

# KIC 006034587

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
006034587-01	OBS	No	425.391103	208.756329	1283.6	4.667	8.5	8.5	0.30	3464	1.12	0.02

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
006034587-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_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.

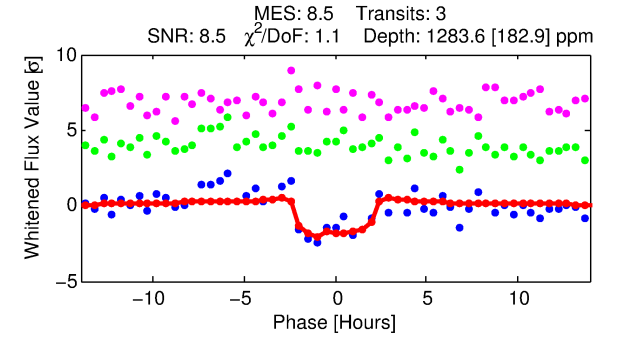
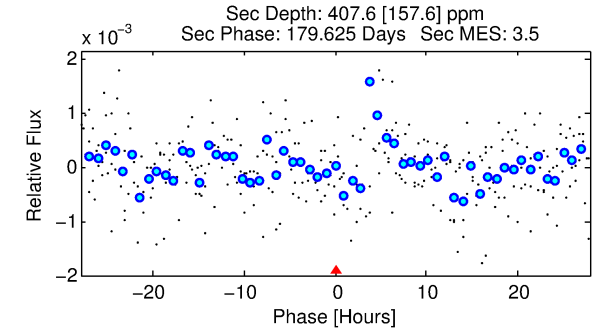
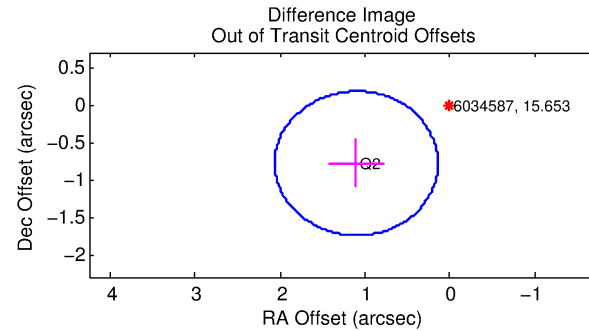
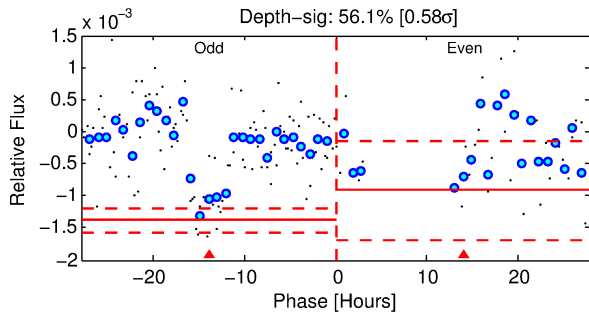
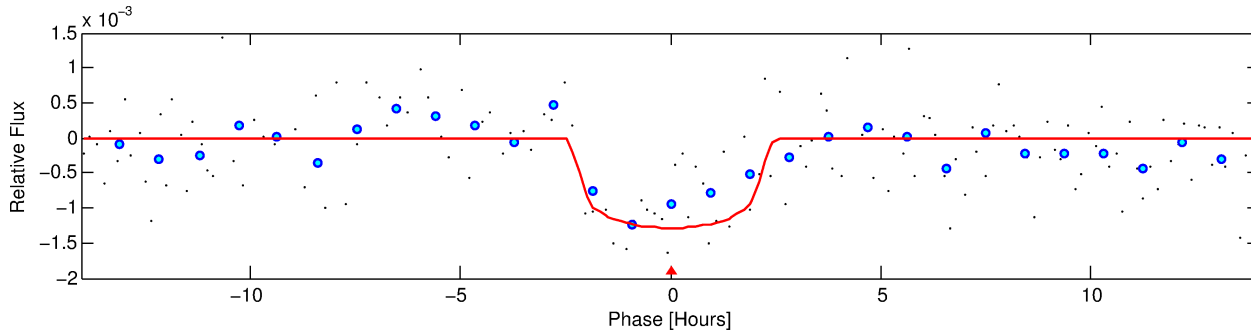
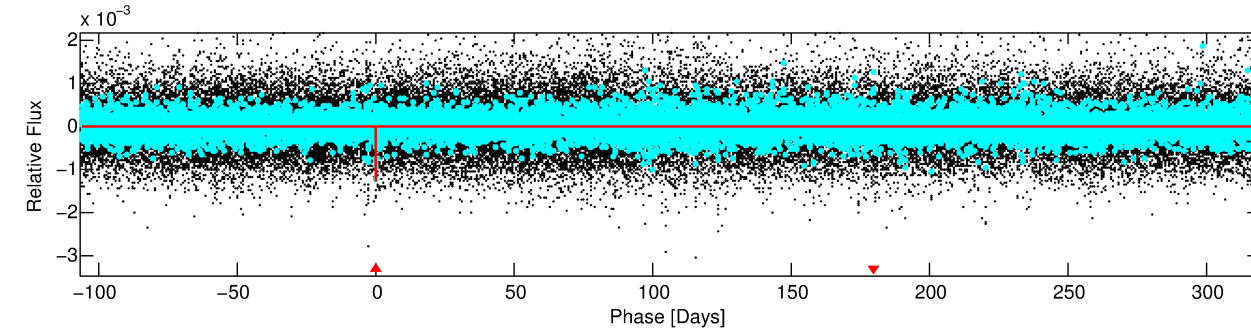
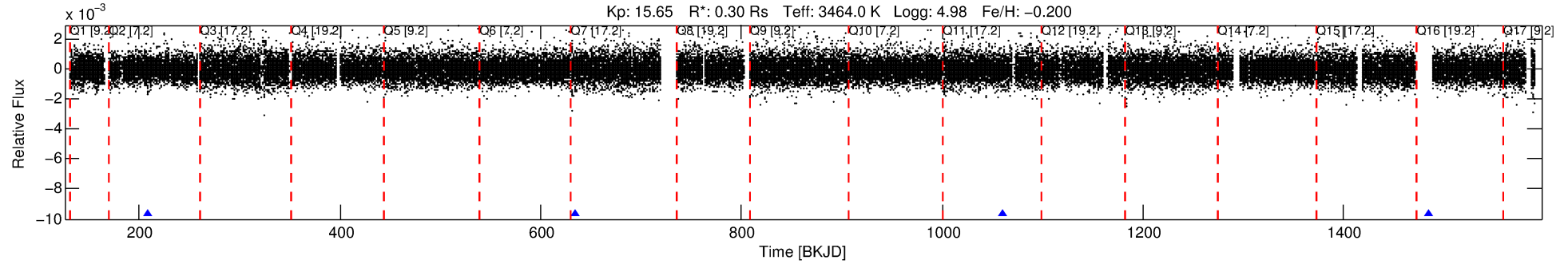
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 006034587-01

No Significant Match Found

# DV One-Page Summary

KIC: 6034587 Candidate: 1 of 1 Period: 425.391 d



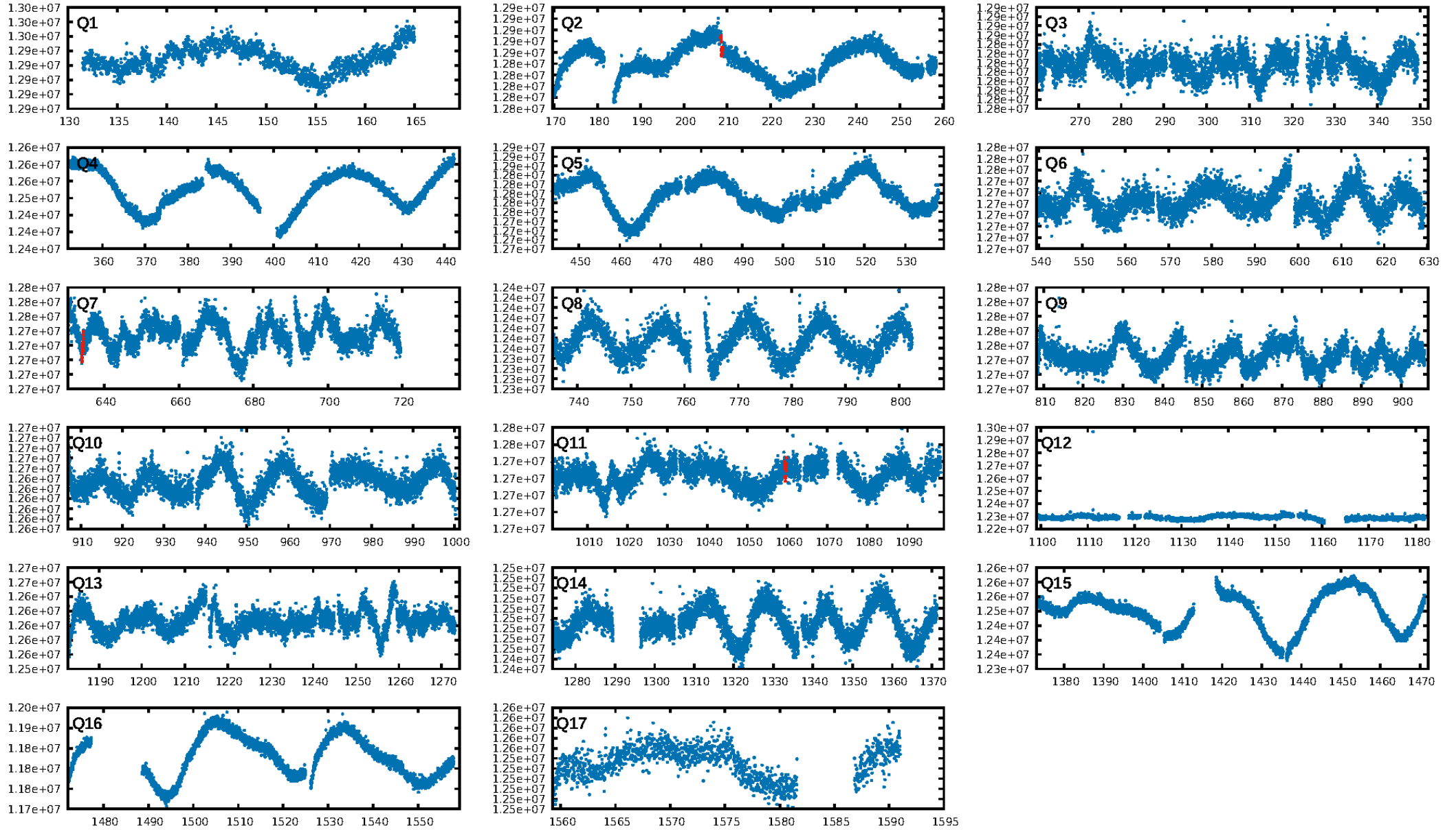
## DV Fit Results:

Period = 425.39110 [0.00600] d  
Epoch = 208.7563 [0.0096] BKJD  
Rp/R\* = 0.0342 [0.0462]  
a/R\* = 582.44 [3579.80]  
b = 0.61 [6.39]  
Seff = 0.02 [0.00]  
Teq = 96 [3] K  
Rp = 1.12 [1.51] Re  
a = 0.7511 [0.0673] AU  
Ag = 101577.68 [277598.57] [0.37]  
Teff = 2661 [1817] K [1.41 $\sigma$ ]

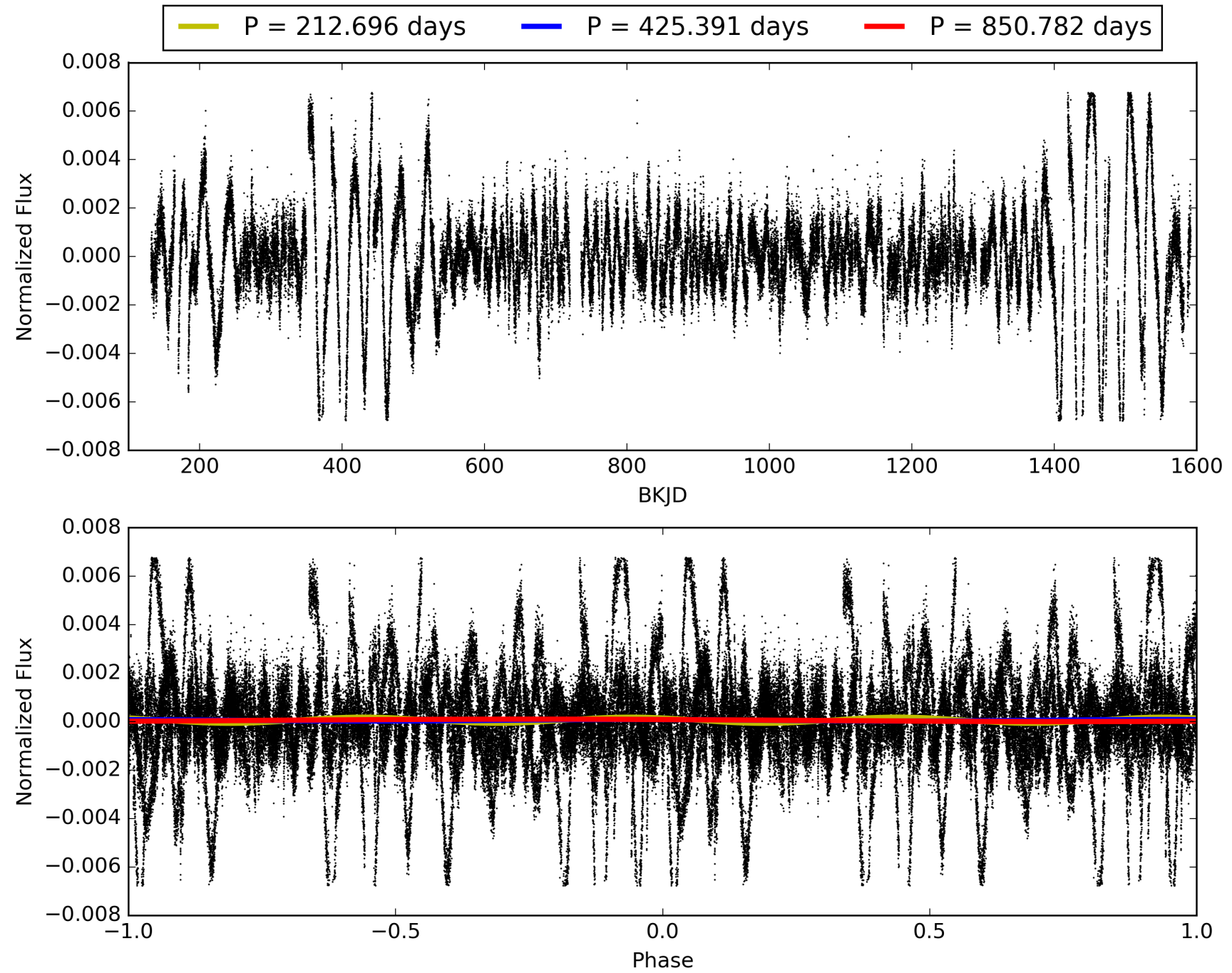
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: 11.1%  
ModelChiSquareGof-sig: 95.2%  
**Bootstrap-pfa: 3.56e-10**  
RollingBand-fgt: 1.00 [3/3]  
GhostDiagnostic-chr: 2.45  
Centroid-sig: 4.8%  
Centroid-so: 3.309 arcsec [1.68 $\sigma$ ]  
**OotOffset-rm: 1.349 arcsec [4.20 $\sigma$ ]**  
**KicOffset-rm: 1.819 arcsec [5.68 $\sigma$ ]**  
OotOffset-st: 1/0/0/0 [1]  
KicOffset-st: 1/0/0/0 [1]  
DiffImageQuality-fgm: 1.00 [1/1]  
DiffImageOverlap-fno: 1.00 [2/2]

# TCE 006034587-01, PDC Light Curves

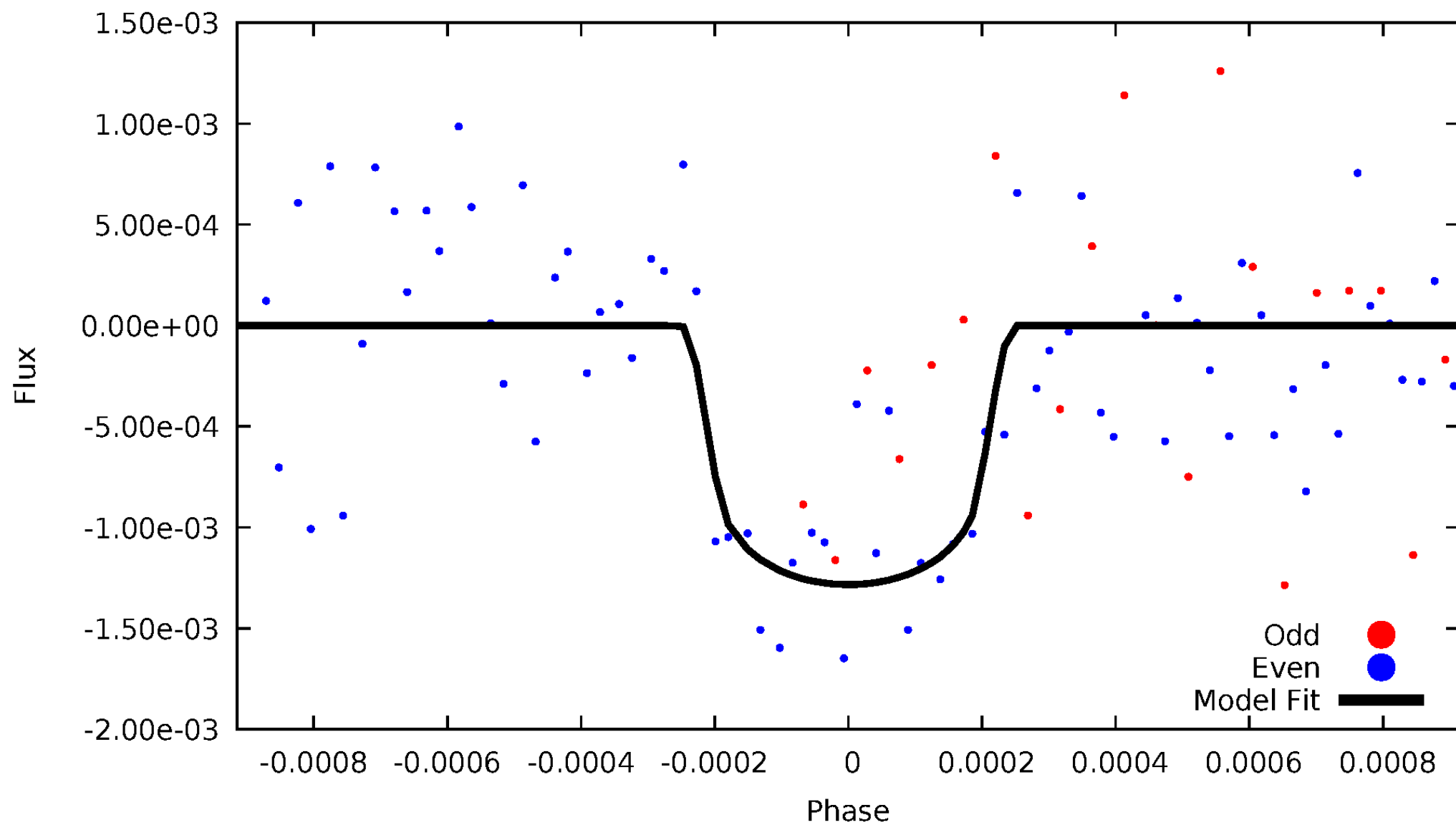


TCE 006034587-01



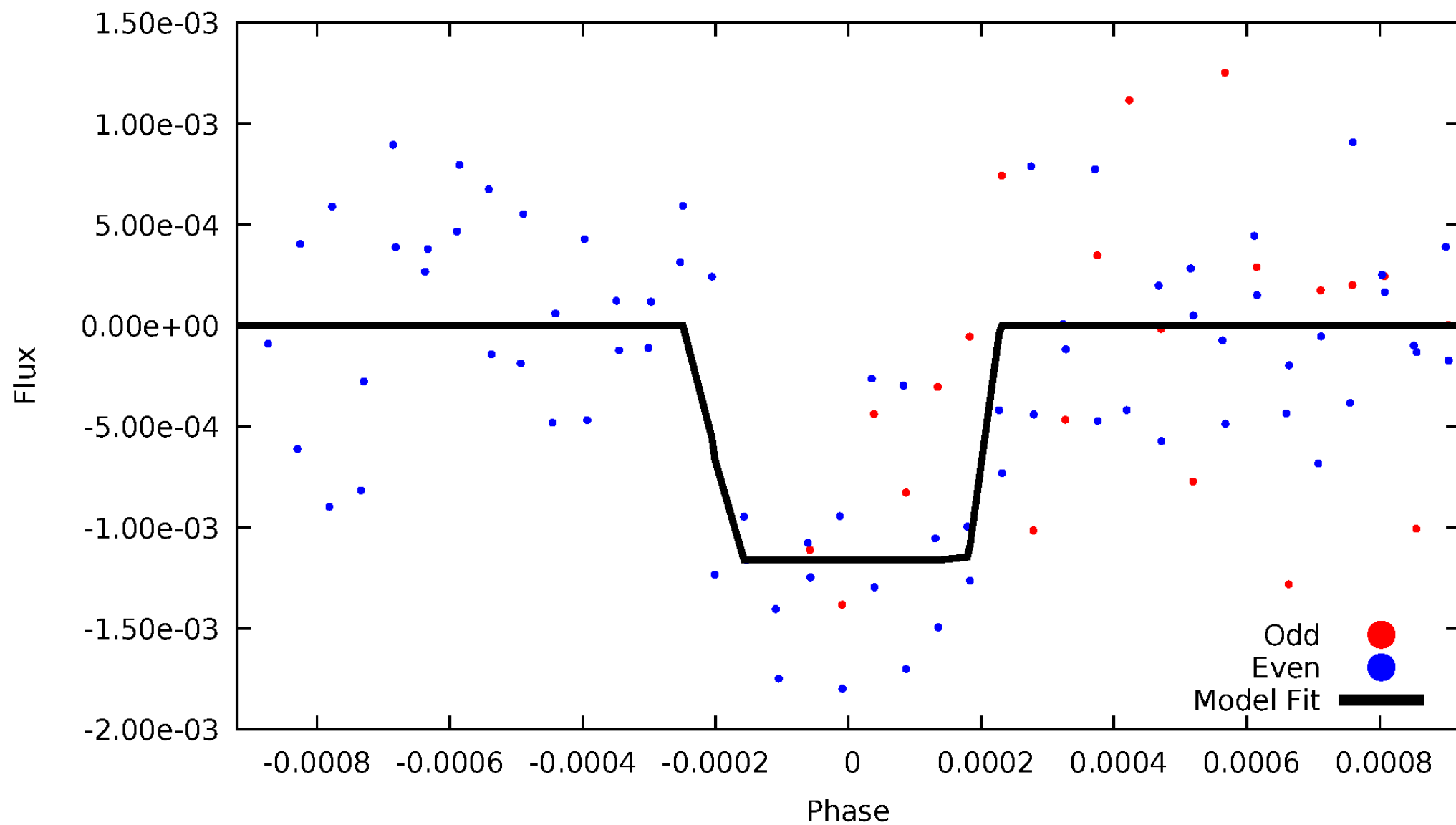
# DV Odd/Even

TCE 006034587-01



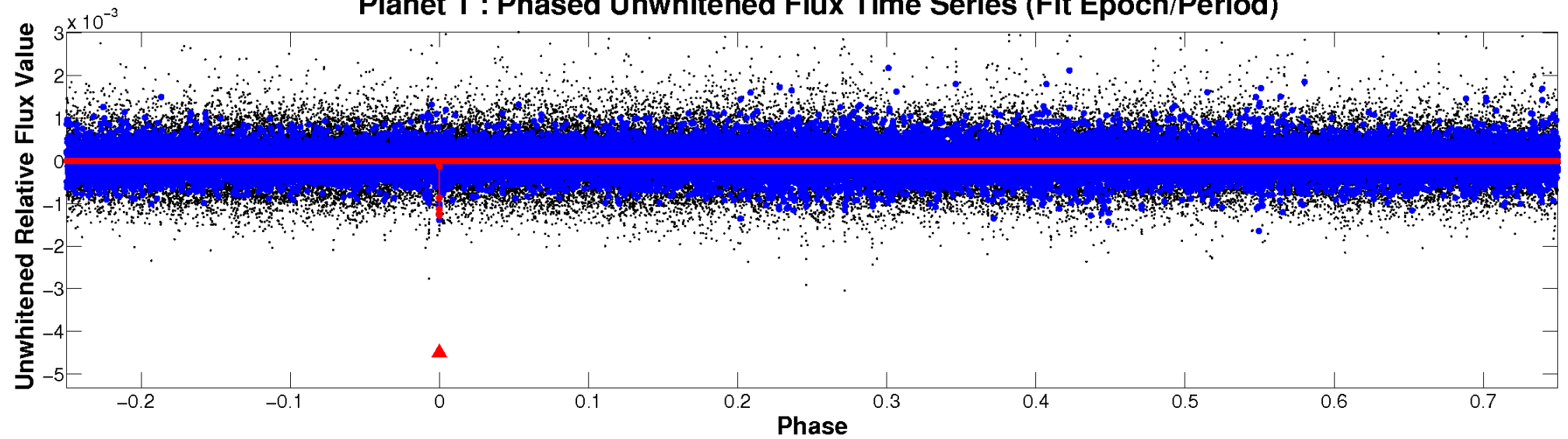
# ALT Odd/Even

TCE 006034587-01

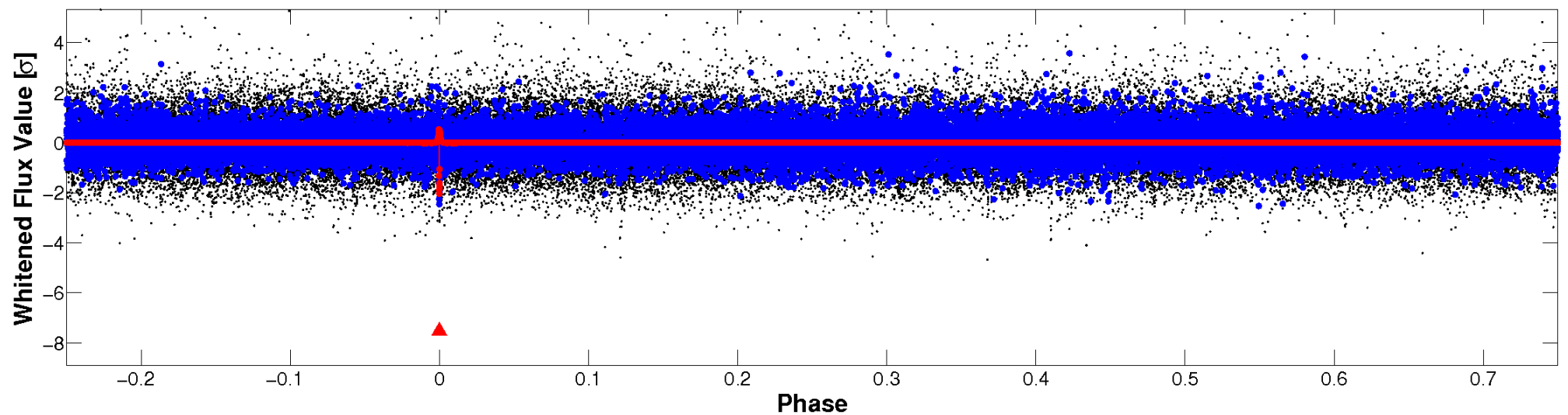


# Non-Whitened Vs. Whitened Light Curve

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

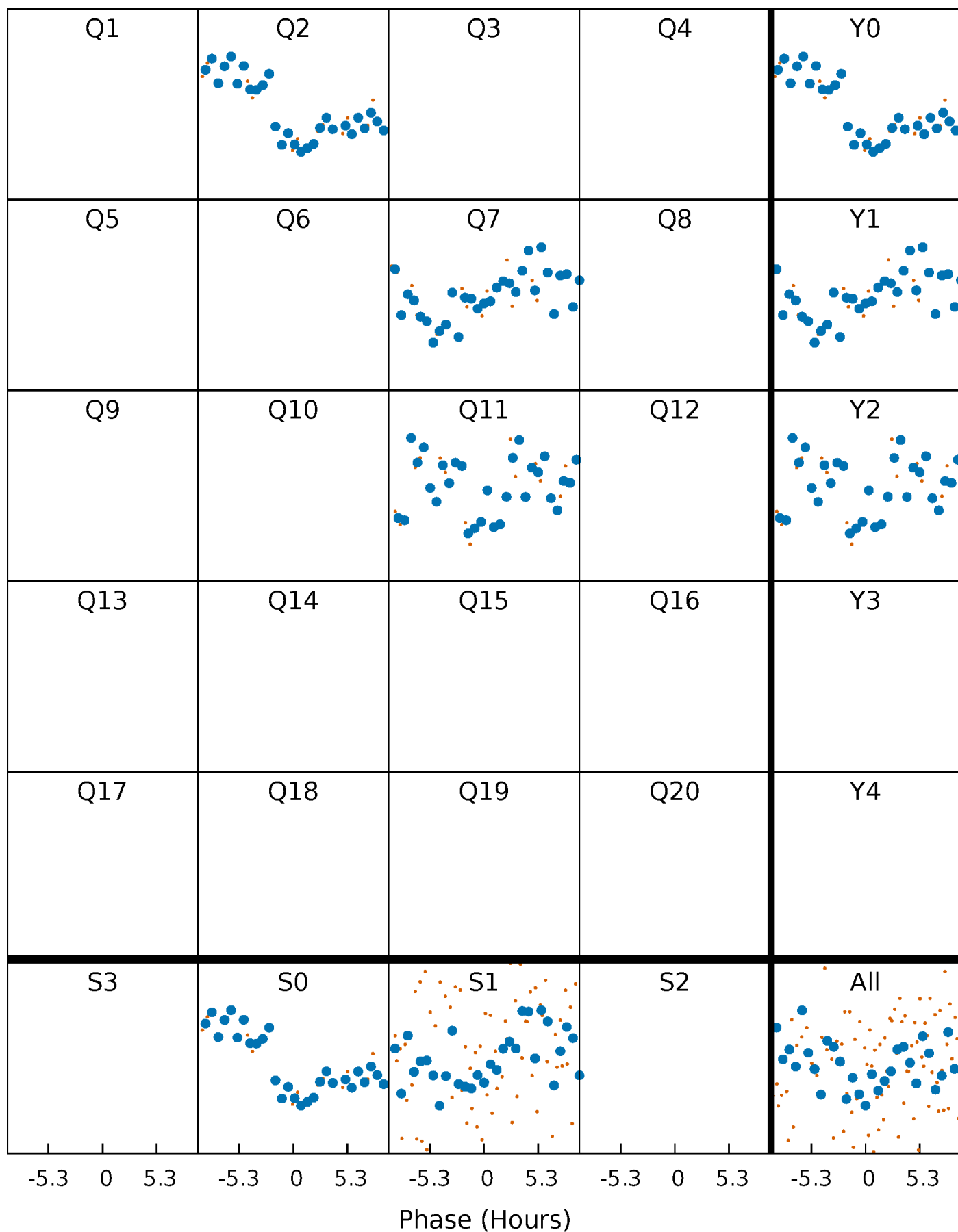


**Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)**



# PDC Quarter-Phased Transit Curves

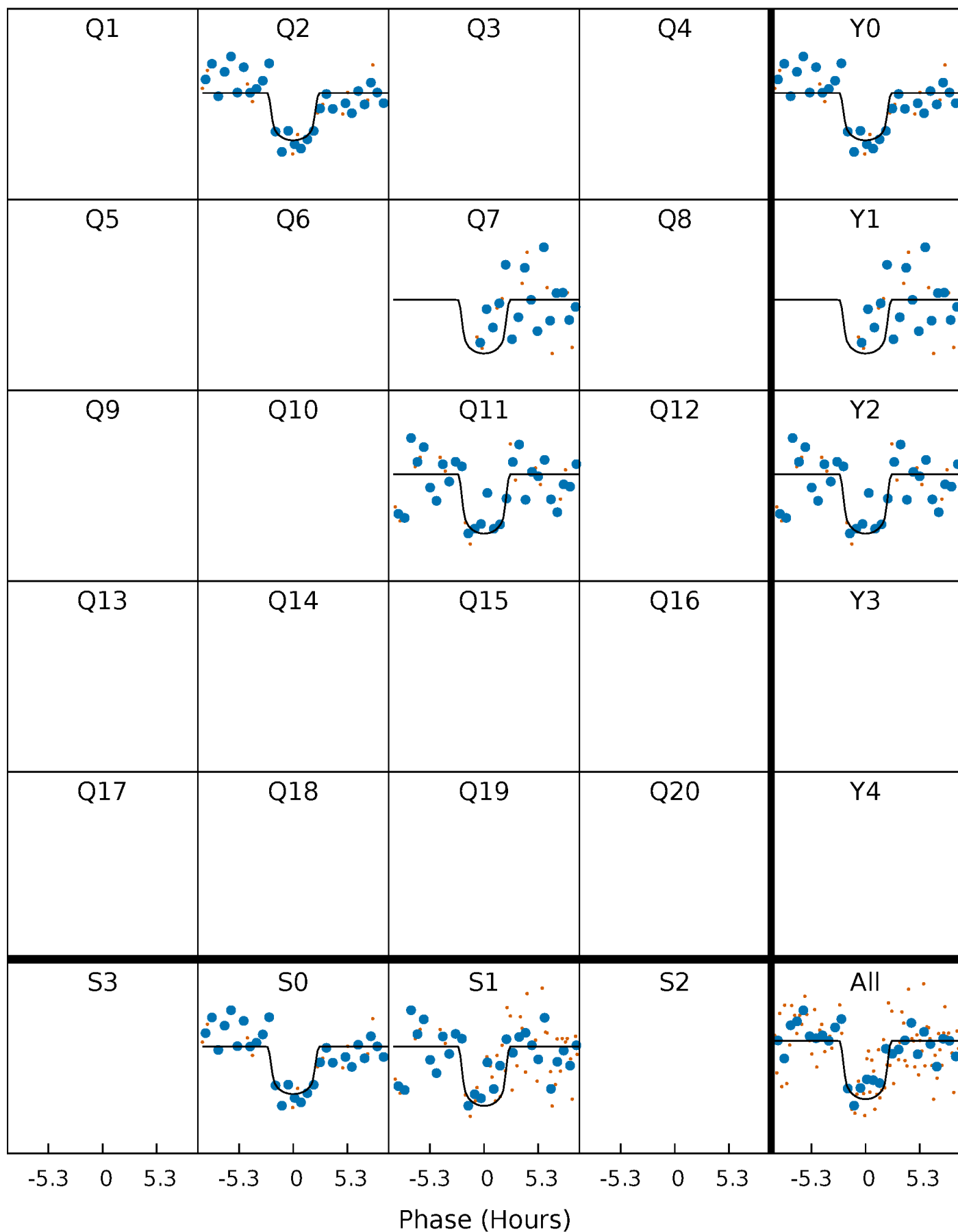
TCE 006034587-01 P=425.391103 Days  $T_0=208.756329$  (BKJD)





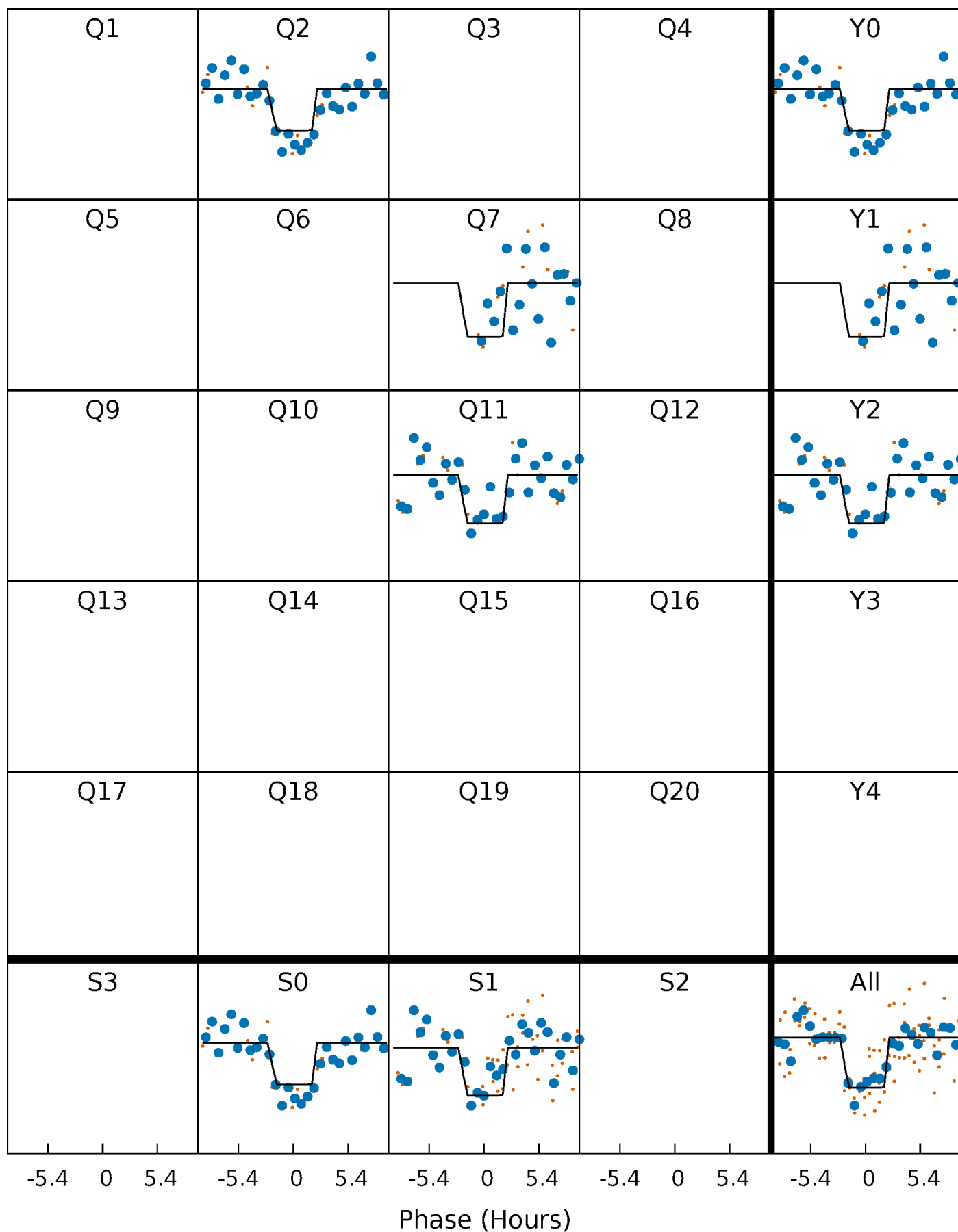
# DV Quarter-Phased Transit Curves

TCE 006034587-01 P=425.391103 Days  $T_0=208.756329$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

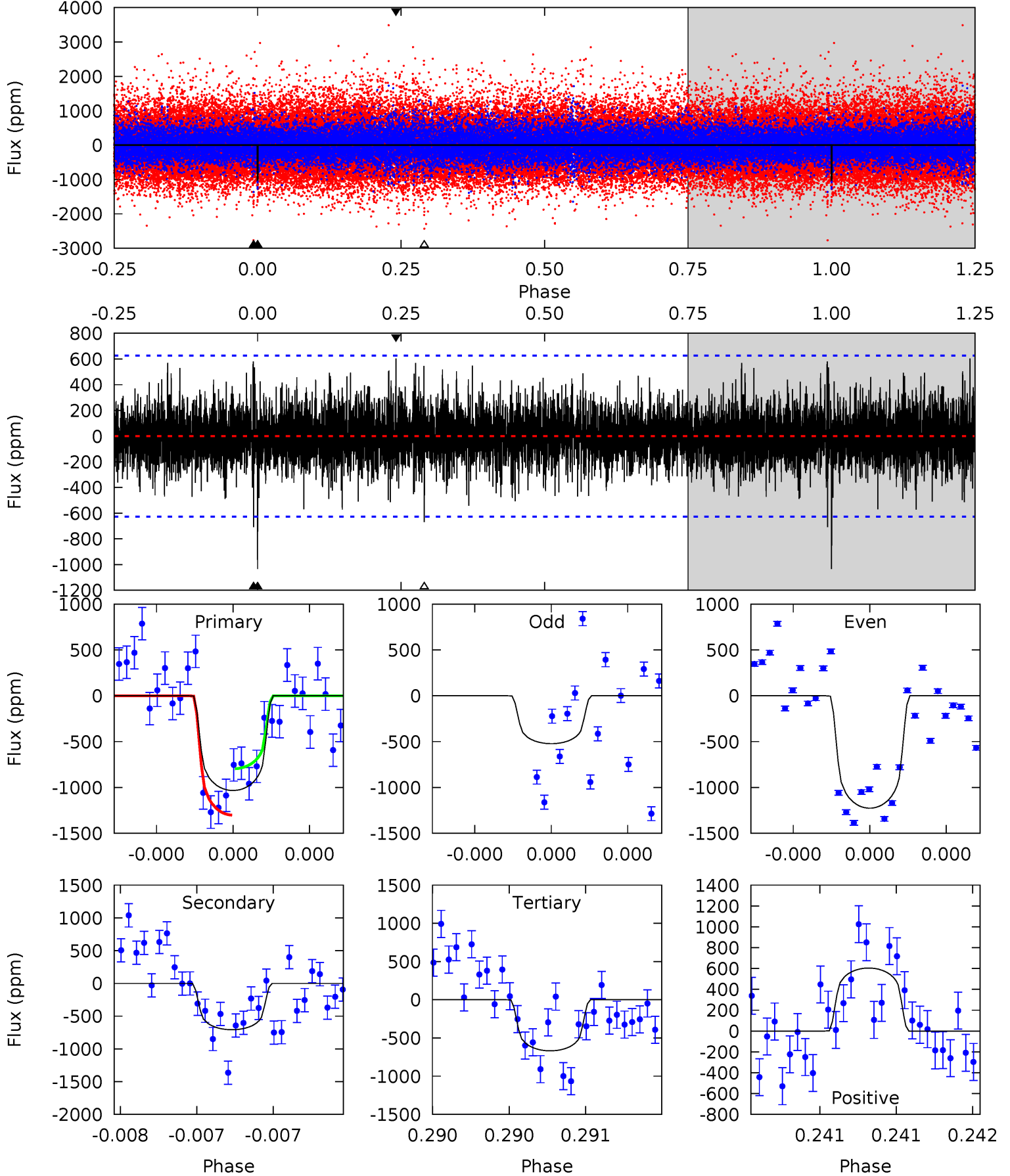
TCE 006034587-01 P=425.385852 Days  $T_0=208.757276$  (BKJD)



# DV Model-Shift Uniqueness Test

006034587-01, P = 425.391103 Days, E = 208.756329 Days

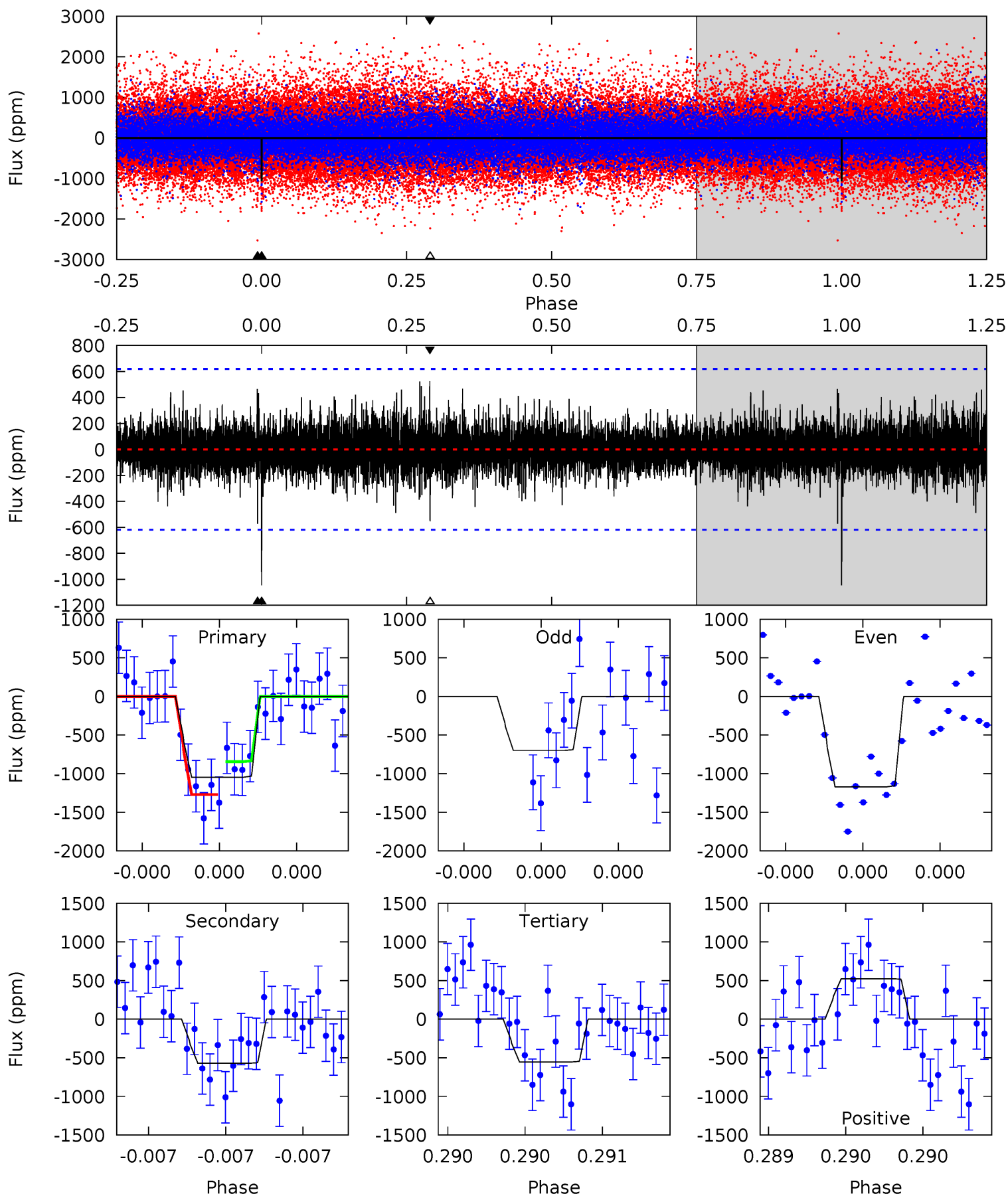
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
9.20	6.30	5.95	5.38	5.58	3.49	1.33	3.25	3.82	0.35	0.92	2.79	0.95	0.37	2.26



# Alt Model-Shift Uniqueness Test

006034587-01, P = 425.385852 Days, E = 208.757276 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
9.45	5.16	5.00	4.74	5.60	3.52	1.01	4.45	4.71	0.15	0.42	1.87	1.21	0.33	1.93



### Stellar Parameters For KIC 006034587

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$3464^{+36}_{-46}$	$4.981^{+0.032}_{-0.052}$	$-0.200^{+0.100}_{-0.100}$	$0.299^{+0.036}_{-0.029}$	$0.311^{+0.036}_{-0.044}$	$16.420^{+3.388}_{-3.368}$
	+1%/-1%	+1%/-1%	+50%/-50%	+12%/-10%	+12%/-14%	+21%/-21%
Source	PHO2	PHO2	PHO2	DSEP		

KIC = Kepler Input Catalog; PHO = Photometry; SPE = Spectroscopy; AST = Asteroseismology  
 TRA = Transits; DESP = Dartmouth Models; MULT = Multiple Models

### Secondary Eclipse Parameters for KIC 006034587-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	$A_{\text{obs}}$
DV	$-708 \pm 112$	$1.57^{+1.43}_{-0.99}$	$135^{+3}_{-3}$	$2914^{+1059}_{-461}$	$89156^{+554357}_{-65189}$
Alt.	$-571 \pm 111$	$1.55^{+1.41}_{-1.05}$	$135^{+3}_{-3}$	$2842^{+1191}_{-437}$	$71025^{+671258}_{-51285}$

$T_{\text{max}}$  = 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

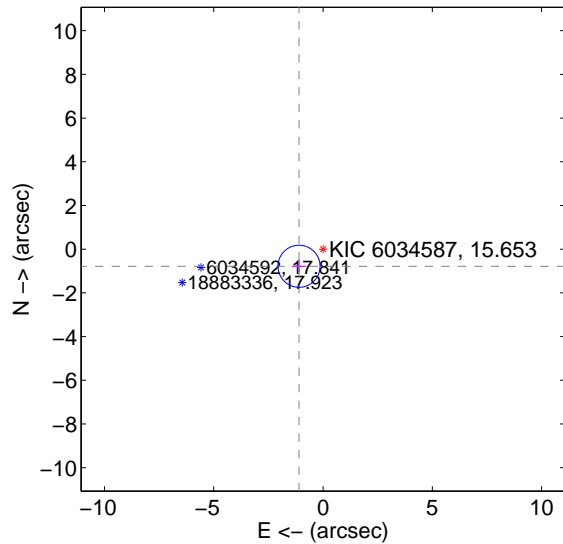
Supplemental centroid analysis for 006034587-01. Kepler magnitude: 15.65. Transit SNR 8.51

There are 1 quarters with good PRF difference image offsets

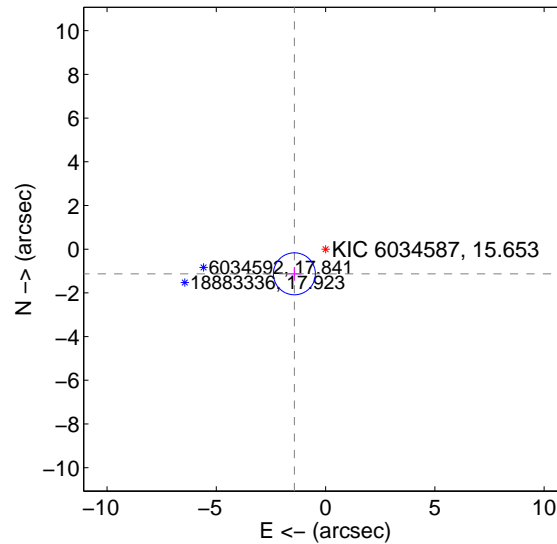
The direct PRF centroid is offset from the target star catalog position by about 0.48 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	1.349 $\pm$ 0.321	4.20	1.099 $\pm$ 0.326	-0.783 $\pm$ 0.311
PRF-fit source offset from KIC position	1.819 $\pm$ 0.320	5.68	1.427 $\pm$ 0.326	-1.127 $\pm$ 0.311
photometric centroid source offset	3.31 $\pm$ 1.97	1.68	2.79 $\pm$ 2.04	-1.78 $\pm$ 1.79

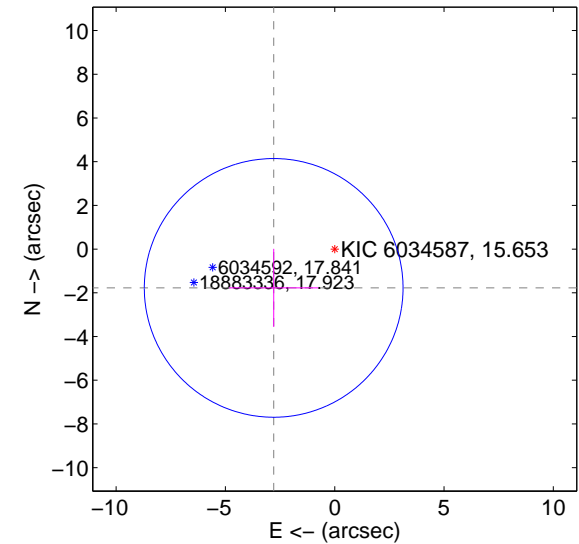
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

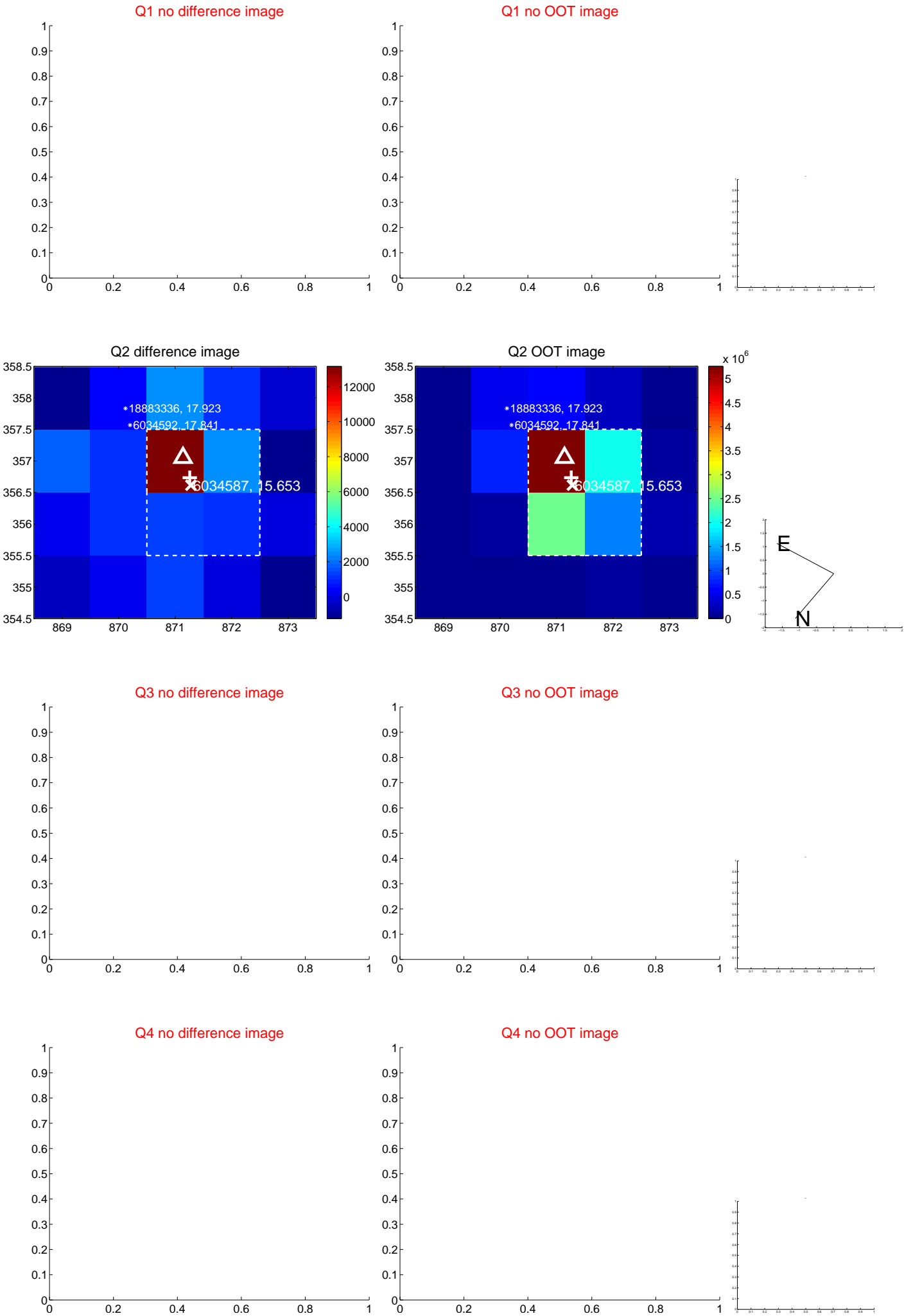


offset from photometric centroids



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.

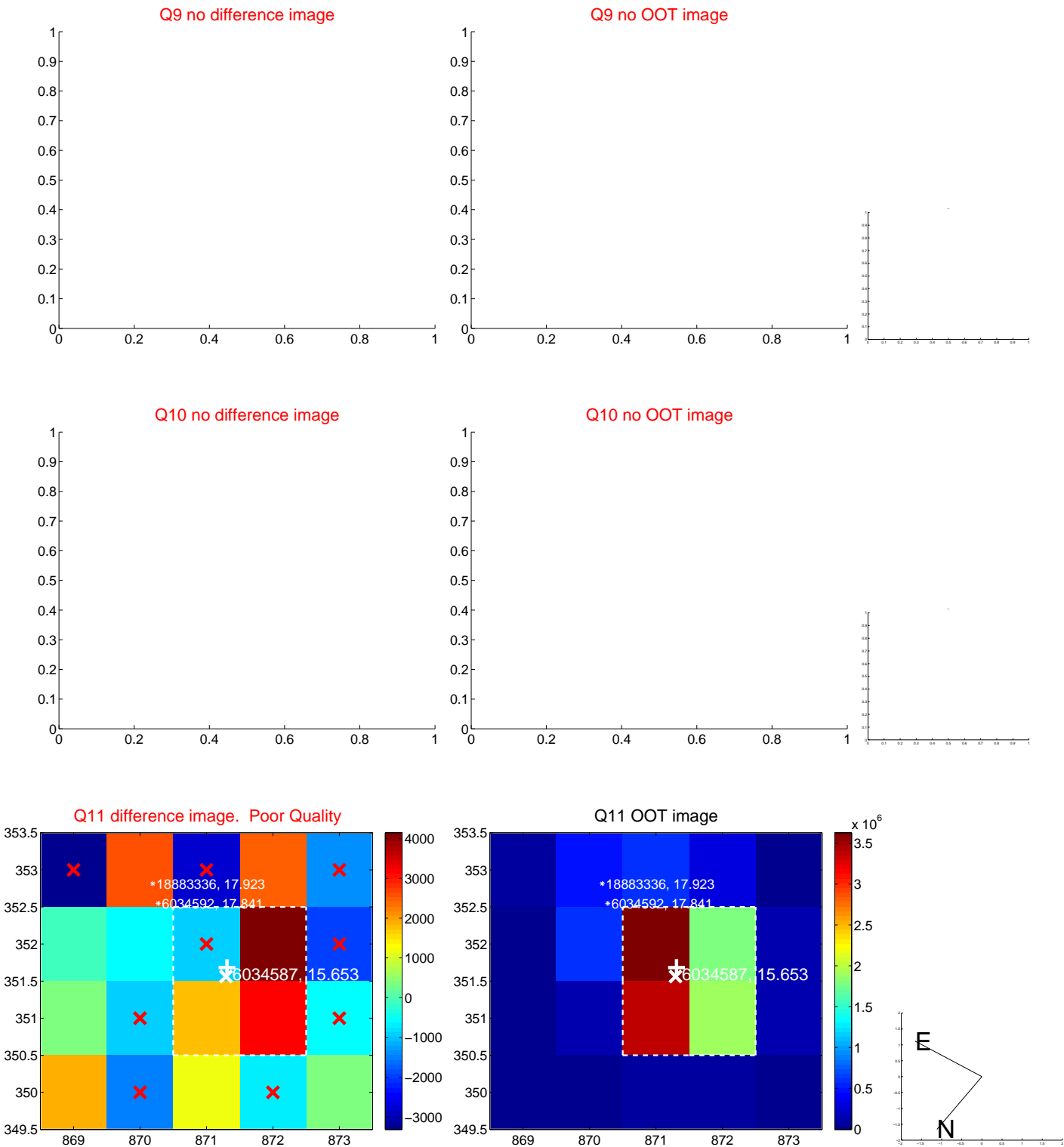


white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.





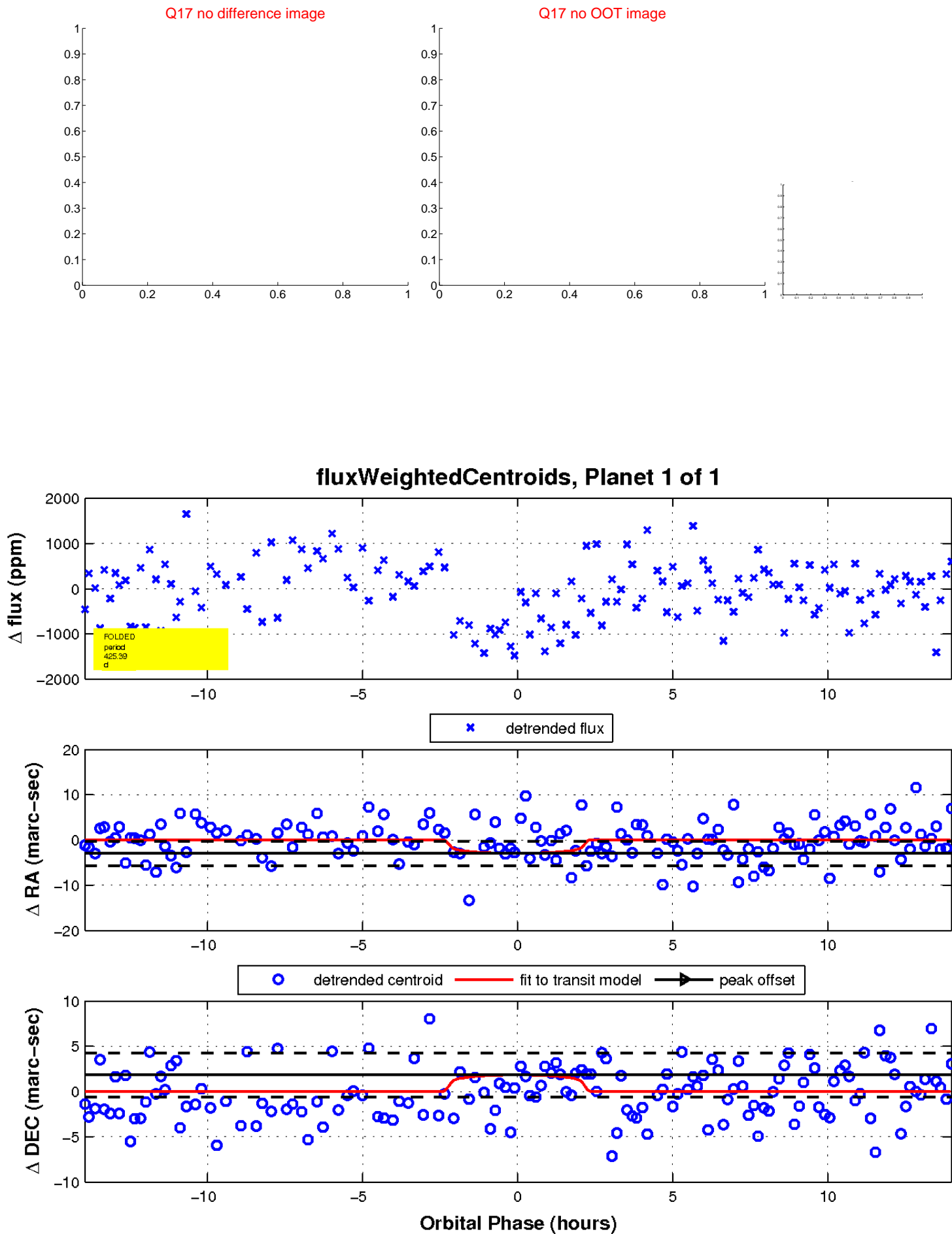
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ×: large negative pixel value.



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

