

# KIC 010448377

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
010448377-01	OBS	No	325.476321	194.574016	2592.6	3.277	10.6	6.7	0.61	3874	3.13	0.12

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
010448377-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_SKYE—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT— INCONSISTENT_TRANS—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.

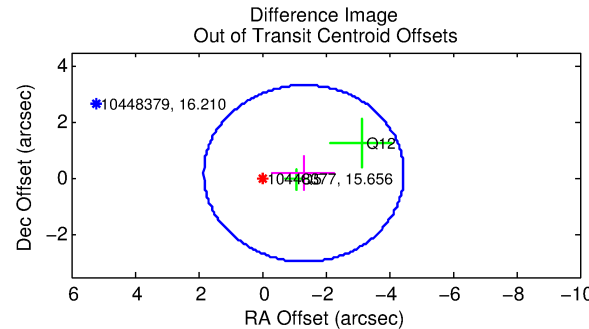
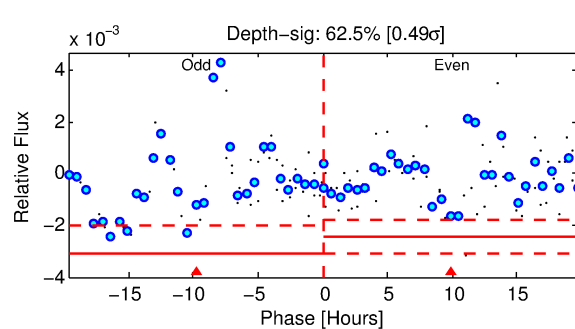
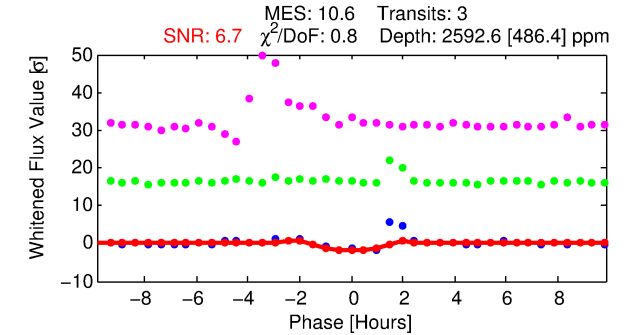
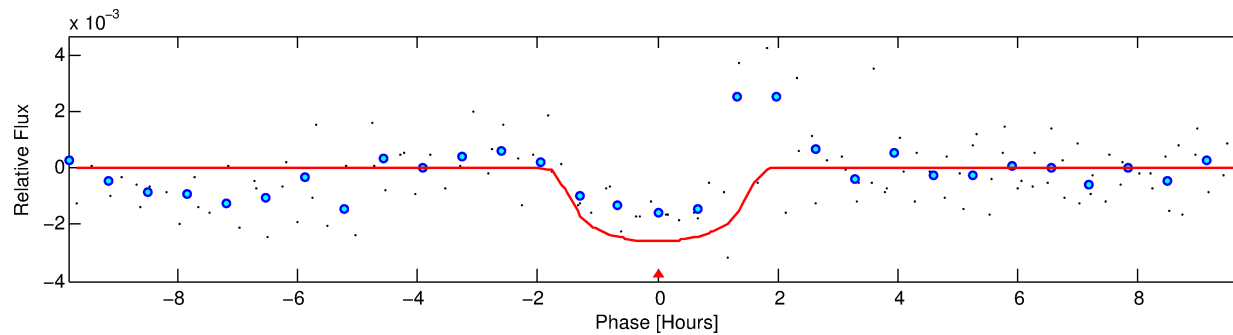
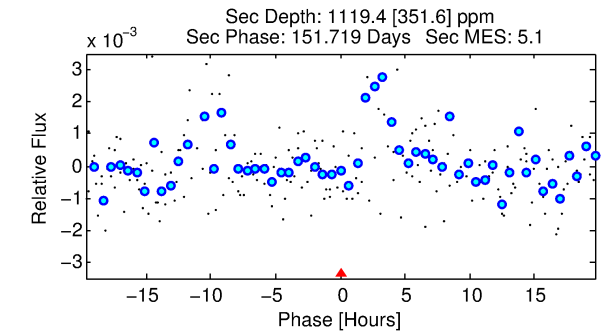
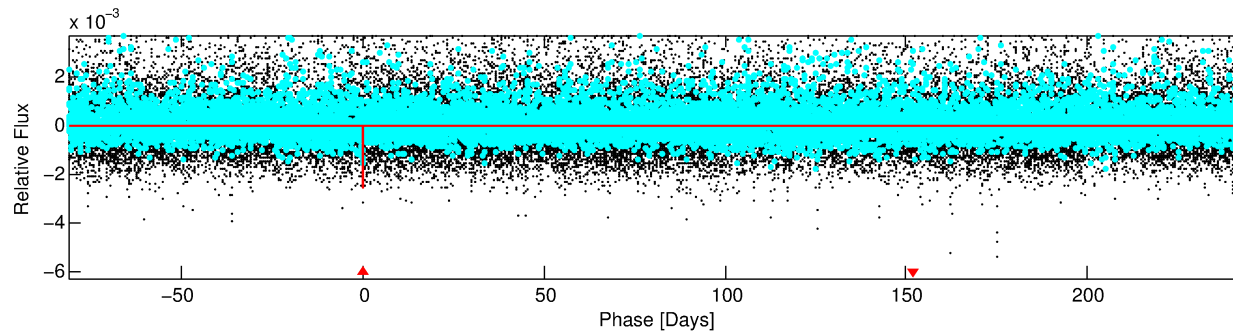
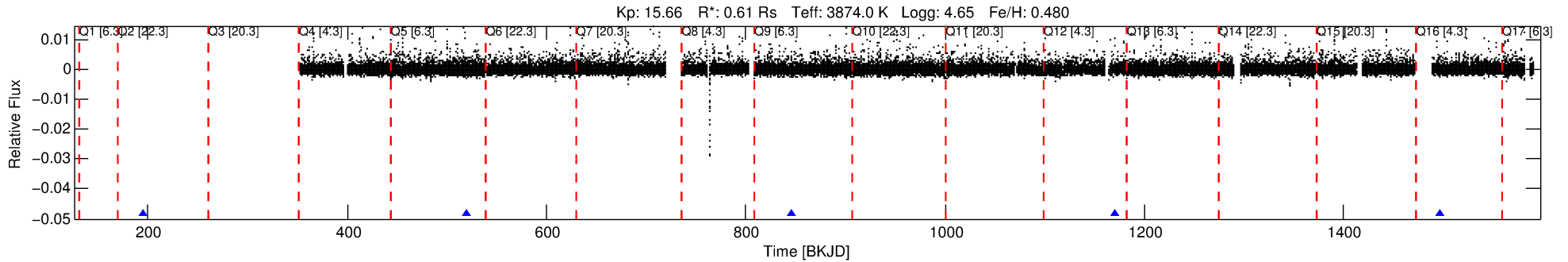
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 010448377-01

No Significant Match Found

# DV One-Page Summary

KIC: 10448377 Candidate: 1 of 1 Period: 325.476 d



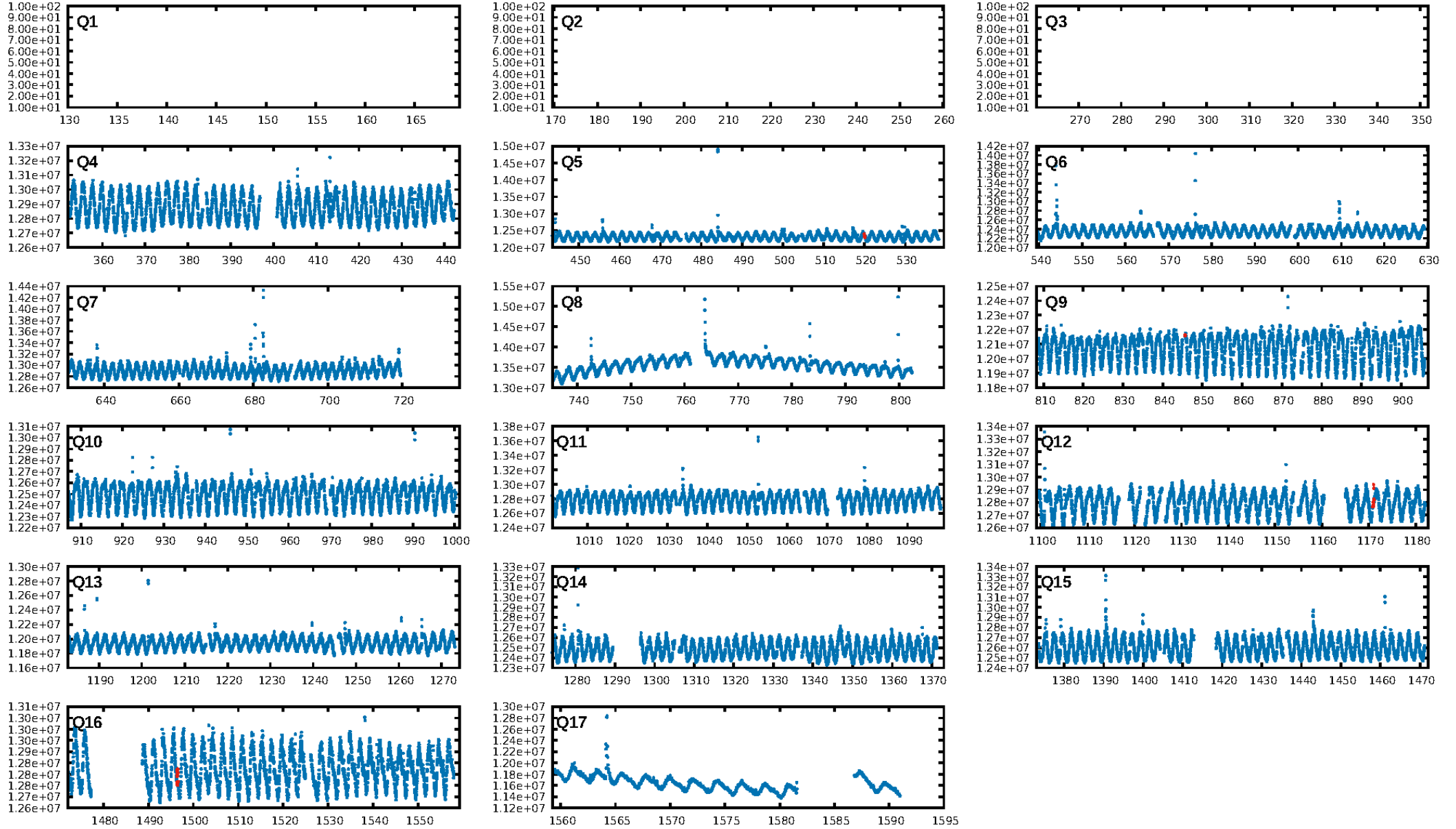
## DV Fit Results:

Period = 325.47632 [0.00409] d  
Epoch = 194.5740 [0.0133] BKJD  
Rp/R\* = 0.0468 [0.0768]  
a/R\* = 700.23 [3381.04]  
b = 0.49 [7.59]  
Seff = 0.12 [0.02]  
Teq = 151 [7] K  
Rp = 3.13 [5.16] Re  
a = 0.7873 [0.0684] AU  
Ag = 38900.83 [128539.93] [0.30σ]  
Teffp = 3277 [2708] K [1.15σ]

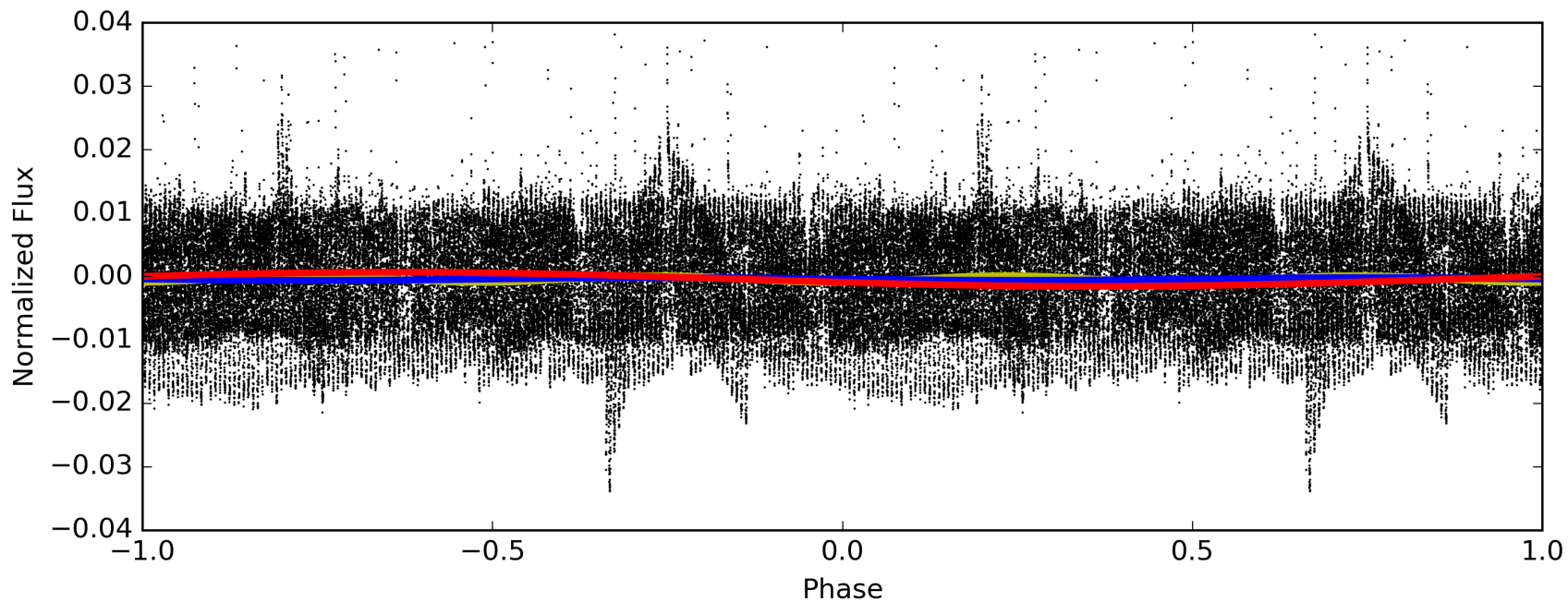
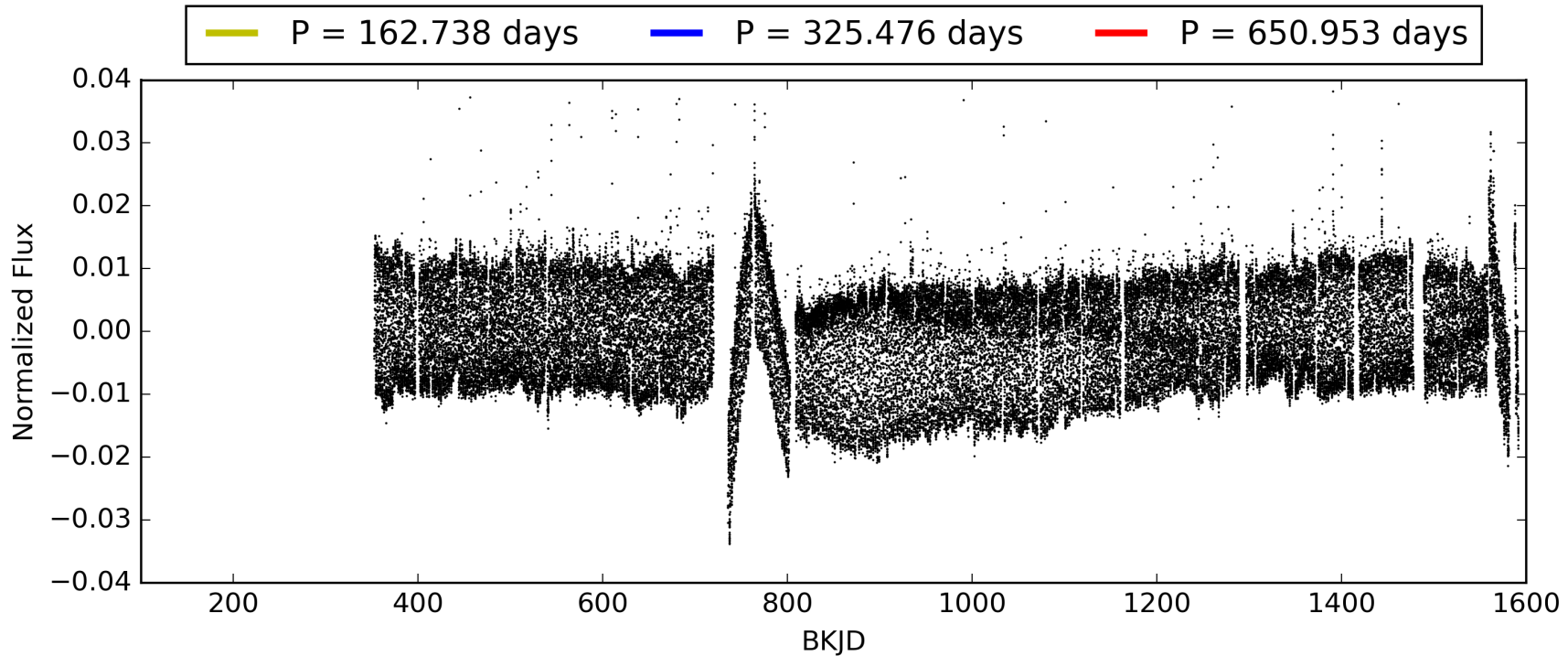
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: 22.9%  
ModelChiSquareGof-sig: 99.1%  
**Bootstrap-pfa: 1.54e-12**  
RollingBand-fgt: 1.00 [3/3]  
GhostDiagnostic-chr: 1.058  
Centroid-sig: 59.4%  
Centroid-so: 1.516 arcsec [2.46σ]  
OotOffset-rm: 1.331 arcsec [1.27σ]  
KicOffset-rm: 1.224 arcsec [1.08σ]  
OotOffset-st: 0/0/1/1 [2]  
KicOffset-st: 0/0/1/1 [2]  
DiffImageQuality-fgm: 1.00 [2/2]  
DiffImageOverlap-fno: 1.00 [3/3]

# TCE 010448377-01, PDC Light Curves

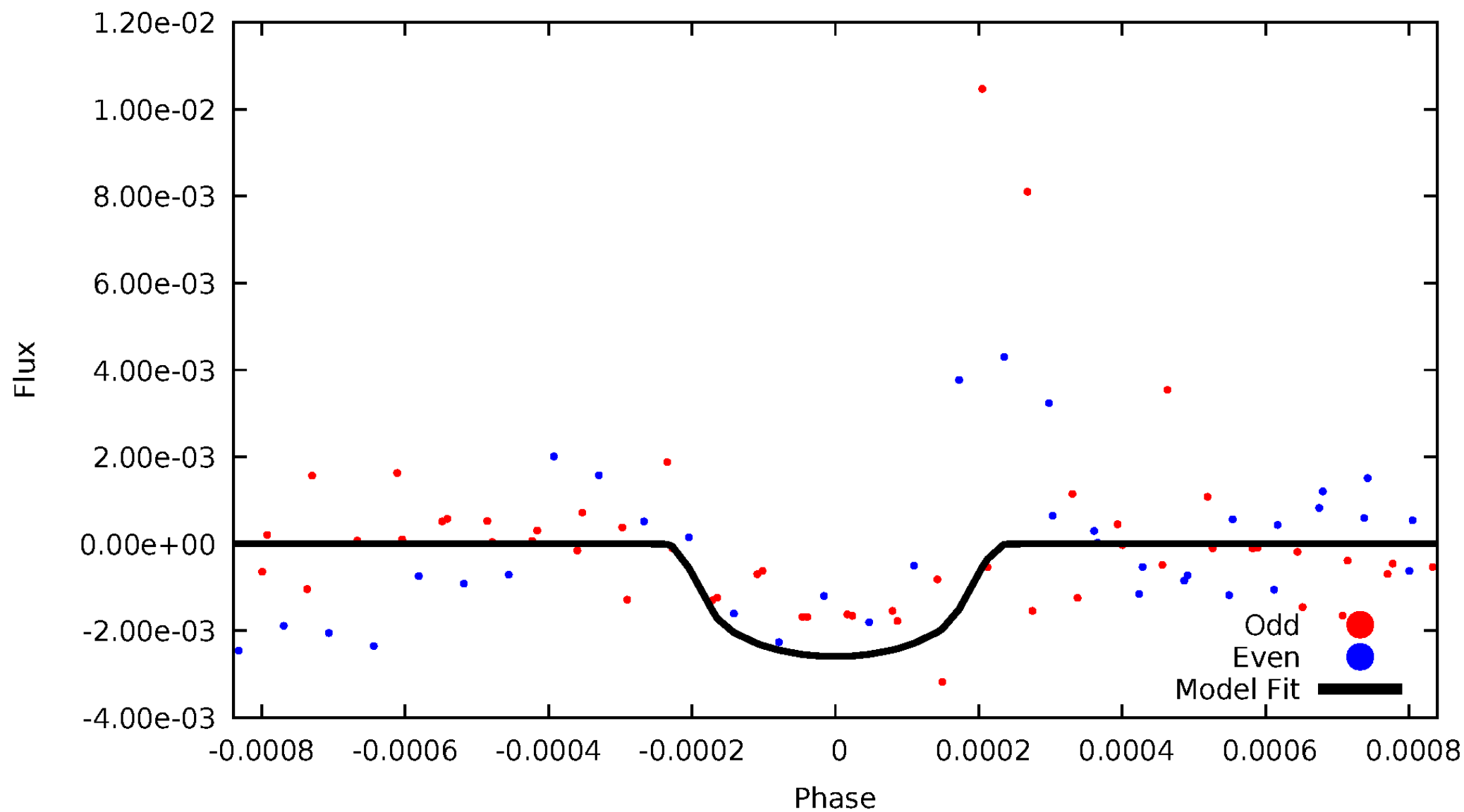


TCE 010448377-01



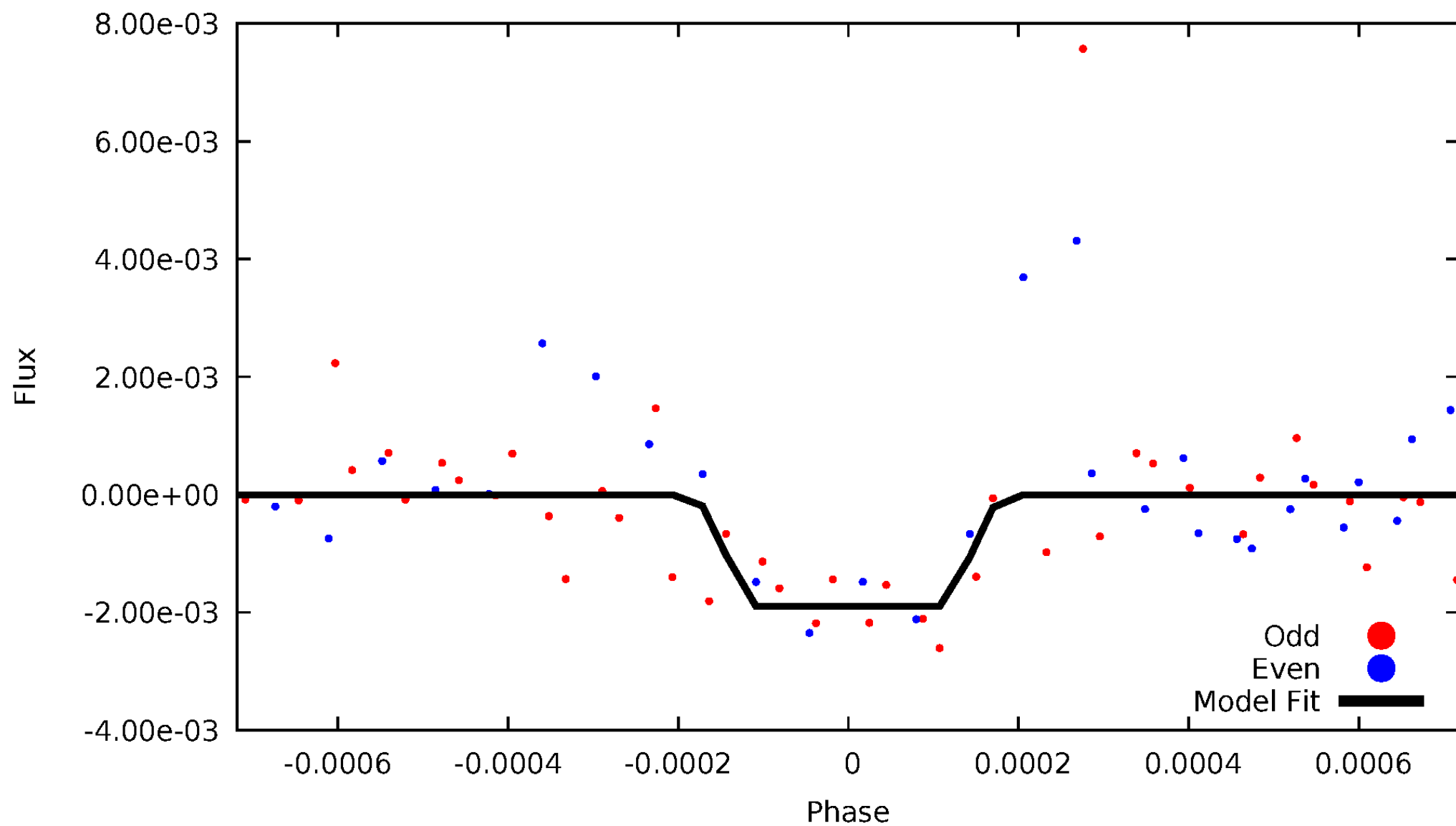
# DV Odd/Even

TCE 010448377-01



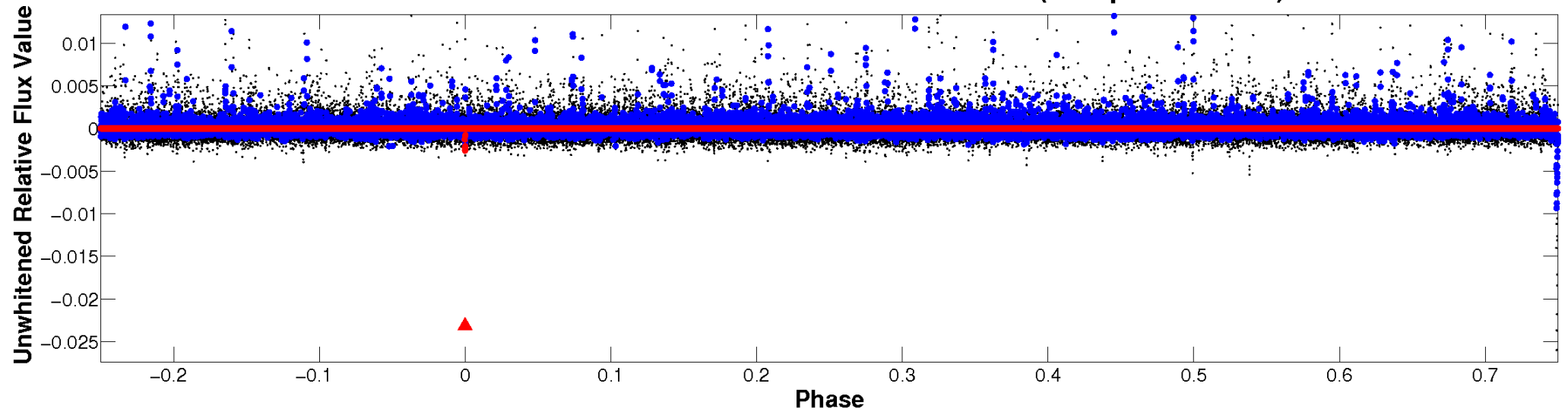
# ALT Odd/Even

TCE 010448377-01

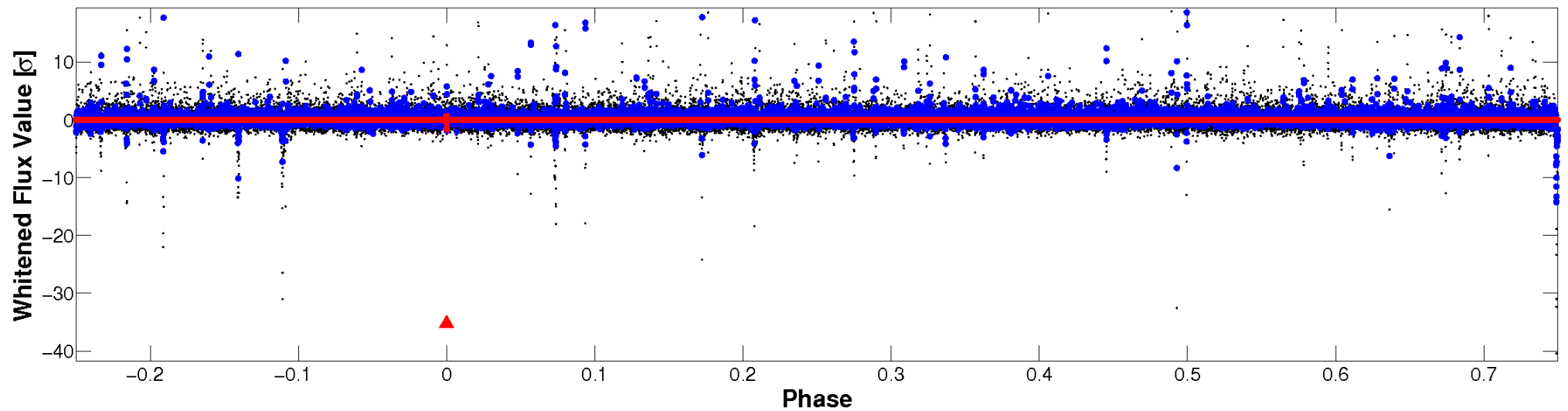


# Non-Whitened Vs. Whitened Light Curve

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

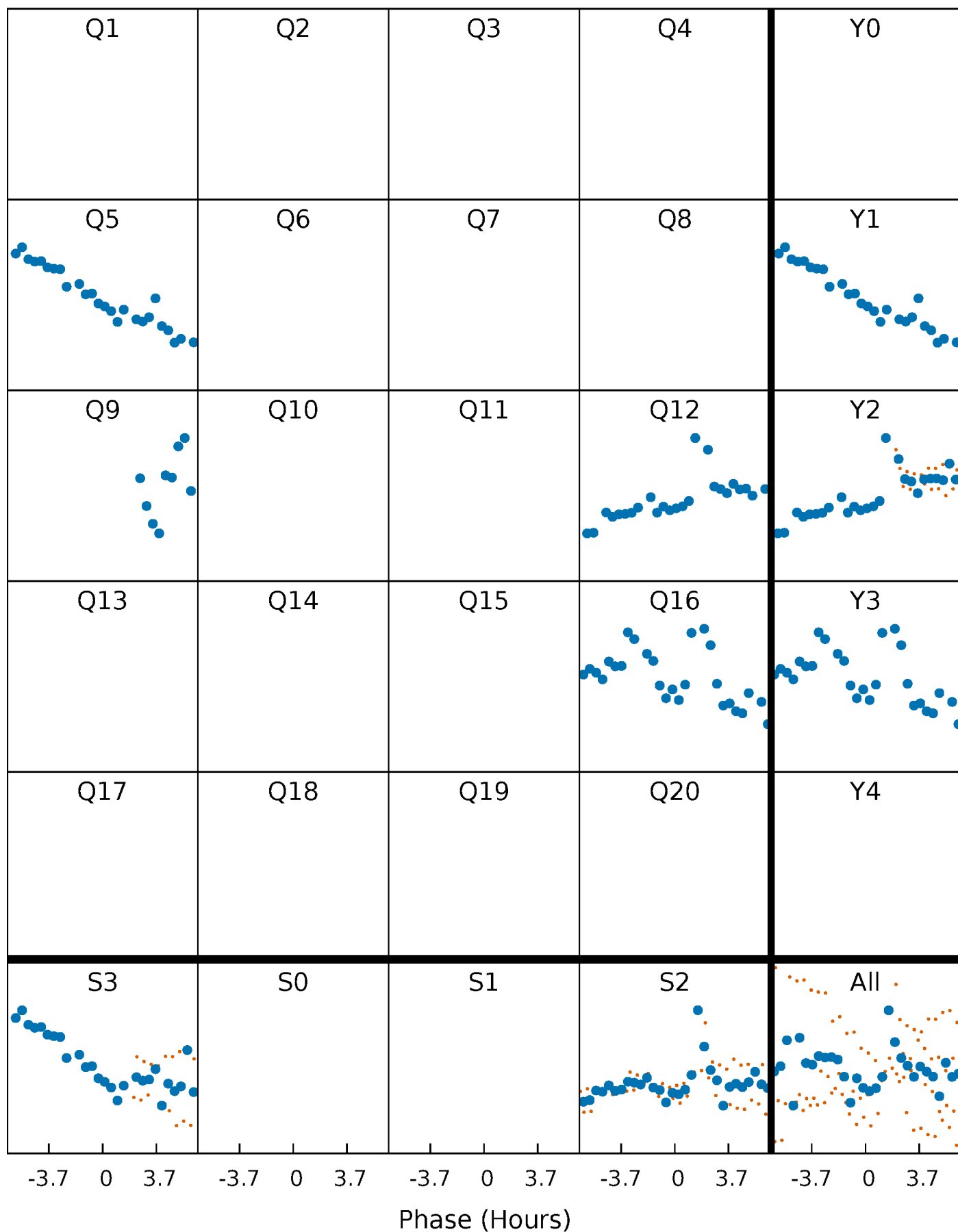


**Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)**



# PDC Quarter-Phased Transit Curves

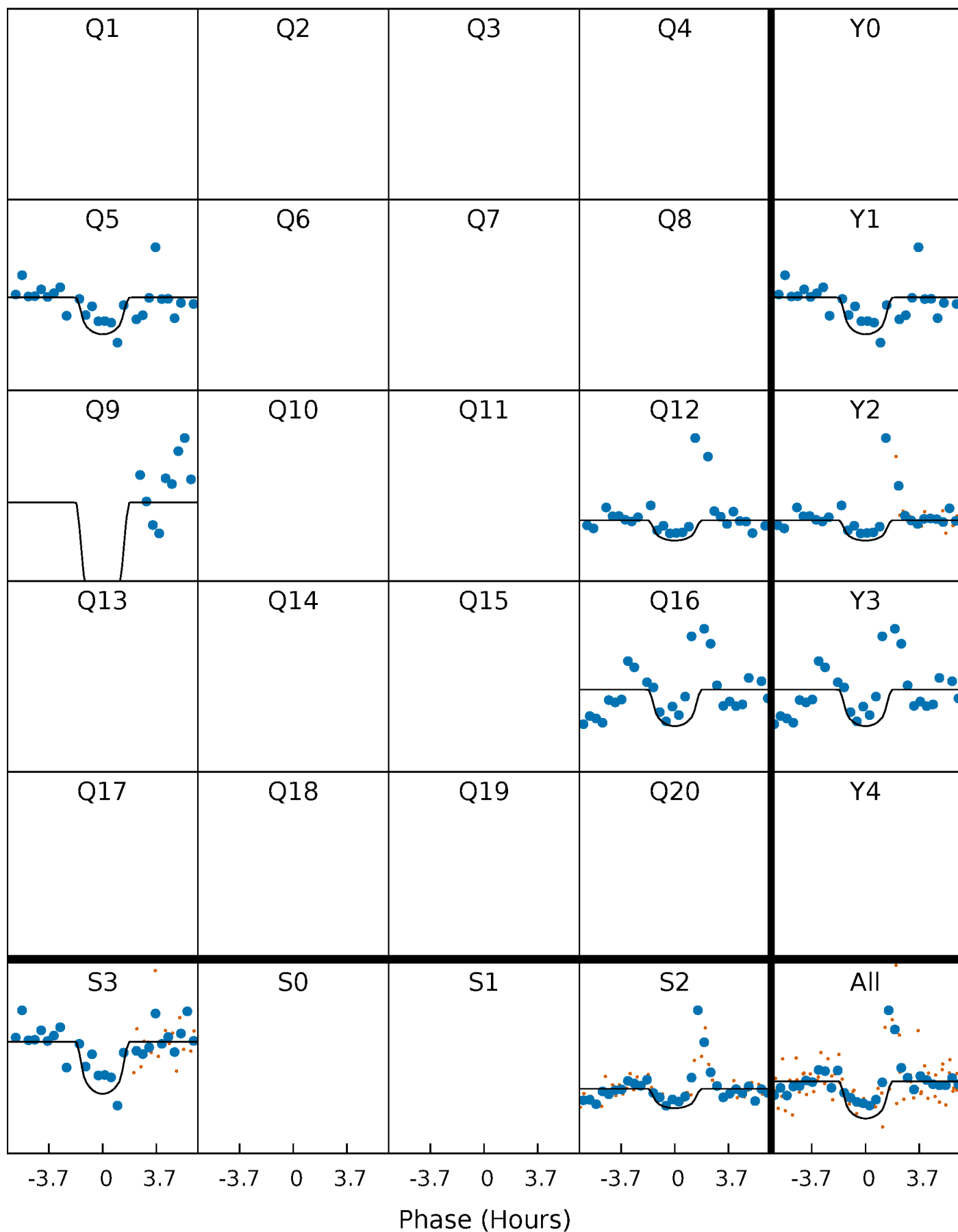
TCE 010448377-01     $P=325.476321$  Days     $T_0=194.574016$  (BKJD)





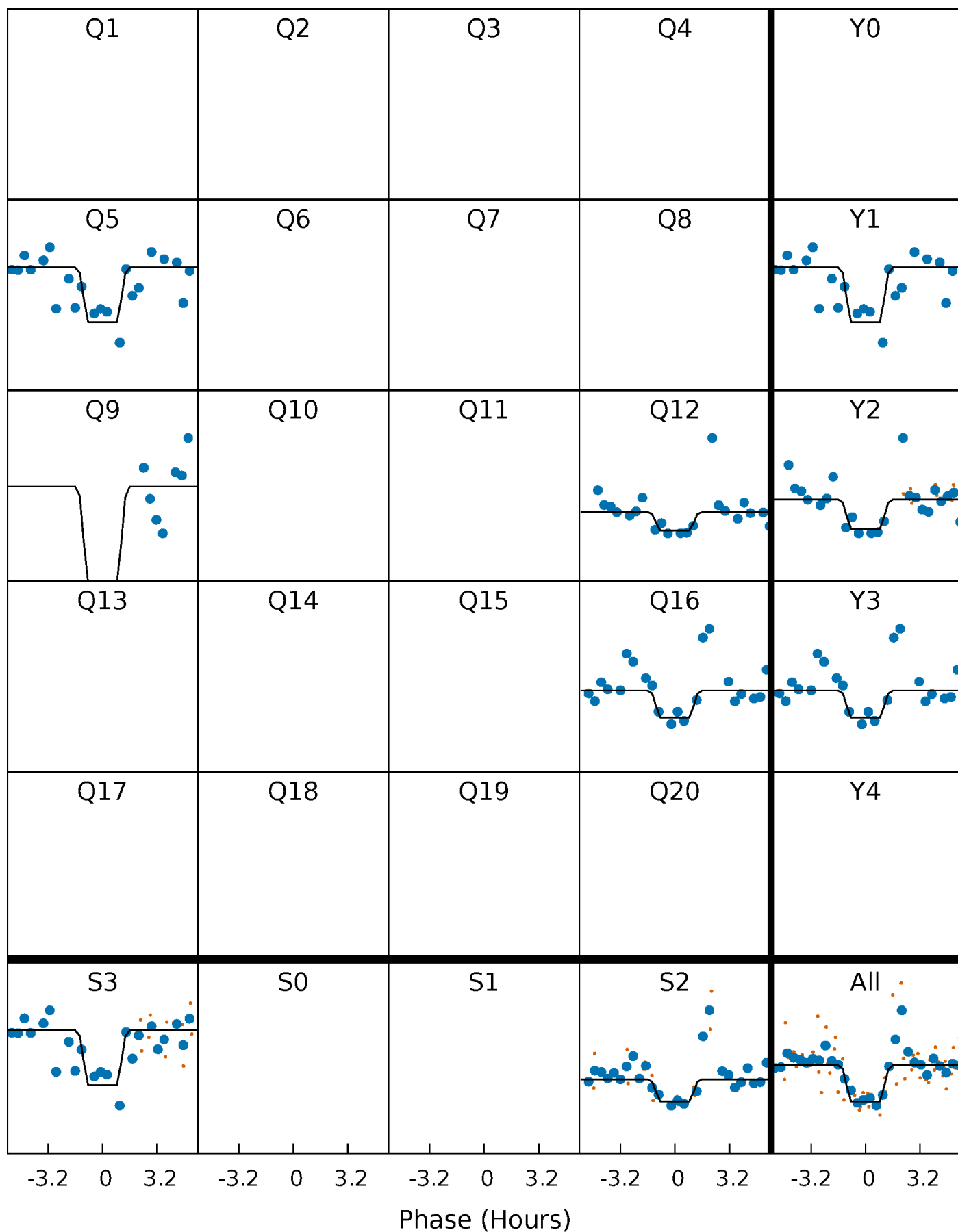
# DV Quarter-Phased Transit Curves

TCE 010448377-01 P=325.476321 Days  $T_0=194.574016$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

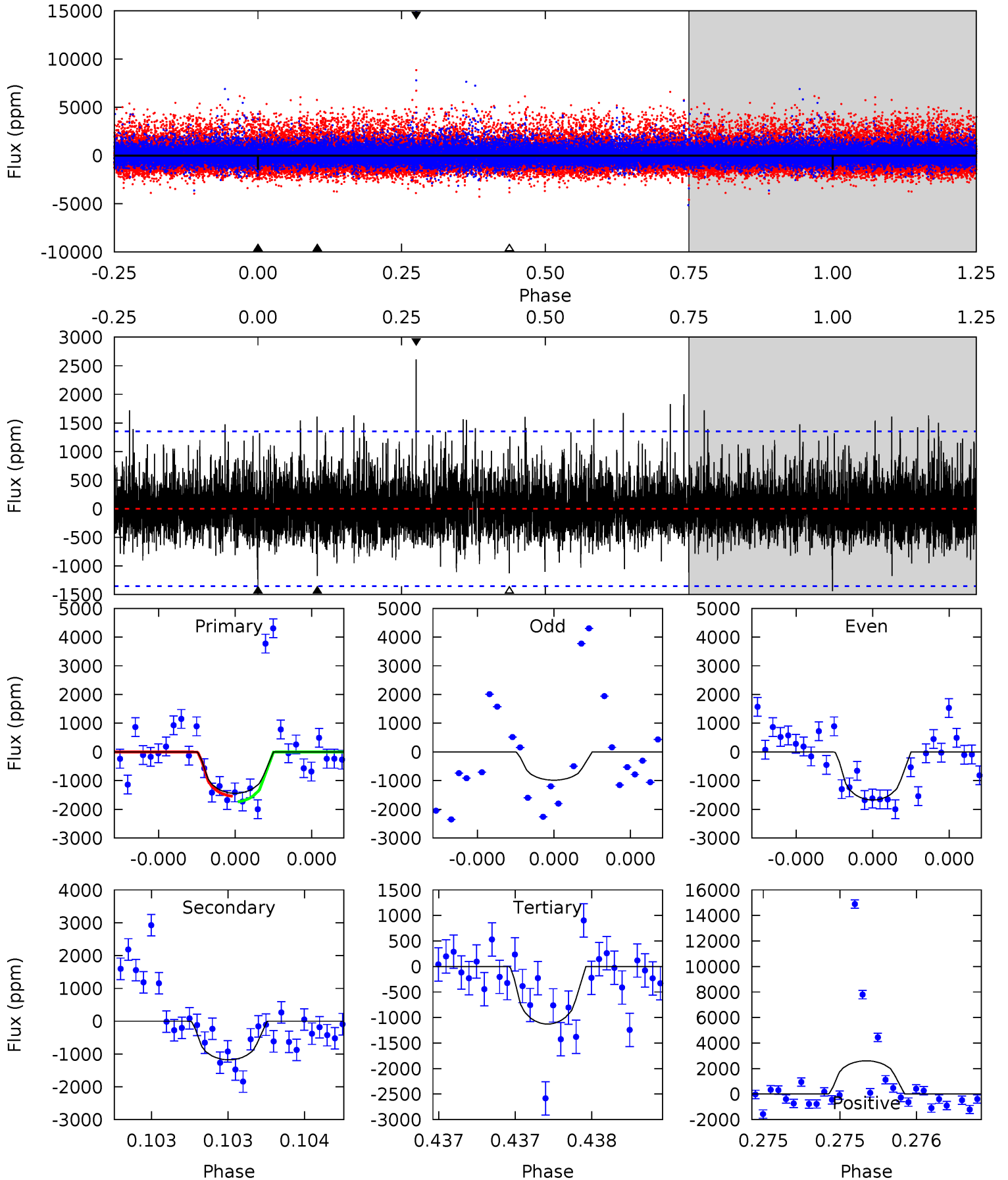
TCE 010448377-01   P=325.468177 Days    $T_0=194.595859$  (BKJD)



# DV Model-Shift Uniqueness Test

010448377-01, P = 325.476321 Days, E = 194.574016 Days

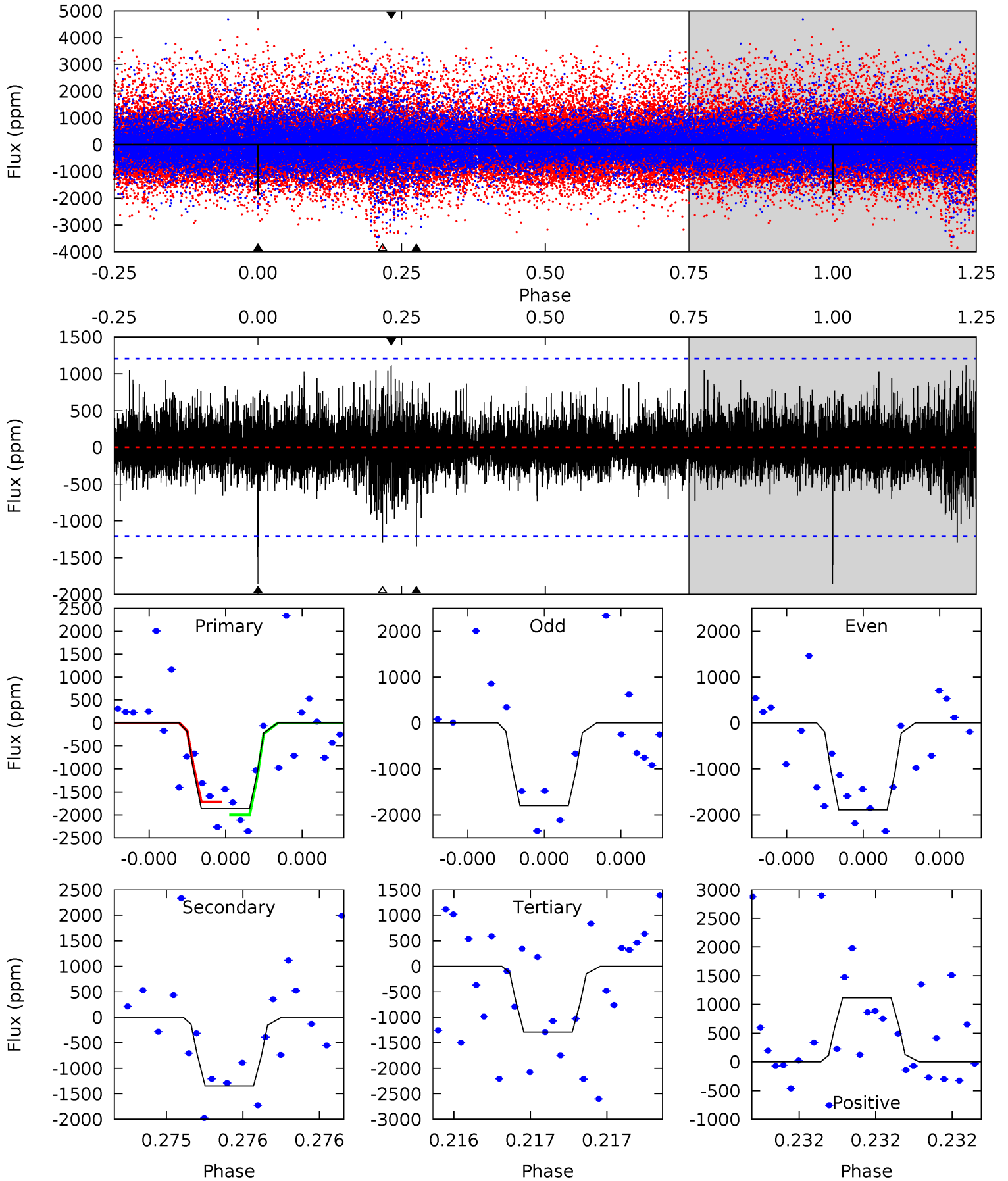
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
5.95	4.85	4.65	10.8	5.58	3.50	1.45	1.30	-4.81	0.21	-5.91	1.16	1.30	0.64	0.39



# Alt Model-Shift Uniqueness Test

010448377-01, P = 325.468177 Days, E = 194.595859 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
8.70	6.30	6.04	5.23	5.64	3.58	1.09	2.66	3.47	0.26	1.07	0.20	1.04	0.38	0.65



### Stellar Parameters For KIC 010448377

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R$ ( $R_{\odot}$ )	$M$ ( $M_{\odot}$ )	$p_{\star}$ ( $\text{g}\cdot\text{cm}^{-3}$ )
	$3874^{+120}_{-147}$	$4.650^{+0.064}_{-0.020}$	$0.480^{+0.050}_{-0.300}$	$0.614^{+0.028}_{-0.066}$	$0.614^{+0.035}_{-0.060}$	$3.740^{+1.107}_{-0.331}$
	+3%/-4%	+1%/-0%	+10%/-62%	+5%/-11%	+6%/-10%	+30%/-9%
Source	KIC0	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 010448377-01 / KOI

Detrend	Depth (ppm)	$R_p$ ( $R_{\oplus}$ )	$T_{max}$ (K)	$T_{obs}$ (K)	$A_{obs}$
DV	$-1175 \pm 242$	$4.85^{+4.20}_{-3.15}$	$209^{+7}_{-9}$	$3049^{+1261}_{-492}$	$17422^{+115965}_{-12604}$
Alt.	$-1346 \pm 214$	$4.75^{+4.56}_{-3.06}$	$209^{+8}_{-8}$	$3114^{+1287}_{-502}$	$20980^{+149571}_{-15717}$

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

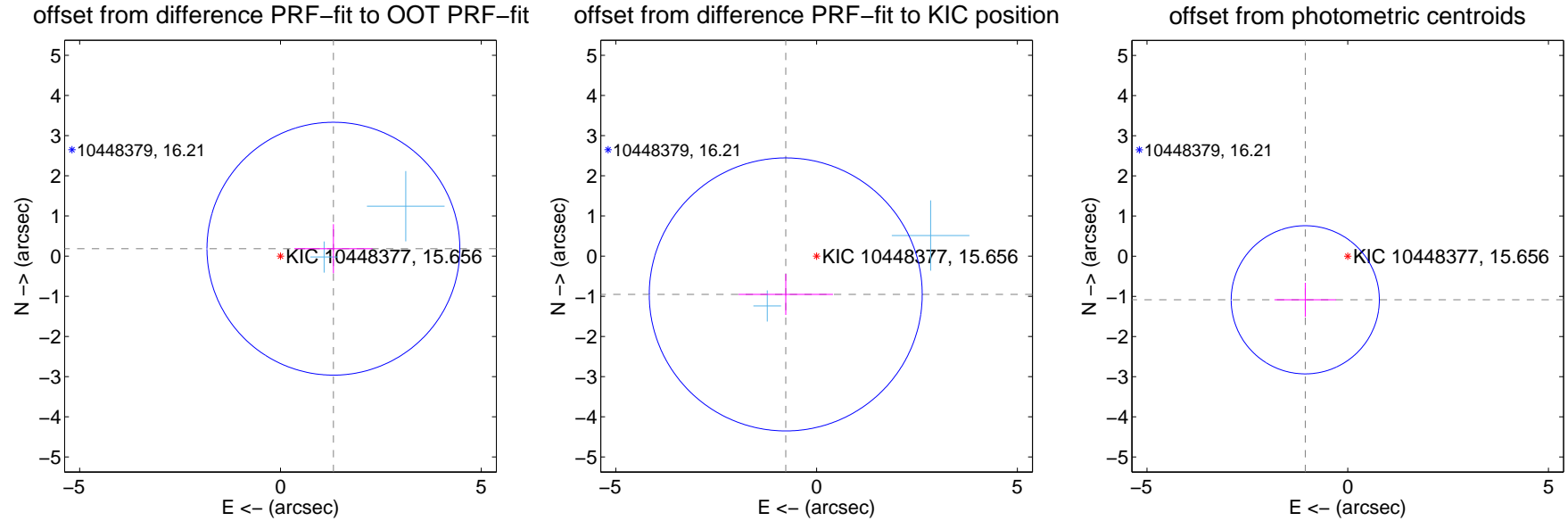
## DV Centroid Data

Supplemental centroid analysis for 010448377-01. Kepler magnitude: 15.66. Transit SNR 6.65

There are 2 quarters with good PRF difference image offsets

The direct PRF centroid is offset from the target star catalog position by about 0.78 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$1.331 \pm 1.049$	1.27	$-1.318 \pm 0.975$	$0.185 \pm 0.610$
PRF-fit source offset from KIC position	$1.224 \pm 1.133$	1.08	$0.768 \pm 1.176$	$-0.953 \pm 0.510$
photometric centroid source offset	$1.52 \pm 0.61$	2.46	$1.06 \pm 0.77$	$-1.09 \pm 0.42$

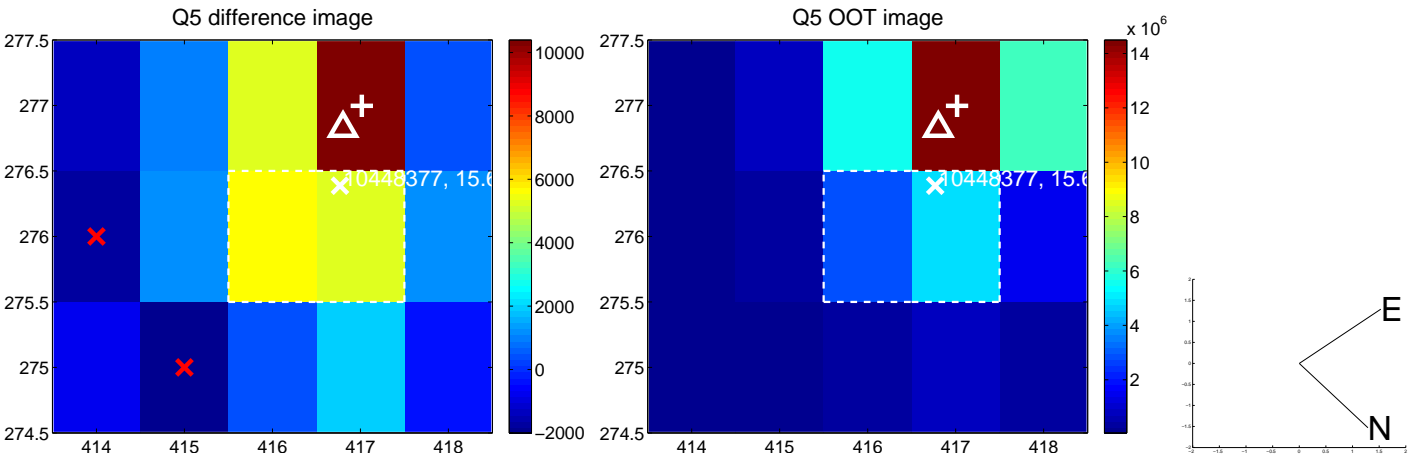


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: three-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

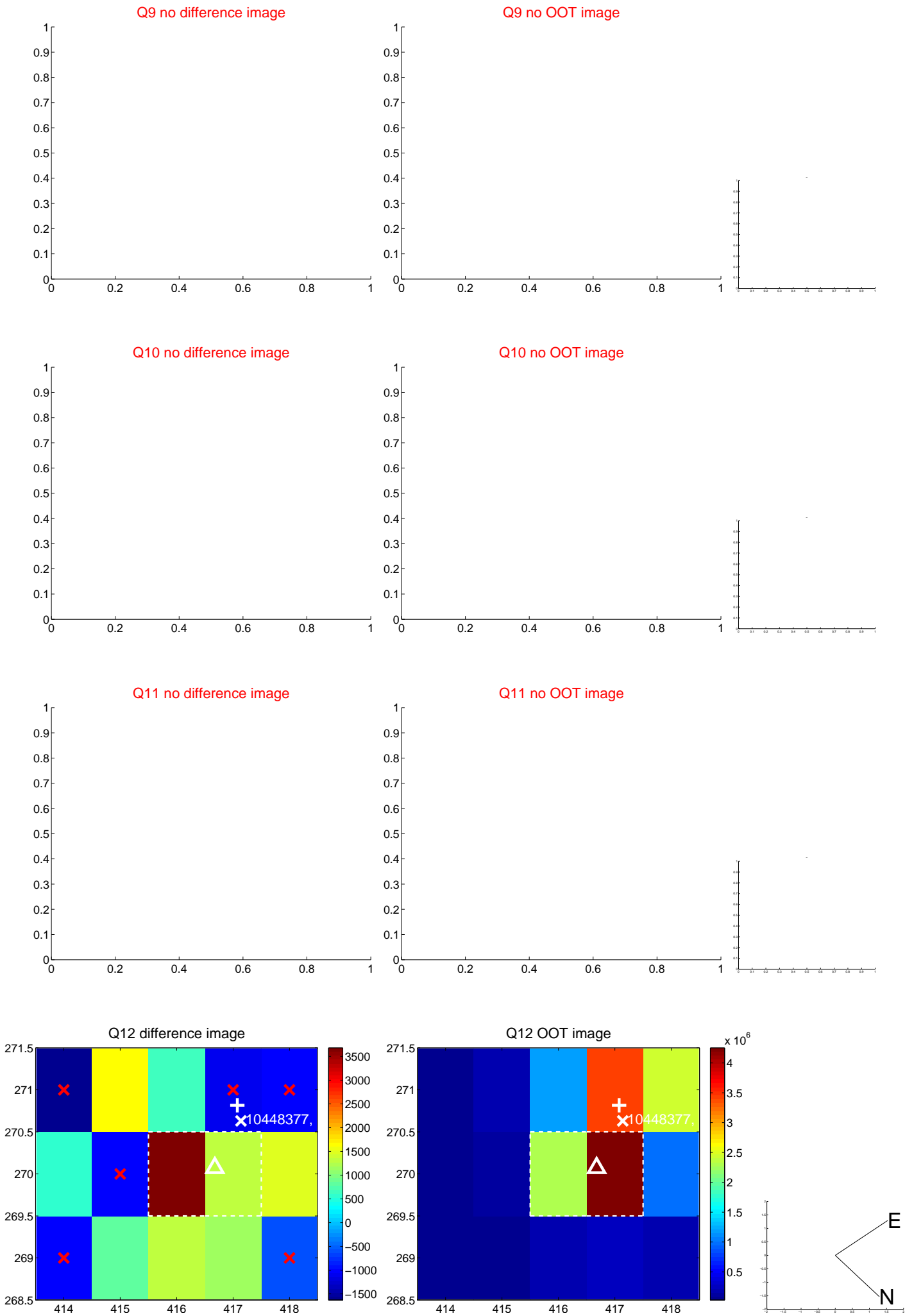


white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

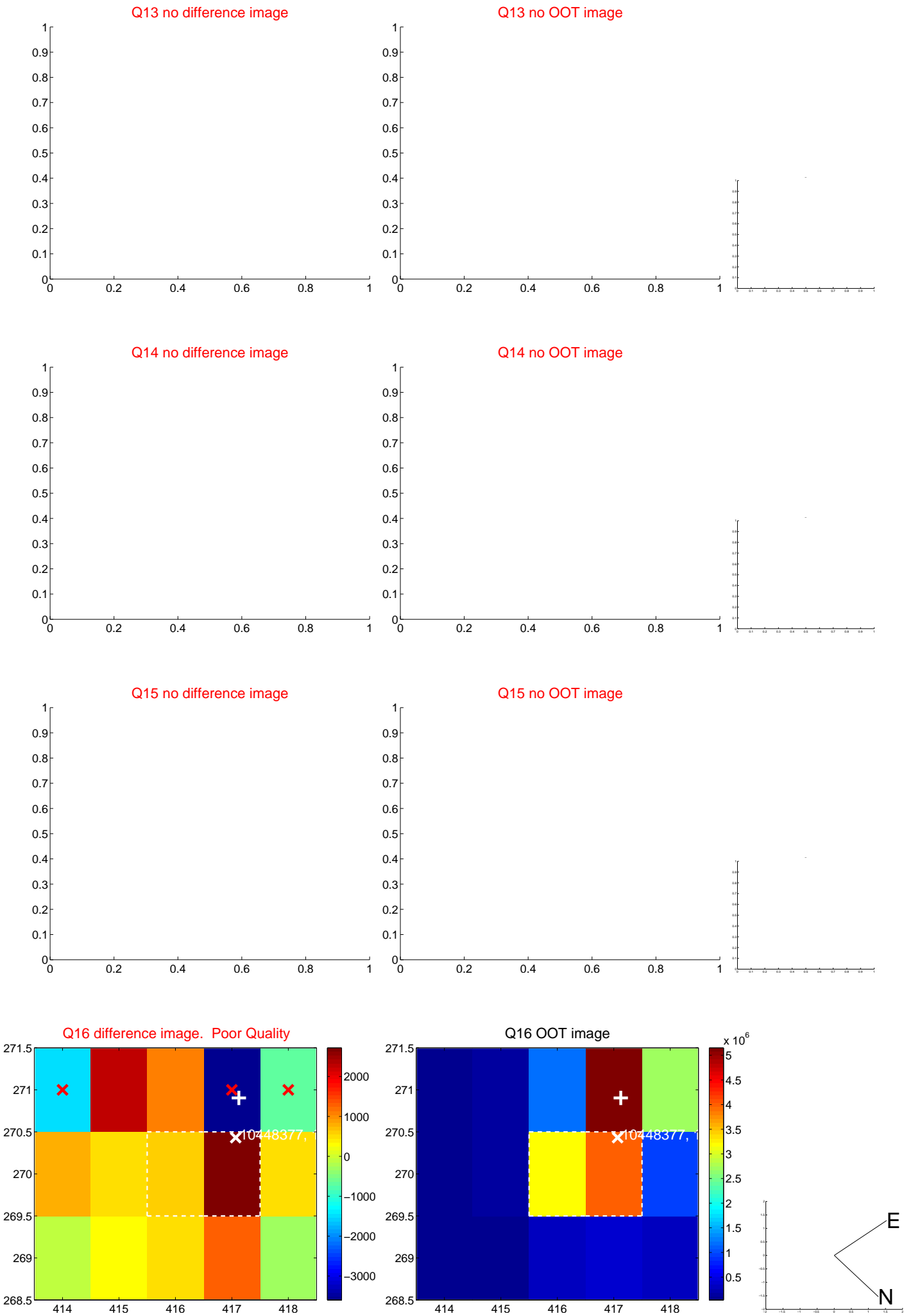




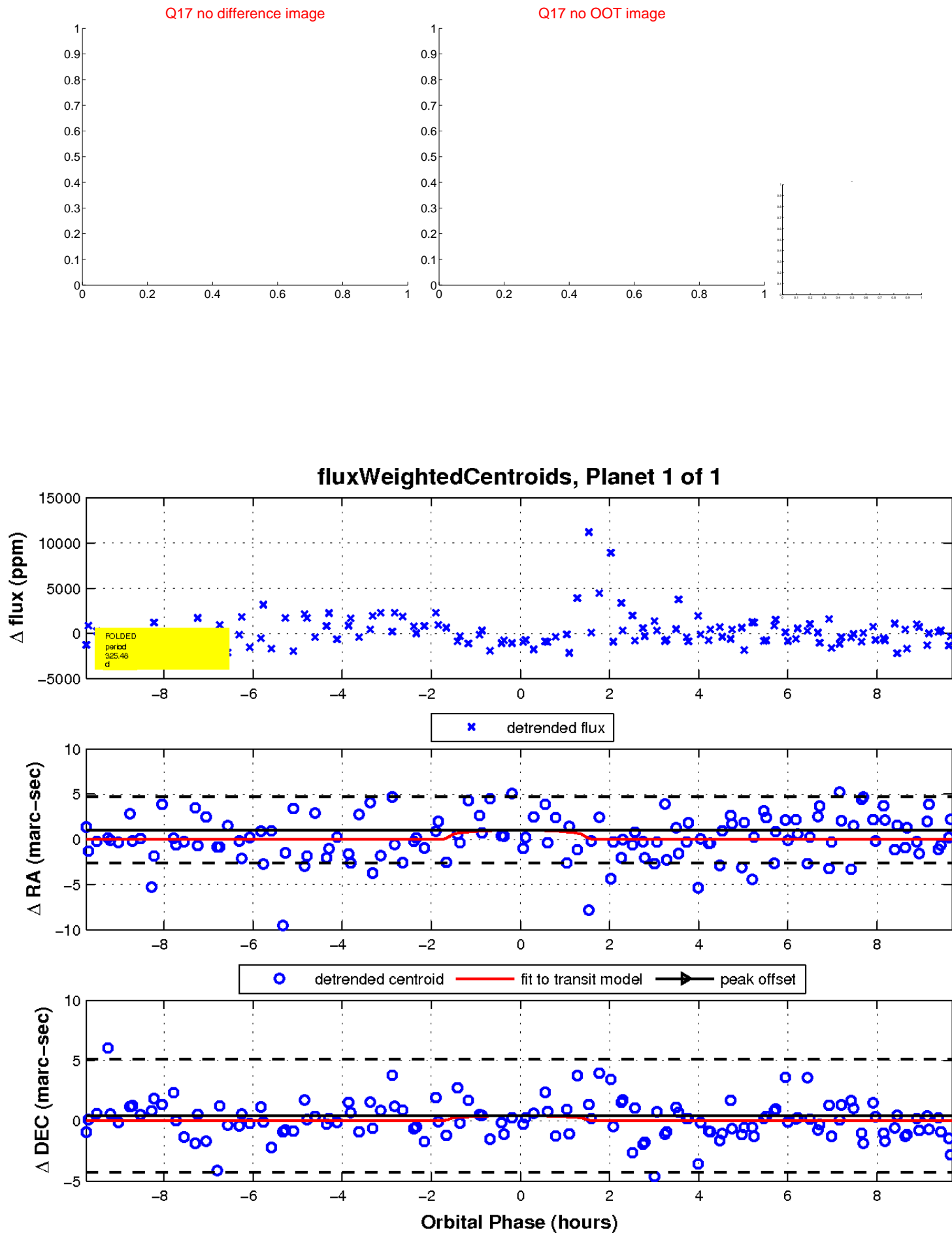
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UKIRT Image

