

# KIC 011759220

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
011759220-01	OBS	No	306.711967	274.195760	451.7	3.013	10.7	3.4	12.87	4437	26.00	61.38

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
011759220-01	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS—HALO_GHOST

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

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

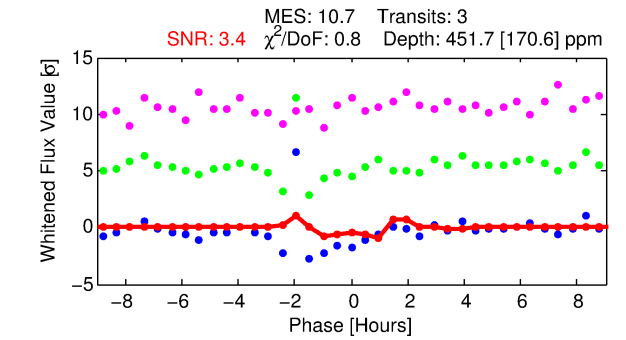
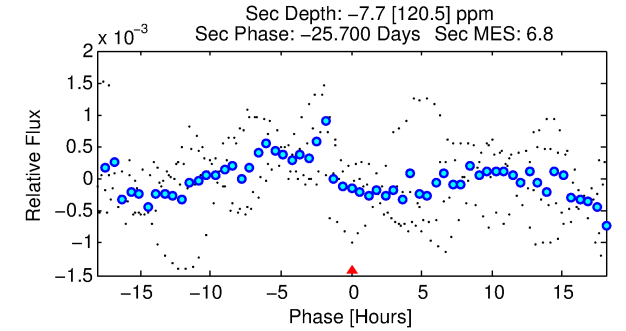
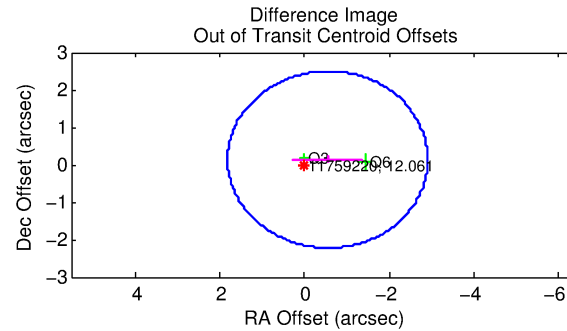
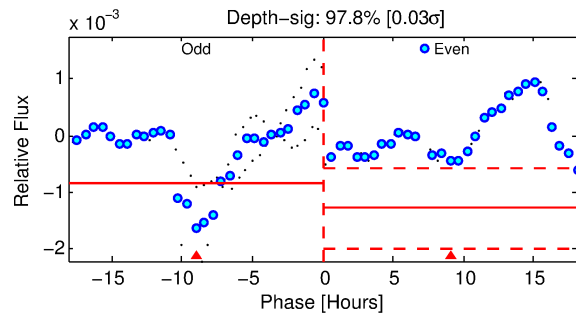
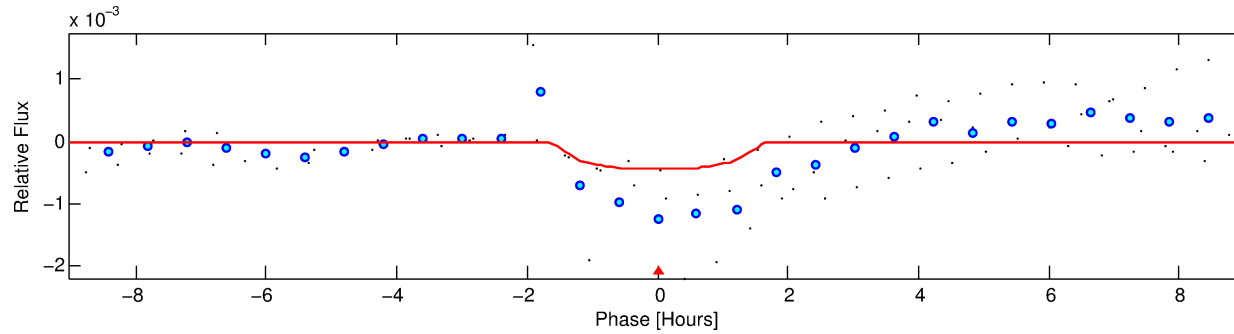
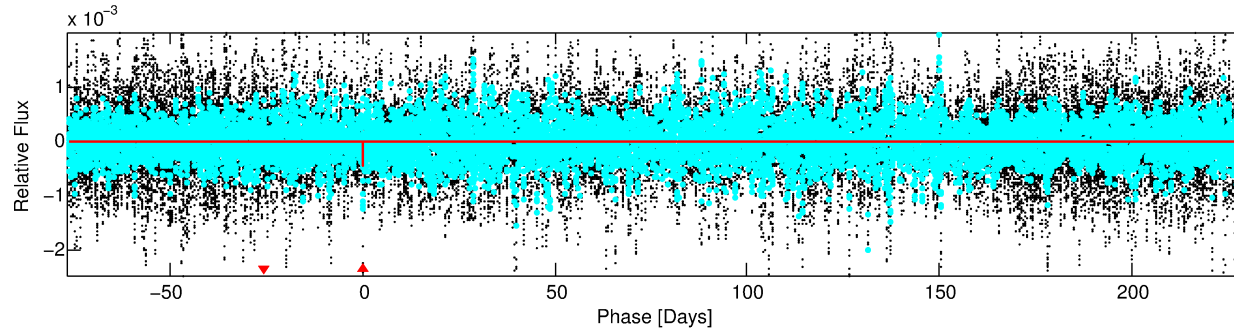
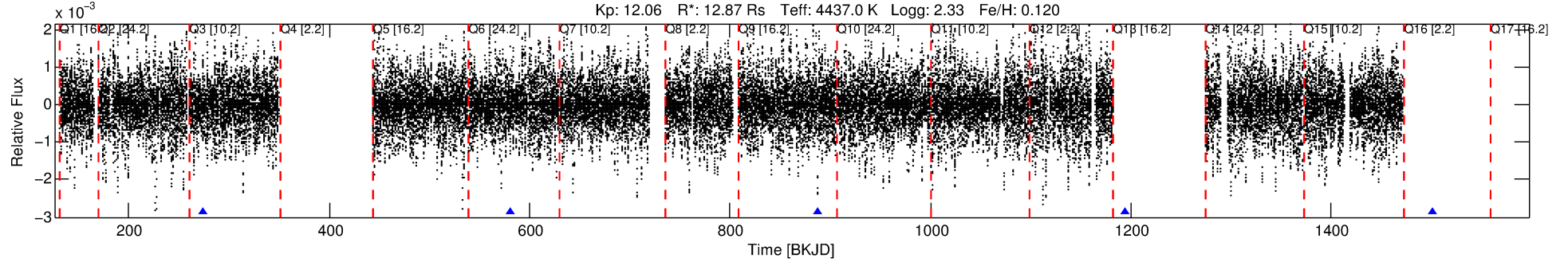
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 011759220-01

No Significant Match Found

# DV One-Page Summary

KIC: 11759220 Candidate: 1 of 1 Period: 306.712 d



## DV Fit Results:

Period = 306.71197 [0.00730] d  
Epoch = 274.1958 [0.0067] BKJD  
Rp/R\* = 0.0185 [0.0322]  
a/R\* = 791.78 [3919.50]  
b = 0.03 [190.44]  
Seff = 61.38 [9.25]  
Teq = 714 [27] K  
Rp = 26.00 [45.45] Re  
a = 0.9682 [0.1254] AU  
Ag = N/A  
Teffp = N/A

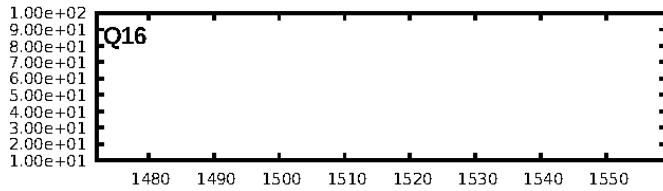
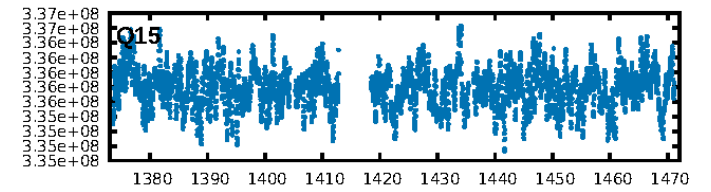
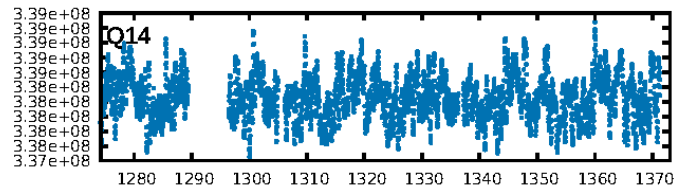
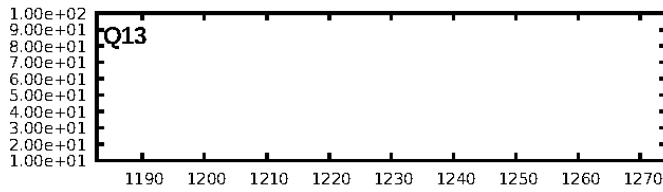
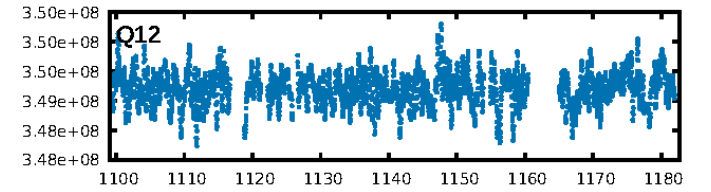
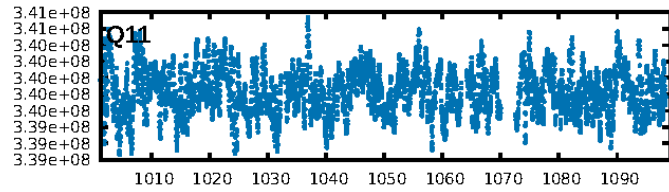
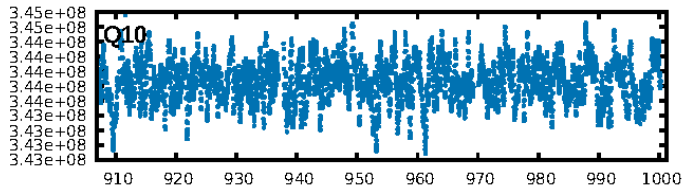
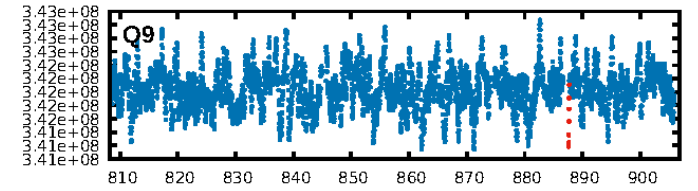
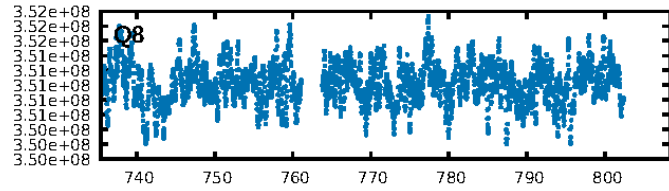
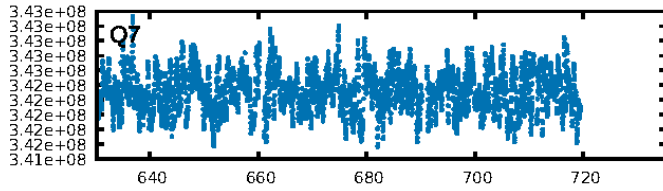
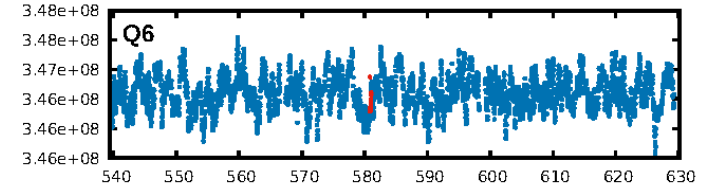
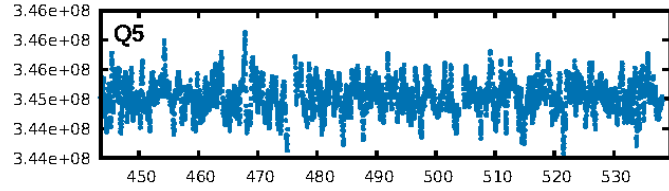
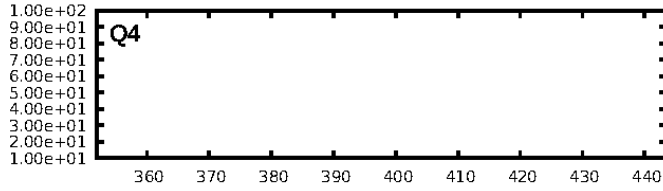
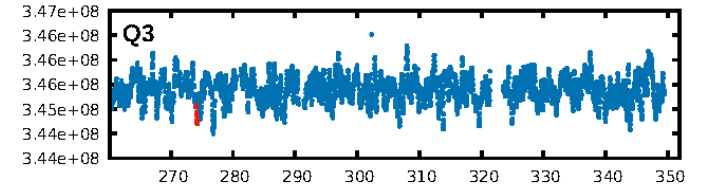
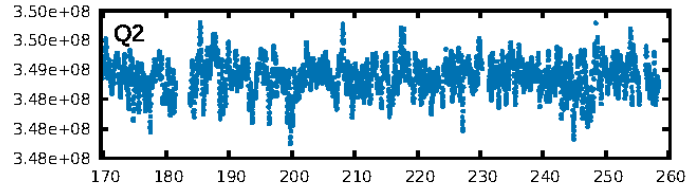
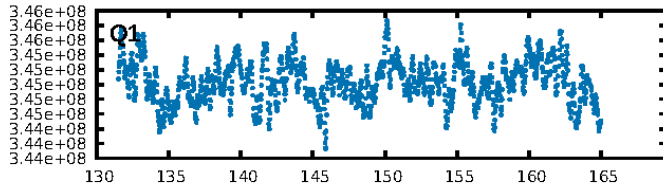
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: 15.8%  
ModelChiSquareGof-sig: 95.1%  
Bootstrap-pfa: 3.40e-11  
RollingBand-fgt: 1.00 [3/3]  
GhostDiagnostic-chr: -0.09216  
Centroid-sig: 0.2%  
Centroid-so: 1.915 arcsec [1.98 $\sigma$ ]  
OotOffset-rm: 0.569 arcsec [0.72 $\sigma$ ]  
OotOffset-st: 1/1/0/0 [2]  
KicOffset-rm: 0.565 arcsec [0.95 $\sigma$ ]  
KicOffset-st: 1/1/0/0 [2]  
DiffImageQuality-fgm: 1.00 [2/2]  
DiffImageOverlap-fno: 1.00 [2/2]

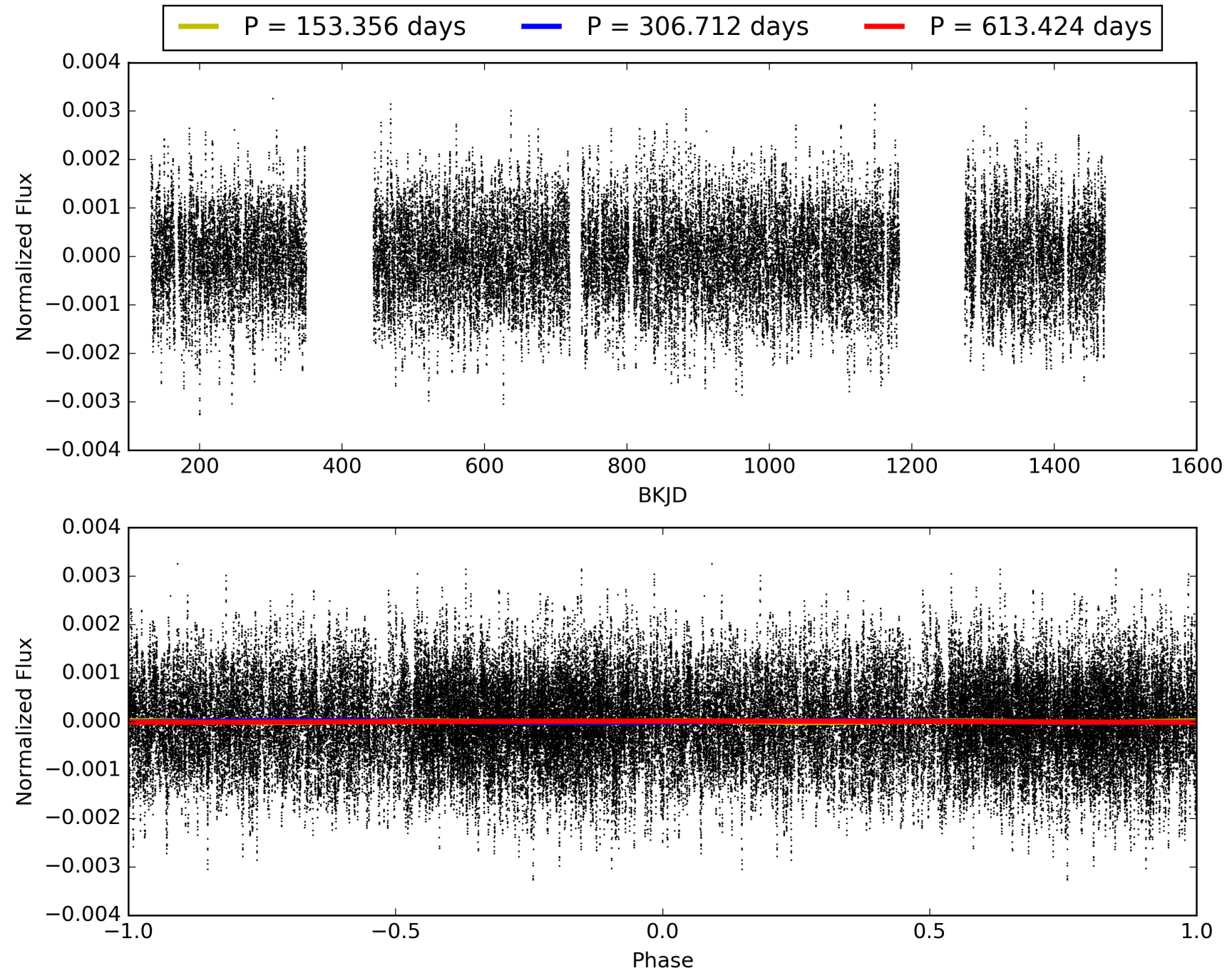
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 28-Jan-2016 20:58:21 Z

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

# TCE 011759220-01, PDC Light Curves

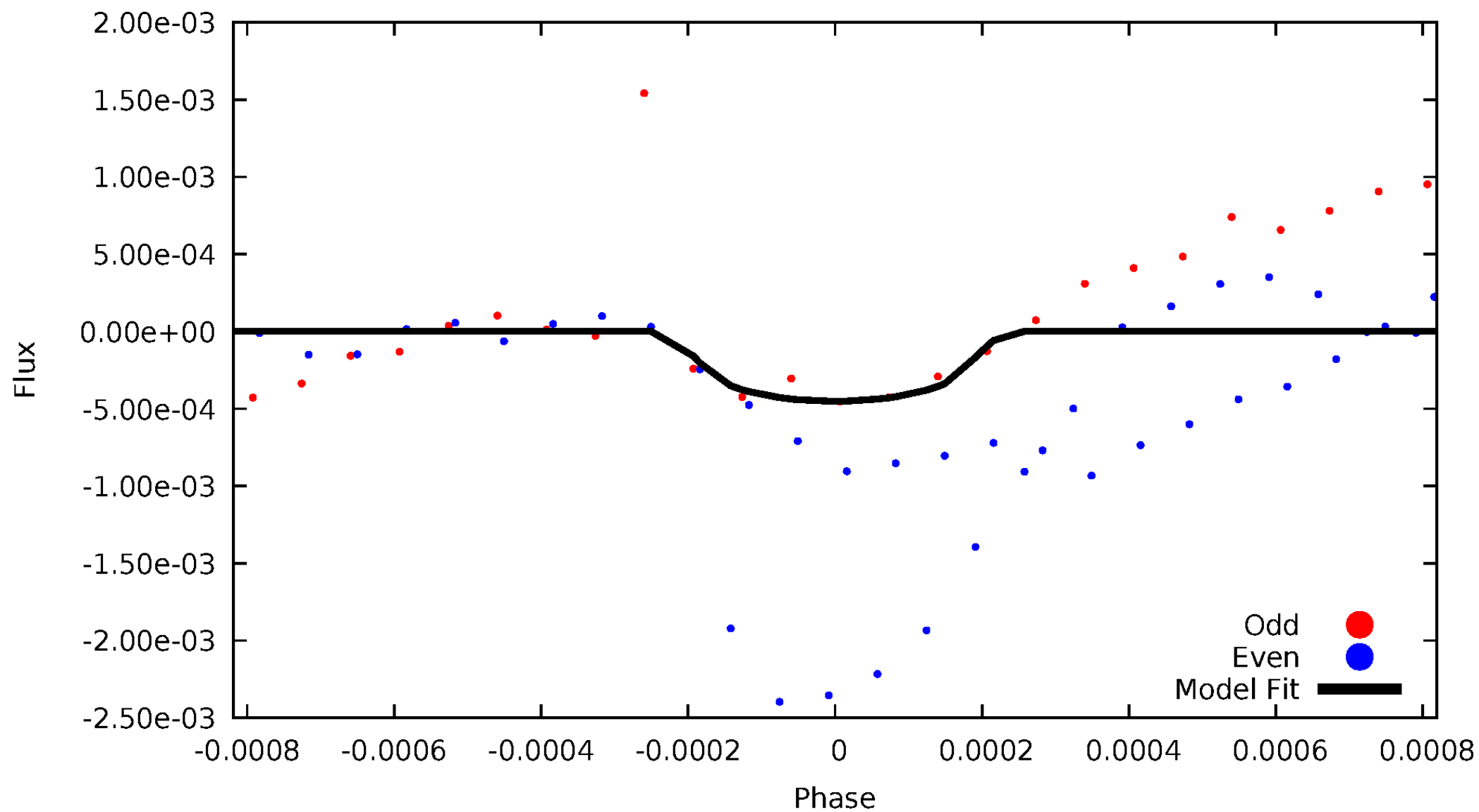


# TCE 011759220-01



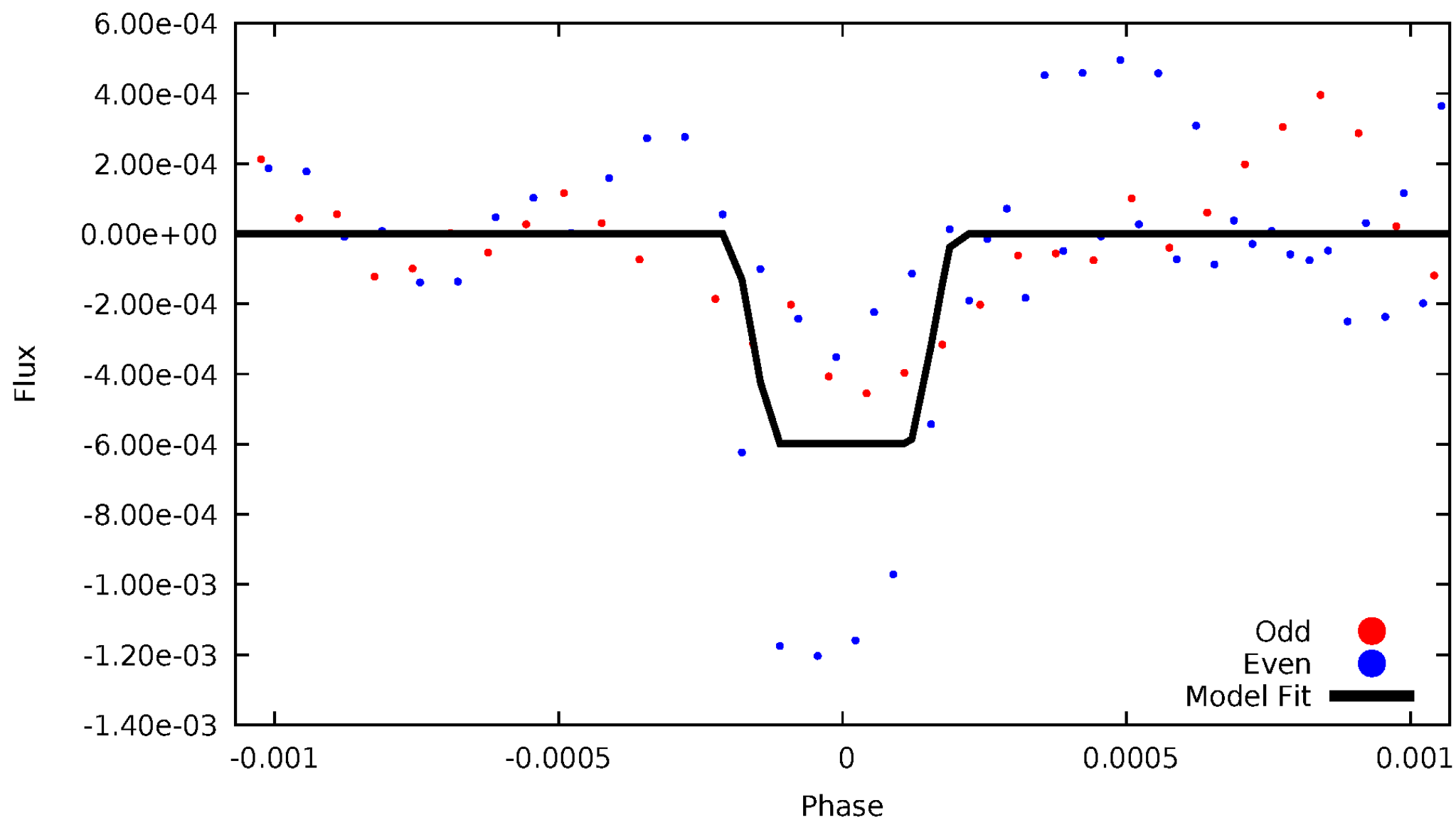
# DV Odd/Even

TCE 011759220-01



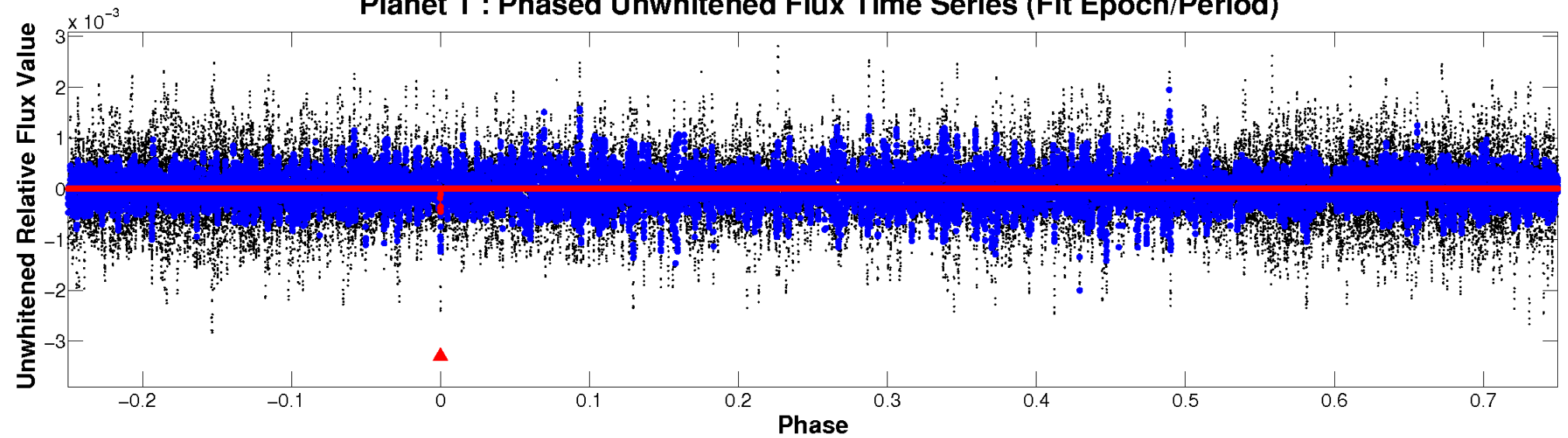
# ALT Odd/Even

TCE 011759220-01

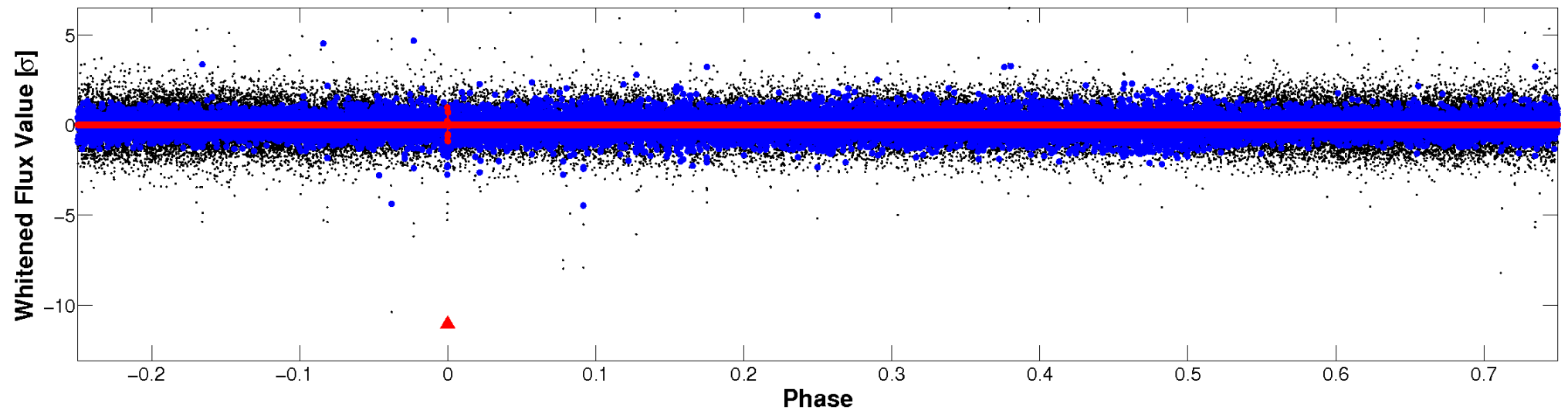


# Non-Whitened Vs. Whitened Light Curve

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



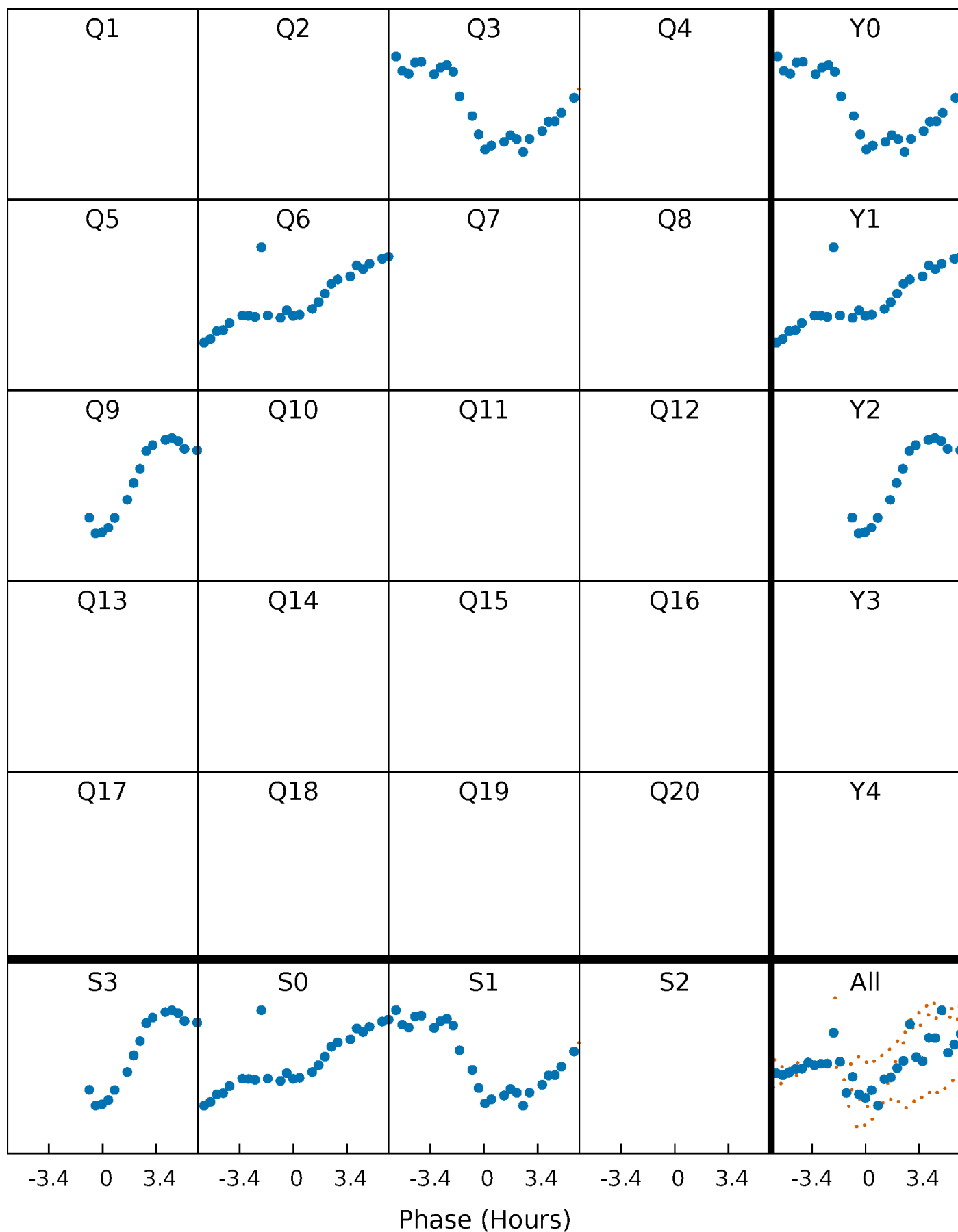
**Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)**





# PDC Quarter-Phased Transit Curves

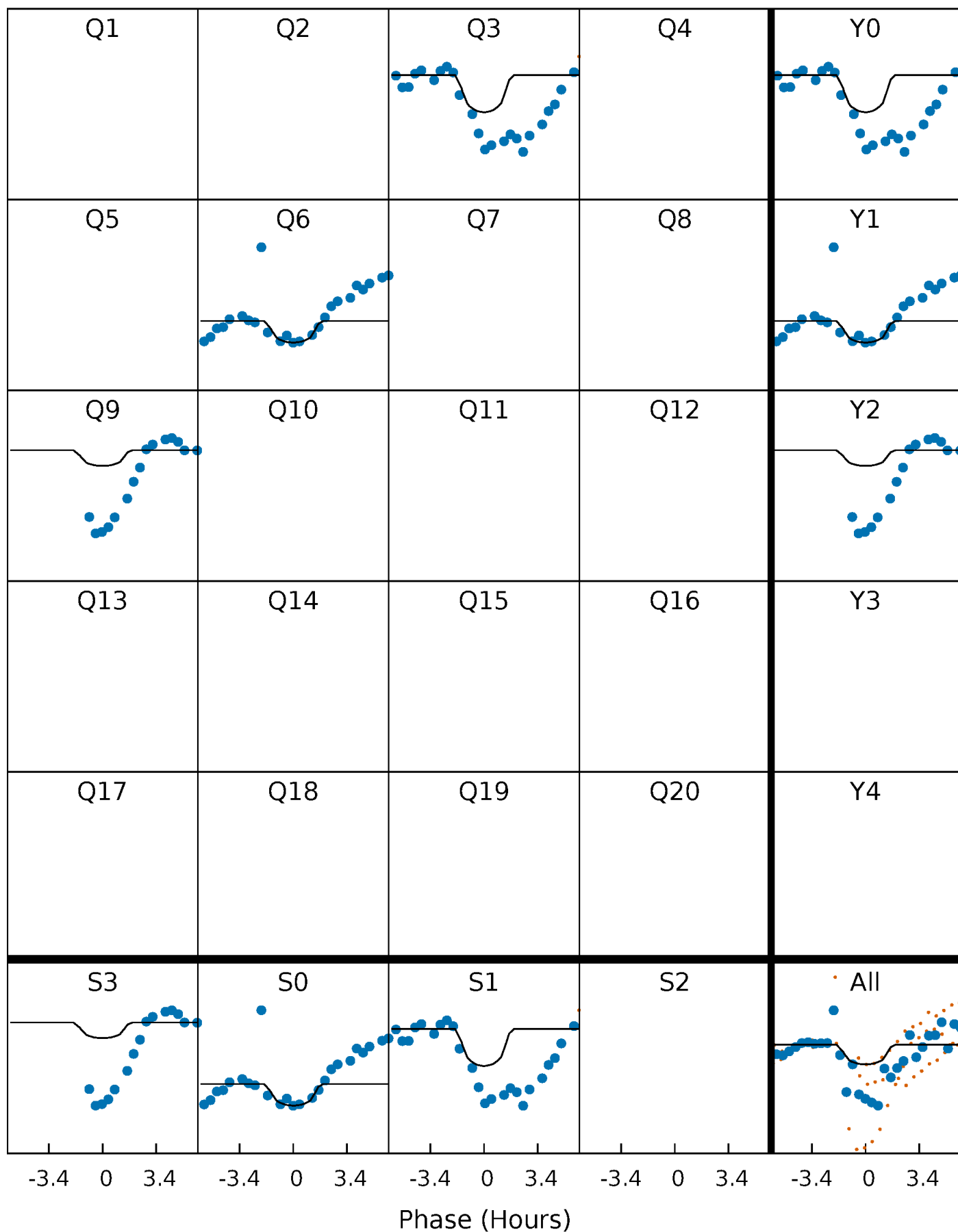
TCE 011759220-01 P=306.711967 Days  $T_0=274.195760$  (BKJD)





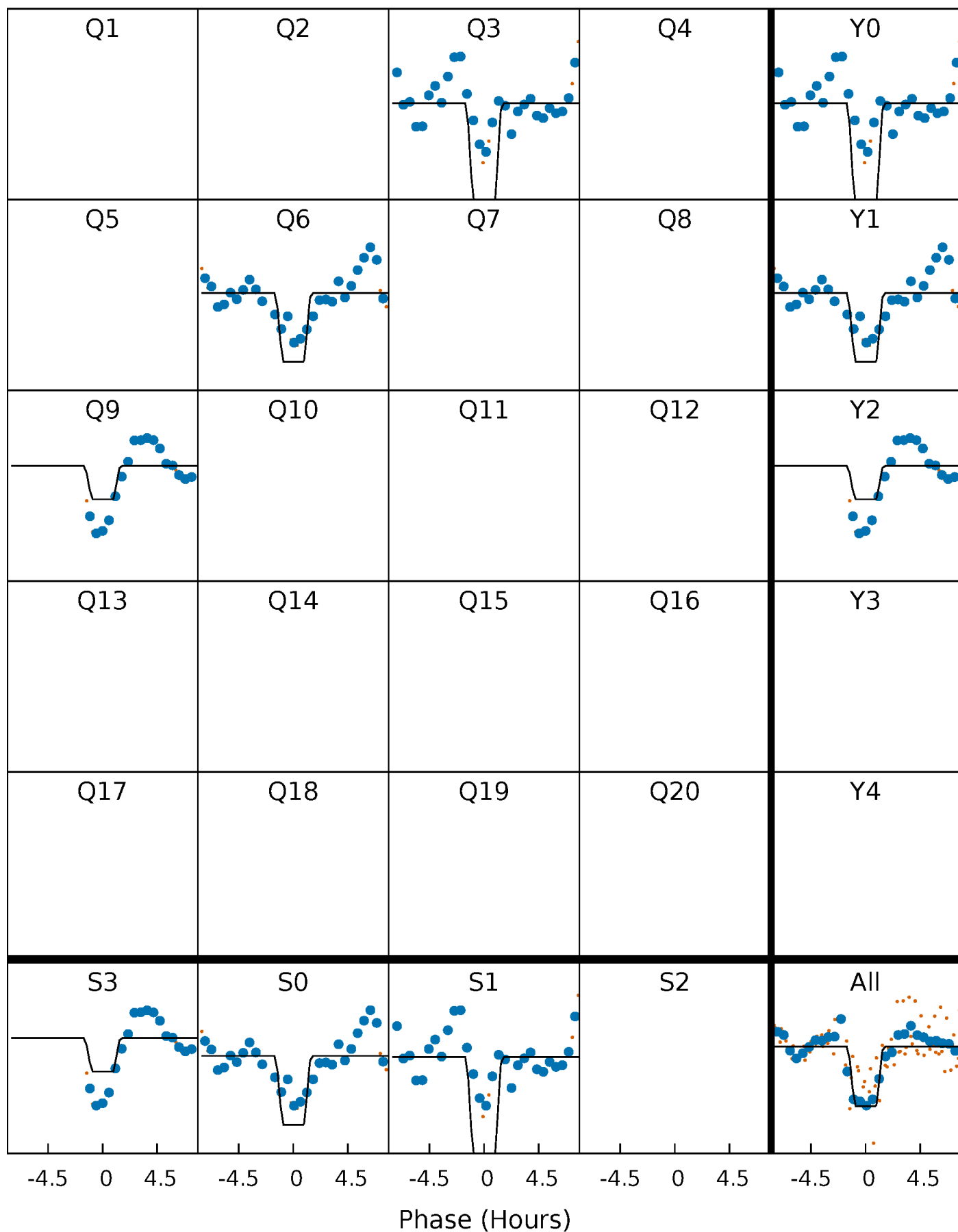
# DV Quarter-Phased Transit Curves

TCE 011759220-01 P=306.711967 Days  $T_0=274.195760$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

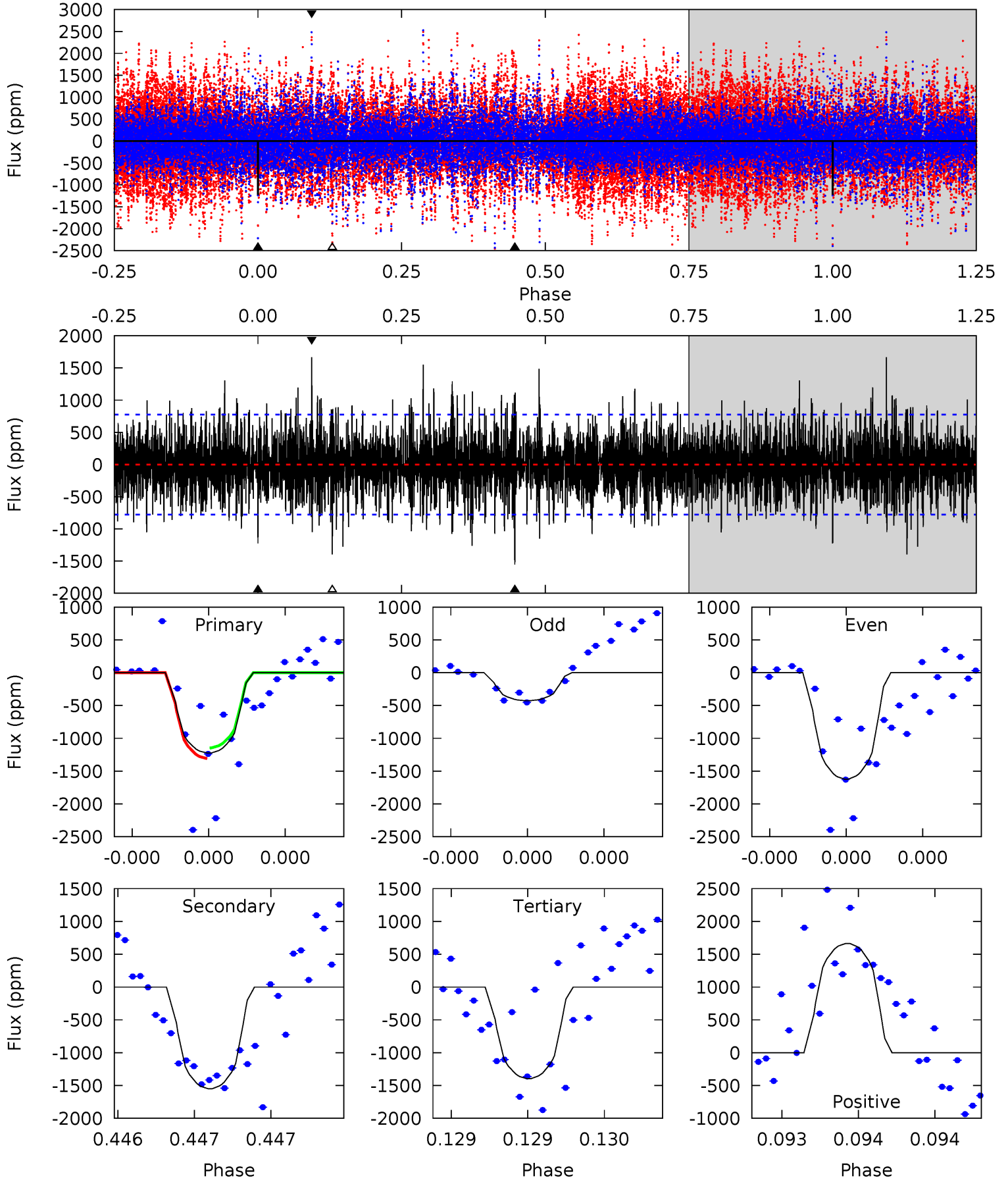
TCE 011759220-01 P=306.713173 Days  $T_0=274.204100$  (BKJD)



# DV Model-Shift Uniqueness Test

011759220-01, P = 306.711967 Days, E = 274.195760 Days

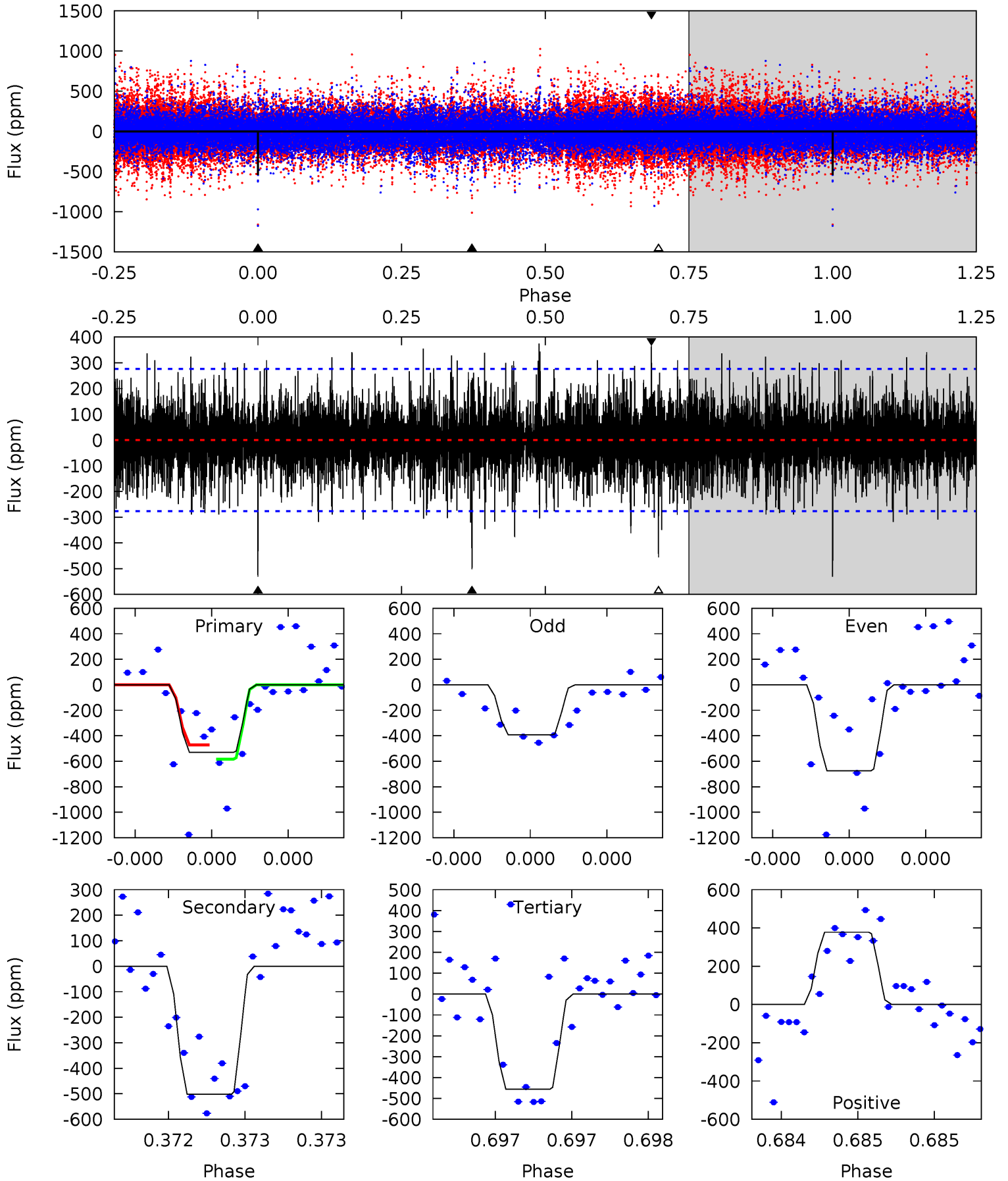
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
8.82	11.2	10.1	12.0	5.59	3.51	2.56	-1.24	-3.17	1.11	-0.82	4.00	1.48	0.52	0.57



# Alt Model-Shift Uniqueness Test

011759220-01, P = 306.713173 Days, E = 274.204100 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
10.8	10.2	9.27	7.68	5.62	3.55	1.89	1.52	3.11	0.95	2.54	2.69	1.49	0.42	1.11



### Stellar Parameters For KIC 011759220

	$T_{\text{eff}}(K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$4437^{+73}_{-53}$	$2.328^{+0.027}_{-0.030}$	$0.120^{+0.150}_{-0.100}$	$12.872^{+2.461}_{-1.325}$	$1.286^{+0.452}_{-0.243}$	$0.001^{+0.000}_{-0.000}$
	+2%/-1%	+1%/-1%	+125%/-83%	+19%/-10%	+35%/-19%	+16%/-17%
Source	SPE74	AST9	SPE74	DSEP		

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

### Secondary Eclipse Parameters for KIC 011759220-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	$A_{obs}$
DV	$-1551 \pm 139$	$40.57^{+41.83}_{-27.50}$	$1000^{+26}_{-24}$	$5094^{+4243}_{-1205}$	$500^{+4216}_{-378}$
Alt.	$-502 \pm 49$	$47.26^{+35.51}_{-31.49}$	$998^{+26}_{-23}$	$3852^{+2098}_{-650}$	$119^{+922}_{-82}$

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

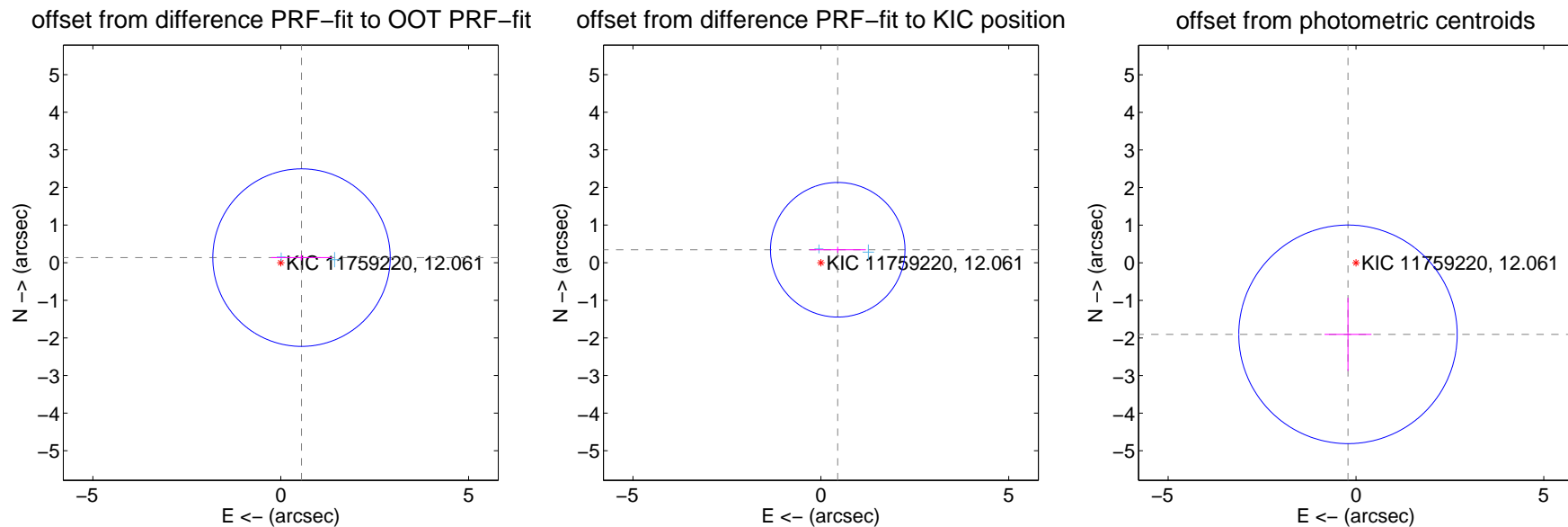
## DV Centroid Data

Supplemental centroid analysis for 011759220-01. Kepler magnitude: 12.06. Transit SNR 3.37

There are 2 quarters with good PRF difference image offsets

The direct PRF centroid is offset from the target star catalog position by about 0.26 arcsec

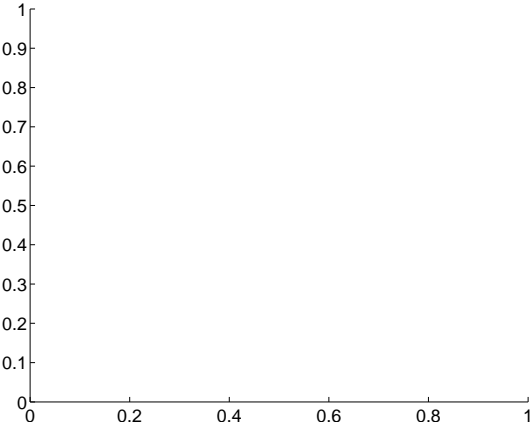
	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.569 \pm 0.787$	0.72	$-0.553 \pm 0.810$	$0.135 \pm 0.076$
PRF-fit source offset from KIC position	$0.565 \pm 0.596$	0.95	$-0.449 \pm 0.749$	$0.344 \pm 0.079$
photometric centroid source offset	$1.92 \pm 0.97$	1.98	$0.21 \pm 0.62$	$-1.90 \pm 0.97$



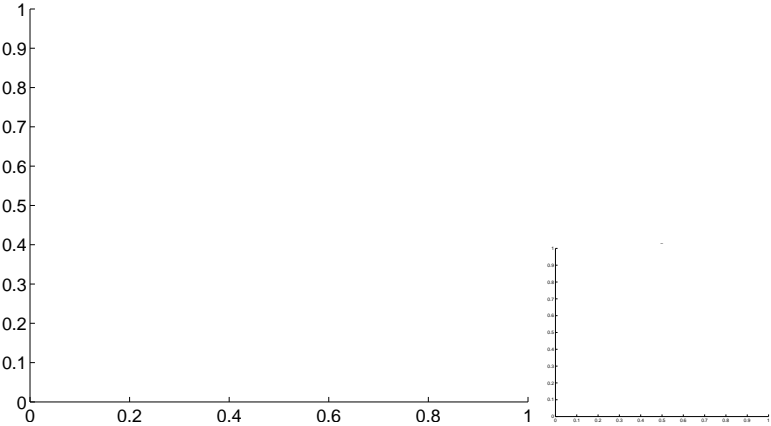
Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: three-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

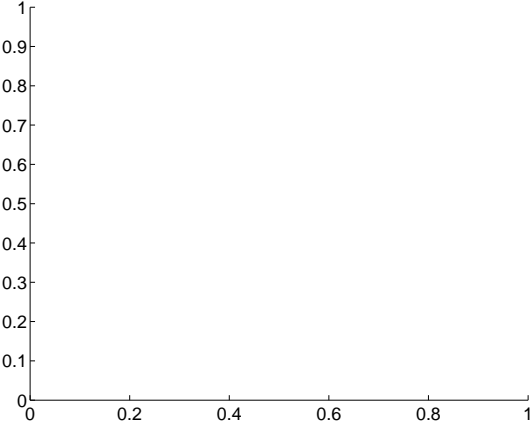
Q1 no difference image



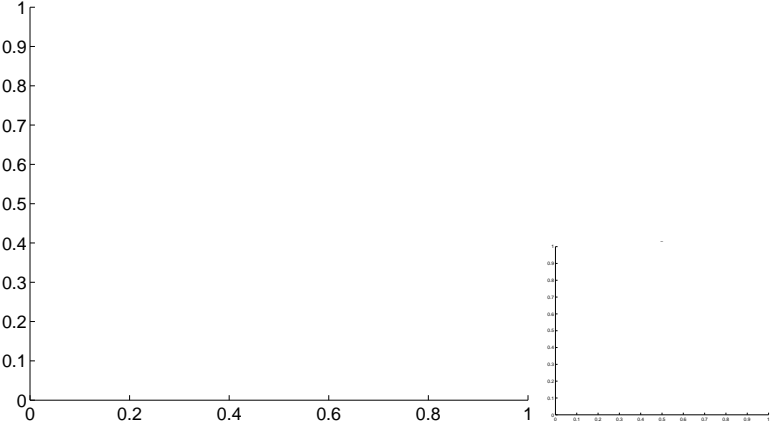
Q1 no OOT image



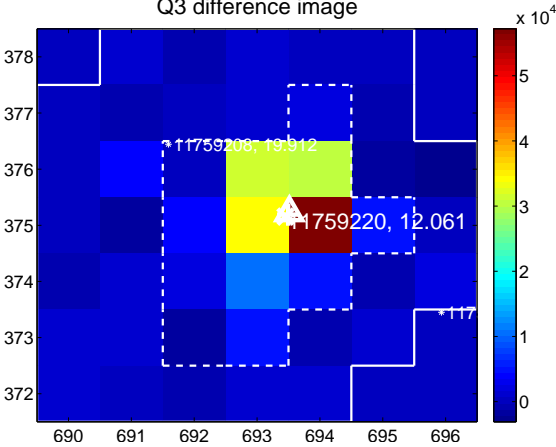
Q2 no difference image



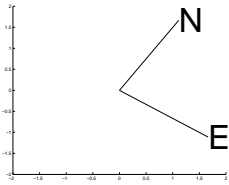
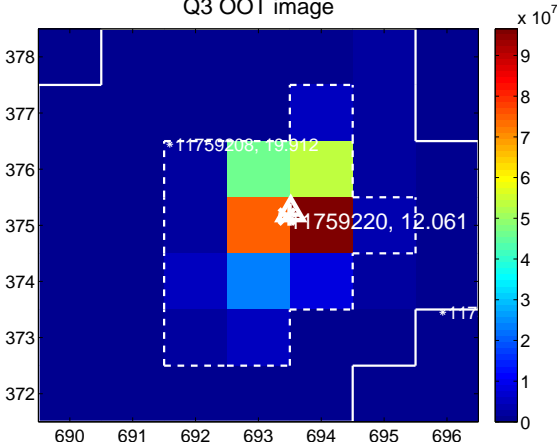
Q2 no OOT image



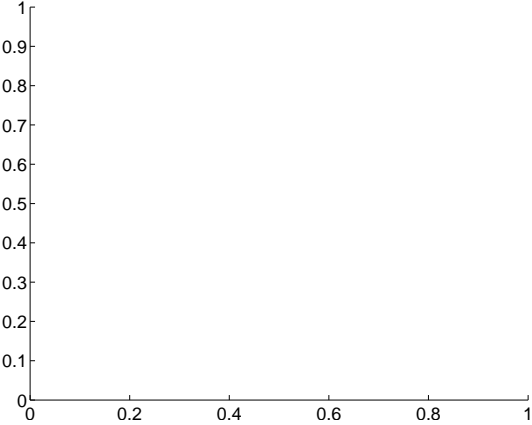
Q3 difference image



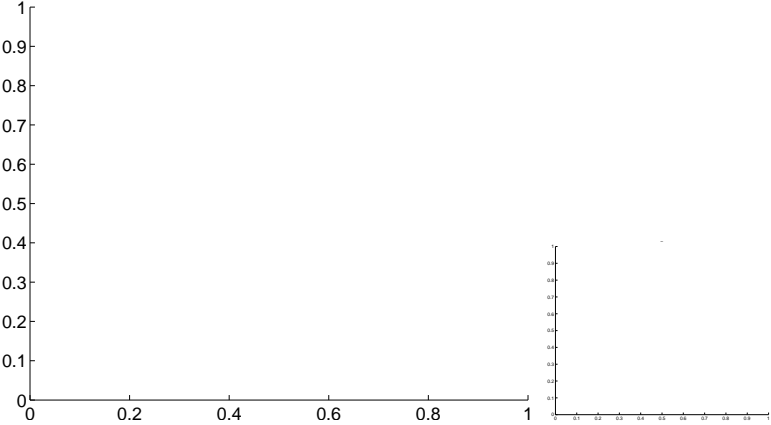
Q3 OOT image



Q4 no difference image

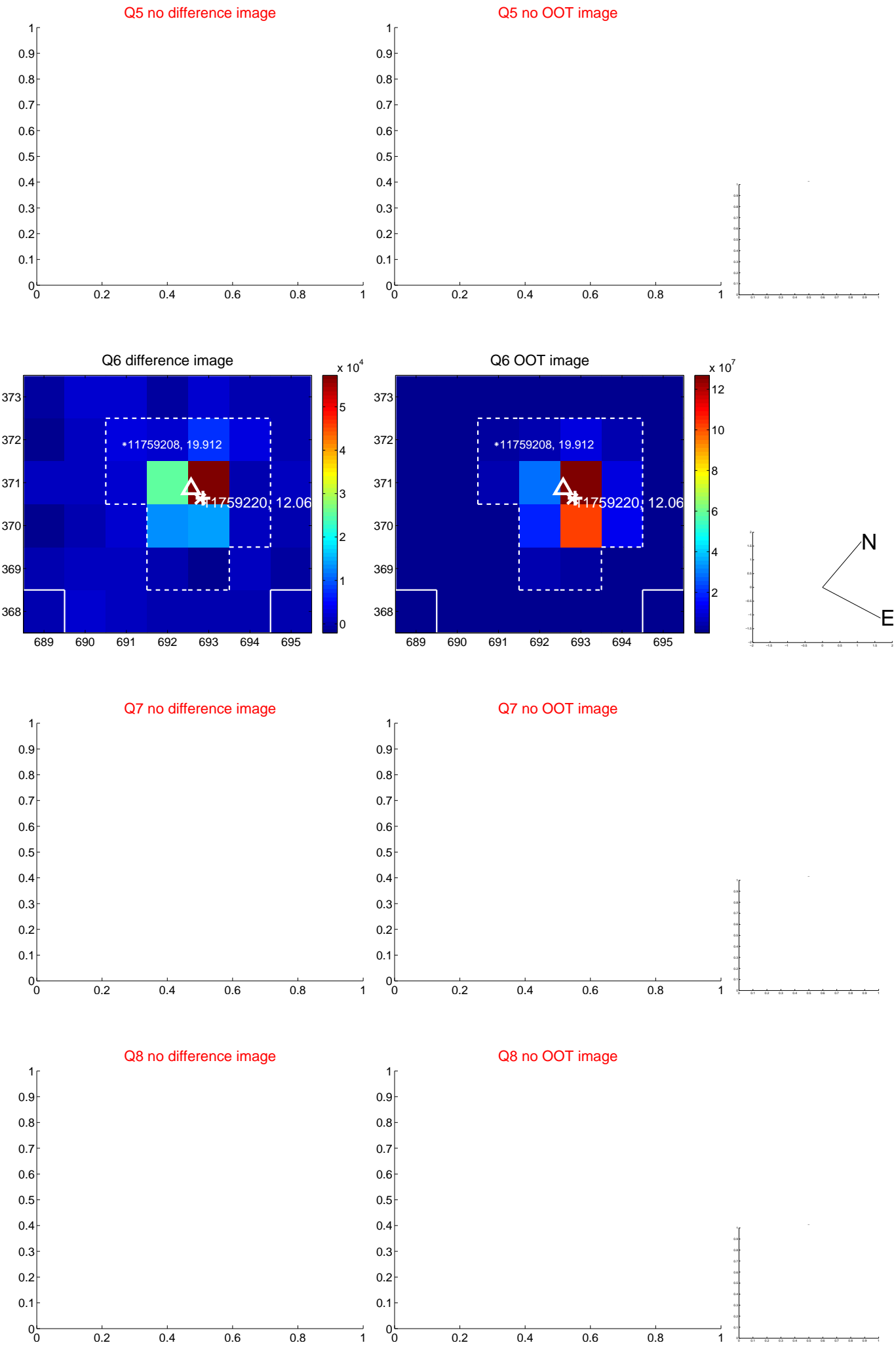


Q4 no OOT image





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



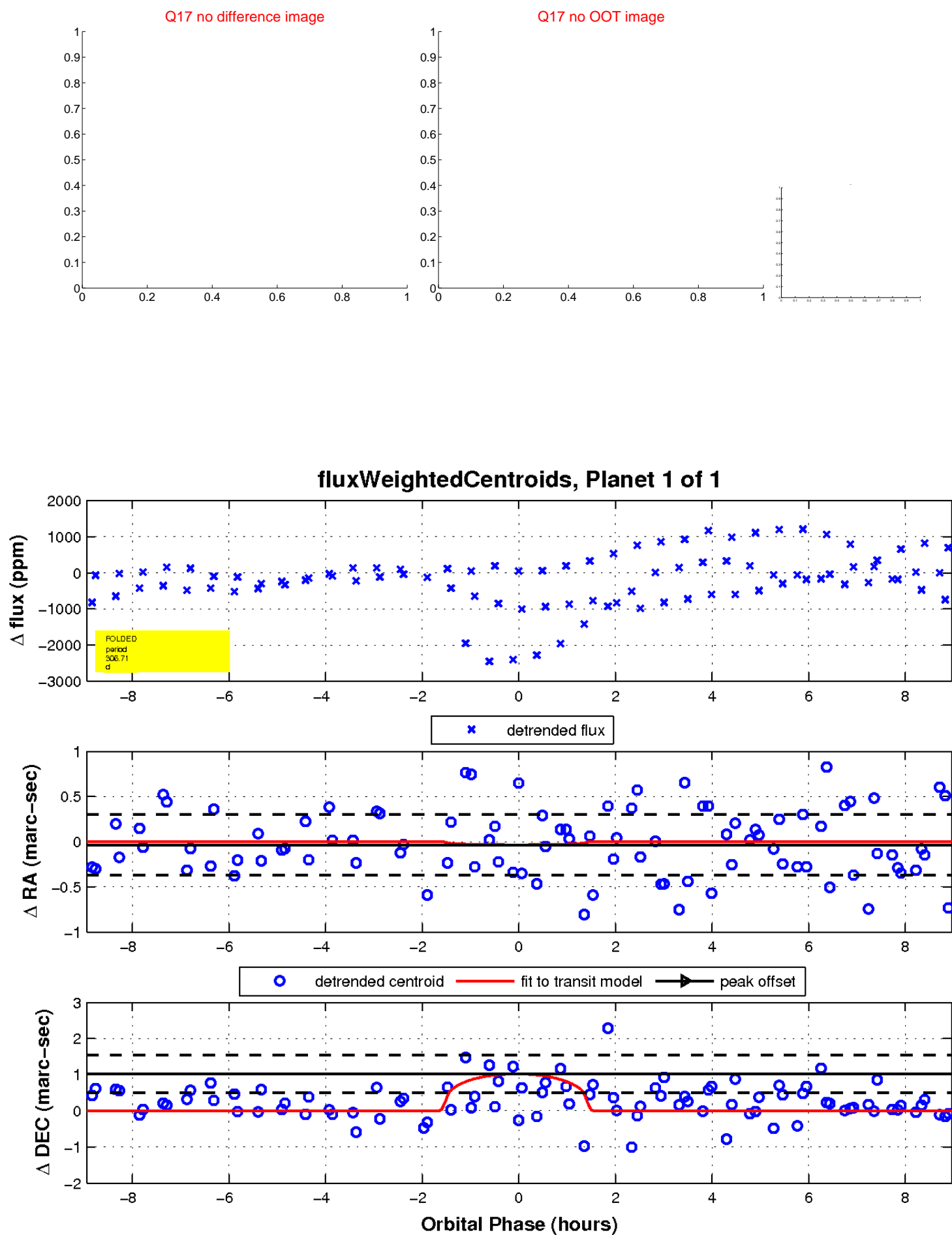
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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



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



UKIRT Image

Declination

