

# KIC 006143316

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
006143316-01	OBS	No	3.198745	132.611417	41.1	8.816	9.0	7.6	1.46	6562	1.10	1630.19

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
006143316-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV

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

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

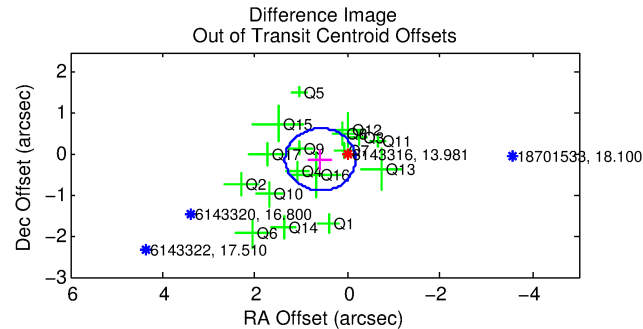
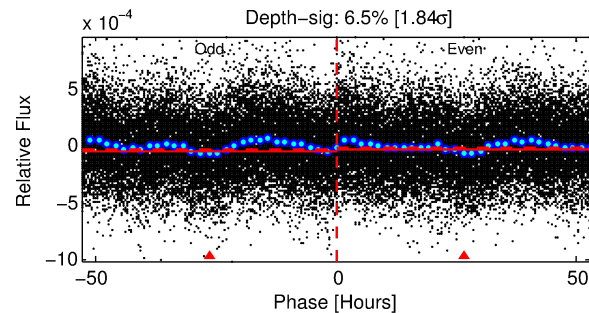
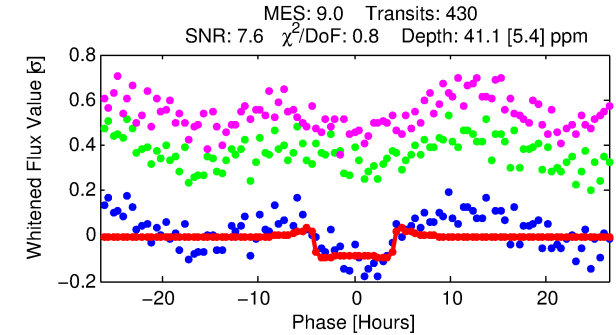
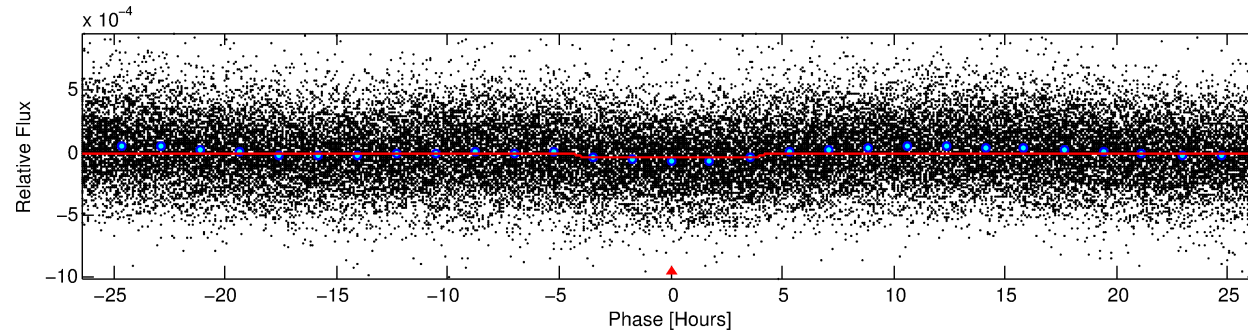
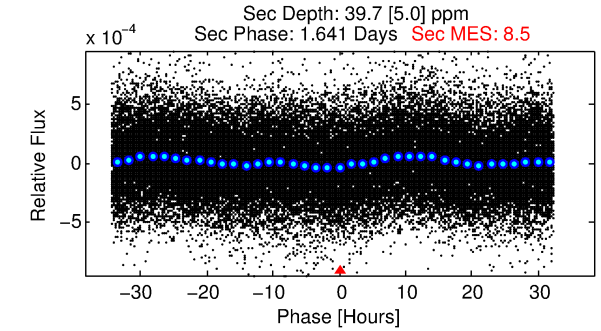
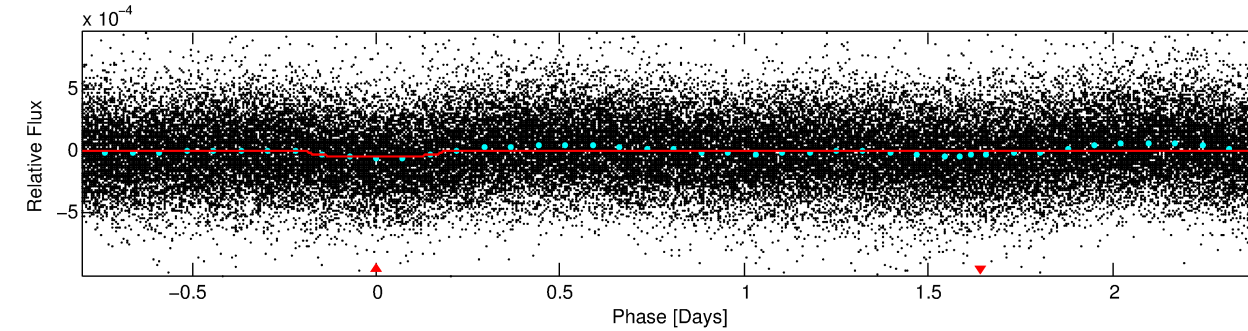
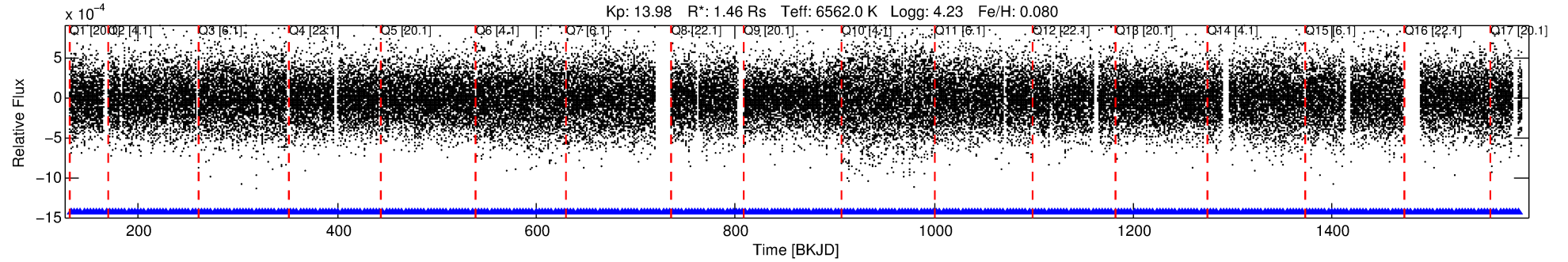
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 006143316-01

No Significant Match Found

# DV One-Page Summary

KIC: 6143316 Candidate: 1 of 1 Period: 3.199 d



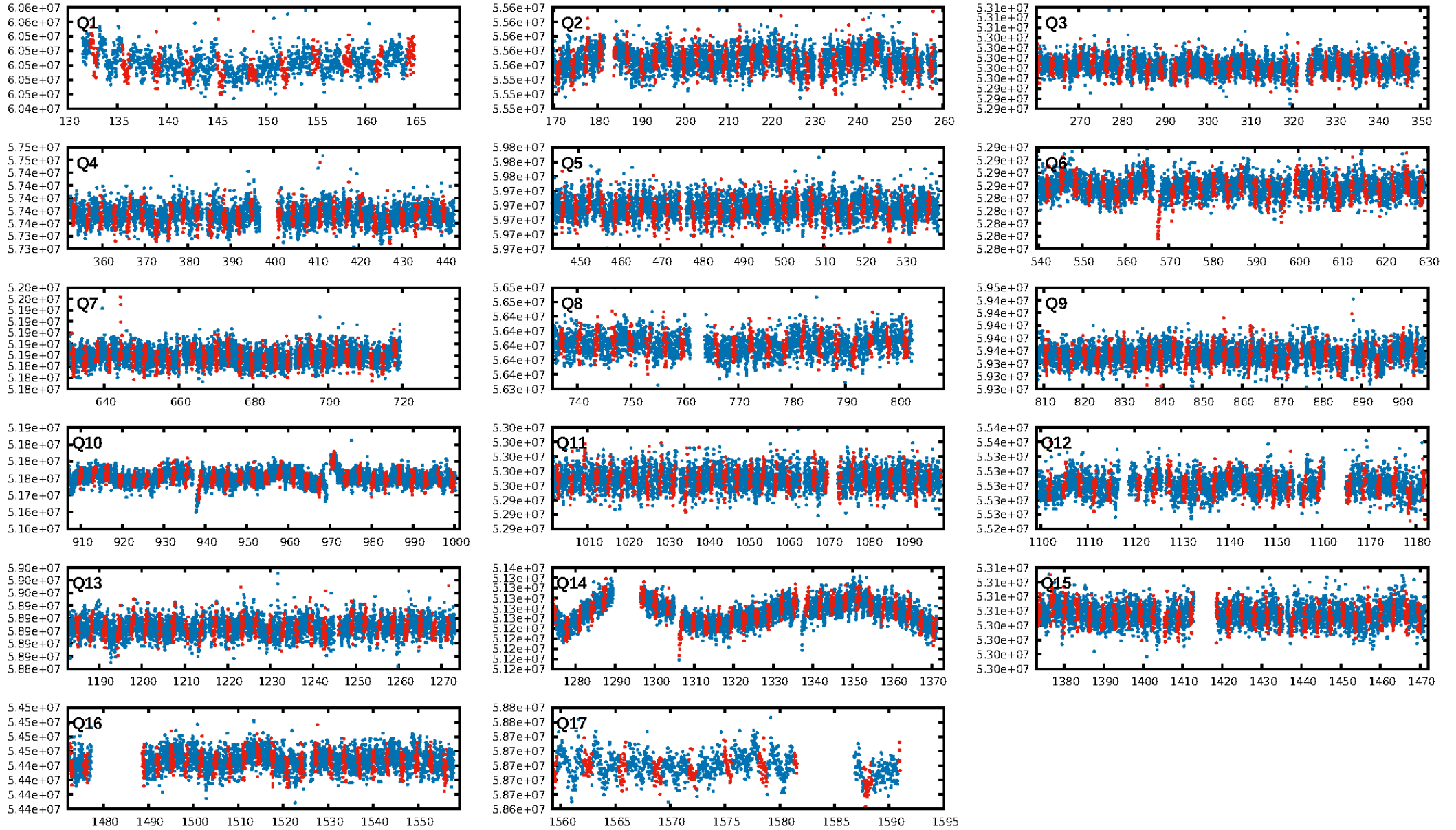
## DV Fit Results:

Period = 3.19874 [0.00004] d  
Epoch = 132.6114 [0.0076] BKJD  
Rp/R\* = 0.0069 [0.0015]  
a/R\* = 1.52 [1.00]  
b = 0.91 [0.22]  
Seff = 1630.19 [671.30]  
Teq = 1620 [167] K  
Rp = 1.10 [0.43] Re  
a = 0.0465 [0.0126] AU  
Ag = 38.96 [22.86] [1.66σ]  
Teffp = 6259 [724] K [6.25σ]

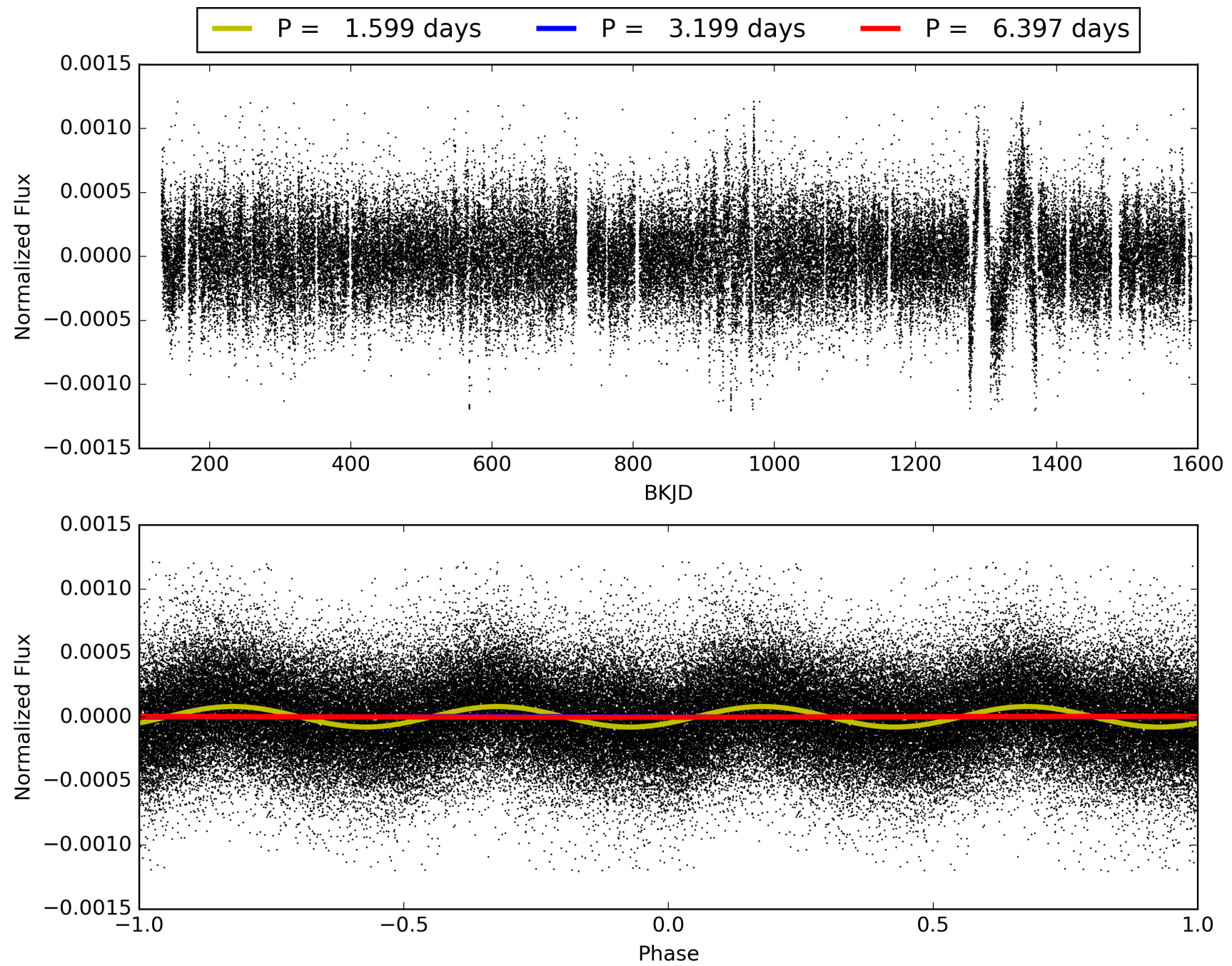
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: N/A  
ModelChiSquareGoF-sig: N/A  
Bootstrap-pfa: 2.61e-14  
RollingBand-fgt: 1.00 [410/410]  
GhostDiagnostic-chr: 2.289  
Centroid-sig: 0.1%  
Centroid-so: 2.182 arcsec [2.67σ]  
OotOffset-rm: 0.606 arcsec [2.39σ]  
KicOffset-rm: 0.529 arcsec [2.28σ]  
OotOffset-st: 4/4/4/5 [17]  
KicOffset-st: 4/4/4/5 [17]  
DiffImageQuality-fgm: 0.94 [16/17]  
DiffImageOverlap-fno: 1.00 [17/17]

# TCE 006143316-01, PDC Light Curves



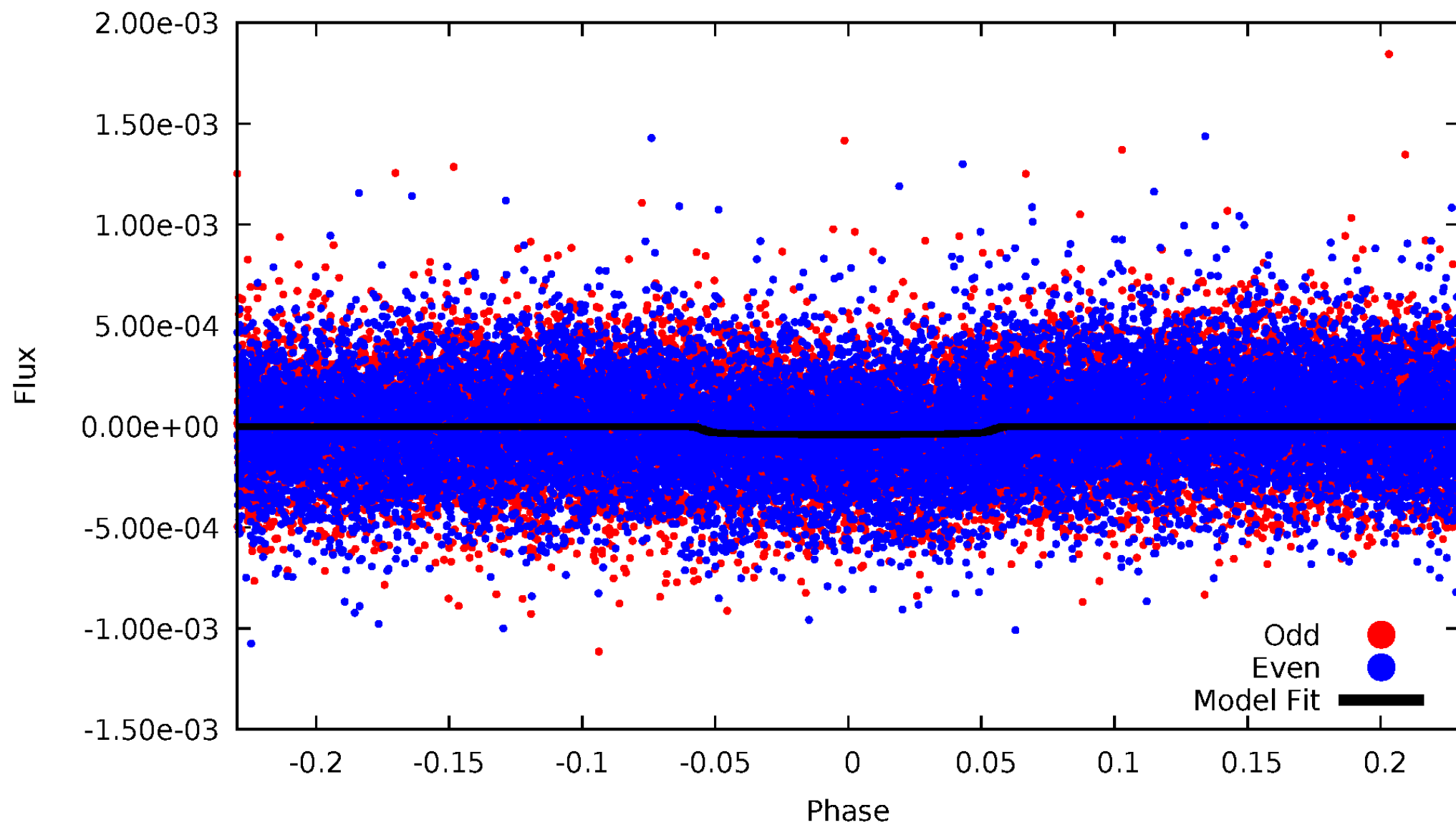
TCE 006143316-01





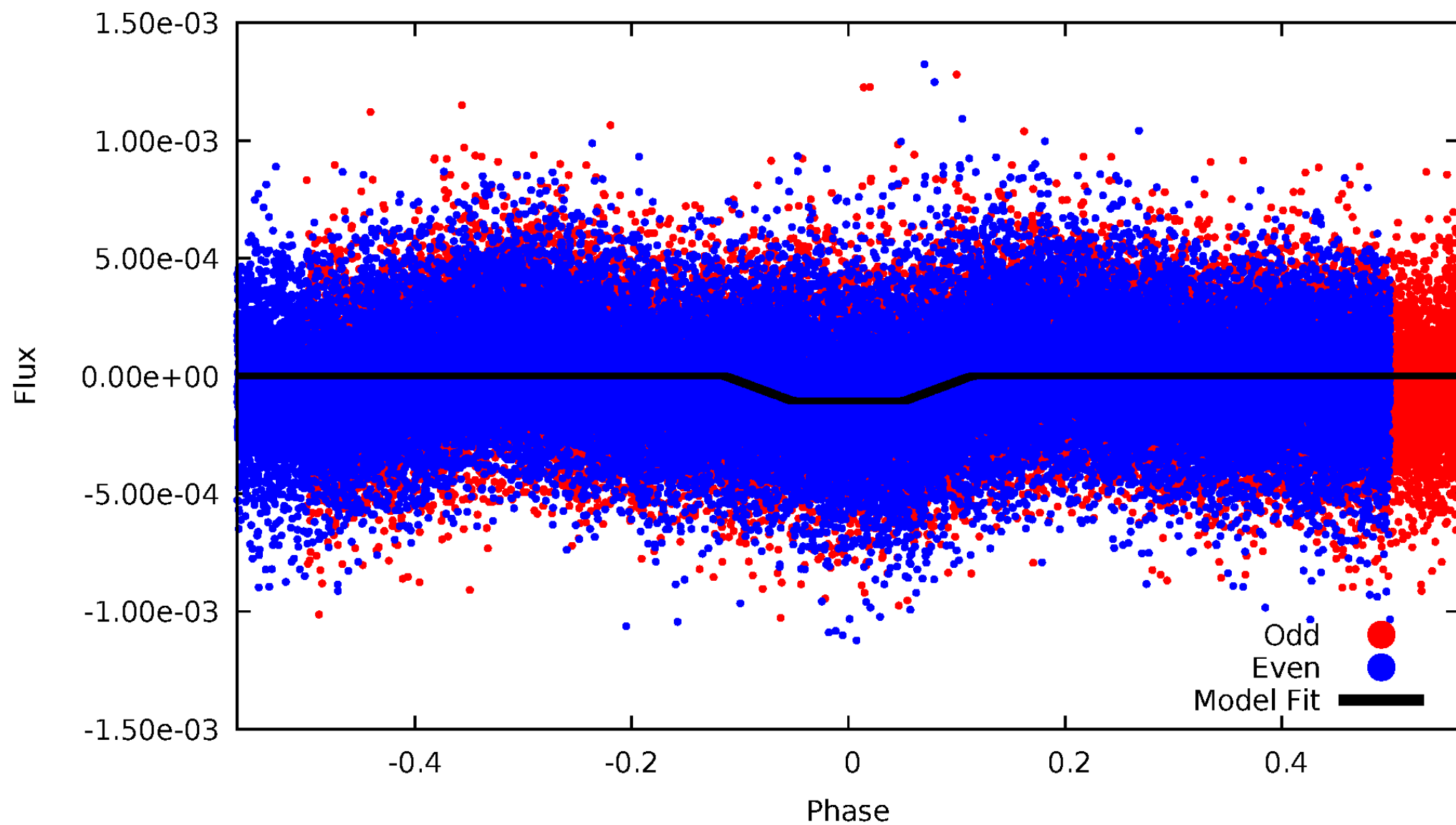
# DV Odd/Even

TCE 006143316-01

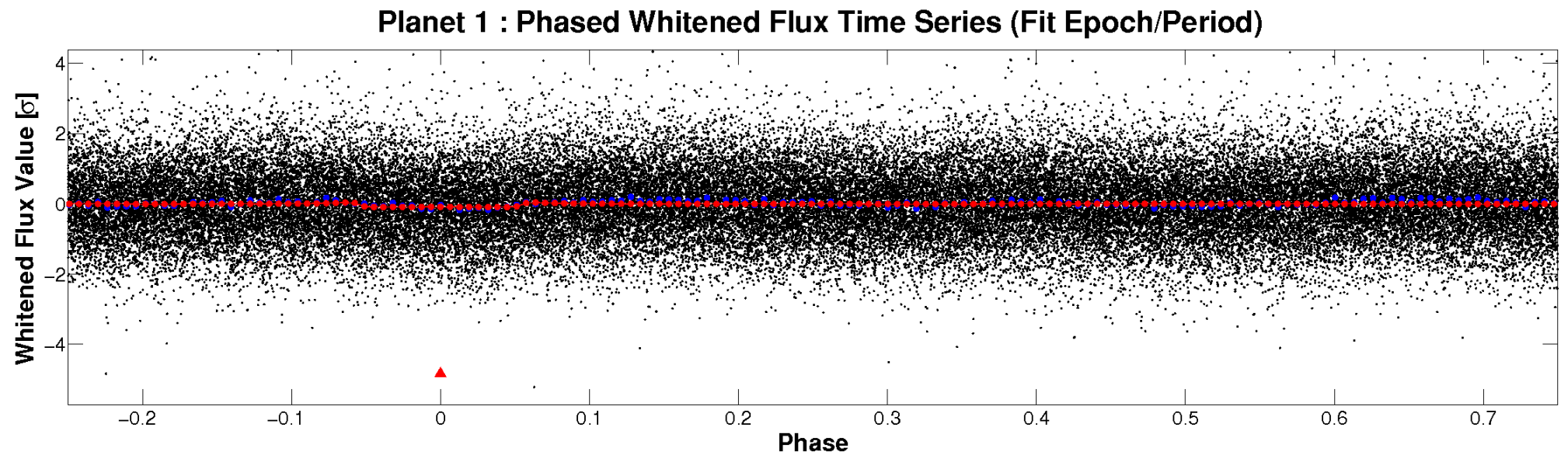
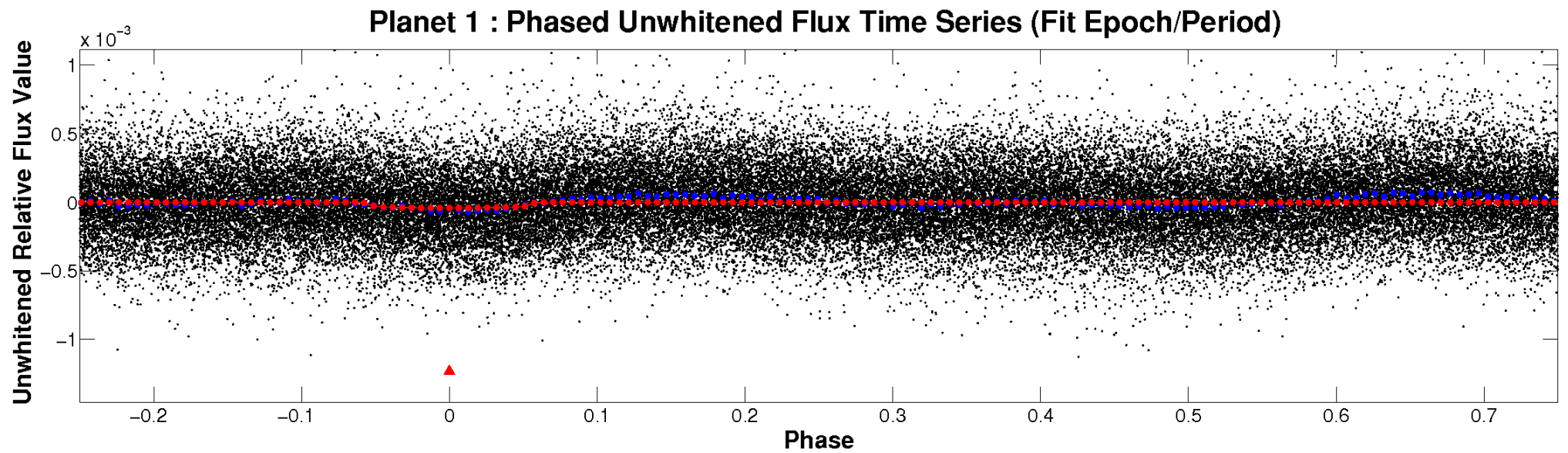


# ALT Odd/Even

TCE 006143316-01

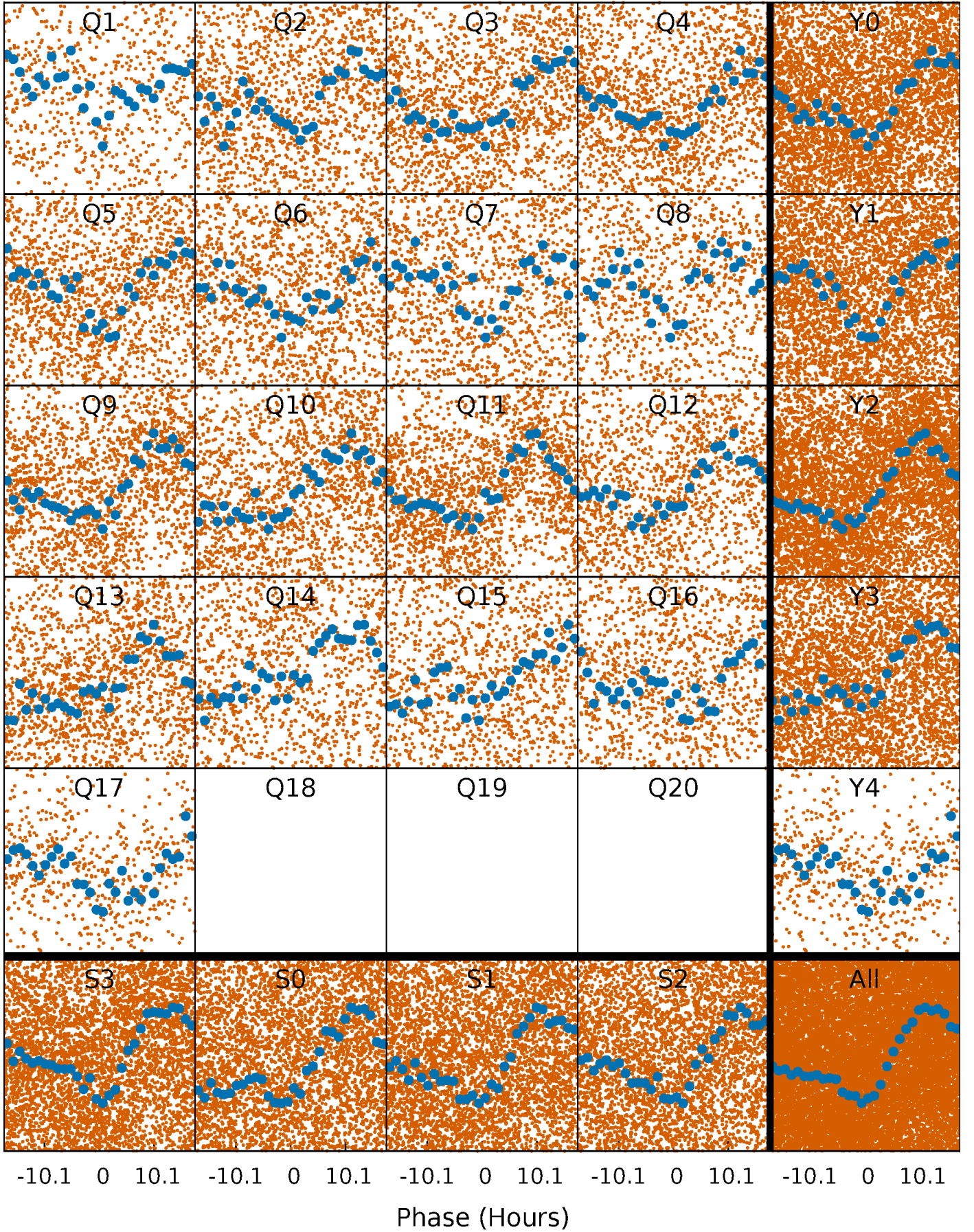


# Non-Whitened Vs. Whitened Light Curve



# PDC Quarter-Phased Transit Curves

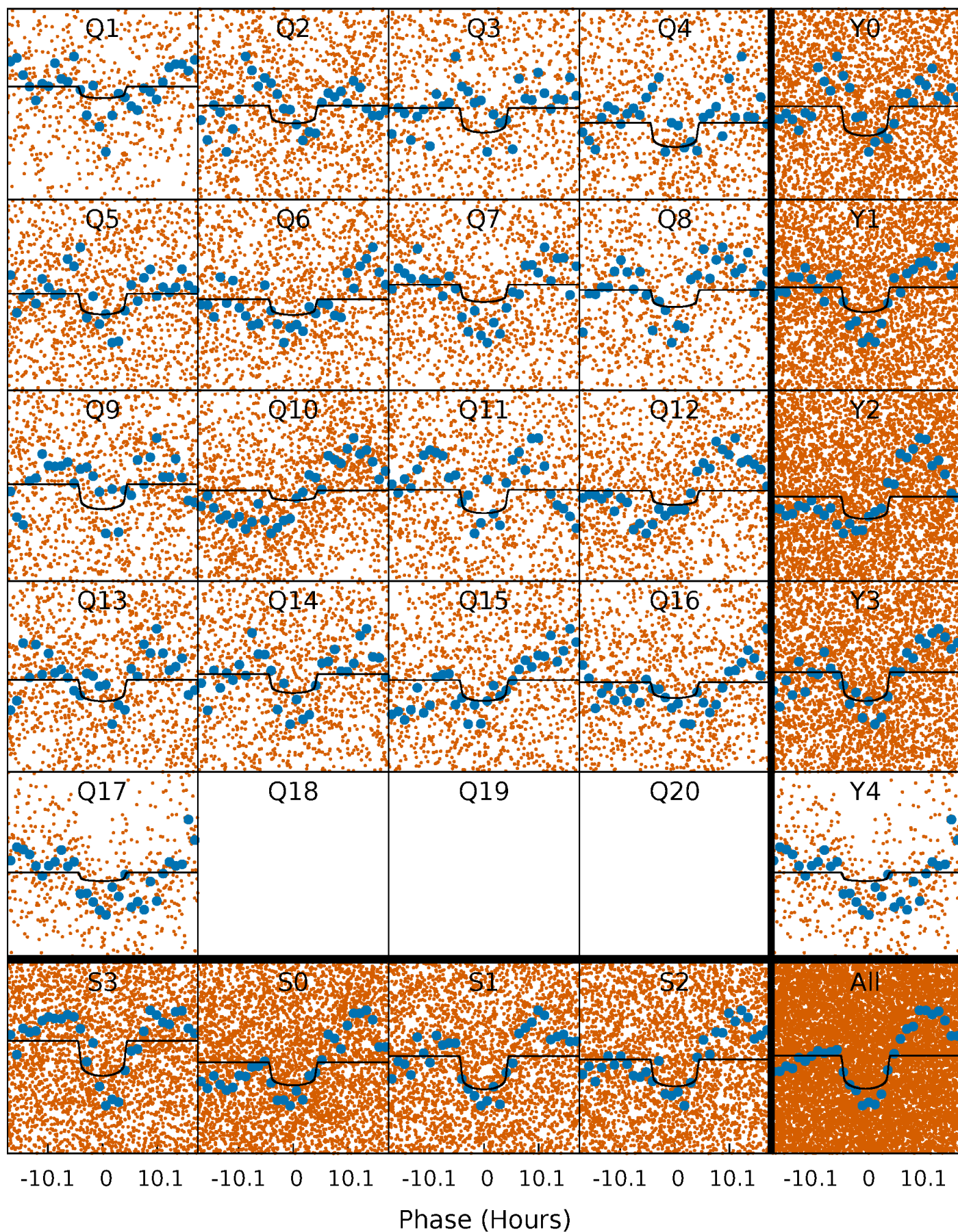
TCE 006143316-01   P= 3.198745 Days    $T_0=132.611417$  (BKJD)





# DV Quarter-Phased Transit Curves

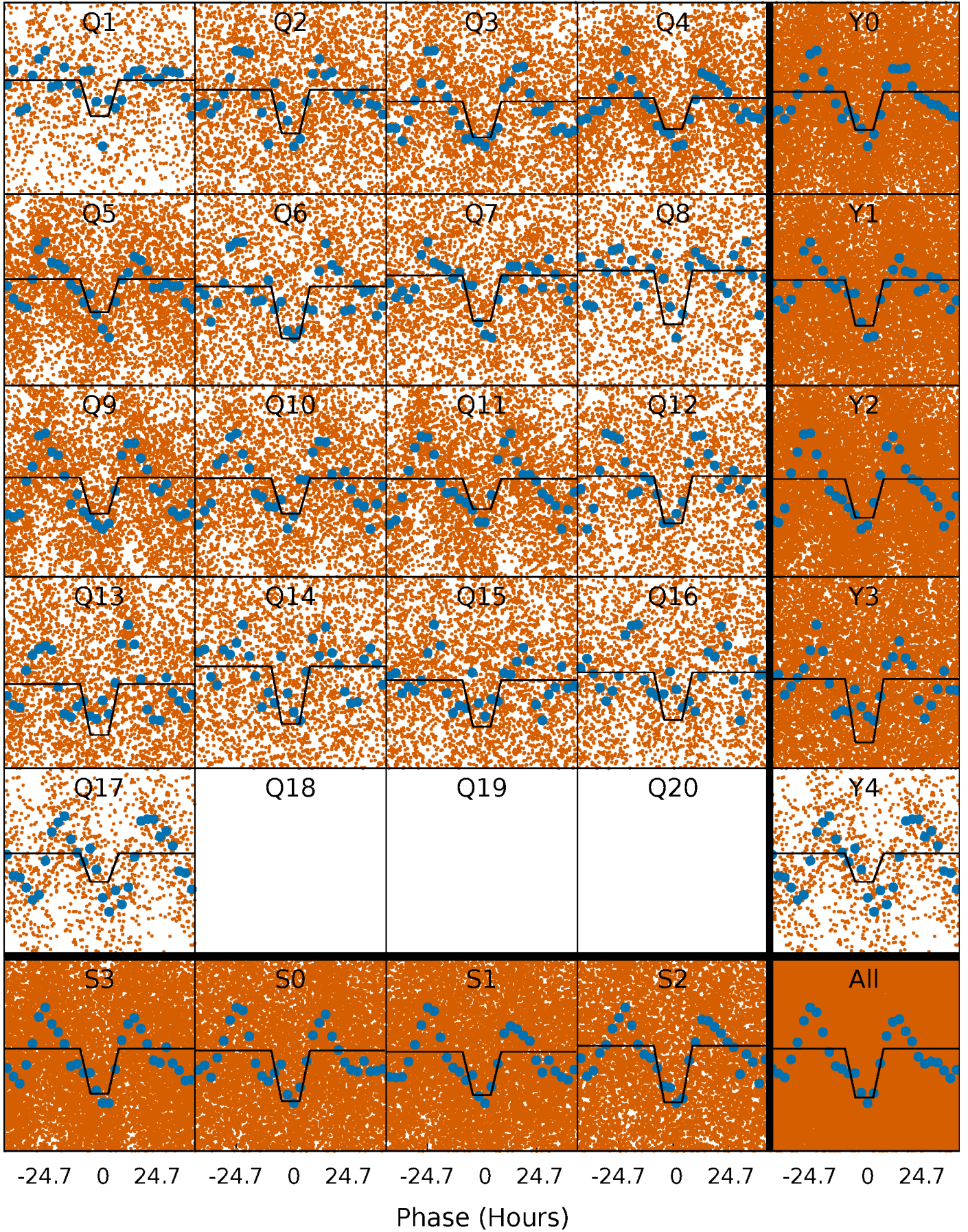
TCE 006143316-01 P= 3.198745 Days  $T_0=132.611417$  (BKJD)





# Alt. Detrend Quarter-Phased Transit Curves

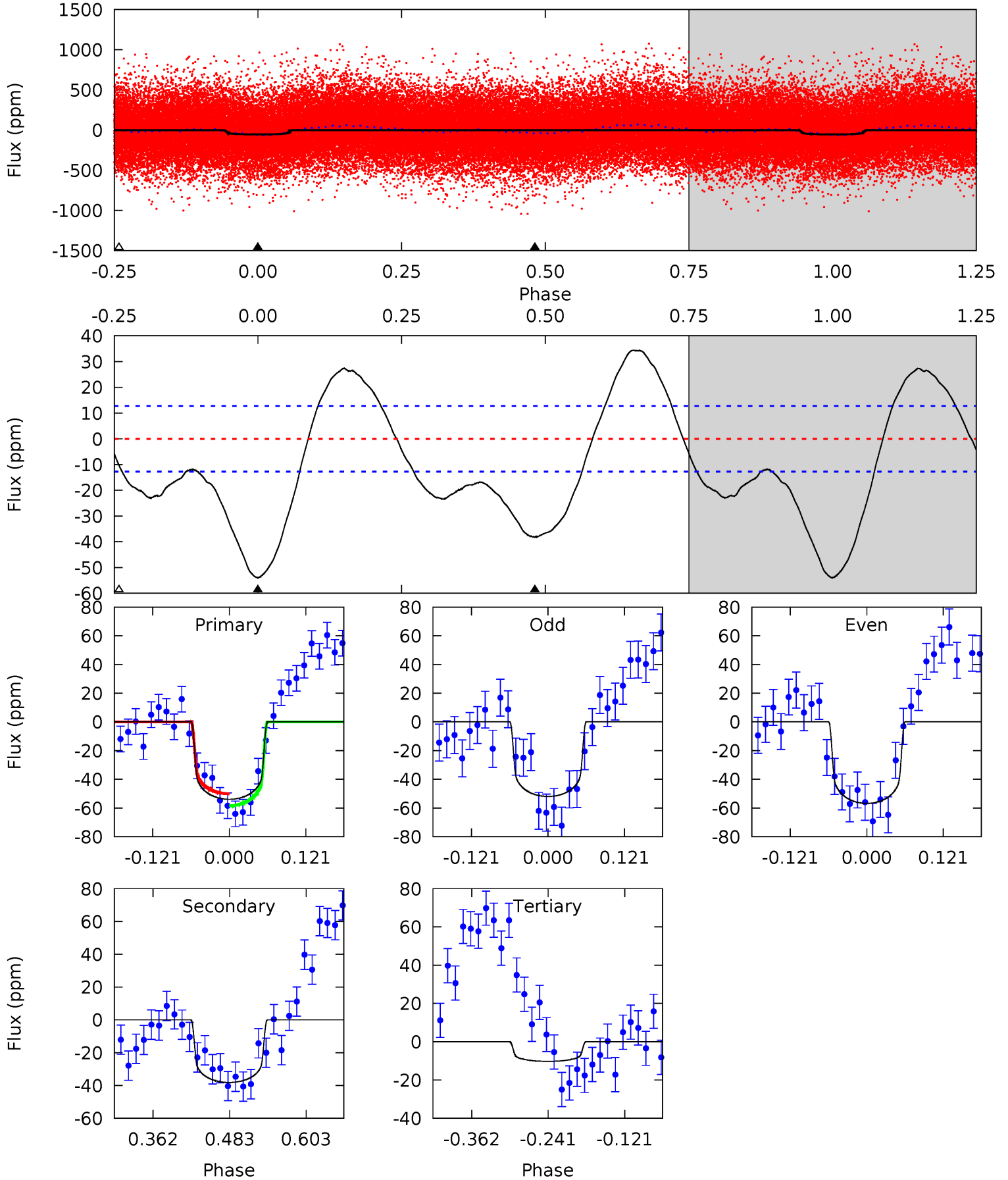
TCE 006143316-01 P= 3.198569 Days  $T_0=132.558277$  (BKJD)



# DV Model-Shift Uniqueness Test

006143316-01, P = 3.198745 Days, E = 129.412672 Days

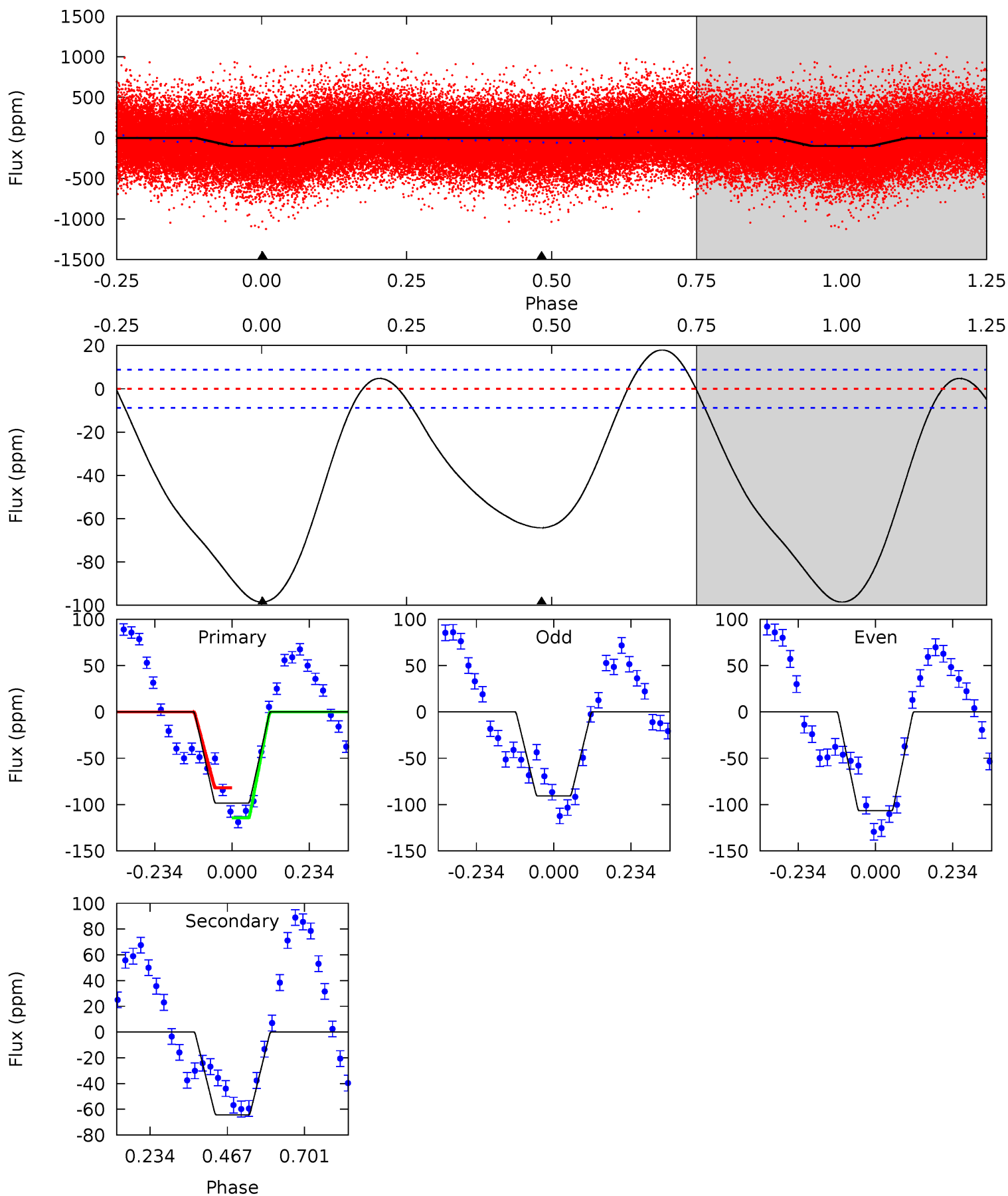
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
19.2	13.6	3.65	0	4.53	1.55	7.31	15.5	19.2	9.93	13.6	0.86	0.93	0.39	1.48



# Alt Model-Shift Uniqueness Test

006143316-01, P = 3.198569 Days, E = 129.359708 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
48.9	31.9	0	0	4.38	1.19	4.34	48.9	48.9	31.9	31.9	4.00	0.98	0.15	8.33





### Stellar Parameters For KIC 006143316

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$6562^{+161}_{-230}$	$4.229^{+0.112}_{-0.208}$	$0.080^{+0.250}_{-0.300}$	$1.458^{+0.479}_{-0.258}$	$1.317^{+0.195}_{-0.214}$	$0.598^{+0.361}_{-0.301}$
	+2%/-4%	+3%/-5%	+312%/-375%	+33%/-18%	+15%/-16%	+60%/-50%
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 006143316-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	$A_{\text{obs}}$
DV	$-38 \pm 3$	$1.13^{+0.29}_{-0.27}$	$2280^{+182}_{-140}$	$6147^{+930}_{-576}$	$35^{+24}_{-13}$
Alt.	$-64 \pm 2$	$1.67^{+0.39}_{-0.29}$	$2290^{+179}_{-144}$	$5780^{+465}_{-405}$	$27^{+12}_{-9}$

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

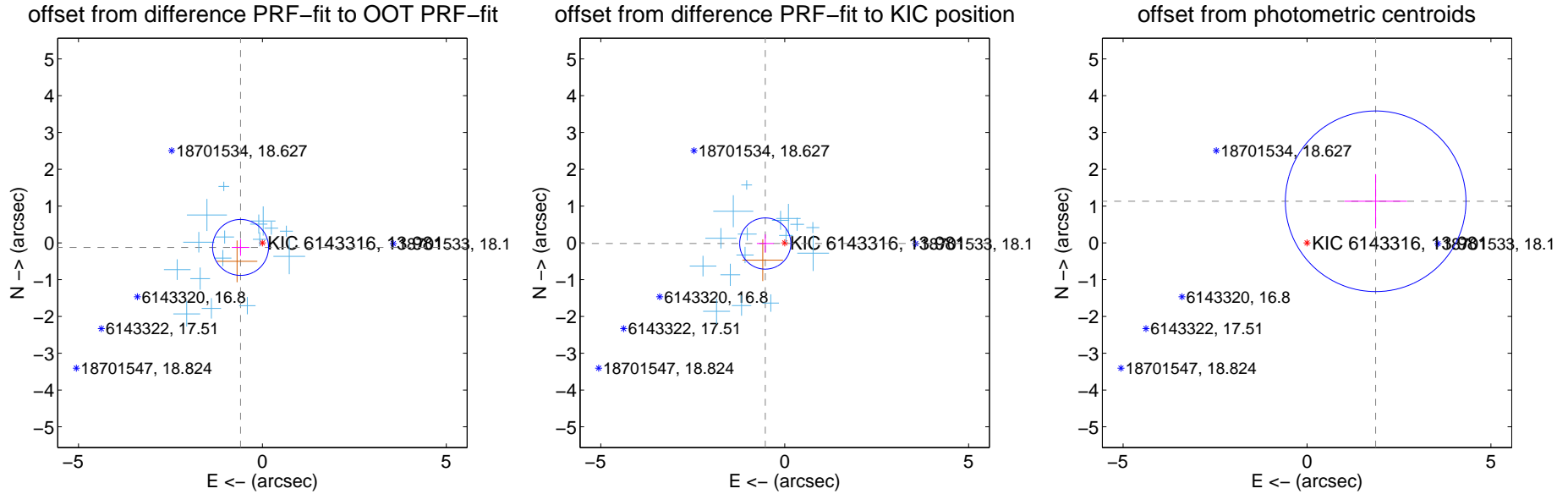
## DV Centroid Data

Supplemental centroid analysis for 006143316-01. Kepler magnitude: 13.98. Transit SNR 7.60

There are 16 quarters with good PRF difference image offsets

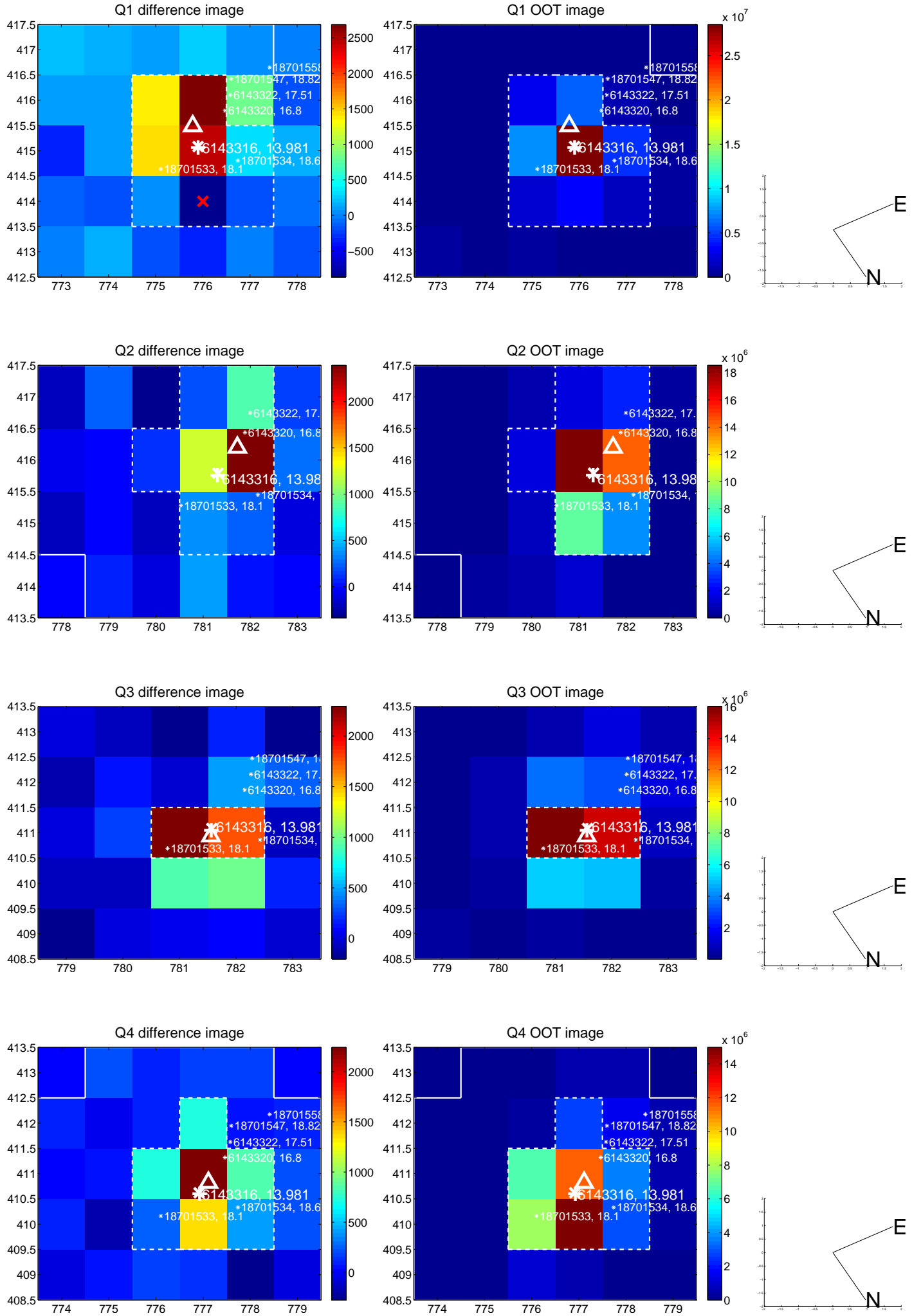
The direct PRF centroid is offset from the target star catalog position by about 0.11 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.606 \pm 0.254$	2.39	$0.593 \pm 0.240$	$-0.124 \pm 0.228$
PRF-fit source offset from KIC position	$0.529 \pm 0.232$	2.28	$0.528 \pm 0.229$	$-0.018 \pm 0.249$
photometric centroid source offset	$2.18 \pm 0.82$	2.67	$-1.87 \pm 0.85$	$1.13 \pm 0.74$

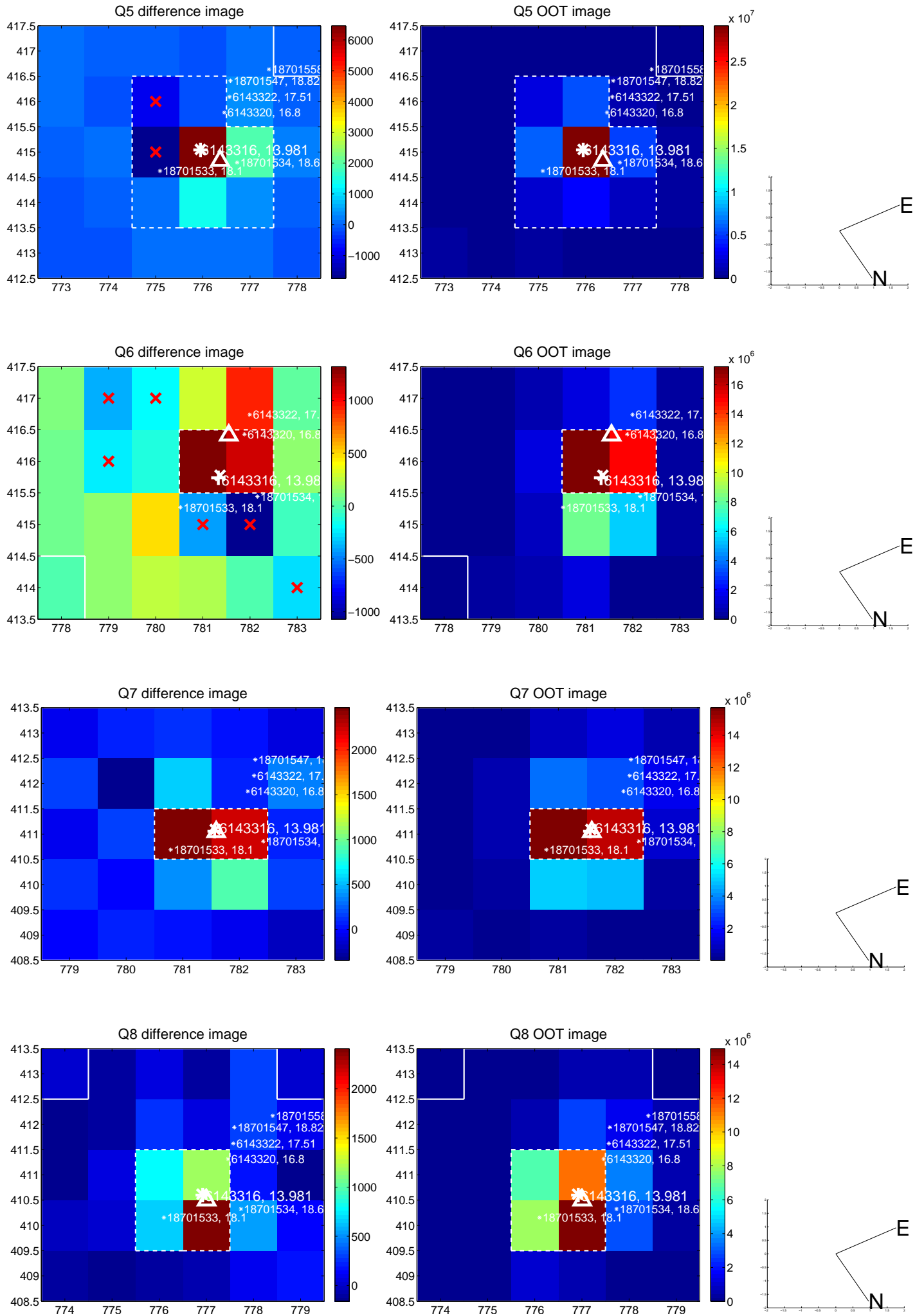


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: three-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

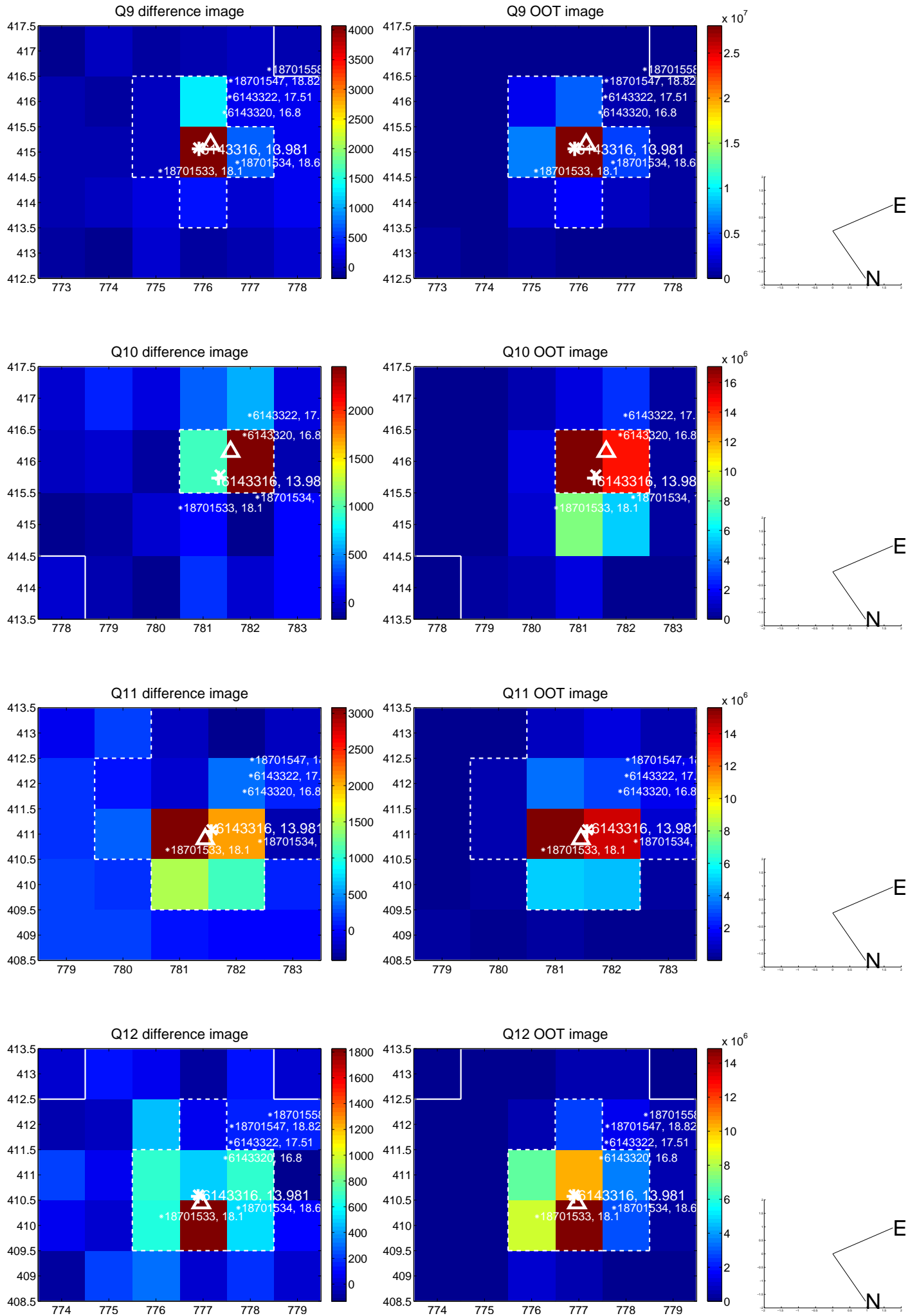


white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

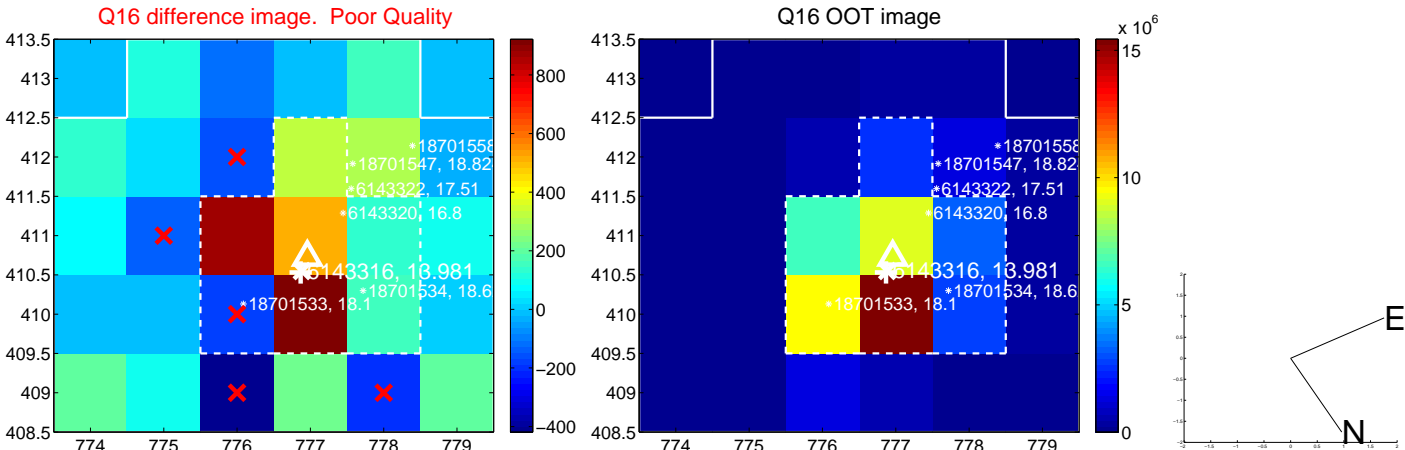
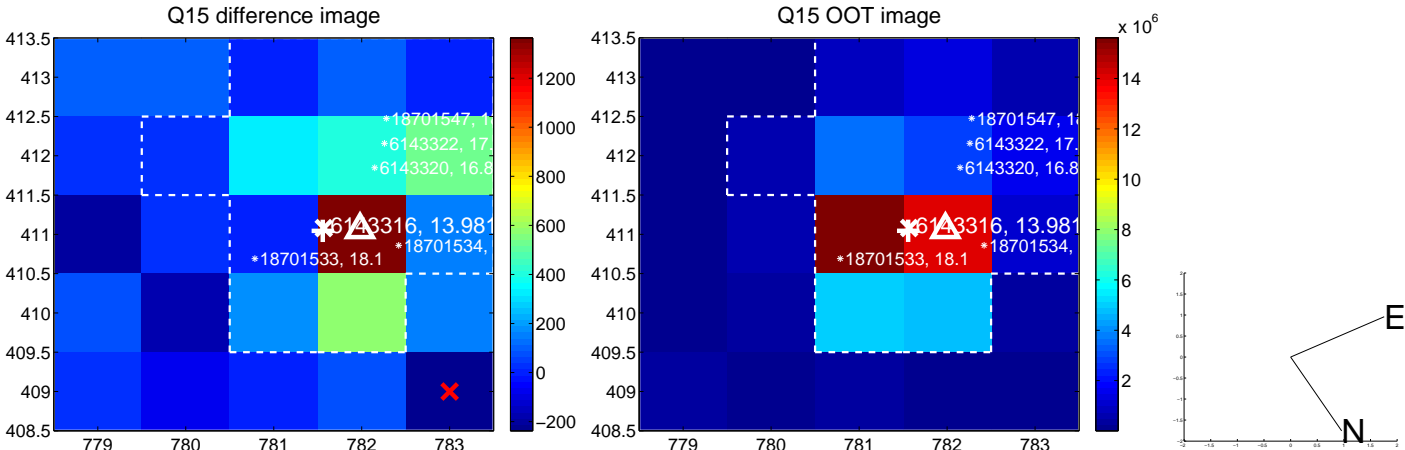
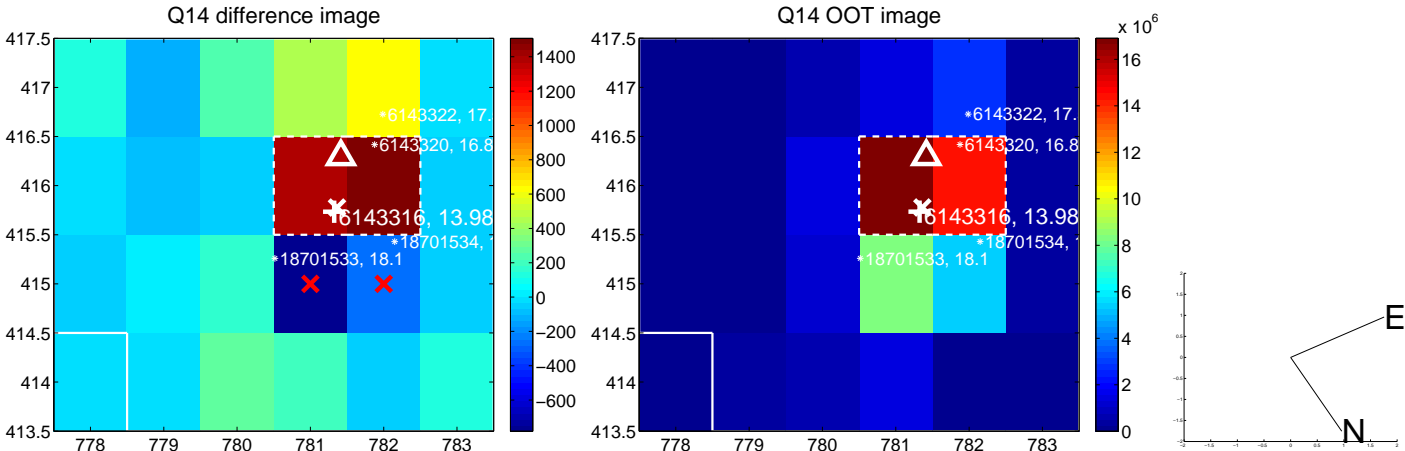
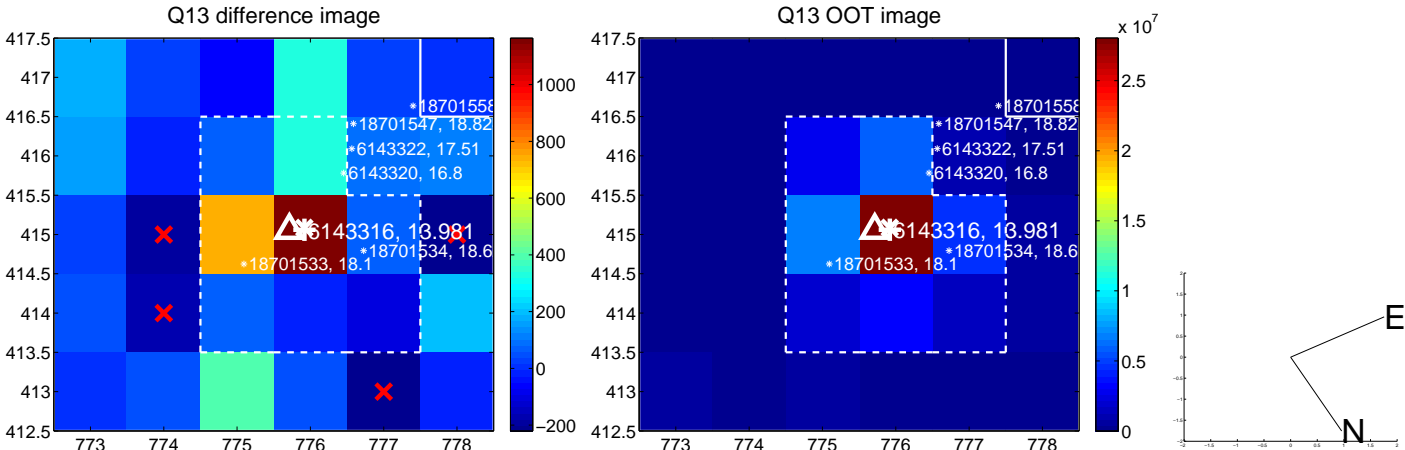




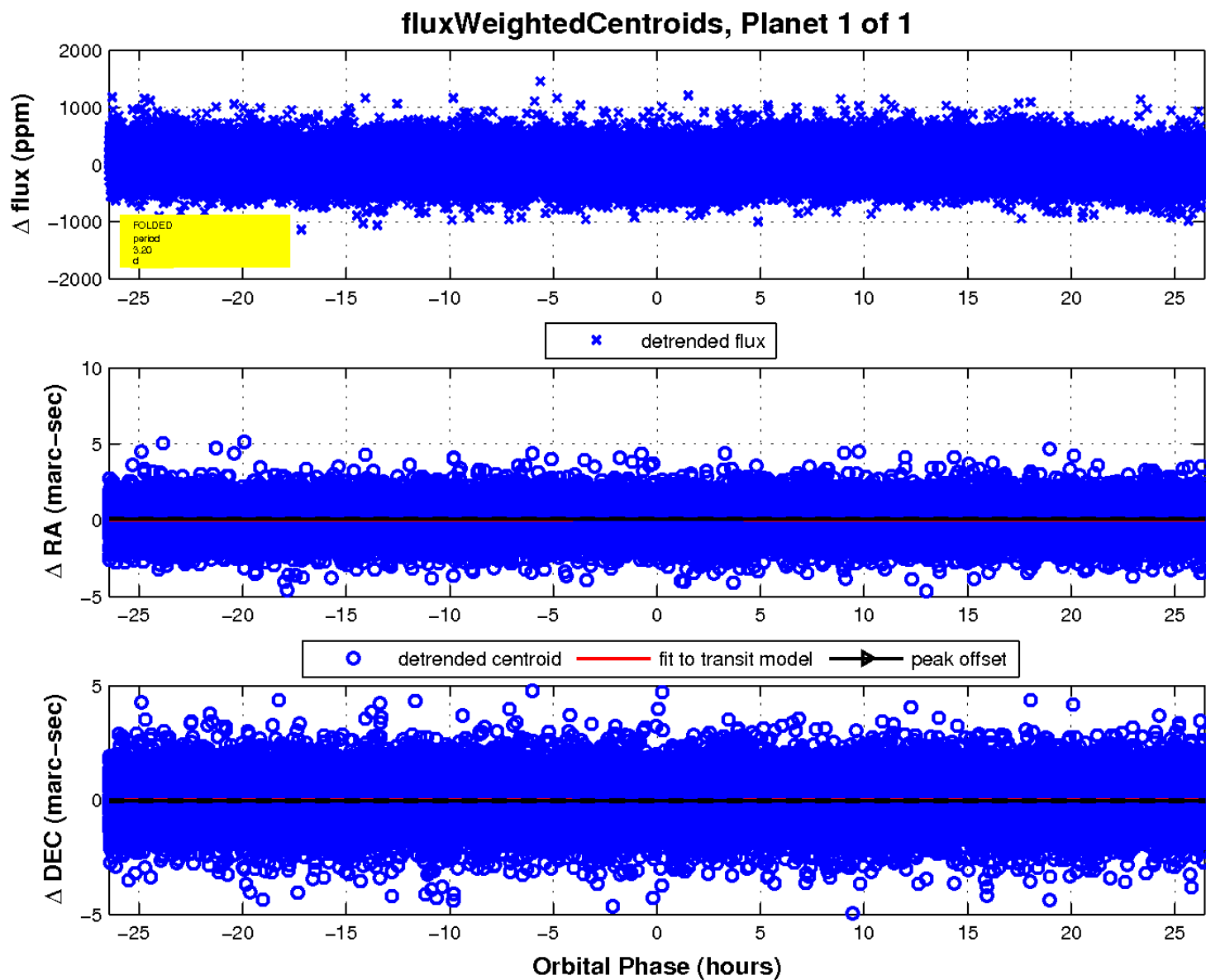
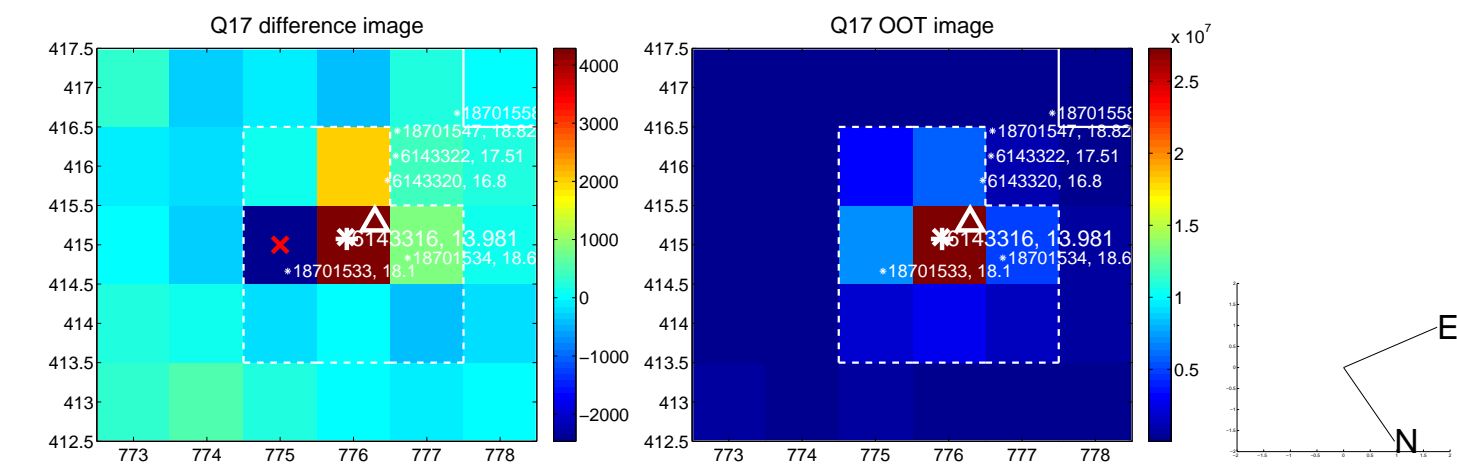
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white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



UKIRT Image

Declination

