

# KIC 008818142

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
008818142-01	OBS	No	374.701645	139.596500	292.9	28.224	7.6	10.5	1.58	5302	3.20	1.79

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008818142-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_SKYE—LPP_DV—ALL_TRANS_CHASES—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.

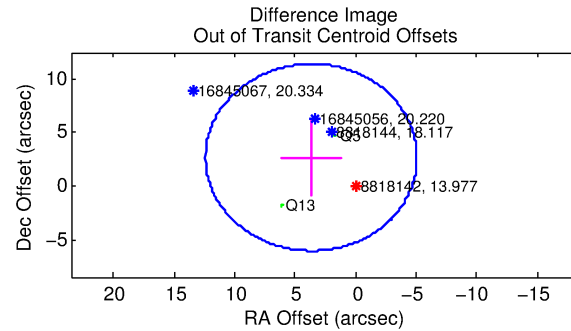
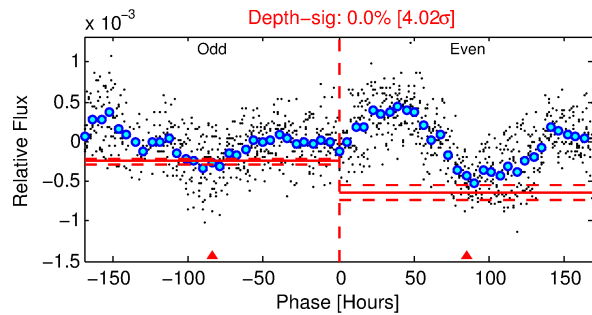
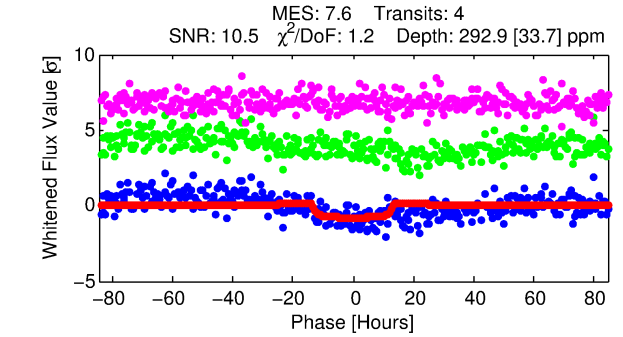
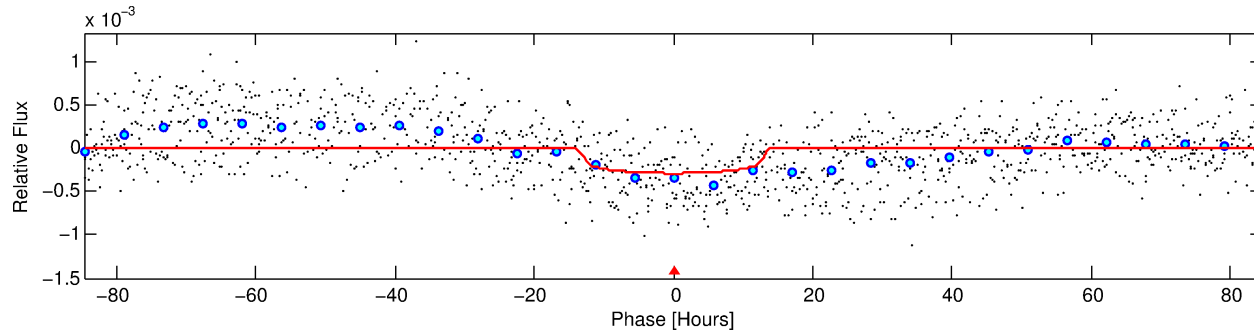
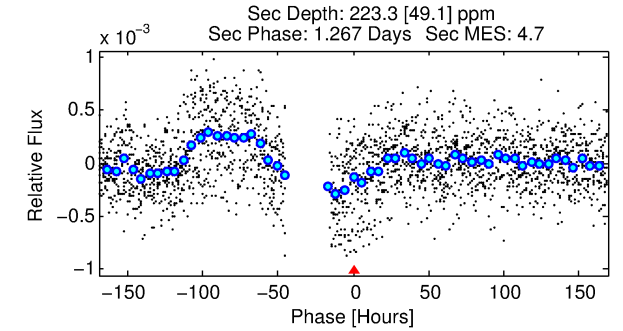
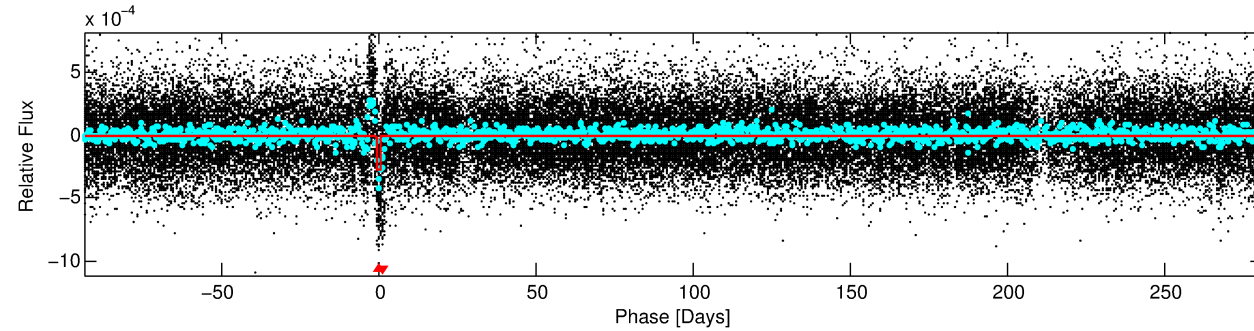
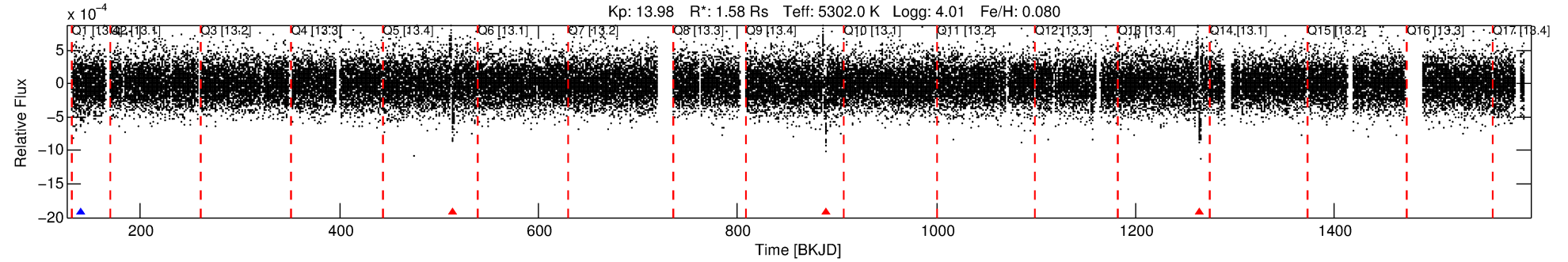
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 008818142-01

No Significant Match Found

# DV One-Page Summary

KIC: 8818142 Candidate: 1 of 1 Period: 374.702 d



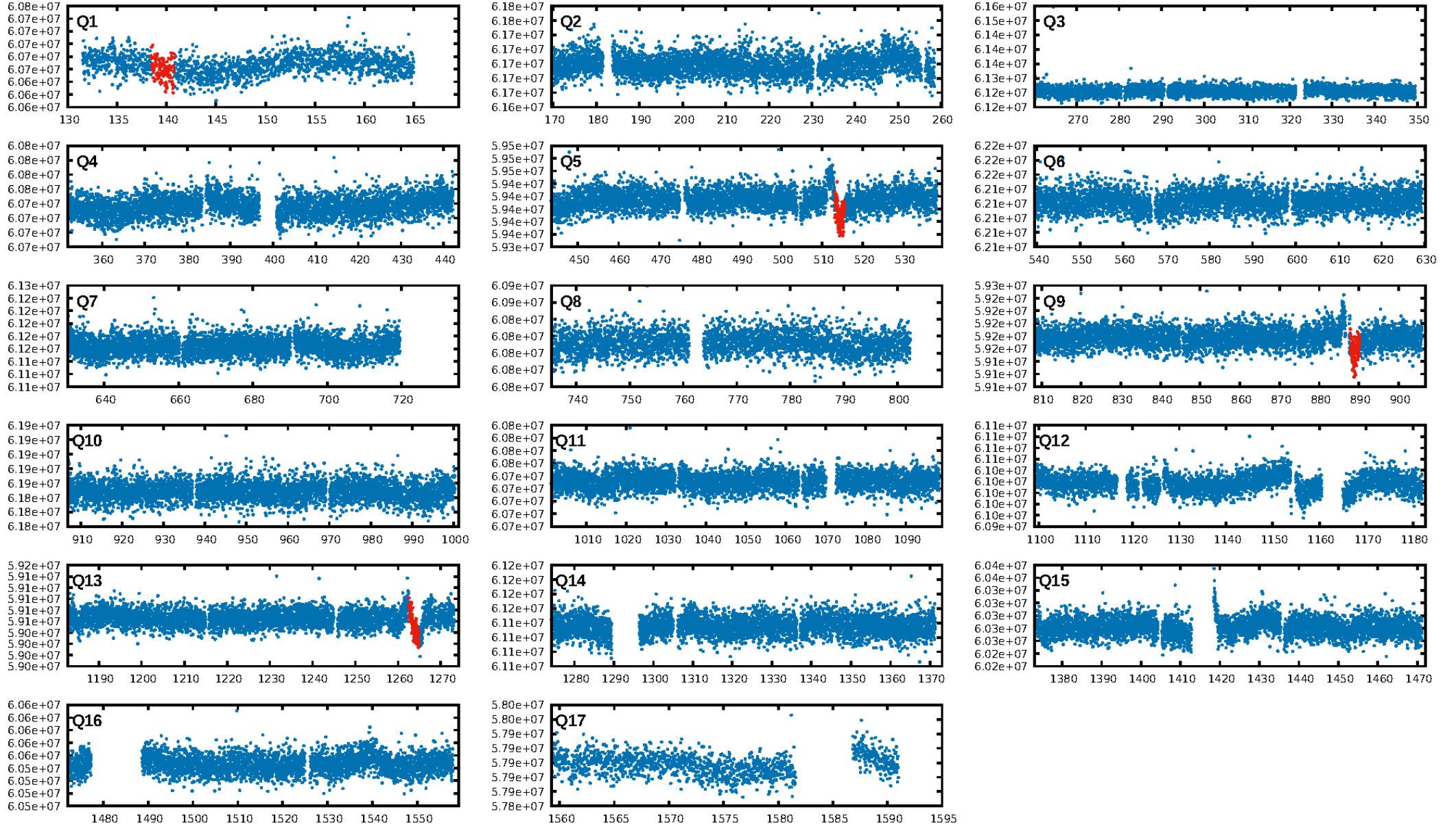
## DV Fit Results:

Period = 374.70165 [0.02036] d  
Epoch = 139.5965 [0.0382] BKJD  
Rp/R\* = 0.0185 [0.0027]  
a/R\* = 52.37 [28.64]  
b = 0.88 [0.15]  
Seff = 1.79 [1.53]  
Teff = 295 [63] K  
Rp = 3.20 [1.58] Re  
a = 0.9969 [0.5014] AU  
Ag = 11942.01 [10992.69] [1.09σ]  
Teffp = 4765 [462] K [9.59σ]

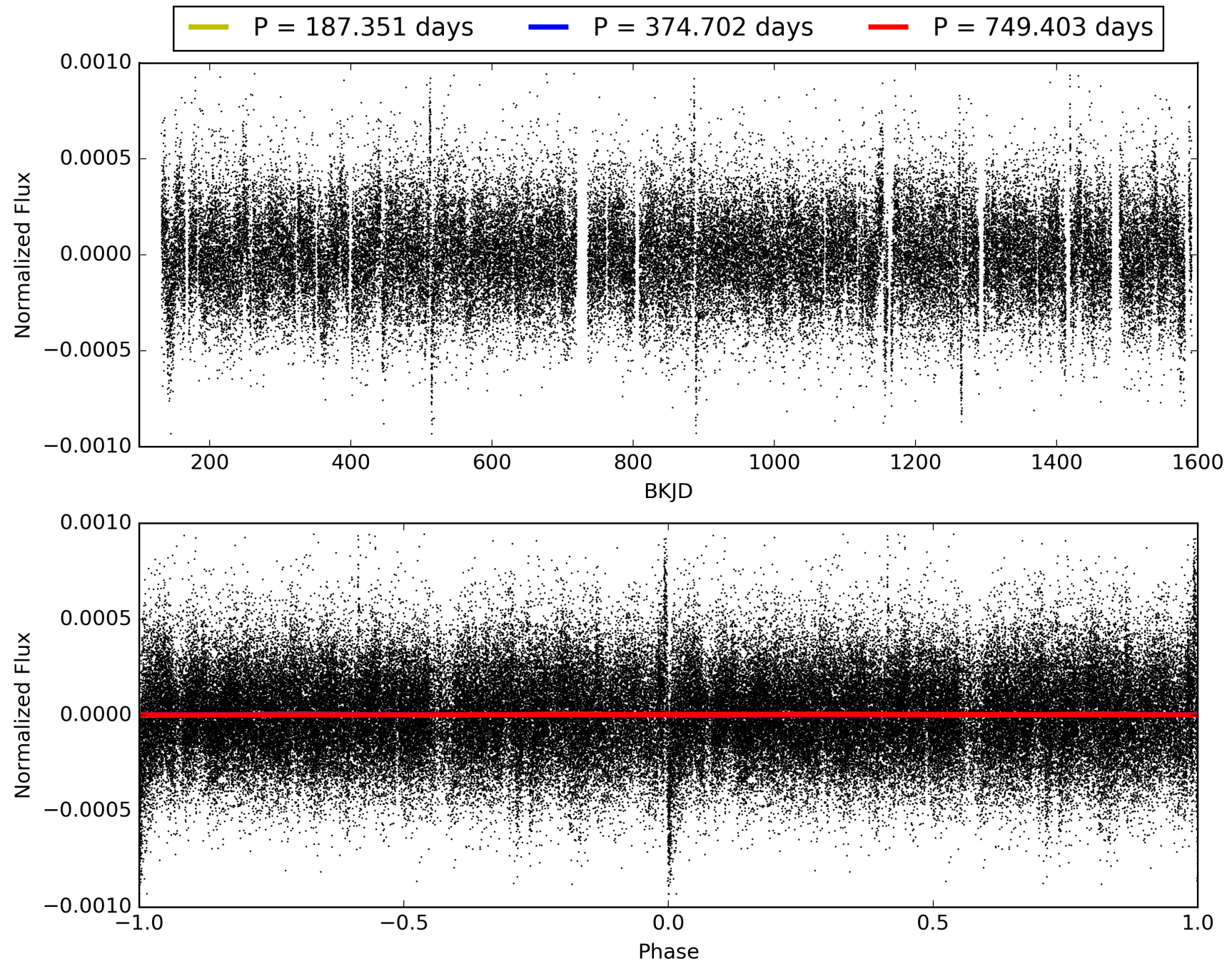
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: 0.0%  
ModelChiSquareGof-sig: 96.7%  
Bootstrap-pfa: 1.20e-13  
RollingBand-fgt: 0.00 [0/3]  
GhostDiagnostic-chr: 4.983  
Centroid-sig: 0.3%  
Centroid-so: 1.893 arcsec [1.76σ]  
OotOffset-rm: 4.542 arcsec [1.56σ]  
KicOffset-rm: 4.597 arcsec [1.56σ]  
OotOffset-st: 0/0/0/2 [2]  
KicOffset-st: 0/0/0/2 [2]  
DiffImageQuality-fgm: 0.00 [0/2]  
DiffImageOverlap-fno: 1.00 [3/3]

# TCE 008818142-01, PDC Light Curves

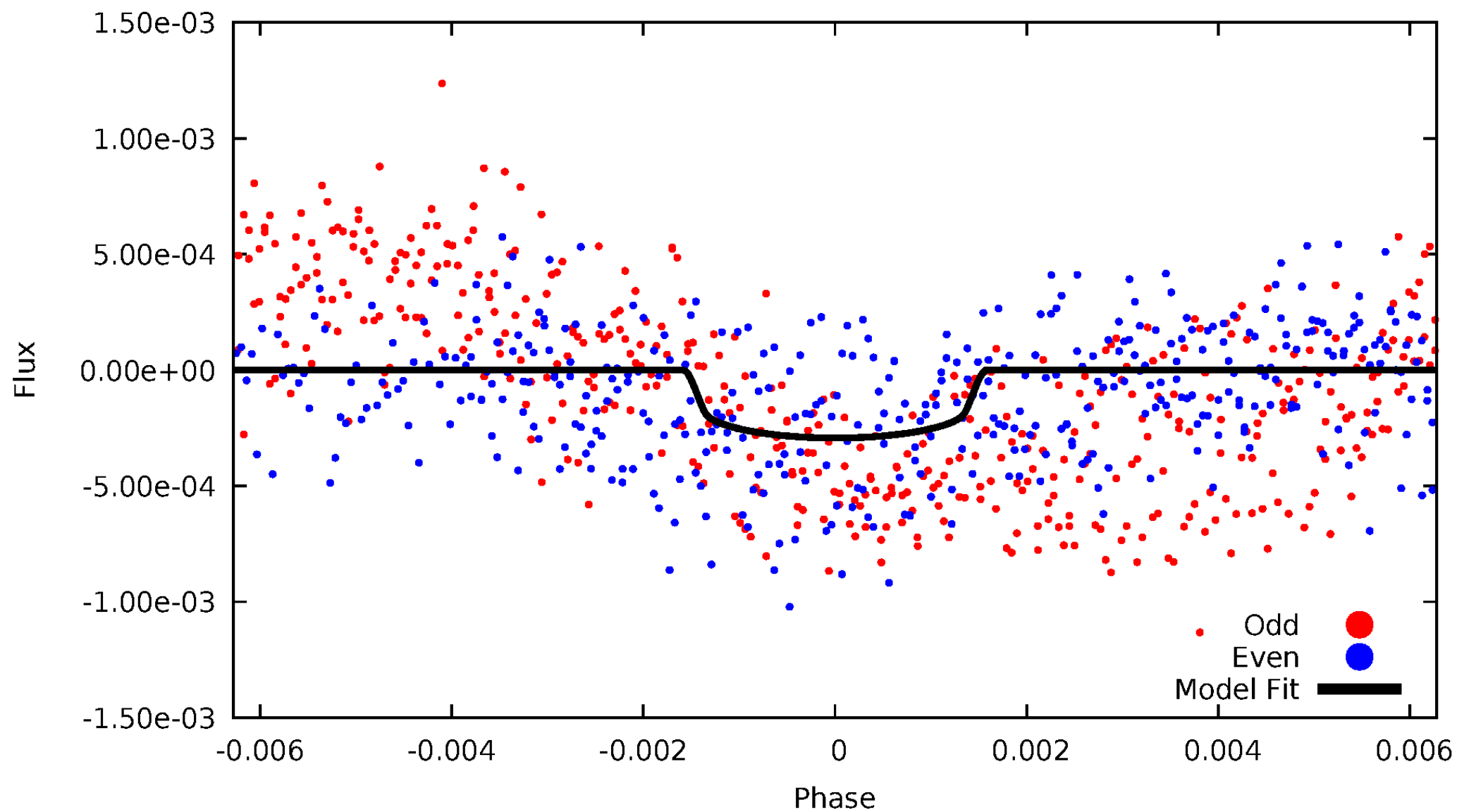


TCE 008818142-01



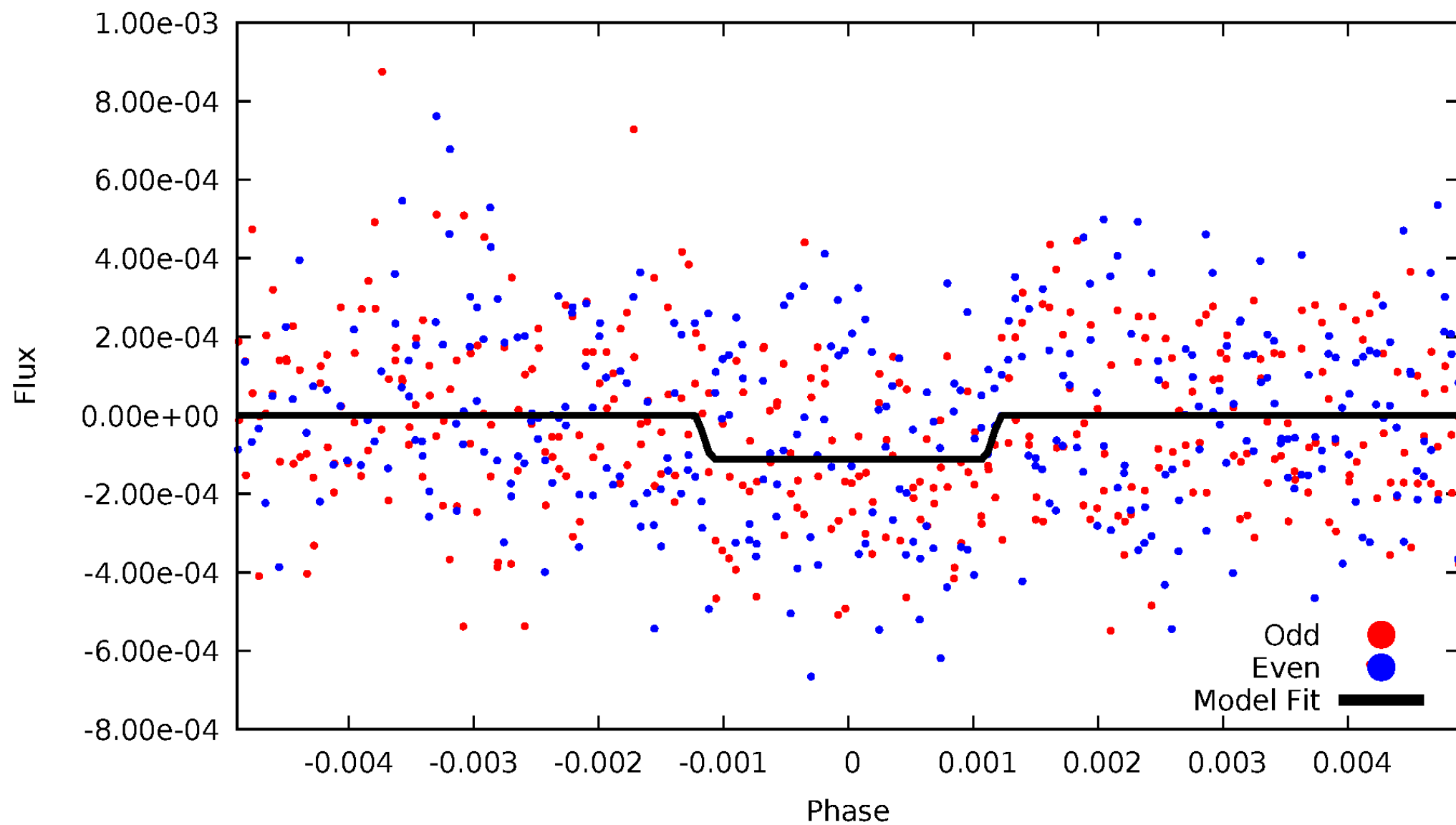
# DV Odd/Even

TCE 008818142-01



# ALT Odd/Even

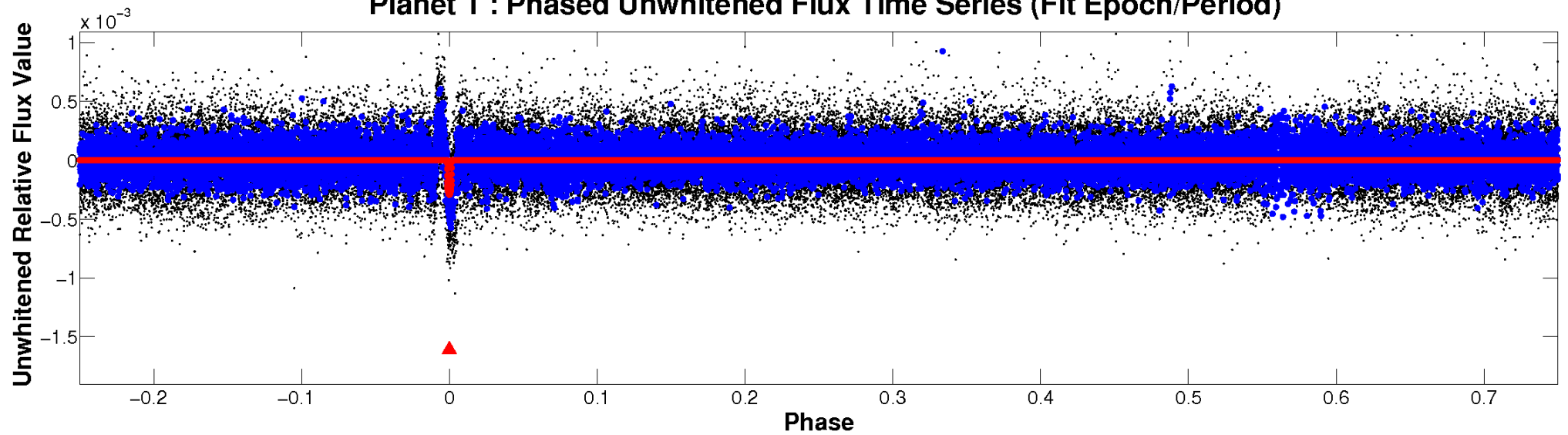
TCE 008818142-01



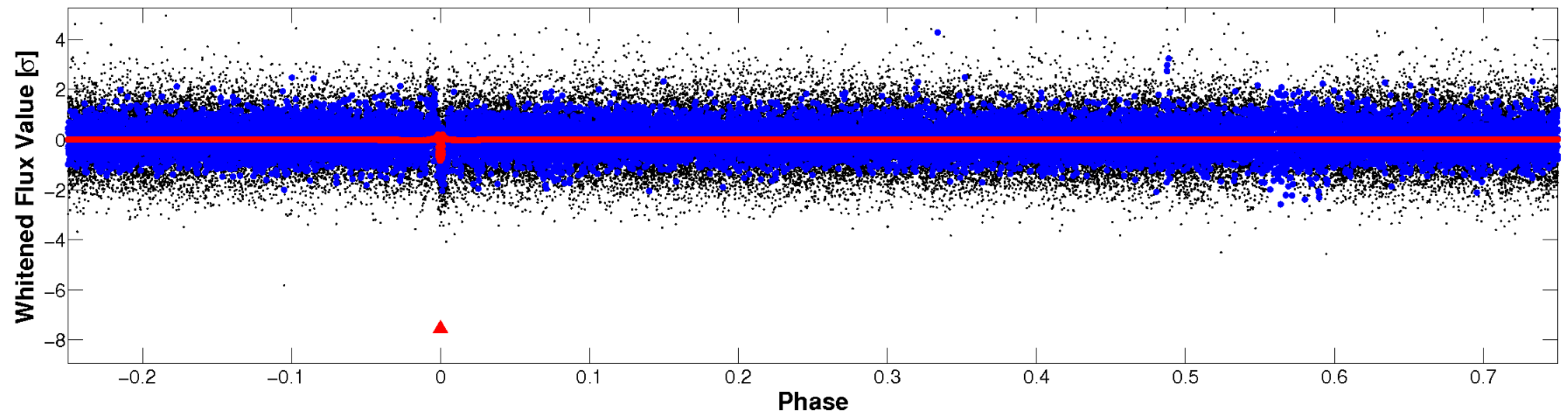


# Non-Whitened Vs. Whitened Light Curve

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

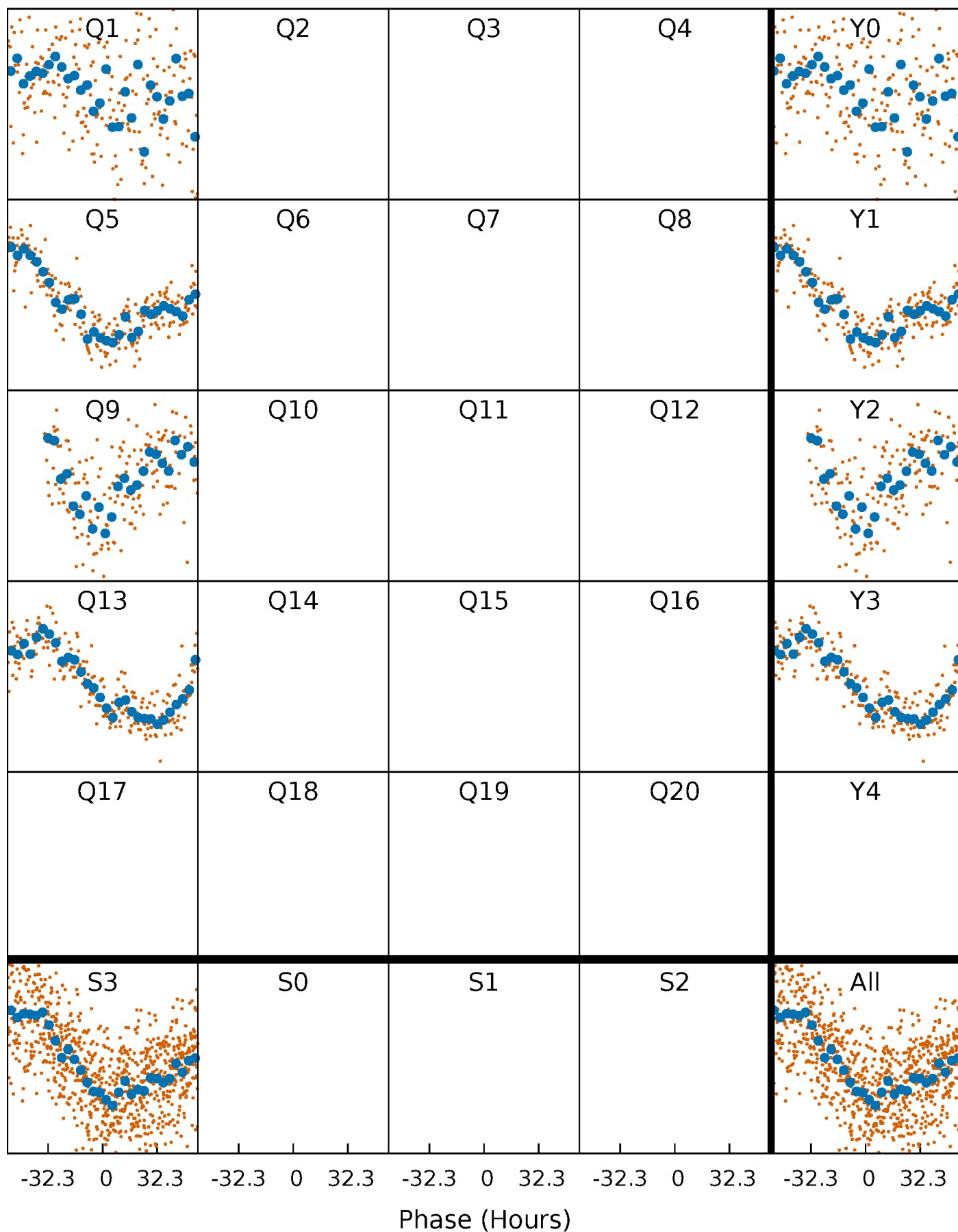


**Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)**



# PDC Quarter-Phased Transit Curves

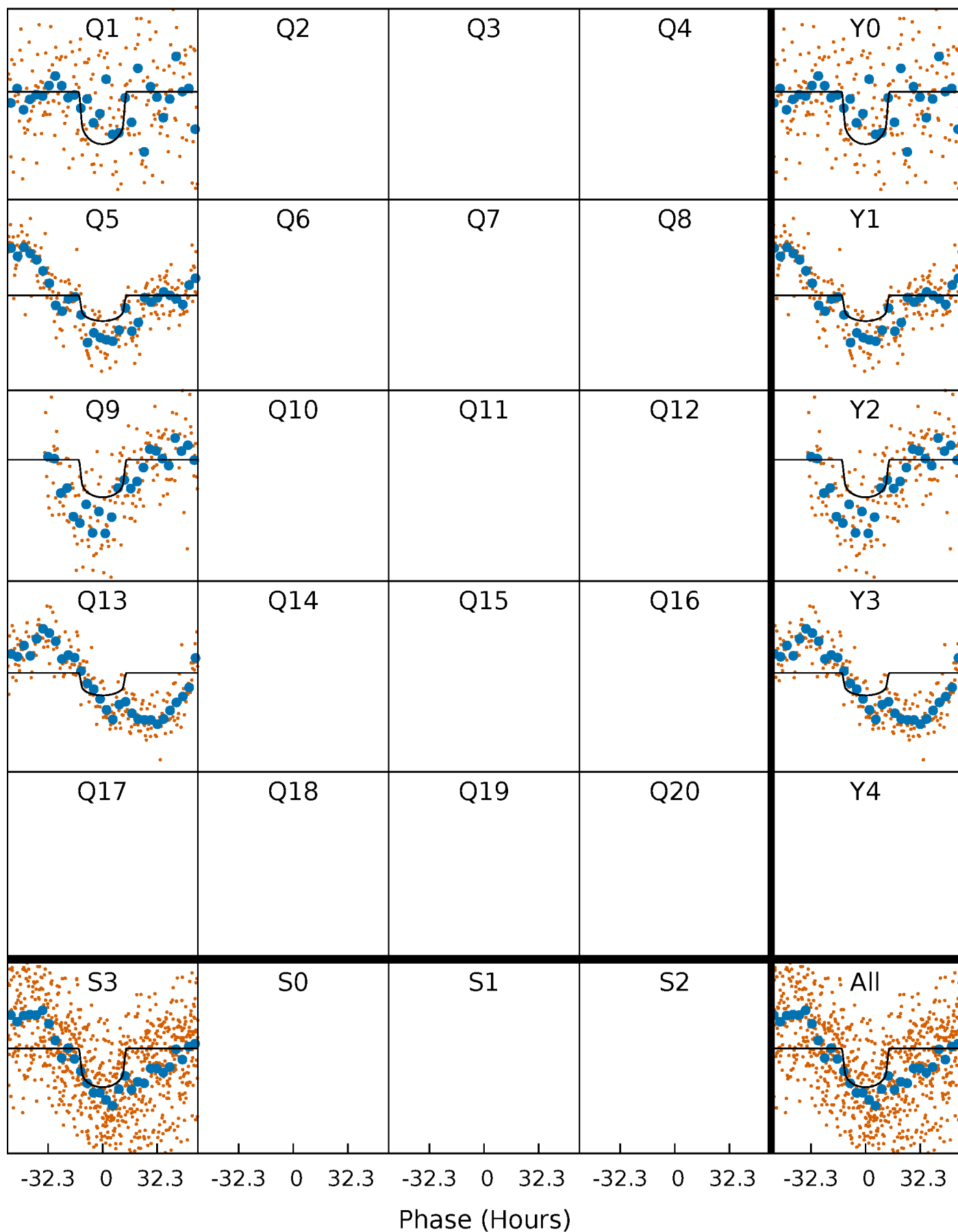
TCE 008818142-01 P=374.701645 Days  $T_0=139.596500$  (BKJD)





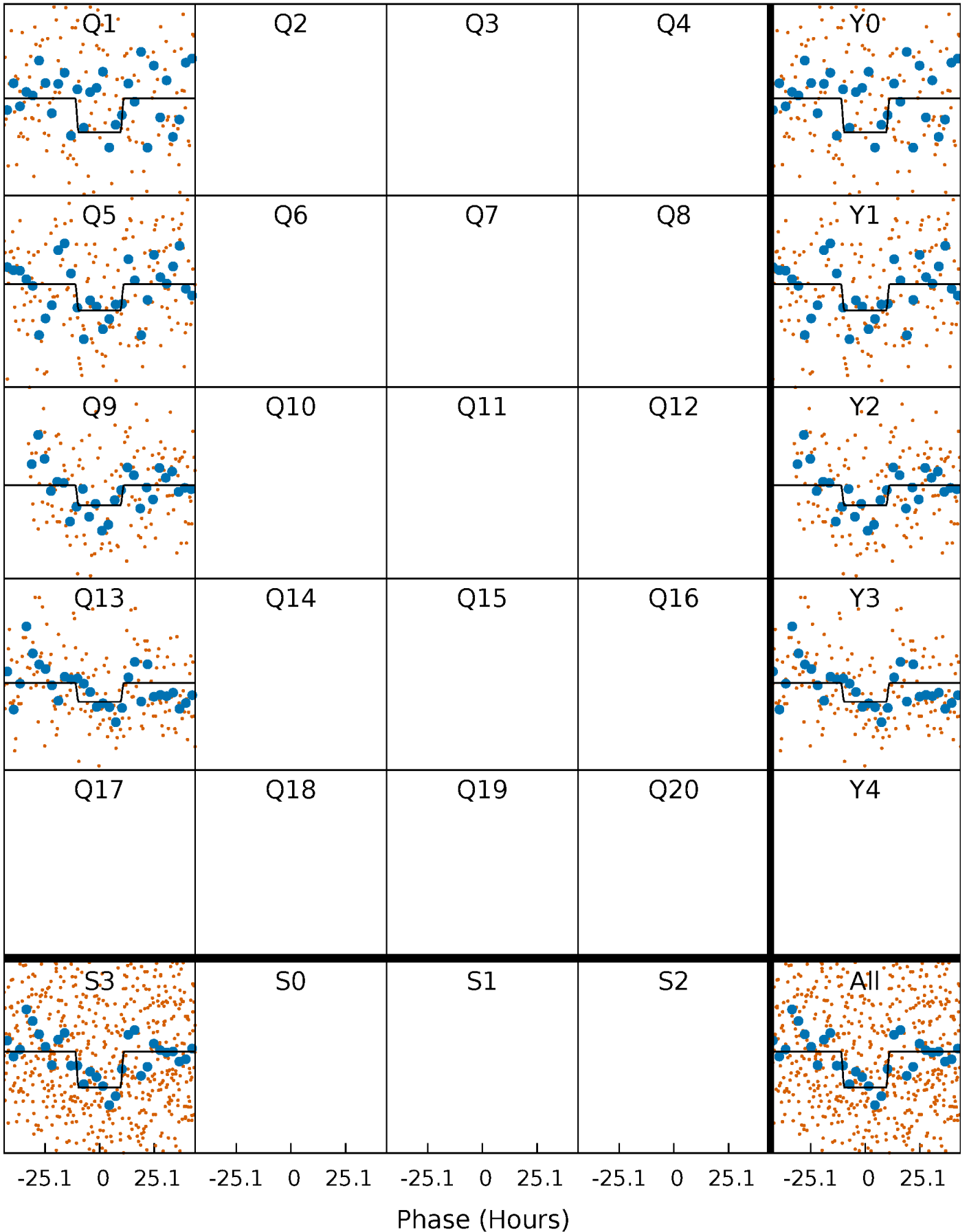
# DV Quarter-Phased Transit Curves

TCE 008818142-01     $P=374.701645$  Days     $T_0=139.596500$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

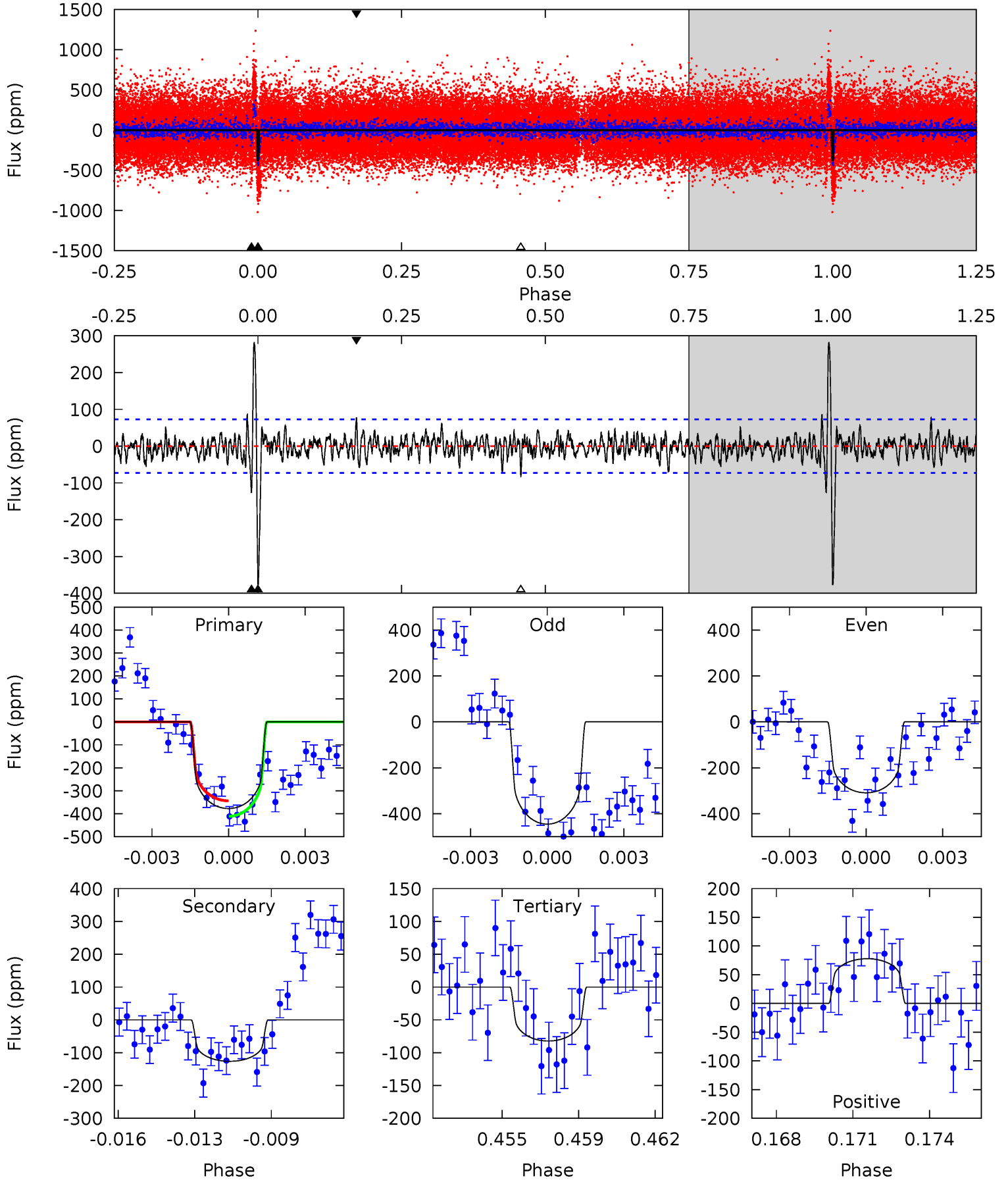
TCE 008818142-01 P=374.628889 Days  $T_0=139.676635$  (BKJD)



# DV Model-Shift Uniqueness Test

008818142-01, P = 374.701645 Days, E = 139.596500 Days

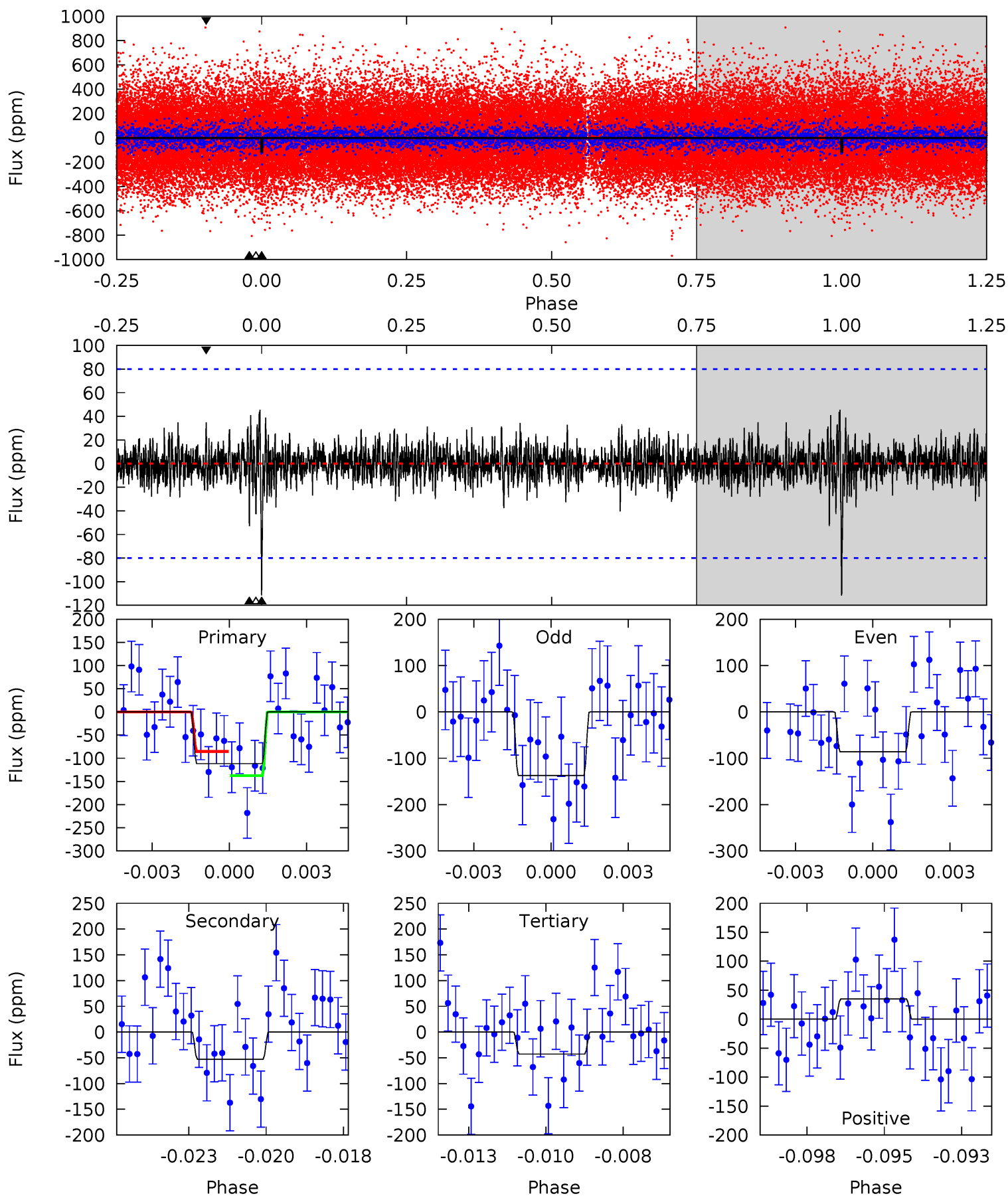
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
27.2	9.11	5.93	5.62	5.24	2.95	2.04	21.3	21.6	3.18	3.49	4.93	0.88	0.43	2.43



# Alt Model-Shift Uniqueness Test

008818142-01, P = 374.628889 Days, E = 139.676635 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
7.38	3.50	2.82	2.31	5.29	3.02	0.70	4.56	5.07	0.68	1.19	1.69	0.86	0.29	1.73



### Stellar Parameters For KIC 008818142

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R$ ( $R_{\odot}$ )	$M(M_{\odot})$	$p_{\star}$ ( $\text{g}\cdot\text{cm}^{-3}$ )
	$5302^{+175}_{-143}$	$4.012^{+0.511}_{-0.219}$	$0.080^{+0.250}_{-0.250}$	$1.584^{+0.612}_{-0.748}$	$0.940^{+0.090}_{-0.100}$	$0.333^{+1.562}_{-0.206}$
	+3%/-3%	+13%/-5%	+312%/-312%	+39%/-47%	+10%/-11%	+469%/-62%
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 008818142-01 / KOI

Detrend	Depth (ppm)	$R_p$ ( $R_{\oplus}$ )	$T_{\text{max}}$ (K)	$T_{\text{obs}}$ (K)	$A_{\text{obs}}$
DV	$-126 \pm 14$	$3.01^{+0.80}_{-0.81}$	$405^{+41}_{-56}$	$4319^{+326}_{-231}$	$7531^{+6849}_{-2922}$
Alt.	$-53 \pm 15$	$1.75^{+0.64}_{-0.63}$	$408^{+42}_{-56}$	$4527^{+670}_{-503}$	$9185^{+13498}_{-4755}$

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

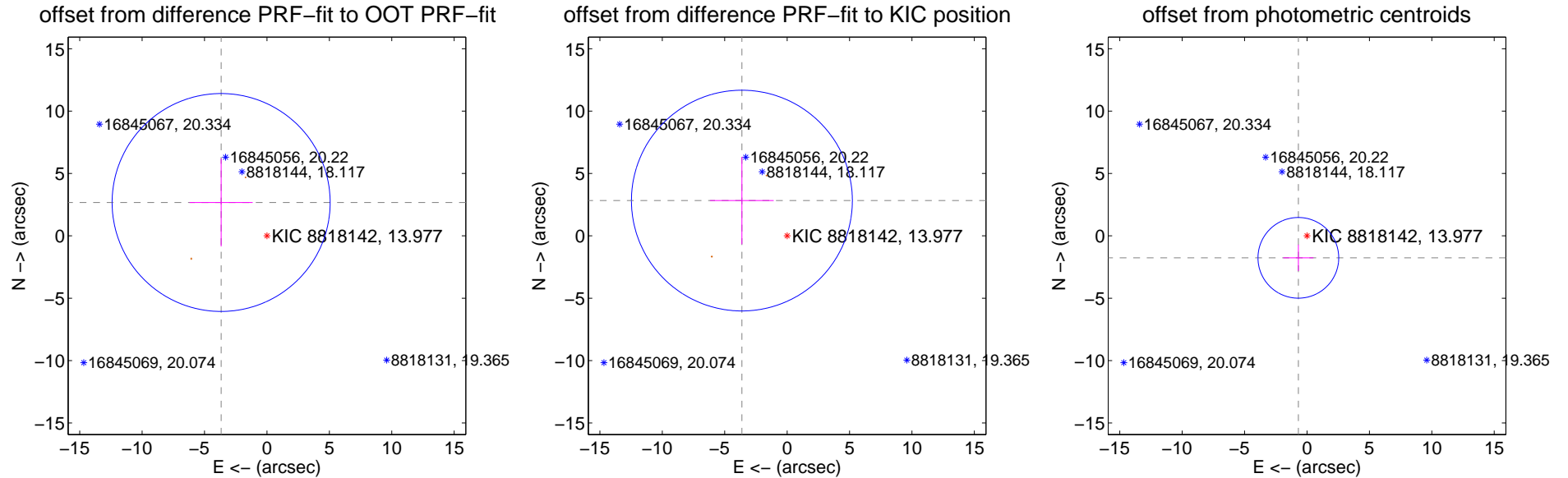
## DV Centroid Data

Supplemental centroid analysis for 008818142-01. Kepler magnitude: 13.98. Transit SNR 10.53

There are 0 quarters with good PRF difference image offsets

The direct PRF centroid is offset from the target star catalog position by about 0.17 arcsec

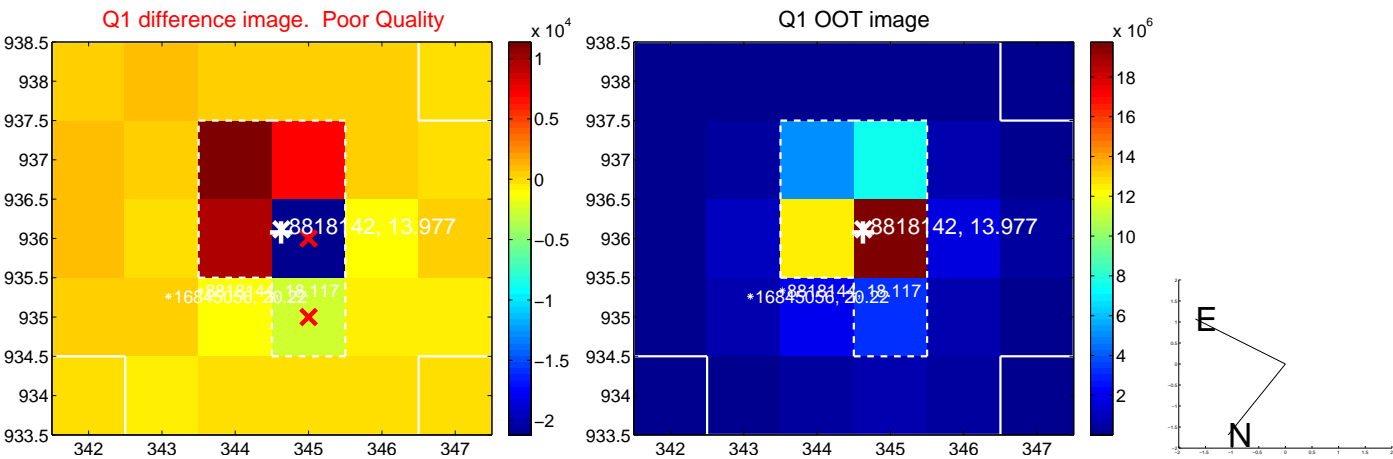
	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$4.542 \pm 2.912$	1.56	$3.670 \pm 2.529$	$2.675 \pm 3.521$
PRF-fit source offset from KIC position	$4.597 \pm 2.950$	1.56	$3.623 \pm 2.552$	$2.828 \pm 3.506$
photometric centroid source offset	$1.89 \pm 1.08$	1.76	$0.69 \pm 1.21$	$-1.76 \pm 1.06$



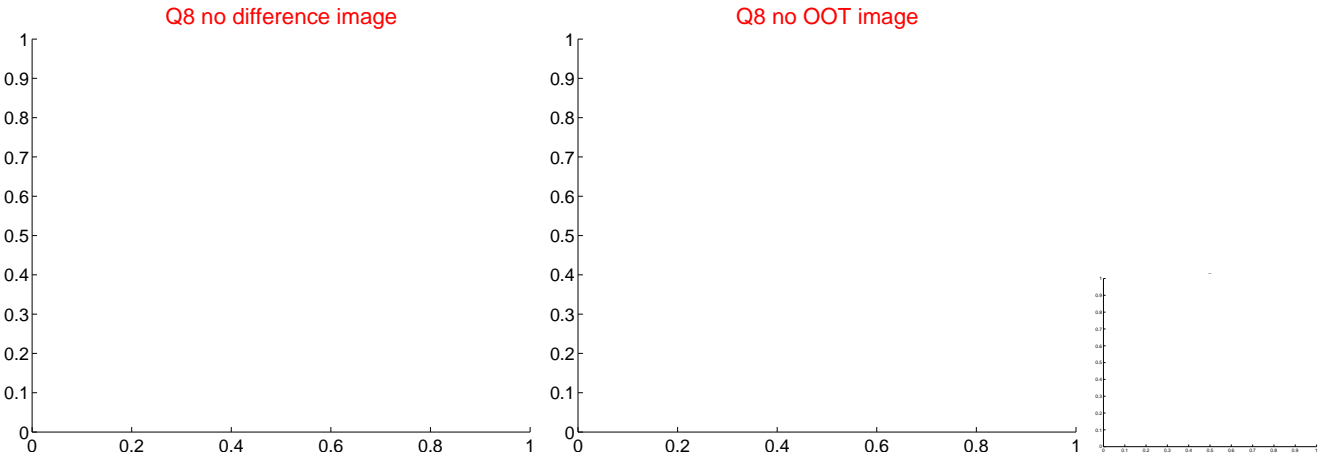
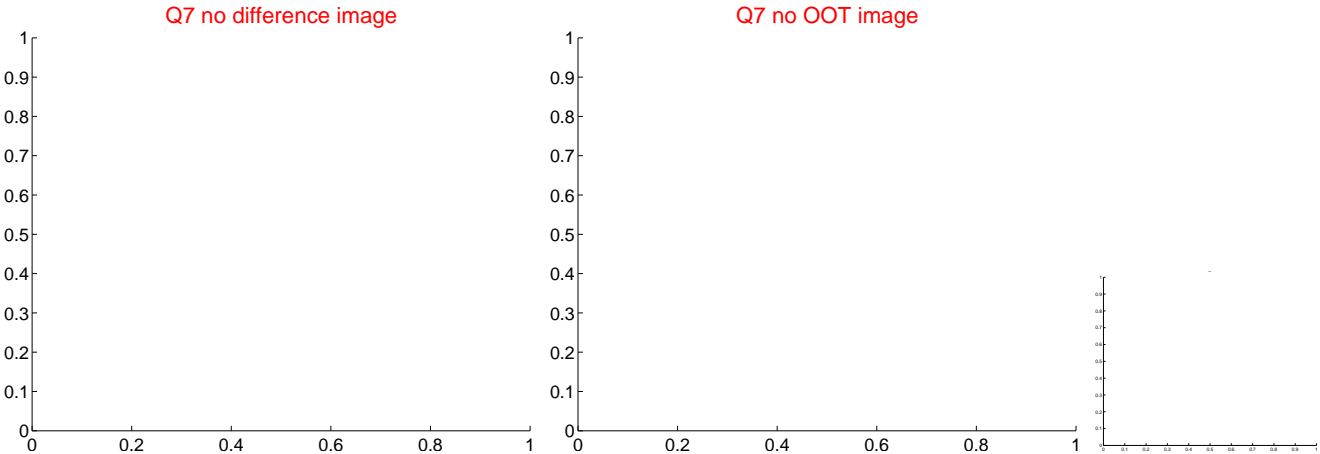
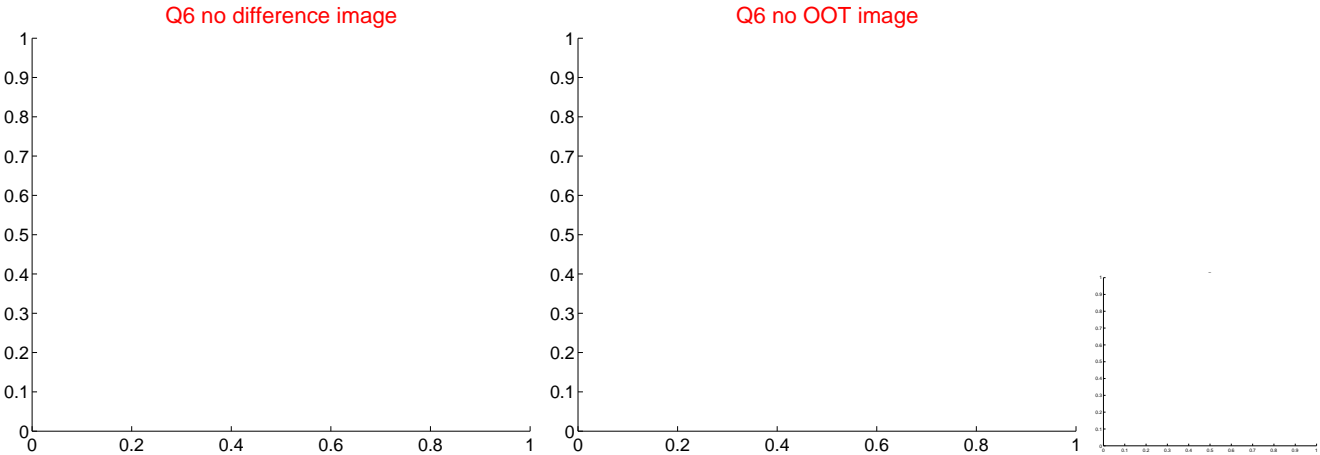
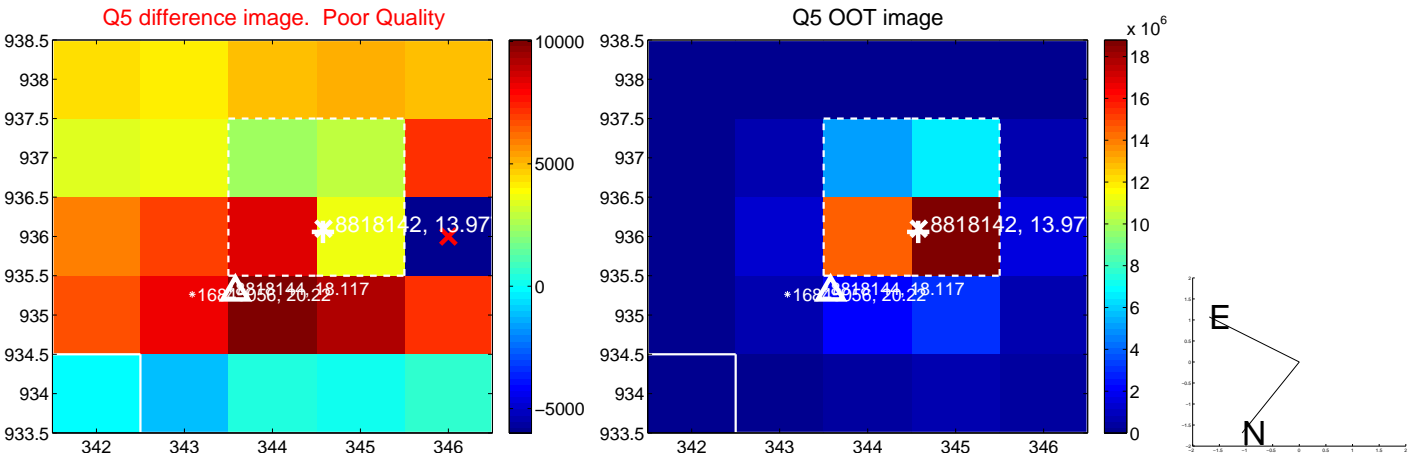
Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: three-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



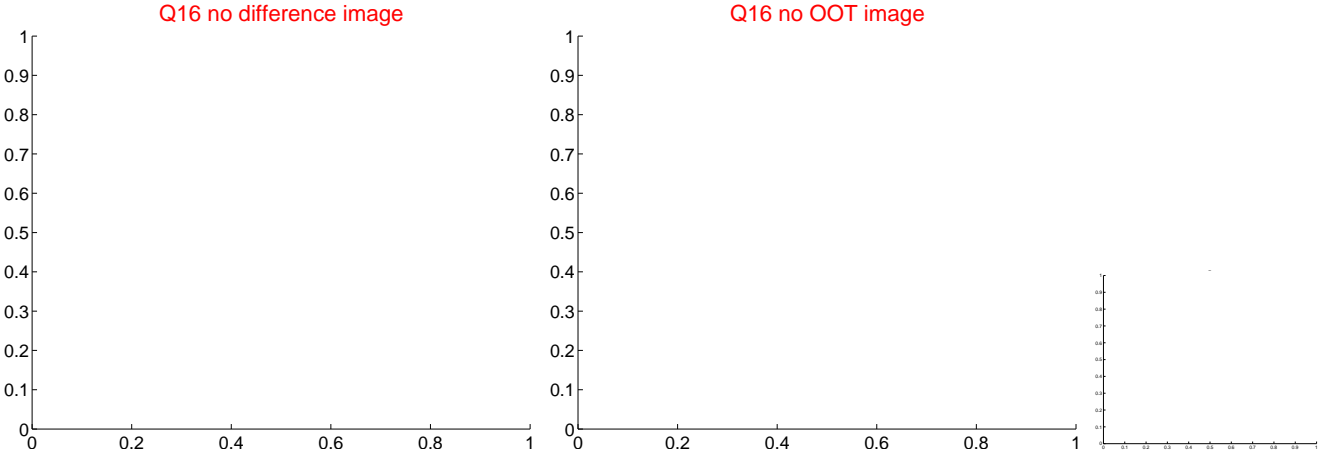
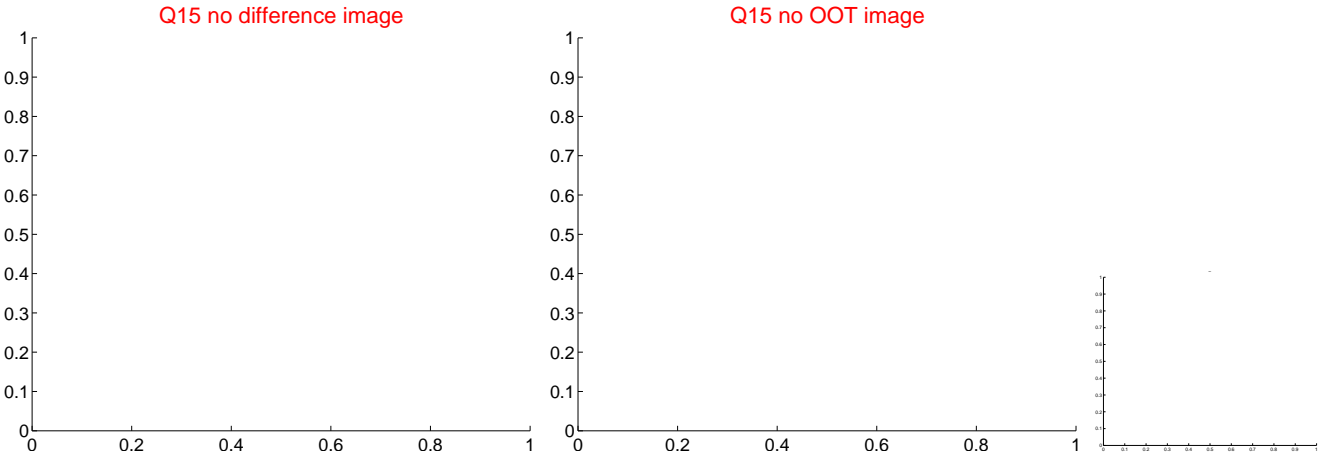
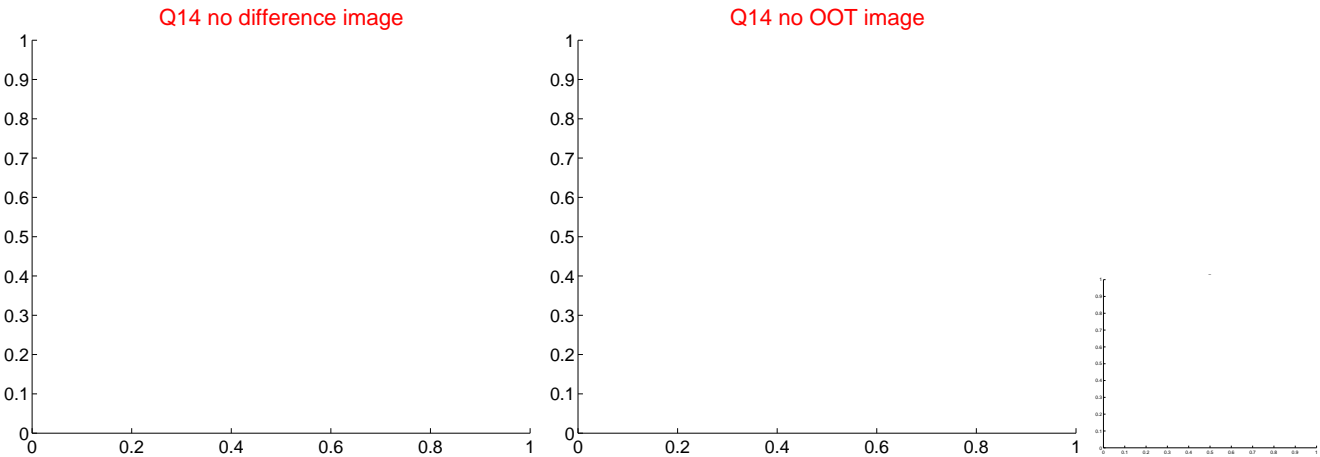
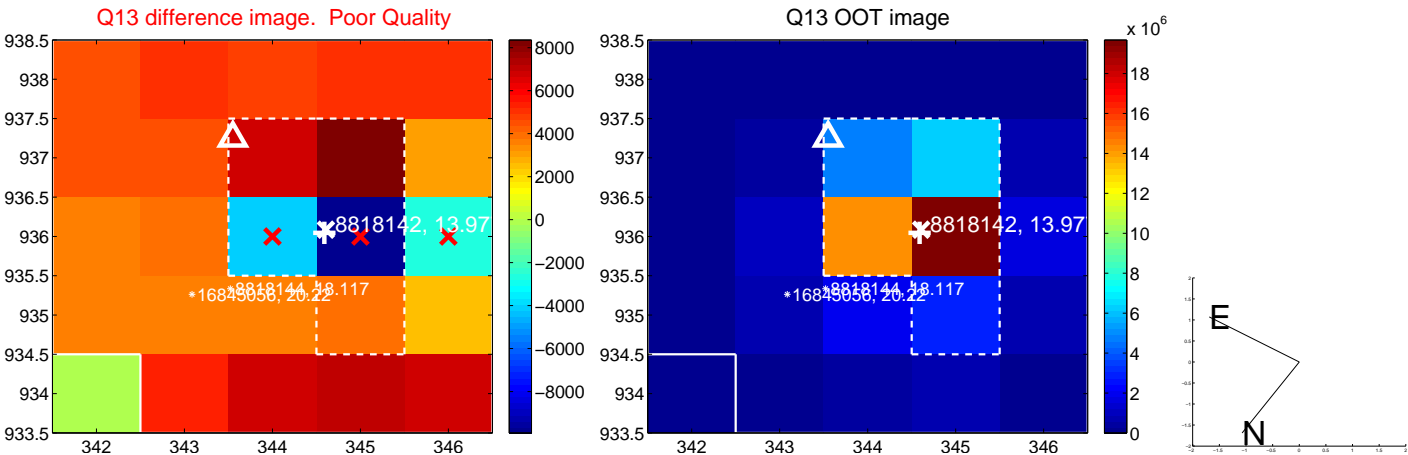
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ×: large negative pixel value.



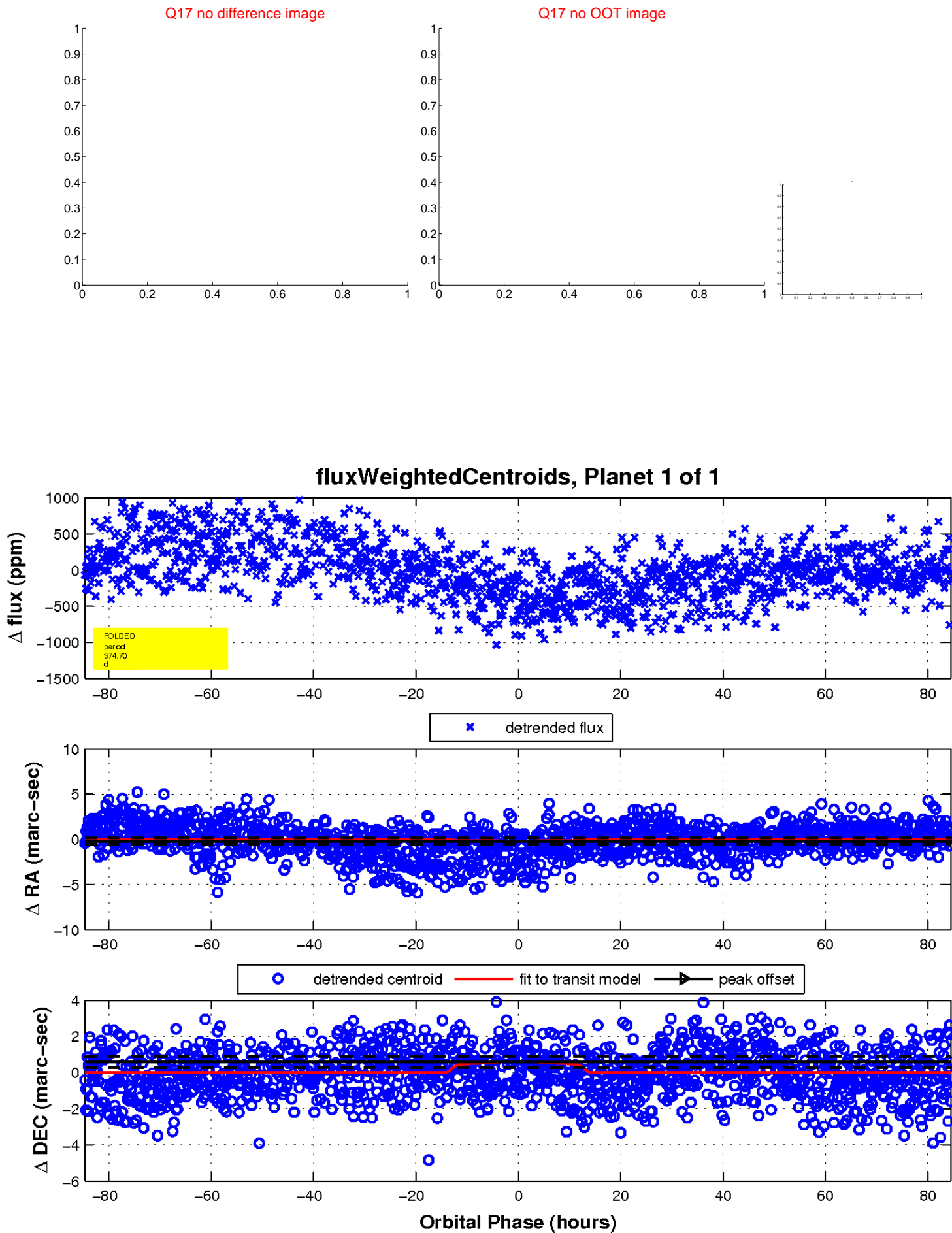
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



white  $\times$ : 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

