

KIC 004651399

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})
004651399-01	OBS	7698.01	508.799477	368.365230	2045.4	4.915	7.3	7.4	8.81	4893	43.63	29.59

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
004651399-01	OBS	FP	0.10	1	0	0	0	ALL_TRANS_CHASES—MOD_NONUNIQ_ALT

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

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

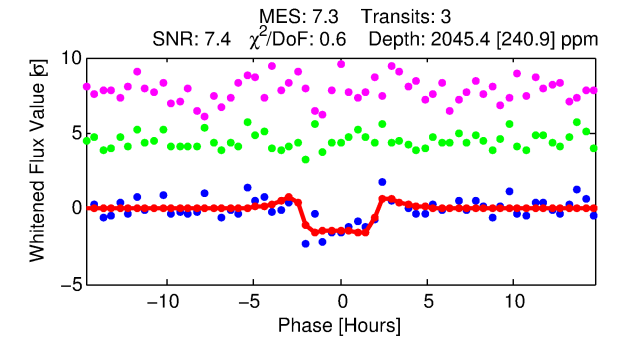
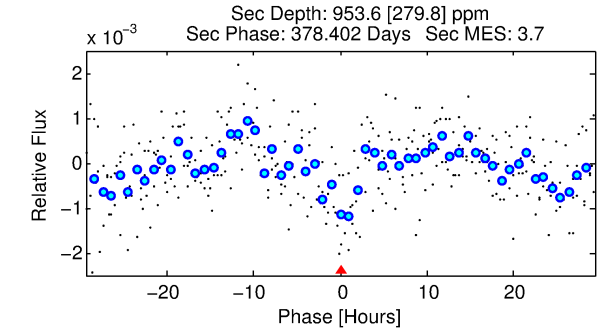
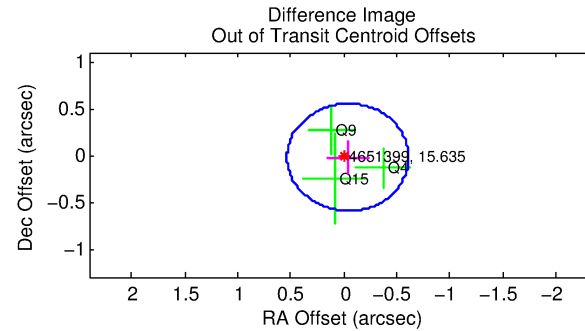
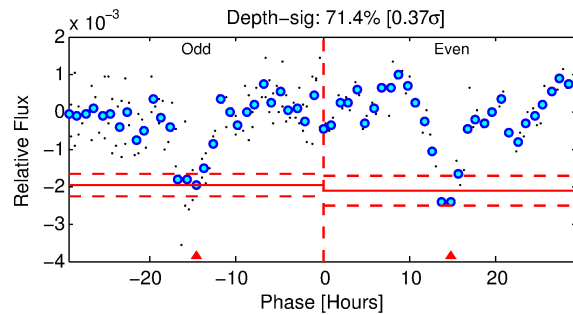
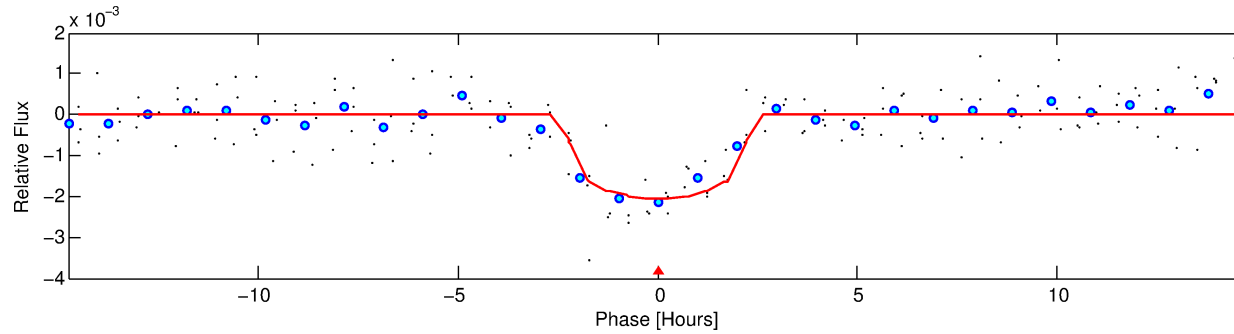
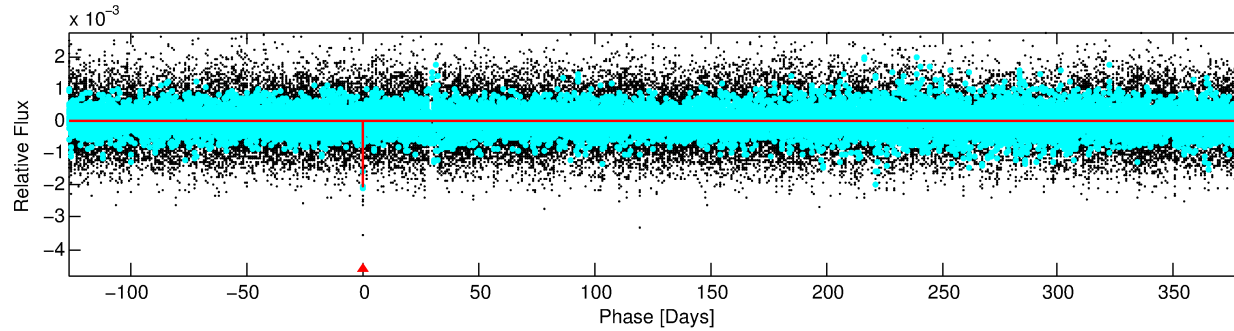
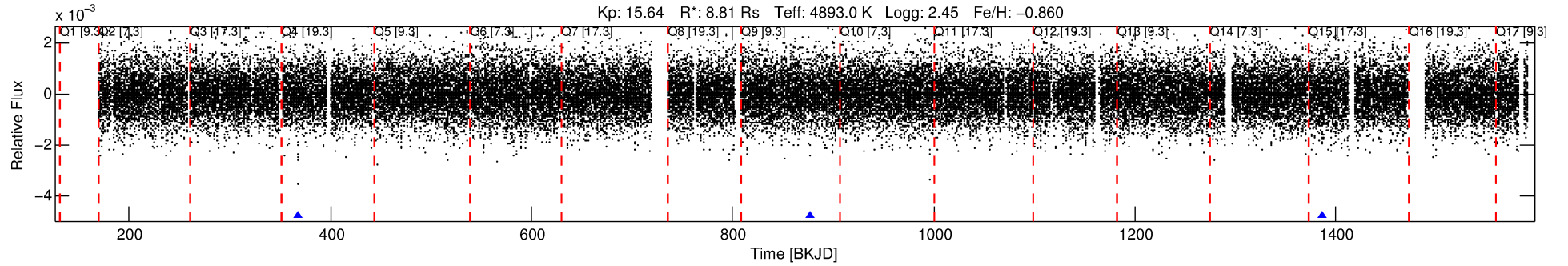
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 004651399-01

No Significant Match Found

DV One-Page Summary

KIC: 4651399 Candidate: 1 of 1 Period: 508.799 d



DV Fit Results:

Period = 508.79948 [0.00392] d
Epoch = 368.3652 [0.0046] BKJD
Rp/R* = 0.0454 [0.0605]
a/R* = 567.13 [2909.95]
b = 0.76 [2.91]
Seff = 29.59 [6.02]
Teq = 595 [30] K
Rp = 43.63 [59.23] Re
a = 1.1608 [0.1982] AU
Ag = 371.37 [998.81] [0.37 σ]
Teff = 4037 [2710] K [1.27 σ]

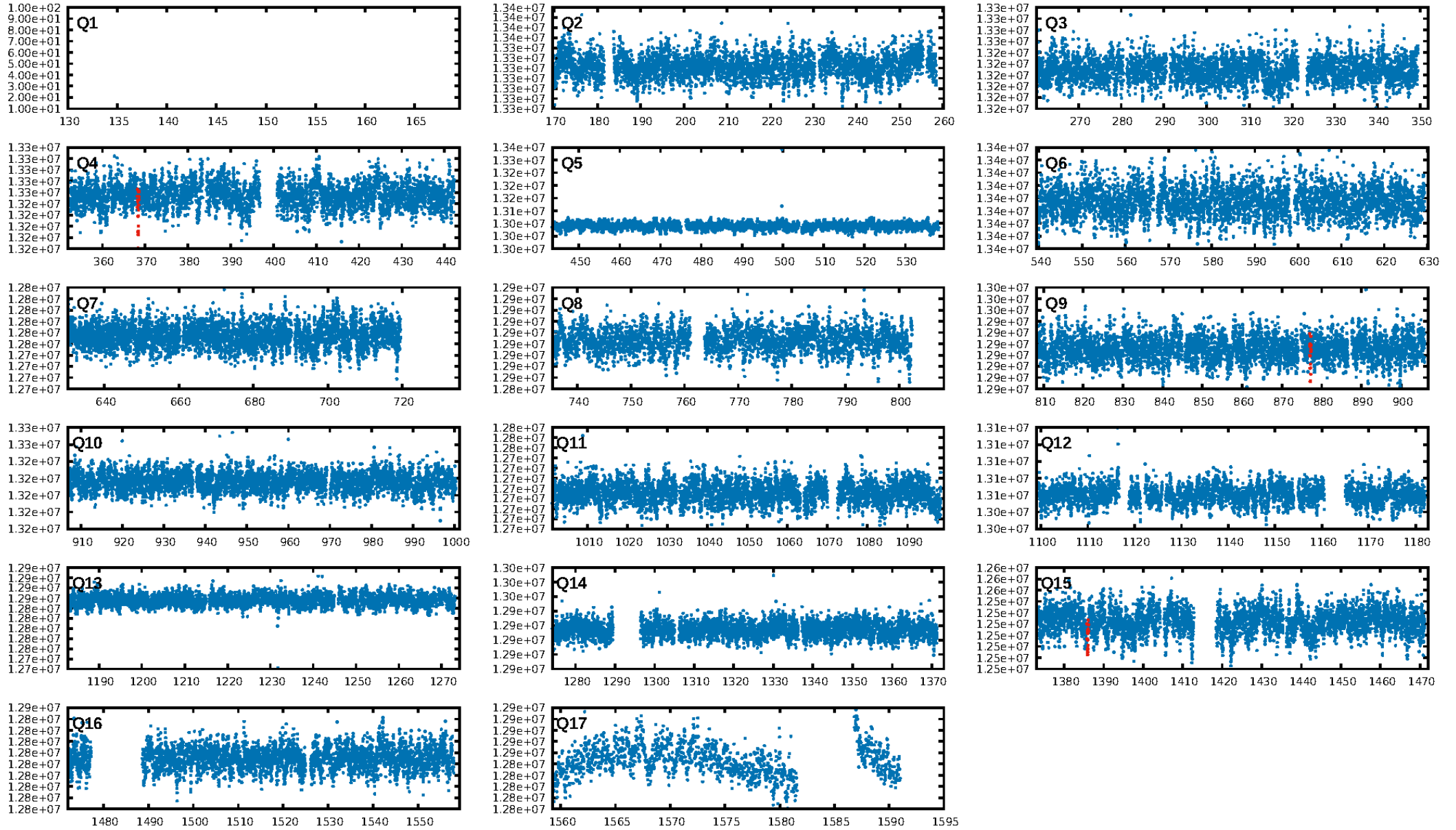
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: 87.6%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 5.32e-11
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: 5.486
Centroid-sig: 1.7%
Centroid-so: 1.013 arcsec [1.43 σ]
OotOffset-rm: 0.046 arcsec [0.24 σ]
OotOffset-st: 0/1/1/1 [3]
KicOffset-rm: 0.155 arcsec [0.75 σ]
KicOffset-st: 0/1/1/1 [3]
DiffImageQuality-fgm: 1.00 [3/3]
DiffImageOverlap-fno: 1.00 [3/3]

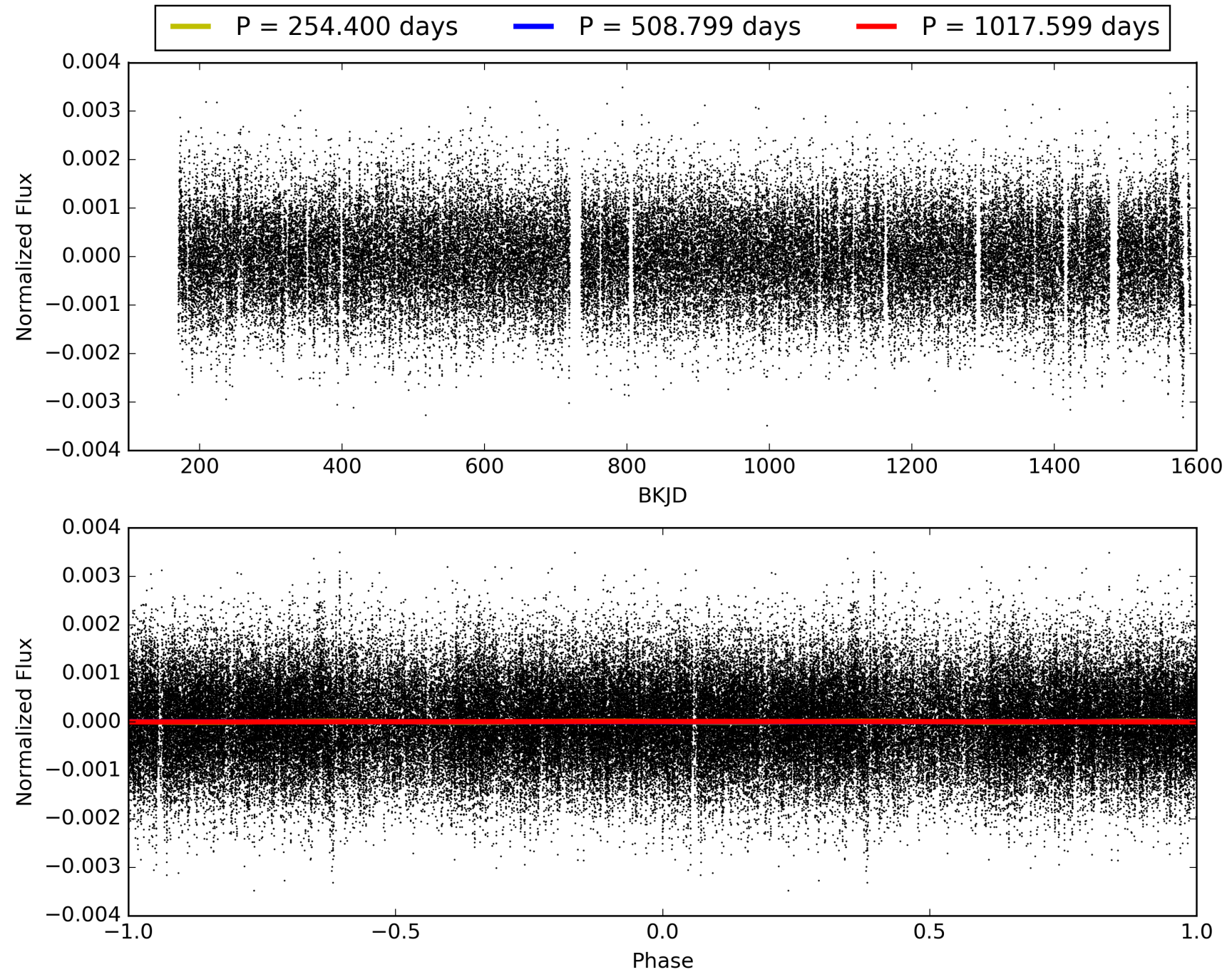
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 04:29:48 Z

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

TCE 004651399-01, PDC Light Curves

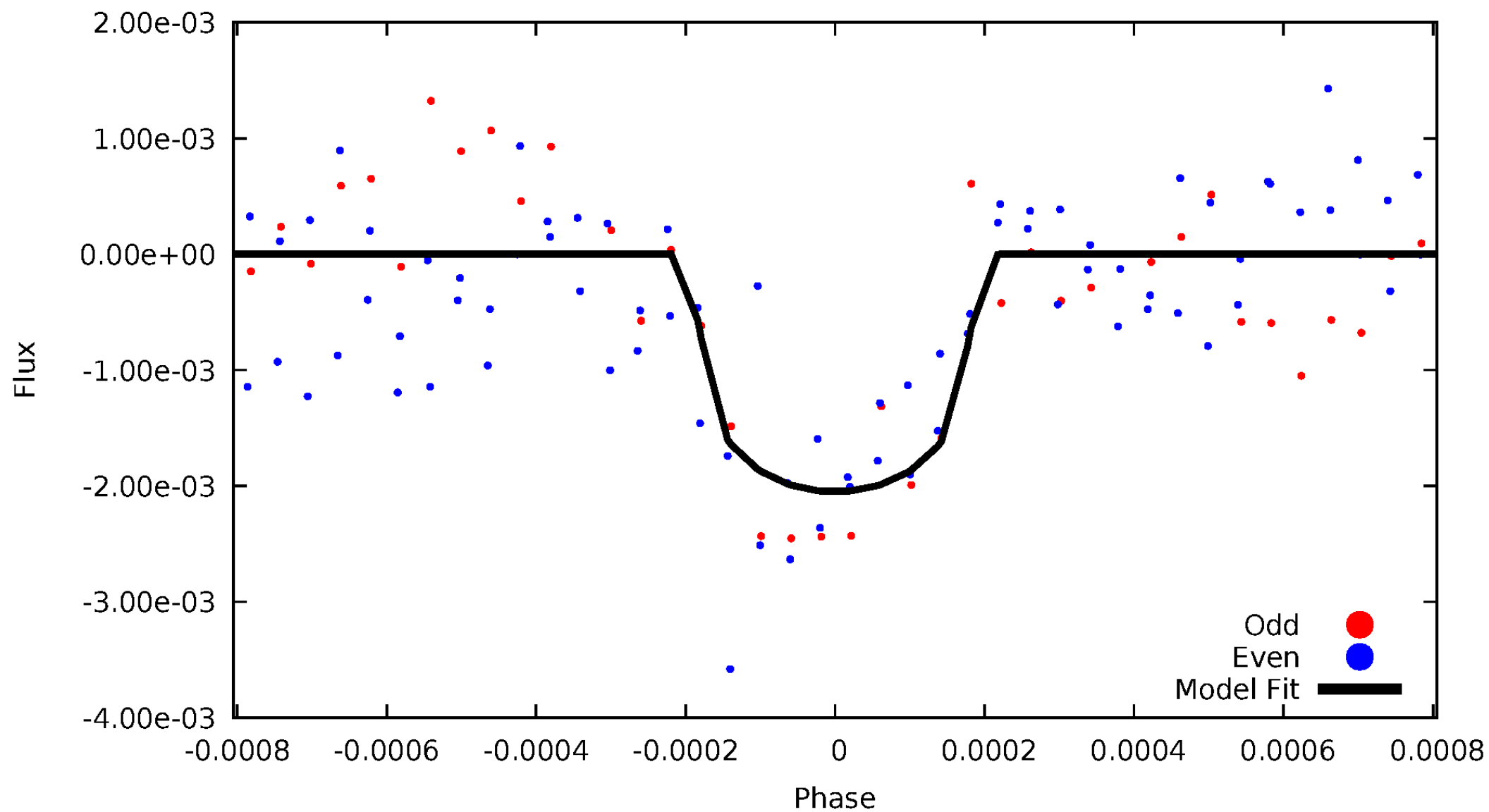


TCE 004651399-01



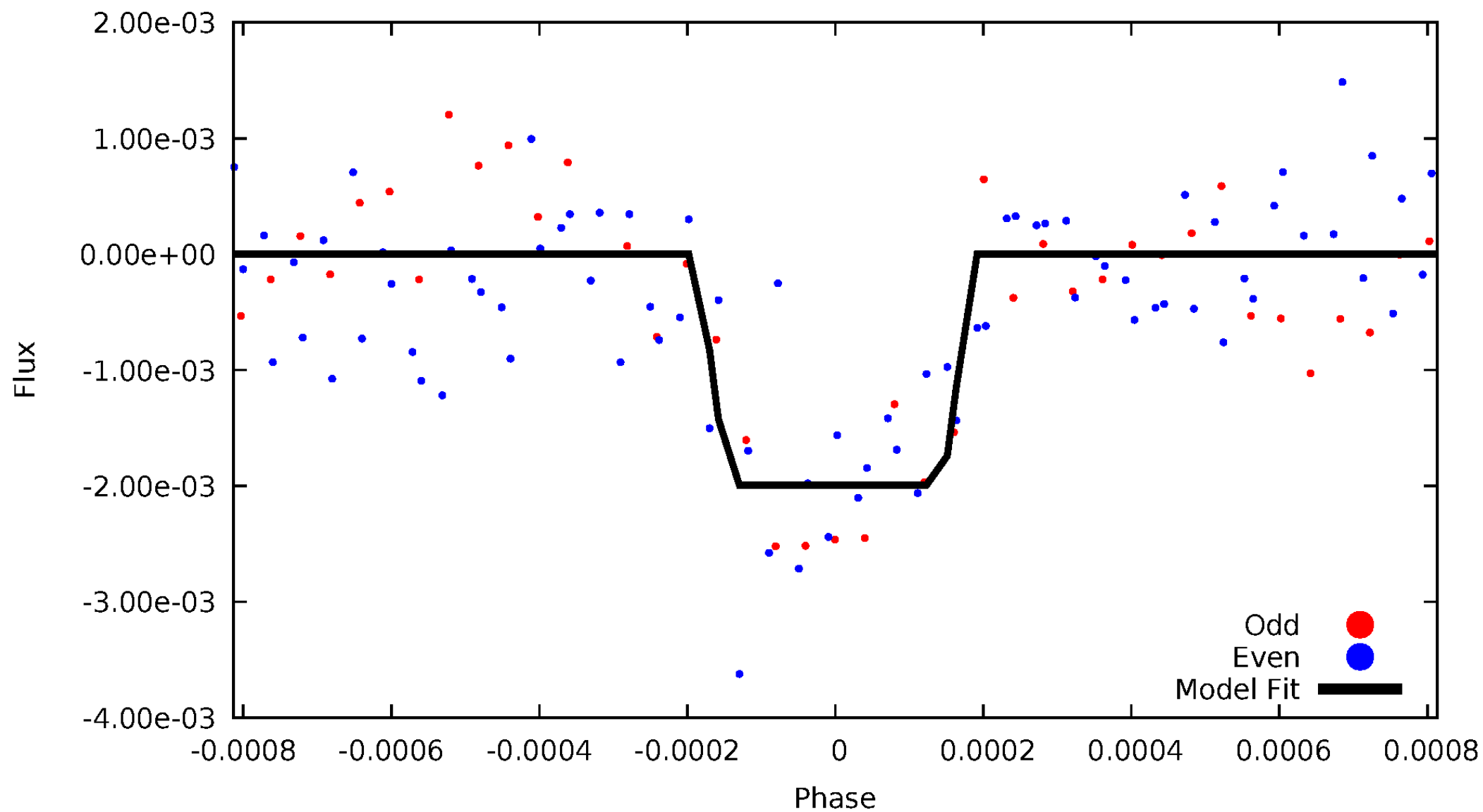
DV Odd/Even

TCE 004651399-01

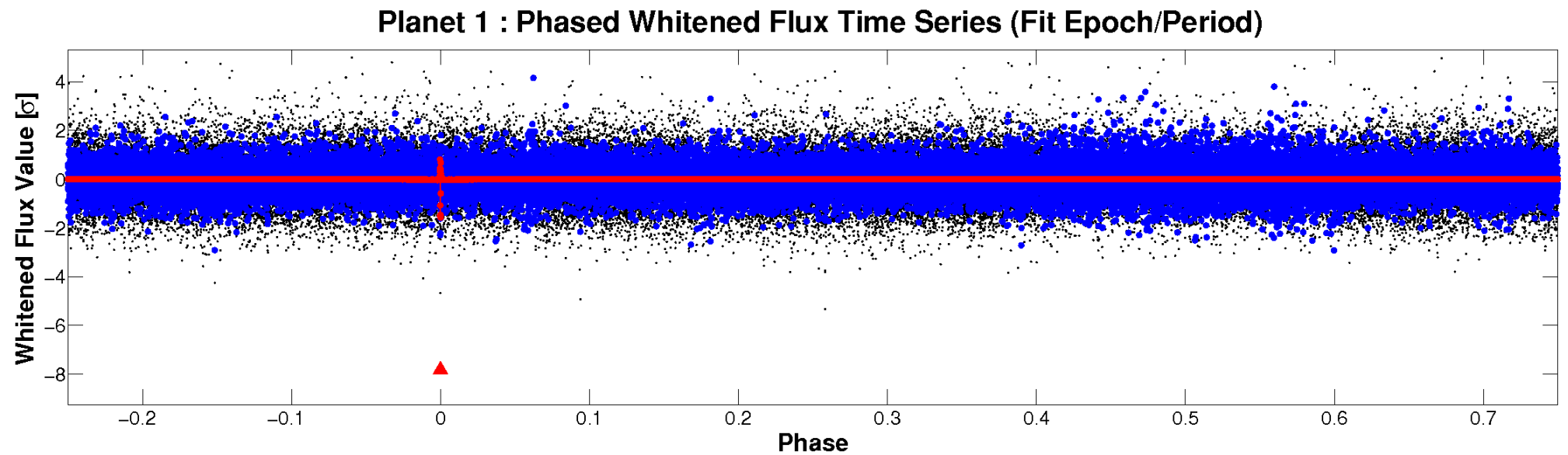
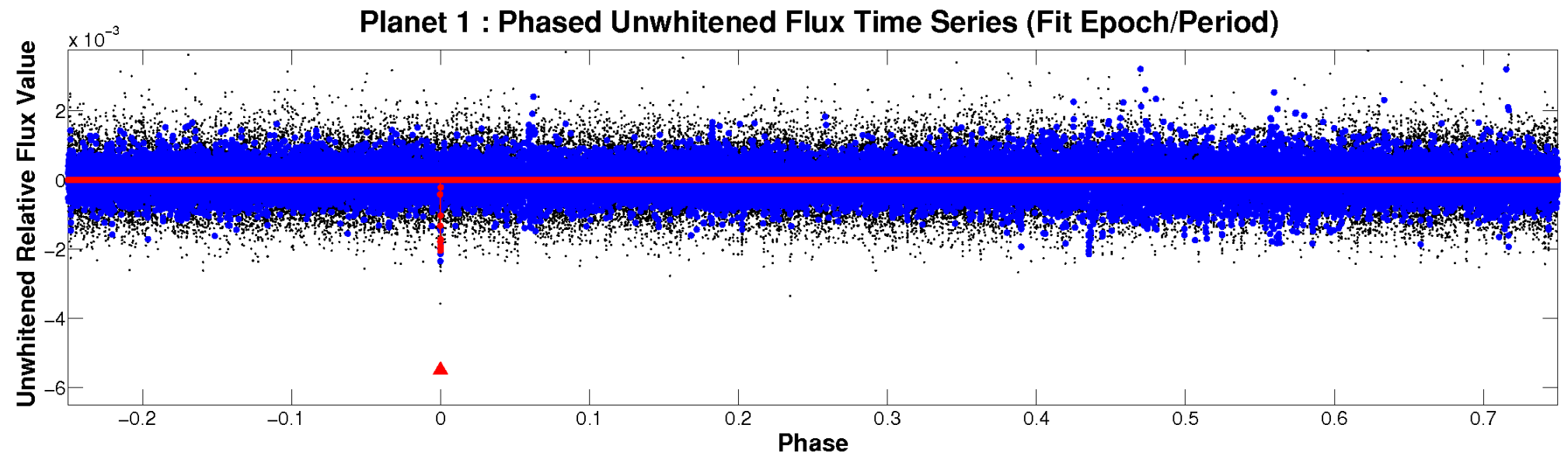


ALT Odd/Even

TCE 004651399-01

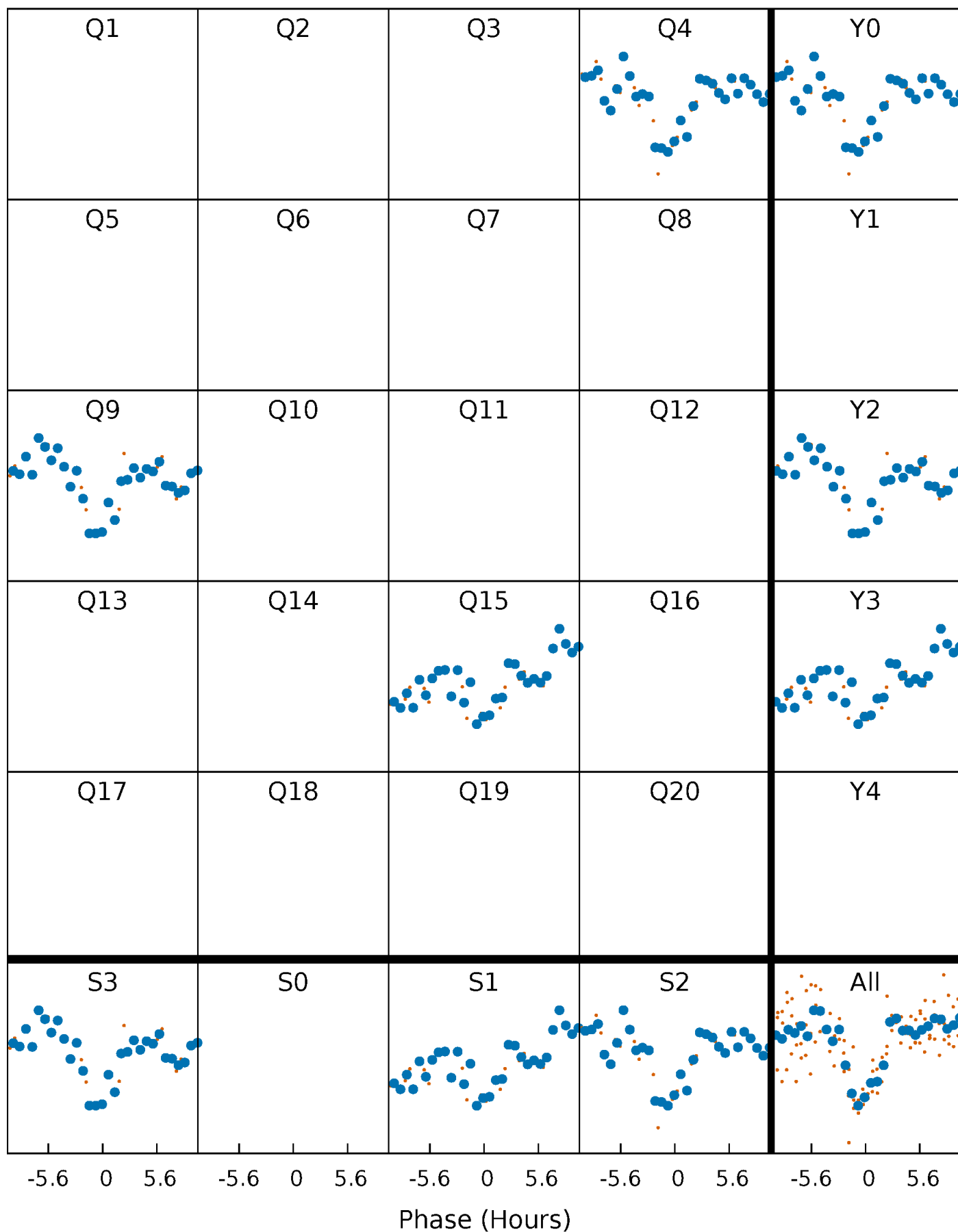


Non-Whitened Vs. Whitened Light Curve



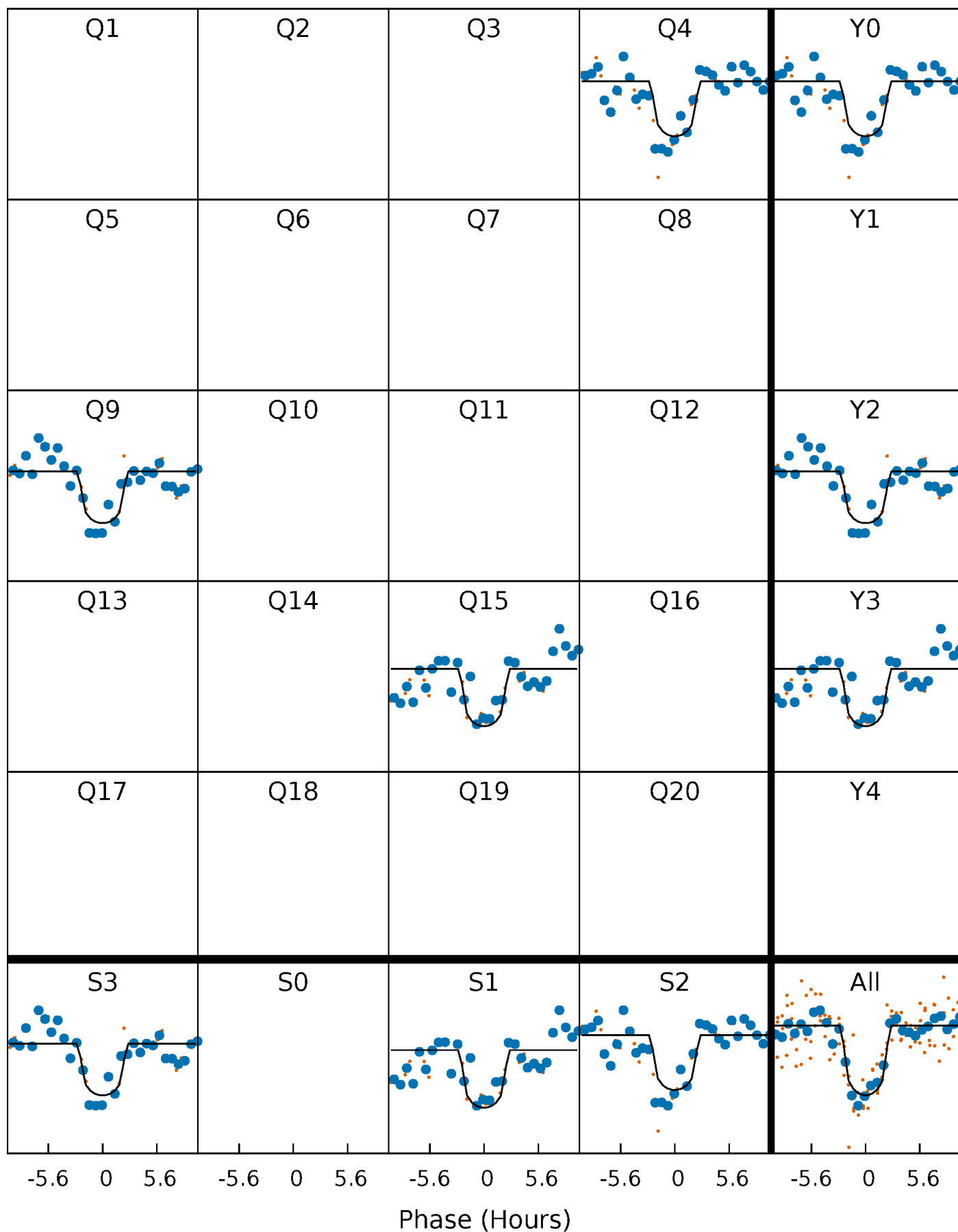
PDC Quarter-Phased Transit Curves

TCE 004651399-01 P=508.799477 Days $T_0=368.365230$ (BKJD)



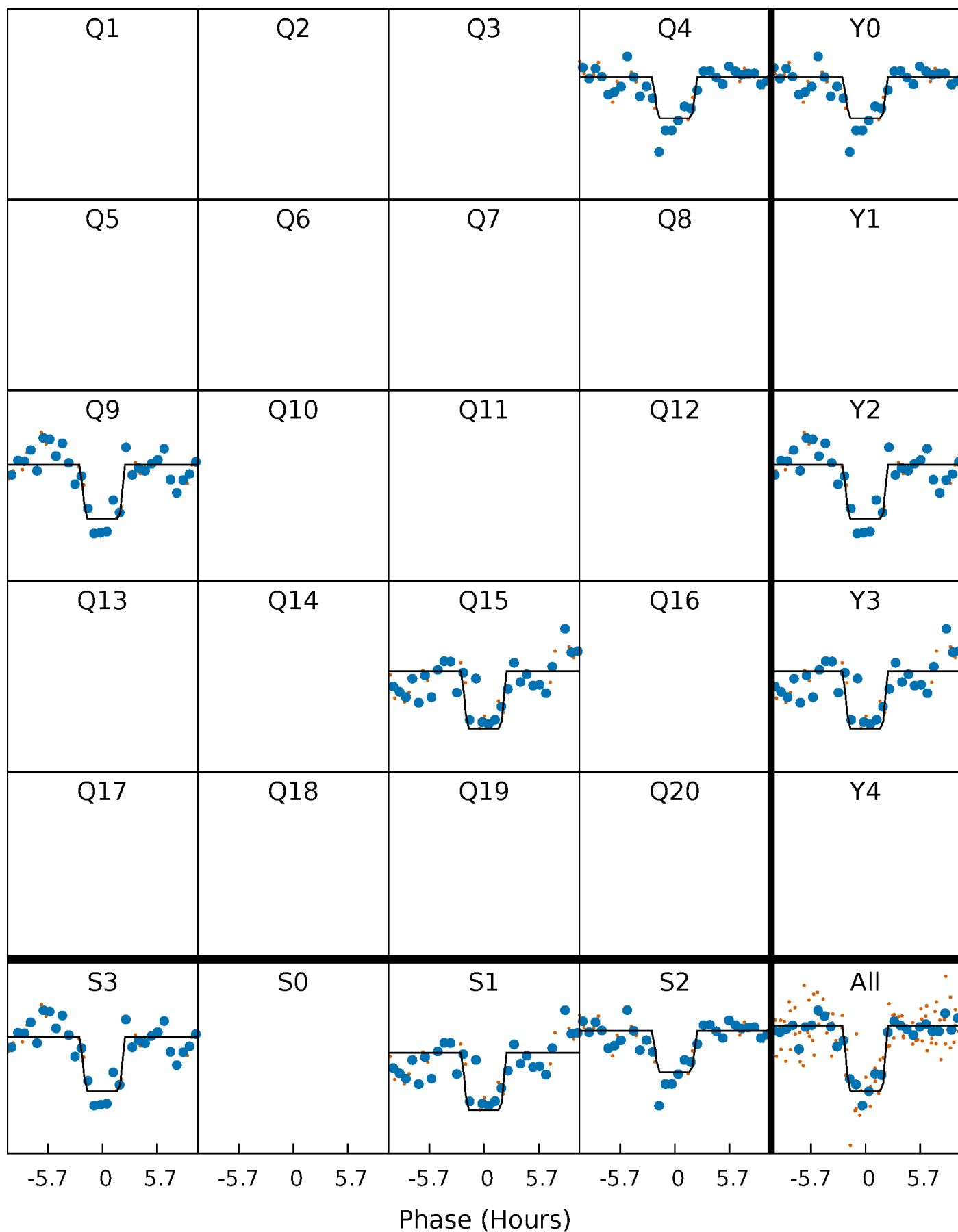
DV Quarter-Phased Transit Curves

TCE 004651399-01 P=508.799477 Days $T_0=368.365230$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

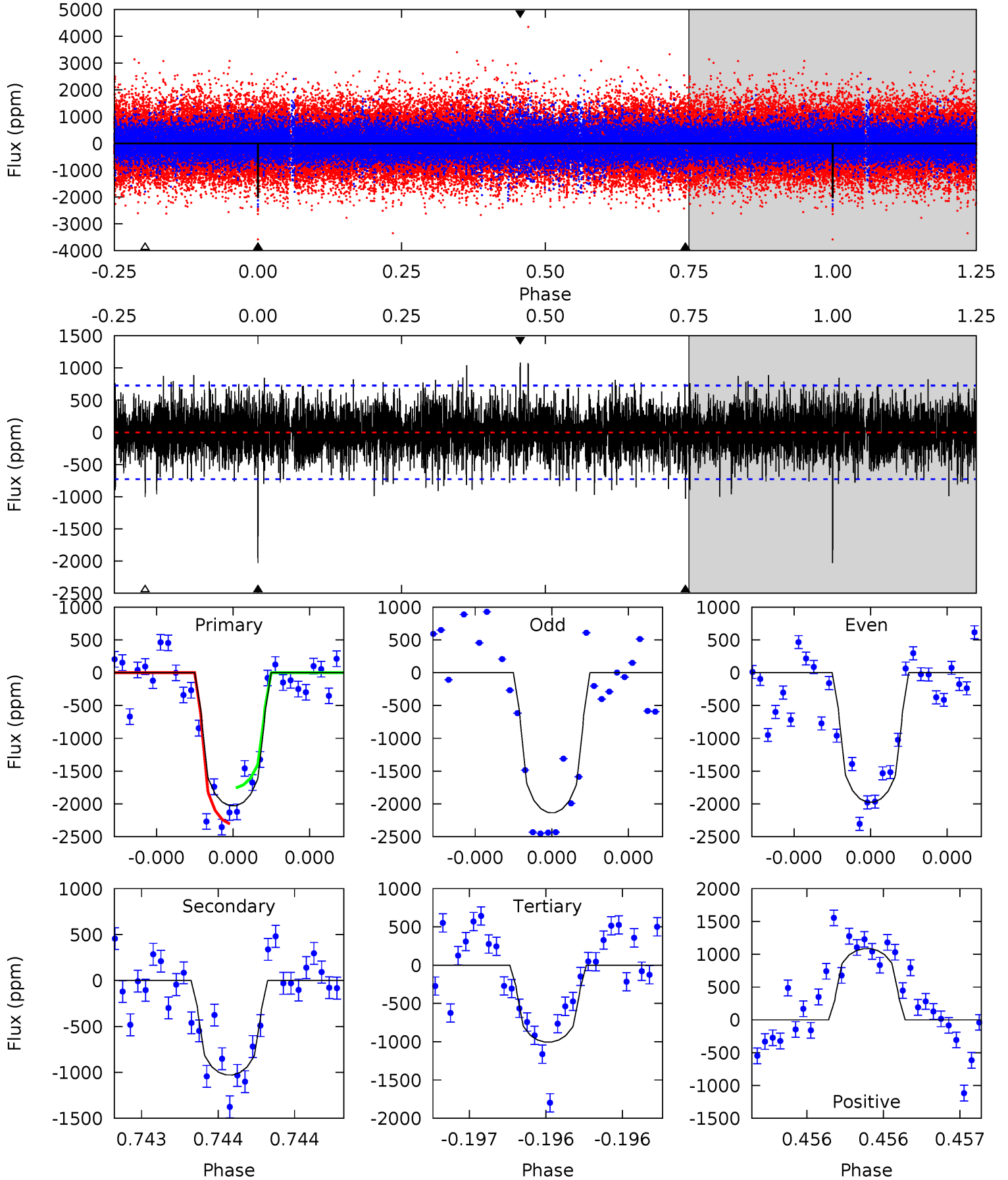
TCE 004651399-01 P=508.795644 Days $T_0=368.359665$ (BKJD)



DV Model-Shift Uniqueness Test

004651399-01, P = 508.799477 Days, E = 368.365230 Days

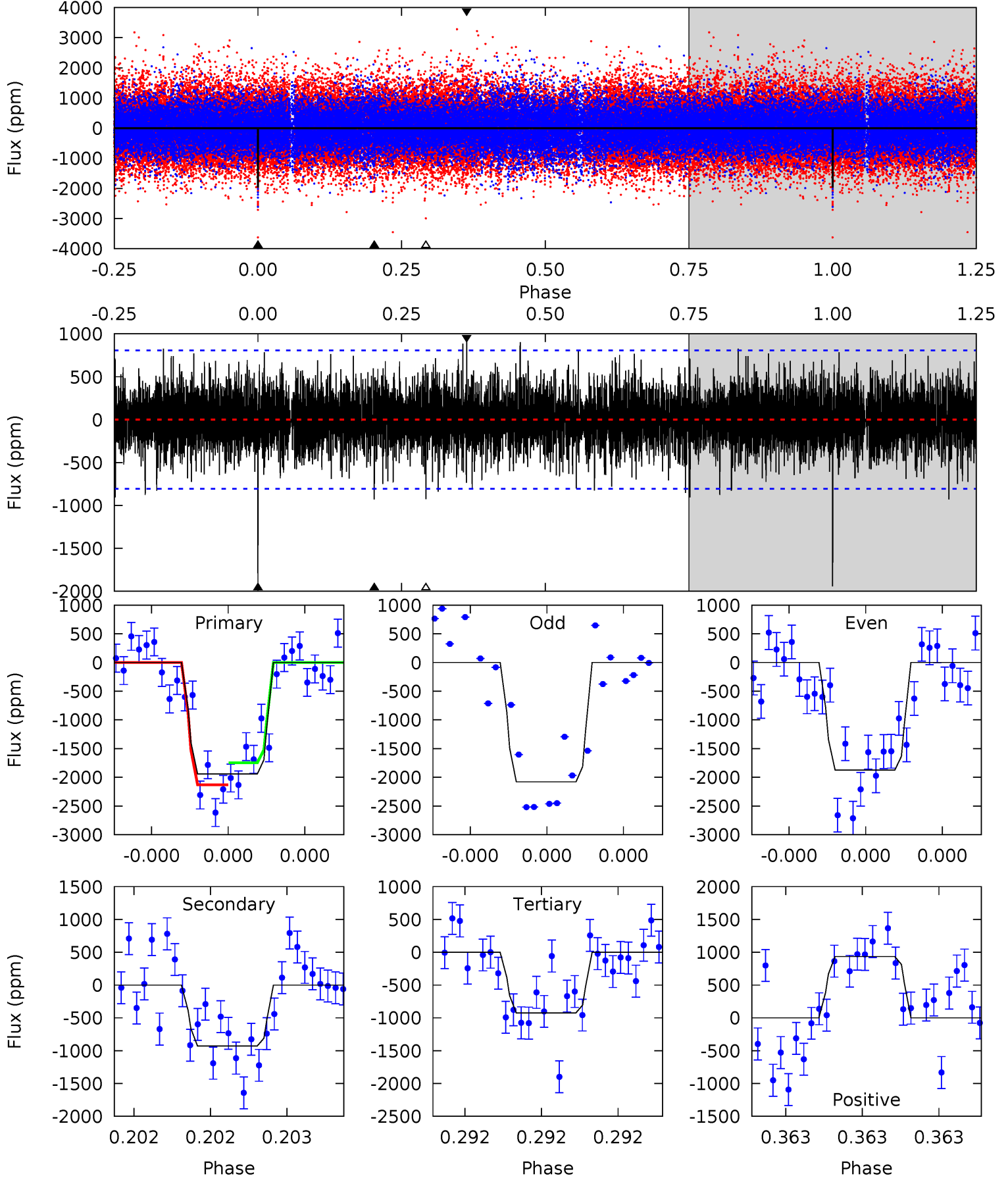
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
15.6	7.91	7.73	8.35	5.60	3.52	2.09	7.88	7.26	0.19	-0.43	0.58	0.95	0.35	2.11



Alt Model-Shift Uniqueness Test

004651399-01, P = 508.795644 Days, E = 368.359665 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
13.6	6.51	6.48	6.54	5.65	3.60	1.71	7.14	7.07	0.03	-0.04	0.68	0.93	0.32	1.35



Stellar Parameters For KIC 004651399

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	4893^{+124}_{-112}	$2.454^{+0.033}_{-0.030}$	$-0.860^{+0.350}_{-0.200}$	$8.811^{+2.232}_{-0.248}$	$0.805^{+0.433}_{-0.024}$	$0.002^{+0.000}_{-0.000}$
	+3%/-2%	+1%/-1%	+41%/-23%	+25%/-3%	+54%/-3%	+9%/-21%
Source	PHO1	AST71	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 004651399-01 / KOI 7698.01

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-1028 ± 130	$60.19^{+55.32}_{-39.80}$	831^{+24}_{-20}	3828^{+2026}_{-724}	217^{+1547}_{-159}
Alt.	-929 ± 143	$60.87^{+54.47}_{-39.25}$	831^{+24}_{-21}	3737^{+1830}_{-688}	192^{+1212}_{-140}

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 $A_{obs} \gg 1.0$

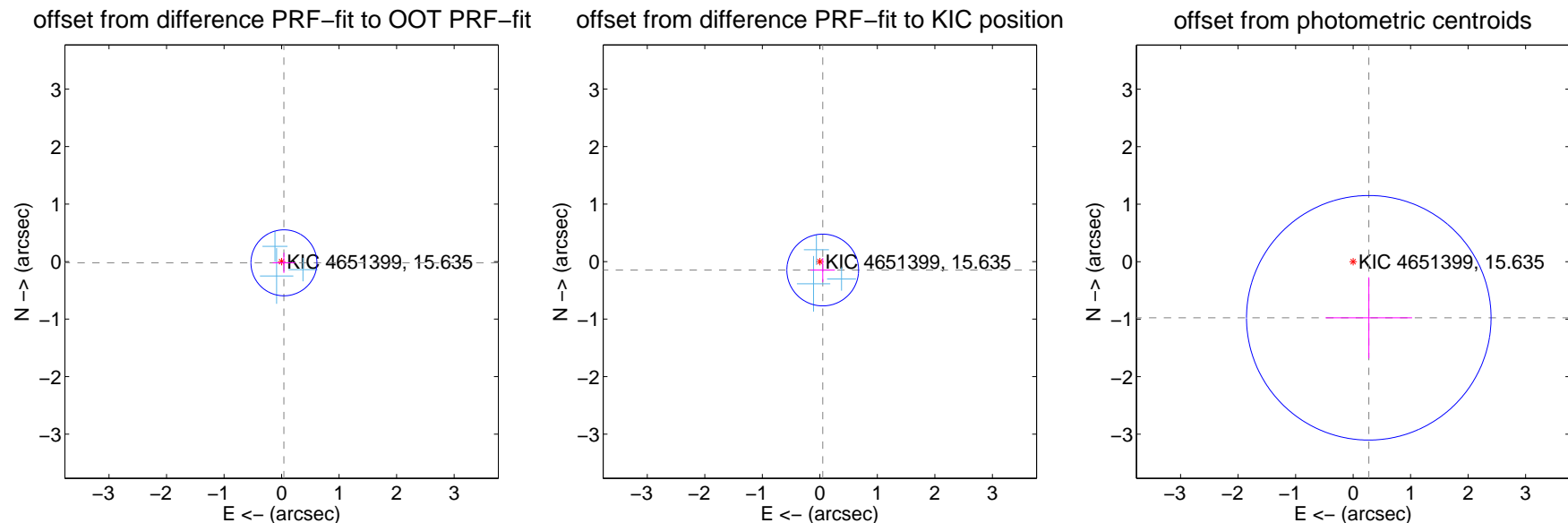
DV Centroid Data

Supplemental centroid analysis for 004651399-01. Kepler magnitude: 15.63. Transit SNR 7.36

There are 3 quarters with good PRF difference image offsets

The direct PRF centroid is offset from the target star catalog position by about 0.14 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.046 ± 0.191	0.24	-0.041 ± 0.195	-0.021 ± 0.176
PRF-fit source offset from KIC position	0.155 ± 0.208	0.75	-0.050 ± 0.211	-0.147 ± 0.207
photometric centroid source offset	1.01 ± 0.71	1.43	-0.27 ± 0.75	-0.98 ± 0.70



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



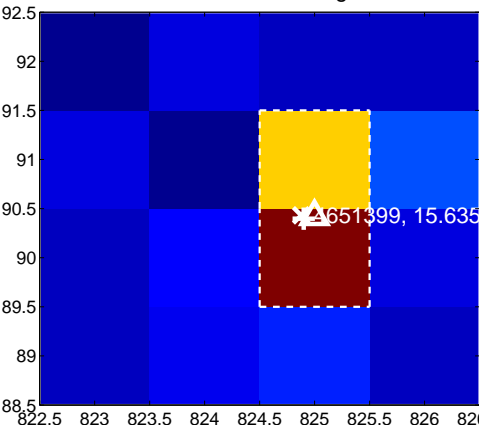
Q3 no difference image



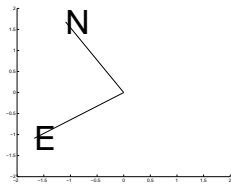
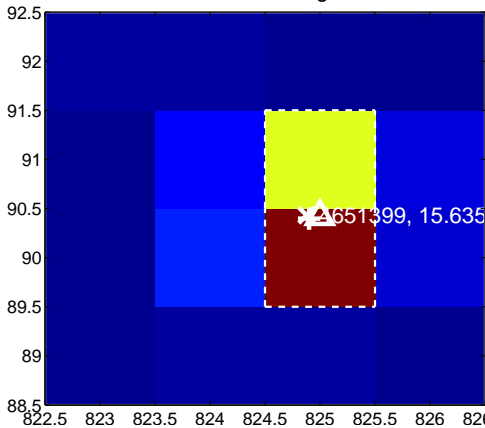
Q3 no OOT image



Q4 difference image



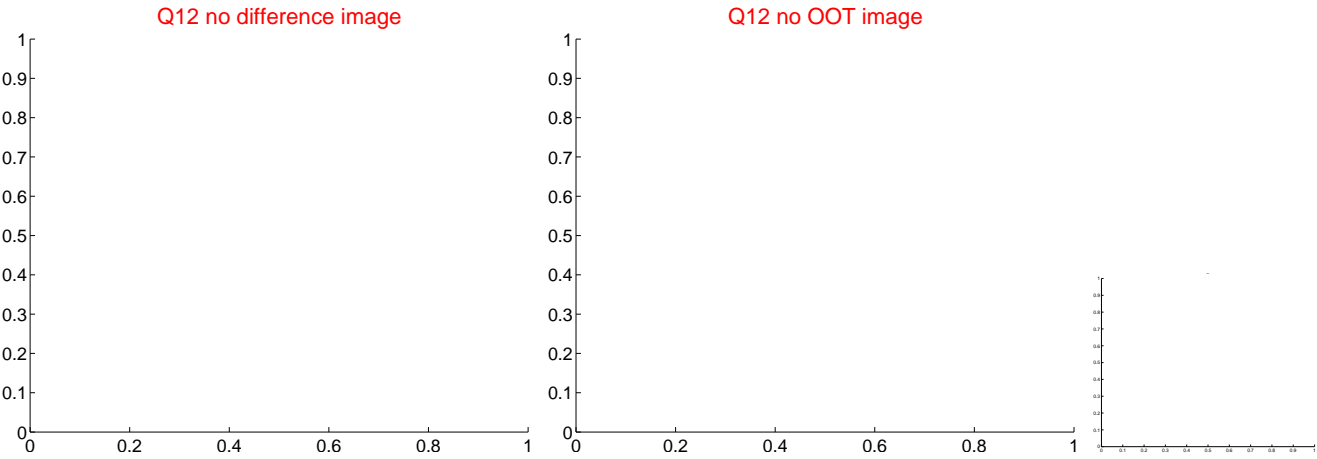
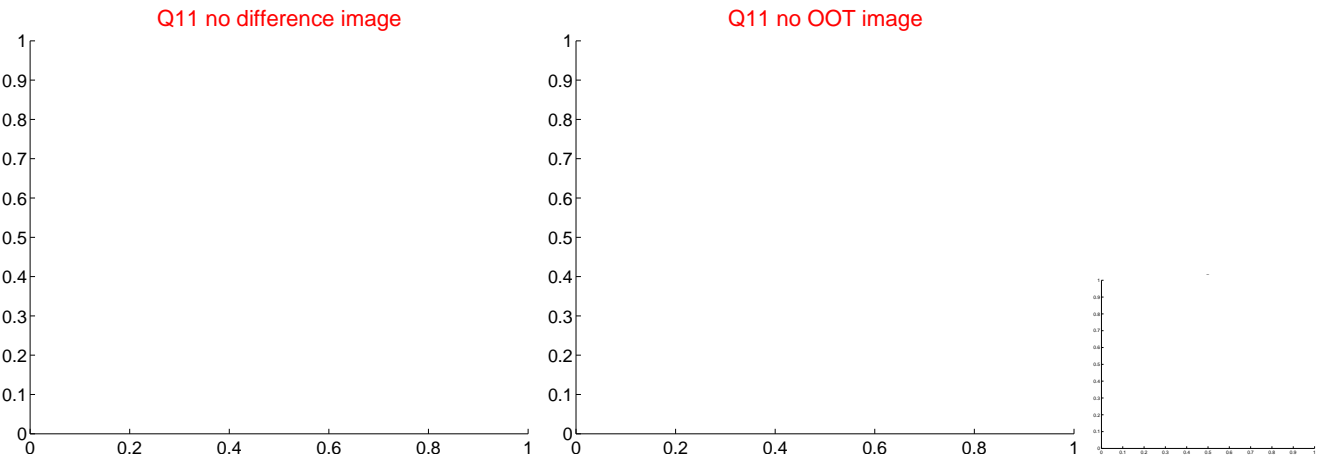
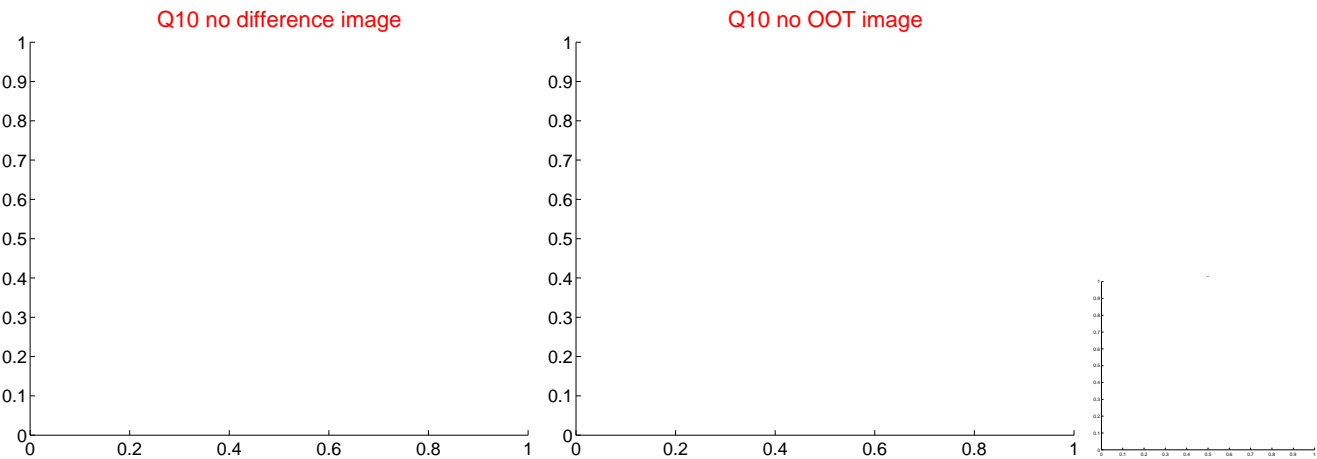
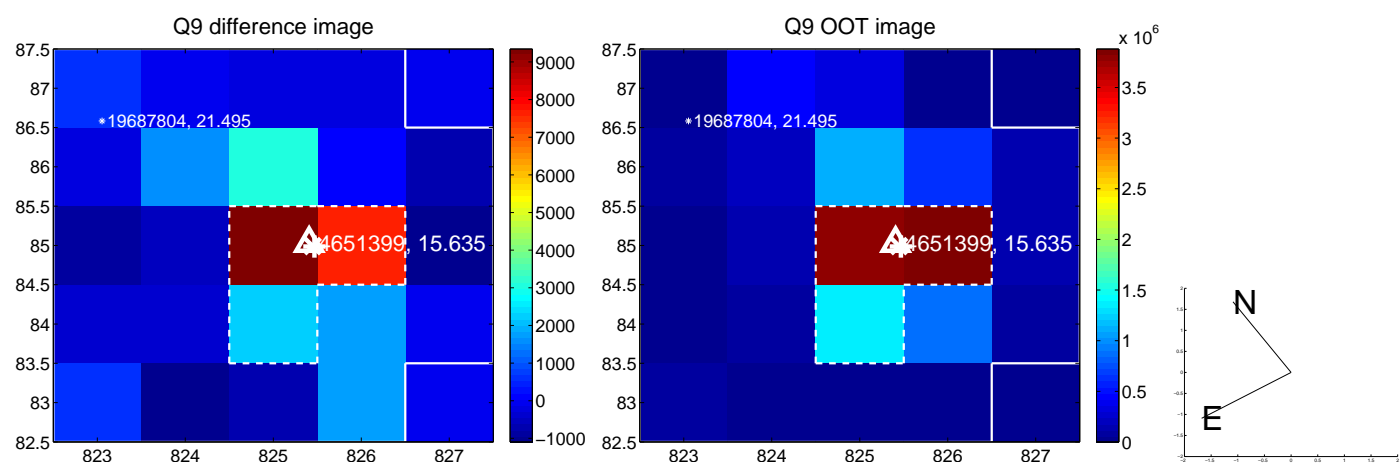
Q4 OOT image



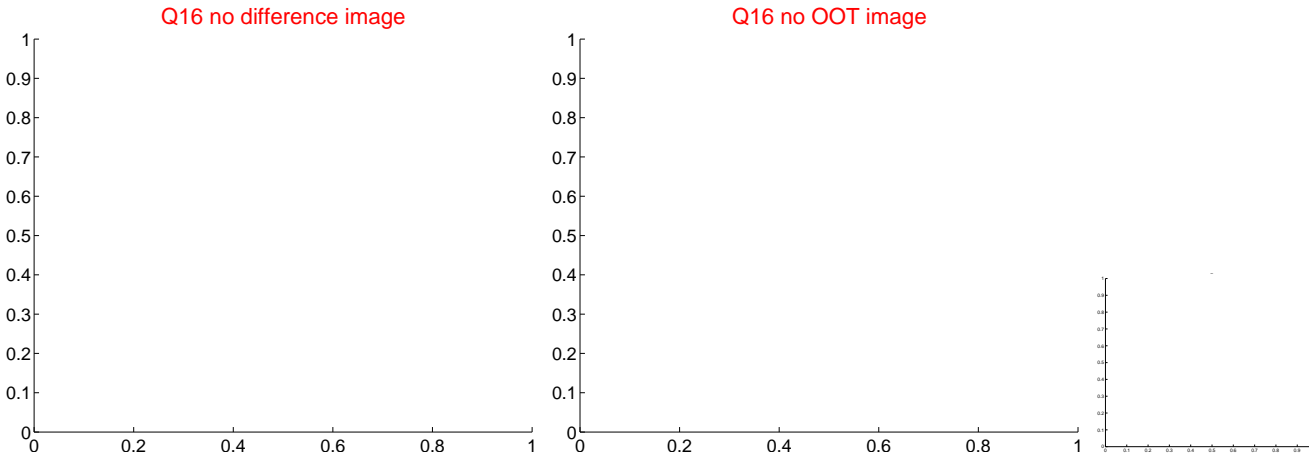
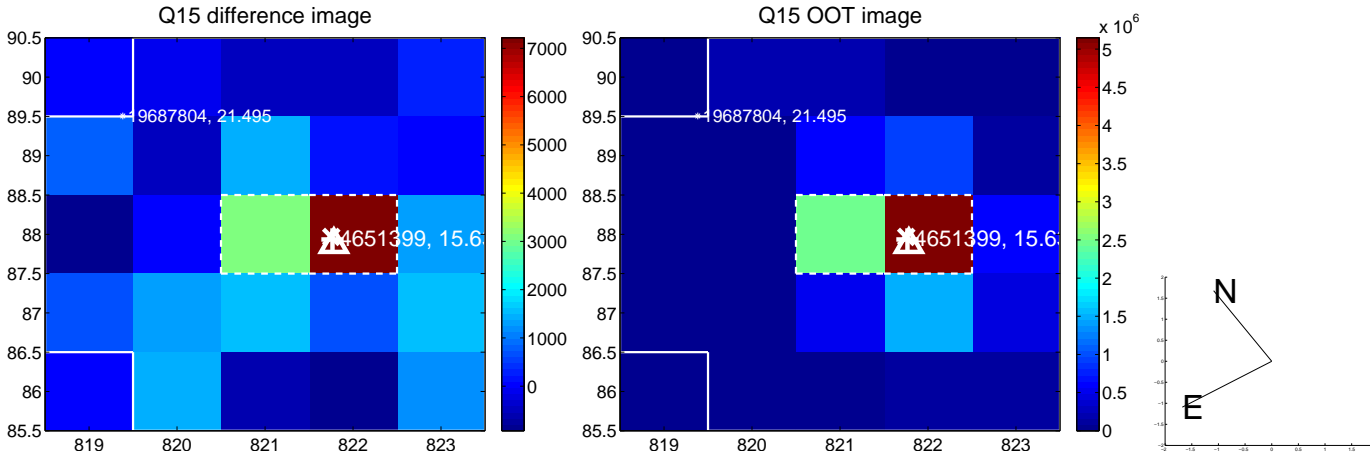
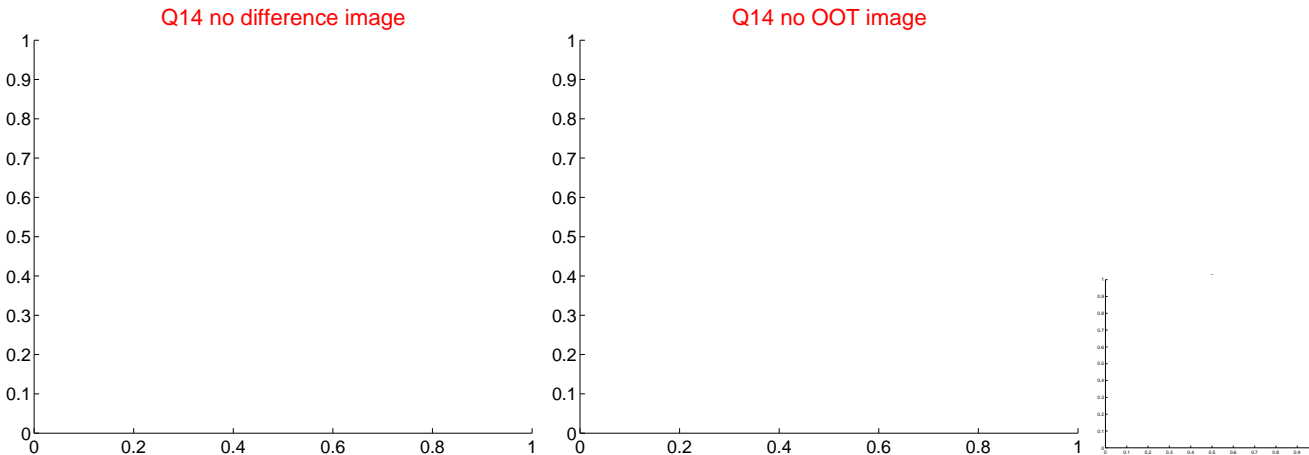
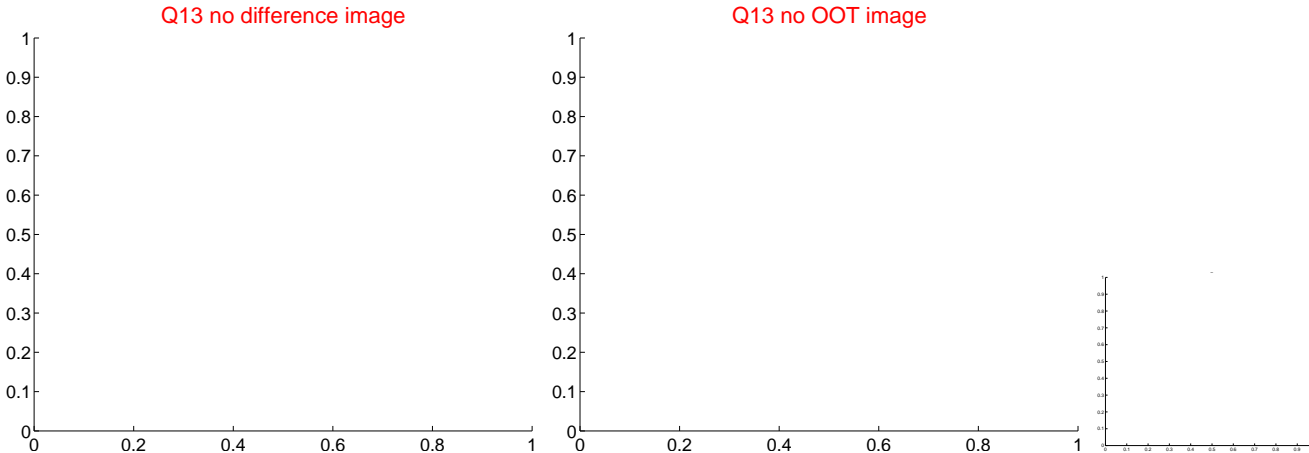
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



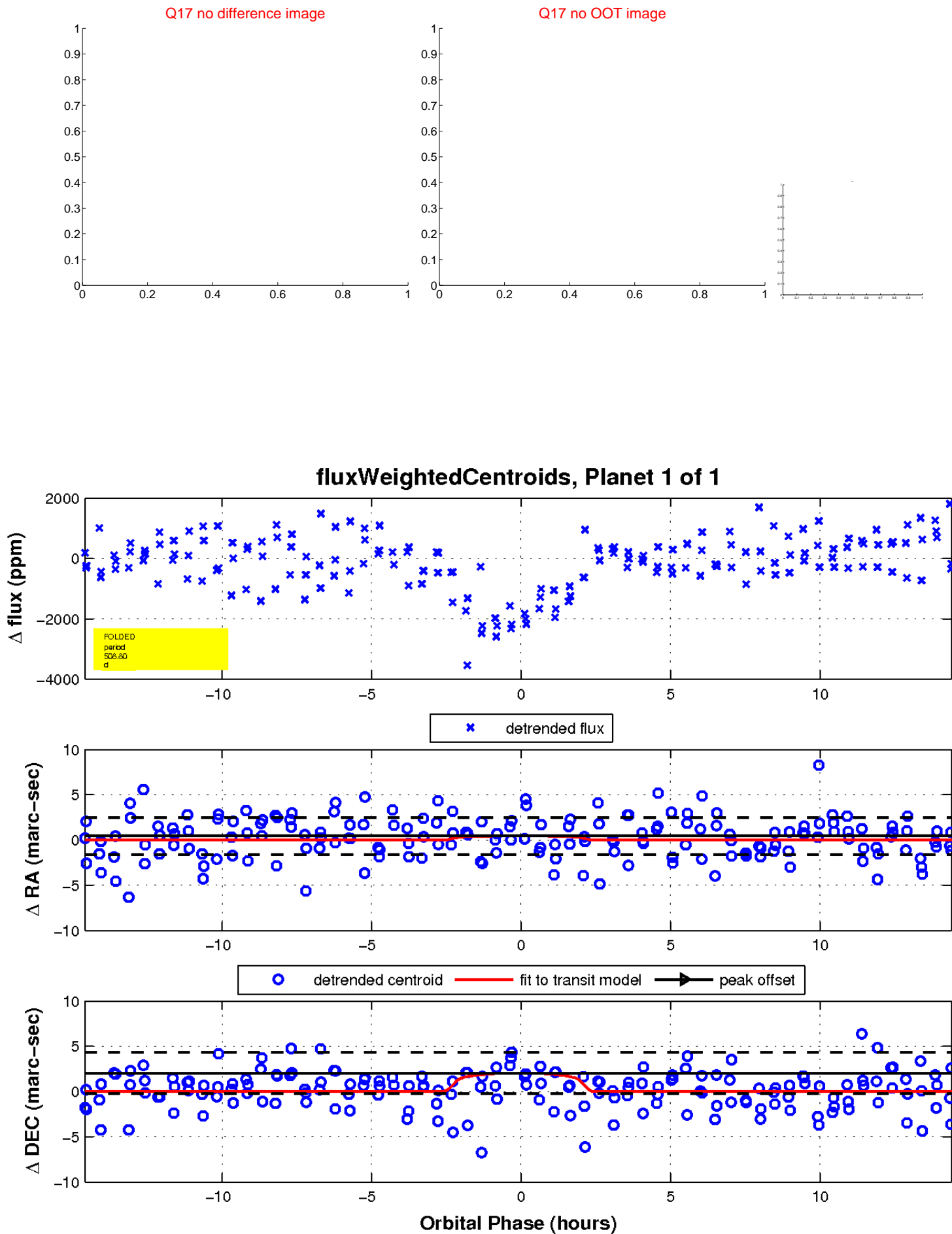
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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UKIRT Image

Declination

