

KIC 009394989

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})
009394989-01	OBS	No	439.026490	205.250713	1162.5	22.486	12.3	10.2	0.98	5871	6.42	0.76

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
009394989-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—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.

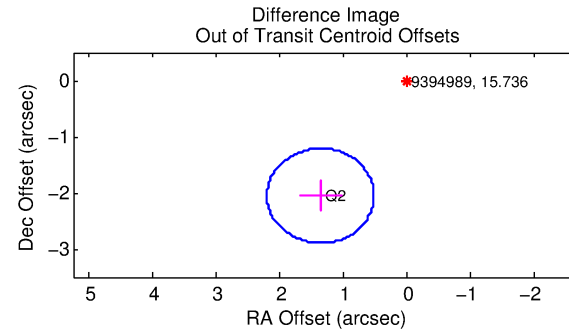
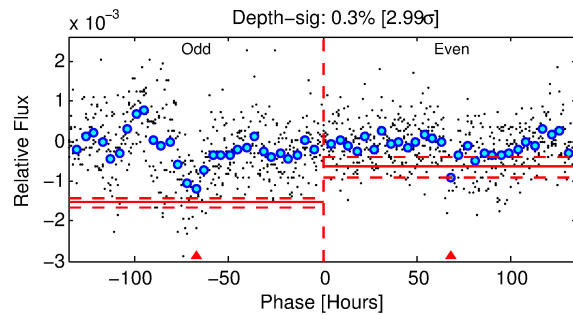
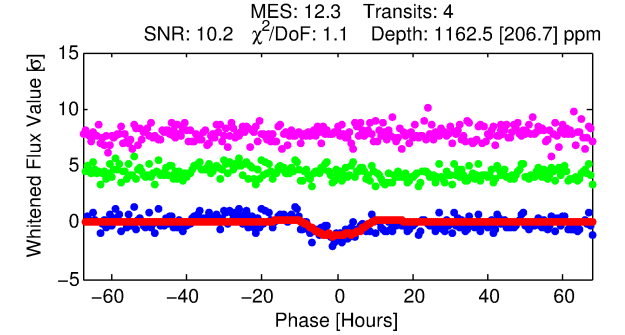
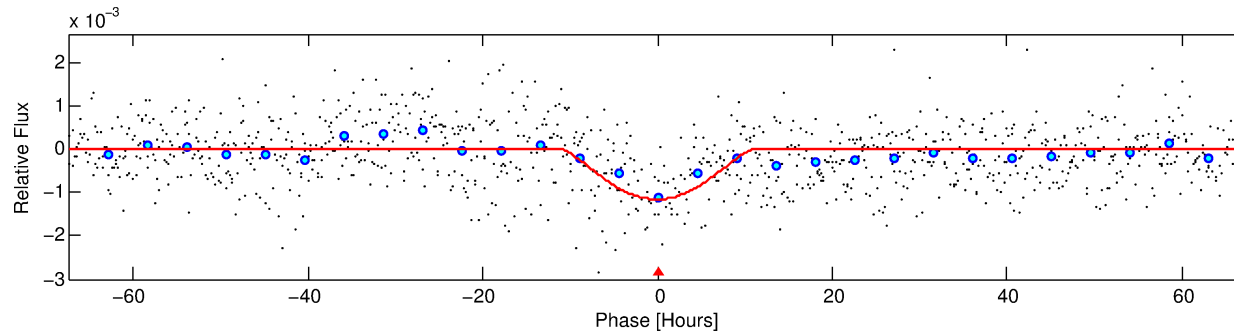
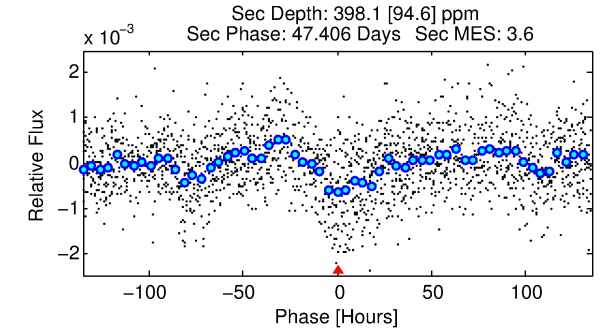
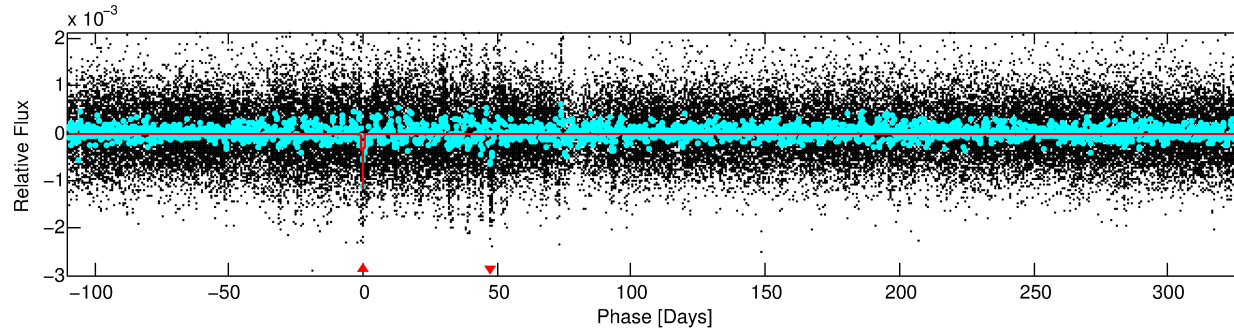
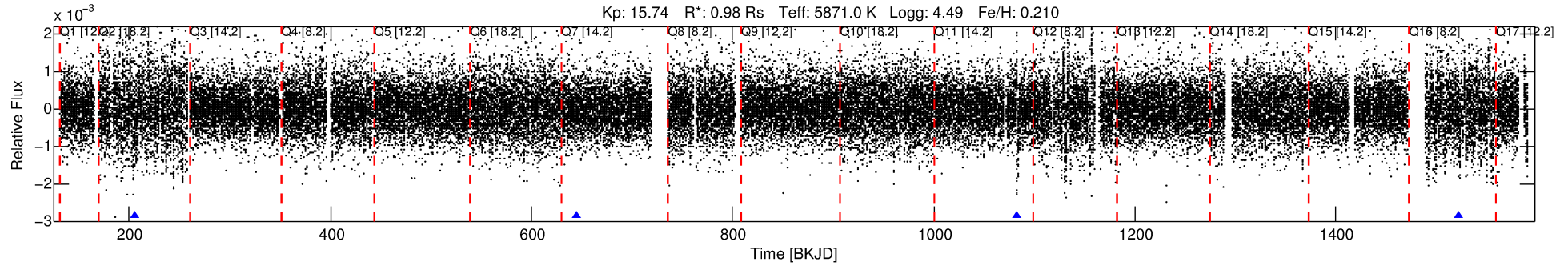
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 009394989-01

No Significant Match Found

DV One-Page Summary

KIC: 9394989 Candidate: 1 of 1 Period: 439.026 d



DV Fit Results:

Period = 439.02649 [0.02547] d
Epoch = 205.2507 [0.0461] BKJD
Rp/R* = 0.0599 [0.1644]
a/R* = 52.92 [33.45]
b = 1.00 [0.24]
Seff = 0.76 [0.29]
Teq = 238 [23] K
Rp = 6.42 [17.72] Re
a = 1.1661 [0.2759] AU
Ag = 7220.43 [39761.97] [0.18σ]
Teff = 3389 [4659] K [0.68σ]

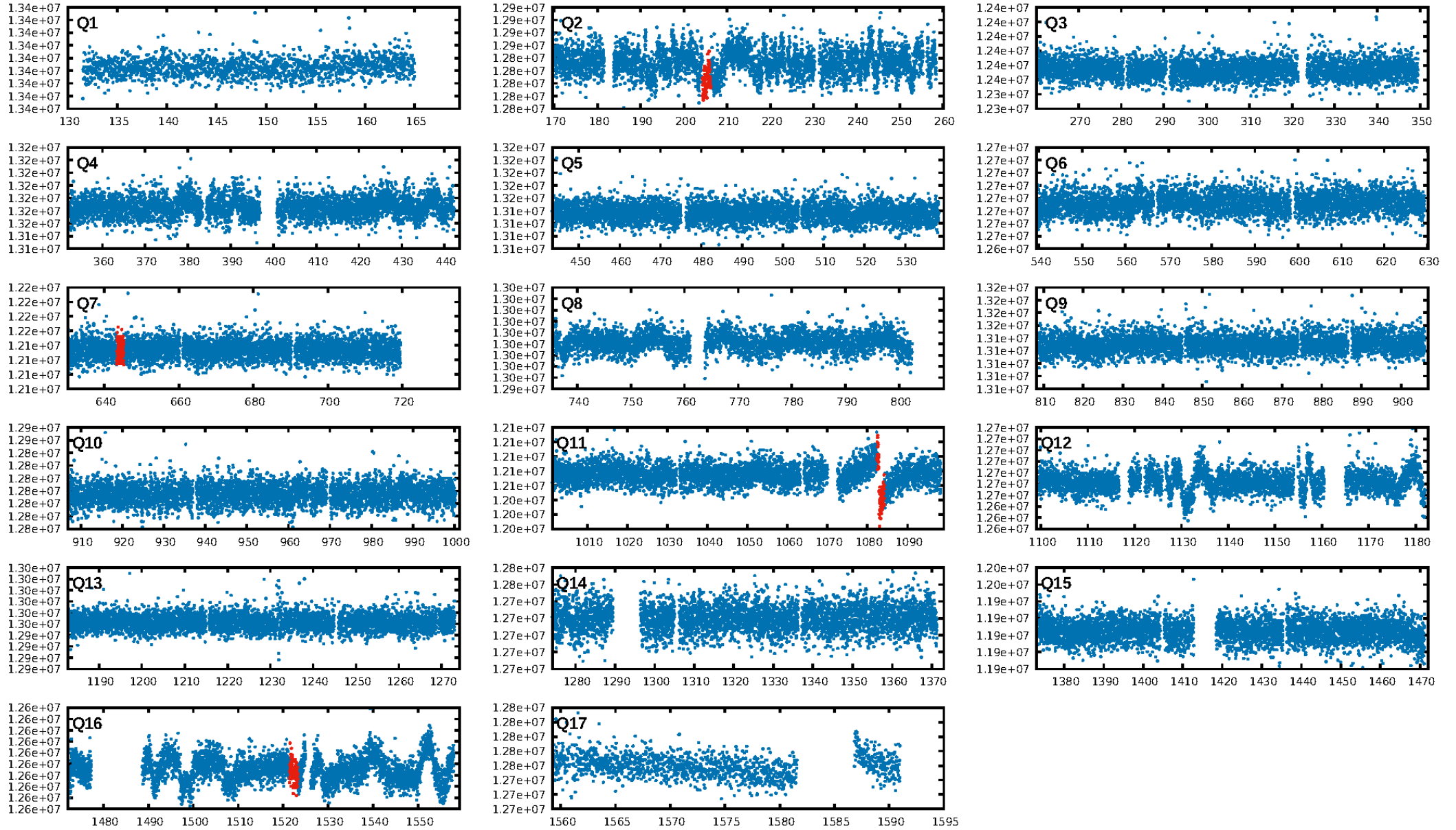
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: 0.0%
ModelChiSquareGof-sig: 99.9%
Bootstrap-pfa: 2.76e-25
RollingBand-fgt: 1.00 [4/4]
GhostDiagnostic-chr: 17.81
Centroid-sig: 0.0%
Centroid-so: 2.501 arcsec [2.56σ]
OotOffset-rm: 2.466 arcsec [8.78σ]
KicOffset-rm: 2.632 arcsec [9.32σ]
OotOffset-st: 1/0/0/0 [1]
KicOffset-st: 1/0/0/0 [1]
DiffImageQuality-fgm: 0.00 [0/1]
DiffImageOverlap-fno: 1.00 [2/2]

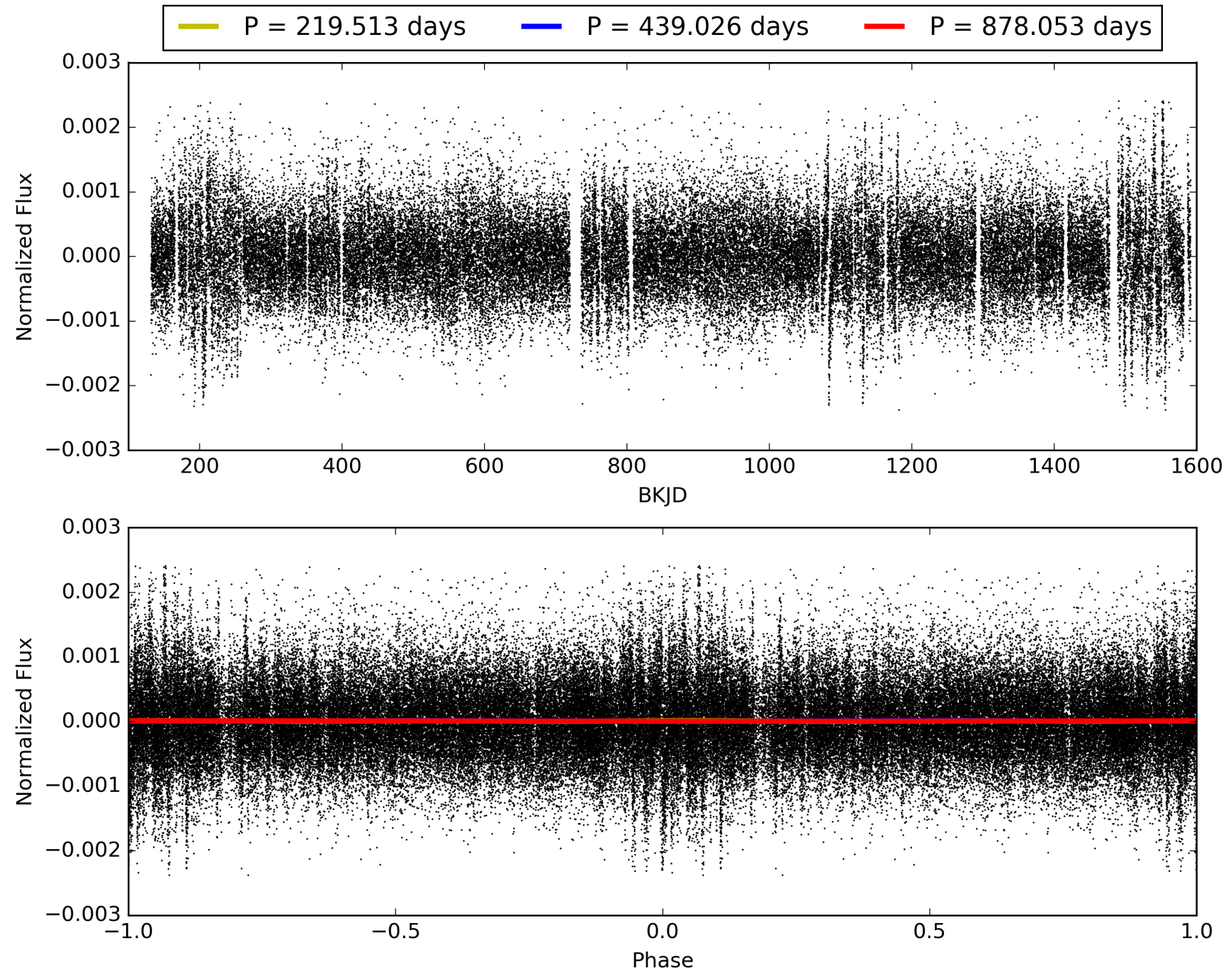
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 28-Jan-2016 22:07:34 Z

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

TCE 009394989-01, PDC Light Curves

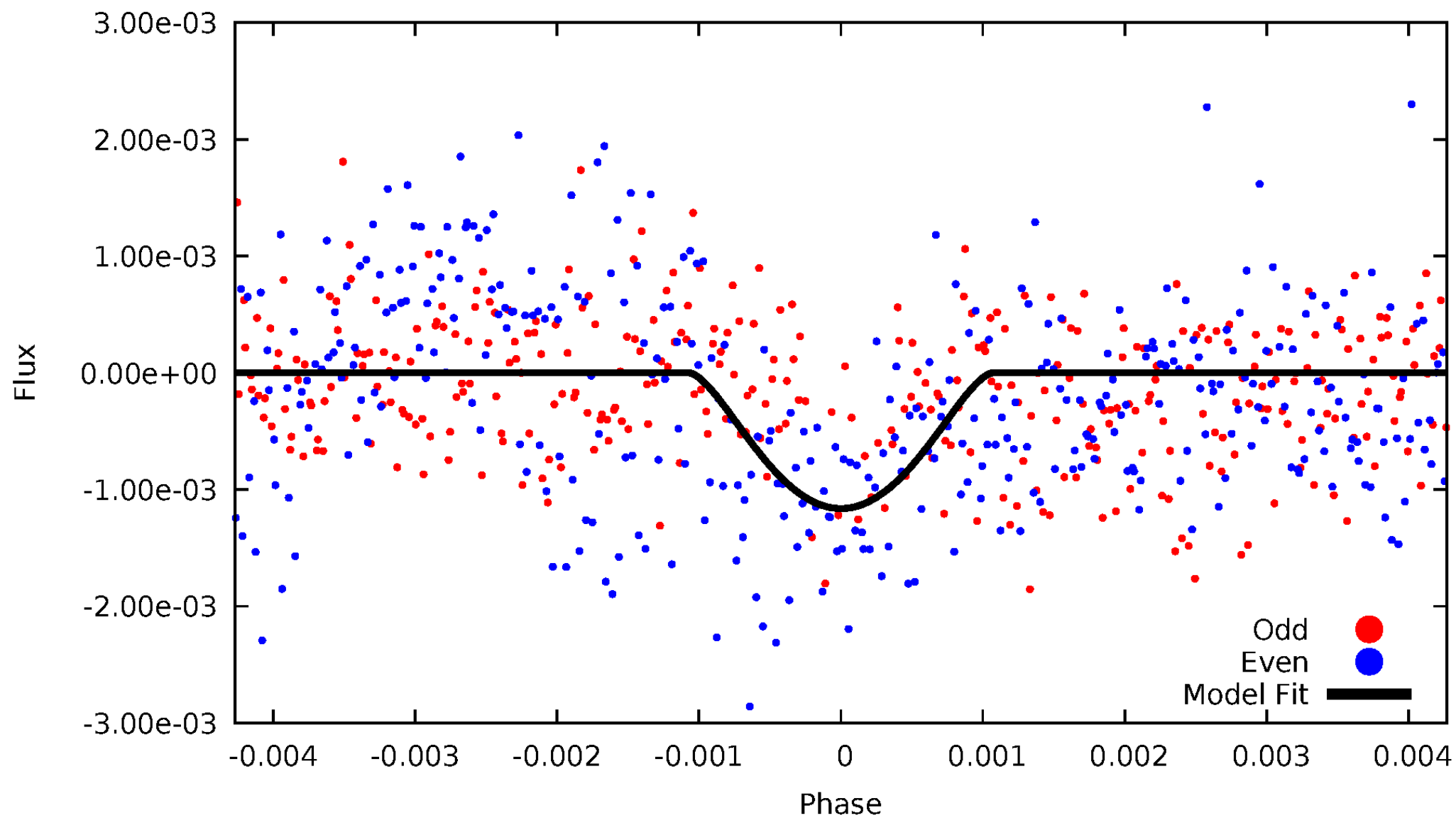


TCE 009394989-01



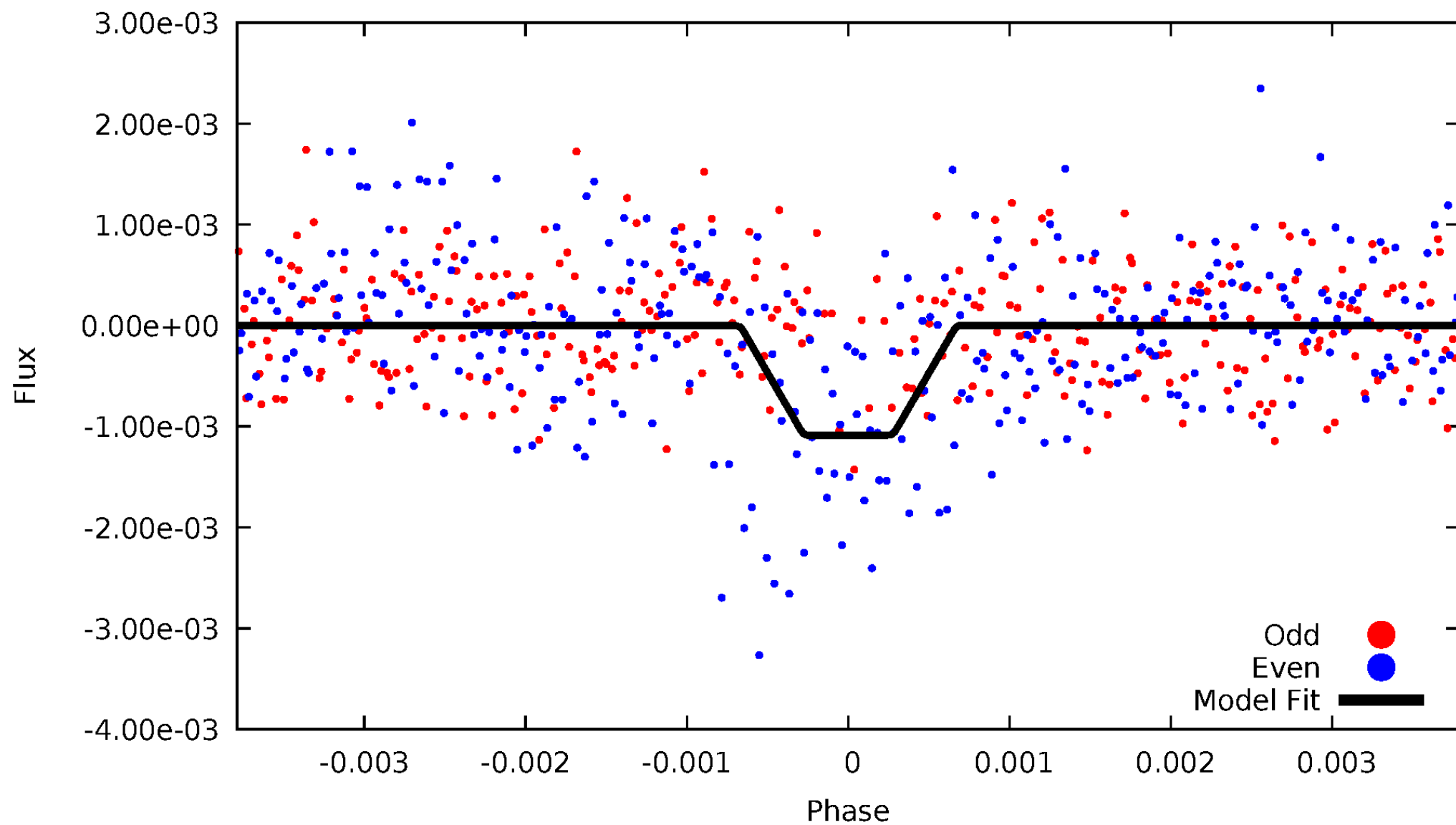
DV Odd/Even

TCE 009394989-01



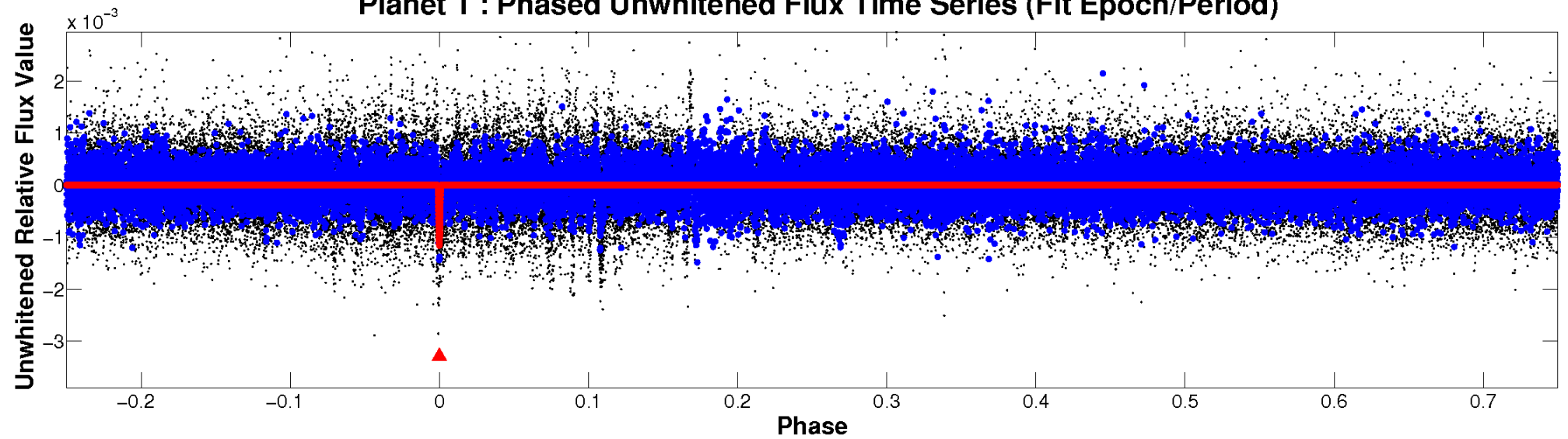
ALT Odd/Even

TCE 009394989-01

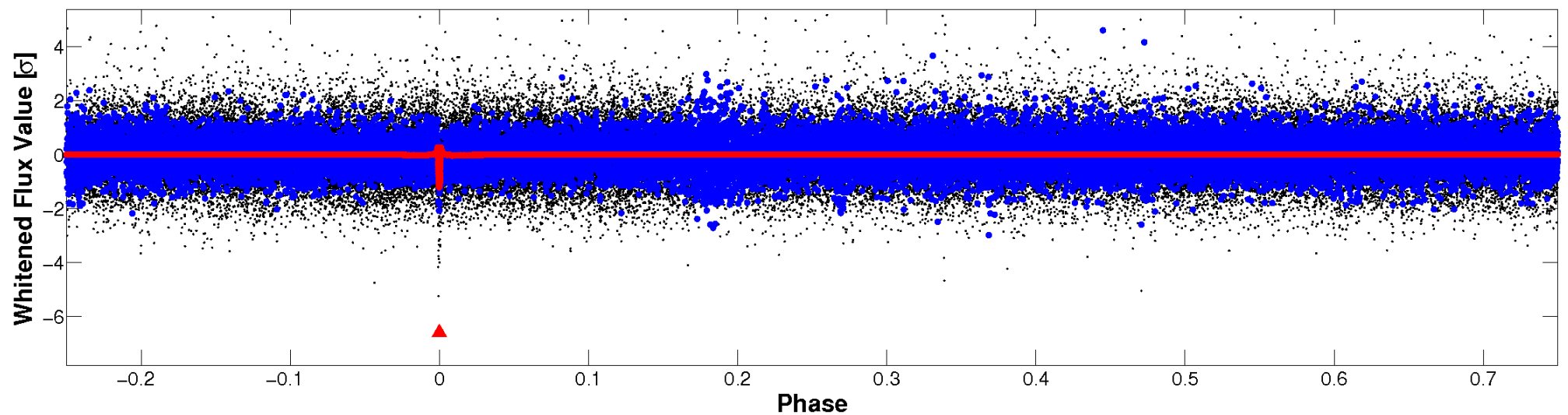


Non-Whitened Vs. Whitened Light Curve

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

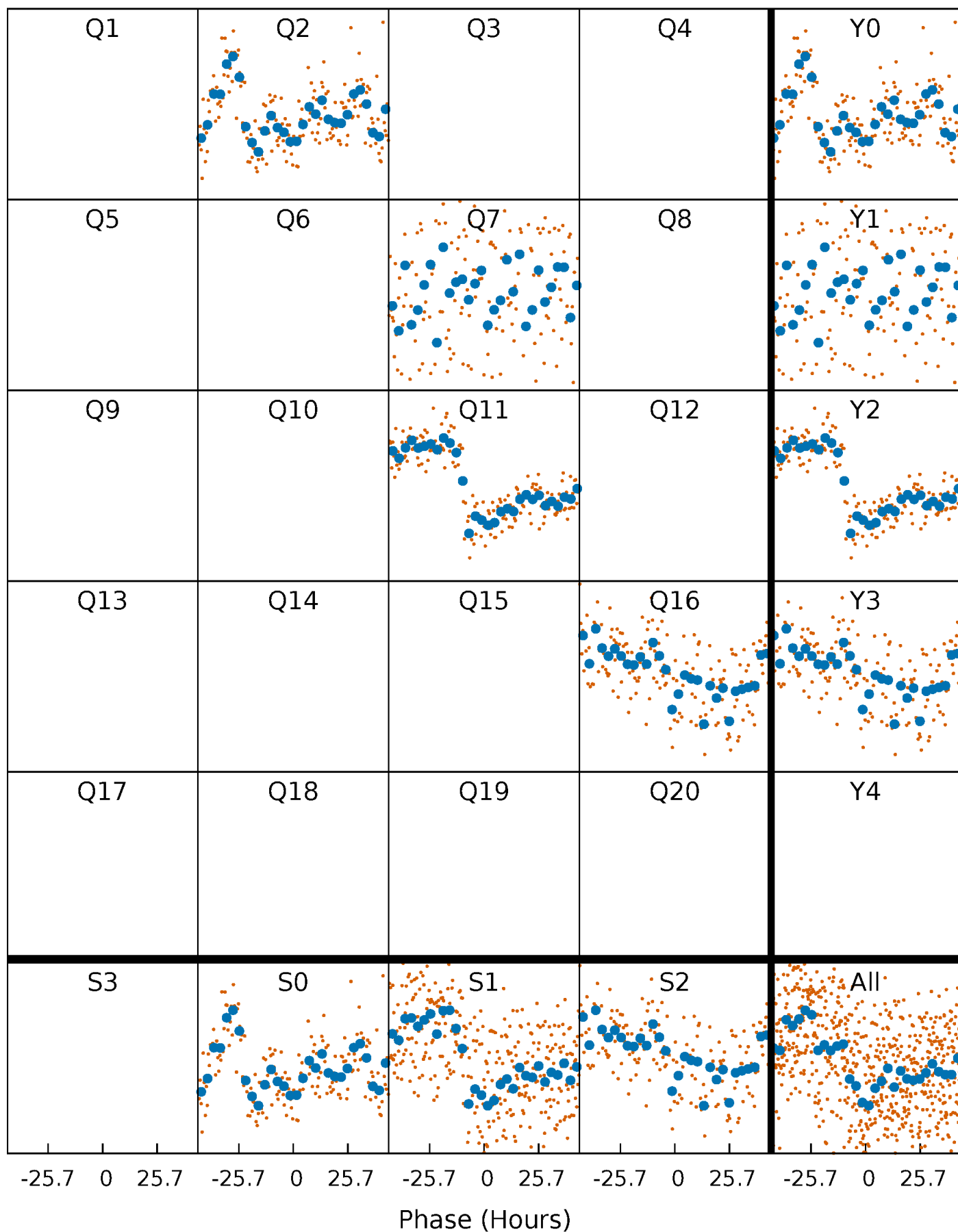


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



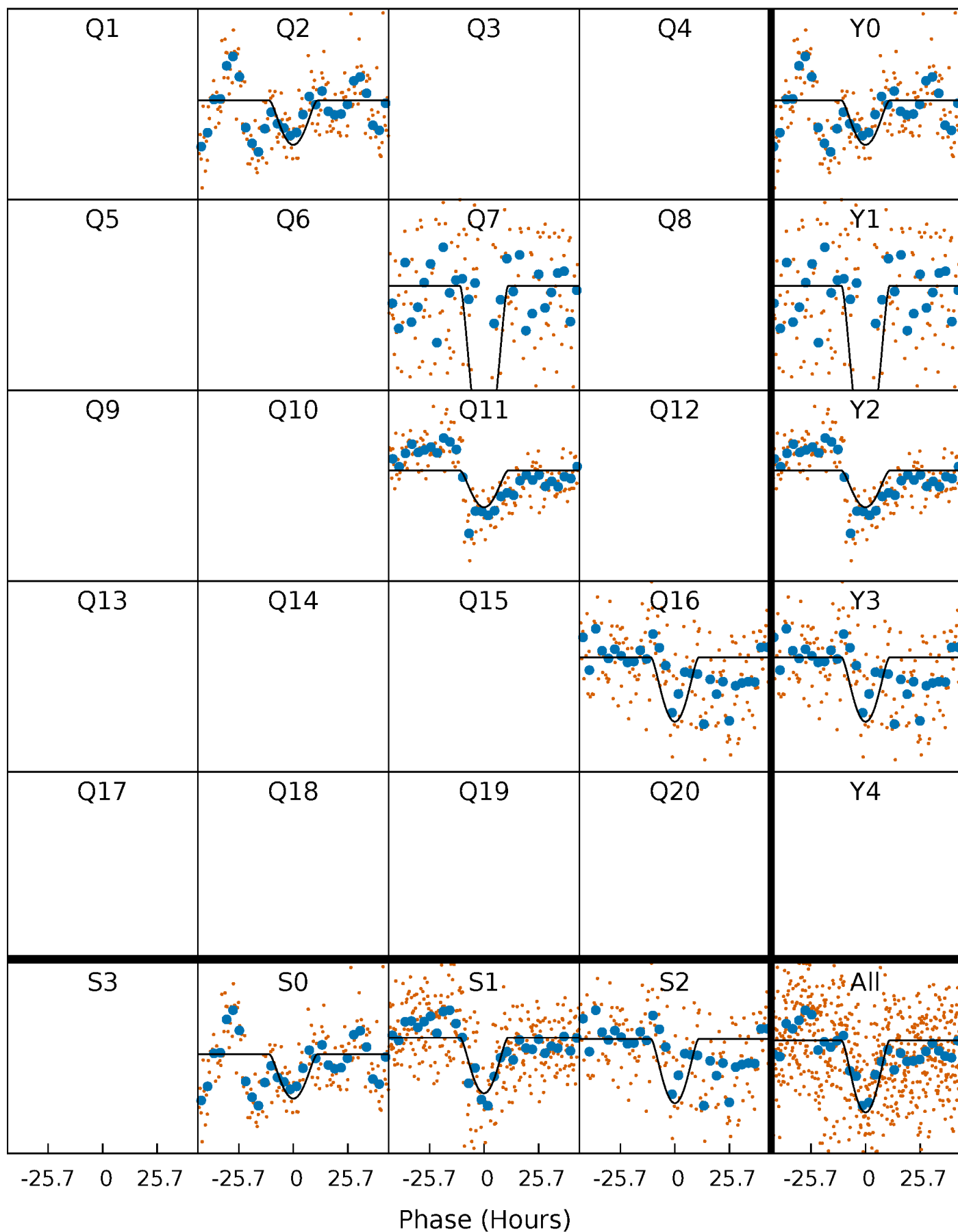
PDC Quarter-Phased Transit Curves

TCE 009394989-01 P=439.026490 Days $T_0=205.250713$ (BKJD)



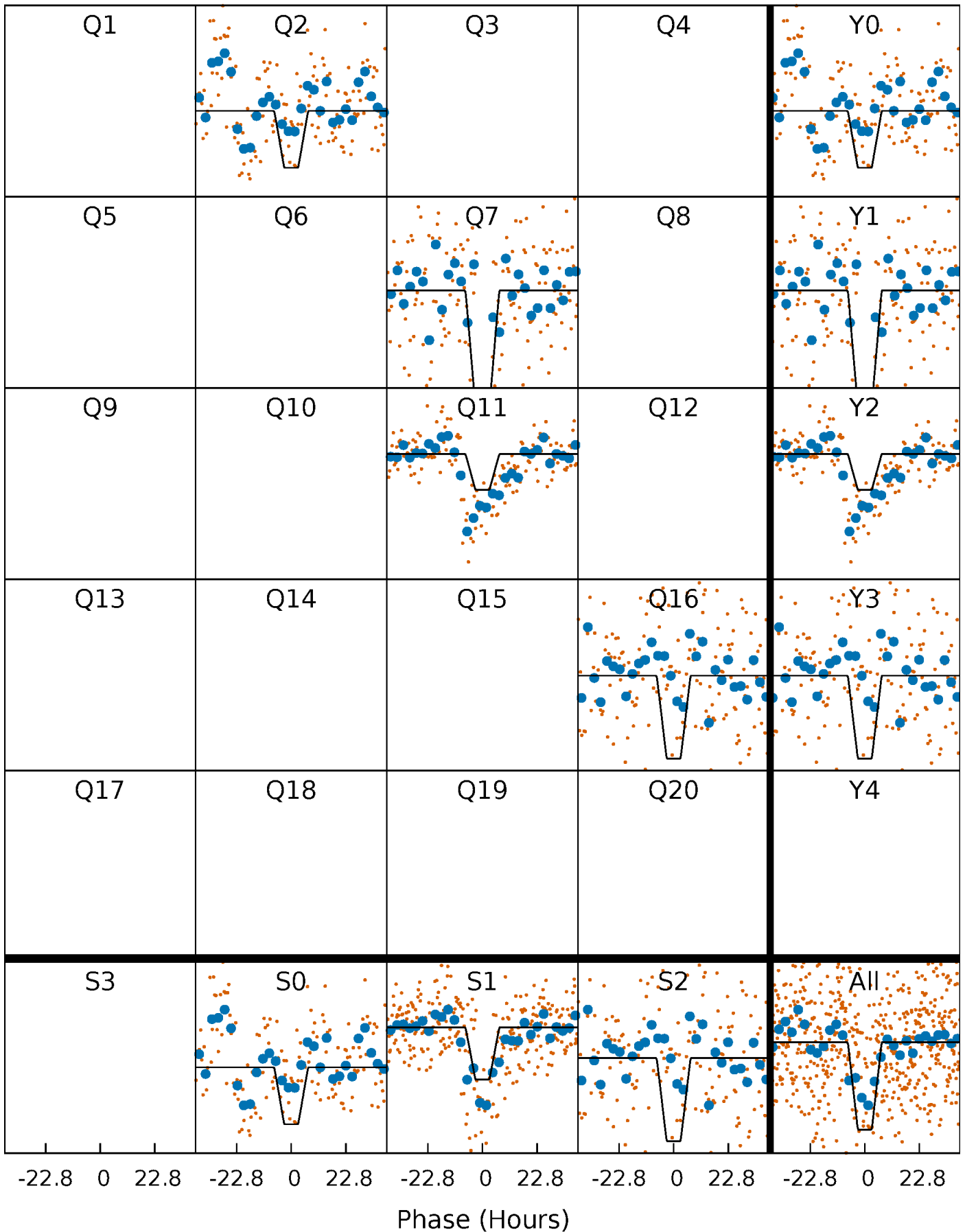
DV Quarter-Phased Transit Curves

TCE 009394989-01 $P=439.026490$ Days $T_0=205.250713$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

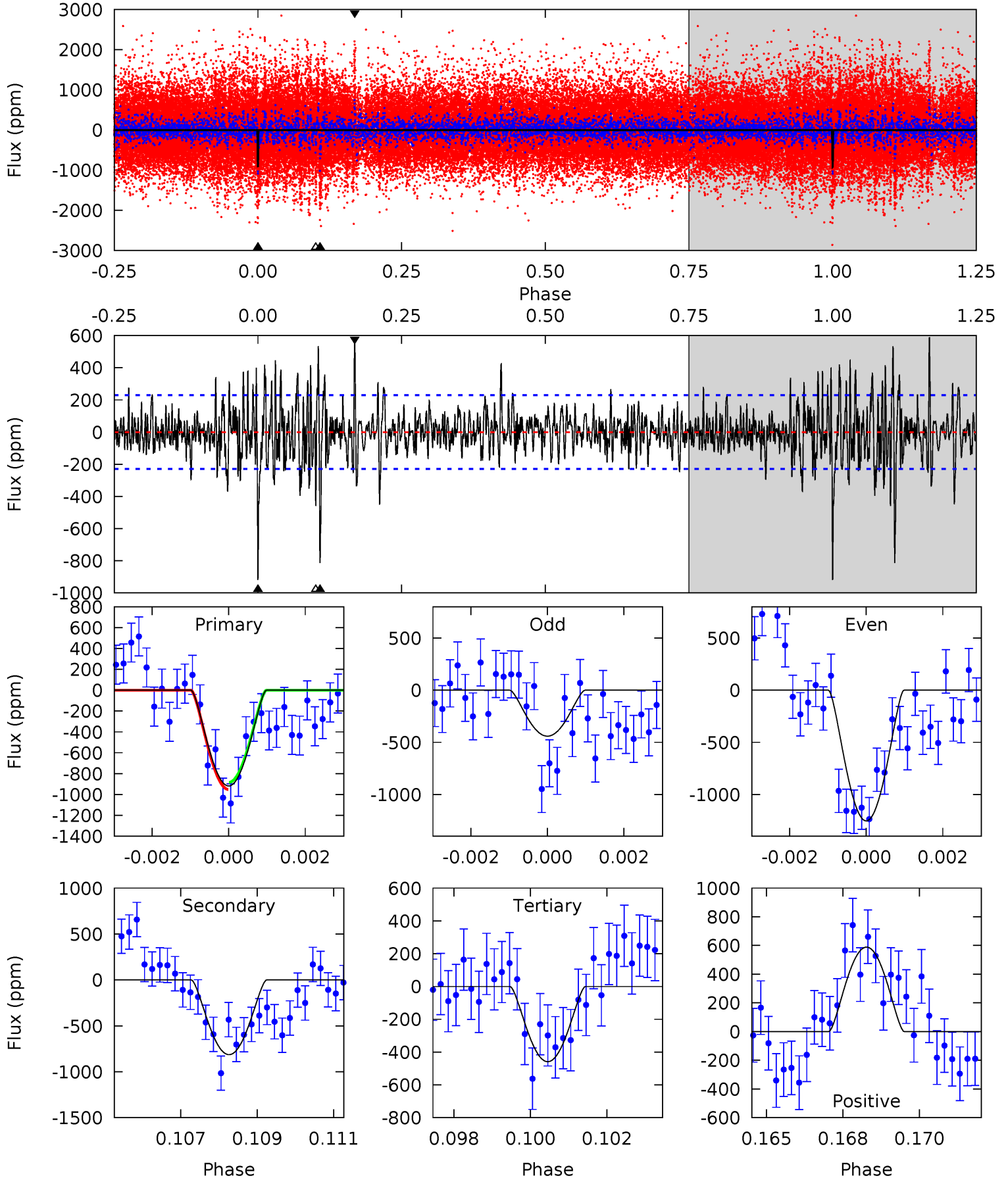
TCE 009394989-01 P=439.001414 Days $T_0=205.261067$ (BKJD)



DV Model-Shift Uniqueness Test

009394989-01, P = 439.026490 Days, E = 205.250713 Days

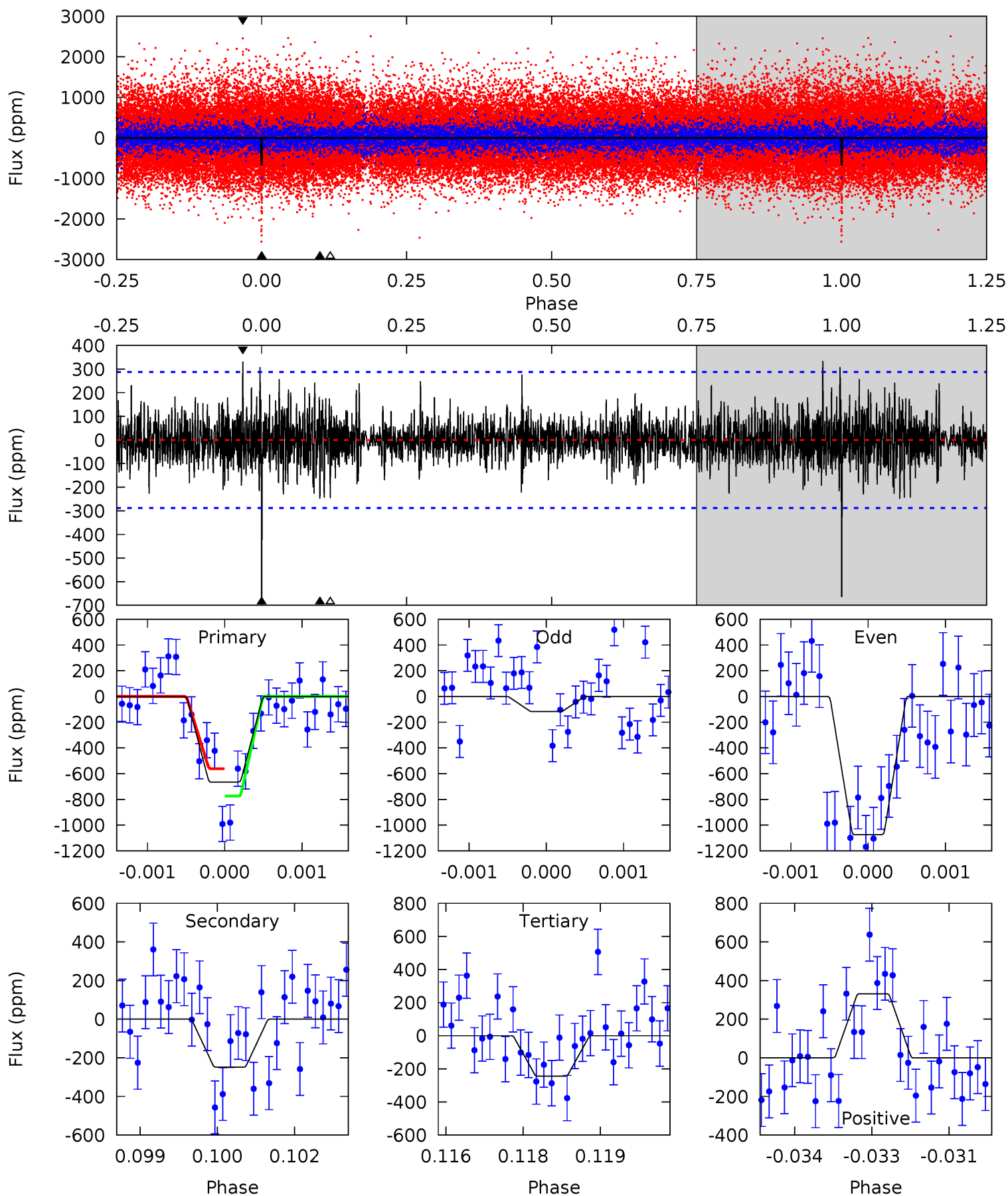
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
21.3	18.9	10.6	13.6	5.31	3.06	2.84	10.6	7.64	8.23	5.22	9.43	1.18	0.39	0.78



Alt Model-Shift Uniqueness Test

009394989-01, P = 439.001414 Days, E = 205.261067 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
12.5	4.65	4.58	6.21	5.40	3.20	1.29	7.88	6.25	0.08	-1.56	9.00	2.93	0.33	2.00



Stellar Parameters For KIC 009394989

	$T_{\text{eff}} (K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (g \cdot cm^{-3})$
	5871^{+162}_{-223}	$4.493^{+0.048}_{-0.192}$	$0.210^{+0.150}_{-0.300}$	$0.983^{+0.273}_{-0.091}$	$1.097^{+0.112}_{-0.137}$	$1.624^{+0.389}_{-0.800}$
	+3%/-4%	+1%/-4%	+71%/-143%	+28%/-9%	+10%/-12%	+24%/-49%
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 009394989-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-814 ± 43	$14.96^{+16.18}_{-10.46}$	339^{+23}_{-17}	3274^{+1810}_{-609}	2625^{+27251}_{-2026}
Alt.	-248 ± 53	$14.16^{+14.55}_{-9.96}$	339^{+22}_{-17}	2800^{+1168}_{-457}	881^{+8849}_{-676}

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

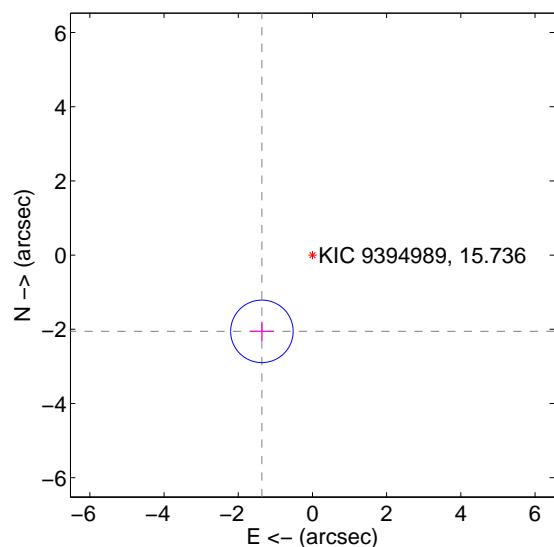
Supplemental centroid analysis for 009394989-01. Kepler magnitude: 15.74. Transit SNR 10.25

There are 0 quarters with good PRF difference image offsets

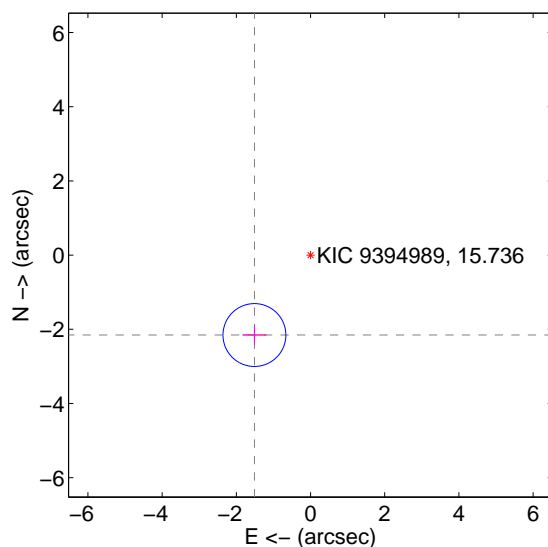
The direct PRF centroid is offset from the target star catalog position by about 0.18 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	2.466 ± 0.281	8.78	1.362 ± 0.322	-2.055 ± 0.261
PRF-fit source offset from KIC position	2.632 ± 0.282	9.32	1.512 ± 0.322	-2.155 ± 0.261
photometric centroid source offset	2.50 ± 0.98	2.56	-1.67 ± 1.03	-1.86 ± 0.93

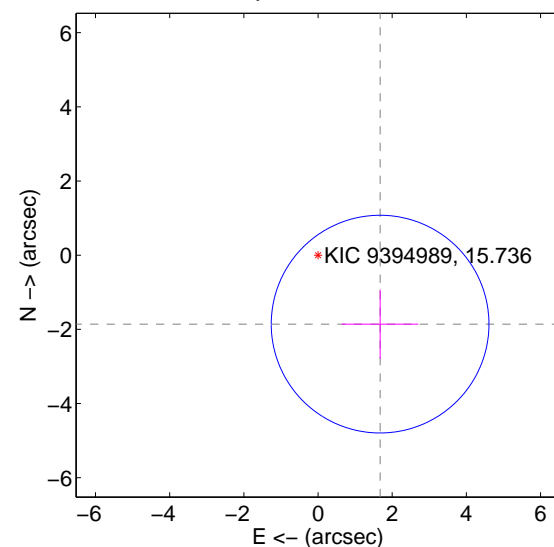
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

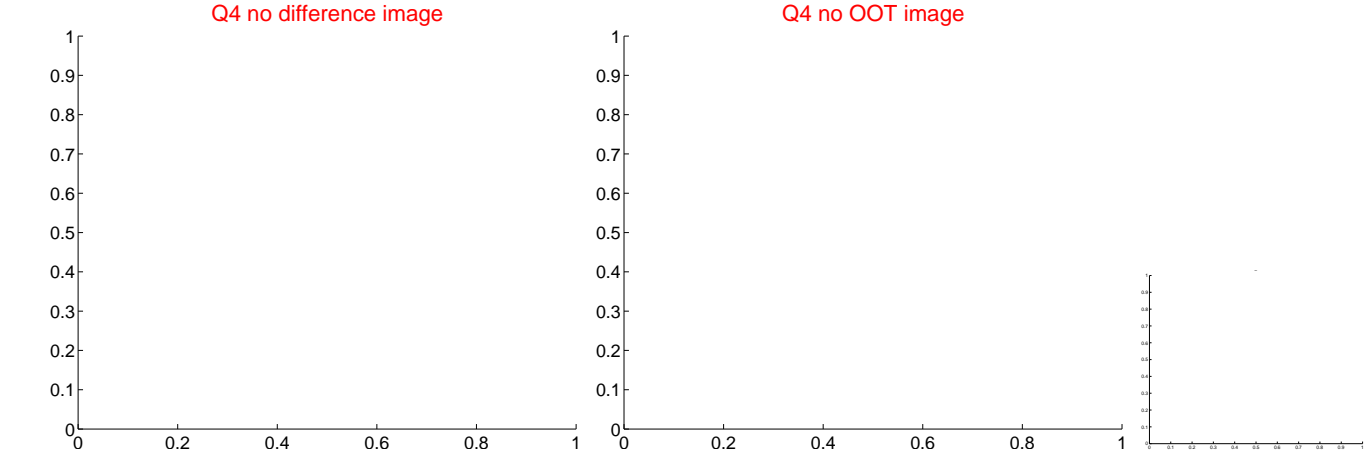
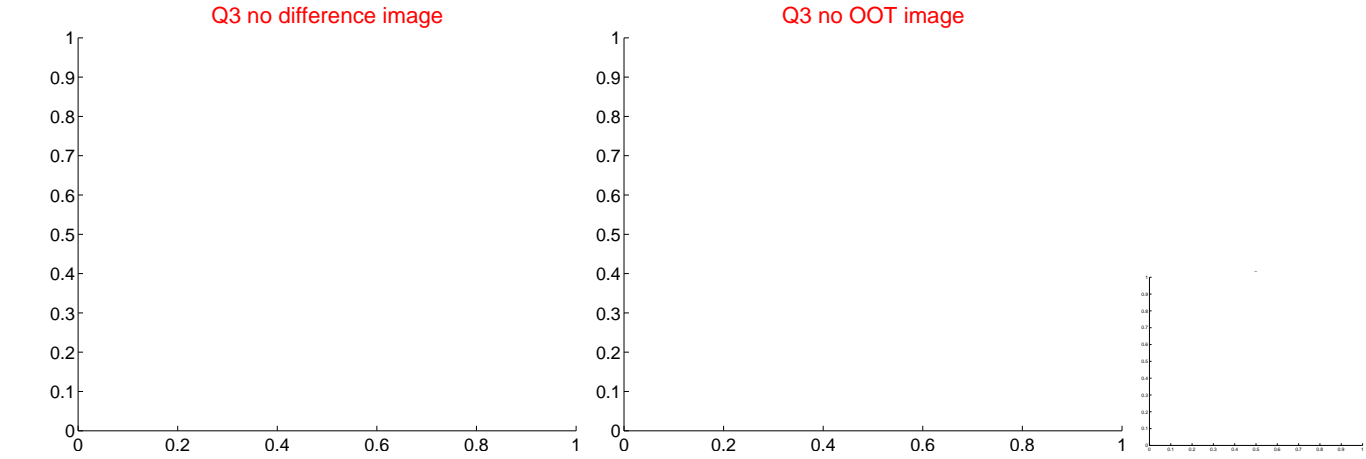
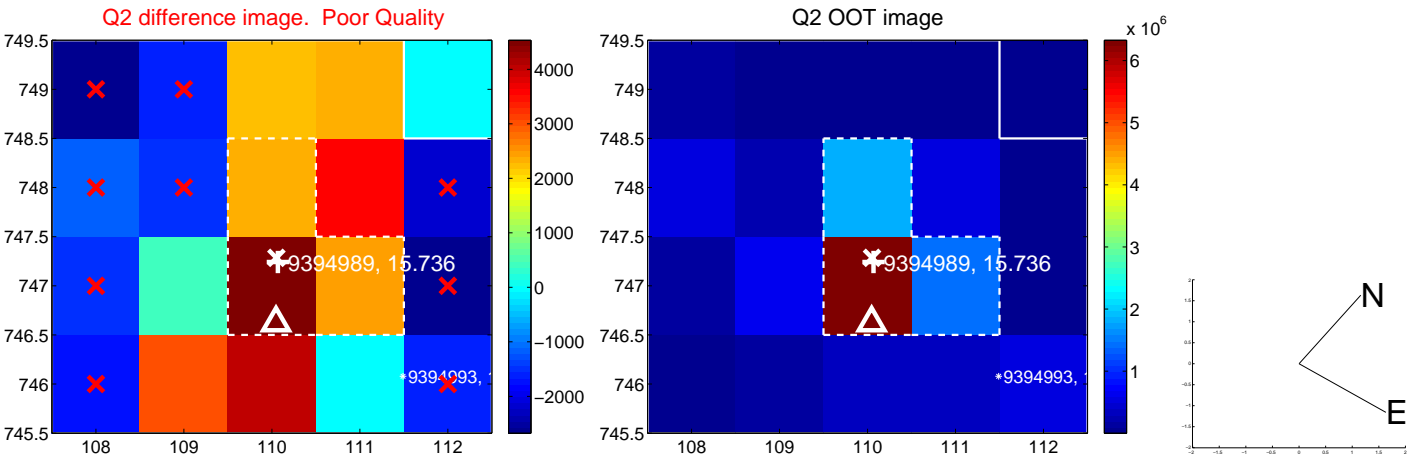
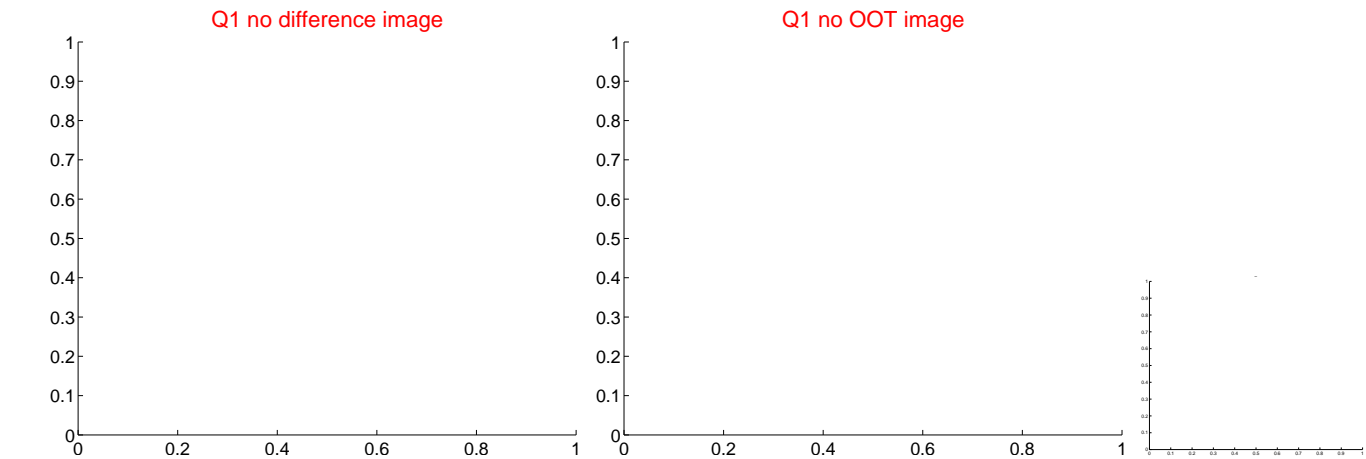


offset from photometric centroids



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.



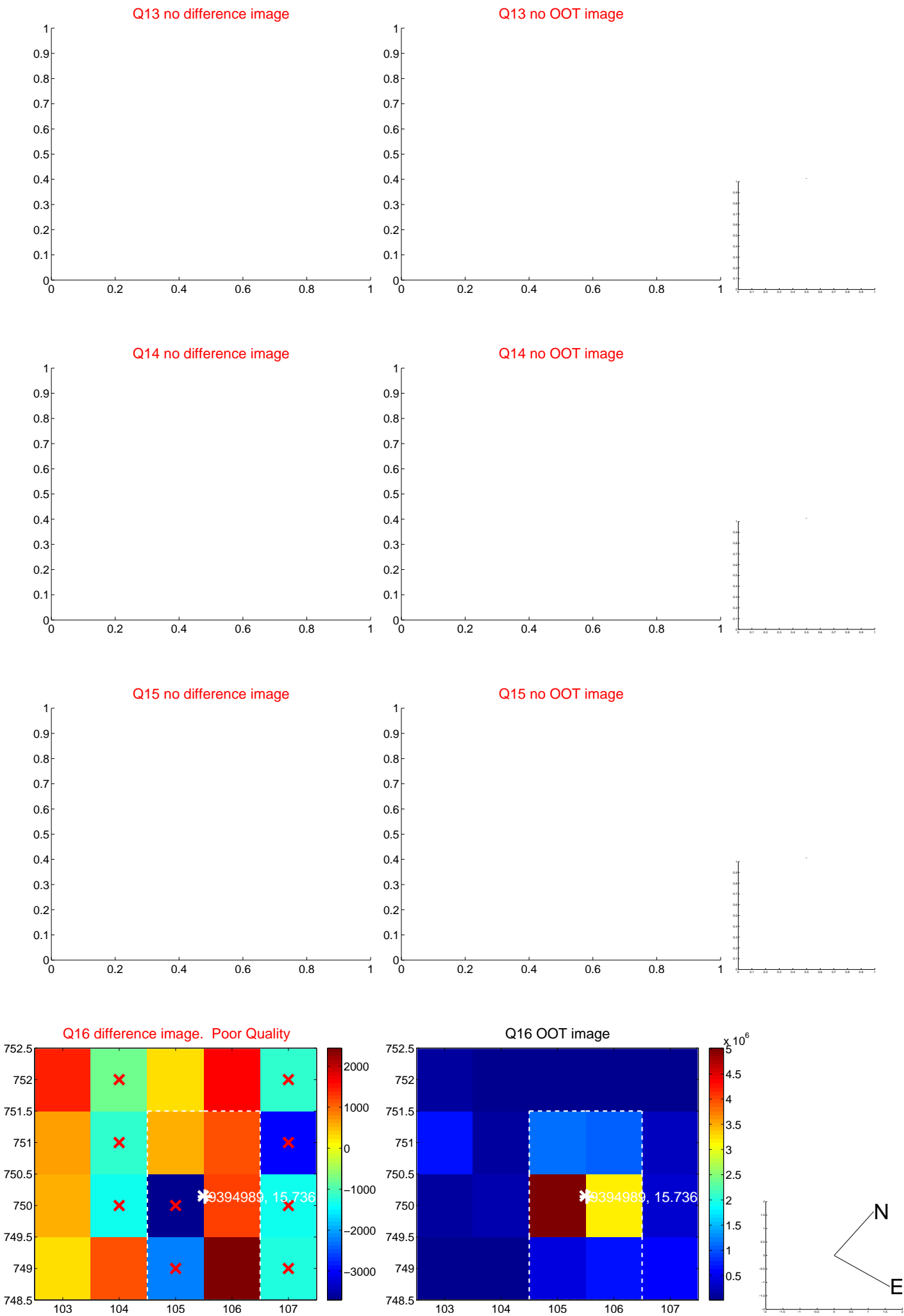
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



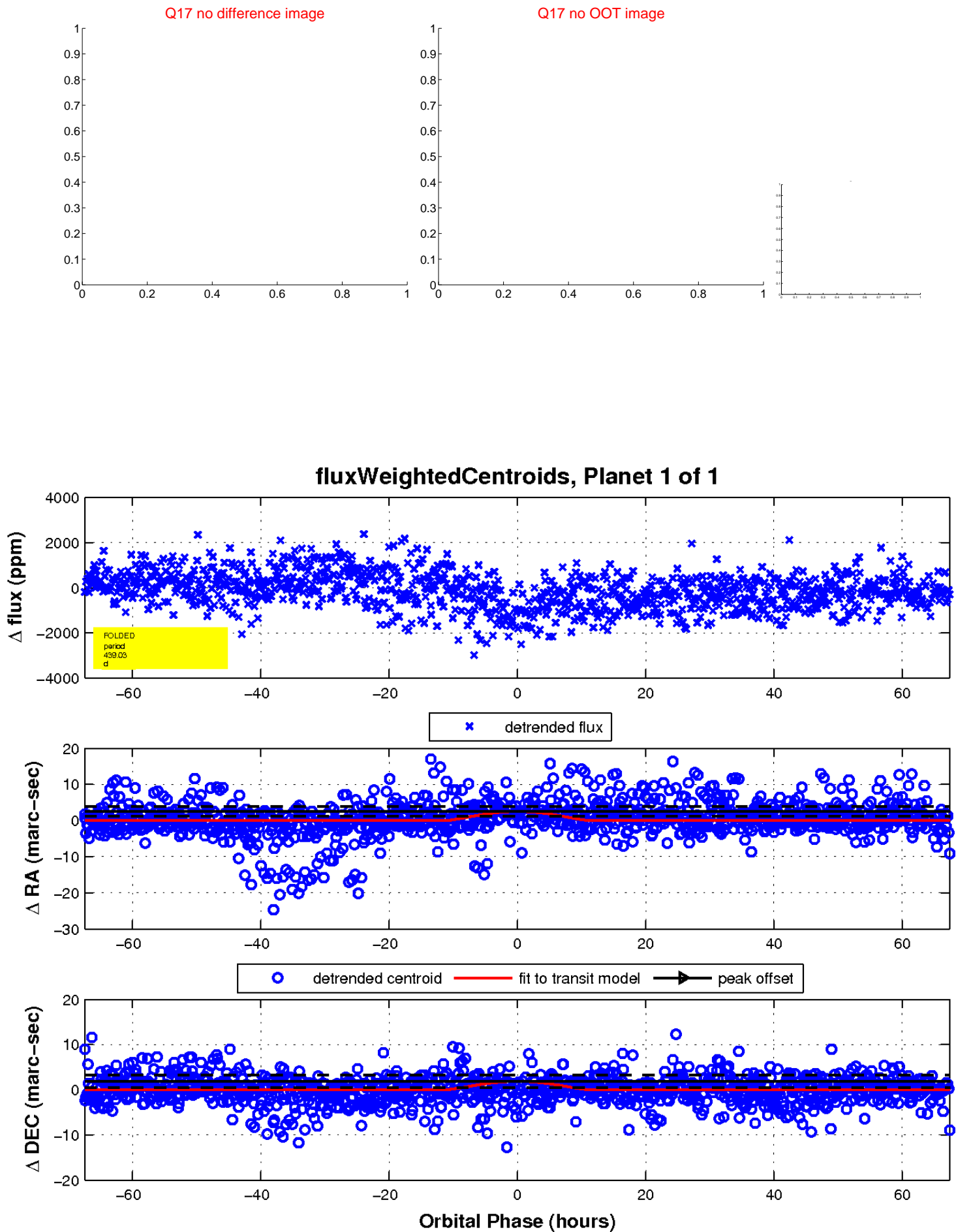
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

