

# KIC 011867527

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
011867527-01	OBS	No	523.256371	452.530365	891.2	12.159	10.1	9.9	0.75	5066	2.36	0.26

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
011867527-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_SKYE—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.

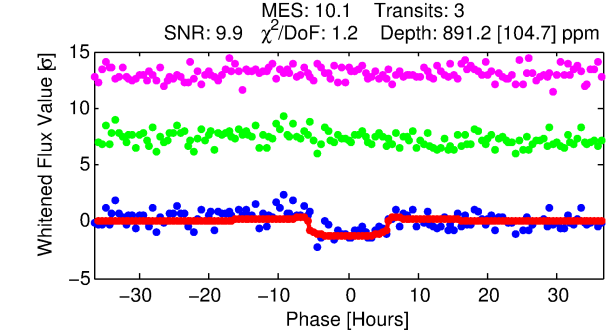
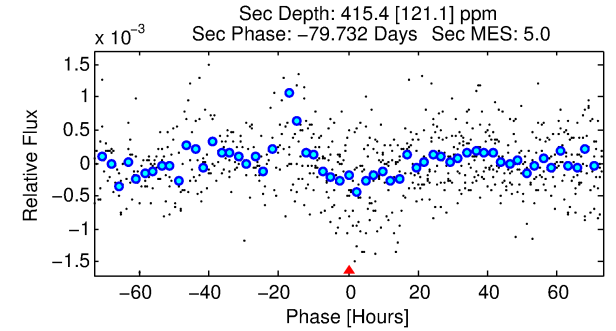
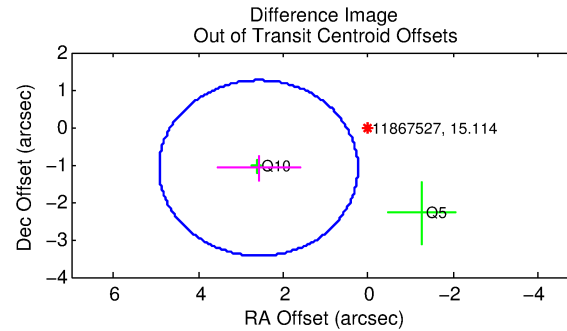
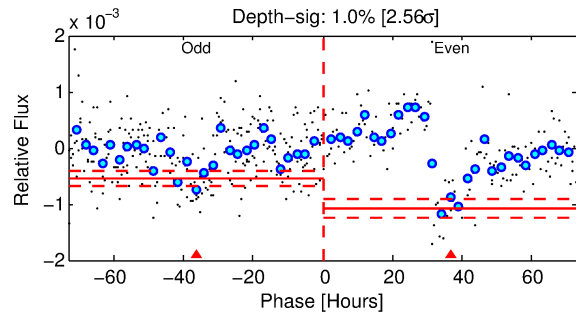
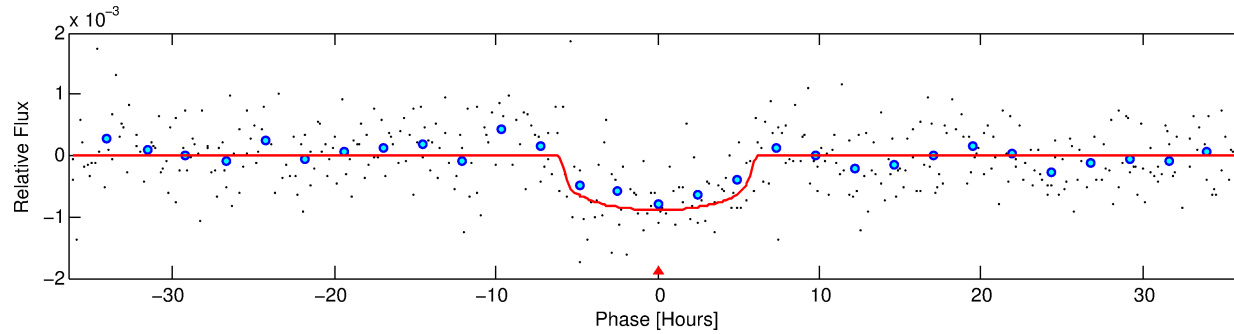
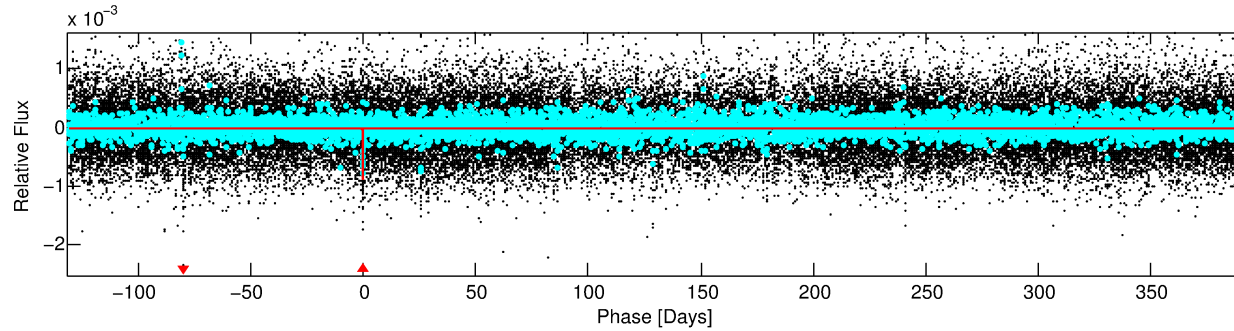
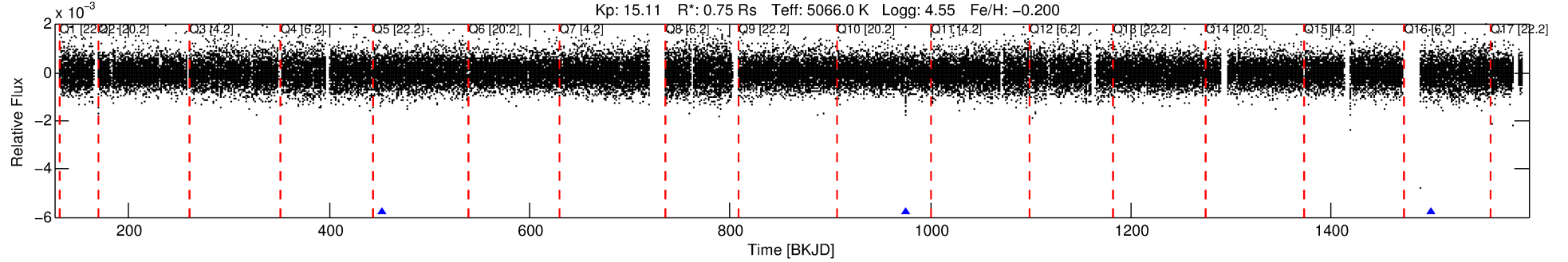
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 011867527-01

No Significant Match Found

# DV One-Page Summary

KIC: 11867527 Candidate: 1 of 1 Period: 523.256 d



## DV Fit Results:

Period = 523.25637 [0.01191] d  
Epoch = 452.5304 [0.0155] BKJD  
Rp/R\* = 0.0287 [0.0112]  
a/R\* = 261.43 [364.71]  
b = 0.65 [1.24]  
Seff = 0.25 [0.04]  
Teq = 181 [8] K  
Rp = 2.36 [0.96] Re  
a = 1.1475 [0.0990] AU  
Ag = 53984.65 [45594.92] [1.18 $\sigma$ ]  
Teffp = 4270 [901] K [4.54 $\sigma$ ]

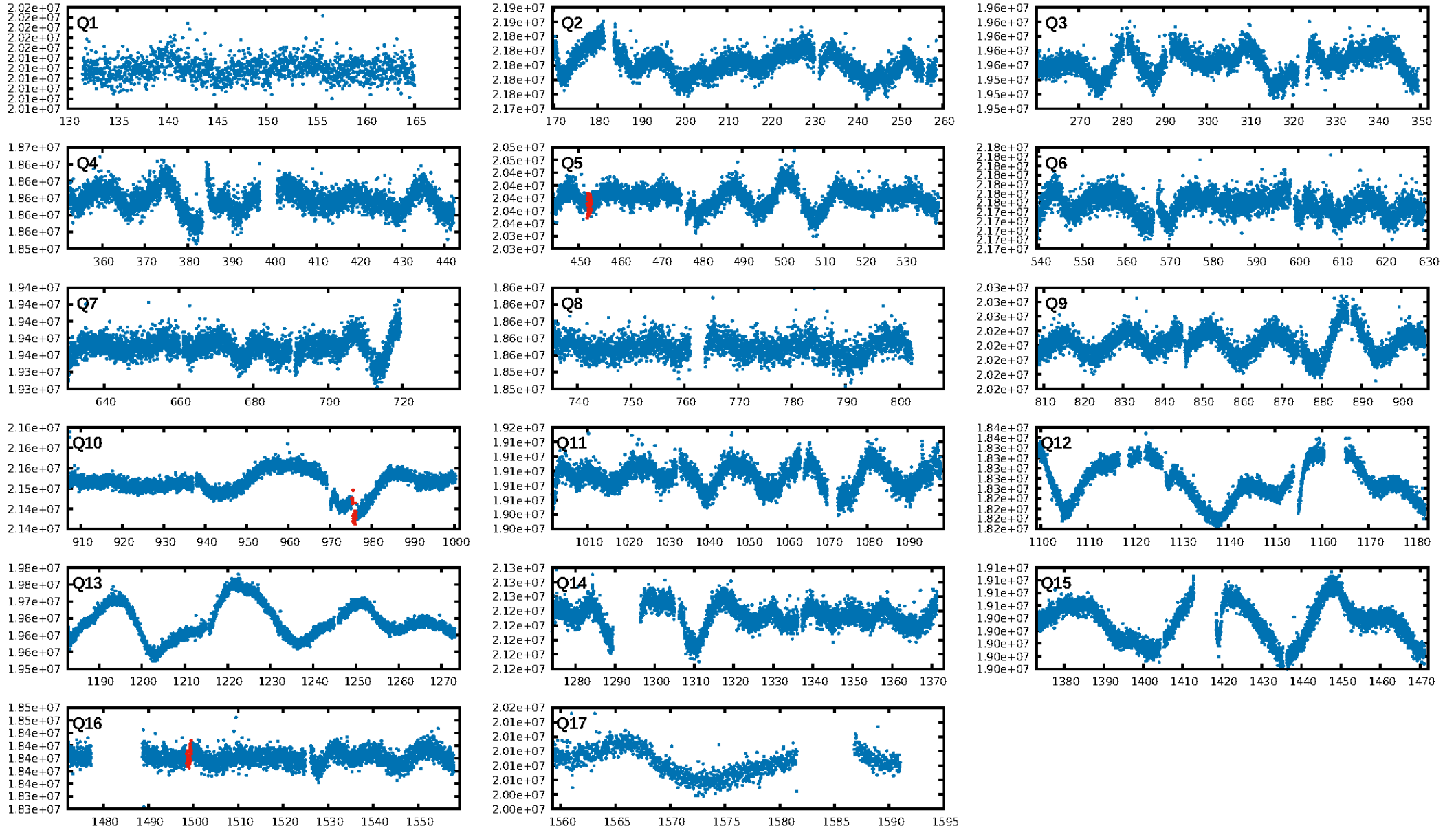
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: 2.1%  
ModelChiSquareGof-sig: 96.5%  
Bootstrap-pfa: 3.01e-17  
RollingBand-fgt: 1.00 [3/3]  
GhostDiagnostic-chr: 1.89  
Centroid-sig: 1.1%  
Centroid-so: 2.291 arcsec [2.13 $\sigma$ ]  
OotOffset-rm: 2.801 arcsec [3.59 $\sigma$ ]  
KicOffset-rm: 2.726 arcsec [3.63 $\sigma$ ]  
OotOffset-st: 1/0/0/1 [2]  
KicOffset-st: 1/0/0/1 [2]  
DiffImageQuality-fgm: 1.00 [2/2]  
DiffImageOverlap-fno: 1.00 [2/2]

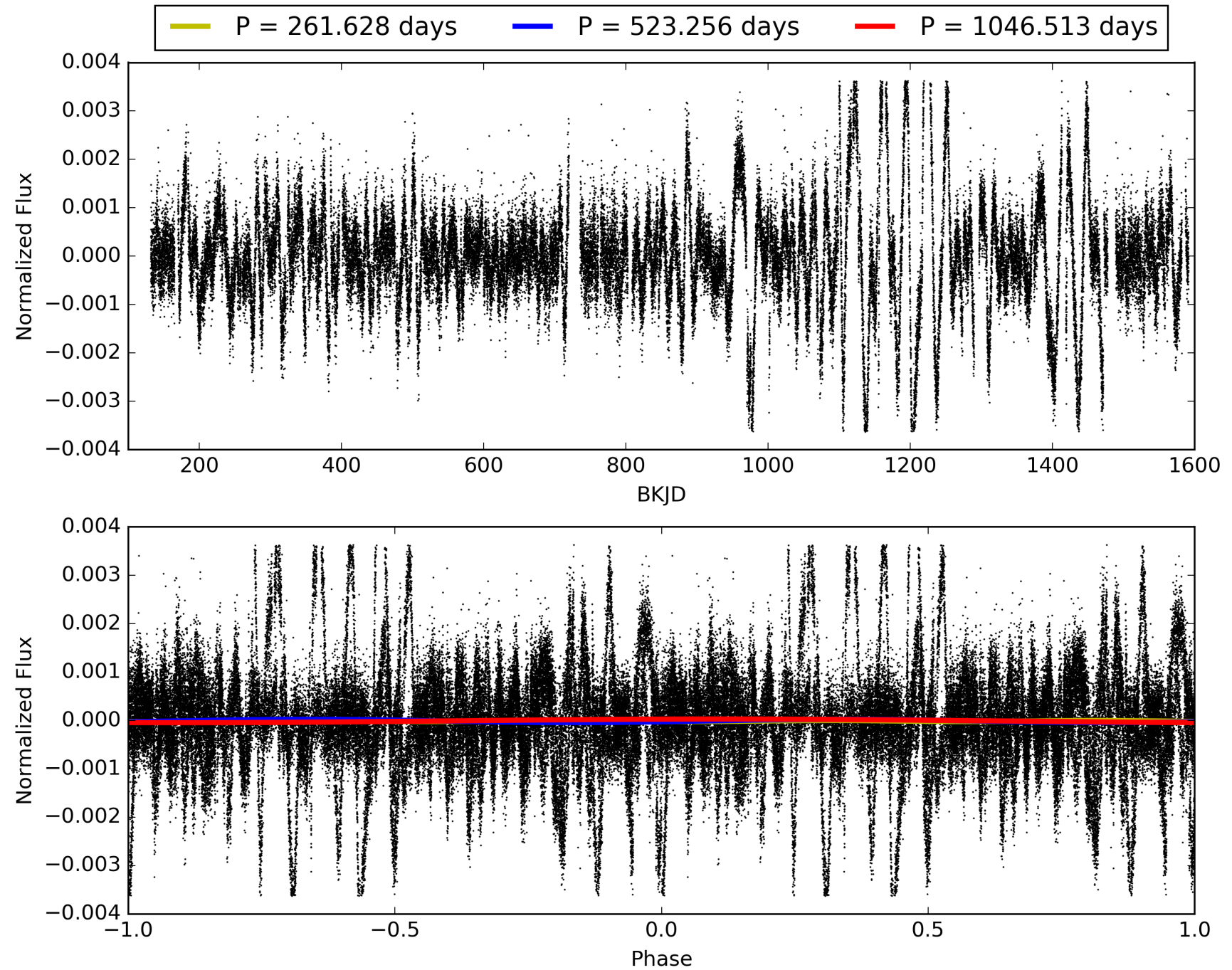
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 28-Jan-2016 19:54:20 Z

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

# TCE 011867527-01, PDC Light Curves

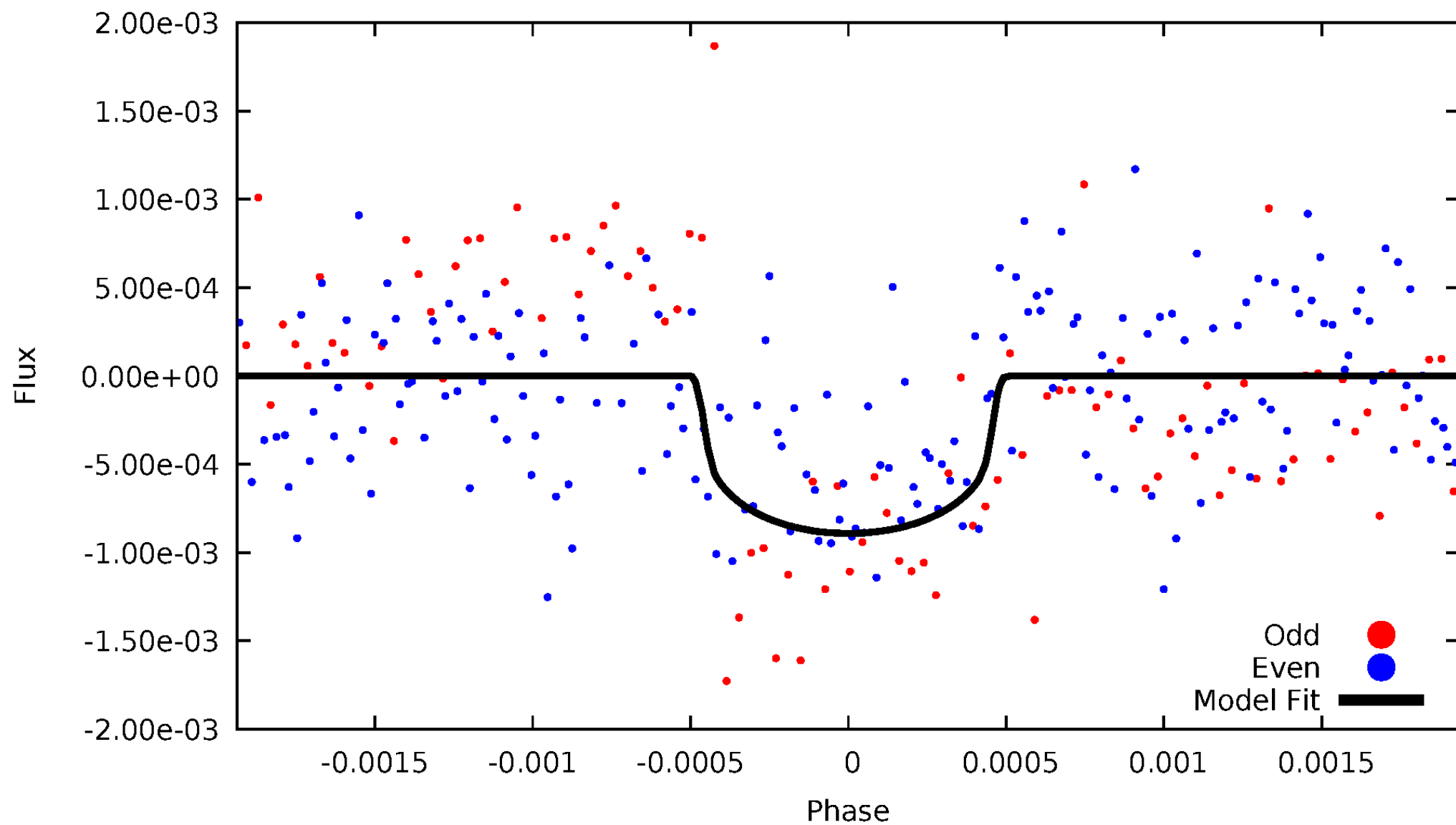


# TCE 011867527-01



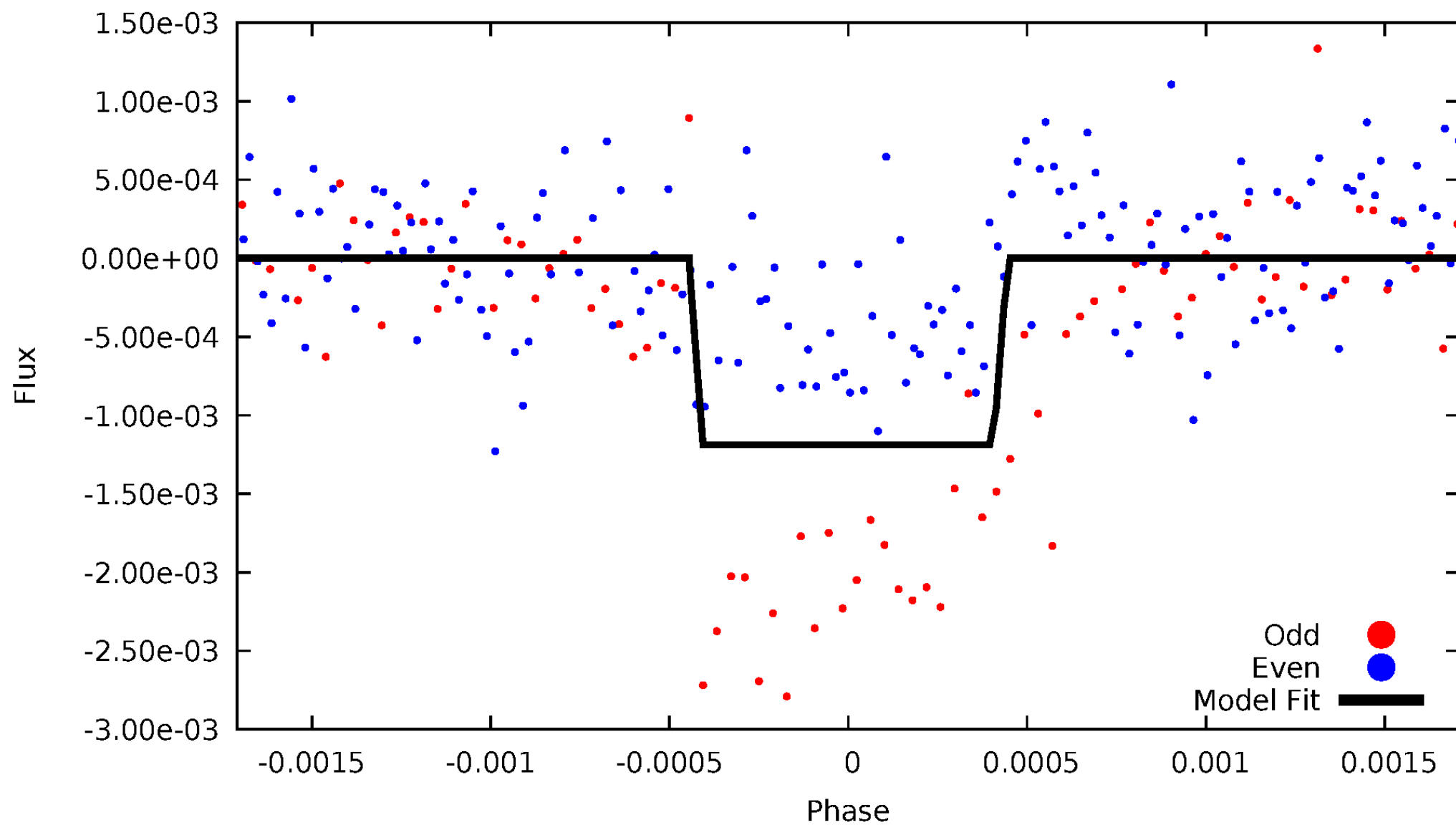
# DV Odd/Even

TCE 011867527-01



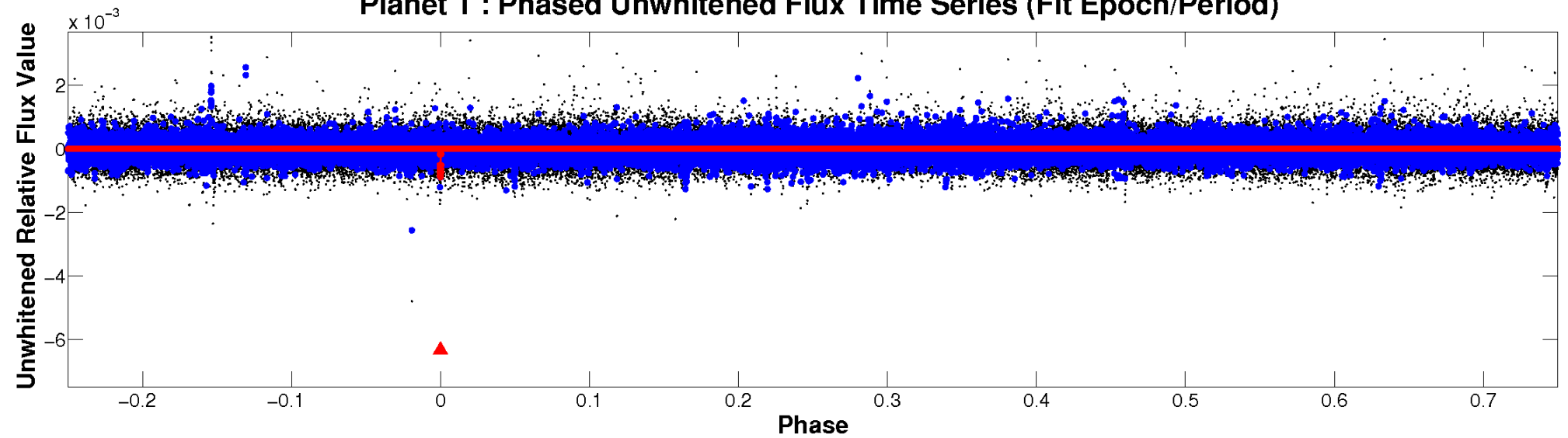
# ALT Odd/Even

TCE 011867527-01

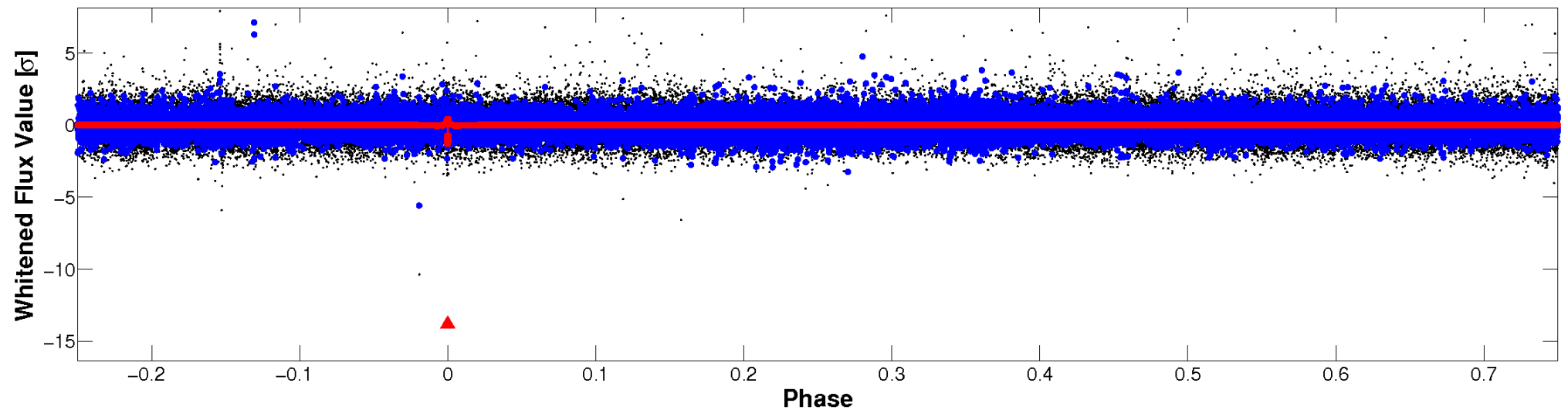


# Non-Whitened Vs. Whitened Light Curve

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

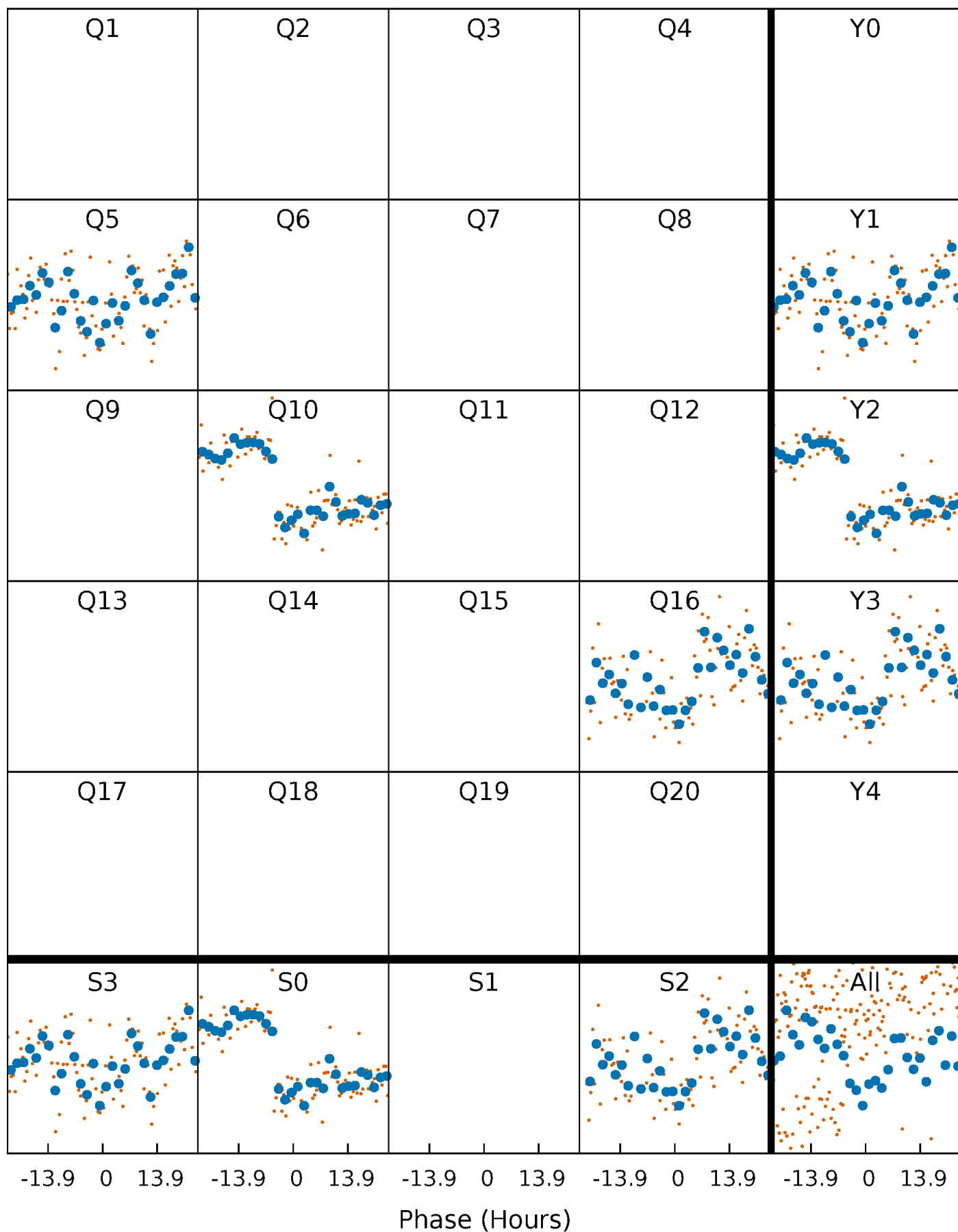


**Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)**



# PDC Quarter-Phased Transit Curves

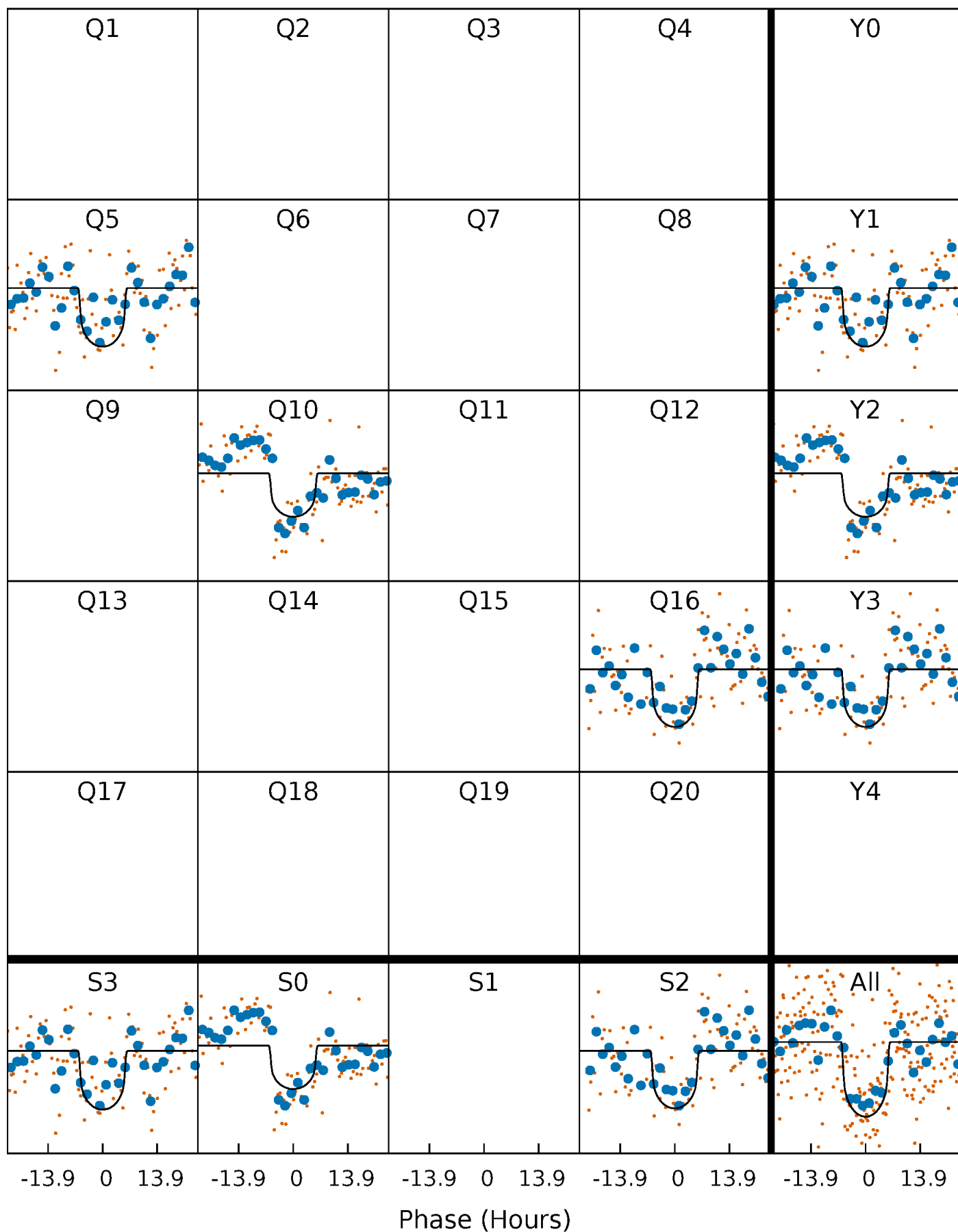
TCE 011867527-01 P=523.256371 Days  $T_0=452.530365$  (BKJD)





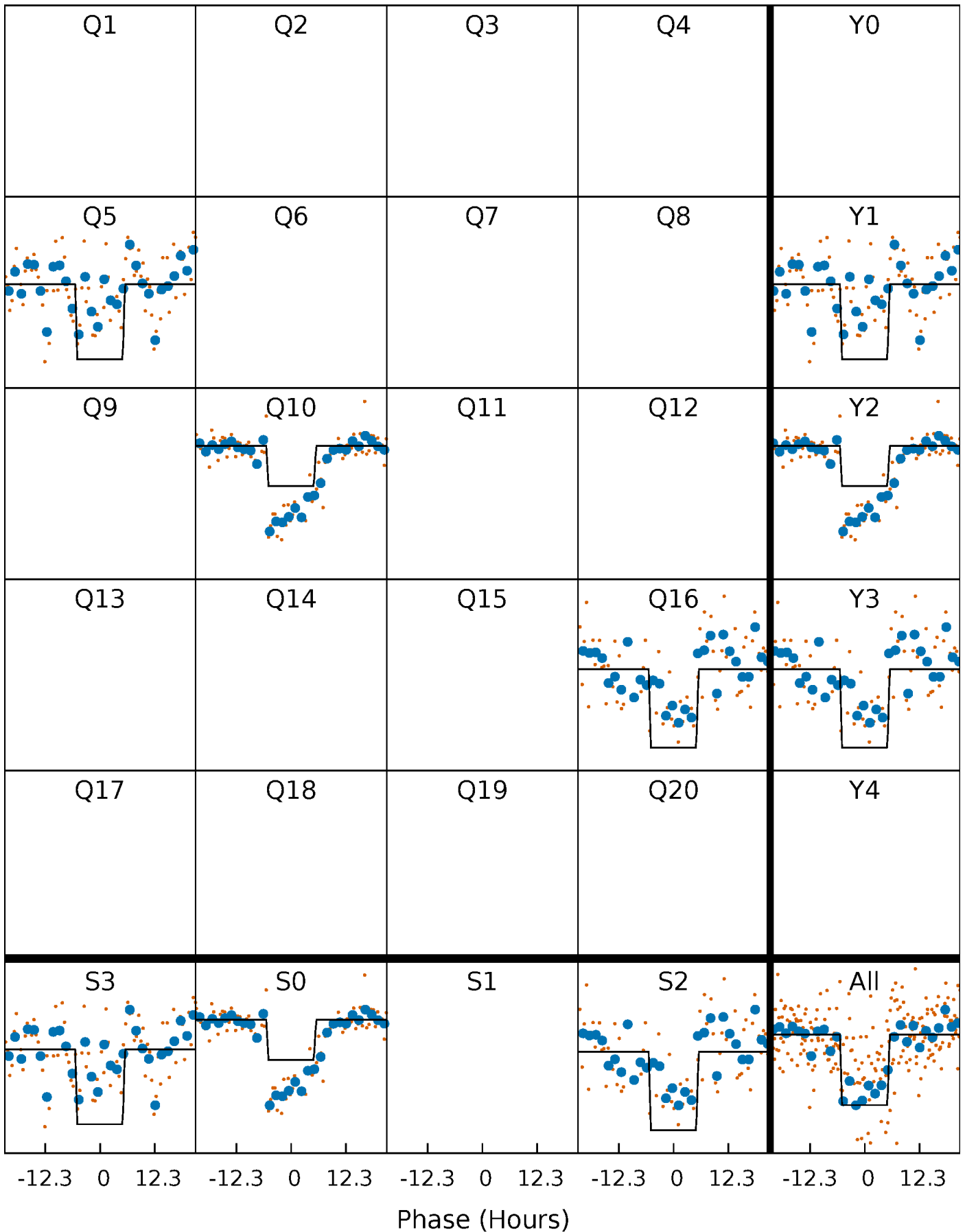
# DV Quarter-Phased Transit Curves

TCE 011867527-01 P=523.256371 Days  $T_0=452.530365$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

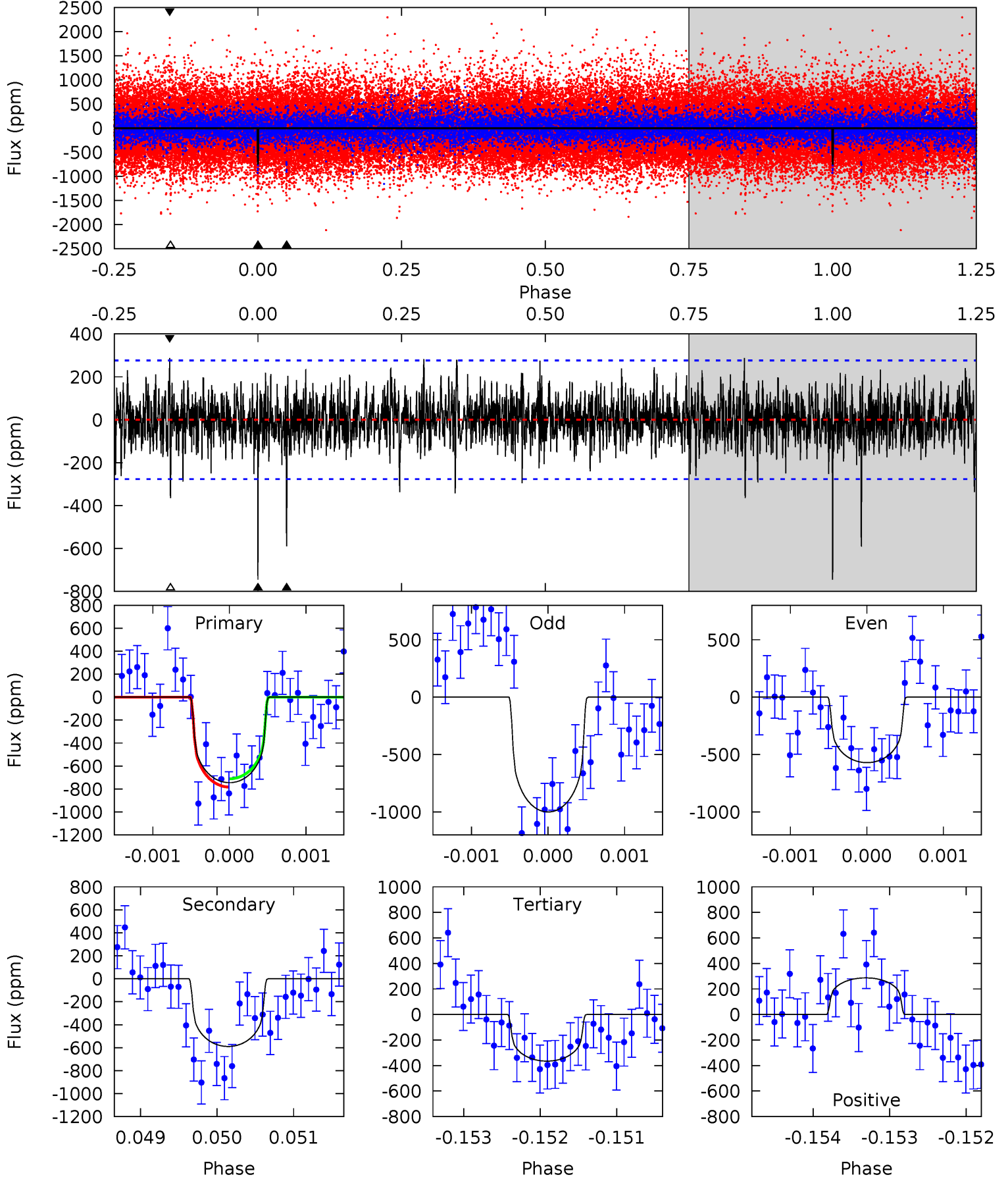
TCE 011867527-01 P=523.248982 Days  $T_0=452.548504$  (BKJD)



# DV Model-Shift Uniqueness Test

011867527-01, P = 523.256371 Days, E = 452.530365 Days

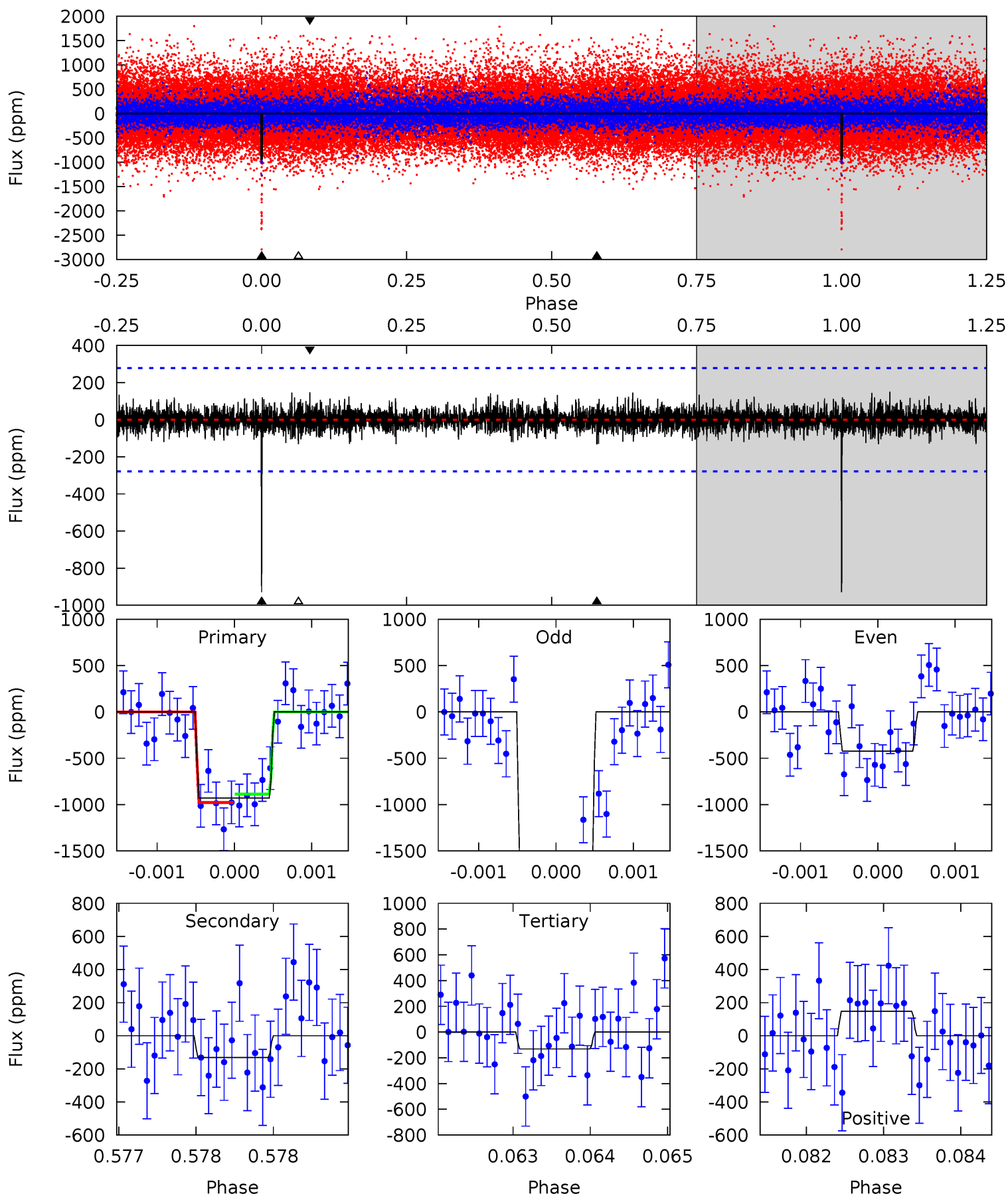
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
14.7	11.6	7.21	5.67	5.46	3.30	1.58	7.50	9.05	4.43	5.97	4.00	1.09	0.28	0.71



# Alt Model-Shift Uniqueness Test

011867527-01, P = 523.248982 Days, E = 452.548504 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
18.3	2.60	2.58	2.91	5.47	3.33	0.72	15.7	15.4	0.01	-0.31	15.5	1.76	0.14	0.90



### Stellar Parameters For KIC 011867527

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$5066^{+151}_{-151}$	$4.550^{+0.066}_{-0.054}$	$-0.200^{+0.300}_{-0.300}$	$0.754^{+0.079}_{-0.079}$	$0.735^{+0.095}_{-0.055}$	$2.419^{+0.700}_{-0.455}$
	+3%/-3%	+1%/-1%	+150%/-150%	+10%/-10%	+13%/-7%	+29%/-19%
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 011867527-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	$A_{obs}$
DV	$-590 \pm 51$	$2.39^{+0.94}_{-0.96}$	$253^{+10}_{-9}$	$4706^{+1221}_{-564}$	$76663^{+139323}_{-37500}$
Alt.	$-132 \pm 51$	$2.85^{+0.97}_{-0.91}$	$252^{+10}_{-9}$	$3375^{+518}_{-361}$	$11629^{+15975}_{-6283}$

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

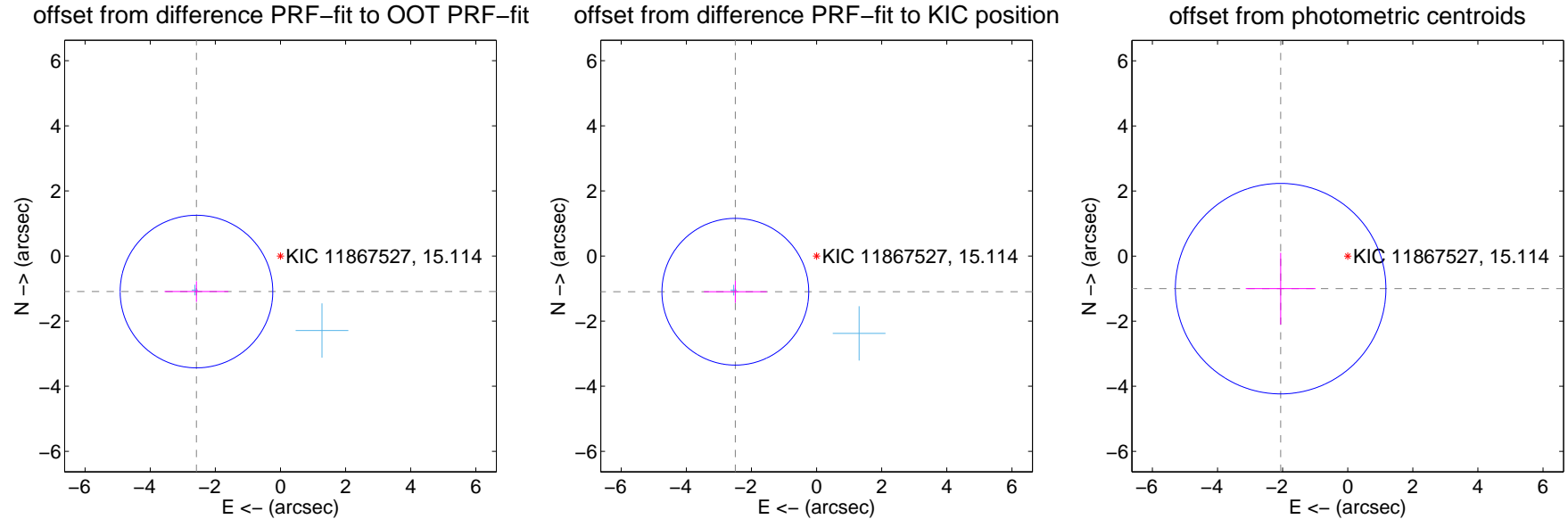
## DV Centroid Data

Supplemental centroid analysis for 011867527-01. Kepler magnitude: 15.11. Transit SNR 9.85

There are 2 quarters with good PRF difference image offsets

The direct PRF centroid is offset from the target star catalog position by about 0.09 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$2.801 \pm 0.781$	3.59	$2.579 \pm 0.979$	$-1.092 \pm 0.318$
PRF-fit source offset from KIC position	$2.726 \pm 0.751$	3.63	$2.495 \pm 0.966$	$-1.097 \pm 0.339$
photometric centroid source offset	$2.29 \pm 1.08$	2.13	$2.06 \pm 1.07$	$-1.00 \pm 1.10$

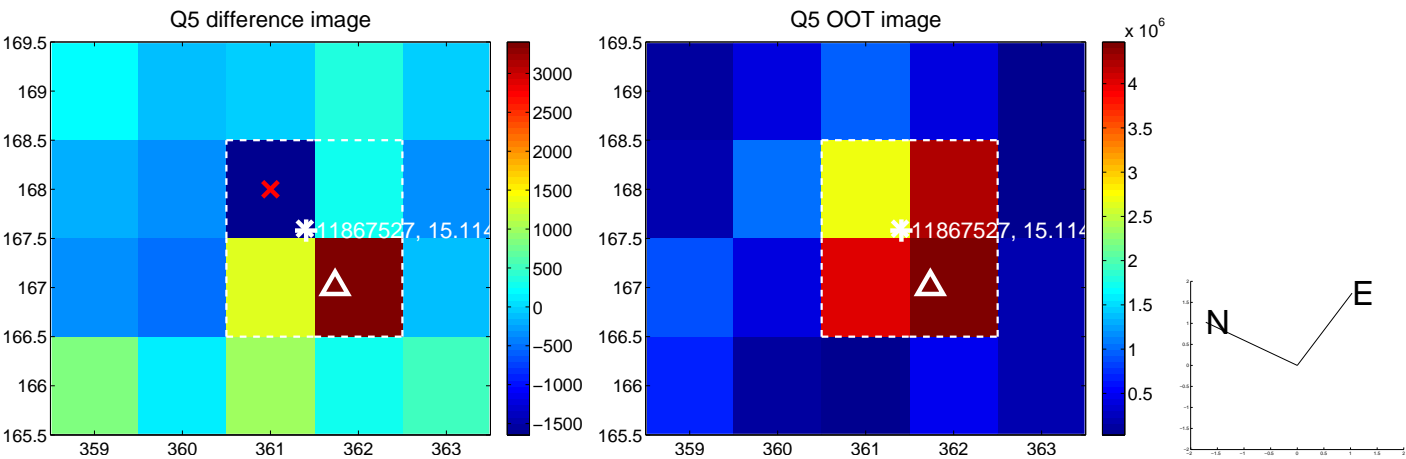


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: three- $\sigma$ . 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.



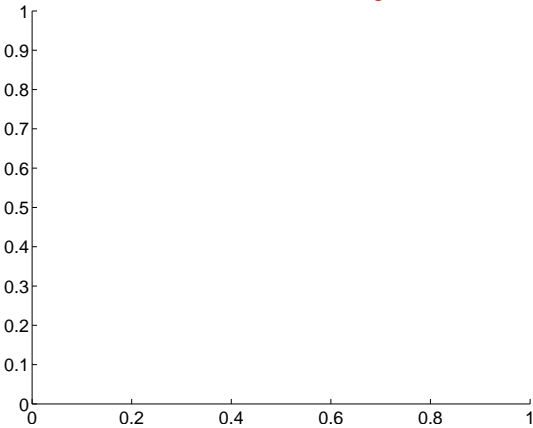
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.





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

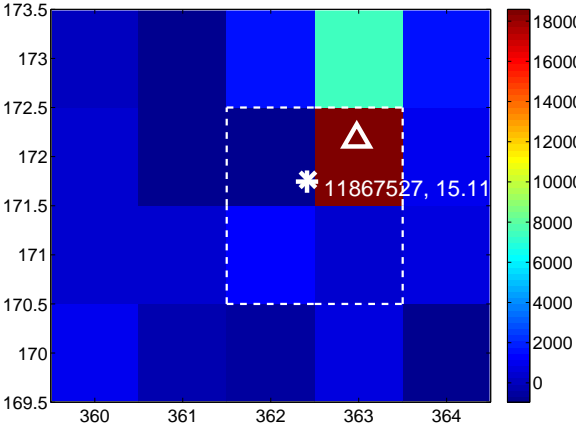
Q9 no difference image



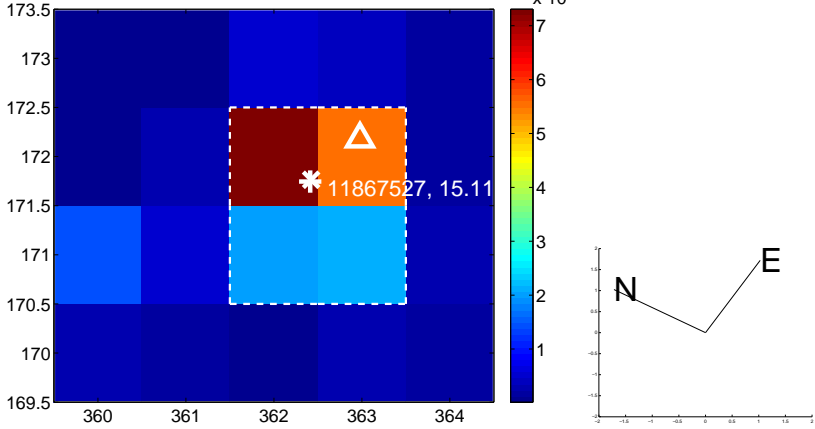
Q9 no OOT image



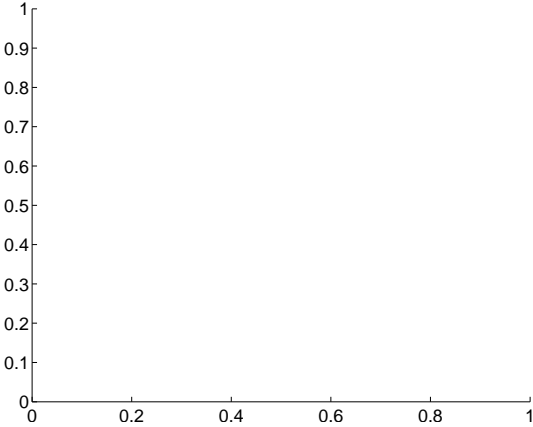
Q10 difference image



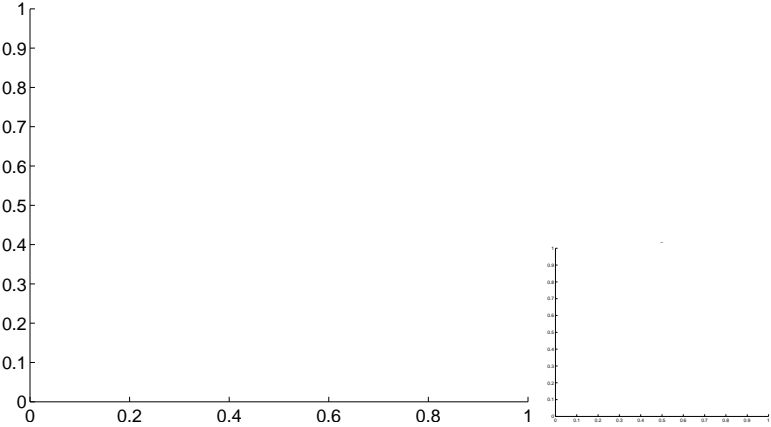
Q10 OOT image



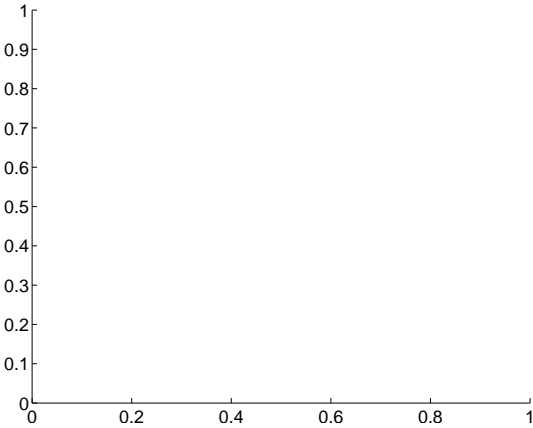
Q11 no difference image



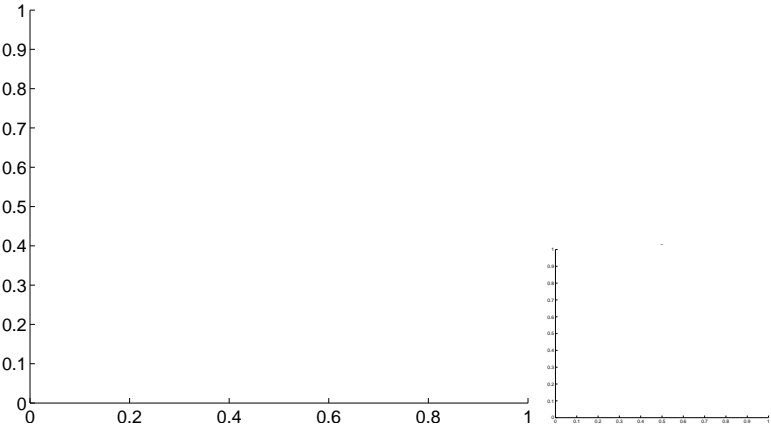
Q11 no OOT image



Q12 no difference image



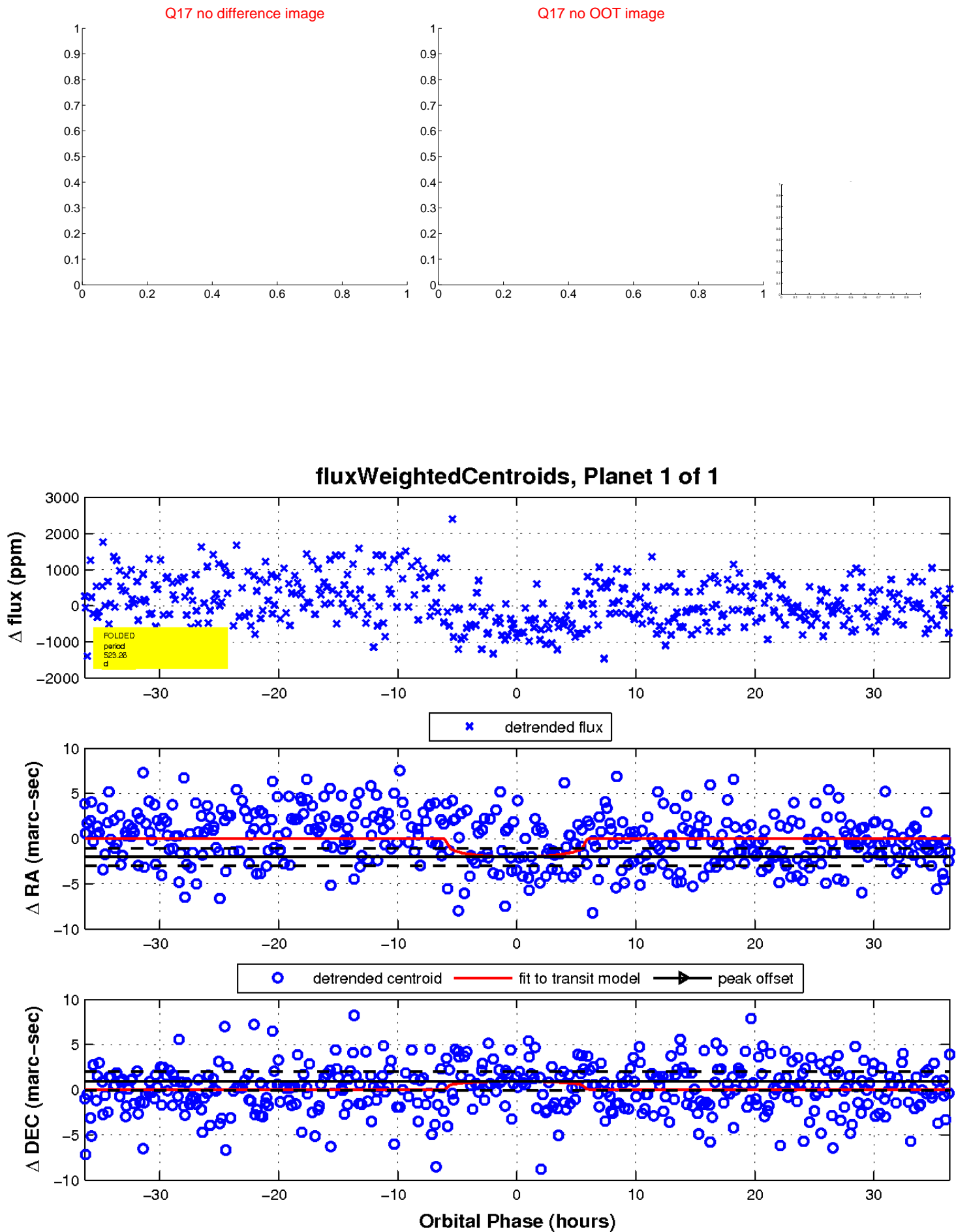
Q12 no OOT image



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.



UKIRT Image

Declination

