

# KIC 008748435

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
008748435-01	OBS	8167.01	259.848346	291.192333	281.0	23.694	7.5	10.5	0.74	5374	1.27	0.74

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008748435-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL_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.

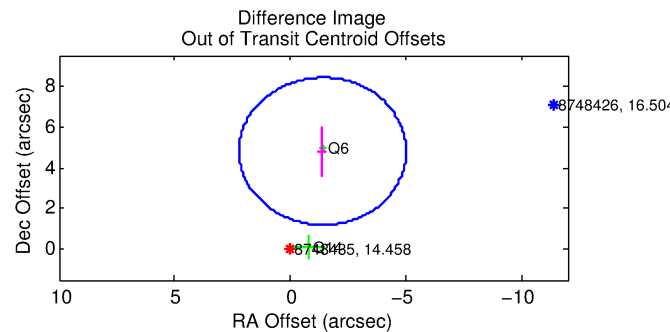
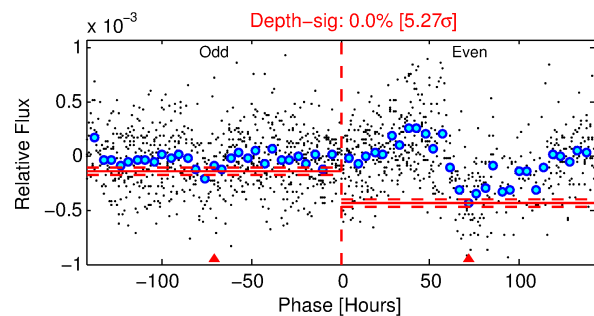
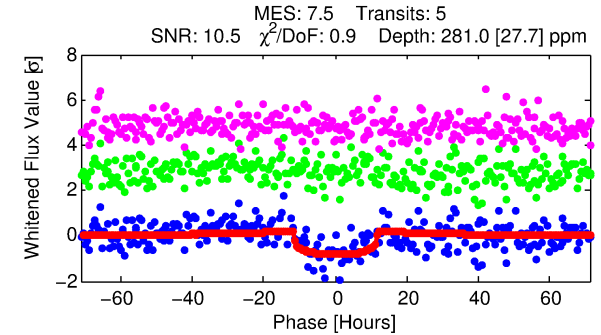
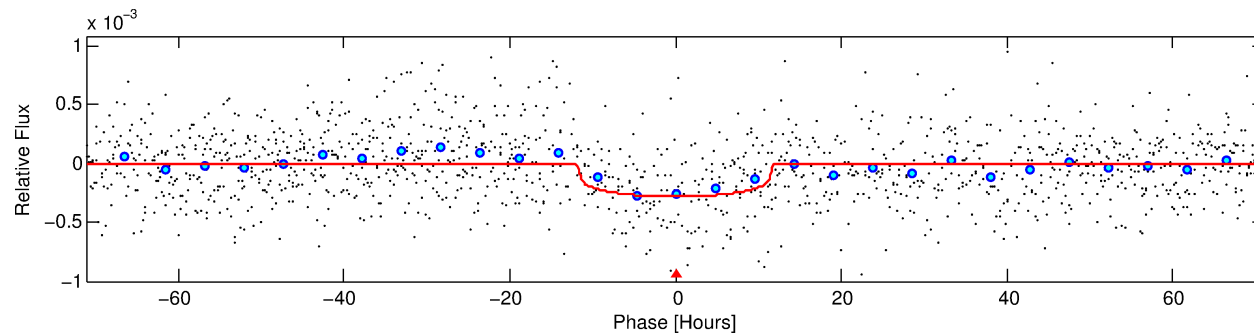
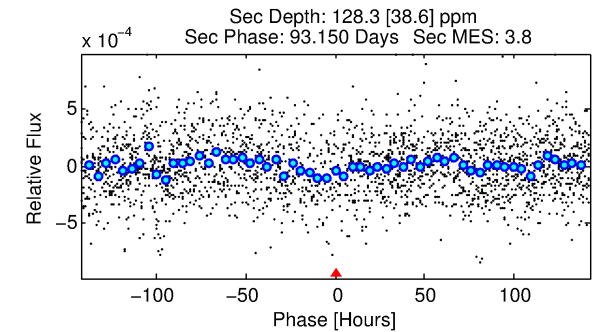
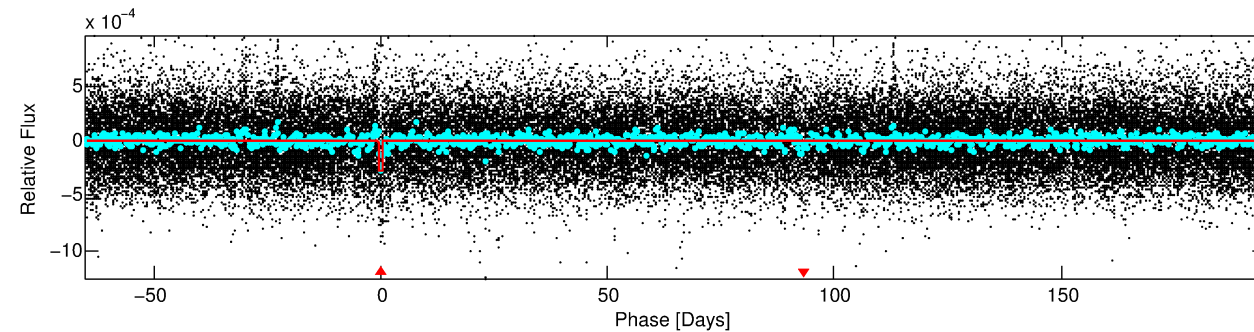
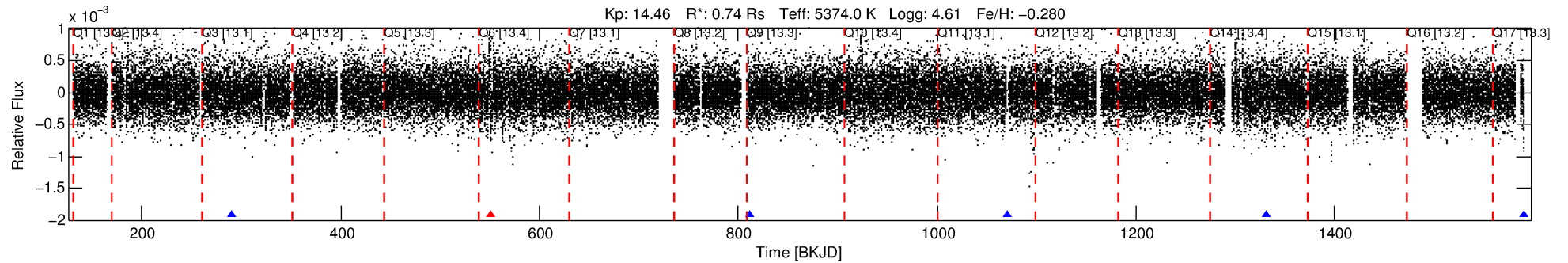
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 008748435-01

No Significant Match Found

# DV One-Page Summary

KIC: 8748435 Candidate: 1 of 1 Period: 259.848 d



## DV Fit Results:

Period = 259.84835 [0.00790] d  
Epoch = 291.1923 [0.0263] BKJD  
Rp/R\* = 0.0156 [0.0094]  
a/R\* = 74.46 [181.07]  
b = 0.49 [3.77]  
Seff = 0.74 [0.17]  
Teq = 237 [13] K  
Rp = 1.27 [0.79] Re  
a = 0.7468 [0.1014] AU  
Ag = 24541.09 [30870.58] [0.79 $\sigma$ ]  
Teffp = 4579 [1429] K [3.04 $\sigma$ ]

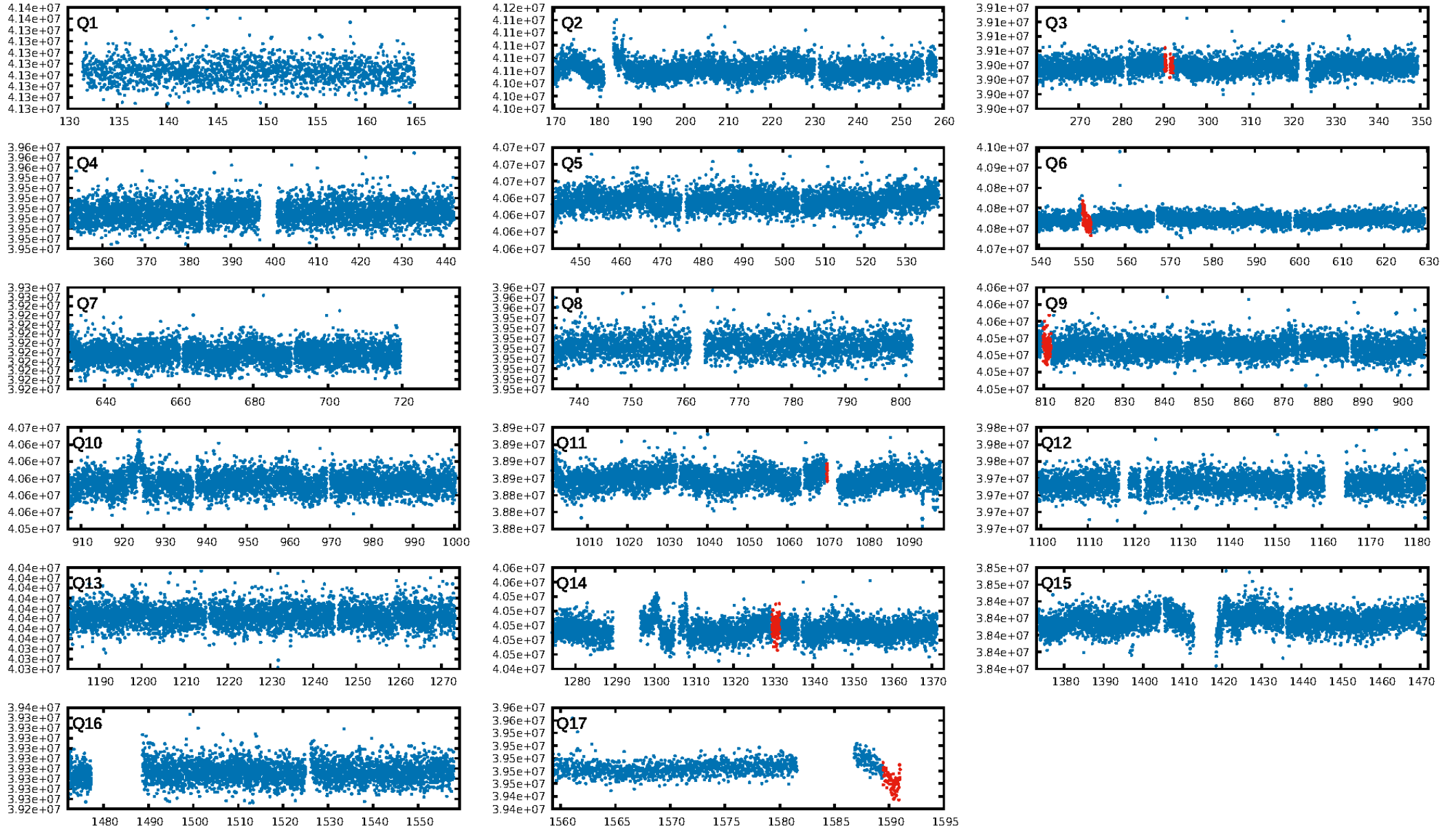
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: 1.0%  
ModelChiSquareGof-sig: 100.0%  
Bootstrap-pfa: 6.02e-10  
RollingBand-fgt: 0.75 [3/4]  
GhostDiagnostic-chr: 1.882  
Centroid-sig: 2.5%  
Centroid-so: 2.614 arcsec [2.05 $\sigma$ ]  
OotOffset-rm: 5.000 arcsec [4.15 $\sigma$ ]  
KicOffset-rm: 5.424 arcsec [3.95 $\sigma$ ]  
OotOffset-st: 2/0/0/0 [2]  
KicOffset-st: 2/0/0/0 [2]  
DiffImageQuality-fgm: 0.50 [1/2]  
DiffImageOverlap-fno: 1.00 [2/2]

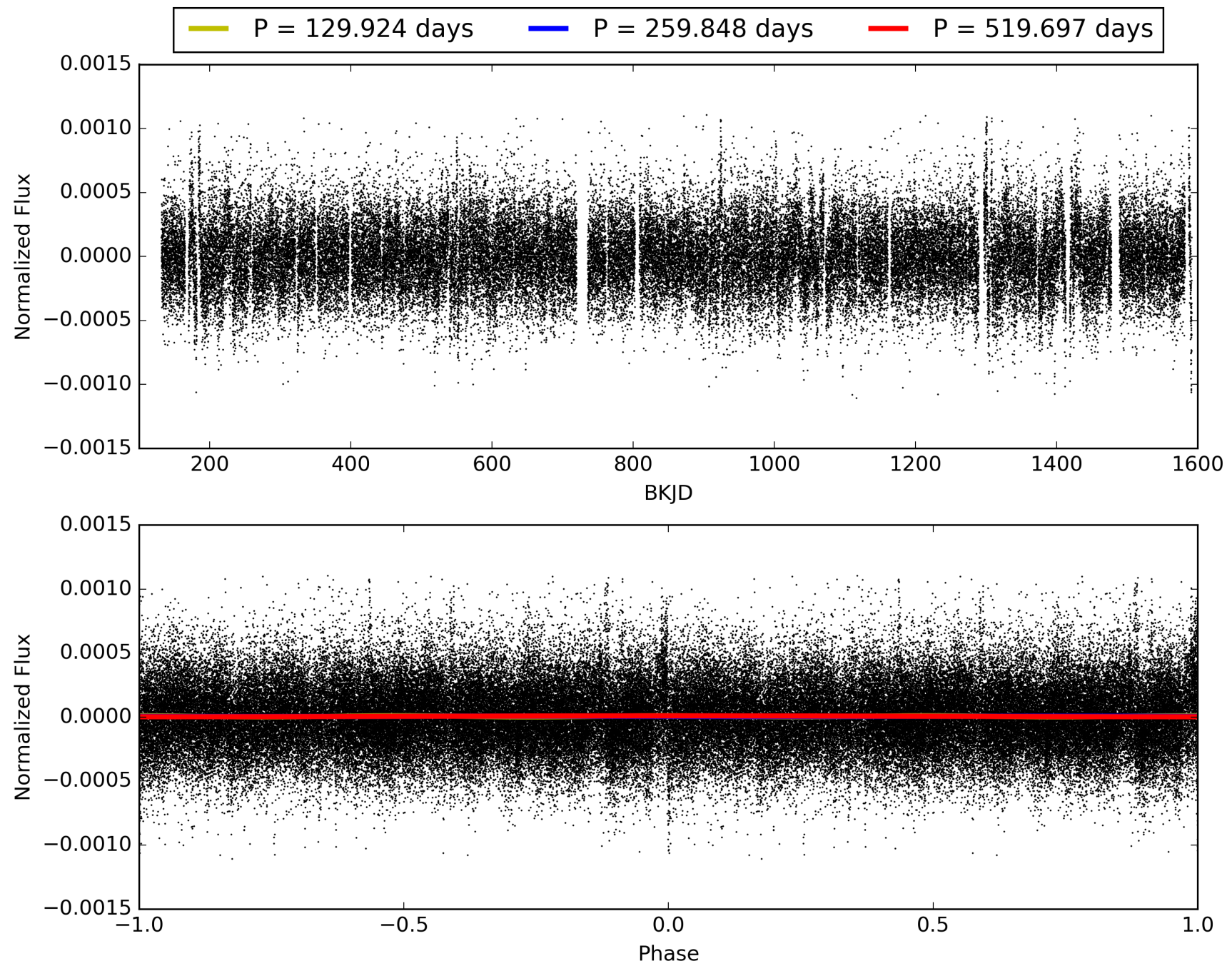
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 14:26:04 Z

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

# TCE 008748435-01, PDC Light Curves

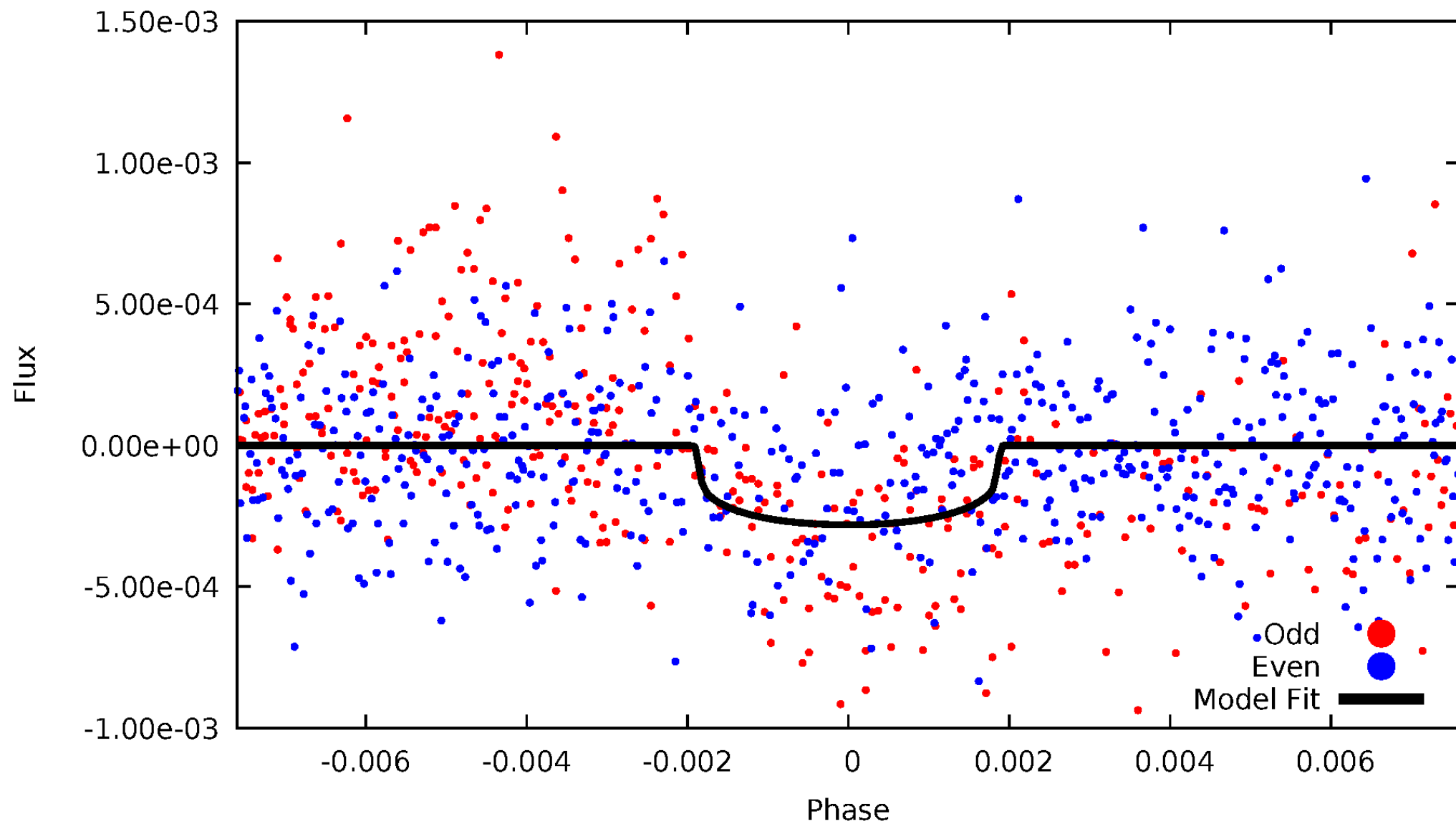


TCE 008748435-01



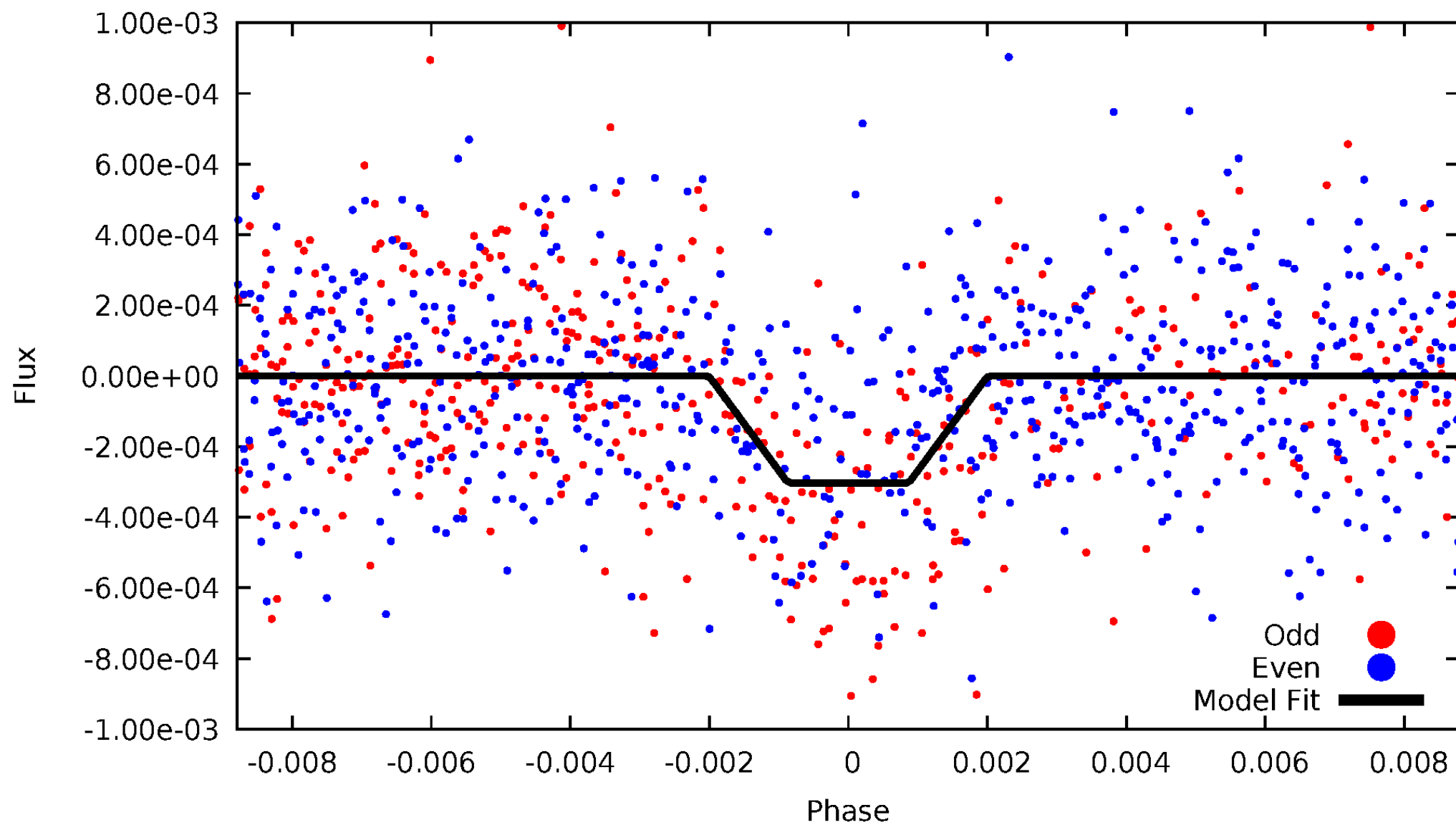
# DV Odd/Even

TCE 008748435-01



# ALT Odd/Even

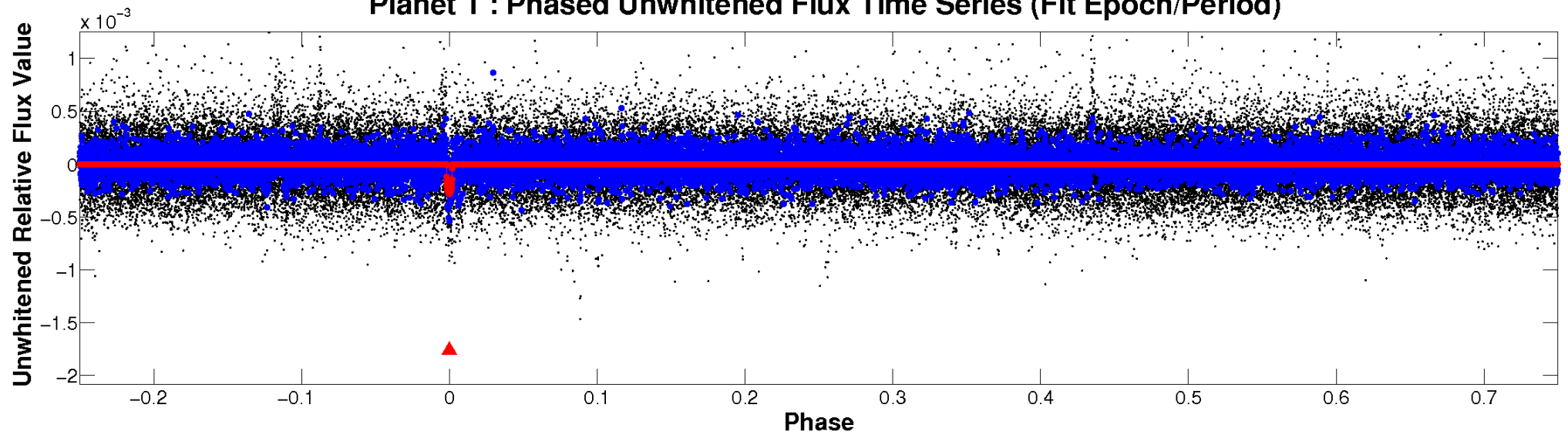
TCE 008748435-01



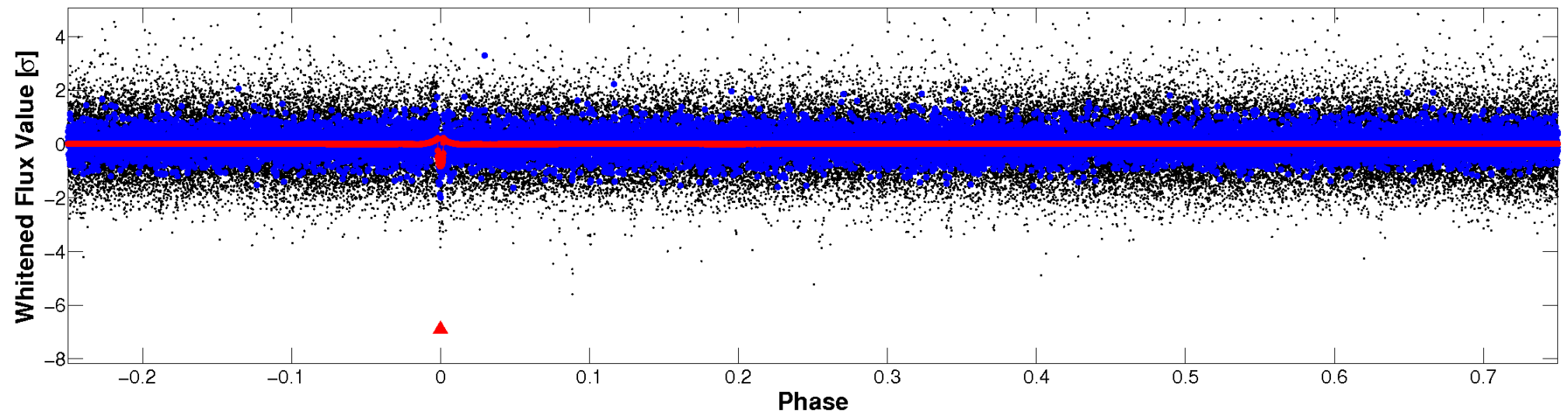


# Non-Whitened Vs. Whitened Light Curve

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

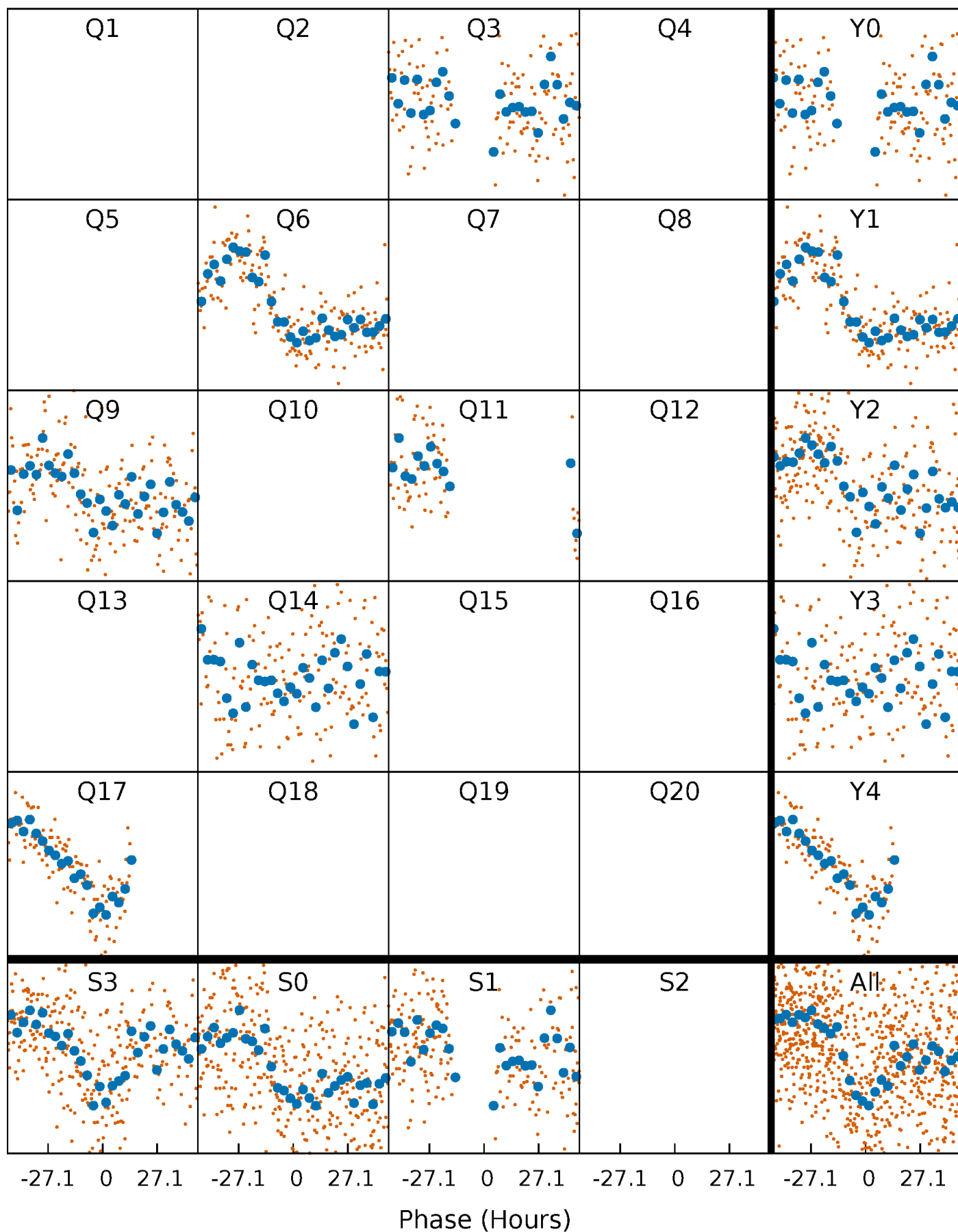


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



# PDC Quarter-Phased Transit Curves

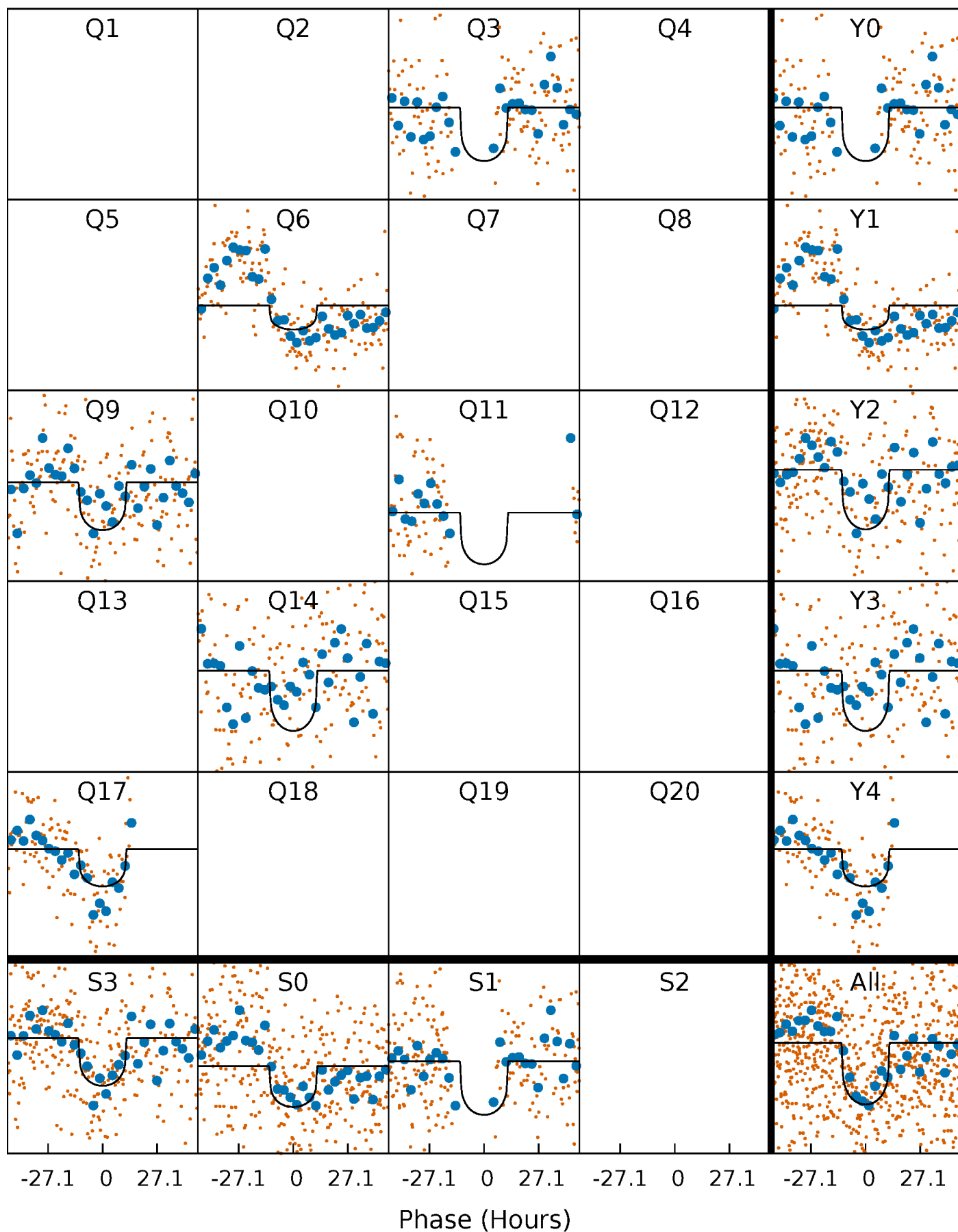
TCE 008748435-01 P=259.848346 Days  $T_0=291.192333$  (BKJD)





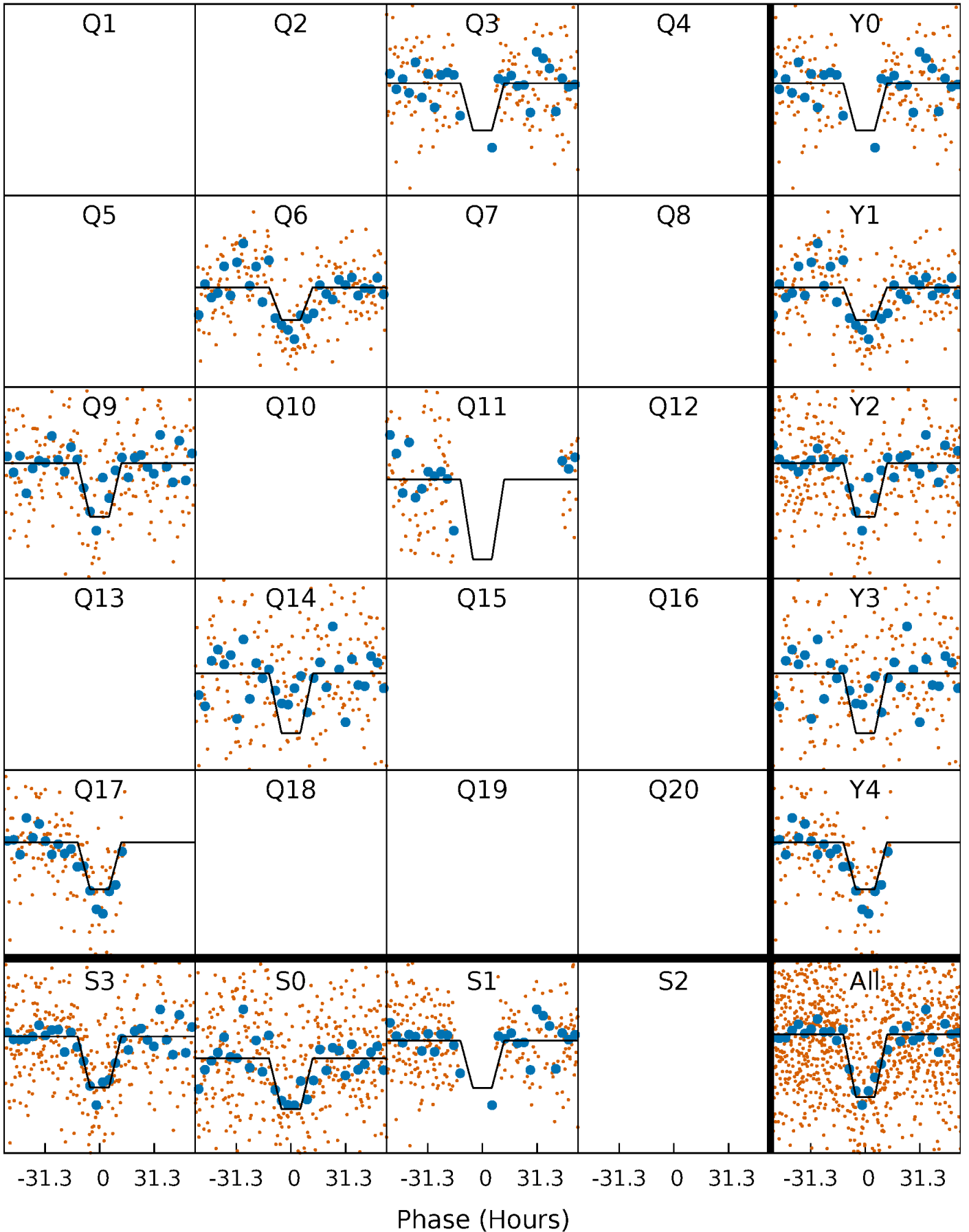
# DV Quarter-Phased Transit Curves

TCE 008748435-01 P=259.848346 Days  $T_0=291.192333$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

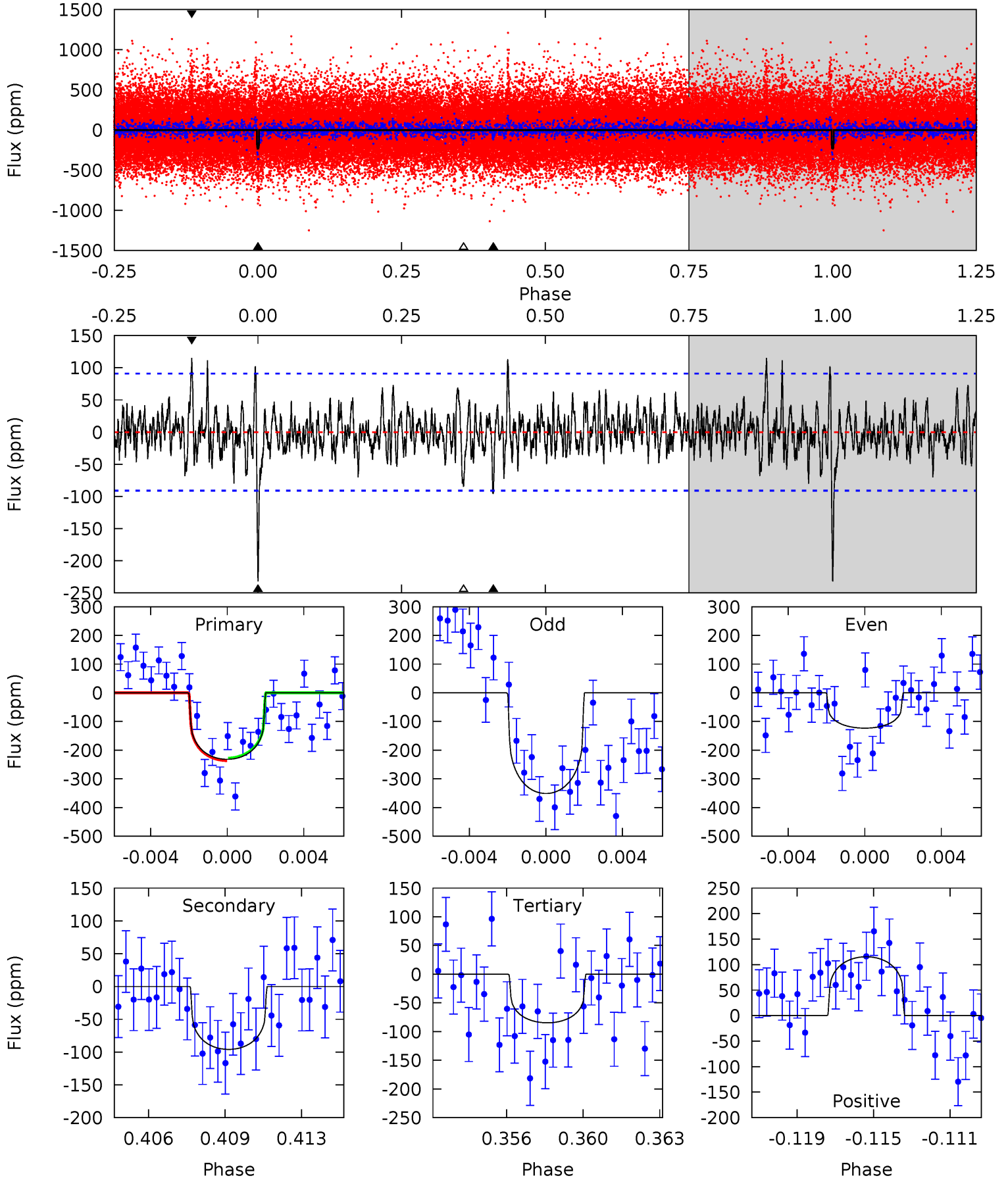
TCE 008748435-01 P=259.853583 Days  $T_0=291.131165$  (BKJD)



# DV Model-Shift Uniqueness Test

008748435-01, P = 259.848346 Days, E = 31.343987 Days

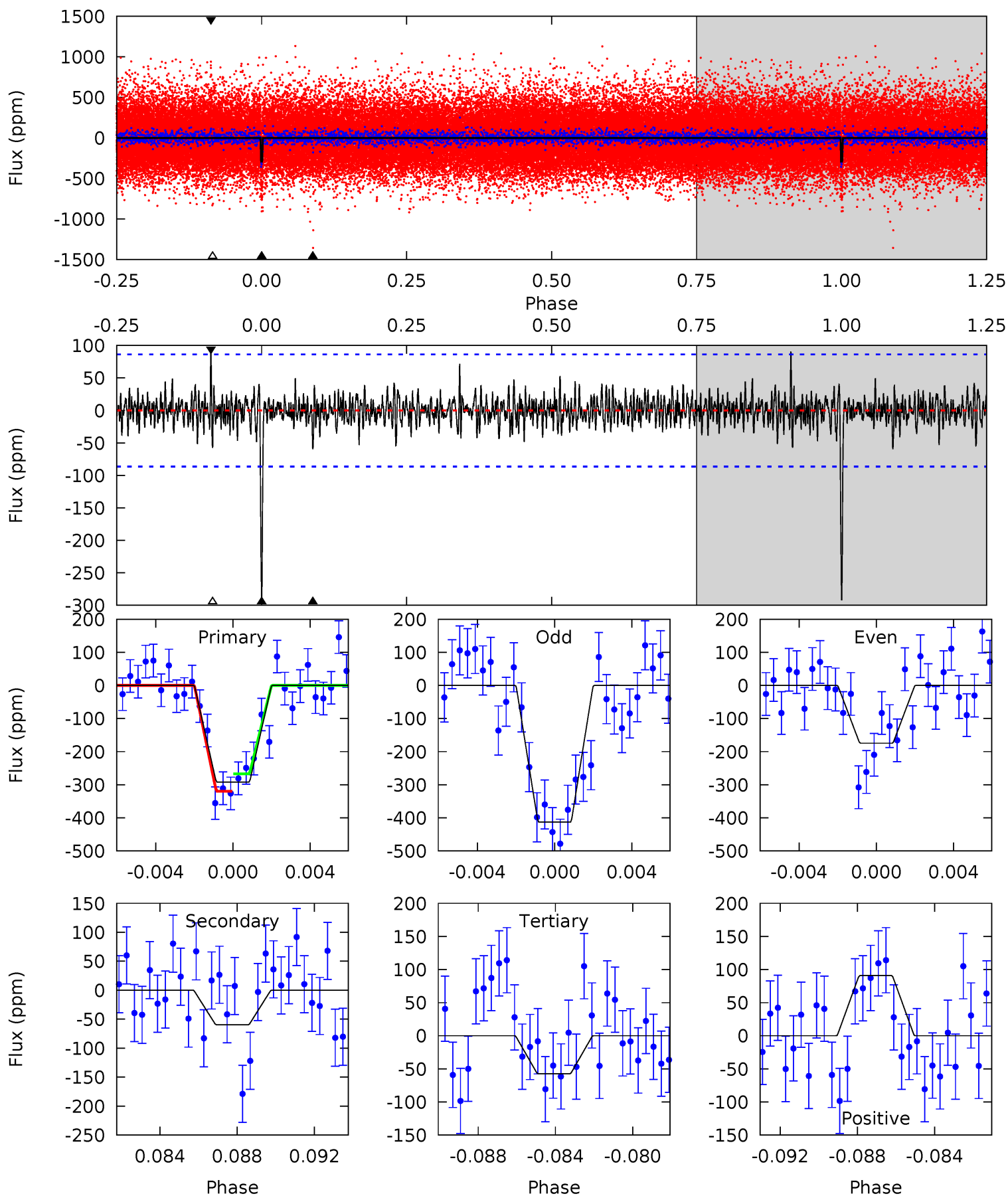
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
13.3	5.49	4.85	6.61	5.21	2.89	1.52	8.43	6.67	0.64	-1.11	6.52	1.17	0.33	0.25



# Alt Model-Shift Uniqueness Test

008748435-01, P = 259.853583 Days, E = 31.277582 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
17.6	3.59	3.45	5.46	5.20	2.88	1.03	14.1	12.1	0.14	-1.87	7.17	1.05	0.24	1.59



### Stellar Parameters For KIC 008748435

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$5374^{+159}_{-143}$	$4.610^{+0.037}_{-0.105}$	$-0.280^{+0.300}_{-0.300}$	$0.744^{+0.122}_{-0.057}$	$0.833^{+0.078}_{-0.096}$	$2.848^{+0.443}_{-0.949}$
	+3%/-3%	+1%/-2%	+107%/-107%	+16%/-8%	+9%/-12%	+16%/-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 008748435-01 / KOI 8167.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	$A_{\text{obs}}$
DV	$-96 \pm 17$	$1.39^{+0.79}_{-0.76}$	$335^{+14}_{-12}$	$4320^{+1669}_{-626}$	$14985^{+62170}_{-8946}$
Alt.	$-60 \pm 17$	$1.41^{+0.86}_{-0.72}$	$336^{+15}_{-13}$	$3941^{+1299}_{-601}$	$8585^{+29529}_{-5358}$

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

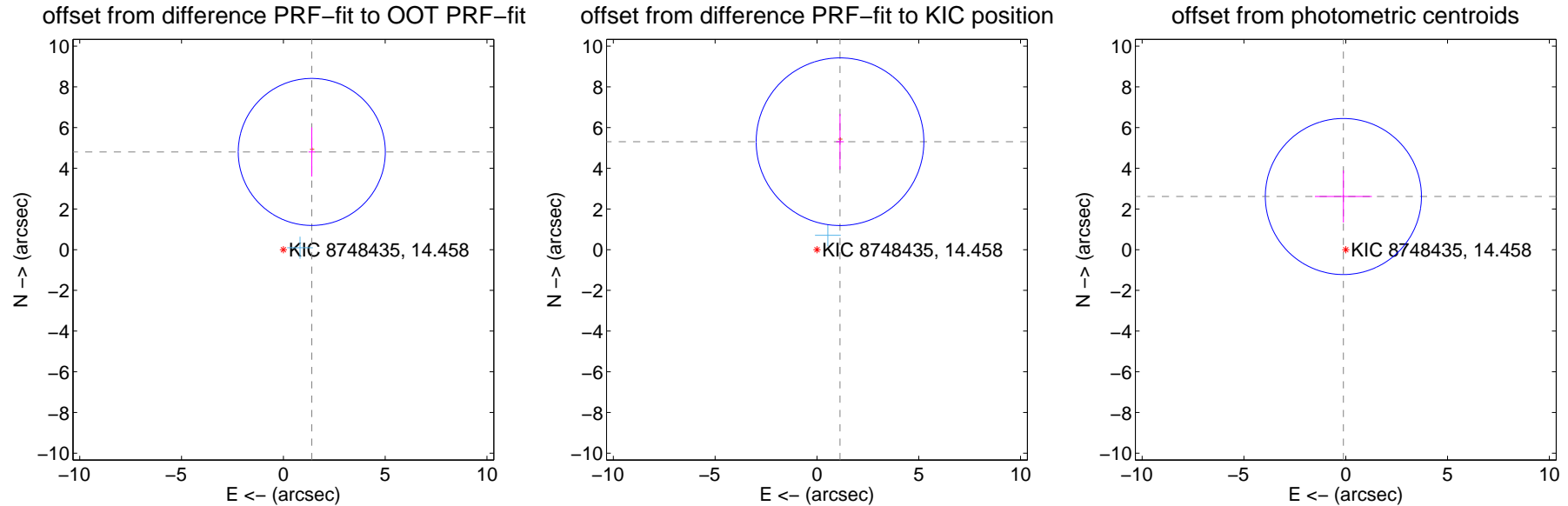
## DV Centroid Data

Supplemental centroid analysis for 008748435-01. Kepler magnitude: 14.46. Transit SNR 10.48

There are 1 quarters with good PRF difference image offsets

The direct PRF centroid is offset from the target star catalog position by about 0.67 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$5.000 \pm 1.204$	4.15	$-1.395 \pm 0.162$	$4.802 \pm 1.210$
PRF-fit source offset from KIC position	$5.424 \pm 1.372$	3.95	$-1.133 \pm 0.189$	$5.304 \pm 1.366$
photometric centroid source offset	$2.61 \pm 1.28$	2.05	$0.12 \pm 1.40$	$2.61 \pm 1.28$



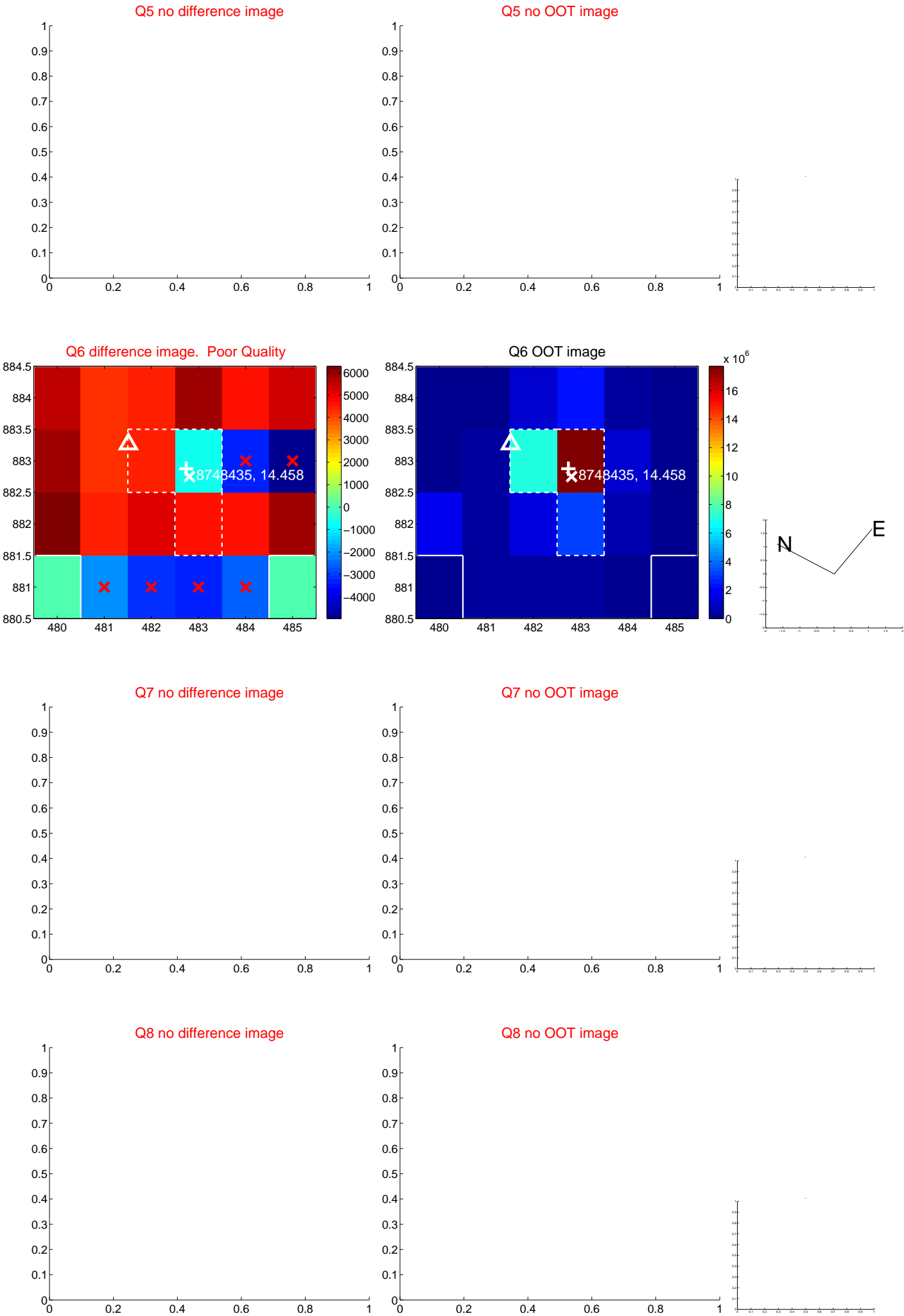
Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: three-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



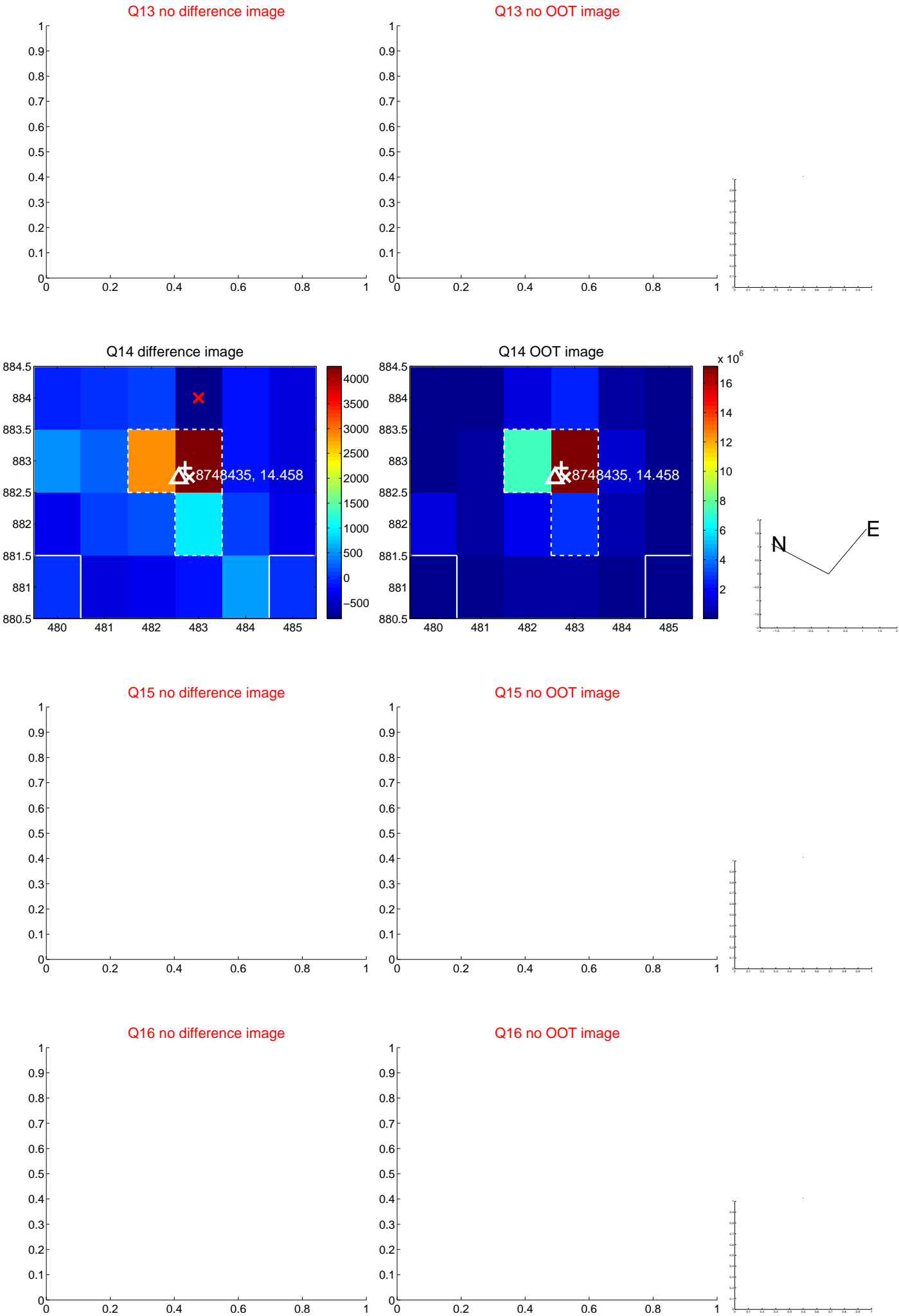
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



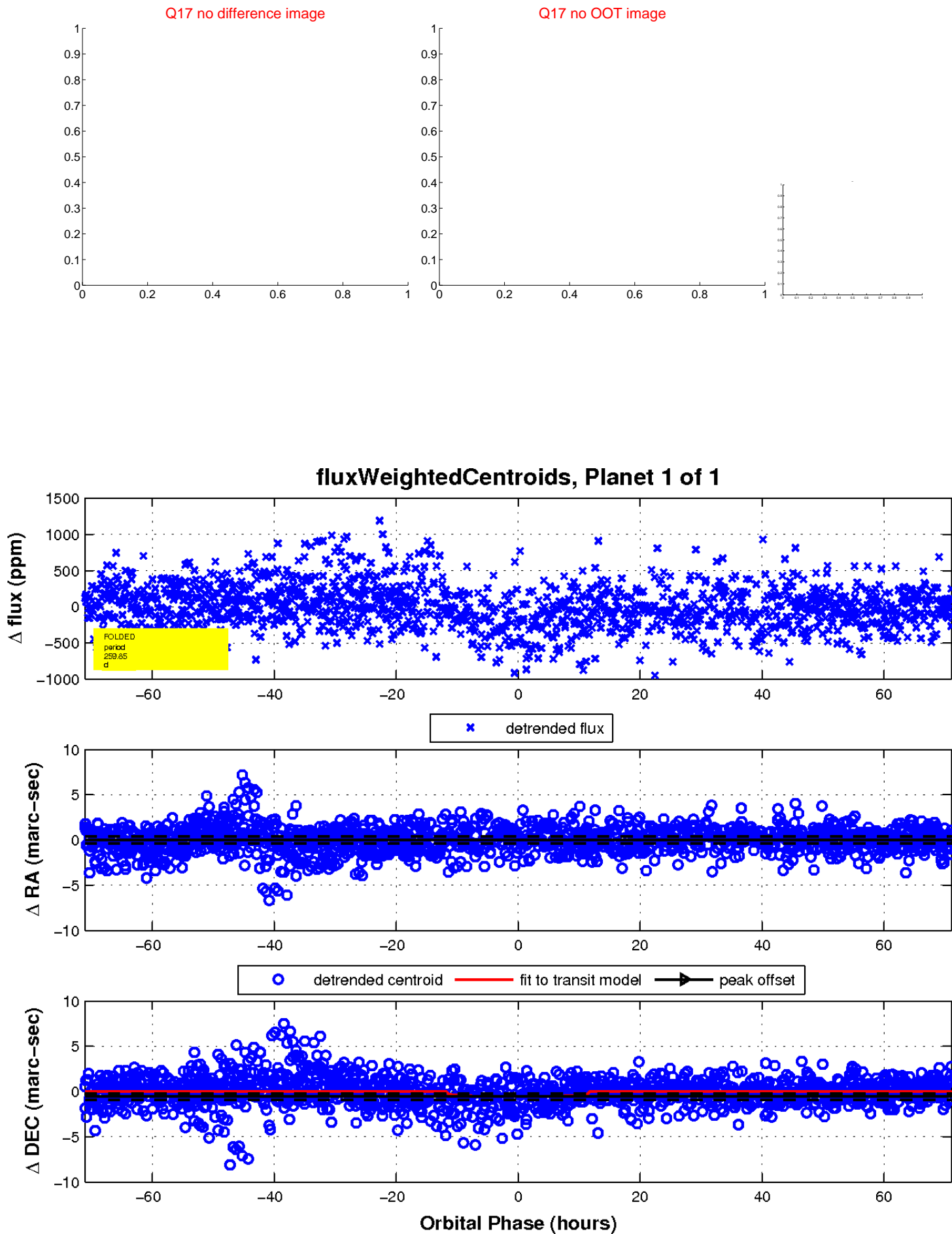
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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UKIRT Image

Declination

