

# KIC 011457198

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
011457198-01	OBS	No	0.559098	131.863435	59.2	6.019	11.1	10.7	2.07	7505	1.85	48923.72

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
011457198-01	OBS	FP	0.00	1	0	0	0	LPP_DV

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

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

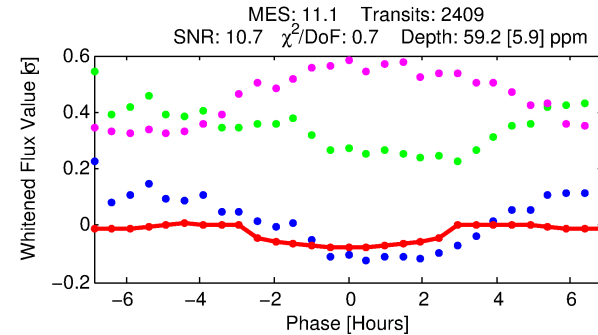
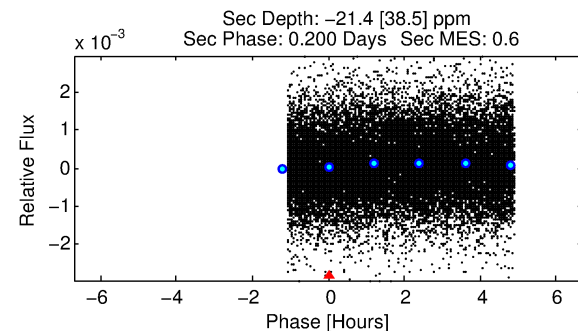
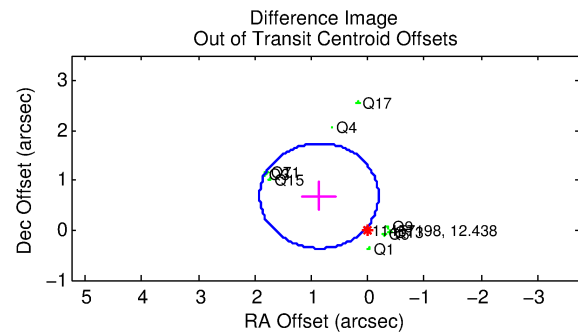
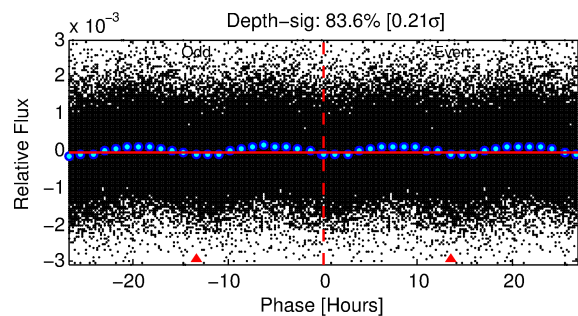
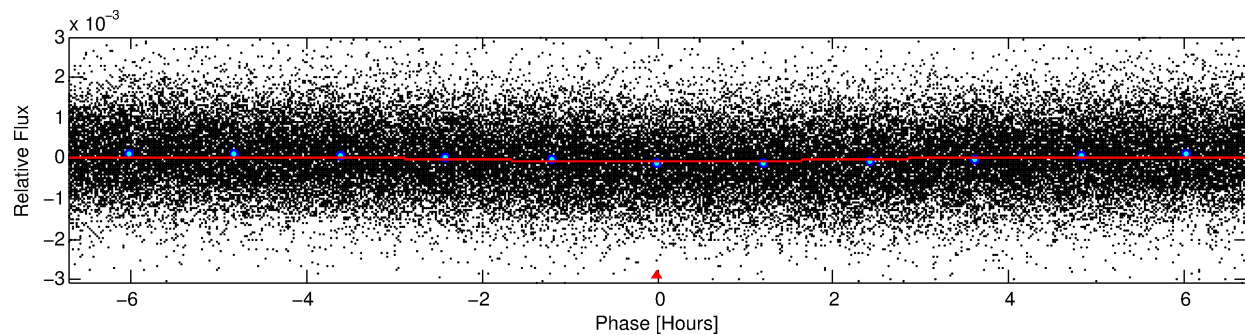
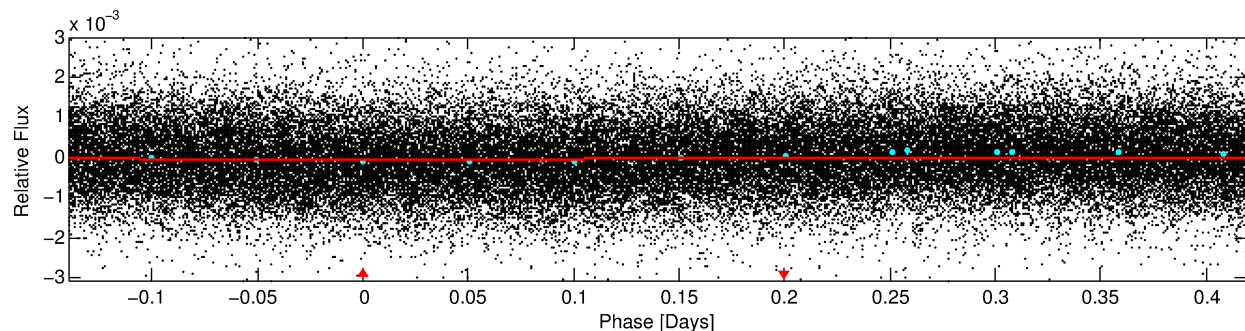
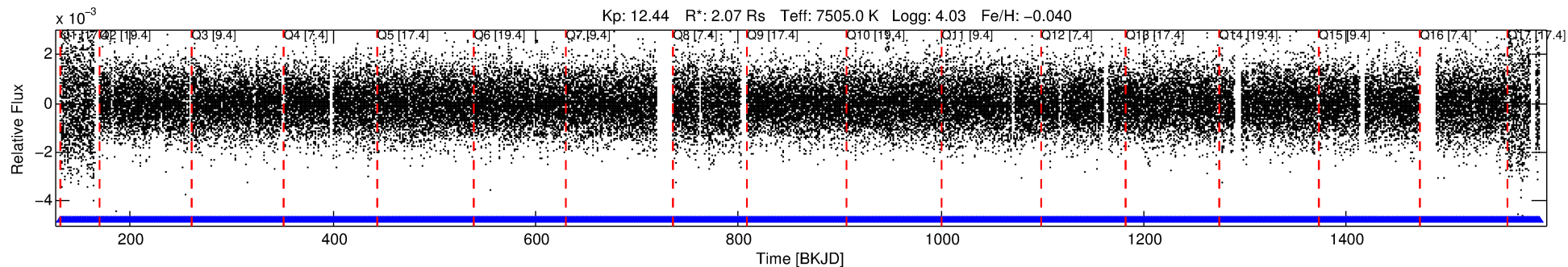
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 011457198-01

No Significant Match Found

# DV One-Page Summary

KIC: 11457198 Candidate: 1 of 1 Period: 0.559 d



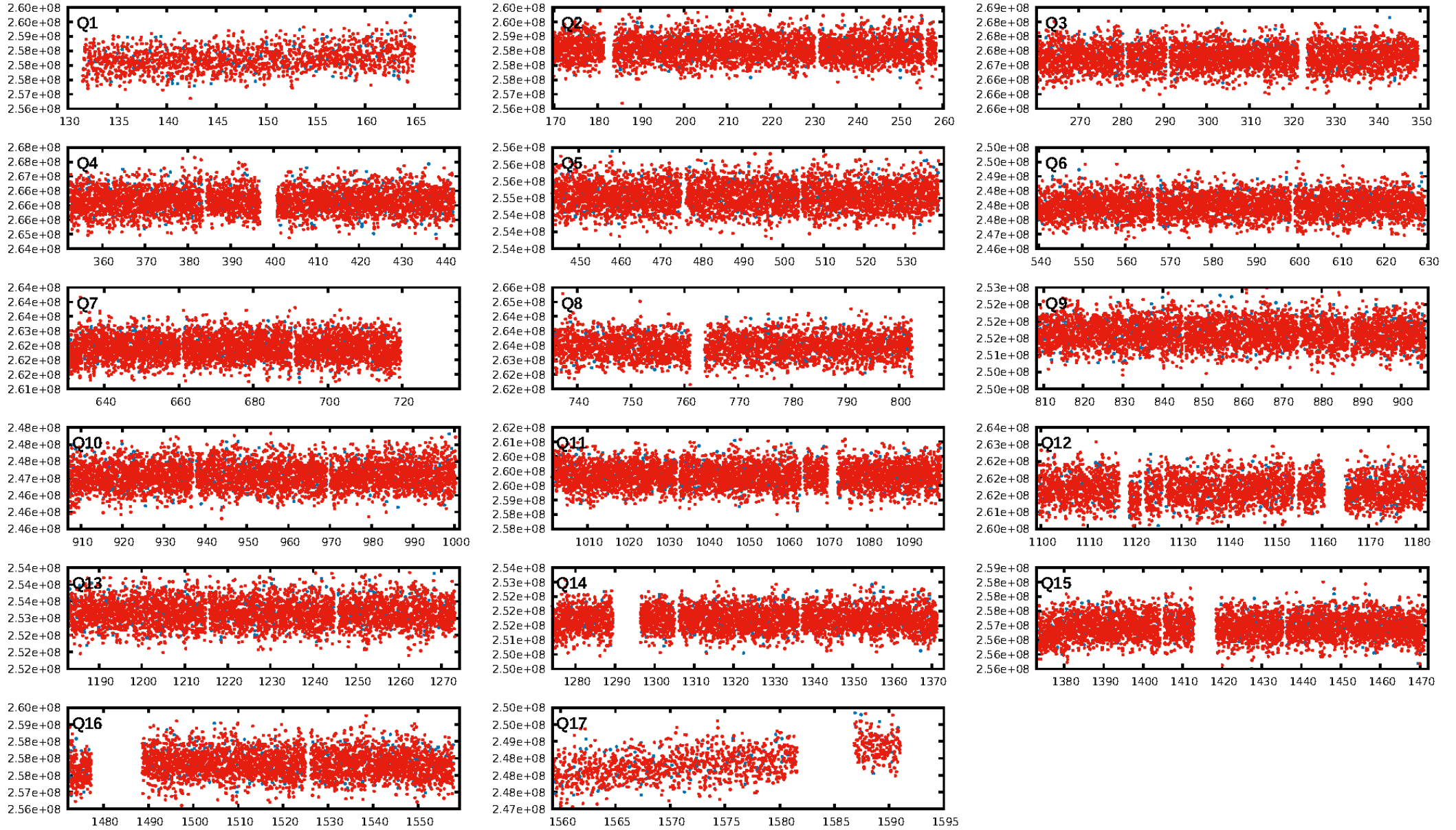
## DV Fit Results:

Period = 0.55910 [0.00001] d  
Epoch = 131.8634 [0.0044] BKJD  
Rp/R\* = 0.0082 [0.0008]  
a/R\* = 1.01 [0.01]  
b = 0.90 [0.11]  
Seff = 48923.72 [18176.06]  
Teff = 3792 [352] K  
Rp = 1.85 [0.49] Re  
a = 0.0158 [0.0035] AU  
Ag = N/A  
Teffp = N/A

## DV Diagnostic Results:

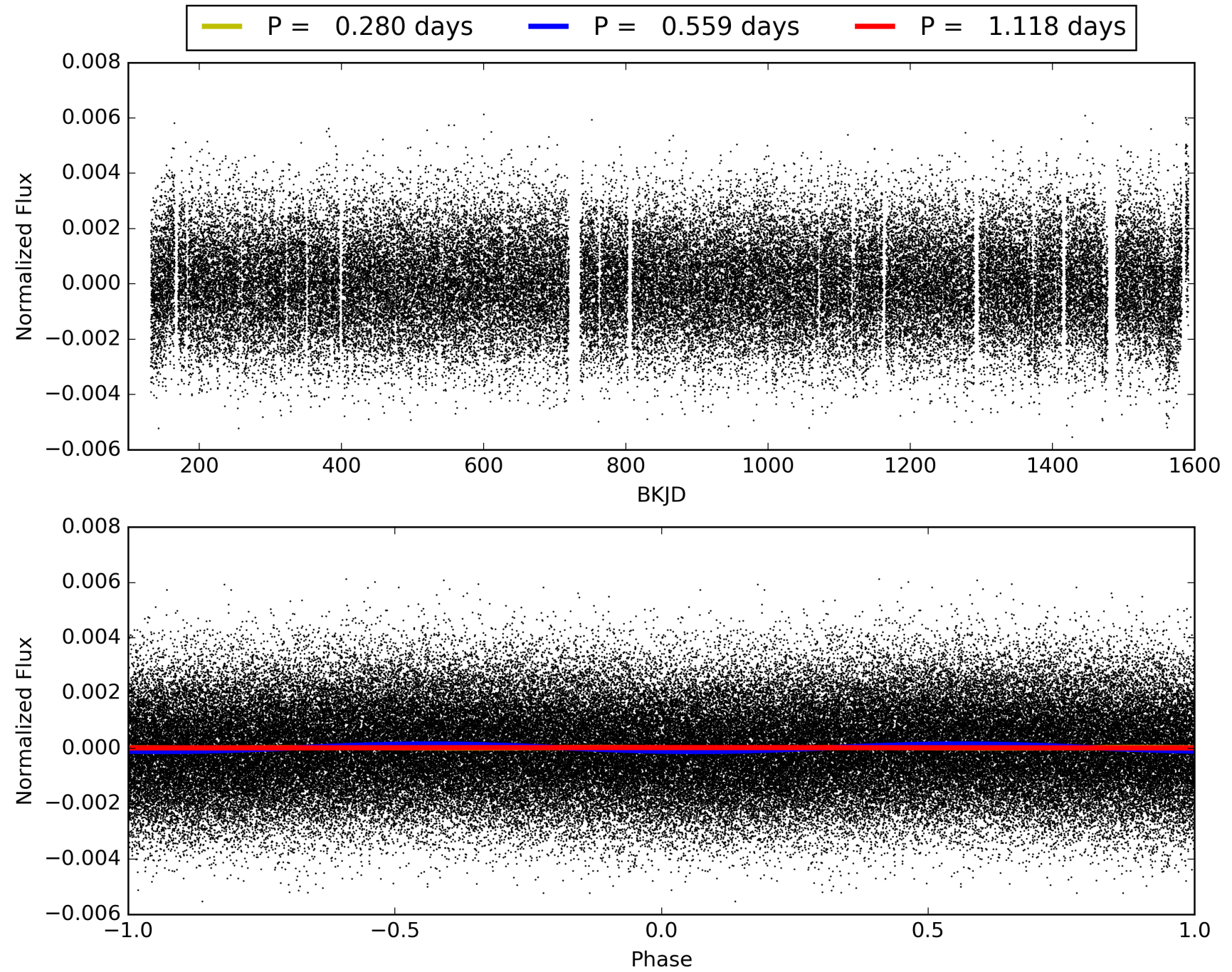
ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: N/A  
ModelChiSquareGof-sig: N/A  
Bootstrap-pfa: N/A  
RollingBand-fgt: 1.00 [2300/2300]  
GhostDiagnostic-chr: 1.689  
Centroid-sig: 0.0%  
Centroid-so: 0.709 arcsec [5.41 $\sigma$ ]  
OotOffset-rm: 1.103 arcsec [3.15 $\sigma$ ]  
KicOffset-rm: 1.041 arcsec [2.61 $\sigma$ ]  
OotOffset-st: 0/4/1/5 [10]  
KicOffset-st: 0/4/1/5 [10]  
DiffImageQuality-fgm: 1.00 [10/10]  
DiffImageOverlap-fno: 1.00 [17/17]

# TCE 011457198-01, PDC Light Curves



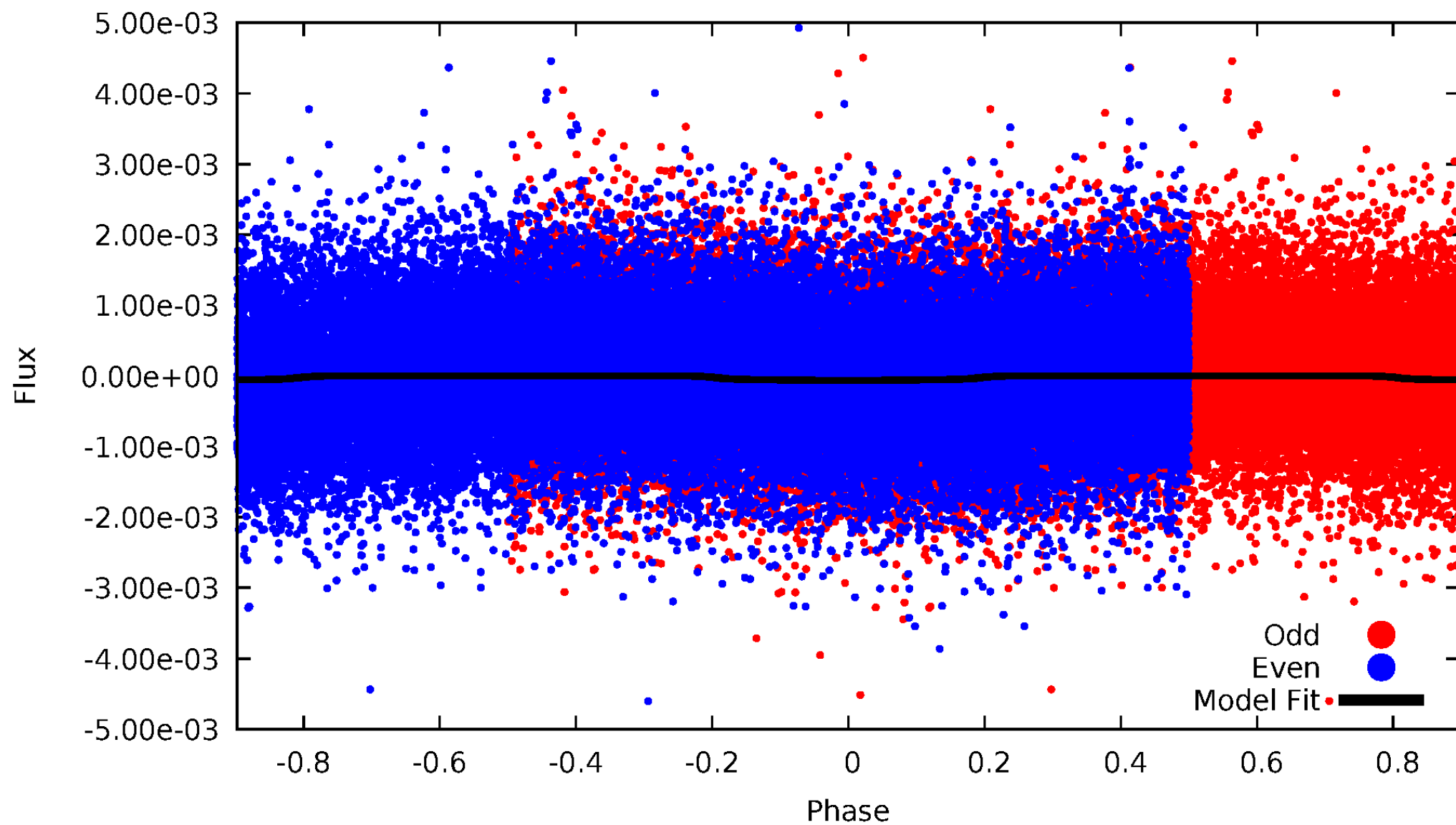


# TCE 011457198-01



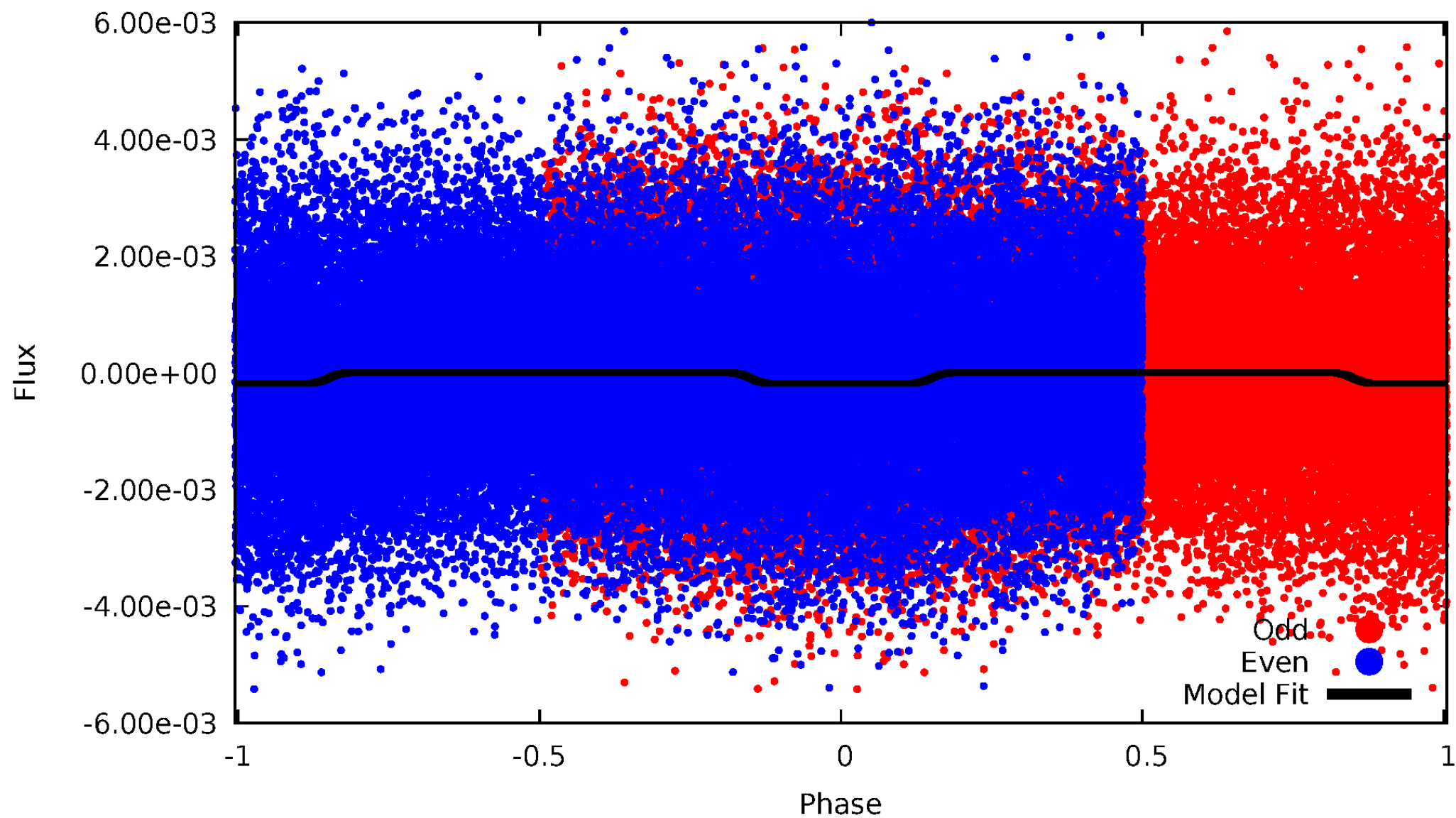
# DV Odd/Even

TCE 011457198-01



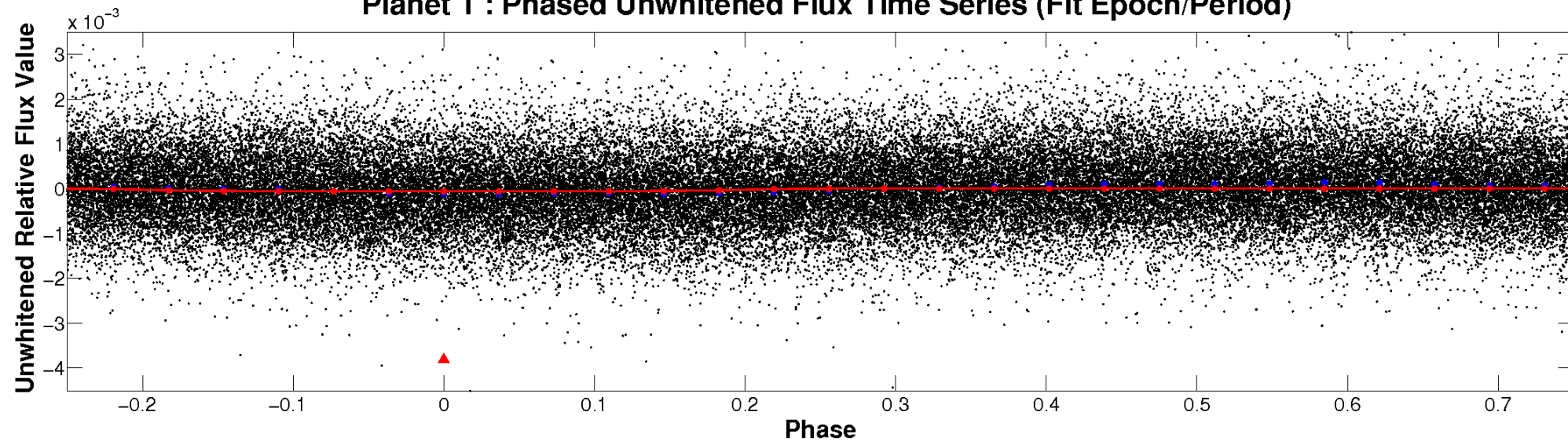
# ALT Odd/Even

TCE 011457198-01

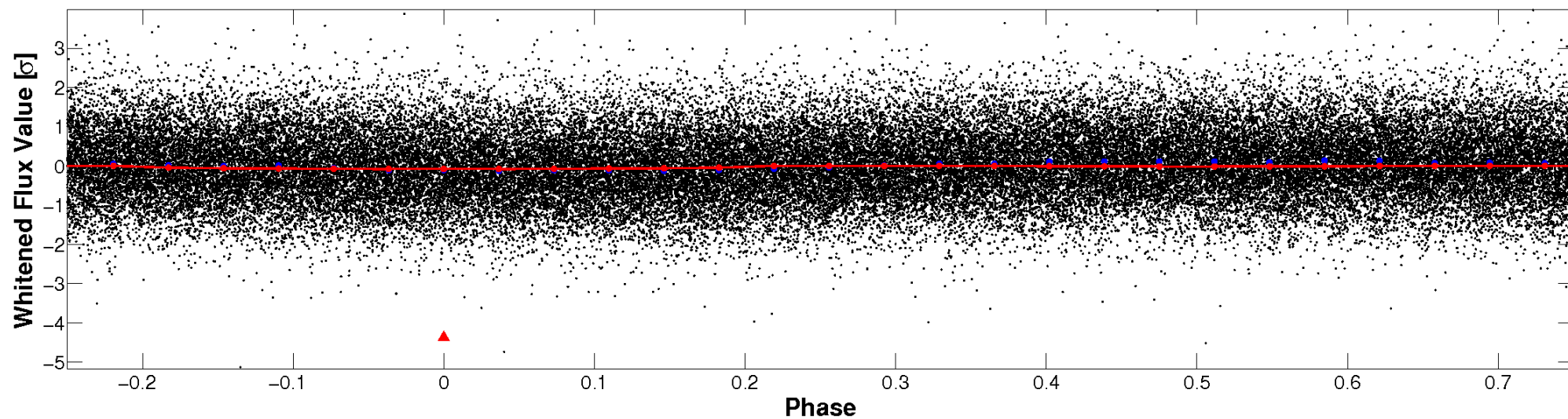


# Non-Whitened Vs. Whitened Light Curve

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



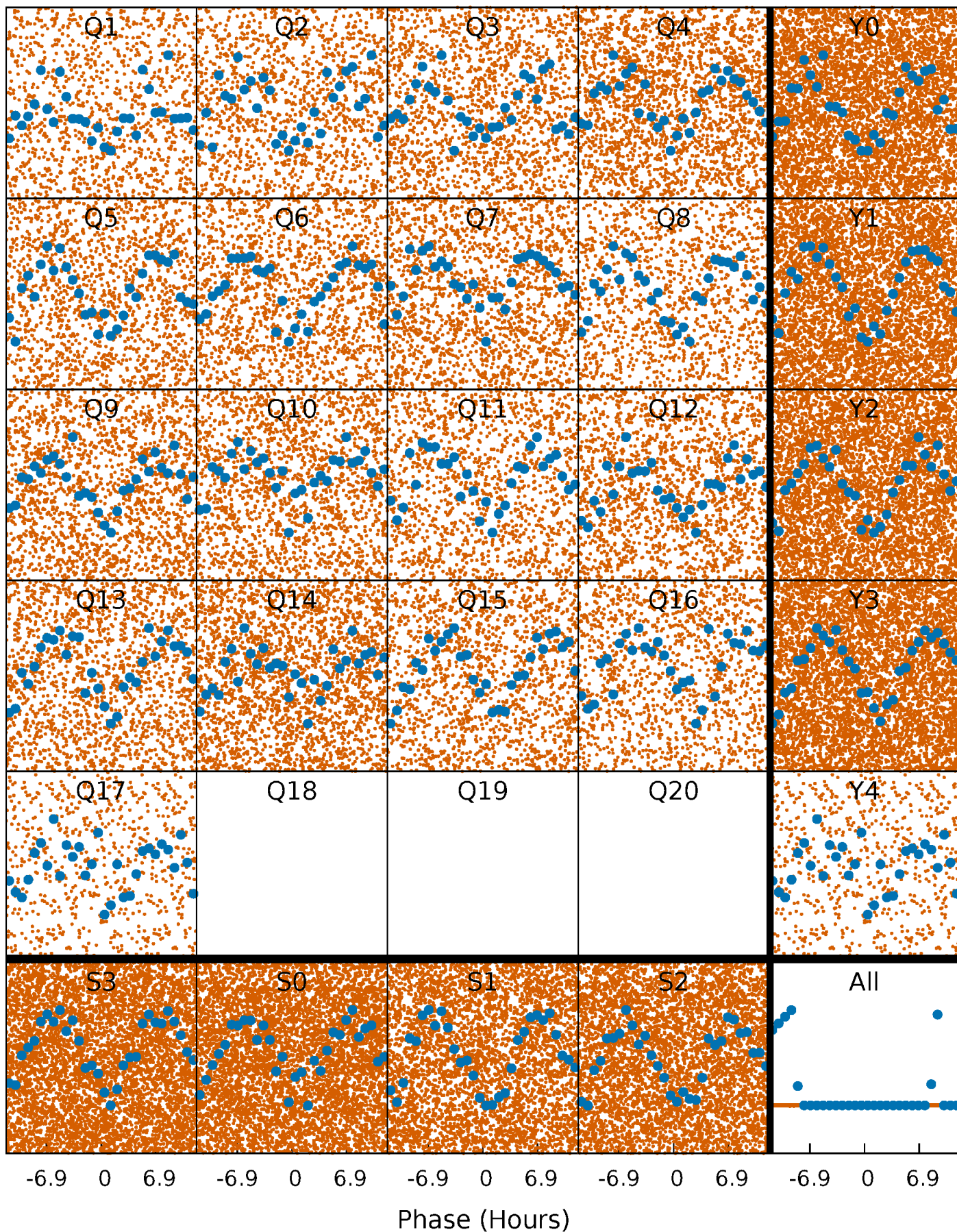
**Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)**





# PDC Quarter-Phased Transit Curves

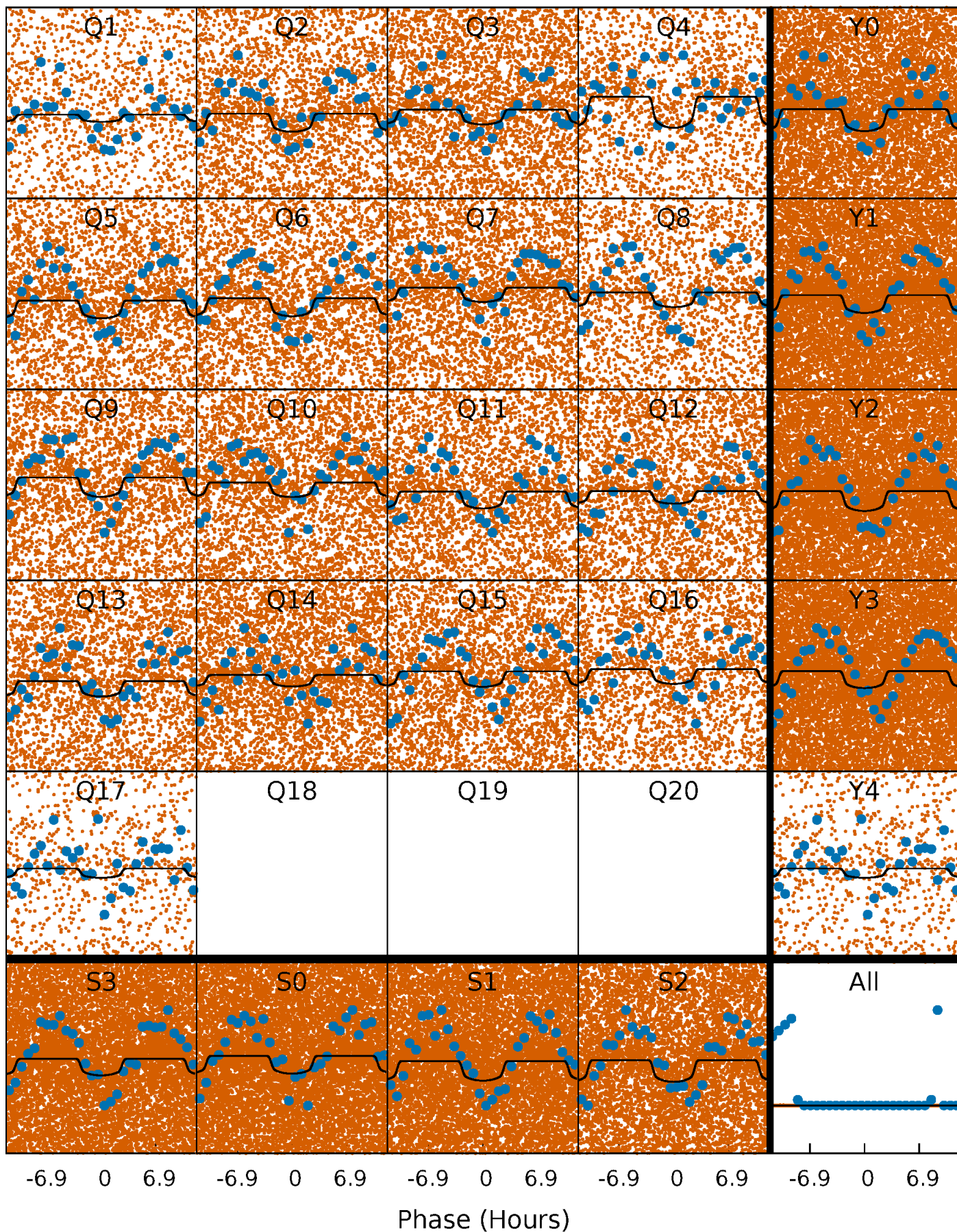
TCE 011457198-01 P= 0.559098 Days  $T_0=131.863435$  (BKJD)





# DV Quarter-Phased Transit Curves

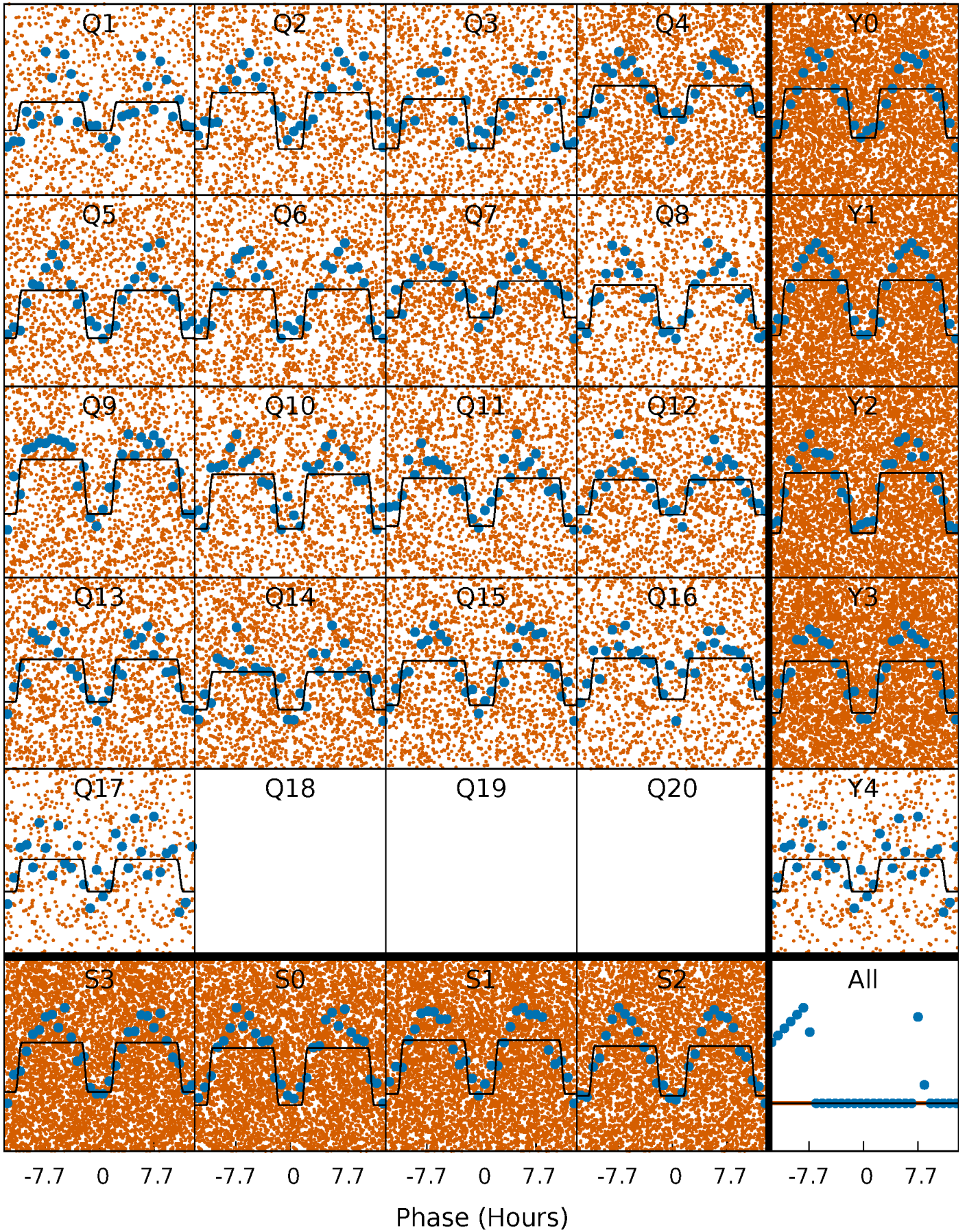
TCE 011457198-01 P= 0.559098 Days  $T_0=131.863435$  (BKJD)





# Alt. Detrend Quarter-Phased Transit Curves

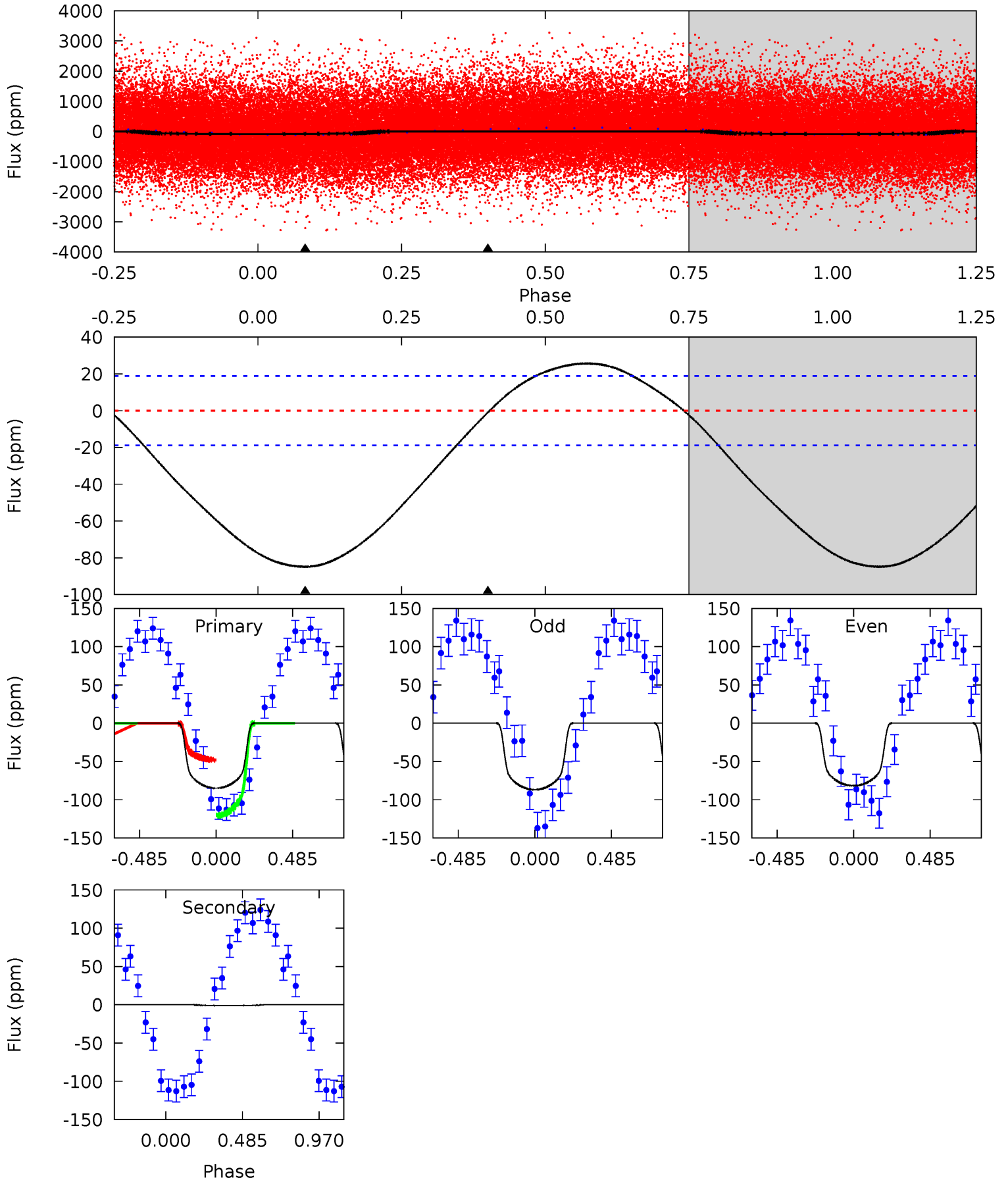
TCE 011457198-01 P= 0.559146 Days  $T_0=131.838880$  (BKJD)



# DV Model-Shift Uniqueness Test

011457198-01, P = 0.559098 Days, E = 131.304337 Days

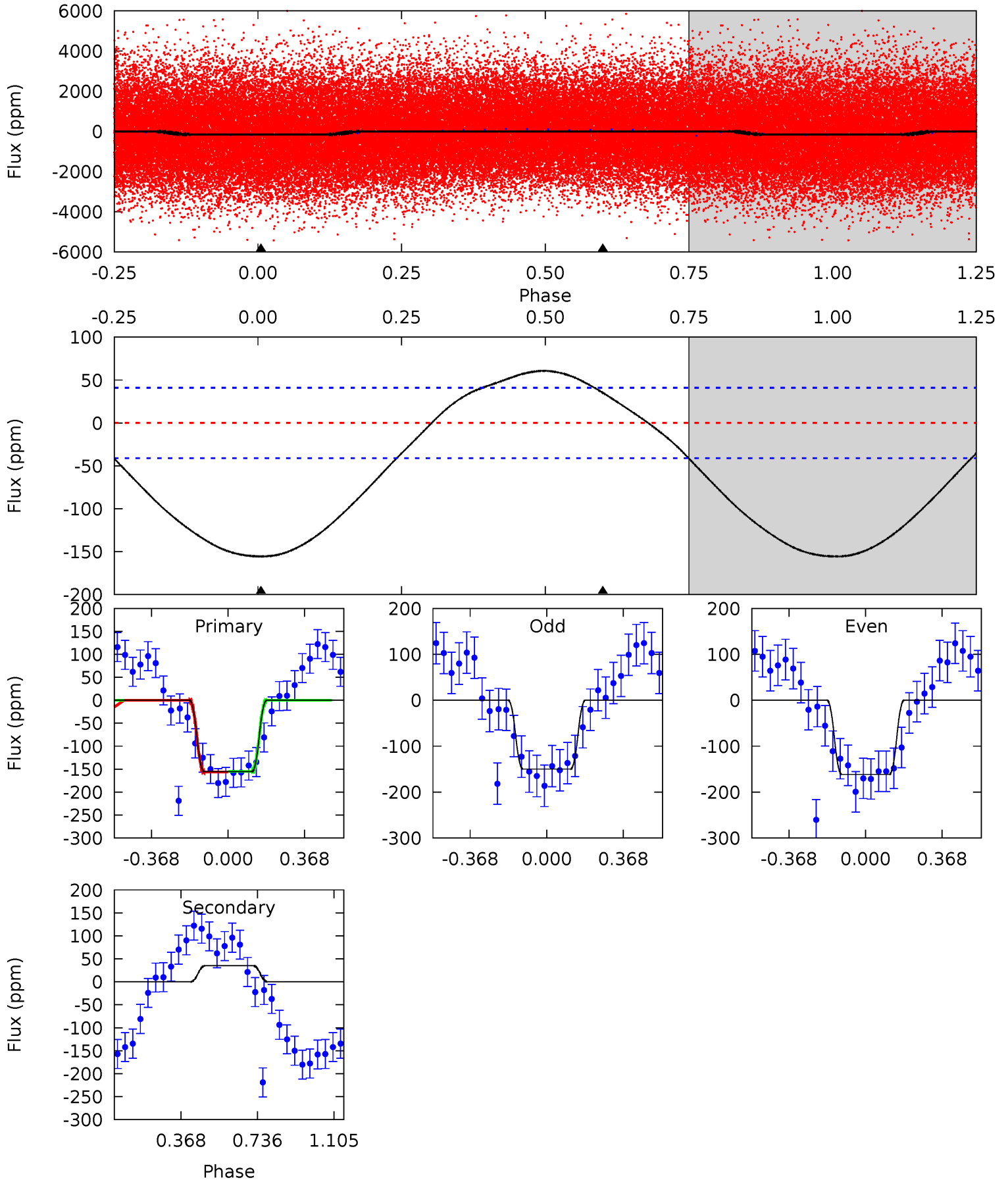
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
19.0	0.22	0	0	4.22	0.70	1.82	19.0	19.0	0.22	0.22	0.58	1.21	0.23	8.15



# Alt Model-Shift Uniqueness Test

011457198-01, P = 0.559146 Days, E = 131.279734 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
16.2	-3.66	0	0	4.28	0.90	1.95	16.2	16.2	-3.66	-3.66	0.61	1.03	0.28	0.08





### Stellar Parameters For KIC 011457198

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$7505^{+209}_{-314}$	$4.031^{+0.187}_{-0.153}$	$-0.040^{+0.200}_{-0.350}$	$2.074^{+0.517}_{-0.517}$	$1.682^{+0.200}_{-0.275}$	$0.266^{+0.278}_{-0.117}$
	+3%/-4%	+5%/-4%	+500%/-875%	+25%/-25%	+12%/-16%	+105%/-44%
Source	KIC0	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 011457198-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	$A_{obs}$
DV	$-1 \pm 4$	$1.83^{+0.31}_{-0.30}$	$5240^{+412}_{-379}$	$-4310^{+1018}_{-530}$	$0.049^{+0.194}_{-0.179}$
Alt.	$35 \pm 10$	$3.00^{+0.49}_{-0.42}$	$5258^{+371}_{-368}$	$-5494^{+285}_{-316}$	$-0.529^{+0.181}_{-0.239}$

$T_{max}$  = 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

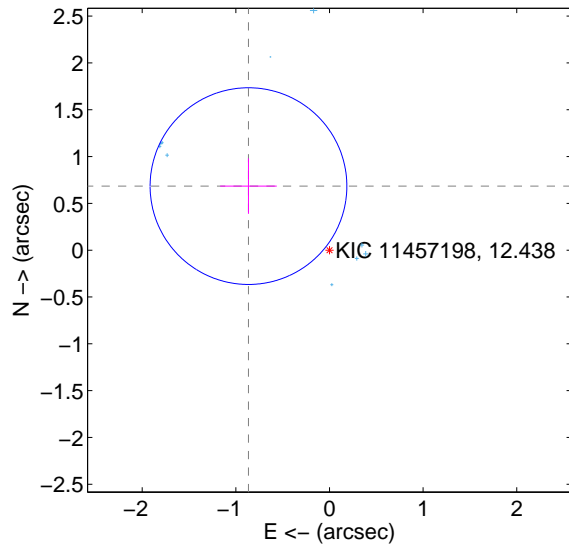
Supplemental centroid analysis for 011457198-01. Kepler magnitude: 12.44. Transit SNR 10.69

There are 10 quarters with good PRF difference image offsets

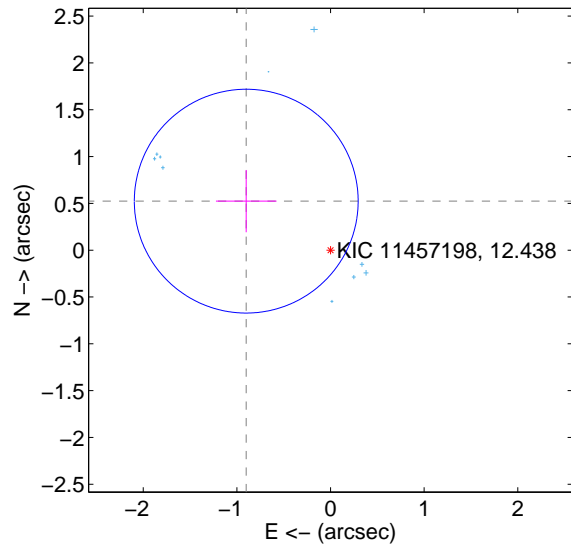
The direct PRF centroid is offset from the target star catalog position by about 0.20 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	<b><math>1.103 \pm 0.350</math></b>	<b>3.15</b>	$0.865 \pm 0.302$	$0.684 \pm 0.295$
PRF-fit source offset from KIC position	$1.041 \pm 0.398$	2.61	$0.900 \pm 0.324$	$0.524 \pm 0.333$
photometric centroid source offset	<b><math>0.71 \pm 0.13</math></b>	<b>5.41</b>	$-0.14 \pm 0.11$	$-0.70 \pm 0.13$

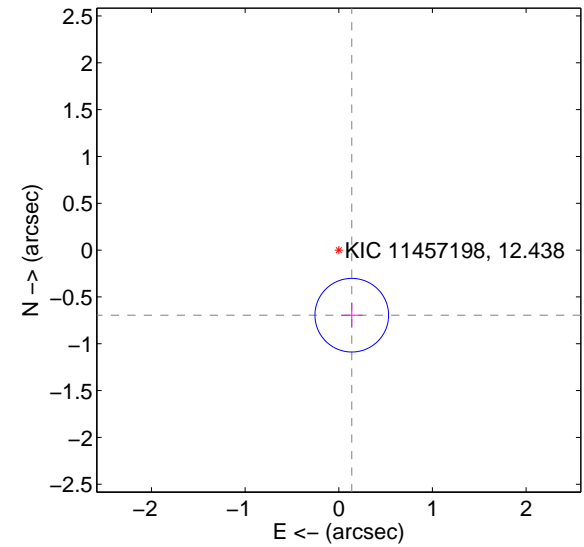
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

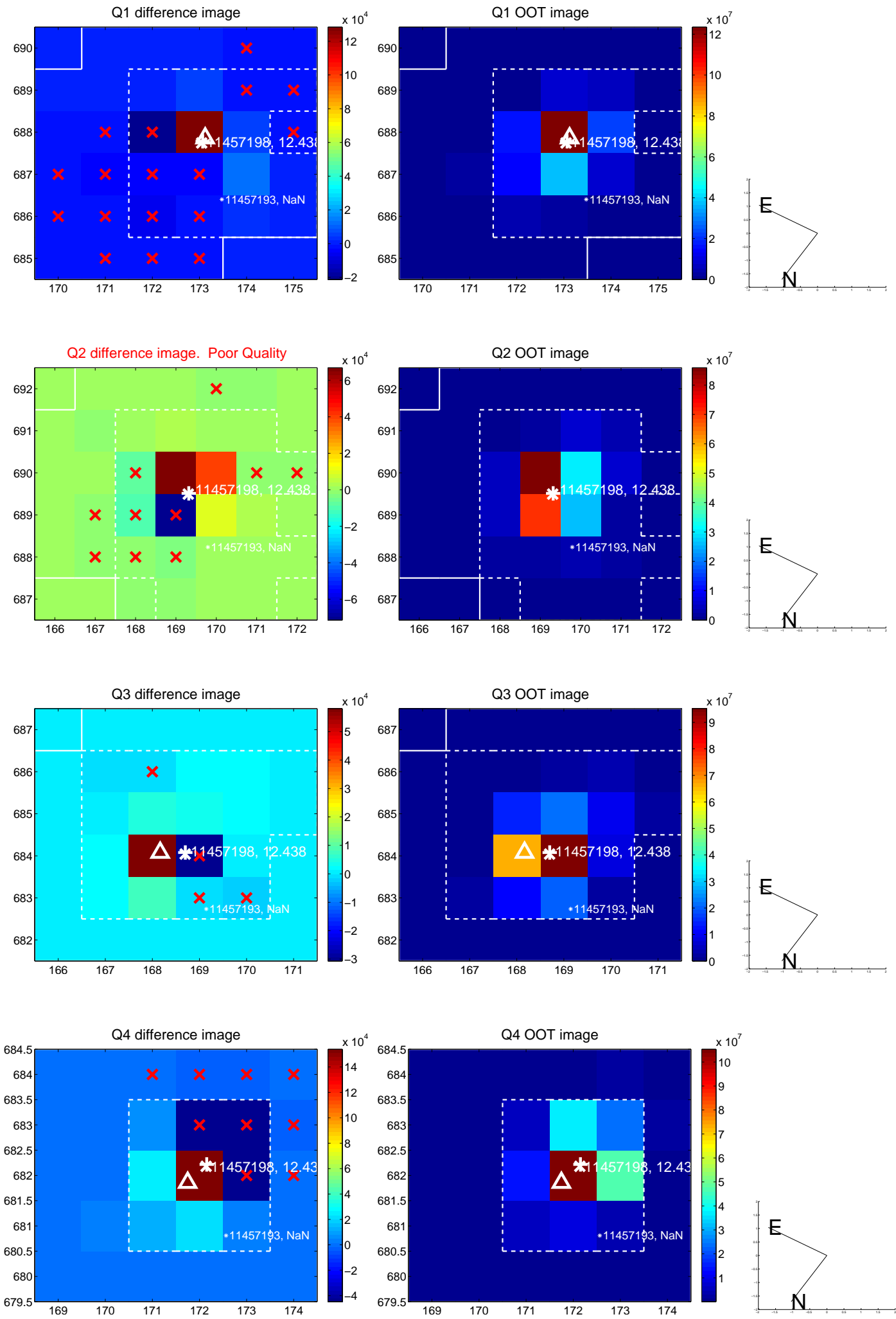


offset from photometric centroids

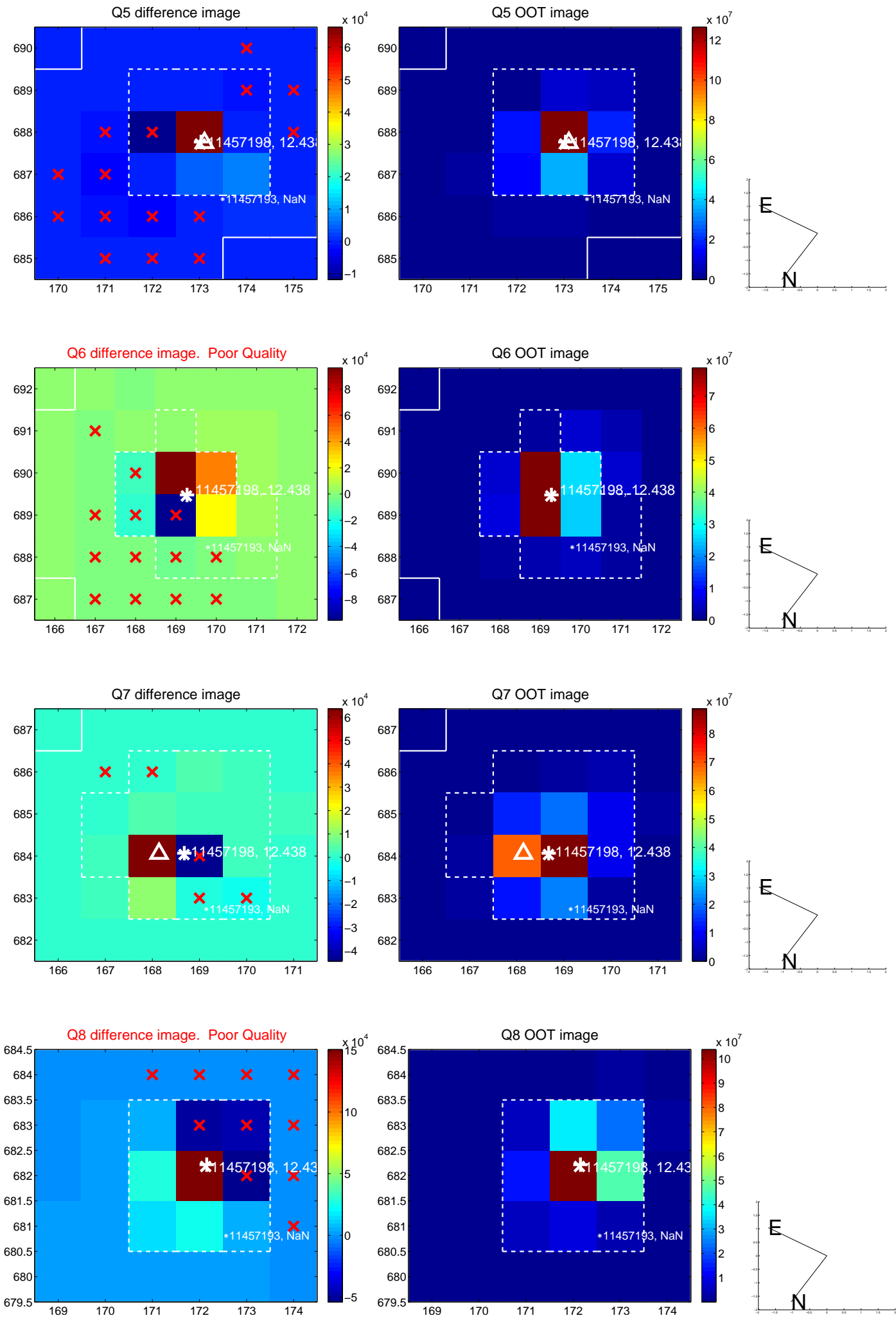


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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

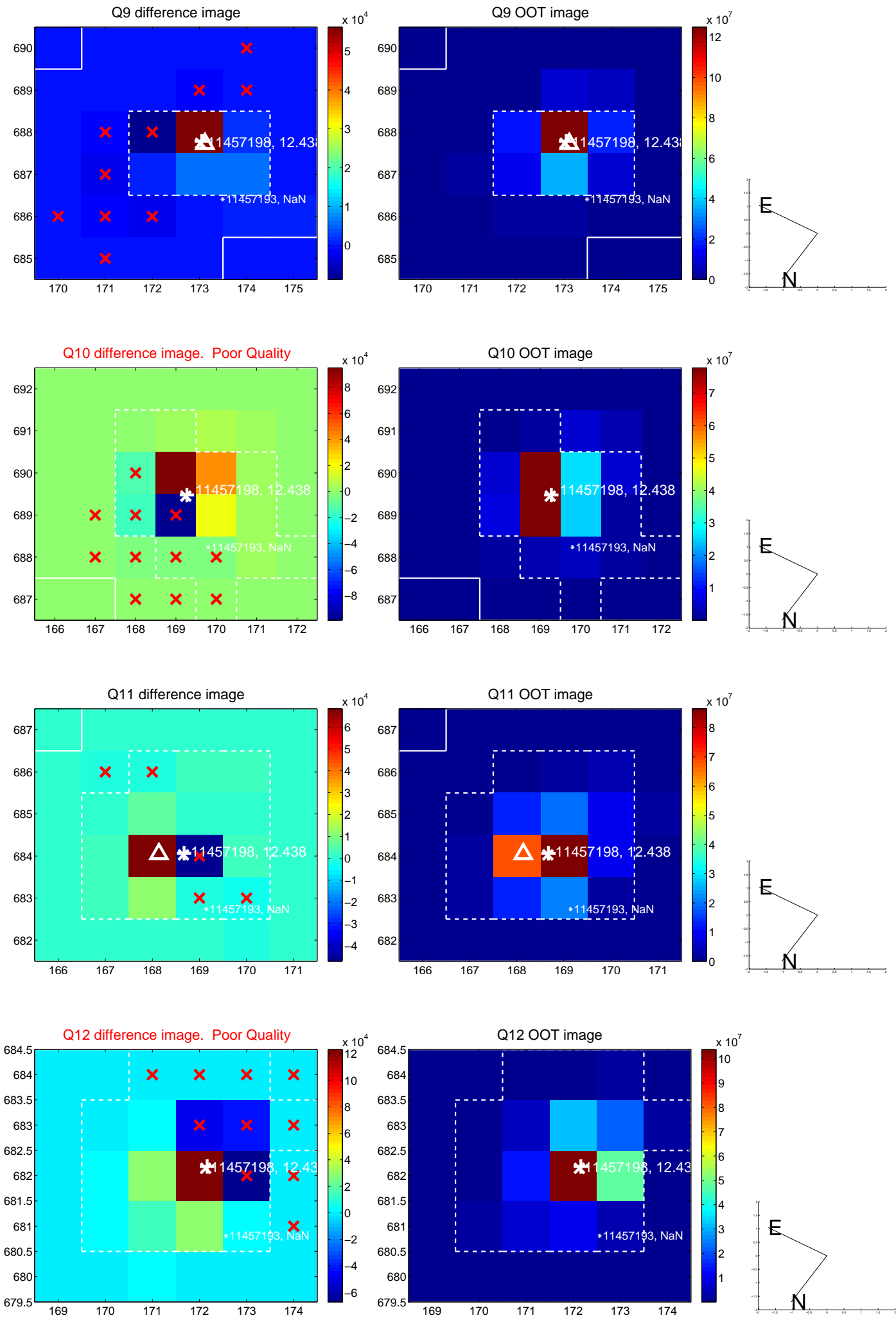


white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

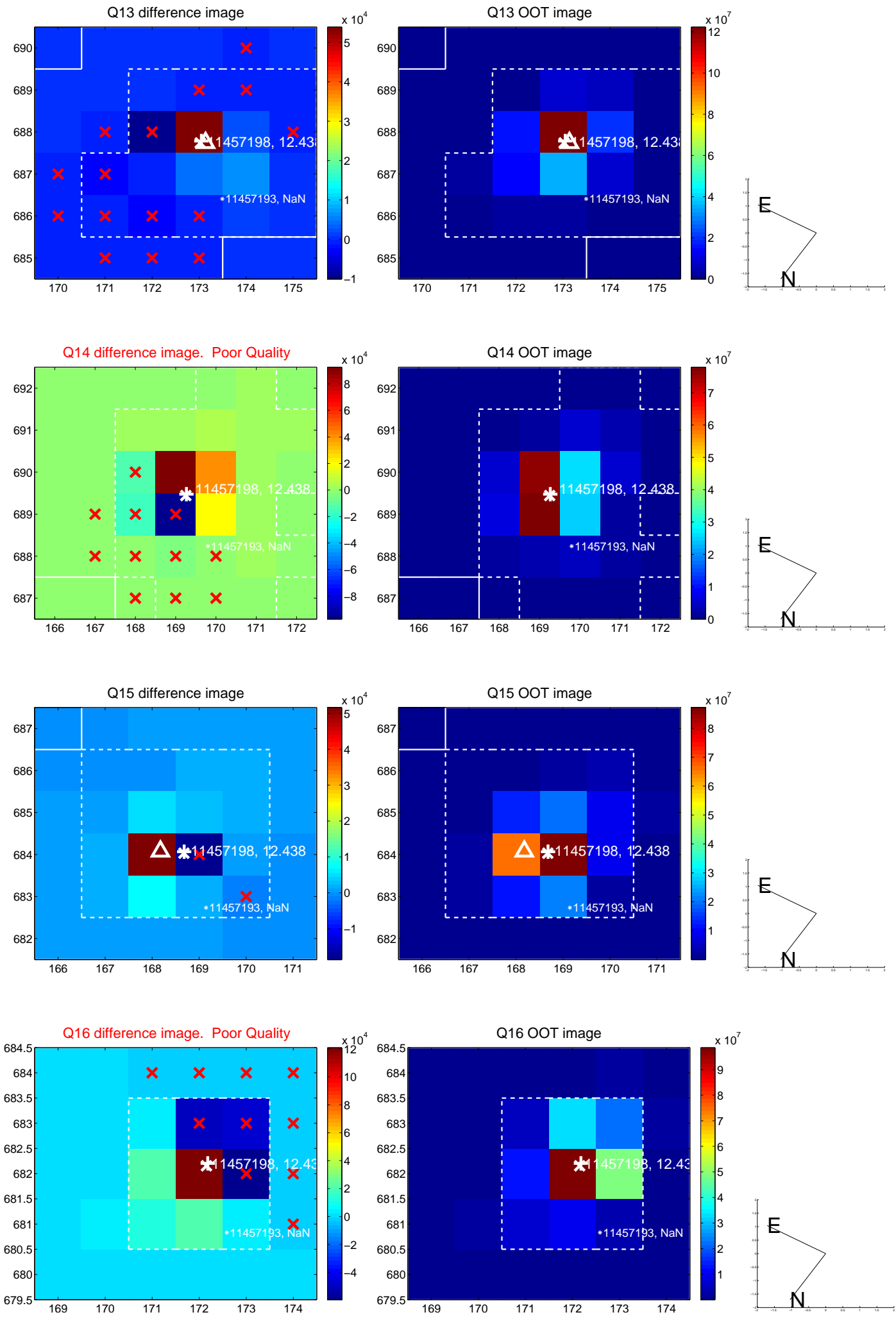




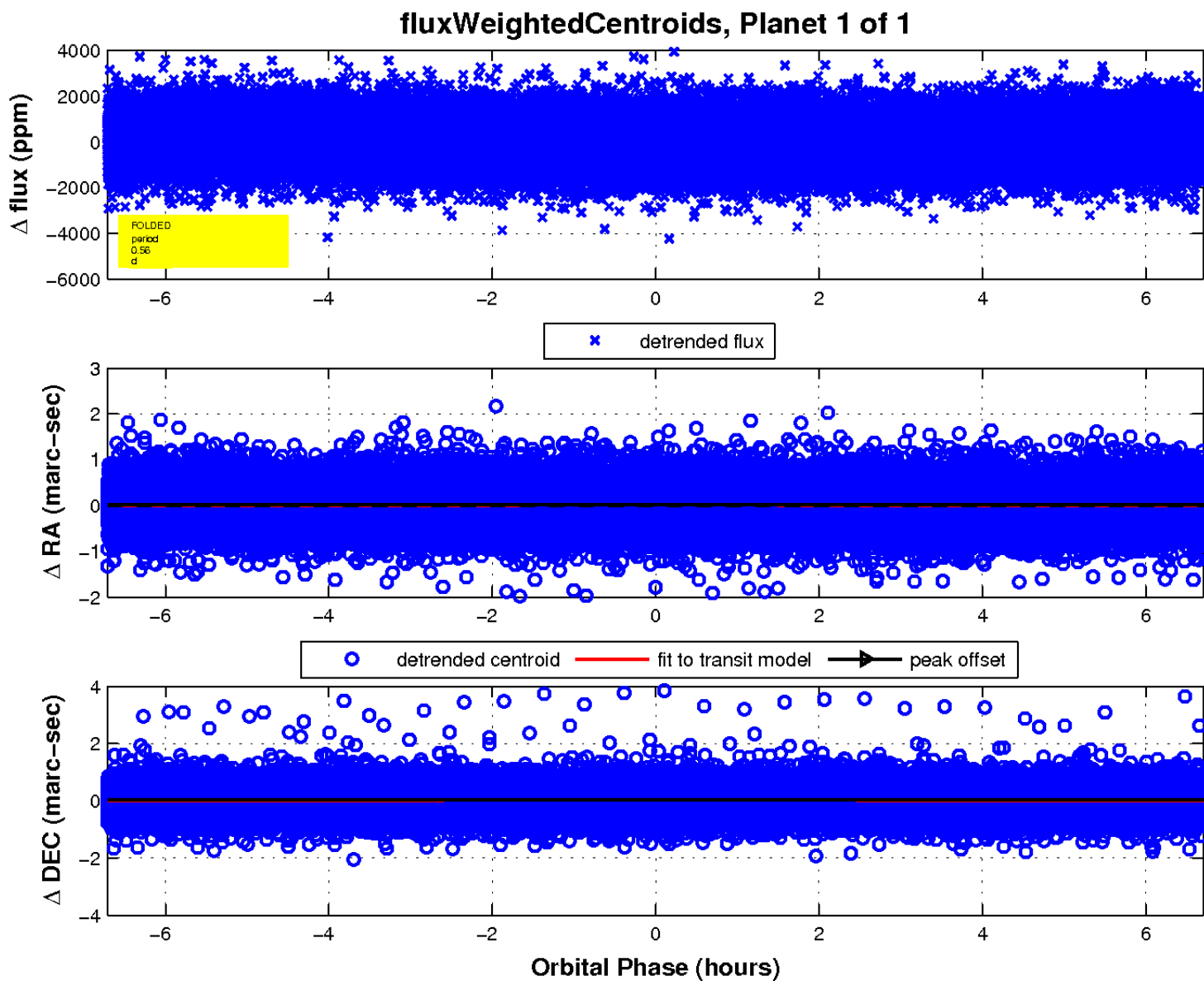
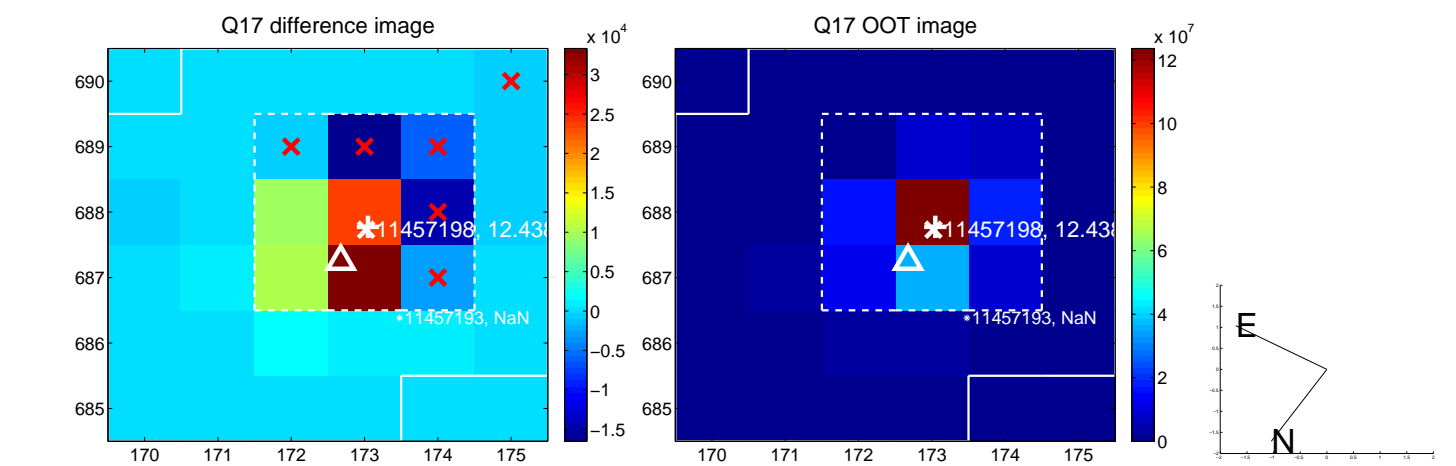
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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



UKIRT Image

Declination

