

# KIC 005858519

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
005858519-01	OBS	5206.01	4.182383	134.046781	191591.7	6.717	4324.7	3206.9	1.17	6188	76.82	681.81

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005858519-01	OBS	FP	0.00	0	1	0	0	MOD_ODDEVEN_DV—DEEP_V_SHAPED—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.

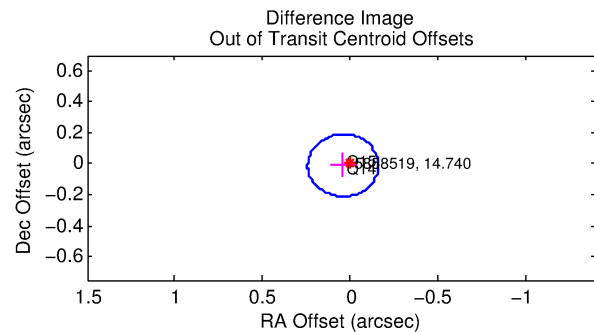
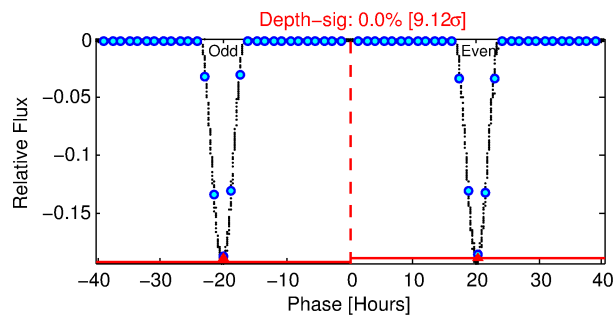
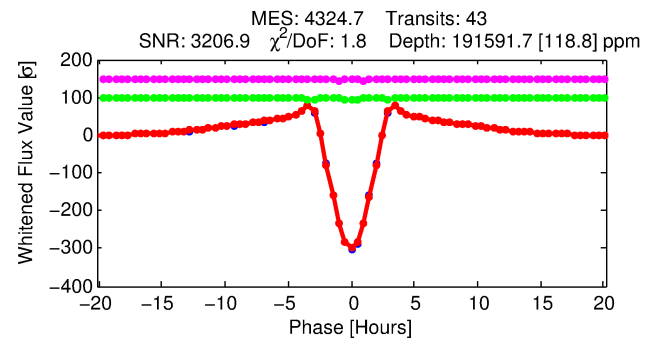
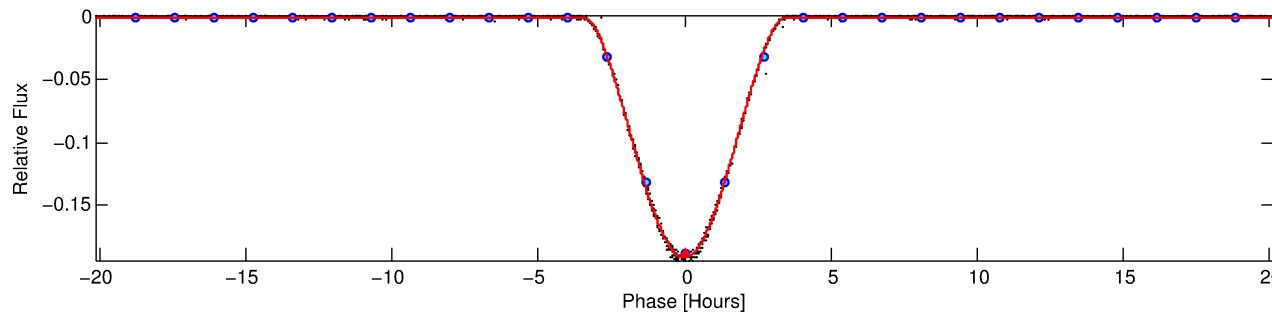
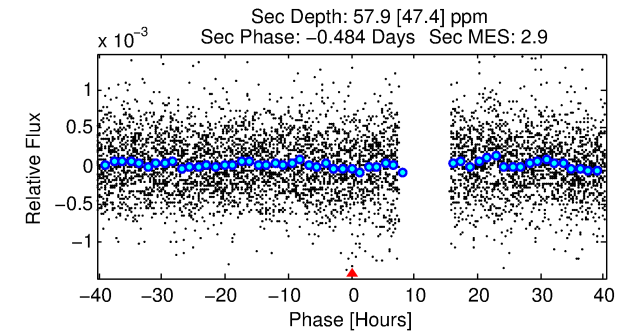
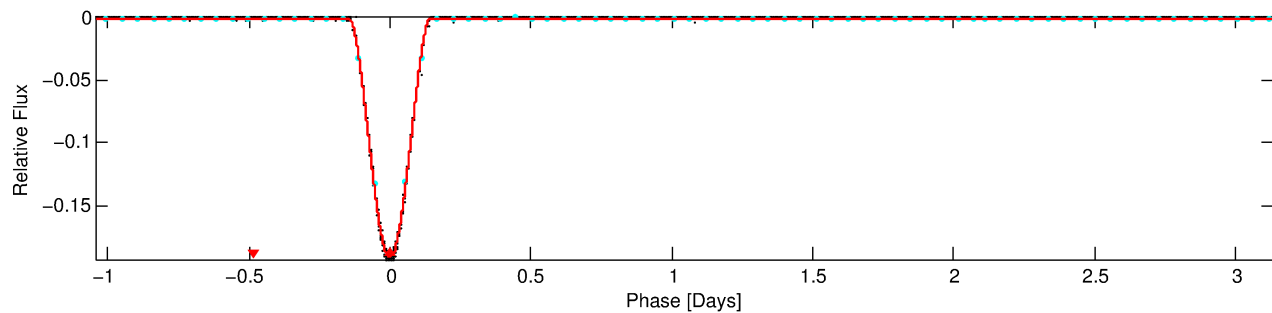
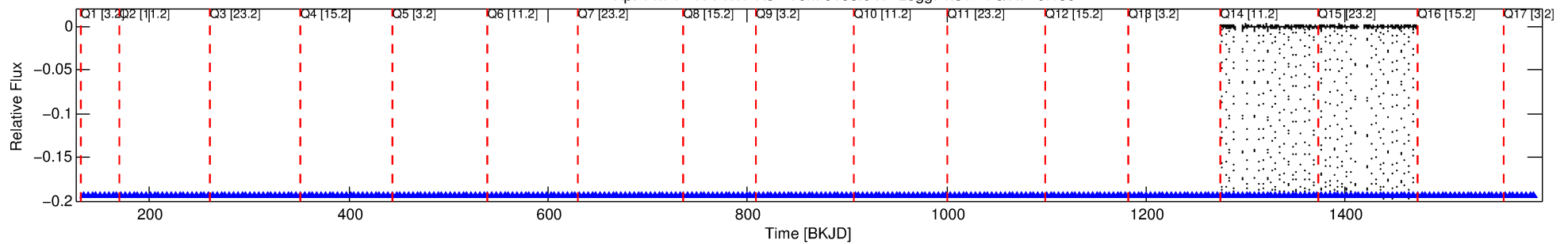
## Ephemeris Match Information For 005858519-01

No Significant Match Found

# DV One-Page Summary

KIC: 5858519 Candidate: 1 of 1 Period: 4.182 d  
KOI: K05206.01 Corr: 0.990

Kp: 14.74 R\*: 1.17 Rs Teff: 6188.0 K Logg: 4.31 Fe/H: -0.180



## DV Fit Results:

Period = 4.18238 [0.00000] d  
Epoch = 134.0468 [0.0001] BKJD  
Rp/R\* = 0.6037 [0.0164]  
a/R\* = 6.43 [0.03]  
b = 0.90 [0.02]  
Seff = 681.81 [272.93]  
Teq = 1303 [130] K  
Rp = 76.82 [24.20] Re  
a = 0.0512 [0.0132] AU  
Ag = 0.01 [0.01] [-77.49σ]  
Teffp = 695 [145] K [-3.12σ]

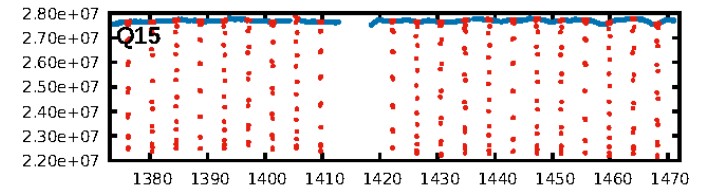
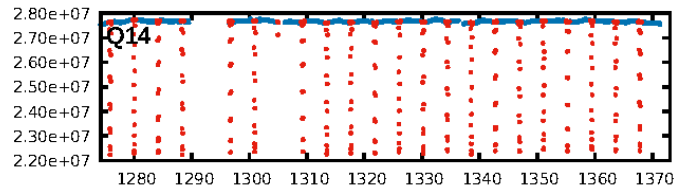
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: 0.0%  
ModelChiSquareGof-sig: 0.0%  
Bootstrap-pfa: 0.00e+00  
RollingBand-fgt: 1.00 [43/43]  
GhostDiagnostic-chr: 3.69  
Centroid-sig: 0.0%  
Centroid-so: 0.017 arcsec [8.33σ]  
OotOffset-rm: 0.043 arcsec [0.64σ]  
KicOffset-rm: 0.037 arcsec [0.52σ]  
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]

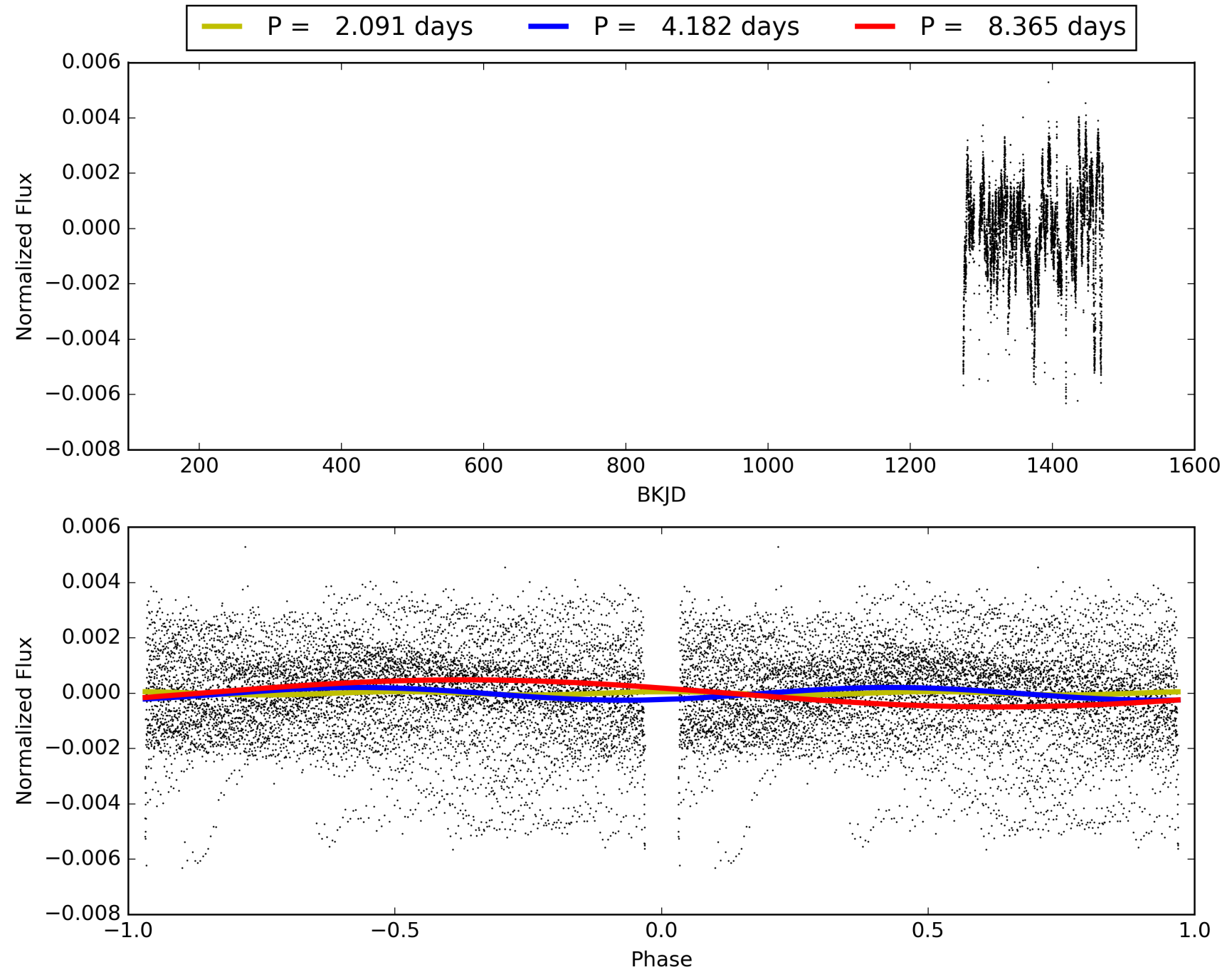
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 14:32:32 Z

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

# TCE 005858519-01, PDC Light Curves

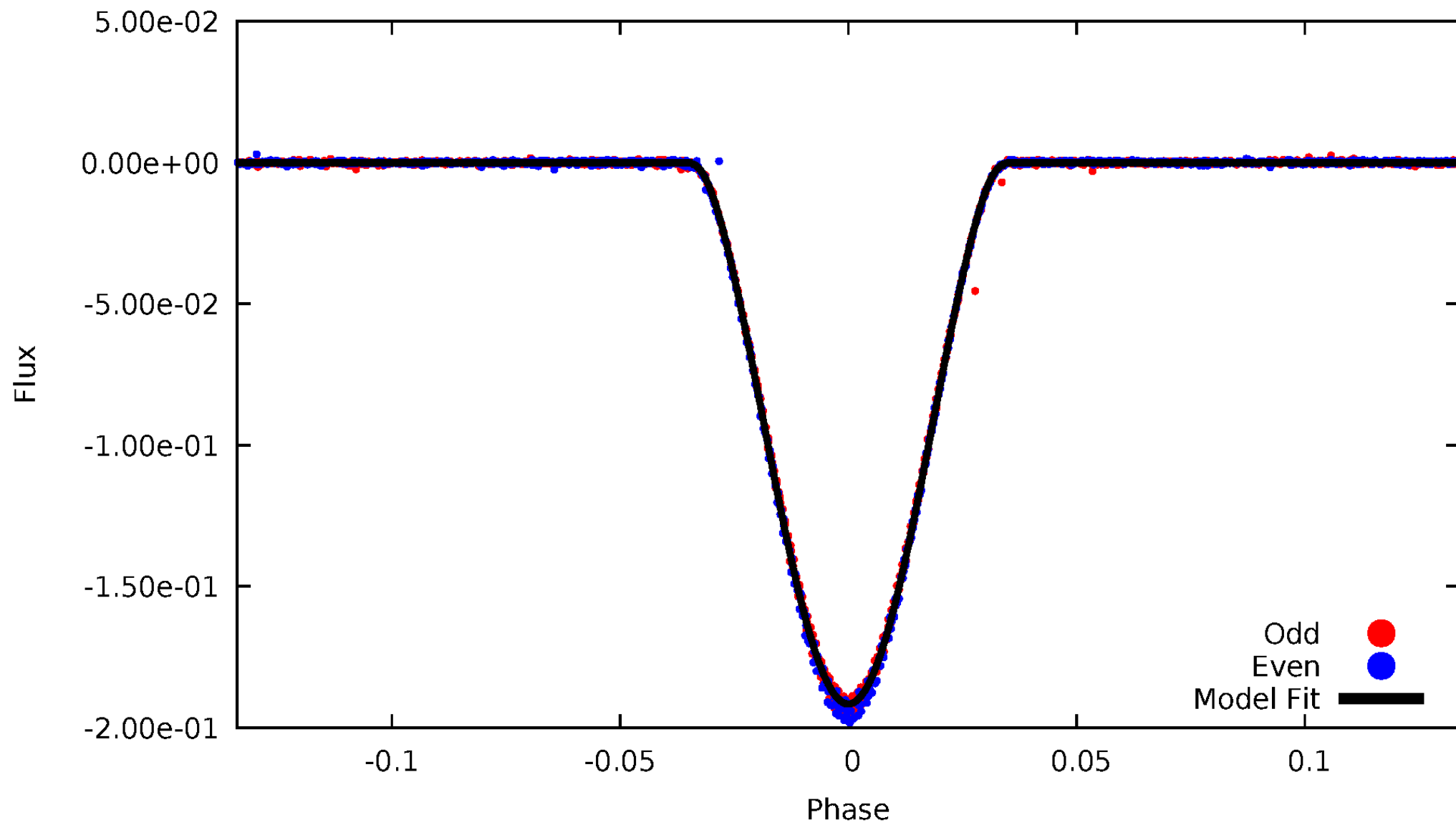


# TCE 005858519-01



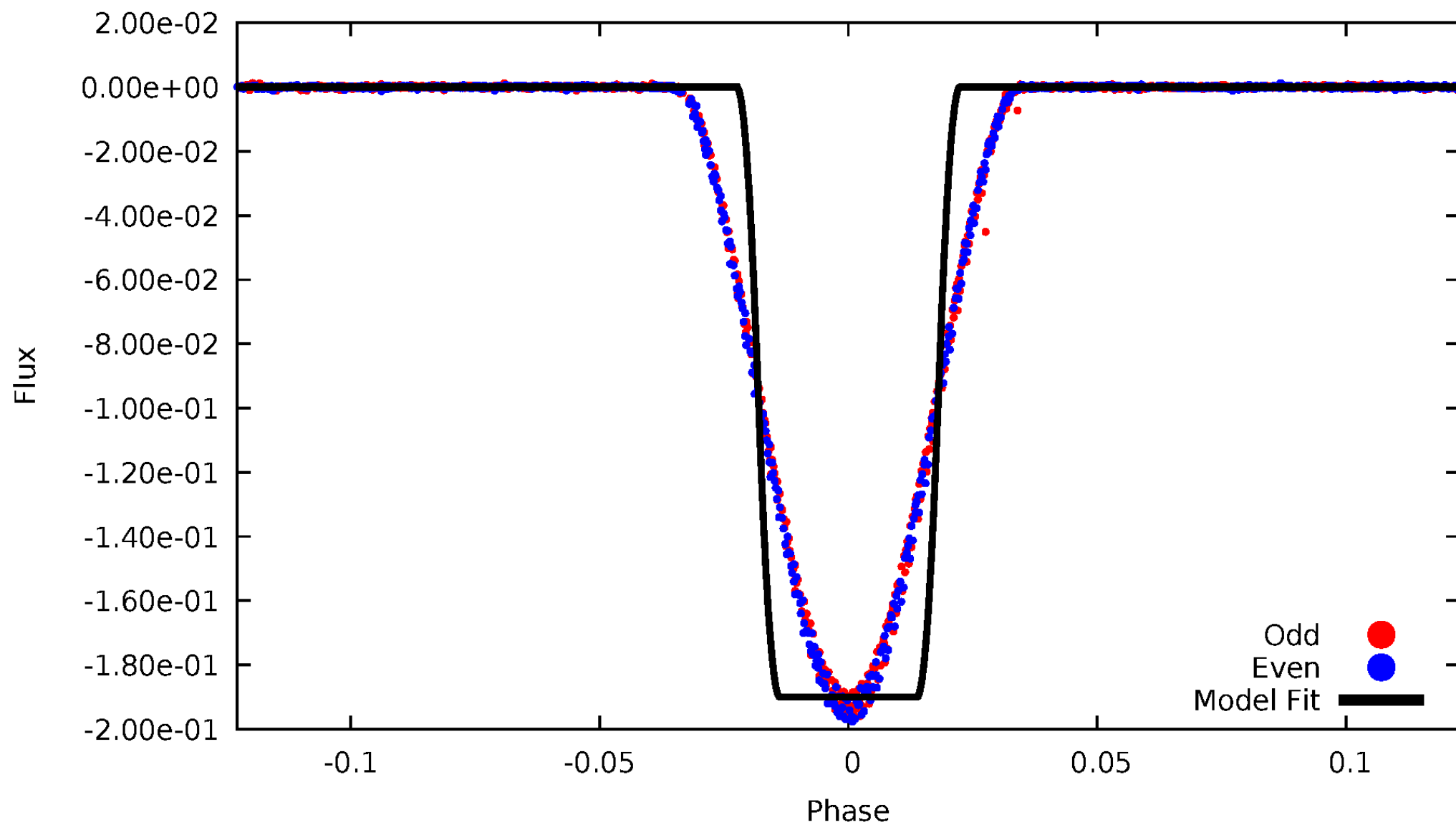
# DV Odd/Even

TCE 005858519-01



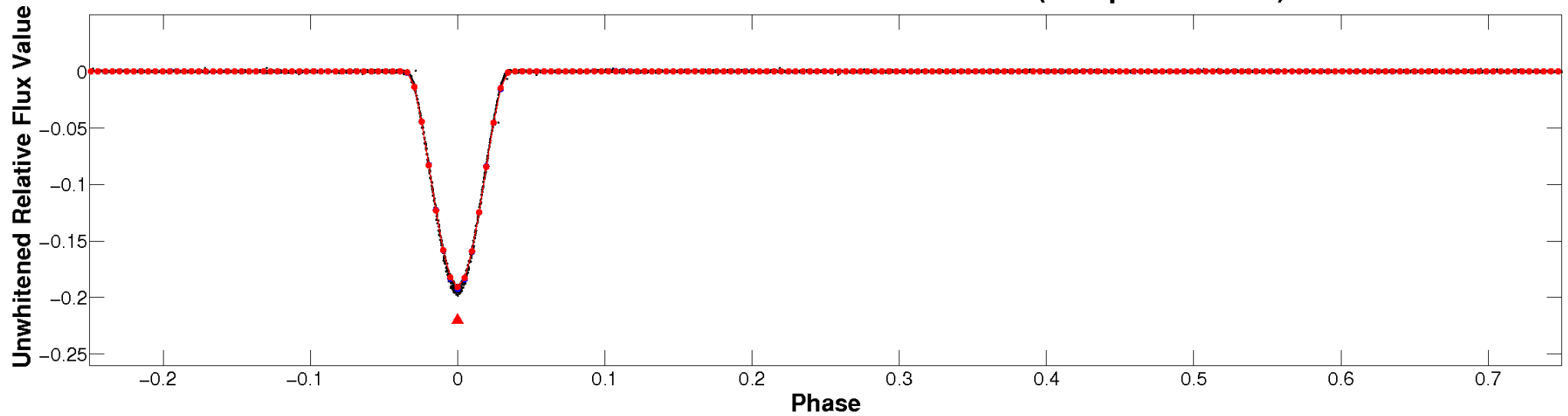
# ALT Odd/Even

TCE 005858519-01

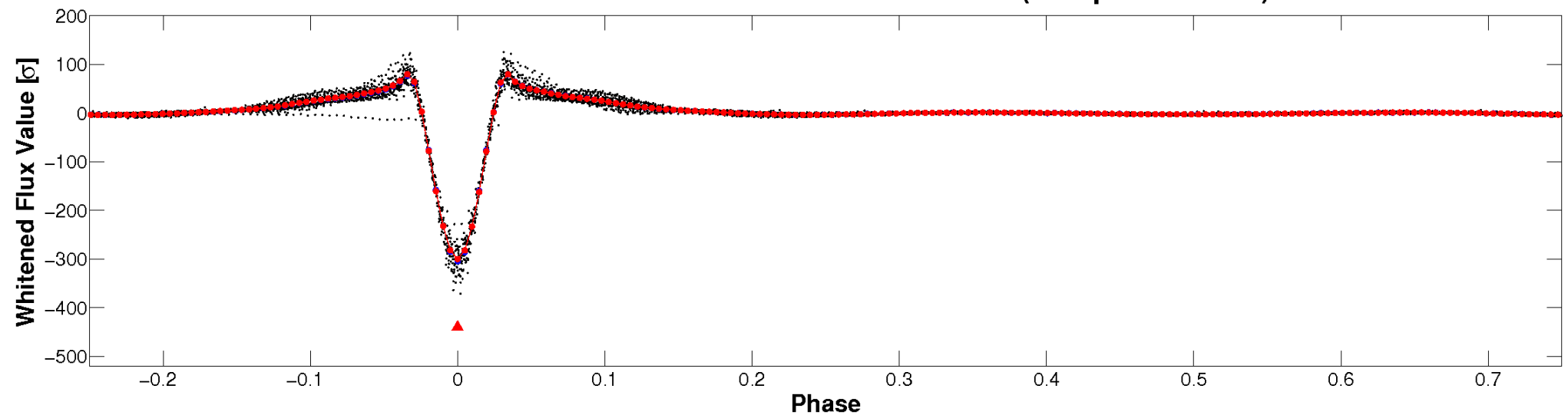


# Non-Whitened Vs. Whitened Light Curve

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

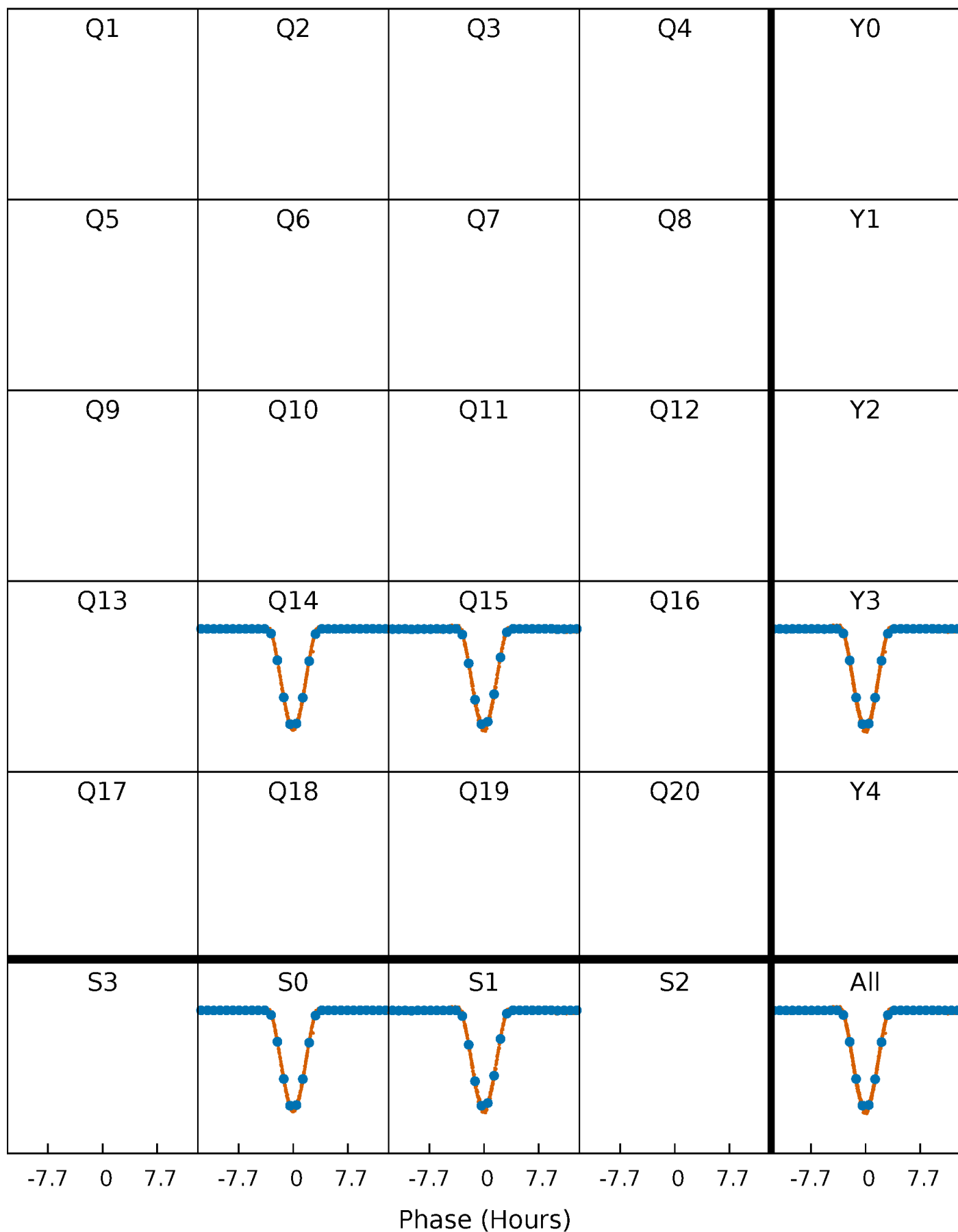


**Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)**



# PDC Quarter-Phased Transit Curves

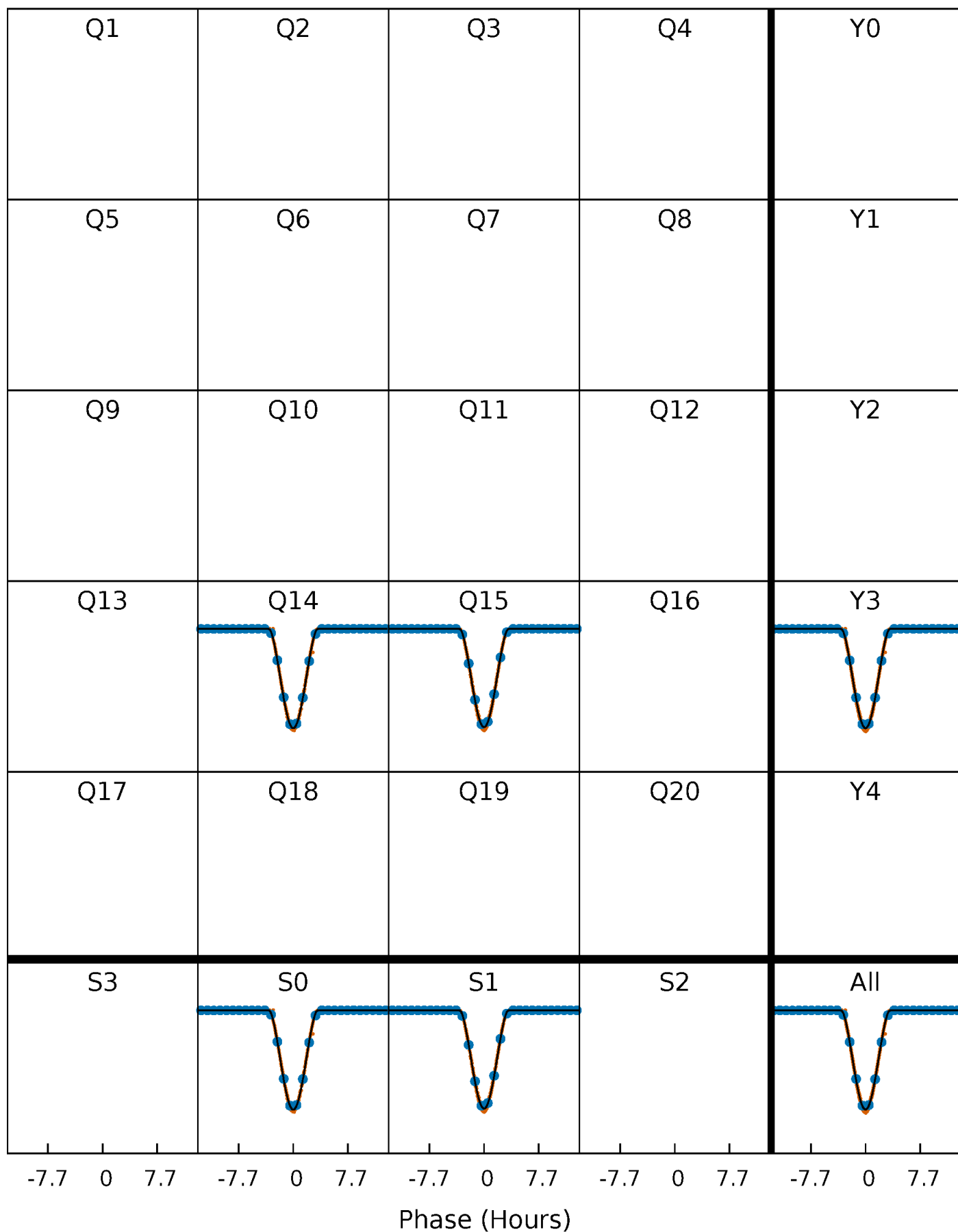
TCE 005858519-01 P= 4.182383 Days  $T_0=134.046781$  (BKJD)





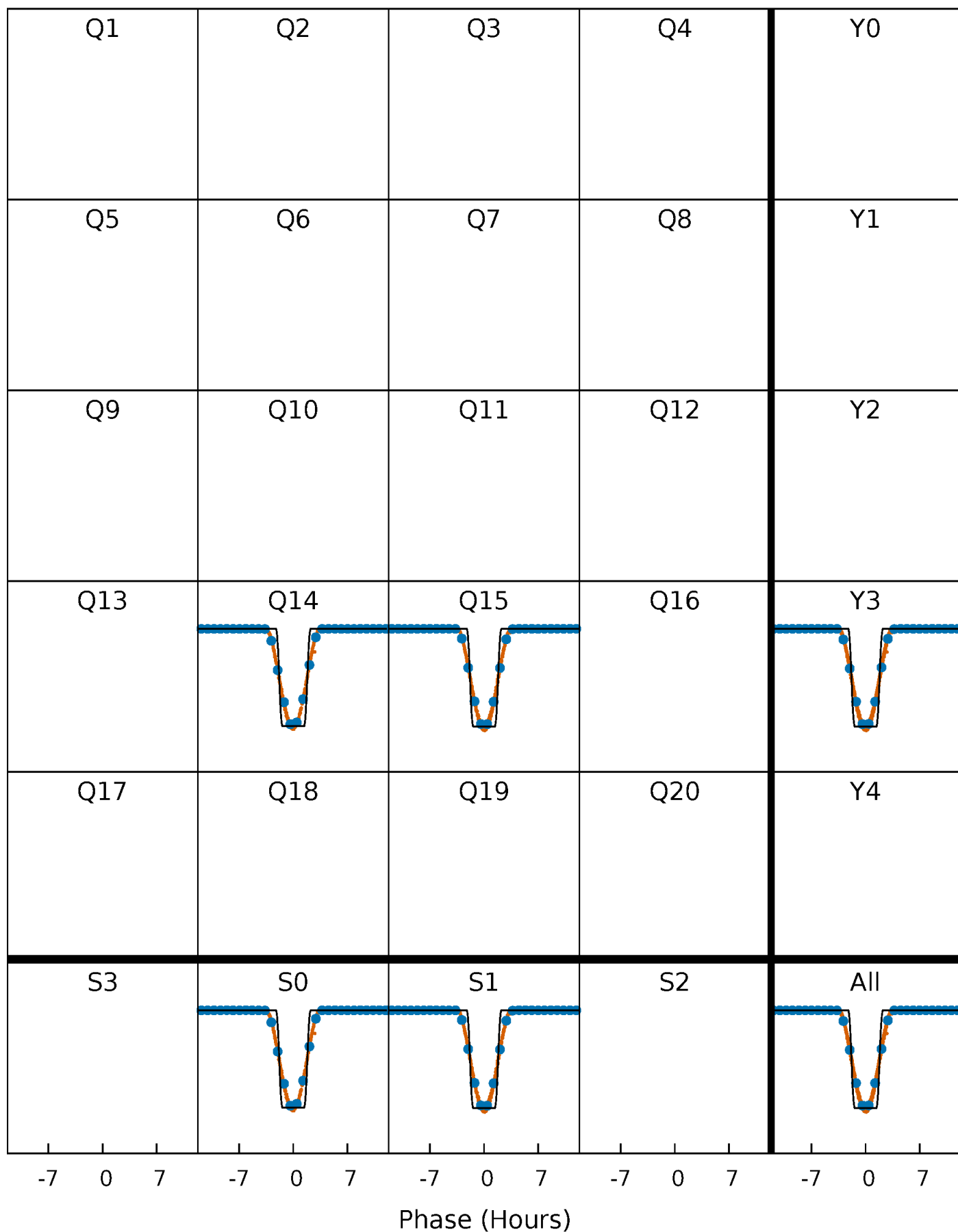
# DV Quarter-Phased Transit Curves

TCE 005858519-01 P= 4.182383 Days  $T_0=134.046781$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

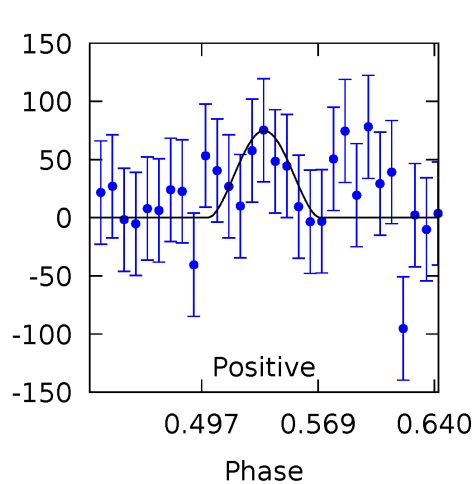
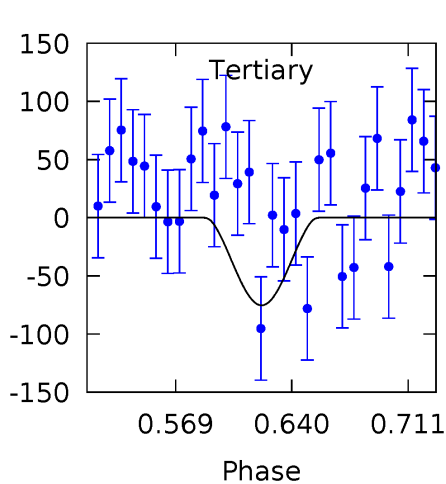
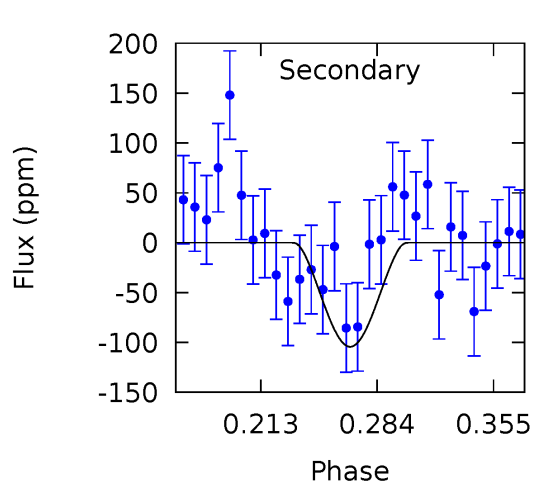
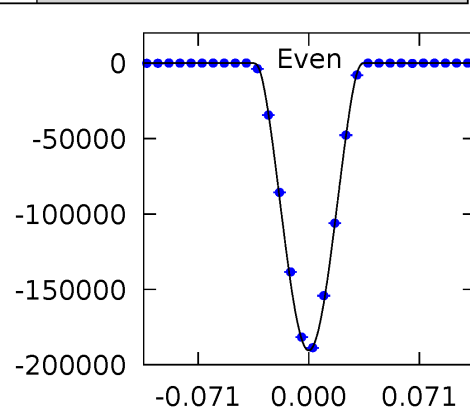
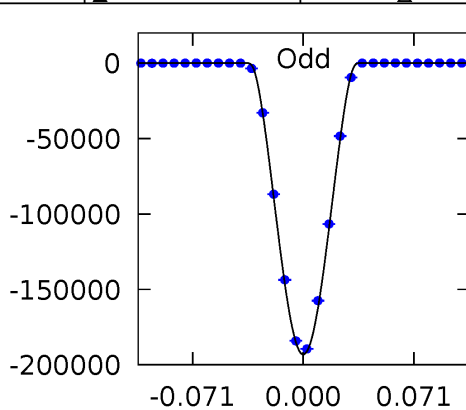
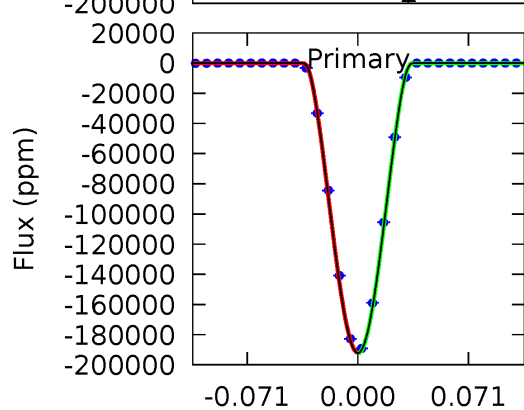
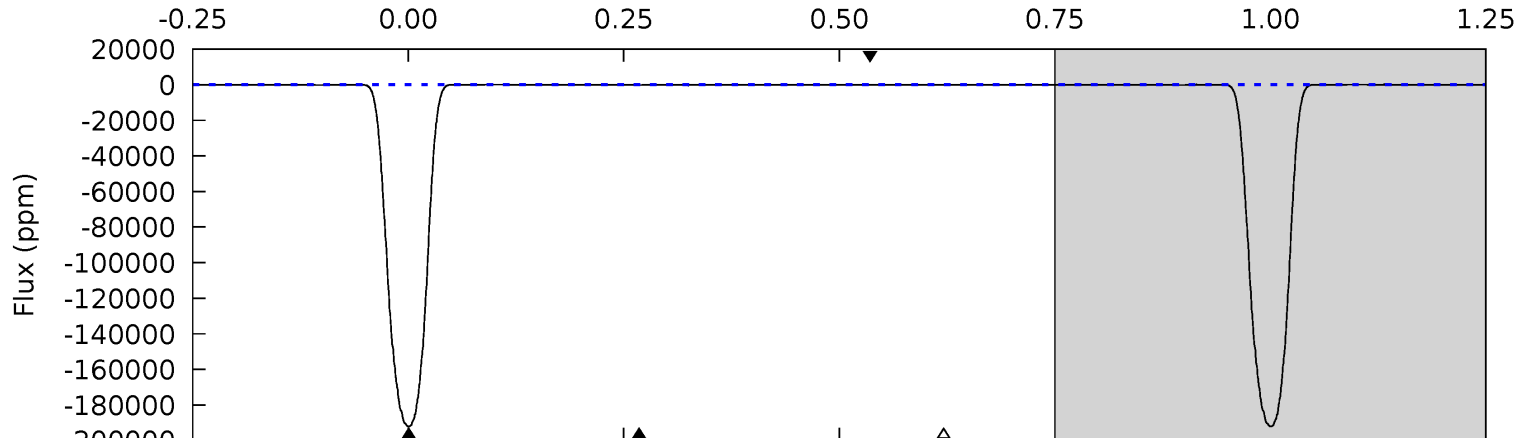
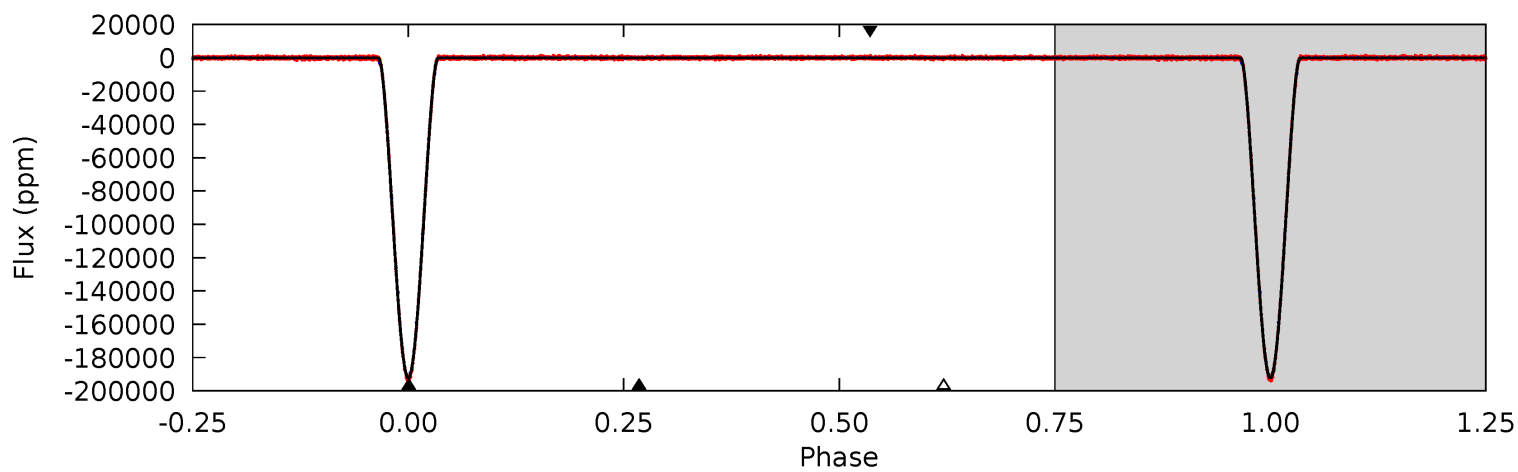
TCE 005858519-01 P= 4.182272 Days  $T_0=134.079902$  (BKJD)



# DV Model-Shift Uniqueness Test

005858519-01, P = 4.182383 Days, E = 134.046781 Days

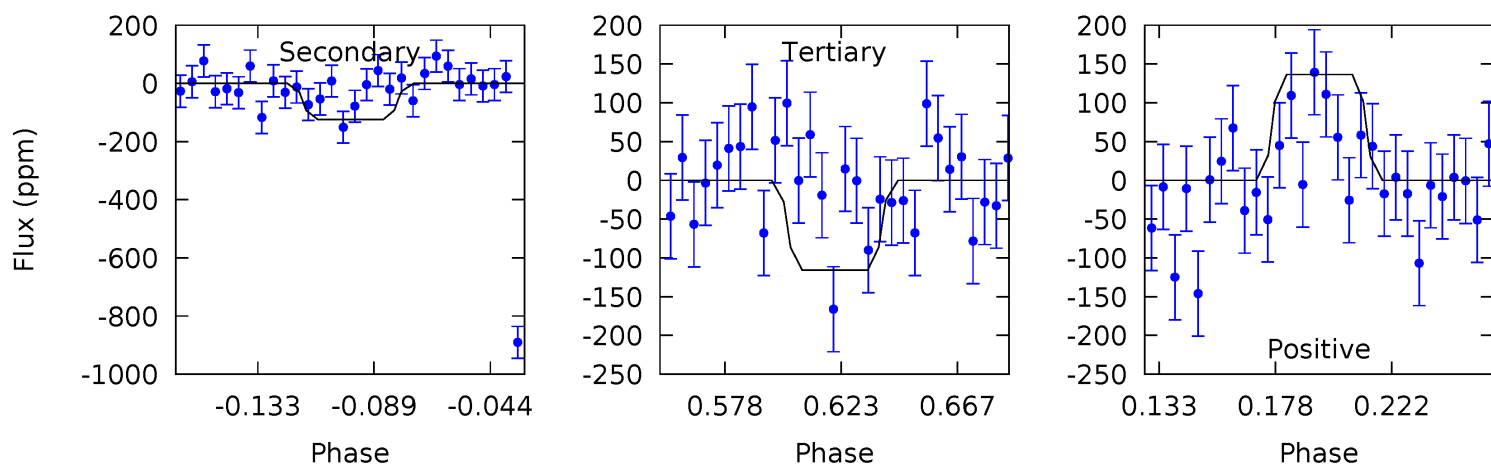
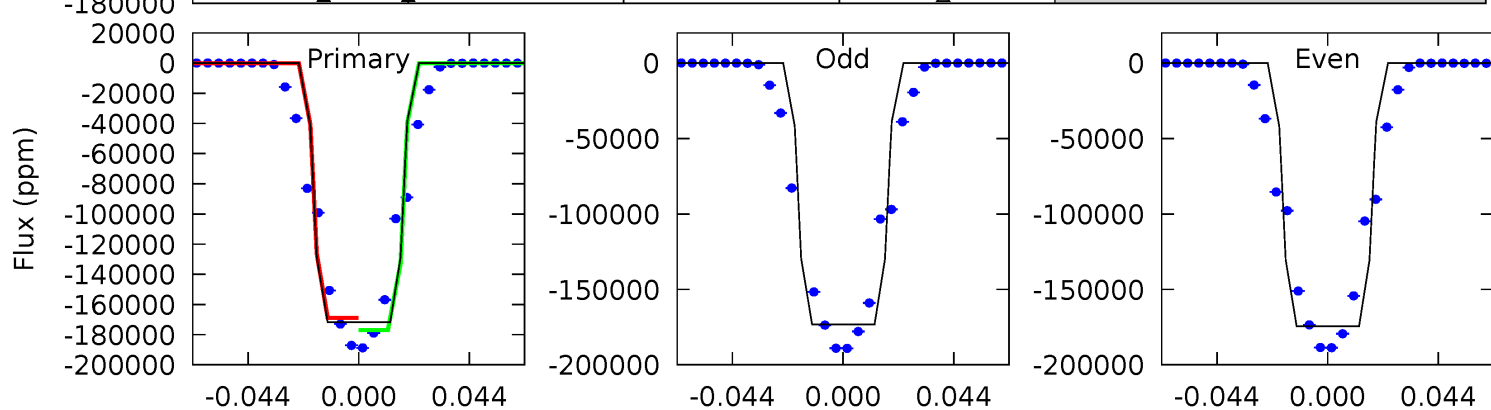
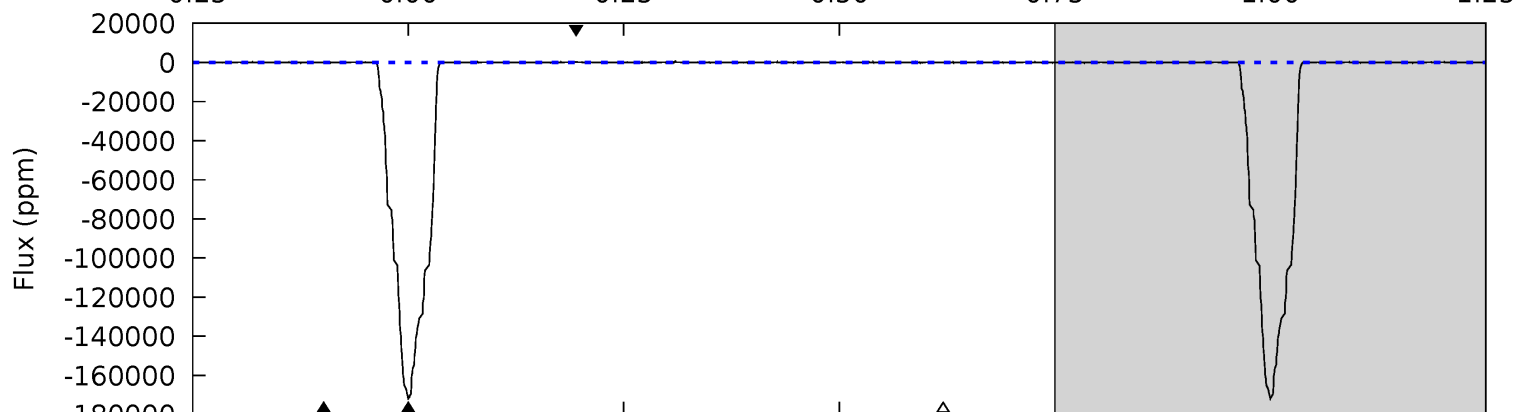
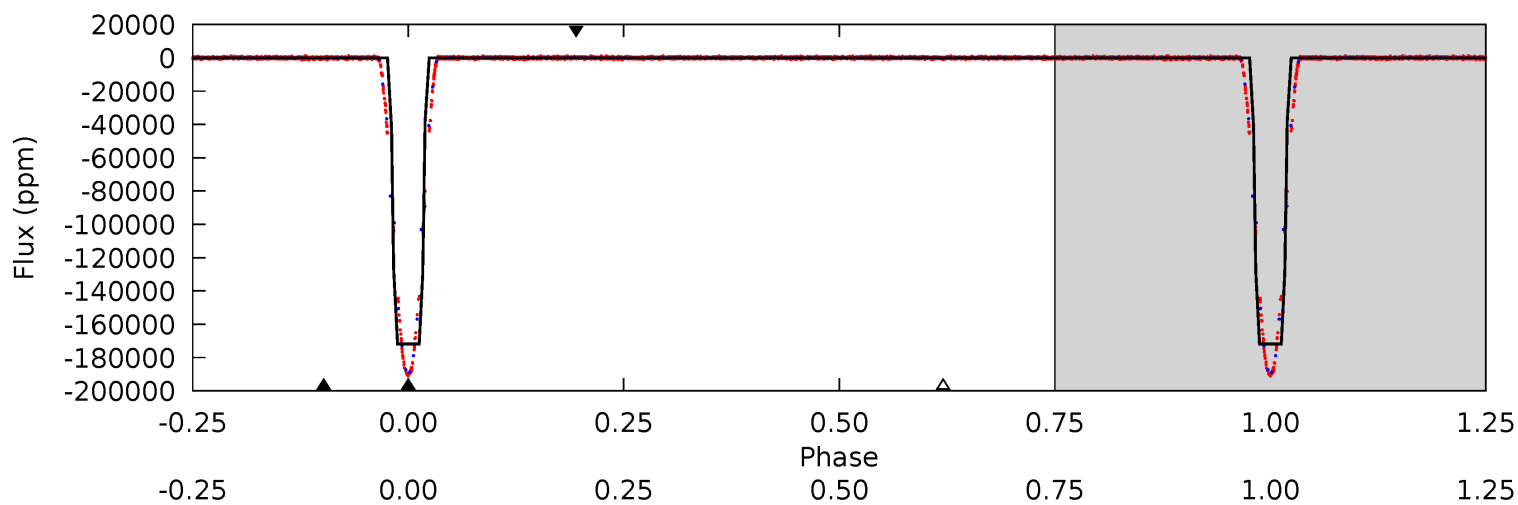
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
9944	5.40	3.90	3.87	4.64	1.81	2.66	9940	9940	1.50	1.53	68.9	0.97	0.00	0



# Alt Model-Shift Uniqueness Test

005858519-01, P = 4.182272 Days, E = 134.079902 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
4560	3.29	3.07	3.62	4.73	2.01	1.16	4557	4556	0.23	-0.32	15.0	1.00	0.00	104.3



### Stellar Parameters For KIC 005858519

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$6188^{+197}_{-240}$	$4.314^{+0.132}_{-0.198}$	$-0.180^{+0.250}_{-0.300}$	$1.166^{+0.366}_{-0.197}$	$1.020^{+0.173}_{-0.115}$	$0.907^{+0.598}_{-0.459}$
	+3%/-4%	+3%/-5%	+139%/-167%	+31%/-17%	+17%/-11%	+66%/-51%
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 005858519-01 / KOI 5206.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	$A_{obs}$
DV	$-104 \pm 19$	$77.16^{+13.51}_{-8.34}$	$1827^{+143}_{-122}$	$-2364^{+78}_{-94}$	$0.025^{+0.009}_{-0.008}$
Alt.	$-124 \pm 38$	$55.87^{+10.49}_{-6.03}$	$1824^{+151}_{-115}$	$-2331^{+84}_{-109}$	$0.053^{+0.027}_{-0.019}$

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

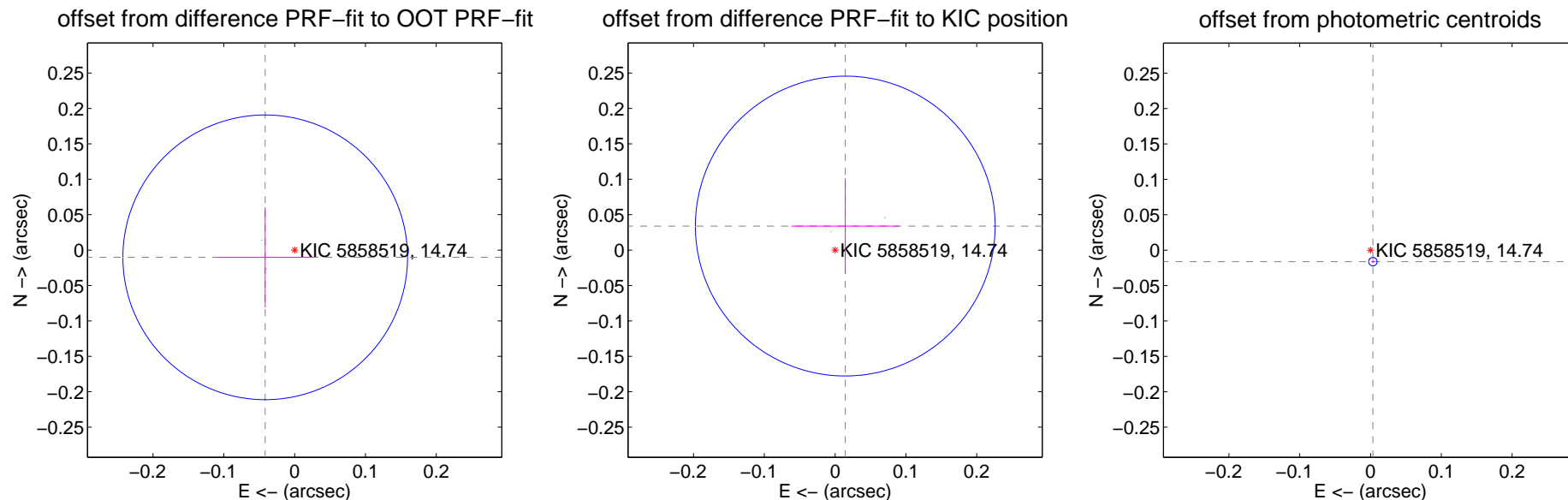
## DV Centroid Data

Supplemental centroid analysis for 005858519-01. Kepler magnitude: 14.74. Transit SNR 3206.91

There are 2 quarters with good PRF difference image offsets

The direct PRF centroid is offset from the target star catalog position by about 0.12 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.043 \pm 0.067$	0.64	$0.042 \pm 0.067$	$-0.010 \pm 0.071$
PRF-fit source offset from KIC position	$0.037 \pm 0.071$	0.52	$-0.014 \pm 0.076$	$0.034 \pm 0.067$
photometric centroid source offset	$0.02 \pm 0.00$	8.33	$-0.00 \pm 0.00$	$-0.02 \pm 0.00$



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.



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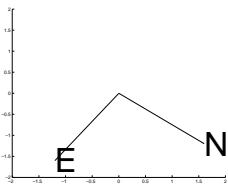
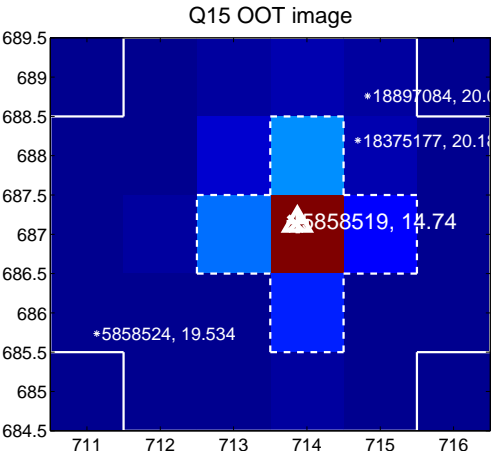
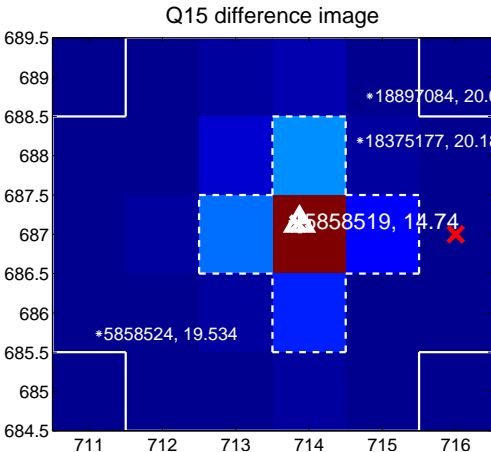
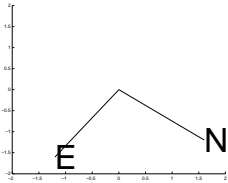
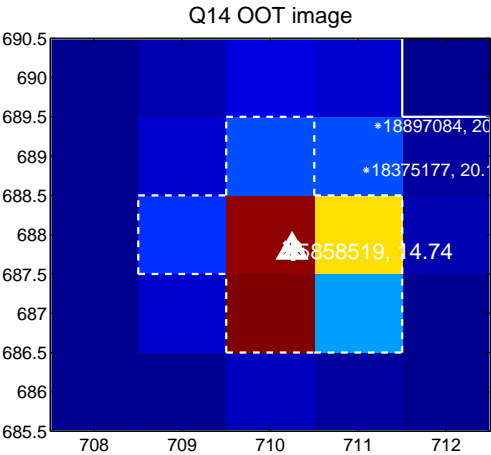
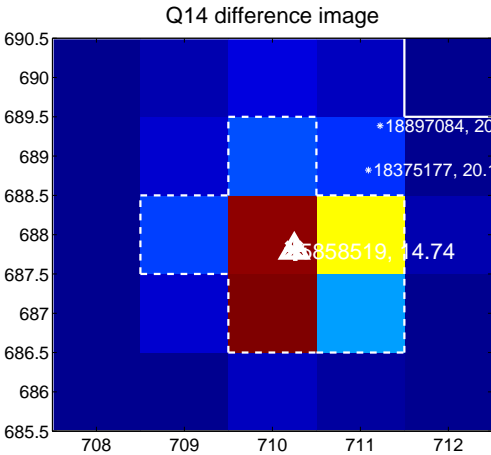


white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

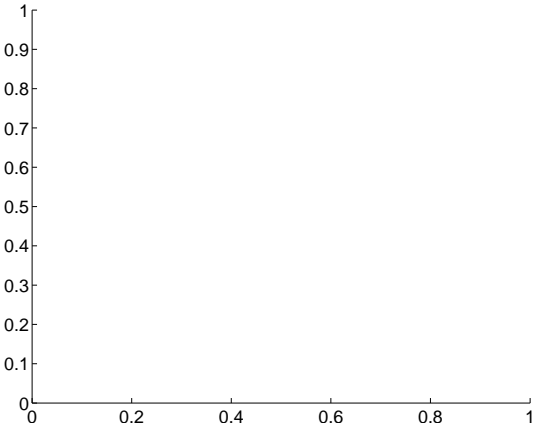
Q13 no difference image



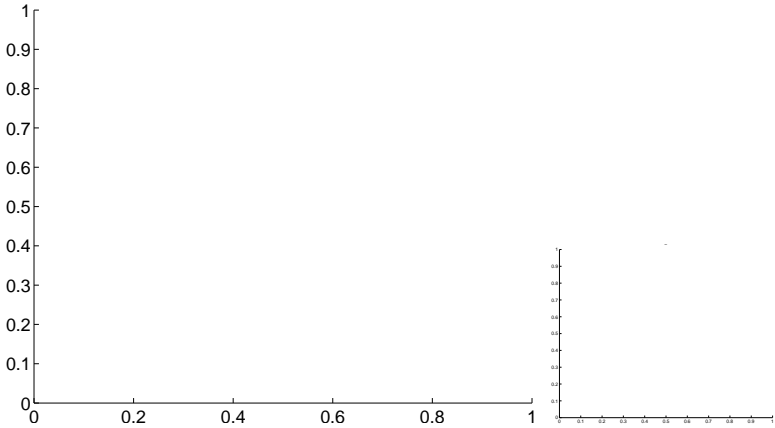
Q13 no OOT image



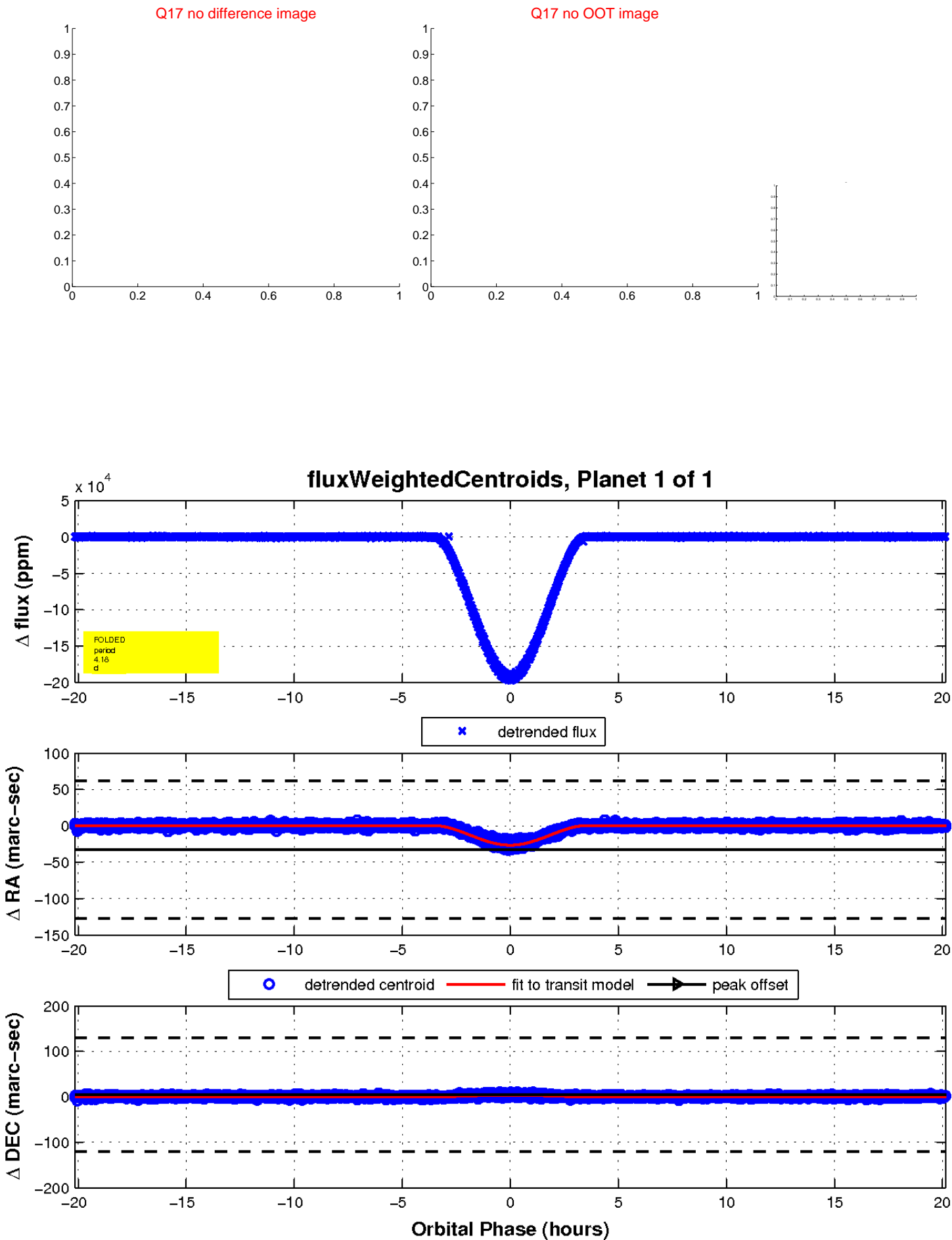
Q16 no difference image



Q16 no OOT image



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



UKIRT Image

Declination

