

KIC 009031086

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})
009031086-01	OBS	No	436.962296	361.522609	140.8	8.238	7.9	8.5	1.15	6520	1.53	1.58

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
009031086-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—INCONSISTENT_TRANS—CENT_SATURATED

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

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

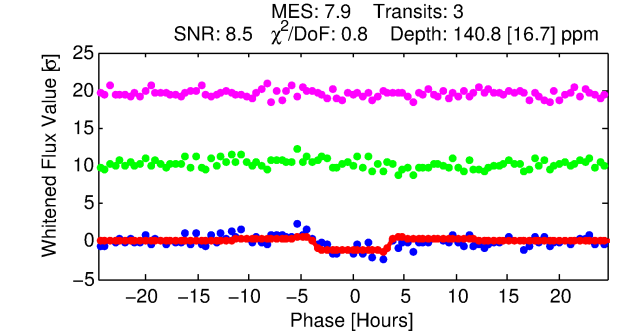
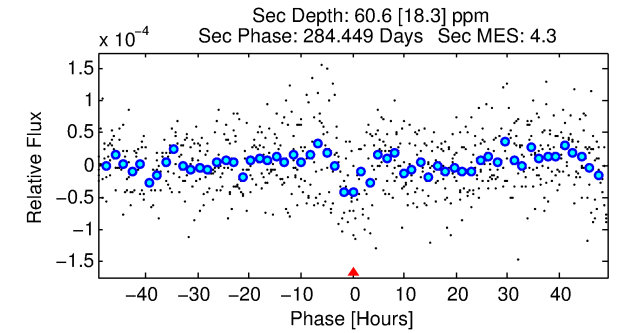
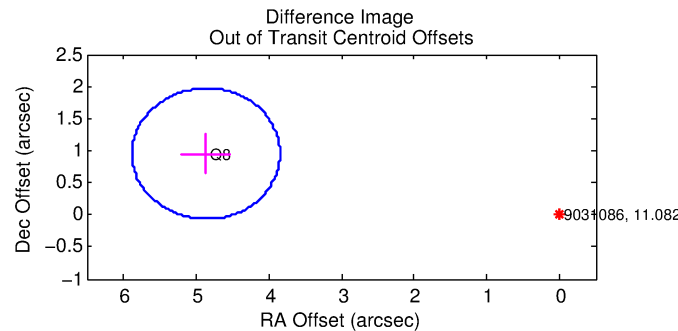
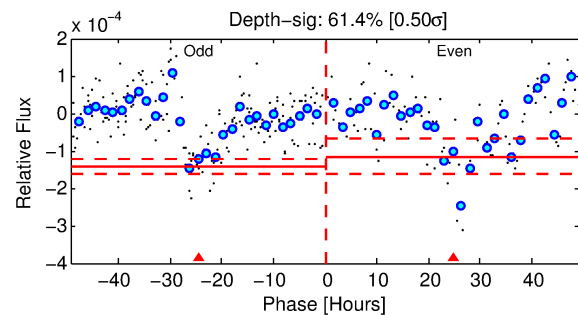
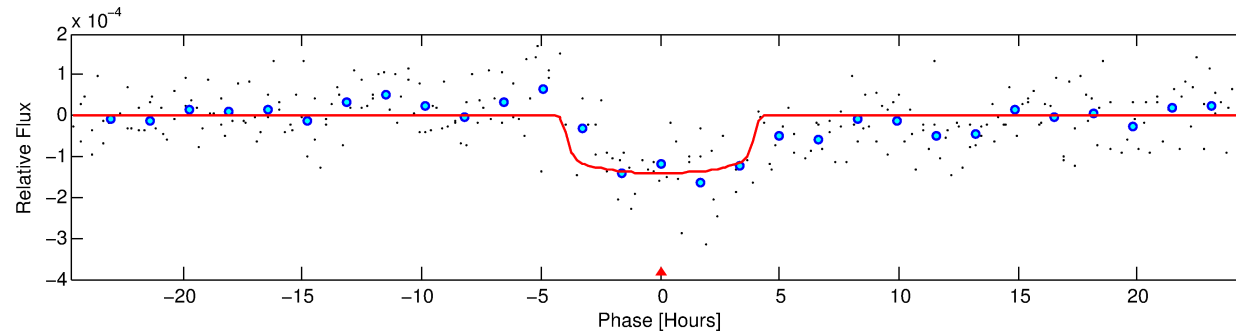
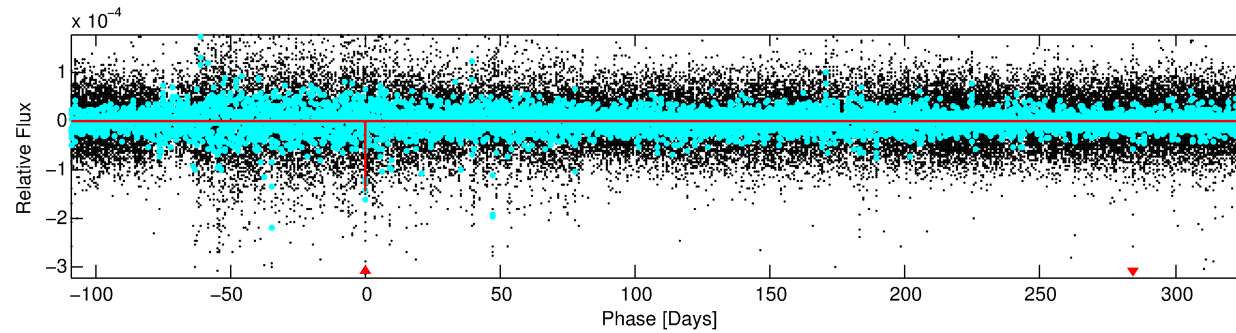
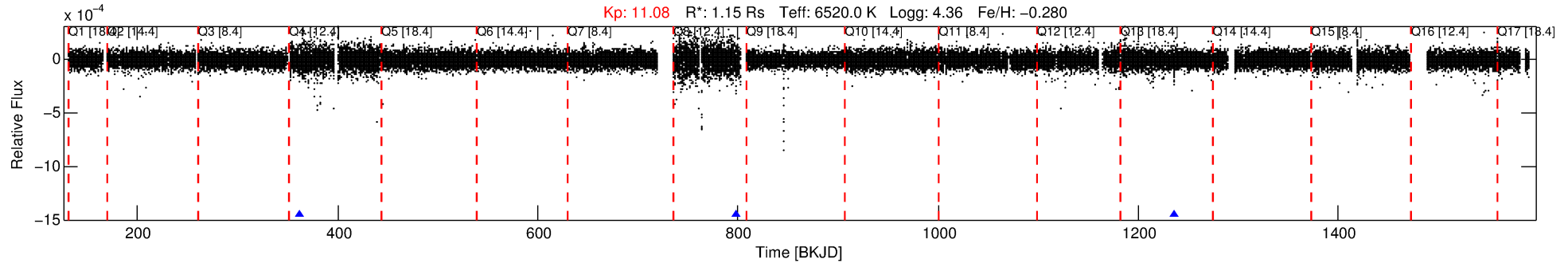
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 009031086-01

No Significant Match Found

DV One-Page Summary

KIC: 9031086 Candidate: 1 of 1 Period: 436.962 d



DV Fit Results:

Period = 436.96230 [0.00996] d
Epoch = 361.5226 [0.0133] BKJD
Rp/R* = 0.0122 [0.0036]
a/R* = 230.97 [374.63]
b = 0.84 [0.59]
Seff = 1.58 [0.55]
Teq = 286 [25] K
Rp = 1.53 [0.57] Re
a = 1.1676 [0.2196] AU
Ag = 19343.67 [13945.98] [1.39σ]
Teffp = 5210 [914] K [5.38σ]

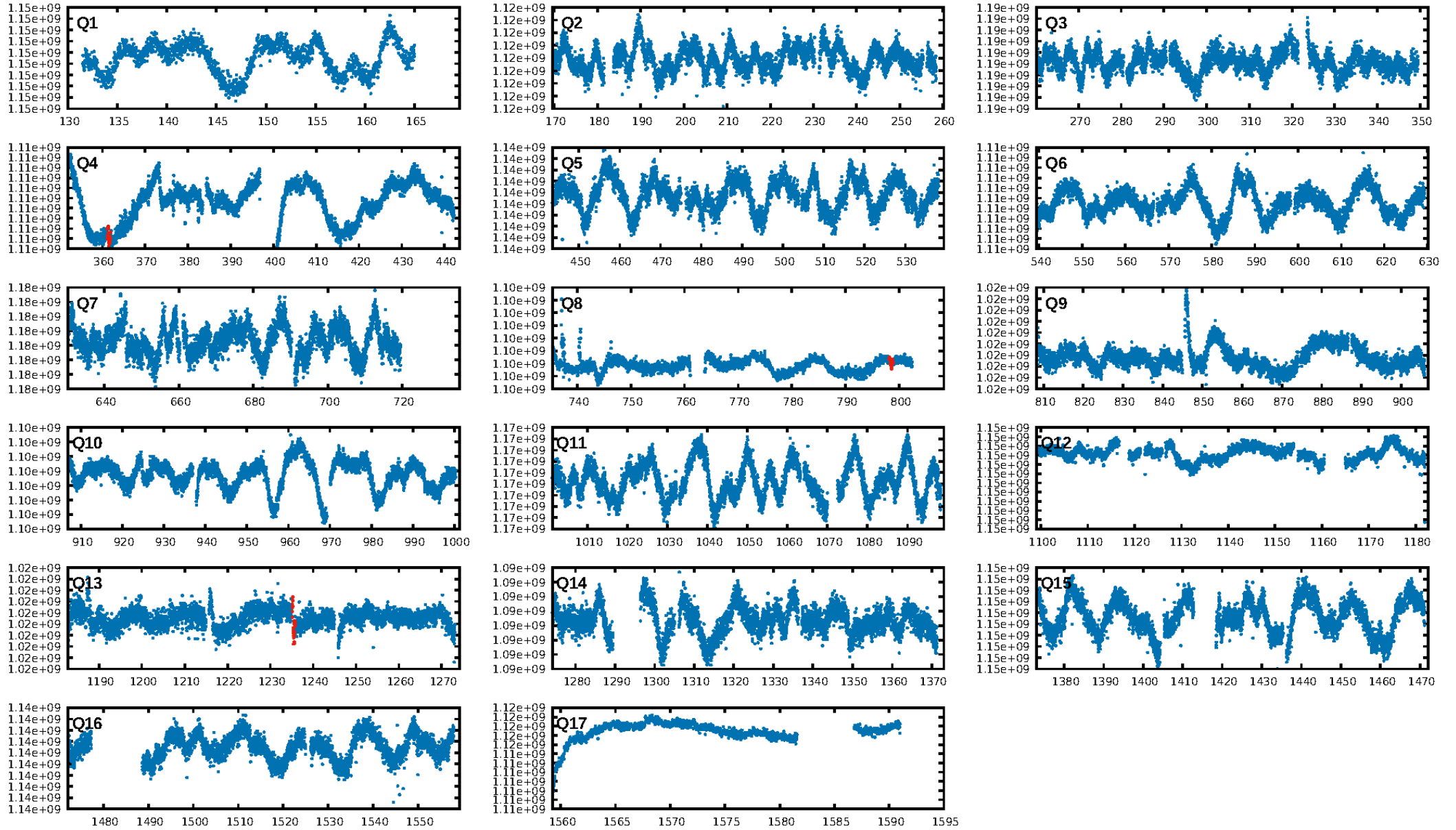
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: 52.4%
ModelChiSquareGof-sig: 99.9%
Bootstrap-pfa: 2.11e-08
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: 0.4733
Centroid-sig: 62.9%
Centroid-so: 0.939 arcsec [0.70σ]
OotOffset-rm: 4.953 arcsec [14.59σ]
KicOffset-rm: 4.851 arcsec [14.30σ]
OotOffset-st: 0/0/1/0 [1]
KicOffset-st: 0/0/1/0 [1]
DiffImageQuality-fgm: 1.00 [1/1]
DiffImageOverlap-fno: 1.00 [3/3]

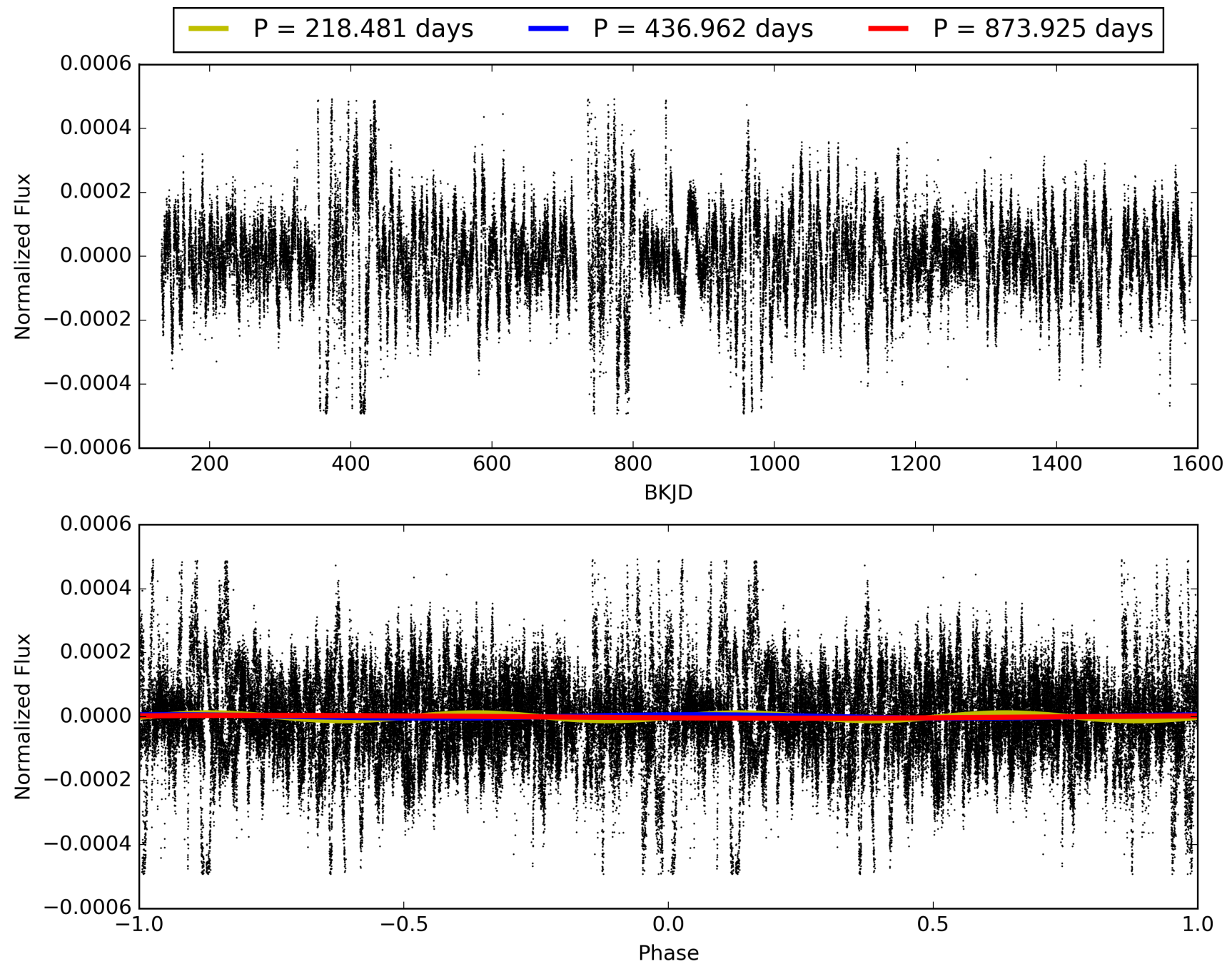
Software Revision: svn-ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 01:43:10 Z

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

TCE 009031086-01, PDC Light Curves

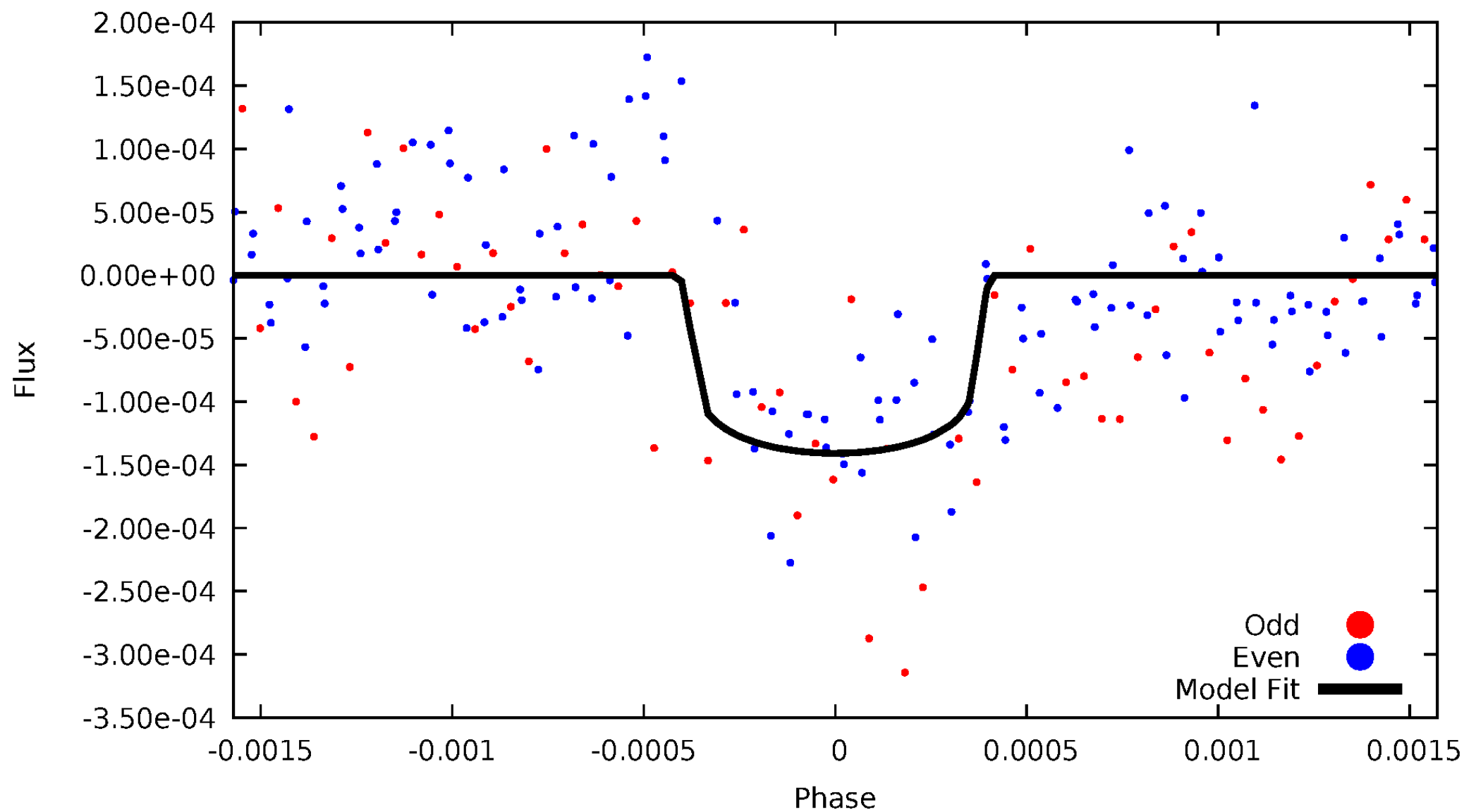


TCE 009031086-01



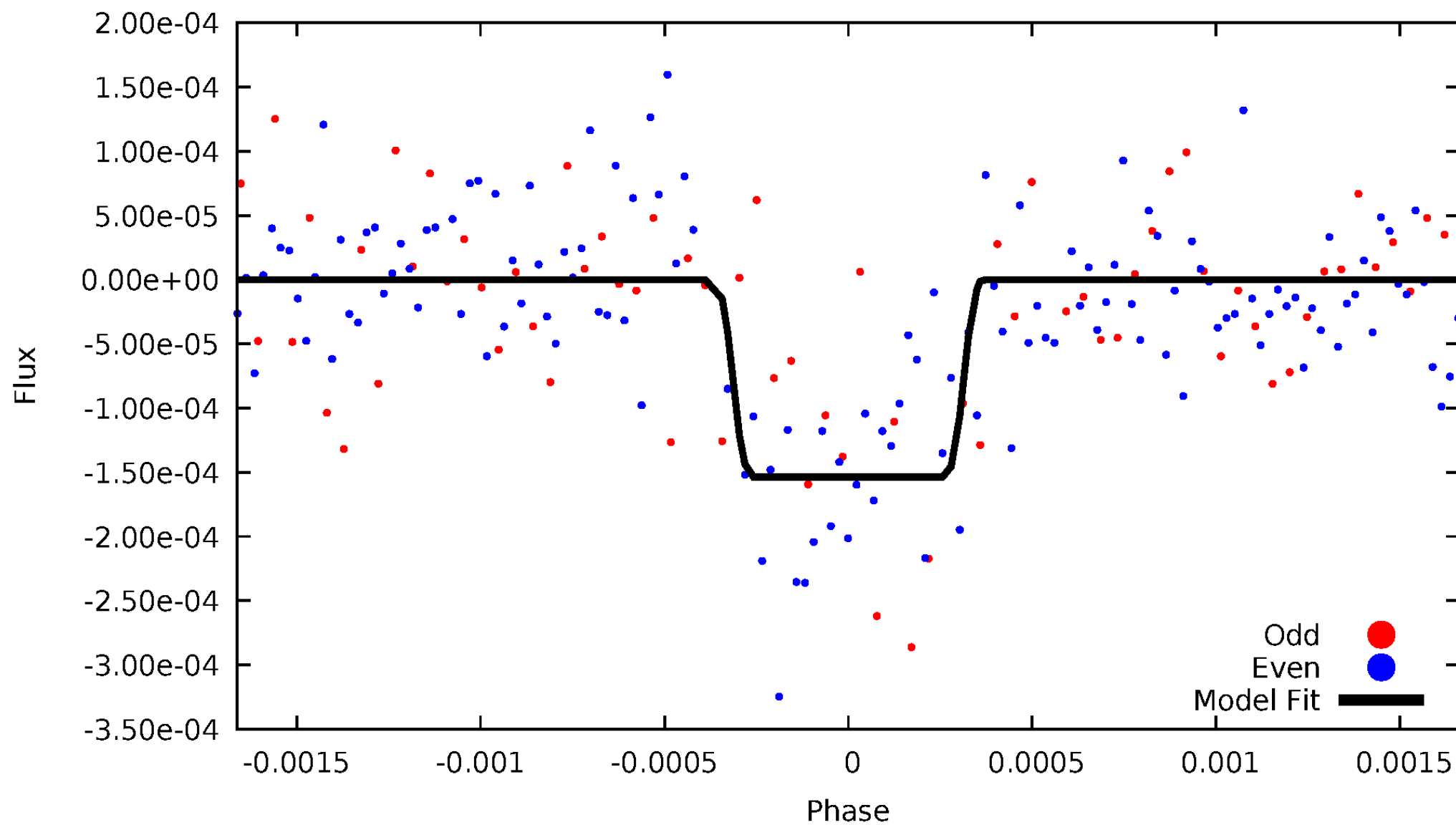
DV Odd/Even

TCE 009031086-01

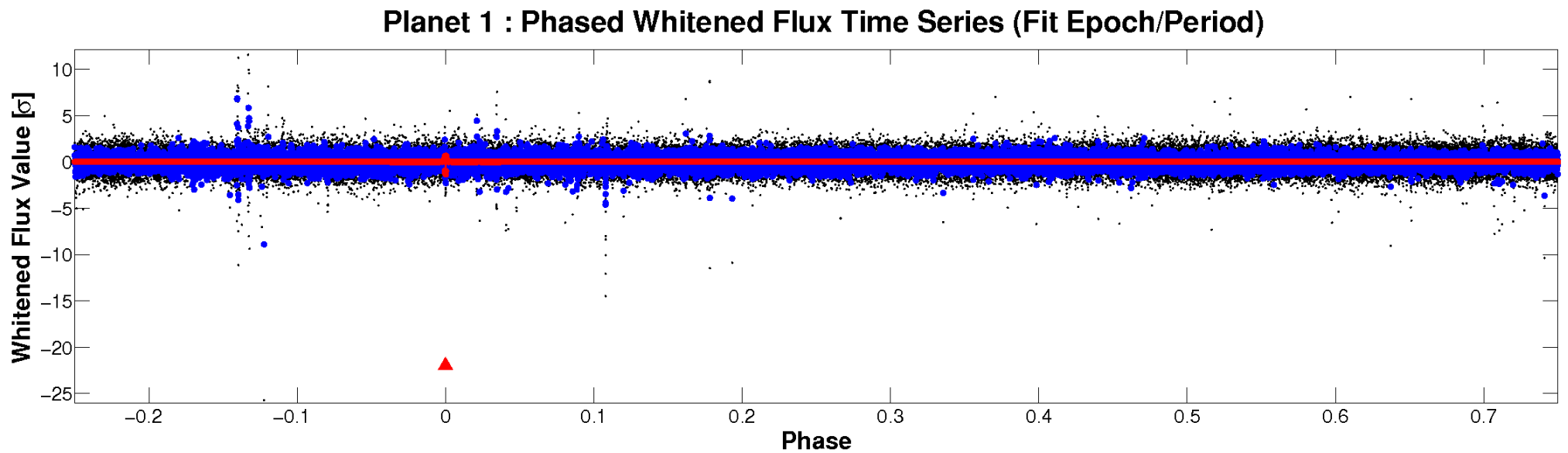
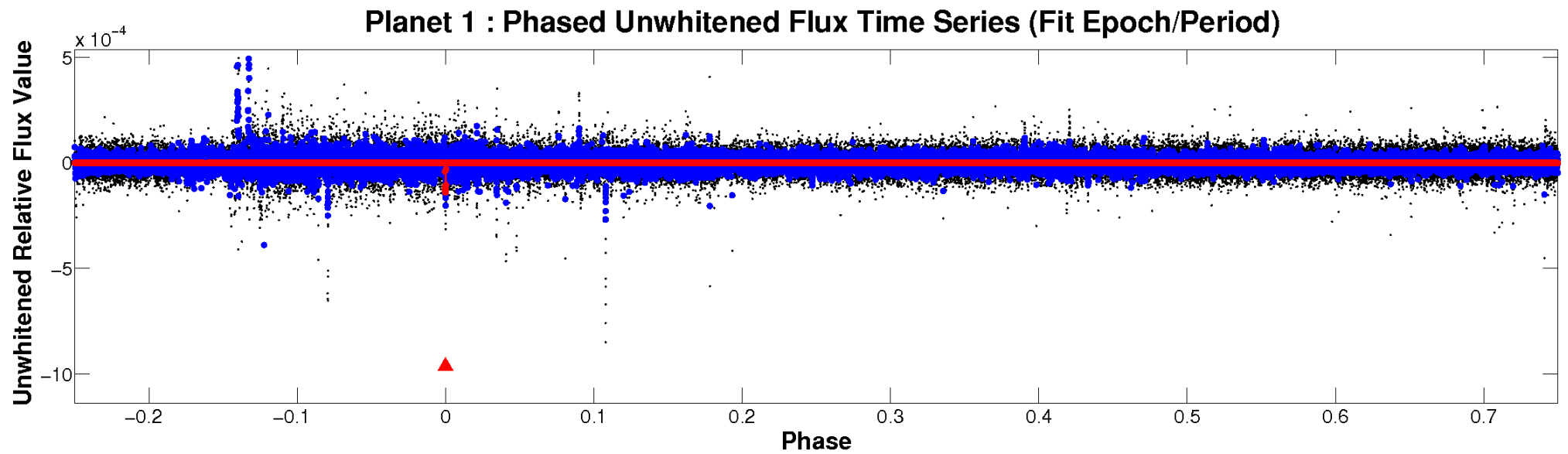


ALT Odd/Even

TCE 009031086-01

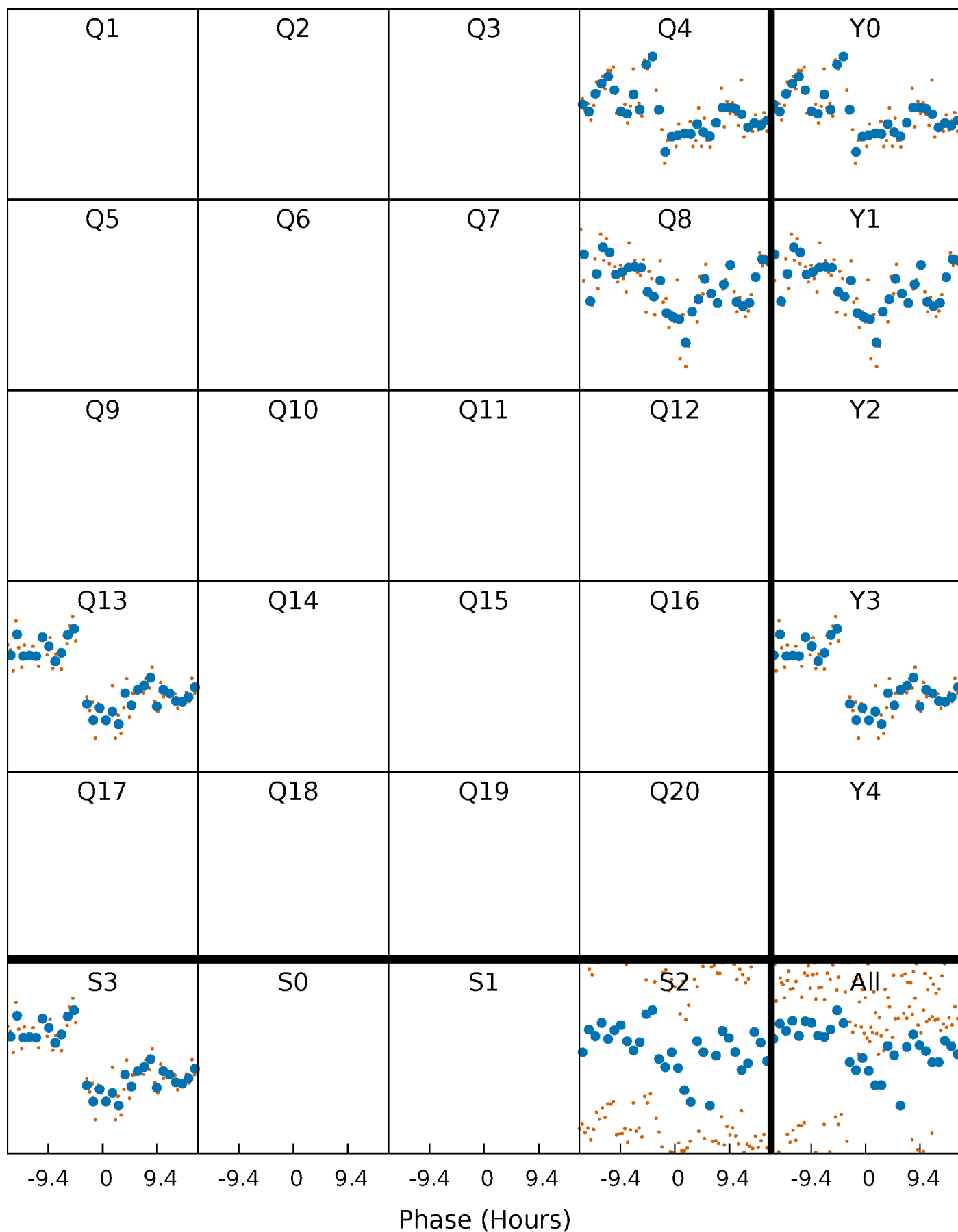


Non-Whitened Vs. Whitened Light Curve



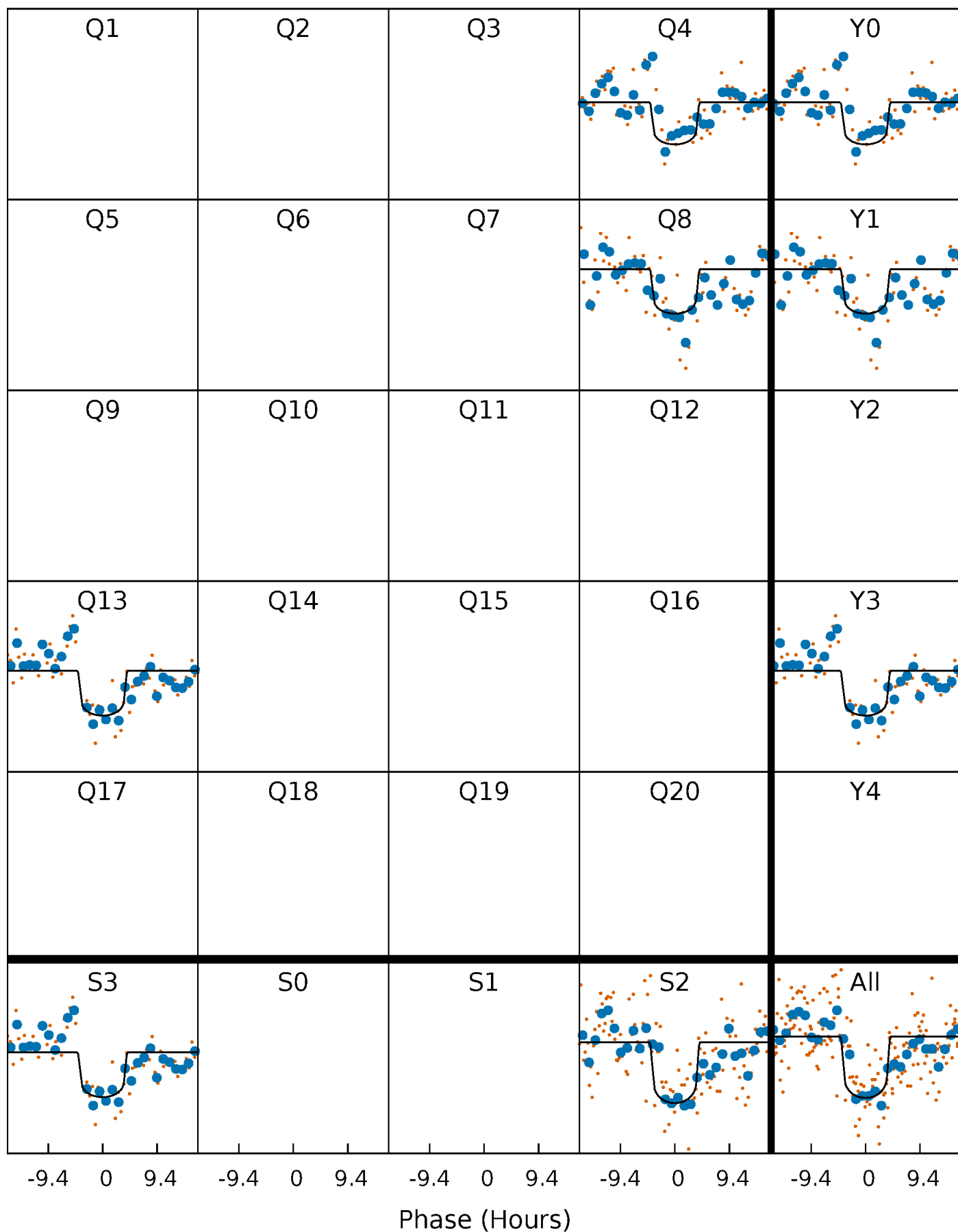
PDC Quarter-Phased Transit Curves

TCE 009031086-01 P=436.962296 Days $T_0=361.522609$ (BKJD)



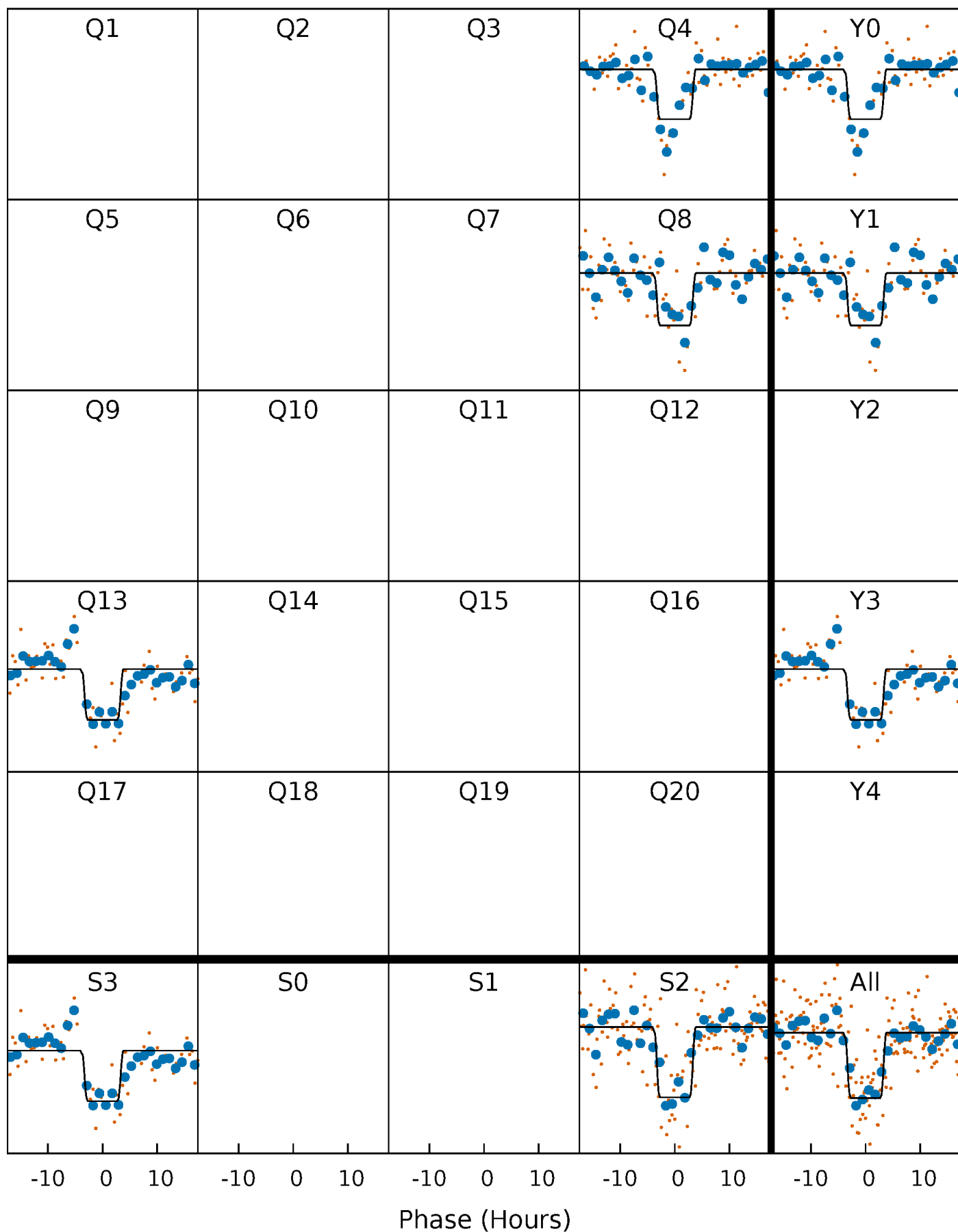
DV Quarter-Phased Transit Curves

TCE 009031086-01 $P=436.962296$ Days $T_0=361.522609$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

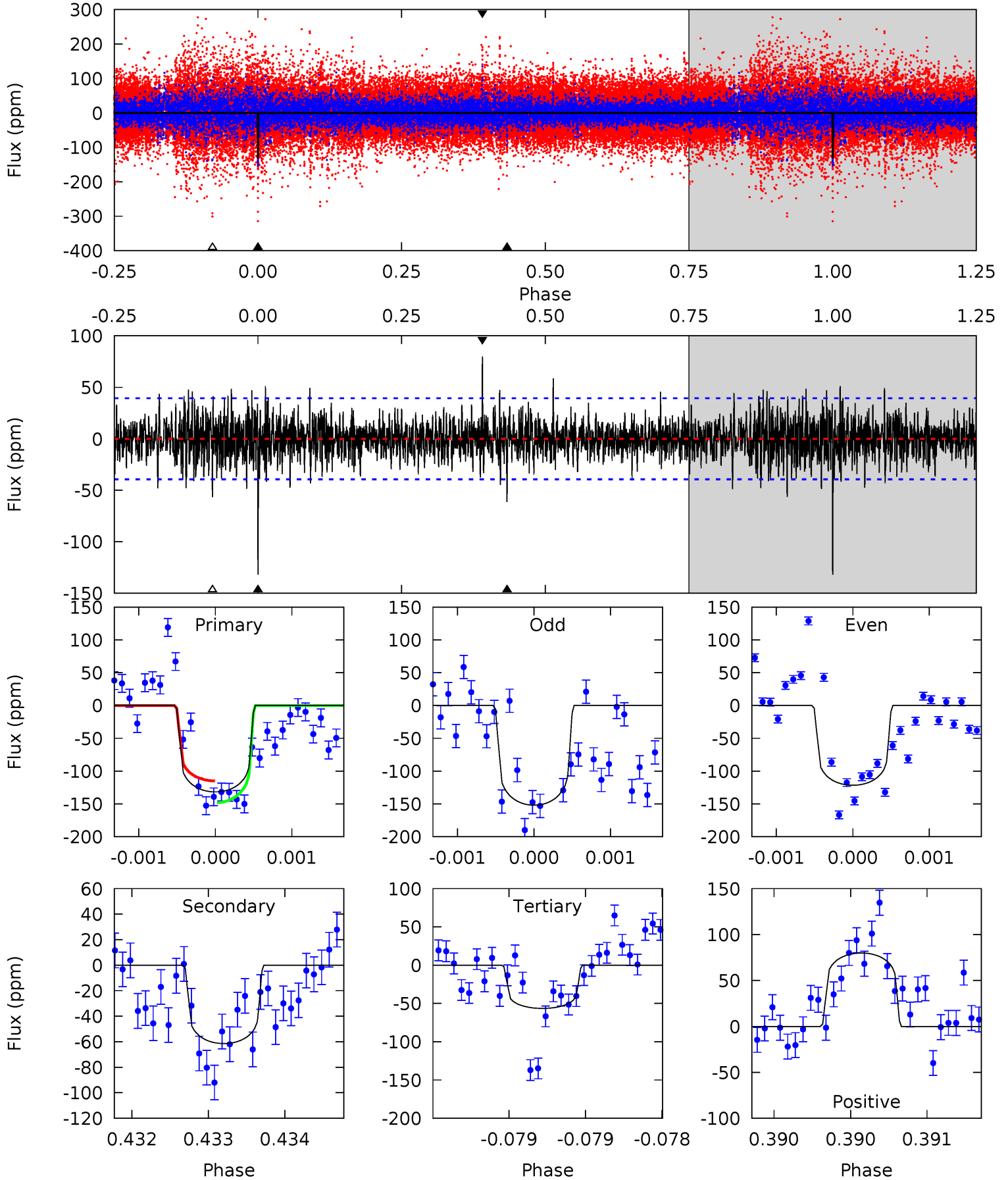
TCE 009031086-01 P=436.958058 Days $T_0=361.531287$ (BKJD)



DV Model-Shift Uniqueness Test

009031086-01, P = 436.962296 Days, E = 361.522609 Days

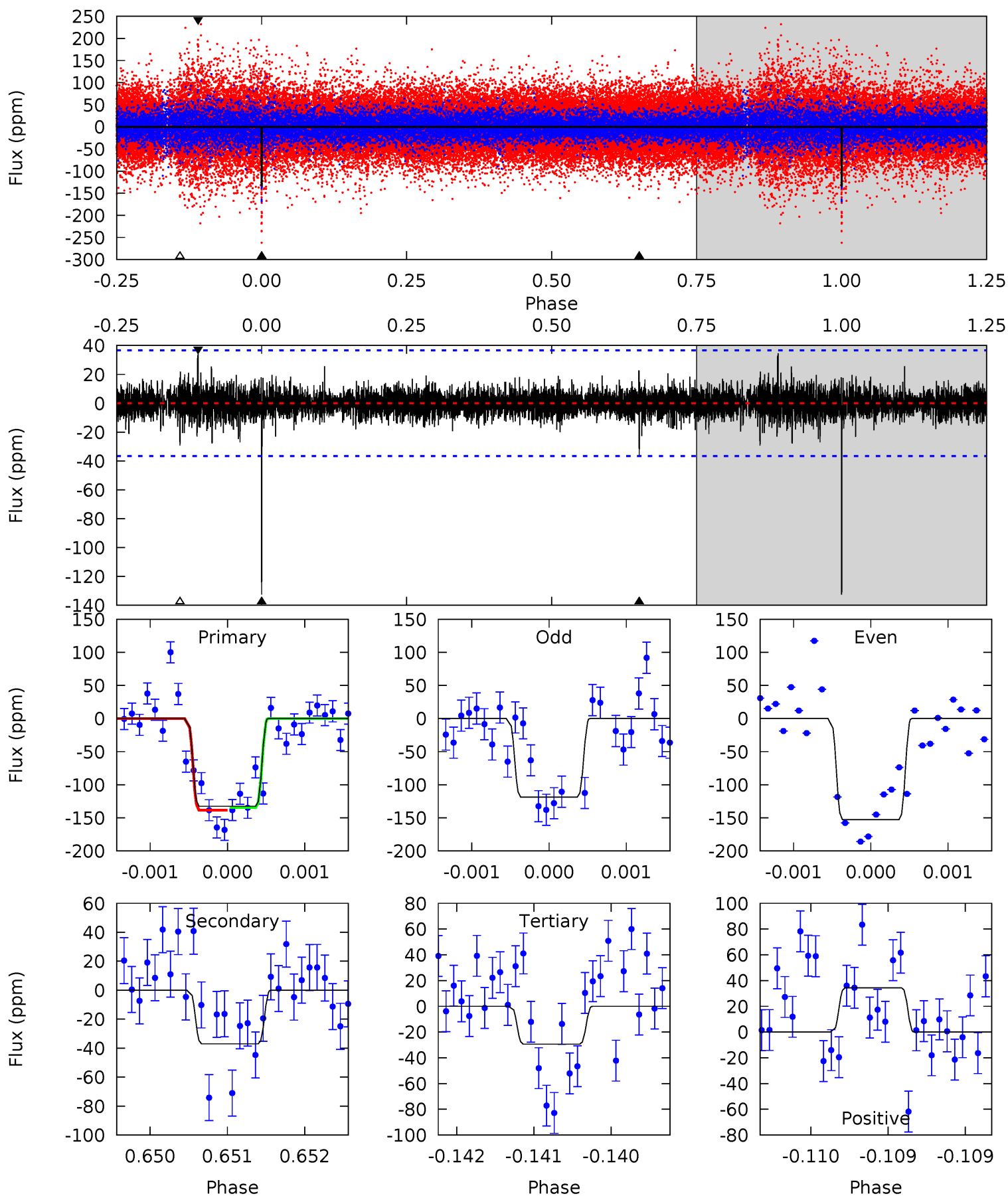
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
18.4	8.56	7.88	11.1	5.49	3.35	1.83	10.5	7.22	0.69	-2.58	1.66	0.92	0.38	2.31



Alt Model-Shift Uniqueness Test

009031086-01, P = 436.958058 Days, E = 361.531287 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
20.0	5.59	4.43	5.19	5.51	3.39	0.90	15.6	14.8	1.16	0.40	2.39	0.95	0.21	0.33



Stellar Parameters For KIC 009031086

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	M (M_{\odot})	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	6520^{+238}_{-357}	$4.361^{+0.092}_{-0.150}$	$-0.280^{+0.250}_{-0.300}$	$1.152^{+0.257}_{-0.171}$	$1.111^{+0.146}_{-0.162}$	$1.023^{+0.501}_{-0.419}$
	+4%/-5%	+2%/-3%	+89%/-107%	+22%/-15%	+13%/-15%	+49%/-41%
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 009031086-01 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-61 ± 7	$1.58^{+0.49}_{-0.51}$	402^{+26}_{-26}	5207^{+1028}_{-558}	18290^{+20901}_{-7708}
Alt.	-37 ± 7	$1.61^{+0.54}_{-0.47}$	403^{+27}_{-25}	4646^{+824}_{-451}	10469^{+11441}_{-4481}

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 $A_{obs} \gg 1.0$

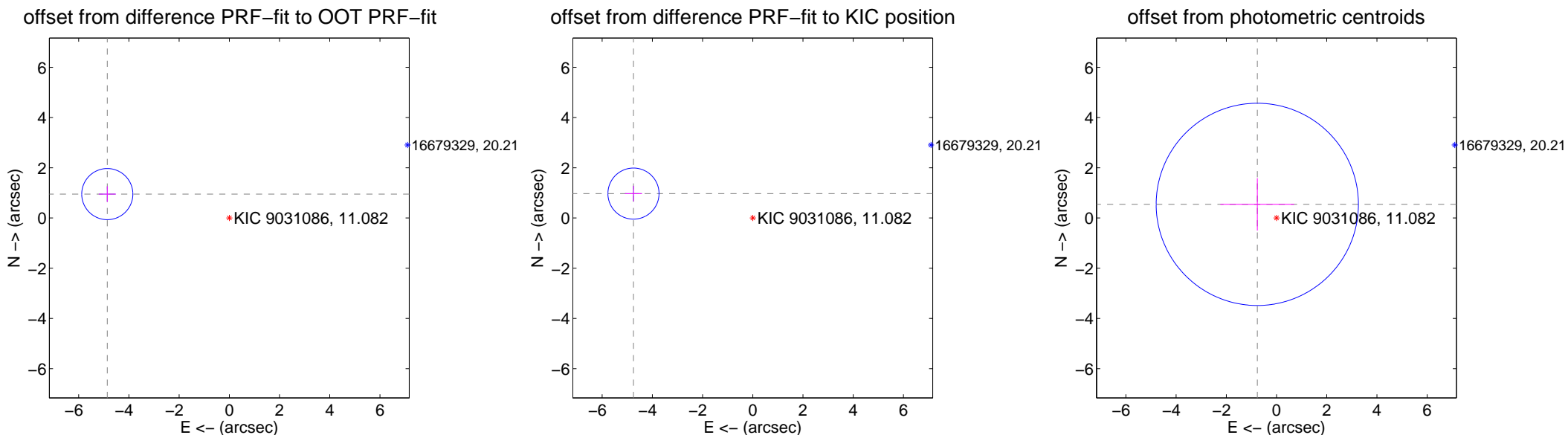
DV Centroid Data

Supplemental centroid analysis for 009031086-01. **Kepler magnitude: 11.08.** Transit SNR 8.49

There are 1 quarters with good PRF difference image offsets

The direct PRF centroid is offset from the target star catalog position by about 0.11 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	4.953 \pm 0.339	14.59	4.861 \pm 0.340	0.952 \pm 0.313
PRF-fit source offset from KIC position	4.851 \pm 0.339	14.30	4.753 \pm 0.340	0.972 \pm 0.313
photometric centroid source offset	0.94 \pm 1.34	0.70	0.77 \pm 1.47	0.54 \pm 1.04



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.

Q1 no difference image



Q1 no OOT image



Q2 no difference image



Q2 no OOT image



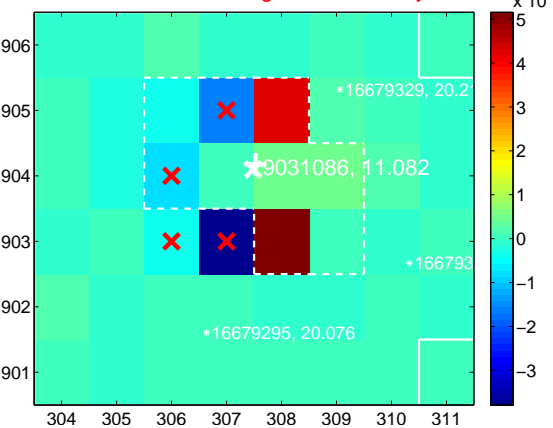
Q3 no difference image



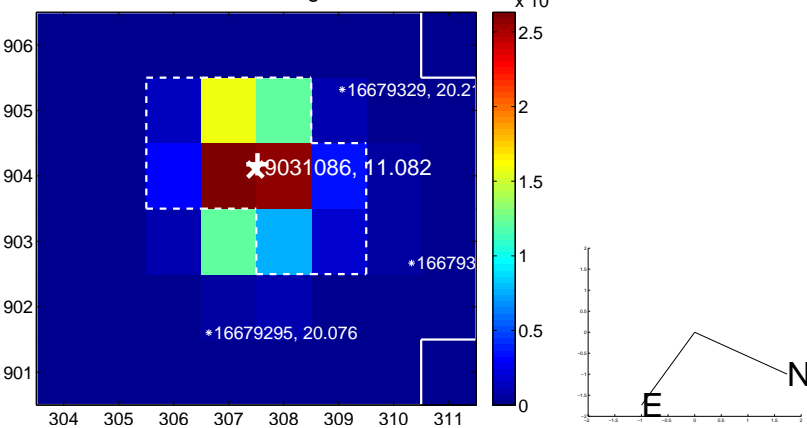
Q3 no OOT image



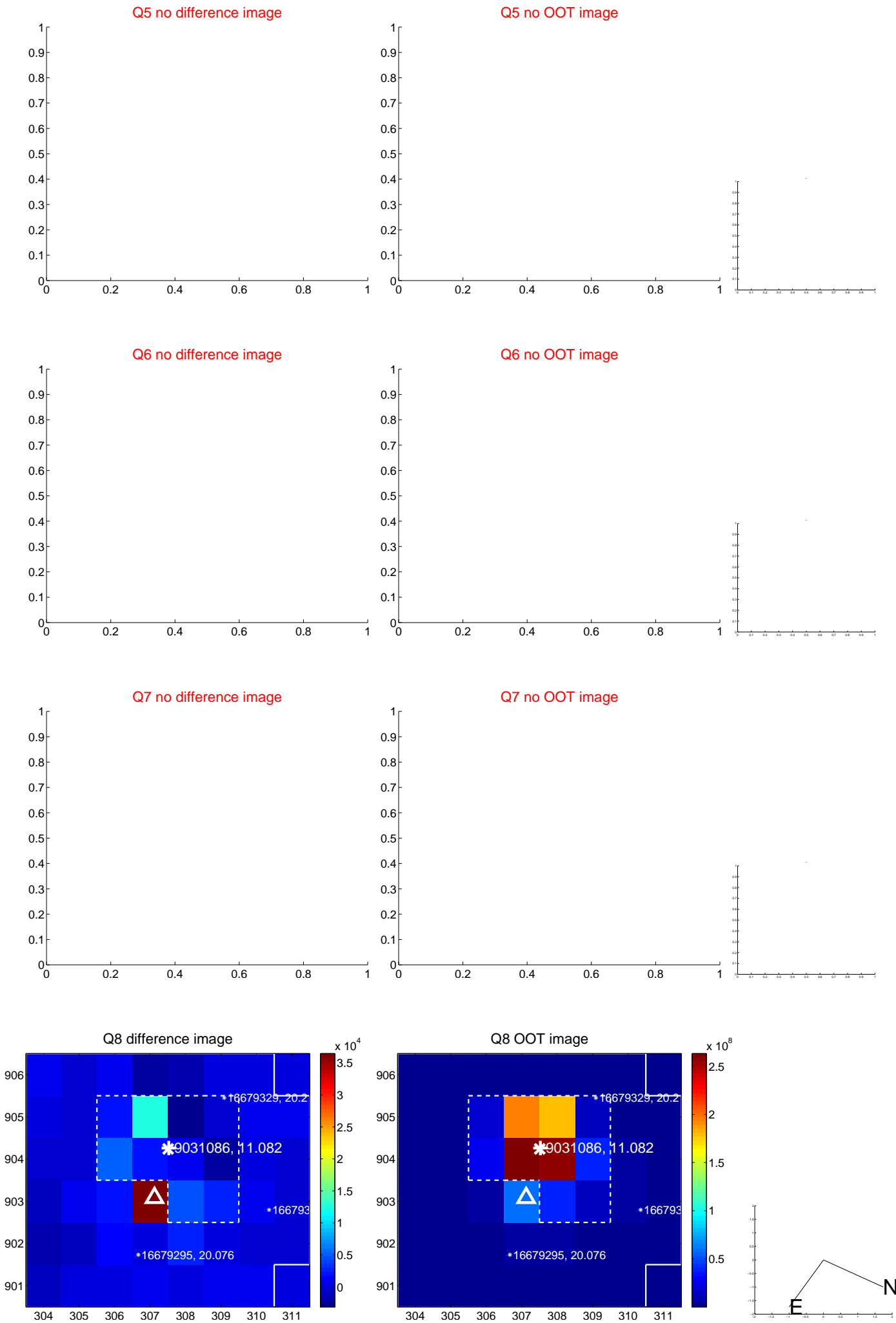
Q4 difference image. Poor Quality



Q4 OOT image



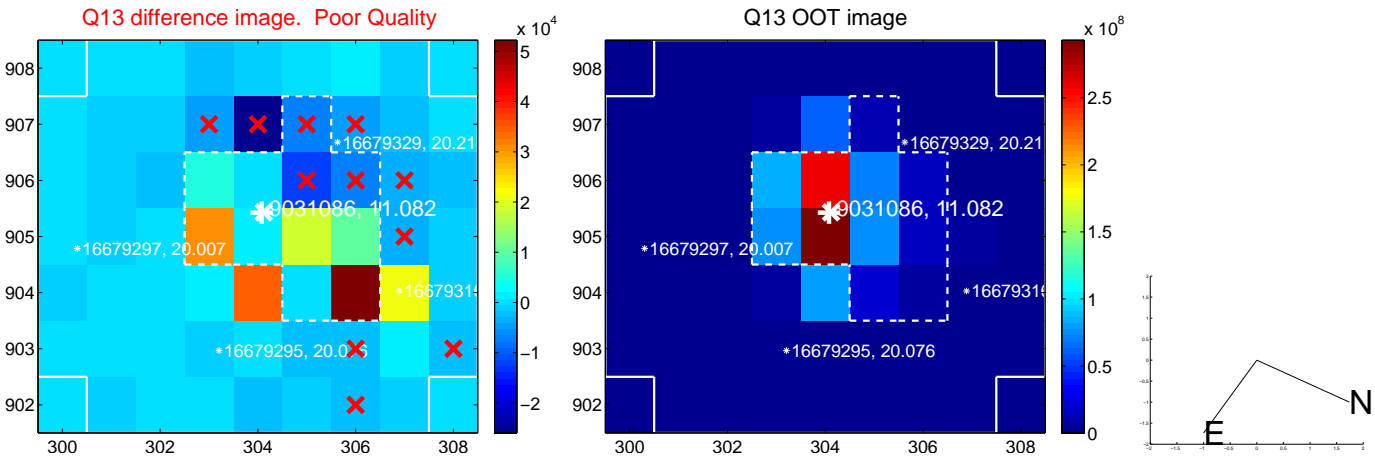
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



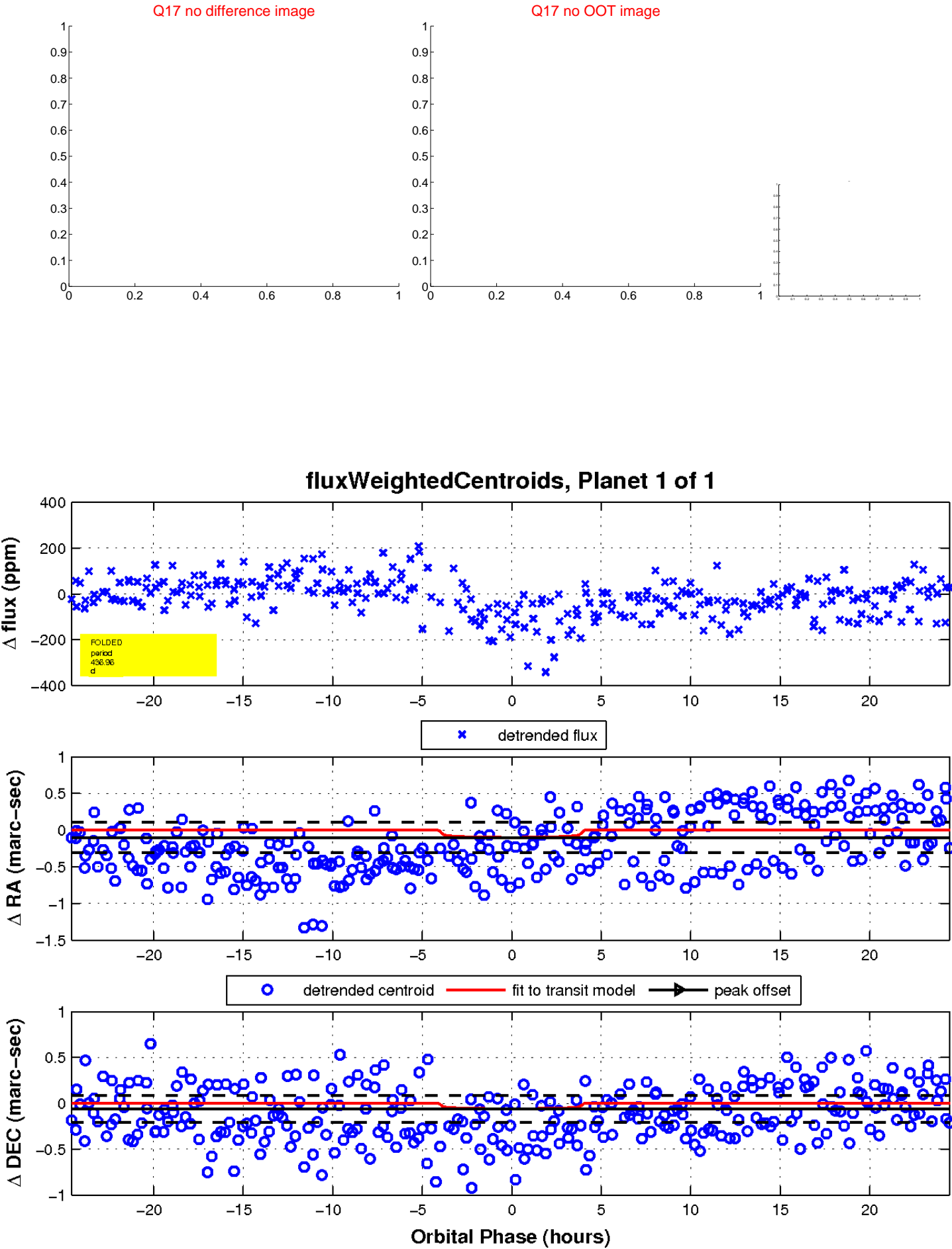
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



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



This astronomical image displays a field of stars against a black background. A blue grid is overlaid on the image, with green numerical labels indicating coordinates. The labels include '03.0', '01.5', '19:40:00.0', and '40.0'. The stars are represented as bright, multi-colored (yellow, orange, and red) point sources. The grid lines are blue, and the coordinate labels are green.

Declination