

# KIC 011808713

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
011808713-01	OBS	No	374.011245	261.373787	7787.8	8.922	15.5	7.6	0.82	5565	8.29	0.60
011808713-02	OBS	No	374.312872	258.682415	14754.9	10.881	24.7	12.8	0.82	5565	9.83	0.60

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
011808713-01	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_MARSHALL_SKYE—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS—HALO_GHOST
011808713-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL_TRACKER—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—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.

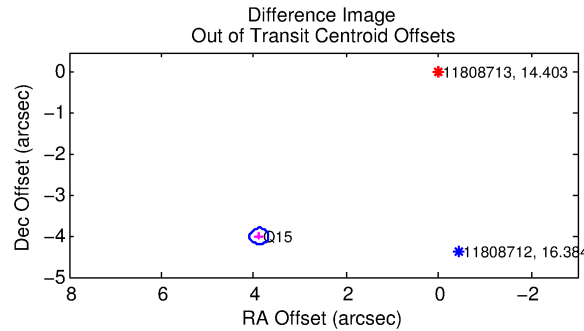
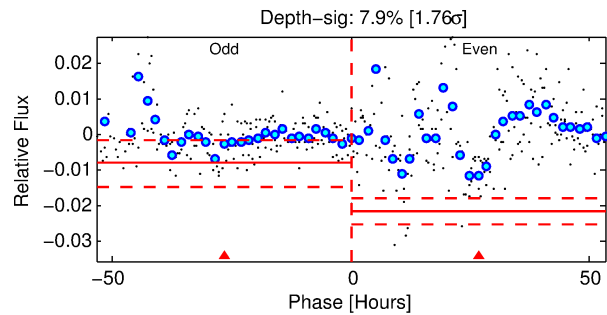
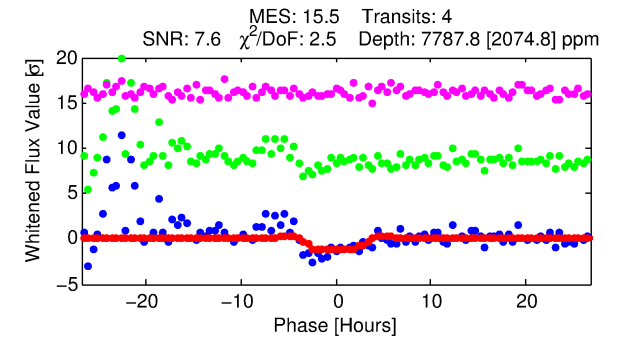
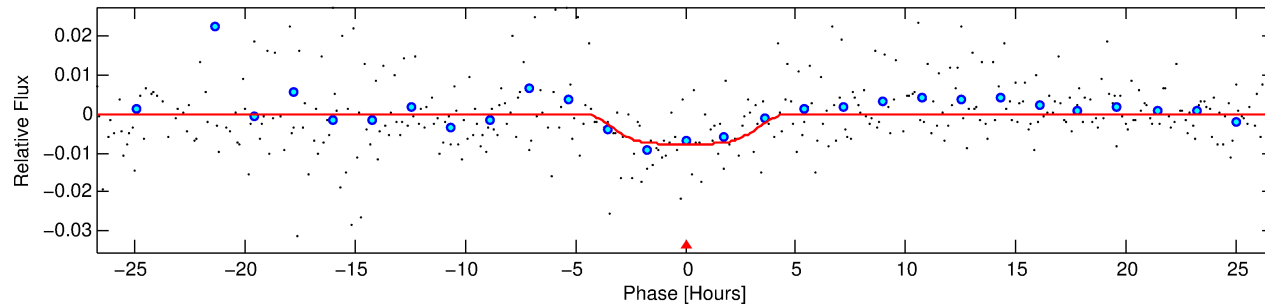
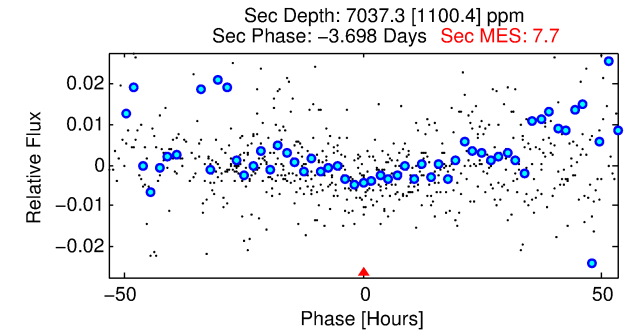
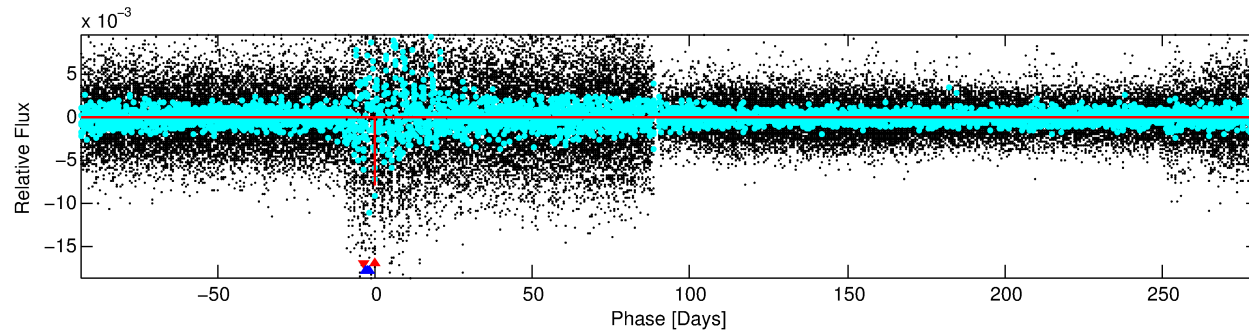
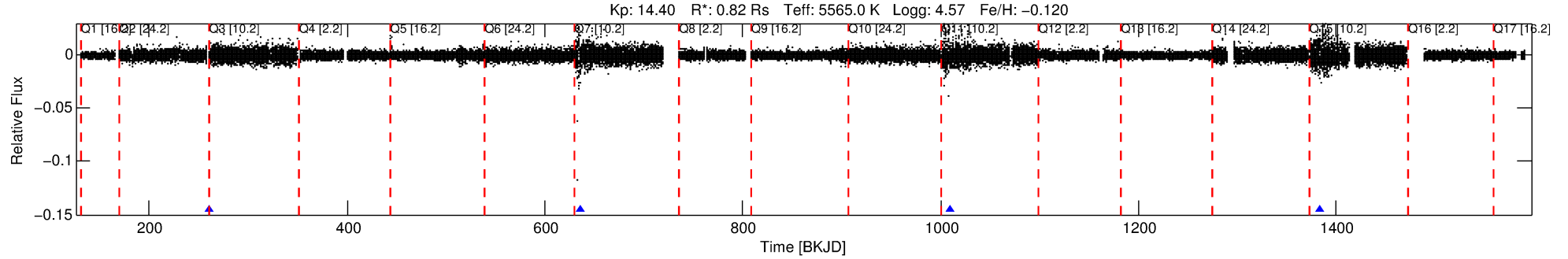
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 011808713-01

No Significant Match Found

# DV One-Page Summary

KIC: 11808713 Candidate: 1 of 2 Period: 374.011 d



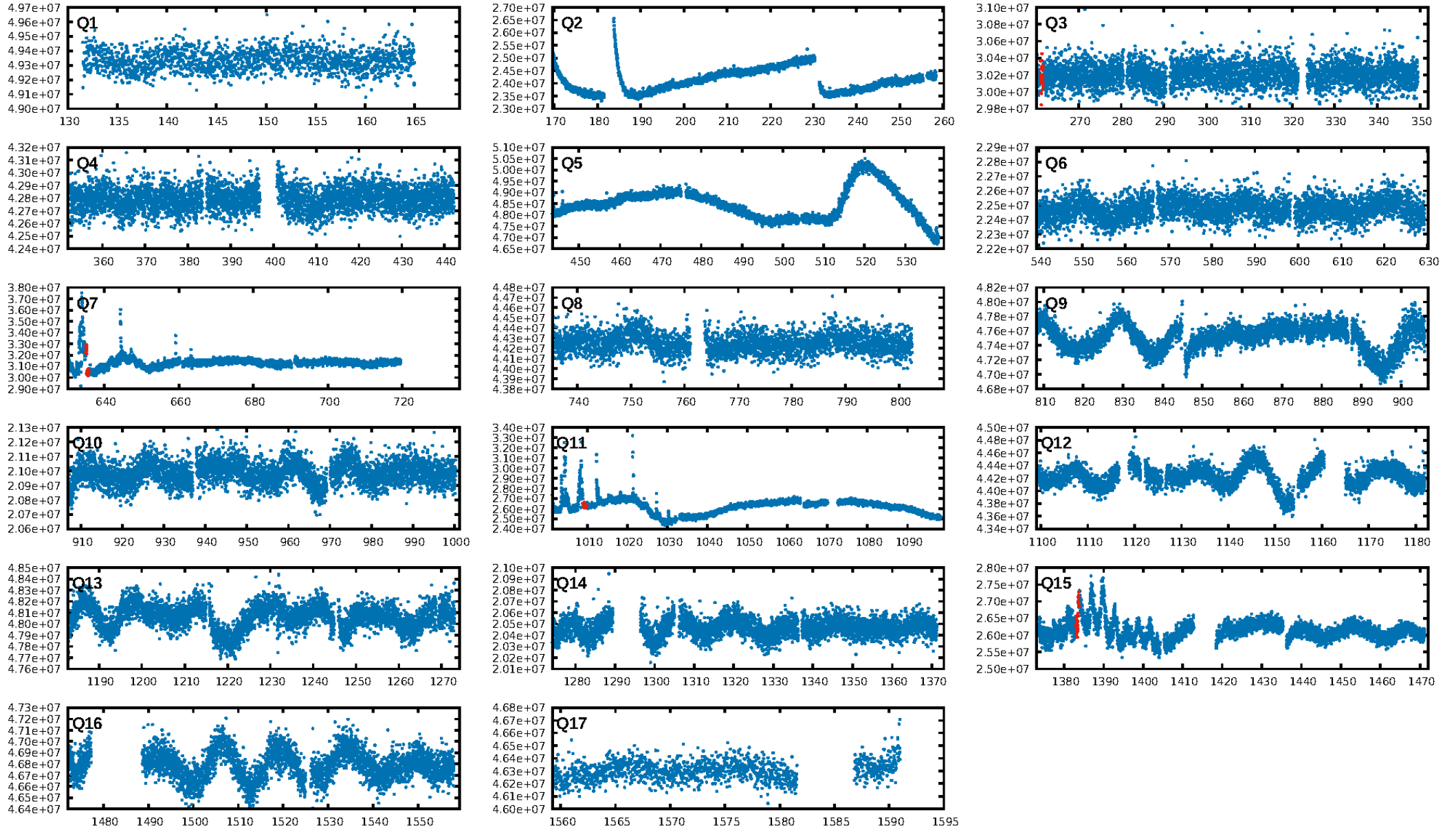
## DV Fit Results:

Period = 374.01125 [0.02038] d  
Epoch = 261.3738 [0.0315] BKJD  
Rp/R\* = 0.0925 [0.0211]  
a/R\* = 222.83 [133.12]  
b = 0.84 [0.22]  
Seff = 0.60 [0.19]  
Teq = 224 [18] K  
Rp = 8.29 [2.77] Re  
a = 0.9837 [0.2009] AU  
Ag = 54513.86 [30823.61] [1.77 $\sigma$ ]  
**Teff = 5299 [658] K [7.71 $\sigma$ ]**

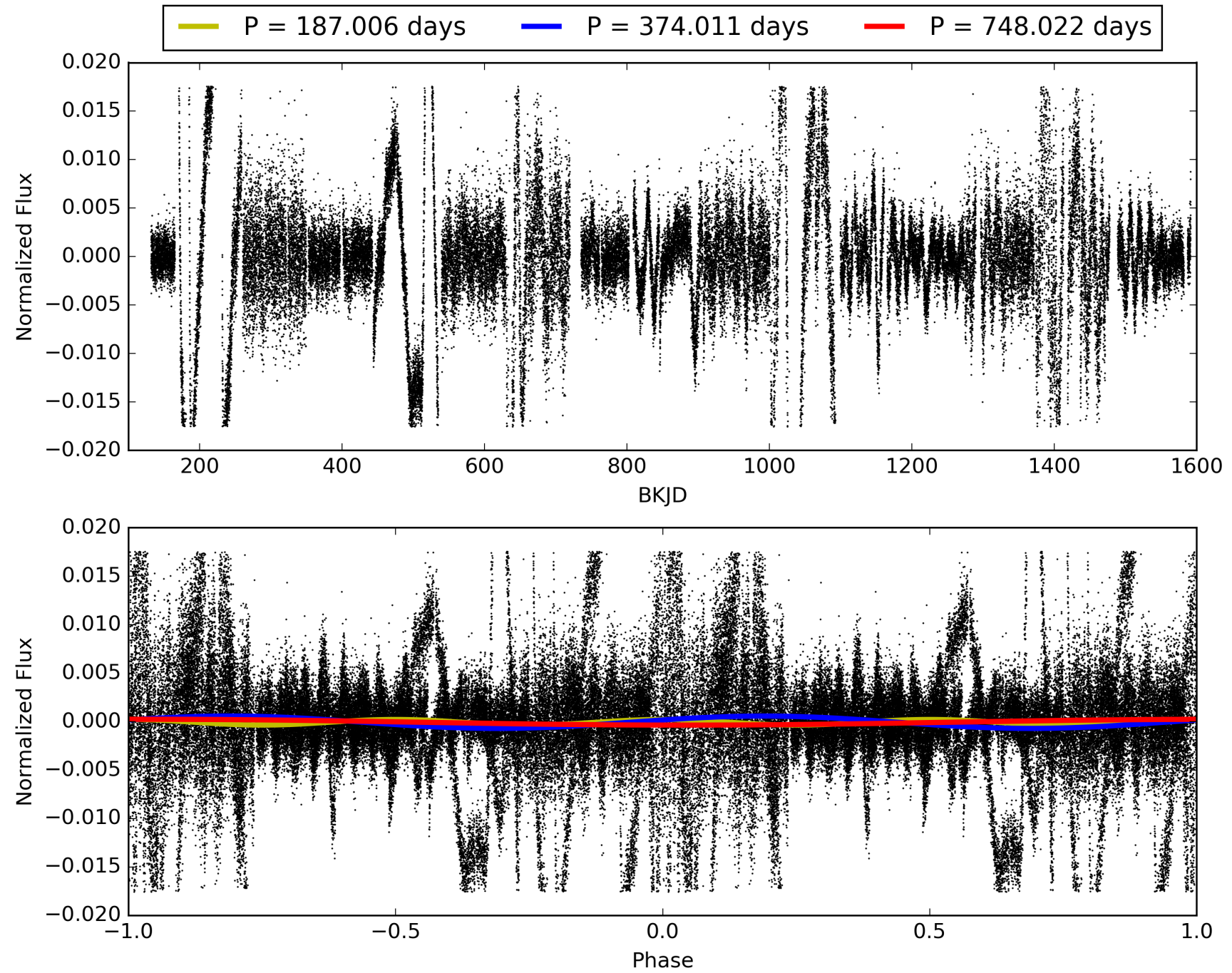
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: 39.3% [0.51 $\sigma$ ]  
**ModelChiSquare2-sig: 0.0%**  
ModelChiSquareGof-sig: 1.0%  
Bootstrap-pfa: 2.73e-25  
RollingBand-fgt: 1.00 [4/4]  
**GhostDiagnostic-chr: -0.1095**  
Centroid-sig: 30.1%  
Centroid-so: 0.614 arcsec [0.29 $\sigma$ ]  
**OotOffset-rm: 5.584 arcsec [83.68 $\sigma$ ]**  
**KicOffset-rm: 0.729 arcsec [10.93 $\sigma$ ]**  
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 011808713-01, PDC Light Curves

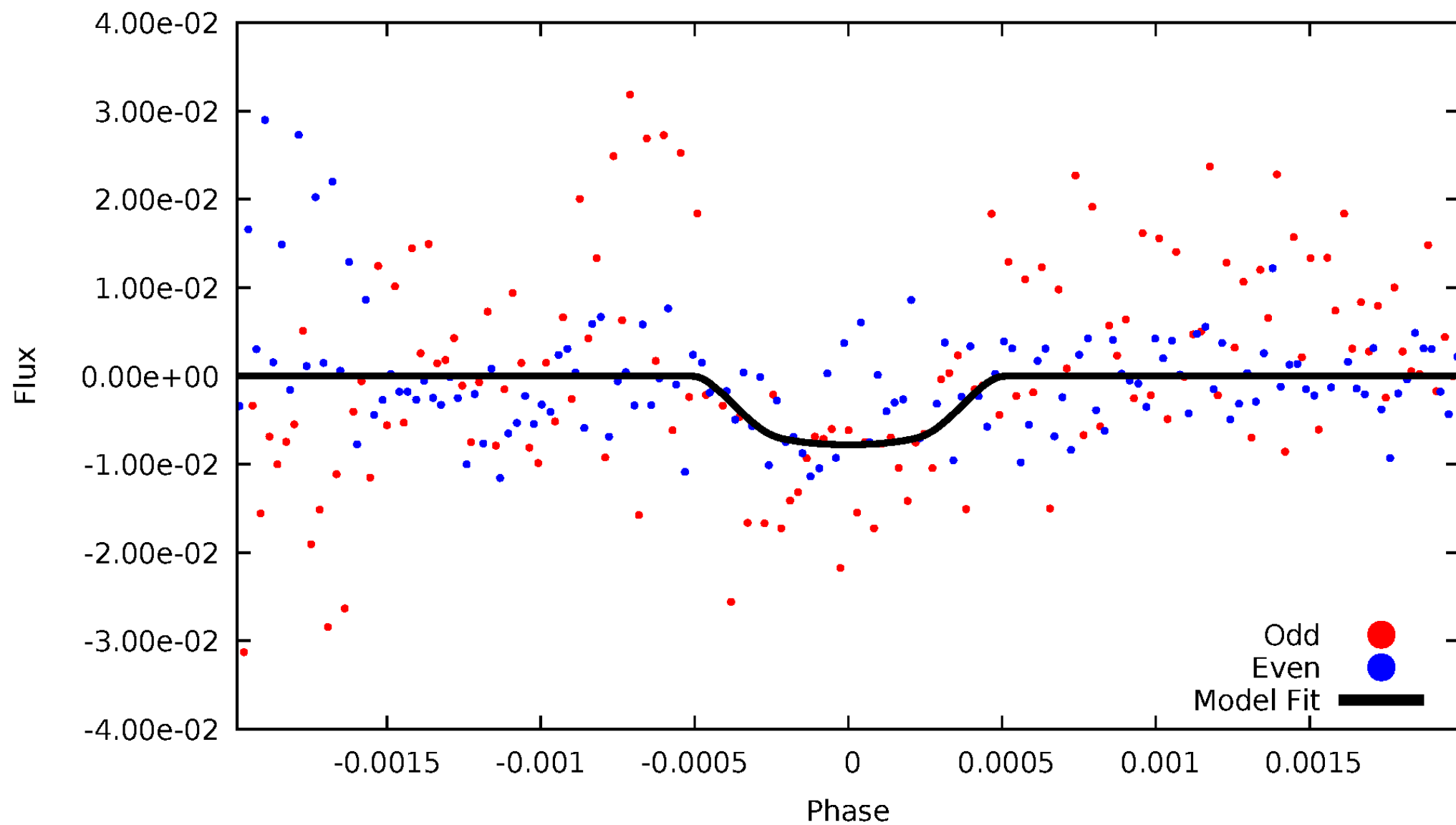


# TCE 011808713-01



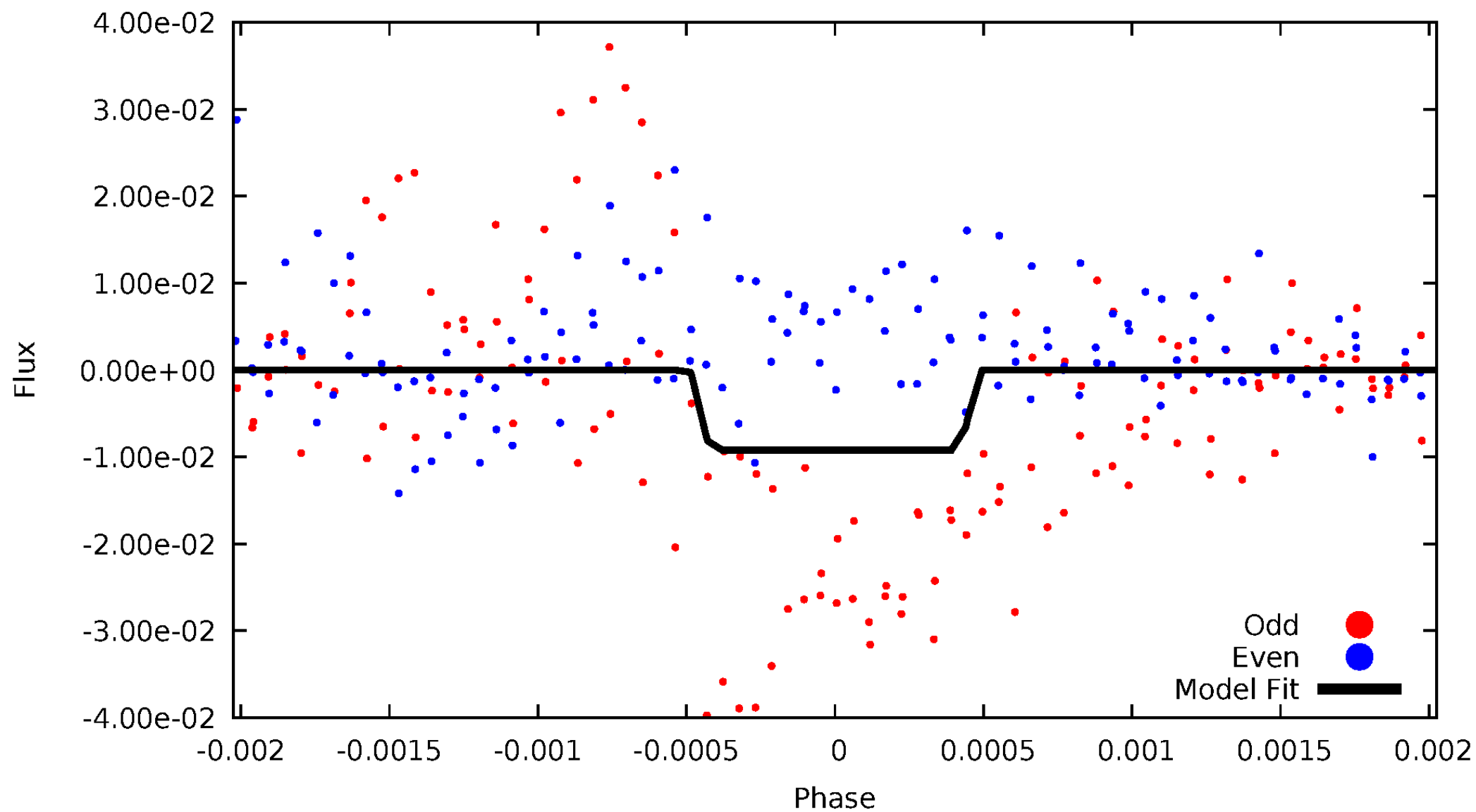
# DV Odd/Even

TCE 011808713-01



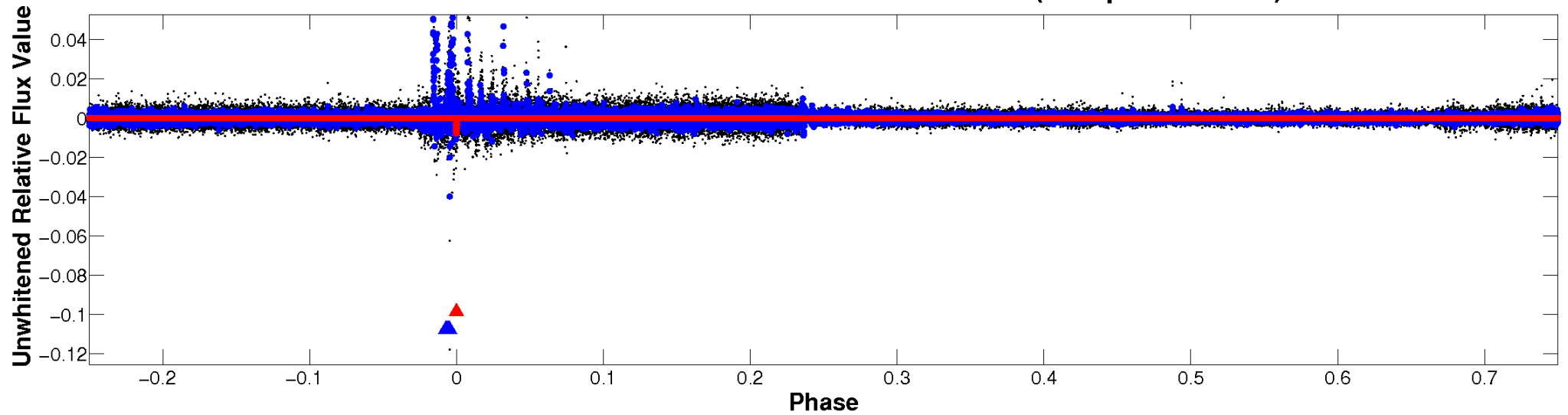
# ALT Odd/Even

TCE 011808713-01

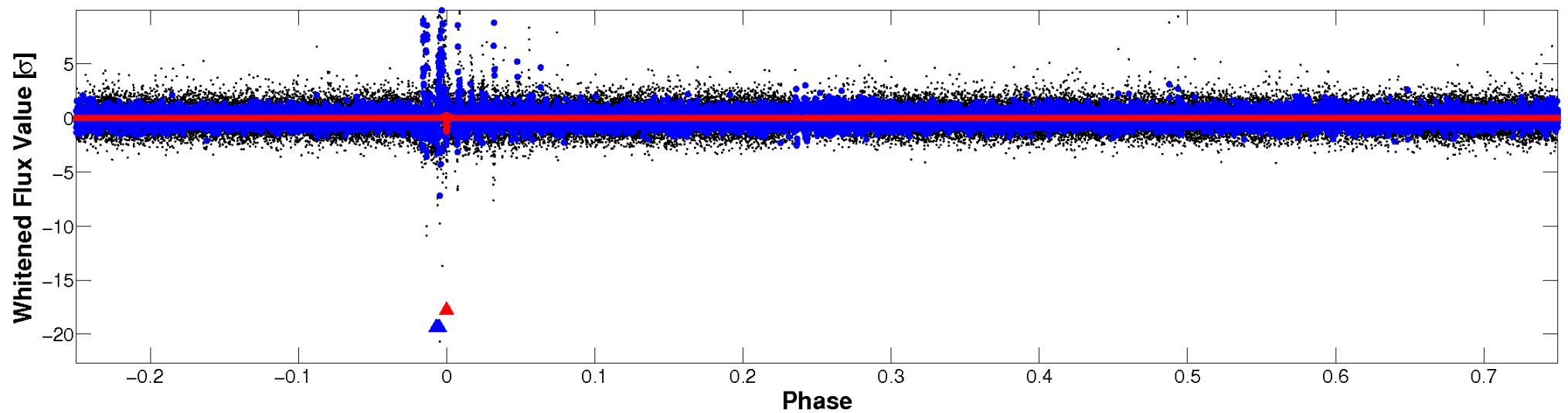


# Non-Whitened Vs. Whitened Light Curve

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

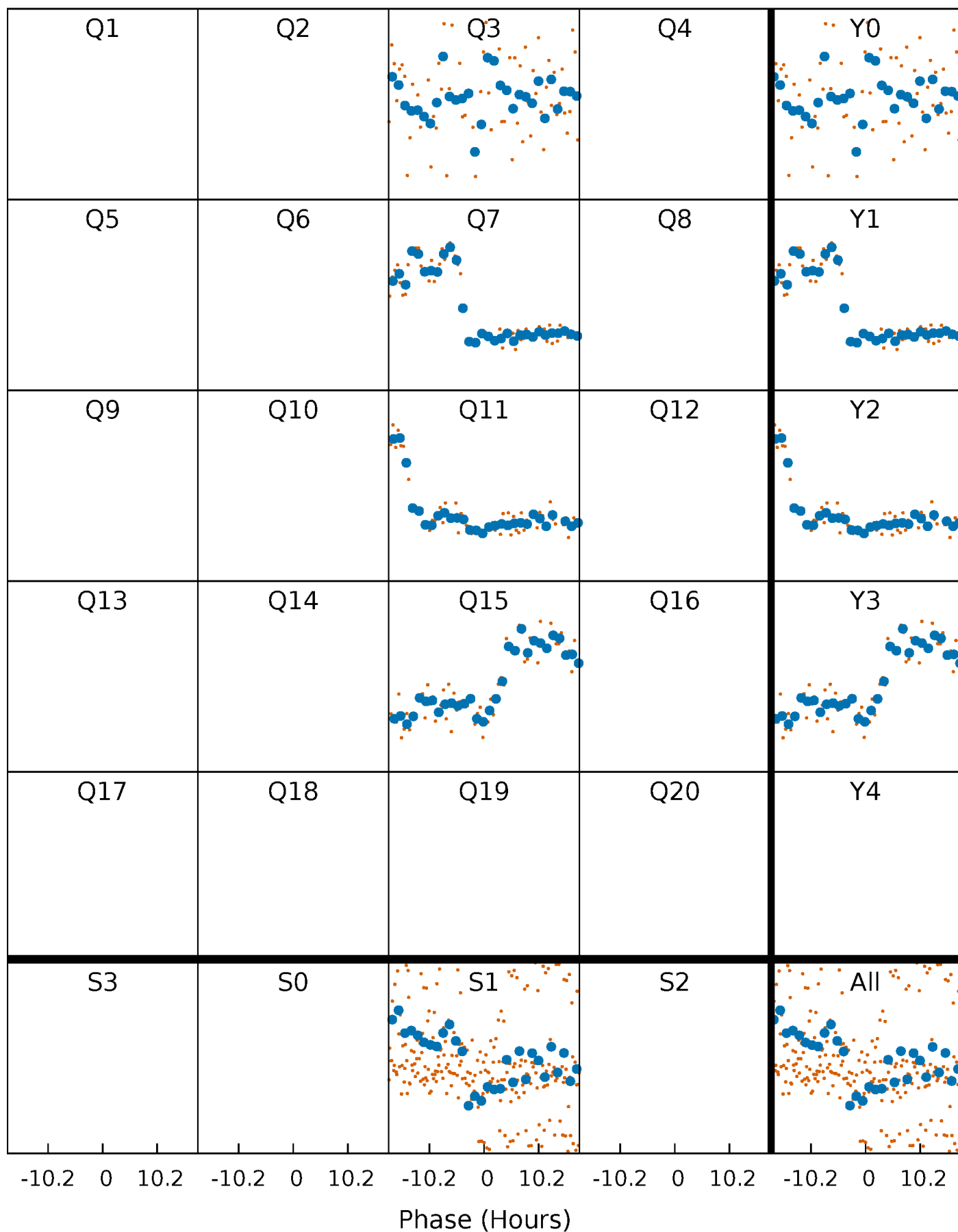


**Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)**



# PDC Quarter-Phased Transit Curves

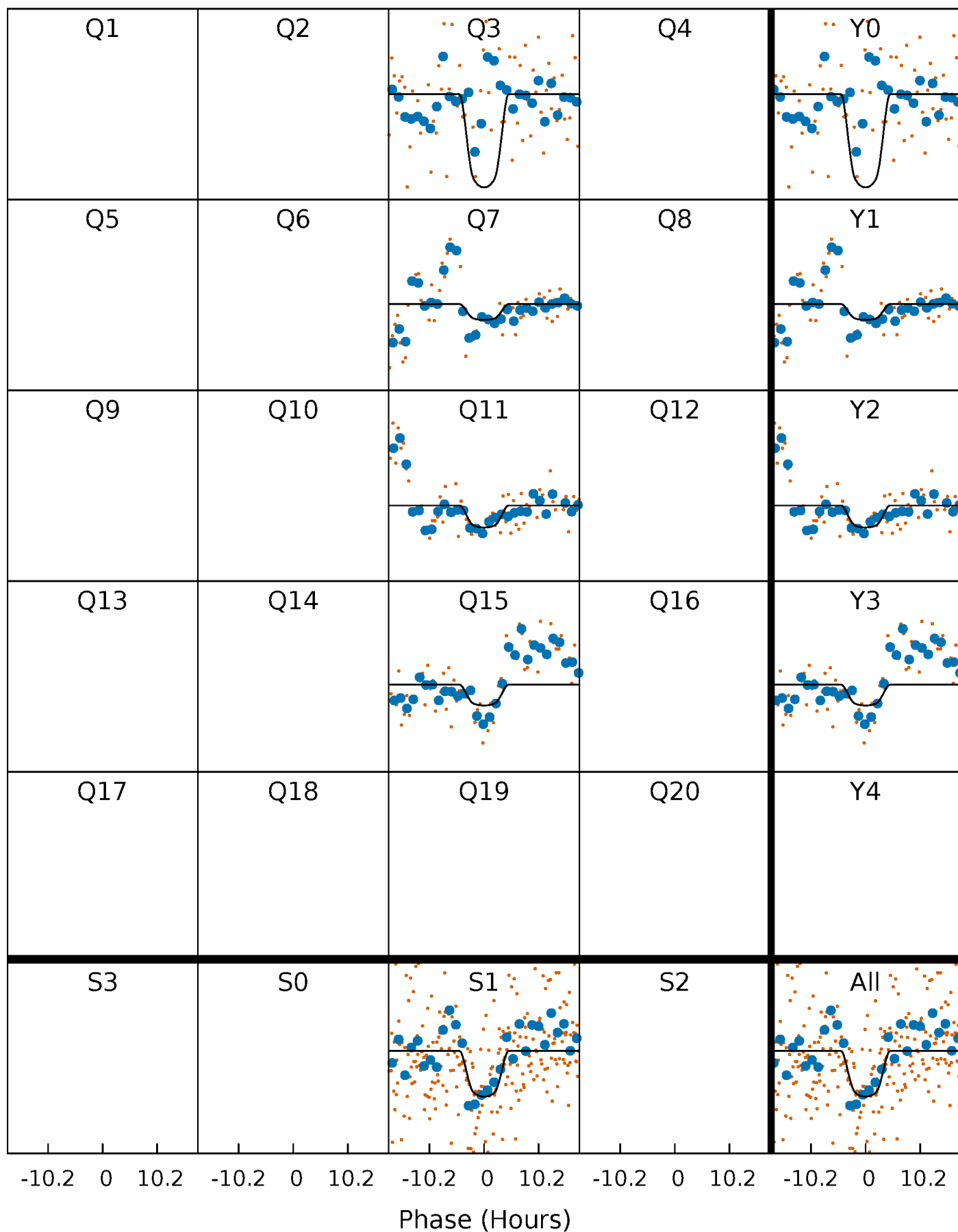
TCE 011808713-01 P=374.011245 Days  $T_0=261.373787$  (BKJD)





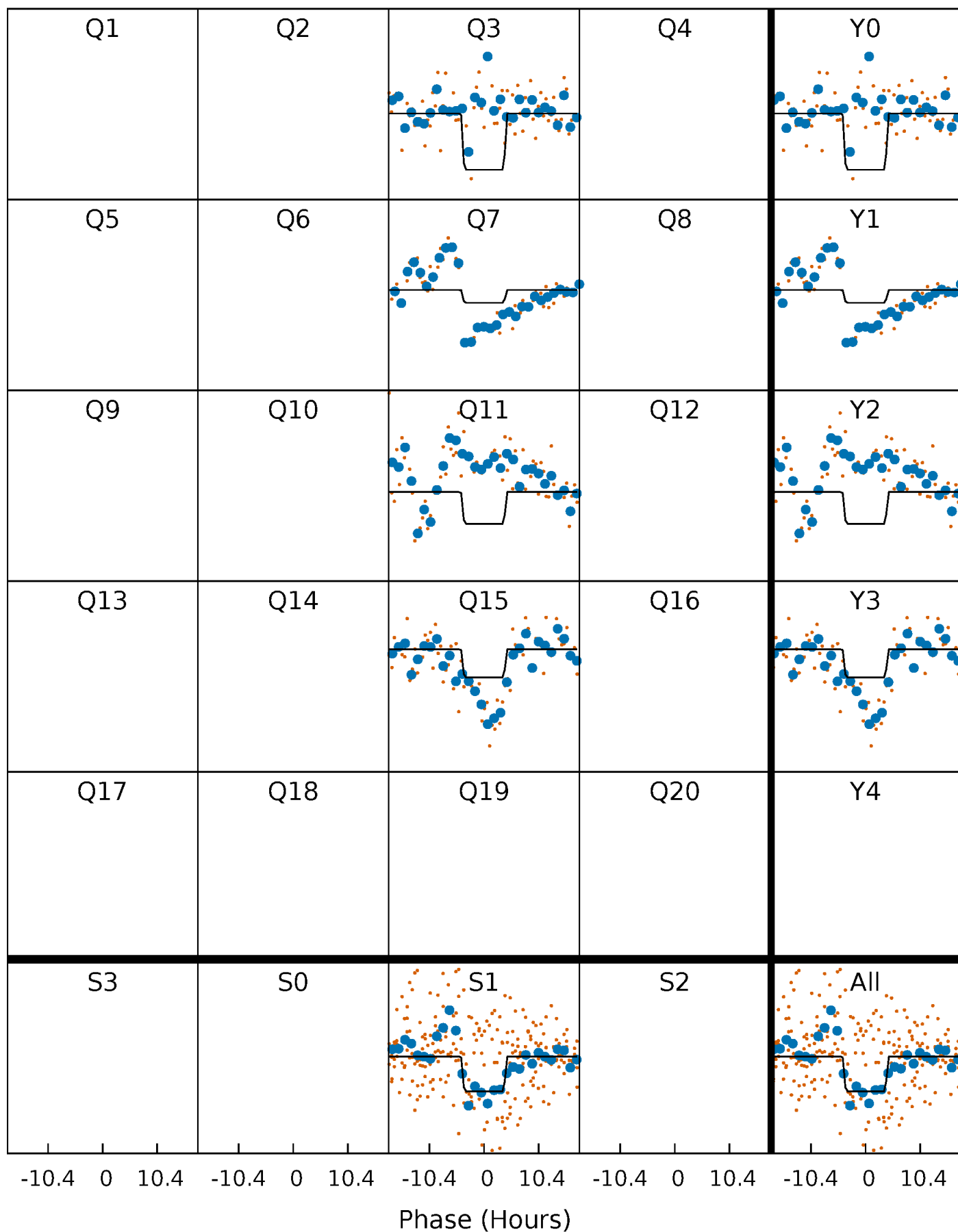
# DV Quarter-Phased Transit Curves

TCE 011808713-01 P=374.011245 Days  $T_0=261.373787$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

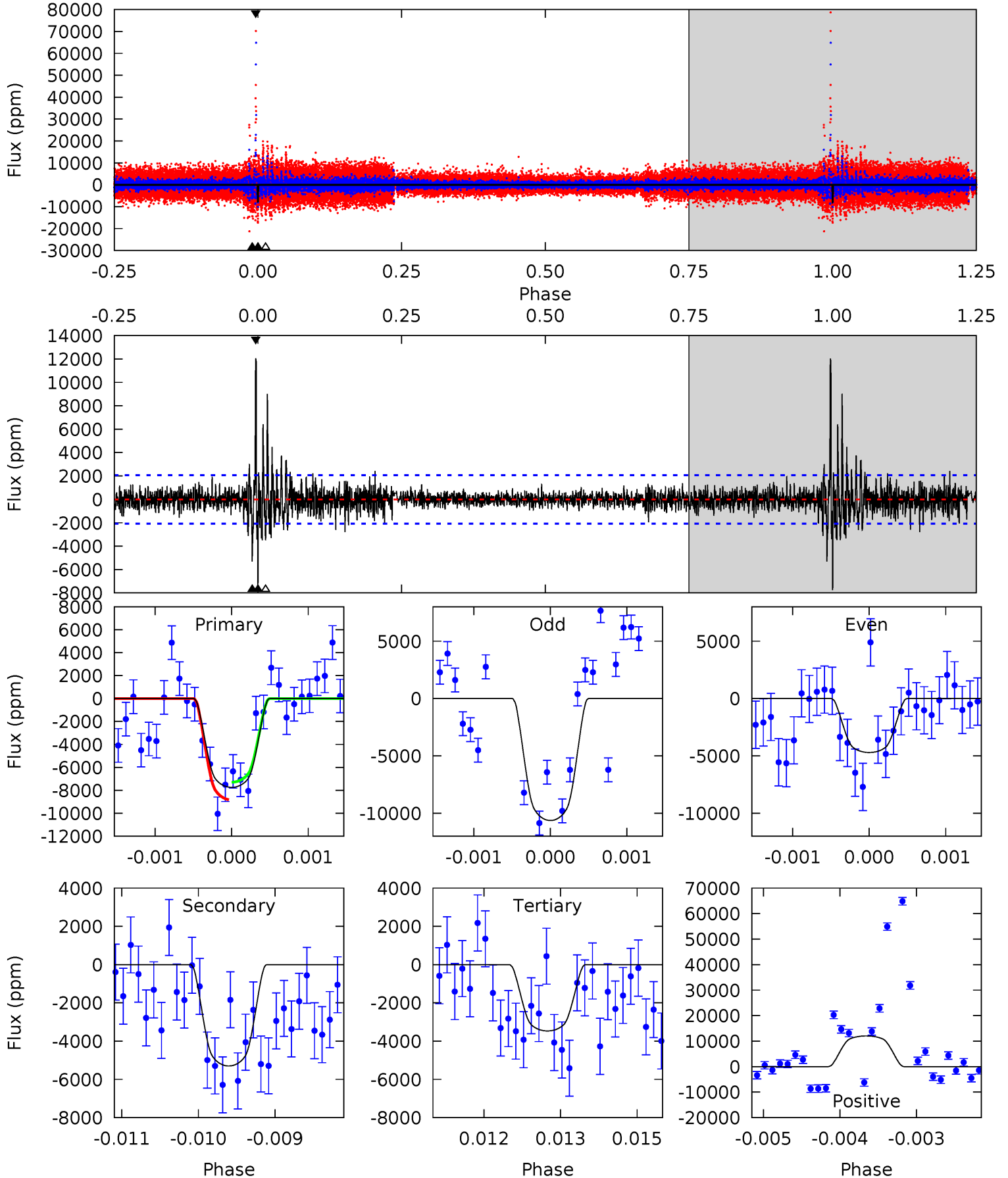
TCE 011808713-01 P=373.975015 Days  $T_0=261.428561$  (BKJD)



# DV Model-Shift Uniqueness Test

011808713-01, P = 374.011245 Days, E = 261.373787 Days

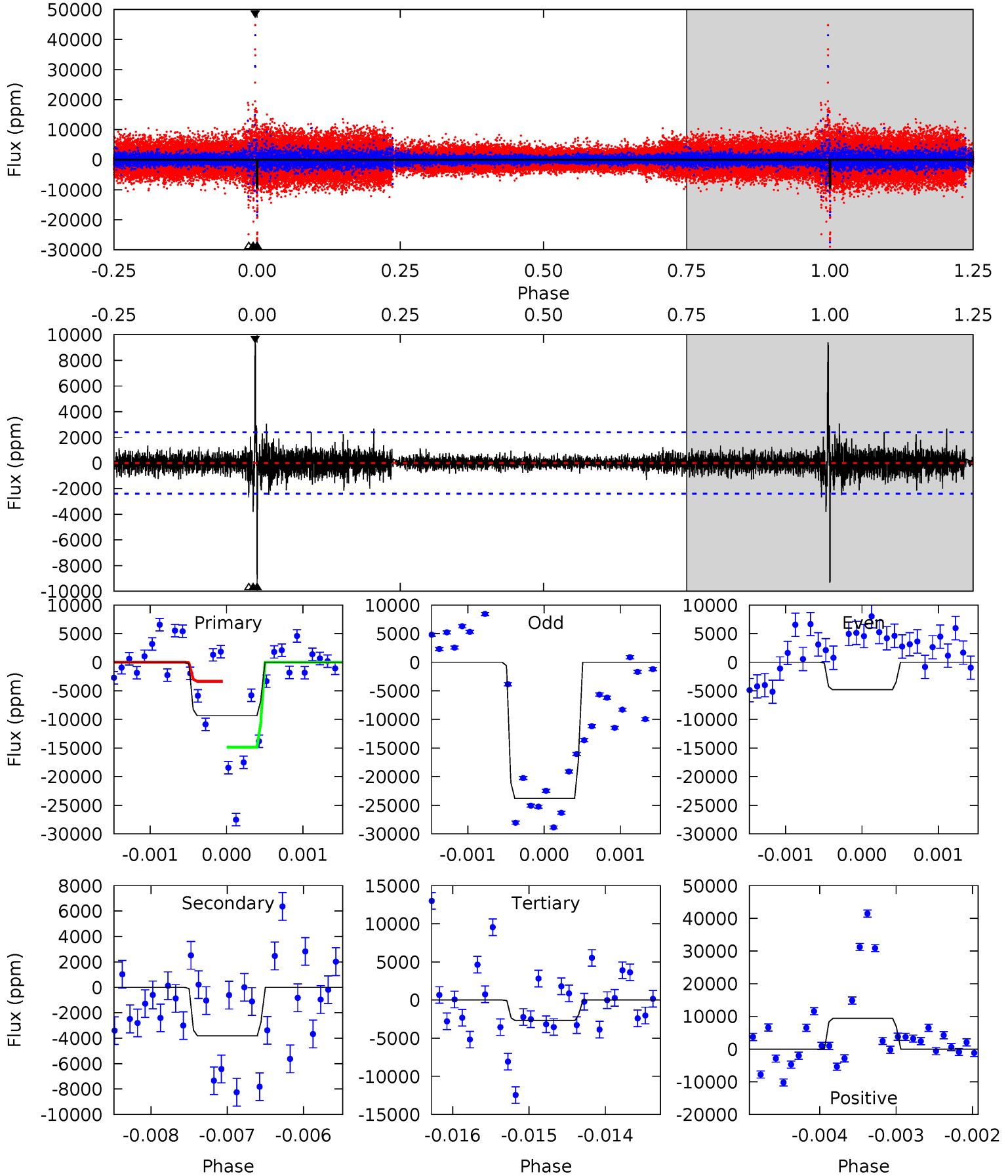
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
20.3	13.9	9.10	31.6	5.44	3.28	2.05	11.2	-11.3	4.81	-17.7	6.58	0.82	0.61	0



# Alt Model-Shift Uniqueness Test

011808713-01, P = 373.975015 Days, E = 261.428561 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
21.2	8.65	6.07	21.3	5.45	3.30	1.08	15.1	-0.14	2.58	-12.7	25.8	1.05	0.50	0



### Stellar Parameters For KIC 011808713

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$5565^{+149}_{-166}$	$4.567^{+0.040}_{-0.160}$	$-0.120^{+0.300}_{-0.300}$	$0.821^{+0.201}_{-0.080}$	$0.910^{+0.091}_{-0.102}$	$2.320^{+0.384}_{-1.065}$
	+3%/-3%	+1%/-4%	+250%/-250%	+24%/-10%	+10%/-11%	+17%/-46%
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 011808713-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	$A_{obs}$
DV	$-5300 \pm 381$	$8.73^{+2.30}_{-2.09}$	$319^{+18}_{-13}$	$4977^{+573}_{-427}$	$36660^{+24283}_{-13737}$
Alt.	$-3805 \pm 440$	$8.98^{+2.12}_{-2.02}$	$319^{+18}_{-14}$	$4592^{+534}_{-359}$	$24938^{+17174}_{-9237}$

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

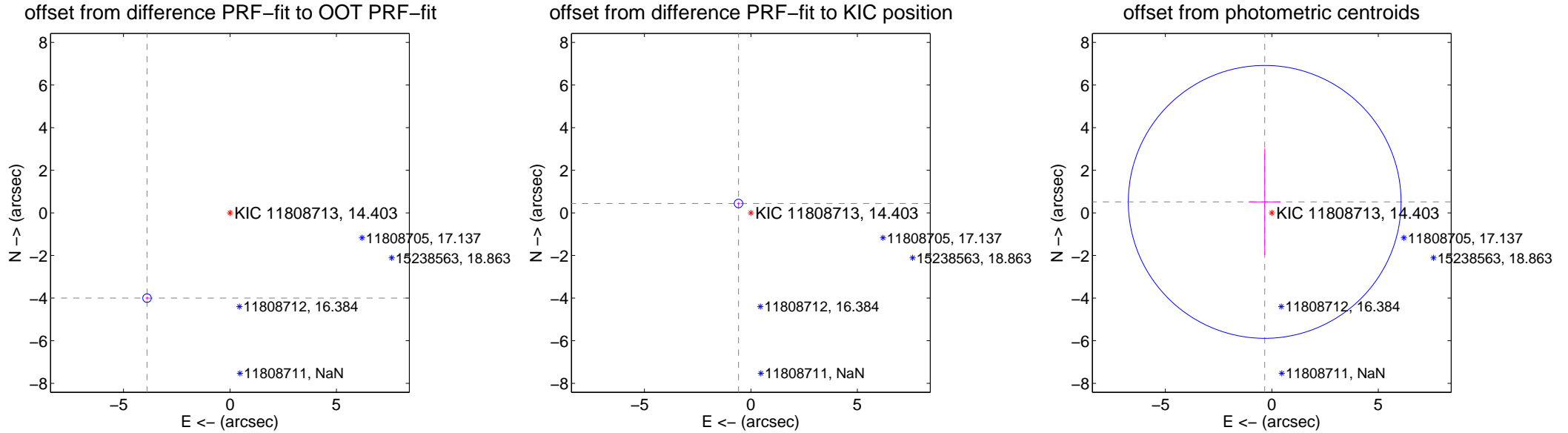
## DV Centroid Data

Supplemental centroid analysis for 011808713-01. Kepler magnitude: 14.40. Transit SNR 7.65

There are 1 quarters with good PRF difference image offsets

The OOT PRF centroid is offset from the target star catalog position by about 5.54 arcsec so the offset from difference PRF-fit to OOT-fit may be invalid.

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$5.584 \pm 0.067$	83.68	$3.896 \pm 0.067$	$-4.001 \pm 0.067$
PRF-fit source offset from KIC position	$0.729 \pm 0.067$	10.93	$0.582 \pm 0.067$	$0.440 \pm 0.067$
photometric centroid source offset	$0.61 \pm 2.13$	0.29	$0.33 \pm 0.76$	$0.52 \pm 2.50$

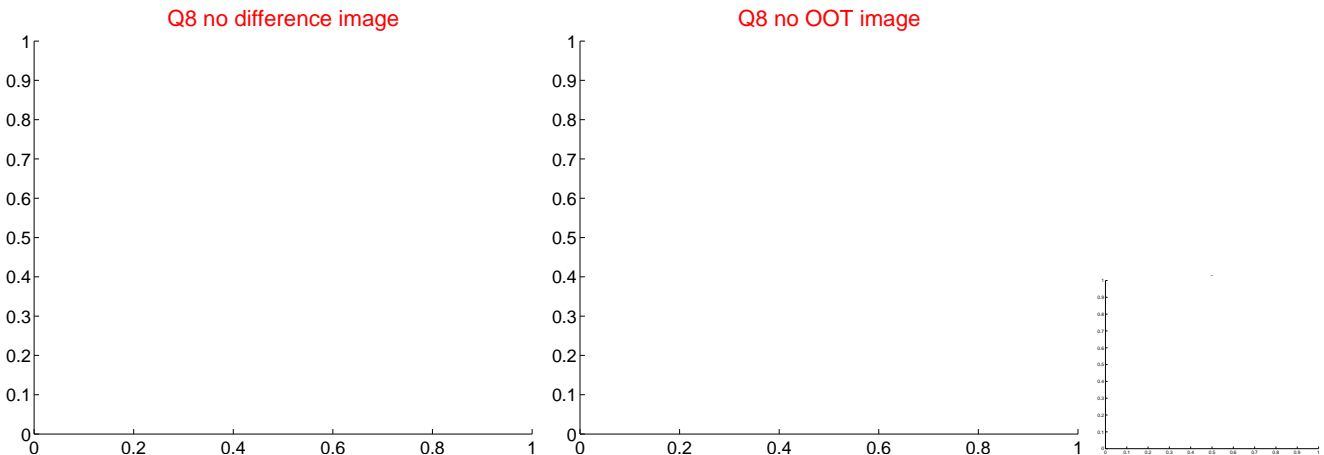
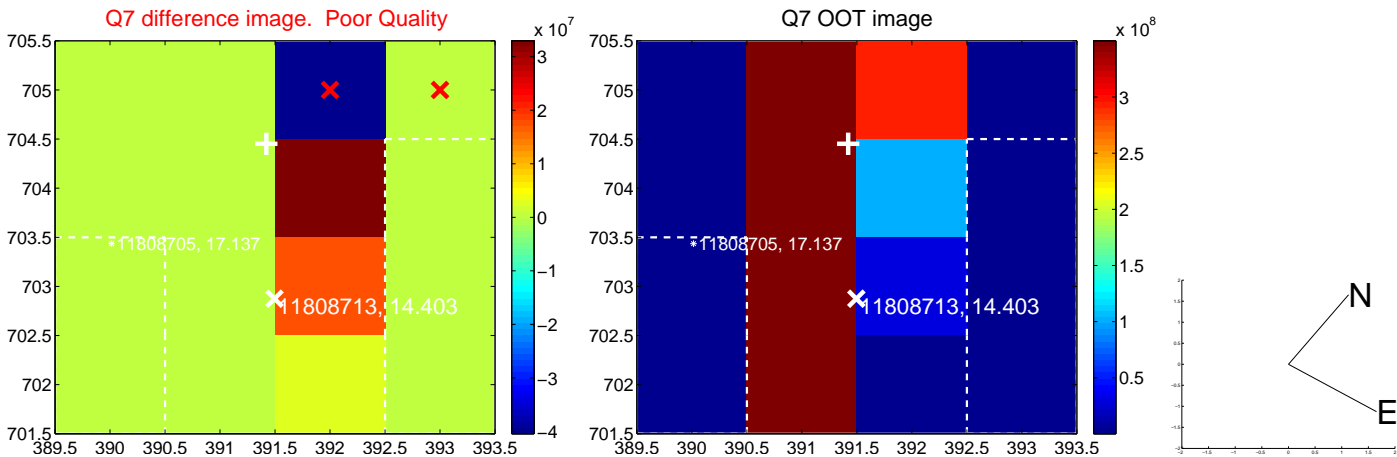
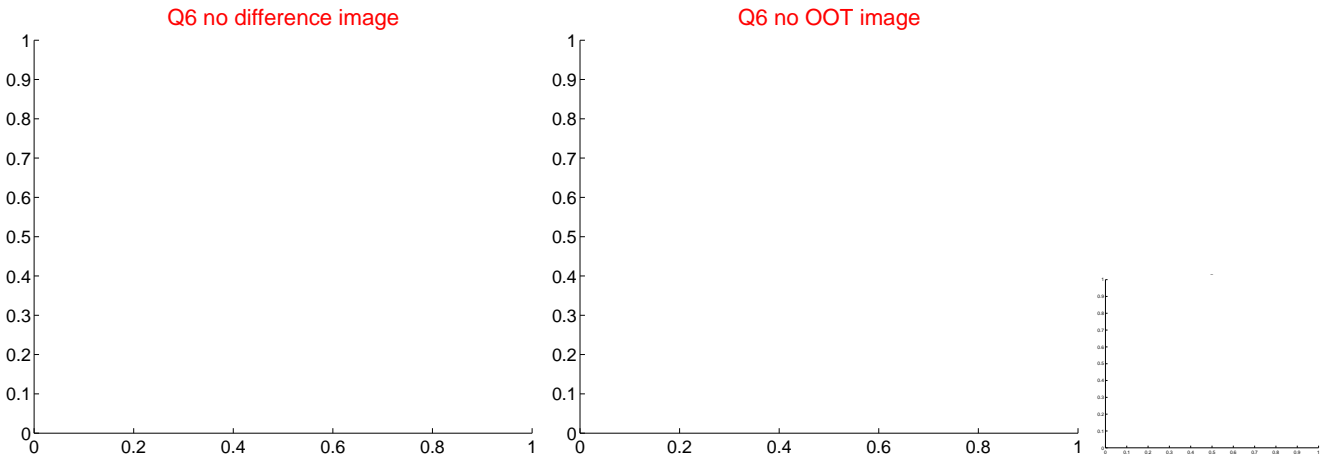
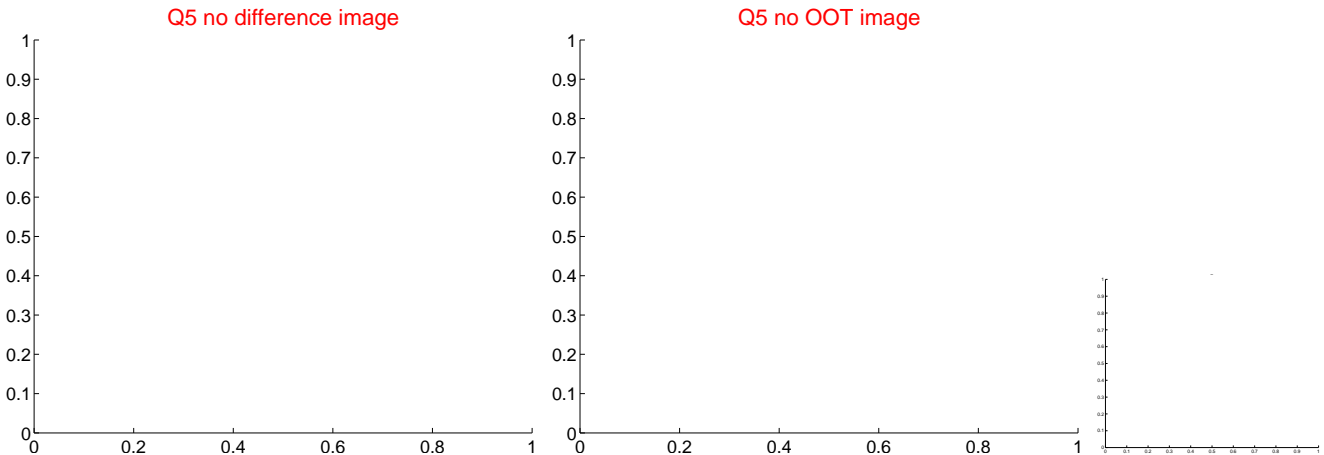


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: three-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

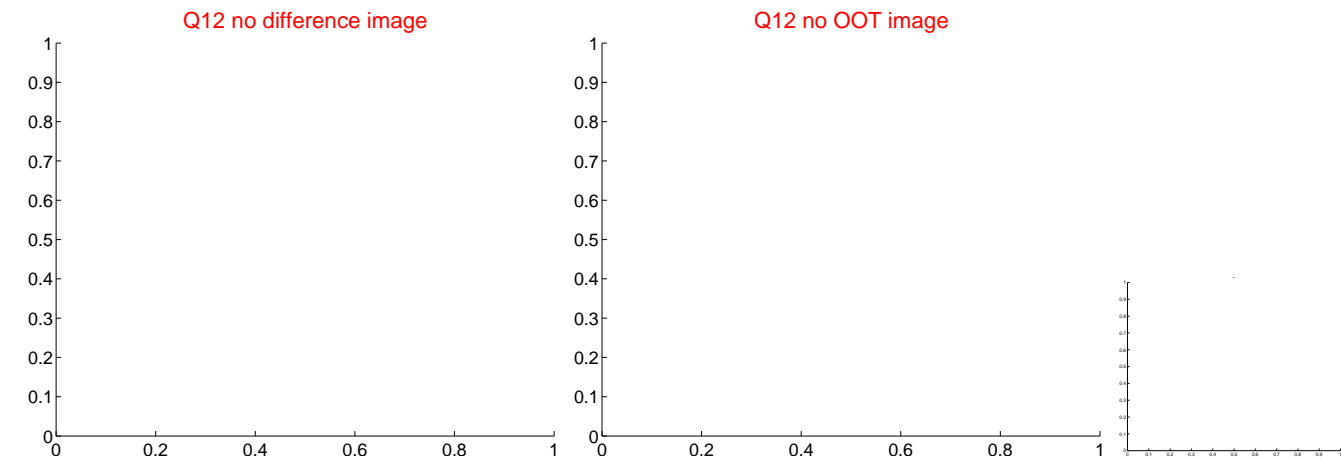
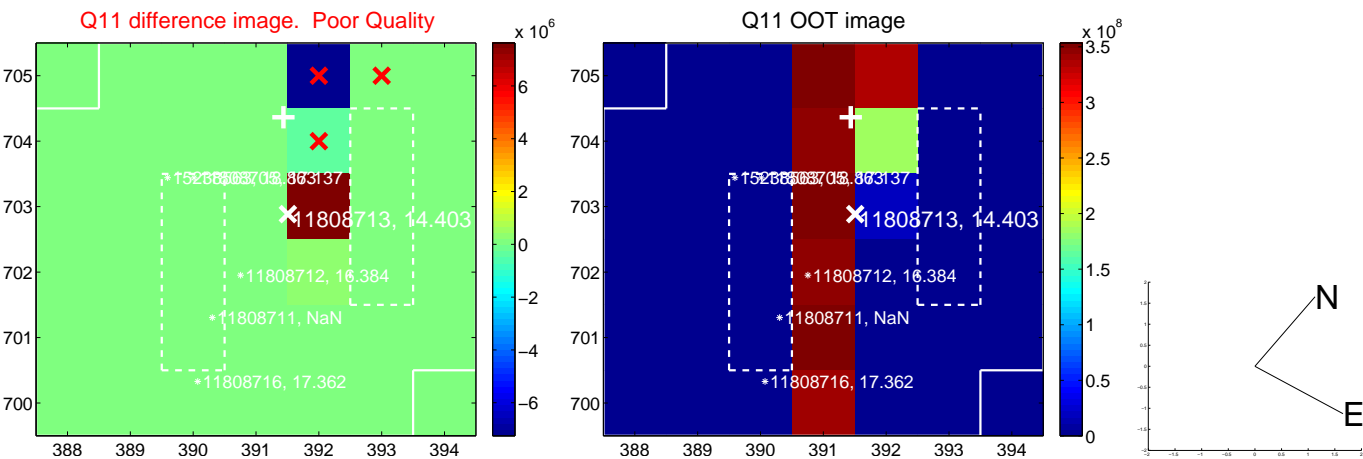


white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value

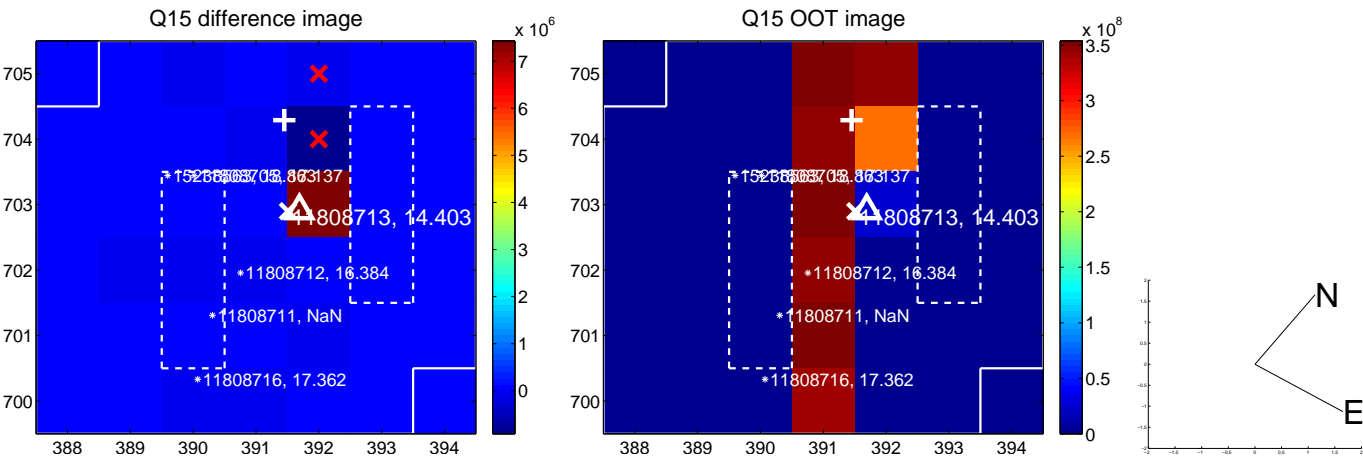




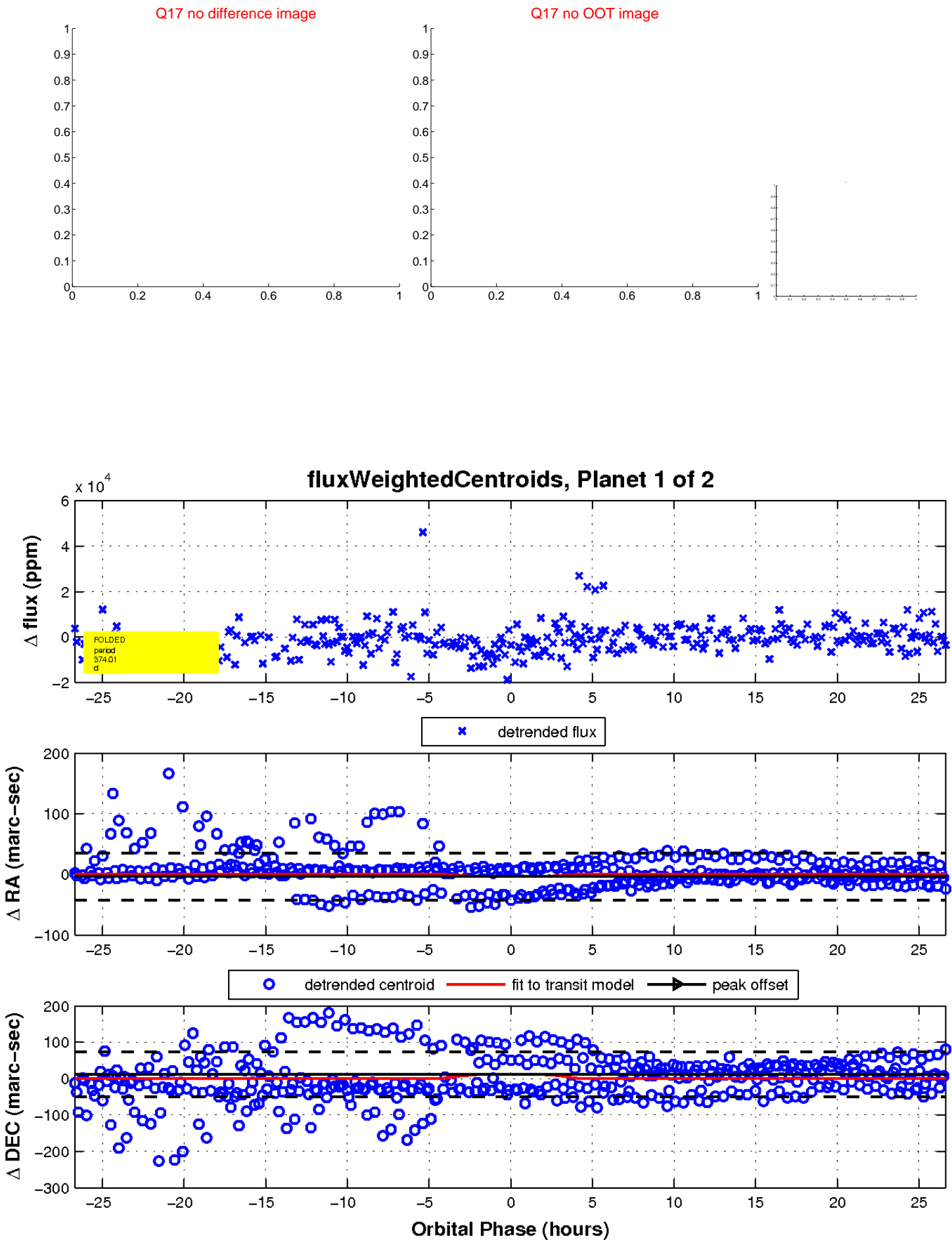
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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

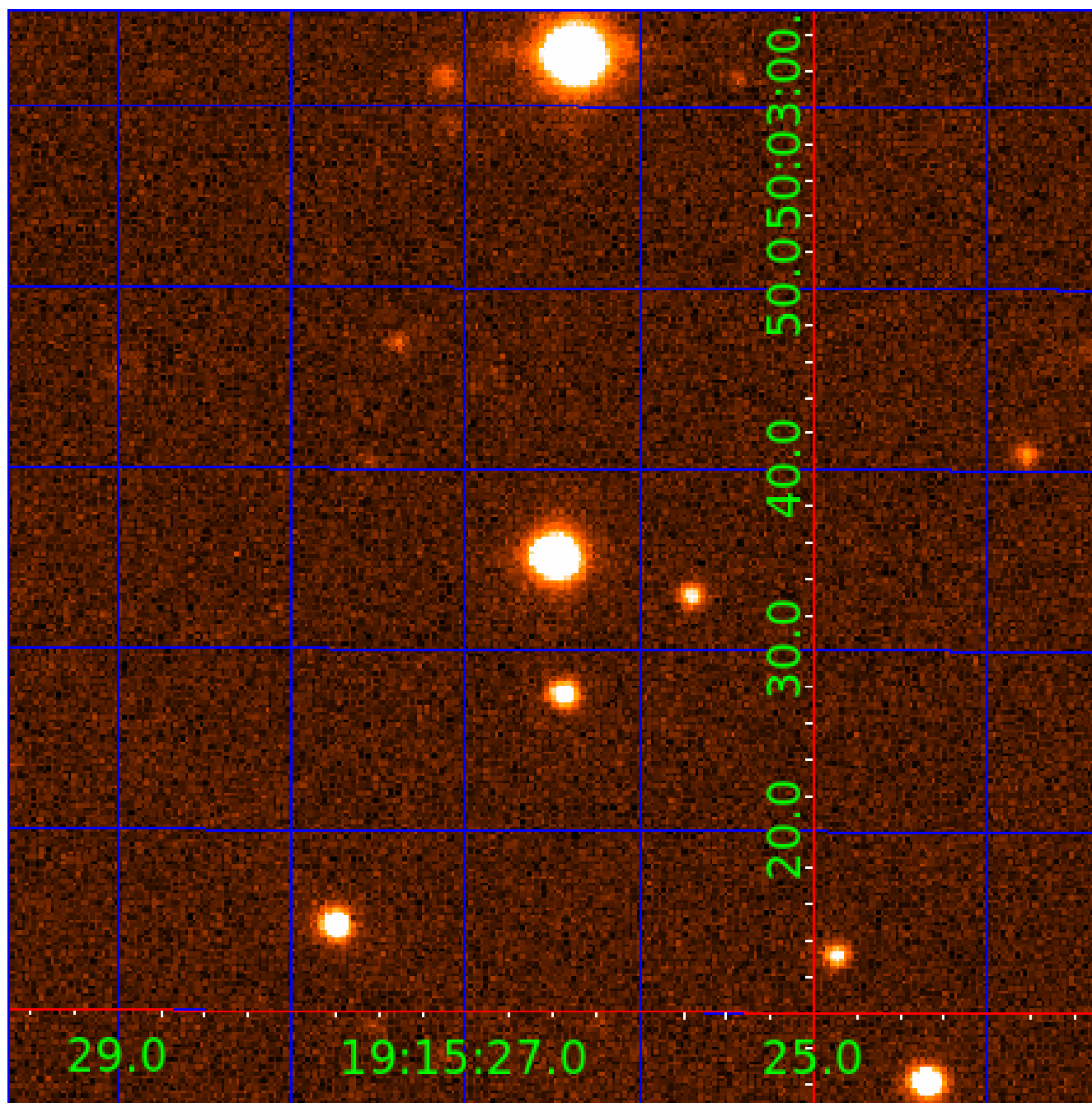


white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



UKIRT Image

Declination



# KIC 011808713

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
011808713-01	OBS	No	374.011245	261.373787	7787.8	8.922	15.5	7.6	0.82	5565	8.29	0.60
011808713-02	OBS	No	374.312872	258.682415	14754.9	10.881	24.7	12.8	0.82	5565	9.83	0.60

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
011808713-01	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_MARSHALL_SKYE—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS—HALO_GHOST
011808713-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL_TRACKER—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—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.

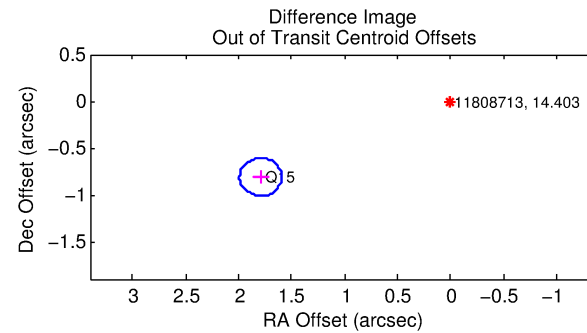
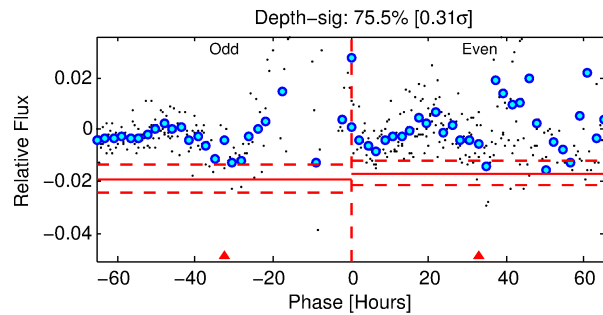
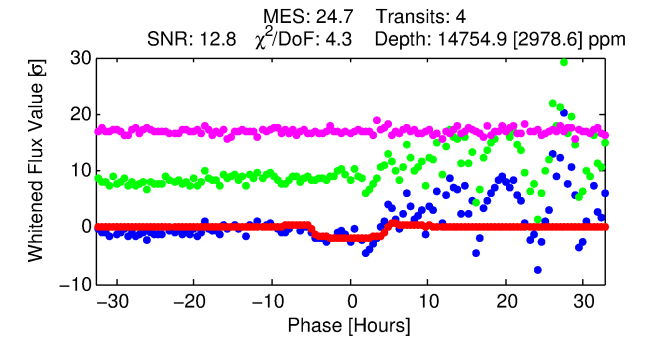
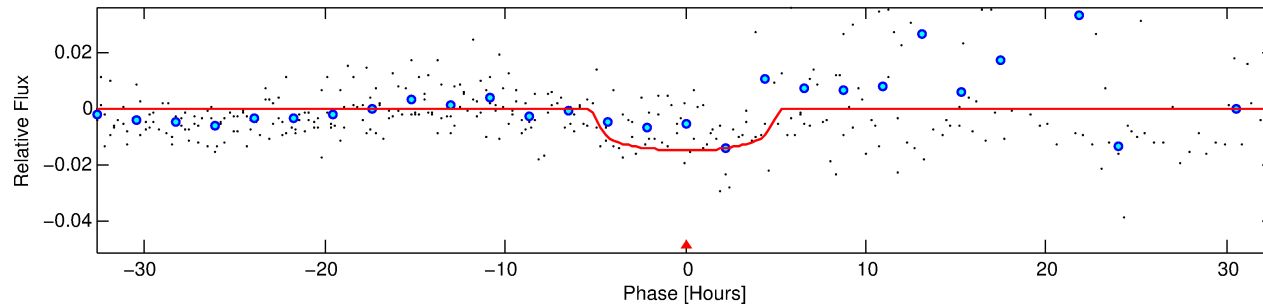
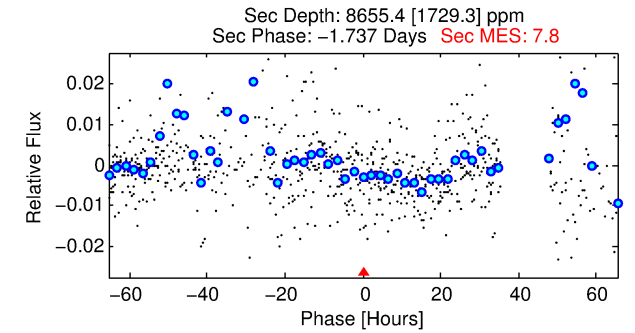
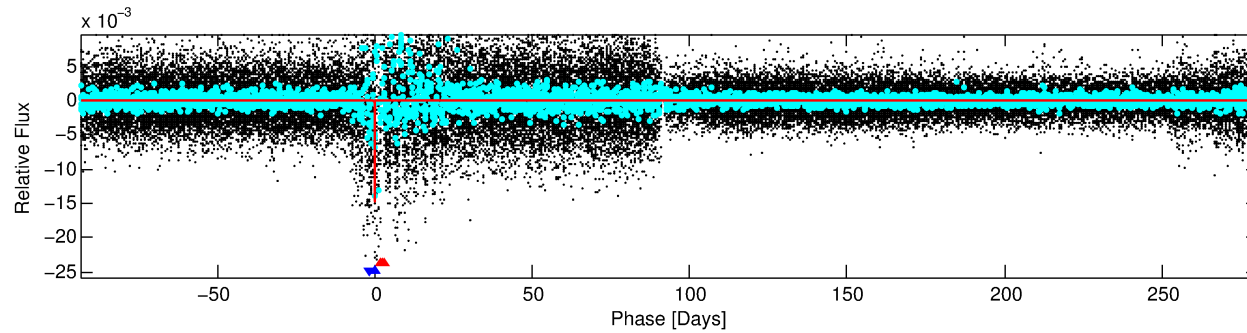
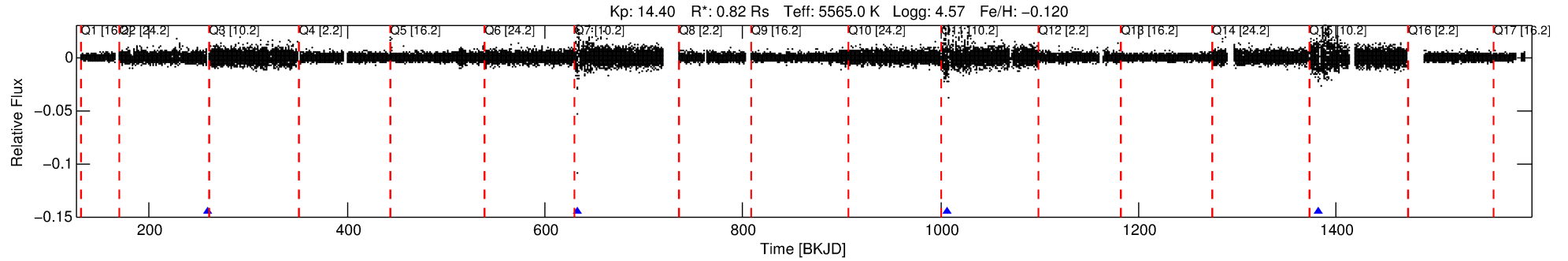
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 011808713-02

No Significant Match Found

# DV One-Page Summary

KIC: 11808713 Candidate: 2 of 2 Period: 374.313 d



## DV Fit Results:

Period = 374.31287 [0.01618] d  
Epoch = 258.6824 [0.0318] BKJD  
Rp/R\* = 0.1097 [0.0284]  
a/R\* = 291.62 [265.44]  
b = 0.01 [170.10]  
Seff = 0.60 [0.19]  
Teq = 224 [18] K  
Rp = 9.83 [3.50] Re  
a = 0.9842 [0.2010] AU  
Ag = 47747.42 [29988.08] [1.59σ]  
**Teffp = 5125 [727] K [6.74σ]**

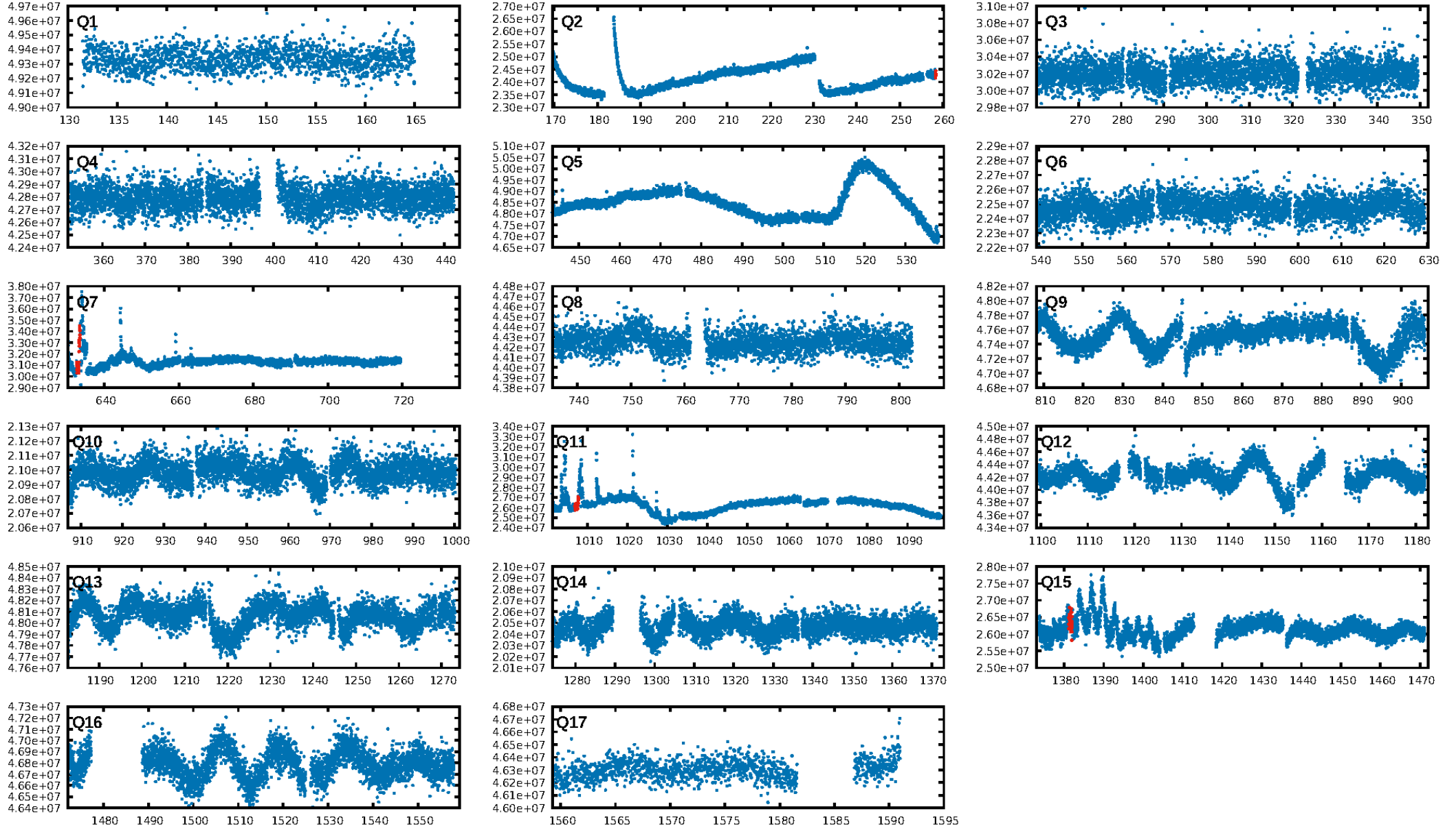
## DV Diagnostic Results:

ShortPeriod-sig: 39.3% [0.51σ]  
LongPeriod-sig: N/A  
**ModelChiSquare2-sig: 0.0%**  
**ModelChiSquareGof-sig: 0.0%**  
Bootstrap-pfa: 1.20e-41  
RollingBand-fgt: 1.00 [4/4]  
GhostDiagnostic-chr: -0.7156  
Centroid-sig: 7.0%  
Centroid-so: 1.201 arcsec [0.98σ]  
**OotOffset-rm: 1.966 arcsec [29.43σ]**  
**KicOffset-rm: 3.955 arcsec [59.17σ]**  
OotOffset-st: 0/1/0/0 [1]  
KicOffset-st: 0/1/0/0 [1]  
DiffImageQuality-fgm: 1.00 [1/1]  
DiffImageOverlap-fno: 1.00 [2/2]

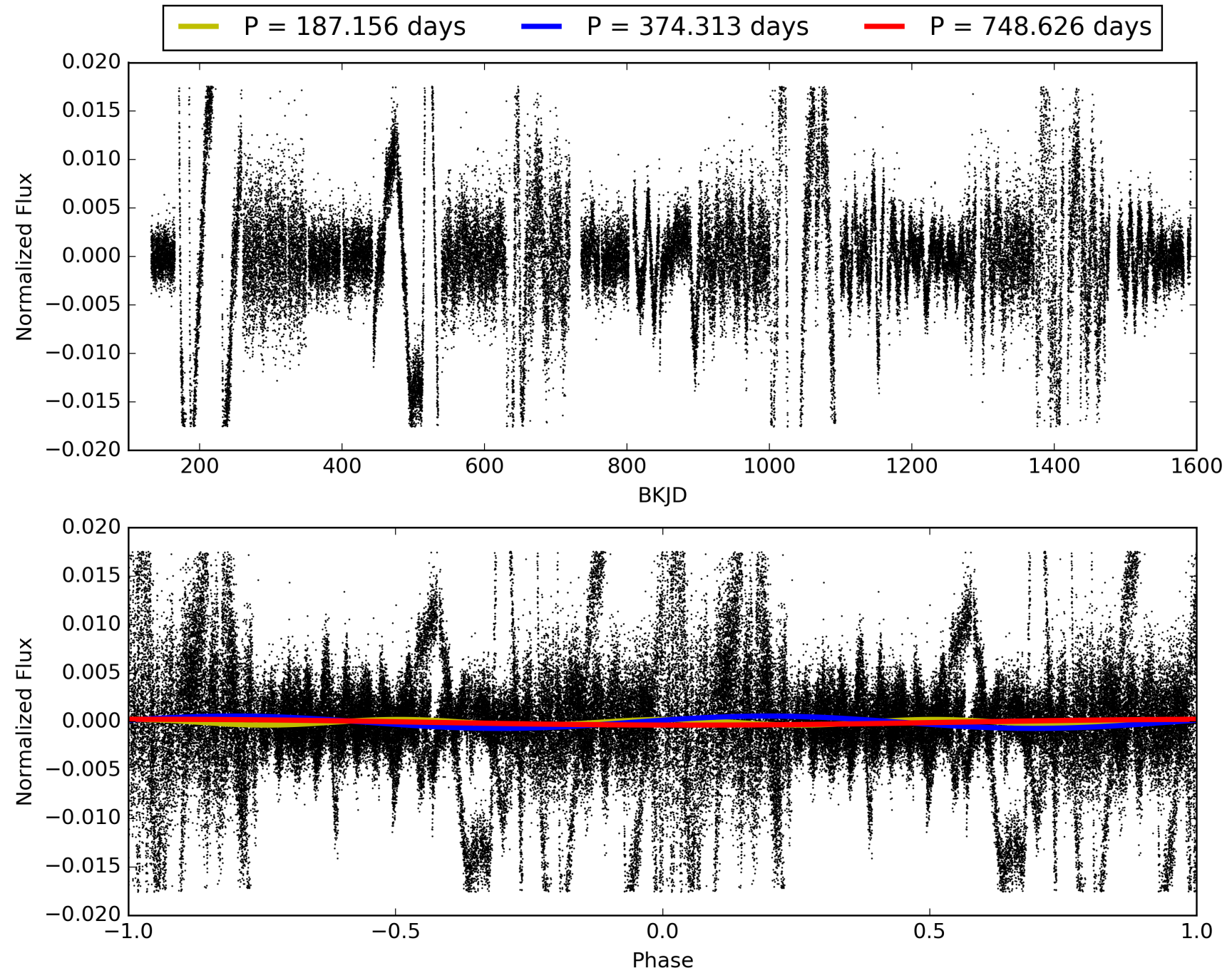
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 07:57:00 Z

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

# TCE 011808713-02, PDC Light Curves



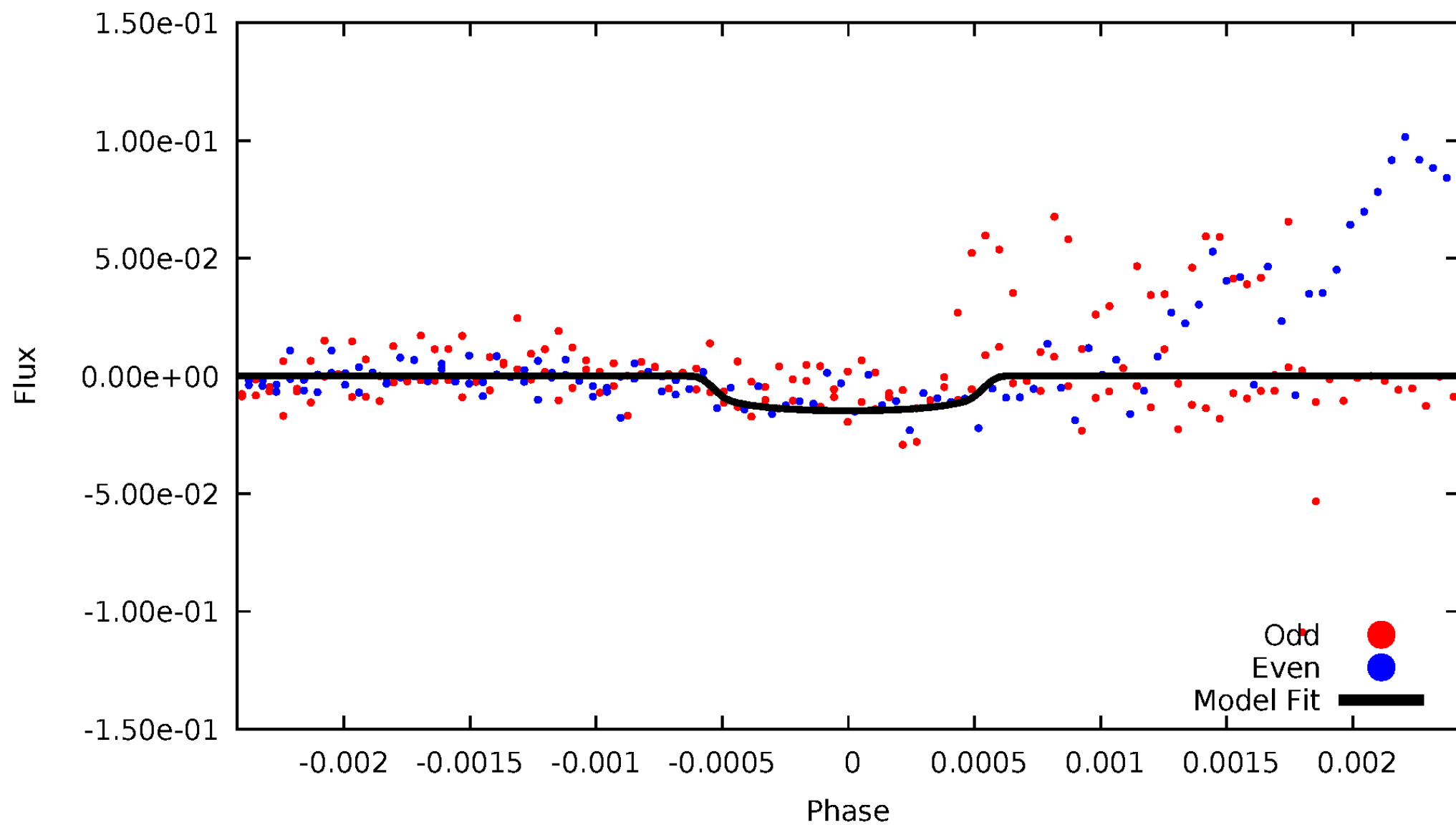
# TCE 011808713-02





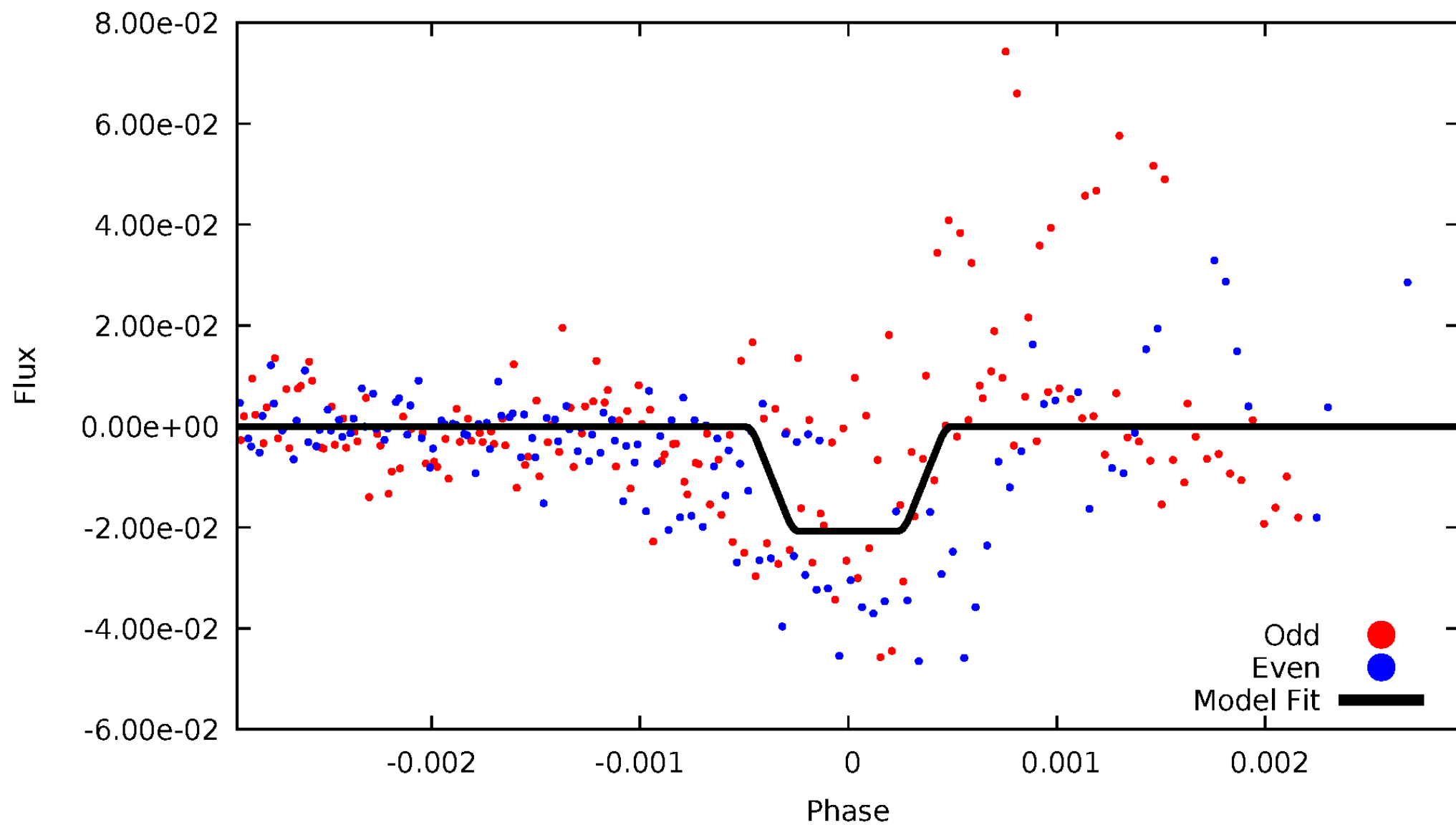
# DV Odd/Even

TCE 011808713-02



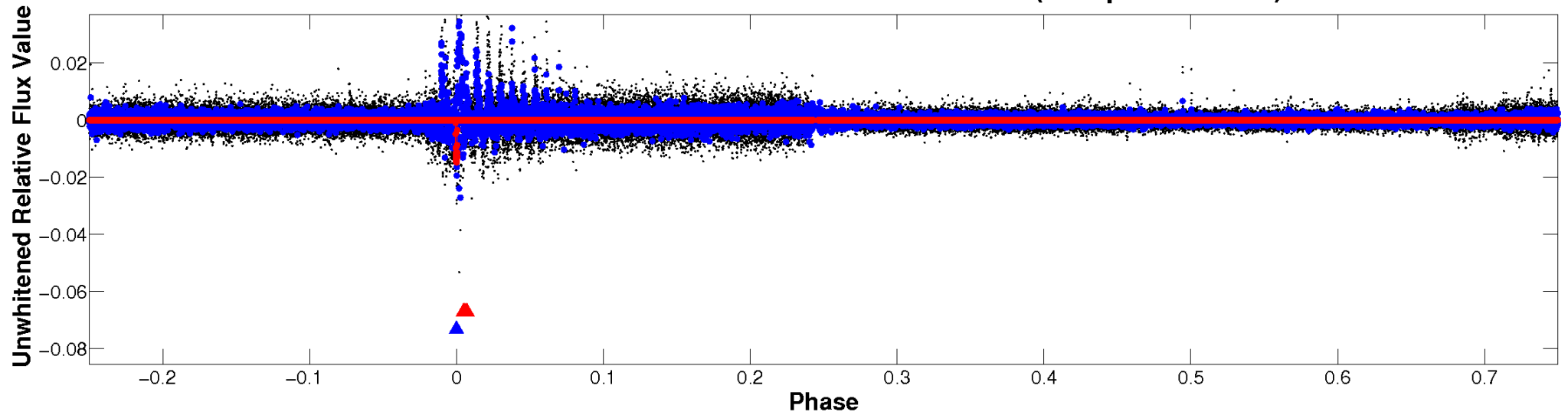
# ALT Odd/Even

TCE 011808713-02

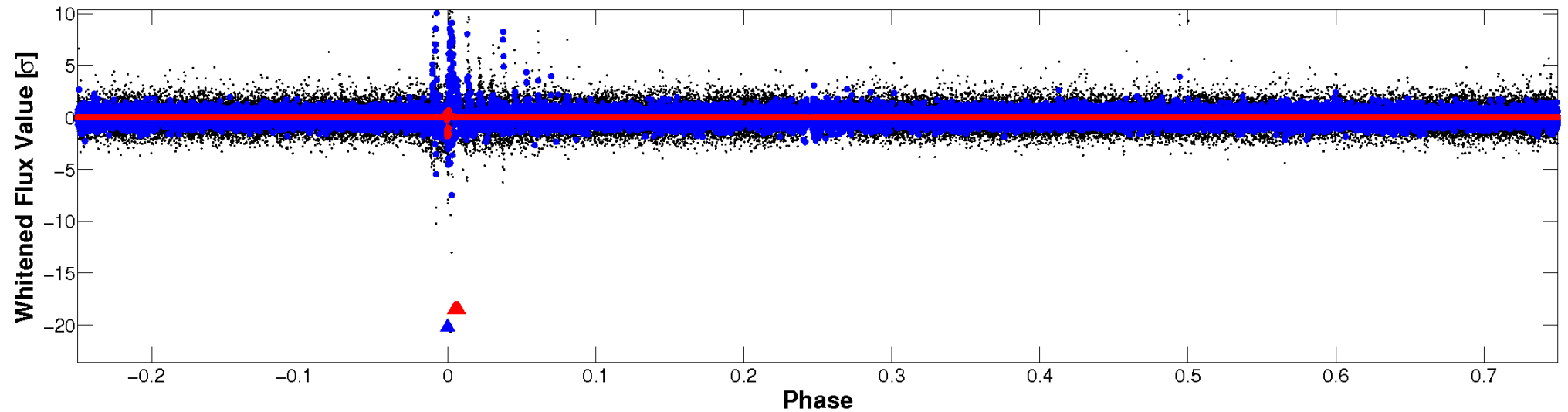


# Non-Whitened Vs. Whitened Light Curve

**Planet 2 : Phased Unwhitened Flux Time Series (Fit Epoch/Period)**

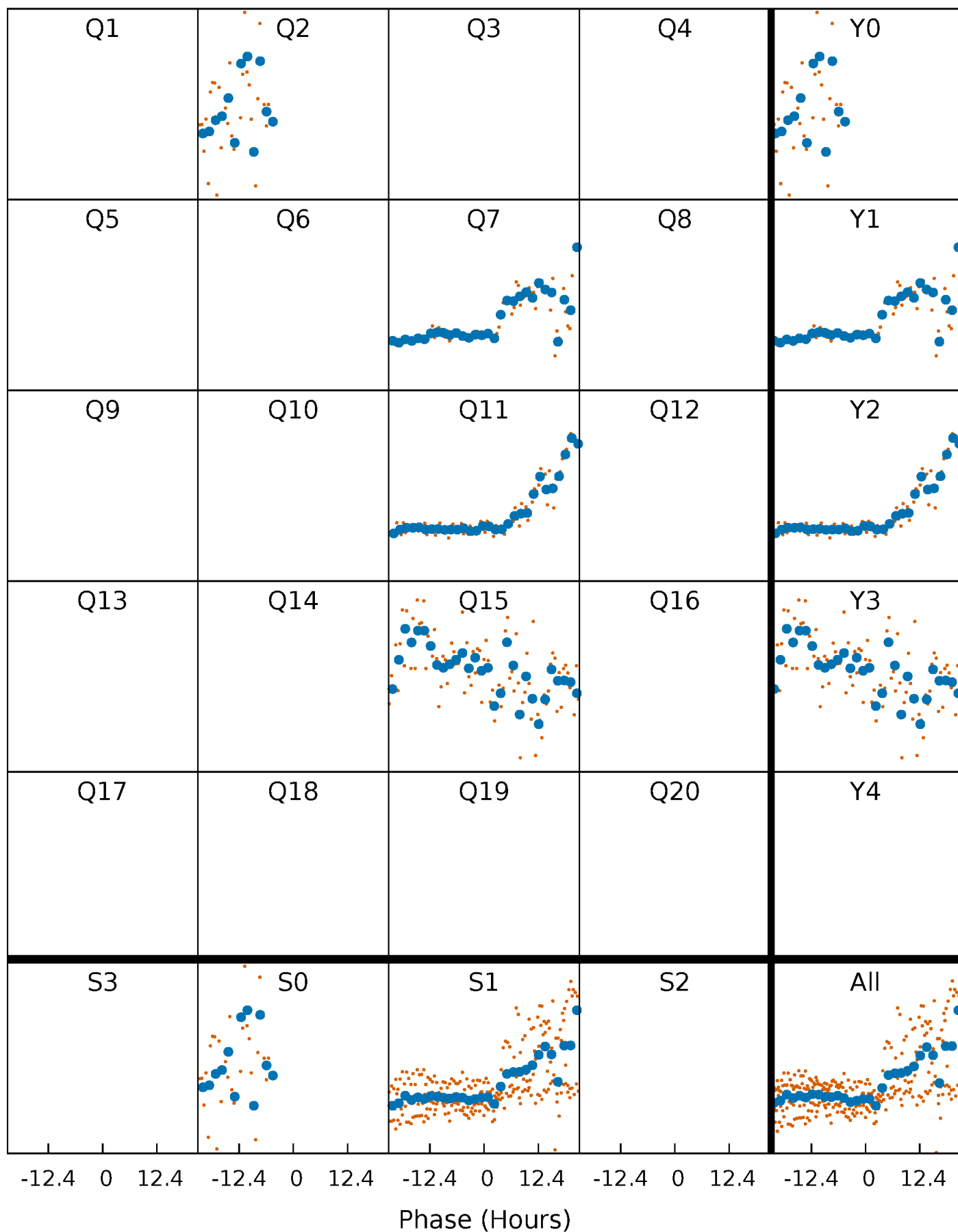


**Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)**



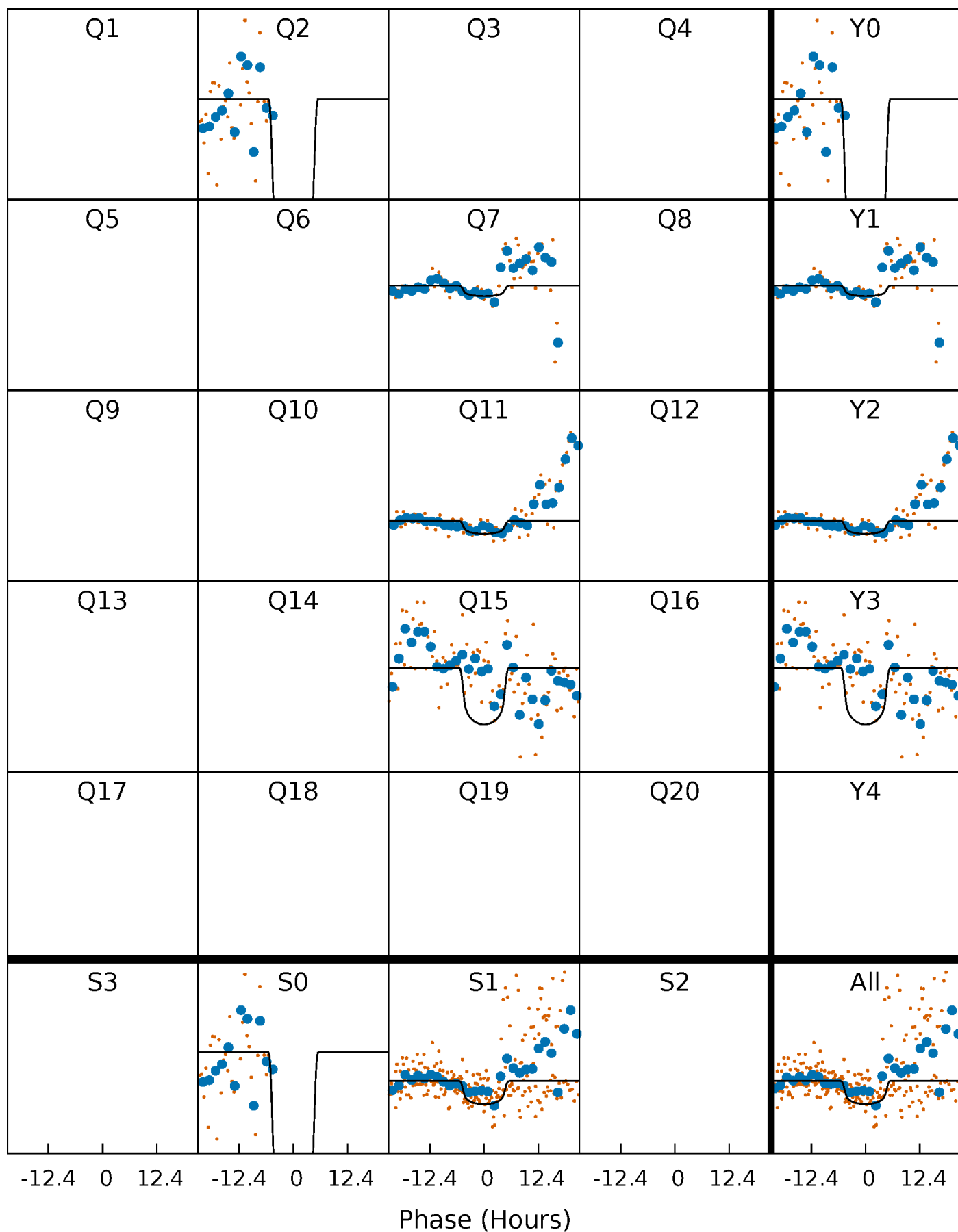
# PDC Quarter-Phased Transit Curves

TCE 011808713-02     $P=374.312872$  Days     $T_0=258.682415$  (BKJD)



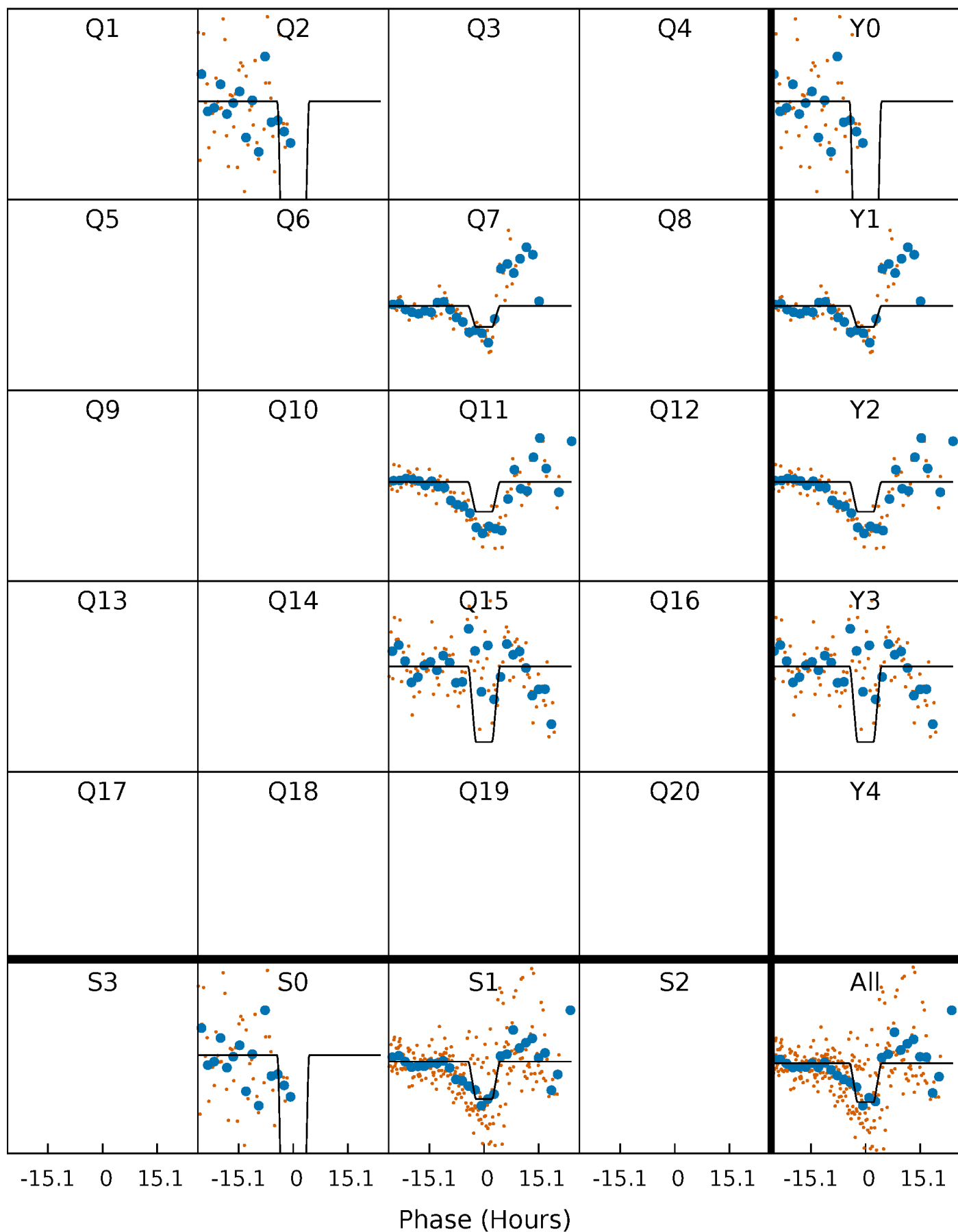
# DV Quarter-Phased Transit Curves

TCE 011808713-02 P=374.312872 Days  $T_0=258.682415$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

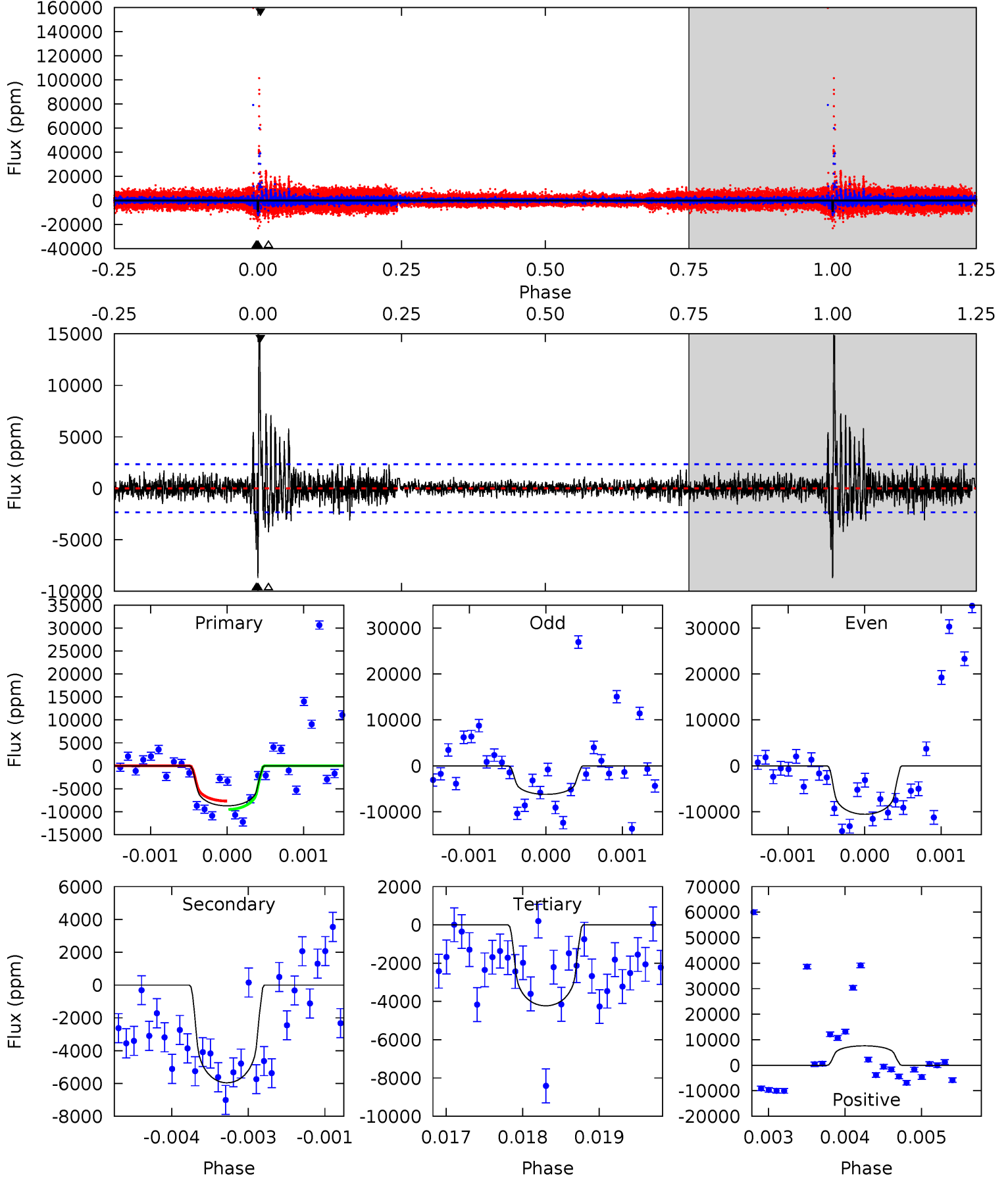
TCE 011808713-02 P=374.499477 Days  $T_0=258.518834$  (BKJD)



# DV Model-Shift Uniqueness Test

011808713-02, P = 374.312872 Days, E = 258.682415 Days

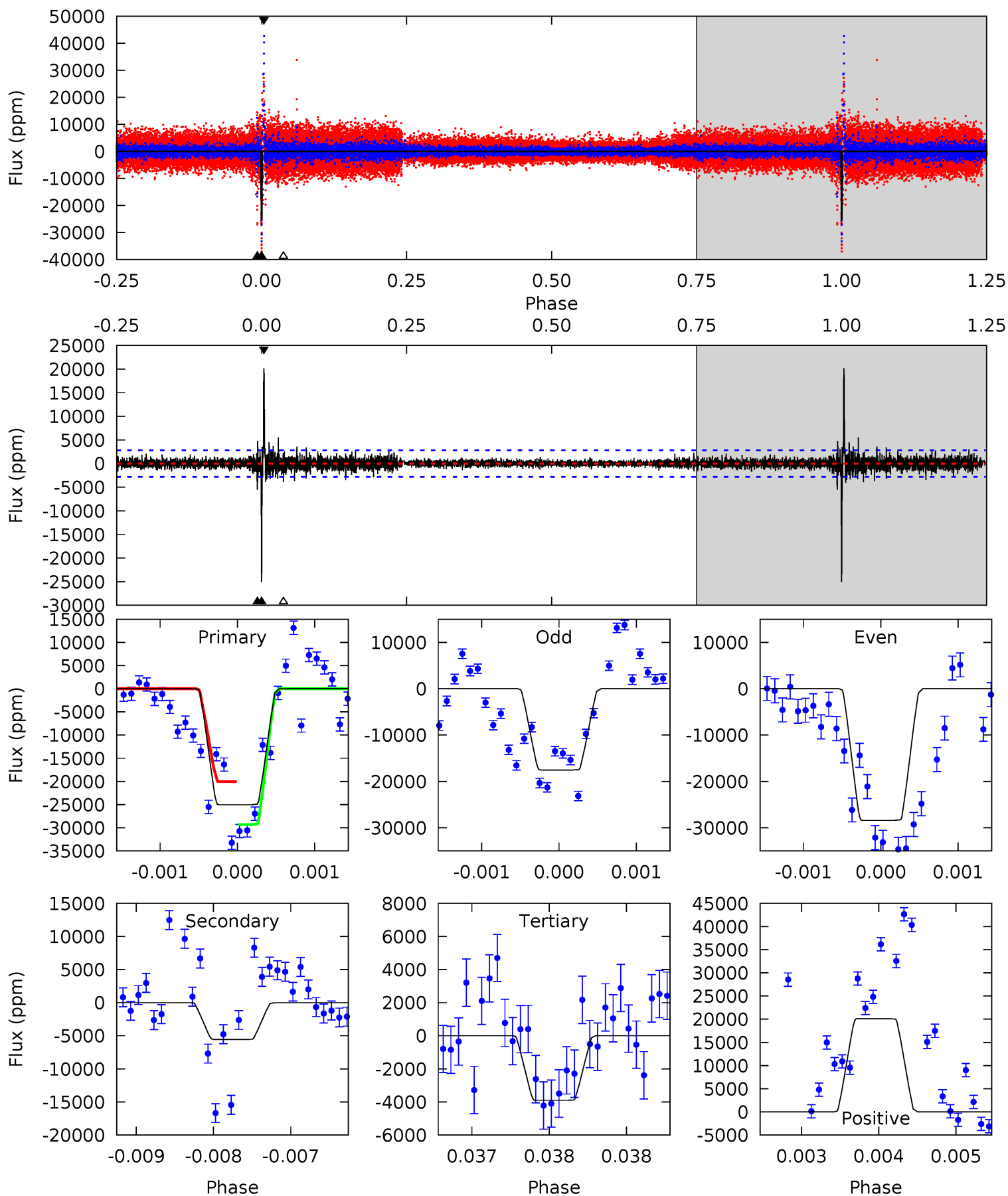
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
20.1	13.8	9.78	17.6	5.41	3.22	2.07	10.4	2.53	4.00	-3.84	3.96	0.88	0.63	0



# Alt Model-Shift Uniqueness Test

011808713-02, P = 374.499477 Days, E = 258.518834 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
48.4	10.7	7.54	38.9	5.46	3.30	1.37	40.9	9.53	3.21	-28.1	11.5	1.09	0.45	8.21





### Stellar Parameters For KIC 011808713

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$5565^{+149}_{-166}$	$4.567^{+0.040}_{-0.160}$	$-0.120^{+0.300}_{-0.300}$	$0.821^{+0.201}_{-0.080}$	$0.910^{+0.091}_{-0.102}$	$2.320^{+0.384}_{-1.065}$
	+3%/-3%	+1%/-4%	+250%/-250%	+24%/-10%	+10%/-11%	+17%/-46%
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 011808713-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	$A_{obs}$
DV	$-5945 \pm 432$	$10.11^{+2.95}_{-2.64}$	$318^{+17}_{-13}$	$4772^{+626}_{-426}$	$30601^{+25303}_{-12580}$
Alt.	$-5559 \pm 517$	$13.40^{+3.33}_{-2.71}$	$319^{+19}_{-13}$	$4209^{+424}_{-272}$	$16049^{+9604}_{-5554}$

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

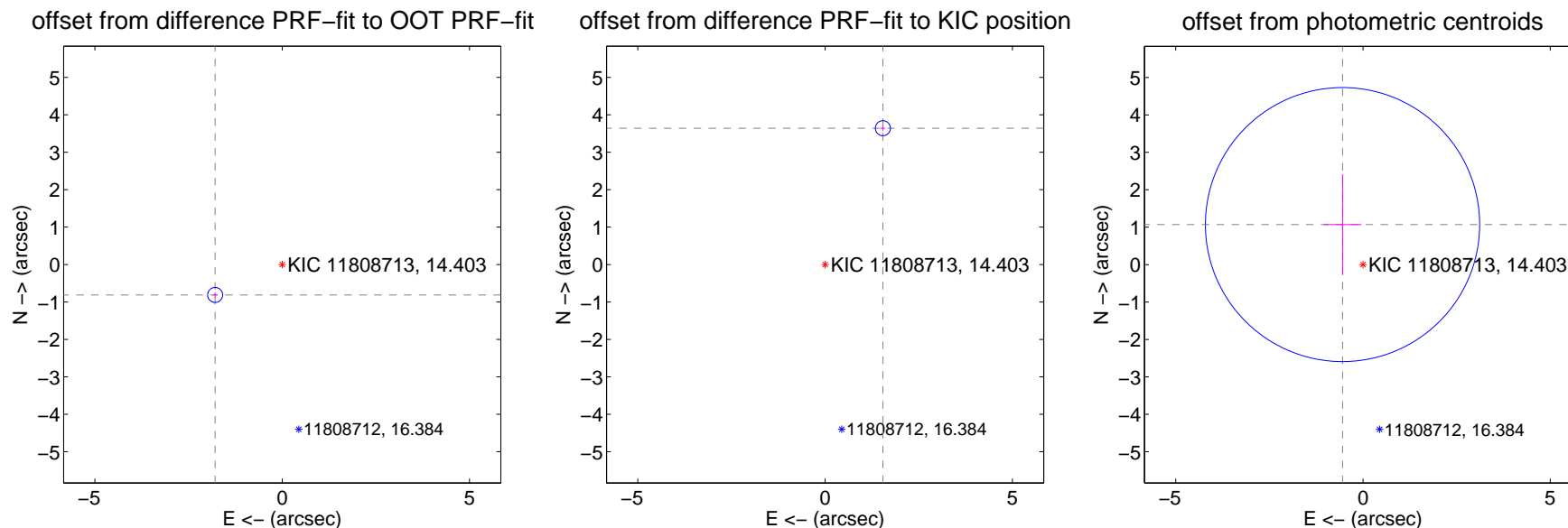
## DV Centroid Data

Supplemental centroid analysis for 011808713-02. Kepler magnitude: 14.40. Transit SNR 12.85

There are 1 quarters with good PRF difference image offsets

The OOT PRF centroid is offset from the target star catalog position by about 5.56 arcsec so the offset from difference PRF-fit to OOT-fit may be invalid.

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$1.966 \pm 0.067$	29.43	$1.790 \pm 0.067$	$-0.812 \pm 0.067$
PRF-fit source offset from KIC position	$3.955 \pm 0.067$	59.17	$-1.542 \pm 0.067$	$3.642 \pm 0.067$
photometric centroid source offset	$1.20 \pm 1.22$	0.98	$0.55 \pm 0.51$	$1.07 \pm 1.35$



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.

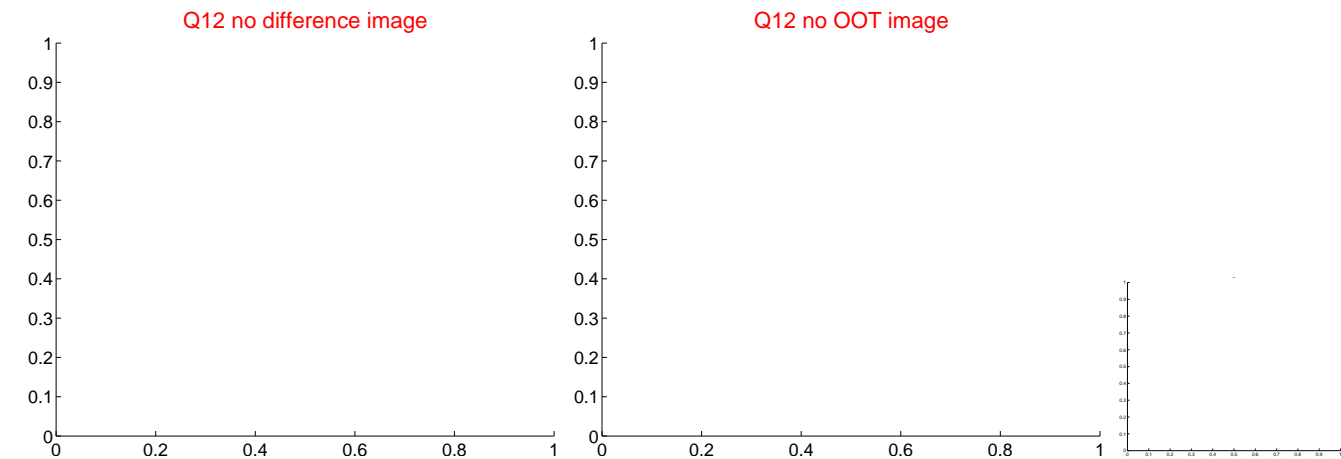
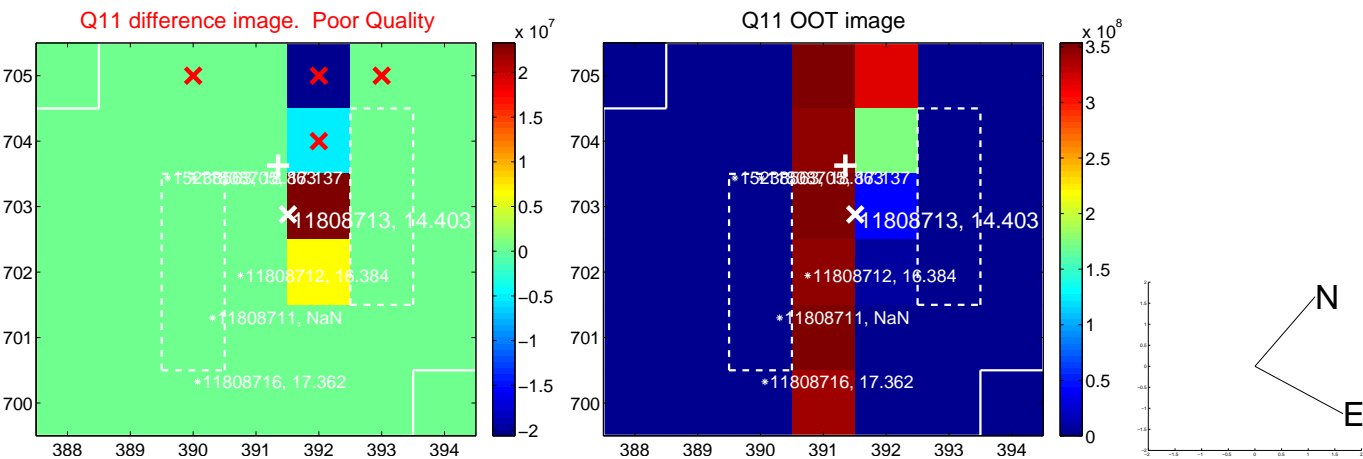
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



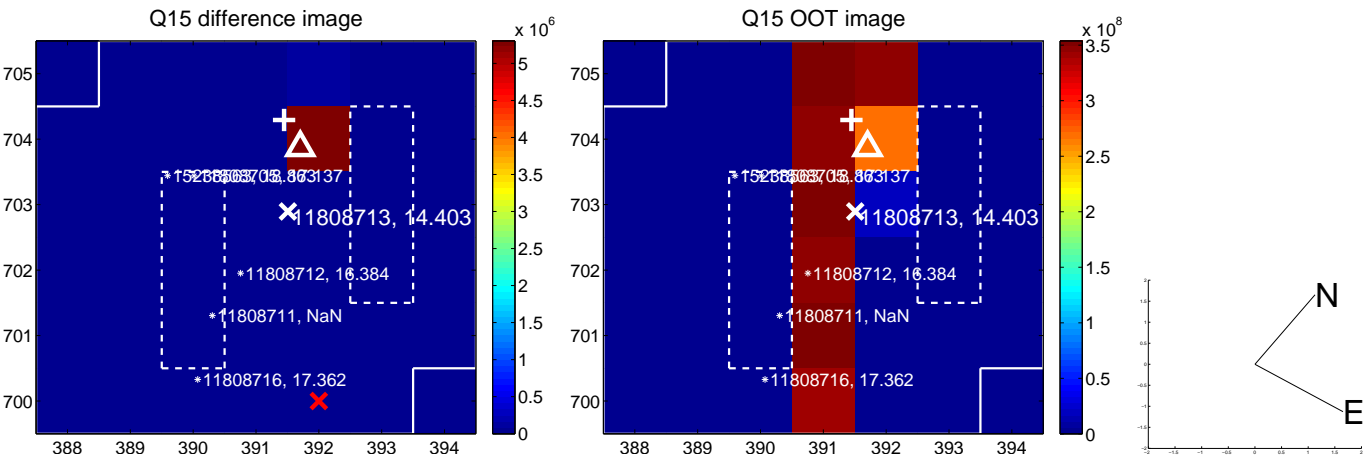
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



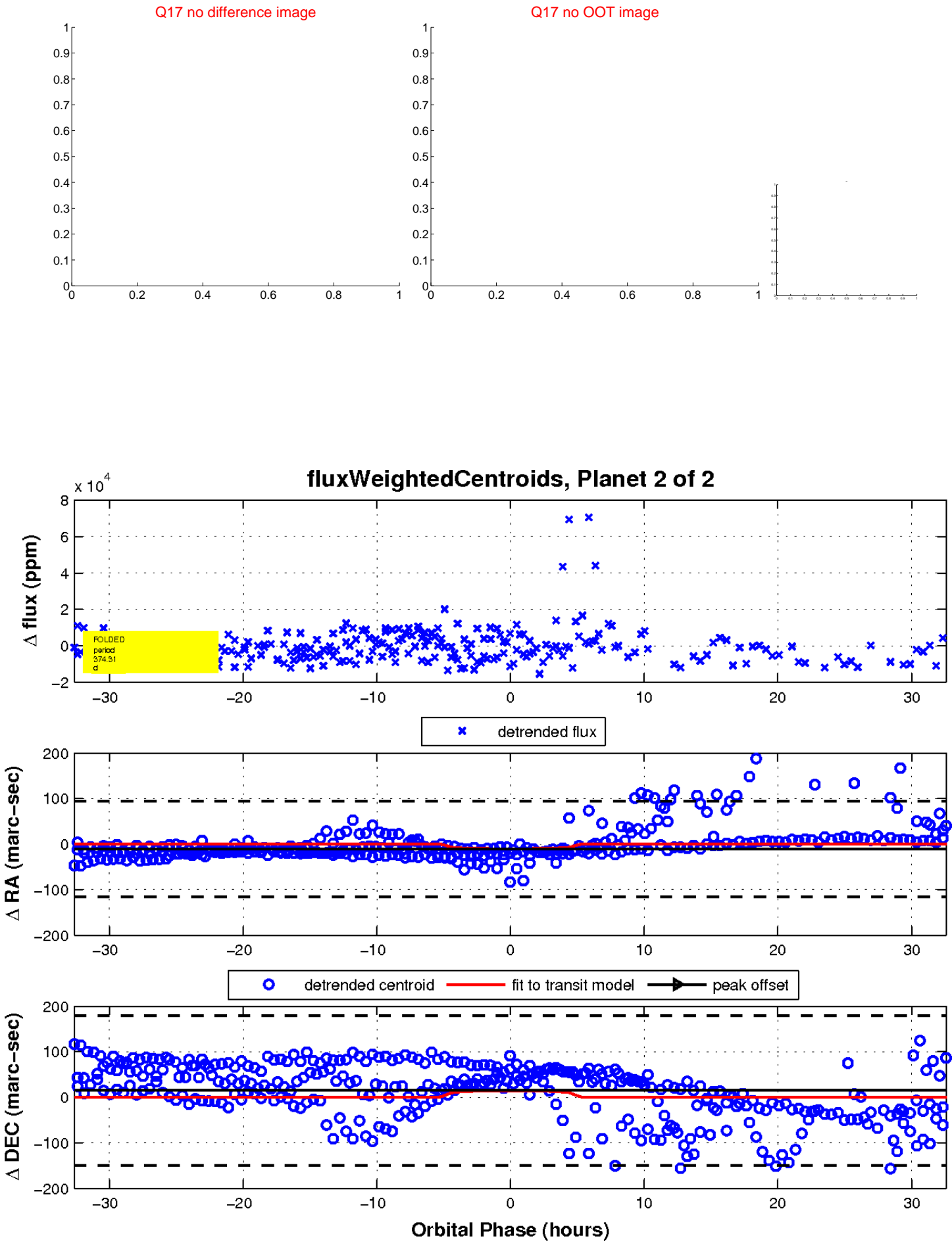
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ×: large negative pixel value.



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UKIRT Image

Declination

