

# KIC 005339567

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
005339567-01	OBS	2440.01	4.866419	134.014077	144.7	2.418	14.6	16.5	1.11	5688	1.59	374.05

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005339567-01	OBS	PC	0.98	0	0	0	0	NO_COMMENT

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

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

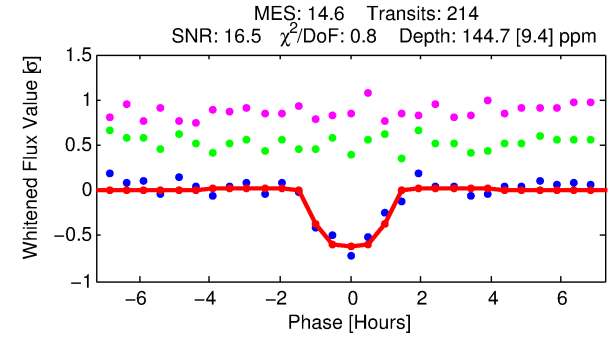
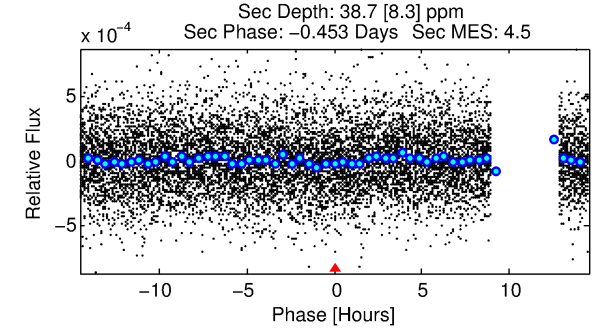
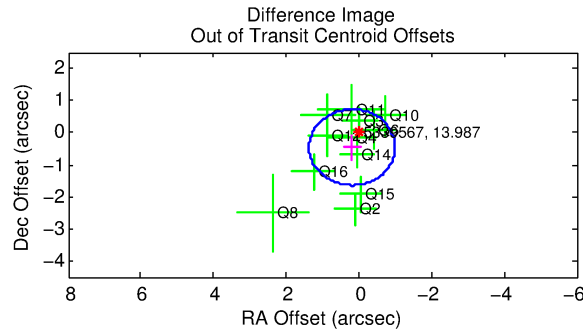
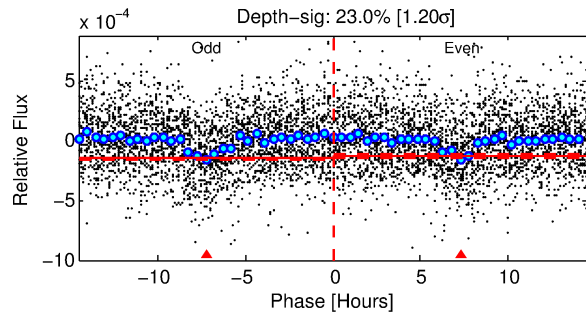
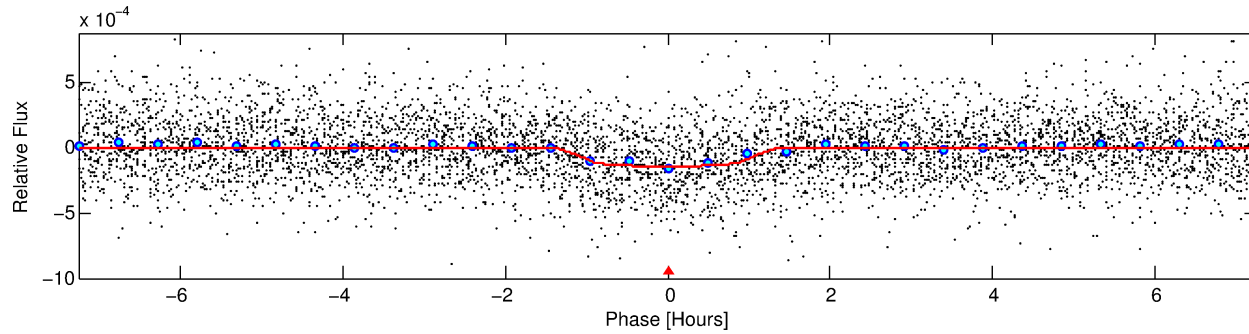
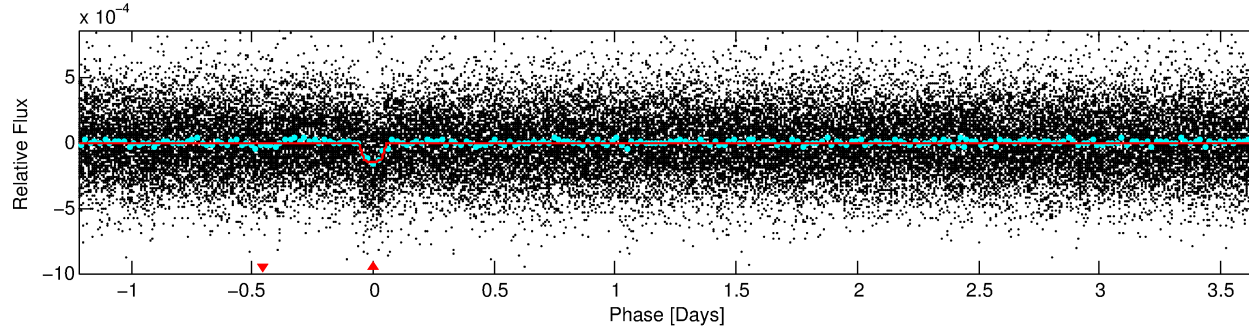
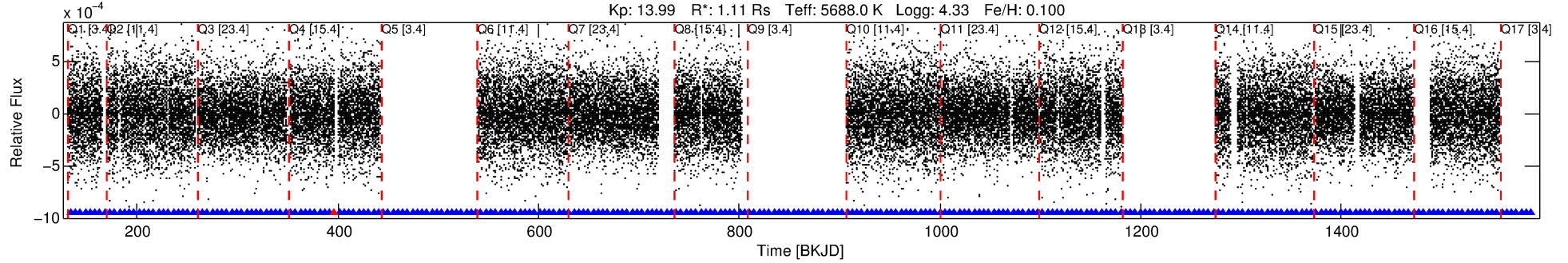
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 005339567-01

No Significant Match Found

# DV One-Page Summary

KIC: 5339567 Candidate: 1 of 1 Period: 4.866 d  
KOI: K02440.01 Corr: 0.952



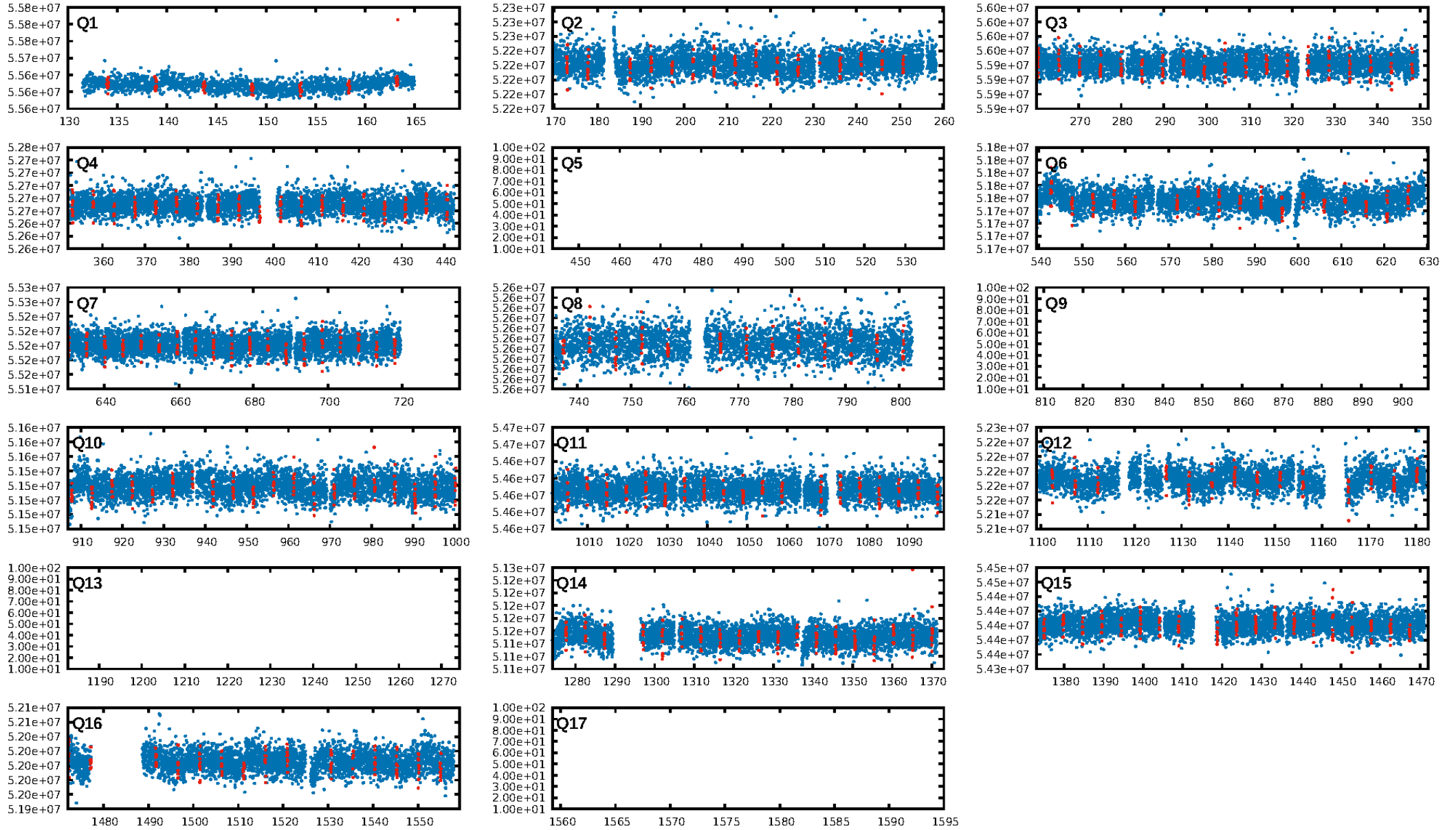
## DV Fit Results:

Period = 4.86642 [0.00002] d  
Epoch = 134.0141 [0.0027] BKJD  
Rp/R\* = 0.0132 [0.0062]  
a/R\* = 7.24 [15.51]  
b = 0.90 [0.47]  
Seff = 374.05 [87.14]  
Teff = 1121 [65] K  
Rp = 1.60 [0.79] Re  
a = 0.0556 [0.0080] AU  
Ag = 25.88 [25.56] [0.97 $\sigma$ ]  
Teffp = 3911 [941] K [2.96 $\sigma$ ]

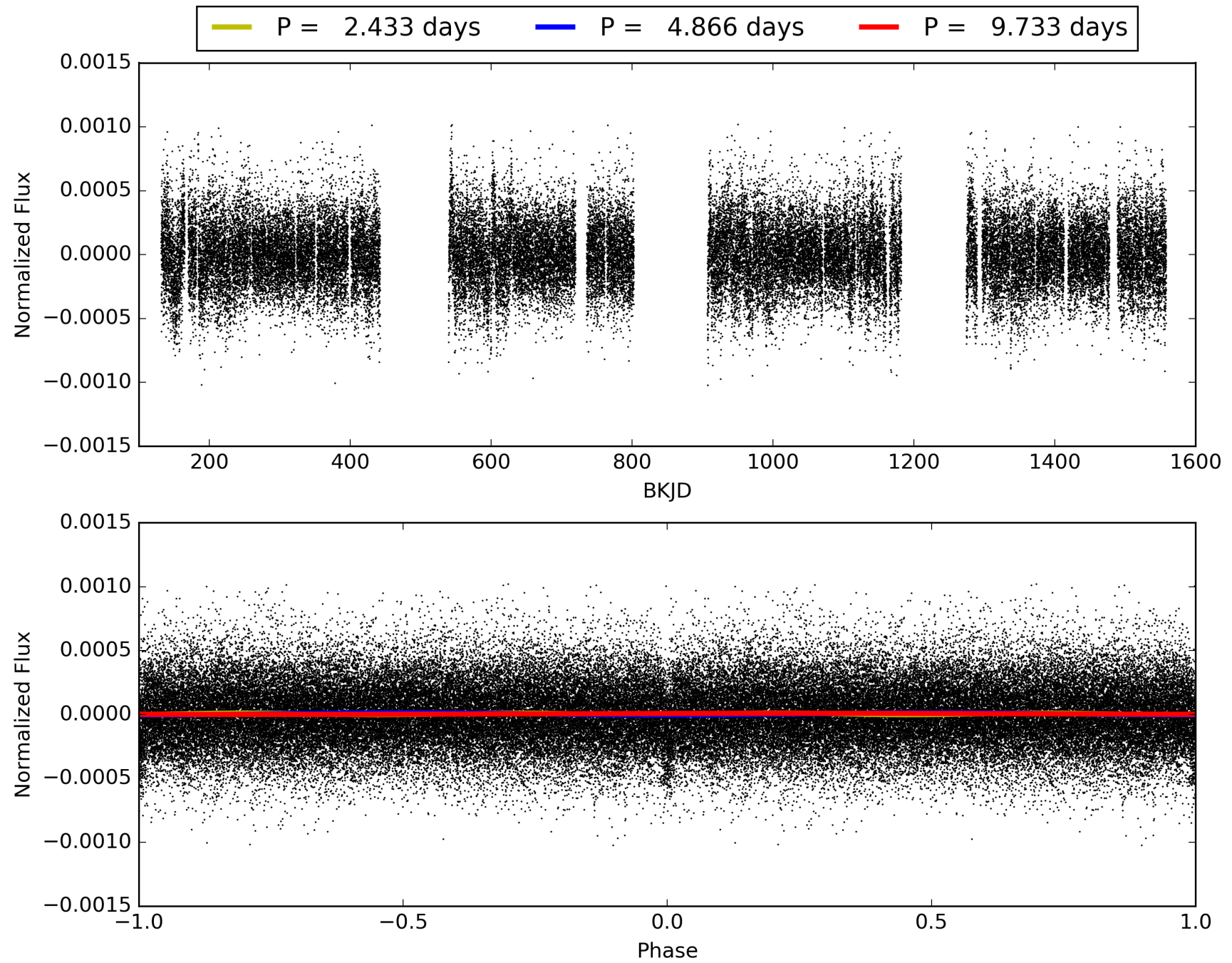
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: N/A  
ModelChiSquareGof-sig: N/A  
Bootstrap-pfa: 1.76e-48  
RollingBand-fgt: 1.00 [206/207]  
GhostDiagnostic-chr: 2.573  
Centroid-sig: 93.2%  
Centroid-so: 0.288 arcsec [0.32 $\sigma$ ]  
OotOffset-rm: 0.498 arcsec [1.26 $\sigma$ ]  
KicOffset-rm: 0.501 arcsec [1.50 $\sigma$ ]  
OotOffset-st: 4/4/4/0 [12]  
KicOffset-st: 4/4/4/0 [12]  
DiffImageQuality-fgm: 0.83 [10/12]  
DiffImageOverlap-fno: 1.00 [13/13]

# TCE 005339567-01, PDC Light Curves

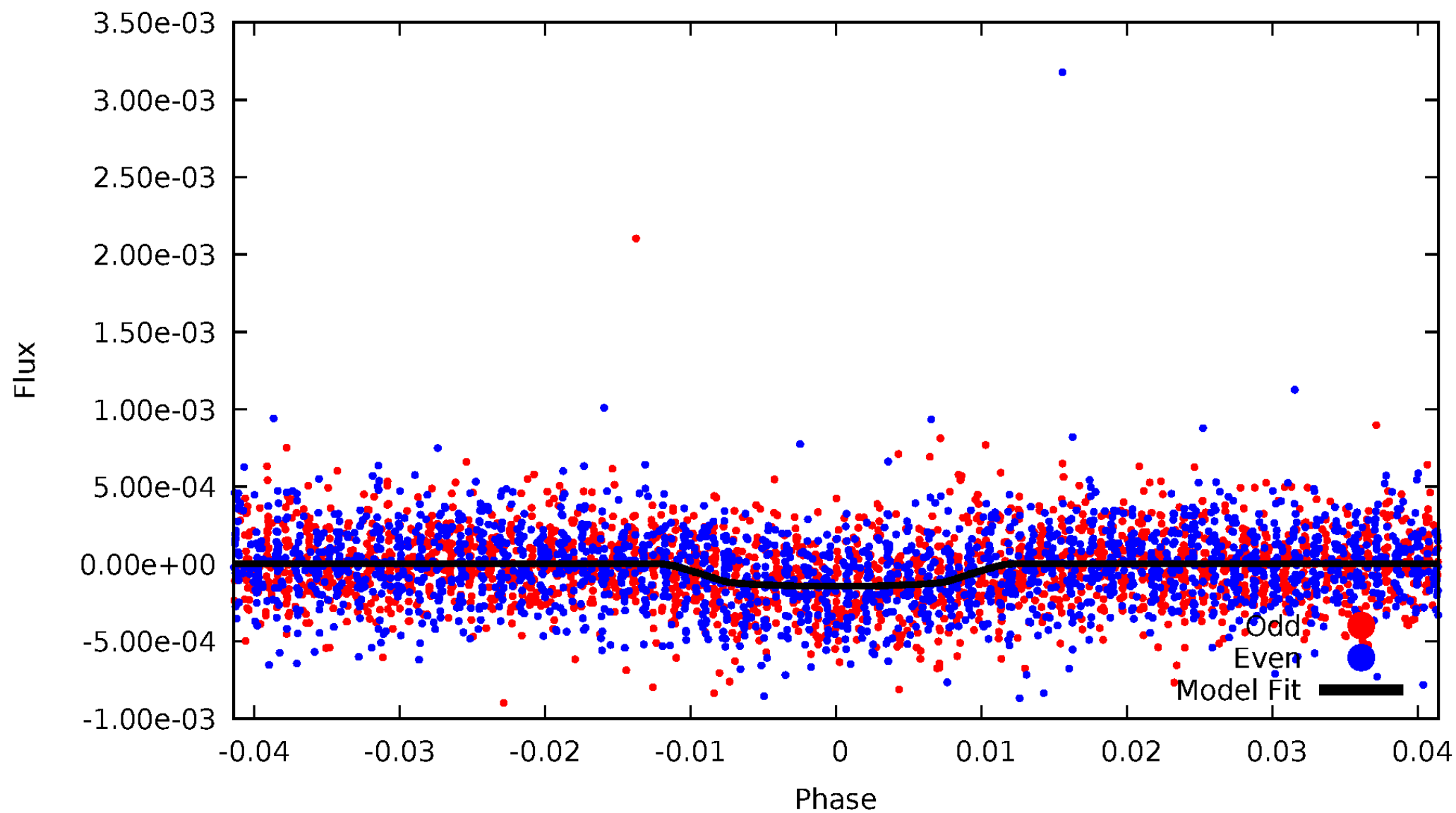


TCE 005339567-01



# DV Odd/Even

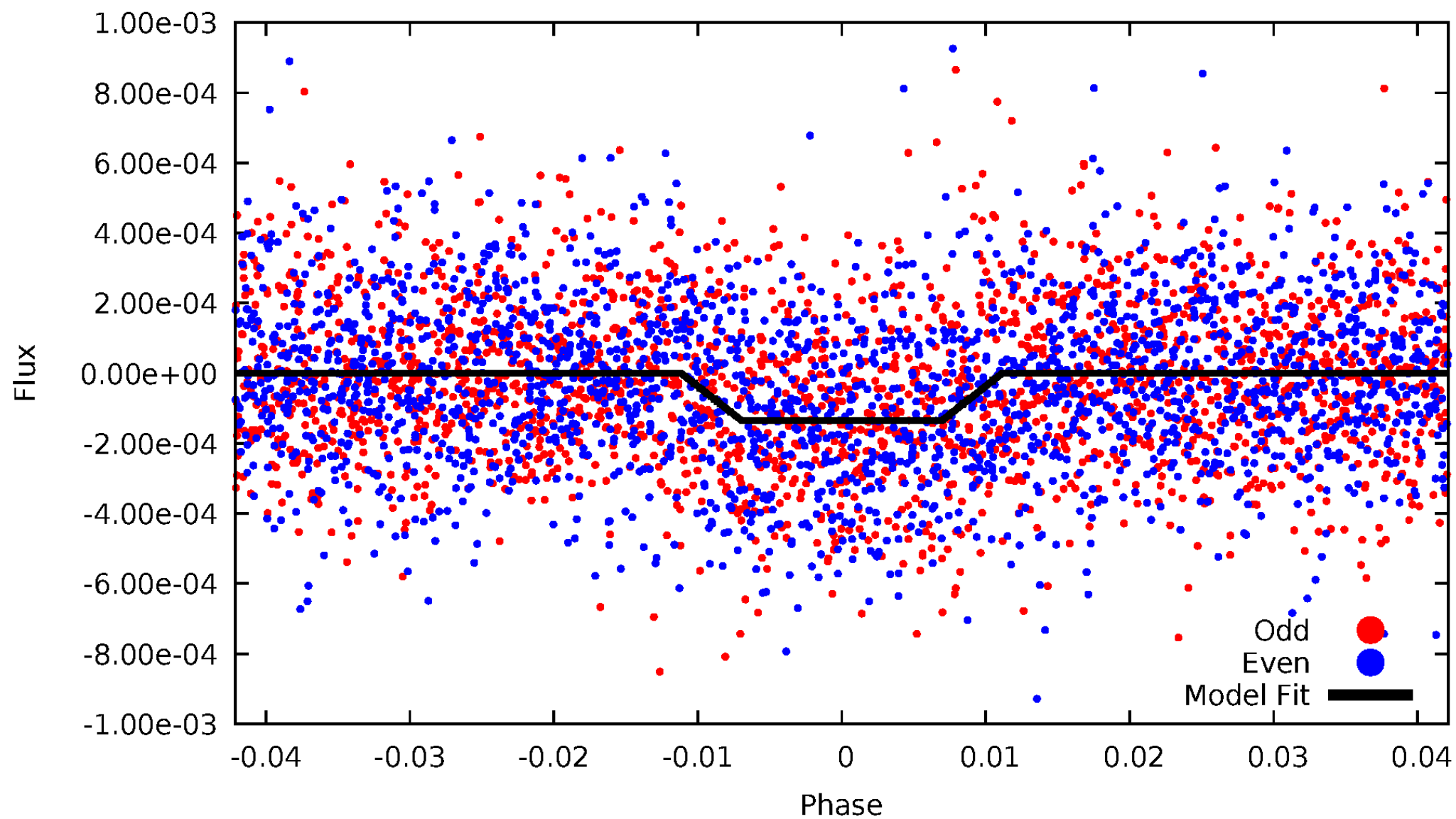
TCE 005339567-01



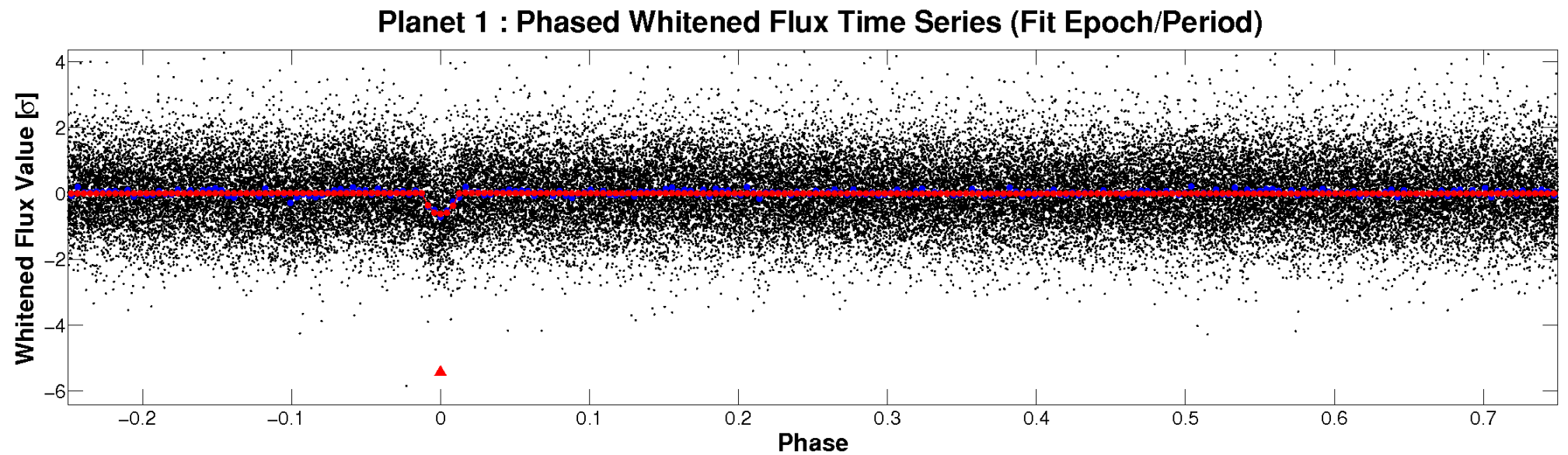
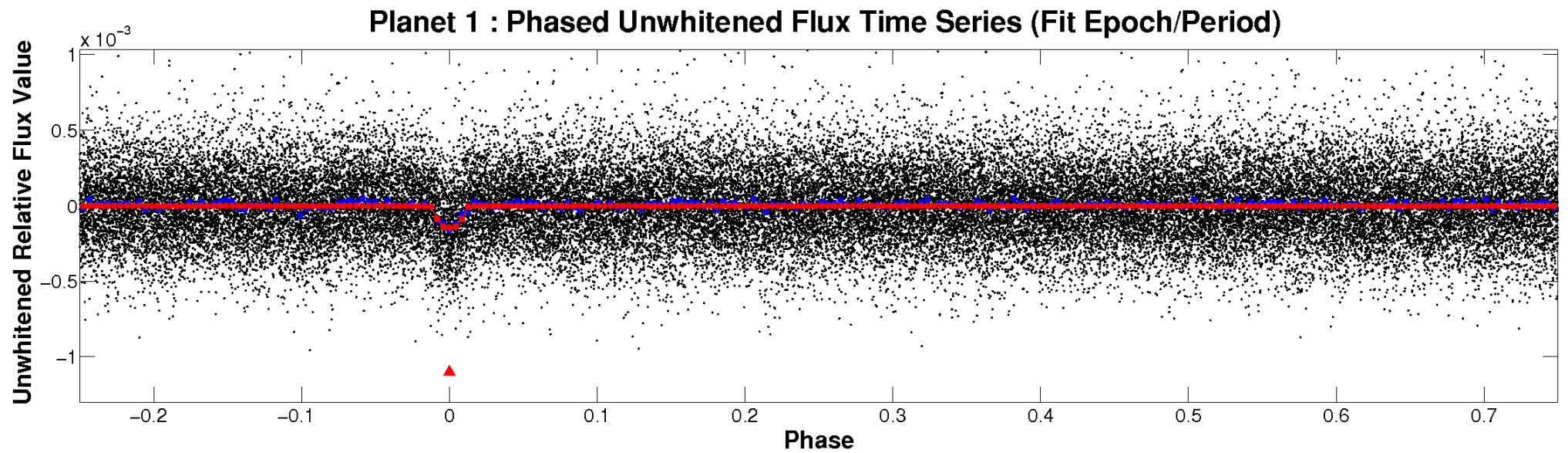


# ALT Odd/Even

TCE 005339567-01

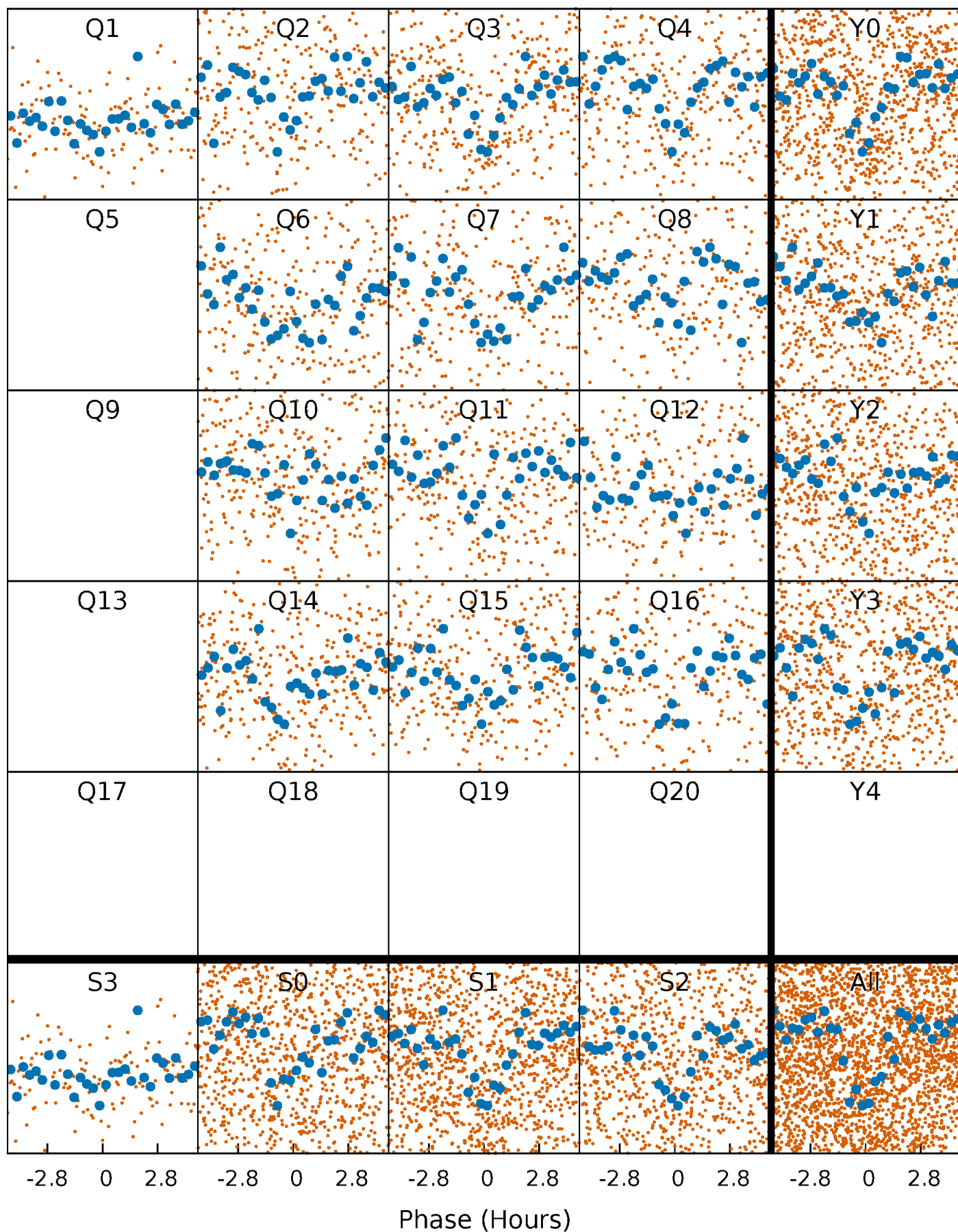


# Non-Whitened Vs. Whitened Light Curve



# PDC Quarter-Phased Transit Curves

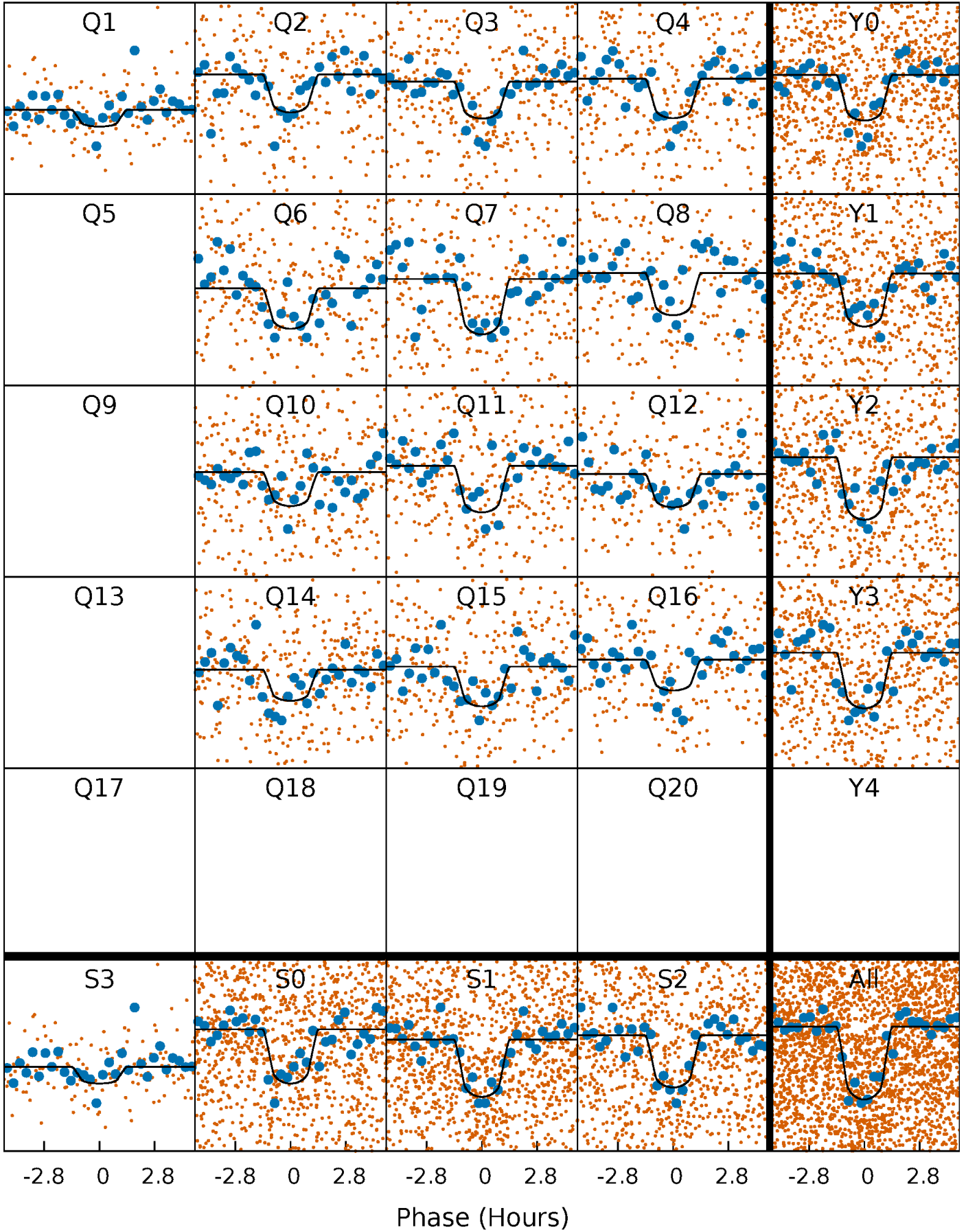
TCE 005339567-01 P= 4.866419 Days  $T_0=134.014077$  (BKJD)





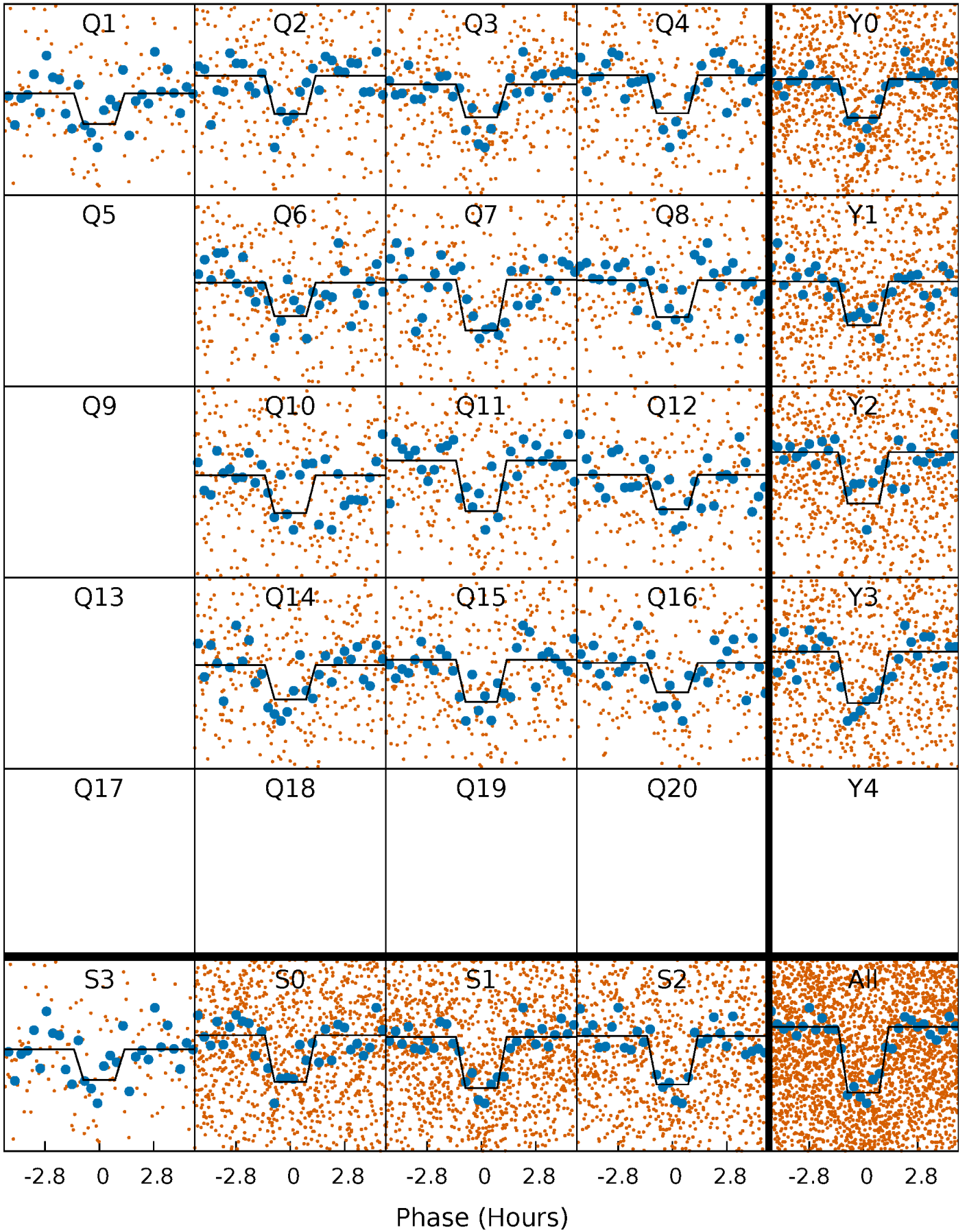
# DV Quarter-Phased Transit Curves

TCE 005339567-01 P= 4.866419 Days  $T_0=134.014077$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

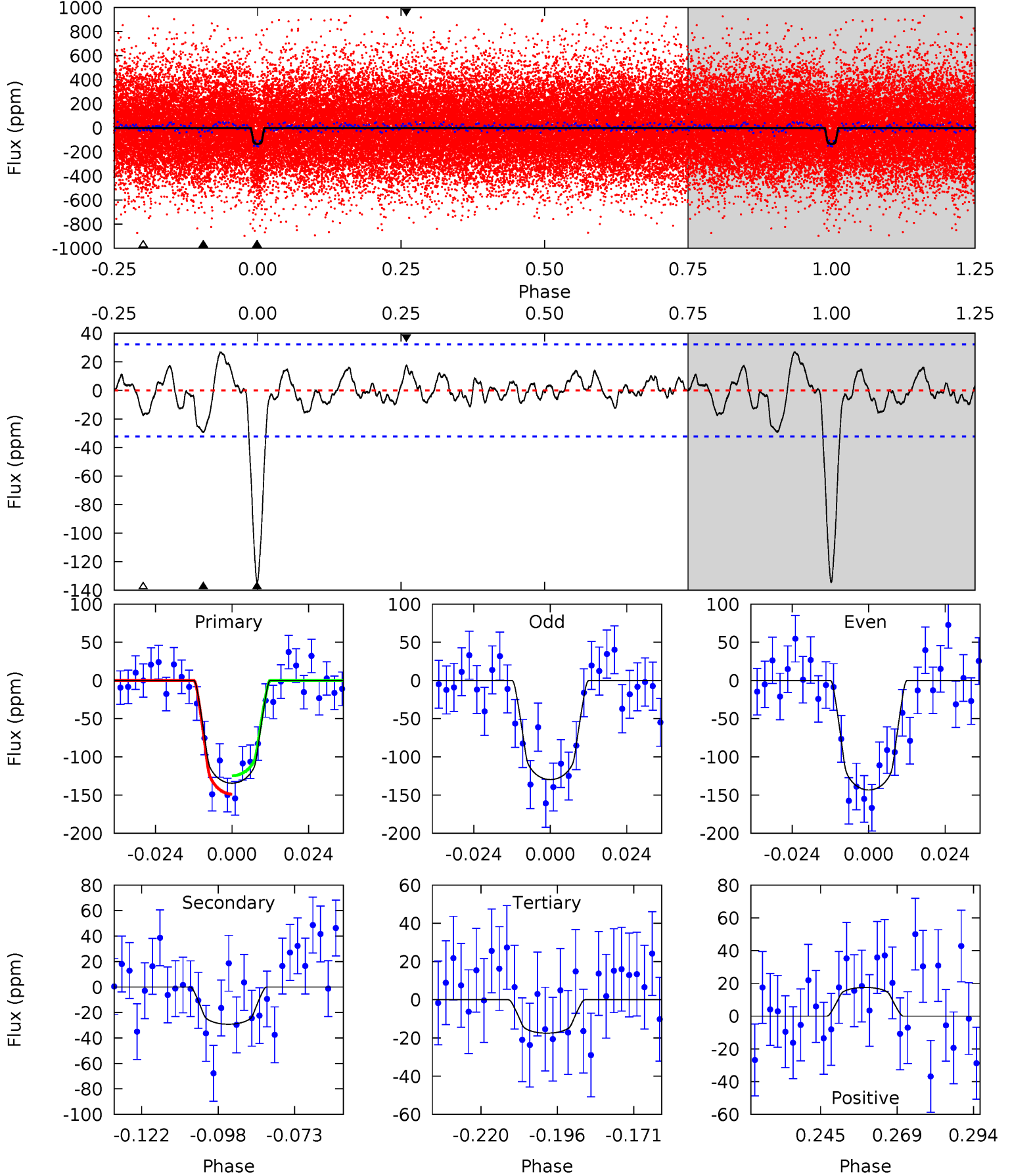
TCE 005339567-01 P= 4.866393 Days  $T_0=134.015005$  (BKJD)



# DV Model-Shift Uniqueness Test

005339567-01, P = 4.866419 Days, E = 129.147658 Days

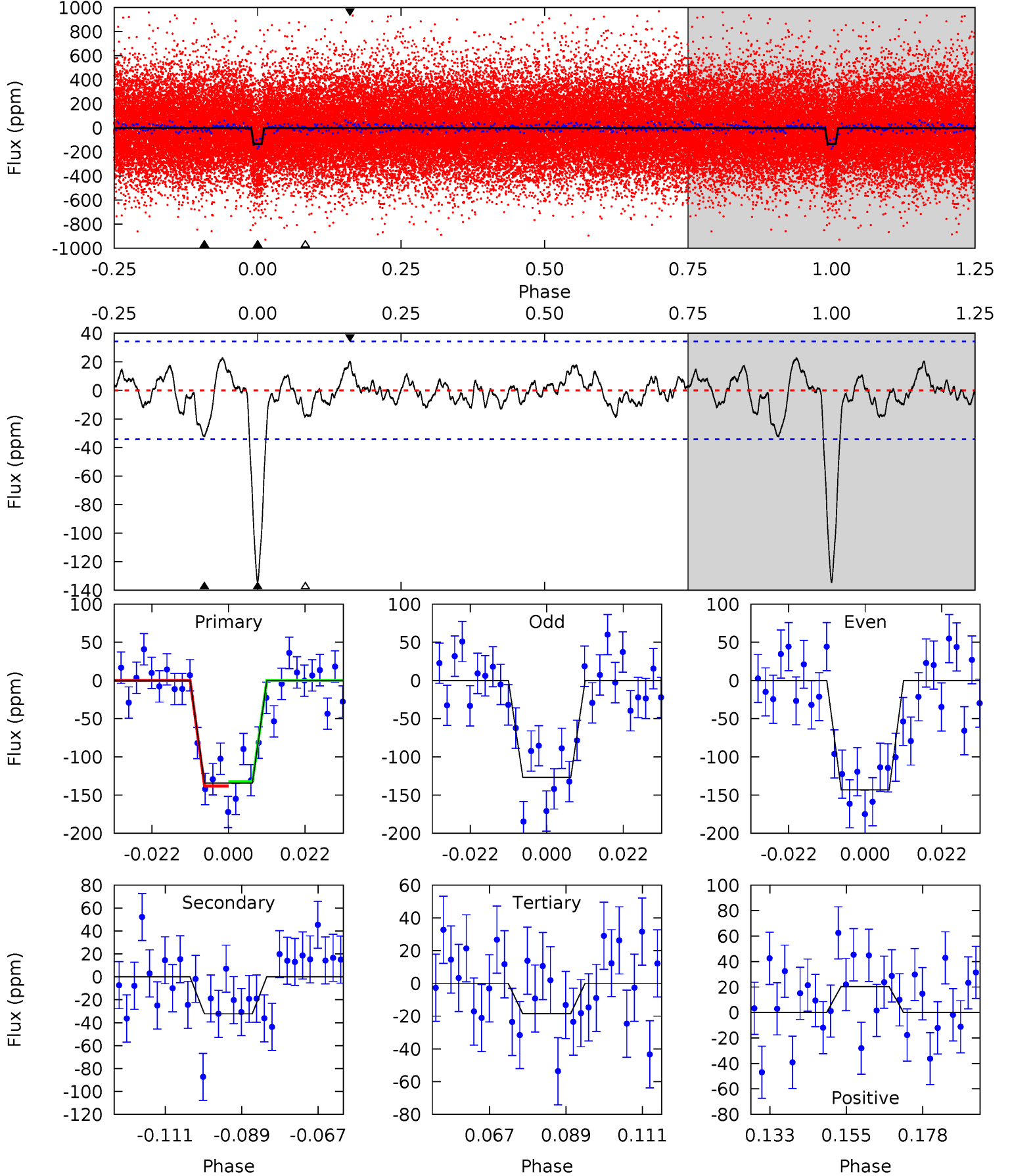
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
20.2	4.40	2.63	2.64	4.85	2.25	1.18	17.6	17.6	1.76	1.76	1.03	1.01	0.17	1.80



# Alt Model-Shift Uniqueness Test

005339567-01, P = 4.866393 Days, E = 129.148612 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
19.1	4.59	2.64	2.91	4.87	2.29	1.15	16.4	16.2	1.95	1.68	1.16	1.02	0.14	0.42



### Stellar Parameters For KIC 005339567

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$5688^{+77}_{-77}$	$4.333^{+0.132}_{-0.108}$	$0.100^{+0.150}_{-0.150}$	$1.111^{+0.169}_{-0.154}$	$0.969^{+0.071}_{-0.050}$	$0.994^{+0.518}_{-0.342}$
	+1%/-1%	+3%/-2%	+150%/-150%	+15%/-14%	+7%/-5%	+52%/-34%
Source	SPE90	SPE90	SPE90	DSEP		

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

### Secondary Eclipse Parameters for KIC 005339567-01 / KOI 2440.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	$A_{obs}$
DV	$-29 \pm 7$	$1.54^{+0.77}_{-0.66}$	$1562^{+69}_{-62}$	$3982^{+1025}_{-524}$	$21^{+49}_{-12}$
Alt.	$-32 \pm 7$	$1.40^{+0.79}_{-0.71}$	$1561^{+74}_{-68}$	$4201^{+1421}_{-625}$	$27^{+85}_{-16}$

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



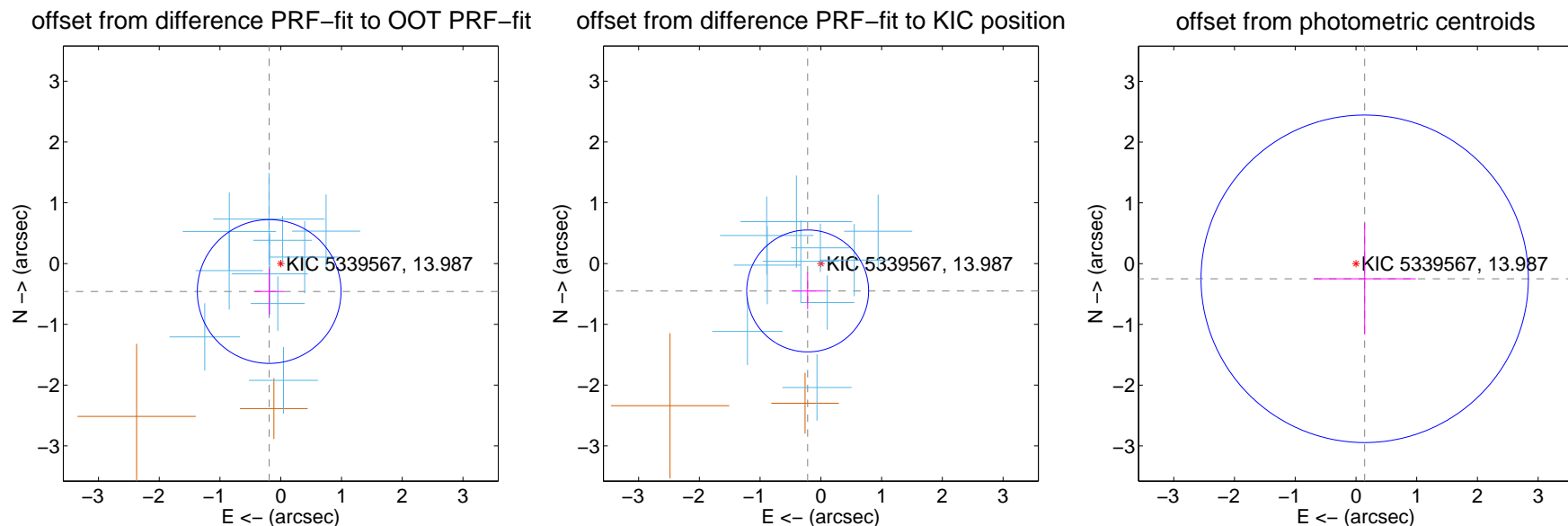
## DV Centroid Data

Supplemental centroid analysis for 005339567-01. Kepler magnitude: 13.99. Transit SNR 16.54

There are 10 quarters with good PRF difference image offsets

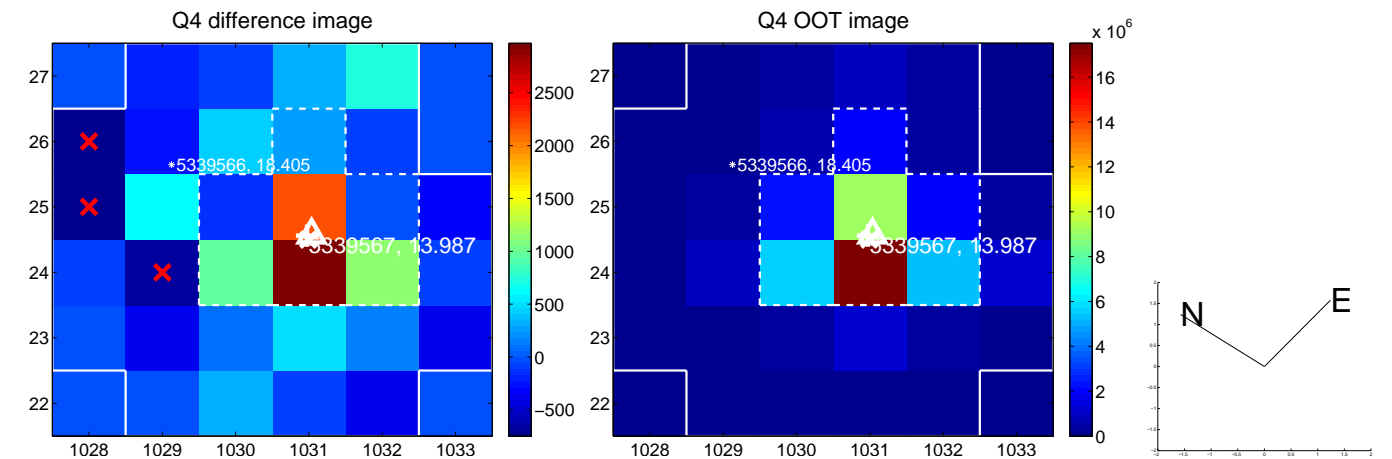
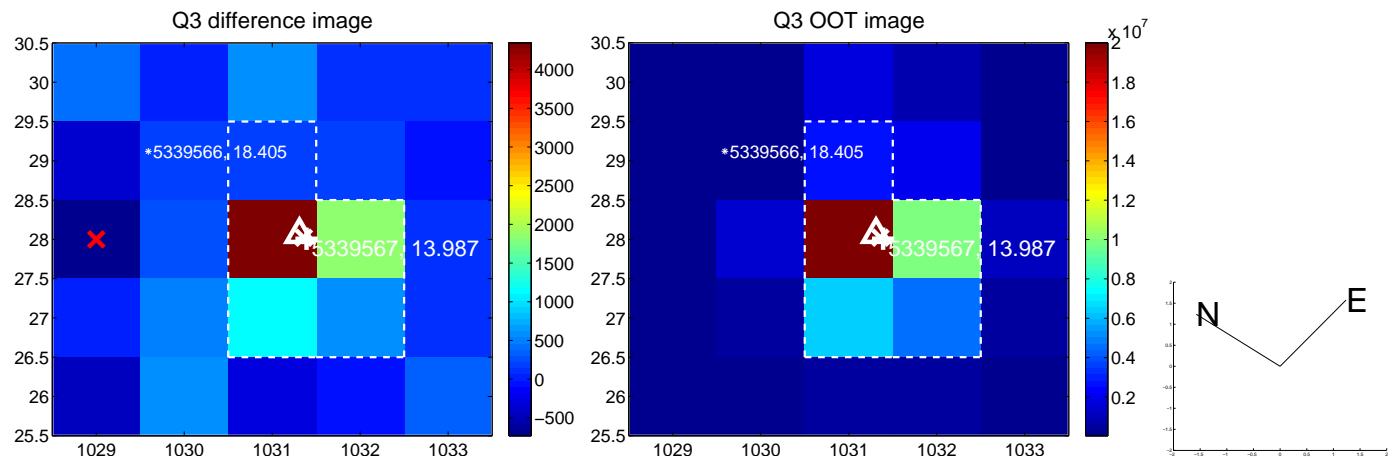
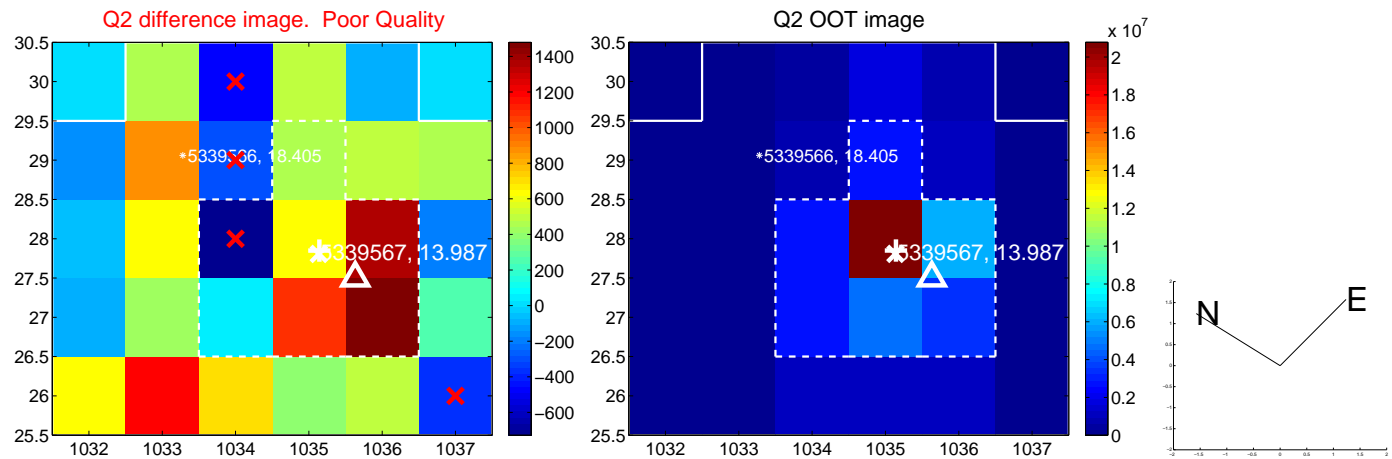
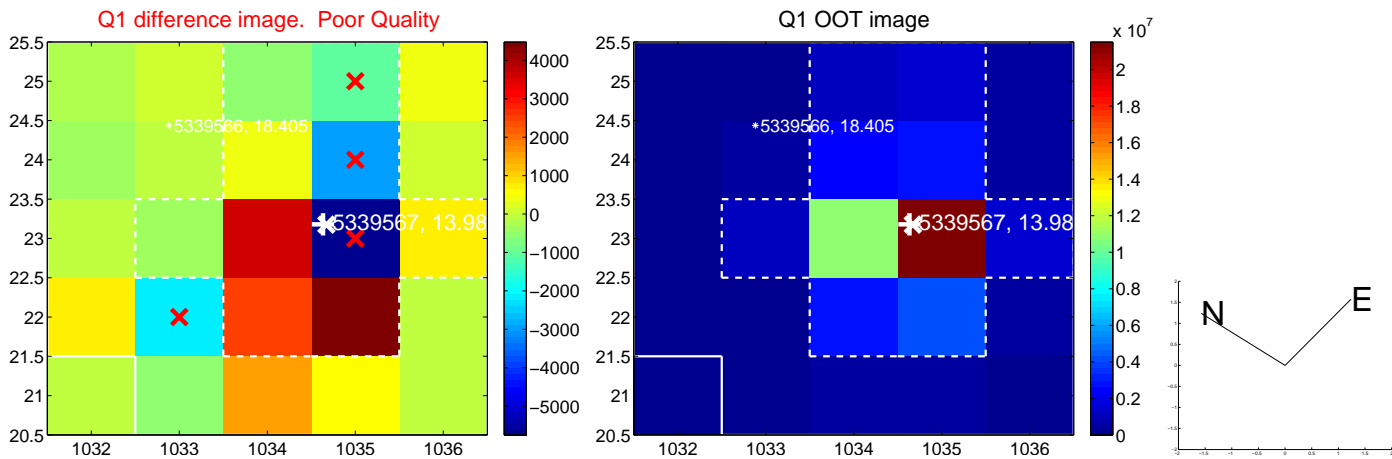
The direct PRF centroid is offset from the target star catalog position by about 0.10 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.498 \pm 0.394$	1.26	$0.191 \pm 0.238$	$-0.460 \pm 0.375$
PRF-fit source offset from KIC position	$0.501 \pm 0.334$	1.50	$0.218 \pm 0.262$	$-0.451 \pm 0.300$
photometric centroid source offset	$0.29 \pm 0.90$	0.32	$-0.14 \pm 0.84$	$-0.25 \pm 0.92$

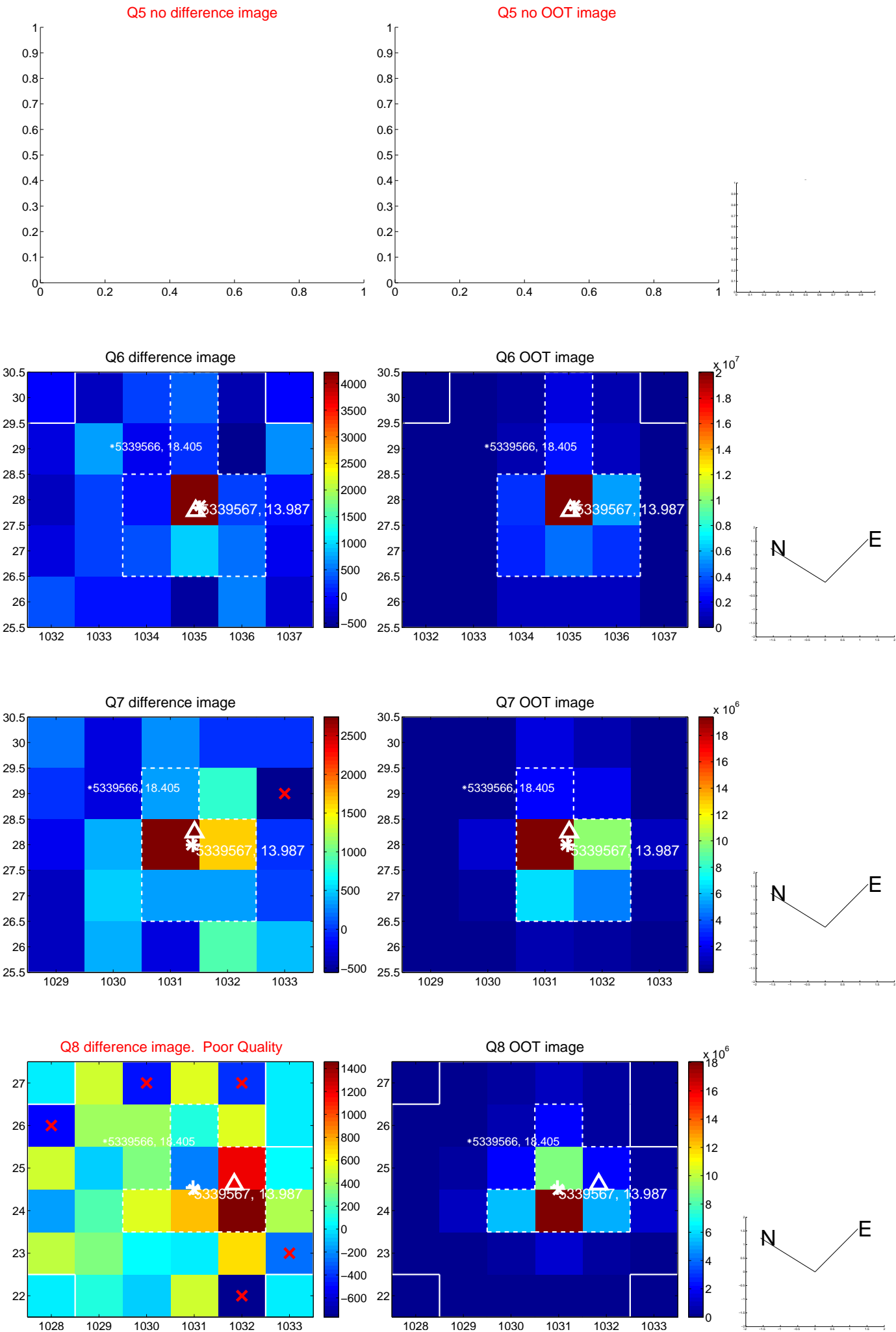


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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

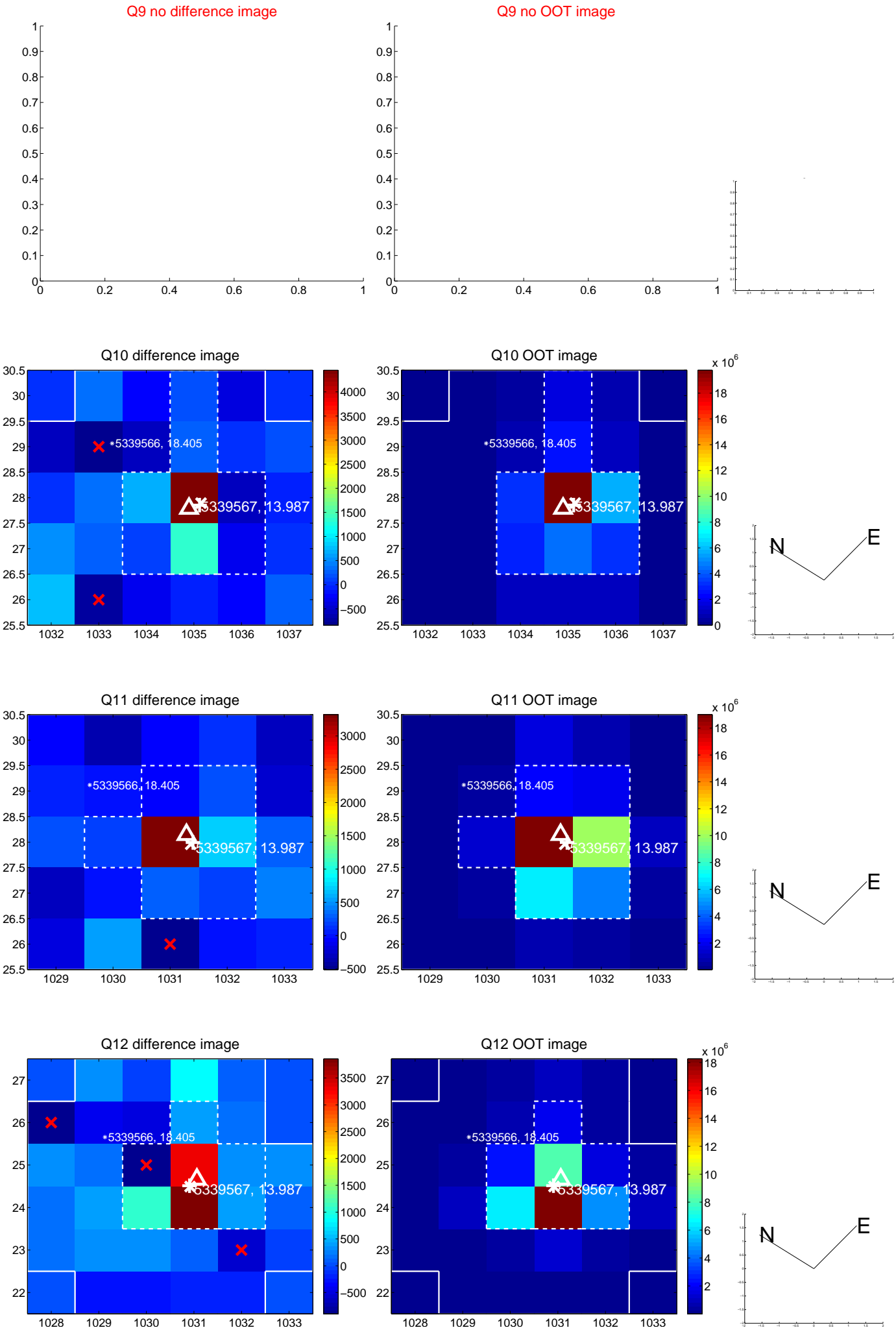
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



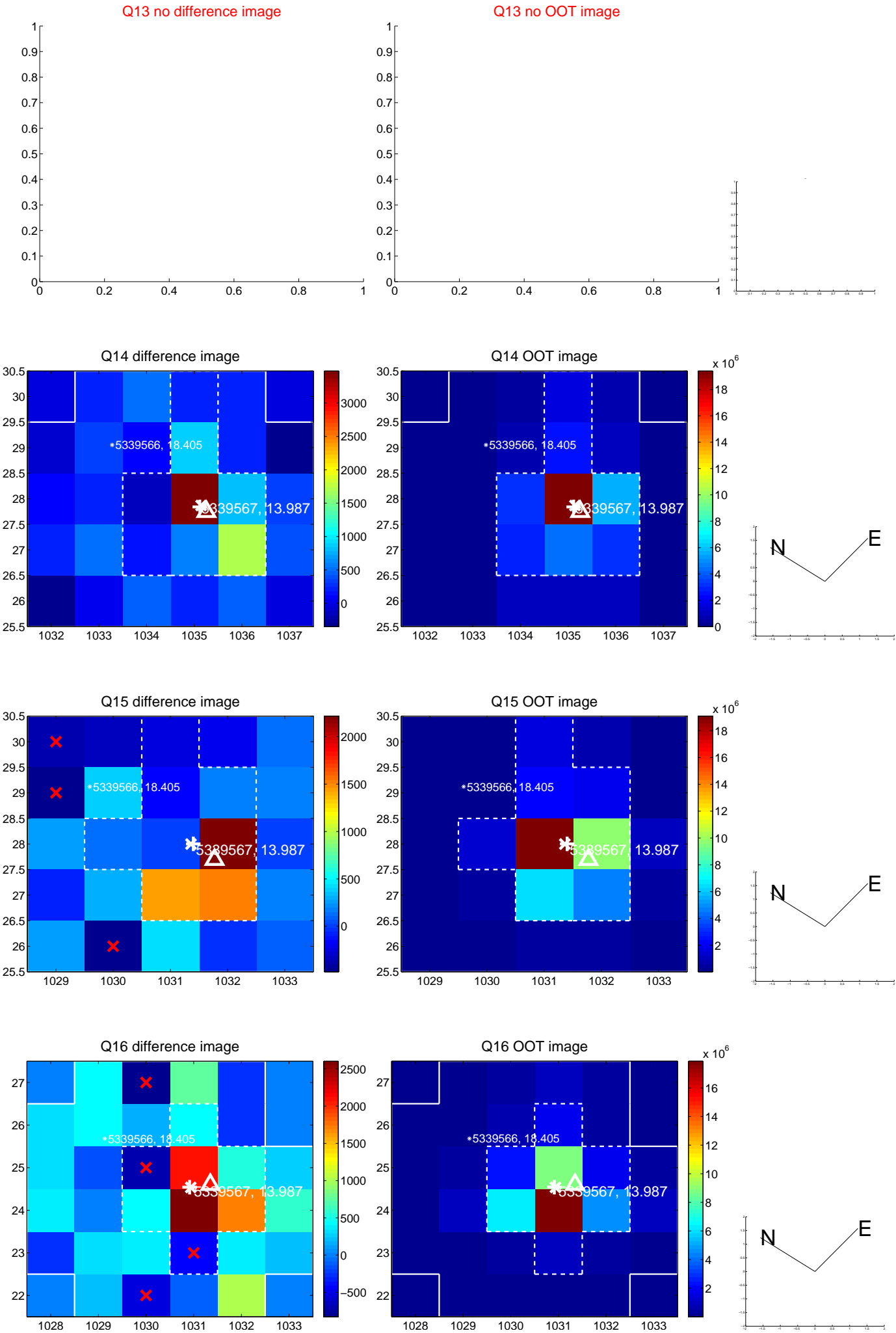
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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

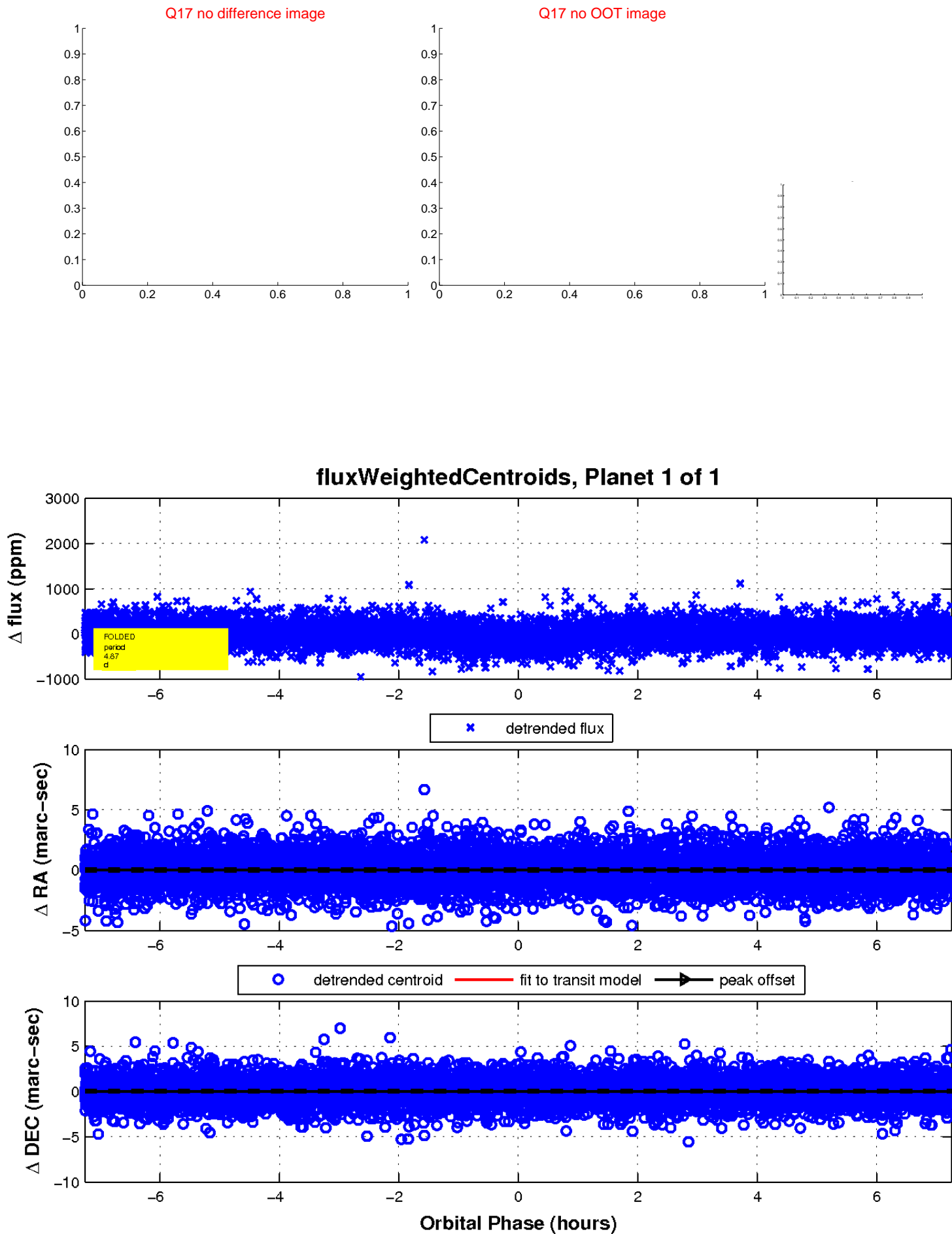


white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.





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



# UKIRT Image

Declination

