

# KIC 010586619

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
010586619-01	OBS	7345.01	377.502517	278.834774	502.5	12.045	10.8	11.5	0.94	5751	2.17	0.81

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
010586619-01	OBS	PC	0.90	0	0	0	0	NO_COMMENT

**Notes:** OBS = Observed. INJ = Injected. INV = Inverted. SCR = Scrambled.

N = Not Transit-Like. S = Stellar Eclipse. C = Centroid Offset. E = Ephemeris Match.

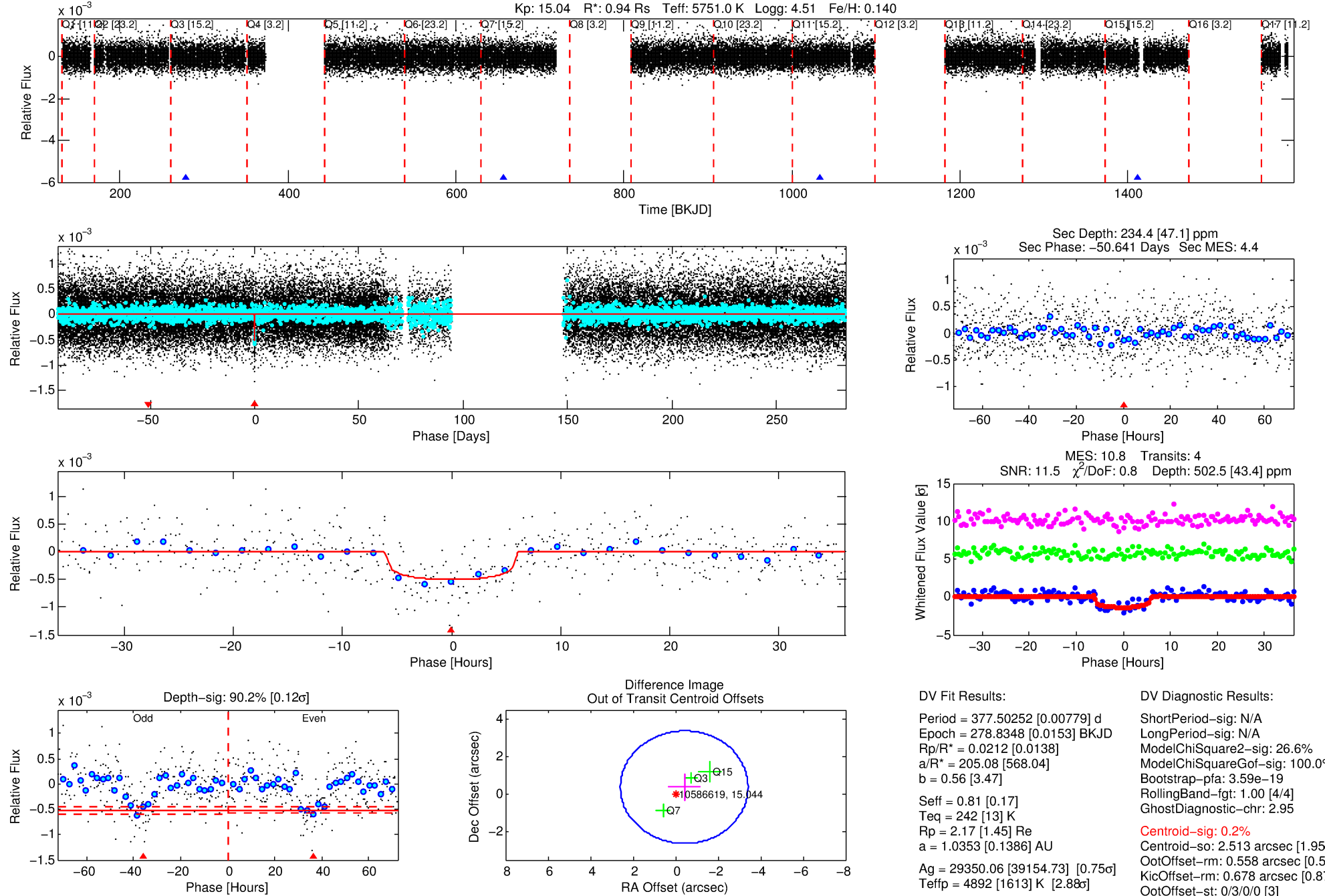
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 010586619-01

No Significant Match Found

# DV One-Page Summary

KIC: 10586619 Candidate: 1 of 1 Period: 377.503 d  
KOI: K07345.01 Corr: 0.996



## DV Fit Results:

Period = 377.50252 [0.00779] d  
Epoch = 278.8348 [0.0153] BKJD  
Rp/R\* = 0.0212 [0.0138]  
a/R\* = 205.08 [568.04]  
b = 0.56 [3.47]  
Seff = 0.81 [0.17]  
Teq = 242 [13] K  
Rp = 2.17 [1.45] Re  
a = 1.0353 [0.1386] AU  
Ag = 29350.06 [39154.73] [0.75 $\sigma$ ]  
Teffp = 4892 [1613] K [2.88 $\sigma$ ]

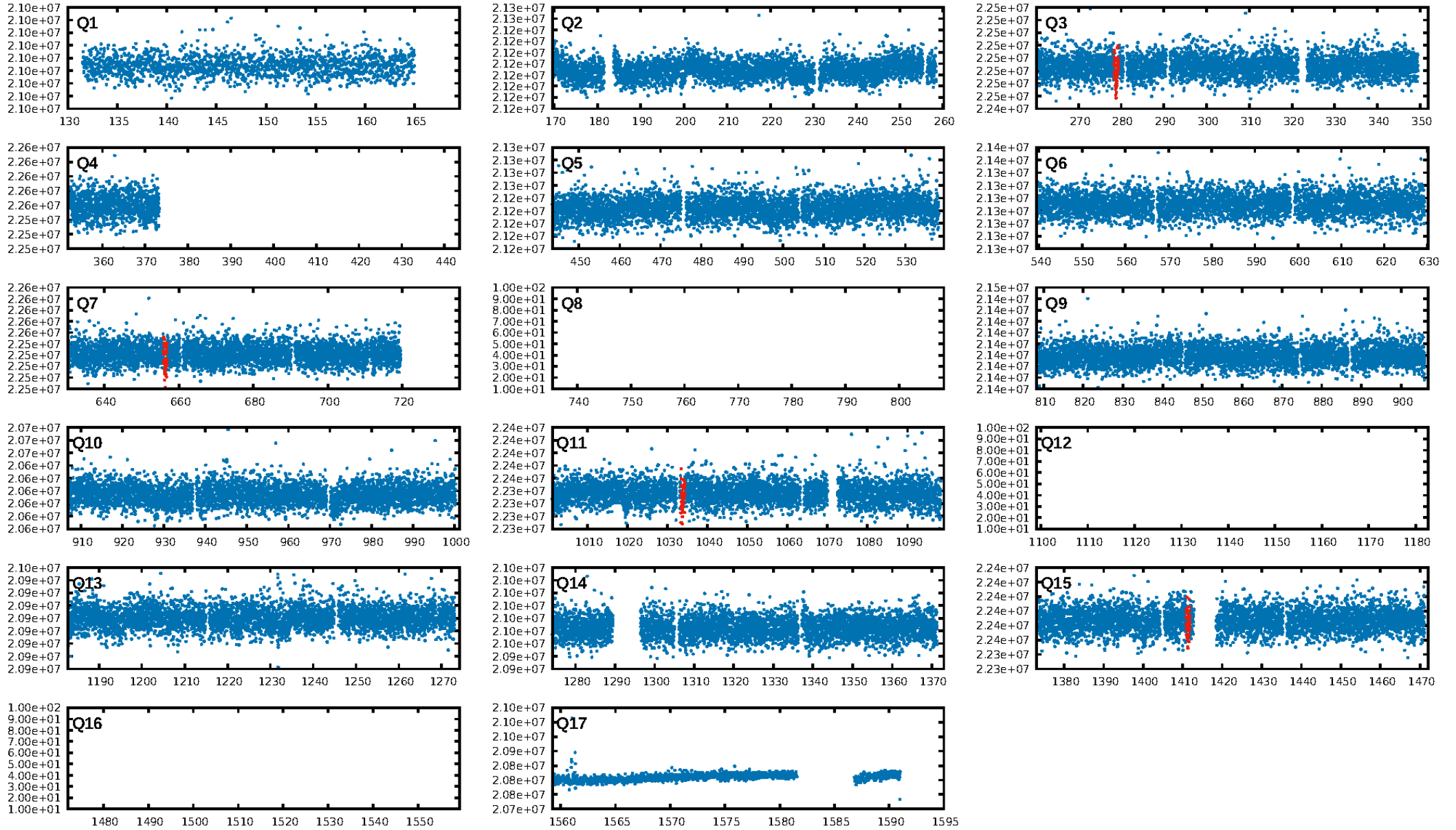
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: 26.6%  
ModelChiSquareGof-sig: 100.0%  
Bootstrap-pfa: 3.59e-19  
RollingBand-fgt: 1.00 [4/4]  
GhostDiagnostic-chr: 2.95  
Centroid-sig: 0.2%  
Centroid-so: 2.513 arcsec [1.95 $\sigma$ ]  
OotOffset-rm: 0.558 arcsec [0.56 $\sigma$ ]  
KicOffset-rm: 0.678 arcsec [0.87 $\sigma$ ]  
OotOffset-st: 0/3/0/0 [3]  
KicOffset-st: 0/3/0/0 [3]  
DiffImageQuality-fgm: 1.00 [3/3]  
DiffImageOverlap-fno: 1.00 [3/3]

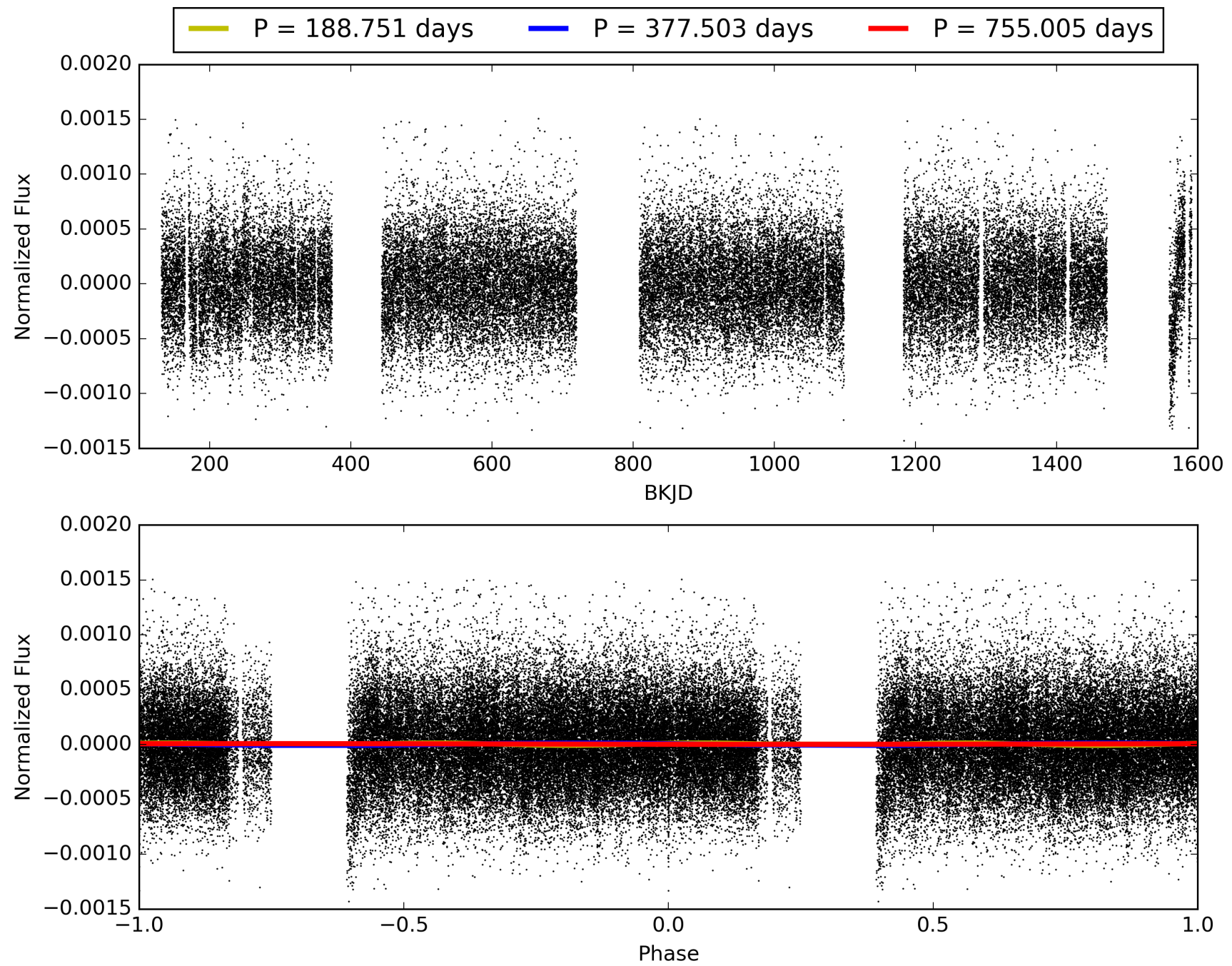
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 28-Jan-2016 19:00:02 Z

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

# TCE 010586619-01, PDC Light Curves

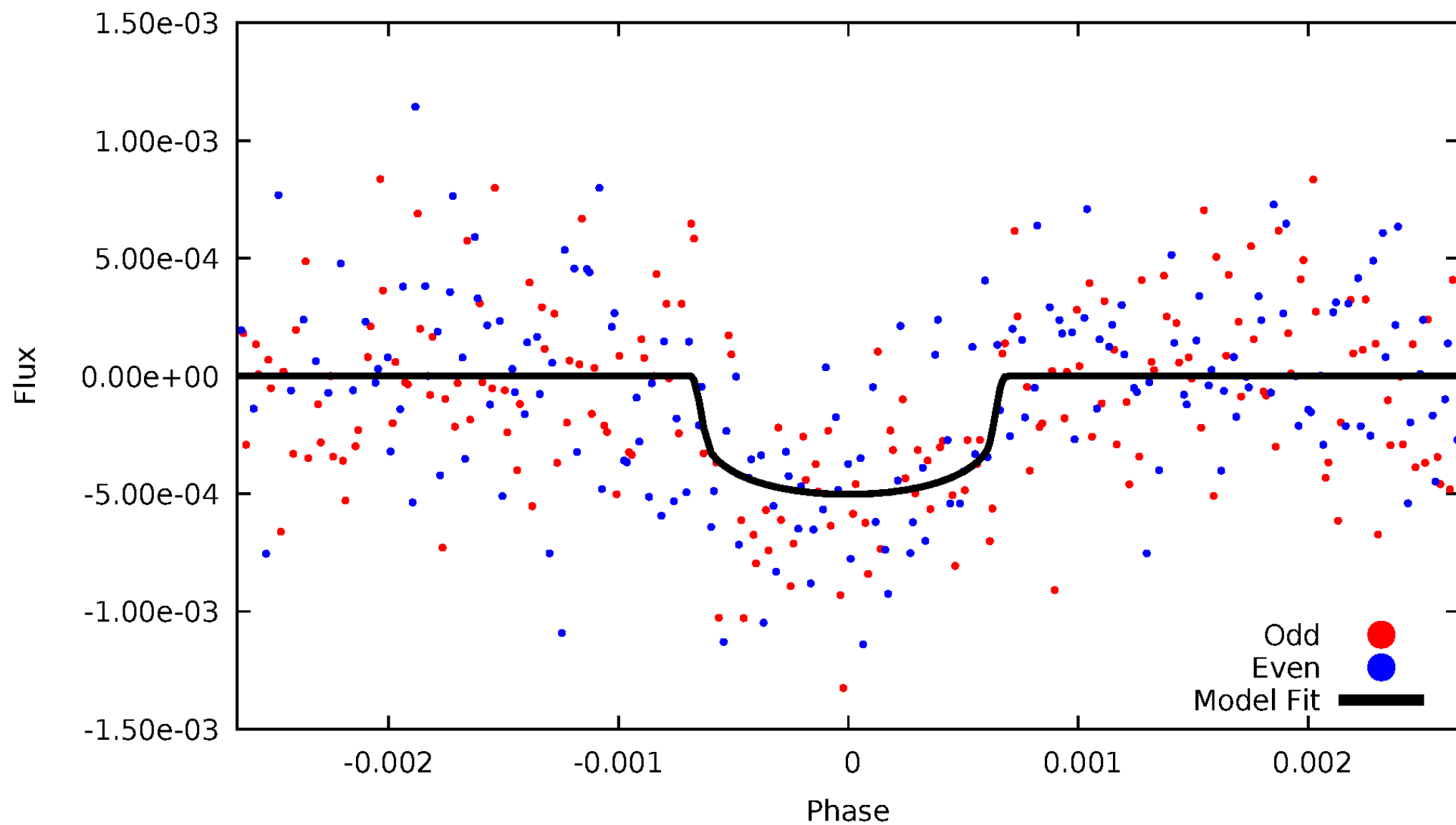


# TCE 010586619-01



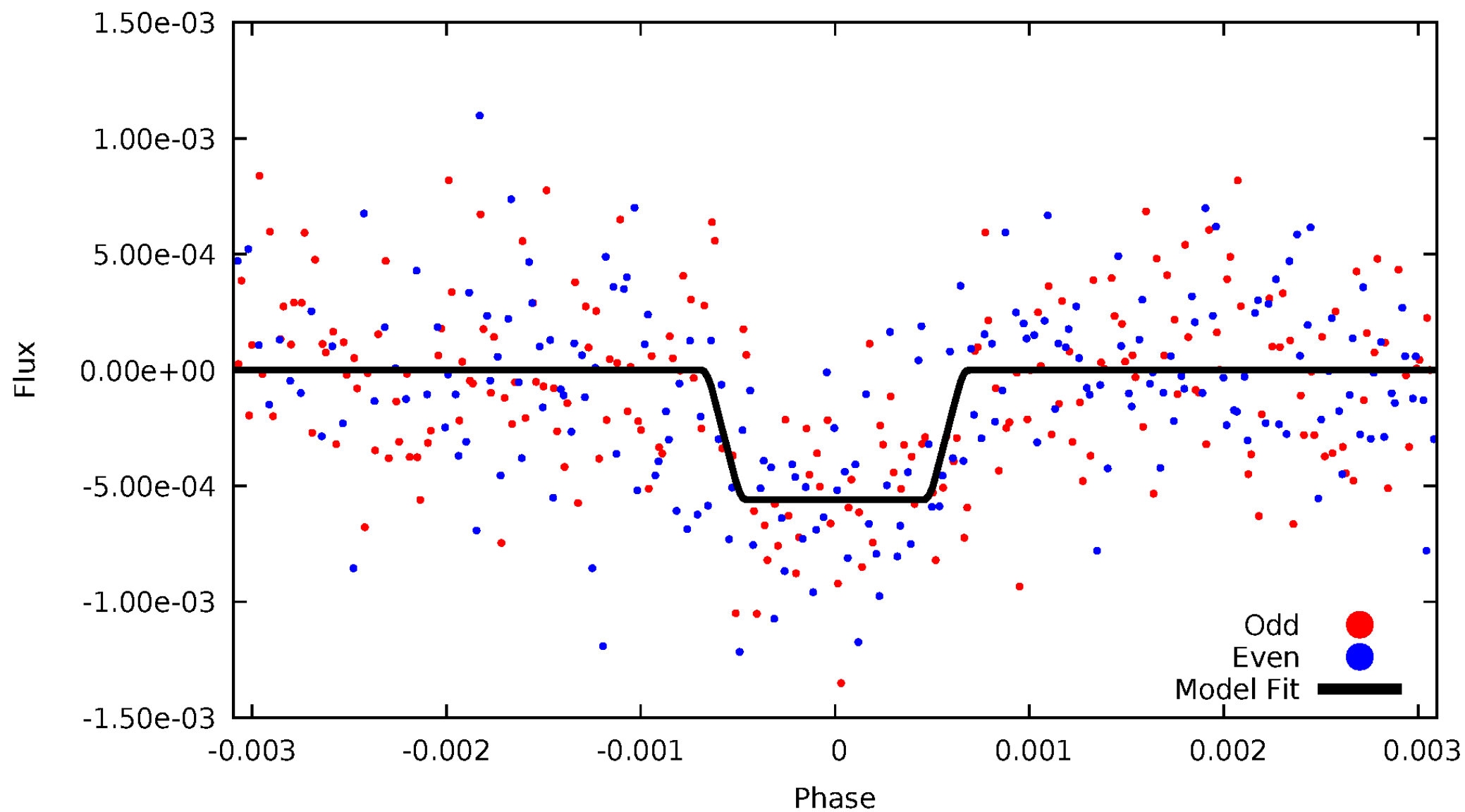
# DV Odd/Even

TCE 010586619-01



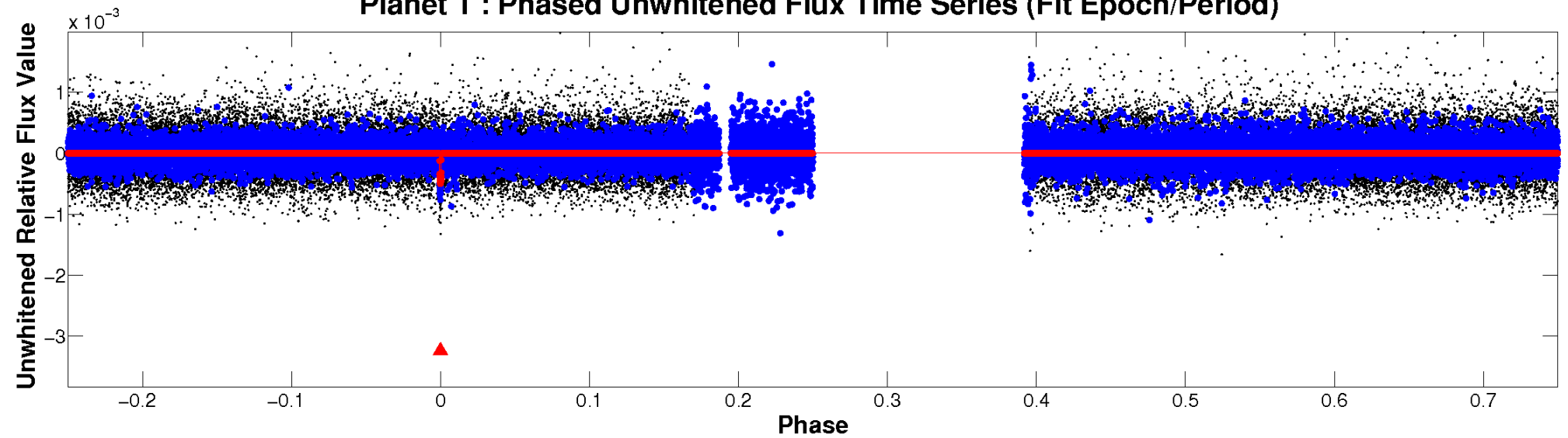
# ALT Odd/Even

TCE 010586619-01

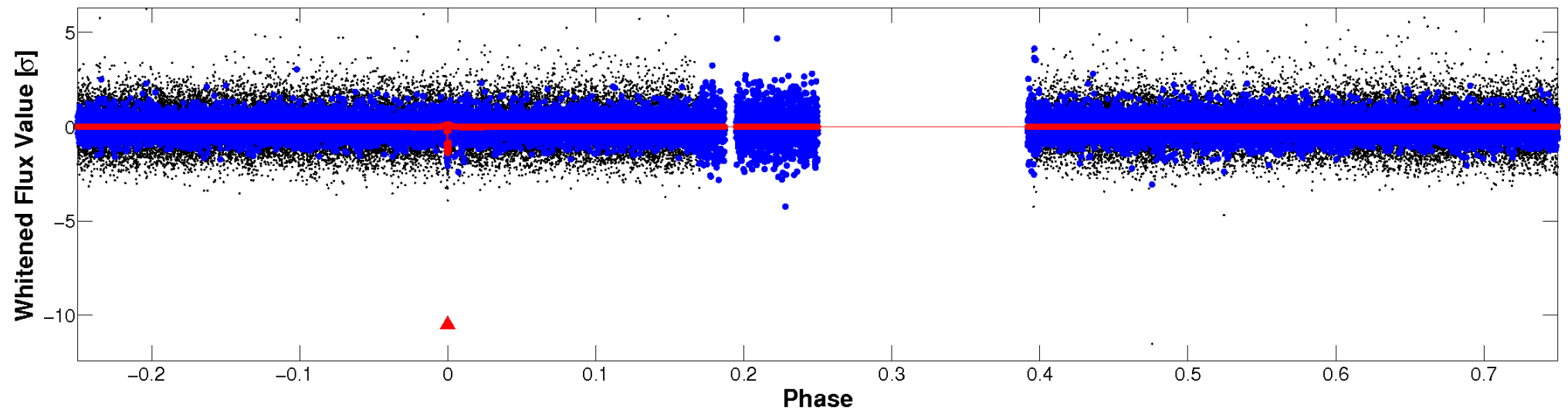


# Non-Whitened Vs. Whitened Light Curve

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

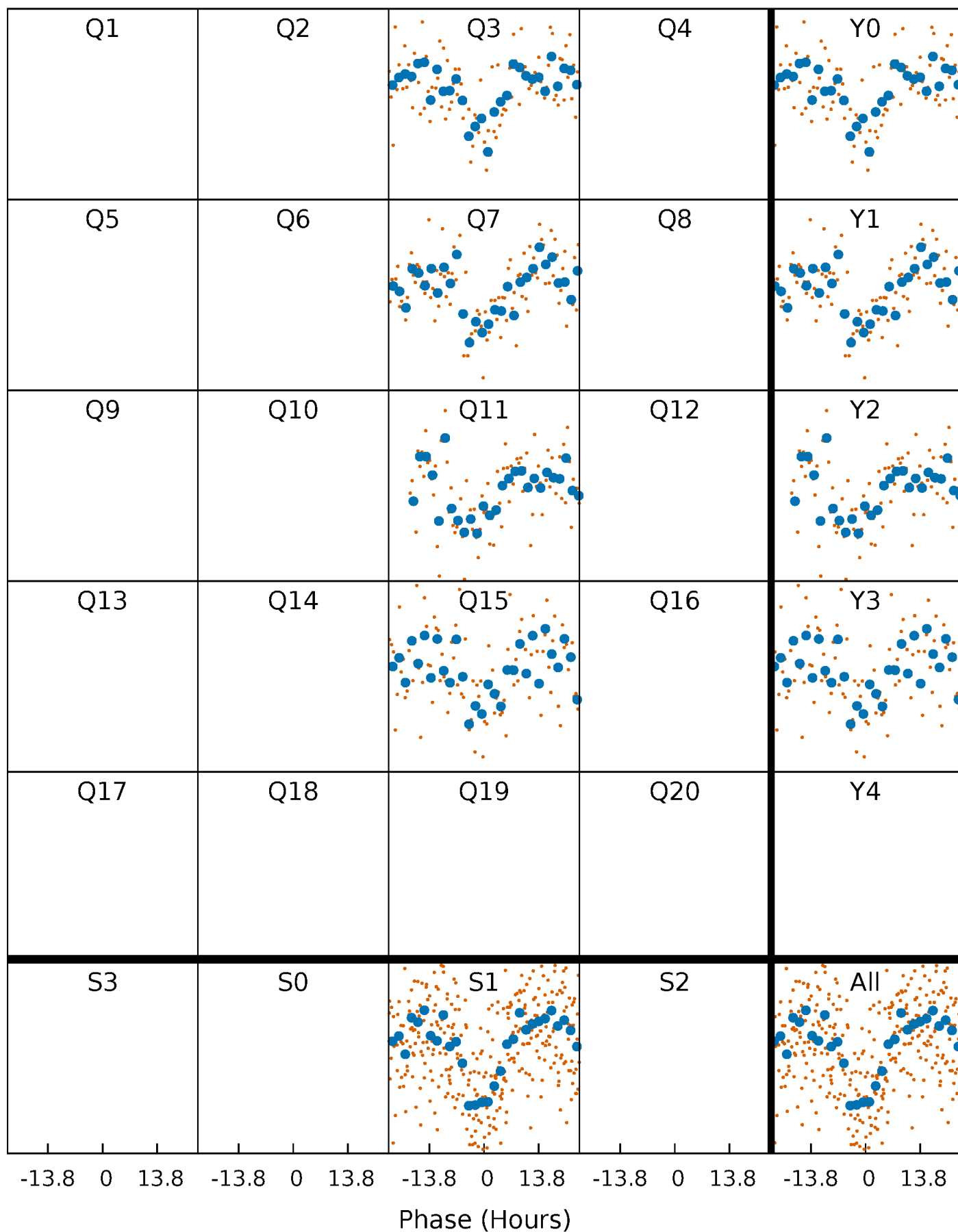


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



# PDC Quarter-Phased Transit Curves

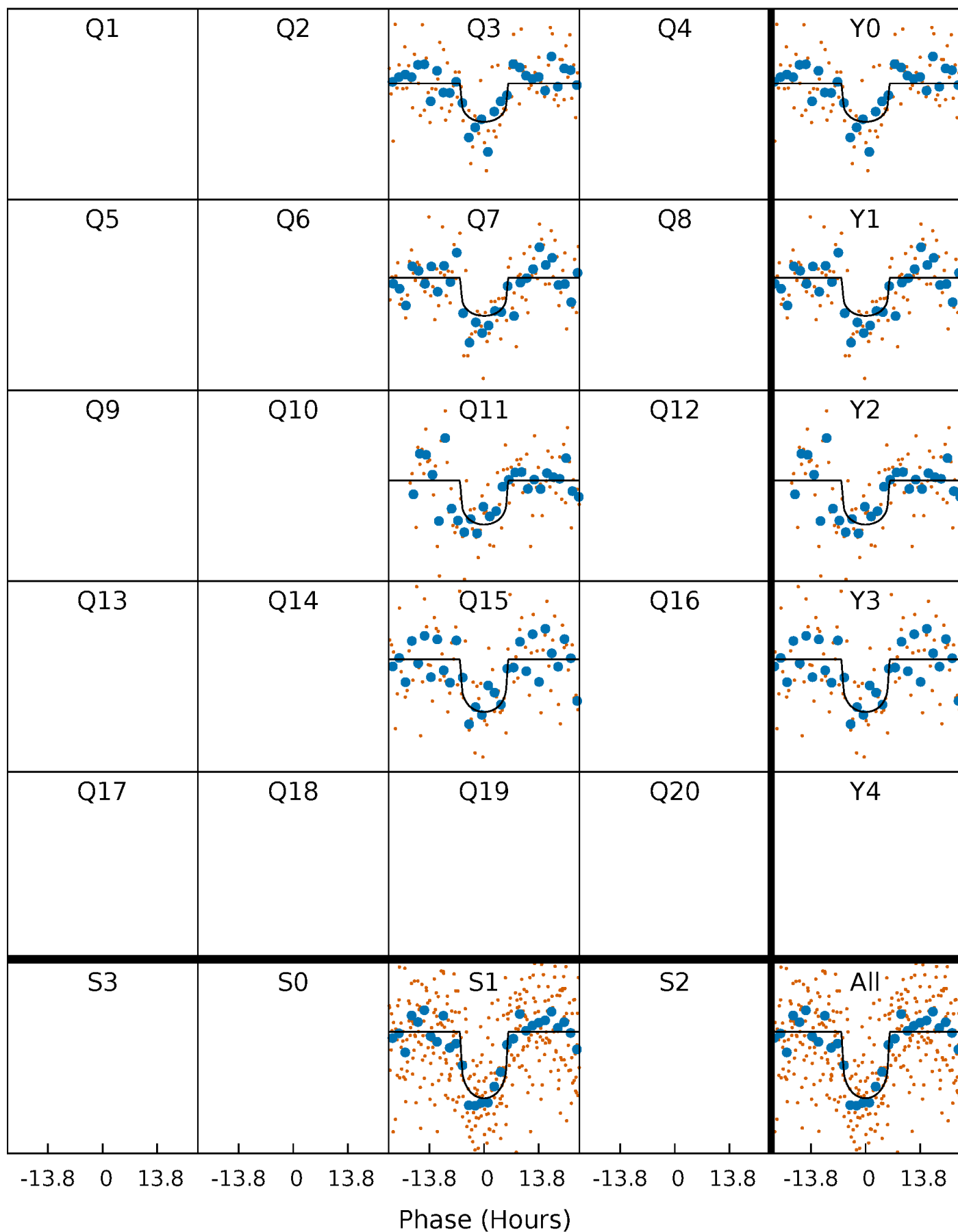
TCE 010586619-01 P=377.502517 Days  $T_0=278.834774$  (BKJD)





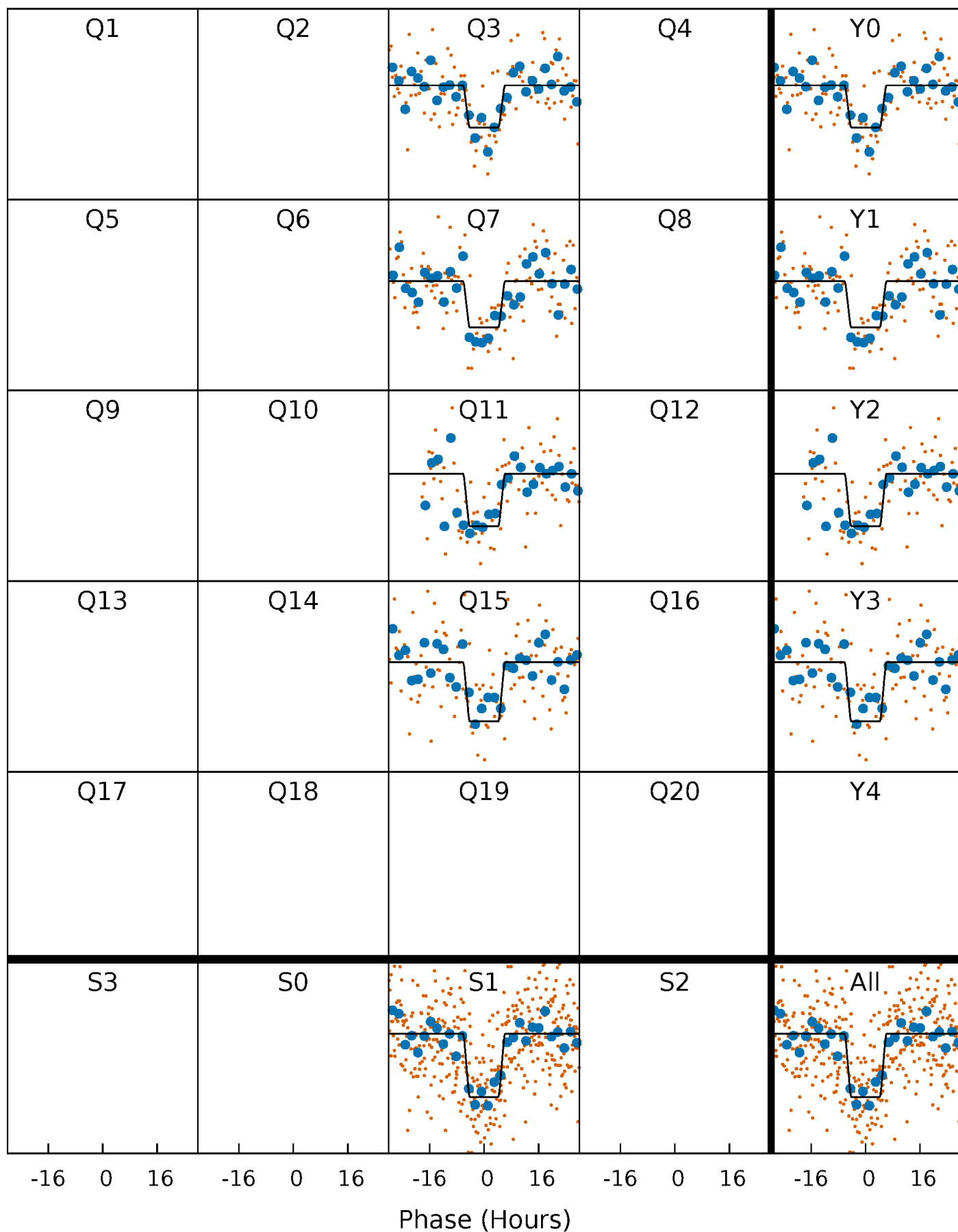
# DV Quarter-Phased Transit Curves

TCE 010586619-01 P=377.502517 Days  $T_0=278.834774$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

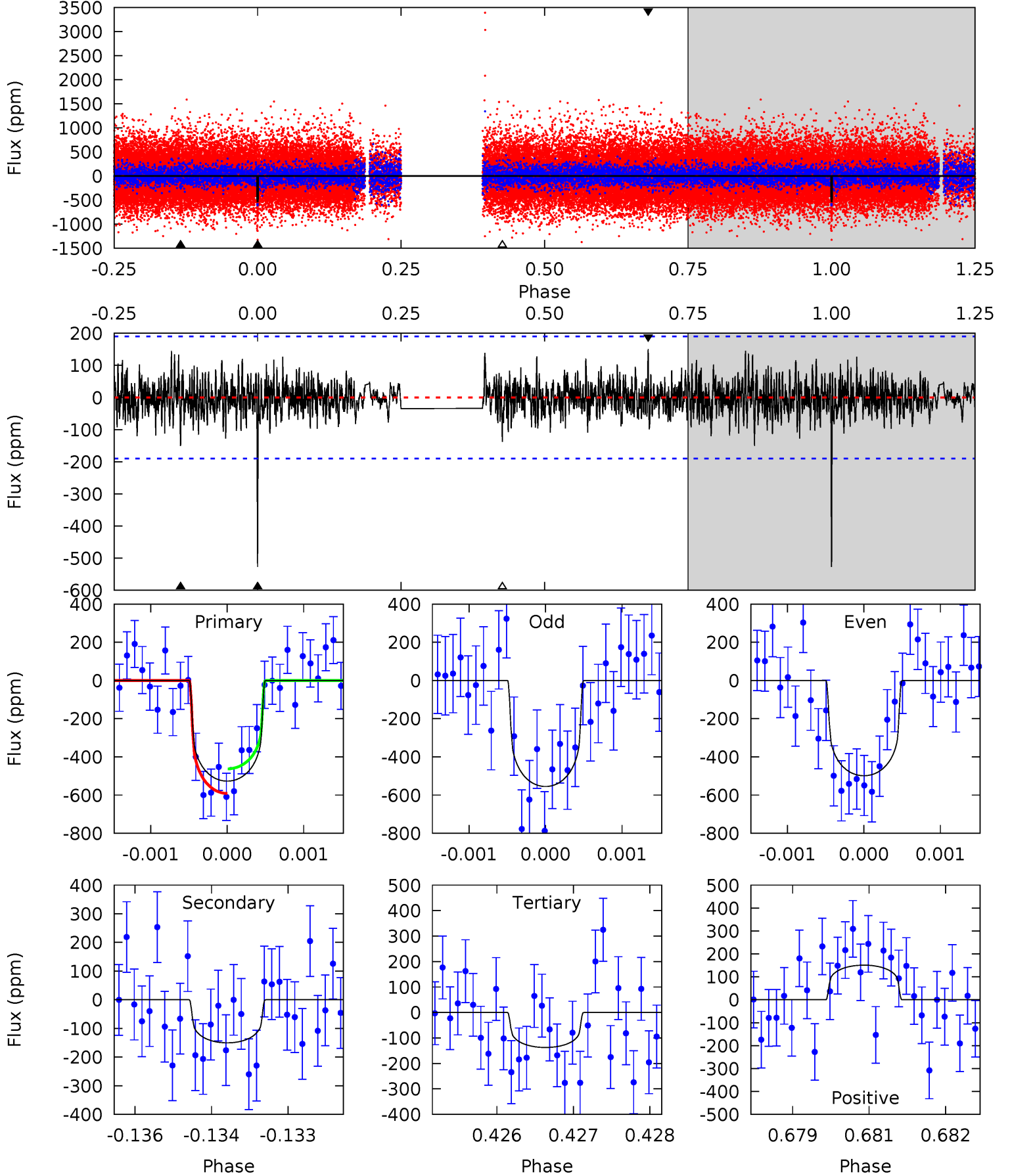
TCE 010586619-01 P=377.503210 Days  $T_0=278.814120$  (BKJD)



# DV Model-Shift Uniqueness Test

010586619-01,  $P = 377.502517$  Days,  $E = 278.834774$  Days

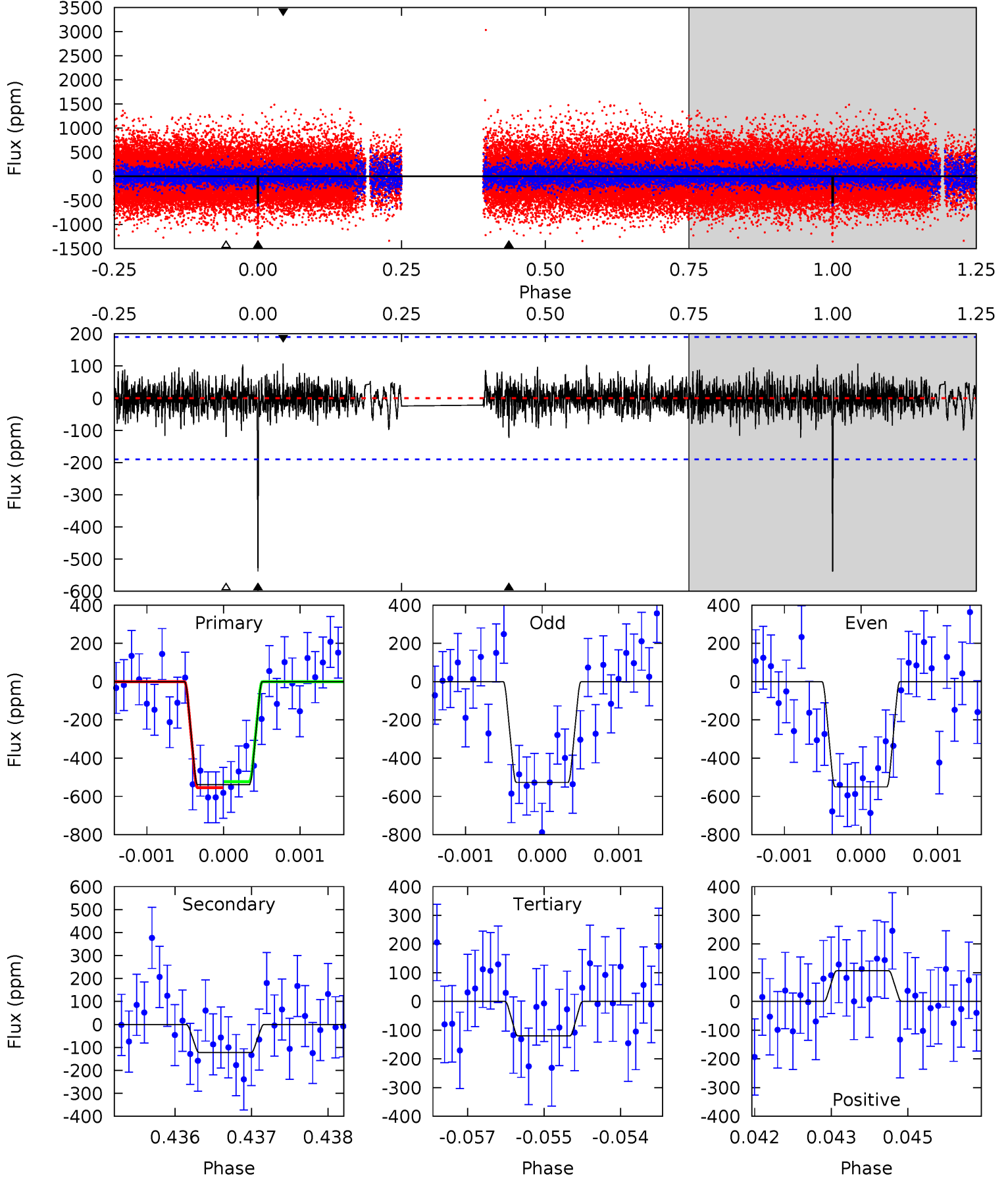
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
15.0	4.27	3.90	4.28	5.39	3.20	1.14	11.1	10.7	0.37	-0.02	0.80	1.03	0.22	1.84



# Alt Model-Shift Uniqueness Test

010586619-01, P = 377.503210 Days, E = 278.814120 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
15.3	3.49	3.41	3.04	5.40	3.20	0.89	11.9	12.3	0.07	0.45	0.34	0.98	0.17	0.44



### Stellar Parameters For KIC 010586619

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$5751^{+78}_{-78}$	$4.508^{+0.021}_{-0.119}$	$0.140^{+0.150}_{-0.150}$	$0.940^{+0.138}_{-0.043}$	$1.038^{+0.050}_{-0.068}$	$1.761^{+0.181}_{-0.600}$
	+1%/-1%	+0%/-3%	+107%/-107%	+15%/-5%	+5%/-7%	+10%/-34%
Source	SPE90	SPE90	SPE90	DSEP		

KIC = Kepler Input Catalog; PHO = Photometry; SPE = Spectroscopy; AST = Asteroseismology  
 TRA = Transits; DESP = Dartmouth Models; MULT = Multiple Models

### Secondary Eclipse Parameters for KIC 010586619-01 / KOI 7345.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	$A_{obs}$
DV	$-150 \pm 35$	$2.46^{+1.37}_{-1.49}$	$342^{+13}_{-8}$	$4368^{+2235}_{-685}$	$14439^{+76588}_{-8969}$
Alt.	$-123 \pm 35$	$2.59^{+1.38}_{-1.34}$	$342^{+13}_{-8}$	$4110^{+1502}_{-580}$	$9924^{+35114}_{-5836}$

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

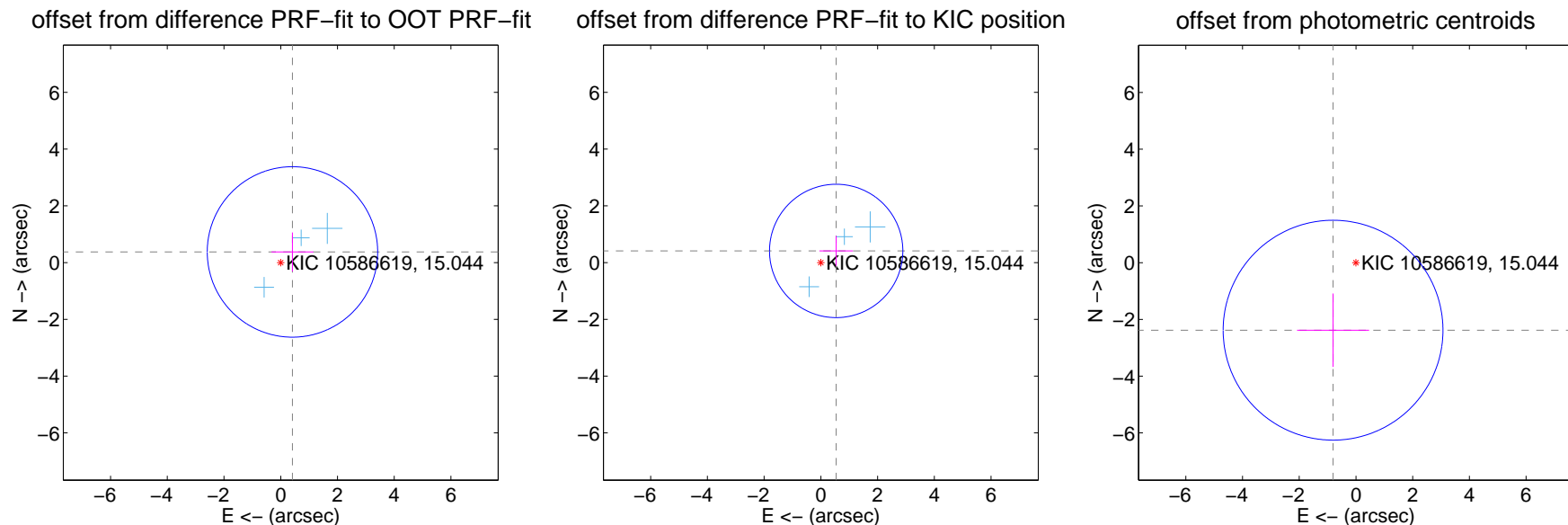
## DV Centroid Data

Supplemental centroid analysis for 010586619-01. Kepler magnitude: 15.04. Transit SNR 11.50

There are 3 quarters with good PRF difference image offsets

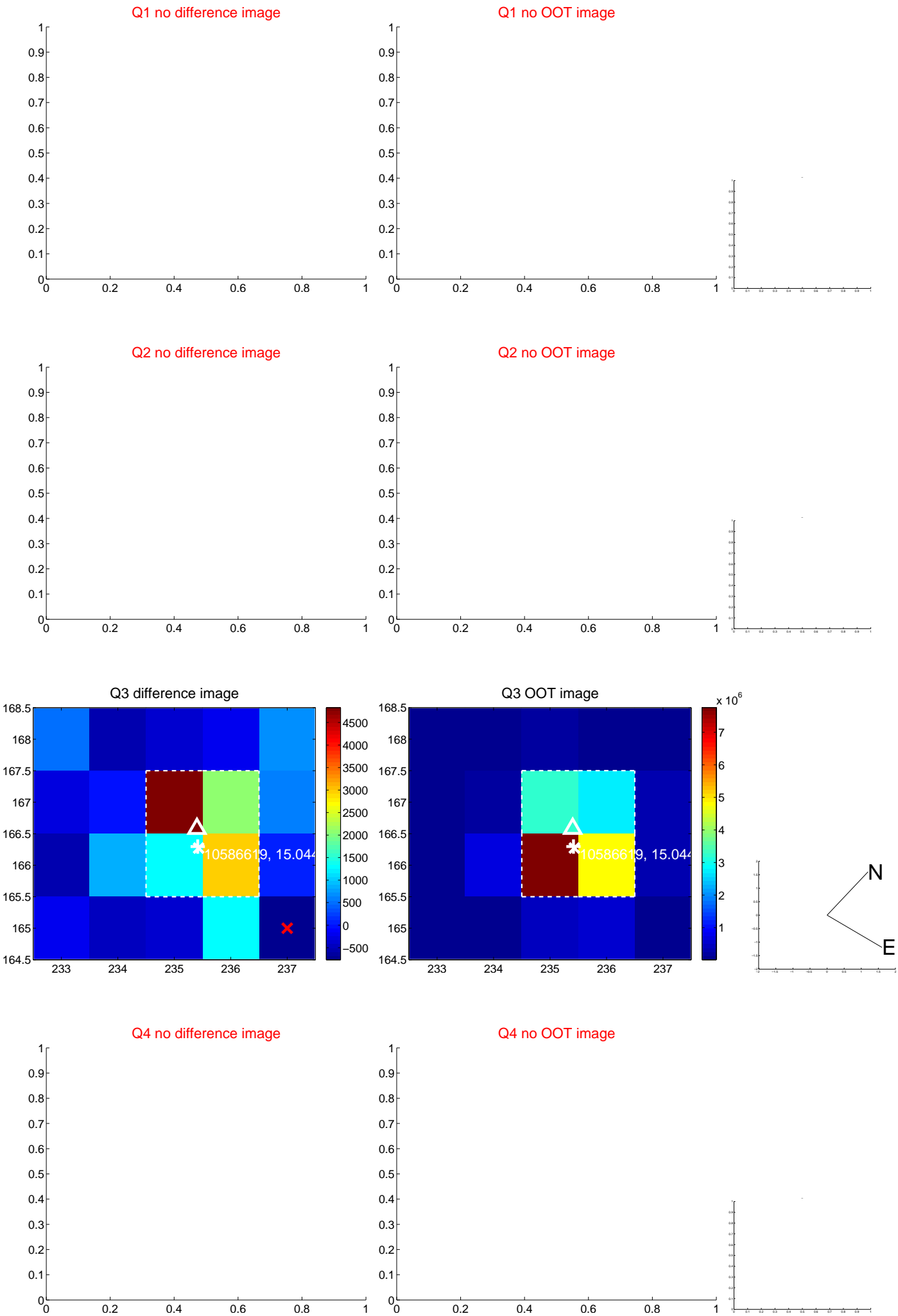
The direct PRF centroid is offset from the target star catalog position by about 0.11 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.558 \pm 1.001$	0.56	$-0.413 \pm 0.739$	$0.376 \pm 0.685$
PRF-fit source offset from KIC position	$0.678 \pm 0.783$	0.87	$-0.540 \pm 0.591$	$0.411 \pm 0.526$
photometric centroid source offset	$2.51 \pm 1.29$	1.95	$0.81 \pm 1.27$	$-2.38 \pm 1.29$

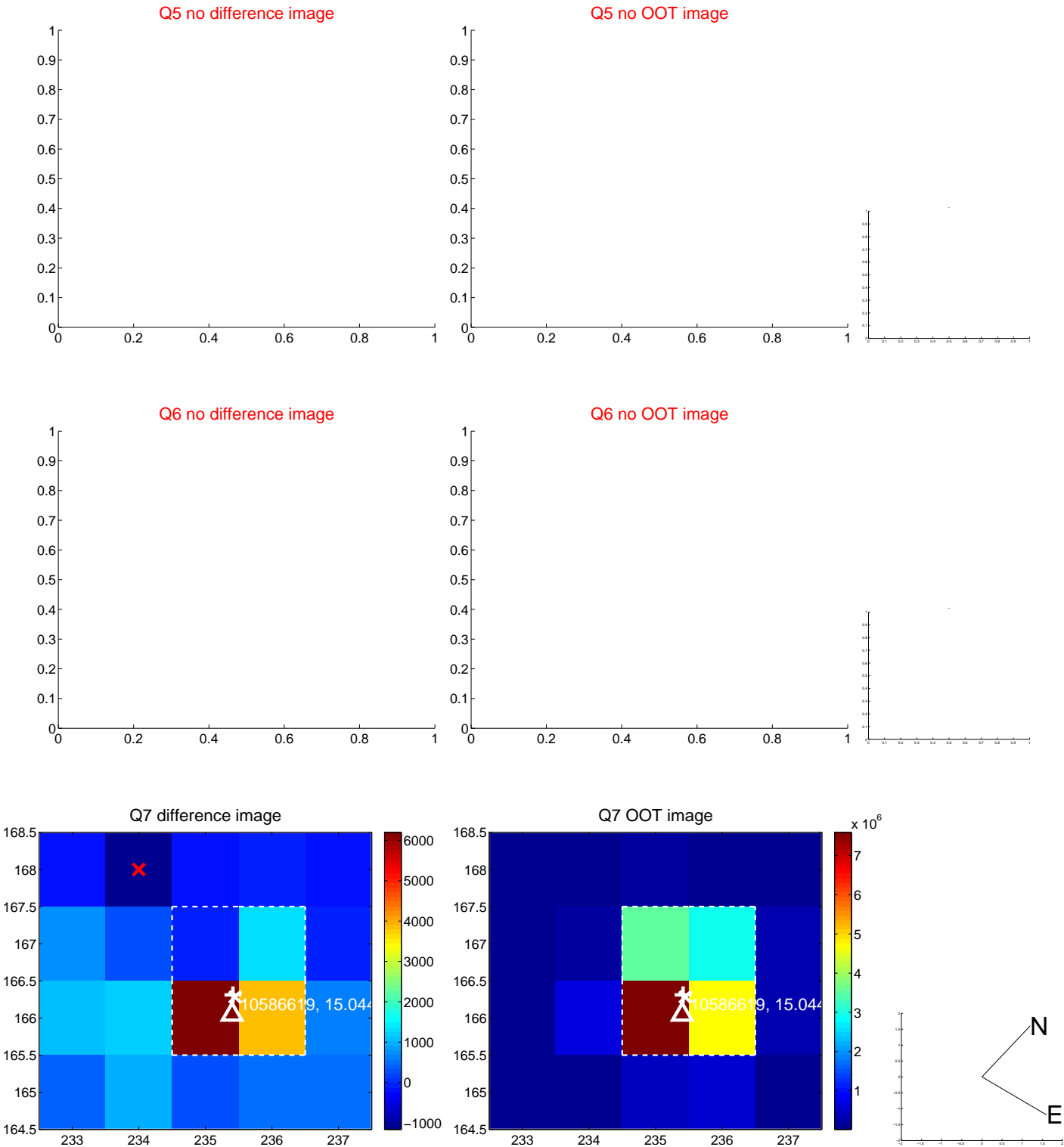


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: three- $\sigma$ . 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 ×: KIC target position; +: OOT centroid; △: difference centroid. red ✕: large negative pixel value.



white ×: KIC target position; +: OOT centroid; △: difference centroid. red ✕: large negative pixel value.





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



white ×: KIC target position; +: OOT centroid; △: difference centroid. red ✕: large negative pixel value.

Q13 no difference image



Q13 no OOT image



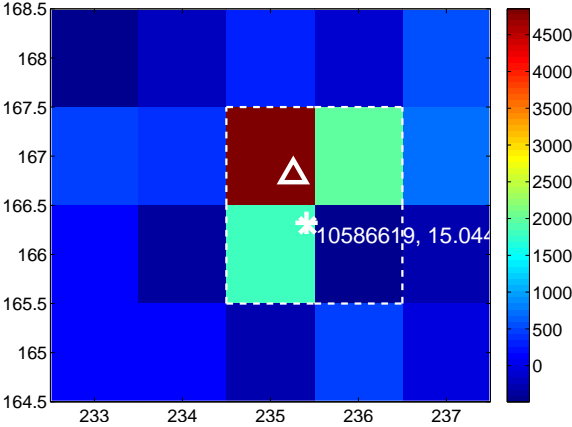
Q14 no difference image



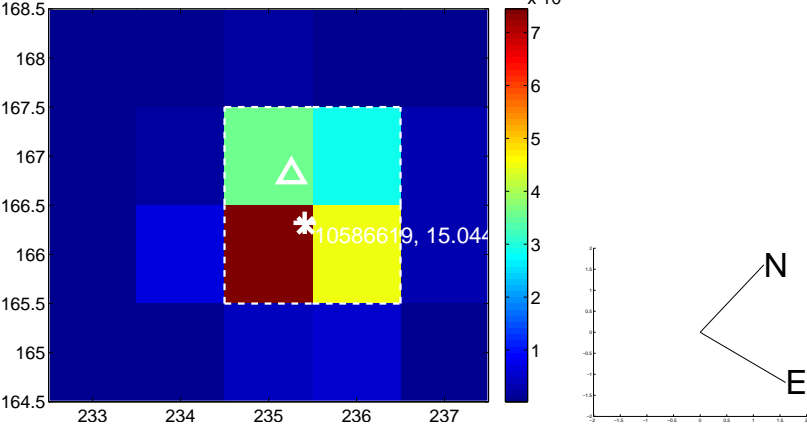
Q14 no OOT image



Q15 difference image



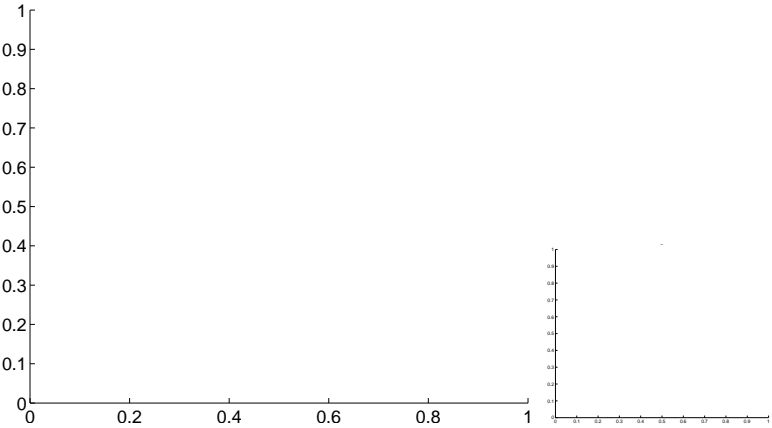
Q15 OOT image



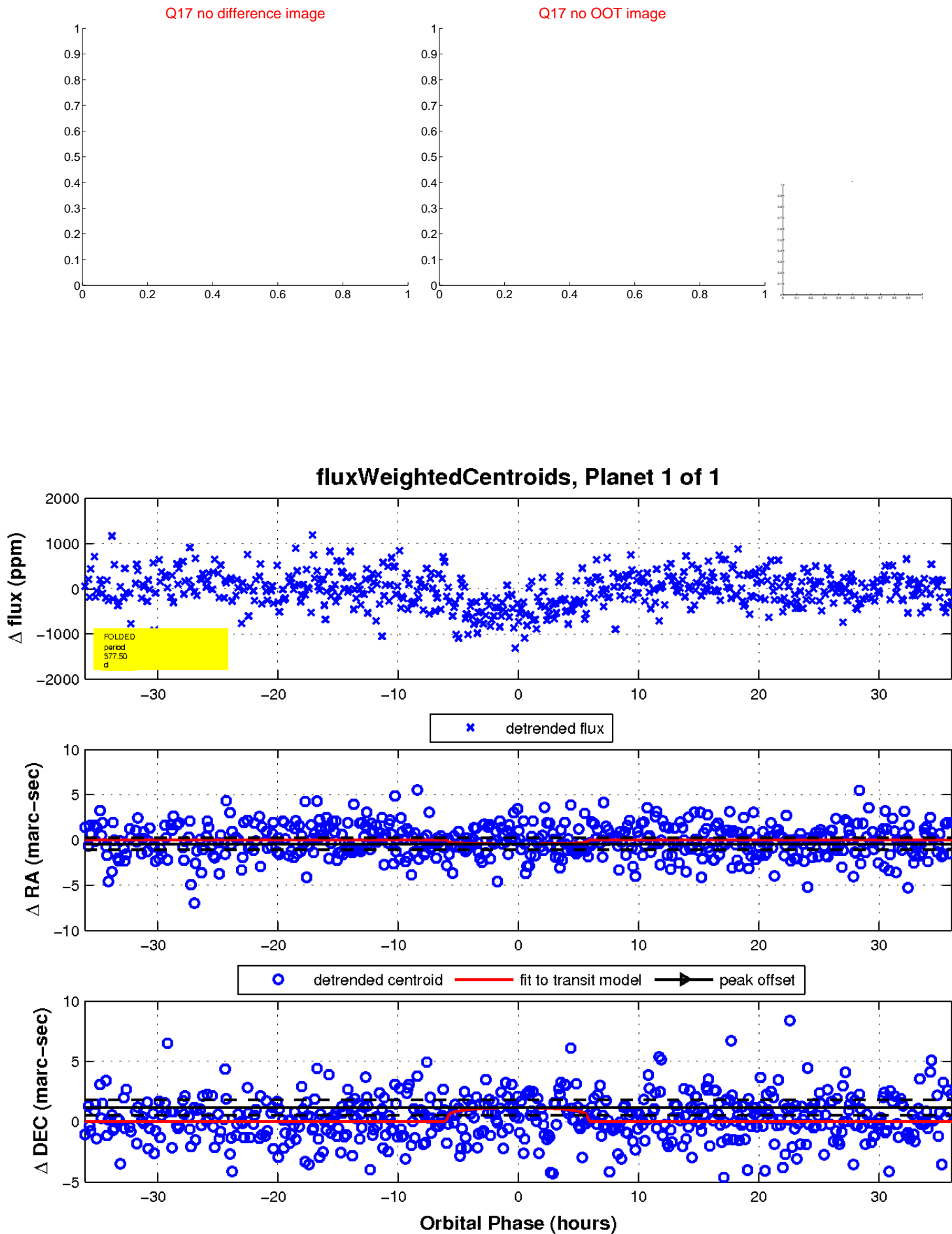
Q16 no difference image



Q16 no OOT image



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



This plot does not exist for this TCE.