

# KIC 008176434

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
008176434-01	OBS	No	308.758437	232.467971	657.2	5.574	7.2	7.0	0.74	5486	2.21	0.63

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008176434-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_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.

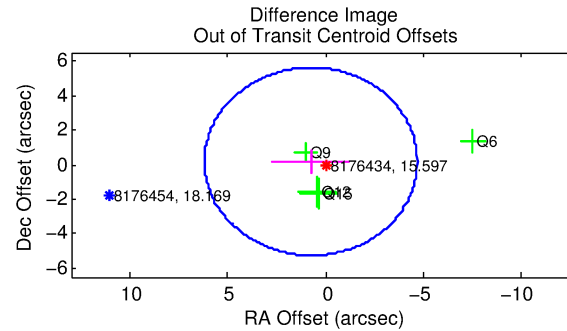
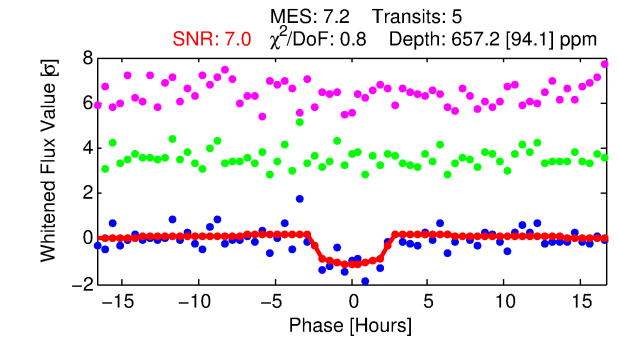
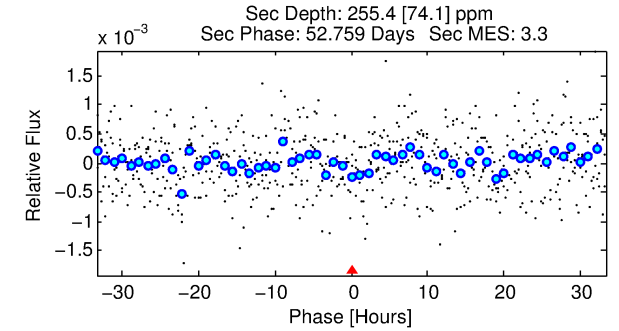
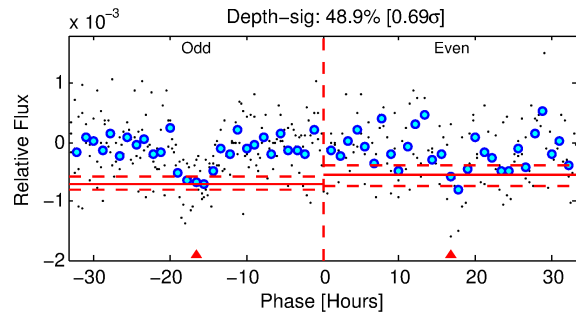
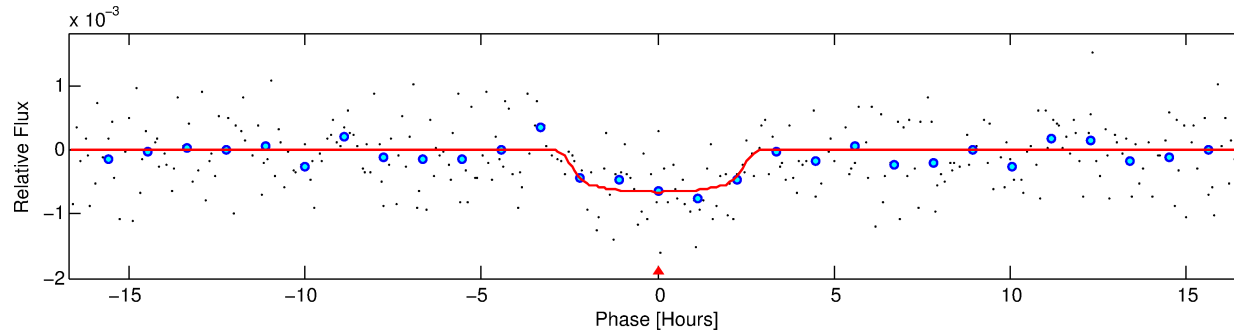
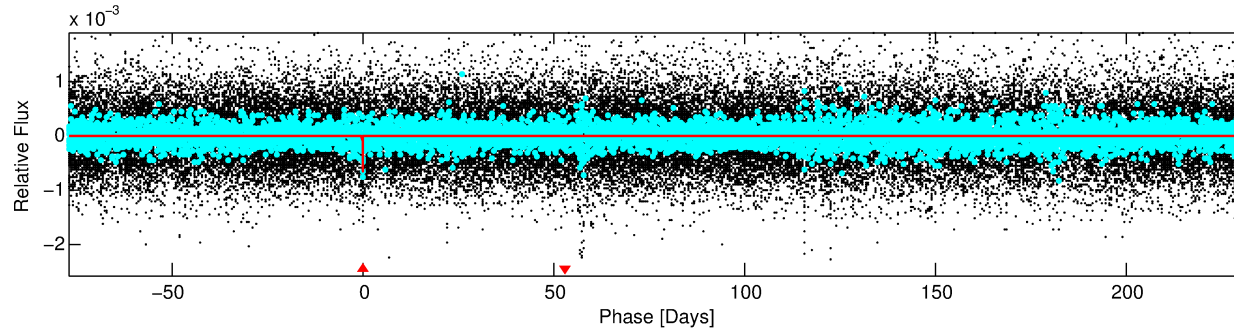
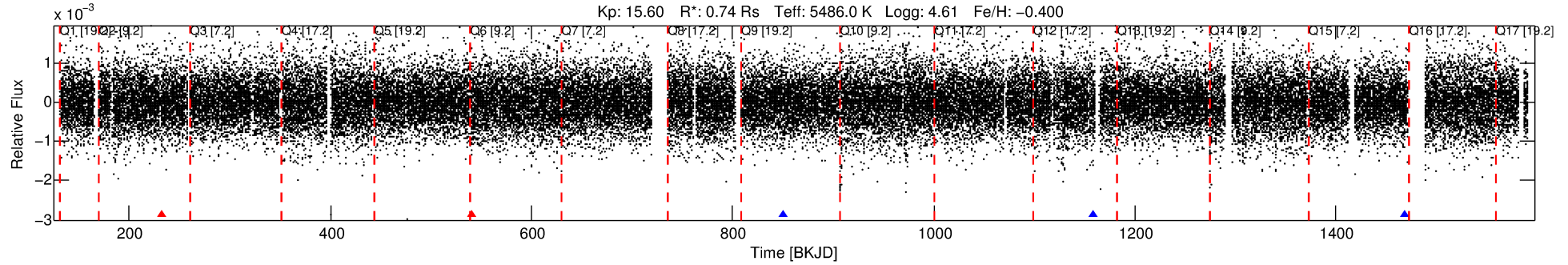
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 008176434-01

No Significant Match Found

# DV One-Page Summary

KIC: 8176434 Candidate: 1 of 1 Period: 308.758 d



## DV Fit Results:

Period = 308.75844 [0.00488] d  
Epoch = 232.4680 [0.0129] BKJD  
Rp/R\* = 0.0276 [0.0072]  
a/R\* = 222.70 [246.69]  
b = 0.88 [0.28]  
Seff = 0.63 [0.16]  
Teq = 227 [14] K  
Rp = 2.21 [0.71] Re  
a = 0.8331 [0.1294] AU  
Ag = 19912.99 [12757.92] [1.56σ]  
Teffp = 4178 [640] K [6.17σ]

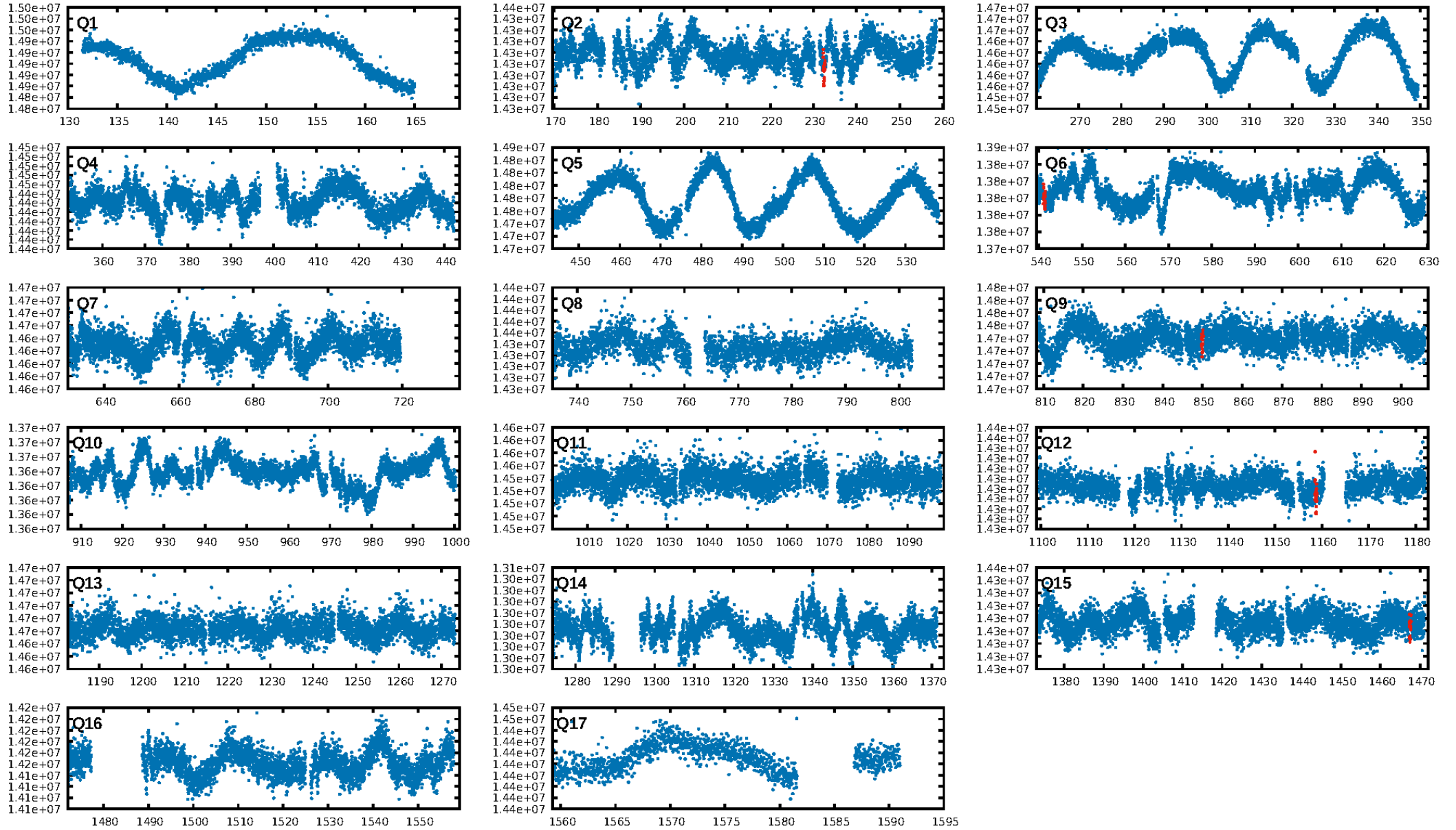
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: 30.7%  
ModelChiSquareGof-sig: 99.9%  
Bootstrap-pfa: 2.11e-10  
RollingBand-fgt: 0.60 [3/5]  
GhostDiagnostic-chr: -2.552  
Centroid-sig: 11.7%  
Centroid-so: 3.210 arcsec [1.38σ]  
OotOffset-rm: 0.768 arcsec [0.42σ]  
OotOffset-st: 1/1/1/1 [4]  
KicOffset-rm: 0.791 arcsec [0.43σ]  
KicOffset-st: 1/1/1/1 [4]  
DiffImageQuality-fgm: 0.50 [2/4]  
DiffImageOverlap-fno: 1.00 [4/4]

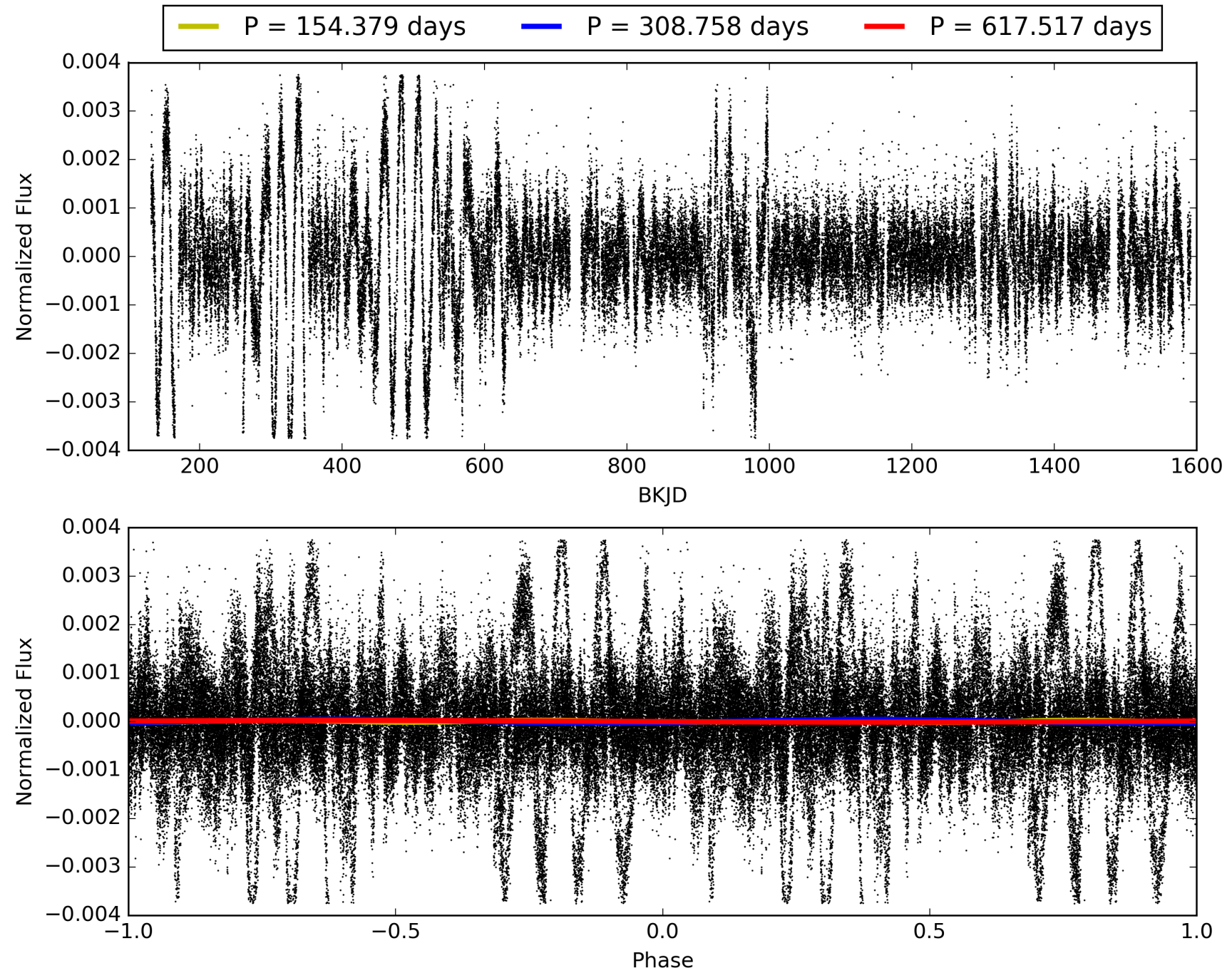
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 28-Jan-2016 23:06:43 Z

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

# TCE 008176434-01, PDC Light Curves

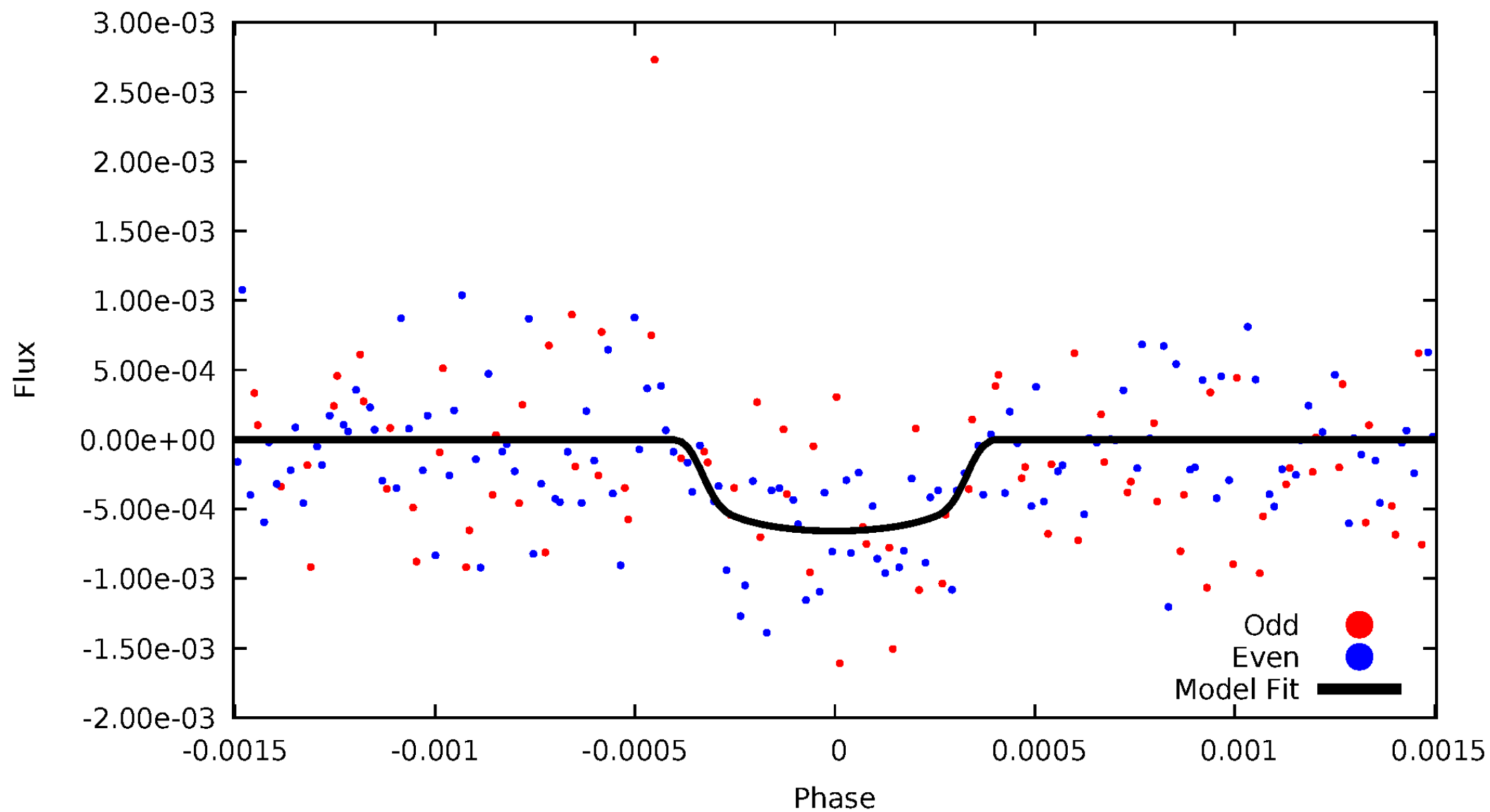


TCE 008176434-01



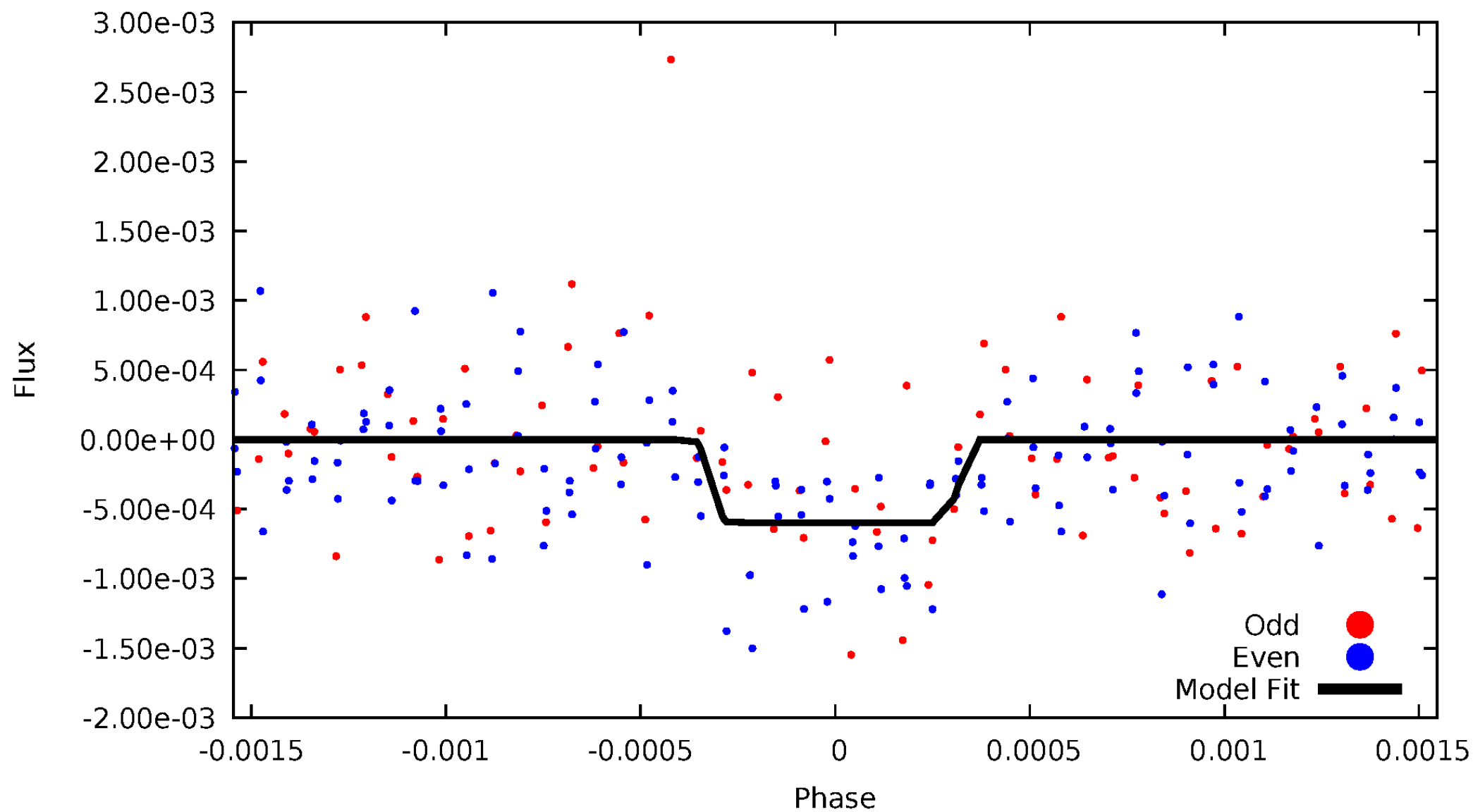
# DV Odd/Even

TCE 008176434-01



# ALT Odd/Even

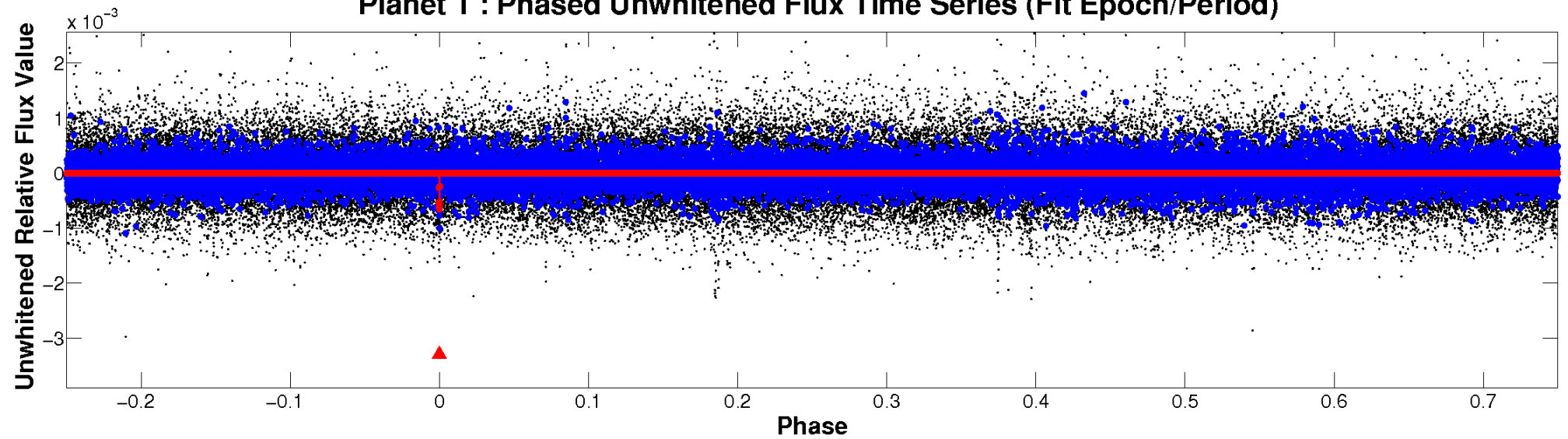
TCE 008176434-01



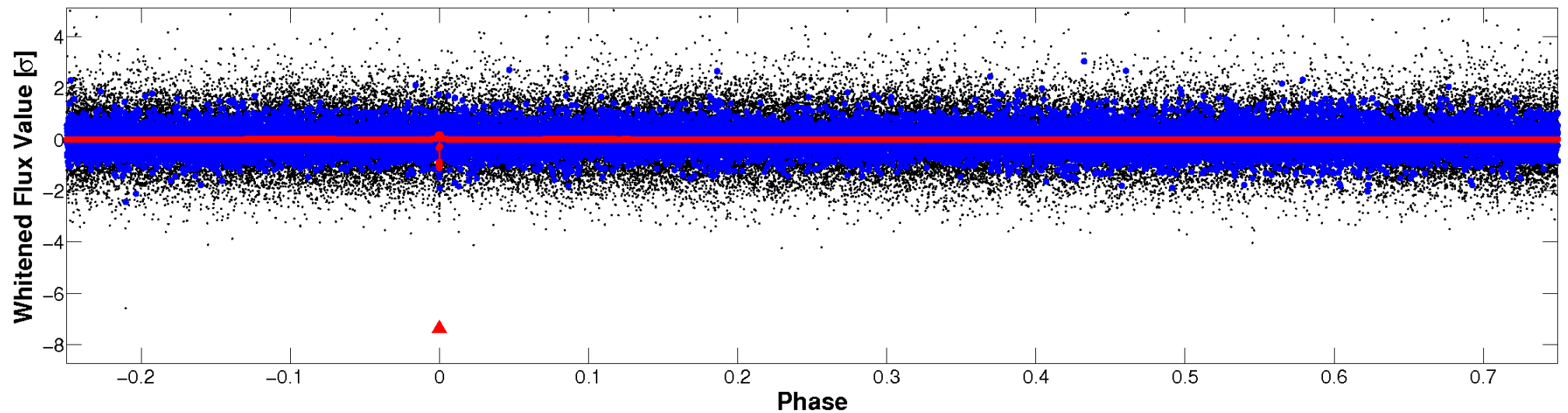


# Non-Whitened Vs. Whitened Light Curve

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

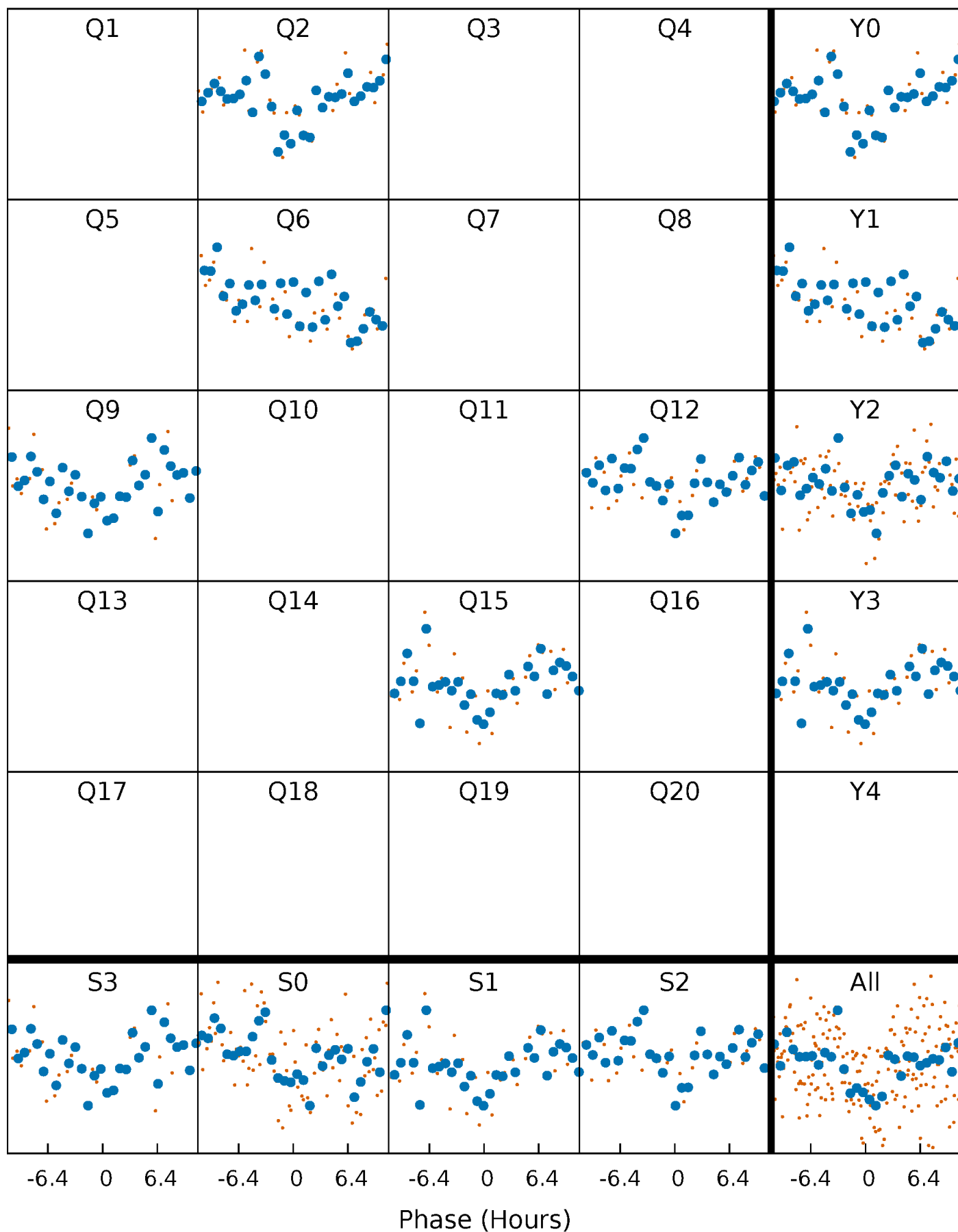


**Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)**



# PDC Quarter-Phased Transit Curves

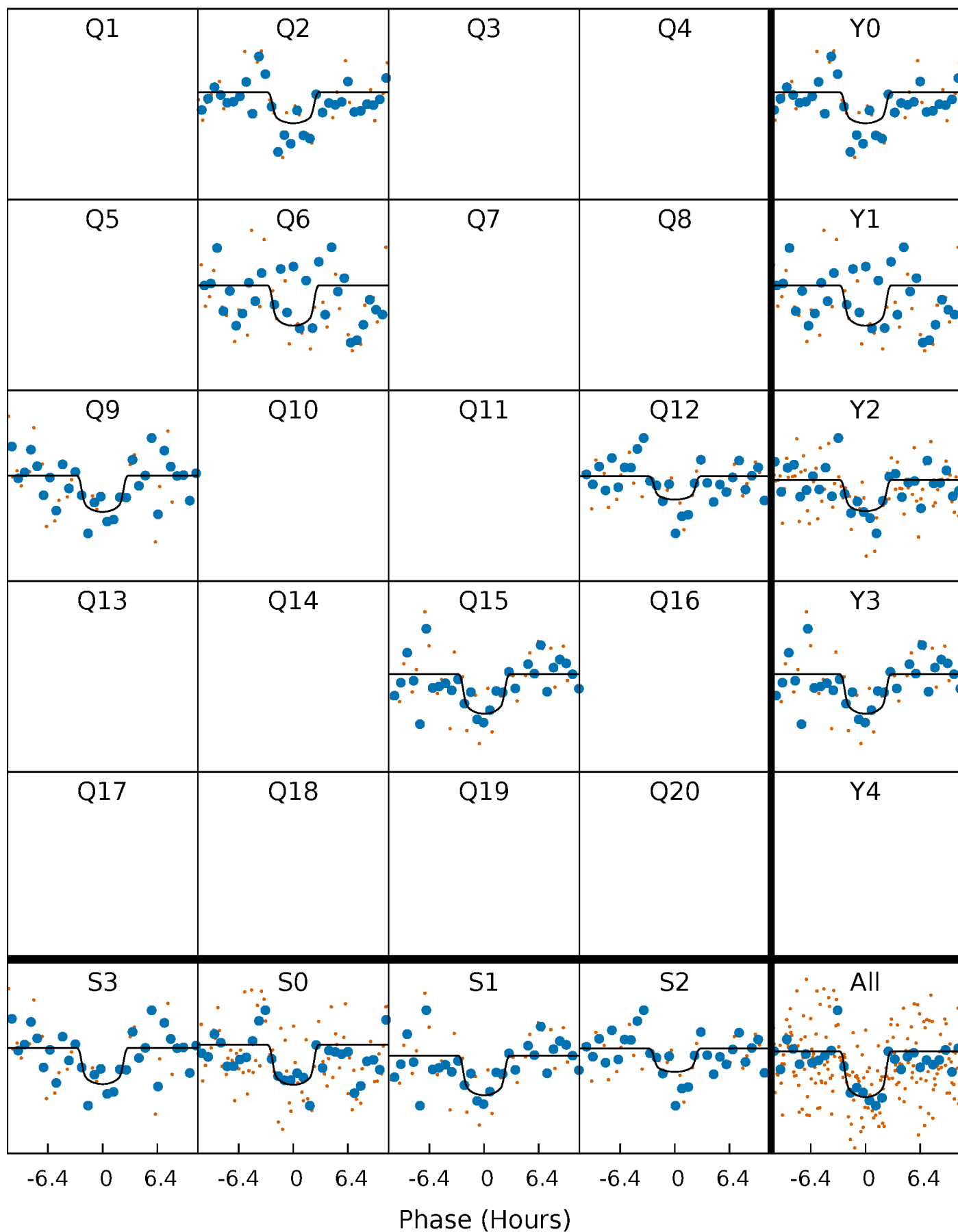
TCE 008176434-01 P=308.758437 Days  $T_0=232.467971$  (BKJD)





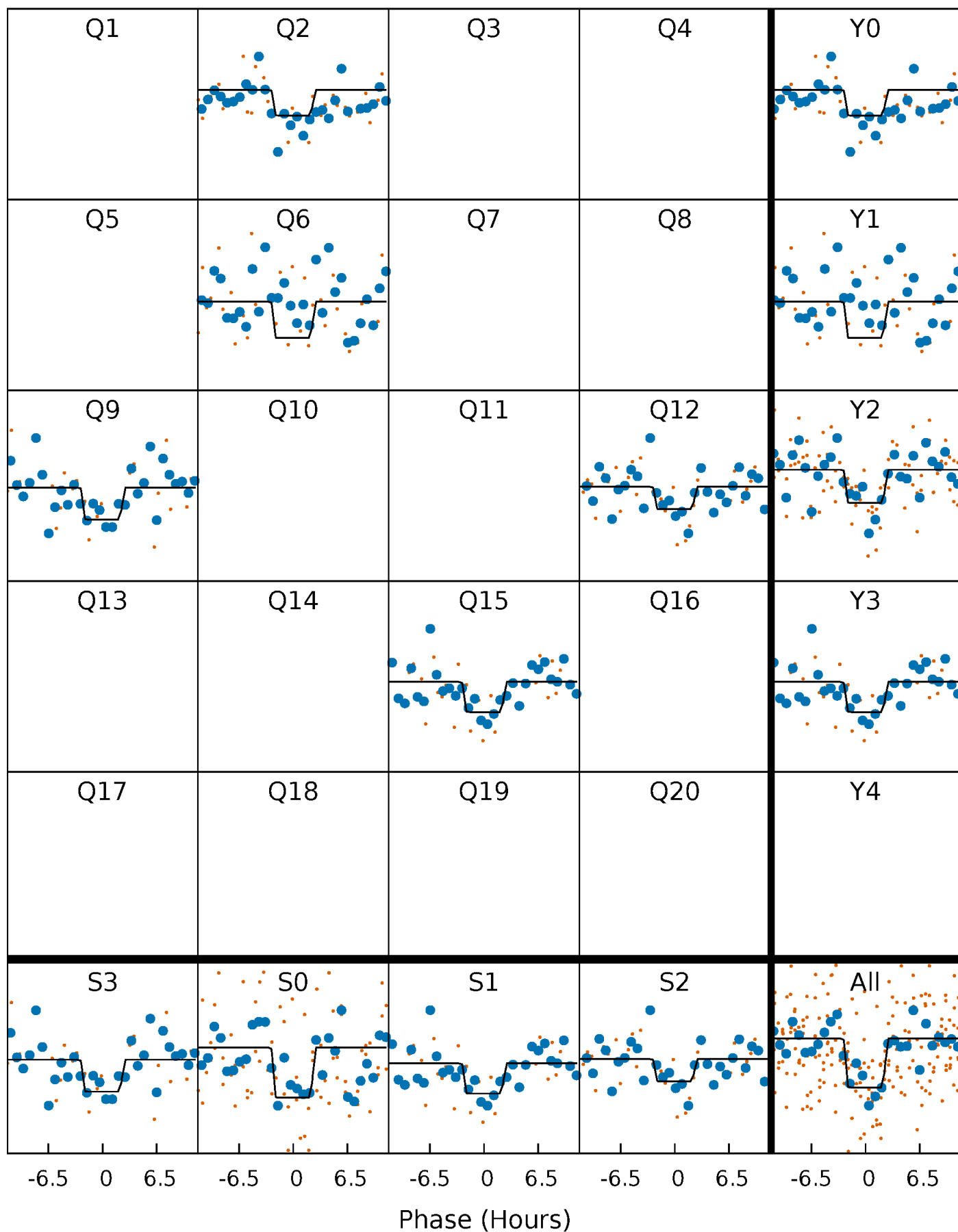
# DV Quarter-Phased Transit Curves

TCE 008176434-01 P=308.758437 Days  $T_0=232.467971$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

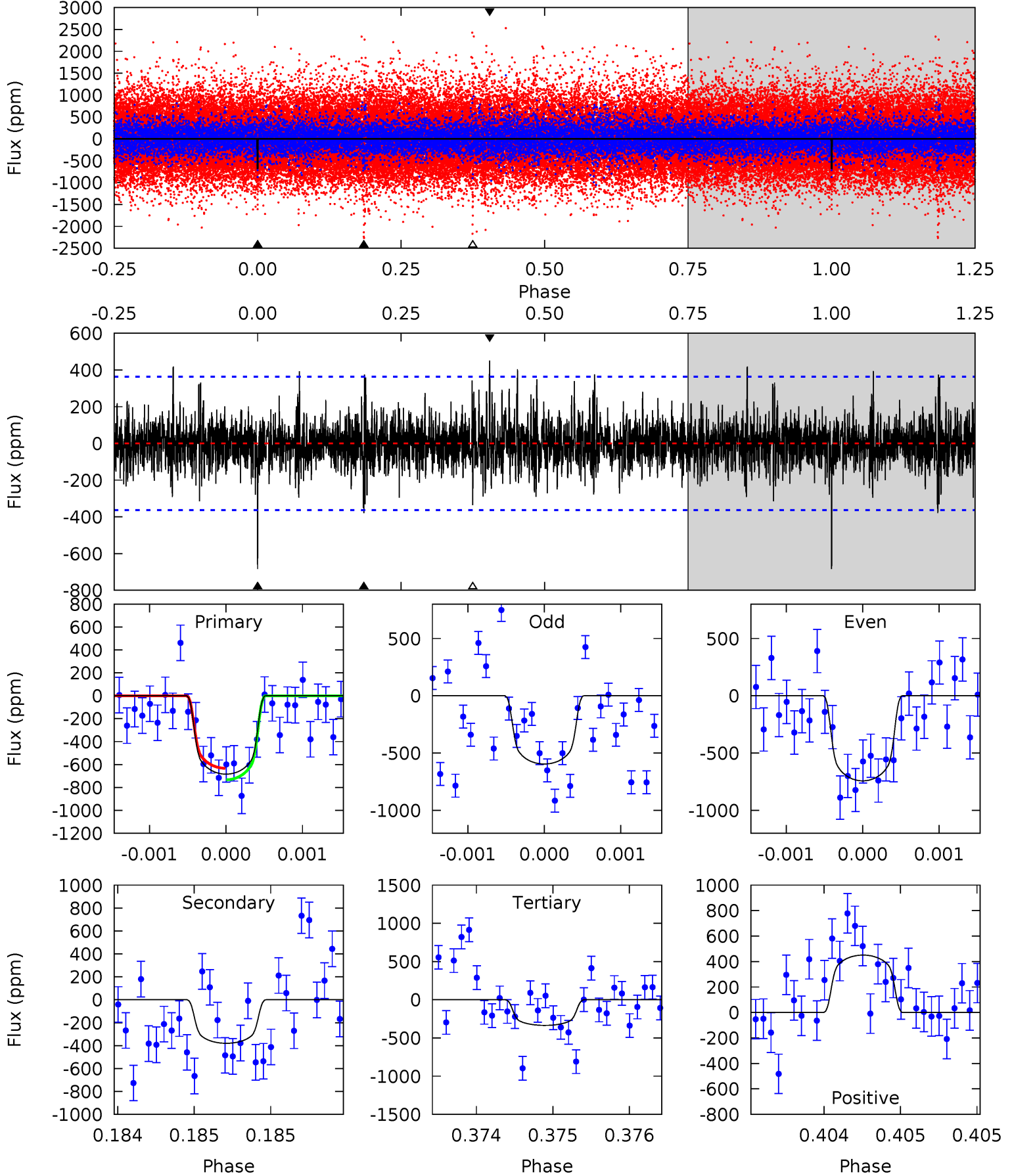
TCE 008176434-01 P=308.751092 Days  $T_0=232.481196$  (BKJD)



# DV Model-Shift Uniqueness Test

008176434-01, P = 308.758437 Days, E = 232.467971 Days

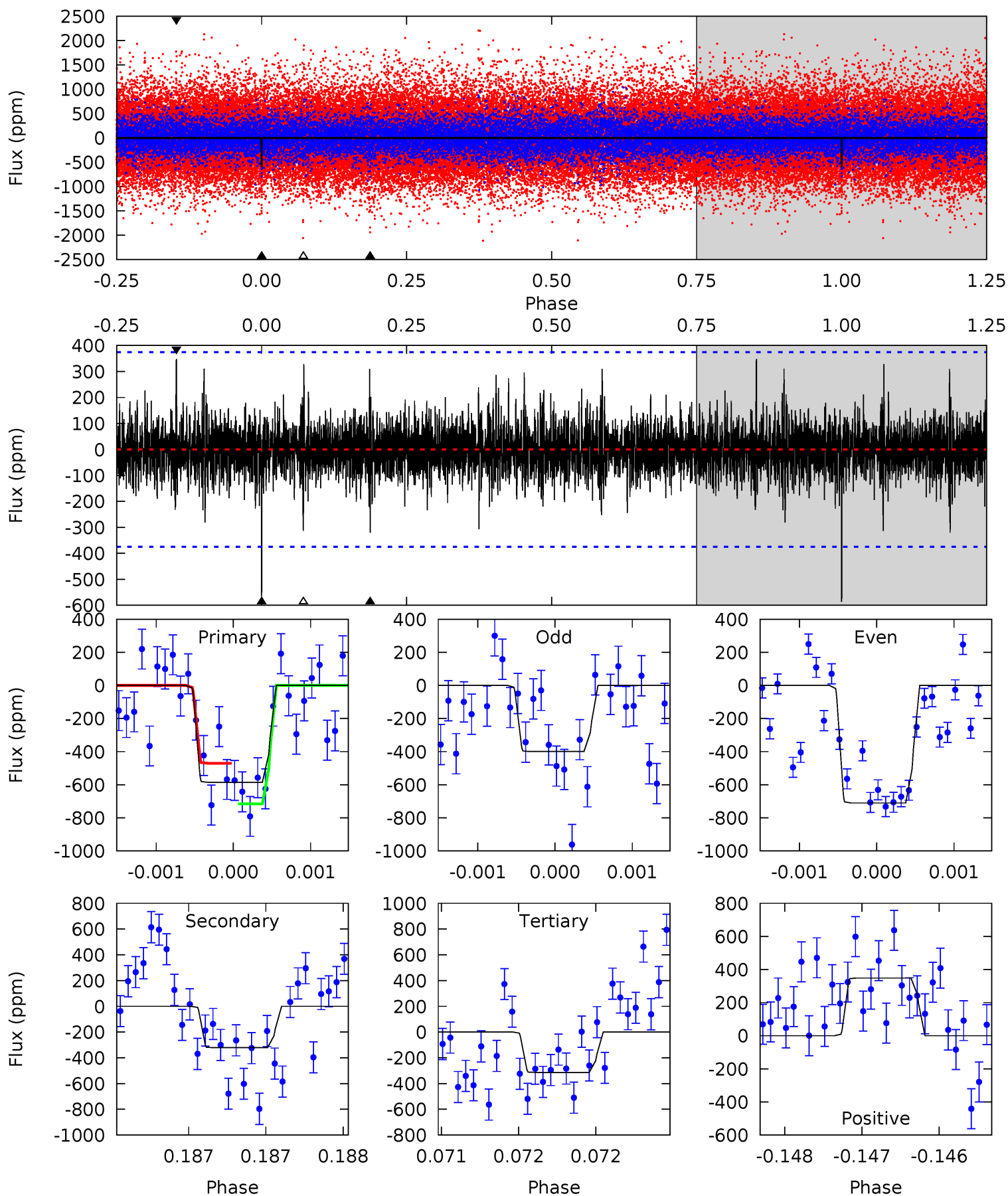
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
10.3	5.74	5.07	6.81	5.49	3.36	1.42	5.27	3.53	0.67	-1.07	1.08	1.00	0.40	0.76



# Alt Model-Shift Uniqueness Test

008176434-01, P = 308.751092 Days, E = 232.481196 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
8.64	4.73	4.62	5.14	5.52	3.40	1.04	4.01	3.50	0.11	-0.41	2.25	0.98	0.37	1.80



### Stellar Parameters For KIC 008176434

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R$ ( $R_{\odot}$ )	$M$ ( $M_{\odot}$ )	$p_{\star}$ ( $\text{g}\cdot\text{cm}^{-3}$ )
	$5486^{+164}_{-164}$	$4.612^{+0.040}_{-0.120}$	$-0.400^{+0.300}_{-0.300}$	$0.736^{+0.138}_{-0.059}$	$0.824^{+0.078}_{-0.087}$	$2.905^{+0.466}_{-1.044}$
	+3%/-3%	+1%/-3%	+75%/-75%	+19%/-8%	+9%/-11%	+16%/-36%
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 008176434-01 / KOI

Detrend	Depth (ppm)	$R_p$ ( $R_{\oplus}$ )	$T_{max}$ (K)	$T_{obs}$ (K)	$A_{obs}$
DV	$-380 \pm 66$	$2.34^{+0.62}_{-0.64}$	$323^{+15}_{-14}$	$4667^{+680}_{-414}$	$26154^{+23963}_{-10029}$
Alt.	$-321 \pm 68$	$2.09^{+0.55}_{-0.66}$	$322^{+15}_{-14}$	$4735^{+813}_{-461}$	$27955^{+31231}_{-11520}$

$T_{max}$  = Theoretical Maximum Planetary Temperature

$T_{obs}$  = Observed Planetary Temperature (Assuming  $A=0.3$ )

$A_{obs}$  = Observed Albedo (Assuming  $T=0$ )

If a secondary eclipse is present, the system is likely an EB if  $T_{obs} \gg T_{max}$  AND  $A_{obs} \gg 1.0$

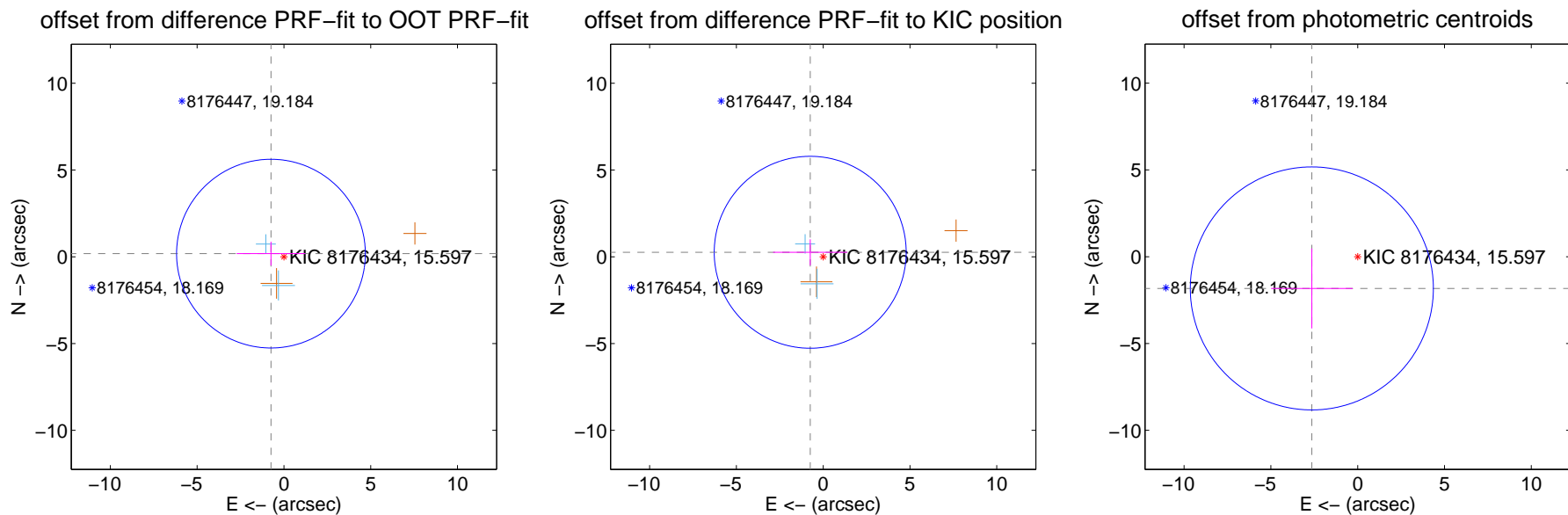
## DV Centroid Data

Supplemental centroid analysis for 008176434-01. Kepler magnitude: 15.60. Transit SNR 7.03

There are 2 quarters with good PRF difference image offsets

The direct PRF centroid is offset from the target star catalog position by about 0.10 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.768 \pm 1.812$	0.42	$0.747 \pm 1.977$	$0.181 \pm 0.683$
PRF-fit source offset from KIC position	$0.791 \pm 1.843$	0.43	$0.748 \pm 2.135$	$0.259 \pm 0.747$
photometric centroid source offset	$3.21 \pm 2.33$	1.38	$2.64 \pm 2.35$	$-1.83 \pm 2.30$



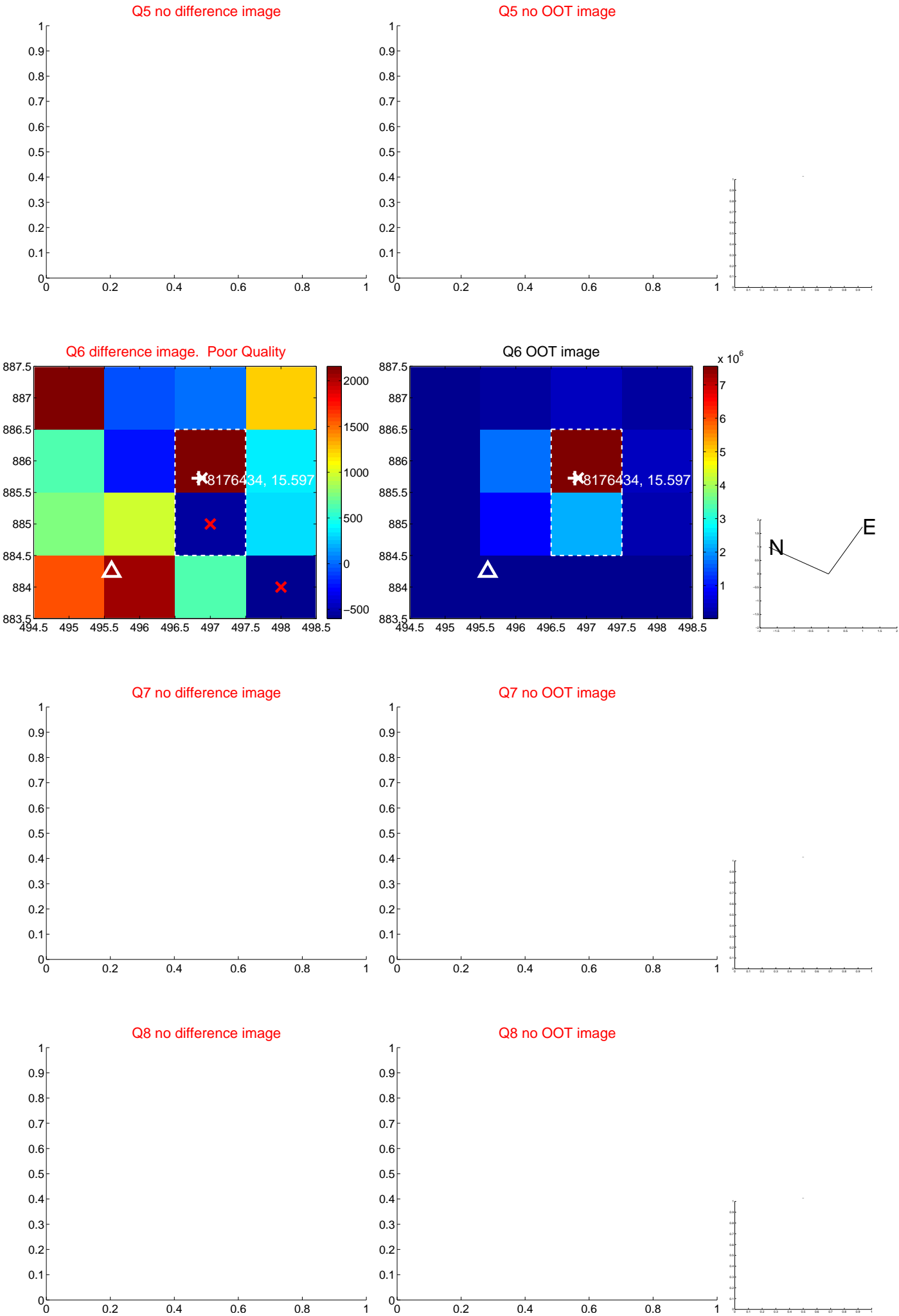
Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: three-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

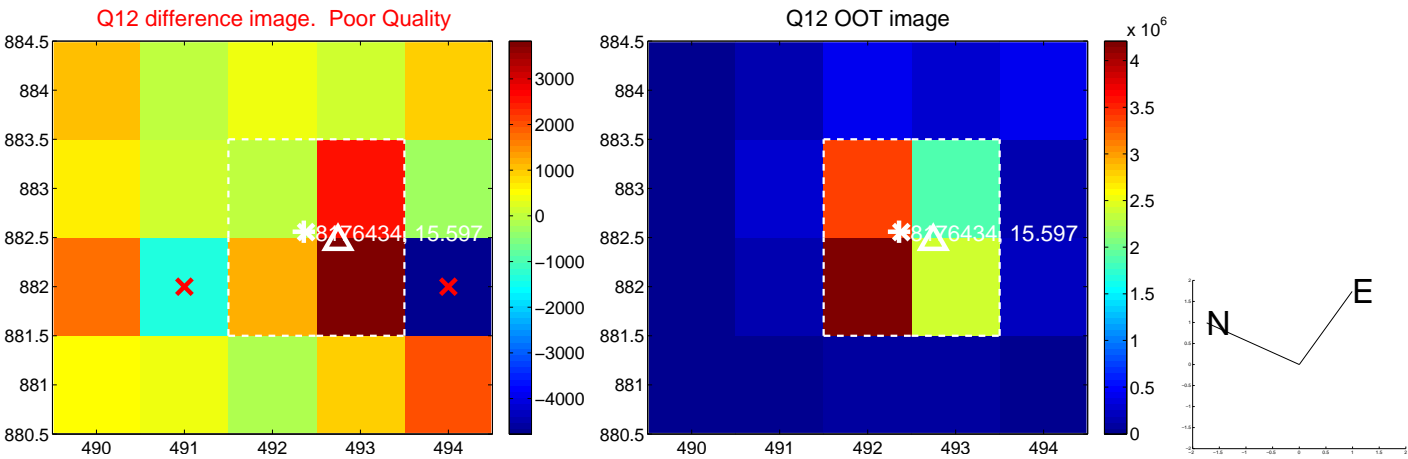
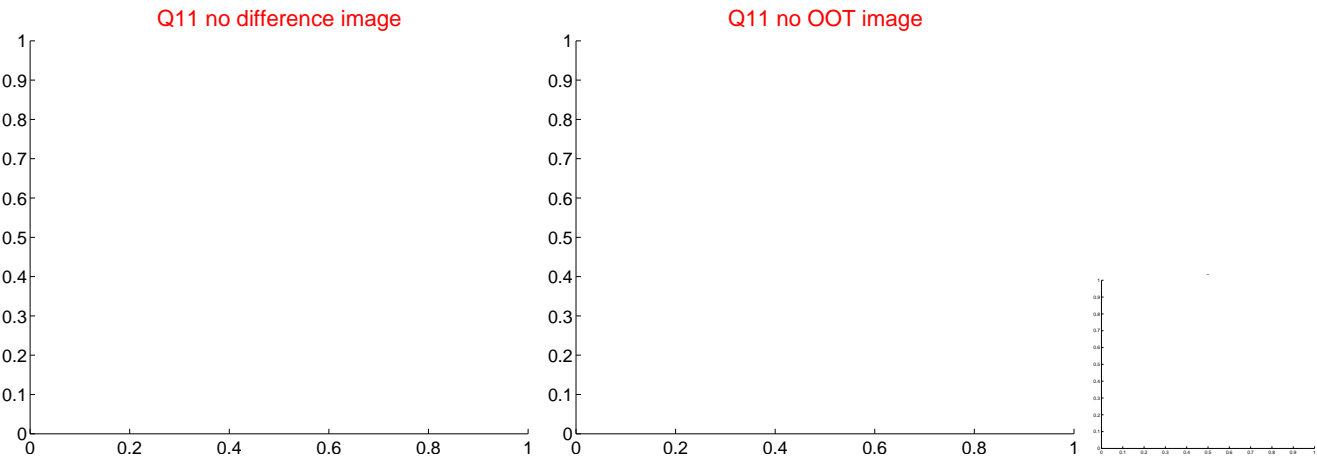
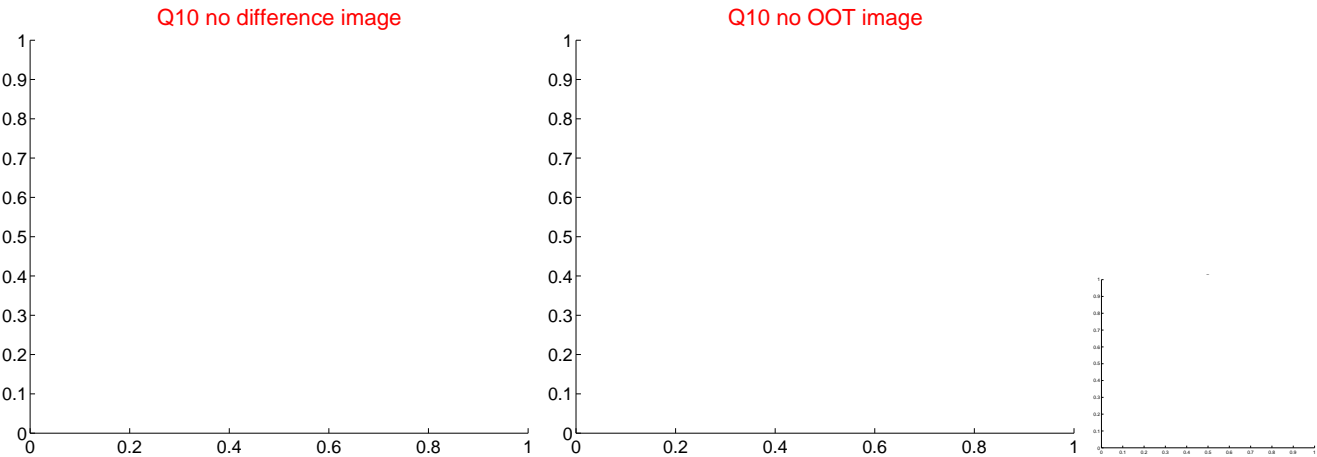
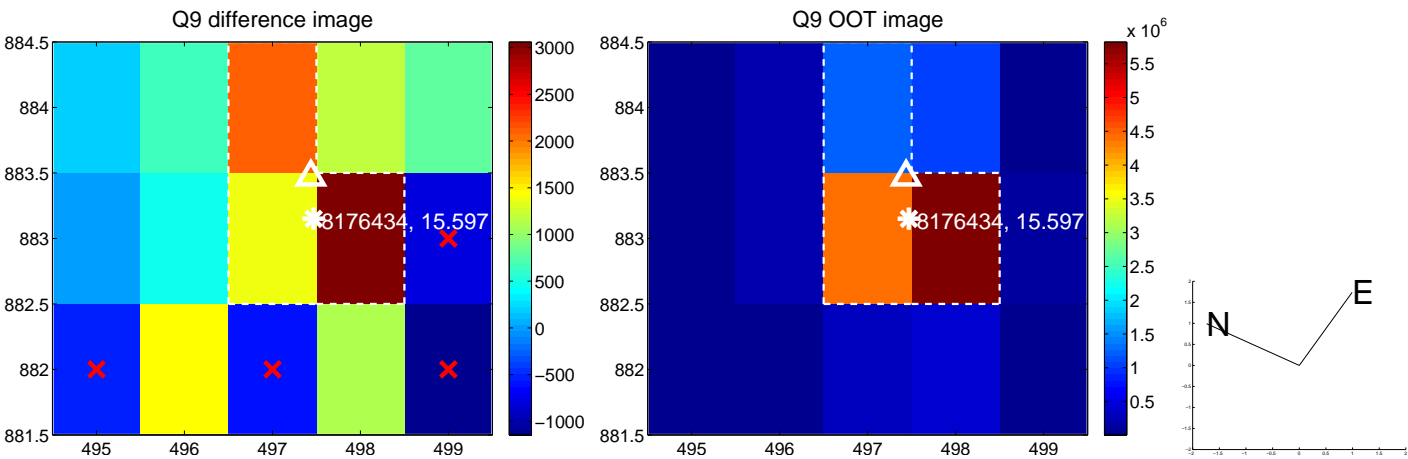




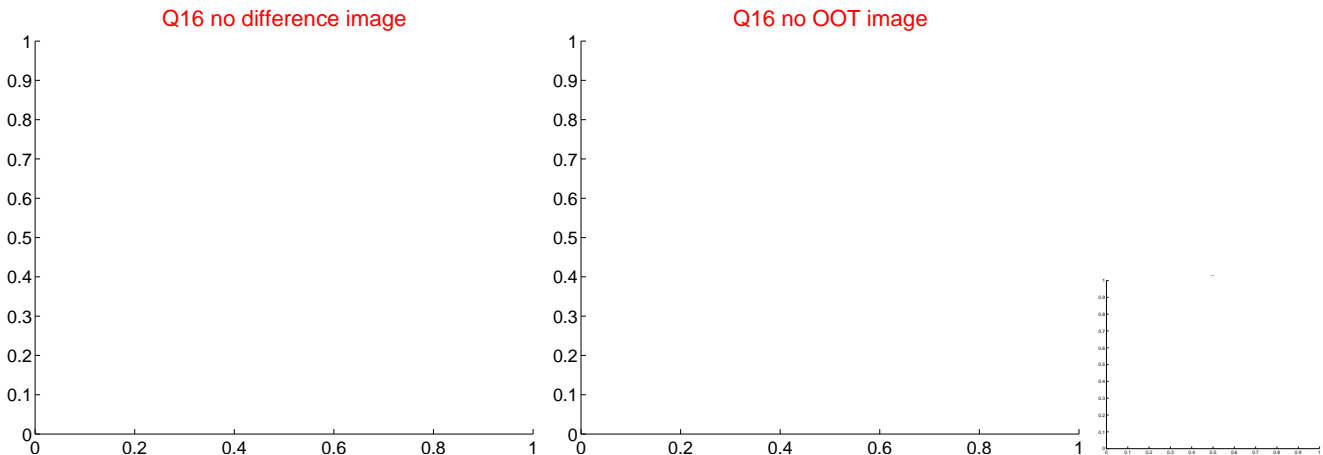
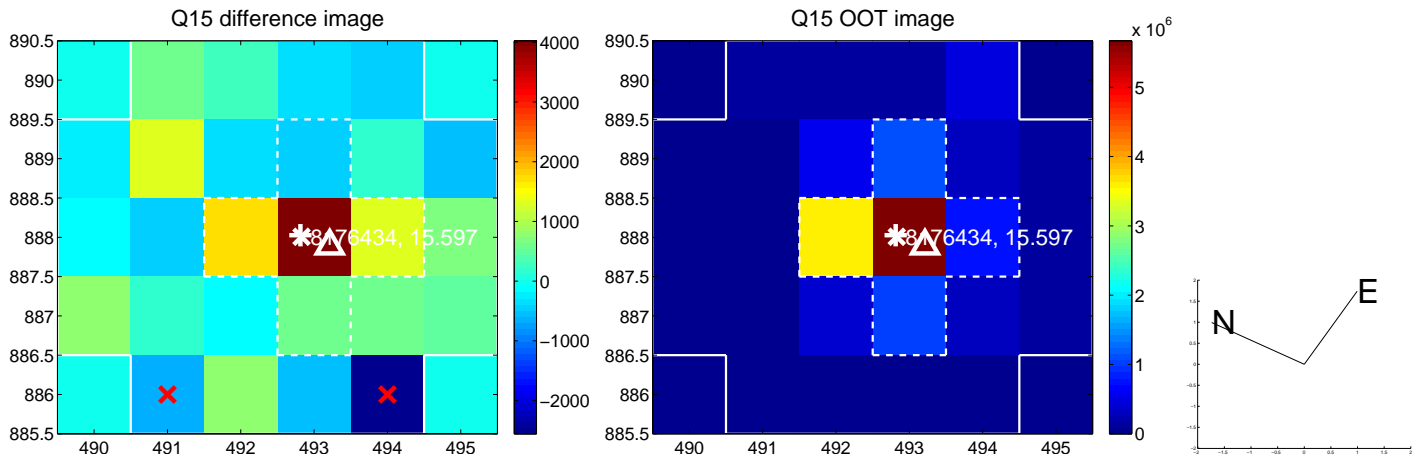
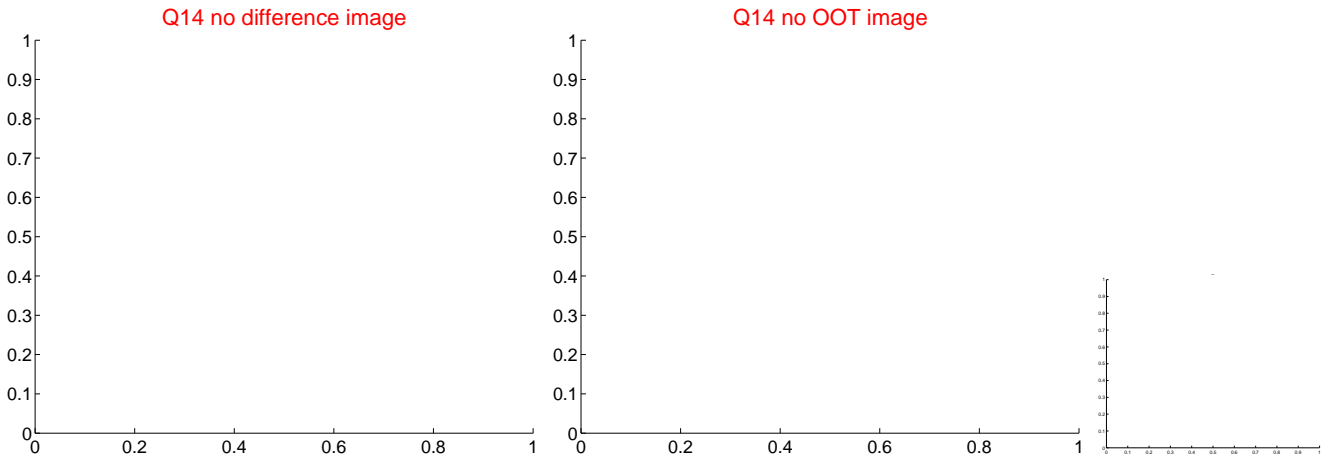
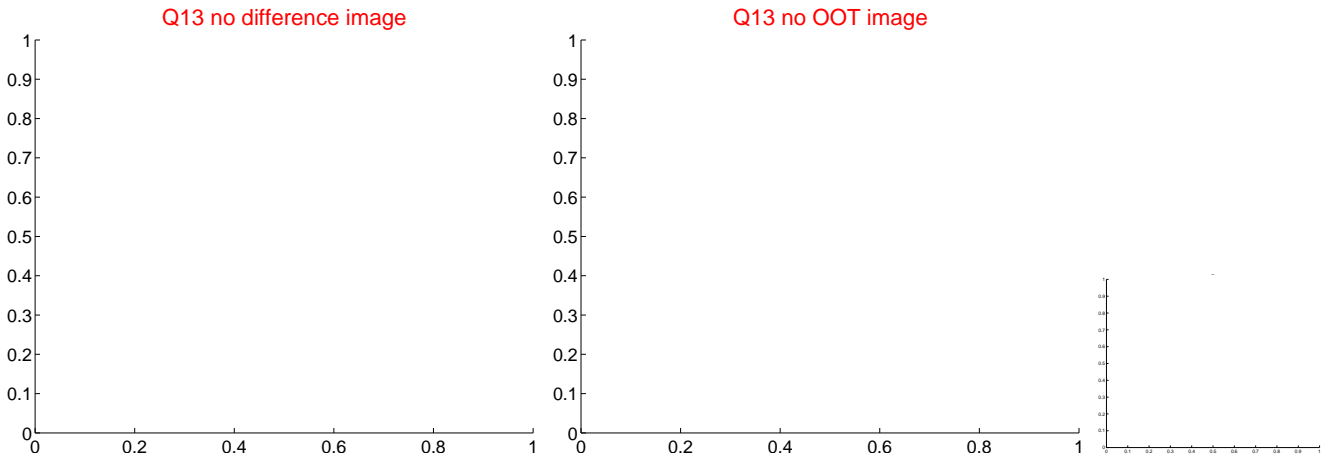
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



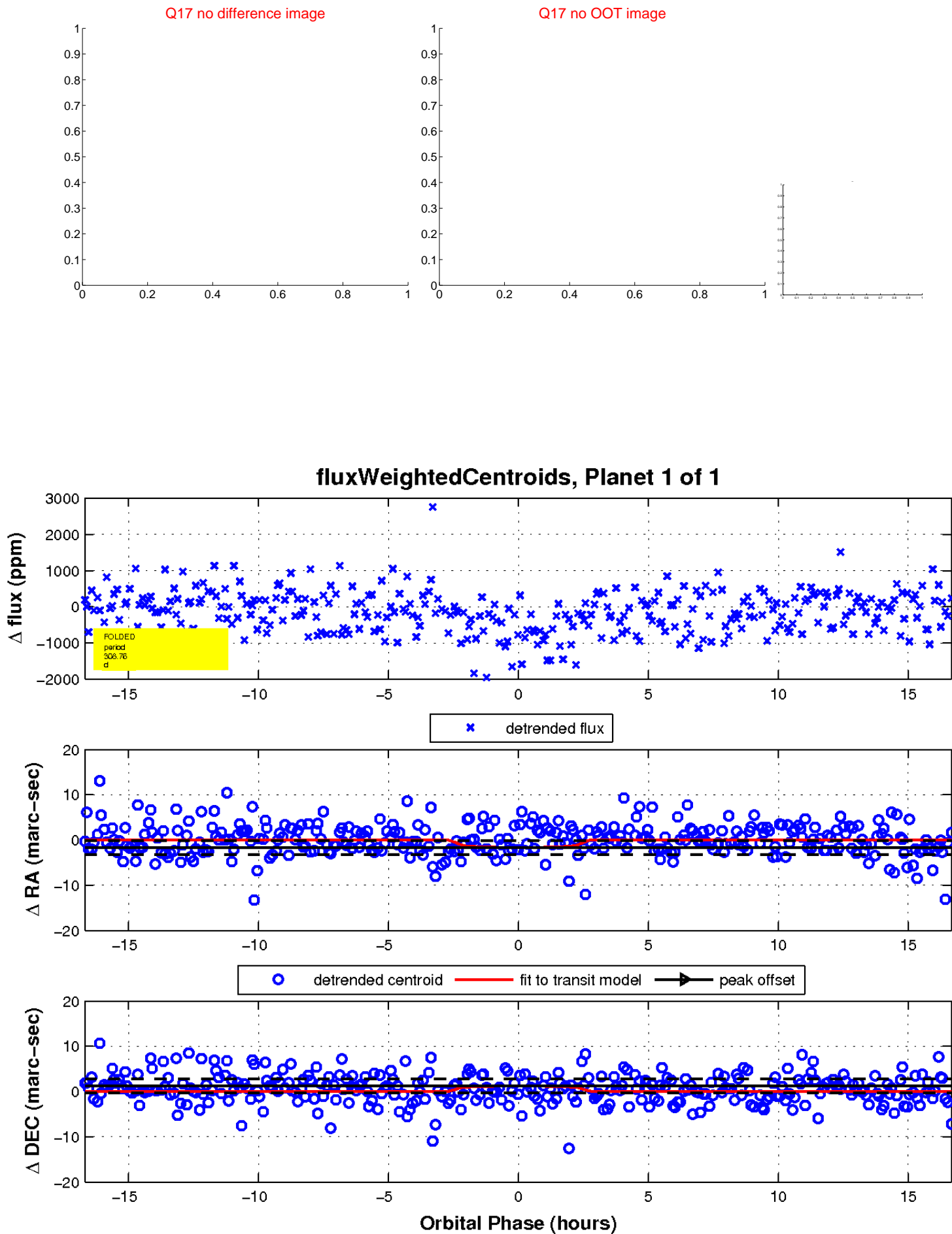
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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



# UKIRT Image

Declination

