

# KIC 005024292

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
005024292-01	OBS	3579.01	2.150590	132.298386	165370.6	5.908	6040.3	2789.1	1.55	6386	81.37	2668.38

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005024292-01	OBS	FP	0.00	0	1	0	0	DEPTH_ODDEVEN_DV—DEPTH_ODDEVEN_ALT—MOD_ODDEVEN_DV—MOD_ODDEVEN_ALT—DEEP_V_SHAPED—CENT_KIC_POS

**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.

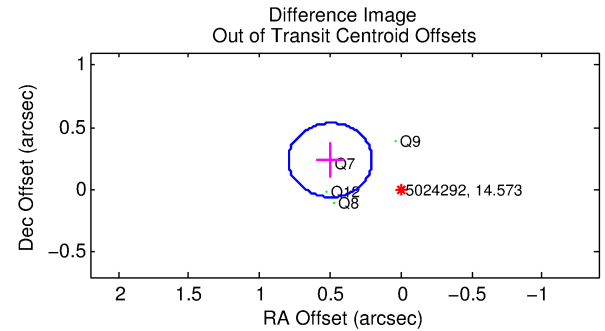
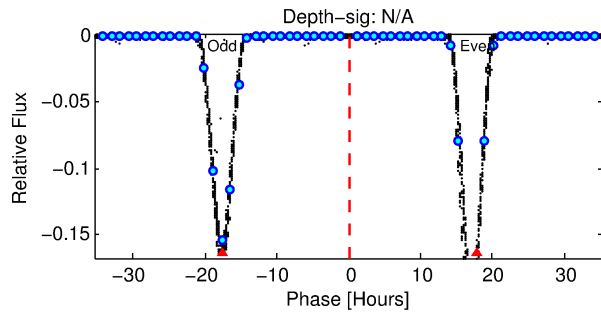
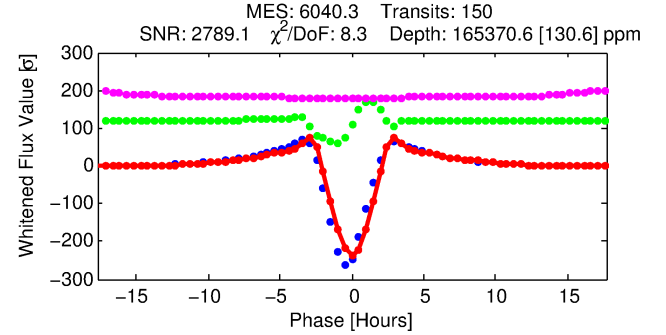
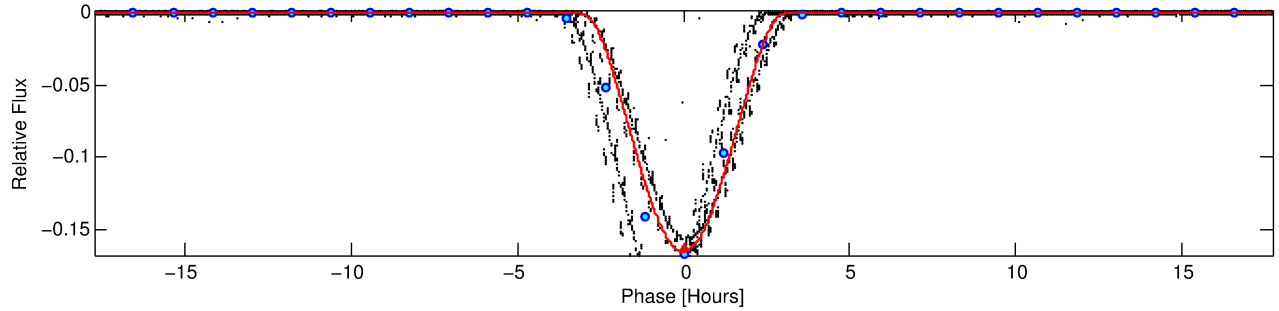
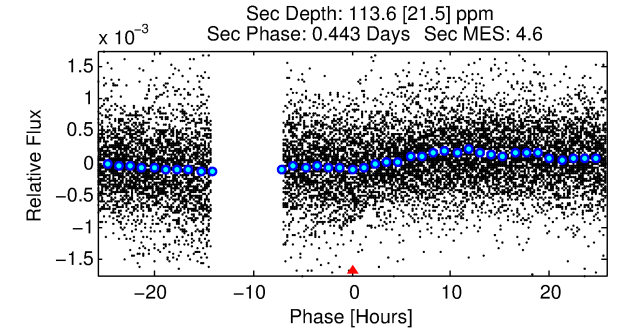
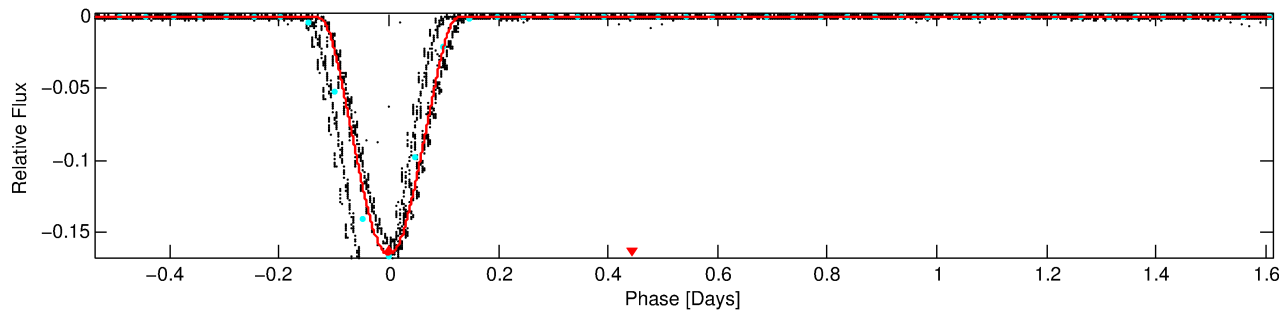
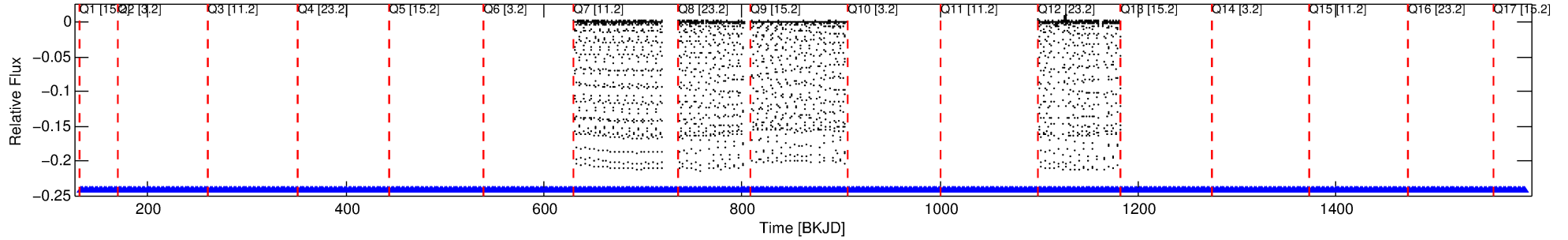
## Ephemeris Match Information For 005024292-01

No Significant Match Found

# DV One-Page Summary

KIC: 5024292 Candidate: 1 of 1 Period: 2.151 d  
KOI: K03579 Corr: No Ephemeris Match

Kp: 14.57 R\*: 1.55 Rs Teff: 6386.0 K Logg: 4.21 Fe/H: 0.480



## DV Fit Results:

Period = 2.15059 [0.00000] d  
Epoch = 132.2984 [0.0001] BKJD  
Rp/R\* = 0.4817 [0.0104]  
a/R\* = 3.65 [0.01]  
b = 0.79 [0.02]  
Seff = 2668.38 [1142.05]  
Teq = 1833 [196] K  
Rp = 81.37 [27.91] Re  
a = 0.0366 [0.0103] AU  
Ag = 0.01 [0.01] [-175.80σ]  
Teffp = 950 [59] K [-4.31σ]

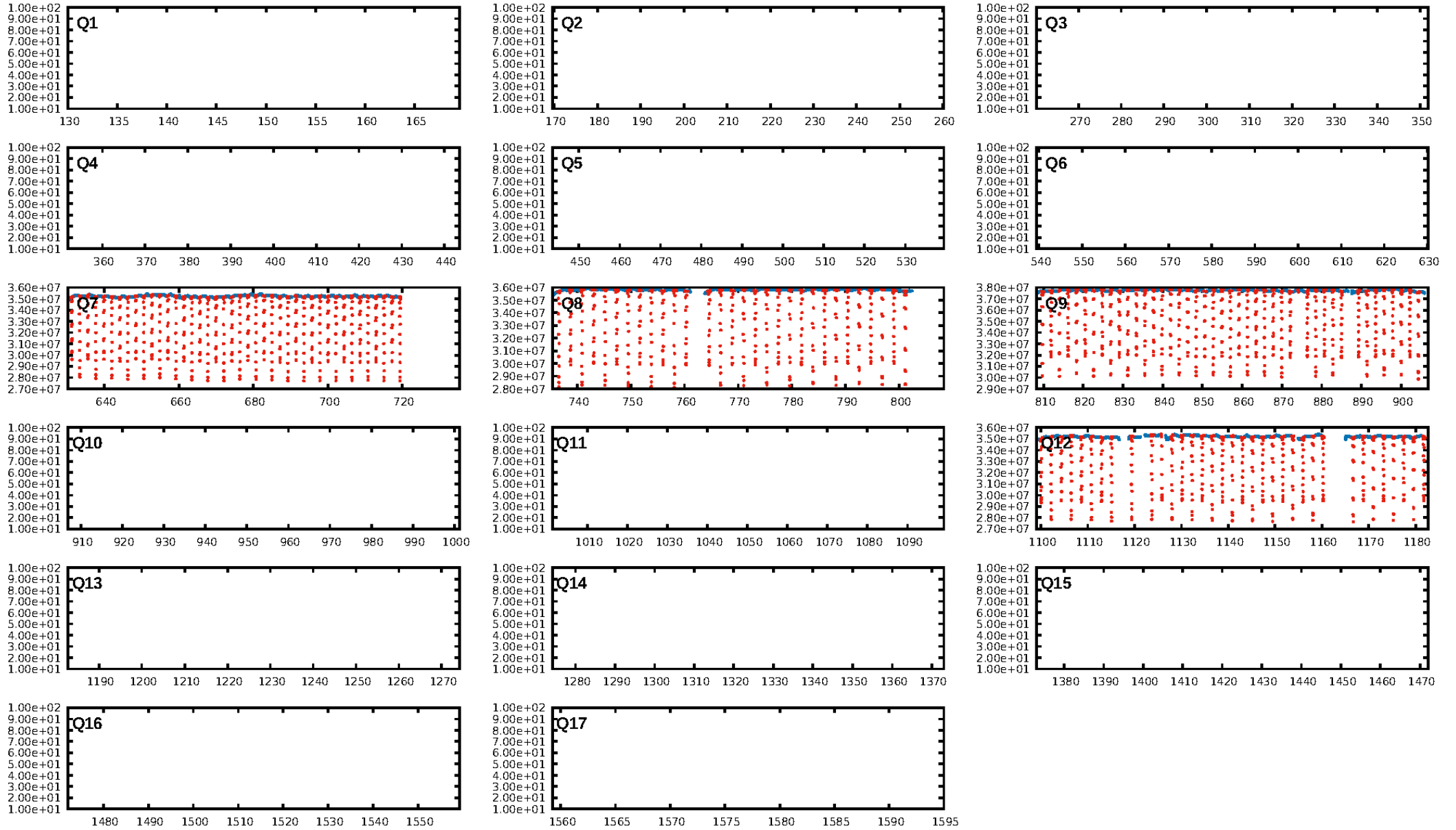
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: 0.0%  
ModelChiSquareGof-sig: 0.0%  
Bootstrap-pfa: N/A  
RollingBand-fgt: 1.00 [150/150]  
GhostDiagnostic-chr: 2.952  
Centroid-sig: N/A  
Centroid-so: 1.431 arcsec [677.60σ]  
OotOffset-rm: 0.553 arcsec [5.60σ]  
KicOffset-rm: 0.679 arcsec [9.56σ]  
OotOffset-st: 0/1/2/1 [4]  
KicOffset-st: 0/1/2/1 [4]  
DiffImageQuality-fgm: 1.00 [4/4]  
DiffImageOverlap-fno: 1.00 [4/4]

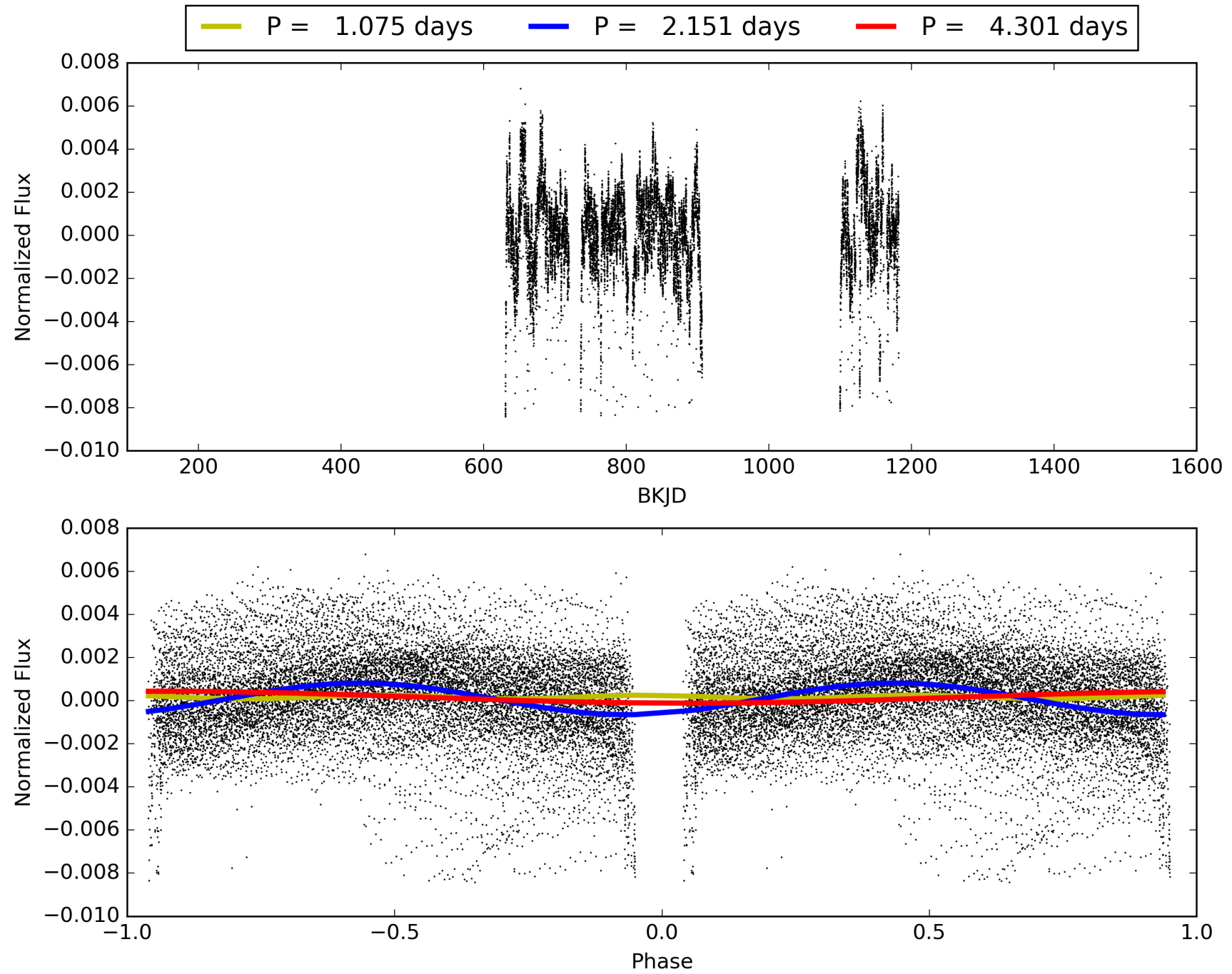
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 08:21:02 Z

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

# TCE 005024292-01, PDC Light Curves

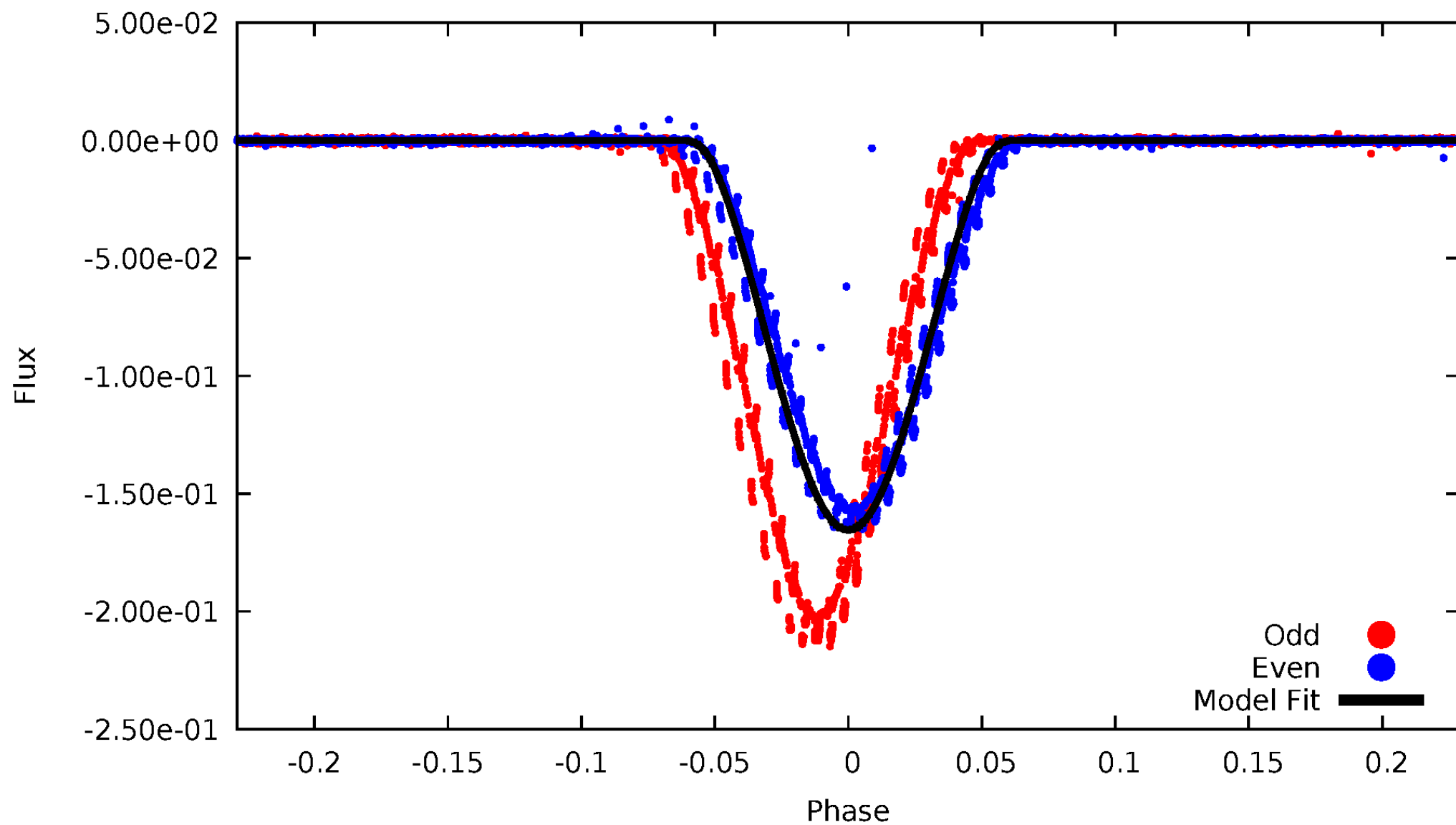


TCE 005024292-01



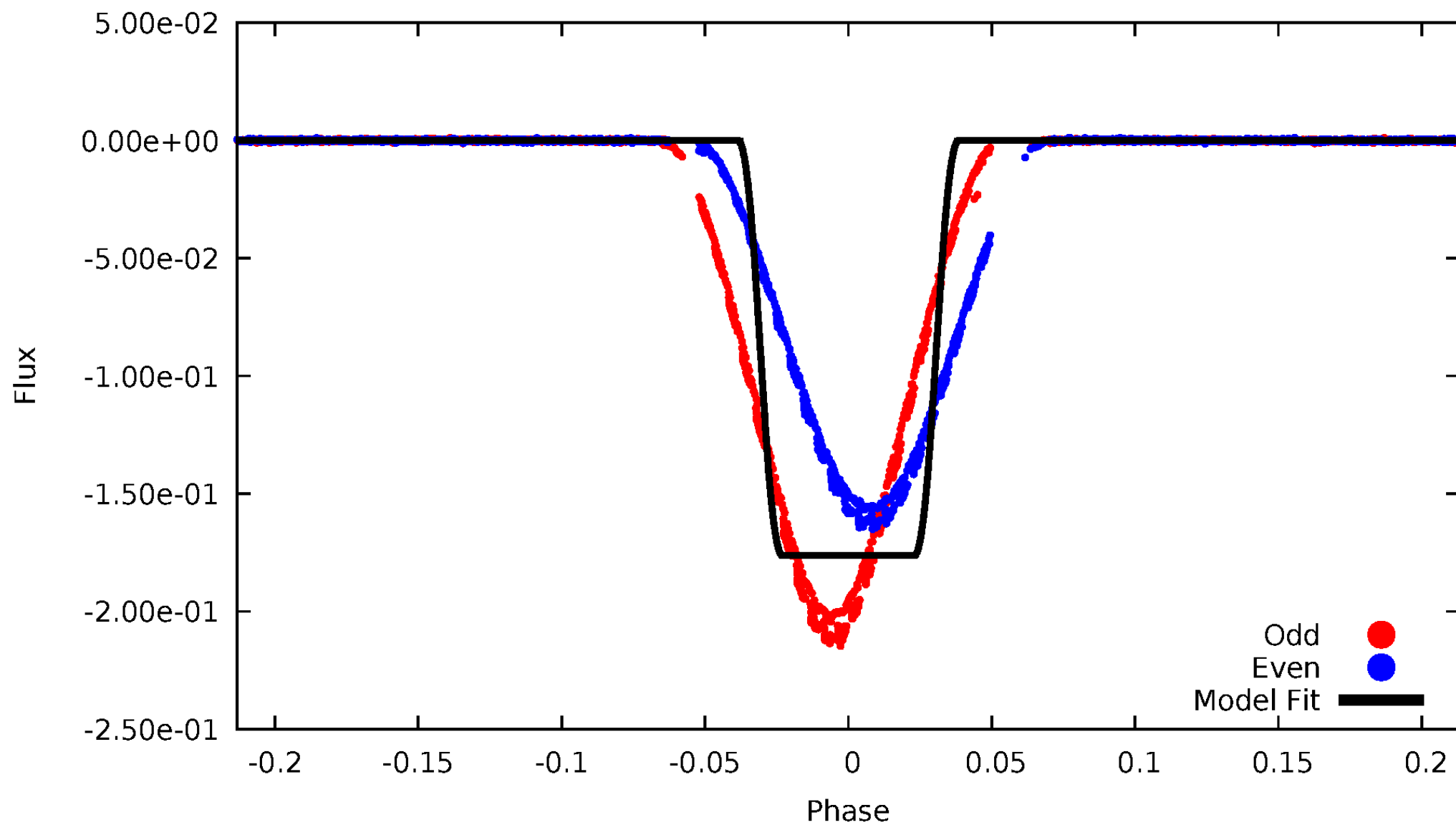
# DV Odd/Even

TCE 005024292-01



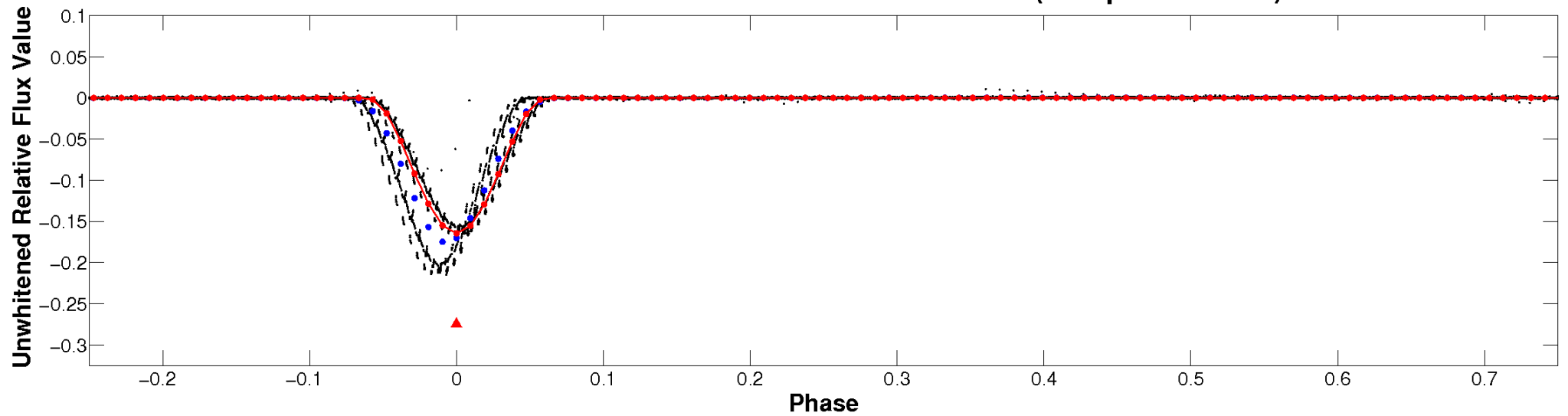
# ALT Odd/Even

TCE 005024292-01

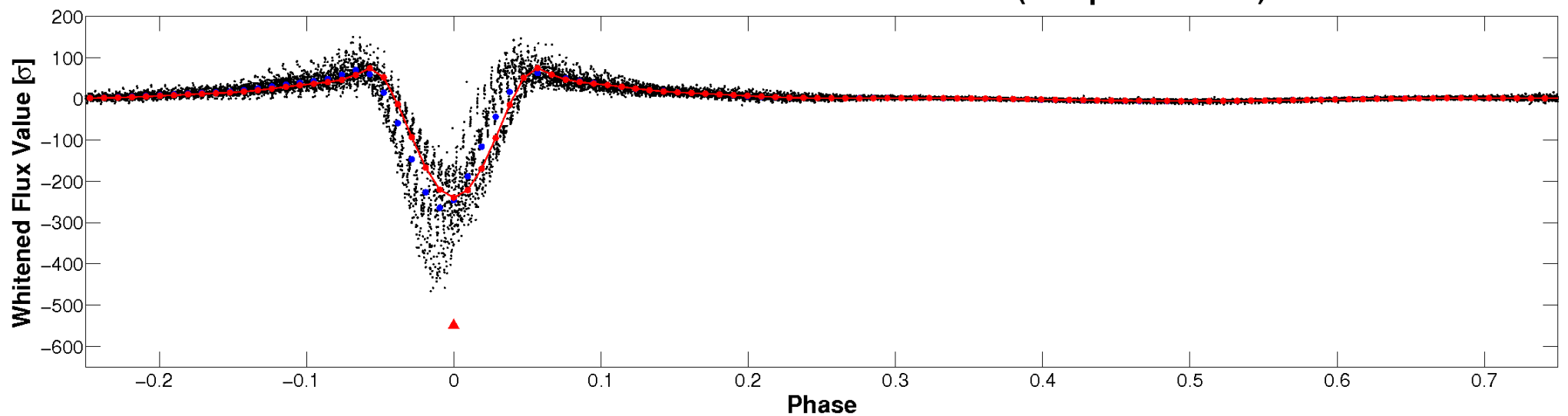


# Non-Whitened Vs. Whitened Light Curve

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

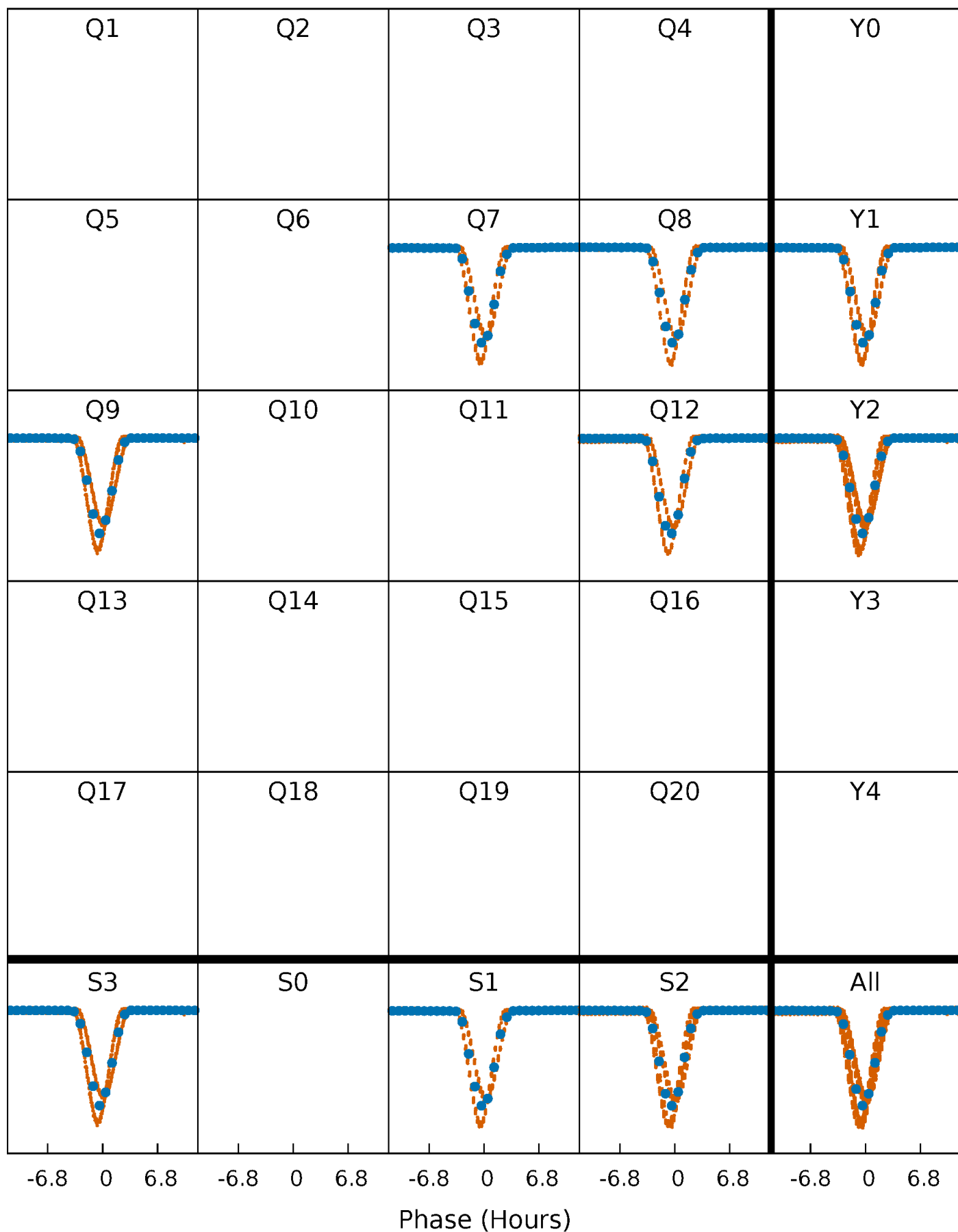


## Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



# PDC Quarter-Phased Transit Curves

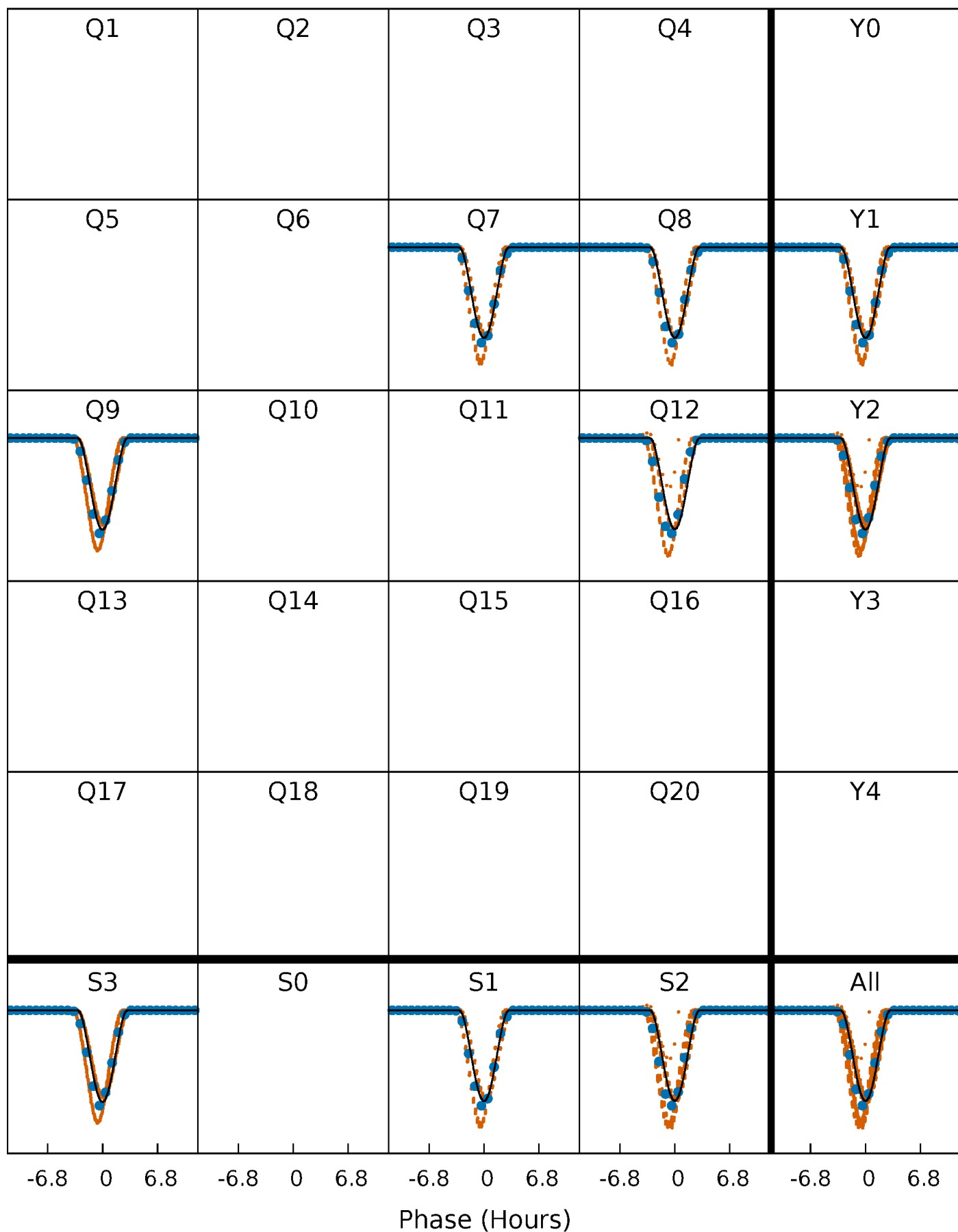
TCE 005024292-01   P= 2.150590 Days    $T_0=132.298386$  (BKJD)





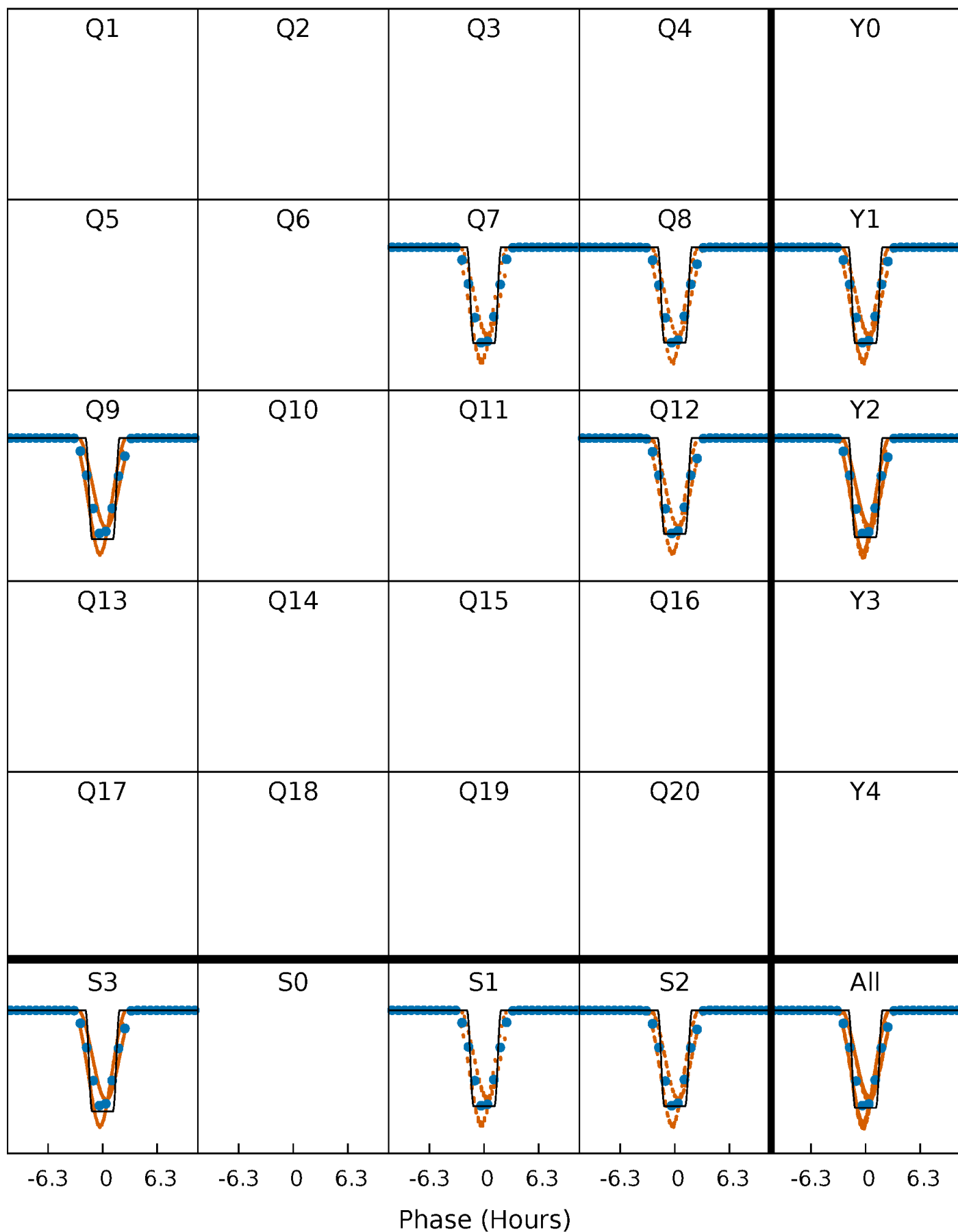
# DV Quarter-Phased Transit Curves

TCE 005024292-01    P= 2.150590 Days     $T_0=132.298386$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

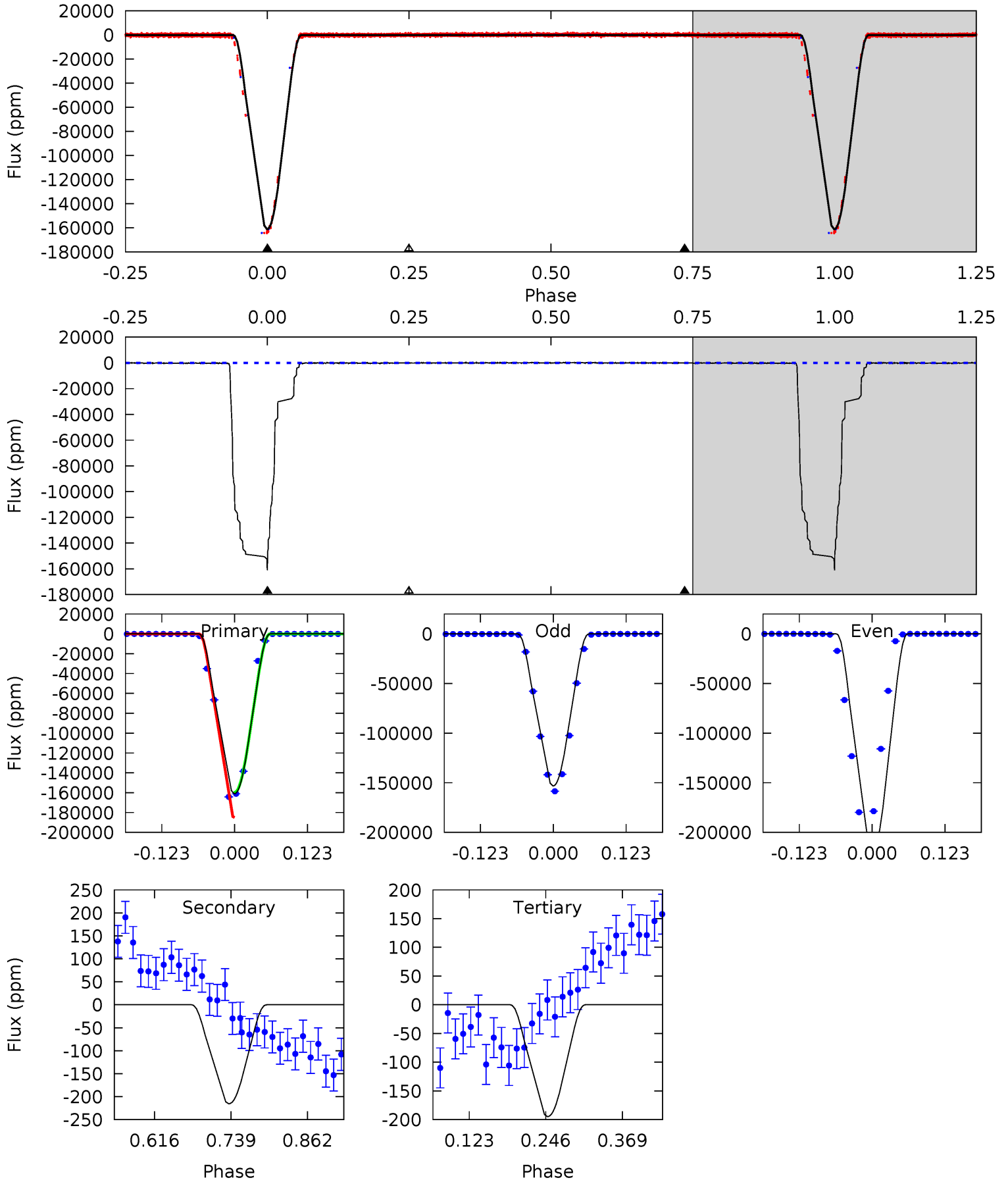
TCE 005024292-01 P= 2.150512 Days  $T_0=132.312133$  (BKJD)



# DV Model-Shift Uniqueness Test

005024292-01, P = 2.150590 Days, E = 132.298386 Days

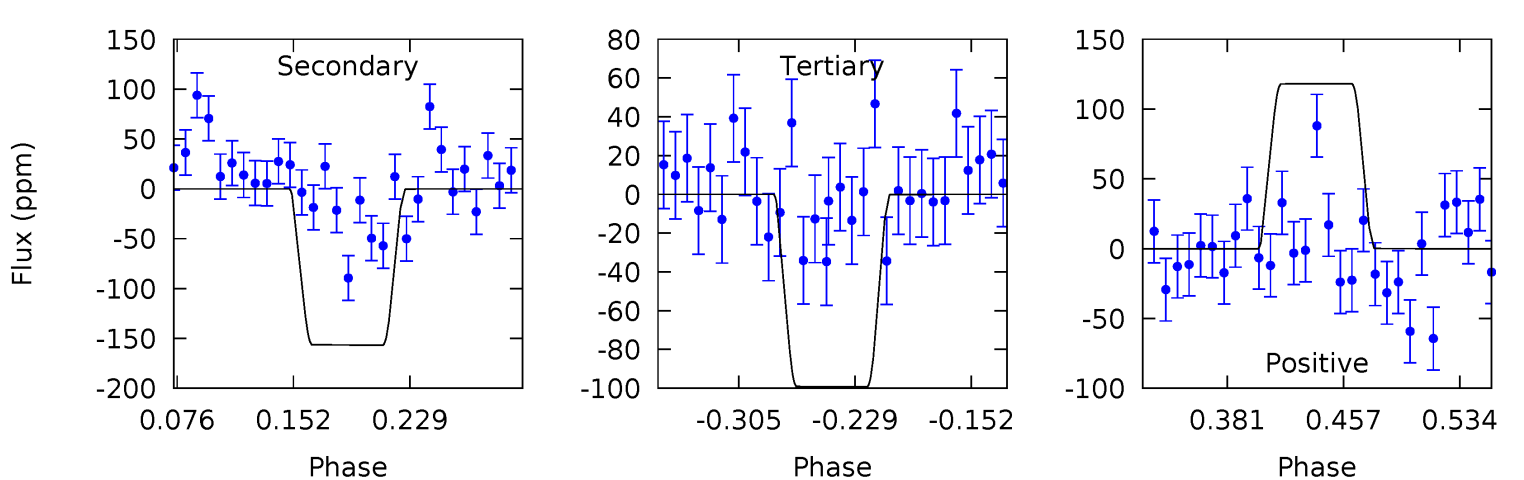
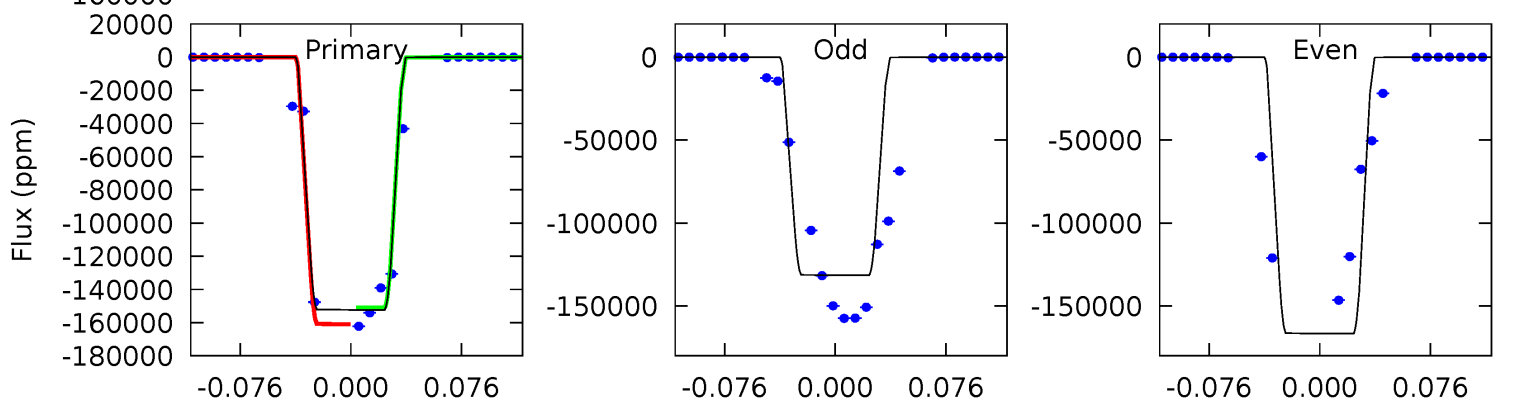
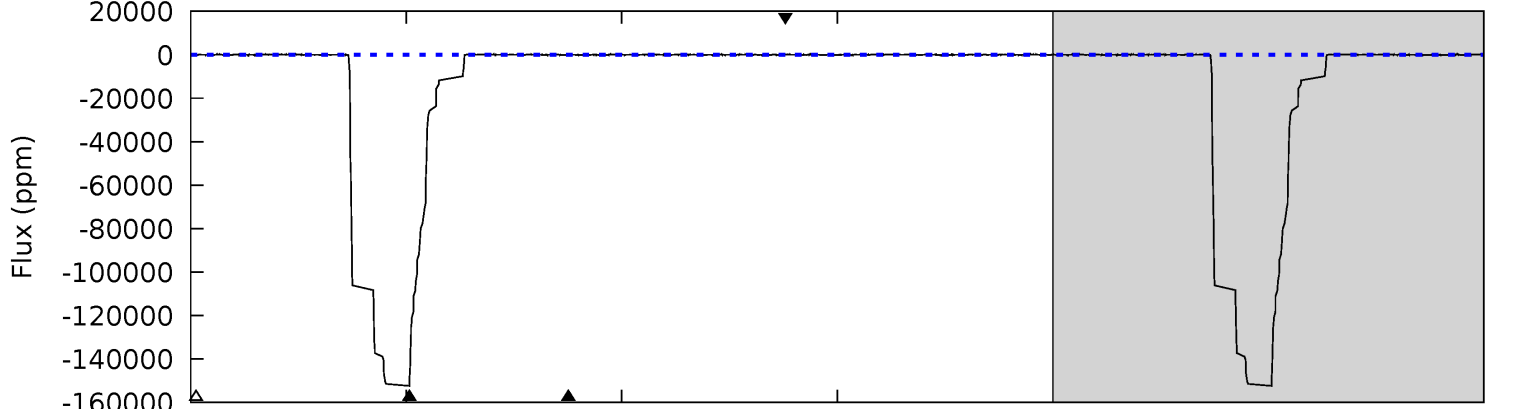
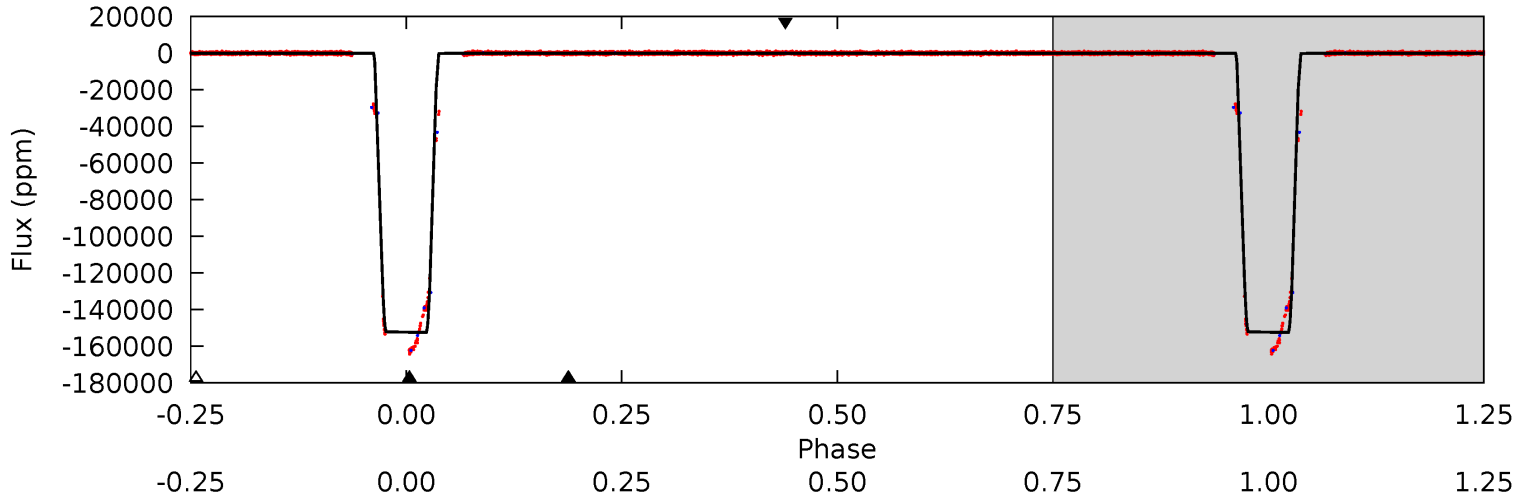
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
4496	6.01	5.44	0	4.52	1.54	2.98	4490	4496	0.58	6.01	1614	1.02	0.00	0



# Alt Model-Shift Uniqueness Test

005024292-01, P = 2.150512 Days, E = 132.312133 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
4705	4.84	3.06	3.65	4.62	1.77	1.13	4702	4701	1.77	1.19	862.2	1.00	0.00	0



### Stellar Parameters For KIC 005024292

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$6386^{+177}_{-243}$	$4.208^{+0.115}_{-0.214}$	$0.480^{+0.050}_{-0.300}$	$1.548^{+0.530}_{-0.285}$	$1.408^{+0.196}_{-0.196}$	$0.535^{+0.347}_{-0.280}$
	+3%/-4%	+3%/-5%	+10%/-62%	+34%/-18%	+14%/-14%	+65%/-52%
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 005024292-01 / KOI 3579.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	$A_{\text{obs}}$
DV	$-215 \pm 36$	$82.82^{+14.92}_{-9.43}$	$2584^{+222}_{-158}$	$-2815^{+99}_{-140}$	$0.022^{+0.007}_{-0.007}$
Alt.	$-157 \pm 32$	$71.94^{+12.63}_{-7.52}$	$2585^{+217}_{-167}$	$-2814^{+101}_{-135}$	$0.021^{+0.008}_{-0.007}$

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

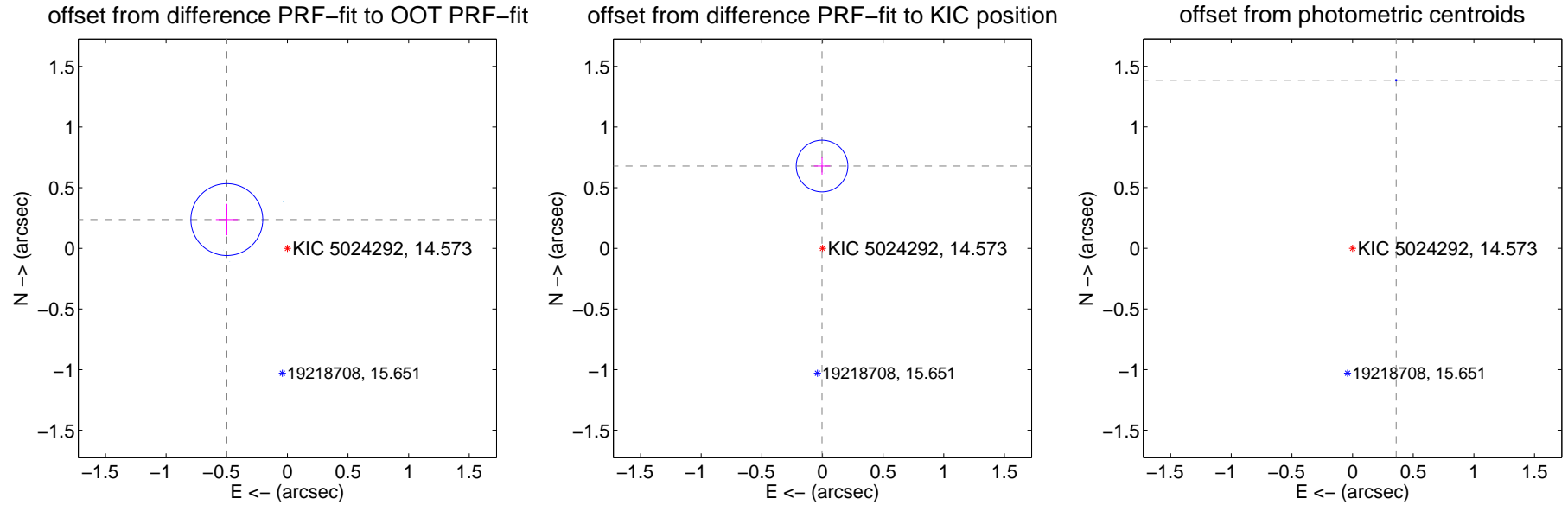
## DV Centroid Data

Supplemental centroid analysis for 005024292-01. Kepler magnitude: 14.57. Transit SNR 2789.10

There are 4 quarters with good PRF difference image offsets

The direct PRF centroid is offset from the target star catalog position by about 0.89 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	<b>0.553 <math>\pm</math> 0.099</b>	<b>5.60</b>	0.499 $\pm$ 0.090	0.237 $\pm$ 0.129
PRF-fit source offset from KIC position	<b>0.679 <math>\pm</math> 0.071</b>	<b>9.56</b>	0.004 $\pm$ 0.067	0.679 $\pm$ 0.071
photometric centroid source offset	<b>1.43 <math>\pm</math> 0.00</b>	<b>677.60</b>	-0.36 $\pm$ 0.00	1.39 $\pm$ 0.00



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.

Q5 no difference image



Q5 no OOT image



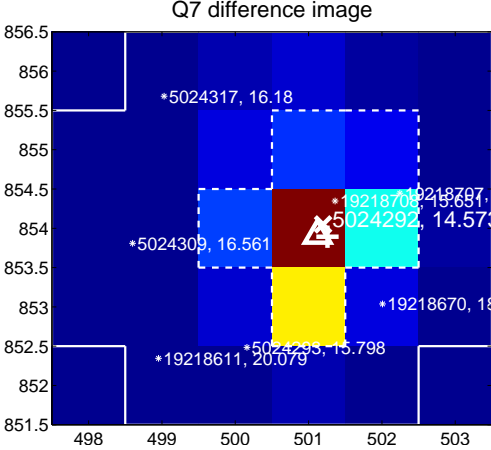
Q6 no difference image



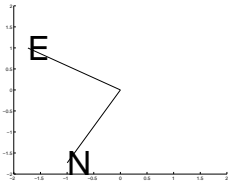
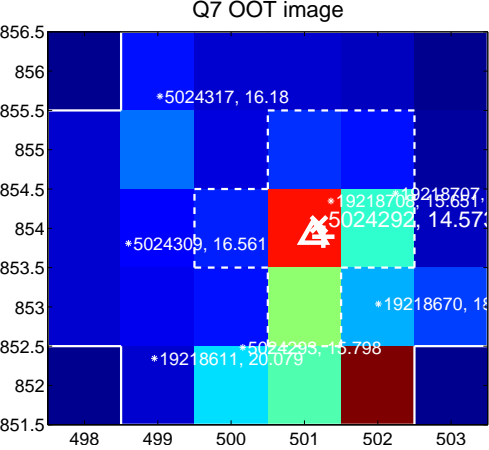
Q6 no OOT image



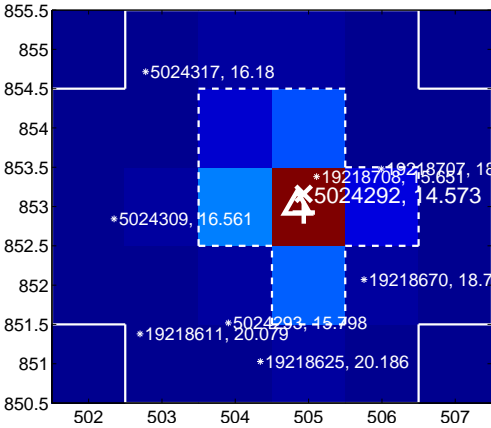
Q7 difference image



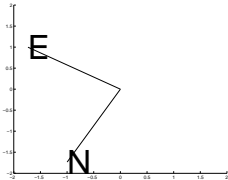
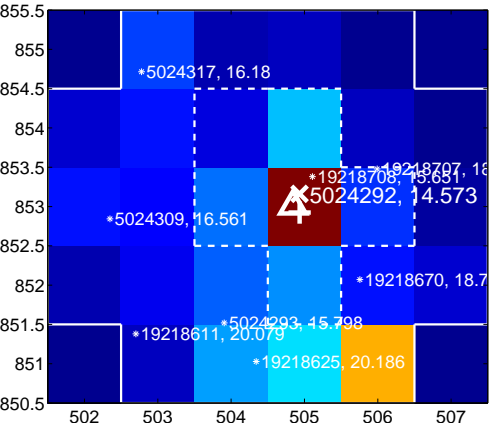
Q7 OOT image



Q8 difference image

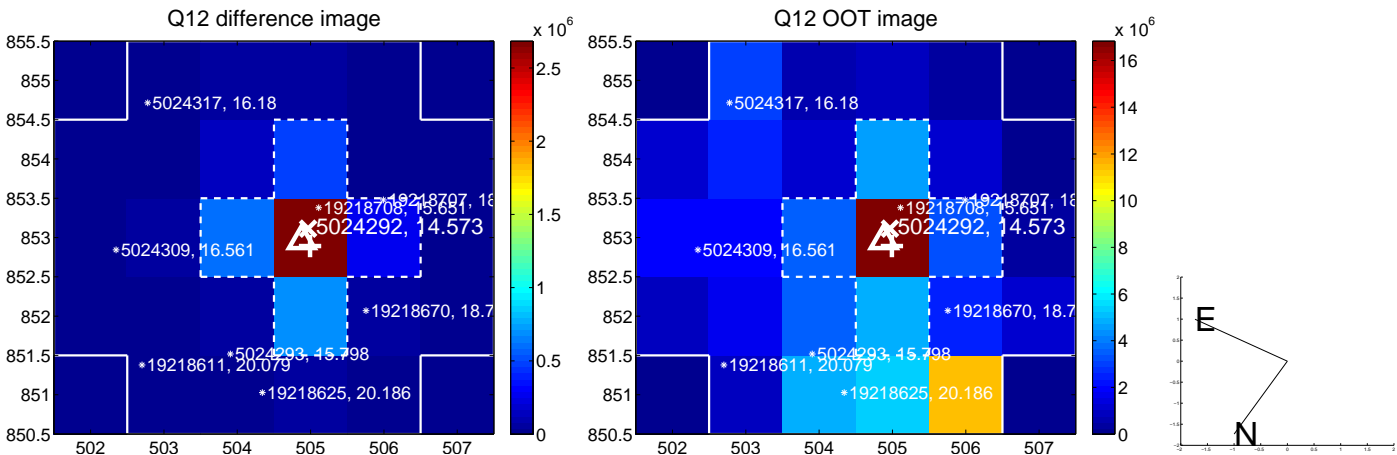
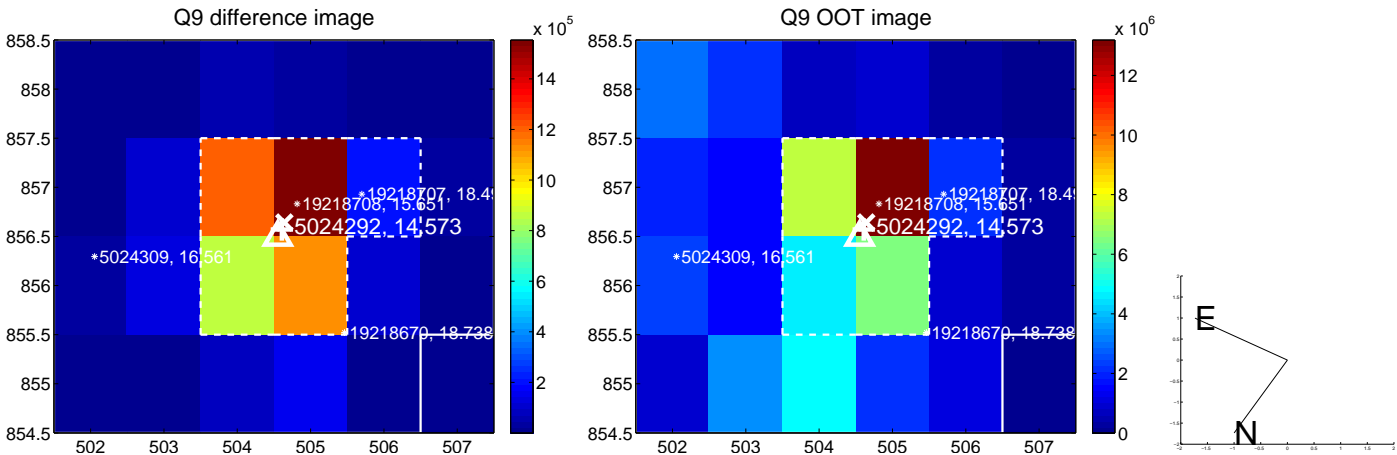


Q8 OOT image





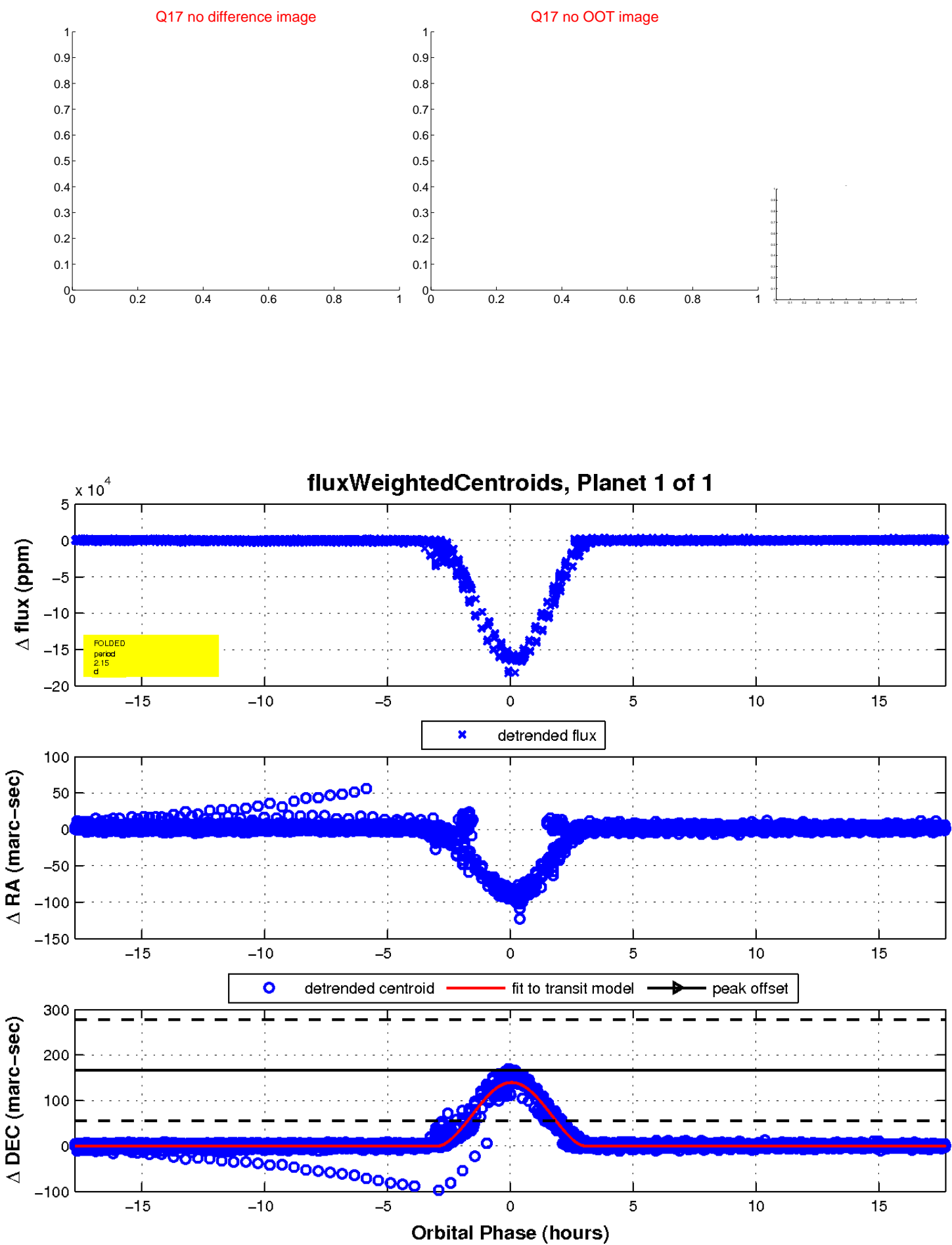
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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.



UKIRT Image

Declination

