

# KIC 009583493

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
009583493-01	OBS	No	387.425572	490.365658	425.3	2.582	9.0	6.5	0.77	5658	1.65	0.61

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
009583493-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_SKYE—ALL_TRANS_CHASES—INCONSISTENT_TRANS

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

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

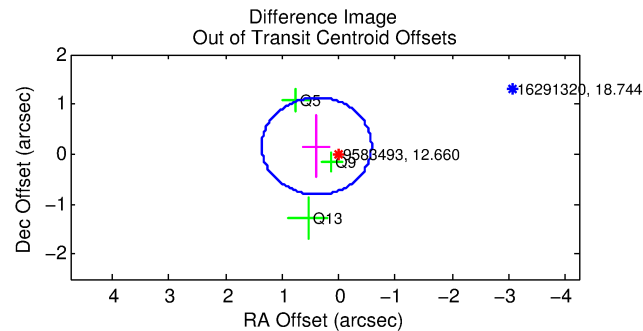
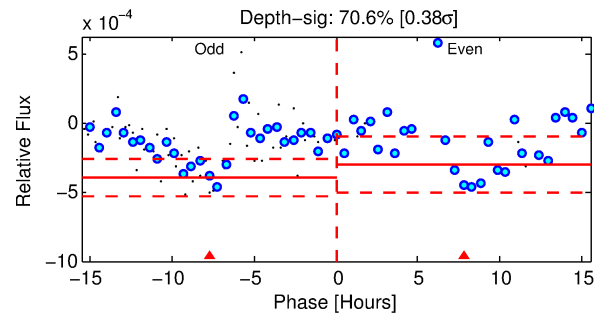
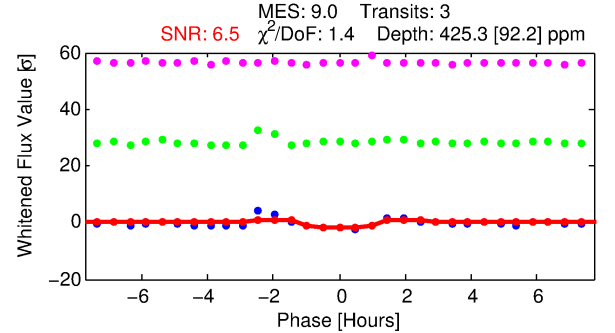
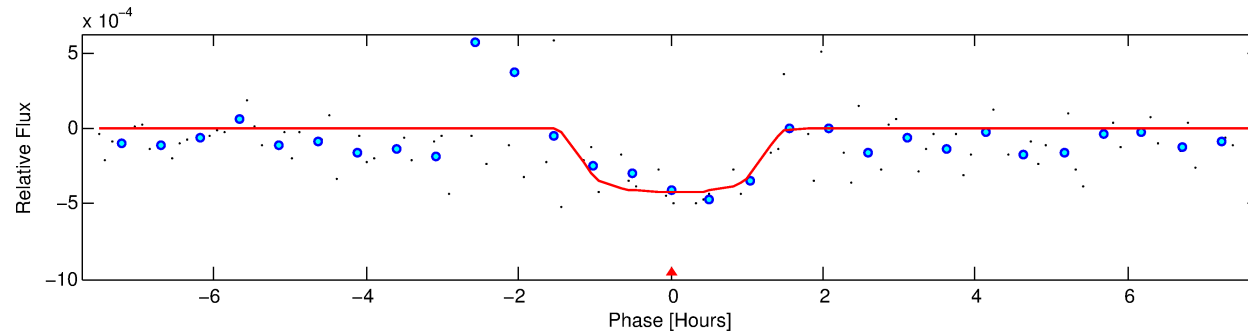
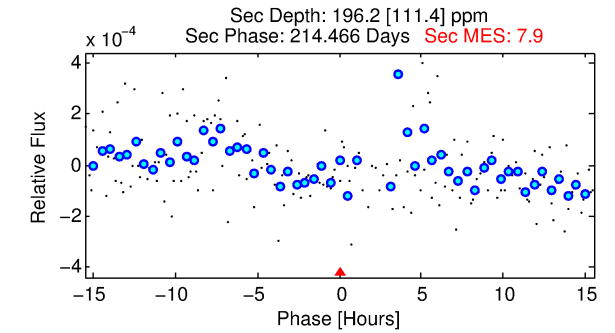
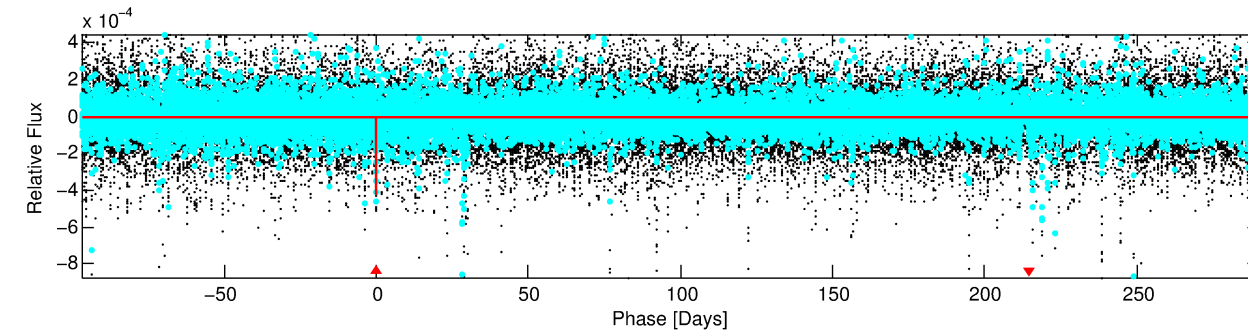
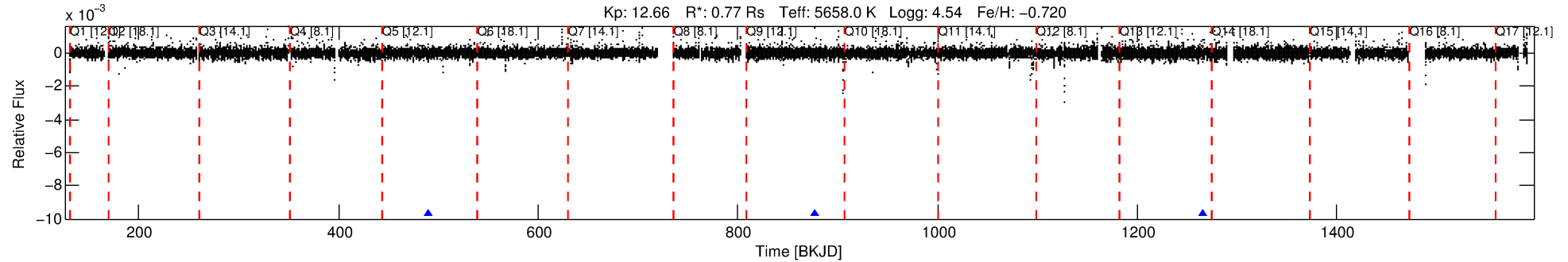
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 009583493-01

No Significant Match Found

# DV One-Page Summary

KIC: 9583493 Candidate: 1 of 1 Period: 387.426 d



## DV Fit Results:

Period = 387.42557 [0.00682] d  
Epoch = 490.3657 [0.0090] BKJD  
Rp/R\* = 0.0197 [0.0377]  
a/R\* = 951.05 [8665.20]  
b = 0.59 [10.01]  
Seff = 0.61 [0.14]  
Teq = 225 [13] K  
Rp = 1.65 [3.15] Re  
a = 0.9381 [0.1286] AU  
Ag = 35060.99 [135576.47] [0.26 $\sigma$ ]  
Teffp = 4769 [4606] K [0.99 $\sigma$ ]

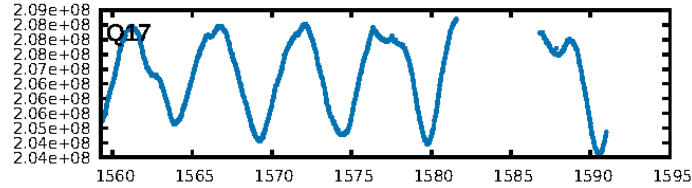
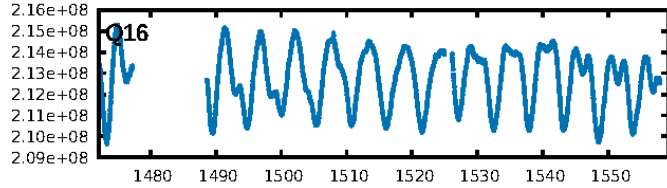
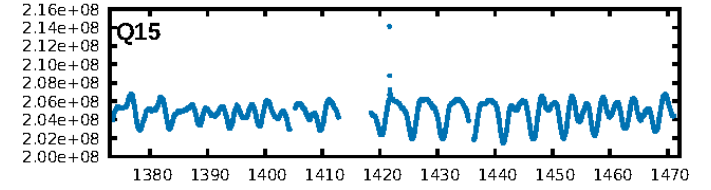
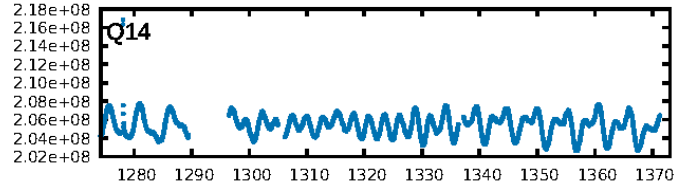
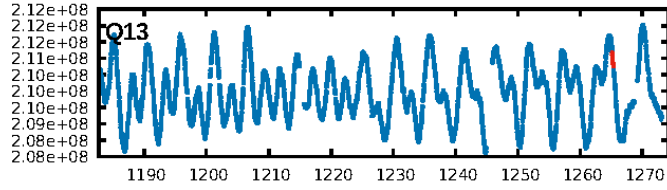
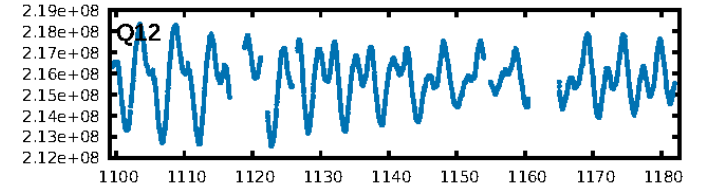
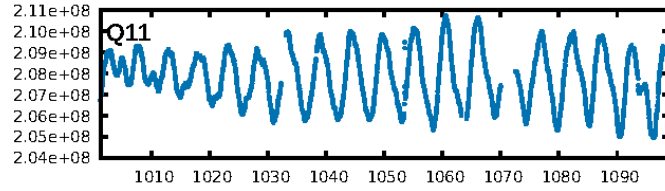
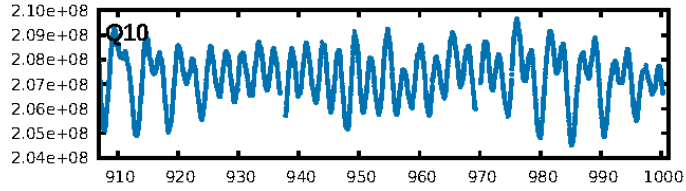
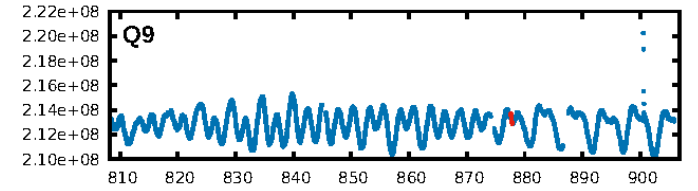
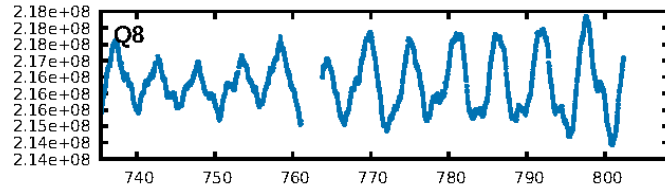
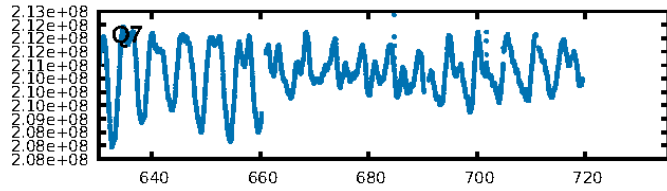
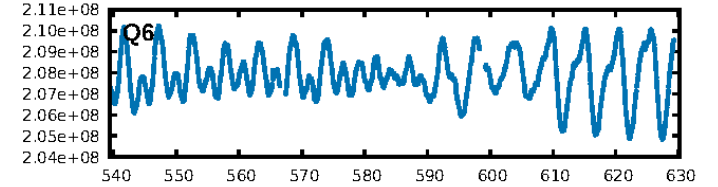
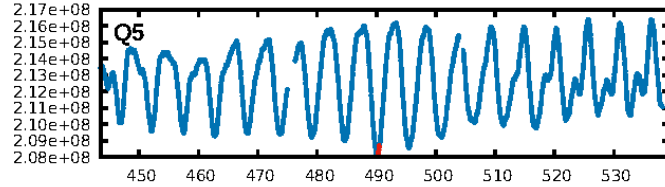
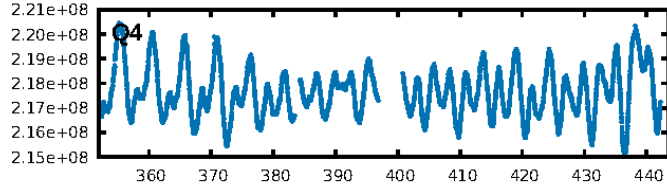
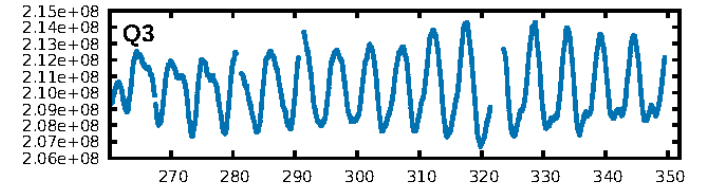
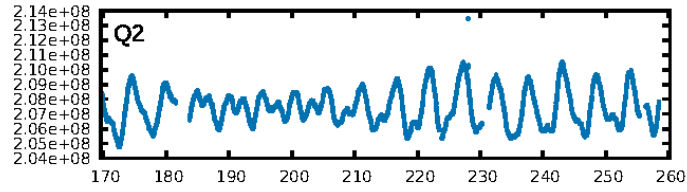
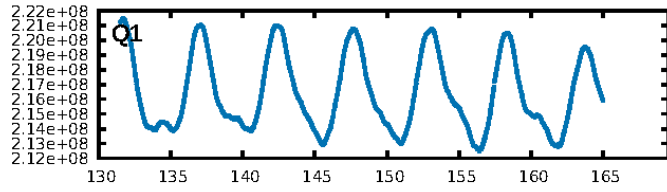
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: 4.8%  
ModelChiSquareGof-sig: 60.7%  
**Bootstrap-pfa: 2.65e-08**  
RollingBand-fgt: 1.00 [3/3]  
**GhostDiagnostic-chr: -0.3174**  
Centroid-sig: 57.7%  
Centroid-so: 0.654 arcsec [0.66 $\sigma$ ]  
OotOffset-rm: 0.423 arcsec [1.31 $\sigma$ ]  
OotOffset-st: 0/0/0/3 [3]  
KicOffset-rm: 0.570 arcsec [1.48 $\sigma$ ]  
KicOffset-st: 0/0/0/3 [3]  
DiffImageQuality-fgm: 1.00 [3/3]  
DiffImageOverlap-fno: 1.00 [3/3]

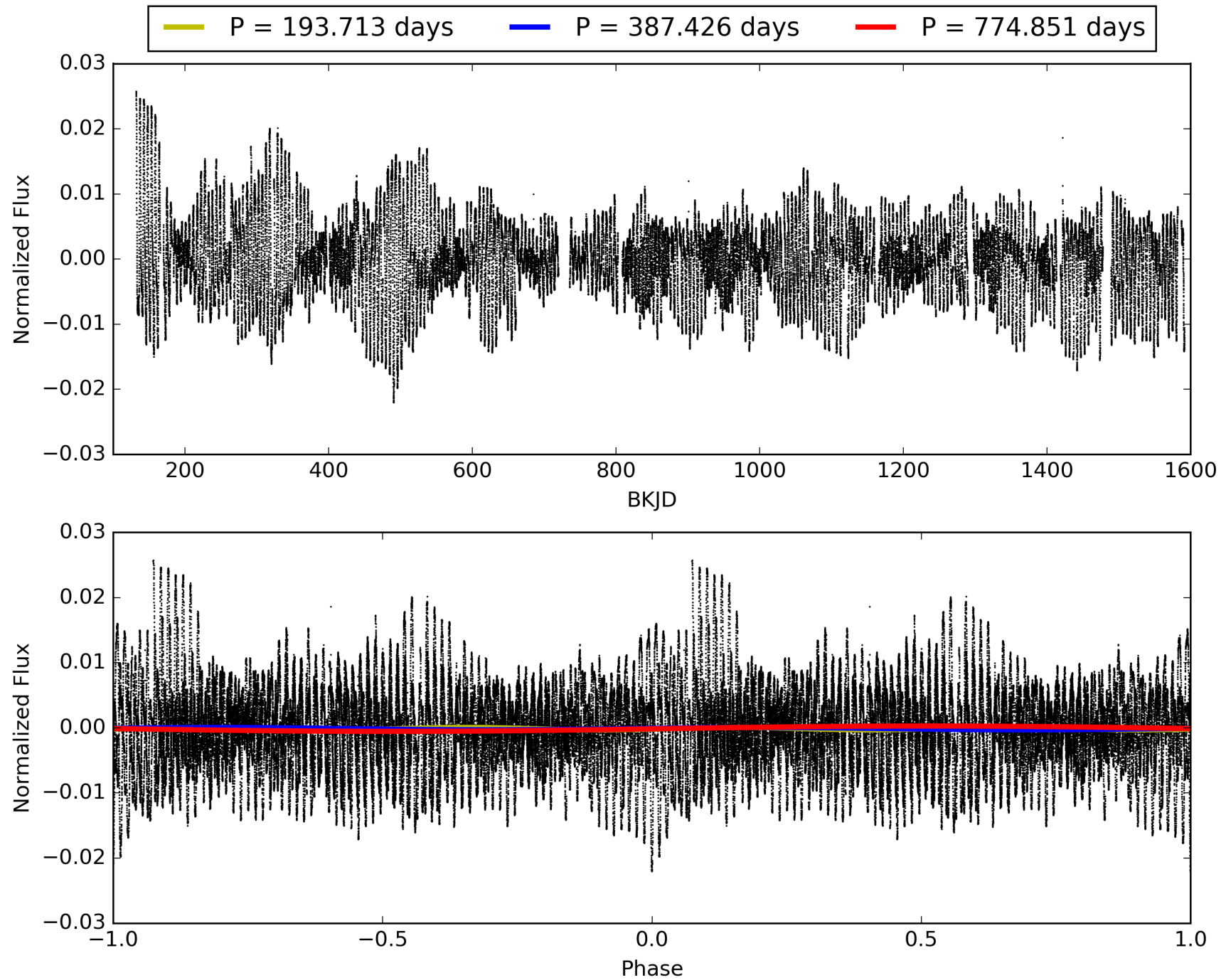
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 00:37:54 Z

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

# TCE 009583493-01, PDC Light Curves

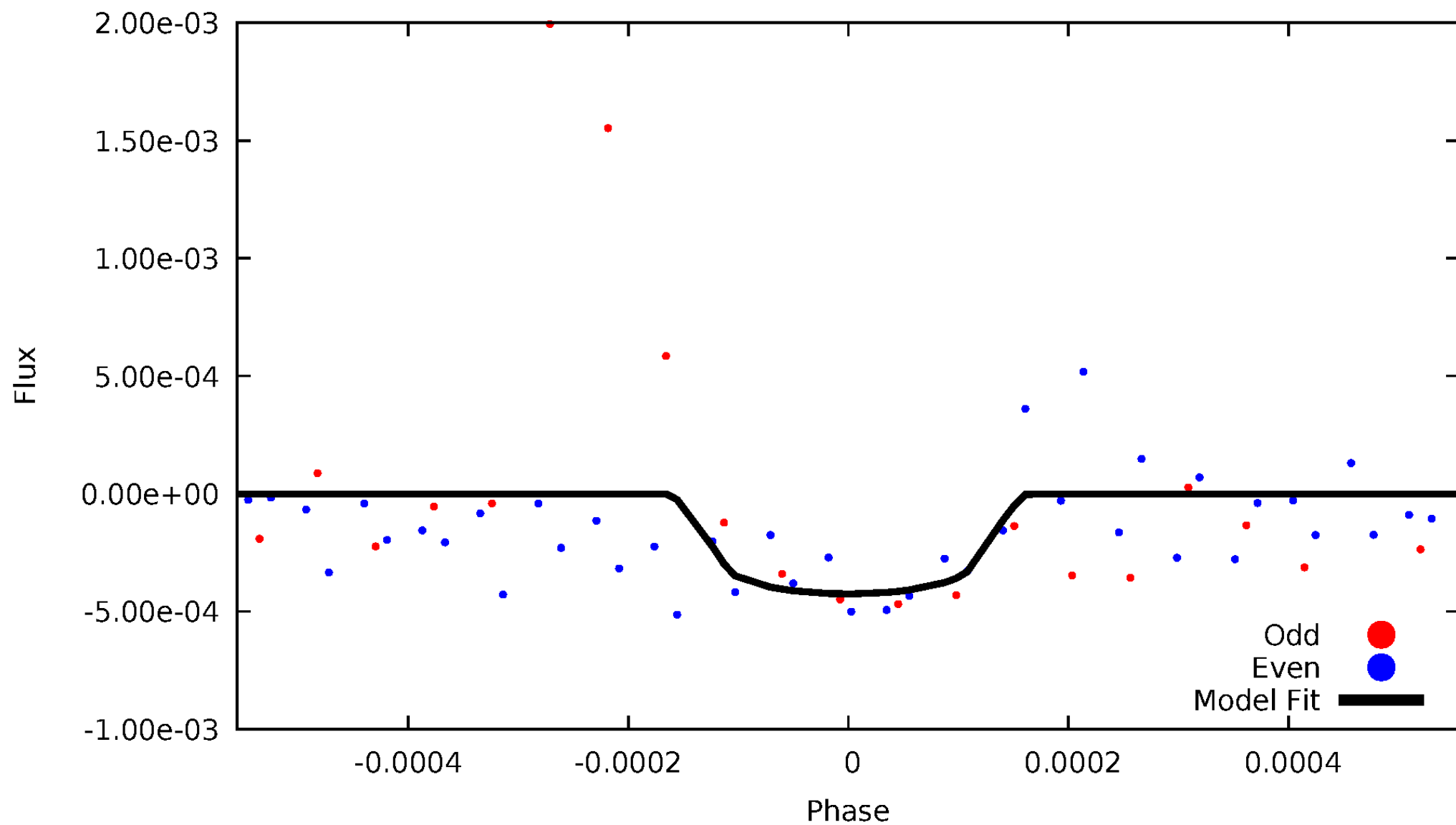


TCE 009583493-01



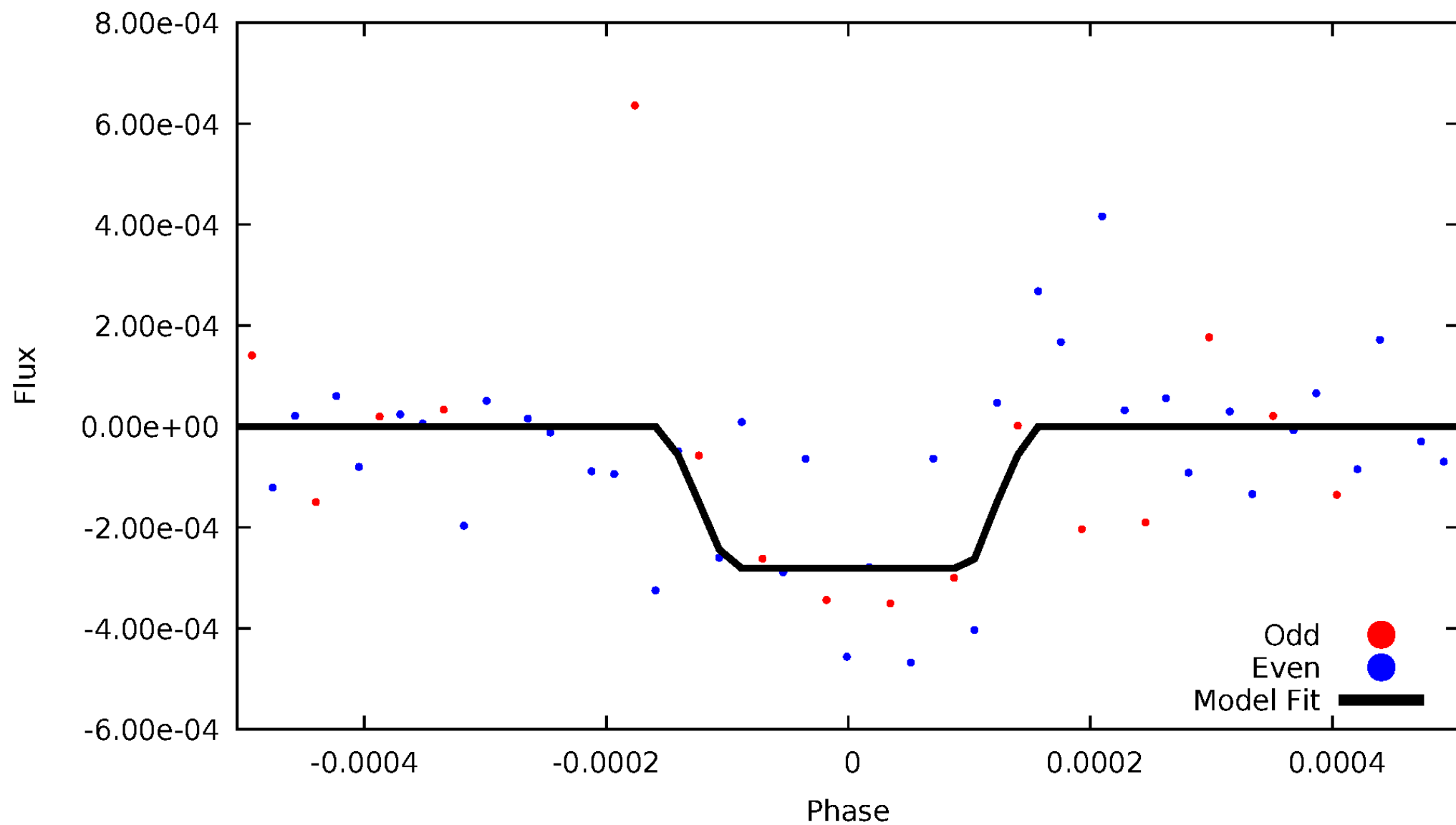
# DV Odd/Even

TCE 009583493-01



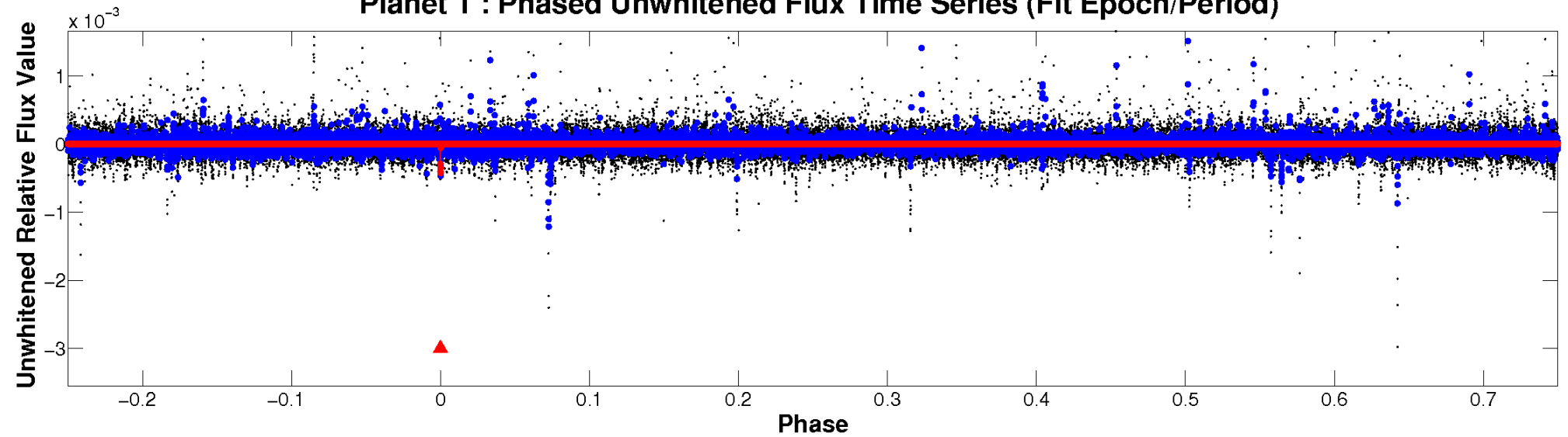
# ALT Odd/Even

TCE 009583493-01

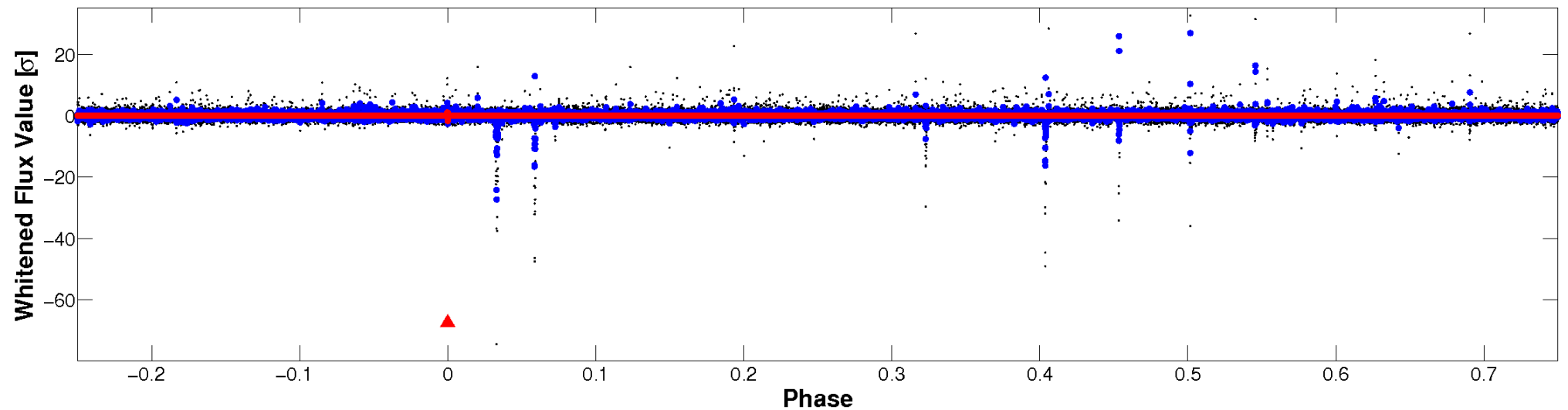


# Non-Whitened Vs. Whitened Light Curve

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

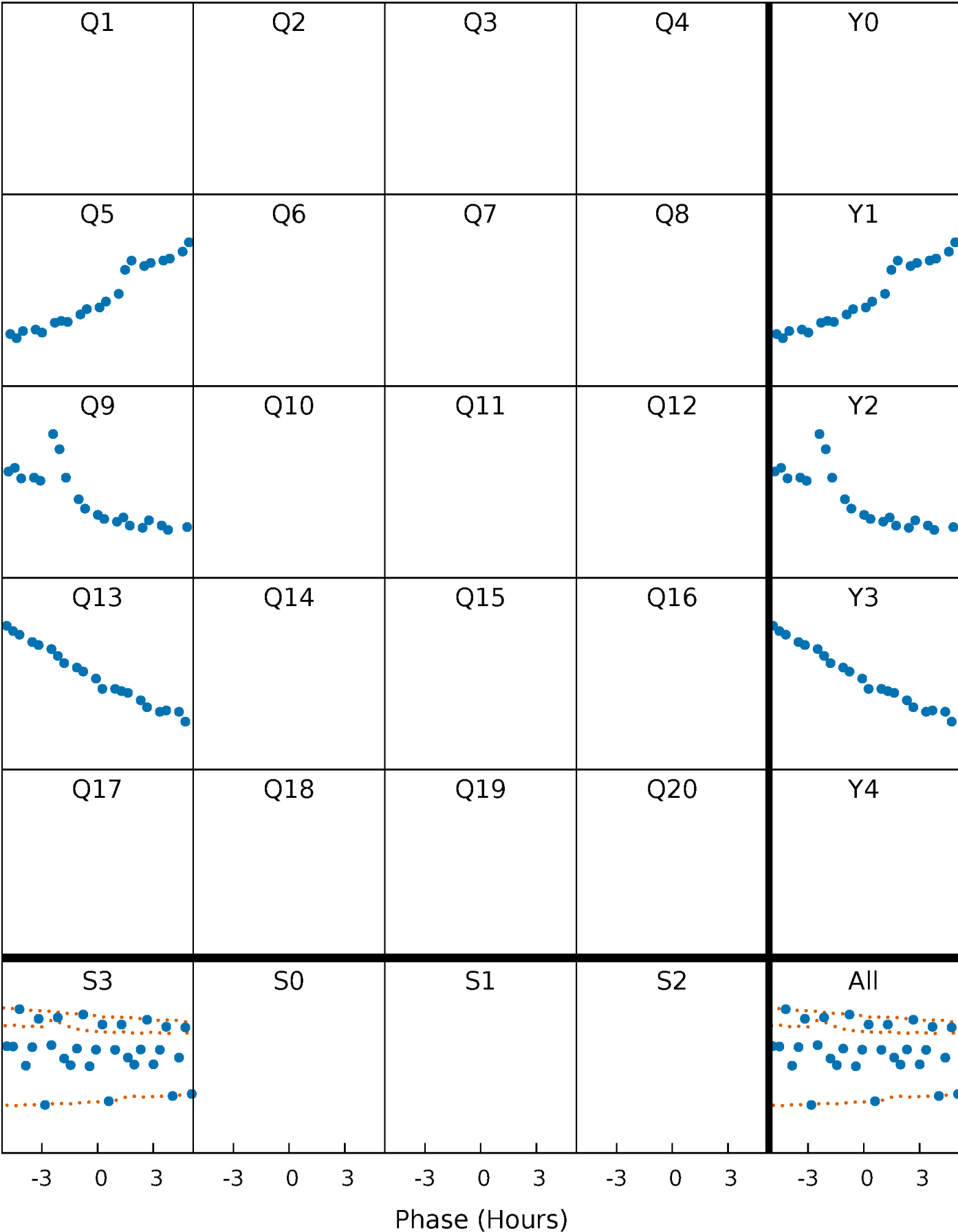


**Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)**



PDC Quarter-Phased Transit Curves

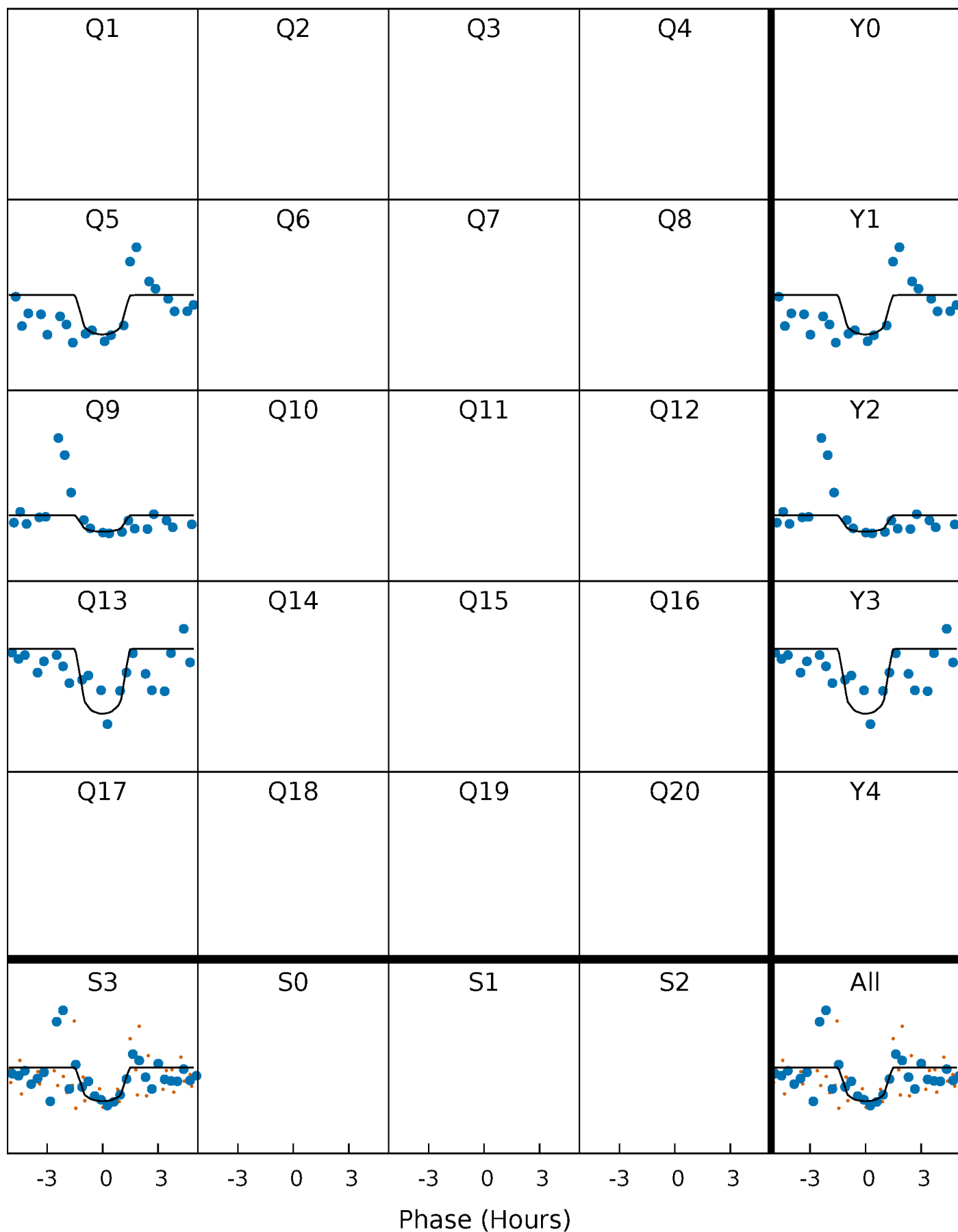
TCE 009583493-01    P=387.425572 Days    T<sub>0</sub>=490.365658 (BKJD)





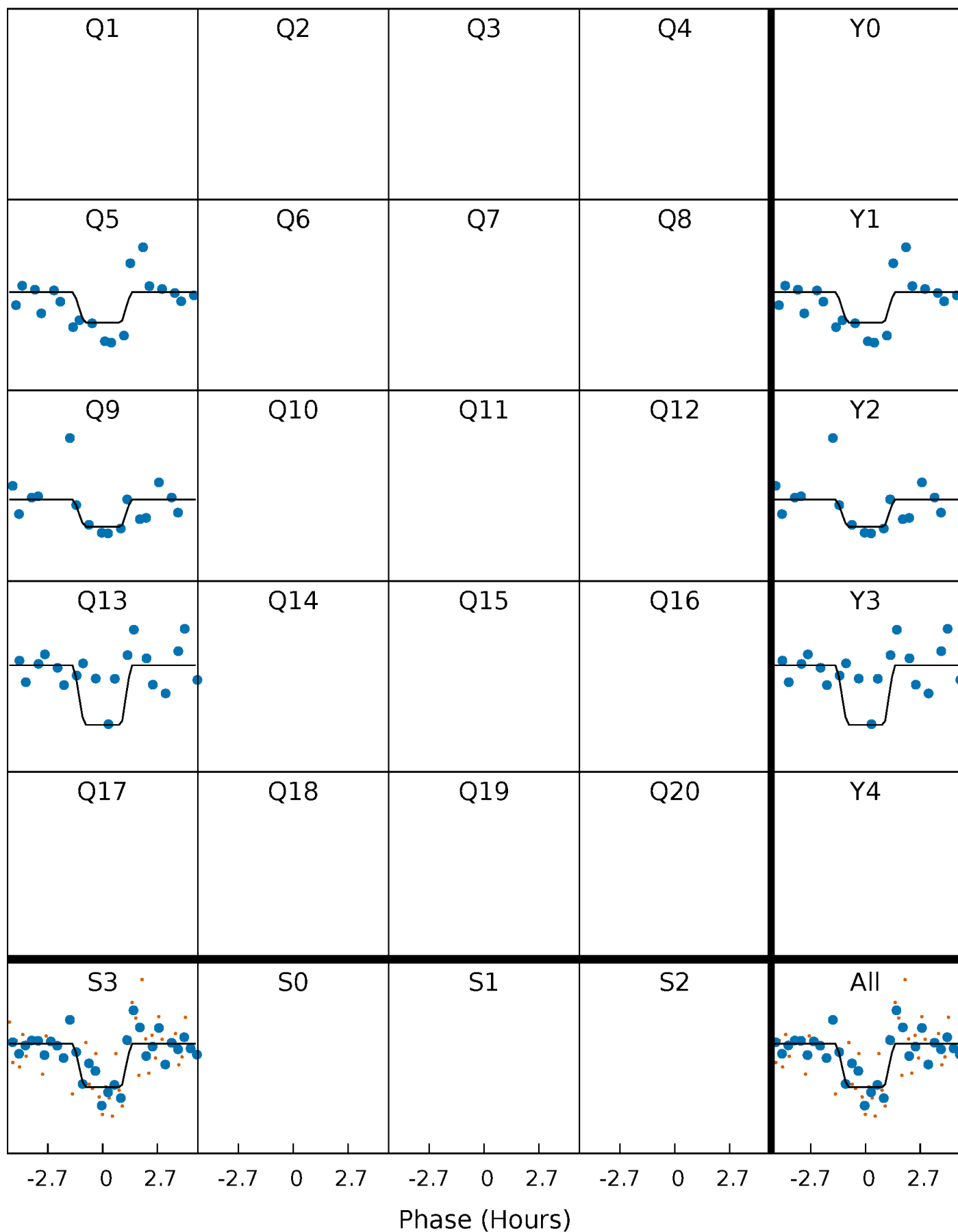
# DV Quarter-Phased Transit Curves

TCE 009583493-01     $P=387.425572$  Days     $T_0=490.365658$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

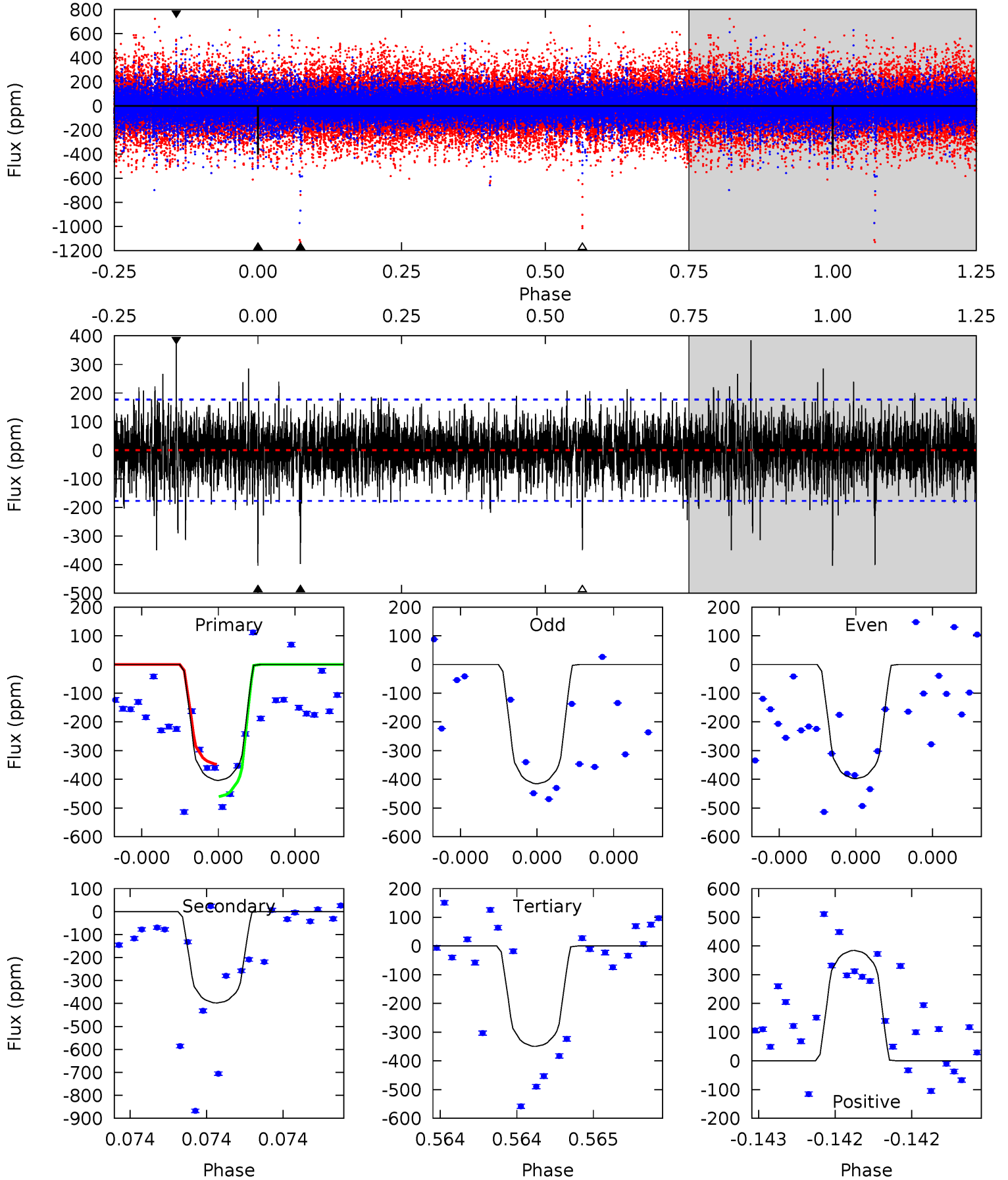
TCE 009583493-01 P=387.428192 Days  $T_0=490.367162$  (BKJD)



# DV Model-Shift Uniqueness Test

009583493-01, P = 387.425572 Days, E = 102.940086 Days

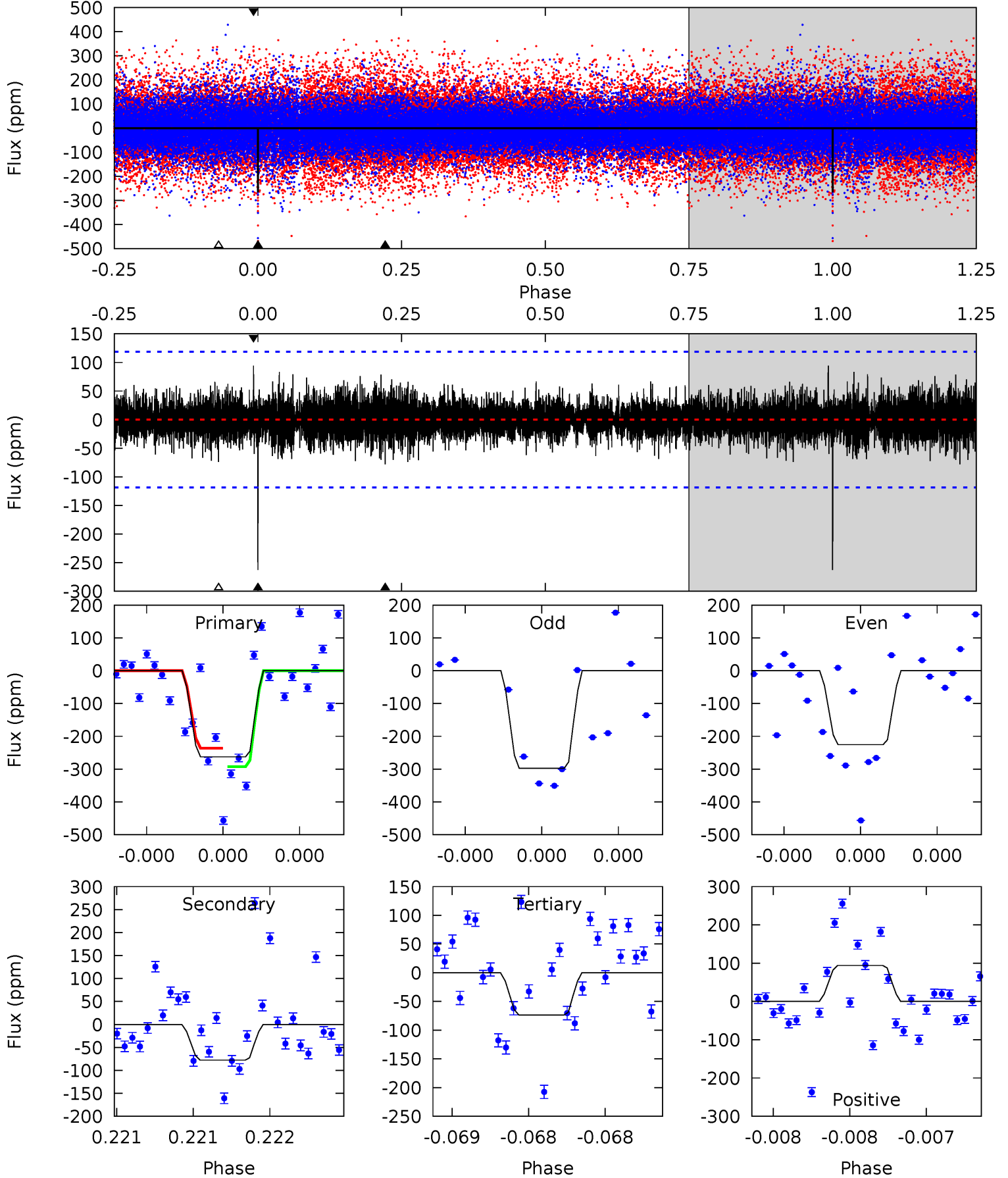
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
12.8	12.7	11.1	12.2	5.64	3.58	1.90	1.72	0.61	1.54	0.42	0.18	0.97	0.49	1.79



# Alt Model-Shift Uniqueness Test

009583493-01, P = 387.428192 Days, E = 102.938970 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
12.5	3.71	3.52	4.49	5.66	3.62	0.89	9.02	8.04	0.19	-0.78	1.64	0.87	0.26	1.35



### Stellar Parameters For KIC 009583493

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$5658^{+150}_{-150}$	$4.536^{+0.090}_{-0.110}$	$-0.720^{+0.300}_{-0.300}$	$0.765^{+0.124}_{-0.083}$	$0.732^{+0.085}_{-0.039}$	$2.307^{+0.774}_{-0.761}$
	+3%/-3%	+2%/-2%	+42%/-42%	+16%/-11%	+12%/-5%	+34%/-33%
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 009583493-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	$A_{\text{obs}}$
DV	$-398 \pm 31$	$2.82^{+2.67}_{-1.77}$	$315^{+15}_{-13}$	$4518^{+2829}_{-951}$	$25039^{+160366}_{-18522}$
Alt.	$-78 \pm 21$	$2.70^{+2.89}_{-1.83}$	$316^{+14}_{-13}$	$3482^{+1736}_{-690}$	$5317^{+44945}_{-4140}$

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

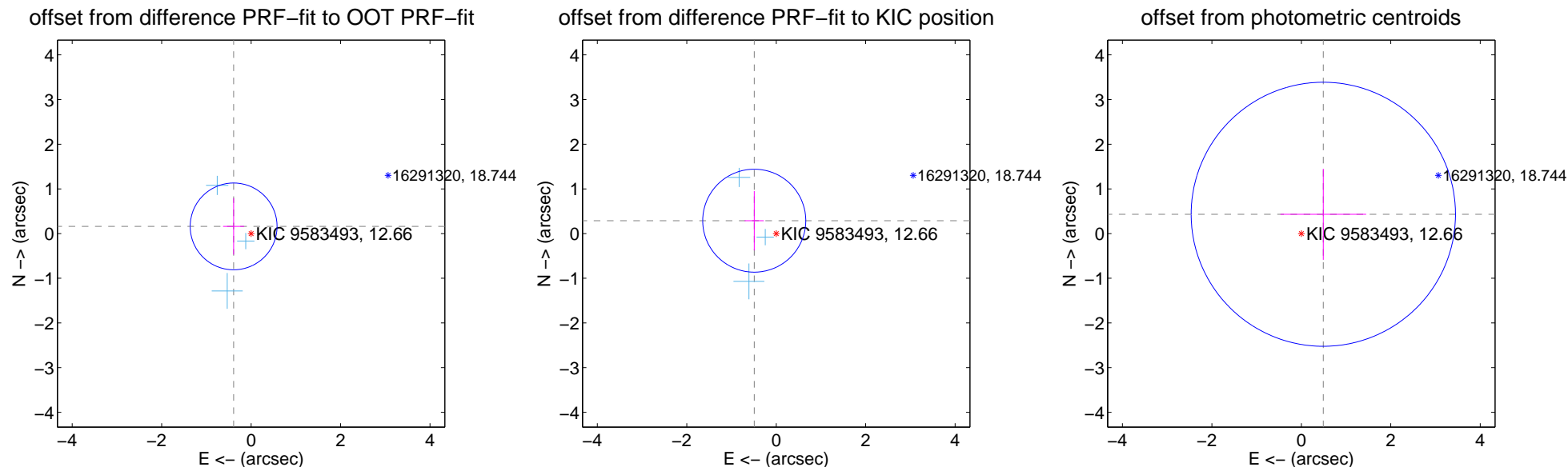
## DV Centroid Data

Supplemental centroid analysis for 009583493-01. Kepler magnitude: 12.66. Transit SNR 6.51

There are 3 quarters with good PRF difference image offsets

The direct PRF centroid is offset from the target star catalog position by about 0.23 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.423 \pm 0.324$	1.31	$0.391 \pm 0.234$	$0.161 \pm 0.631$
PRF-fit source offset from KIC position	$0.570 \pm 0.384$	1.48	$0.491 \pm 0.214$	$0.289 \pm 0.664$
photometric centroid source offset	$0.65 \pm 0.98$	0.66	$-0.49 \pm 0.96$	$0.43 \pm 1.02$

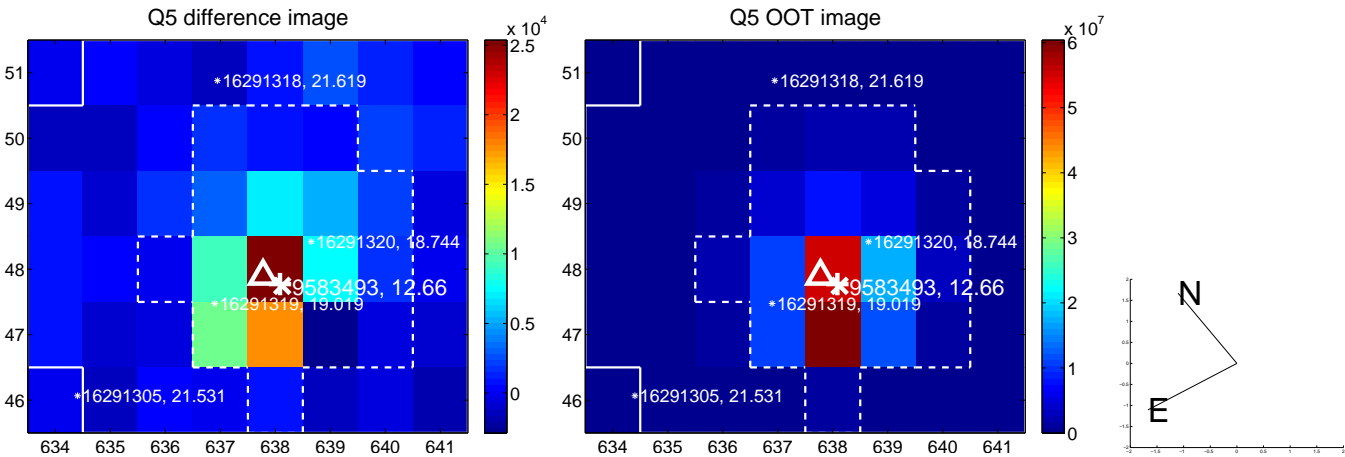


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: three-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

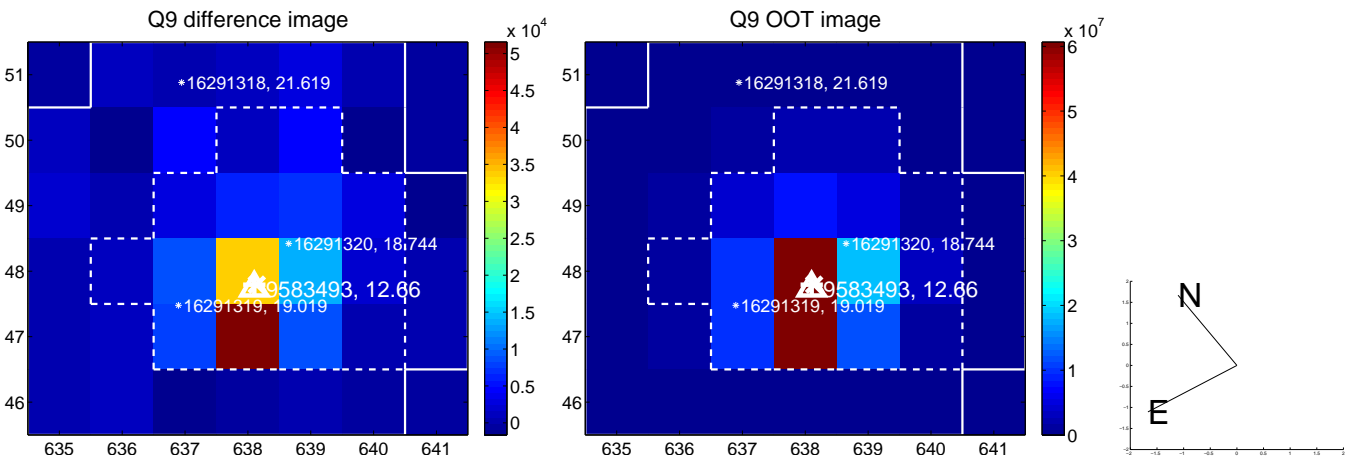


white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

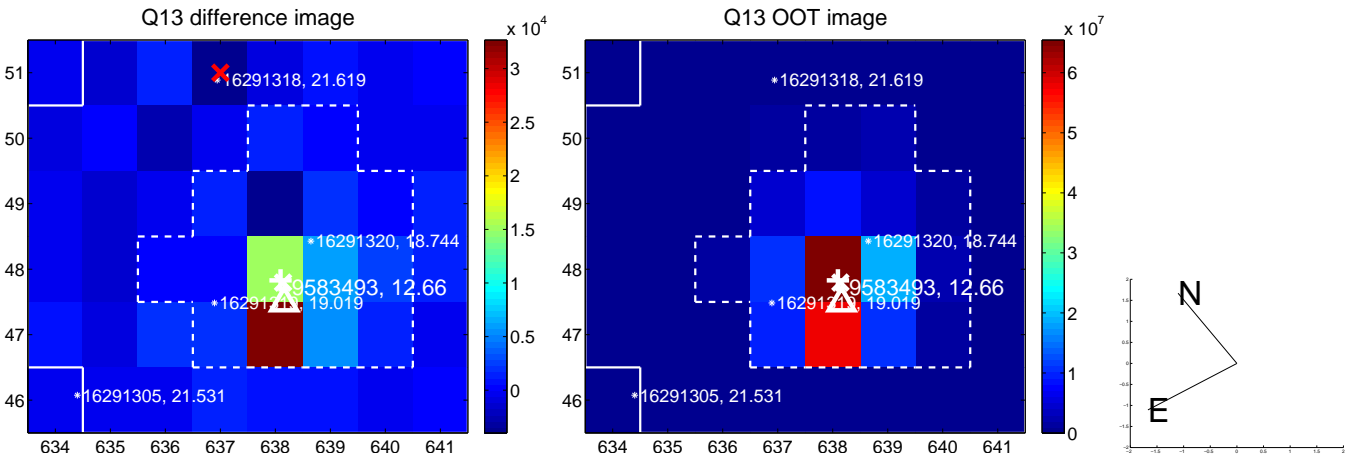




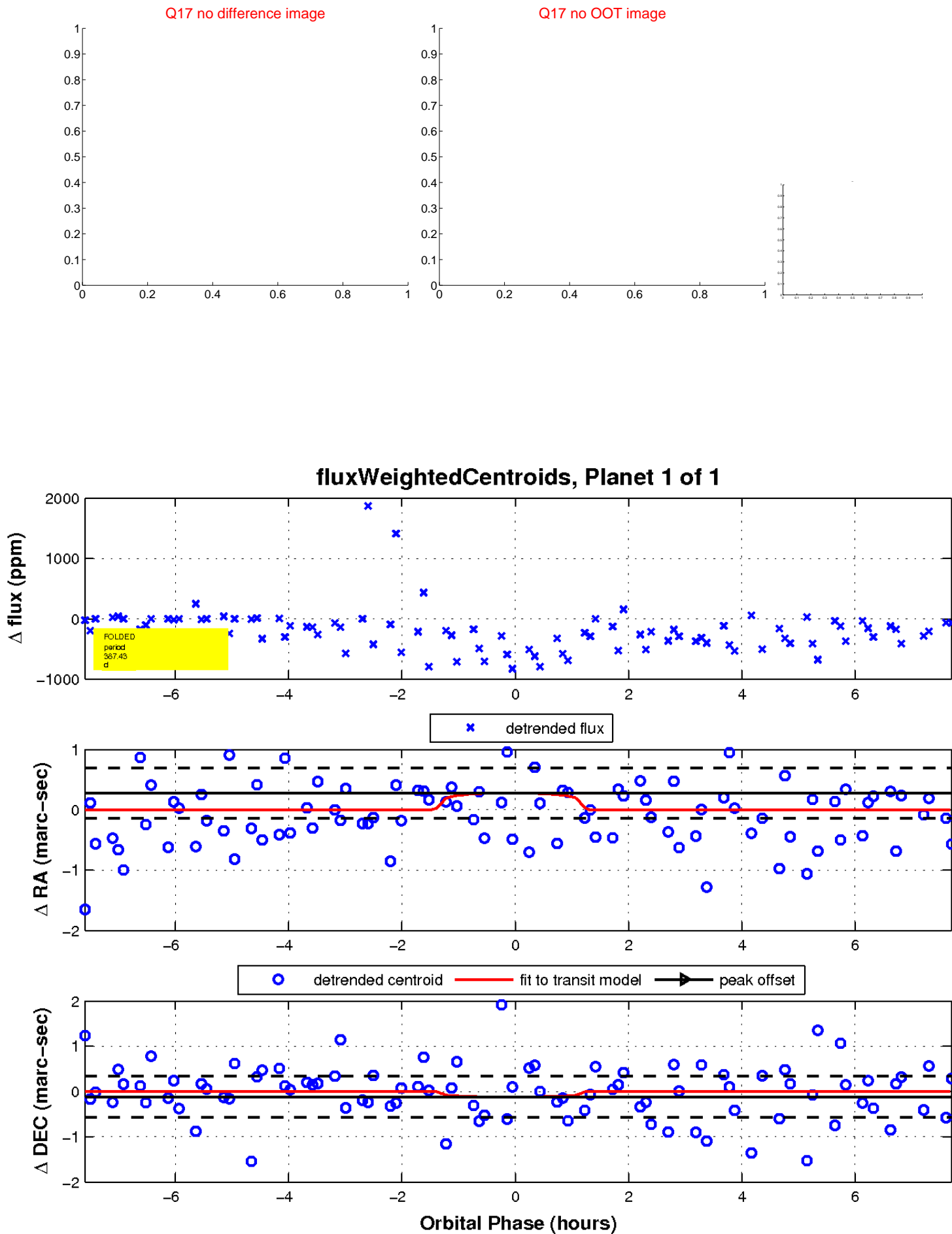
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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



UKIRT Image

Declination

