

# KIC 004914399

## Q1-17 DR25 TCE Parameters

TCE	Run Type	KOI?	Period (Days)	Epoch (BKJD)	Depth (ppm)	Duration (Hours)	MES	SNR	R <sub>★</sub> (R <sub>☉</sub> )	T <sub>★</sub> (K)	R <sub>p</sub> (R <sub>⊕</sub> )	S <sub>p</sub> (S <sub>⊕</sub> )
004914399-01	OBS	5100.01	1.237075	132.730196	663.7	3.500	19.1	-1.0	1.32	6556	3.44	5290.71

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
004914399-01	OBS	FP	0.00	0	0	0	1	CENT_NOFITS—EPHEM_MATCH

**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 004914399-01

TCE (1)	KIC	Parent (2)	Parent KIC	P <sub>1</sub> :P <sub>2</sub>	Dist (″)	ΔRow	ΔCol	m <sub>2</sub>	m <sub>1</sub>	D <sub>2</sub> /D <sub>1</sub>	Mechanism	Flag	σ <sub>P</sub>	σ <sub>T</sub>
004914399-01	4914399	6121.01	4826439	1:1	255.5	64	0	13.82	14.46	669.67	Col-Anomaly	0	4.97	4.86

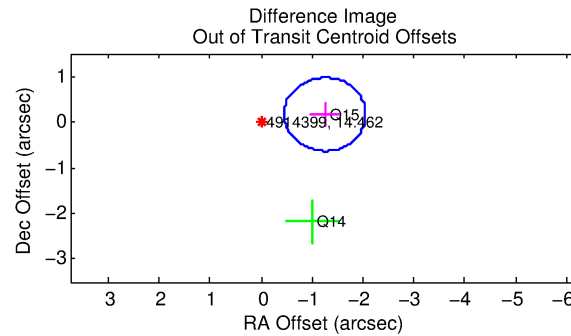
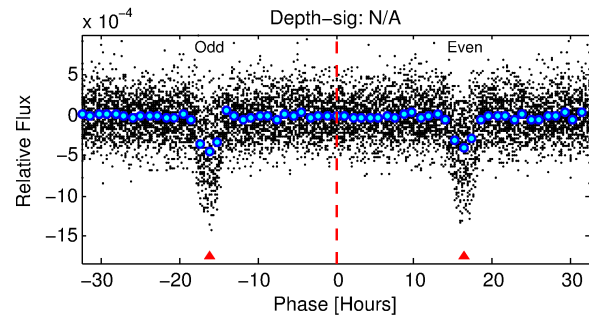
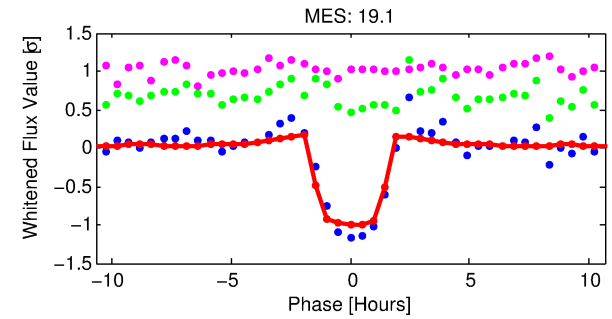
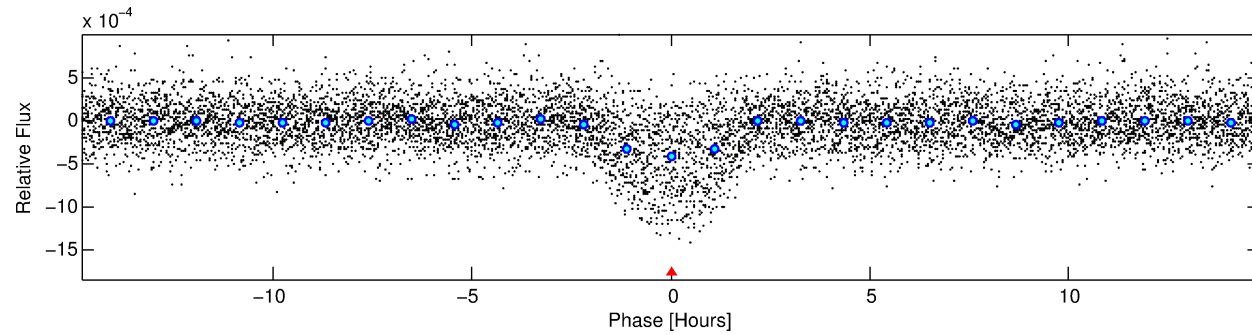
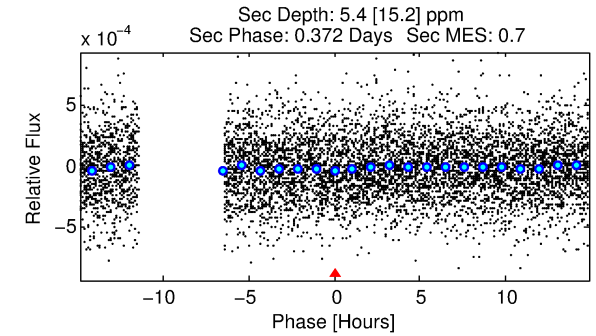
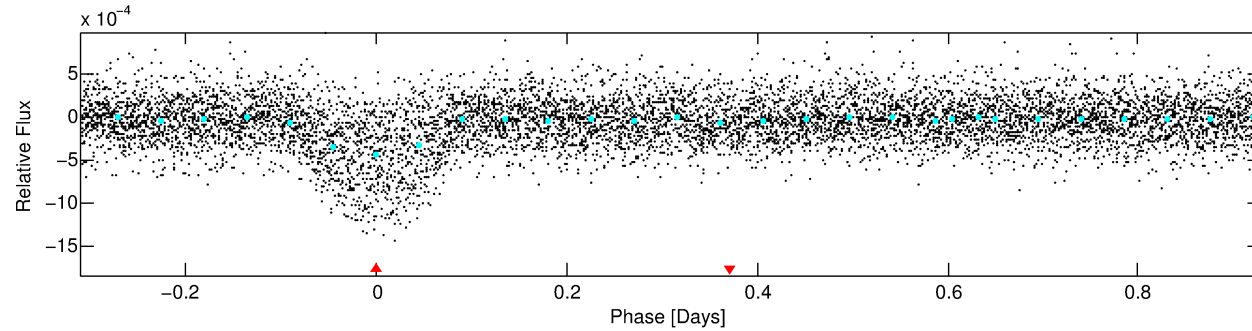
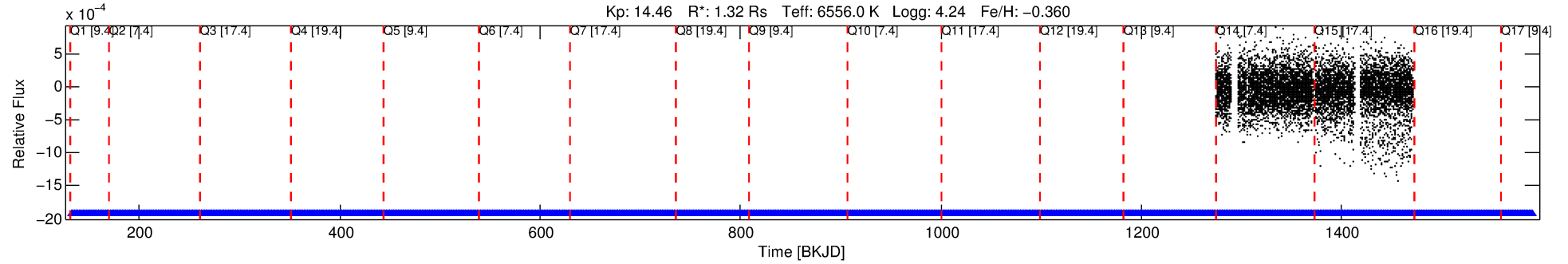
**Notes:** P<sub>1</sub>:P<sub>2</sub> is the period ratio. Dist is the distance in arcseconds. ΔRow and ΔCol are the number of pixels apart in row and column. m<sub>2</sub> and m<sub>1</sub> are the magnitudes of the parent and child. D<sub>2</sub>/D<sub>1</sub> is the parent's transit depth divided by the child's. σ<sub>P</sub> and σ<sub>T</sub> are the significance of the match in period and epoch. For a match to be considered significant σ<sub>P</sub> < 5.0 and σ<sub>T</sub> < 5.0. Matches which have σ<sub>P</sub> and σ<sub>T</sub> very close to this cutoff should receive extra scrutiny, especially if the period ratio is very large.

# DV One-Page Summary

KIC: 4914399 Candidate: 1 of 1 Period: 1.237 d

KOI: K05100.01 Corr: 0.780

Kp: 14.46 R\*: 1.32 Rs Teff: 6556.0 K Logg: 4.24 Fe/H: -0.360



TPS TCE Results:

Period = 1.23708 d  
Epoch = 132.7302 BKJD

DV fit results are unavailable

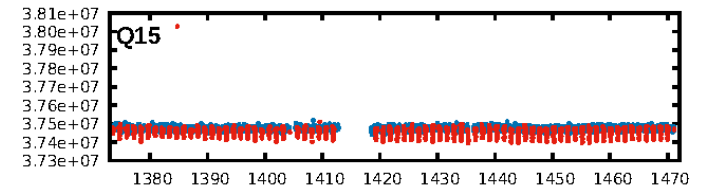
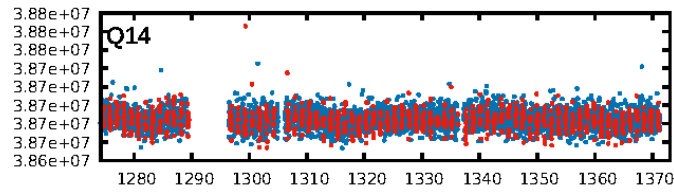
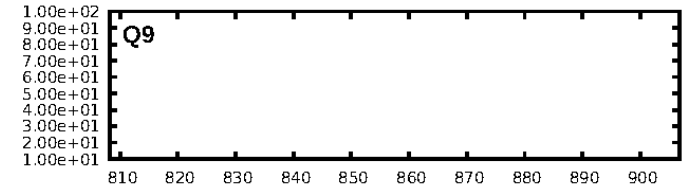
DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: N/A  
ModelChiSquareGof-sig: N/A  
Bootstrap-pfa: N/A  
RollingBand-fgt: 1.00 [147/147]  
GhostDiagnostic-chr: -8.437  
Centroid-sig: 1.3%  
Centroid-so: 0.892 arcsec [5.58σ]  
OotOffset-rm: 1.266 arcsec [4.73σ]  
KicOffset-rm: 1.333 arcsec [3.55σ]  
OotOffset-st: 1/1/0/0 [2]  
KicOffset-st: 1/1/0/0 [2]  
DiffImageQuality-fgm: 1.00 [2/2]  
DiffImageOverlap-fno: 1.00 [2/2]

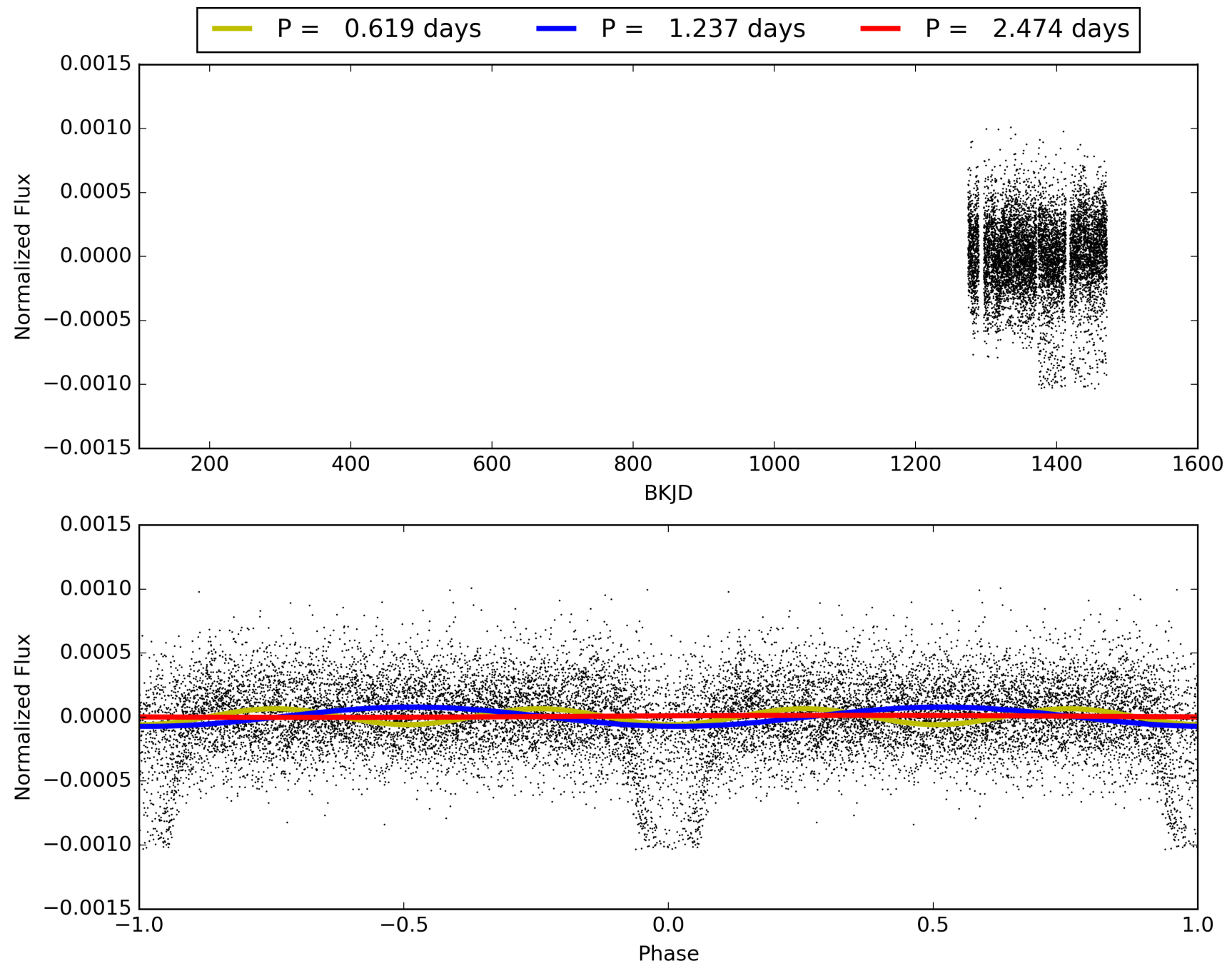
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 23:18:14 Z

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

# TCE 004914399-01, PDC Light Curves

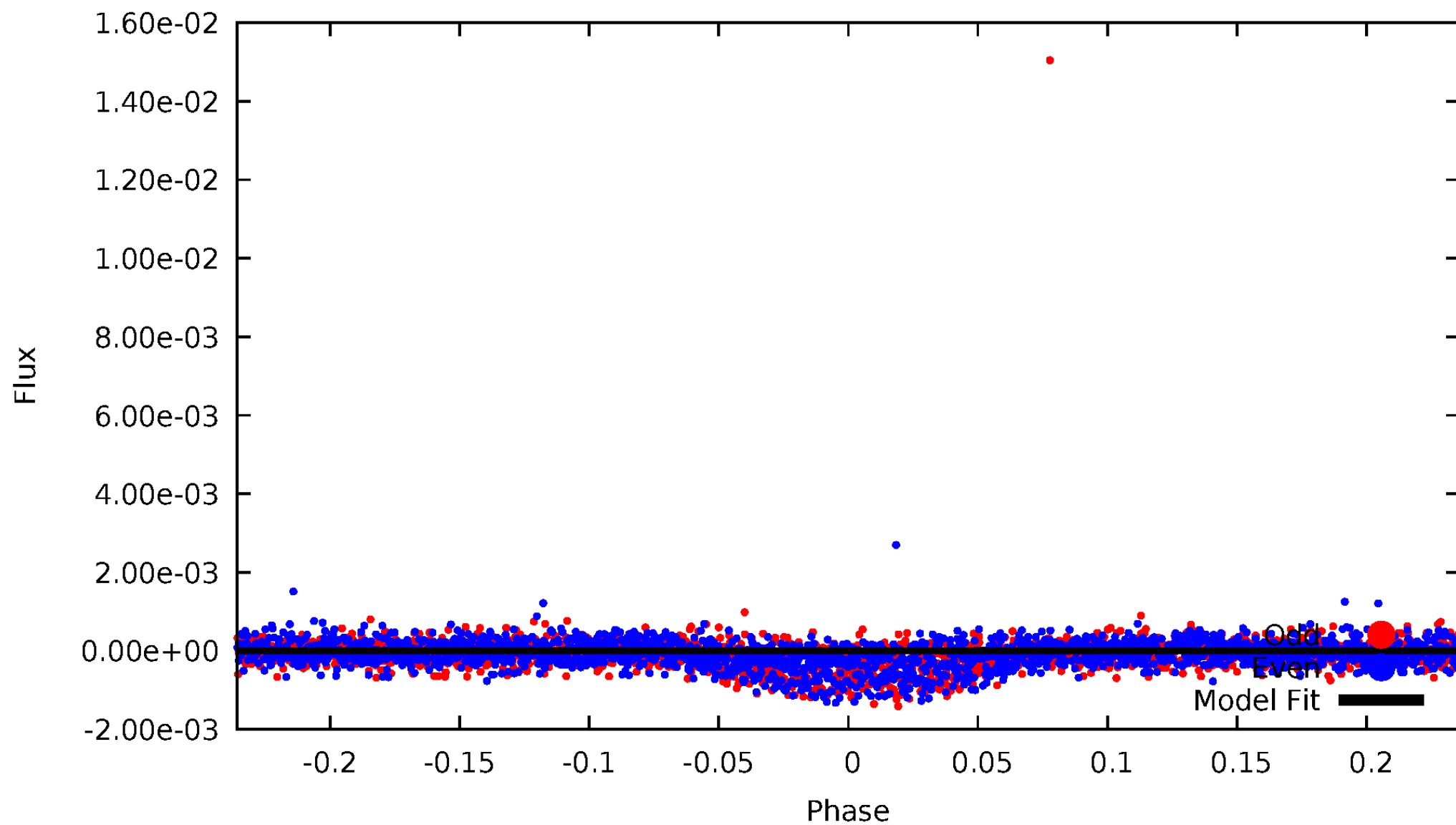


# TCE 004914399-01



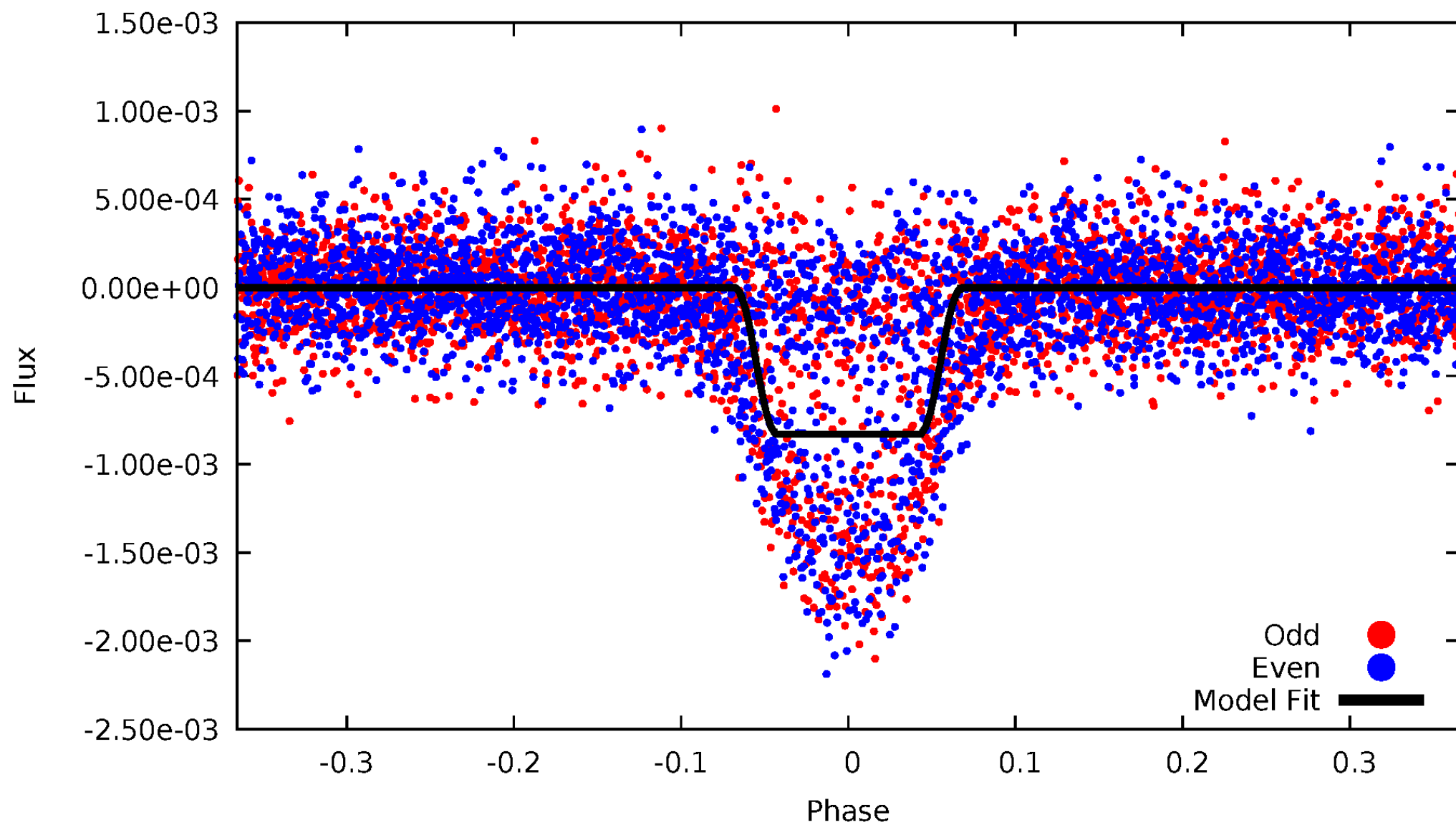
# DV Odd/Even

TCE 004914399-01

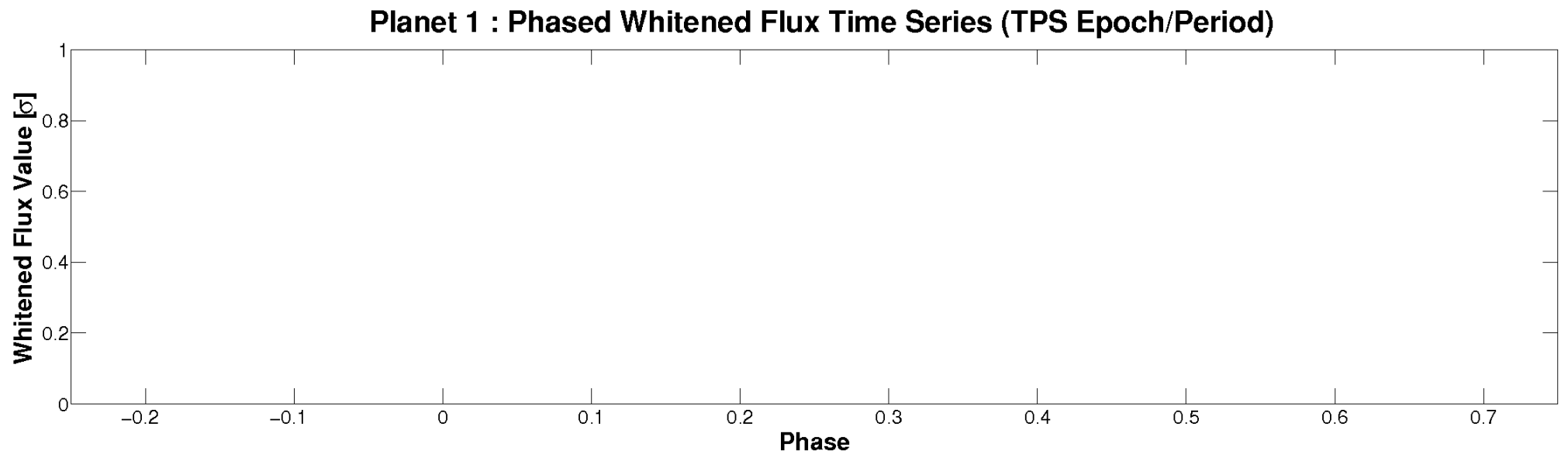
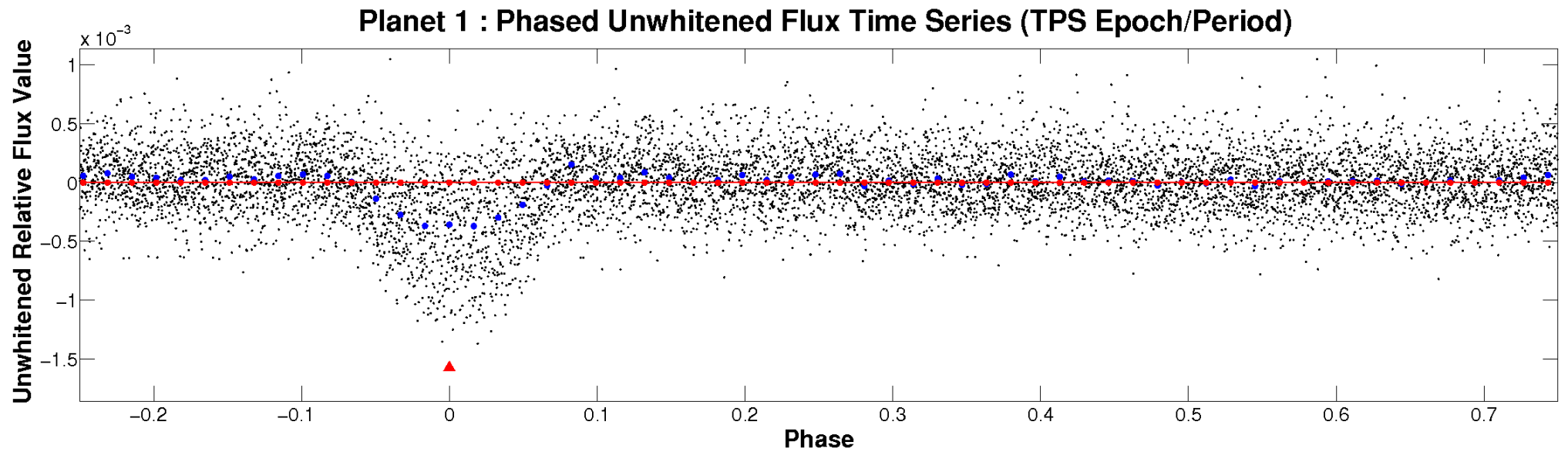


# ALT Odd/Even

TCE 004914399-01

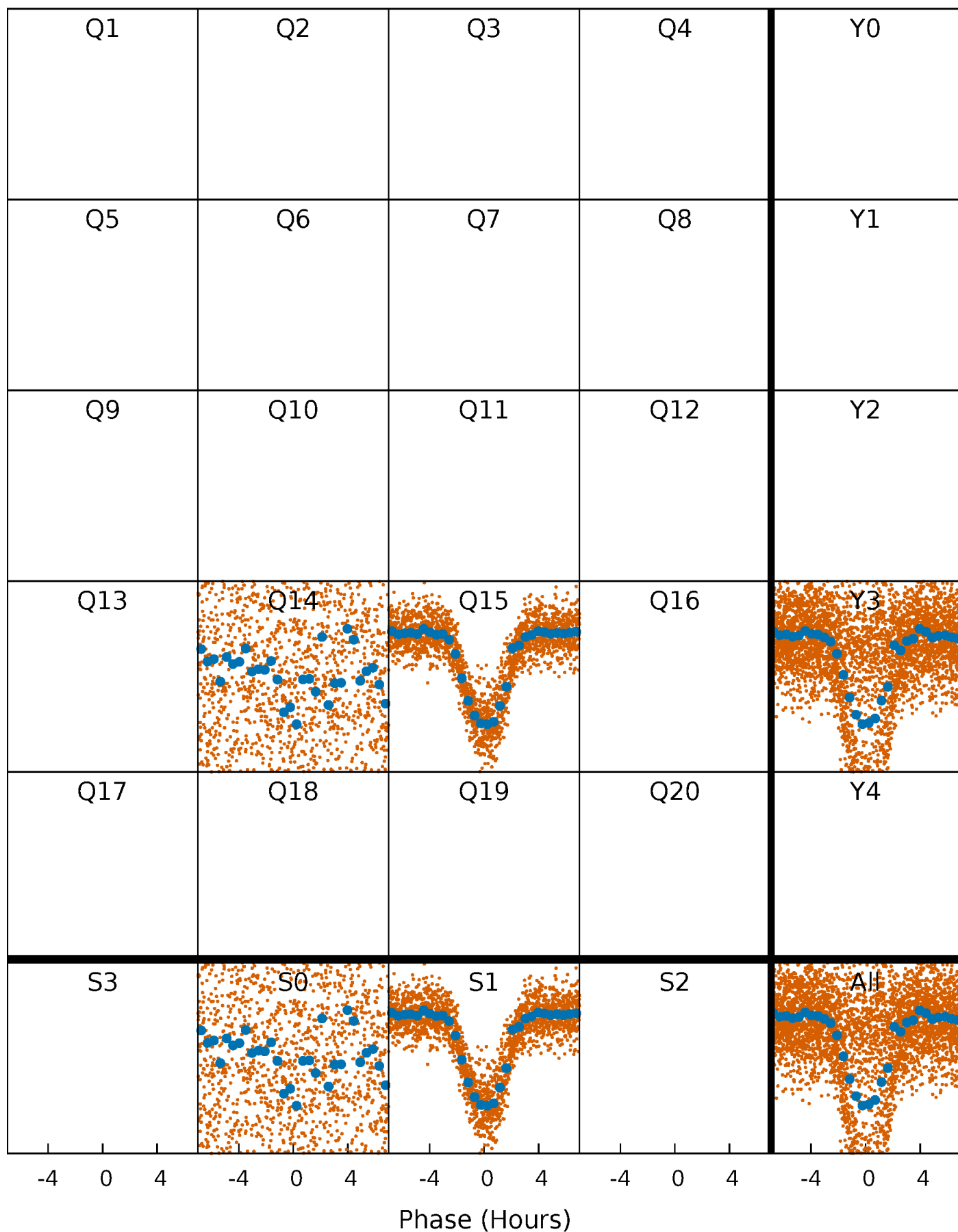


# Non-Whitened Vs. Whitened Light Curve



# PDC Quarter-Phased Transit Curves

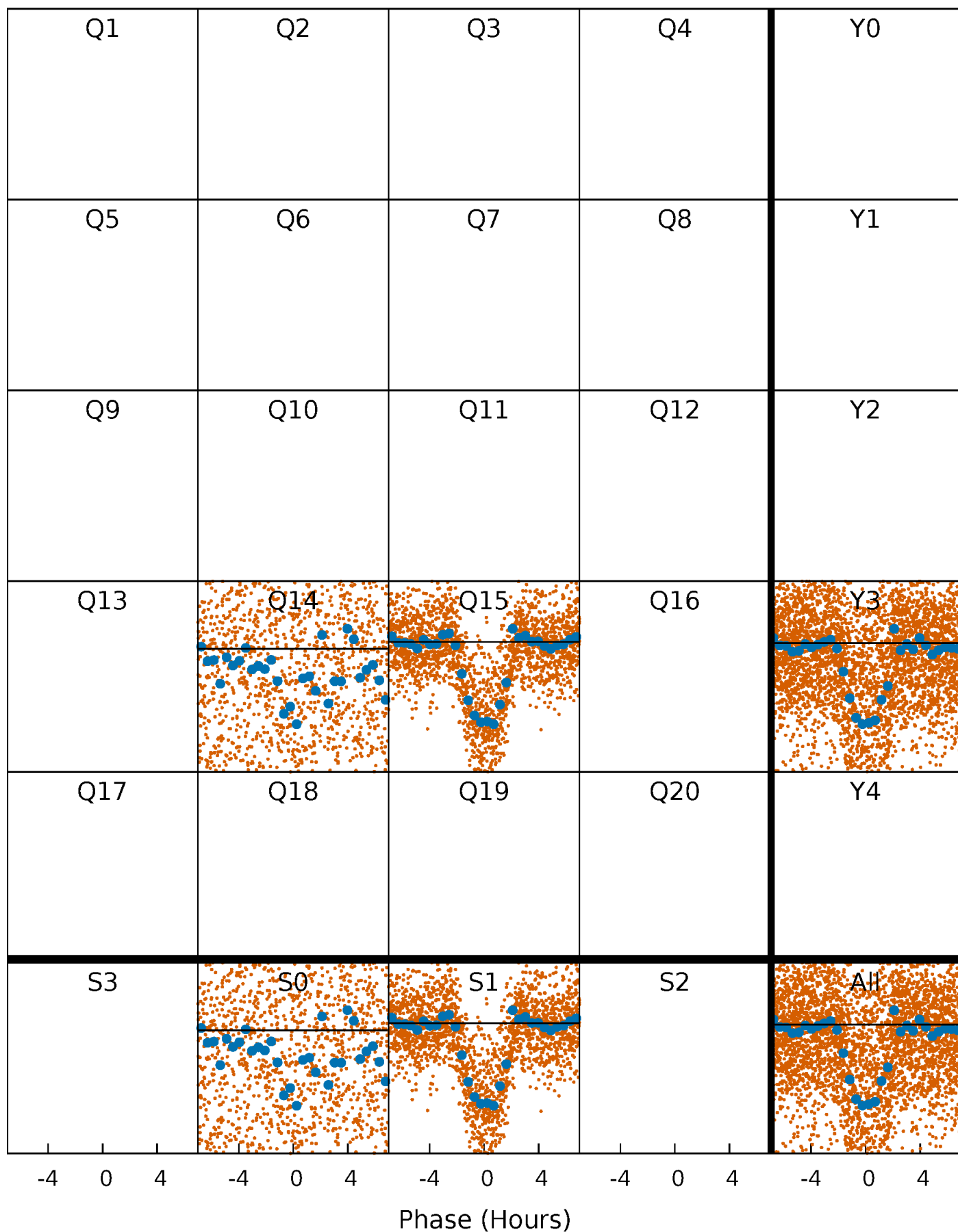
TCE 004914399-01 P= 1.237075 Days  $T_0=132.730196$  (BKJD)





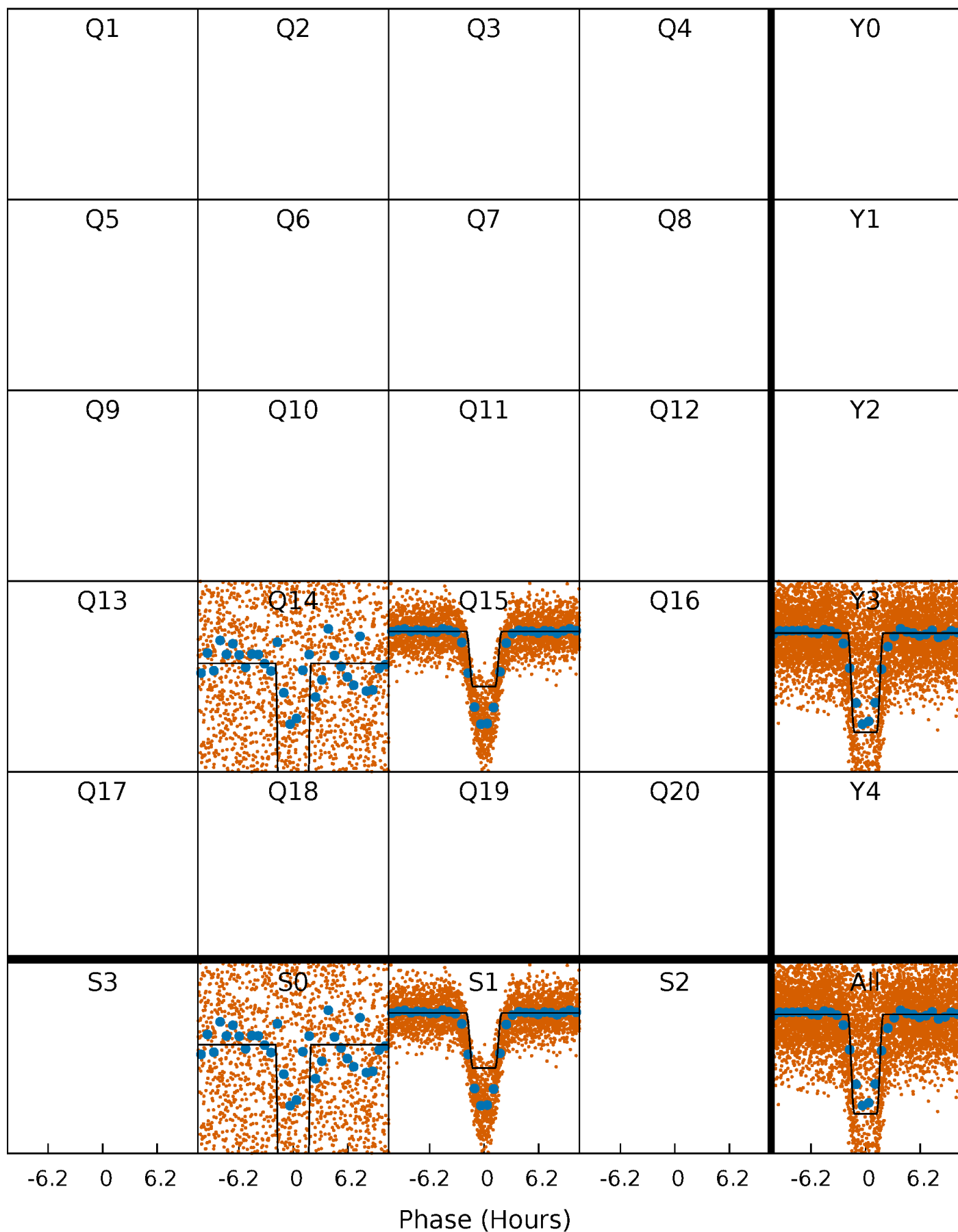
# DV Quarter-Phased Transit Curves

TCE 004914399-01   P= 1.237075 Days    $T_0=132.730196$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

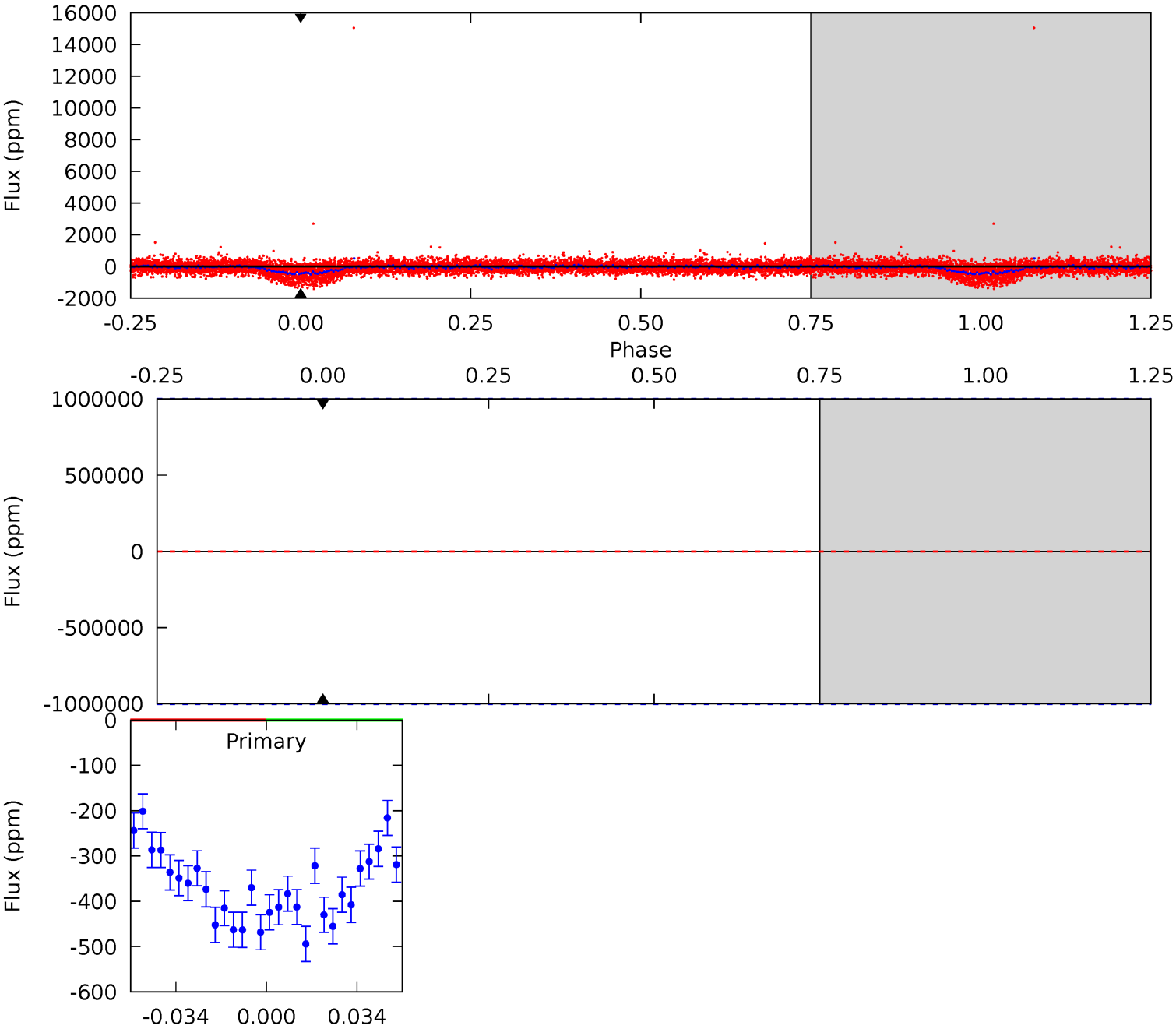
TCE 004914399-01 P= 1.237075 Days  $T_0=132.734250$  (BKJD)



# DV Model-Shift Uniqueness Test

004914399-01, P = 1.237075 Days, E = 132.730196 Days

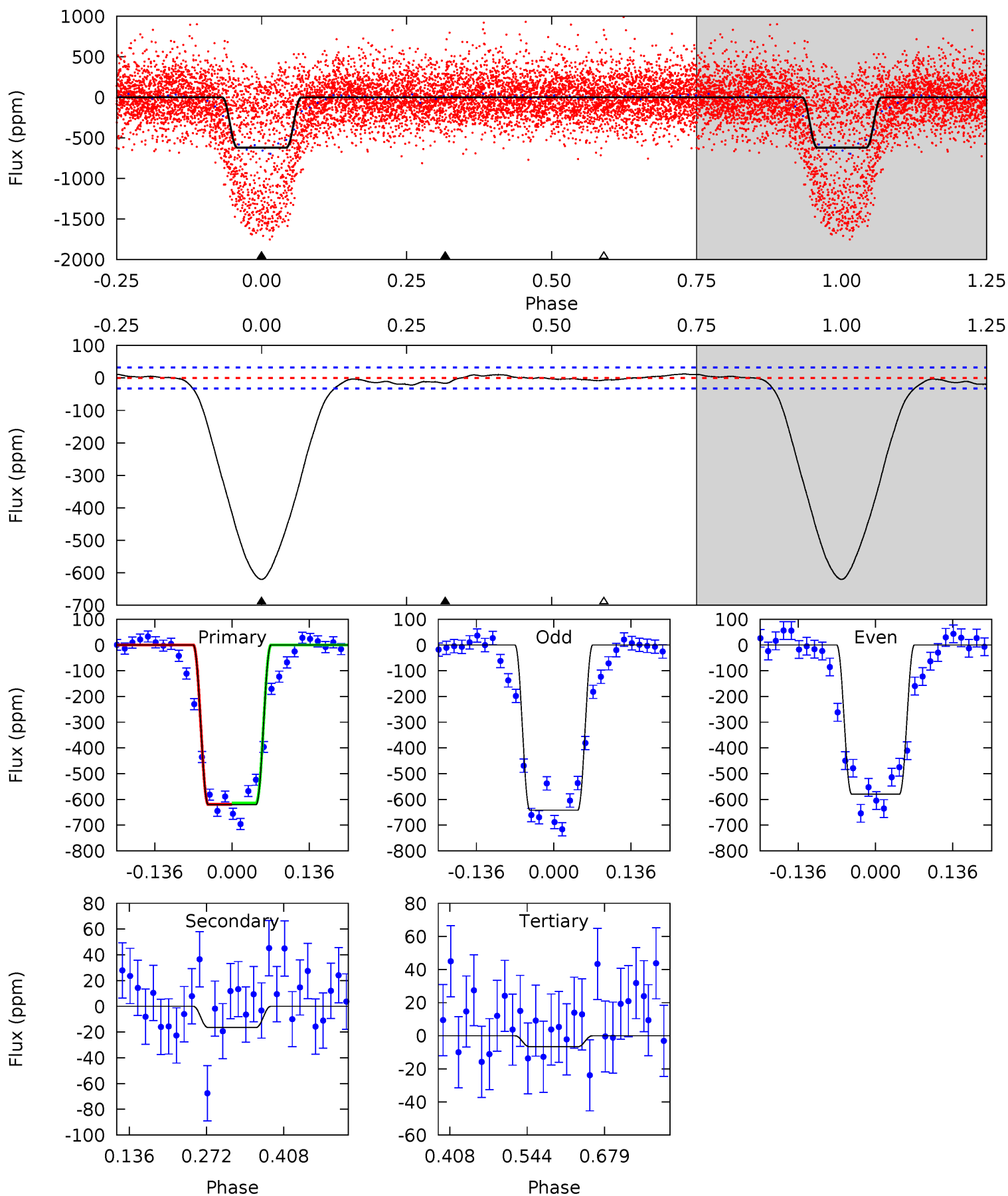
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
0	0	0	0	1.00	1.00	1.00	0	0	0	0	0	0	0	0



# Alt Model-Shift Uniqueness Test

004914399-01, P = 1.237075 Days, E = 132.734250 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
86.6	2.30	0.93	0	4.50	1.49	0.82	85.7	86.6	1.37	2.30	4.32	0.87	0.02	0.33



### Stellar Parameters For KIC 004914399

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$6556^{+185}_{-254}$	$4.243^{+0.170}_{-0.187}$	$-0.360^{+0.250}_{-0.300}$	$1.324^{+0.366}_{-0.267}$	$1.121^{+0.178}_{-0.162}$	$0.680^{+0.585}_{-0.310}$
	+3%/-4%	+4%/-4%	+69%/-83%	+28%/-20%	+16%/-14%	+86%/-46%
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 004914399-01 / KOI 5100.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	$A_{\text{obs}}$
DV	$0 \pm 1000000$	$12.11^{+11.60}_{-8.46}$	$3024^{+229}_{-207}$	$4462^{+22496}_{-25851}$	$3.417^{+427.431}_{-268.382}$
Alt.	$-16 \pm 7$	$11.74^{+11.85}_{-7.74}$	$3037^{+254}_{-198}$	$-3008^{+4445}_{-183}$	$0.033^{+0.267}_{-0.026}$

$T_{\text{max}}$  = Theoretical Maximum Planetary Temperature

$T_{\text{obs}}$  = Observed Planetary Temperature (Assuming  $A=0.3$ )

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

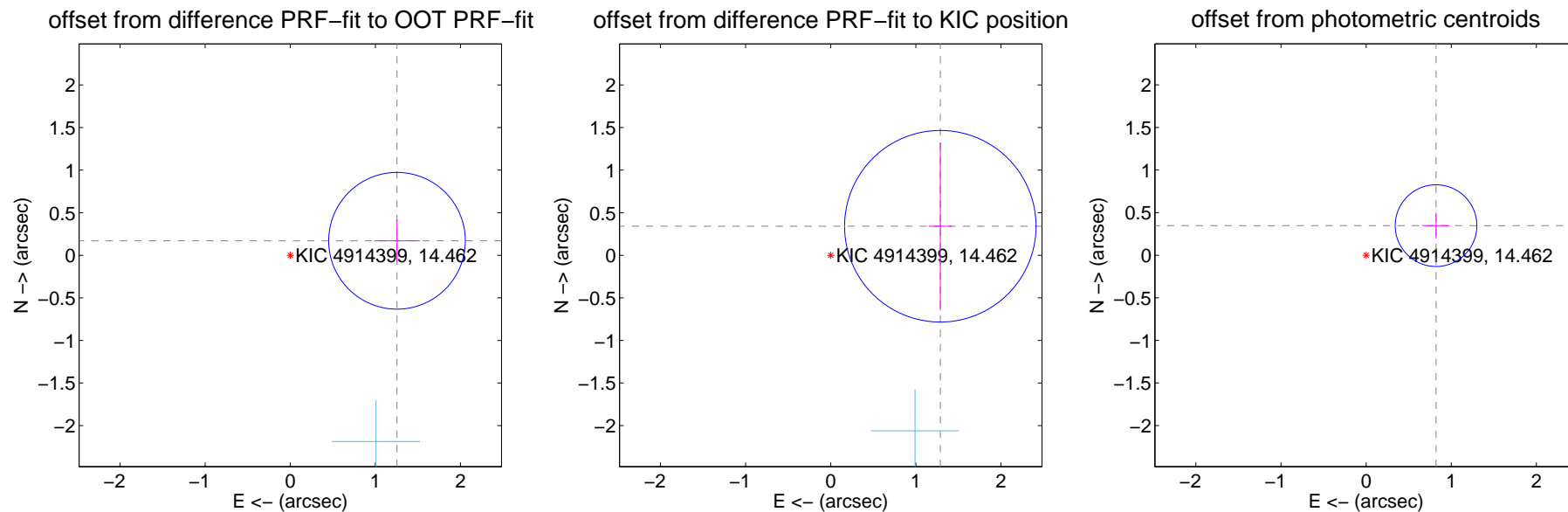
## DV Centroid Data

Supplemental centroid analysis for 004914399-01. Kepler magnitude: 14.46. Transit SNR -1.00

There are 2 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 / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$1.266 \pm 0.268$	4.73	$-1.255 \pm 0.268$	$0.170 \pm 0.252$
PRF-fit source offset from KIC position	$1.333 \pm 0.375$	3.55	$-1.288 \pm 0.139$	$0.341 \pm 0.985$
photometric centroid source offset	$0.89 \pm 0.16$	5.58	$-0.82 \pm 0.16$	$0.35 \pm 0.15$



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.



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

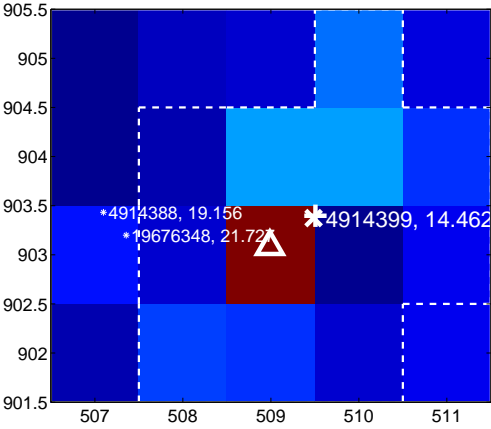
Q13 no difference image



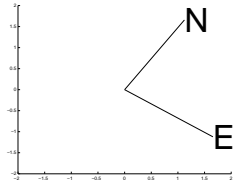
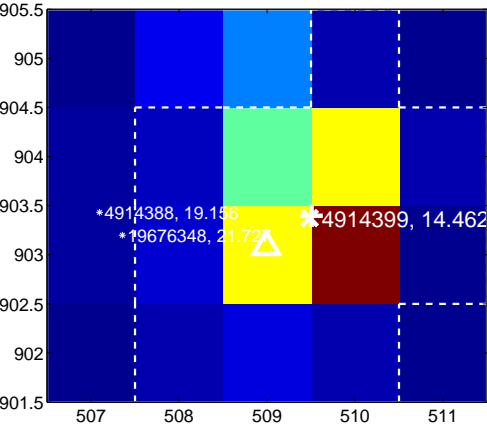
Q13 no OOT image



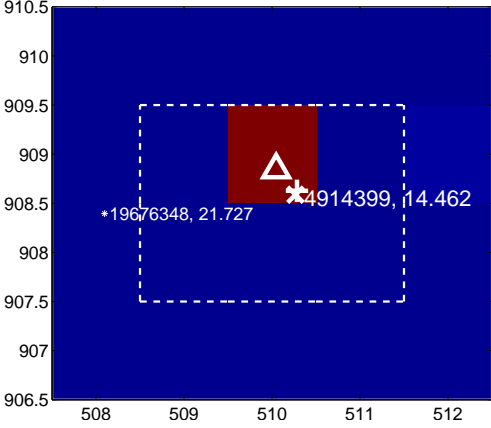
Q14 difference image



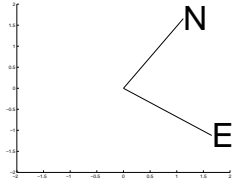
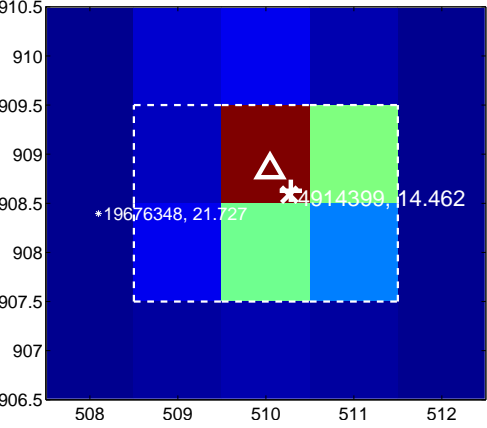
Q14 OOT image



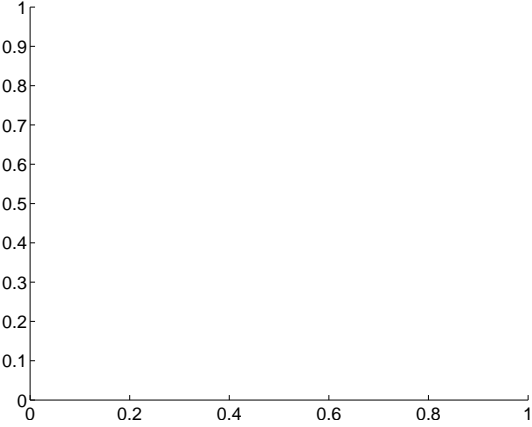
Q15 difference image



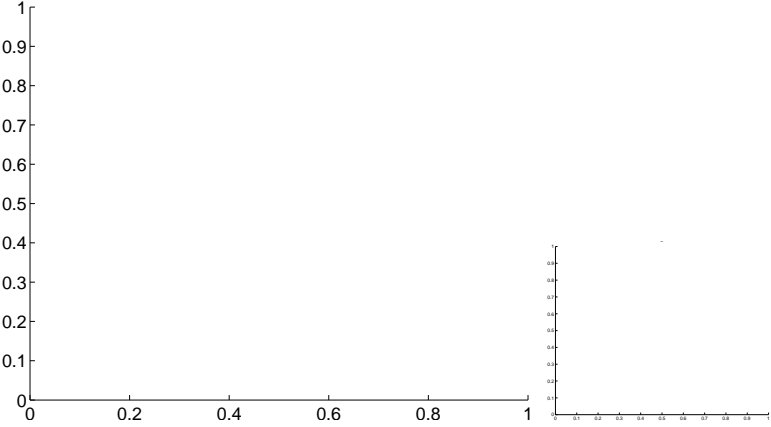
Q15 OOT image



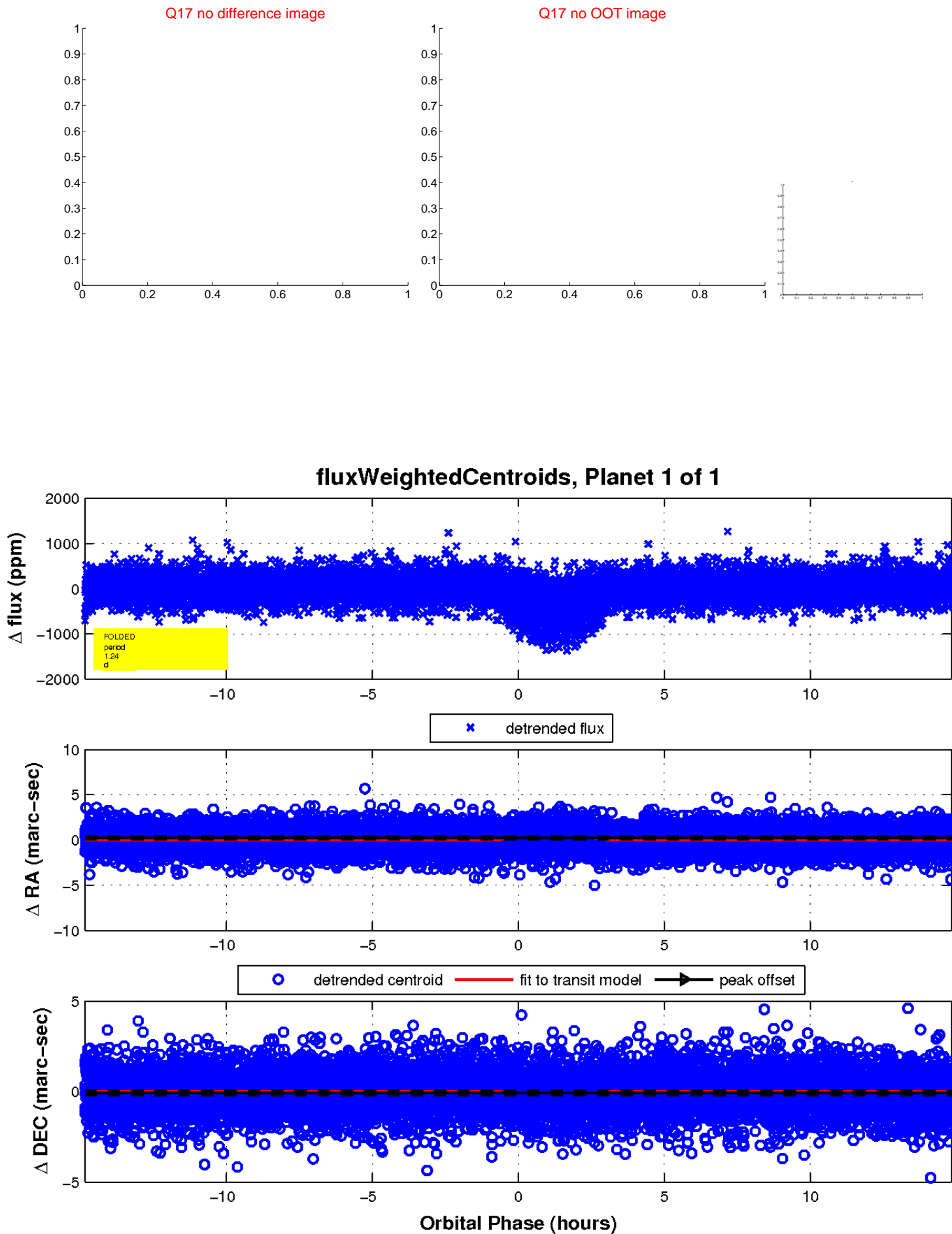
Q16 no difference image



Q16 no OOT image



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



UKIRT Image

