

# KIC 010614770

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
010614770-01	OBS	No	271.015244	206.020978	170.3	5.819	7.2	8.0	2.11	4805	3.13	3.28

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
010614770-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_SKYE—MOD_NONUNIQ_ALT—MOD_POS_ALT—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.

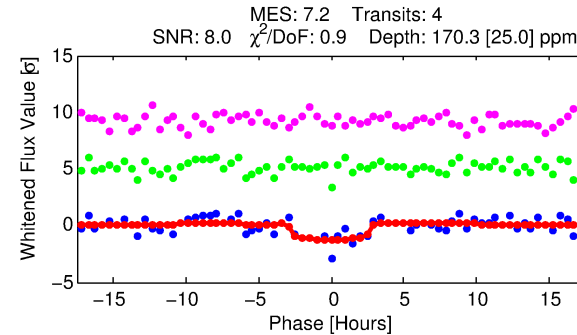
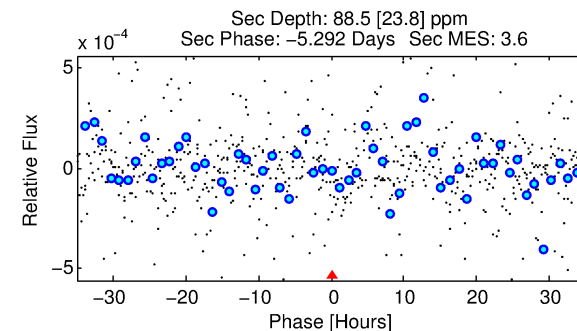
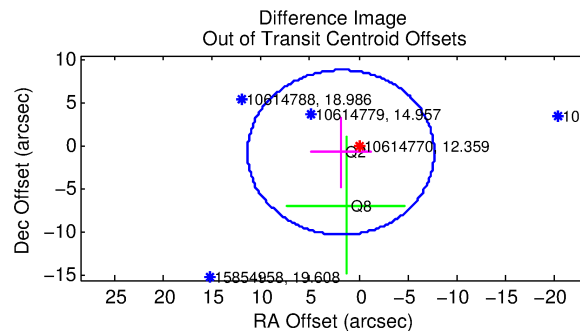
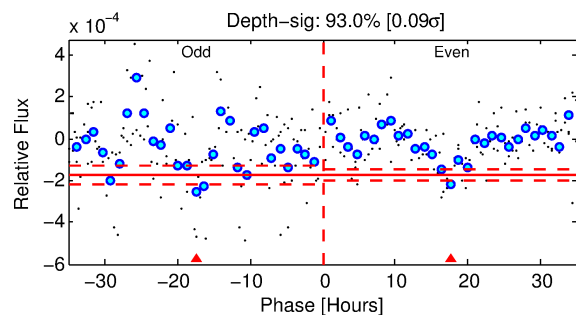
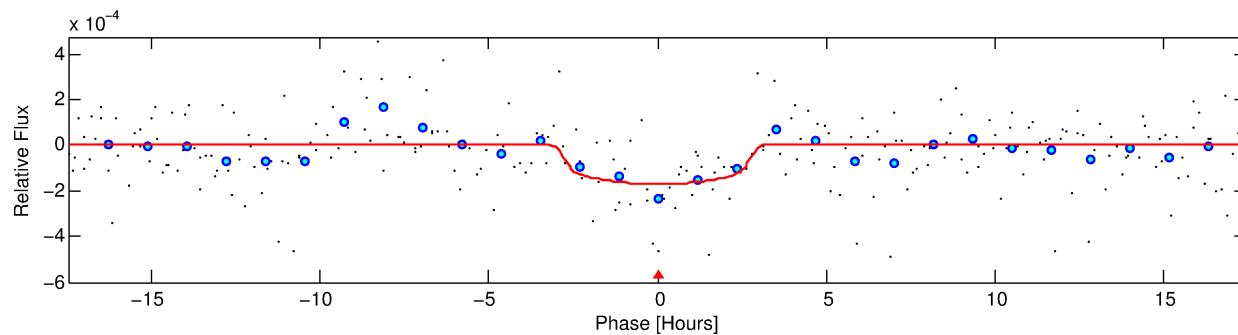
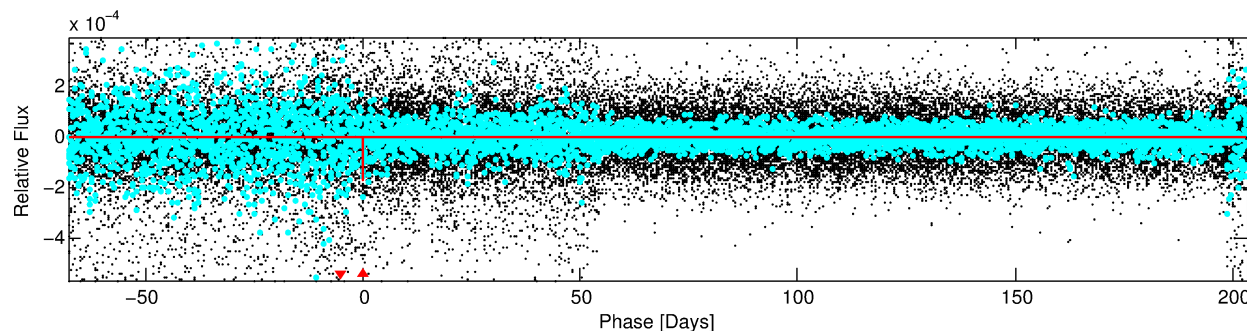
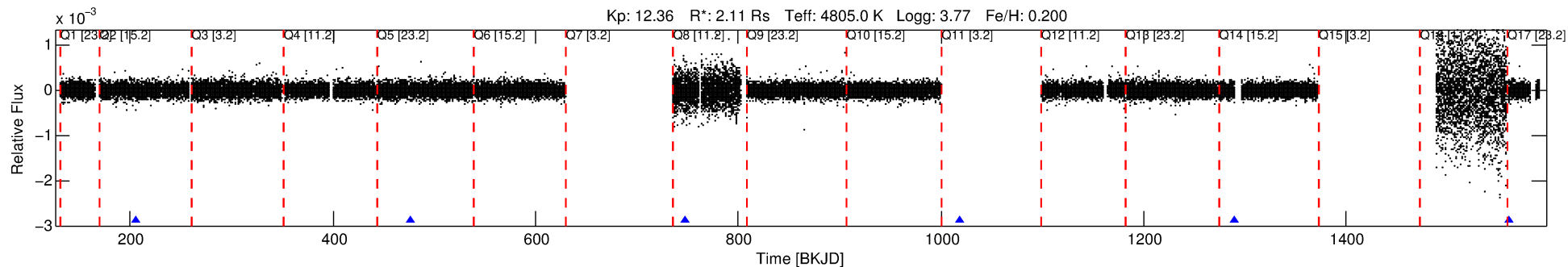
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 010614770-01

No Significant Match Found

# DV One-Page Summary

KIC: 10614770 Candidate: 1 of 1 Period: 271.015 d



## DV Fit Results:

Period = 271.01524 [0.00278] d  
Epoch = 206.0210 [0.0090] BKJD  
Rp/R\* = 0.0136 [0.0124]  
a/R\* = 214.32 [695.65]  
b = 0.82 [1.36]  
Seff = 3.28 [3.90]  
Teq = 343 [102] K  
Rp = 3.13 [3.40] Re  
a = 0.8054 [0.5512] AU  
Ag = 3232.36 [7074.38] [0.46σ]  
Teff = 4001 [1843] K [1.98σ]

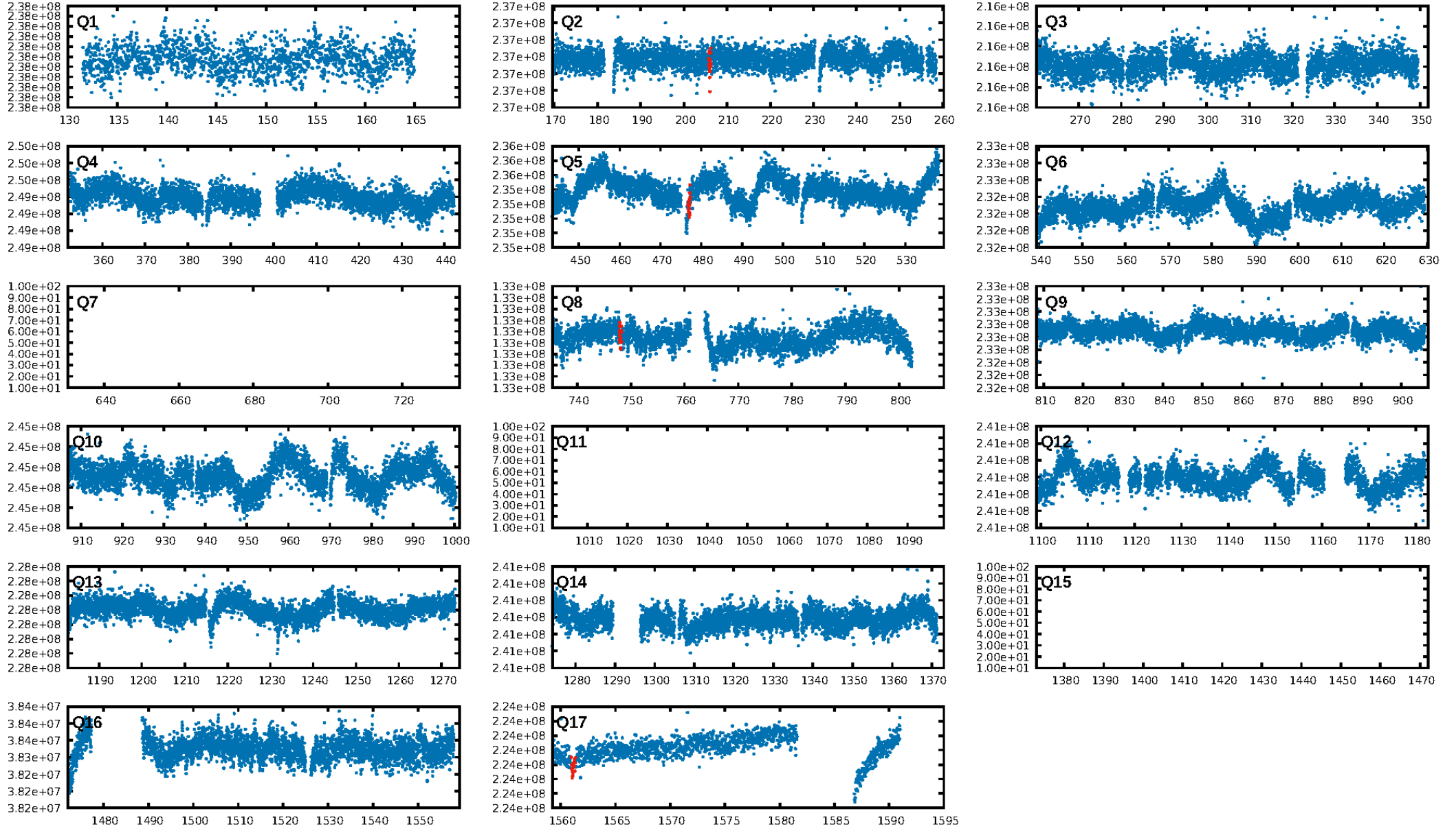
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: 57.3%  
ModelChiSquareGof-sig: 96.9%  
**Bootstrap-pfa: 1.97e-04**  
RollingBand-fgt: 1.00 [3/3]  
GhostDiagnostic-chr: -2.47  
Centroid-sig: 9.1%  
Centroid-so: 0.817 arcsec [0.77σ]  
OotOffset-rm: 1.983 arcsec [0.62σ]  
KicOffset-rm: 3.432 arcsec [1.10σ]  
OotOffset-st: 1/0/1/0 [2]  
KicOffset-st: 1/0/1/0 [2]  
DiffImageQuality-fgm: 0.50 [1/2]  
DiffImageOverlap-fno: 1.00 [2/2]

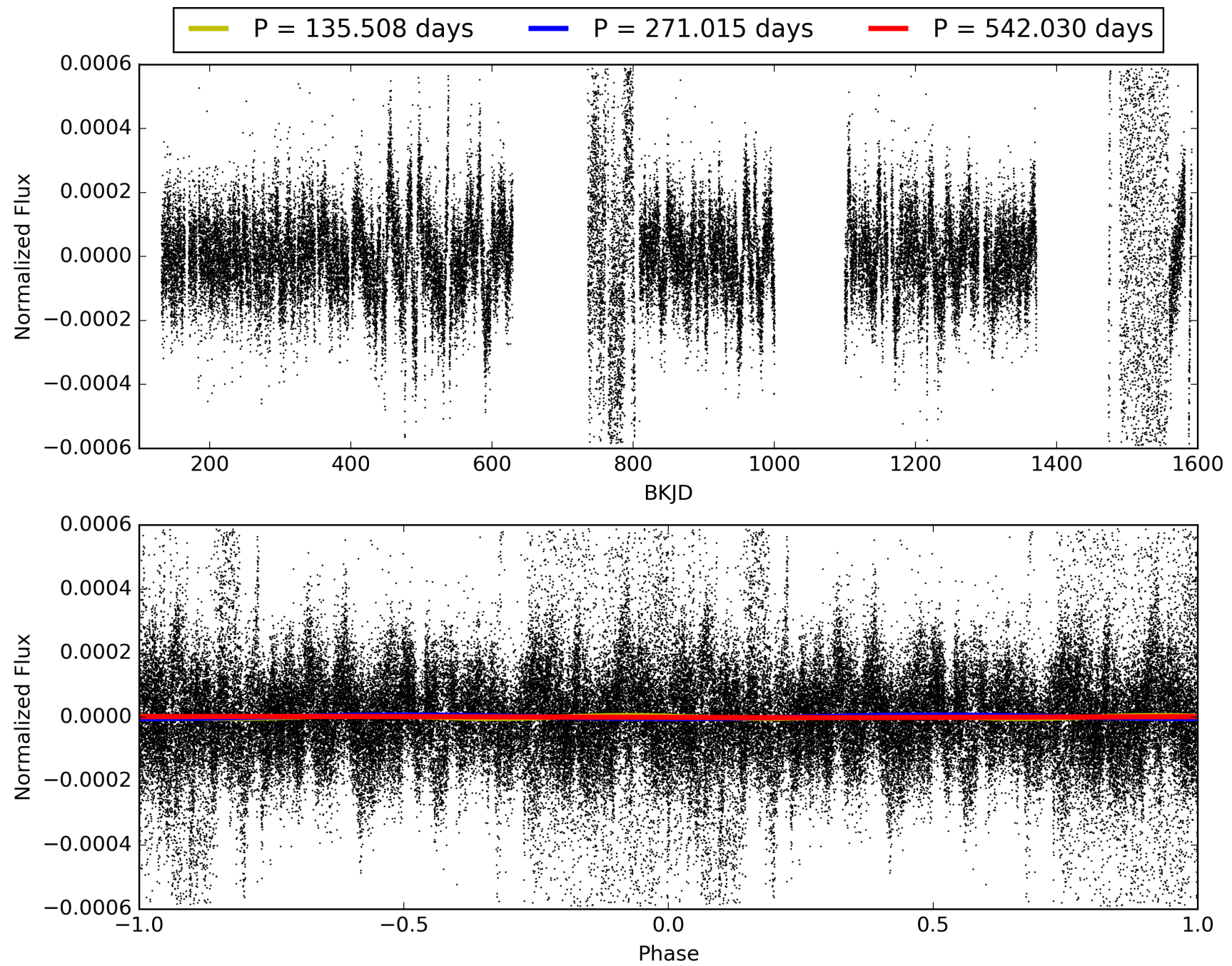
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 11:52:12 Z

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

# TCE 010614770-01, PDC Light Curves

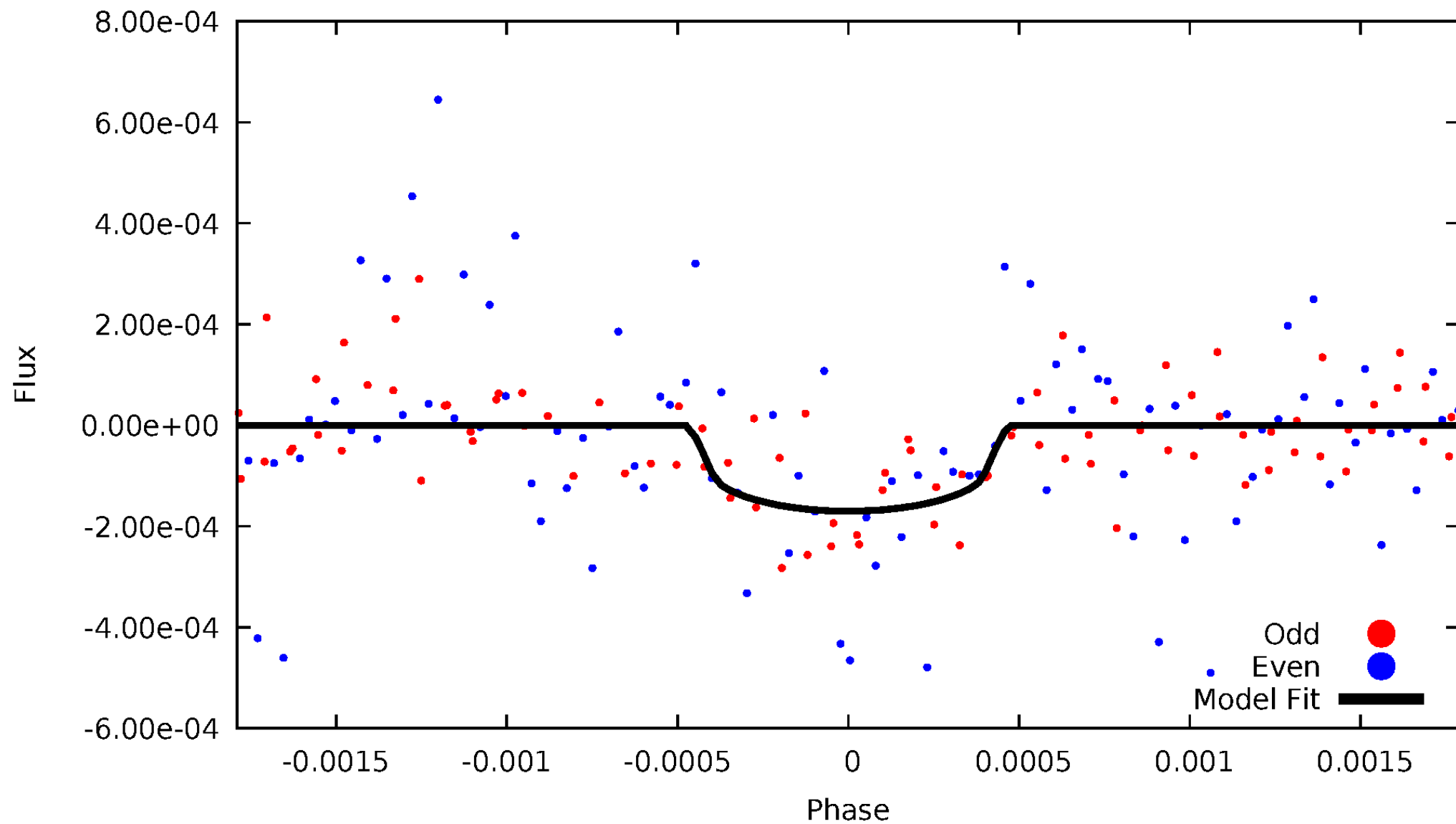


# TCE 010614770-01



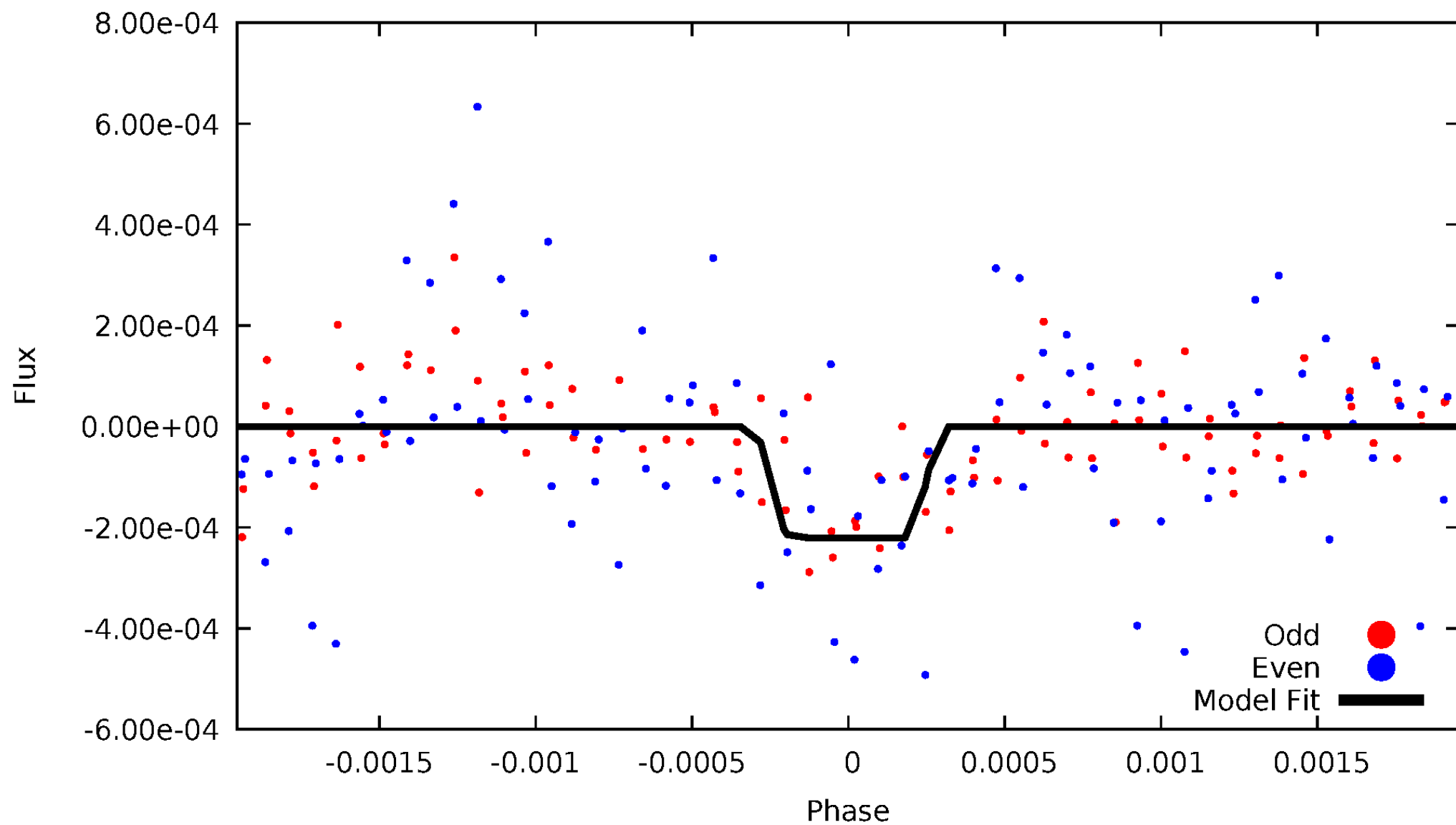
# DV Odd/Even

TCE 010614770-01



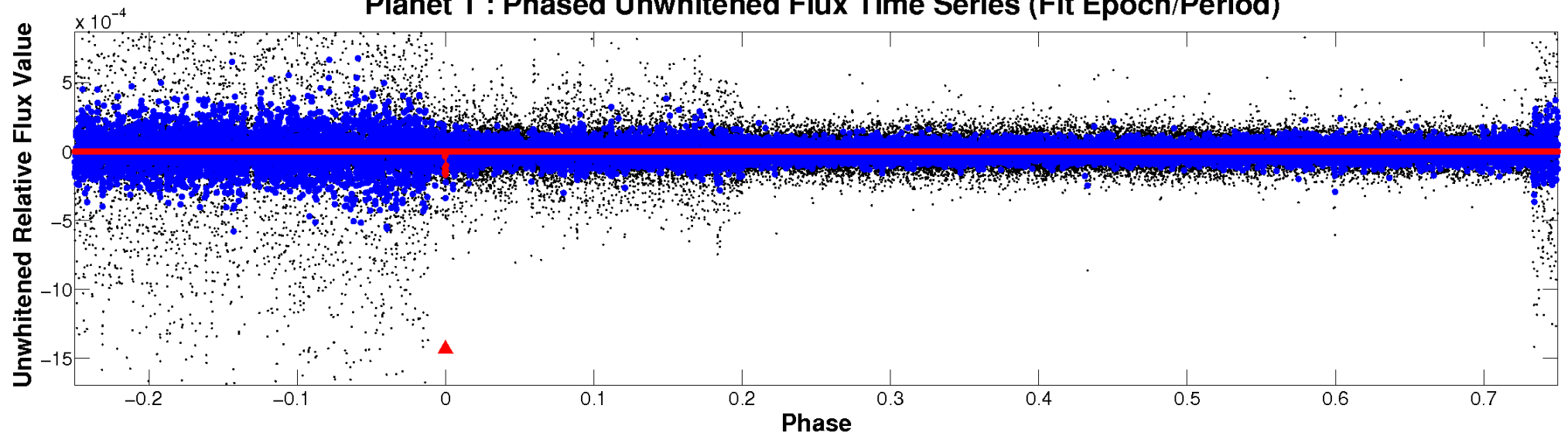
# ALT Odd/Even

TCE 010614770-01

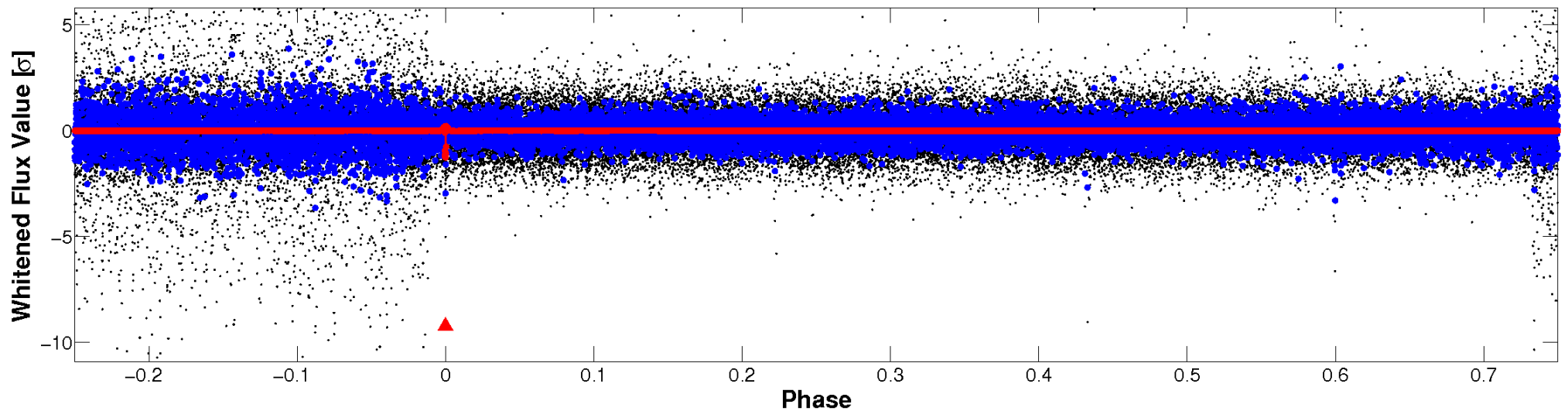


# Non-Whitened Vs. Whitened Light Curve

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



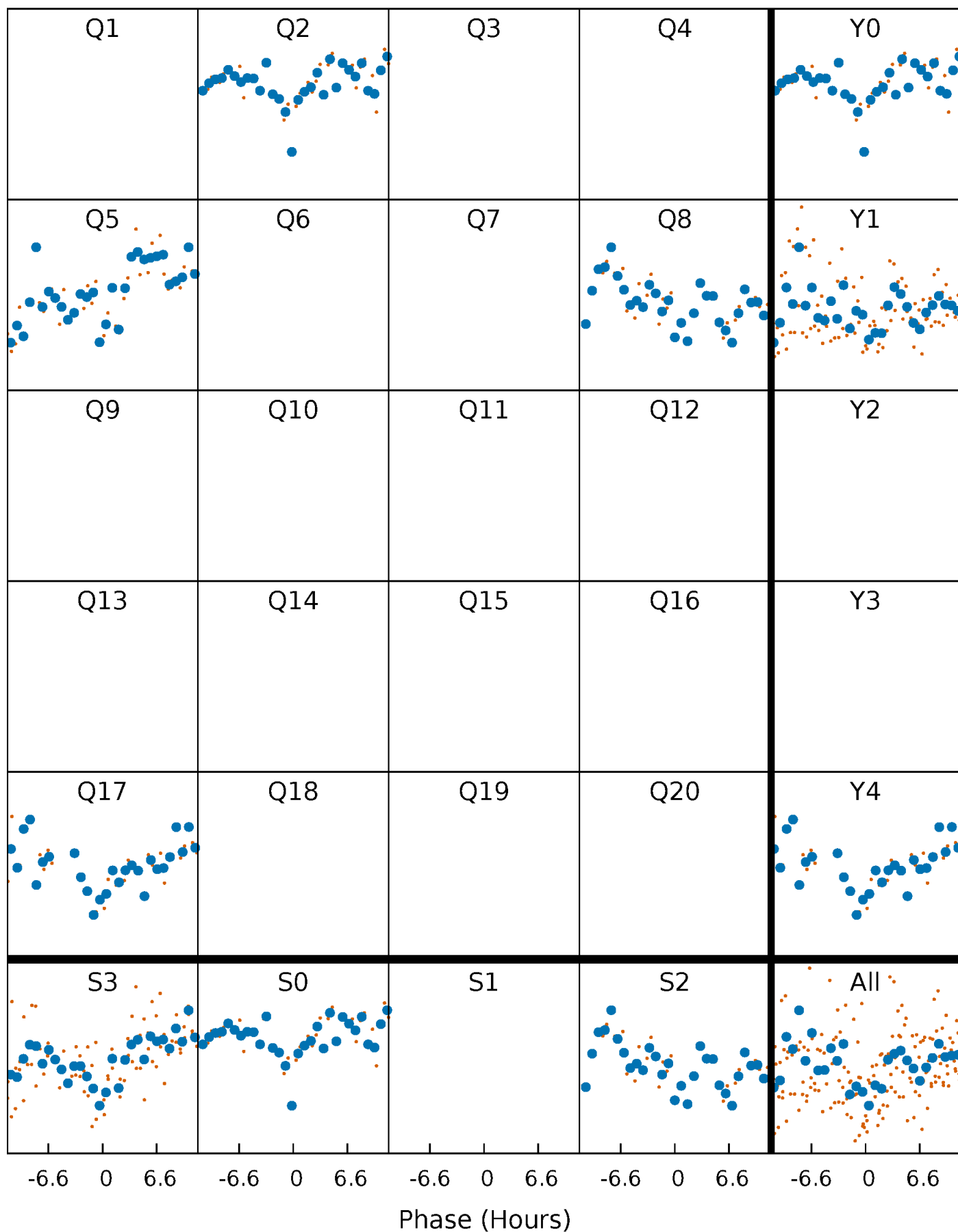
**Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)**





# PDC Quarter-Phased Transit Curves

TCE 010614770-01 P=271.015244 Days  $T_0=206.020977$  (BKJD)





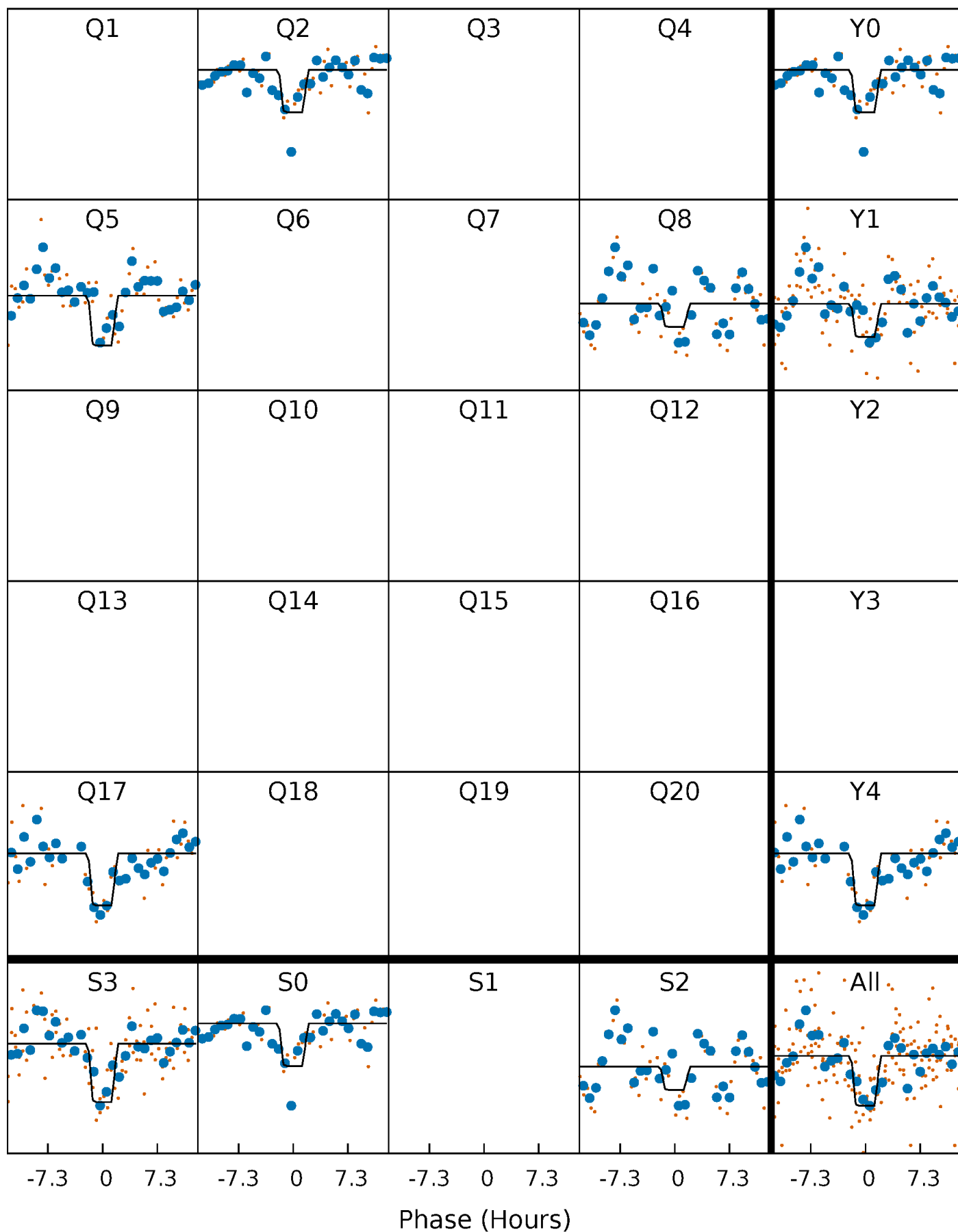
# DV Quarter-Phased Transit Curves

TCE 010614770-01     $P=271.015244$  Days     $T_0=206.020977$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

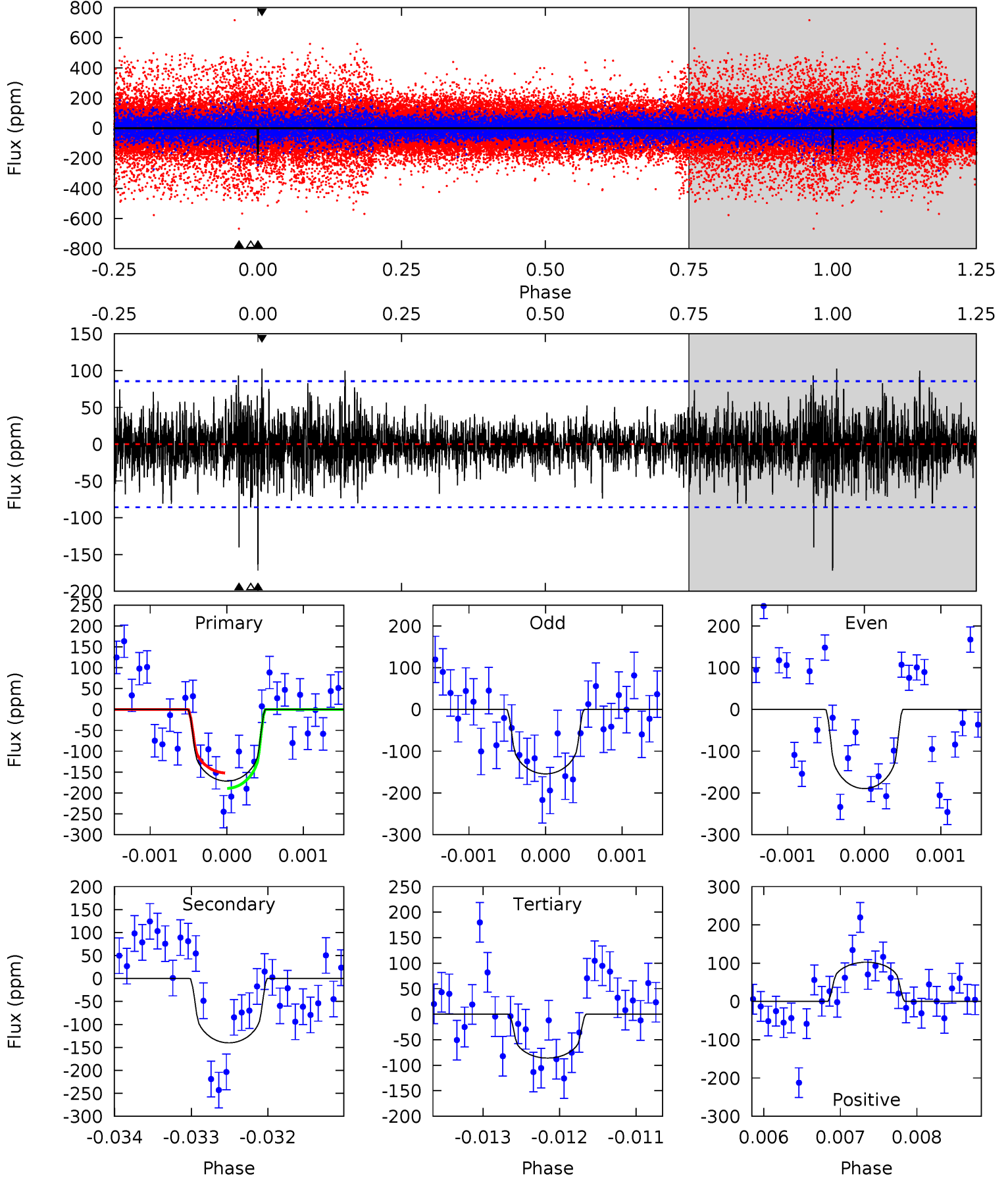
TCE 010614770-01 P=271.010306 Days  $T_0=206.026853$  (BKJD)



# DV Model-Shift Uniqueness Test

010614770-01,  $P = 271.015244$  Days,  $E = 206.020977$  Days

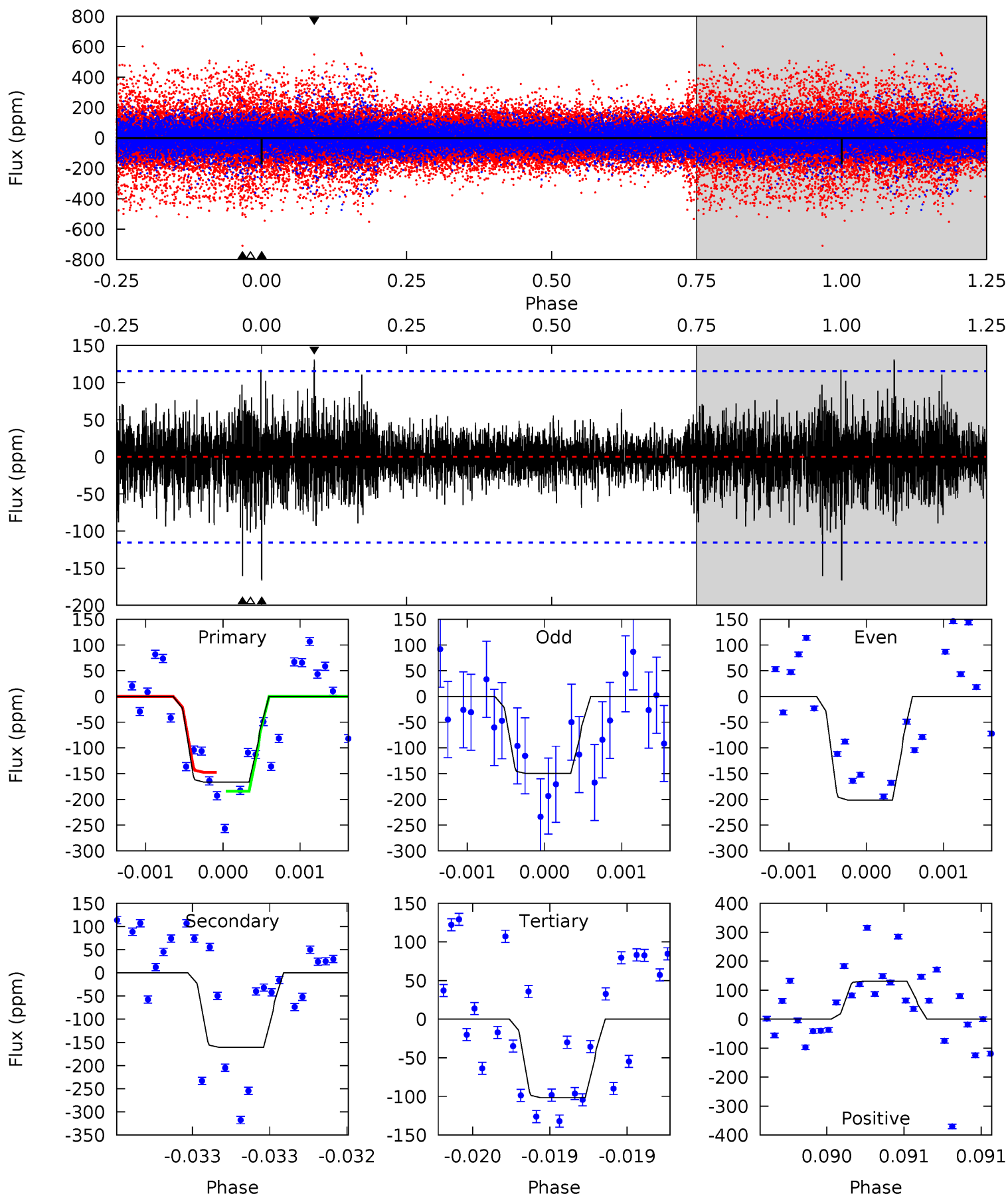
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
10.9	8.92	5.47	6.53	5.46	3.30	1.43	5.45	4.39	3.45	2.39	1.07	0.93	0.37	1.18



# Alt Model-Shift Uniqueness Test

010614770-01, P = 271.010306 Days, E = 206.026853 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
8.01	7.73	4.89	6.30	5.56	3.46	1.19	3.13	1.71	2.84	1.43	1.21	0.87	0.44	0.88



### Stellar Parameters For KIC 010614770

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$\rho_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$4805^{+114}_{-76}$	$3.766^{+0.728}_{-0.182}$	$0.200^{+0.200}_{-0.200}$	$2.111^{+0.577}_{-1.251}$	$0.948^{+0.131}_{-0.180}$	$0.142^{+2.072}_{-0.074}$
	+2%/-2%	+19%/-5%	+100%/-100%	+27%/-59%	+14%/-19%	+1459%/-52%
Source	PHO1	FLK73	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 010614770-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	$A_{obs}$
DV	$-140 \pm 16$	$3.31^{+2.63}_{-2.21}$	$477^{+40}_{-81}$	$4283^{+2456}_{-698}$	$4454^{+35923}_{-3067}$
Alt.	$-161 \pm 21$	$3.30^{+2.89}_{-2.14}$	$475^{+42}_{-75}$	$4349^{+2498}_{-721}$	$5180^{+36349}_{-3666}$

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

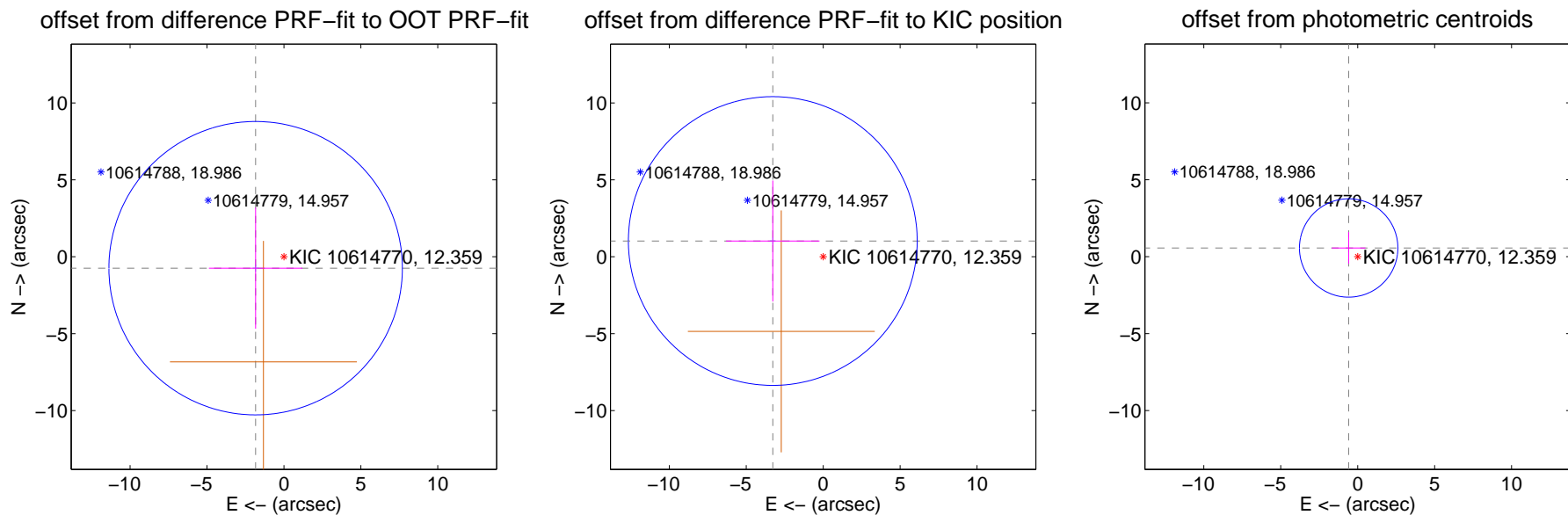
## DV Centroid Data

Supplemental centroid analysis for 010614770-01. Kepler magnitude: 12.36. Transit SNR 7.95

There are 1 quarters with good PRF difference image offsets

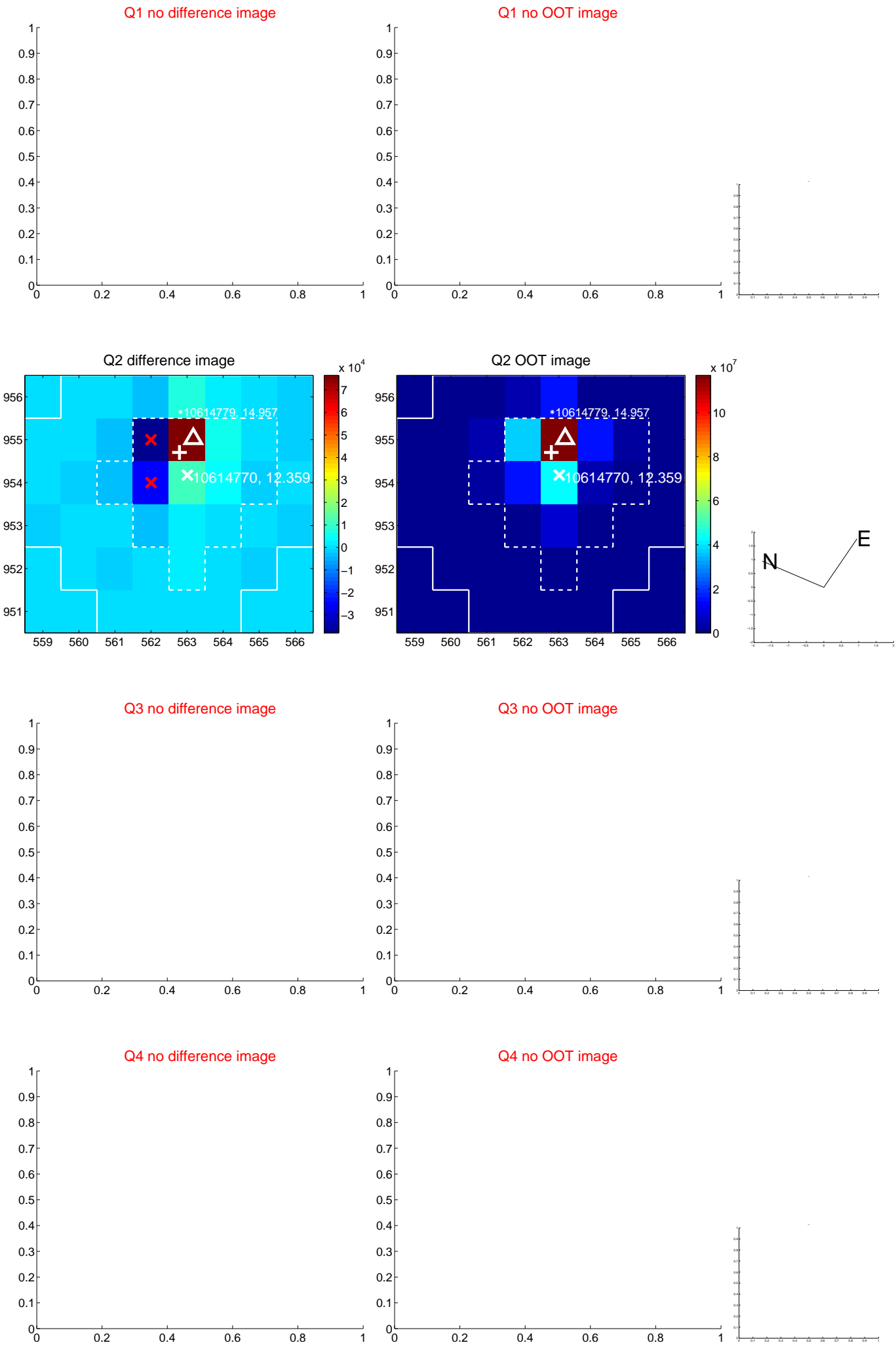
The OOT PRF centroid is offset from the target star catalog position by about 2.42 arcsec so the offset from difference PRF-fit to OOT-fit may be invalid.

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$1.983 \pm 3.180$	0.62	$1.839 \pm 3.039$	$-0.741 \pm 3.935$
PRF-fit source offset from KIC position	$3.432 \pm 3.129$	1.10	$3.276 \pm 3.039$	$1.024 \pm 3.935$
photometric centroid source offset	$0.82 \pm 1.07$	0.77	$0.59 \pm 1.10$	$0.57 \pm 1.03$



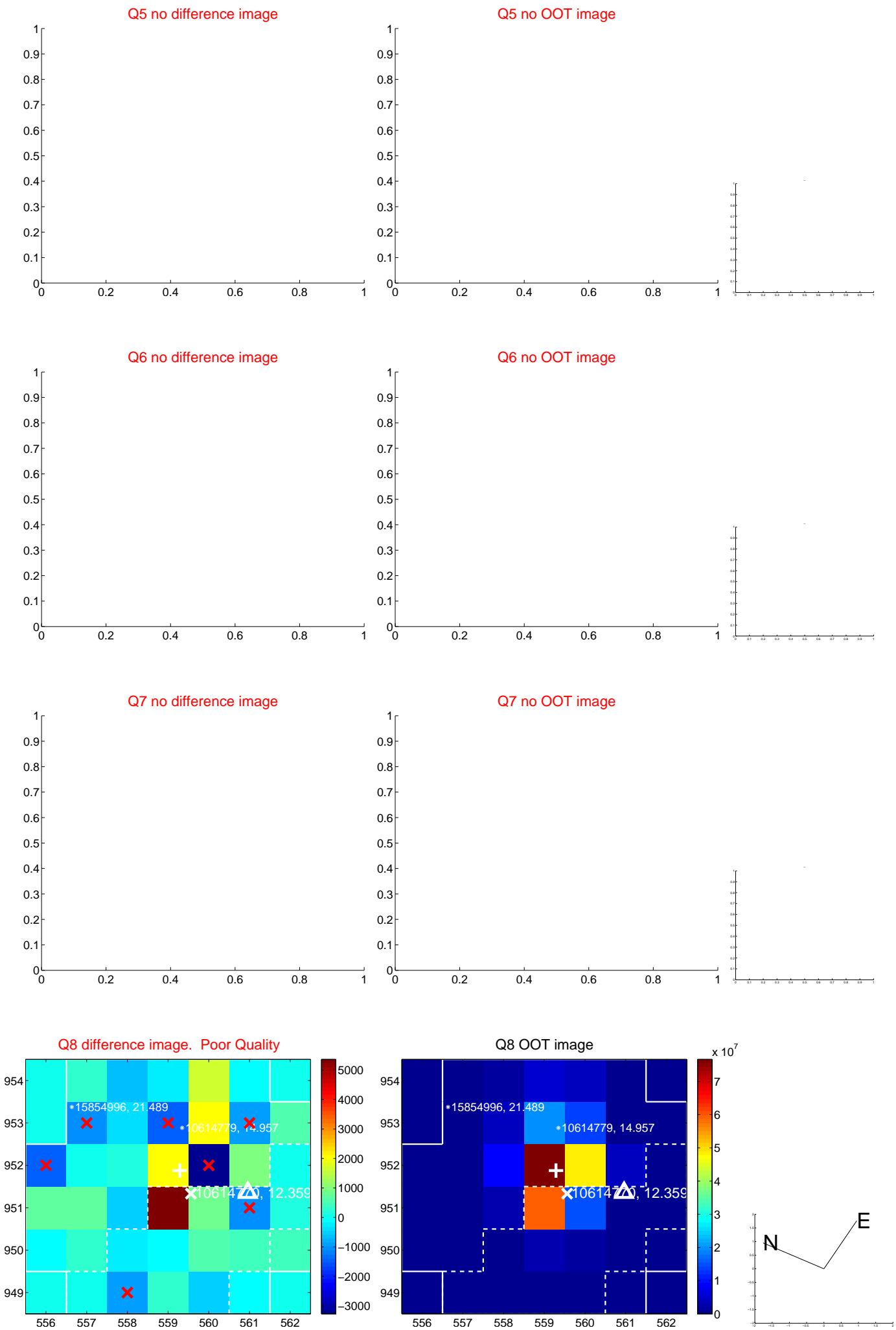
Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: three-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





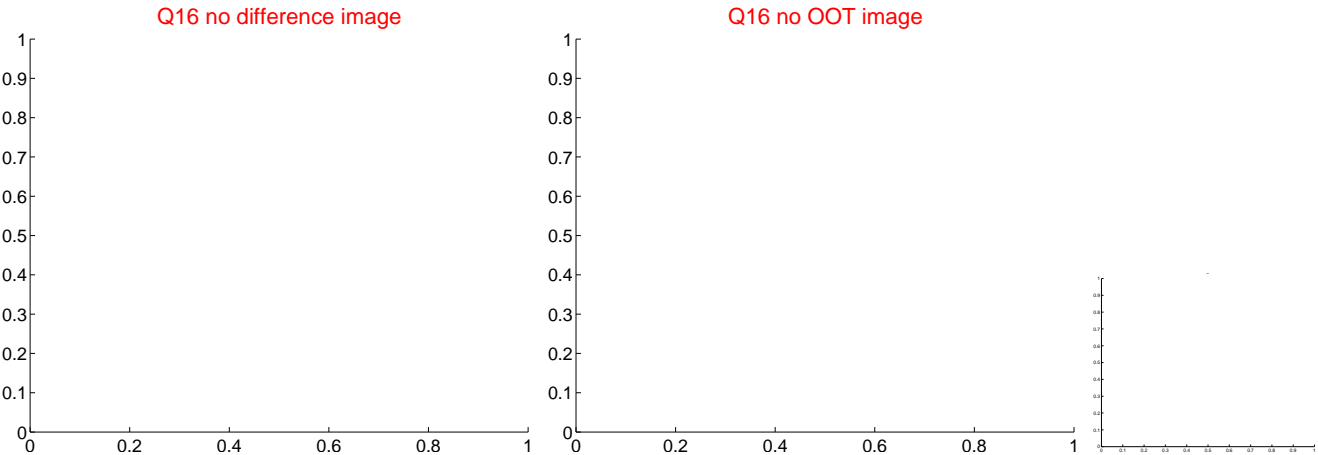
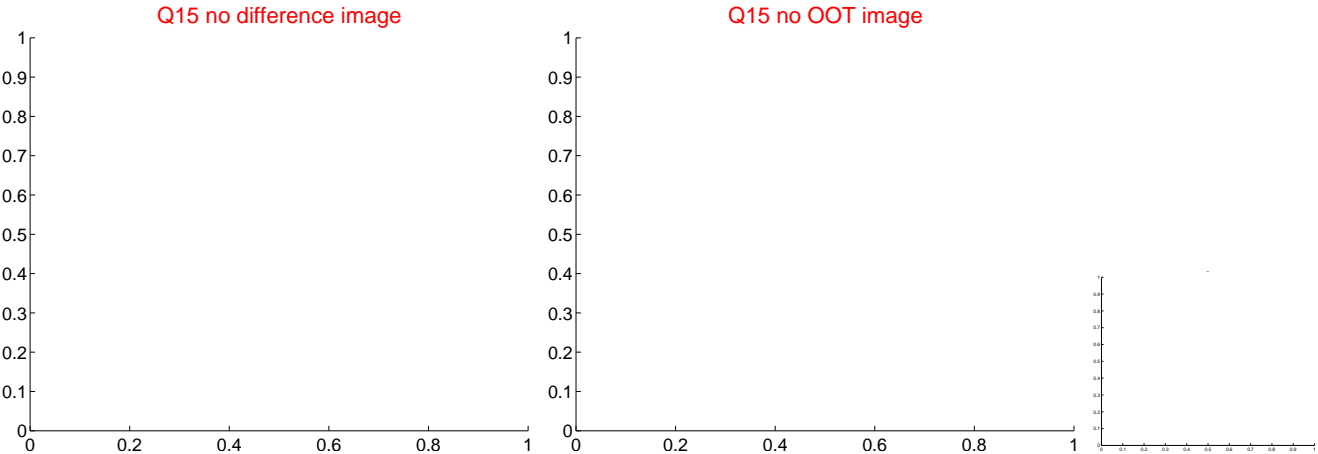
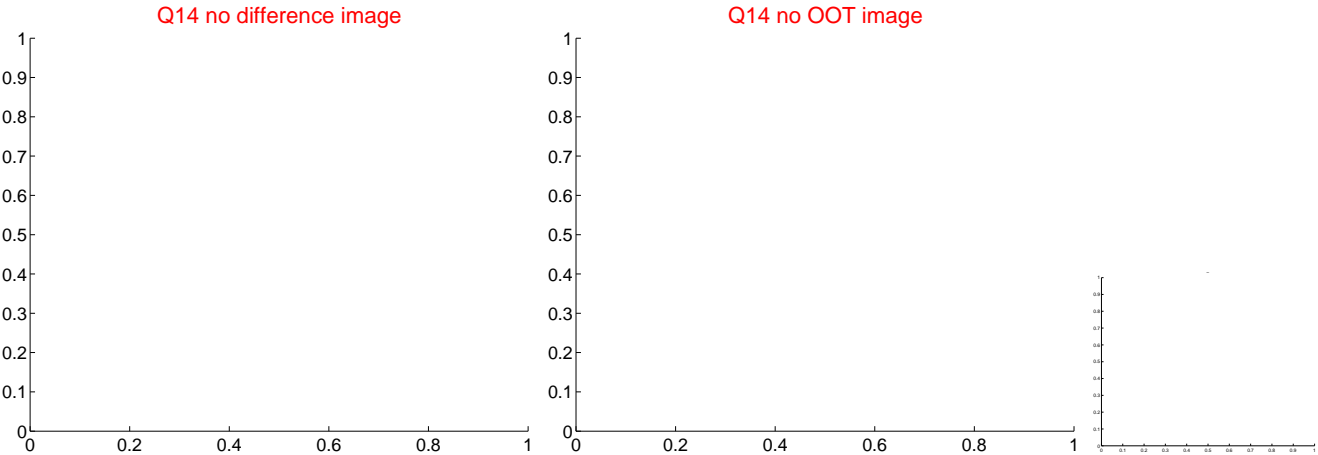
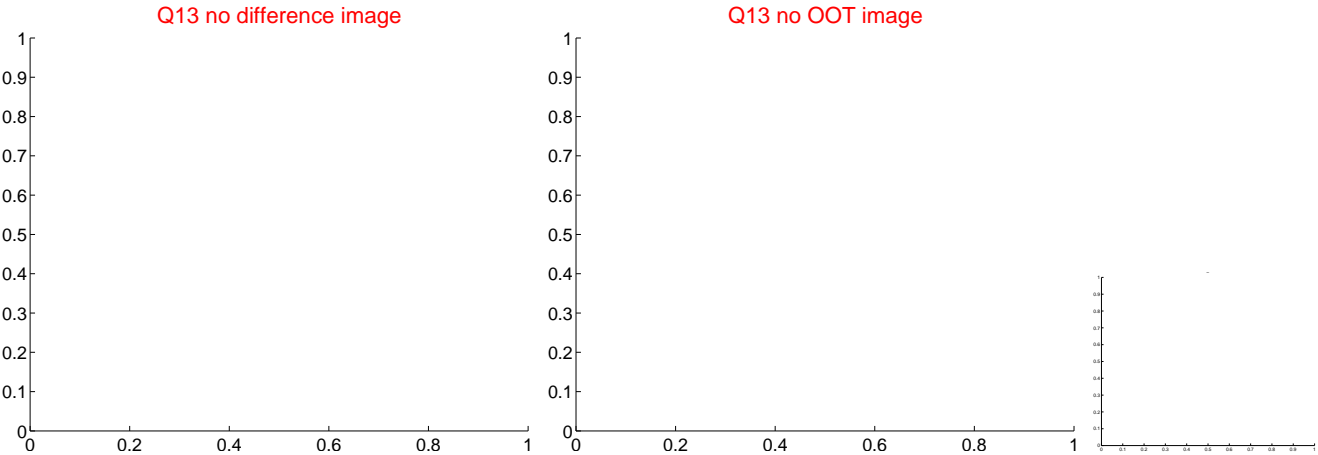
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



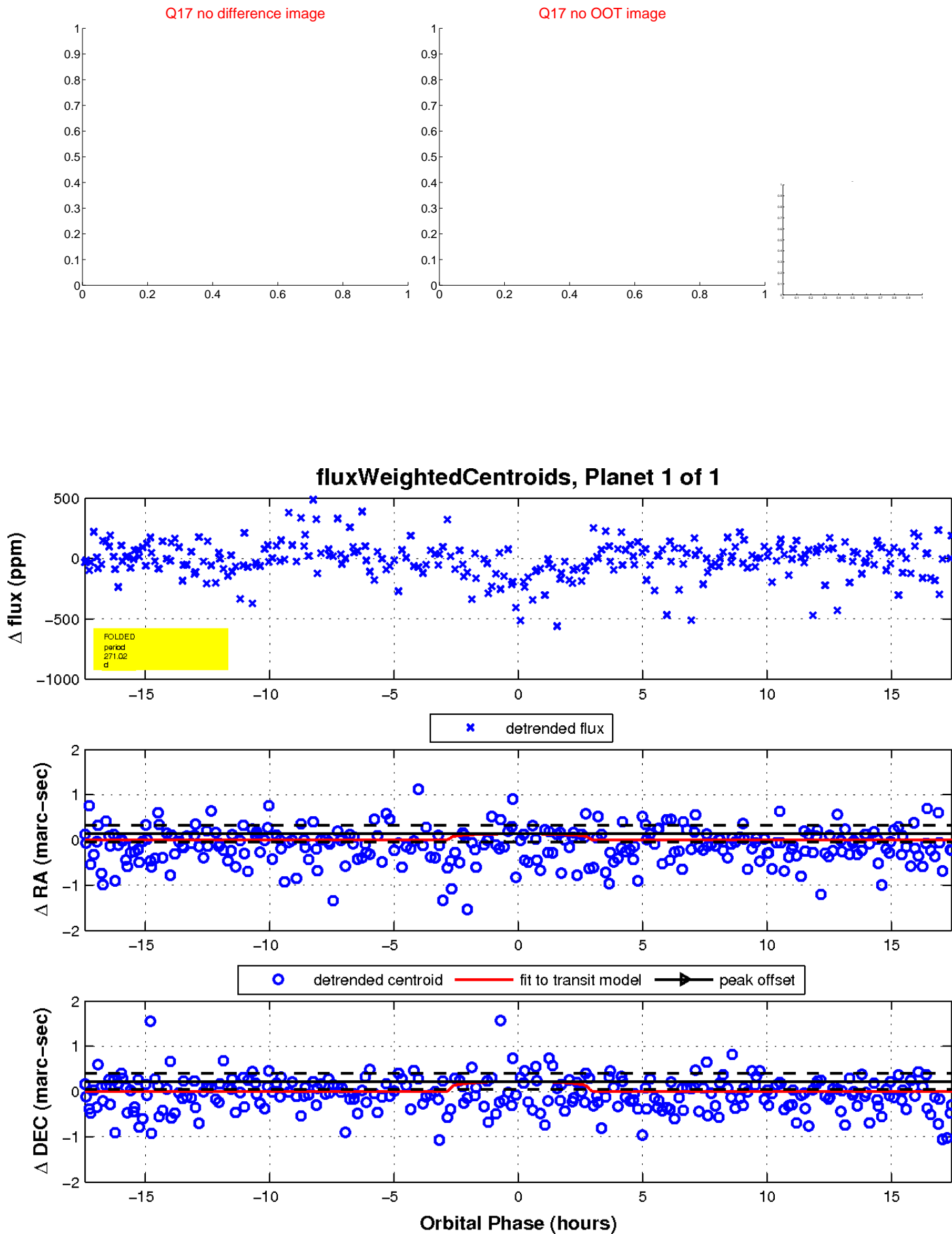
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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

