

# KIC 007461382

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
007461382-01	OBS	No	0.608882	131.763107	10.6	5.220	9.5	1.8	1.48	6642	0.49	17040.12

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
007461382-01	OBS	FP	0.00	1	0	0	0	LPP_DV—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.

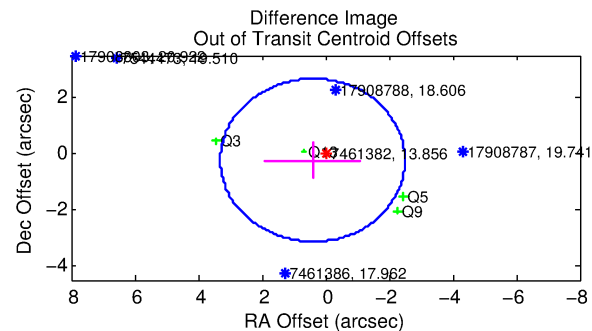
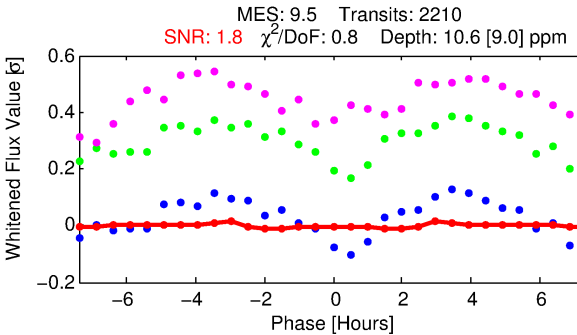
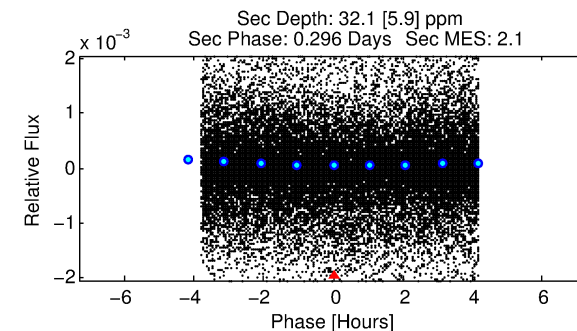
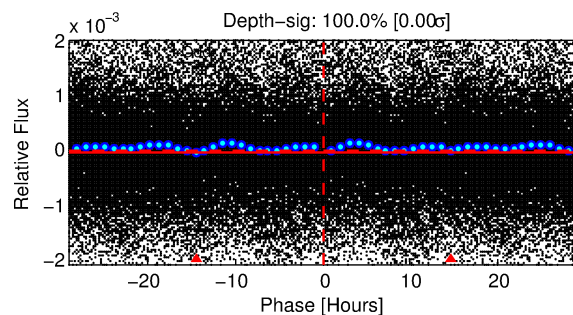
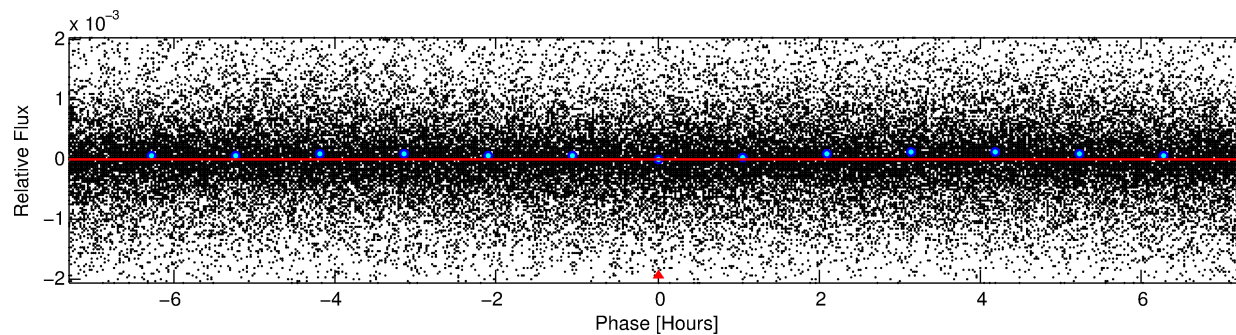
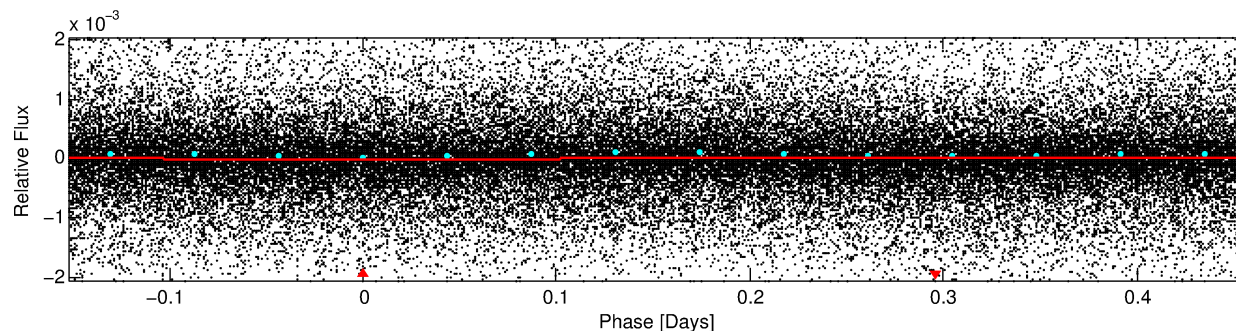
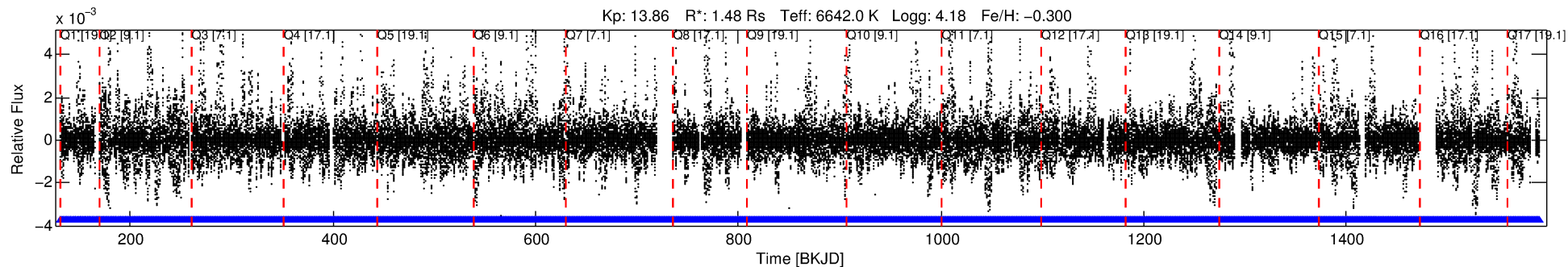
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 007461382-01

No Significant Match Found

# DV One-Page Summary

KIC: 7461382 Candidate: 1 of 1 Period: 0.609 d



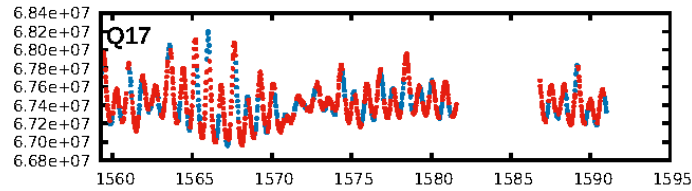
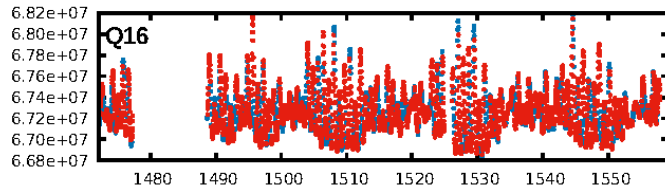
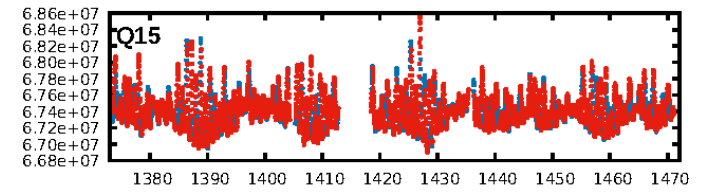
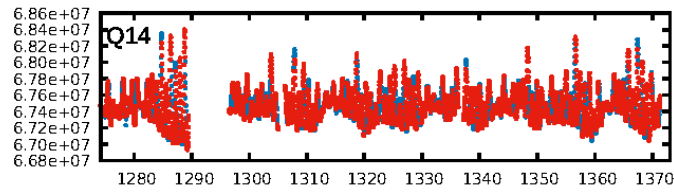
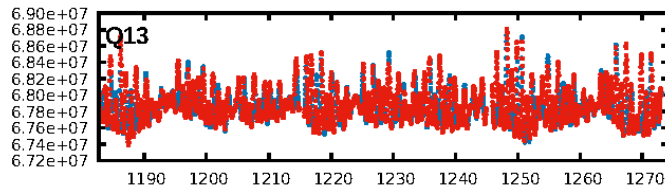
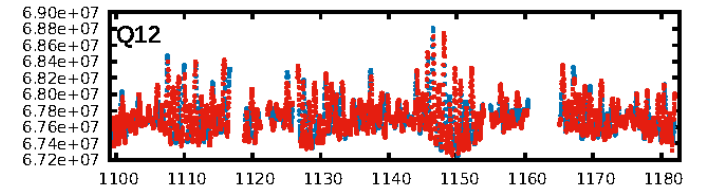
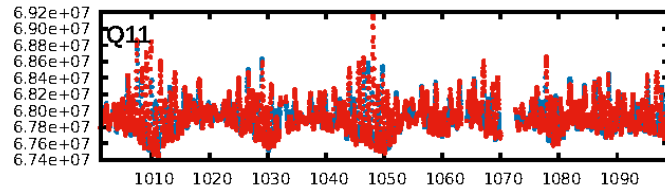
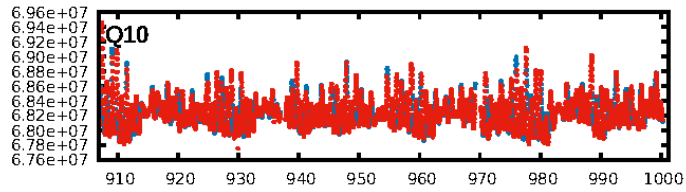
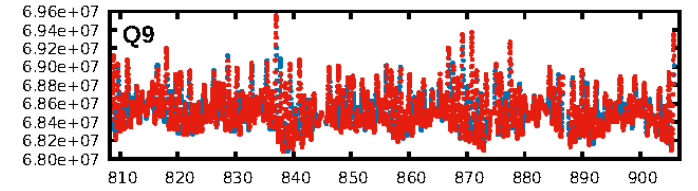
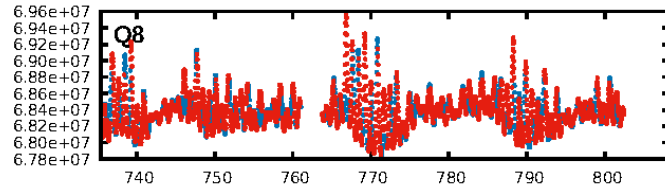
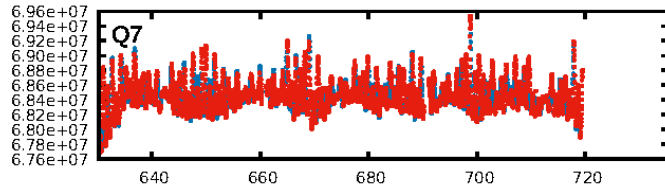
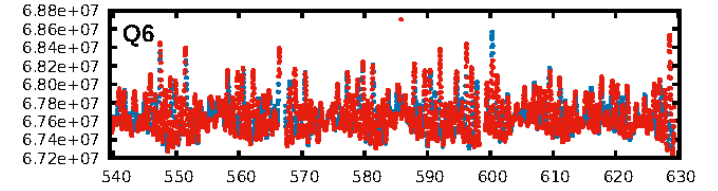
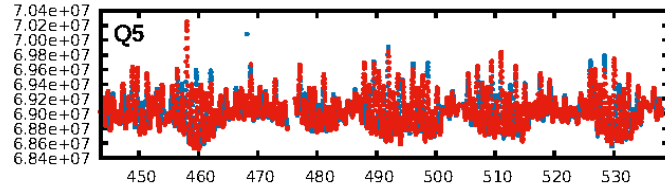
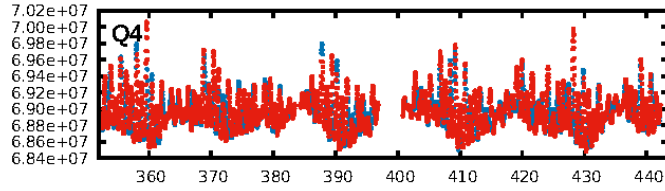
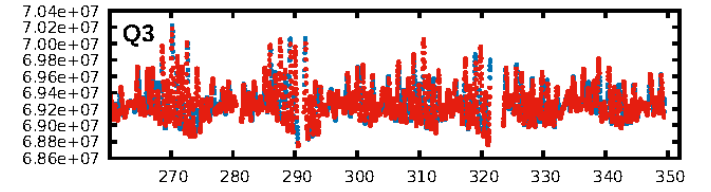
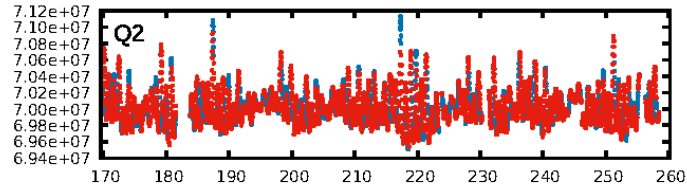
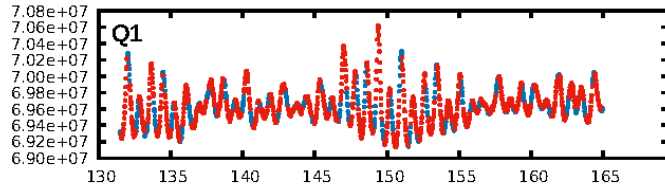
## DV Fit Results:

Period = 0.60888 [0.00005] d  
Epoch = 131.7631 [0.0089] BKJD  
Rp/R\* = 0.0030 [0.0055]  
a/R\* = 1.11 [2.24]  
b = 0.14 [76.55]  
Seff = 17040.12 [6175.69]  
Teq = 2913 [264] K  
Rp = 0.49 [0.90] Re  
a = 0.0150 [0.0035] AU  
Ag = 16.84 [62.27] [0.25 $\sigma$ ]  
Teffp = 9124 [8409] K [0.74 $\sigma$ ]

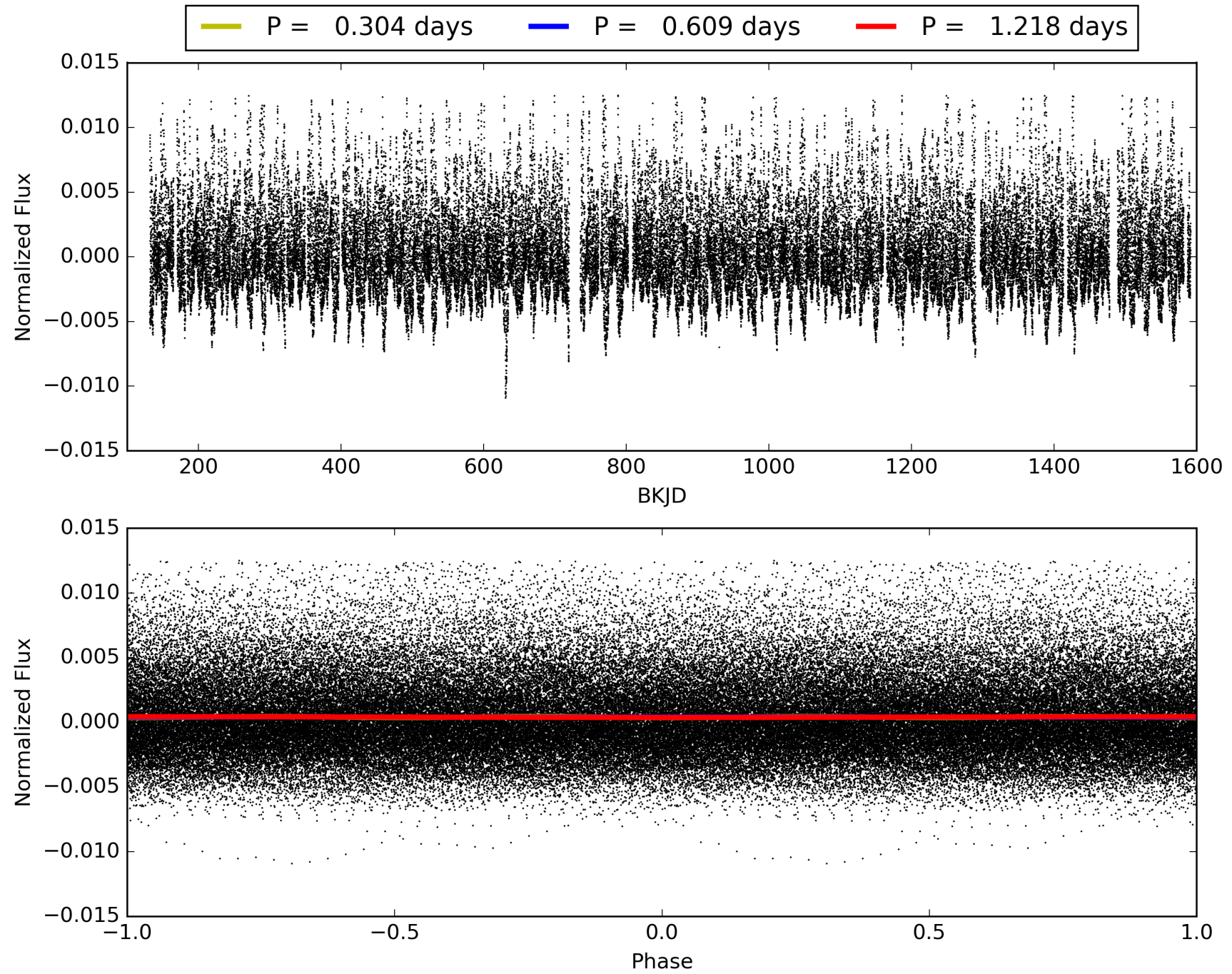
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: N/A  
ModelChiSquareGof-sig: N/A  
Bootstrap-pfa: N/A  
RollingBand-fgt: 1.00 [2111/2111]  
GhostDiagnostic-chr: 1.716  
Centroid-sig: 0.0%  
Centroid-so: 5.652 arcsec [3.71 $\sigma$ ]  
OotOffset-rm: 0.466 arcsec [0.48 $\sigma$ ]  
KicOffset-rm: 0.426 arcsec [0.54 $\sigma$ ]  
OotOffset-st: 0/1/0/3 [4]  
KicOffset-st: 0/1/0/3 [4]  
DiffImageQuality-fgm: 0.75 [3/4]  
DiffImageOverlap-fno: 1.00 [17/17]

# TCE 007461382-01, PDC Light Curves



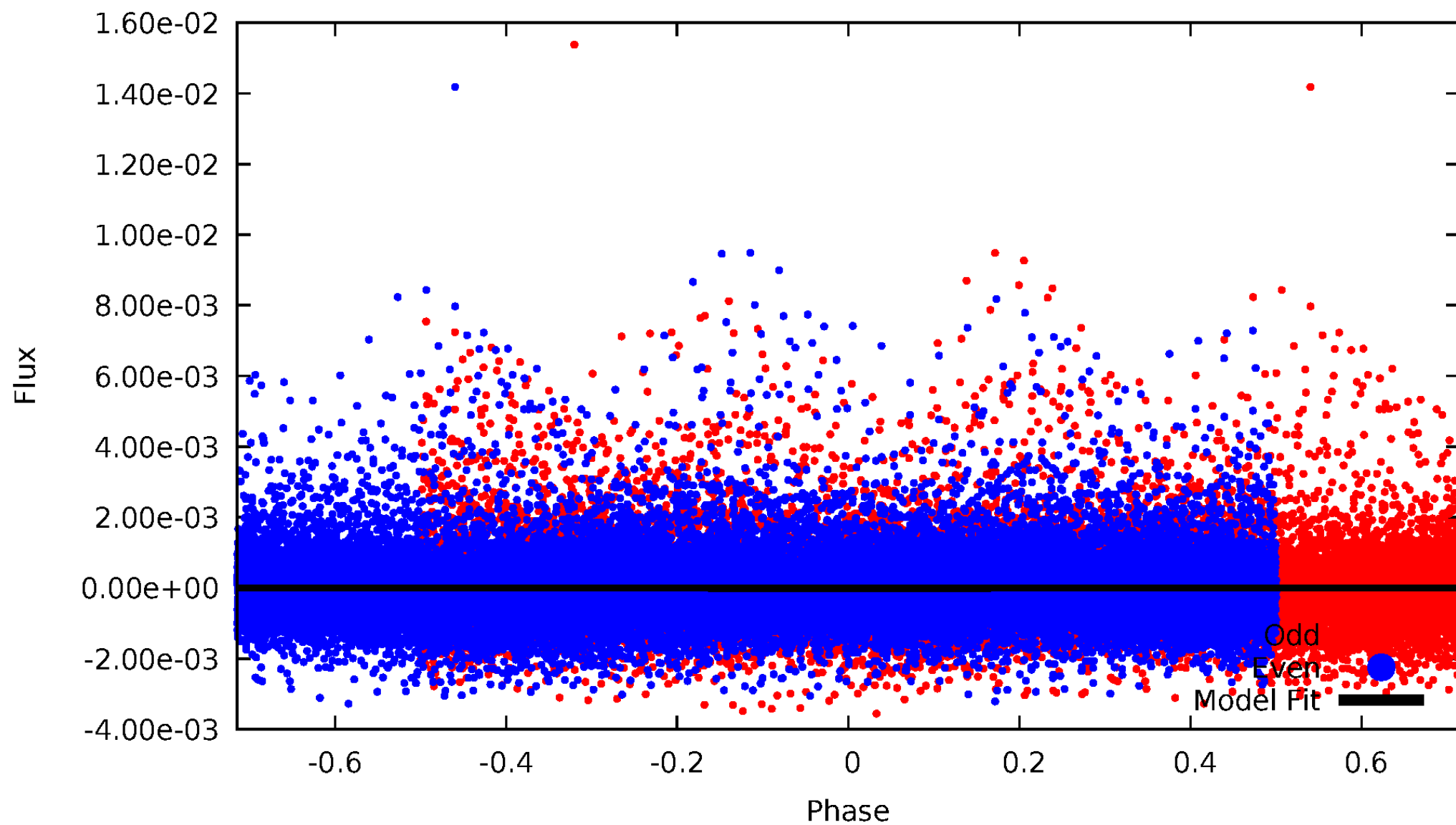
TCE 007461382-01





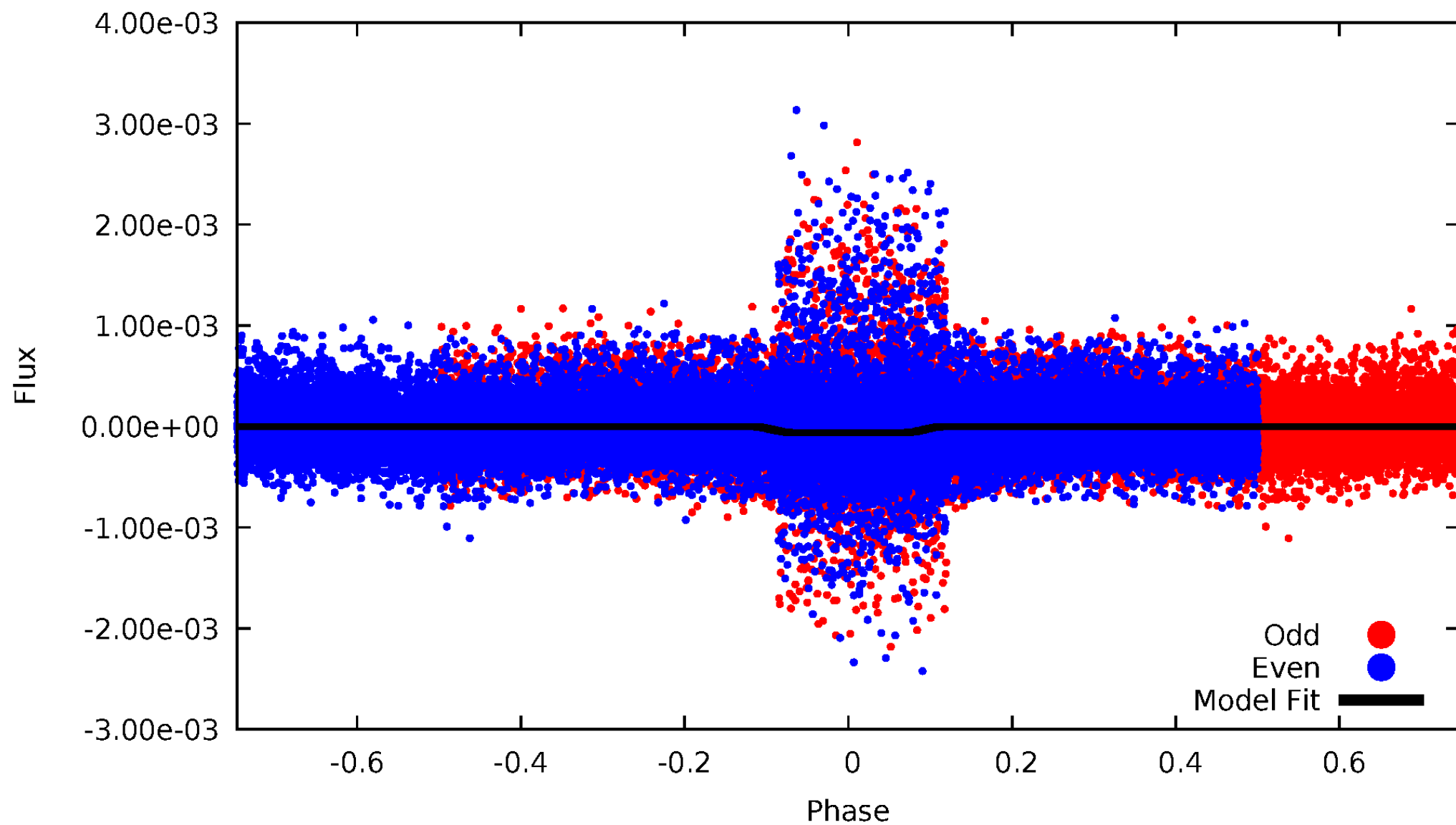
# DV Odd/Even

TCE 007461382-01



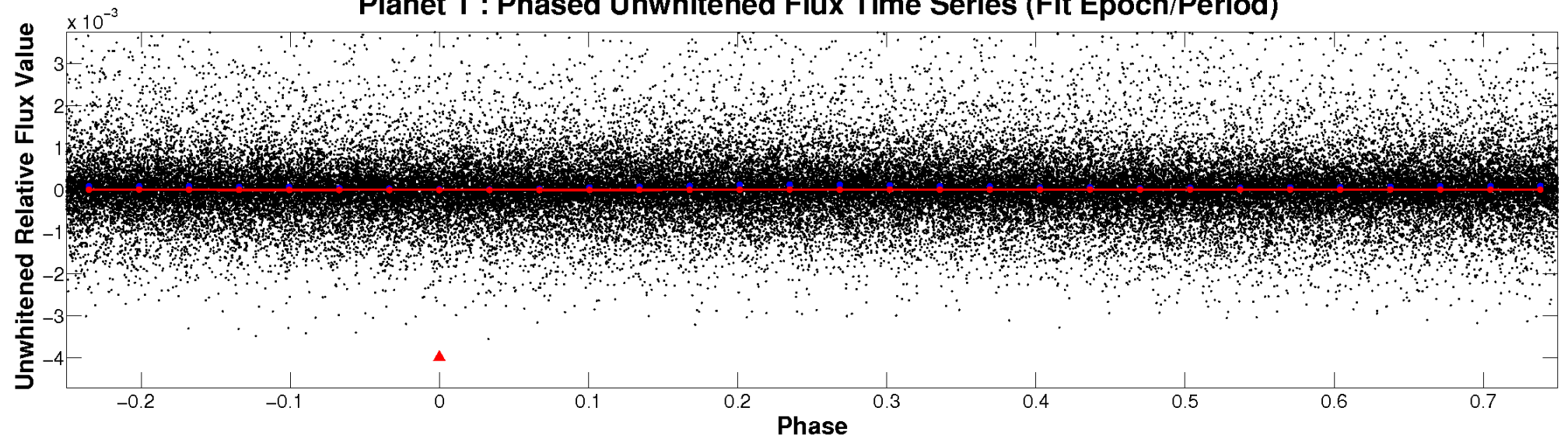
# ALT Odd/Even

TCE 007461382-01

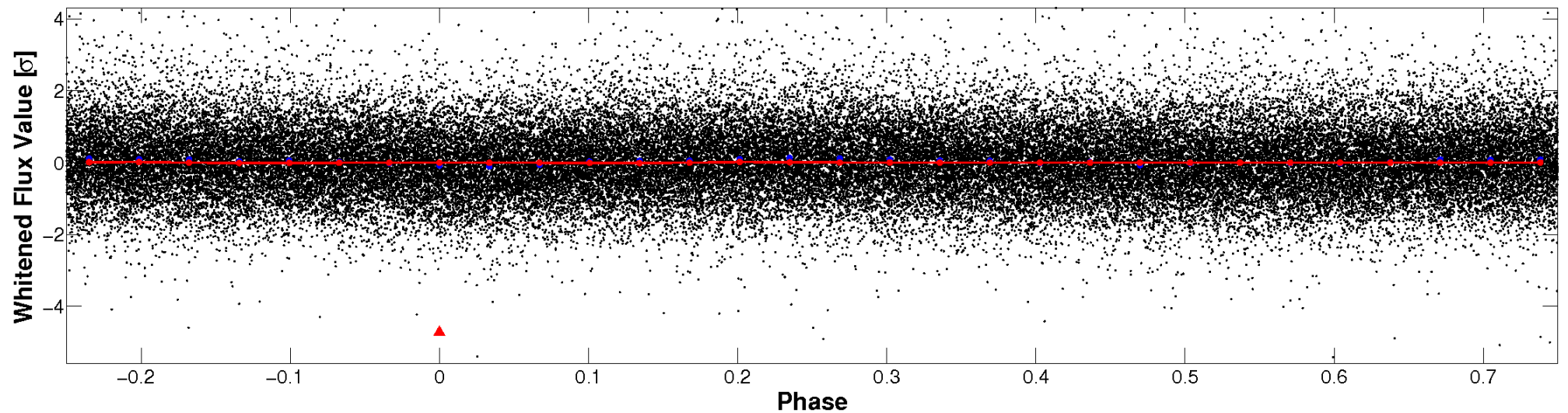


# Non-Whitened Vs. Whitened Light Curve

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

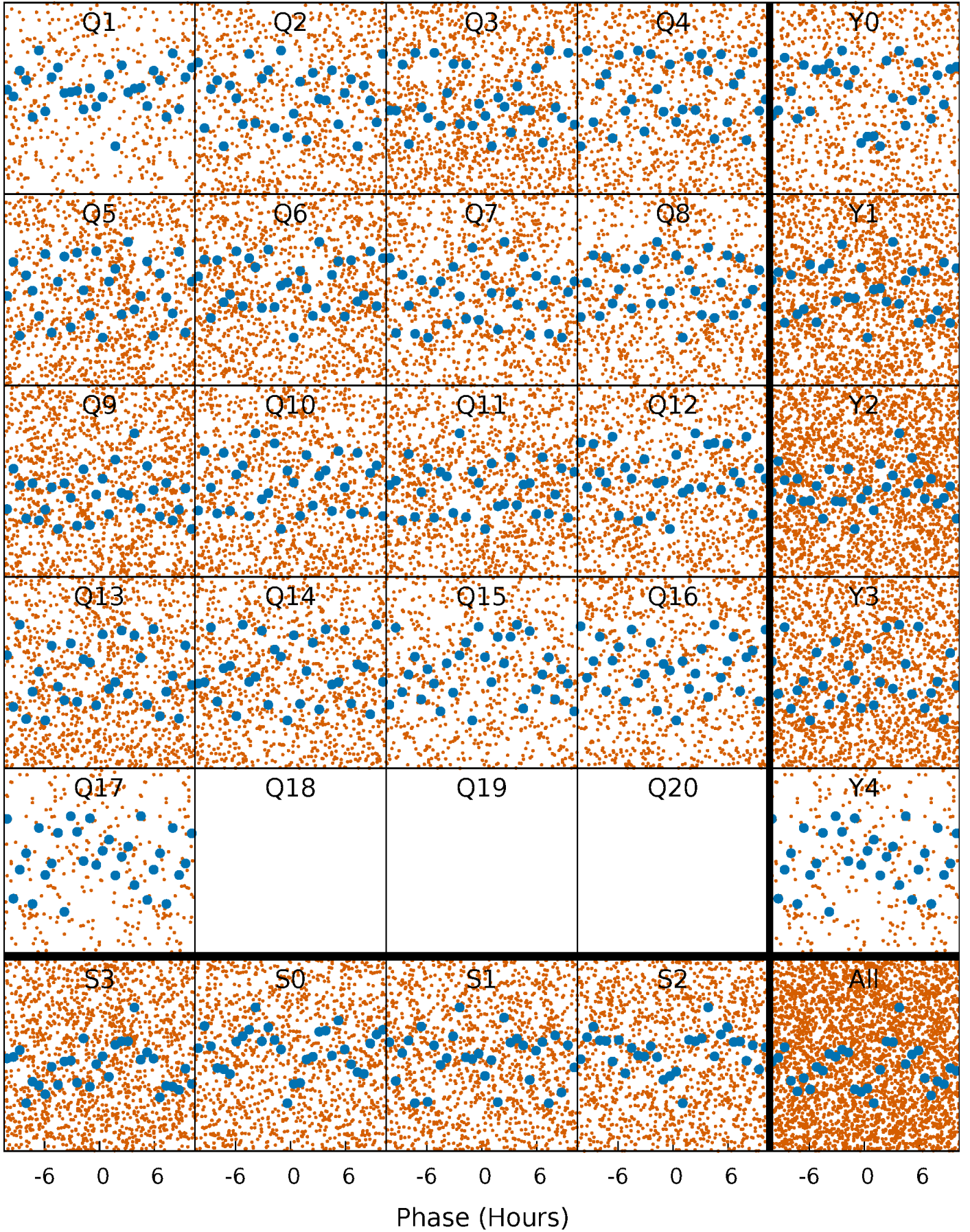


**Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)**



# PDC Quarter-Phased Transit Curves

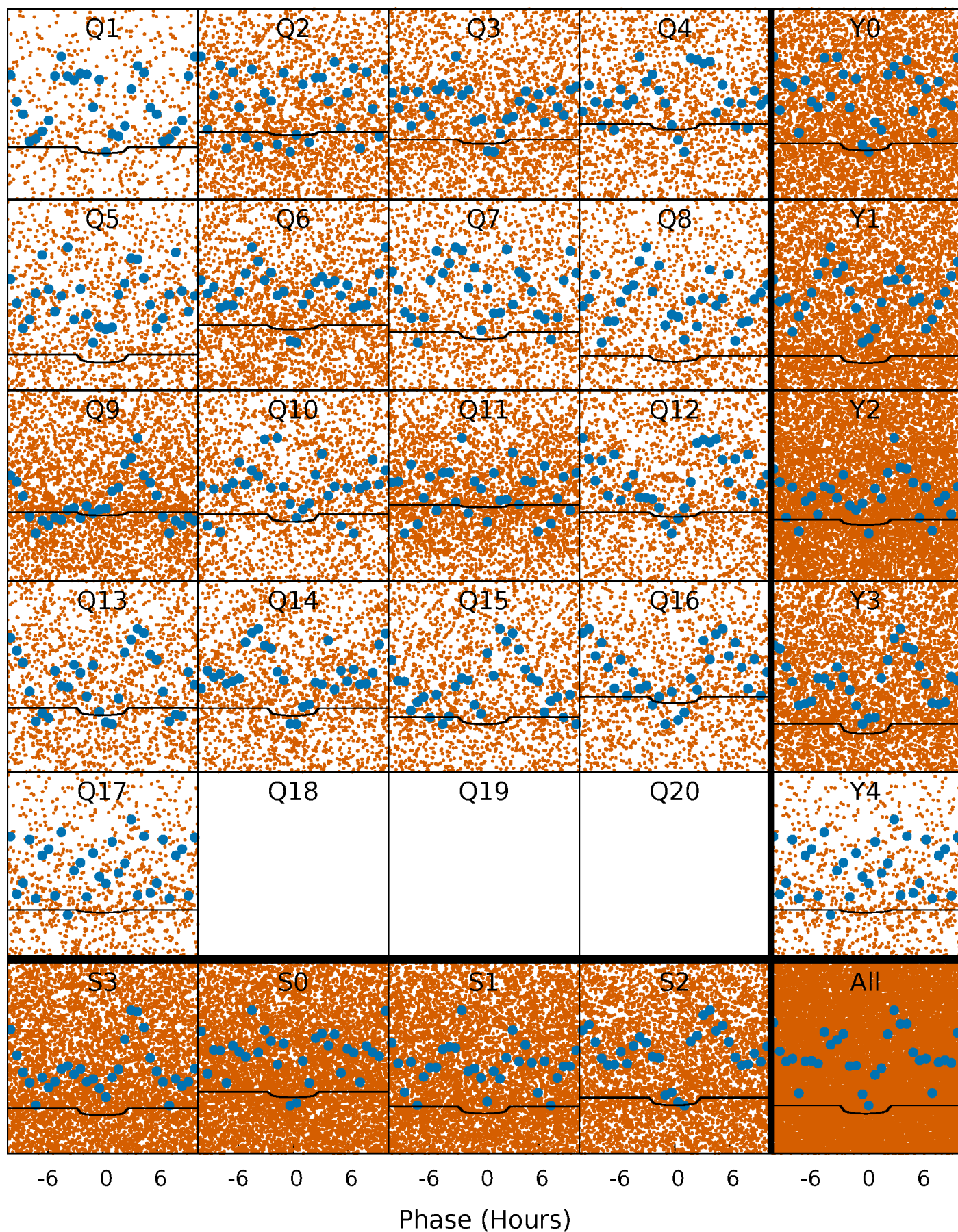
TCE 007461382-01   P= 0.608882 Days    $T_0=131.763107$  (BKJD)





# DV Quarter-Phased Transit Curves

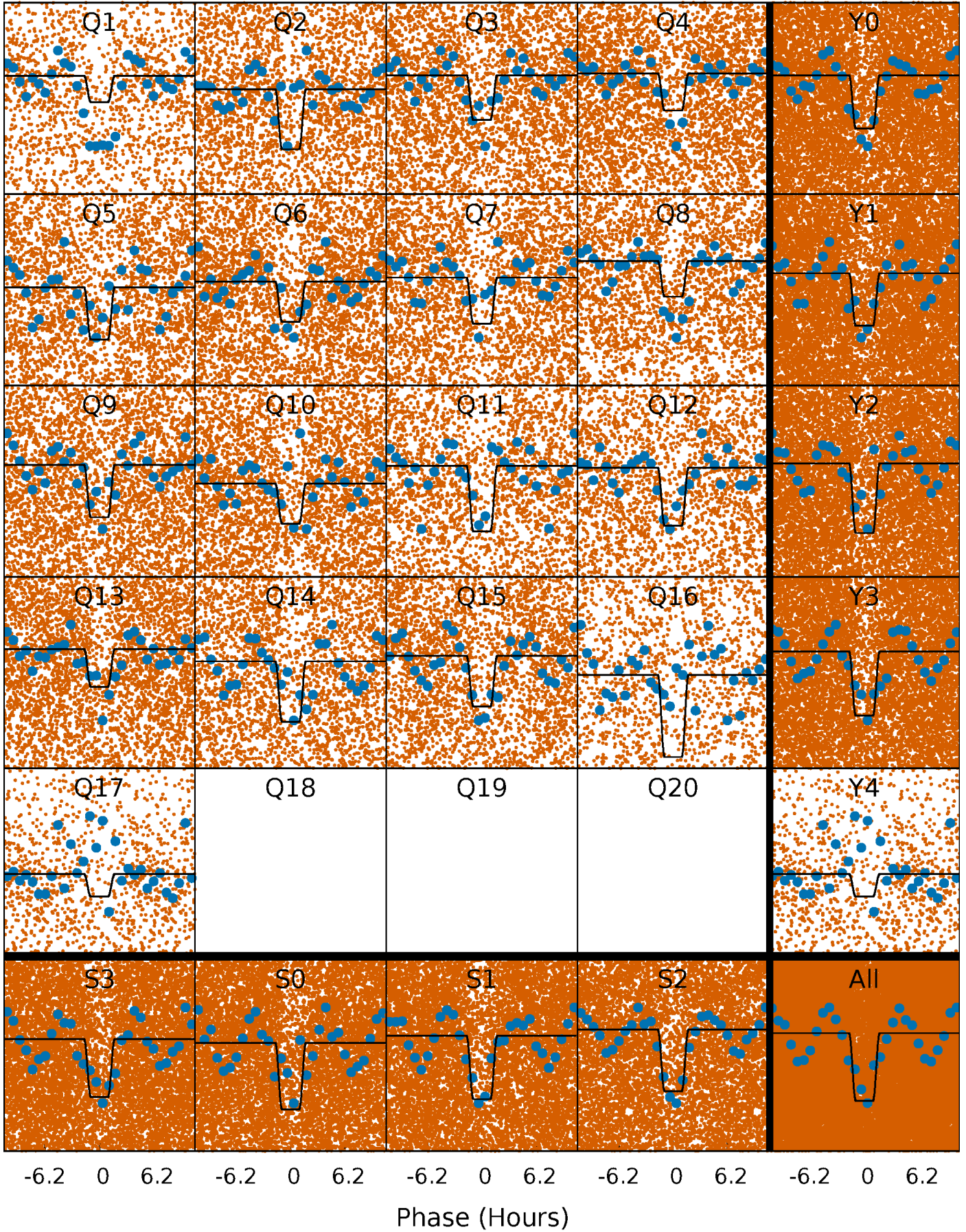
TCE 007461382-01 P= 0.608882 Days  $T_0=131.763107$  (BKJD)





# Alt. Detrend Quarter-Phased Transit Curves

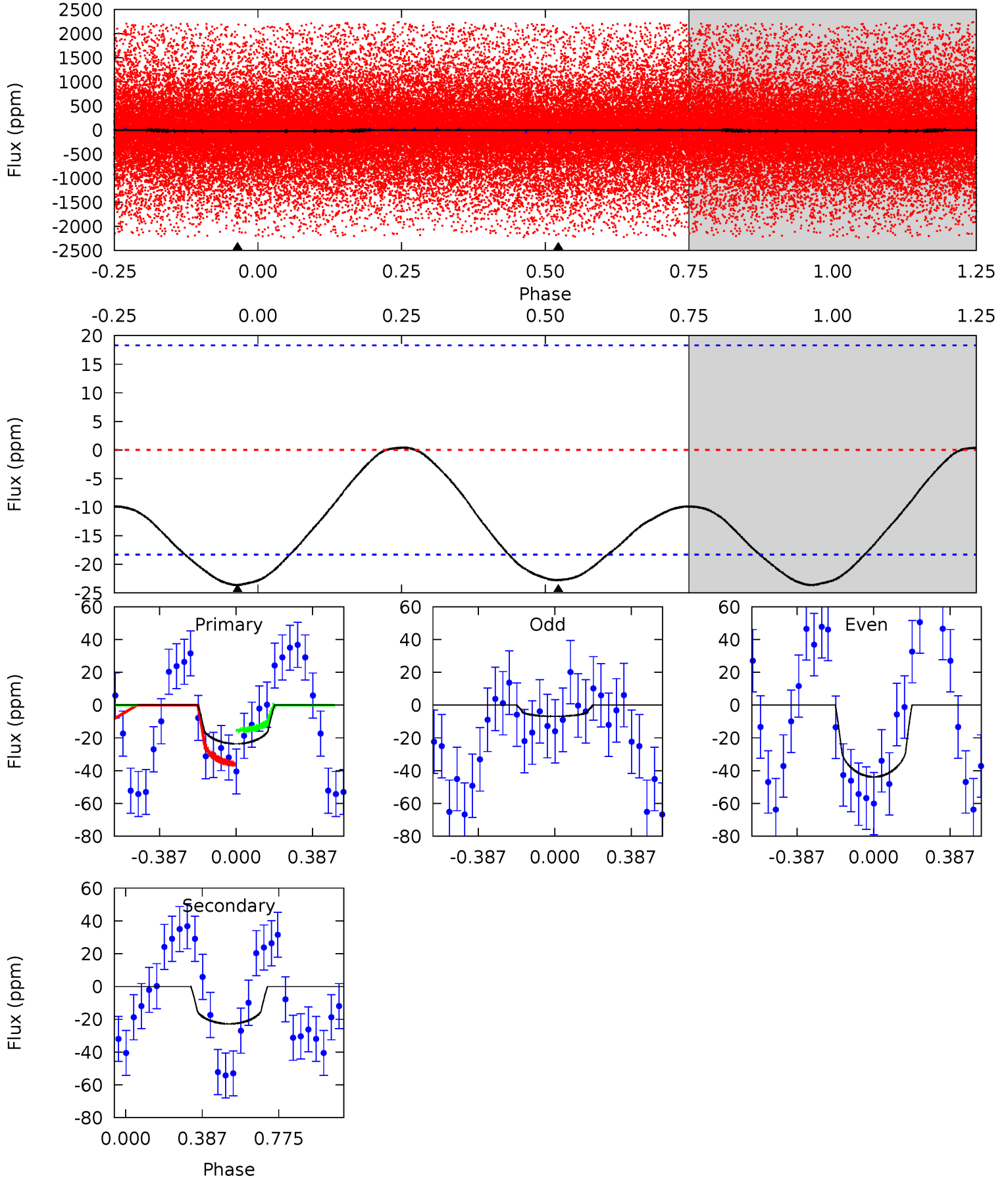
TCE 007461382-01 P= 0.608884 Days  $T_0=131.767369$  (BKJD)



# DV Model-Shift Uniqueness Test

007461382-01, P = 0.608882 Days, E = 131.154225 Days

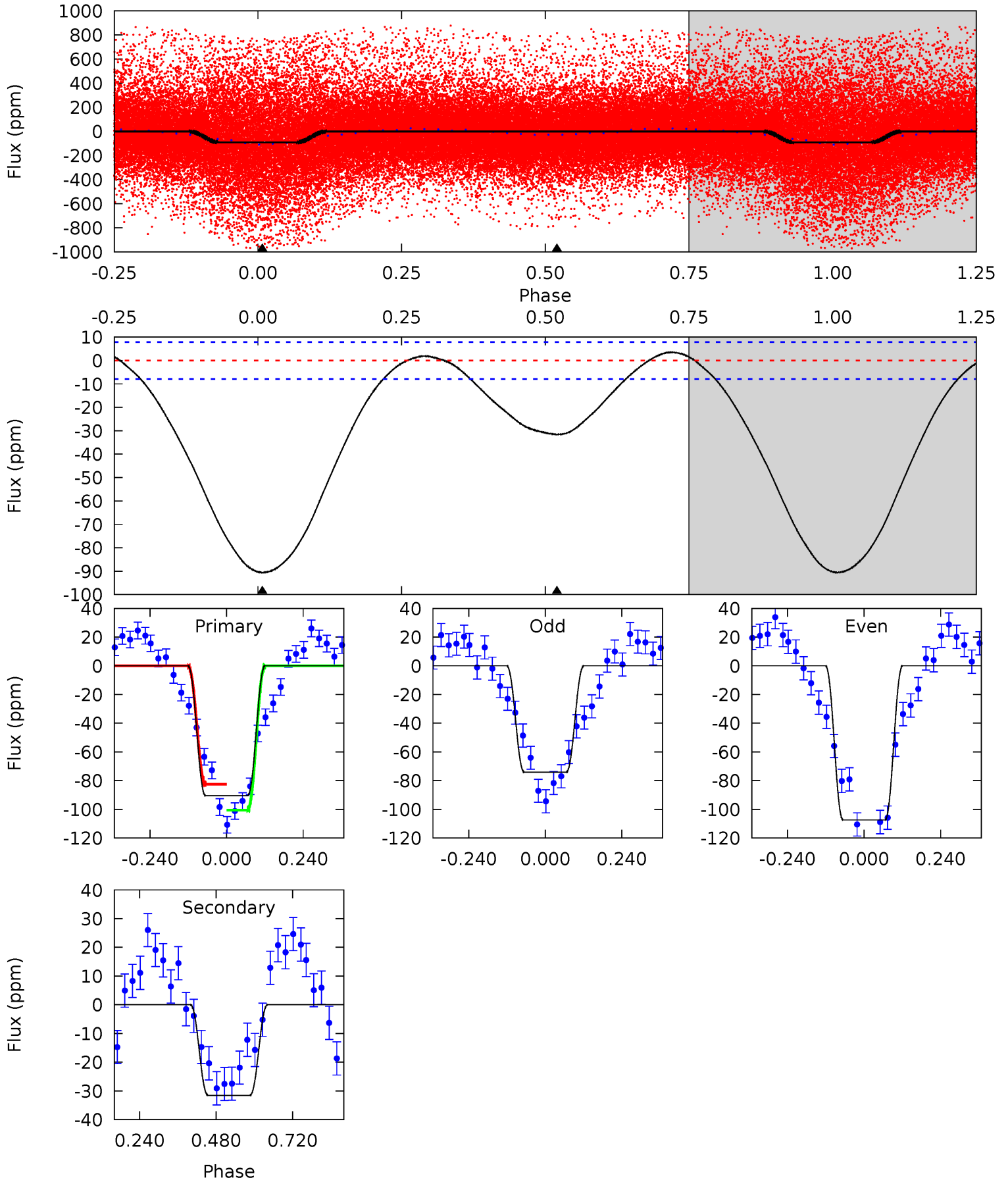
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
5.52	5.32	0	0	4.27	0.86	0.16	5.52	5.52	5.32	5.32	4.36	33.2	0.02	2.45



# Alt Model-Shift Uniqueness Test

007461382-01, P = 0.608884 Days, E = 131.158485 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
50.4	17.5	0	0	4.38	1.18	1.12	50.4	50.4	17.5	17.5	9.28	0.39	0.04	5.07





### Stellar Parameters For KIC 007461382

	$T_{\text{eff}}(K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$6642^{+165}_{-235}$	$4.180^{+0.180}_{-0.180}$	$-0.300^{+0.250}_{-0.300}$	$1.483^{+0.416}_{-0.341}$	$1.222^{+0.171}_{-0.190}$	$0.528^{+0.498}_{-0.255}$
	+2%/-4%	+4%/-4%	+83%/-100%	+28%/-23%	+14%/-16%	+94%/-48%
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 007461382-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	$A_{obs}$
DV	$-23 \pm 4$	$0.78^{+0.77}_{-0.51}$	$4050^{+301}_{-271}$	$6388^{+7124}_{-1980}$	$4.531^{+30.382}_{-3.440}$
Alt.	$-32 \pm 2$	$1.32^{+0.83}_{-0.75}$	$4049^{+323}_{-269}$	$5320^{+3272}_{-1171}$	$2.247^{+9.799}_{-1.411}$

$T_{max}$  = 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

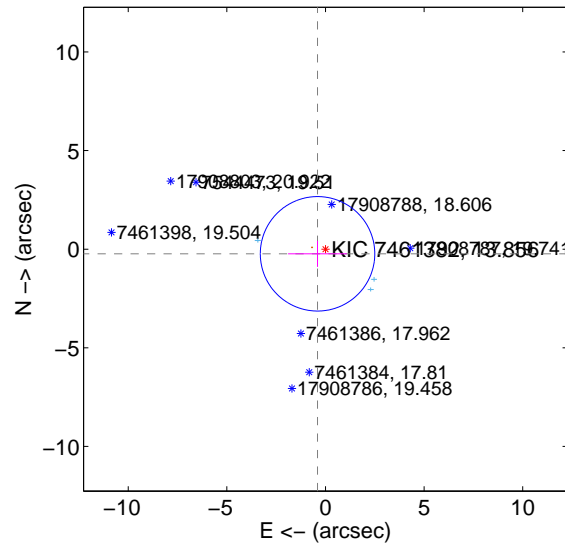
Supplemental centroid analysis for 007461382-01. Kepler magnitude: 13.86. Transit SNR 1.80

There are 3 quarters with good PRF difference image offsets

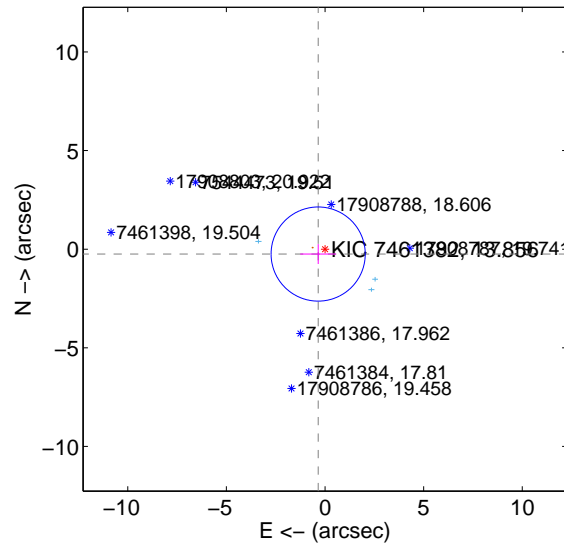
The direct PRF centroid is offset from the target star catalog position by about 0.05 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.466 \pm 0.967$	0.48	$0.402 \pm 1.492$	$-0.235 \pm 0.664$
PRF-fit source offset from KIC position	$0.426 \pm 0.796$	0.54	$0.348 \pm 0.907$	$-0.247 \pm 0.506$
photometric centroid source offset	$5.65 \pm 1.52$	3.71	$1.50 \pm 1.62$	$5.45 \pm 1.52$

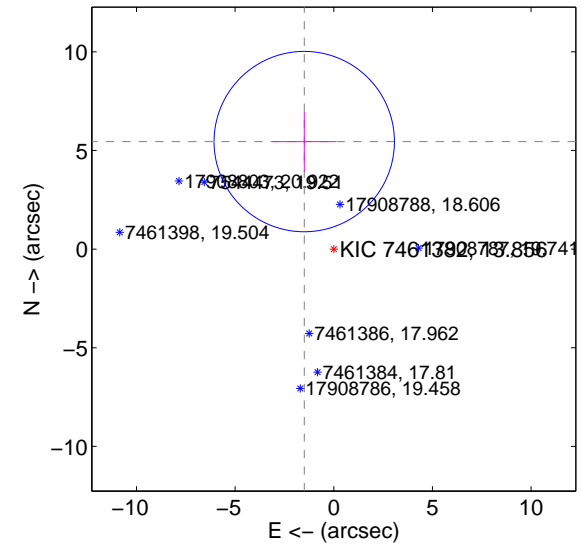
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

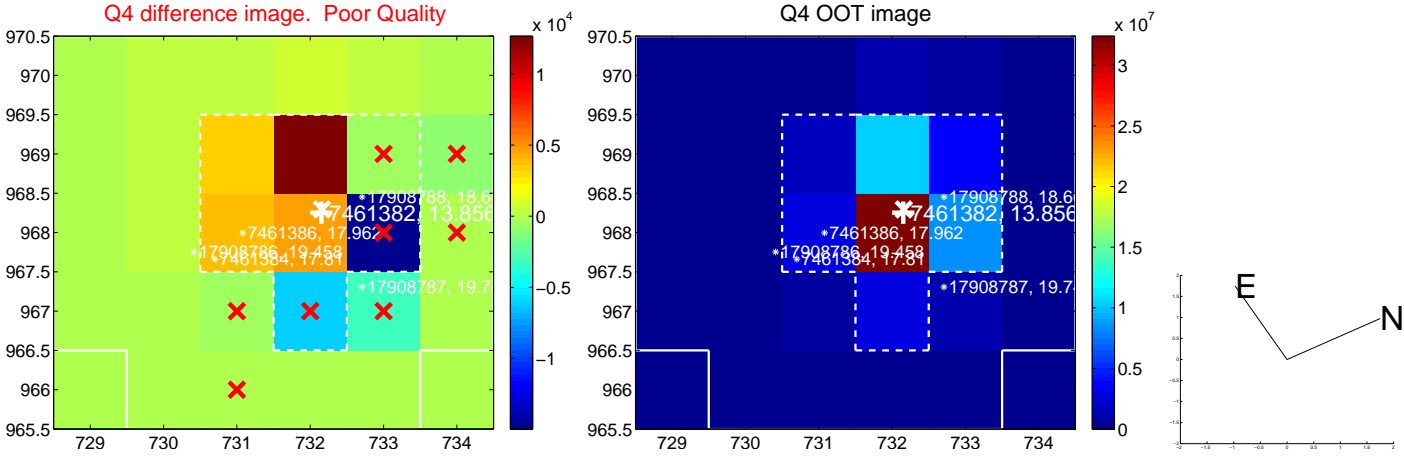
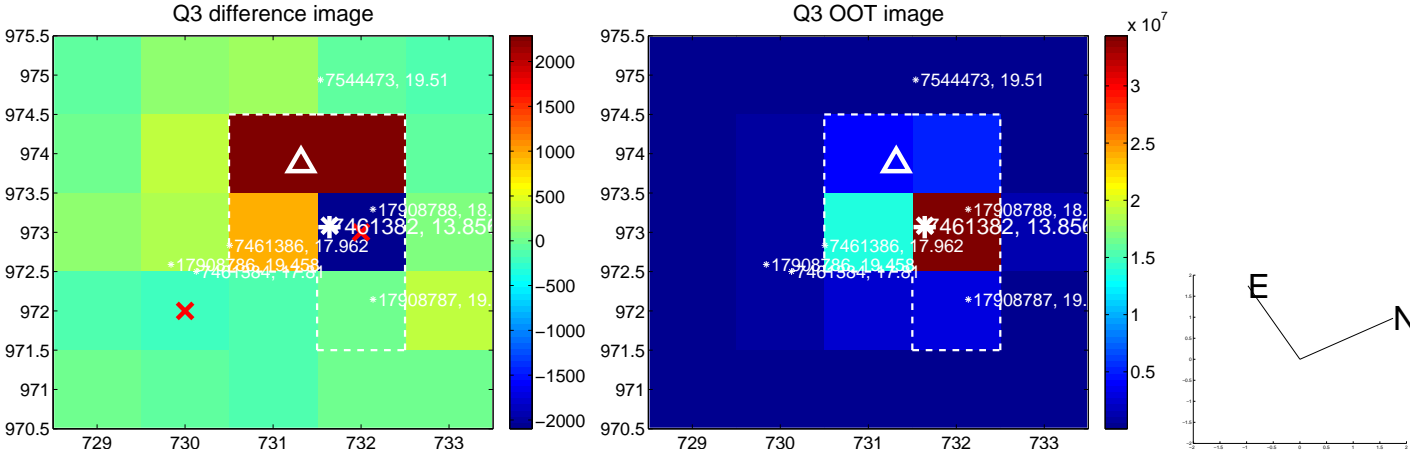
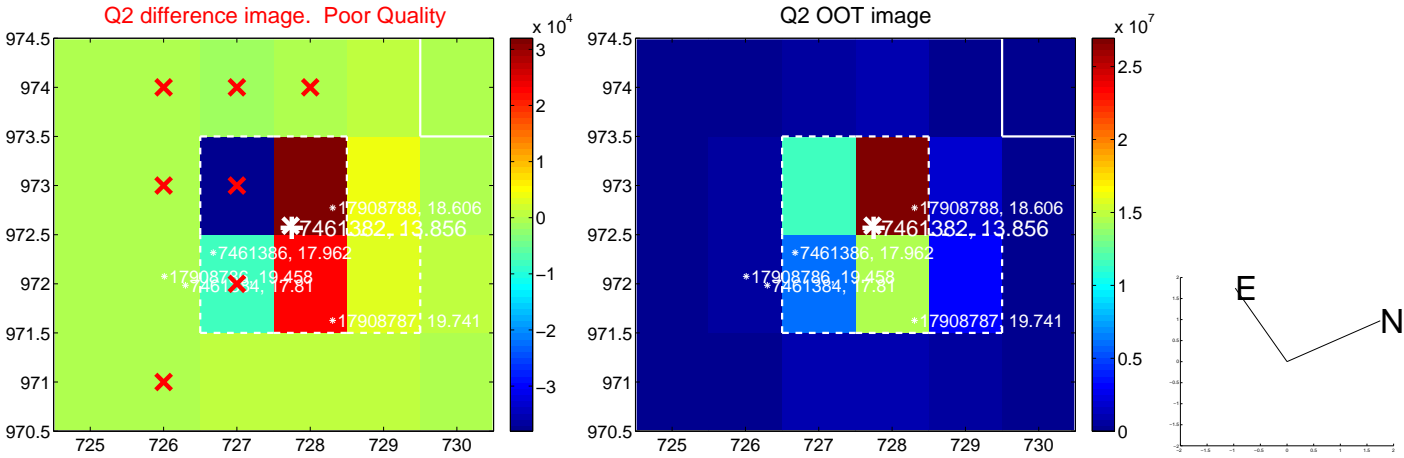
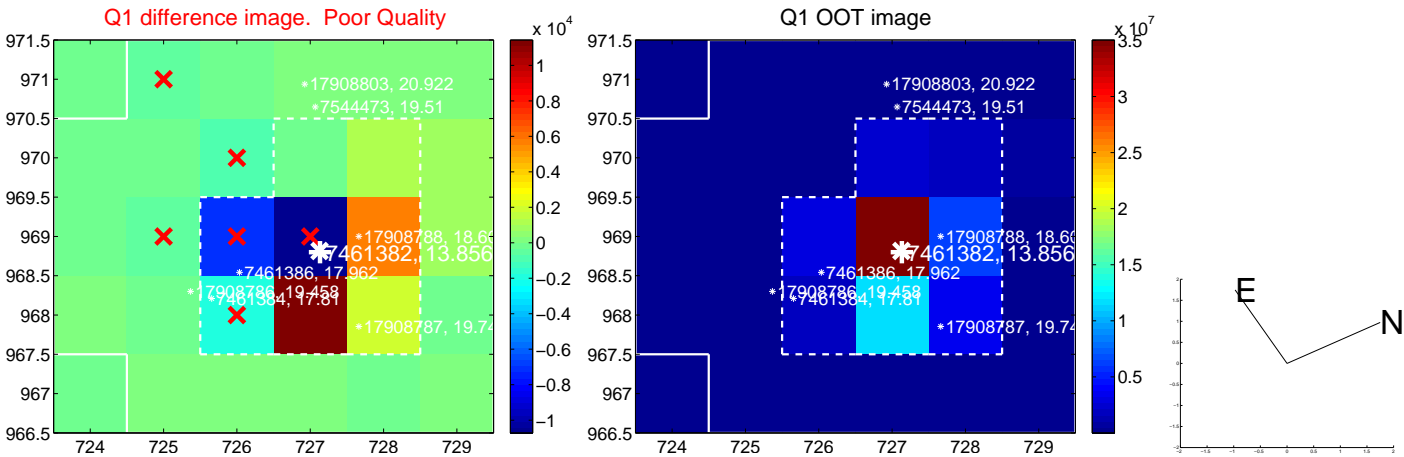


offset from photometric centroids

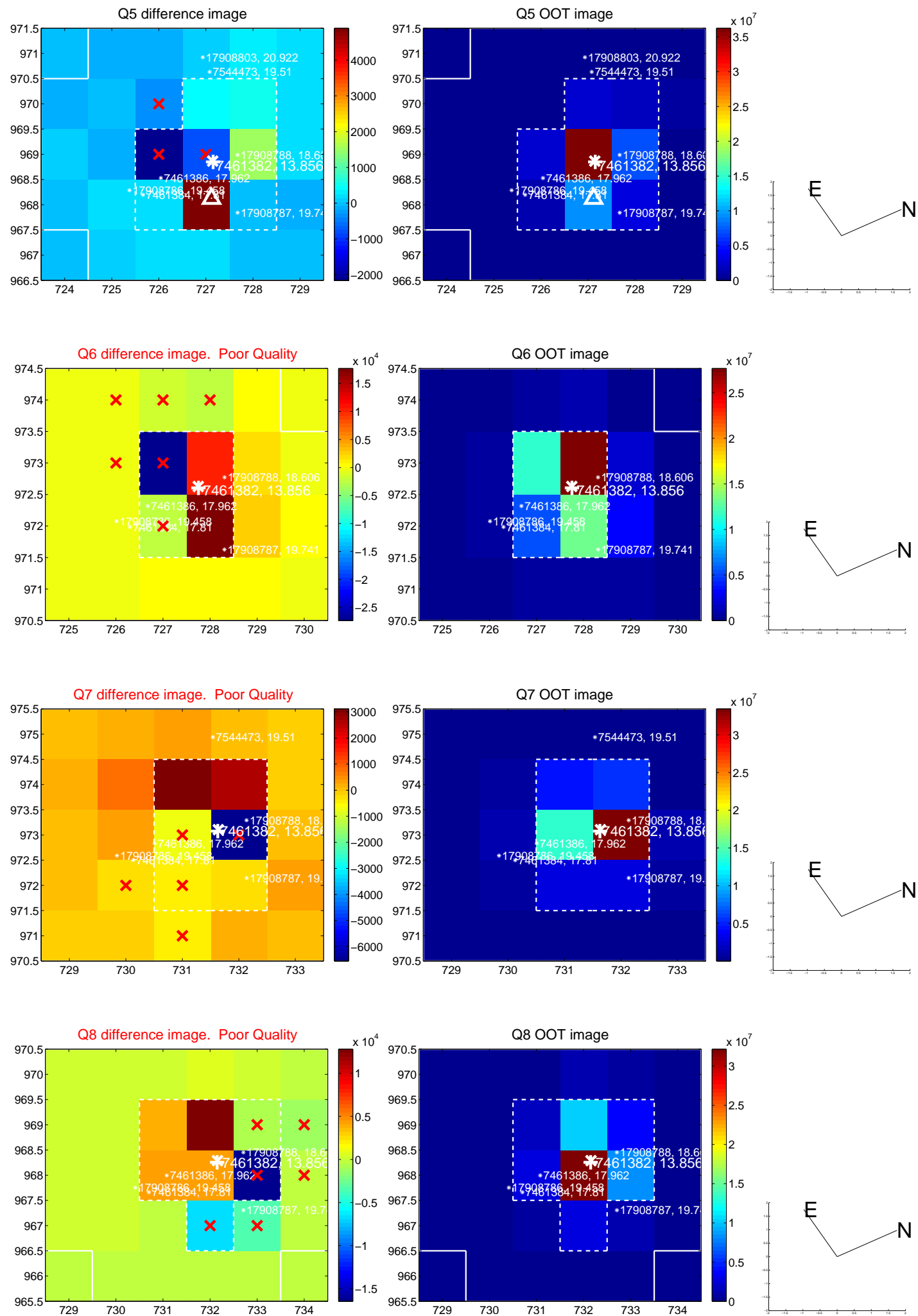


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: three-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

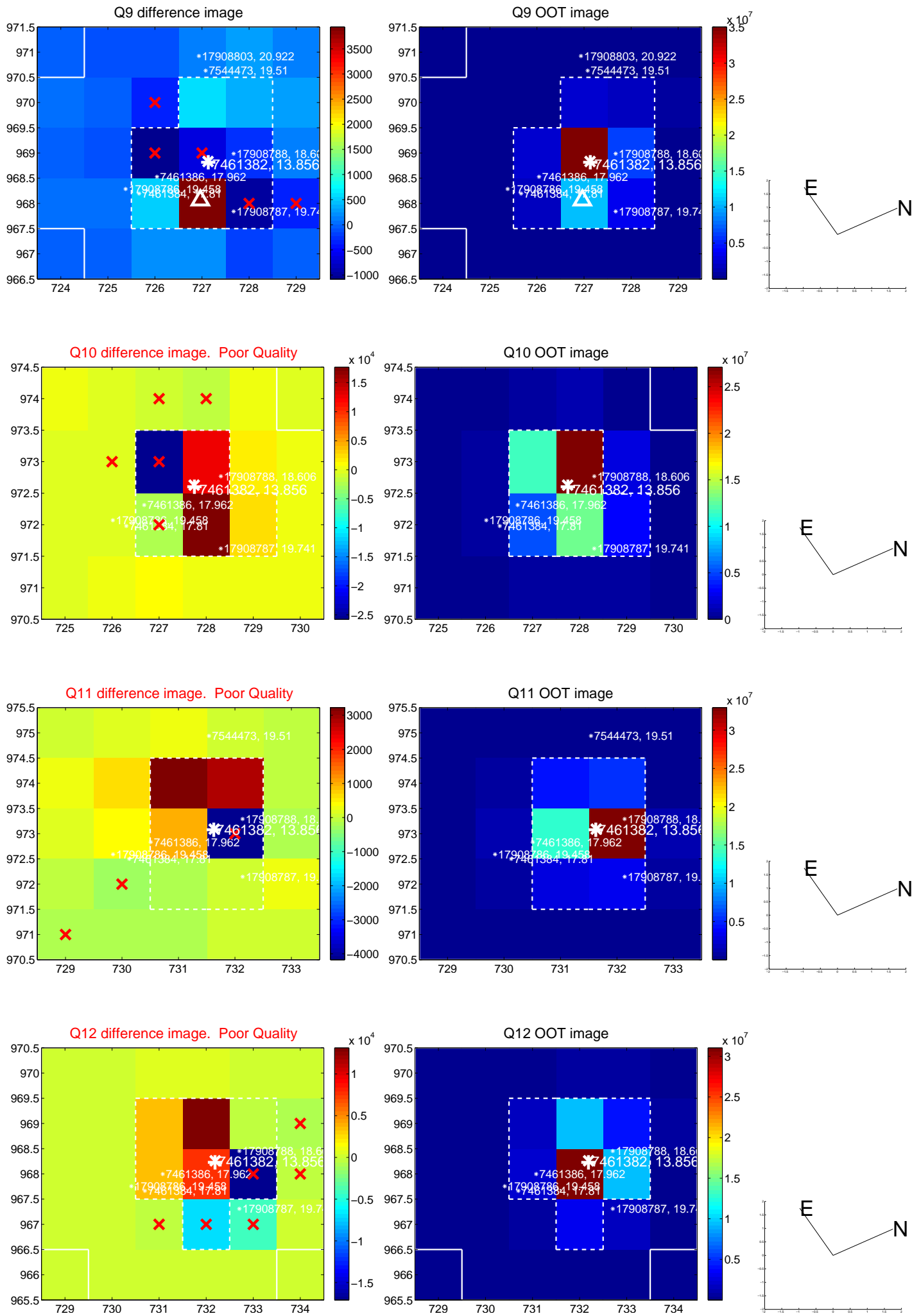


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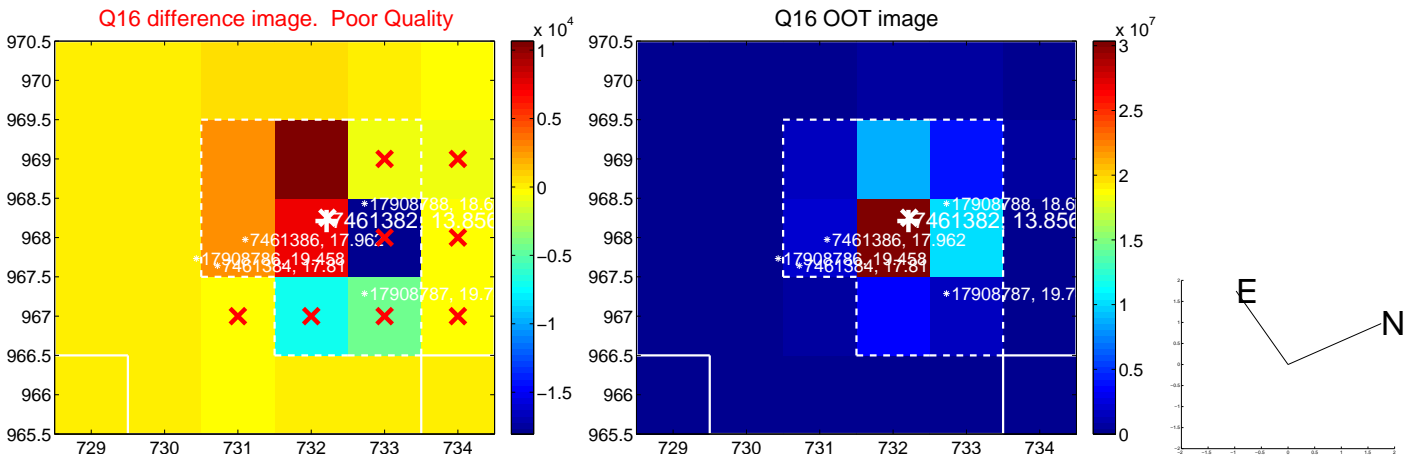
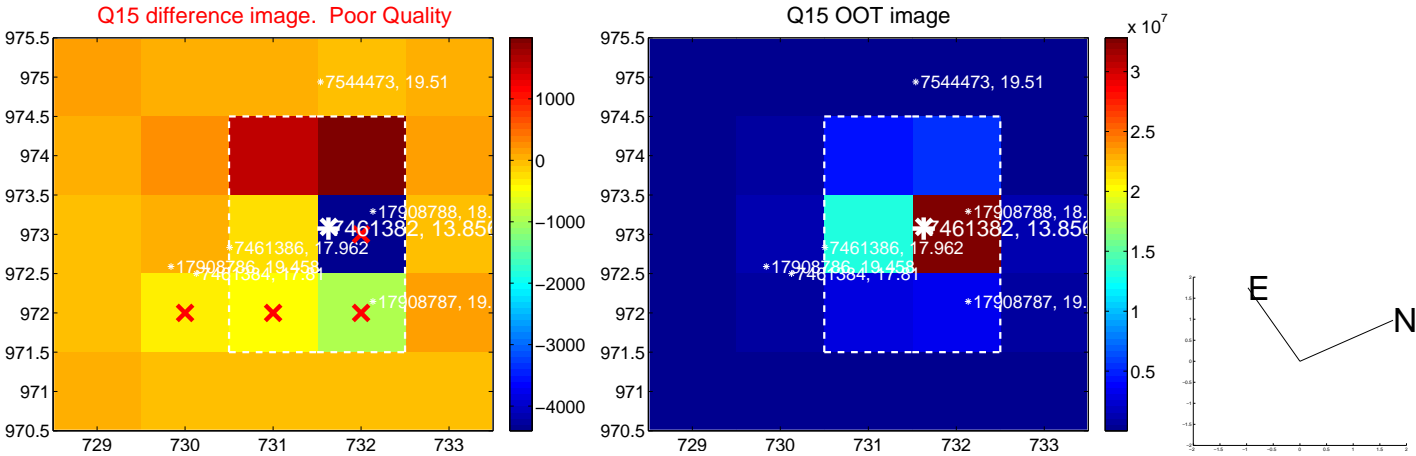
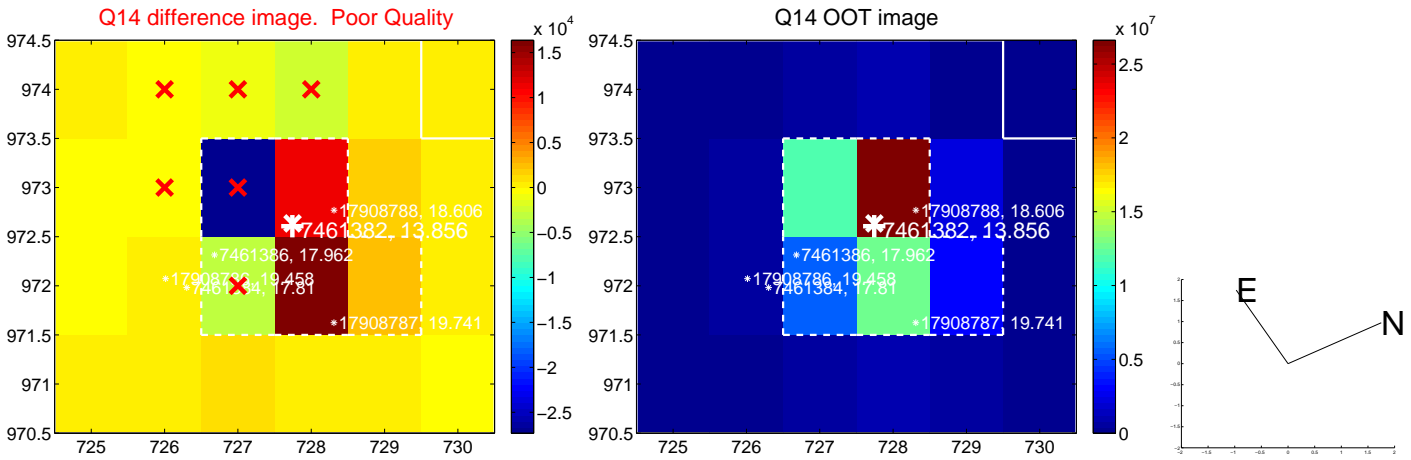
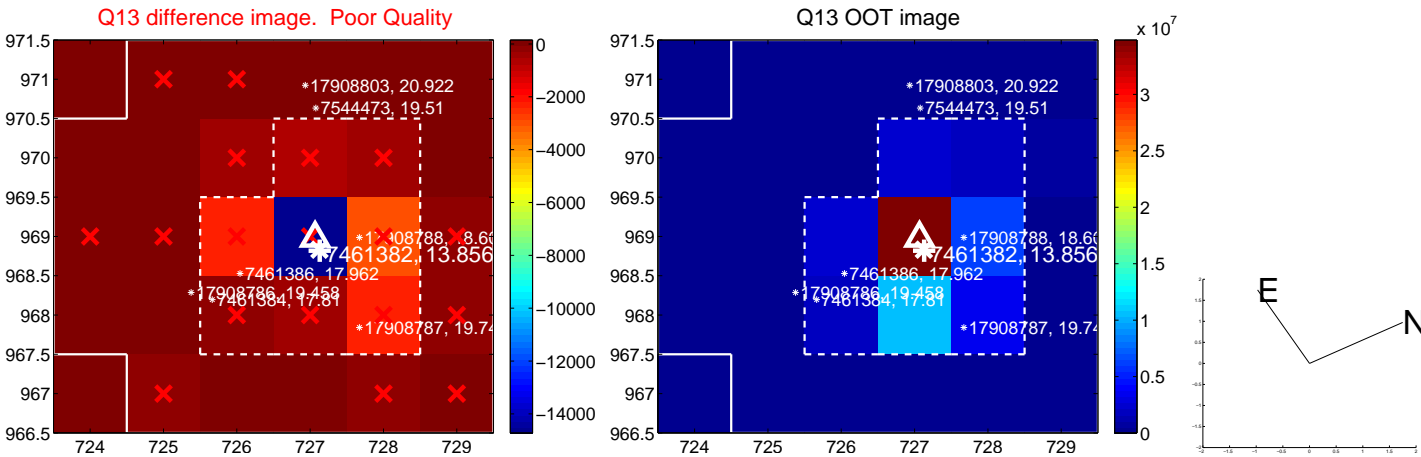




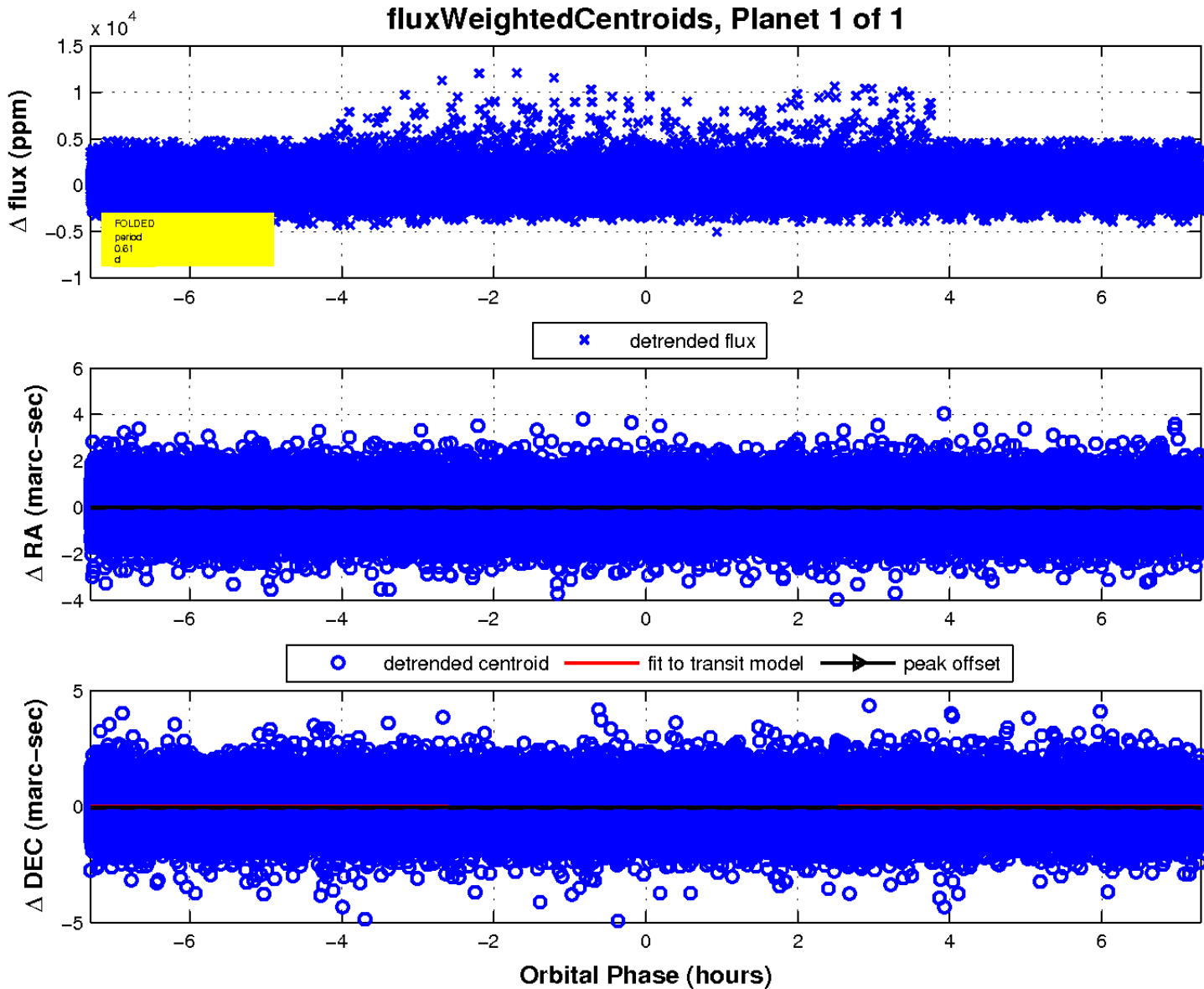
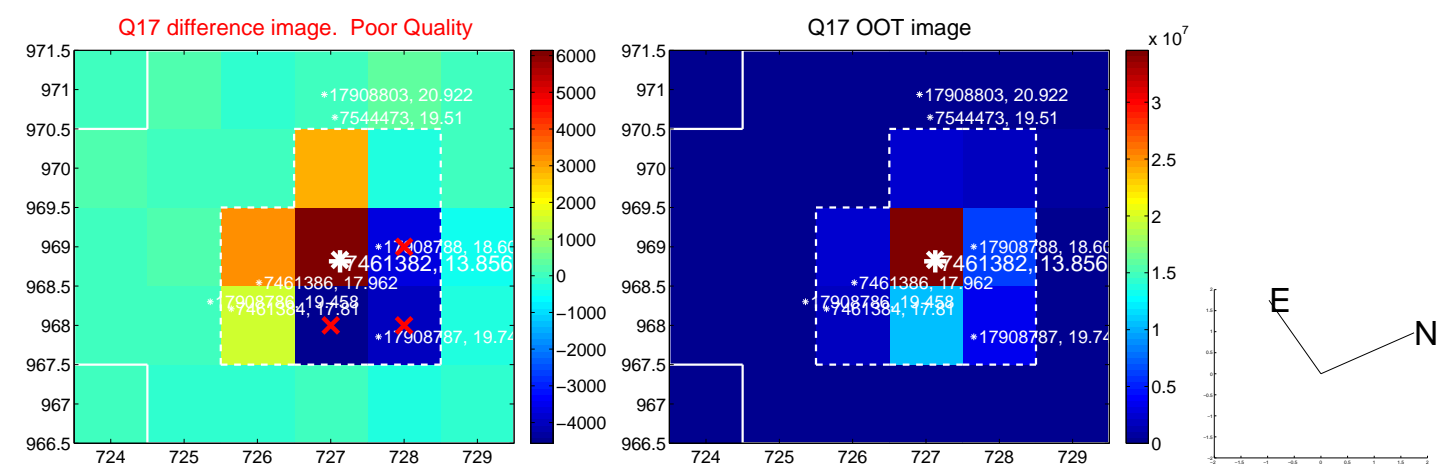
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white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



UKIRT Image

Declination

