

# KIC 005184472

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
005184472-01	OBS	No	373.392326	364.558947	203.8	12.282	8.8	8.5	71.35	3763	118.21	996.36

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005184472-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—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.

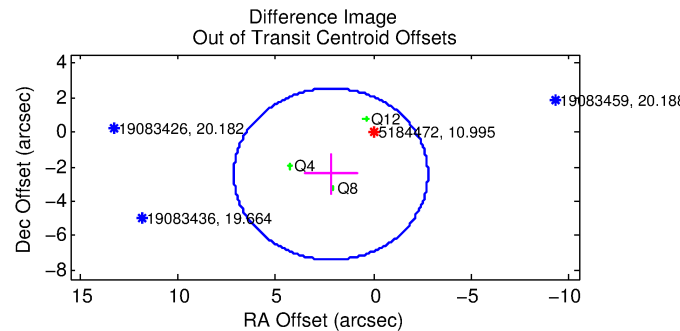
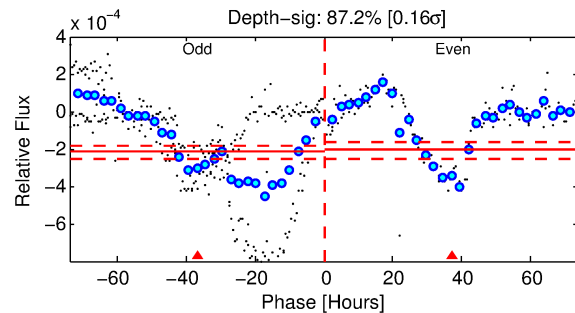
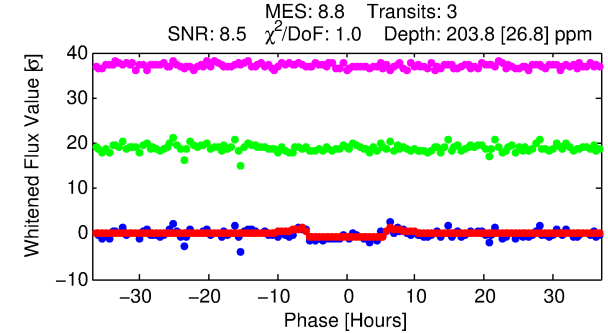
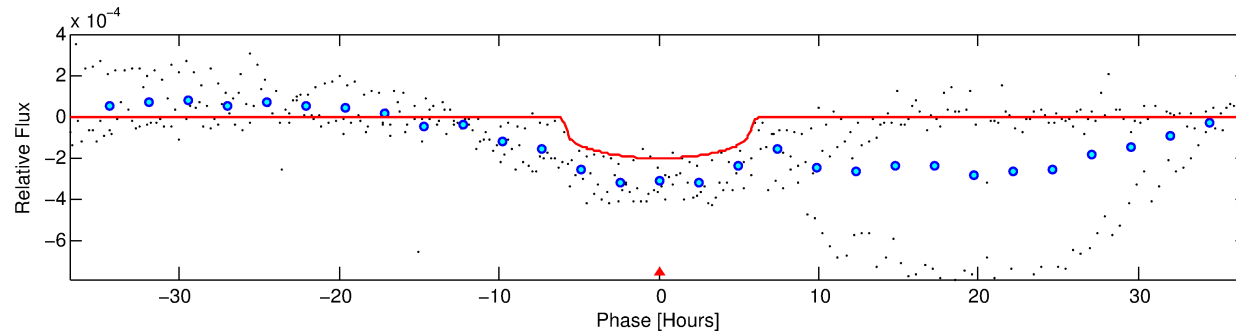
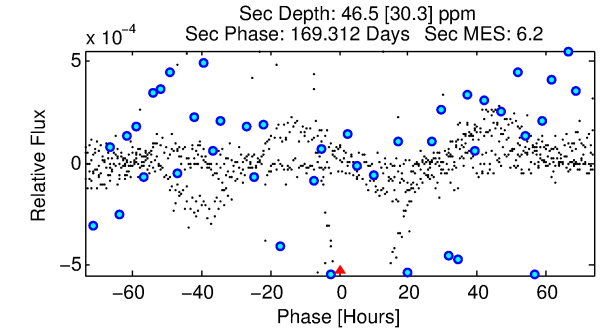
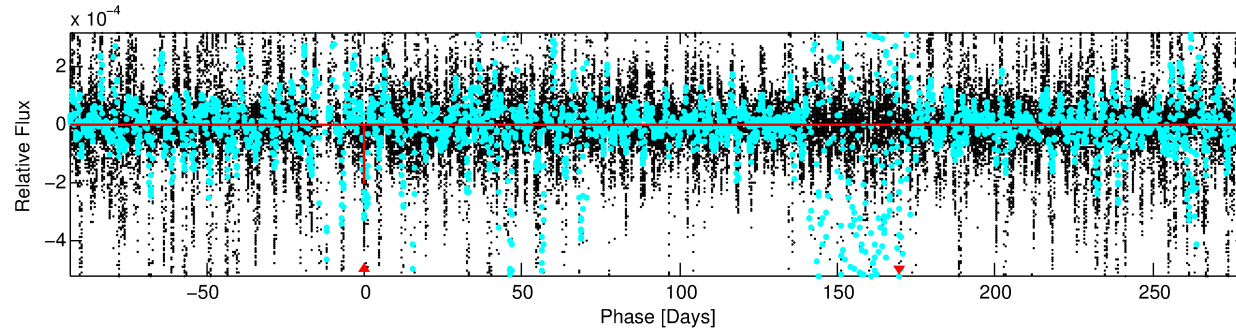
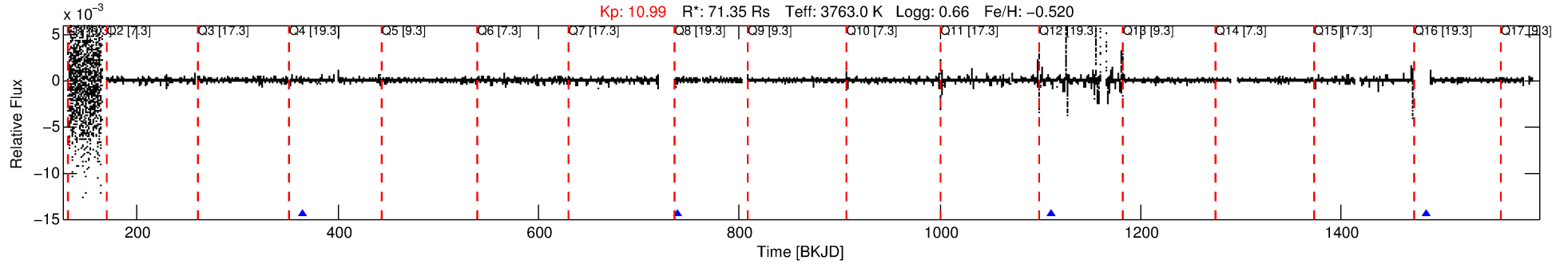
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 005184472-01

No Significant Match Found

# DV One-Page Summary

KIC: 5184472 Candidate: 1 of 1 Period: 373.392 d



## DV Fit Results:

Period = 373.39233 [0.00645] d  
Epoch = 364.5589 [0.0084] BKJD  
Rp/R\* = 0.0152 [0.0031]  
a/R\* = 138.38 [78.61]  
b = 0.82 [0.23]  
Seff = 996.36 [380.90]  
Teq = 1433 [137] K  
Rp = 118.21 [50.07] Re  
a = 0.9581 [0.2709] AU  
Ag = 1.68 [1.44] [0.47σ]  
Teffp = 2522 [490] K [2.14σ]

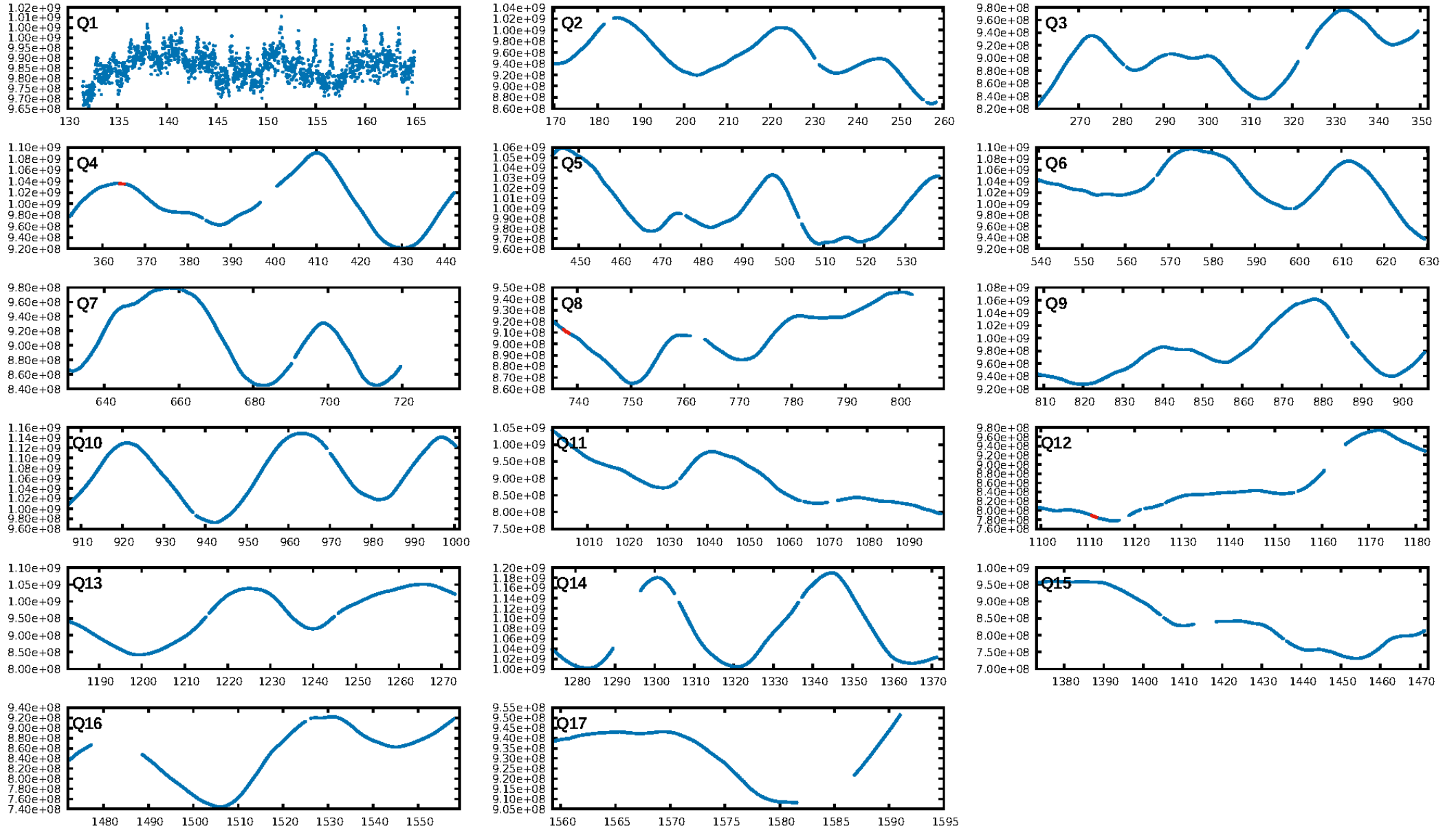
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: 80.2%  
ModelChiSquareGof-sig: 96.2%  
Bootstrap-pfa: 8.45e-05  
RollingBand-fgt: 1.00 [3/3]  
GhostDiagnostic-chr: N/A  
Centroid-sig: 31.6%  
Centroid-so: 1.997 arcsec [0.68σ]  
OotOffset-rm: 3.266 arcsec [1.98σ]  
OotOffset-st: 0/0/3/0 [3]  
KicOffset-rm: 3.169 arcsec [2.18σ]  
KicOffset-st: 0/0/3/0 [3]  
DiffImageQuality-fgm: 0.67 [2/3]  
DiffImageOverlap-fno: 1.00 [3/3]

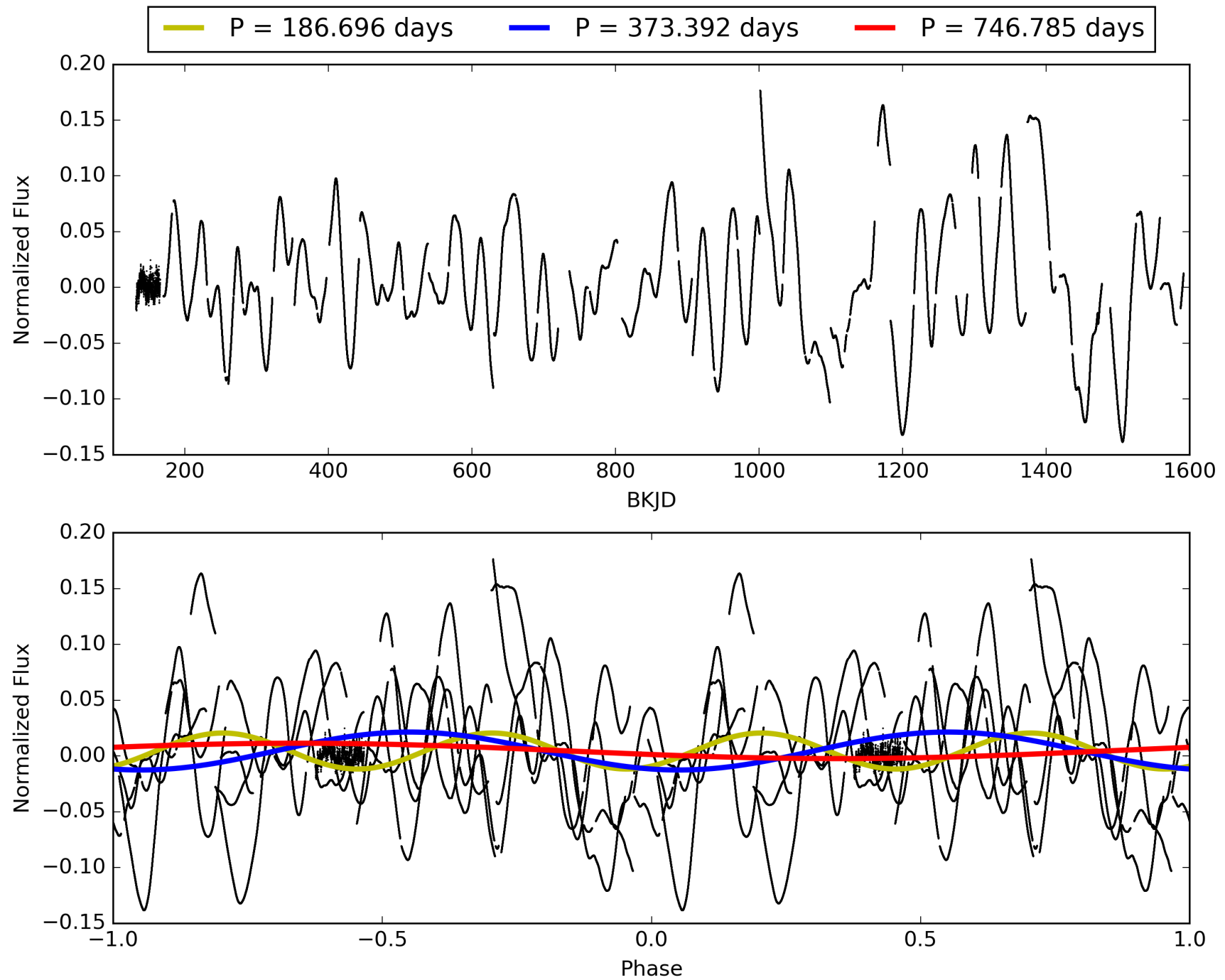
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 12:15:51 Z

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

# TCE 005184472-01, PDC Light Curves

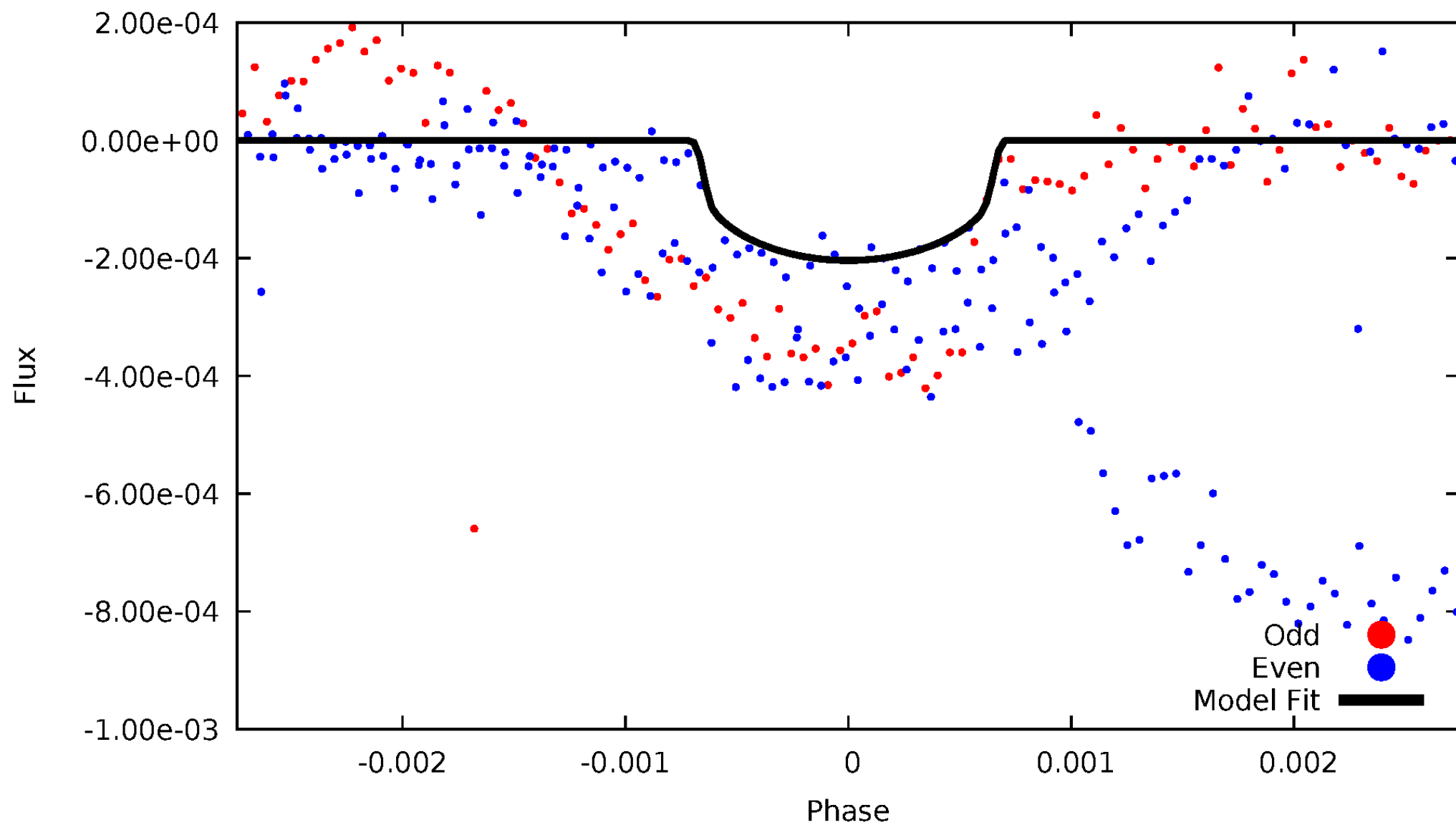


TCE 005184472-01



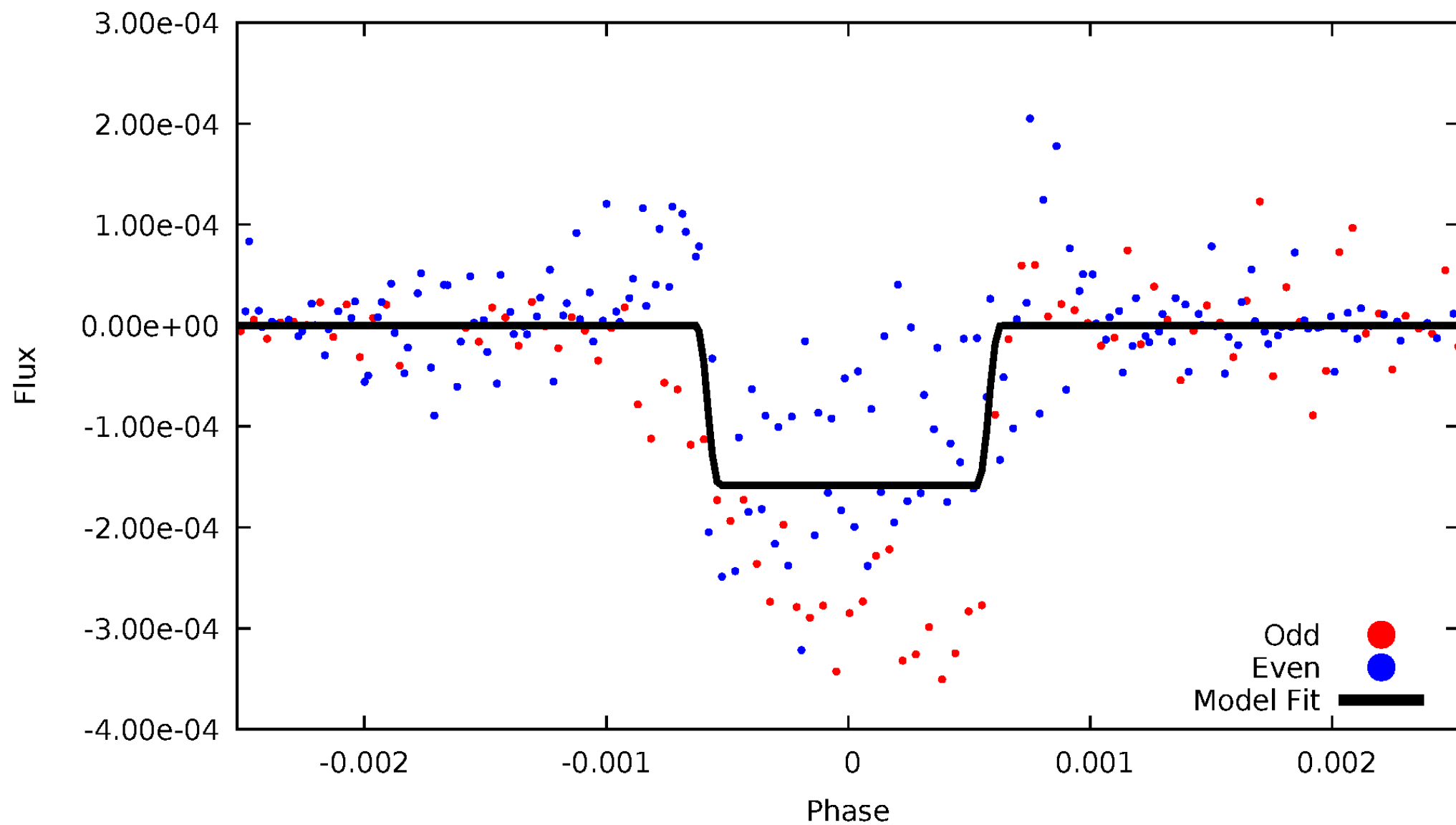
# DV Odd/Even

TCE 005184472-01



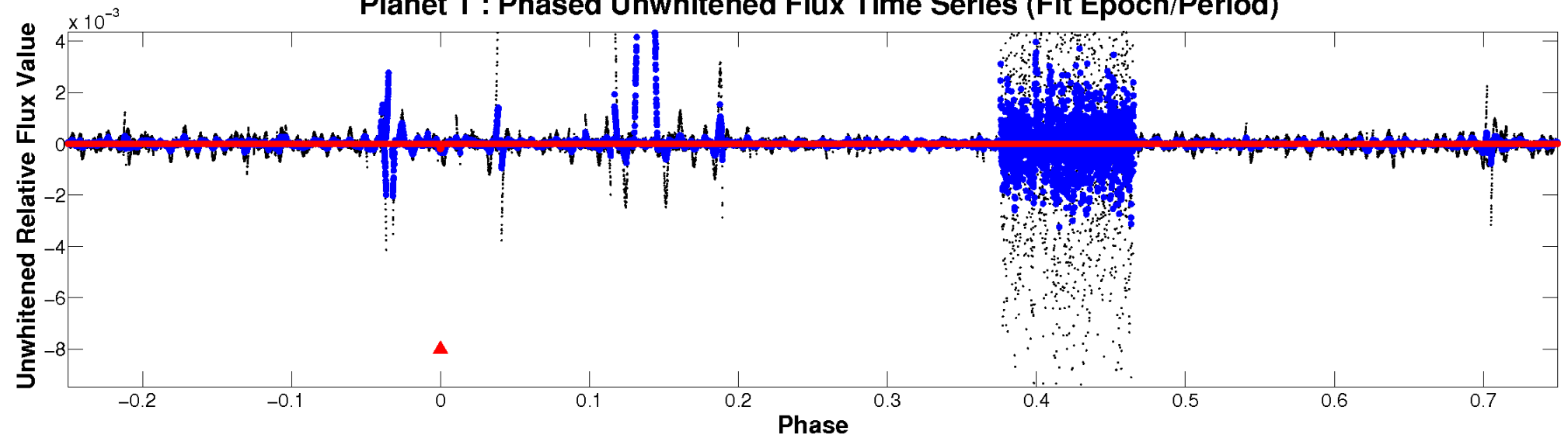
# ALT Odd/Even

TCE 005184472-01

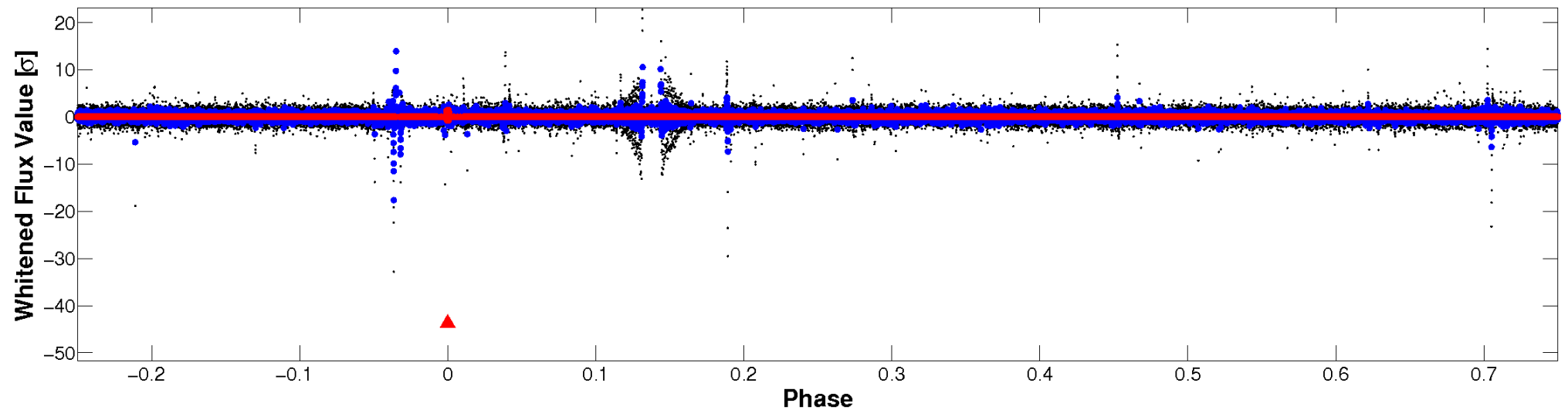


# Non-Whitened Vs. Whitened Light Curve

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

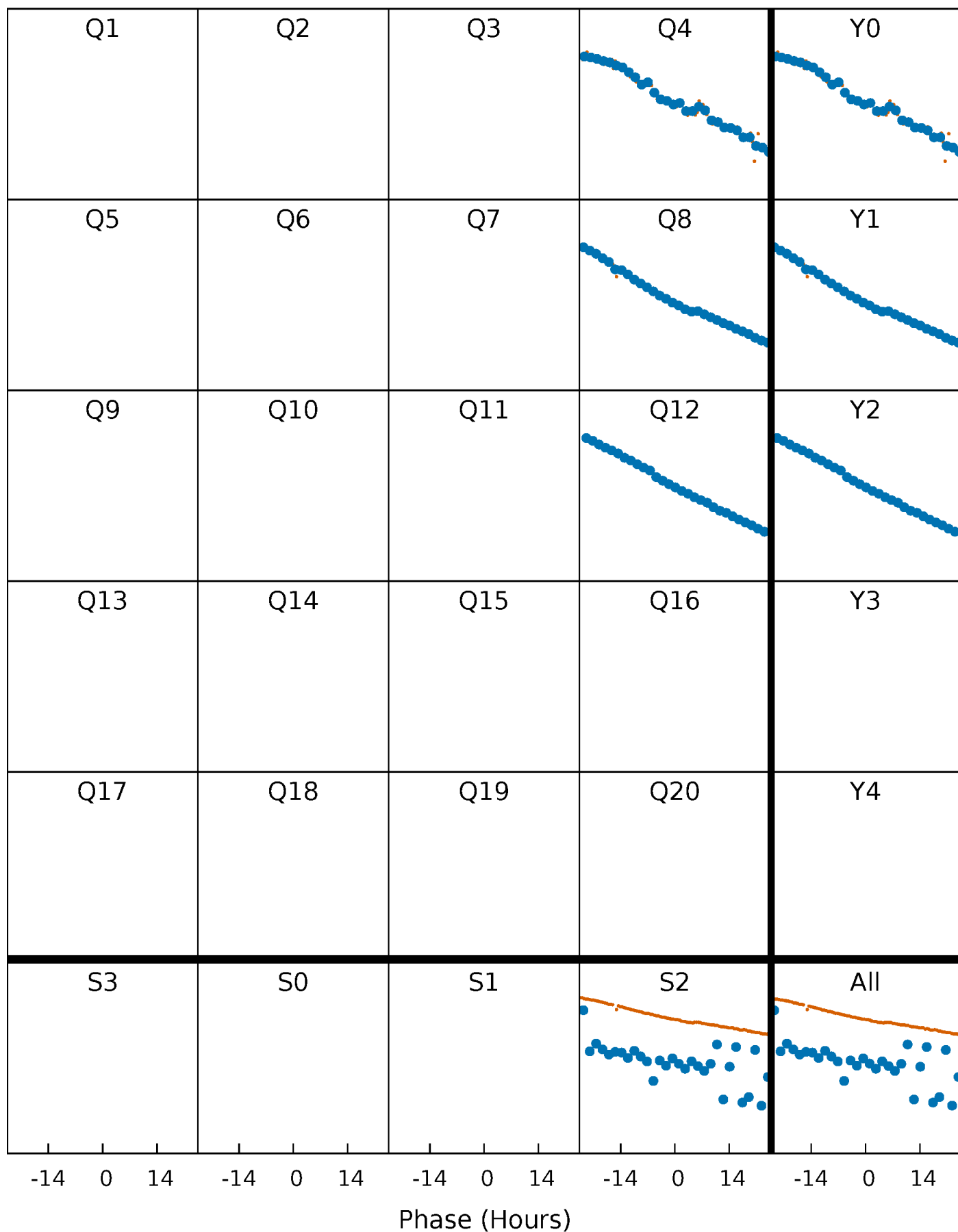


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



# PDC Quarter-Phased Transit Curves

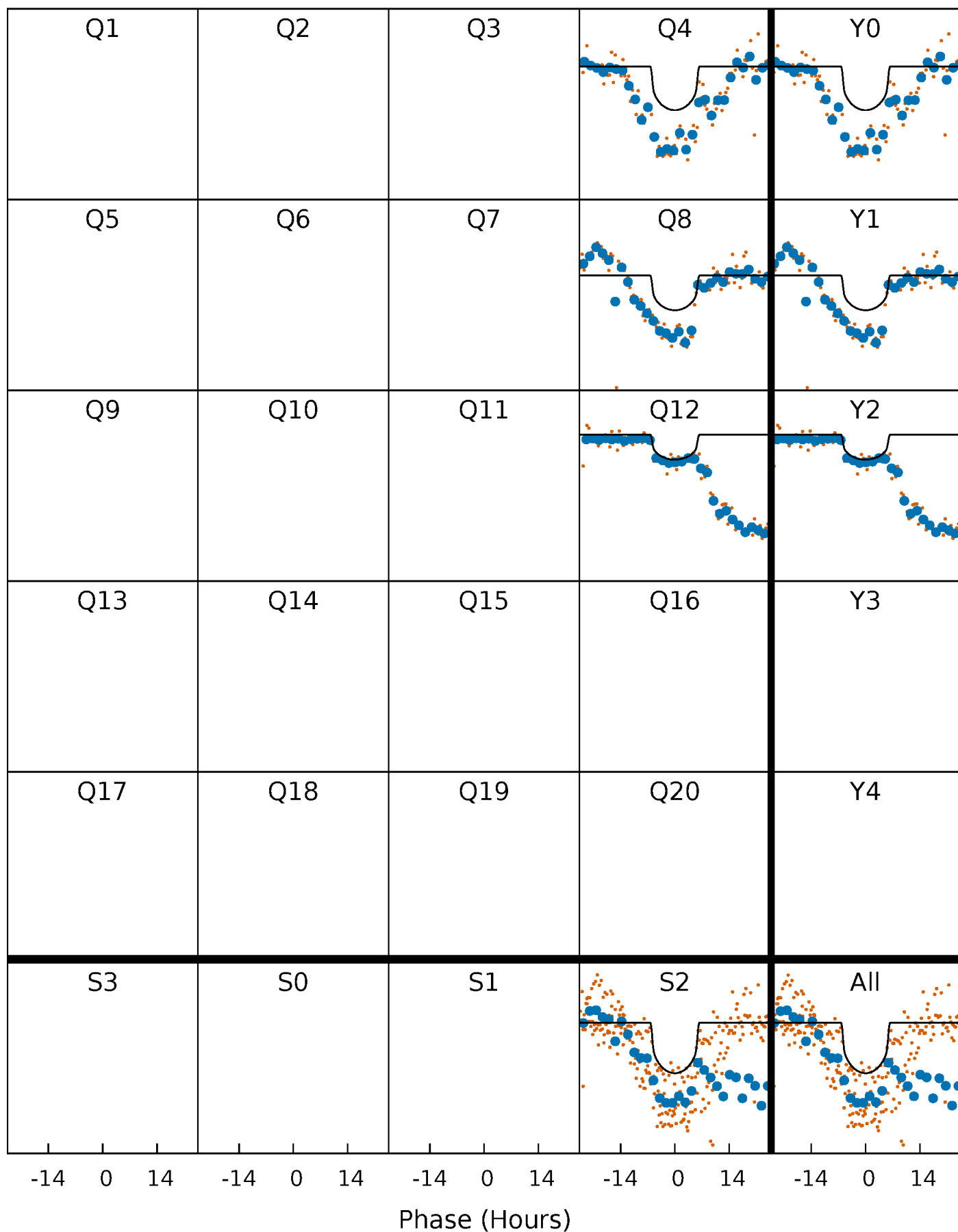
TCE 005184472-01 P=373.392326 Days  $T_0=364.558947$  (BKJD)





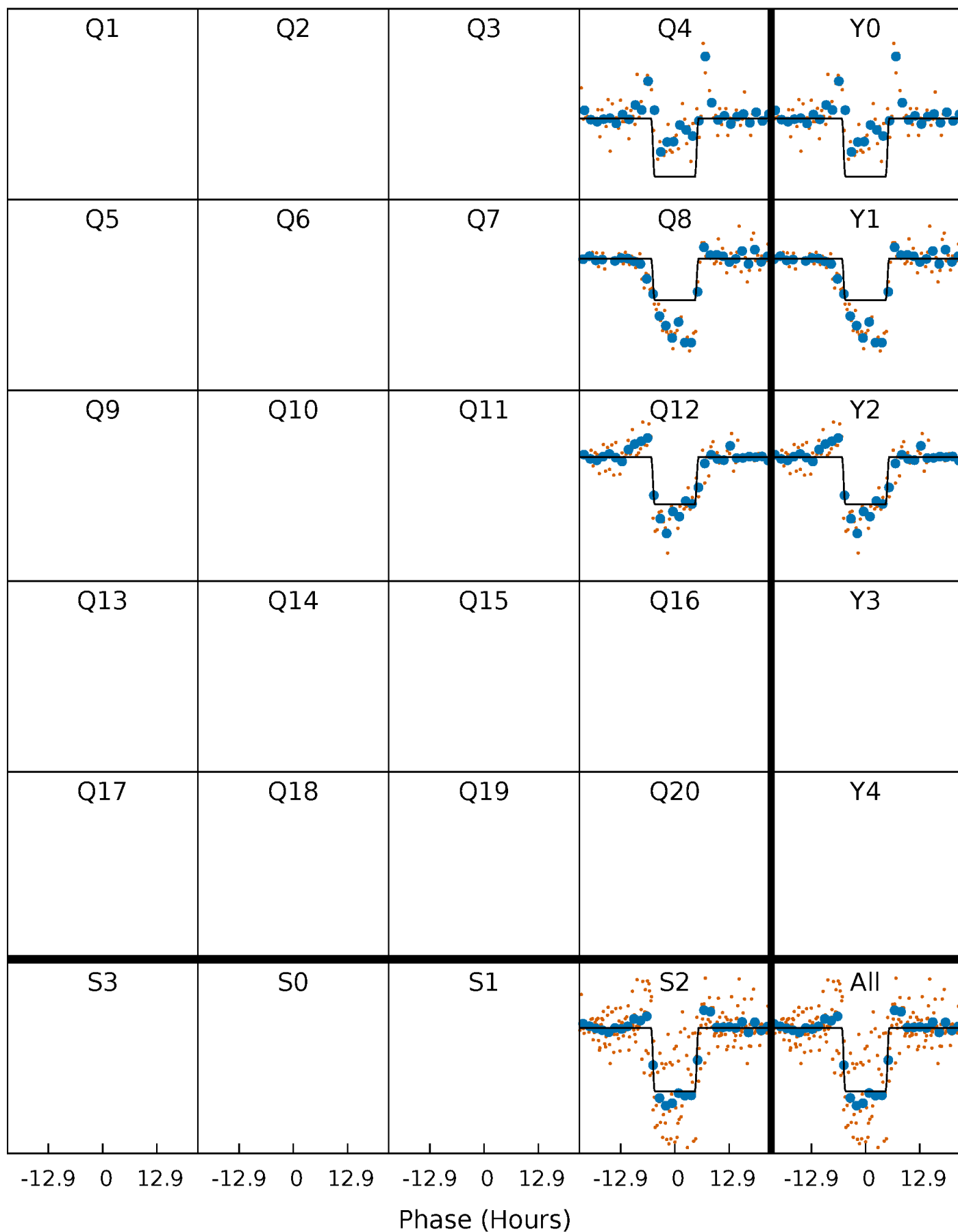
# DV Quarter-Phased Transit Curves

TCE 005184472-01     $P=373.392326$  Days     $T_0=364.558947$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

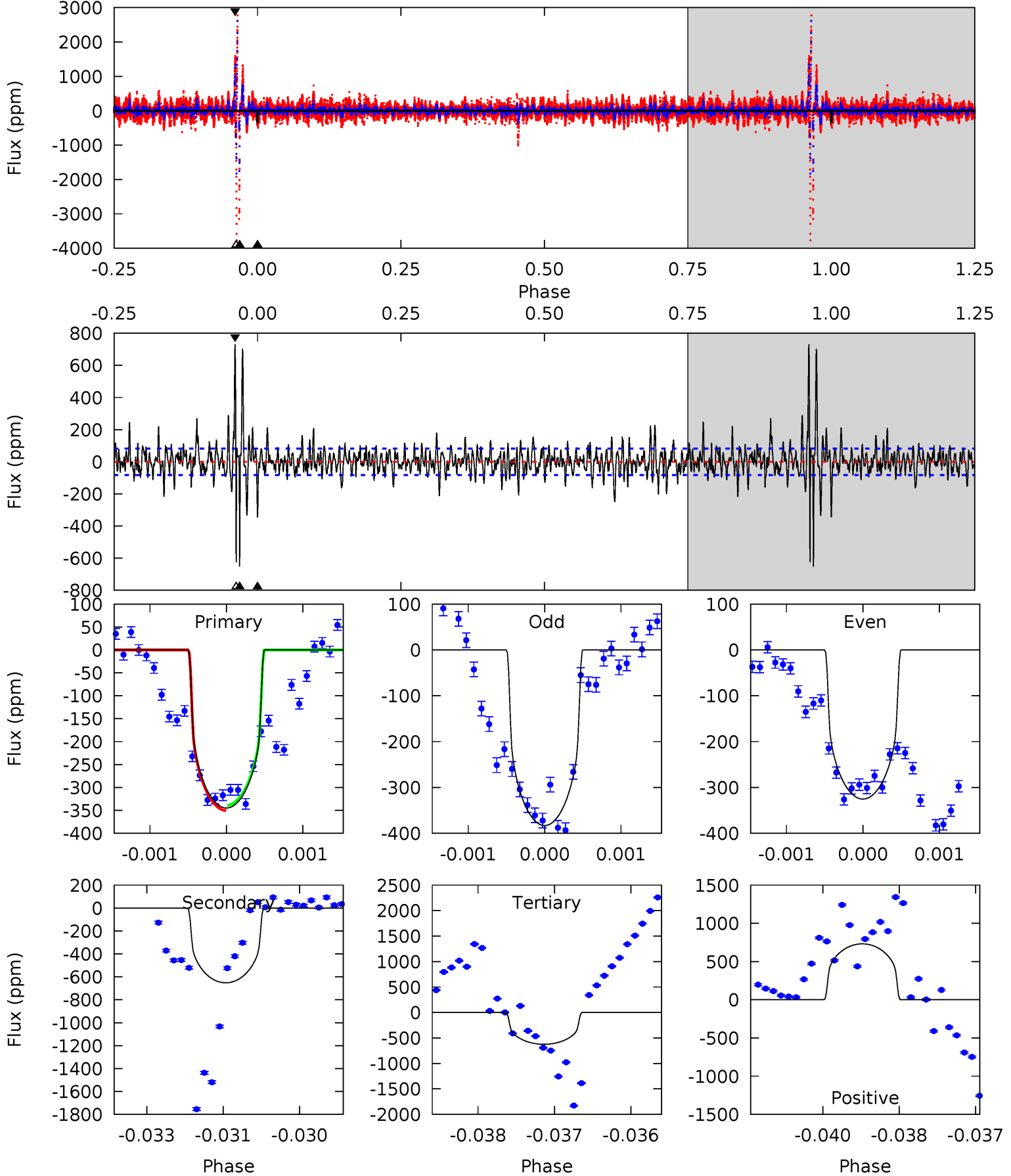
TCE 005184472-01 P=373.396064 Days  $T_0=364.539657$  (BKJD)



# DV Model-Shift Uniqueness Test

005184472-01, P = 373.392326 Days, E = 364.558947 Days

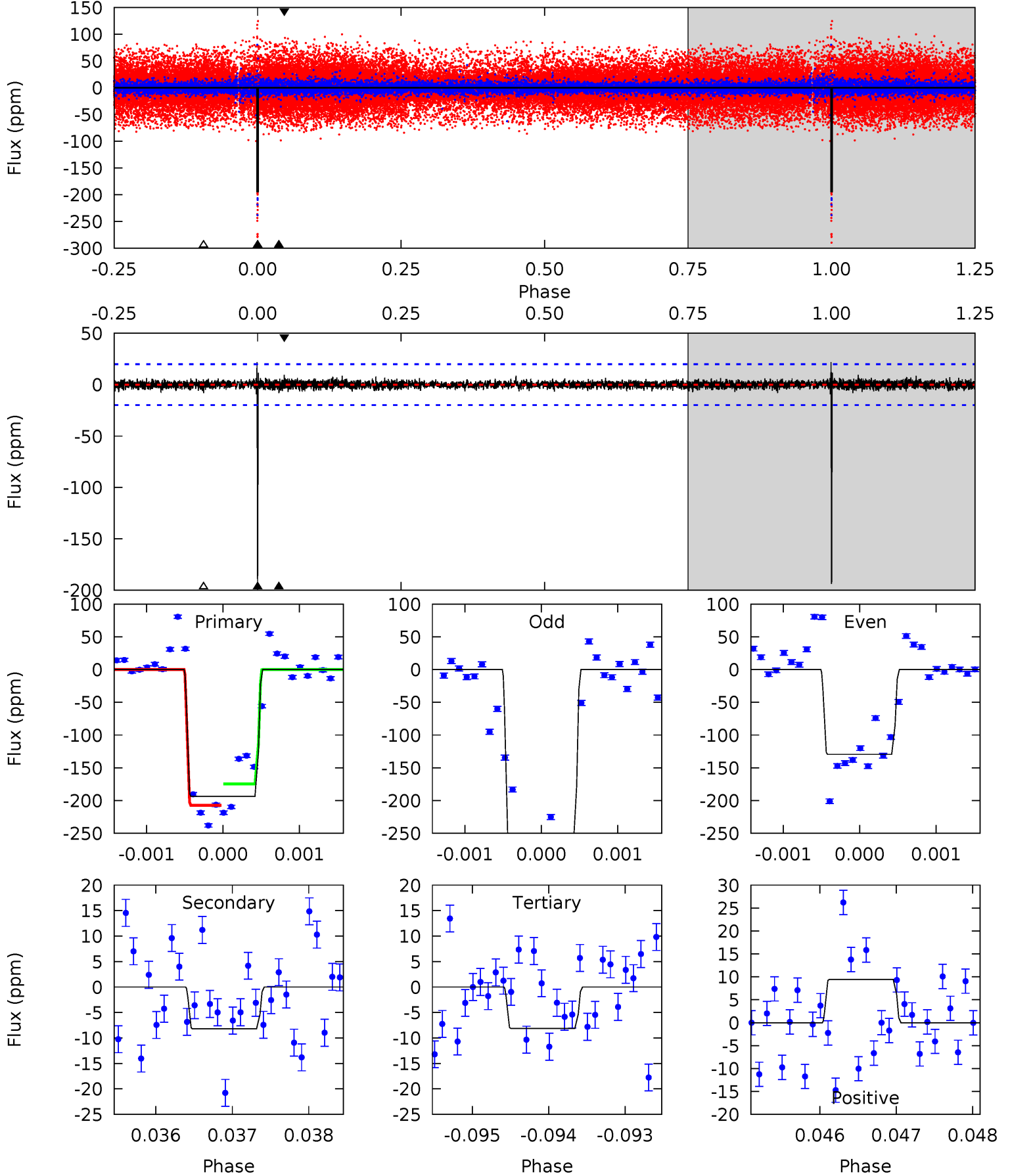
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
22.6	42.6	40.8	47.8	5.39	3.19	4.82	-18.3	-25.3	1.83	-5.20	0.78	0.90	0.53	0.39



# Alt Model-Shift Uniqueness Test

005184472-01, P = 373.396064 Days, E = 364.539657 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
52.7	2.23	2.21	2.57	5.41	3.23	0.50	50.5	50.2	0.02	-0.33	2.48	0.88	0.10	0



### Stellar Parameters For KIC 005184472

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R$ ( $R_{\odot}$ )	$M(M_{\odot})$	$p_{\star}$ ( $\text{g}\cdot\text{cm}^{-3}$ )
	$3763^{+89}_{-66}$	$0.656^{+0.180}_{-0.180}$	$-0.520^{+0.150}_{-0.150}$	$71.352^{+26.402}_{-11.315}$	$0.840^{+0.391}_{-0.022}$	$0.000^{+0.000}_{-0.000}$
	+2%/-2%	+27%/-27%	+29%/-29%	+37%/-16%	+47%/-3%	+74%/-49%
Source	SPE74	KIC0	SPE74	DSEP		

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

### Secondary Eclipse Parameters for KIC 005184472-01 / KOI

Detrend	Depth (ppm)	$R_p$ ( $R_{\oplus}$ )	$T_{max}$ (K)	$T_{obs}$ (K)	$A_{obs}$
DV	$-652 \pm 15$	$120.73^{+32.17}_{-29.21}$	$1989^{+148}_{-115}$	$4568^{+458}_{-331}$	$25^{+16}_{-9}$
Alt.	$-8 \pm 4$	$99.22^{+33.14}_{-26.27}$	$1998^{+159}_{-121}$	$2169^{+368}_{-4329}$	$0.440^{+0.453}_{-0.261}$

$T_{max}$  = 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

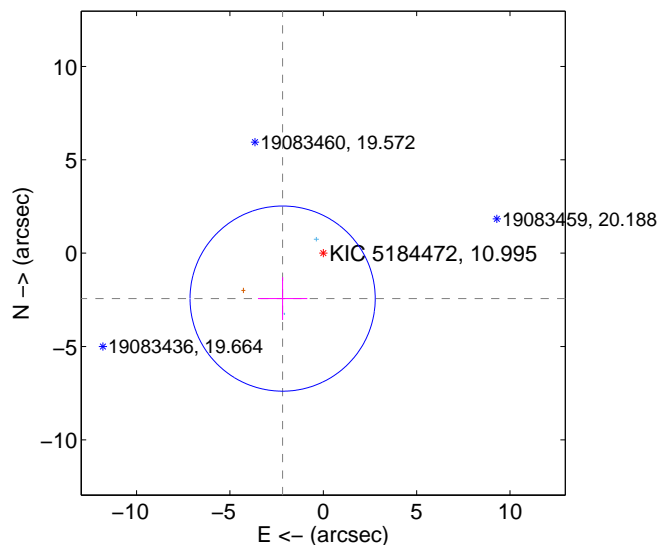
Supplemental centroid analysis for 005184472-01. **Kepler magnitude: 10.99.** Transit SNR 8.50

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

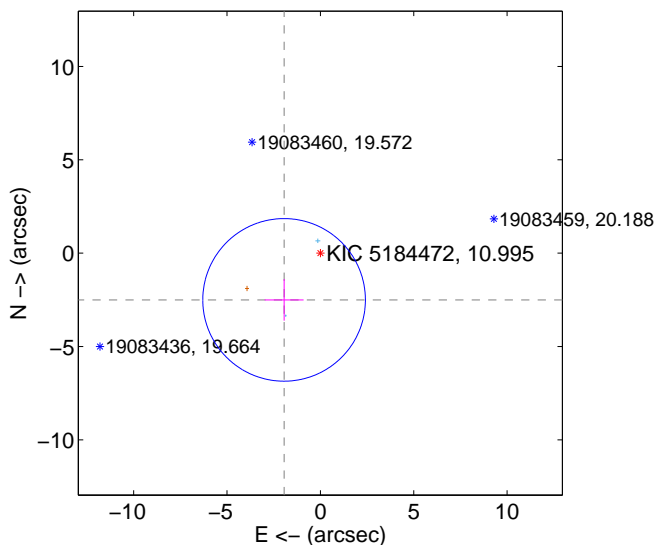
The direct PRF centroid is offset from the target star catalog position by about 0.25 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$3.266 \pm 1.653$	1.98	$2.178 \pm 1.321$	$-2.433 \pm 1.146$
PRF-fit source offset from KIC position	$3.169 \pm 1.452$	2.18	$1.944 \pm 1.042$	$-2.503 \pm 1.116$
photometric centroid source offset	$2.00 \pm 2.93$	0.68	$1.06 \pm 1.98$	$1.69 \pm 3.24$

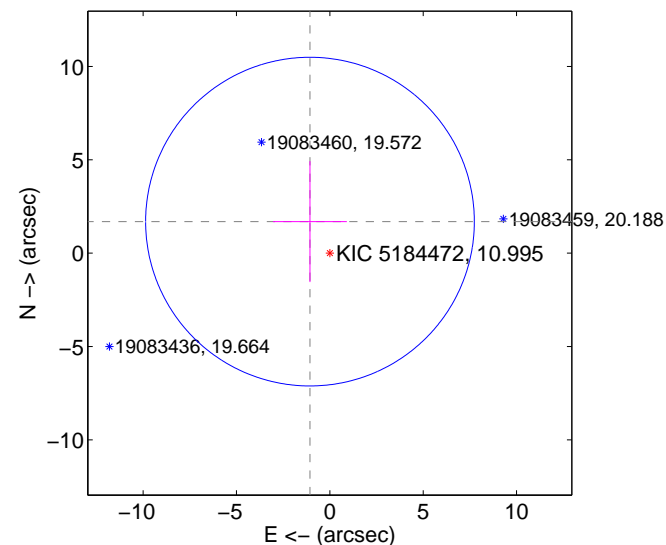
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

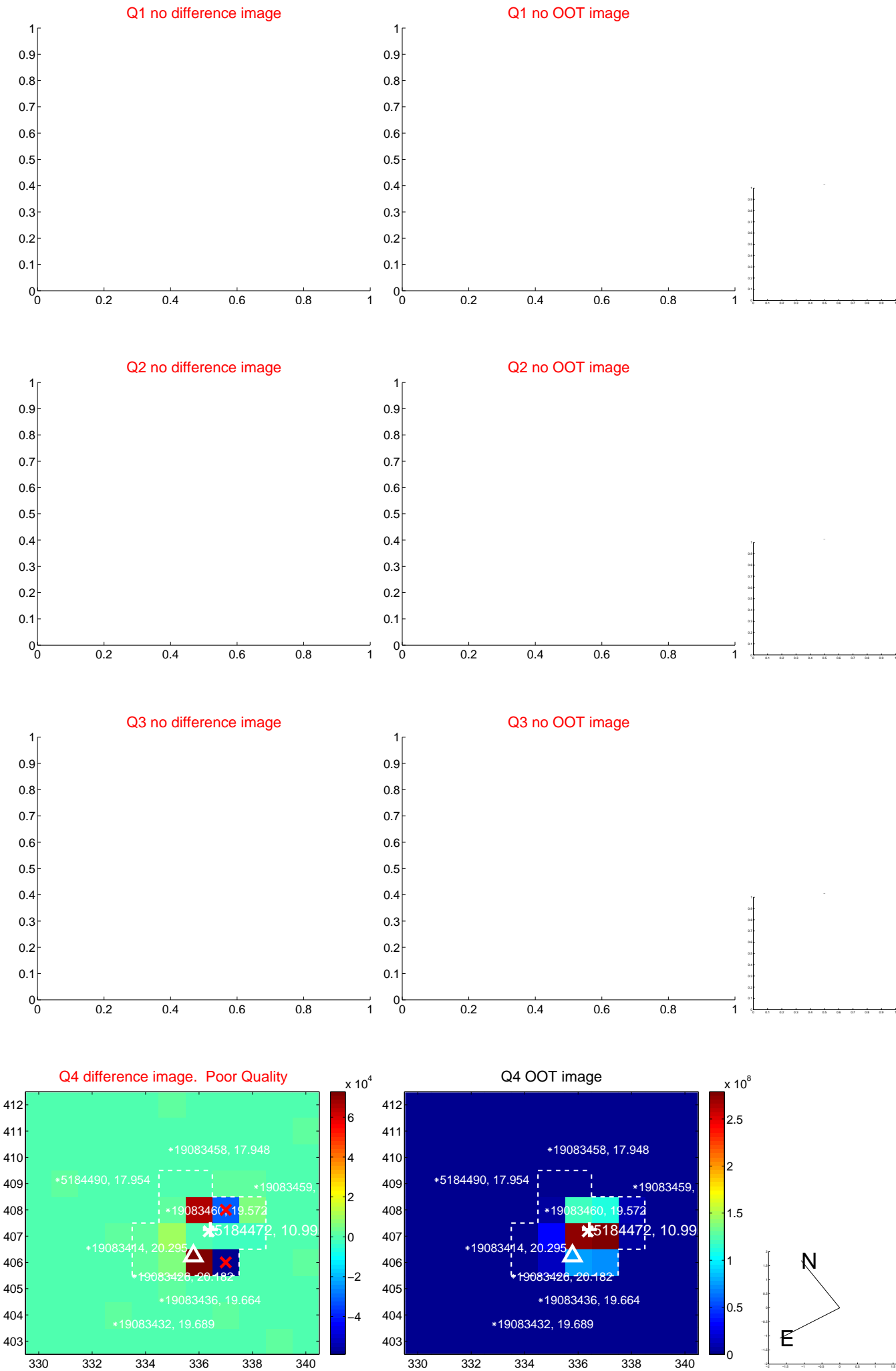


offset from photometric centroids

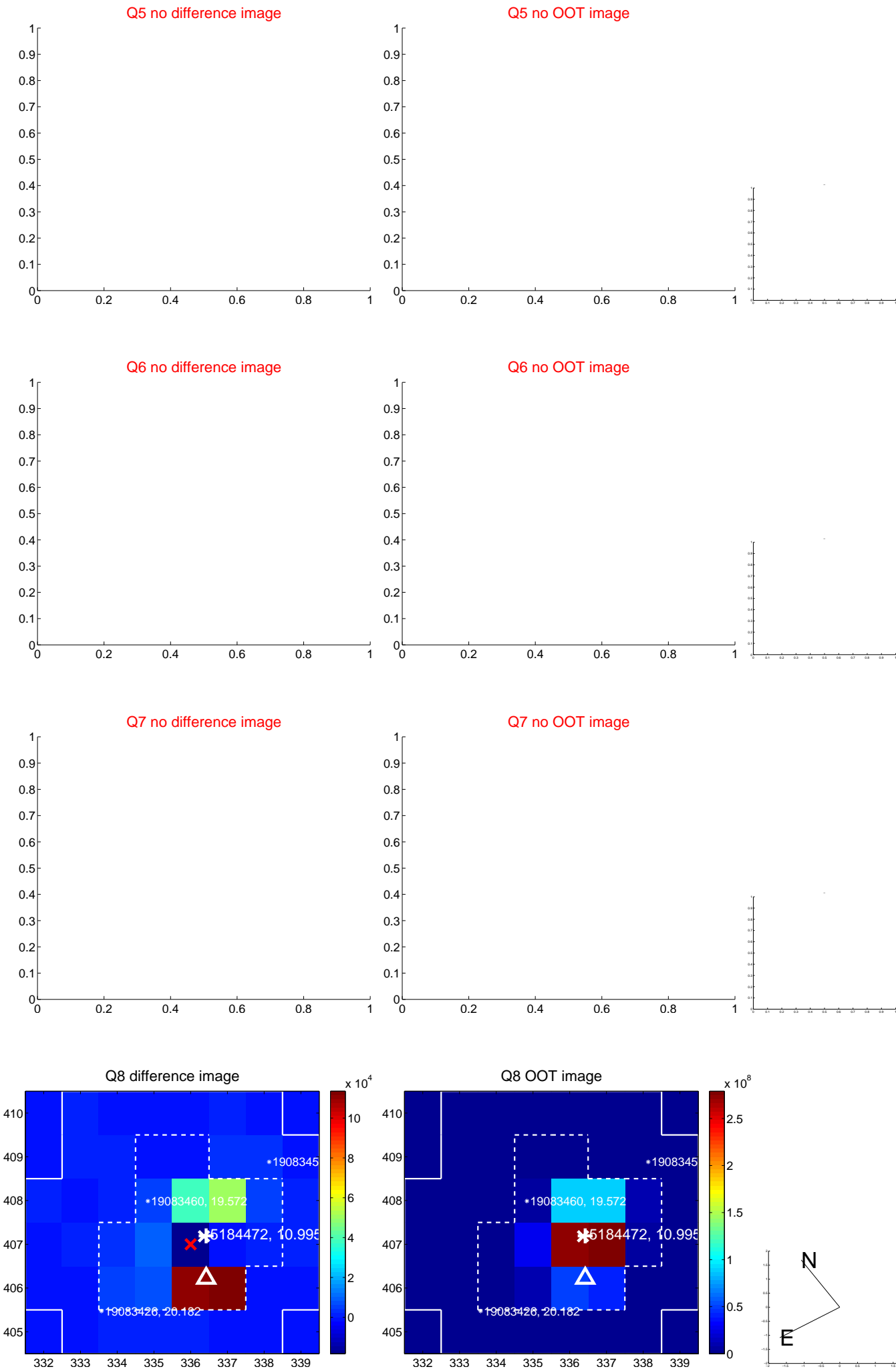


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: 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  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

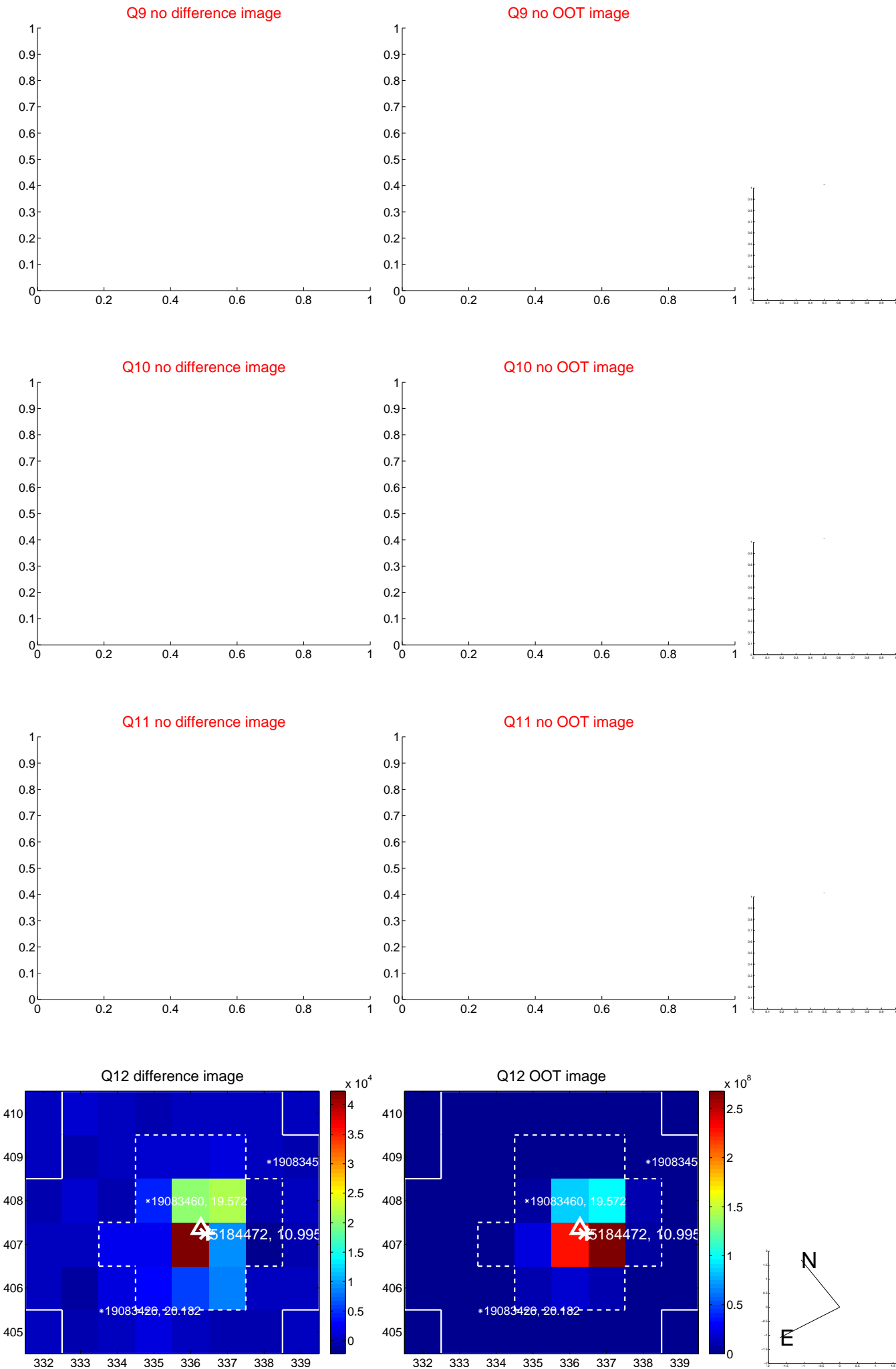


white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.





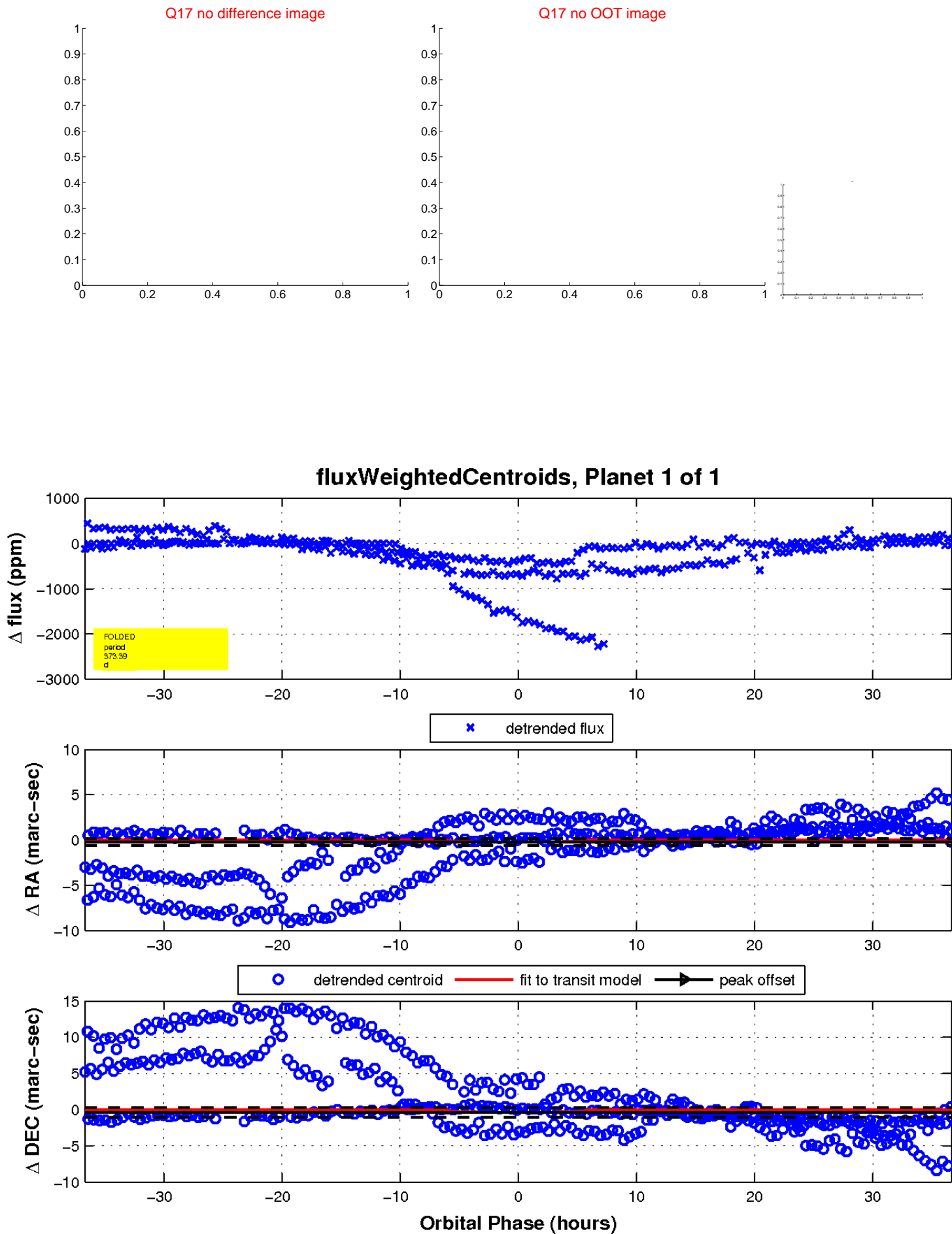
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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.



UKIRT Image

