

KIC 009850893

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})
009850893-01	OBS	1523.01	8.480354	135.849148	271.1	6.673	18.9	20.0	1.05	5401	2.06	133.16

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
009850893-01	OBS	FP	0.00	0	0	1	1	CENT_CROWDED—HALO_GHOST—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.

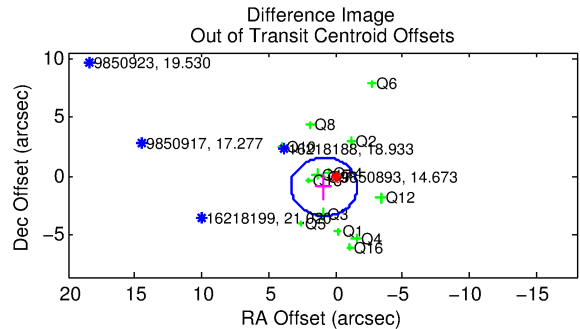
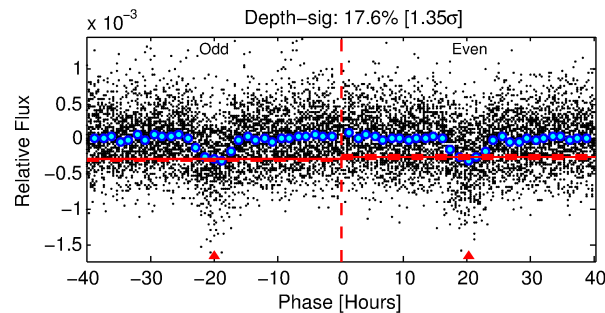
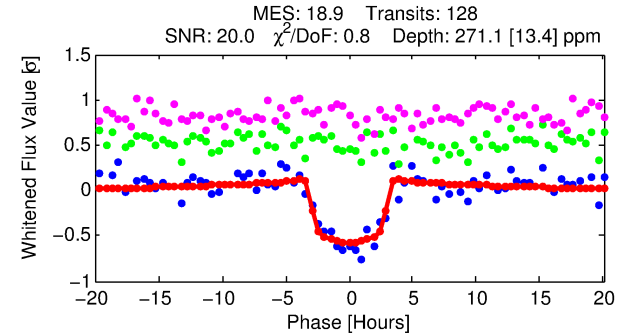
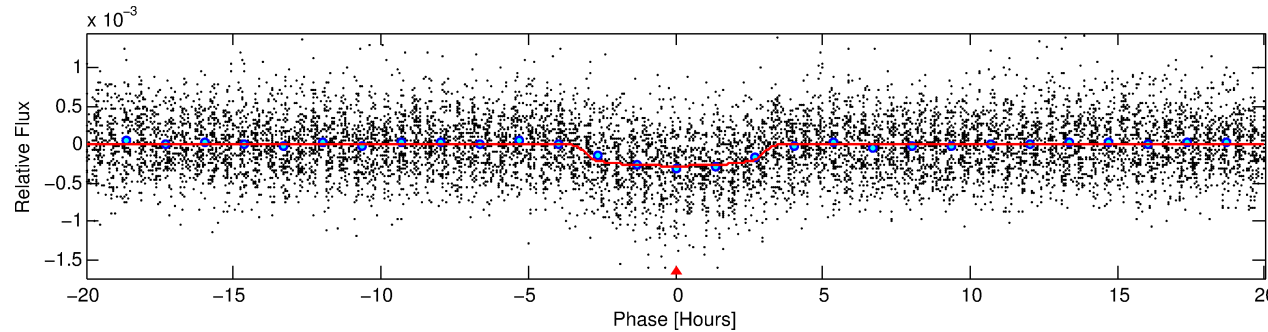
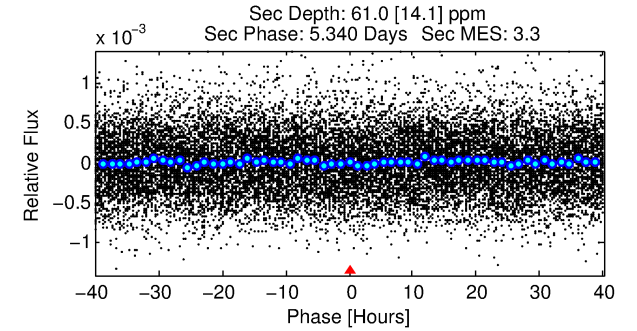
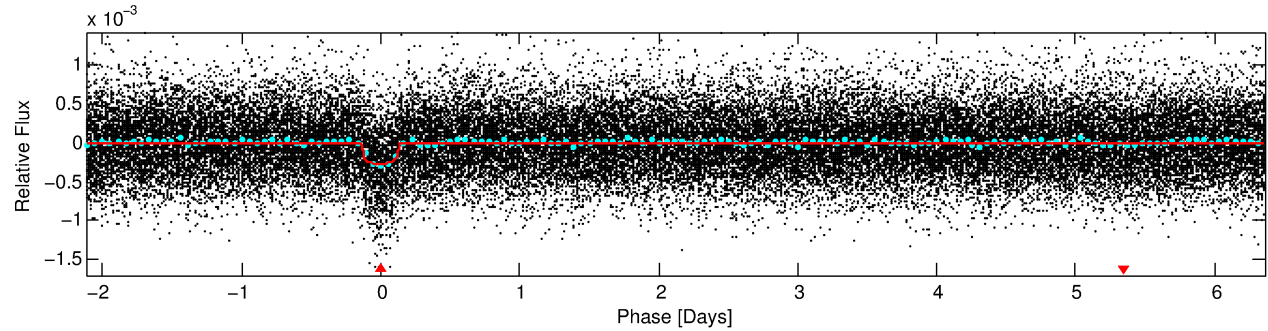
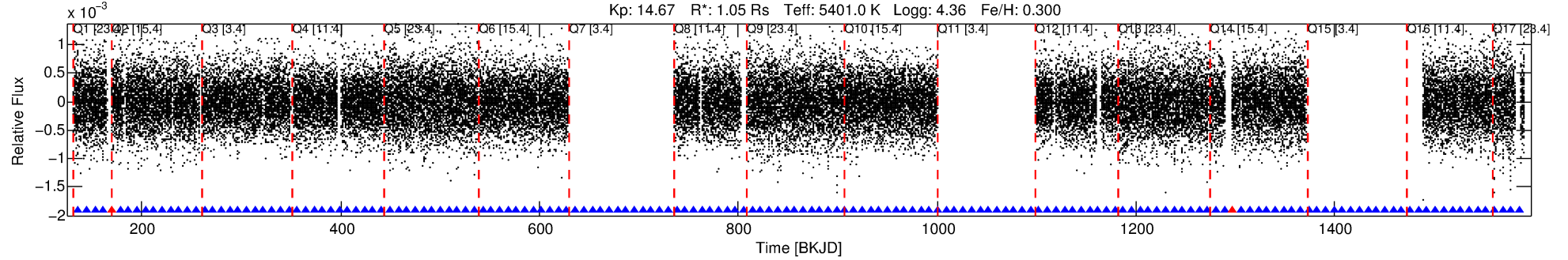
Ephemeris Match Information For 009850893-01

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
009850893-01	9850893	009851142-pri	9851142	1:1	192.2	29	39	7.63	14.67	336.16	Direct-PRF	0	0.26	0.21

Notes: $P_1:P_2$ 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. m_2 and m_1 are the magnitudes of the parent and child. D_2/D_1 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: 9850893 Candidate: 1 of 1 Period: 8.480 d
KOI: K01523.01 Corr: 0.940



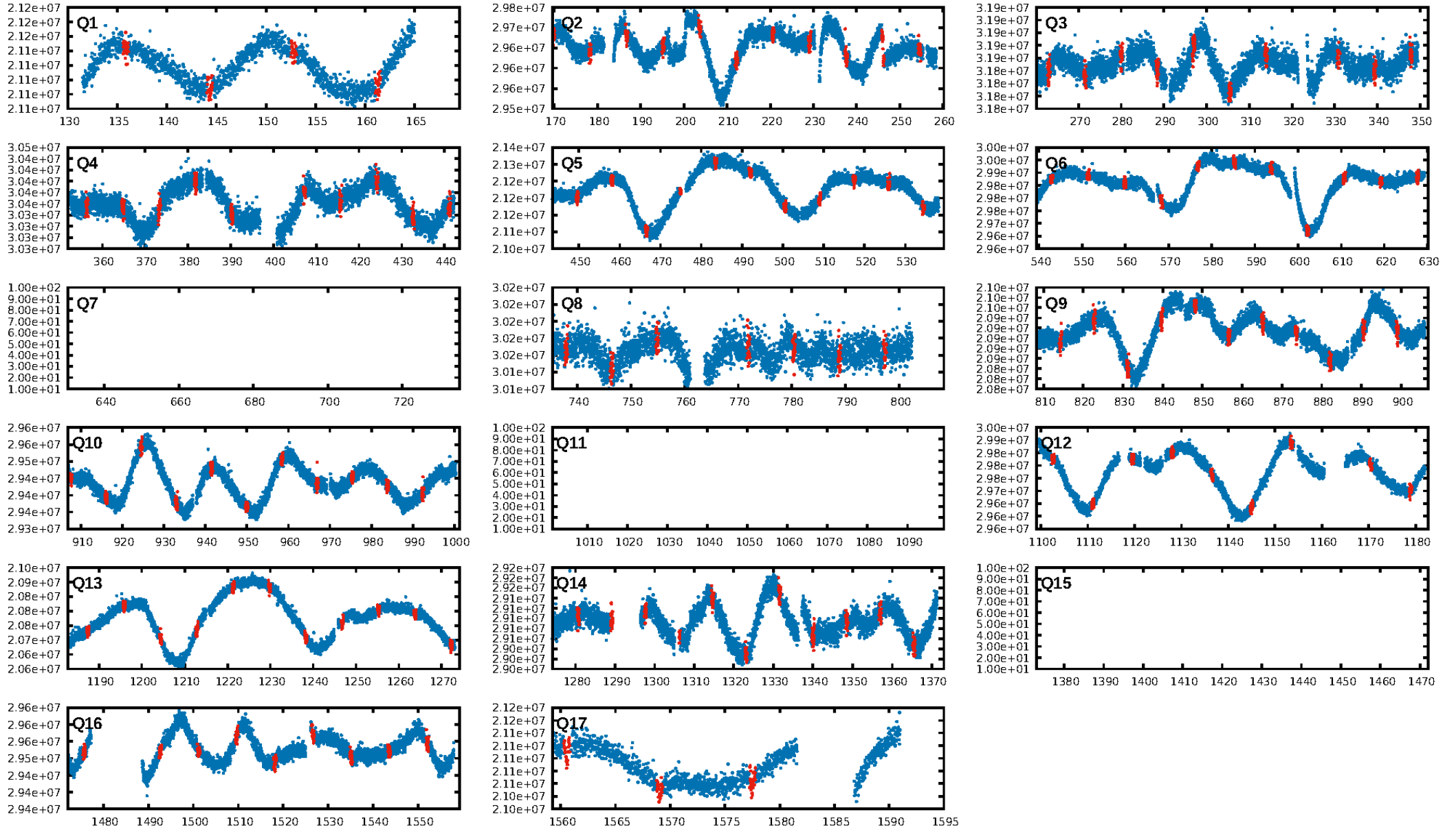
DV Fit Results:

Period = 8.48035 [0.00006] d
Epoch = 135.8491 [0.0050] BKJD
Rp/R* = 0.0180 [0.0023]
a/R* = 4.90 [2.49]
b = 0.89 [0.13]
Seff = 133.16 [48.51]
Teff = 866 [79] K
Rp = 2.06 [0.64] Re
a = 0.0795 [0.0188] AU
Ag = 49.82 [24.21] [2.02σ]
Teffp = 3558 [324] K [8.06σ]

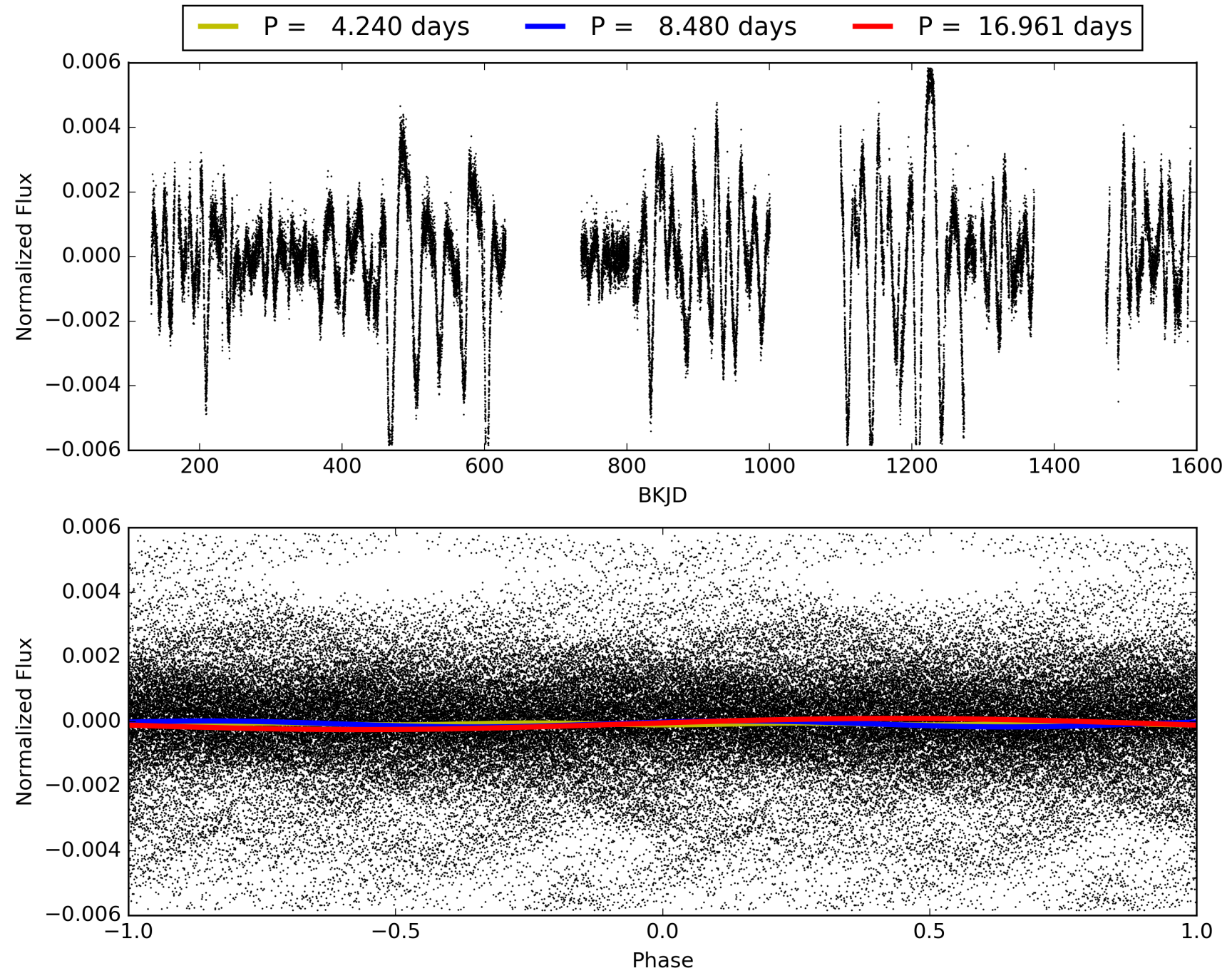
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: 0.0%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 1.22e-76
RollingBand-fgt: 0.98 [119/121]
GhostDiagnostic-chr: 0.005672
Centroid-sig: 0.3%
Centroid-so: 1.173 arcsec [1.92σ]
OotOffset-rm: 1.248 arcsec [1.51σ]
KicOffset-rm: 1.161 arcsec [1.45σ]
OotOffset-st: 4/1/4/5 [14]
KicOffset-st: 4/1/4/5 [14]
DiffImageQuality-fgm: 0.00 [0/14]
DiffImageOverlap-fno: 1.00 [14/14]

TCE 009850893-01, PDC Light Curves

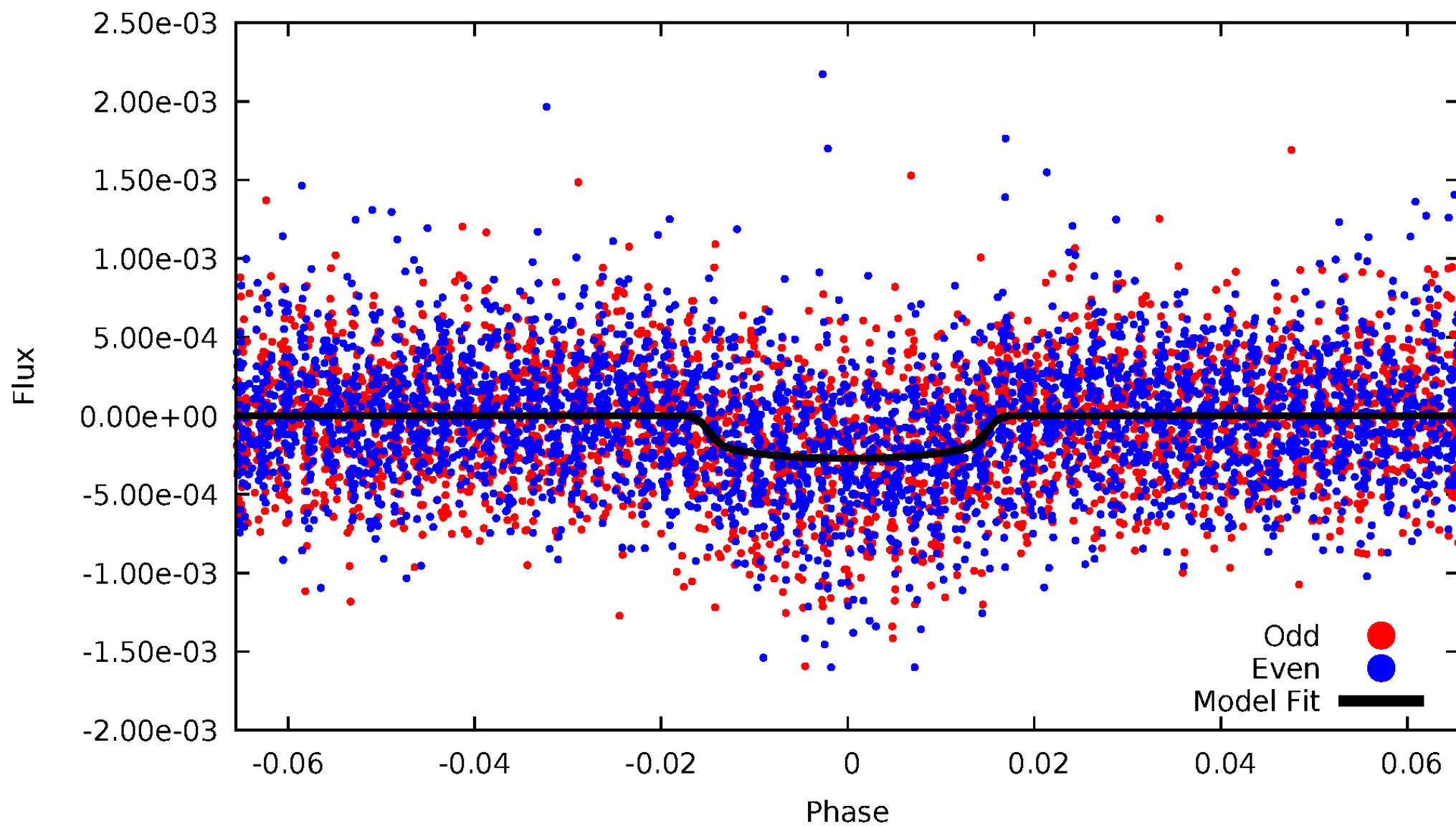


TCE 009850893-01



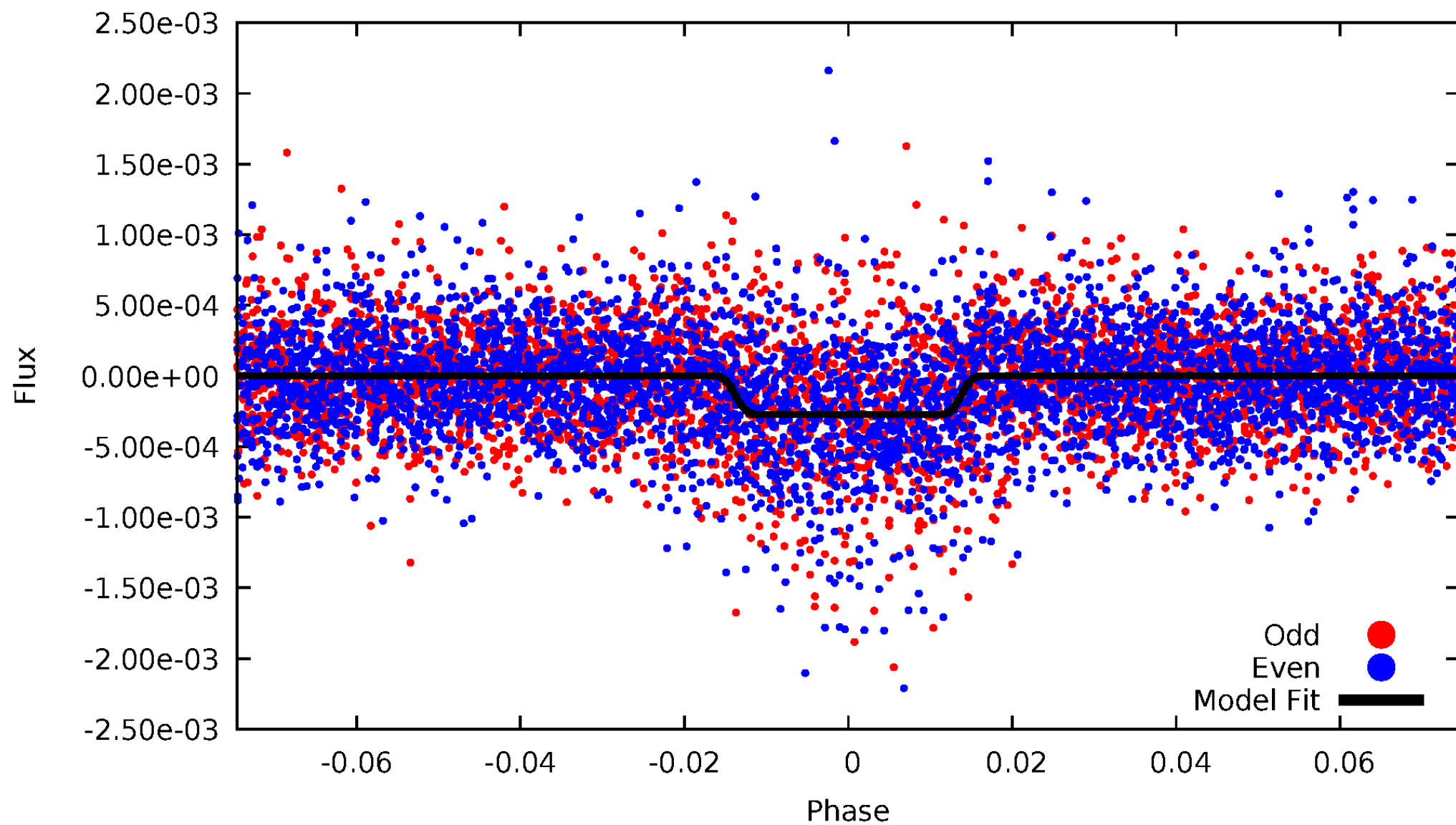
DV Odd/Even

TCE 009850893-01



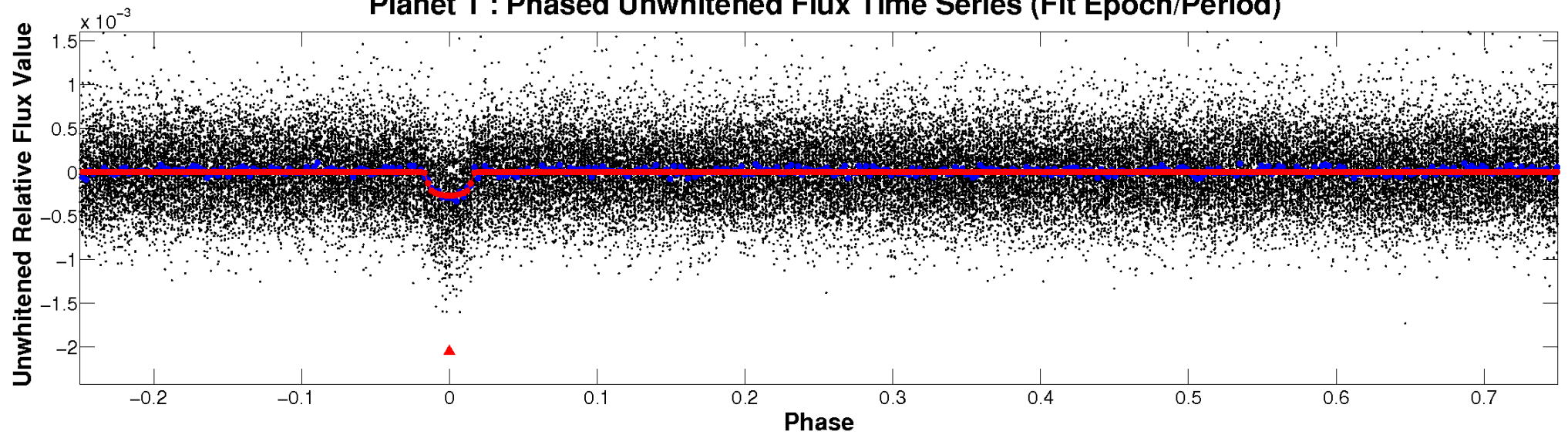
ALT Odd/Even

TCE 009850893-01

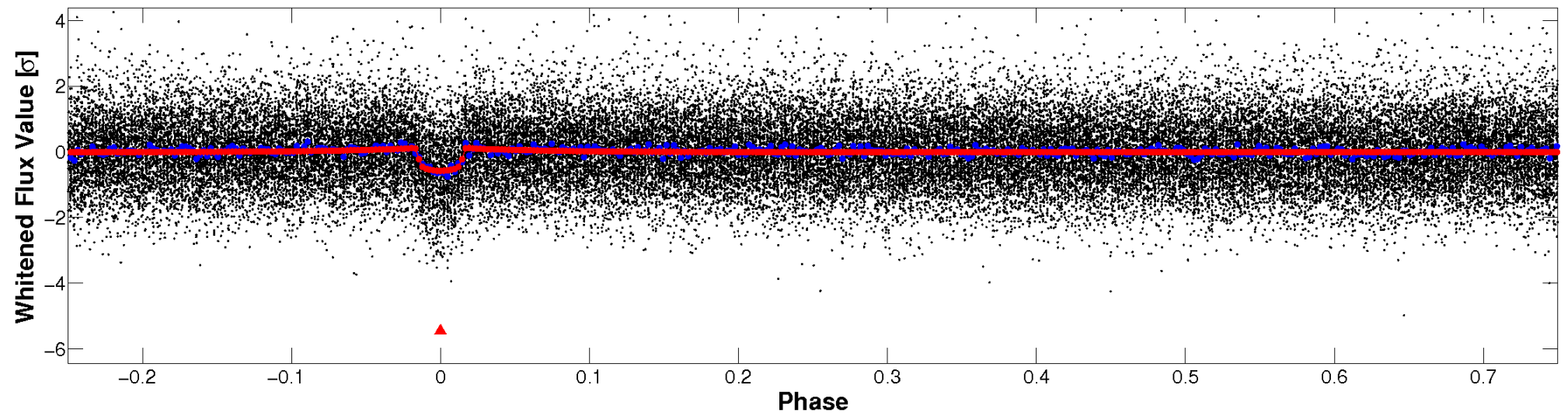


Non-Whitened Vs. Whitened Light Curve

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

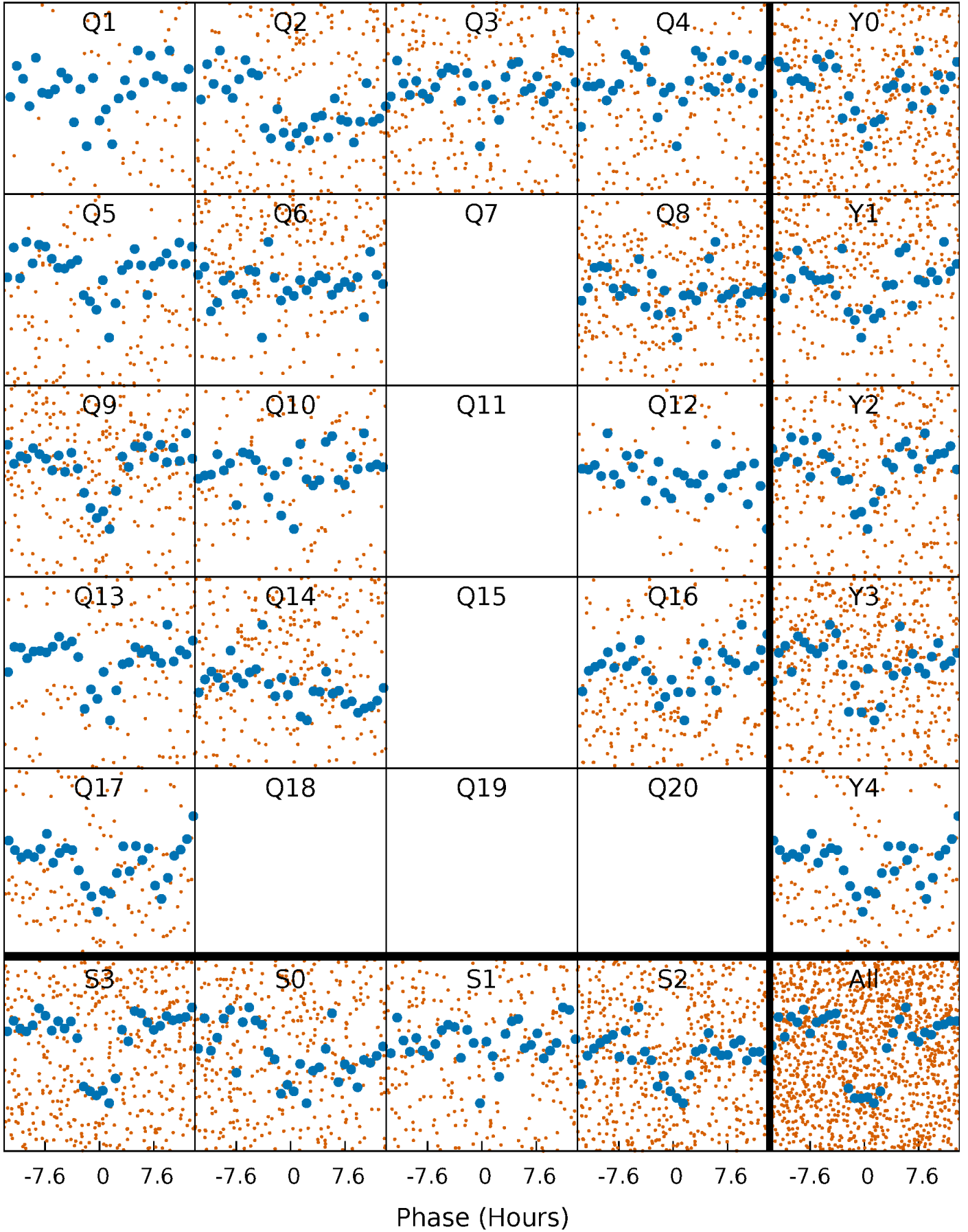


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



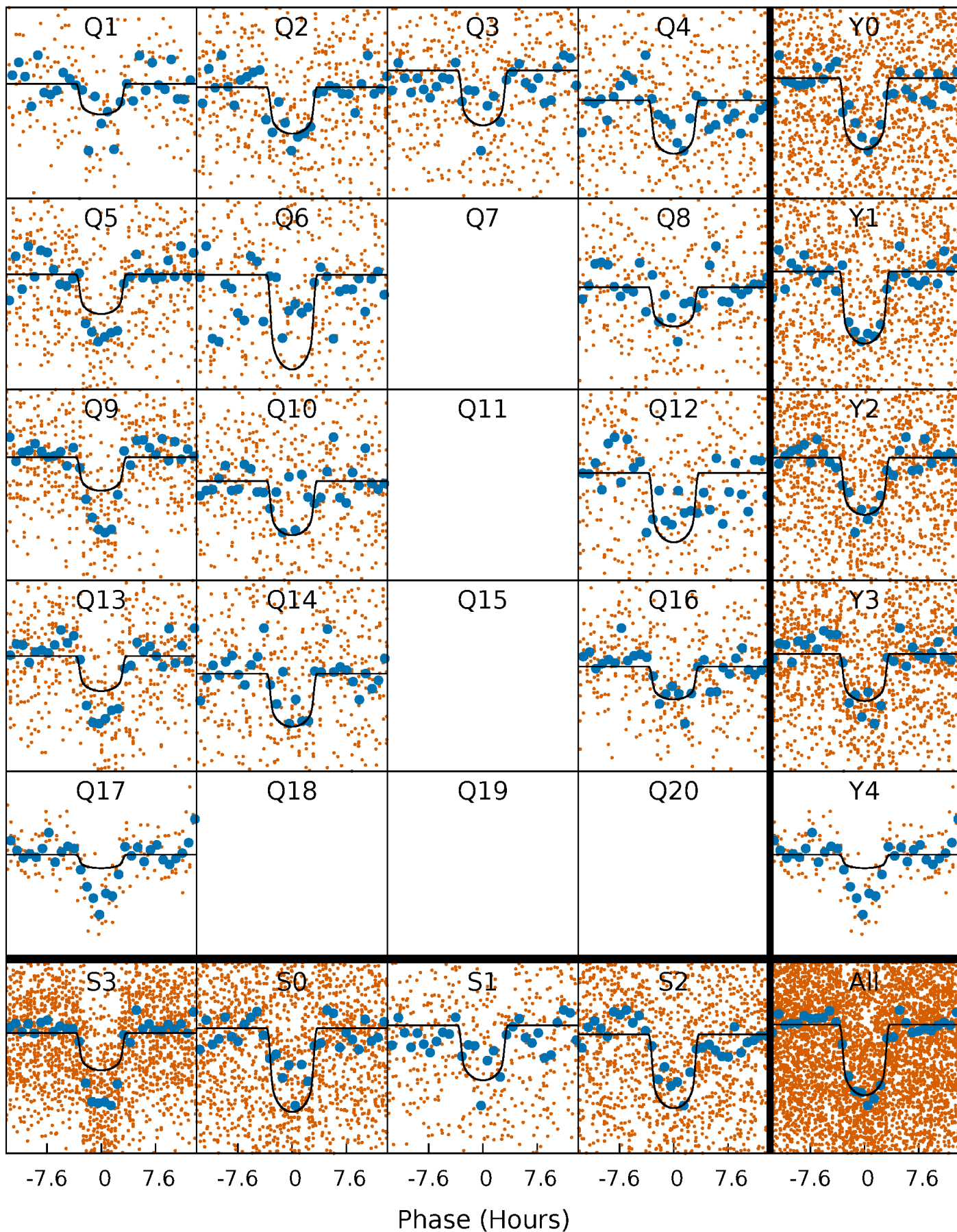
PDC Quarter-Phased Transit Curves

TCE 009850893-01 P= 8.480354 Days $T_0=135.849148$ (BKJD)



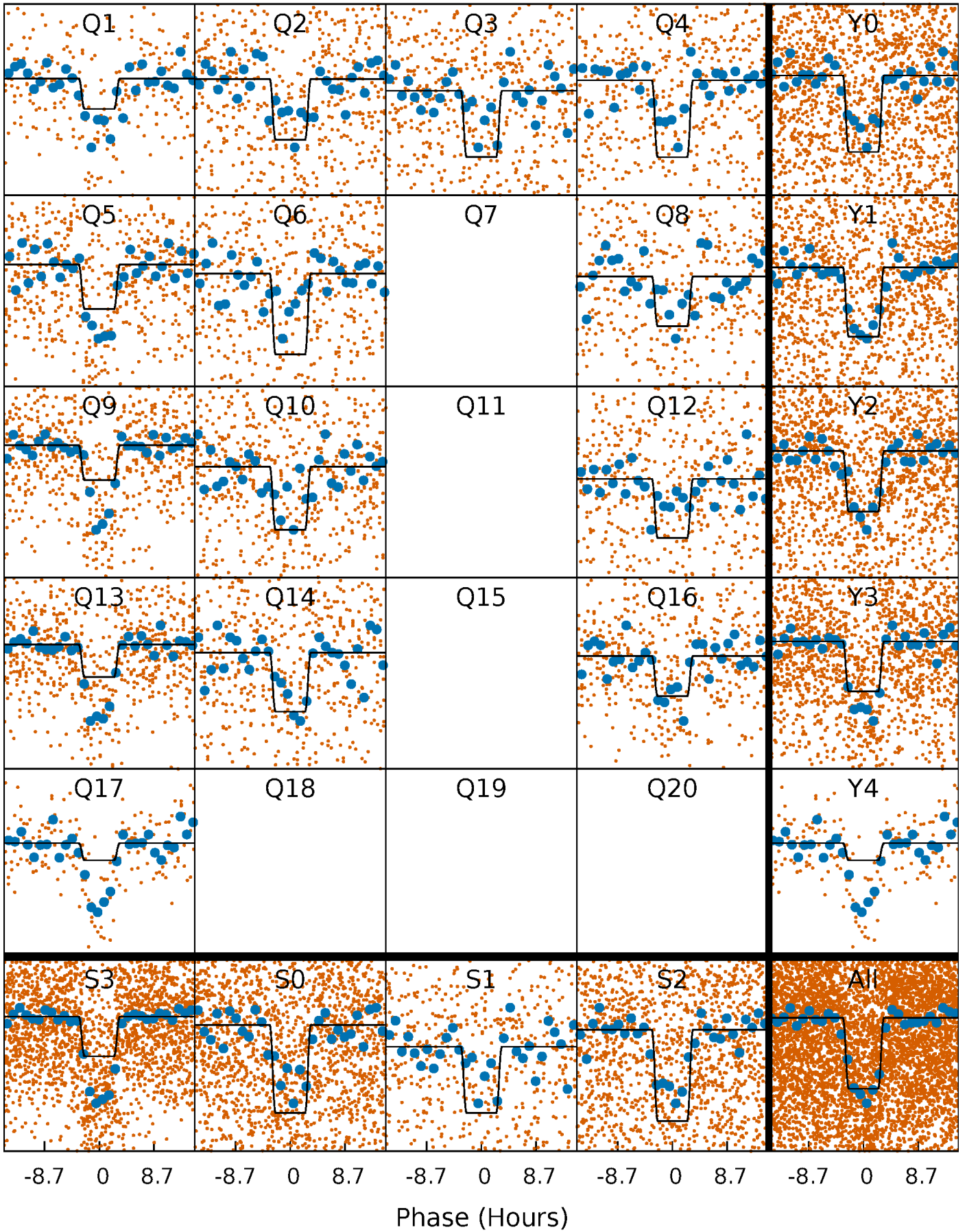
DV Quarter-Phased Transit Curves

TCE 009850893-01 P= 8.480354 Days $T_0=135.849148$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

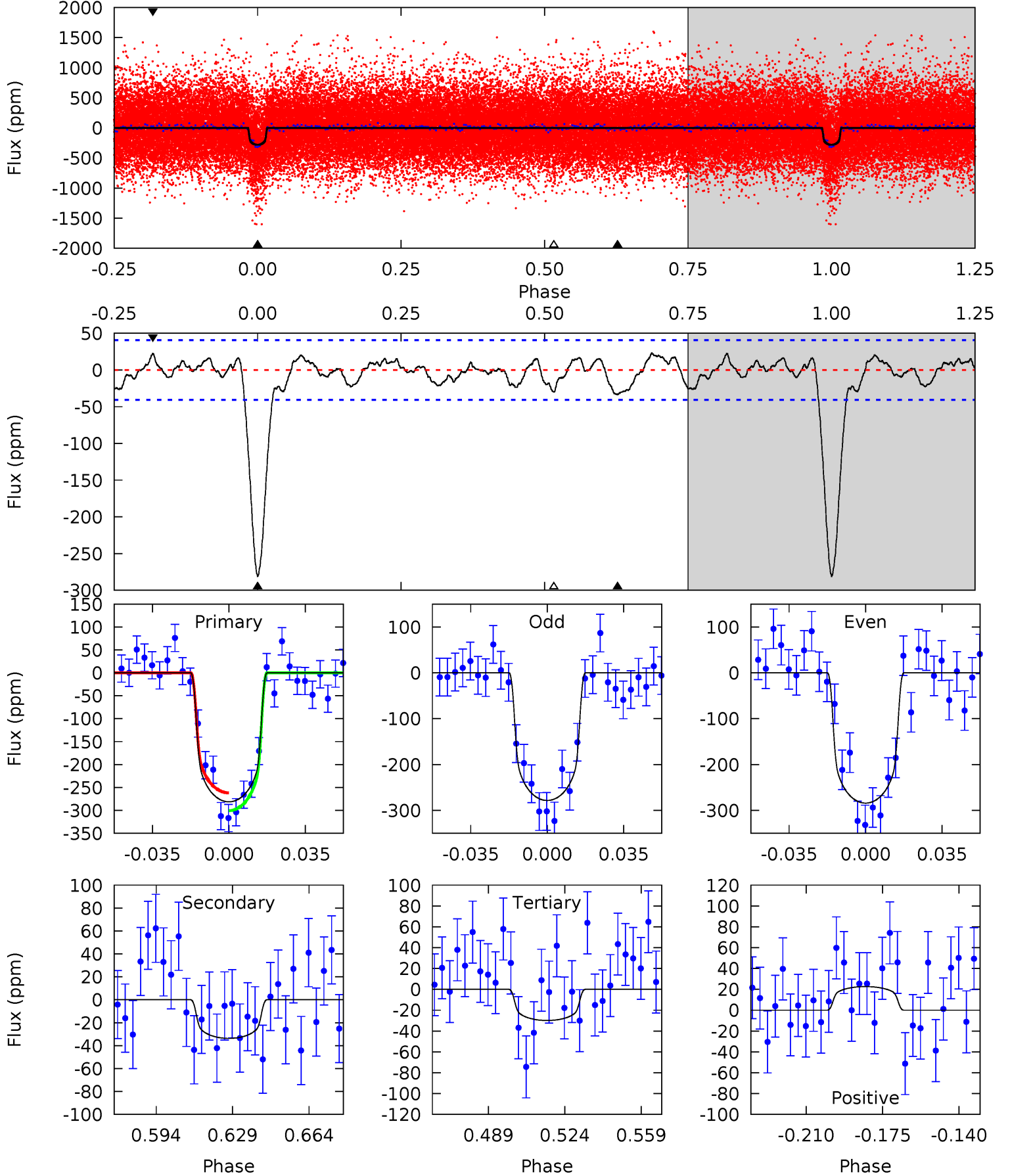
TCE 009850893-01 P= 8.480296 Days $T_0=135.852631$ (BKJD)



DV Model-Shift Uniqueness Test

009850893-01, P = 8.480354 Days, E = 127.368794 Days

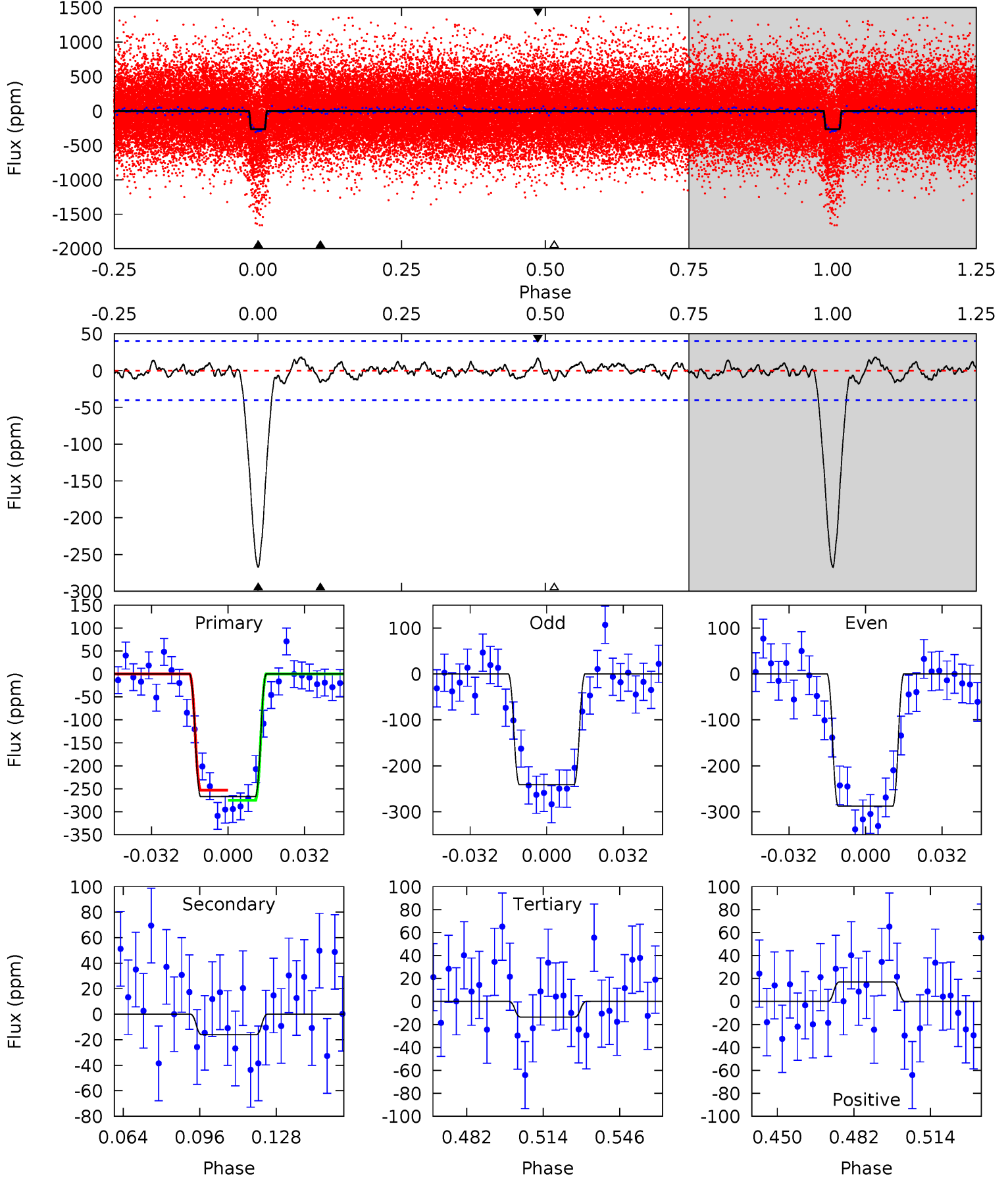
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
33.0	3.96	3.51	2.66	4.78	2.11	1.42	29.5	30.4	0.44	1.30	0.34	1.12	0.08	2.28



Alt Model-Shift Uniqueness Test

009850893-01, P = 8.480296 Days, E = 127.372335 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
31.9	1.93	1.62	2.02	4.80	2.14	0.74	30.3	29.9	0.31	-0.10	2.79	1.33	0.06	1.32



Stellar Parameters For KIC 009850893

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	5401^{+164}_{-164}	$4.364^{+0.153}_{-0.187}$	$0.300^{+0.150}_{-0.250}$	$1.050^{+0.297}_{-0.183}$	$0.930^{+0.082}_{-0.074}$	$1.131^{+0.806}_{-0.545}$
	+3%/-3%	+4%/-4%	+50%/-83%	+28%/-17%	+9%/-8%	+71%/-48%
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 009850893-01 / KOI 1523.01

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-34 ± 9	$2.09^{+0.43}_{-0.34}$	1216^{+94}_{-80}	3513^{+224}_{-215}	26^{+15}_{-10}
Alt.	-16 ± 8	$1.91^{+0.38}_{-0.34}$	1216^{+83}_{-75}	3193^{+305}_{-331}	14^{+12}_{-8}

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 $A_{obs} \gg 1.0$

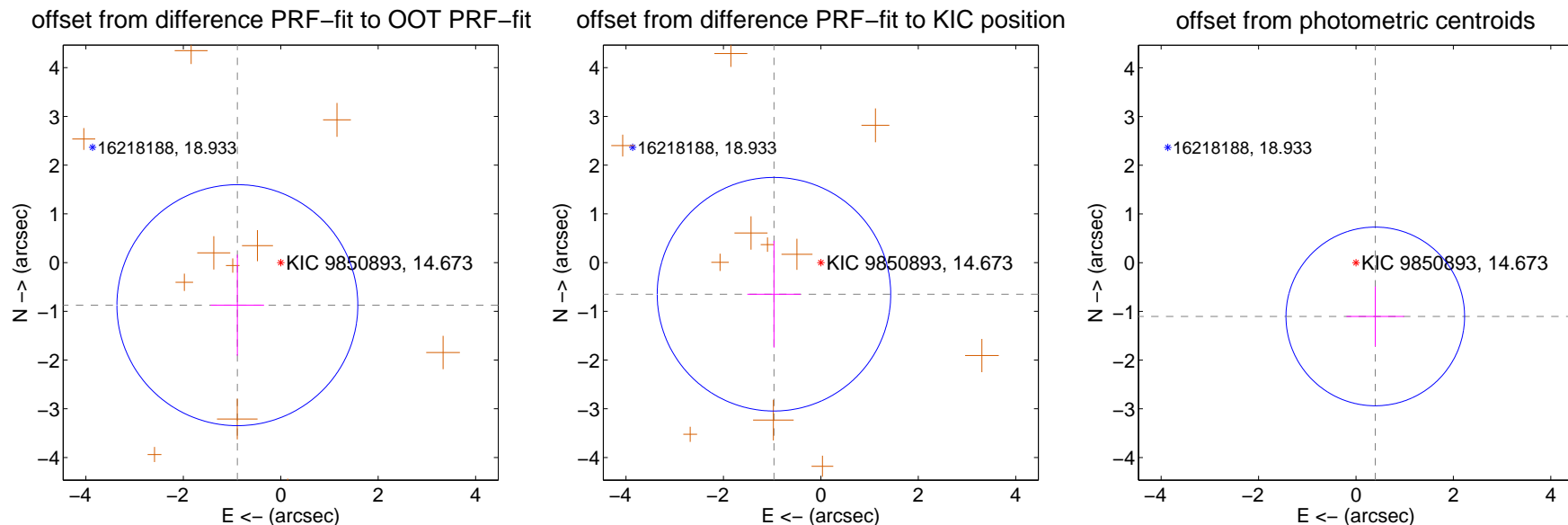
DV Centroid Data

Supplemental centroid analysis for 009850893-01. Kepler magnitude: 14.67. Transit SNR 19.96

There are 0 quarters with good PRF difference image offsets

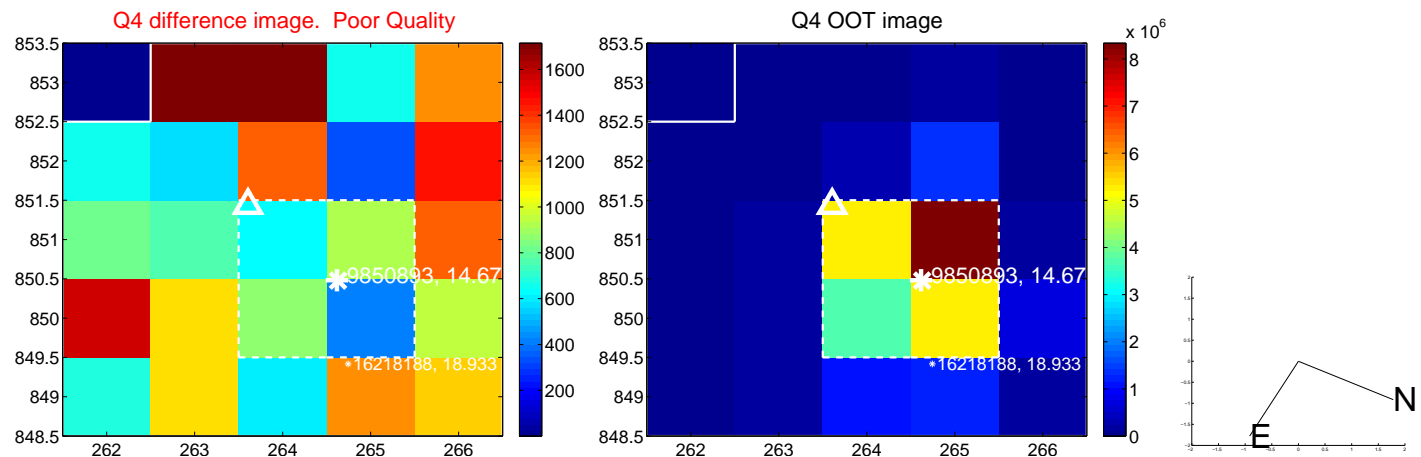
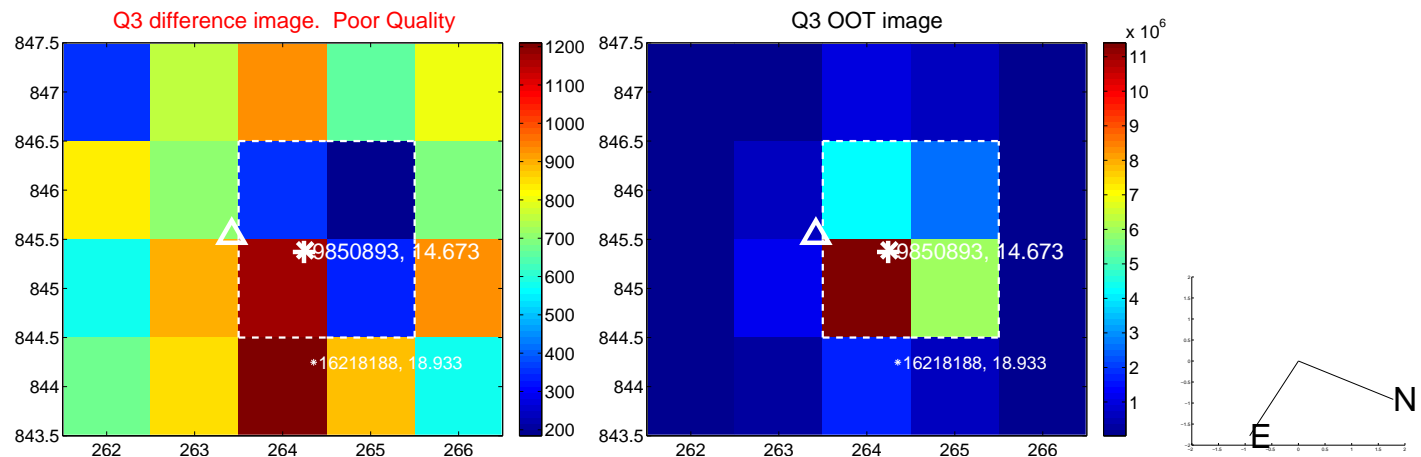
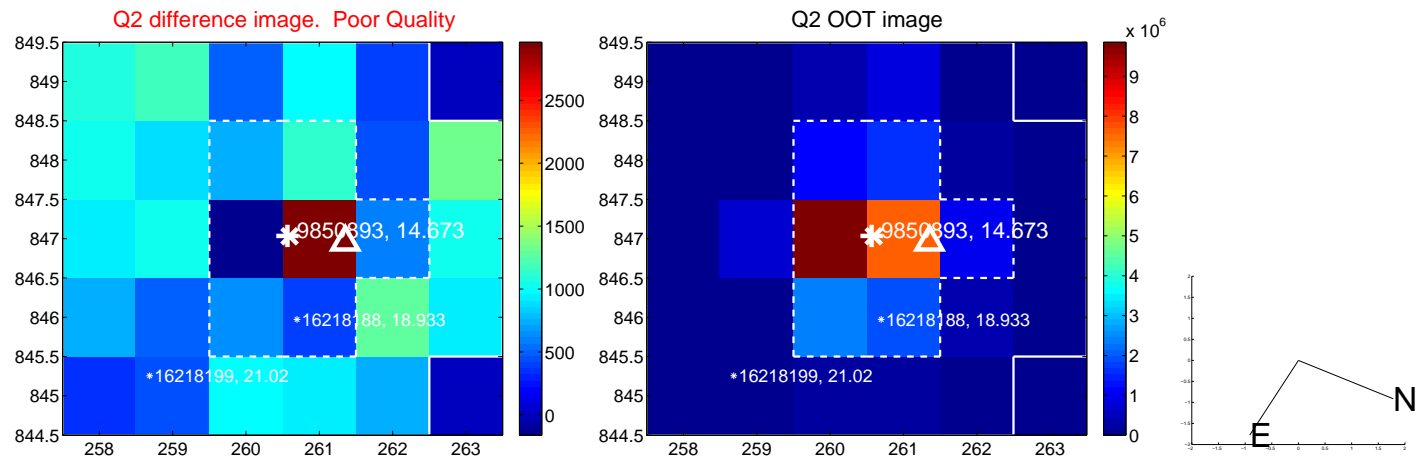
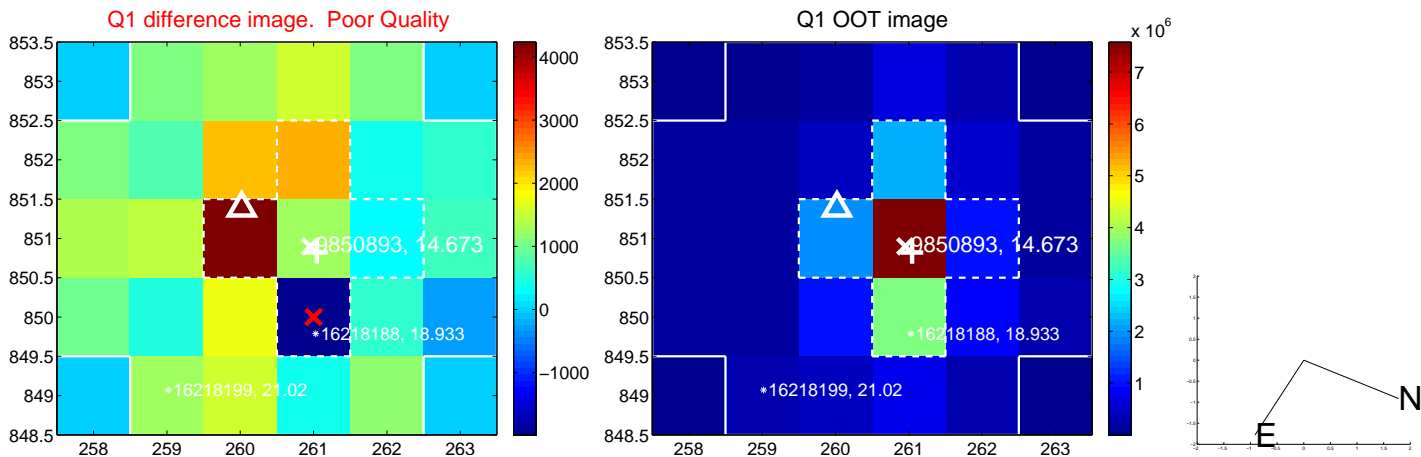
The direct PRF centroid is offset from the target star catalog position by about 0.41 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	1.248 ± 0.824	1.51	0.891 ± 0.547	-0.874 ± 1.036
PRF-fit source offset from KIC position	1.161 ± 0.799	1.45	0.963 ± 0.547	-0.649 ± 1.096
photometric centroid source offset	1.17 ± 0.61	1.92	-0.40 ± 0.59	-1.10 ± 0.61

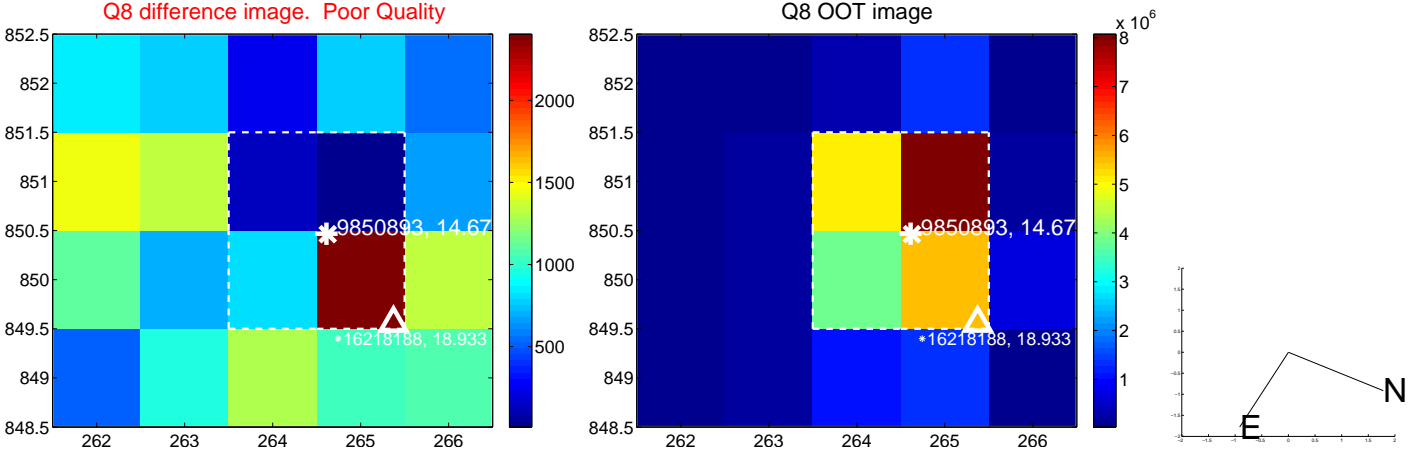
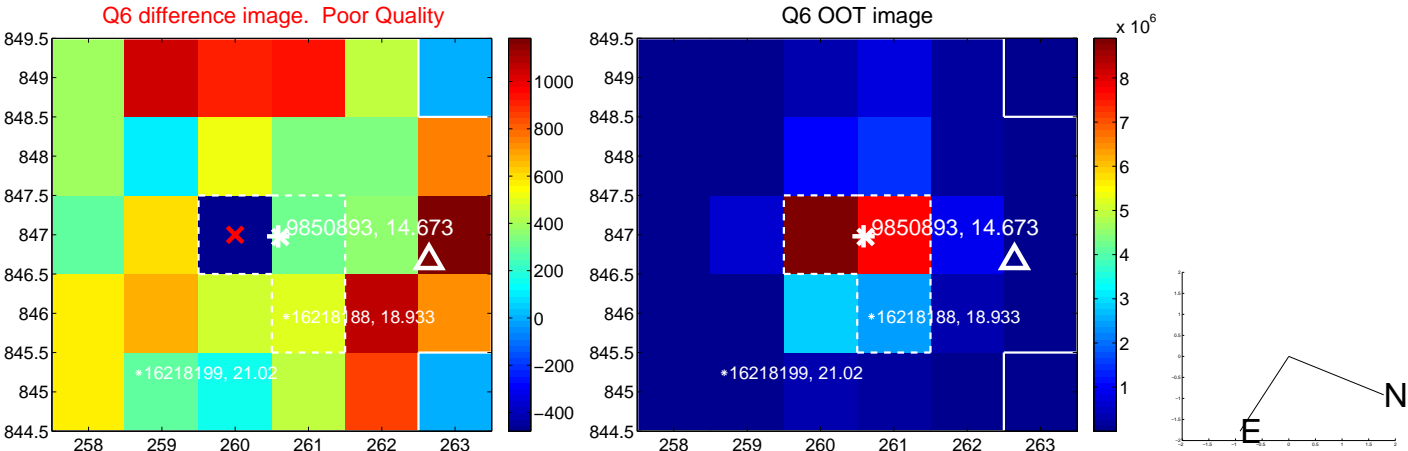
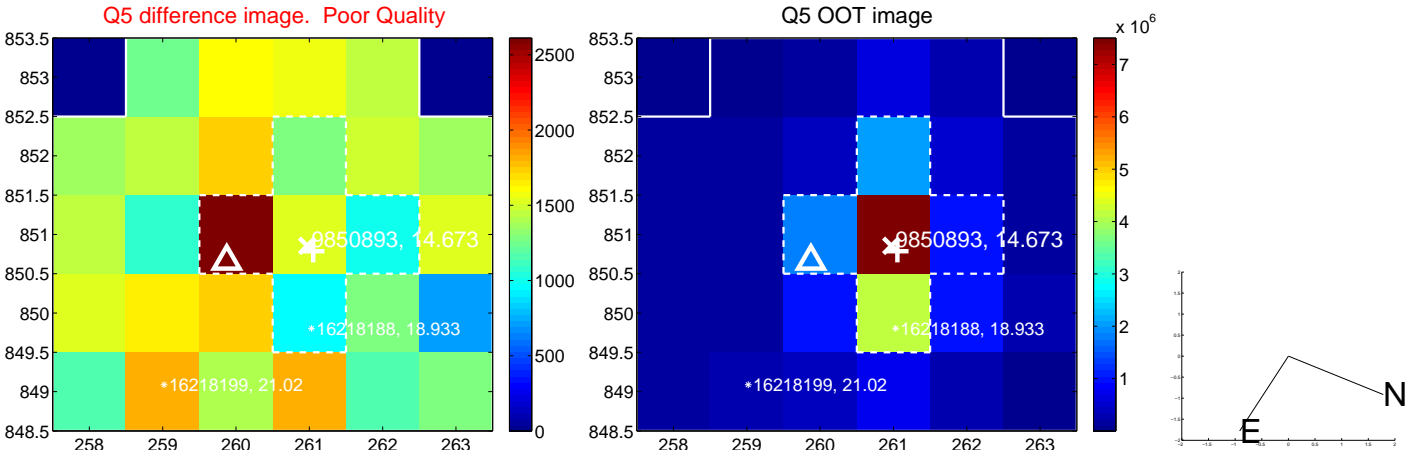


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

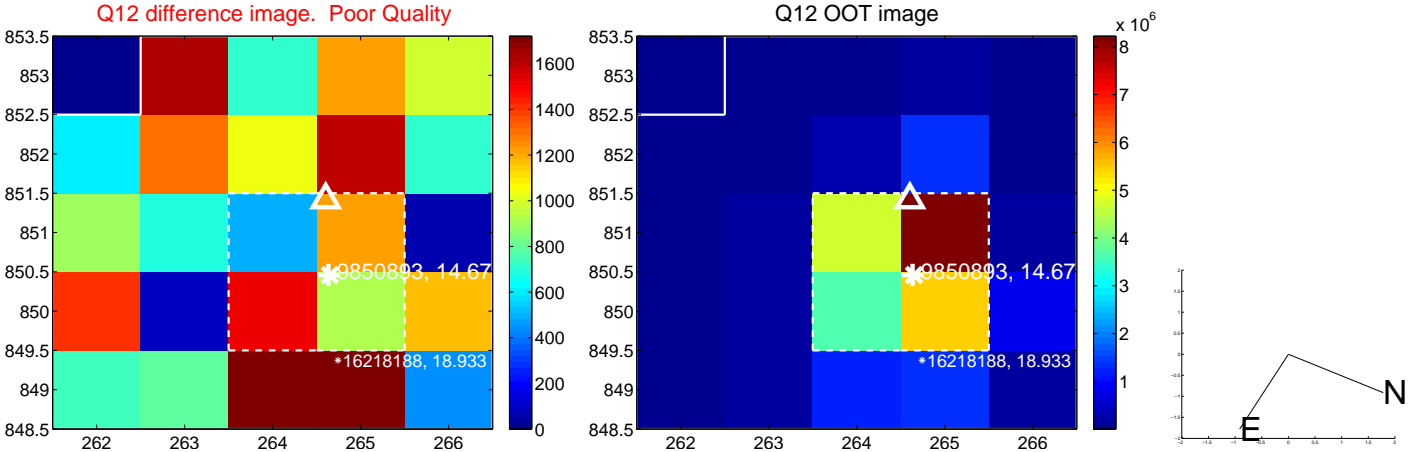
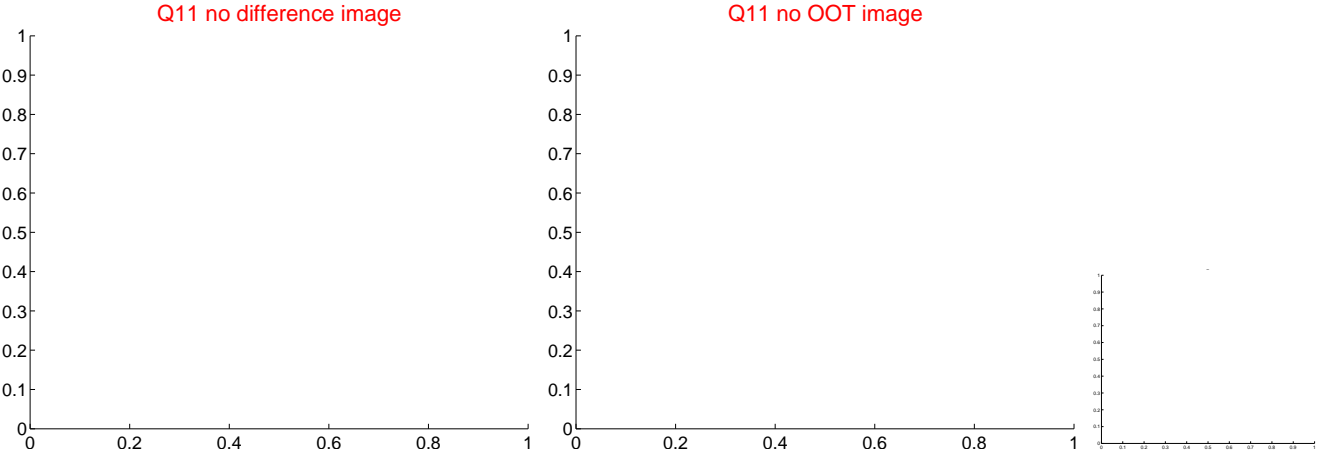
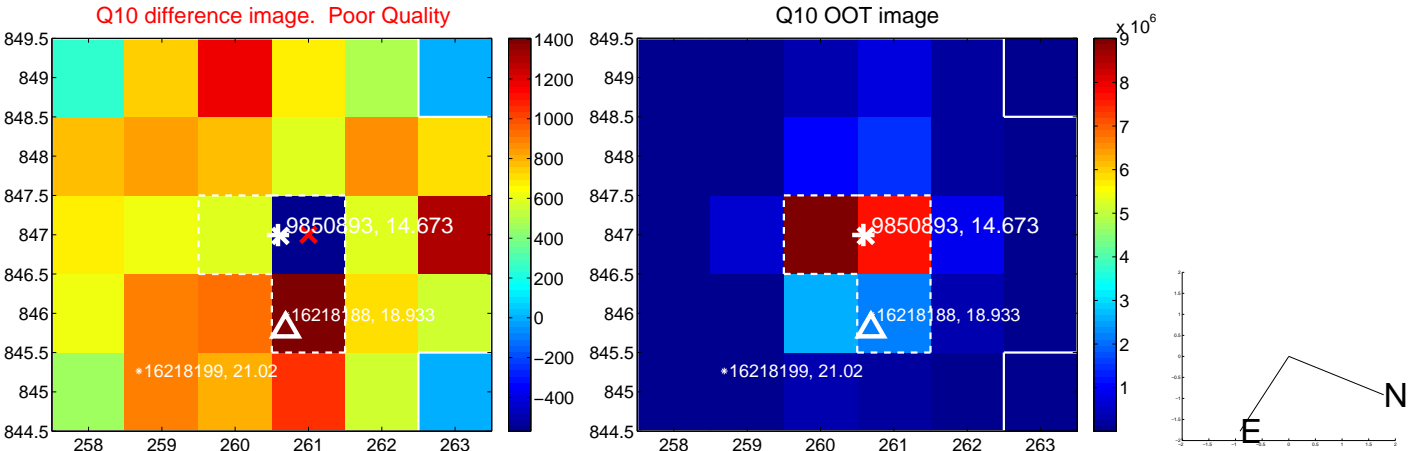
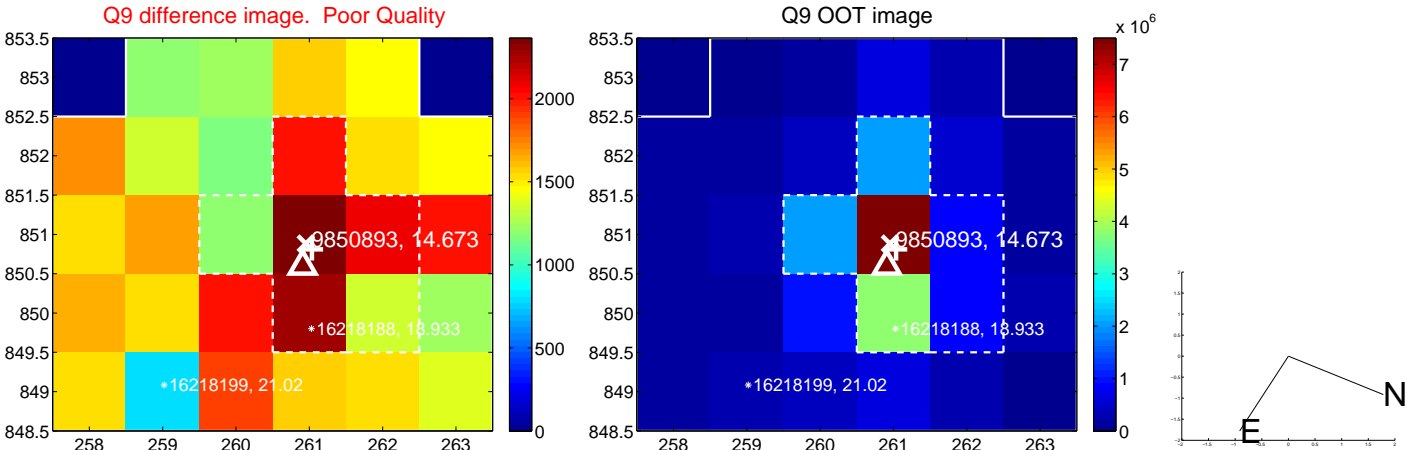
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



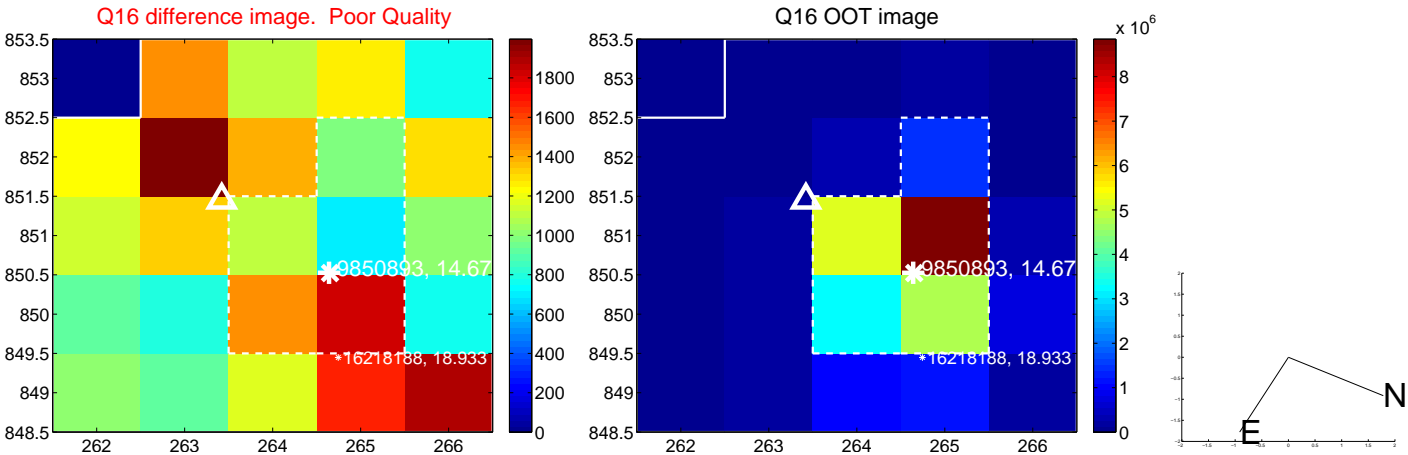
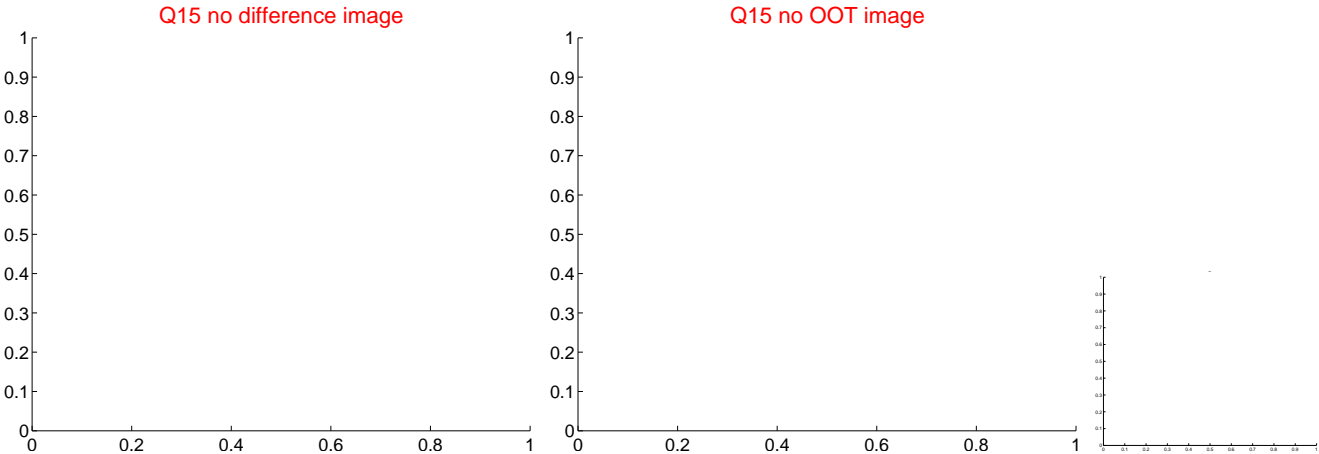
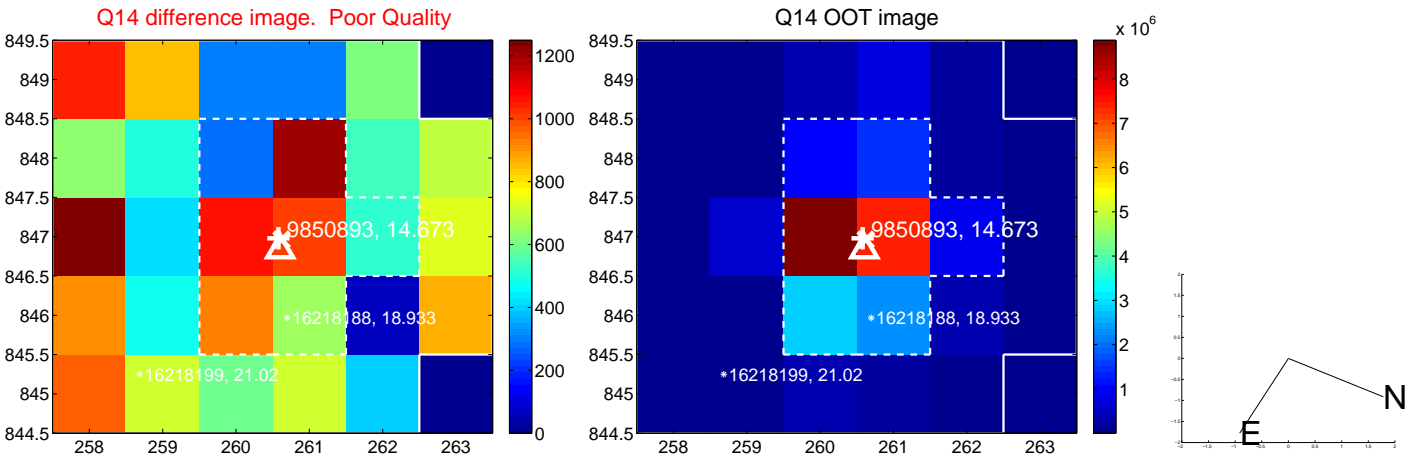
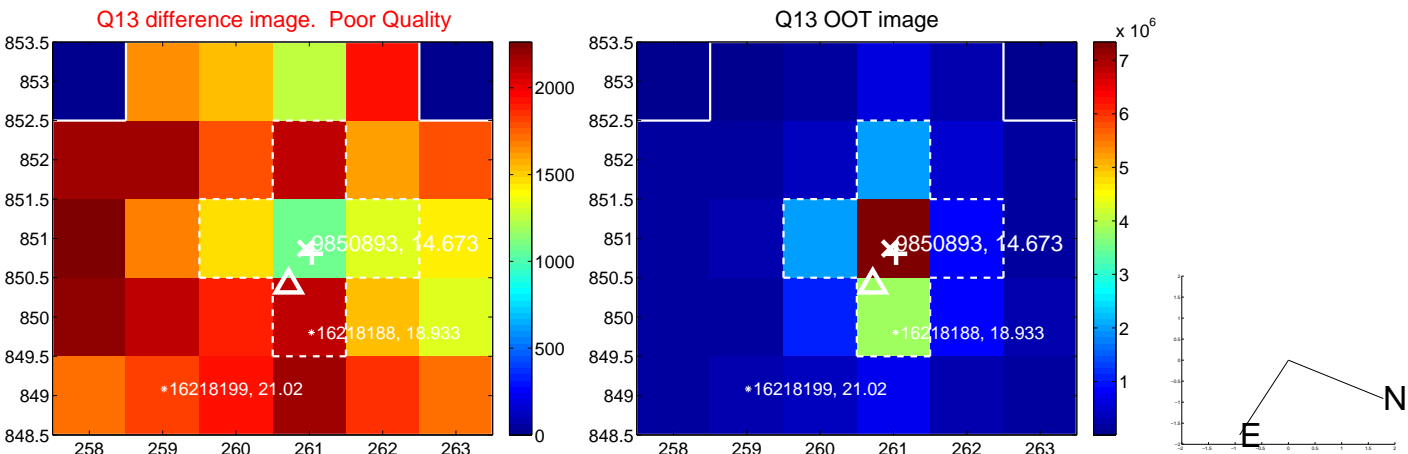
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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UKIRT Image

Declination

