

# KIC 006387193

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
006387193-01	OBS	No	277.017714	374.522283	270.8	18.254	75.2	5.5	0.95	5741	1.68	1.37

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
006387193-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL_SKYE_ZUMA—LPP_DV—LPP_ALT—INCONSISTENT_TRANS—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.

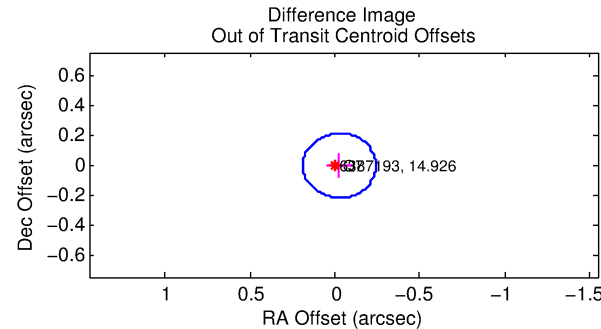
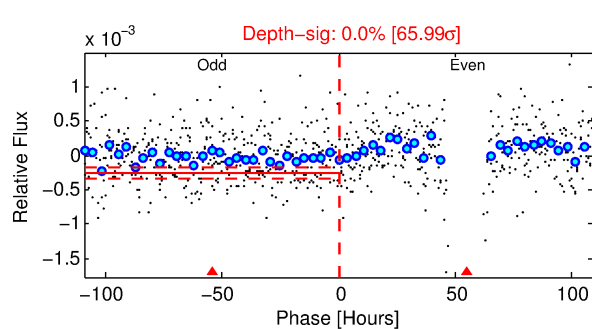
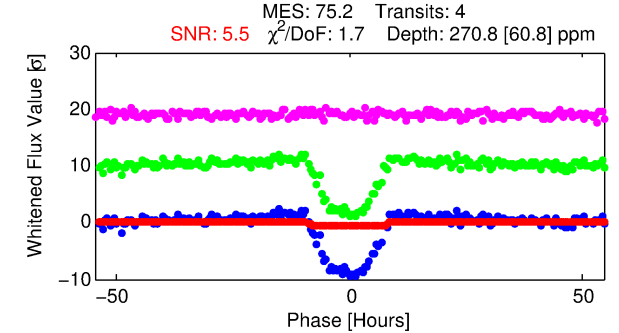
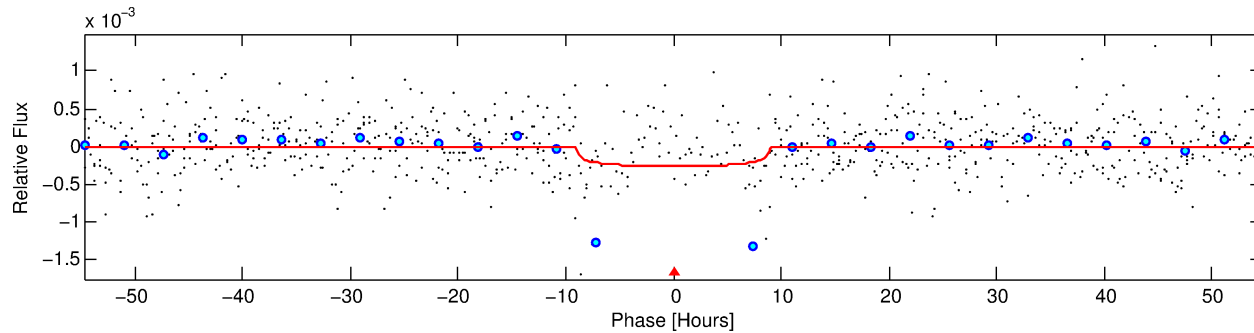
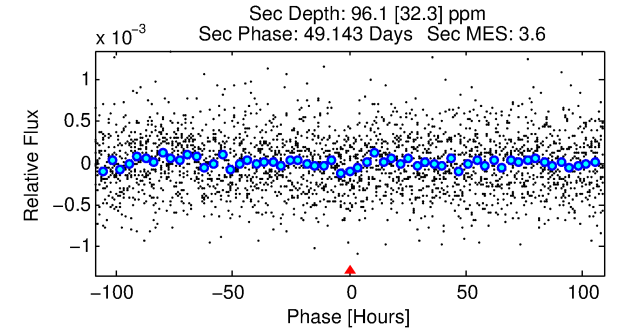
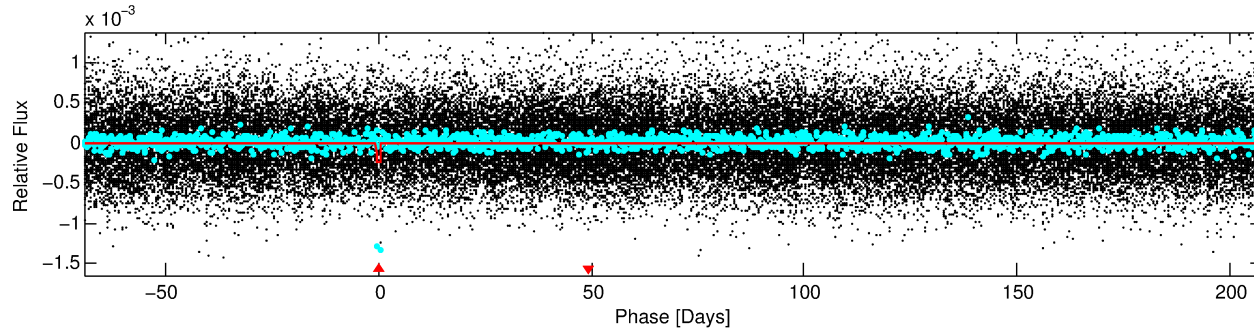
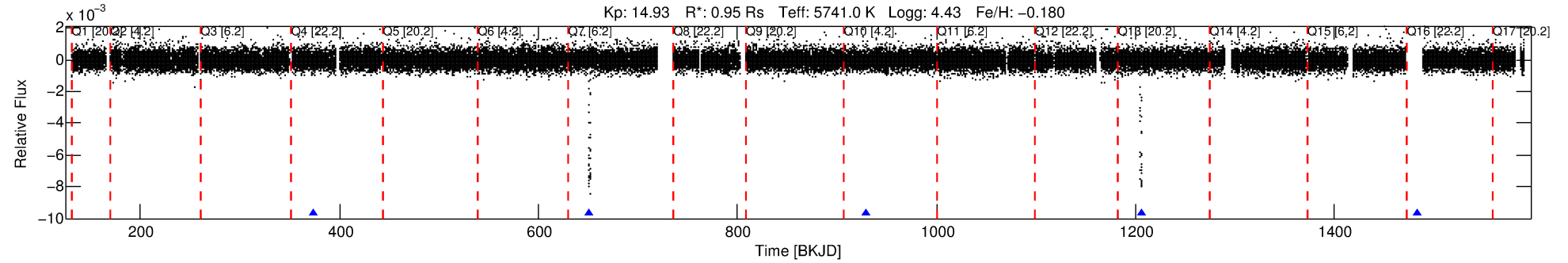
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 006387193-01

No Significant Match Found

# DV One-Page Summary

KIC: 6387193 Candidate: 1 of 1 Period: 277.018 d



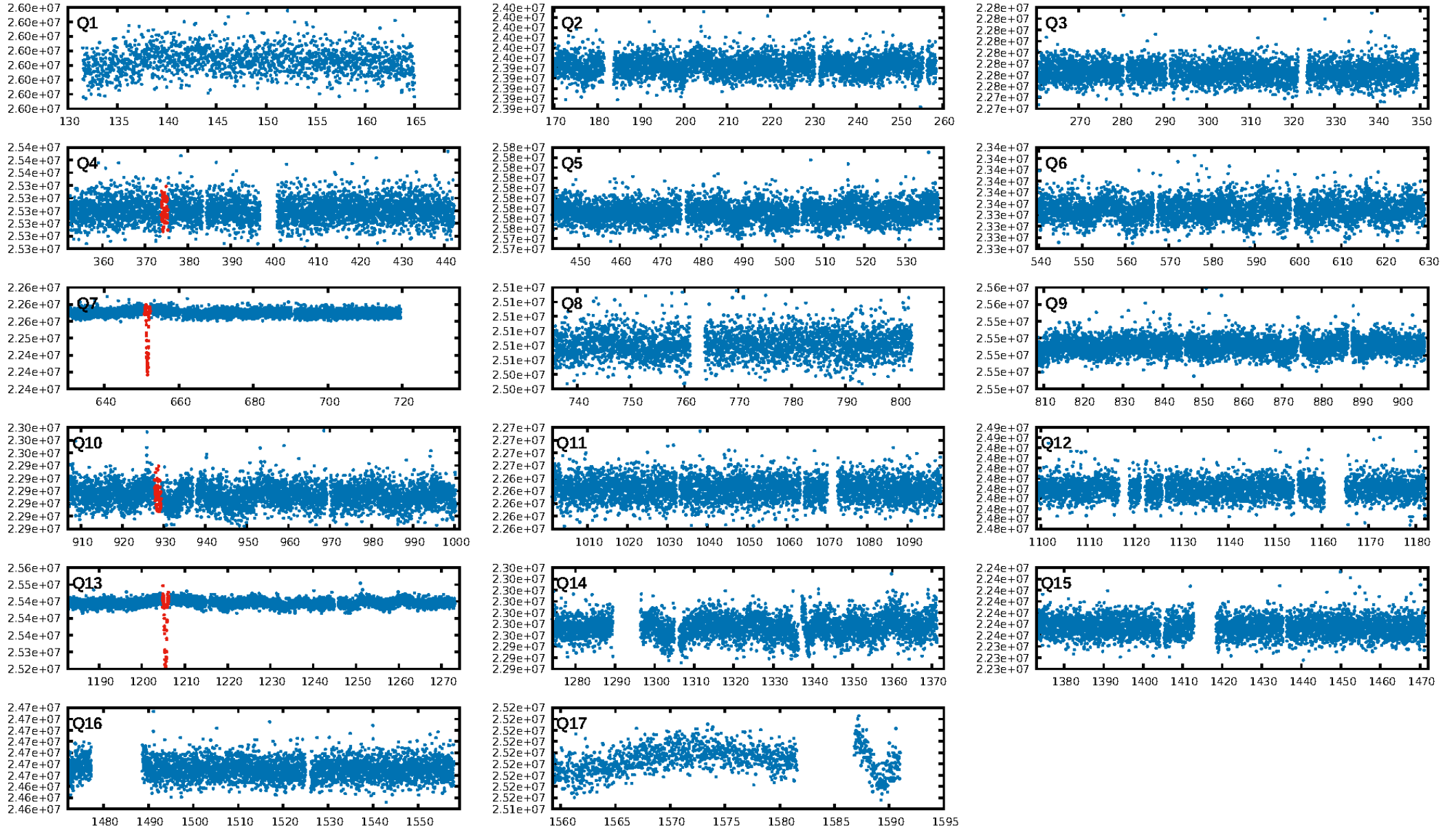
## DV Fit Results:

Period = 277.01771 [0.02707] d  
Epoch = 374.5223 [0.0499] BKJD  
Rp/R\* = 0.0162 [0.0109]  
a/R\* = 83.89 [251.50]  
b = 0.71 [2.08]  
Seff = 1.37 [0.48]  
Teff = 276 [24] K  
Rp = 1.68 [1.22] Re  
a = 0.8014 [0.1837] AU  
Ag = 12096.38 [17303.35] [0.70σ]  
Teffp = 4471 [1561] K [2.69σ]

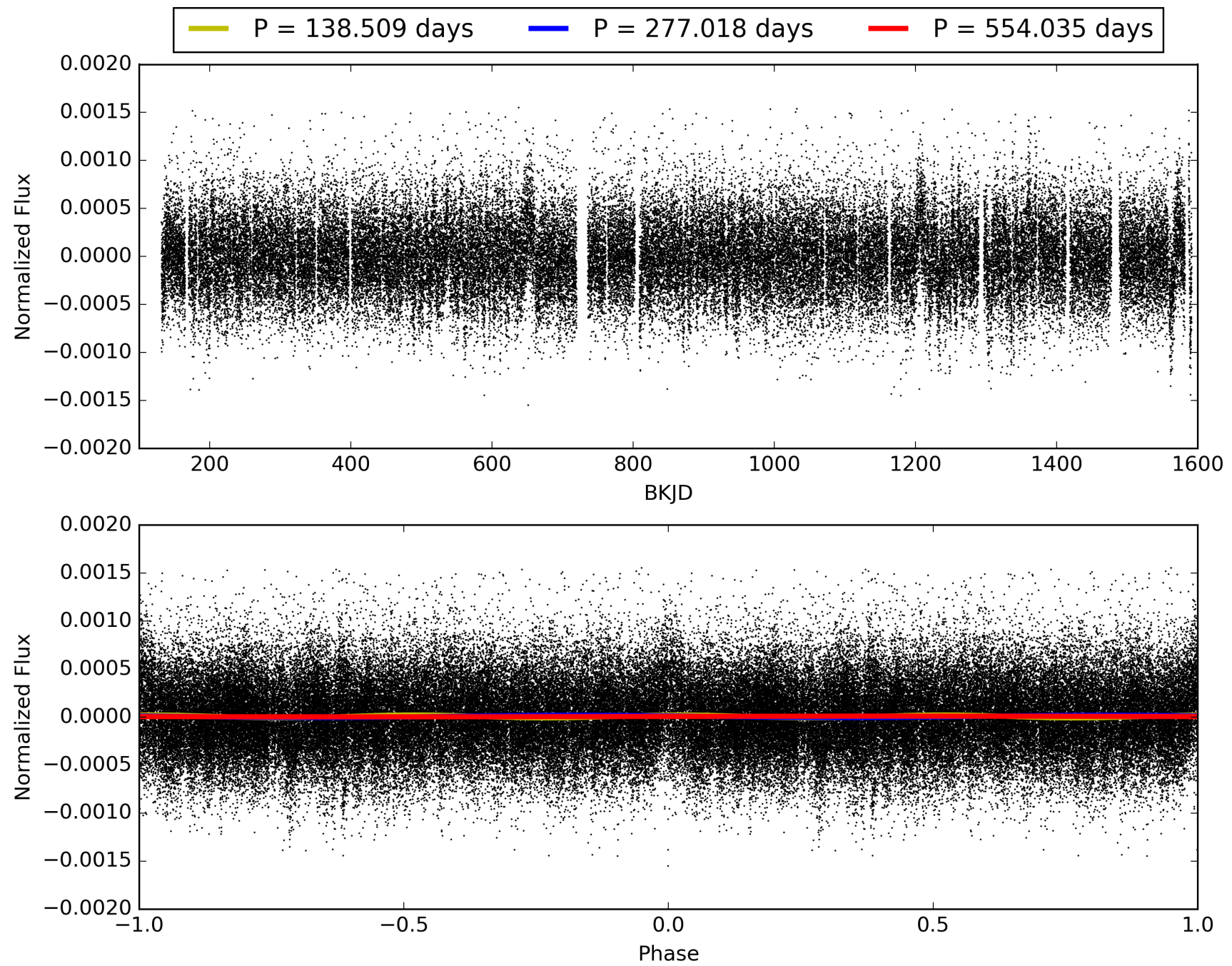
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: 0.0%  
ModelChiSquareGof-sig: 99.8%  
Bootstrap-pfa: 0.00e+00  
RollingBand-fgt: 1.00 [4/4]  
GhostDiagnostic-chr: 47.21  
Centroid-sig: 29.7%  
Centroid-so: 1.877 arcsec [0.86σ]  
OotOffset-rm: 0.026 arcsec [0.36σ]  
KicOffset-rm: 0.054 arcsec [0.75σ]  
OotOffset-st: 0/1/0/0 [1]  
KicOffset-st: 0/1/0/0 [1]  
DiffImageQuality-fgm: 1.00 [1/1]  
DiffImageOverlap-fno: 1.00 [3/3]

# TCE 006387193-01, PDC Light Curves

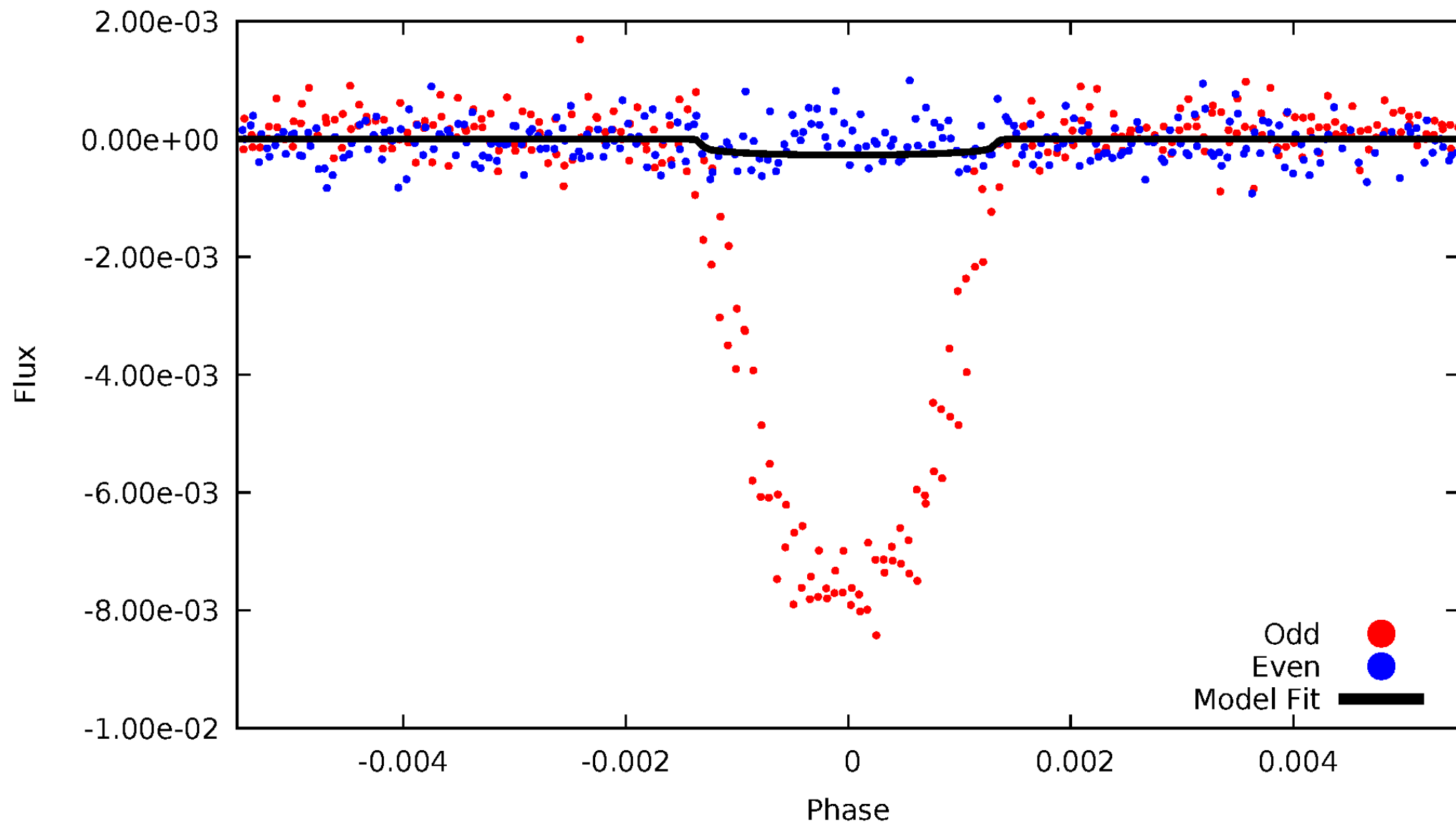


TCE 006387193-01



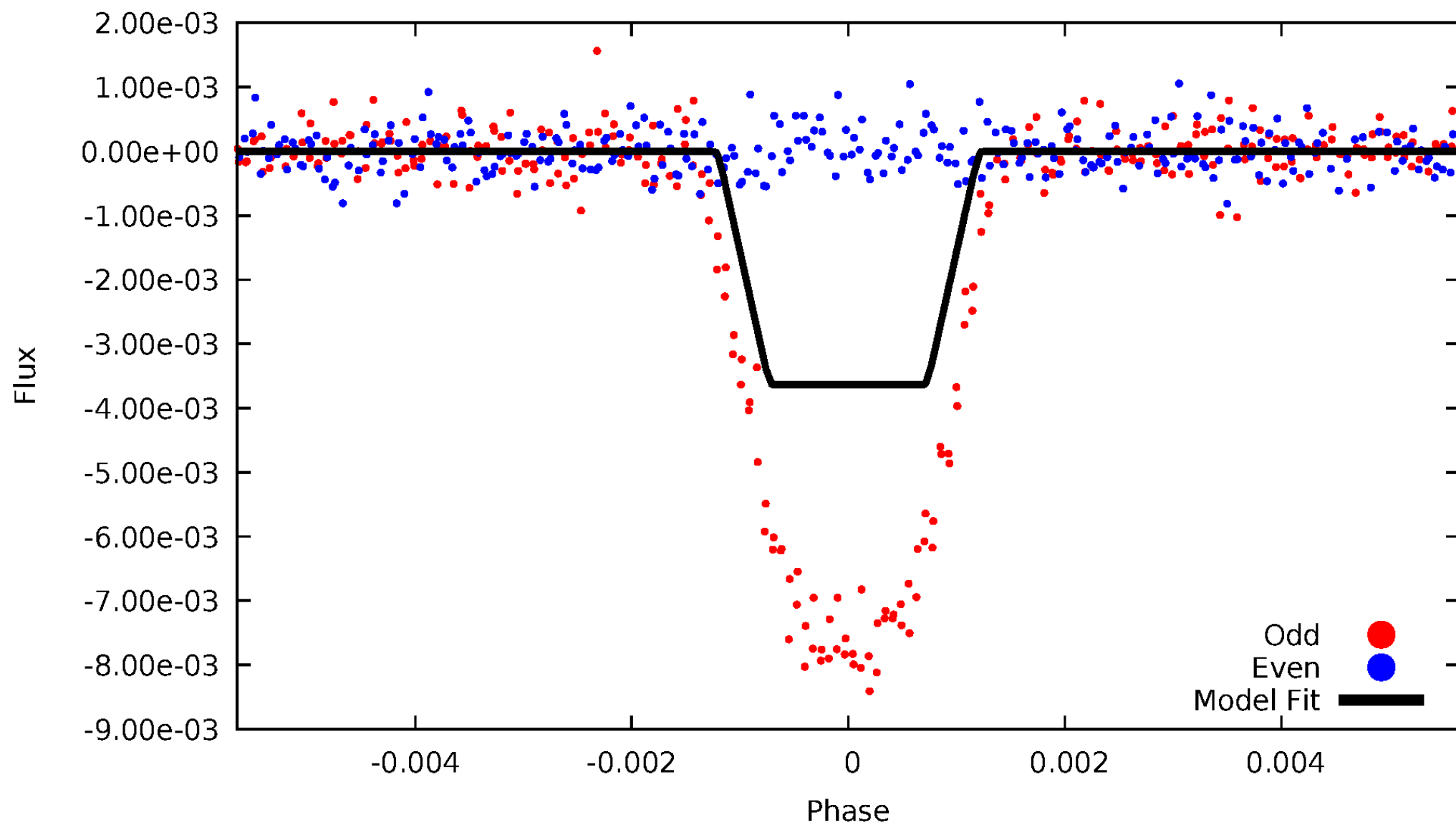
# DV Odd/Even

TCE 006387193-01



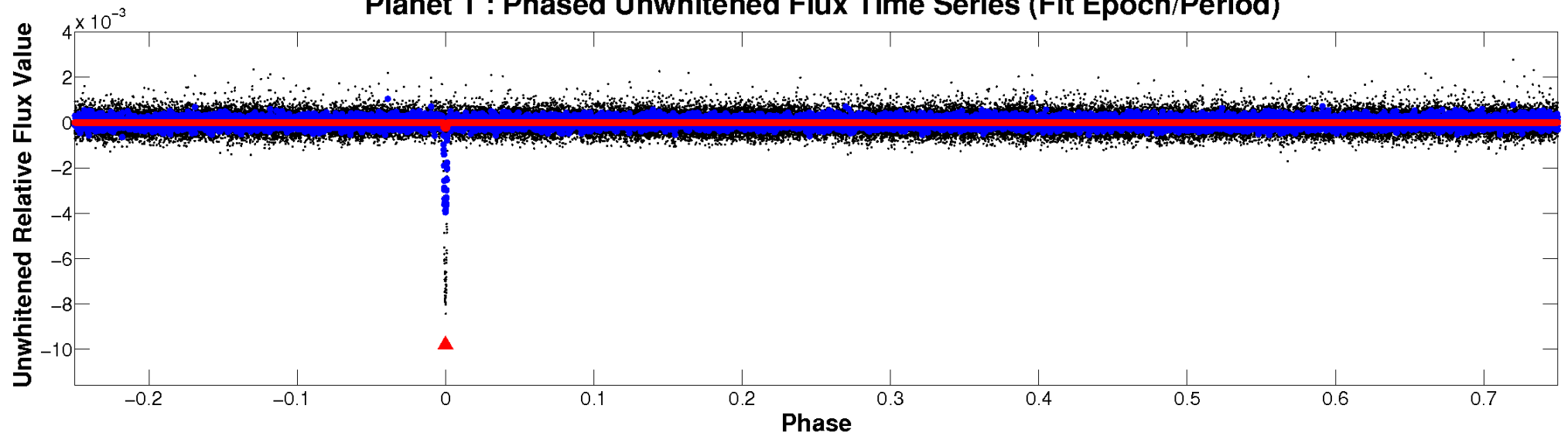
# ALT Odd/Even

TCE 006387193-01

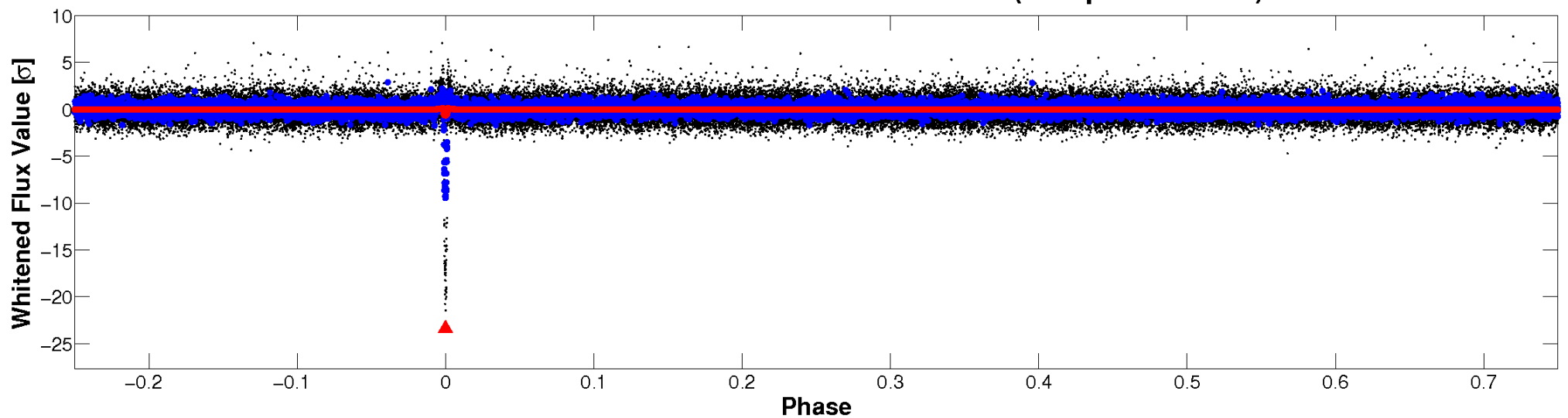


# Non-Whitened Vs. Whitened Light Curve

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



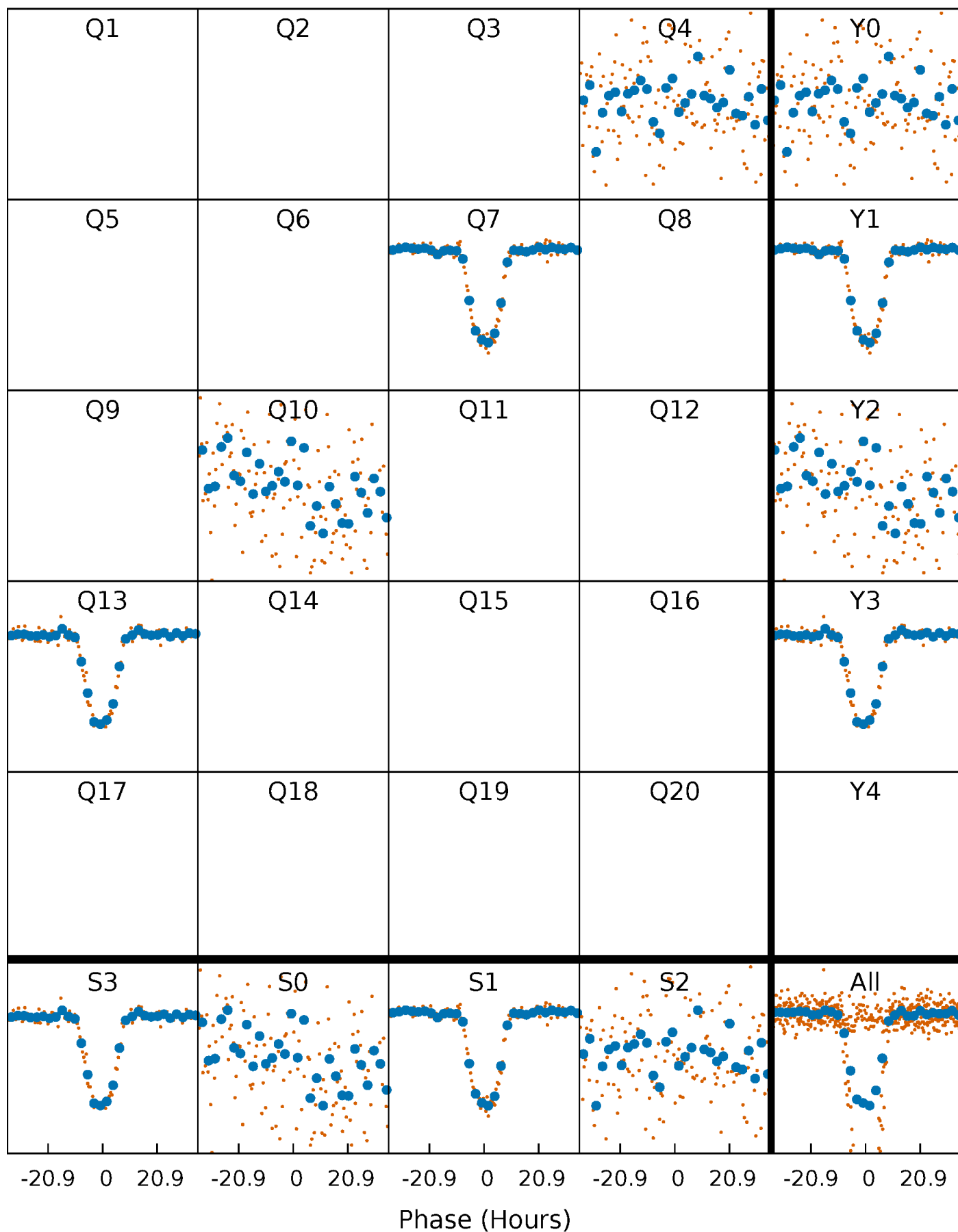
Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)





# PDC Quarter-Phased Transit Curves

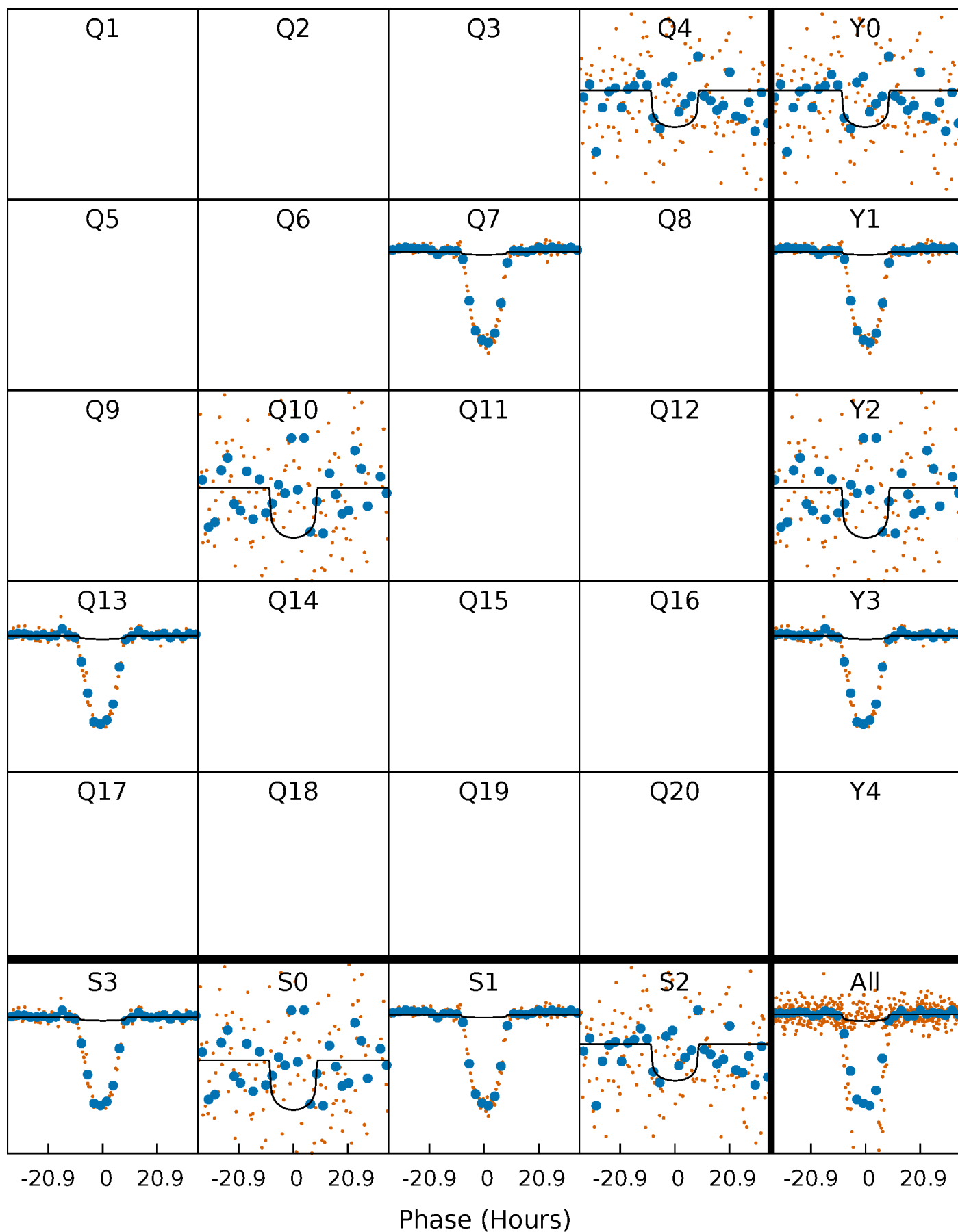
TCE 006387193-01 P=277.017714 Days  $T_0=374.522283$  (BKJD)





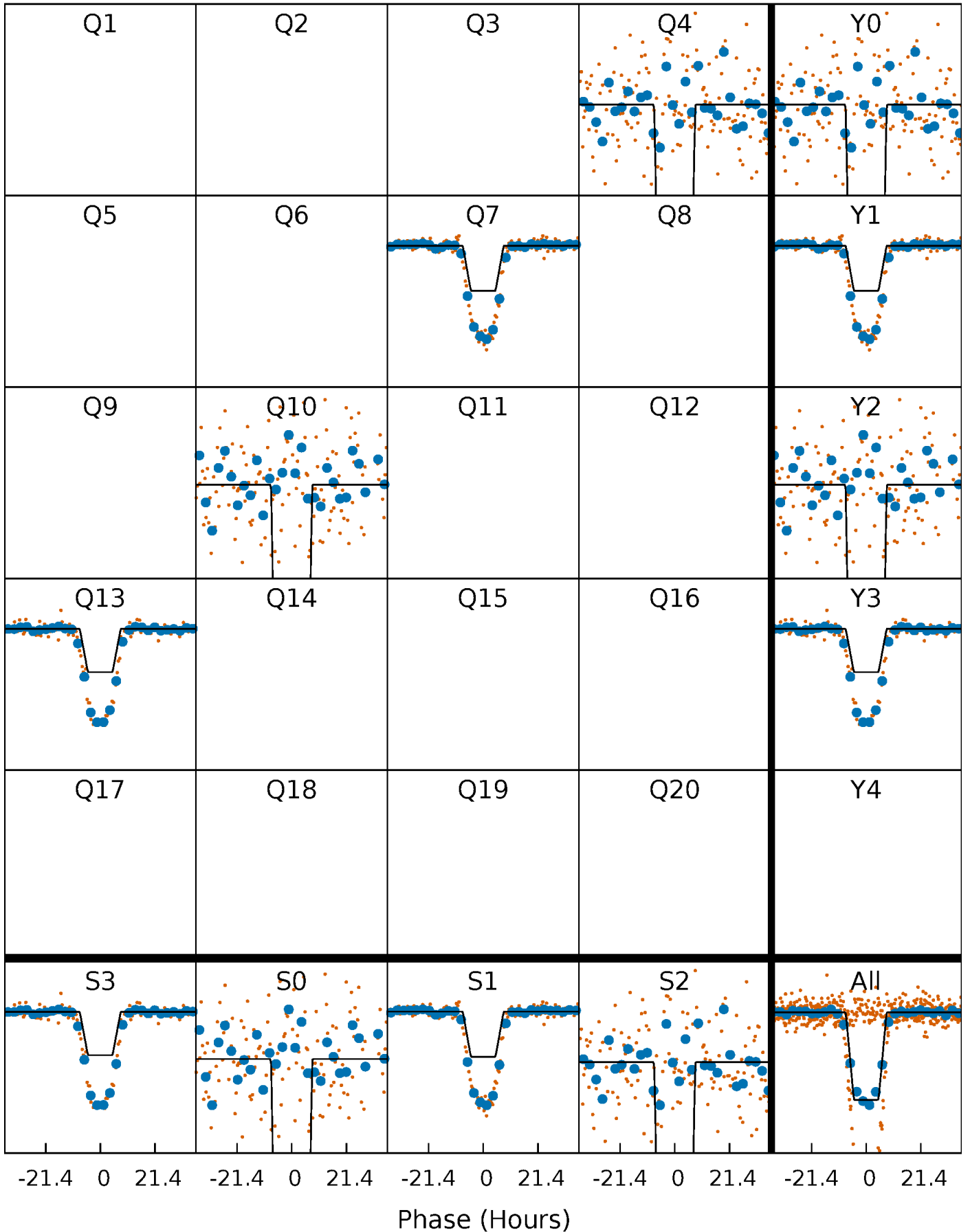
# DV Quarter-Phased Transit Curves

TCE 006387193-01 P=277.017714 Days  $T_0=374.522283$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

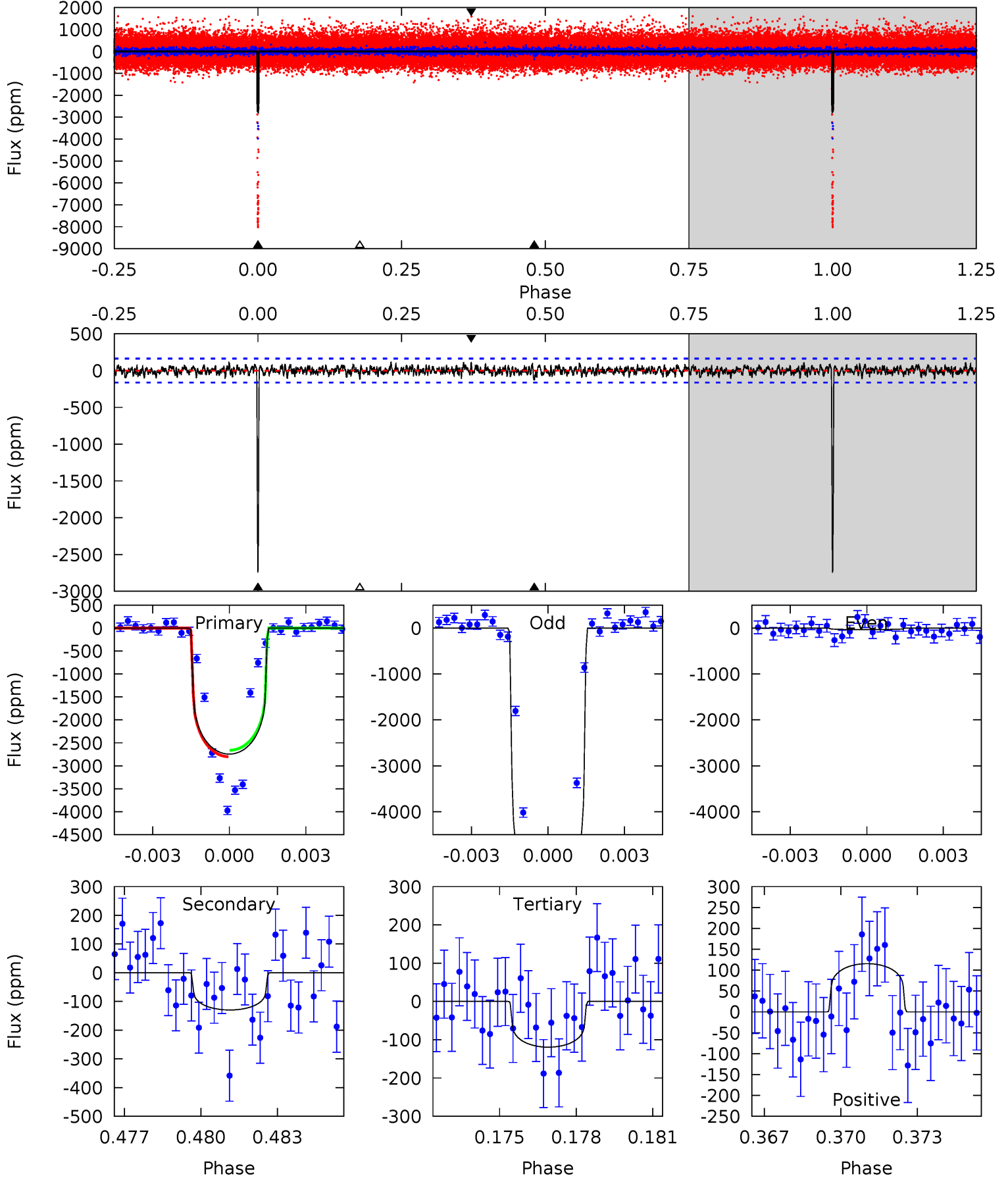
TCE 006387193-01 P=276.997339 Days  $T_0=374.558271$  (BKJD)



# DV Model-Shift Uniqueness Test

006387193-01, P = 277.017714 Days, E = 97.504569 Days

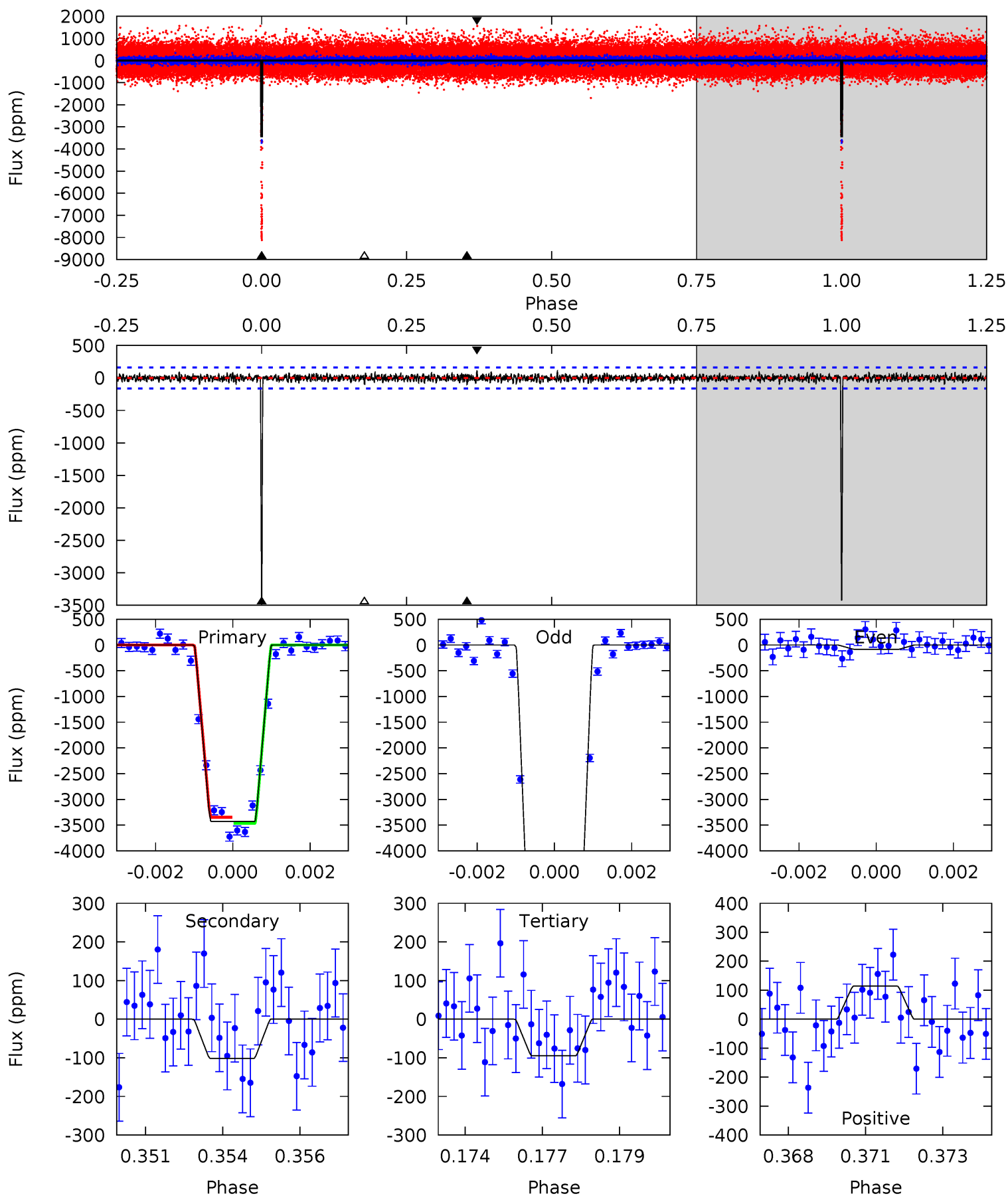
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
88.7	4.19	3.86	3.73	5.27	3.00	1.18	84.8	85.0	0.33	0.46	106.8	1.00	0.04	2.24



# Alt Model-Shift Uniqueness Test

006387193-01,  $P = 276.997339$  Days,  $E = 97.560932$  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
111.8	3.31	3.09	3.72	5.29	3.03	0.95	108.7	108.1	0.21	-0.42	117.3	1.01	0.03	1.89



### Stellar Parameters For KIC 006387193

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$5741^{+172}_{-172}$	$4.434^{+0.112}_{-0.182}$	$-0.180^{+0.300}_{-0.300}$	$0.950^{+0.259}_{-0.139}$	$0.894^{+0.120}_{-0.087}$	$1.467^{+0.665}_{-0.737}$
	+3%/-3%	+3%/-4%	+167%/-167%	+27%/-15%	+13%/-10%	+45%/-50%
Source	PHO1	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 006387193-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	$A_{obs}$
DV	$-130 \pm 31$	$1.78^{+1.21}_{-0.99}$	$389^{+30}_{-22}$	$4811^{+2408}_{-830}$	$13916^{+63451}_{-8978}$
Alt.	$-101 \pm 31$	$6.29^{+1.52}_{-1.22}$	$388^{+28}_{-22}$	$3014^{+239}_{-204}$	$887^{+629}_{-369}$

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

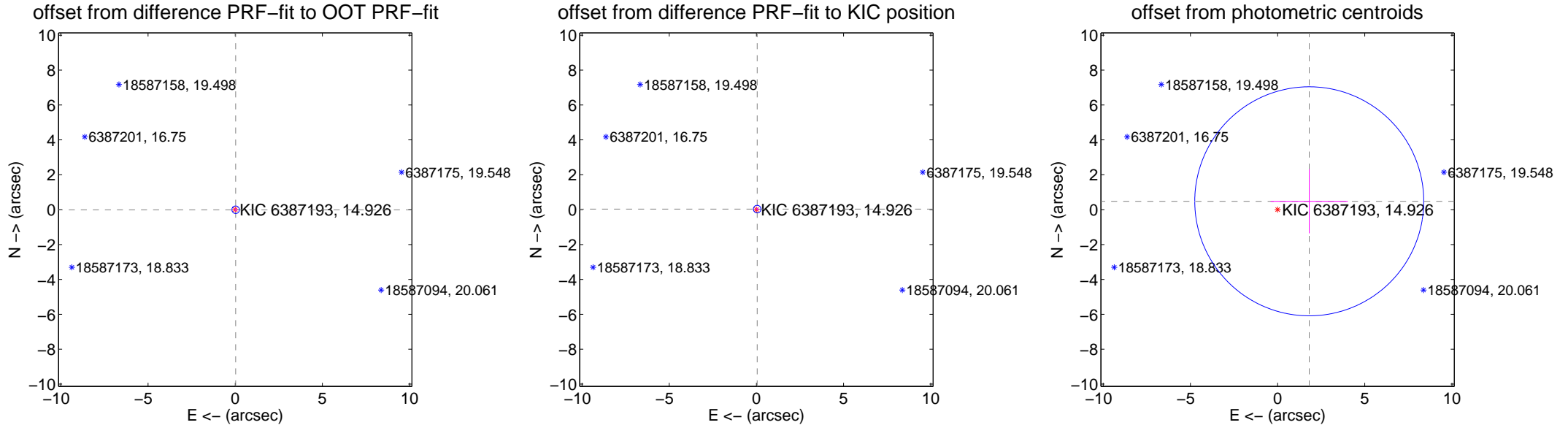
## DV Centroid Data

Supplemental centroid analysis for 006387193-01. Kepler magnitude: 14.93. Transit SNR 5.45

There are 1 quarters with good PRF difference image offsets

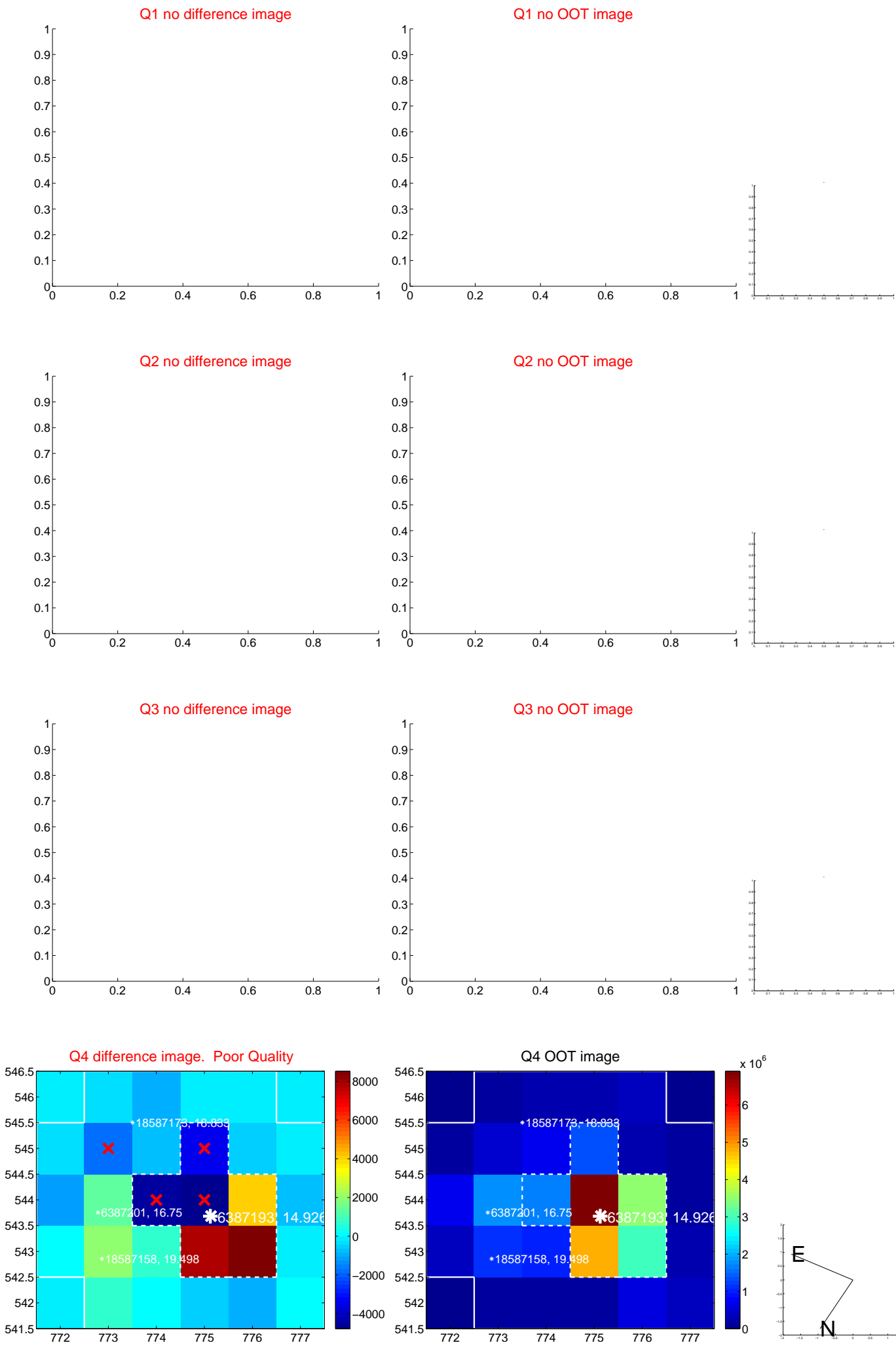
The direct PRF centroid is offset from the target star catalog position by about 0.04 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.026 \pm 0.072$	0.36	$-0.025 \pm 0.072$	$-0.006 \pm 0.075$
PRF-fit source offset from KIC position	$0.054 \pm 0.073$	0.75	$-0.045 \pm 0.072$	$0.031 \pm 0.075$
photometric centroid source offset	$1.88 \pm 2.19$	0.86	$-1.82 \pm 2.21$	$0.48 \pm 1.84$



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.

Q5 no difference image



Q5 no OOT image



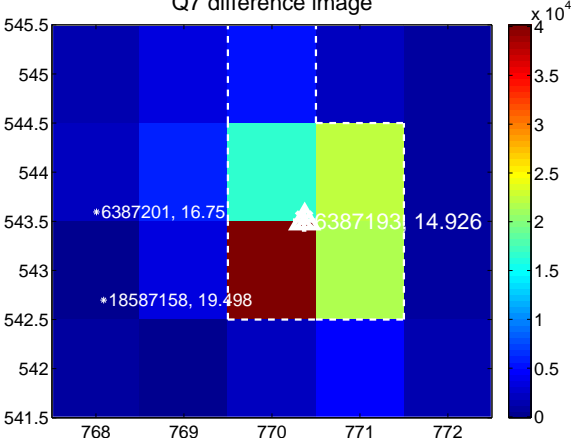
Q6 no difference image



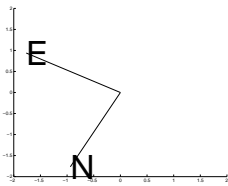
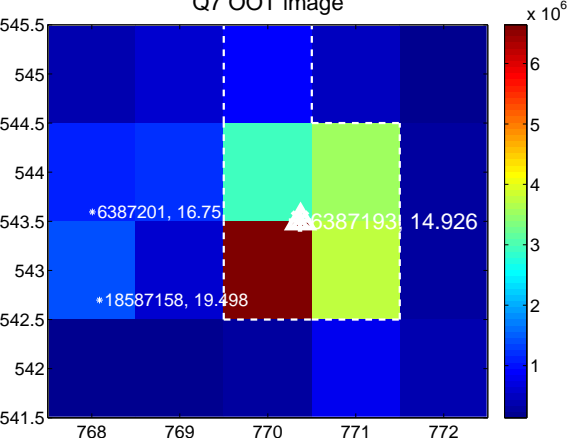
Q6 no OOT image



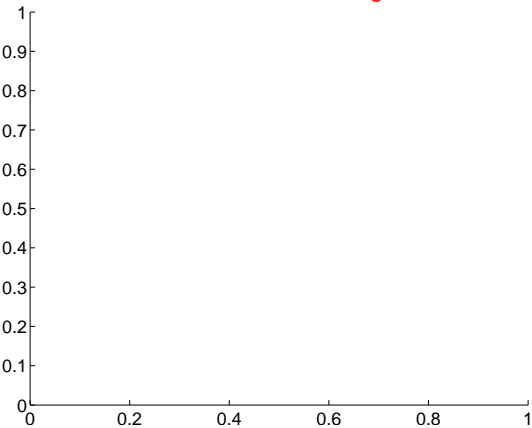
Q7 difference image



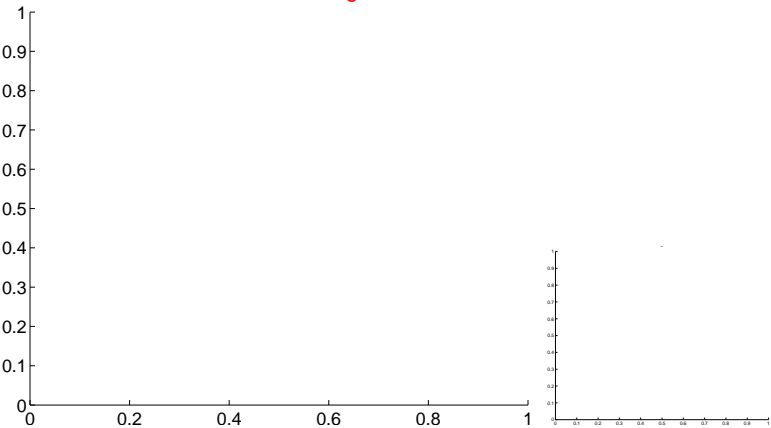
Q7 OOT image



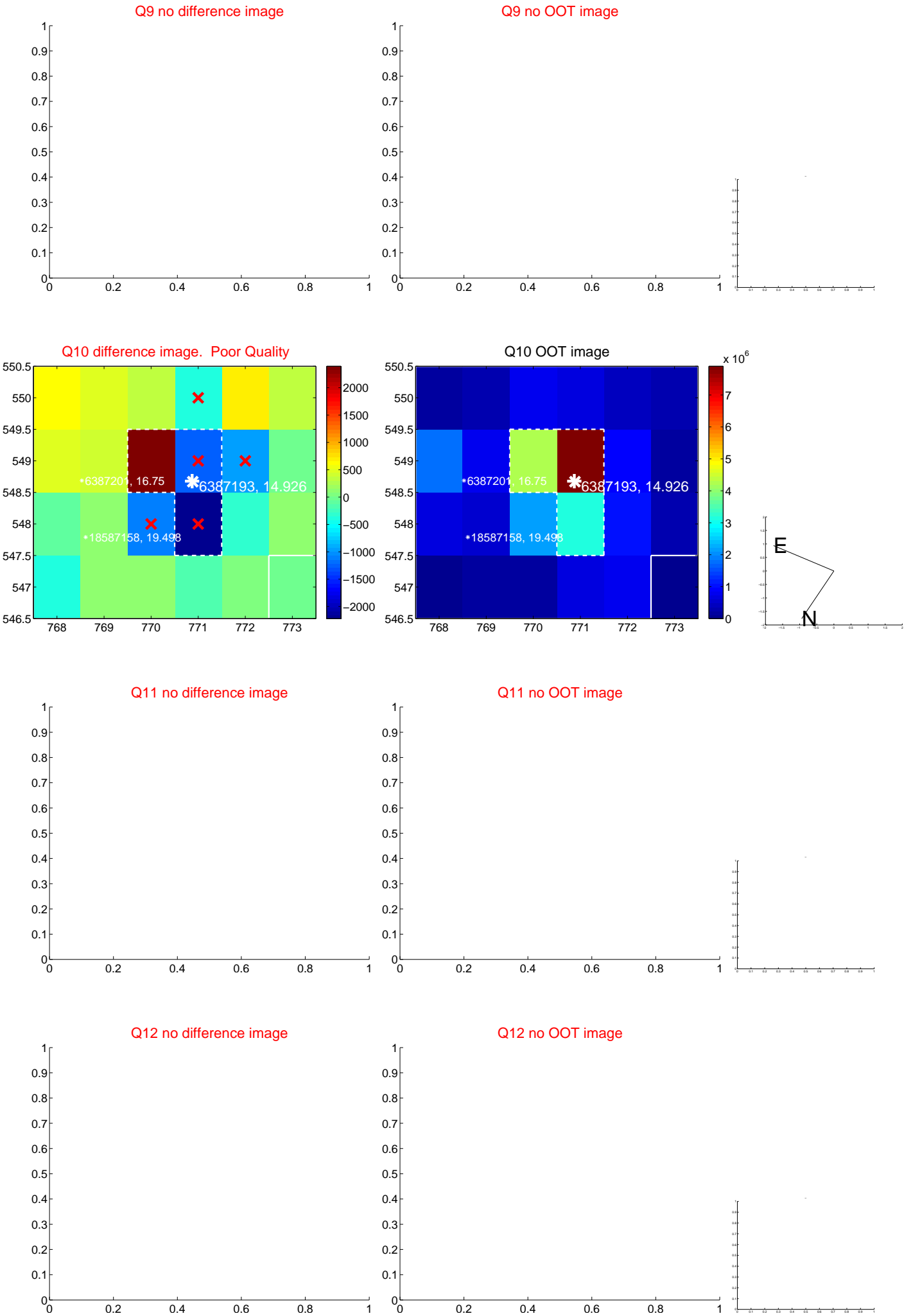
Q8 no difference image



Q8 no OOT image



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



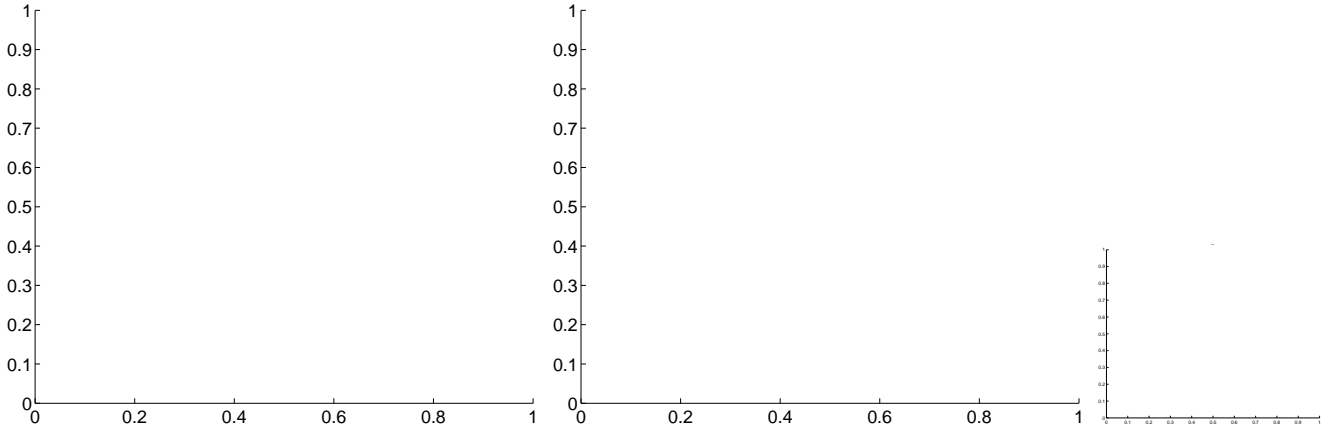
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



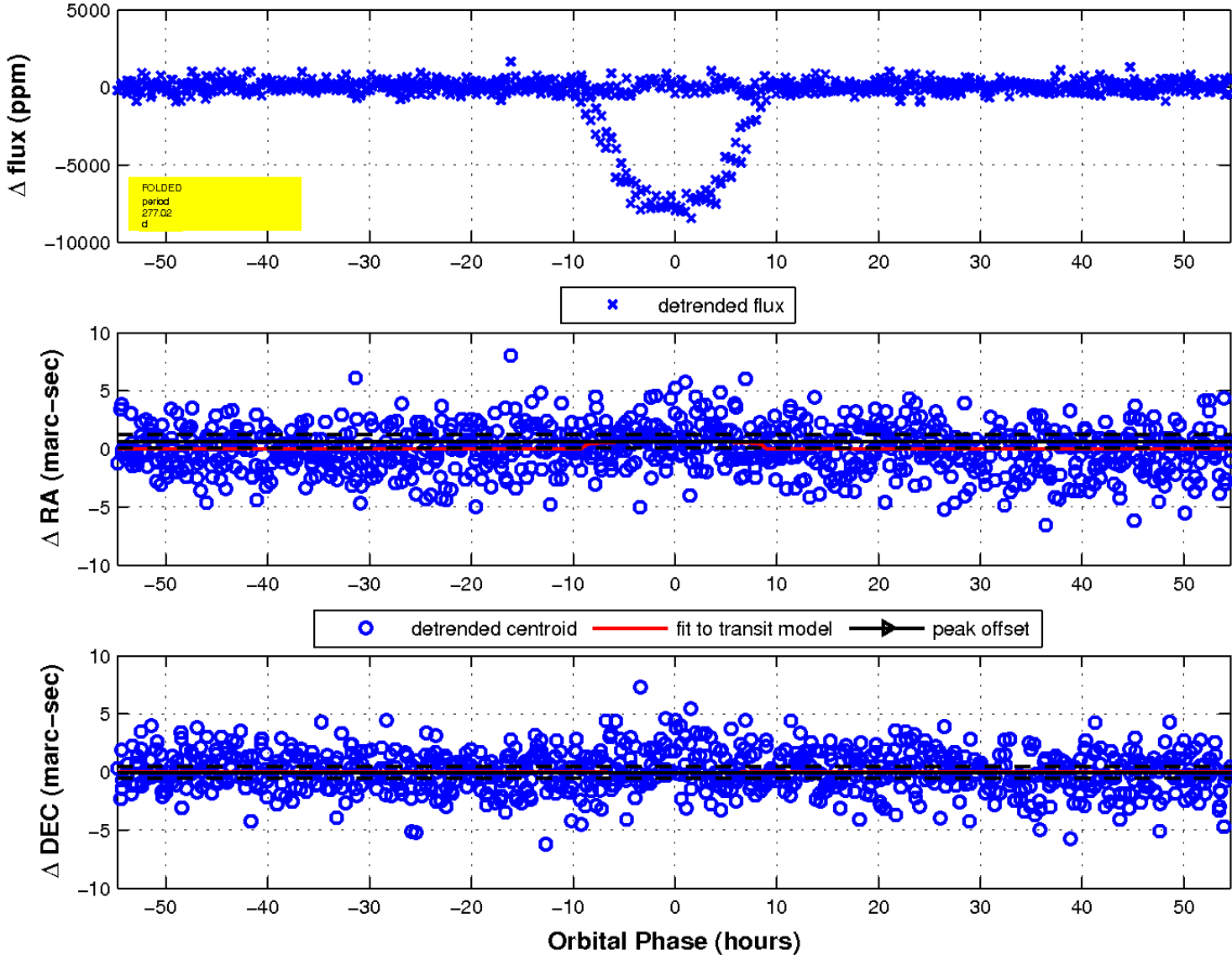
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

Q17 no difference image

Q17 no OOT image



fluxWeightedCentroids, Planet 1 of 1



UKIRT Image

