

KIC 009837586

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})
009837586-01	OBS	3442.01	10.366859	132.959410	65845.9	7.889	142.7	104.2	1.00	5780	39.38	115.45

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
009837586-01	OBS	FP	0.00	0	1	1	1	DEPTH_ODDEVEN_DV—DEPTH_ODDEVEN_ALT—MOD_ODDEVEN_DV—DEEP_V_SHAPED—CENT_RESOLVED_OFFSET—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 009837586-01

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
009837586-01	9837586	2937.01	9837578	1:2	5.4	-1	-1	15.73	17.48	7.46	Direct-PRF	0	0.12	3.52

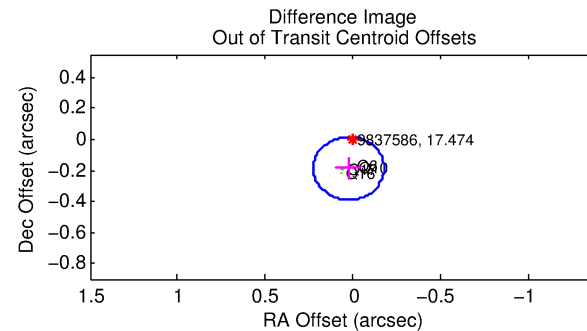
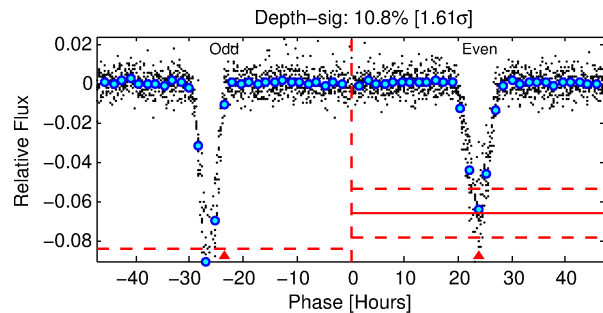
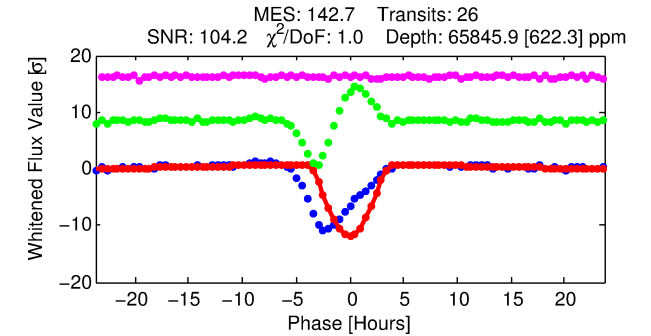
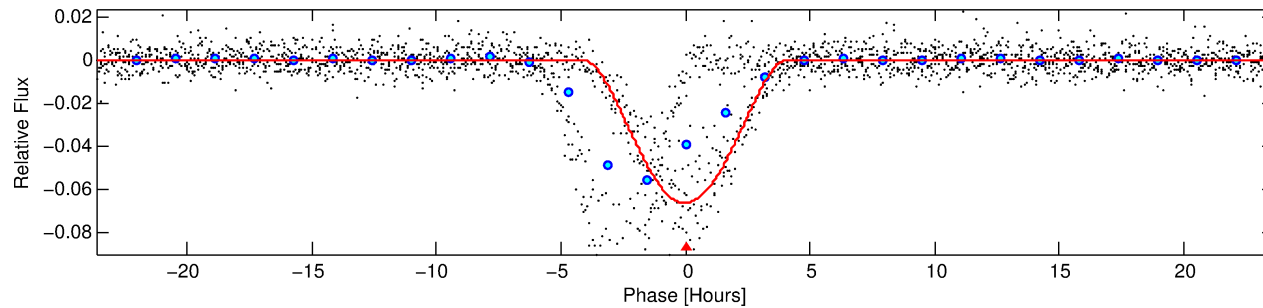
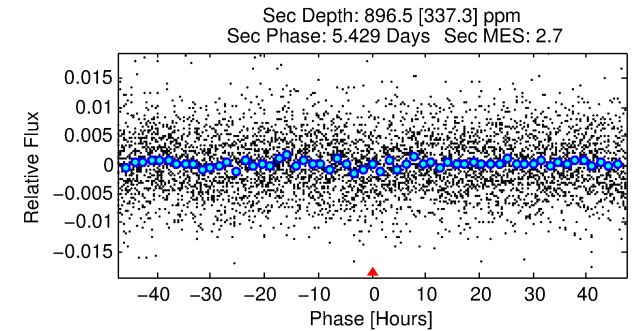
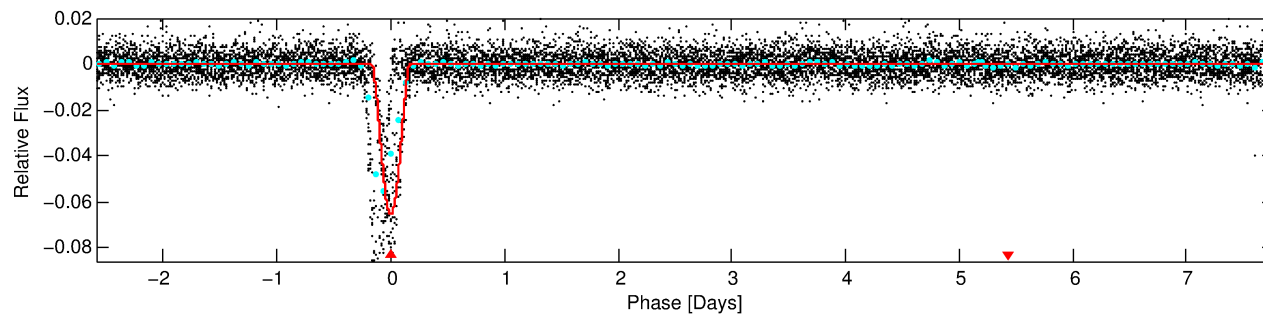
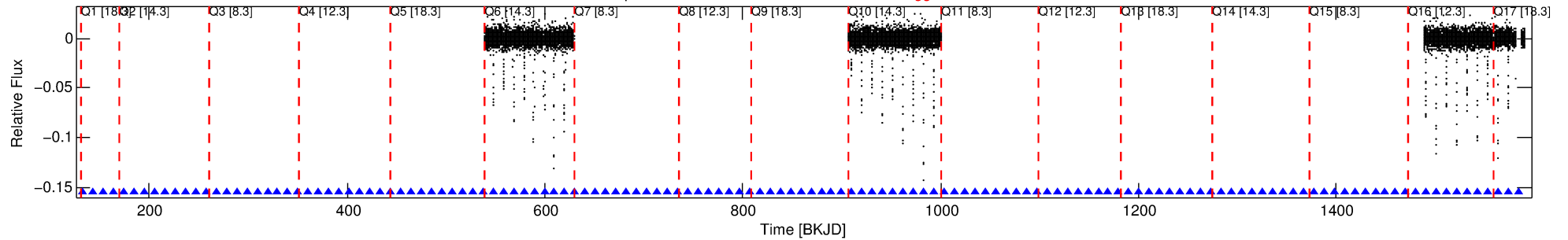
Notes: $P_1:P_2$ is the period ratio. Dist is the distance in arcseconds. Δ Row and Δ Col are the number of pixels apart in row and column. m_2 and m_1 are the magnitudes of the parent and child. D_2/D_1 is the parent's transit depth divided by the child's. σ_P and σ_T are the significance of the match 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: 9837586 Candidate: 1 of 1 Period: 10.367 d

KOI: K03442 Corr: No Ephemeris Match

Kp: 17.47 R*: 1.00 Rs Teff: 5780.0 K Logg: 4.44 Fe/H: 0.000



DV Fit Results:

Period = 10.36686 [0.00002] d
Epoch = 132.9594 [0.0018] BKJD
Rp/R* = 0.3609 [0.2166]
a/R* = 9.93 [0.11]
b = 0.94 [0.31]
Seff = 115.45 [0.00]
Teq = 836 [0] K
Rp = 39.38 [23.64] Re
a = 0.0931 [0.0000] AU
Ag = 2.75 [3.47] [0.51σ]
Teffp = 1665 [524] K [1.58σ]

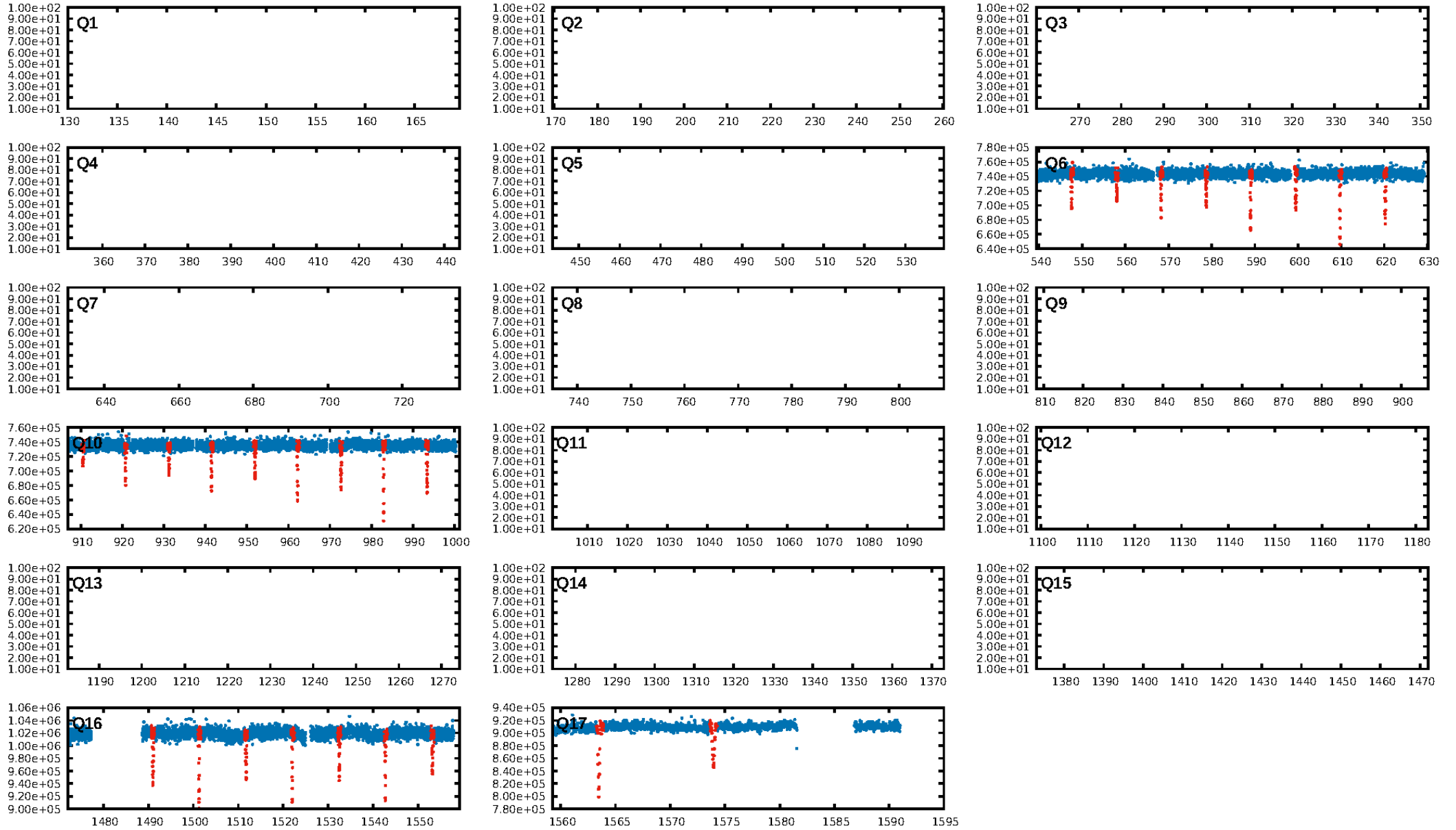
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: 0.0%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 0.00e+00
RollingBand-fgt: 1.00 [24/24]
GhostDiagnostic-chr: -0.594
Centroid-sig: 0.0%
Centroid-so: 6.423 arcsec [473.48σ]
OotOffset-rm: 0.188 arcsec [2.78σ]
KicOffset-rm: 5.585 arcsec [81.31σ]
OotOffset-st: 2/0/1/1 [4]
KicOffset-st: 2/0/1/1 [4]
DiffImageQuality-fgm: 1.00 [4/4]
DiffImageOverlap-fno: 1.00 [4/4]

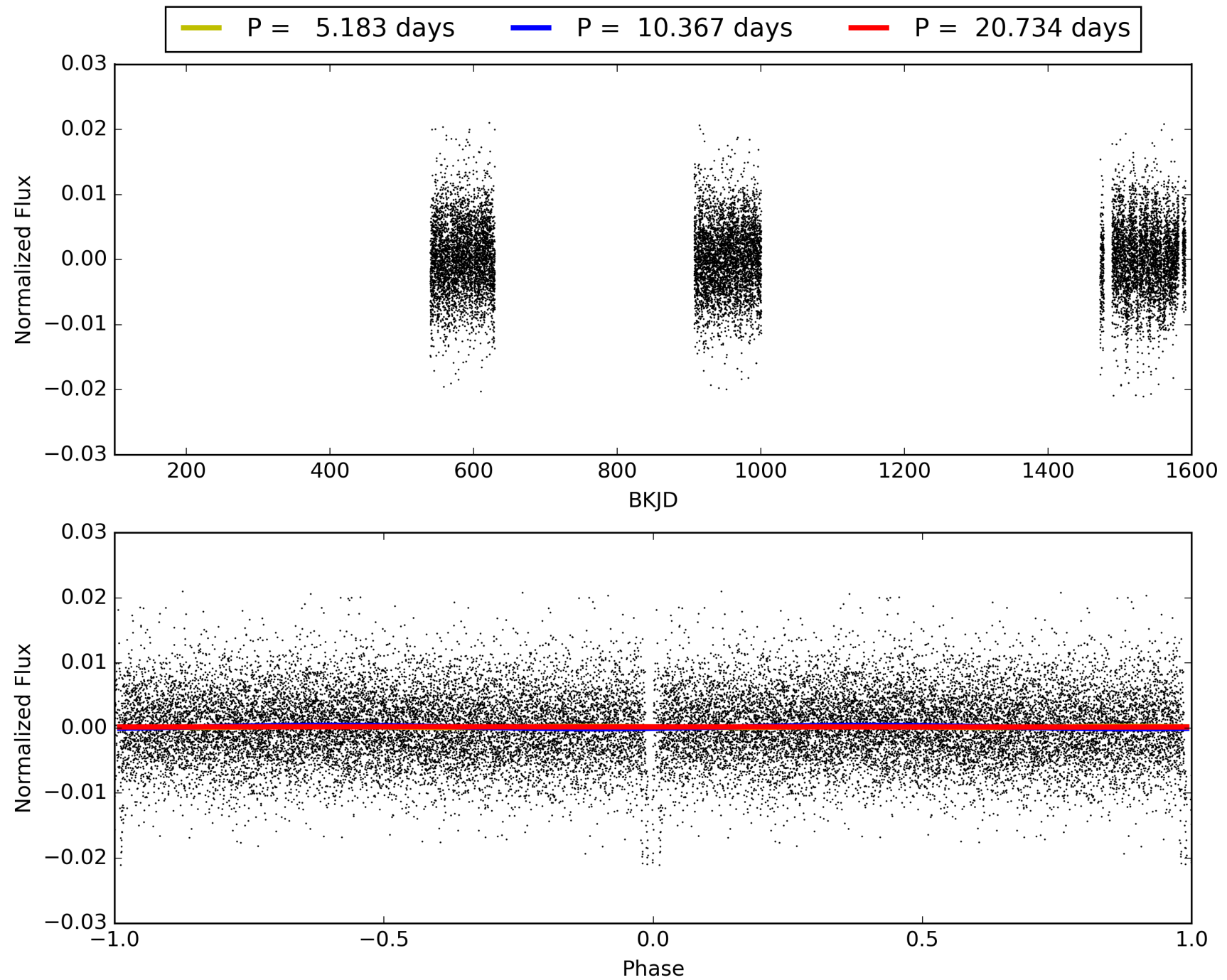
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 00:19:09 Z

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

TCE 009837586-01, PDC Light Curves

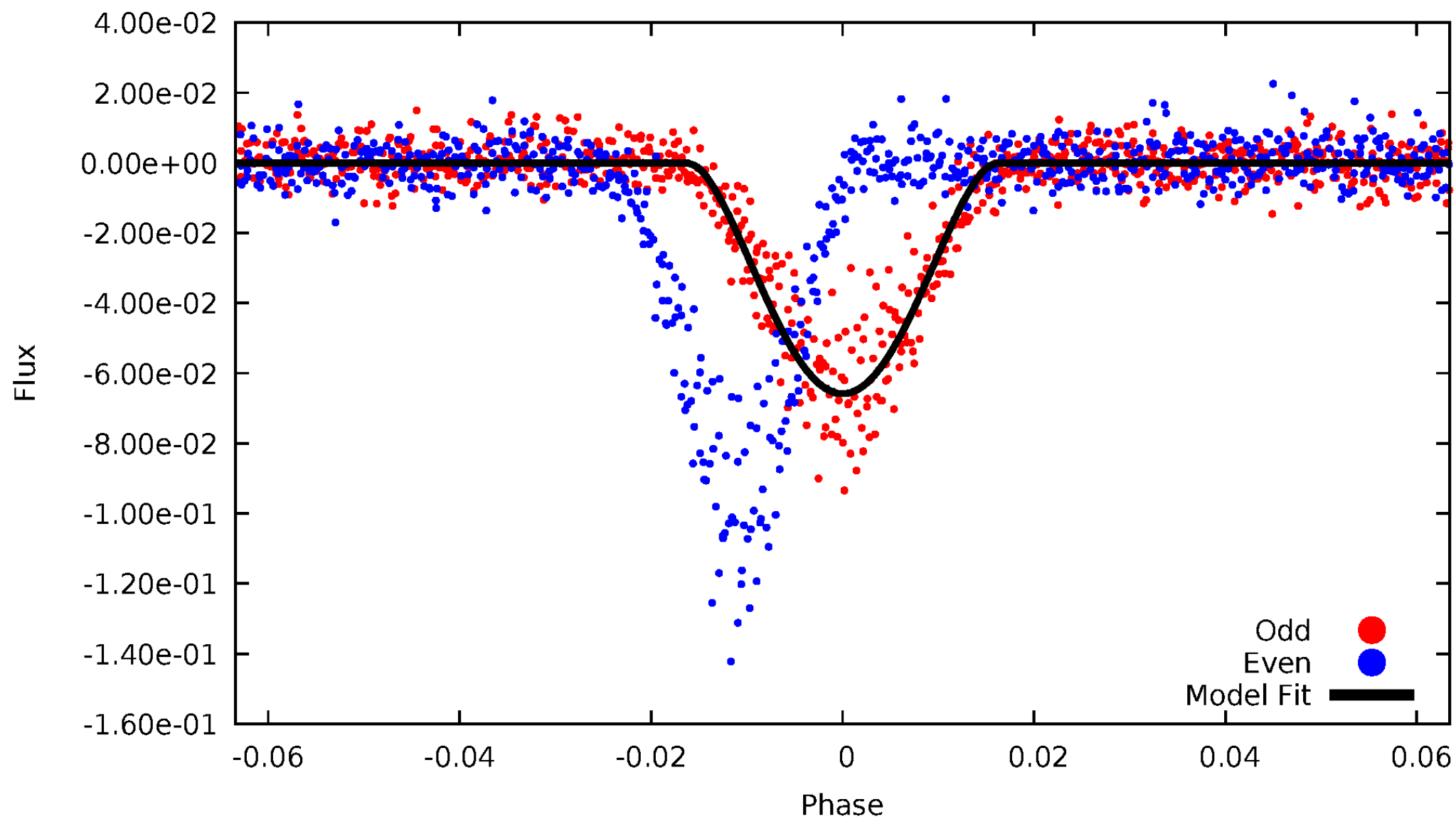


TCE 009837586-01



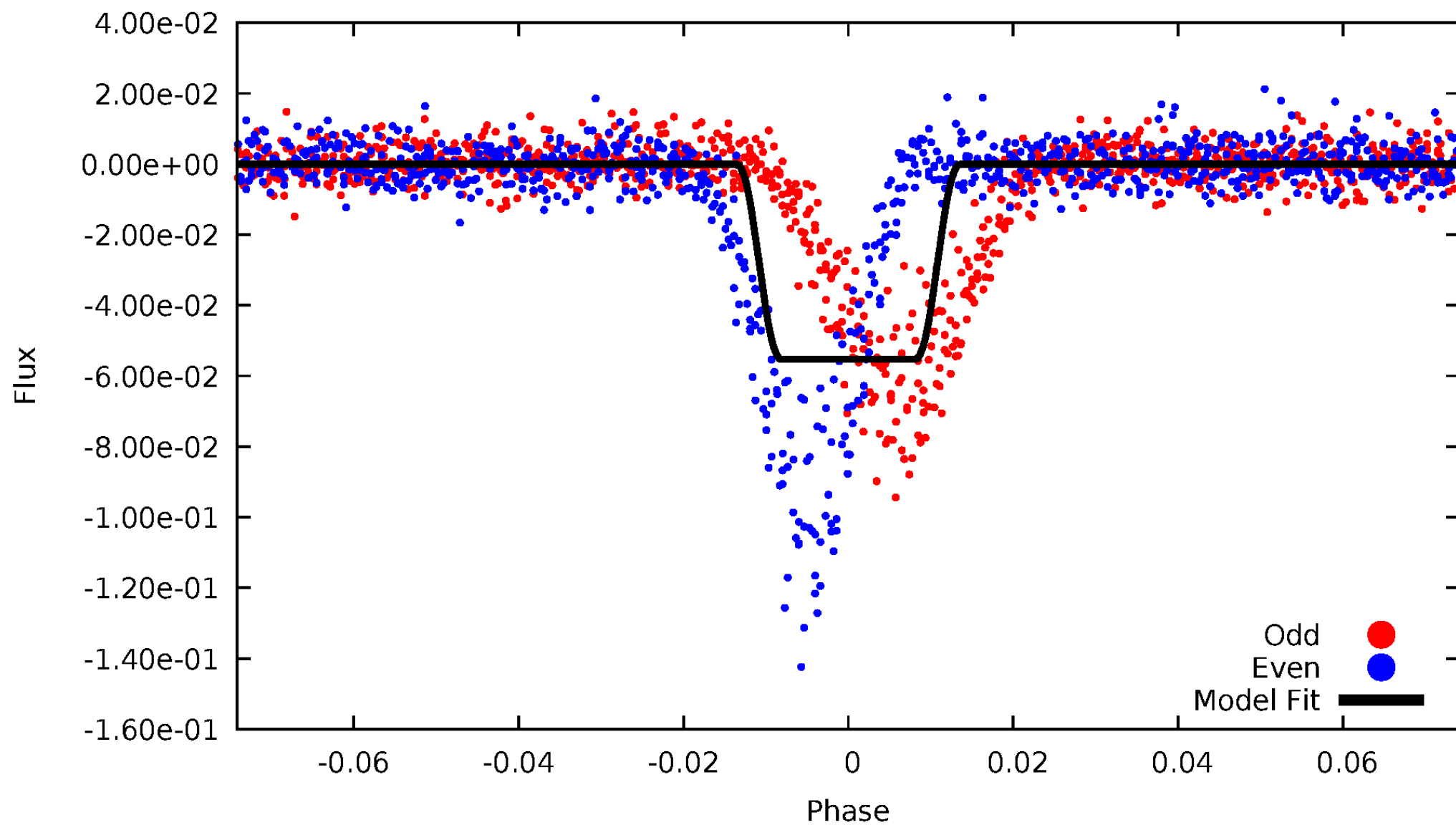
DV Odd/Even

TCE 009837586-01



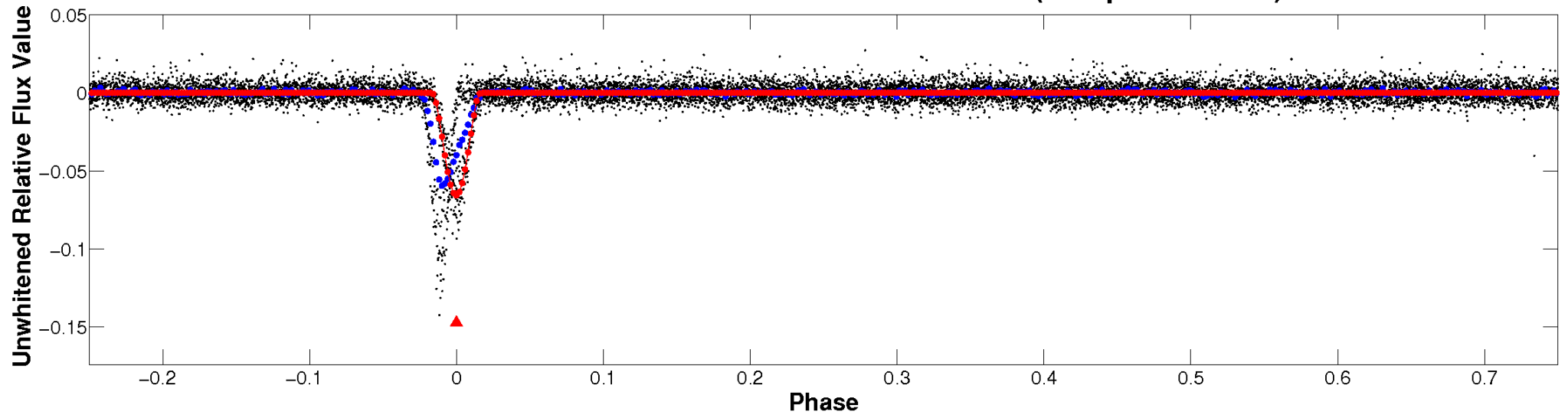
ALT Odd/Even

TCE 009837586-01

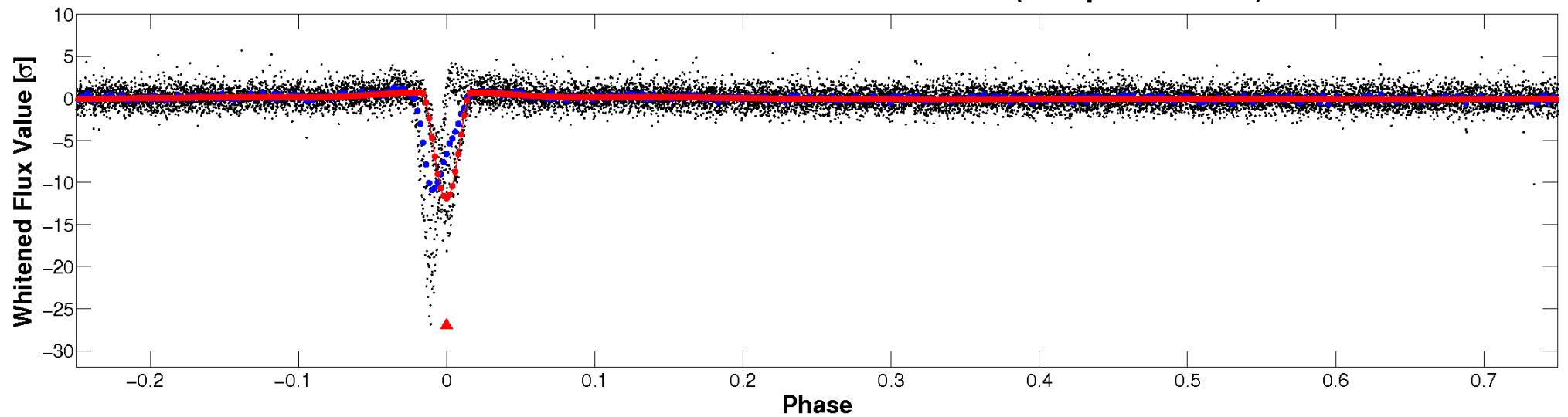


Non-Whitened Vs. Whitened Light Curve

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

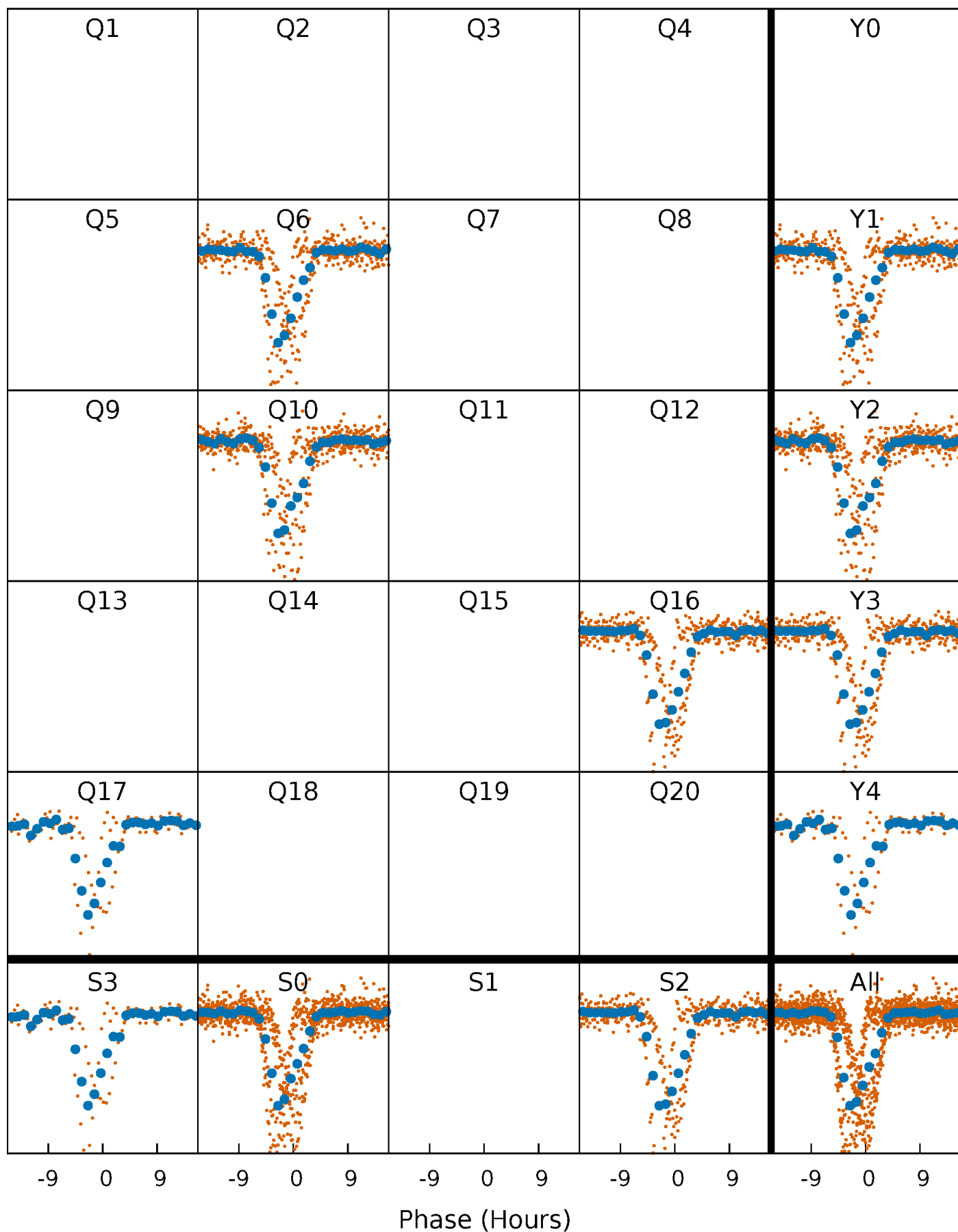


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



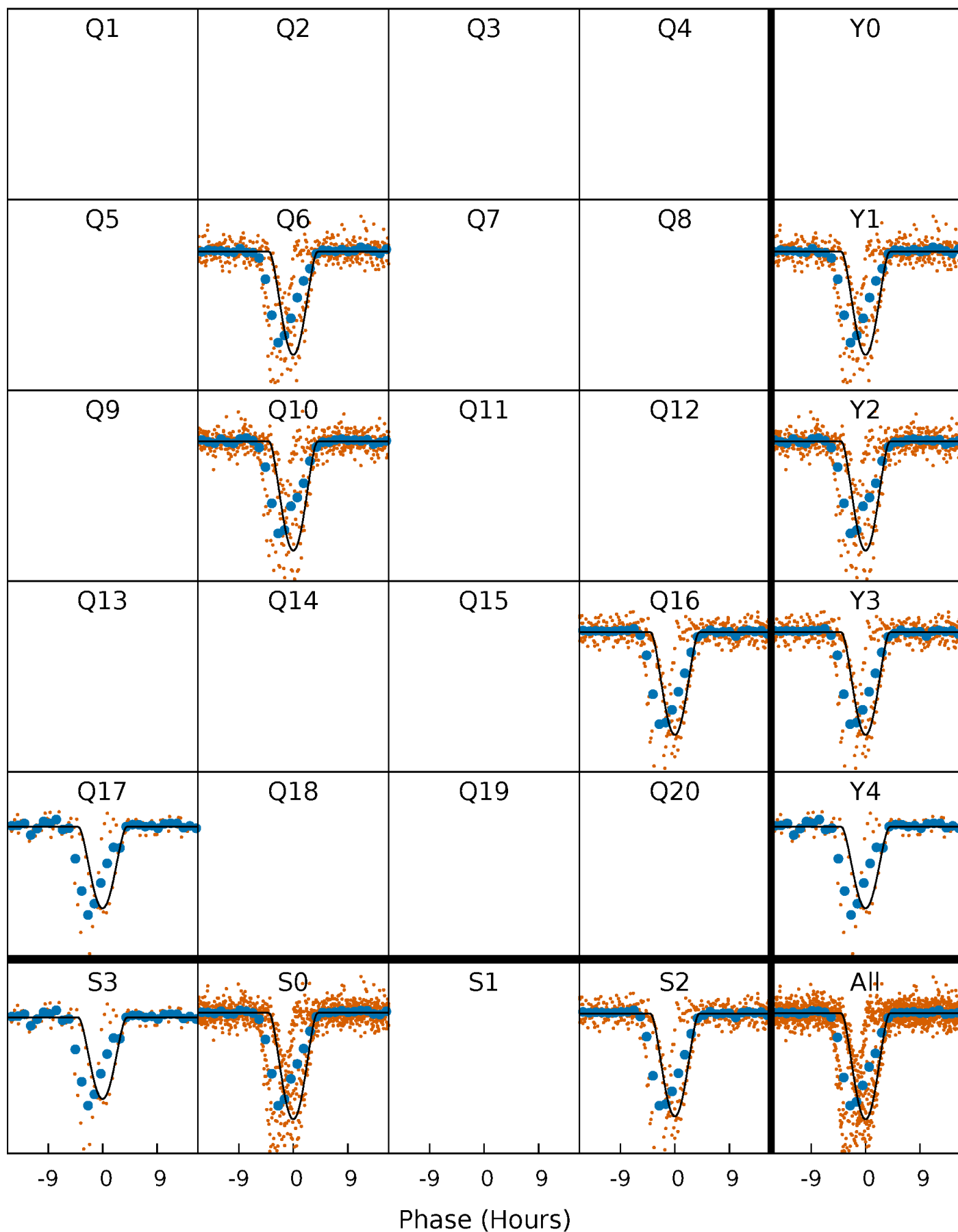
PDC Quarter-Phased Transit Curves

TCE 009837586-01 P= 10.366859 Days $T_0=132.959410$ (BKJD)



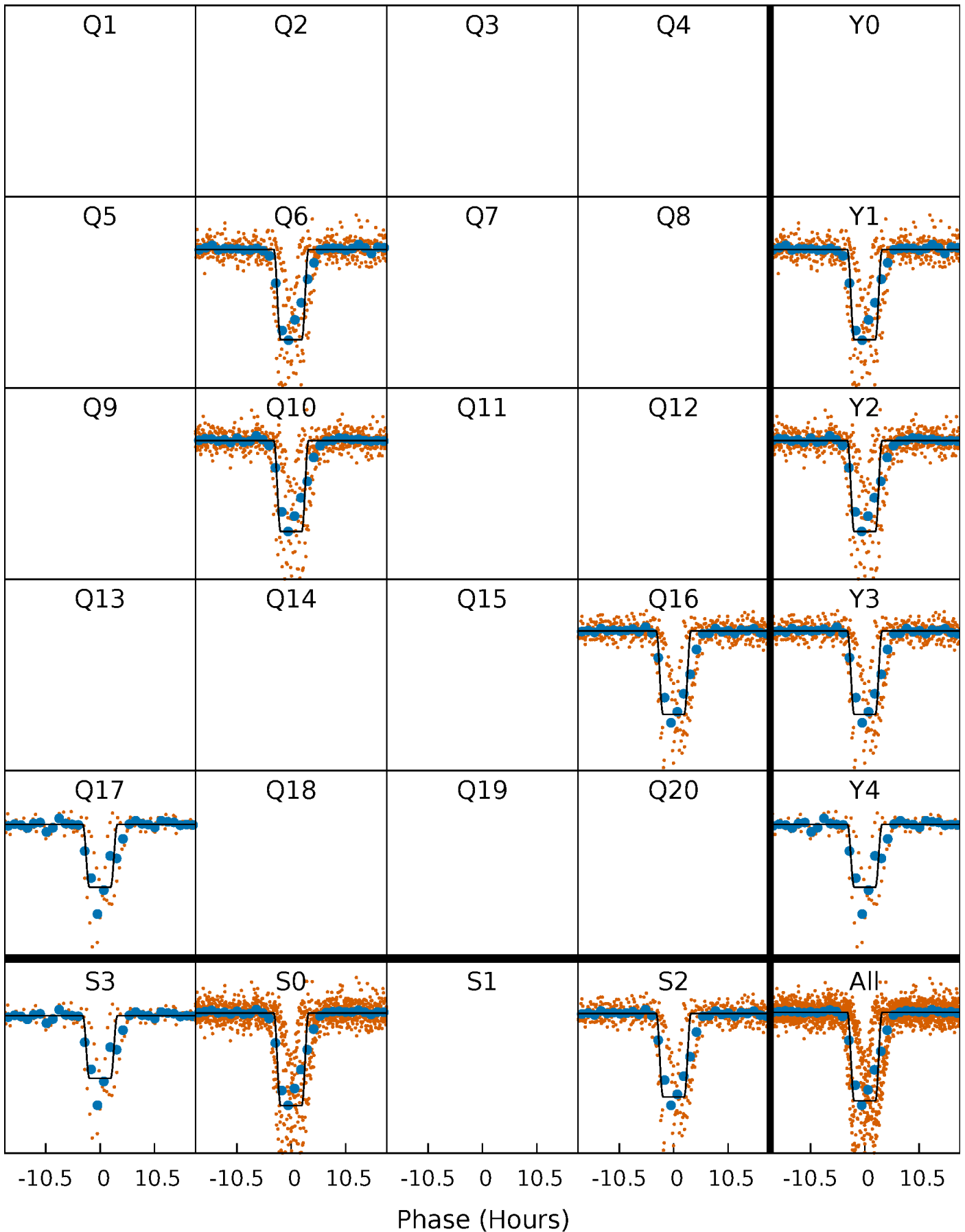
DV Quarter-Phased Transit Curves

TCE 009837586-01 P= 10.366859 Days $T_0=132.959410$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

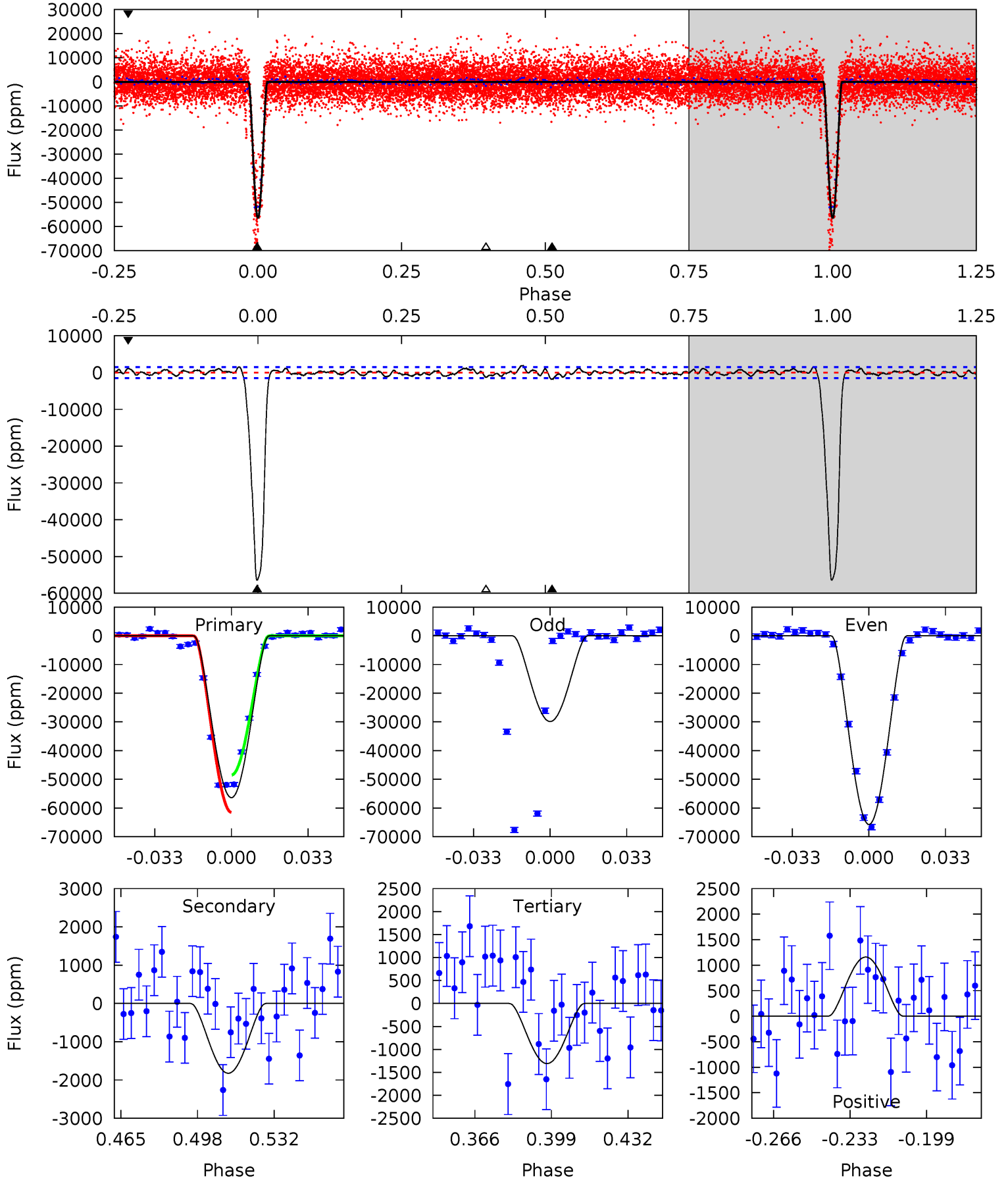
TCE 009837586-01 P= 10.366748 Days $T_0=132.906842$ (BKJD)



DV Model-Shift Uniqueness Test

009837586-01, P = 10.366859 Days, E = 132.959410 Days

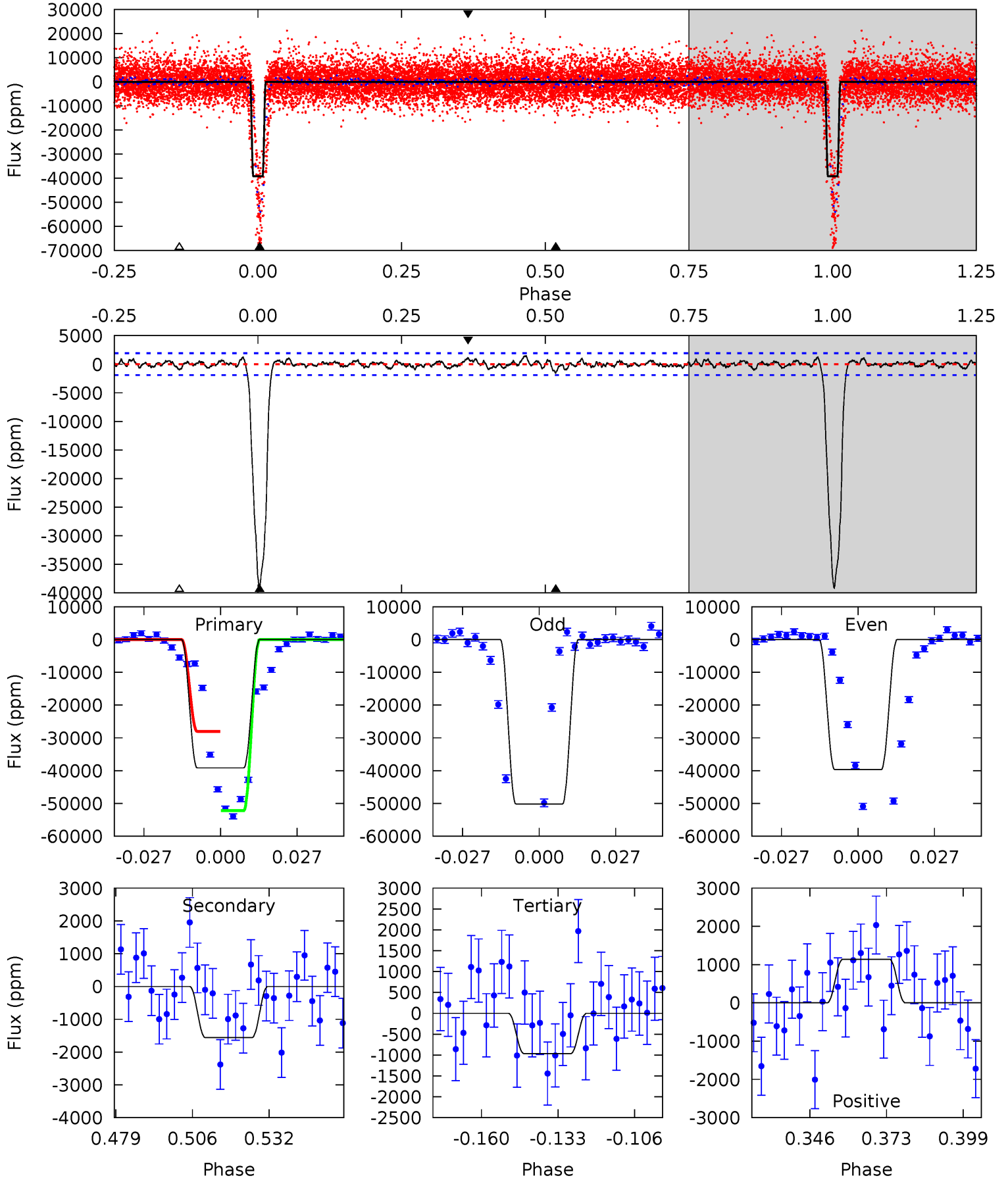
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
180.1	5.82	4.18	3.70	4.79	2.13	1.72	176.0	176.4	1.64	2.12	70.6	1.11	0.03	0



Alt Model-Shift Uniqueness Test

009837586-01, P = 10.366748 Days, E = 132.906842 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
99.1	3.95	2.45	2.89	4.84	2.22	1.03	96.6	96.2	1.50	1.06	18.2	1.07	0.04	29.2



Stellar Parameters For KIC 009837586

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5780^{+1}_{-1}	$4.438^{+1.000}_{-1.000}$	$0.000^{+1.000}_{-1.000}$	$1.000^{+1.000}_{-1.000}$	$-1.000^{+1.000}_{-1.000}$	$-1.000^{+1.000}_{-1.000}$
	+0%/-0%	+23%/-23%	+inf%/-inf%	+100%/-100%	+100%/-100%	+100%/-100%
Source	Solar	Solar	Solar	Solar		

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

Secondary Eclipse Parameters for KIC 009837586-01 / KOI 3442.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-1823 ± 313	$43.14^{+21.14}_{-21.96}$	1171^{+54}_{-58}	2662^{+619}_{-292}	$4.656^{+15.464}_{-2.614}$
Alt.	-1560 ± 395	$29.08^{+23.26}_{-17.65}$	1165^{+57}_{-53}	2884^{+1060}_{-436}	$8.154^{+48.702}_{-5.647}$

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

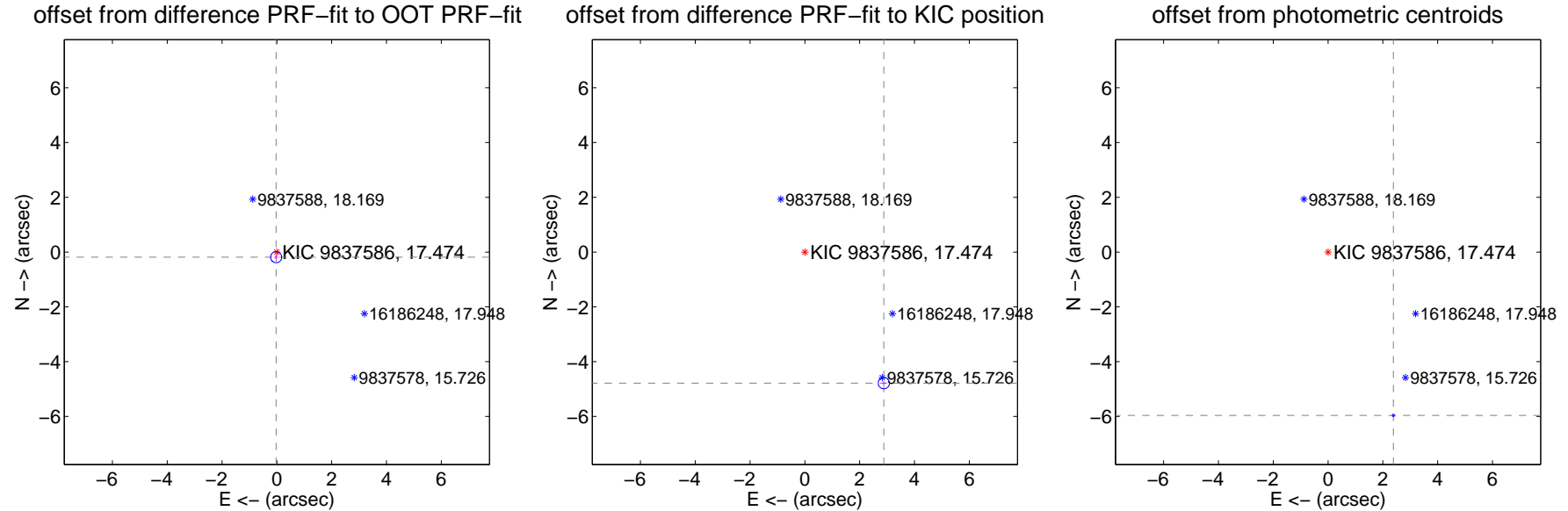
DV Centroid Data

Supplemental centroid analysis for 009837586-01. Kepler magnitude: 17.47. Transit SNR 104.23

There are 4 quarters with good PRF difference image offsets

The OOT PRF centroid is offset from the target star catalog position by about 5.47 arcsec so the offset from difference PRF-fit to OOT-fit may be invalid.

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.188 ± 0.068	2.78	0.026 ± 0.069	-0.186 ± 0.067
PRF-fit source offset from KIC position	5.585 ± 0.069	81.31	-2.881 ± 0.070	-4.785 ± 0.068
photometric centroid source offset	6.42 ± 0.01	473.49	-2.38 ± 0.01	-5.96 ± 0.01



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.

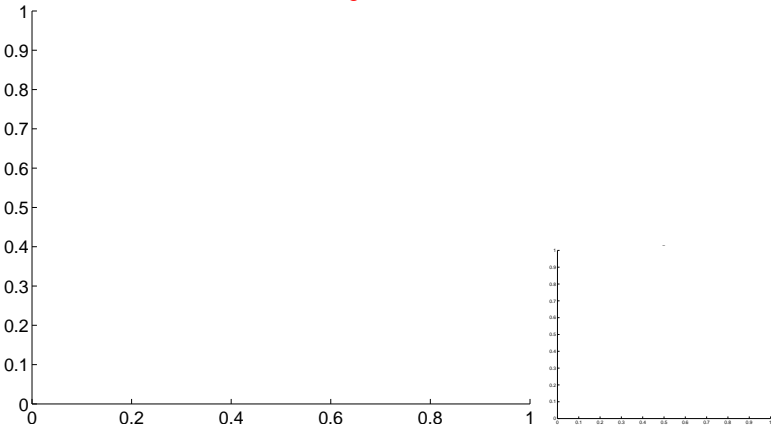


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.

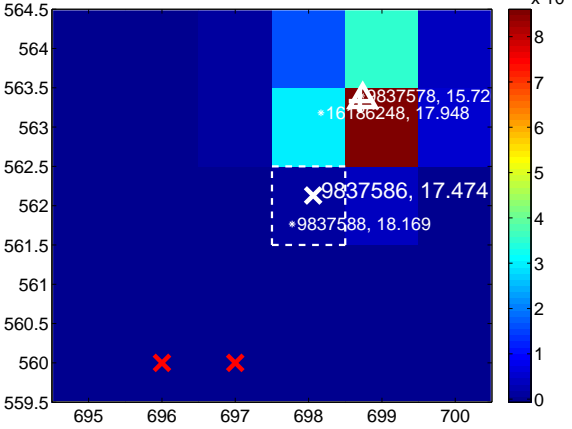
Q5 no difference image



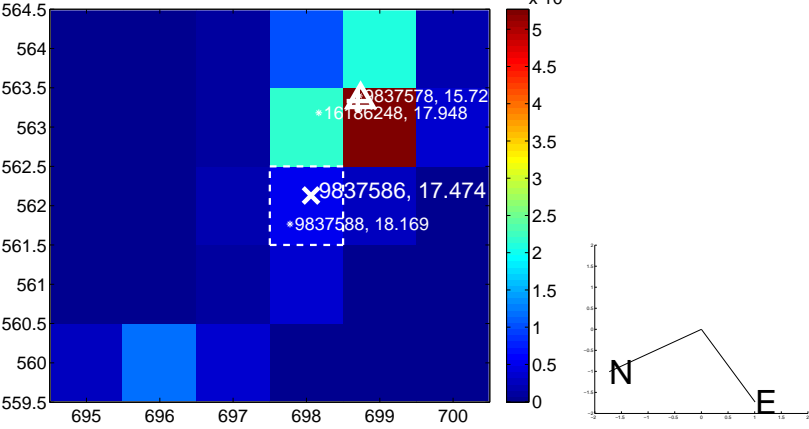
Q5 no OOT image



Q6 difference image



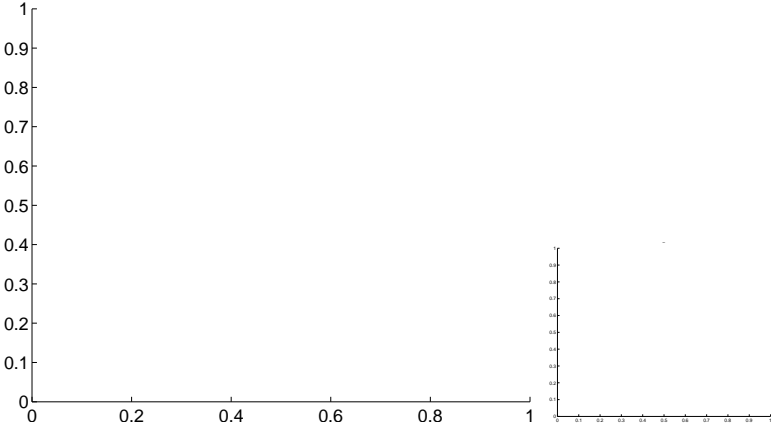
Q6 OOT image



Q7 no difference image



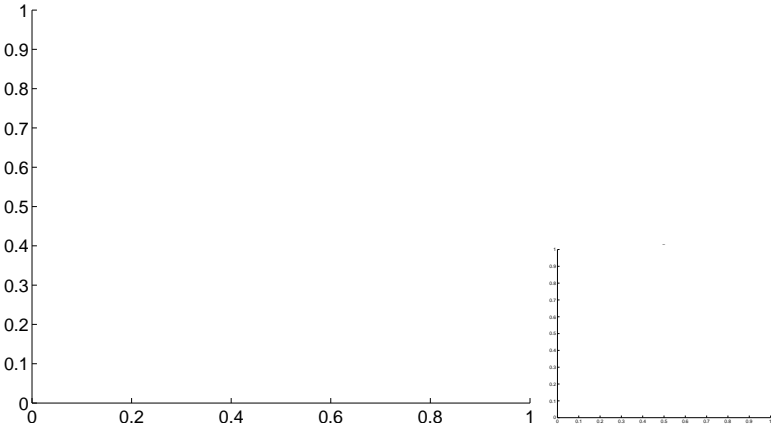
Q7 no OOT image



Q8 no difference image



Q8 no OOT image



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

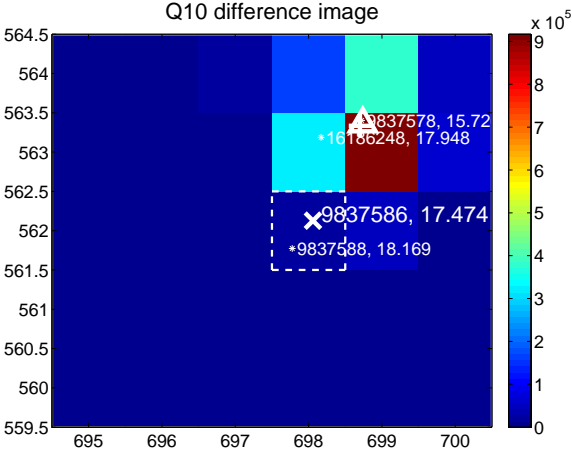
Q9 no difference image



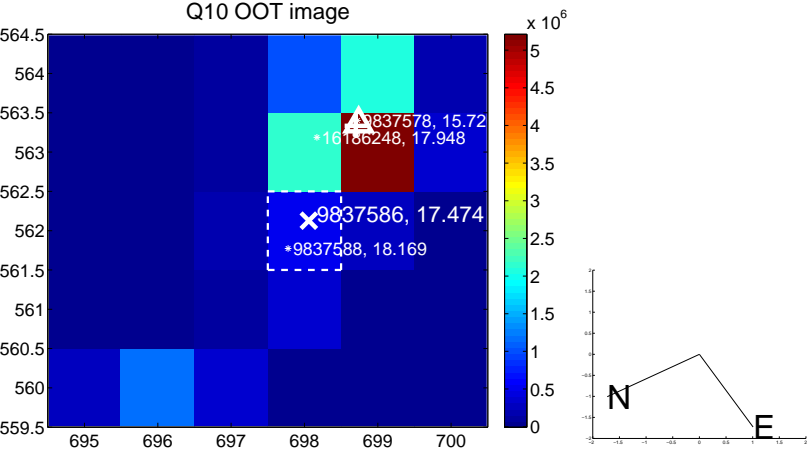
Q9 no OOT image



Q10 difference image



Q10 OOT image



Q11 no difference image



Q11 no OOT image



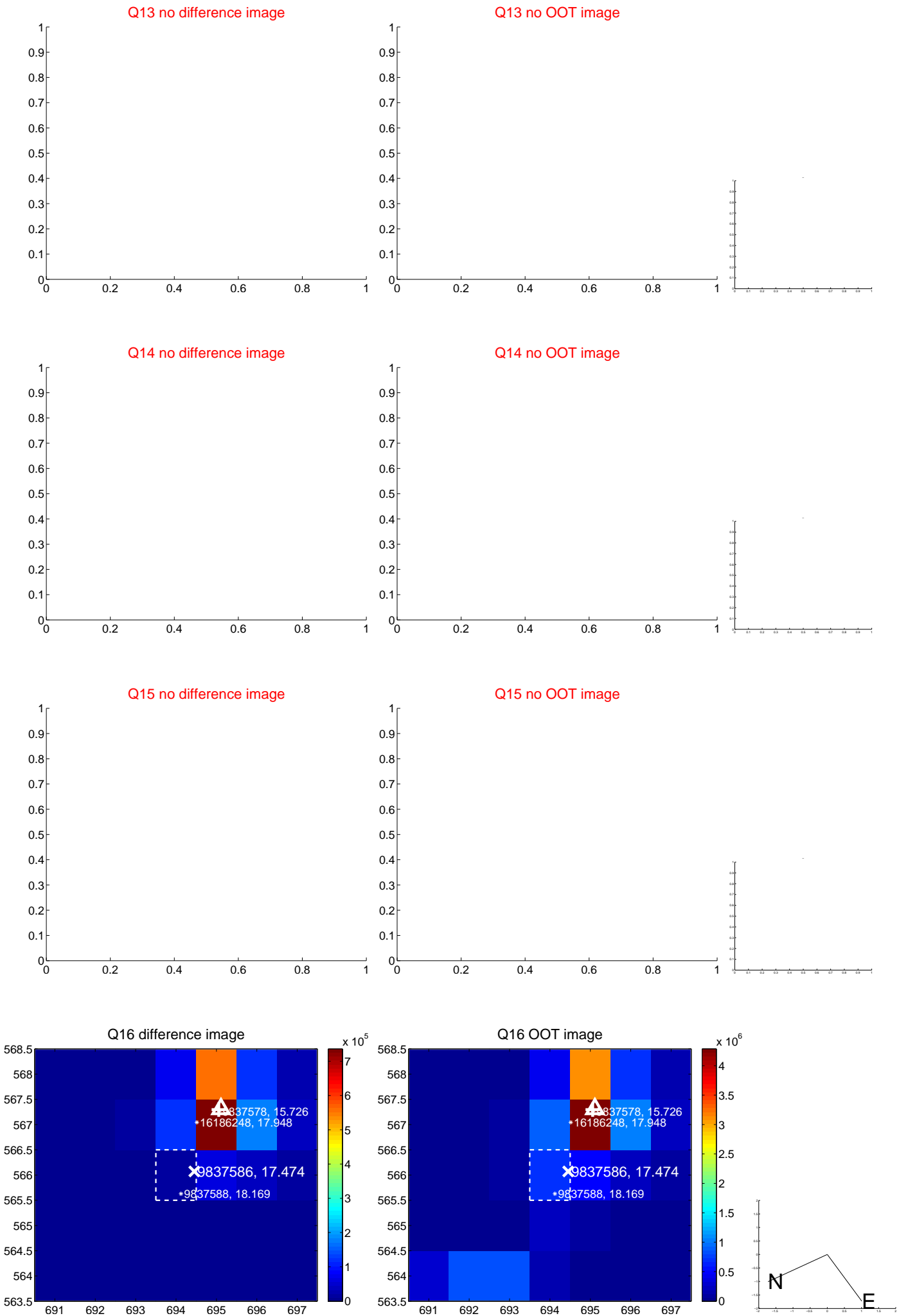
Q12 no difference image



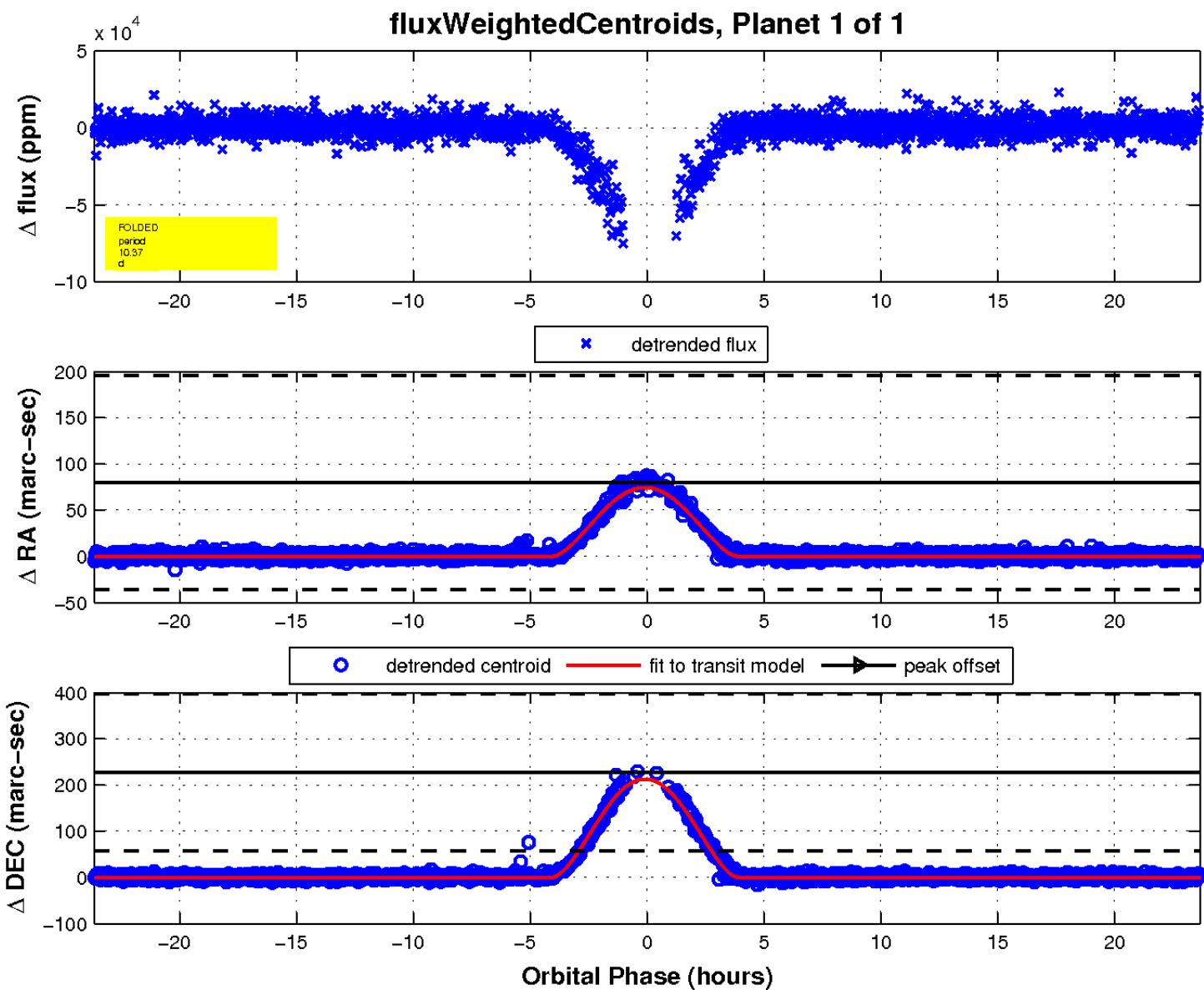
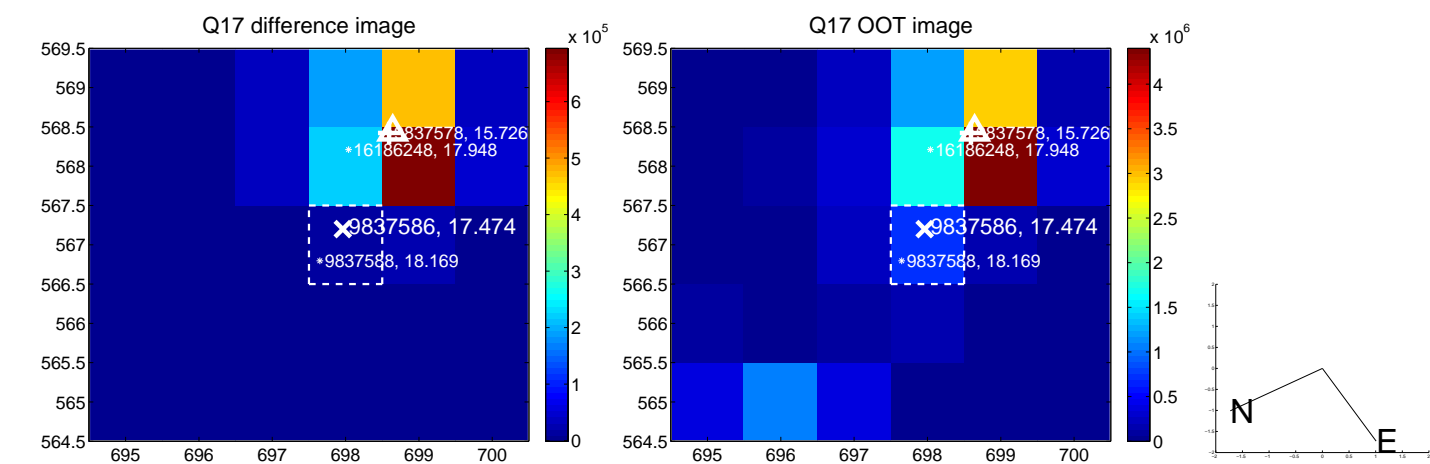
Q12 no OOT image



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



UKIRT Image

Declination

