

# KIC 007032442

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
007032442-01	OBS	No	329.157731	458.162169	719.0	2.942	11.7	5.4	2.97	5117	9.04	7.09

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
007032442-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_ZUMA—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—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.

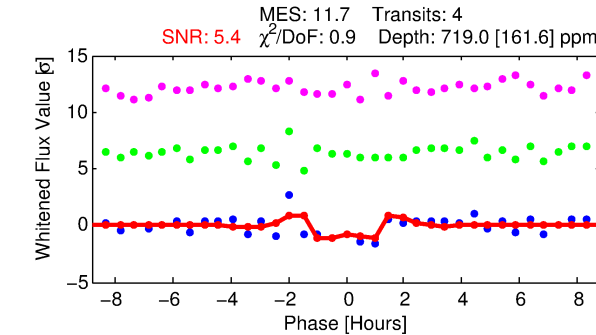
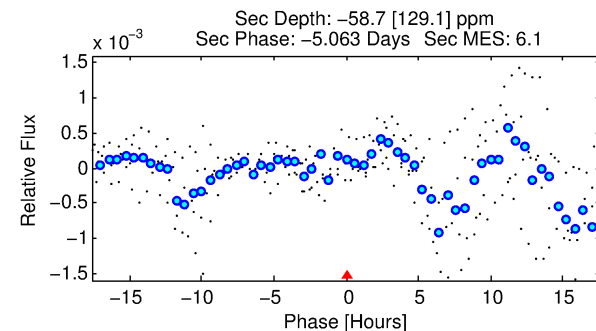
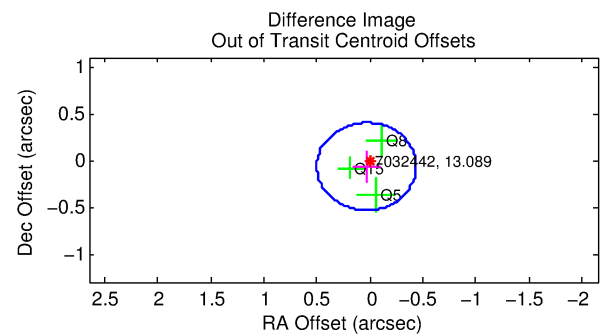
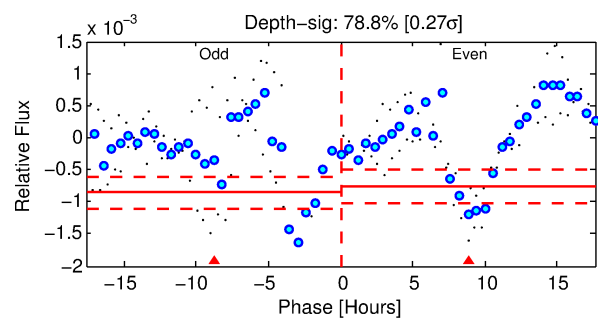
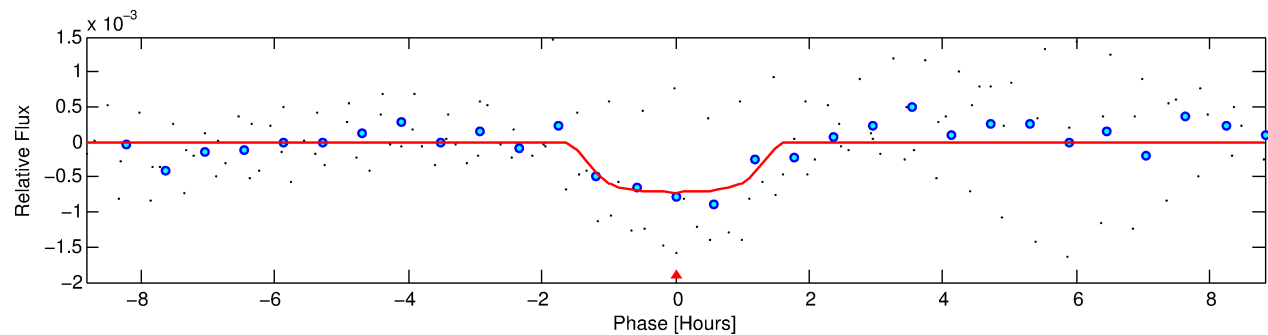
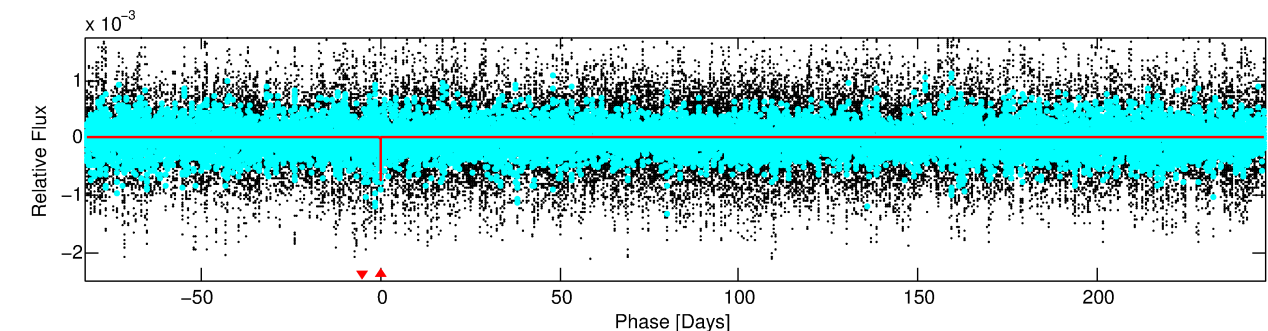
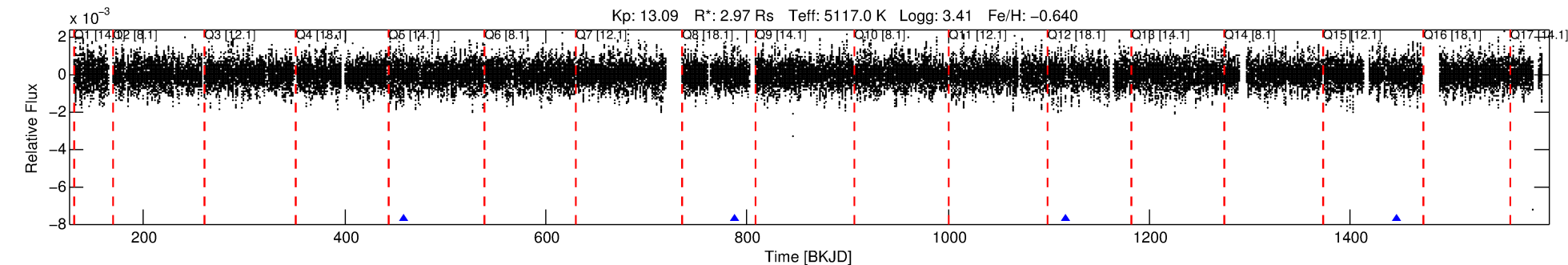
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 007032442-01

No Significant Match Found

# DV One-Page Summary

KIC: 7032442 Candidate: 1 of 1 Period: 329.158 d



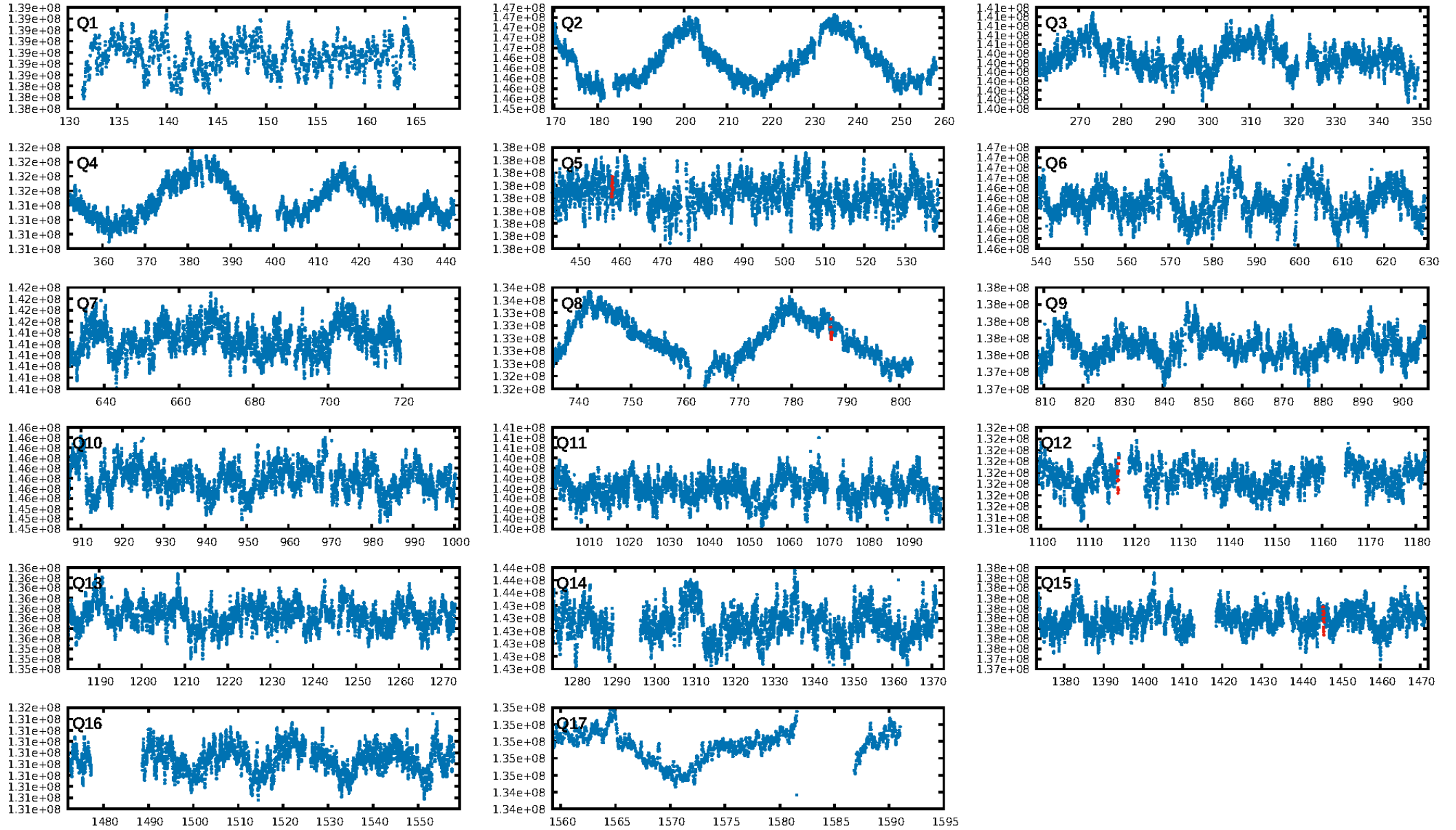
## DV Fit Results:

Period = 329.15773 [0.00300] d  
Epoch = 458.1622 [0.0056] BKJD  
Rp/R\* = 0.0279 [0.0162]  
a/R\* = 517.21 [1153.30]  
b = 0.83 [0.84]  
Seff = 7.09 [2.64]  
Teq = 416 [39] K  
Rp = 9.04 [6.08] Re  
a = 0.8737 [0.2315] AU  
Ag = N/A  
Teffp = N/A

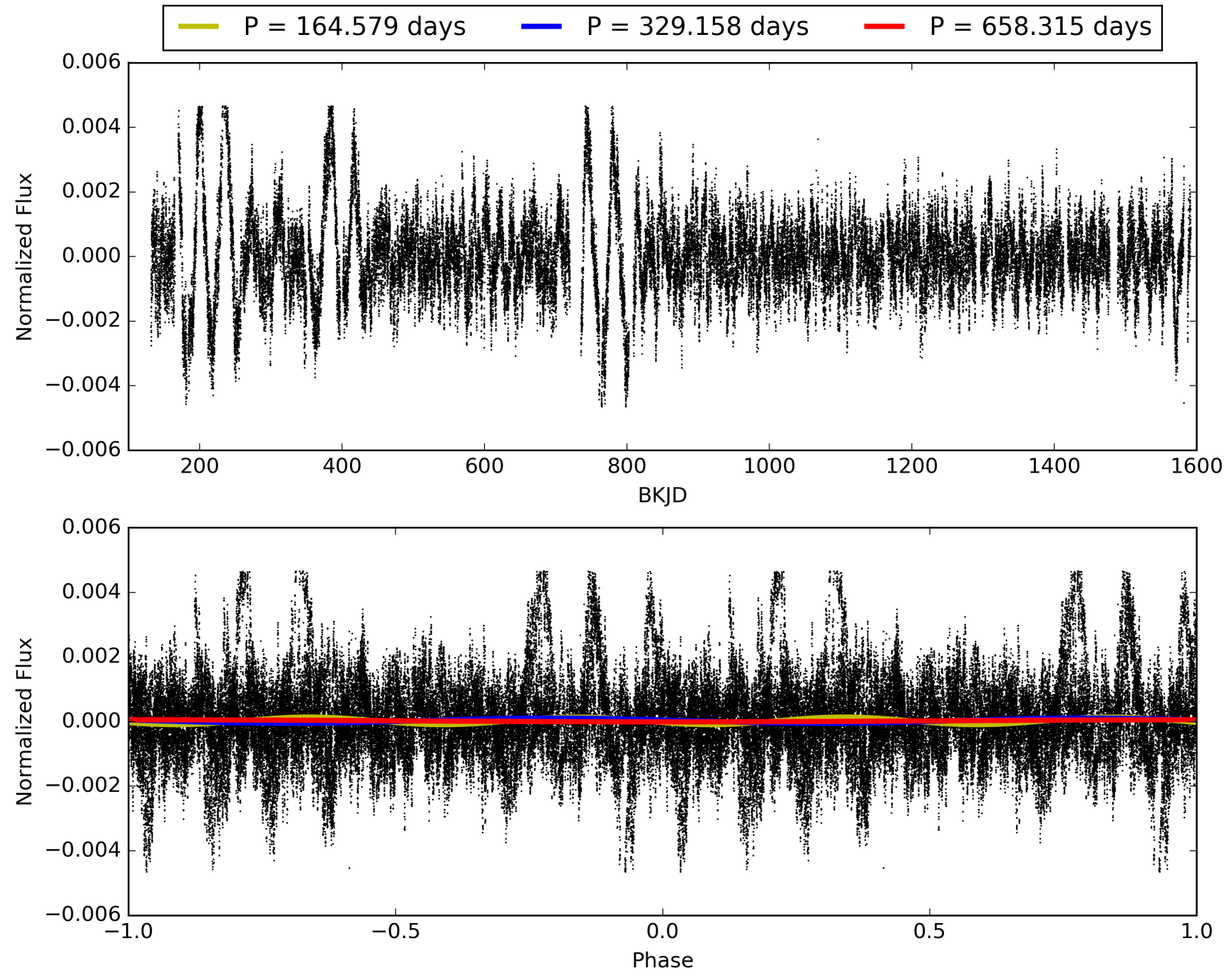
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: 84.7%  
ModelChiSquareGof-sig: 97.9%  
Bootstrap-pfa: 3.81e-13  
RollingBand-fgt: 1.00 [4/4]  
GhostDiagnostic-chr: 1.925  
Centroid-sig: 1.5%  
Centroid-so: 1.391 arcsec [2.17 $\sigma$ ]  
OotOffset-rm: 0.074 arcsec [0.48 $\sigma$ ]  
KicOffset-rm: 0.229 arcsec [1.20 $\sigma$ ]  
OotOffset-st: 0/1/1/1 [3]  
KicOffset-st: 0/1/1/1 [3]  
DiffImageQuality-fgm: 0.67 [2/3]  
DiffImageOverlap-fno: 1.00 [3/3]

# TCE 007032442-01, PDC Light Curves

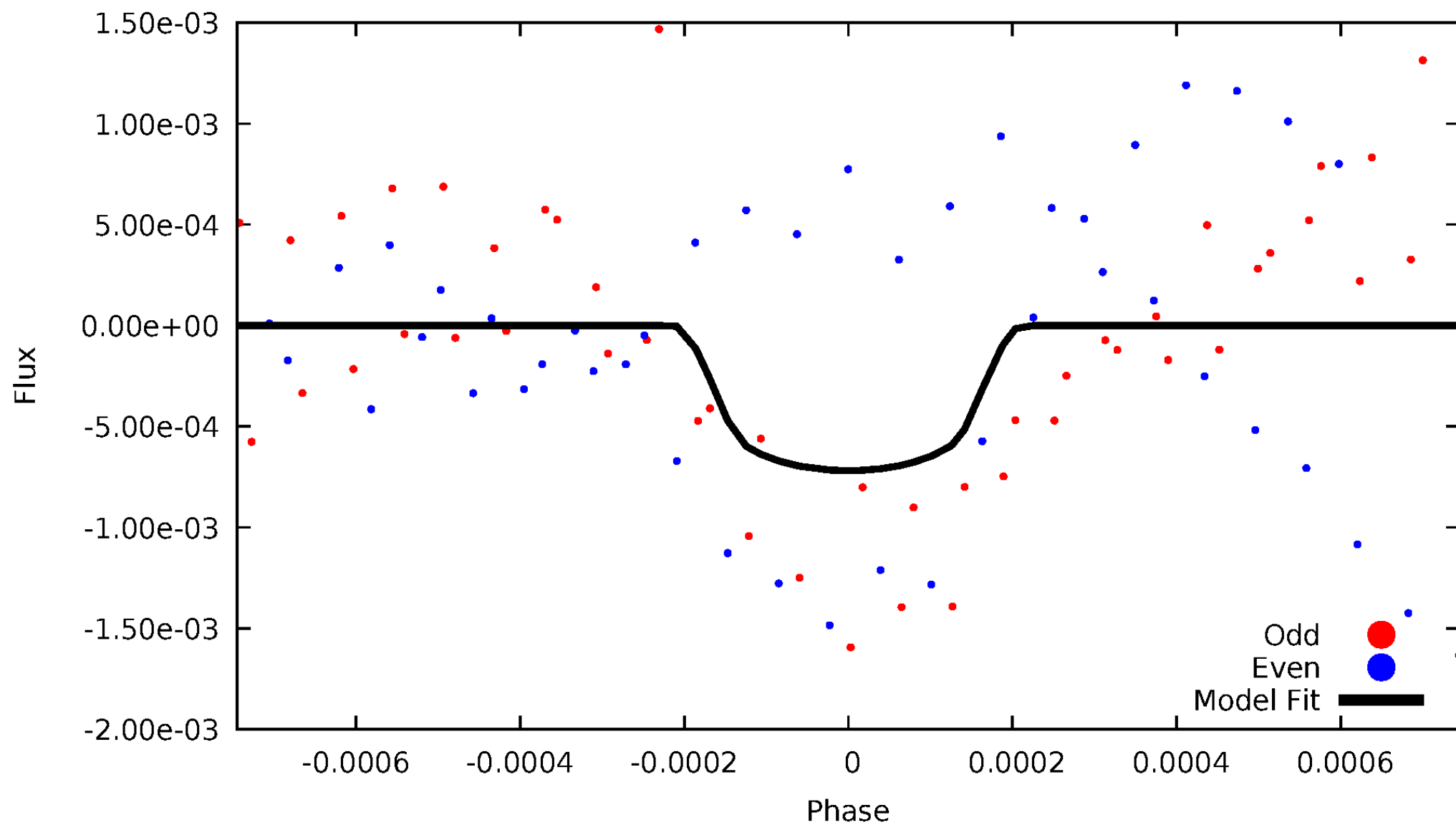


TCE 007032442-01



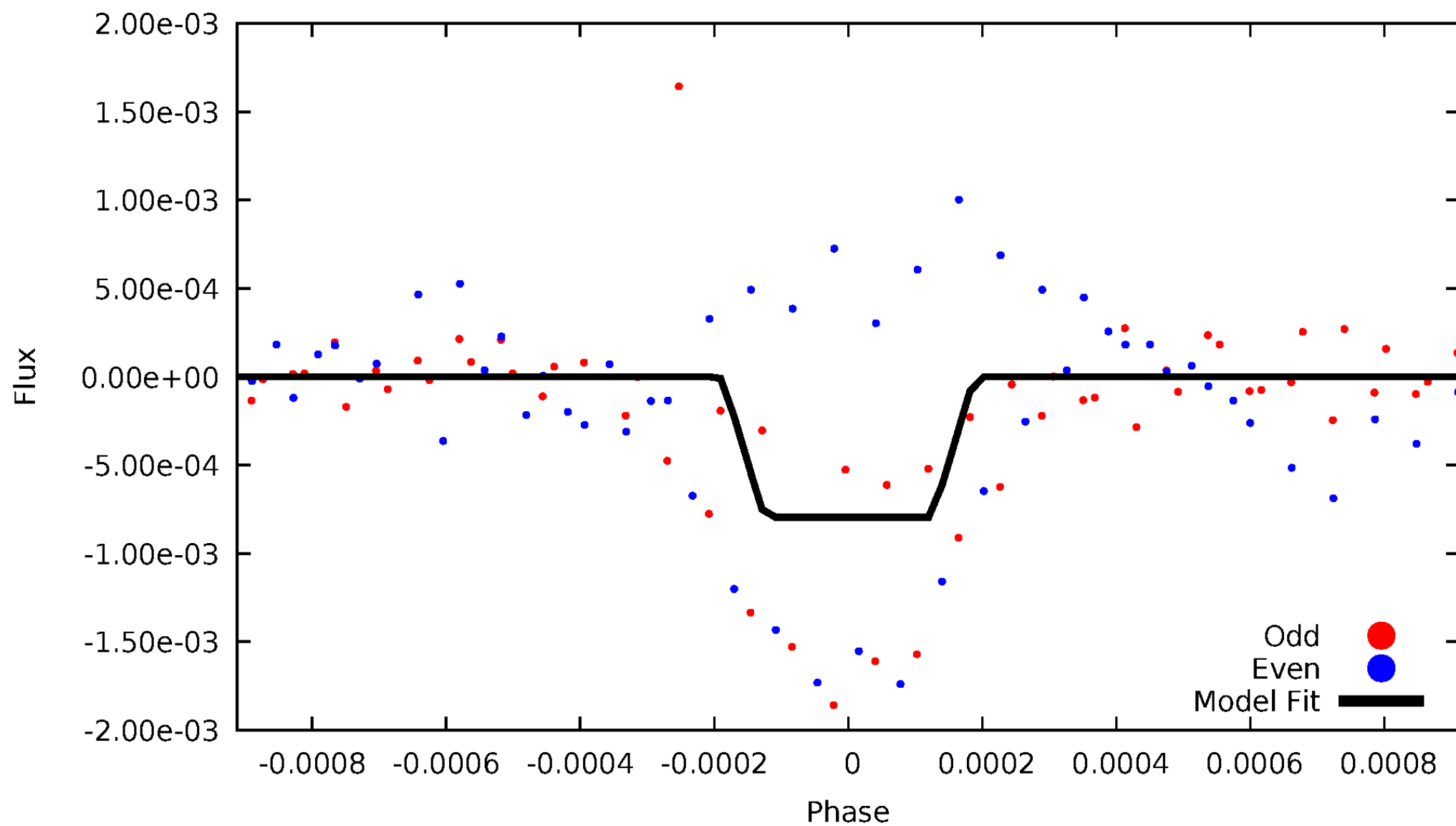
# DV Odd/Even

TCE 007032442-01



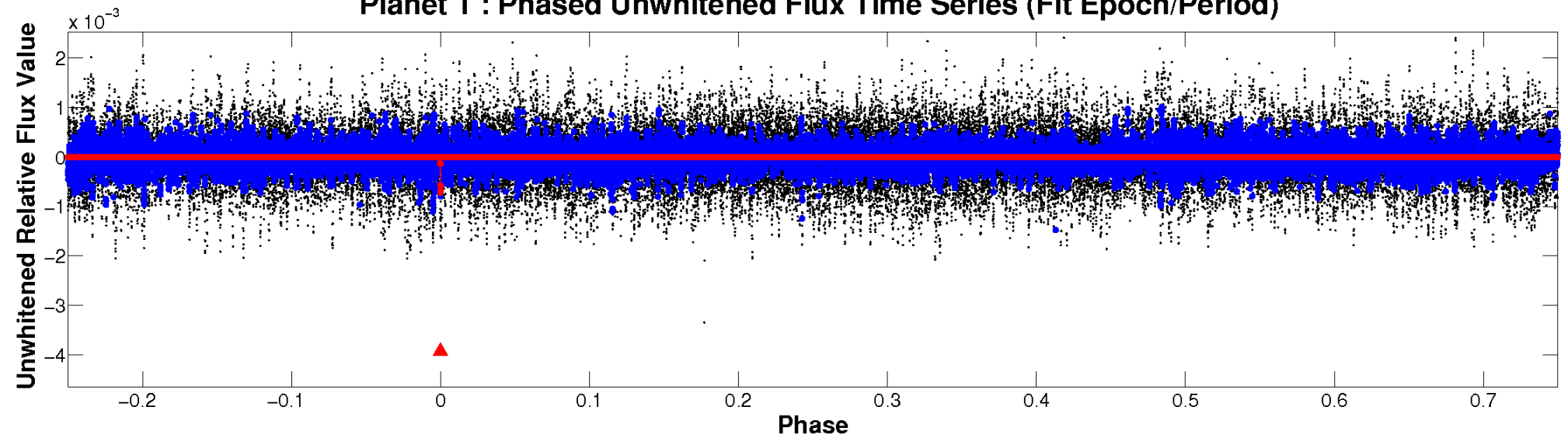
# ALT Odd/Even

TCE 007032442-01

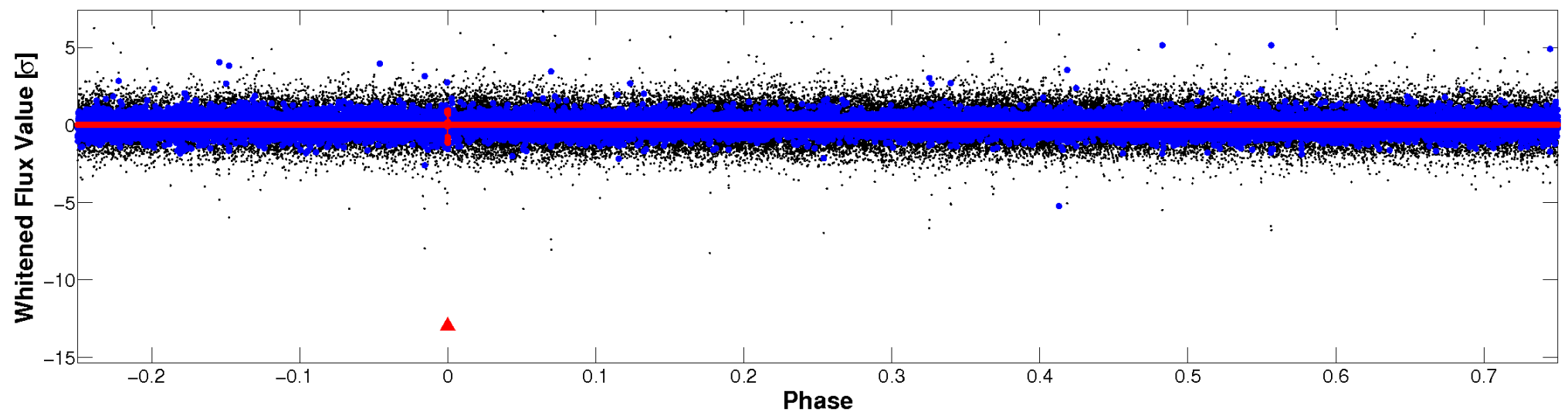


# Non-Whitened Vs. Whitened Light Curve

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

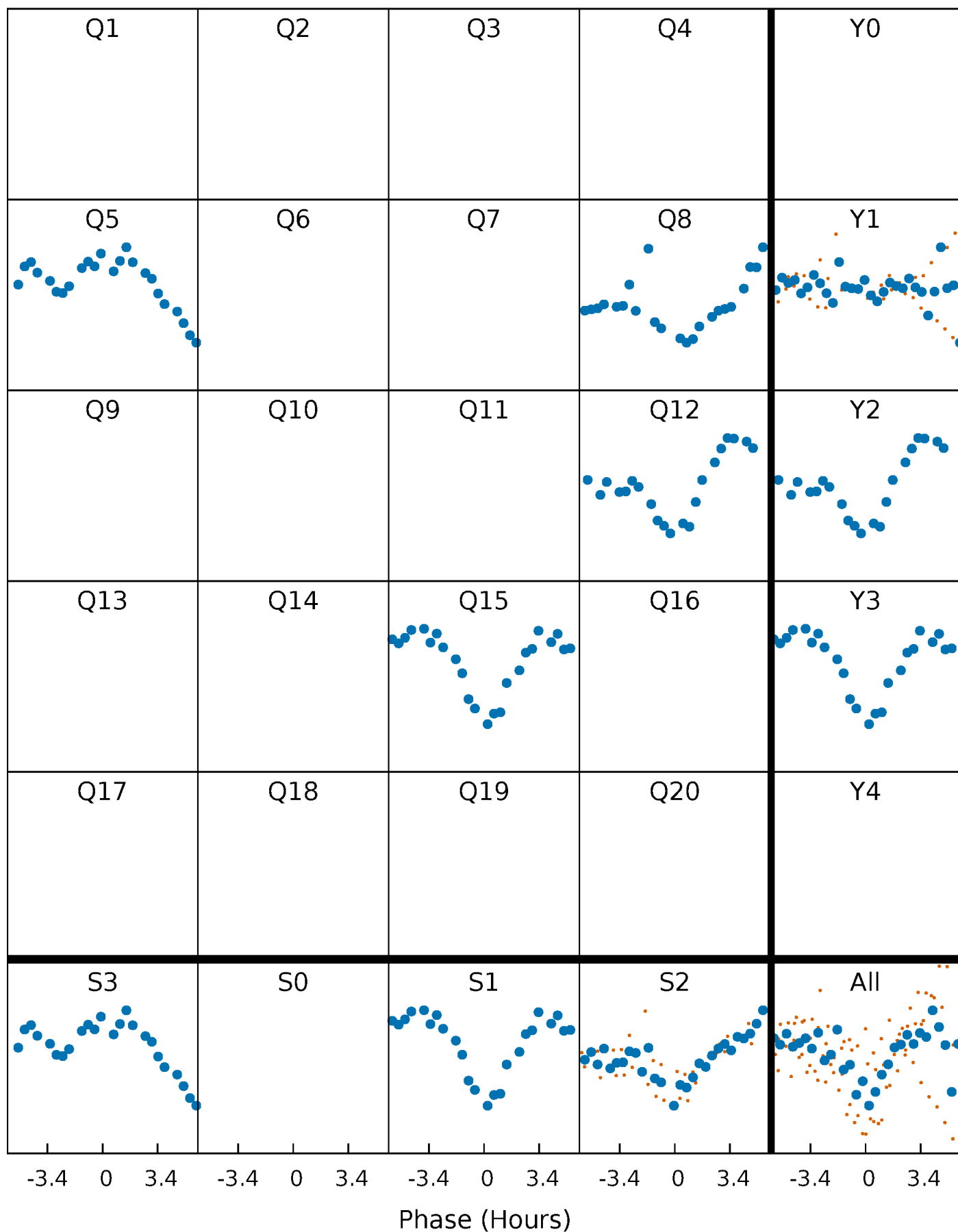


**Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)**



# PDC Quarter-Phased Transit Curves

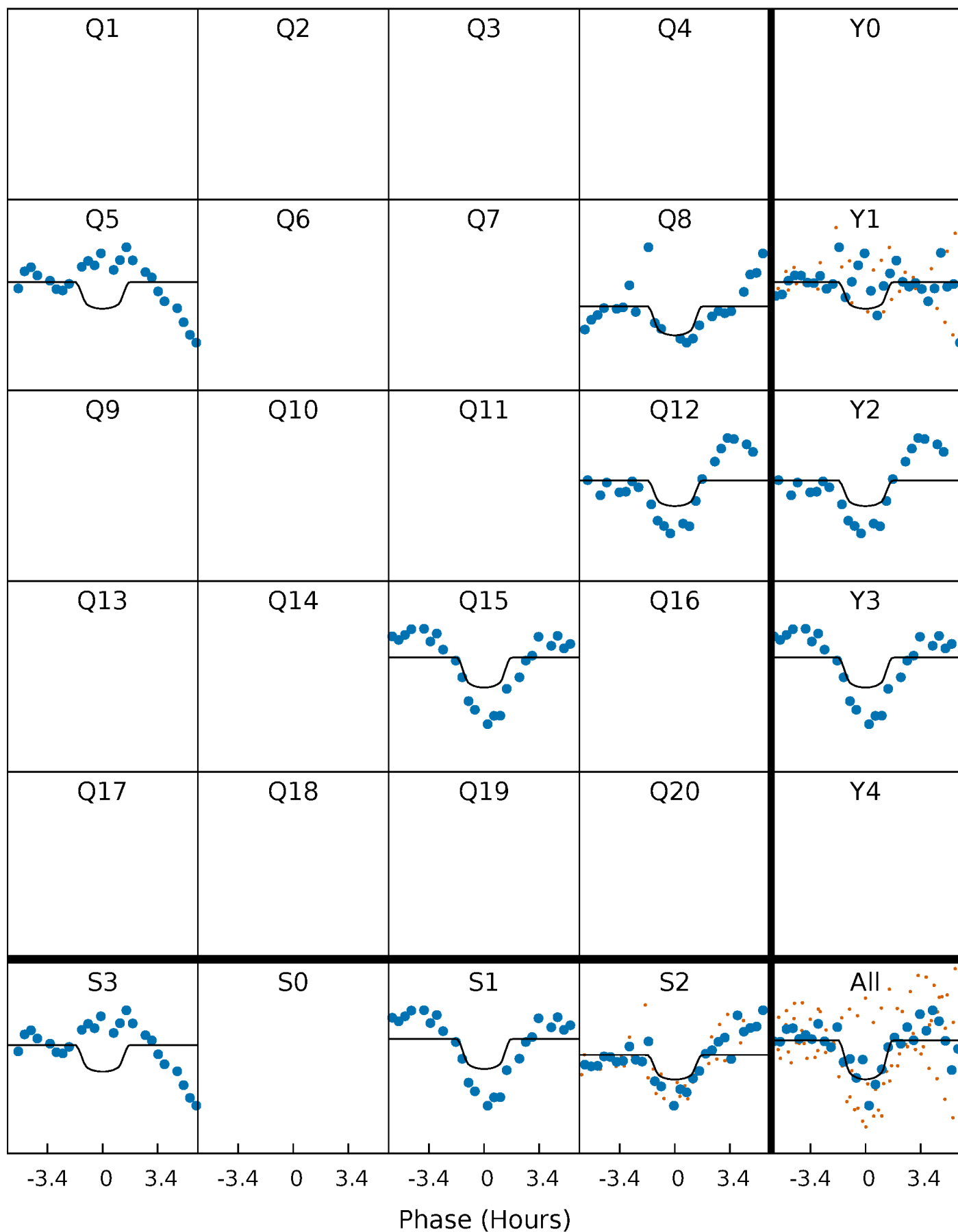
TCE 007032442-01 P=329.157731 Days  $T_0=458.162169$  (BKJD)





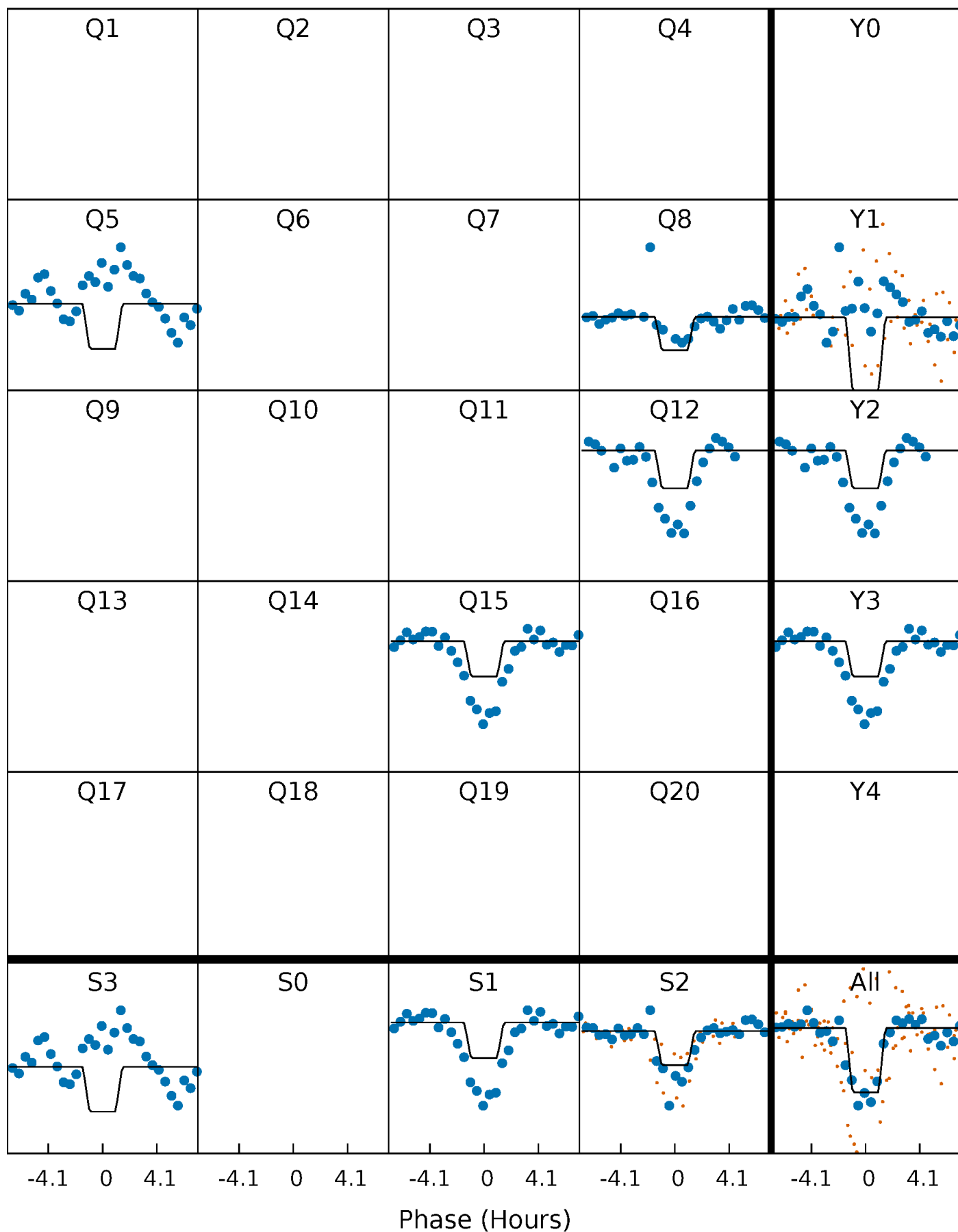
# DV Quarter-Phased Transit Curves

TCE 007032442-01 P=329.157731 Days  $T_0=458.162169$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

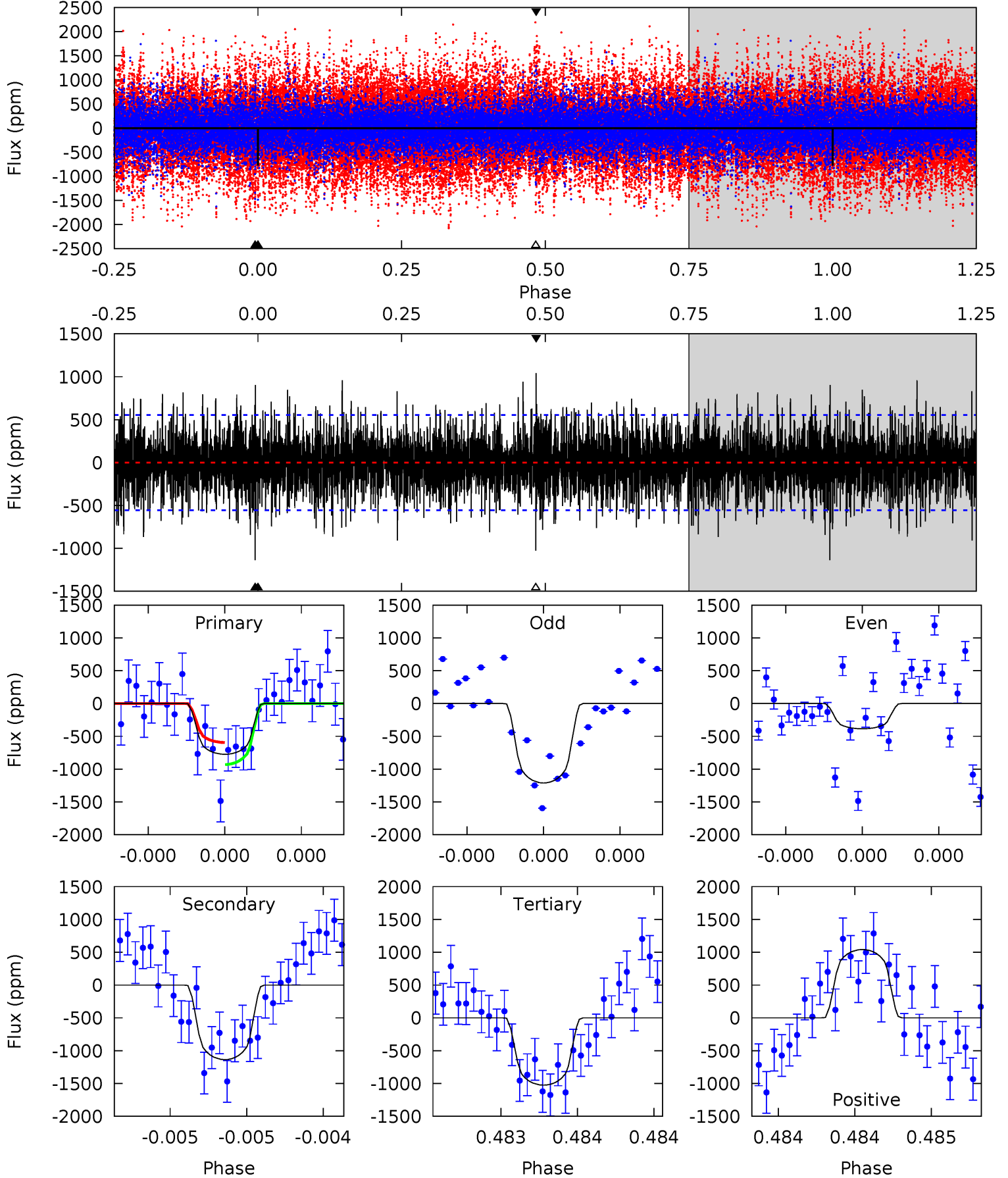
TCE 007032442-01 P=329.158178 Days  $T_0=458.168969$  (BKJD)



# DV Model-Shift Uniqueness Test

007032442-01, P = 329.157731 Days, E = 129.004438 Days

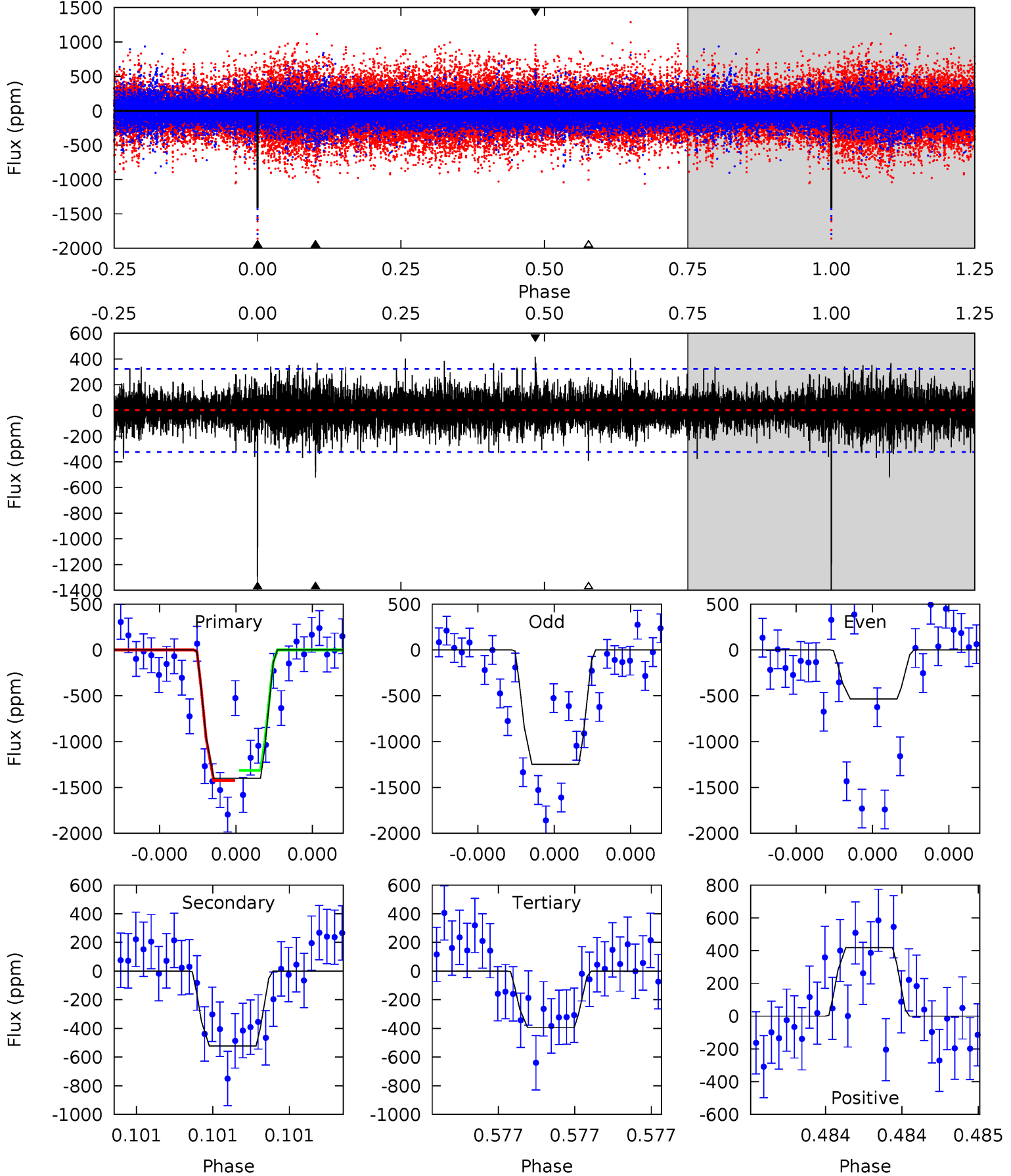
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
7.81	11.5	10.3	10.5	5.60	3.52	2.57	-2.53	-2.70	1.13	0.96	4.16	0.69	0.48	1.70



# Alt Model-Shift Uniqueness Test

007032442-01, P = 329.158178 Days, E = 129.010791 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
24.3	9.08	6.84	7.27	5.62	3.56	1.65	17.5	17.1	2.25	1.81	7.13	0.76	0.23	0.93



### Stellar Parameters For KIC 007032442

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R$ ( $R_{\odot}$ )	$M(M_{\odot})$	$p_{\star}$ ( $\text{g}\cdot\text{cm}^{-3}$ )
	$5117^{+129}_{-90}$	$3.407^{+0.148}_{-0.181}$	$-0.640^{+0.300}_{-0.200}$	$2.969^{+1.005}_{-0.431}$	$0.819^{+0.259}_{-0.014}$	$0.044^{+0.030}_{-0.022}$
	+3%/-2%	+4%/-5%	+47%/-31%	+34%/-15%	+32%/-2%	+69%/-50%
Source	PHO1	FLK73	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 007032442-01 / KOI

Detrend	Depth (ppm)	$R_p$ ( $R_{\oplus}$ )	$T_{\text{max}}$ (K)	$T_{\text{obs}}$ (K)	$A_{\text{obs}}$
DV	$-1137 \pm 99$	$9.82^{+5.12}_{-5.48}$	$584^{+43}_{-32}$	$5444^{+3031}_{-891}$	$5303^{+21778}_{-3111}$
Alt.	$-522 \pm 57$	$10.06^{+5.51}_{-4.98}$	$581^{+42}_{-32}$	$4603^{+1649}_{-693}$	$2298^{+6753}_{-1379}$

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

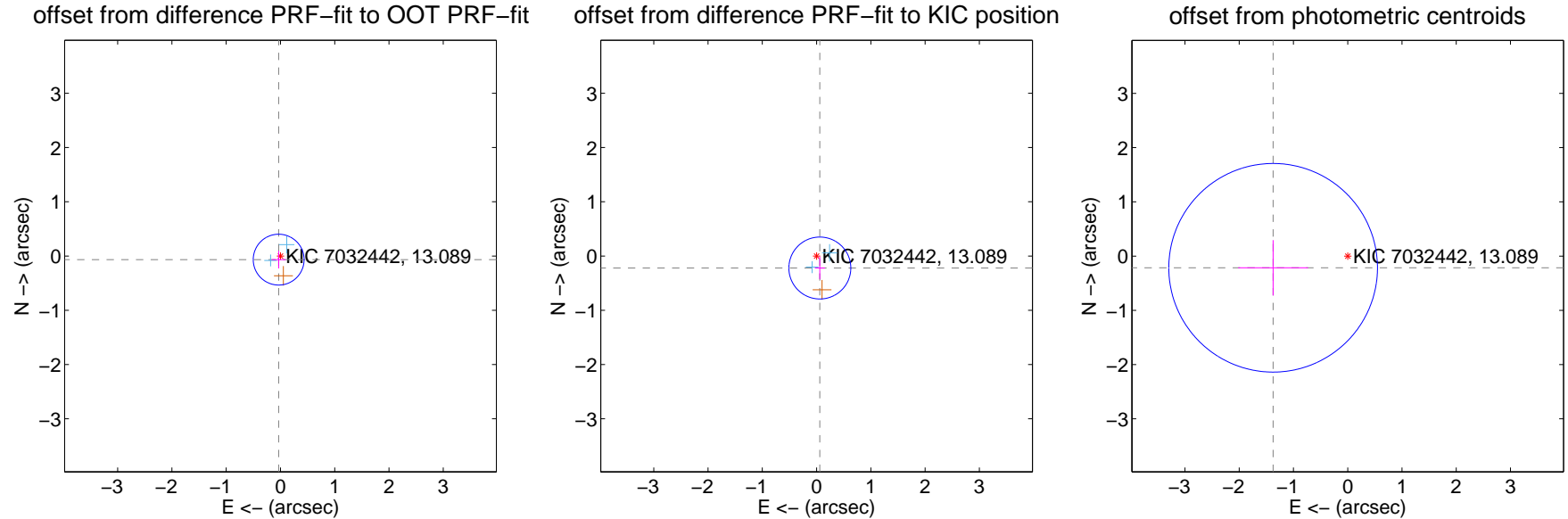
## DV Centroid Data

Supplemental centroid analysis for 007032442-01. Kepler magnitude: 13.09. Transit SNR 5.43

There are 2 quarters with good PRF difference image offsets

The direct PRF centroid is offset from the target star catalog position by about 0.16 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.074 \pm 0.156$	0.48	$0.033 \pm 0.128$	$-0.067 \pm 0.162$
PRF-fit source offset from KIC position	$0.229 \pm 0.190$	1.20	$-0.060 \pm 0.091$	$-0.221 \pm 0.206$
photometric centroid source offset	$1.39 \pm 0.64$	2.17	$1.37 \pm 0.64$	$-0.22 \pm 0.51$

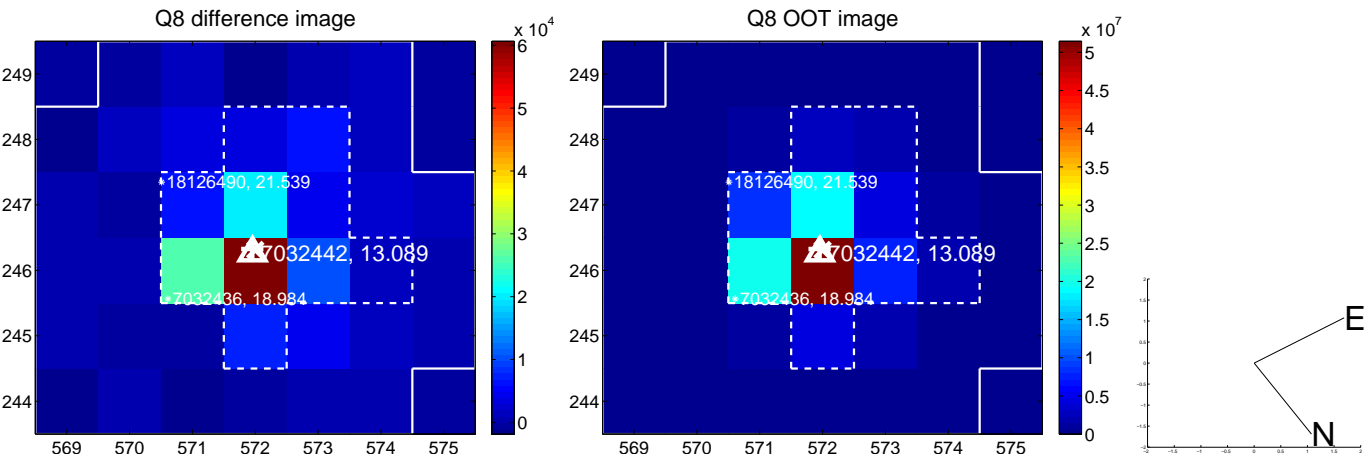
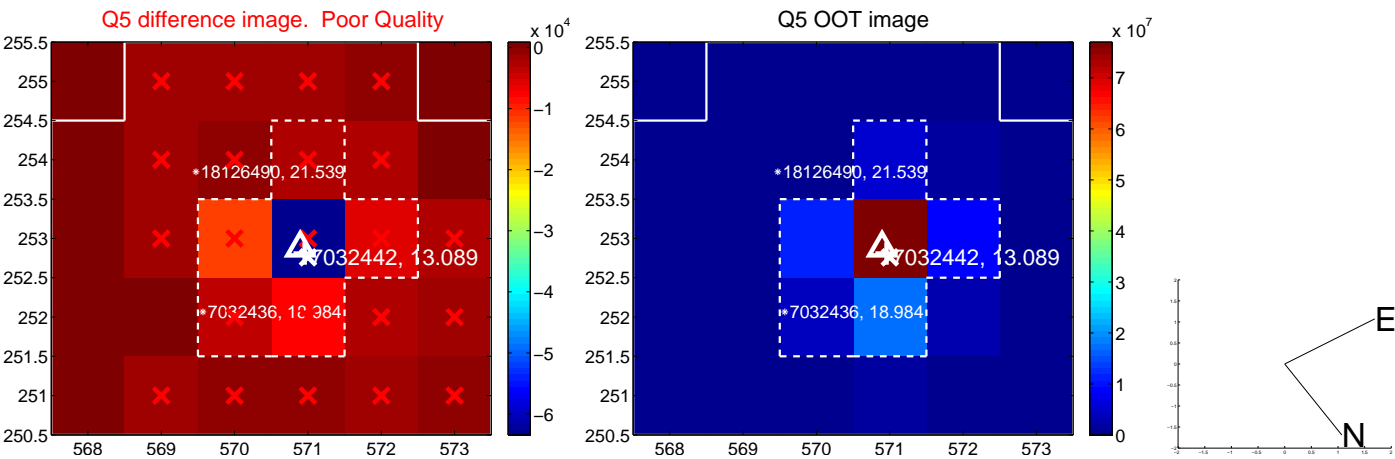


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: three-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

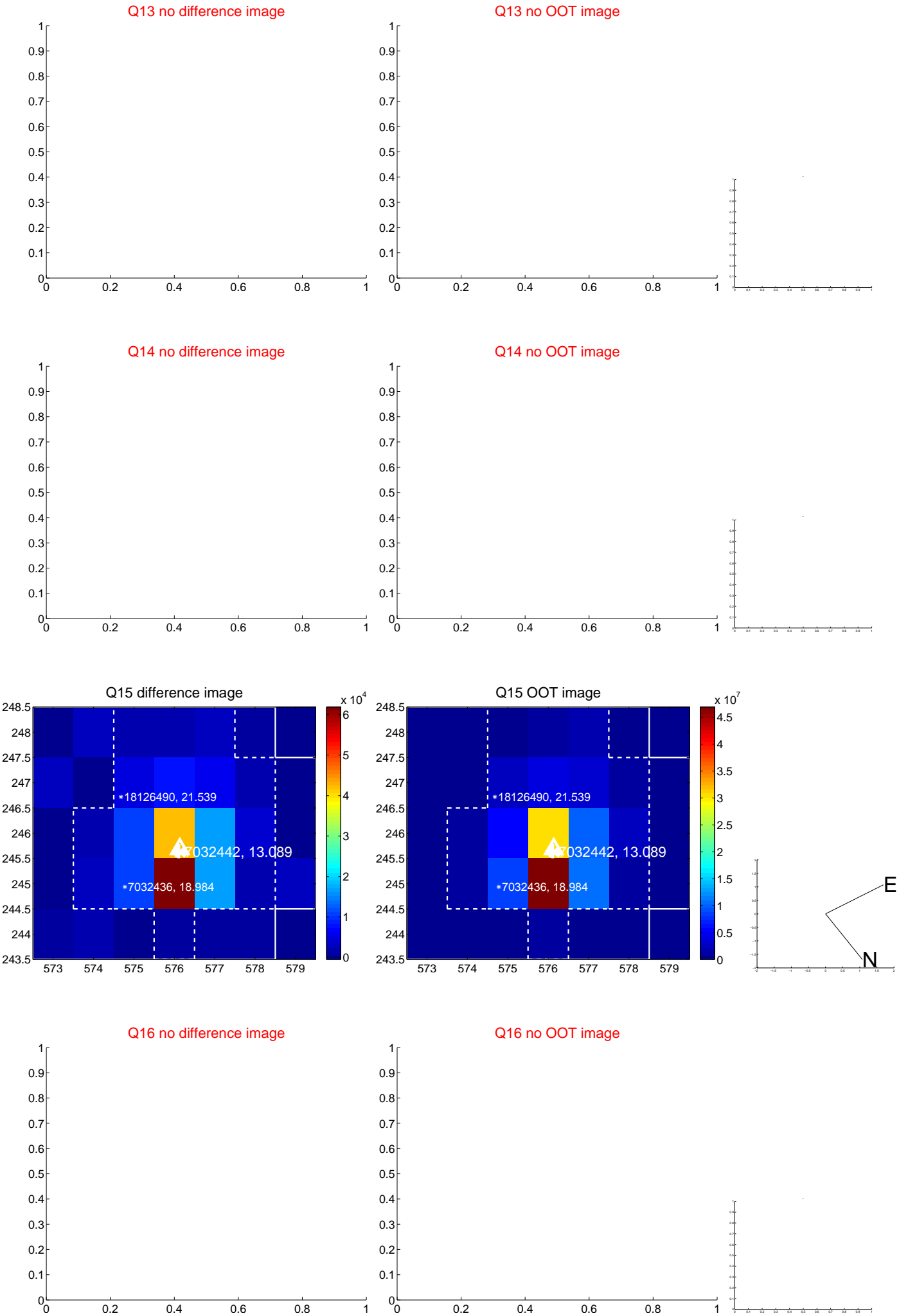




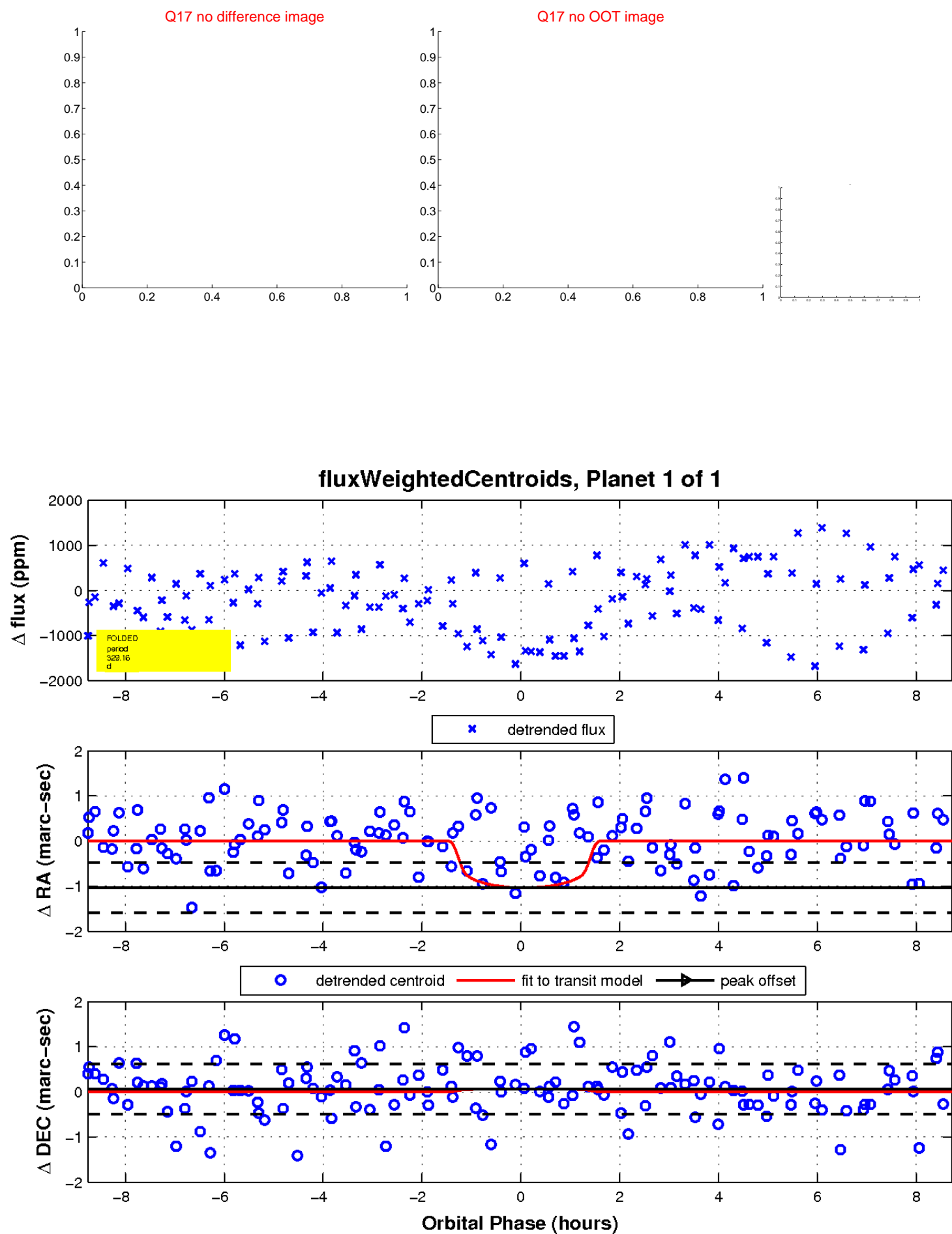
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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

