

KIC 010139107

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})
010139107-01	OBS	No	444.616665	562.000581	1176.9	13.523	7.3	7.1	0.77	5683	3.13	0.47

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
010139107-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—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.

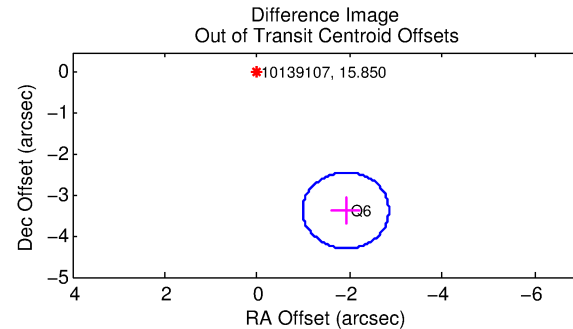
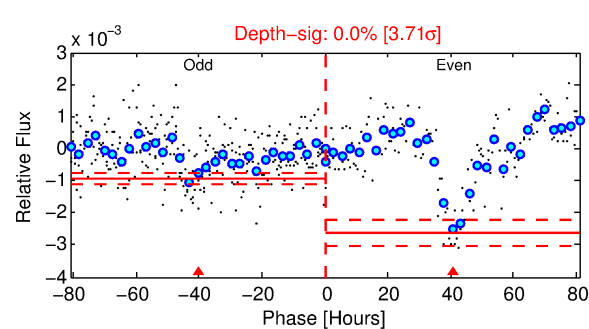
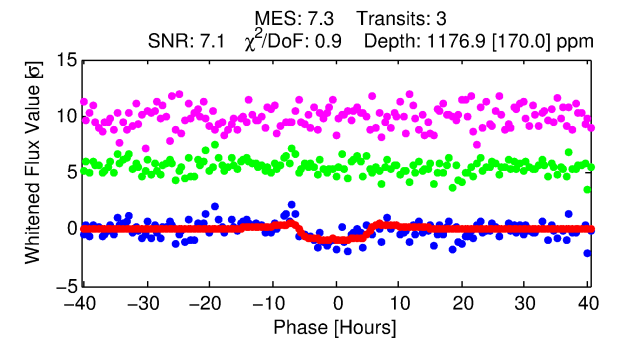
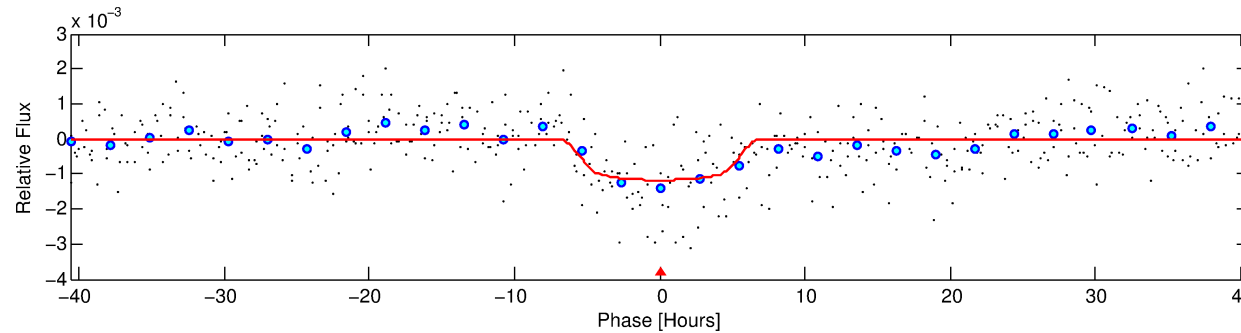
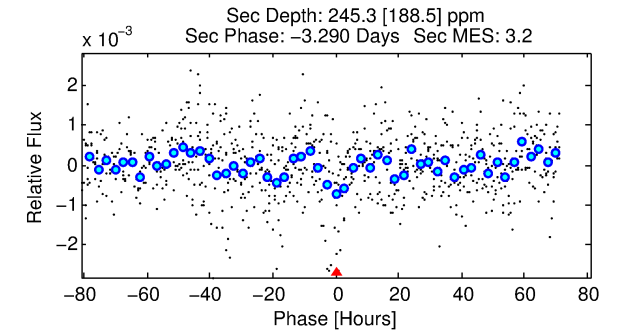
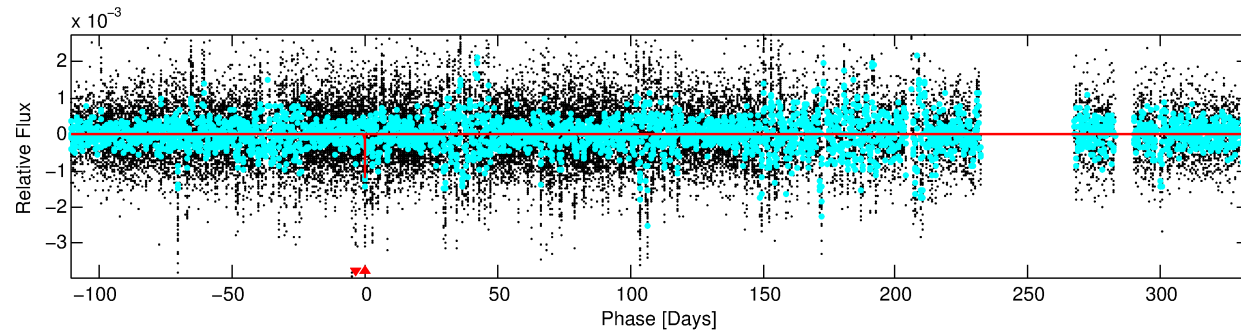
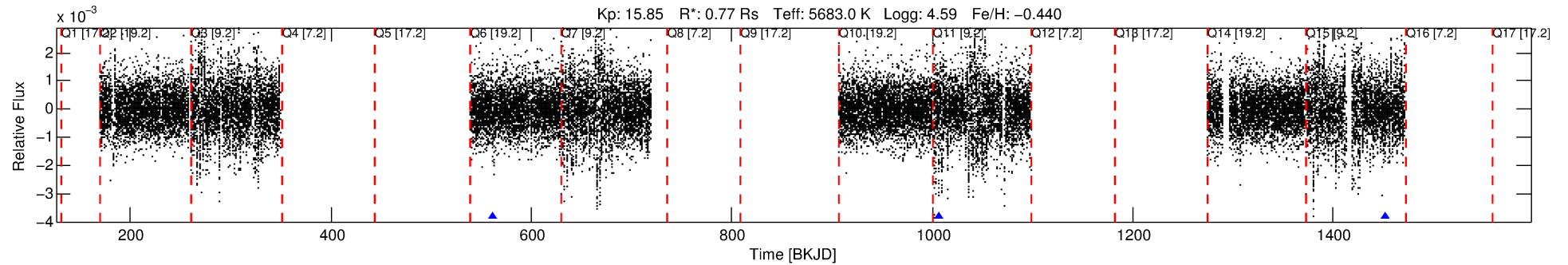
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 010139107-01

No Significant Match Found

DV One-Page Summary

KIC: 10139107 Candidate: 1 of 1 Period: 444.617 d



DV Fit Results:

Period = 444.61666 [0.01678] d
Epoch = 562.0006 [0.0208] BKJD
Rp/R* = 0.0375 [0.0040]
a/R* = 127.09 [39.82]
b = 0.91 [0.06]
Seff = 0.47 [0.15]
Teq = 211 [16] K
Rp = 3.13 [0.82] Re
a = 1.0751 [0.2124] AU
Ag = 15941.97 [13484.44] [1.18σ]
Teff = 3674 [741] K [4.67σ]

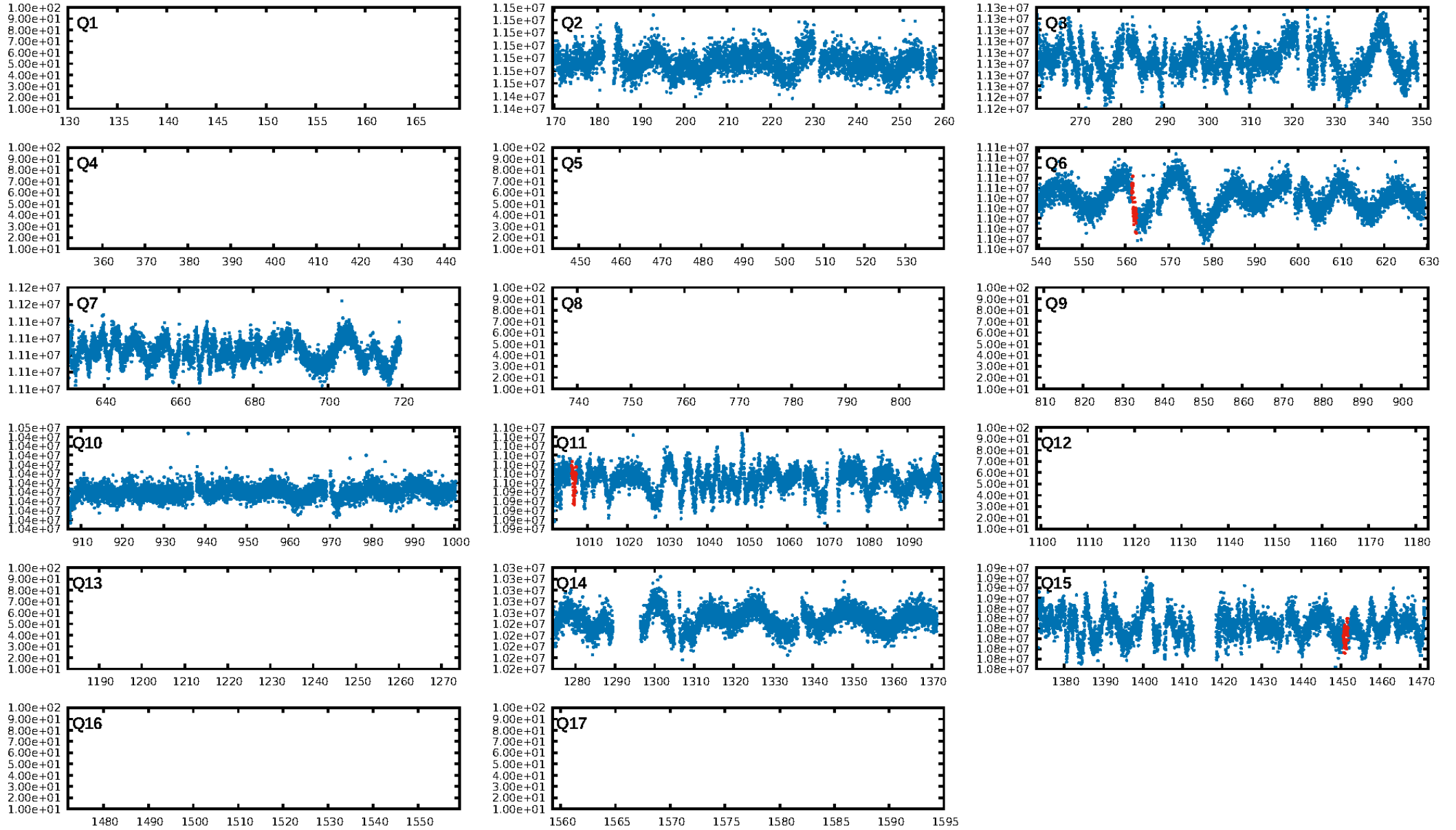
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: 6.7%
ModelChiSquareGoF-sig: 99.4%
Bootstrap-pfa: 2.65e-09
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: 2.552
Centroid-sig: 1.1%
Centroid-so: 3.248 arcsec [1.40σ]
OotOffset-rm: 3.874 arcsec [12.48σ]
KicOffset-rm: 3.992 arcsec [12.86σ]
OotOffset-st: 1/0/0/0 [1]
KicOffset-st: 1/0/0/0 [1]
DiffImageQuality-fgm: 1.00 [1/1]
DiffImageOverlap-fno: 1.00 [2/2]

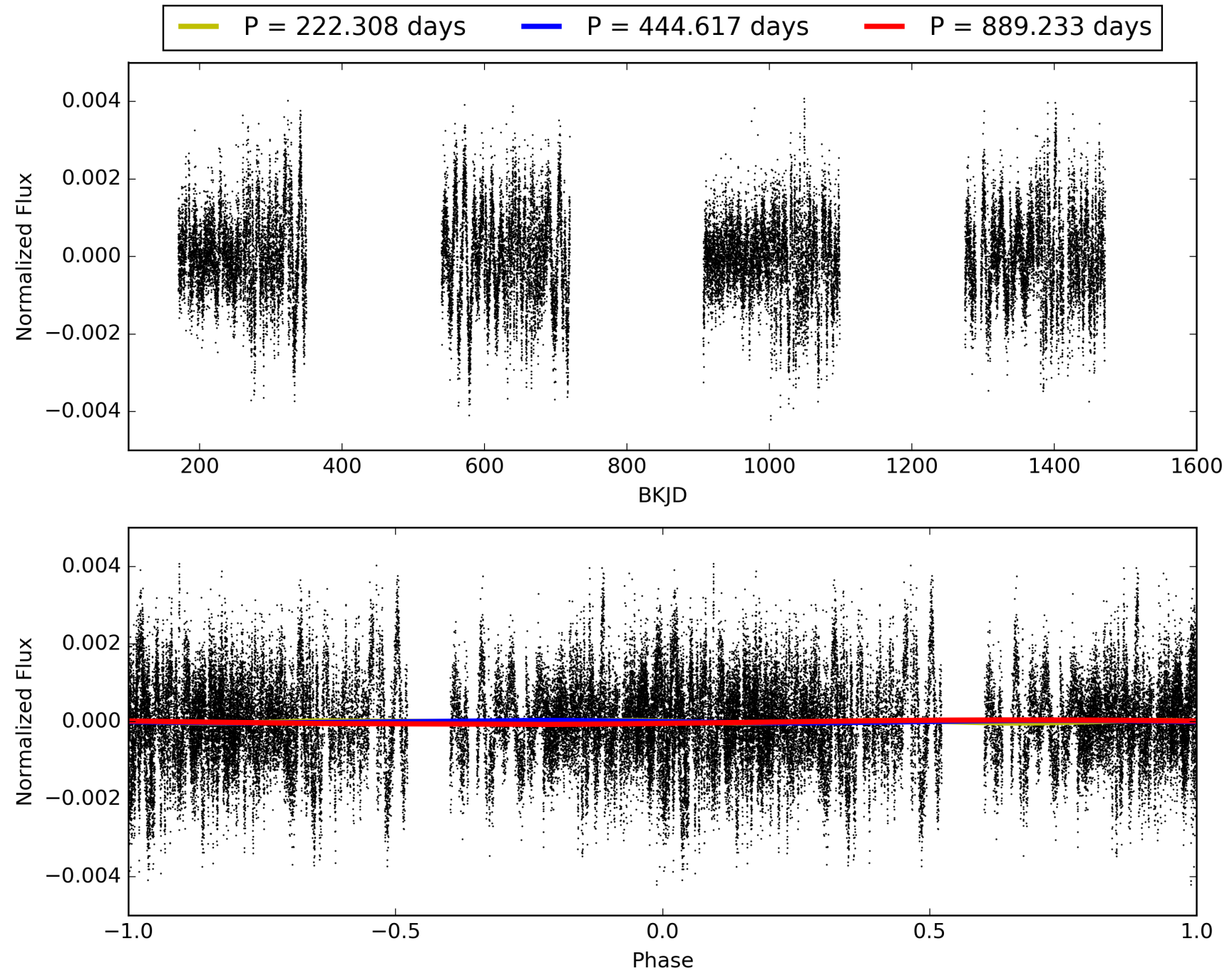
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 28-Jan-2016 20:36:59 Z

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

TCE 010139107-01, PDC Light Curves

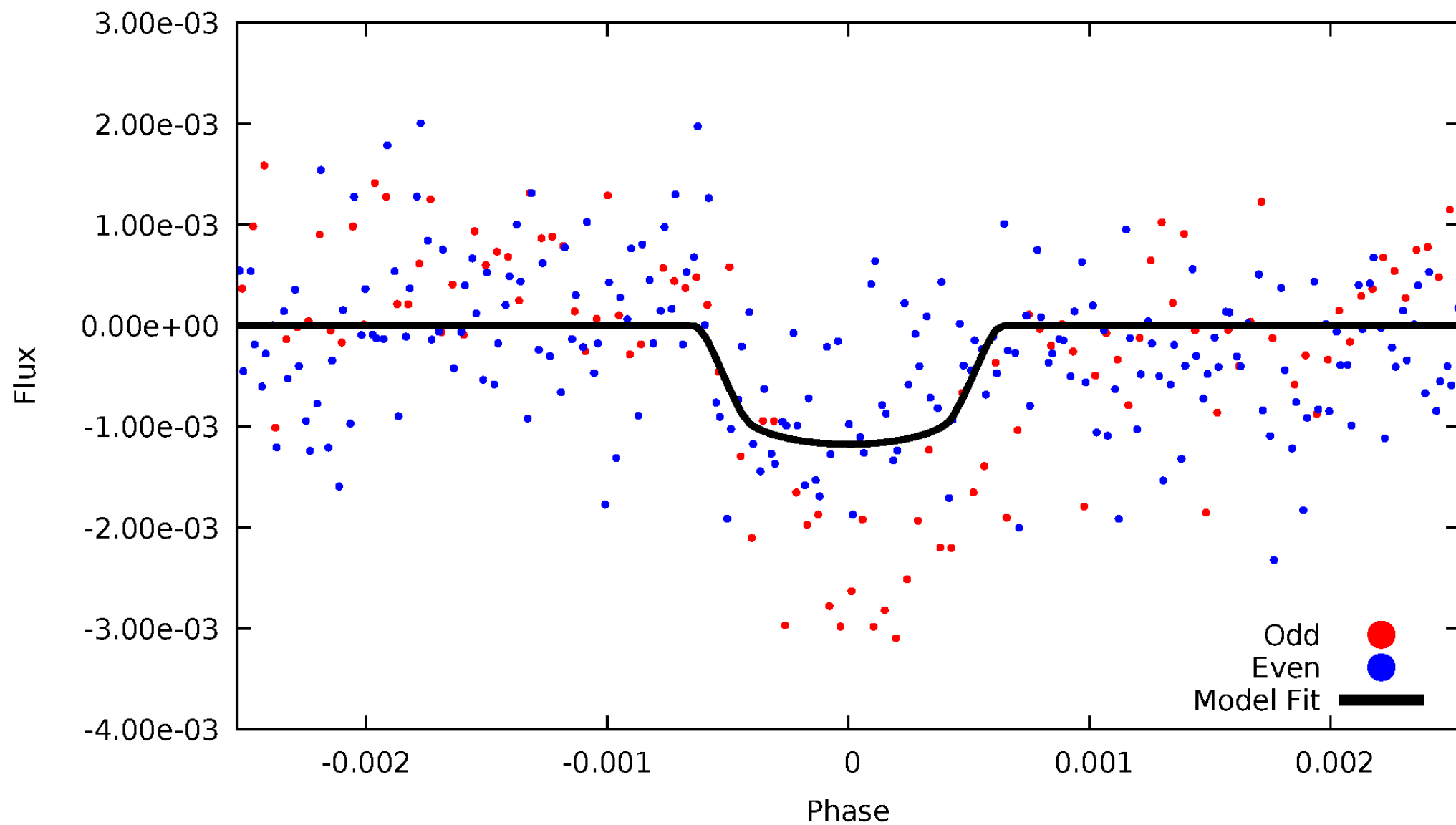


TCE 010139107-01



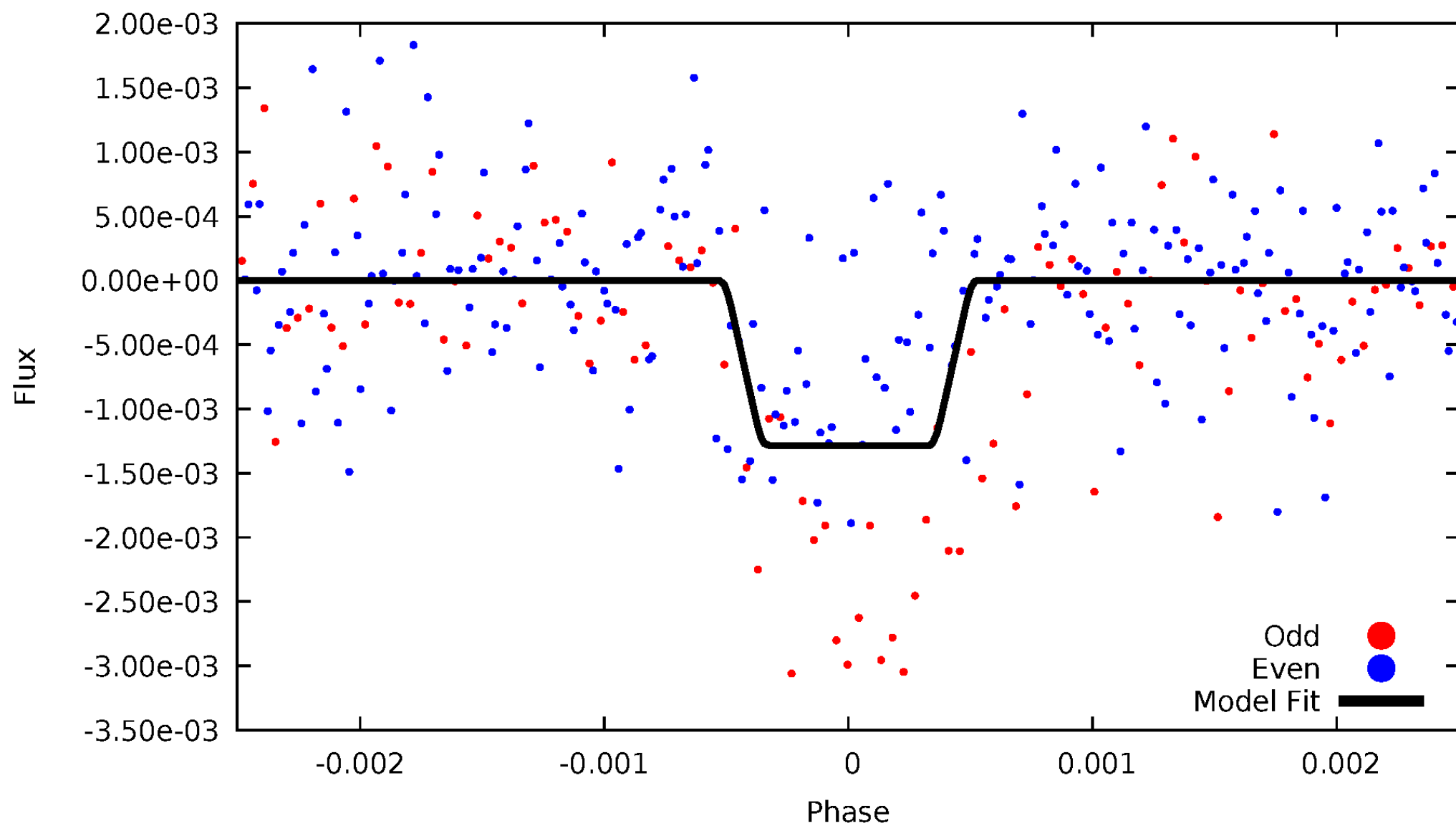
DV Odd/Even

TCE 010139107-01



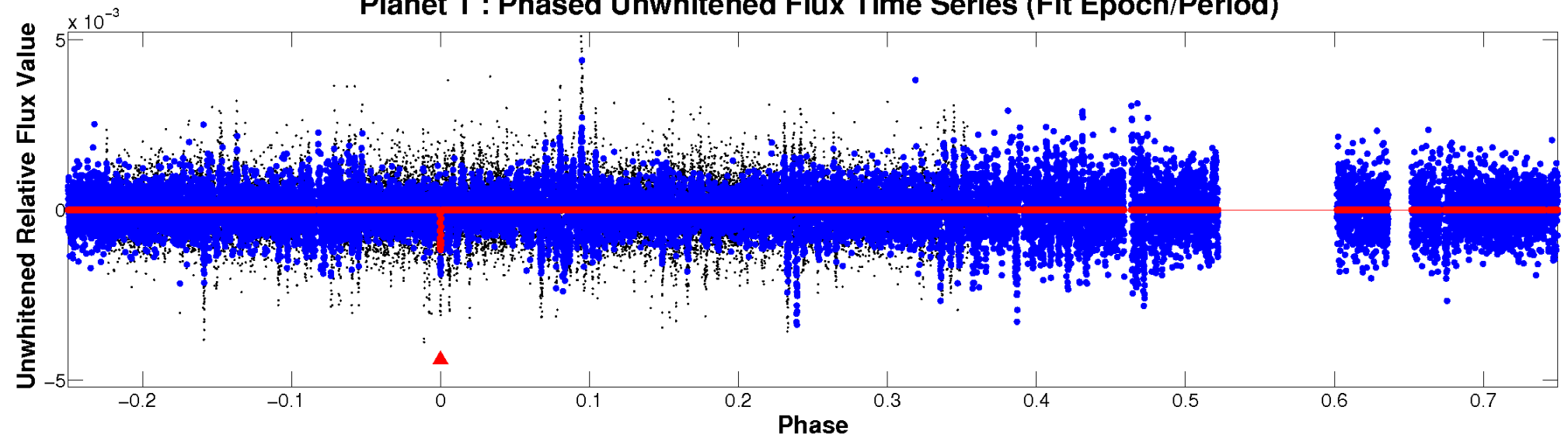
ALT Odd/Even

TCE 010139107-01

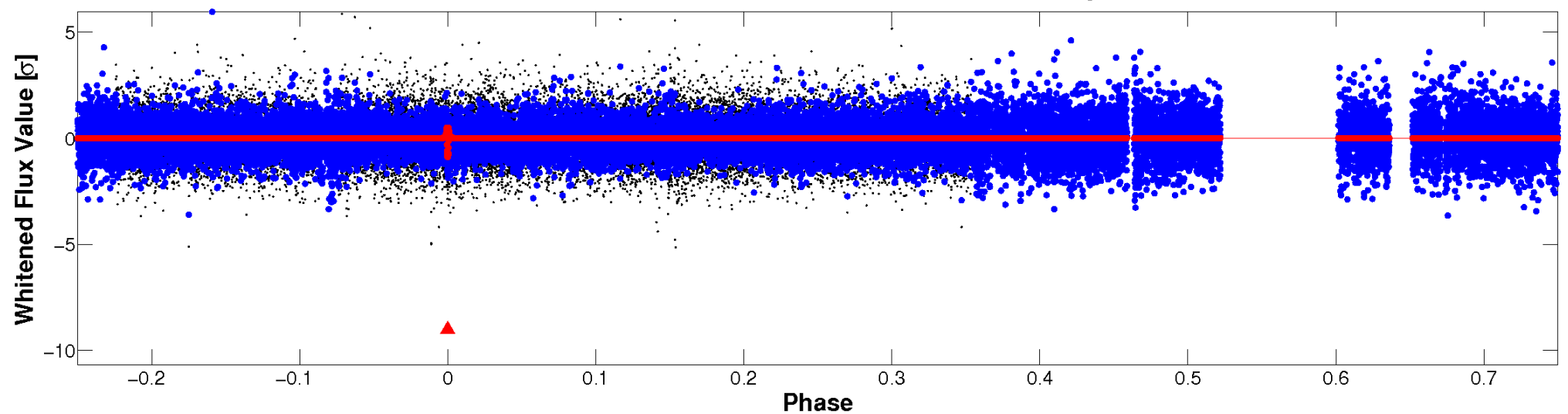


Non-Whitened Vs. Whitened Light Curve

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

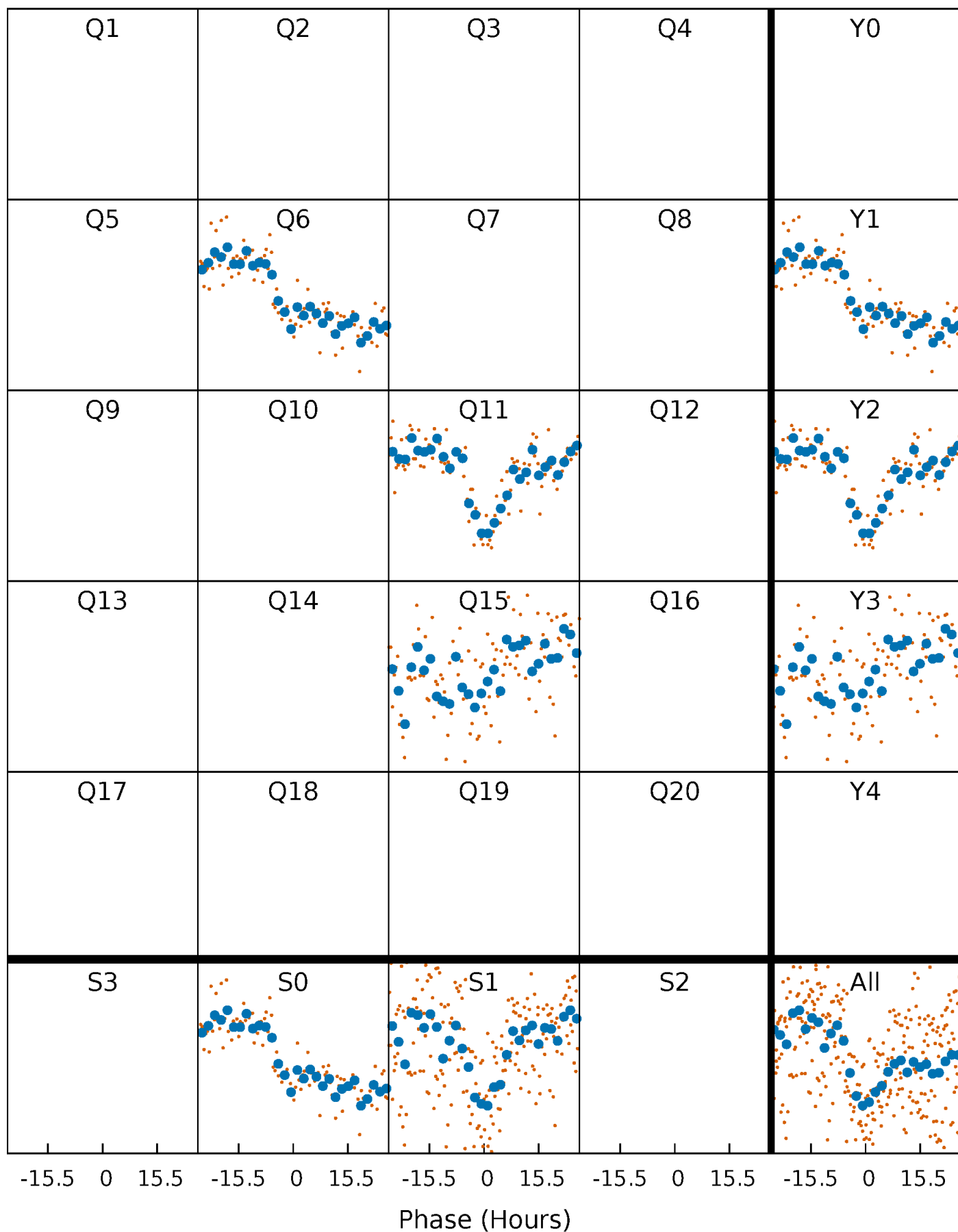


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



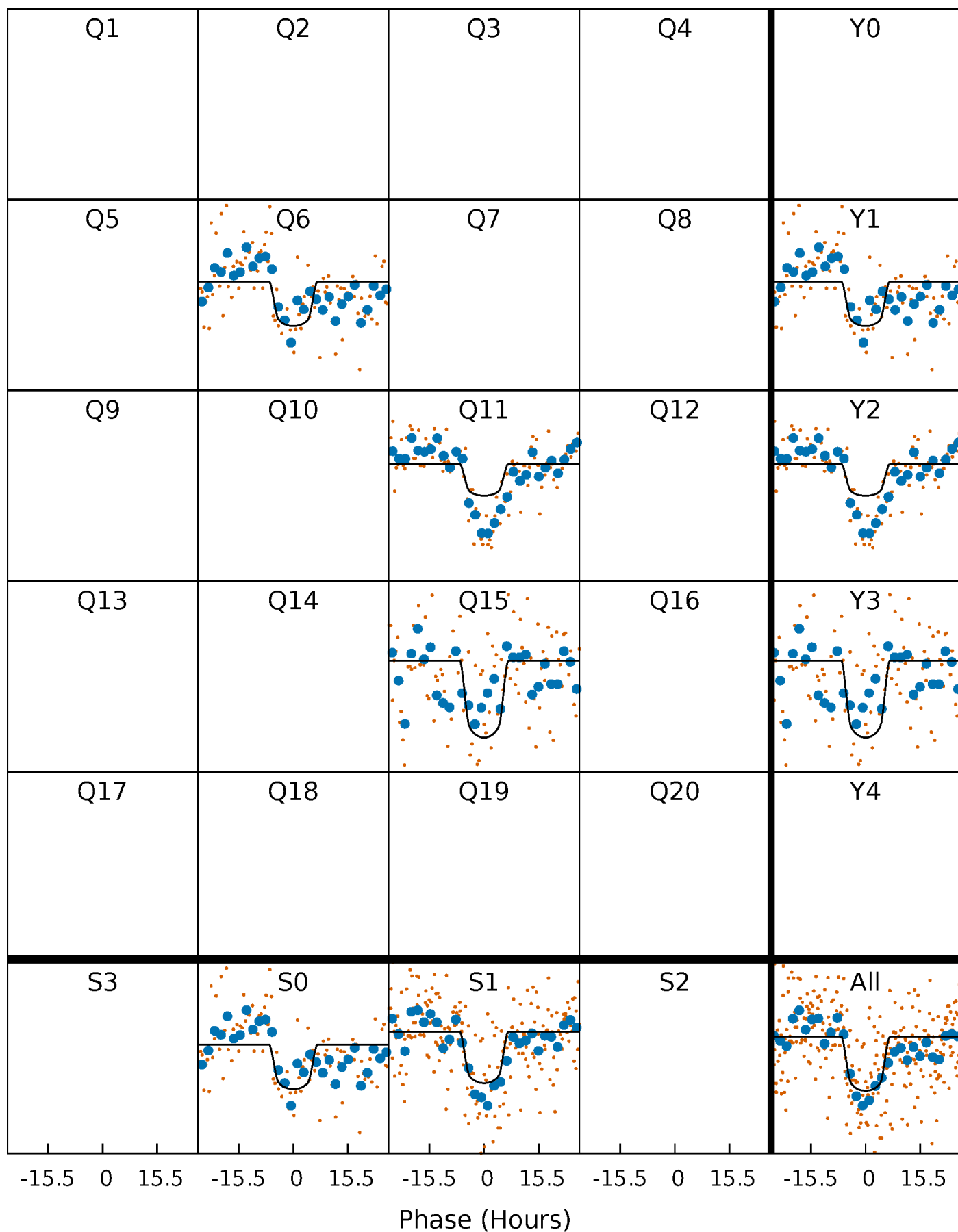
PDC Quarter-Phased Transit Curves

TCE 010139107-01 P=444.616665 Days $T_0=562.000581$ (BKJD)



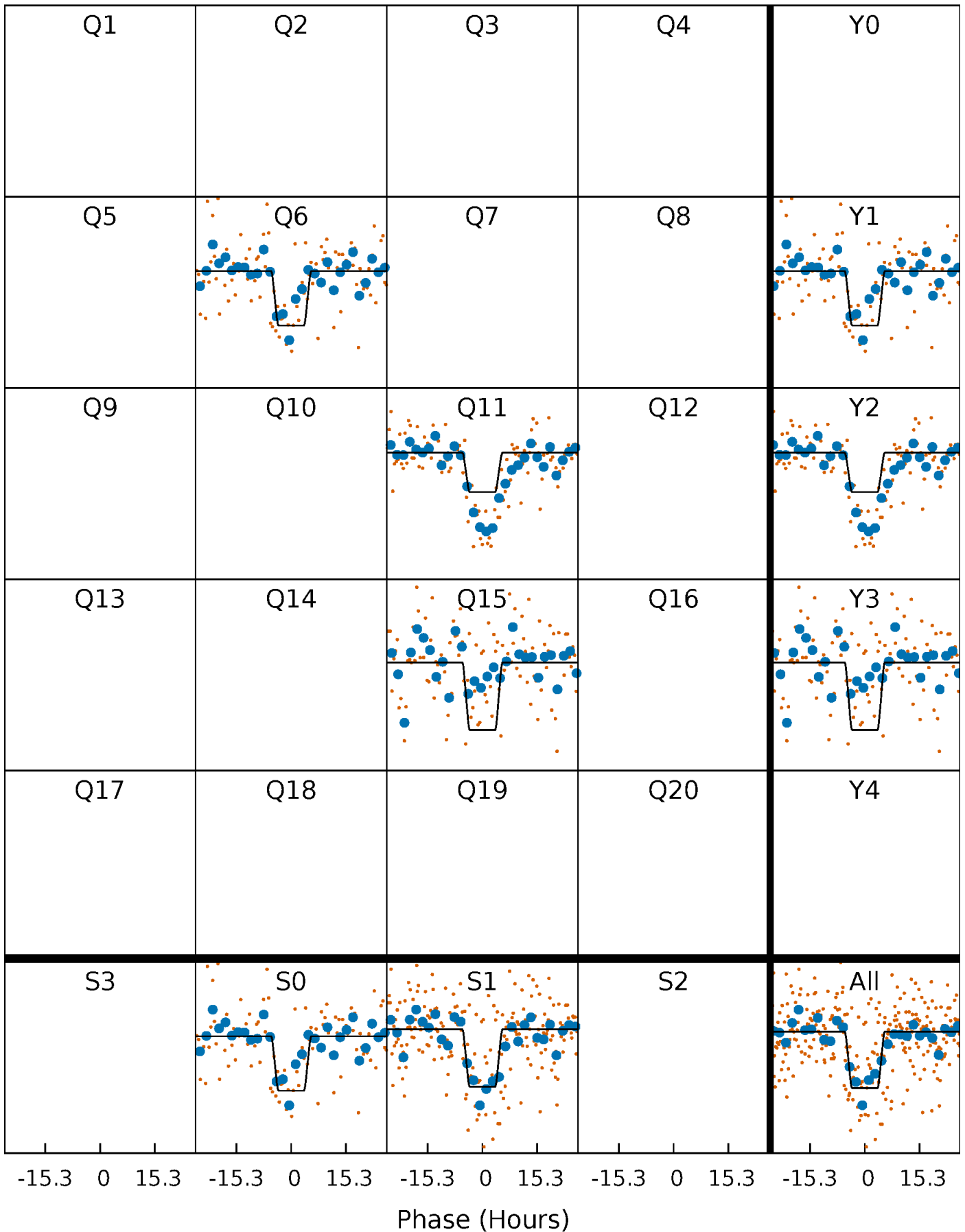
DV Quarter-Phased Transit Curves

TCE 010139107-01 P=444.616665 Days $T_0=562.000581$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

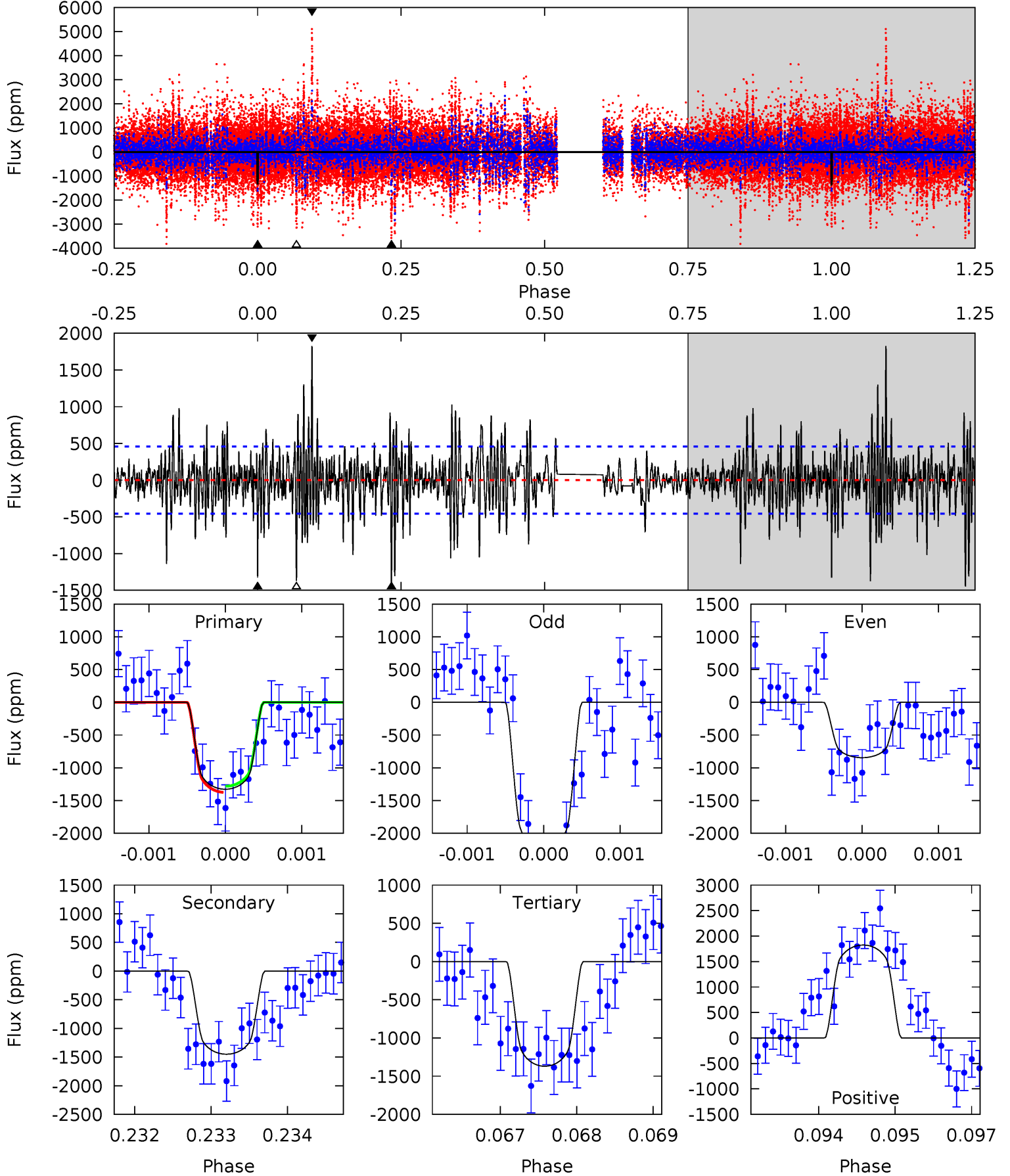
TCE 010139107-01 P=444.600210 Days $T_0=562.003803$ (BKJD)



DV Model-Shift Uniqueness Test

010139107-01, P = 444.616665 Days, E = 117.383916 Days

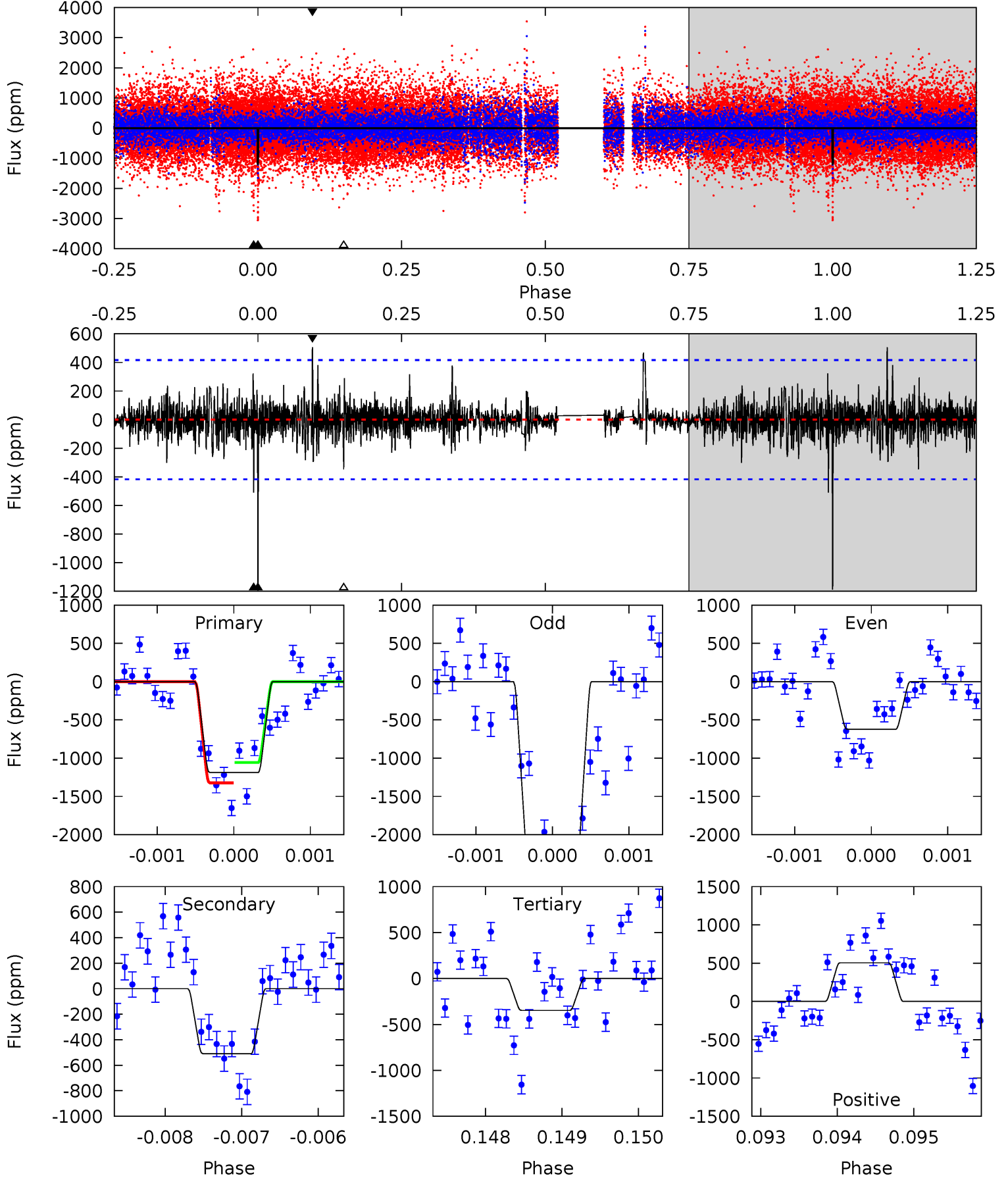
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
15.7	17.2	16.2	21.6	5.41	3.22	3.63	-0.50	-5.88	0.95	-4.43	7.90	1.43	0.56	0.56



Alt Model-Shift Uniqueness Test

010139107-01, P = 444.600210 Days, E = 117.403593 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
15.5	6.65	4.54	6.61	5.44	3.28	1.04	11.0	8.91	2.11	0.05	10.3	1.29	0.30	1.74



Stellar Parameters For KIC 010139107

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5683^{+154}_{-172}	$4.594^{+0.038}_{-0.152}$	$-0.440^{+0.300}_{-0.300}$	$0.765^{+0.183}_{-0.061}$	$0.841^{+0.089}_{-0.089}$	$2.642^{+0.423}_{-1.131}$
	+3%/-3%	+1%/-3%	+68%/-68%	+24%/-8%	+11%/-11%	+16%/-43%
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 010139107-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-1450 ± 84	$3.25^{+0.46}_{-0.44}$	301^{+16}_{-13}	5737^{+395}_{-330}	86465^{+28454}_{-20284}
Alt.	-509 ± 77	$3.11^{+0.51}_{-0.42}$	300^{+18}_{-13}	4618^{+307}_{-255}	32453^{+11777}_{-8543}

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 $A_{obs} \gg 1.0$

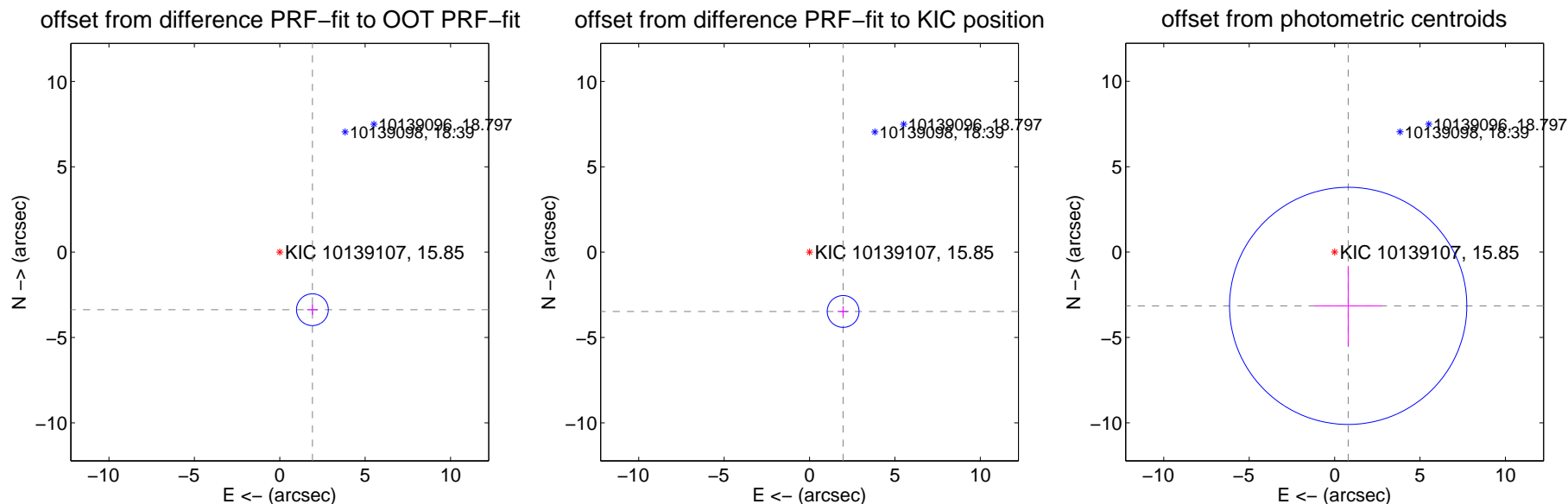
DV Centroid Data

Supplemental centroid analysis for 010139107-01. Kepler magnitude: 15.85. Transit SNR 7.14

There are 1 quarters with good PRF difference image offsets

The direct PRF centroid is offset from the target star catalog position by about 0.12 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	3.874 ± 0.310	12.48	-1.911 ± 0.313	-3.370 ± 0.309
PRF-fit source offset from KIC position	3.992 ± 0.310	12.86	-1.967 ± 0.313	-3.473 ± 0.309
photometric centroid source offset	3.25 ± 2.31	1.40	-0.80 ± 1.97	-3.15 ± 2.33



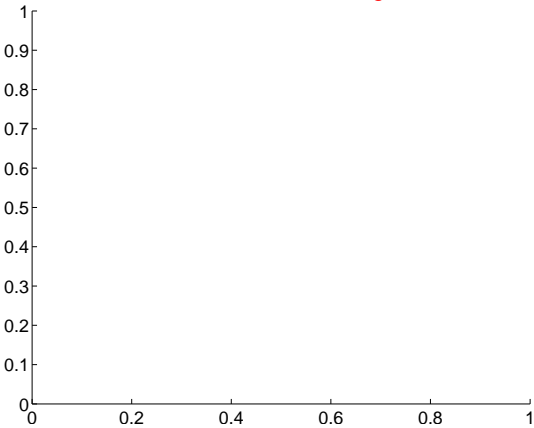
Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

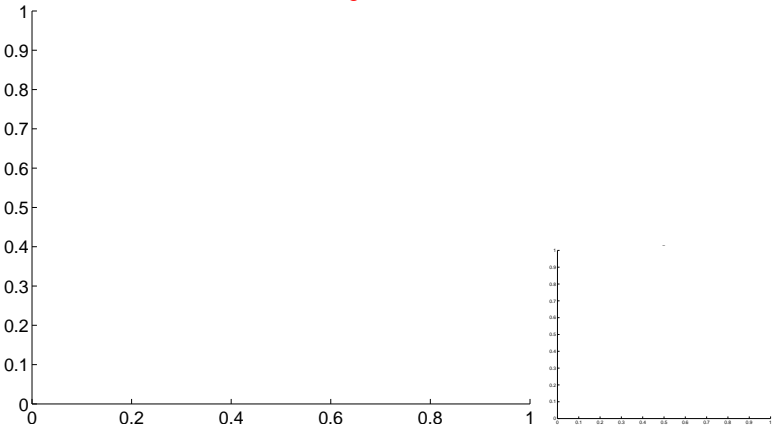


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.

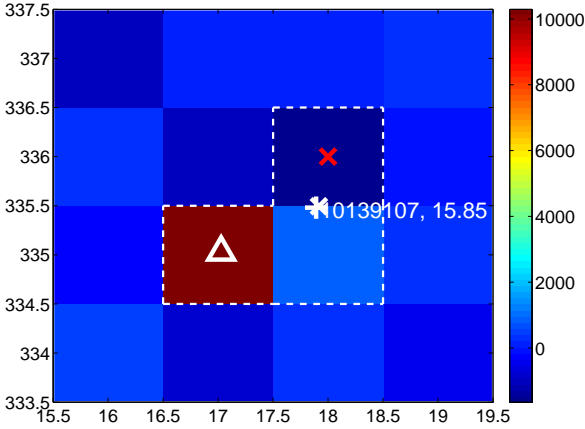
Q5 no difference image



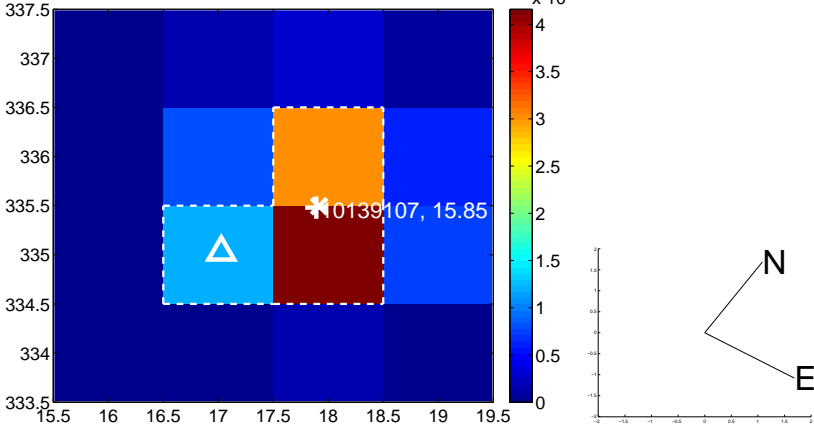
Q5 no OOT image



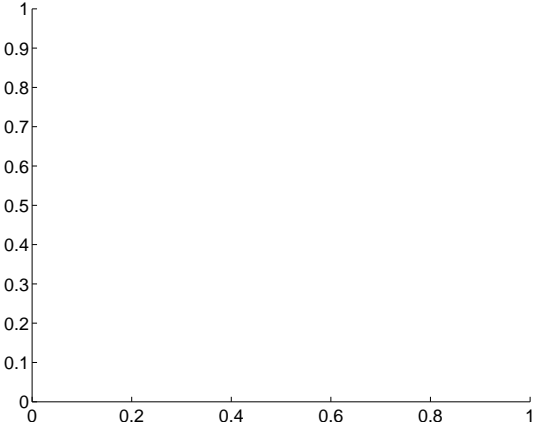
Q6 difference image



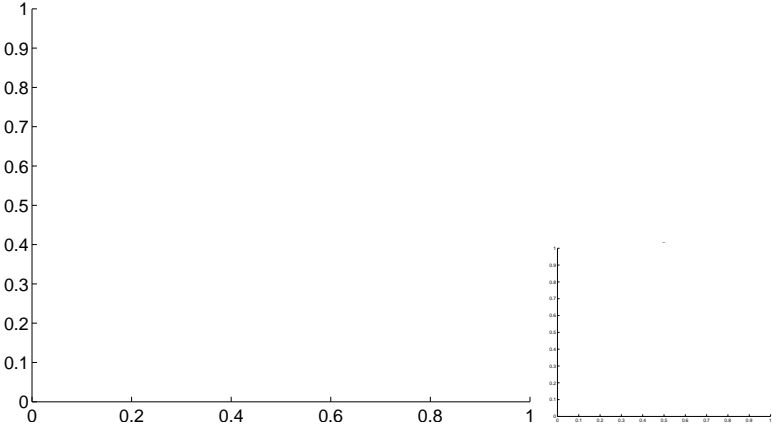
Q6 OOT image



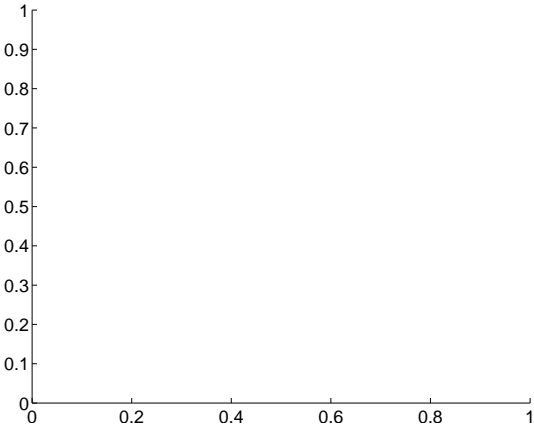
Q7 no difference image



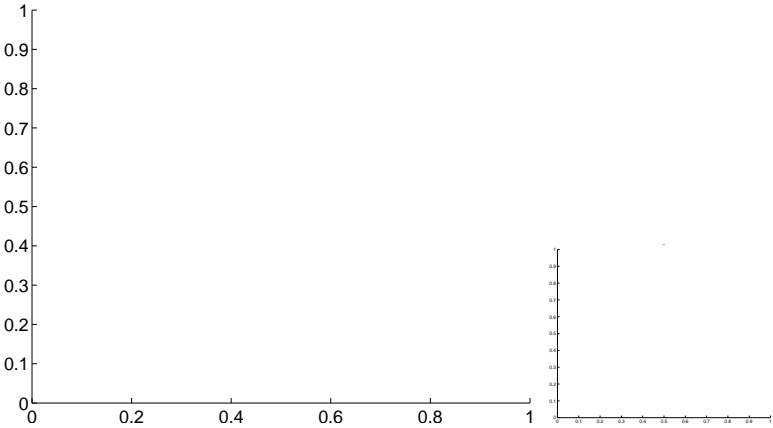
Q7 no OOT image



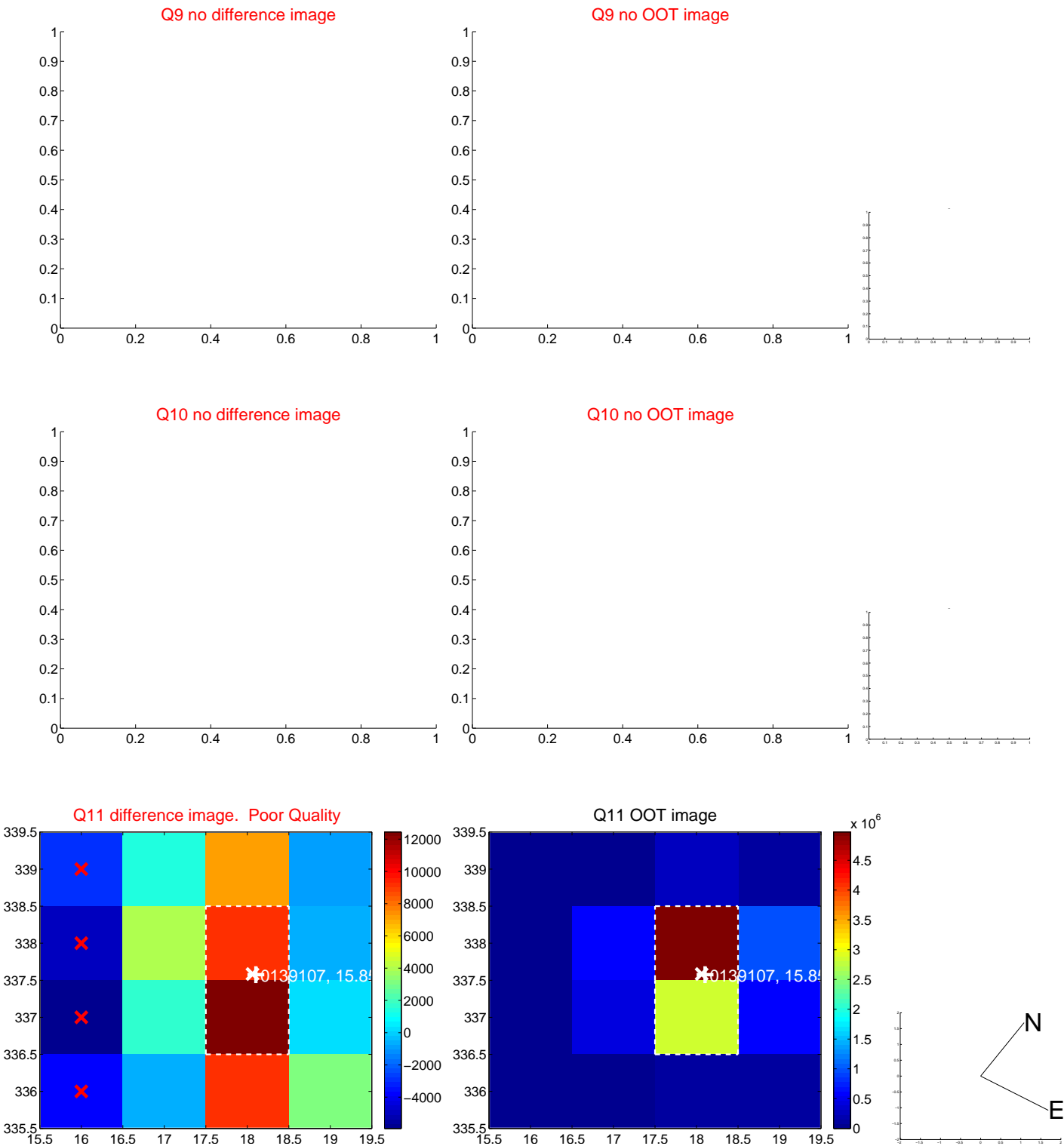
Q8 no difference image



Q8 no OOT image



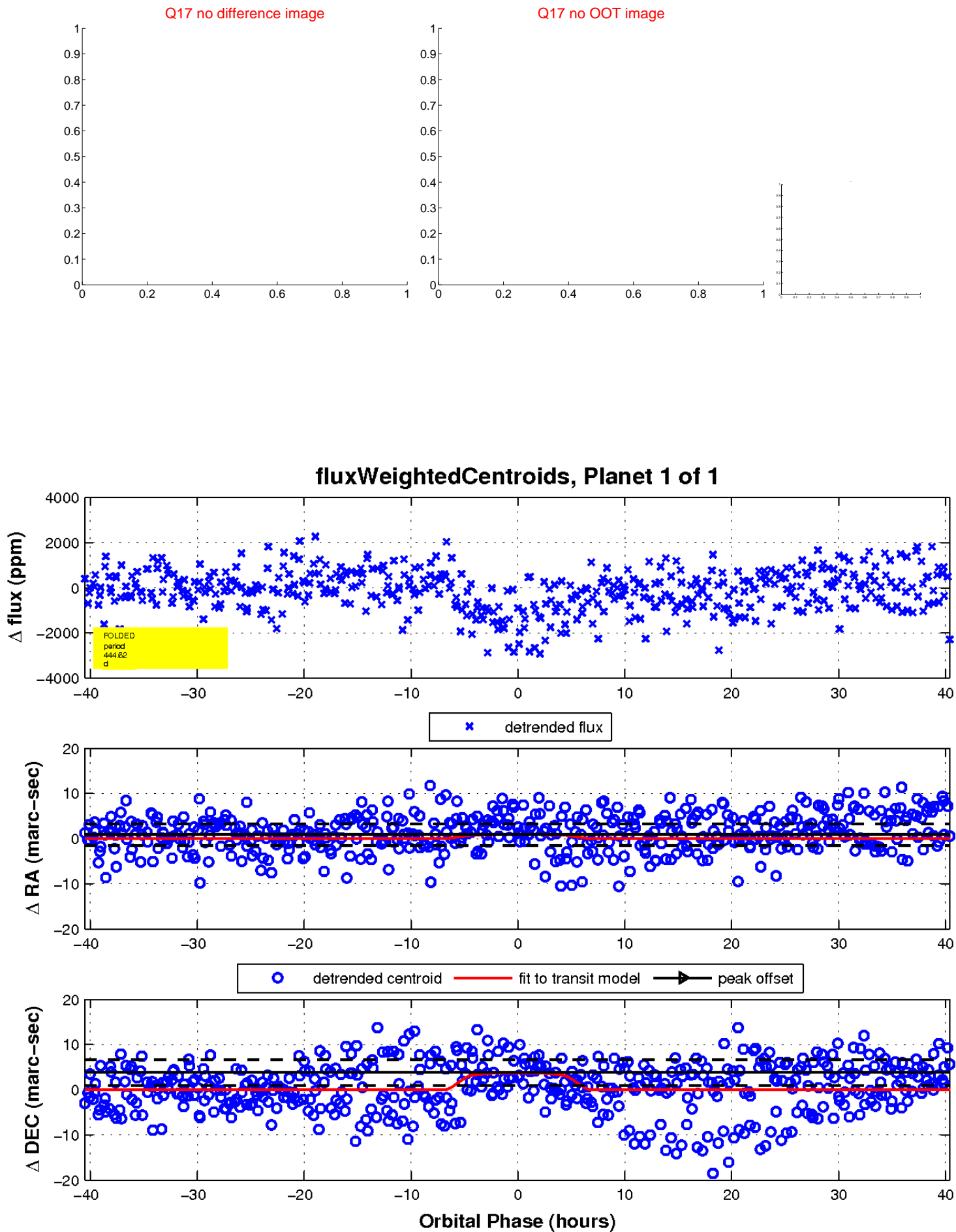
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ✕: large negative pixel value.



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



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



UKIRT Image

Declination

