

# KIC 006148271

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
006148271-01	OBS	3812.01	1.785465	133.035603	1570.5	5.856	91.1	89.5	1.23	6505	7.61	2568.51

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
006148271-01	OBS	FP	0.00	0	0	1	0	CENT_FEW_DIFFS—HALO_GHOST

**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.

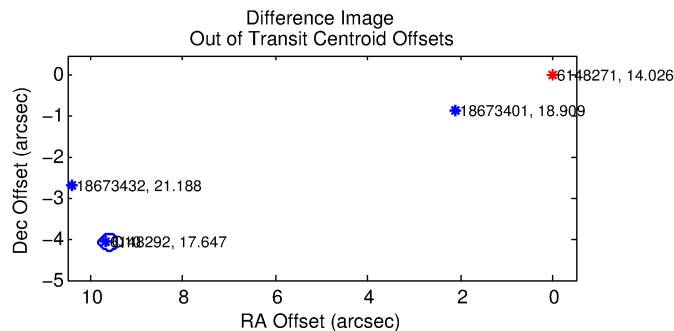
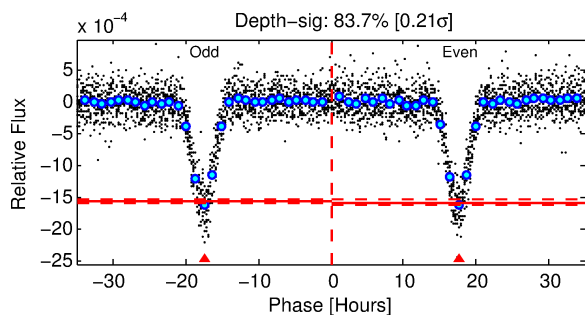
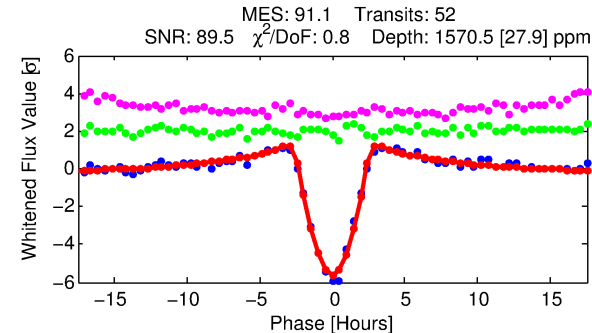
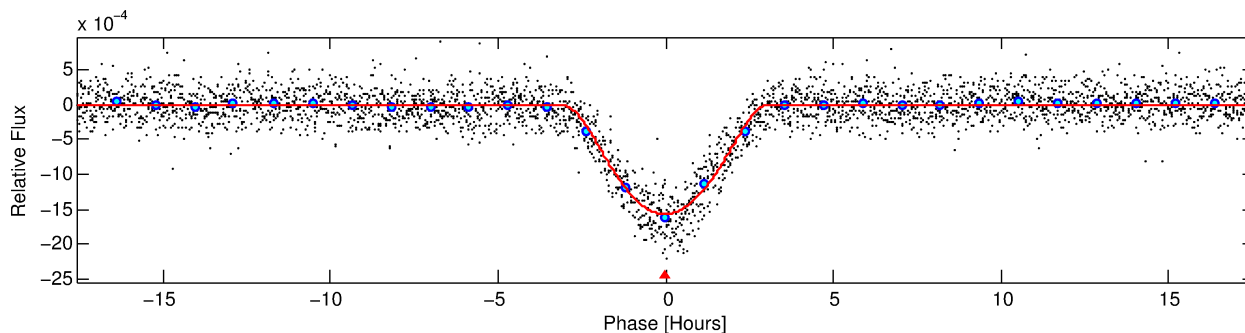
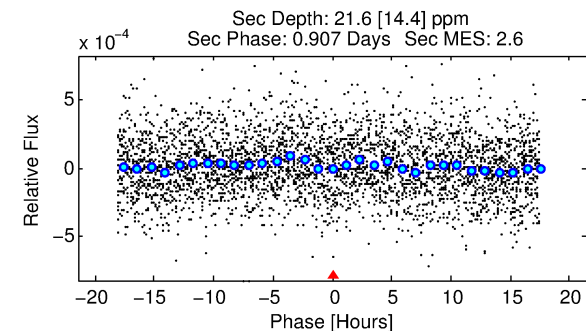
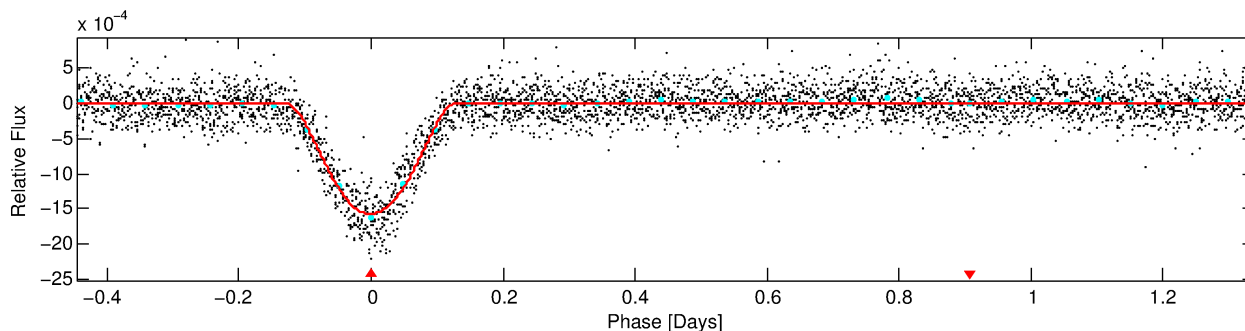
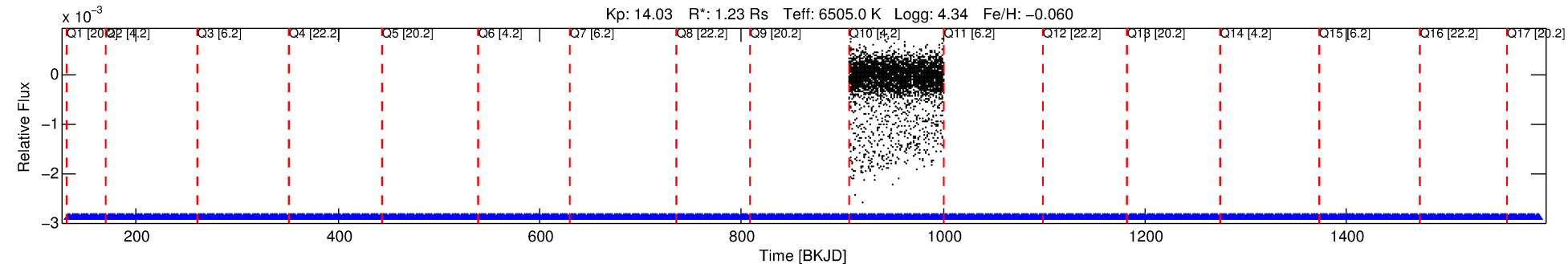
Ephemeris Match Information For 006148271-01

No Significant Match Found

# DV One-Page Summary

KIC: 6148271 Candidate: 1 of 1 Period: 1.785 d  
KOI: K03812.01 Corr: 0.847

Kp: 14.03 R\*: 1.23 Rs Teff: 6505.0 K Logg: 4.34 Fe/H: -0.060



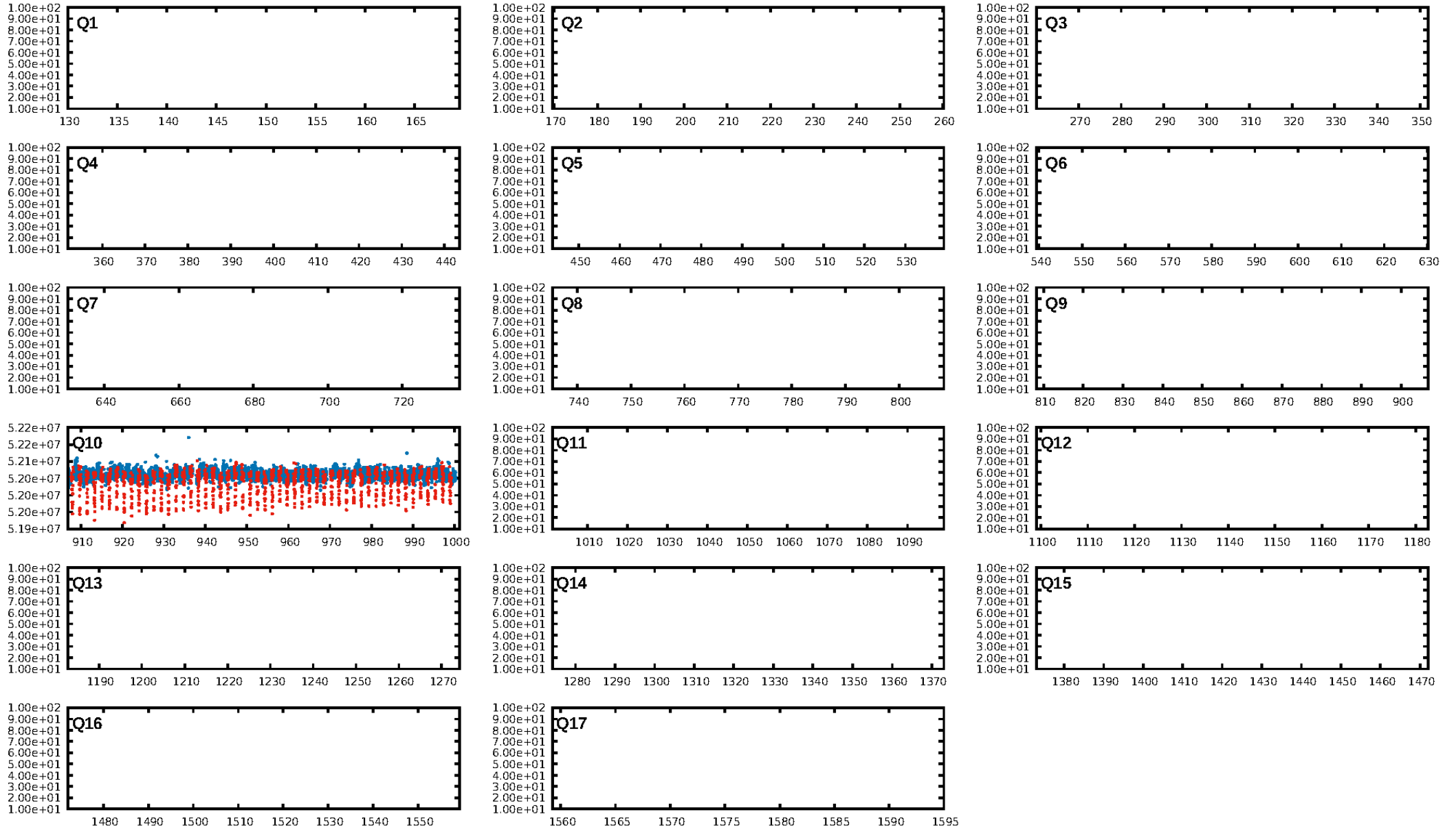
## DV Fit Results:

Period = 1.78547 [0.00001] d  
Epoch = 133.0356 [0.0021] BKJD  
Rp/R\* = 0.0568 [0.0104]  
a/R\* = 1.36 [0.03]  
b = 0.98 [0.02]  
Seff = 2568.51 [1071.34]  
Teq = 1815 [189] K  
Rp = 7.61 [2.99] Re  
a = 0.0307 [0.0086] AU  
Ag = 0.19 [0.16] [-4.90σ]  
Teff = 1861 [359] K [0.11σ]

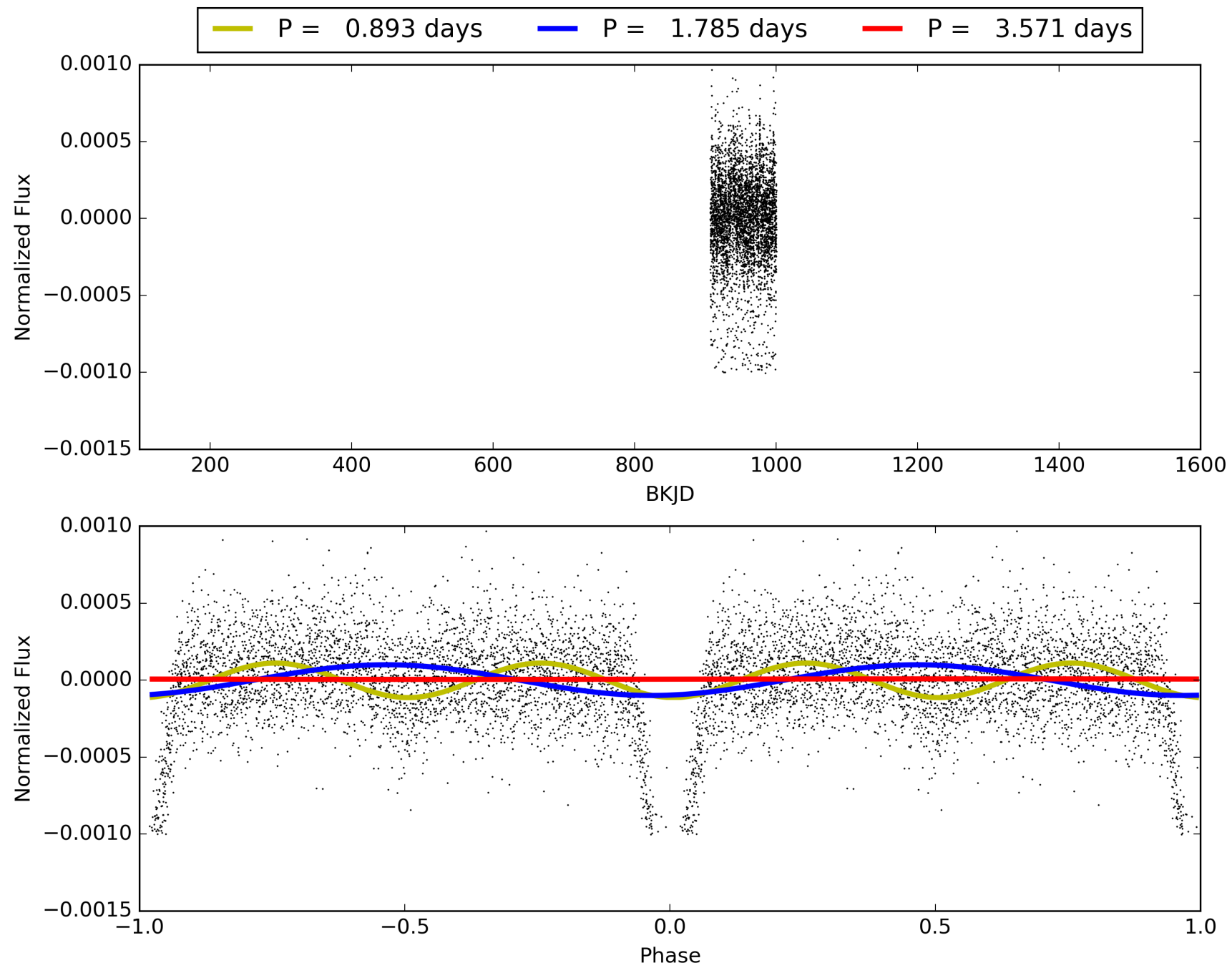
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: 2.0%  
ModelChiSquareGoF-sig: 100.0%  
Bootstrap-pfa: 0.00e+00  
RollingBand-fgt: 1.00 [52/52]  
GhostDiagnostic-chr: -0.0365  
Centroid-sig: 0.0%  
Centroid-so: 21.671 arcsec [106.46σ]  
OotOffset-rm: 10.444 arcsec [156.56σ]  
KicOffset-rm: 10.388 arcsec [155.74σ]  
OotOffset-st: 1/0/0/0 [1]  
KicOffset-st: 1/0/0/0 [1]  
DiffImageQuality-fgm: 1.00 [1/1]  
DiffImageOverlap-fno: 1.00 [1/1]

# TCE 006148271-01, PDC Light Curves

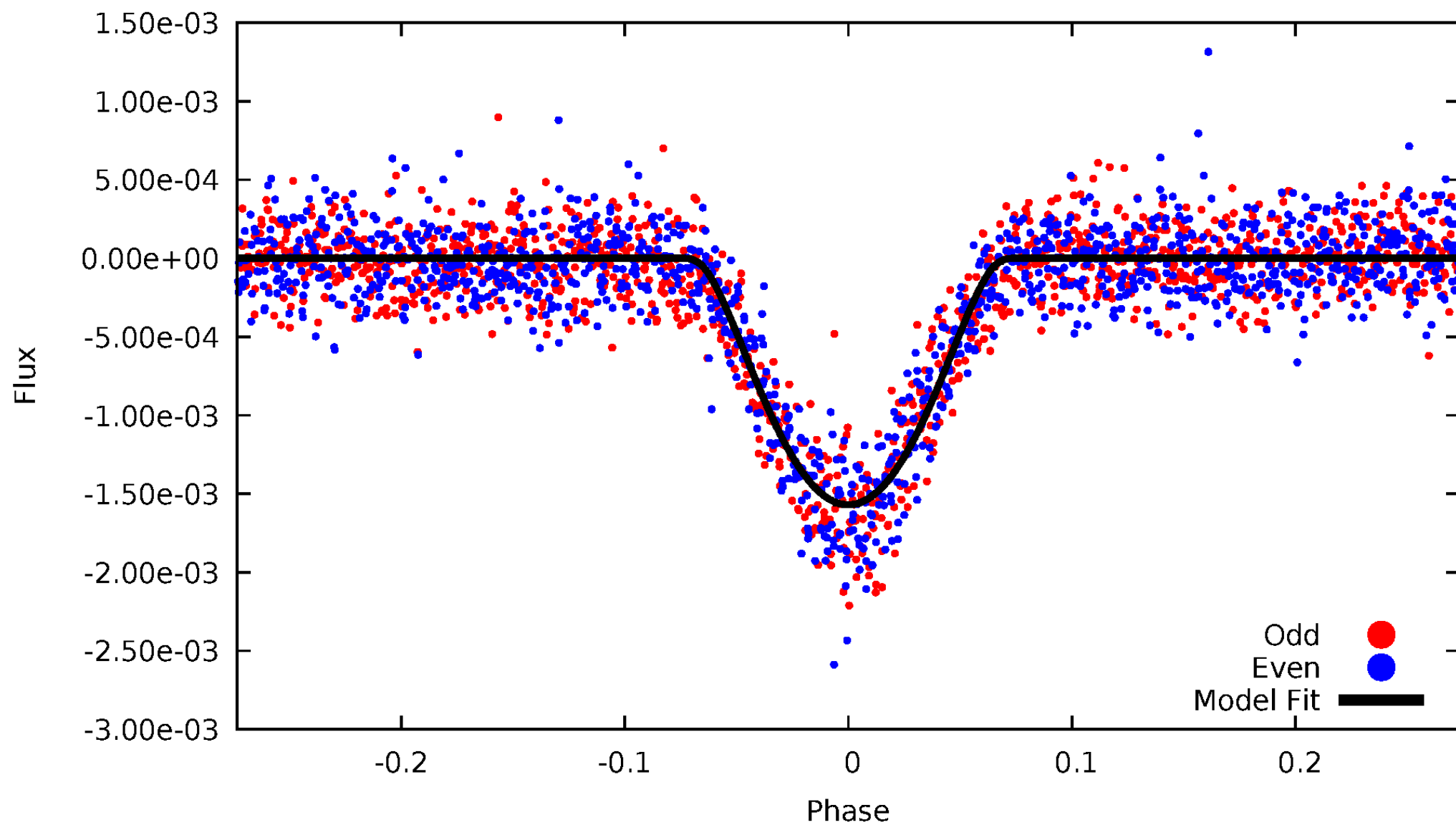


TCE 006148271-01



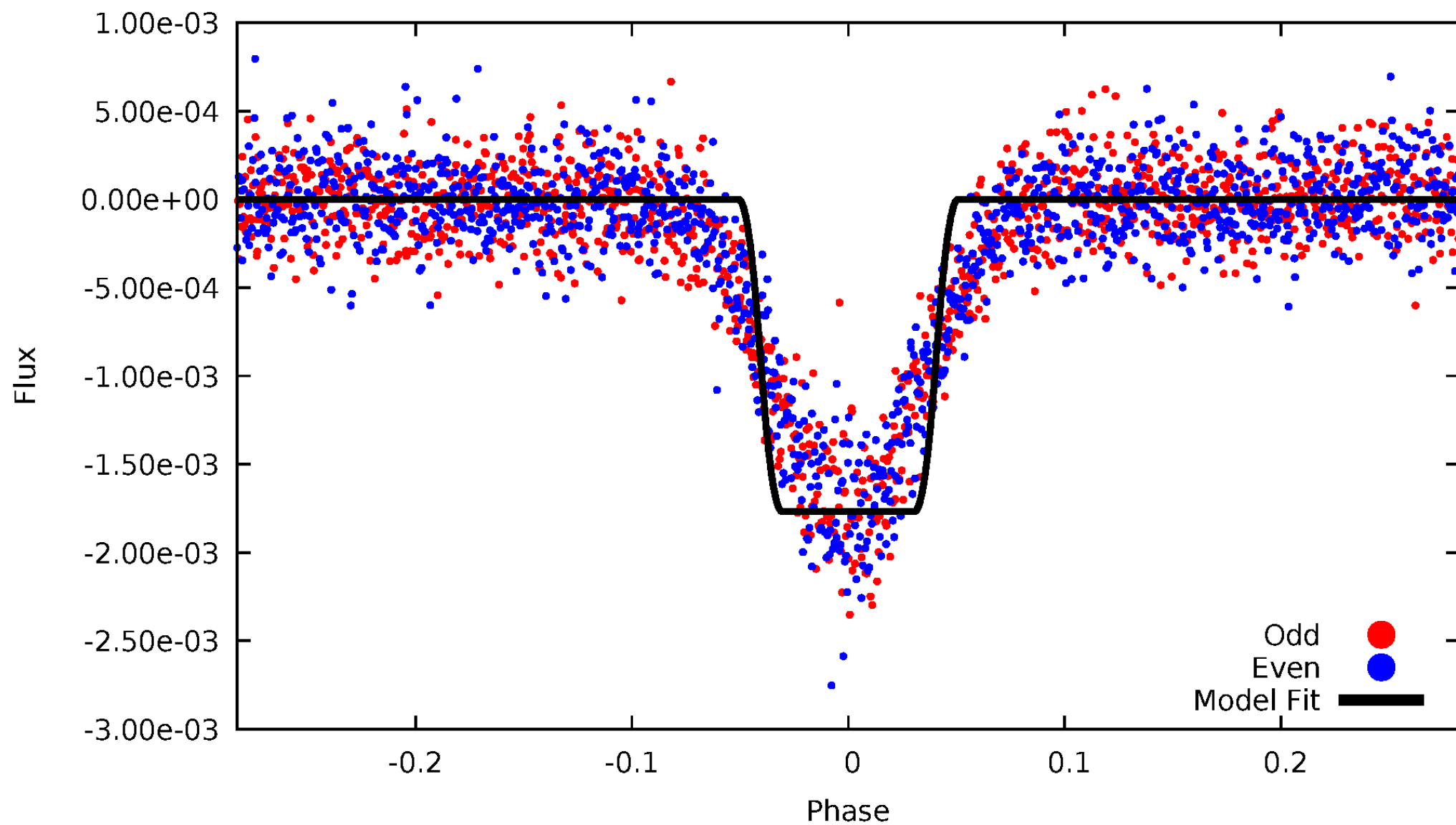
# DV Odd/Even

TCE 006148271-01



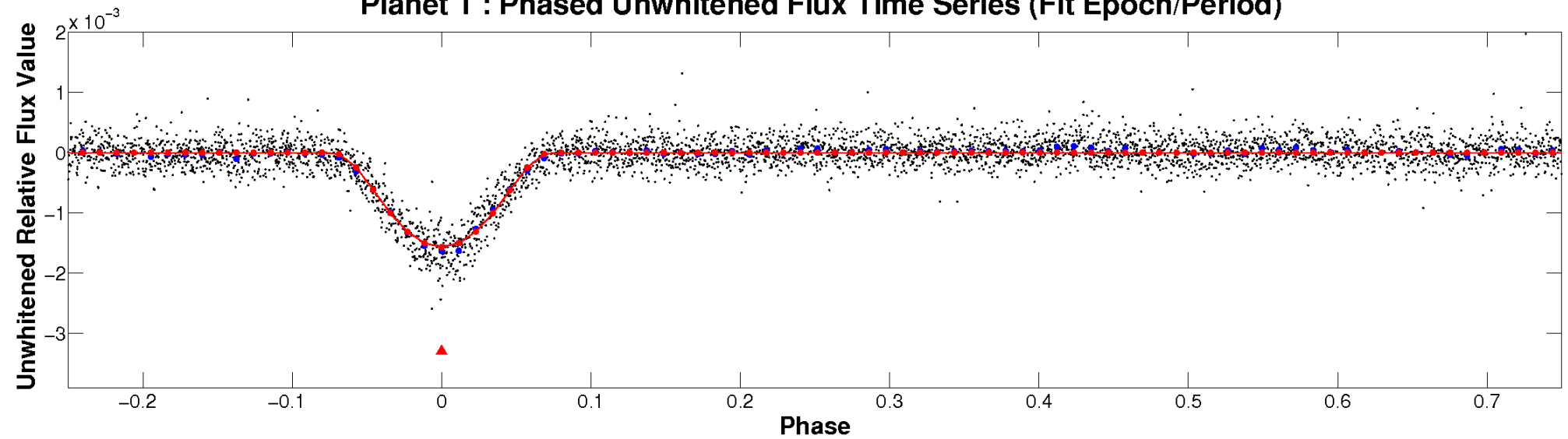
# ALT Odd/Even

TCE 006148271-01

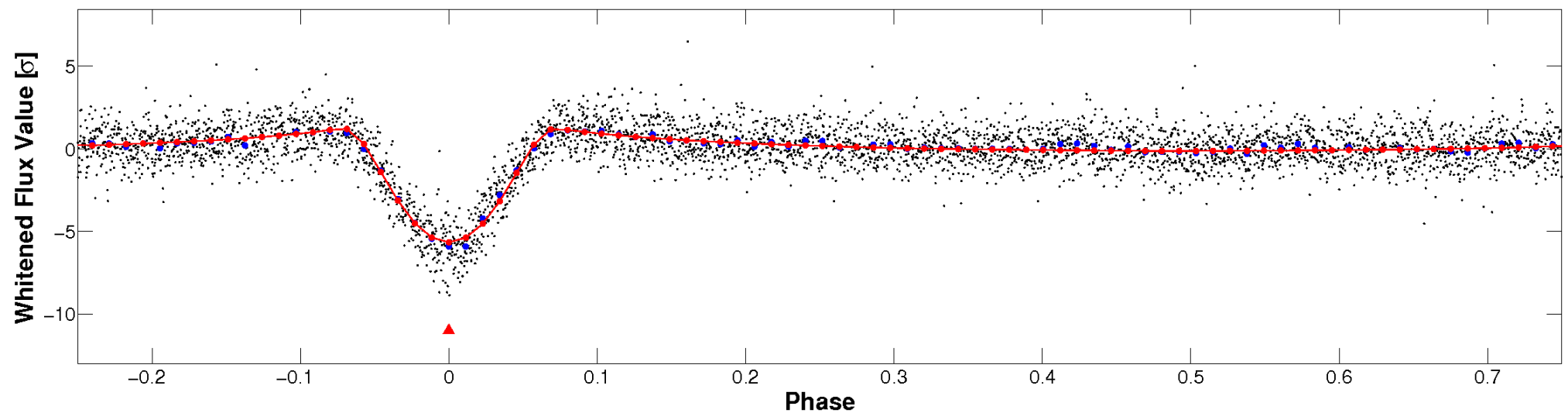


# Non-Whitened Vs. Whitened Light Curve

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

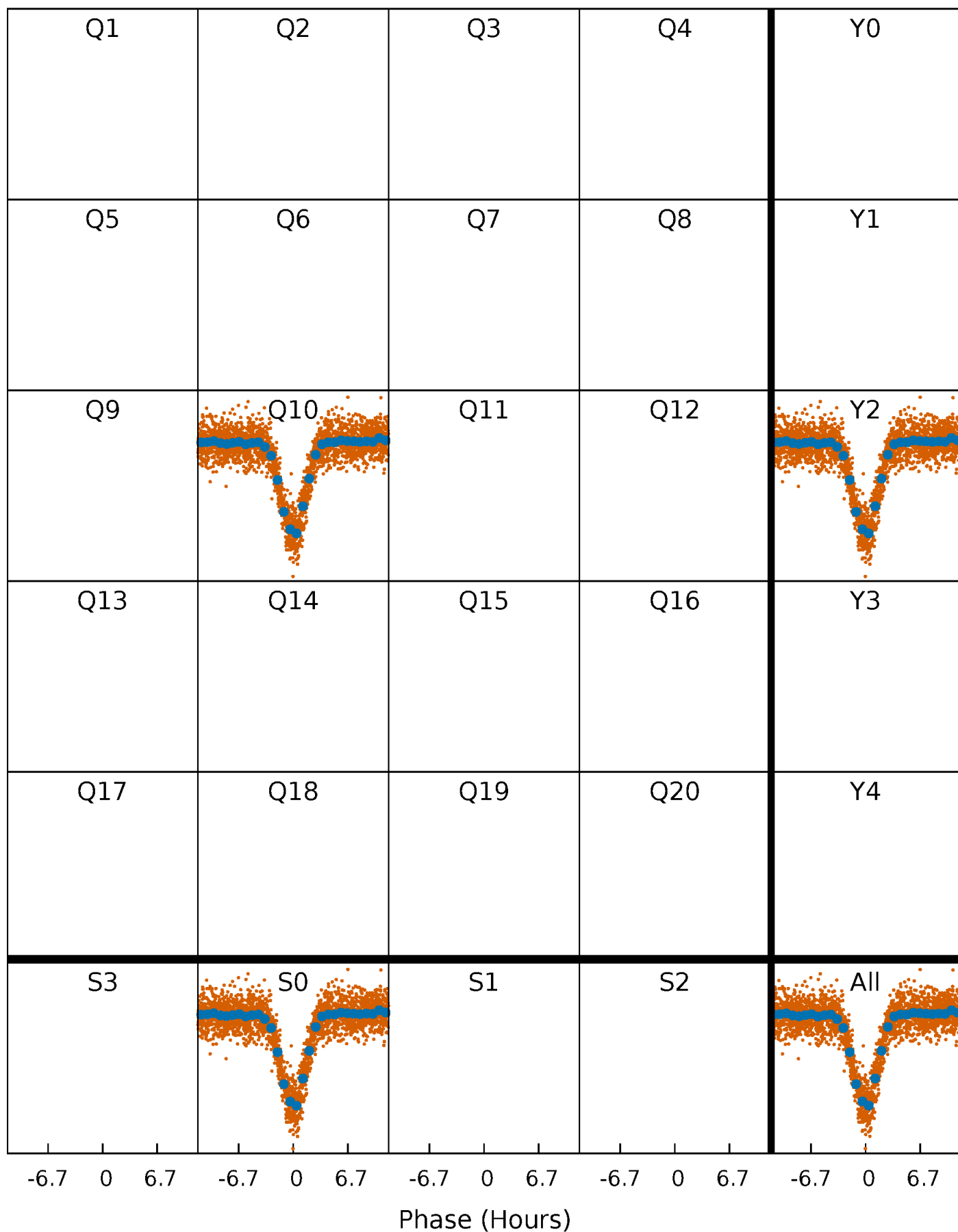


**Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)**



# PDC Quarter-Phased Transit Curves

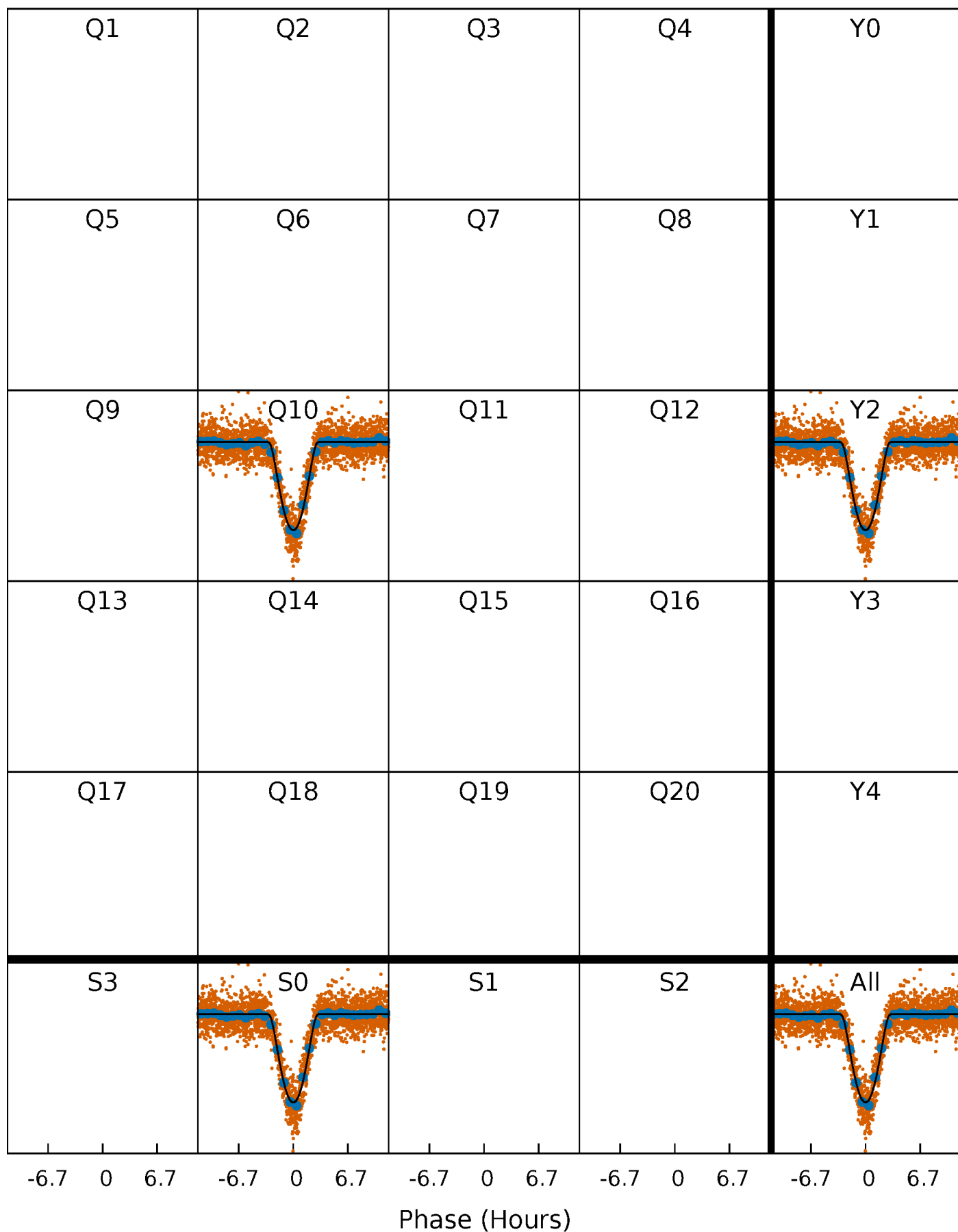
TCE 006148271-01 P= 1.785465 Days  $T_0=133.035603$  (BKJD)





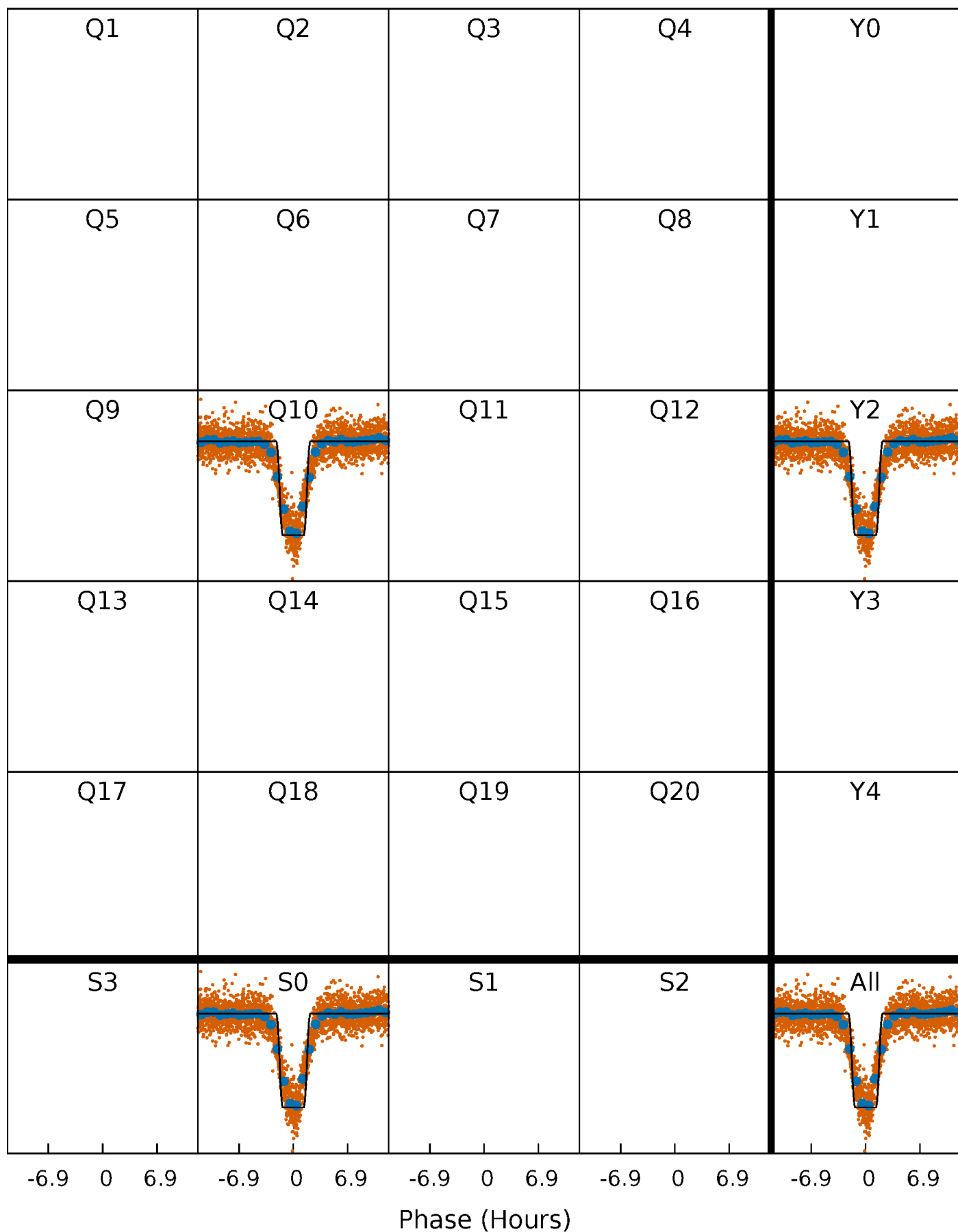
# DV Quarter-Phased Transit Curves

TCE 006148271-01 P= 1.785465 Days  $T_0=133.035603$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

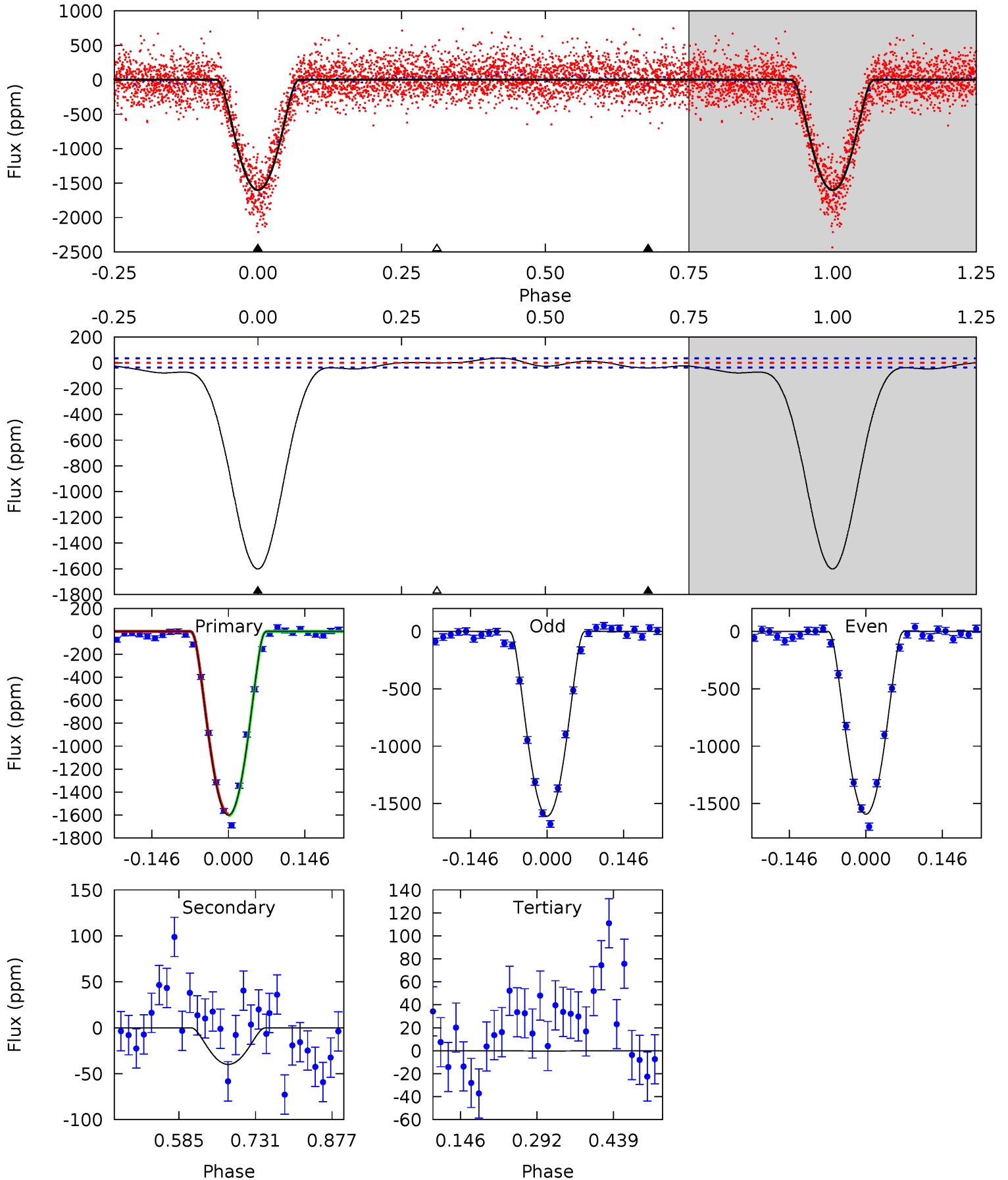
TCE 006148271-01 P= 1.785293 Days  $T_0=133.113691$  (BKJD)



# DV Model-Shift Uniqueness Test

006148271-01, P = 1.785465 Days, E = 133.035603 Days

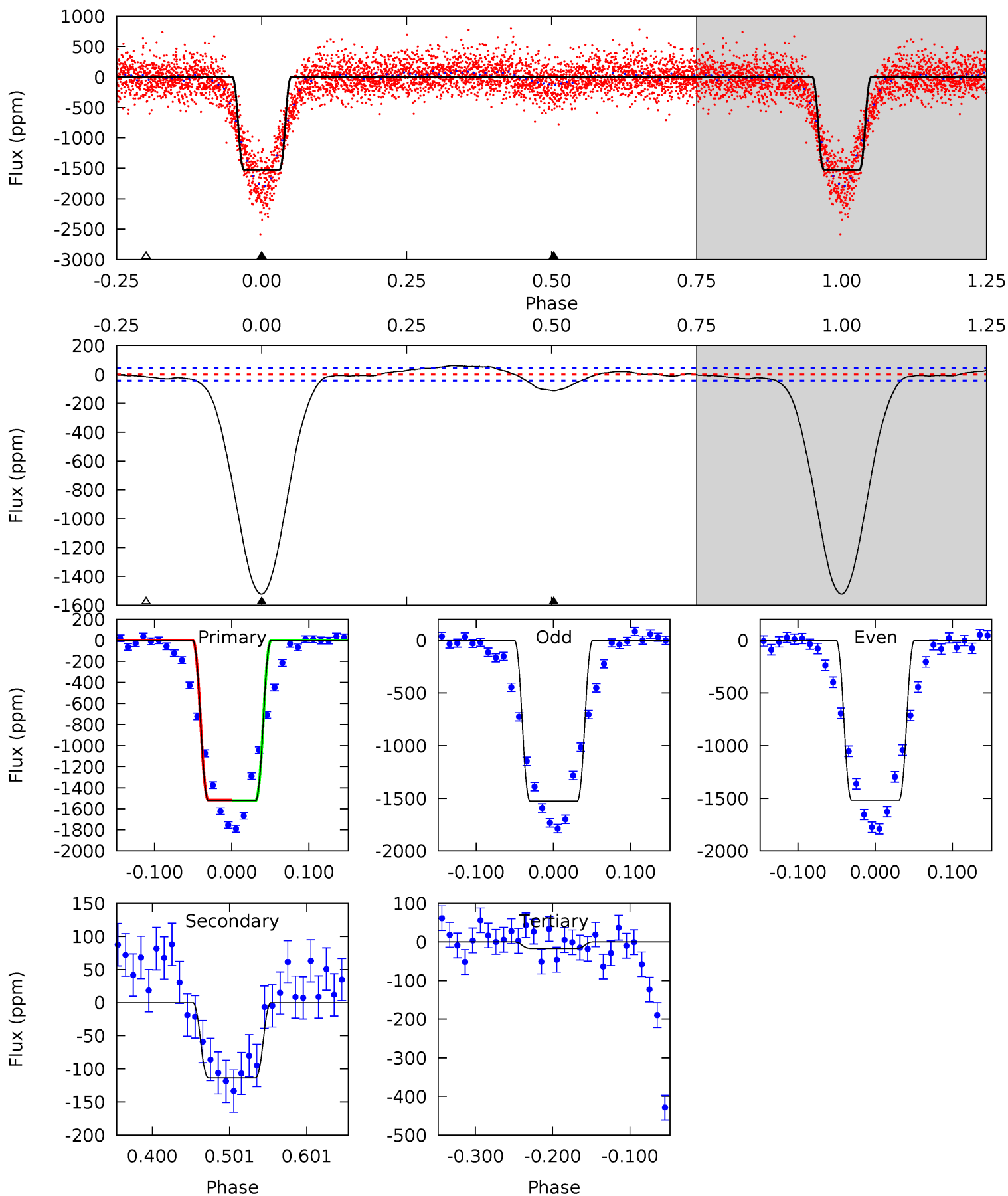
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
201.0	5.01	0.04	0	4.48	1.45	3.67	200.9	201.0	4.97	5.01	1.03	1.01	0.02	0.92



# Alt Model-Shift Uniqueness Test

006148271-01, P = 1.785293 Days, E = 133.113691 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
157.3	11.7	1.73	0	4.56	1.64	3.06	155.6	157.3	10.00	11.7	0.37	0.99	0.04	0.29



### Stellar Parameters For KIC 006148271

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$6505^{+179}_{-246}$	$4.342^{+0.087}_{-0.203}$	$-0.060^{+0.250}_{-0.300}$	$1.228^{+0.428}_{-0.171}$	$1.211^{+0.181}_{-0.181}$	$0.922^{+0.372}_{-0.510}$
	+3%/-4%	+2%/-5%	+417%/-500%	+35%/-14%	+15%/-15%	+40%/-55%
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 006148271-01 / KOI 3812.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	$A_{obs}$
DV	$-40 \pm 8$	$7.97^{+1.84}_{-1.71}$	$2563^{+217}_{-143}$	$2006^{+713}_{-4523}$	$0.316^{+0.219}_{-0.116}$
Alt.	$-114 \pm 10$	$5.73^{+1.50}_{-1.61}$	$2556^{+202}_{-142}$	$3589^{+434}_{-315}$	$1.775^{+1.557}_{-0.681}$

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

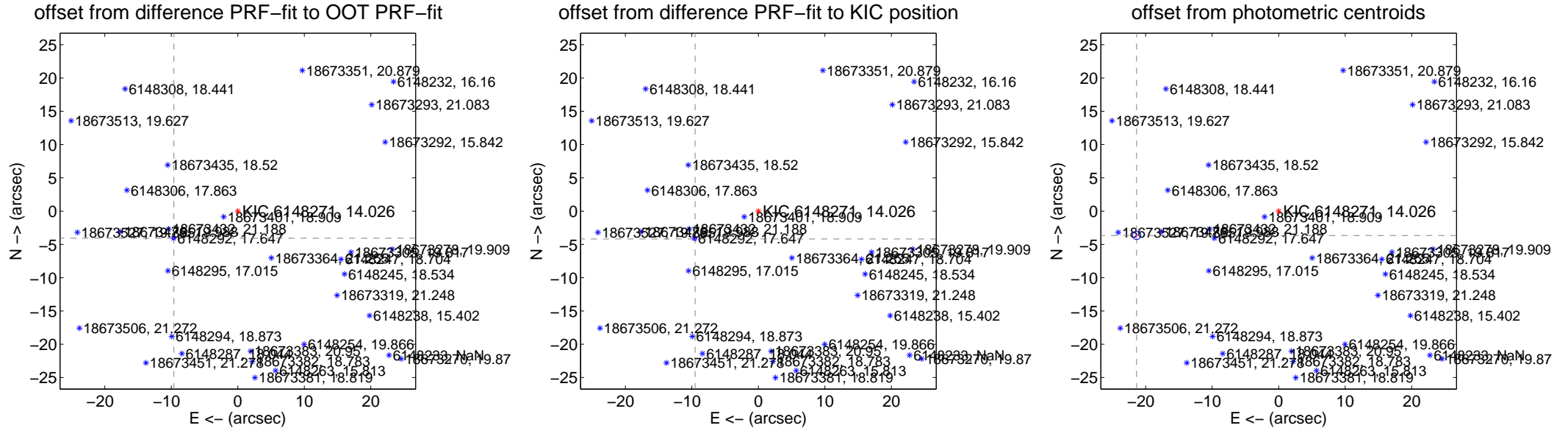
# DV Centroid Data

Supplemental centroid analysis for 006148271-01. Kepler magnitude: 14.03. Transit SNR 89.54

There are 1 quarters with good PRF difference image offsets

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

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	10.444 $\pm$ 0.067	156.56	9.616 $\pm$ 0.067	-4.074 $\pm$ 0.067
PRF-fit source offset from KIC position	10.388 $\pm$ 0.067	155.74	9.507 $\pm$ 0.067	-4.186 $\pm$ 0.067
photometric centroid source offset	21.67 $\pm$ 0.20	106.46	21.36 $\pm$ 0.21	-3.66 $\pm$ 0.12



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.

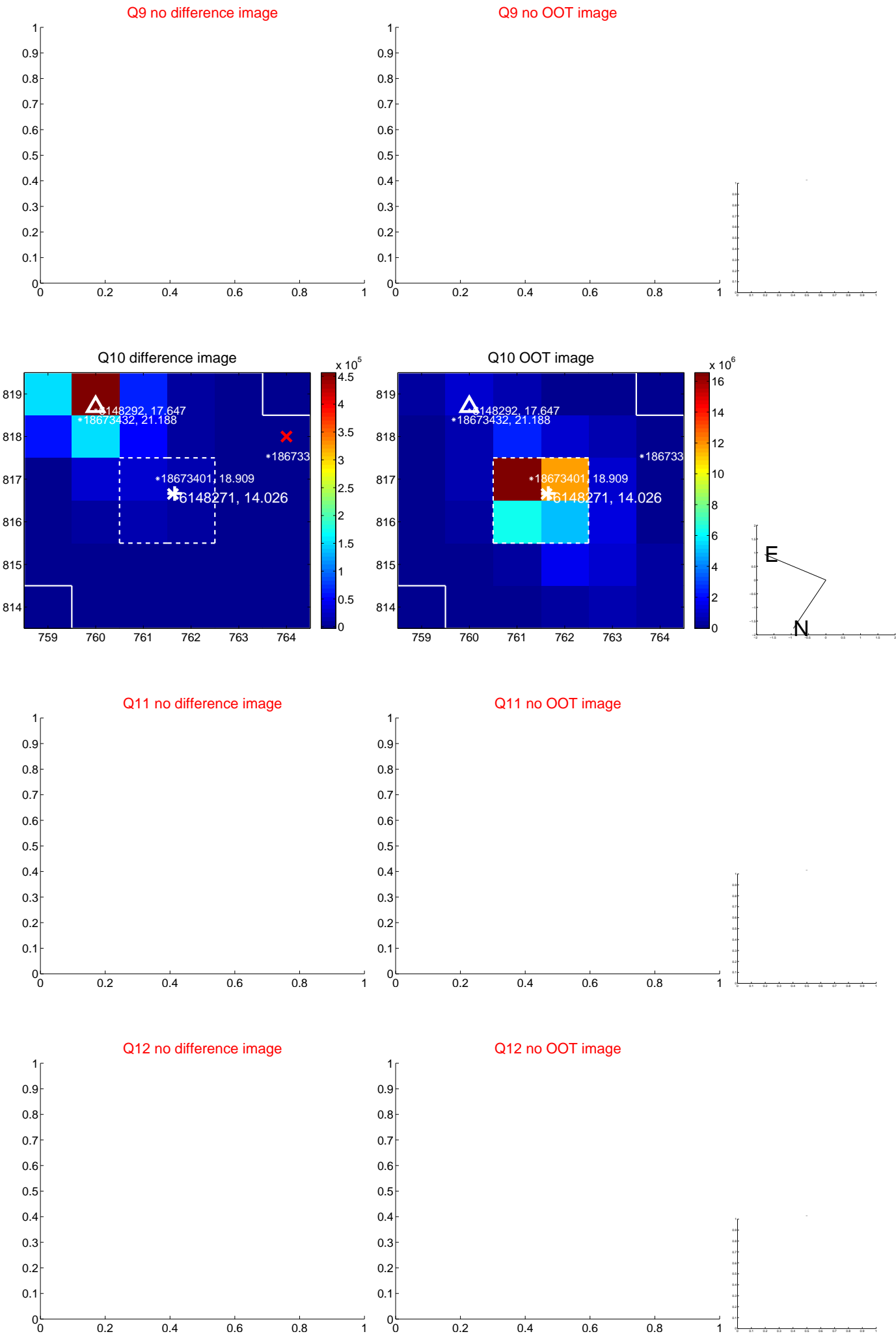


white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.





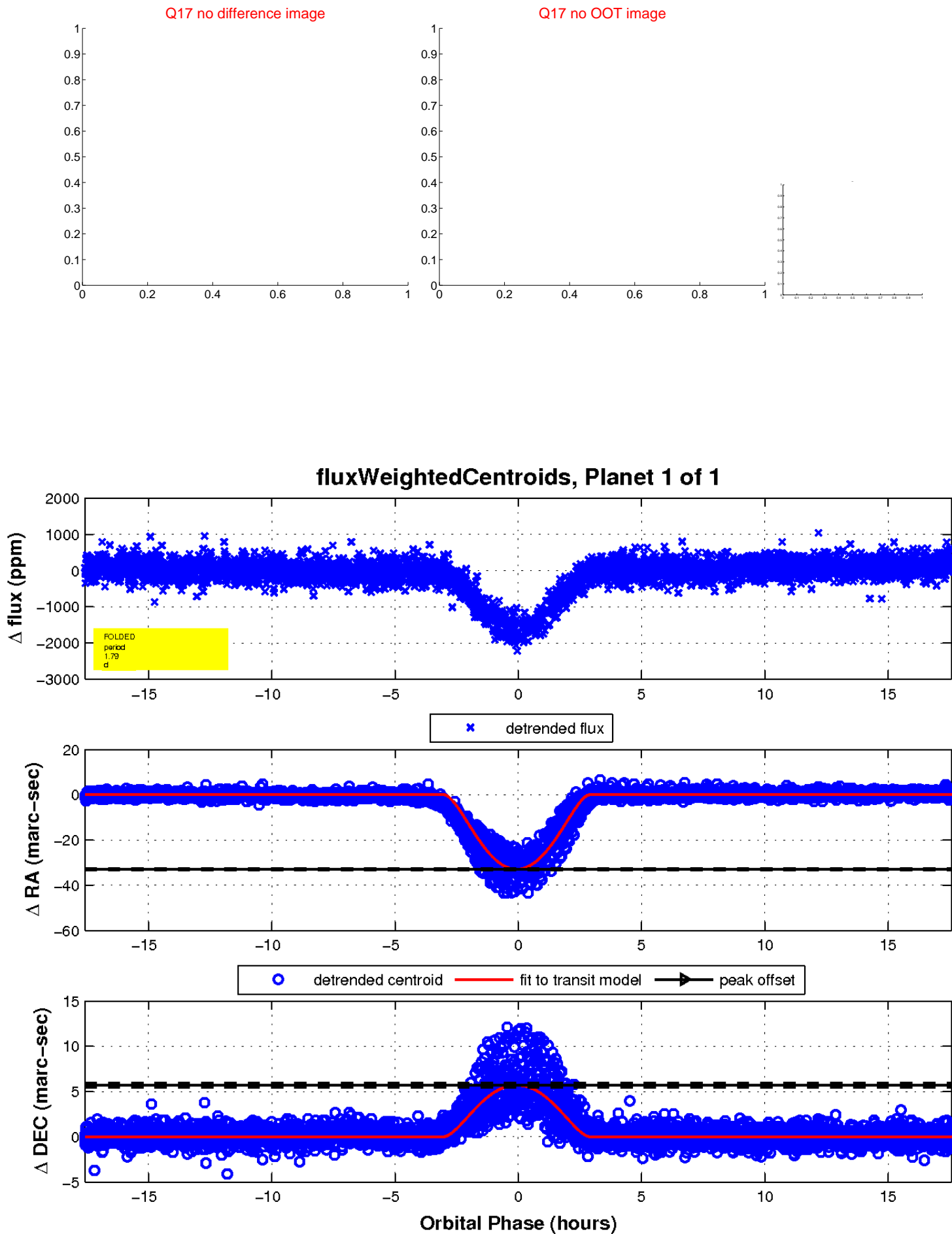
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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



UKIRT Image

Declination

