

KIC 012365293

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})
012365293-01	OBS	No	593.031777	392.509056	591.6	10.542	7.2	8.0	9.98	5450	26.62	20.69

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
012365293-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_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.

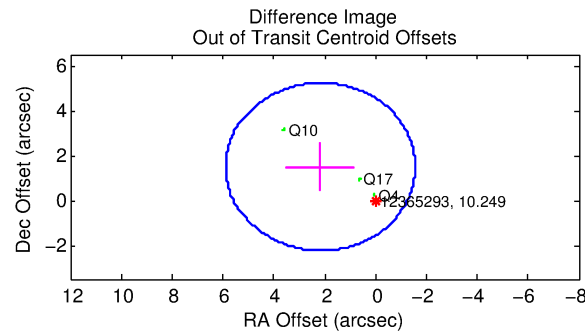
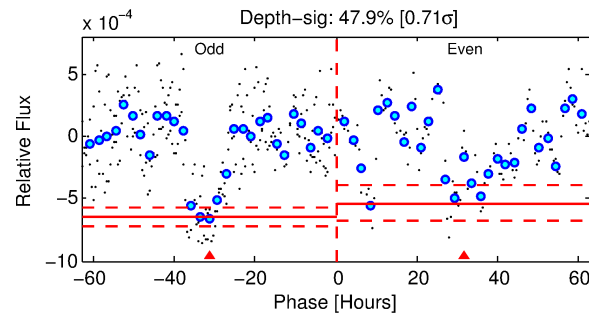
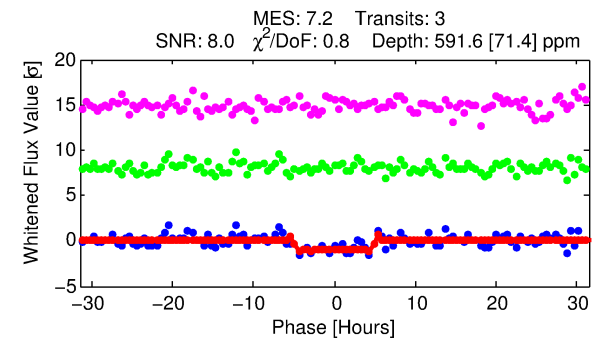
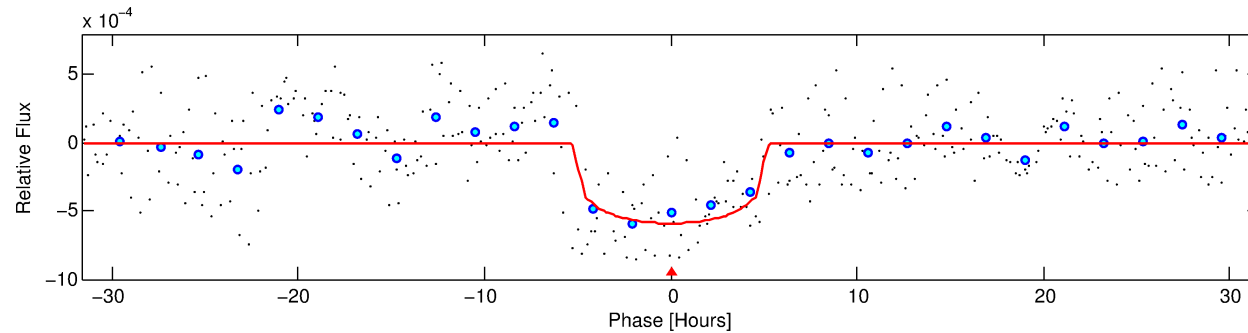
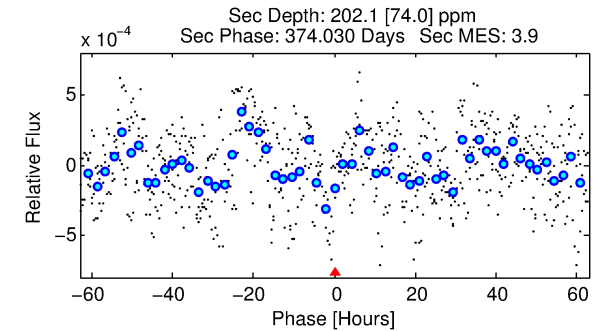
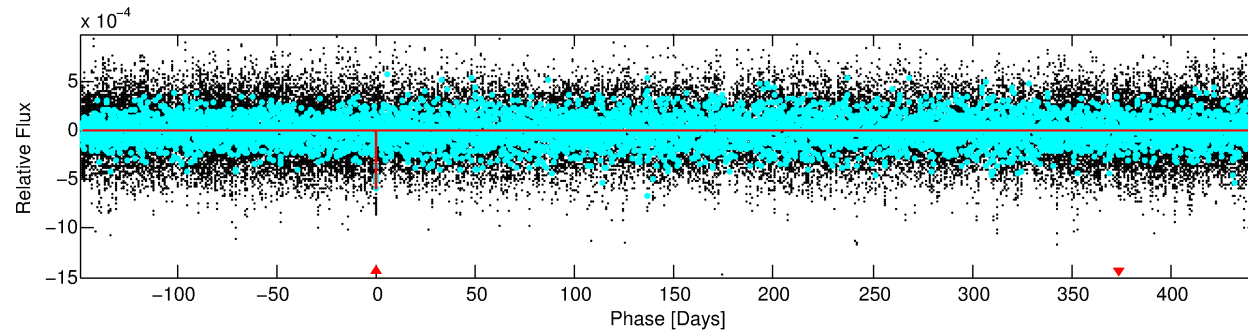
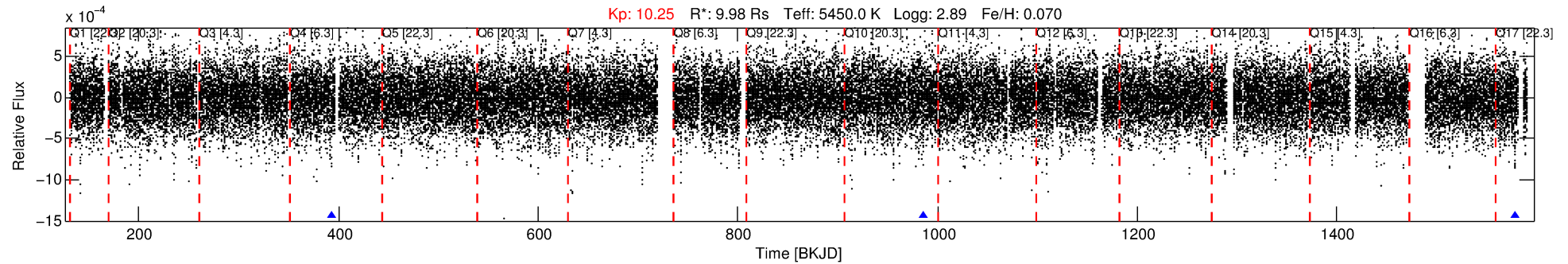
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 012365293-01

No Significant Match Found

DV One-Page Summary

KIC: 12365293 Candidate: 1 of 1 Period: 593.032 d



DV Fit Results:

Period = 593.03178 [0.00462] d
Epoch = 392.5091 [0.0059] BKJD
Rp/R* = 0.0245 [0.0029]
a/R* = 289.69 [113.70]
b = 0.77 [0.21]
Seff = 20.69 [11.44]
Teff = 544 [75] K
Rp = 26.62 [9.71] Re
a = 1.9501 [0.4513] AU
Ag = 596.76 [294.88] [2.02σ]
Teffp = 4156 [689] K [5.21σ]

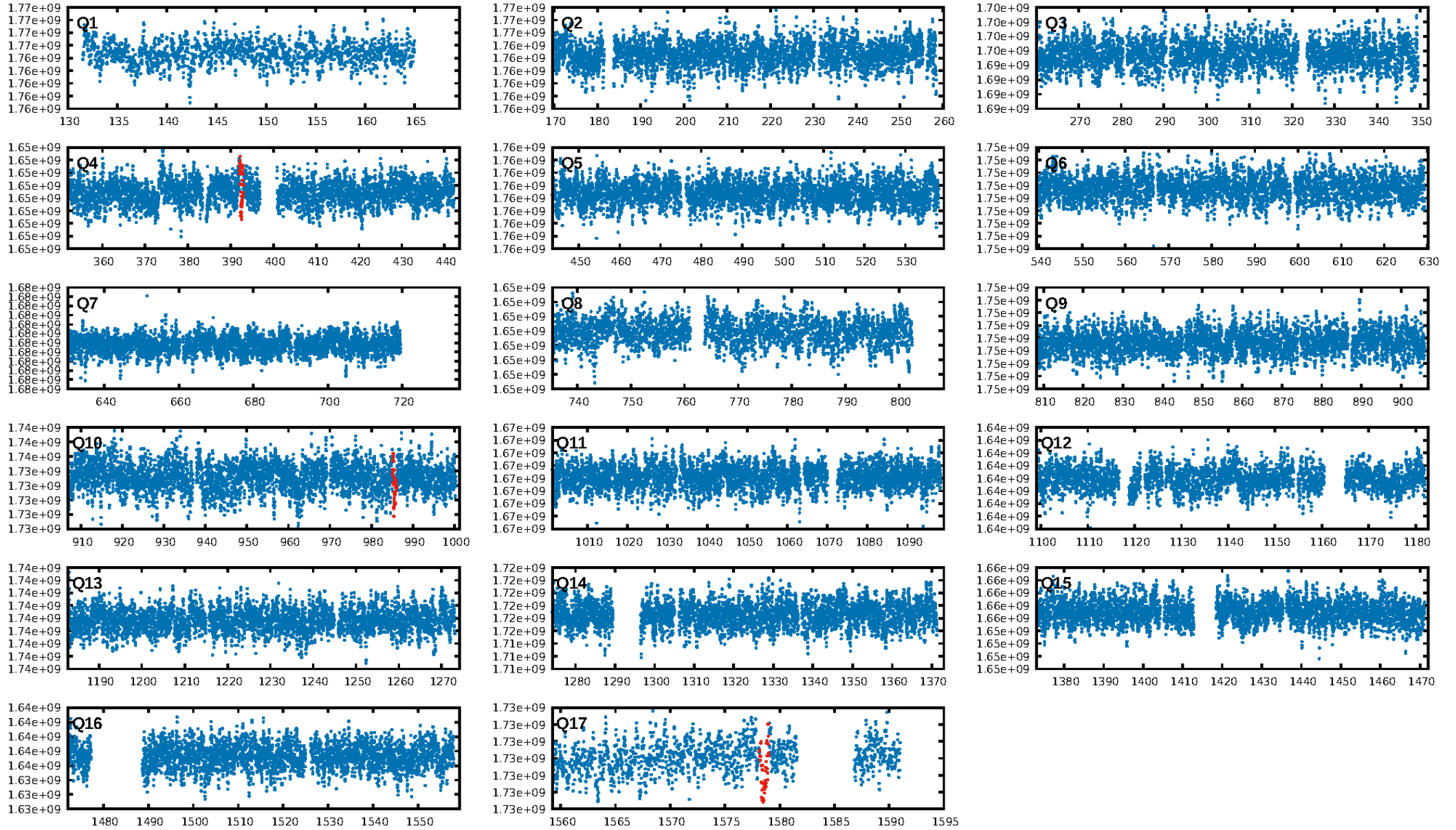
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: 65.6%
ModelChiSquareGof-sig: 99.7%
Bootstrap-pfa: 9.40e-11
RollingBand-fgt: 1.00 [2/2]
GhostDiagnostic-chr: N/A
Centroid-sig: 8.0%
Centroid-so: 0.482 arcsec [1.16σ]
OotOffset-rm: 2.629 arcsec [2.11σ]
KicOffset-rm: 2.975 arcsec [2.79σ]
OotOffset-st: 1/0/1/1 [3]
KicOffset-st: 1/0/1/1 [3]
DiffImageQuality-fgm: 1.00 [3/3]
DiffImageOverlap-fno: 1.00 [3/3]

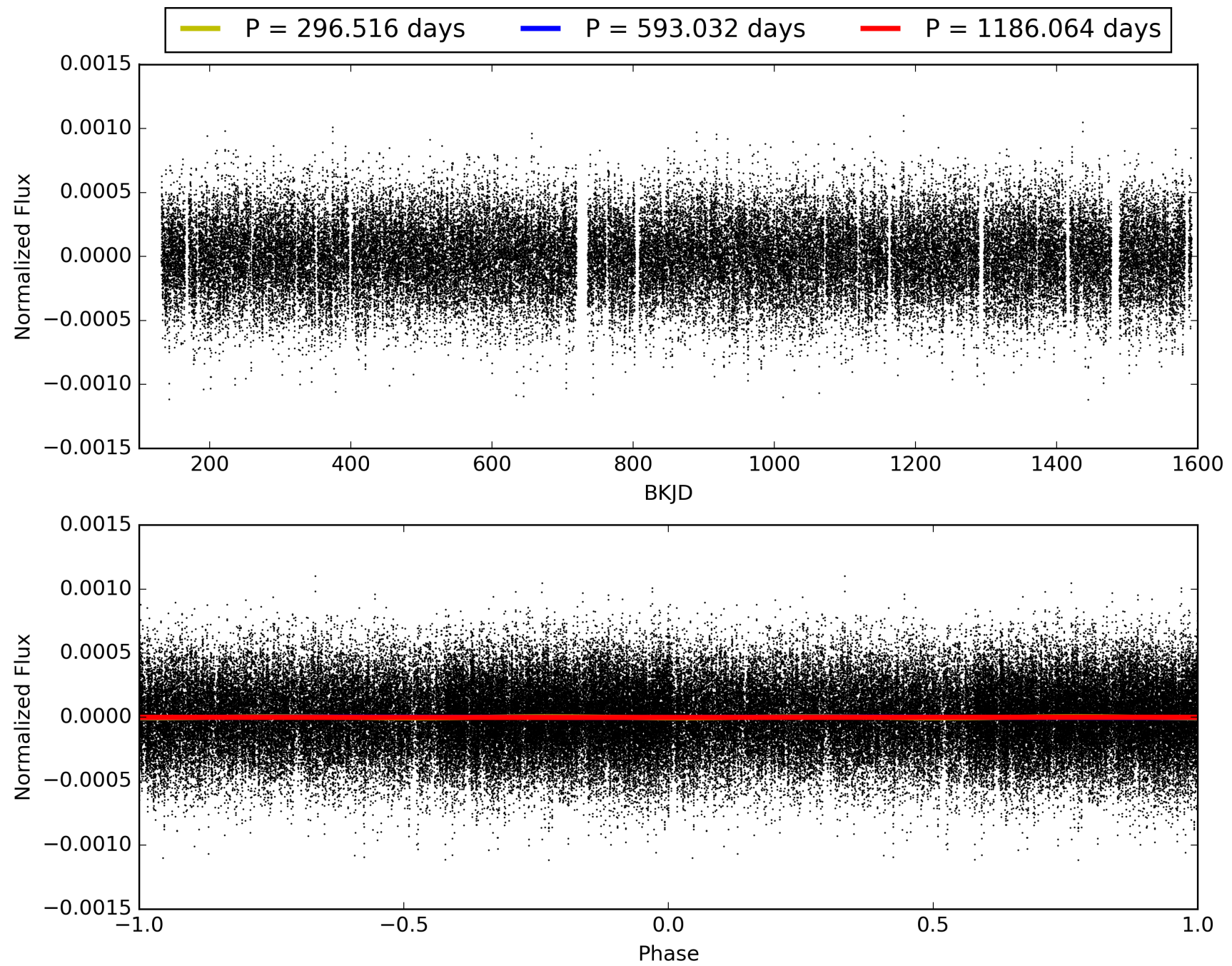
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 28-Jan-2016 20:52:52 Z

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

TCE 012365293-01, PDC Light Curves

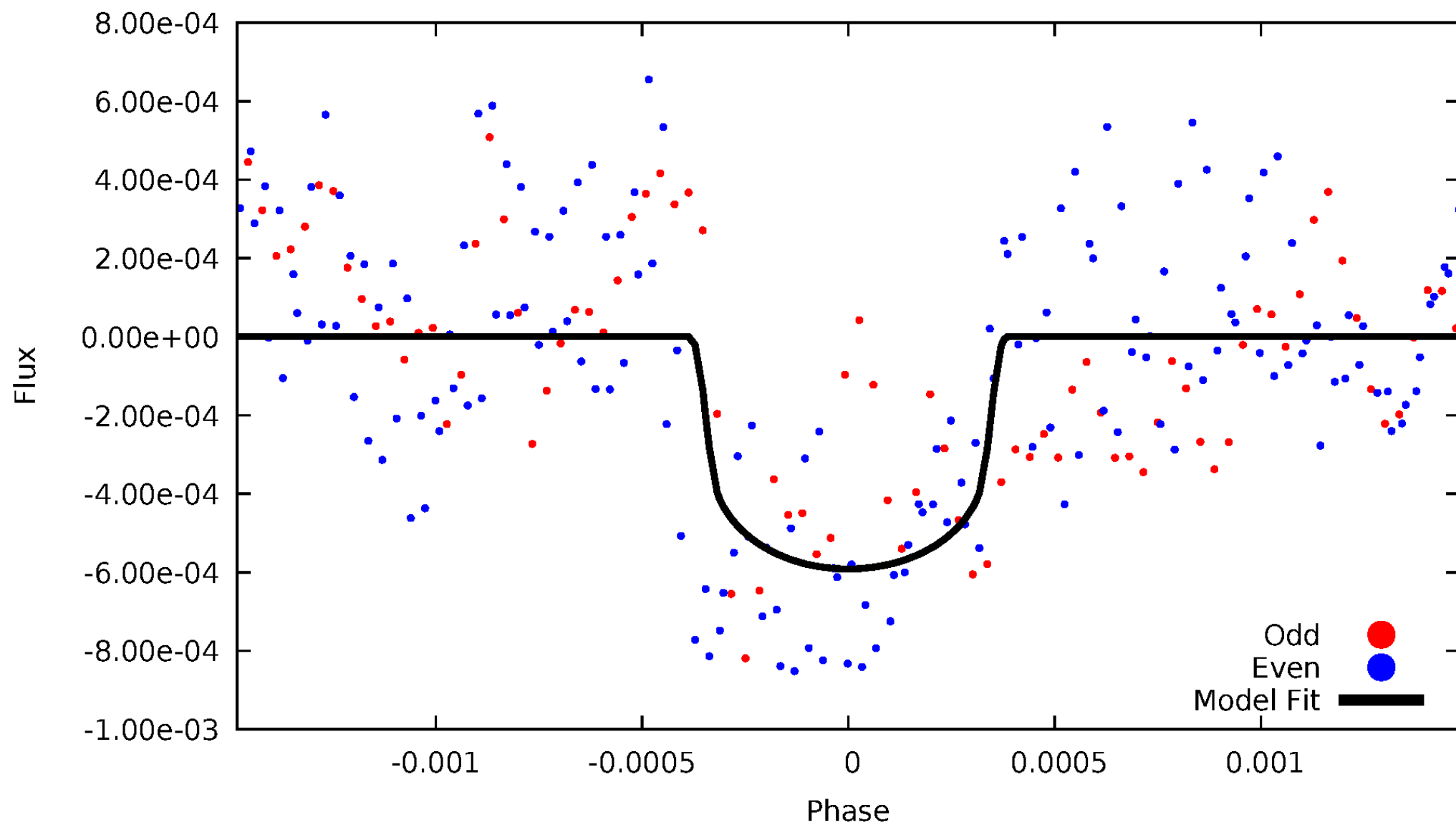


TCE 012365293-01



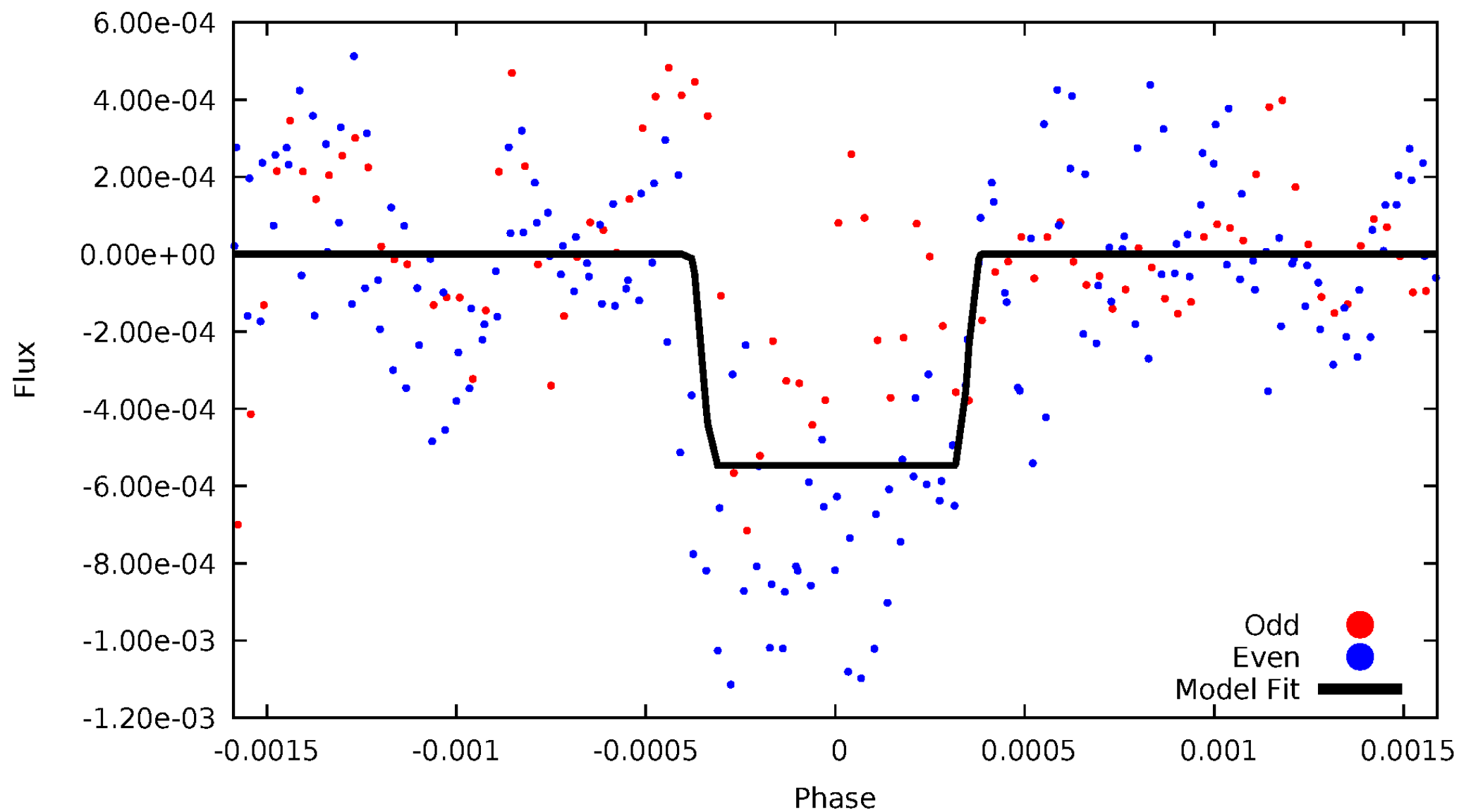
DV Odd/Even

TCE 012365293-01



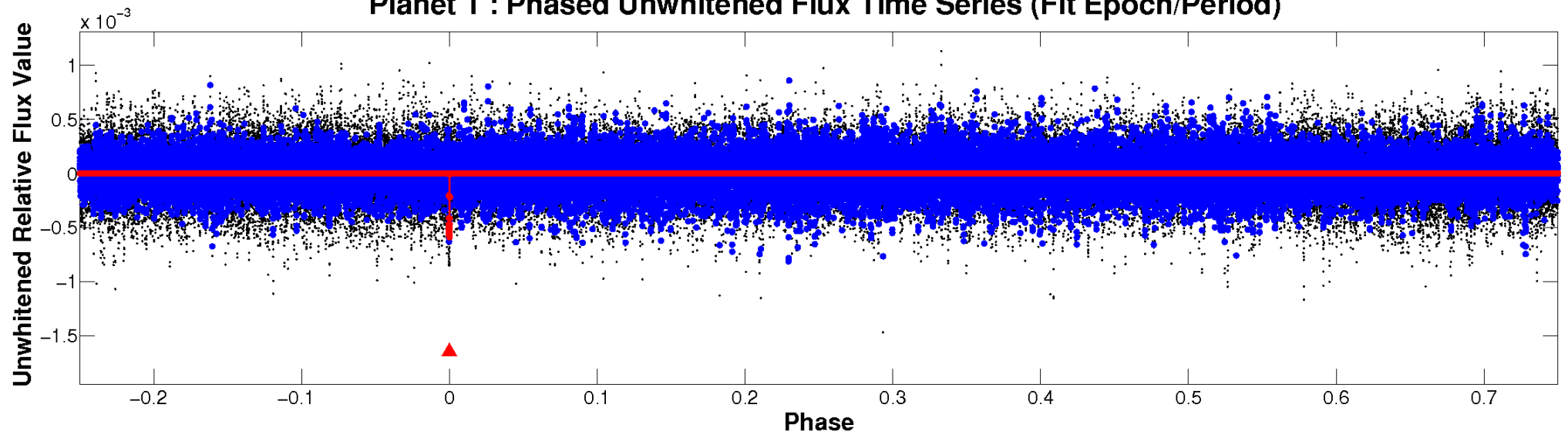
ALT Odd/Even

TCE 012365293-01

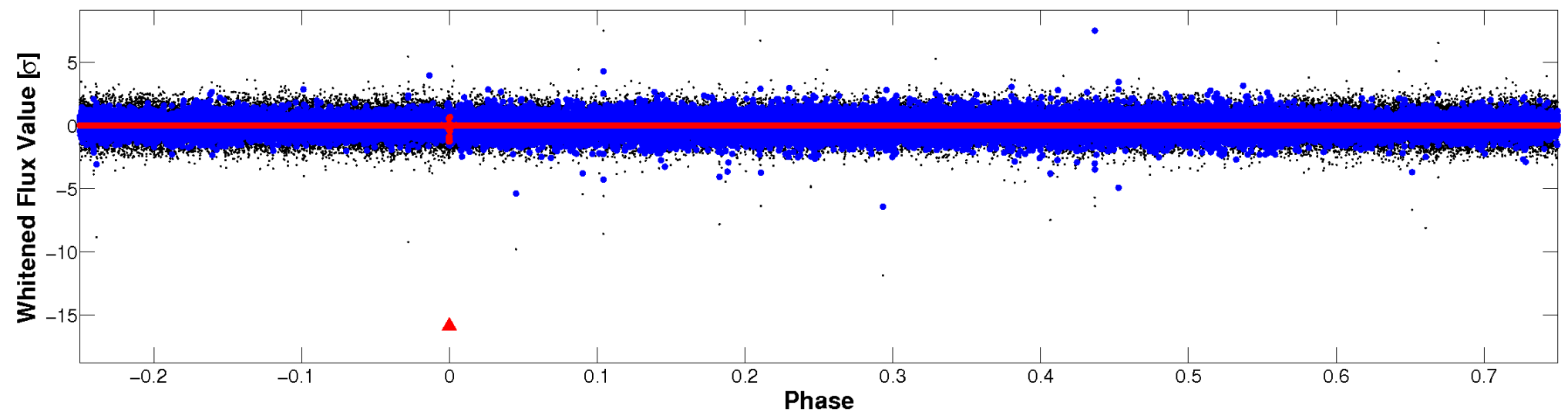


Non-Whitened Vs. Whitened Light Curve

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

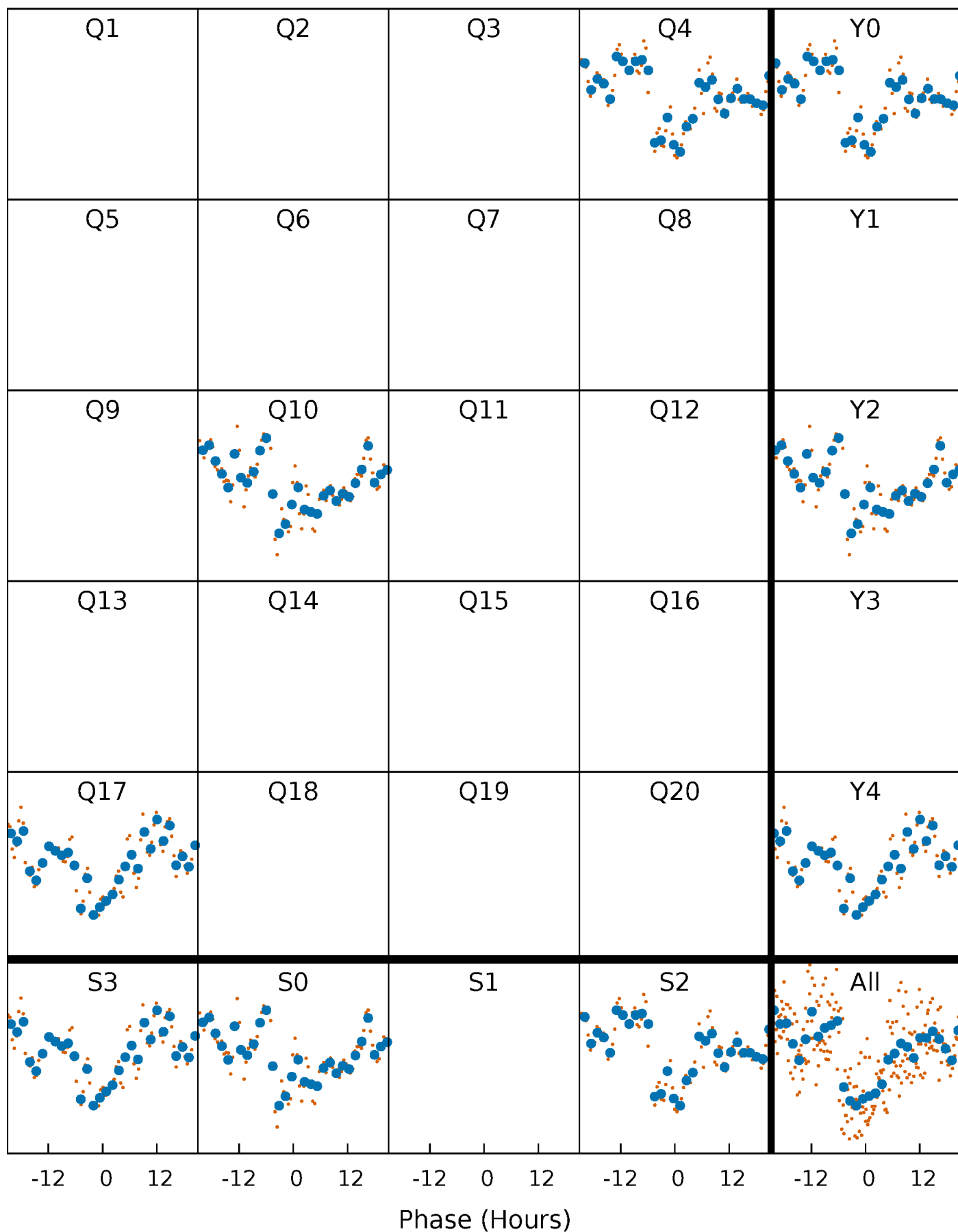


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



PDC Quarter-Phased Transit Curves

TCE 012365293-01 $P=593.031777$ Days $T_0=392.509056$ (BKJD)



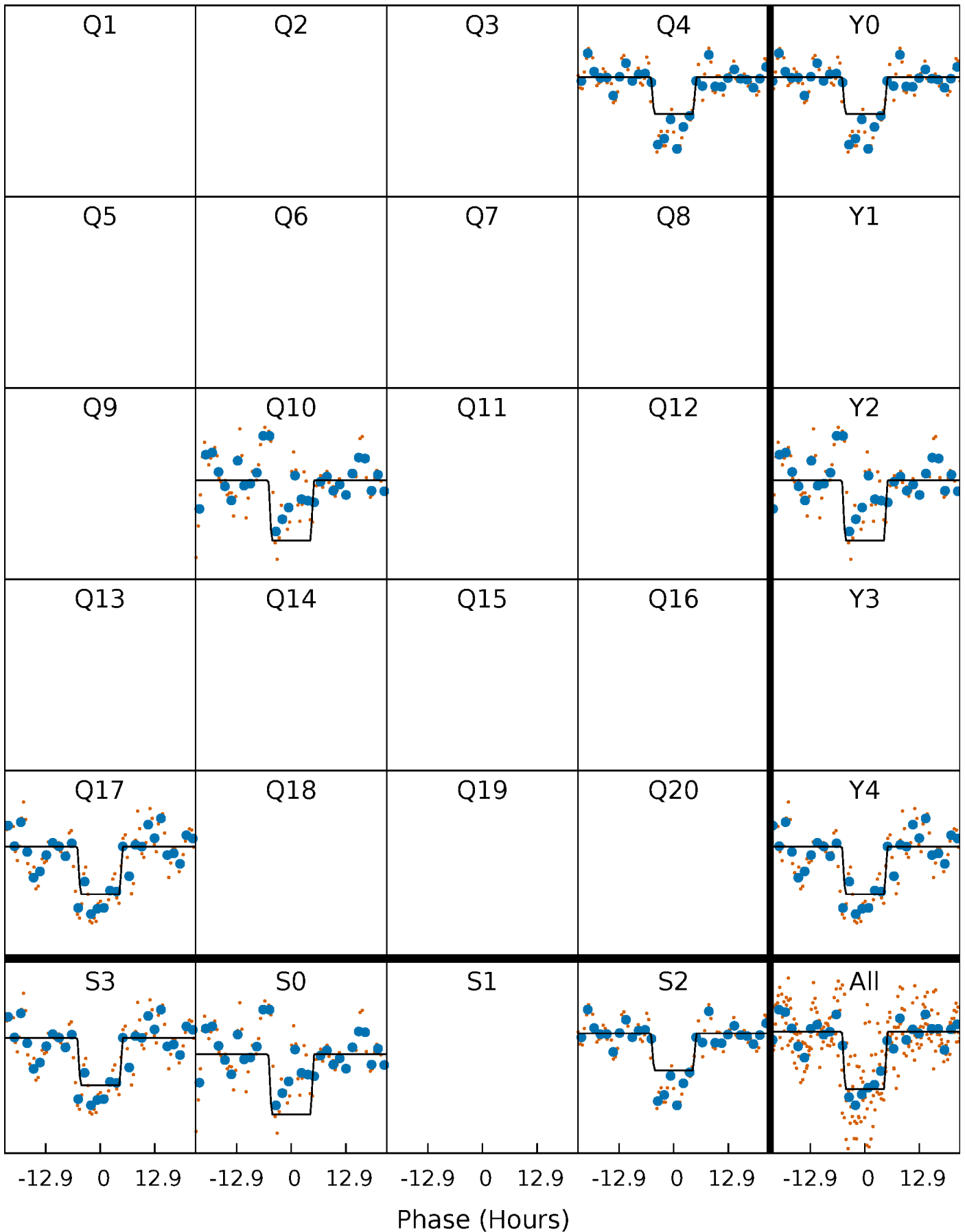
DV Quarter-Phased Transit Curves

TCE 012365293-01 $P=593.031777$ Days $T_0=392.509056$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

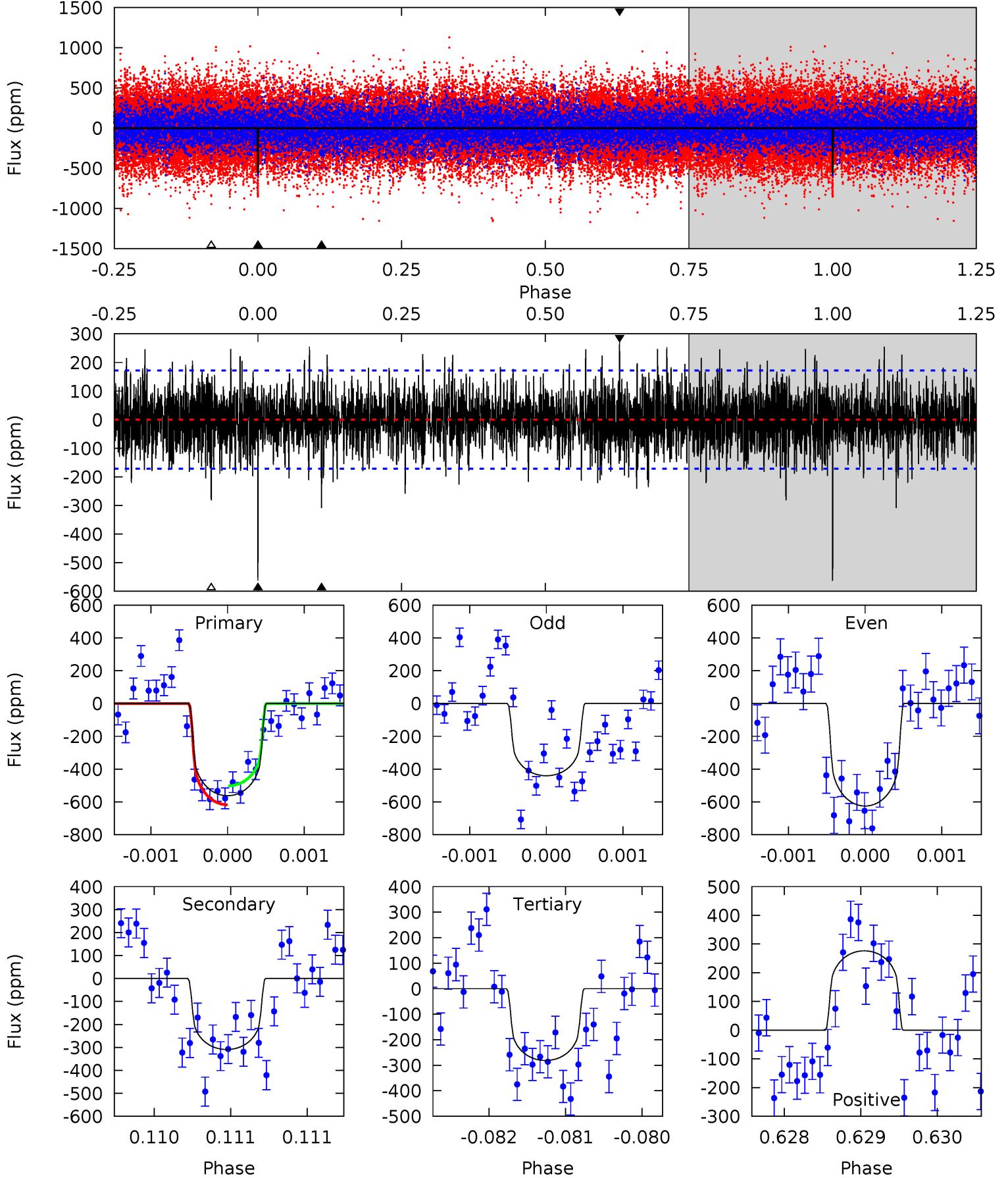
TCE 012365293-01 P=593.043212 Days $T_0=392.487978$ (BKJD)



DV Model-Shift Uniqueness Test

012365293-01, P = 593.031777 Days, E = 392.509056 Days

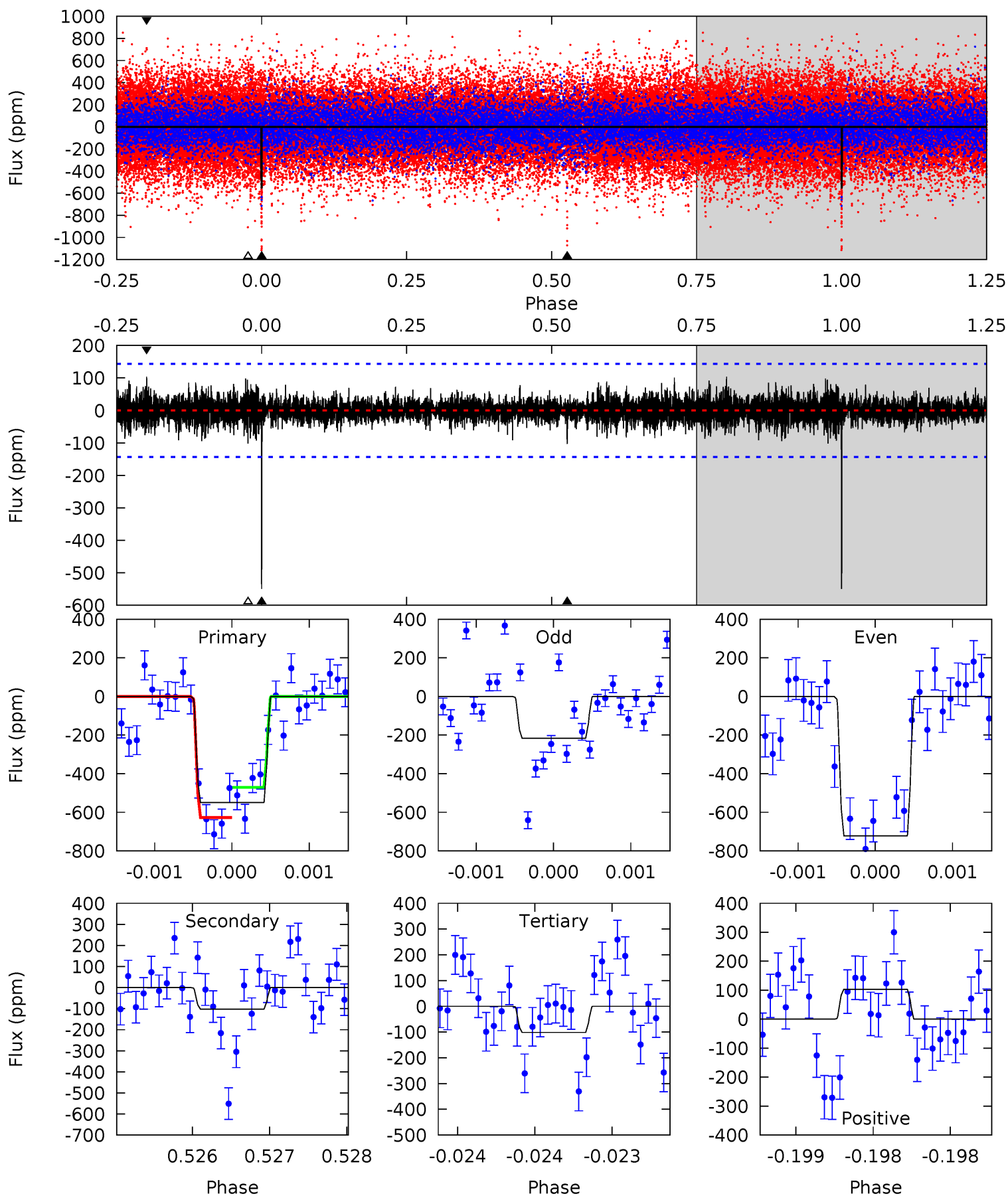
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
18.0	9.90	9.01	8.85	5.50	3.37	2.37	9.00	9.16	0.89	1.05	2.84	0.92	0.33	1.84



Alt Model-Shift Uniqueness Test

012365293-01, P = 593.043212 Days, E = 392.487978 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
21.0	3.93	3.89	3.96	5.50	3.37	0.97	17.2	17.1	0.04	-0.03	9.27	0.89	0.16	3.00



Stellar Parameters For KIC 012365293

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5450^{+315}_{-682}	$2.889^{+0.030}_{-0.030}$	$0.070^{+0.100}_{-0.200}$	$9.976^{+0.383}_{-3.446}$	$2.813^{+0.086}_{-1.637}$	$0.004^{+0.002}_{-0.000}$
	+6%/-13%	+1%/-1%	+143%/-286%	+4%/-35%	+3%/-58%	+55%/-10%
Source	PHO55	AST55	SPE55	DSEP		

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

Secondary Eclipse Parameters for KIC 012365293-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-309 ± 31	$26.77^{+3.49}_{-3.44}$	757^{+48}_{-90}	4669^{+396}_{-496}	912^{+275}_{-217}
Alt.	-103 ± 26	$25.58^{+3.47}_{-3.35}$	762^{+46}_{-98}	3829^{+392}_{-407}	328^{+148}_{-110}

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

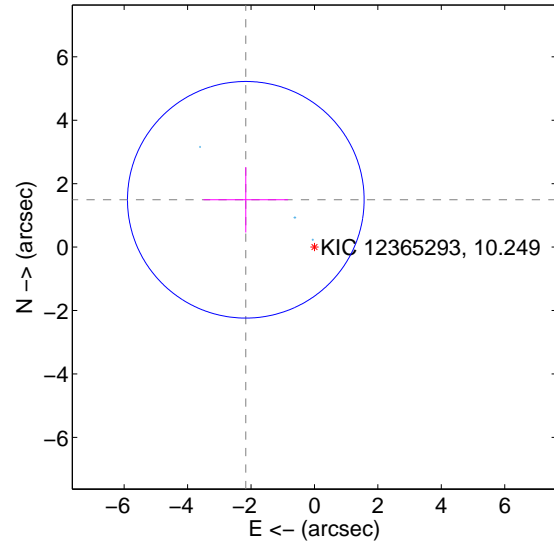
Supplemental centroid analysis for 012365293-01. **Kepler magnitude: 10.25.** Transit SNR 8.01

There are 3 quarters with good PRF difference image offsets

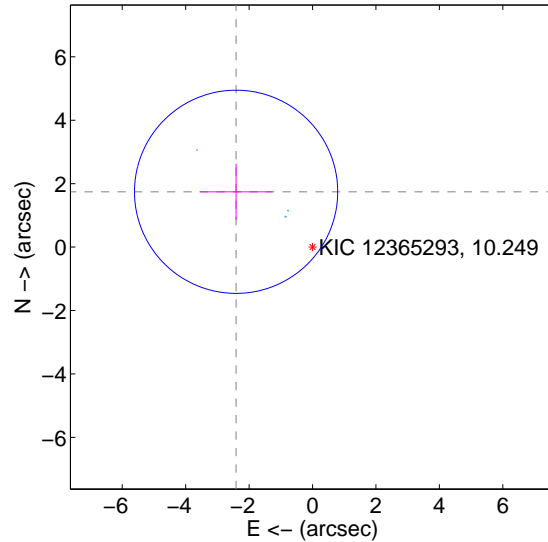
The direct PRF centroid is offset from the target star catalog position by about 0.23 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	2.629 ± 1.244	2.11	2.164 ± 1.333	1.492 ± 1.032
PRF-fit source offset from KIC position	2.975 ± 1.068	2.79	2.410 ± 1.153	1.744 ± 0.882
photometric centroid source offset	0.48 ± 0.42	1.16	0.48 ± 0.42	0.08 ± 0.35

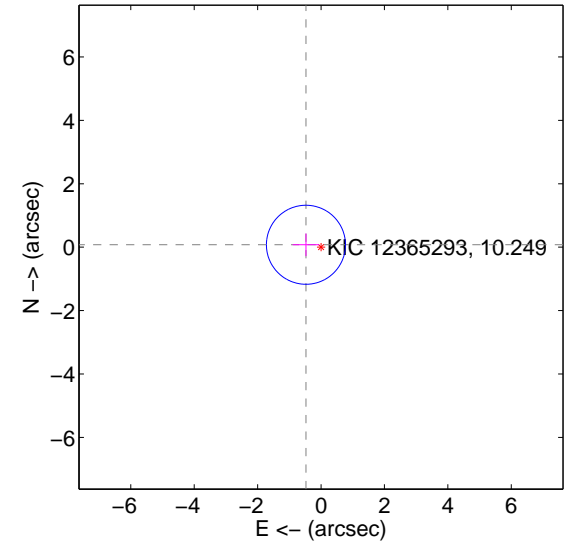
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

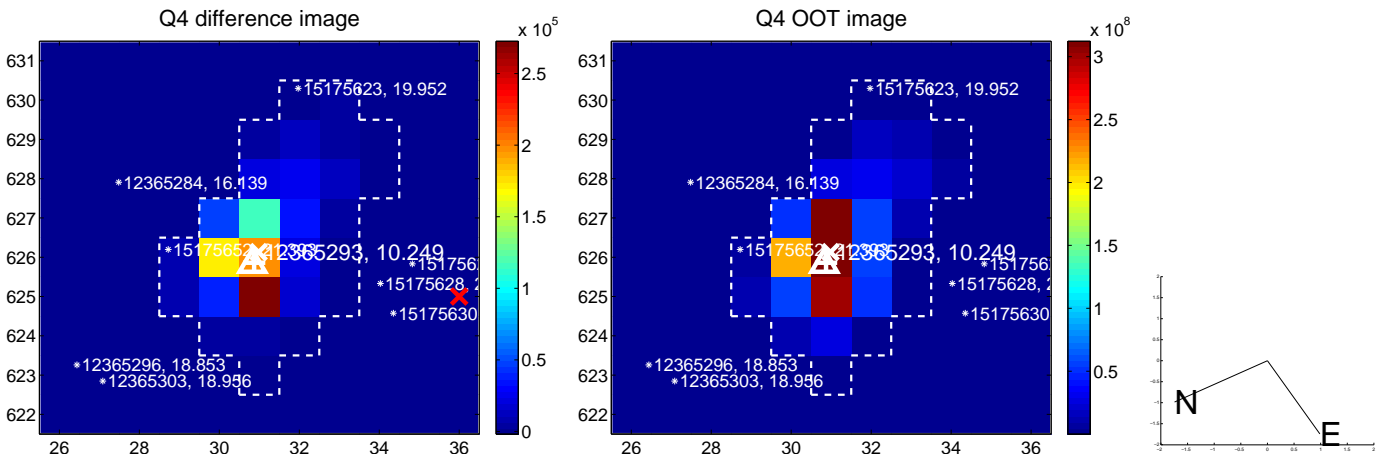


offset from photometric centroids



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



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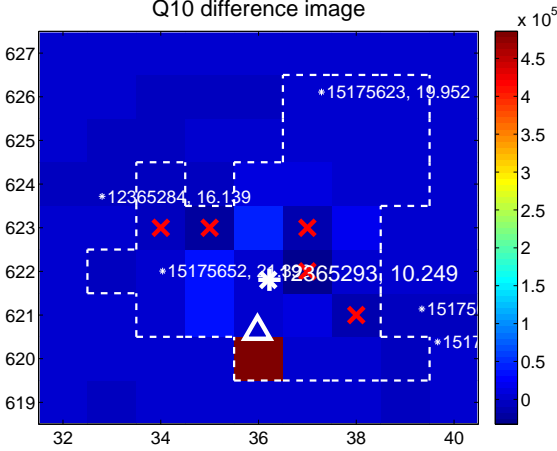
Q9 no difference image



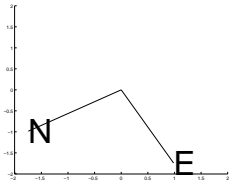
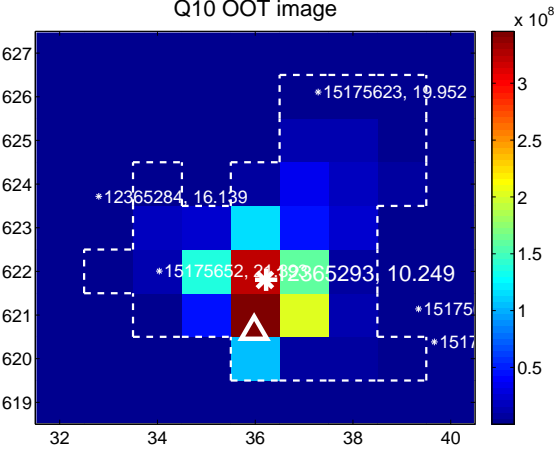
Q9 no OOT image



Q10 difference image



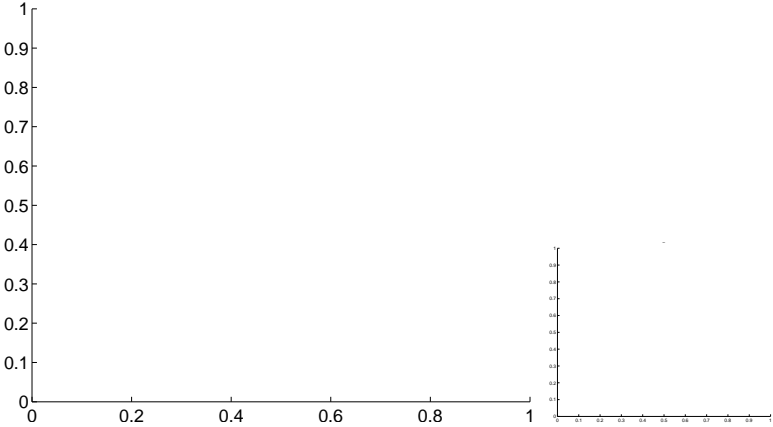
Q10 OOT image



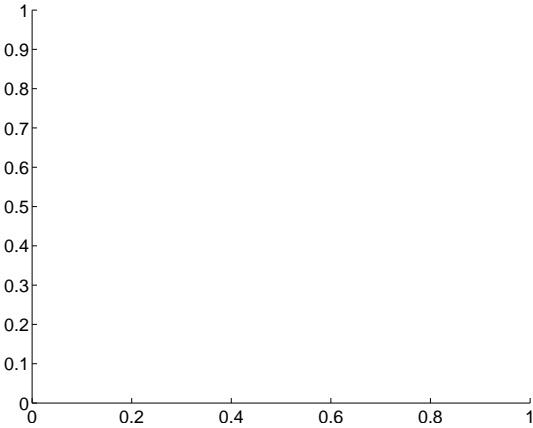
Q11 no difference image



Q11 no OOT image



Q12 no difference image



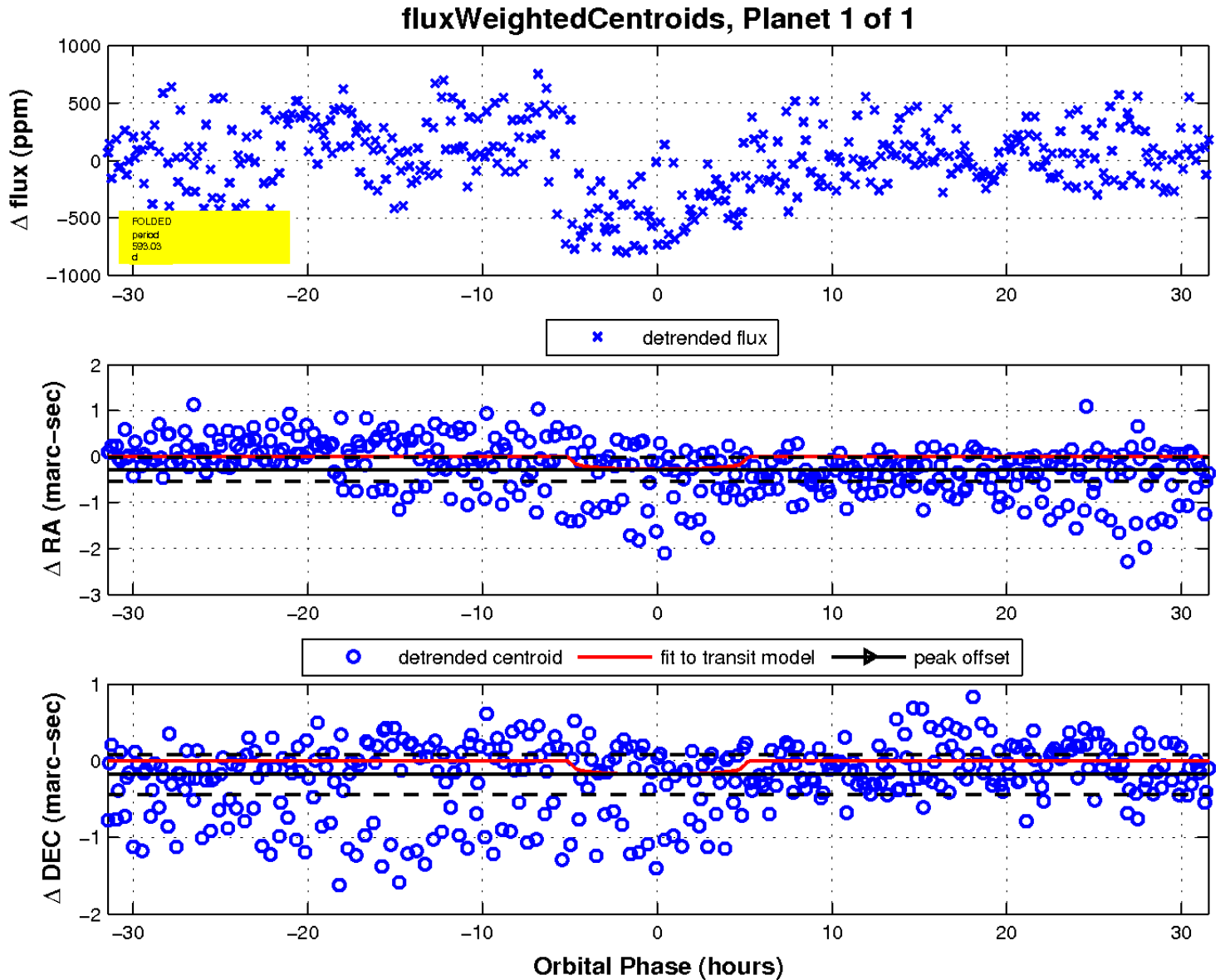
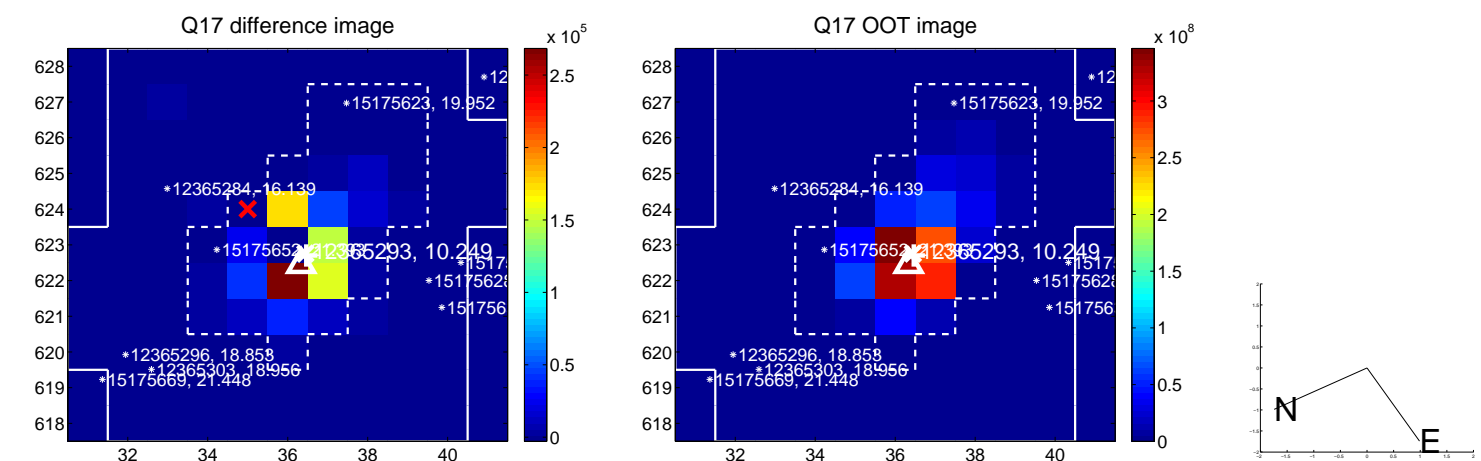
Q12 no OOT image



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.



UKIRT Image

Declination

