

# KIC 003854101

## Q1-17 DR25 TCE Parameters

TCE	Run Type	KOI?	Period (Days)	Epoch (BKJD)	Depth (ppm)	Duration (Hours)	MES	SNR	R <sub>★</sub> (R <sub>☉</sub> )	T <sub>★</sub> (K)	R <sub>p</sub> (R <sub>⊕</sub> )	S <sub>p</sub> (S <sub>⊕</sub> )
003854101-01	OBS	5018.01	293.505564	328.727217	6633.1	3.335	49.6	48.0	1.01	5455	12.11	1.16

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
003854101-01	OBS	FP	0.00	0	1	0	0	DEEP_V_SHAPED

**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.

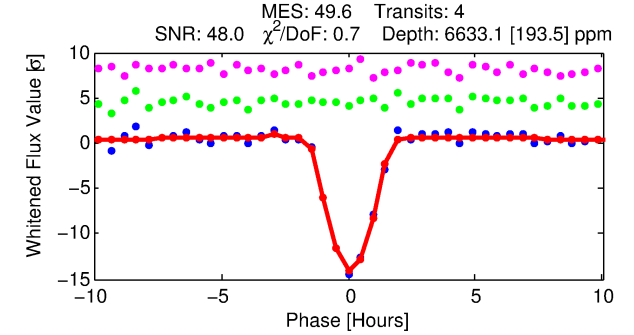
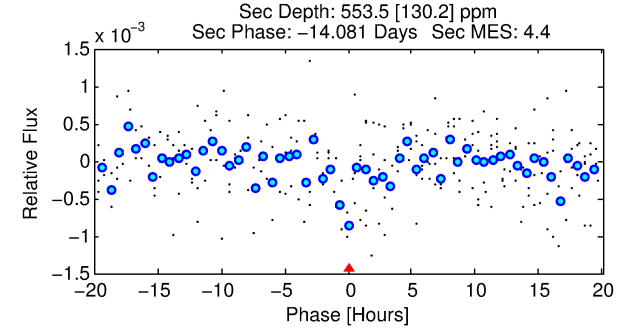
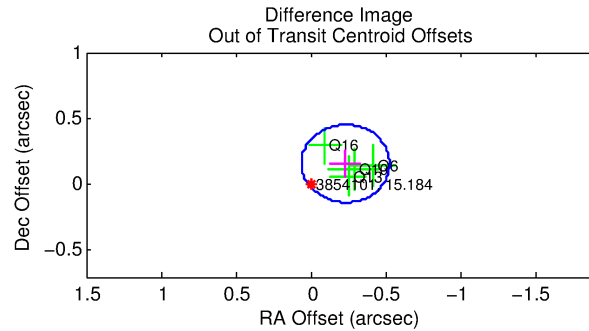
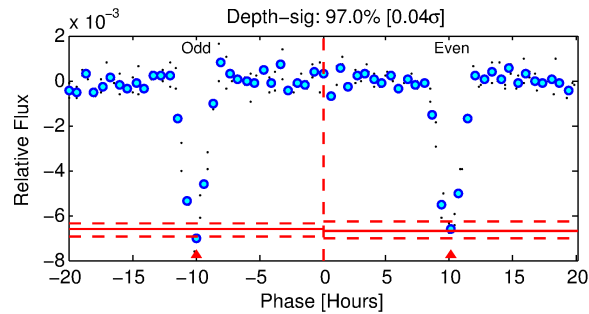
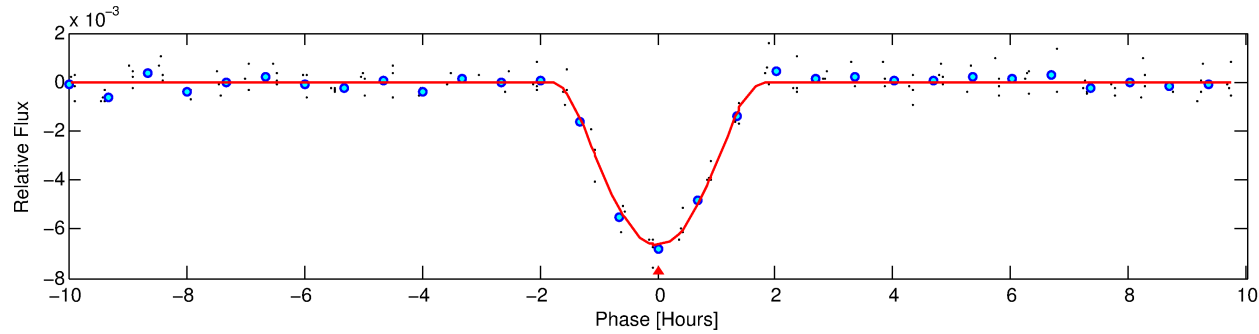
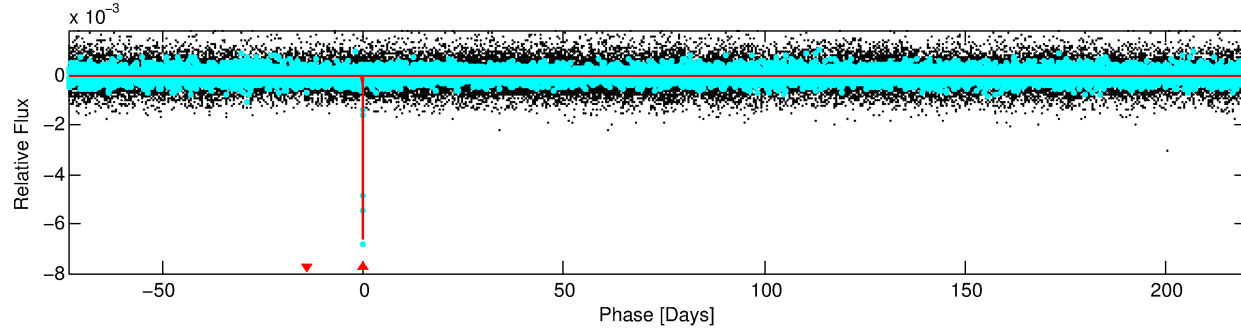
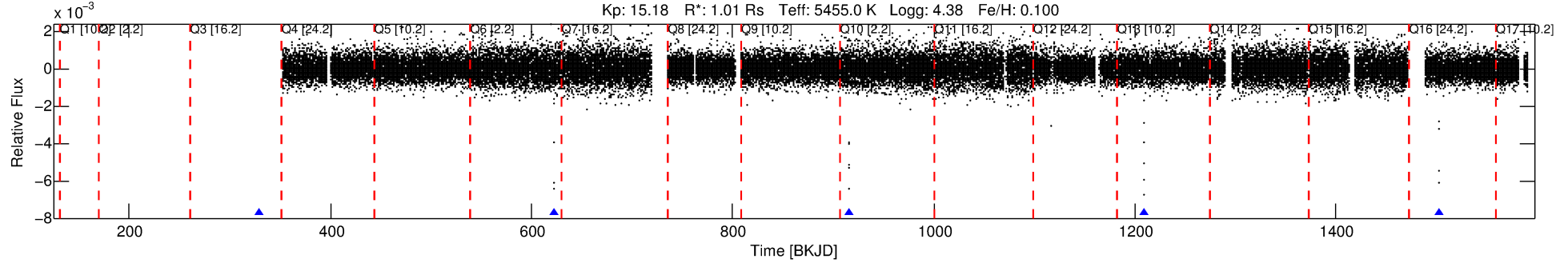
## Ephemeris Match Information For 003854101-01

No Significant Match Found

# DV One-Page Summary

KIC: 3854101 Candidate: 1 of 1 Period: 293.506 d

KOI: K05018.01 Corr: 0.988



## DV Fit Results:

Period = 293.50556 [0.00078] d  
Epoch = 328.7272 [0.0022] BKJD  
Rp/R\* = 0.1103 [0.0547]  
a/R\* = 382.04 [55.94]  
b = 0.95 [0.10]  
Seff = 1.16 [0.25]  
Teq = 265 [14] K  
Rp = 12.11 [6.20] Re  
a = 0.8308 [0.1062] AU  
Ag = 1432.84 [1492.14] [0.96 $\sigma$ ]  
Teffp = 2519 [643] K [3.50 $\sigma$ ]

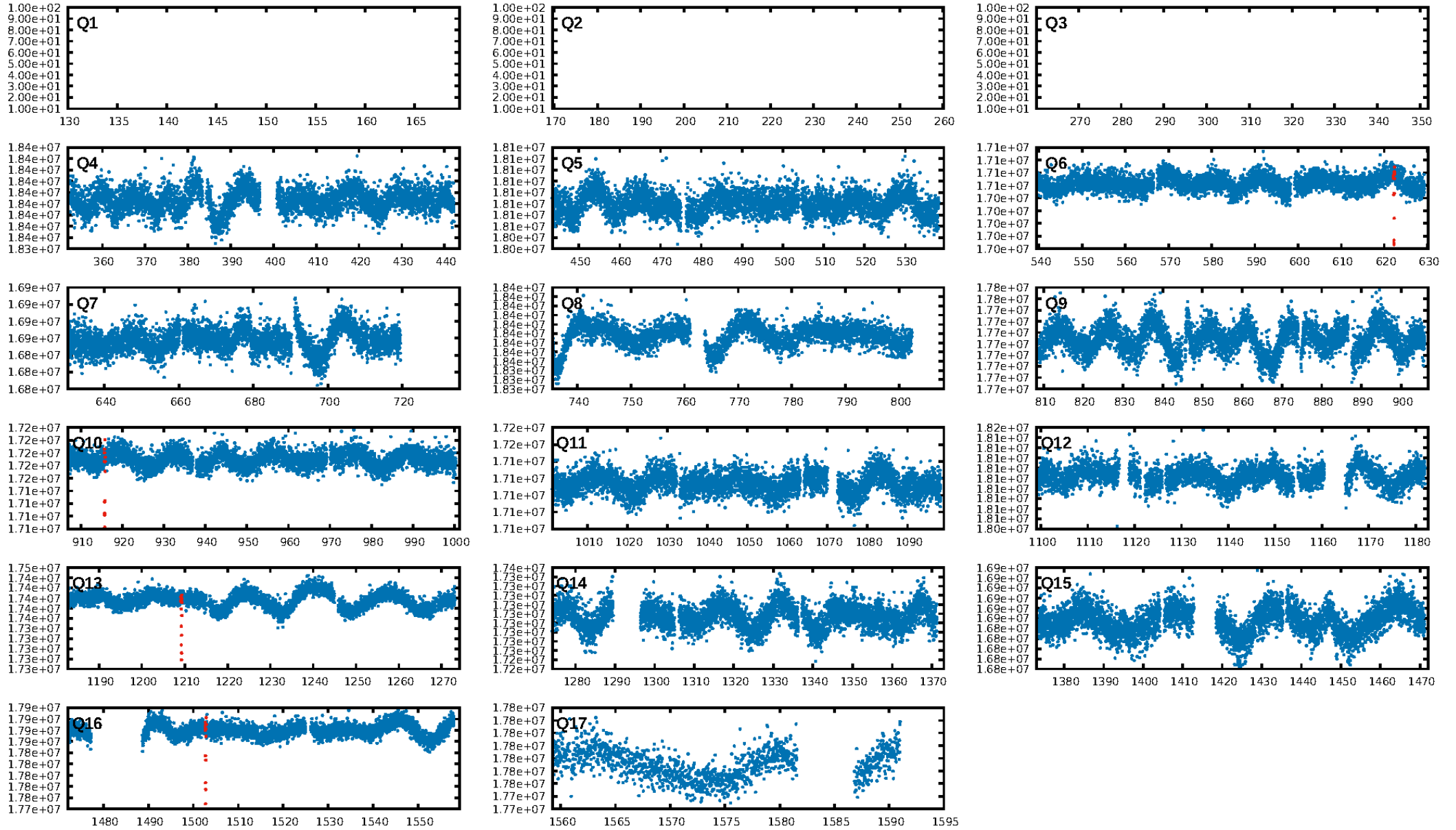
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: 77.4%  
ModelChiSquareGof-sig: 98.6%  
Bootstrap-pfa: 0.00e+00  
RollingBand-fgt: 1.00 [4/4]  
GhostDiagnostic-chr: 5.683  
Centroid-sig: 1.6%  
Centroid-so: 0.201 arcsec [0.69 $\sigma$ ]  
OotOffset-rm: 0.282 arcsec [2.87 $\sigma$ ]  
KicOffset-rm: 0.156 arcsec [1.59 $\sigma$ ]  
OotOffset-st: 2/0/1/1 [4]  
KicOffset-st: 2/0/1/1 [4]  
DiffImageQuality-fgm: 1.00 [4/4]  
DiffImageOverlap-fno: 1.00 [4/4]

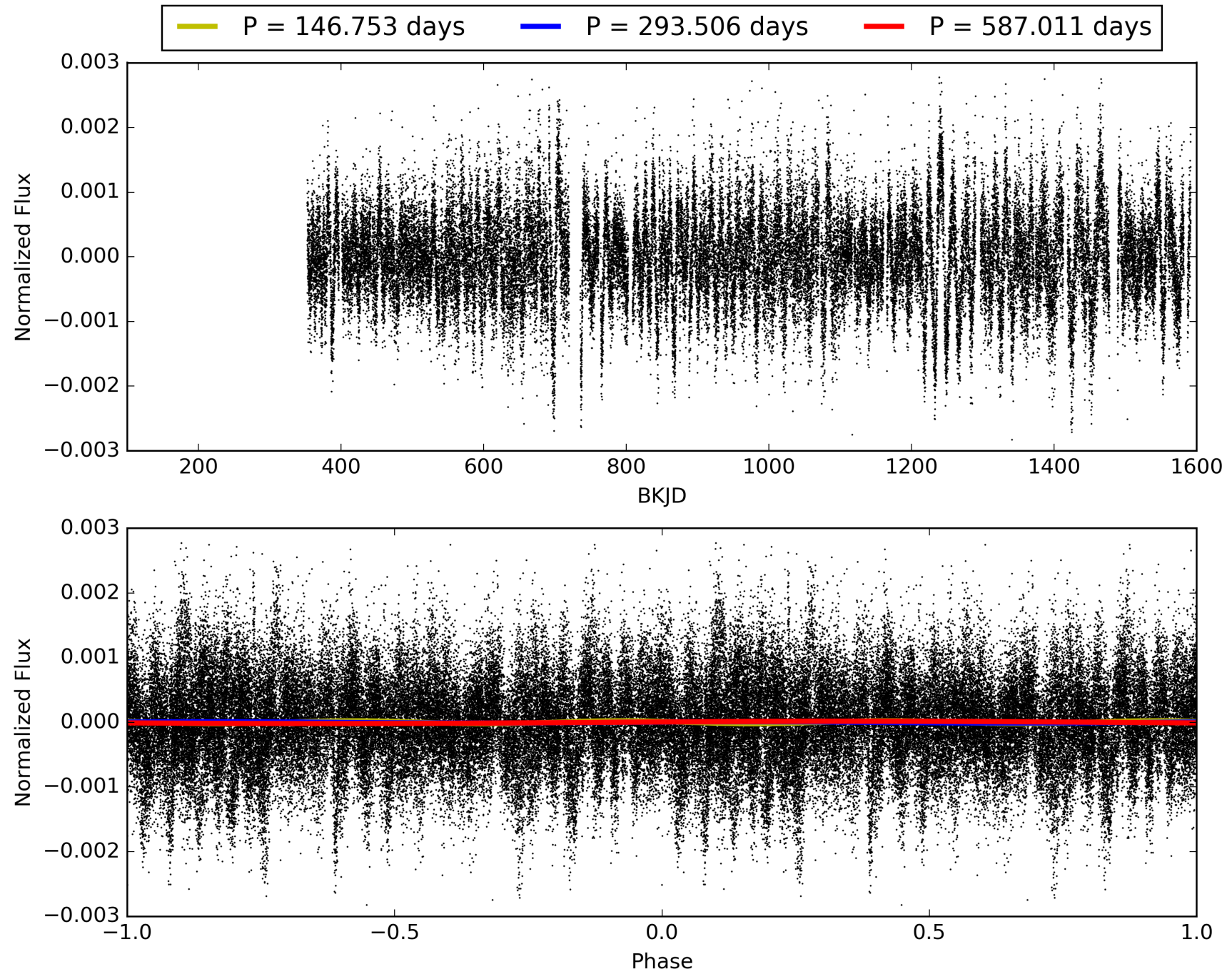
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 19:34:53 Z

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

# TCE 003854101-01, PDC Light Curves

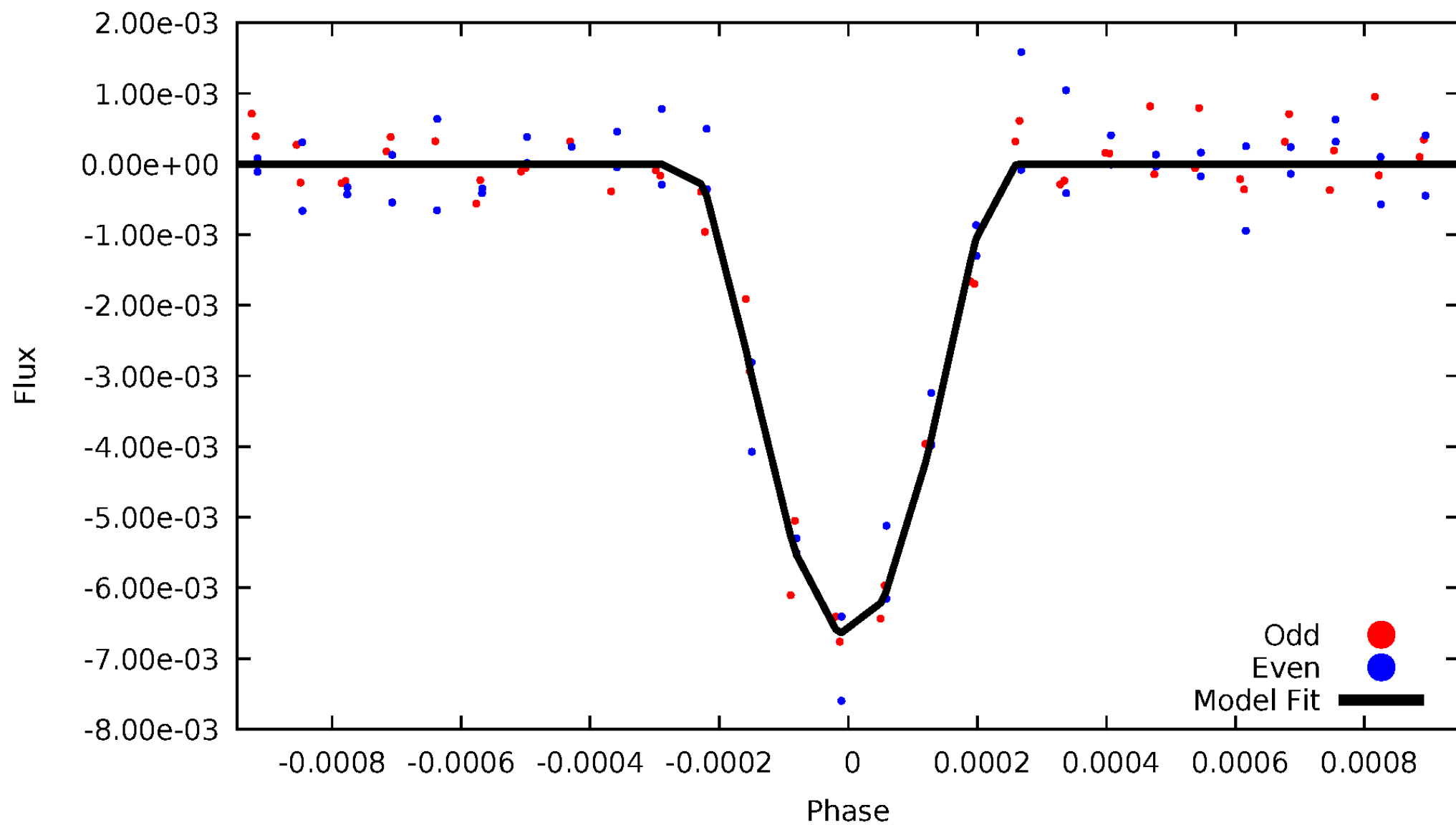


TCE 003854101-01



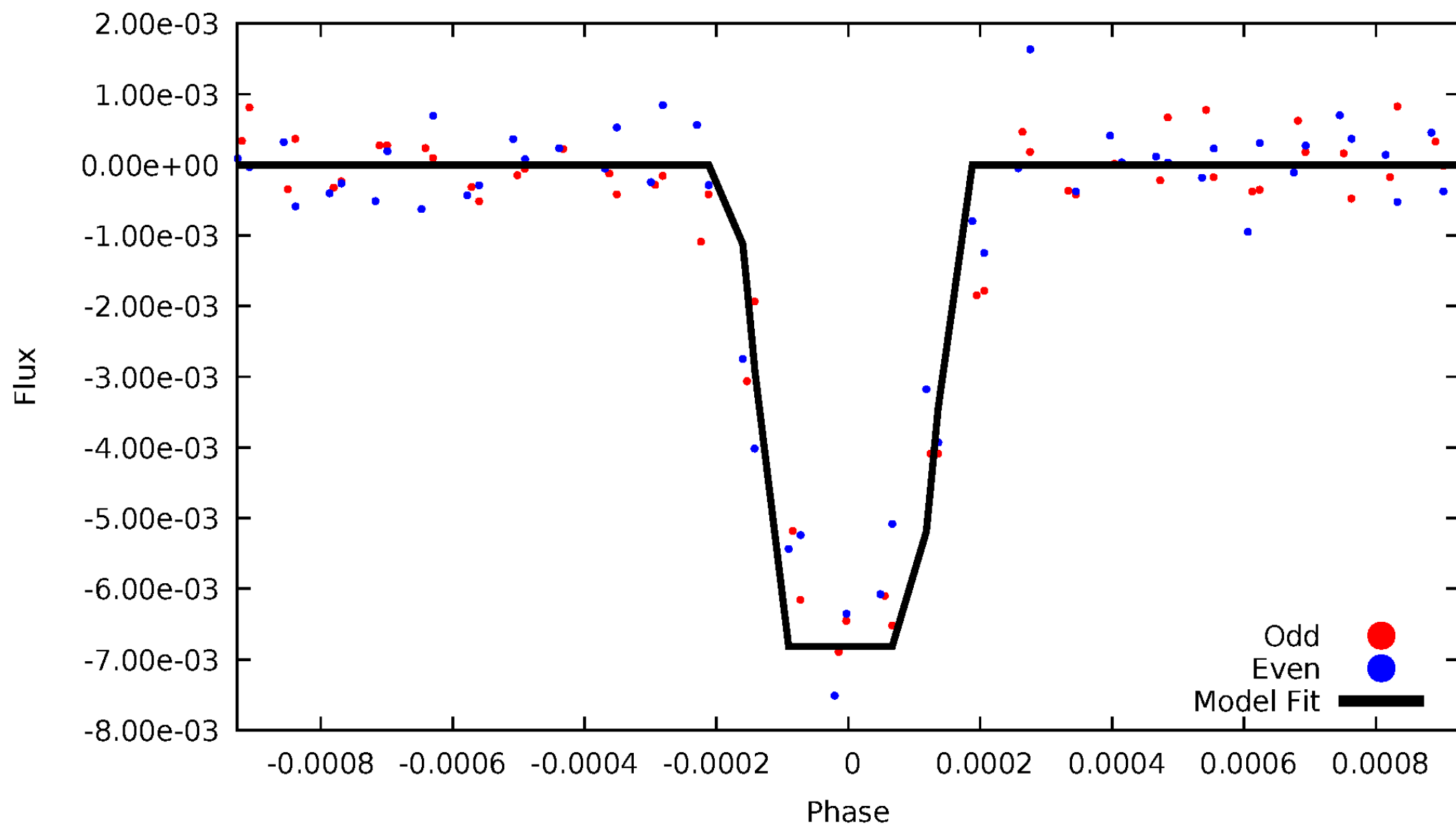
# DV Odd/Even

TCE 003854101-01

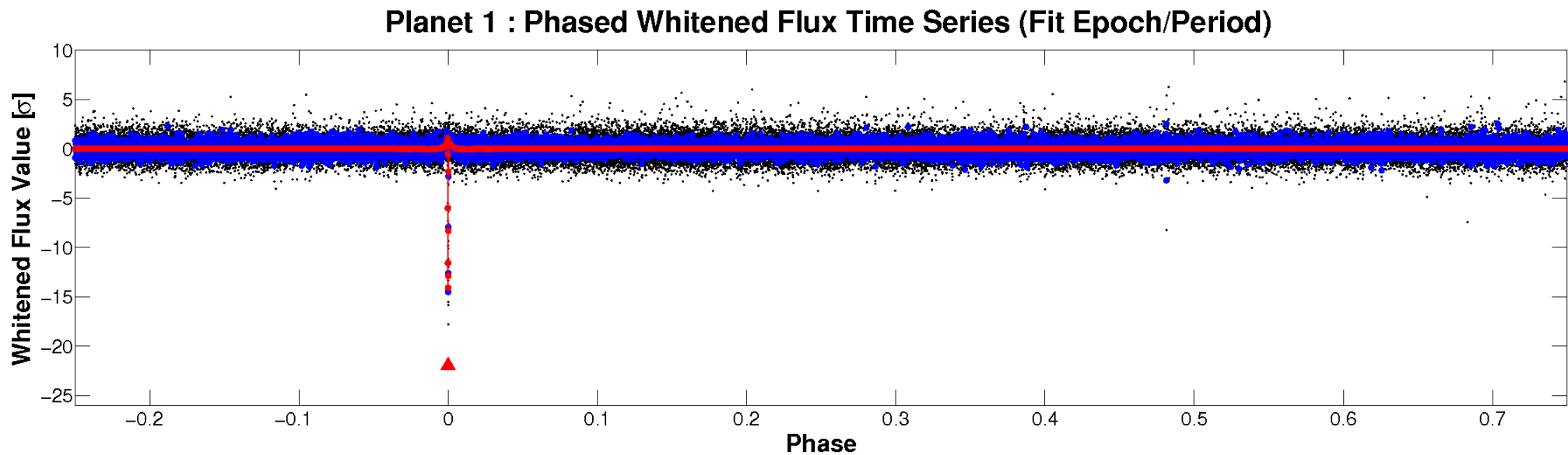
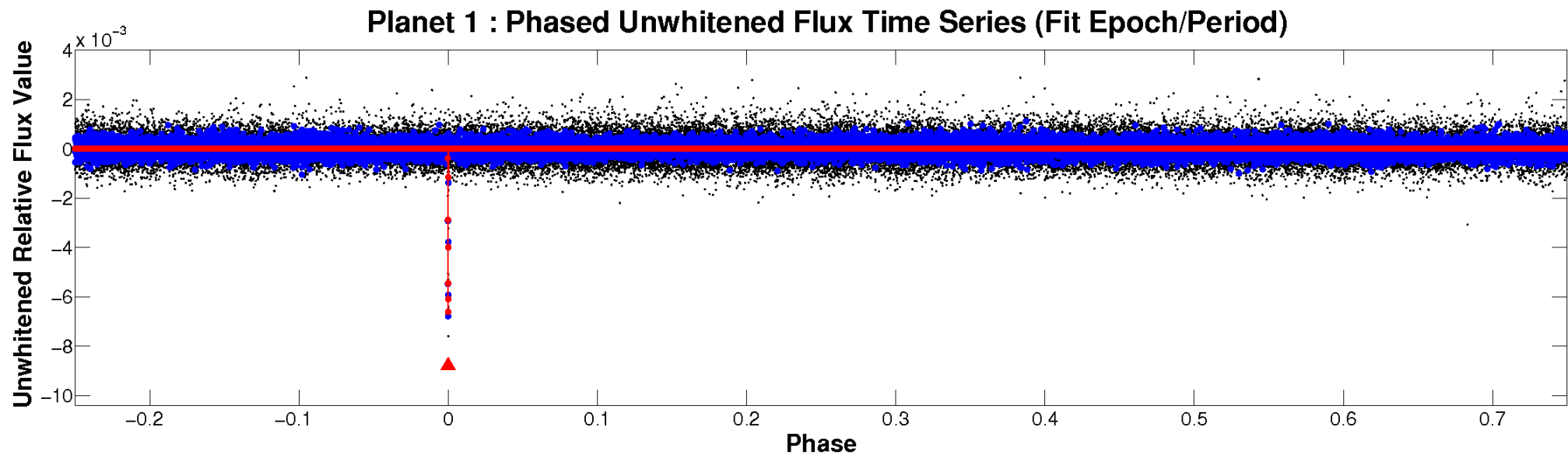


# ALT Odd/Even

TCE 003854101-01

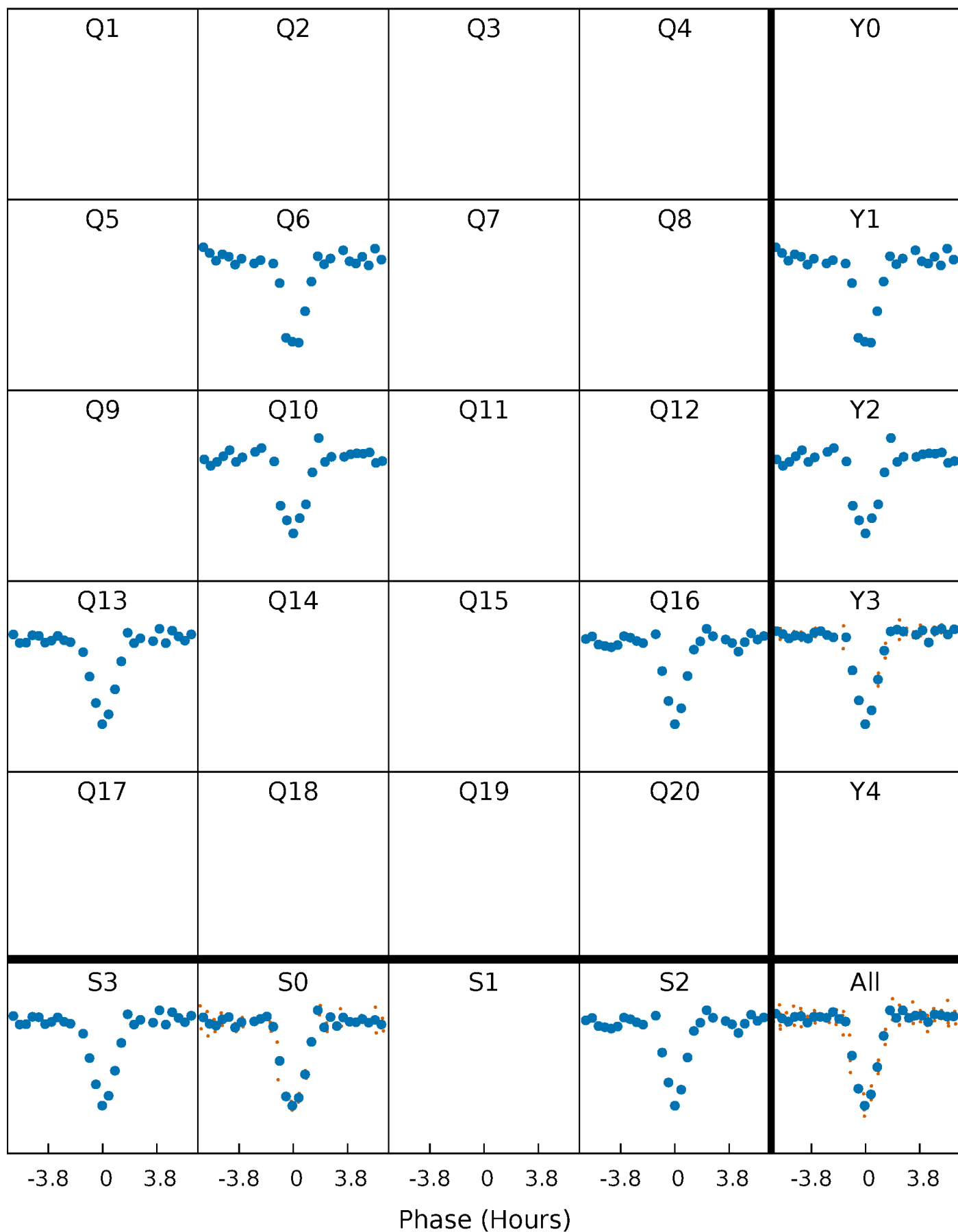


# Non-Whitened Vs. Whitened Light Curve



# PDC Quarter-Phased Transit Curves

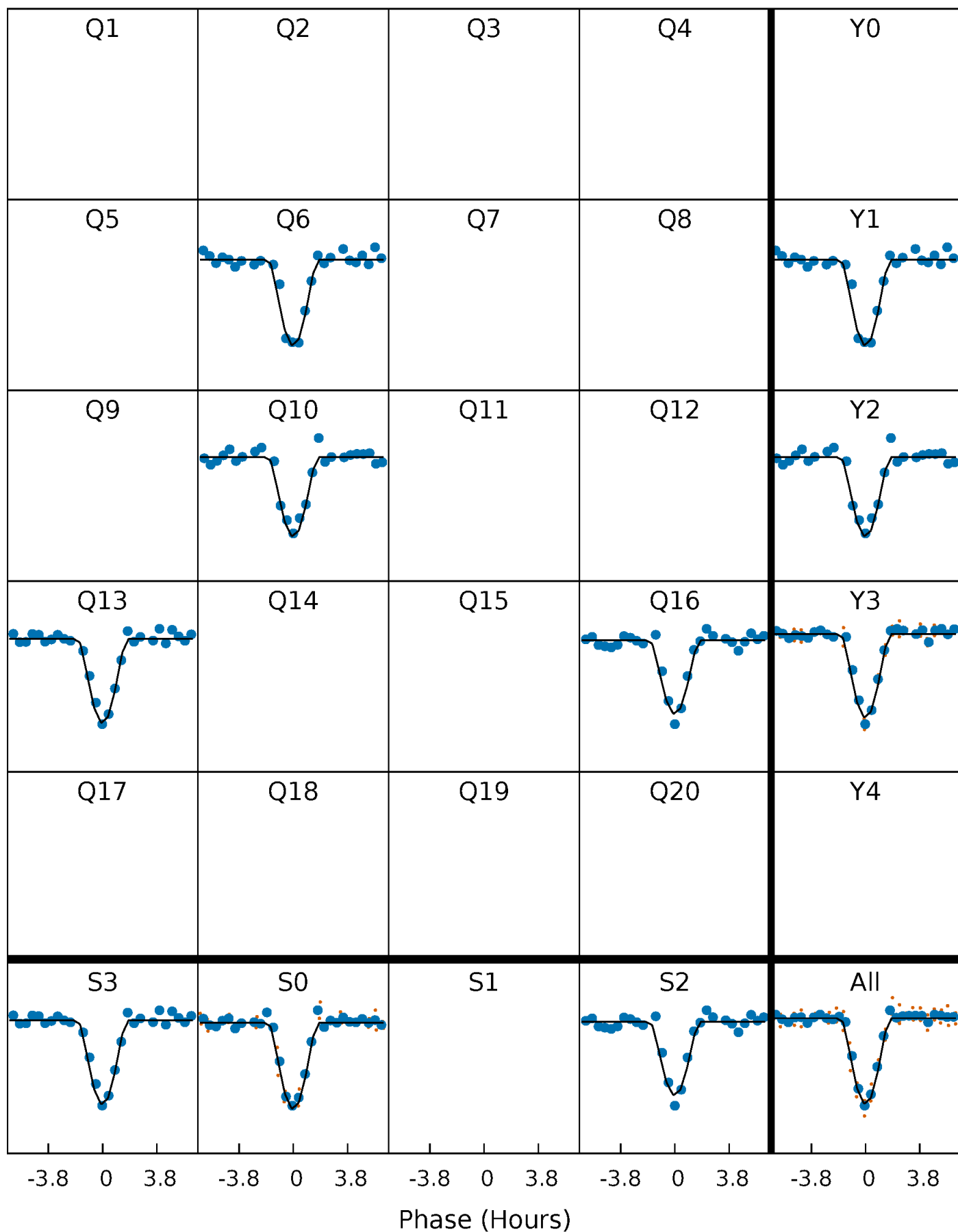
TCE 003854101-01 P=293.505564 Days  $T_0=328.727217$  (BKJD)





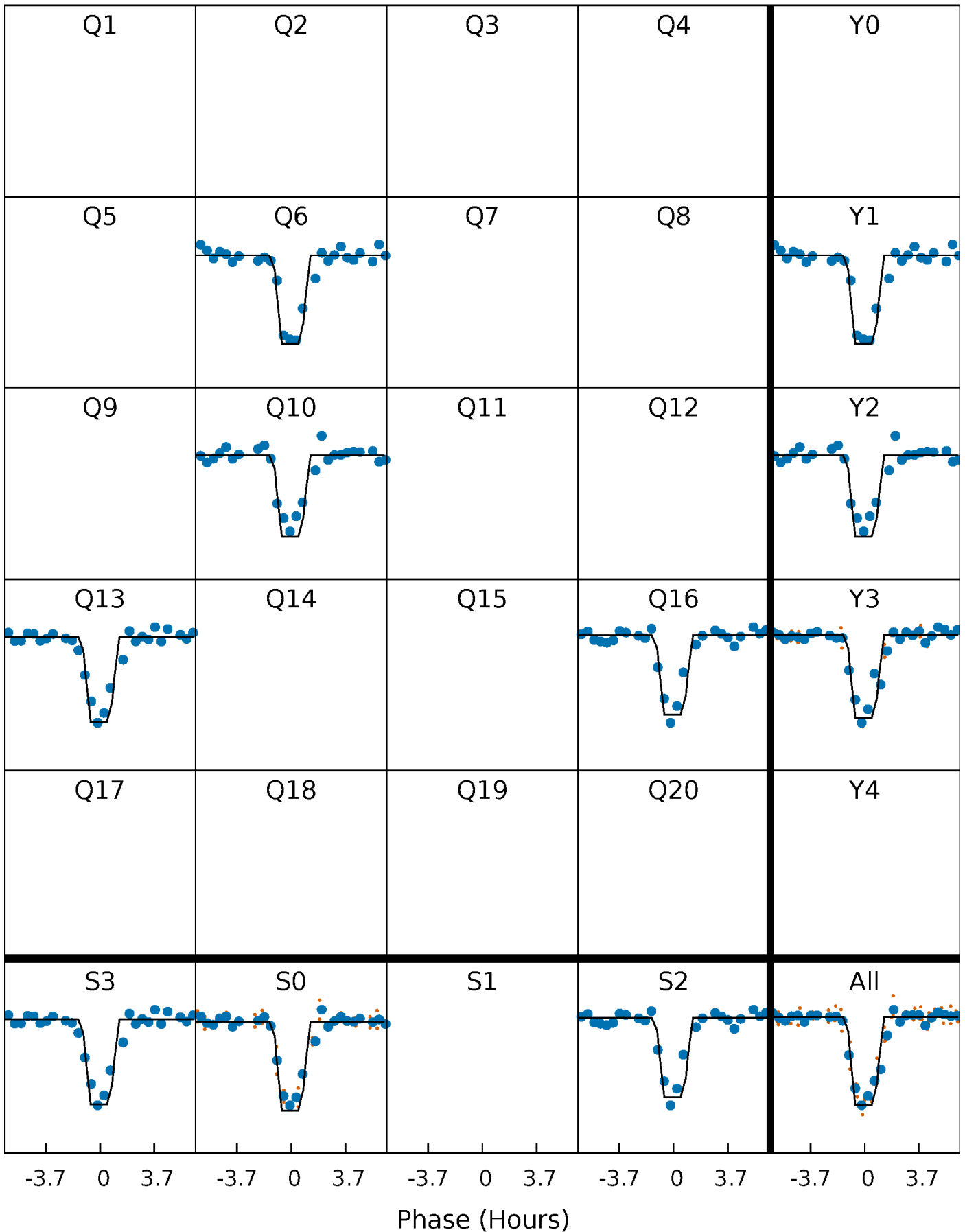
# DV Quarter-Phased Transit Curves

TCE 003854101-01     $P=293.505564$  Days     $T_0=328.727217$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

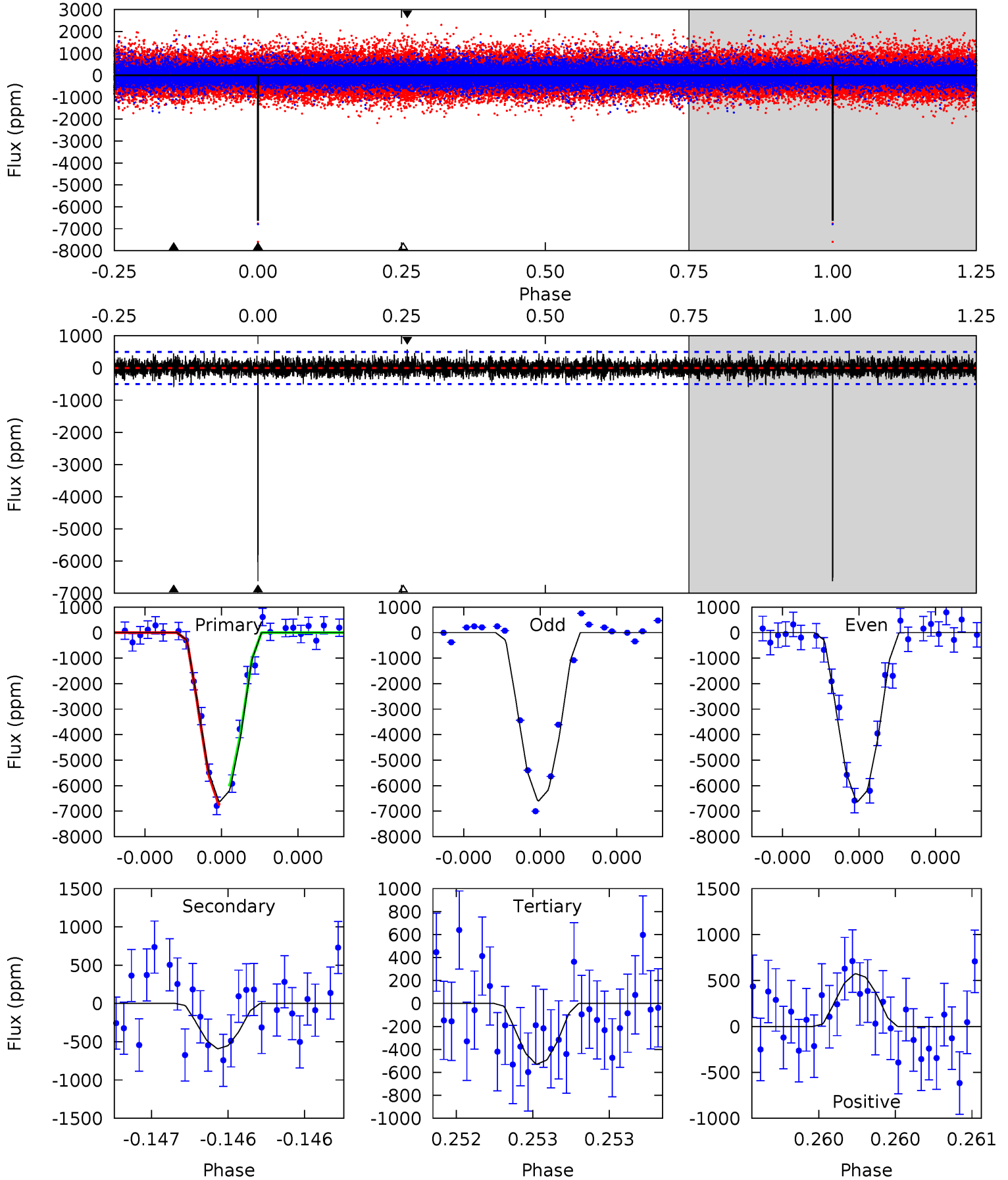
TCE 003854101-01 P=293.508170 Days  $T_0=328.719761$  (BKJD)



# DV Model-Shift Uniqueness Test

003854101-01, P = 293.505564 Days, E = 328.727217 Days

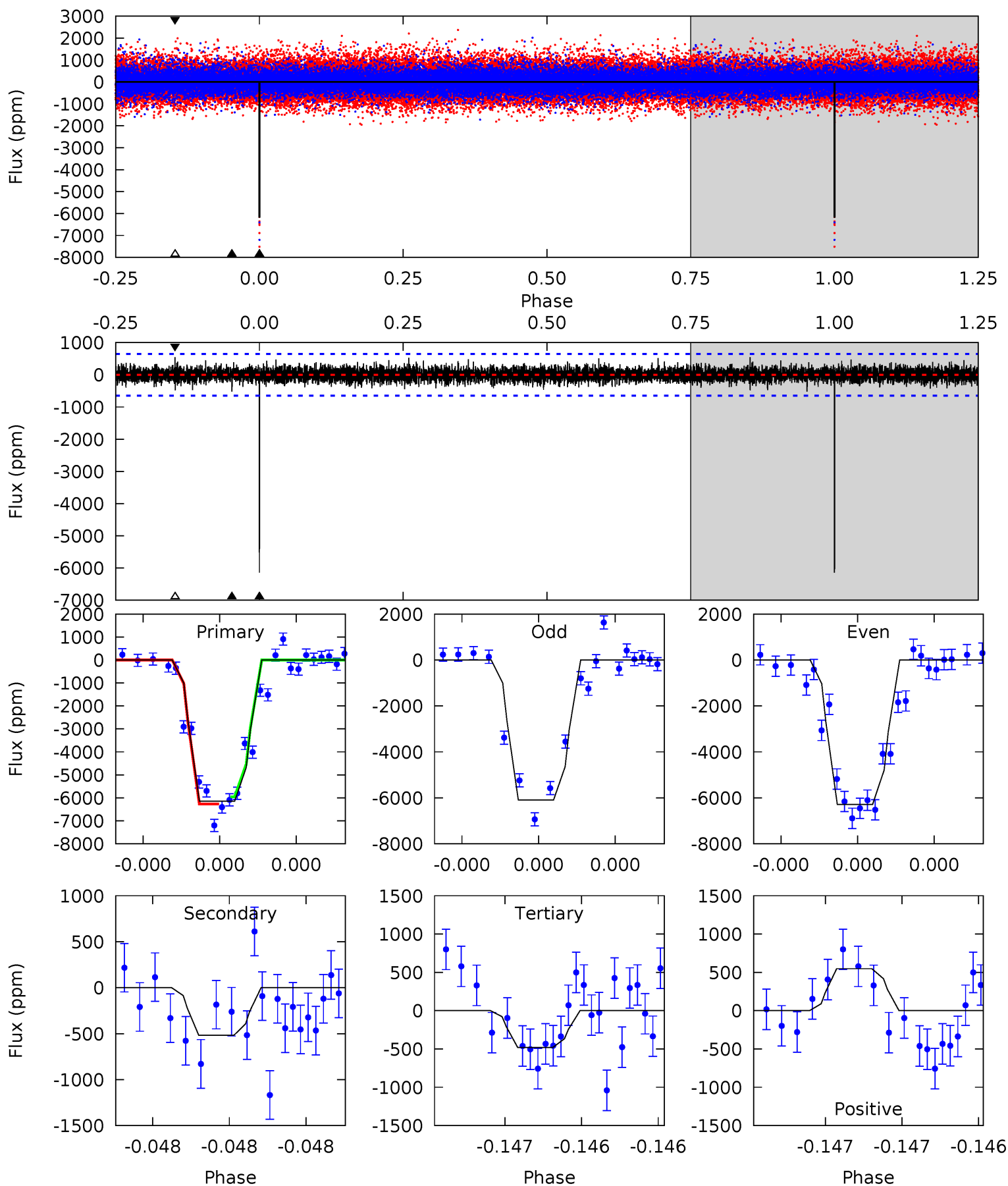
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
73.9	6.58	5.89	6.40	5.57	3.48	1.54	68.0	67.5	0.69	0.18	0.21	1.00	0.08	4.07



# Alt Model-Shift Uniqueness Test

003854101-01, P = 293.508170 Days, E = 328.719761 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
53.4	4.50	4.17	4.76	5.64	3.58	1.12	49.2	48.7	0.33	-0.26	0.82	1.00	0.08	1.37



### Stellar Parameters For KIC 003854101

	$T_{\text{eff}} (K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$5455^{+81}_{-73}$	$4.381^{+0.126}_{-0.084}$	$0.100^{+0.150}_{-0.150}$	$1.006^{+0.126}_{-0.126}$	$0.887^{+0.067}_{-0.039}$	$1.225^{+0.623}_{-0.352}$
	+1%/-1%	+3%/-2%	+150%/-150%	+13%/-13%	+8%/-4%	+51%/-29%
Source	SPE90	SPE90	SPE90	DSEP		

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

### Secondary Eclipse Parameters for KIC 003854101-01 / KOI 5018.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	$A_{\text{obs}}$
DV	$-590 \pm 90$	$12.28^{+6.01}_{-5.82}$	$369^{+14}_{-16}$	$3116^{+731}_{-309}$	$1486^{+3973}_{-825}$
Alt.	$-517 \pm 115$	$9.59^{+5.60}_{-5.10}$	$368^{+13}_{-14}$	$3318^{+982}_{-447}$	$2183^{+7811}_{-1373}$

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

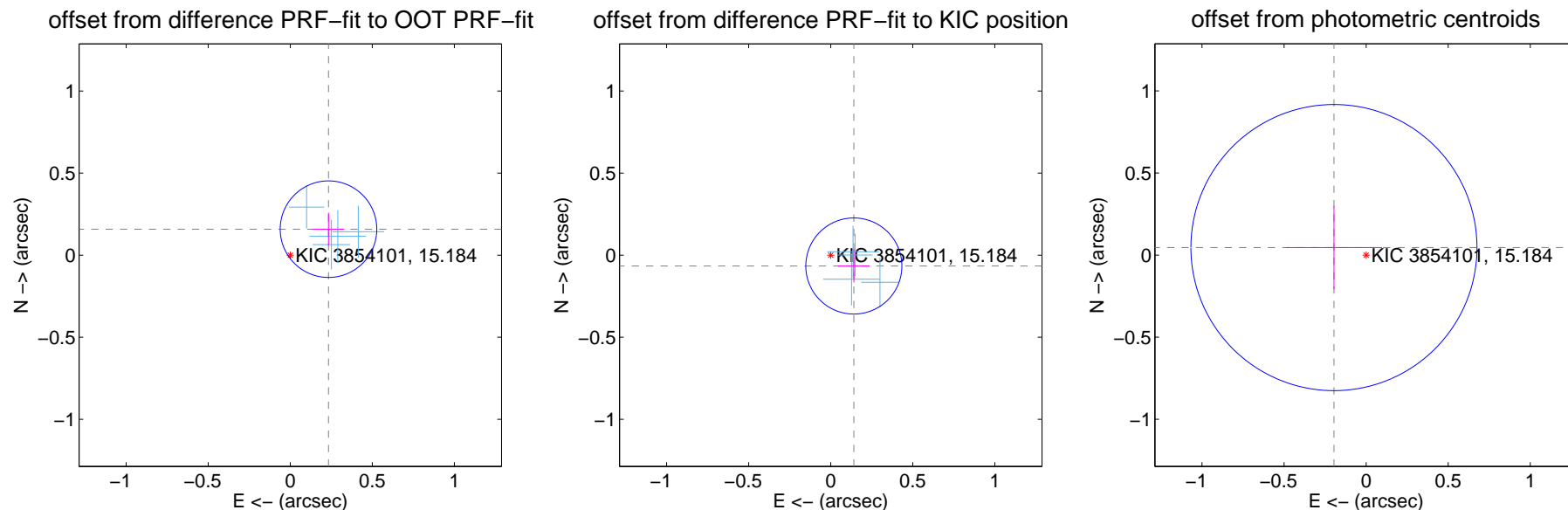
## DV Centroid Data

Supplemental centroid analysis for 003854101-01. Kepler magnitude: 15.18. Transit SNR 48.00

There are 4 quarters with good PRF difference image offsets

The direct PRF centroid is offset from the target star catalog position by about 0.30 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.282 \pm 0.098$	2.87	$-0.233 \pm 0.097$	$0.158 \pm 0.100$
PRF-fit source offset from KIC position	$0.156 \pm 0.098$	1.59	$-0.141 \pm 0.097$	$-0.066 \pm 0.100$
photometric centroid source offset	$0.20 \pm 0.29$	0.69	$0.20 \pm 0.29$	$0.05 \pm 0.25$

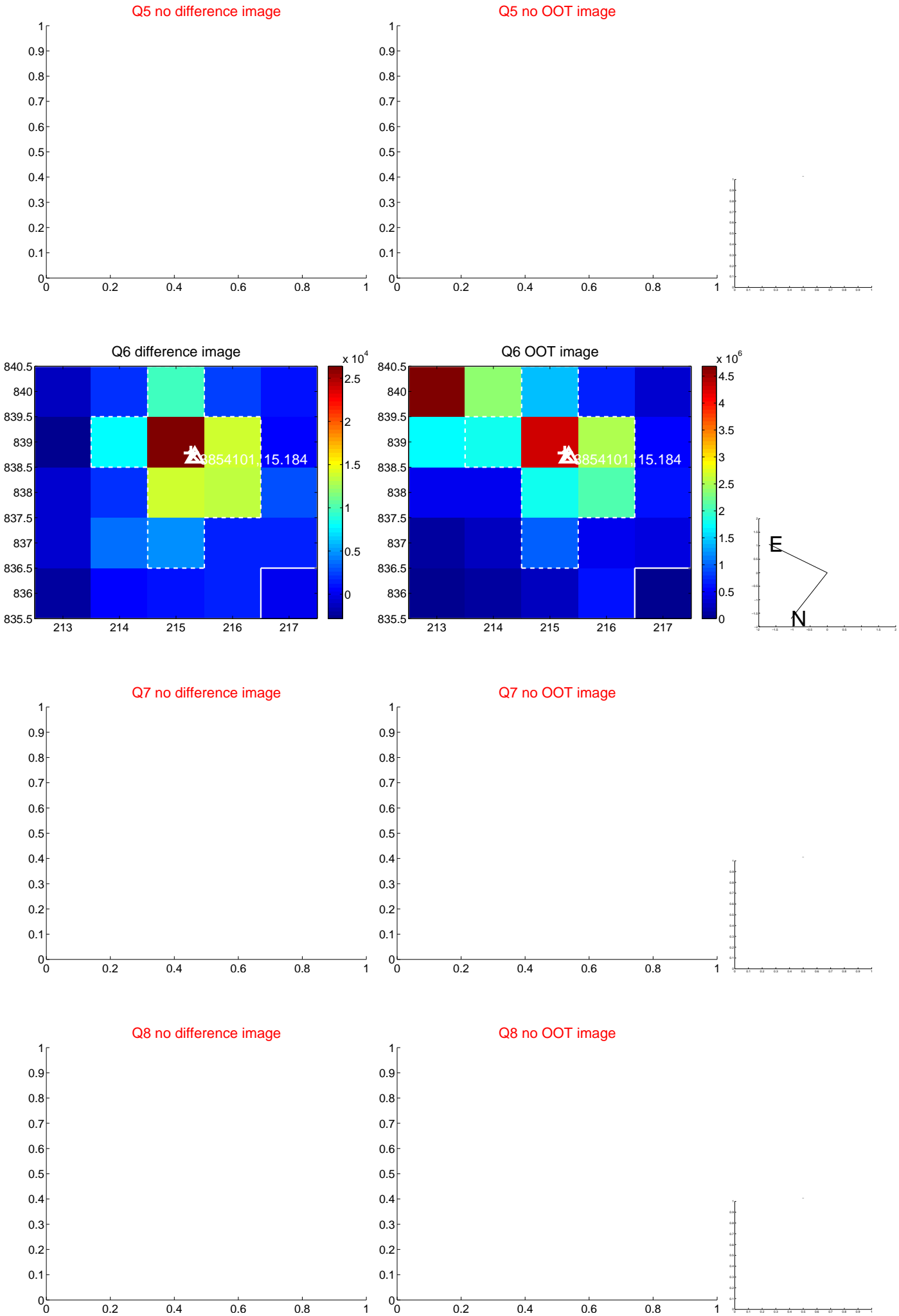


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets**; **Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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

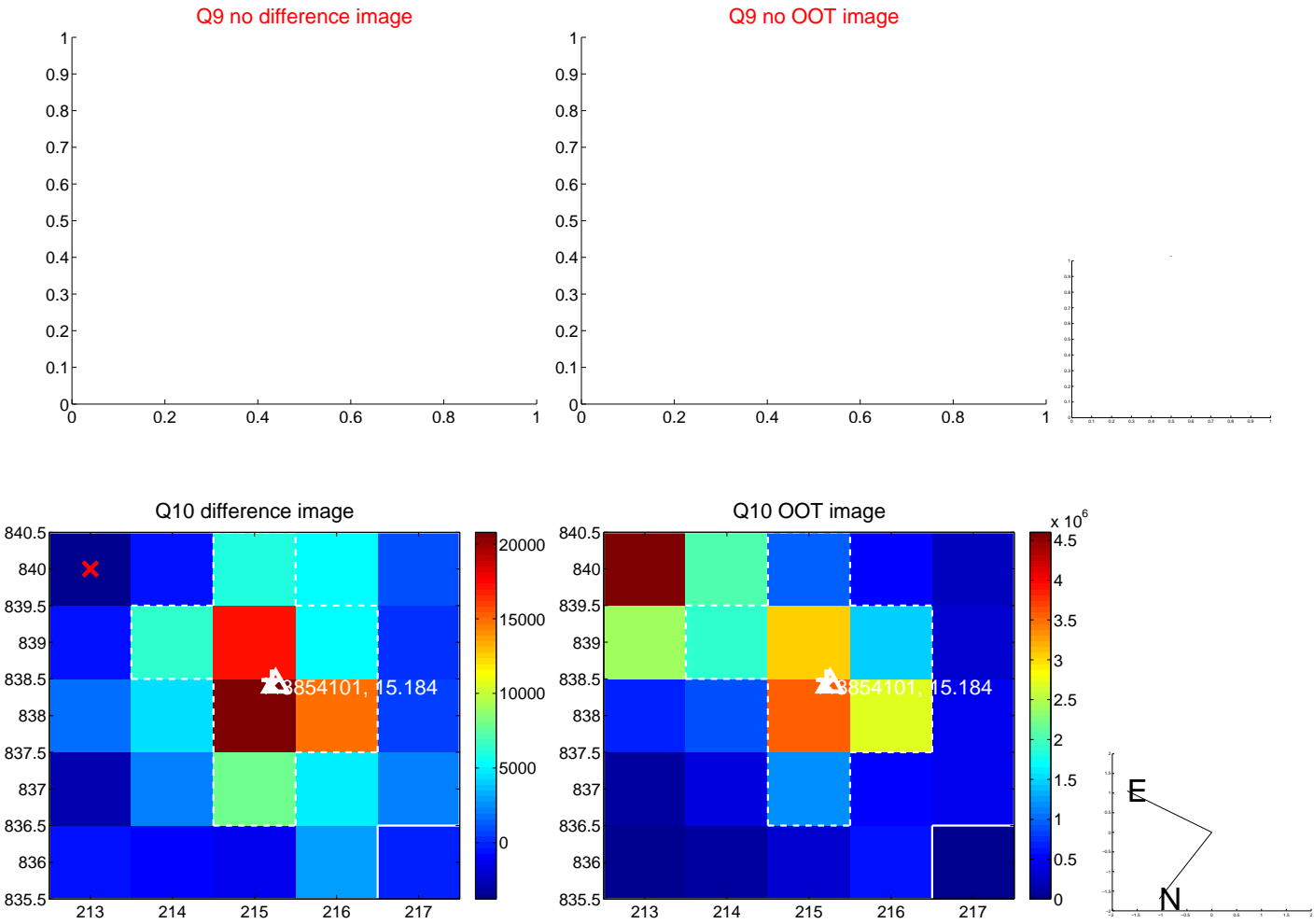


white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

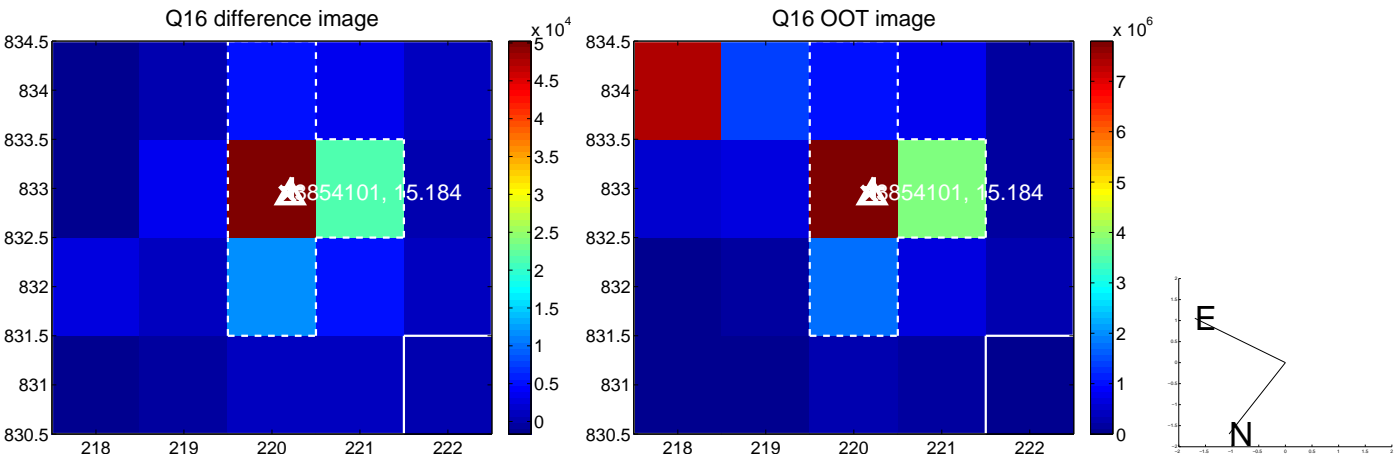
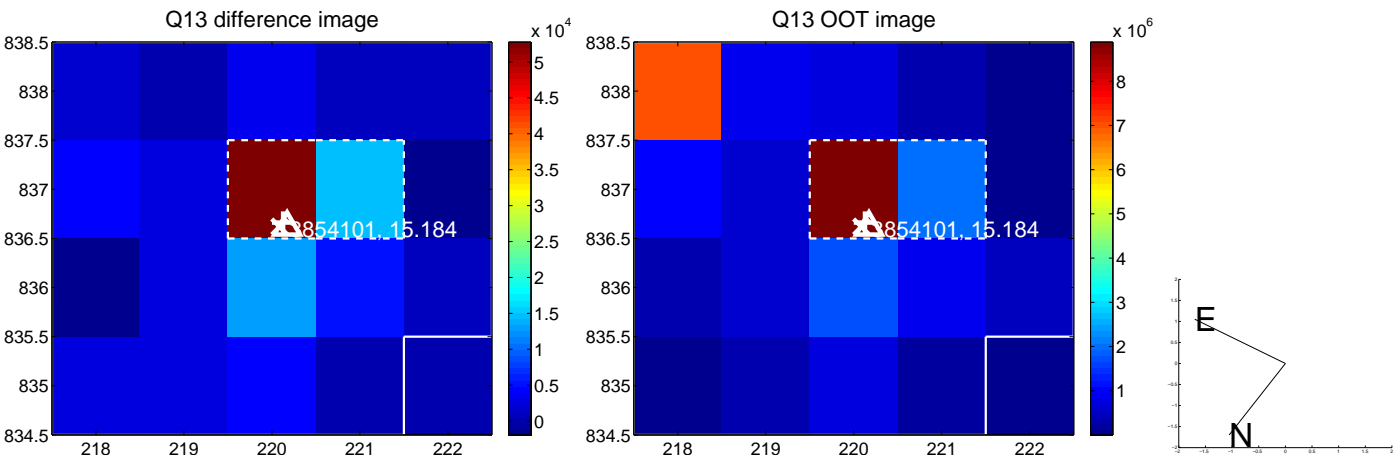




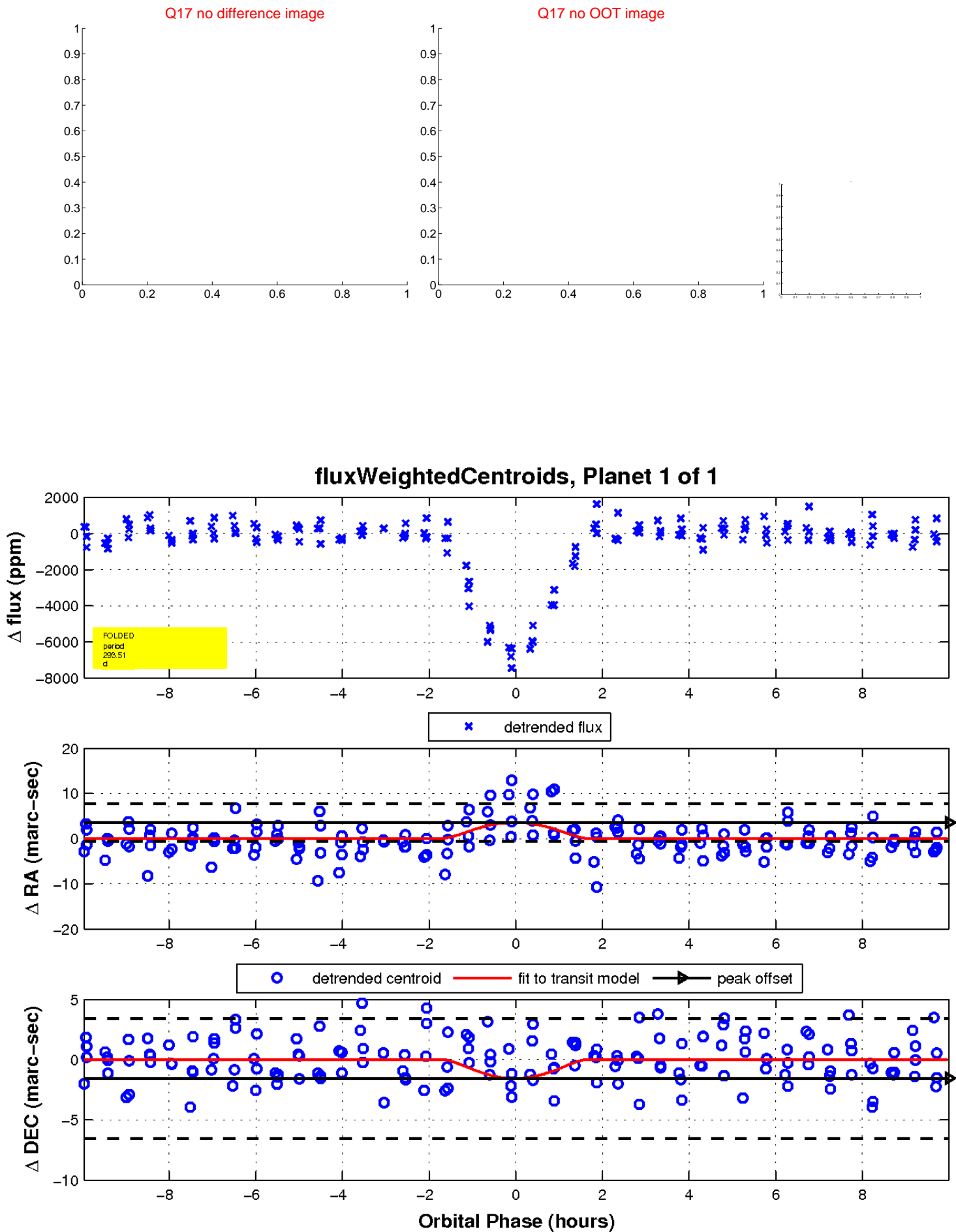
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ×: large negative pixel value.



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

