

# KIC 008518250

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
008518250-01	OBS	No	563.648801	363.408933	197.9	3.910	12.7	6.4	0.57	4542	0.95	0.10

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008518250-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—ALL_TRANS_CHASES—MOD_TER_DV—MOD_POS_DV—CENT_SATURATED

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

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

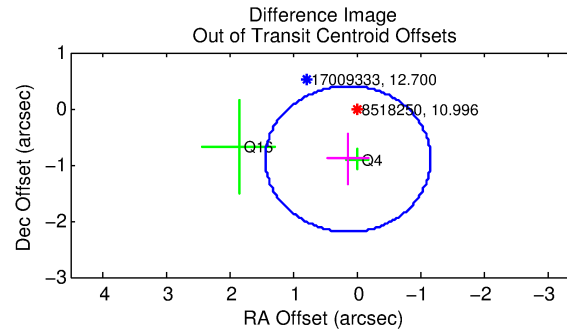
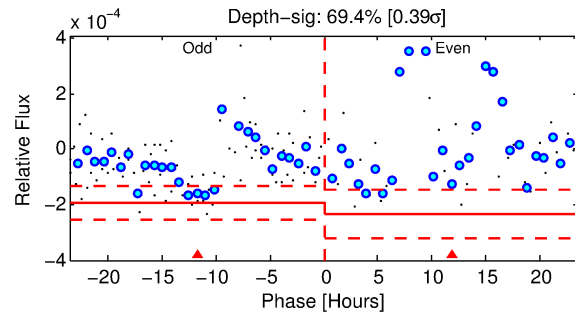
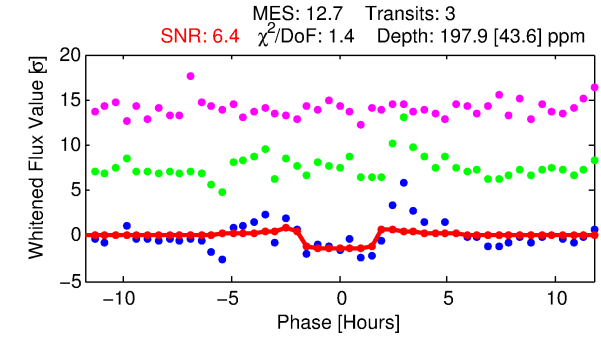
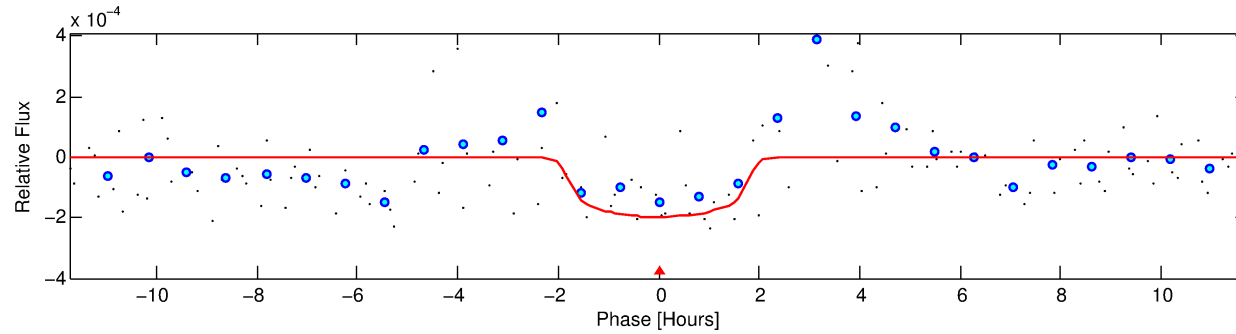
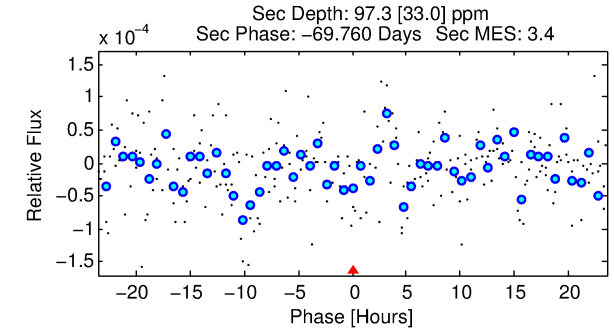
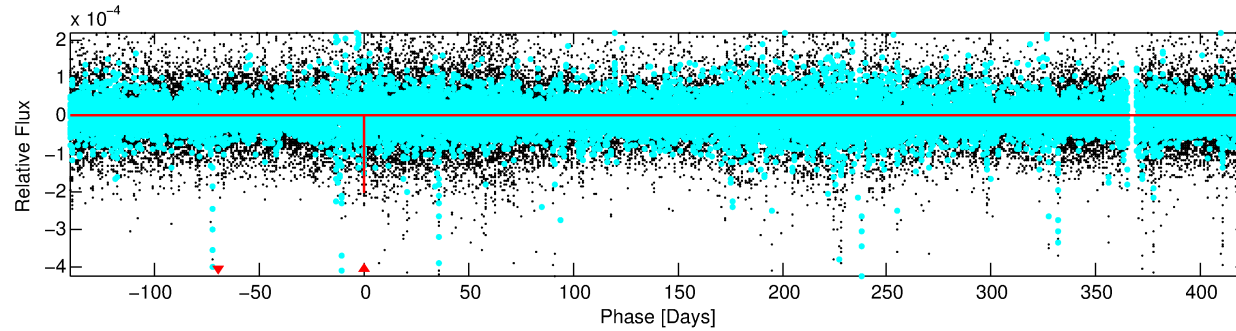
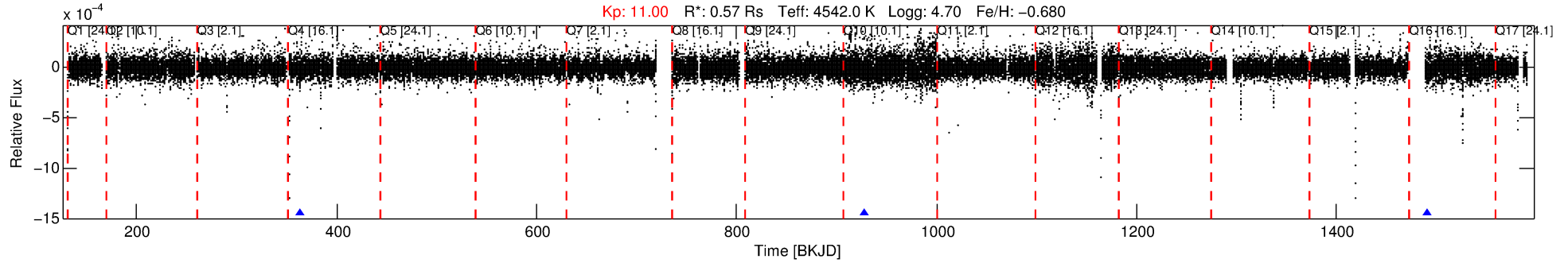
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 008518250-01

No Significant Match Found

# DV One-Page Summary

KIC: 8518250 Candidate: 1 of 1 Period: 563.649 d



## DV Fit Results:

Period = 563.64880 [0.00827] d  
Epoch = 363.4089 [0.0110] BKJD  
 $R_p/R^* = 0.0153$  [0.0133]  
 $a/R^* = 566.15$  [1825.43]  
 $b = 0.88$  [0.88]  
 $S_{\text{eff}} = 0.10$  [0.02]  
 $T_{\text{eq}} = 143$  [6] K  
 $R_p = 0.95$  [0.83]  $R_e$   
 $a = 1.1189$  [0.0772] AU  
 $A_g = 73928.70$  [130920.79] [0.56σ]  
 $T_{\text{effp}} = 3643$  [1616] K [2.17σ]

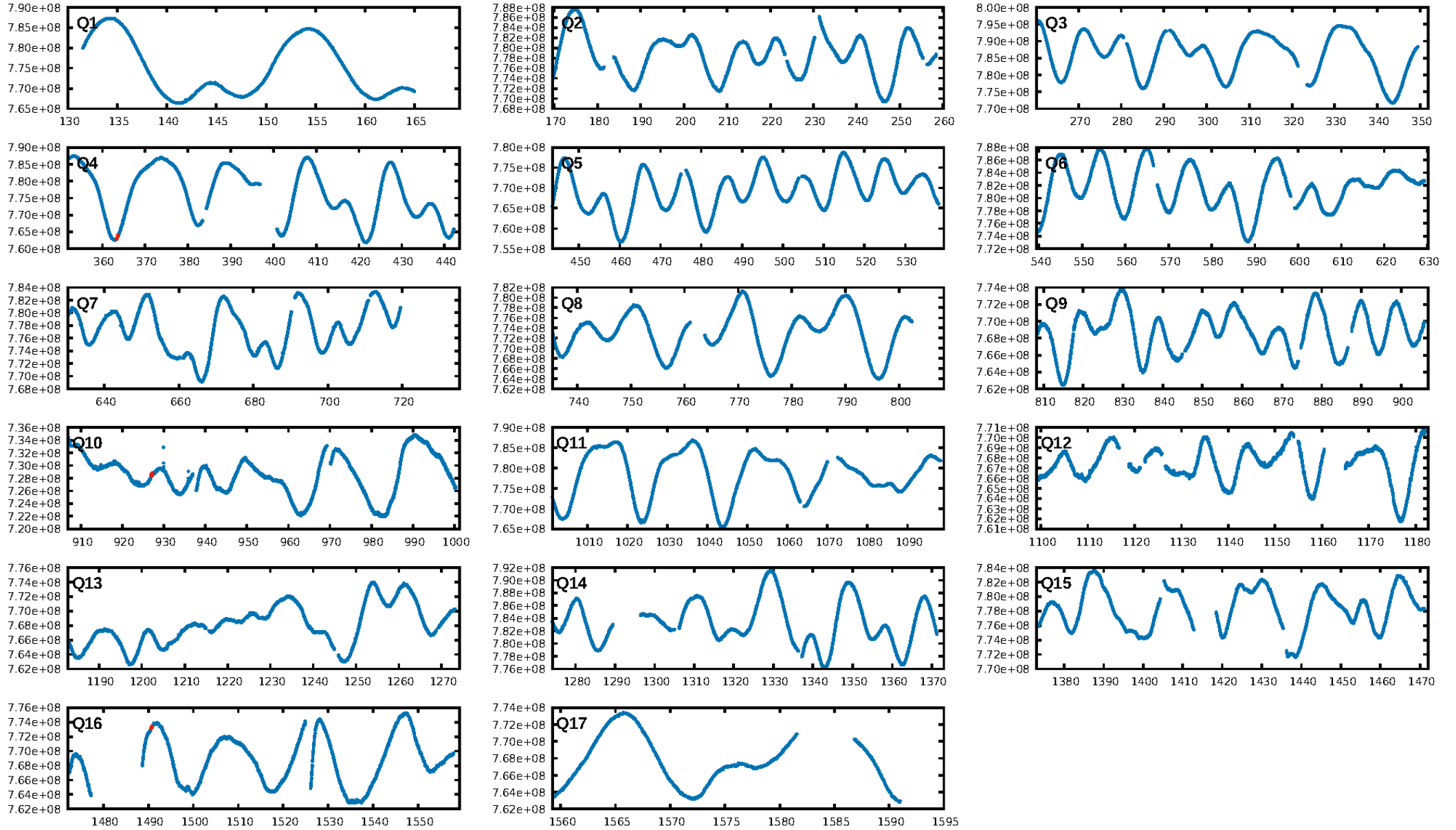
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: 62.7%  
ModelChiSquareGof-sig: 94.2%  
**Bootstrap-pfa: 4.10e-11**  
RollingBand-fgt: 1.00 [3/3]  
GhostDiagnostic-chr: -17.63  
Centroid-sig: 4.1%  
Centroid-so: 1.480 arcsec [1.58σ]  
OotOffset-rm: 0.909 arcsec [2.10σ]  
OotOffset-st: 0/0/2/0 [2]  
KicOffset-rm: 0.657 arcsec [1.40σ]  
KicOffset-st: 0/0/2/0 [2]  
DiffImageQuality-fgm: 1.00 [2/2]  
DiffImageOverlap-fno: 1.00 [3/3]

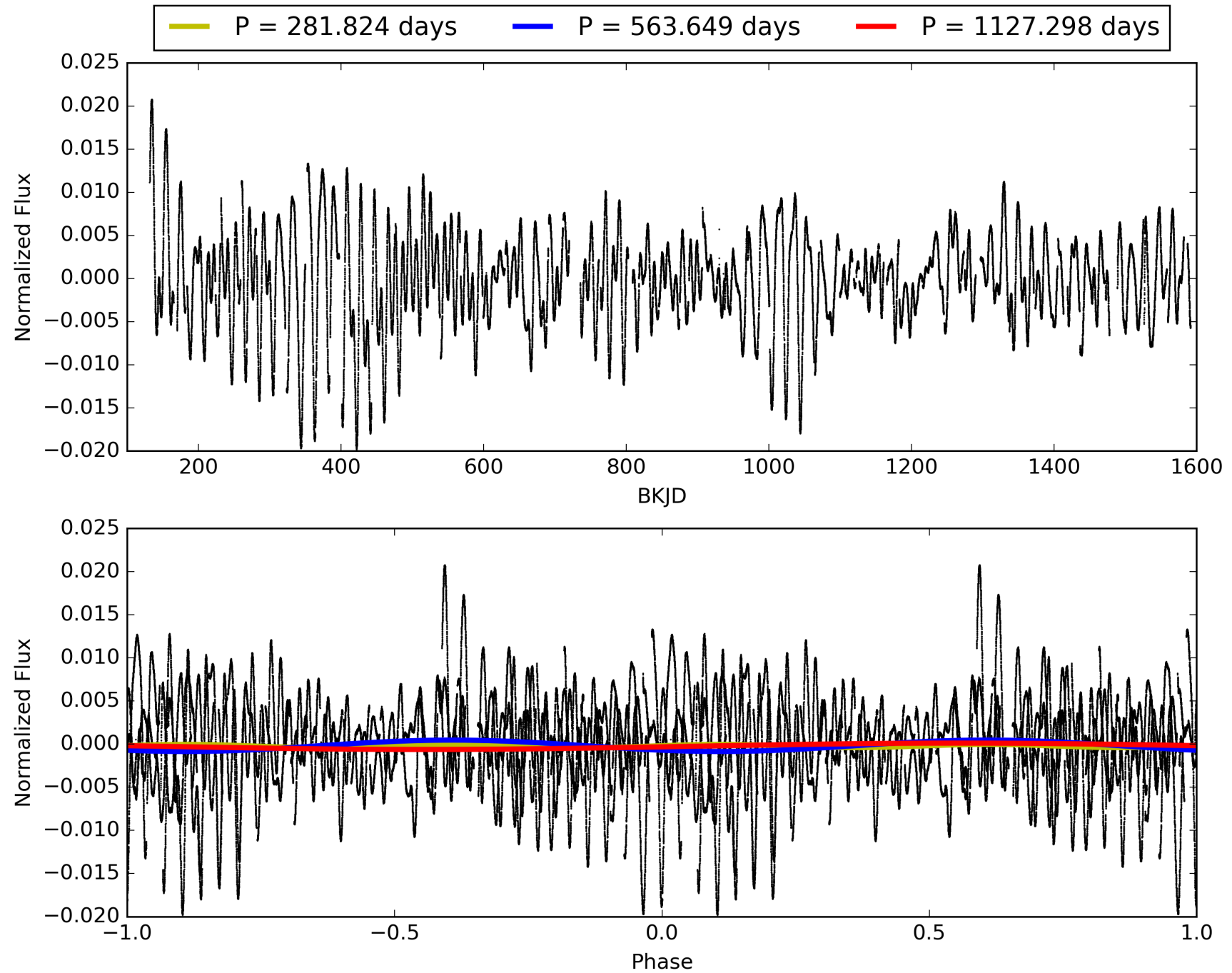
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 16:11:29 Z

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

# TCE 008518250-01, PDC Light Curves

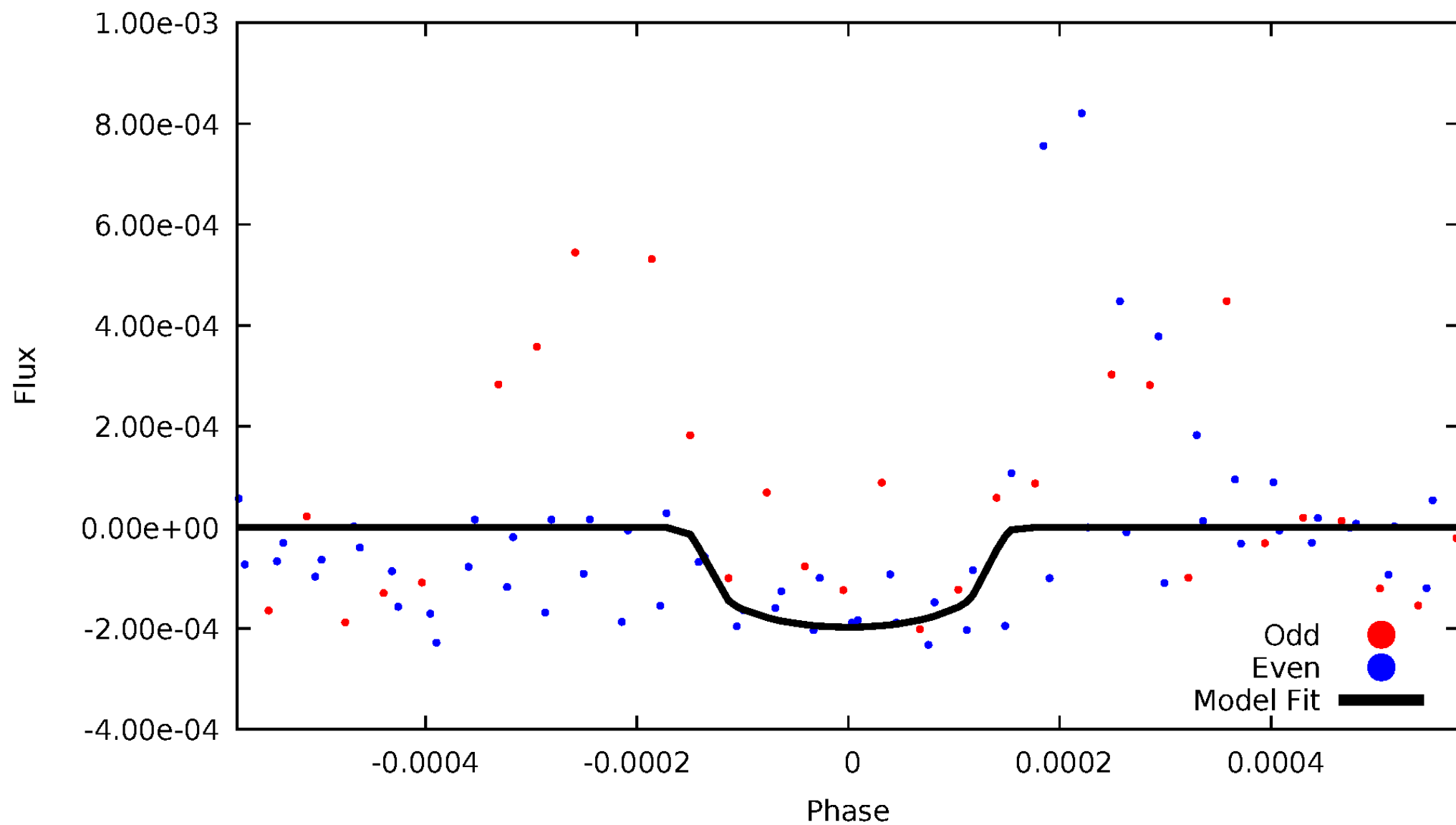


# TCE 008518250-01



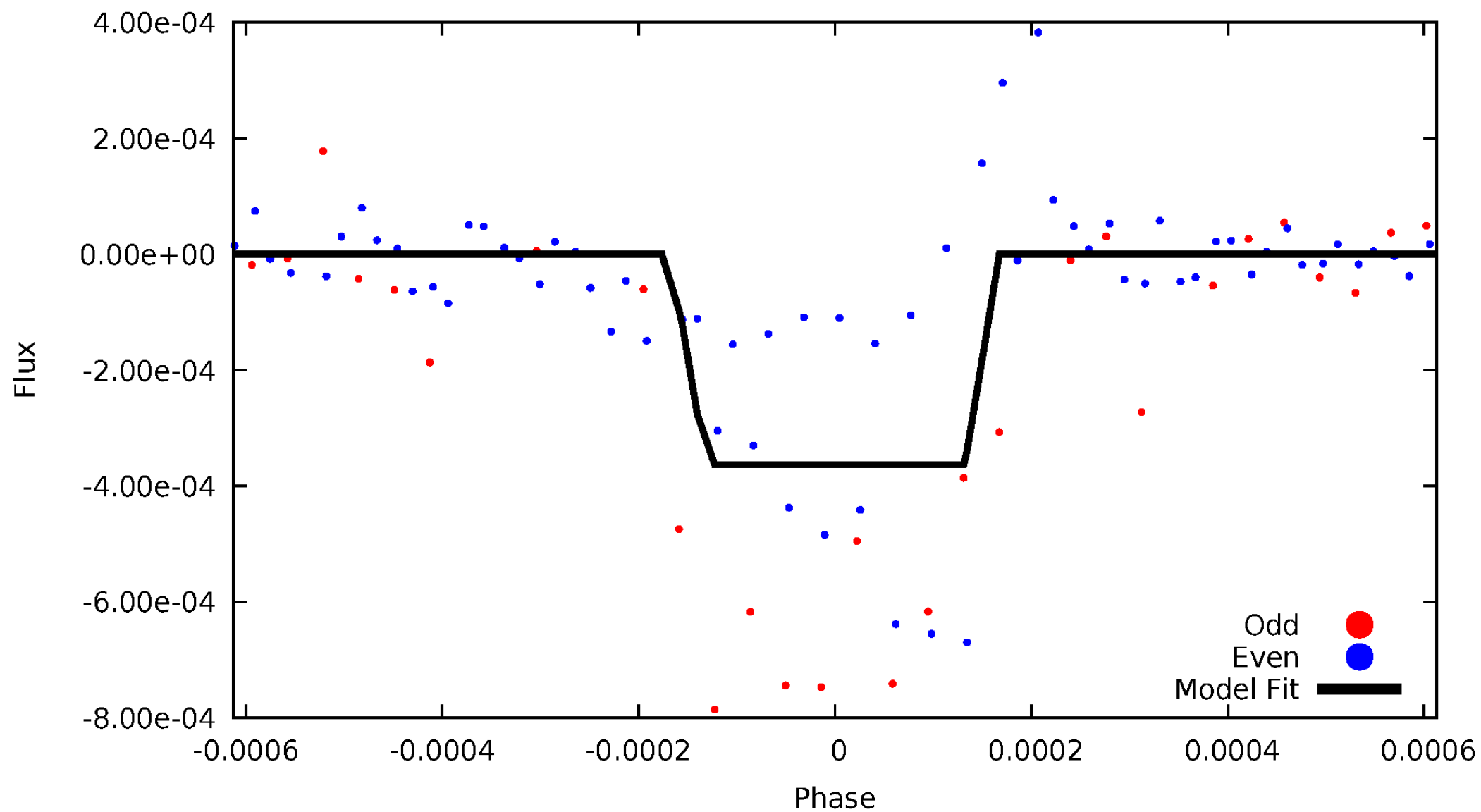
# DV Odd/Even

TCE 008518250-01



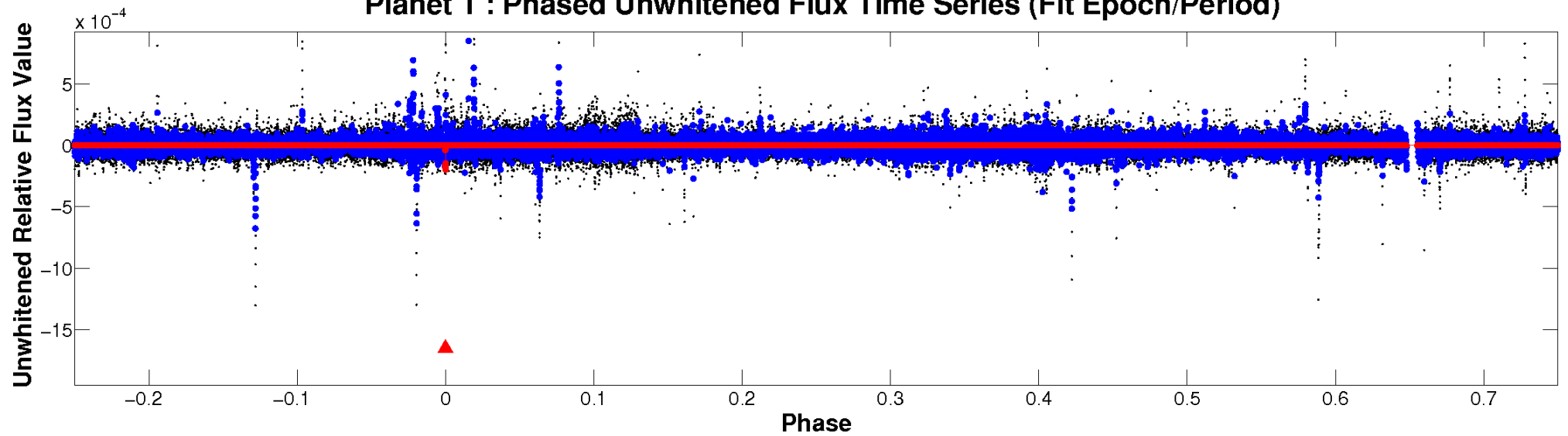
# ALT Odd/Even

TCE 008518250-01

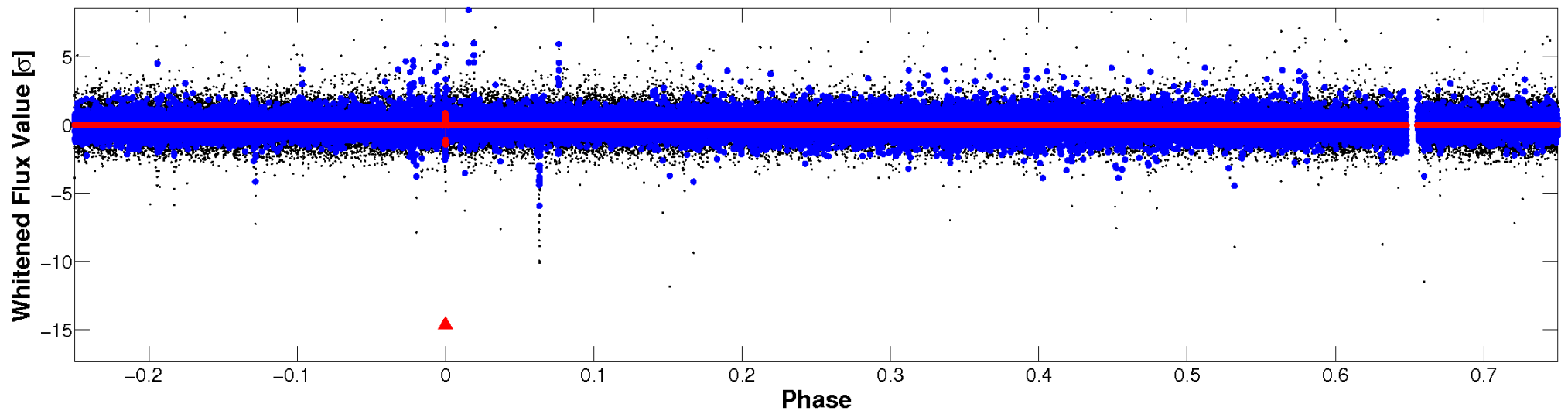


# Non-Whitened Vs. Whitened Light Curve

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

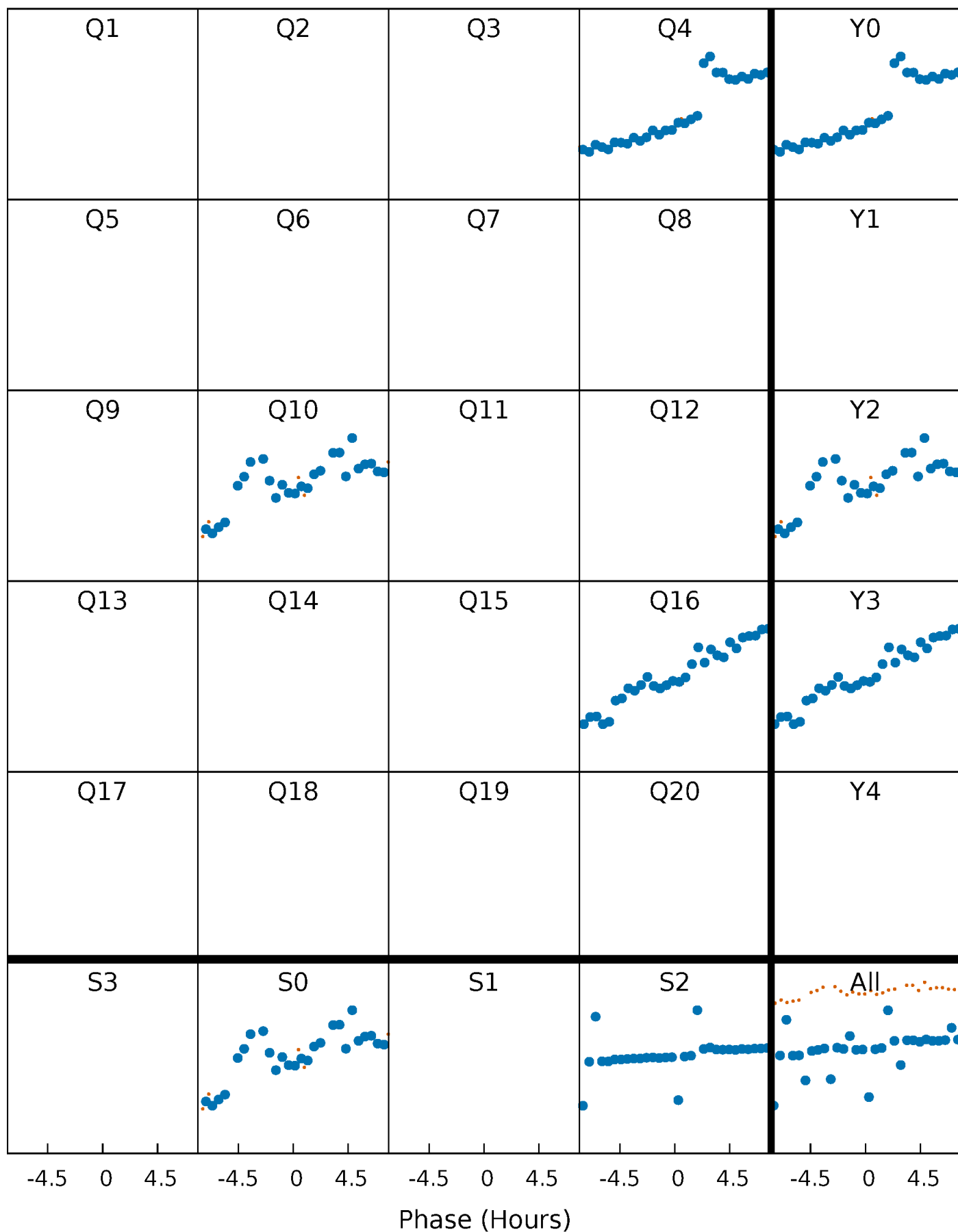


**Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)**



# PDC Quarter-Phased Transit Curves

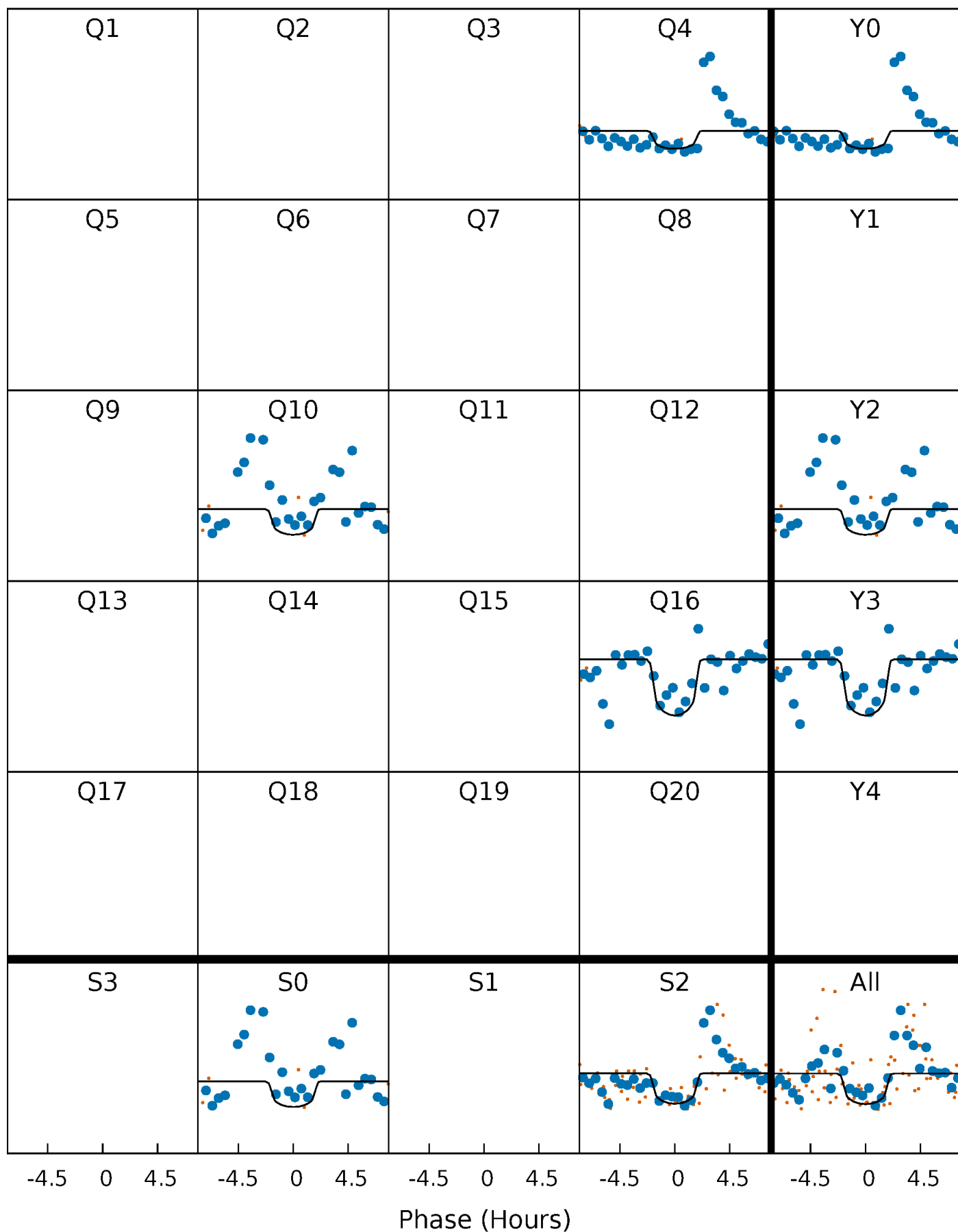
TCE 008518250-01 P=563.648801 Days  $T_0=363.408933$  (BKJD)





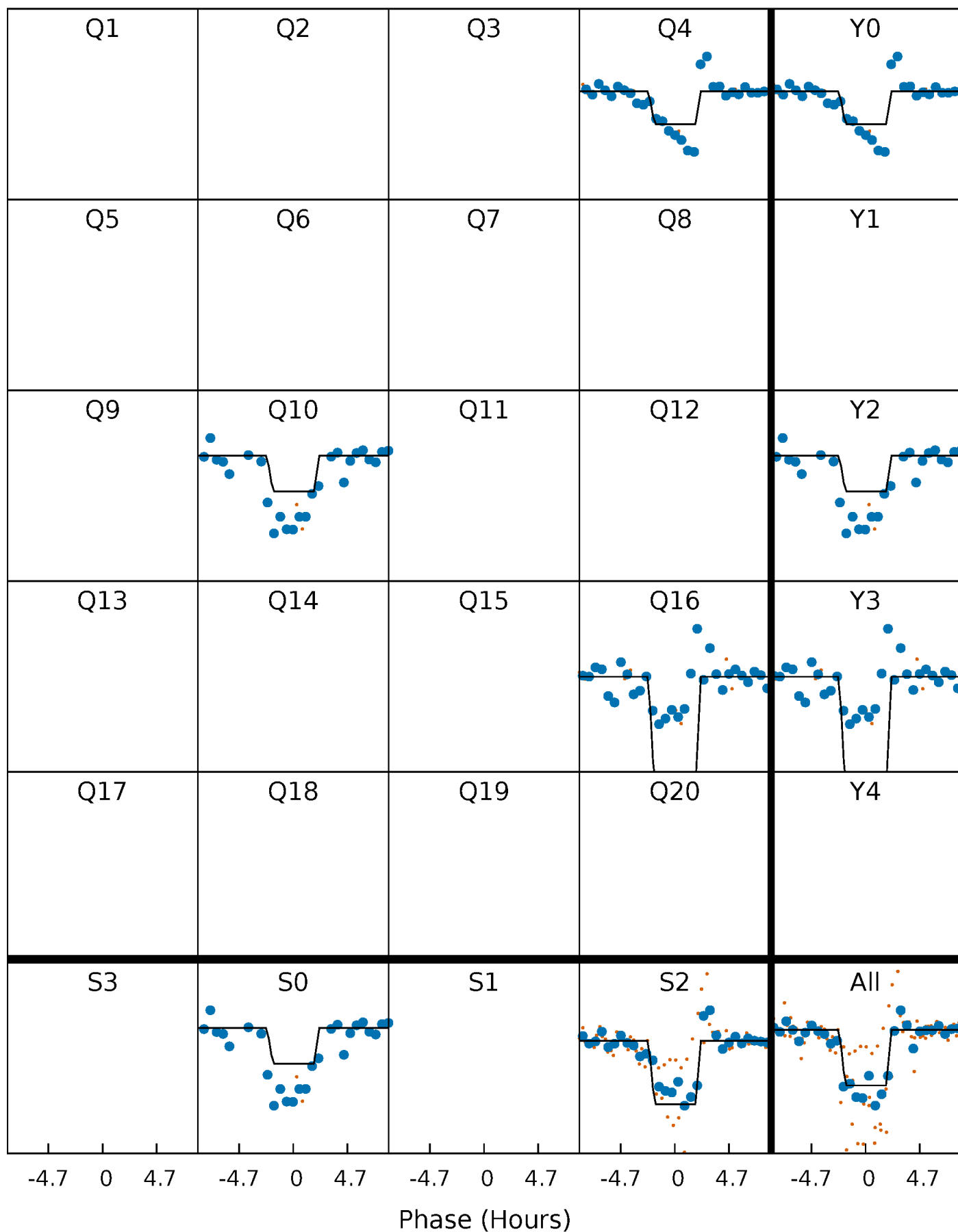
# DV Quarter-Phased Transit Curves

TCE 008518250-01 P=563.648801 Days  $T_0=363.408933$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

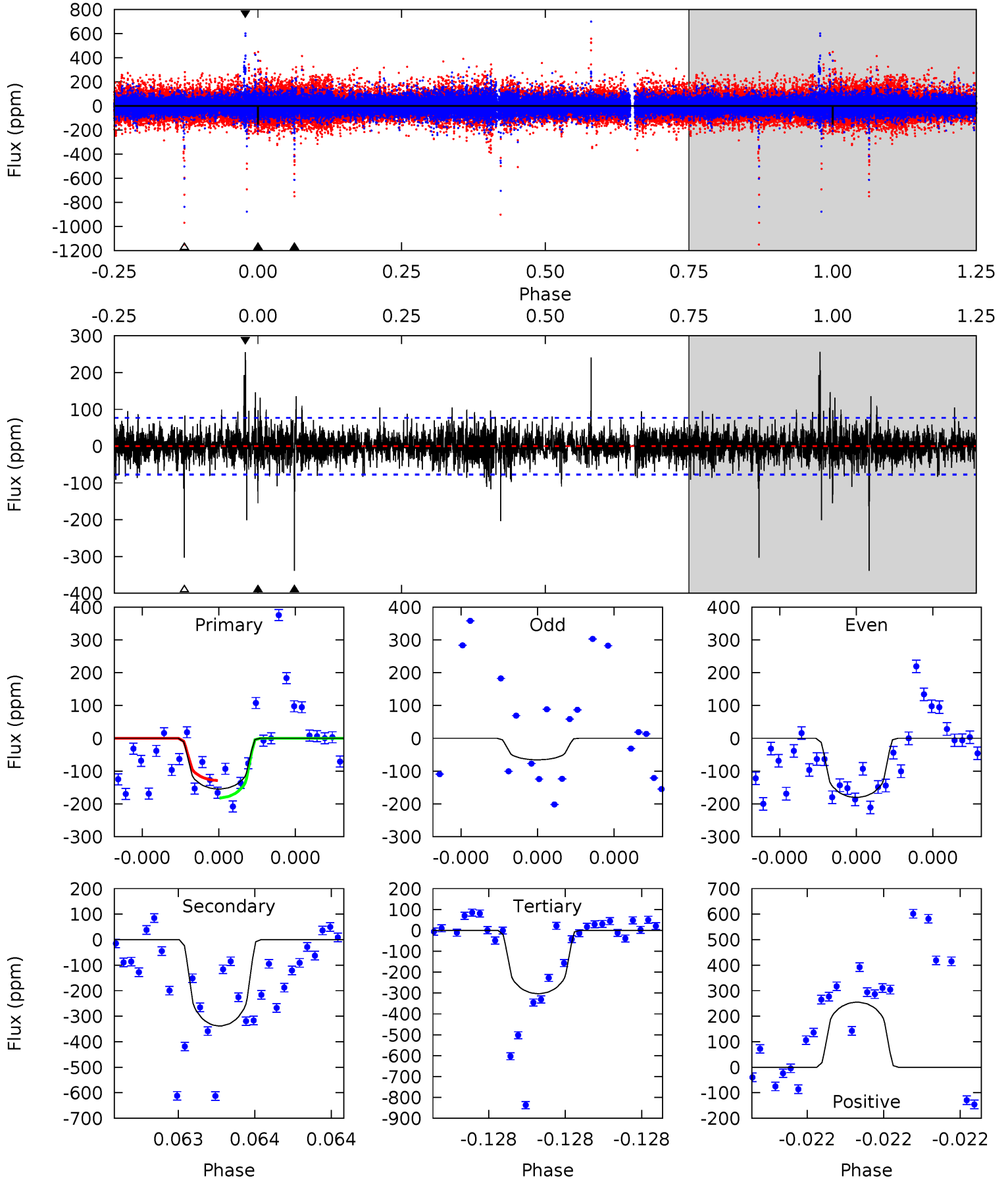
TCE 008518250-01 P=563.646130 Days  $T_0=363.416754$  (BKJD)



# DV Model-Shift Uniqueness Test

008518250-01, P = 563.648801 Days, E = 363.408933 Days

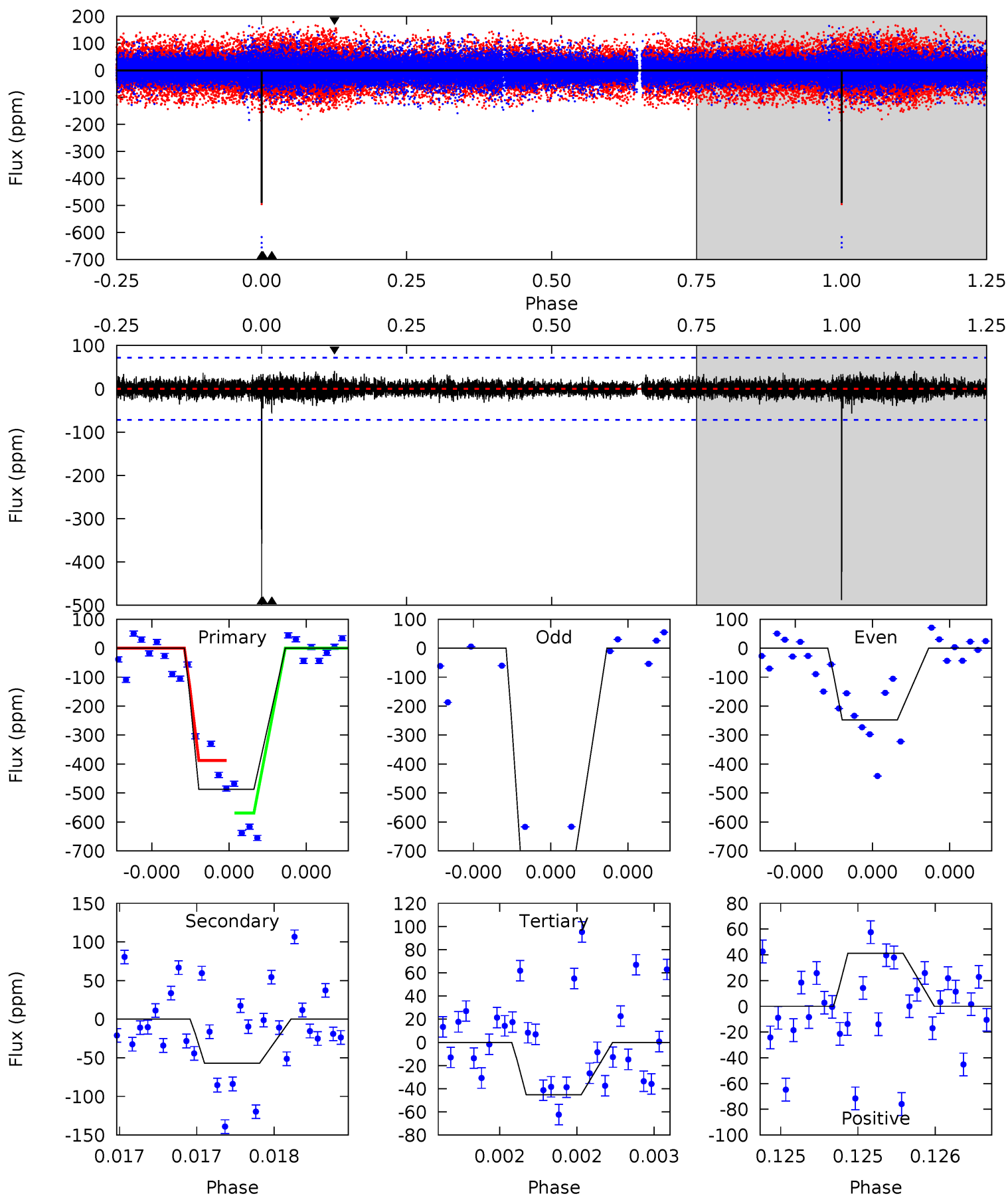
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
11.3	24.8	22.2	18.7	5.65	3.59	1.92	-10.9	-7.35	2.56	6.10	3.44	0.89	0.43	1.96



# Alt Model-Shift Uniqueness Test

008518250-01, P = 563.646130 Days, E = 363.416754 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
38.4	4.49	3.56	3.25	5.66	3.61	0.64	34.8	35.1	0.93	1.24	24.5	0.84	0.08	7.15



### Stellar Parameters For KIC 008518250

	$T_{\text{eff}} (K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (g \cdot \text{cm}^{-3})$
	$4542^{+162}_{-162}$	$4.697^{+0.036}_{-0.045}$	$-0.680^{+0.300}_{-0.300}$	$0.569^{+0.051}_{-0.046}$	$0.589^{+0.054}_{-0.043}$	$4.492^{+0.848}_{-0.778}$
	+4%/-4%	+1%/-1%	+44%/-44%	+9%/-8%	+9%/-7%	+19%/-17%
Source	PHO54	PHO54	PHO54	DSEP		

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

### Secondary Eclipse Parameters for KIC 008518250-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	$A_{\text{obs}}$
DV	$-338 \pm 14$	$1.10^{+0.77}_{-0.65}$	$200^{+8}_{-8}$	$4634^{+2387}_{-822}$	$191679^{+959120}_{-124075}$
Alt.	$-57 \pm 13$	$1.26^{+0.84}_{-0.69}$	$201^{+7}_{-8}$	$3253^{+1001}_{-453}$	$24868^{+93004}_{-16343}$

$T_{\text{max}}$  = 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

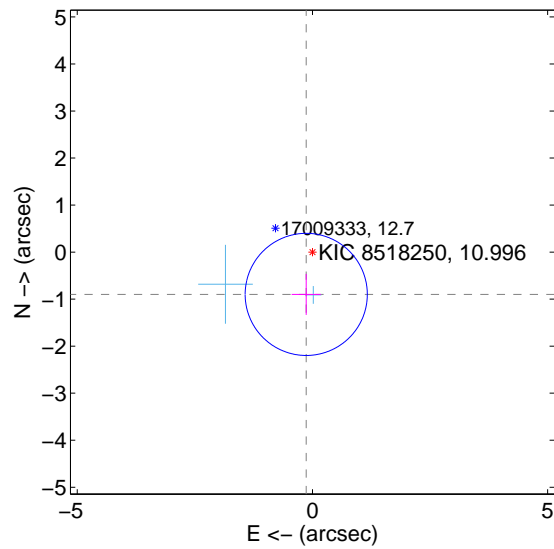
Supplemental centroid analysis for 008518250-01. **Kepler magnitude: 11.00.** Transit SNR 6.40

**There are 2 quarters with good PRF difference image offsets**

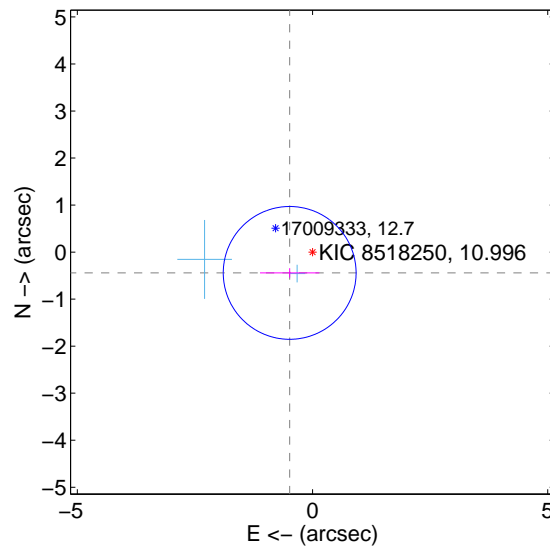
The direct PRF centroid is offset from the target star catalog position by about 0.69 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.909 \pm 0.433$	2.10	$0.132 \pm 0.310$	$-0.899 \pm 0.435$
PRF-fit source offset from KIC position	$0.657 \pm 0.471$	1.40	$0.486 \pm 0.630$	$-0.442 \pm 0.101$
photometric centroid source offset	$1.48 \pm 0.94$	1.58	$0.25 \pm 1.90$	$1.46 \pm 0.89$

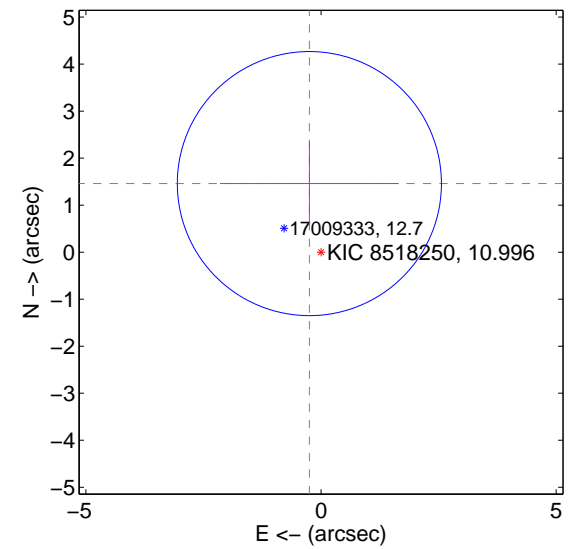
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

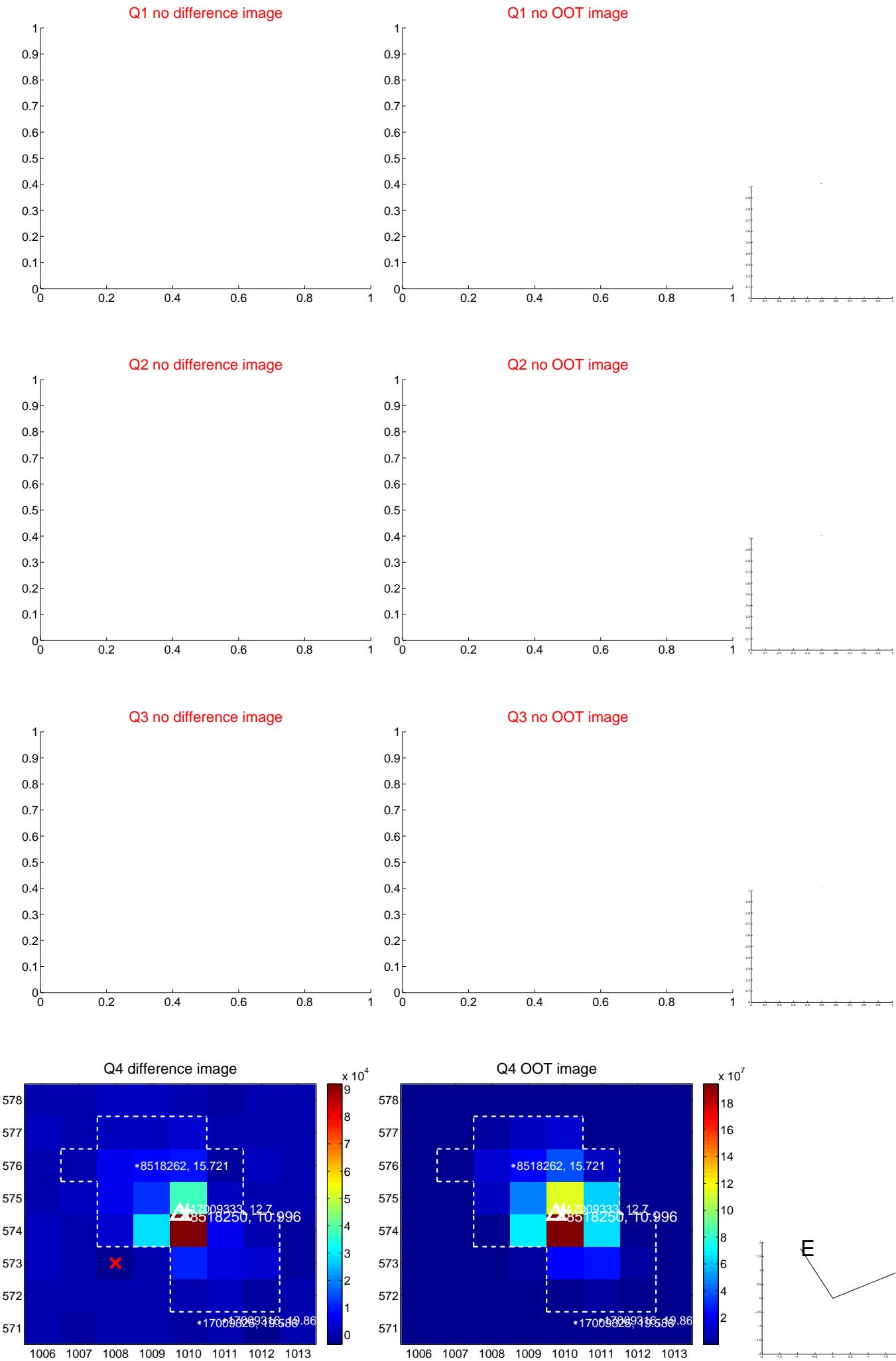


offset from photometric centroids



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

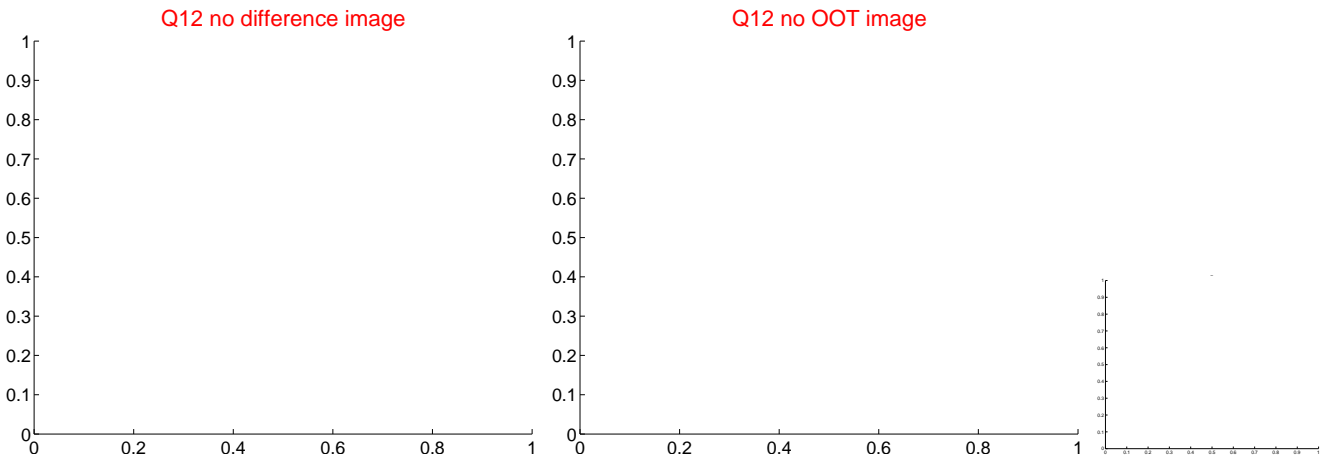
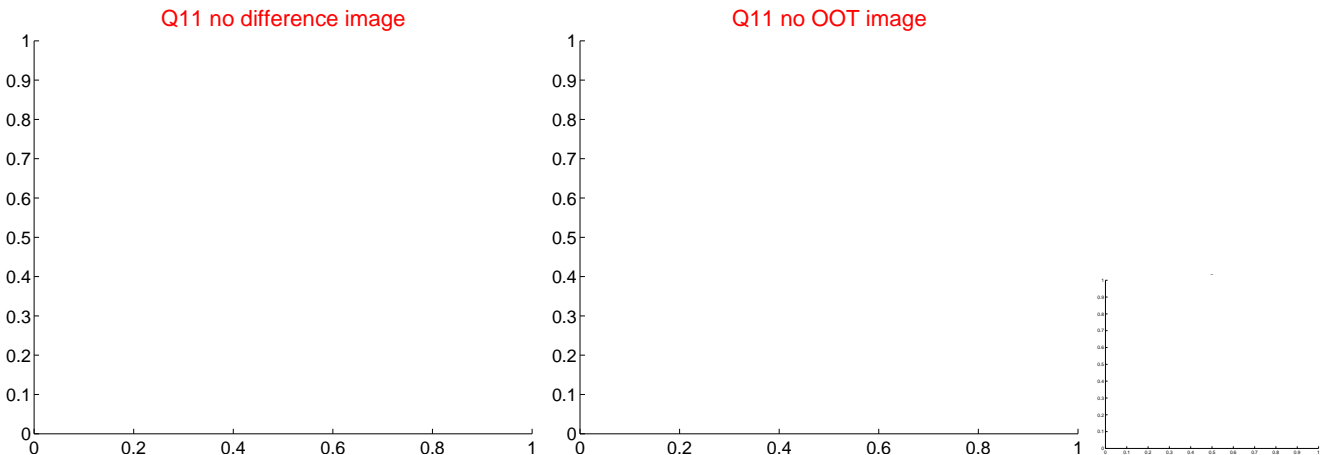
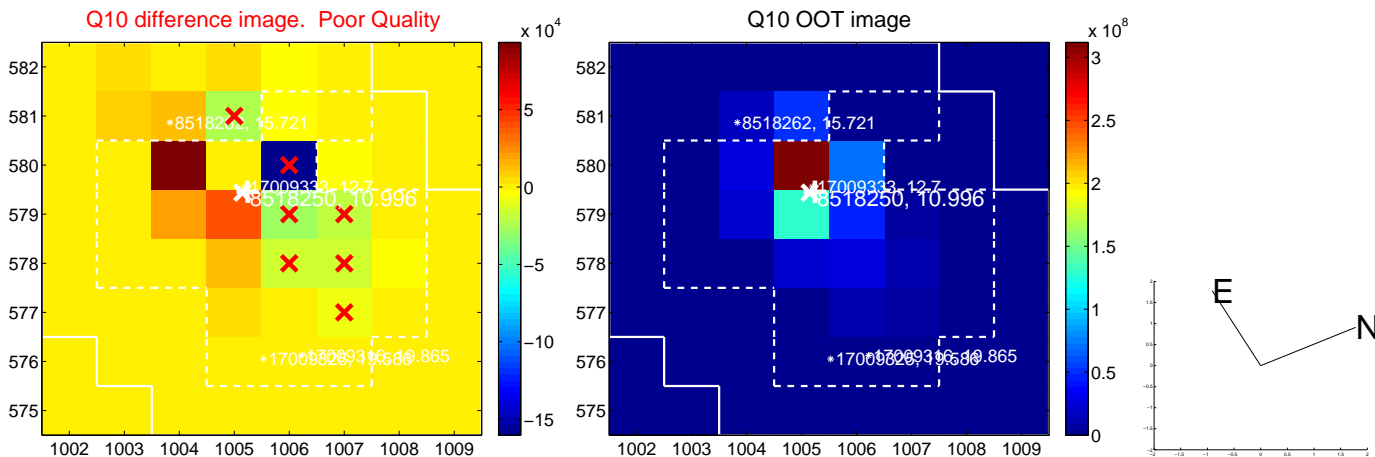
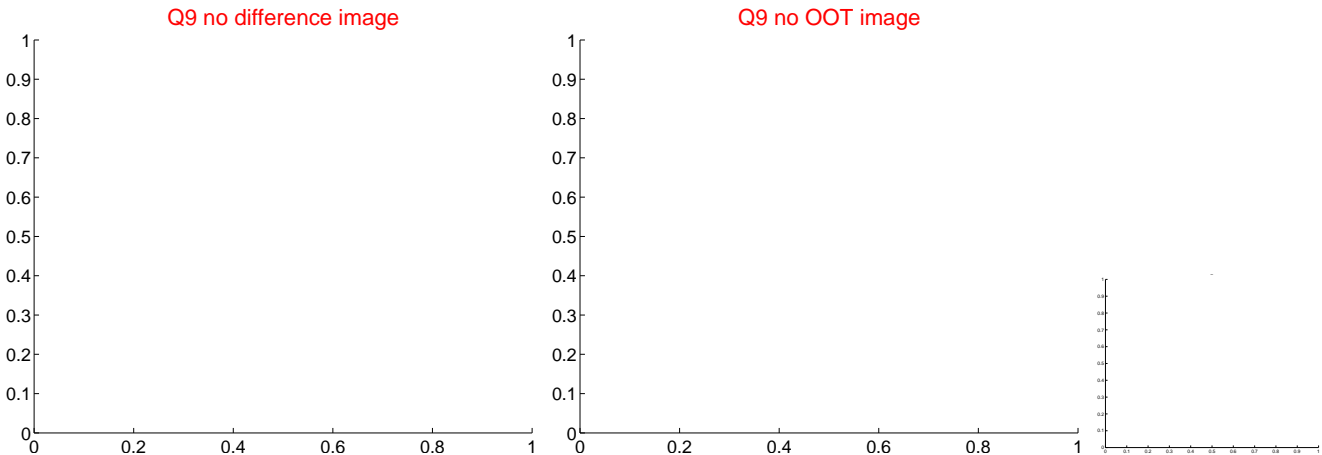


white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

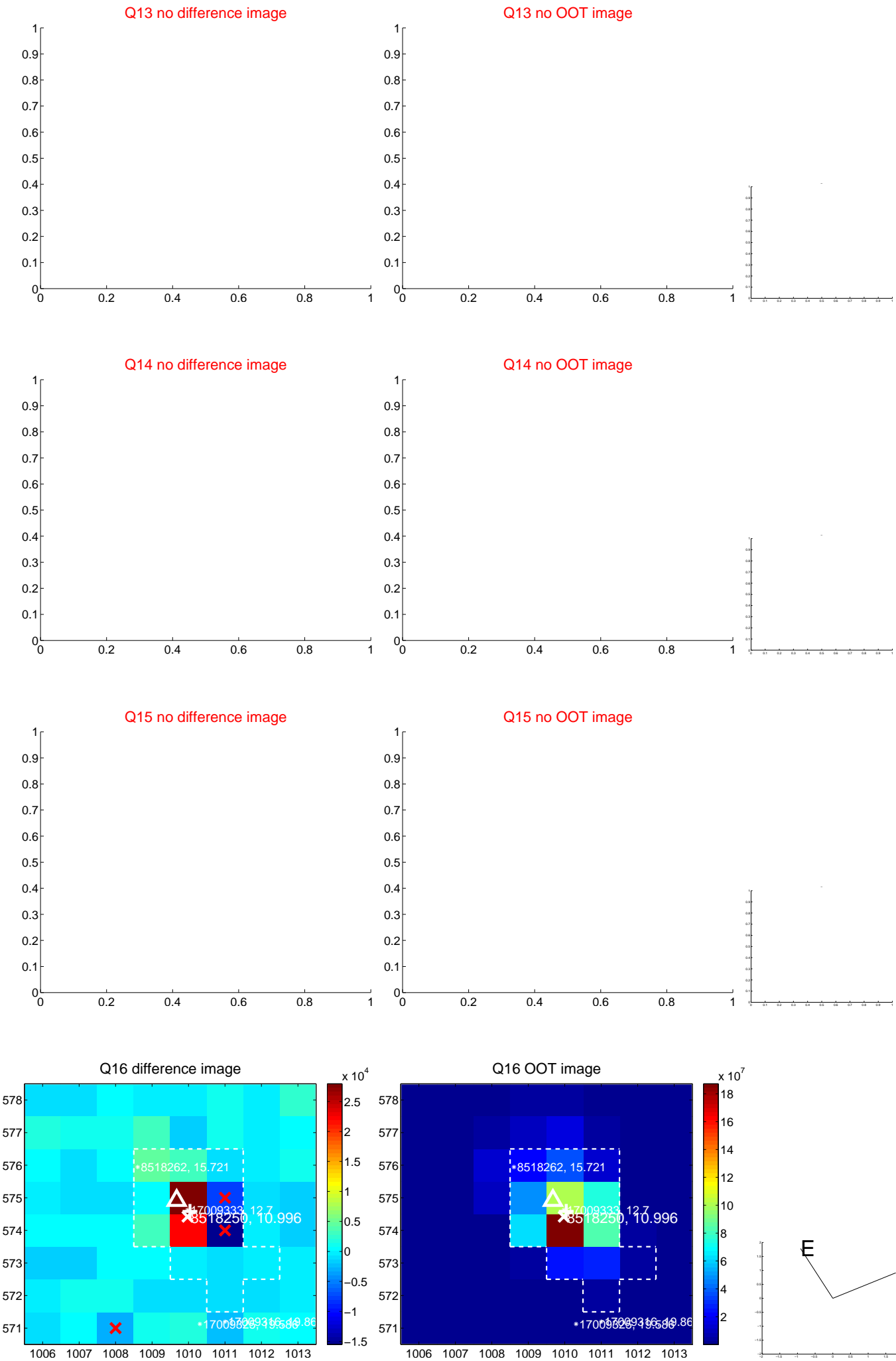




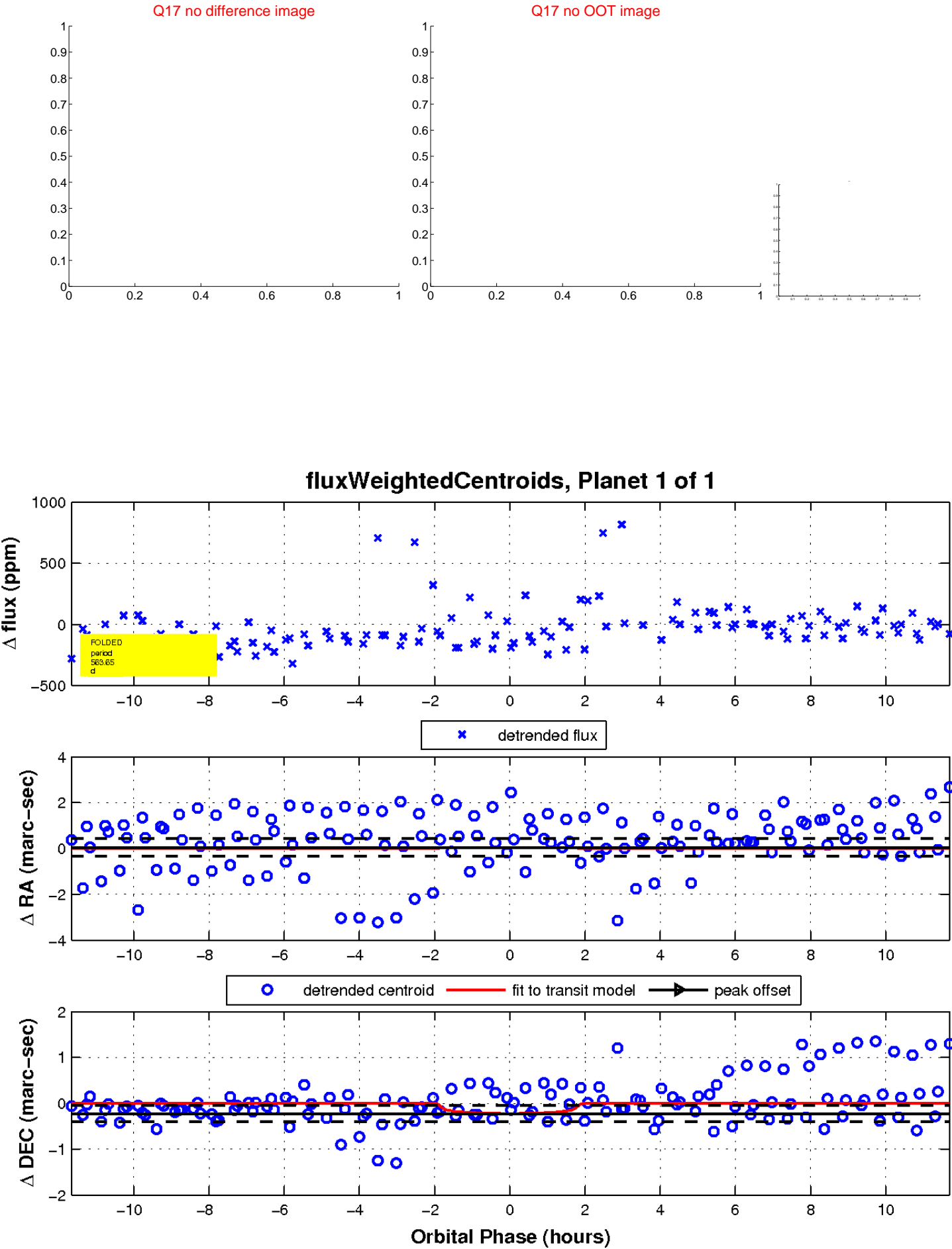
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value



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

