

# KIC 006774920

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
006774920-01	OBS	No	464.415834	586.022581	683.6	5.058	8.7	8.0	0.76	5392	2.28	0.40

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
006774920-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_POS_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.

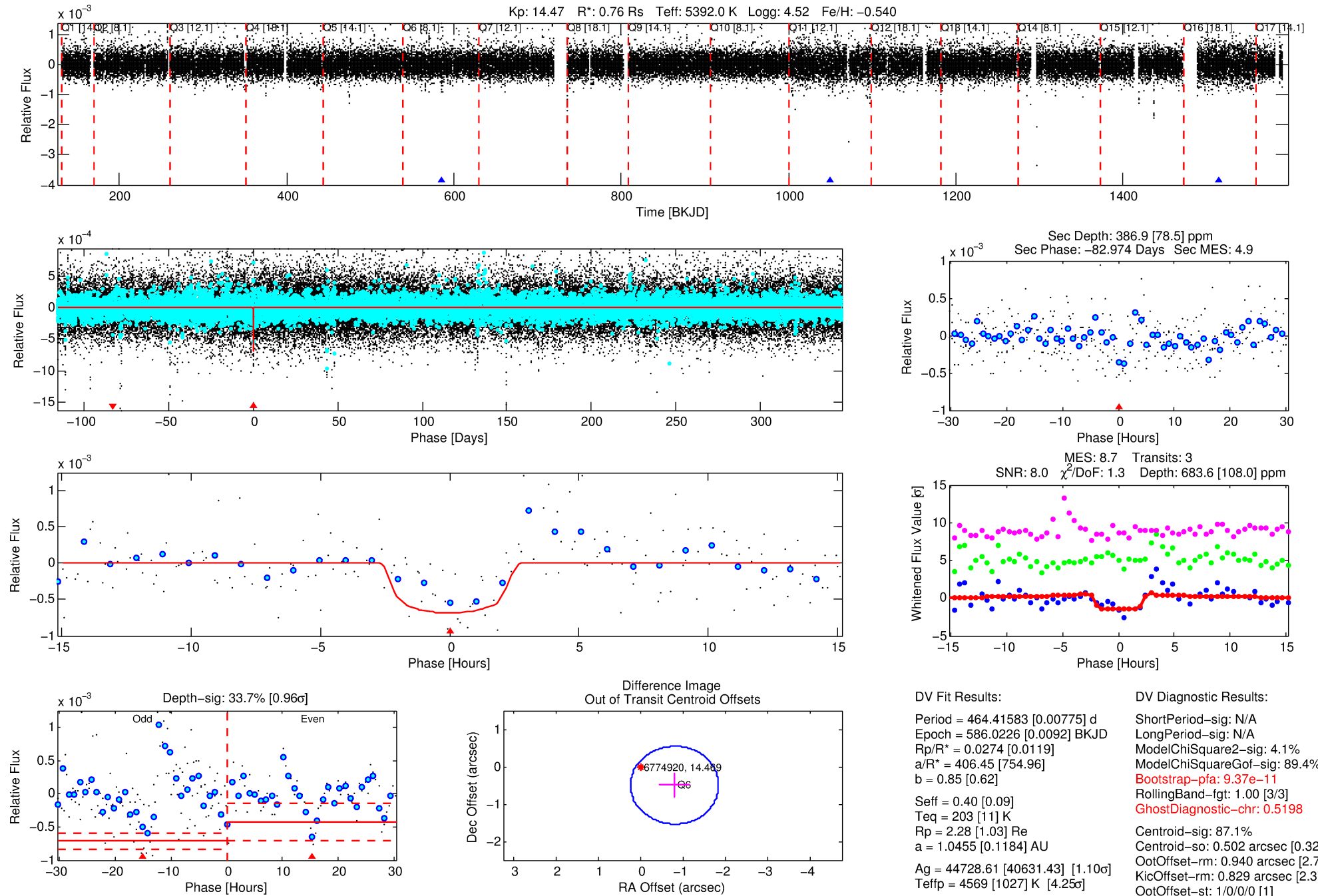
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 006774920-01

No Significant Match Found

# DV One-Page Summary

KIC: 6774920 Candidate: 1 of 1 Period: 464.416 d



## DV Fit Results:

Period = 464.41583 [0.00775] d  
Epoch = 586.0226 [0.0092] BKJD  
Rp/R\* = 0.0274 [0.0119]  
a/R\* = 406.45 [754.96]  
b = 0.85 [0.62]  
Seff = 0.40 [0.09]  
Teq = 203 [11] K  
Rp = 2.28 [1.03] Re  
a = 1.0455 [0.1184] AU  
Ag = 44728.61 [40631.43] [1.10 $\sigma$ ]  
Teffp = 4569 [1027] K [4.25 $\sigma$ ]

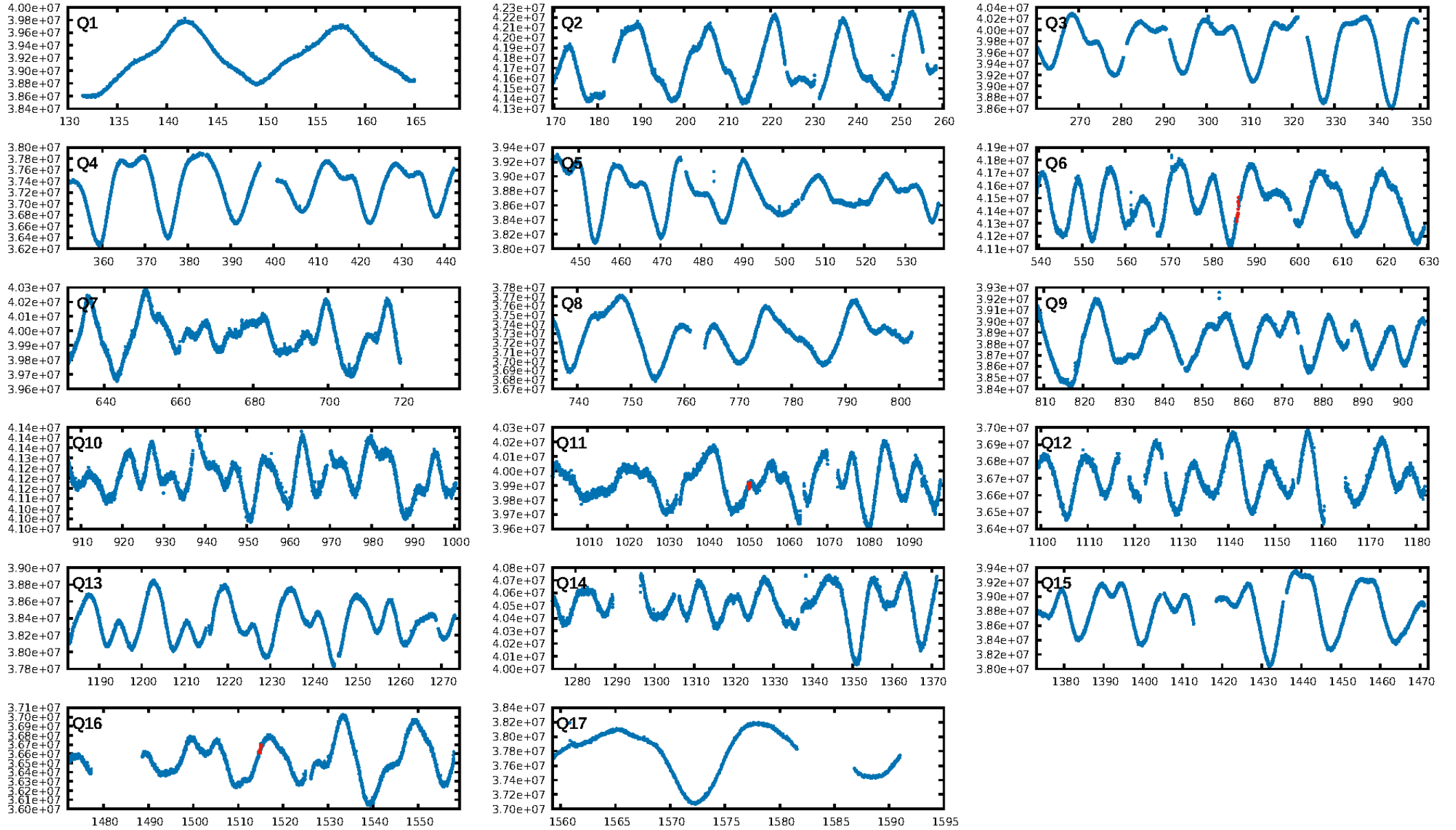
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: 4.1%  
ModelChiSquareGof-sig: 89.4%  
**Bootstrap-pfa: 9.37e-11**  
RollingBand-fgt: 1.00 [3/3]  
**GhostDiagnostic-chr: 0.5198**  
Centroid-sig: 87.1%  
Centroid-so: 0.502 arcsec [0.32 $\sigma$ ]  
OotOffset-rm: 0.940 arcsec [2.71 $\sigma$ ]  
KicOffset-rm: 0.829 arcsec [2.37 $\sigma$ ]  
OotOffset-st: 1/0/0/0 [1]  
KicOffset-st: 1/0/0/0 [1]  
DiffImageQuality-fgm: 1.00 [1/1]  
DiffImageOverlap-fno: 1.00 [3/3]

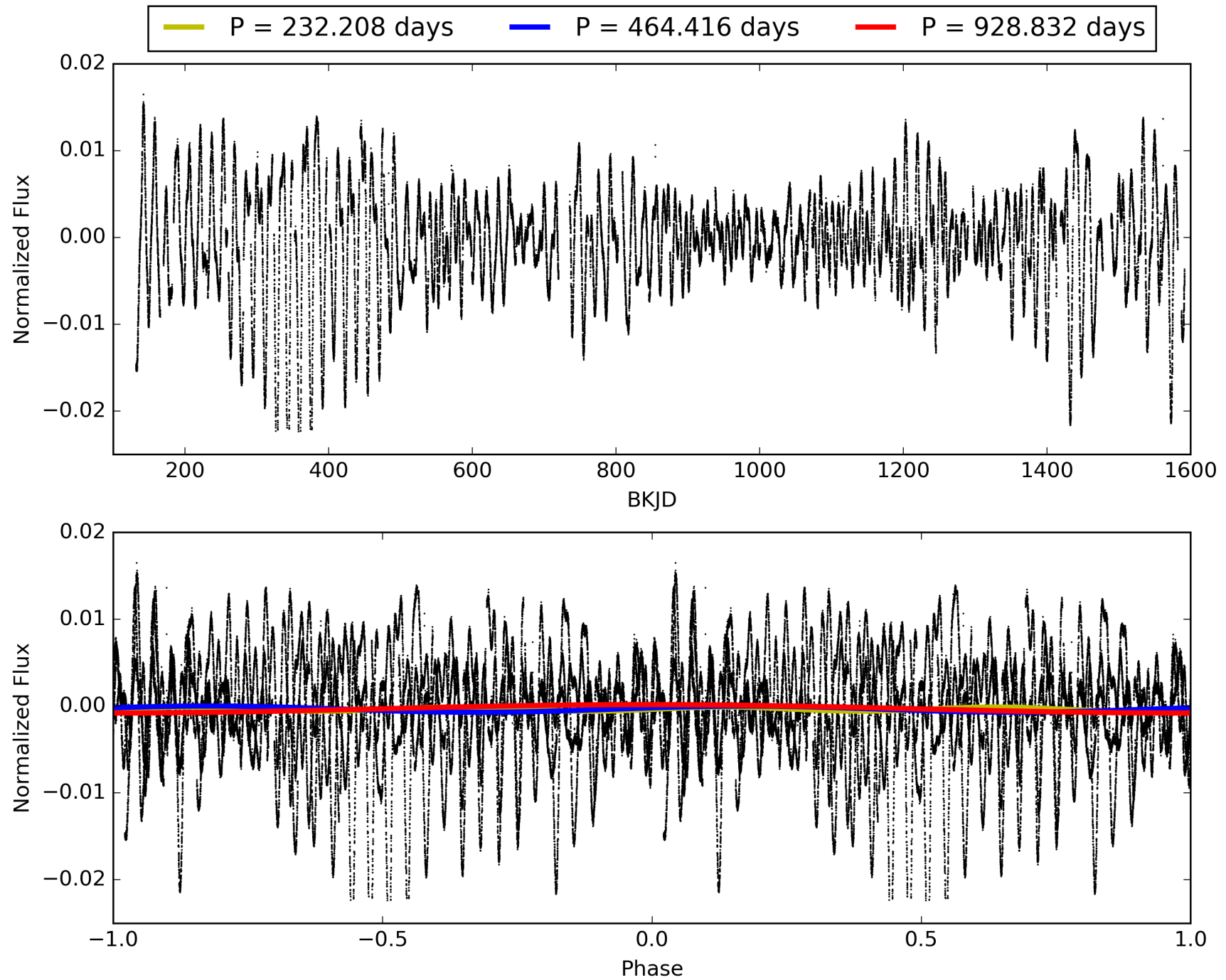
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 10:26:45 Z

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

# TCE 006774920-01, PDC Light Curves

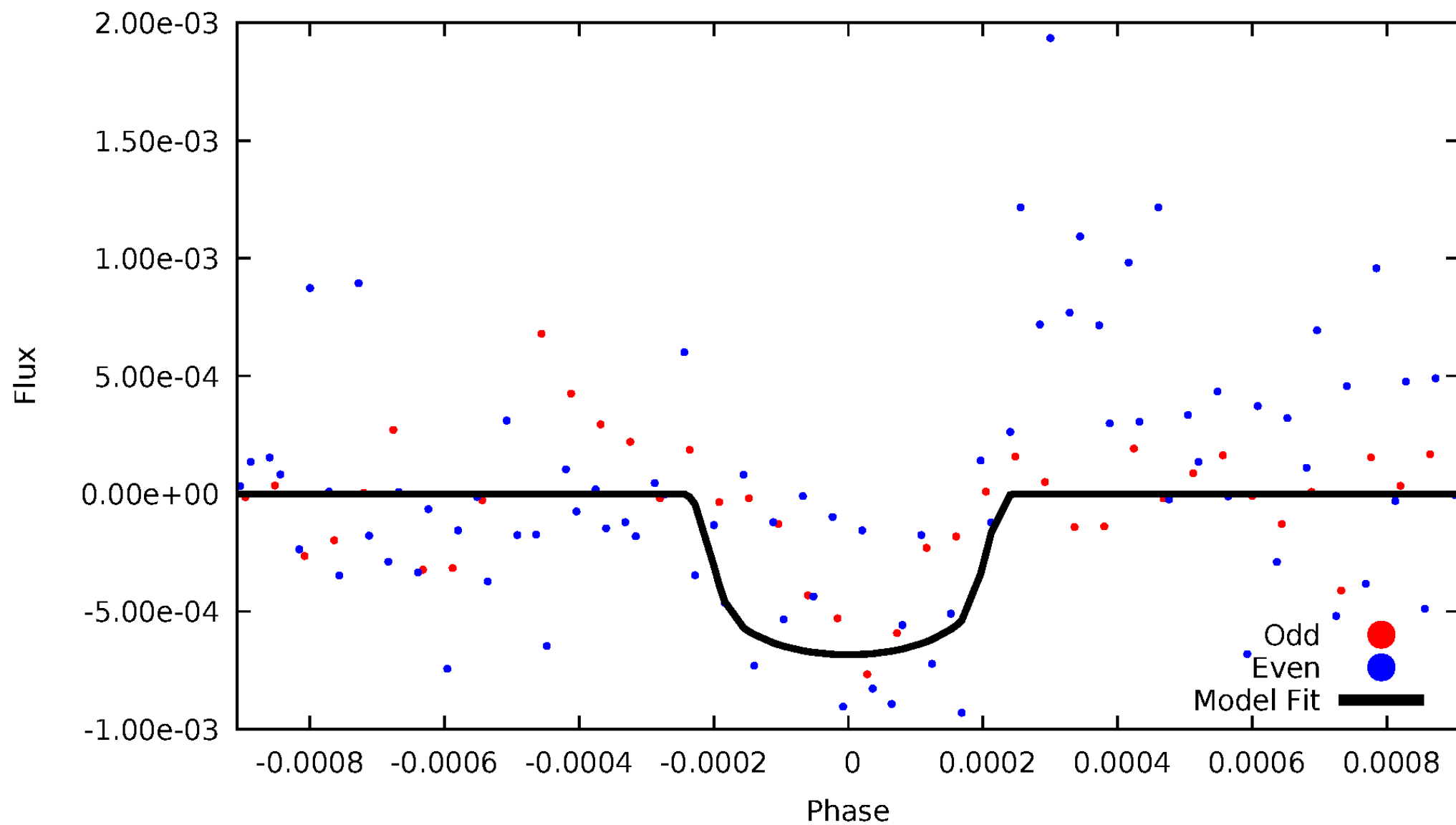


TCE 006774920-01



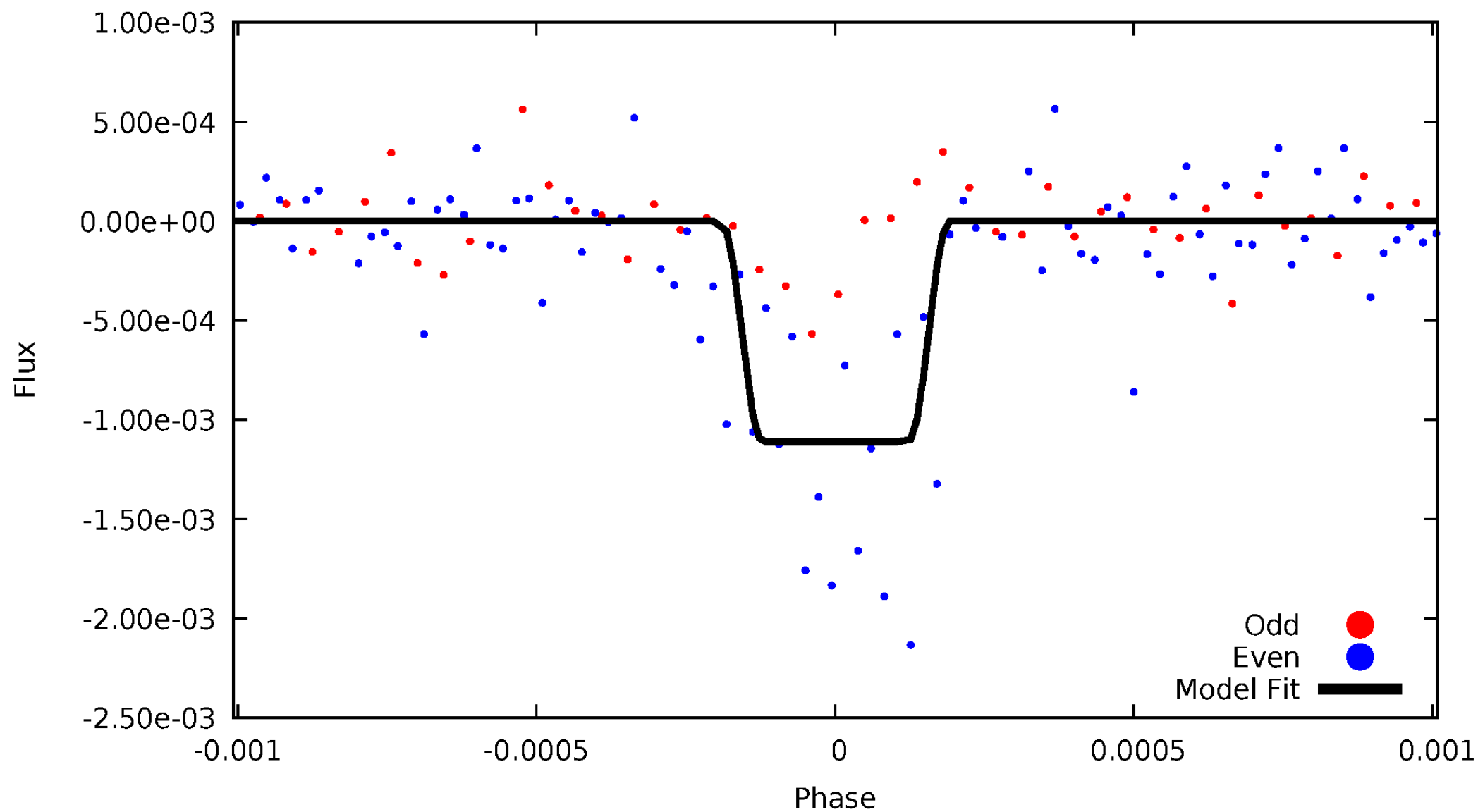
# DV Odd/Even

TCE 006774920-01



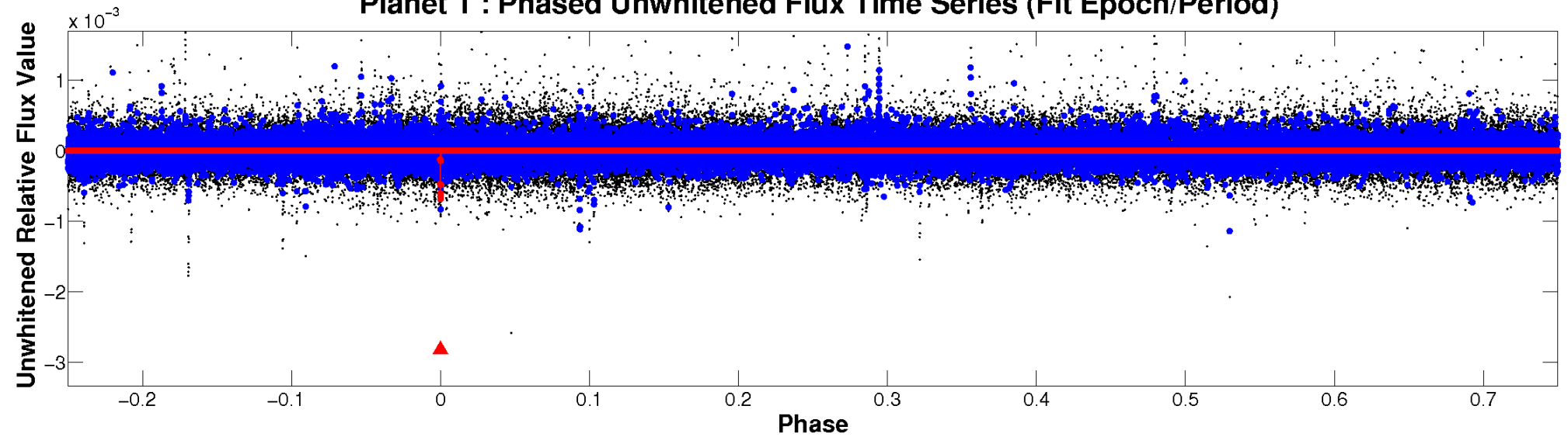
# ALT Odd/Even

TCE 006774920-01

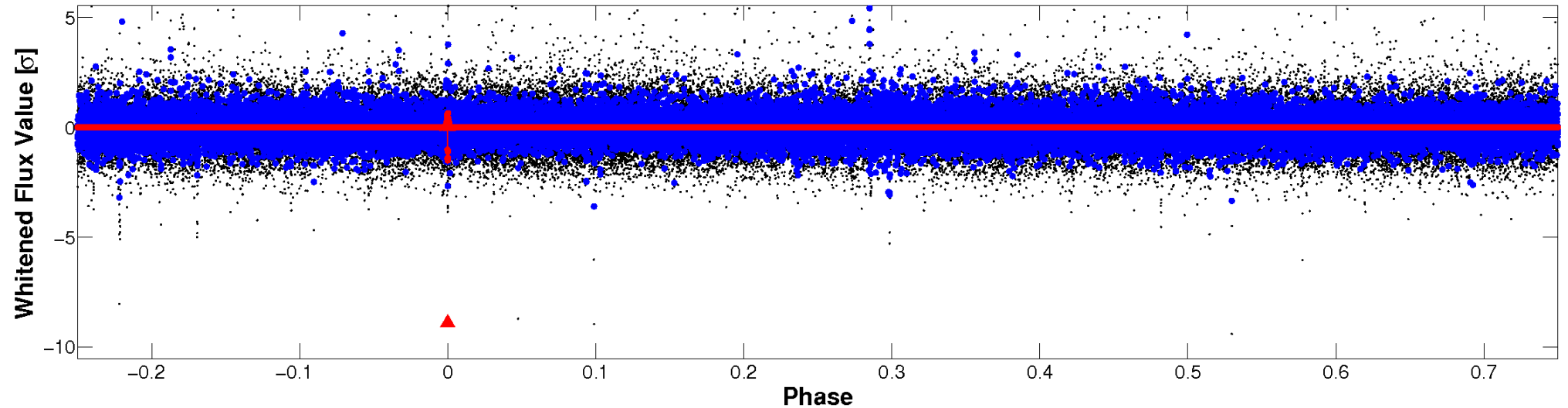


# Non-Whitened Vs. Whitened Light Curve

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

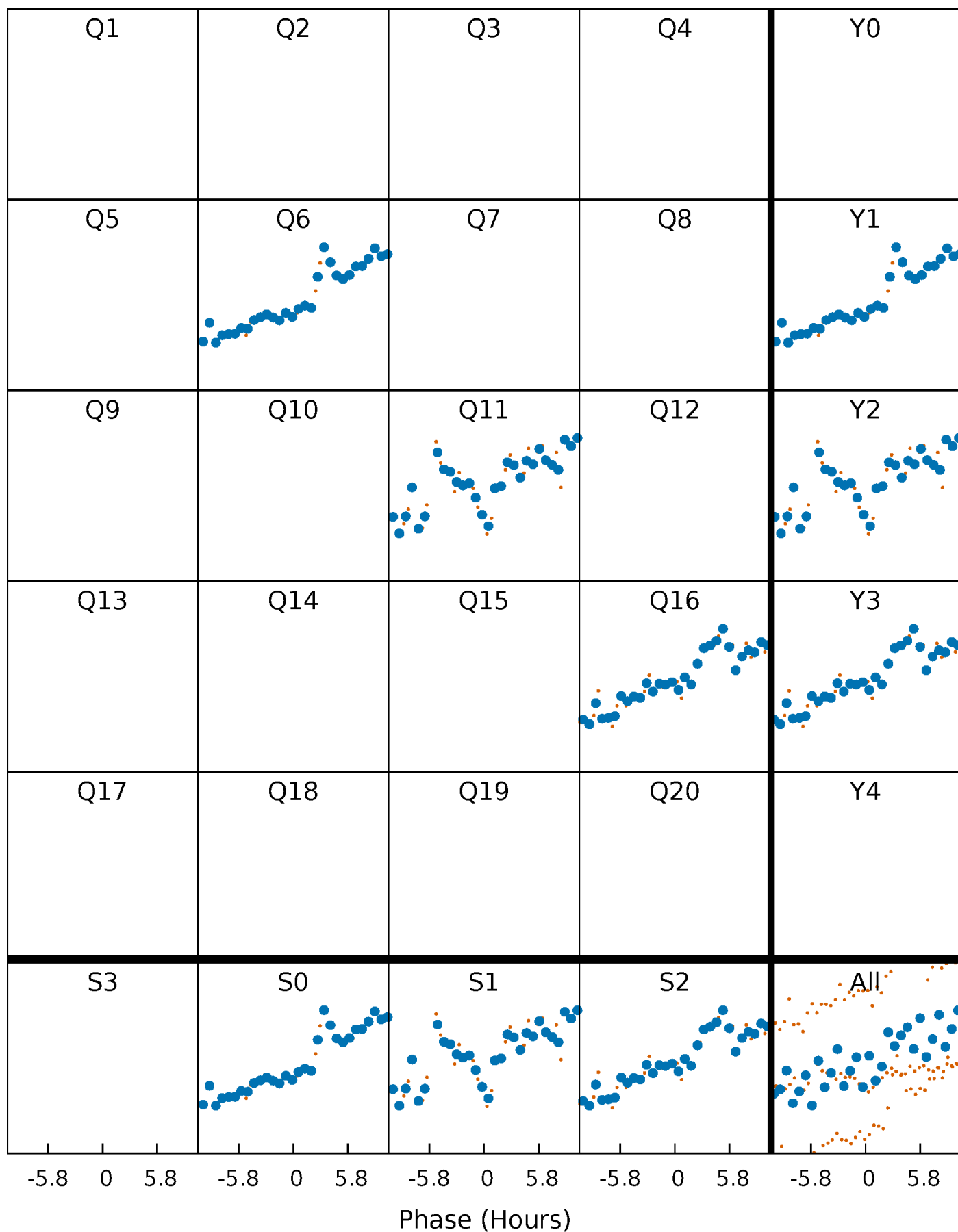


**Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)**



# PDC Quarter-Phased Transit Curves

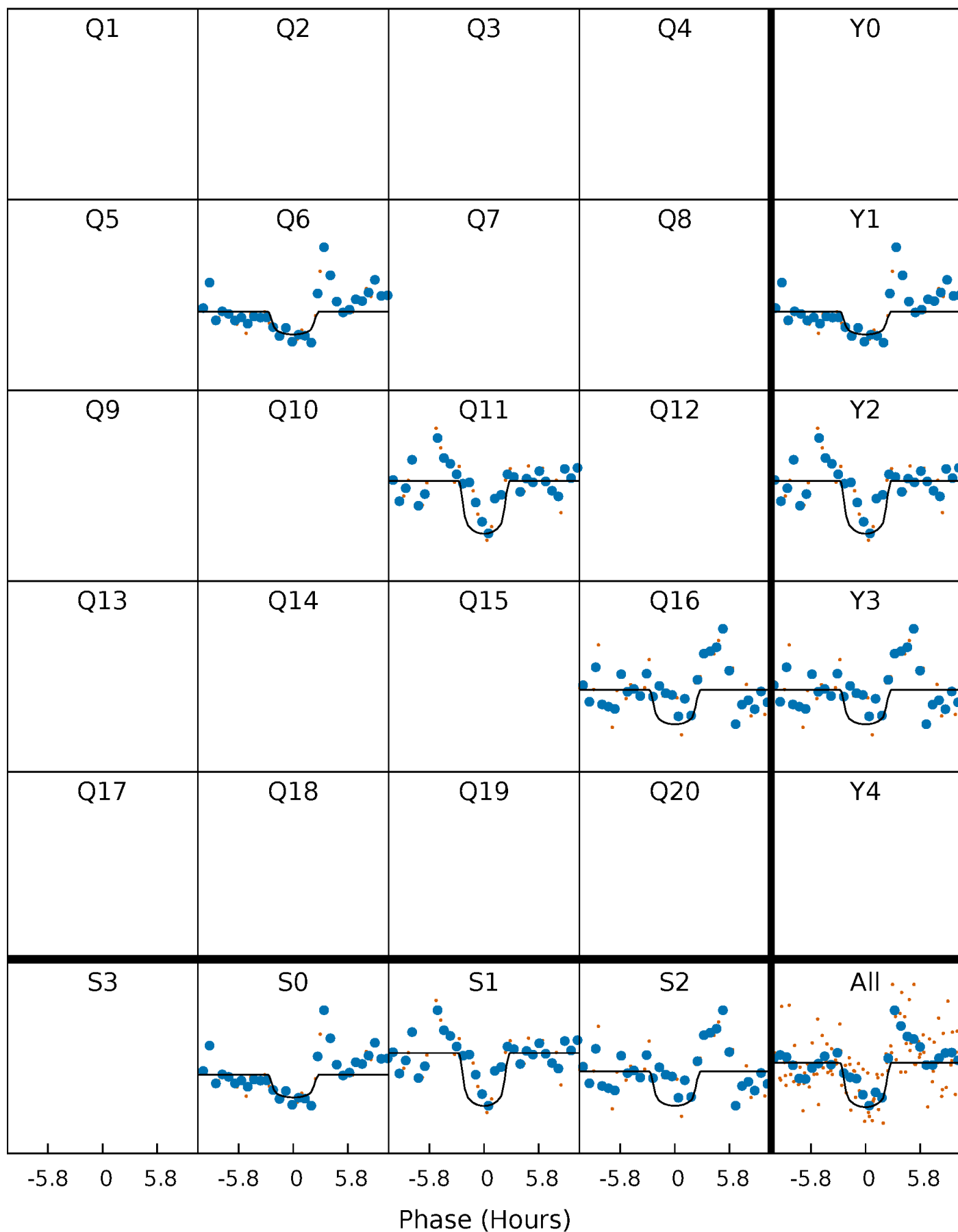
TCE 006774920-01 P=464.415834 Days  $T_0=586.022581$  (BKJD)





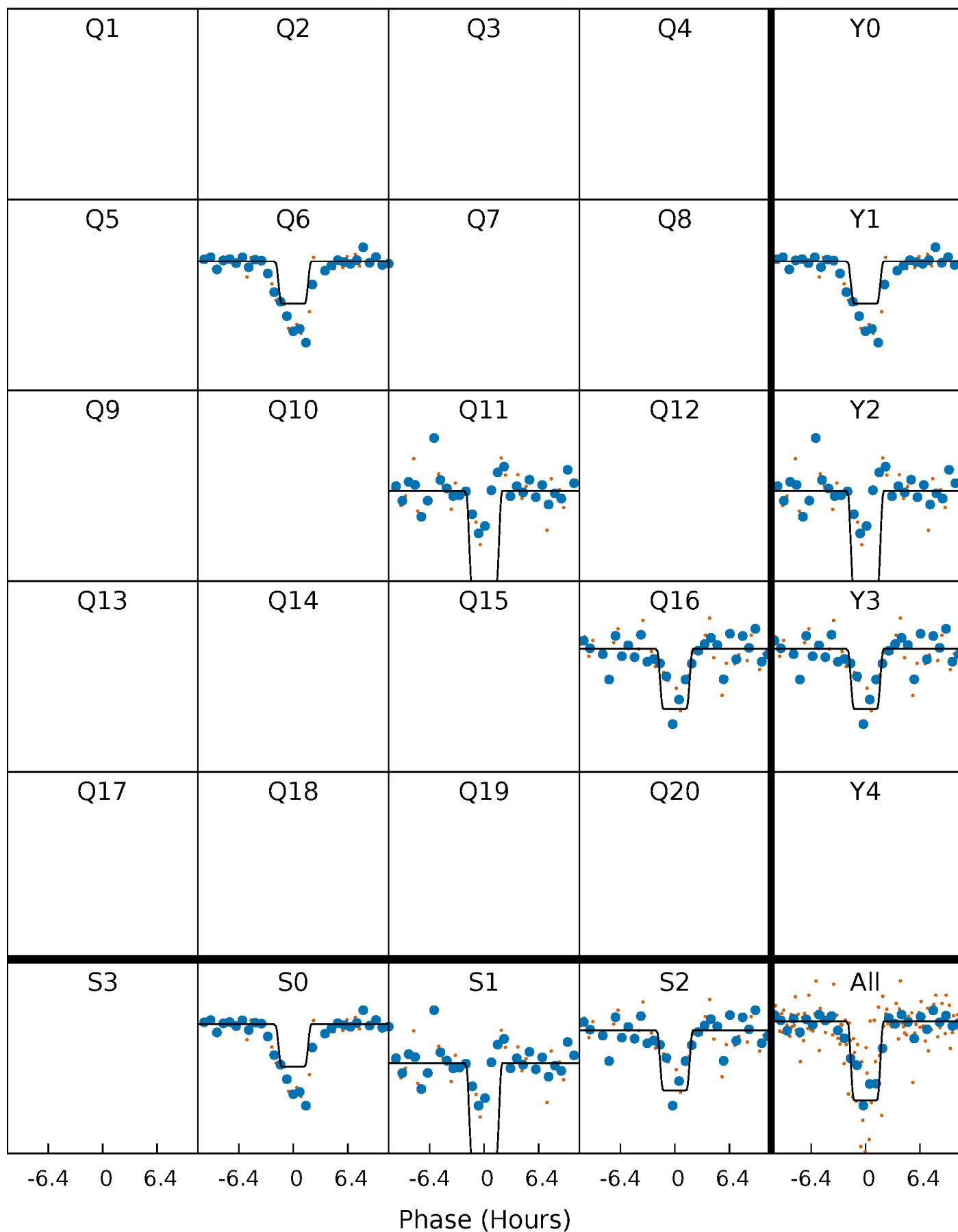
# DV Quarter-Phased Transit Curves

TCE 006774920-01 P=464.415834 Days  $T_0=586.022581$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

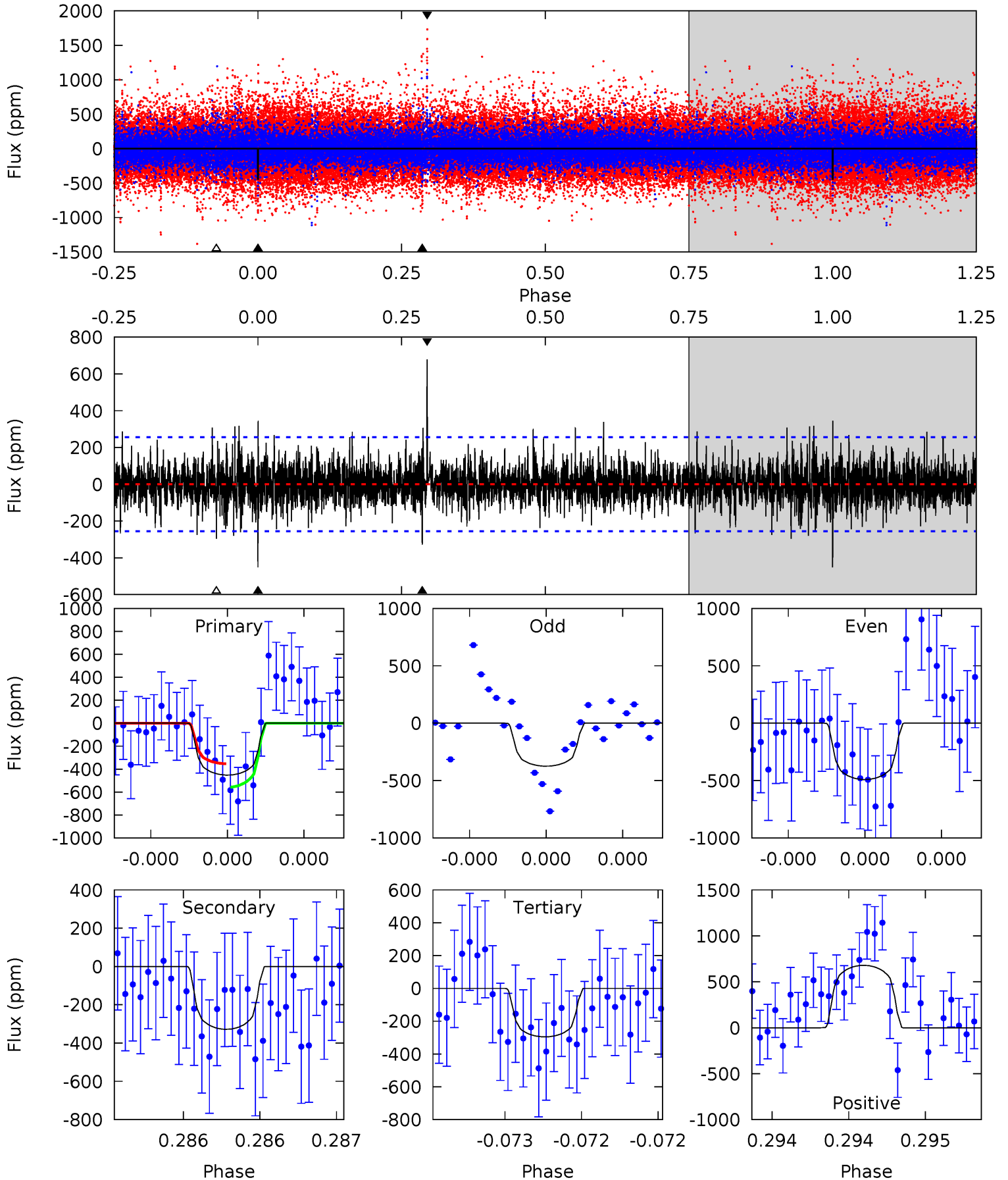
TCE 006774920-01 P=464.427574 Days  $T_0=586.042151$  (BKJD)



# DV Model-Shift Uniqueness Test

006774920-01, P = 464.415834 Days, E = 121.606747 Days

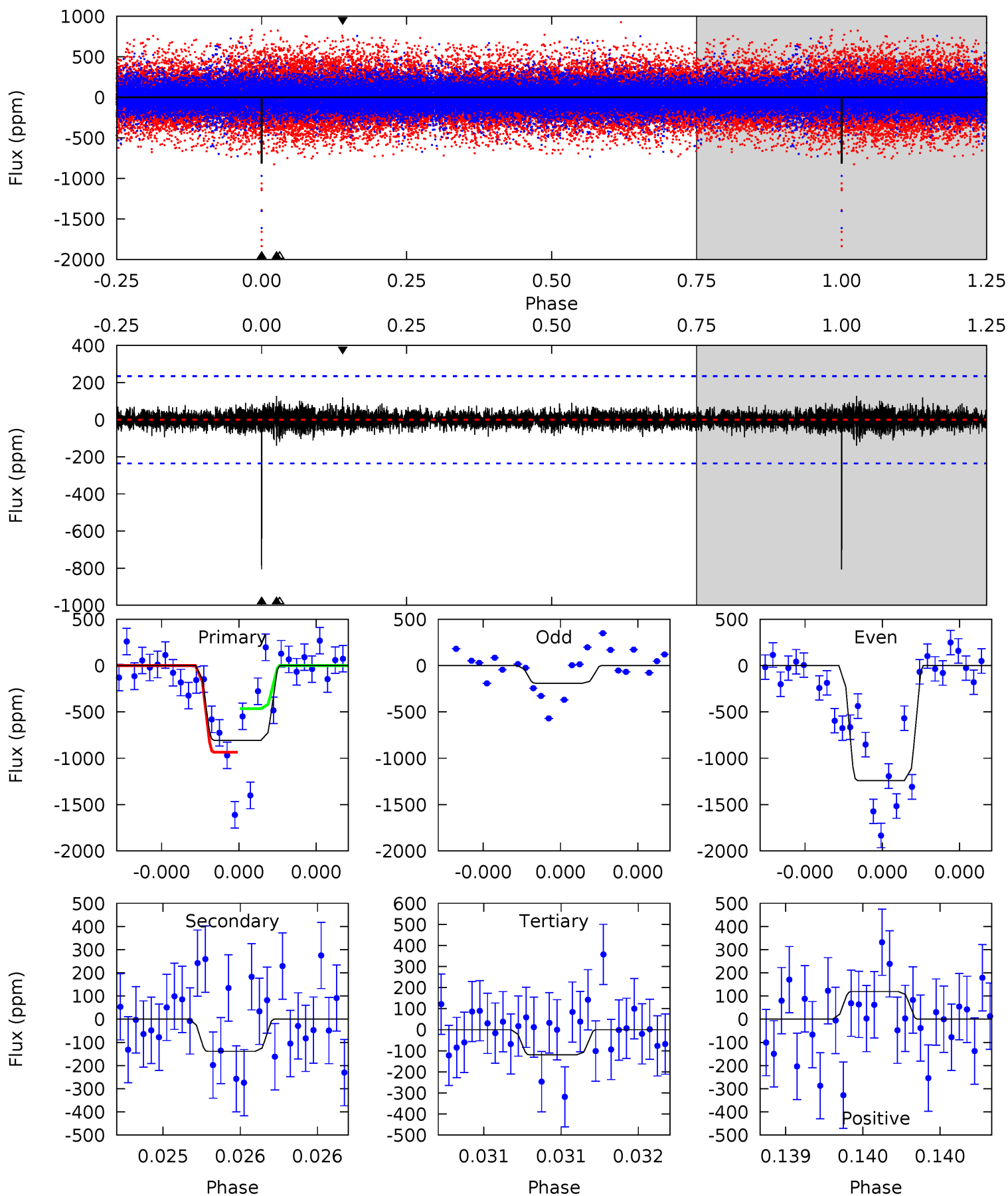
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
9.87	7.17	6.46	14.8	5.58	3.49	1.58	3.42	-4.96	0.71	-7.67	1.16	1.21	0.60	2.23



# Alt Model-Shift Uniqueness Test

006774920-01, P = 464.427574 Days, E = 121.614577 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
19.3	3.33	2.85	2.85	5.63	3.57	0.57	16.4	16.4	0.48	0.48	12.9	1.13	0.14	5.28



### Stellar Parameters For KIC 006774920

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R$ ( $R_{\odot}$ )	$M(M_{\odot})$	$p_{\star}$ ( $\text{g}\cdot\text{cm}^{-3}$ )
	$5392^{+162}_{-162}$	$4.522^{+0.104}_{-0.076}$	$-0.540^{+0.350}_{-0.300}$	$0.763^{+0.092}_{-0.092}$	$0.706^{+0.097}_{-0.037}$	$2.238^{+0.999}_{-0.584}$
	+3%/-3%	+2%/-2%	+65%/-56%	+12%/-12%	+14%/-5%	+45%/-26%
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 006774920-01 / KOI

Detrend	Depth (ppm)	$R_p$ ( $R_{\oplus}$ )	$T_{\text{max}}$ (K)	$T_{\text{obs}}$ (K)	$A_{\text{obs}}$
DV	$-328 \pm 46$	$2.28^{+1.01}_{-0.98}$	$283^{+12}_{-13}$	$4515^{+1218}_{-555}$	$37595^{+81225}_{-19420}$
Alt.	$-139 \pm 42$	$2.73^{+1.02}_{-0.99}$	$283^{+12}_{-13}$	$3643^{+599}_{-393}$	$11471^{+16159}_{-5949}$

$T_{\text{max}}$  = 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

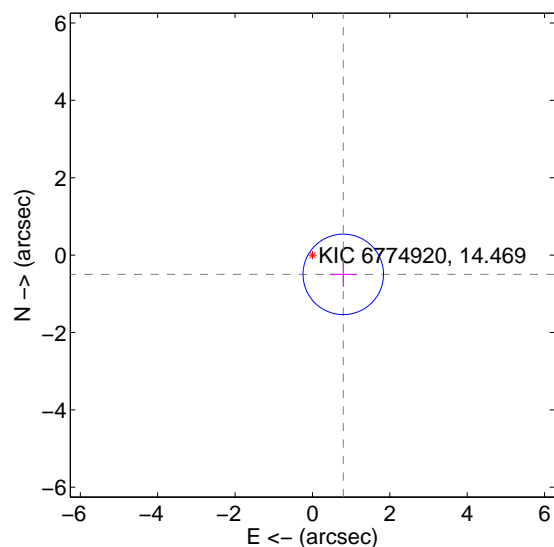
Supplemental centroid analysis for 006774920-01. Kepler magnitude: 14.47. Transit SNR 8.03

There are 1 quarters with good PRF difference image offsets

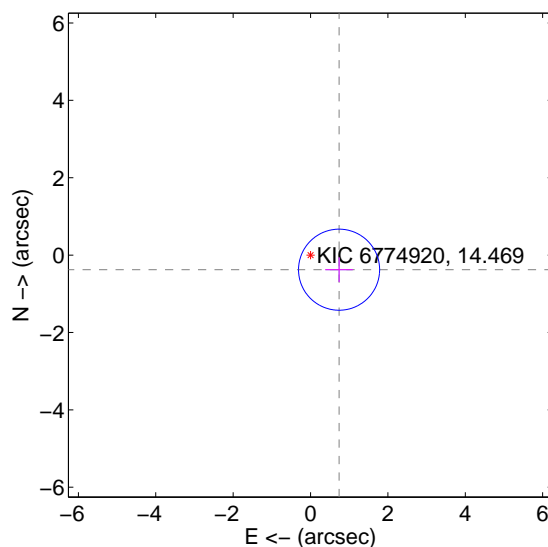
The direct PRF centroid is offset from the target star catalog position by about 0.13 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.940 \pm 0.347$	2.71	$-0.797 \pm 0.356$	$-0.499 \pm 0.321$
PRF-fit source offset from KIC position	$0.829 \pm 0.349$	2.37	$-0.738 \pm 0.356$	$-0.377 \pm 0.321$
photometric centroid source offset	$0.50 \pm 1.57$	0.32	$0.49 \pm 1.58$	$0.09 \pm 1.17$

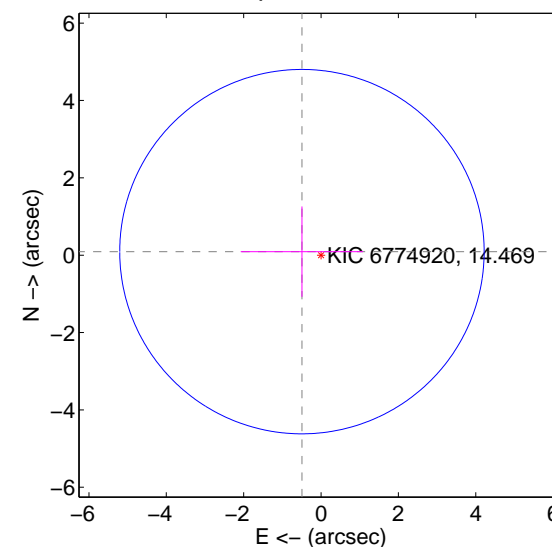
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position



offset from photometric centroids

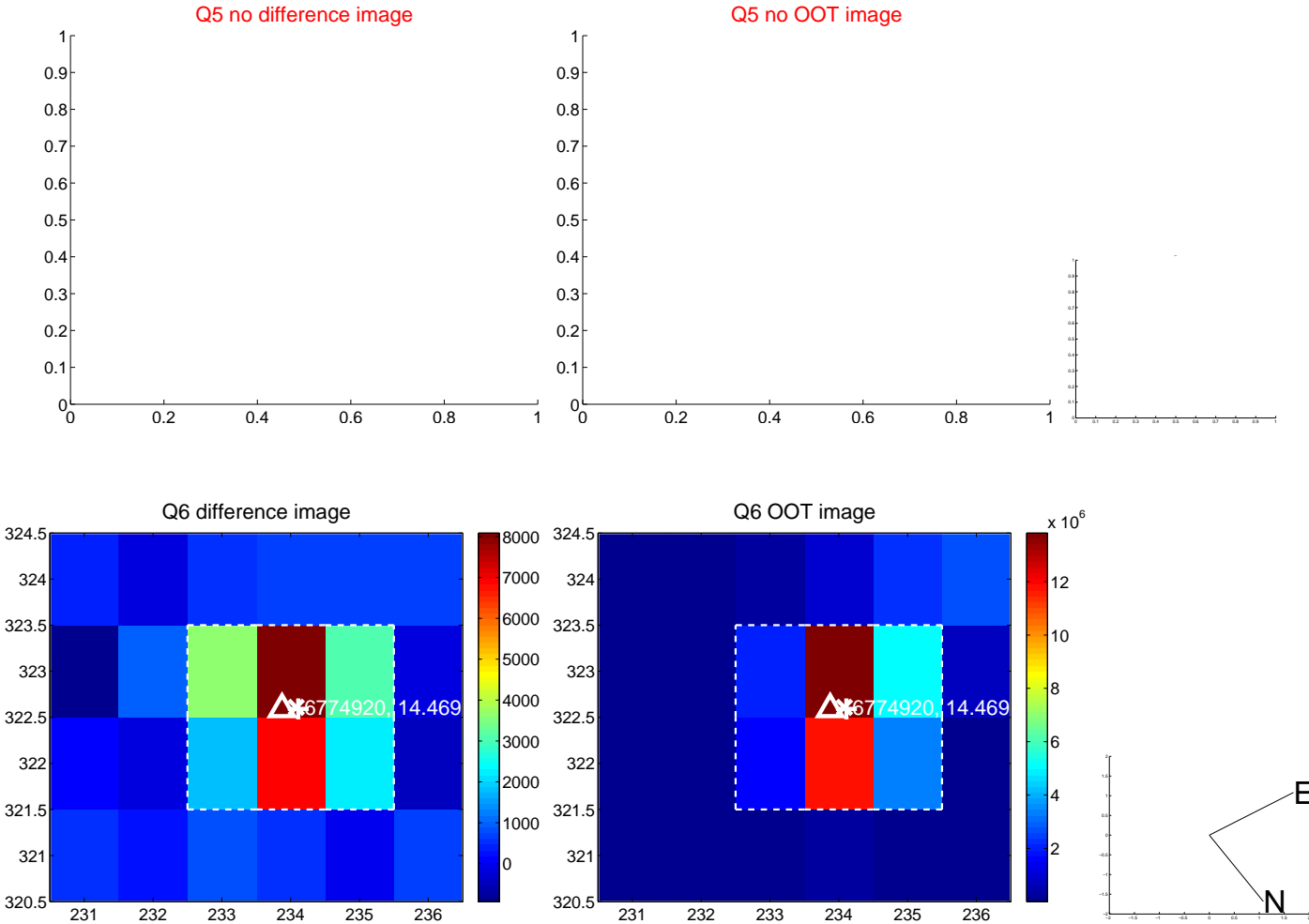


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: three-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

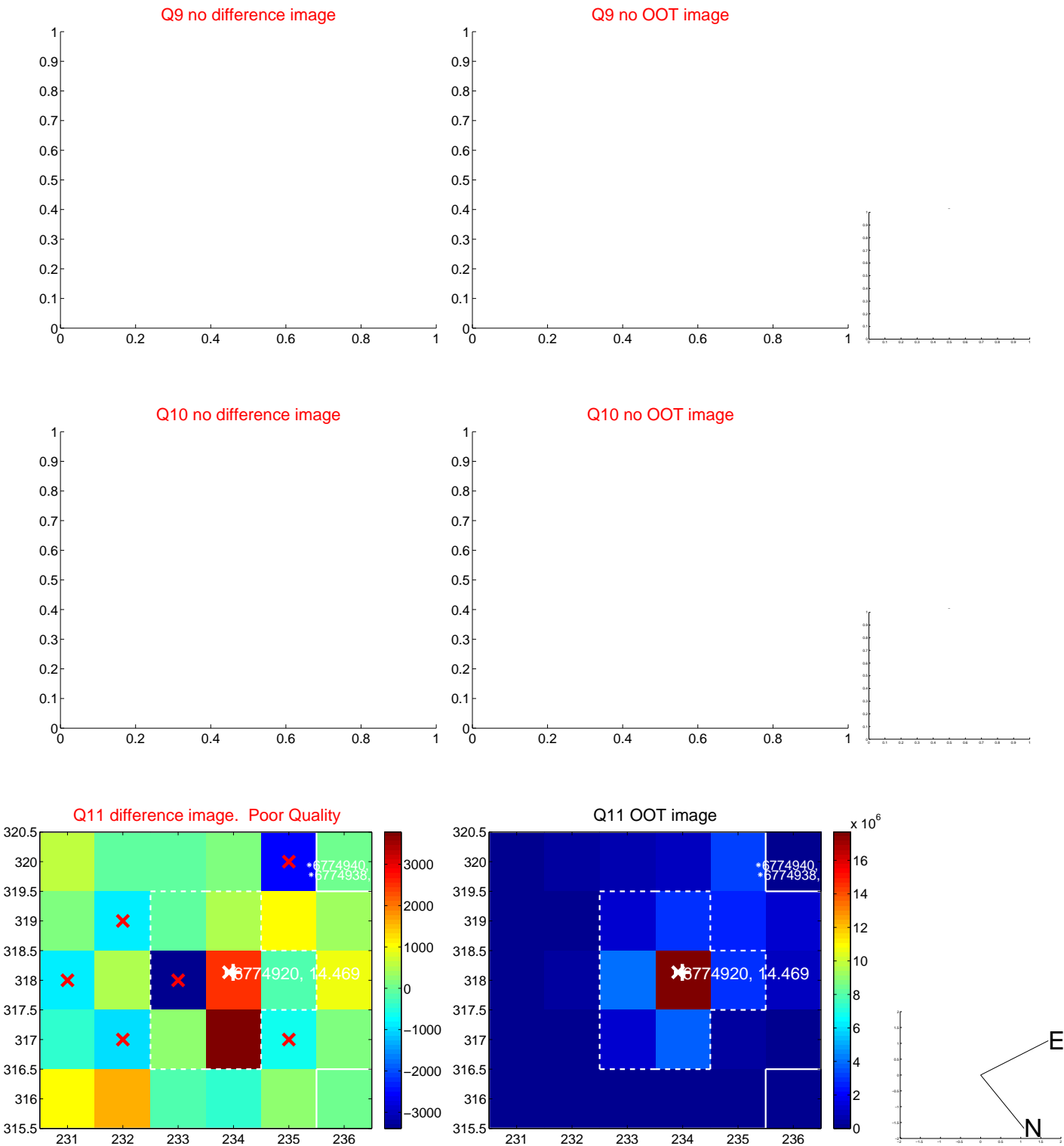


white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

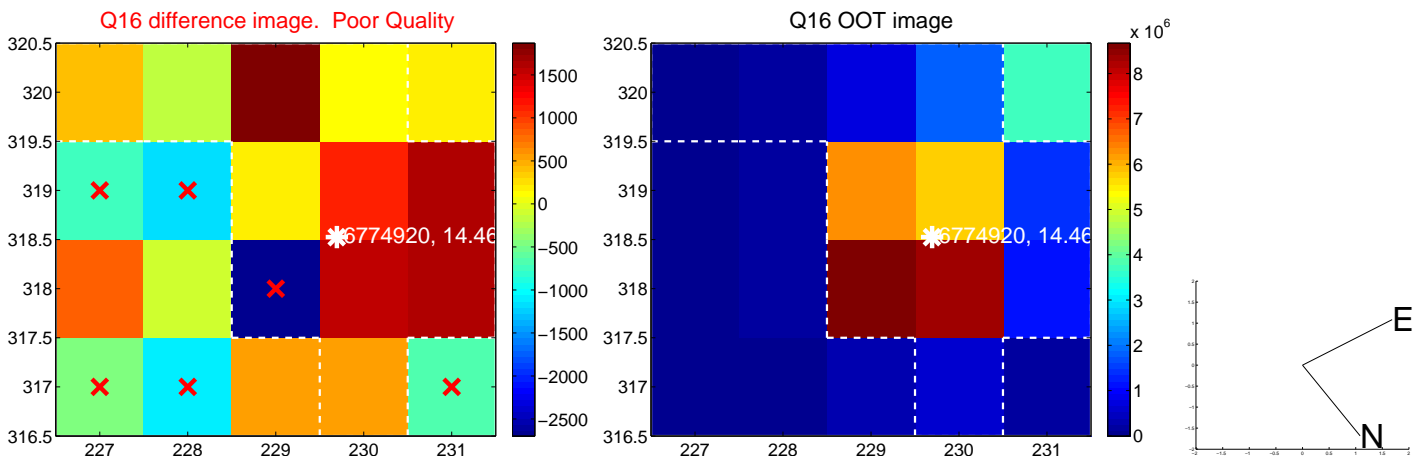
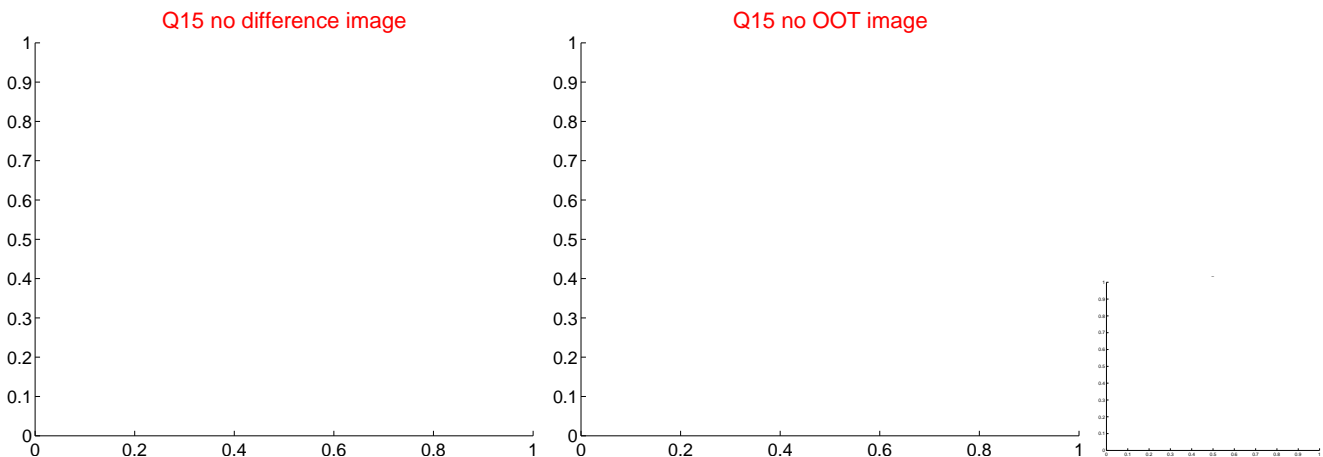
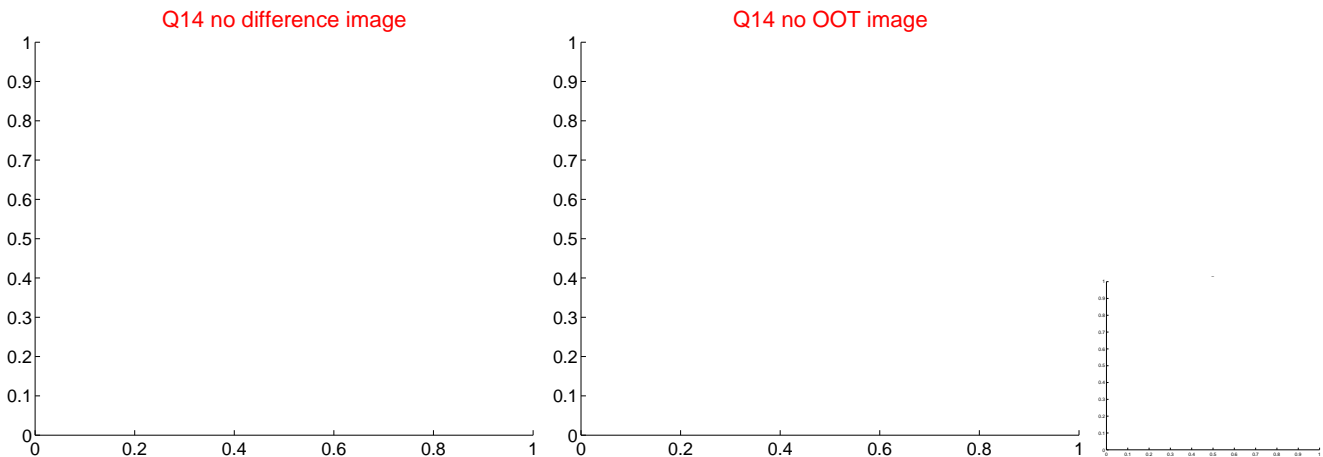




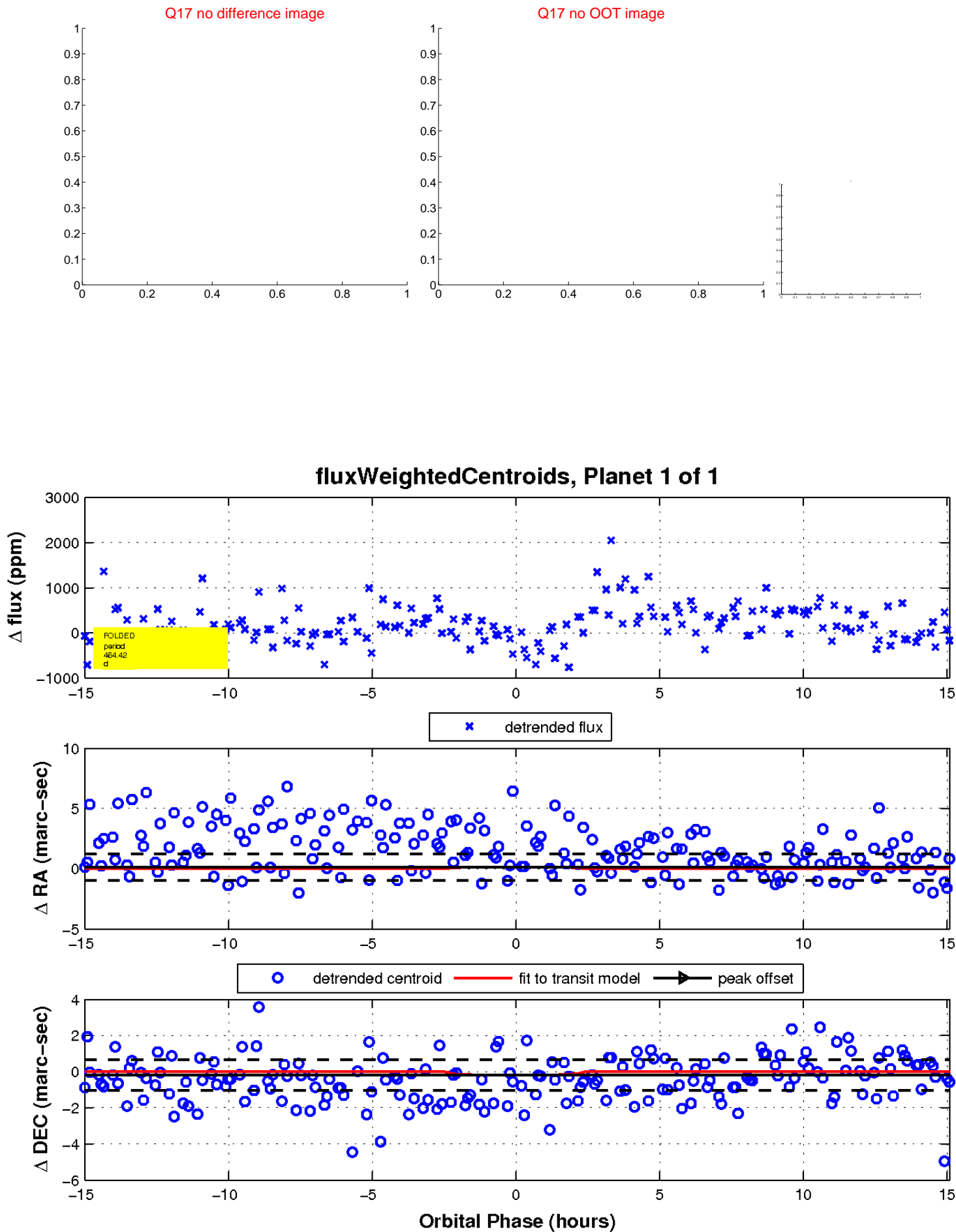
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ✕: large negative pixel value.



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

