

KIC 004075816

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})
004075816-01	OBS	No	113.033229	225.765055	1328.3	6.872	9.5	6.1	7.97	4860	31.34	173.37

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
004075816-01	OBS	FP	0.00	1	0	0	0	LPP_DV—MOD_NONUNIQ_ALT—INCONSISTENT_TRANS

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

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

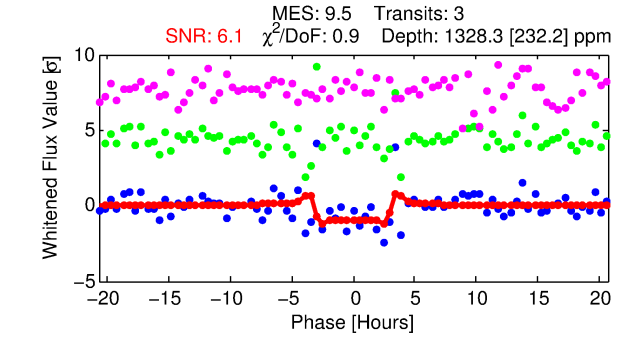
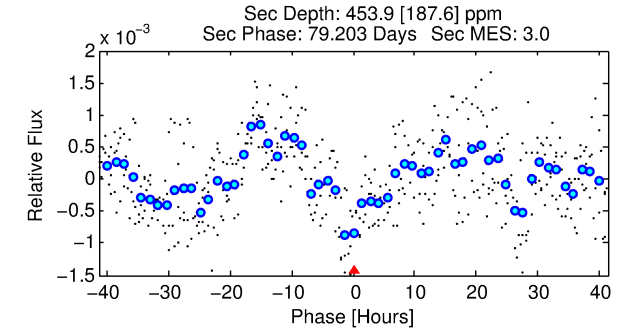
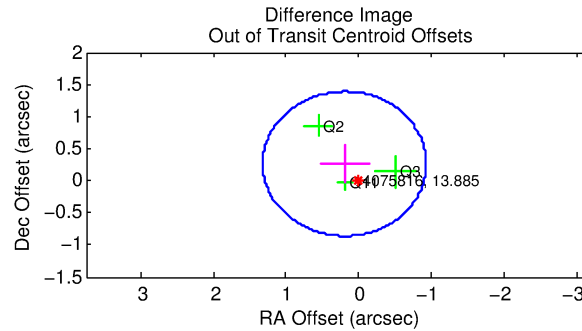
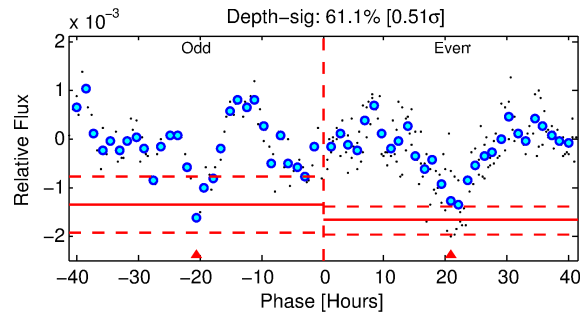
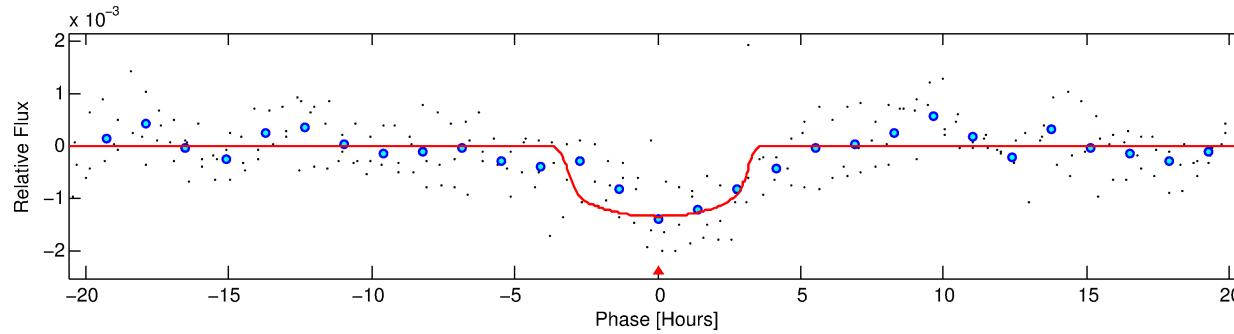
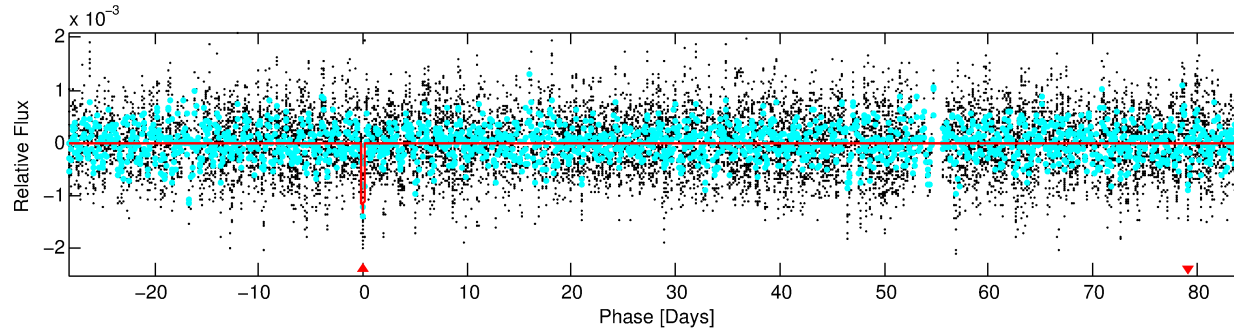
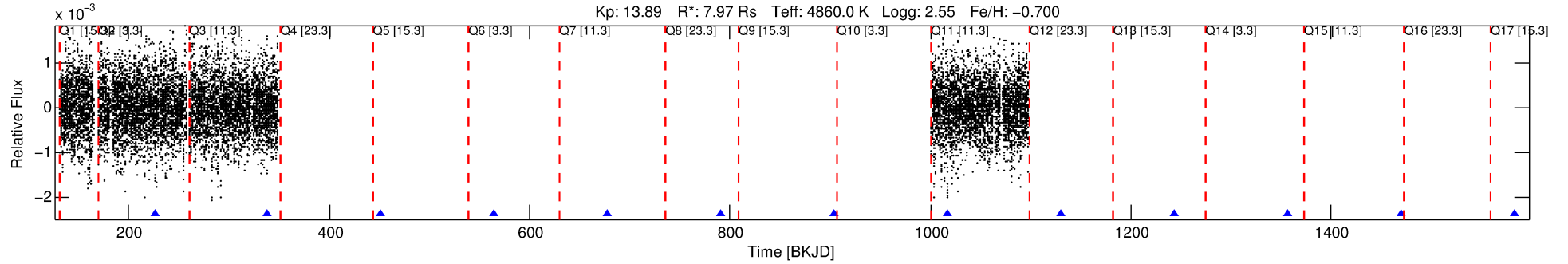
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 004075816-01

No Significant Match Found

DV One-Page Summary

KIC: 4075816 Candidate: 1 of 1 Period: 113.033 d



DV Fit Results:

Period = 113.03323 [0.00163] d
Epoch = 225.7651 [0.0053] BKJD
Rp/R* = 0.0360 [0.0184]
a/R* = 92.61 [171.77]
b = 0.73 [1.22]
Seff = 173.37 [36.74]
Teq = 925 [49] K
Rp = 31.34 [18.03] Re
a = 0.4282 [0.0756] AU
Ag = 46.62 [52.18] [0.87 σ]
Teffp = 3738 [1037] K [2.71 σ]

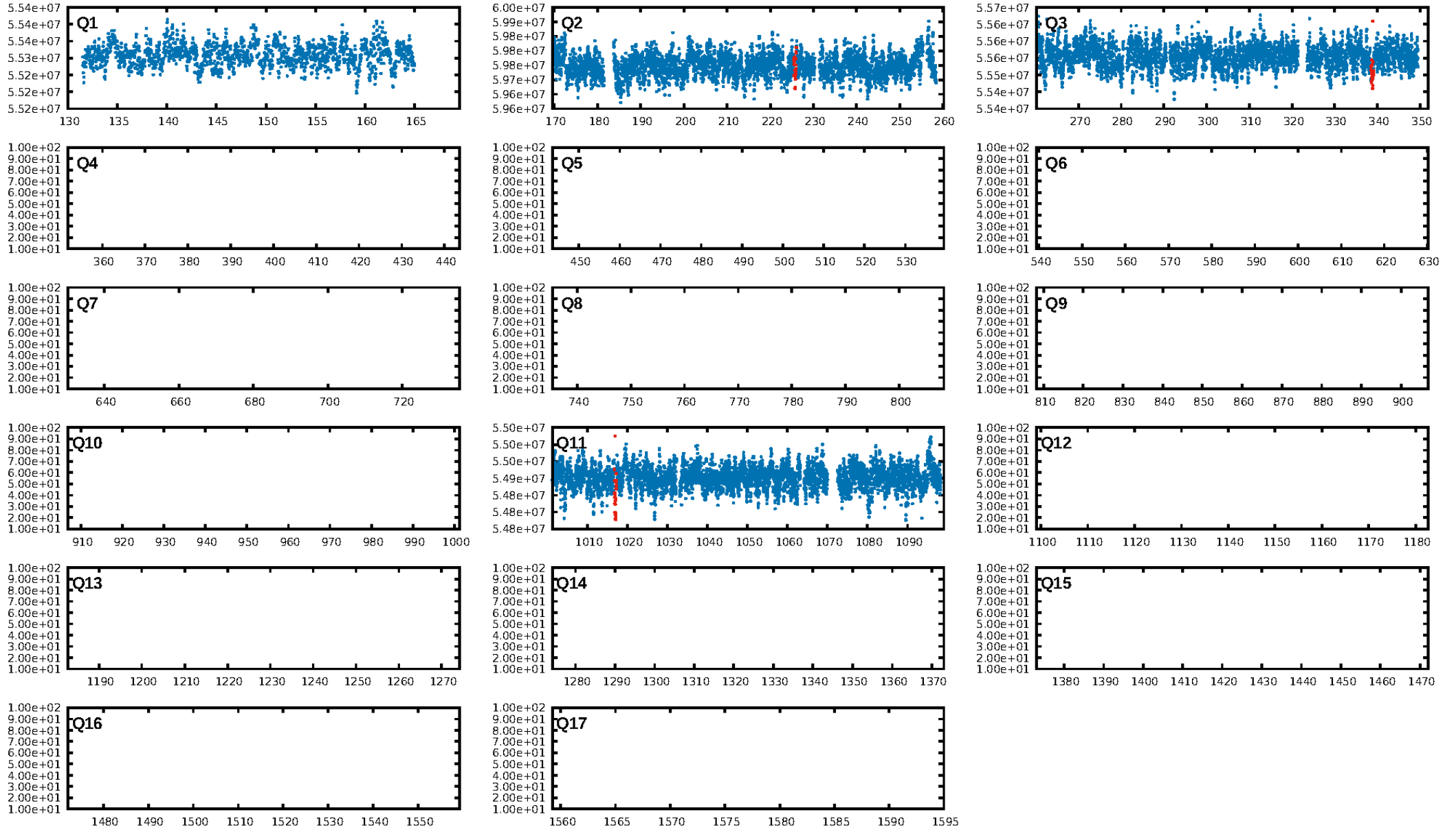
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: 7.3%
ModelChiSquareGof-sig: 98.9%
Bootstrap-pfa: 1.08e-20
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: 2.26
Centroid-sig: 45.4%
Centroid-so: 0.246 arcsec [0.49 σ]
OotOffset-rm: 0.328 arcsec [0.87 σ]
OotOffset-st: 1/2/0/0 [3]
KicOffset-rm: 0.401 arcsec [1.19 σ]
KicOffset-st: 1/2/0/0 [3]
DiffImageQuality-fgm: 1.00 [3/3]
DiffImageOverlap-fno: 1.00 [3/3]

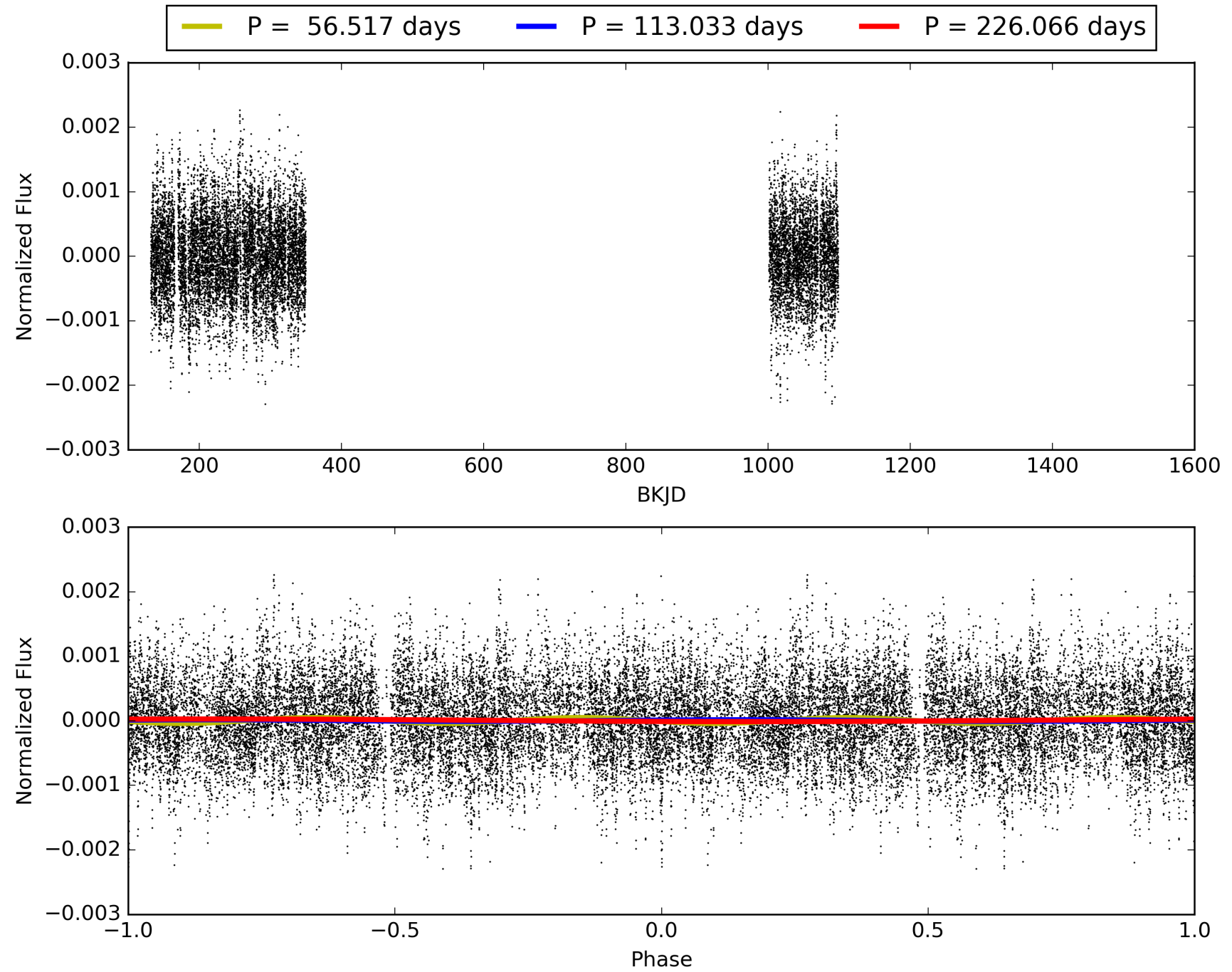
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 19:01:48 Z

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

TCE 004075816-01, PDC Light Curves

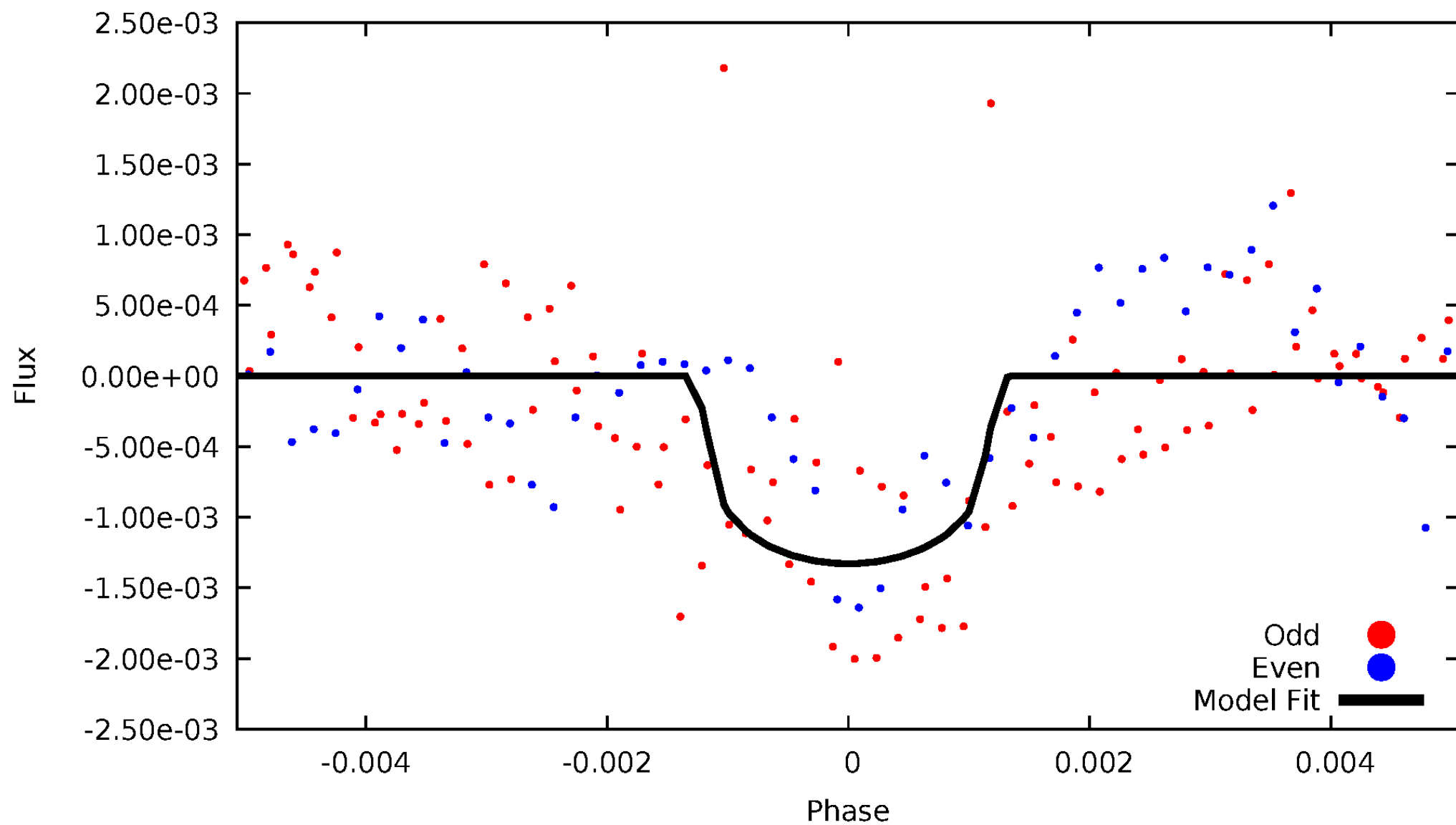


TCE 004075816-01



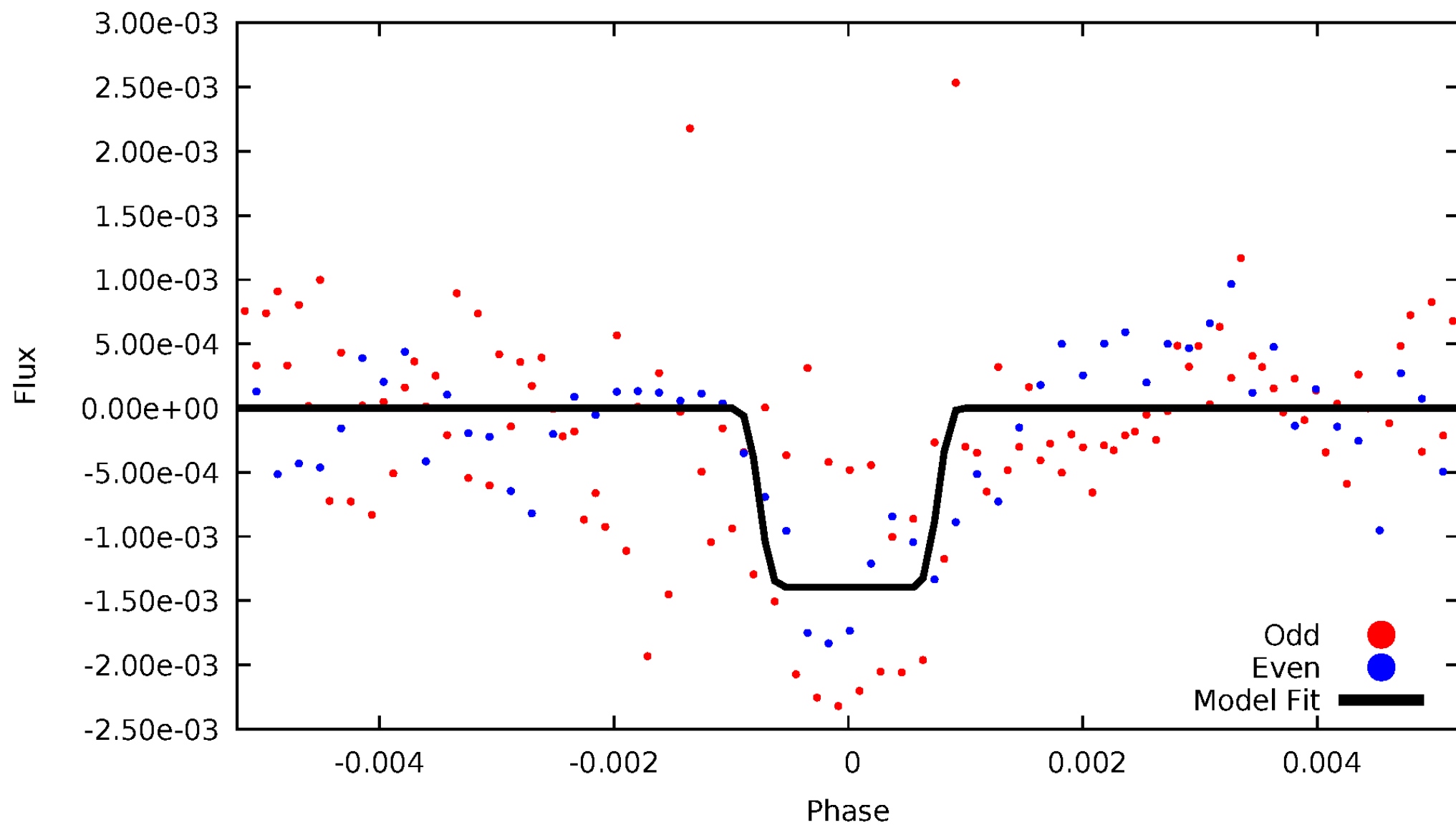
DV Odd/Even

TCE 004075816-01



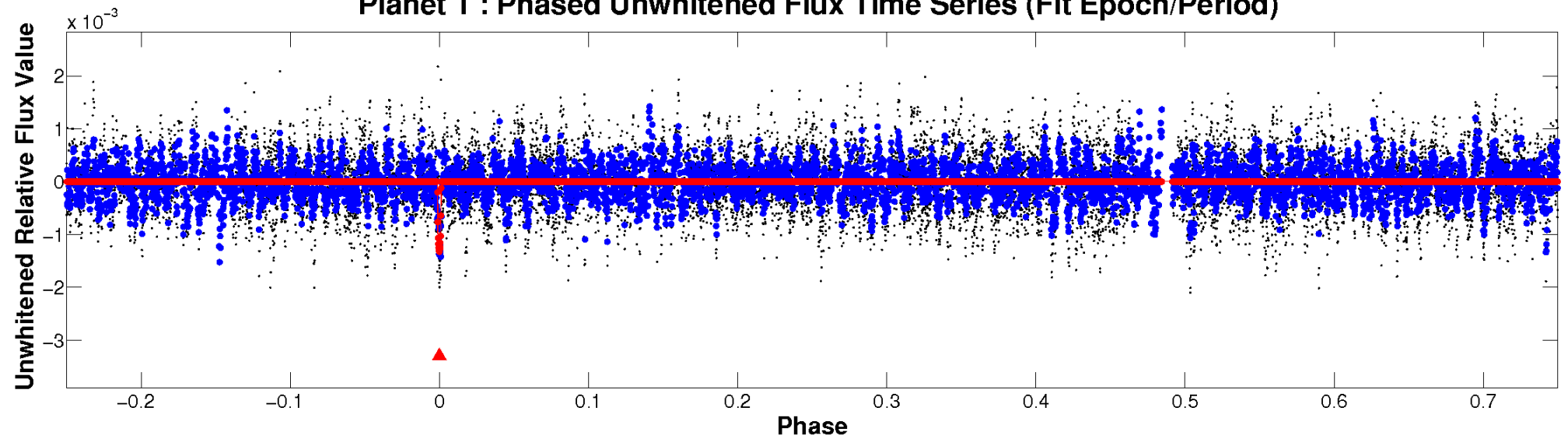
ALT Odd/Even

TCE 004075816-01

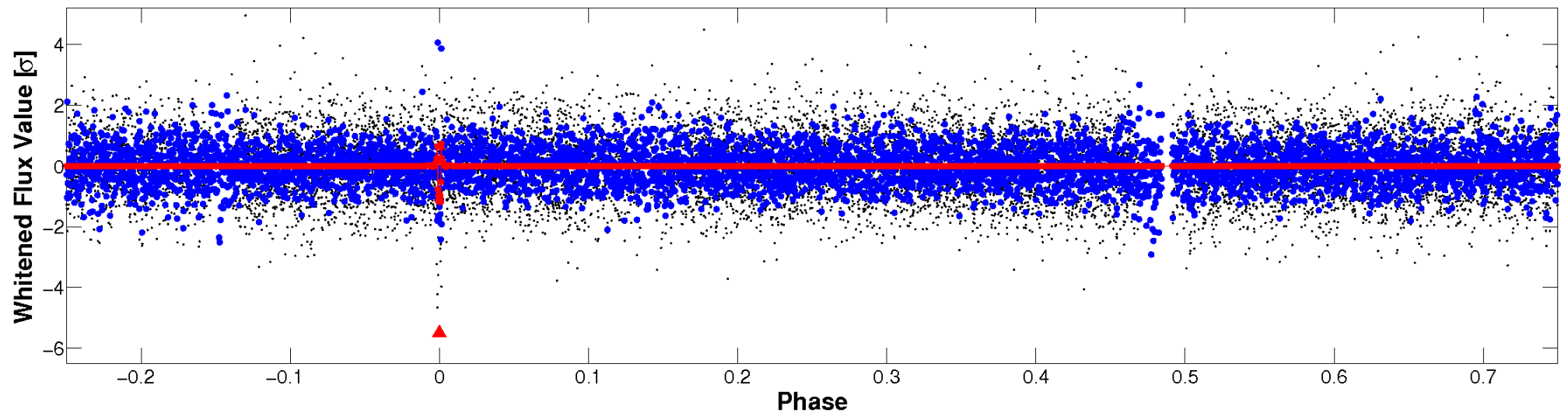


Non-Whitened Vs. Whitened Light Curve

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

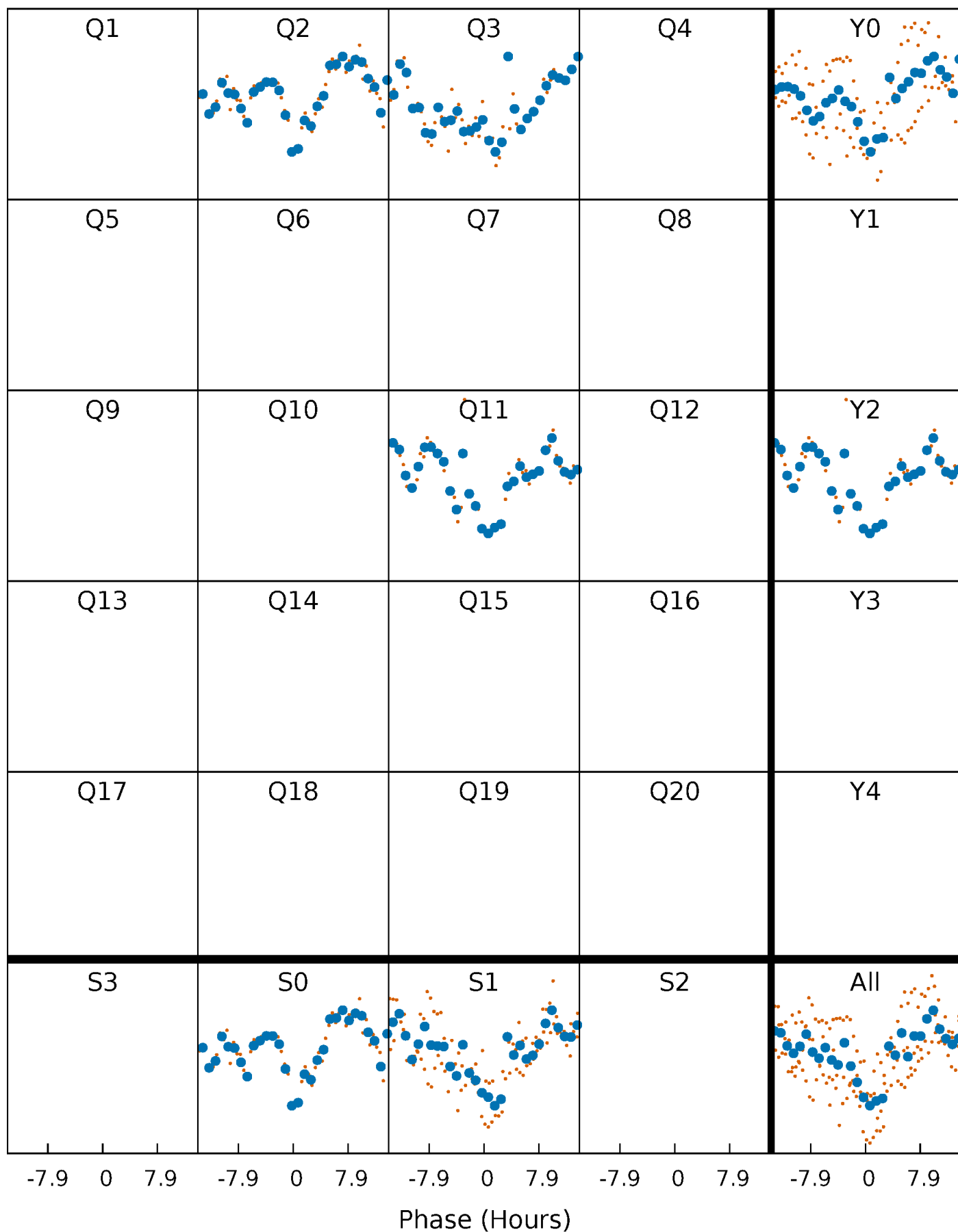


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



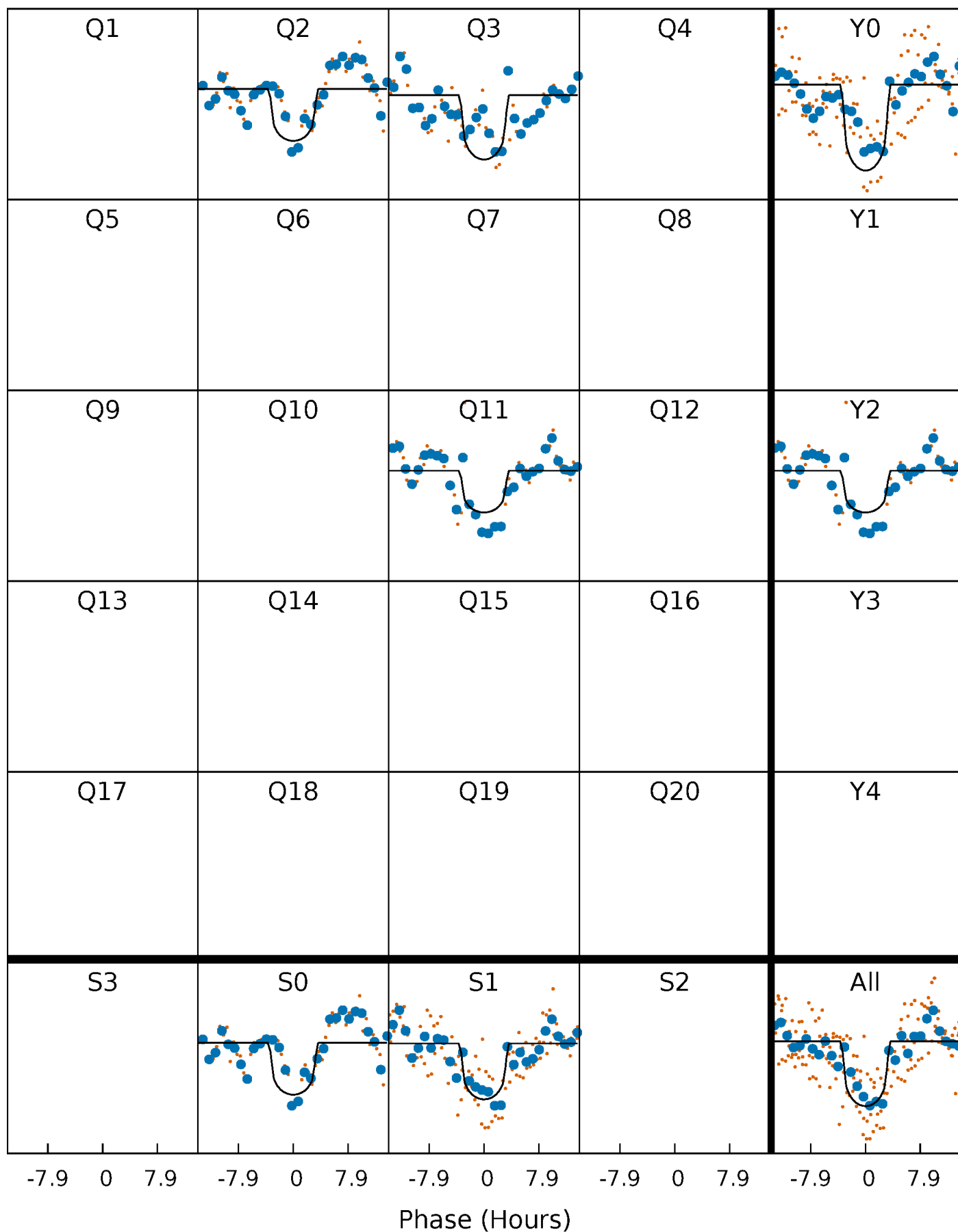
PDC Quarter-Phased Transit Curves

TCE 004075816-01 P=113.033229 Days $T_0=225.765055$ (BKJD)



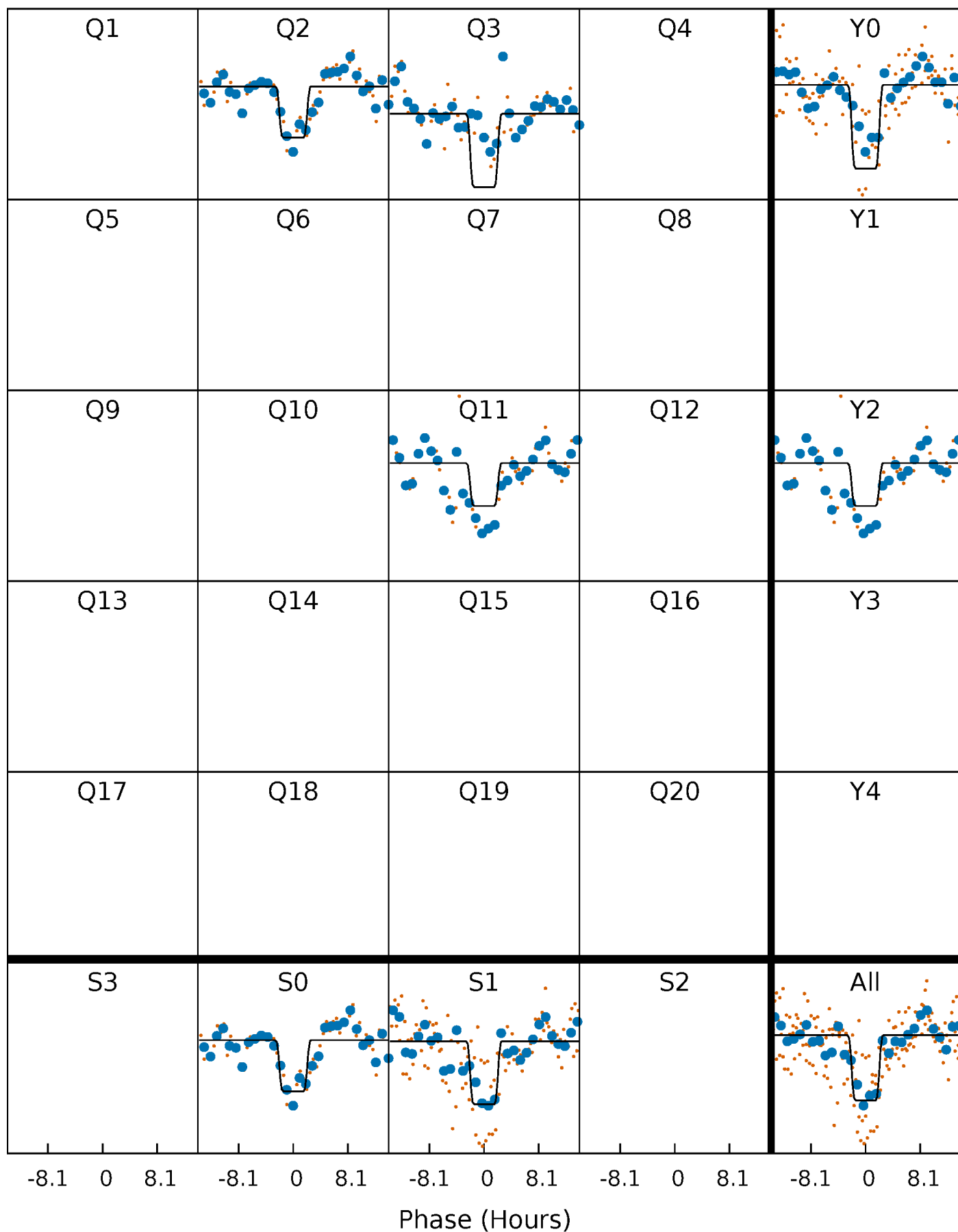
DV Quarter-Phased Transit Curves

TCE 004075816-01 P=113.033229 Days $T_0=225.765055$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

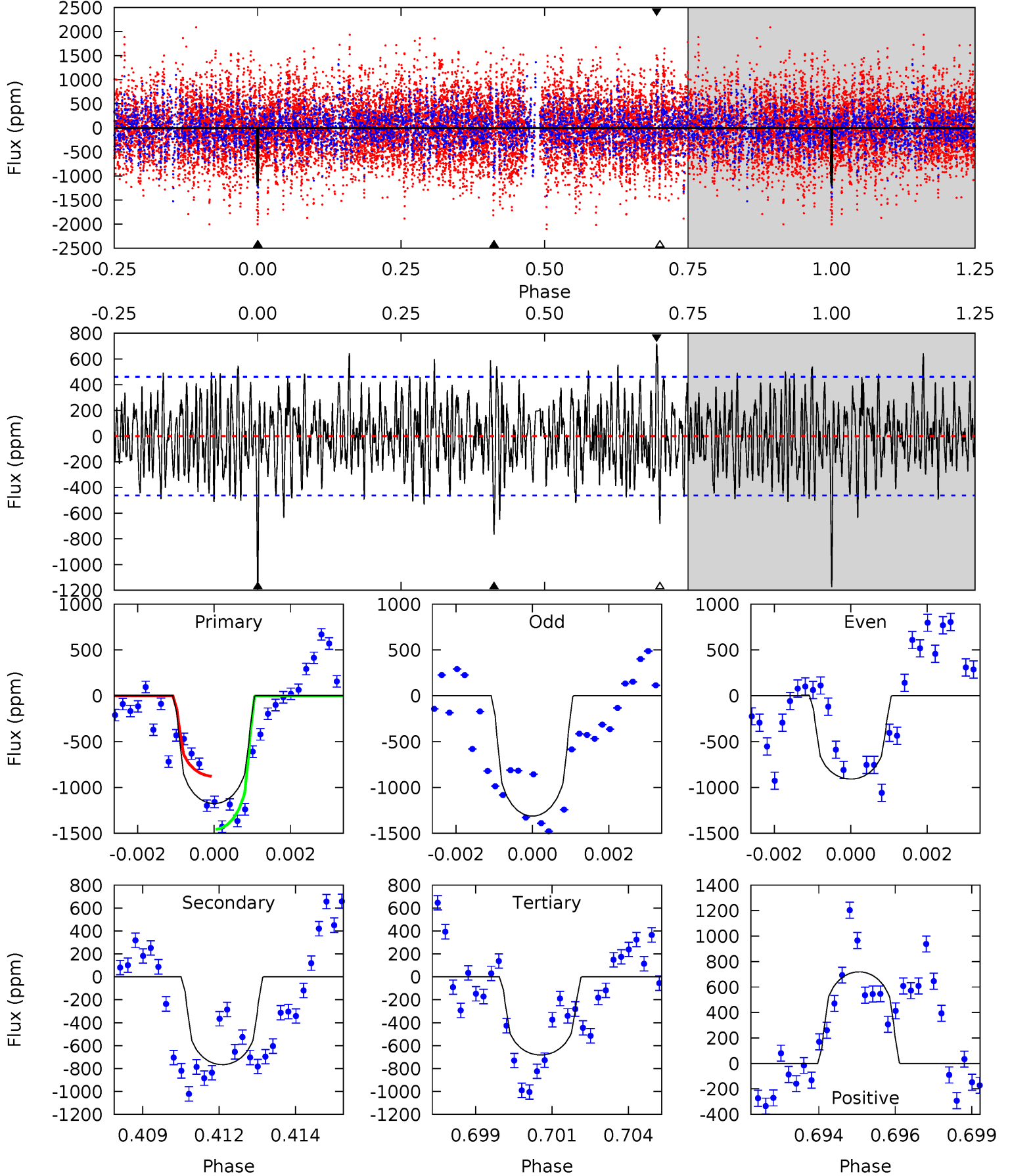
TCE 004075816-01 P=113.034255 Days $T_0=225.793946$ (BKJD)



DV Model-Shift Uniqueness Test

004075816-01, P = 113.033229 Days, E = 112.731826 Days

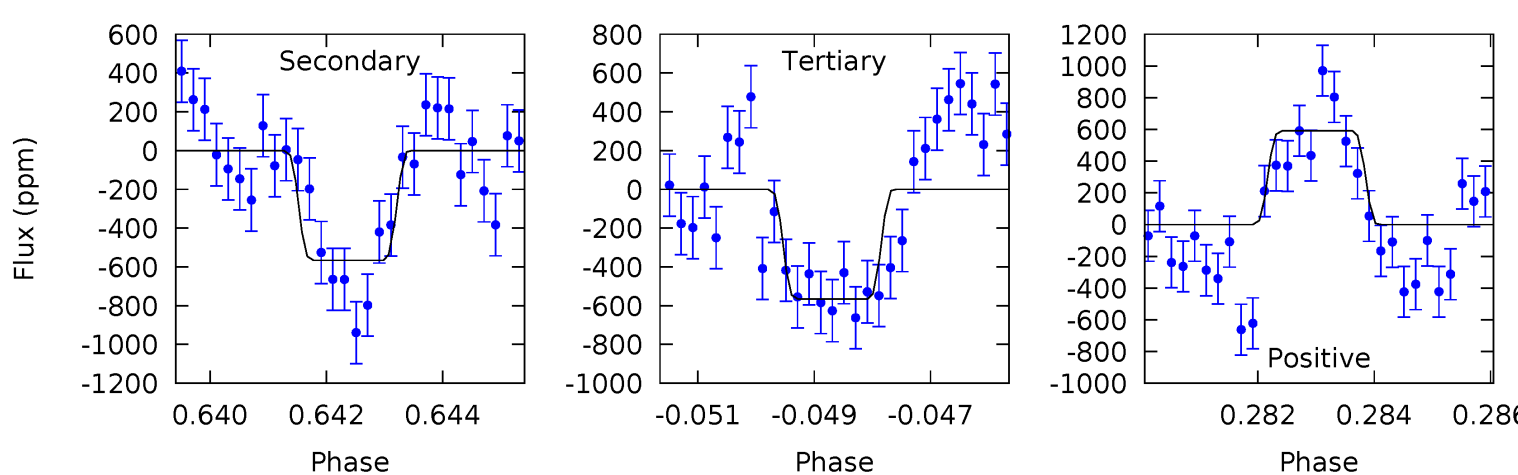
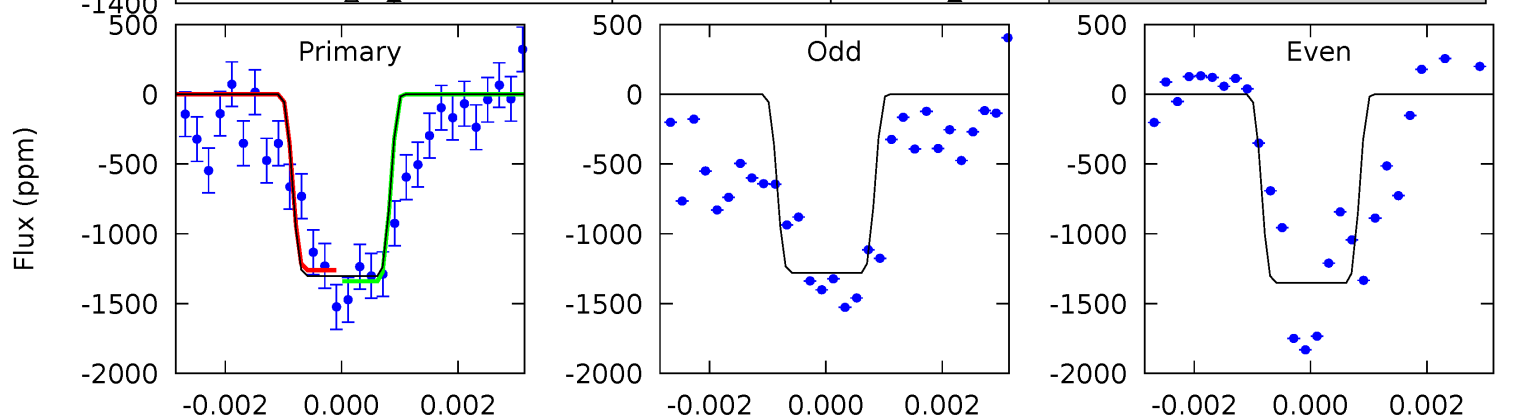
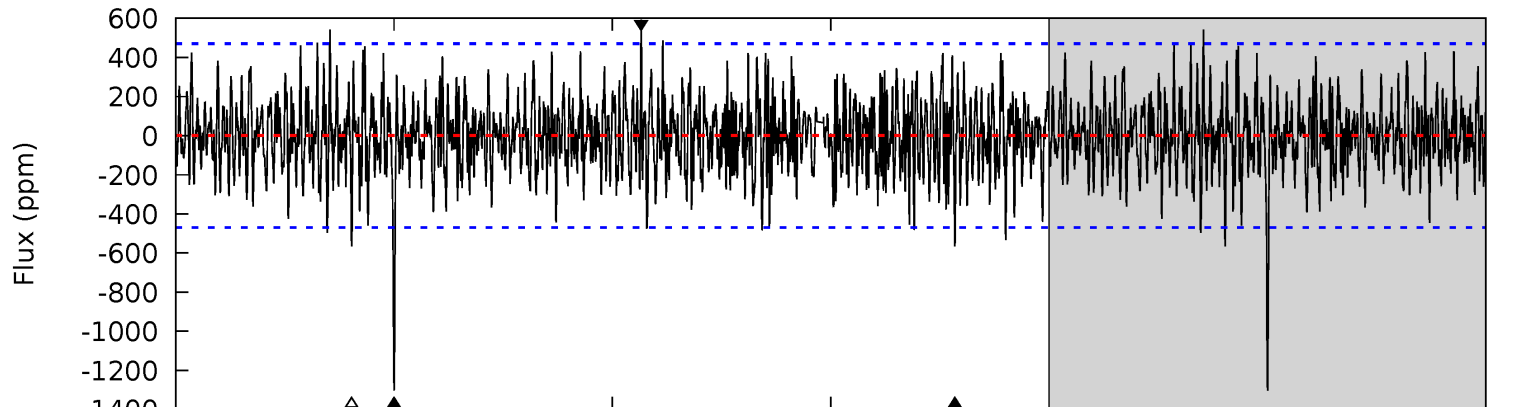
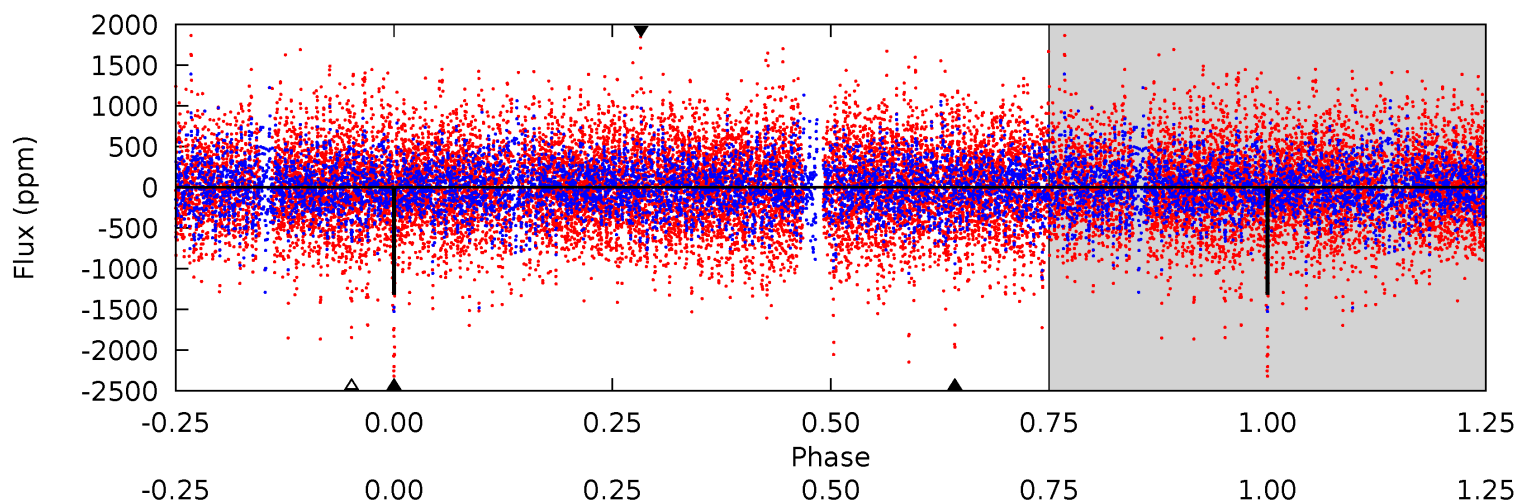
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
13.5	8.77	7.81	8.23	5.29	3.02	2.56	5.66	5.23	0.97	0.54	2.19	1.20	0.38	3.31



Alt Model-Shift Uniqueness Test

004075816-01, P = 113.034255 Days, E = 112.759691 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
14.8	6.44	6.43	6.73	5.35	3.12	1.90	8.39	8.09	0.00	-0.29	0.39	0.96	0.31	0.45



Stellar Parameters For KIC 004075816

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	4860^{+134}_{-122}	$2.548^{+0.030}_{-0.030}$	$-0.700^{+0.300}_{-0.200}$	$7.975^{+2.093}_{-0.246}$	$0.819^{+0.492}_{-0.026}$	$0.002^{+0.000}_{-0.001}$
	+3%/-3%	+1%/-1%	+43%/-29%	+26%/-3%	+60%/-3%	+9%/-23%
Source	PHO1	AST9	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 004075816-01 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-766 ± 87	$32.43^{+16.92}_{-14.77}$	1291^{+43}_{-38}	4328^{+1240}_{-582}	75^{+175}_{-42}
Alt.	-566 ± 88	$33.41^{+16.69}_{-15.55}$	1293^{+42}_{-34}	4060^{+1136}_{-524}	52^{+132}_{-29}

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

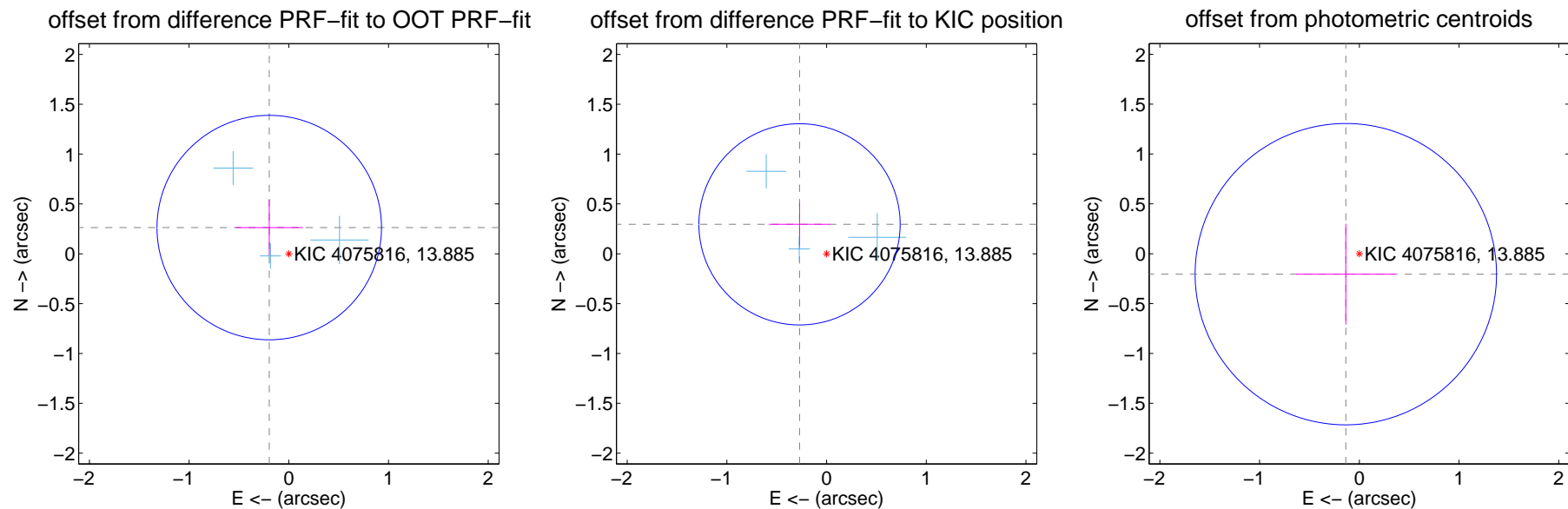
DV Centroid Data

Supplemental centroid analysis for 004075816-01. Kepler magnitude: 13.88. Transit SNR 6.07

There are 3 quarters with good PRF difference image offsets

The direct PRF centroid is offset from the target star catalog position by about 0.11 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.328 ± 0.375	0.87	0.196 ± 0.335	0.263 ± 0.280
PRF-fit source offset from KIC position	0.401 ± 0.336	1.19	0.271 ± 0.306	0.296 ± 0.215
photometric centroid source offset	0.25 ± 0.50	0.49	0.14 ± 0.50	-0.21 ± 0.51



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.

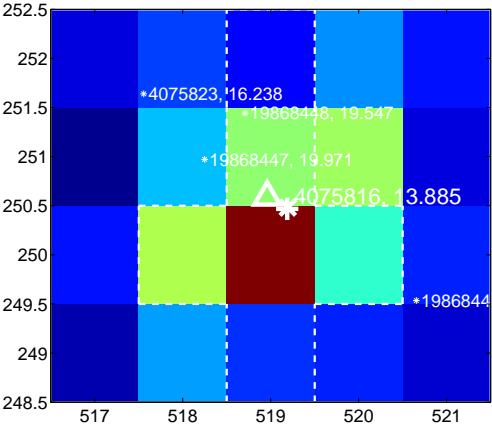
Q1 no difference image



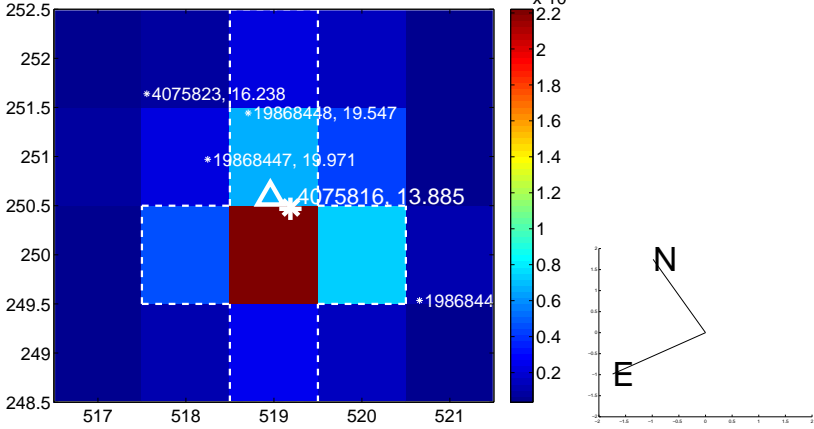
Q1 no OOT image



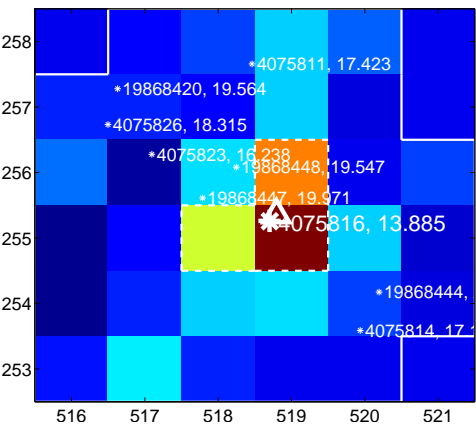
Q2 difference image



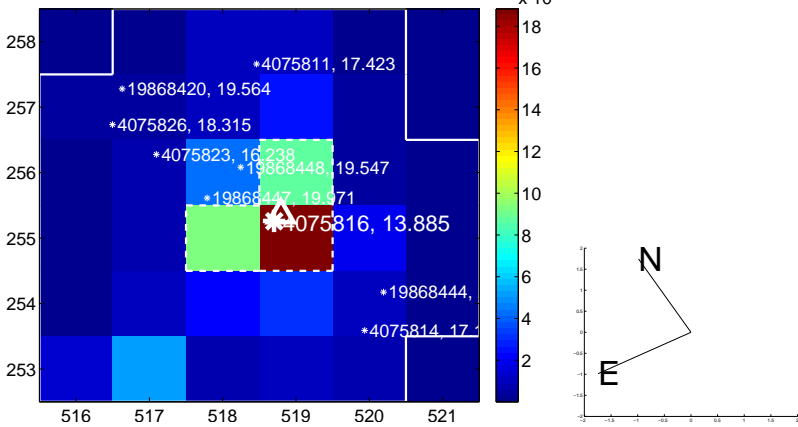
Q2 OOT image



Q3 difference image



Q3 OOT image



Q4 no difference image



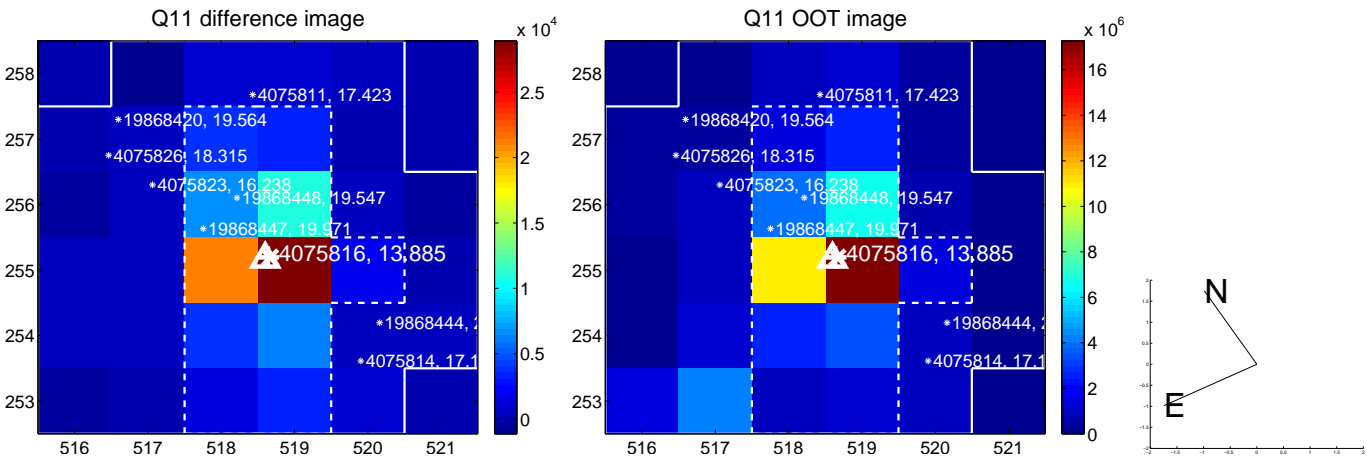
Q4 no OOT image



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



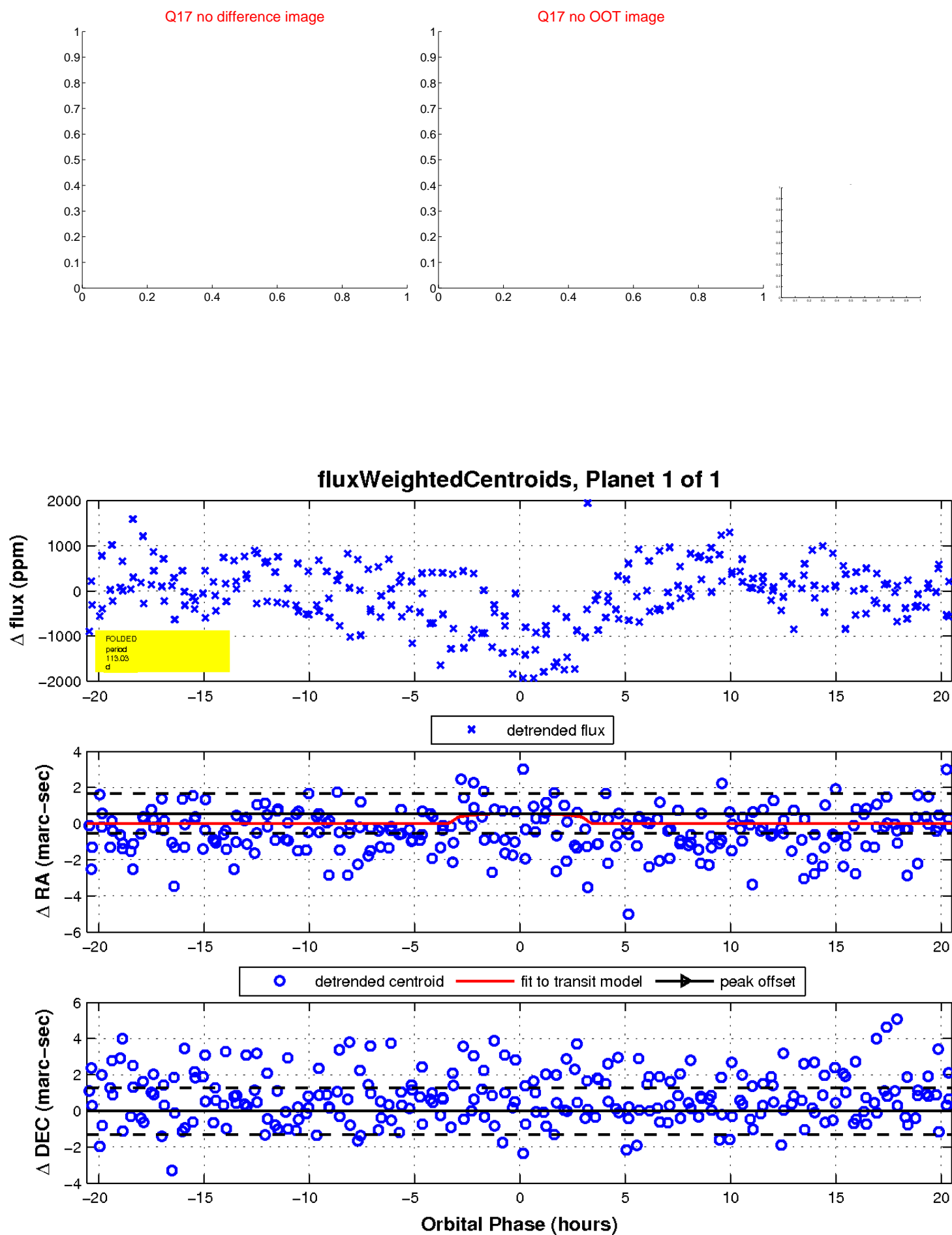
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

