

KIC 002307624

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})
002307624-01	OBS	No	426.155716	500.936008	668.5	22.312	9.1	9.8	1.02	6289	2.73	1.13

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
002307624-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL_SKYE—LPP_DV—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.

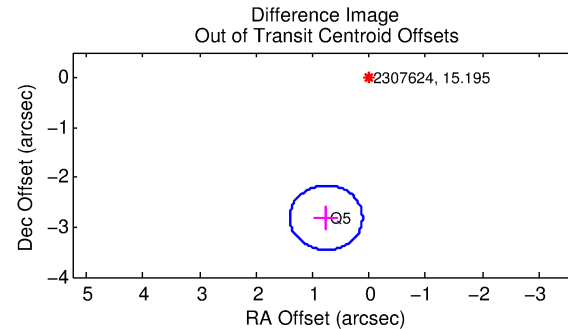
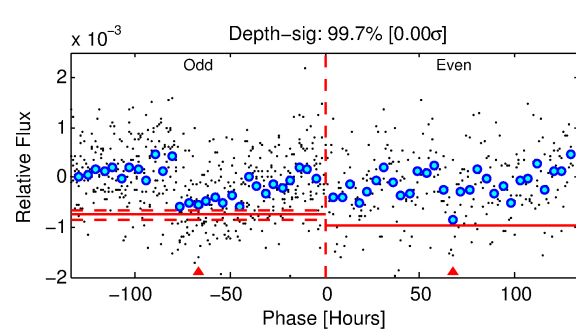
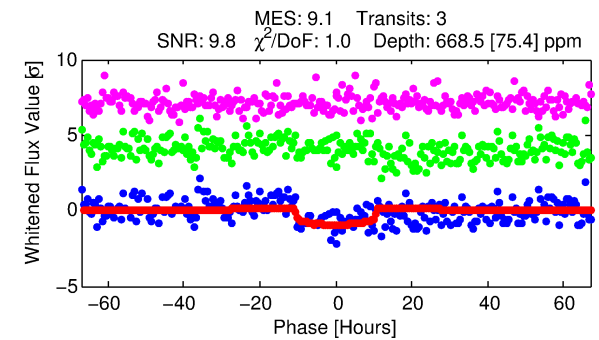
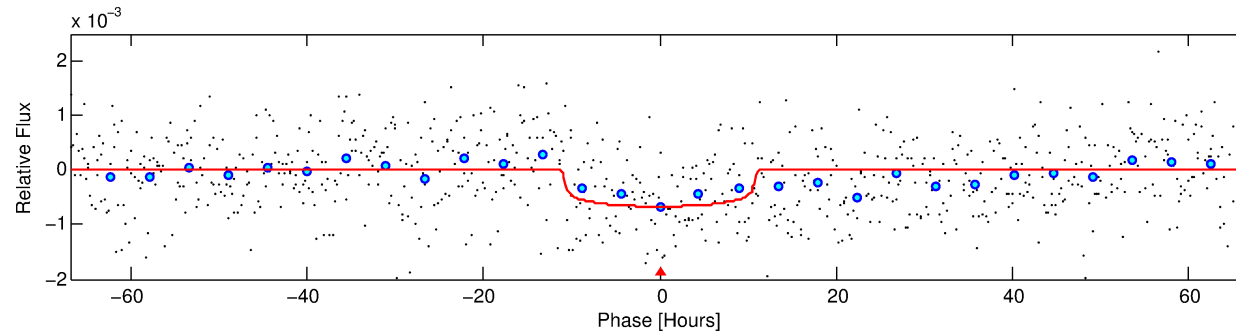
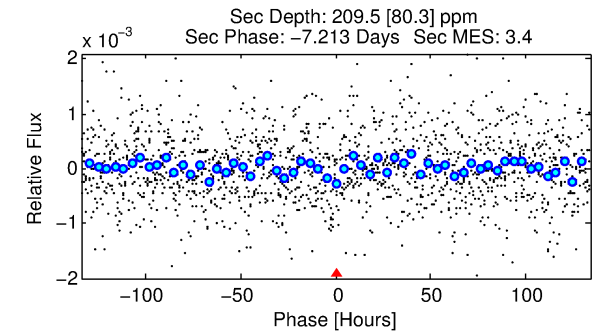
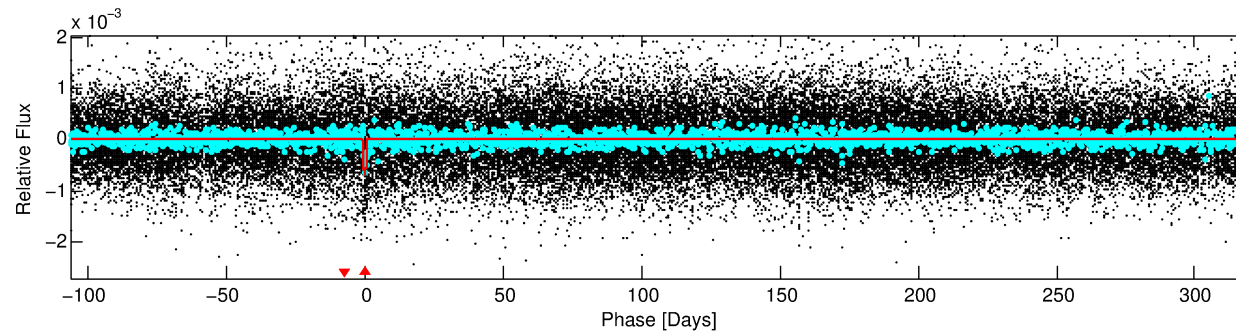
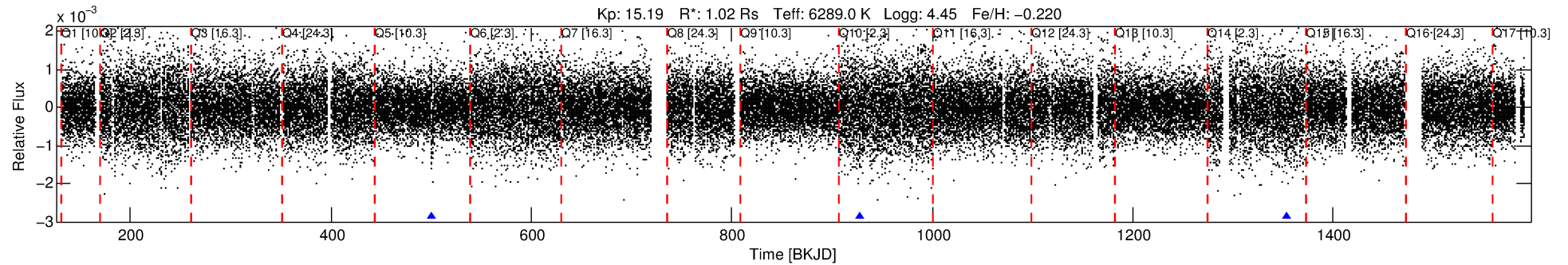
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 002307624-01

No Significant Match Found

DV One-Page Summary

KIC: 2307624 Candidate: 1 of 1 Period: 426.156 d



DV Fit Results:

Period = 426.15572 [0.02040] d
Epoch = 500.9360 [0.0212] BKJD
Rp/R* = 0.0245 [0.0075]
a/R* = 127.08 [195.50]
b = 0.54 [2.03]
Seff = 1.13 [0.46]
Teq = 263 [27] K
Rp = 2.73 [1.19] Re
a = 1.1371 [0.2992] AU
Ag = 19959.81 [16249.63] [1.23σ]
Teff = 4829 [885] K [5.16σ]

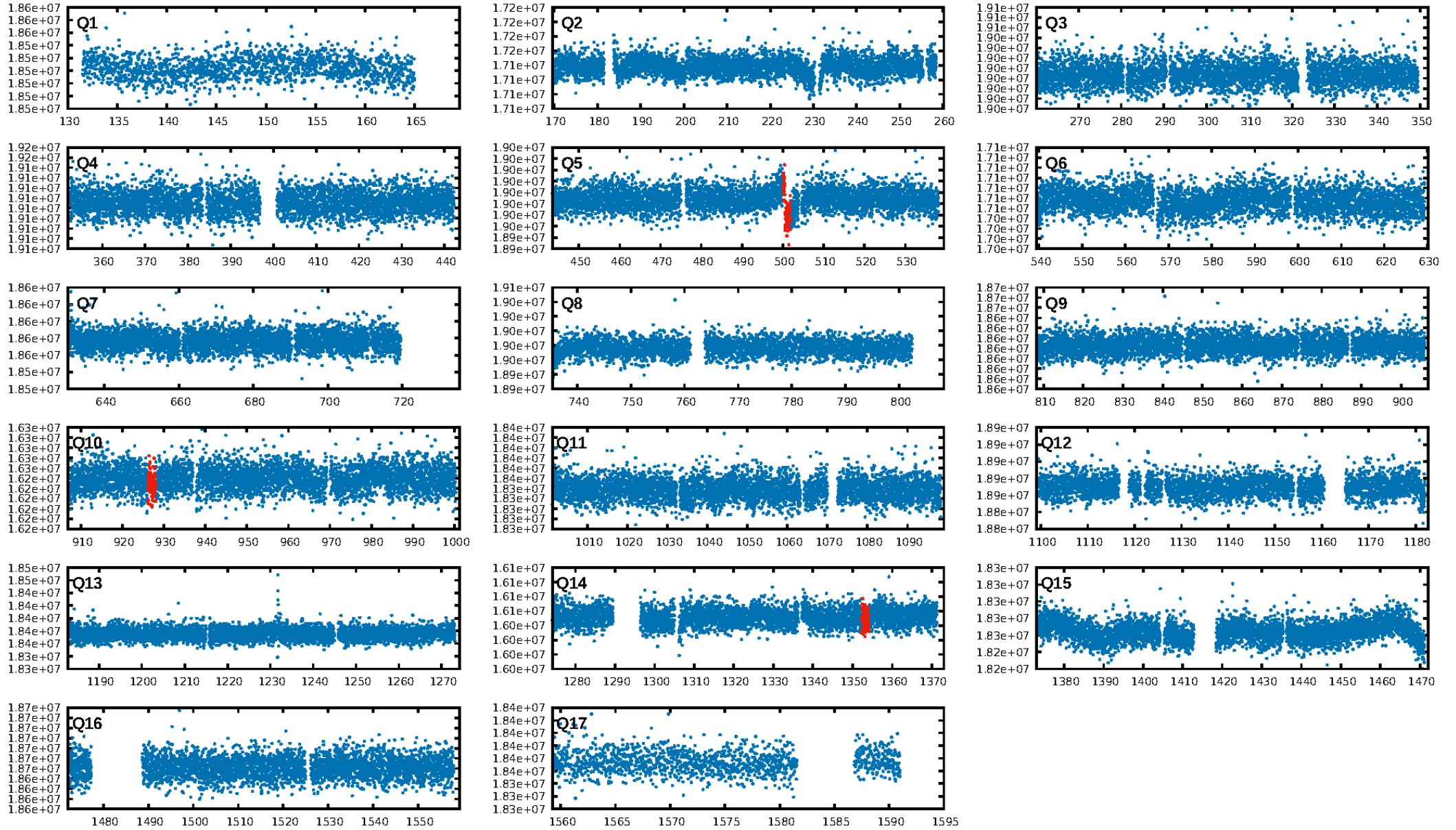
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: 0.0%
ModelChiSquareGoF-sig: 99.7%
Bootstrap-pfa: 1.69e-16
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: 0.4025
Centroid-sig: 0.3%
Centroid-so: 2.881 arcsec [2.50σ]
OotOffset-rm: 2.915 arcsec [13.56σ]
KicOffset-rm: 2.836 arcsec [13.24σ]
OotOffset-st: 0/0/0/1 [1]
KicOffset-st: 0/0/0/1 [1]
DiffImageQuality-fgm: 0.00 [0/1]
DiffImageOverlap-fno: 1.00 [3/3]

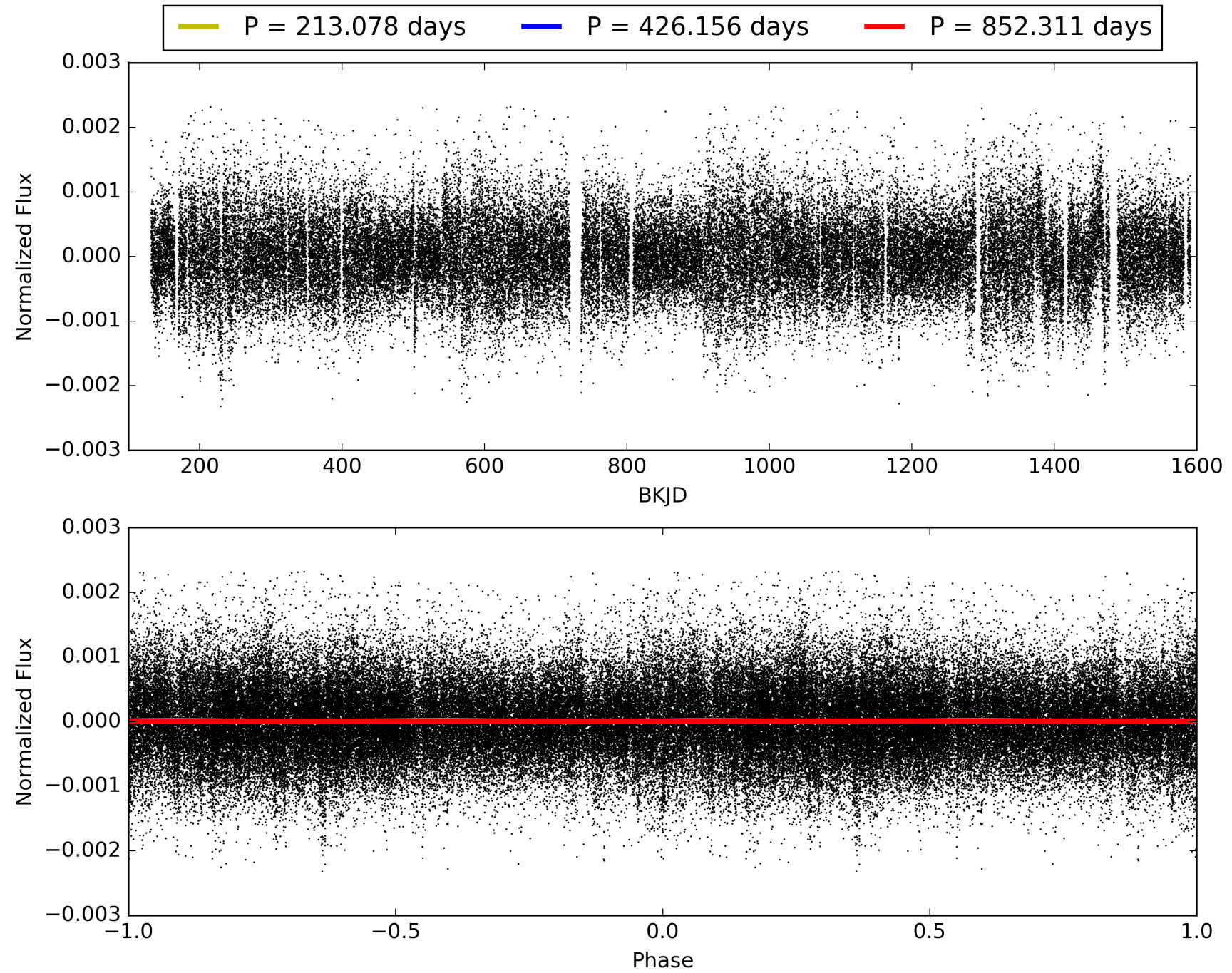
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 20:11:02 Z

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

TCE 002307624-01, PDC Light Curves

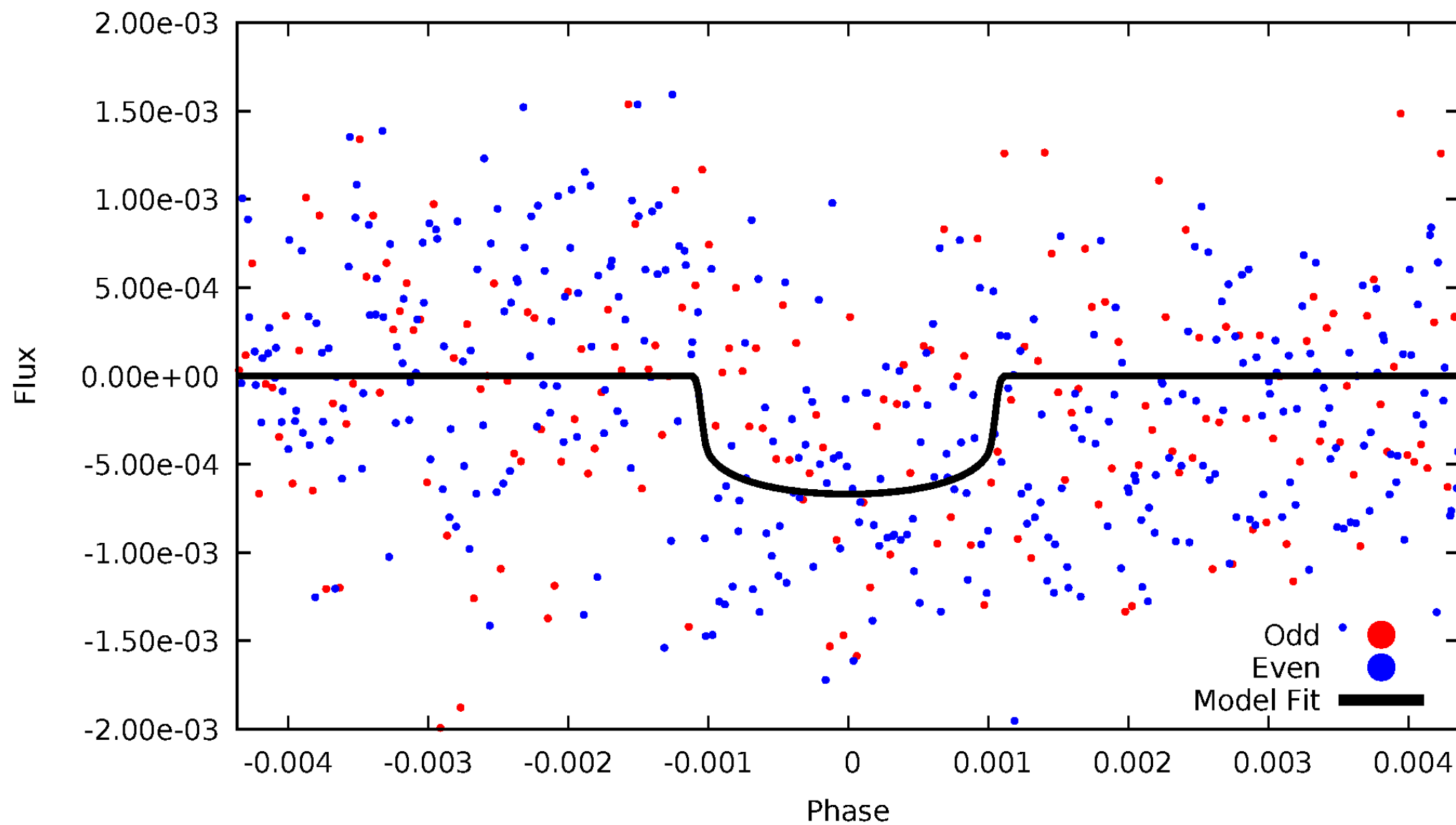


TCE 002307624-01



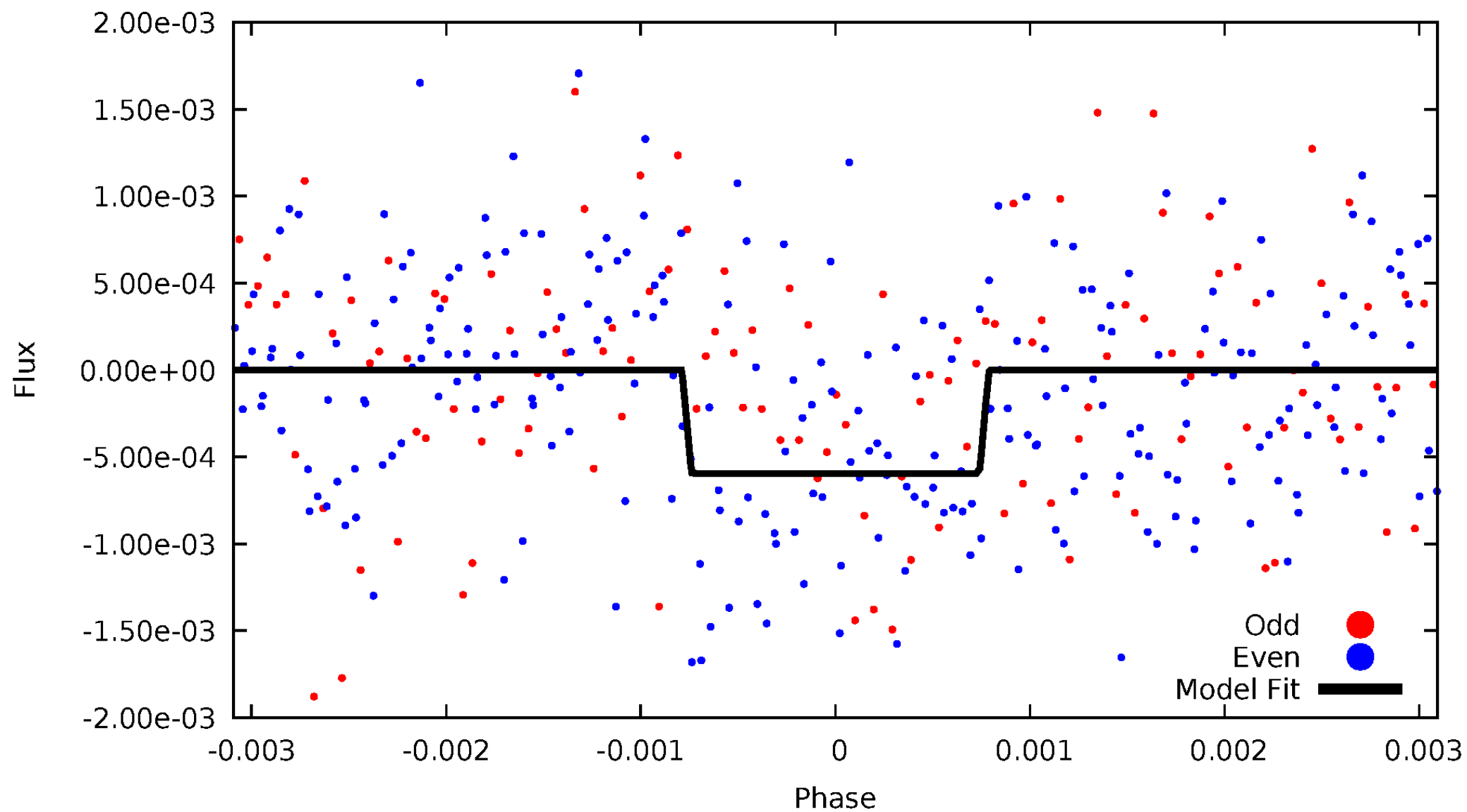
DV Odd/Even

TCE 002307624-01

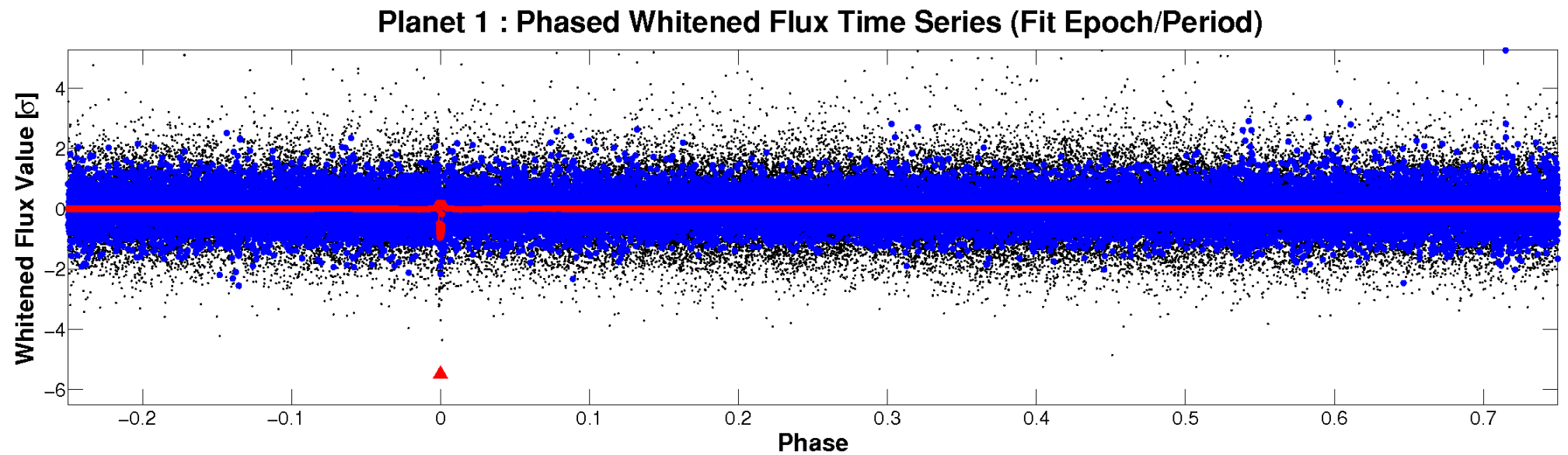
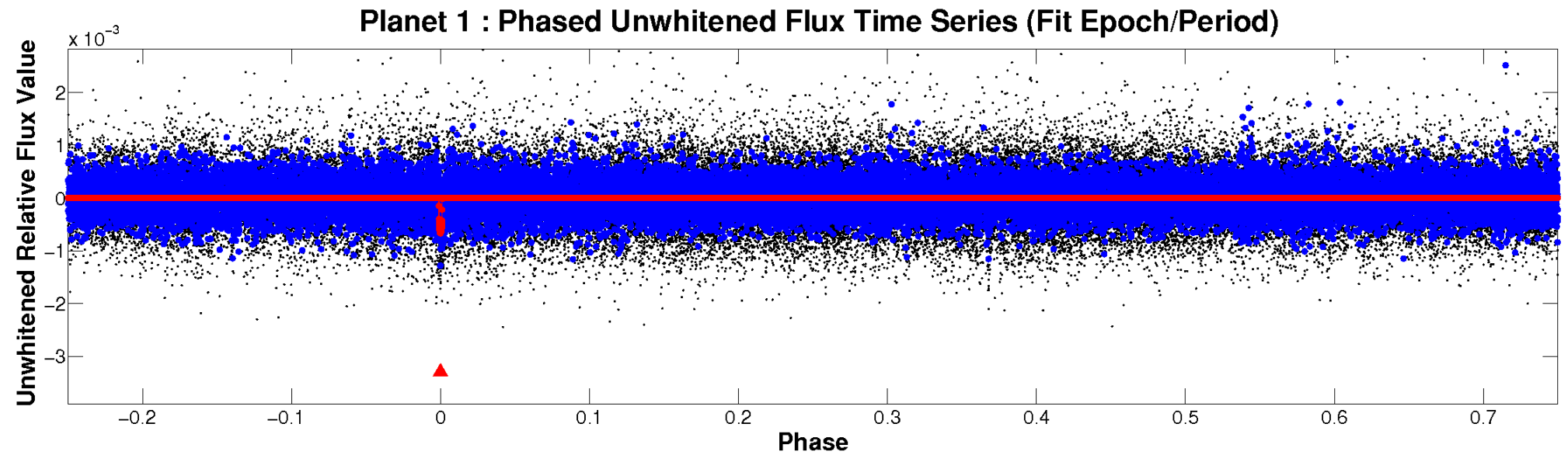


ALT Odd/Even

TCE 002307624-01

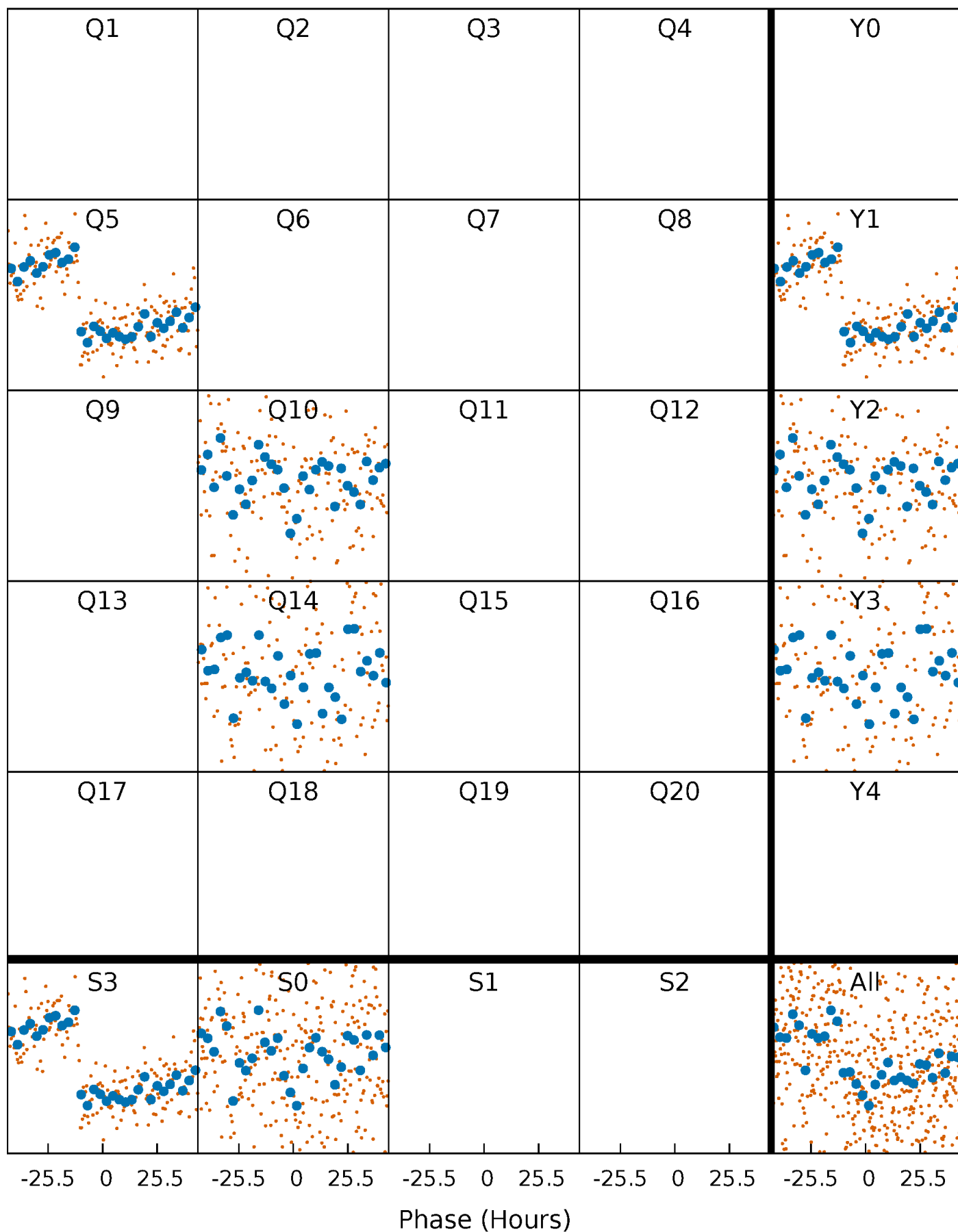


Non-Whitened Vs. Whitened Light Curve



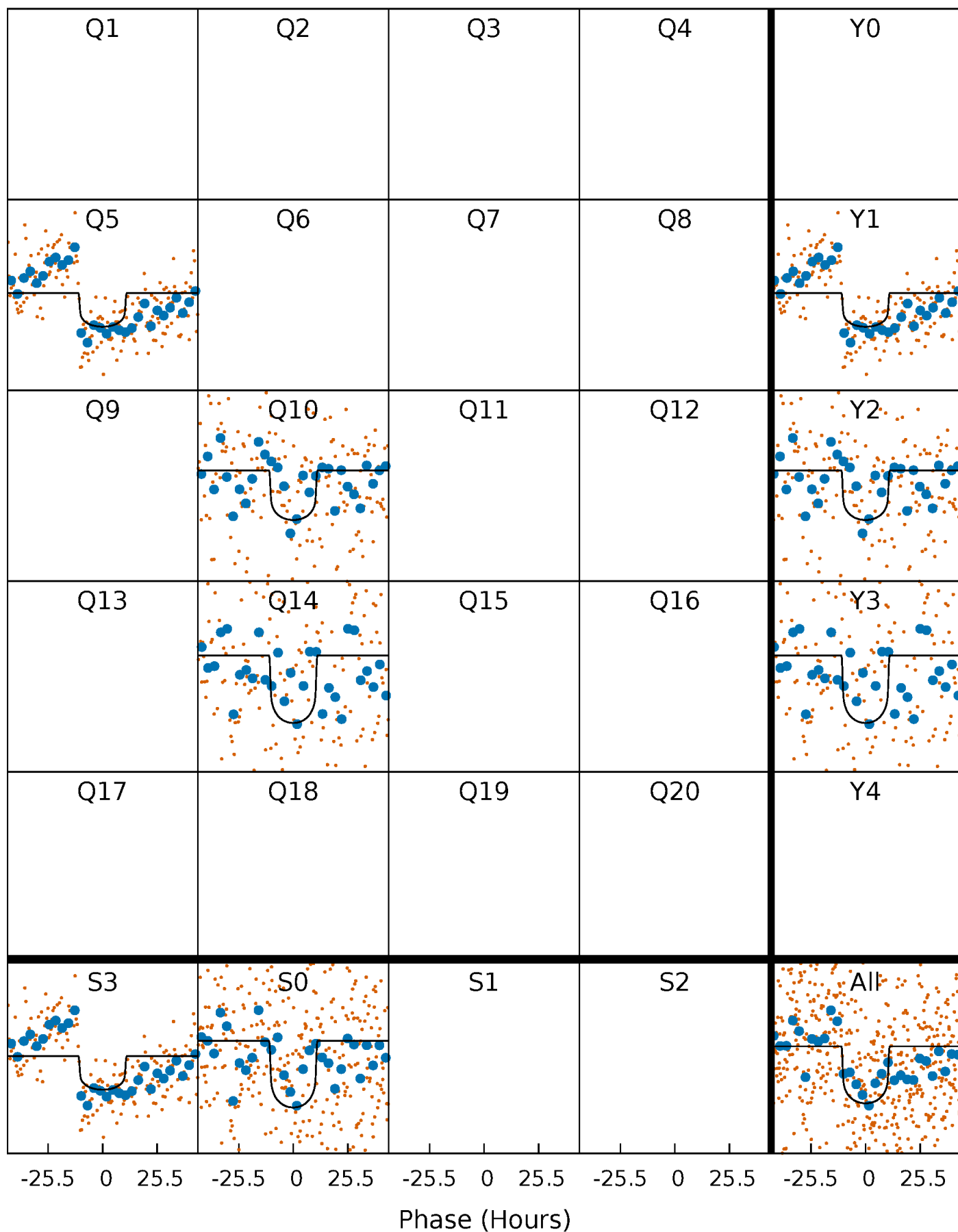
PDC Quarter-Phased Transit Curves

TCE 002307624-01 P=426.155716 Days $T_0=500.936008$ (BKJD)



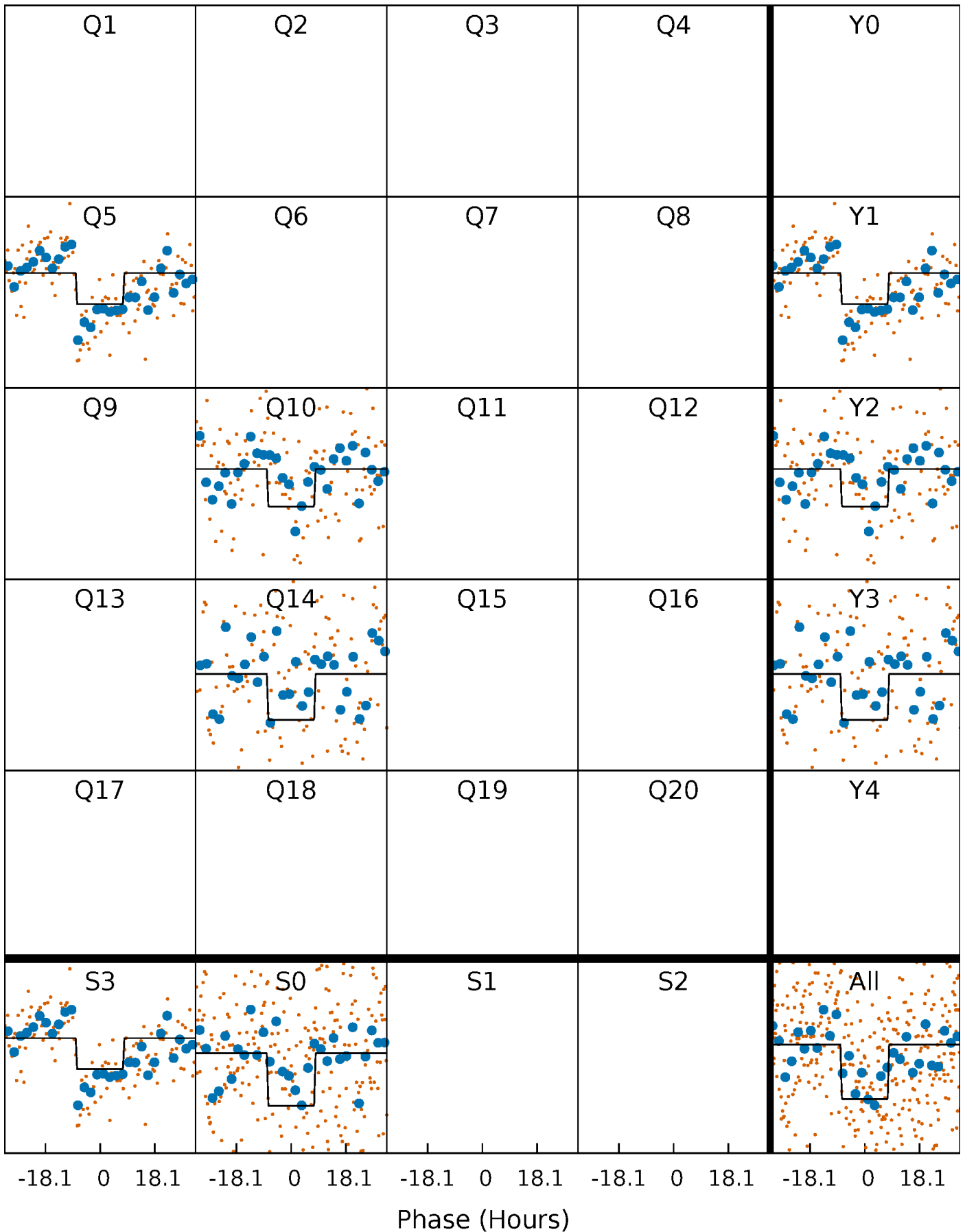
DV Quarter-Phased Transit Curves

TCE 002307624-01 P=426.155716 Days $T_0=500.936008$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

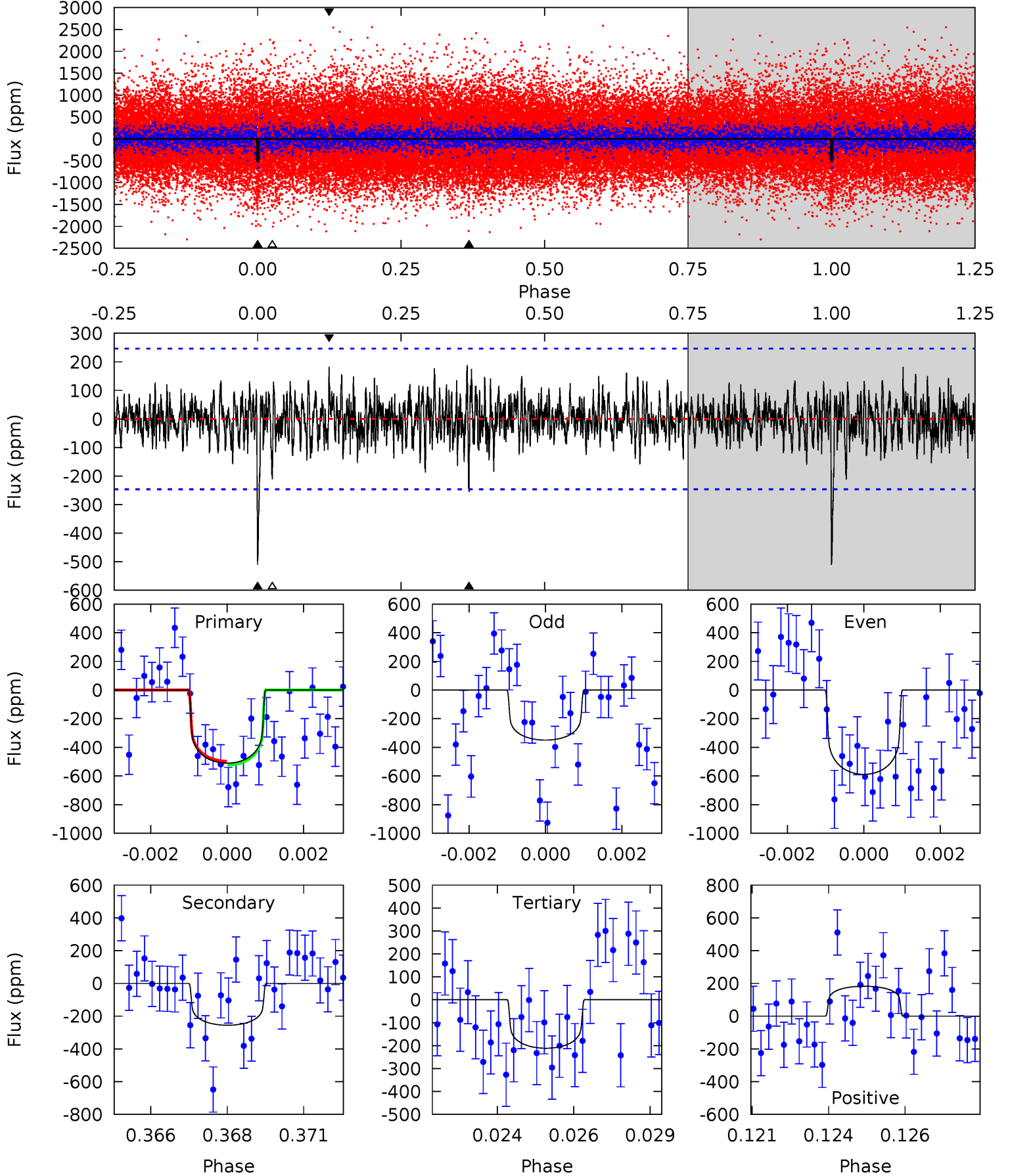
TCE 002307624-01 P=426.175950 Days $T_0=500.816611$ (BKJD)



DV Model-Shift Uniqueness Test

002307624-01, $P = 426.155716$ Days, $E = 74.780292$ Days

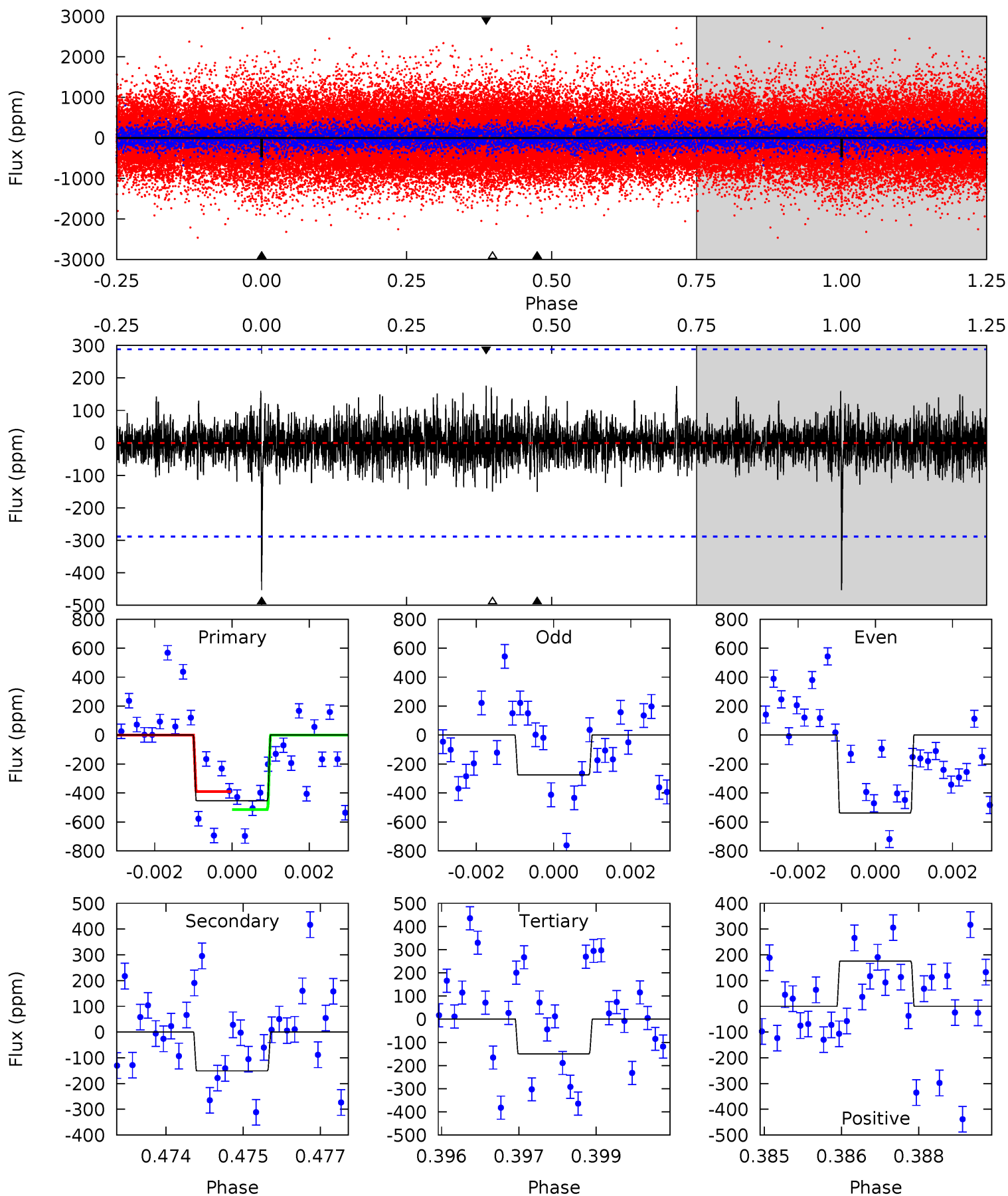
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
11.0	5.51	4.56	3.94	5.31	3.06	1.22	6.44	7.06	0.95	1.57	2.40	1.46	0.27	0.30



Alt Model-Shift Uniqueness Test

002307624-01, P = 426.175950 Days, E = 74.640661 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
8.43	2.80	2.78	3.27	5.37	3.16	0.78	5.65	5.16	0.02	-0.46	2.30	1.64	0.28	1.16



Stellar Parameters For KIC 002307624

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6289^{+169}_{-225}	$4.454^{+0.052}_{-0.208}$	$-0.220^{+0.250}_{-0.300}$	$1.020^{+0.320}_{-0.107}$	$1.075^{+0.144}_{-0.144}$	$1.427^{+0.399}_{-0.744}$
	+3%/-4%	+1%/-5%	+114%/-136%	+31%/-10%	+13%/-13%	+28%/-52%
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 002307624-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-256 ± 46	$2.81^{+1.00}_{-0.82}$	375^{+25}_{-18}	5164^{+913}_{-628}	22722^{+22306}_{-11464}
Alt.	-151 ± 54	$2.82^{+0.95}_{-0.82}$	374^{+28}_{-19}	4596^{+816}_{-563}	12863^{+14880}_{-6724}

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

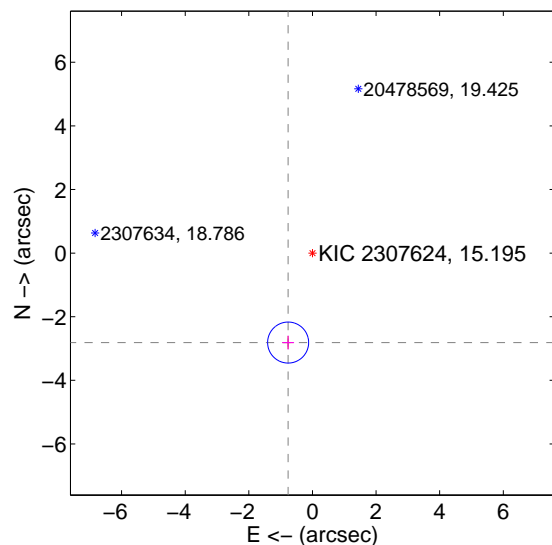
Supplemental centroid analysis for 002307624-01. Kepler magnitude: 15.20. Transit SNR 9.85

There are 0 quarters with good PRF difference image offsets

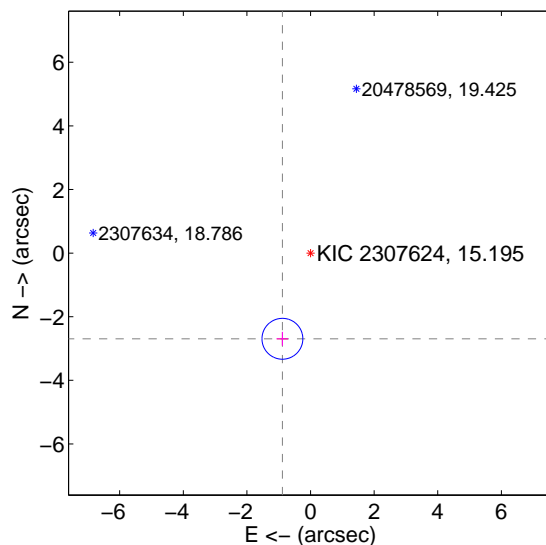
The direct PRF centroid is offset from the target star catalog position by about 0.17 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	2.915 ± 0.215	13.56	0.764 ± 0.186	-2.813 ± 0.217
PRF-fit source offset from KIC position	2.836 ± 0.214	13.24	0.884 ± 0.186	-2.694 ± 0.217
photometric centroid source offset	2.88 ± 1.15	2.50	2.85 ± 1.15	0.45 ± 1.25

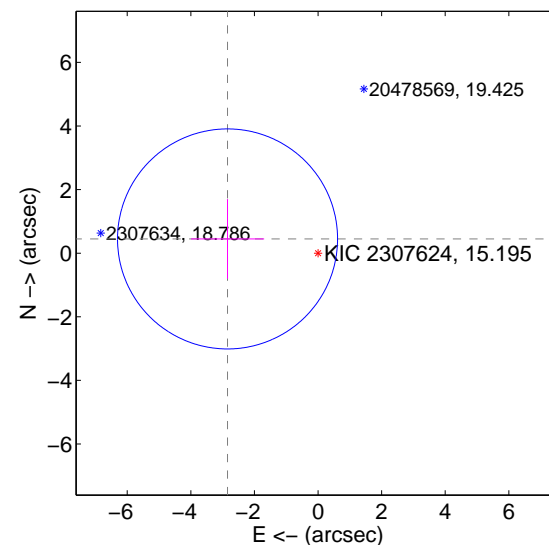
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position



offset from photometric centroids

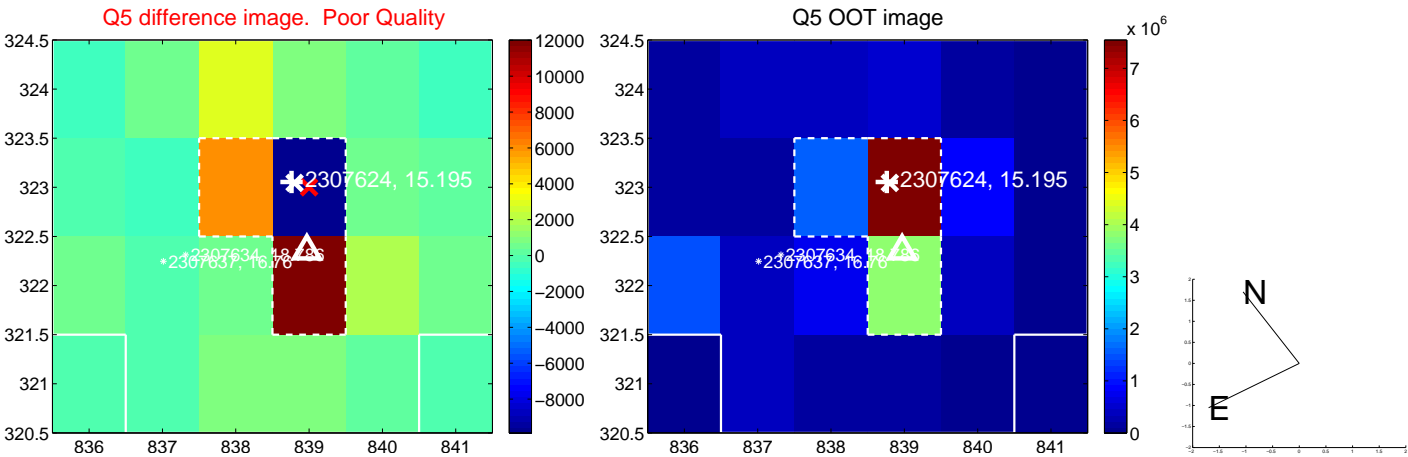


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

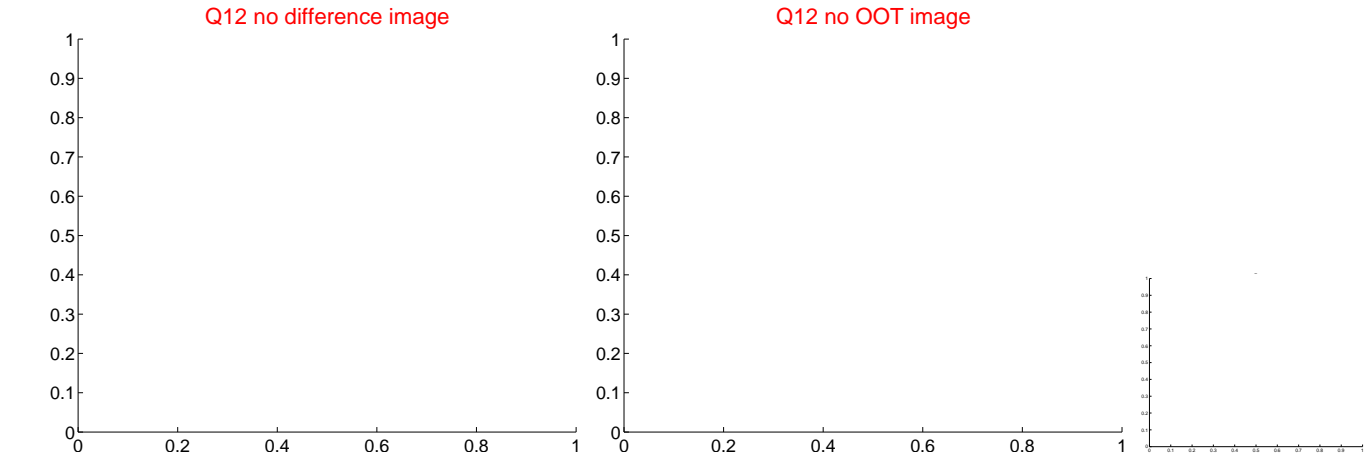
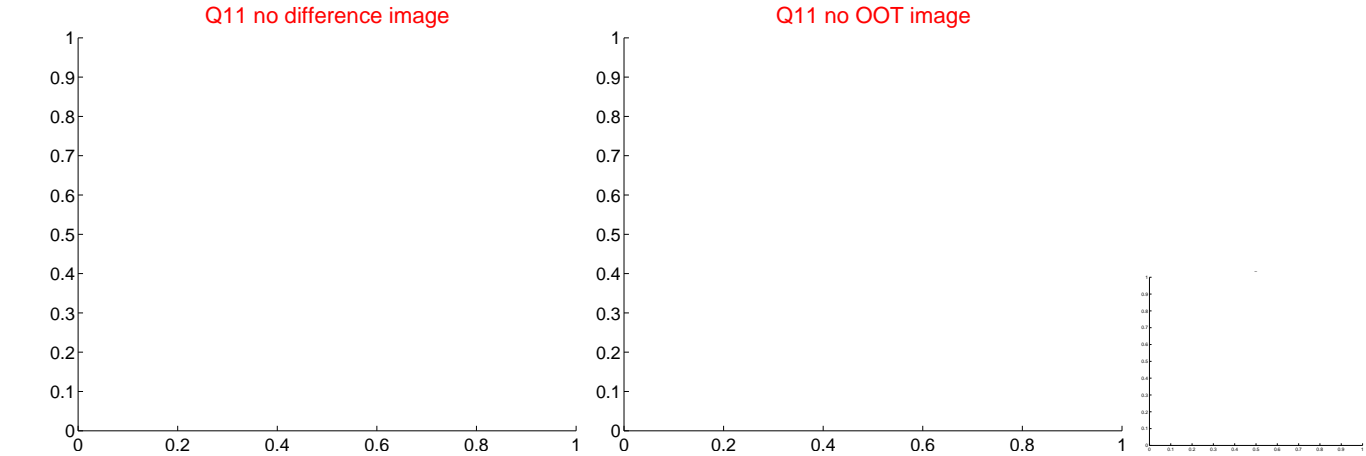
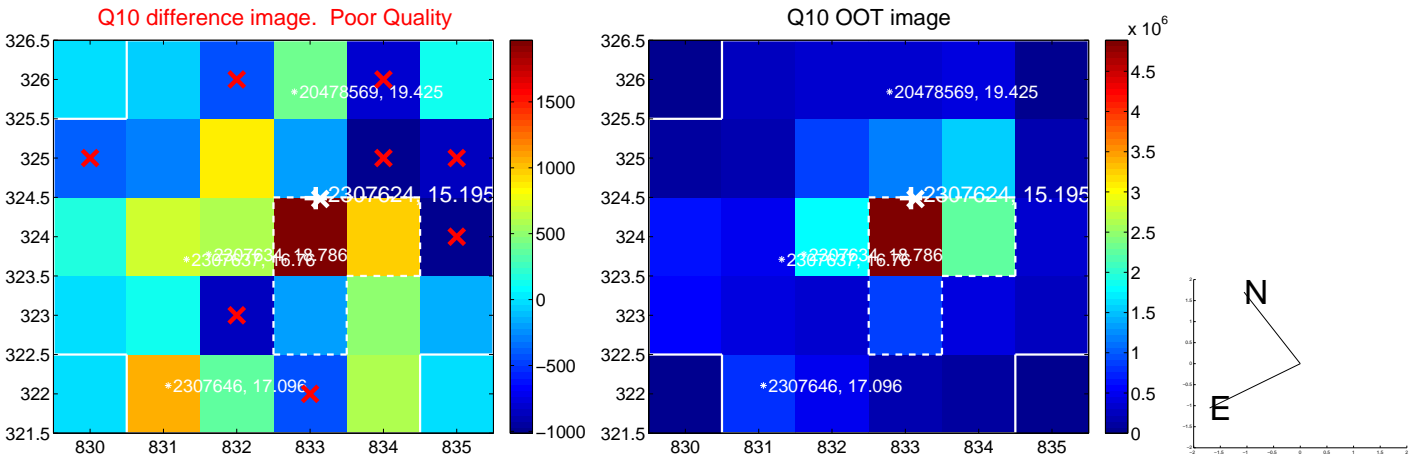
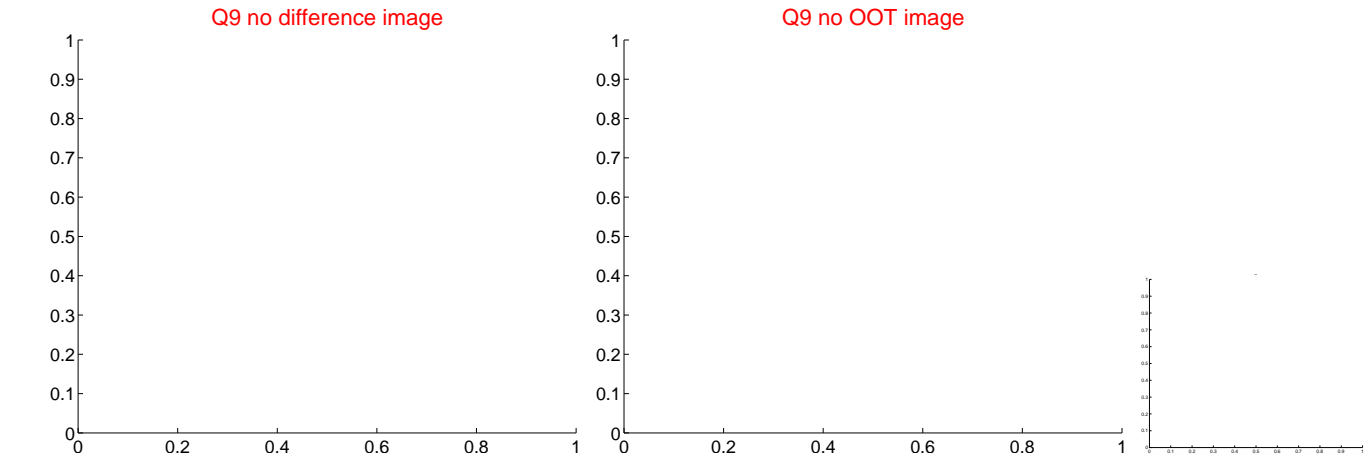
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



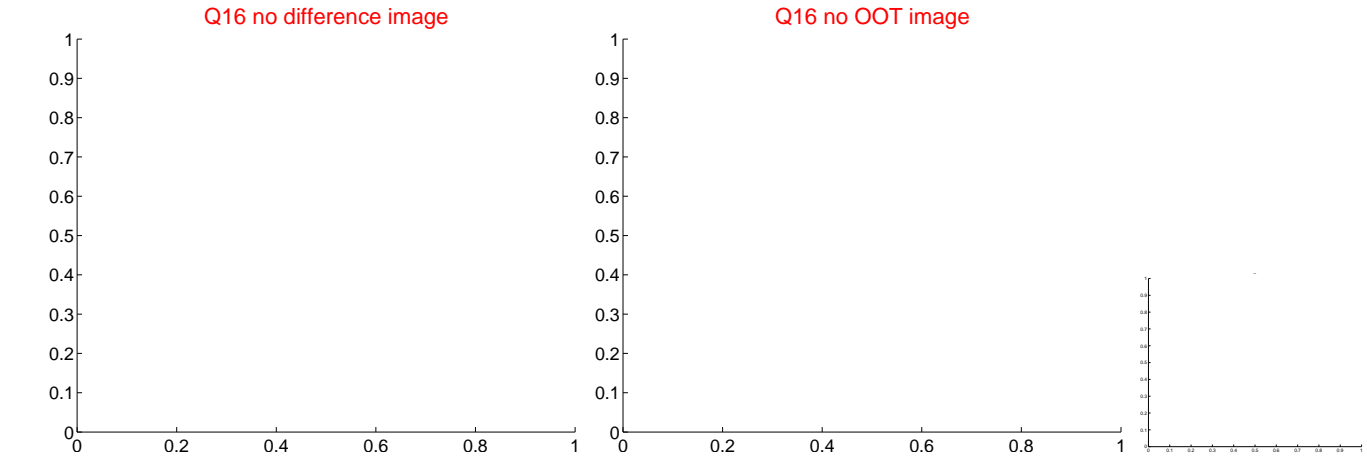
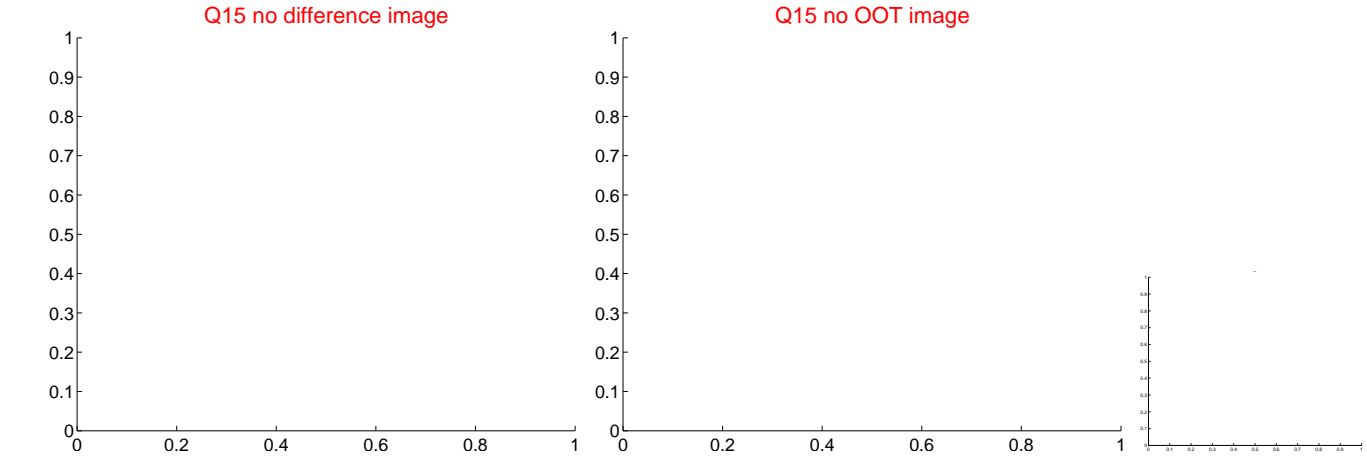
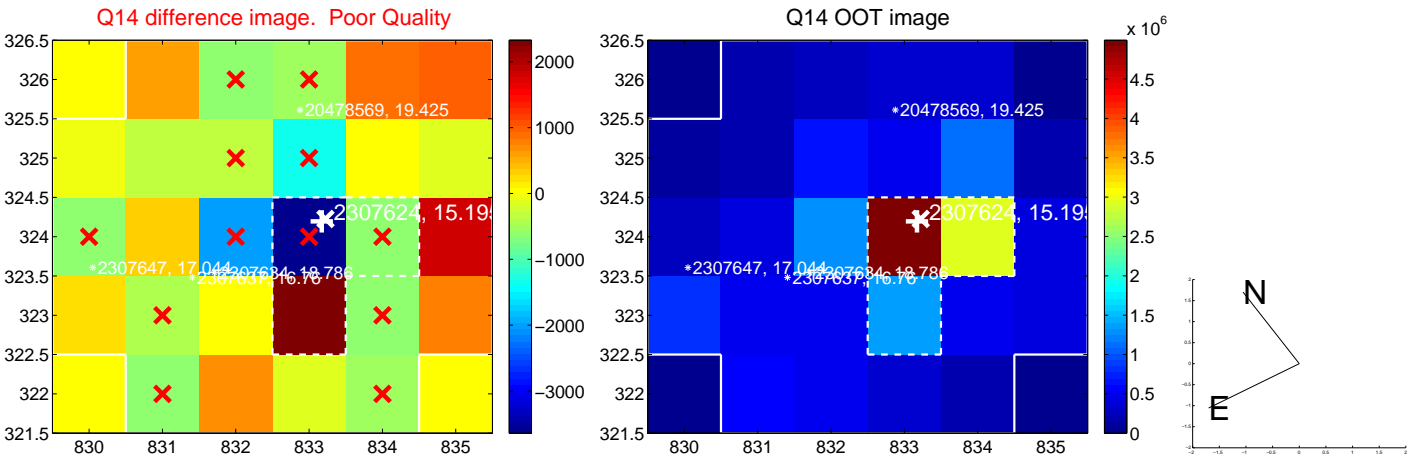
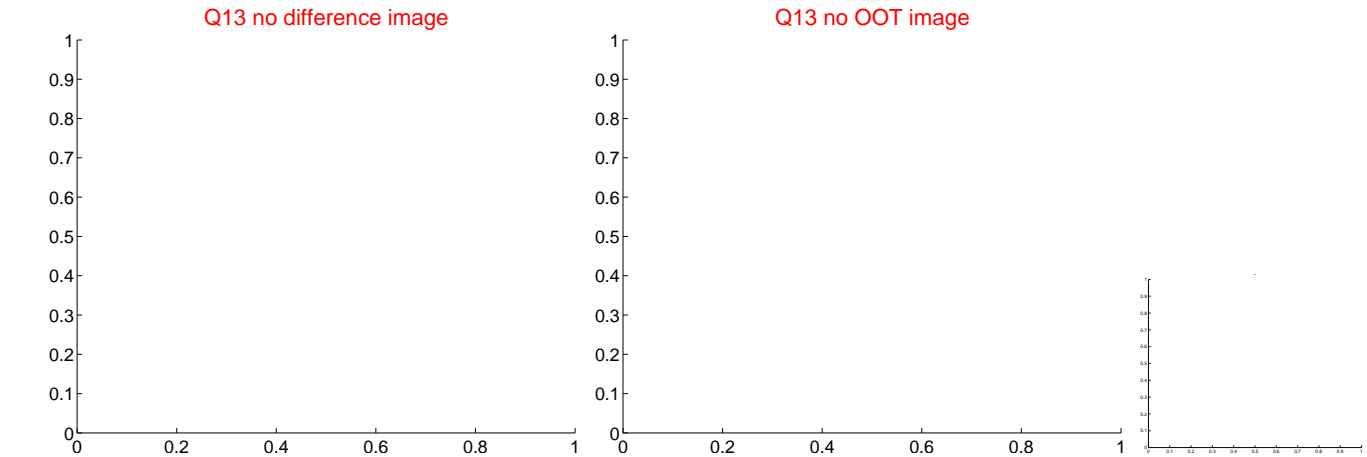
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ×: large negative pixel value.



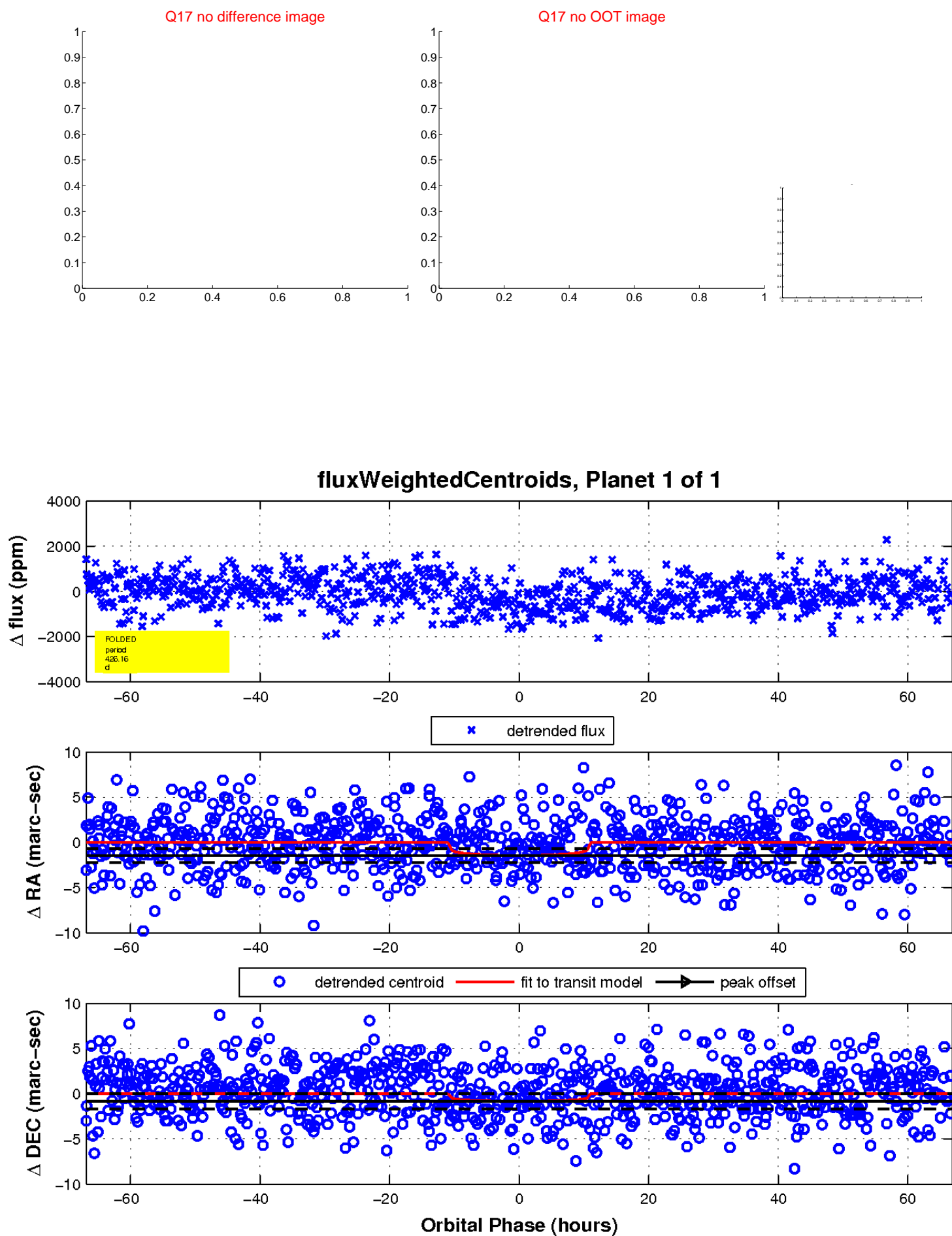
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white ×: KIC target position; +: OOT centroid; △: difference centroid. red ✕: large negative pixel value.



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



UKIRT Image

Declination

