

# KIC 007984047

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
007984047-01	OBS	1552.01	77.634289	184.249999	16563.8	4.101	163.2	156.1	0.76	4812	9.41	2.65

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
007984047-01	OBS	PC	0.94	0	0	0	0	CENT_KIC_POS

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

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

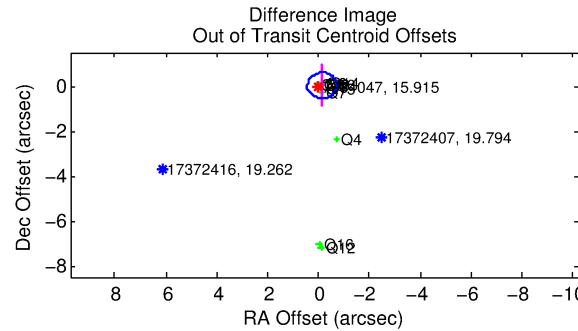
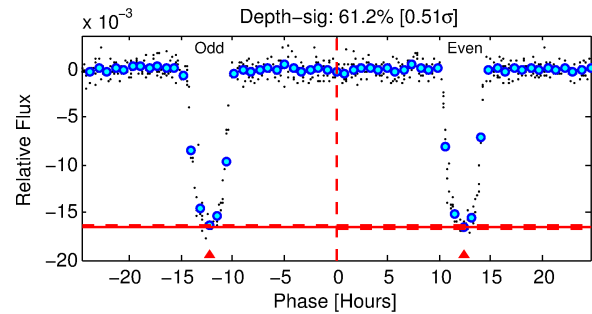
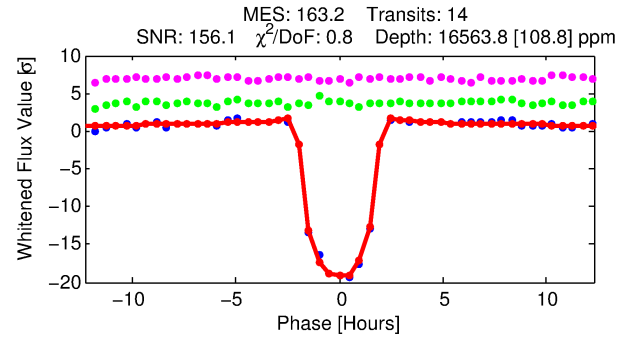
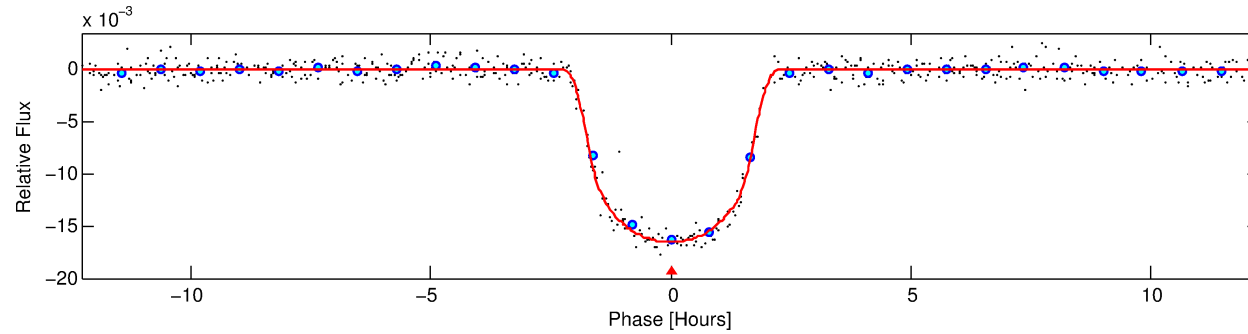
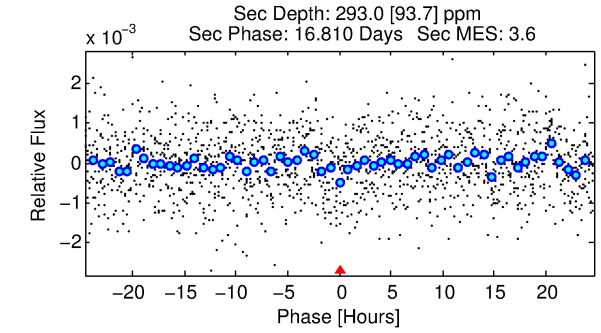
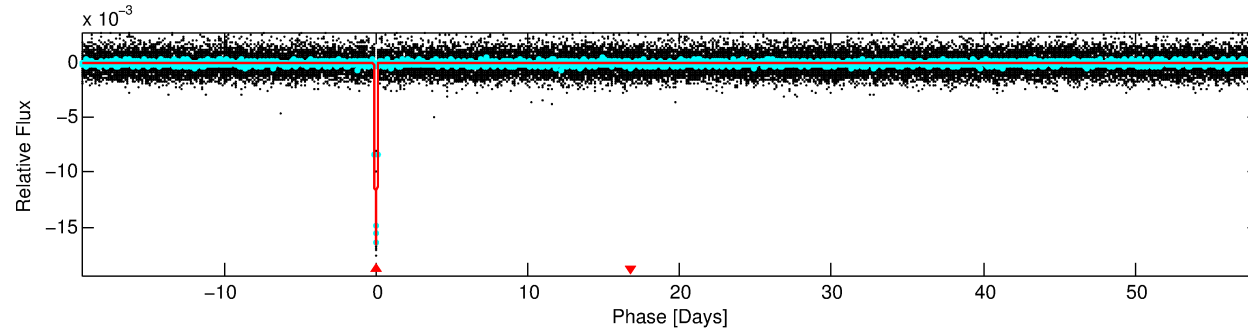
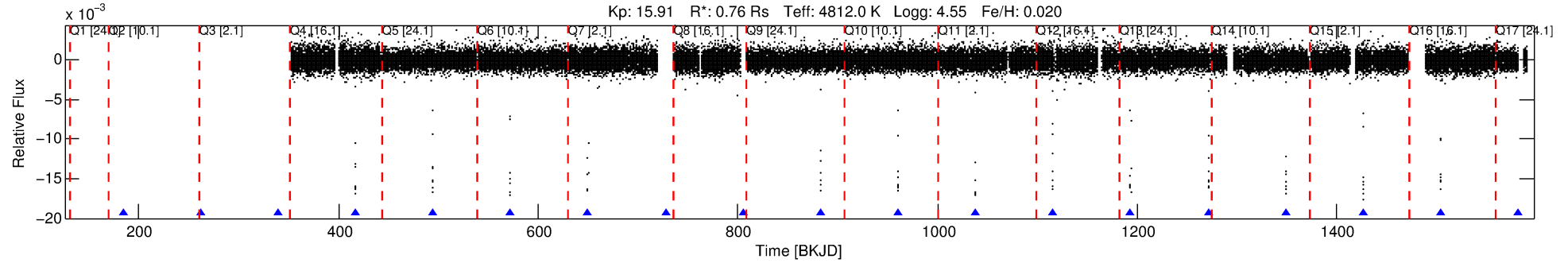
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 007984047-01

No Significant Match Found

# DV One-Page Summary

KIC: 7984047 Candidate: 1 of 1 Period: 77.634 d  
KOI: K01552.01 Corr: 0.995



## DV Fit Results:

Period = 77.63429 [0.00006] d  
Epoch = 184.2500 [0.0007] BKJD  
Rp/R\* = 0.1142 [0.0038]  
a/R\* = 158.79 [15.91]  
b = 0.19 [0.52]  
Seff = 2.65 [0.50]  
Teq = 325 [15] K  
Rp = 9.41 [0.97] Re  
a = 0.3214 [0.0266] AU  
Ag = 188.20 [65.56] [2.86σ]  
Teffp = 1863 [166] K [9.22σ]

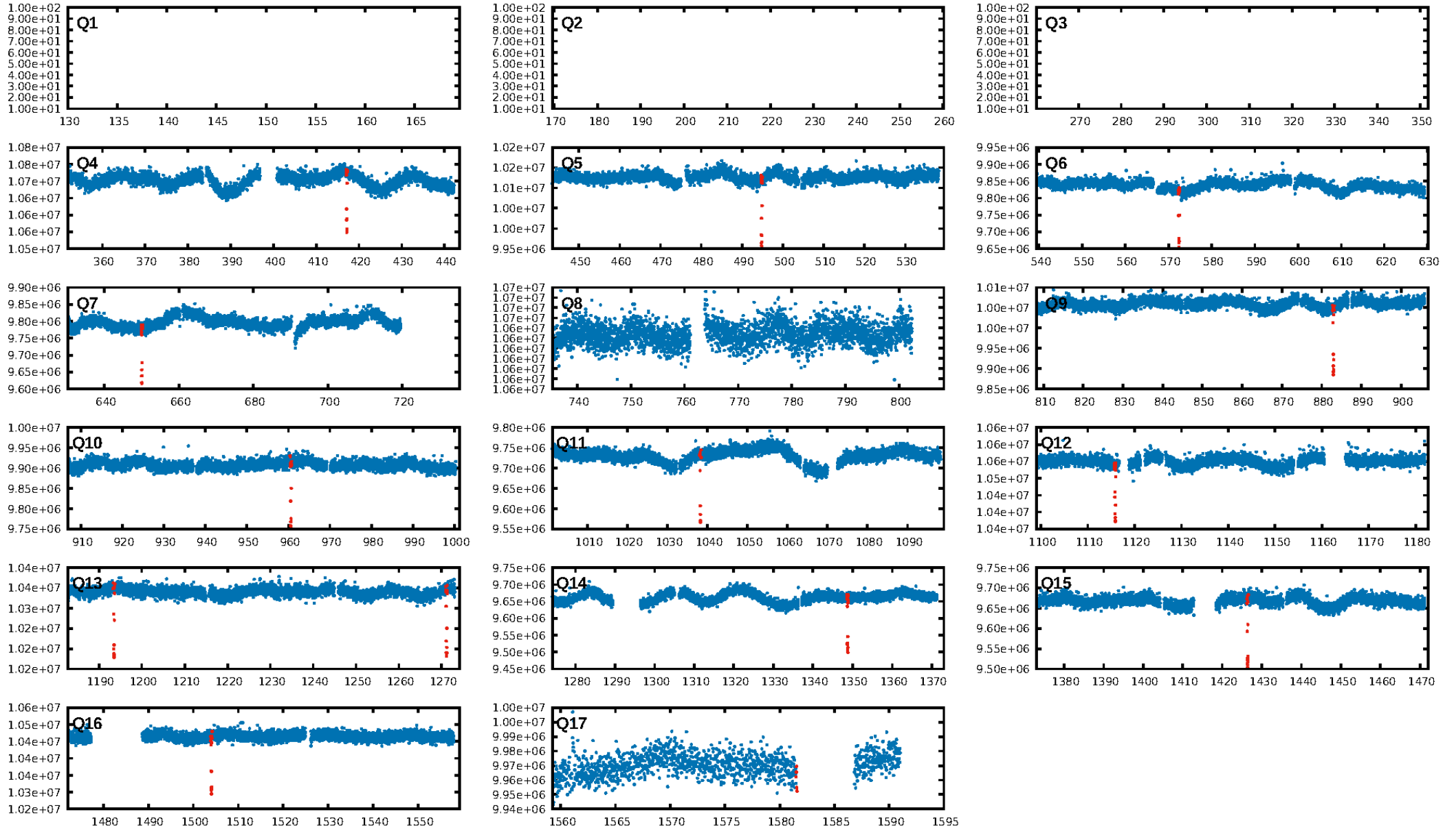
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: 19.6%  
ModelChiSquareGof-sig: 100.0%  
Bootstrap-pfa: 0.00e+00  
RollingBand-fgt: 1.00 [13/13]  
GhostDiagnostic-chr: 5.985  
Centroid-sig: 0.0%  
Centroid-so: 0.385 arcsec [5.40σ]  
OotOffset-rm: 0.148 arcsec [0.78σ]  
KicOffset-rm: 0.104 arcsec [1.39σ]  
OotOffset-st: 3/2/3/3 [11]  
KicOffset-st: 3/2/3/3 [11]  
DiffImageQuality-fgm: 1.00 [11/11]  
DiffImageOverlap-fno: 1.00 [11/11]

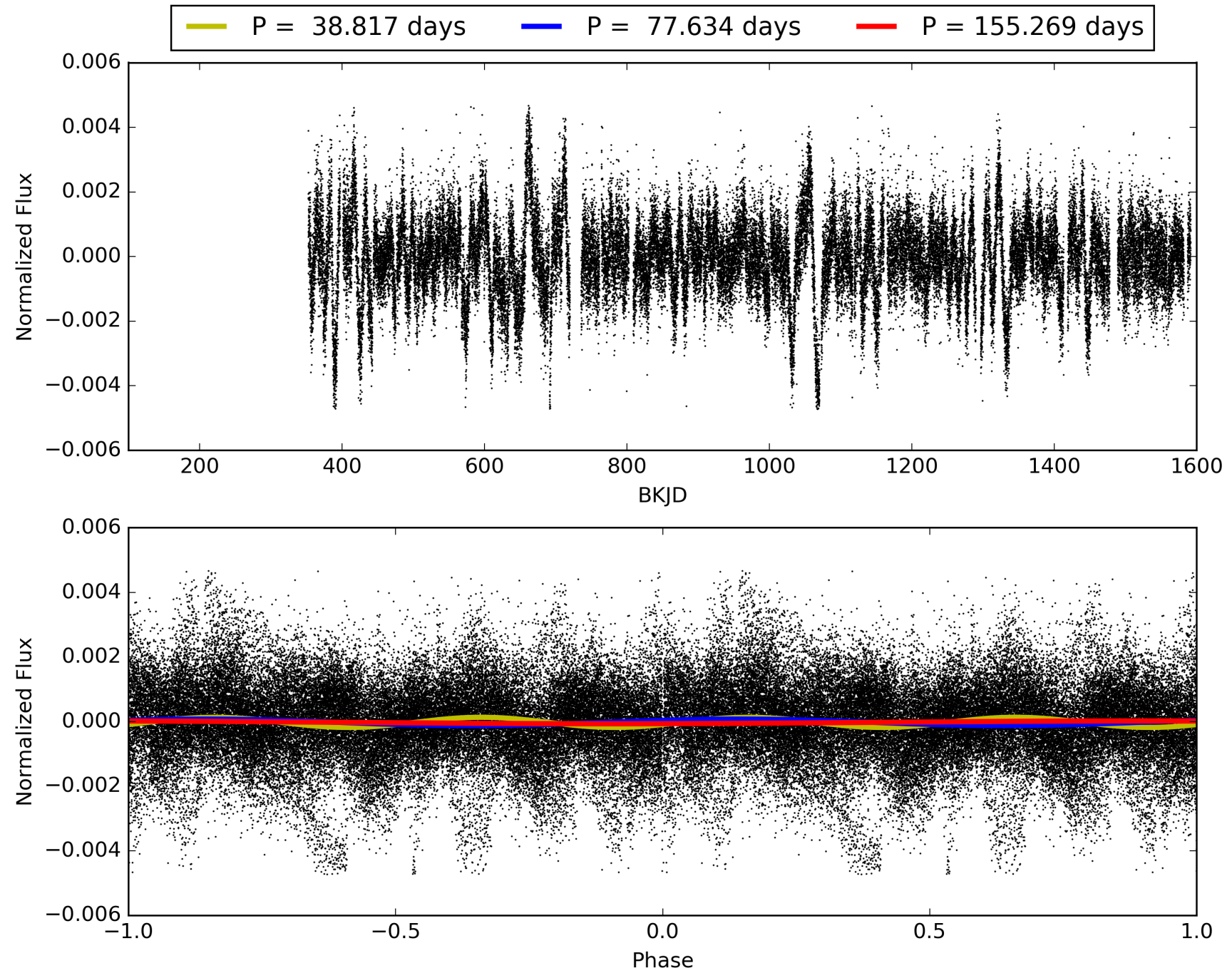
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 14:07:35 Z

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

# TCE 007984047-01, PDC Light Curves

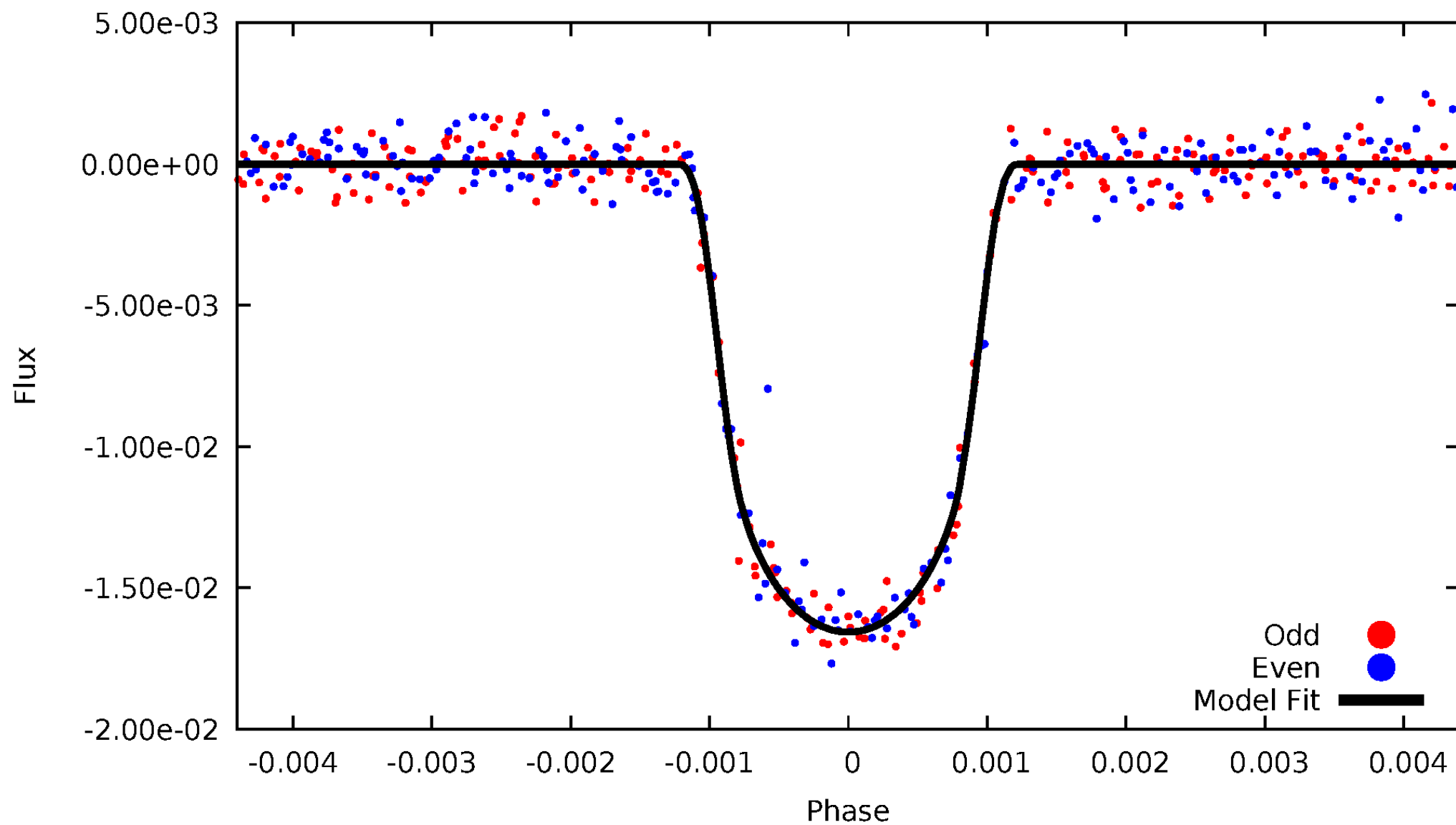


TCE 007984047-01



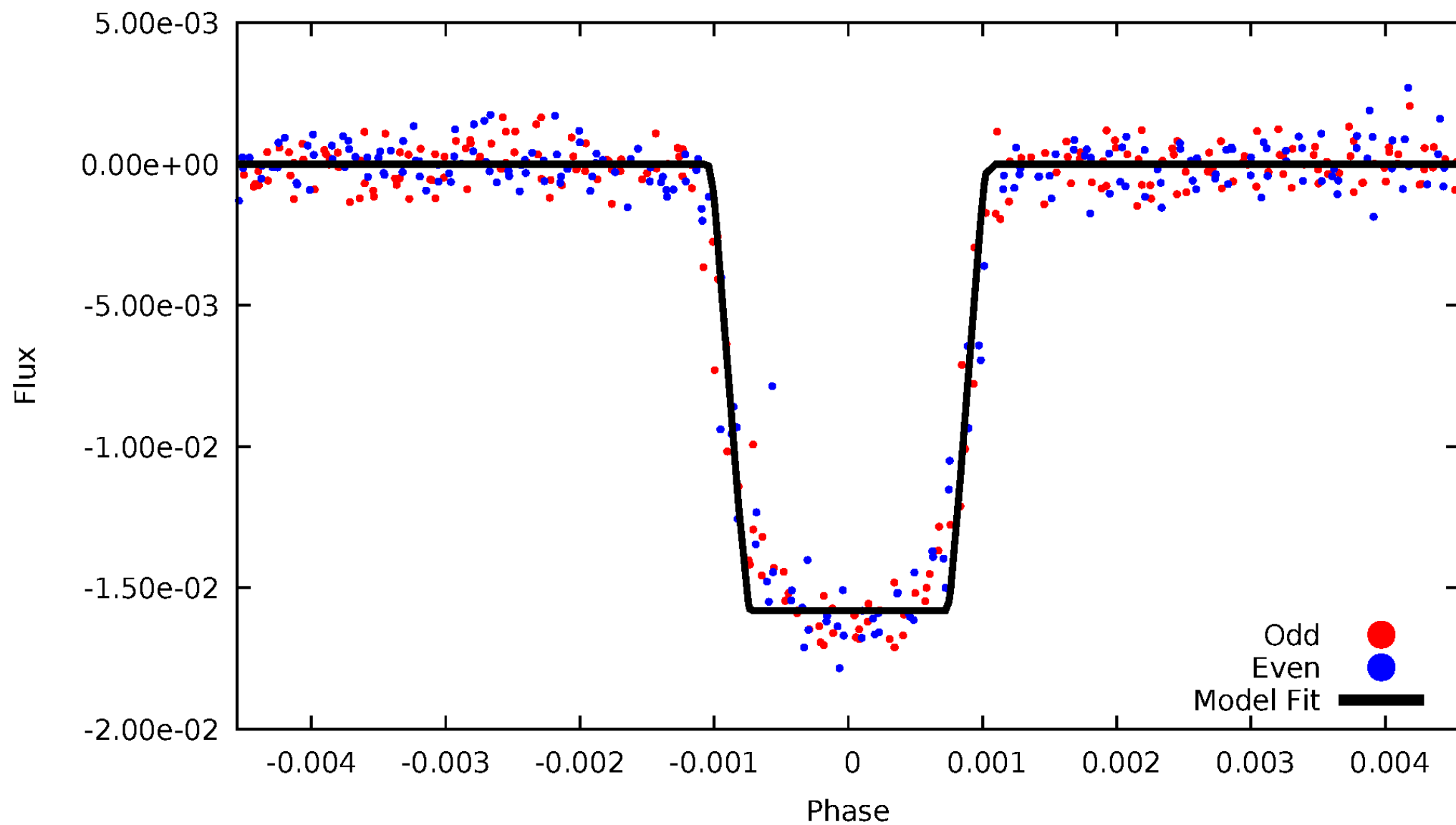
# DV Odd/Even

TCE 007984047-01



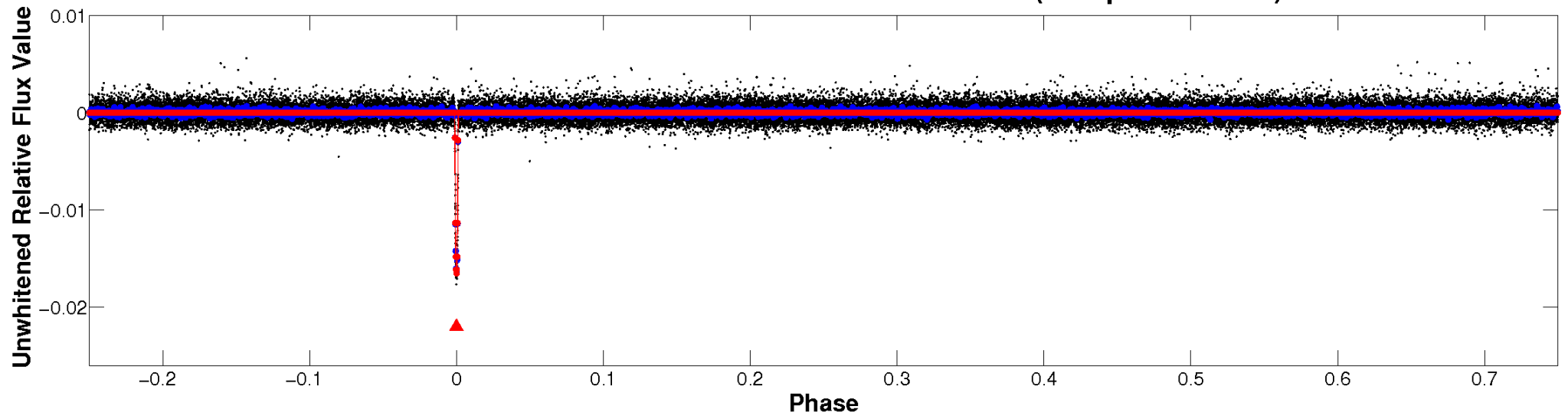
# ALT Odd/Even

TCE 007984047-01

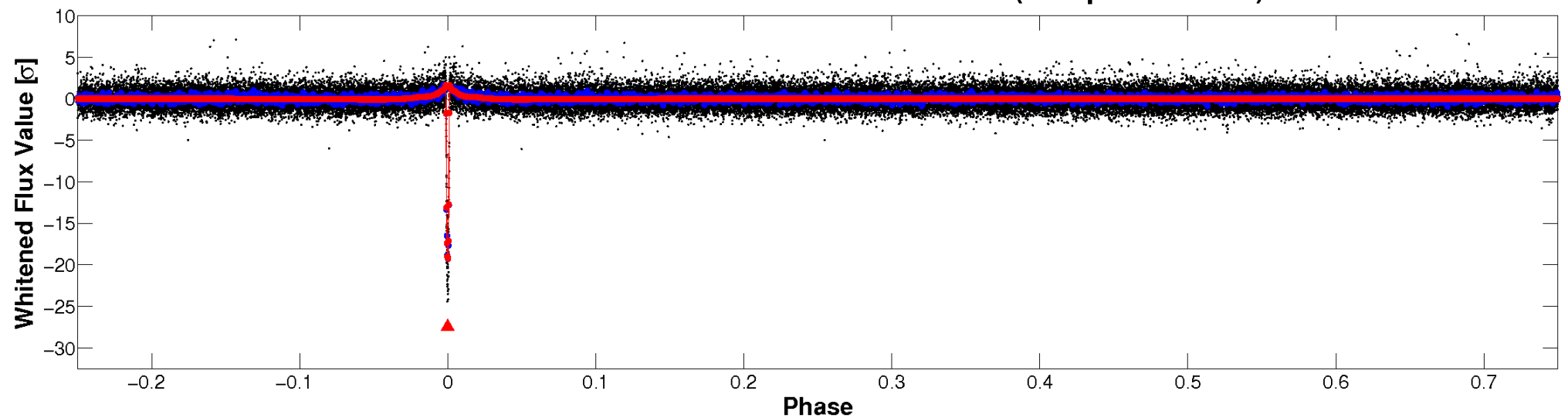


# Non-Whitened Vs. Whitened Light Curve

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

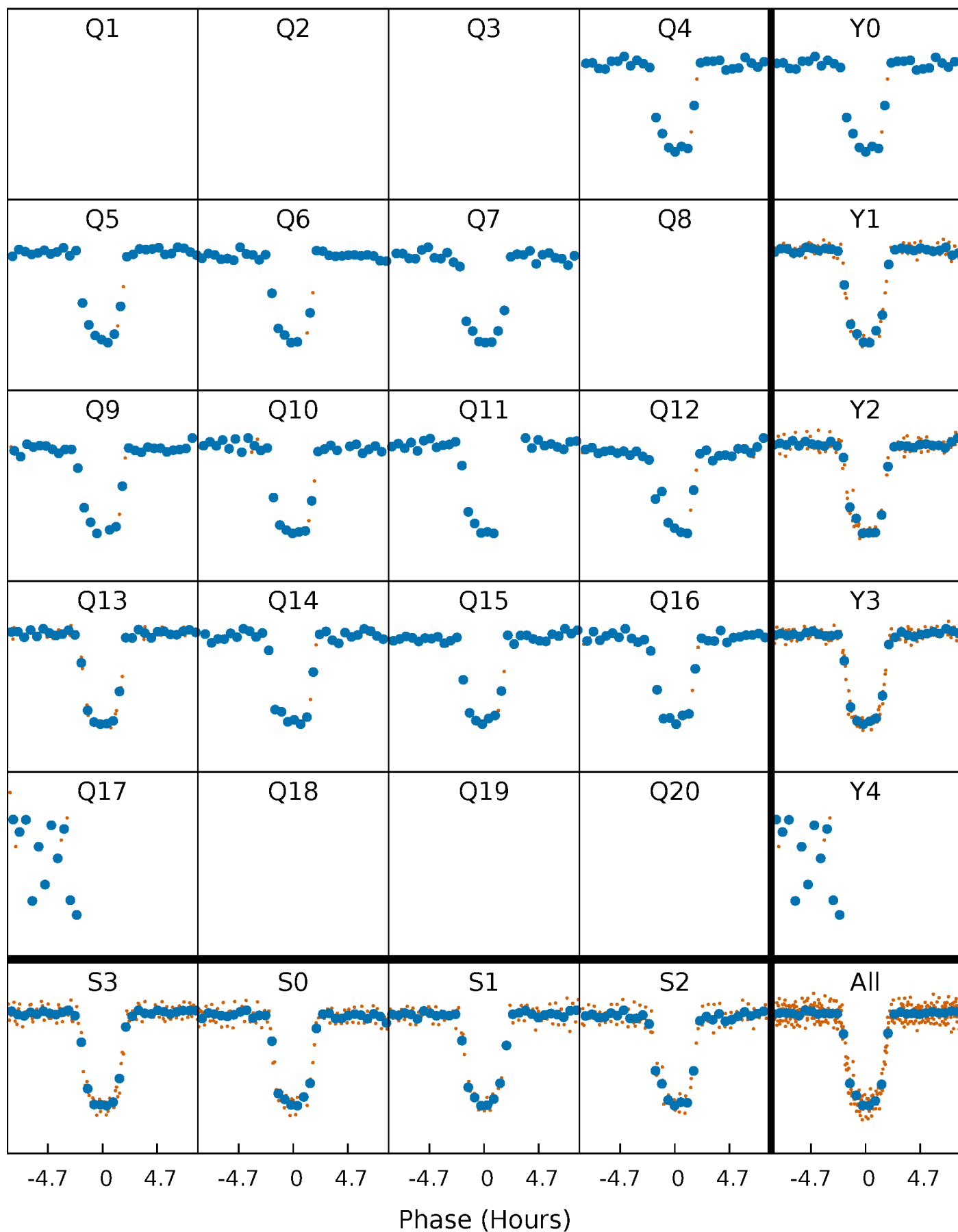


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



# PDC Quarter-Phased Transit Curves

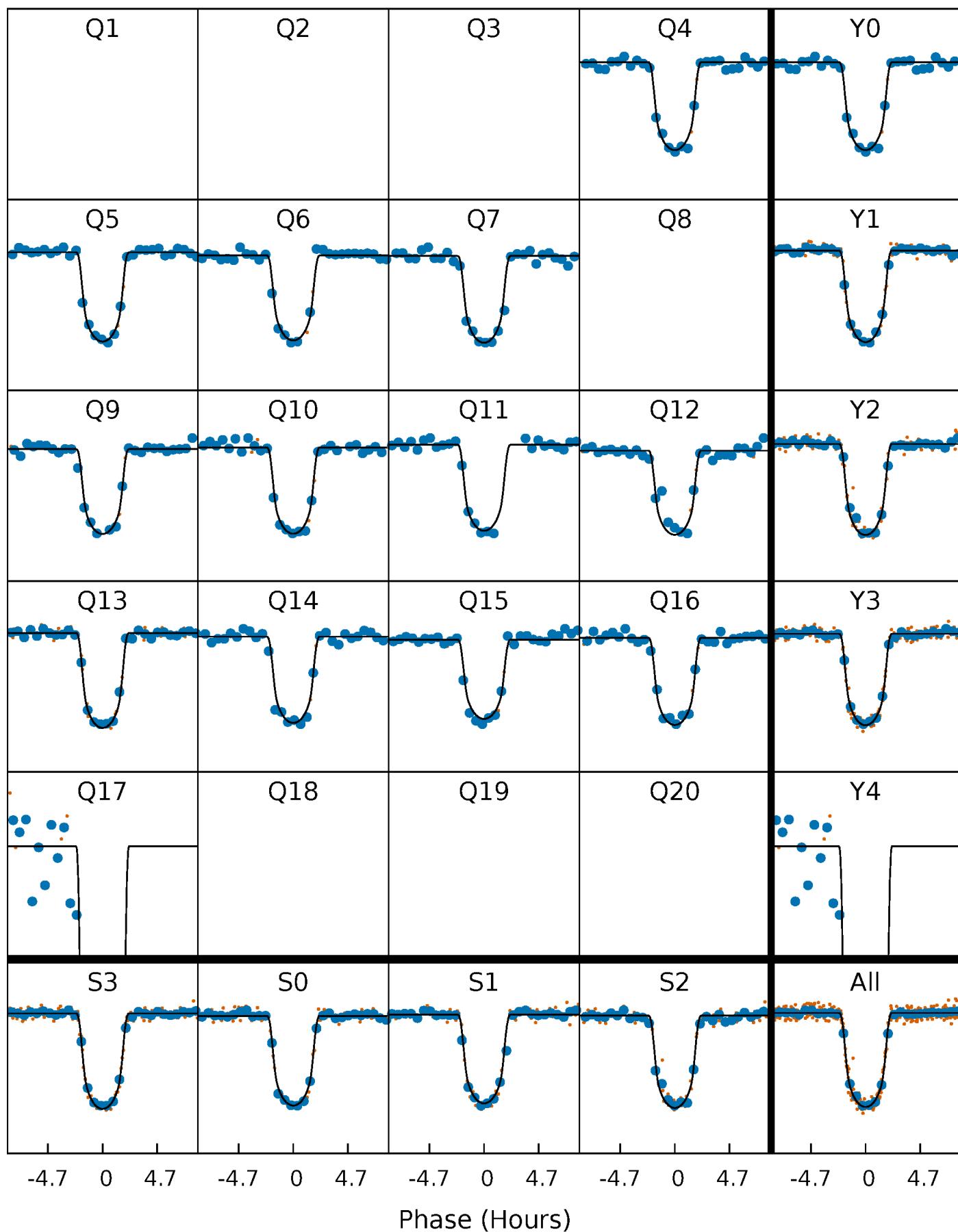
TCE 007984047-01 P= 77.634289 Days  $T_0=184.249999$  (BKJD)





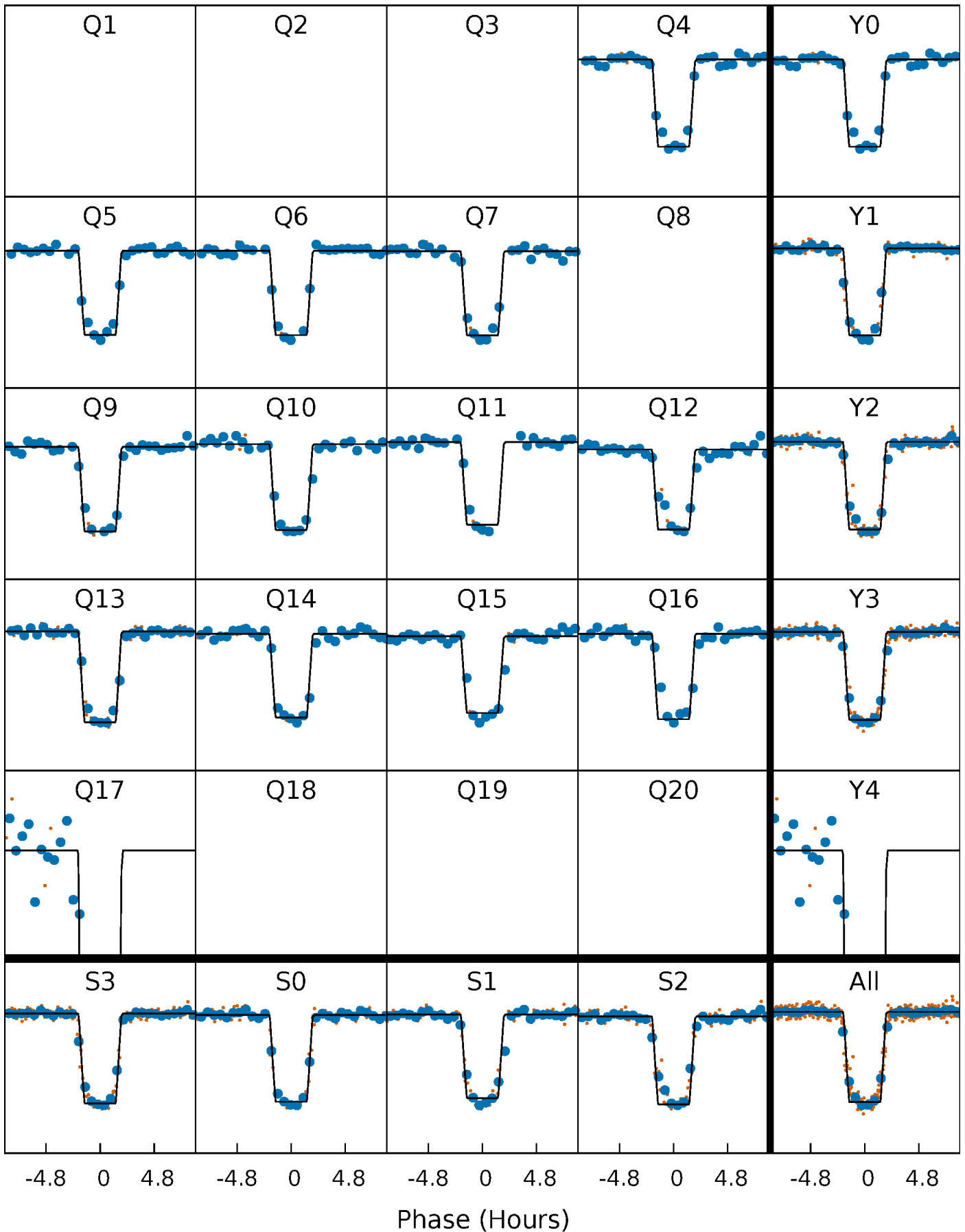
# DV Quarter-Phased Transit Curves

TCE 007984047-01 P= 77.634289 Days  $T_0=184.249999$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

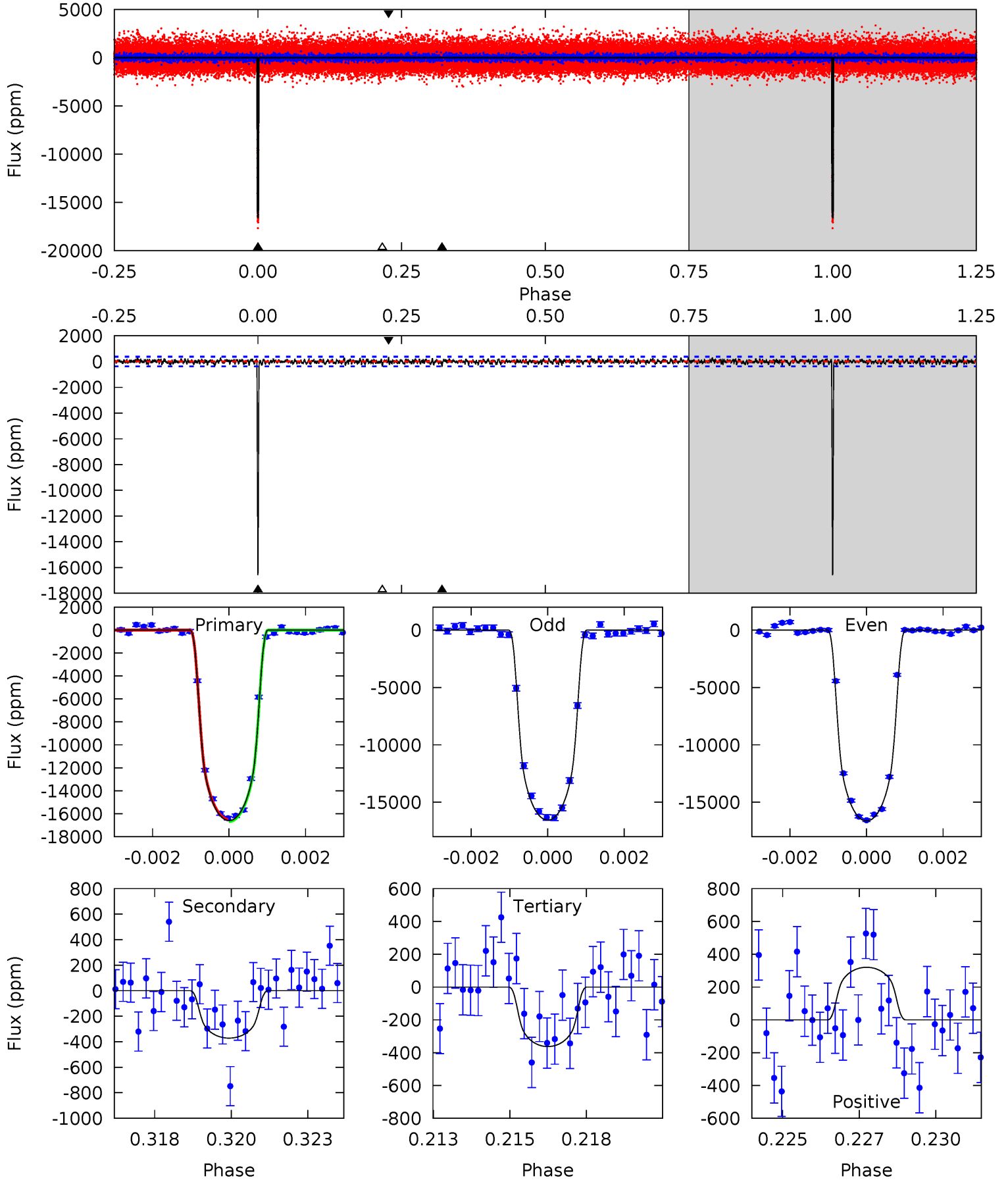
TCE 007984047-01 P= 77.633480 Days  $T_0=184.258705$  (BKJD)



# DV Model-Shift Uniqueness Test

007984047-01, P = 77.634289 Days, E = 184.249999 Days

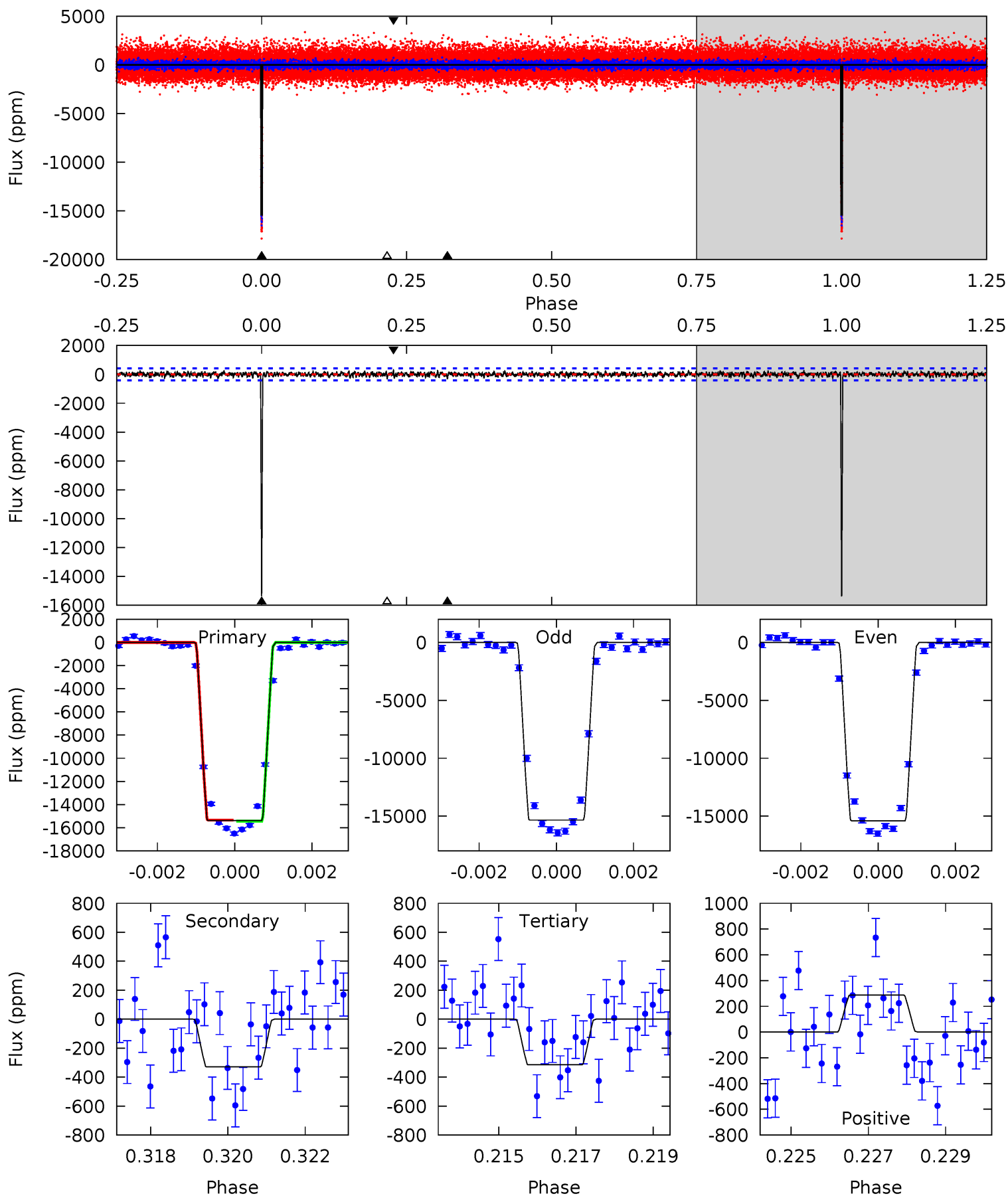
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
232.0	5.20	5.07	4.48	5.29	3.04	1.31	226.9	227.5	0.12	0.72	0.51	0.99	0.02	1.22



# Alt Model-Shift Uniqueness Test

007984047-01,  $P = 77.633480$  Days,  $E = 184.258705$  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
196.2	4.19	4.02	3.66	5.32	3.08	1.09	192.2	192.5	0.18	0.53	0.36	1.00	0.02	0.60



### Stellar Parameters For KIC 007984047

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$4812^{+172}_{-172}$	$4.548^{+0.066}_{-0.039}$	$0.020^{+0.250}_{-0.300}$	$0.755^{+0.054}_{-0.074}$	$0.734^{+0.083}_{-0.060}$	$2.403^{+0.736}_{-0.321}$
	+4%/-4%	+1%/-1%	+1250%/-1500%	+7%/-10%	+11%/-8%	+31%/-13%
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 007984047-01 / KOI 1552.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	$A_{obs}$
DV	$-372 \pm 72$	$9.40^{+0.57}_{-0.60}$	$454^{+18}_{-21}$	$2708^{+94}_{-108}$	$244^{+57}_{-55}$
Alt.	$-329 \pm 78$	$10.33^{+0.61}_{-0.58}$	$453^{+18}_{-18}$	$2601^{+96}_{-105}$	$178^{+47}_{-45}$

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

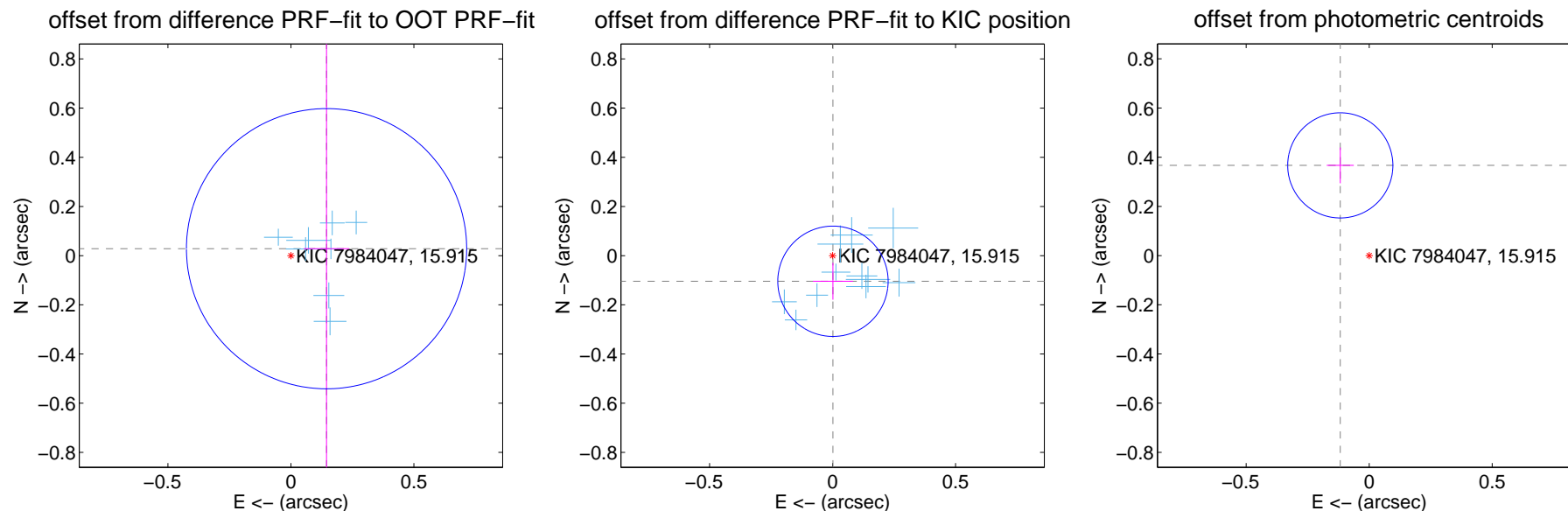
## DV Centroid Data

Supplemental centroid analysis for 007984047-01. Kepler magnitude: 15.91. Transit SNR 156.08

There are 11 quarters with good PRF difference image offsets

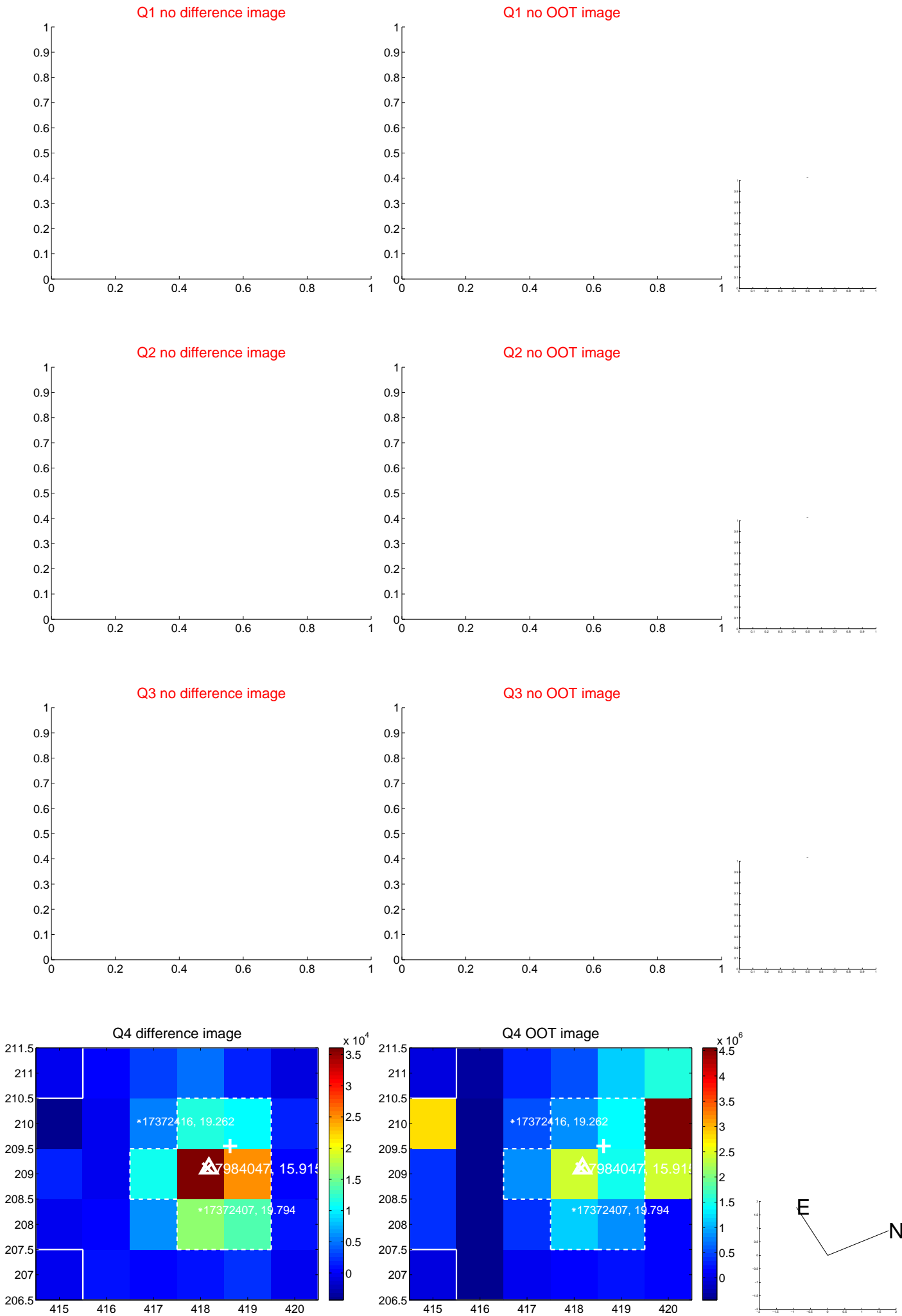
The OOT PRF centroid is offset from the target star catalog position by about 7.10 arcsec so the offset from difference PRF-fit to OOT-fit may be invalid.

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.148 \pm 0.190$	0.78	$-0.145 \pm 0.093$	$0.028 \pm 0.926$
PRF-fit source offset from KIC position	$0.104 \pm 0.075$	1.39	$-0.002 \pm 0.081$	$-0.104 \pm 0.075$
photometric centroid source offset	$0.39 \pm 0.07$	5.40	$0.12 \pm 0.05$	$0.37 \pm 0.07$

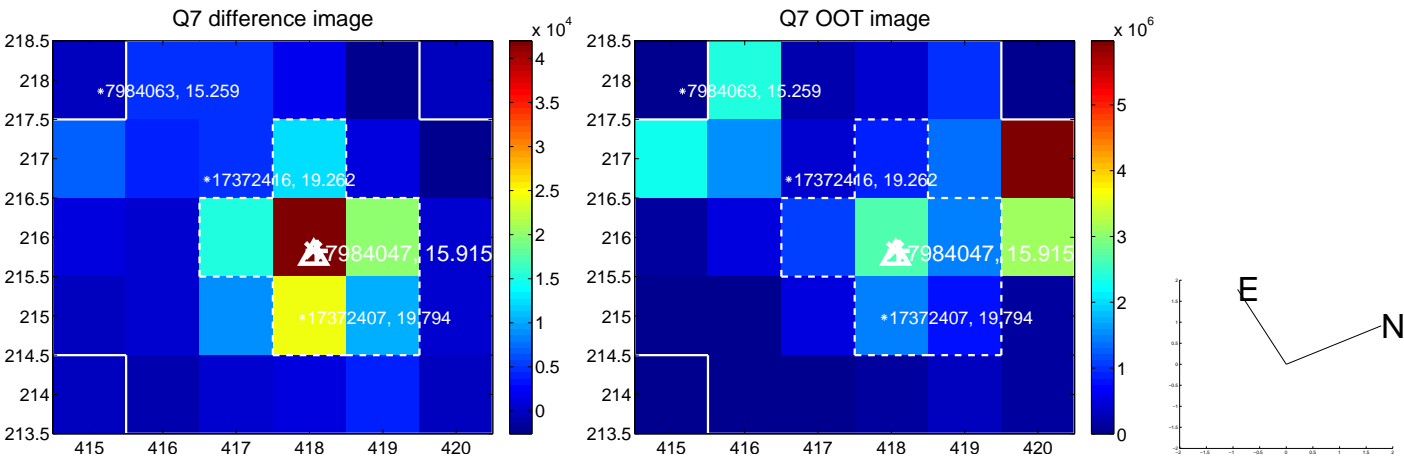
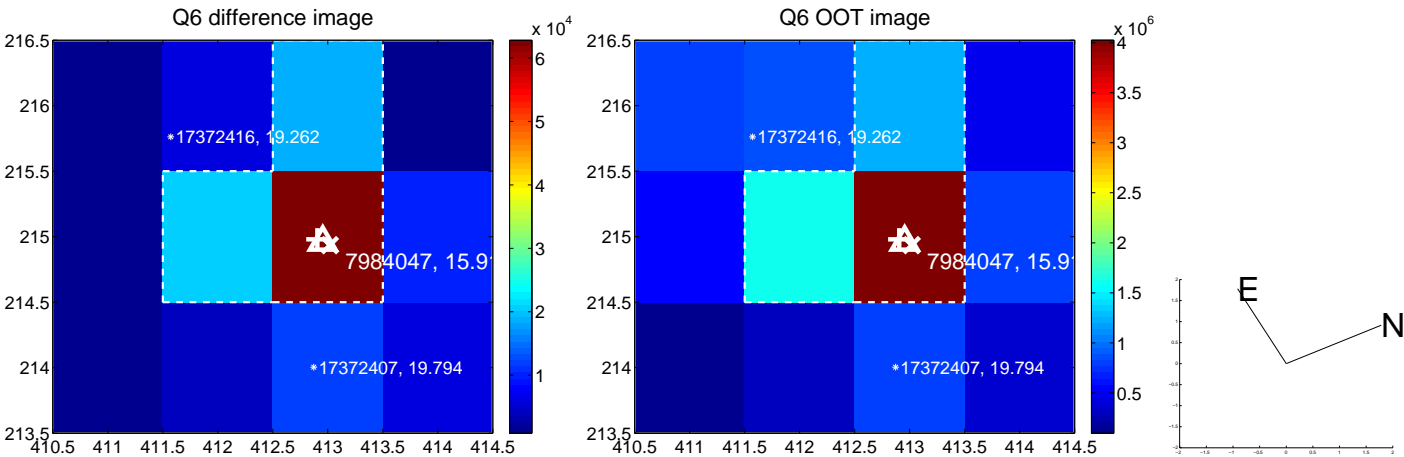
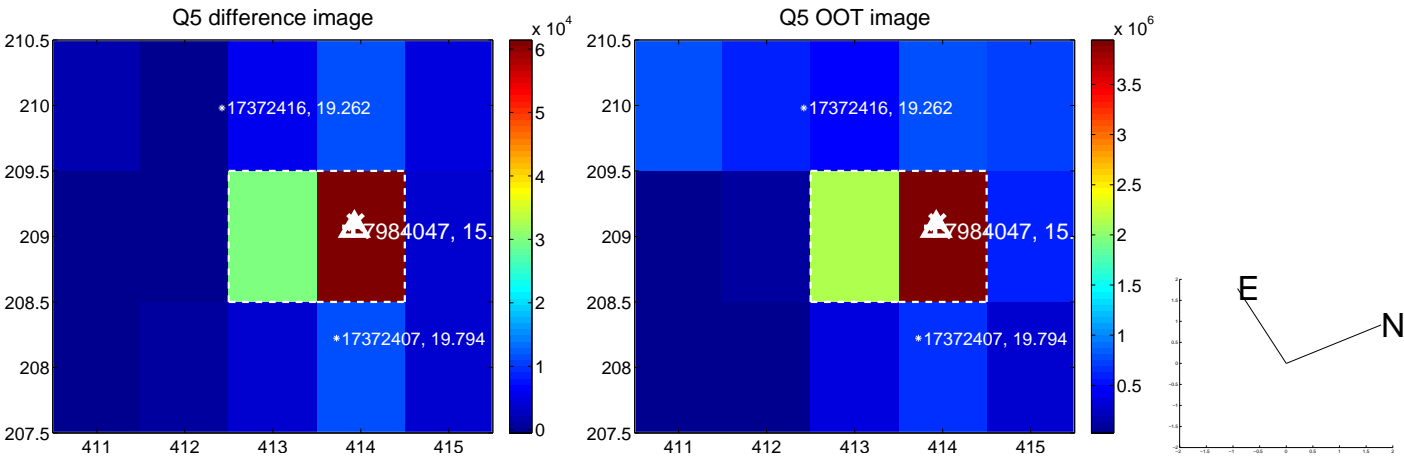


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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

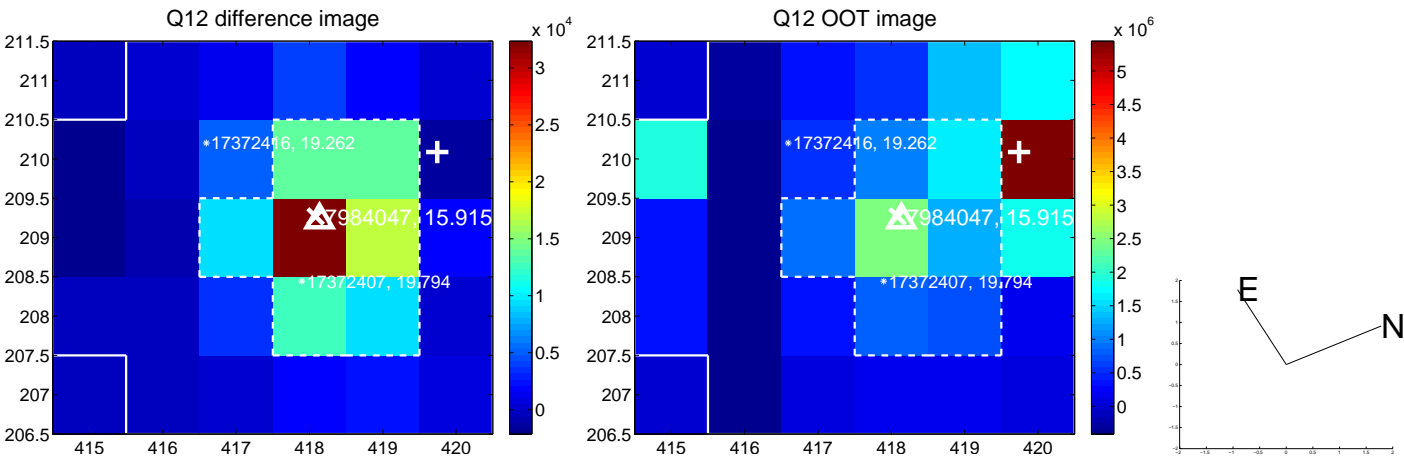
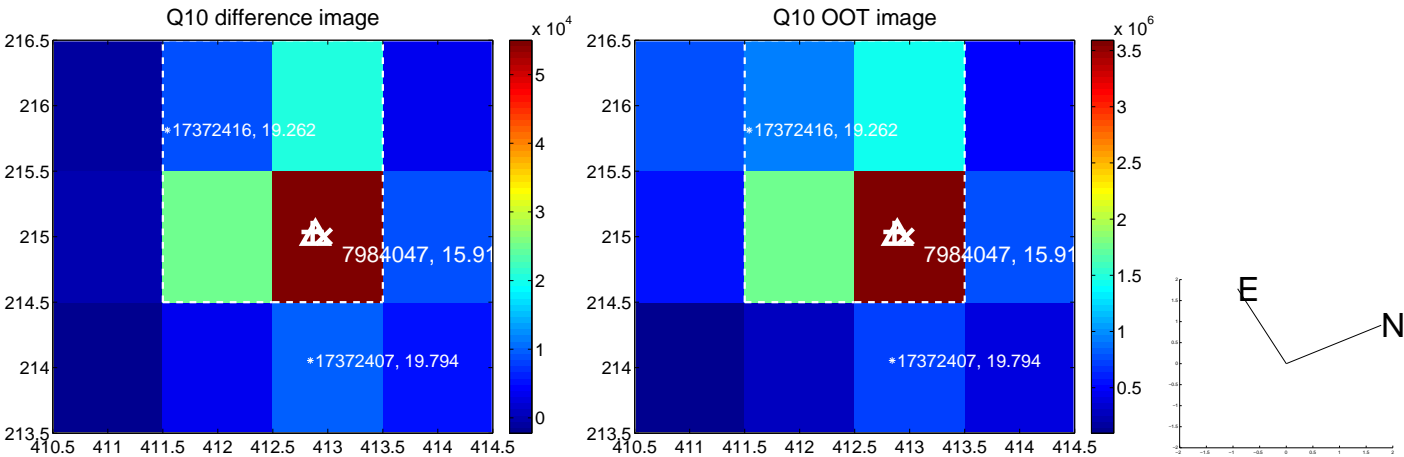
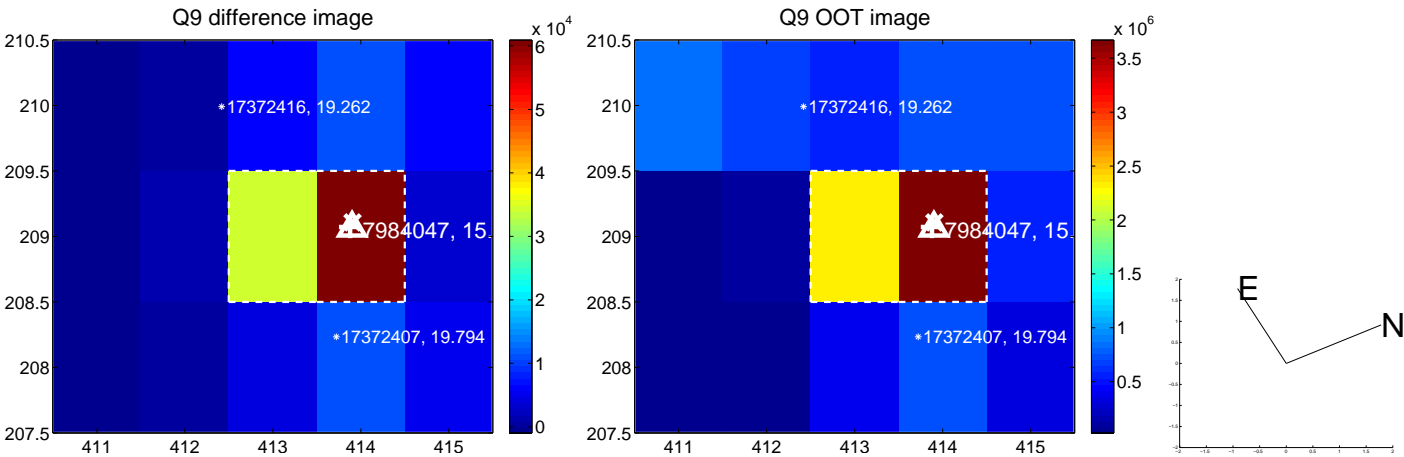


white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

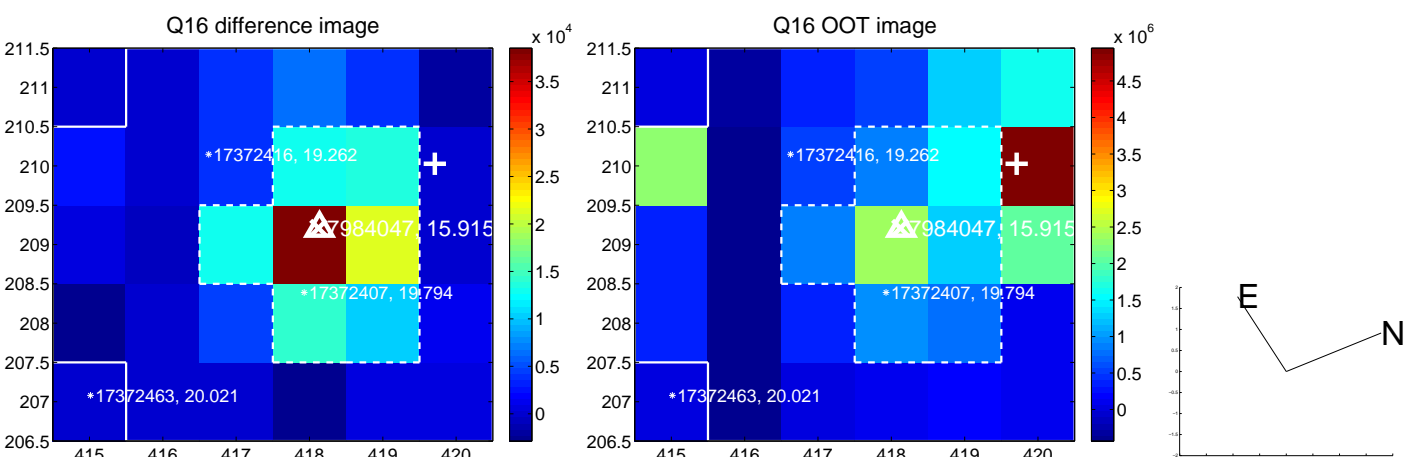
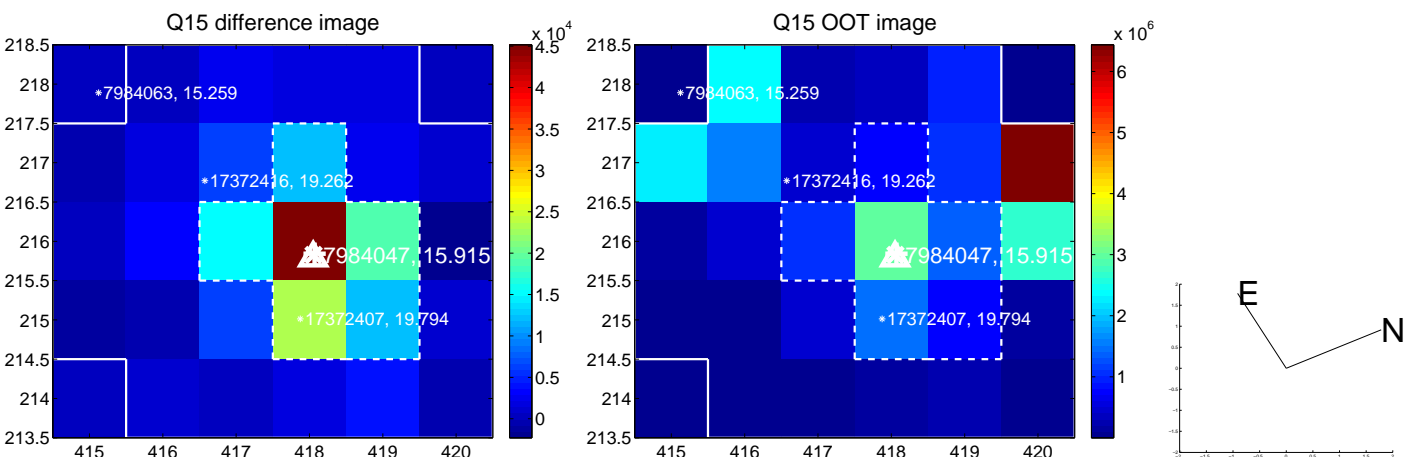
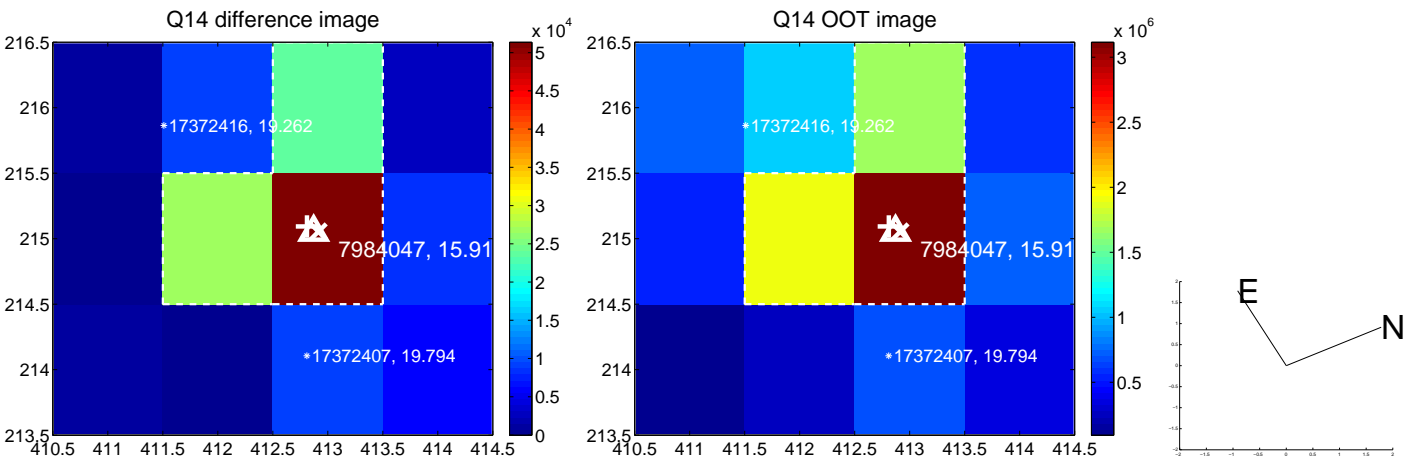
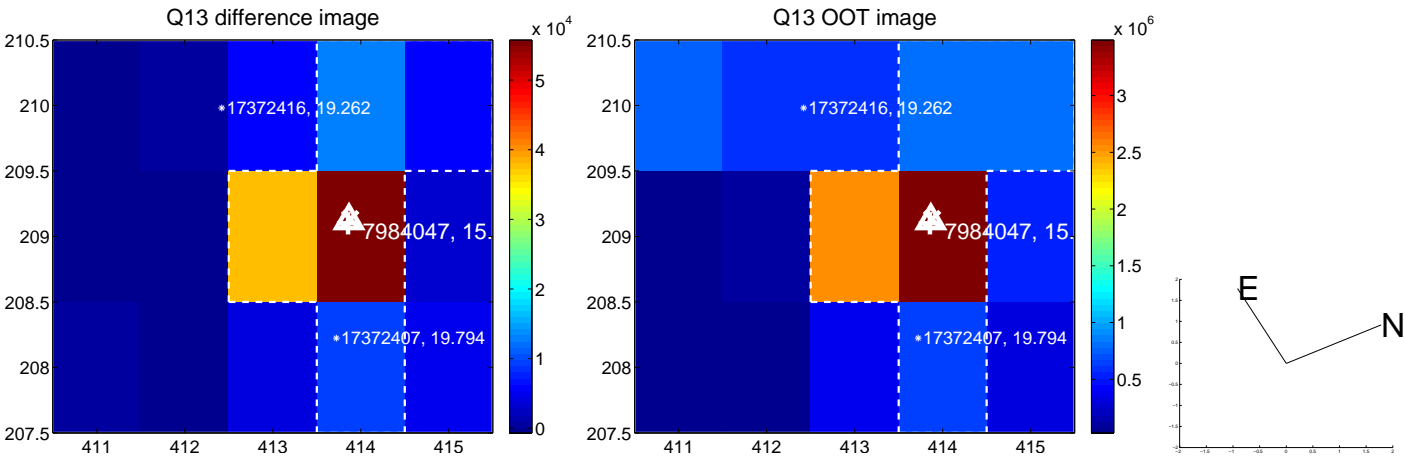




white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

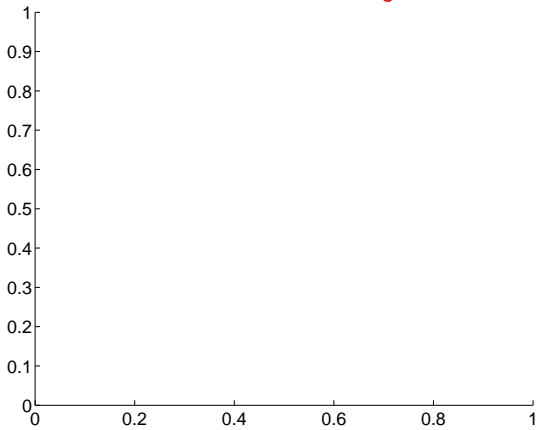


white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

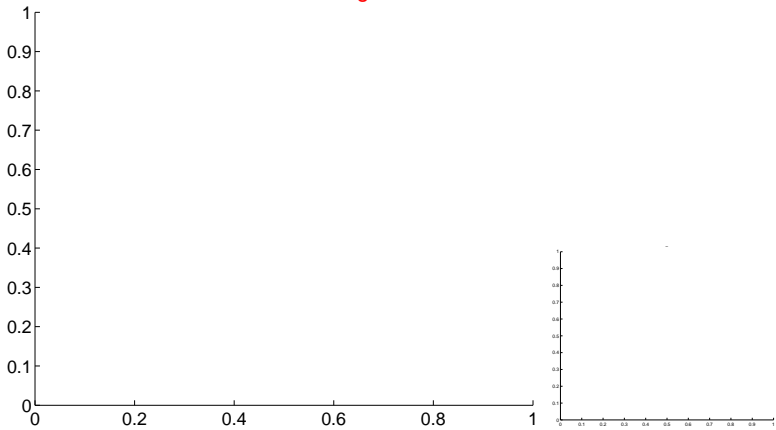


white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

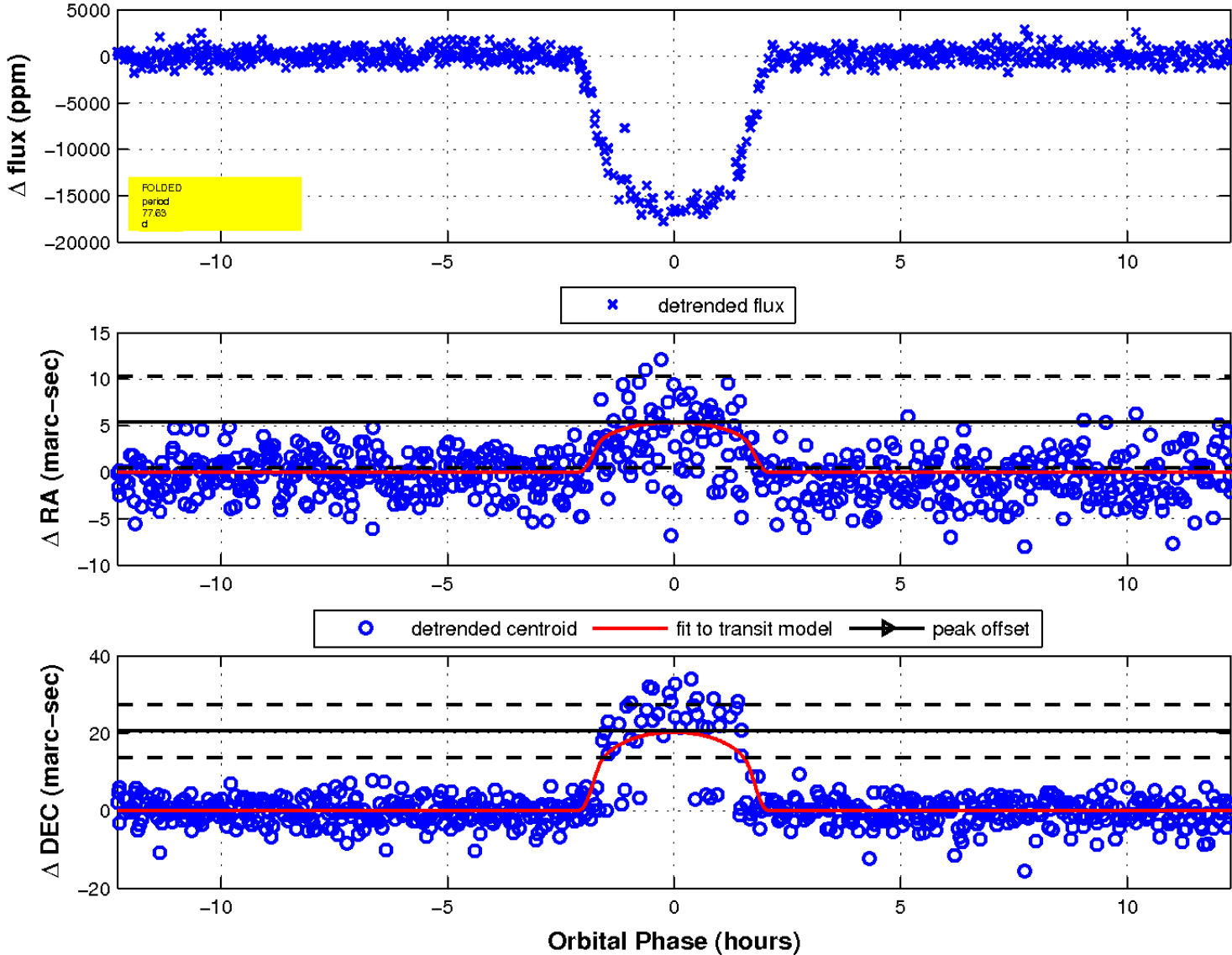
Q17 no difference image



Q17 no OOT image



fluxWeightedCentroids, Planet 1 of 1



UKIRT Image

