

# KIC 008879831

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
008879831-01	OBS	No	377.228295	168.756631	226.8	48.919	7.2	7.4	1.53	6588	2.67	3.20

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008879831-01	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_MARSHALL_SKYE—ALL_TRANS_CHASES—CENT_FEW_DIFFS—HALO_GHOST

**Notes:** OBS = Observed. INJ = Injected. INV = Inverted. SCR = Scrambled.

N = Not Transit-Like. S = Stellar Eclipse. C = Centroid Offset. E = Ephemeris Match.

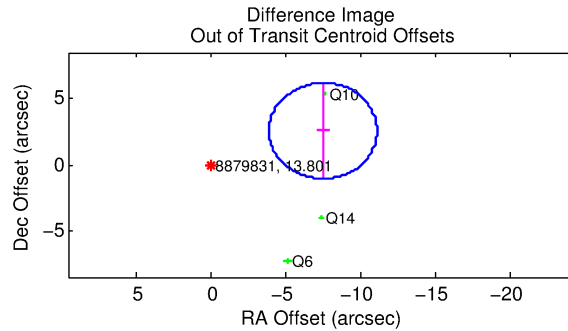
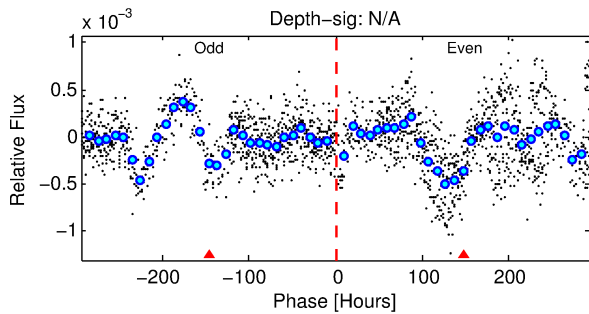
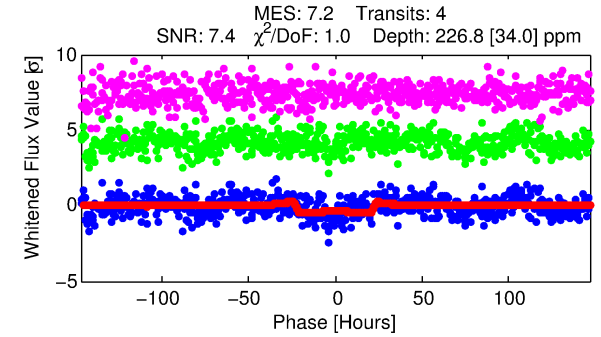
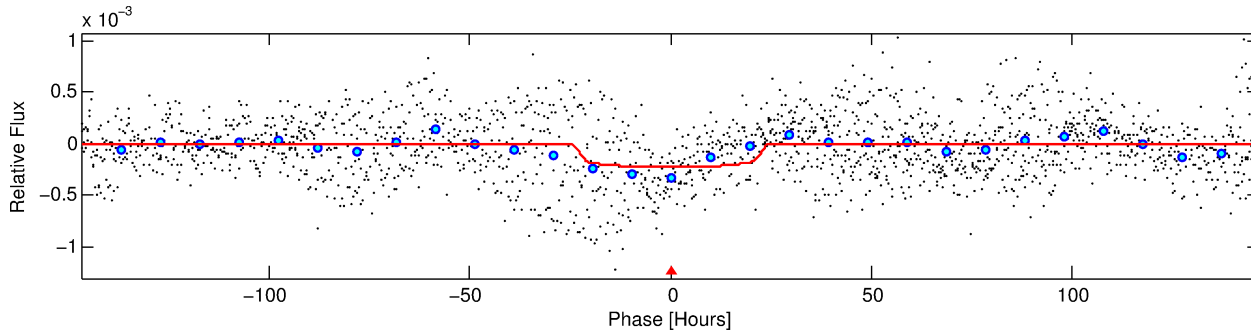
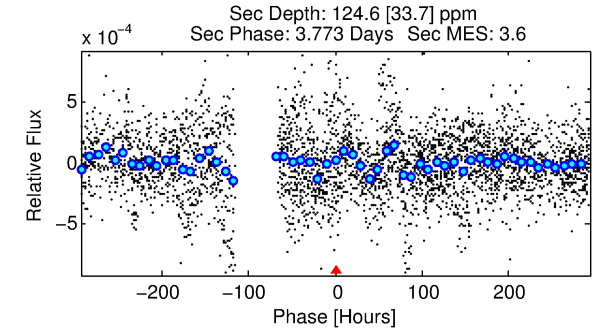
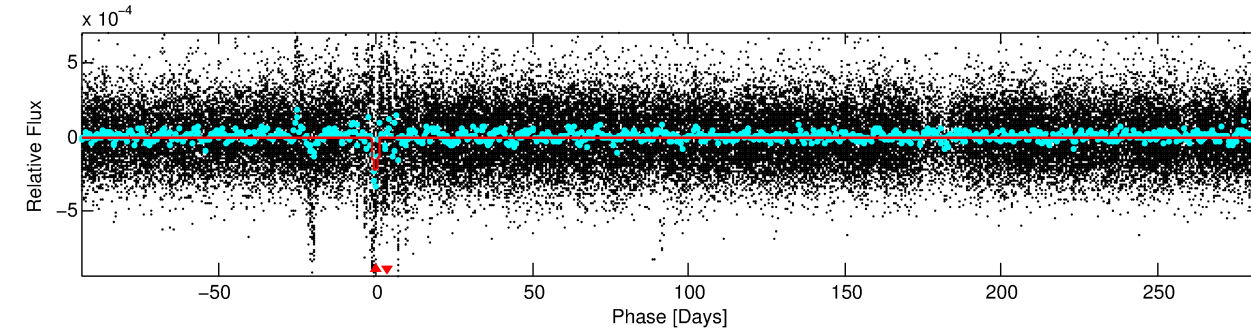
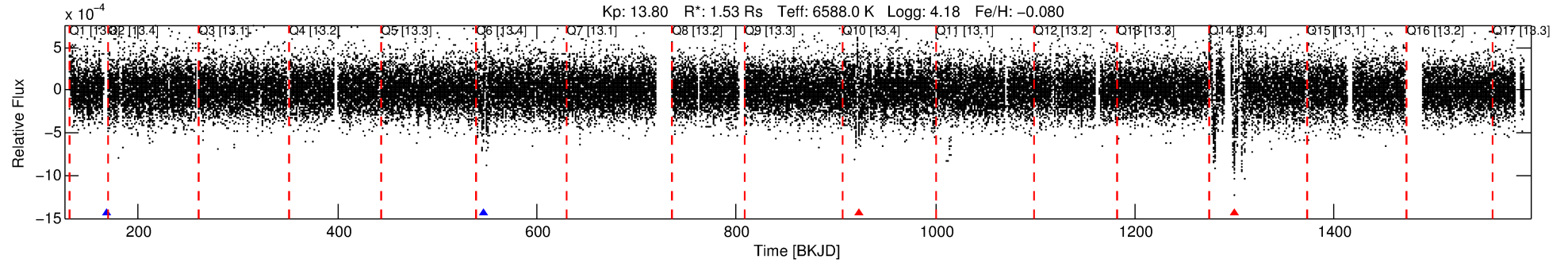
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 008879831-01

No Significant Match Found

# DV One-Page Summary

KIC: 8879831 Candidate: 1 of 1 Period: 377.228 d



## DV Fit Results:

Period = 377.22829 [0.03980] d  
Epoch = 168.7566 [0.0814] BKJD  
Rp/R\* = 0.0160 [0.0017]  
a/R\* = 29.01 [11.55]  
b = 0.89 [0.09]  
Seff = 3.20 [1.25]  
Teff = 341 [33] K  
Rp = 2.67 [0.89] Re  
a = 1.1119 [0.2885] AU  
Ag = 11907.37 [6019.04] [1.98 $\sigma$ ]  
Teffp = 5508 [507] K [10.16 $\sigma$ ]

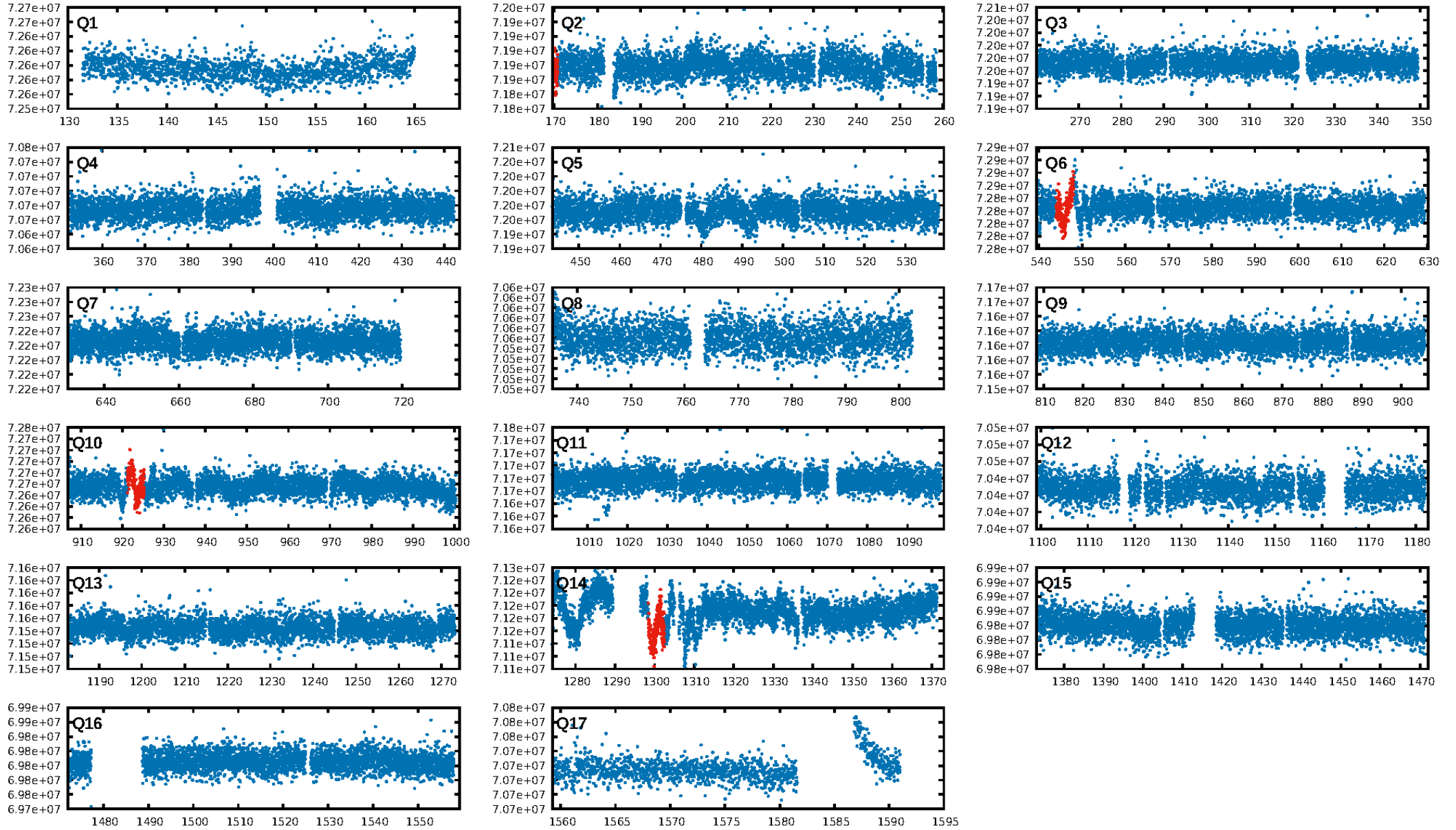
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: 96.3%  
ModelChiSquareGof-sig: 100.0%  
Bootstrap-pfa: 3.46e-09  
RollingBand-fgt: 0.50 [2/4]  
GhostDiagnostic-chr: 0.1771  
Centroid-sig: 0.1%  
Centroid-so: 6.728 arcsec [2.99 $\sigma$ ]  
OotOffset-rm: 7.959 arcsec [6.60 $\sigma$ ]  
KicOffset-rm: 7.907 arcsec [5.71 $\sigma$ ]  
OotOffset-st: 3/0/0/0 [3]  
KicOffset-st: 3/0/0/0 [3]  
DiffImageQuality-fgm: 0.00 [0/3]  
DiffImageOverlap-fno: 1.00 [3/3]

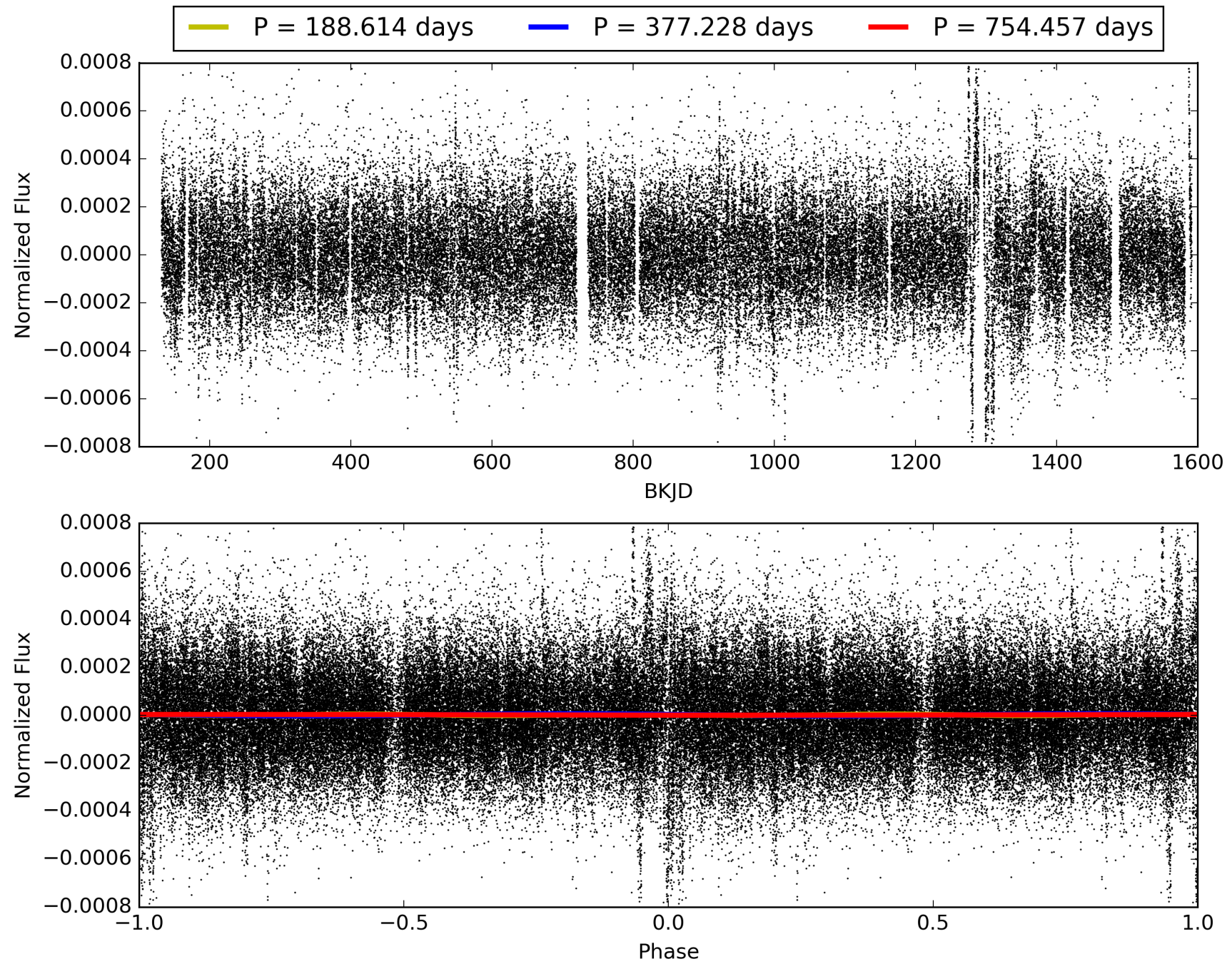
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 13:35:07 Z

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

# TCE 008879831-01, PDC Light Curves

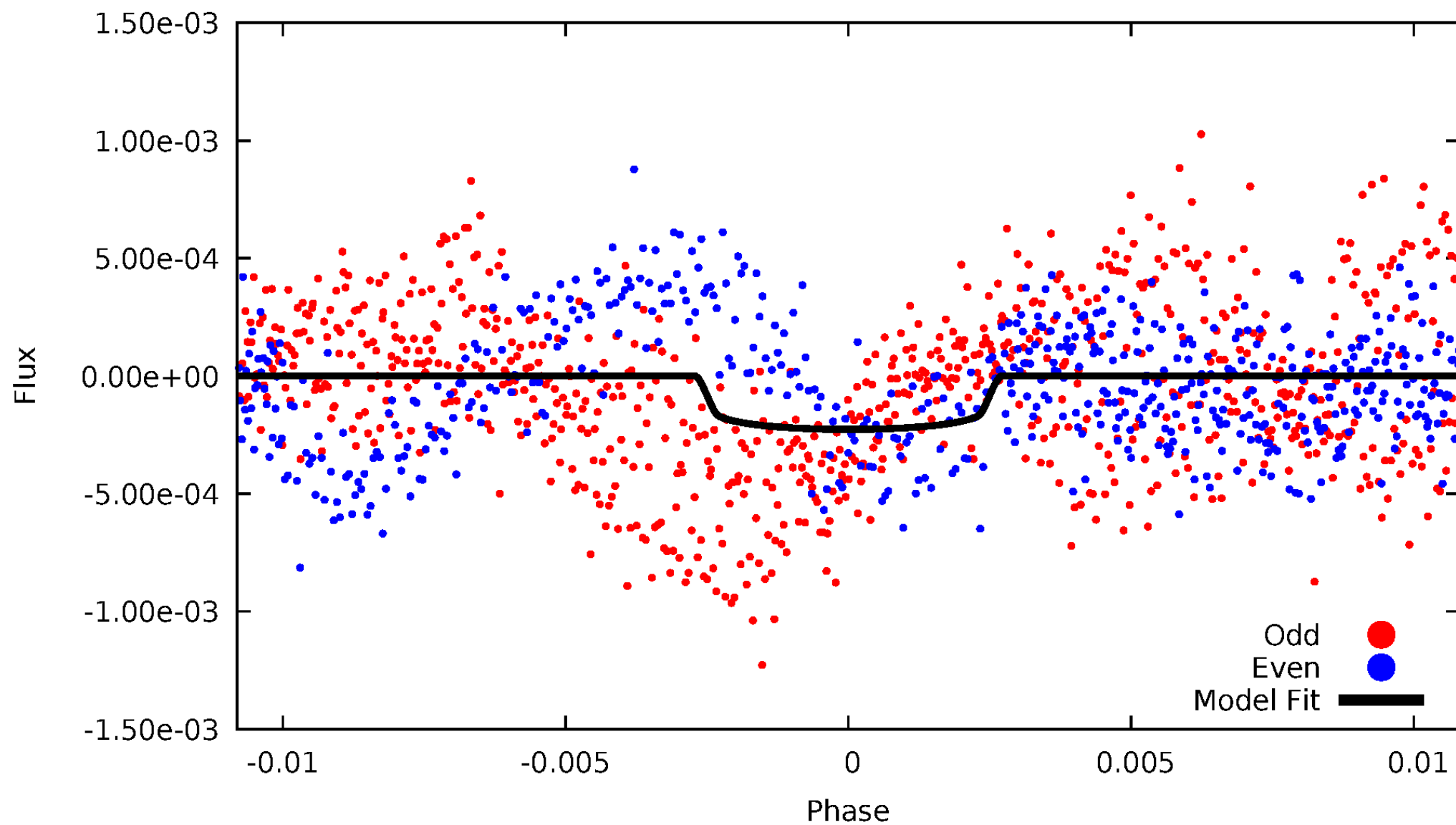


TCE 008879831-01



# DV Odd/Even

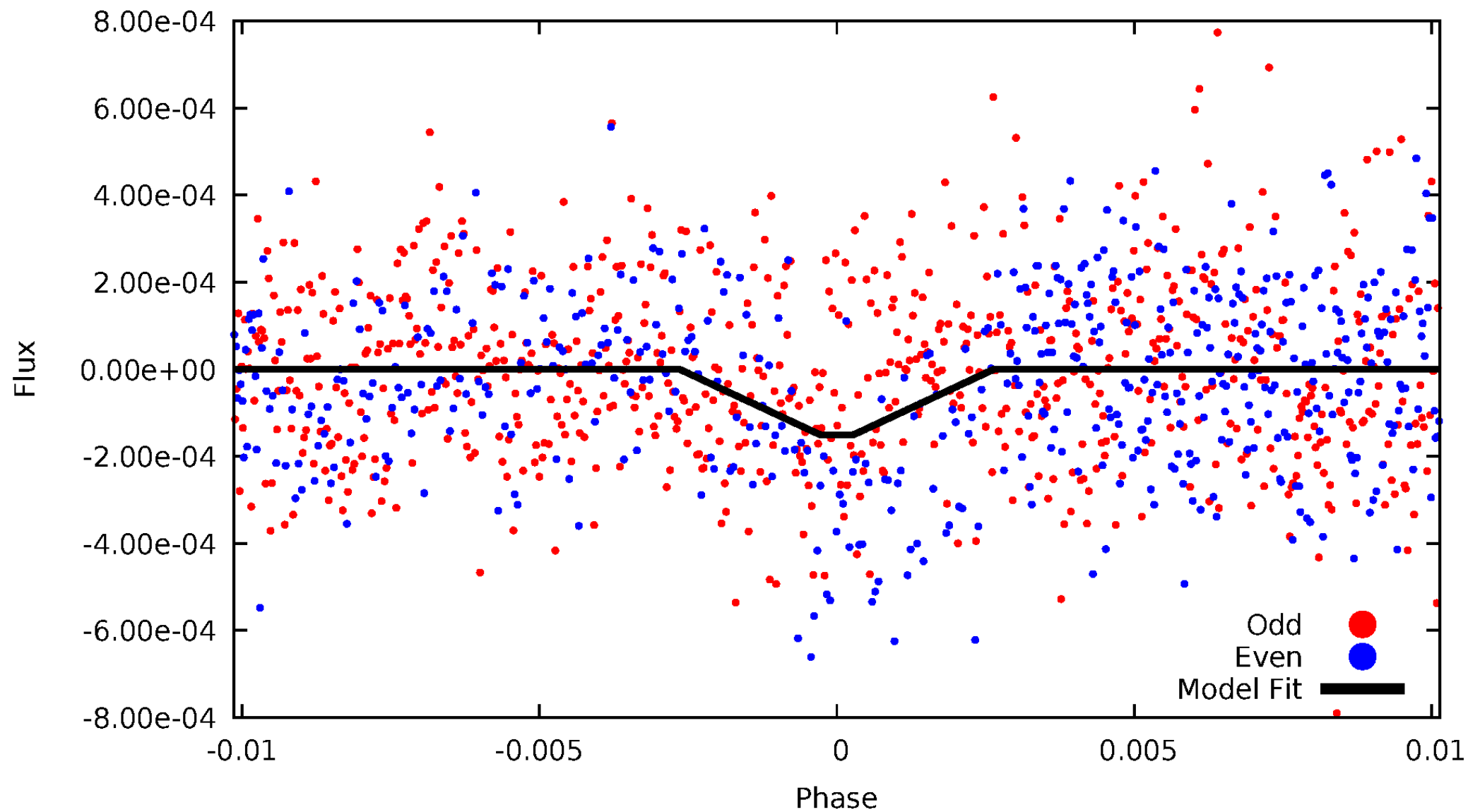
TCE 008879831-01





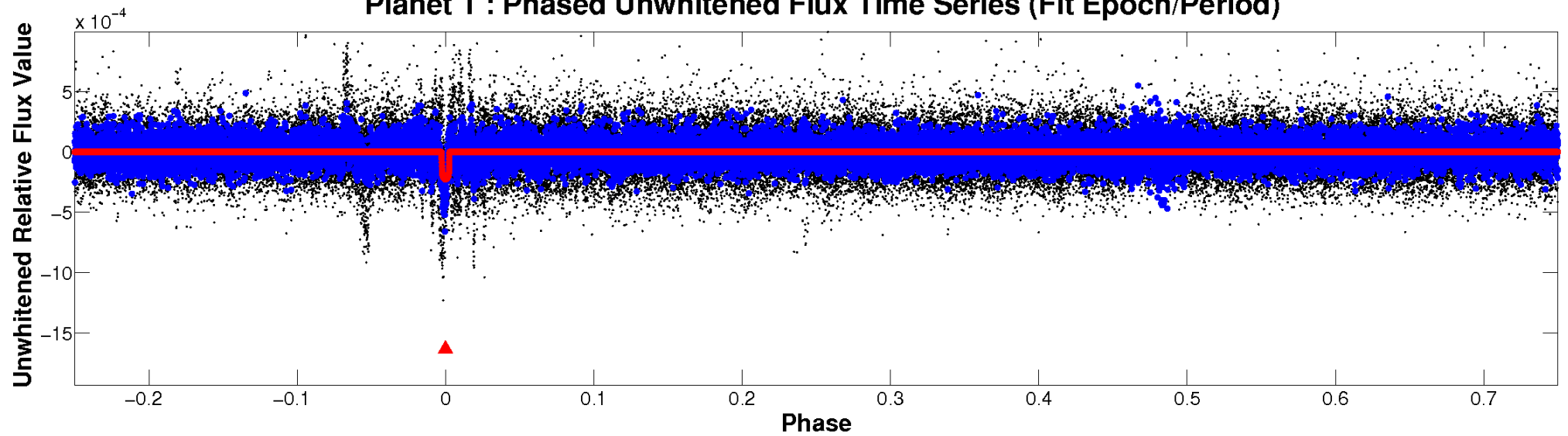
# ALT Odd/Even

TCE 008879831-01

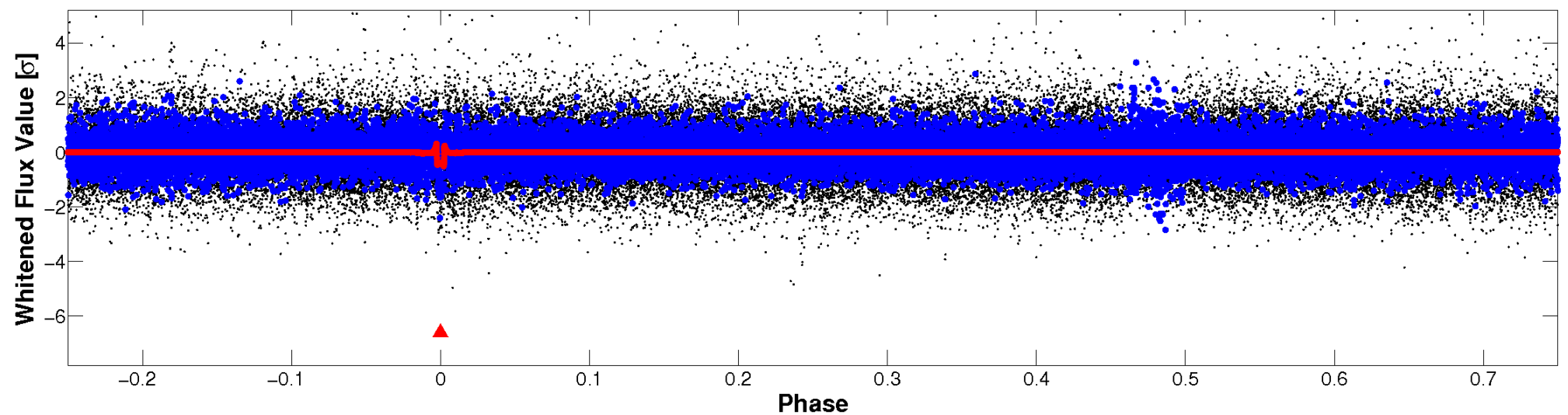


# Non-Whitened Vs. Whitened Light Curve

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

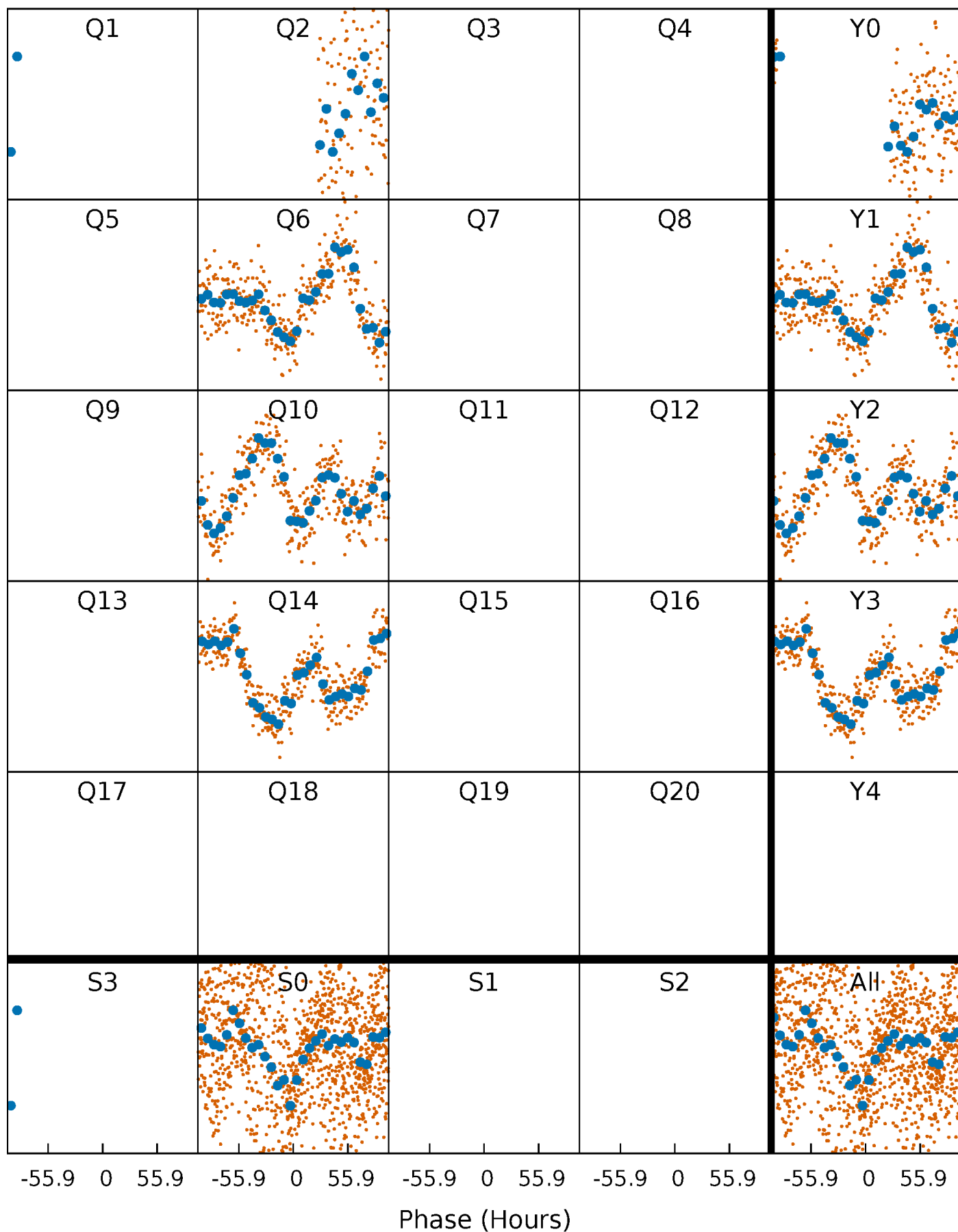


**Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)**



# PDC Quarter-Phased Transit Curves

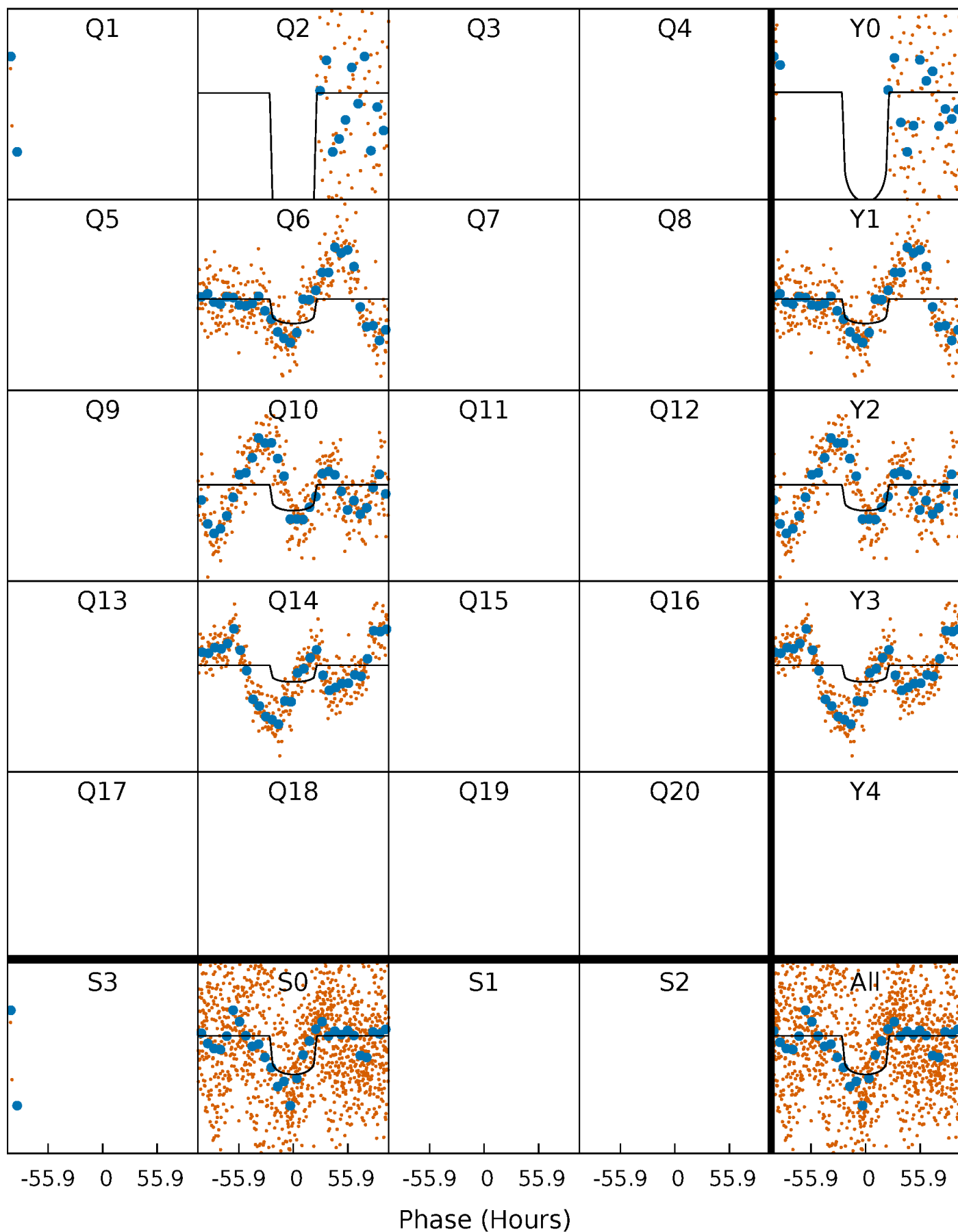
TCE 008879831-01 P=377.228295 Days  $T_0=168.756631$  (BKJD)





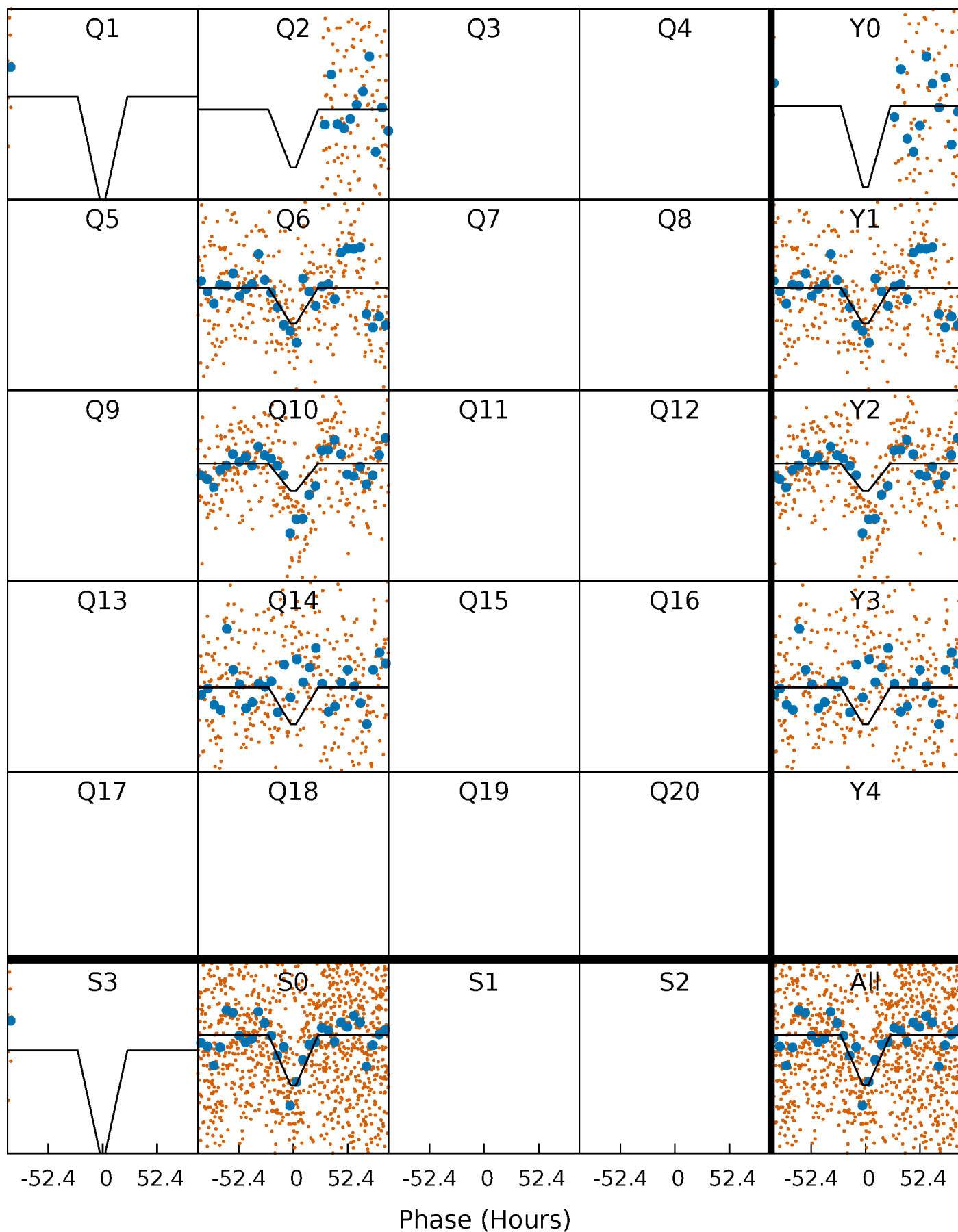
# DV Quarter-Phased Transit Curves

TCE 008879831-01 P=377.228295 Days  $T_0=168.756631$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

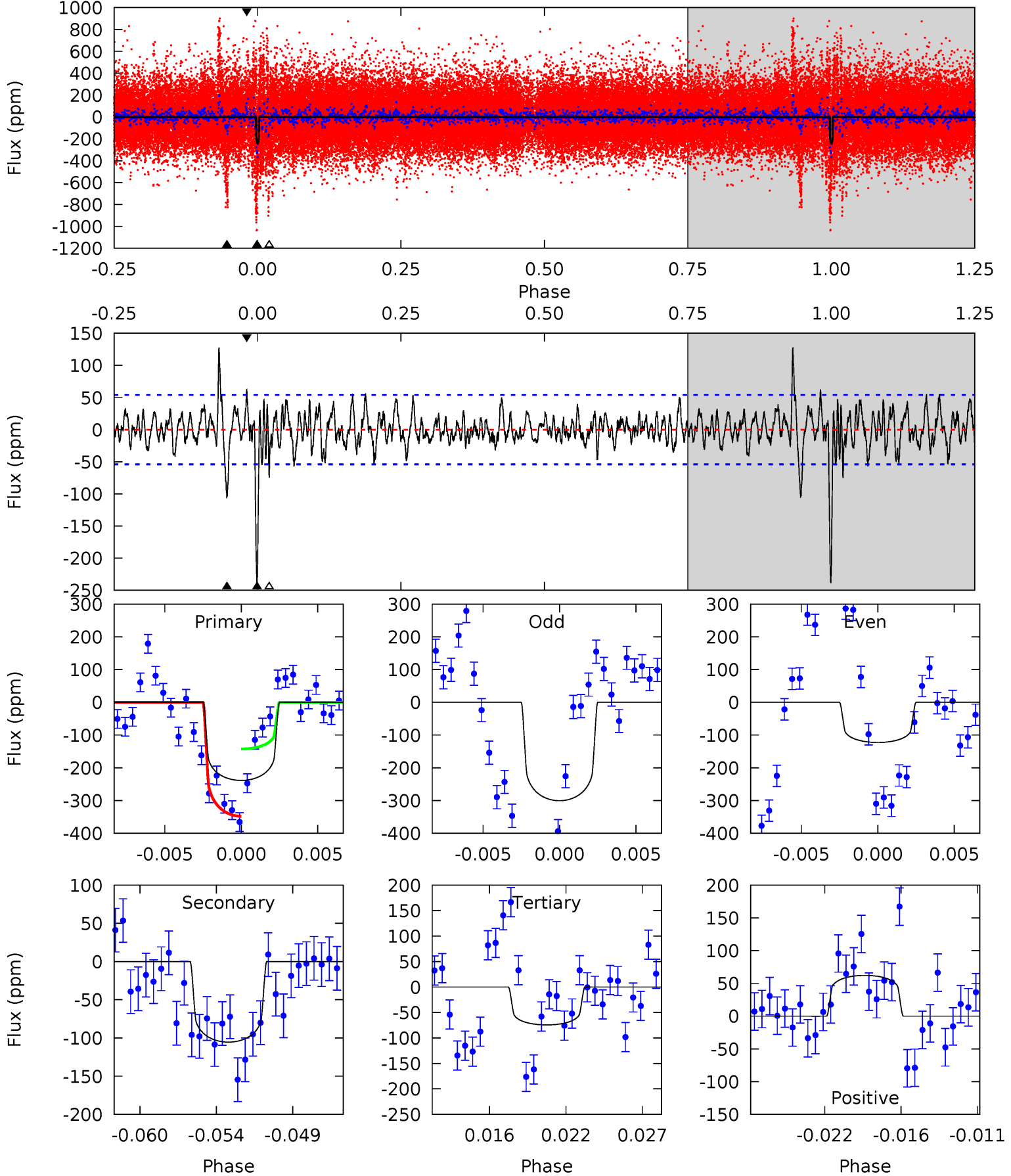
TCE 008879831-01 P=377.292063 Days  $T_0=168.631000$  (BKJD)



# DV Model-Shift Uniqueness Test

008879831-01, P = 377.228295 Days, E = 168.756631 Days

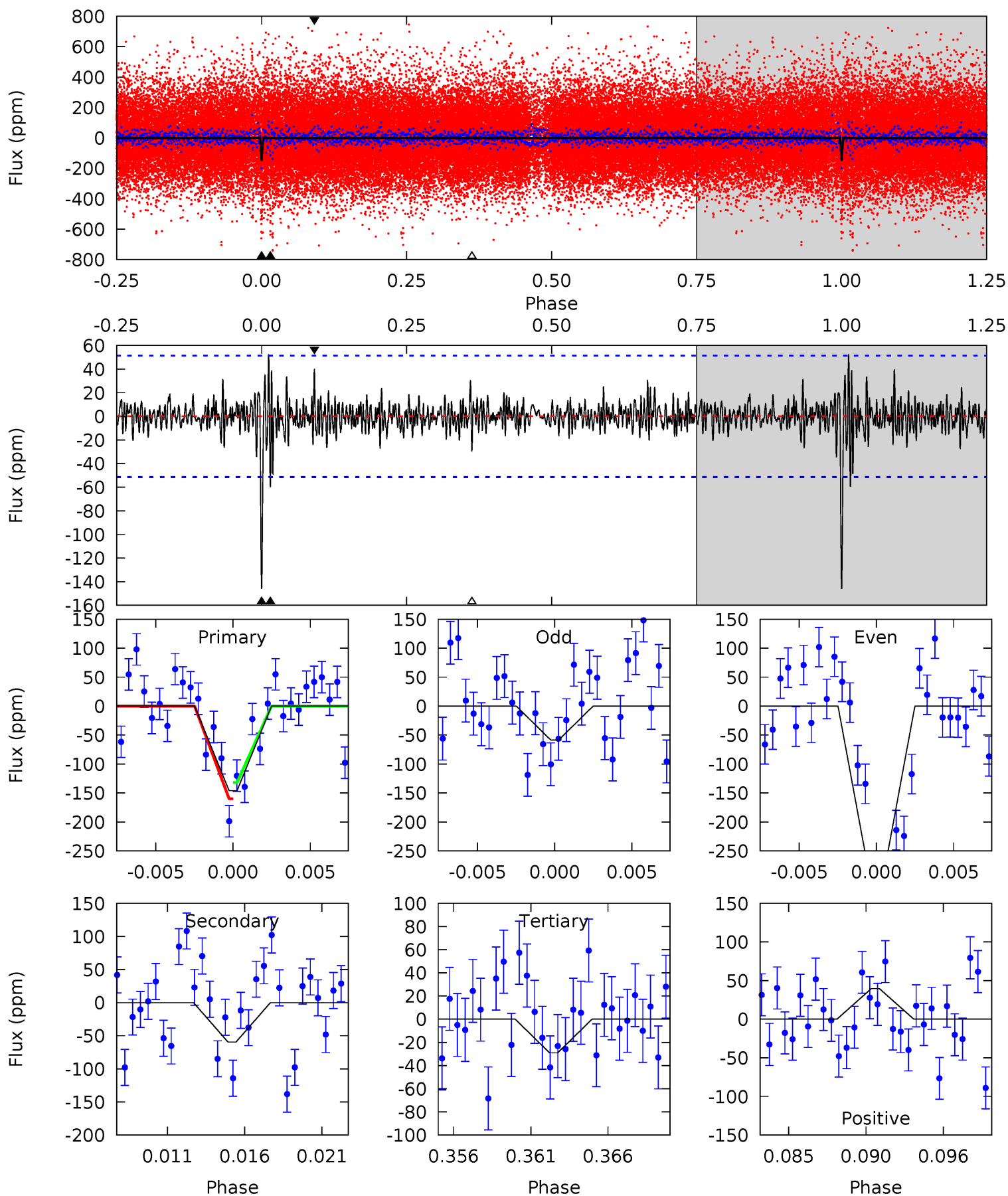
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
22.7	10.0	7.08	5.92	5.14	2.78	1.95	15.6	16.8	2.94	4.11	8.06	1.00	0.35	9.69



# Alt Model-Shift Uniqueness Test

008879831-01, P = 377.292063 Days, E = 168.631000 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
14.6	5.95	2.91	3.96	5.15	2.79	0.89	11.7	10.6	3.04	1.99	12.4	0.89	0.26	1.39



### Stellar Parameters For KIC 008879831

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$6588^{+155}_{-214}$	$4.178^{+0.162}_{-0.198}$	$-0.080^{+0.250}_{-0.300}$	$1.531^{+0.483}_{-0.362}$	$1.292^{+0.181}_{-0.221}$	$0.507^{+0.477}_{-0.244}$
	+2%/-3%	+4%/-5%	+312%/-375%	+32%/-24%	+14%/-17%	+94%/-48%
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 008879831-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	$A_{obs}$
DV	$-105 \pm 11$	$2.71^{+0.48}_{-0.47}$	$478^{+39}_{-29}$	$5303^{+363}_{-275}$	$9824^{+4176}_{-2954}$
Alt.	$-60 \pm 10$	$2.08^{+0.44}_{-0.40}$	$478^{+36}_{-34}$	$5241^{+457}_{-378}$	$9442^{+4523}_{-3008}$

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

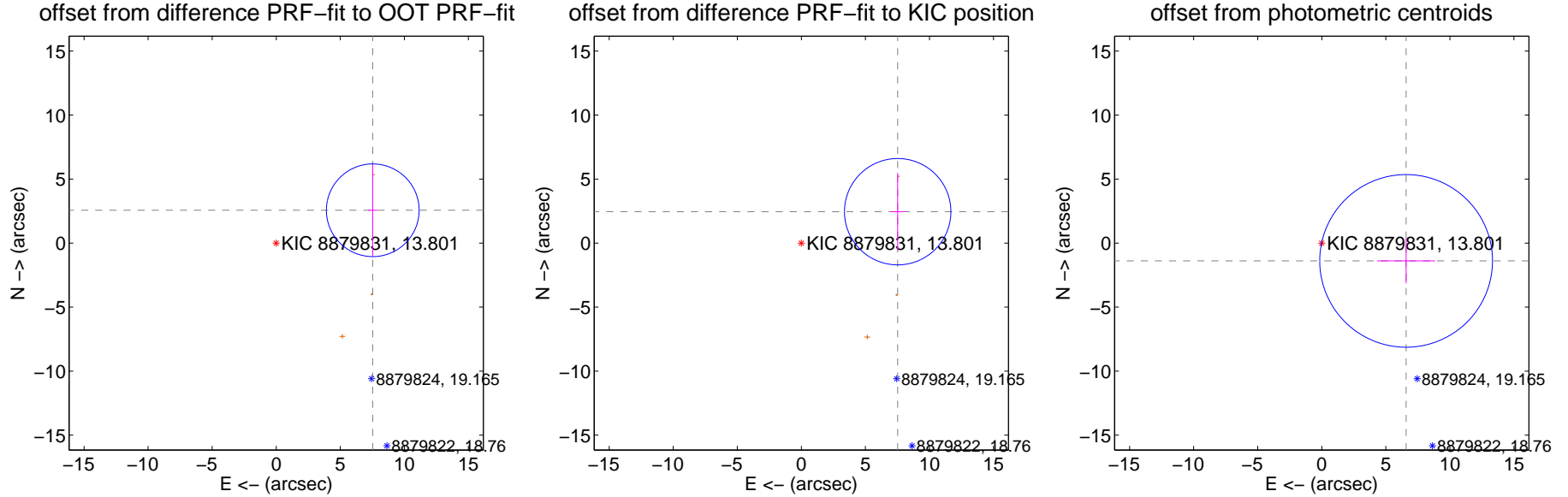
## DV Centroid Data

Supplemental centroid analysis for 008879831-01. Kepler magnitude: 13.80. Transit SNR 7.37

There are 0 quarters with good PRF difference image offsets

The direct PRF centroid is offset from the target star catalog position by about 0.06 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$7.959 \pm 1.206$	6.60	$-7.535 \pm 0.366$	$2.563 \pm 3.588$
PRF-fit source offset from KIC position	$7.907 \pm 1.384$	5.71	$-7.518 \pm 0.571$	$2.452 \pm 3.033$
photometric centroid source offset	$6.73 \pm 2.25$	2.99	$-6.58 \pm 2.27$	$-1.39 \pm 1.75$



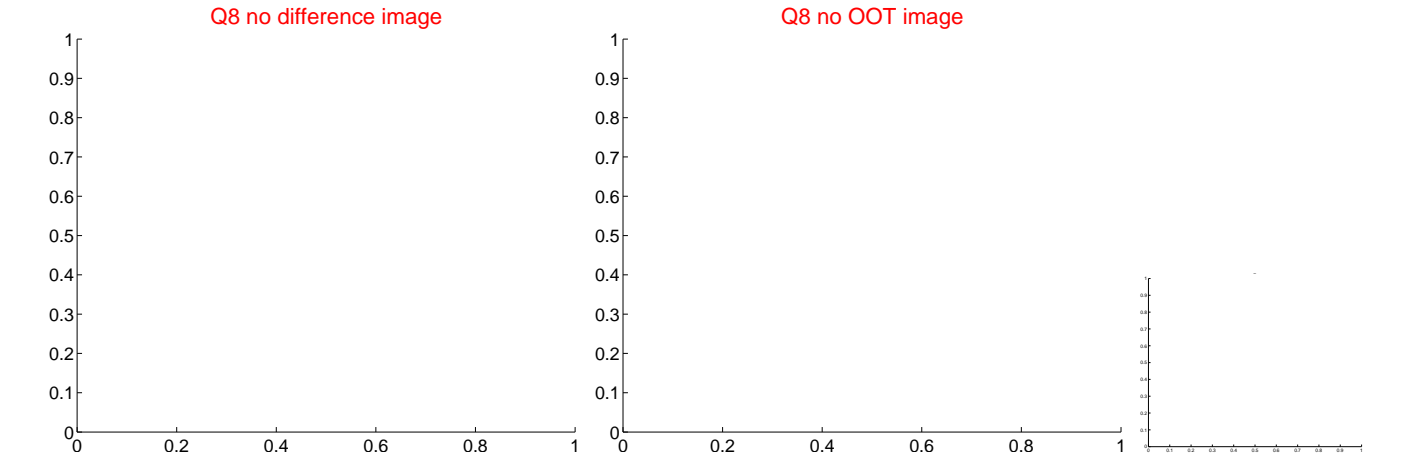
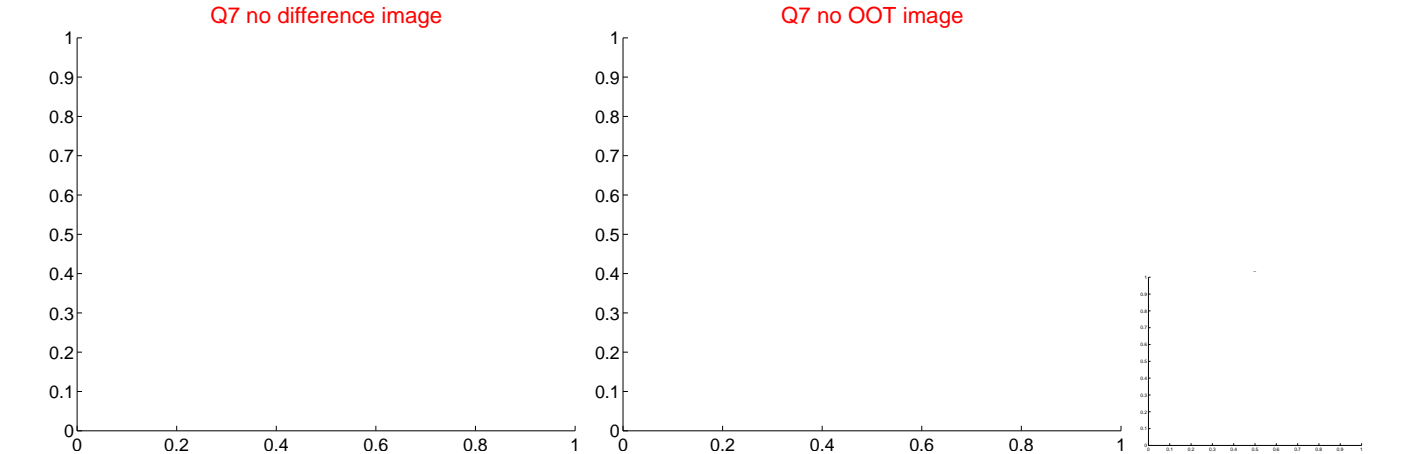
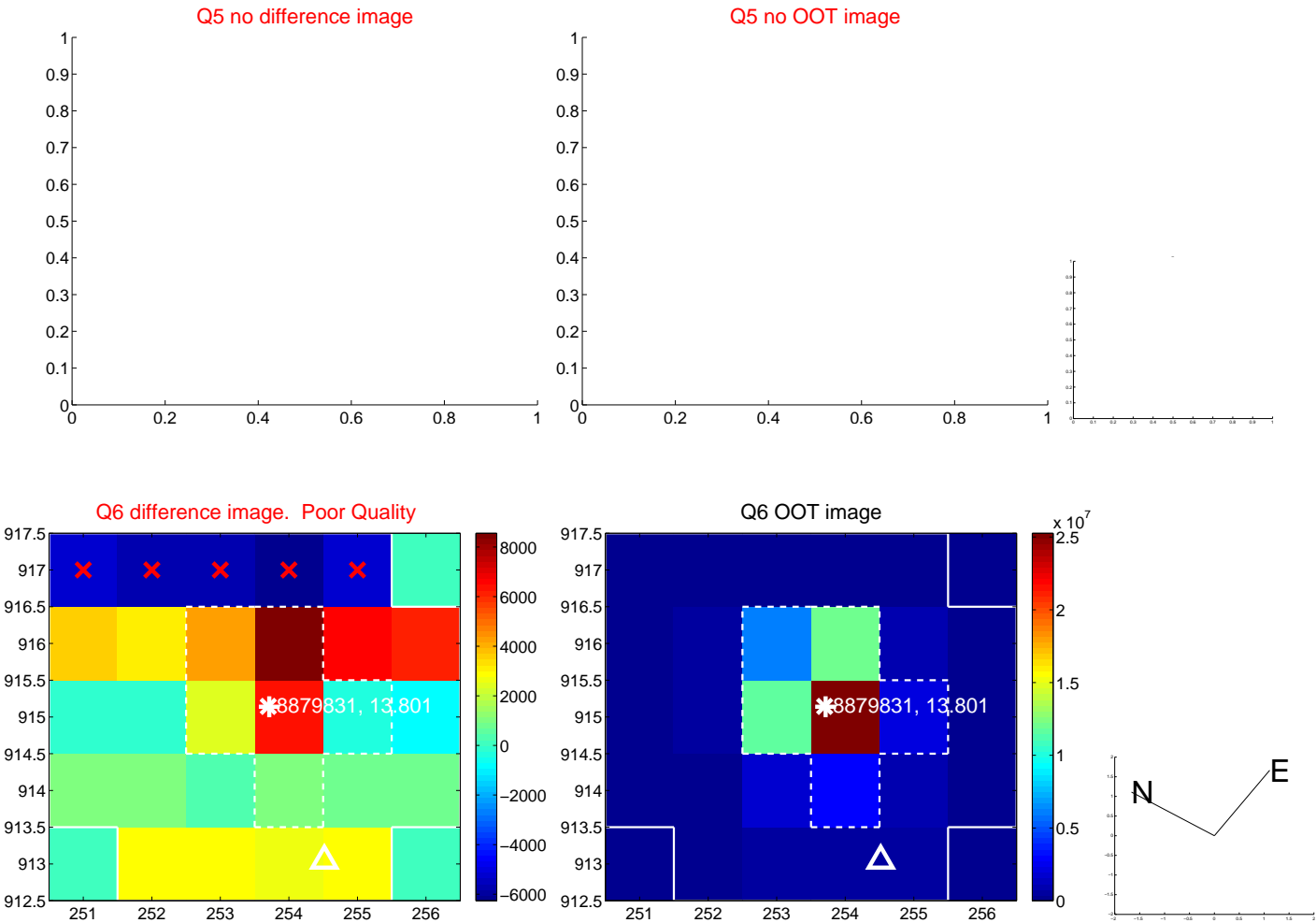
Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: three-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



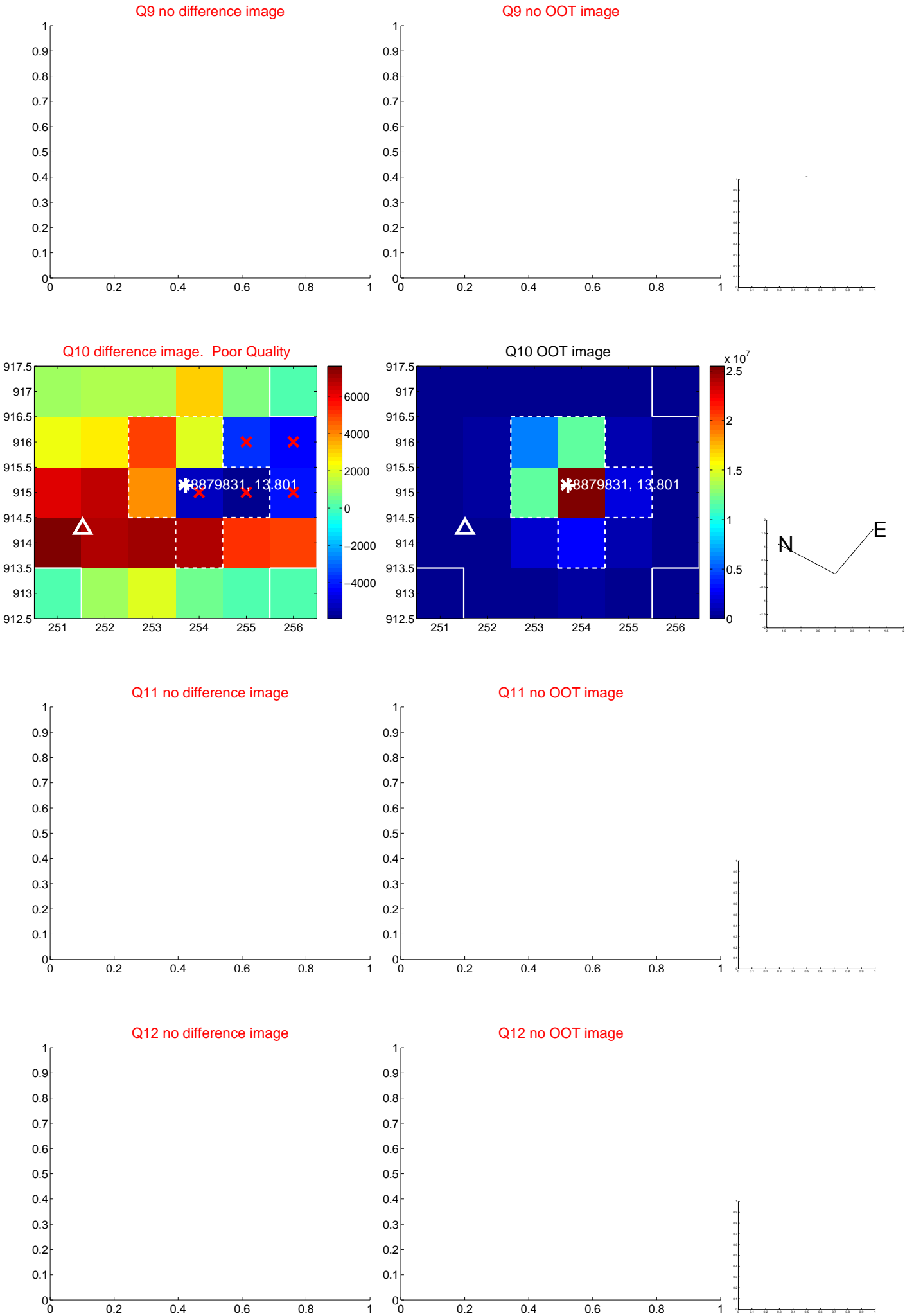
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



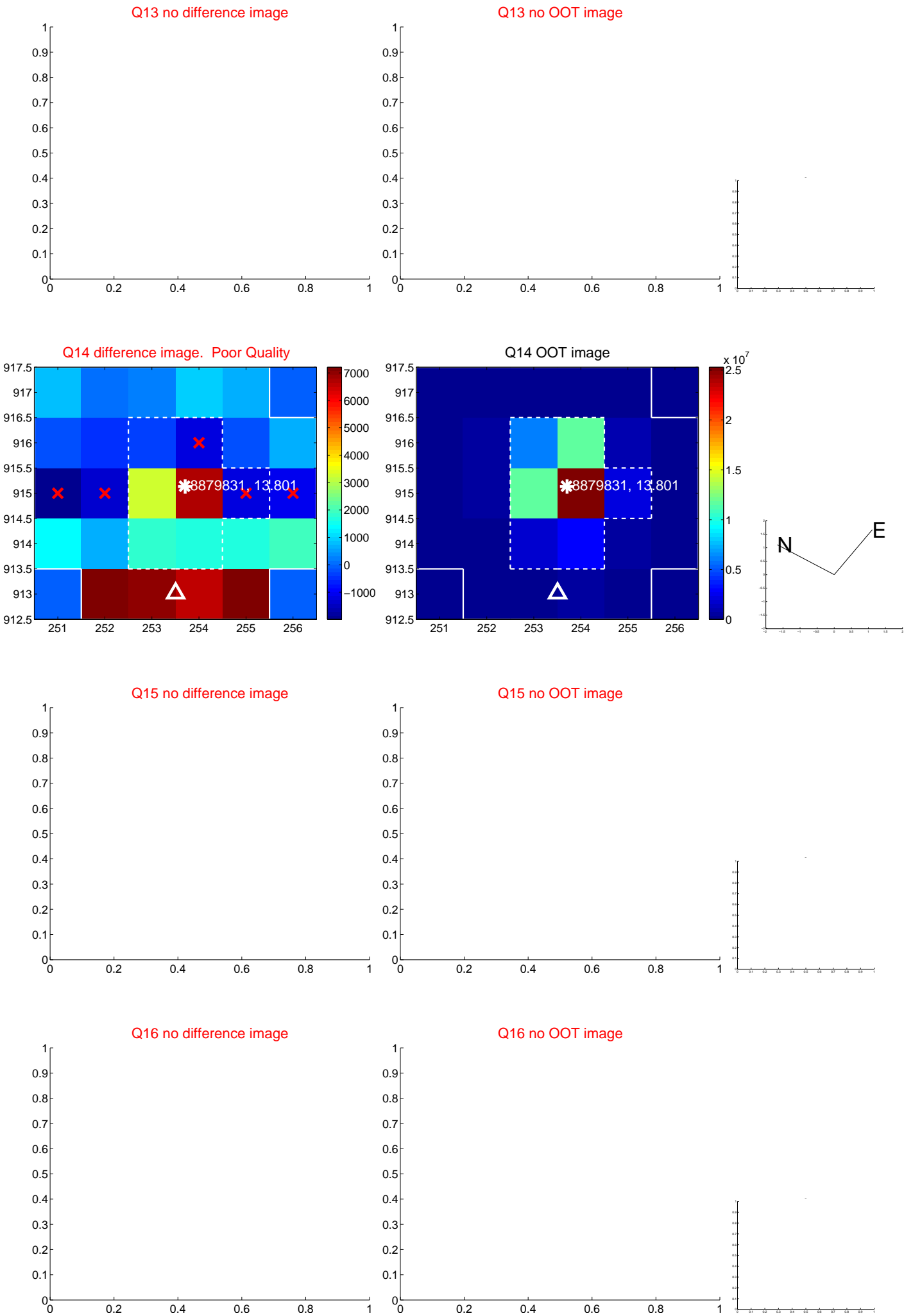
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ✕: large negative pixel value.



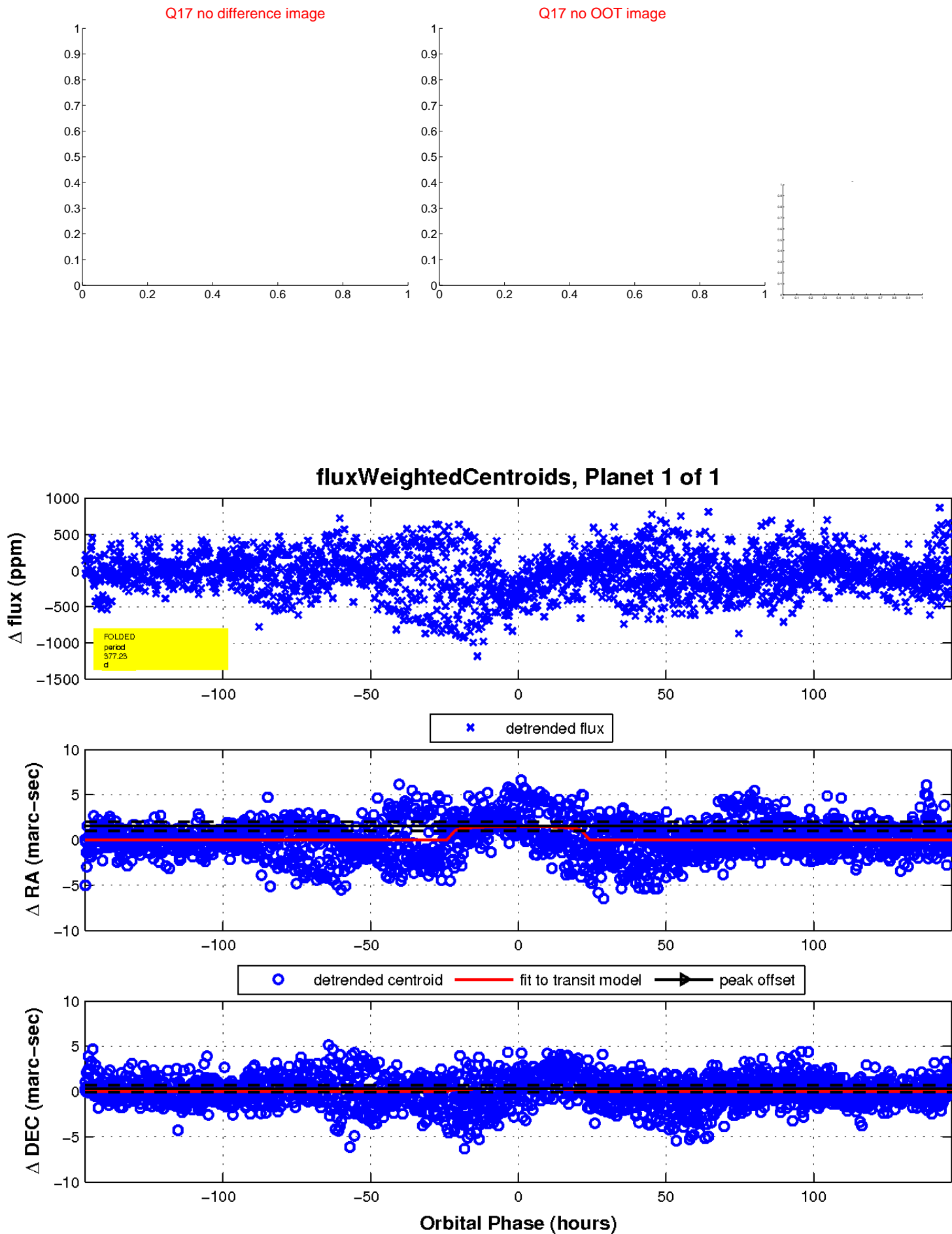
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



white ×: 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.



# UKIRT Image

Declination

