

# KIC 008817330

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
008817330-01	OBS	No	375.543612	139.984427	816.4	58.154	10.1	16.0	0.88	5650	3.13	0.68

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008817330-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL_SKYE—LPP_DV—ALL_TRANS_CHASES—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.

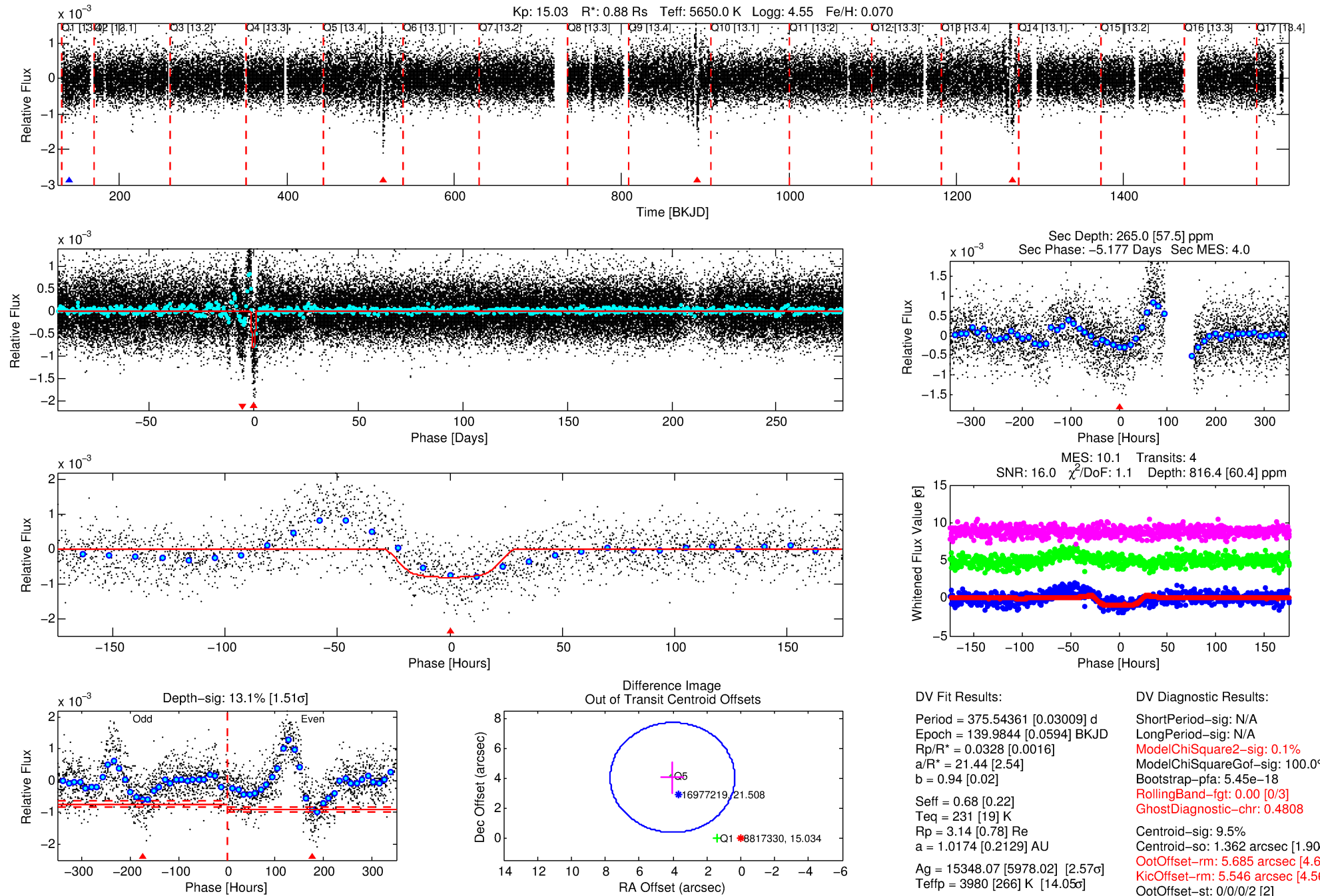
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 008817330-01

No Significant Match Found

# DV One-Page Summary

KIC: 8817330 Candidate: 1 of 1 Period: 375.544 d



## DV Fit Results:

Period = 375.54361 [0.03009] d  
Epoch = 139.9844 [0.0594] BKJD  
Rp/R\* = 0.0328 [0.0016]  
a/R\* = 21.44 [2.54]  
b = 0.94 [0.02]  
Seff = 0.68 [0.22]  
Teff = 231 [19] K  
Rp = 3.14 [0.78] Re  
a = 1.0174 [0.2129] AU  
Ag = 15348.07 [5978.02] [2.57 $\sigma$ ]  
Teffp = 3980 [266] K [14.05 $\sigma$ ]

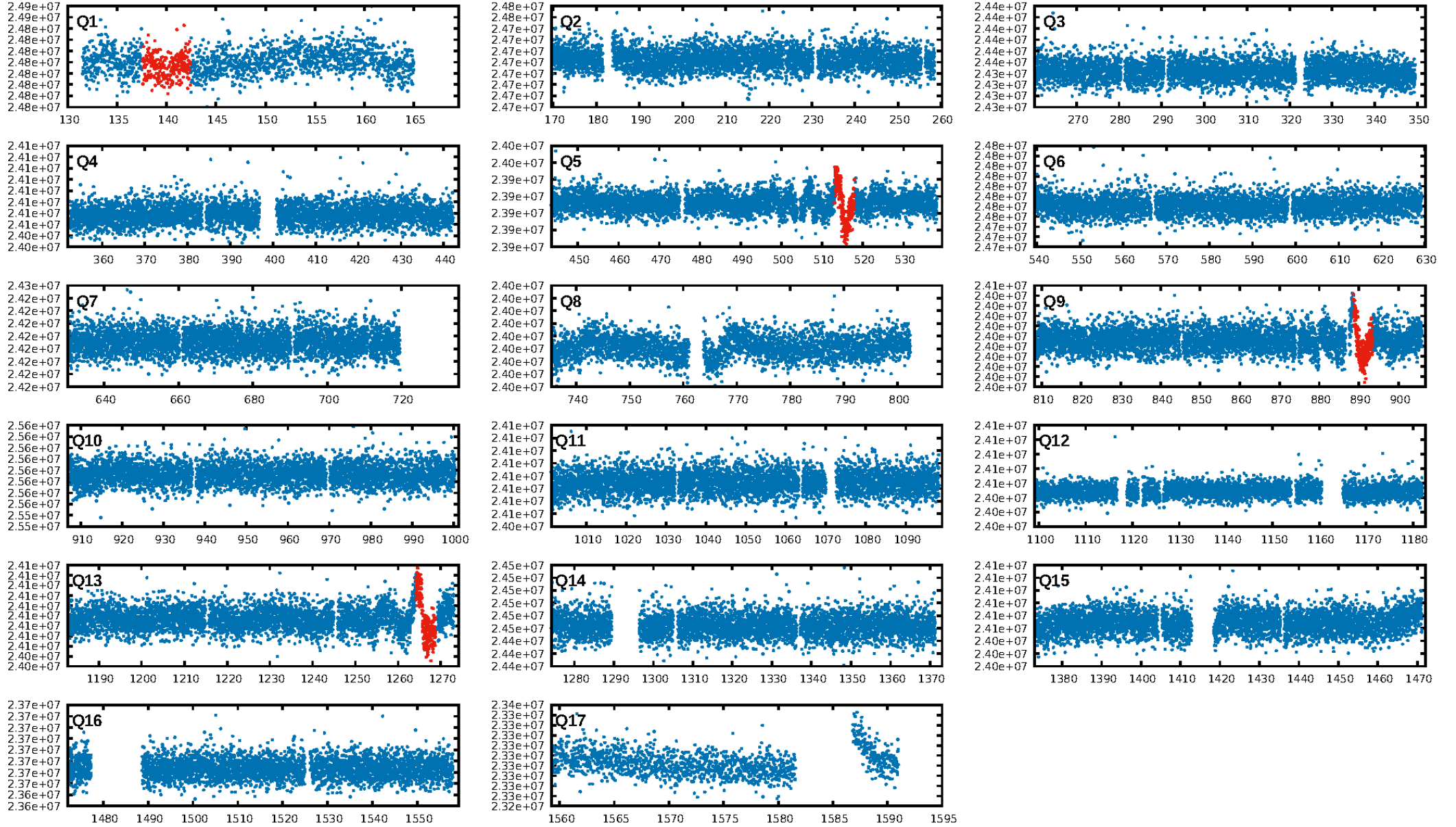
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: 0.1%  
ModelChiSquareGof-sig: 100.0%  
Bootstrap-pfa: 5.45e-18  
RollingBand-fgt: 0.00 [0/3]  
GhostDiagnostic-chr: 0.4808  
Centroid-sig: 9.5%  
Centroid-so: 1.362 arcsec [1.90 $\sigma$ ]  
OotOffset-rm: 5.685 arcsec [4.64 $\sigma$ ]  
KicOffset-rm: 5.546 arcsec [4.56 $\sigma$ ]  
OotOffset-st: 0/0/0/2 [2]  
KicOffset-st: 0/0/0/2 [2]  
DiffImageQuality-fgm: 0.50 [1/2]  
DiffImageOverlap-fno: 1.00 [2/2]

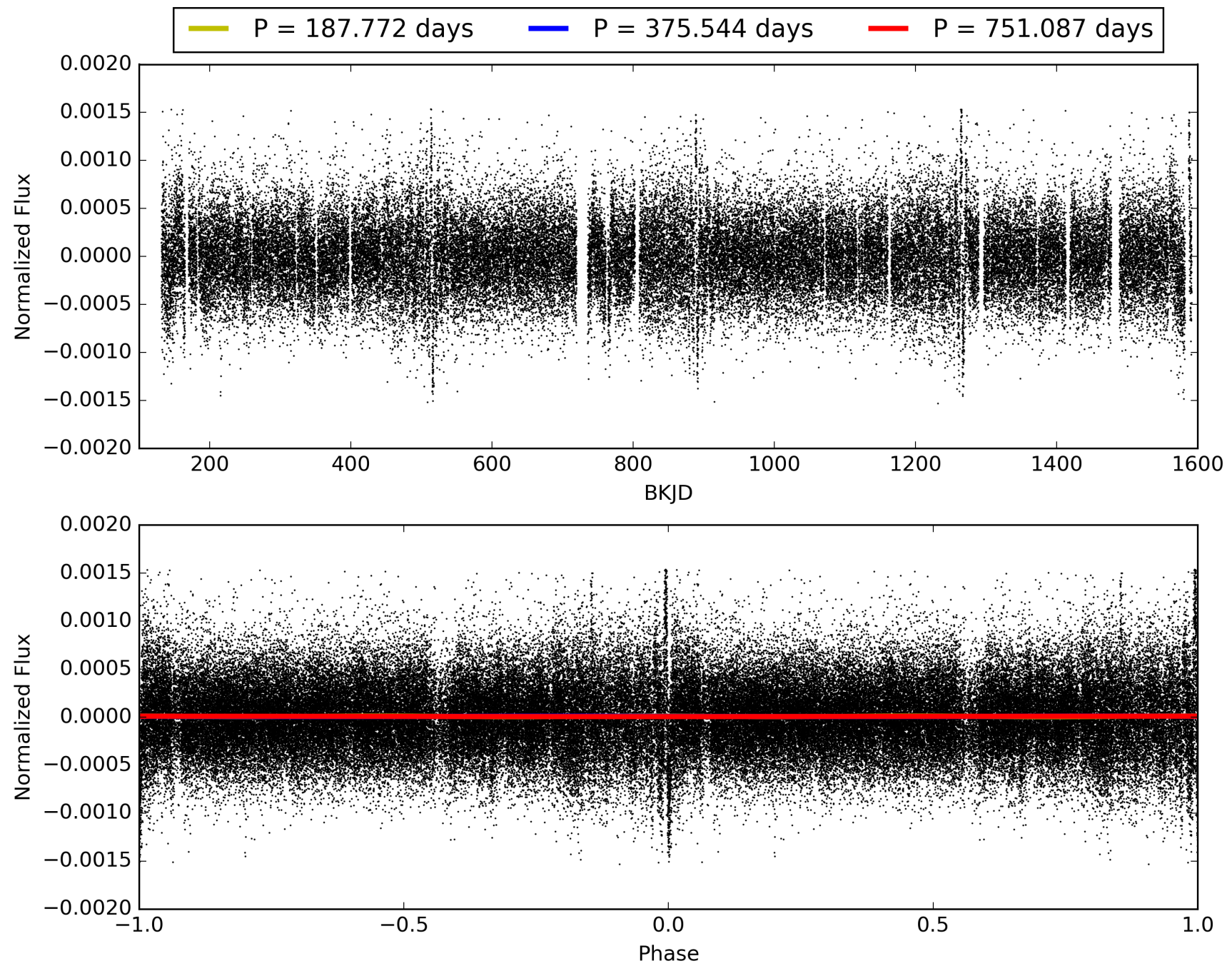
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 14:53:08 Z

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

# TCE 008817330-01, PDC Light Curves

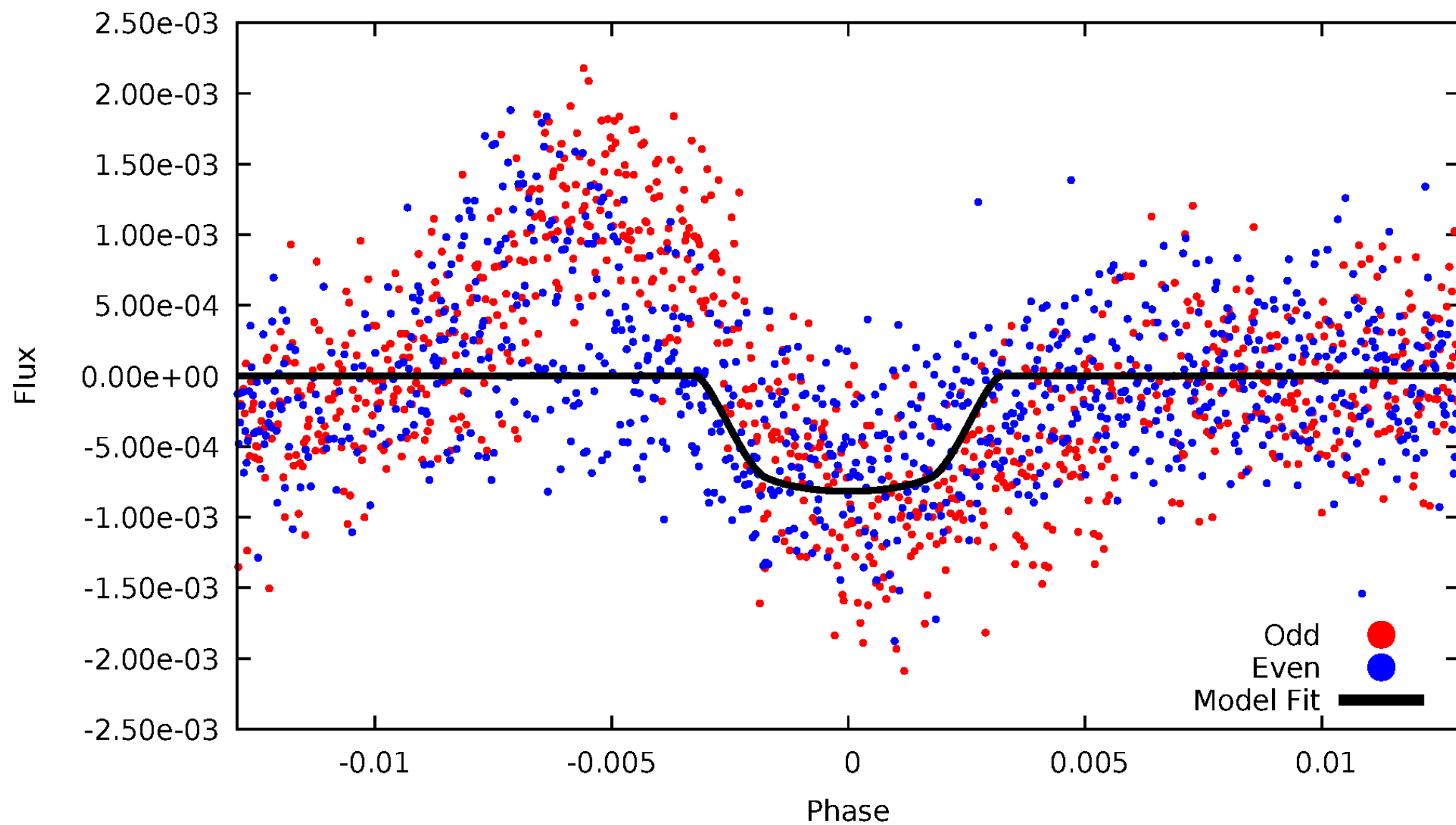


TCE 008817330-01



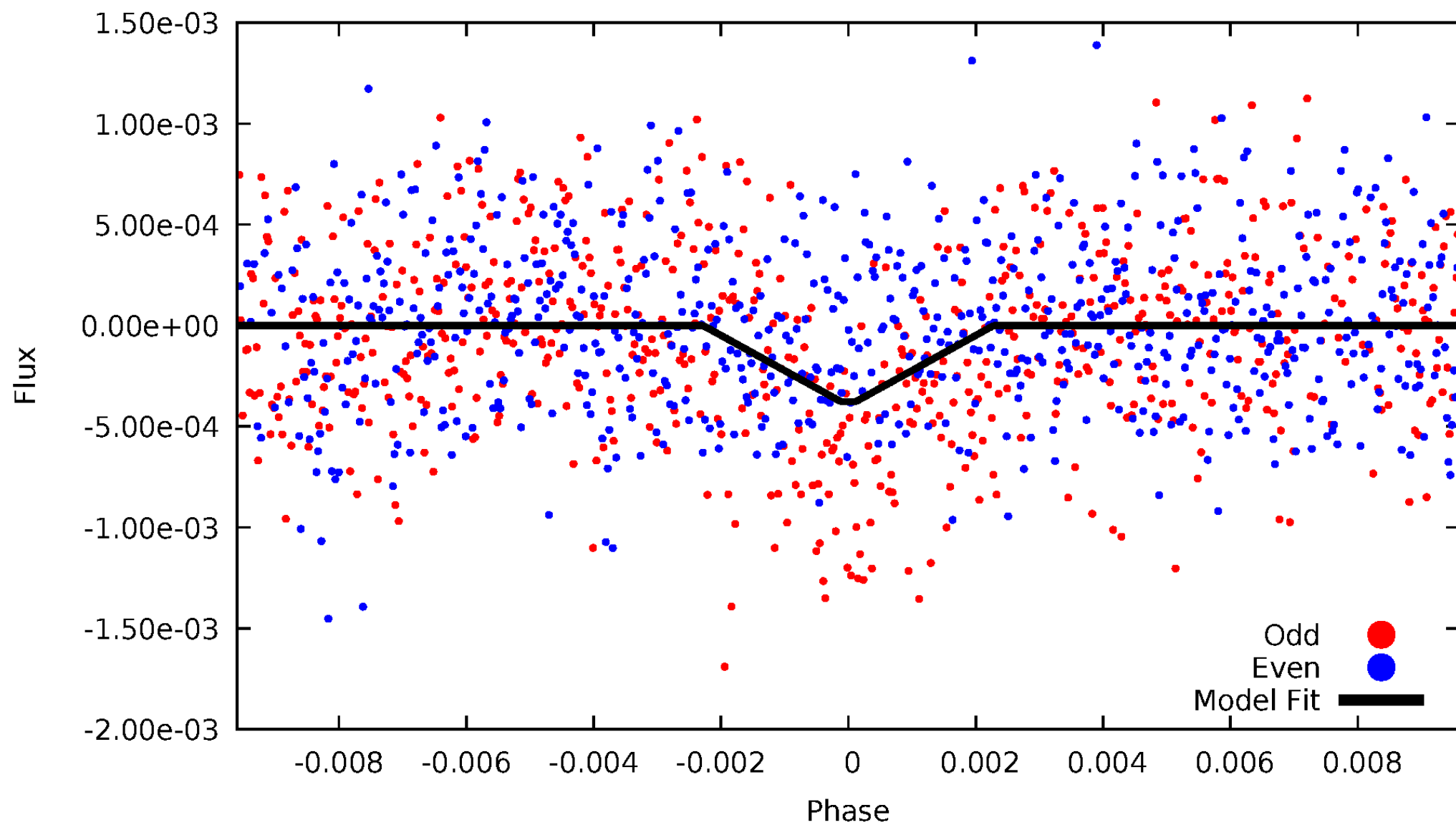
# DV Odd/Even

TCE 008817330-01



# ALT Odd/Even

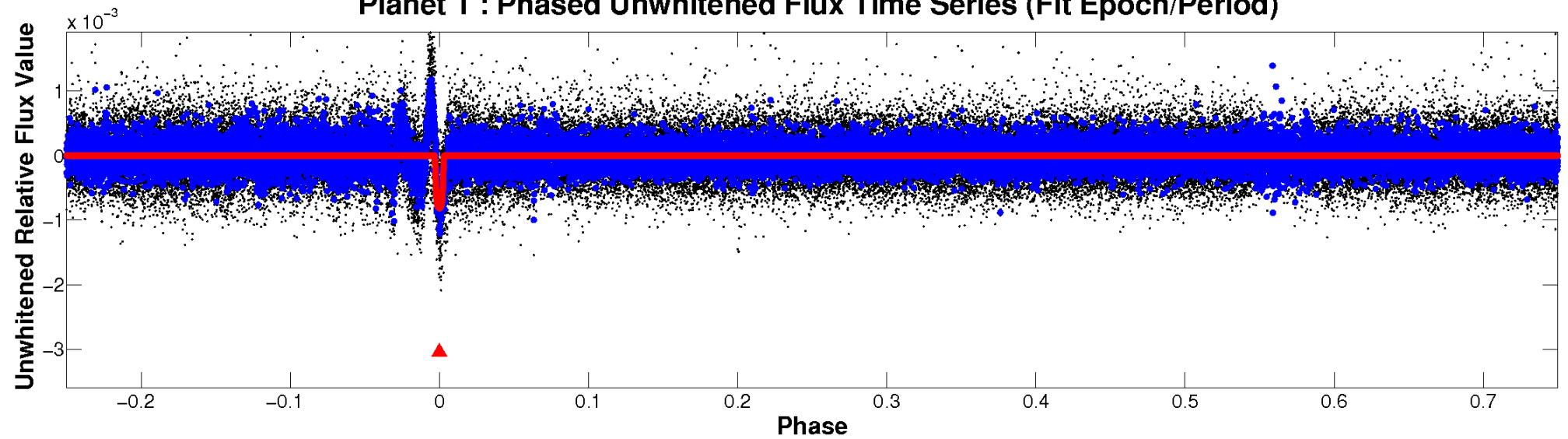
TCE 008817330-01



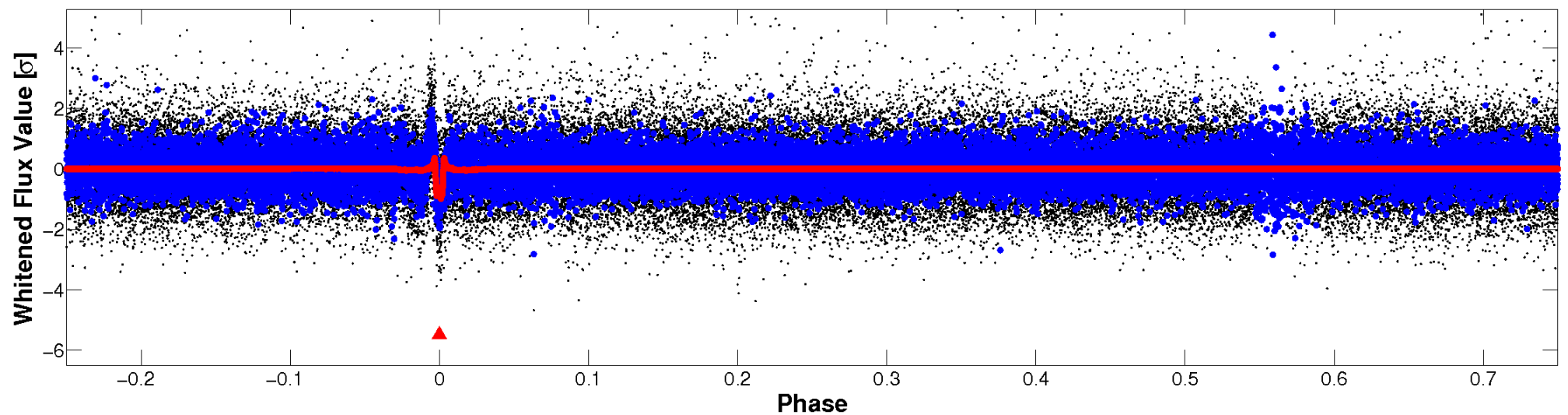


# Non-Whitened Vs. Whitened Light Curve

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

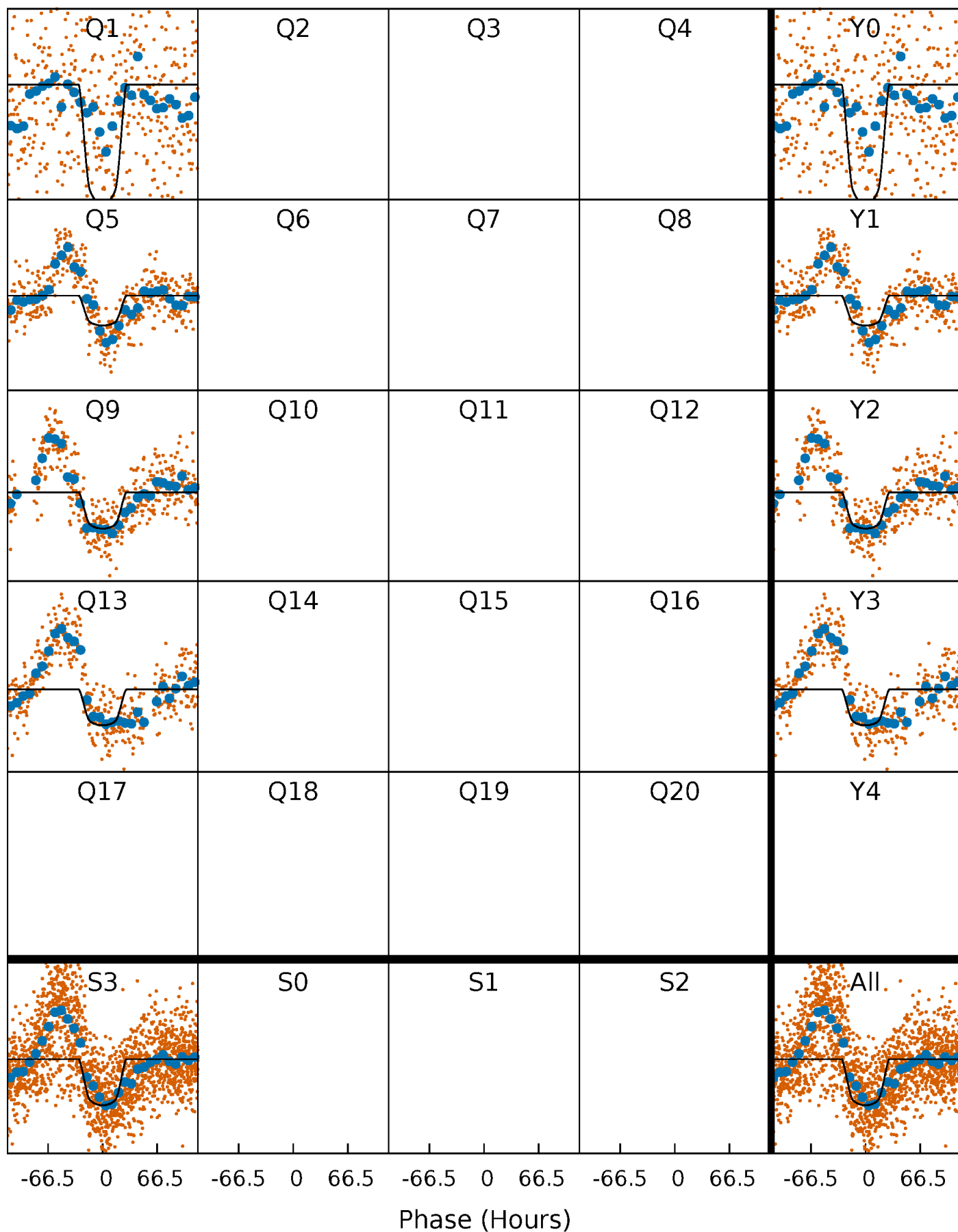
TCE 008817330-01 P=375.543612 Days  $T_0=139.984427$  (BKJD)





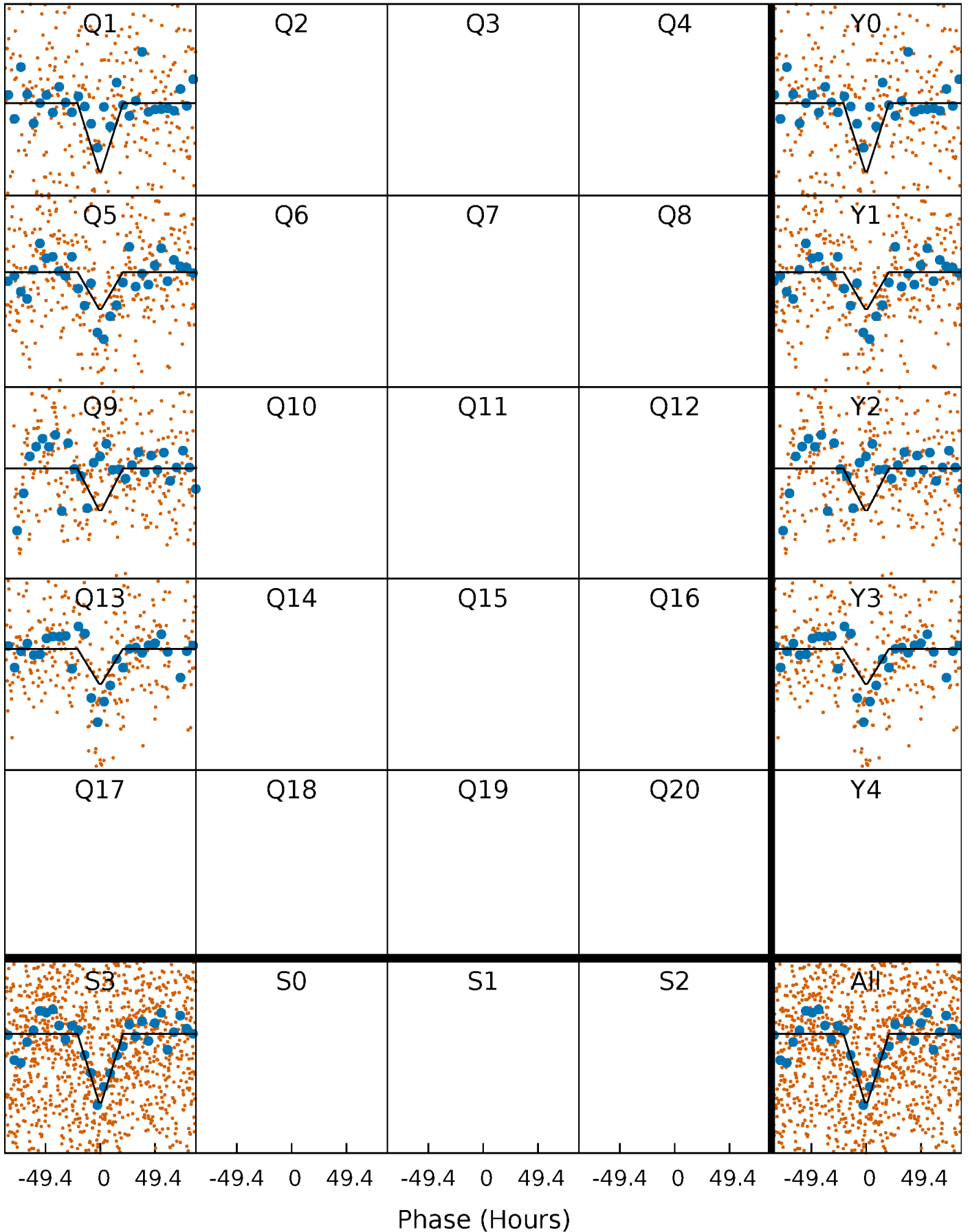
# DV Quarter-Phased Transit Curves

TCE 008817330-01 P=375.543612 Days  $T_0=139.984427$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

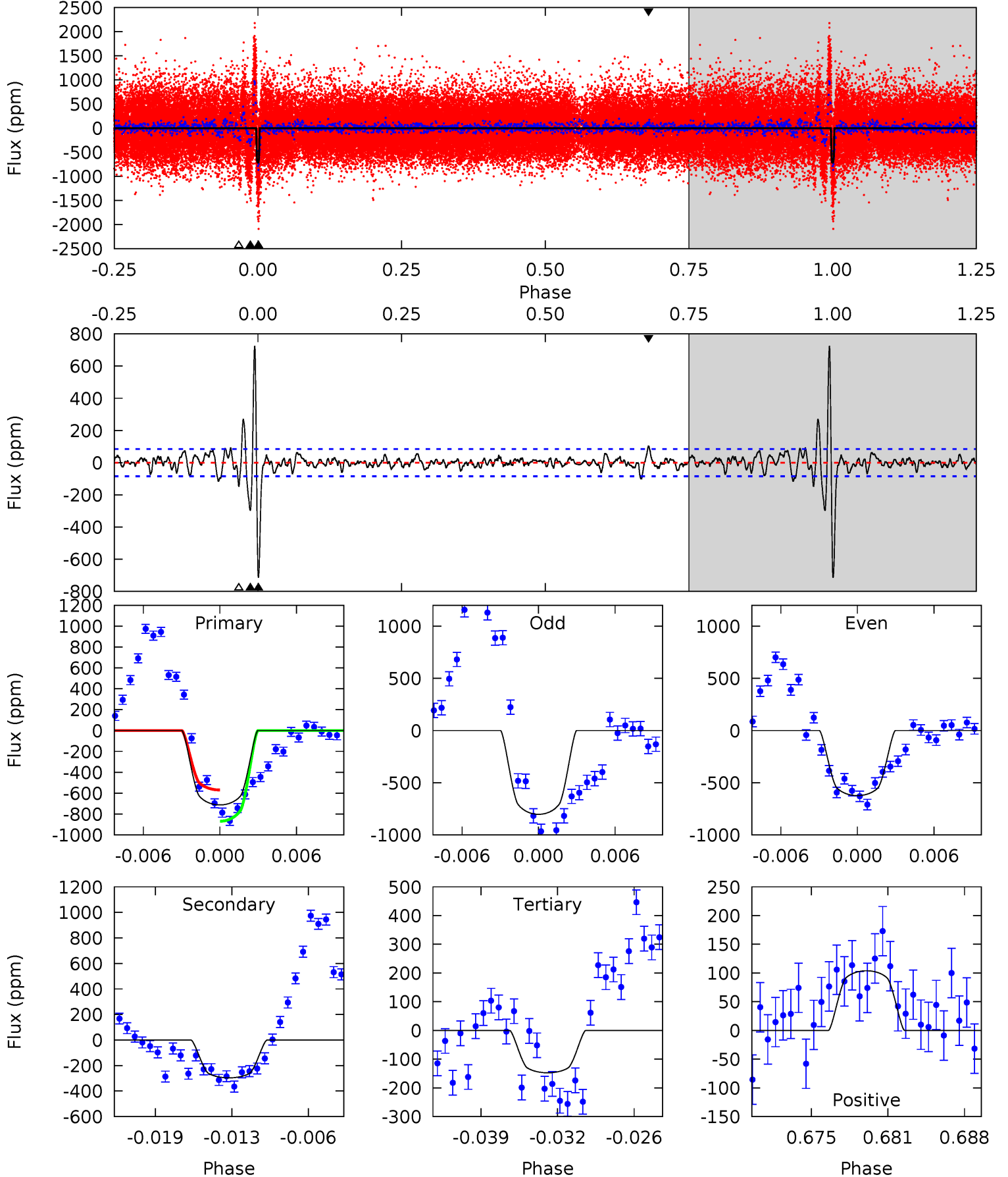
TCE 008817330-01 P=375.269141 Days  $T_0=140.285979$  (BKJD)



# DV Model-Shift Uniqueness Test

008817330-01,  $P = 375.543612$  Days,  $E = 139.984427$  Days

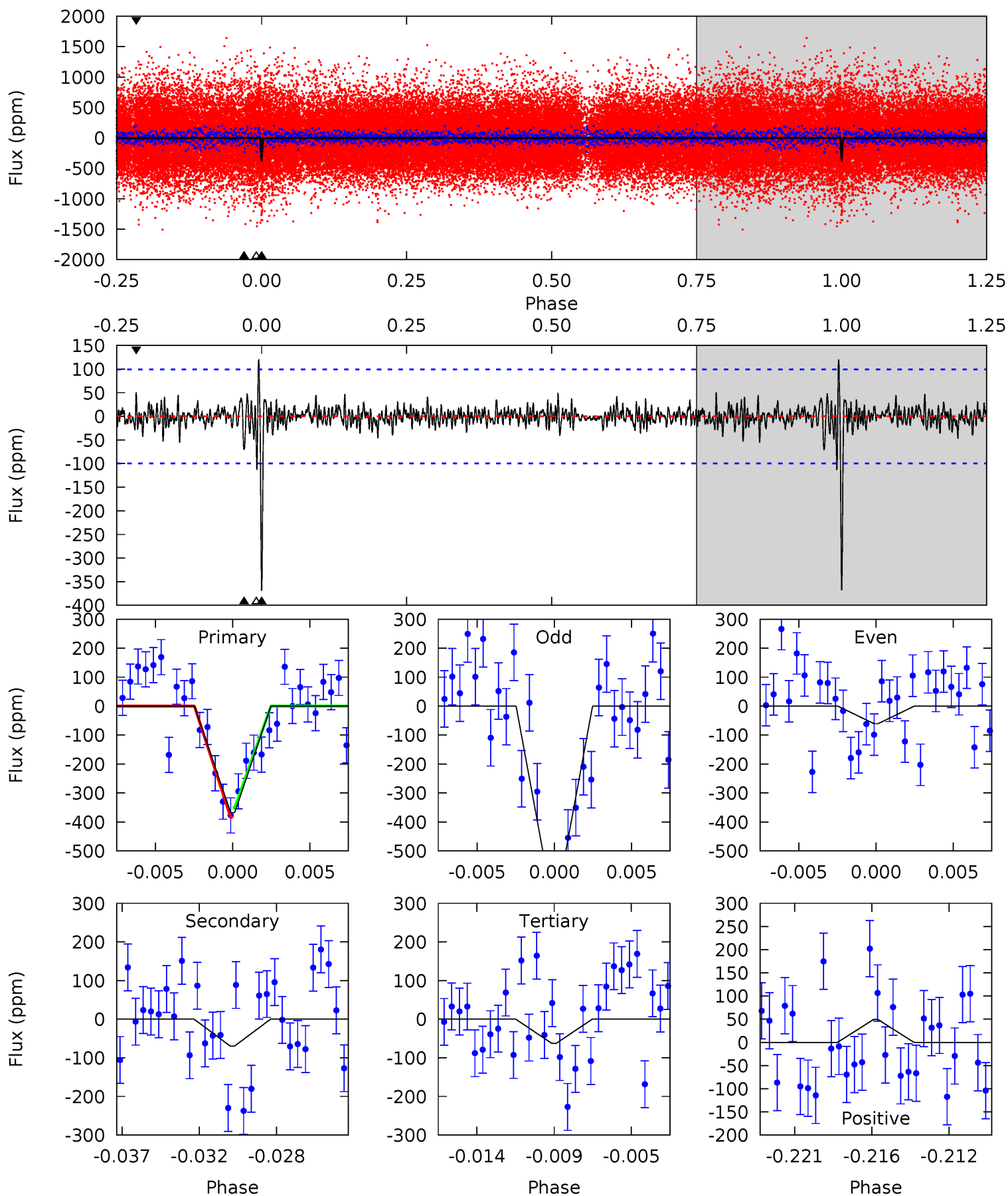
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
42.9	17.8	8.87	6.25	5.11	2.72	2.46	34.0	36.6	8.95	11.6	5.39	0.89	0.50	8.94



# Alt Model-Shift Uniqueness Test

008817330-01, P = 375.269141 Days, E = 140.285979 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
19.1	3.64	3.27	2.58	5.17	2.83	0.83	15.8	16.5	0.36	1.06	16.1	0.88	0.25	0.88



### Stellar Parameters For KIC 008817330

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$5650^{+154}_{-171}$	$4.551^{+0.030}_{-0.170}$	$0.070^{+0.250}_{-0.300}$	$0.876^{+0.215}_{-0.067}$	$0.993^{+0.080}_{-0.120}$	$2.083^{+0.348}_{-0.911}$
	+3%/-3%	+1%/-4%	+357%/-429%	+25%/-8%	+8%/-12%	+17%/-44%
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 008817330-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	$A_{\text{obs}}$
DV	$-296 \pm 17$	$3.22^{+0.42}_{-0.30}$	$330^{+21}_{-15}$	$4314^{+138}_{-143}$	$15767^{+2915}_{-3369}$
Alt.	$-70 \pm 19$	$1.93^{+0.27}_{-0.22}$	$331^{+19}_{-13}$	$4013^{+237}_{-262}$	$10219^{+4233}_{-3360}$

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

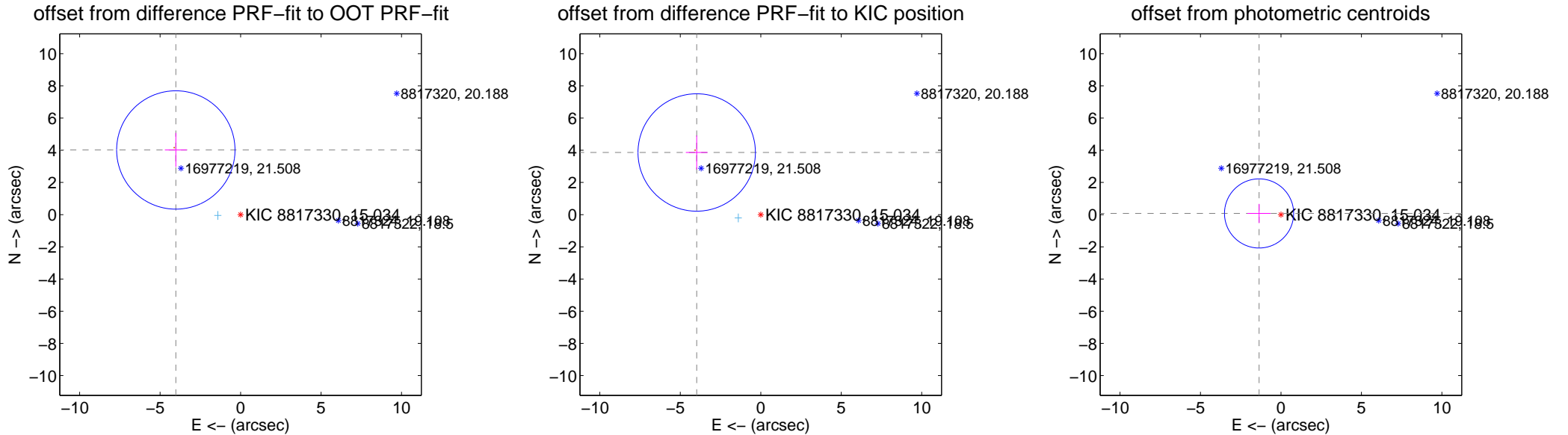
## DV Centroid Data

Supplemental centroid analysis for 008817330-01. Kepler magnitude: 15.03. Transit SNR 15.96

There are 1 quarters with good PRF difference image offsets

The direct PRF centroid is offset from the target star catalog position by about 0.16 arcsec

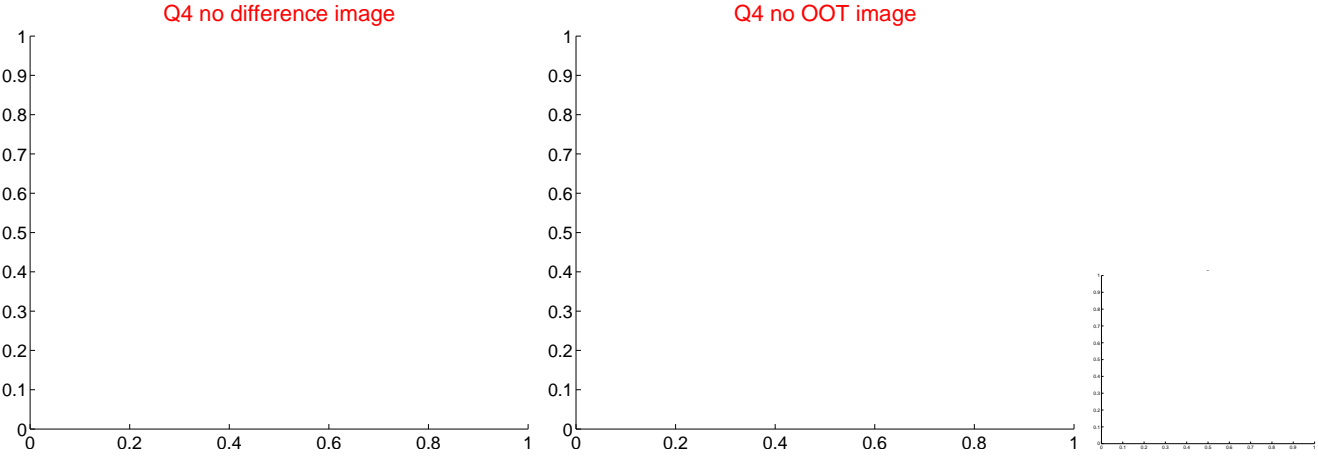
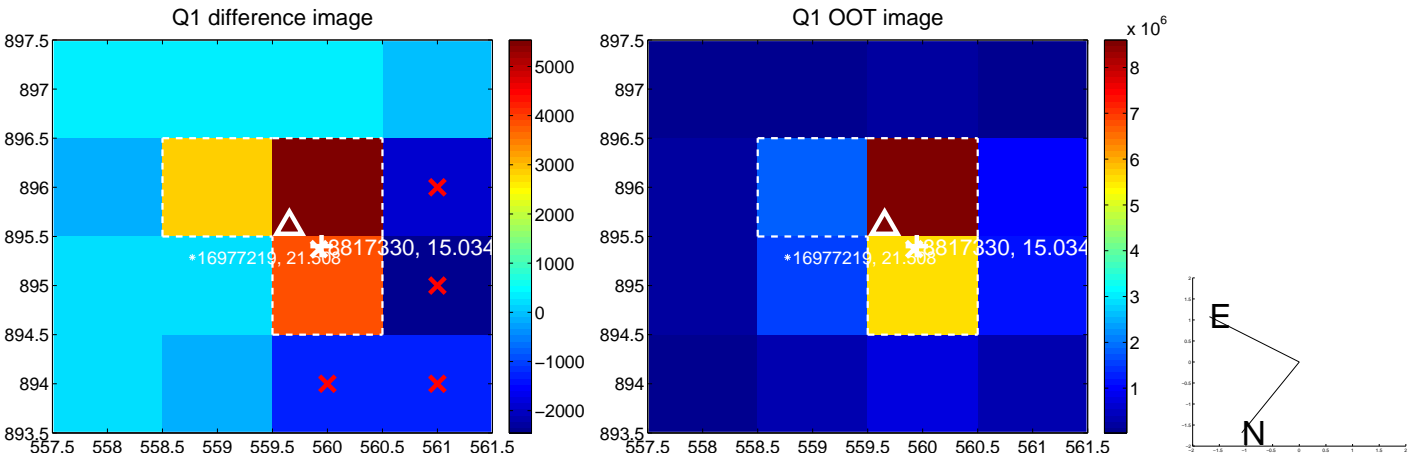
	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$5.685 \pm 1.225$	4.64	$4.023 \pm 0.681$	$4.017 \pm 1.055$
PRF-fit source offset from KIC position	$5.546 \pm 1.216$	4.56	$3.981 \pm 0.674$	$3.861 \pm 1.054$
photometric centroid source offset	$1.36 \pm 0.72$	1.90	$1.36 \pm 0.72$	$0.07 \pm 0.59$



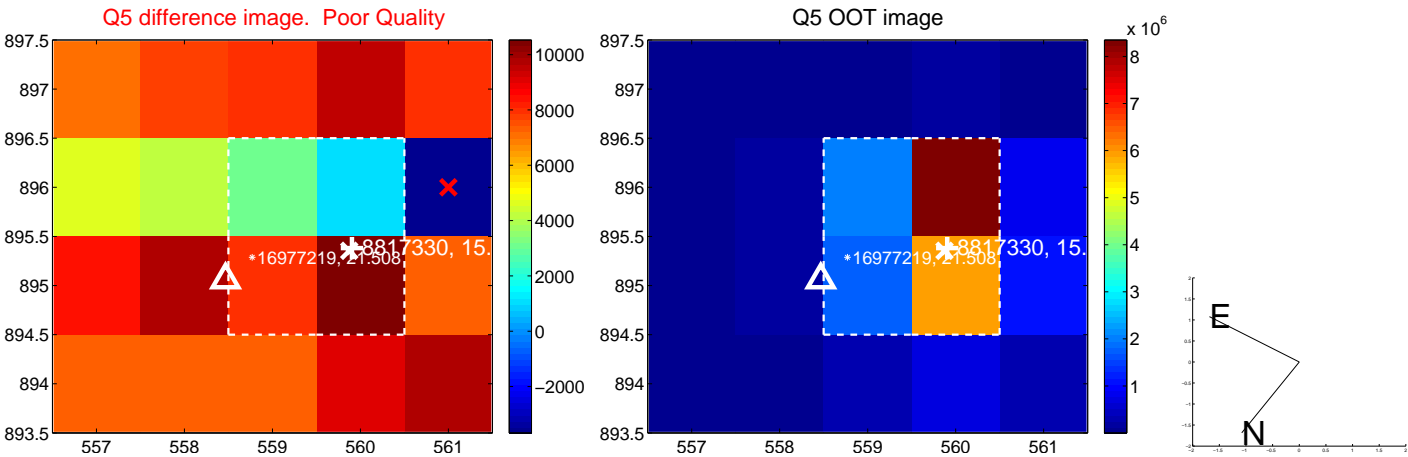
Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: three-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



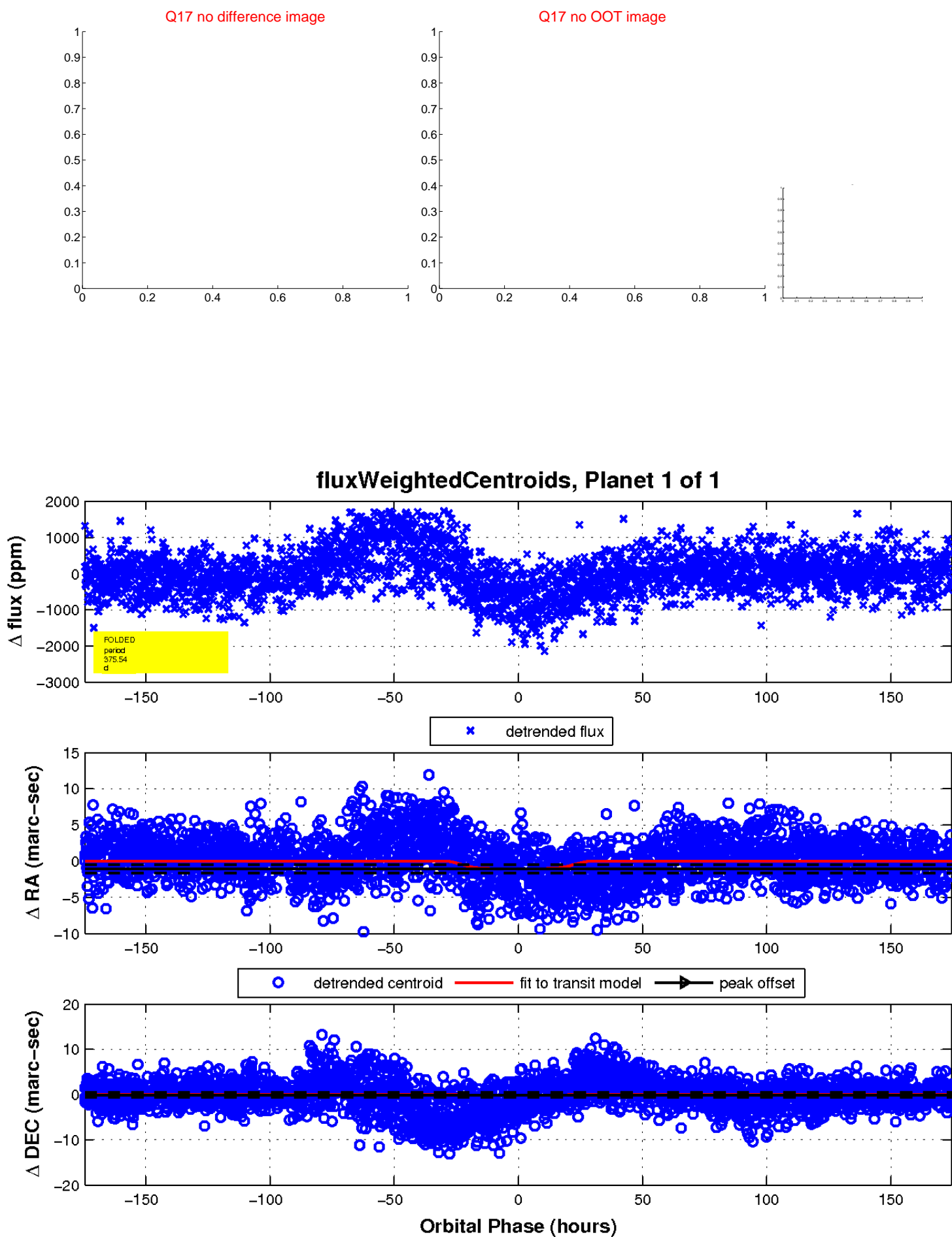
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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

