

KIC 009910942

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})
009910942-01	OBS	4324.01	8.480338	135.853119	38.5	6.180	9.1	9.8	2.18	6245	1.58	884.39

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
009910942-01	OBS	FP	0.00	0	0	1	1	CENT_UNRESOLVED_OFFSET—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.

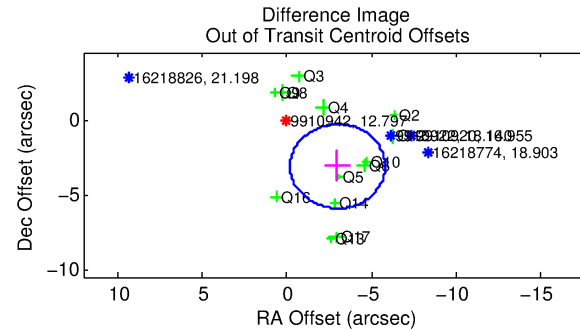
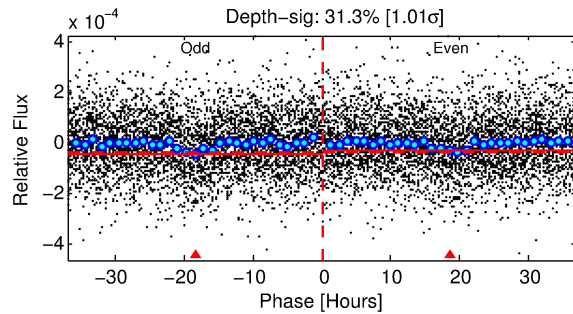
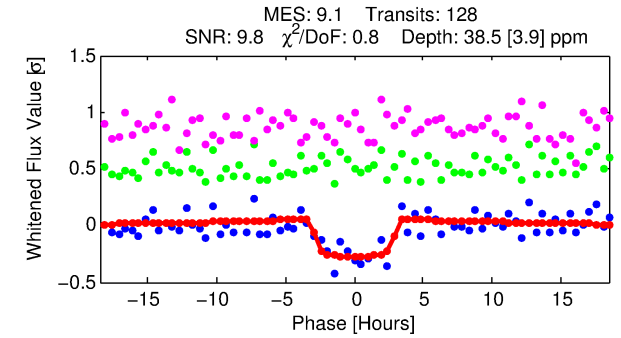
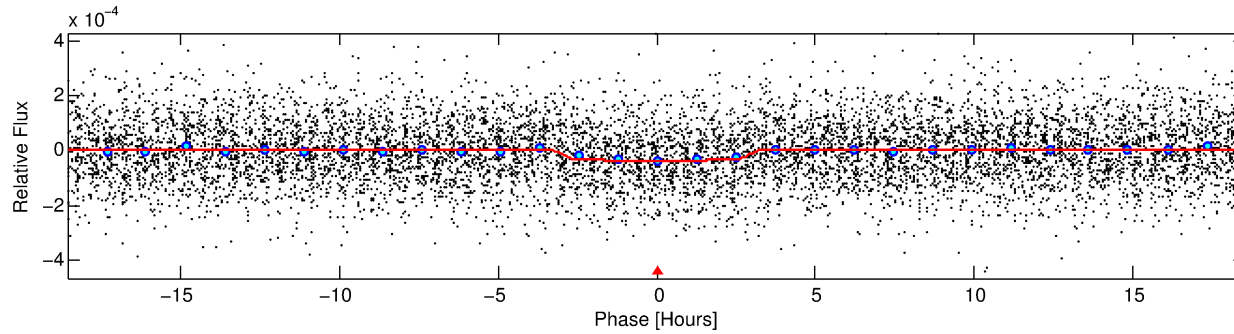
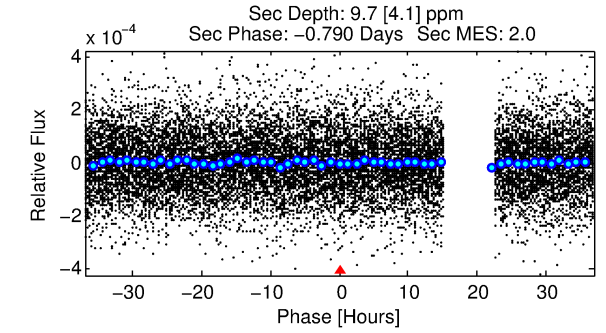
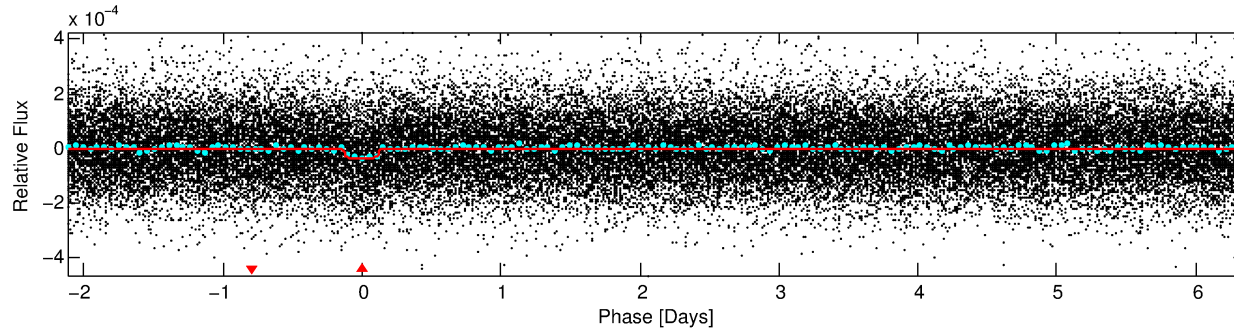
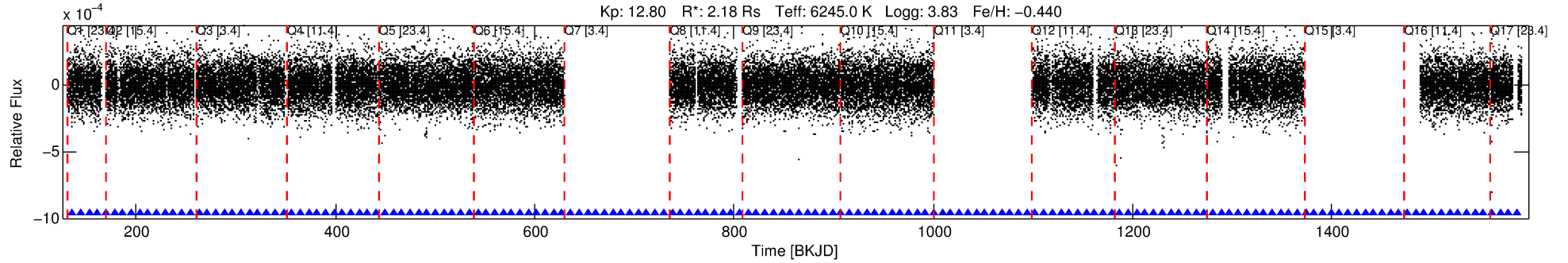
Ephemeris Match Information For 009910942-01

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
009910942-01	9910942	009851142-pri	9851142	1:1	183.3	-33	32	7.63	12.80	2335.90	Direct-PRF	0	0.19	0.07

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: 9910942 Candidate: 1 of 1 Period: 8.480 d
KOI: K04324.01 Corr: 0.985



DV Fit Results:

Period = 8.48034 [0.00011] d
Epoch = 135.8531 [0.0093] BKJD
Rp/R* = 0.0067 [0.0022]
a/R* = 4.81 [8.69]
b = 0.90 [0.40]
Seff = 884.39 [475.61]
Teq = 1391 [187] K
Rp = 1.58 [0.75] Re
a = 0.0855 [0.0279] AU
Ag = 15.57 [14.75] [0.99σ]
Teffp = 4270 [853] K [3.30σ]

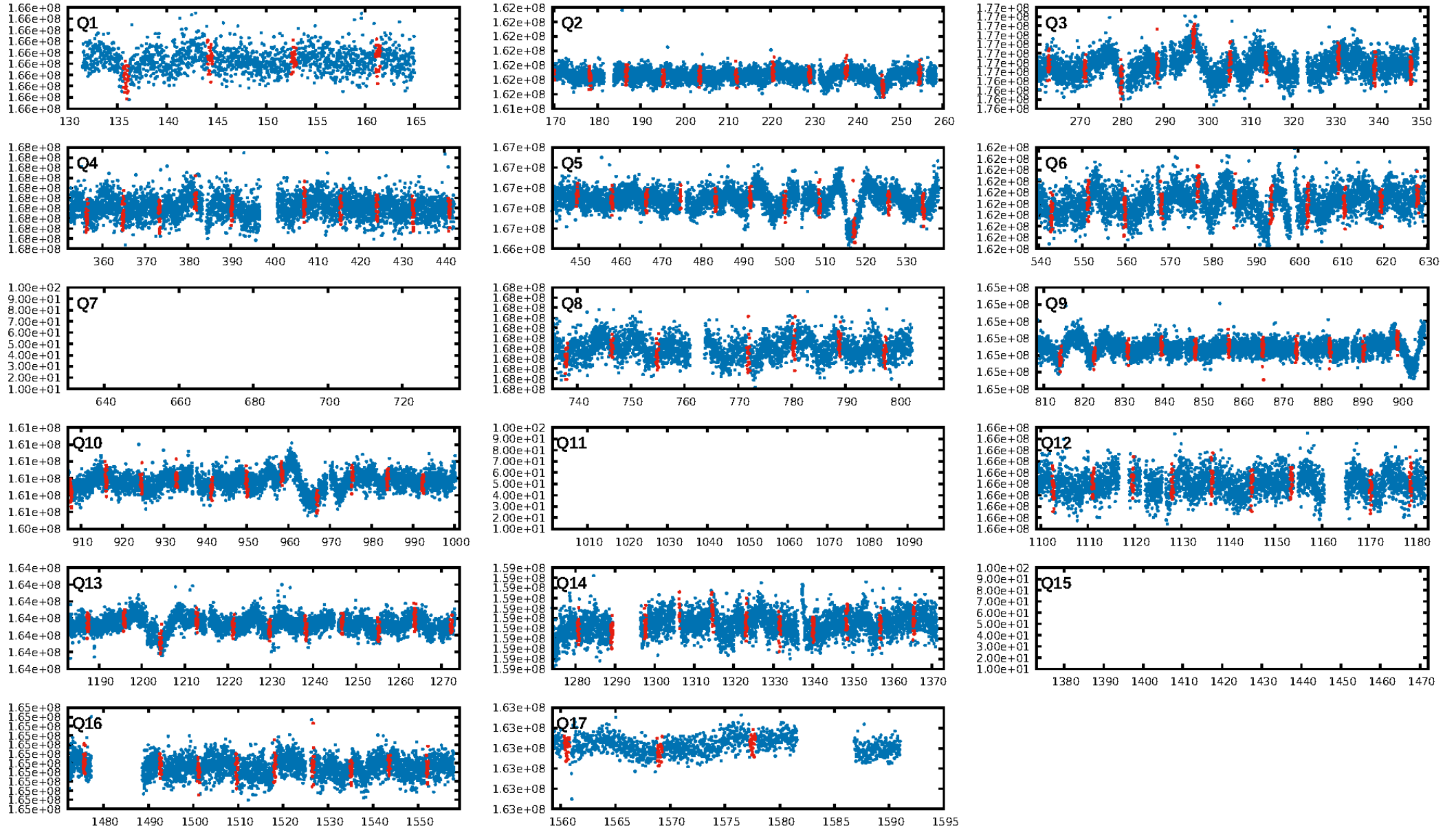
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: 98.7%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 1.34e-19
RollingBand-fgt: 1.00 [121/121]
GhostDiagnostic-chr: 0.1046
Centroid-sig: 0.1%
Centroid-so: 3.632 arcsec [2.92σ]
OotOffset-rm: 4.315 arcsec [4.62σ]
KicOffset-rm: 4.224 arcsec [4.48σ]
OotOffset-st: 4/1/4/4 [13]
KicOffset-st: 4/1/4/4 [13]
DiffImageQuality-fgm: 0.08 [1/13]
DiffImageOverlap-fno: 1.00 [14/14]

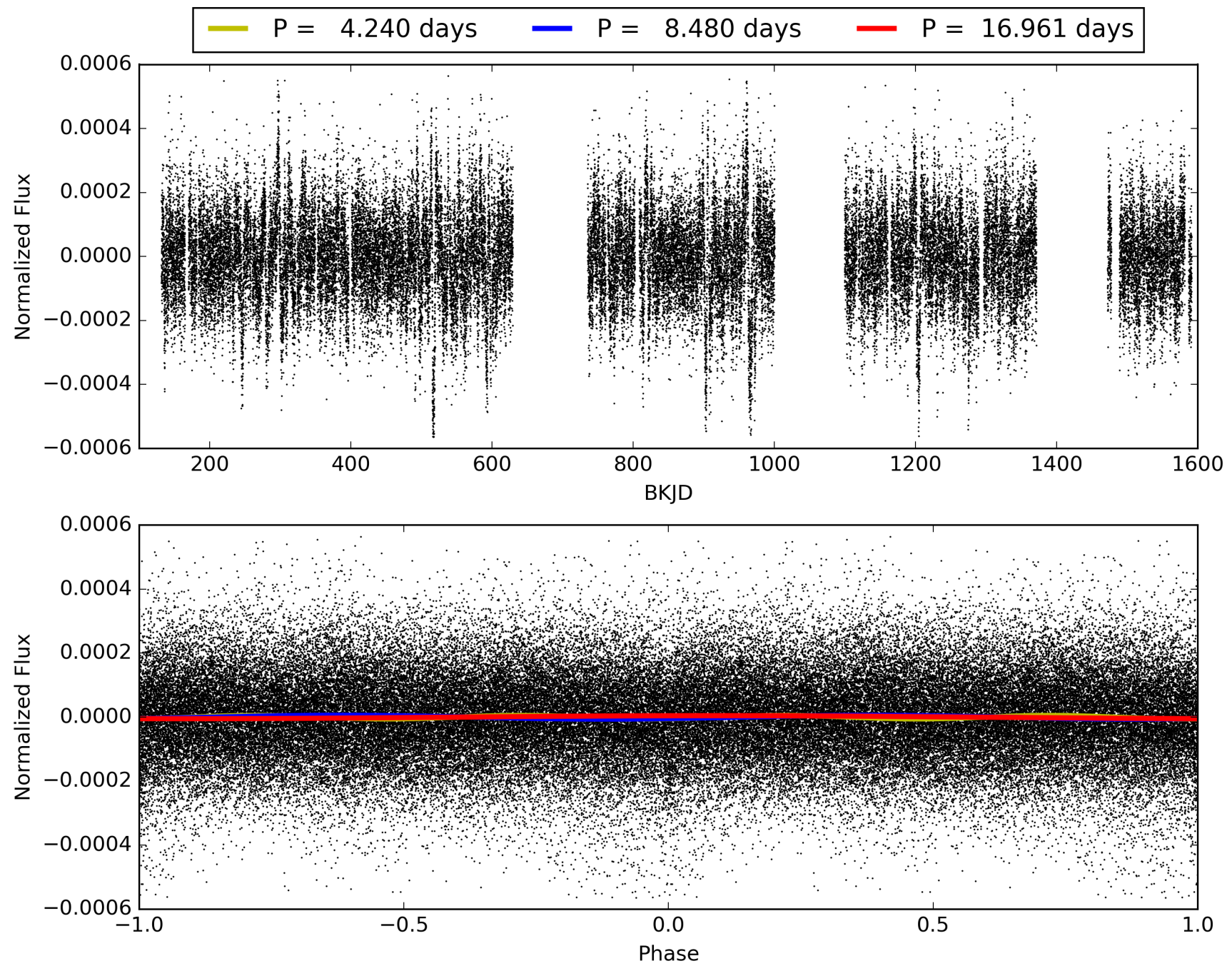
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 07:53:54 Z

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

TCE 009910942-01, PDC Light Curves

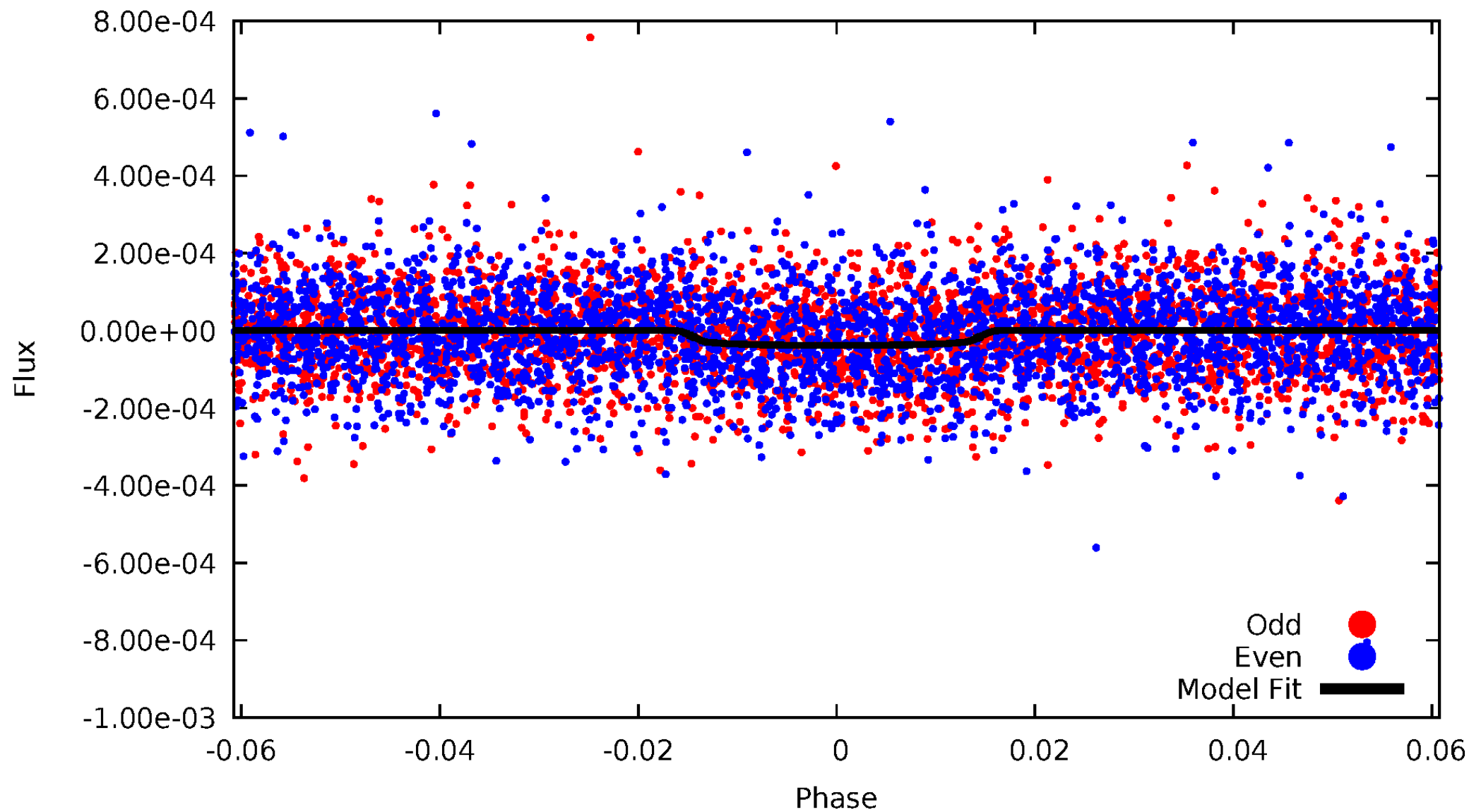


TCE 009910942-01



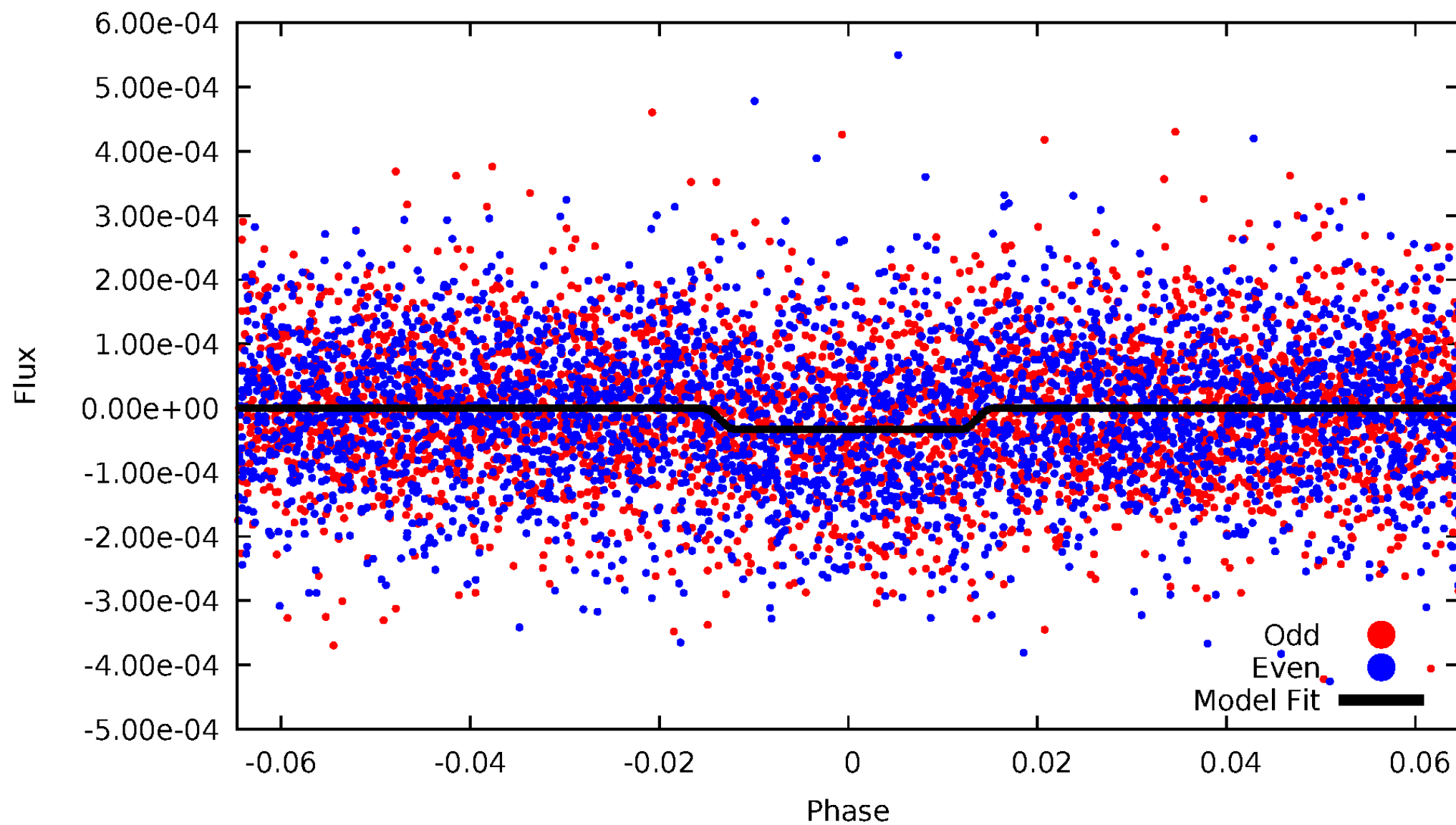
DV Odd/Even

TCE 009910942-01



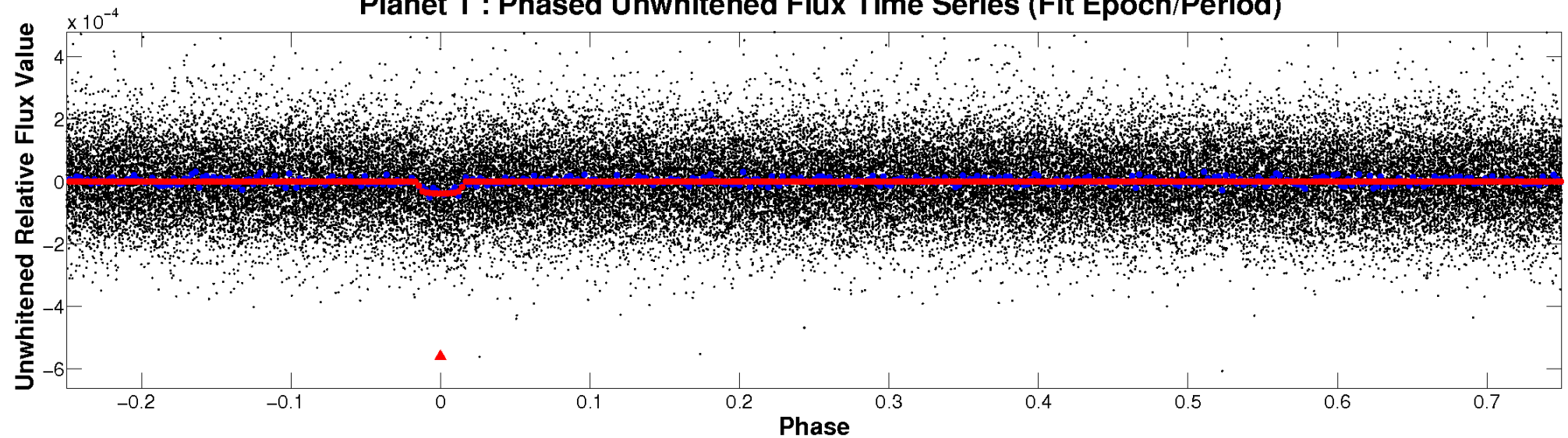
ALT Odd/Even

TCE 009910942-01

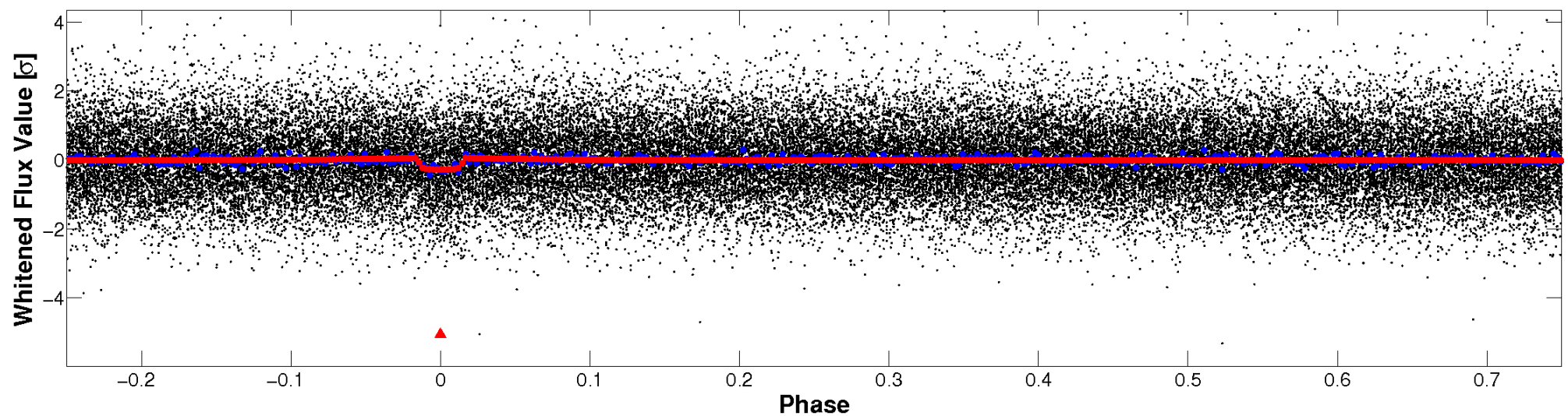


Non-Whitened Vs. Whitened Light Curve

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

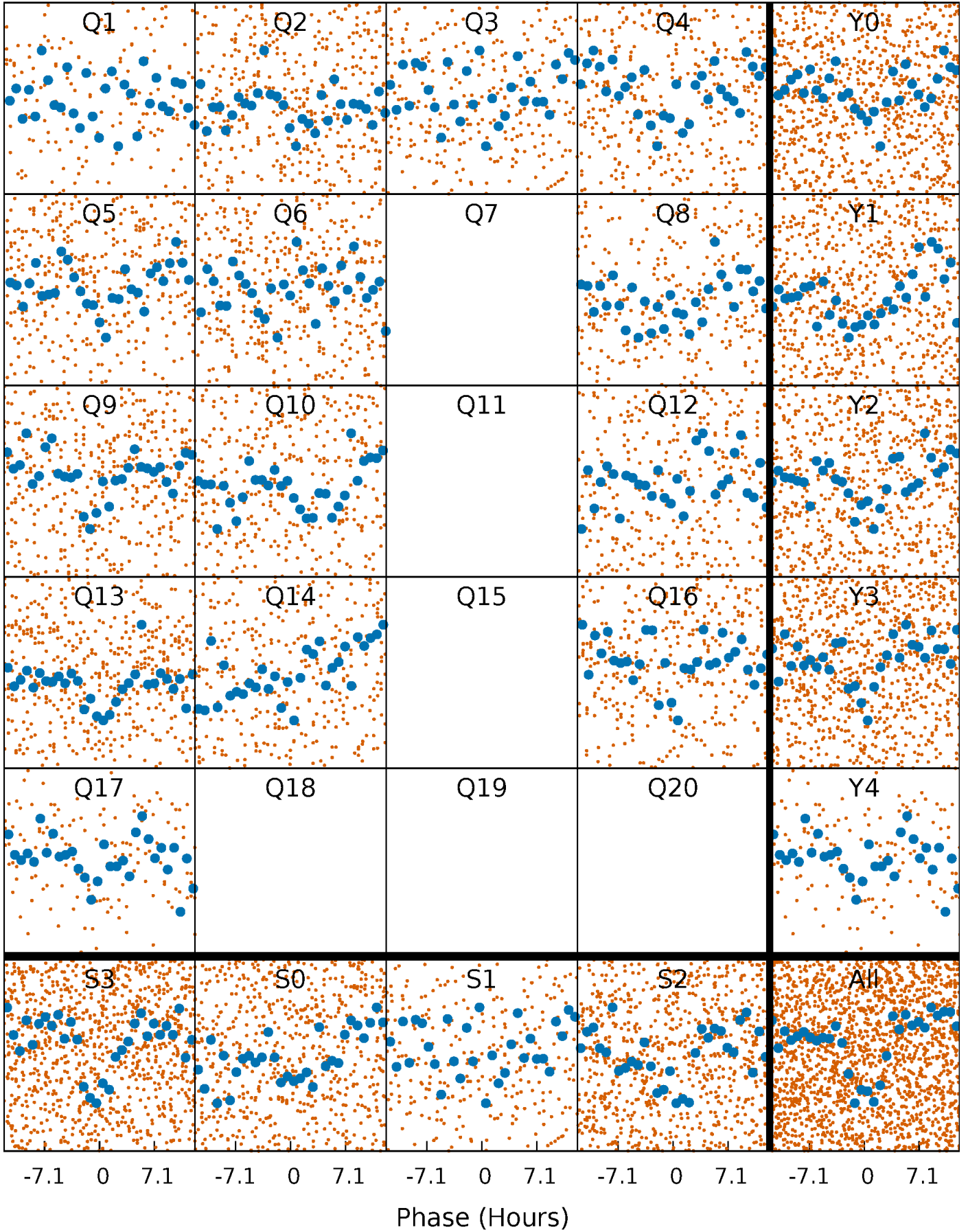


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



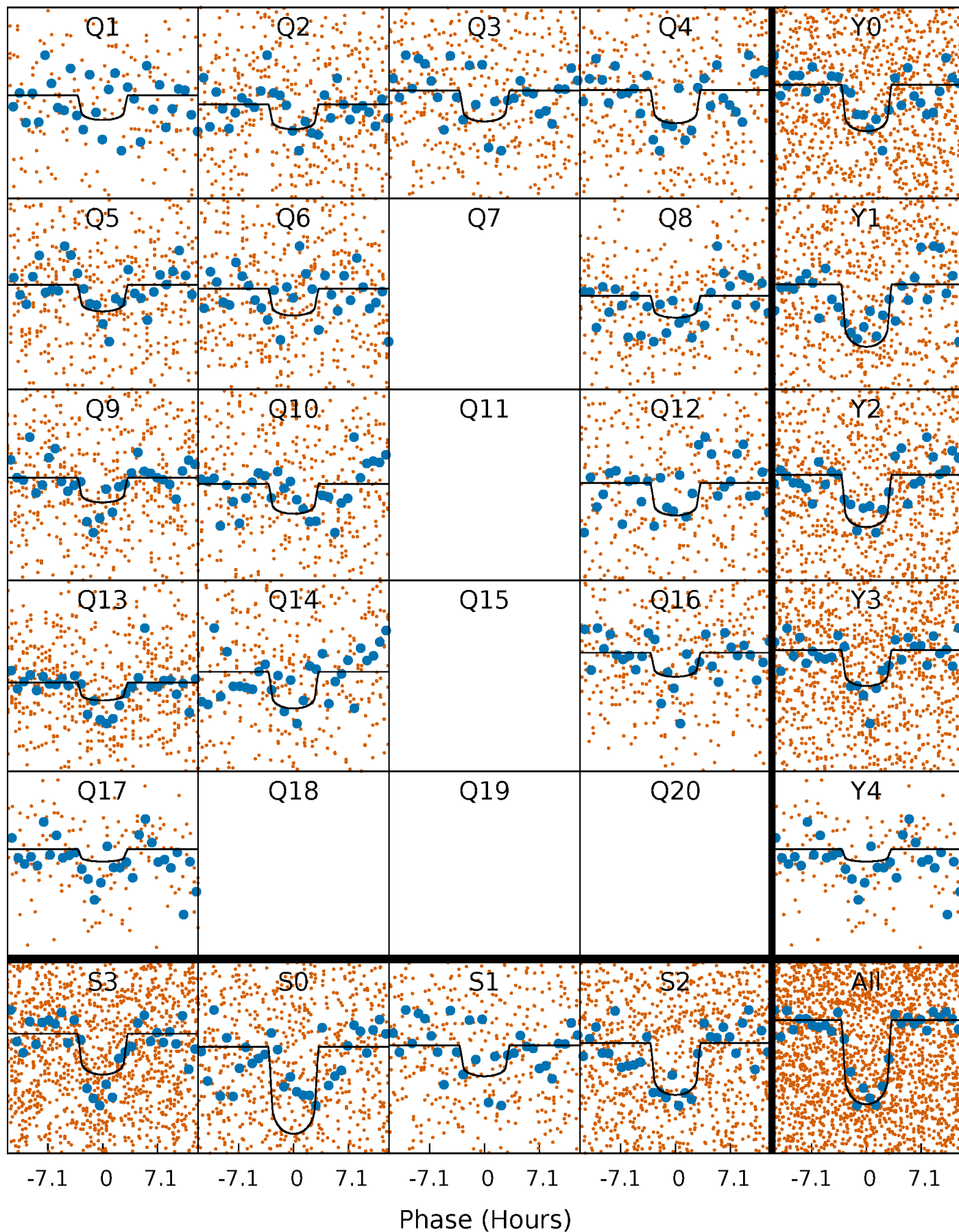
PDC Quarter-Phased Transit Curves

TCE 009910942-01 P= 8.480338 Days $T_0=135.853119$ (BKJD)



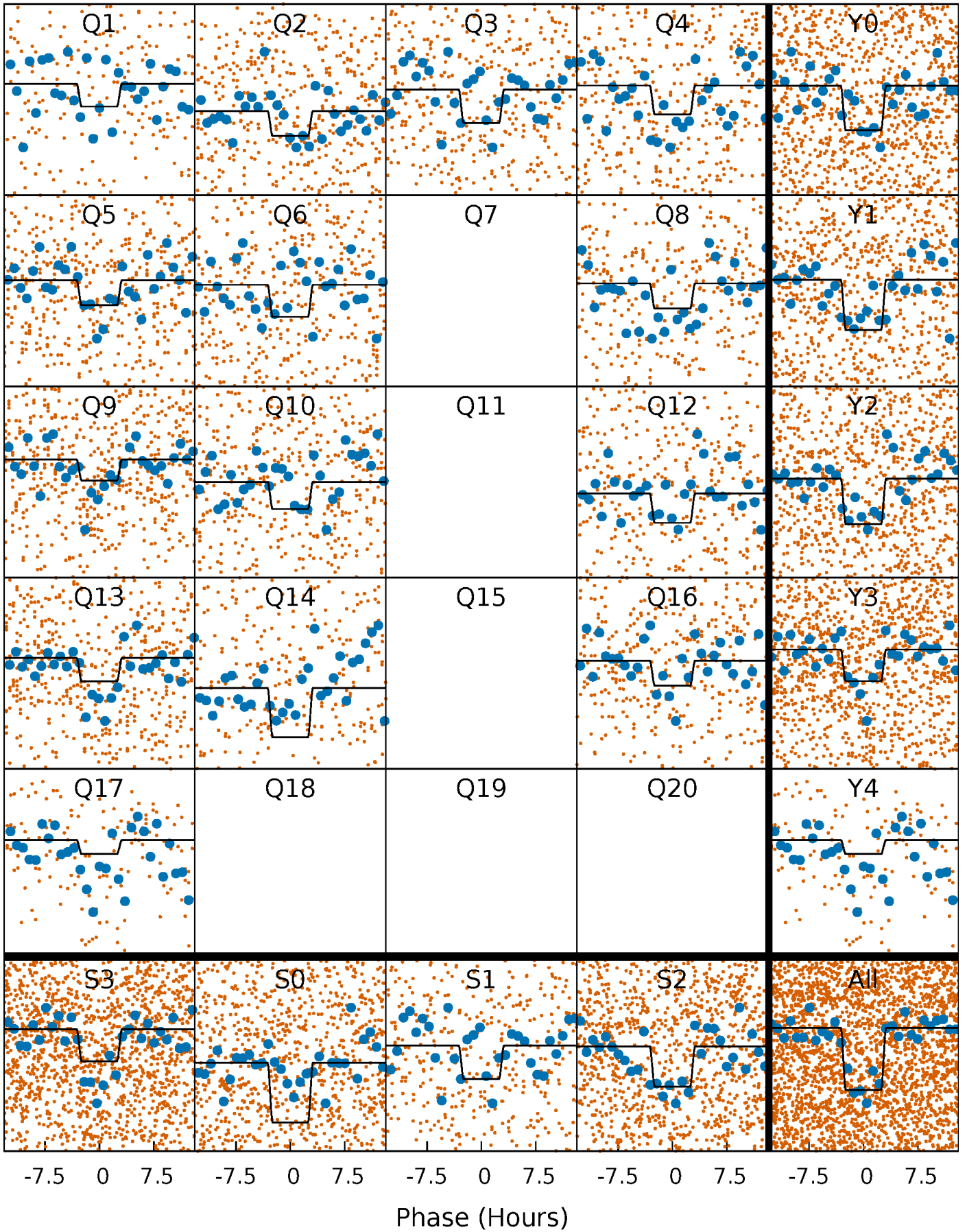
DV Quarter-Phased Transit Curves

TCE 009910942-01 P= 8.480338 Days $T_0=135.853119$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

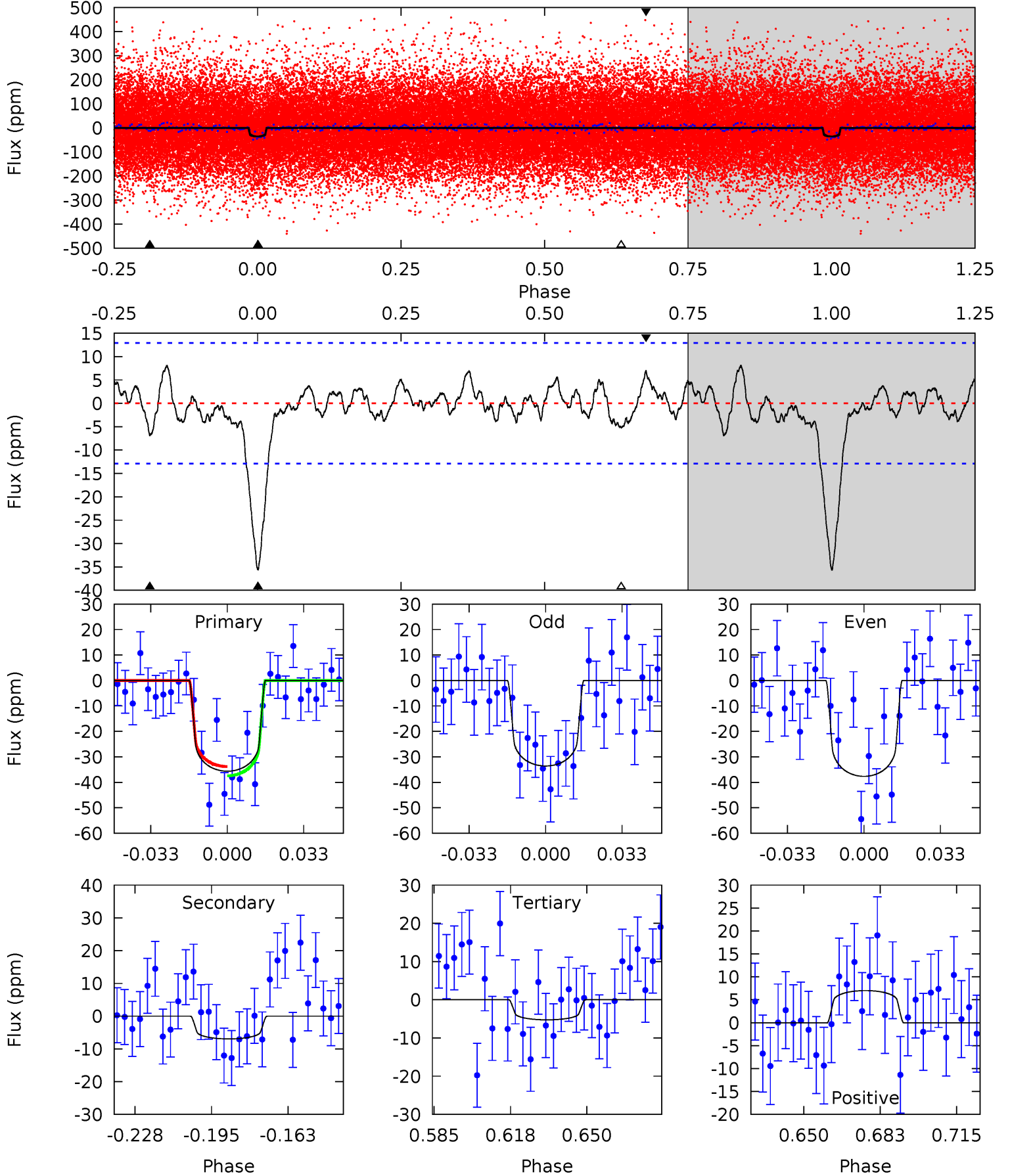
TCE 009910942-01 P= 8.480296 Days $T_0=135.861418$ (BKJD)



DV Model-Shift Uniqueness Test

009910942-01, P = 8.480338 Days, E = 127.372781 Days

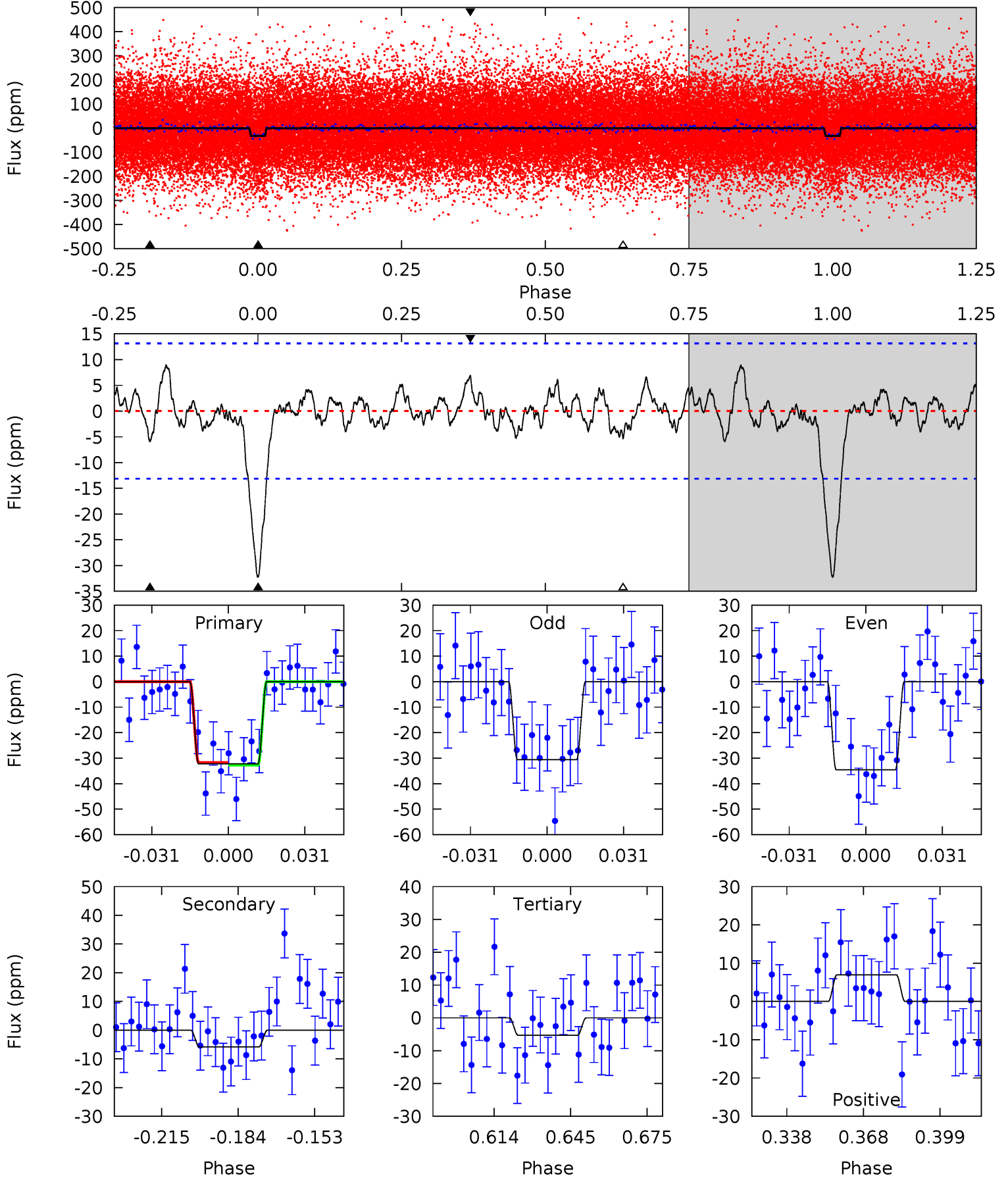
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
13.2	2.58	1.95	2.60	4.80	2.14	0.97	11.3	10.6	0.63	-0.02	0.76	0.86	0.18	0.68



Alt Model-Shift Uniqueness Test

009910942-01, P = 8.480296 Days, E = 127.381122 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
11.8	2.14	1.94	2.55	4.81	2.16	0.90	9.86	9.25	0.20	-0.41	0.73	0.82	0.22	0.18



Stellar Parameters For KIC 009910942

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	6245^{+172}_{-191}	$3.826^{+0.308}_{-0.103}$	$-0.440^{+0.350}_{-0.250}$	$2.179^{+0.430}_{-0.736}$	$1.160^{+0.217}_{-0.217}$	$0.158^{+0.334}_{-0.049}$
	+3%/-3%	+8%/-3%	+80%/-57%	+20%/-34%	+19%/-19%	+212%/-31%
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 009910942-01 / KOI 4324.01

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-7 ± 3	$1.50^{+0.54}_{-0.56}$	1917^{+110}_{-169}	4151^{+800}_{-498}	12^{+20}_{-7}
Alt.	-6 ± 3	$1.30^{+0.63}_{-0.51}$	1897^{+131}_{-170}	4205^{+981}_{-660}	13^{+29}_{-9}

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 $A_{obs} \gg 1.0$

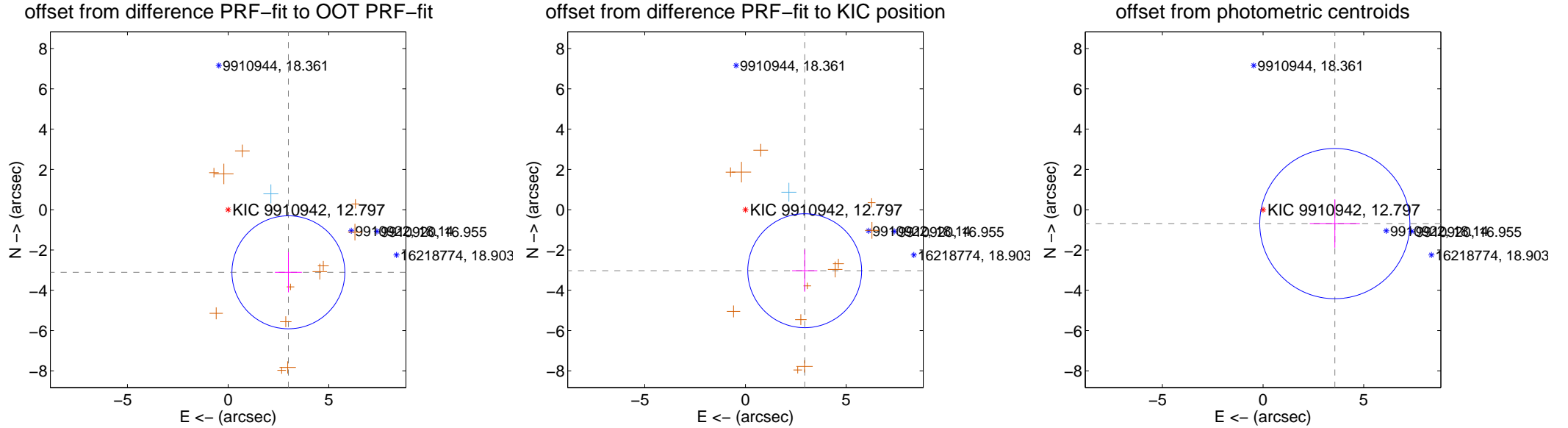
DV Centroid Data

Supplemental centroid analysis for 009910942-01. Kepler magnitude: 12.80. Transit SNR 9.83

There are 1 quarters with good PRF difference image offsets

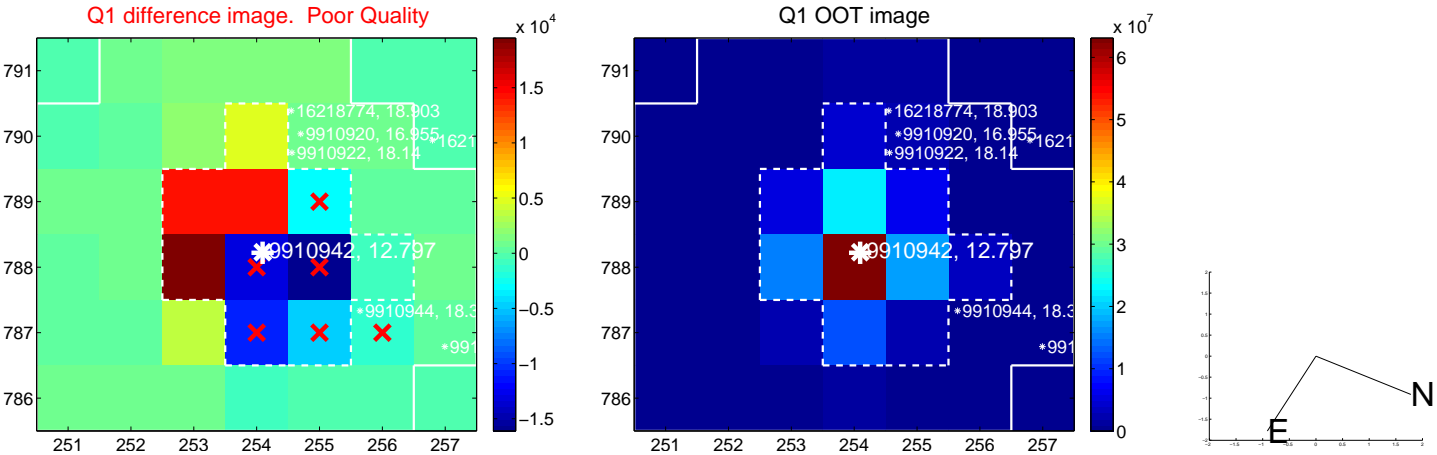
The direct PRF centroid is offset from the target star catalog position by about 0.05 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	4.315 ± 0.935	4.62	-2.995 ± 0.669	-3.107 ± 0.998
PRF-fit source offset from KIC position	4.224 ± 0.943	4.48	-2.944 ± 0.627	-3.029 ± 1.046
photometric centroid source offset	3.63 ± 1.24	2.92	-3.57 ± 1.24	-0.69 ± 1.20

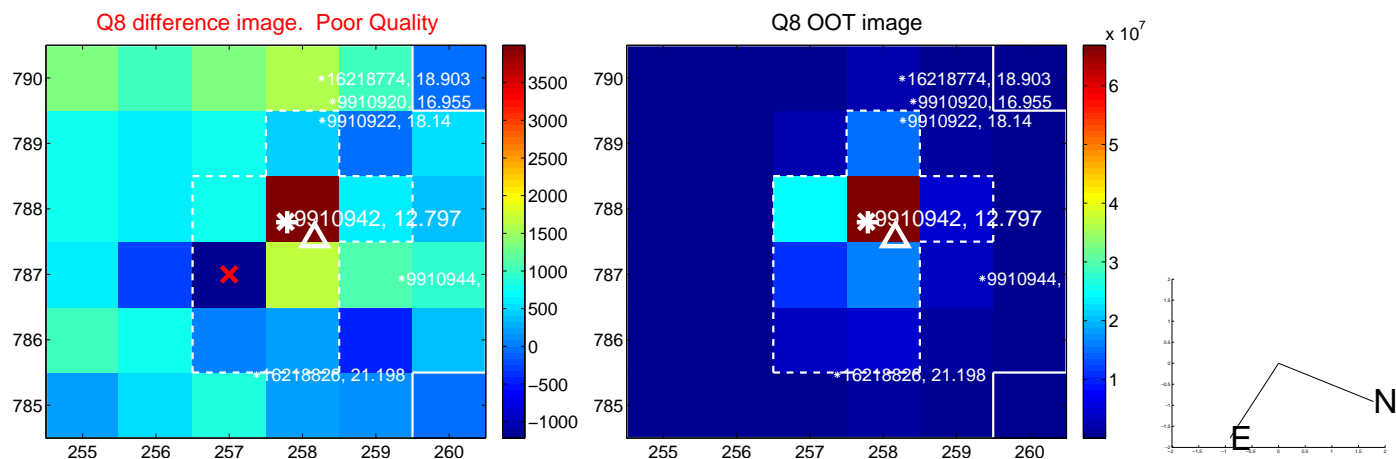
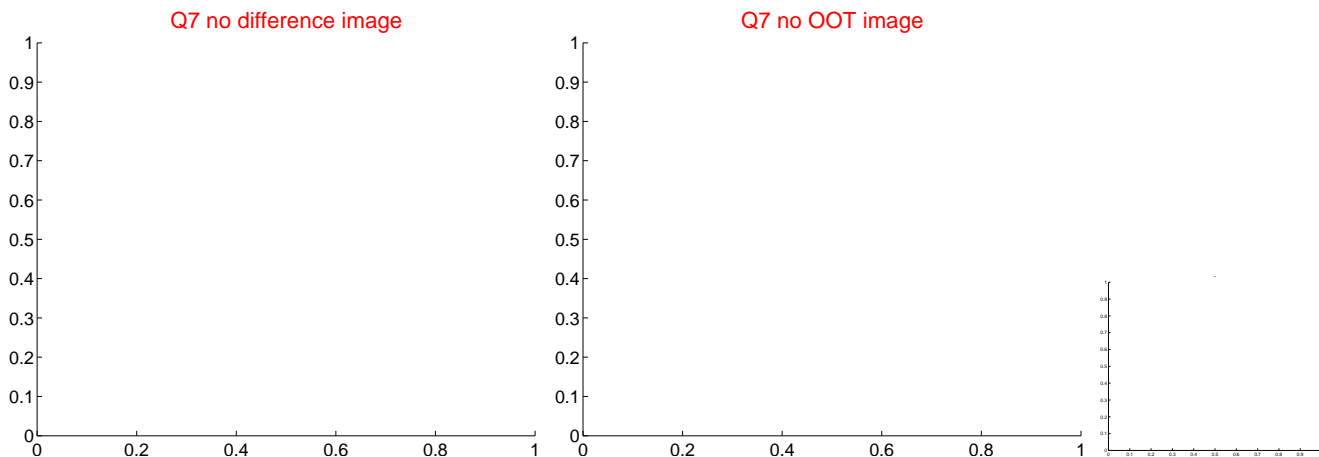
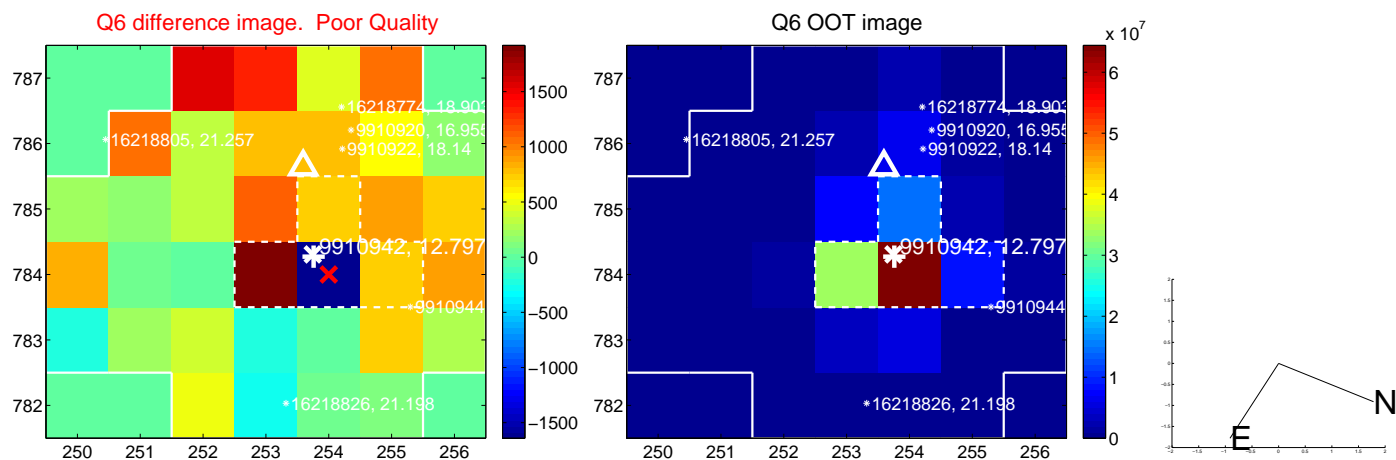
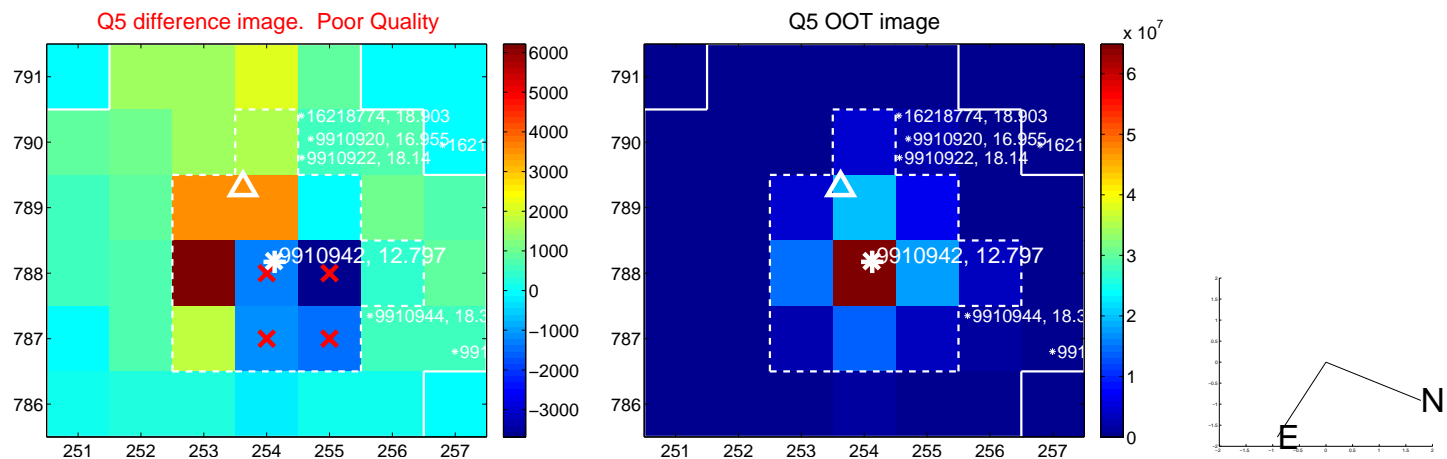


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

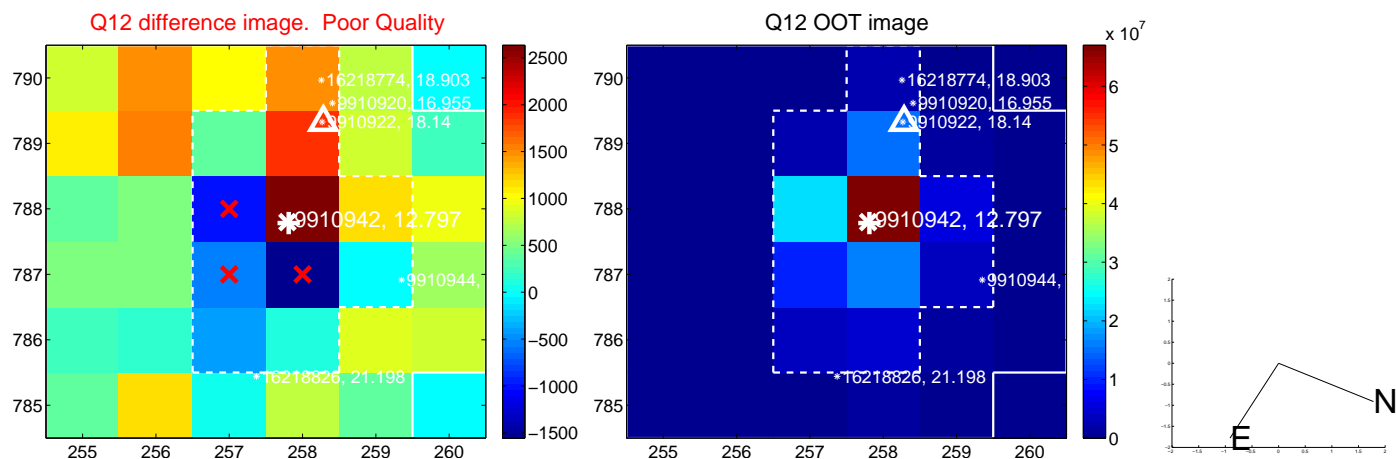
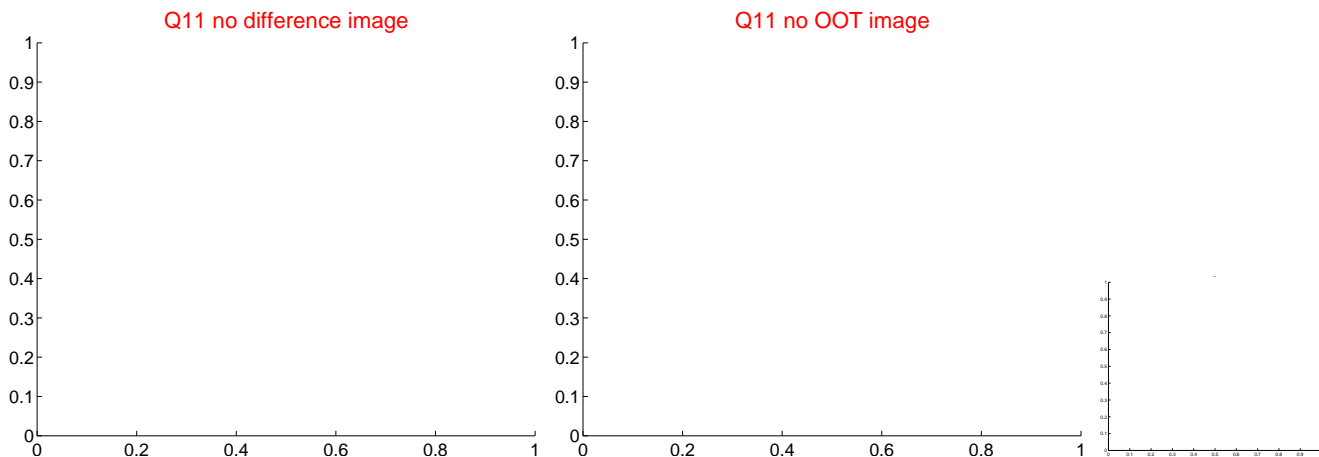
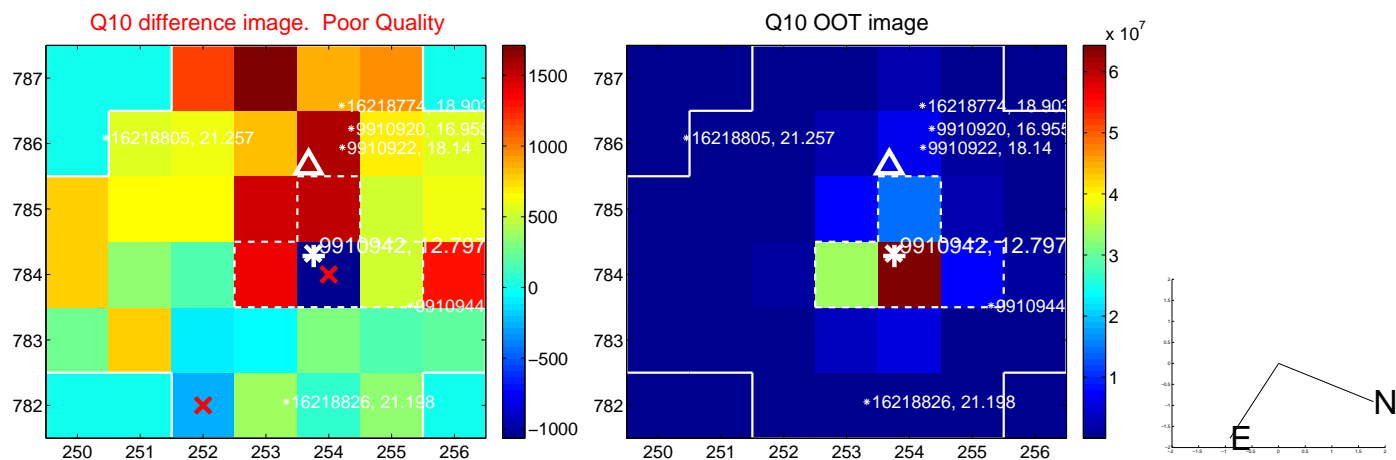
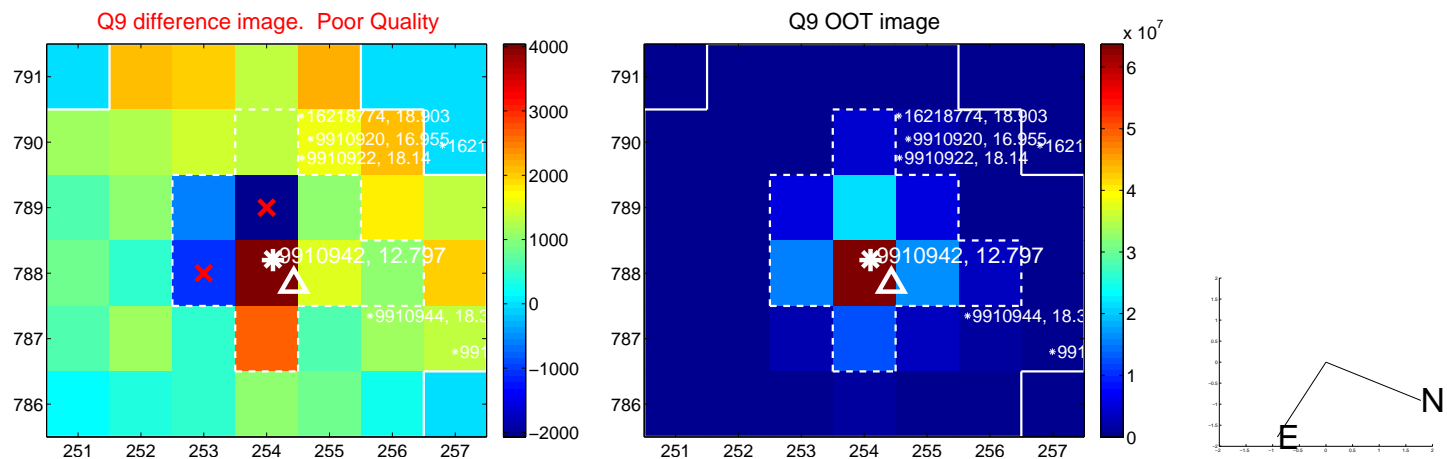
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



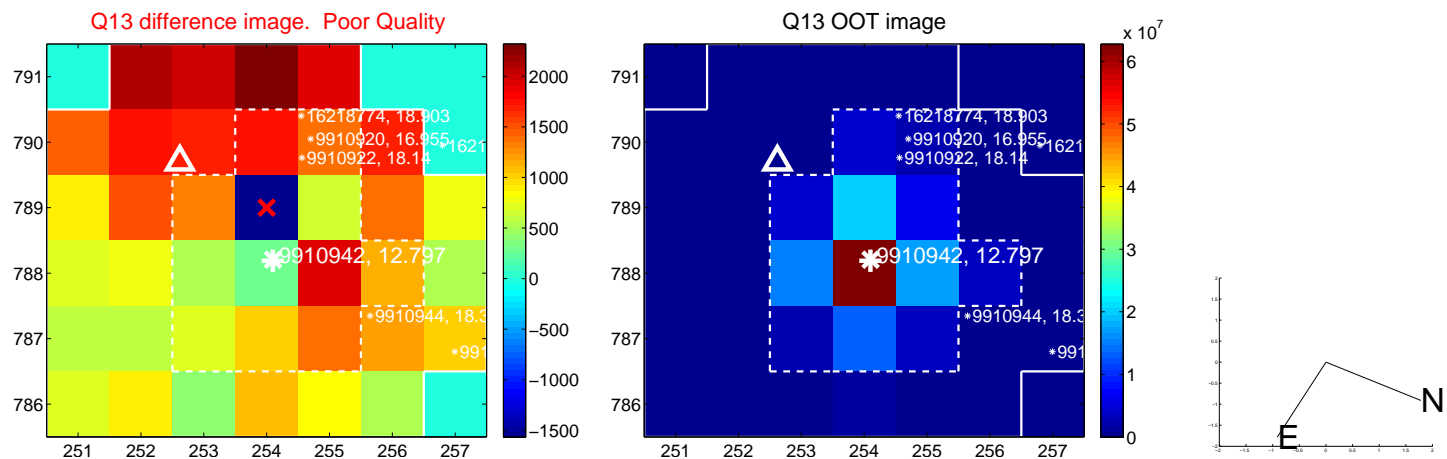
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



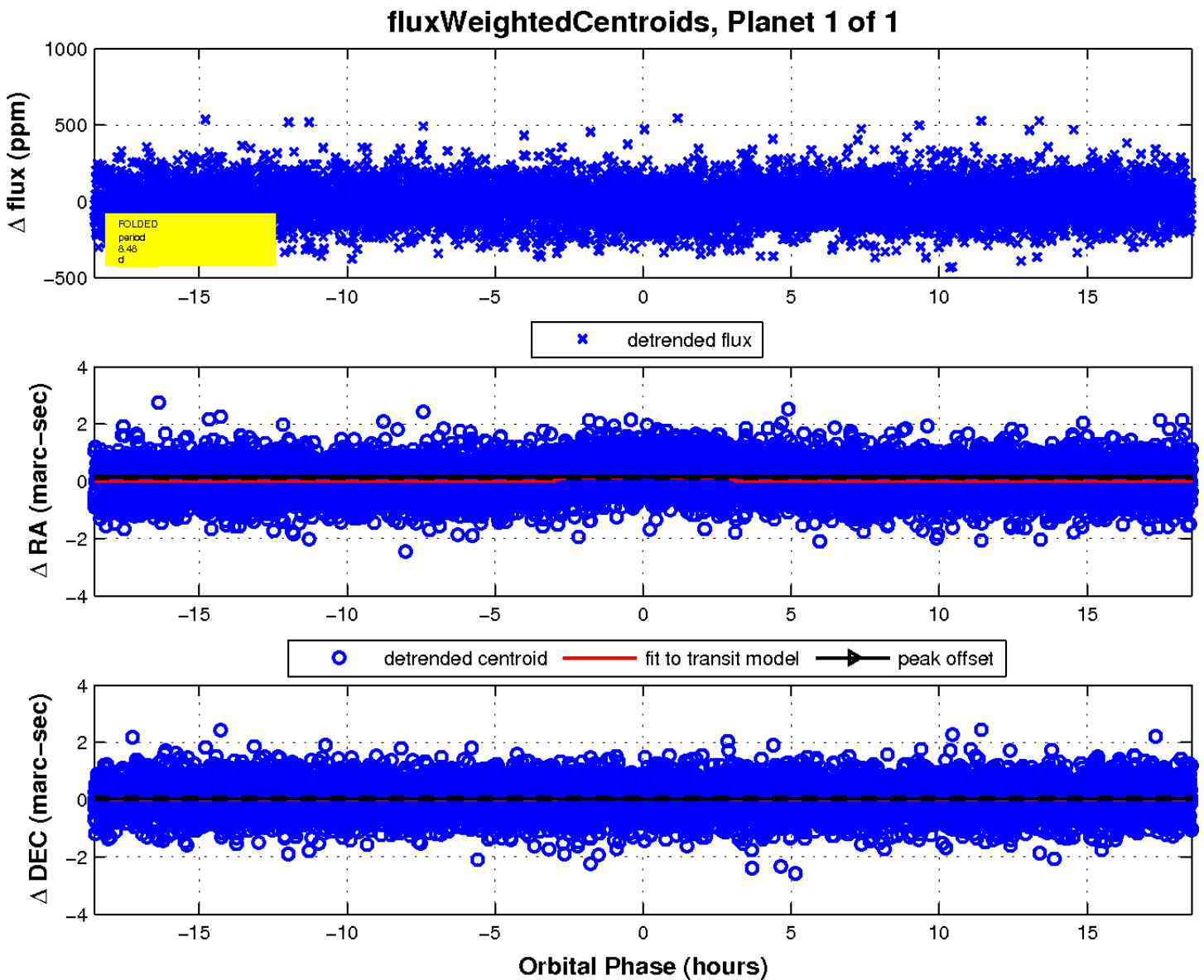
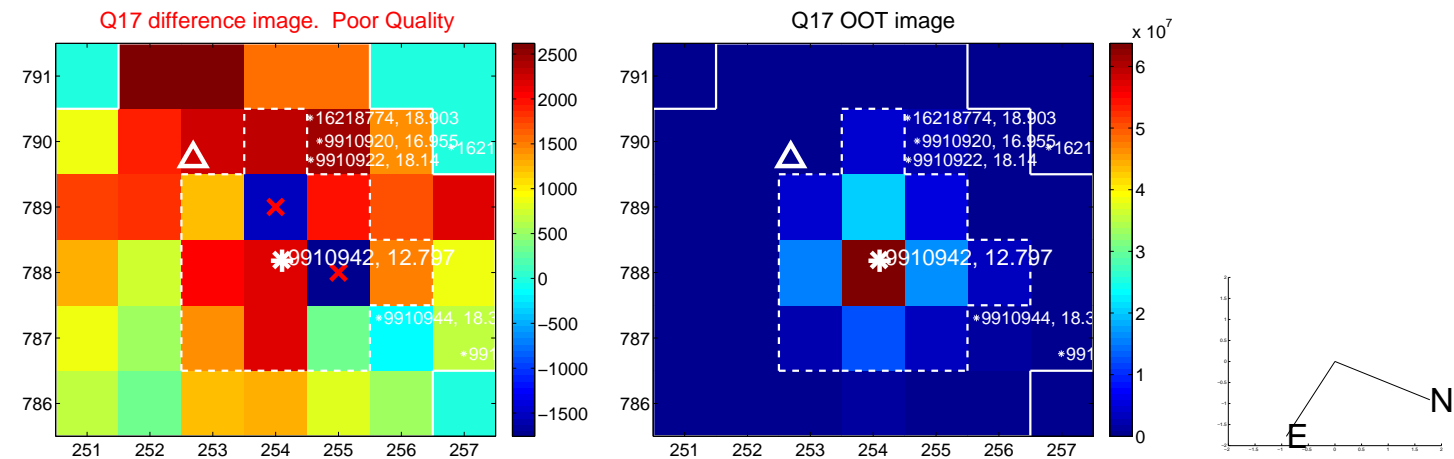
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white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination

