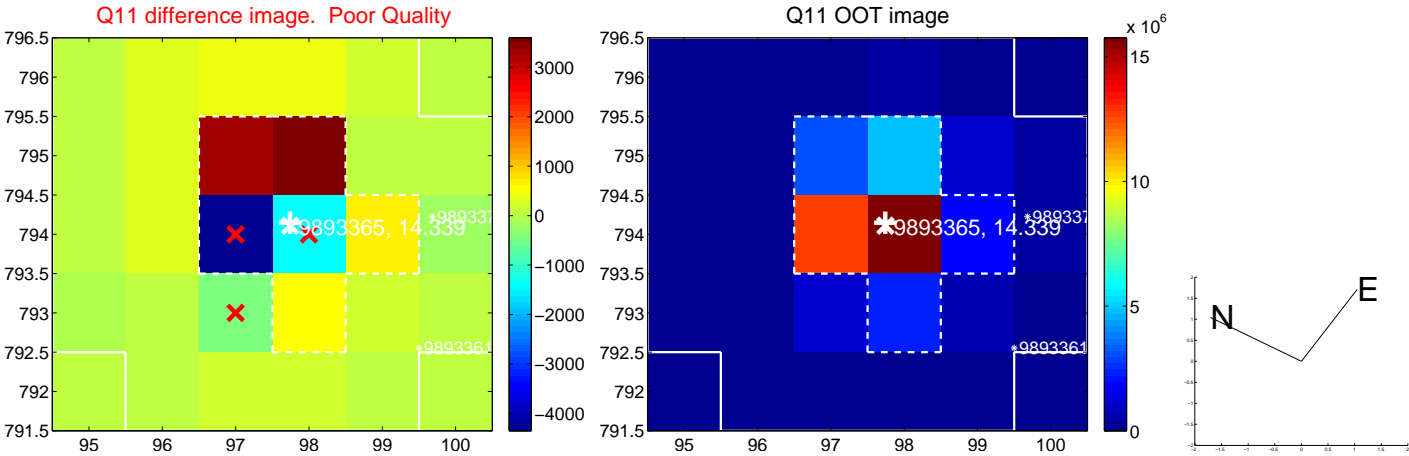
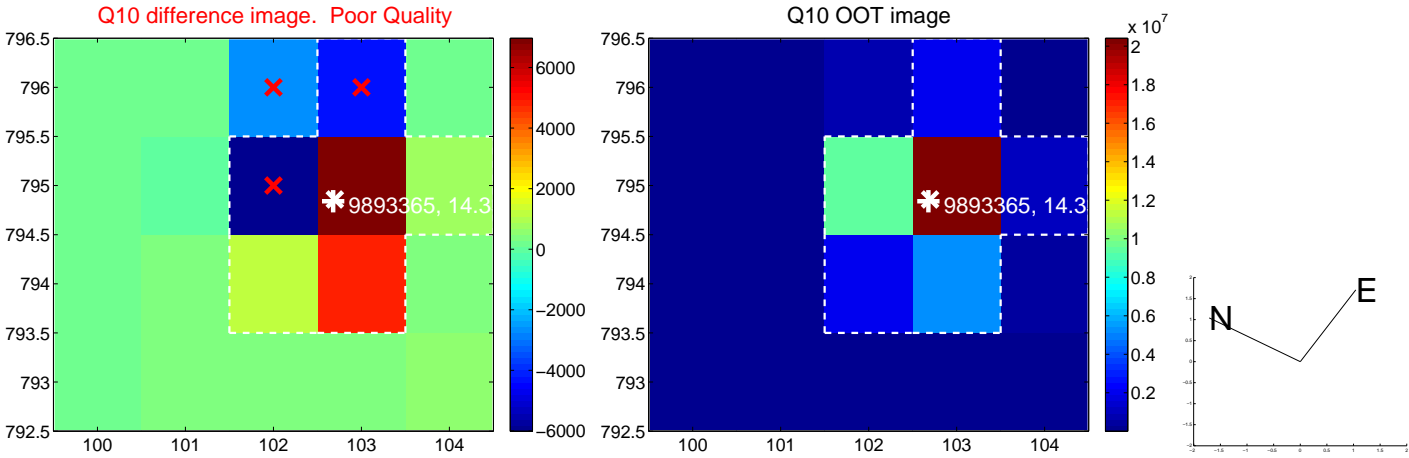
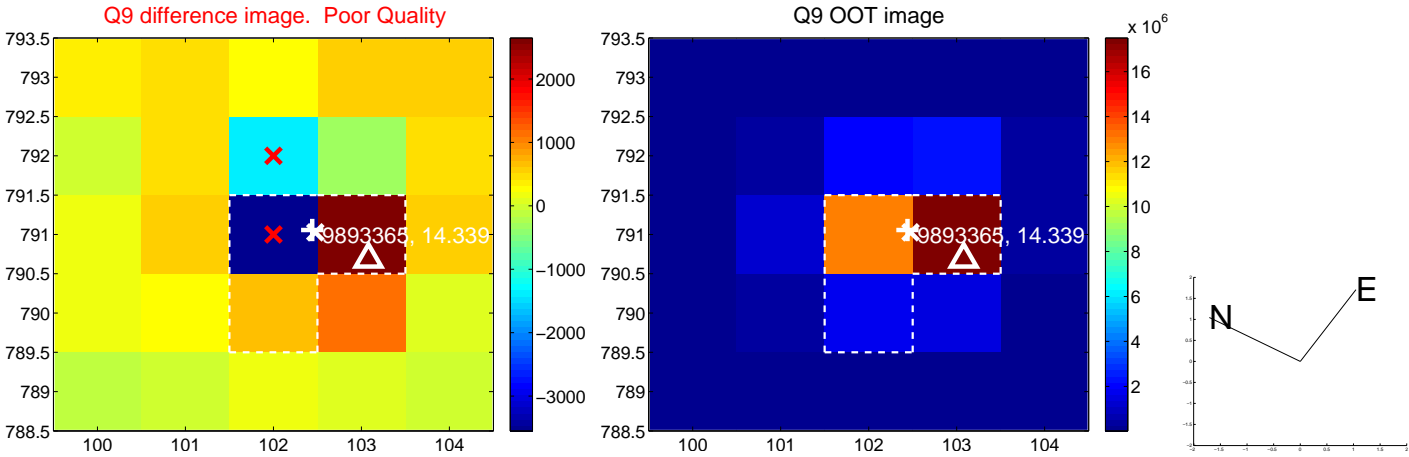


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

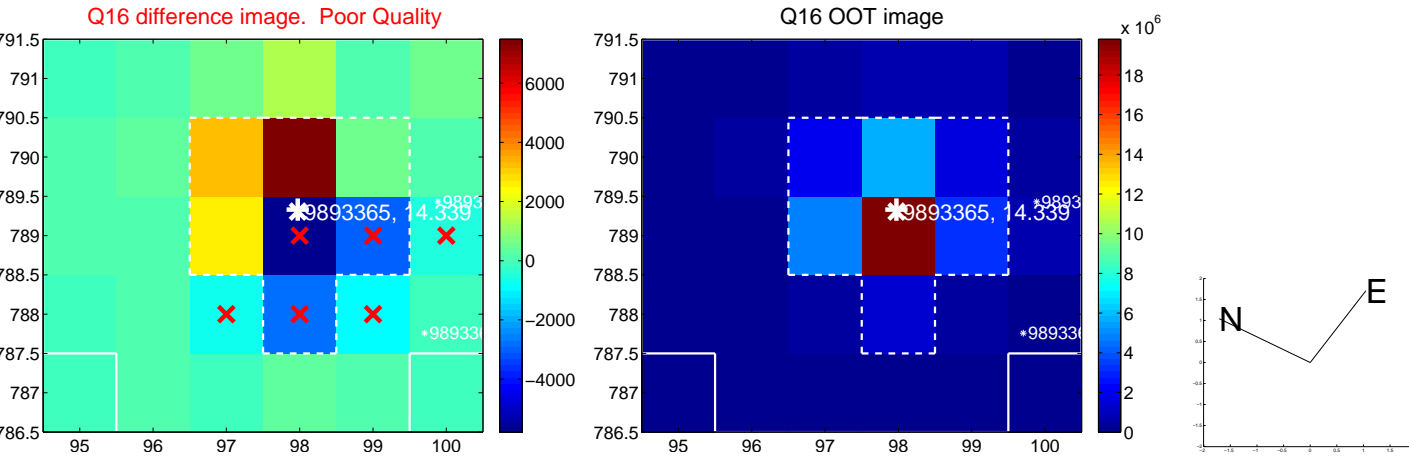
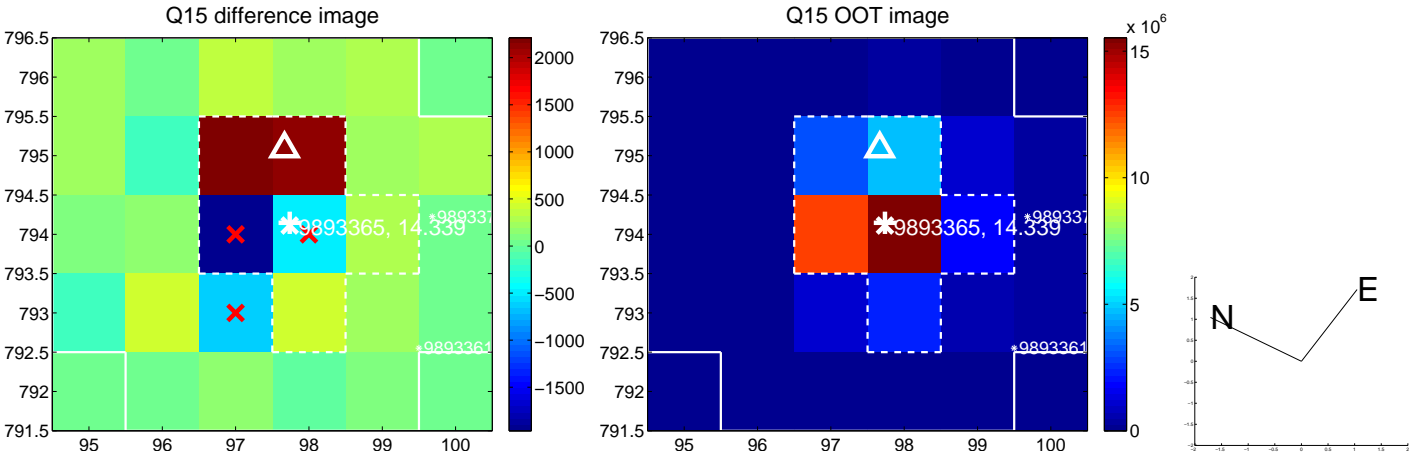
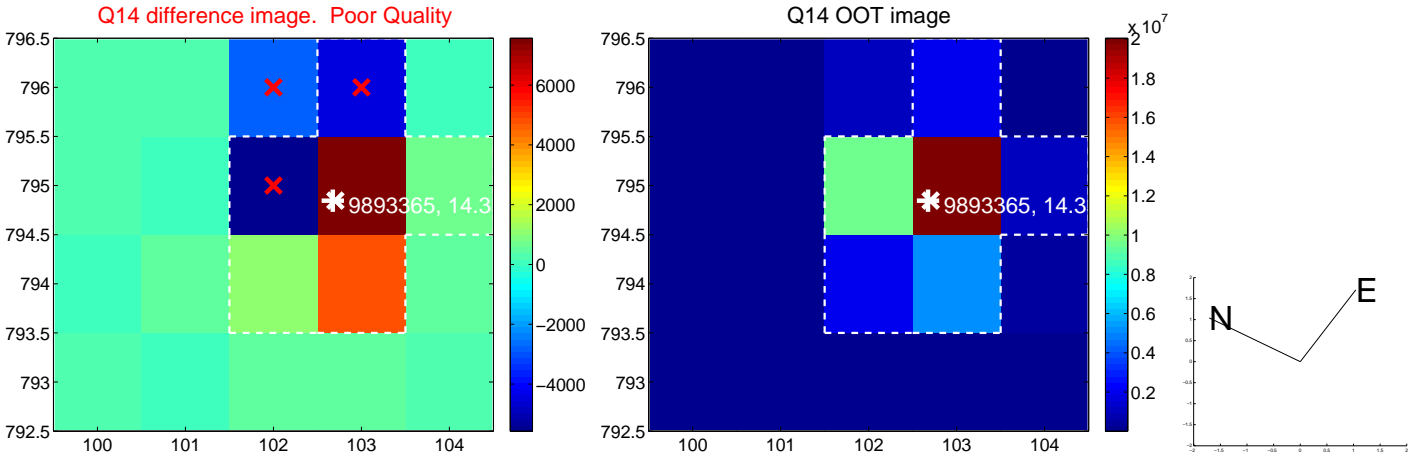
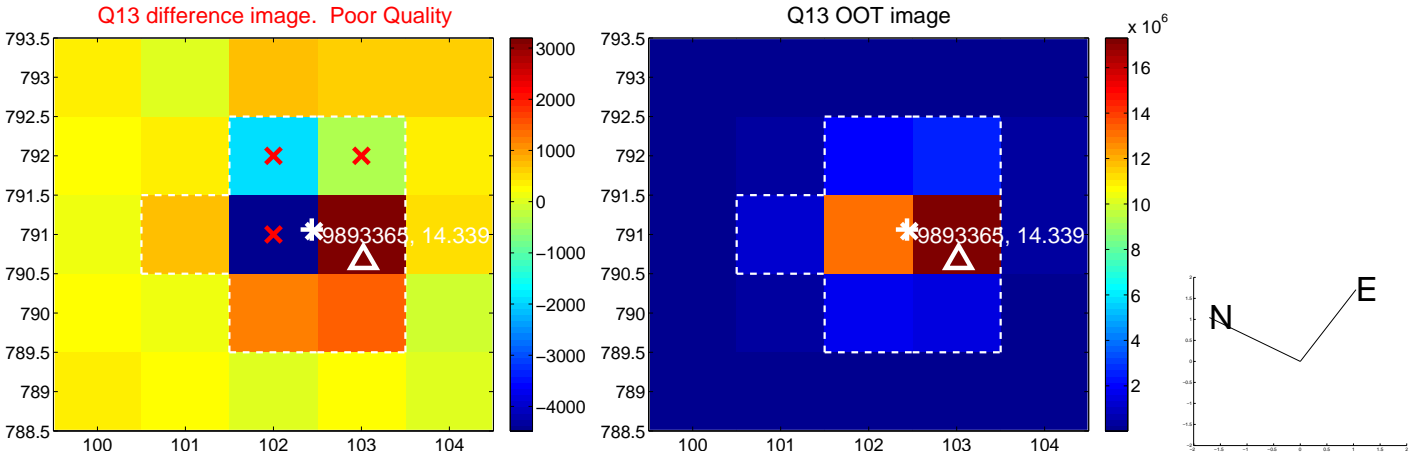
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



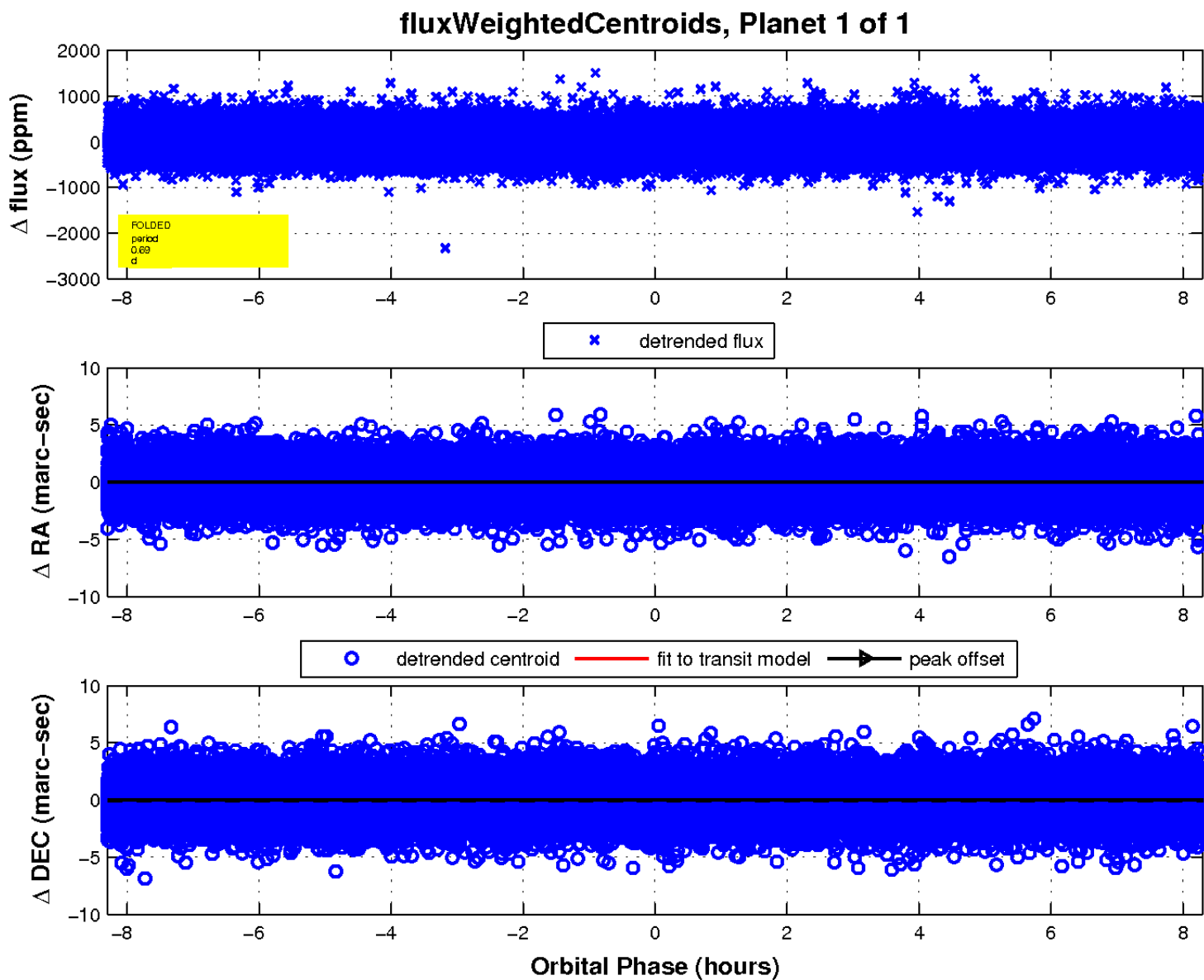
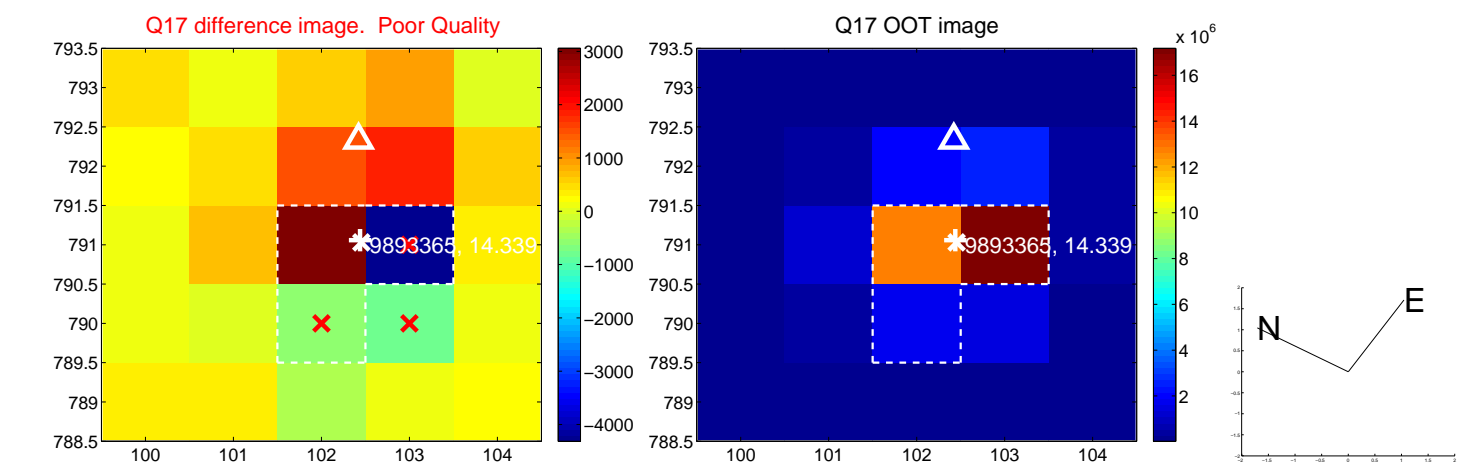
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



UKIRT Image

Declination

