

KIC 008221959

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})
008221959-01	OBS	No	381.986276	415.272042	916.6	4.430	7.7	6.6	0.57	4340	2.03	0.14

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008221959-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—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.

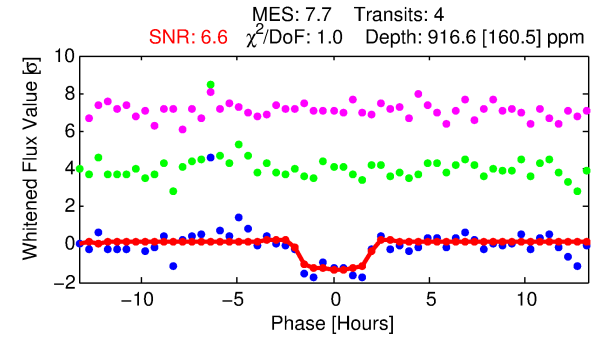
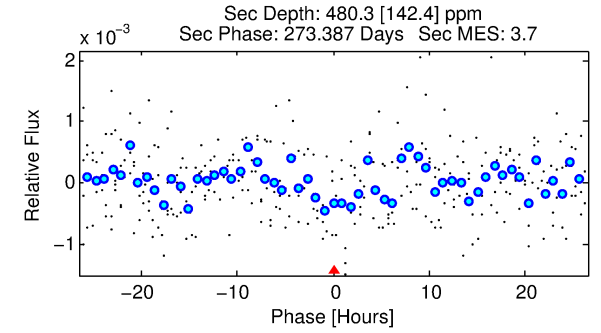
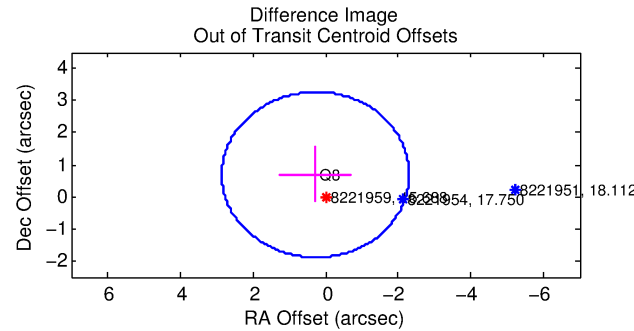
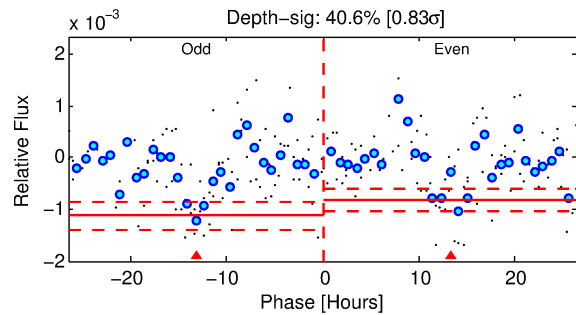
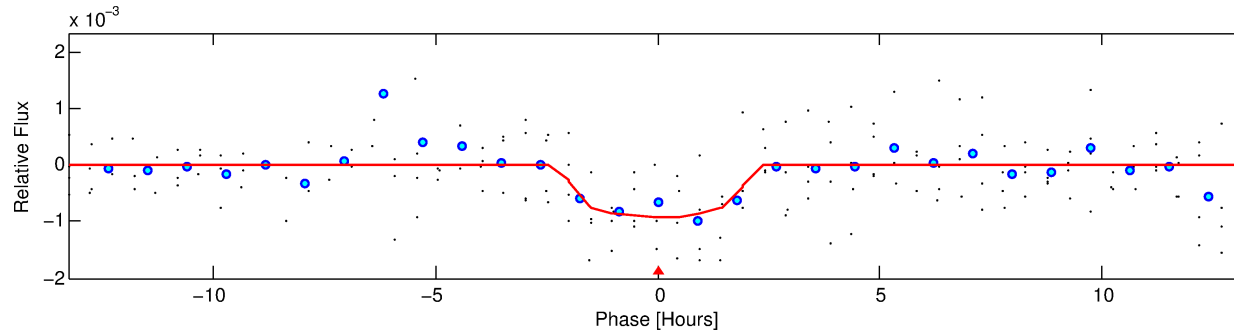
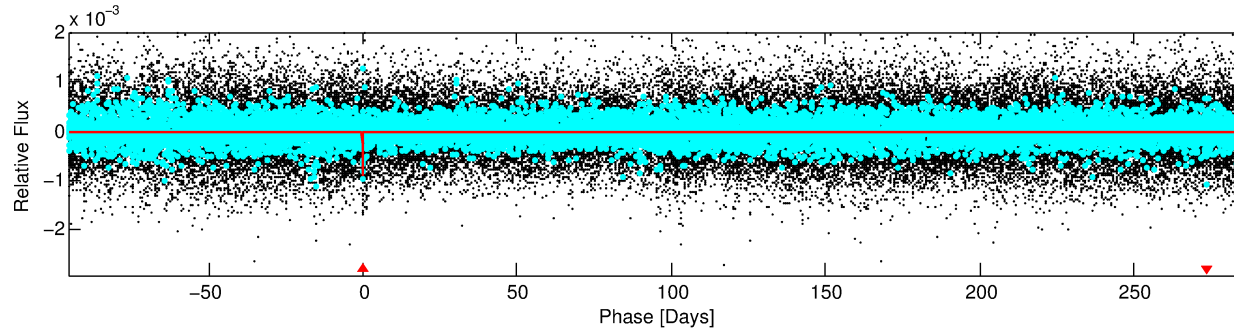
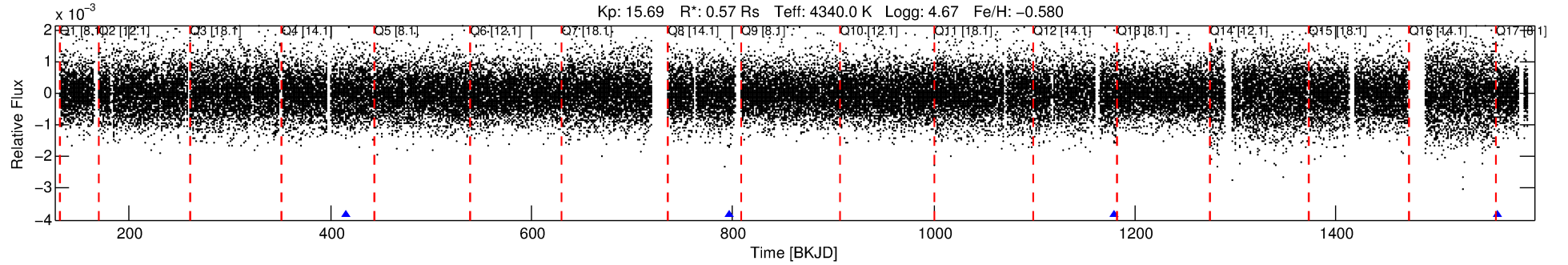
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 008221959-01

No Significant Match Found

DV One-Page Summary

KIC: 8221959 Candidate: 1 of 1 Period: 381.986 d



DV Fit Results:

Period = 381.98628 [0.00612] d
Epoch = 415.2720 [0.0122] BKJD
Rp/R* = 0.0325 [0.0494]
a/R* = 371.90 [2192.46]
b = 0.86 [1.78]
Seff = 0.14 [0.02]
Teq = 157 [6] K
Rp = 2.03 [3.09] Re
a = 0.8485 [0.0674] AU
Ag = 46174.84 [140973.34] [0.33 σ]
Teffp = 3563 [2720] K [1.25 σ]

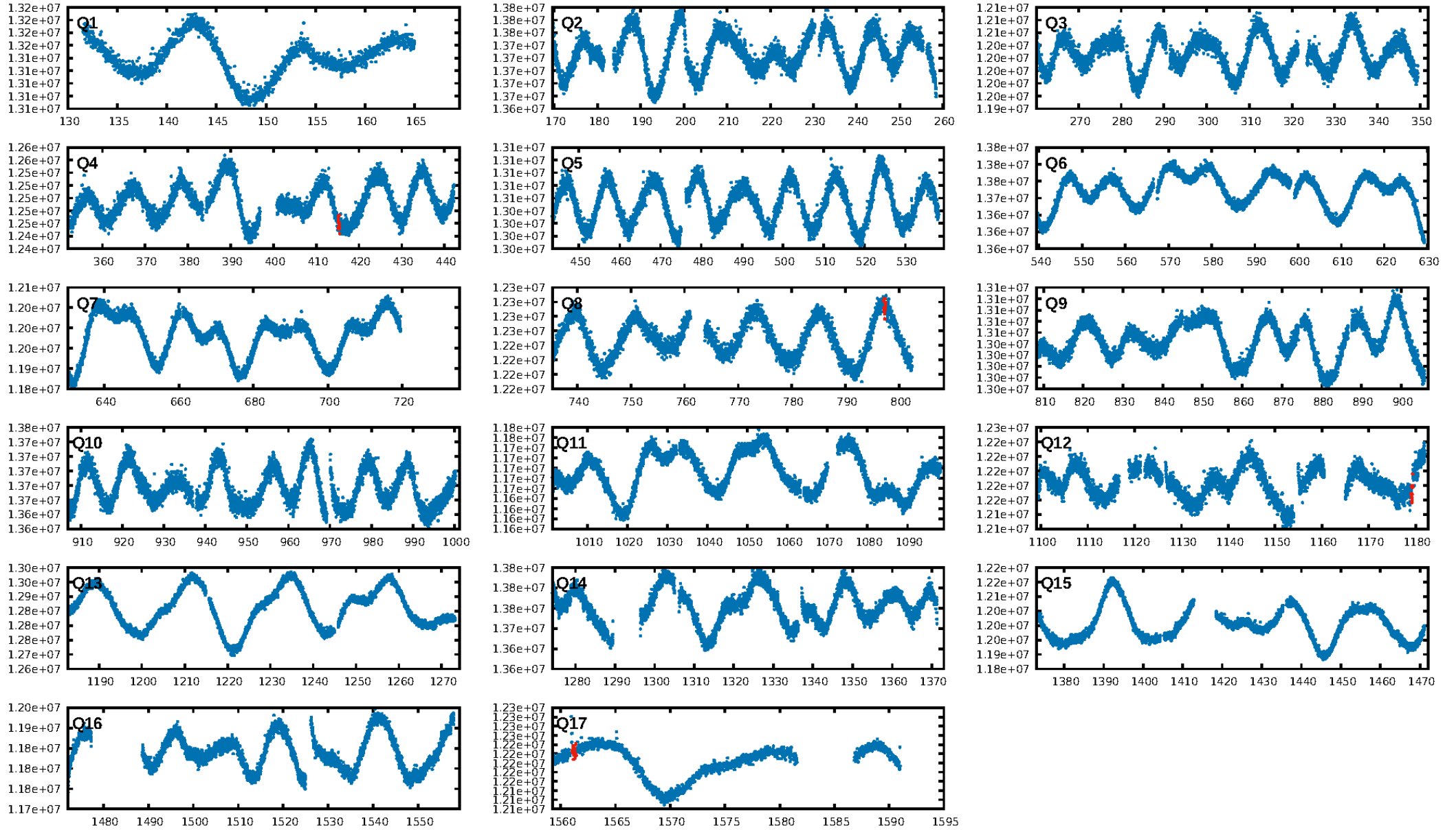
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: 16.9%
ModelChiSquareGof-sig: 96.4%
Bootstrap-pfa: 2.58e-13
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: 3.526
Centroid-sig: 25.8%
Centroid-so: 1.471 arcsec [0.99 σ]
OotOffset-rm: 0.739 arcsec [0.86 σ]
KicOffset-rm: 0.879 arcsec [1.04 σ]
OotOffset-st: 0/0/1/0 [1]
KicOffset-st: 0/0/1/0 [1]
DiffImageQuality-fgm: 1.00 [1/1]
DiffImageOverlap-fno: 1.00 [2/2]

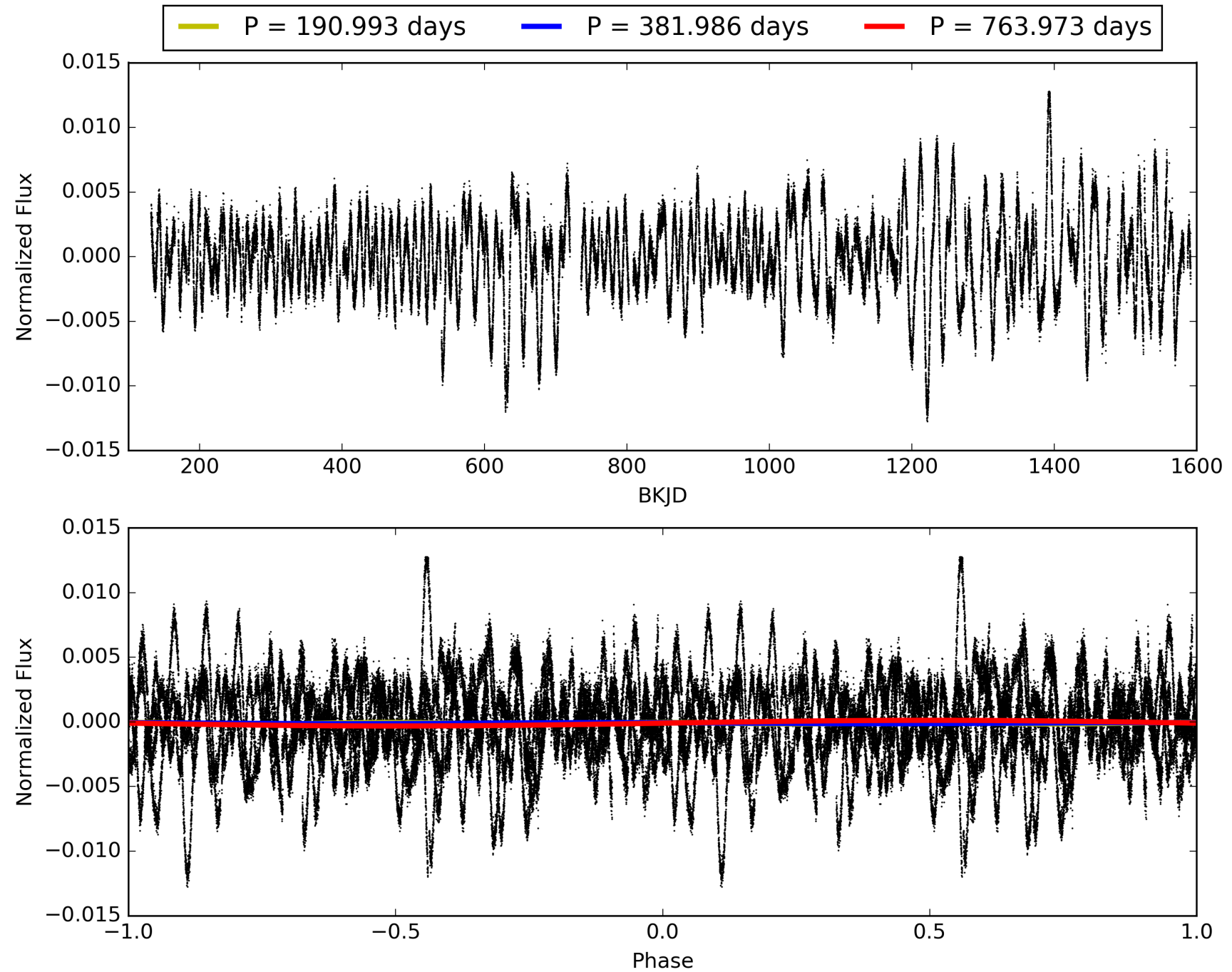
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 00:51:31 Z

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

TCE 008221959-01, PDC Light Curves

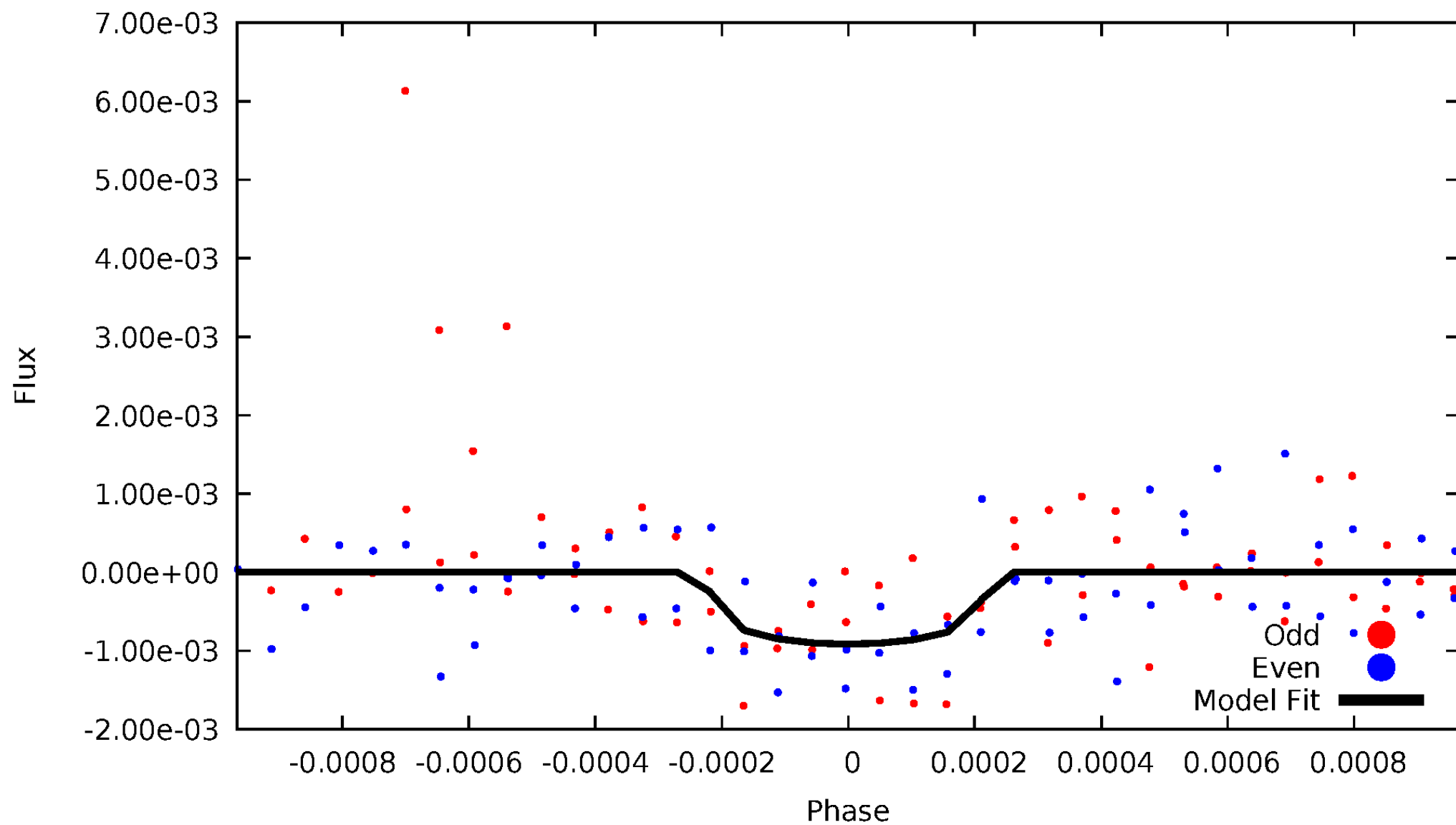


TCE 008221959-01



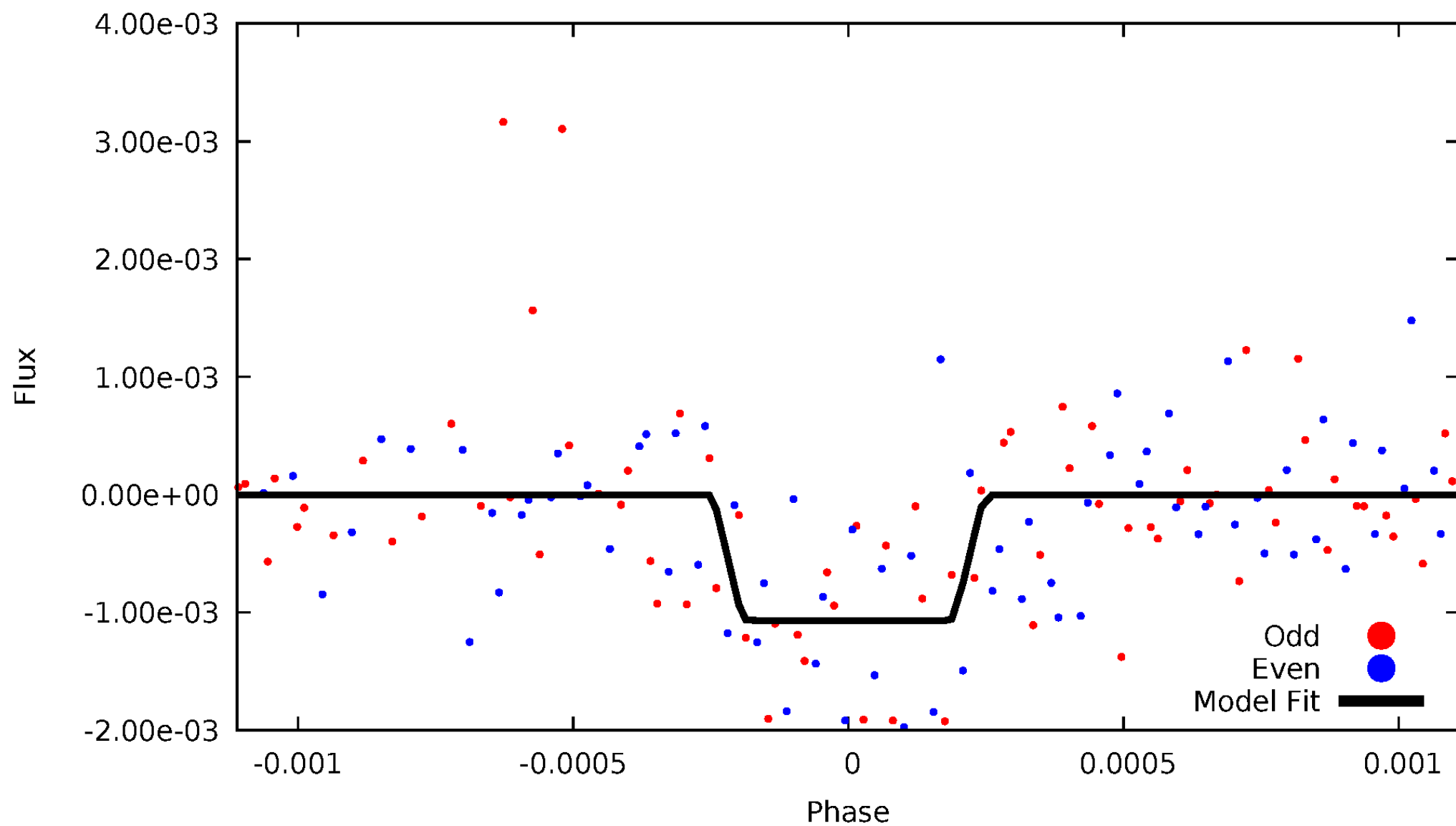
DV Odd/Even

TCE 008221959-01



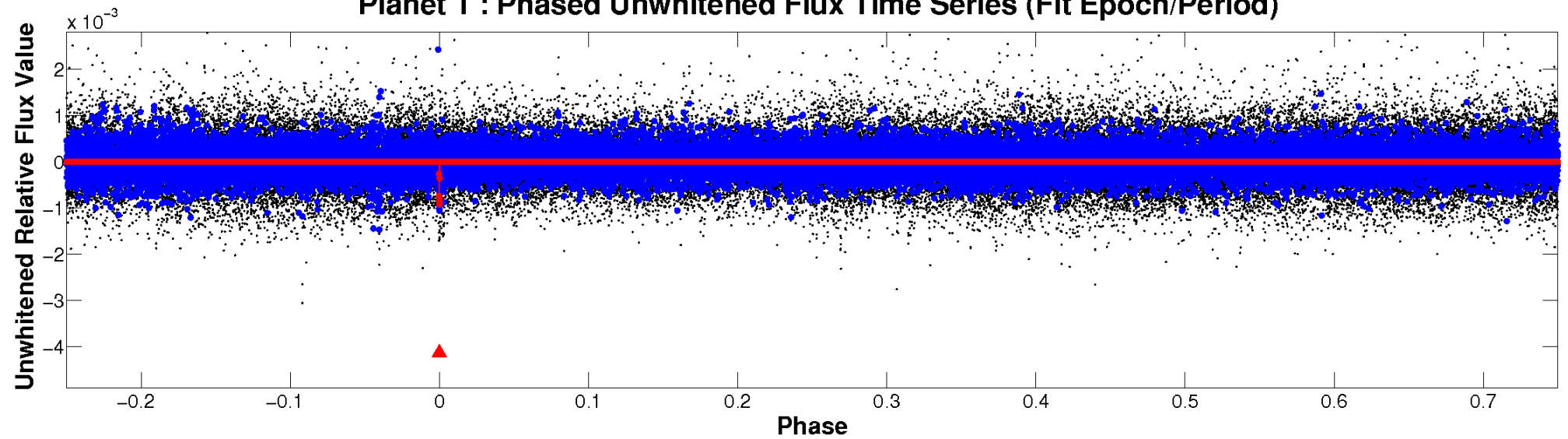
ALT Odd/Even

TCE 008221959-01

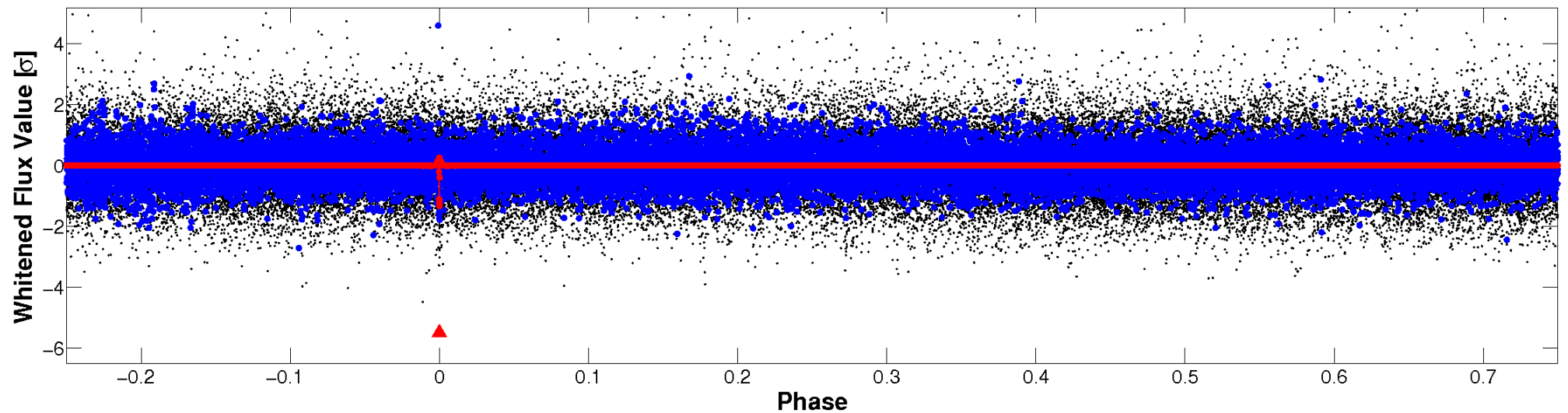


Non-Whitened Vs. Whitened Light Curve

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

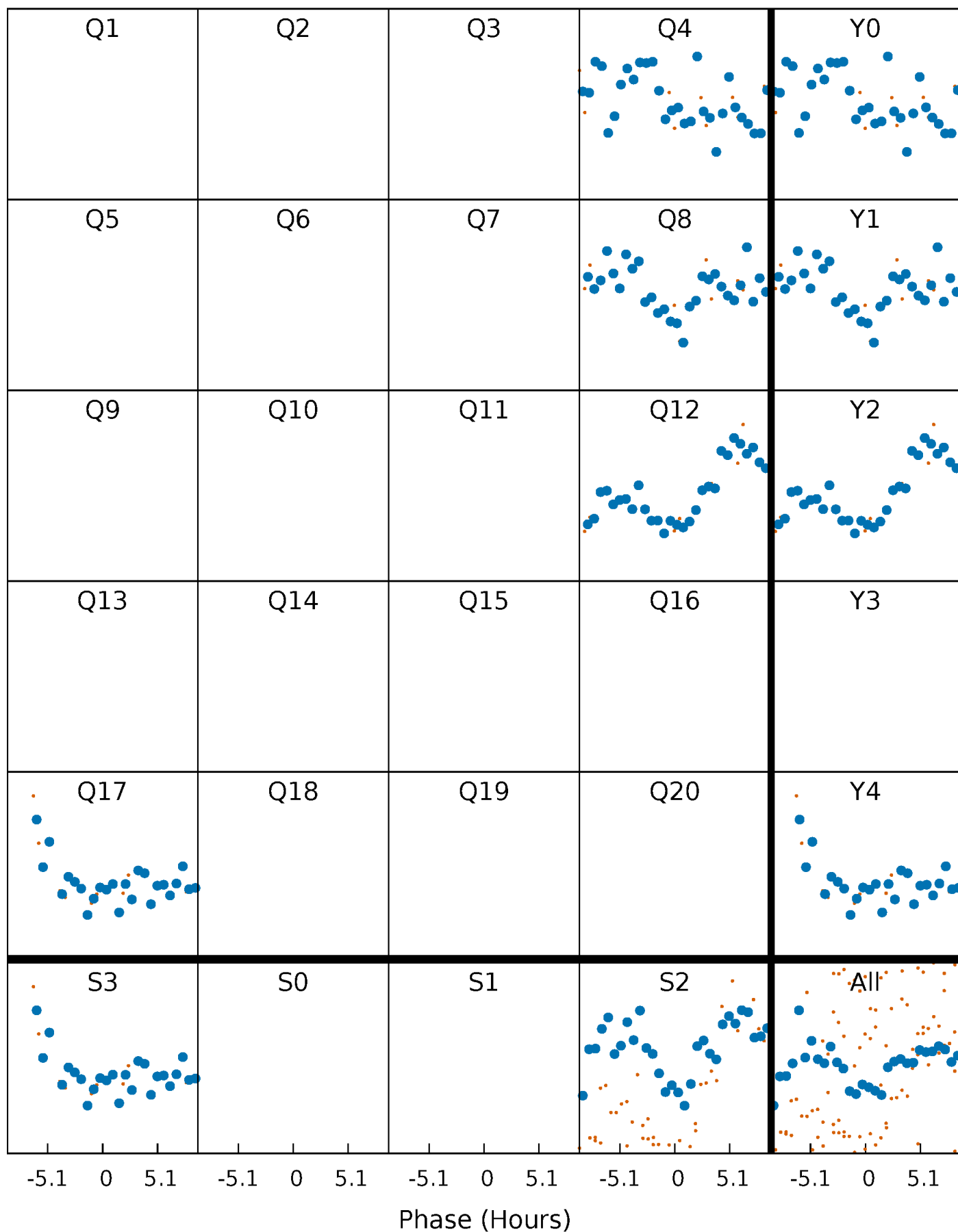


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



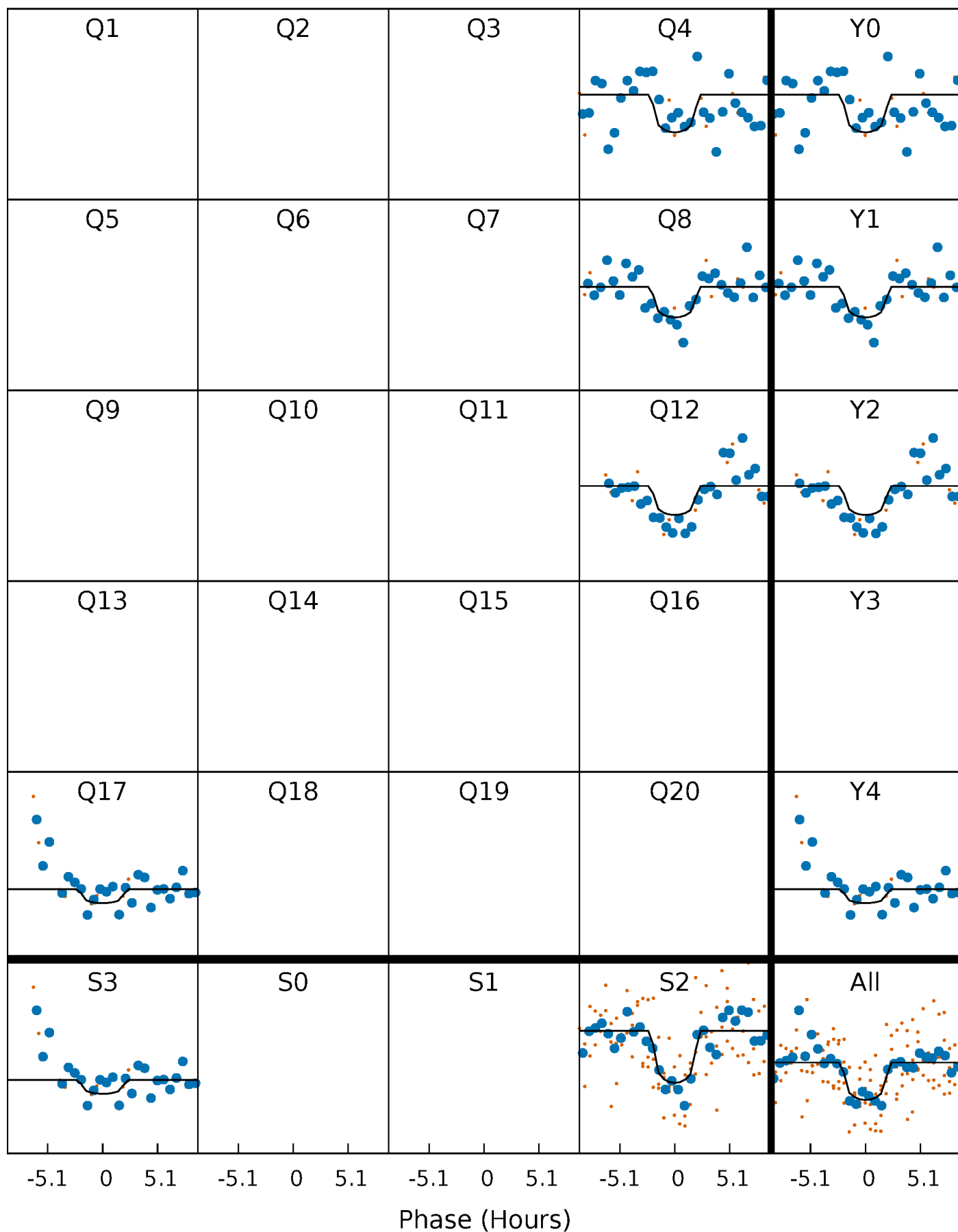
PDC Quarter-Phased Transit Curves

TCE 008221959-01 P=381.986276 Days $T_0=415.272042$ (BKJD)



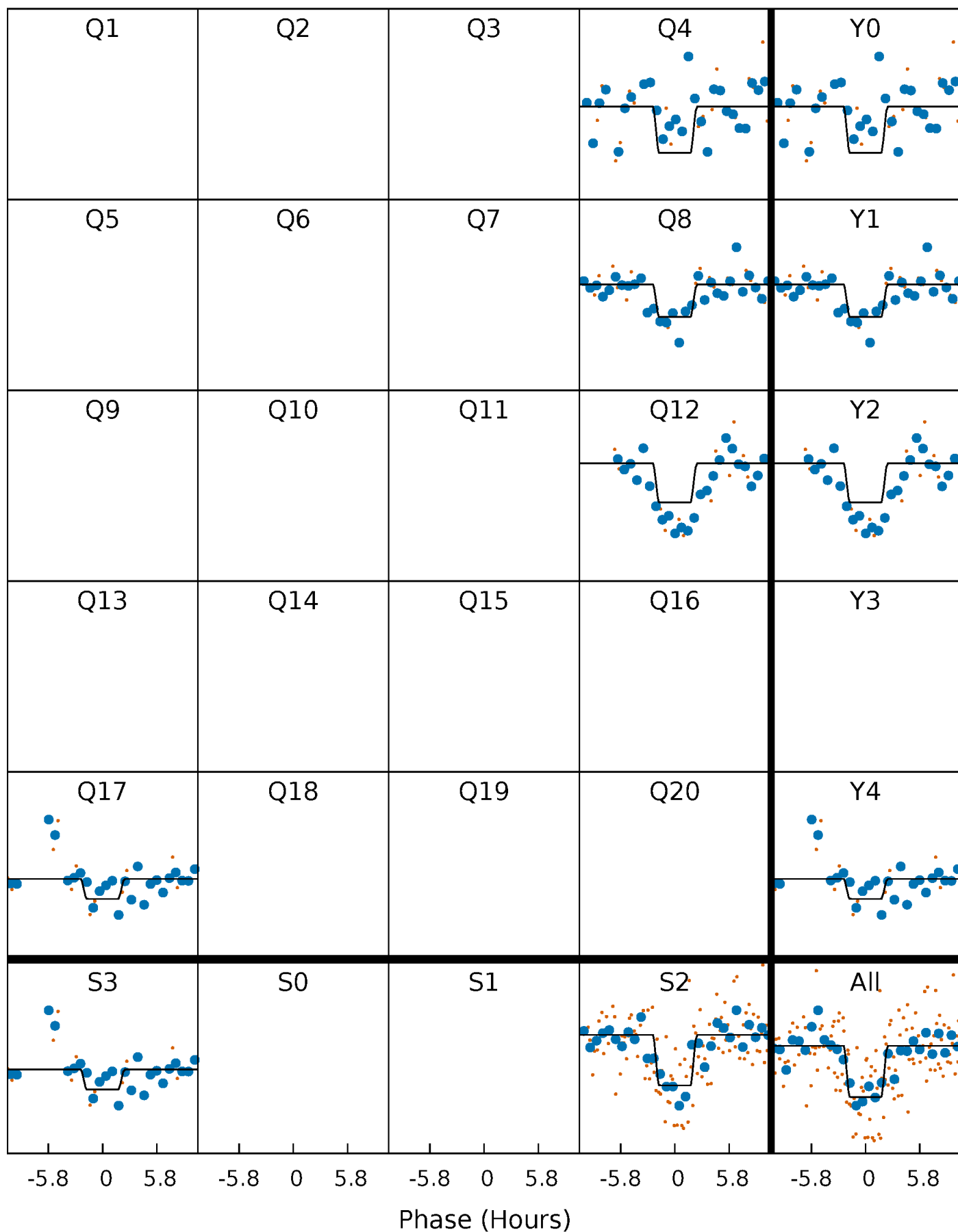
DV Quarter-Phased Transit Curves

TCE 008221959-01 $P=381.986276$ Days $T_0=415.272042$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

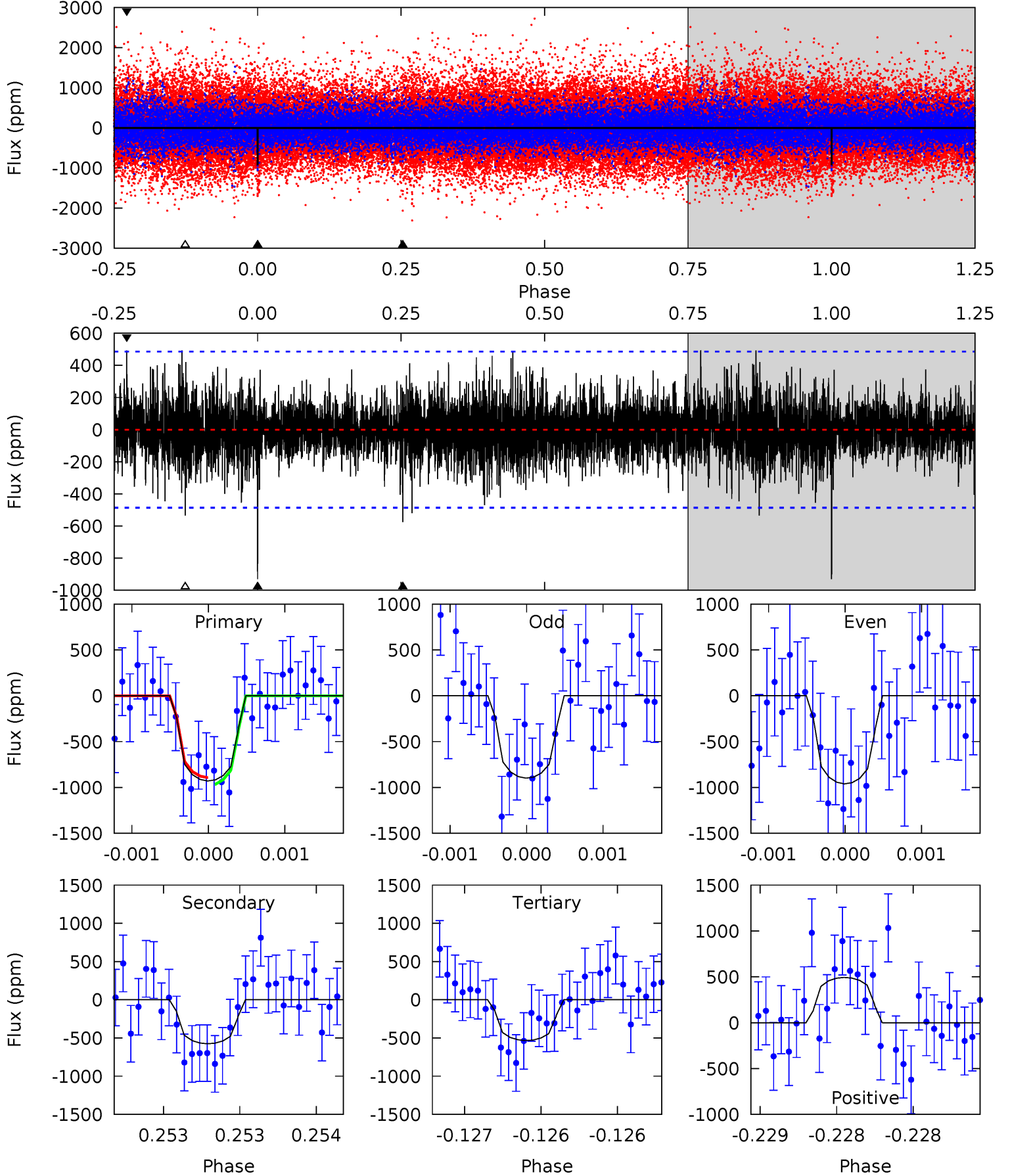
TCE 008221959-01 P=381.978159 Days $T_0=415.288684$ (BKJD)



DV Model-Shift Uniqueness Test

008221959-01, $P = 381.986276$ Days, $E = 33.285766$ Days

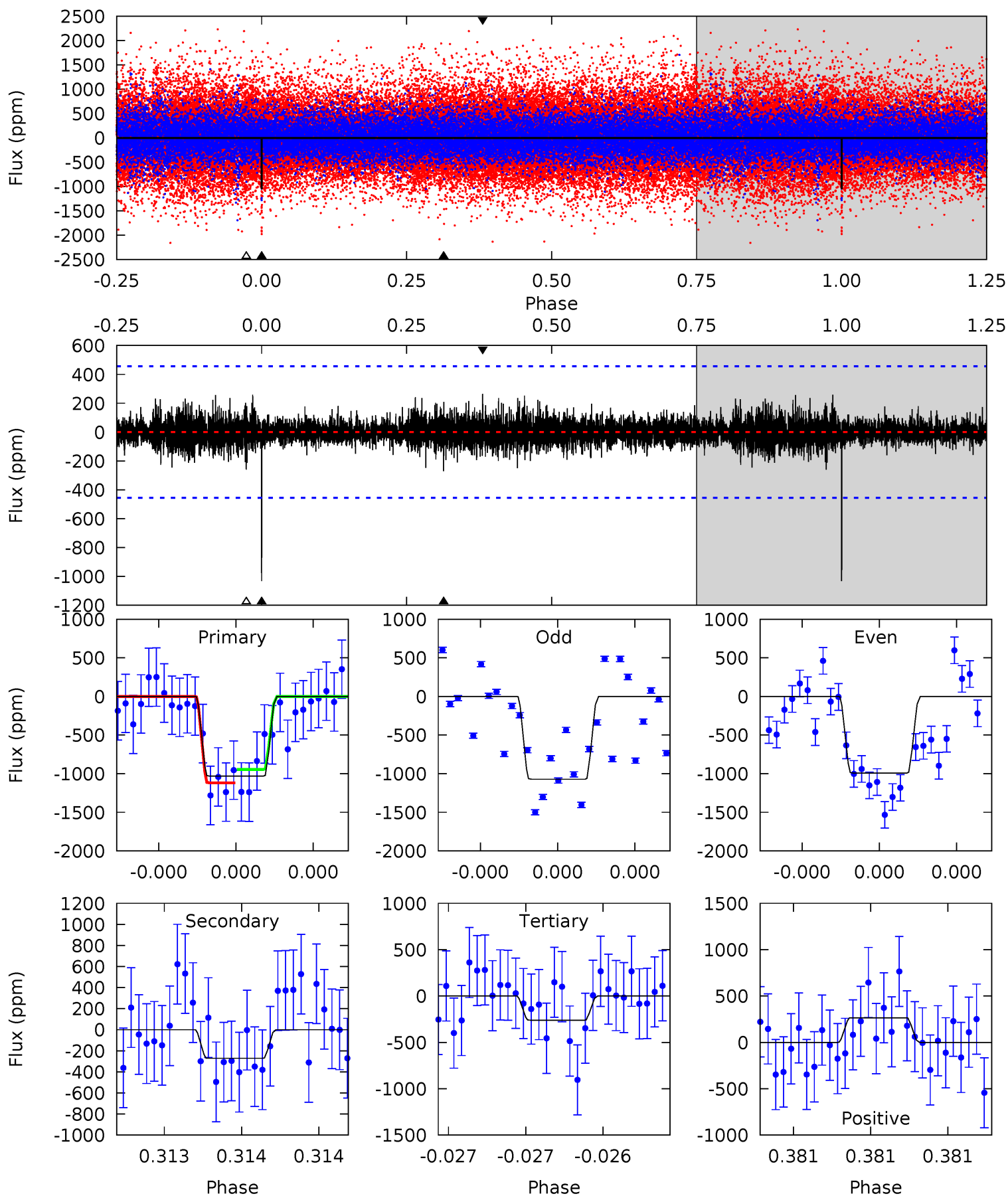
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
10.6	6.58	6.10	5.64	5.56	3.46	1.43	4.53	4.99	0.48	0.94	0.35	1.03	0.35	0.42



Alt Model-Shift Uniqueness Test

008221959-01, $P = 381.978159$ Days, $E = 33.310525$ Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
12.6	3.31	3.19	3.25	5.58	3.48	0.74	9.45	9.39	0.12	0.06	0.49	0.96	0.20	1.06



Stellar Parameters For KIC 008221959

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	M (M_{\odot})	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	4340^{+131}_{-131}	$4.670^{+0.059}_{-0.027}$	$-0.580^{+0.300}_{-0.300}$	$0.572^{+0.045}_{-0.056}$	$0.557^{+0.058}_{-0.042}$	$4.203^{+1.139}_{-0.509}$
	+3%/-3%	+1%/-1%	+52%/-52%	+8%/-10%	+10%/-8%	+27%/-12%
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 008221959-01 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-576 ± 87	$3.13^{+2.65}_{-2.08}$	218^{+7}_{-8}	3382^{+1562}_{-558}	$23888^{+177724}_{-17067}$
Alt.	-270 ± 82	$2.83^{+2.72}_{-1.86}$	218^{+8}_{-7}	3077^{+1372}_{-507}	$12875^{+101952}_{-9539}$

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 $A_{obs} \gg 1.0$

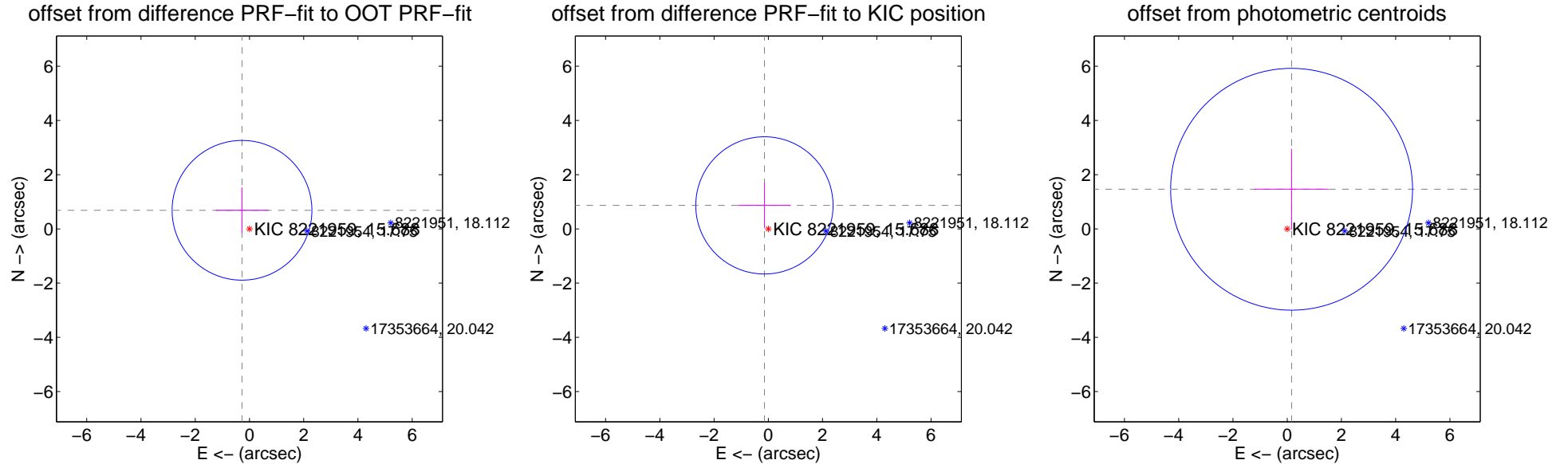
DV Centroid Data

Supplemental centroid analysis for 008221959-01. Kepler magnitude: 15.69. Transit SNR 6.65

There are 1 quarters with good PRF difference image offsets

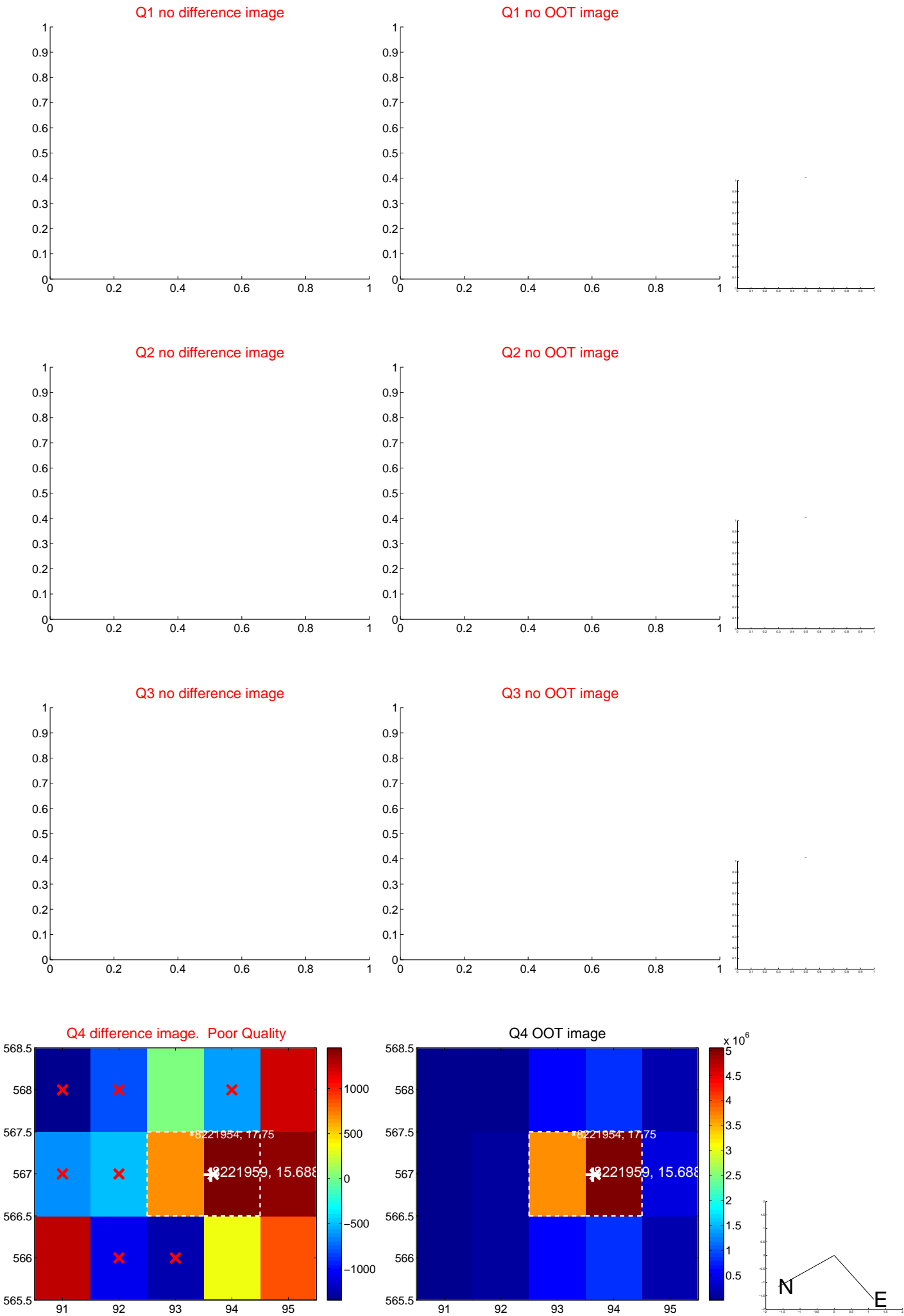
The direct PRF centroid is offset from the target star catalog position by about 0.22 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.739 ± 0.859	0.86	0.275 ± 0.970	0.686 ± 0.840
PRF-fit source offset from KIC position	0.879 ± 0.844	1.04	0.144 ± 0.970	0.867 ± 0.840
photometric centroid source offset	1.47 ± 1.49	0.99	-0.16 ± 1.37	1.46 ± 1.49

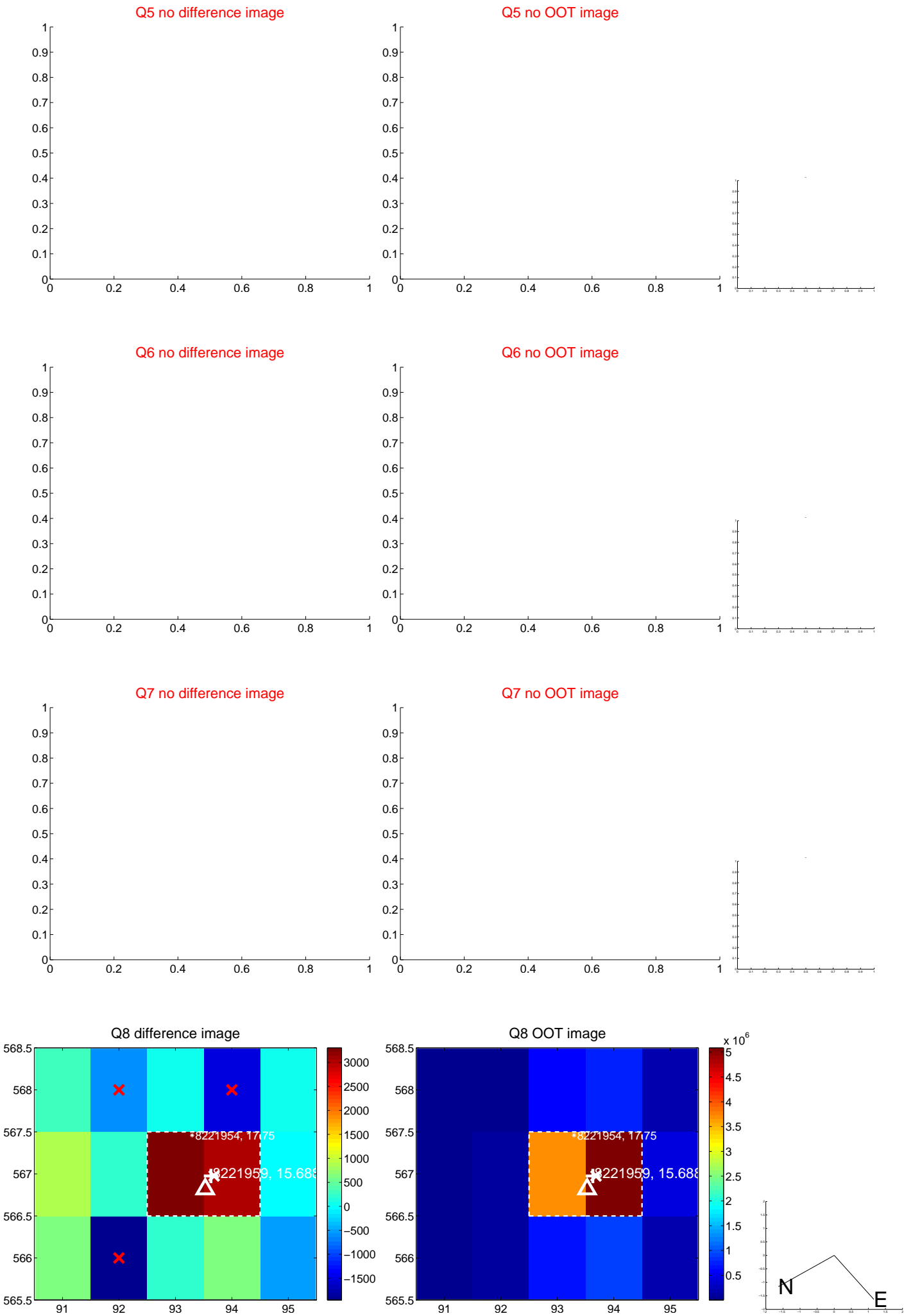


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ . 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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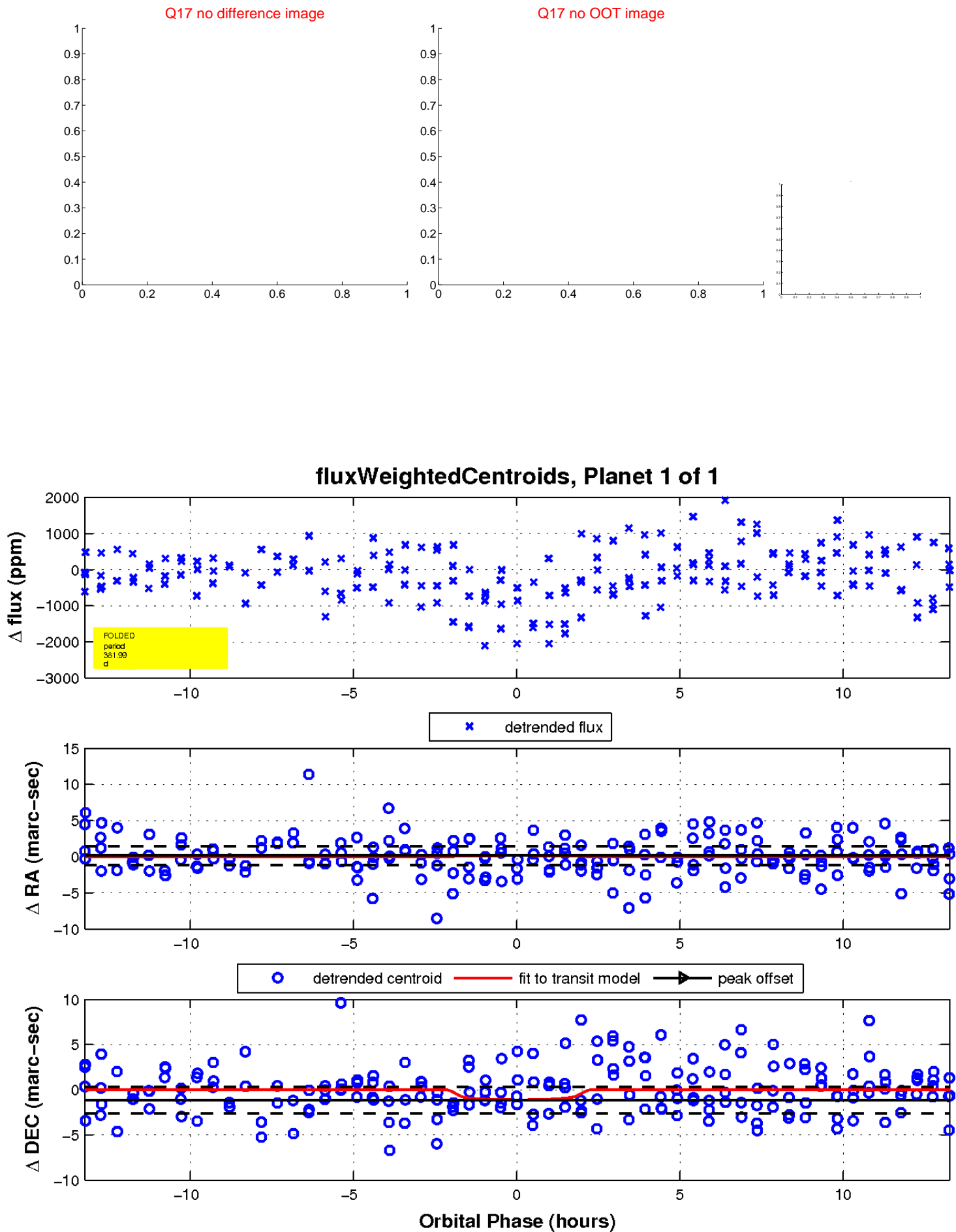
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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UKIRT Image

Declination

