

# KIC 006628926

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
006628926-01	OBS	6746.01	2.564400	131.520874	1597.7	1.023	20.6	28.9	1.43	6274	6.77	2071.30

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
006628926-01	OBS	PC	1.00	0	0	0	0	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.

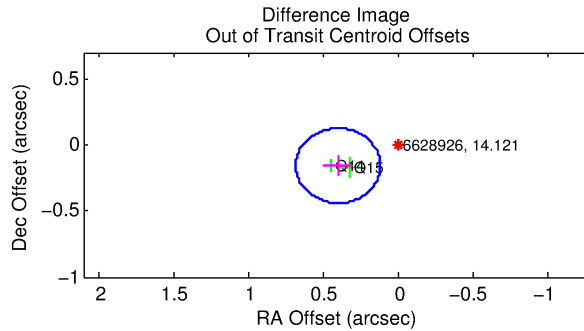
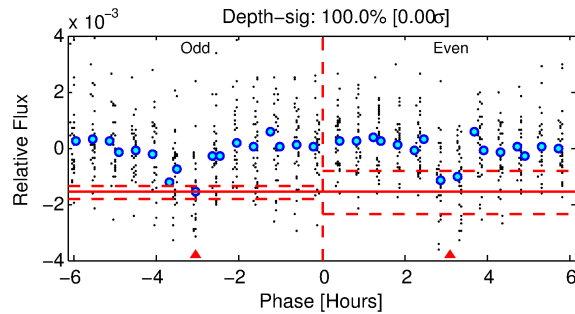
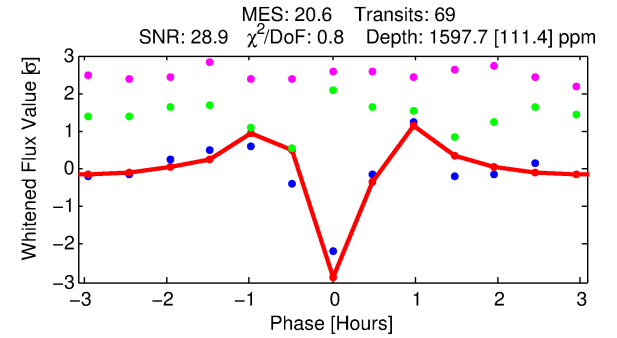
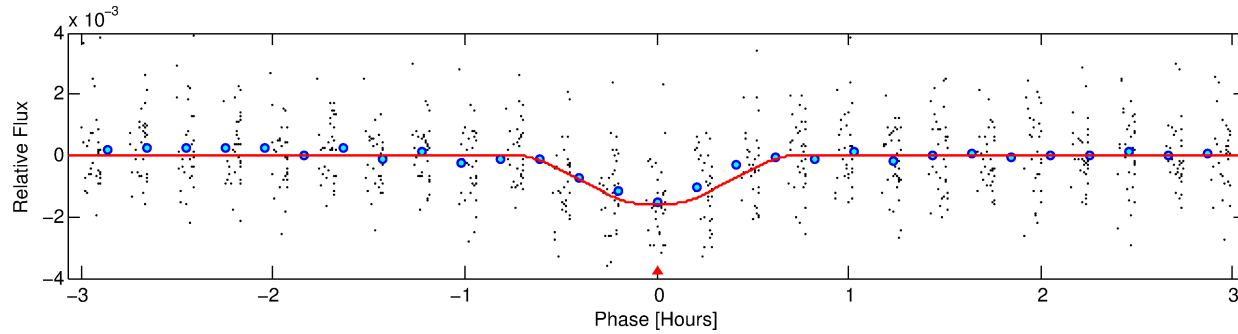
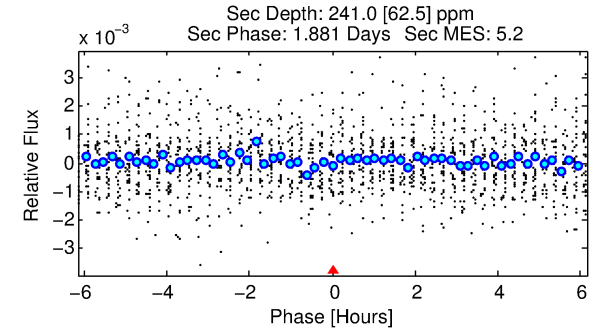
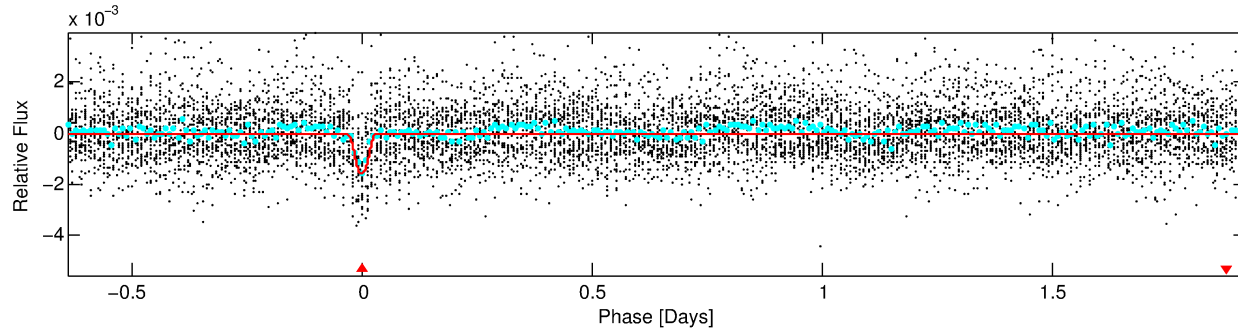
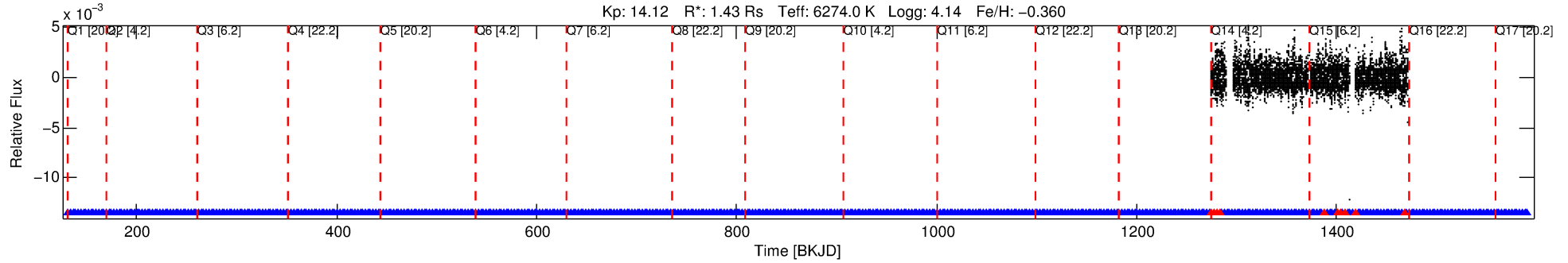
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 006628926-01

No Significant Match Found

# DV One-Page Summary

KIC: 6628926 Candidate: 1 of 1 Period: 2.564 d  
KOI: K06746.01 Corr: 0.910



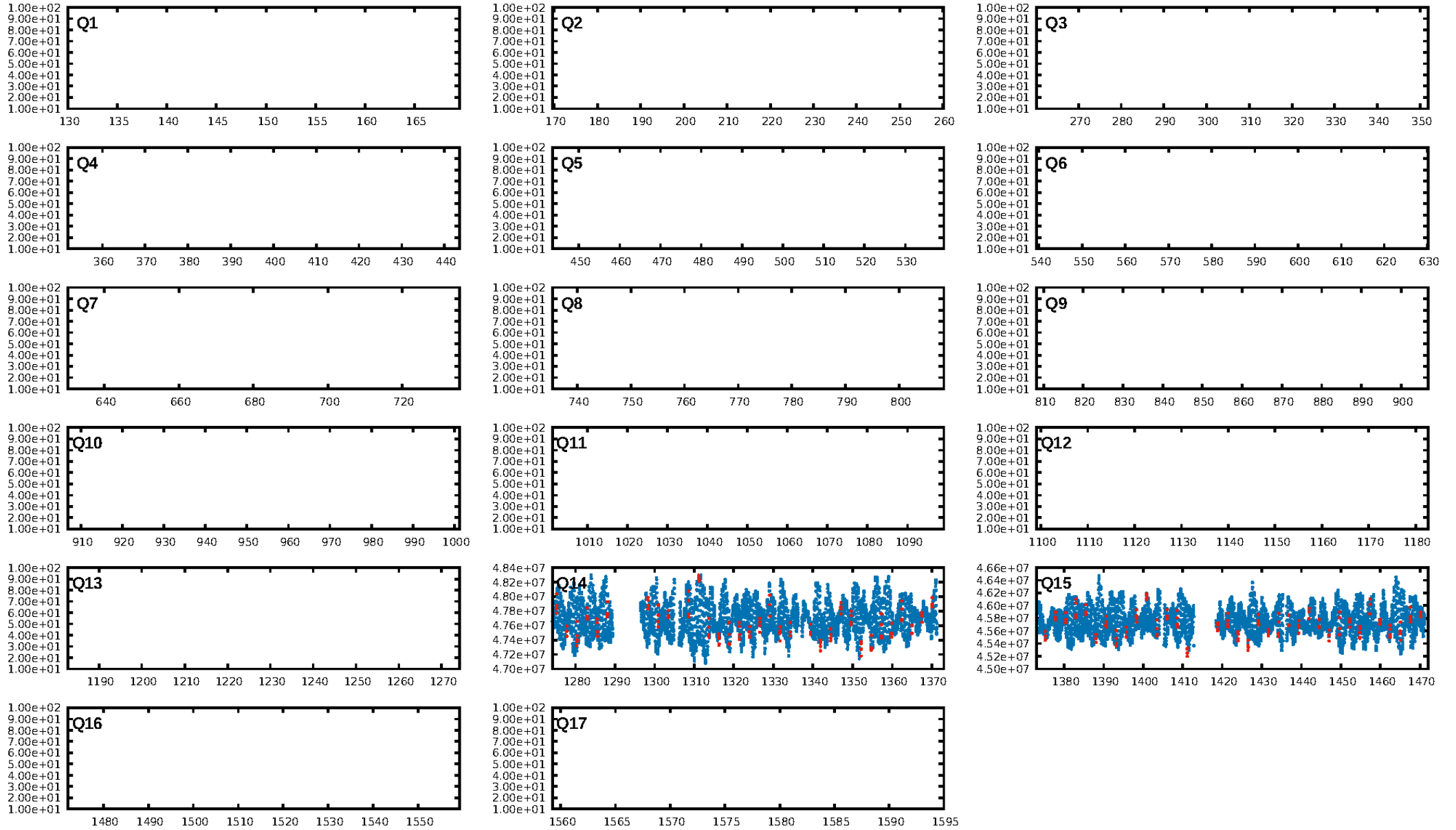
## DV Fit Results:

Period = 2.56440 [0.00000] d  
Epoch = 131.5209 [0.0004] BKJD  
Rp/R\* = 0.0434 [0.0053]  
a/R\* = 10.15 [5.76]  
b = 0.90 [0.12]  
Seff = 2071.30 [1041.13]  
Teq = 1720 [216] K  
Rp = 6.77 [2.10] Re  
a = 0.0370 [0.0107] AU  
Ag = 3.96 [2.36] [1.25σ]  
Teffp = 3752 [364] K [4.80σ]

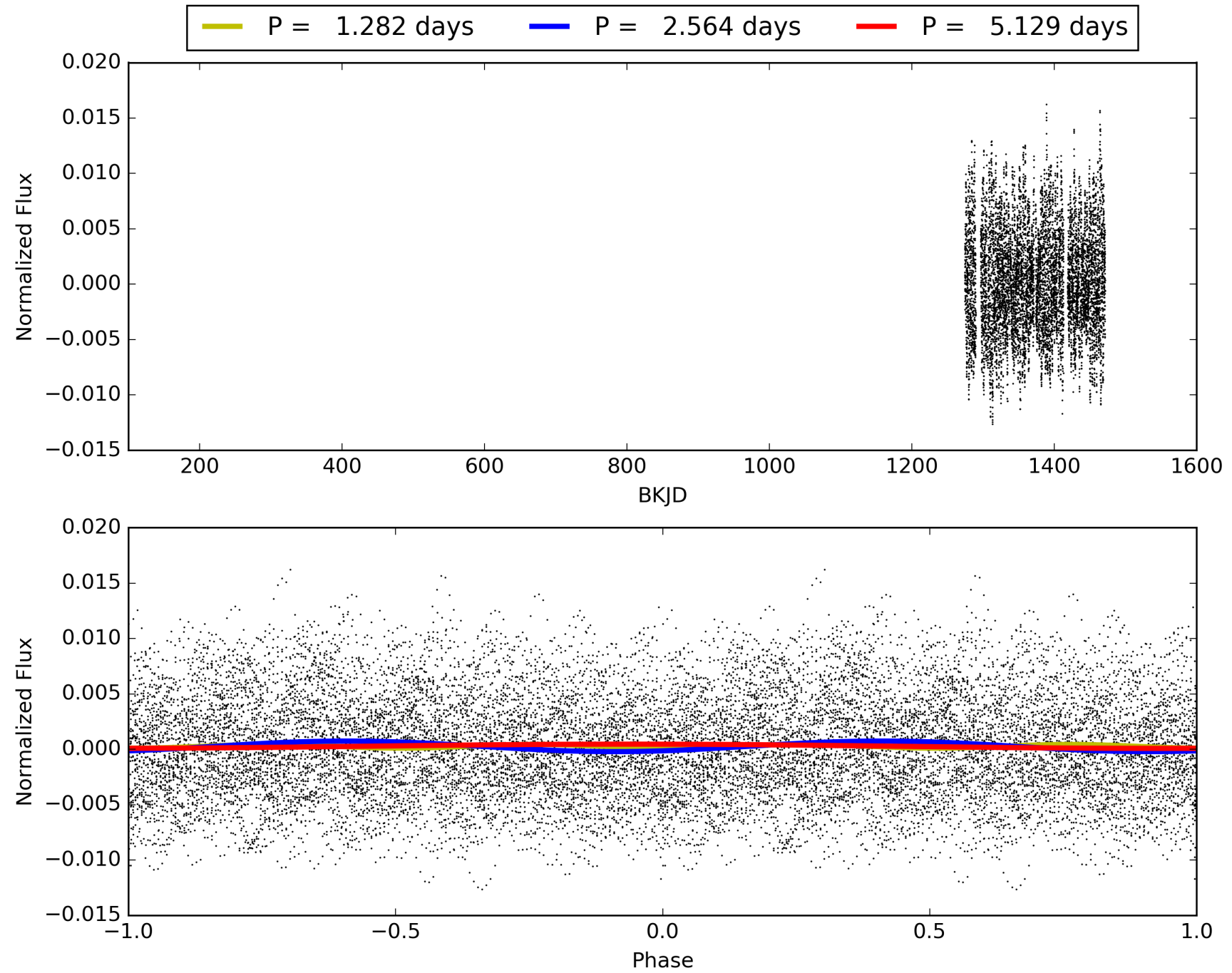
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: 42.1%  
ModelChiSquareGof-sig: 99.1%  
Bootstrap-pfa: 3.61e-98  
RollingBand-fgt: 0.86 [59/69]  
GhostDiagnostic-chr: 3.631  
Centroid-sig: 17.1%  
Centroid-so: 0.248 arcsec [0.93σ]  
OotOffset-rm: 0.429 arcsec [4.54σ]  
KicOffset-rm: 0.422 arcsec [2.84σ]  
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]

# TCE 006628926-01, PDC Light Curves

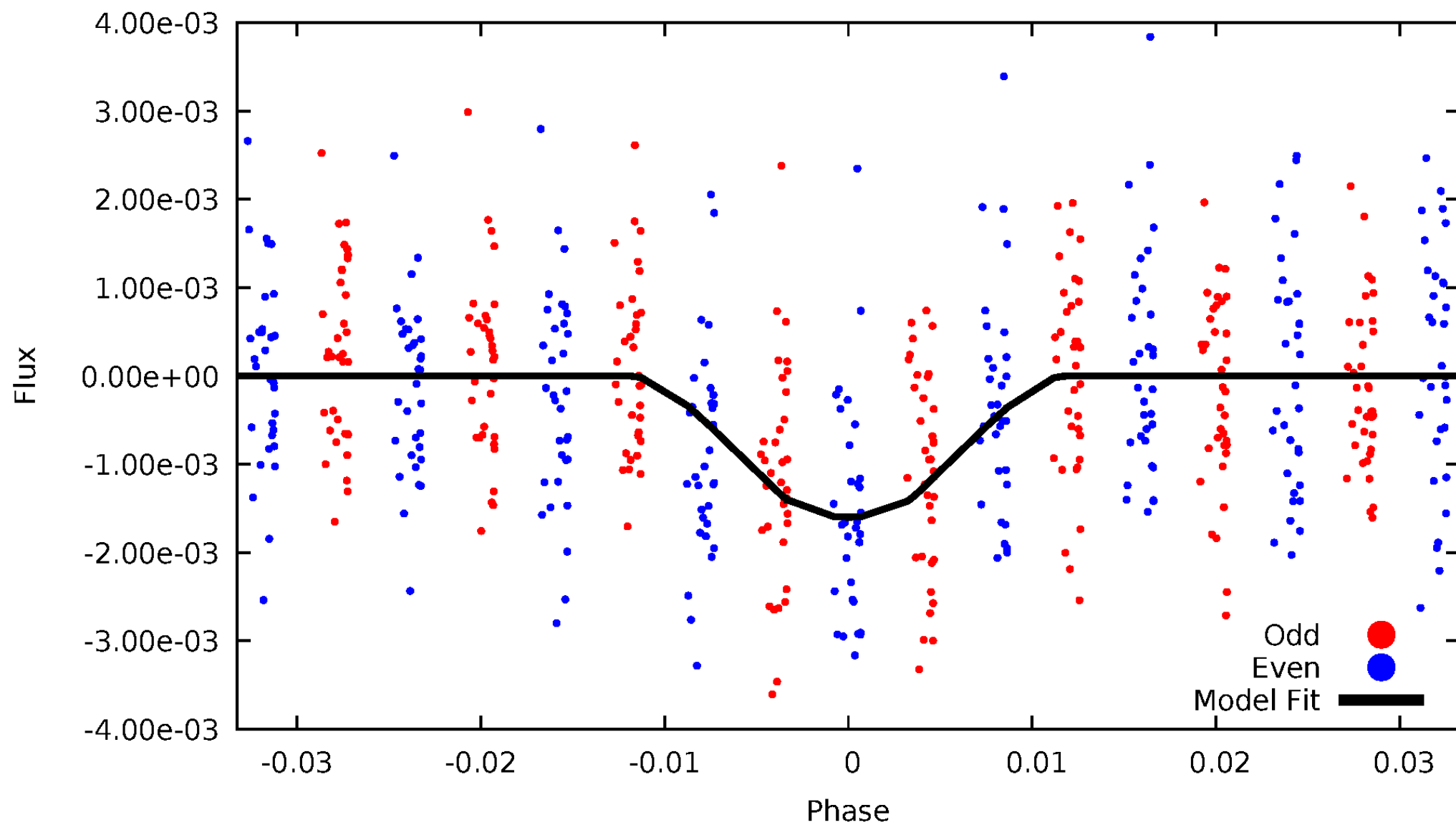


TCE 006628926-01



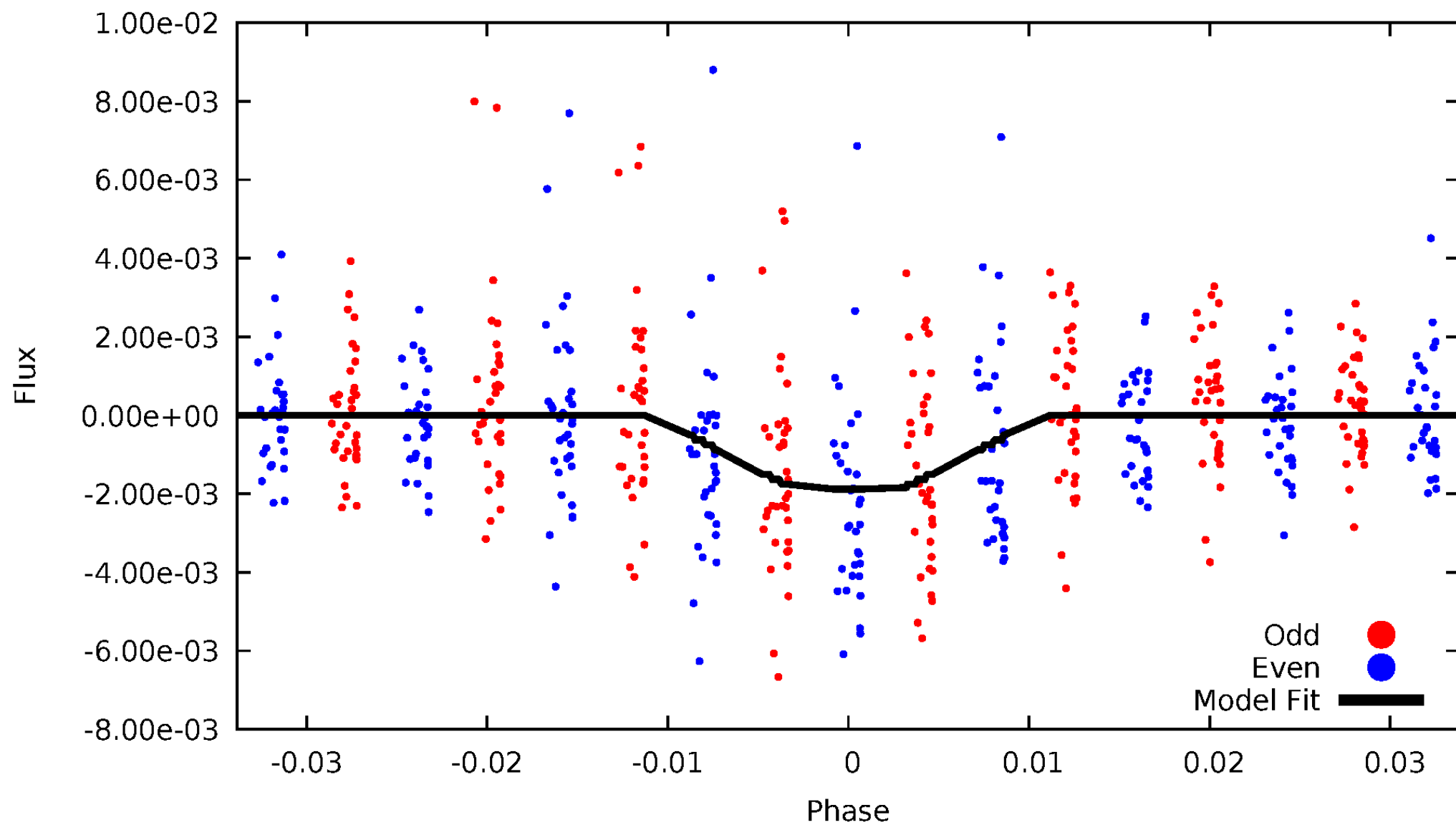
# DV Odd/Even

TCE 006628926-01



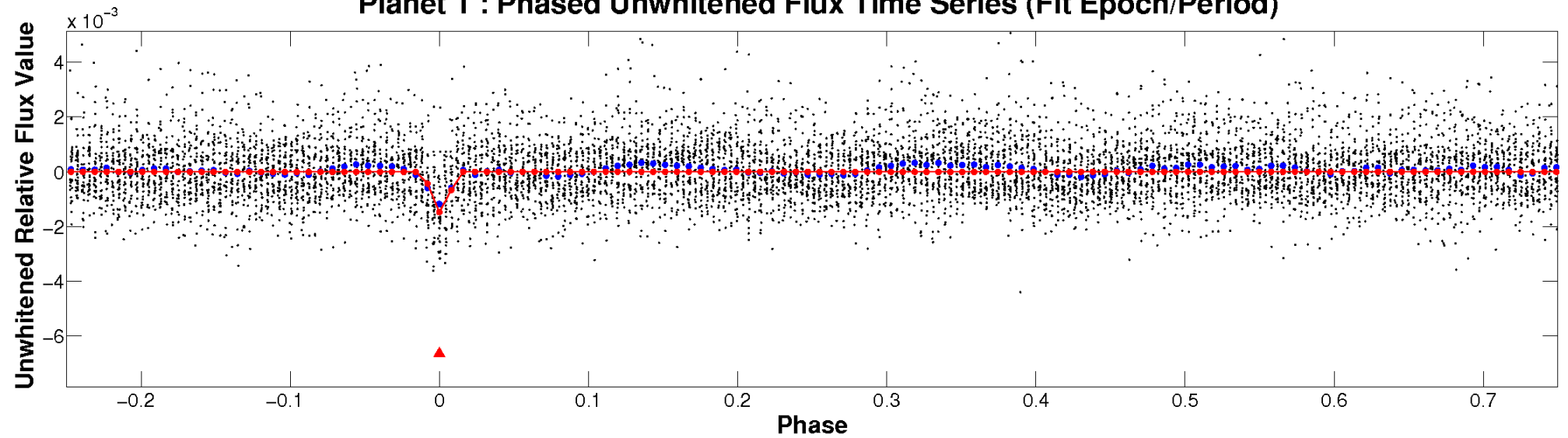
# ALT Odd/Even

TCE 006628926-01

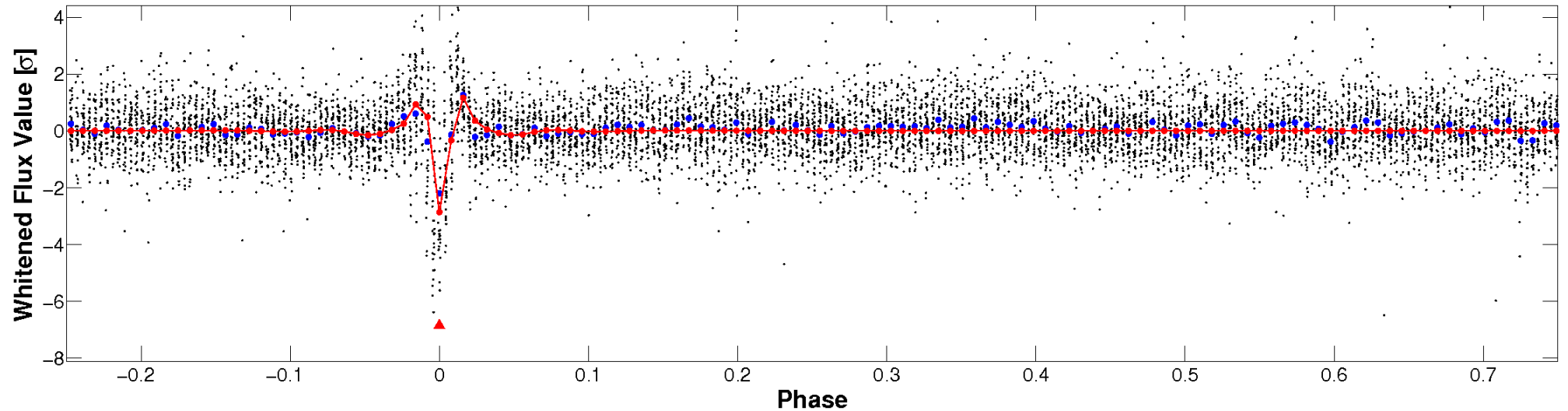


# Non-Whitened Vs. Whitened Light Curve

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

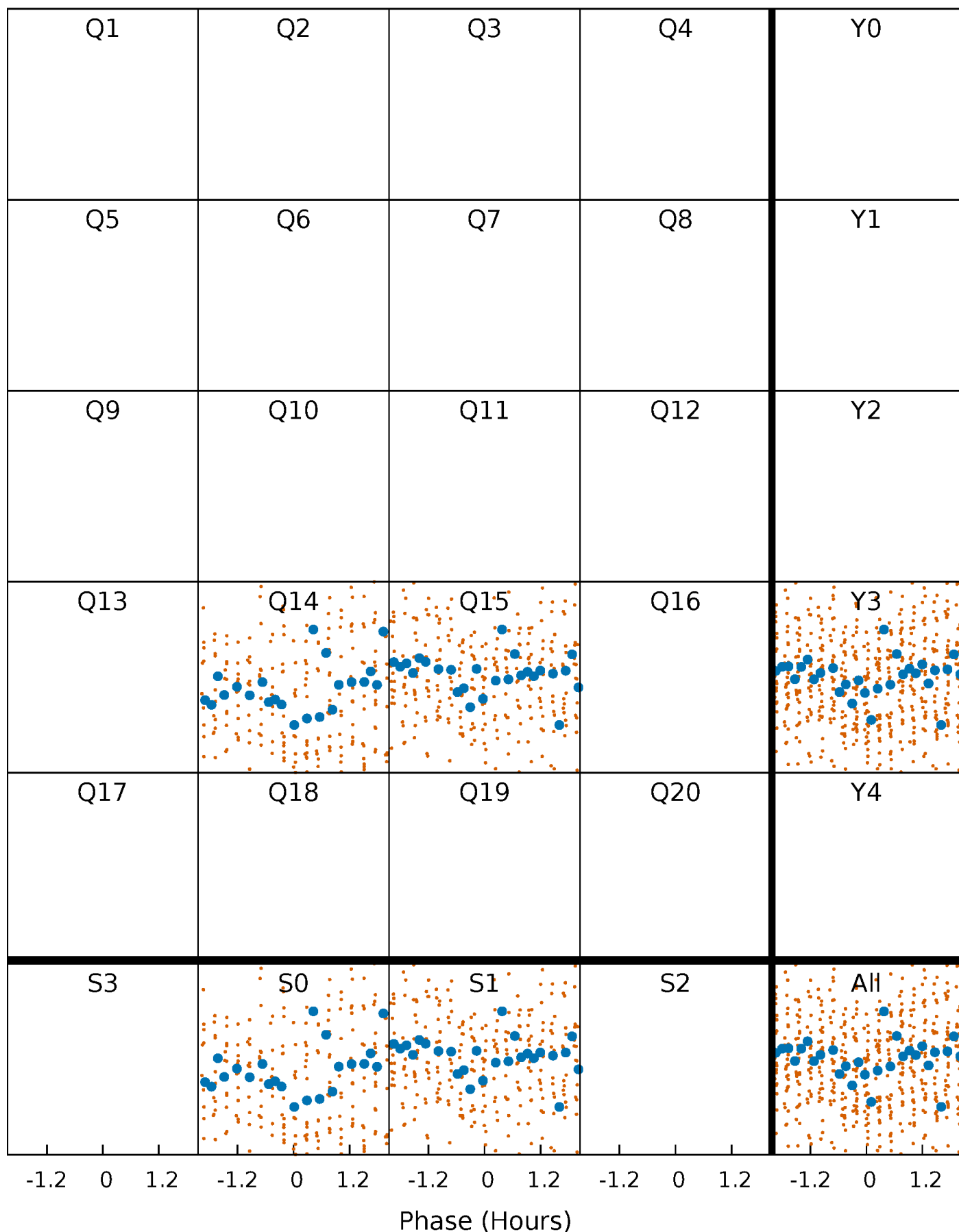


**Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)**



# PDC Quarter-Phased Transit Curves

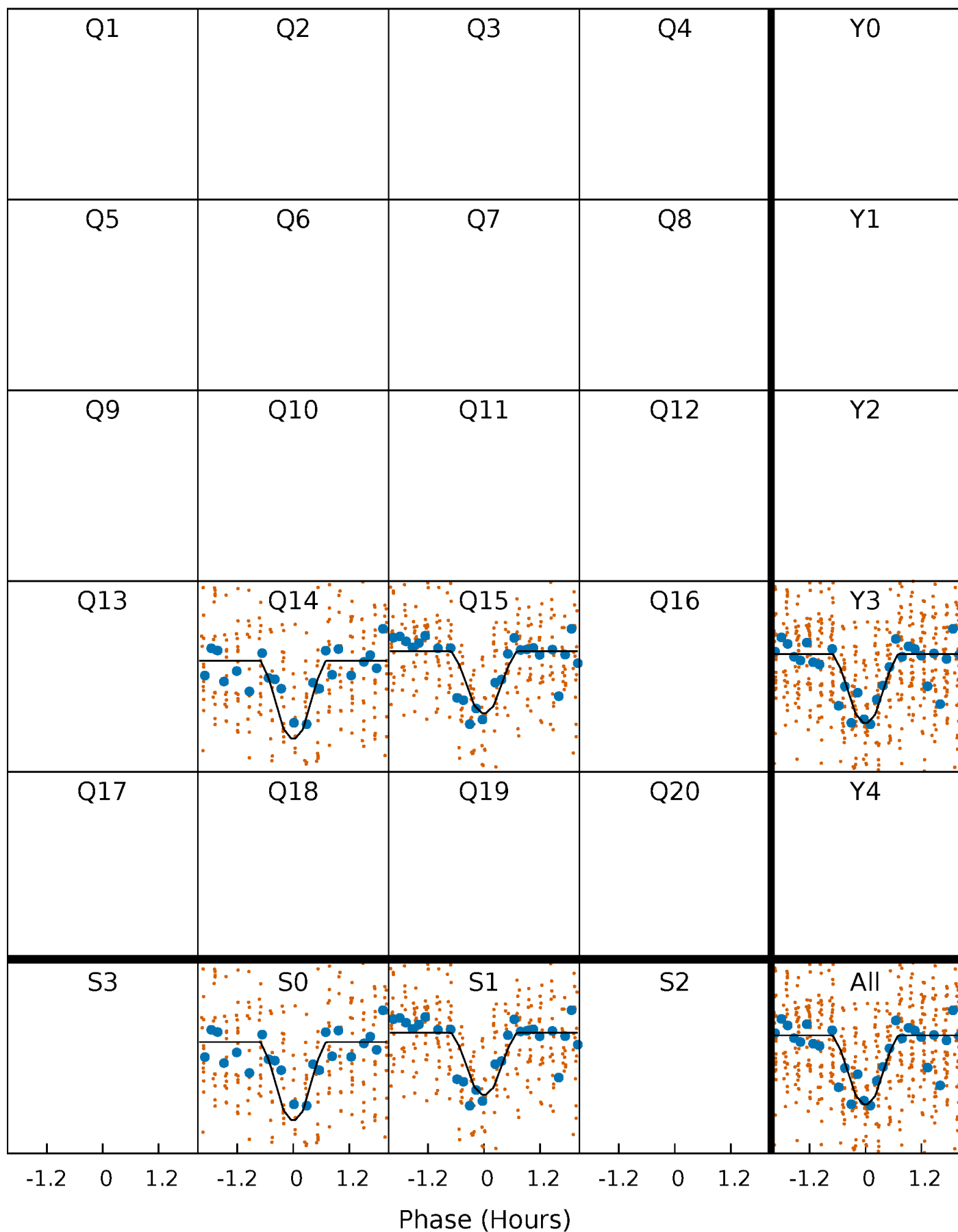
TCE 006628926-01 P= 2.564400 Days  $T_0=131.520874$  (BKJD)





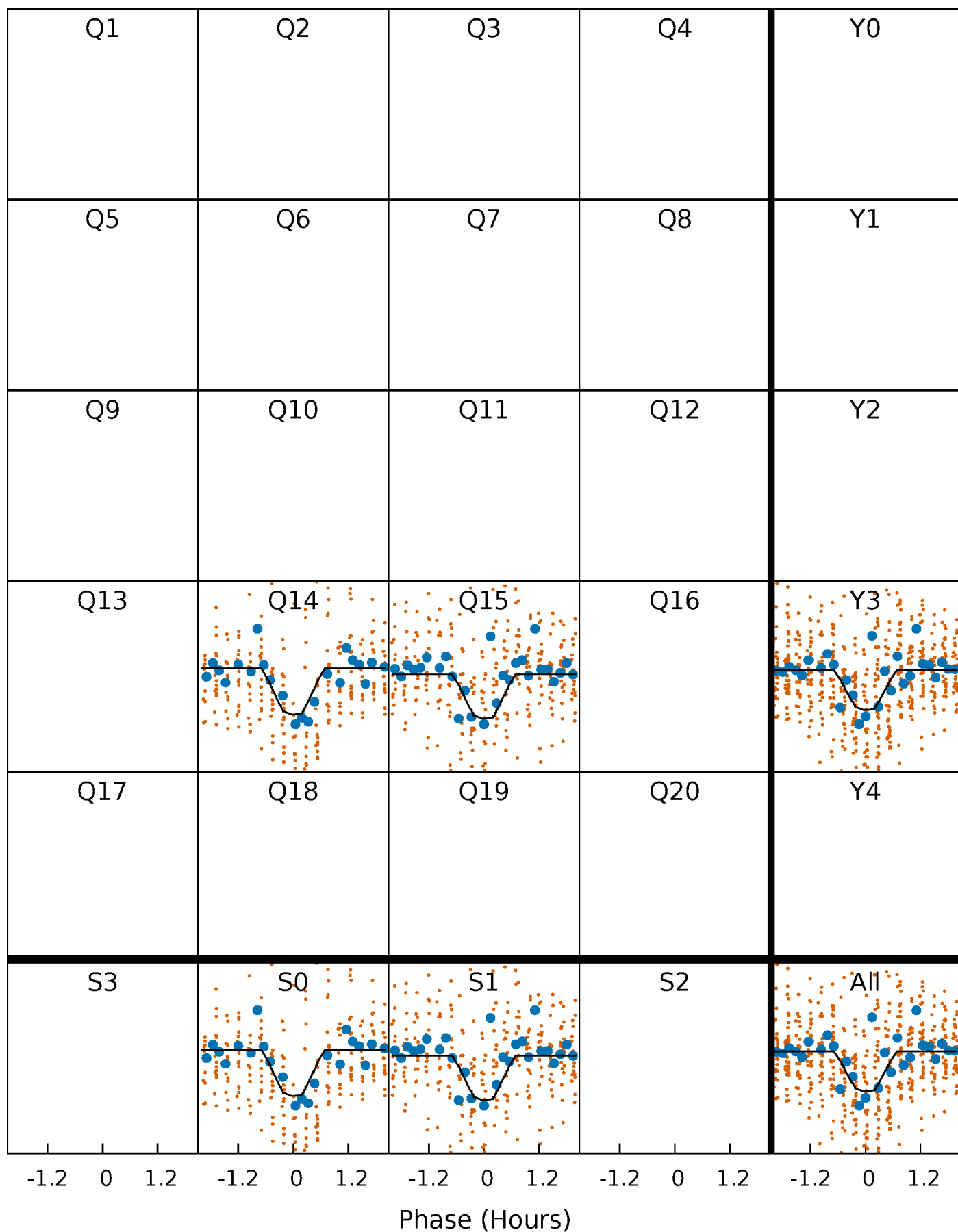
# DV Quarter-Phased Transit Curves

TCE 006628926-01   P= 2.564400 Days    $T_0=131.520874$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

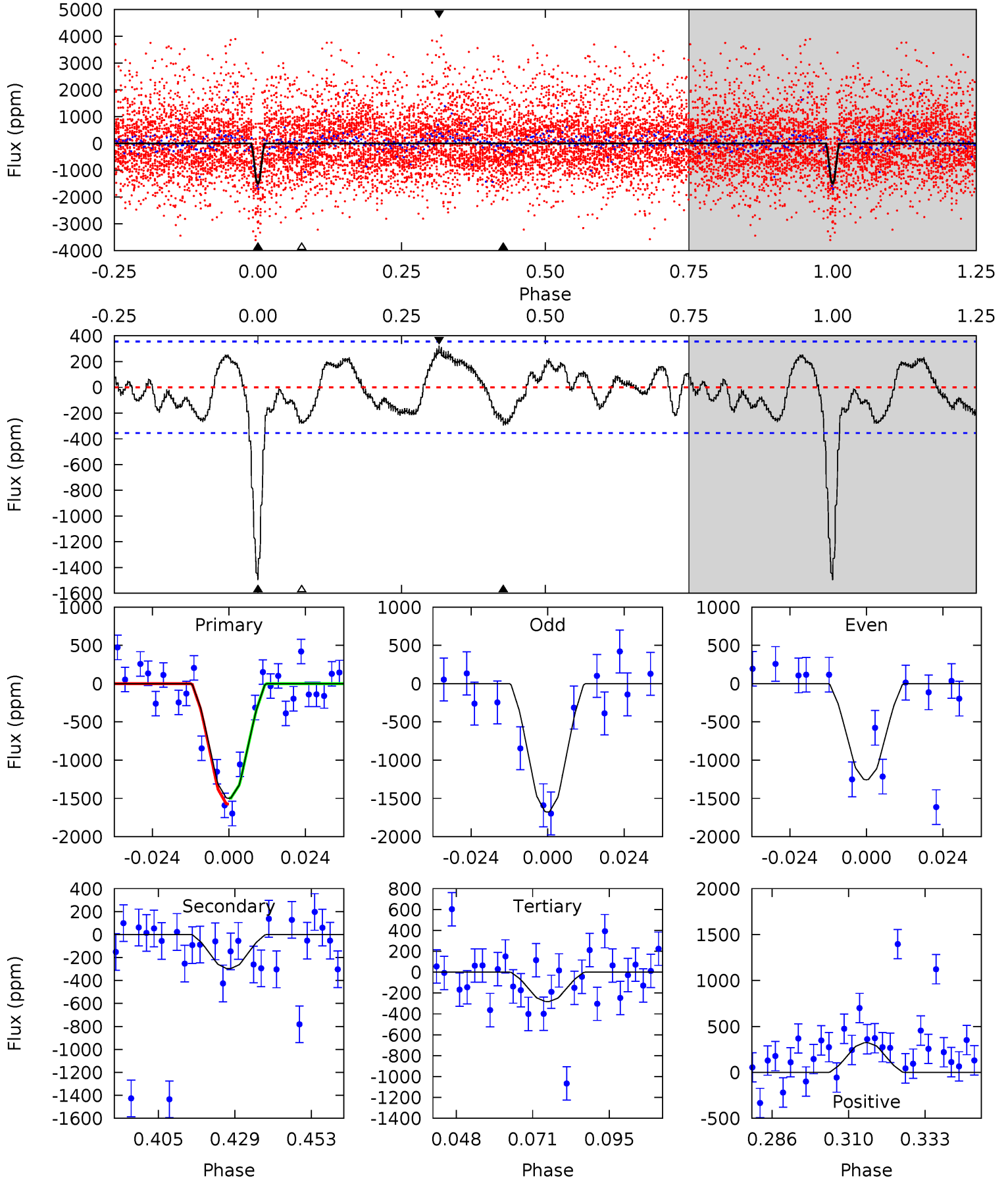
TCE 006628926-01 P= 2.564400 Days  $T_0=131.520874$  (BKJD)



# DV Model-Shift Uniqueness Test

006628926-01, P = 2.564400 Days, E = 131.520874 Days

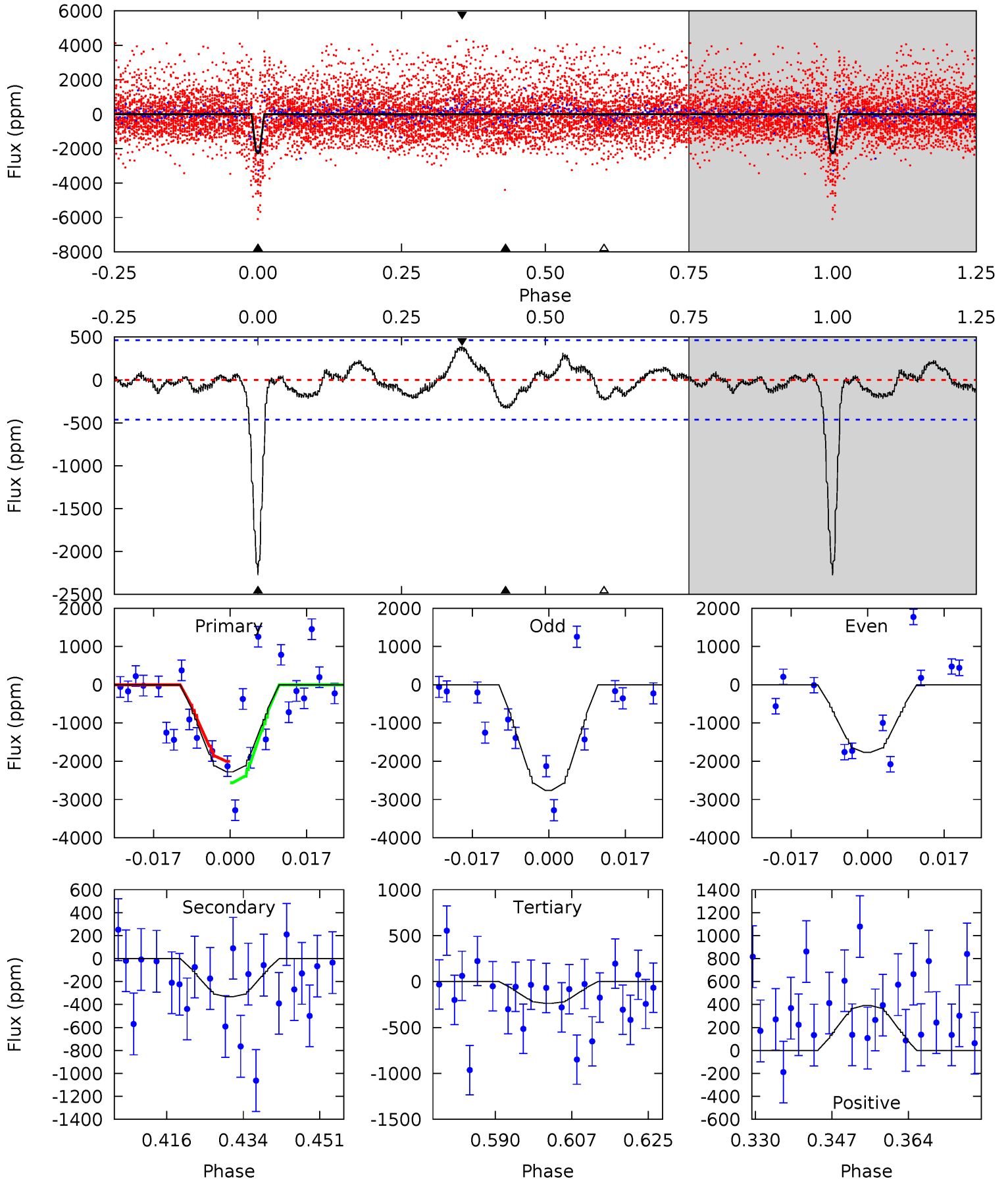
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
20.5	4.05	3.84	4.41	4.86	2.26	1.92	16.6	16.1	0.21	-0.36	2.88	0.90	0.18	0.52



# Alt Model-Shift Uniqueness Test

006628926-01, P = 2.564400 Days, E = 131.520874 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
24.2	3.54	2.52	4.16	4.92	2.38	1.33	21.7	20.0	1.01	-0.62	5.25	0.88	0.15	2.99



### Stellar Parameters For KIC 006628926

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R$ ( $R_{\odot}$ )	$M$ ( $M_{\odot}$ )	$p_{\star}$ ( $\text{g}\cdot\text{cm}^{-3}$ )
	$6274^{+198}_{-242}$	$4.139^{+0.286}_{-0.154}$	$-0.360^{+0.300}_{-0.300}$	$1.428^{+0.407}_{-0.407}$	$1.024^{+0.169}_{-0.138}$	$0.495^{+0.837}_{-0.244}$
	+3%/-4%	+7%/-4%	+83%/-83%	+29%/-29%	+17%/-13%	+169%/-49%
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 006628926-01 / KOI 6746.01

Detrend	Depth (ppm)	$R_p$ ( $R_{\oplus}$ )	$T_{\text{max}}$ (K)	$T_{\text{obs}}$ (K)	$A_{\text{obs}}$
DV	$-296 \pm 73$	$6.54^{+1.32}_{-1.26}$	$2368^{+181}_{-199}$	$4145^{+331}_{-300}$	$5.170^{+2.911}_{-2.009}$
Alt.	$-333 \pm 94$	$6.52^{+1.43}_{-1.28}$	$2361^{+202}_{-209}$	$4234^{+338}_{-319}$	$5.749^{+3.807}_{-2.278}$

$T_{\text{max}}$  = 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

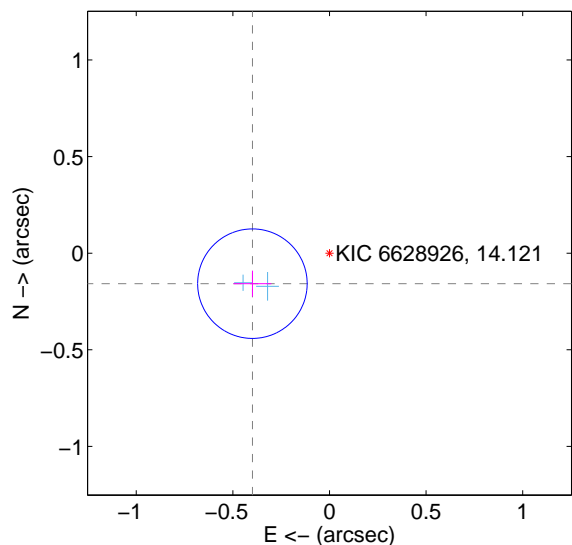
Supplemental centroid analysis for 006628926-01. Kepler magnitude: 14.12. Transit SNR 28.91

There are 2 quarters with good PRF difference image offsets

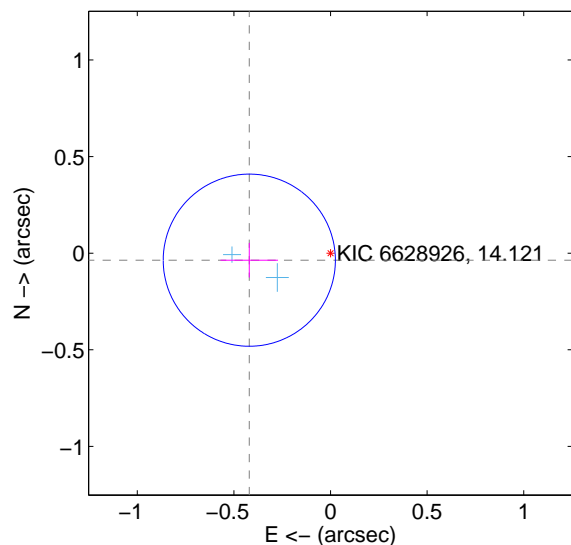
The direct PRF centroid is offset from the target star catalog position by about 0.06 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.429 \pm 0.094$	4.54	$0.399 \pm 0.098$	$-0.158 \pm 0.067$
PRF-fit source offset from KIC position	$0.422 \pm 0.148$	2.84	$0.420 \pm 0.149$	$-0.036 \pm 0.089$
photometric centroid source offset	$0.25 \pm 0.27$	0.93	$-0.20 \pm 0.29$	$0.14 \pm 0.21$

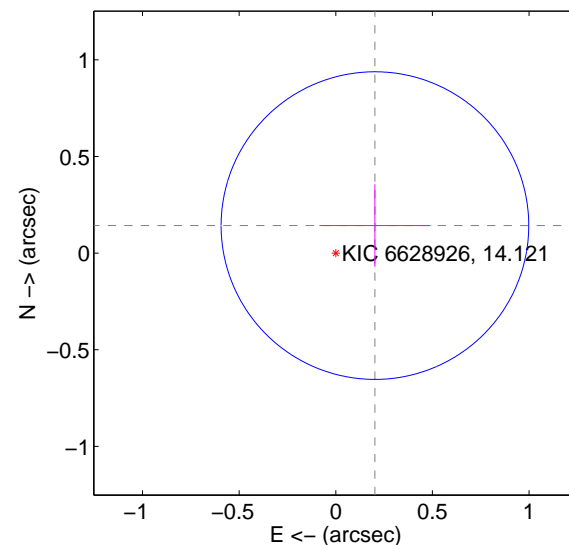
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position



offset from photometric centroids



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.



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

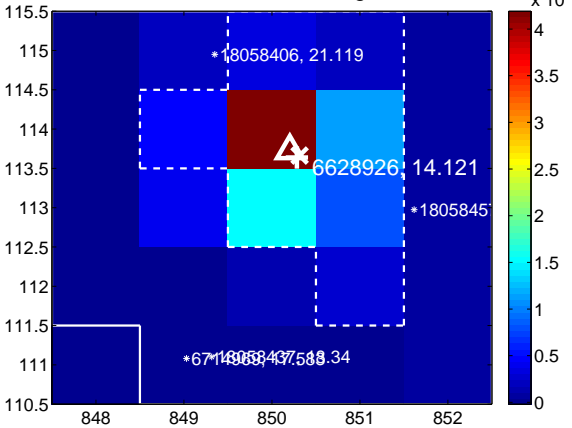
Q13 no difference image



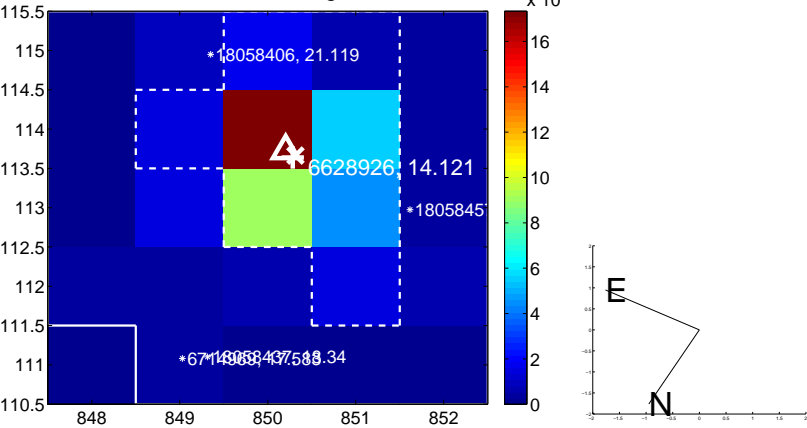
Q13 no OOT image



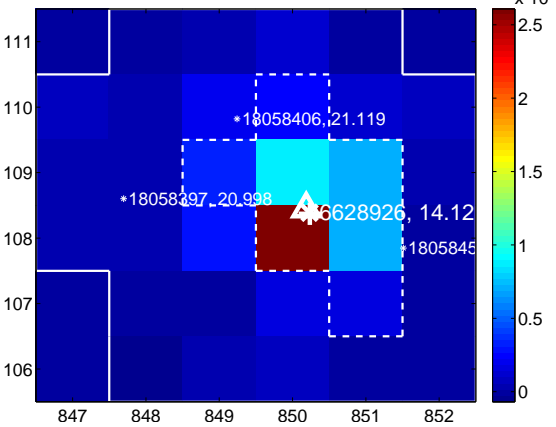
Q14 difference image



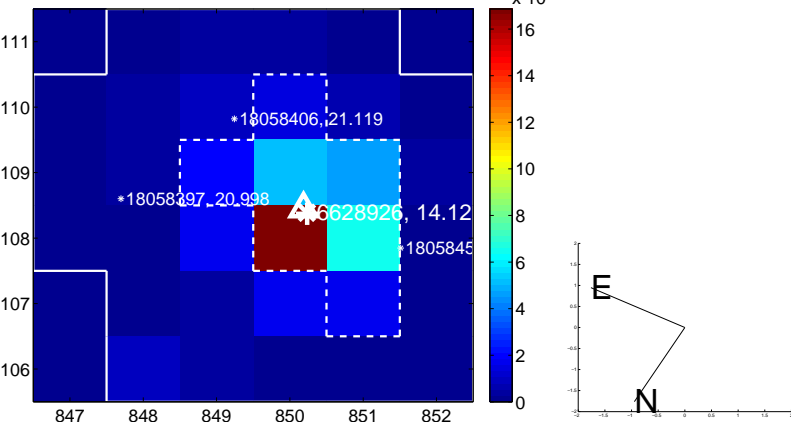
Q14 OOT image



Q15 difference image



Q15 OOT image



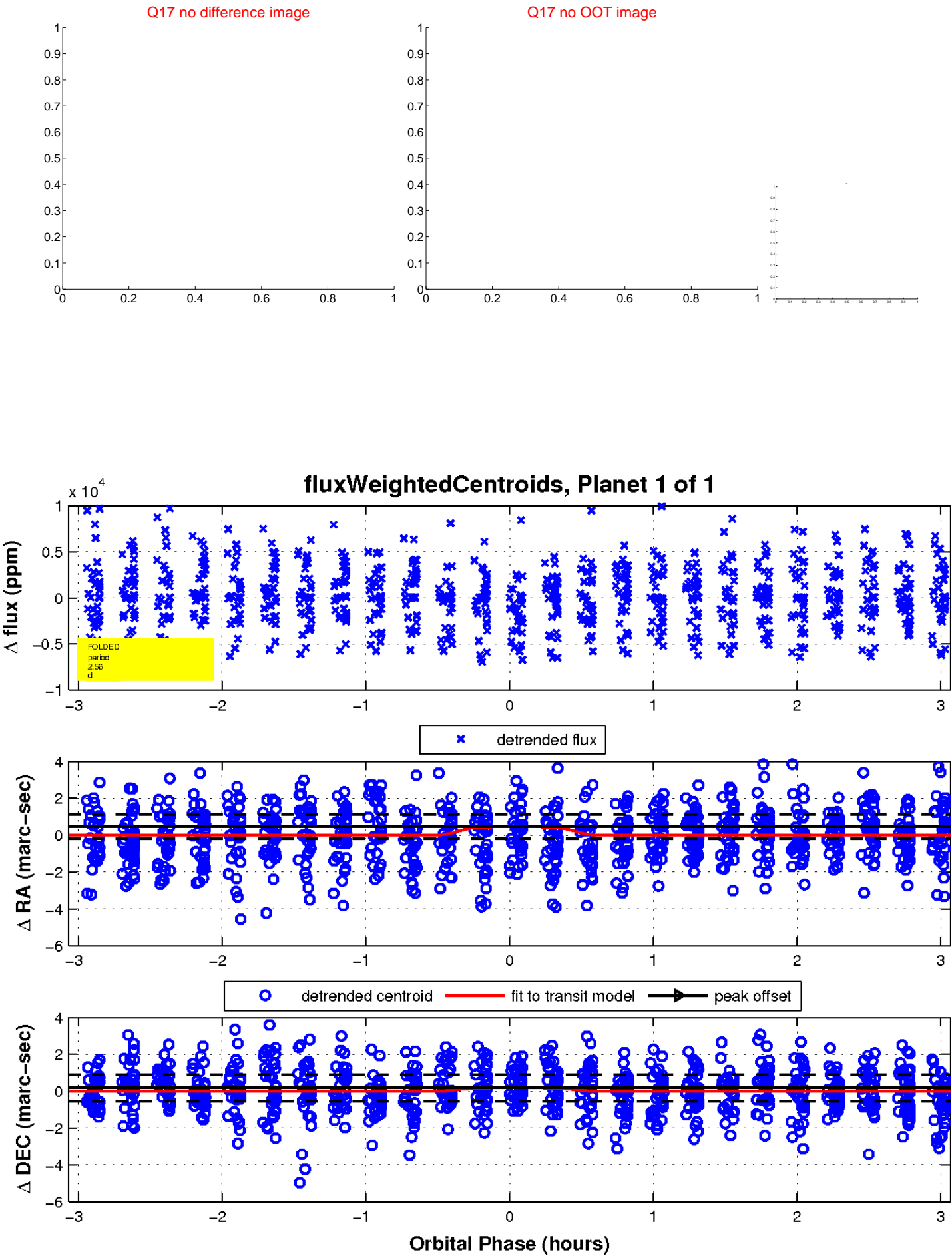
Q16 no difference image



Q16 no OOT image



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



UKIRT Image

Declination

