

KIC 009047416

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})
009047416-01	OBS	5605.01	9.013296	138.444246	967.2	4.006	9.3	9.6	1.74	5627	6.87	352.39

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
009047416-01	OBS	PC	1.00	0	0	0	0	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.

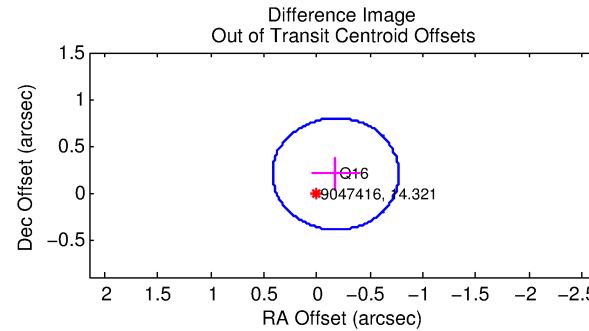
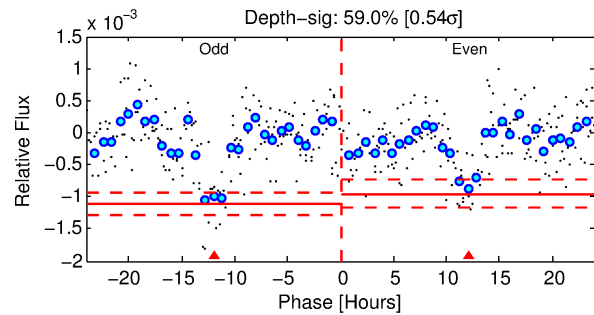
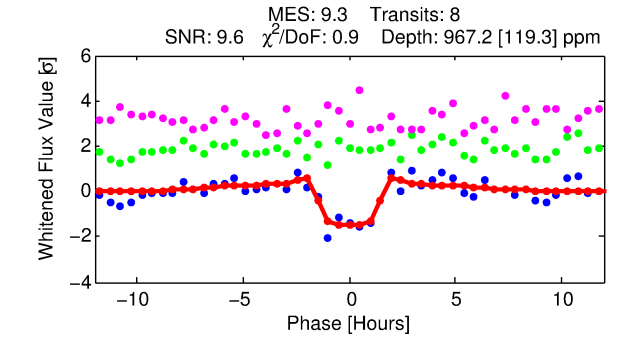
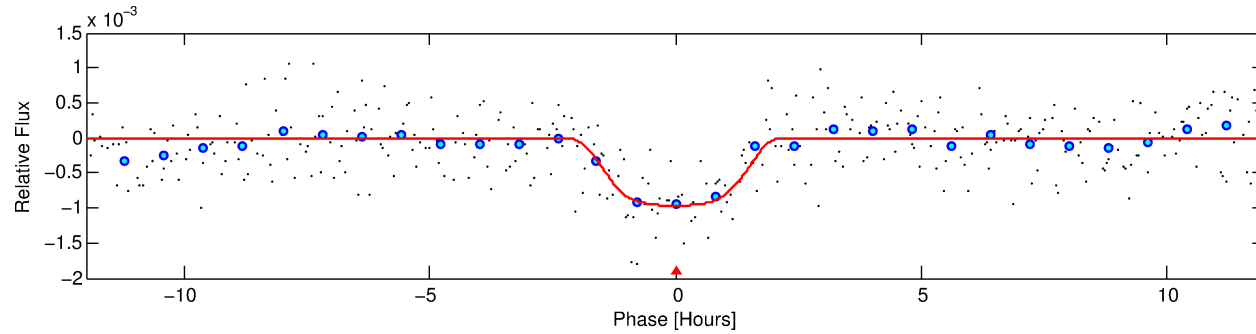
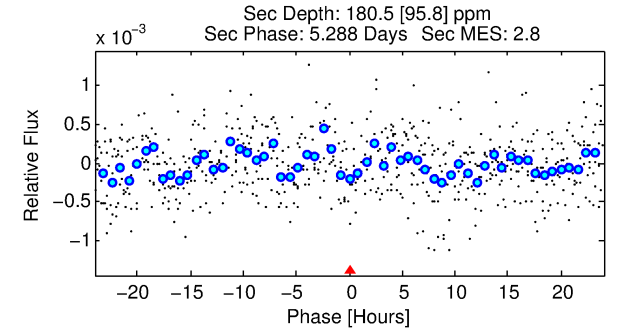
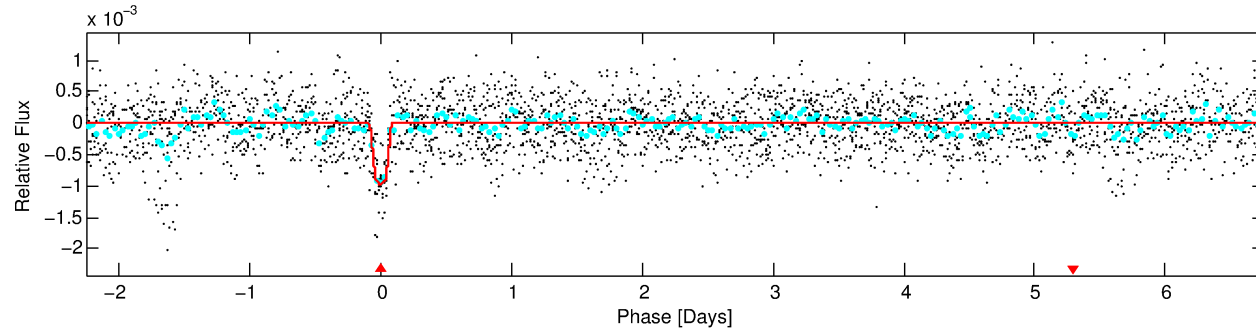
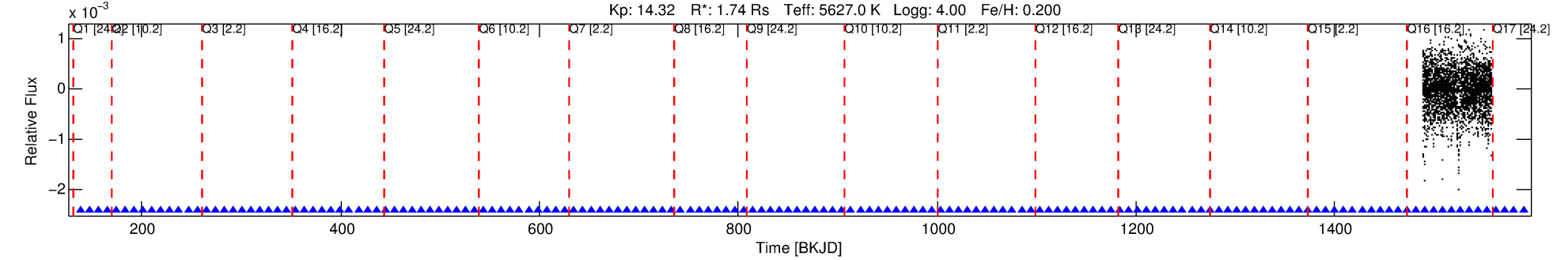
Ephemeris Match Information For 009047416-01

No Significant Match Found

DV One-Page Summary

KIC: 9047416 Candidate: 1 of 1 Period: 9.013 d
KOI: K05605 Corr: No Ephemeris Match

Kp: 14.32 R*: 1.74 Rs Teff: 5627.0 K Logg: 4.00 Fe/H: 0.200



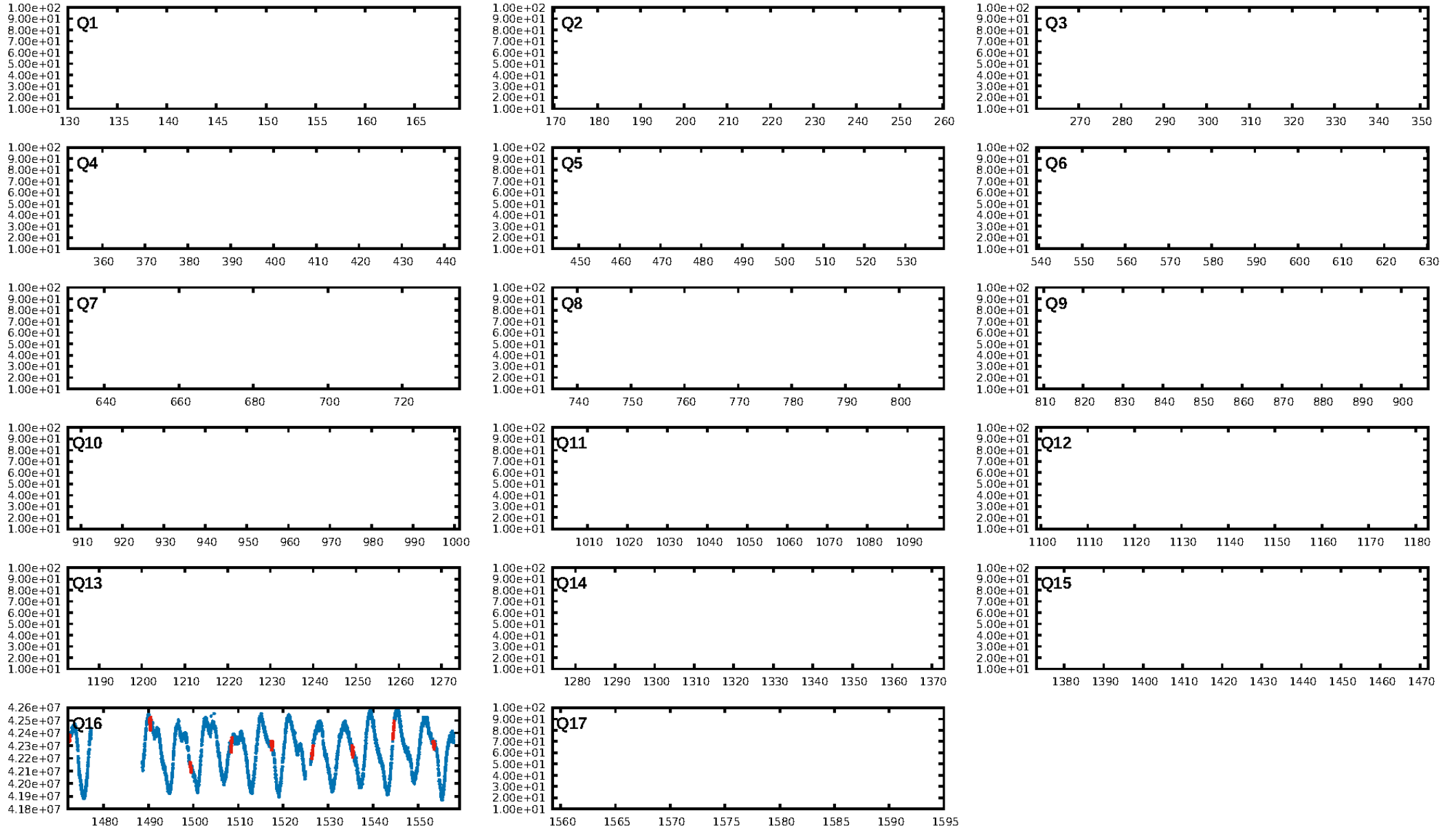
DV Fit Results:

Period = 9.01330 [0.00013] d
Epoch = 138.4442 [0.0186] BKJD
Rp/R* = 0.0363 [0.0033]
a/R* = 7.39 [2.22]
b = 0.94 [0.04]
Seff = 352.39 [248.33]
Teq = 1105 [195] K
Rp = 6.87 [2.93] Re
a = 0.0876 [0.0369] AU
Ag = 16.13 [14.36] [1.05σ]
Teffp = 3423 [493] K [4.38σ]

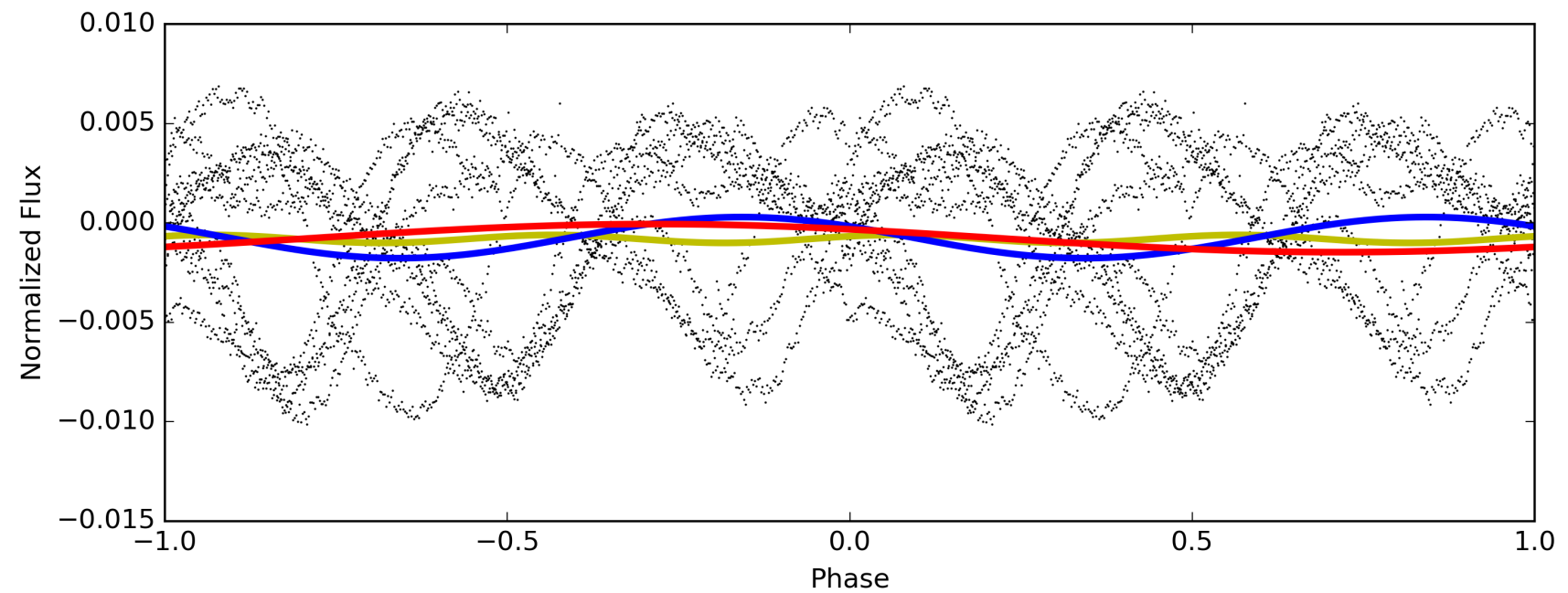
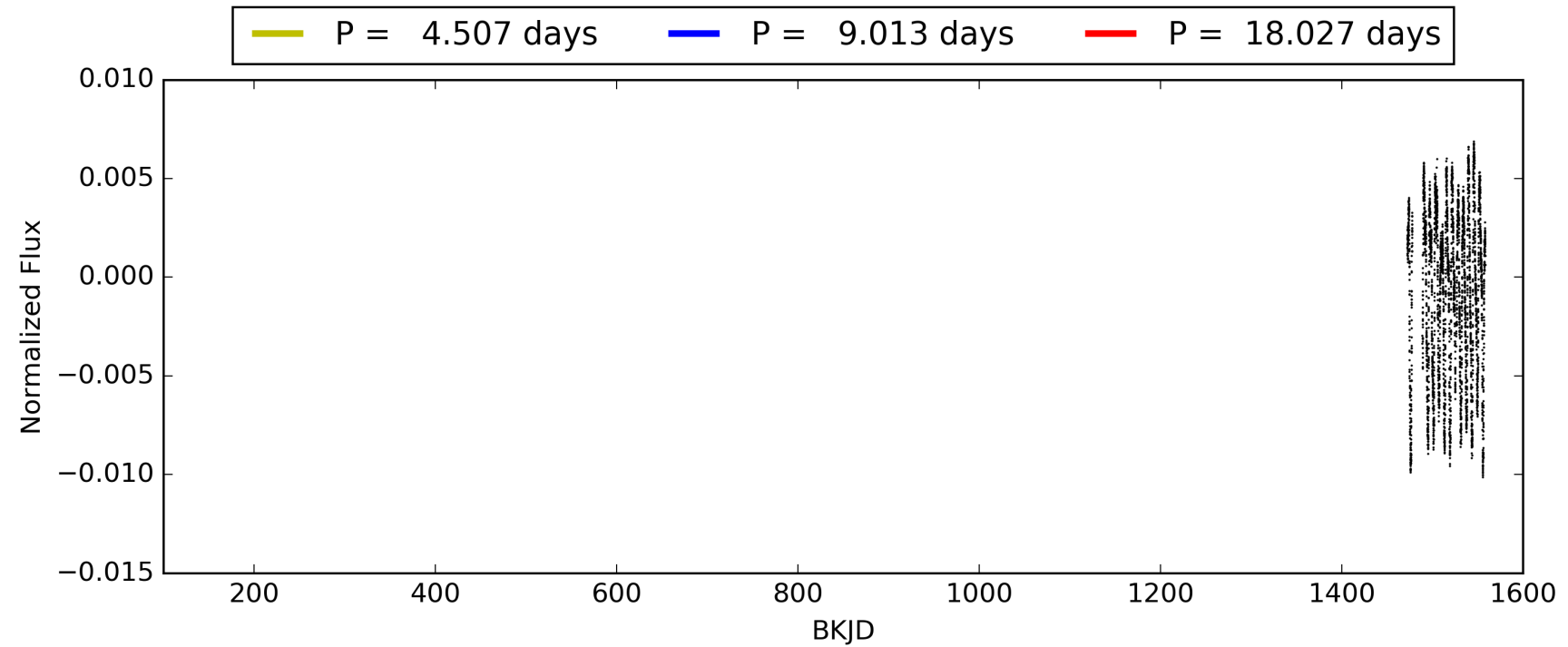
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: 60.2%
ModelChiSquareGof-sig: 97.9%
Bootstrap-pfa: 8.39e-17
RollingBand-fgt: 1.00 [8/8]
GhostDiagnostic-chr: 2.263
Centroid-sig: 17.9%
Centroid-so: 1.101 arcsec [0.99σ]
OotOffset-rm: 0.268 arcsec [1.35σ]
KicOffset-rm: 0.258 arcsec [1.22σ]
OotOffset-st: 0/0/1/0 [1]
KicOffset-st: 0/0/1/0 [1]
DiffImageQuality-fgm: 1.00 [1/1]
DiffImageOverlap-fno: 1.00 [1/1]

TCE 009047416-01, PDC Light Curves

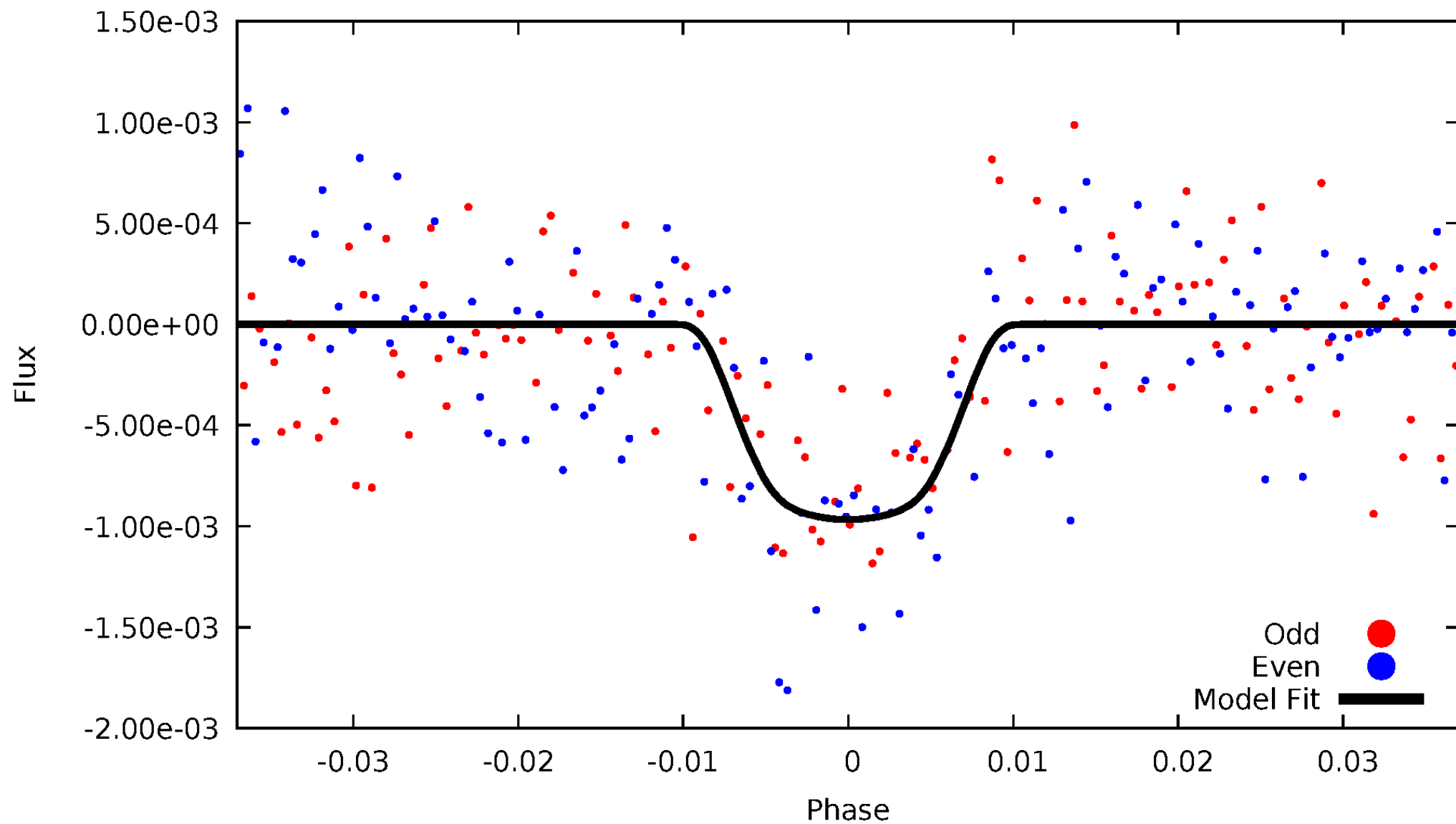


TCE 009047416-01



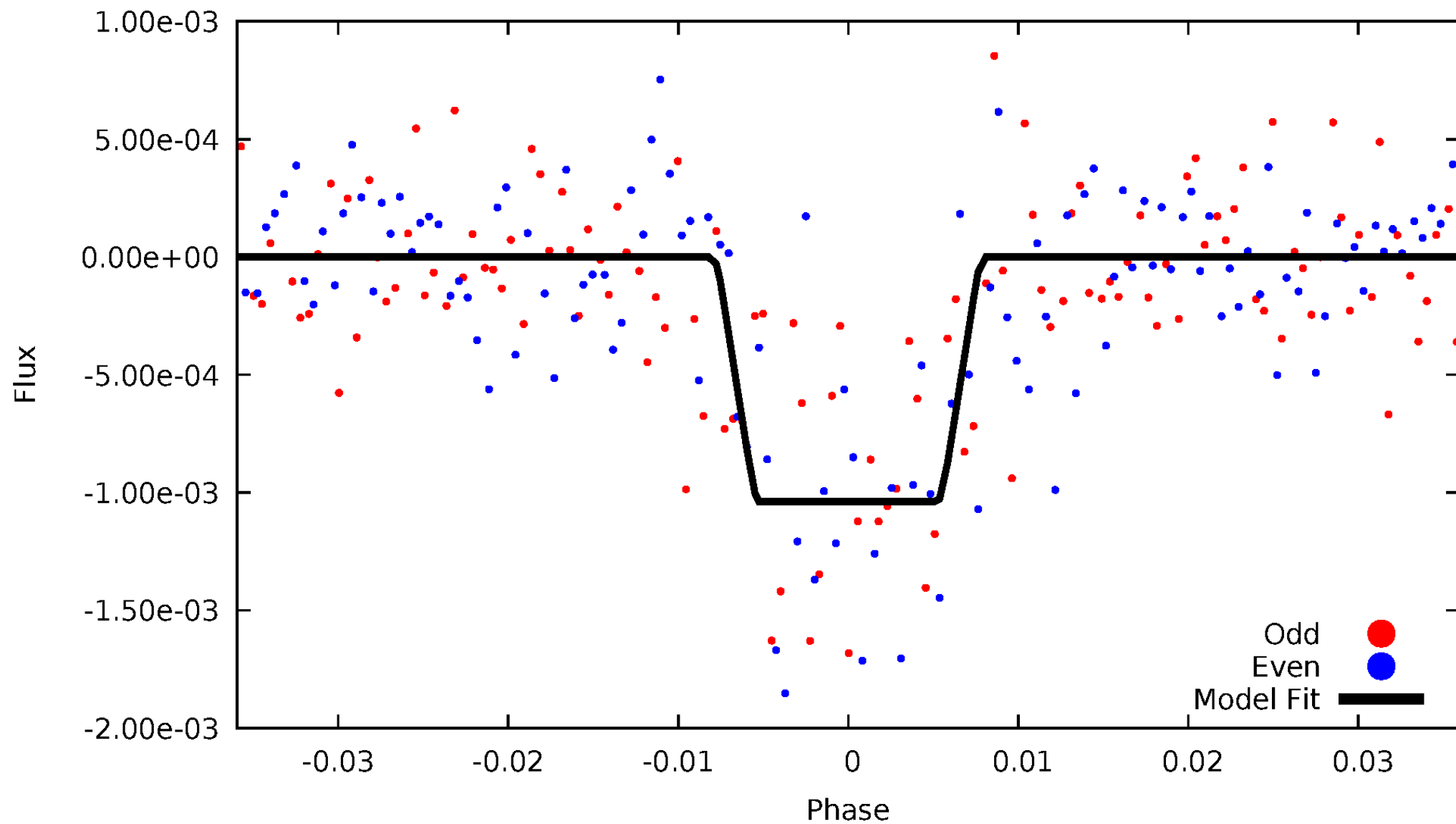
DV Odd/Even

TCE 009047416-01

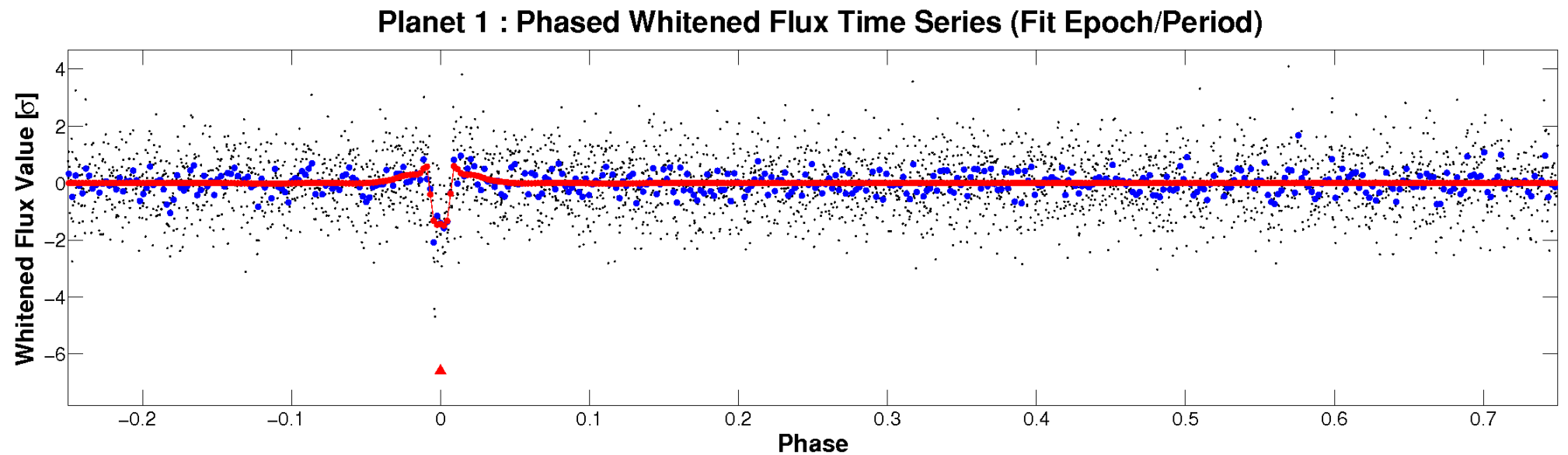
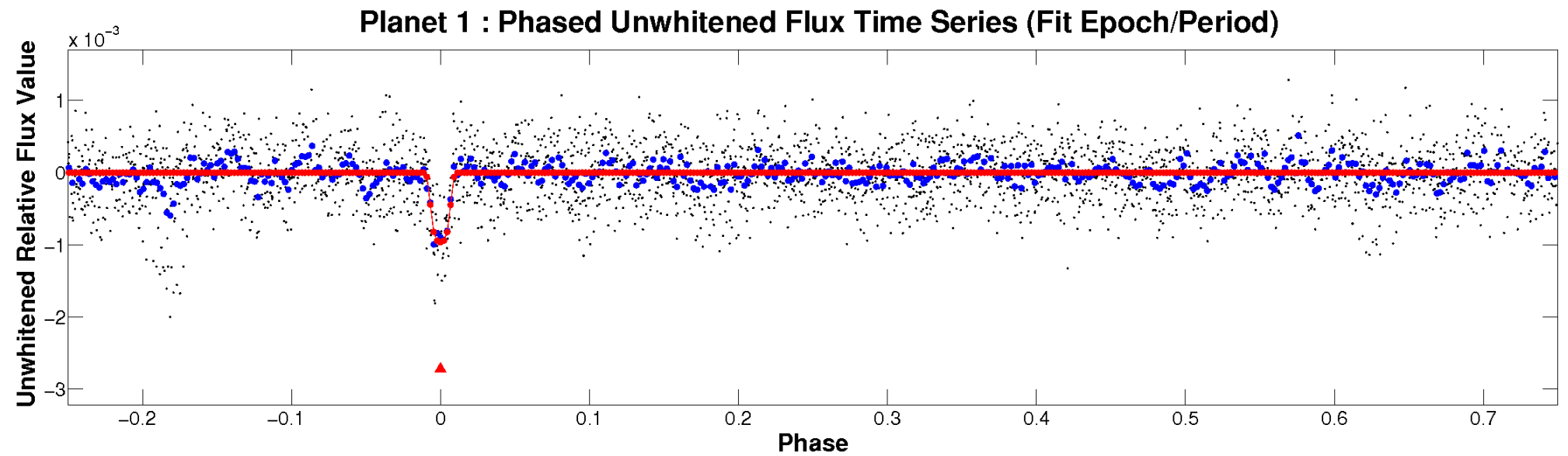


ALT Odd/Even

TCE 009047416-01

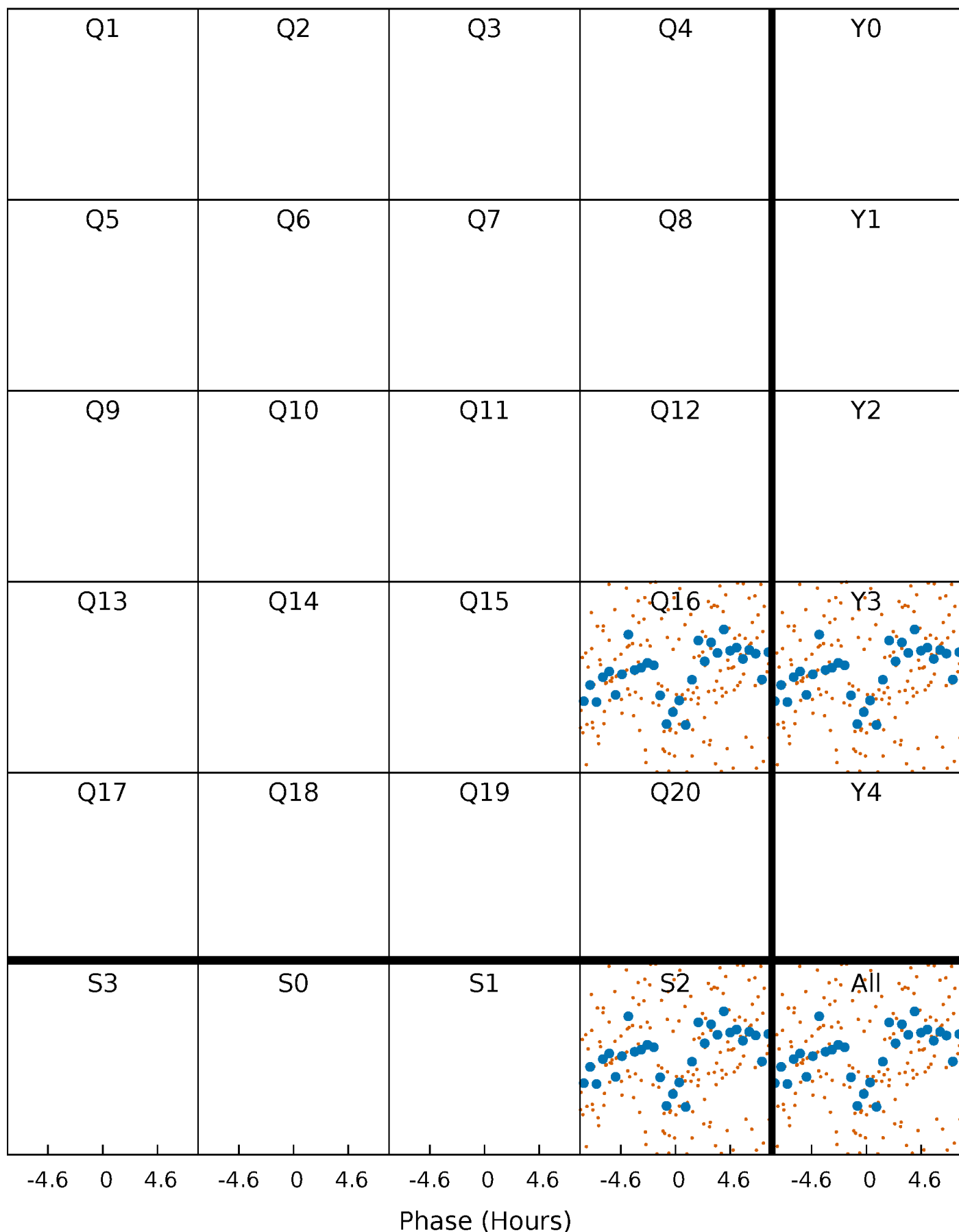


Non-Whitened Vs. Whitened Light Curve



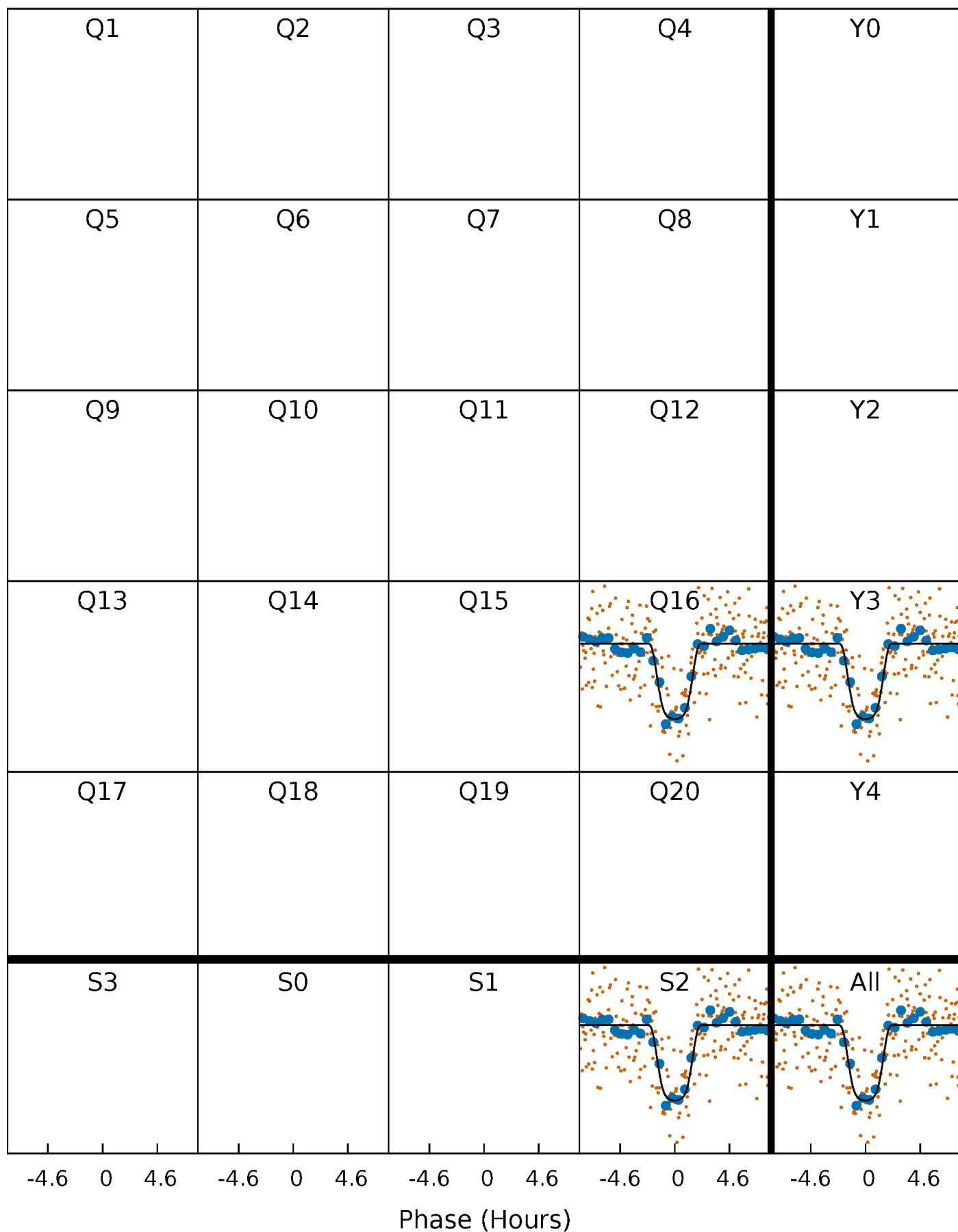
PDC Quarter-Phased Transit Curves

TCE 009047416-01 P= 9.013296 Days $T_0=138.444246$ (BKJD)



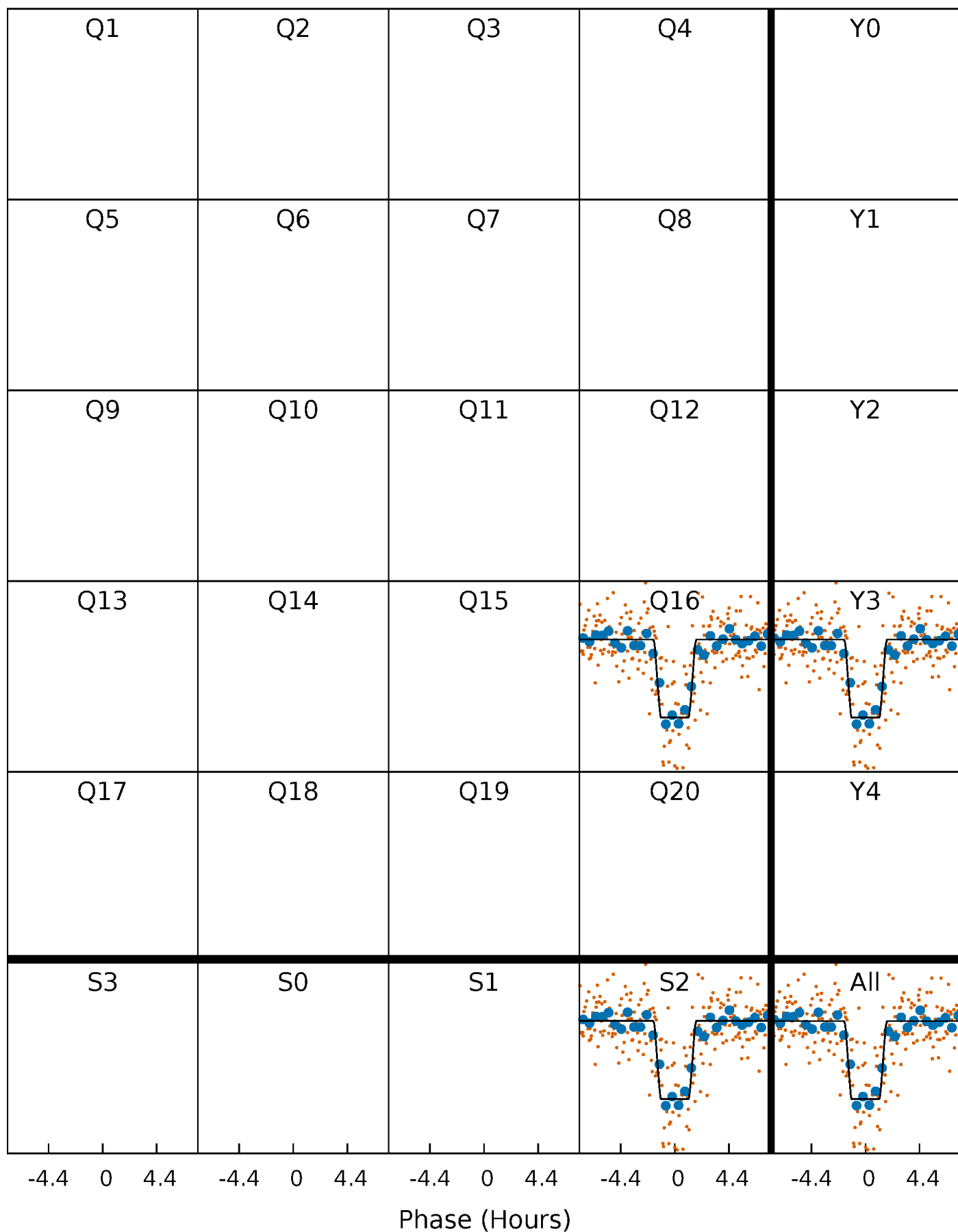
DV Quarter-Phased Transit Curves

TCE 009047416-01 P= 9.013296 Days $T_0=138.444246$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

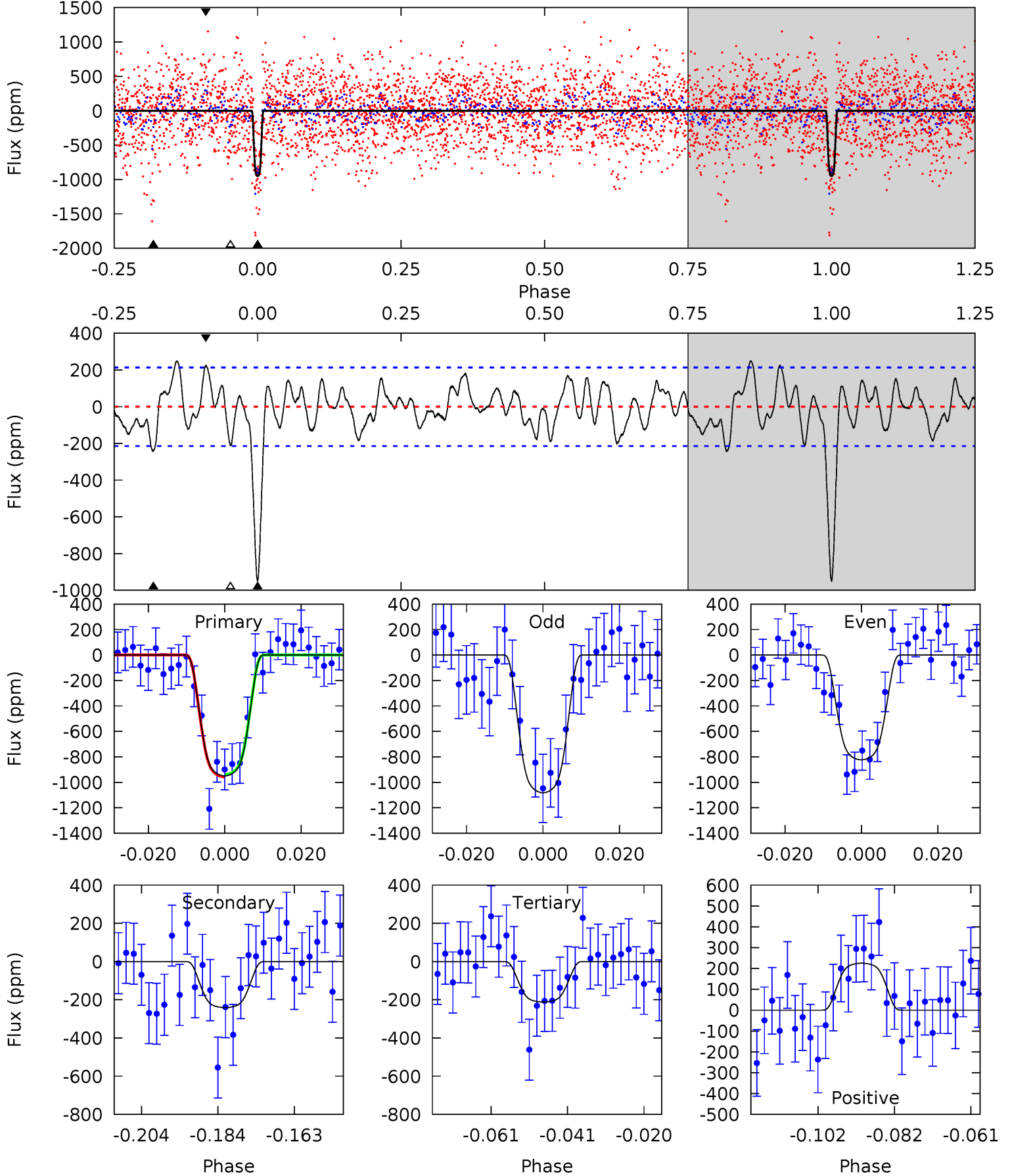
TCE 009047416-01 P= 9.013501 Days $T_0=138.413456$ (BKJD)



DV Model-Shift Uniqueness Test

009047416-01, P = 9.013296 Days, E = 138.444246 Days

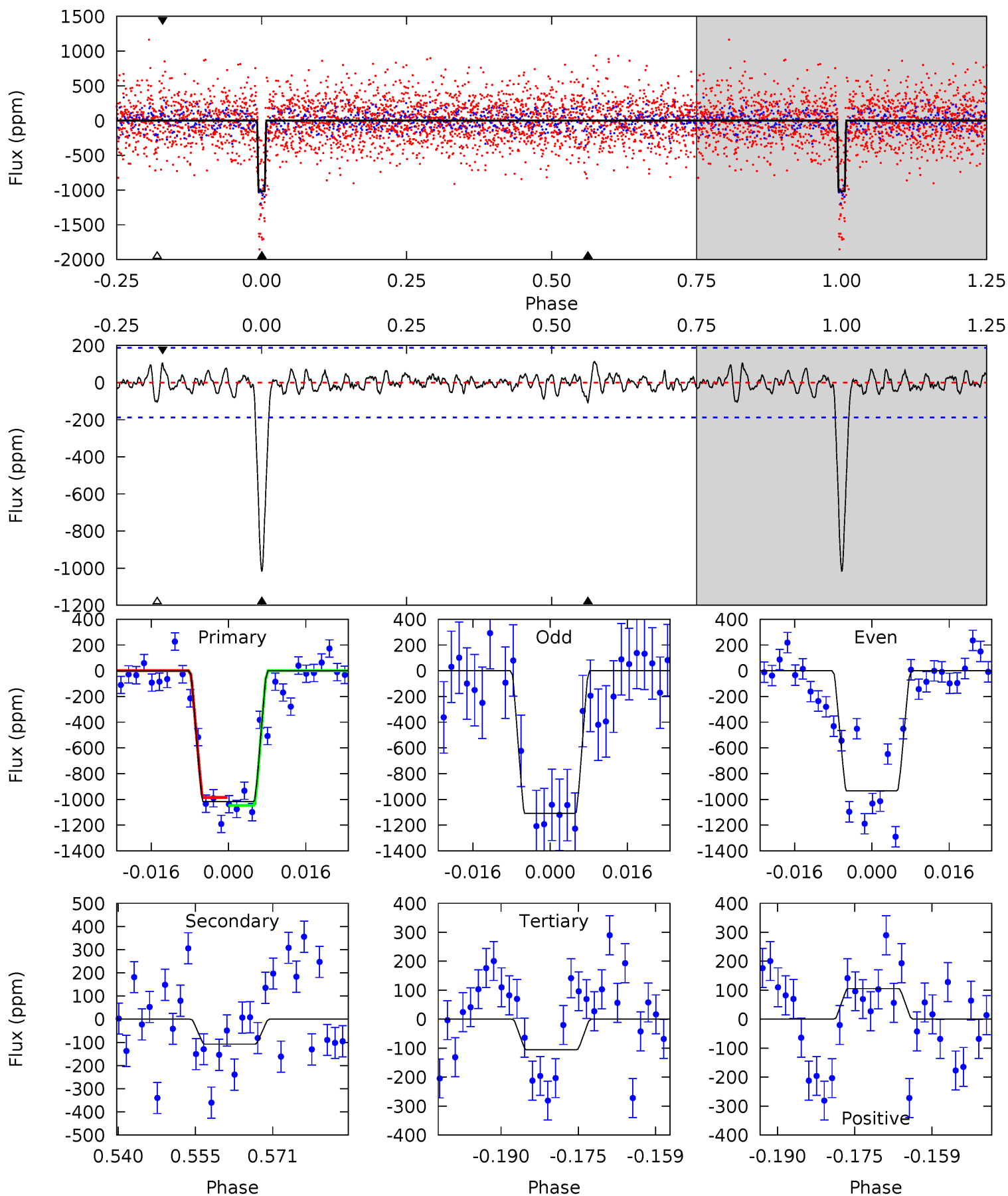
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
21.7	5.51	4.84	5.15	4.89	2.32	2.08	16.8	16.5	0.67	0.36	2.97	1.12	0.21	0.20



Alt Model-Shift Uniqueness Test

009047416-01, P = 9.013501 Days, E = 138.413456 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
26.7	2.83	2.76	2.78	4.94	2.41	0.85	23.9	23.9	0.07	0.05	2.32	0.90	0.10	0.82



Stellar Parameters For KIC 009047416

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	5627^{+186}_{-169}	$4.002^{+0.413}_{-0.138}$	$0.200^{+0.200}_{-0.300}$	$1.735^{+0.389}_{-0.723}$	$1.103^{+0.128}_{-0.177}$	$0.297^{+1.057}_{-0.121}$
	+3%/-3%	+10%/-3%	+100%/-150%	+22%/-42%	+12%/-16%	+355%/-41%
Source	KIC0	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 009047416-01 / KOI 5605.01

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-241 ± 44	$6.62^{+1.17}_{-1.61}$	1521^{+116}_{-174}	3985^{+203}_{-209}	23^{+16}_{-7}
Alt.	-108 ± 38	$5.77^{+1.18}_{-1.22}$	1515^{+112}_{-162}	3604^{+265}_{-267}	13^{+10}_{-5}

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 $A_{\text{obs}} \gg 1.0$

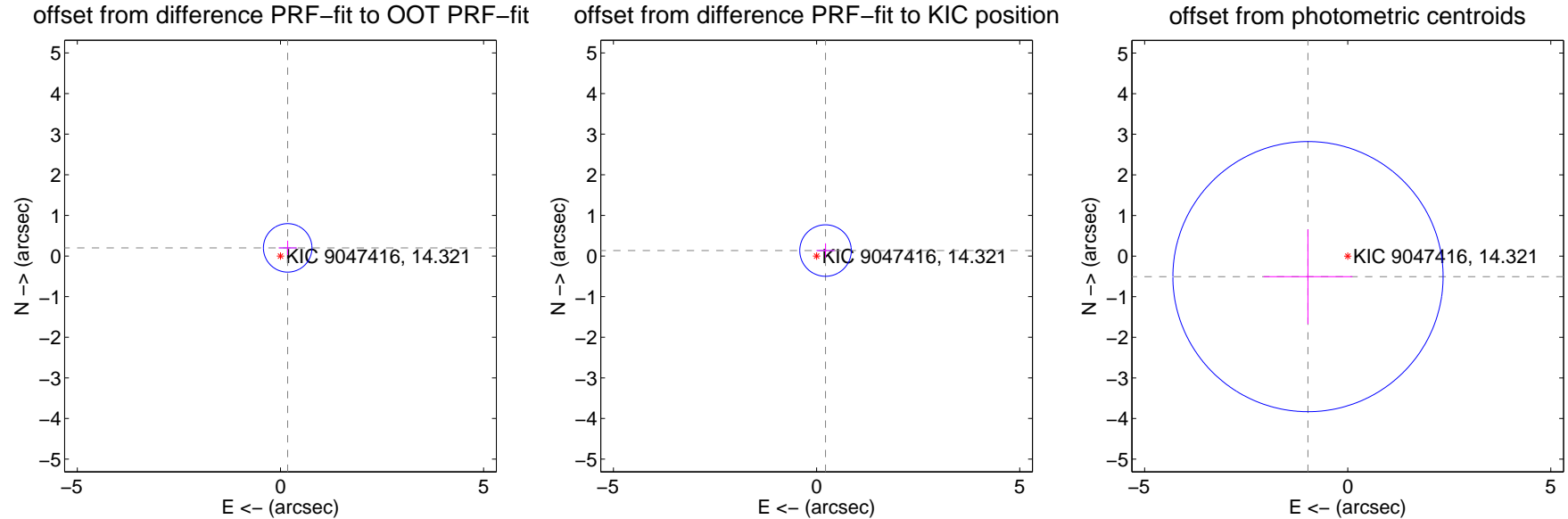
DV Centroid Data

Supplemental centroid analysis for 009047416-01. Kepler magnitude: 14.32. Transit SNR 9.61

There are 1 quarters with good PRF difference image offsets

The direct PRF centroid is offset from the target star catalog position by about 0.08 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.268 ± 0.199	1.35	-0.178 ± 0.222	0.200 ± 0.178
PRF-fit source offset from KIC position	0.258 ± 0.211	1.22	-0.221 ± 0.222	0.135 ± 0.178
photometric centroid source offset	1.10 ± 1.11	0.99	0.98 ± 1.09	-0.51 ± 1.16



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.



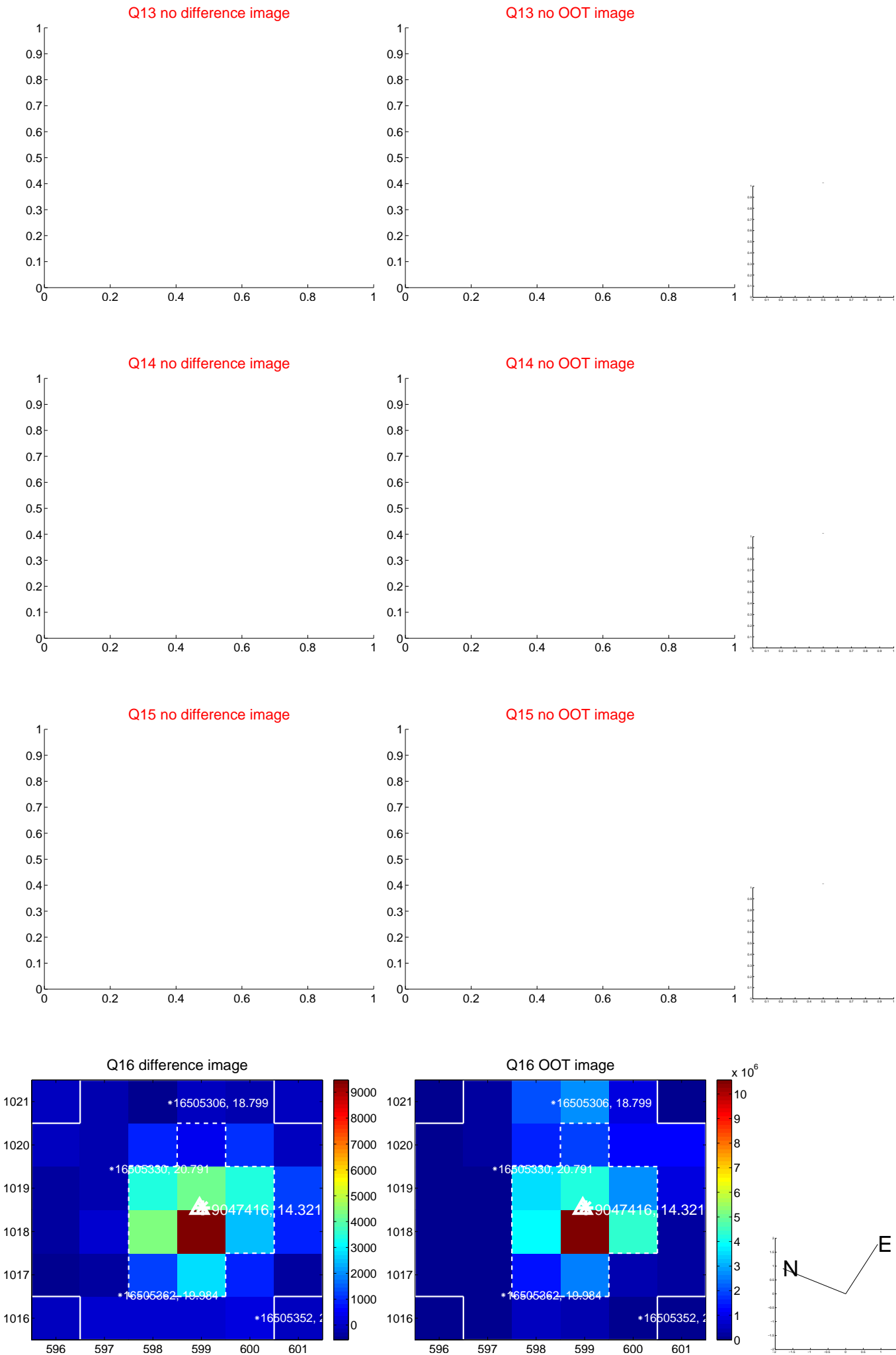
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



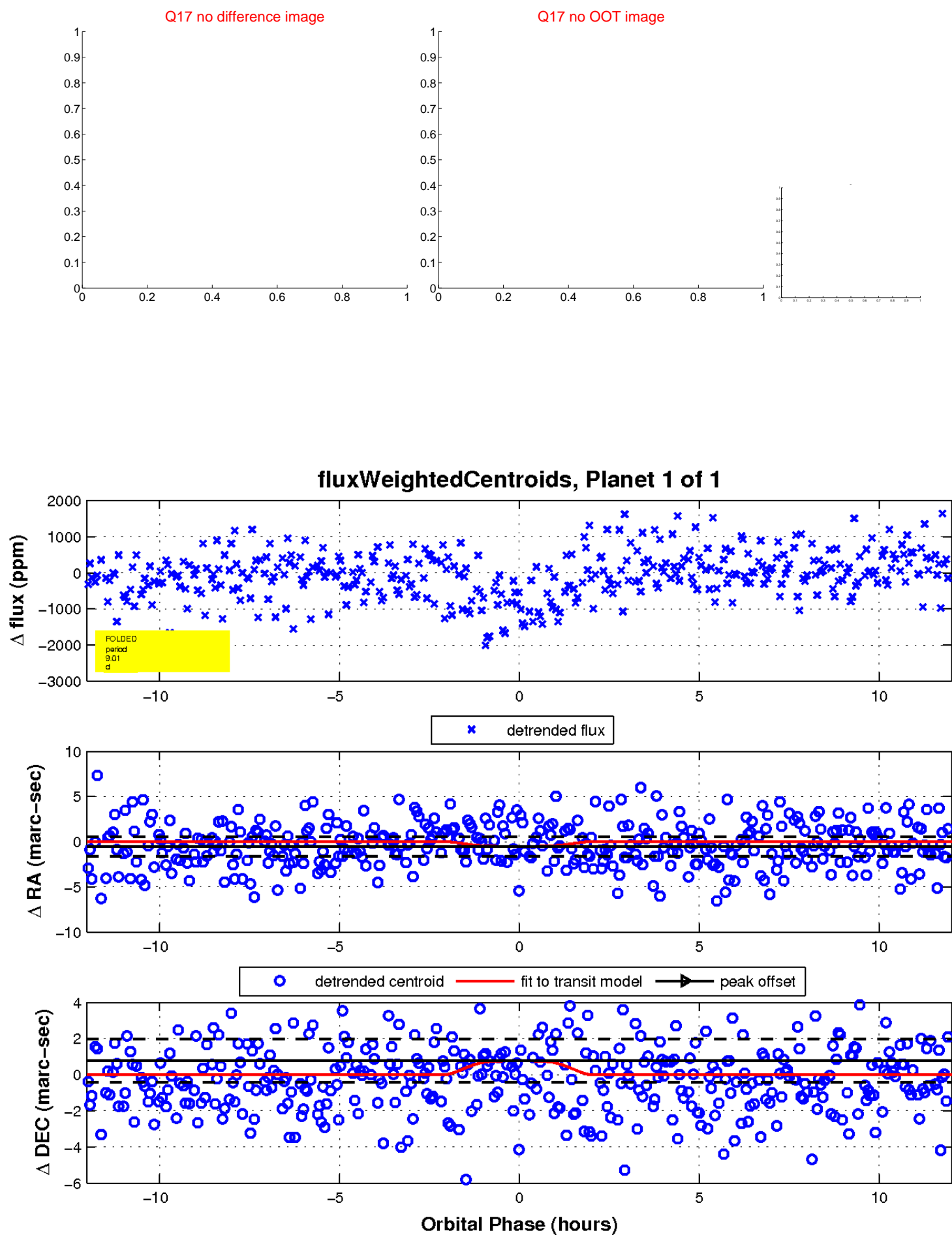
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UKIRT Image

Declination

