

# KIC 007289491

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
007289491-01	OBS	No	493.726838	187.735519	195.2	17.045	7.3	8.5	1.13	5775	1.62	0.91

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
007289491-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—ALL_TRANS_CHASES—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.

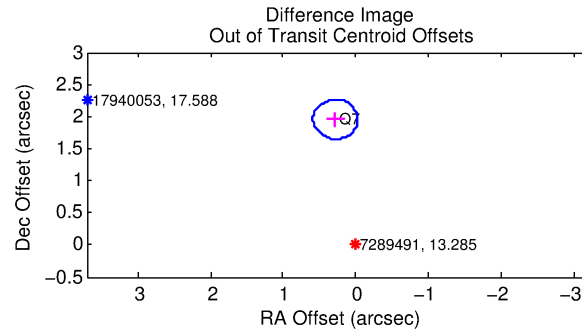
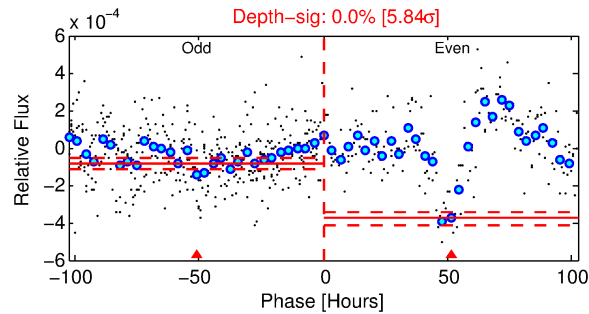
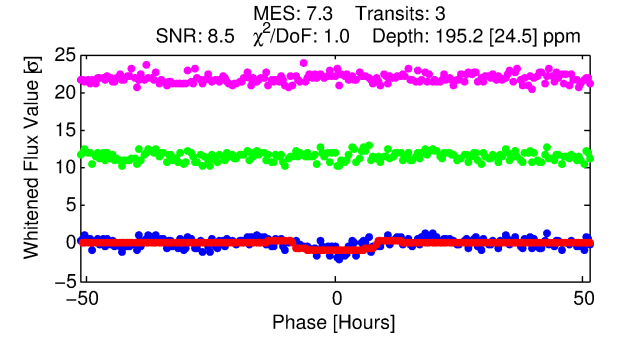
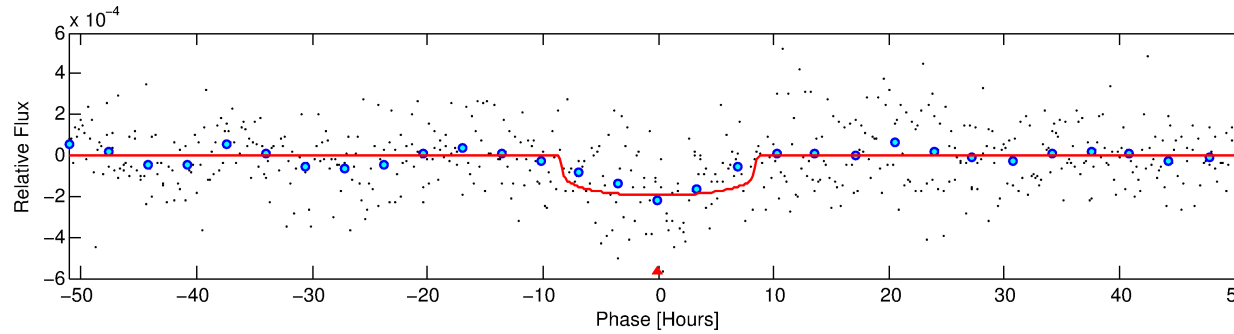
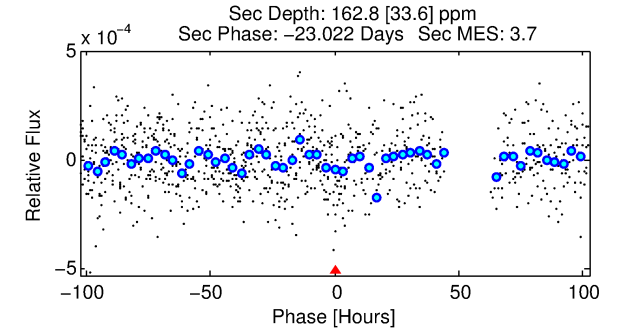
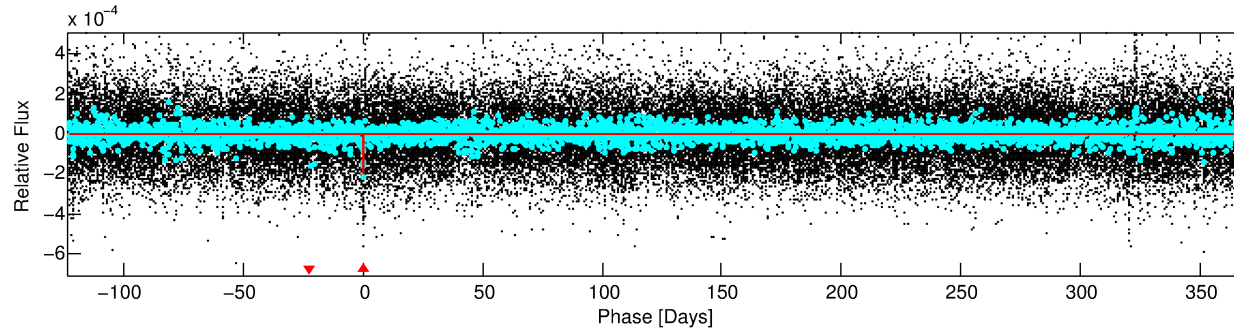
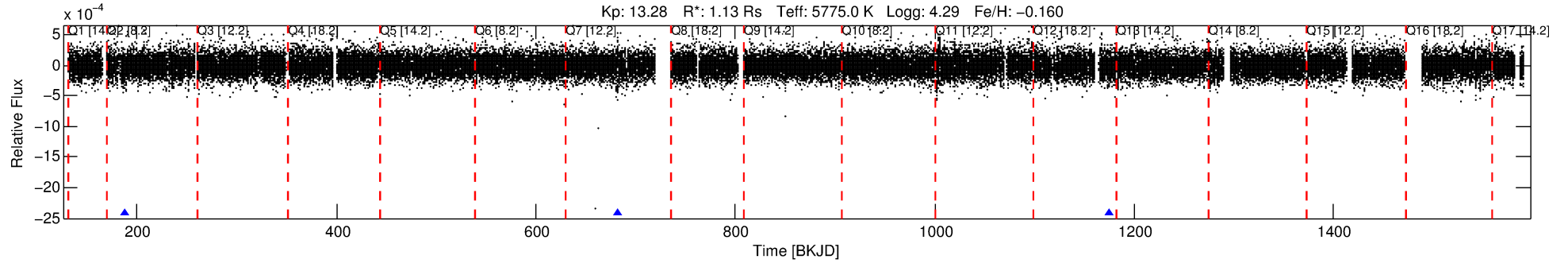
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 007289491-01

No Significant Match Found

# DV One-Page Summary

KIC: 7289491 Candidate: 1 of 1 Period: 493.727 d



## DV Fit Results:

Period = 493.72684 [0.01619] d  
Epoch = 187.7355 [0.0199] BKJD  
Rp/R\* = 0.0132 [0.0085]  
a/R\* = 191.30 [555.98]  
b = 0.53 [3.99]  
Seff = 0.91 [0.33]  
Teq = 249 [23] K  
Rp = 1.62 [1.15] Re  
a = 1.1835 [0.2808] AU  
Ag = 47758.53 [64950.26] [0.74σ]  
Teffp = 5688 [1876] K [2.90σ]

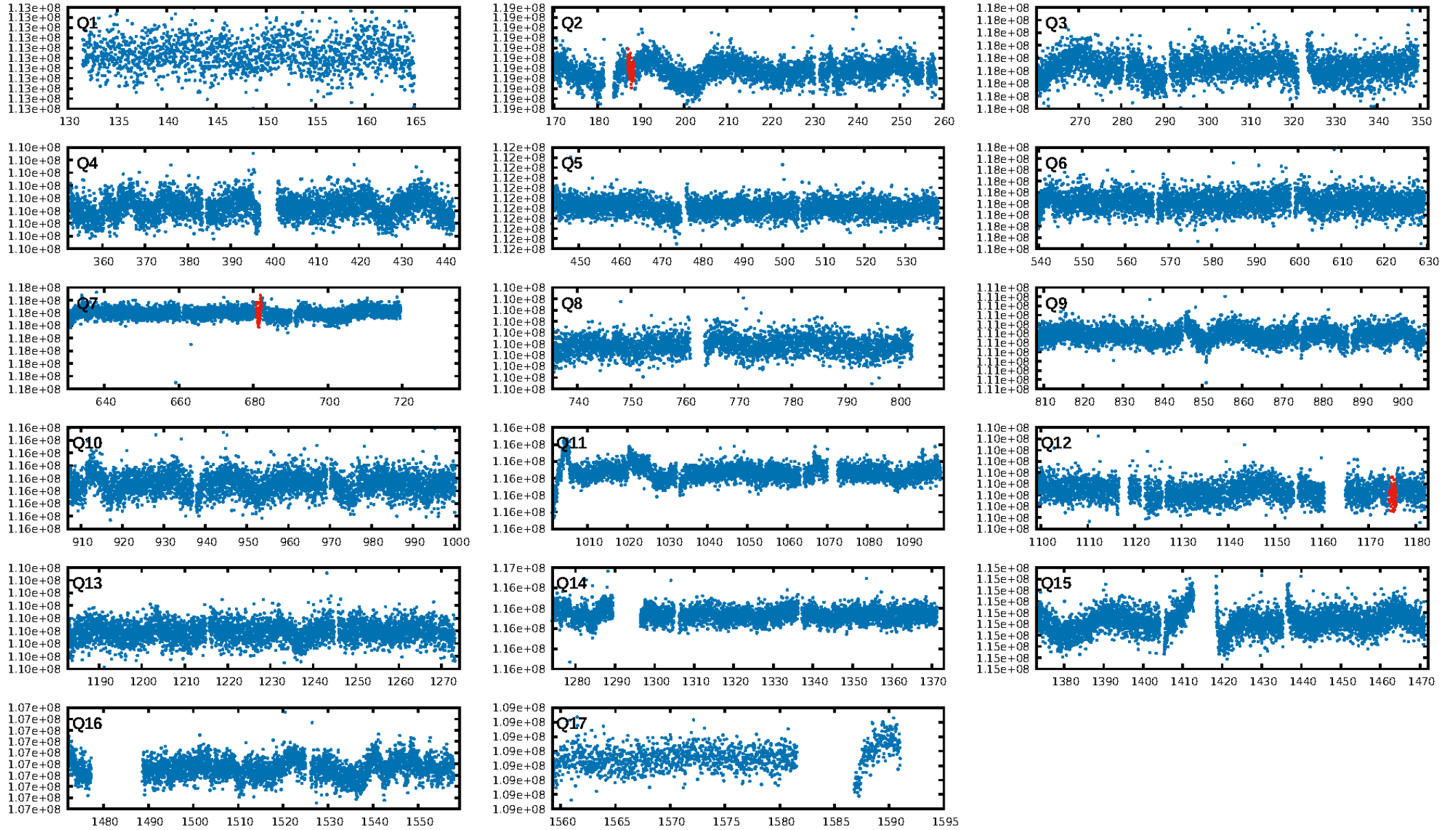
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: 1.0%  
ModelChiSquareGof-sig: 92.5%  
Bootstrap-pfa: 4.76e-08  
RollingBand-fgt: 1.00 [3/3]  
GhostDiagnostic-chr: 5.724  
Centroid-sig: 1.6%  
Centroid-so: 2.945 arcsec [2.60σ]  
OotOffset-rm: 1.978 arcsec [19.26σ]  
KicOffset-rm: 1.678 arcsec [16.38σ]  
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]

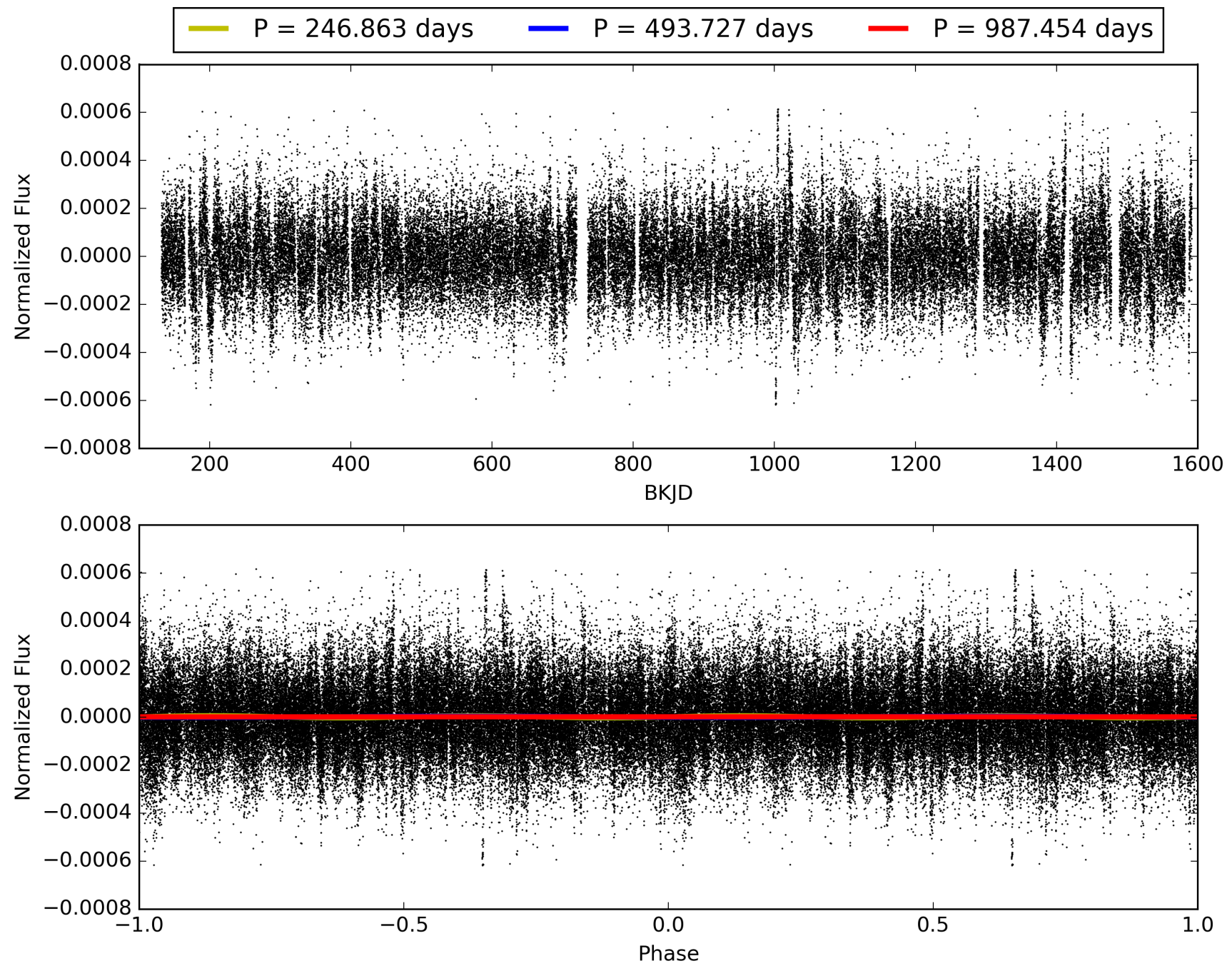
Software Revision: svn-ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 04:48:55 Z

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

# TCE 007289491-01, PDC Light Curves

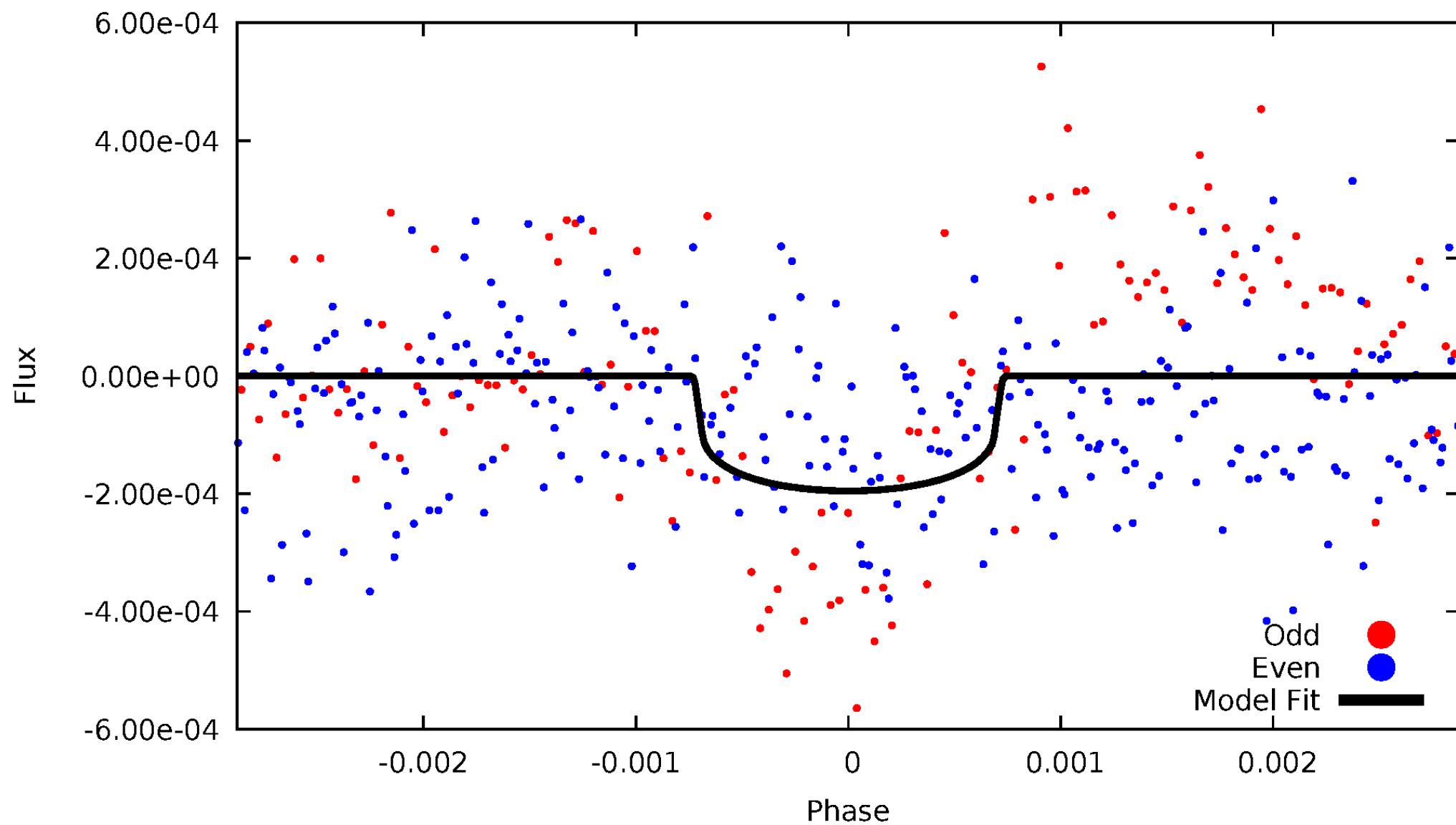


TCE 007289491-01



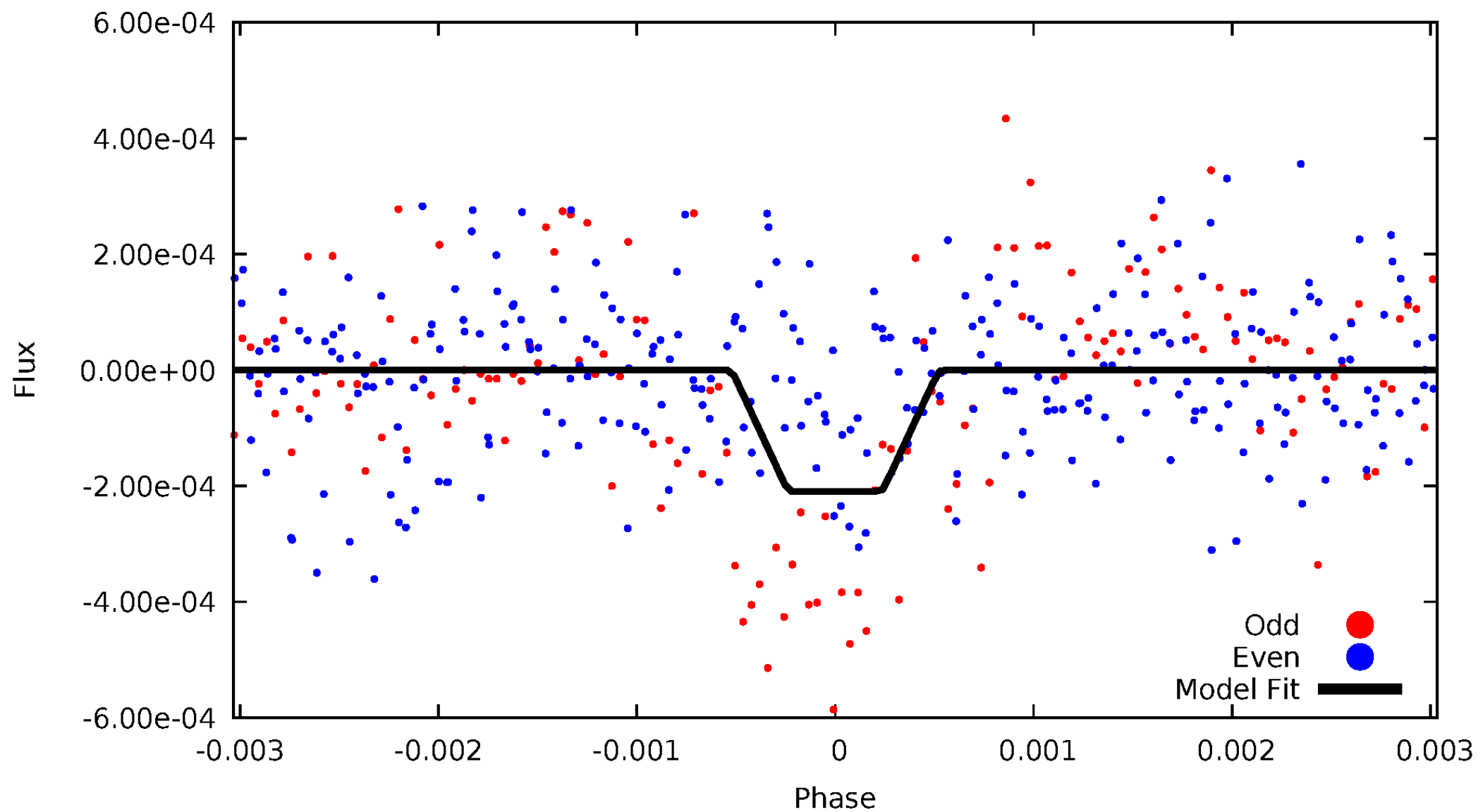
# DV Odd/Even

TCE 007289491-01

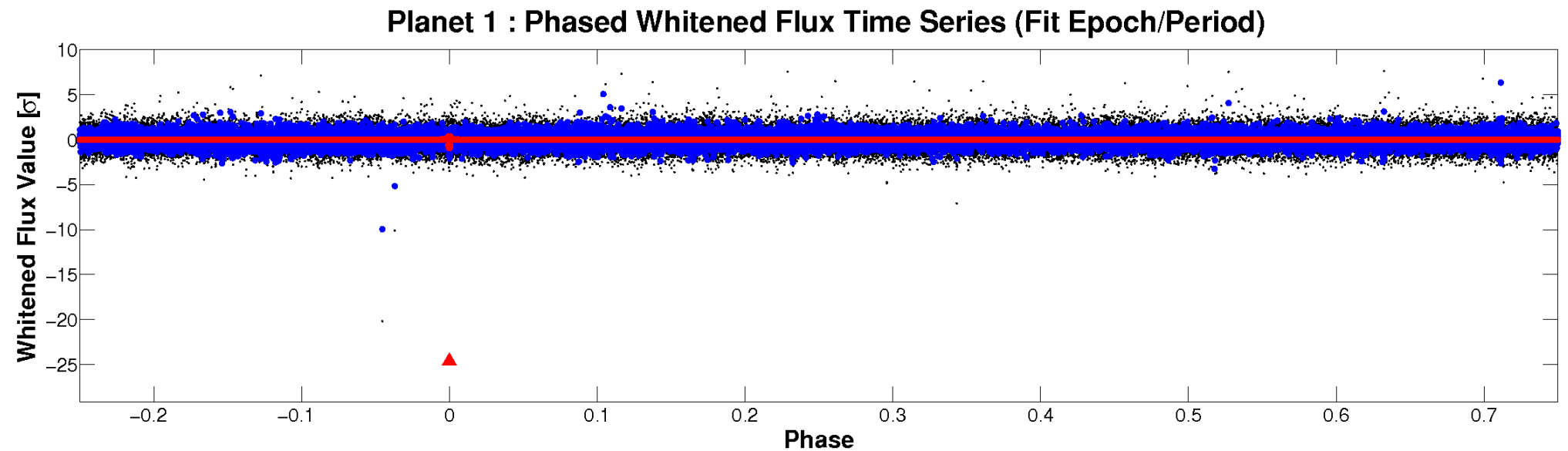
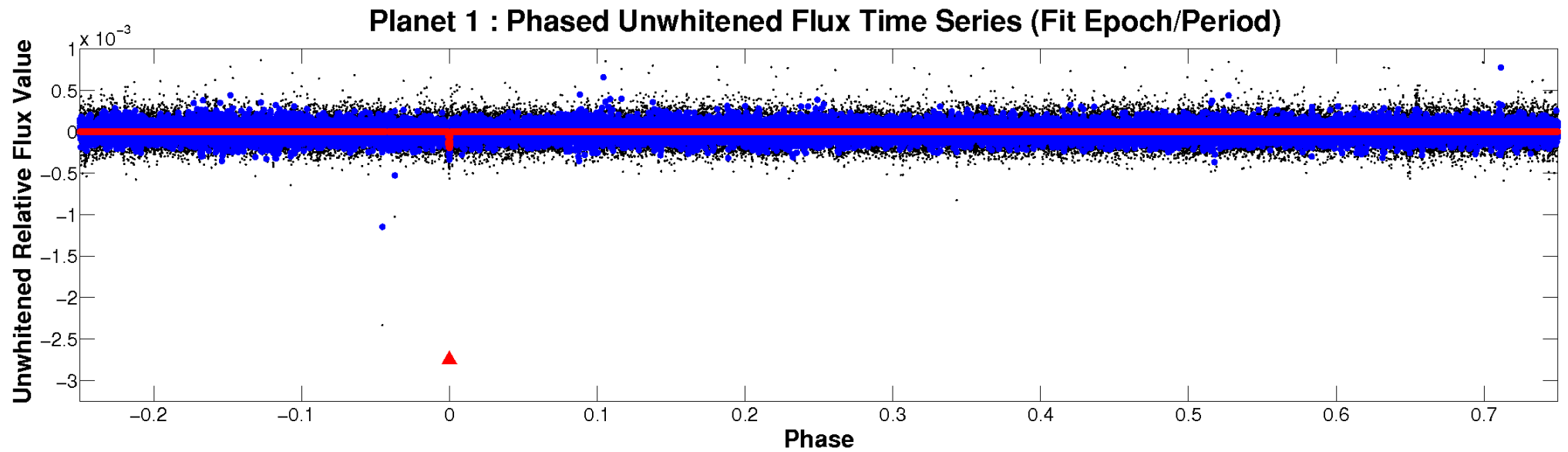


# ALT Odd/Even

TCE 007289491-01

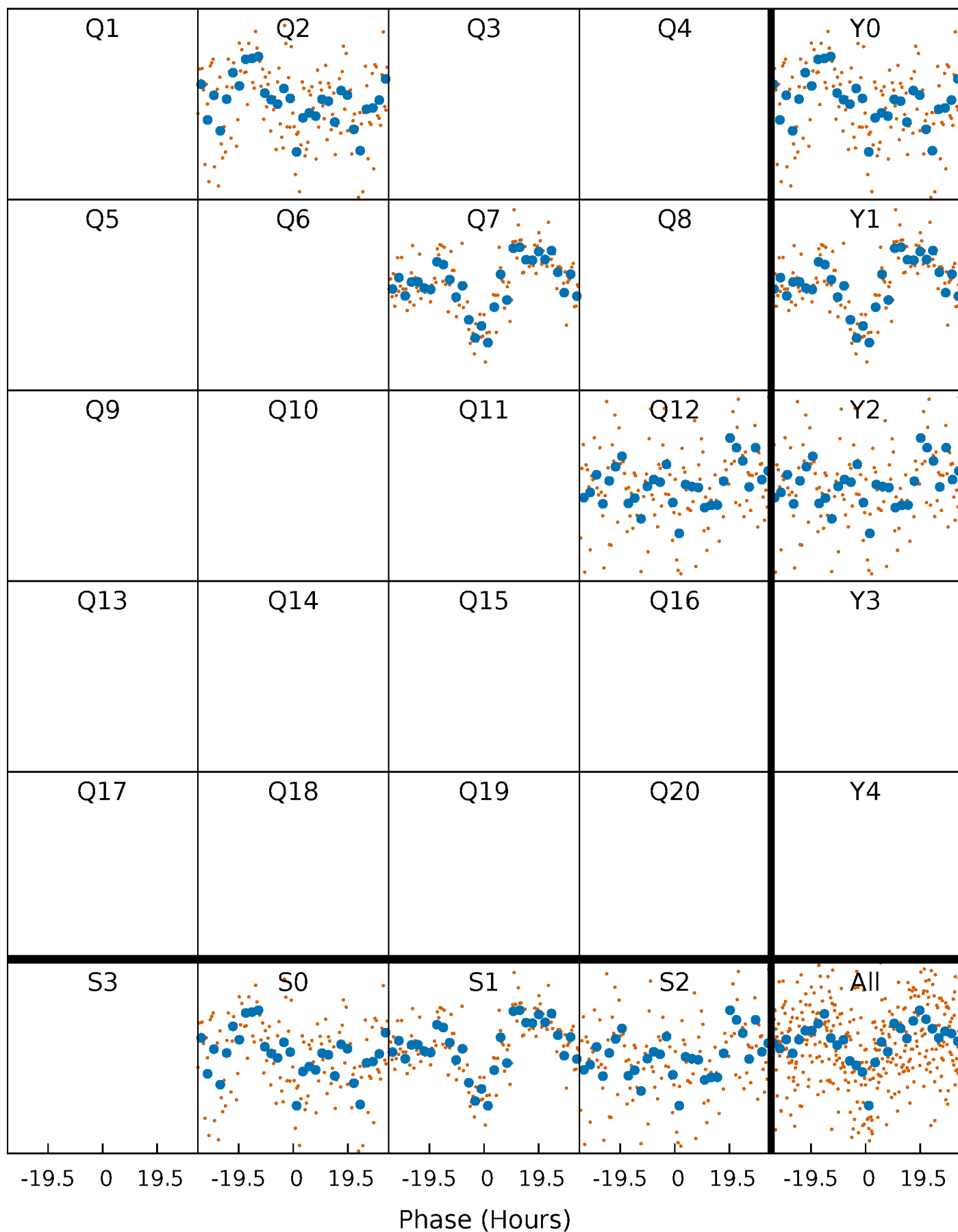


# Non-Whitened Vs. Whitened Light Curve



# PDC Quarter-Phased Transit Curves

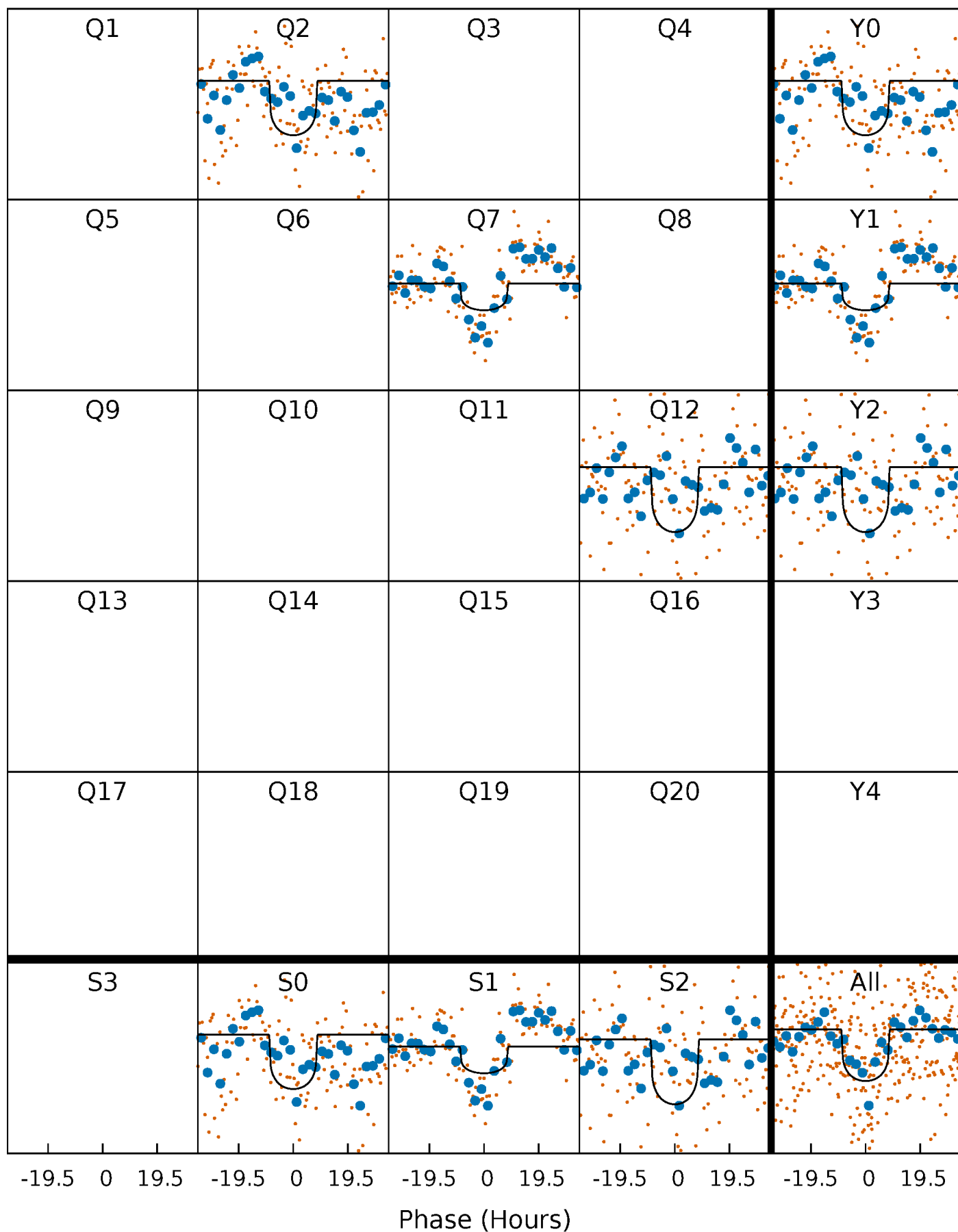
TCE 007289491-01     $P=493.726838$  Days     $T_0=187.735519$  (BKJD)





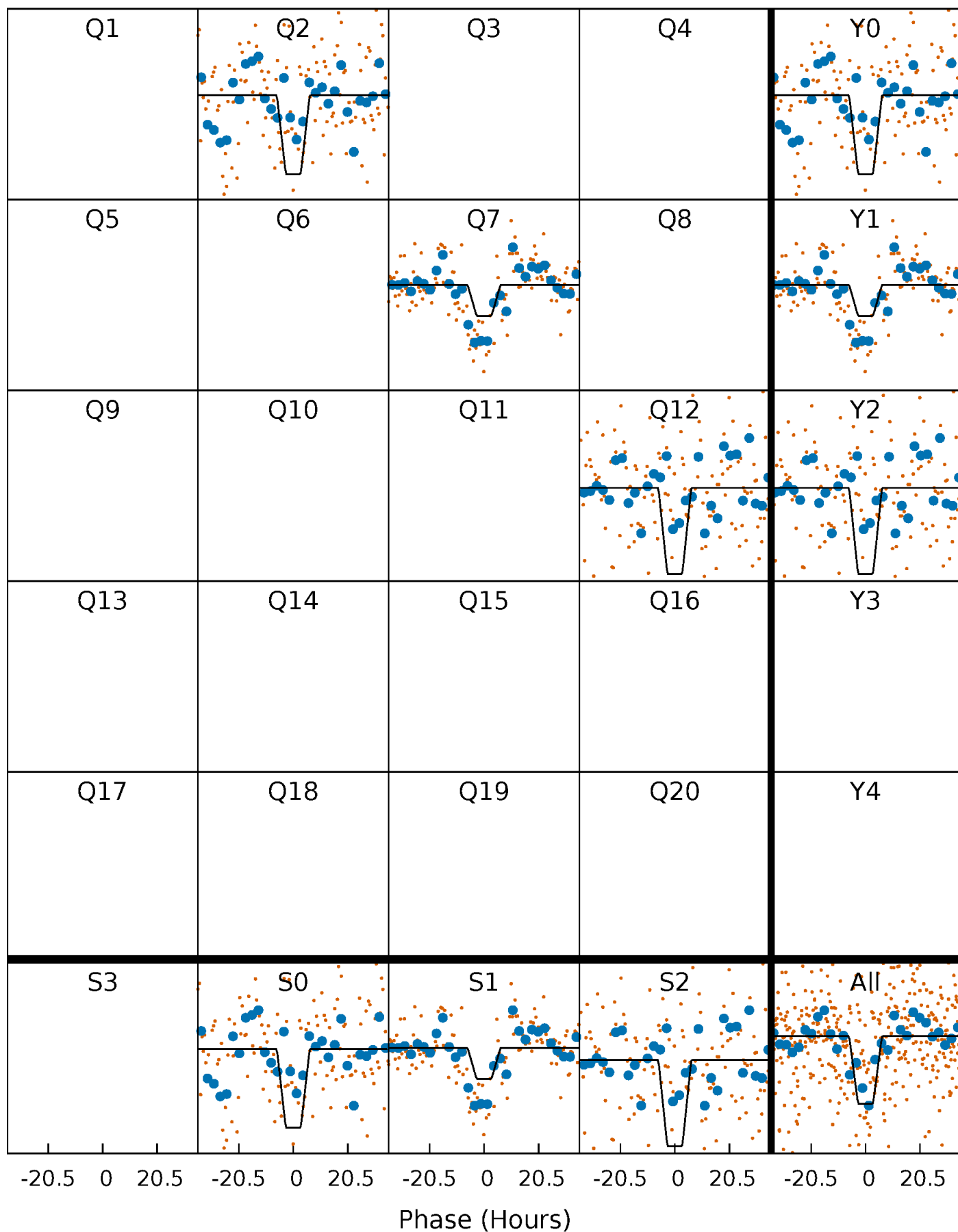
# DV Quarter-Phased Transit Curves

TCE 007289491-01     $P=493.726838$  Days     $T_0=187.735519$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

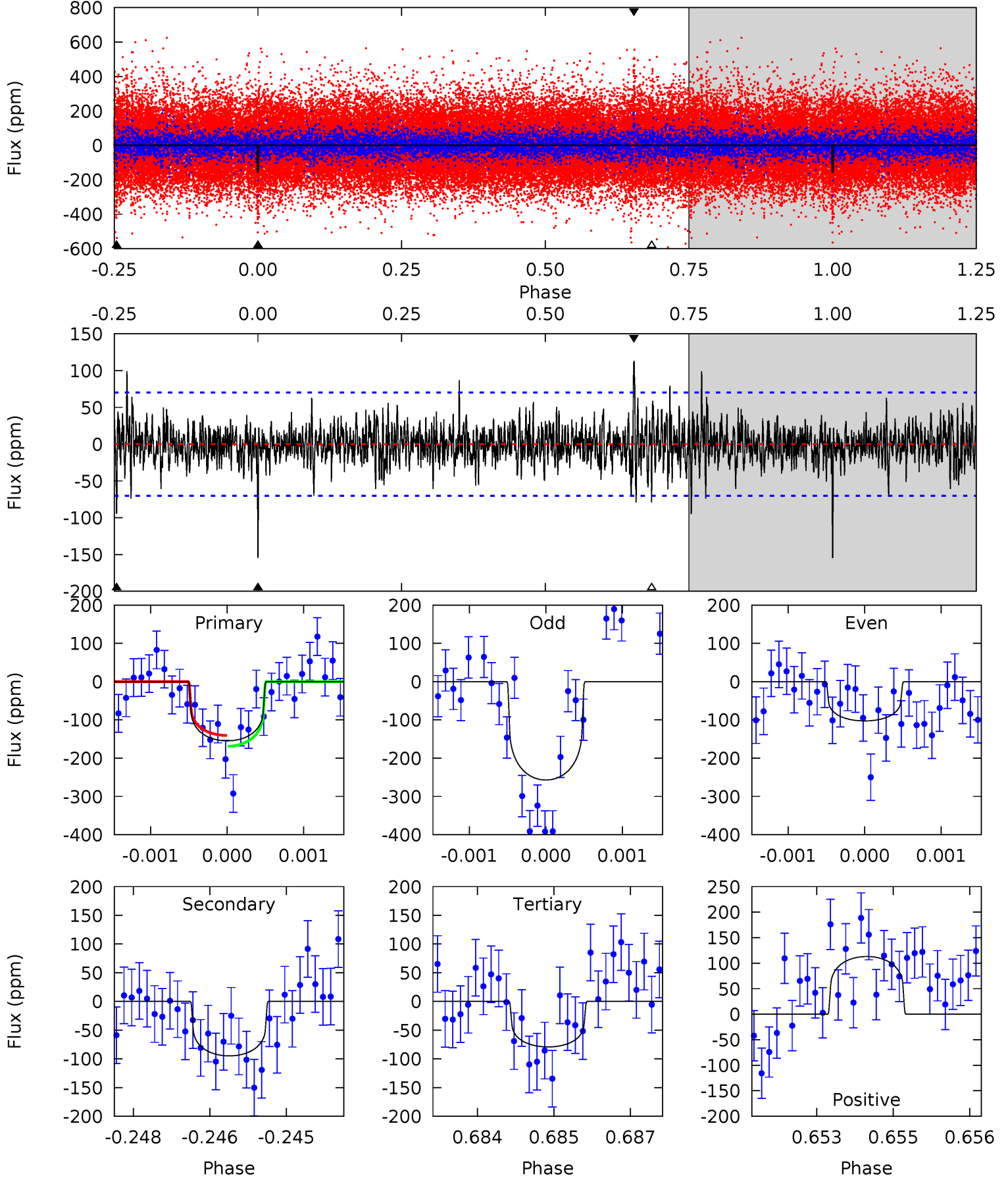
TCE 007289491-01 P=493.715677 Days  $T_0=187.770909$  (BKJD)



# DV Model-Shift Uniqueness Test

007289491-01, P = 493.726838 Days, E = 187.735519 Days

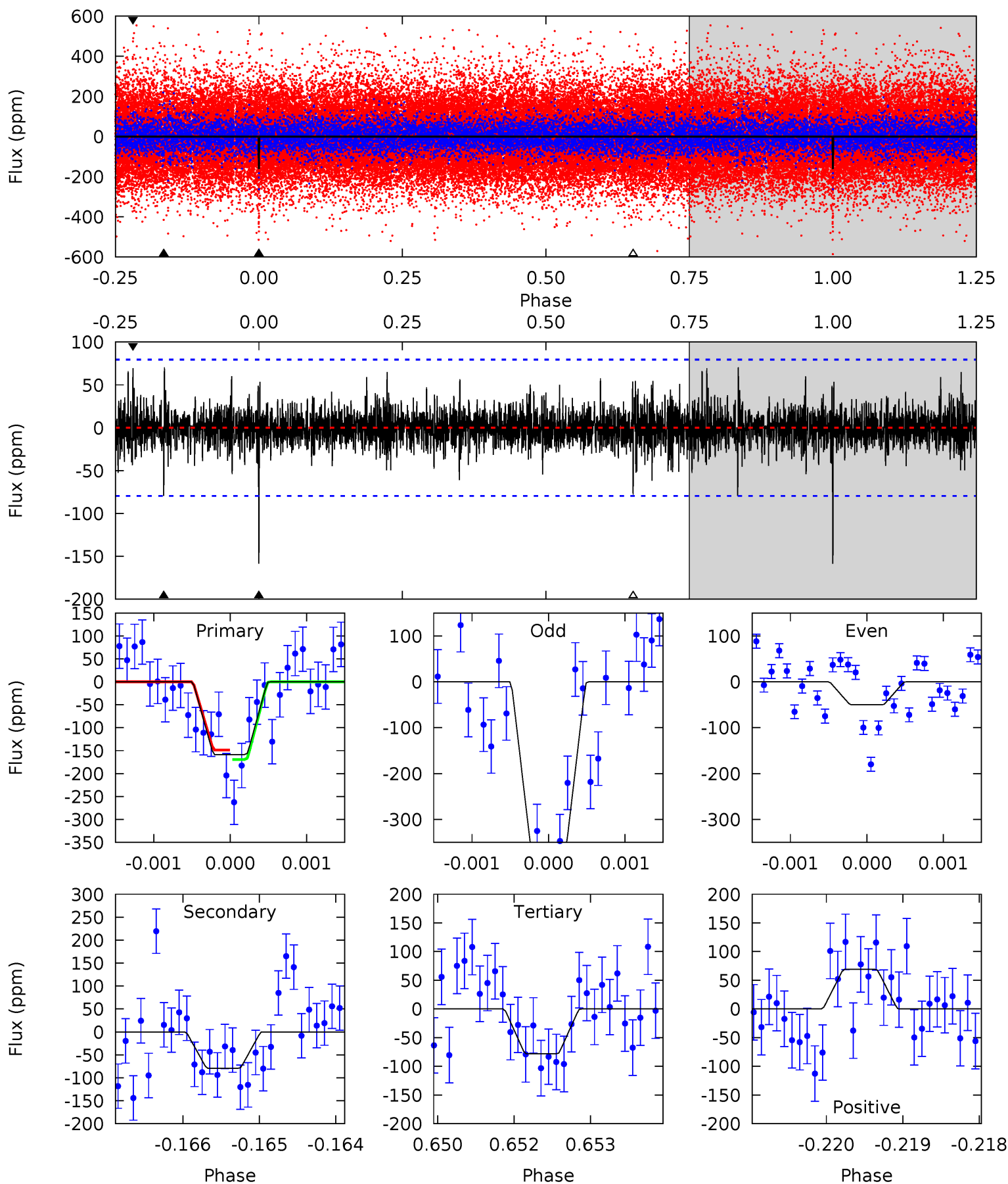
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
11.9	7.27	6.07	8.67	5.38	3.18	1.60	5.79	3.19	1.20	-1.40	5.63	1.28	0.42	1.08



# Alt Model-Shift Uniqueness Test

007289491-01, P = 493.715677 Days, E = 187.770909 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	5.43	5.34	4.73	5.44	3.27	1.12	5.50	6.11	0.09	0.70	10.6	2.58	0.31	0.70



### Stellar Parameters For KIC 007289491

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R$ ( $R_{\odot}$ )	$M$ ( $M_{\odot}$ )	$p_{\star}$ ( $\text{g}\cdot\text{cm}^{-3}$ )
	$5775^{+155}_{-155}$	$4.290^{+0.190}_{-0.190}$	$-0.160^{+0.300}_{-0.300}$	$1.129^{+0.317}_{-0.259}$	$0.906^{+0.133}_{-0.082}$	$0.886^{+0.884}_{-0.443}$
	+3%/-3%	+4%/-4%	+188%/-188%	+28%/-23%	+15%/-9%	+100%/-50%
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 007289491-01 / KOI

Detrend	Depth (ppm)	$R_p$ ( $R_{\oplus}$ )	$T_{\text{max}}$ (K)	$T_{\text{obs}}$ (K)	$A_{\text{obs}}$
DV	$-95 \pm 13$	$1.73^{+1.03}_{-0.93}$	$349^{+26}_{-24}$	$4933^{+2249}_{-807}$	$25103^{+93530}_{-15463}$
Alt.	$-79 \pm 15$	$1.88^{+1.08}_{-0.91}$	$346^{+24}_{-23}$	$4557^{+1452}_{-674}$	$17720^{+47732}_{-10573}$

$T_{\text{max}}$  = 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

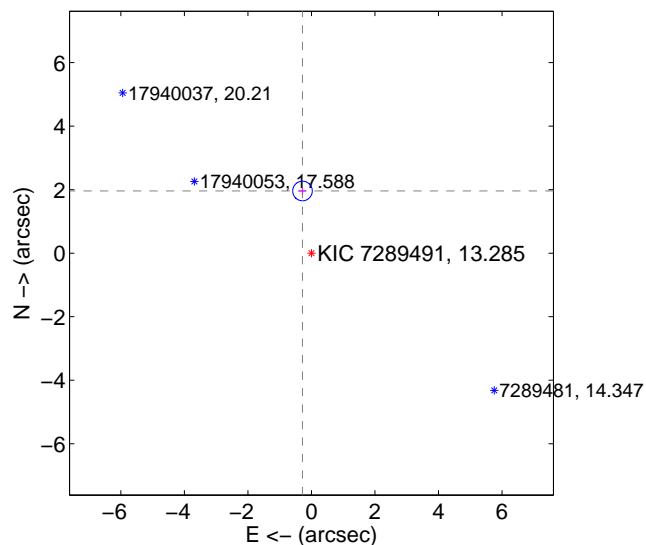
Supplemental centroid analysis for 007289491-01. Kepler magnitude: 13.29. Transit SNR 8.48

There are 1 quarters with good PRF difference image offsets

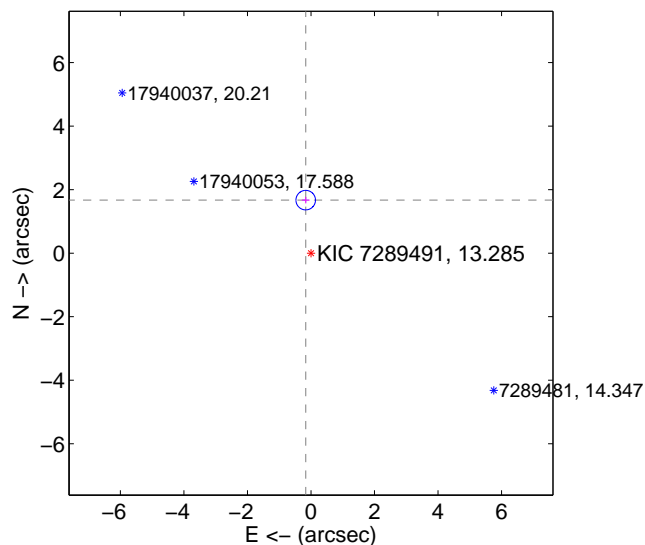
The direct PRF centroid is offset from the target star catalog position by about 0.31 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	1.978 $\pm$ 0.103	19.26	0.282 $\pm$ 0.124	1.957 $\pm$ 0.102
PRF-fit source offset from KIC position	1.678 $\pm$ 0.102	16.38	0.166 $\pm$ 0.124	1.669 $\pm$ 0.102
photometric centroid source offset	2.94 $\pm$ 1.13	2.60	-0.43 $\pm$ 1.25	-2.91 $\pm$ 1.13

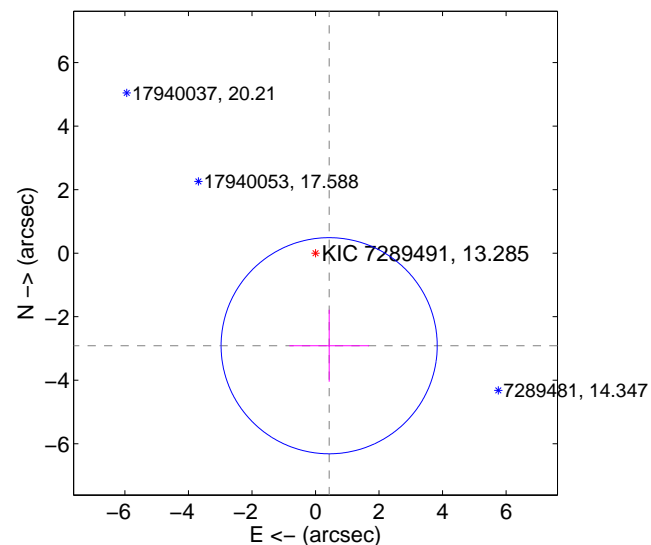
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

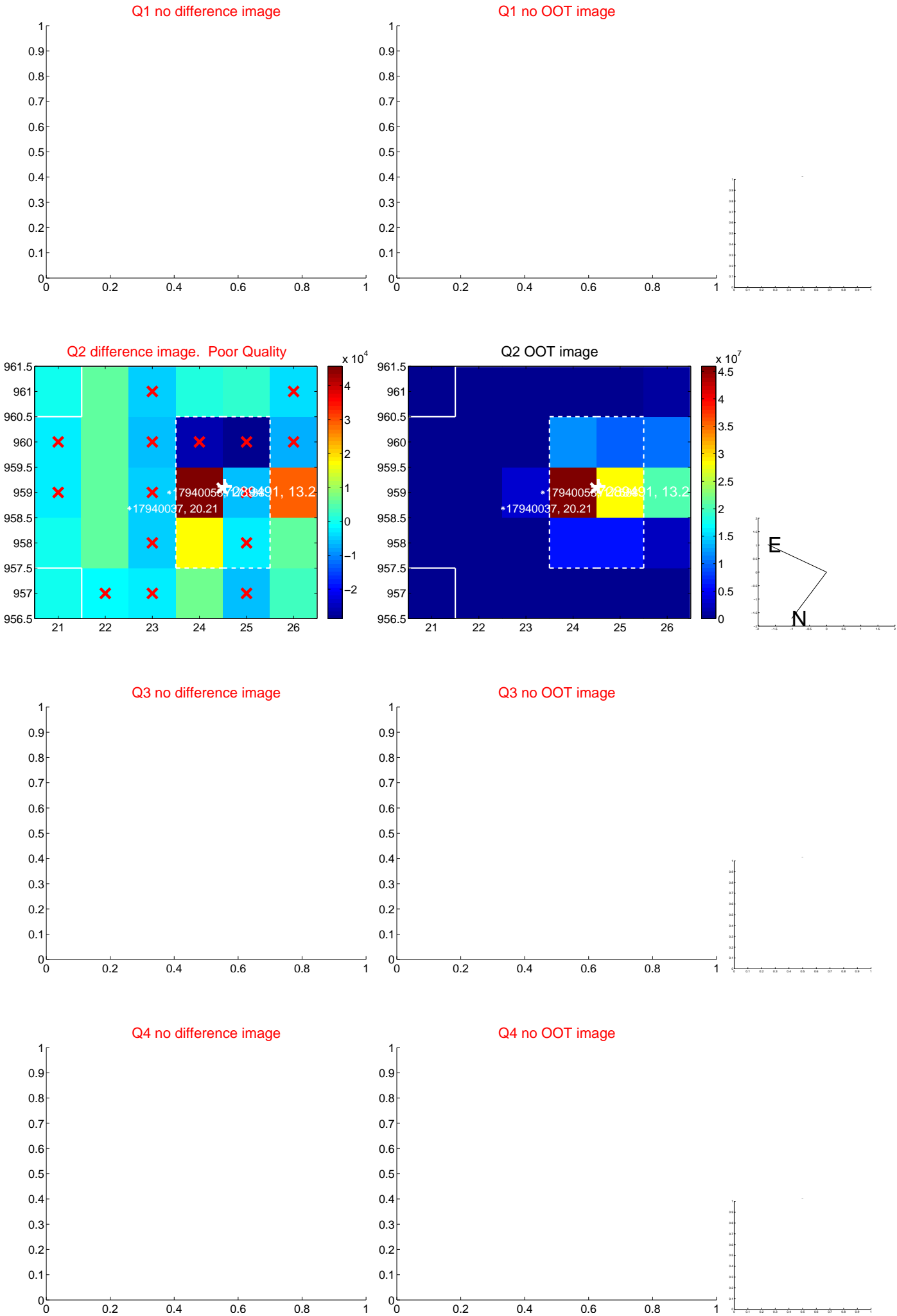


offset from photometric centroids

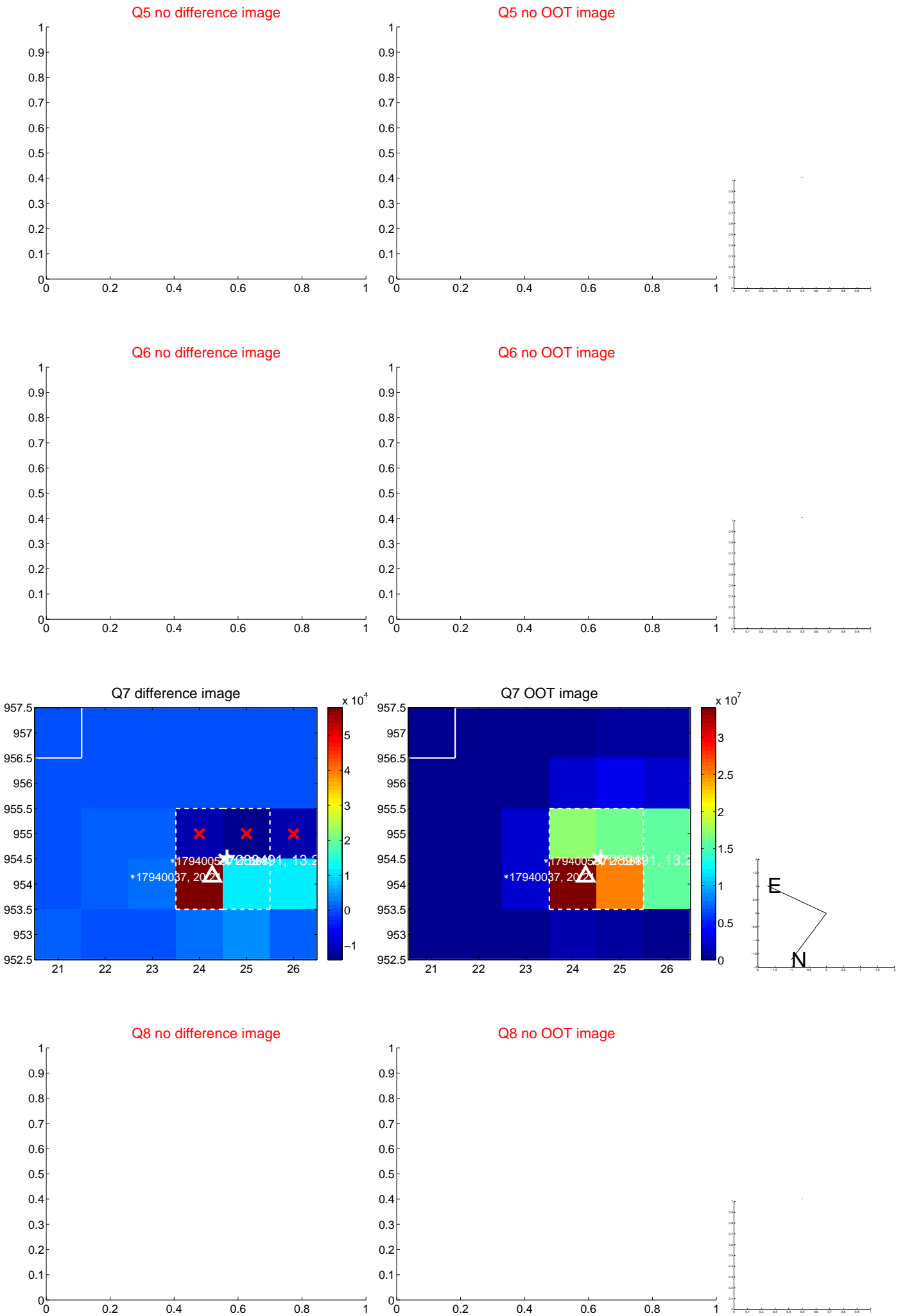


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: three-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

Q9 no difference image



Q9 no OOT image



Q10 no difference image



Q10 no OOT image



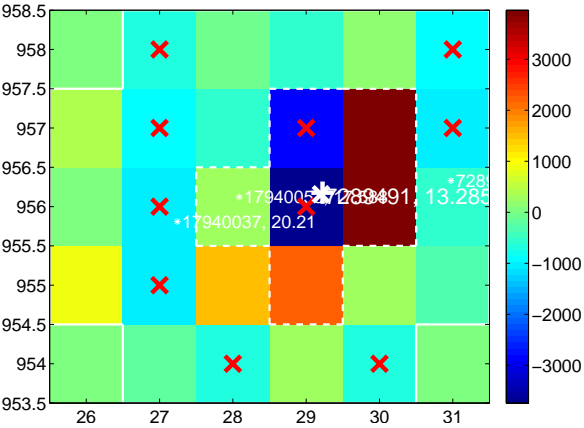
Q11 no difference image



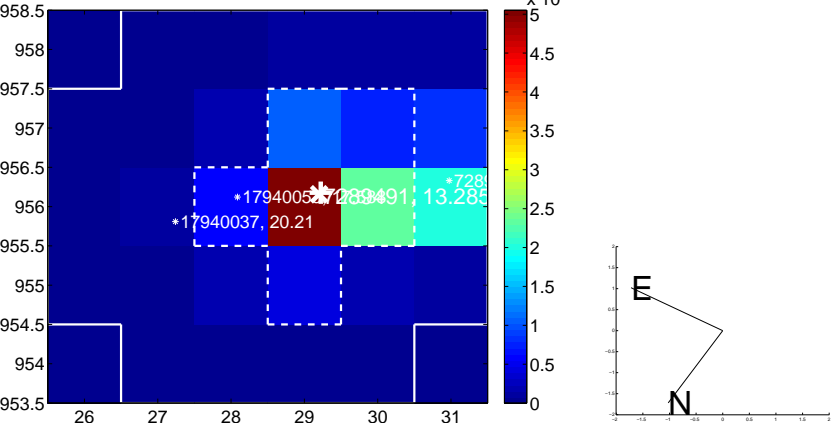
Q11 no OOT image



Q12 difference image. Poor Quality



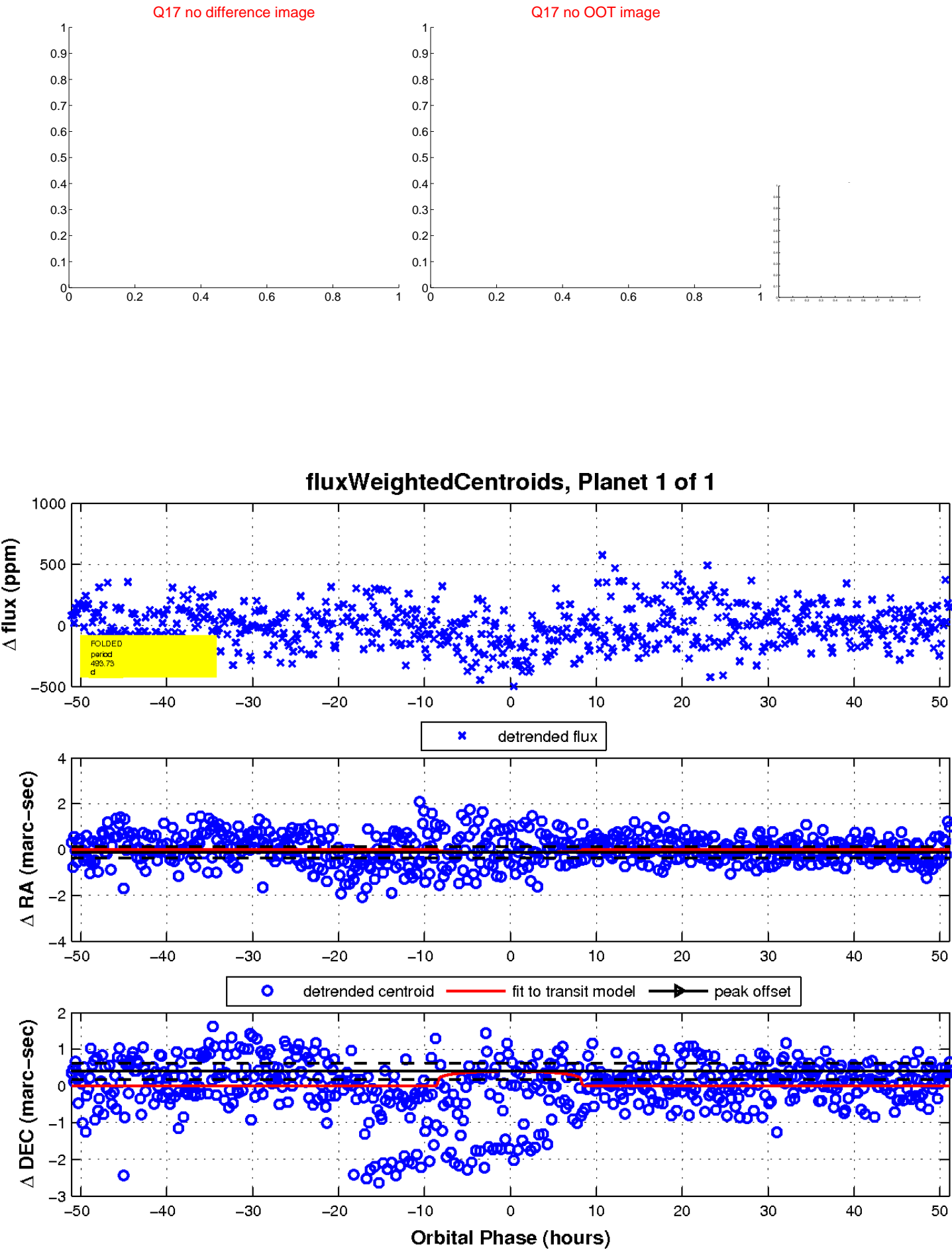
Q12 OOT image



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.



UKIRT Image

Declination

