

# KIC 006359924

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
006359924-01	OBS	No	378.661495	507.615417	1165.8	31.511	8.7	9.6	0.97	5973	3.78	1.04

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
006359924-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL_SKYE—ALL_TRANS_CHASES—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.

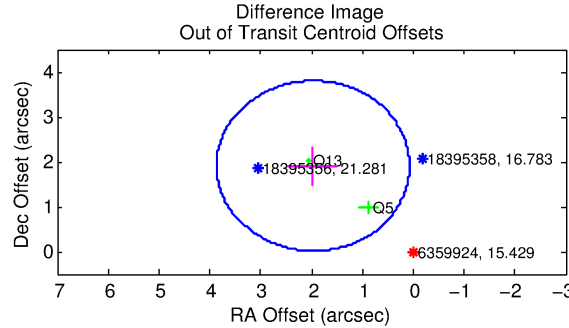
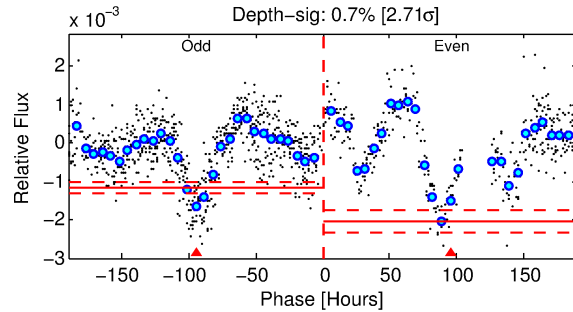
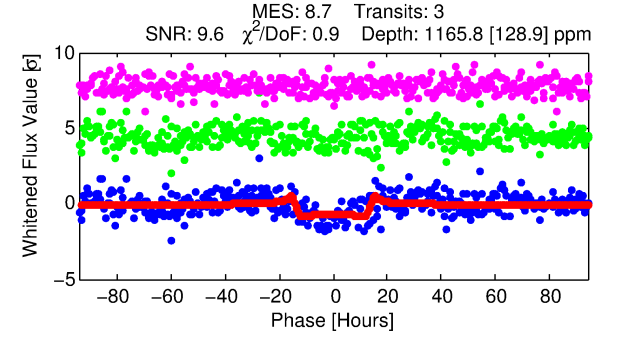
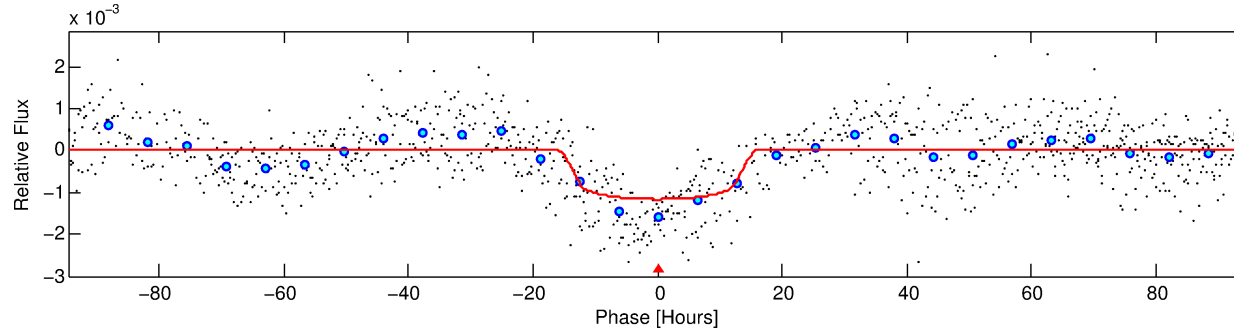
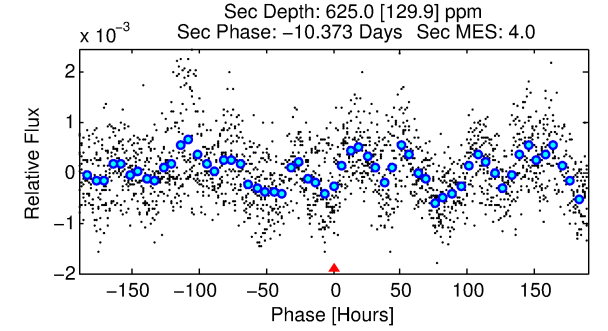
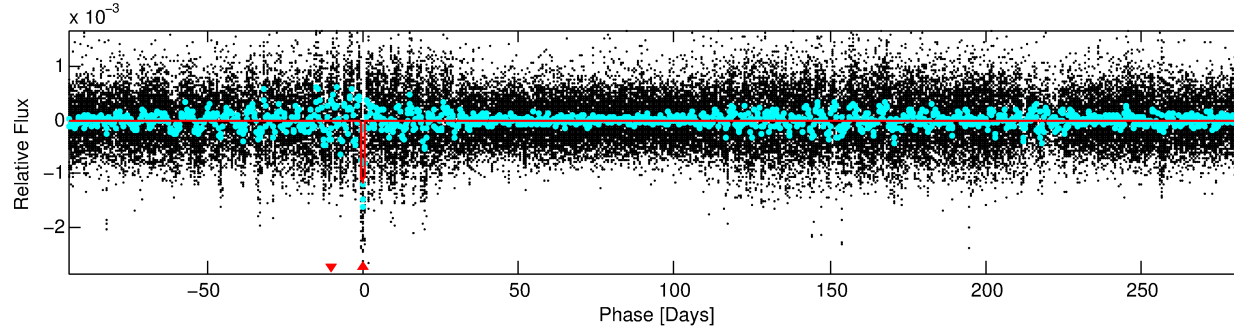
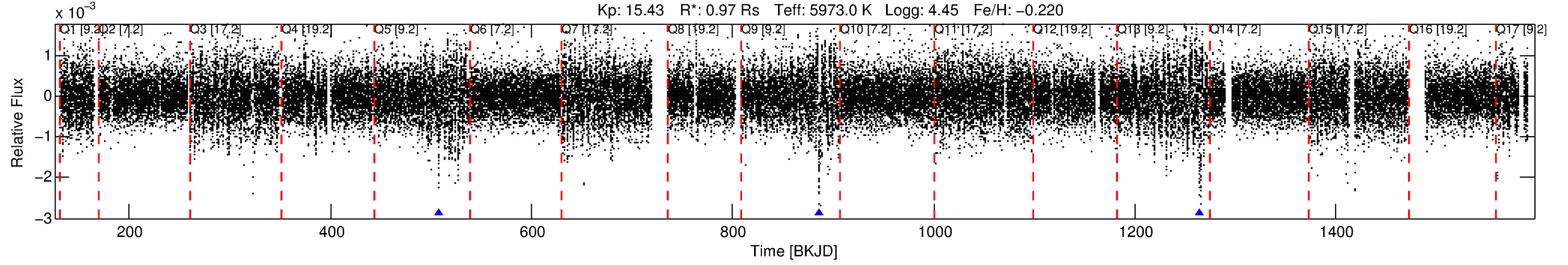
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 006359924-01

No Significant Match Found

# DV One-Page Summary

KIC: 6359924 Candidate: 1 of 1 Period: 378.661 d



## DV Fit Results:

Period = 378.66149 [0.02175] d  
Epoch = 507.6154 [0.0261] BKJD  
Rp/R\* = 0.0359 [0.0026]  
a/R\* = 52.67 [10.22]  
b = 0.86 [0.06]  
Seff = 1.04 [0.40]  
Teq = 258 [25] K  
Rp = 3.78 [1.15] Re  
a = 1.0111 [0.2508] AU  
Ag = 24564.69 [10789.07] [2.28σ]  
Teffp = 4988 [355] K [13.30σ]

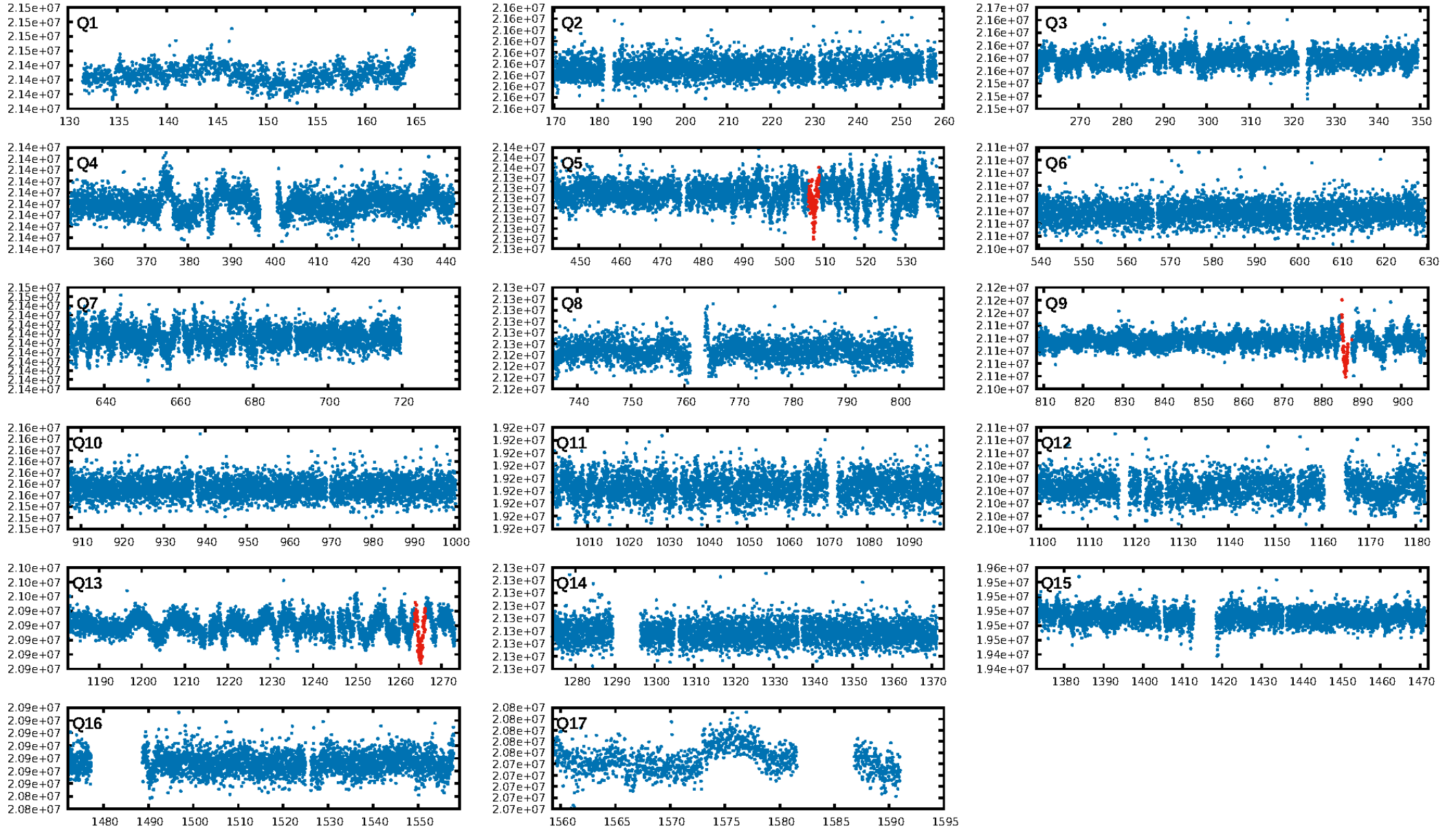
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: 18.6%  
ModelChiSquareGof-sig: 100.0%  
**Bootstrap-pfa: 7.90e-09**  
RollingBand-fgt: 1.00 [3/3]  
GhostDiagnostic-chr: 2.539  
Centroid-sig: 1.2%  
Centroid-so: 5.105 arcsec [2.44σ]  
**OotOffset-rm: 2.742 arcsec [4.34σ]**  
**KicOffset-rm: 2.753 arcsec [7.12σ]**  
OotOffset-st: 0/0/0/2 [2]  
KicOffset-st: 0/0/0/2 [2]  
DiffImageQuality-fgm: 0.50 [1/2]  
DiffImageOverlap-fno: 1.00 [2/2]

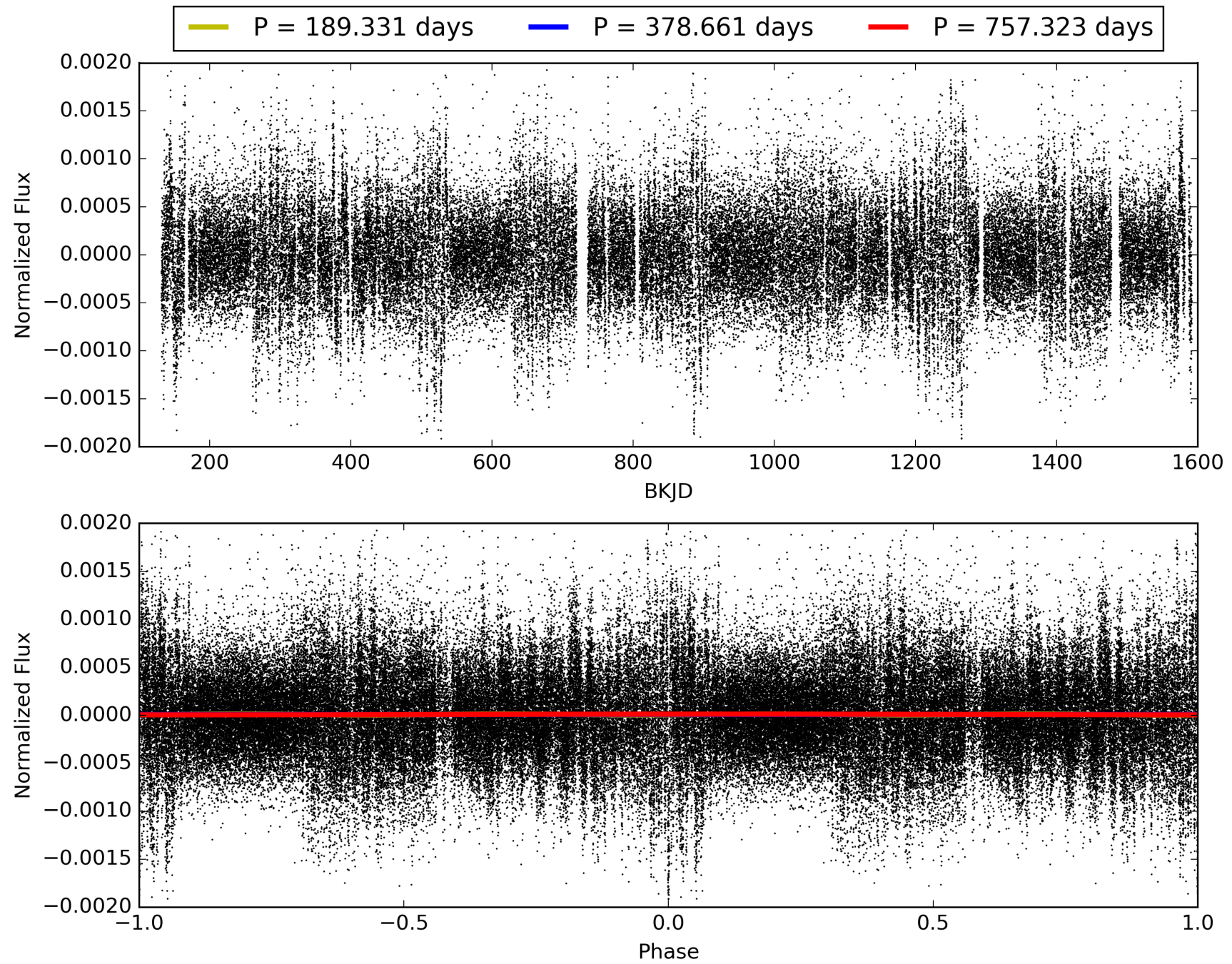
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 17:00:32 Z

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

# TCE 006359924-01, PDC Light Curves

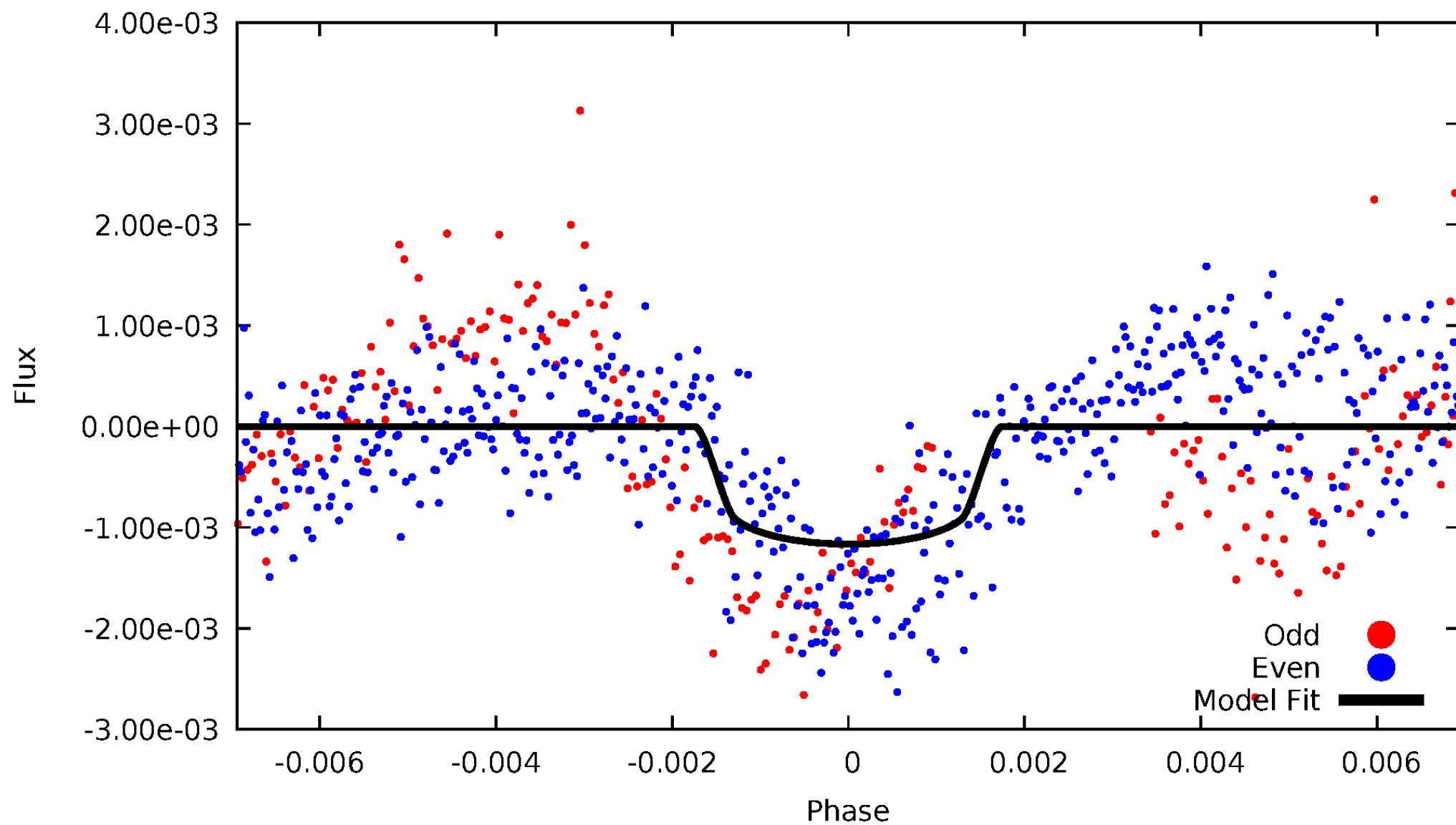


TCE 006359924-01



# DV Odd/Even

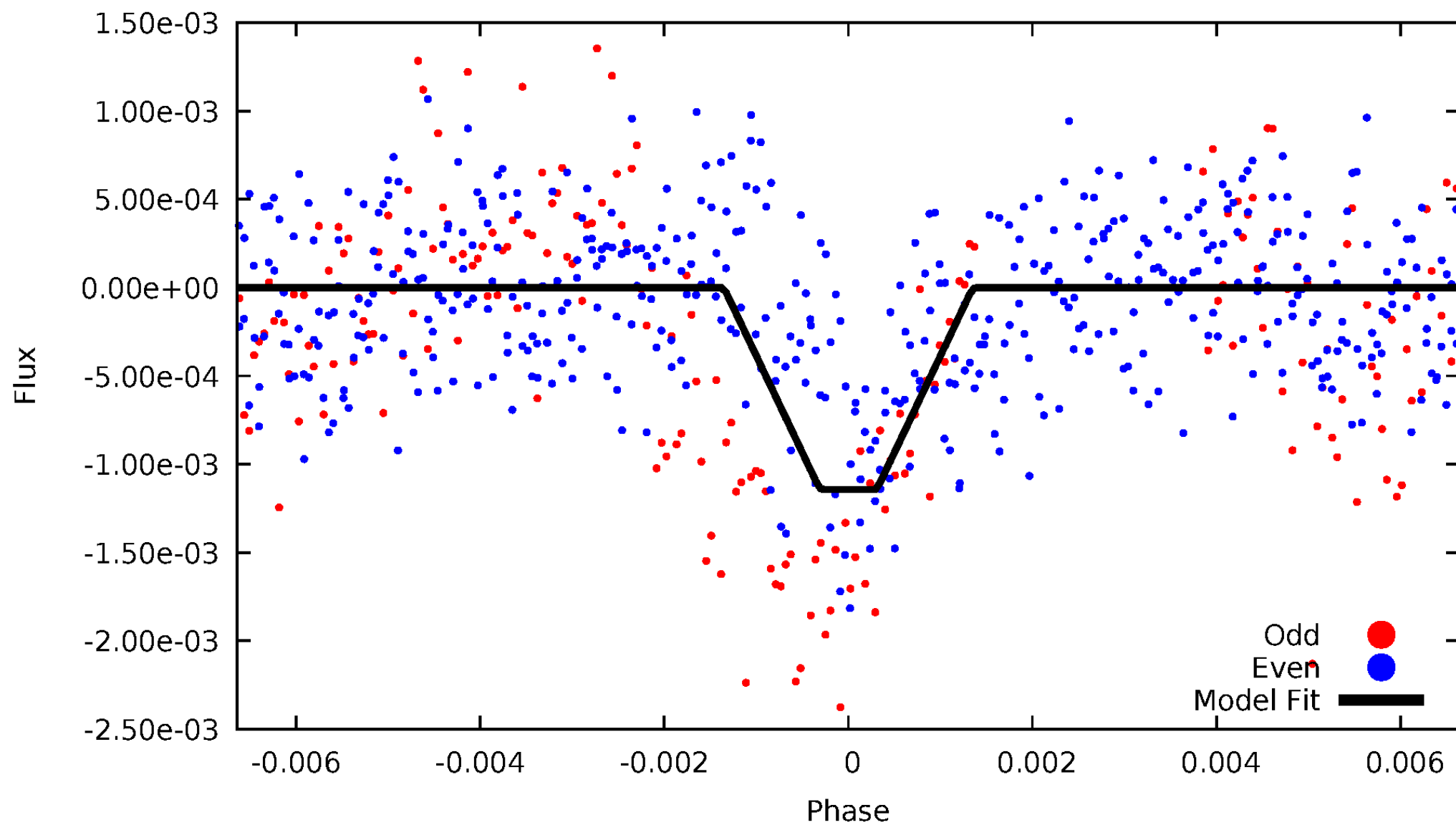
TCE 006359924-01



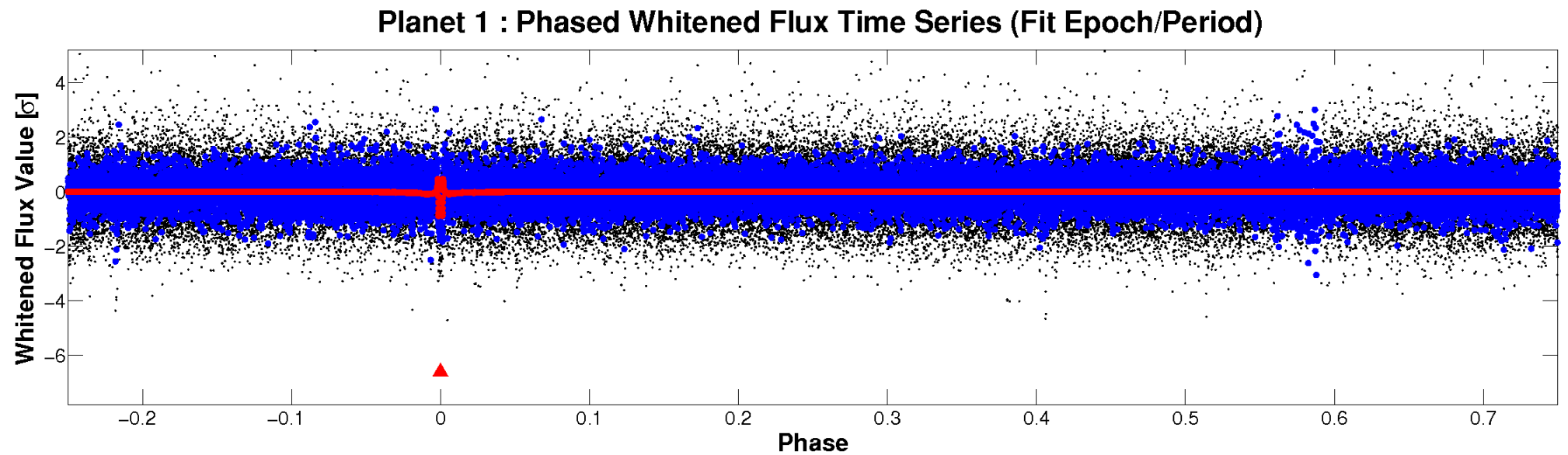
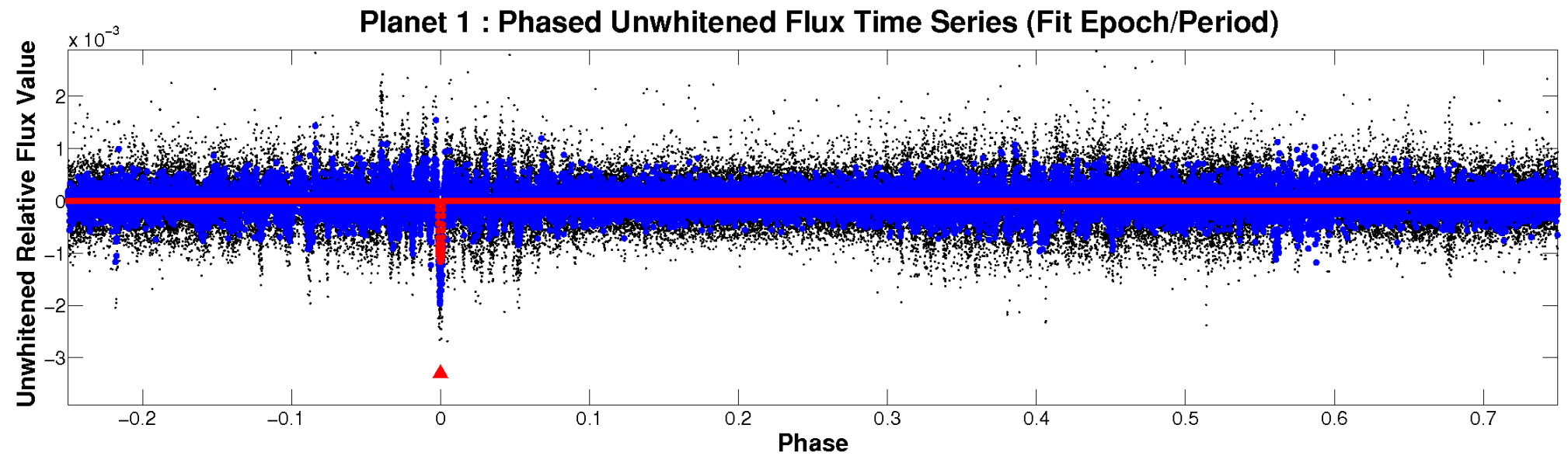


# ALT Odd/Even

TCE 006359924-01

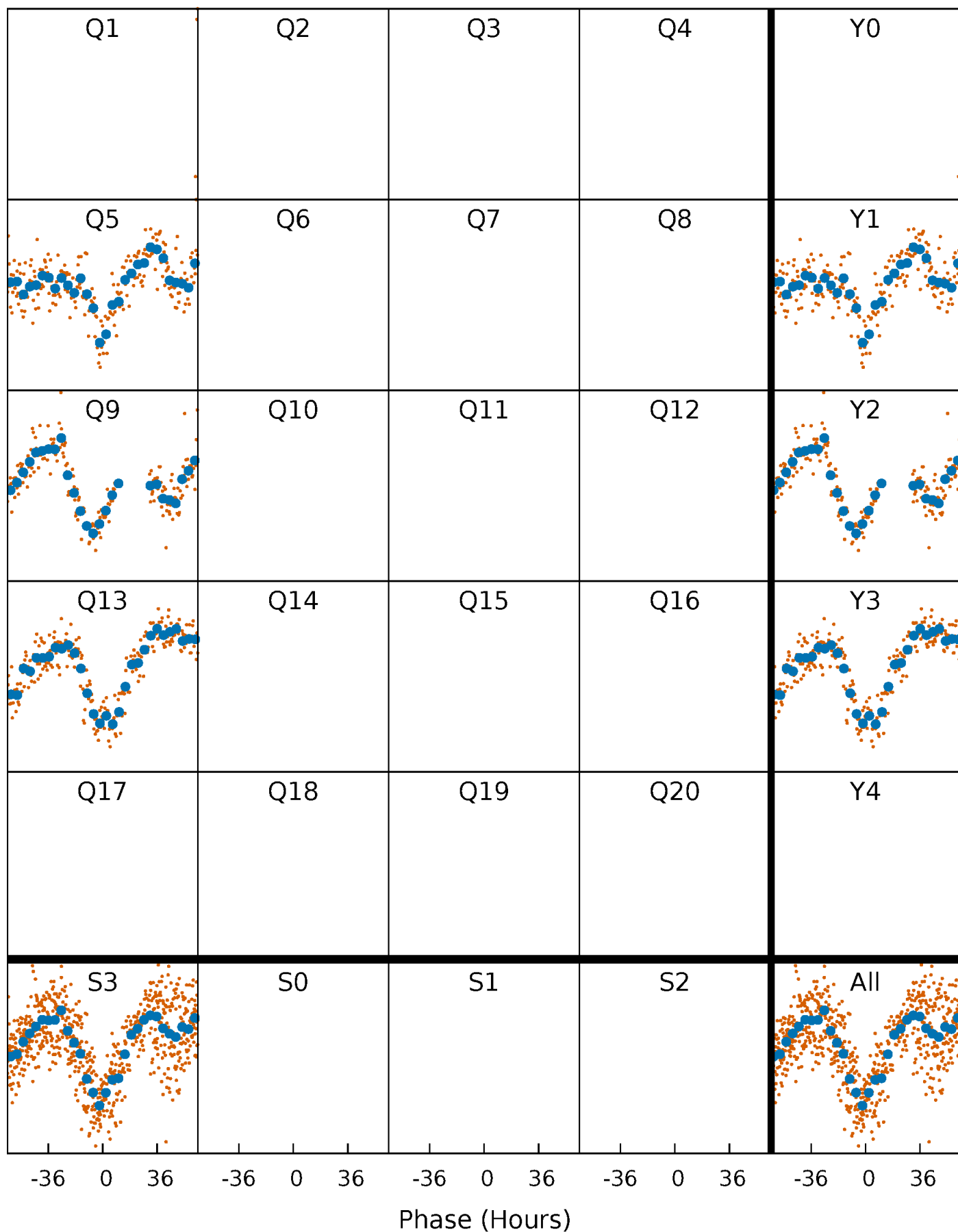


# Non-Whitened Vs. Whitened Light Curve



# PDC Quarter-Phased Transit Curves

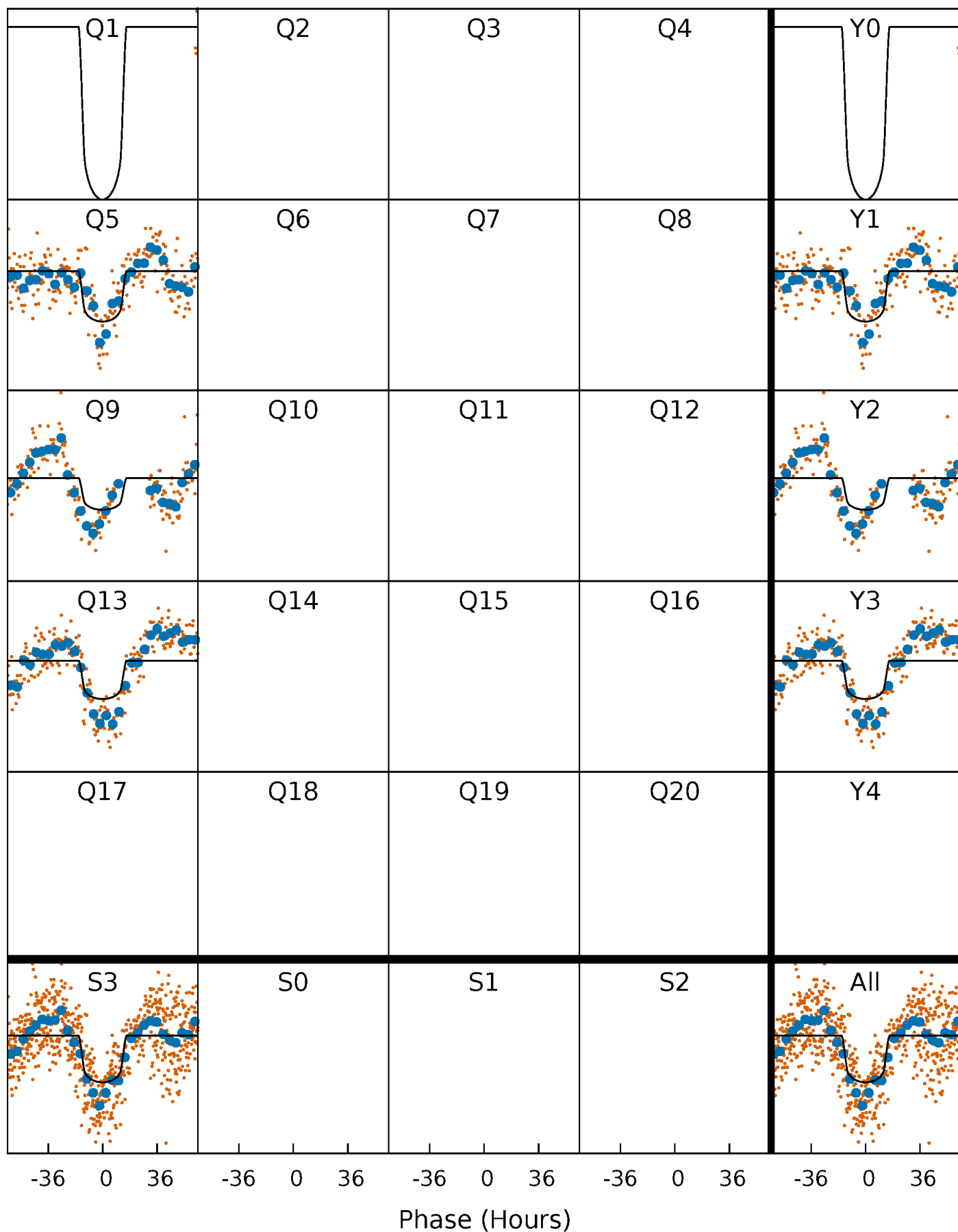
TCE 006359924-01 P=378.661495 Days  $T_0=507.615416$  (BKJD)





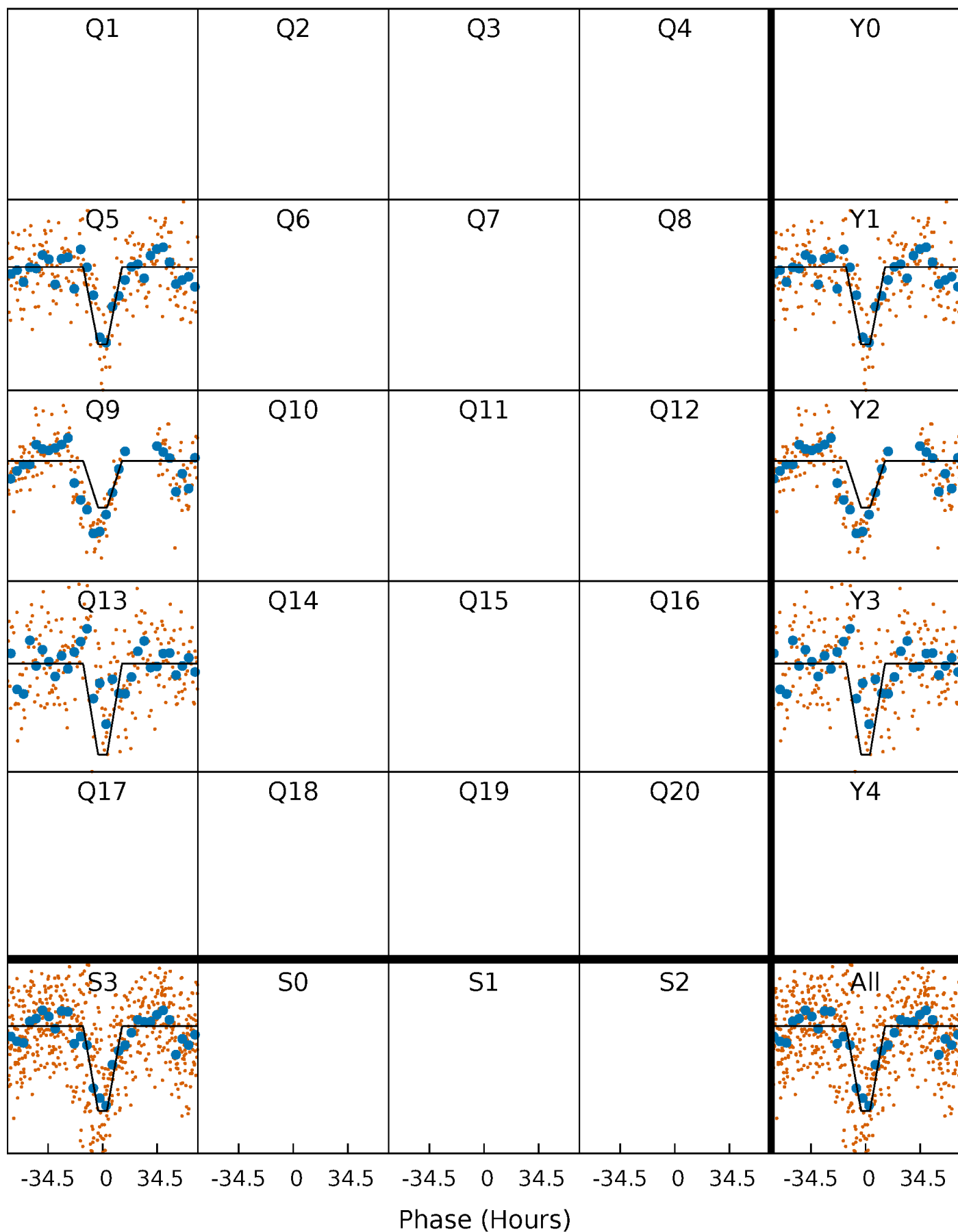
# DV Quarter-Phased Transit Curves

TCE 006359924-01 P=378.661495 Days  $T_0=507.615416$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

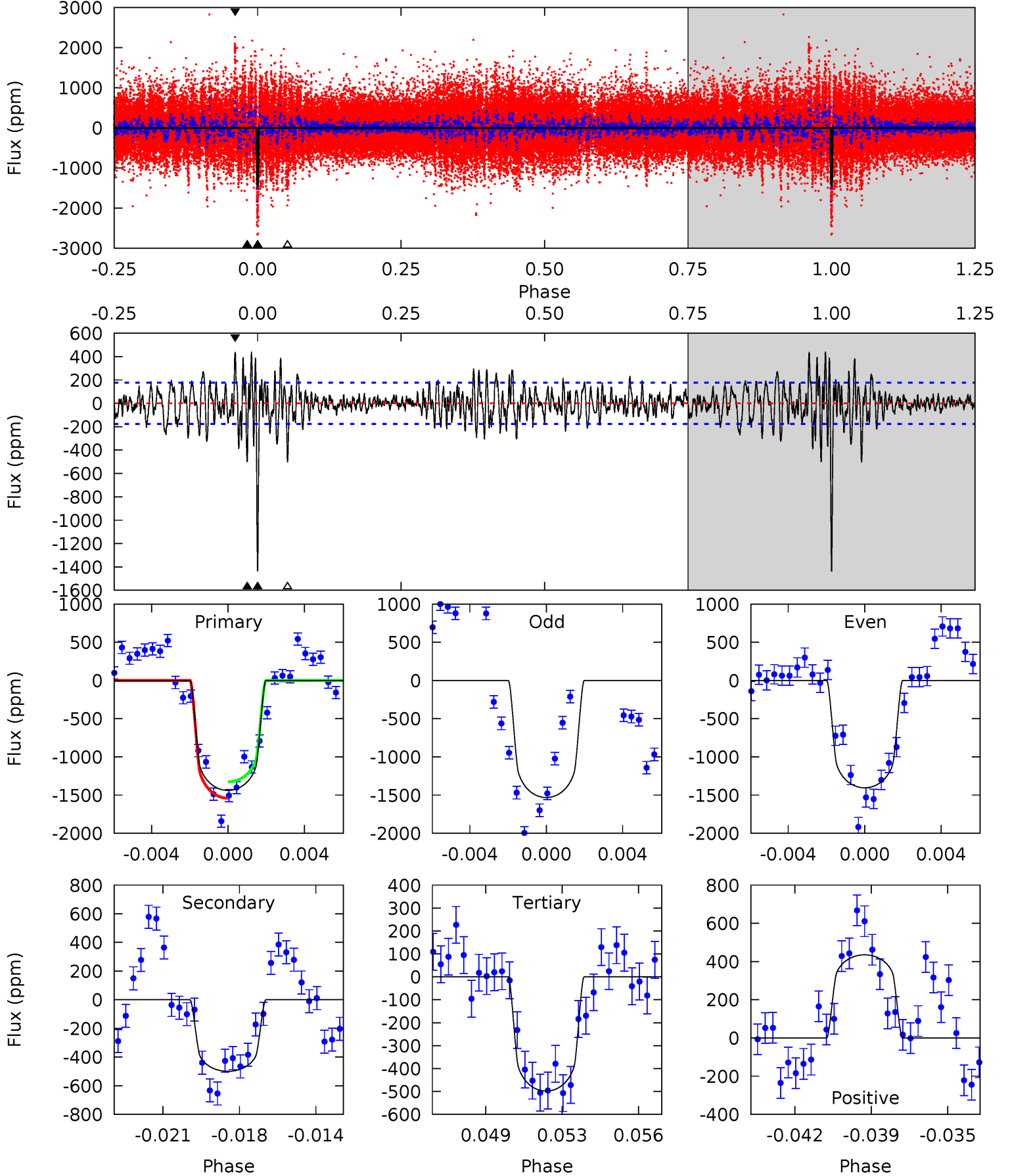
TCE 006359924-01 P=378.572566 Days  $T_0=507.544994$  (BKJD)



# DV Model-Shift Uniqueness Test

006359924-01, P = 378.661495 Days, E = 128.953921 Days

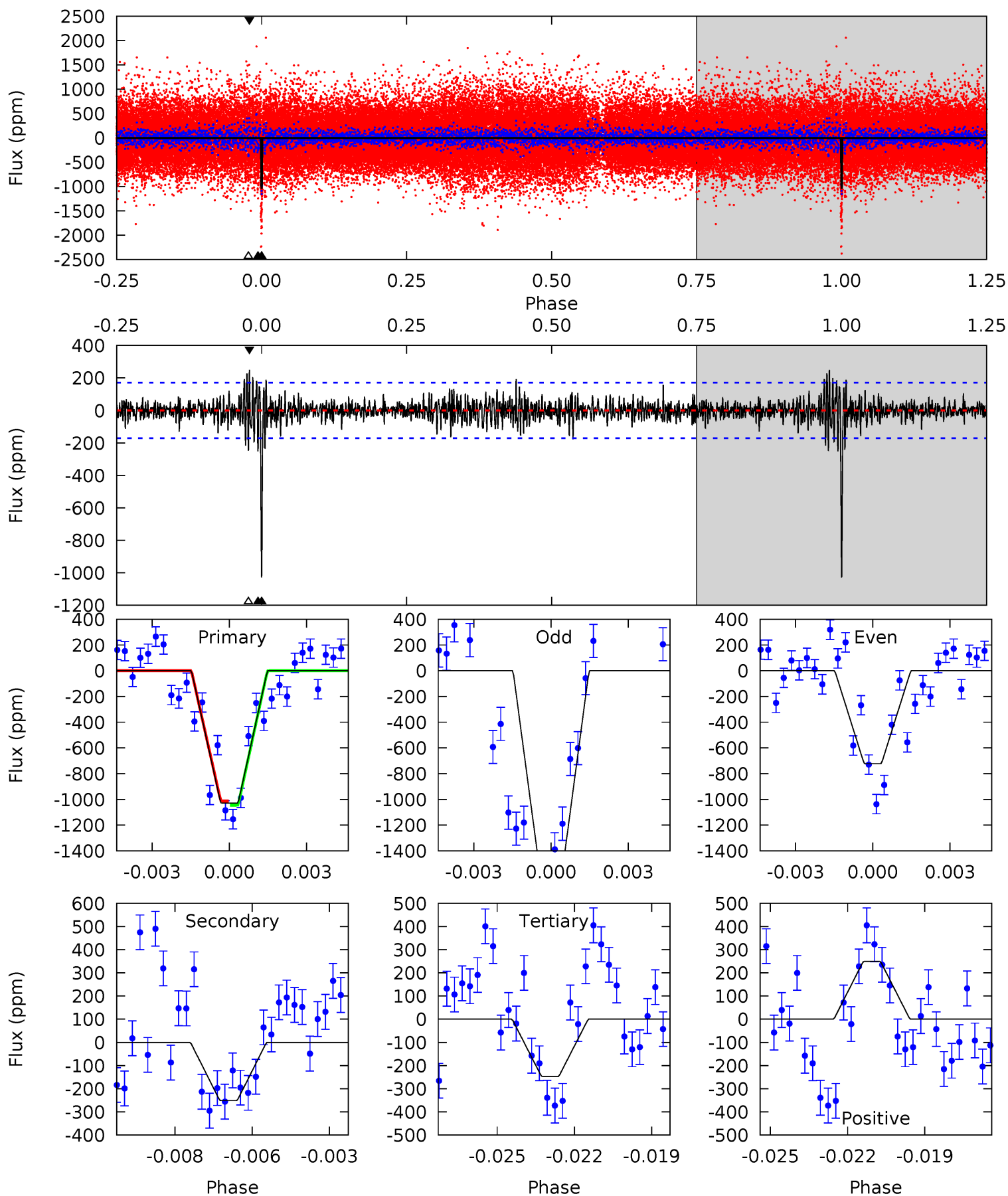
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
42.5	14.8	14.7	12.9	5.22	2.92	3.23	27.8	29.7	0.03	1.90	1.70	0.94	0.23	3.15



# Alt Model-Shift Uniqueness Test

006359924-01, P = 378.572566 Days, E = 128.972428 Days

Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
31.7	7.75	7.61	7.67	5.27	2.99	1.49	24.1	24.0	0.14	0.07	14.3	1.06	0.19	0.51



### Stellar Parameters For KIC 006359924

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$5973^{+179}_{-197}$	$4.450^{+0.084}_{-0.196}$	$-0.220^{+0.300}_{-0.300}$	$0.967^{+0.286}_{-0.123}$	$0.963^{+0.133}_{-0.121}$	$1.498^{+0.552}_{-0.781}$
	+3%/-3%	+2%/-4%	+136%/-136%	+30%/-13%	+14%/-13%	+37%/-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 006359924-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	$A_{obs}$
DV	$-499 \pm 34$	$3.87^{+0.65}_{-0.44}$	$365^{+26}_{-20}$	$4823^{+212}_{-189}$	$18415^{+5055}_{-4808}$
Alt.	$-251 \pm 32$	$3.63^{+0.67}_{-0.44}$	$364^{+27}_{-18}$	$4309^{+202}_{-189}$	$10346^{+3304}_{-2724}$

$T_{max}$  = 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

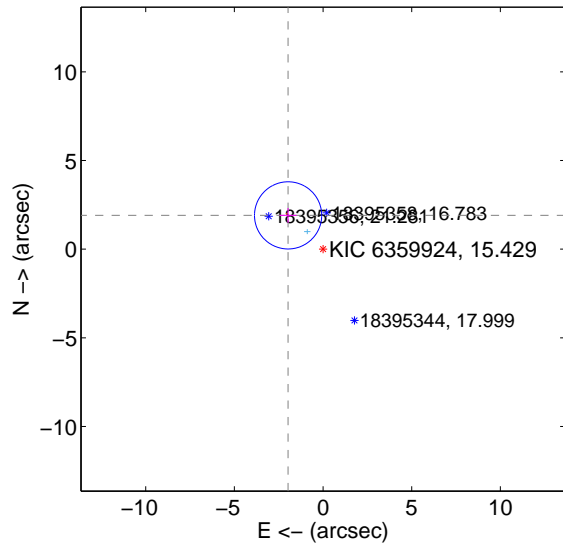
Supplemental centroid analysis for 006359924-01. Kepler magnitude: 15.43. Transit SNR 9.57

There are 1 quarters with good PRF difference image offsets

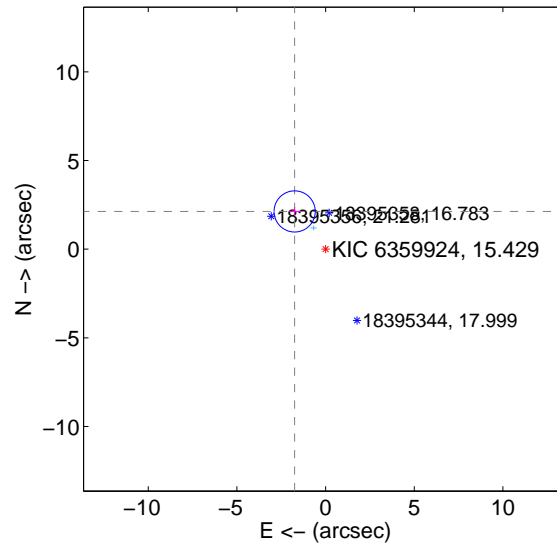
The direct PRF centroid is offset from the target star catalog position by about 0.32 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	2.742 $\pm$ 0.632	4.34	1.971 $\pm$ 0.479	1.906 $\pm$ 0.419
PRF-fit source offset from KIC position	2.753 $\pm$ 0.387	7.12	1.745 $\pm$ 0.296	2.128 $\pm$ 0.265
photometric centroid source offset	5.10 $\pm$ 2.09	2.44	-5.03 $\pm$ 2.11	-0.85 $\pm$ 1.37

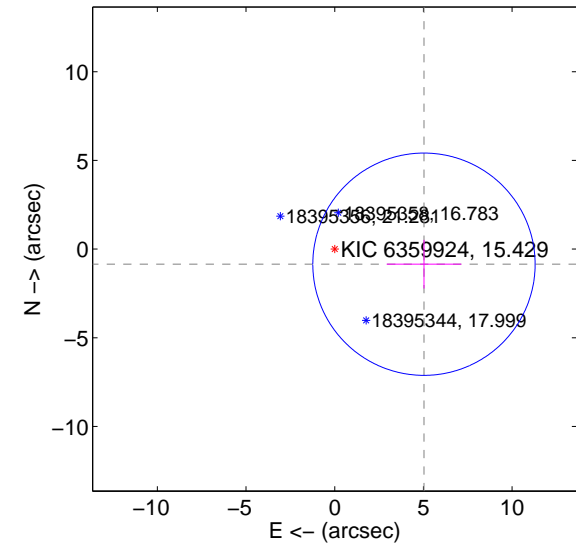
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position



offset from photometric centroids



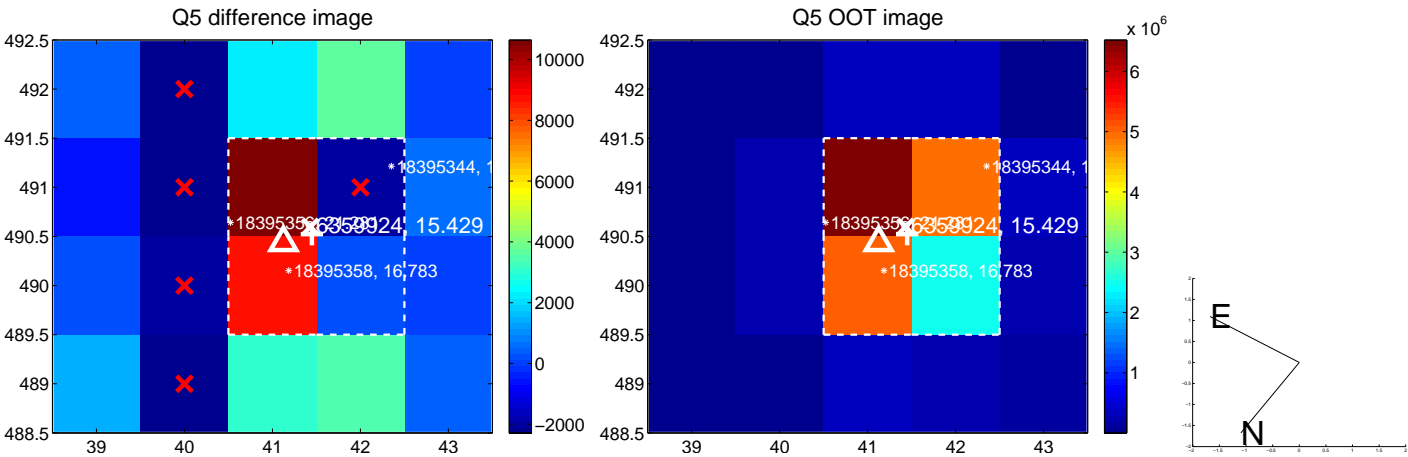
Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: three-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



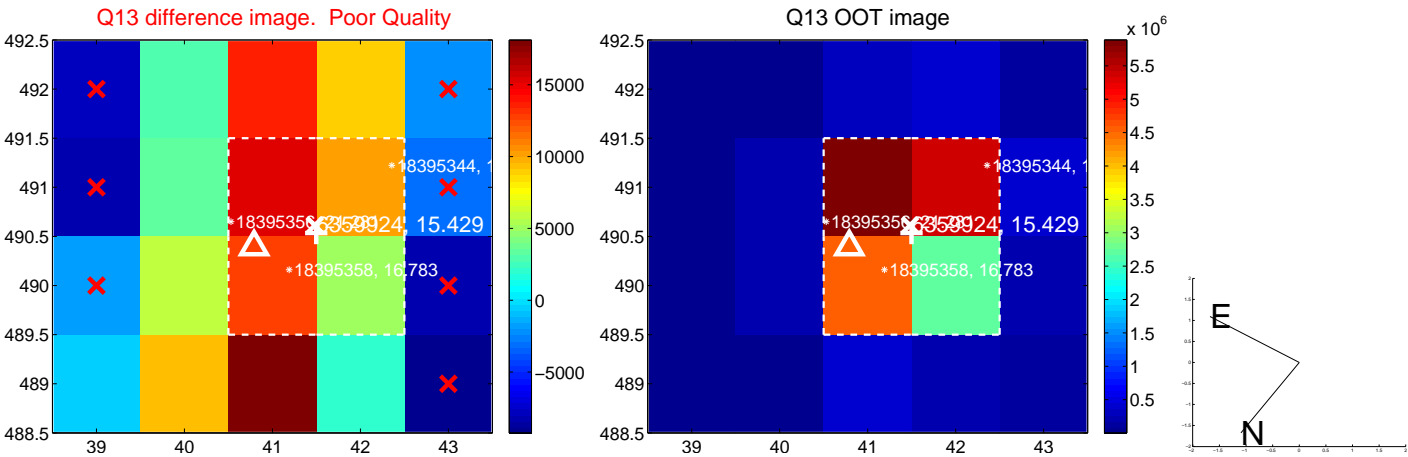
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



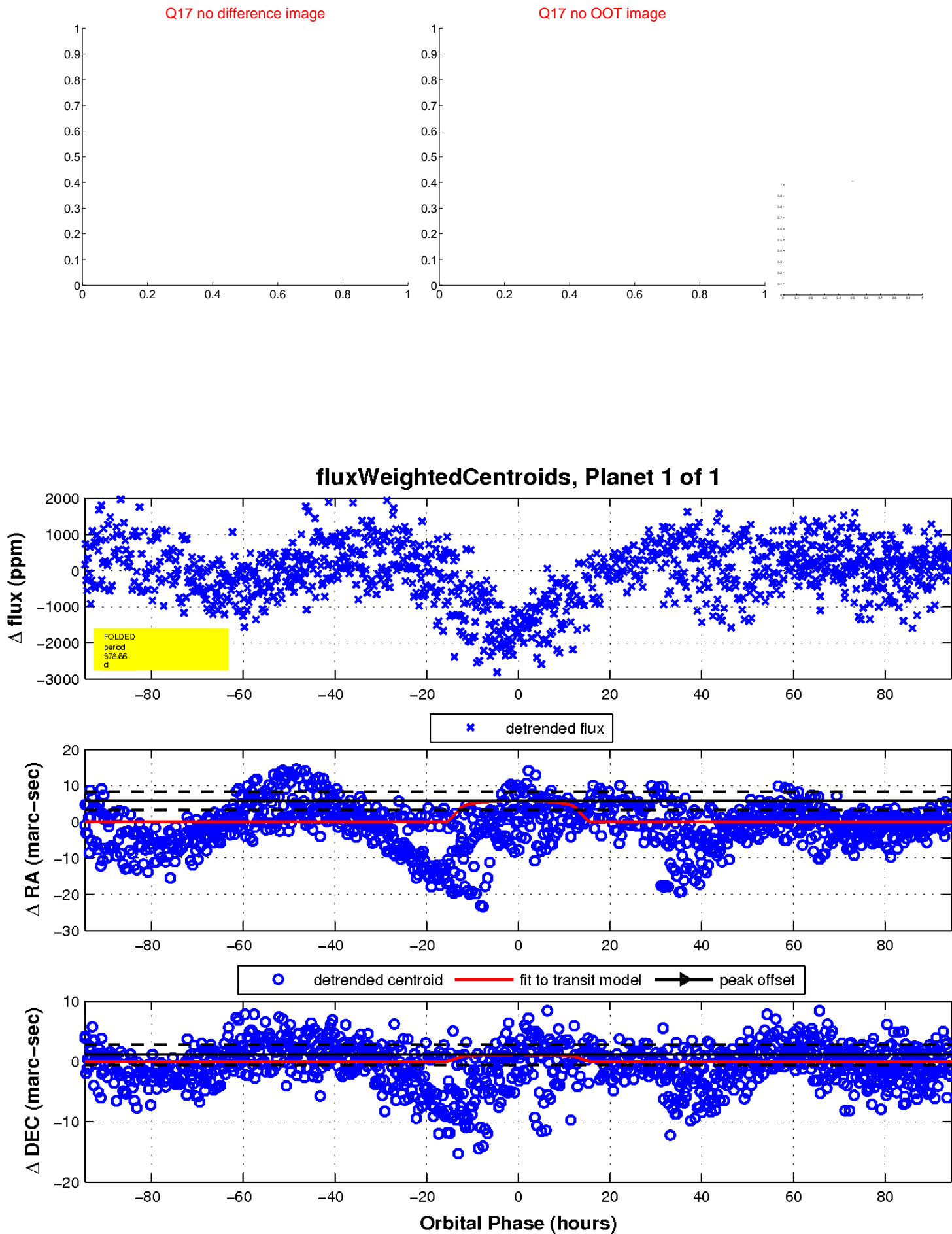
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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



UKIRT Image

Declination

