

KIC 009943009

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})
009943009-01	OBS	7258.01	2.437580	132.138477	23.6	1.786	7.5	7.4	1.53	5927	0.90	1911.69

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
009943009-01	OBS	PC	0.93	0	0	0	0	NO_COMMENT

Notes: OBS = Observed. INJ = Injected. INV = Inverted. SCR = Scrambled.

N = Not Transit-Like. S = Stellar Eclipse. C = Centroid Offset. E = Ephemeris Match.

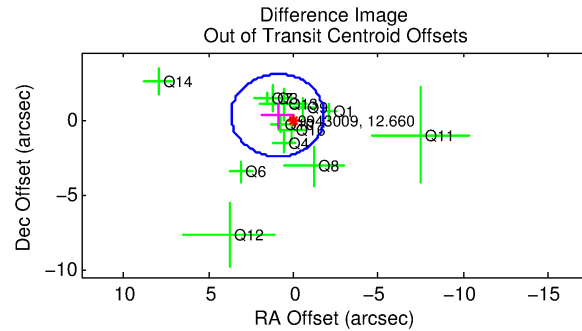
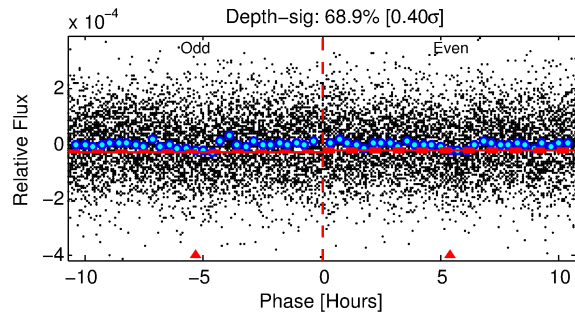
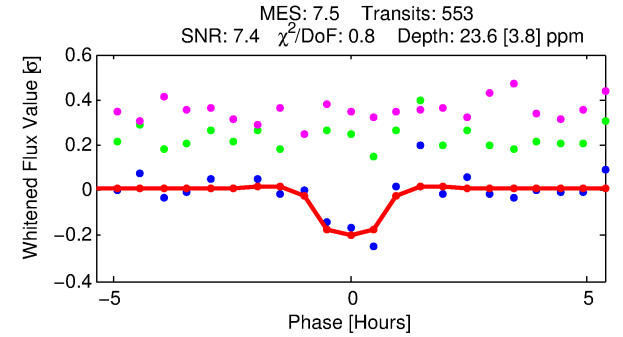
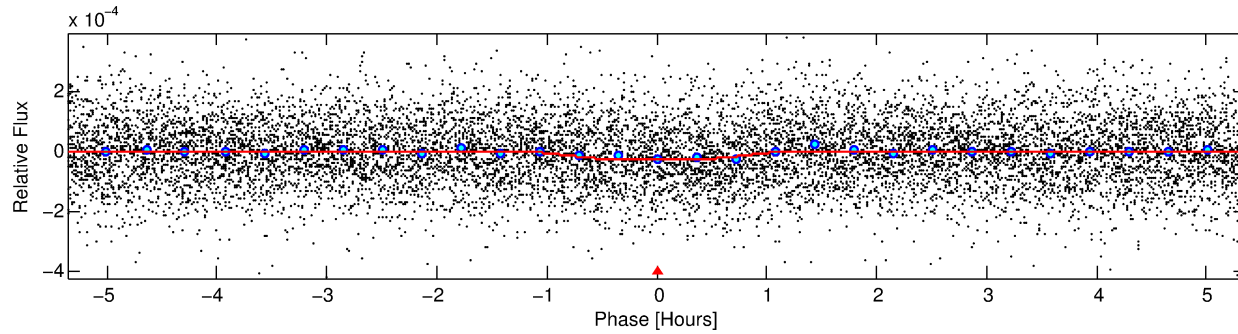
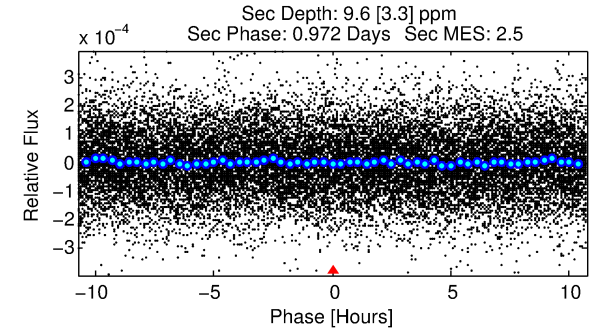
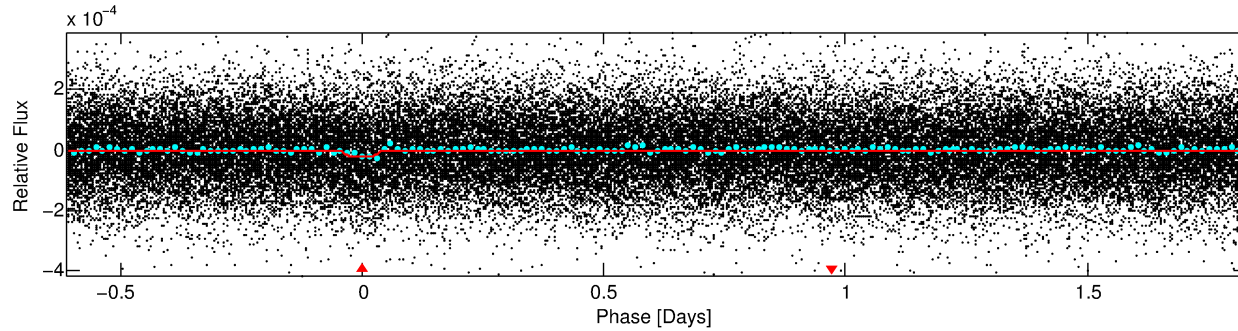
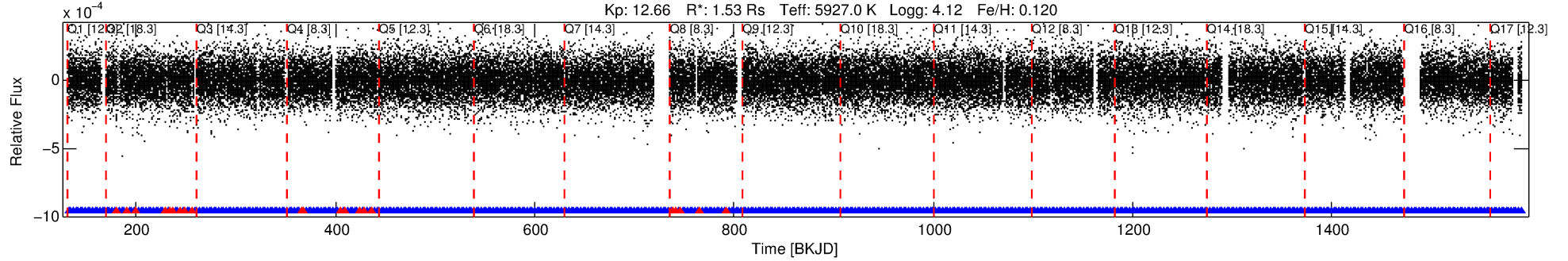
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 009943009-01

No Significant Match Found

DV One-Page Summary

KIC: 9943009 Candidate: 1 of 1 Period: 2.438 d
KOI: K07258.01 Corr: 0.853



DV Fit Results:

Period = 2.43758 [0.00002] d
Epoch = 132.1385 [0.0036] BKJD
Rp/R* = 0.0054 [0.0029]
a/R* = 4.45 [11.55]
b = 0.91 [0.50]
Seff = 1911.69 [606.28]
Teq = 1686 [134] K
Rp = 0.90 [0.52] Re
a = 0.0368 [0.0073] AU
Ag = 8.88 [10.45] [0.75σ]
Teffp = 4500 [1278] K [2.19σ]

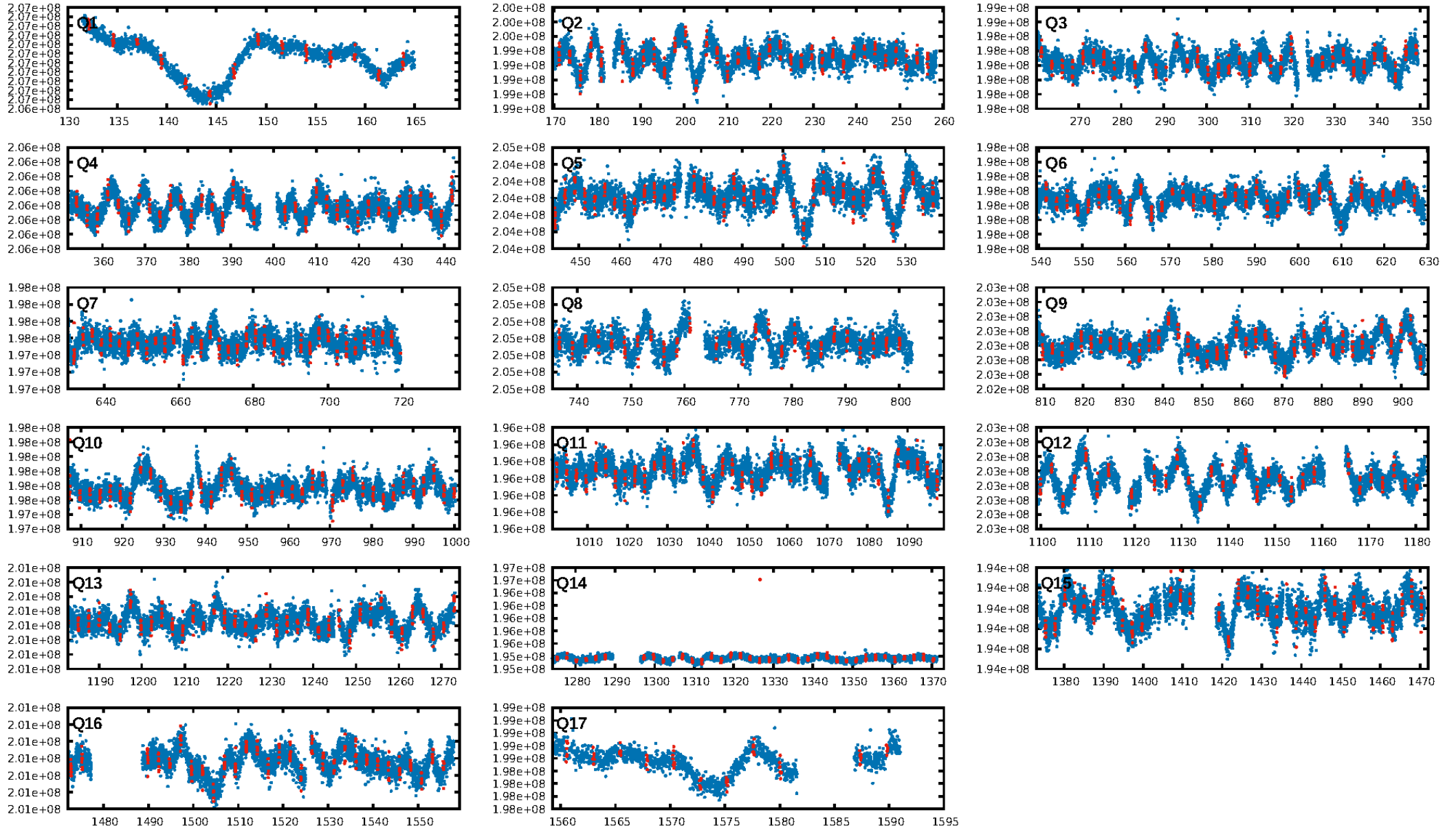
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 1.49e-13
RollingBand-fgt: 0.96 [507/528]
GhostDiagnostic-chr: 1.476
Centroid-sig: 6.7%
Centroid-so: 1.434 arcsec [1.11σ]
OotOffset-rm: 0.962 arcsec [1.05σ]
KicOffset-rm: 0.856 arcsec [0.84σ]
OotOffset-st: 3/3/4/3 [13]
KicOffset-st: 3/3/4/3 [13]
DiffImageQuality-fgm: 0.62 [8/13]
DiffImageOverlap-fno: 1.00 [17/17]

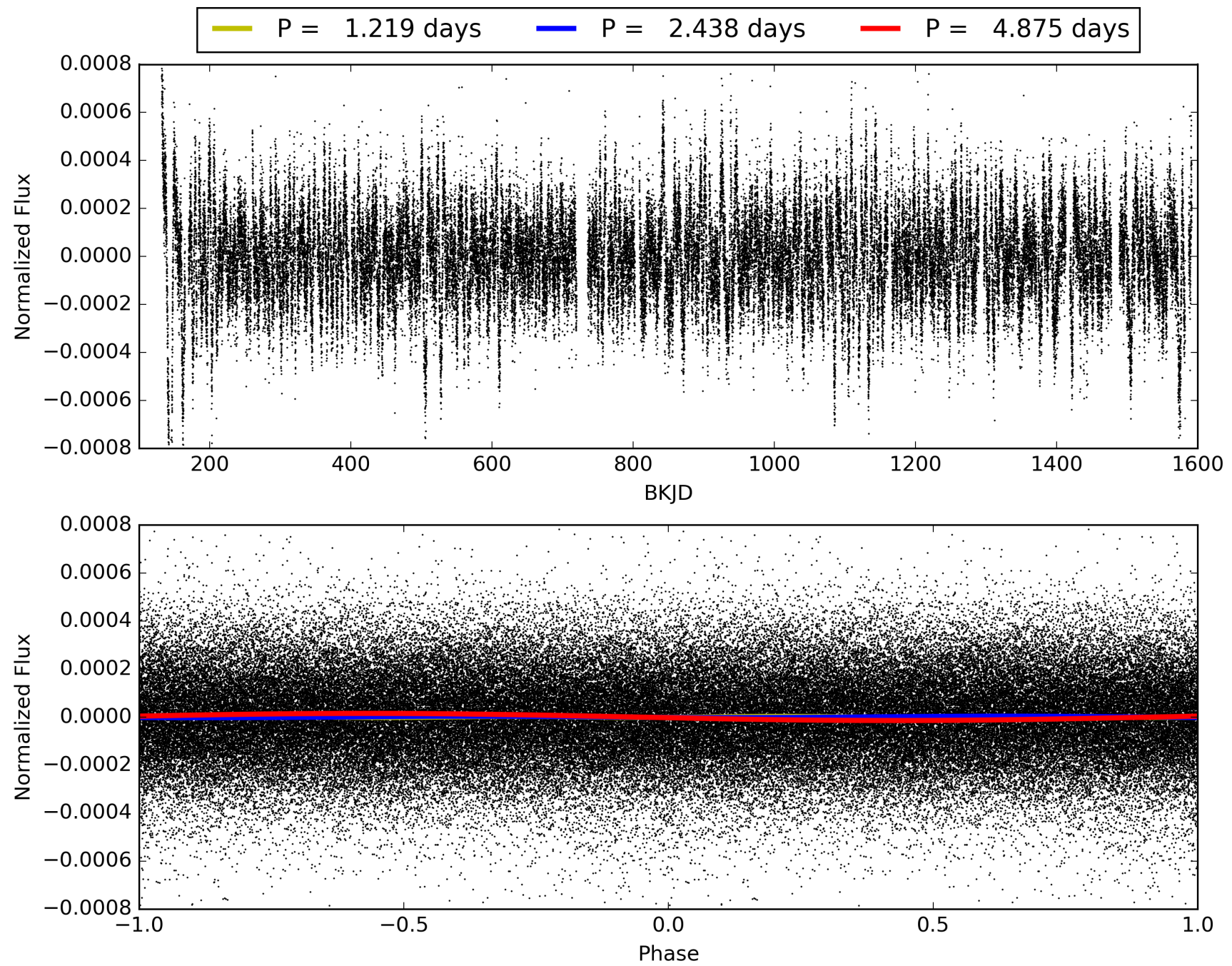
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 28-Jan-2016 23:12:24 Z

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

TCE 009943009-01, PDC Light Curves

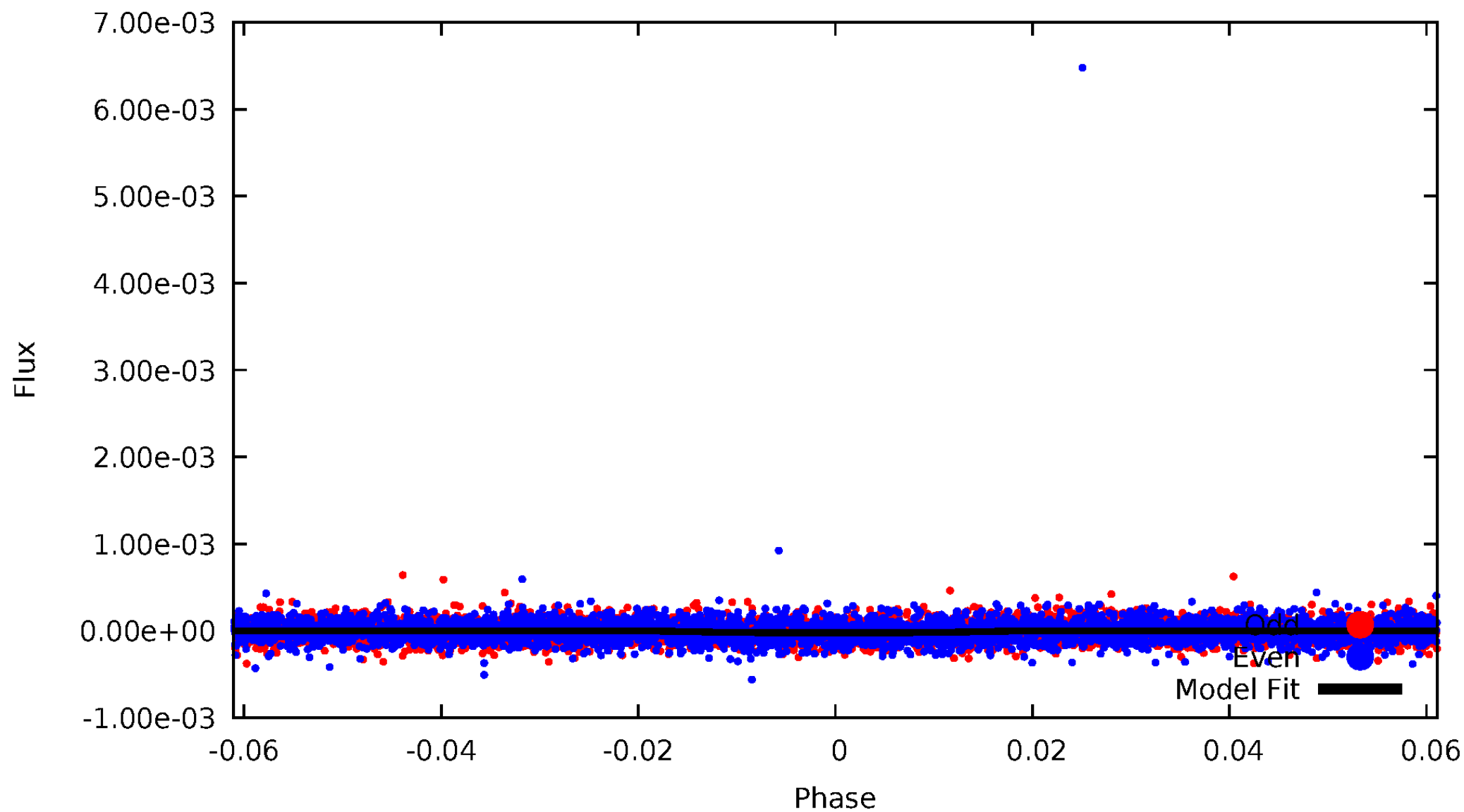


TCE 009943009-01



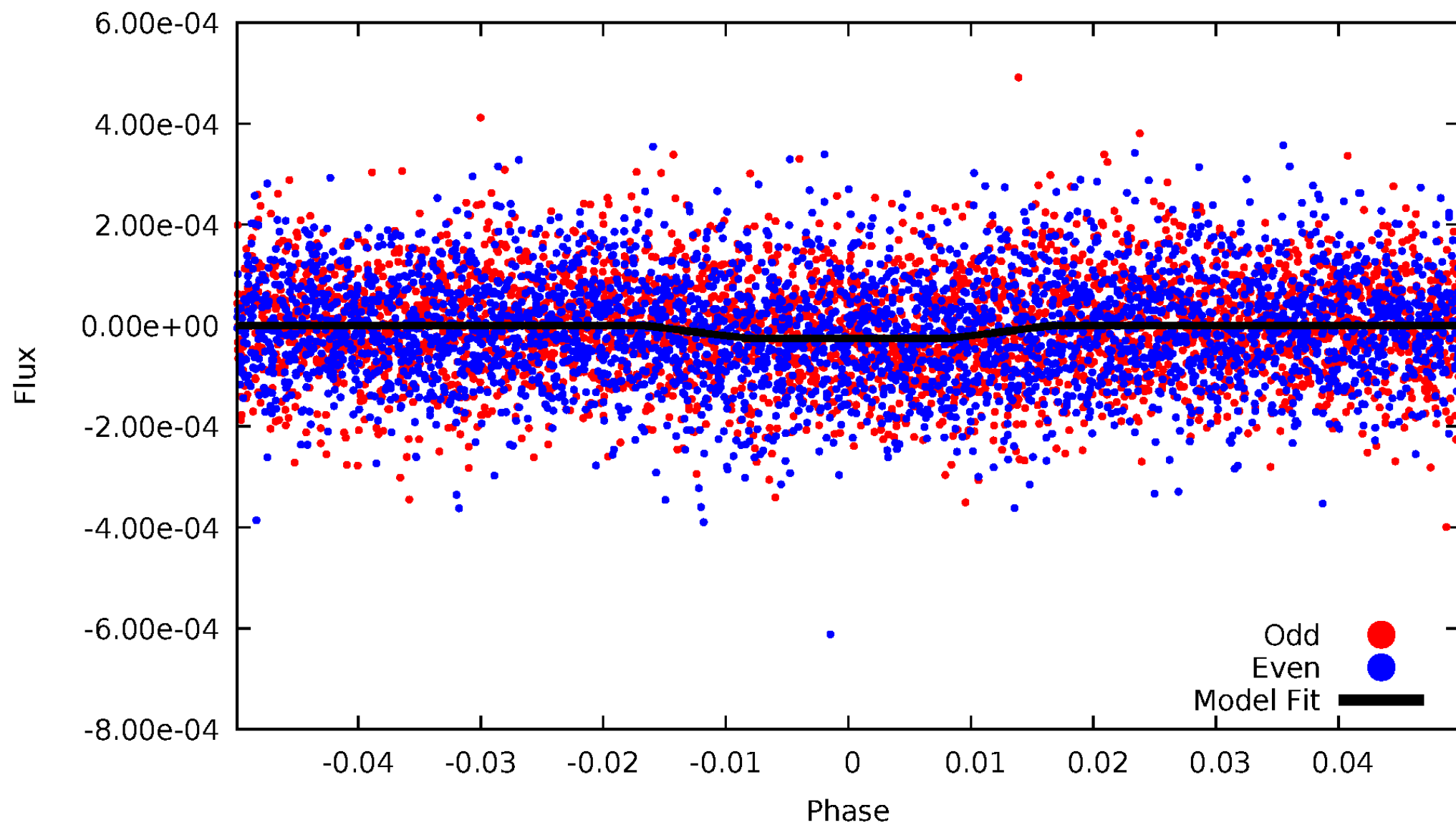
DV Odd/Even

TCE 009943009-01



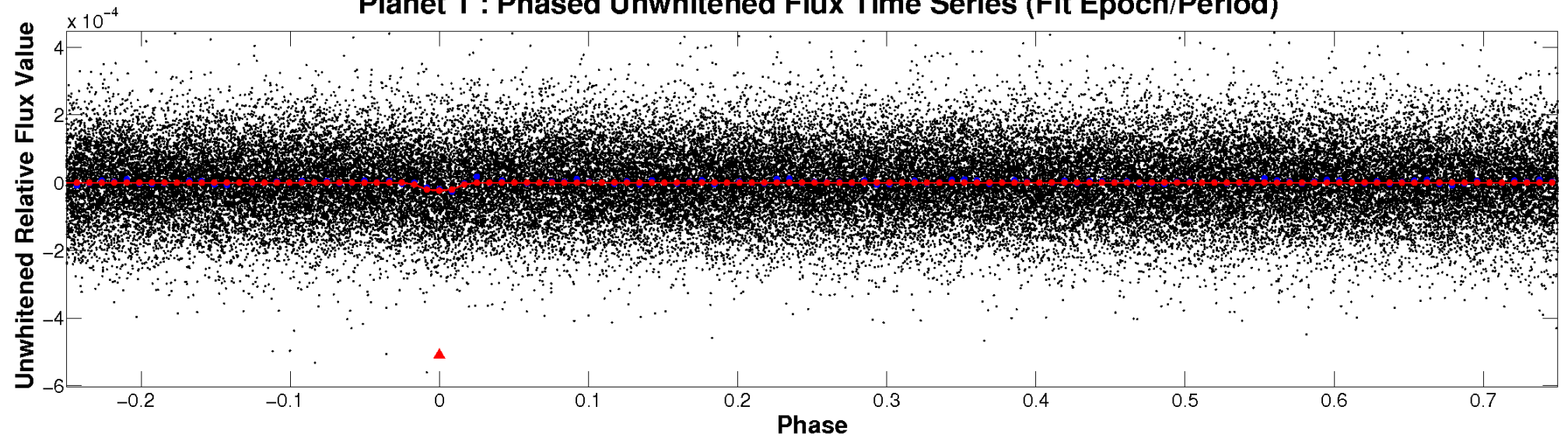
ALT Odd/Even

TCE 009943009-01

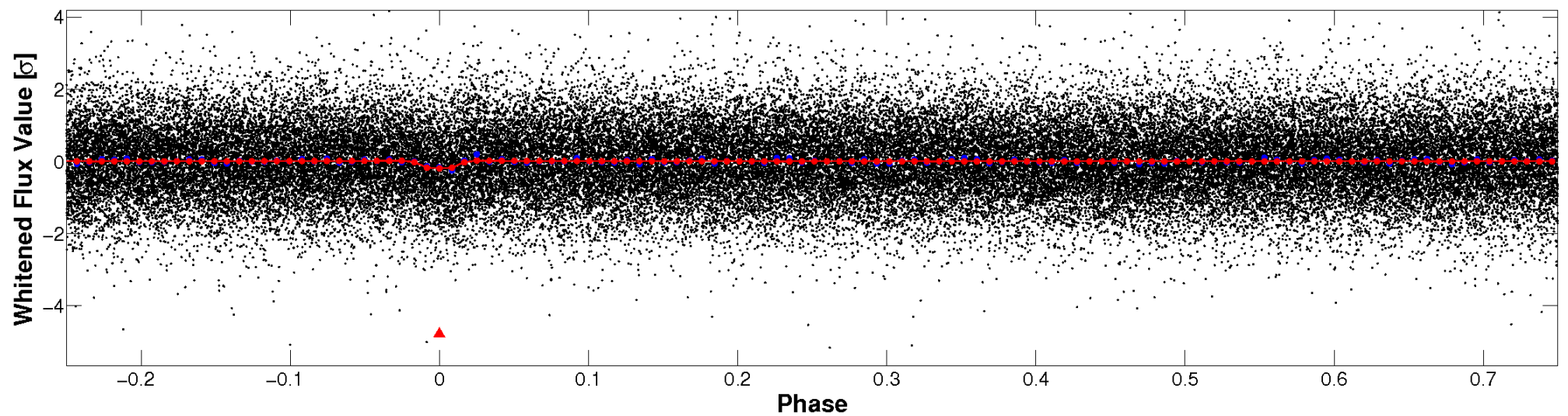


Non-Whitened Vs. Whitened Light Curve

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

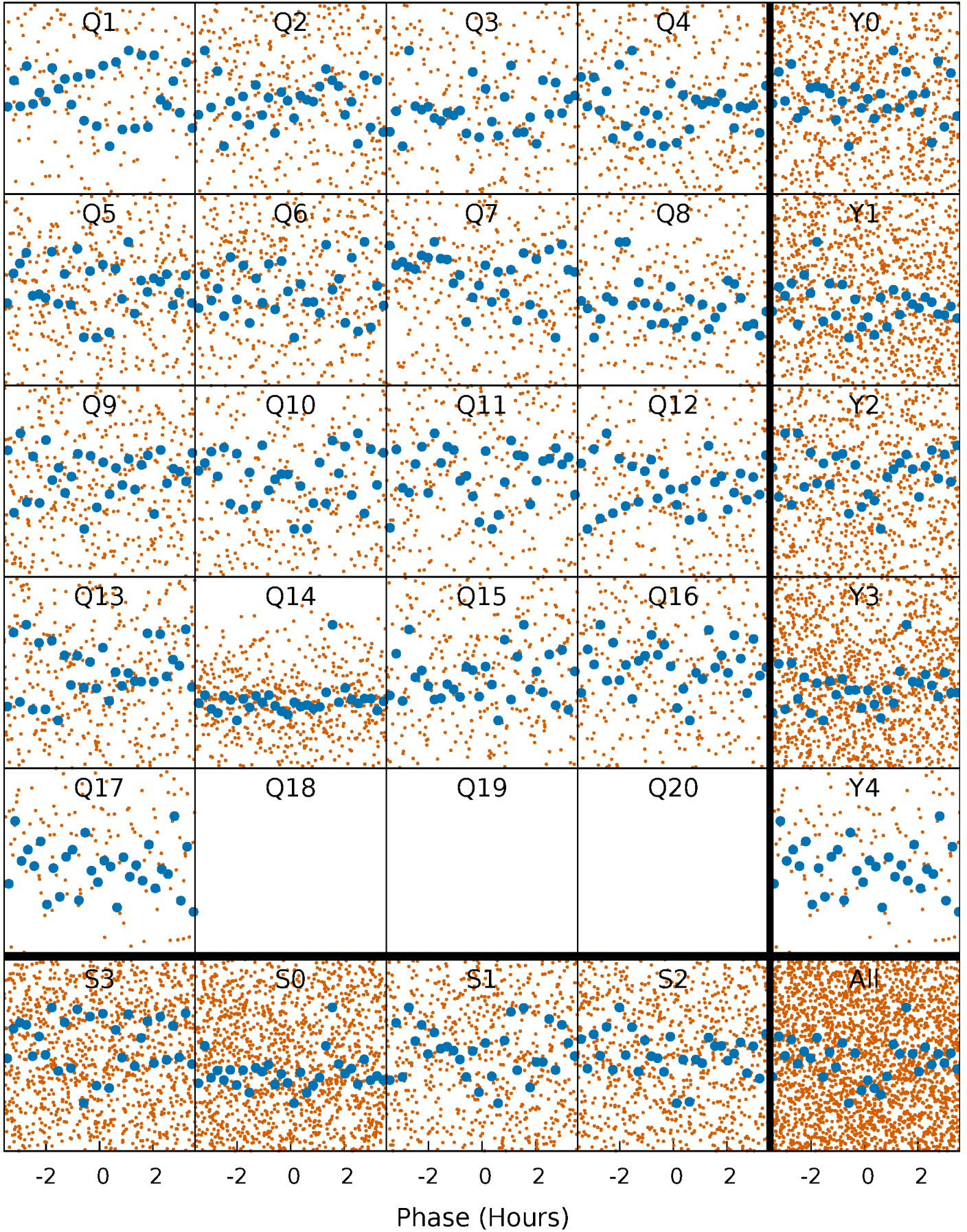


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



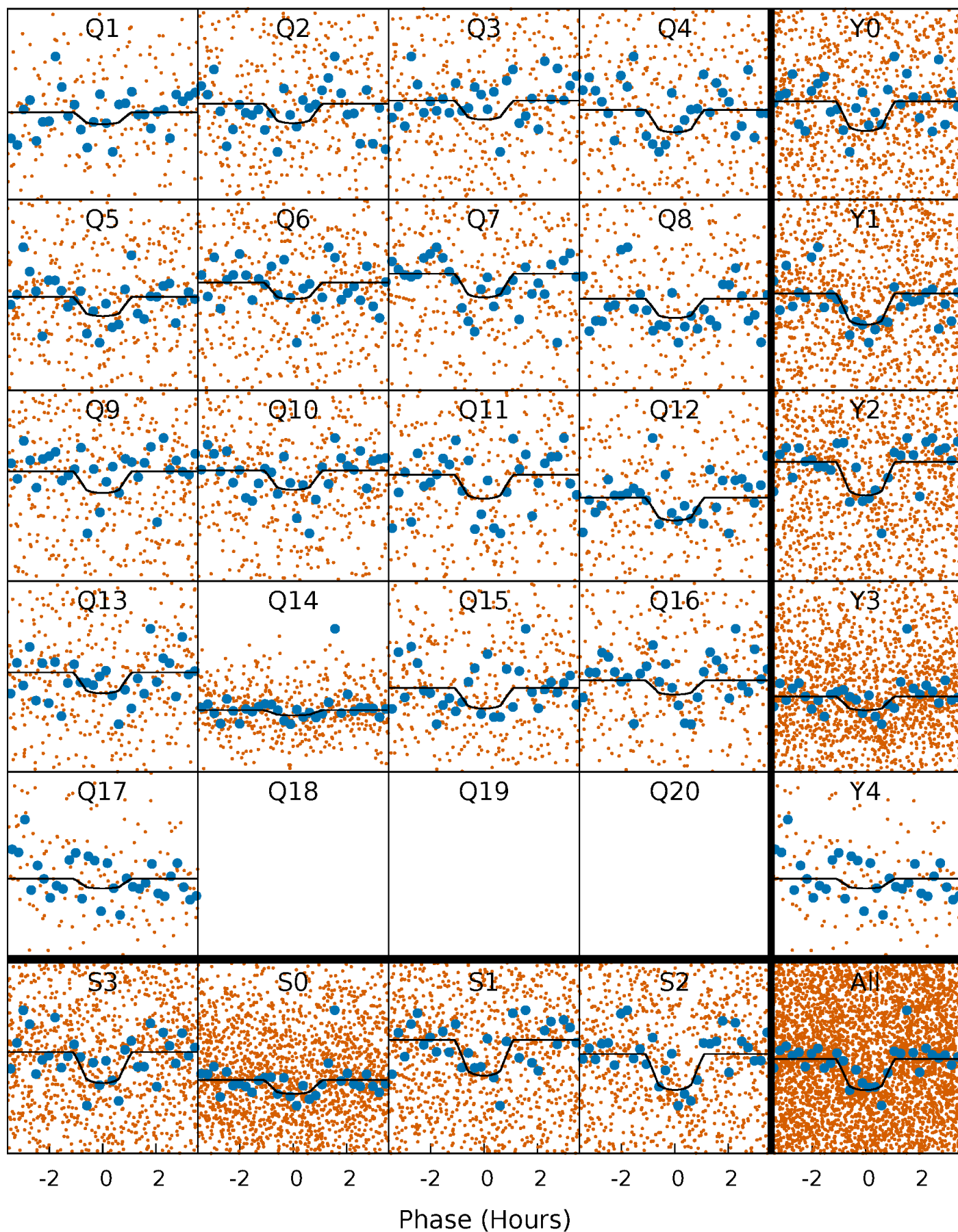
PDC Quarter-Phased Transit Curves

TCE 009943009-01 $P = 2.437580$ Days $T_0 = 132.138477$ (BKJD)



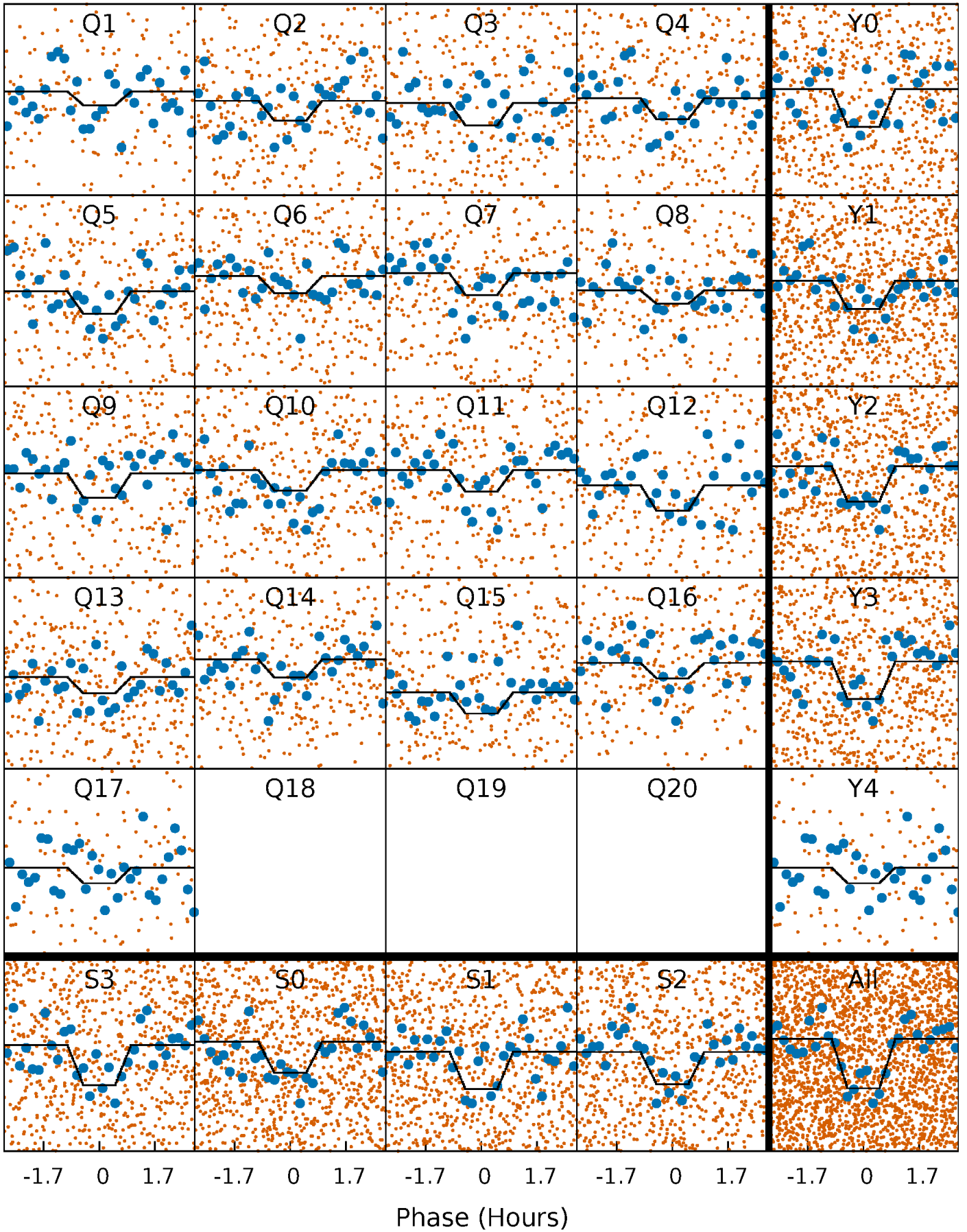
DV Quarter-Phased Transit Curves

TCE 009943009-01 P= 2.437580 Days $T_0=132.138477$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

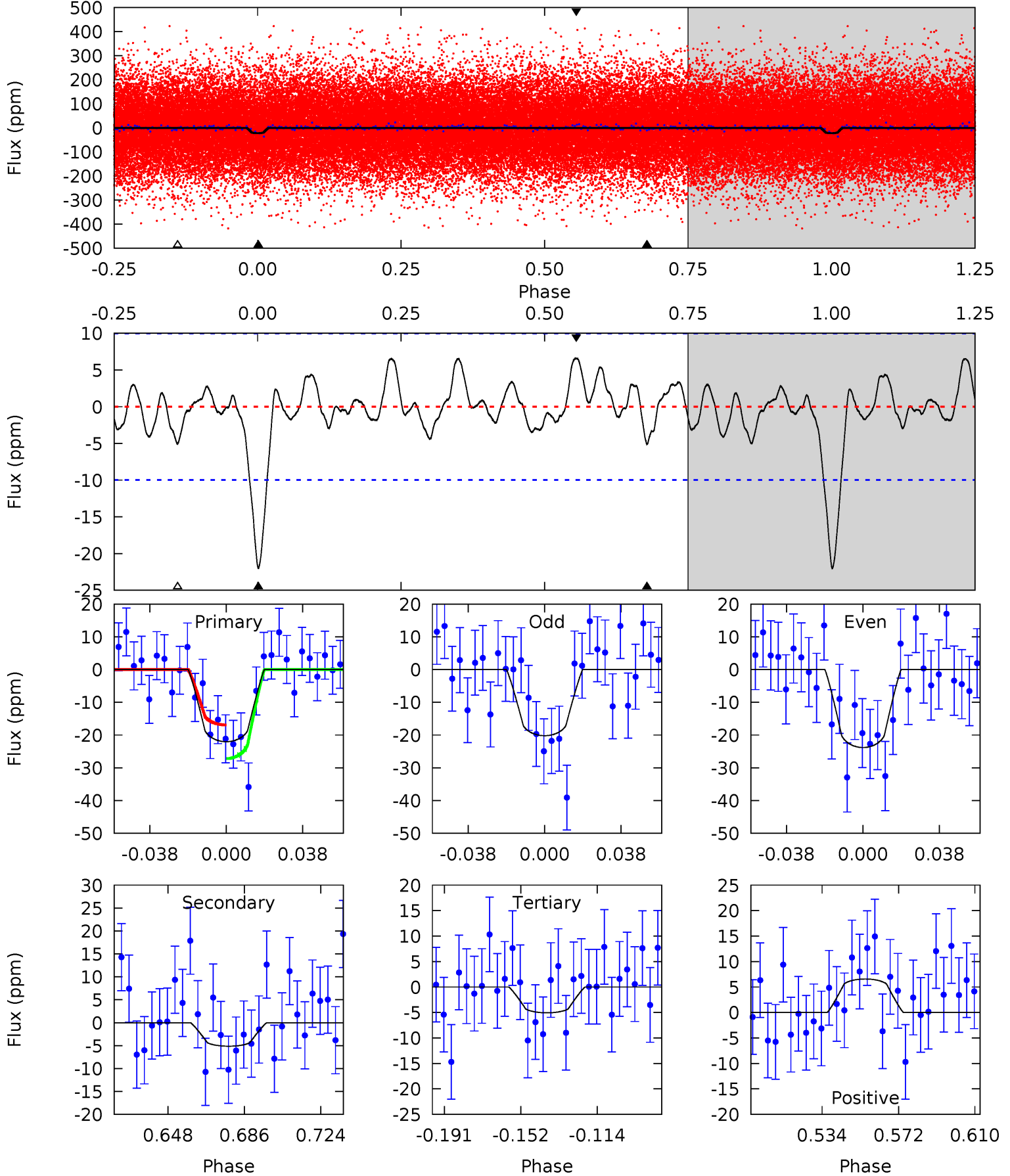
TCE 009943009-01 P= 2.437644 Days $T_0=132.119965$ (BKJD)



DV Model-Shift Uniqueness Test

009943009-01, P = 2.437580 Days, E = 129.700897 Days

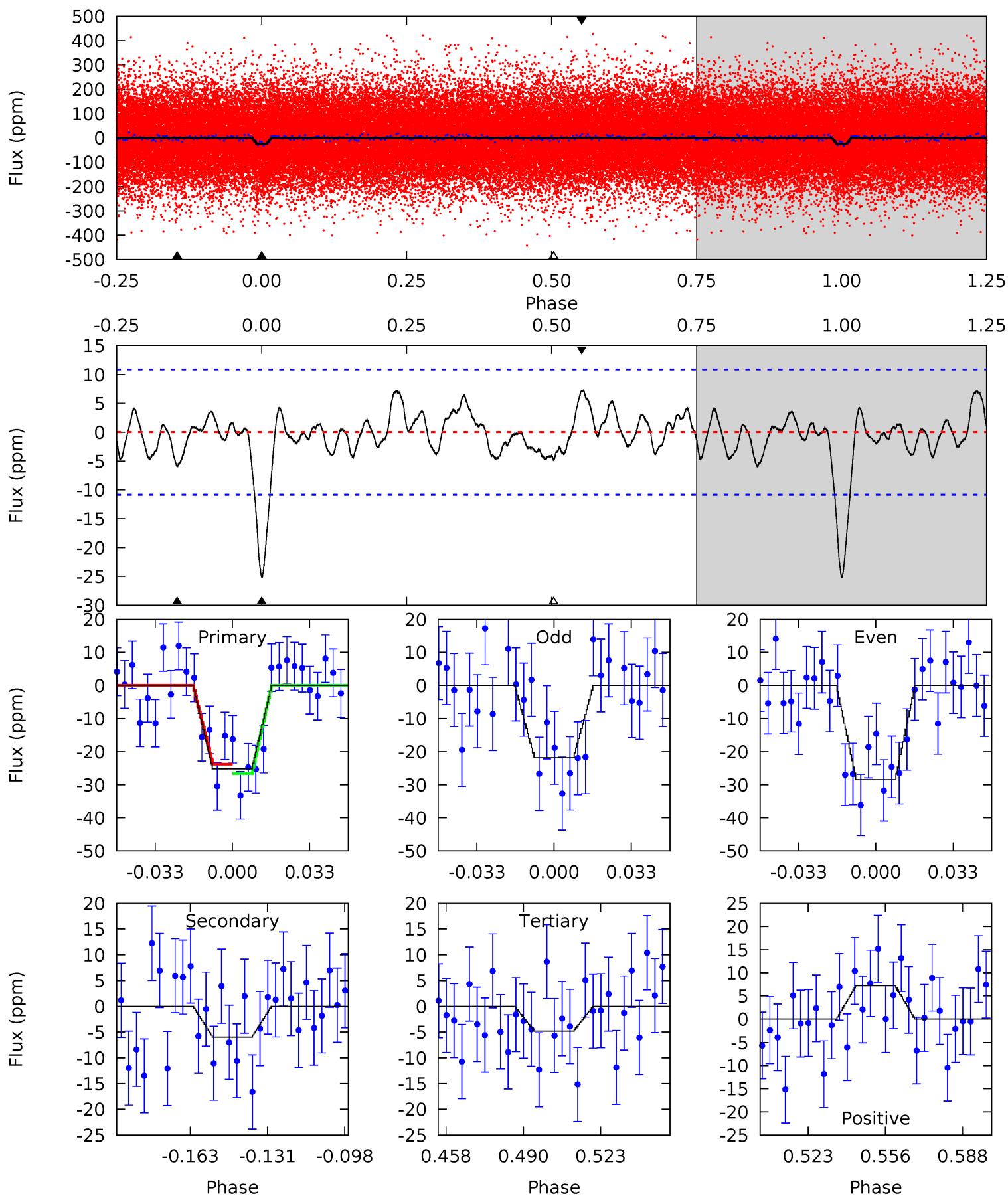
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
10.5	2.45	2.42	3.14	4.76	2.07	1.21	8.10	7.38	0.03	-0.69	0.86	1.02	0.23	2.46



Alt Model-Shift Uniqueness Test

009943009-01, P = 2.437644 Days, E = 129.682321 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
11.1	2.64	2.13	3.18	4.79	2.14	1.25	8.98	7.93	0.50	-0.55	1.46	1.16	0.22	0.62



Stellar Parameters For KIC 009943009

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	M (M_{\odot})	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	5927^{+79}_{-79}	$4.117^{+0.182}_{-0.098}$	$0.120^{+0.150}_{-0.150}$	$1.530^{+0.264}_{-0.322}$	$1.118^{+0.109}_{-0.089}$	$0.440^{+0.411}_{-0.132}$
	+1%/-1%	+4%/-2%	+125%/-125%	+17%/-21%	+10%/-8%	+94%/-30%
Source	SPE90	SPE90	SPE90	DSEP		

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

Secondary Eclipse Parameters for KIC 009943009-01 / KOI 7258.01

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-5 ± 2	$0.89^{+0.52}_{-0.46}$	2335^{+114}_{-129}	4008^{+1486}_{-739}	$4.604^{+17.401}_{-3.062}$
Alt.	-6 ± 2	$0.88^{+0.47}_{-0.47}$	2340^{+109}_{-123}	4189^{+1541}_{-674}	$5.793^{+20.066}_{-3.643}$

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 $A_{obs} \gg 1.0$

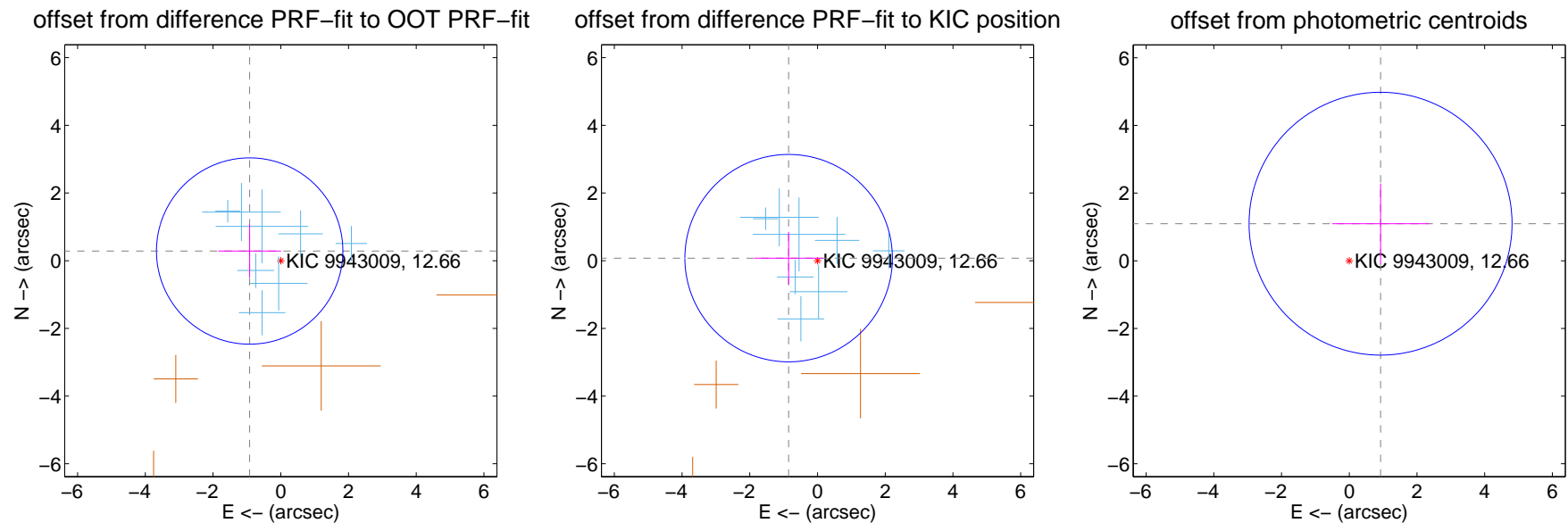
DV Centroid Data

Supplemental centroid analysis for 009943009-01. Kepler magnitude: 12.66. Transit SNR 7.41

There are 8 quarters with good PRF difference image offsets

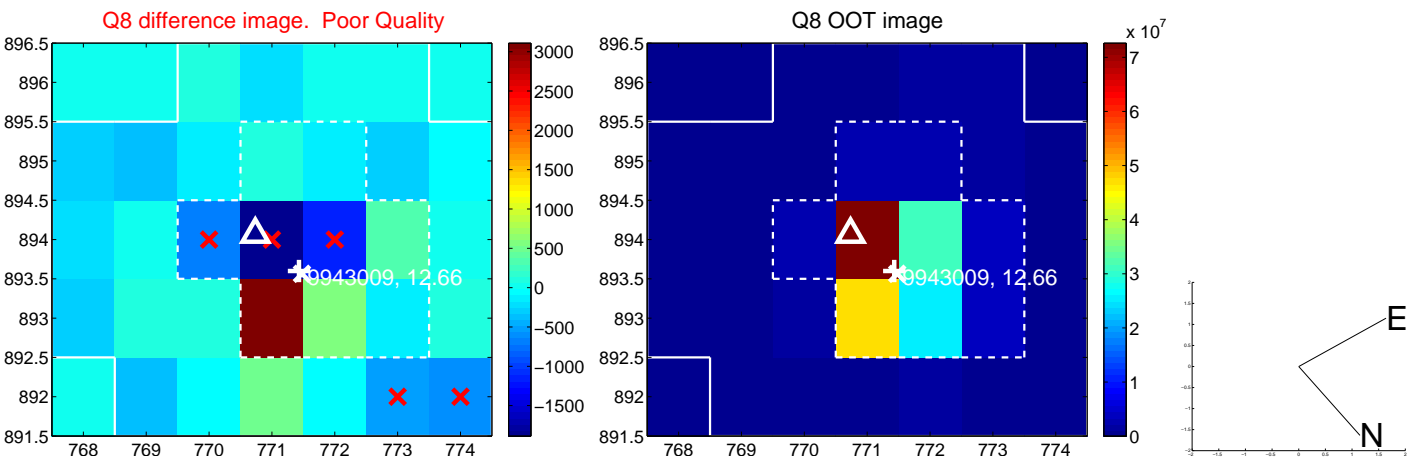
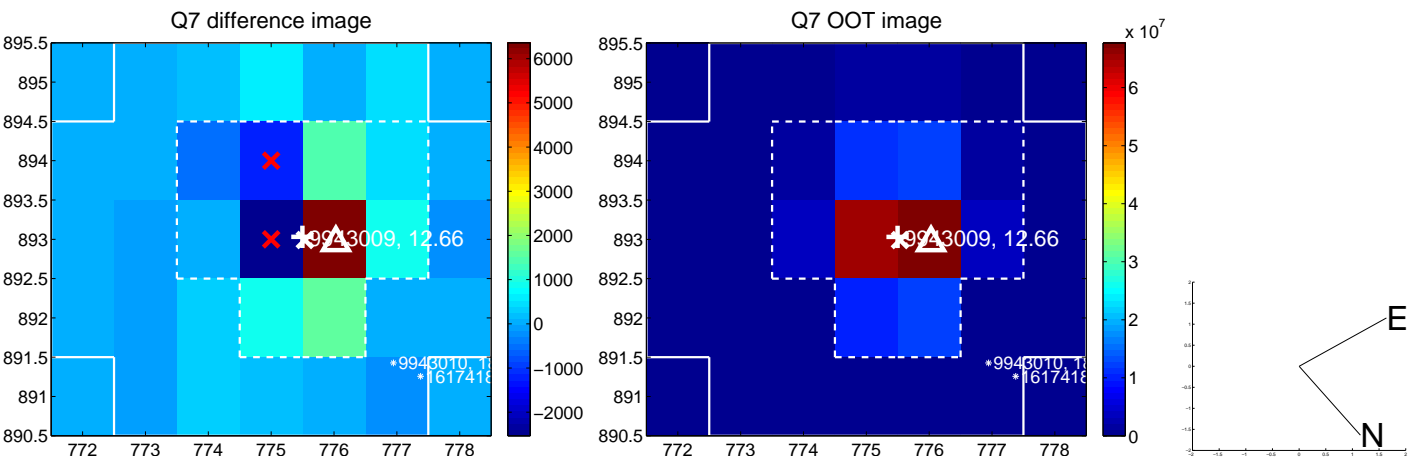
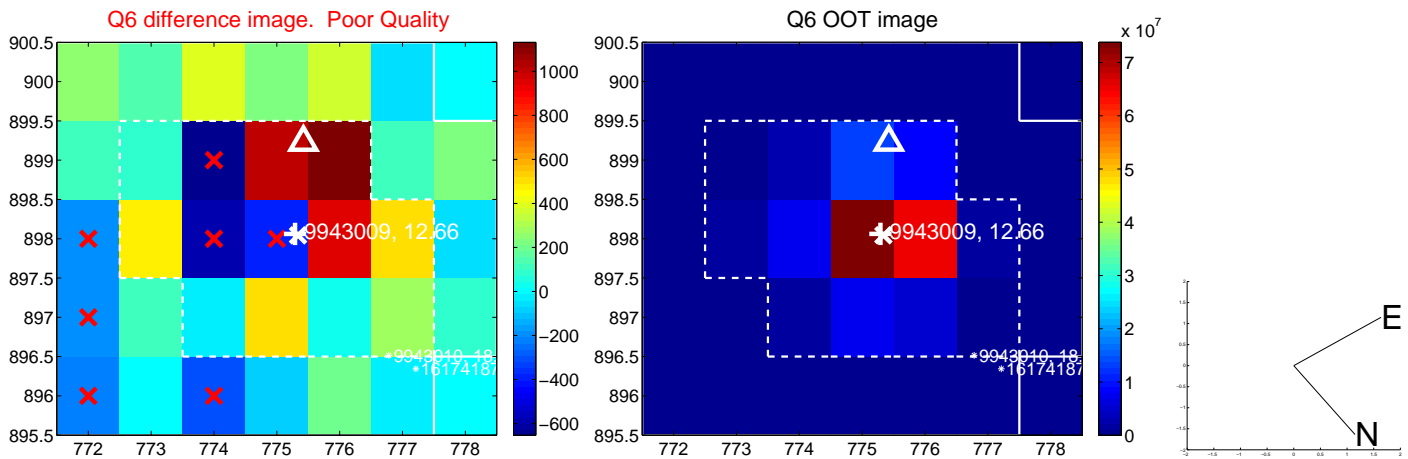
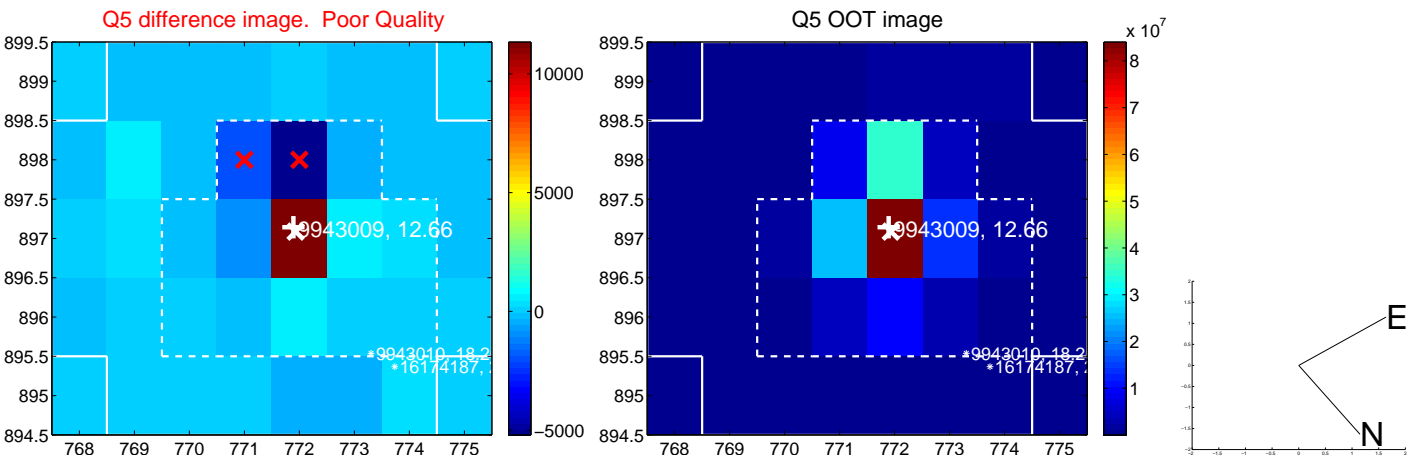
The direct PRF centroid is offset from the target star catalog position by about 0.26 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.962 ± 0.918	1.05	0.919 ± 0.927	0.286 ± 0.786
PRF-fit source offset from KIC position	0.856 ± 1.021	0.84	0.853 ± 1.017	0.075 ± 0.774
photometric centroid source offset	1.43 ± 1.29	1.11	-0.92 ± 1.43	1.10 ± 1.19

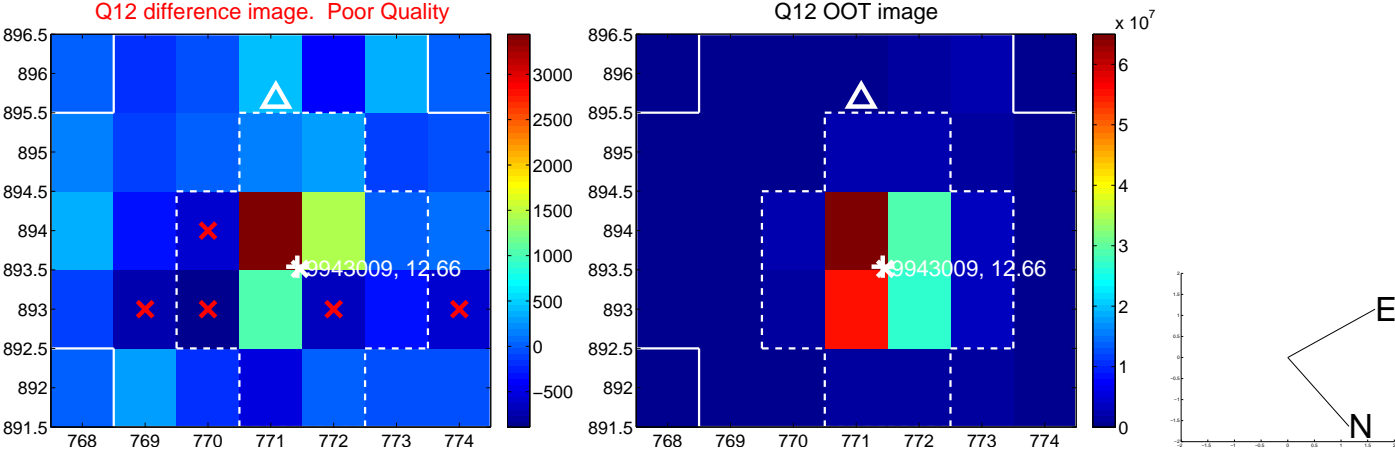
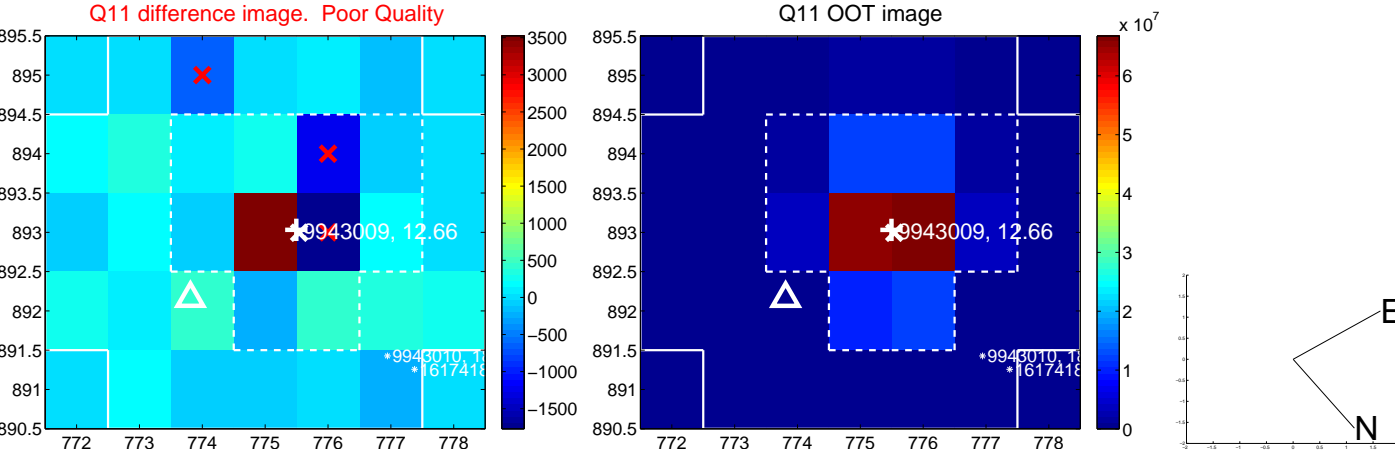
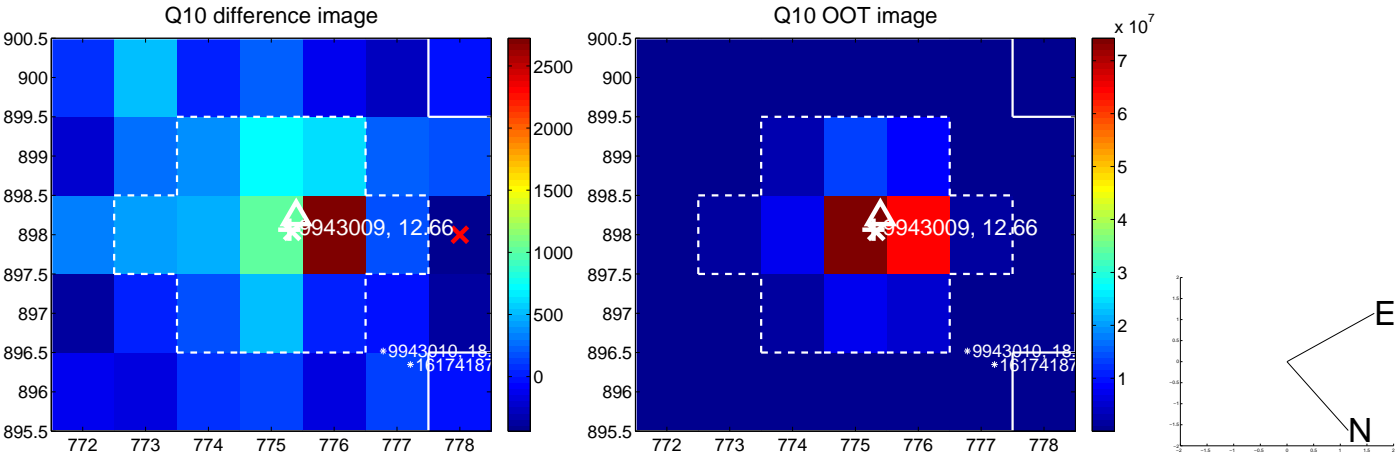
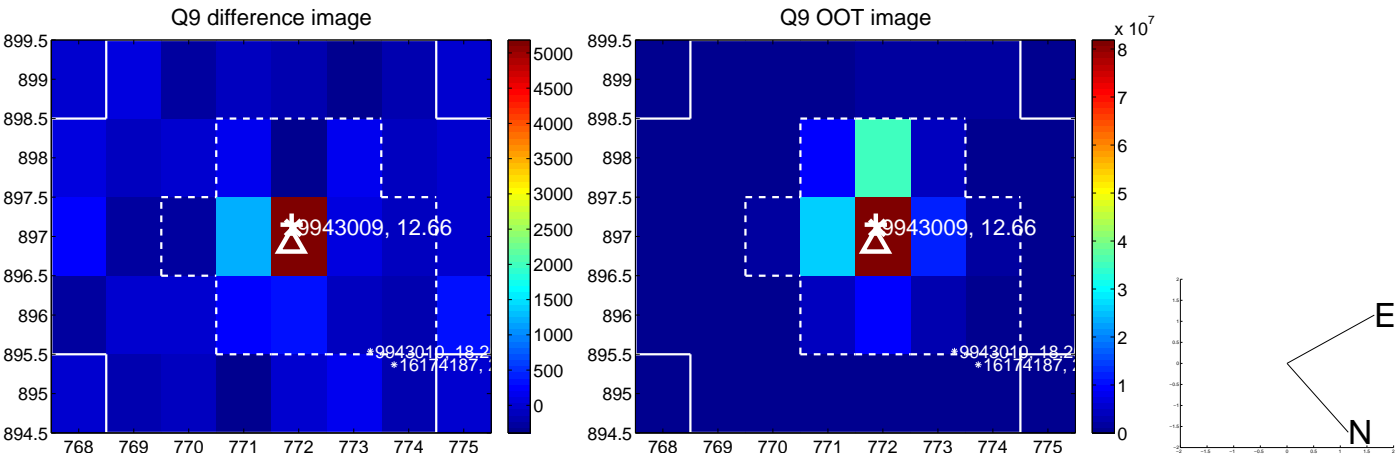


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

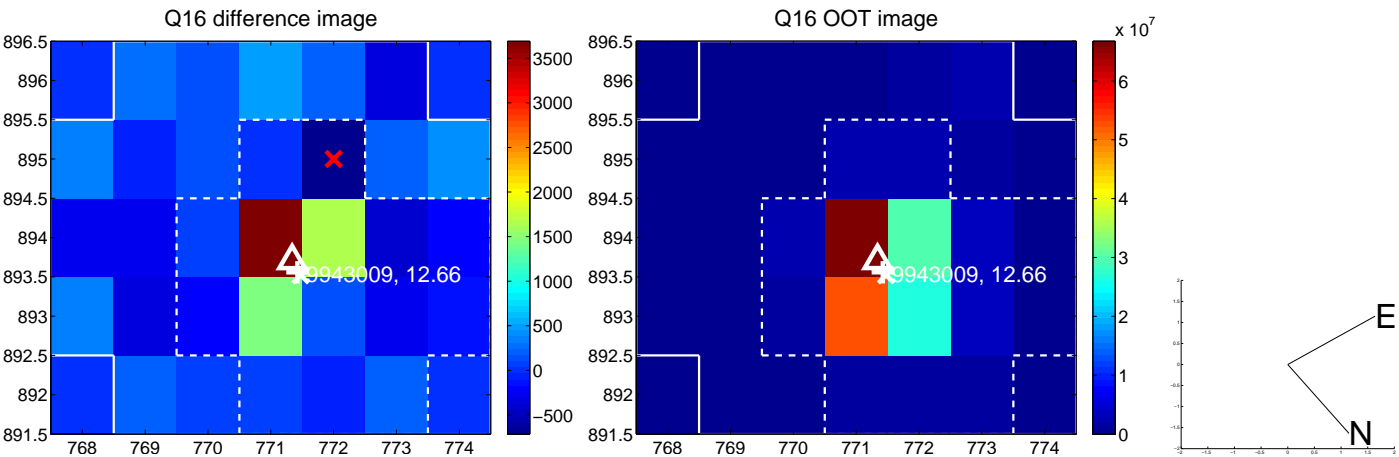
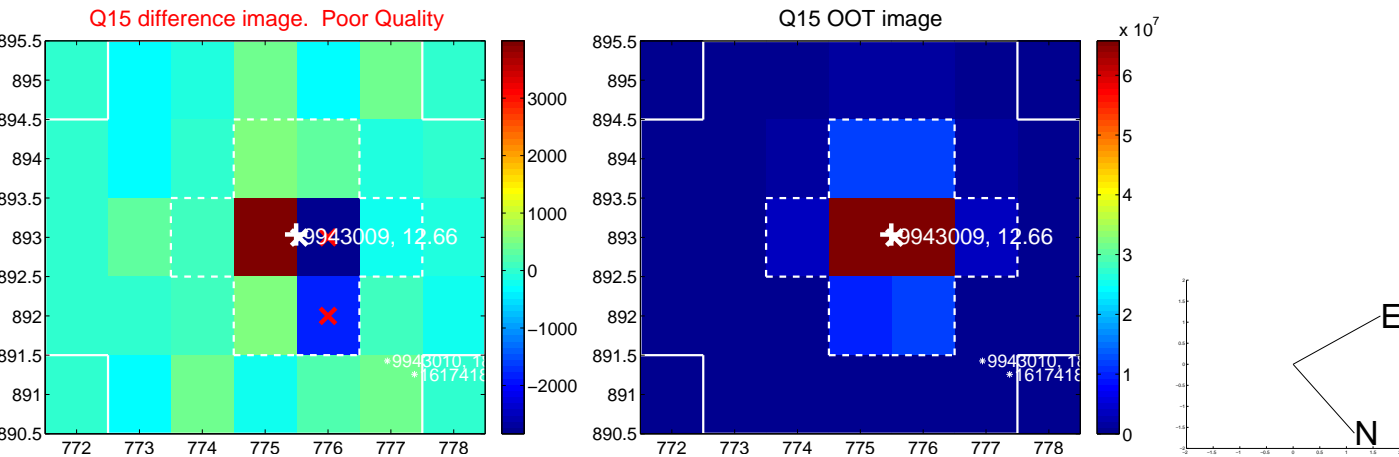
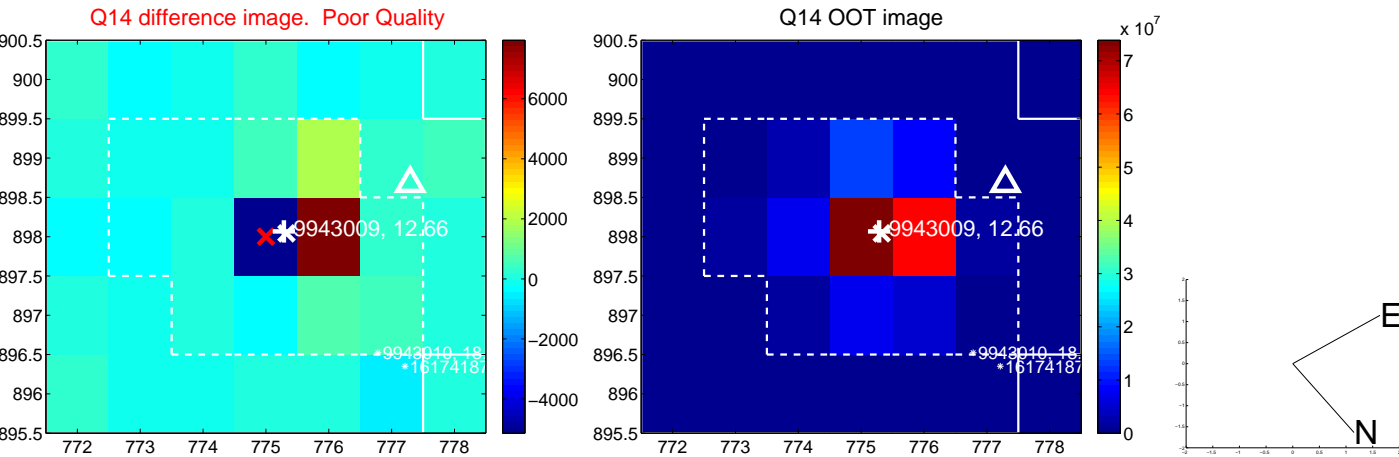
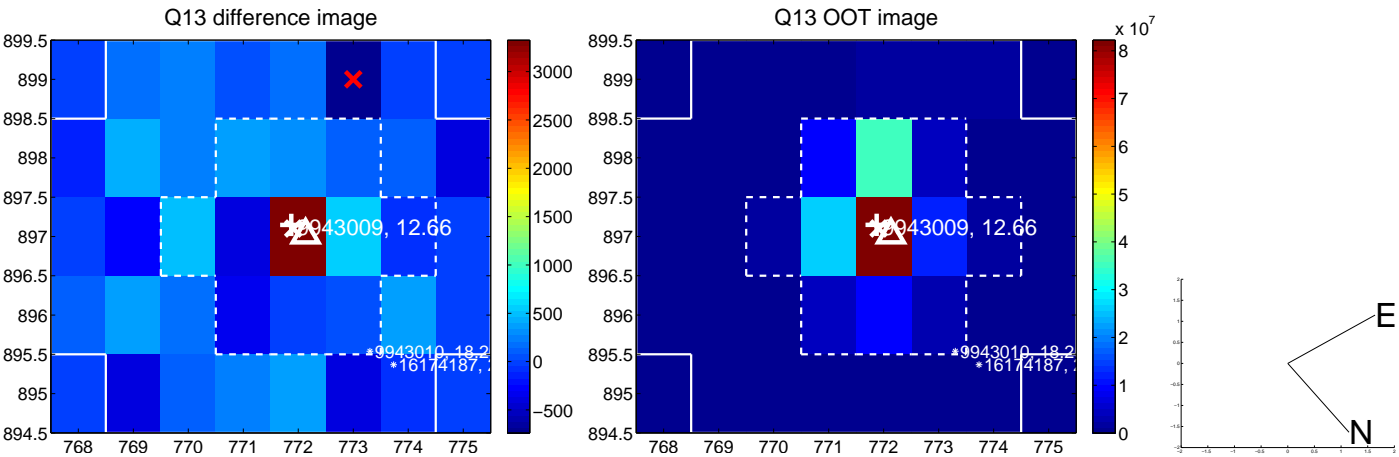
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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.



UKIRT Image

Declination

