

# KIC 001873513

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
001873513-01	OBS	4928.01	3.290353	131.890069	13529.1	1.812	234.1	224.0	0.43	3386	5.10	20.12

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
001873513-01	OBS	PC	1.00	0	0	0	0	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.

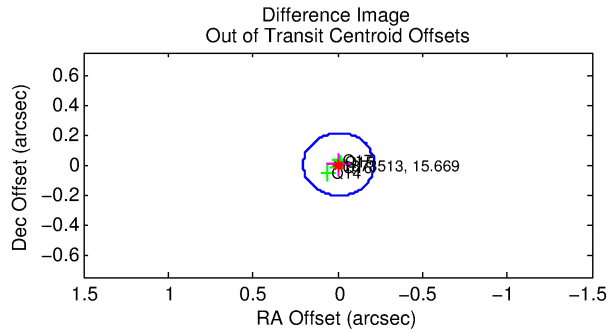
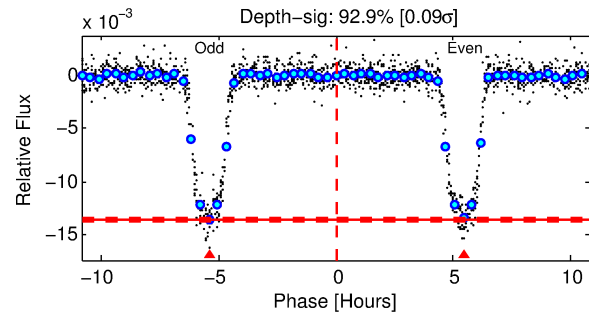
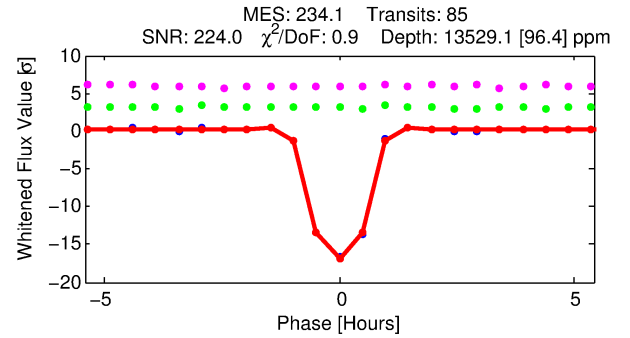
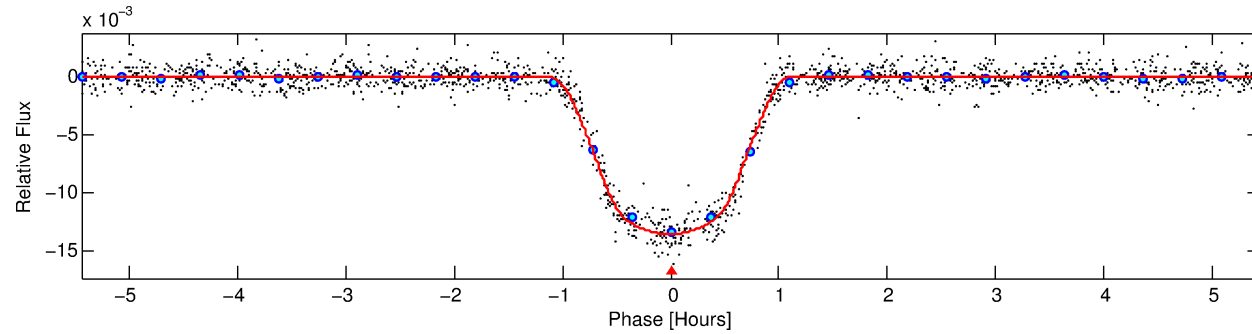
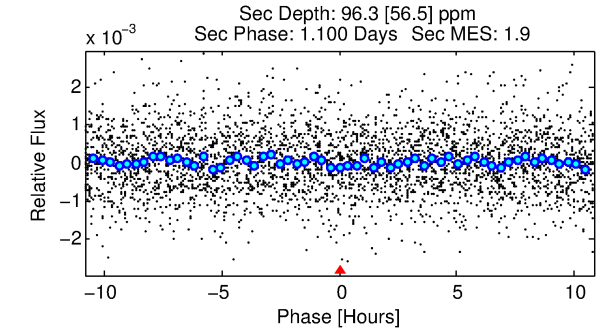
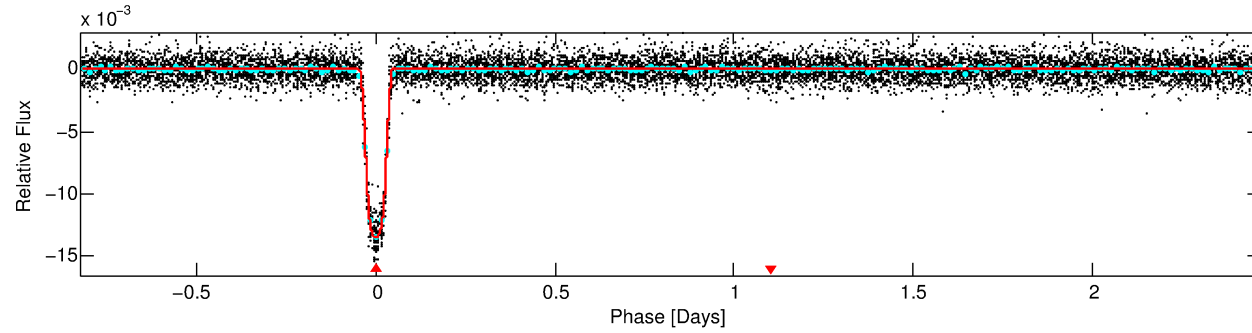
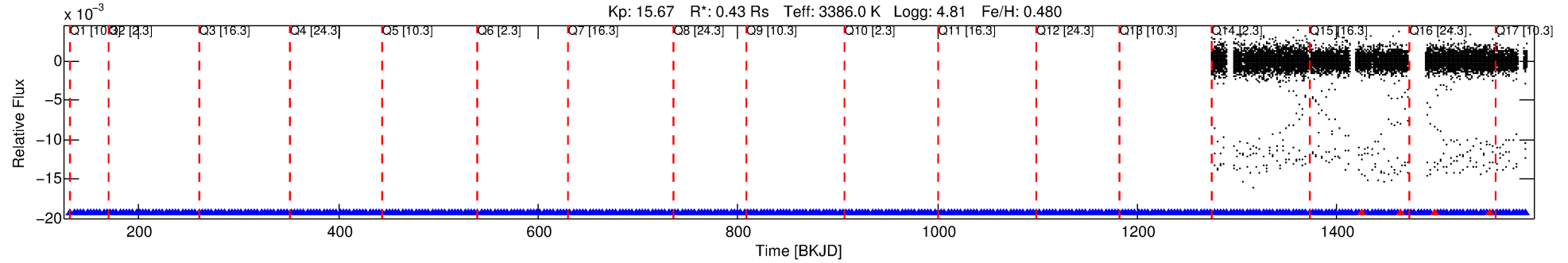
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 001873513-01

No Significant Match Found

# DV One-Page Summary

KIC: 1873513 Candidate: 1 of 1 Period: 3.290 d  
KOI: K04928.01 Corr: 0.882



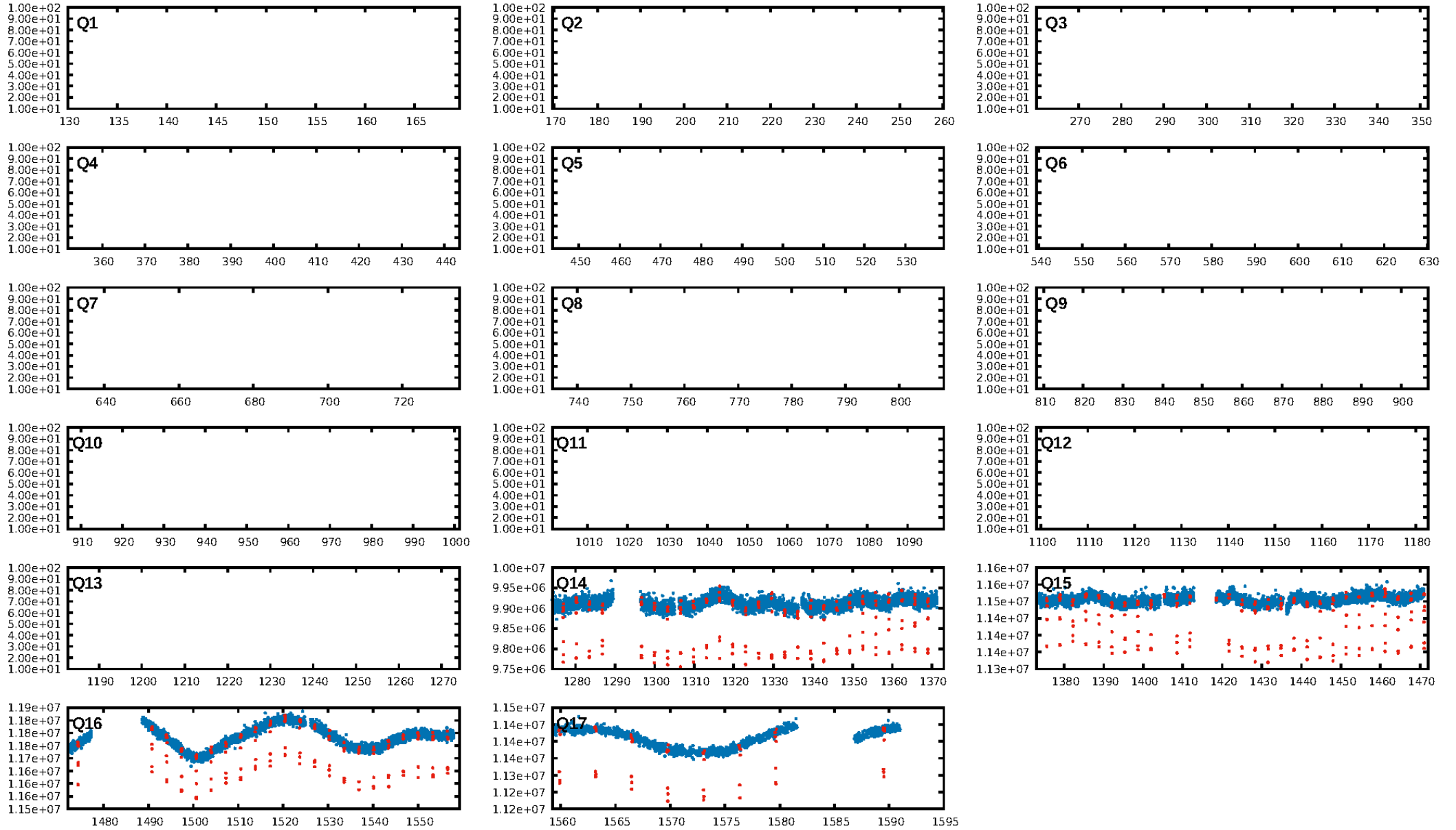
## DV Fit Results:

Period = 3.29035 [0.00000] d  
Epoch = 131.8901 [0.0001] BKJD  
Rp/R\* = 0.1094 [0.0027]  
a/R\* = 13.41 [1.11]  
b = 0.55 [0.11]  
Seff = 20.12 [2.77]  
Teq = 540 [19] K  
Rp = 5.10 [0.45] Re  
a = 0.0327 [0.0019] AU  
Ag = 2.18 [1.29] [0.91 $\sigma$ ]  
Teffp = 1014 [153] K [3.09 $\sigma$ ]

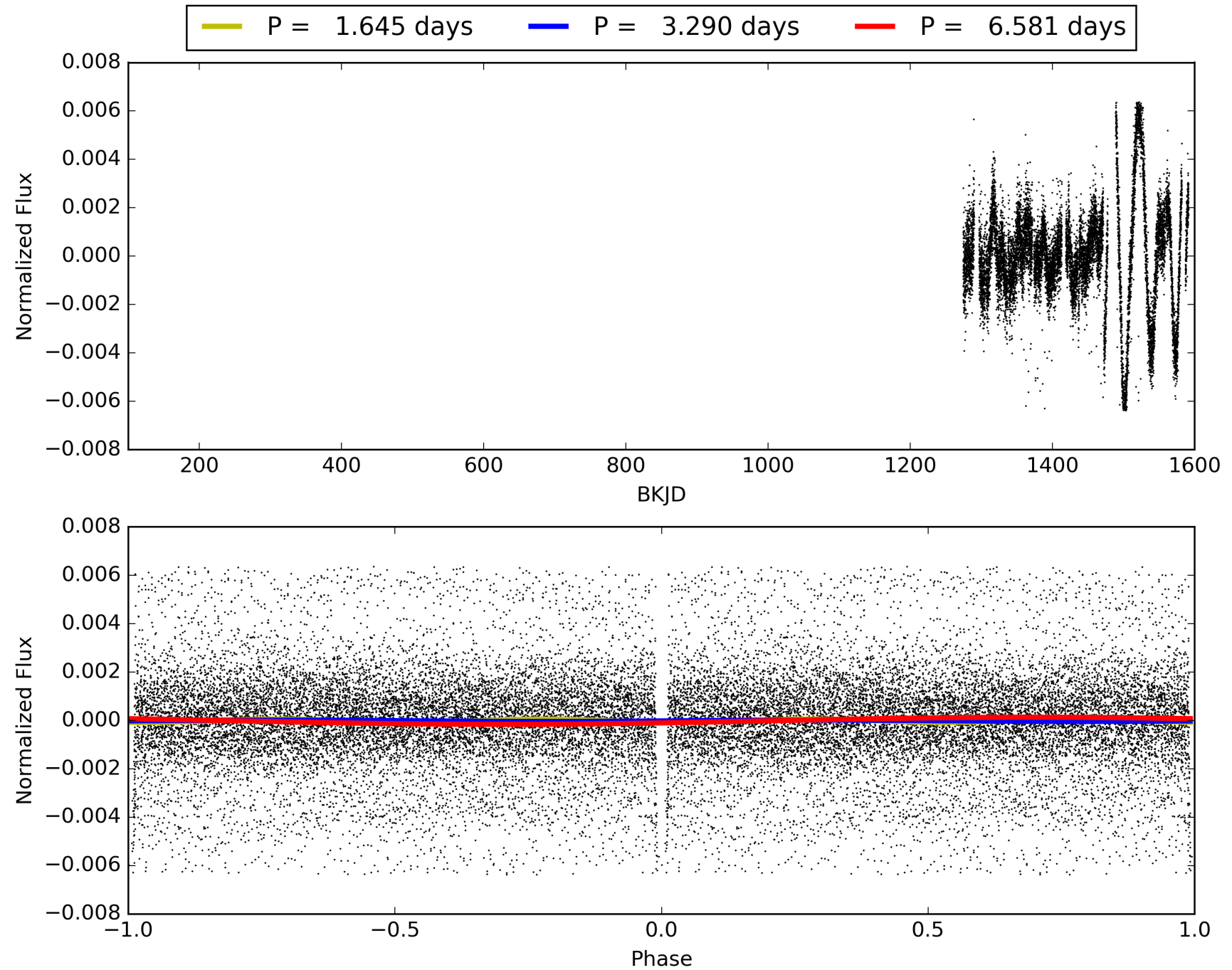
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: 1.8%  
ModelChiSquareGof-sig: 100.0%  
Bootstrap-pfa: 0.00e+00  
RollingBand-fgt: 0.95 [73/77]  
GhostDiagnostic-chr: 2.333  
Centroid-sig: 0.0%  
Centroid-so: 1.492 arcsec [27.36 $\sigma$ ]  
OotOffset-rm: 0.007 arcsec [0.10 $\sigma$ ]  
KicOffset-rm: 0.674 arcsec [5.18 $\sigma$ ]  
OotOffset-st: 1/1/1/1 [4]  
KicOffset-st: 1/1/1/1 [4]  
DiffImageQuality-fgm: 1.00 [4/4]  
DiffImageOverlap-fno: 1.00 [4/4]

# TCE 001873513-01, PDC Light Curves

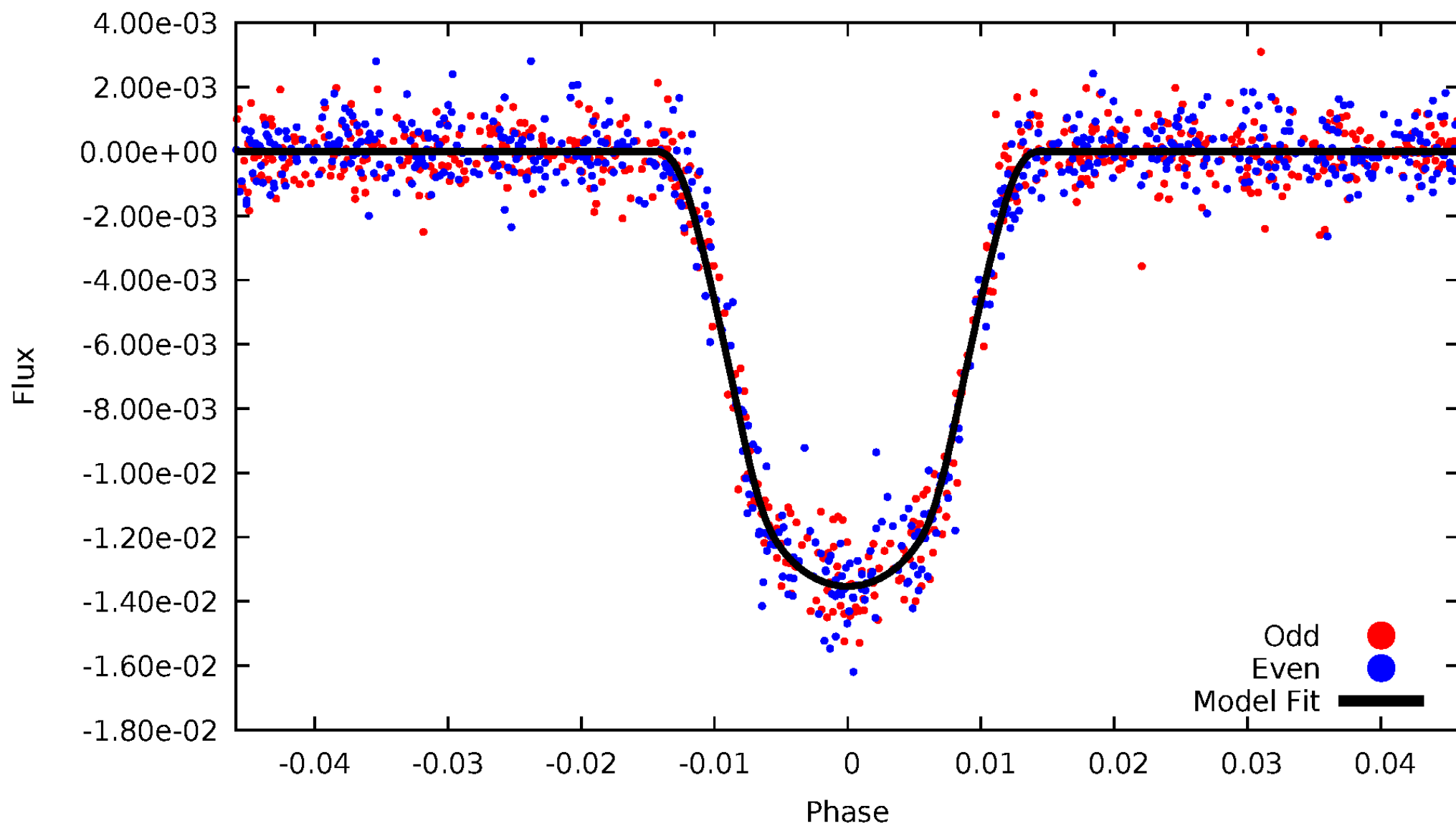


# TCE 001873513-01



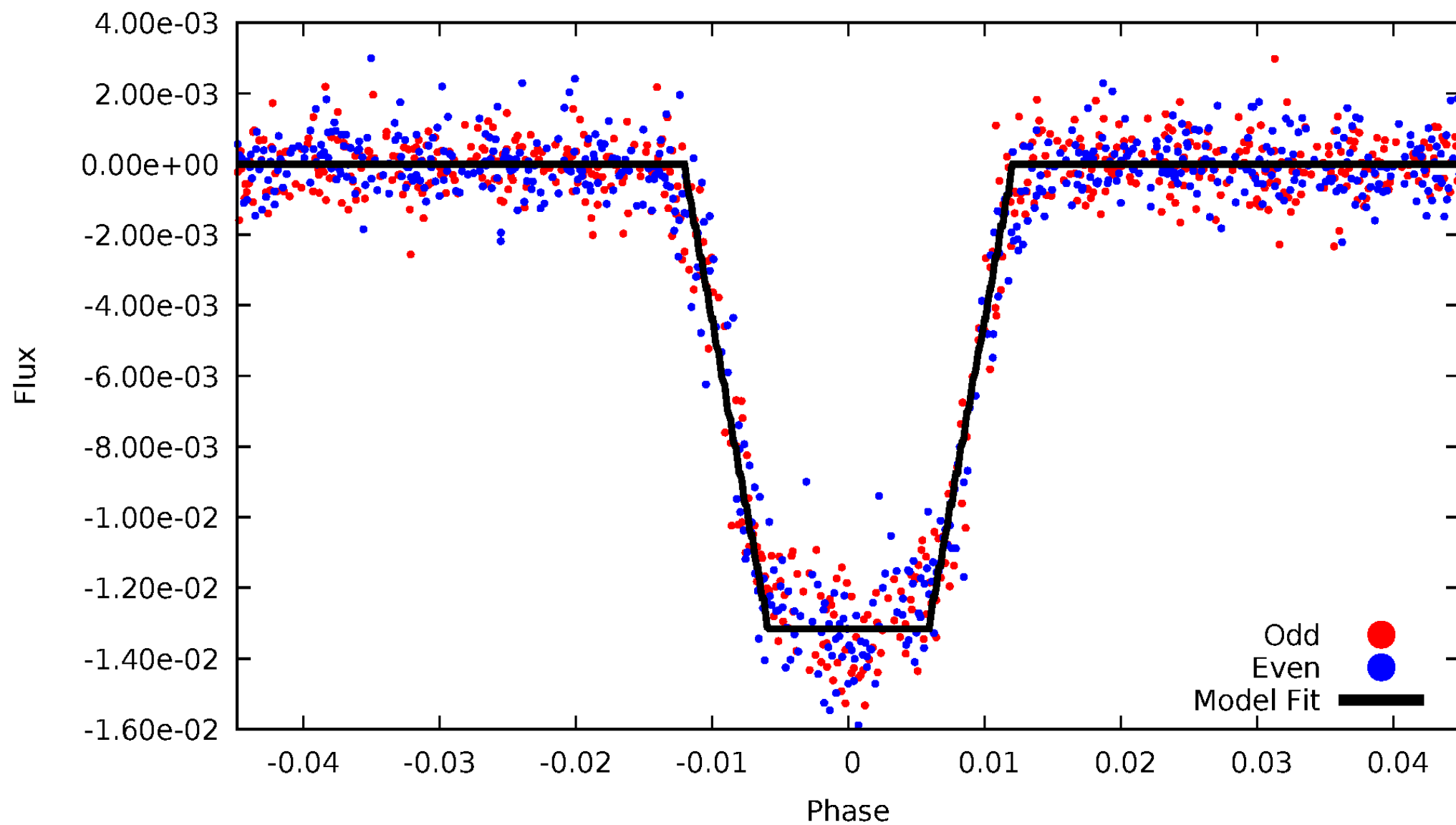
# DV Odd/Even

TCE 001873513-01



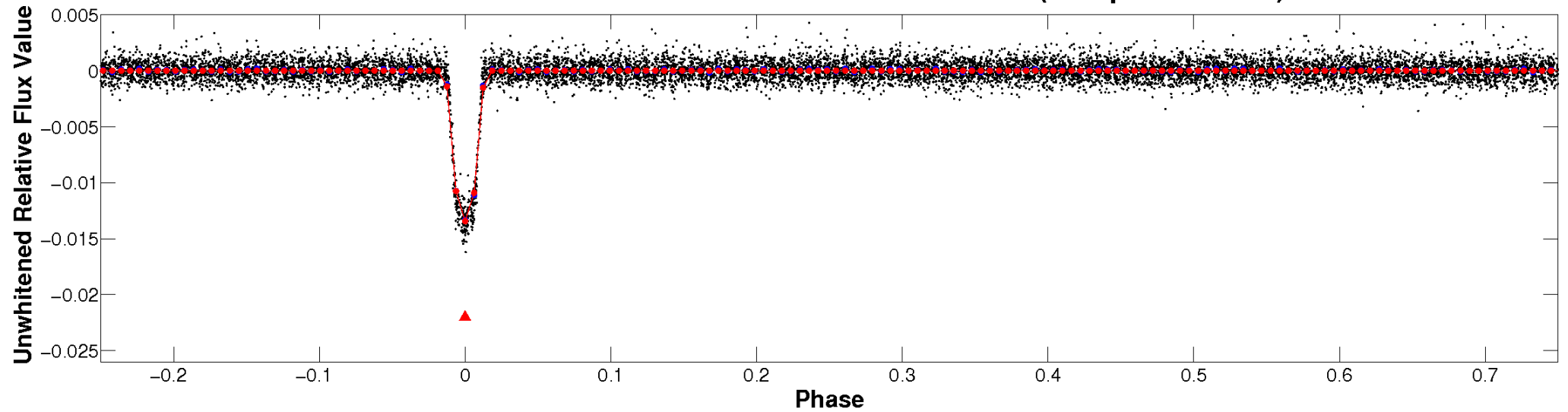
# ALT Odd/Even

TCE 001873513-01

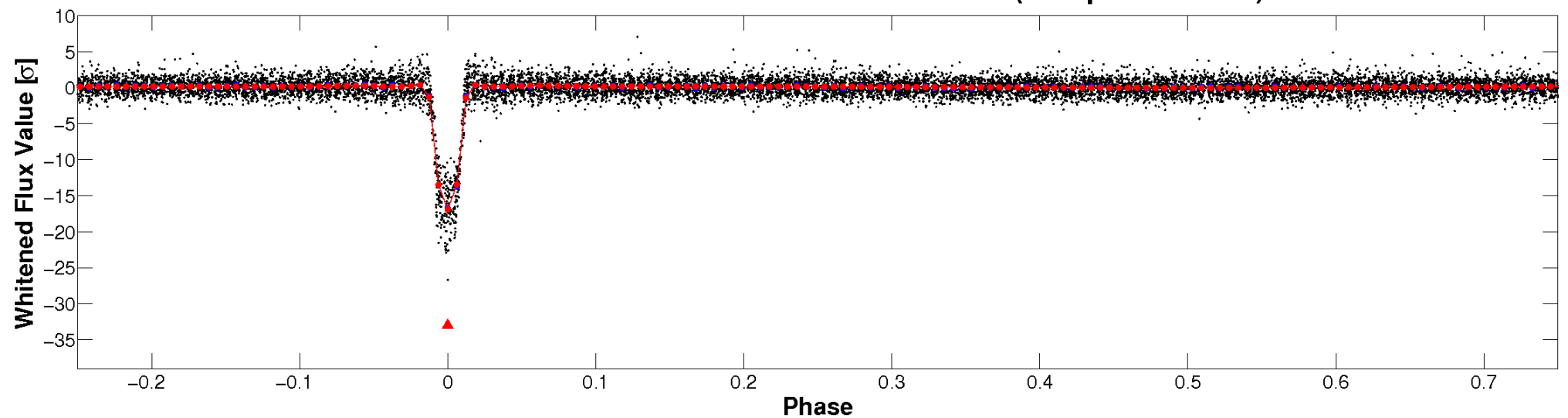


# Non-Whitened Vs. Whitened Light Curve

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

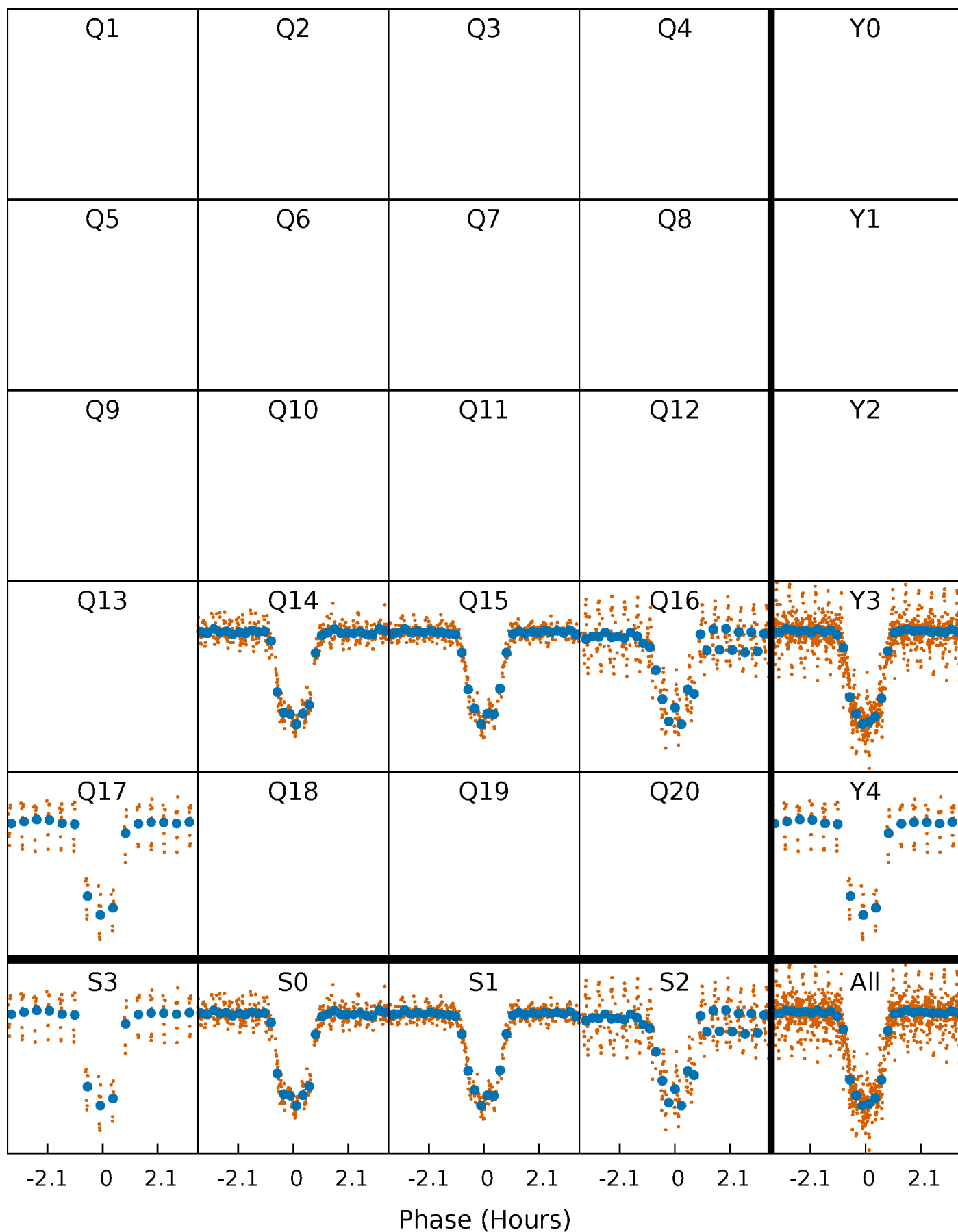


**Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)**



# PDC Quarter-Phased Transit Curves

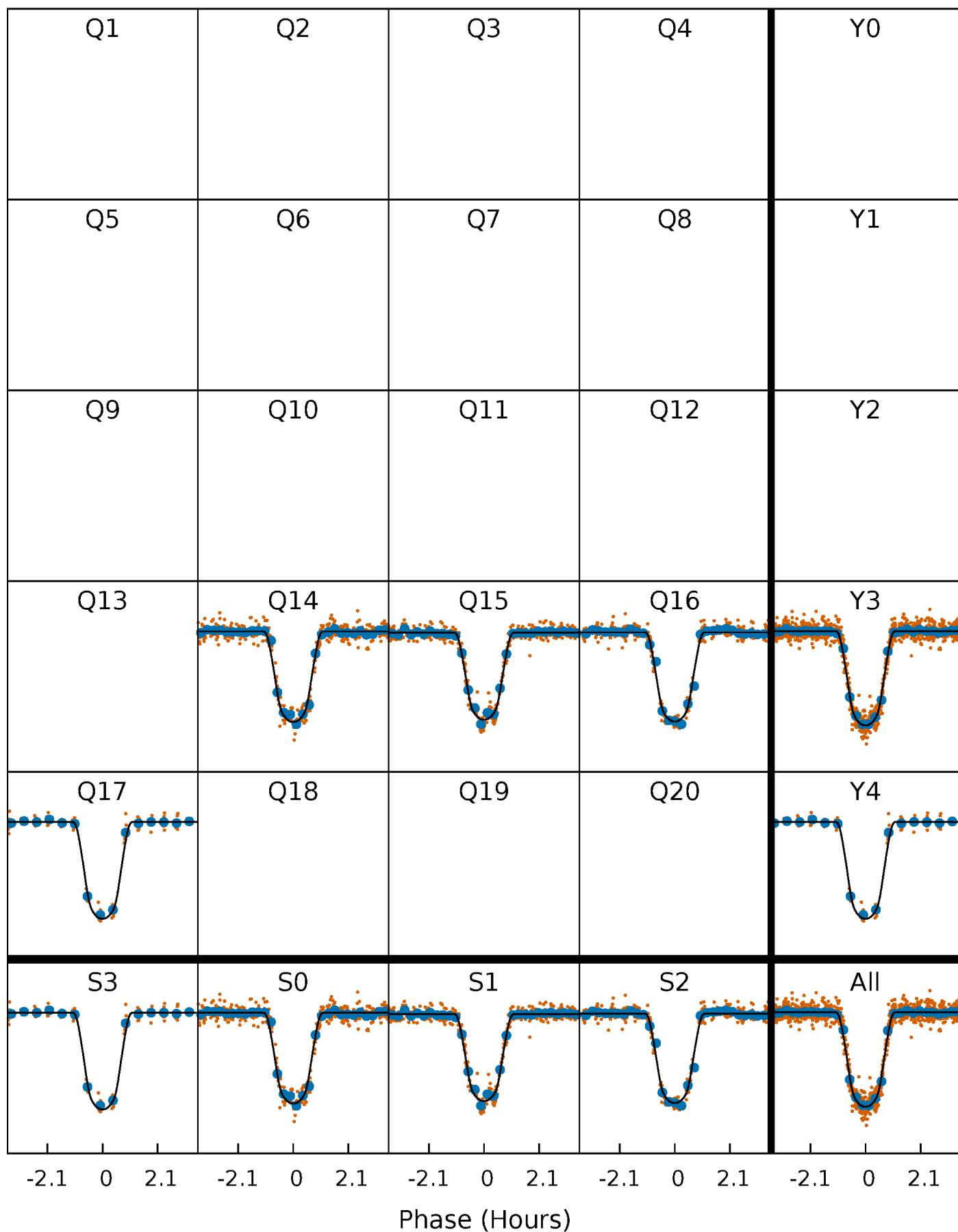
TCE 001873513-01 P= 3.290353 Days  $T_0=131.890069$  (BKJD)





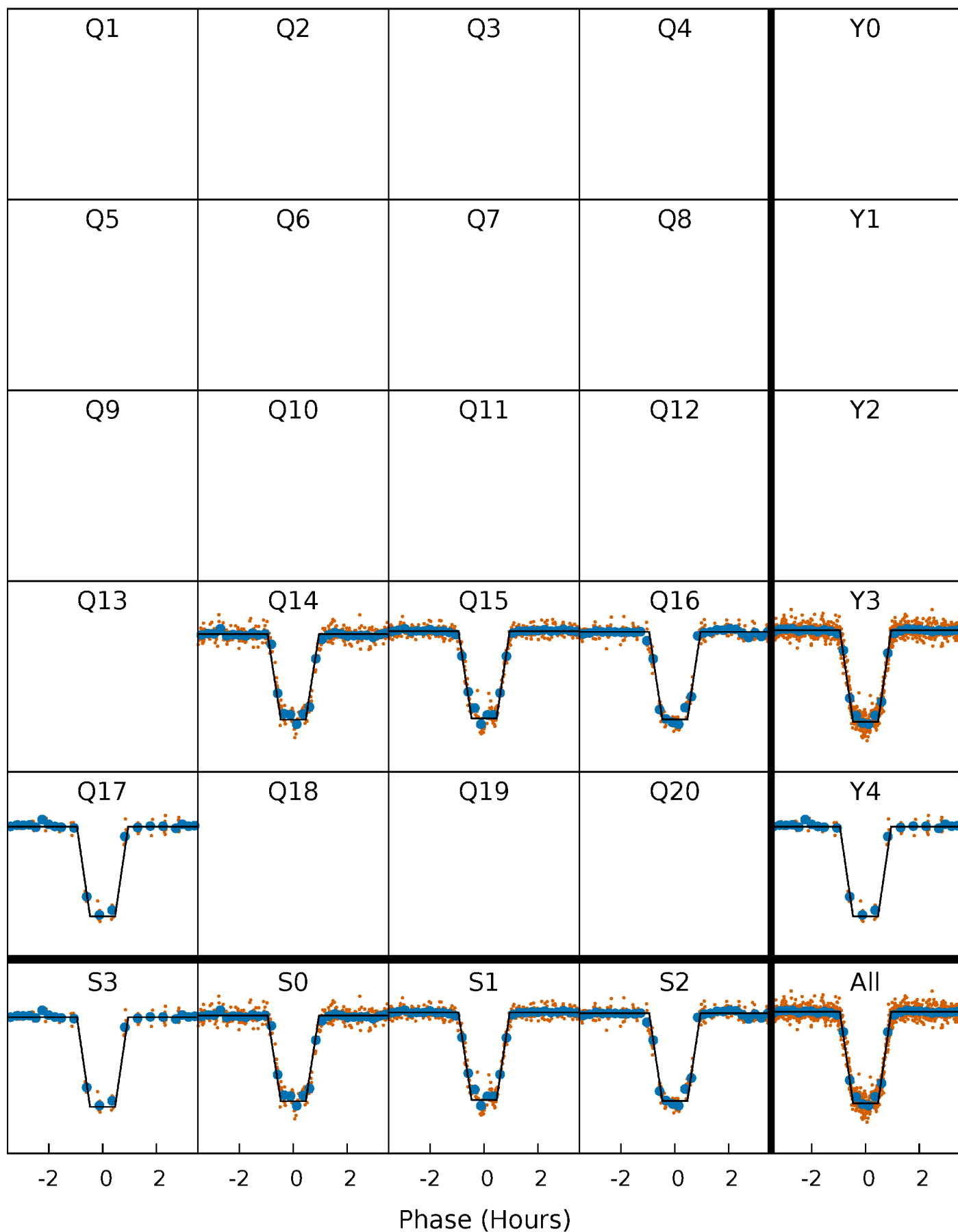
# DV Quarter-Phased Transit Curves

TCE 001873513-01 P= 3.290353 Days  $T_0=131.890069$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

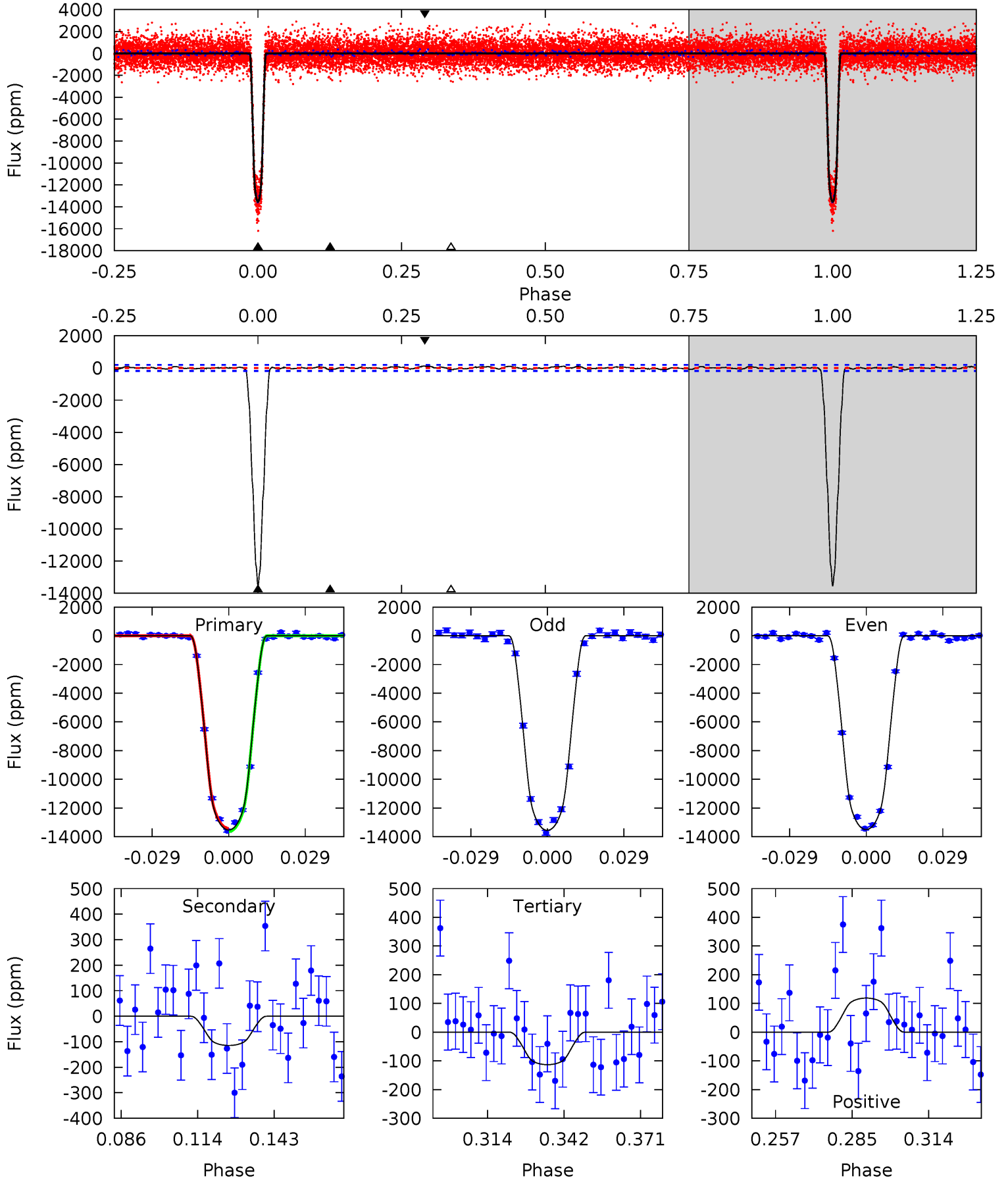
TCE 001873513-01 P= 3.290378 Days  $T_0=131.879735$  (BKJD)



# DV Model-Shift Uniqueness Test

001873513-01, P = 3.290353 Days, E = 131.890069 Days

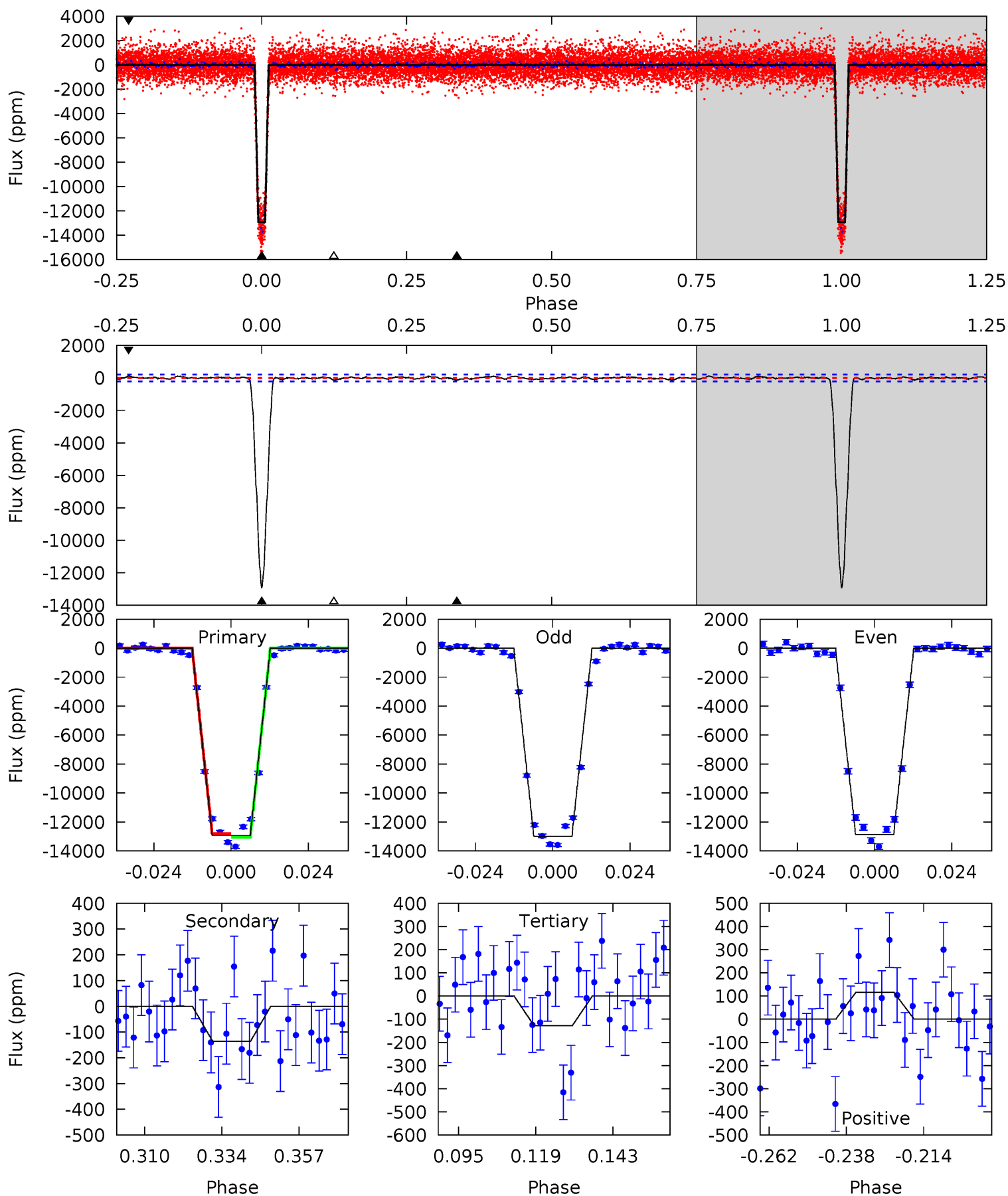
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
344.4	2.92	2.88	3.02	4.82	2.19	1.20	341.5	341.4	0.04	-0.10	0.67	1.00	0.01	2.76



# Alt Model-Shift Uniqueness Test

001873513-01, P = 3.290378 Days, E = 131.879735 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
294.3	3.09	2.93	2.64	4.86	2.26	1.04	291.4	291.7	0.16	0.45	1.47	0.99	0.01	2.72



### Stellar Parameters For KIC 001873513

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R$ ( $R_{\odot}$ )	$M$ ( $M_{\odot}$ )	$p_{\star}$ ( $\text{g}\cdot\text{cm}^{-3}$ )
	$3386^{+103}_{-33}$	$4.810^{+0.010}_{-0.020}$	$0.480^{+0.050}_{-0.150}$	$0.427^{+0.036}_{-0.009}$	$0.430^{+0.046}_{-0.009}$	$7.766^{+0.388}_{-1.008}$
	+3%/-1%	+0%/-0%	+10%/-31%	+8%/-2%	+11%/-2%	+5%/-13%
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 001873513-01 / KOI 4928.01

Detrend	Depth (ppm)	$R_p$ ( $R_{\oplus}$ )	$T_{max}$ (K)	$T_{obs}$ (K)	$A_{obs}$
DV	$-115 \pm 39$	$5.12^{+0.20}_{-0.15}$	$759^{+21}_{-11}$	$1898^{+73}_{-93}$	$2.543^{+0.935}_{-0.904}$
Alt.	$-136 \pm 44$	$5.38^{+0.22}_{-0.16}$	$759^{+20}_{-12}$	$1911^{+70}_{-88}$	$2.713^{+0.967}_{-0.894}$

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

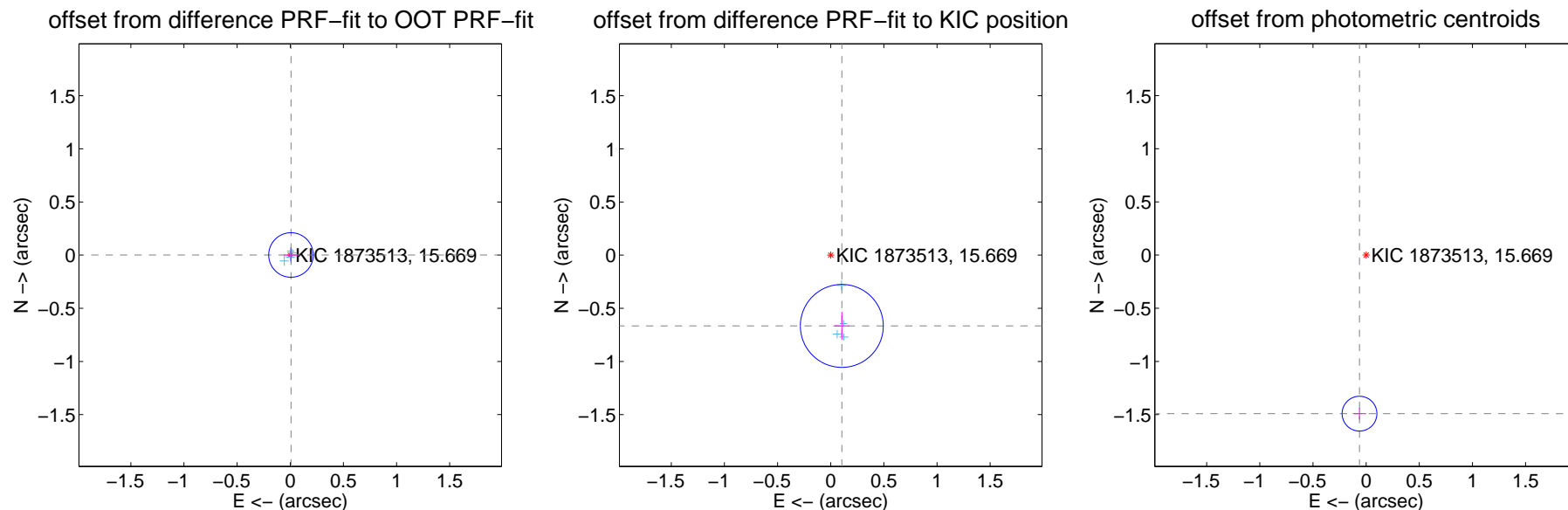
## DV Centroid Data

Supplemental centroid analysis for 001873513-01. Kepler magnitude: 15.67. Transit SNR 223.96

There are 4 quarters with good PRF difference image offsets

The direct PRF centroid is offset from the target star catalog position by about 0.69 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.007 \pm 0.070$	0.10	$-0.007 \pm 0.069$	$0.002 \pm 0.070$
PRF-fit source offset from KIC position	$0.674 \pm 0.130$	5.18	$-0.105 \pm 0.068$	$-0.666 \pm 0.132$
photometric centroid source offset	$1.49 \pm 0.05$	27.36	$0.06 \pm 0.06$	$-1.49 \pm 0.05$



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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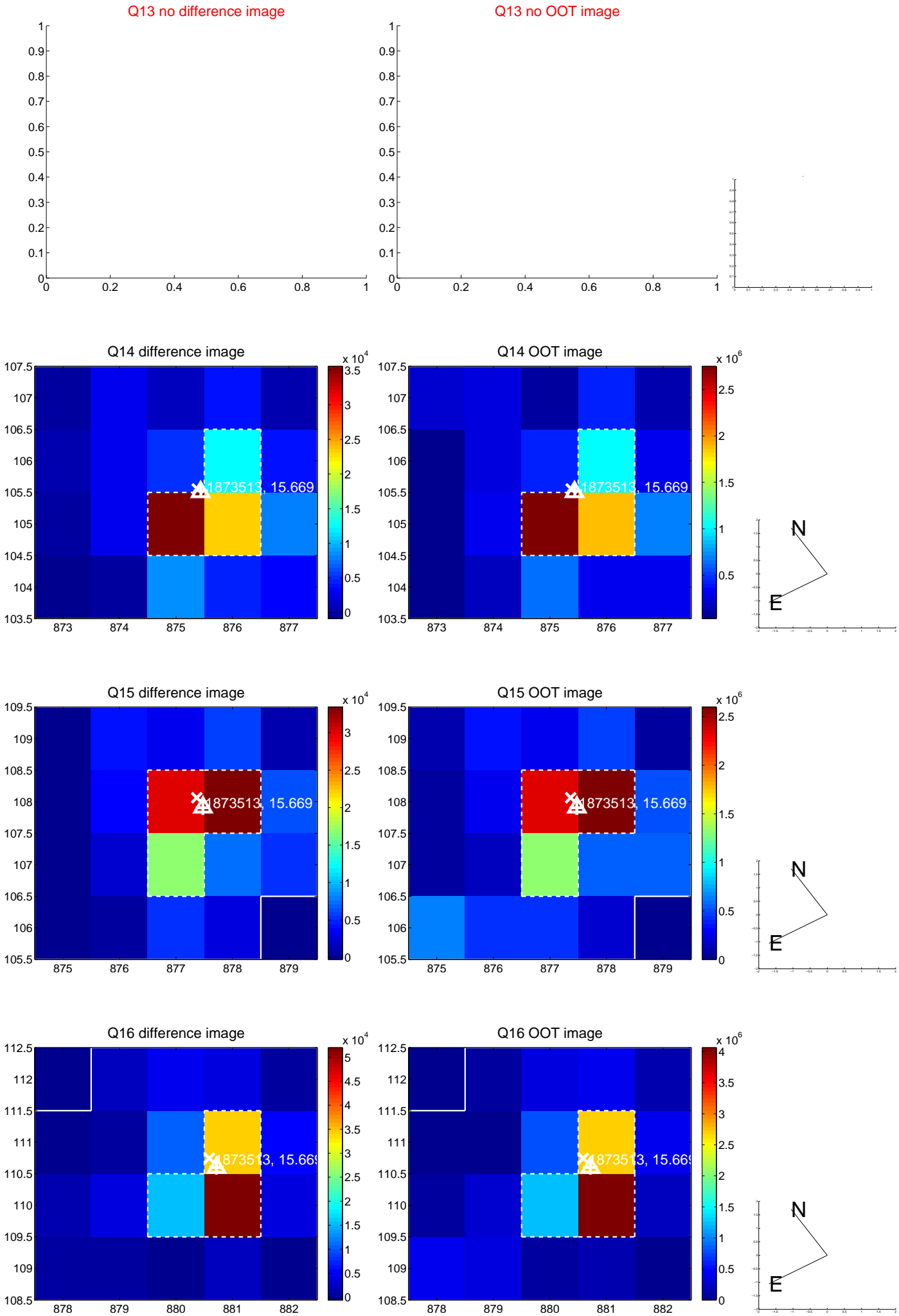




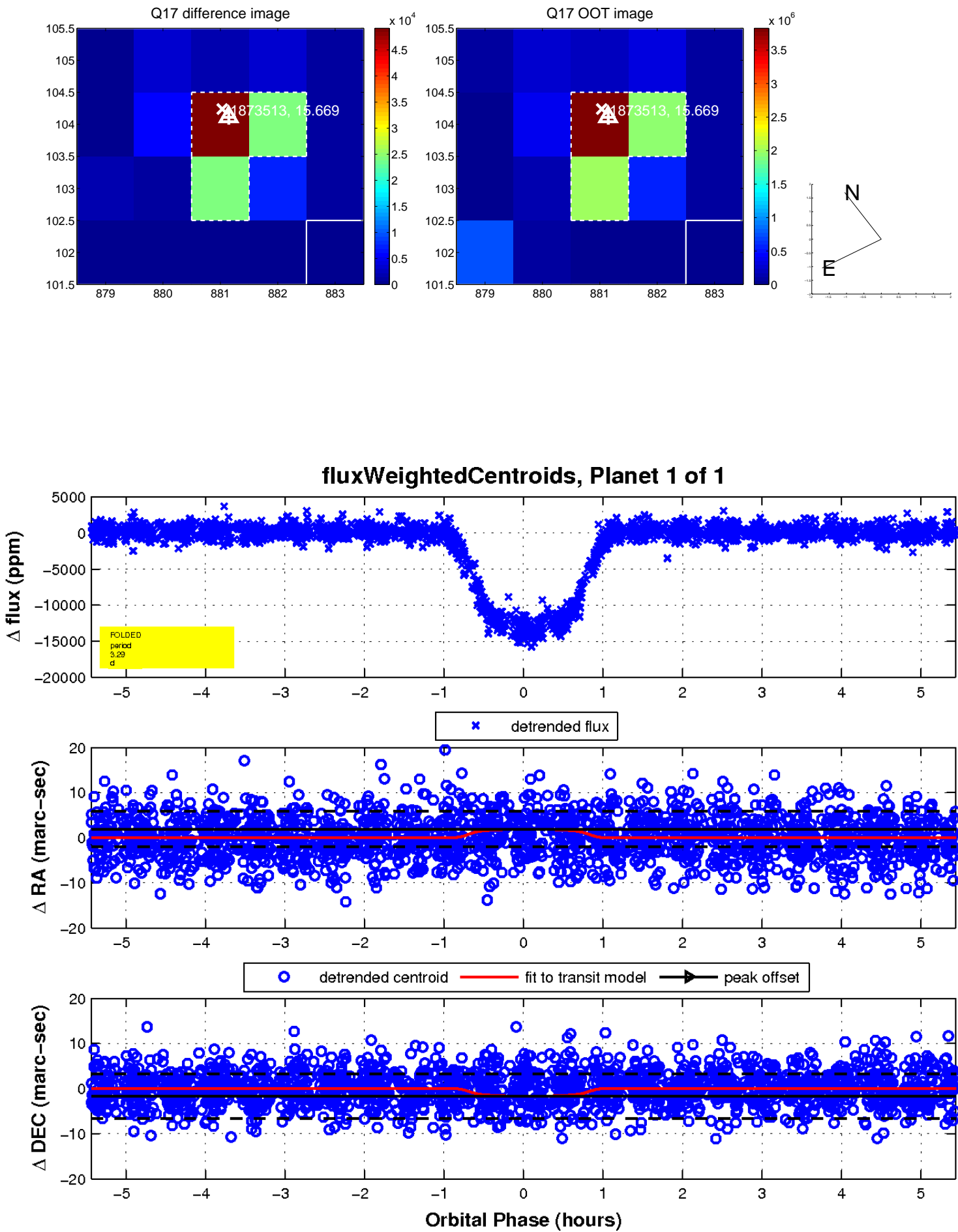
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UKIRT Image

Declination

