

# KIC 005301093

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
005301093-01	OBS	7724.01	488.672766	519.780358	677.8	12.486	7.3	6.8	0.77	5218	2.17	0.30

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005301093-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_SKYE—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.

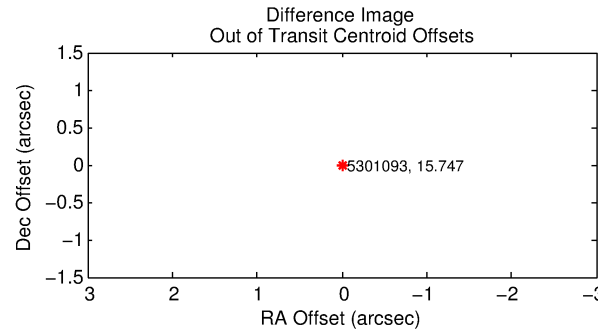
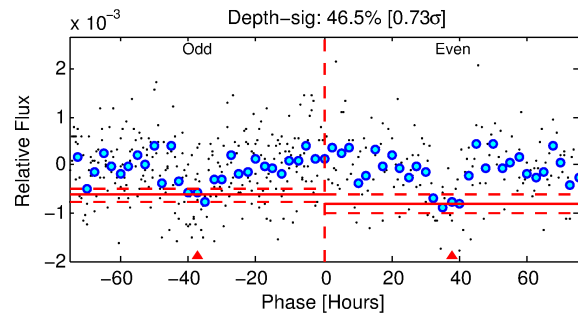
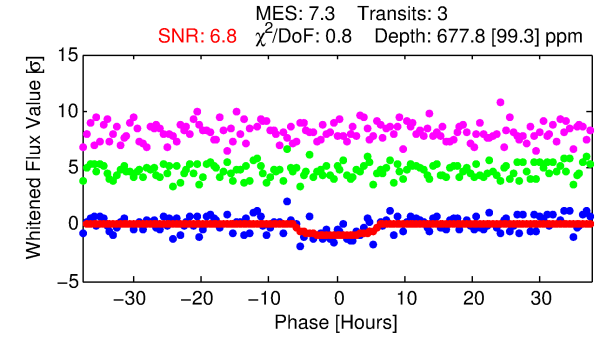
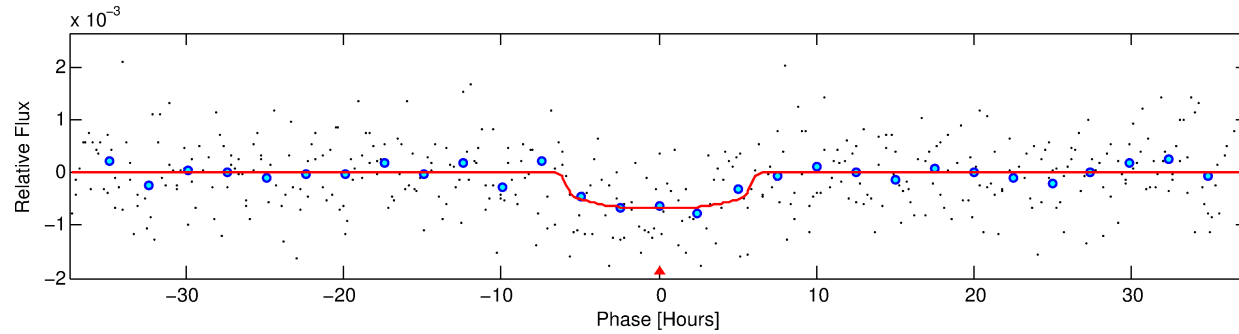
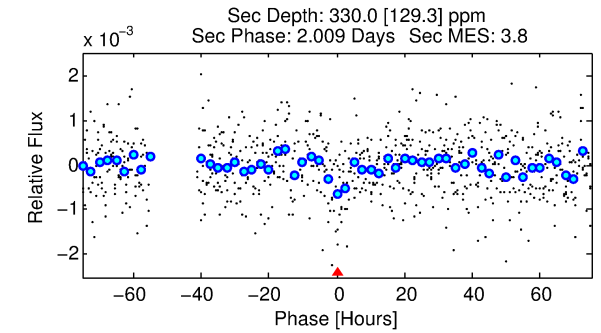
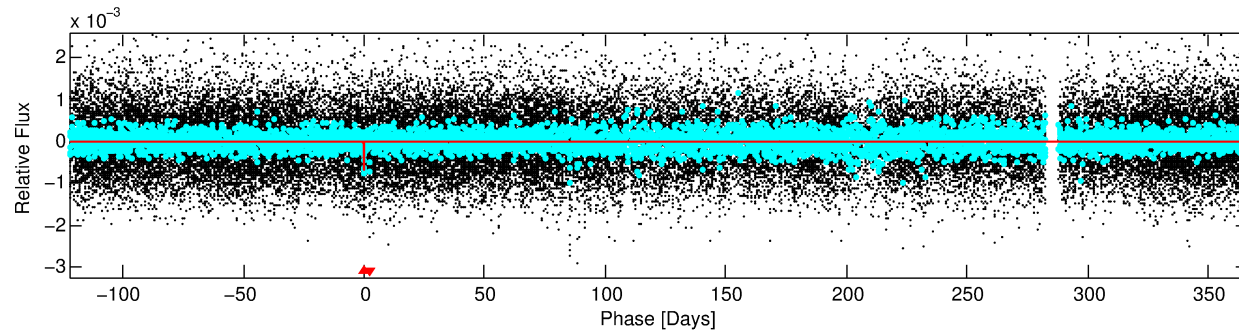
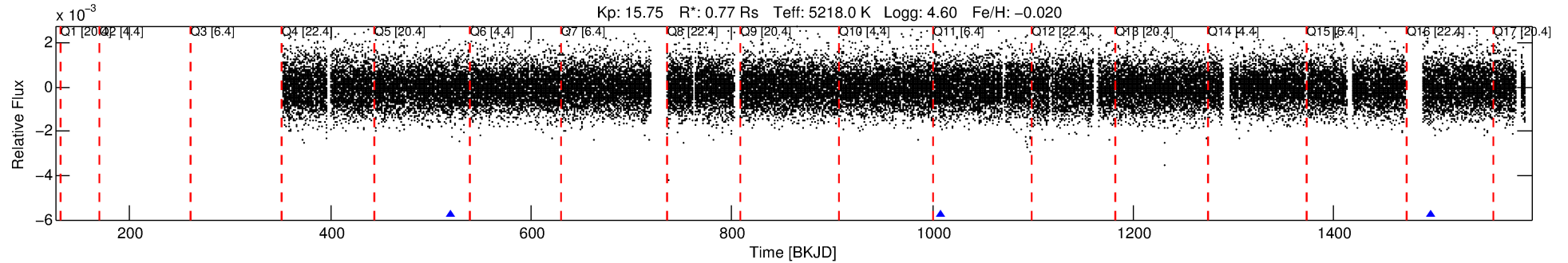
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 005301093-01

No Significant Match Found

# DV One-Page Summary

KIC: 5301093 Candidate: 1 of 1 Period: 488.673 d



## DV Fit Results:

Period = 488.67277 [0.01965] d  
Epoch = 519.7804 [0.0265] BKJD  
Rp/R\* = 0.0257 [0.0126]  
a/R\* = 216.11 [393.80]  
b = 0.73 [1.20]  
Seff = 0.30 [0.07]  
Teq = 188 [11] K  
Rp = 2.17 [1.12] Re  
a = 1.1538 [0.1525] AU  
Ag = 51510.97 [55373.29] [0.93σ]  
Teffp = 4386 [1170] K [3.59σ]

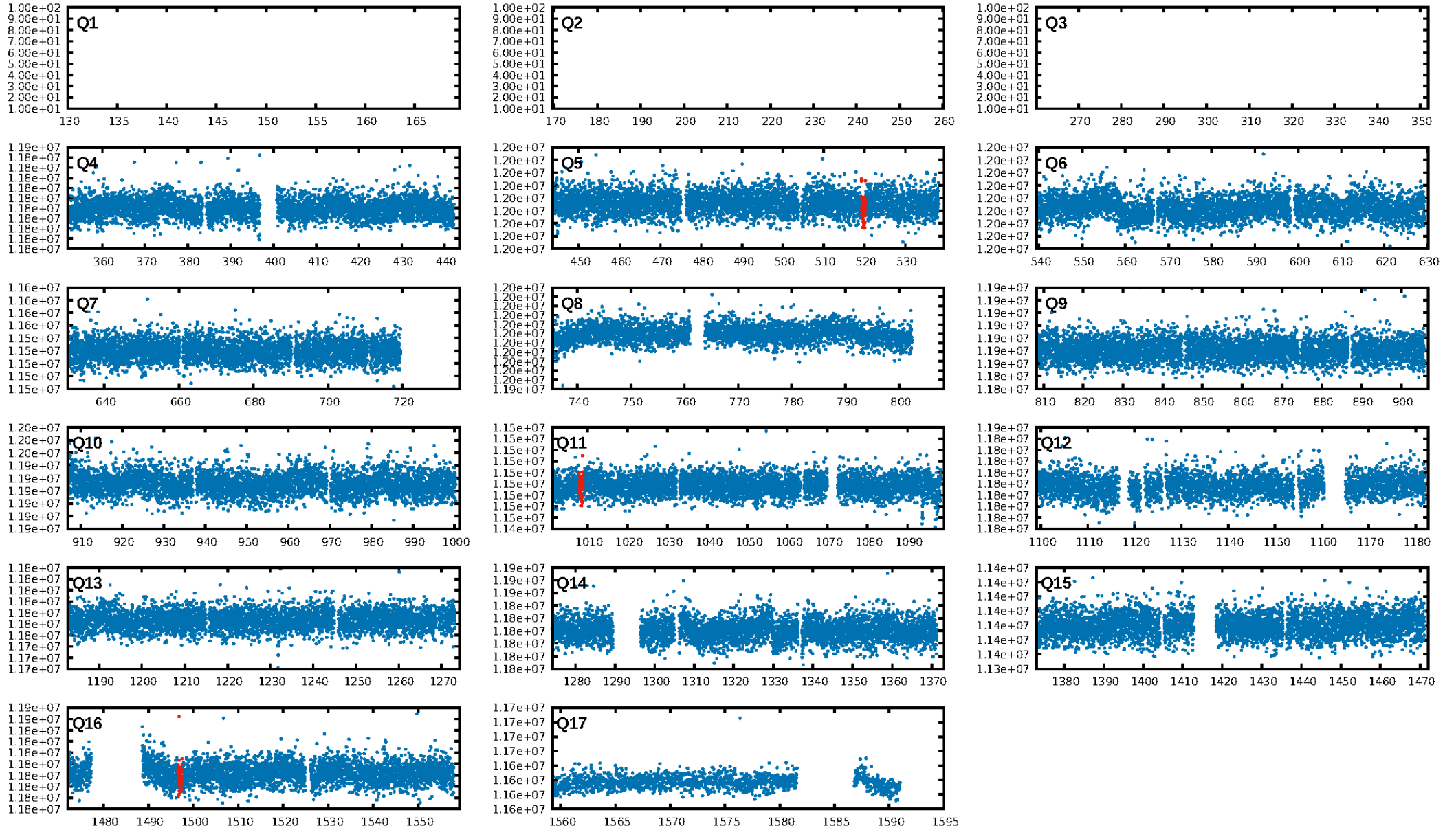
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: 84.5%  
ModelChiSquareGof-sig: 100.0%  
**Bootstrap-pfa: 6.67e-09**  
RollingBand-fgt: 1.00 [3/3]  
GhostDiagnostic-chr: -64.48  
Centroid-sig: 4.4%  
**Centroid-so: 3.100 arcsec [3.38σ]**  
OotOffset-rm: N/A  
KicOffset-rm: 0.781 arcsec [0.53σ]  
OotOffset-st: 0/0/0/0 [0]  
KicOffset-st: 0/0/0/1 [1]  
DiffImageQuality-fgm: 0.00 [0/1]  
DiffImageOverlap-fno: 1.00 [2/2]

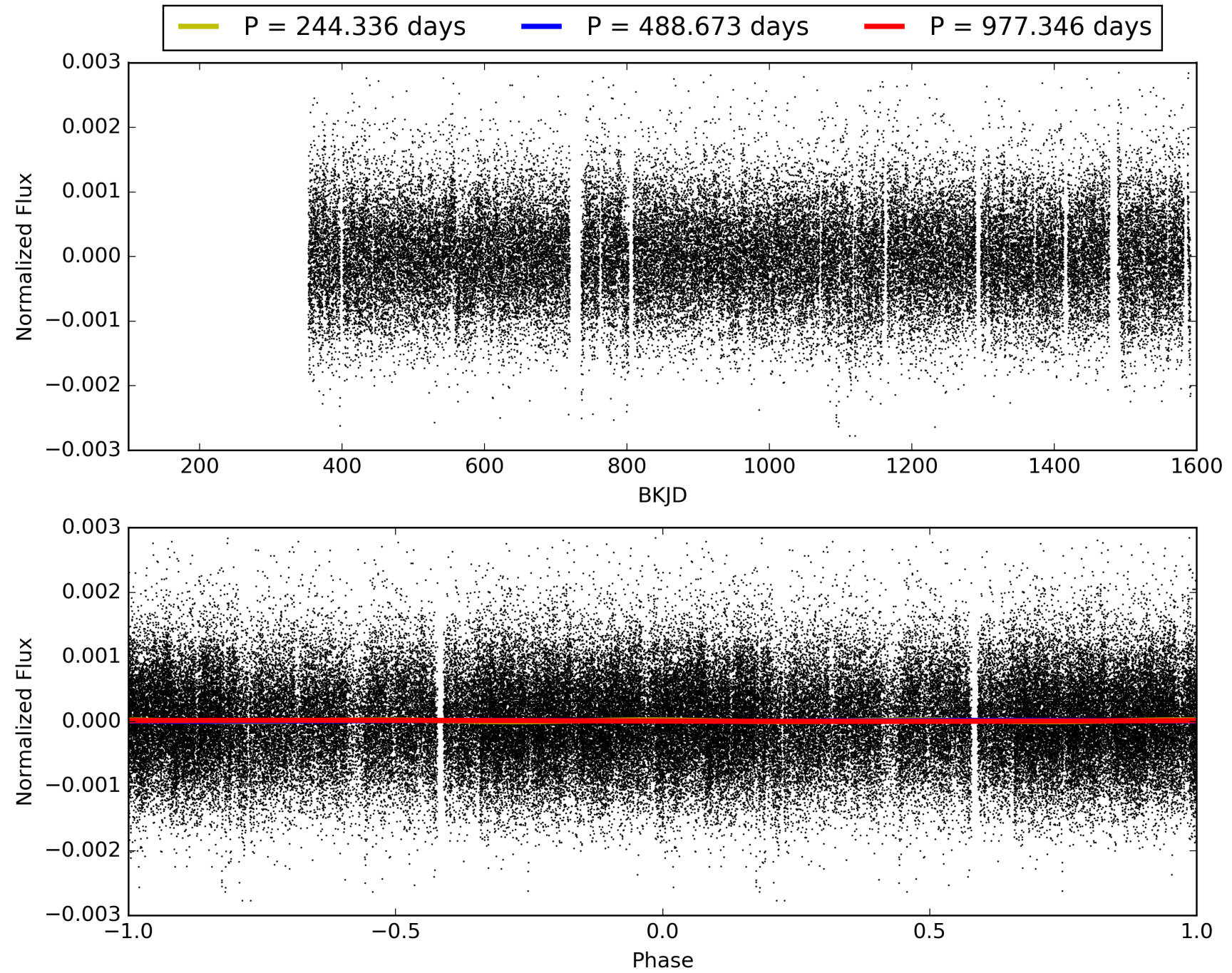
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 06:03:24 Z

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

# TCE 005301093-01, PDC Light Curves

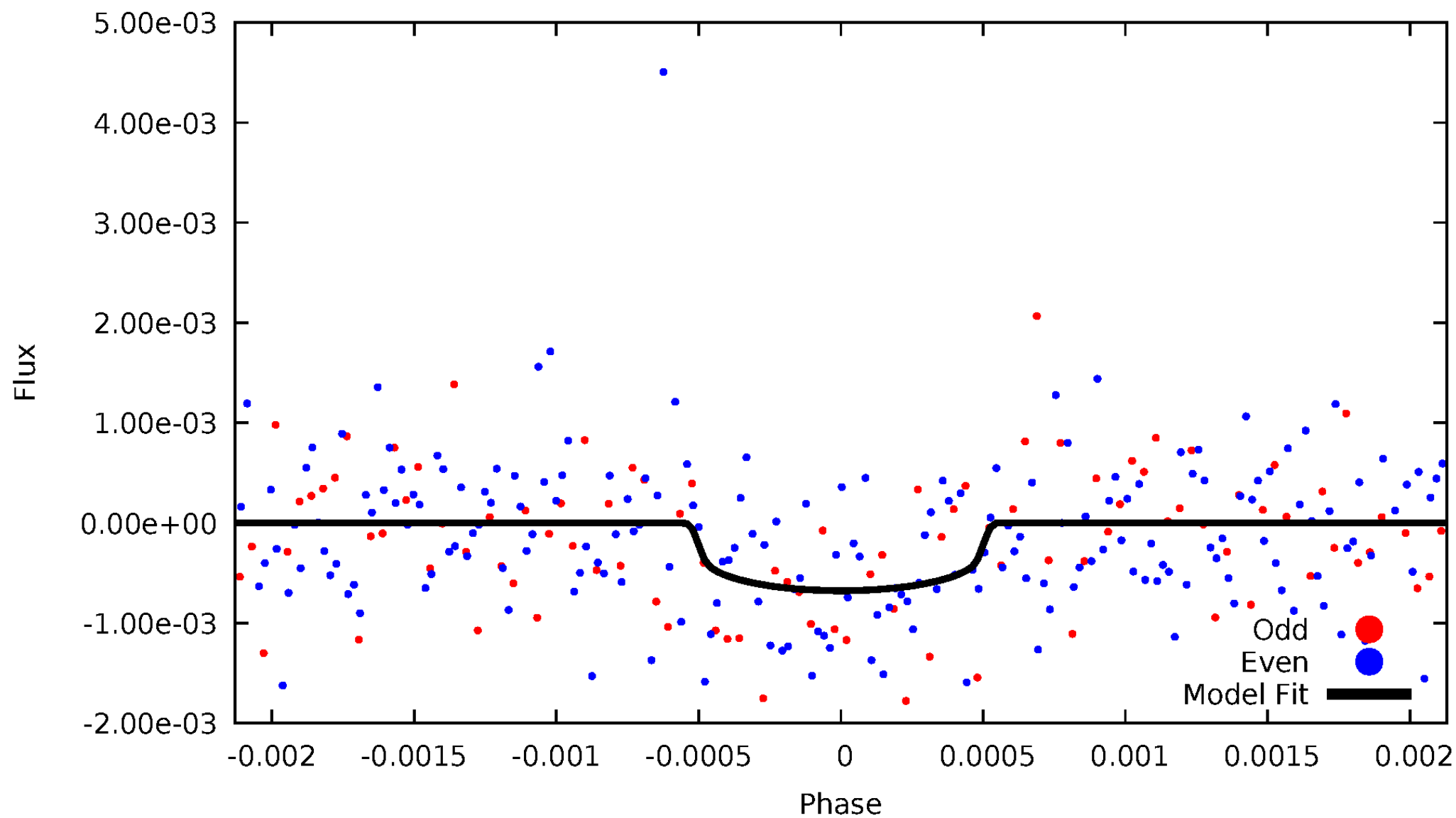


TCE 005301093-01



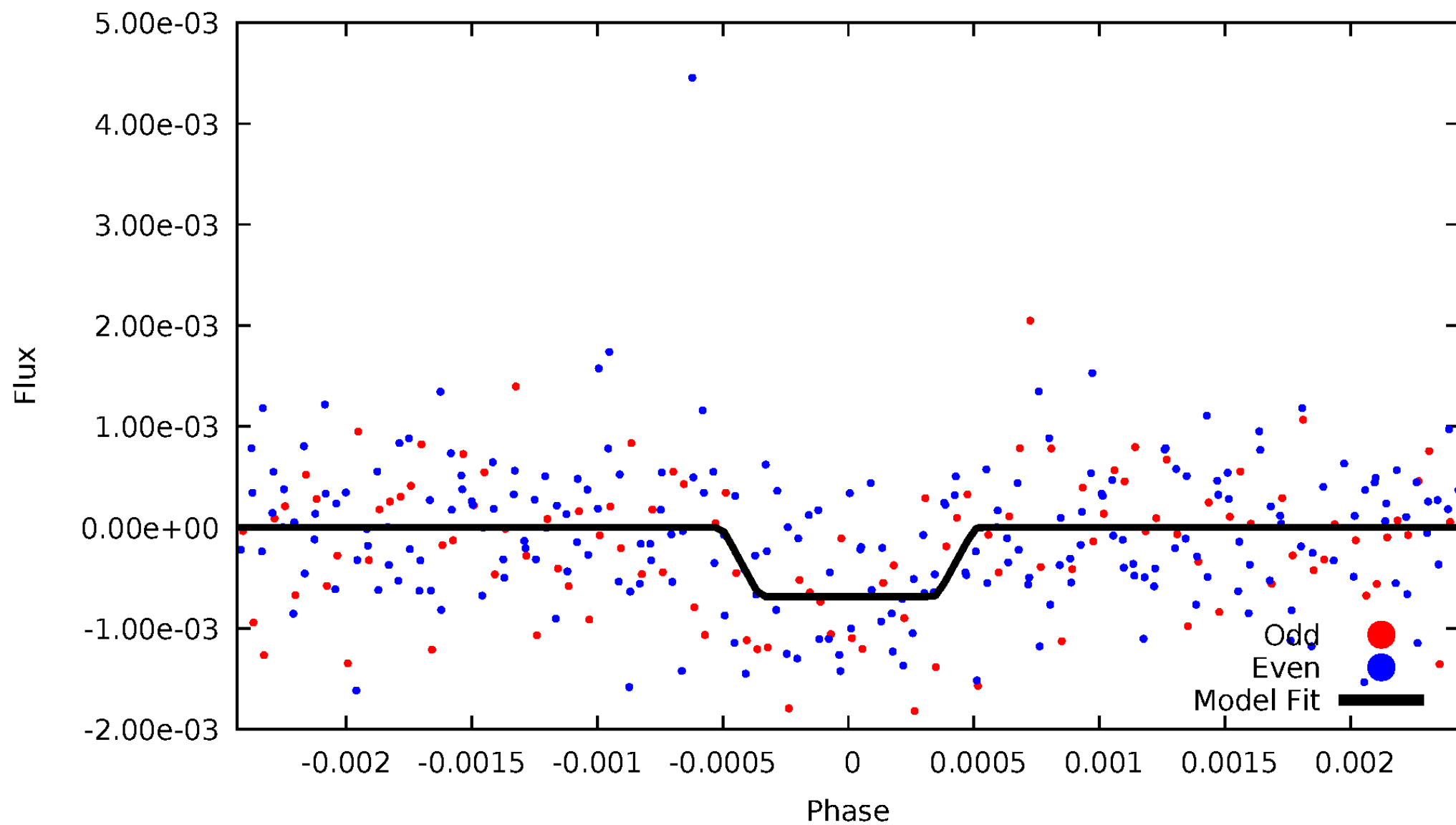
# DV Odd/Even

TCE 005301093-01



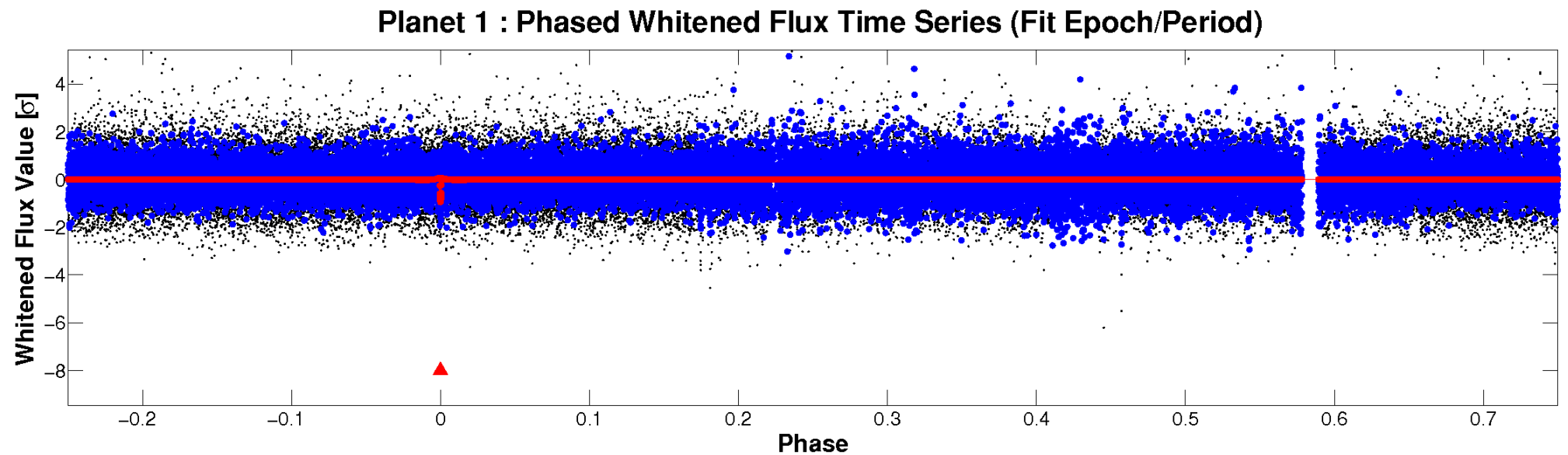
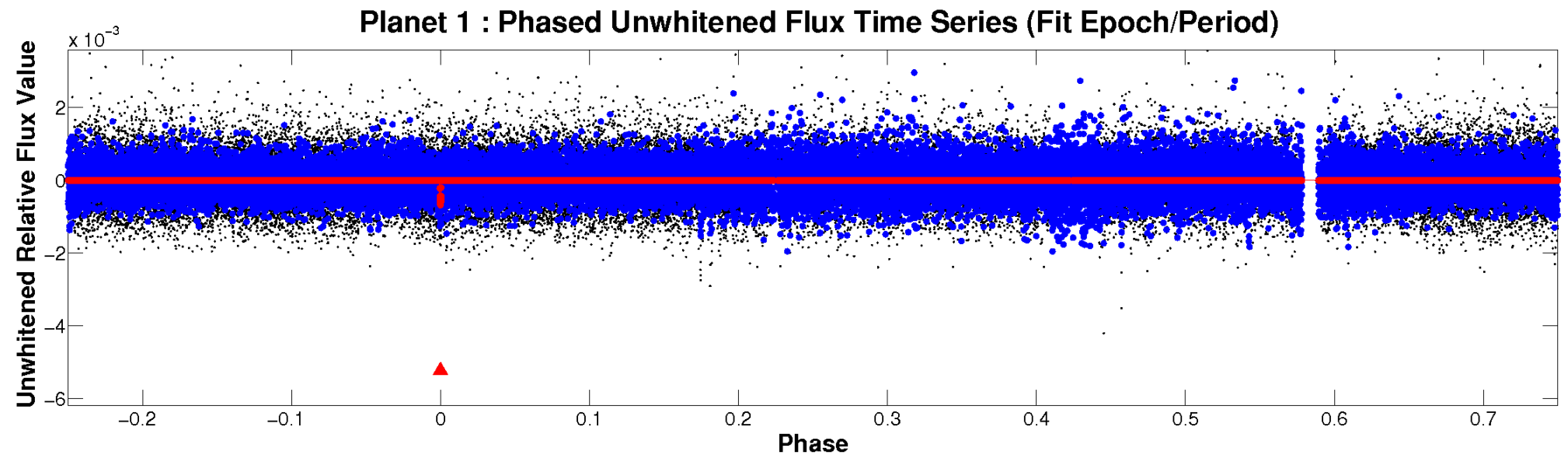
# ALT Odd/Even

TCE 005301093-01



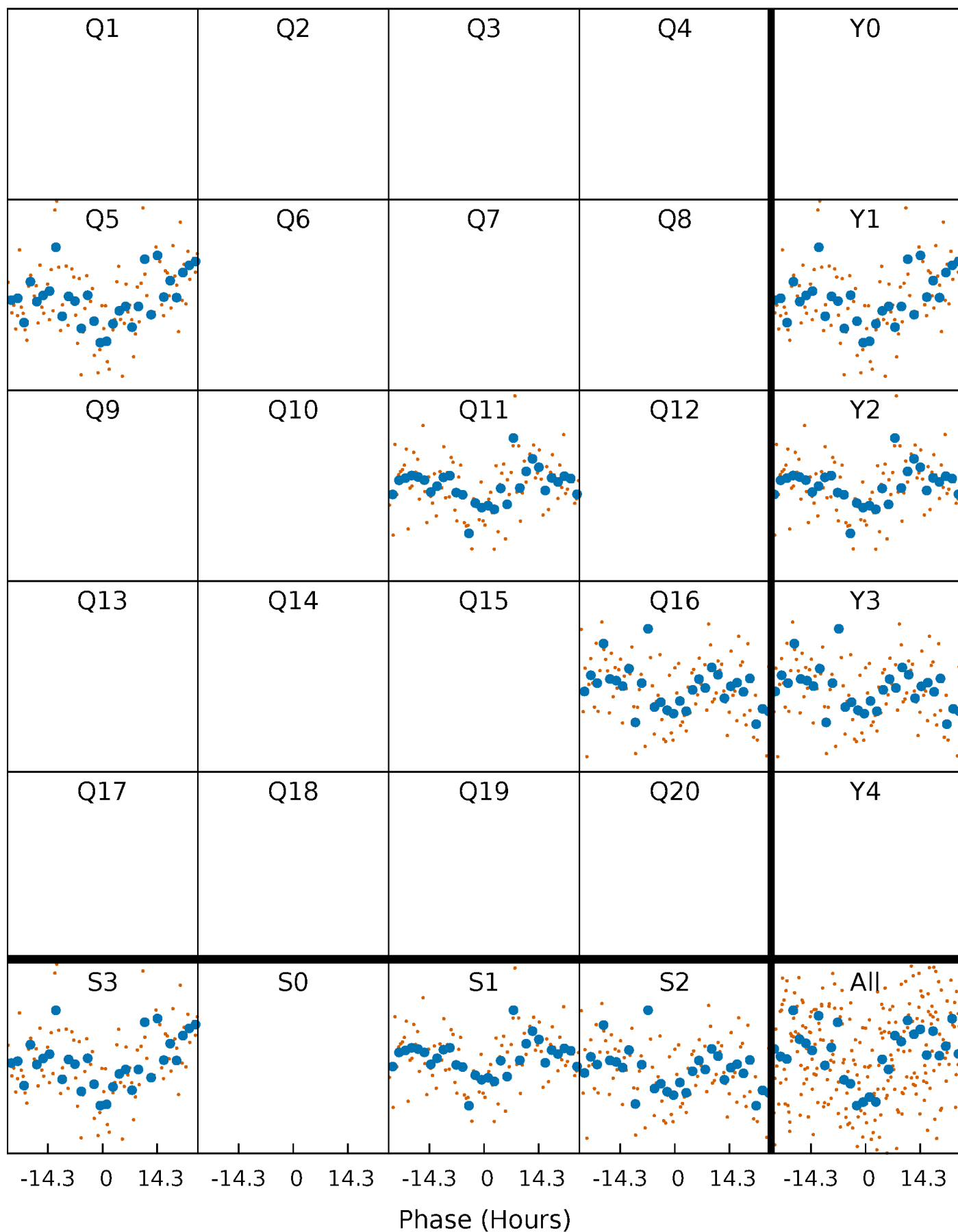


# Non-Whitened Vs. Whitened Light Curve



# PDC Quarter-Phased Transit Curves

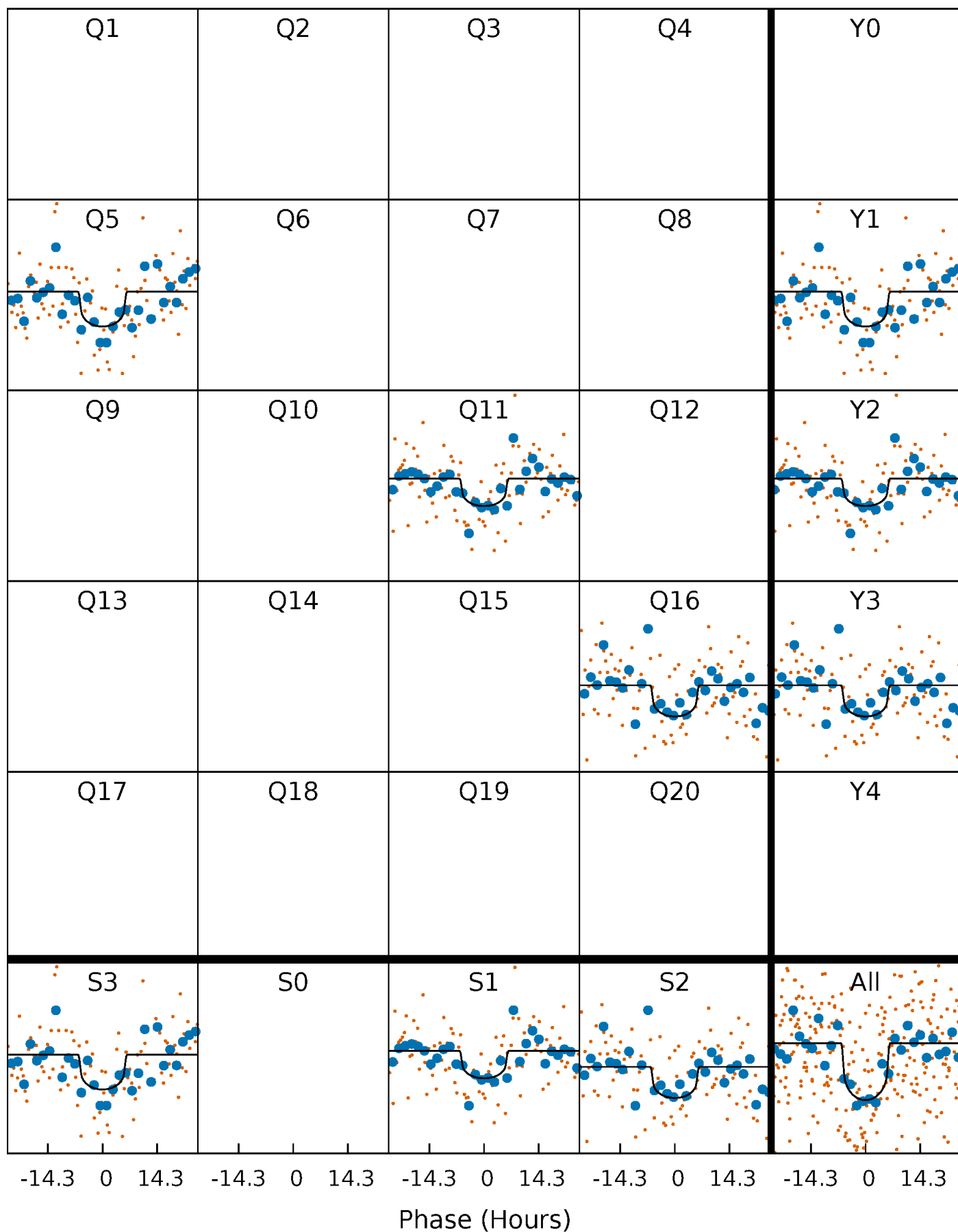
TCE 005301093-01 P=488.672766 Days  $T_0=519.780358$  (BKJD)





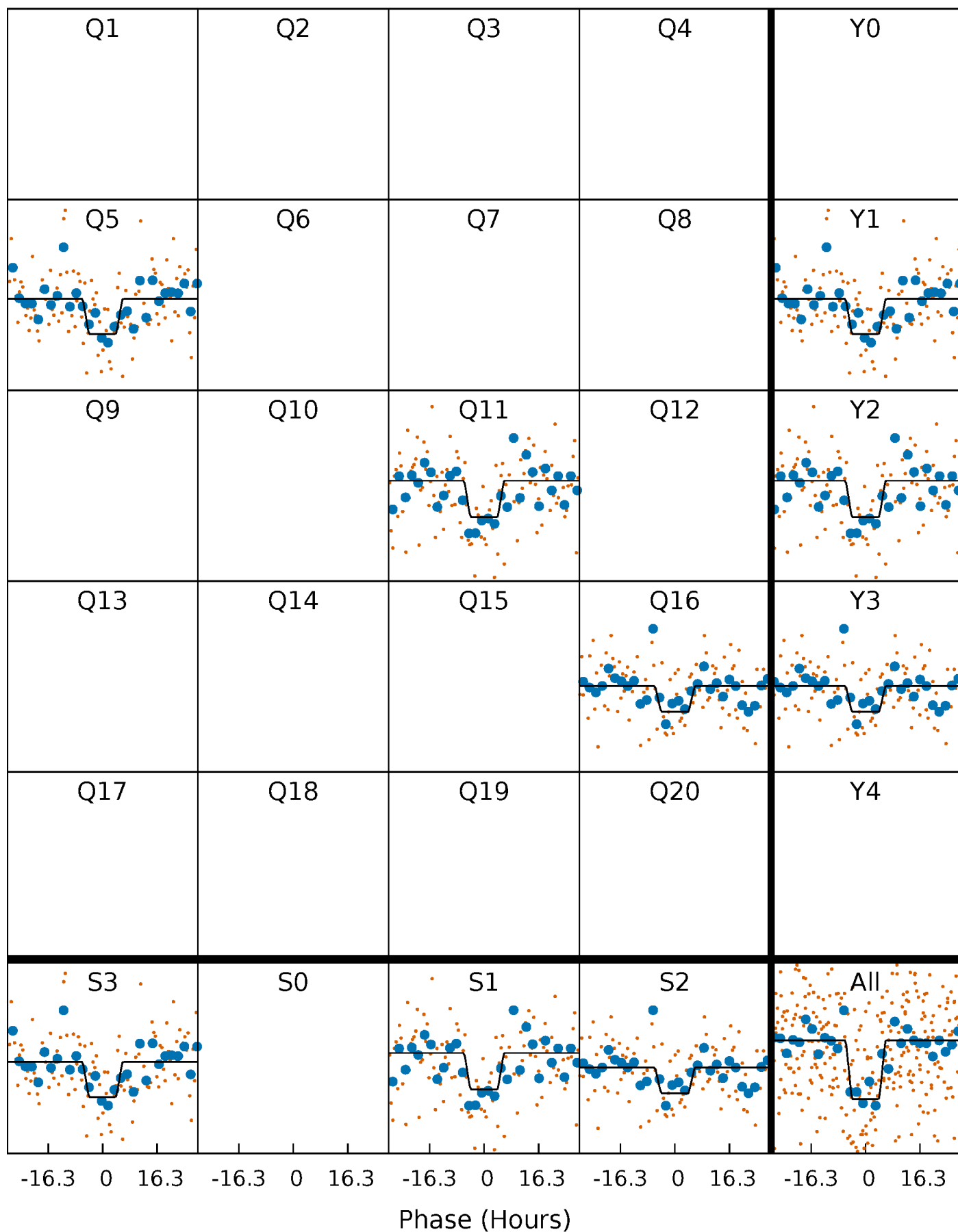
# DV Quarter-Phased Transit Curves

TCE 005301093-01 P=488.672766 Days  $T_0=519.780358$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

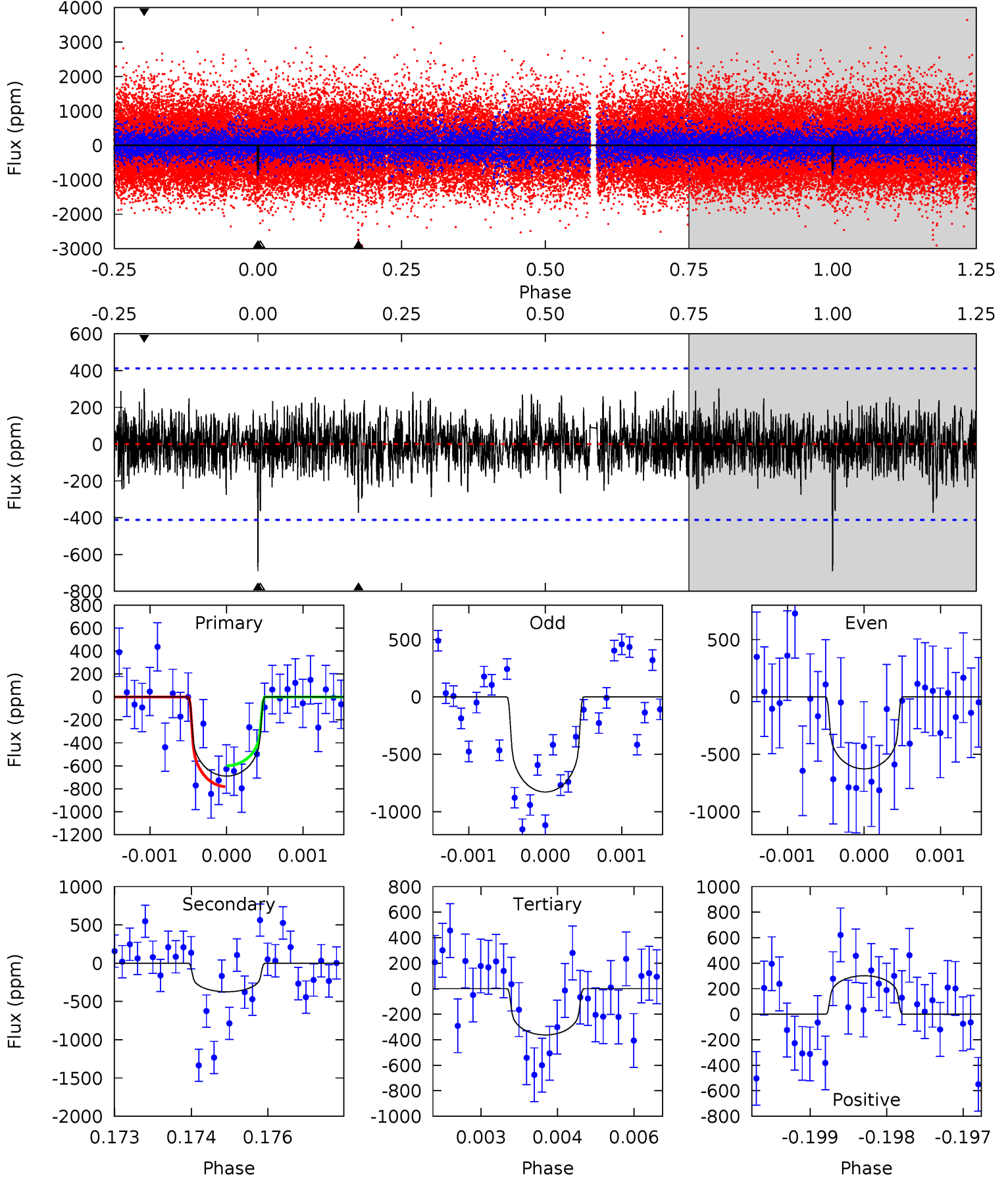
TCE 005301093-01 P=488.689021 Days  $T_0=519.746535$  (BKJD)



# DV Model-Shift Uniqueness Test

005301093-01,  $P = 488.672766$  Days,  $E = 31.107592$  Days

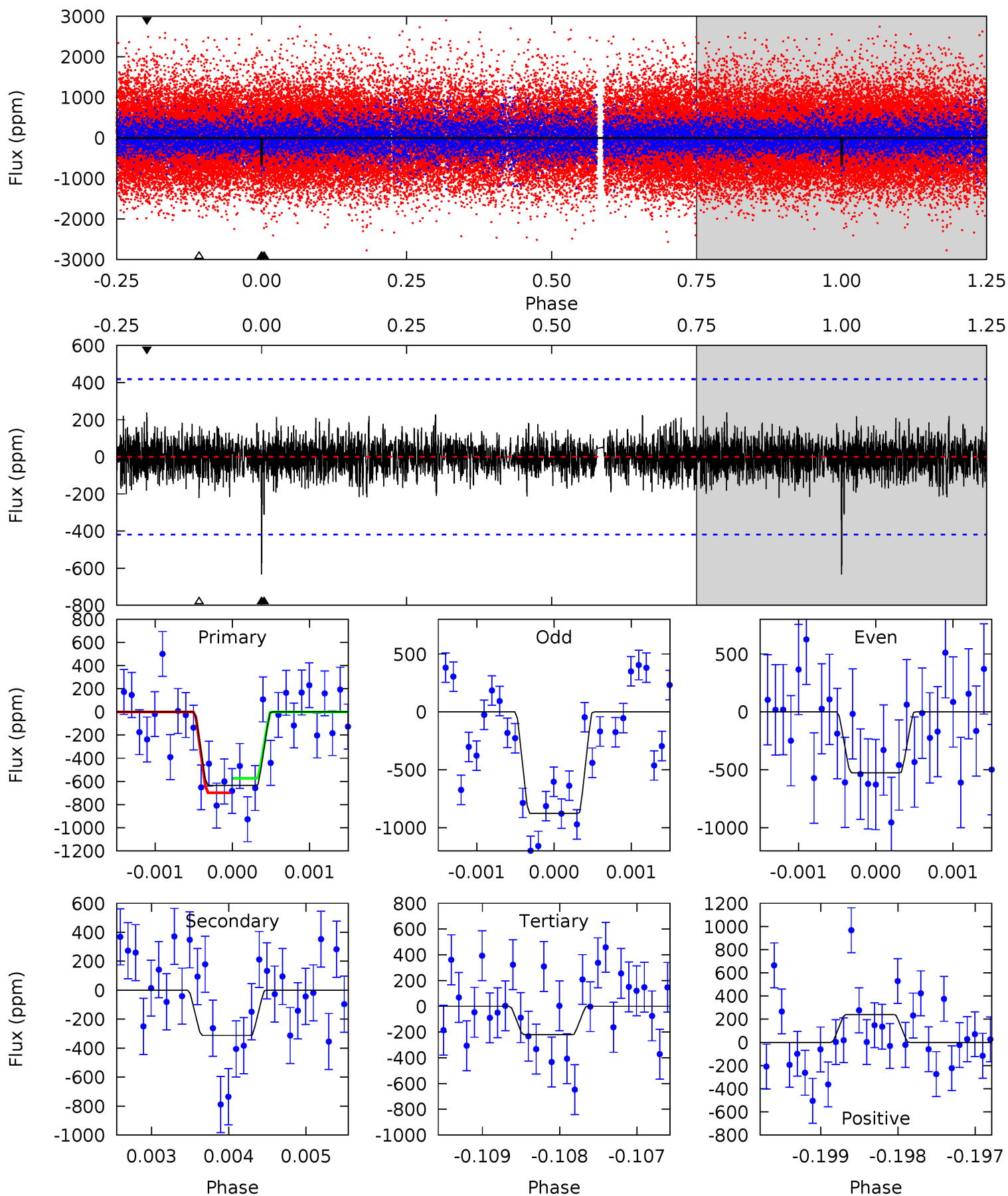
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
9.10	4.94	4.79	3.99	5.43	3.26	1.17	4.32	5.12	0.15	0.95	1.23	0.96	0.30	1.20



# Alt Model-Shift Uniqueness Test

005301093-01, P = 488.689021 Days, E = 31.057514 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
8.24	4.06	2.87	3.11	5.44	3.28	0.88	5.38	5.13	1.19	0.95	2.12	1.20	0.27	0.81



### Stellar Parameters For KIC 005301093

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$5218^{+184}_{-166}$	$4.596^{+0.026}_{-0.104}$	$-0.020^{+0.300}_{-0.300}$	$0.772^{+0.122}_{-0.056}$	$0.867^{+0.070}_{-0.093}$	$2.657^{+0.453}_{-0.861}$
	+4%/-3%	+1%/-2%	+1500%/-1500%	+16%/-7%	+8%/-11%	+17%/-32%
Source	KIC0	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 005301093-01 / KOI 7724.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	$A_{obs}$
DV	$-374 \pm 76$	$2.23^{+1.12}_{-1.07}$	$267^{+13}_{-10}$	$4629^{+1485}_{-672}$	$55113^{+134614}_{-31754}$
Alt.	$-312 \pm 77$	$2.34^{+1.13}_{-1.08}$	$268^{+13}_{-10}$	$4396^{+1409}_{-629}$	$40569^{+104938}_{-22892}$

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

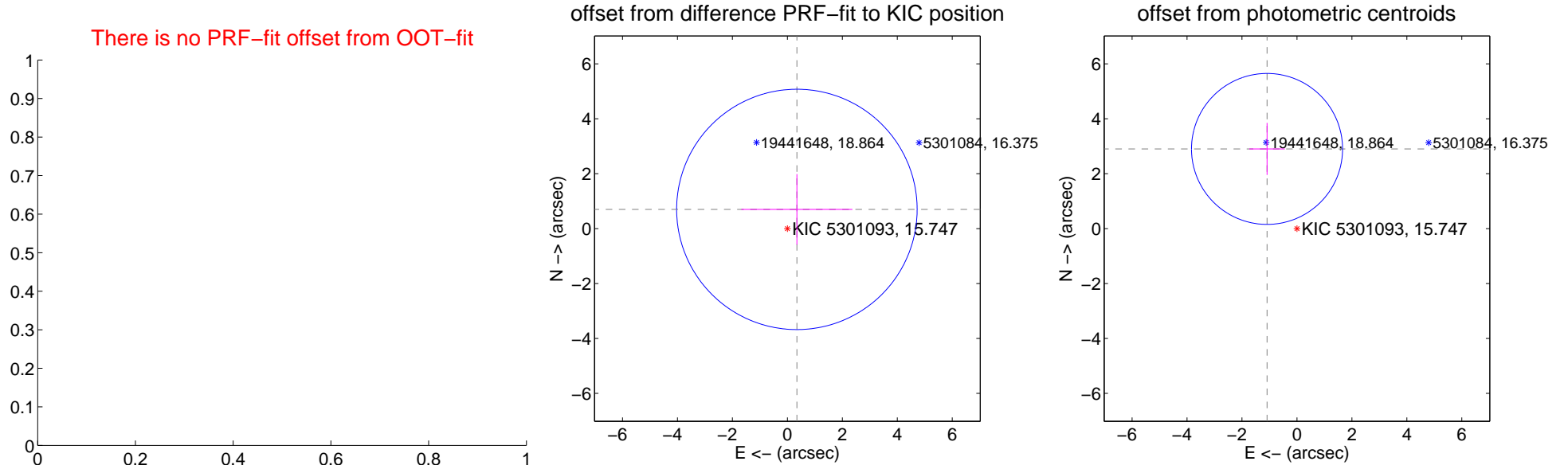
## DV Centroid Data

Supplemental centroid analysis for 005301093-01. Kepler magnitude: 15.75. Transit SNR 6.75

There are 0 quarters with good PRF difference image offsets

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

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	—	—	—	—
PRF-fit source offset from KIC position	$0.781 \pm 1.459$	0.53	$-0.346 \pm 2.022$	$0.699 \pm 1.284$
photometric centroid source offset	$3.10 \pm 0.92$	3.38	$1.09 \pm 0.65$	$2.90 \pm 0.95$



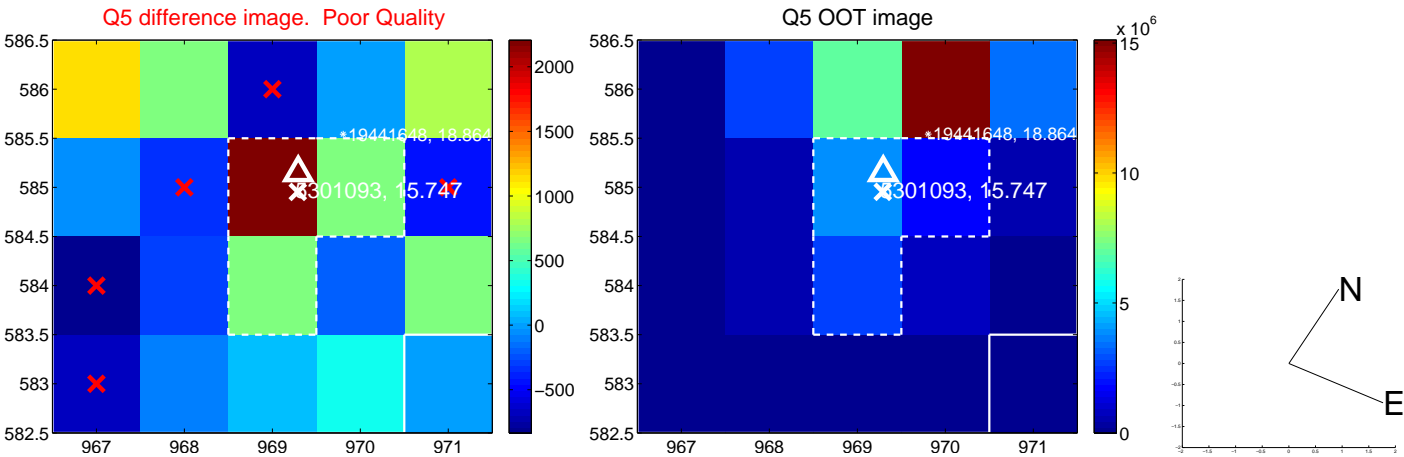
Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: three-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





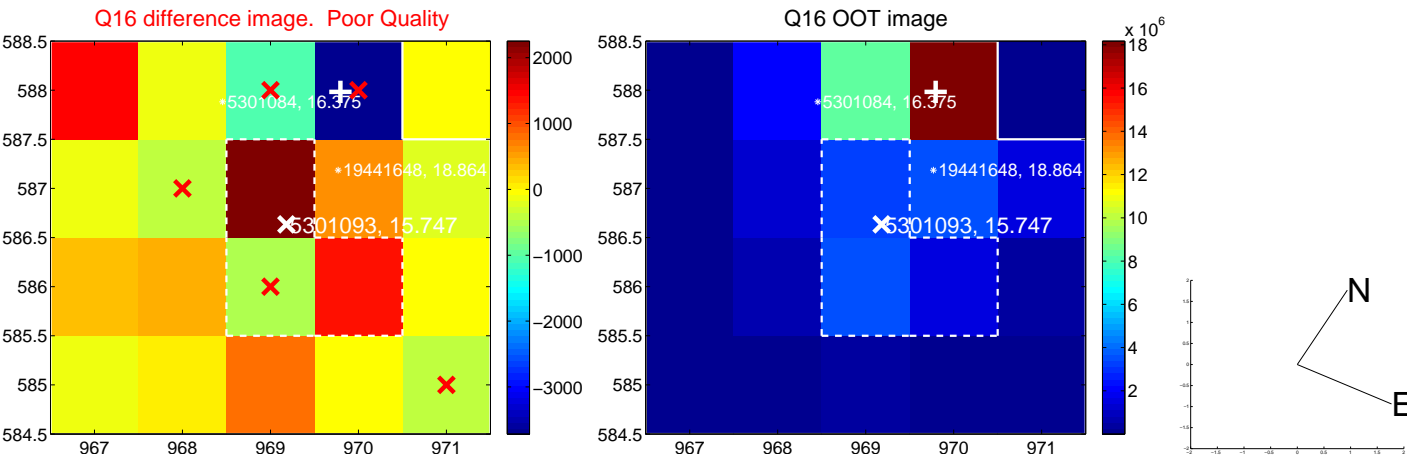
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



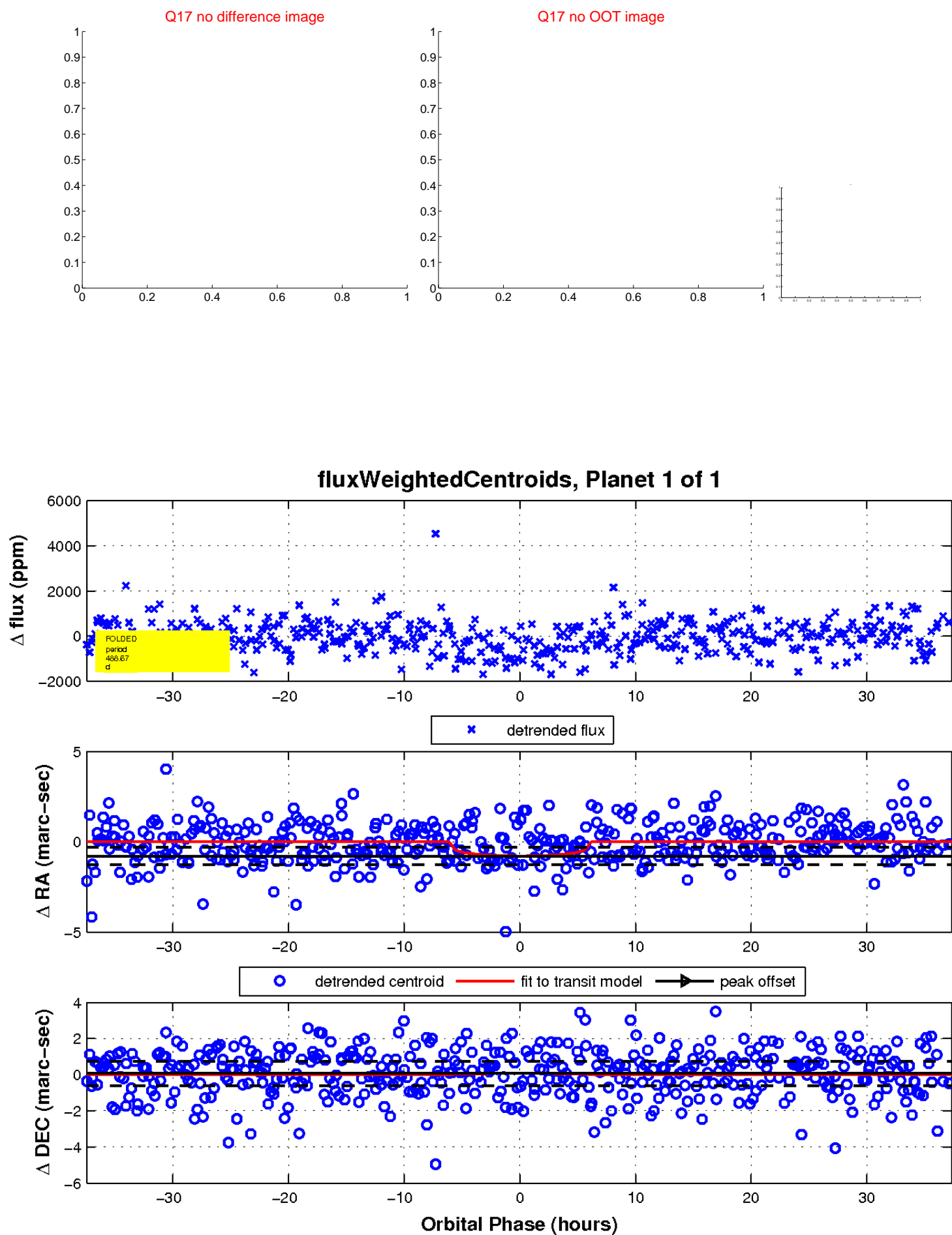
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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

