

KIC 009777990

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})
009777990-01	OBS	7963.01	14.340119	140.918103	2297.9	5.969	7.3	8.2	0.17	3358	1.35	0.89

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
009777990-01	OBS	FP	0.00	0	1	0	0	DEEP_V_SHAPED—CENT_FEW_DIFFS

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

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

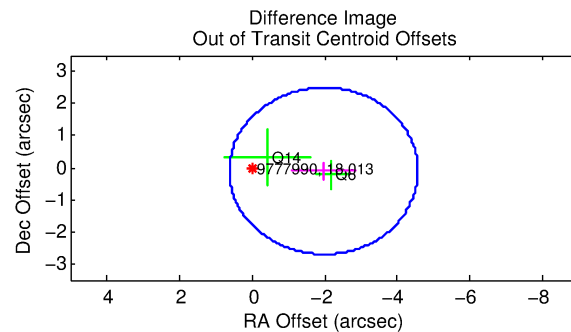
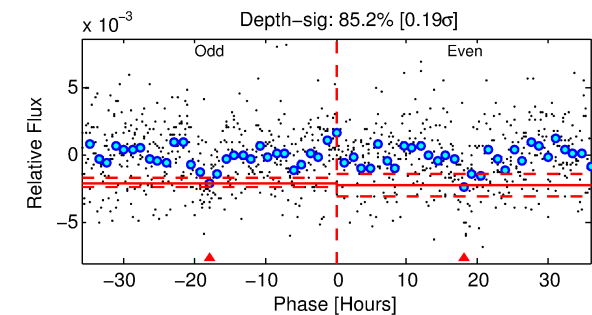
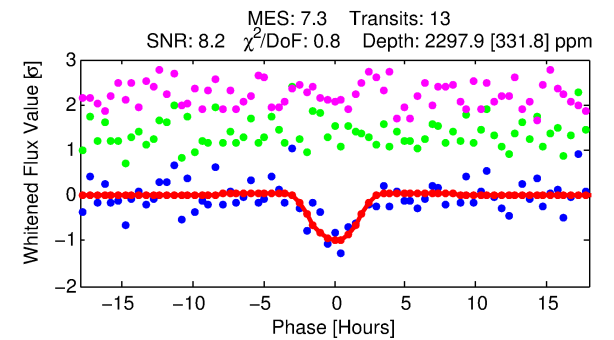
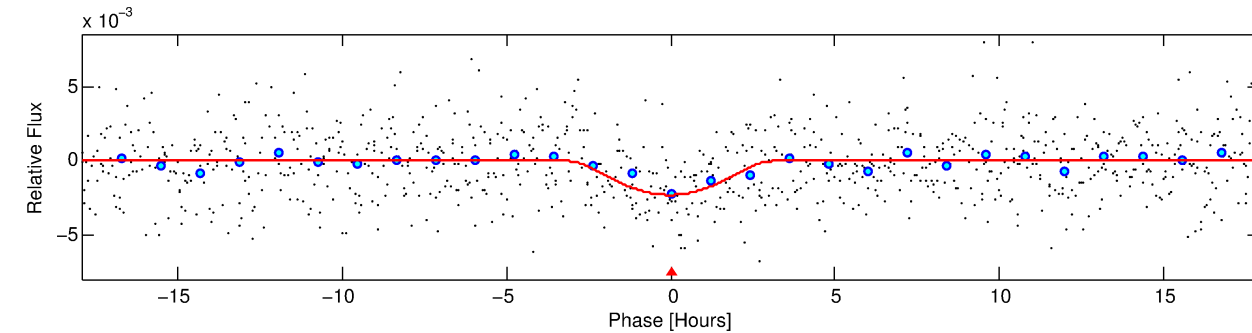
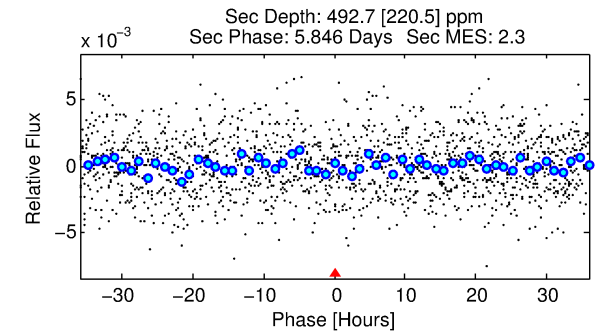
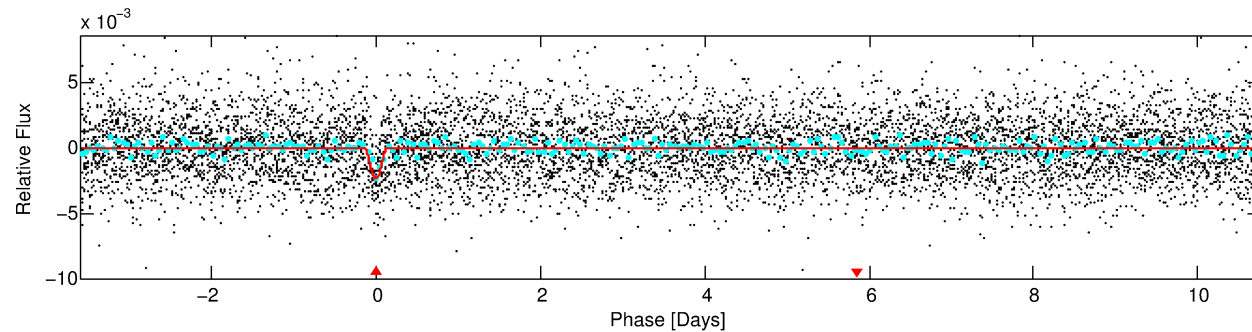
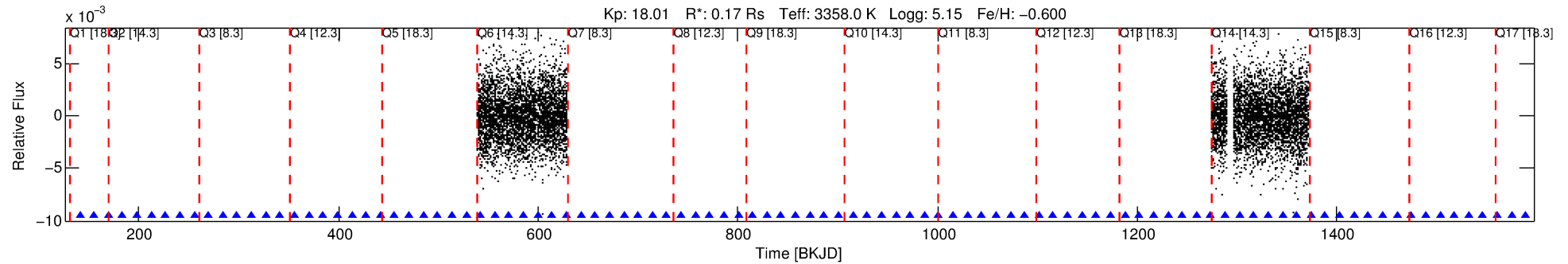
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 009777990-01

No Significant Match Found

DV One-Page Summary

KIC: 9777990 Candidate: 1 of 1 Period: 14.340 d



DV Fit Results:

Period = 14.34012 [0.00034] d
Epoch = 140.9181 [0.0208] BKJD
Rp/R* = 0.0712 [0.2164]
a/R* = 7.95 [6.64]
b = 0.98 [0.36]
Seff = 0.89 [0.36]
Teq = 248 [25] K
Rp = 1.35 [4.16] Re
a = 0.0621 [0.0208] AU
Ag = 573.48 [3504.97] [0.16σ]
Teffp = 1875 [2861] K [0.57σ]

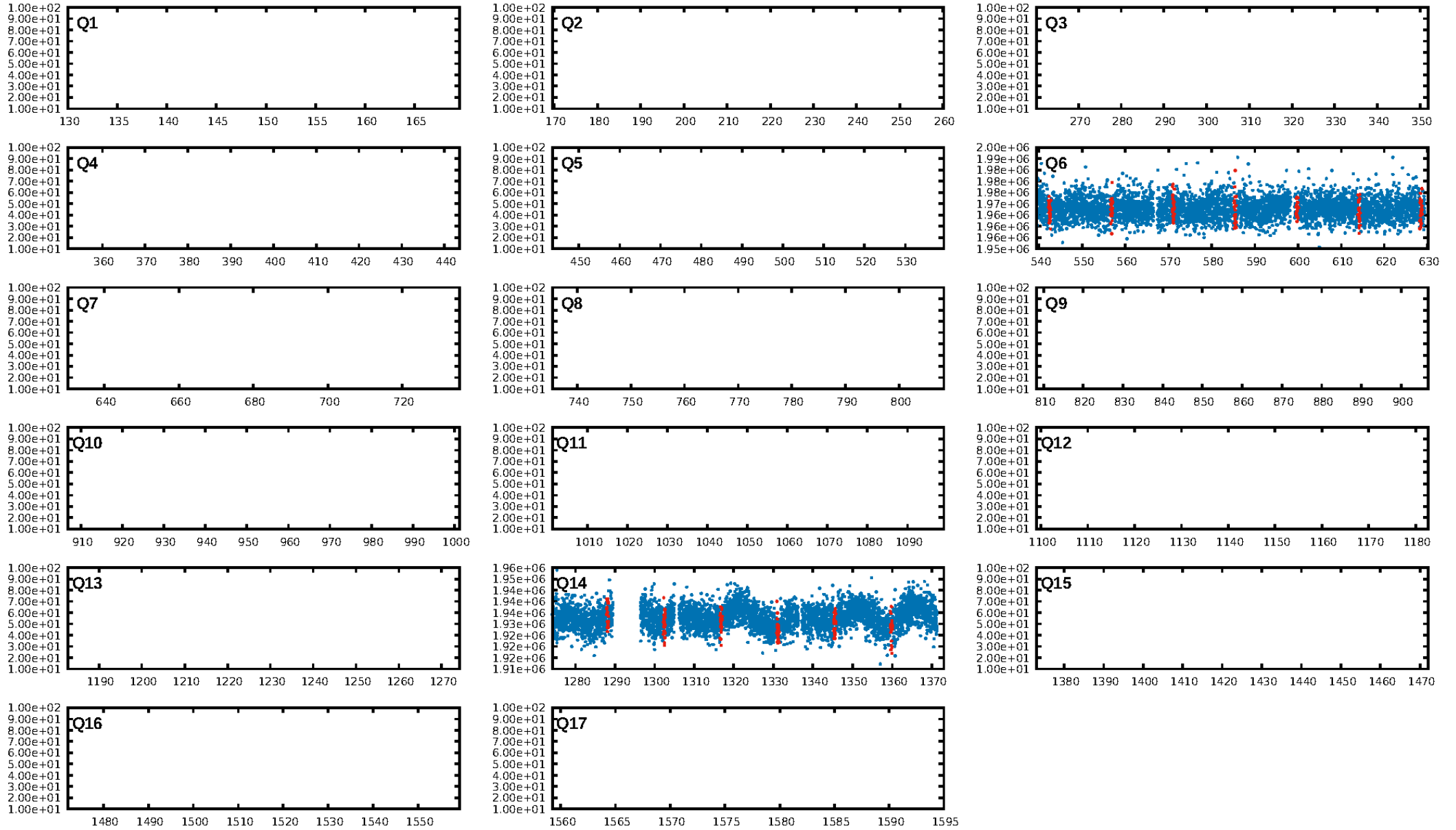
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: 93.6%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 3.62e-13
RollingBand-fgt: 1.00 [13/13]
GhostDiagnostic-chr: 2.134
Centroid-sig: 56.3%
Centroid-so: 1.765 arcsec [0.83σ]
OotOffset-rm: 1.976 arcsec [2.28σ]
OotOffset-st: 2/0/0/0 [2]
KicOffset-rm: 1.976 arcsec [2.66σ]
KicOffset-st: 2/0/0/0 [2]
DiffImageQuality-fgm: 0.50 [1/2]
DiffImageOverlap-fno: 1.00 [2/2]

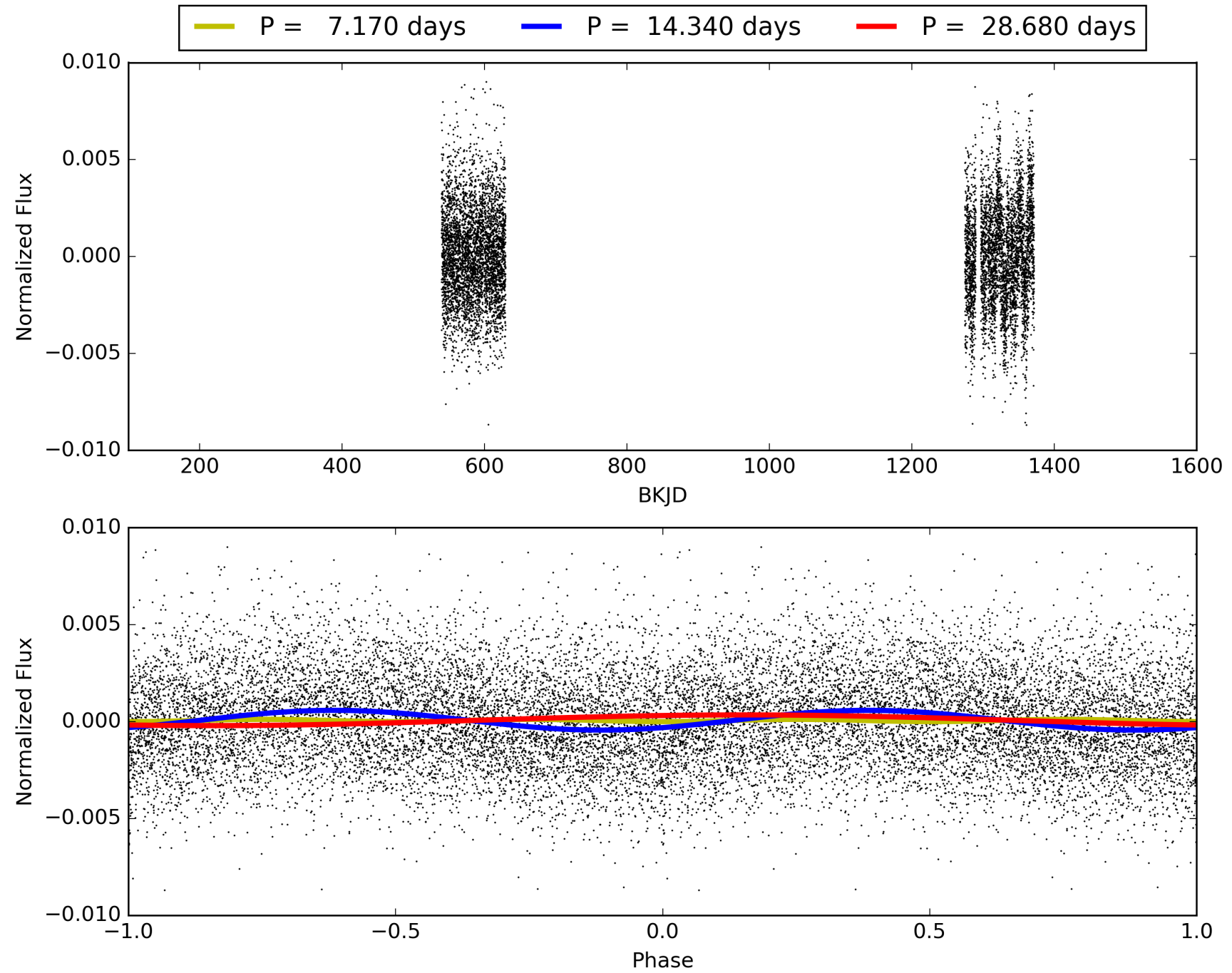
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 16:16:27 Z

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

TCE 009777990-01, PDC Light Curves

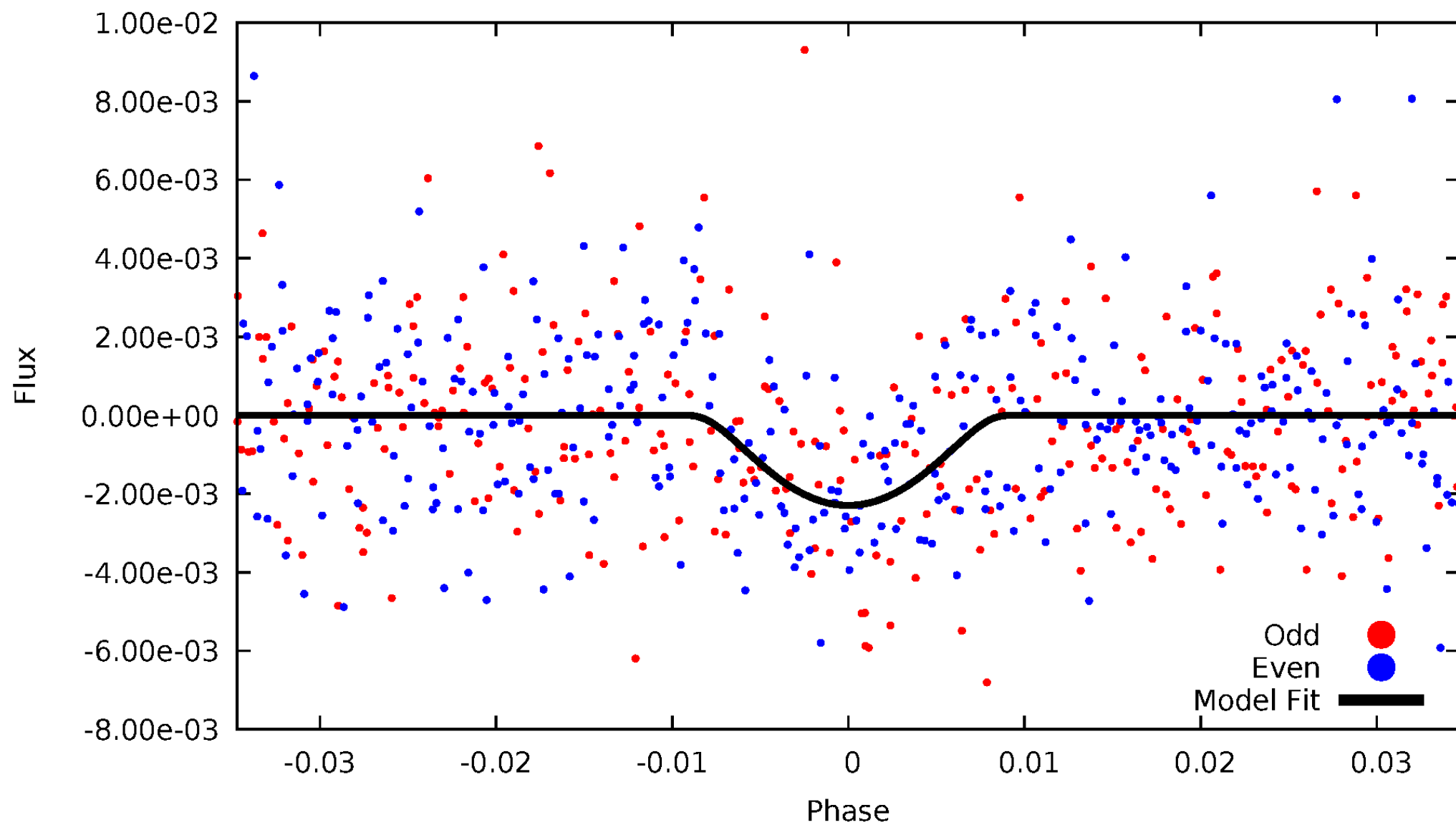


TCE 009777990-01



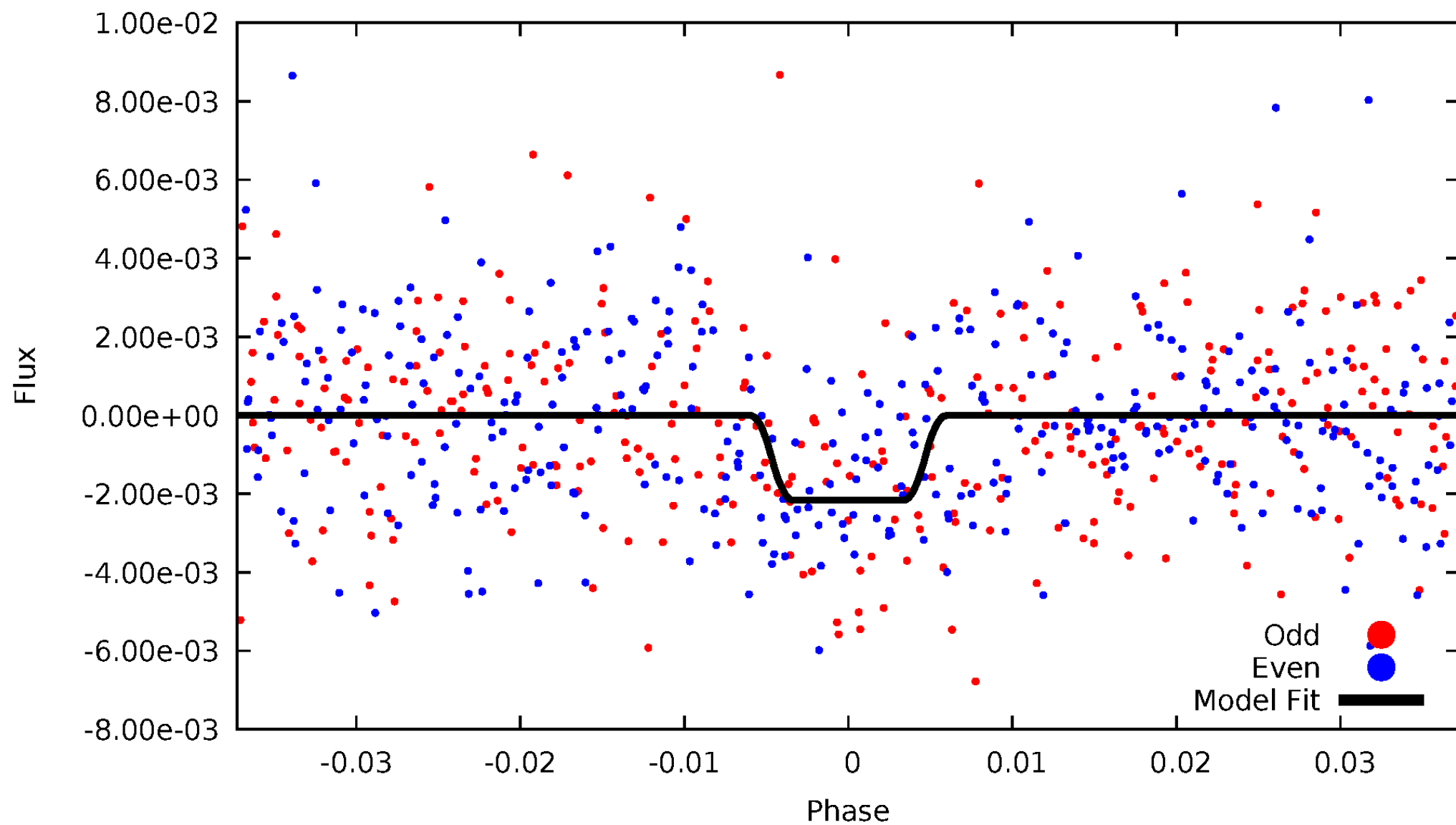
DV Odd/Even

TCE 009777990-01



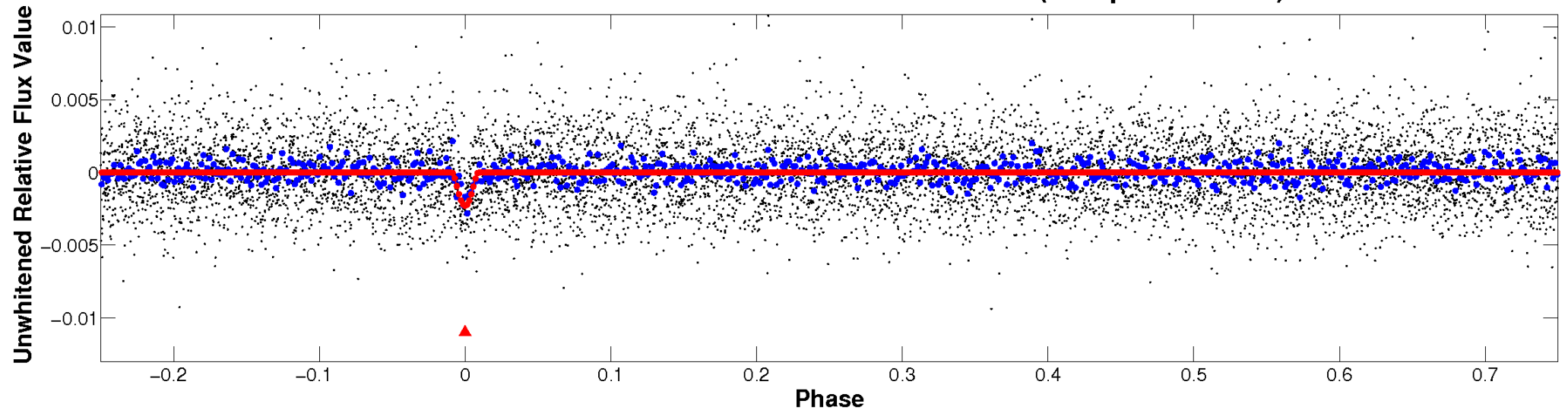
ALT Odd/Even

TCE 009777990-01

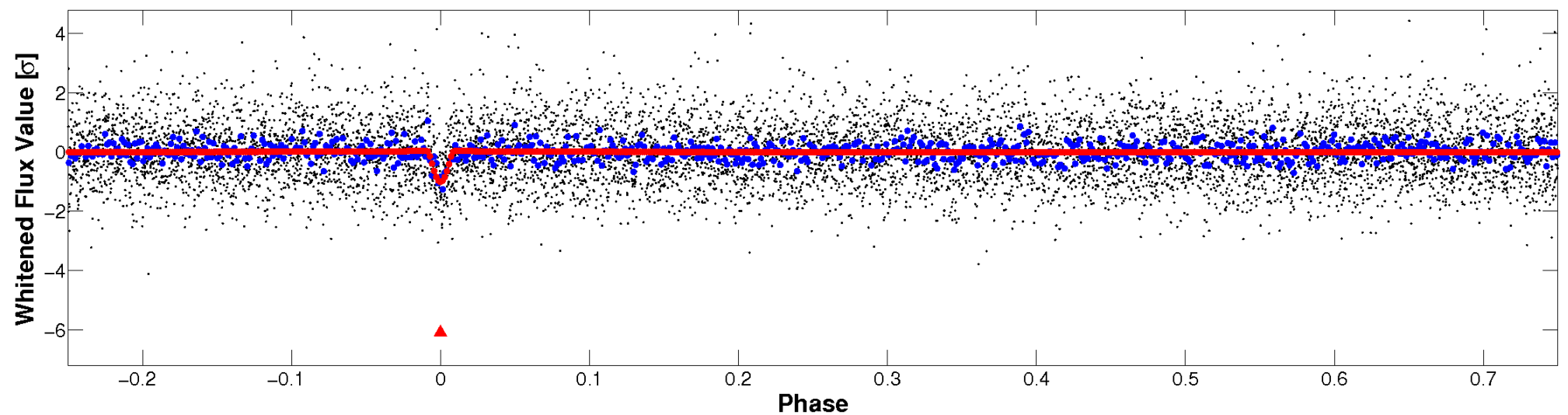


Non-Whitened Vs. Whitened Light Curve

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

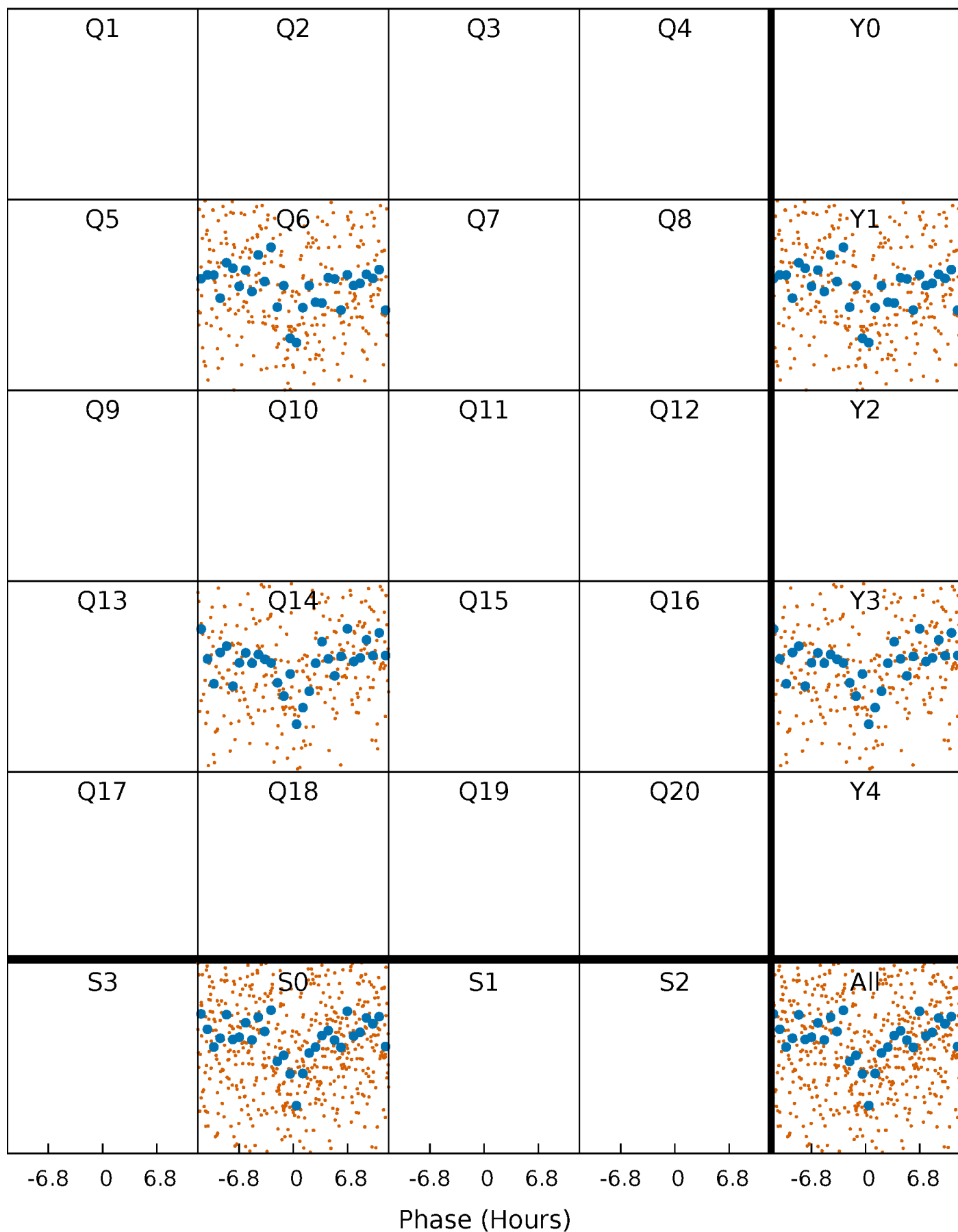


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



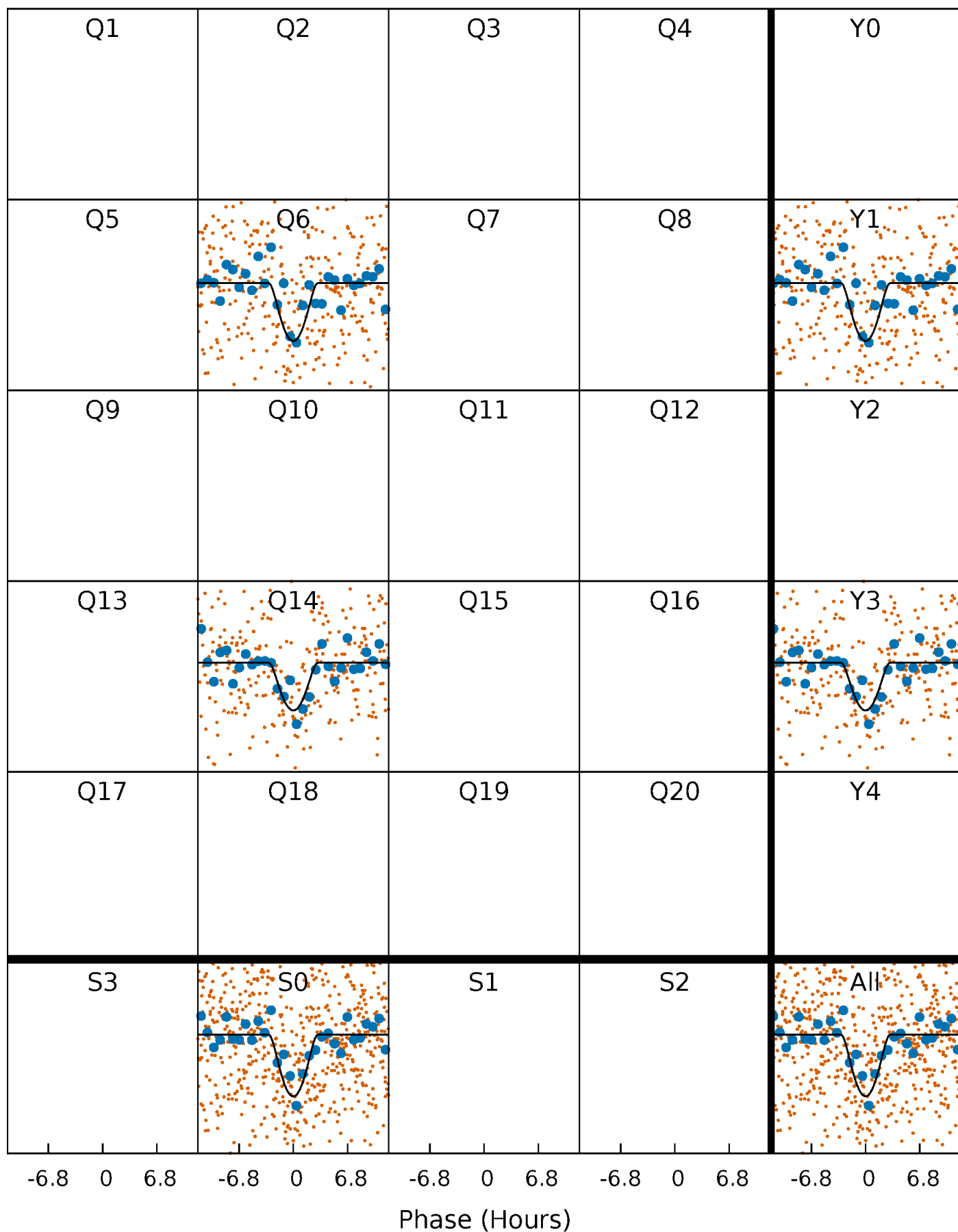
PDC Quarter-Phased Transit Curves

TCE 009777990-01 P= 14.340119 Days $T_0=140.918103$ (BKJD)



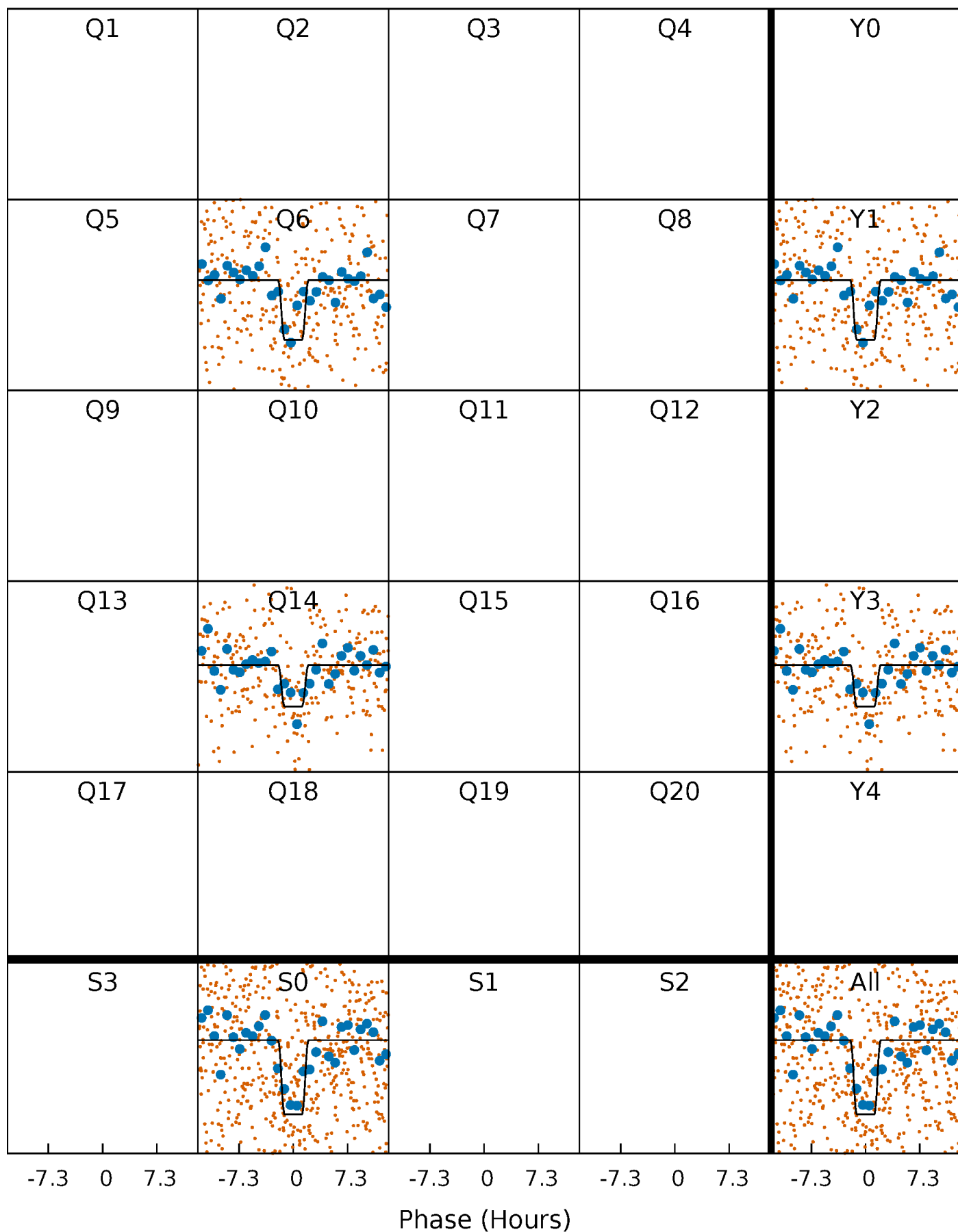
DV Quarter-Phased Transit Curves

TCE 009777990-01 P= 14.340119 Days $T_0=140.918103$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

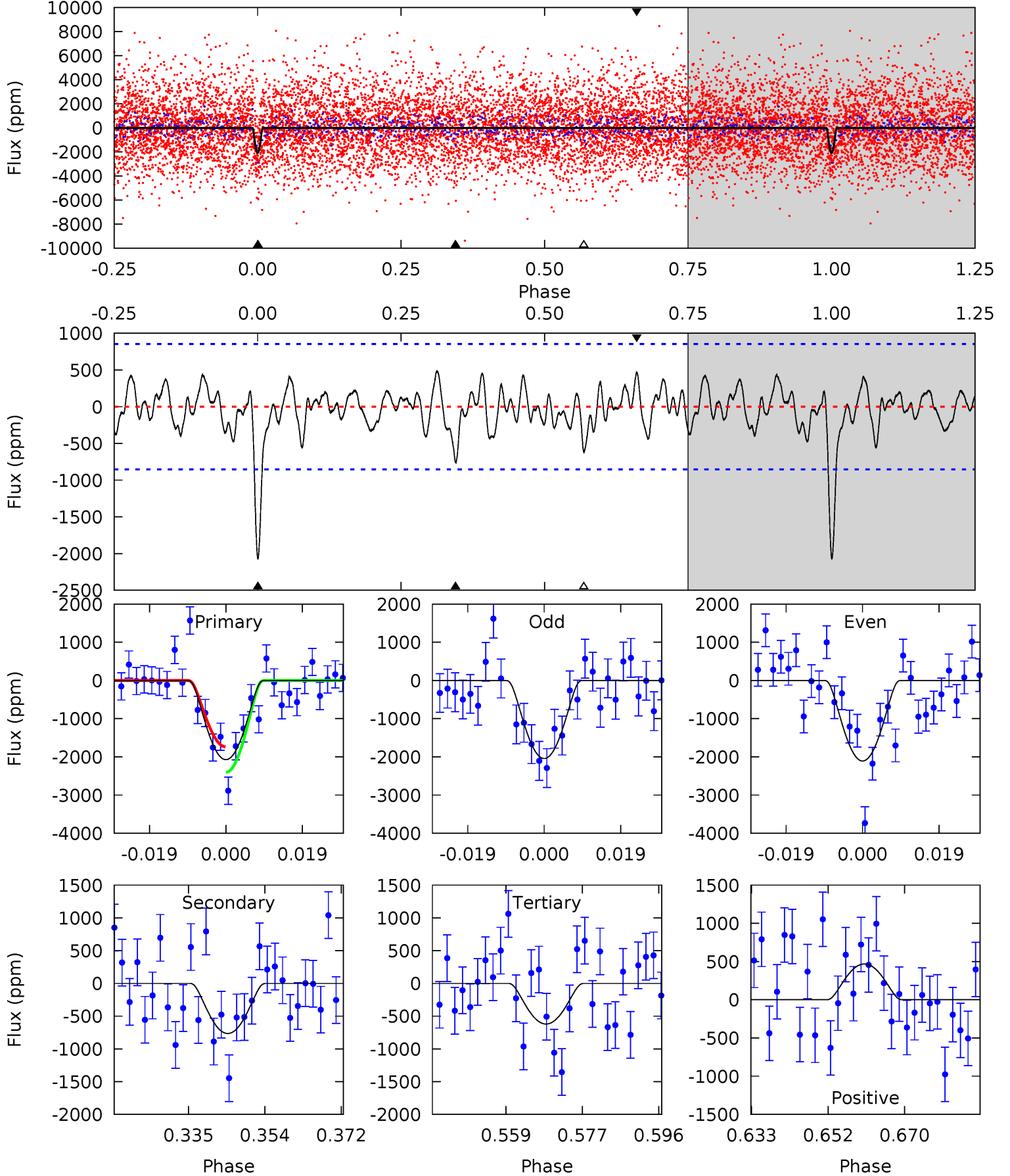
TCE 009777990-01 P= 14.339700 Days $T_0=140.955432$ (BKJD)



DV Model-Shift Uniqueness Test

009777990-01, P = 14.340119 Days, E = 140.918103 Days

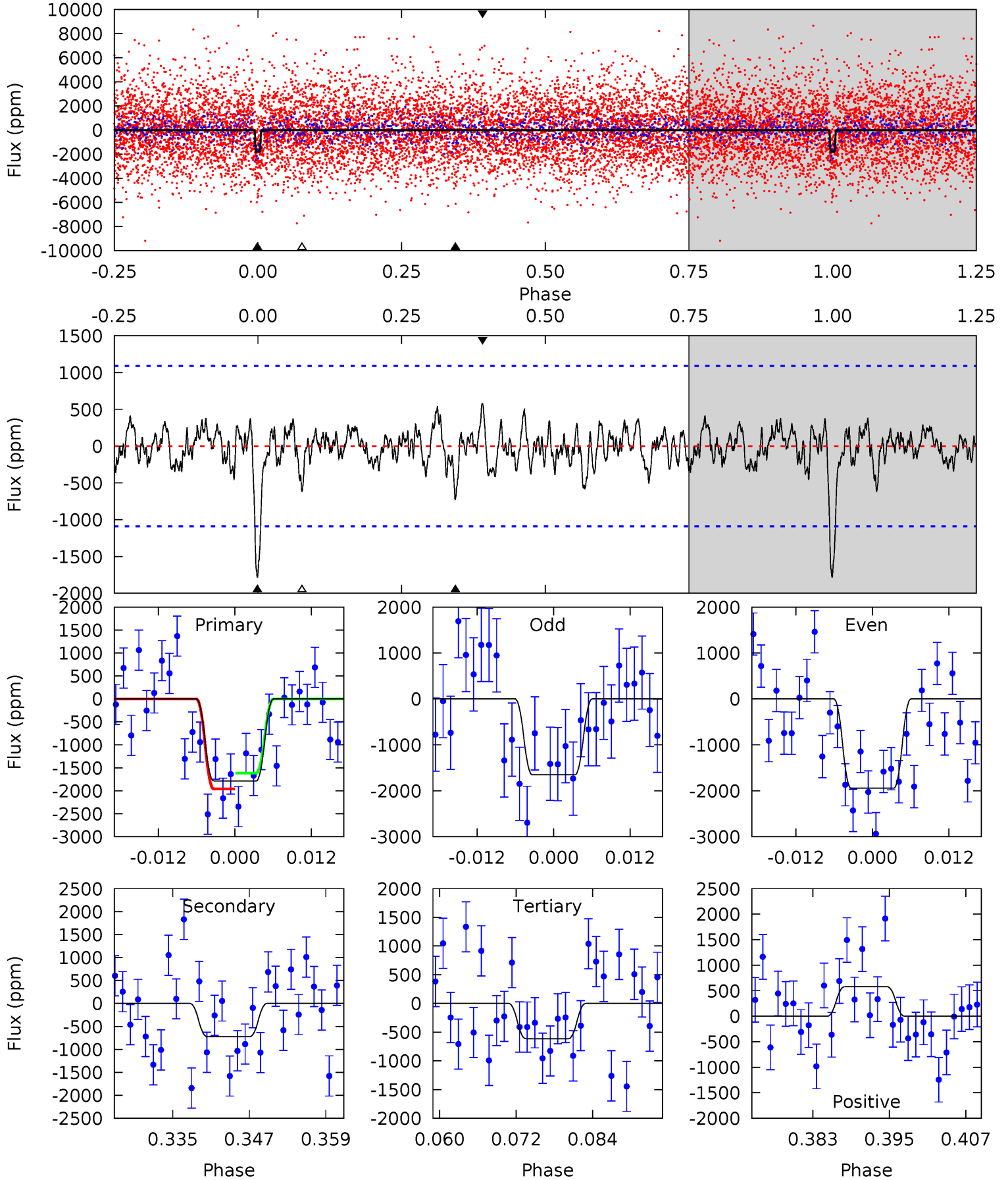
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
11.9	4.40	3.57	2.69	4.91	2.35	1.23	8.36	9.23	0.83	1.71	0.18	0.90	0.19	1.92



Alt Model-Shift Uniqueness Test

009777990-01, $P = 14.339700$ Days, $E = 140.955432$ Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
8.18	3.31	2.81	2.65	4.99	2.51	0.92	5.37	5.54	0.50	0.66	0.67	1.13	0.24	0.78



Stellar Parameters For KIC 009777990

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	M (M_{\odot})	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	3358^{+119}_{-59}	$5.149^{+0.092}_{-0.138}$	$-0.600^{+0.350}_{-0.250}$	$0.174^{+0.083}_{-0.036}$	$0.155^{+0.093}_{-0.031}$	$41.600^{+23.490}_{-20.260}$
	+4%/-2%	+2%/-3%	+58%/-42%	+48%/-21%	+60%/-20%	+56%/-49%
Source	PHO54	PHO54	PHO54	DSEP		

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

Secondary Eclipse Parameters for KIC 009777990-01 / KOI 7963.01

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-765 ± 174	$3.36^{+3.56}_{-2.42}$	352^{+22}_{-18}	2118^{+782}_{-282}	144^{+1843}_{-107}
Alt.	-723 ± 218	$3.18^{+3.27}_{-2.12}$	352^{+24}_{-18}	2118^{+646}_{-295}	149^{+1239}_{-117}

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

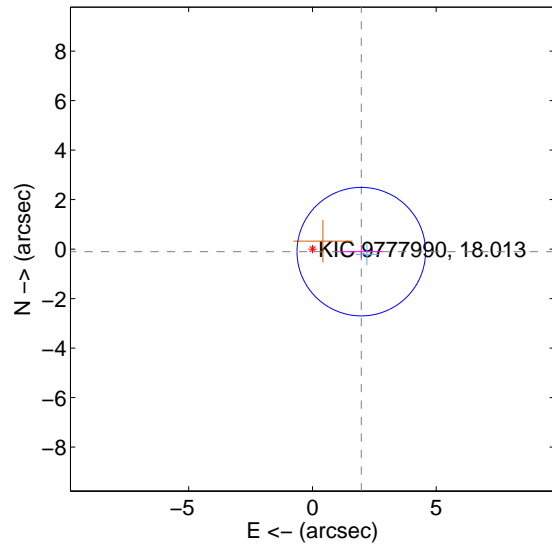
Supplemental centroid analysis for 009777990-01. Kepler magnitude: 18.01. Transit SNR 8.18

There are 1 quarters with good PRF difference image offsets

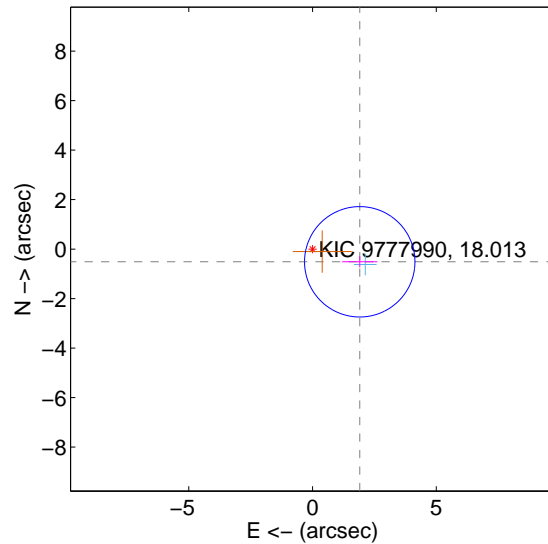
The direct PRF centroid is offset from the target star catalog position by about 0.42 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	1.976 ± 0.866	2.28	-1.973 ± 0.853	-0.103 ± 0.265
PRF-fit source offset from KIC position	1.976 ± 0.744	2.66	-1.908 ± 0.713	-0.513 ± 0.223
photometric centroid source offset	1.77 ± 2.13	0.83	1.11 ± 1.71	-1.37 ± 2.36

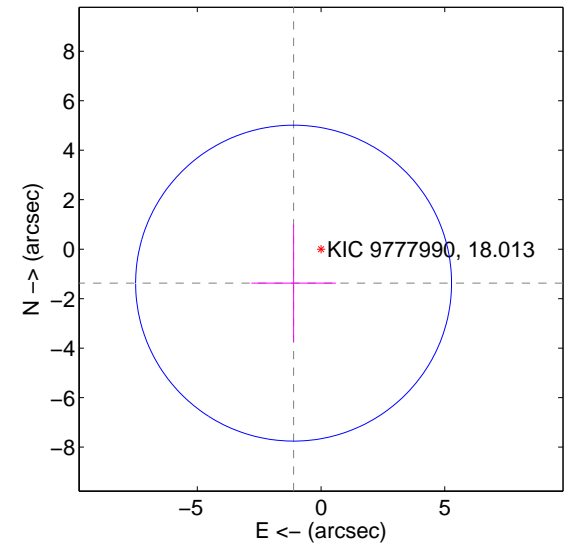
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position



offset from photometric centroids

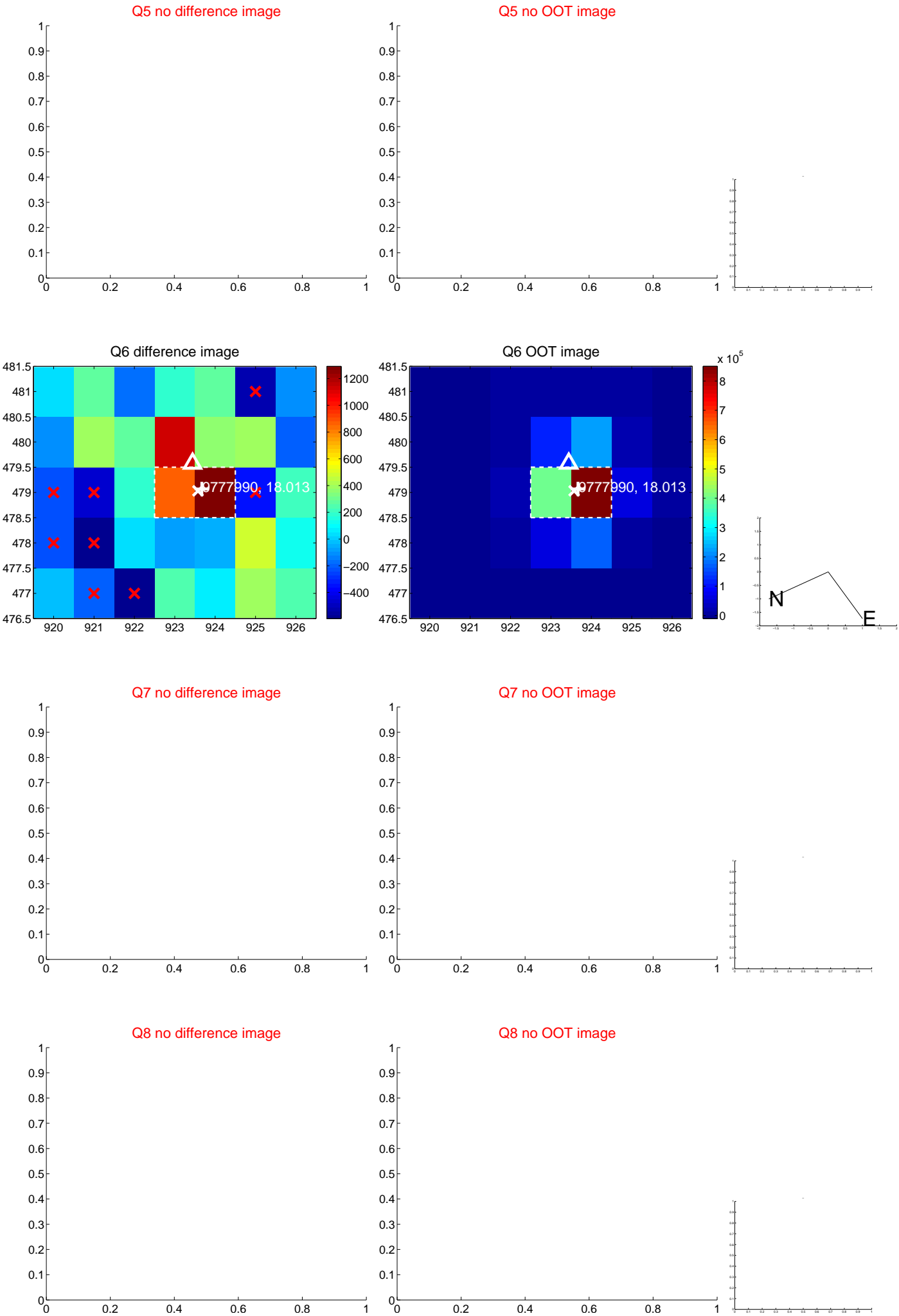


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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



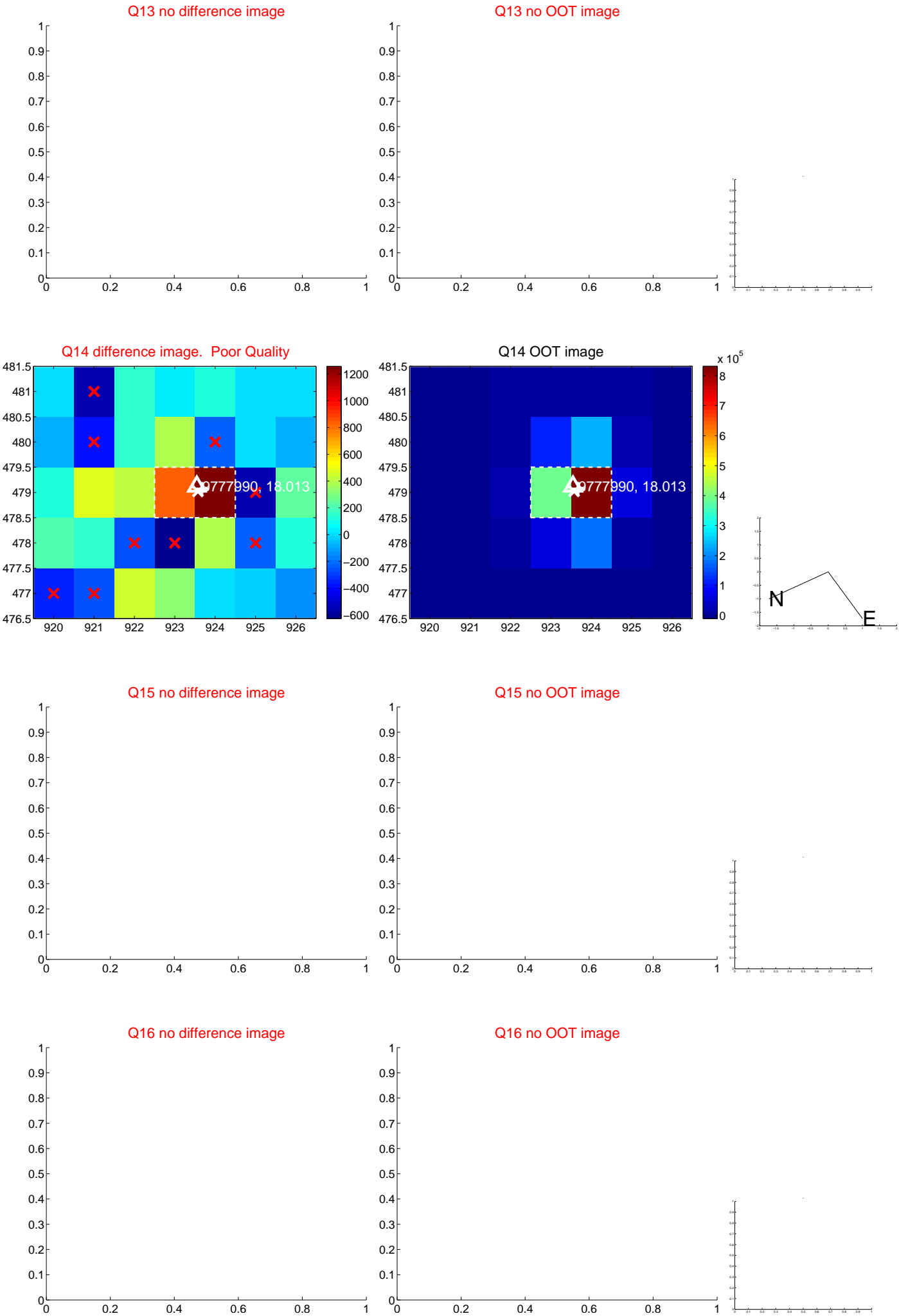
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



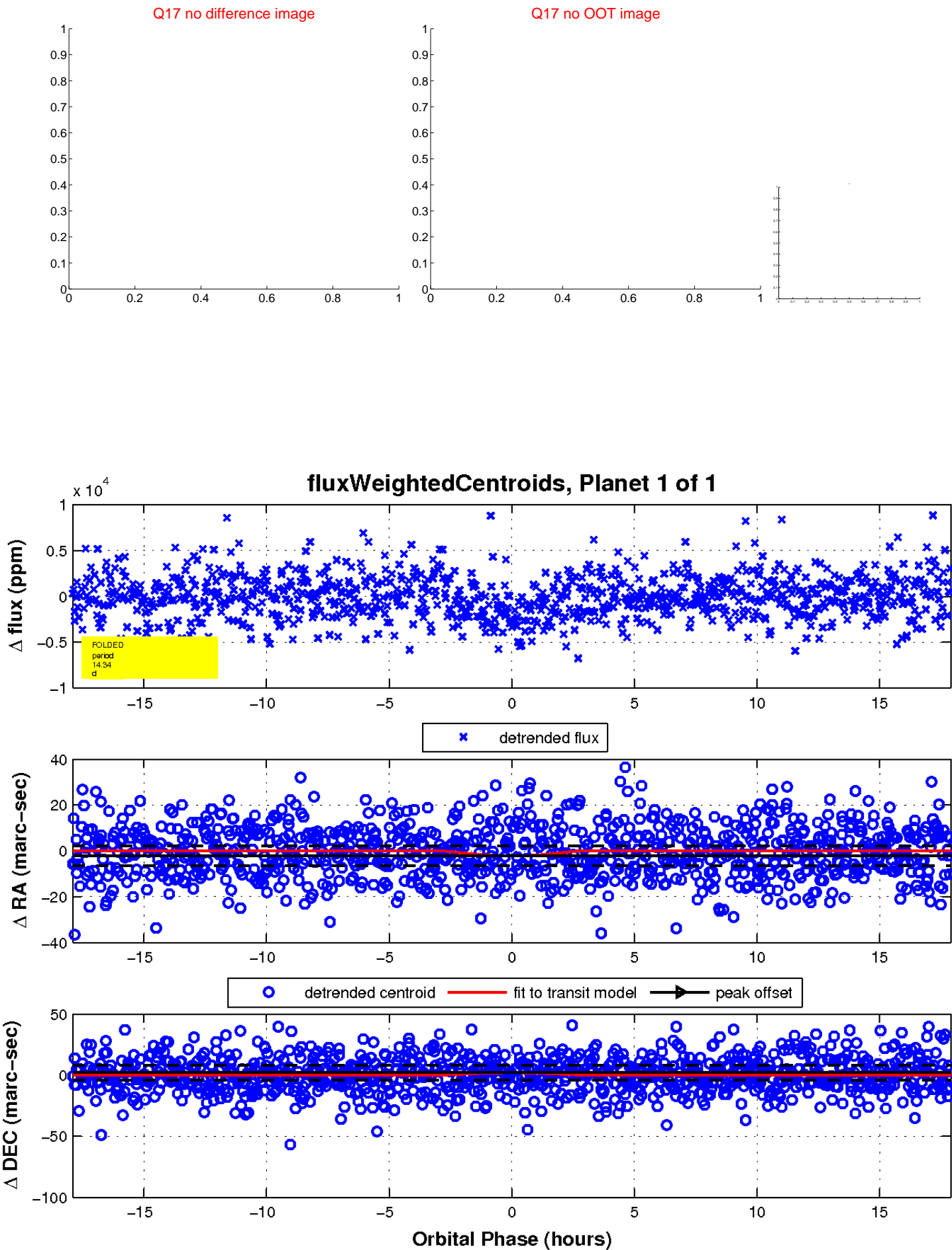
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



white ×: KIC target position; +: OOT centroid; △: difference centroid. red ✕: large negative pixel value.



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



UKIRT Image

Declination

