

KIC 002309595

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})
002309595-01	OBS	No	371.660009	469.199795	176.1	10.954	7.4	7.1	2.39	5159	3.45	3.26

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
002309595-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL—CENT_SATURATED

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

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

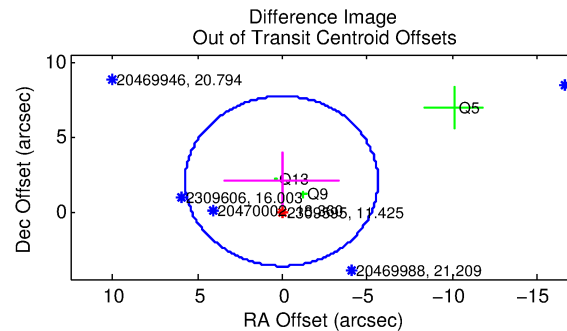
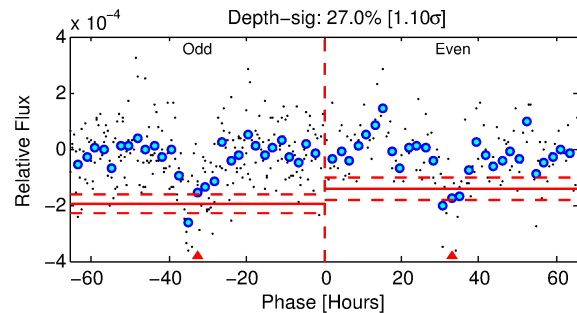
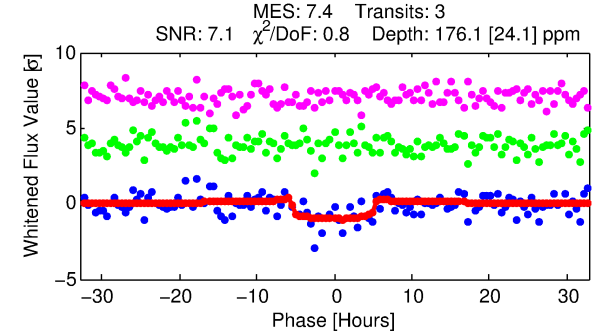
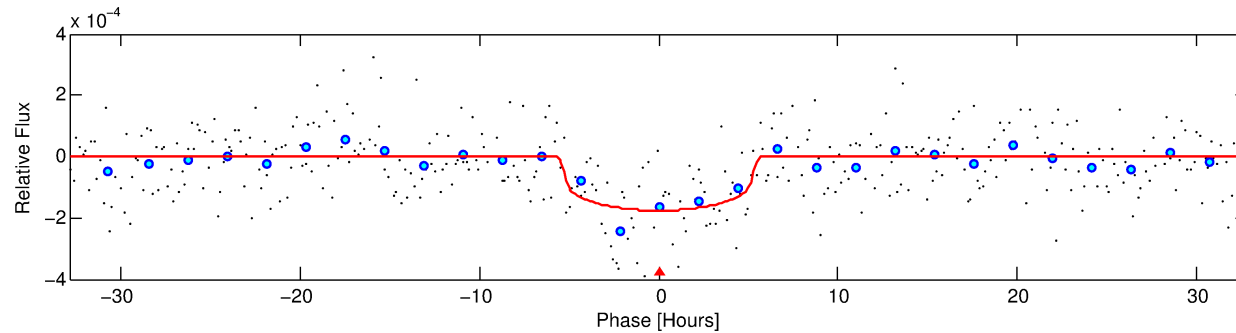
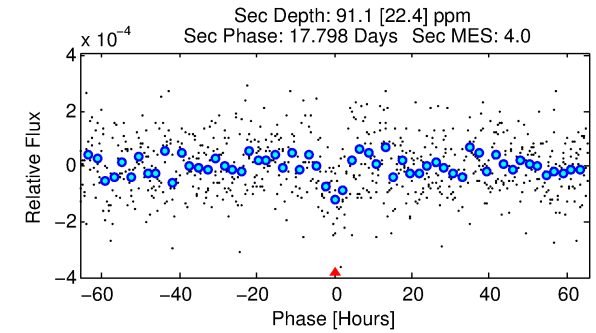
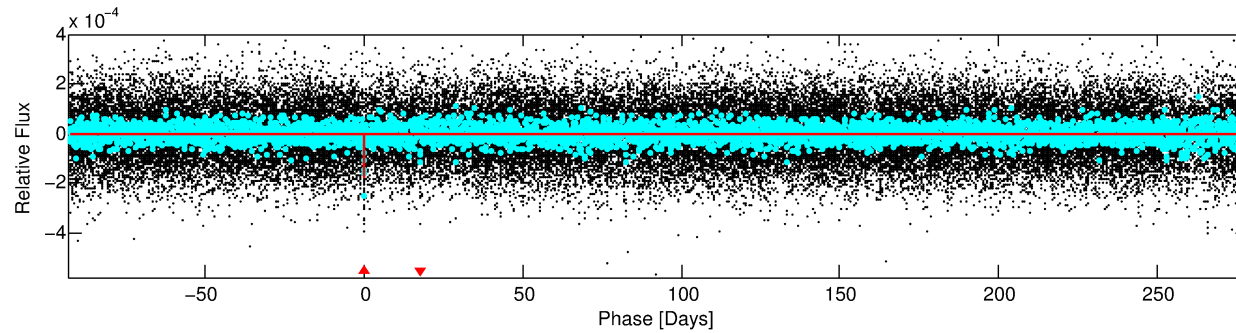
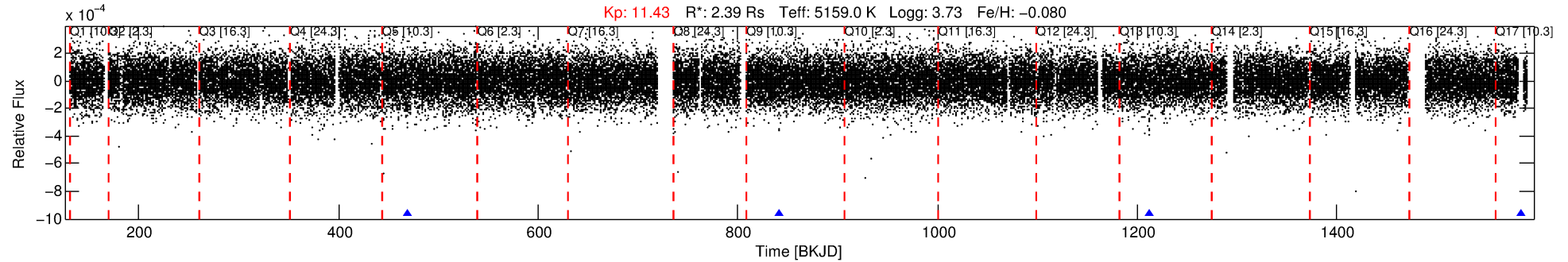
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 002309595-01

No Significant Match Found

DV One-Page Summary

KIC: 2309595 Candidate: 1 of 1 Period: 371.660 d



DV Fit Results:

Period = 371.66001 [0.01094] d
Epoch = 469.1998 [0.0142] BKJD
Rp/R* = 0.0132 [0.0070]
a/R* = 177.17 [358.54]
b = 0.75 [1.21]
Seff = 3.26 [0.27]
Teq = 343 [7] K
Rp = 3.45 [1.86] Re
a = 1.0545 [0.0520] AU
Ag = 4685.84 [5132.89] [0.91σ]
Teffp = 4383 [1201] K [3.36σ]

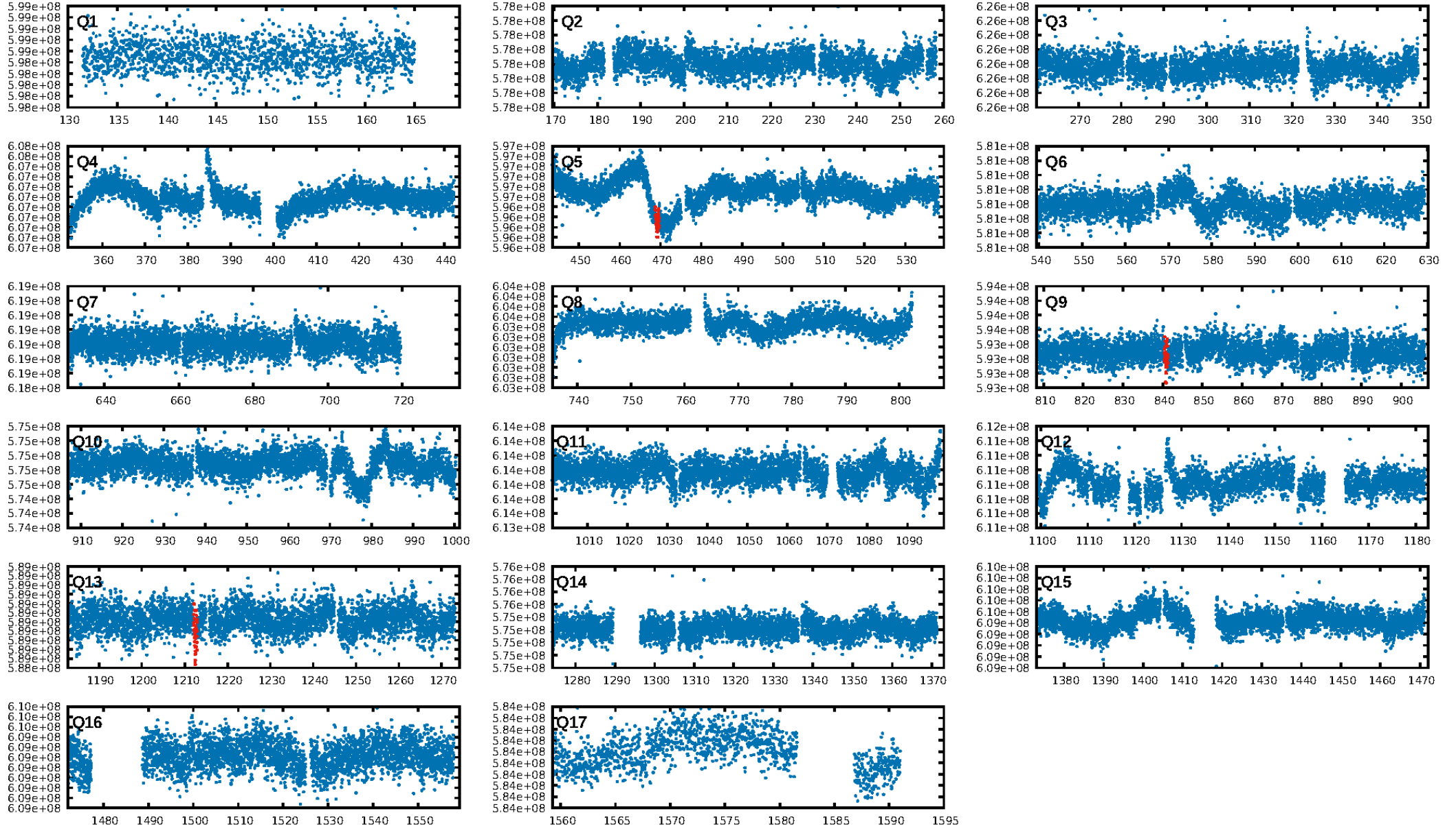
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: 44.0%
ModelChiSquareGof-sig: 99.5%
Bootstrap-pfa: 8.59e-12
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: -1.912
Centroid-sig: 0.6%
Centroid-so: 1.988 arcsec [1.45σ]
OotOffset-rm: 2.035 arcsec [1.08σ]
KicOffset-rm: 2.139 arcsec [2.21σ]
OotOffset-st: 0/0/0/3 [3]
KicOffset-st: 0/0/0/3 [3]
DiffImageQuality-fgm: 0.67 [2/3]
DiffImageOverlap-fno: 1.00 [3/3]

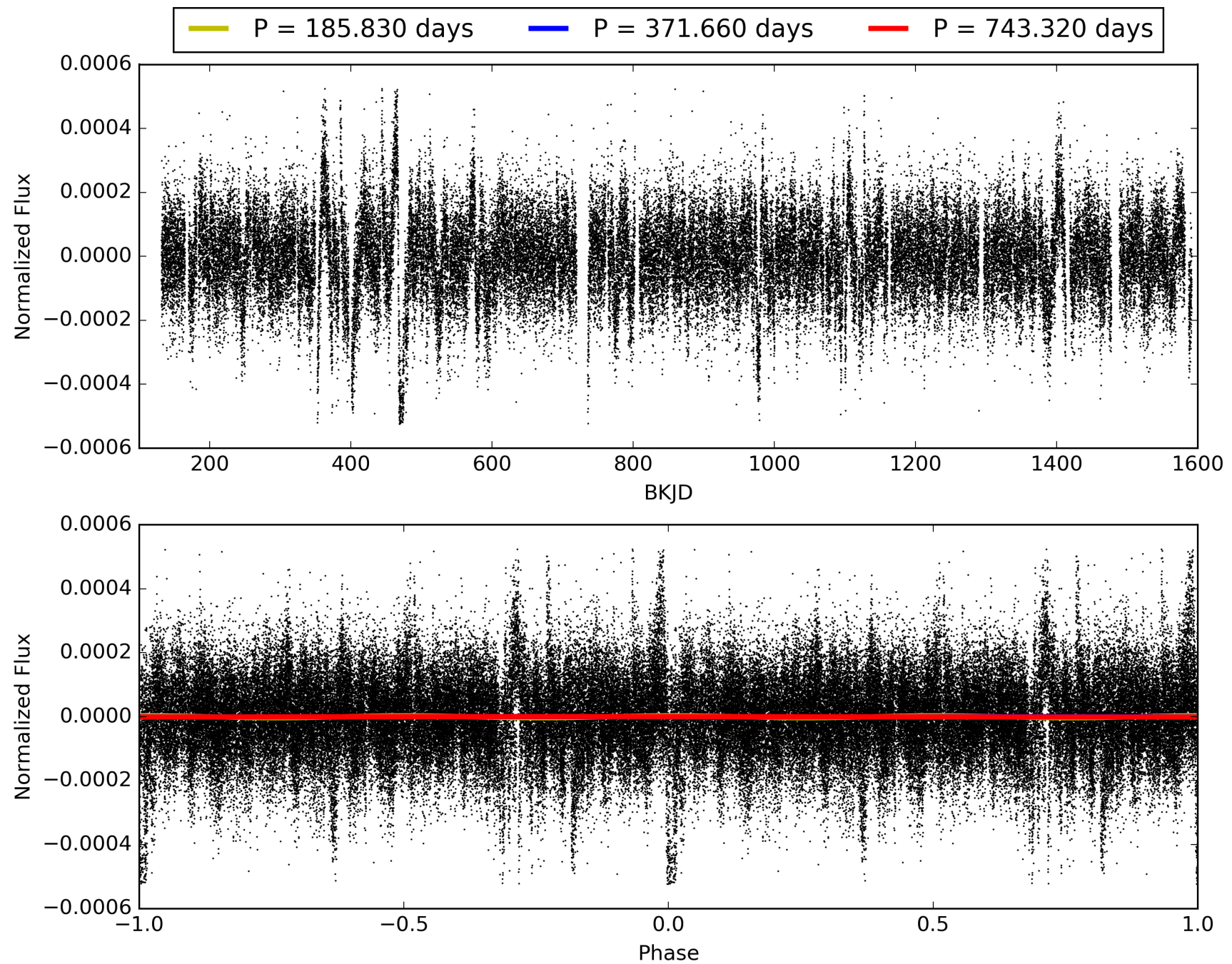
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 19:54:31 Z

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

TCE 002309595-01, PDC Light Curves

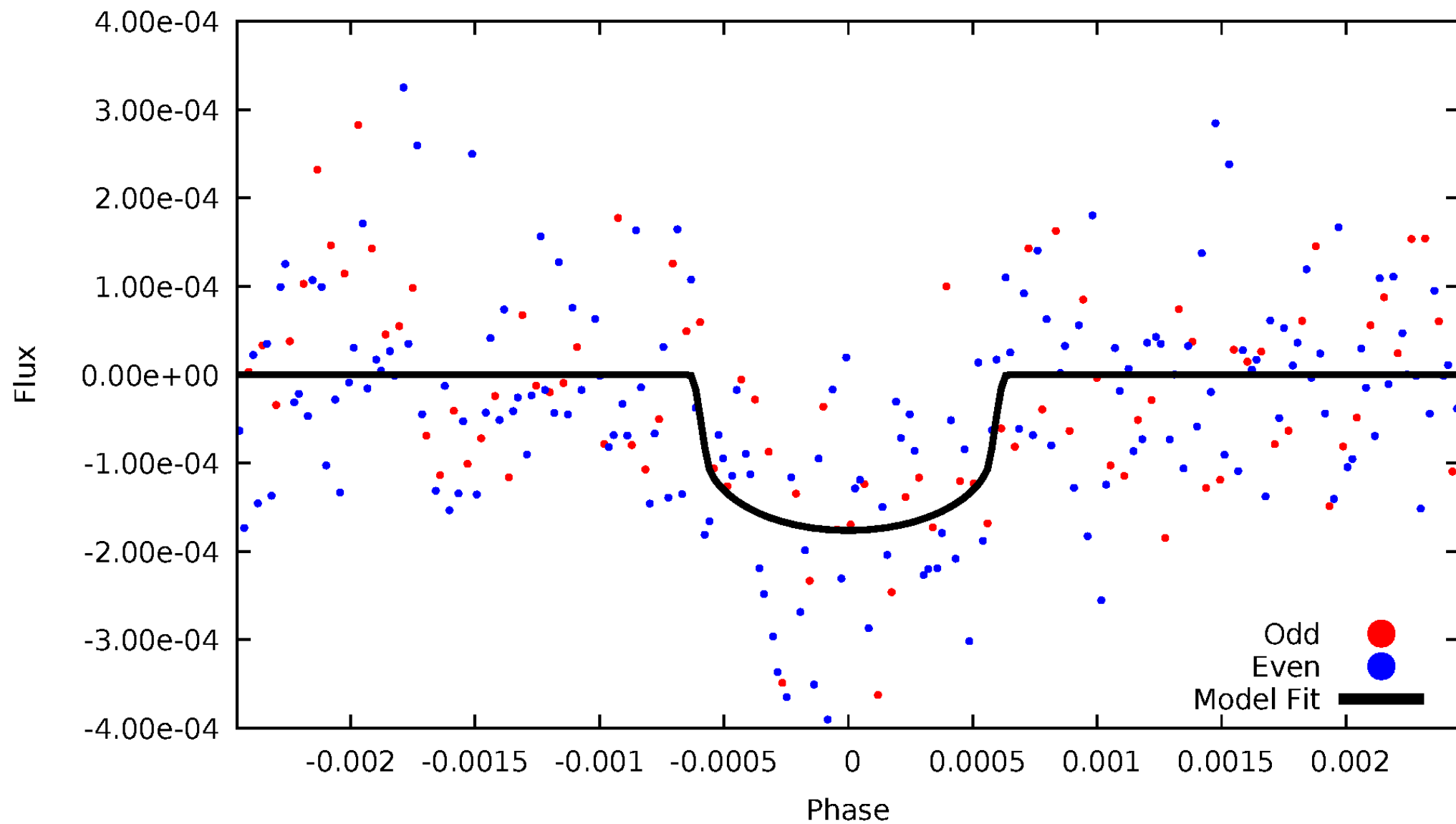


TCE 002309595-01



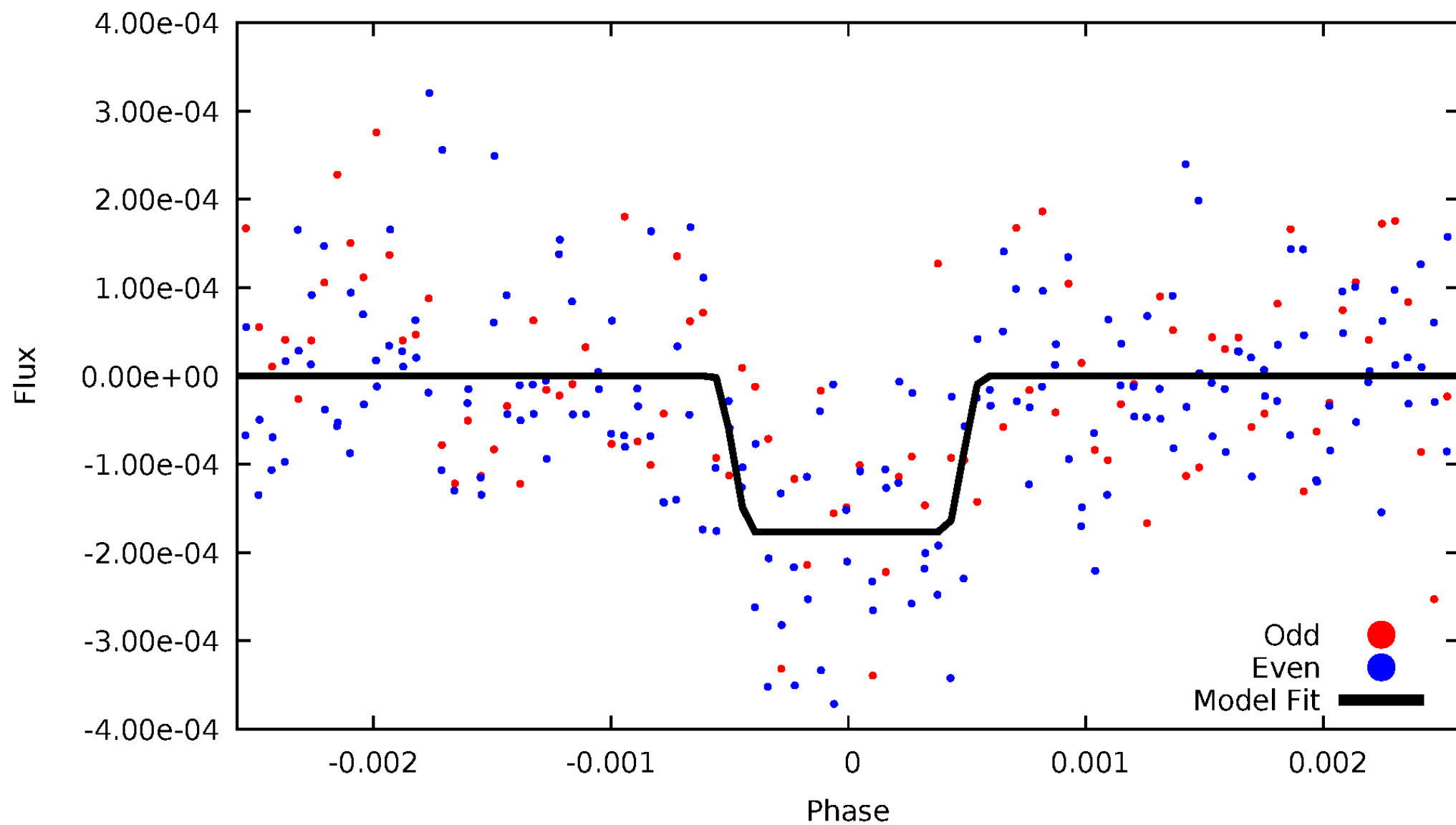
DV Odd/Even

TCE 002309595-01

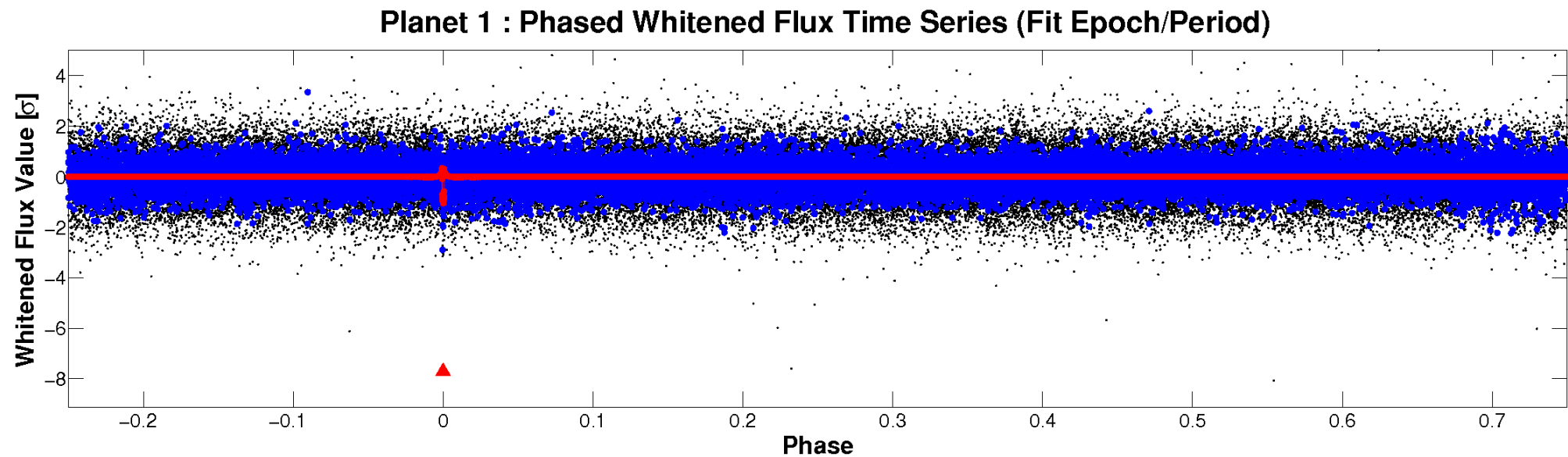
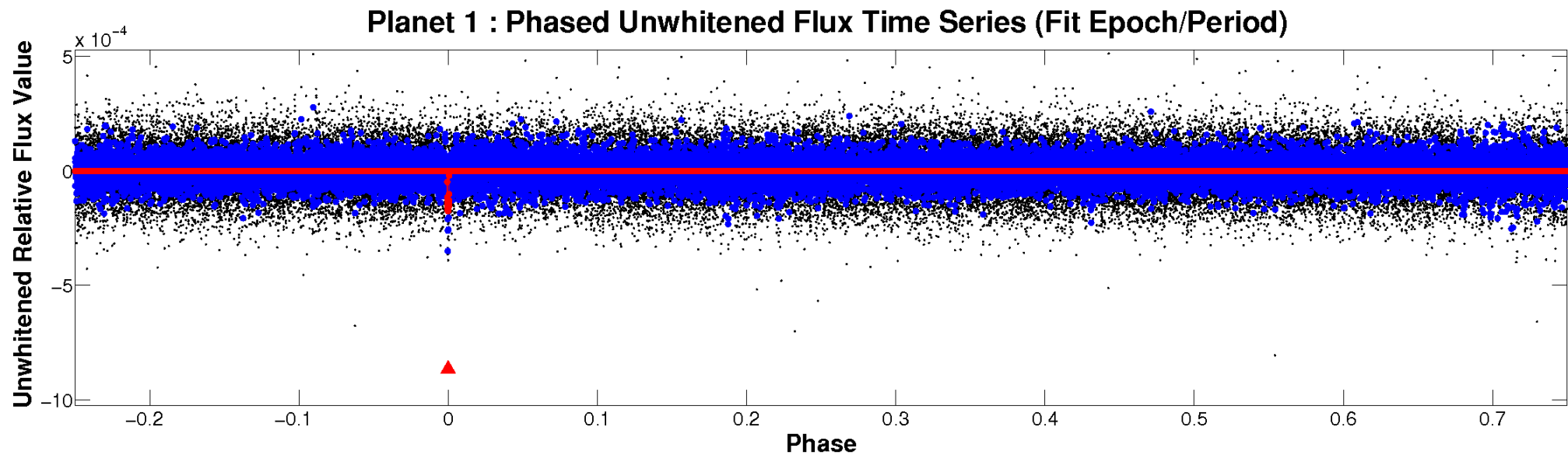


ALT Odd/Even

TCE 002309595-01

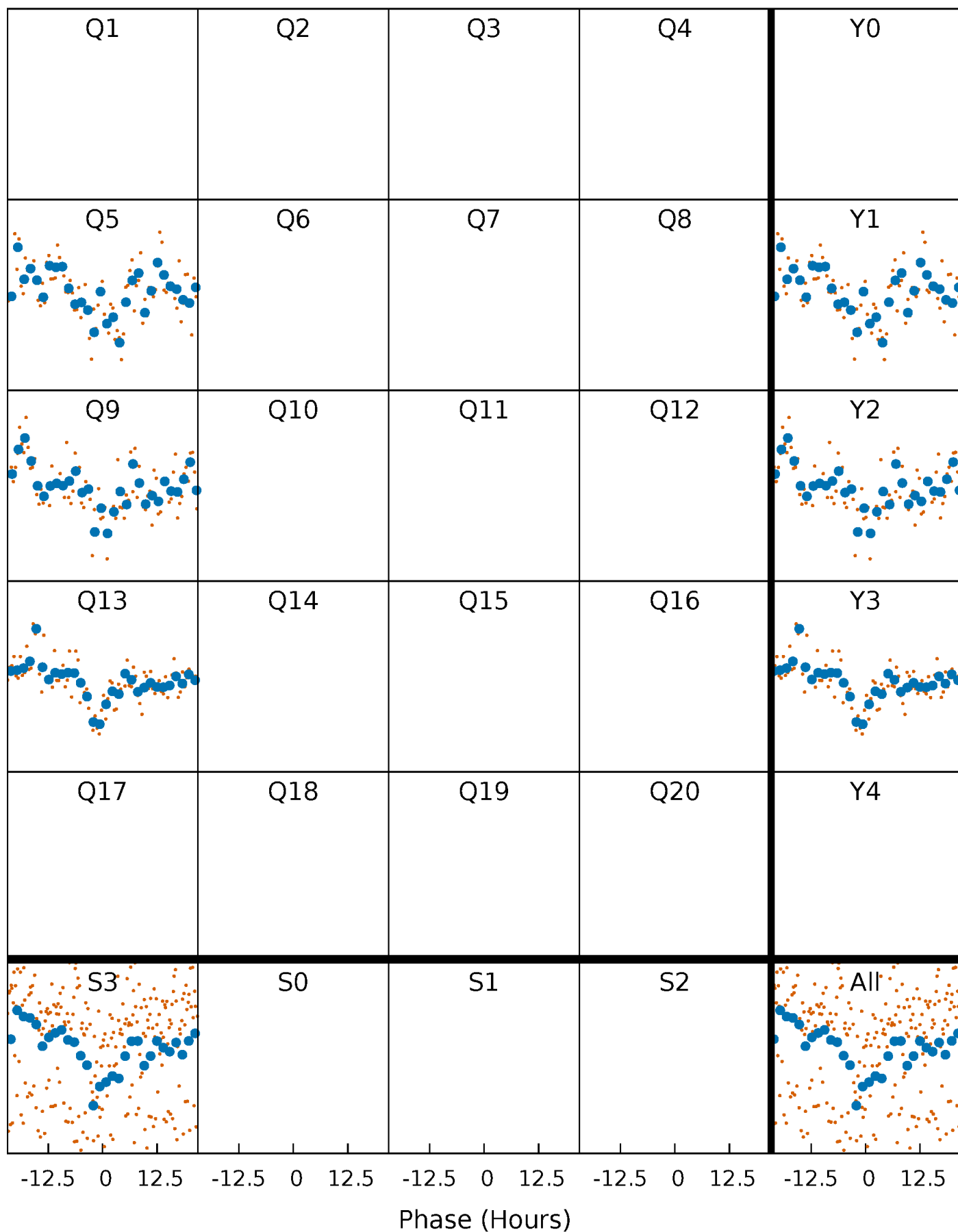


Non-Whitened Vs. Whitened Light Curve



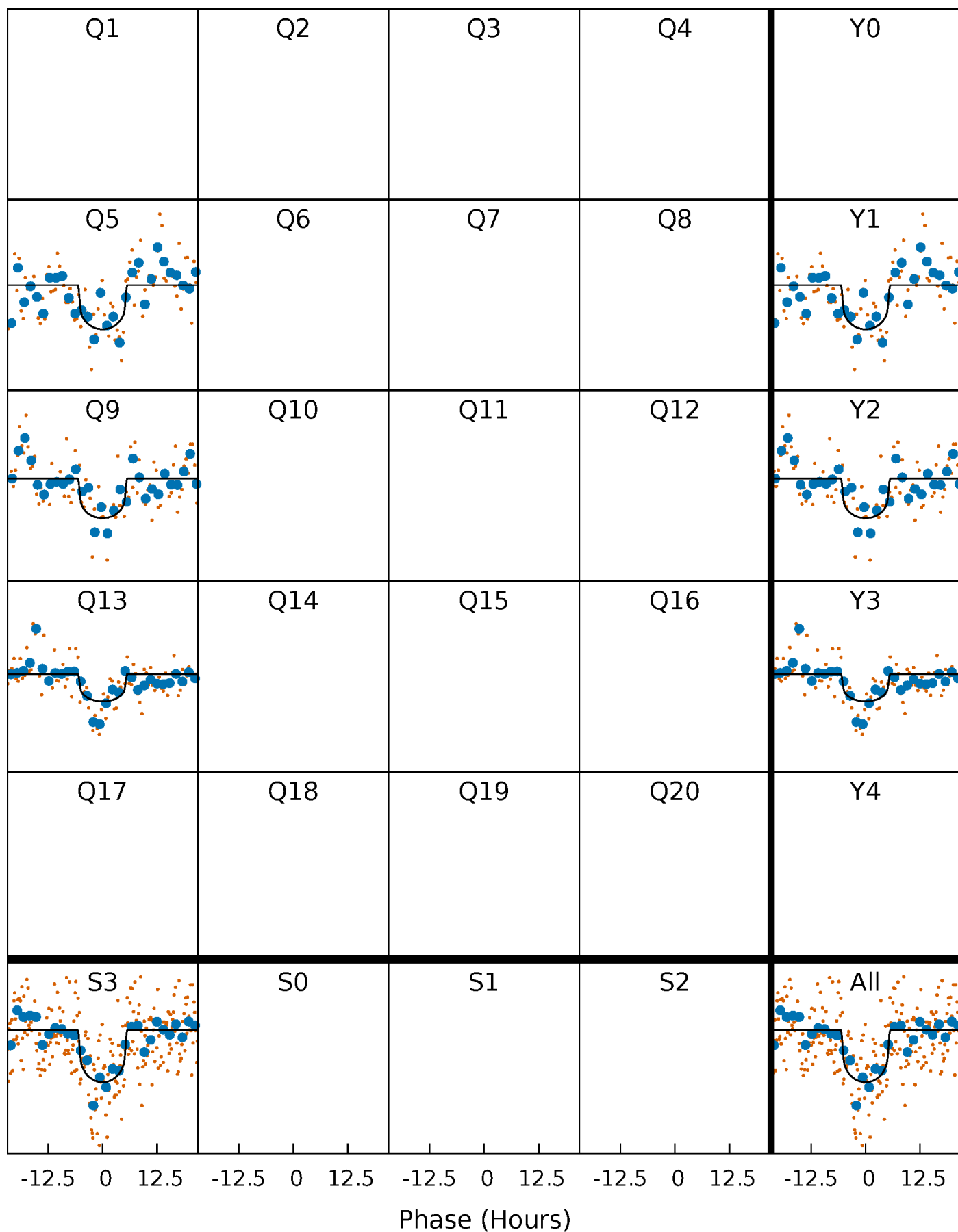
PDC Quarter-Phased Transit Curves

TCE 002309595-01 P=371.660009 Days $T_0=469.199795$ (BKJD)



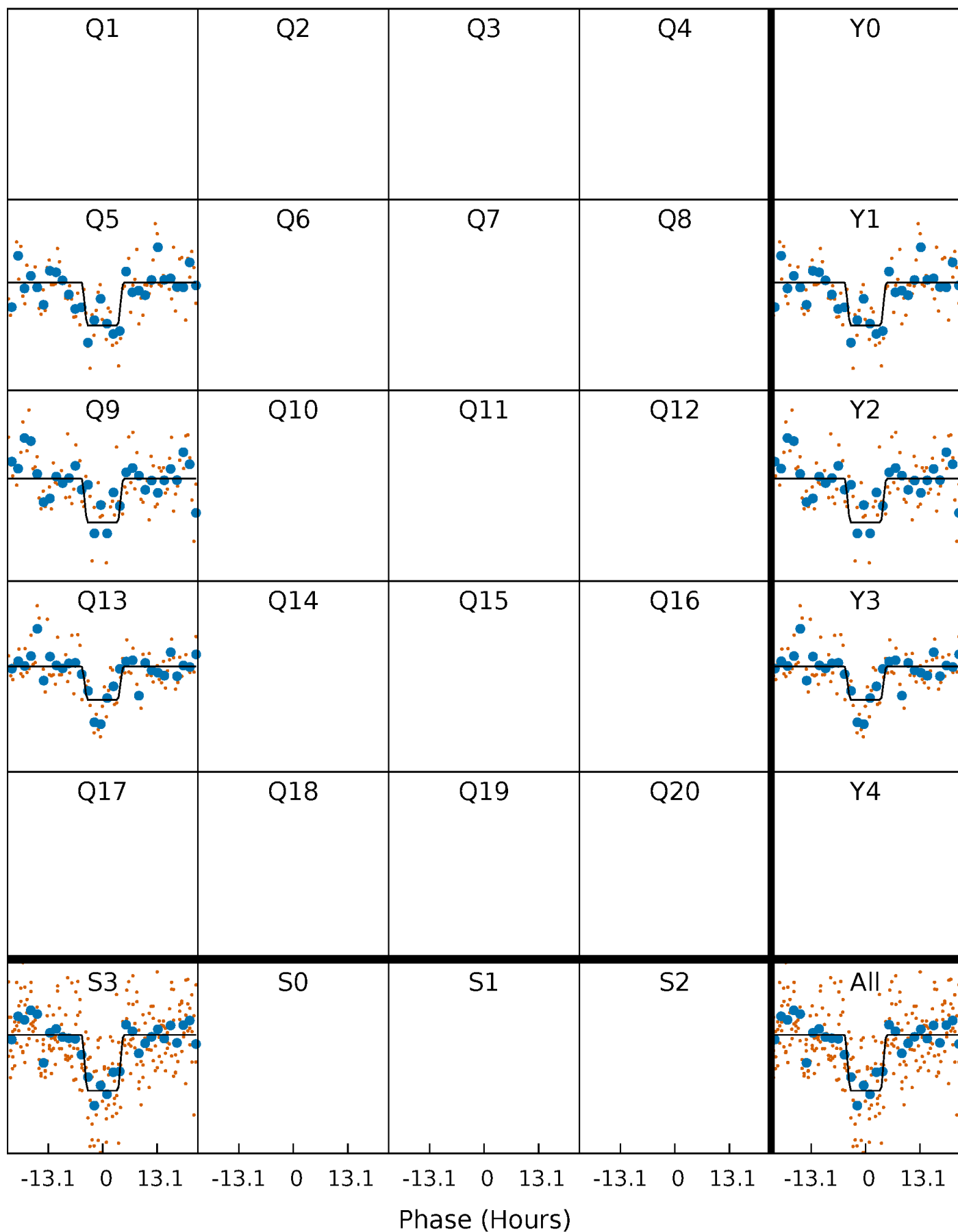
DV Quarter-Phased Transit Curves

TCE 002309595-01 P=371.660009 Days $T_0=469.199795$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

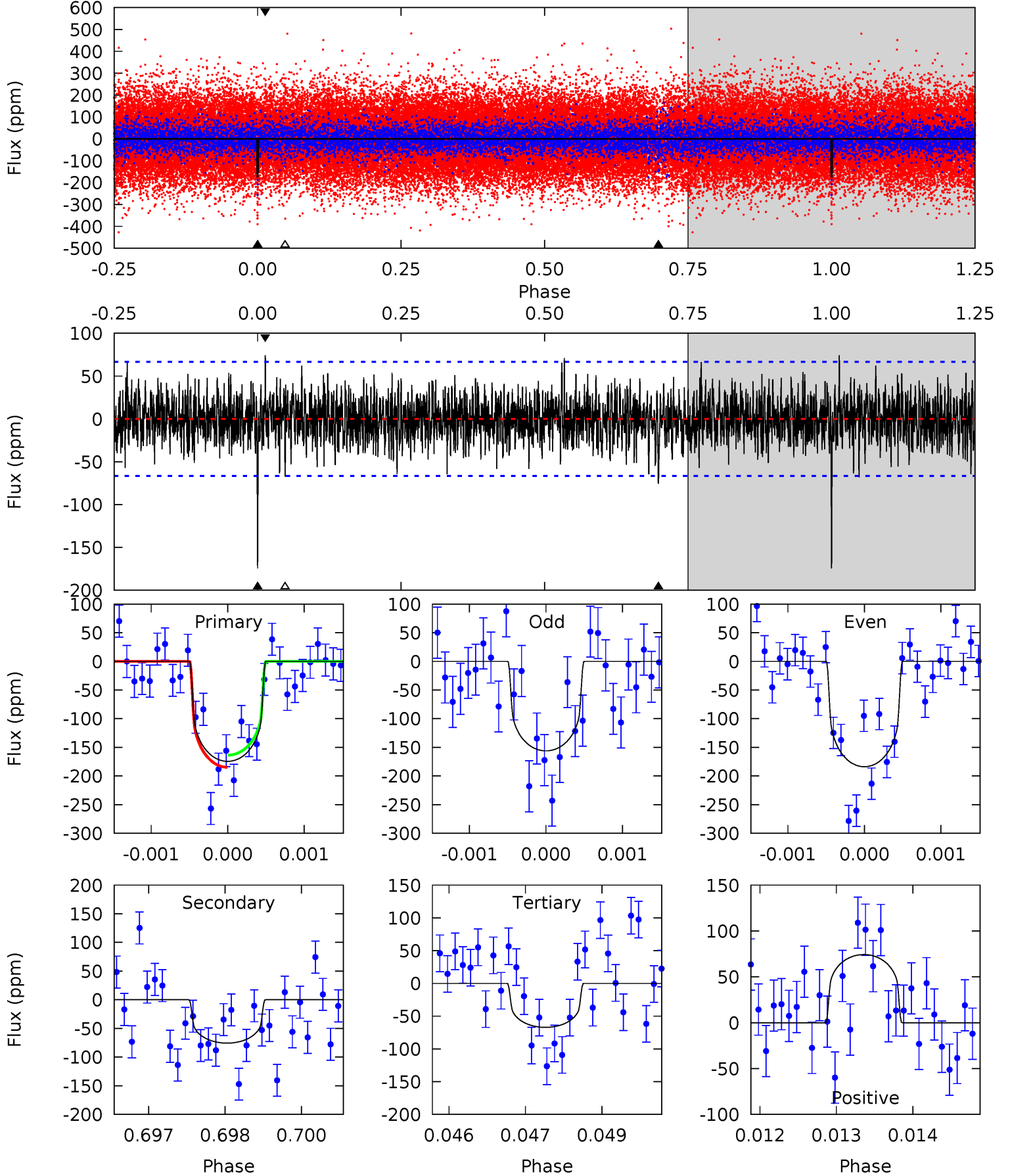
TCE 002309595-01 P=371.645589 Days $T_0=469.220373$ (BKJD)



DV Model-Shift Uniqueness Test

002309595-01, P = 371.660009 Days, E = 97.539786 Days

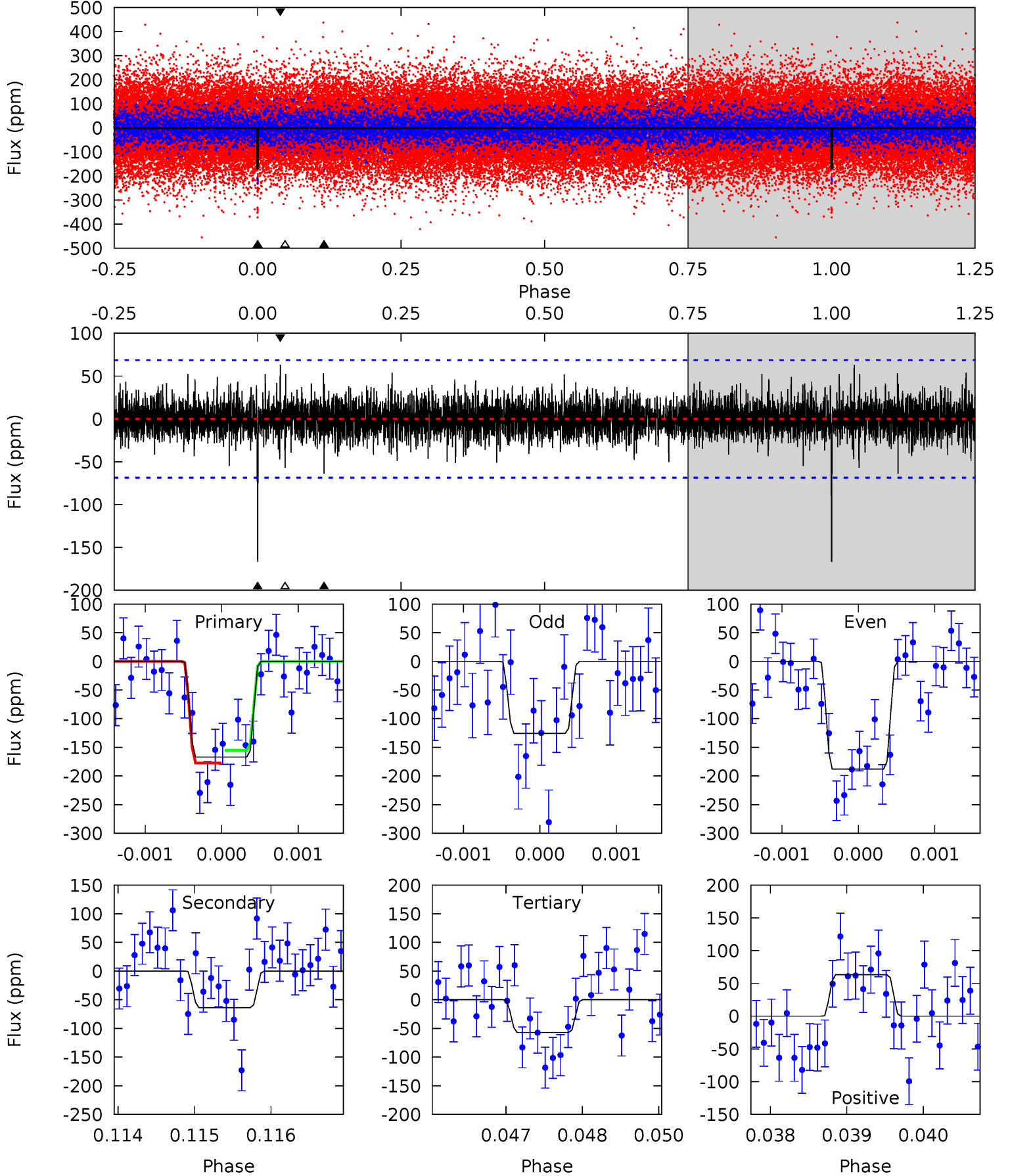
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
14.2	6.14	5.45	6.03	5.41	3.22	1.61	8.72	8.14	0.69	0.11	1.07	1.09	0.30	0.86



Alt Model-Shift Uniqueness Test

002309595-01, $P = 371.645589$ Days, $E = 97.574784$ Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
13.2	5.05	4.51	5.00	5.43	3.25	1.16	8.70	8.21	0.54	0.05	2.32	0.90	0.27	0.87



Stellar Parameters For KIC 002309595

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	5159^{+69}_{-85}	$3.735^{+0.013}_{-0.013}$	$-0.080^{+0.150}_{-0.150}$	$2.390^{+0.130}_{-0.173}$	$1.132^{+0.127}_{-0.140}$	$0.117^{+0.011}_{-0.008}$
	+1%/-2%	+0%/-0%	+188%/-188%	+5%/-7%	+11%/-12%	+9%/-7%
Source	SPE72	AST10	SPE72	DSEP		

KIC = Kepler Input Catalog; PHO = Photometry; SPE = Spectroscopy; AST = Asteroseismology
 TRA = Transits; DESP = Dartmouth Models; MULT = Multiple Models

Secondary Eclipse Parameters for KIC 002309595-01 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-76 ± 12	$3.45^{+1.78}_{-1.74}$	478^{+8}_{-9}	4364^{+1528}_{-634}	3955^{+12445}_{-2301}
Alt.	-64 ± 13	$3.52^{+1.81}_{-1.74}$	478^{+9}_{-8}	4180^{+1366}_{-575}	3112^{+9238}_{-1762}

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

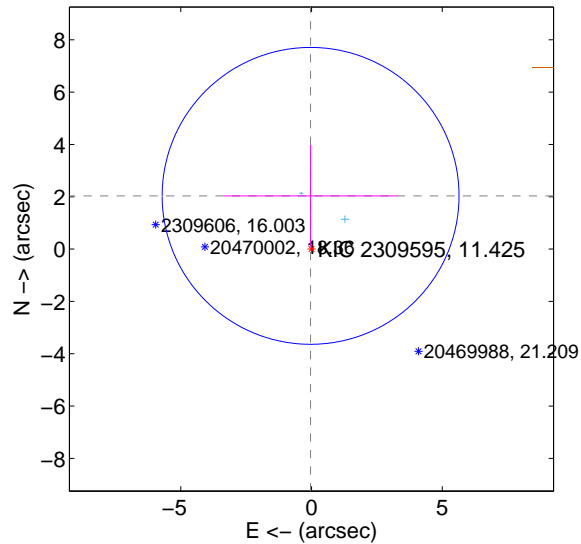
Supplemental centroid analysis for 002309595-01. **Kepler magnitude: 11.43.** Transit SNR 7.12

There are 2 quarters with good PRF difference image offsets

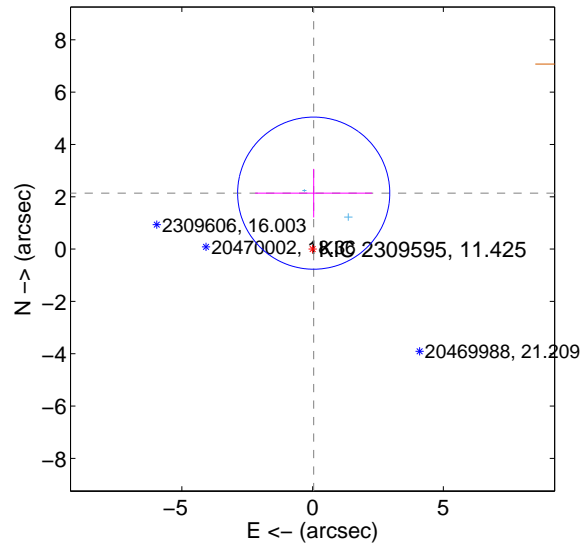
The direct PRF centroid is offset from the target star catalog position by about 0.13 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	2.035 ± 1.891	1.08	0.035 ± 3.325	2.035 ± 1.947
PRF-fit source offset from KIC position	2.139 ± 0.969	2.21	-0.042 ± 2.239	2.139 ± 0.928
photometric centroid source offset	1.99 ± 1.37	1.45	1.00 ± 0.86	-1.72 ± 1.50

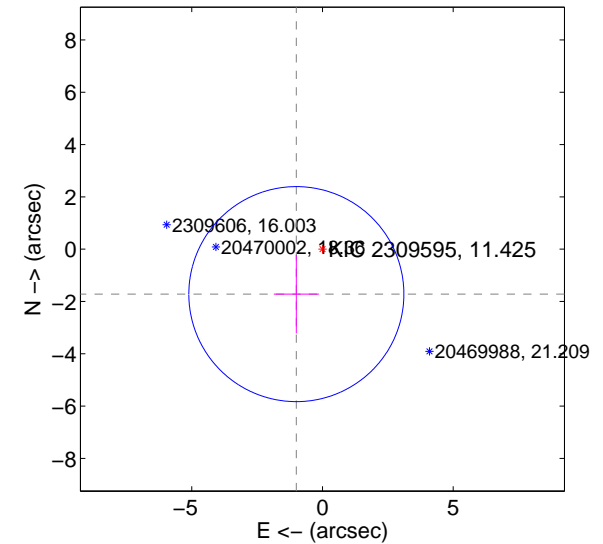
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position



offset from photometric centroids

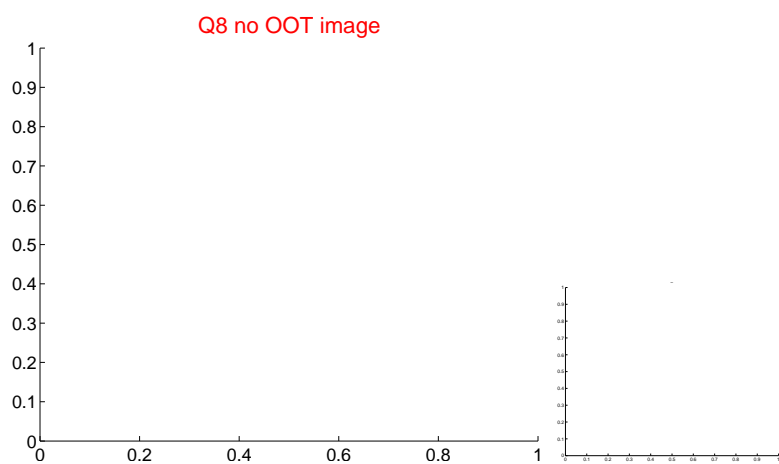
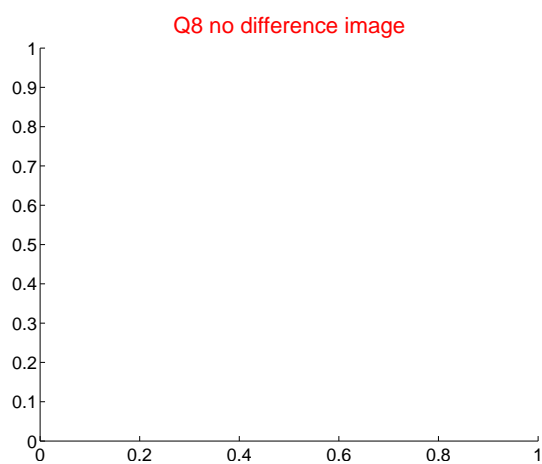
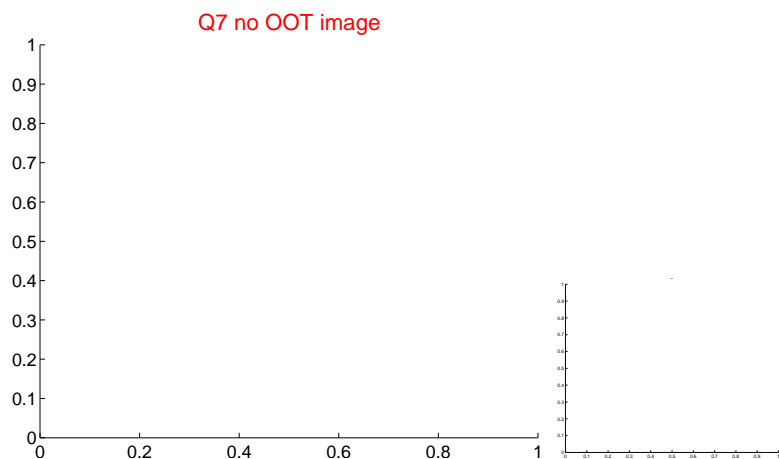
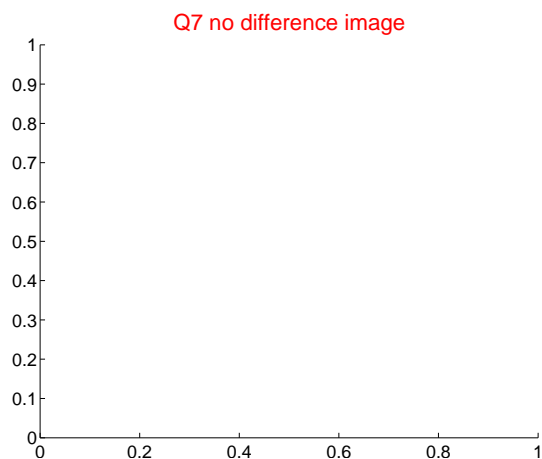
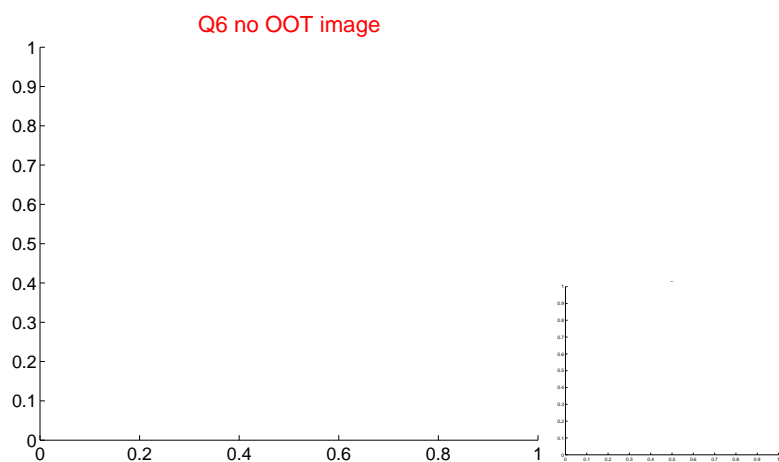
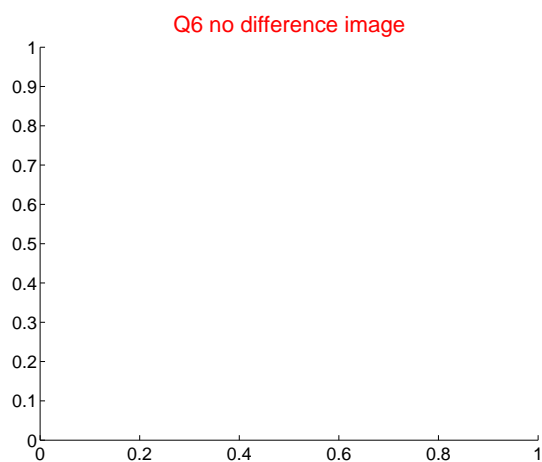
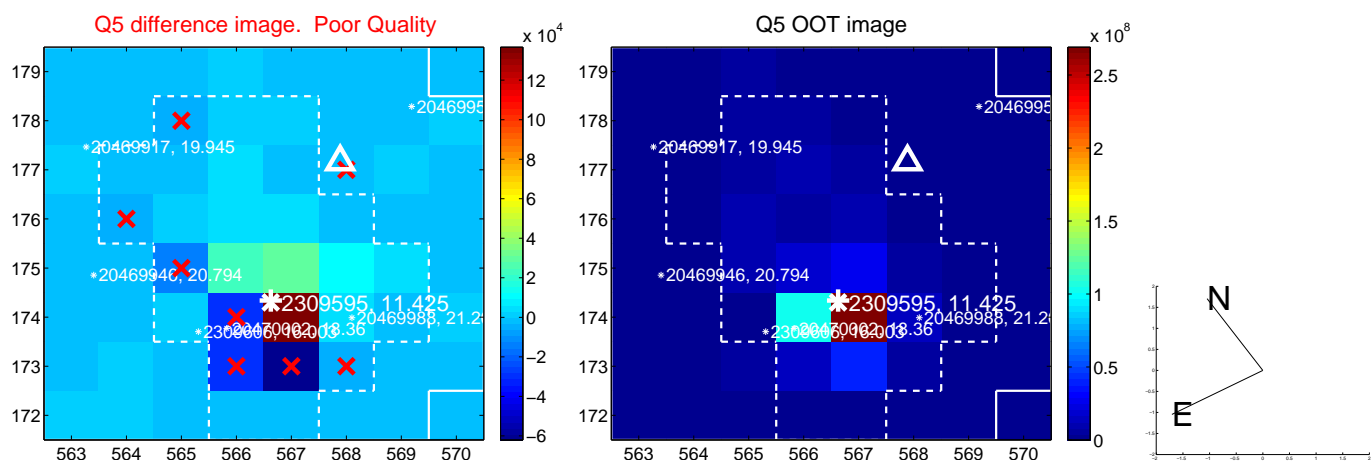


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

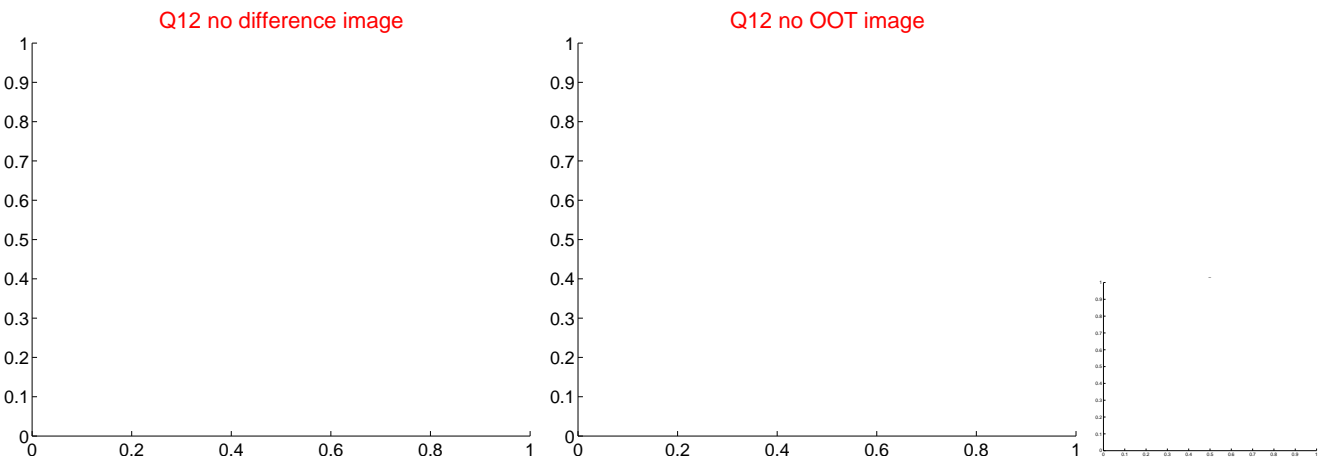
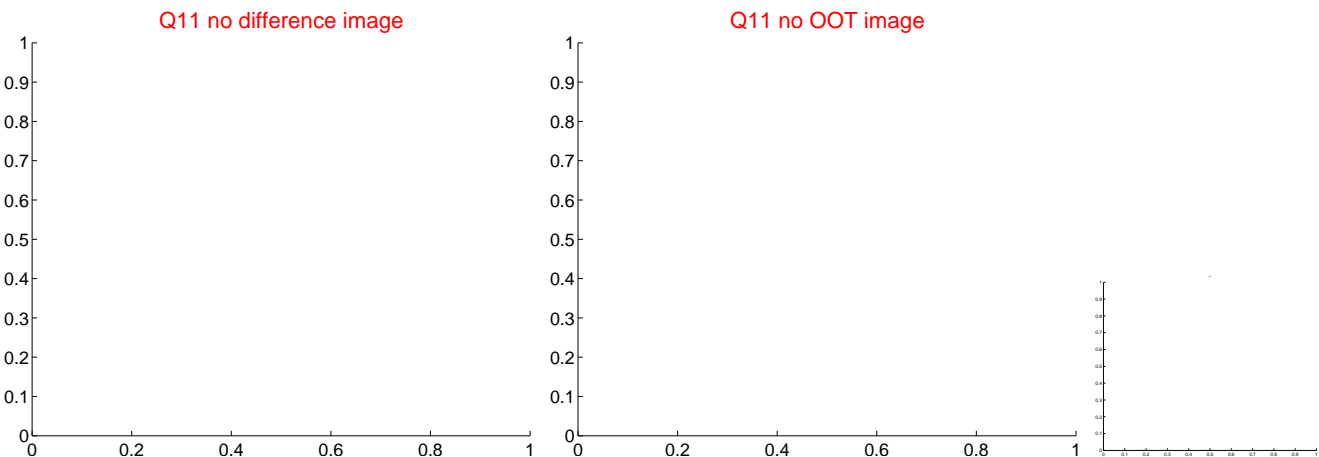
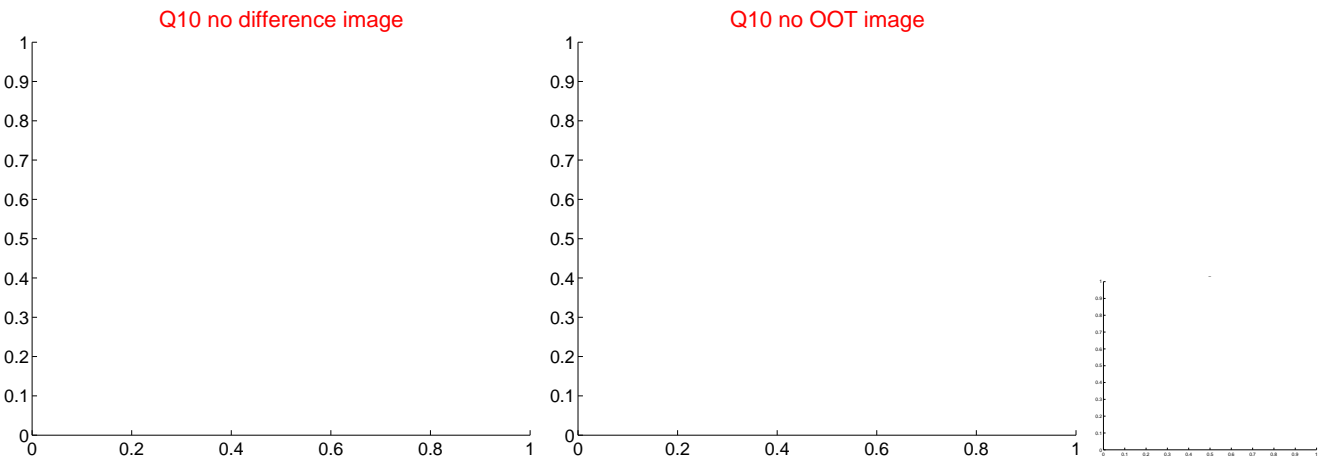
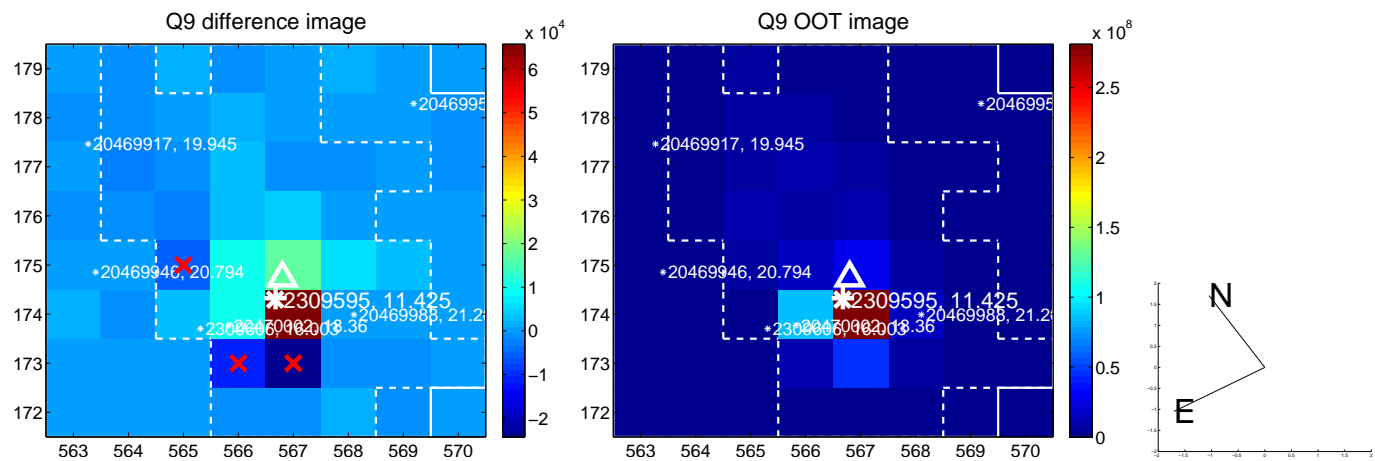
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



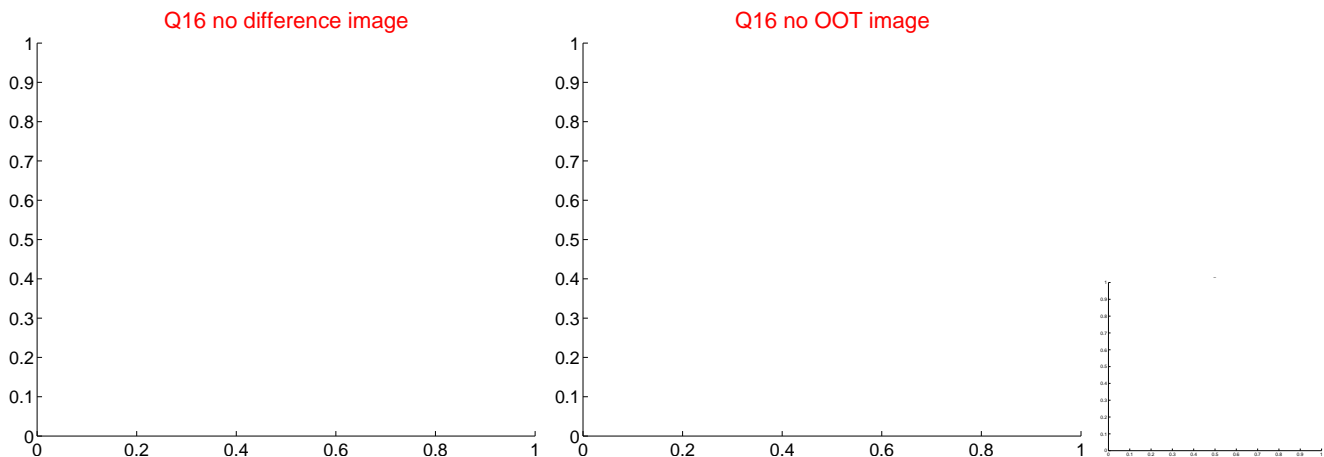
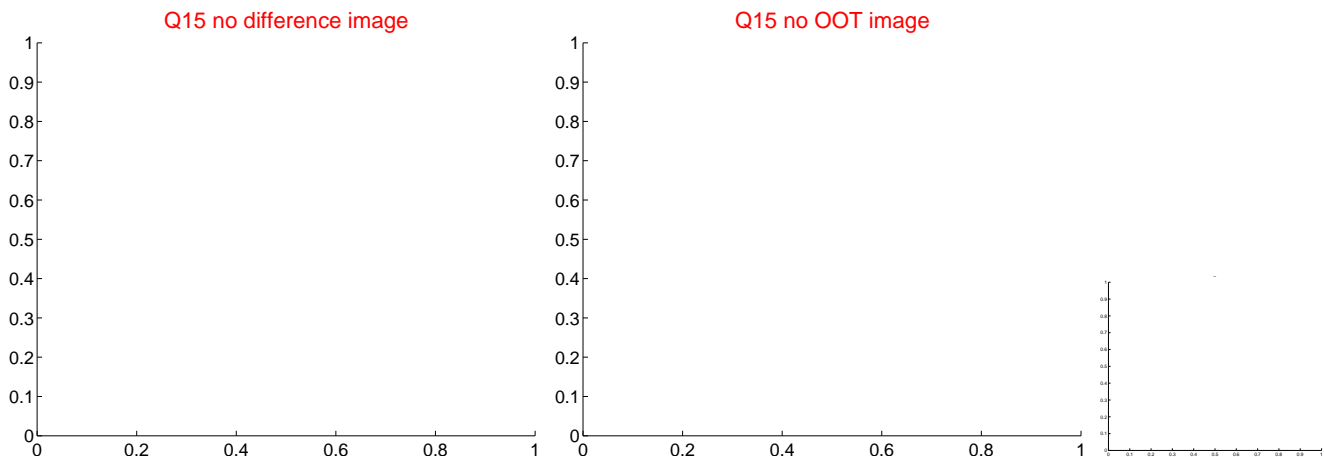
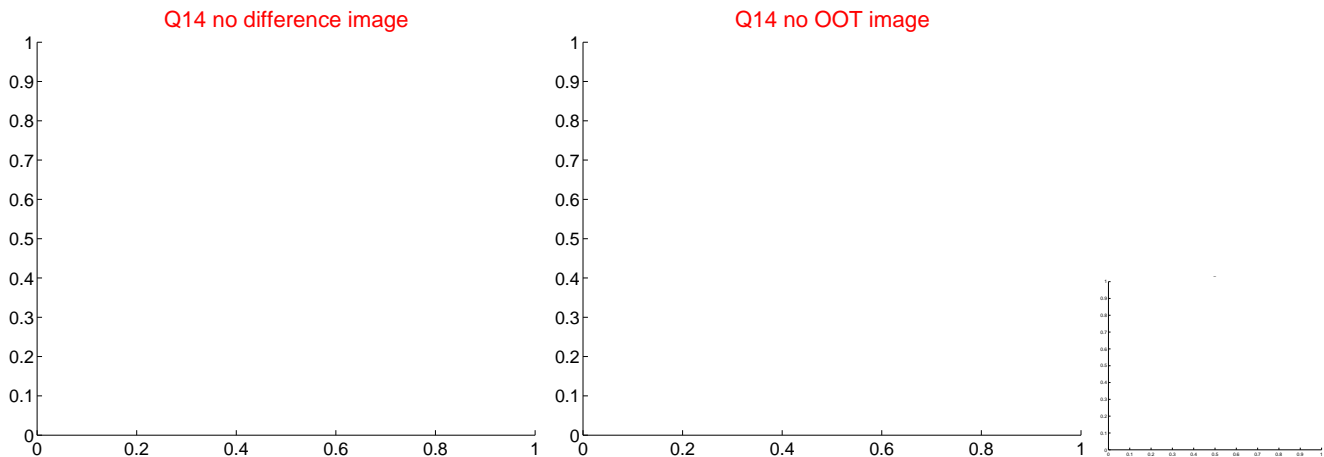
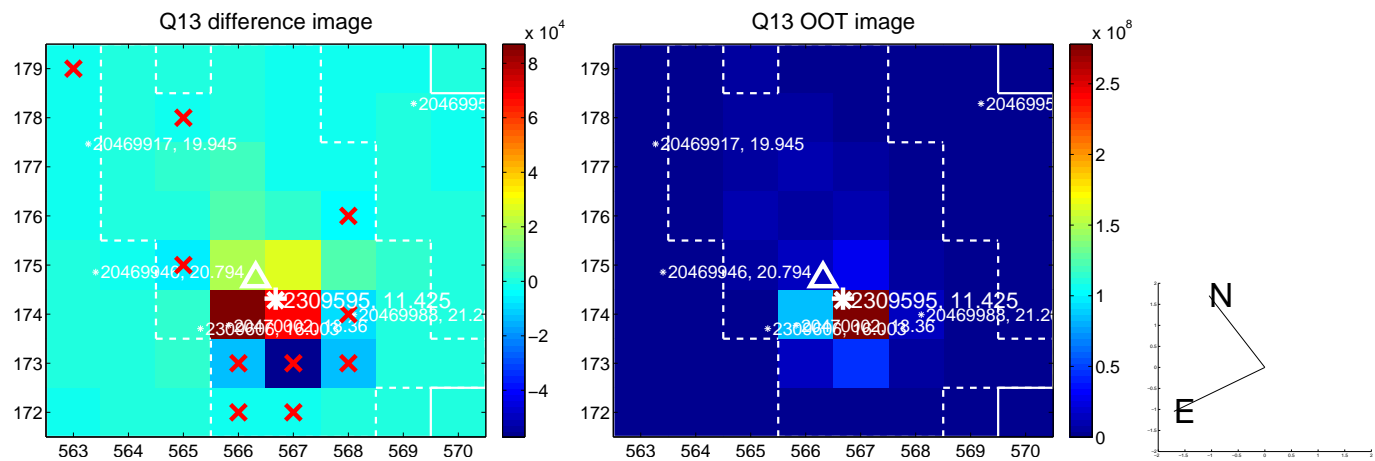
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value



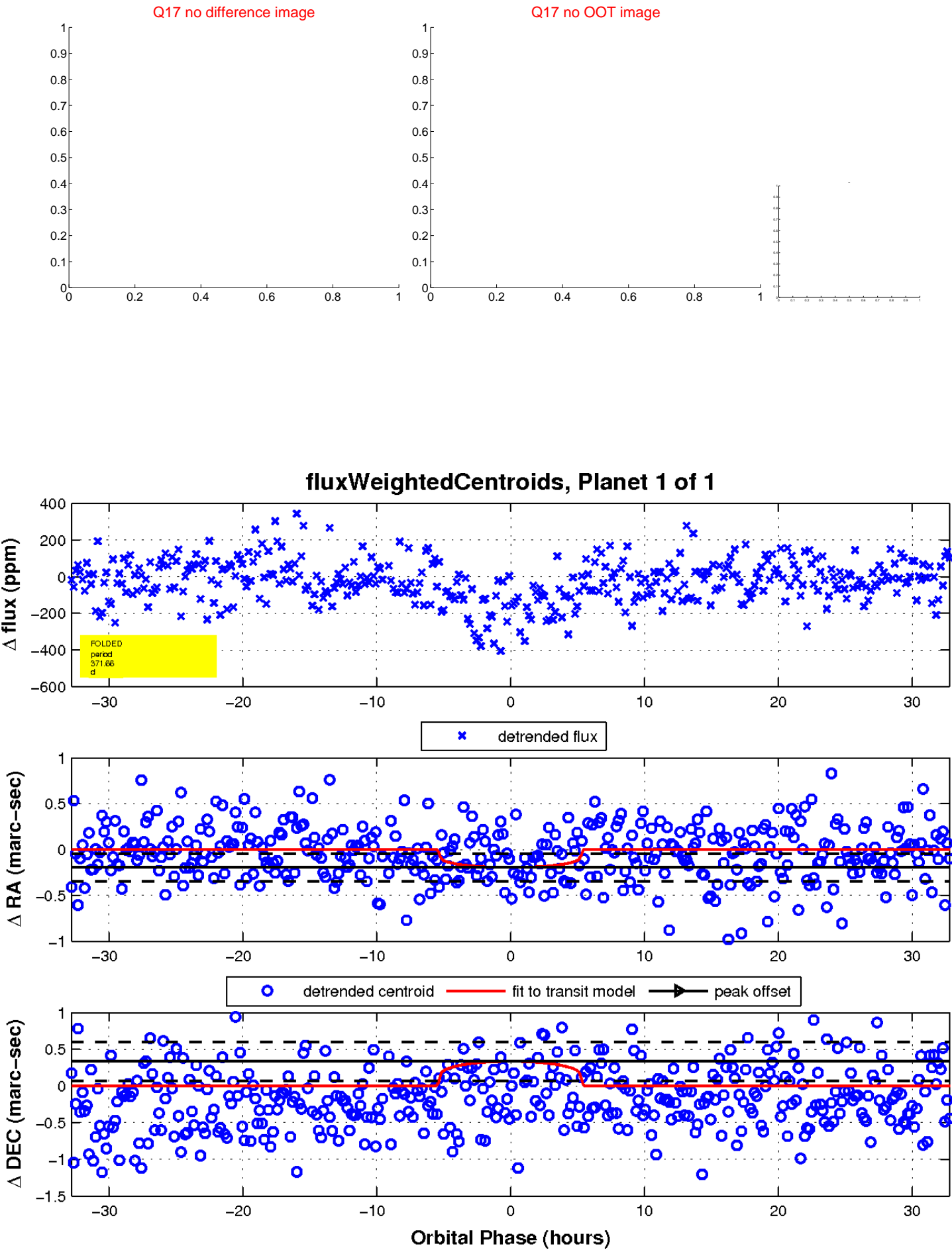
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ✕: large negative pixel value.



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



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



UKIRT Image

Declination

