

KIC 008420690

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})
008420690-01	OBS	No	427.270016	460.859861	243.7	15.838	9.0	6.8	0.78	4879	1.37	0.30

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008420690-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL—ALL_TRANS_CHASES—INCONSISTENT_TRANS—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.

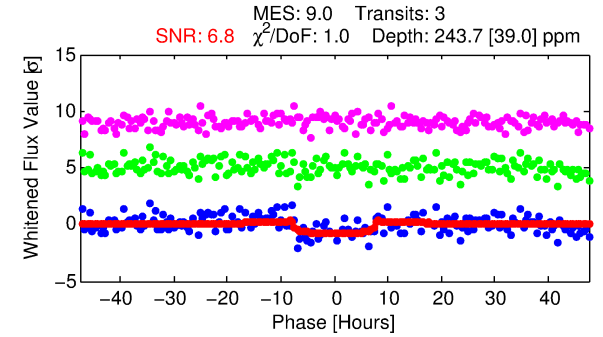
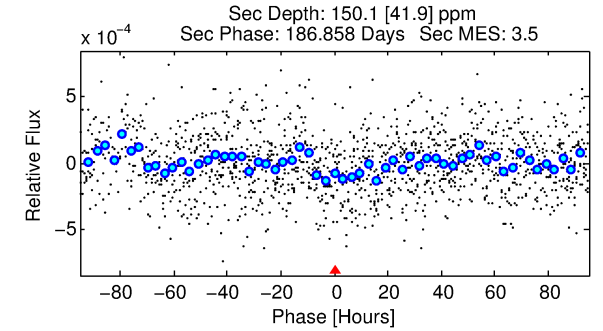
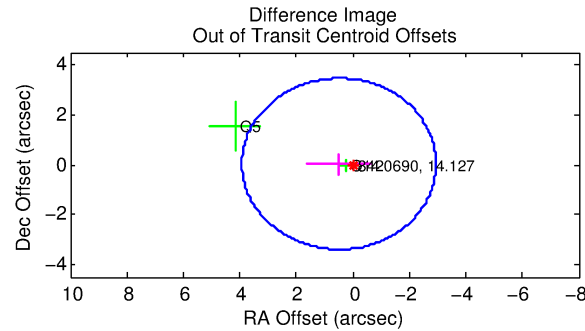
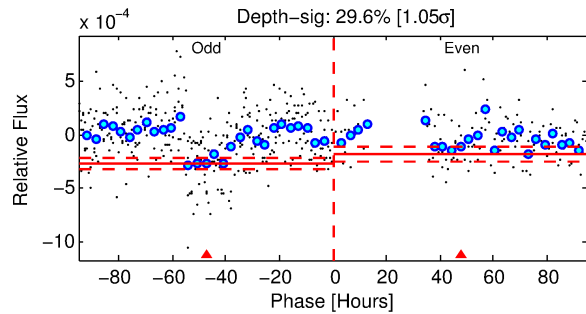
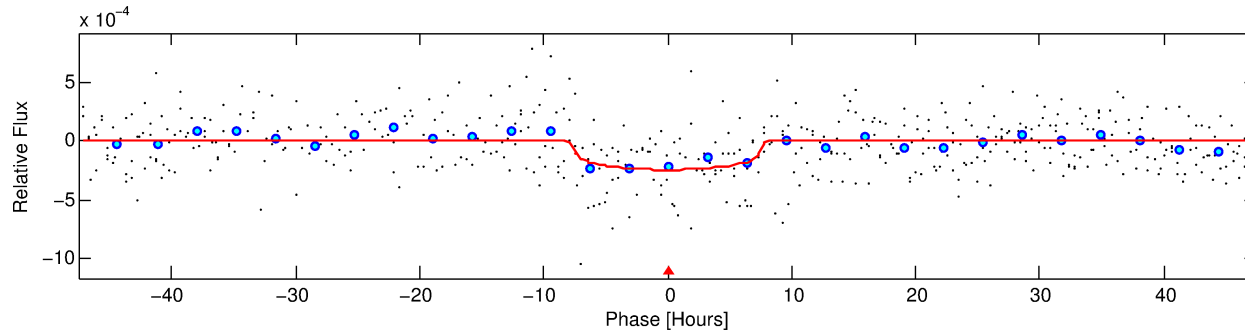
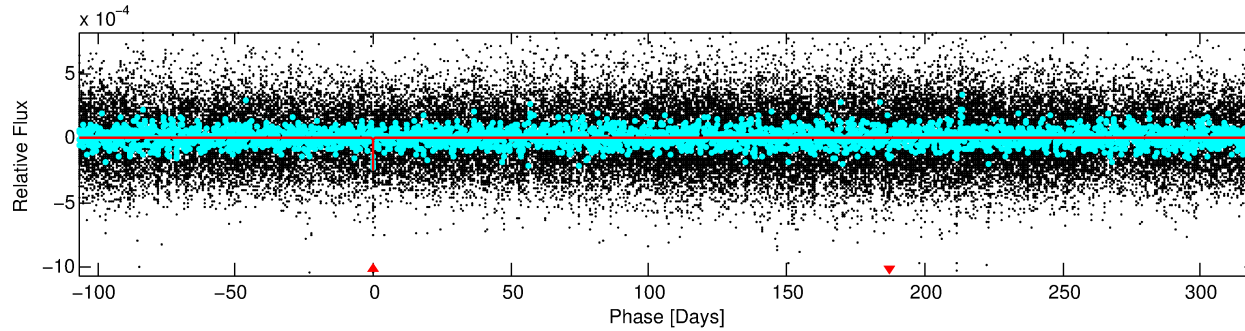
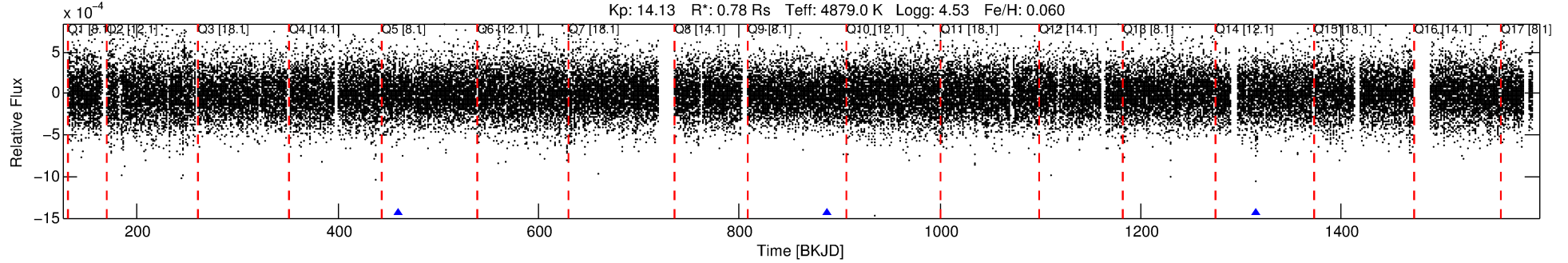
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 008420690-01

No Significant Match Found

DV One-Page Summary

KIC: 8420690 Candidate: 1 of 1 Period: 427.270 d



DV Fit Results:

Period = 427.27002 [0.02011] d
Epoch = 460.8599 [0.0260] BKJD
Rp/R* = 0.0161 [0.0056]
a/R* = 127.27 [156.06]
b = 0.81 [0.53]
Seff = 0.30 [0.05]
Teff = 189 [8] K
Rp = 1.37 [0.50] Re
a = 1.0113 [0.0856] AU
Ag = 44891.43 [34163.63] [1.31 σ]
Teffp = 4254 [808] K [5.03 σ]

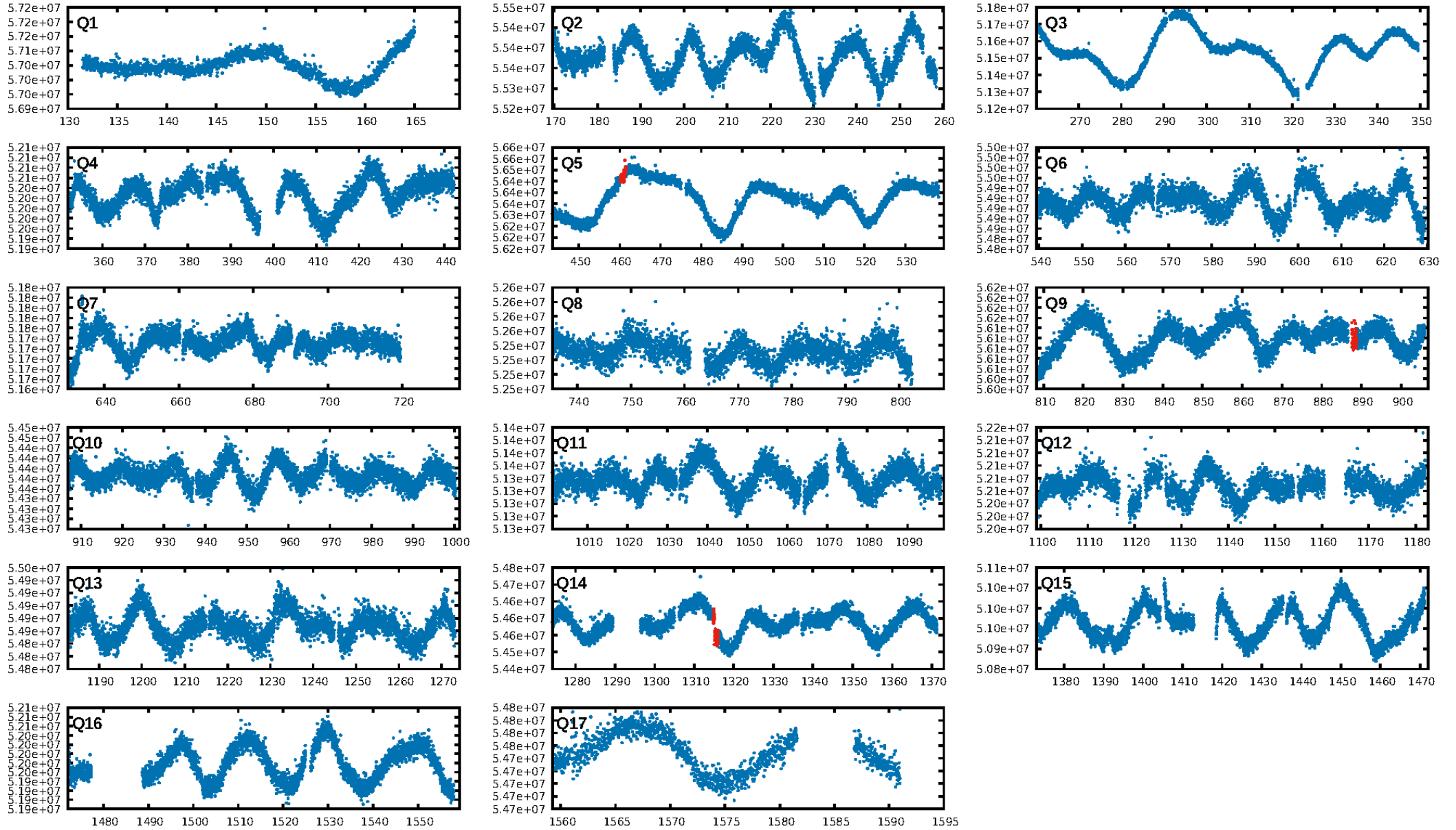
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: 1.1%
ModelChiSquareGof-sig: 99.8%
Bootstrap-pfa: 2.37e-11
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: 1.091
Centroid-sig: 52.9%
Centroid-so: 1.310 arcsec [0.93 σ]
OotOffset-rm: 0.494 arcsec [0.43 σ]
OotOffset-st: 1/0/0/1 [2]
KicOffset-rm: 0.562 arcsec [0.70 σ]
KicOffset-st: 1/0/0/1 [2]
DiffImageQuality-fgm: 0.50 [1/2]
DiffImageOverlap-fno: 1.00 [2/2]

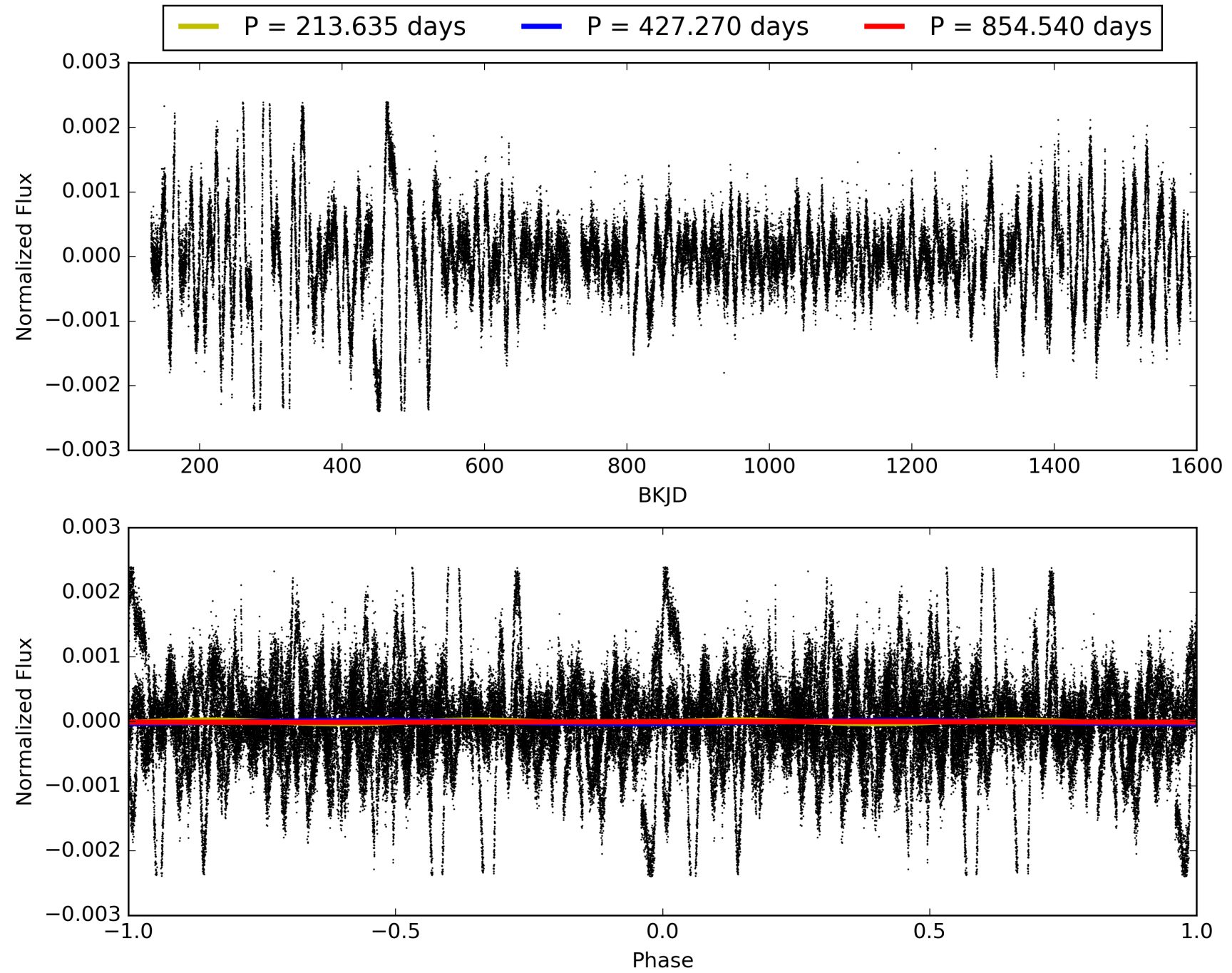
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 21:46:48 Z

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

TCE 008420690-01, PDC Light Curves

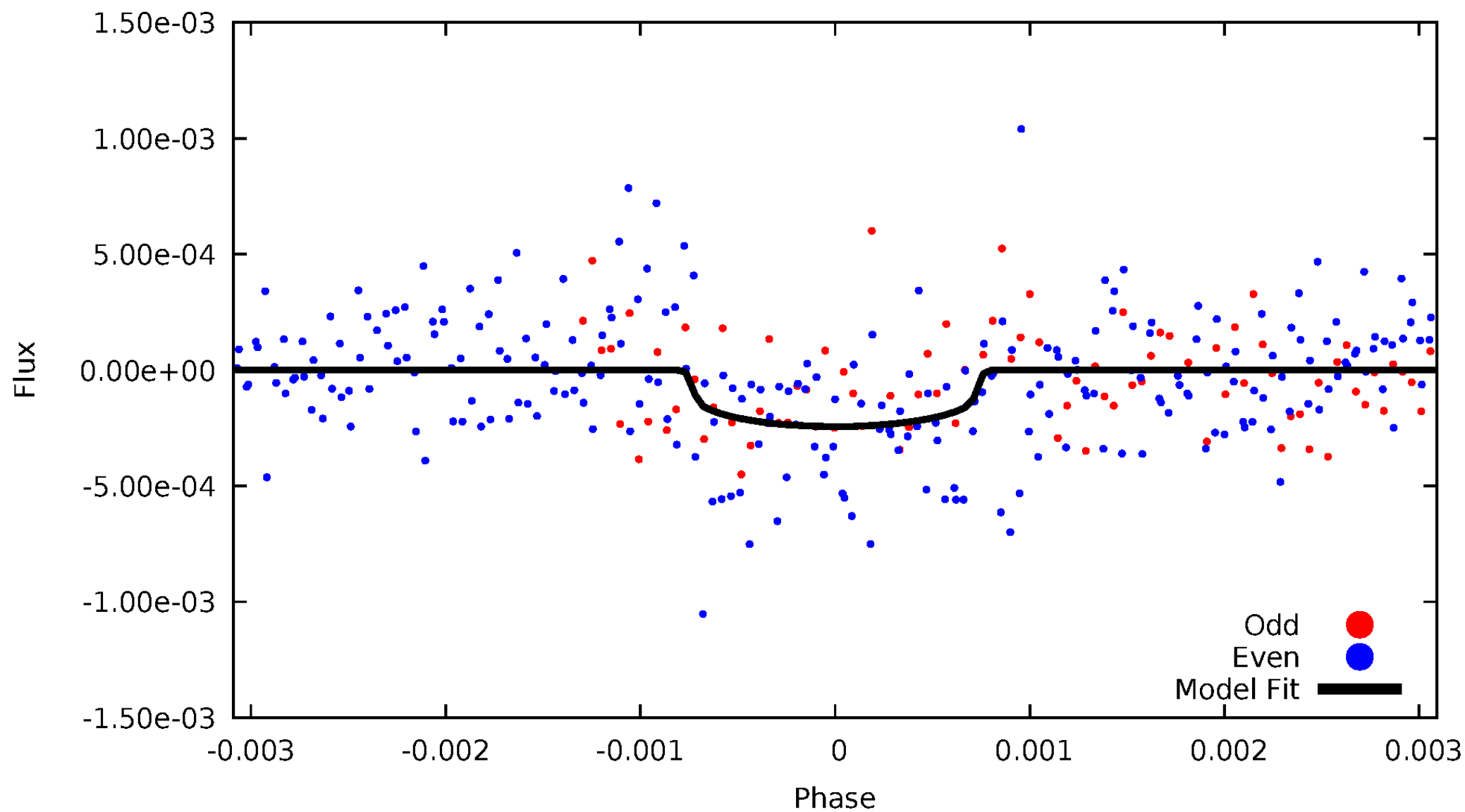


TCE 008420690-01



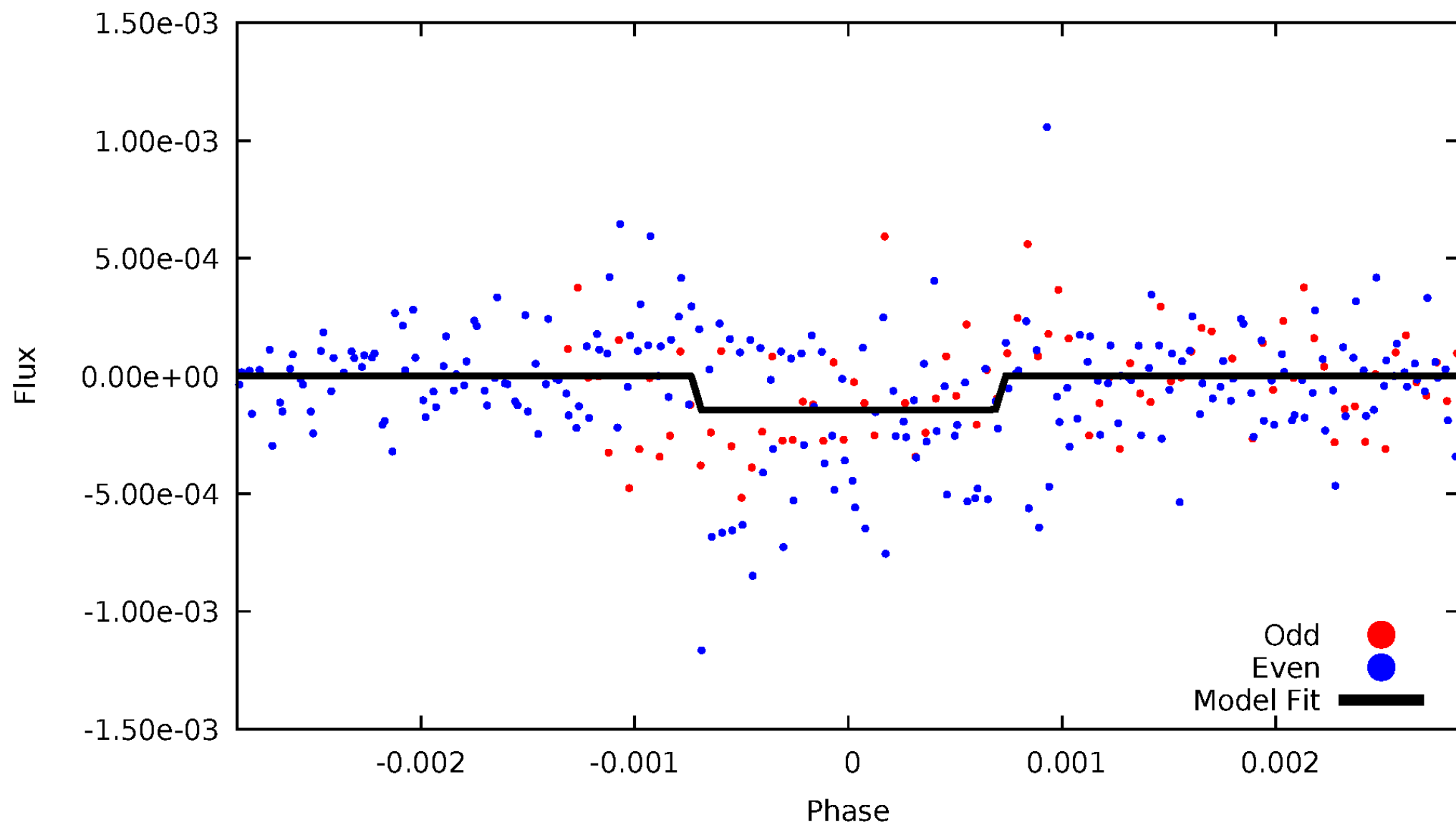
DV Odd/Even

TCE 008420690-01

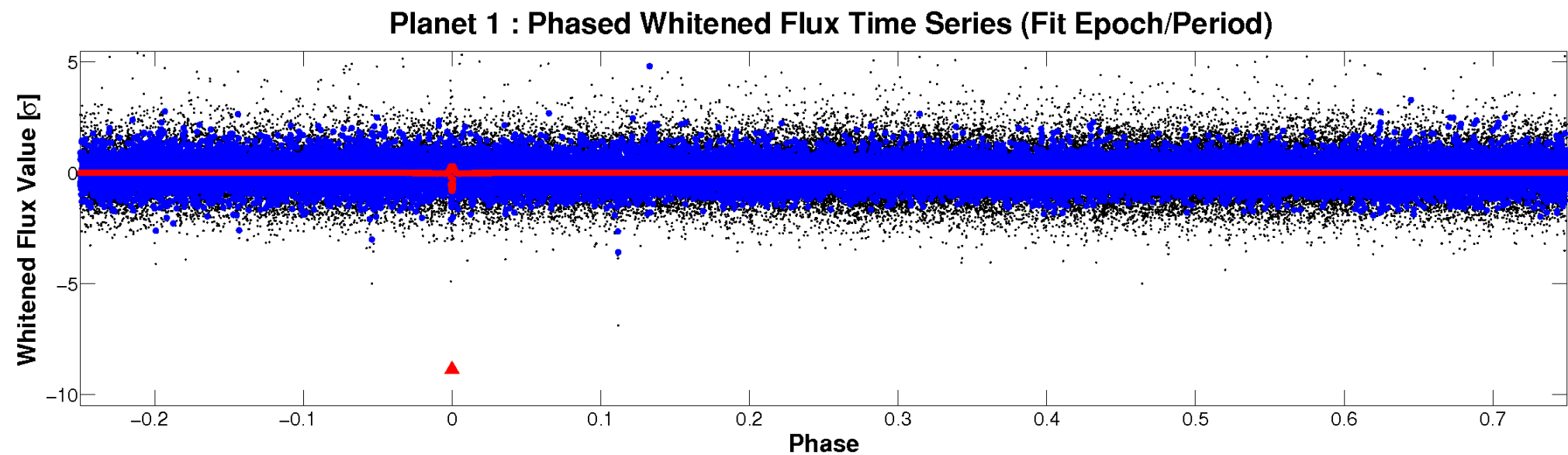
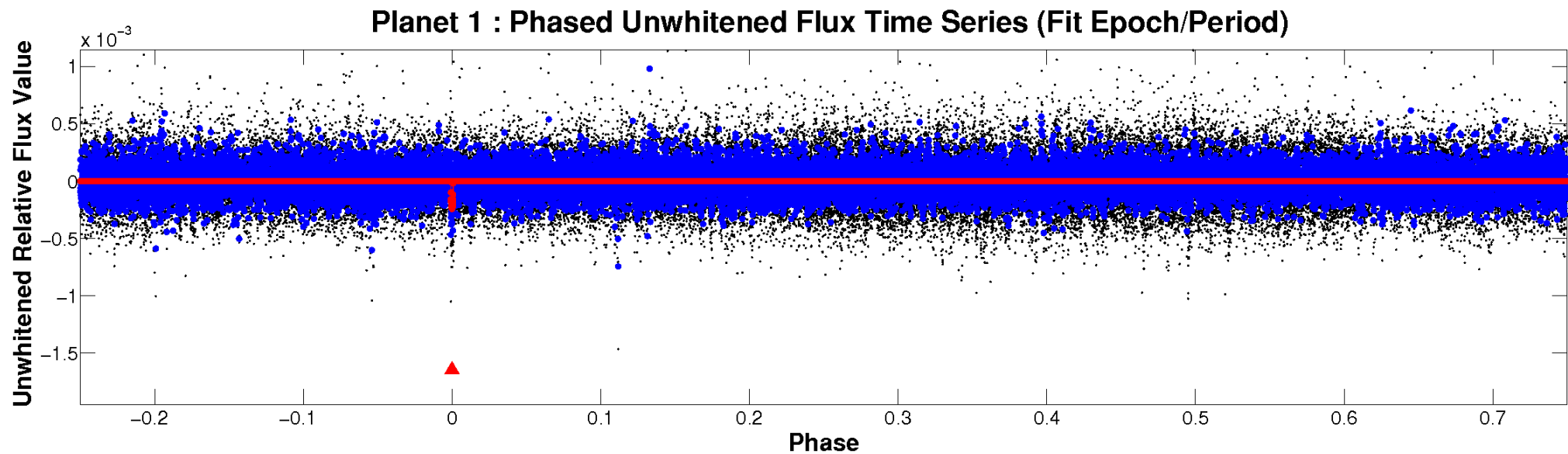


ALT Odd/Even

TCE 008420690-01

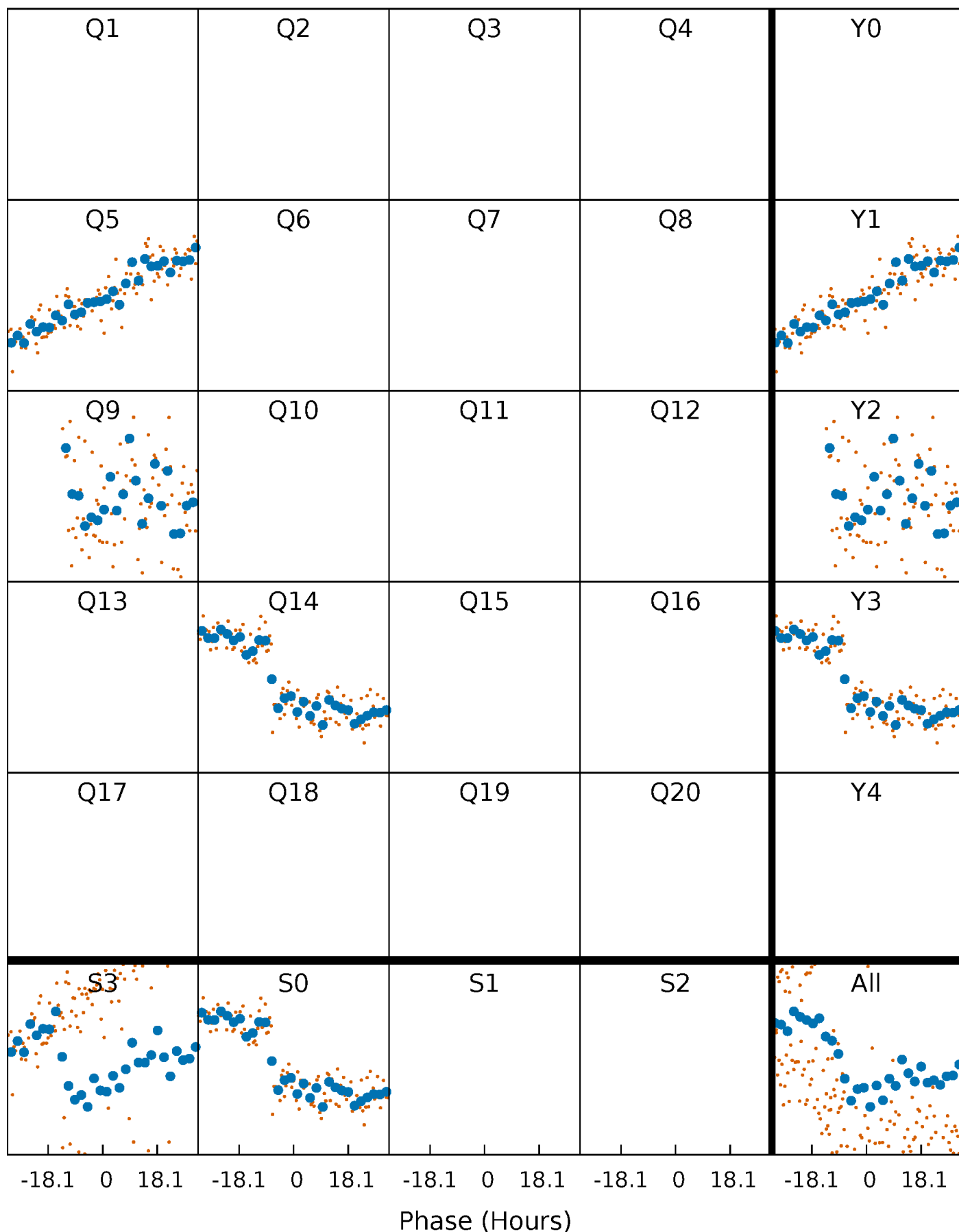


Non-Whitened Vs. Whitened Light Curve



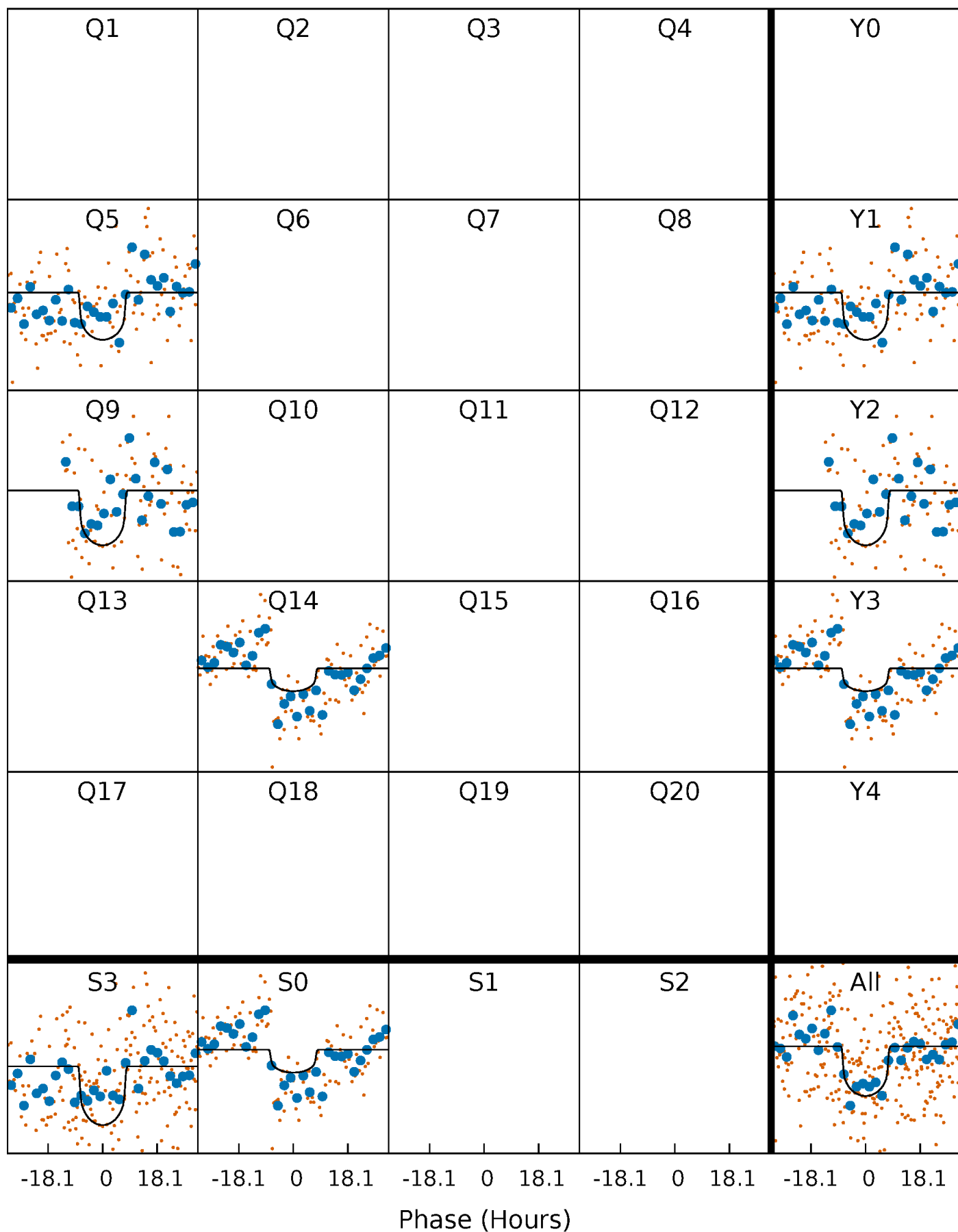
PDC Quarter-Phased Transit Curves

TCE 008420690-01 $P=427.270016$ Days $T_0=460.859861$ (BKJD)



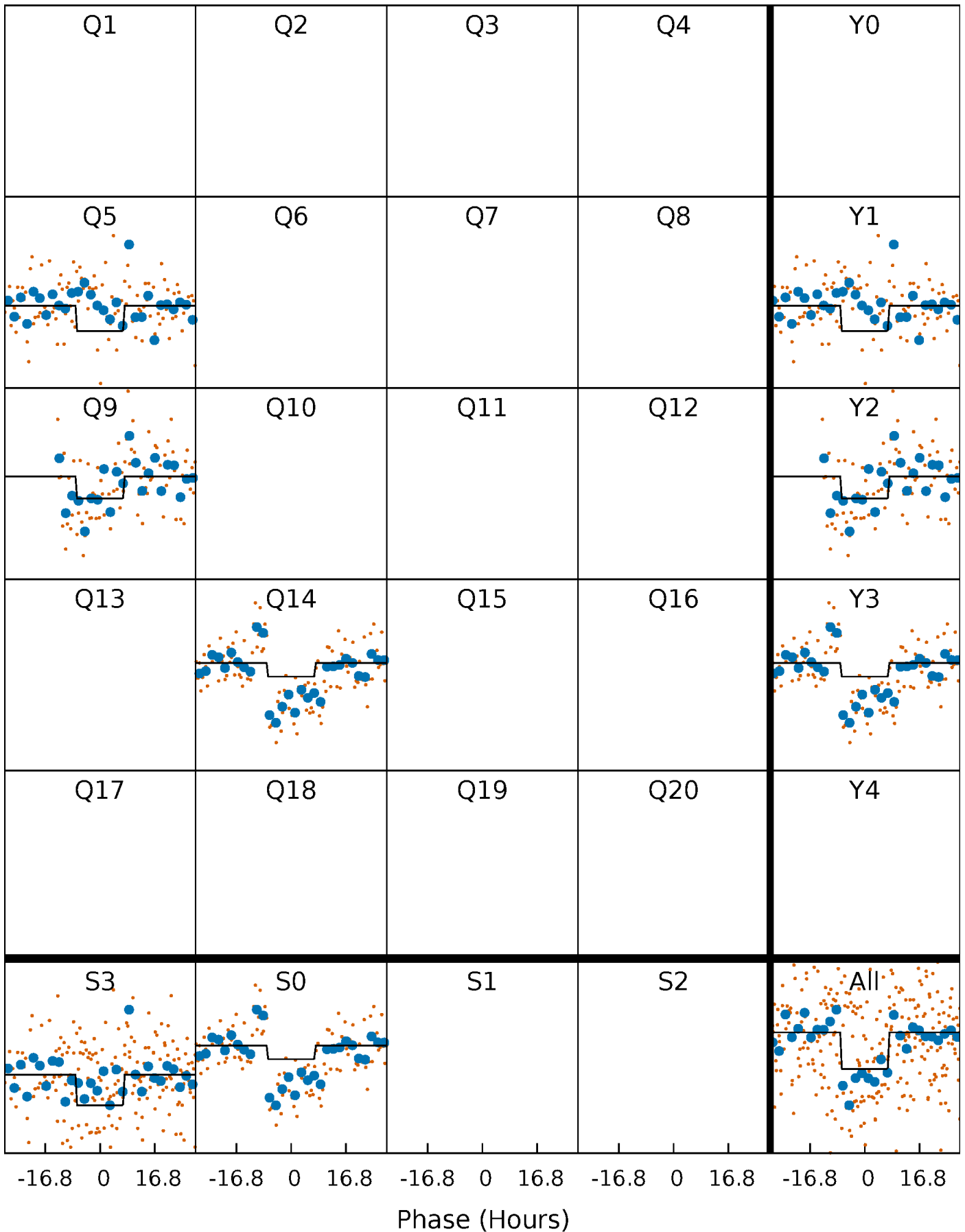
DV Quarter-Phased Transit Curves

TCE 008420690-01 P=427.270016 Days $T_0=460.859861$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

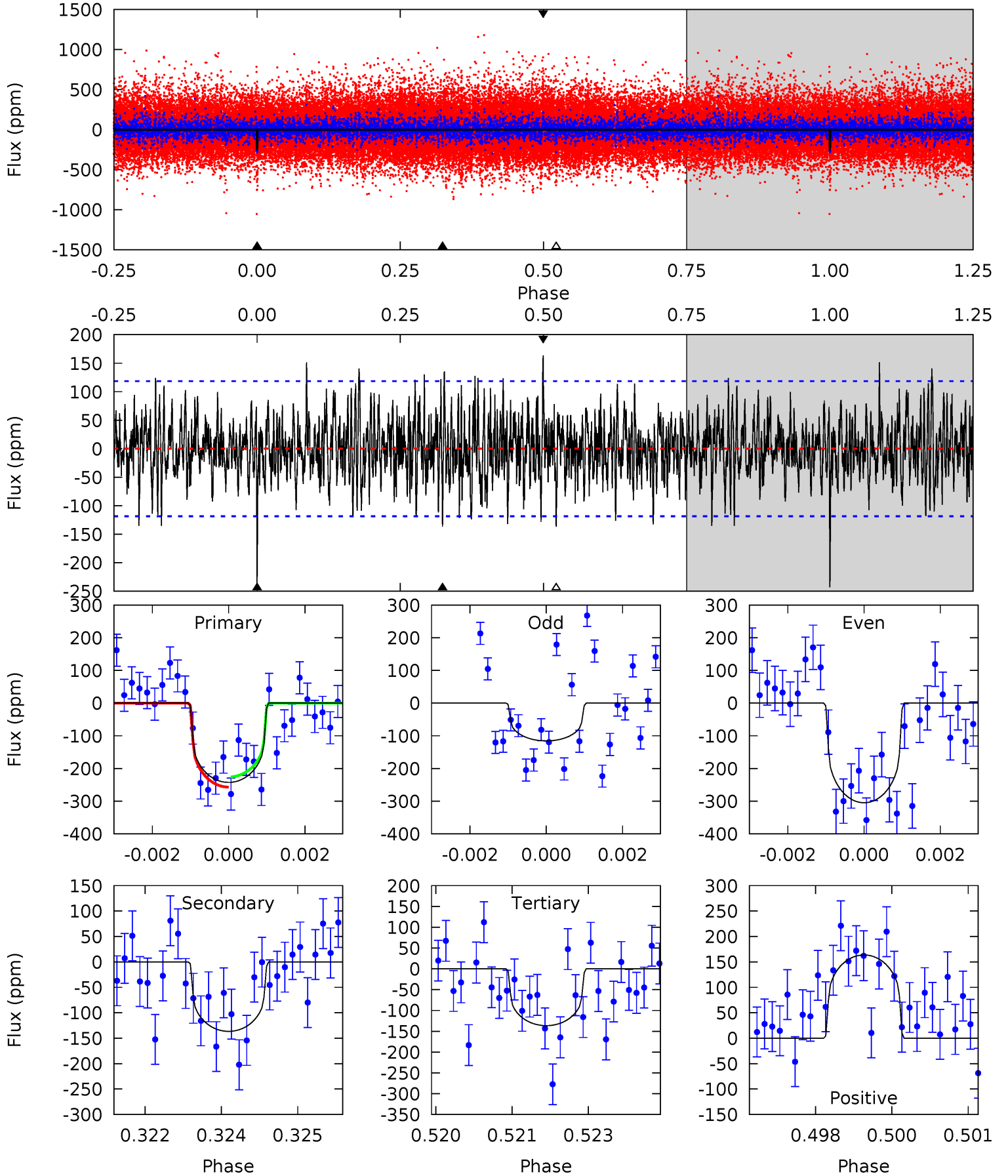
TCE 008420690-01 P=427.265740 Days $T_0=460.871685$ (BKJD)



DV Model-Shift Uniqueness Test

008420690-01, P = 427.270016 Days, E = 33.589845 Days

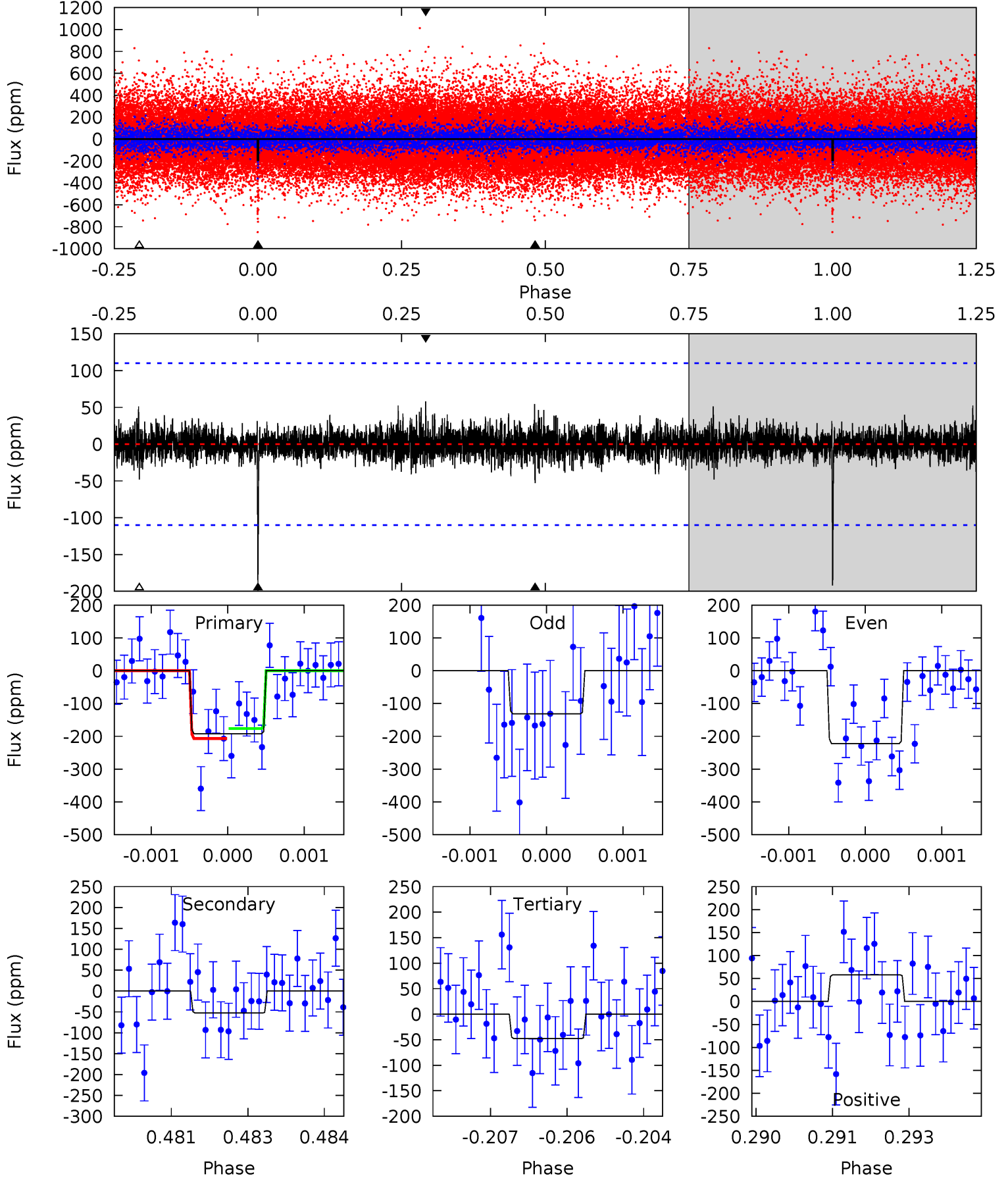
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
11.0	6.19	6.19	7.42	5.37	3.17	2.00	4.81	3.58	0.00	-1.23	4.02	1.77	0.40	0.70



Alt Model-Shift Uniqueness Test

008420690-01, $P = 427.265740$ Days, $E = 33.605945$ Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
9.39	2.58	2.34	2.84	5.38	3.18	0.59	7.05	6.55	0.24	-0.26	2.07	1.52	0.23	0.75



Stellar Parameters For KIC 008420690

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	4879^{+145}_{-145}	$4.532^{+0.072}_{-0.044}$	$0.060^{+0.250}_{-0.300}$	$0.780^{+0.050}_{-0.075}$	$0.753^{+0.079}_{-0.054}$	$2.239^{+0.675}_{-0.319}$
	+3%/-3%	+2%/-1%	+417%/-500%	+6%/-10%	+10%/-7%	+30%/-14%
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 008420690-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-137 ± 22	$1.37^{+0.45}_{-0.47}$	262^{+9}_{-9}	4281^{+780}_{-450}	41227^{+54609}_{-18569}
Alt.	-53 ± 20	$1.02^{+0.48}_{-0.43}$	263^{+9}_{-10}	3998^{+1054}_{-604}	28116^{+63058}_{-17490}

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

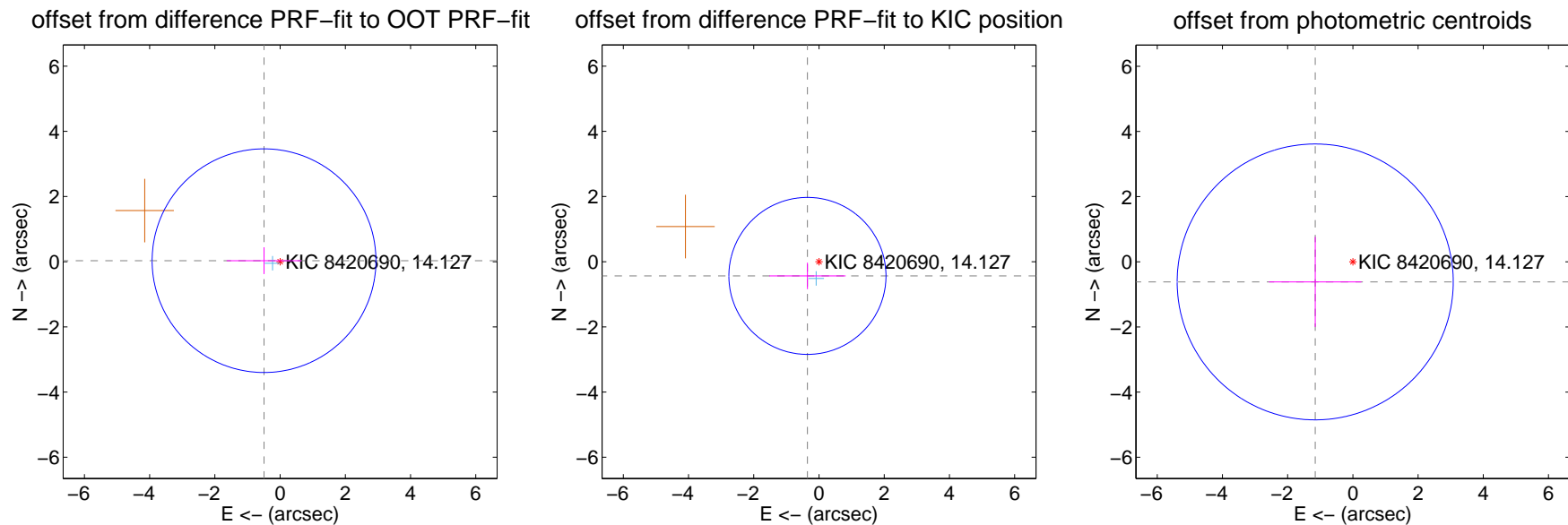
DV Centroid Data

Supplemental centroid analysis for 008420690-01. Kepler magnitude: 14.13. Transit SNR 6.82

There are 1 quarters with good PRF difference image offsets

The direct PRF centroid is offset from the target star catalog position by about 0.49 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.494 ± 1.144	0.43	0.493 ± 1.146	0.031 ± 0.412
PRF-fit source offset from KIC position	0.562 ± 0.803	0.70	0.354 ± 1.170	-0.436 ± 0.406
photometric centroid source offset	1.31 ± 1.41	0.93	1.15 ± 1.42	-0.62 ± 1.38

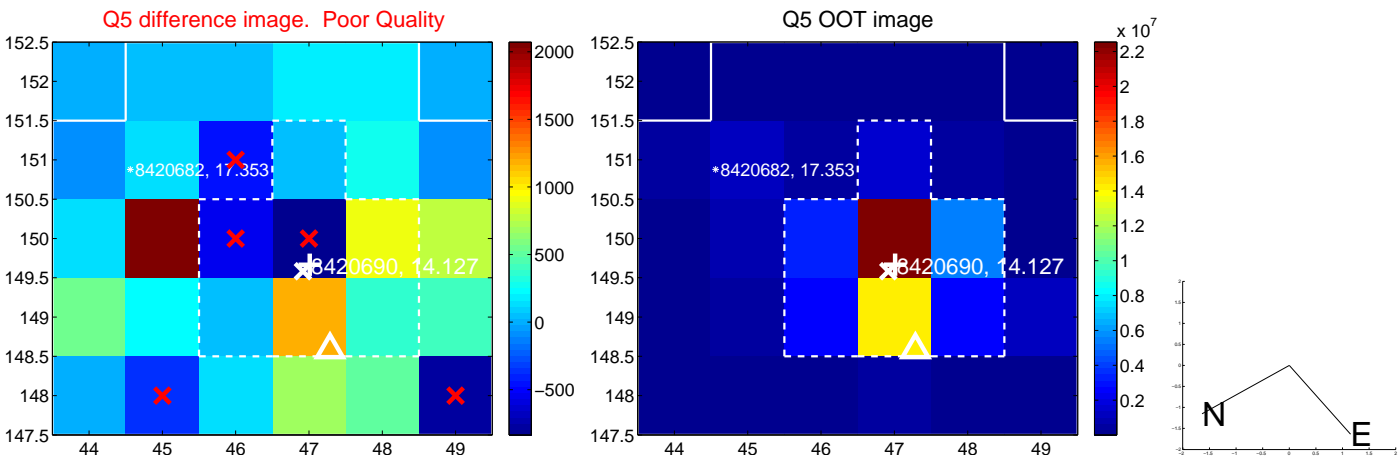


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

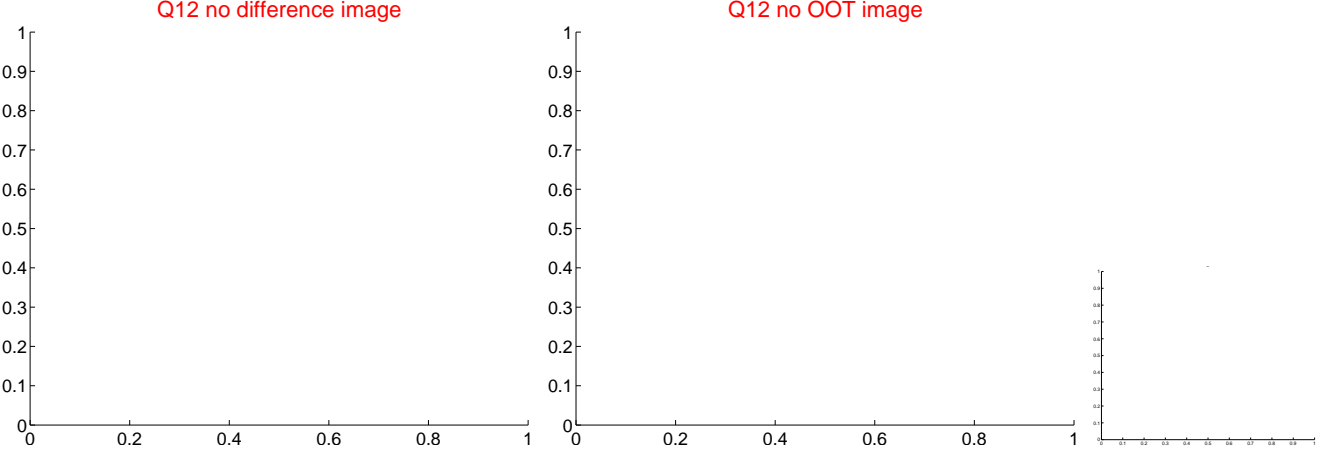
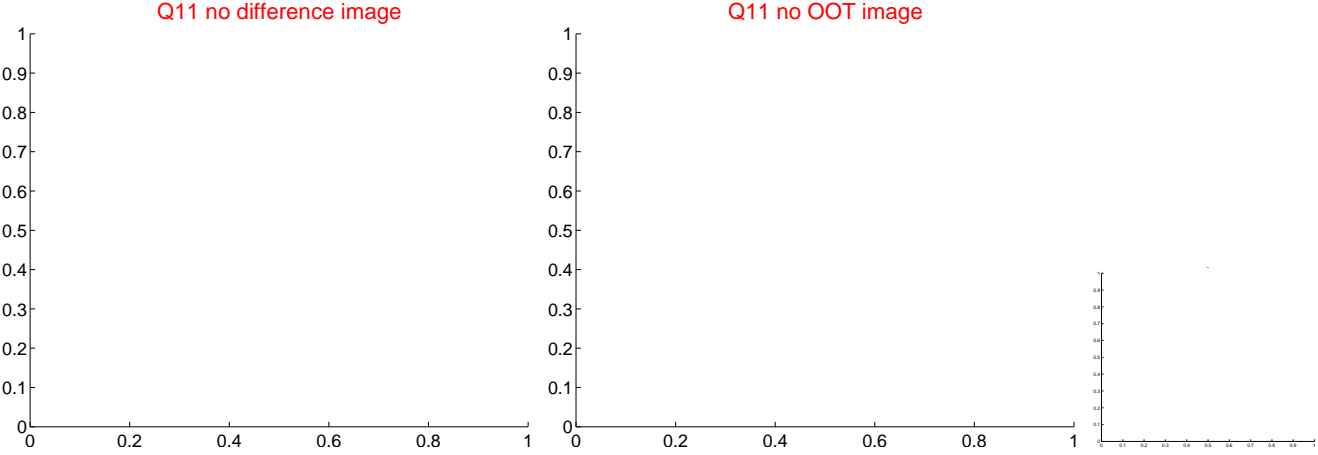
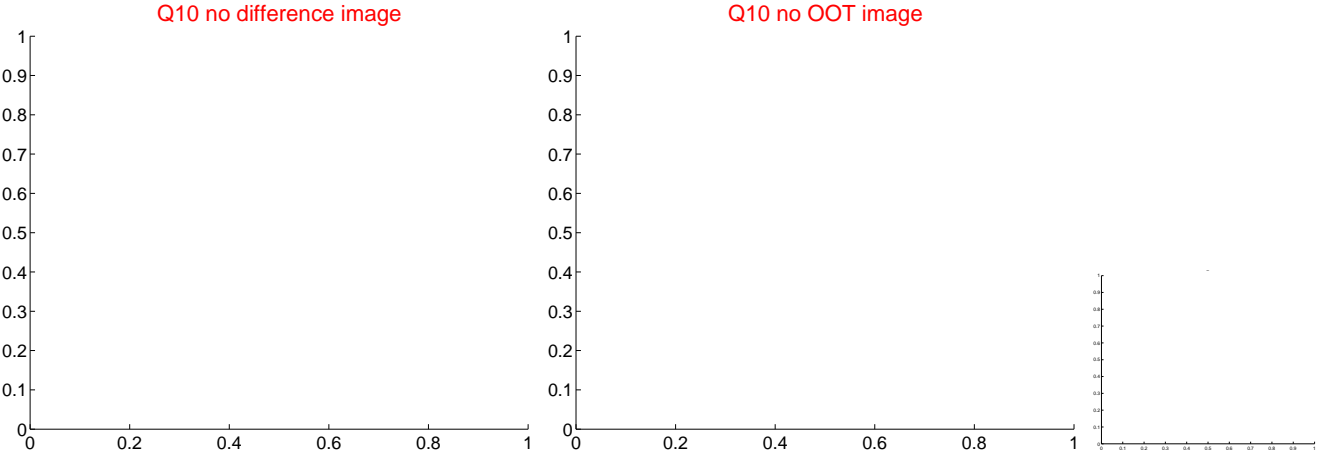
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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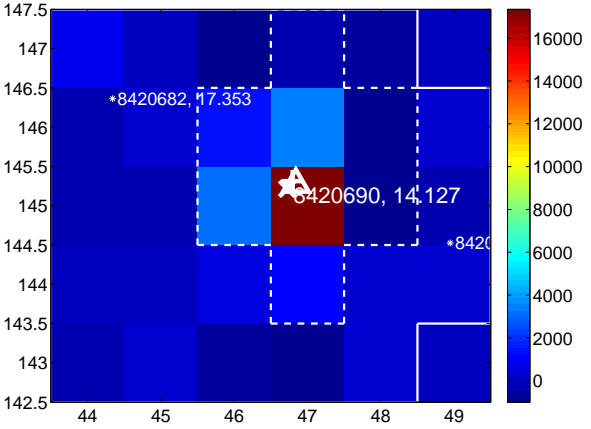
Q13 no difference image



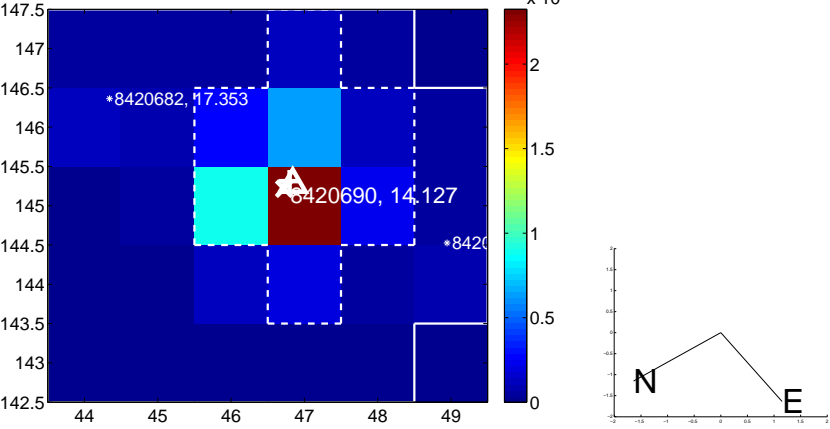
Q13 no OOT image



Q14 difference image



Q14 OOT image



Q15 no difference image



Q15 no OOT image



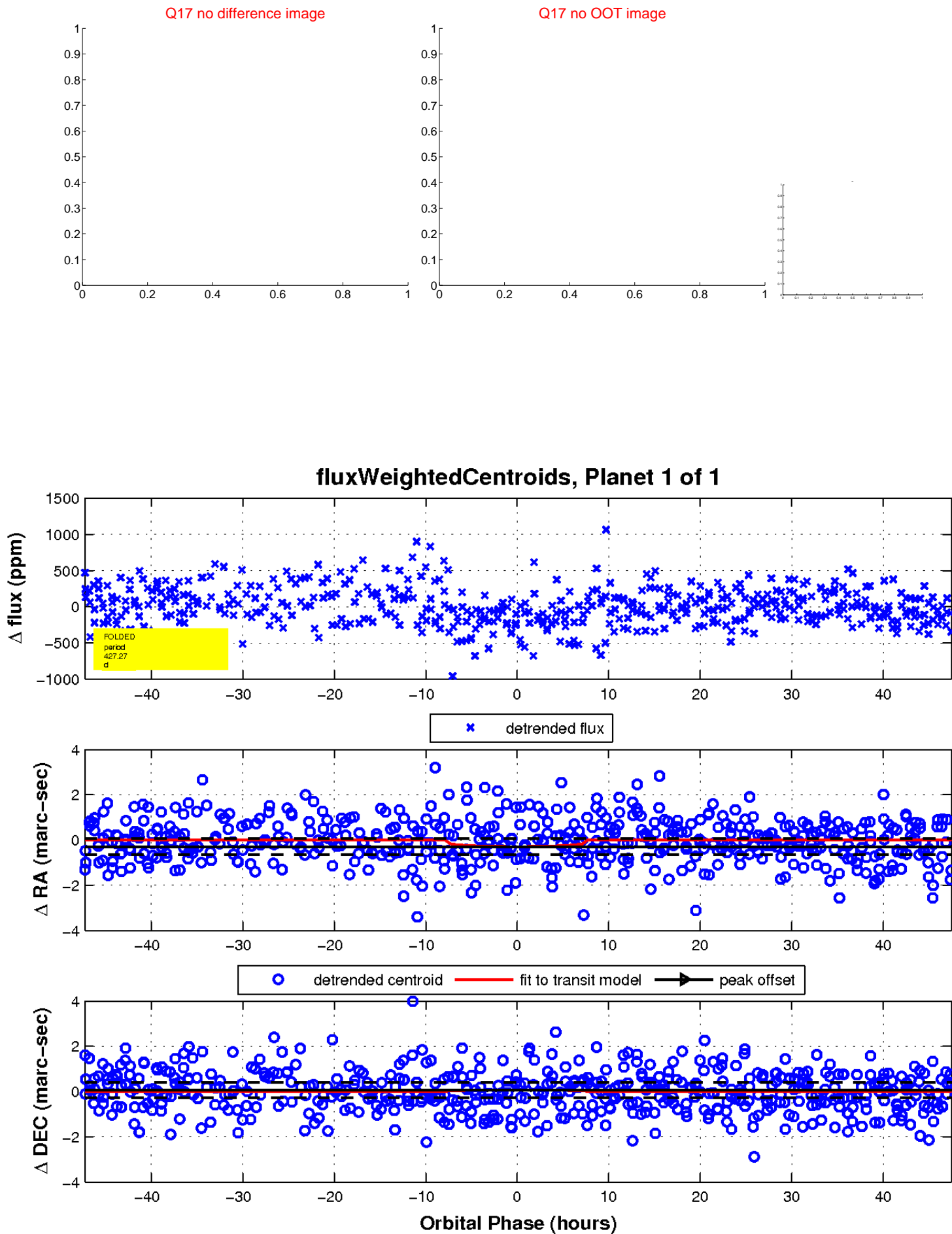
Q16 no difference image



Q16 no OOT image



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



UKIRT Image

Declination

