

# KIC 006186029

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
006186029-01	OBS	No	1.026080	131.946447	5531.5	12.313	15.0	17.6	1.56	7123	12.96	11740.40

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
006186029-01	OBS	FP	0.00	1	0	0	0	SWEET_NTL—LPP_DV—LPP_ALT

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

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

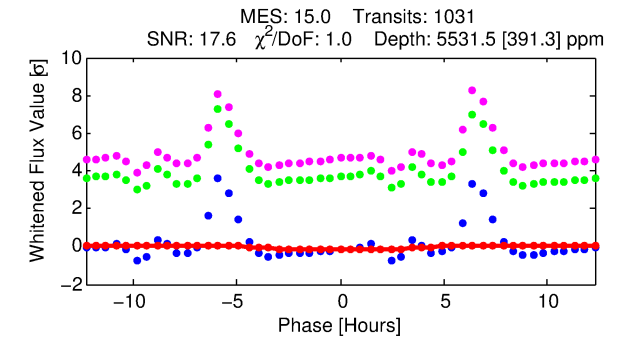
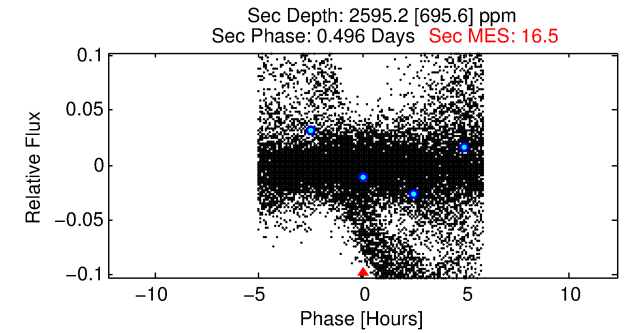
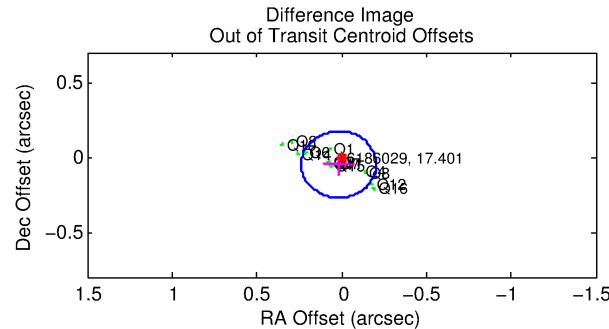
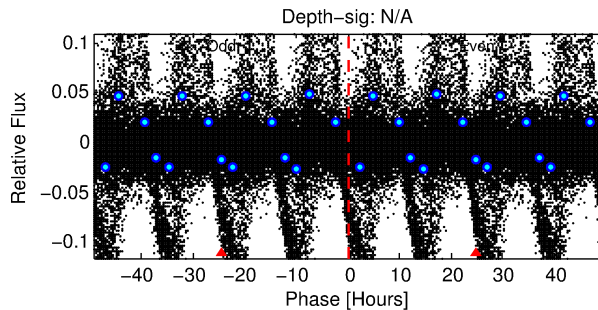
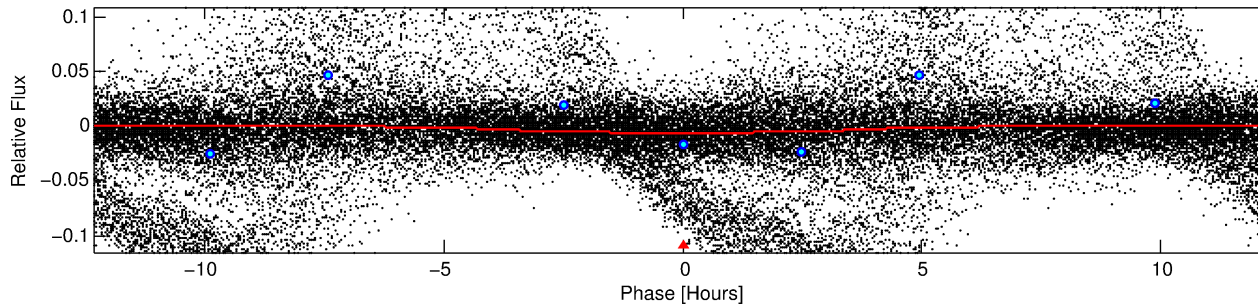
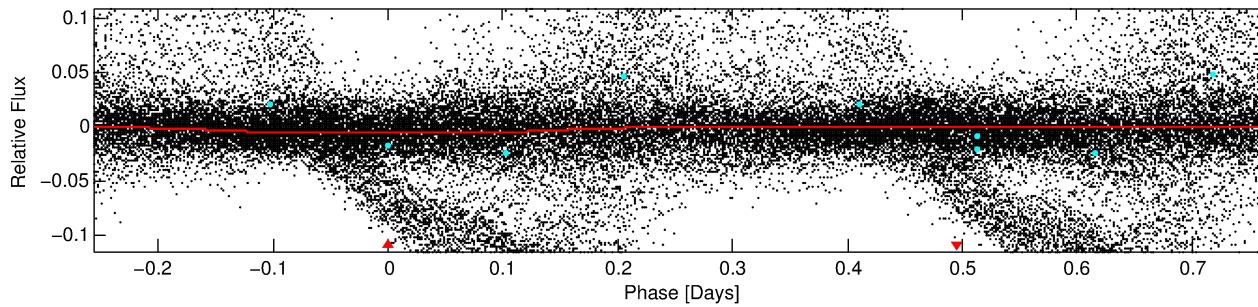
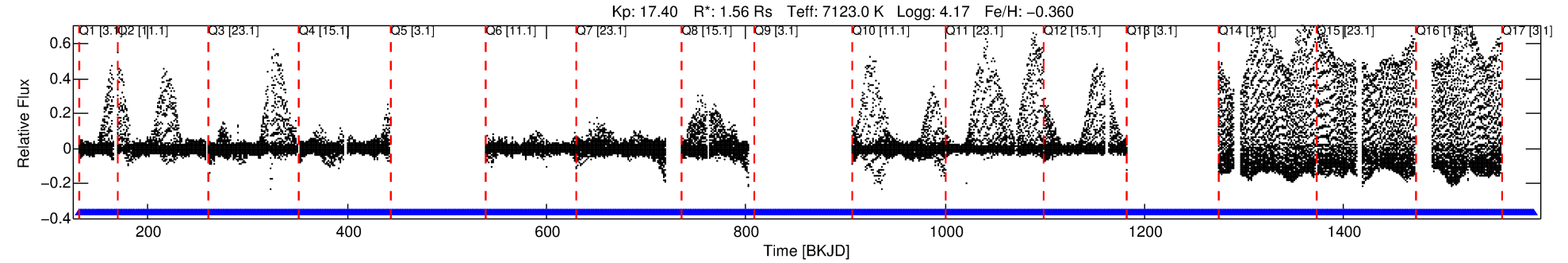
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 006186029-01

No Significant Match Found

# DV One-Page Summary

KIC: 6186029 Candidate: 1 of 1 Period: 1.026 d



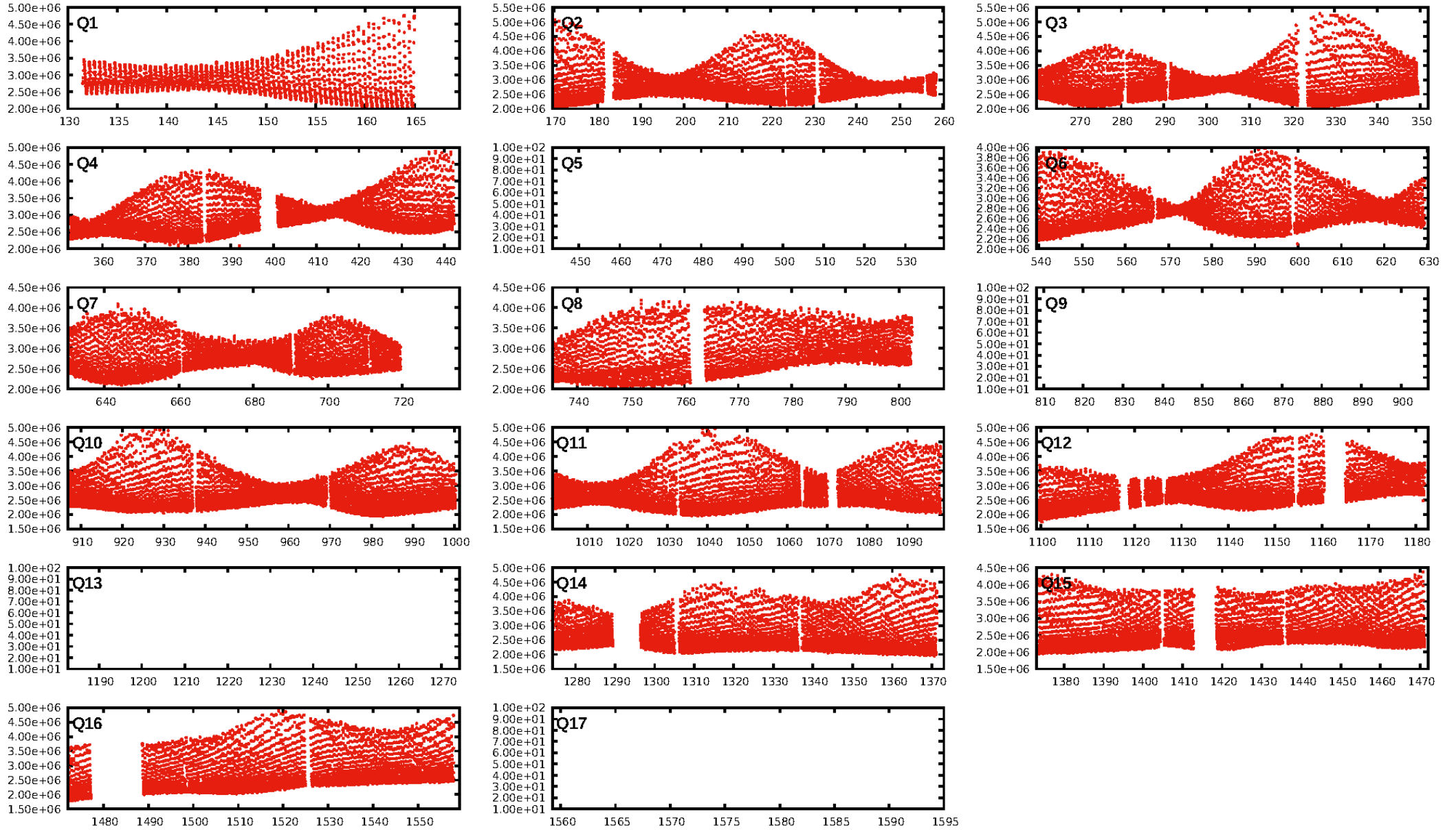
## DV Fit Results:

Period = 1.02608 [0.00002] d  
Epoch = 131.9464 [0.0067] BKJD  
Rp/R\* = 0.0762 [0.0030]  
a/R\* = 1.05 [0.01]  
b = 0.83 [0.03]  
Seff = 11740.40 [4566.33]  
Teq = 2654 [258] K  
Rp = 12.96 [3.71] Re  
a = 0.0218 [0.0052] AU  
Ag = 4.05 [1.80] [1.70σ]  
**Teffp = 5823 [485] K [5.76σ]**

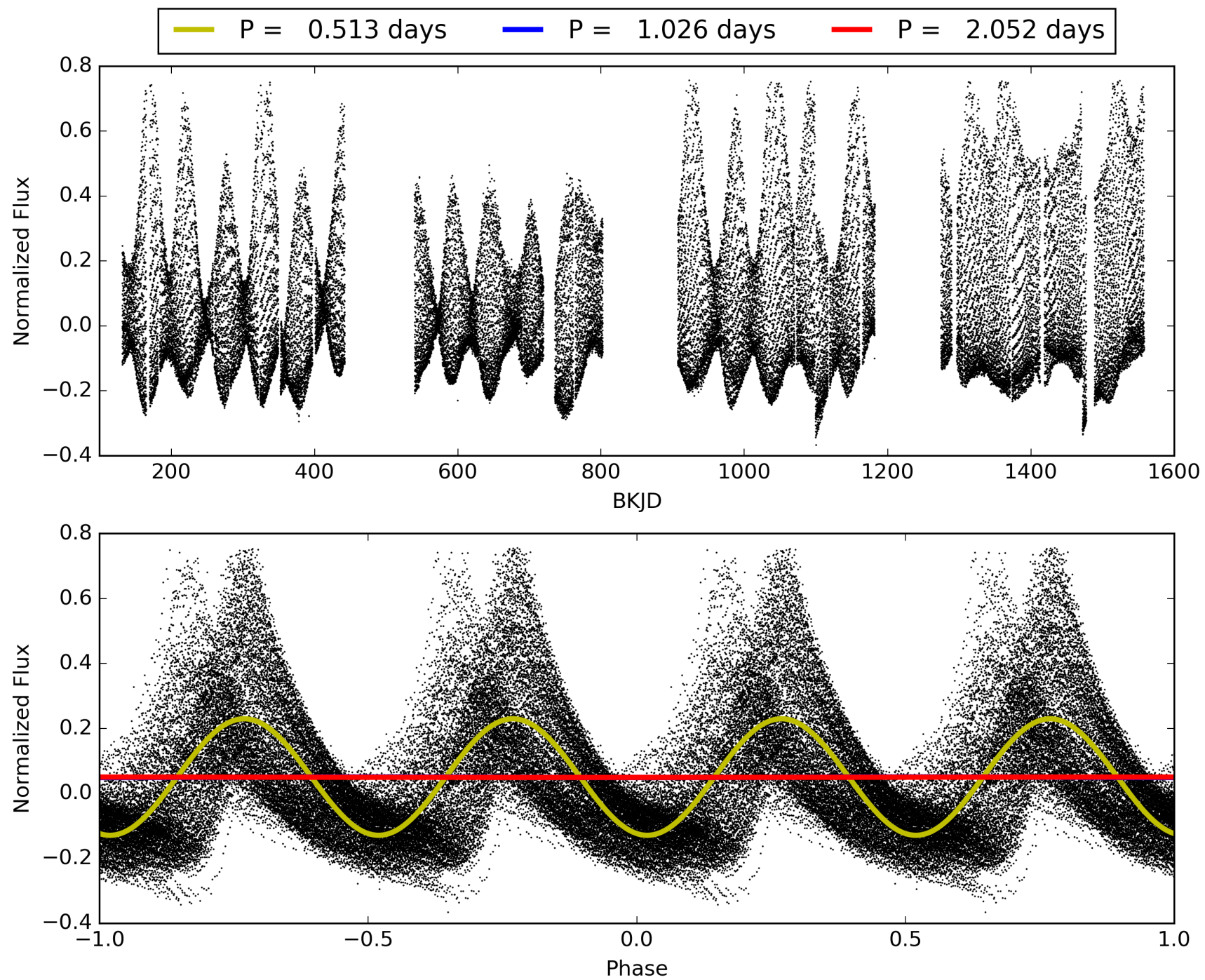
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: N/A  
ModelChiSquareGof-sig: N/A  
Bootstrap-pfa: N/A  
RollingBand-fgt: 1.00 [998/998]  
GhostDiagnostic-chr: N/A  
Centroid-sig: 14.6%  
**Centroid-so: 0.469 arcsec [8.32σ]**  
OotOffset-rm: 0.053 arcsec [0.71σ]  
**KicOffset-rm: 0.304 arcsec [3.95σ]**  
OotOffset-st: 4/4/4/1 [13]  
KicOffset-st: 4/4/4/1 [13]  
DiffImageQuality-fgm: 1.00 [13/13]  
DiffImageOverlap-fno: 1.00 [13/13]

# TCE 006186029-01, PDC Light Curves

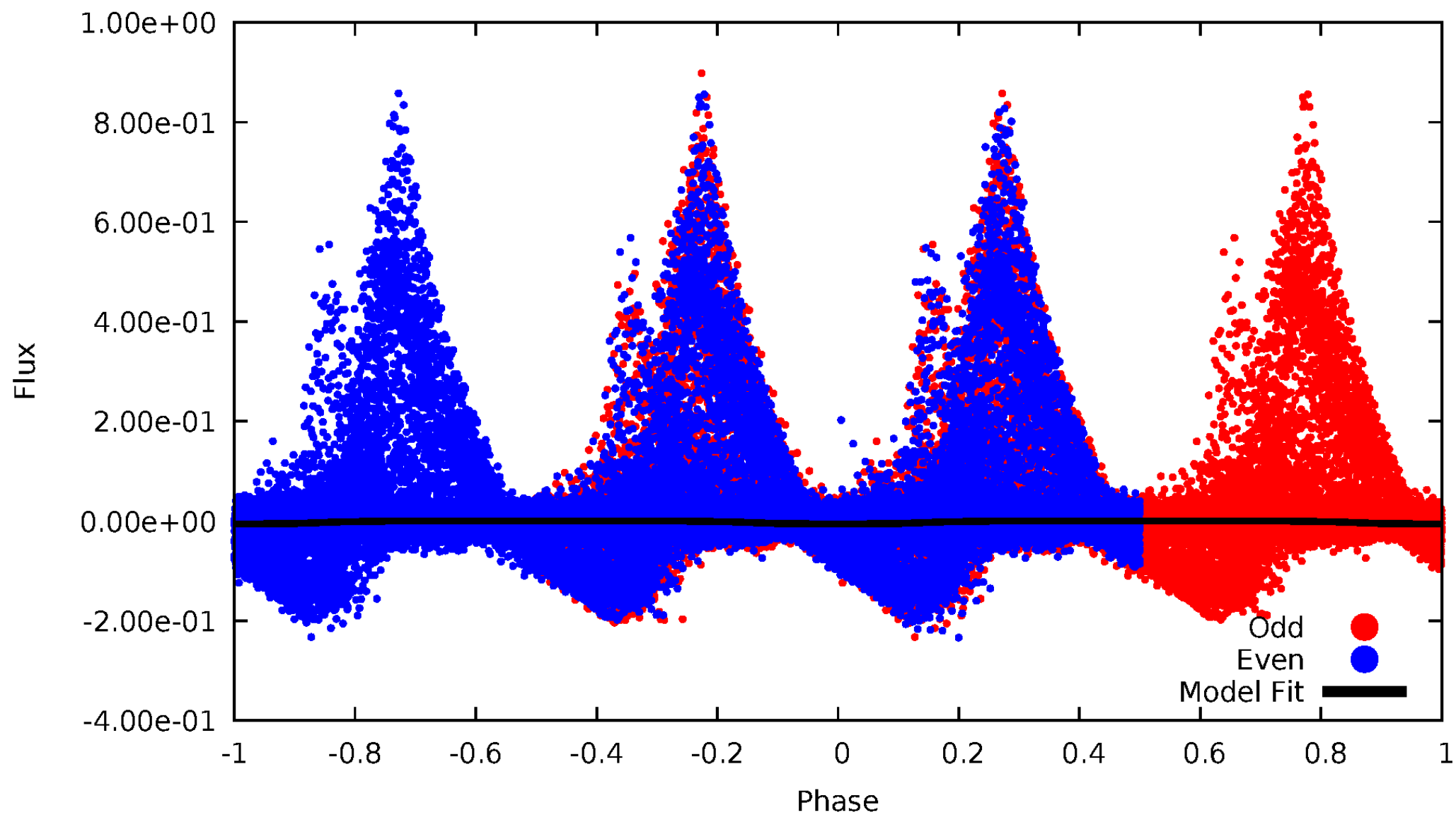


TCE 006186029-01



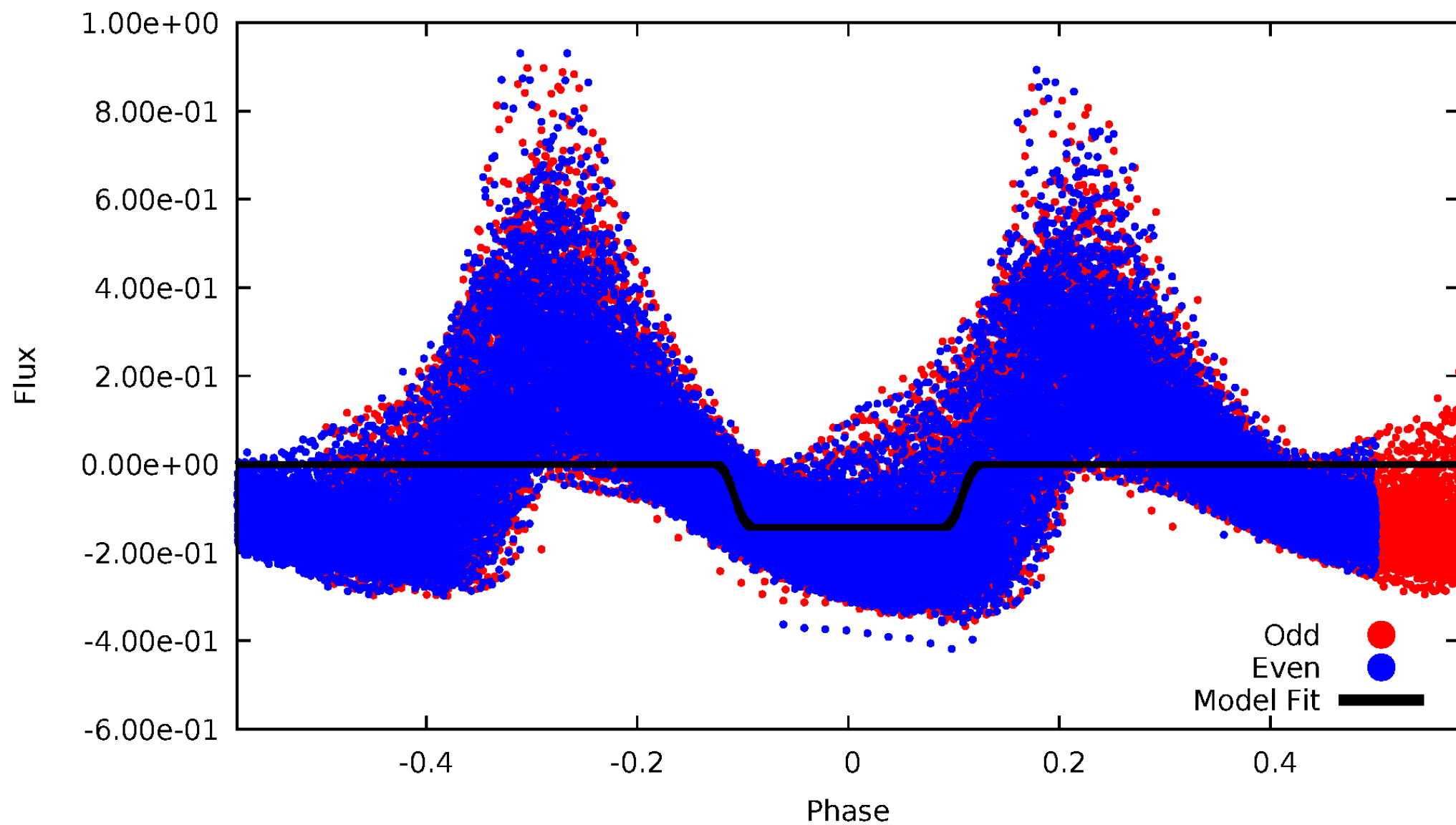
# DV Odd/Even

TCE 006186029-01



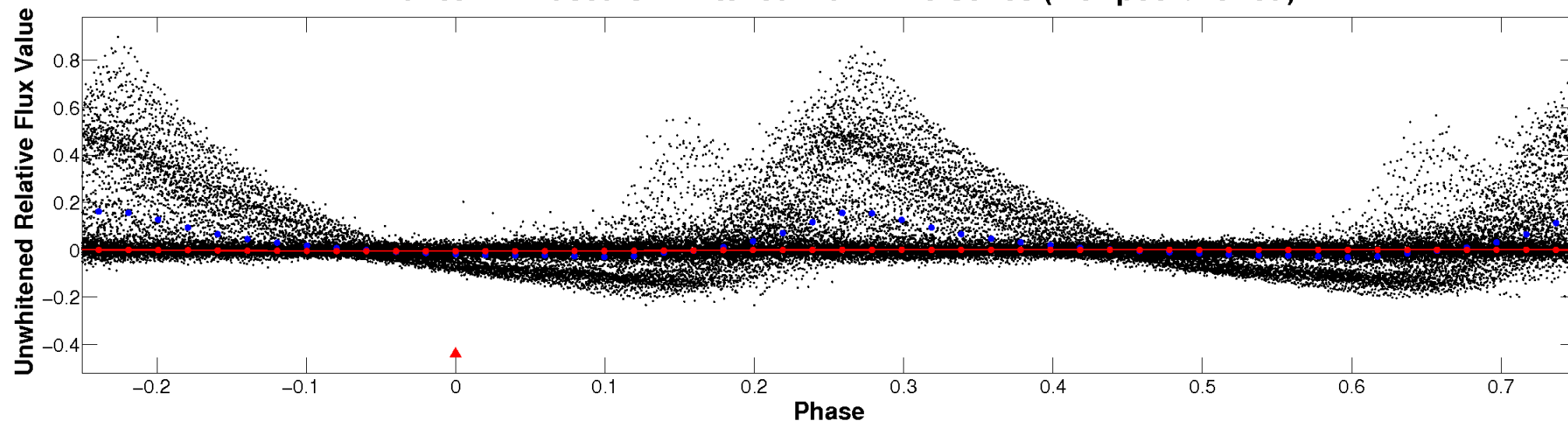
# ALT Odd/Even

TCE 006186029-01

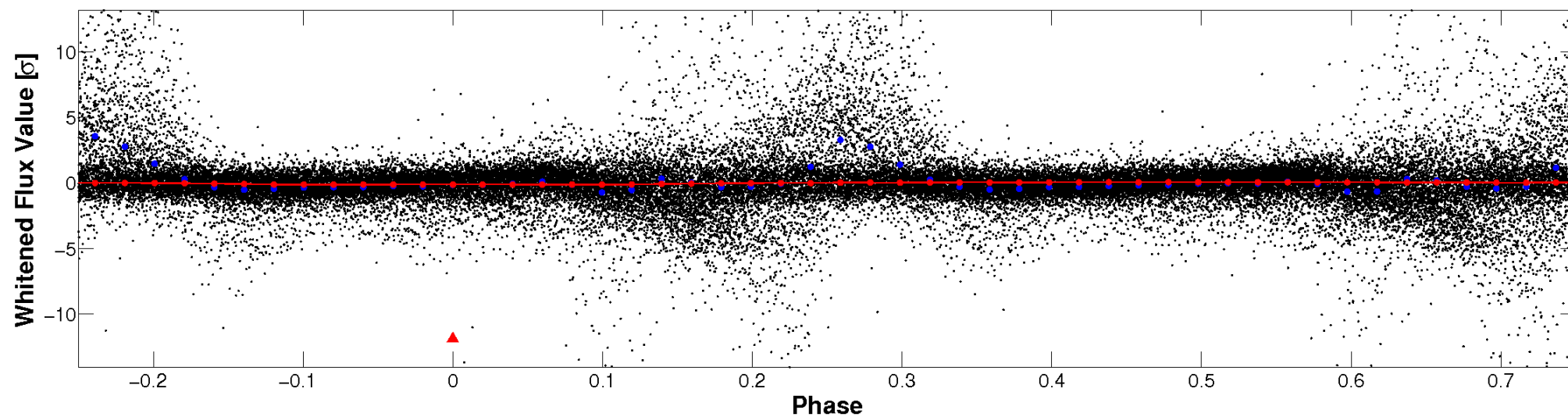


# Non-Whitened Vs. Whitened Light Curve

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

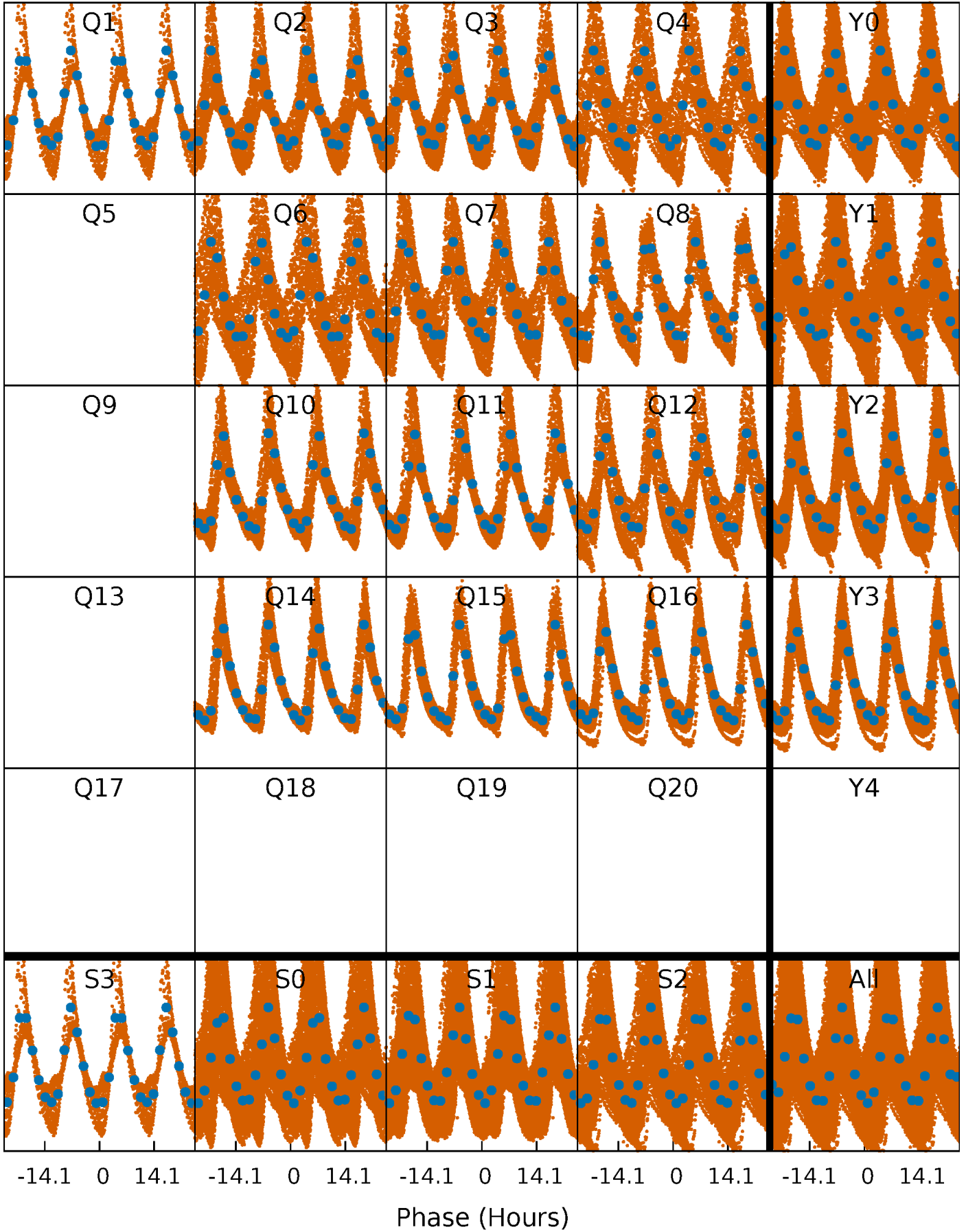


**Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)**



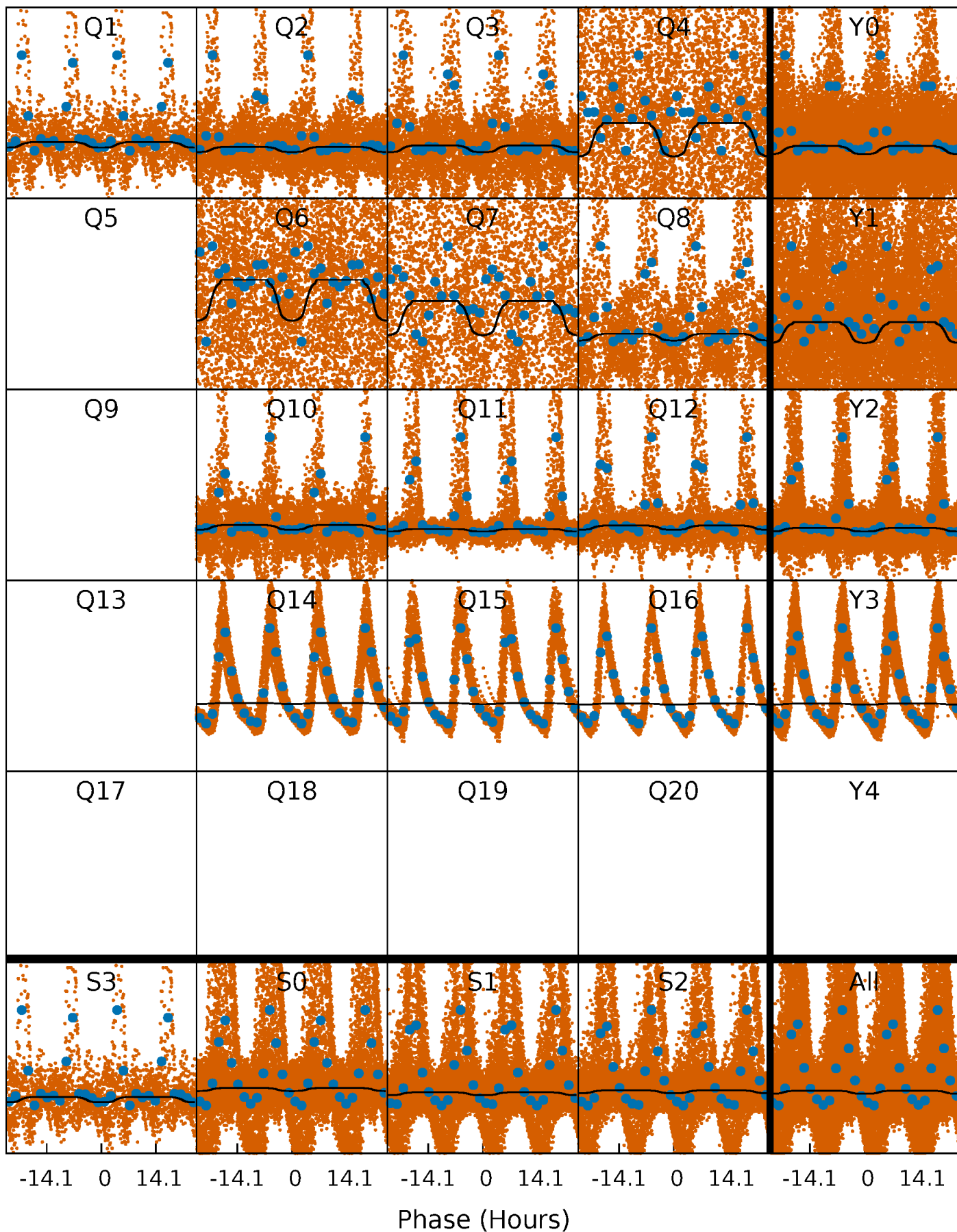
# PDC Quarter-Phased Transit Curves

TCE 006186029-01   P= 1.026080 Days    $T_0=131.946447$  (BKJD)



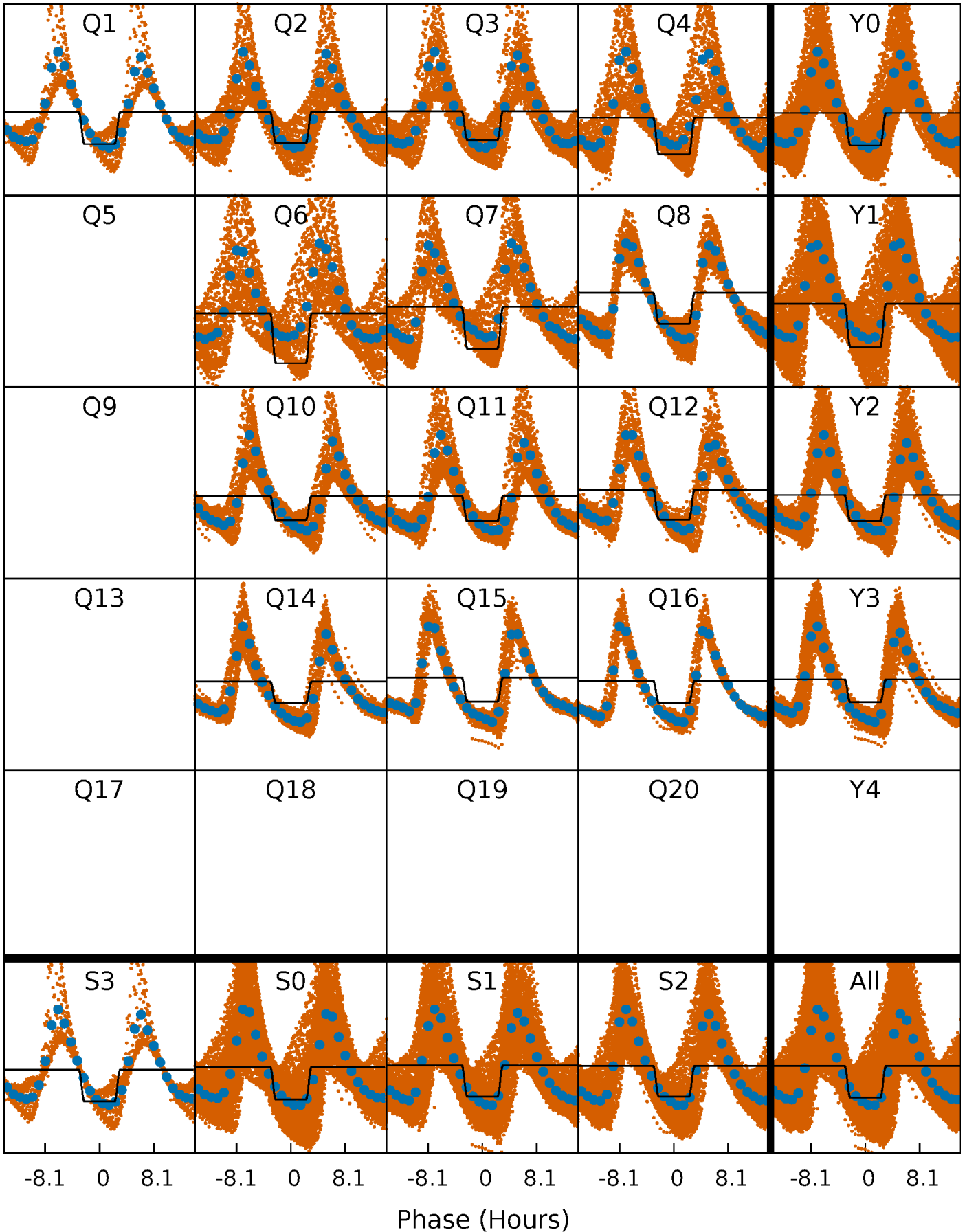
# DV Quarter-Phased Transit Curves

TCE 006186029-01   P= 1.026080 Days    $T_0=131.946447$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

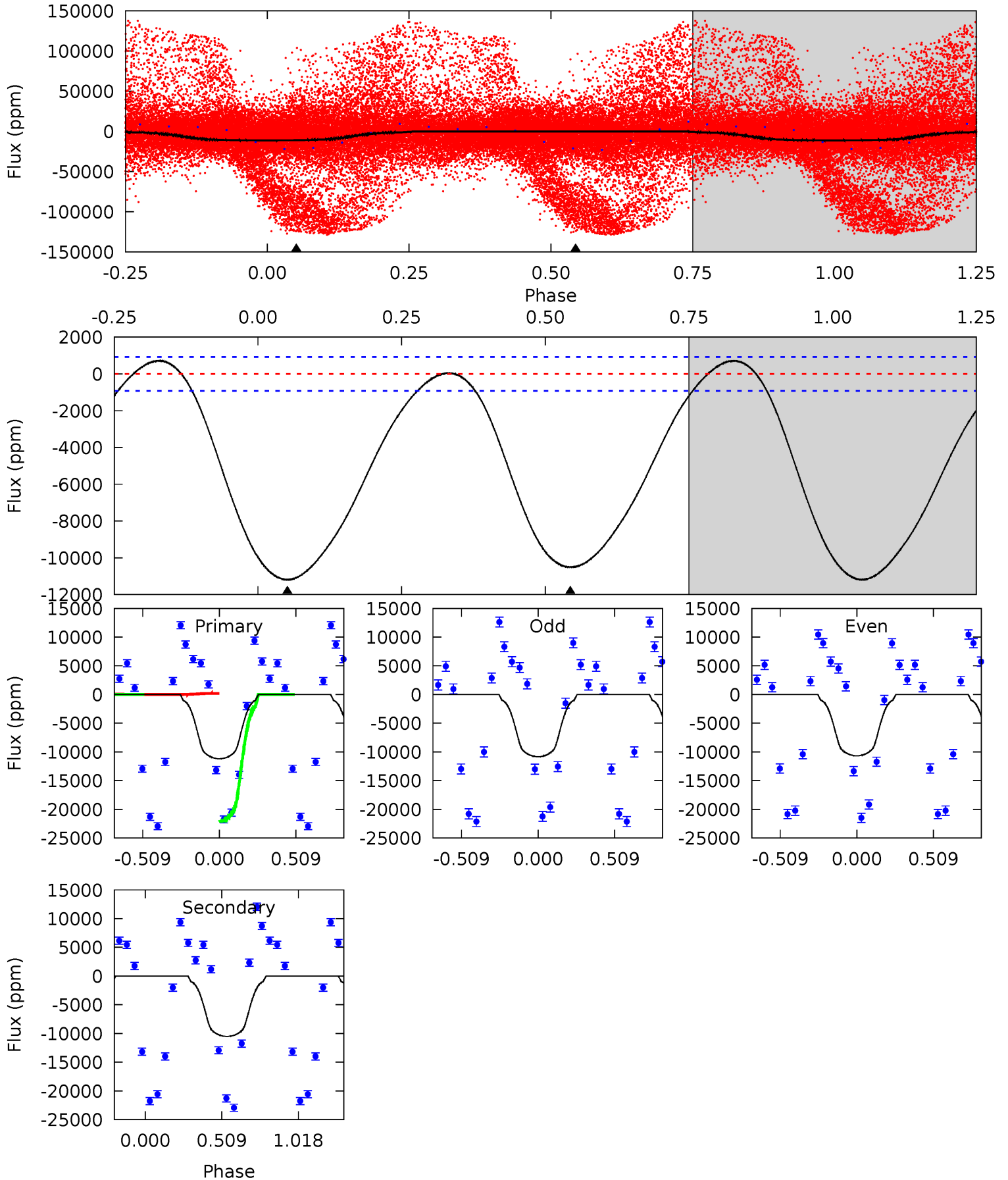
TCE 006186029-01   P= 1.026180 Days    $T_0=131.893704$  (BKJD)



# DV Model-Shift Uniqueness Test

006186029-01, P = 1.026080 Days, E = 130.920367 Days

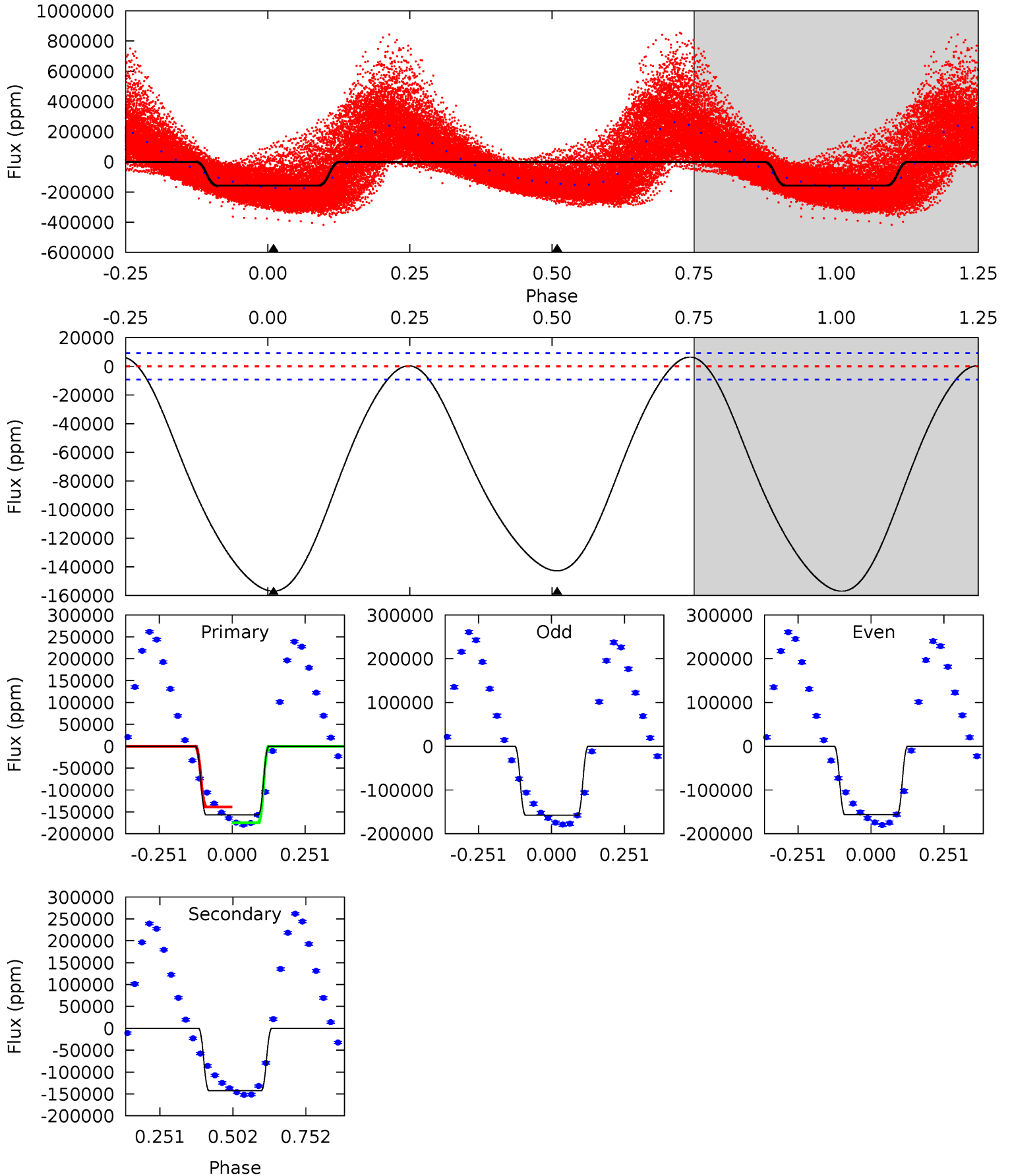
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
51.1	48.0	0	0	4.21	0.66	2.33	51.1	51.1	48.0	48.0	0.37	17.3	0.06	37.0



# Alt Model-Shift Uniqueness Test

006186029-01, P = 1.026180 Days, E = 130.867524 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
74.3	67.5	0	0	4.37	1.15	2.09	74.3	74.3	67.5	67.5	0.20	0.98	0.04	14.5



### Stellar Parameters For KIC 006186029

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$7123^{+199}_{-324}$	$4.173^{+0.153}_{-0.187}$	$-0.360^{+0.300}_{-0.300}$	$1.558^{+0.442}_{-0.362}$	$1.320^{+0.193}_{-0.214}$	$0.492^{+0.434}_{-0.228}$
	+3%/-5%	+4%/-4%	+83%/-83%	+28%/-23%	+15%/-16%	+88%/-46%
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 006186029-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	$A_{\text{obs}}$
DV	$-10513 \pm 219$	$13.03^{+2.25}_{-1.60}$	$3714^{+299}_{-258}$	$8476^{+407}_{-452}$	$16^{+5}_{-4}$
Alt.	$-142741 \pm 2114$	$63.95^{+9.54}_{-7.65}$	$3695^{+268}_{-264}$	$7370^{+226}_{-354}$	$11^{+3}_{-2}$

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

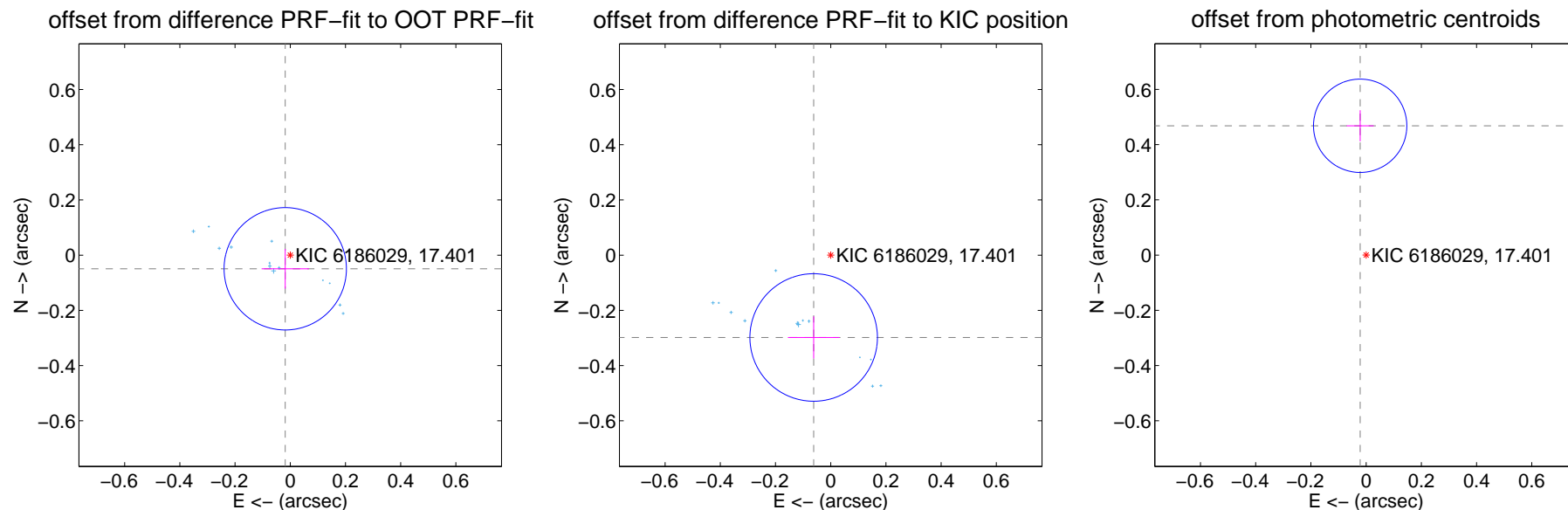
## DV Centroid Data

Supplemental centroid analysis for 006186029-01. Kepler magnitude: 17.40. Transit SNR 17.61

There are 13 quarters with good PRF difference image offsets

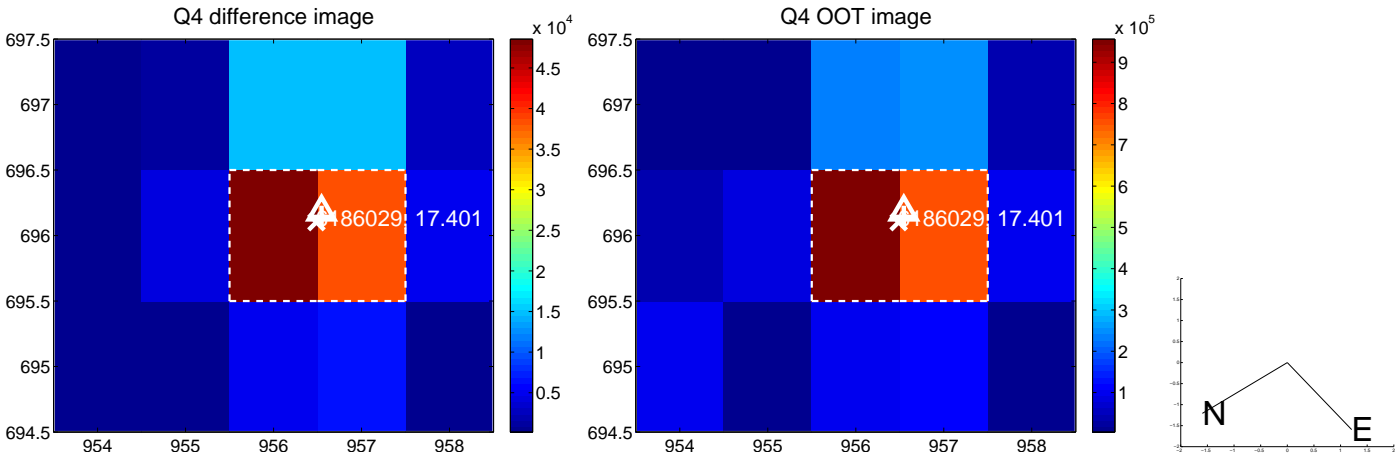
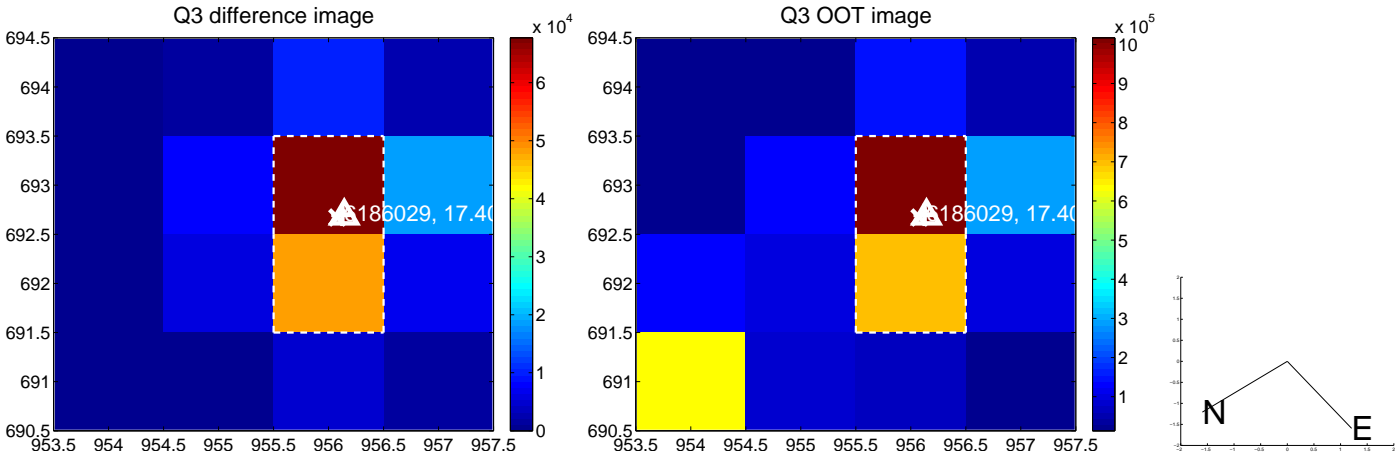
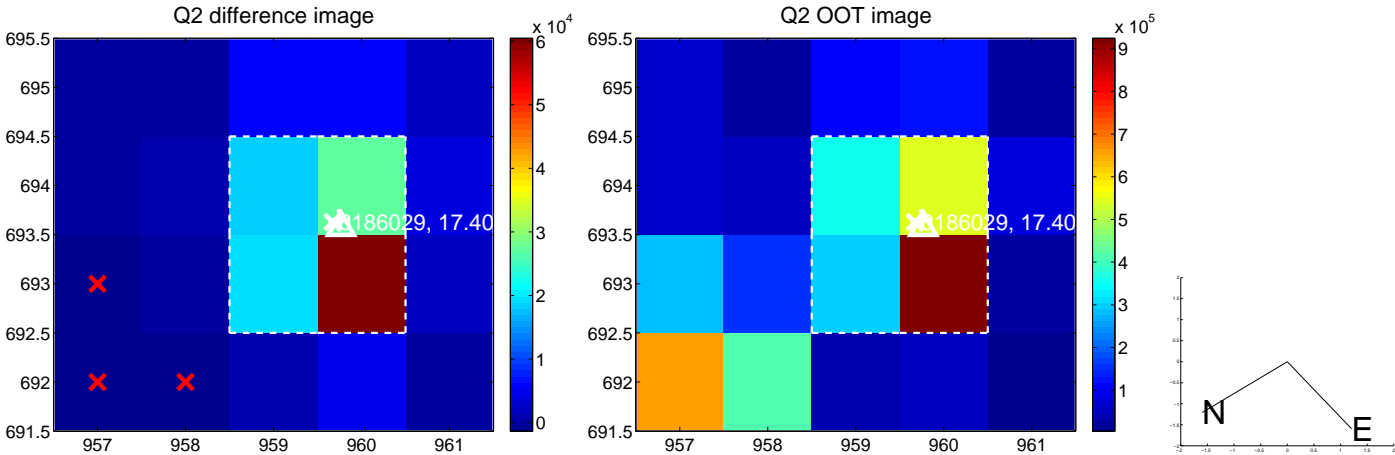
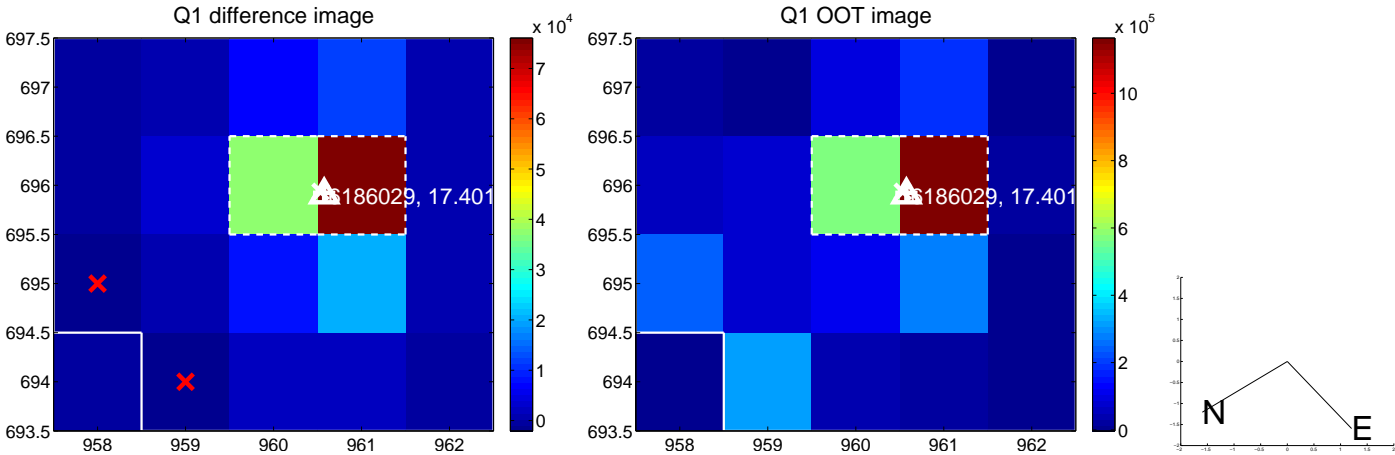
The direct PRF centroid is offset from the target star catalog position by about 0.26 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.053 \pm 0.074$	0.71	$0.018 \pm 0.086$	$-0.049 \pm 0.072$
PRF-fit source offset from KIC position	$0.304 \pm 0.077$	3.95	$0.062 \pm 0.093$	$-0.298 \pm 0.076$
photometric centroid source offset	$0.47 \pm 0.06$	8.32	$0.02 \pm 0.05$	$0.47 \pm 0.06$

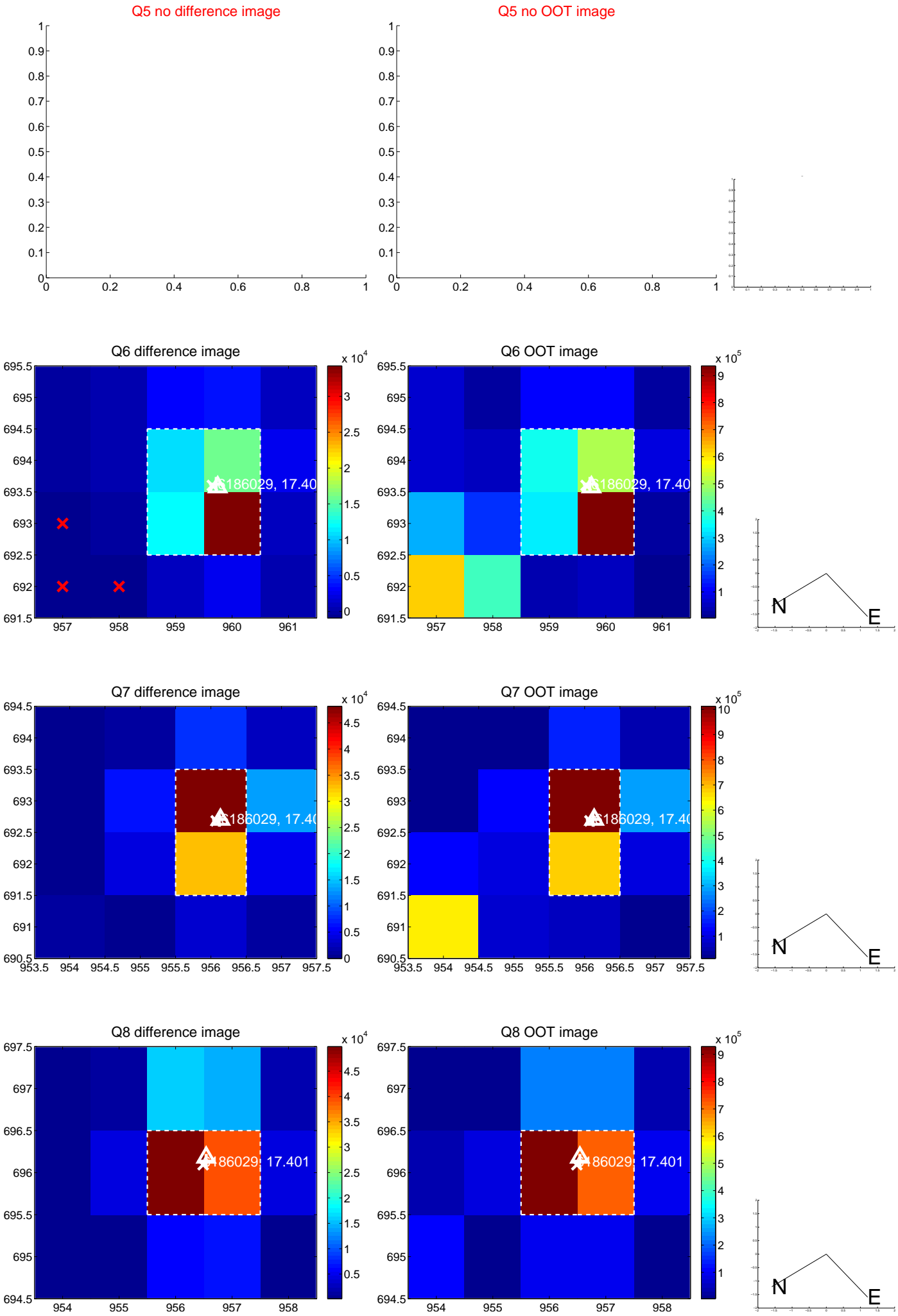


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: three-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

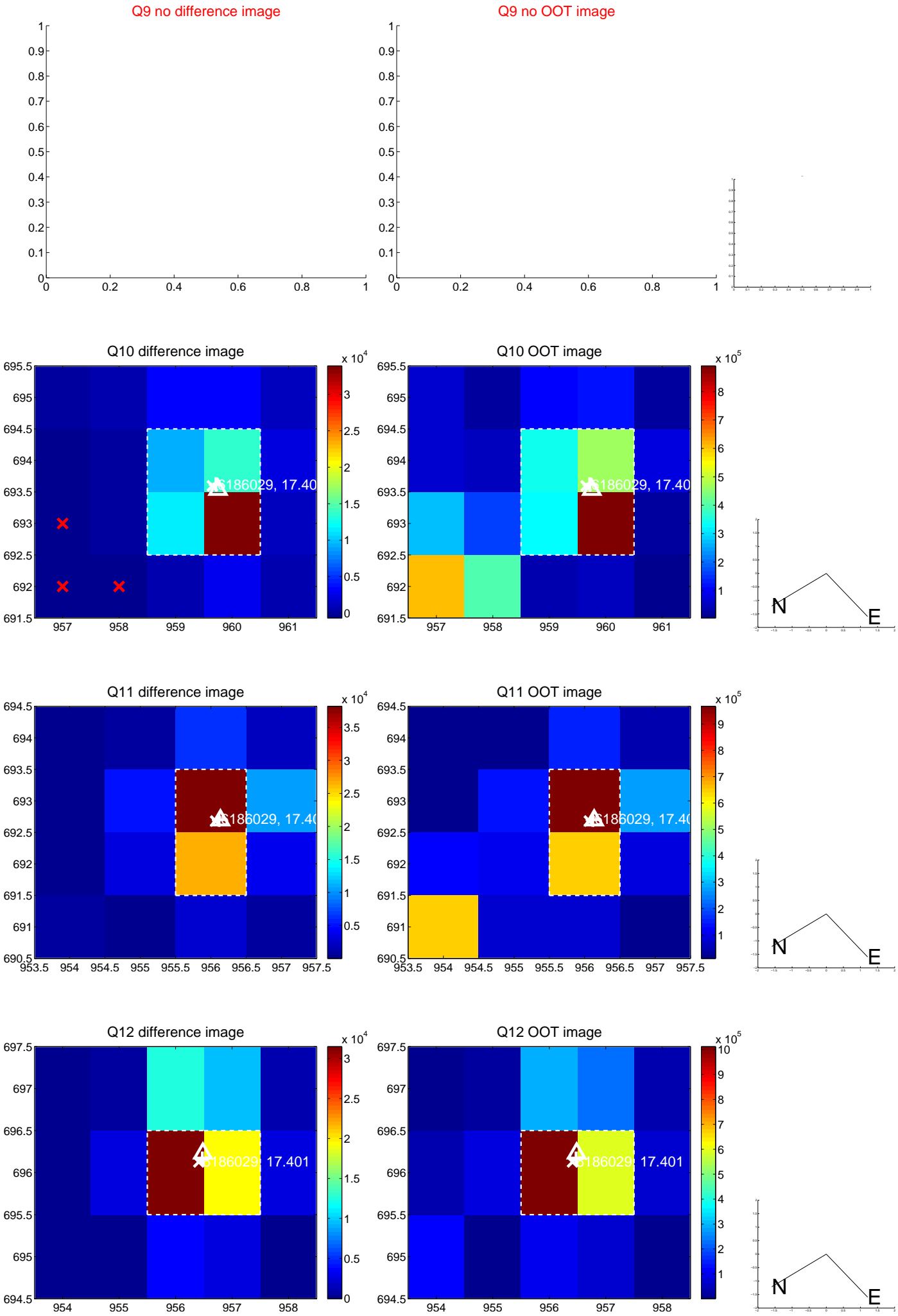
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



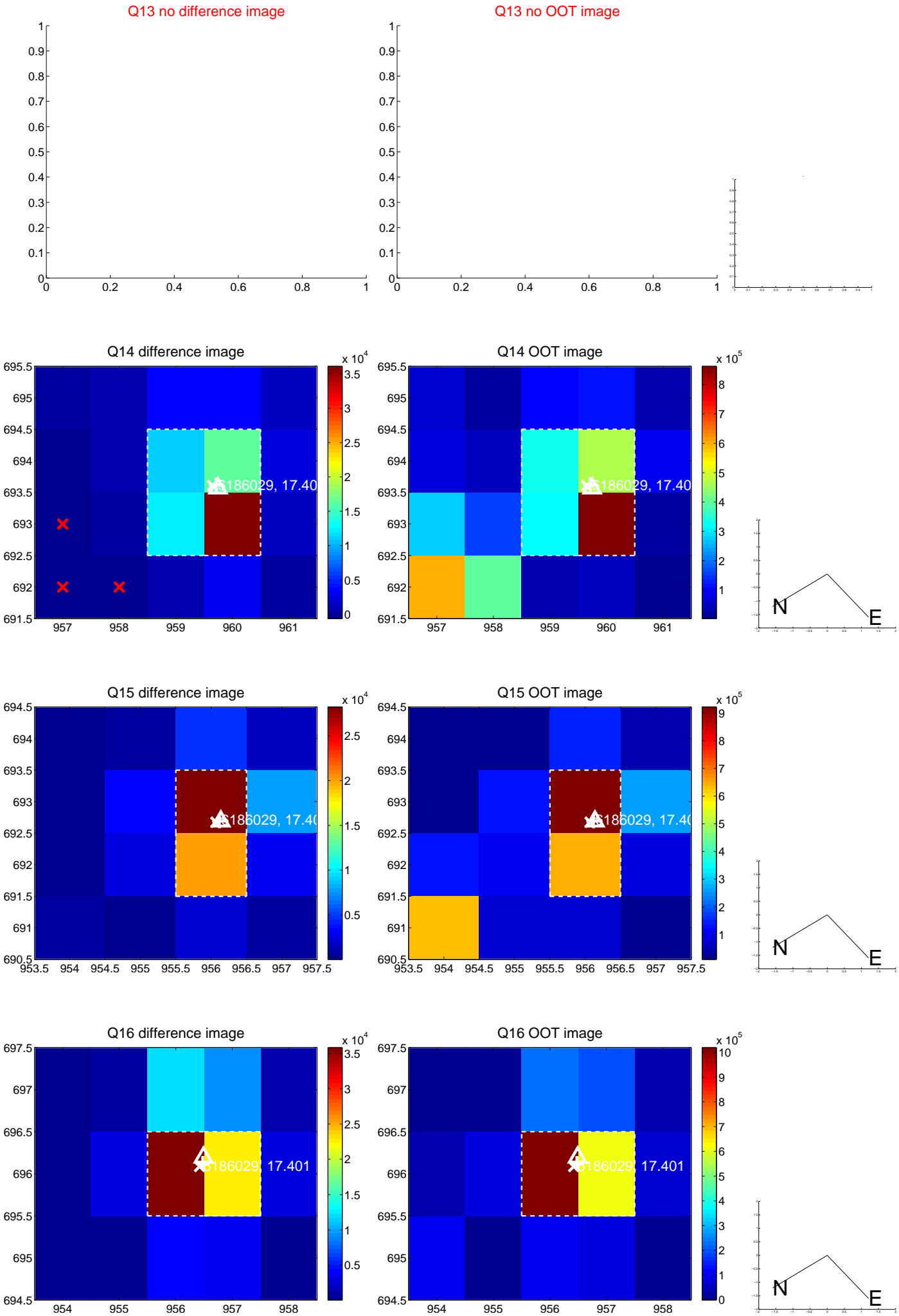
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



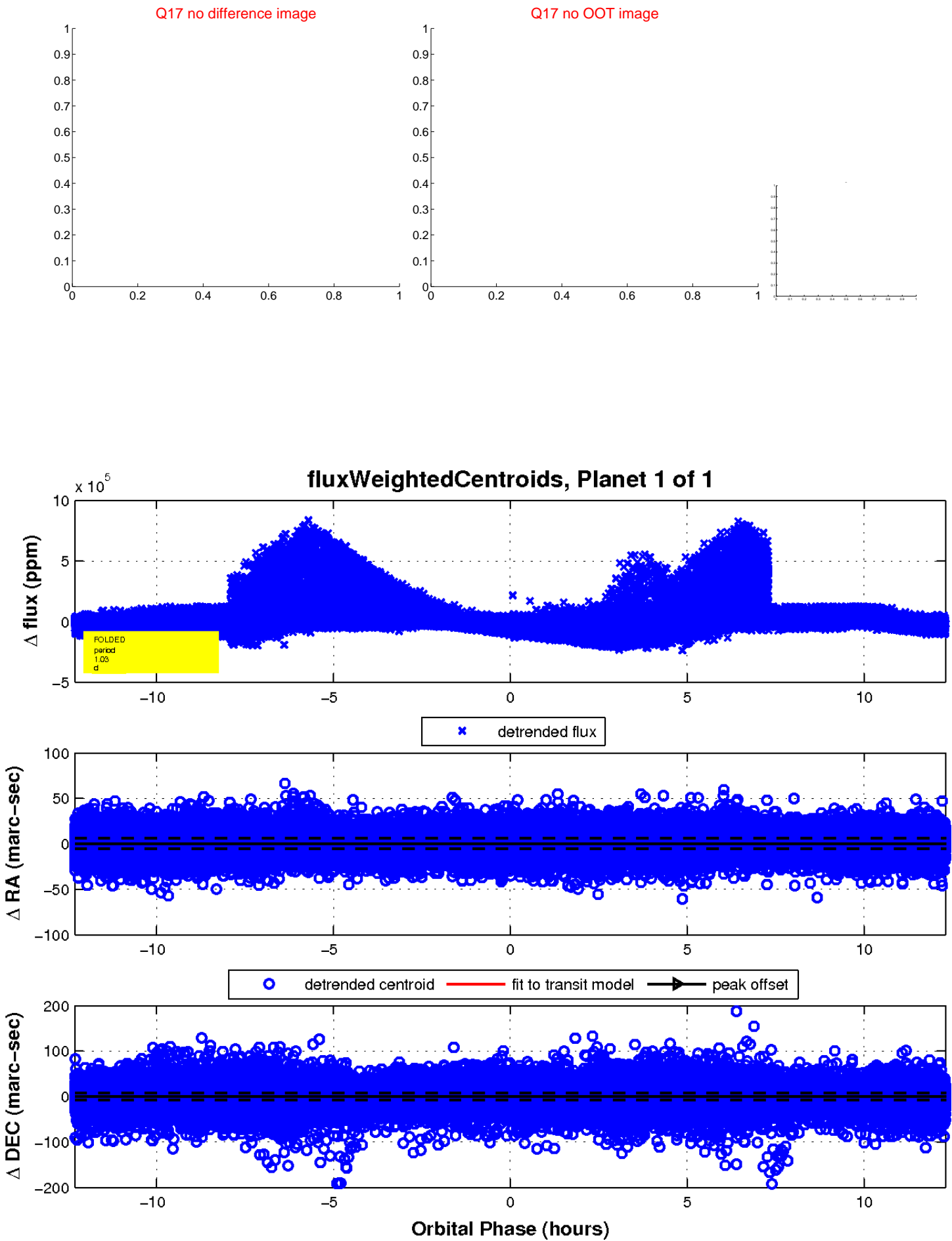
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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

