

# KIC 010585887

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
010585887-01	OBS	8293.01	378.664688	288.262054	323.0	10.238	7.2	7.2	0.97	6000	1.94	1.04

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
010585887-01	OBS	FP	0.19	1	0	0	0	MOD_NONUNIQ_ALT—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.

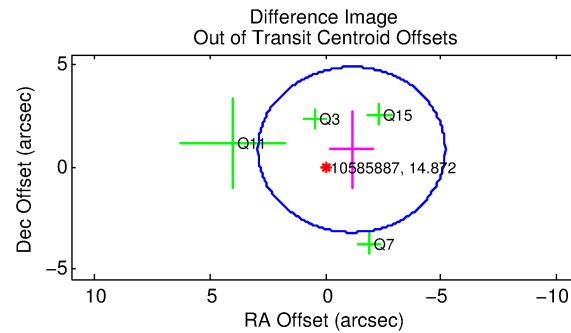
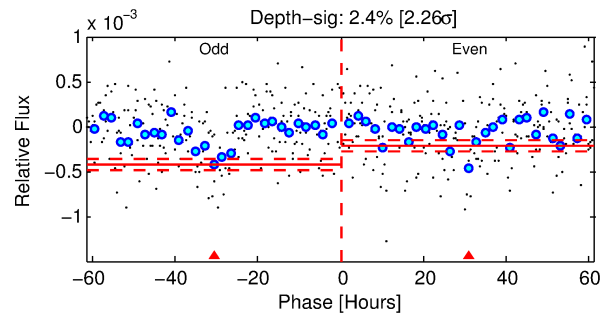
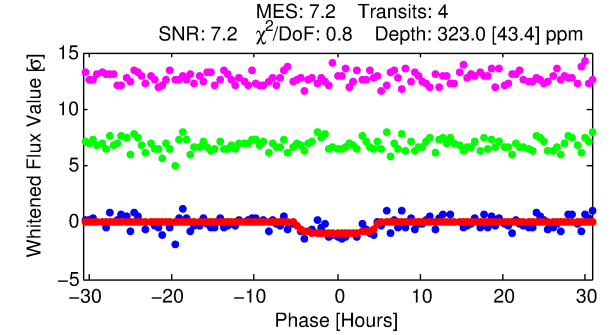
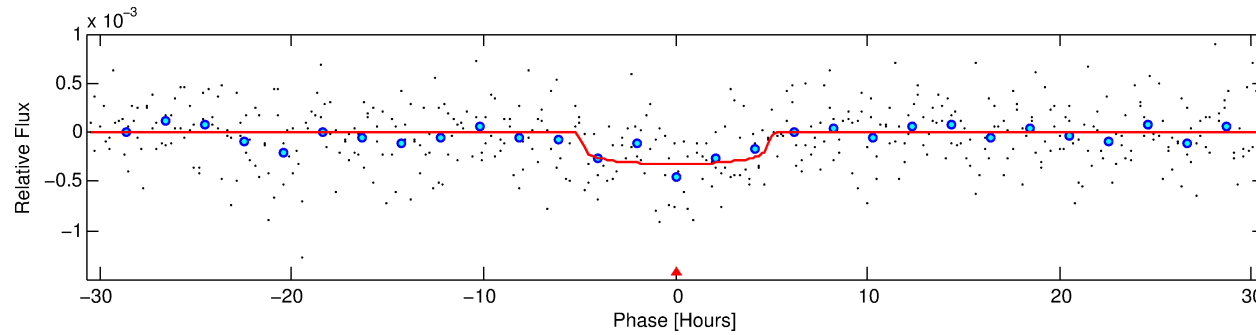
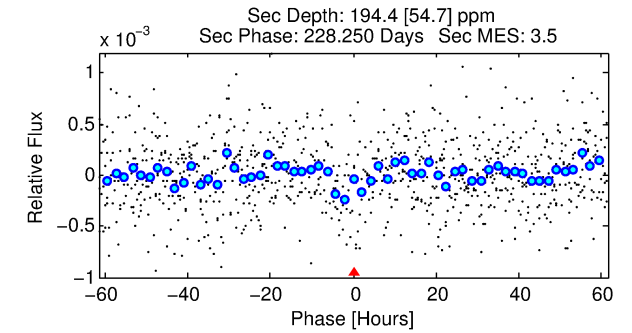
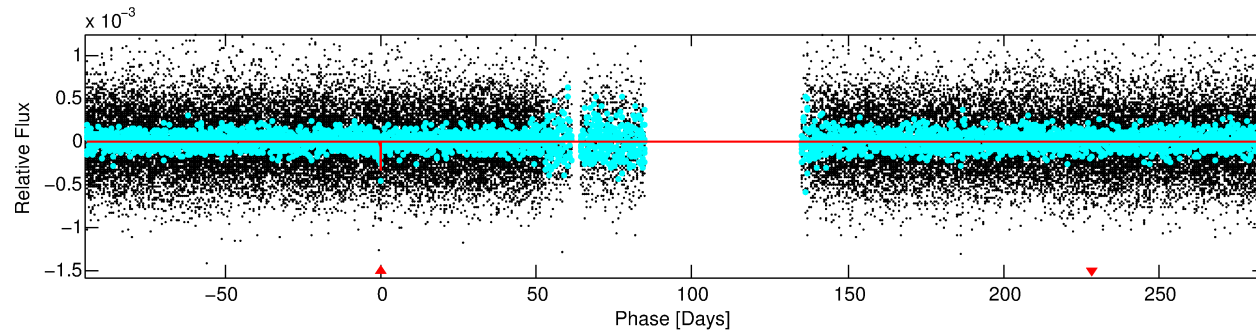
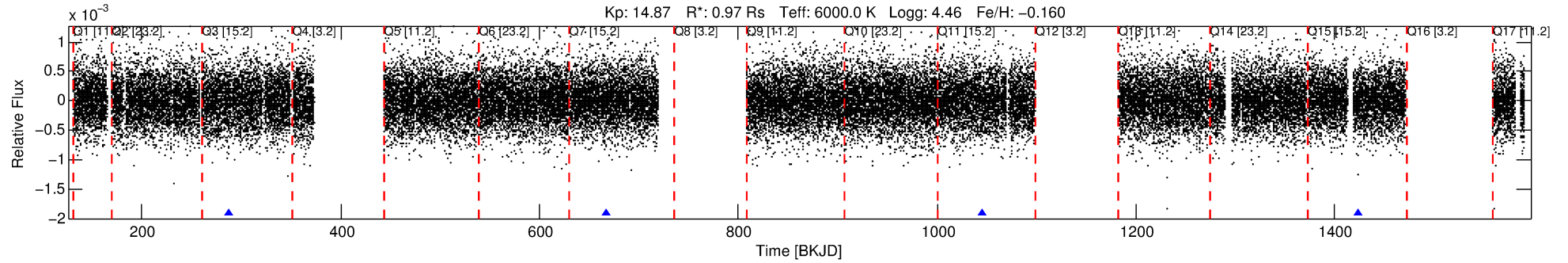
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 010585887-01

No Significant Match Found

# DV One-Page Summary

KIC: 10585887 Candidate: 1 of 1 Period: 378.665 d



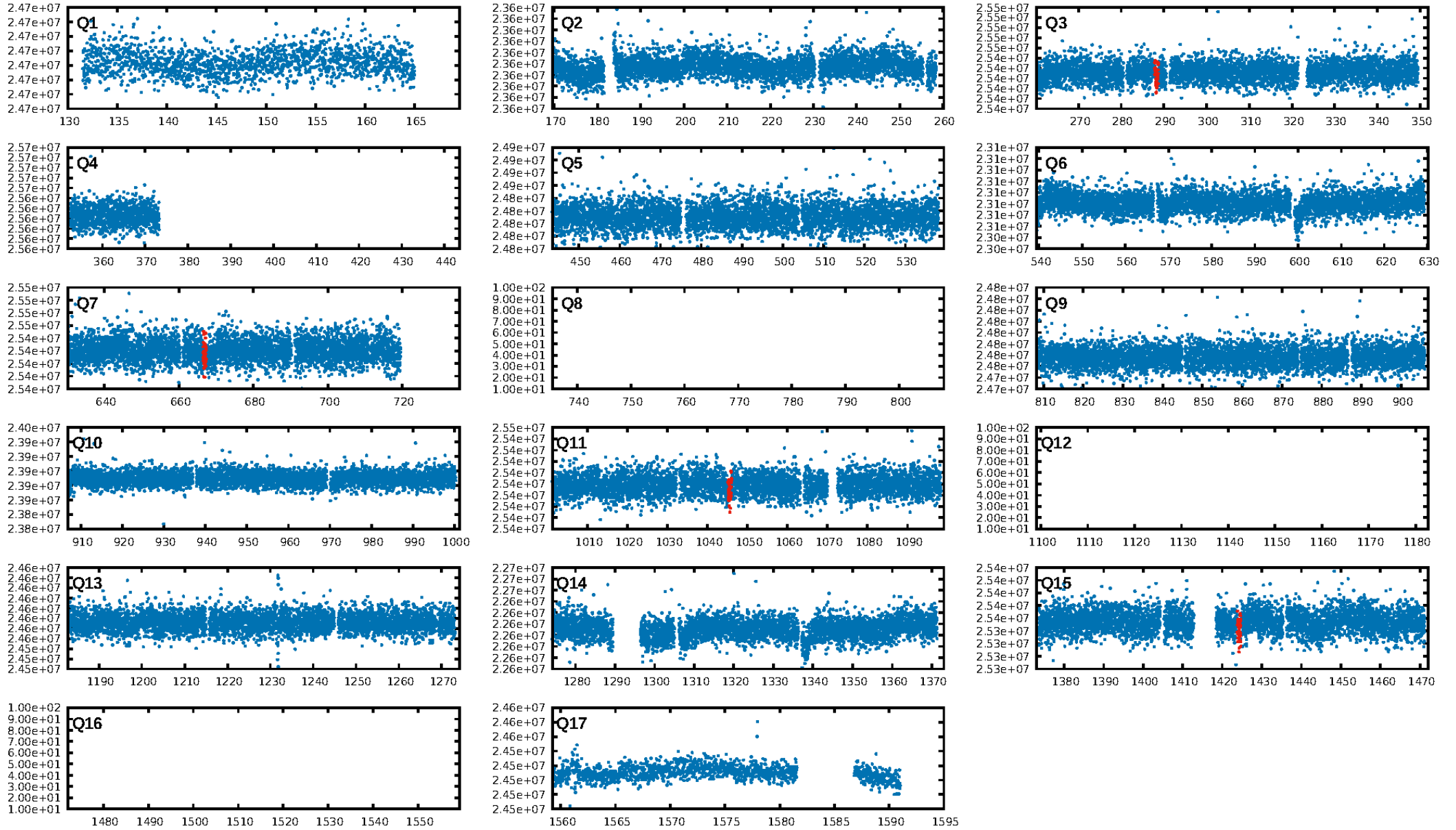
## DV Fit Results:

Period = 378.66469 [0.01065] d  
Epoch = 288.2621 [0.0199] BKJD  
Rp/R\* = 0.0183 [0.0071]  
a/R\* = 176.09 [332.99]  
b = 0.81 [0.83]  
Seff = 1.04 [0.43]  
Teff = 258 [26] K  
Rp = 1.93 [0.97] Re  
a = 1.0234 [0.2712] AU  
Ag = 29922.41 [27320.20] [1.10 $\sigma$ ]  
Teffp = 5240 [1100] K [4.53 $\sigma$ ]

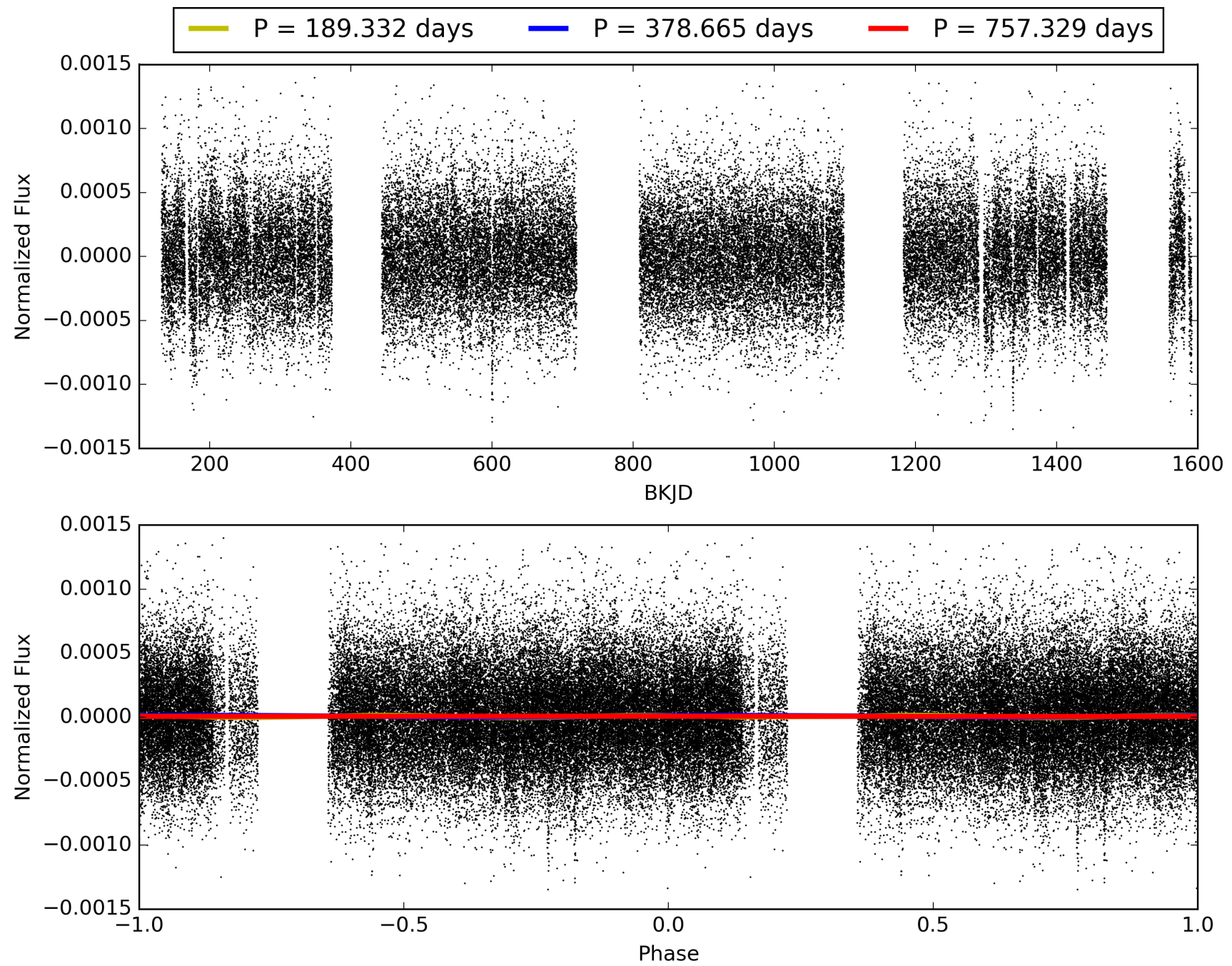
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: 11.6%  
ModelChiSquareGof-sig: 100.0%  
**Bootstrap-pfa: 2.67e-11**  
RollingBand-fgt: 1.00 [4/4]  
**GhostDiagnostic-chr: 0.7313**  
Centroid-sig: 36.2%  
Centroid-so: 1.332 arcsec [0.62 $\sigma$ ]  
OotOffset-rm: 1.408 arcsec [1.04 $\sigma$ ]  
KicOffset-rm: 1.365 arcsec [1.05 $\sigma$ ]  
OotOffset-st: 0/4/0/0 [4]  
KicOffset-st: 0/4/0/0 [4]  
DiffImageQuality-fgm: 0.50 [2/4]  
DiffImageOverlap-fno: 1.00 [4/4]

# TCE 010585887-01, PDC Light Curves

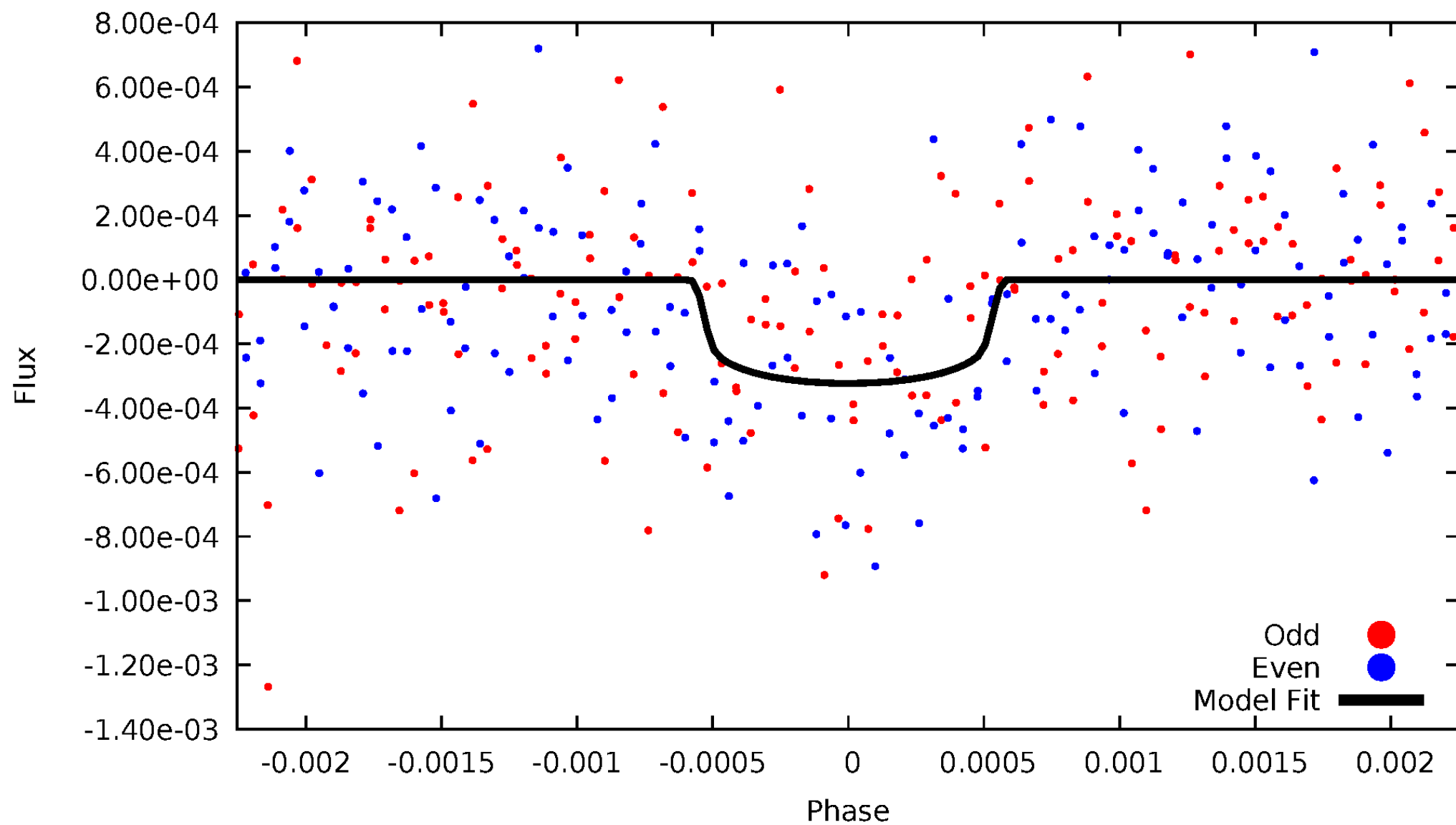


TCE 010585887-01



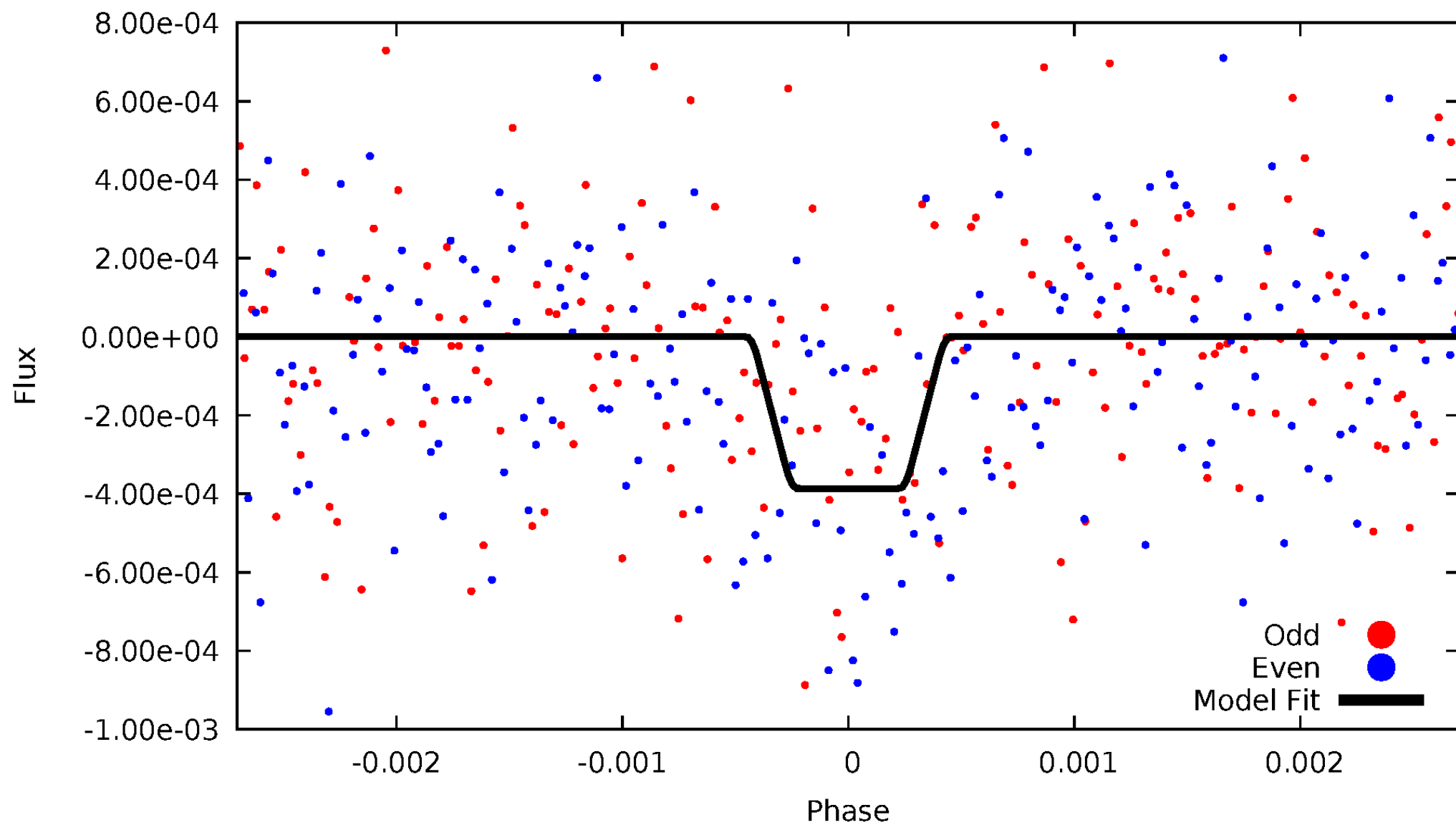
# DV Odd/Even

TCE 010585887-01



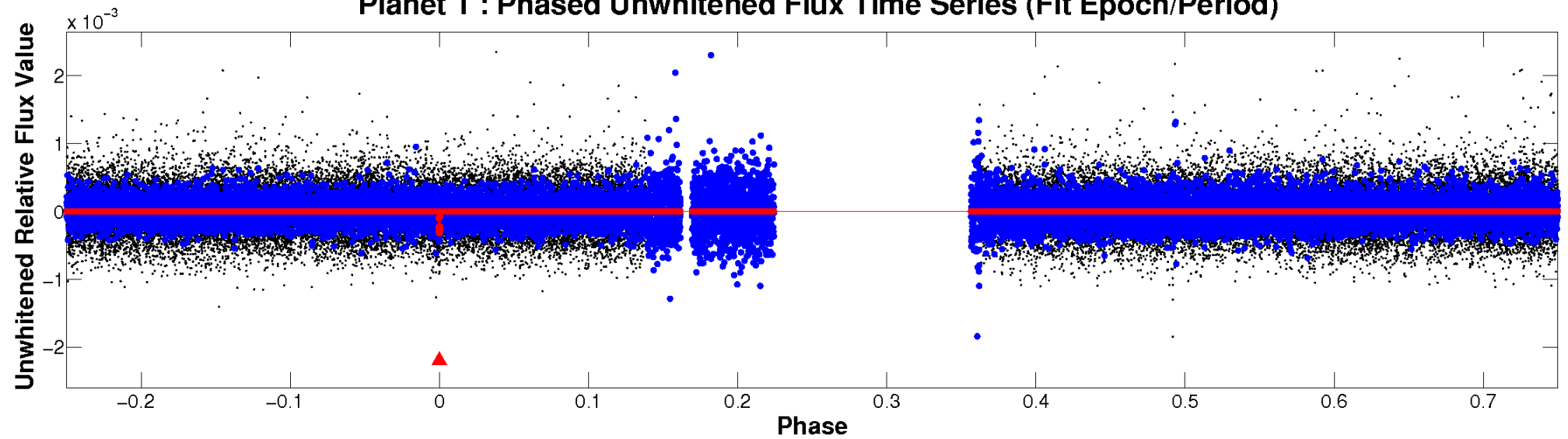
# ALT Odd/Even

TCE 010585887-01

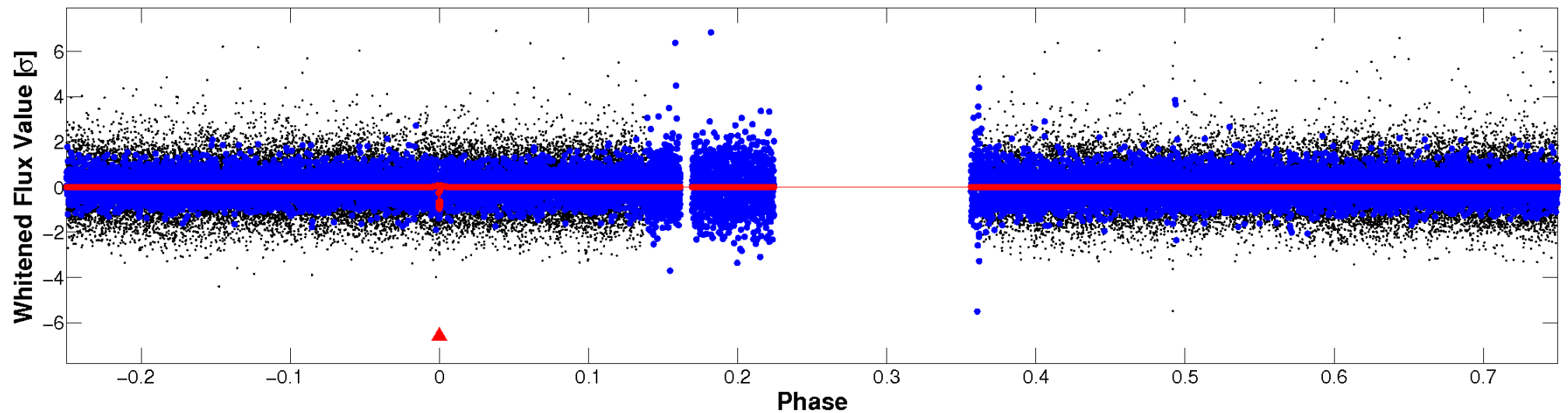


# Non-Whitened Vs. Whitened Light Curve

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



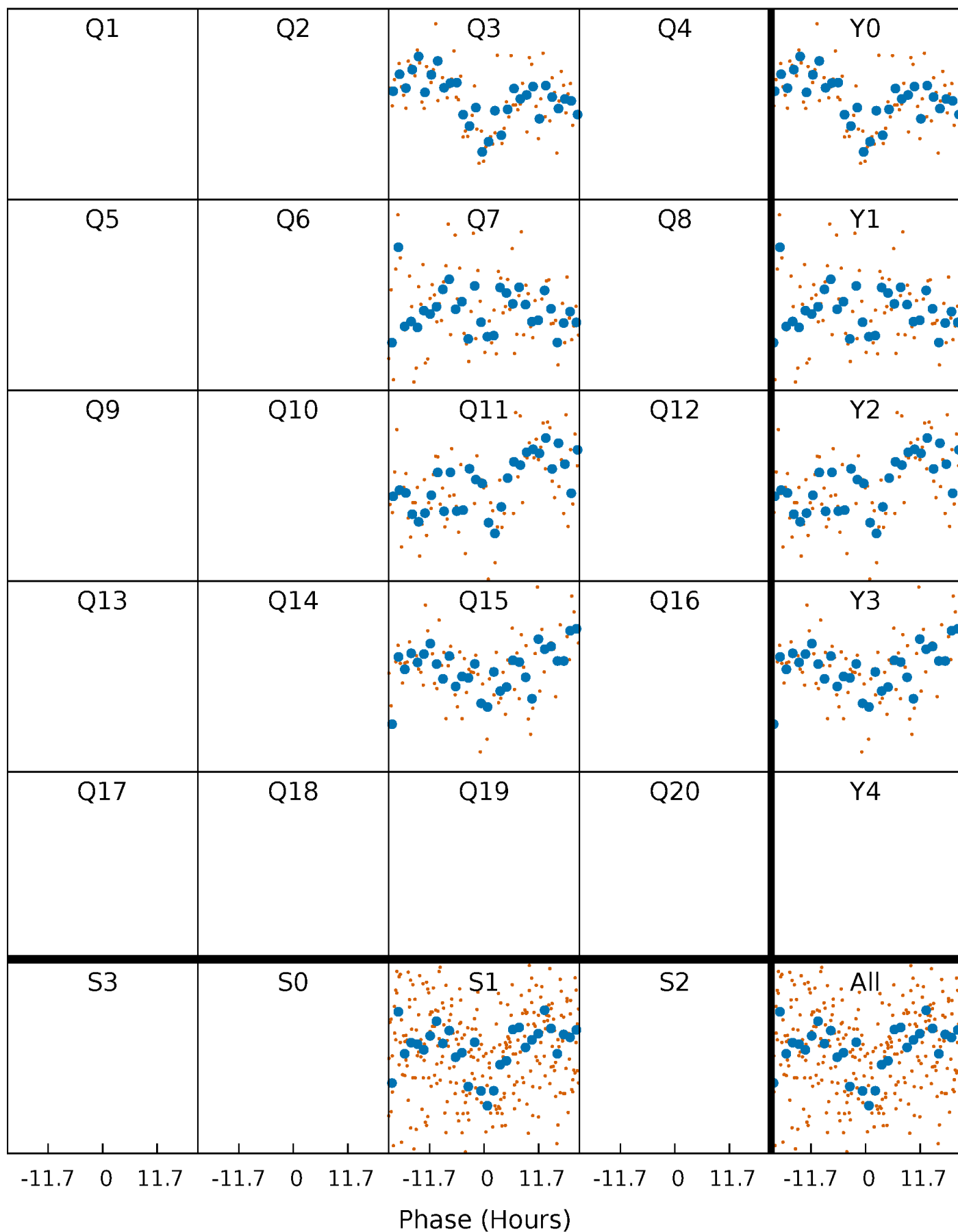
**Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)**





# PDC Quarter-Phased Transit Curves

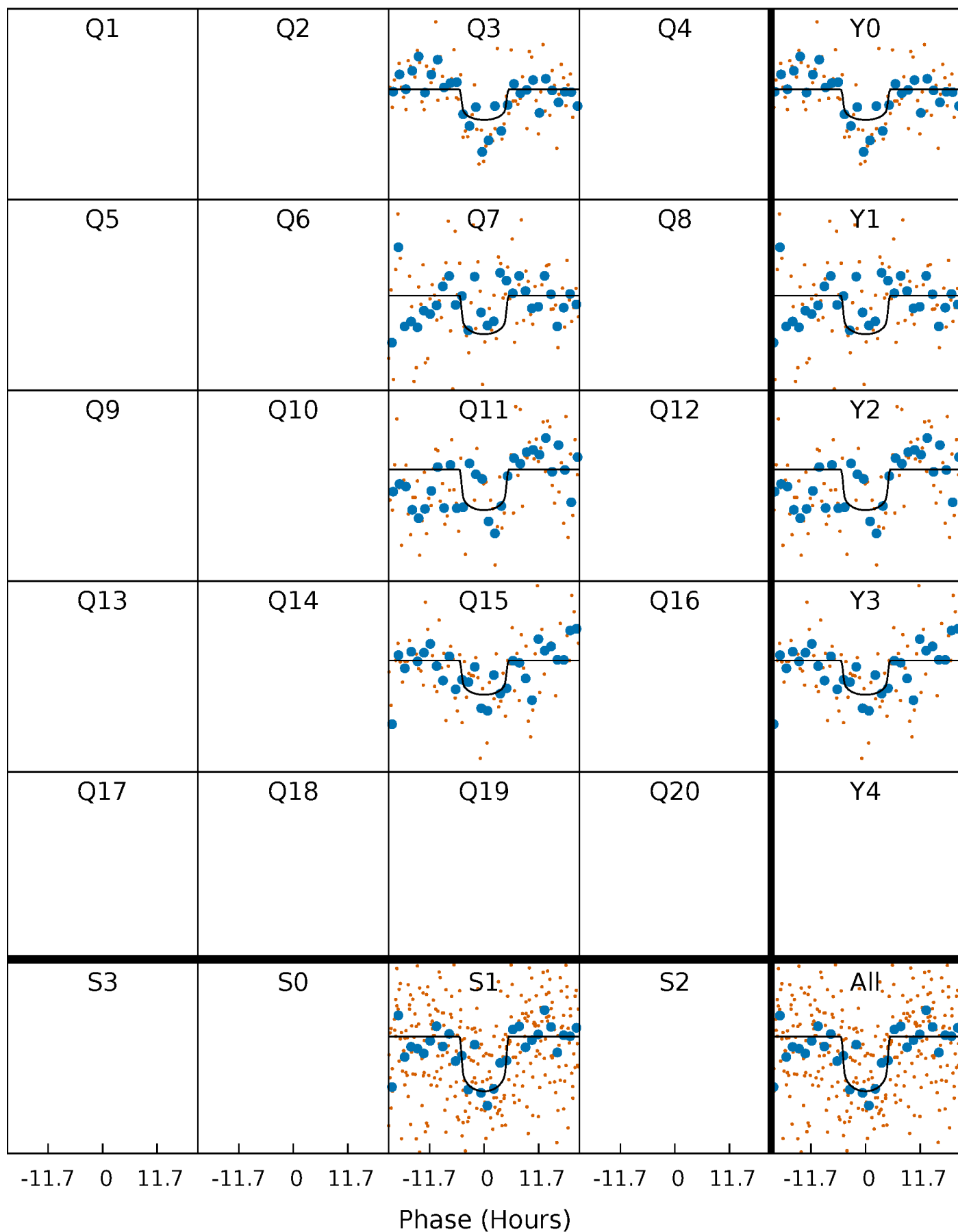
TCE 010585887-01 P=378.664688 Days  $T_0=288.262054$  (BKJD)





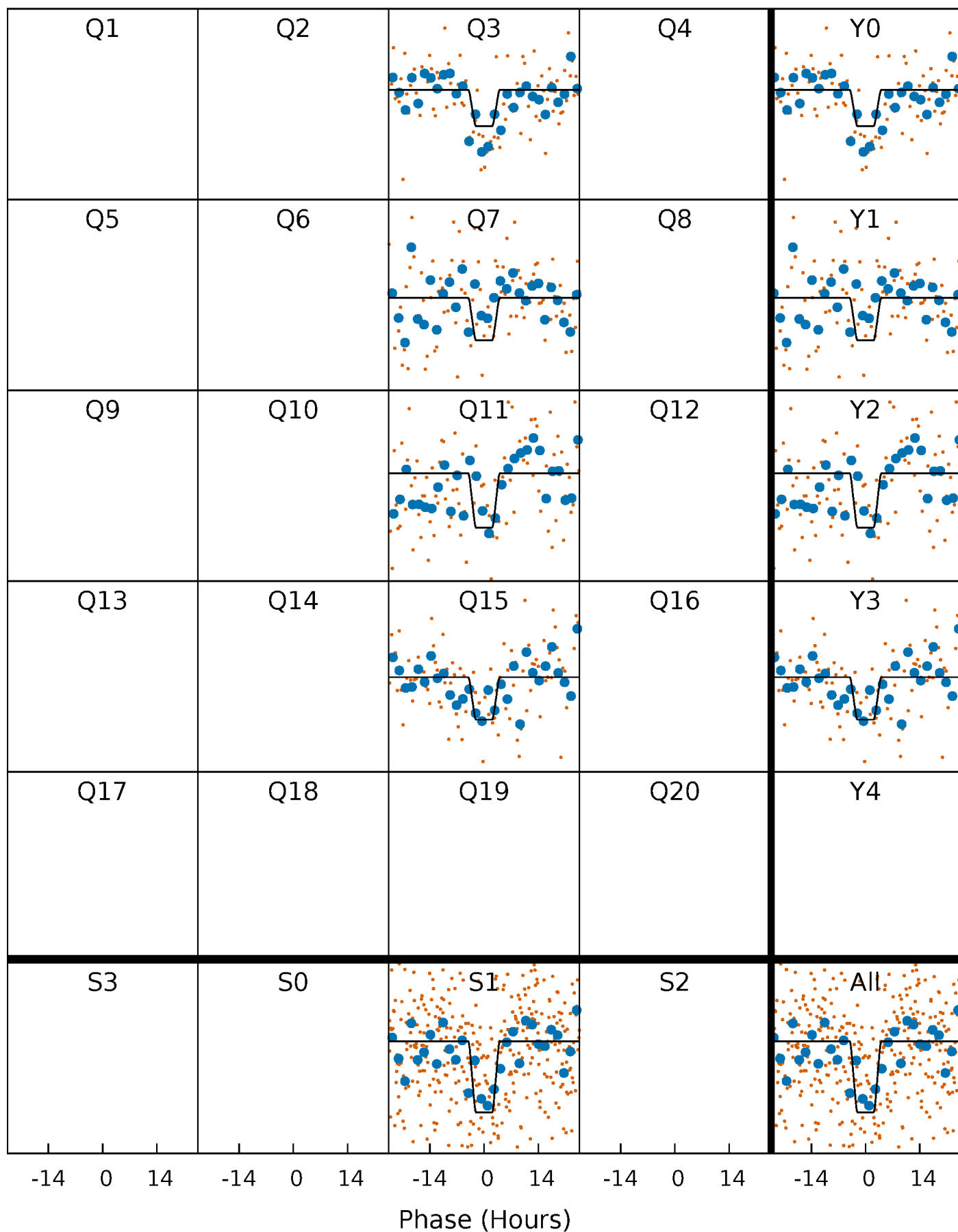
# DV Quarter-Phased Transit Curves

TCE 010585887-01   P=378.664688 Days    $T_0=288.262054$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

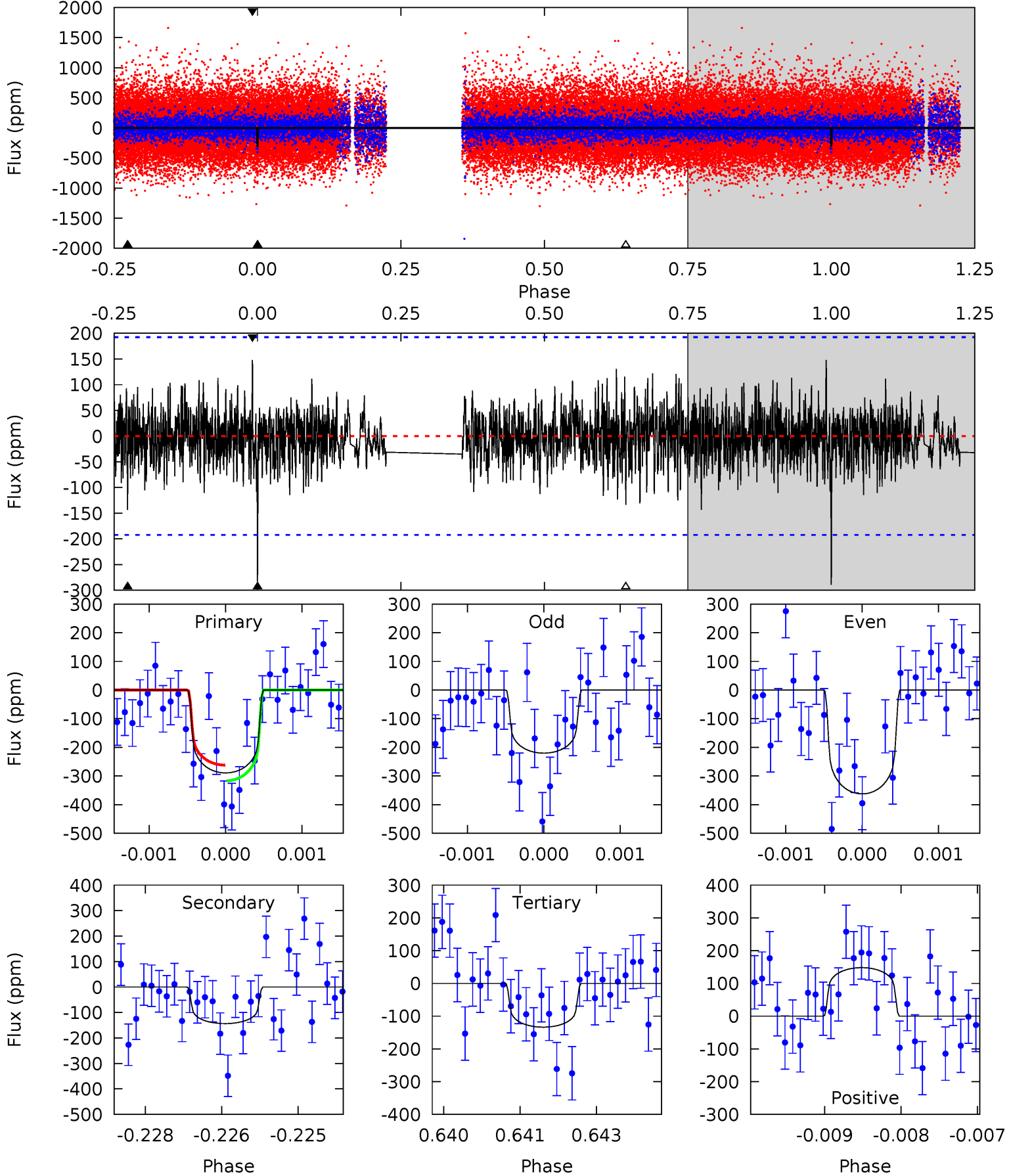
TCE 010585887-01 P=378.681545 Days  $T_0=288.250584$  (BKJD)



# DV Model-Shift Uniqueness Test

010585887-01, P = 378.664688 Days, E = 288.262054 Days

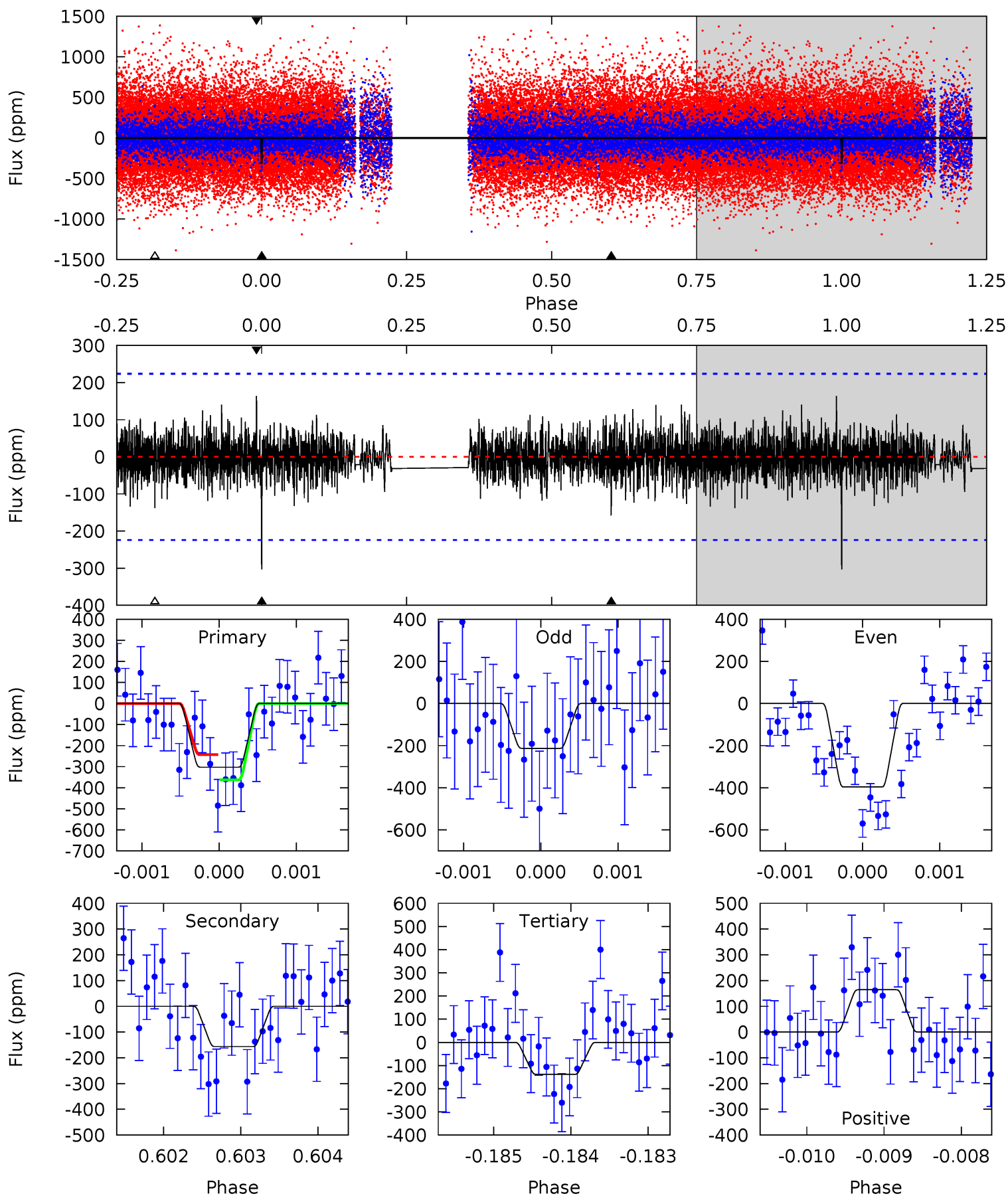
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
8.15	4.04	3.76	4.17	5.42	3.24	1.11	4.38	3.98	0.28	-0.13	2.00	0.97	0.34	0.77



# Alt Model-Shift Uniqueness Test

010585887-01, P = 378.681545 Days, E = 288.250584 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
7.40	3.82	3.38	4.02	5.47	3.33	1.00	4.02	3.38	0.44	-0.19	2.26	1.04	0.35	1.46



### Stellar Parameters For KIC 010585887

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$6000^{+167}_{-209}$	$4.463^{+0.070}_{-0.210}$	$-0.160^{+0.300}_{-0.300}$	$0.970^{+0.306}_{-0.123}$	$0.996^{+0.144}_{-0.118}$	$1.538^{+0.453}_{-0.791}$
	+3%/-3%	+2%/-5%	+188%/-188%	+32%/-13%	+14%/-12%	+29%/-51%
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 010585887-01 / KOI 8293.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	$A_{\text{obs}}$
DV	$-144 \pm 35$	$2.03^{+0.84}_{-0.81}$	$368^{+28}_{-19}$	$4943^{+1258}_{-643}$	$19454^{+37910}_{-10383}$
Alt.	$-156 \pm 41$	$2.12^{+0.91}_{-0.76}$	$366^{+26}_{-18}$	$4904^{+1164}_{-650}$	$19253^{+32110}_{-10208}$

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

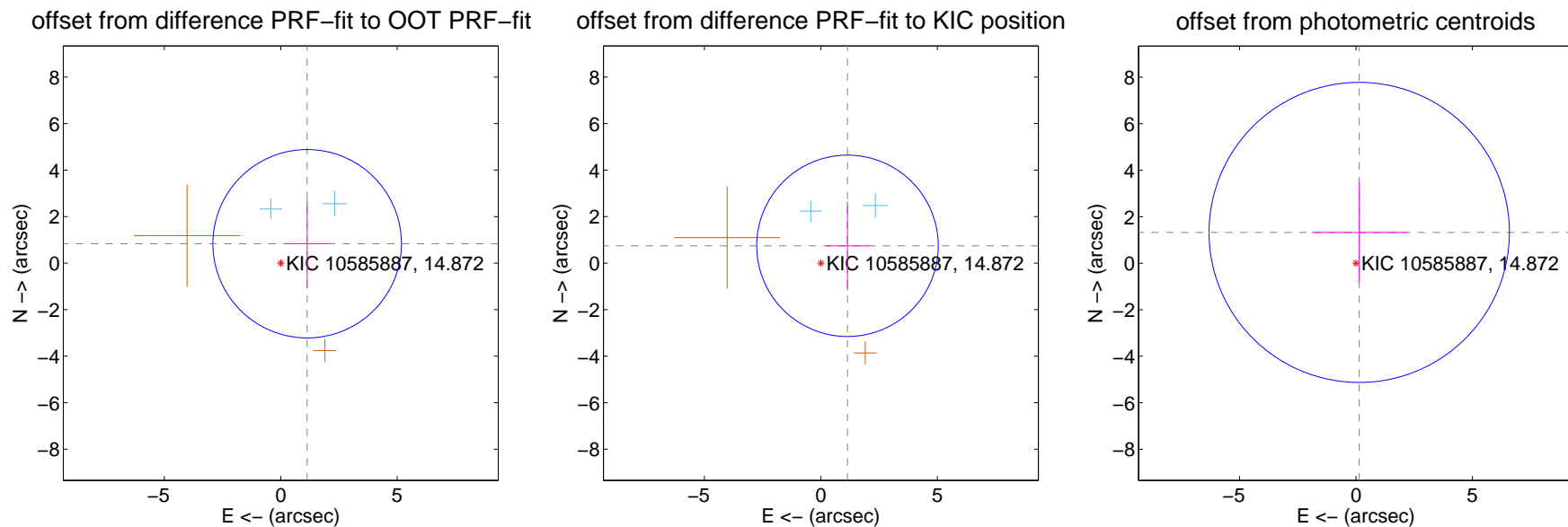
## DV Centroid Data

Supplemental centroid analysis for 010585887-01. Kepler magnitude: 14.87. Transit SNR 7.21

There are 2 quarters with good PRF difference image offsets

The direct PRF centroid is offset from the target star catalog position by about 0.08 arcsec

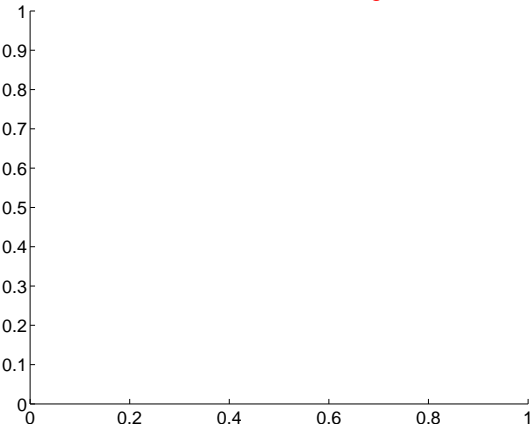
	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$1.408 \pm 1.350$	1.04	$-1.135 \pm 0.925$	$0.833 \pm 1.901$
PRF-fit source offset from KIC position	$1.365 \pm 1.299$	1.05	$-1.144 \pm 0.930$	$0.744 \pm 1.906$
photometric centroid source offset	$1.33 \pm 2.15$	0.62	$-0.14 \pm 2.03$	$1.32 \pm 2.15$



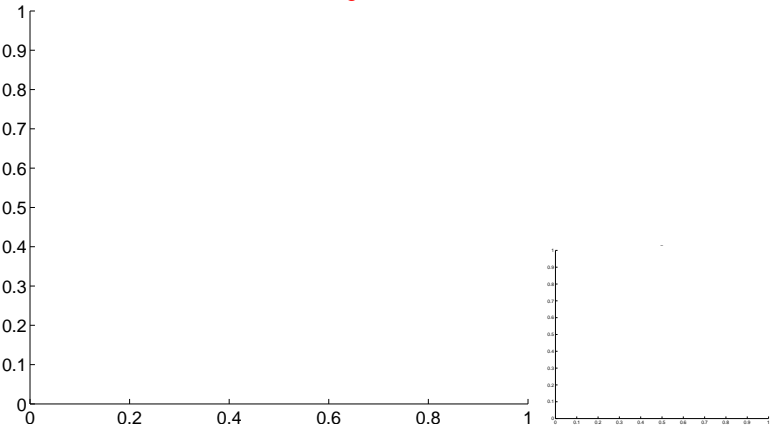
Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: three-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

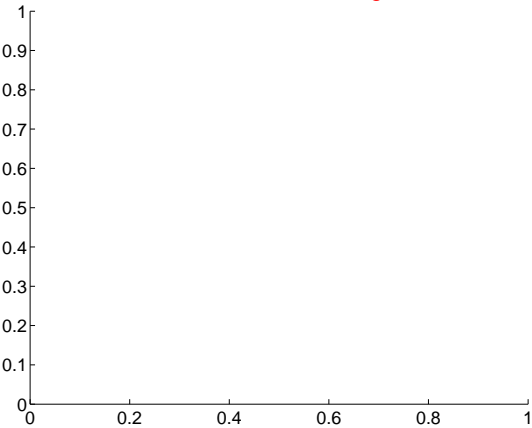
Q1 no difference image



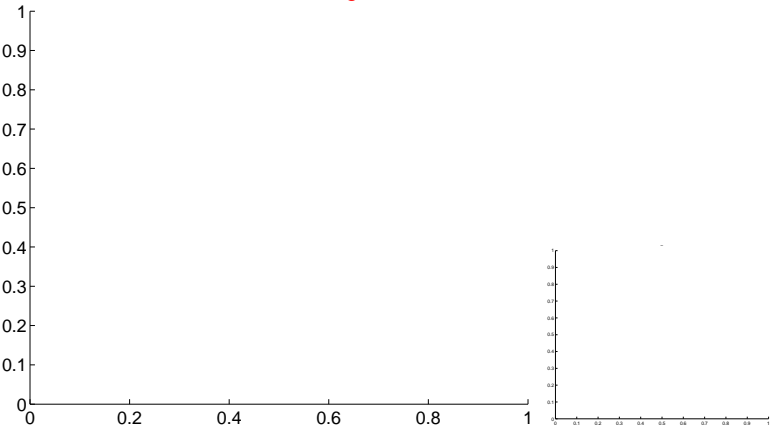
Q1 no OOT image



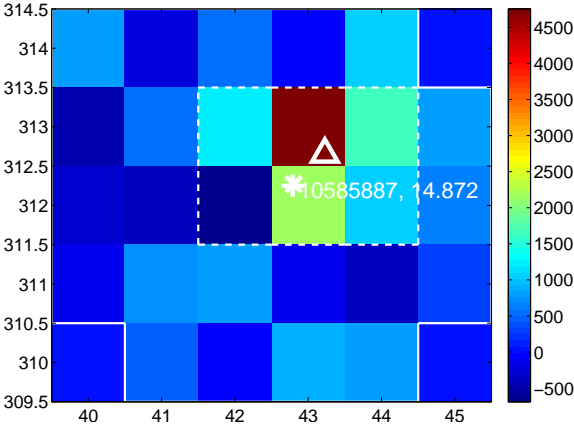
Q2 no difference image



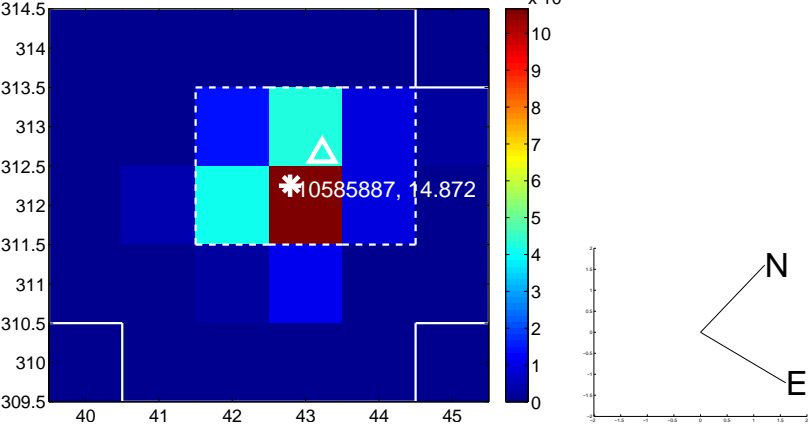
Q2 no OOT image



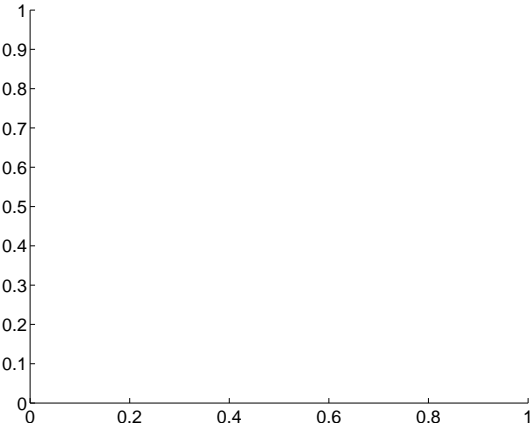
Q3 difference image



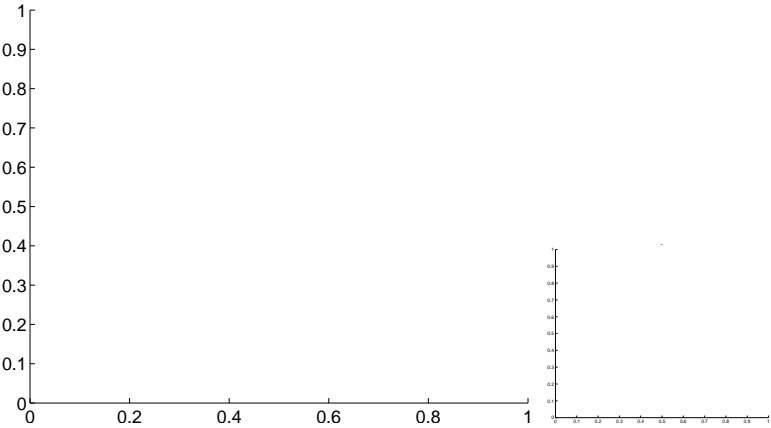
Q3 OOT image



Q4 no difference image



Q4 no OOT image





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

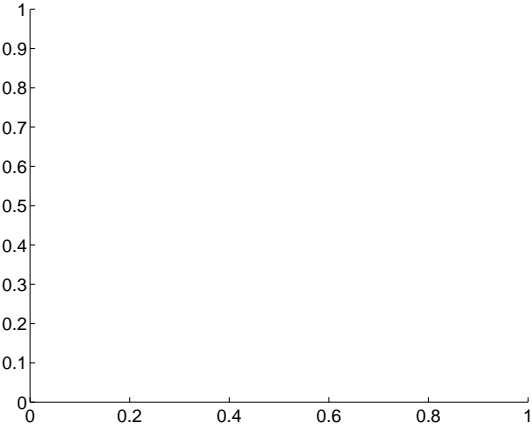
Q5 no difference image



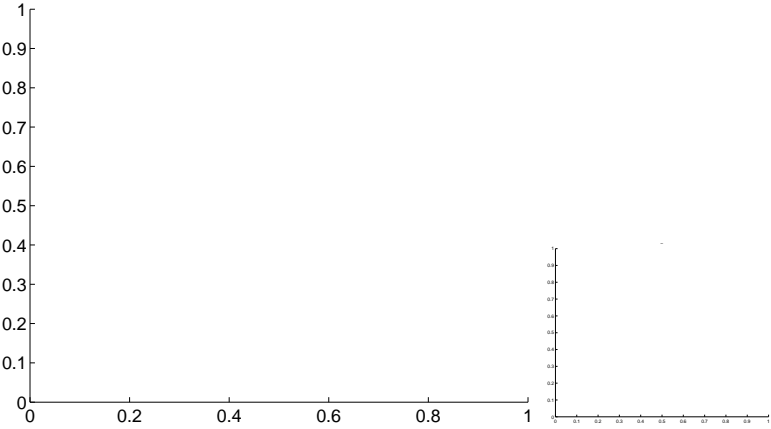
Q5 no OOT image



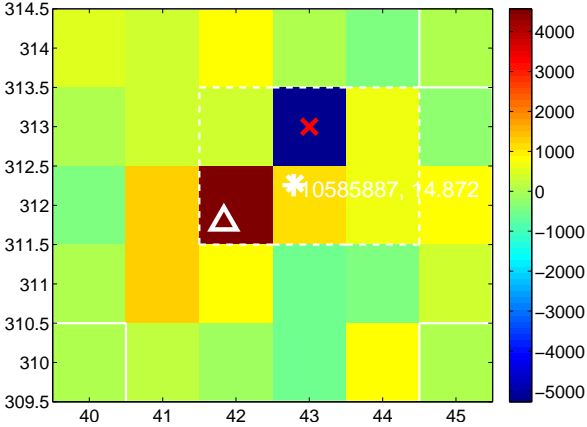
Q6 no difference image



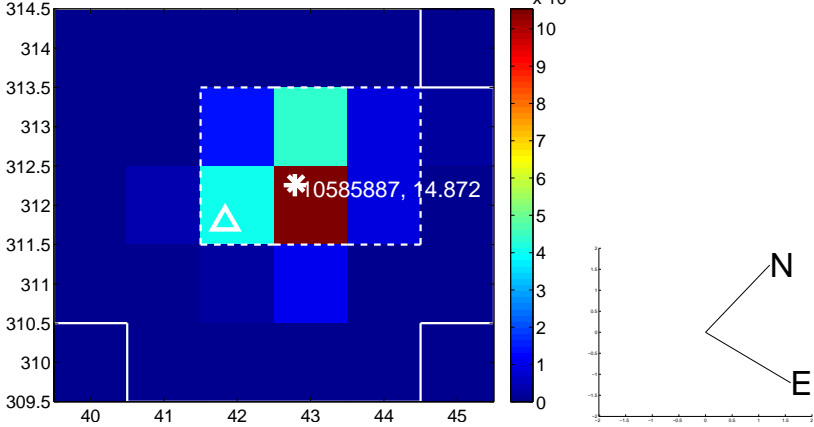
Q6 no OOT image



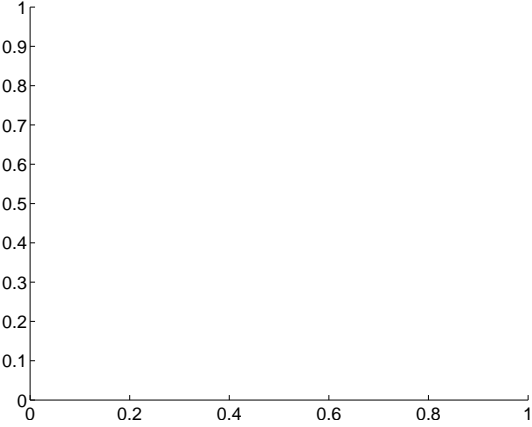
Q7 difference image. Poor Quality



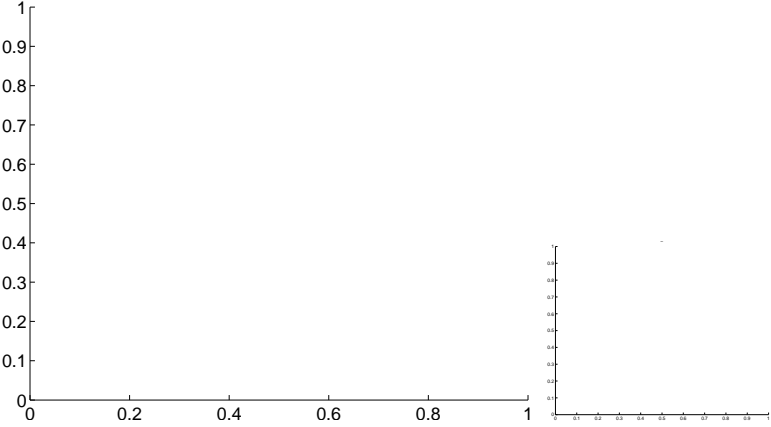
Q7 OOT image



Q8 no difference image

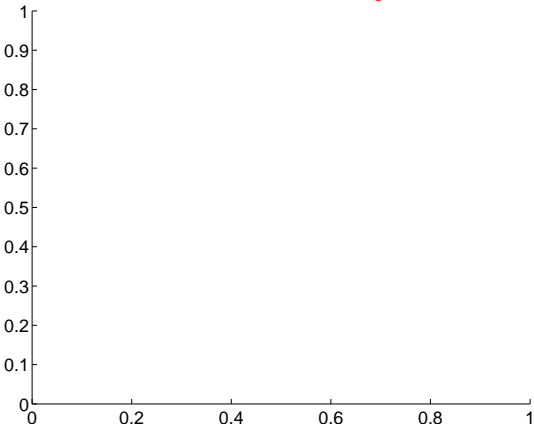


Q8 no OOT image

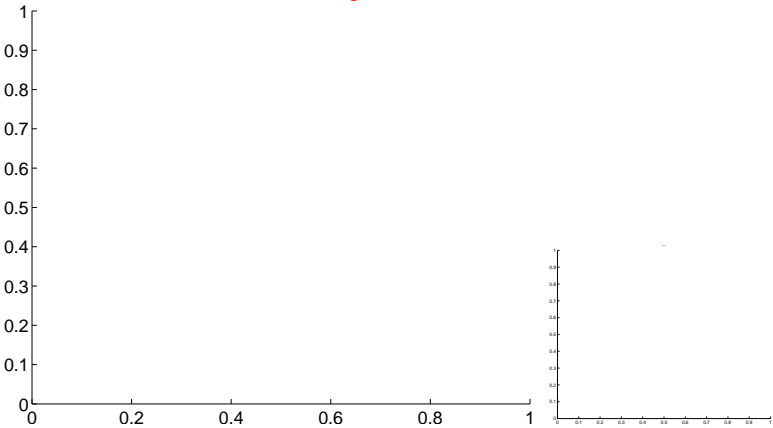


white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

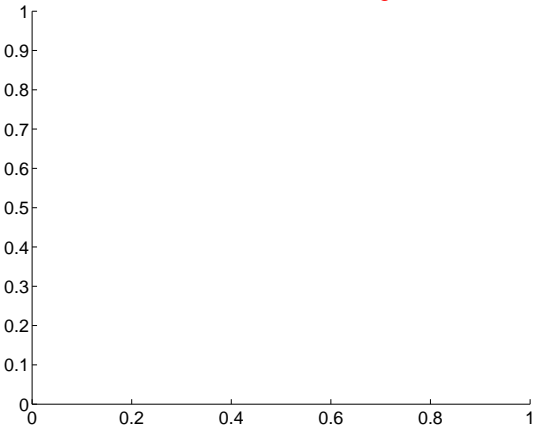
Q9 no difference image



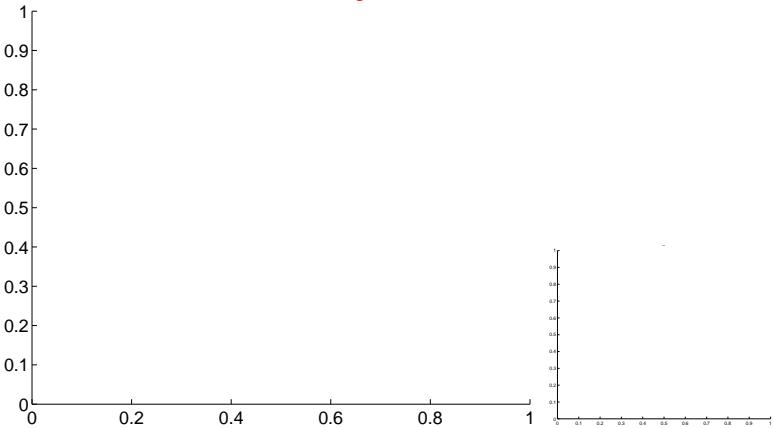
Q9 no OOT image



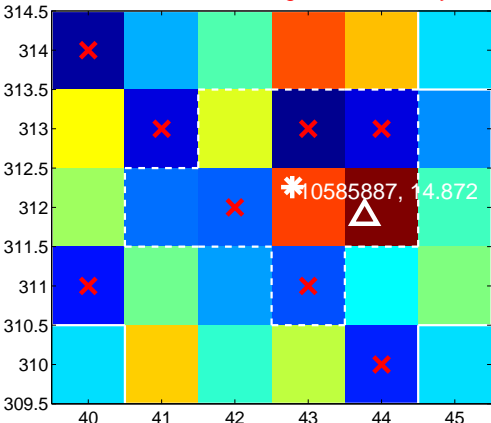
Q10 no difference image



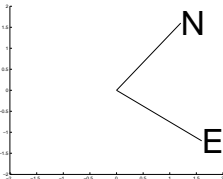
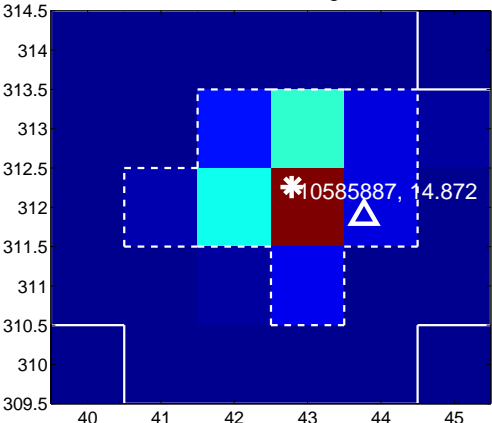
Q10 no OOT image



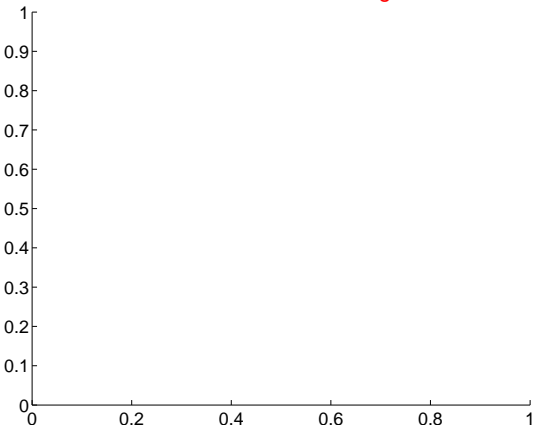
Q11 difference image. Poor Quality



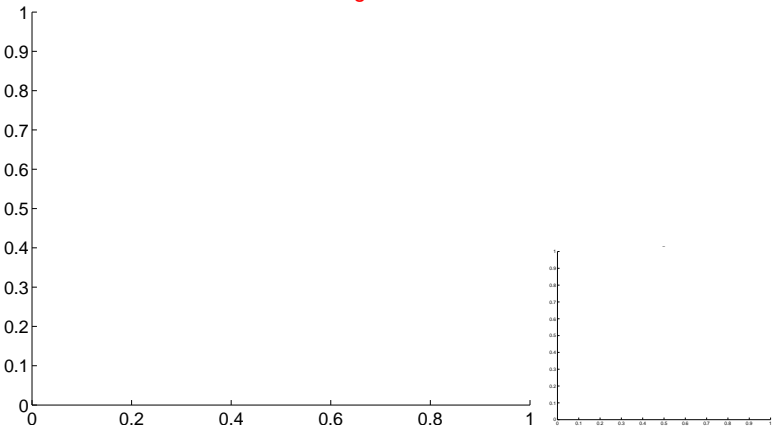
Q11 OOT image



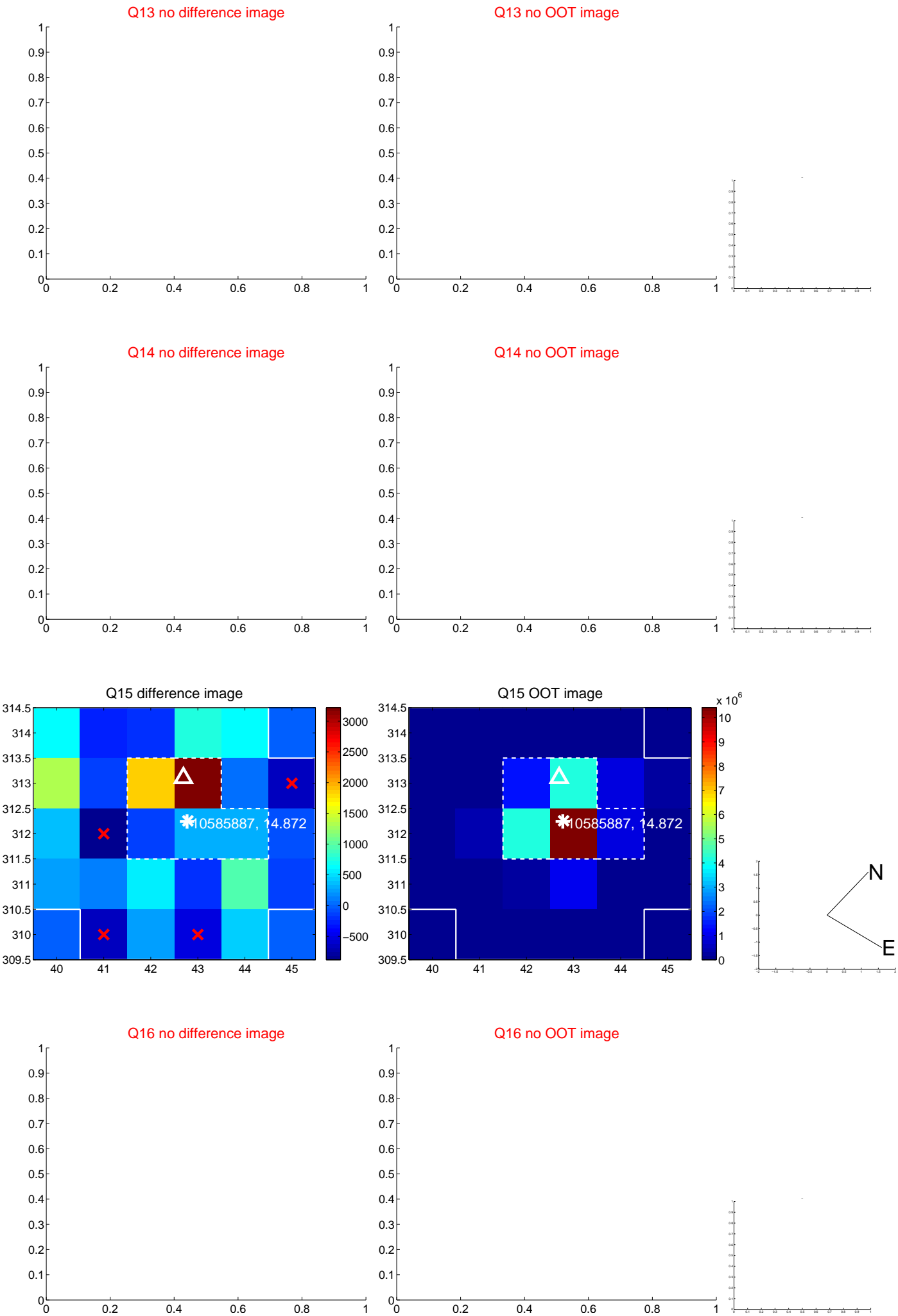
Q12 no difference image



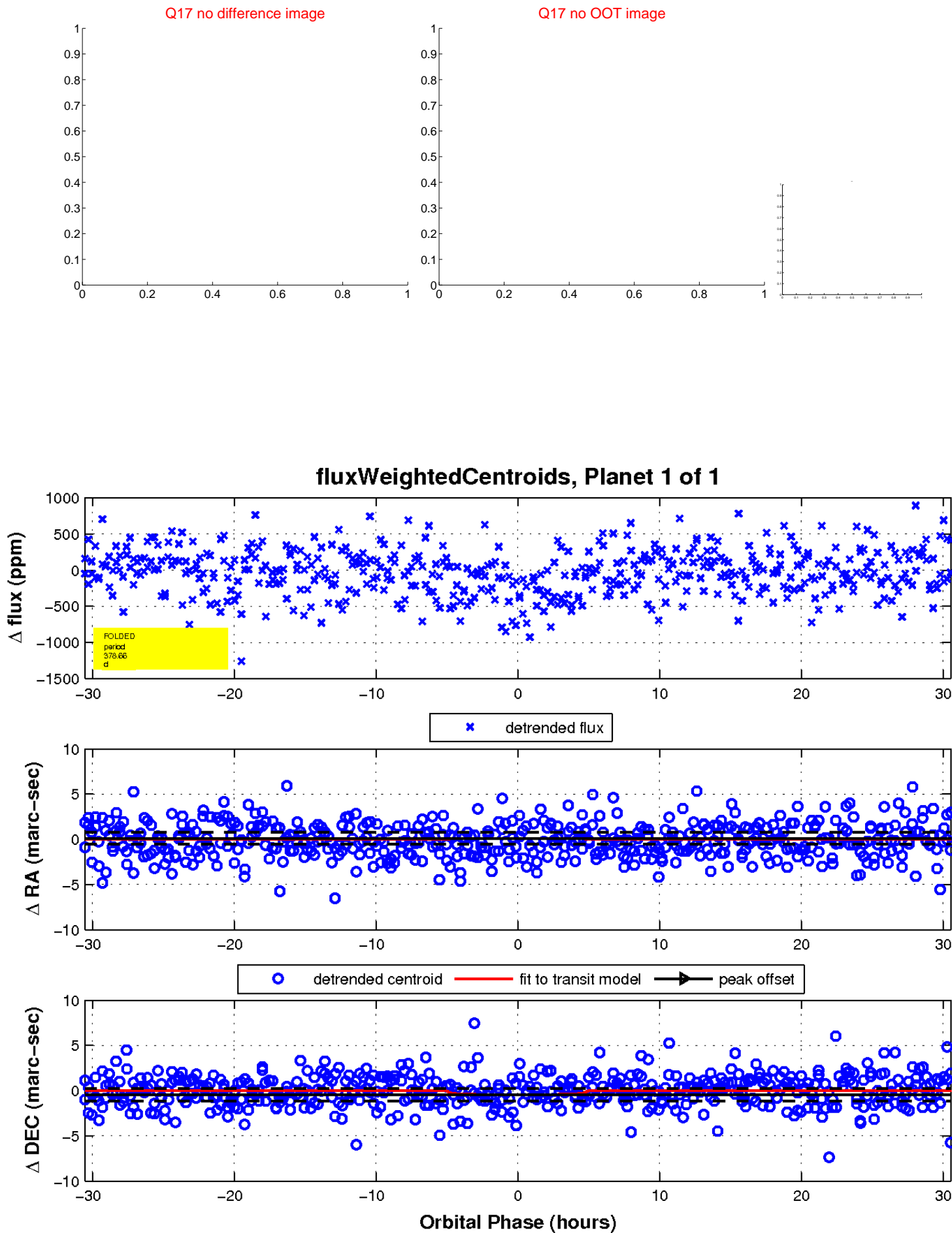
Q12 no OOT image



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

Declination

