

# KIC 006976754

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
006976754-01	OBS	No	2.839223	134.134735	22.3	13.314	7.9	5.2	1.20	6607	0.57	1407.33

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
006976754-01	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.

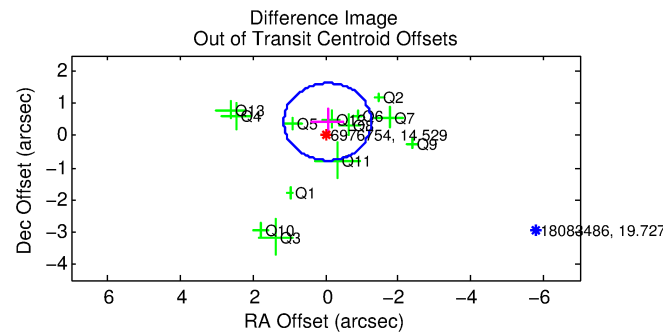
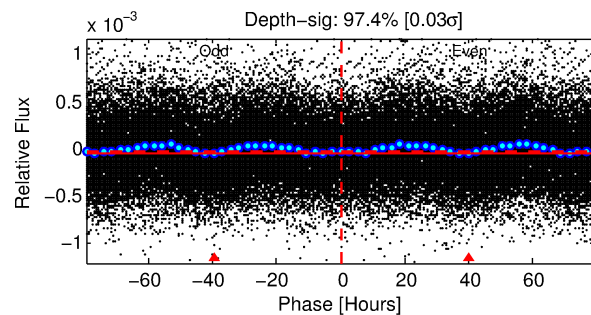
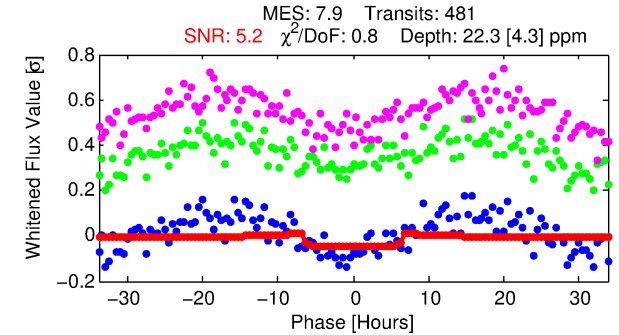
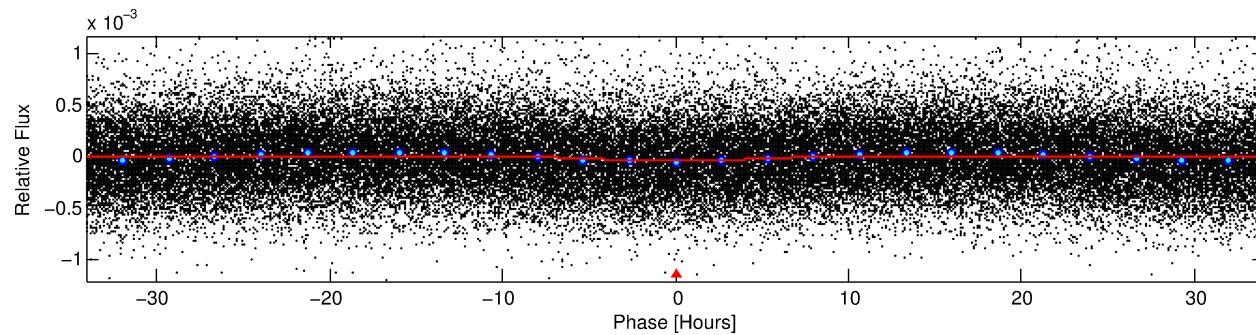
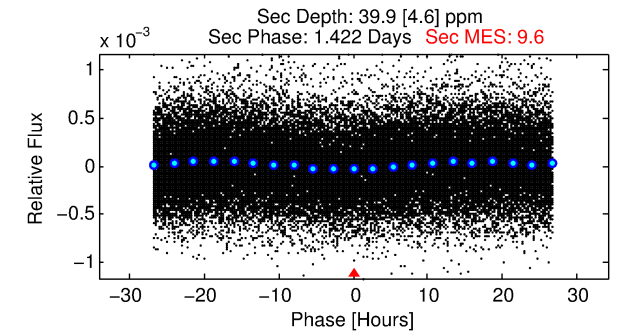
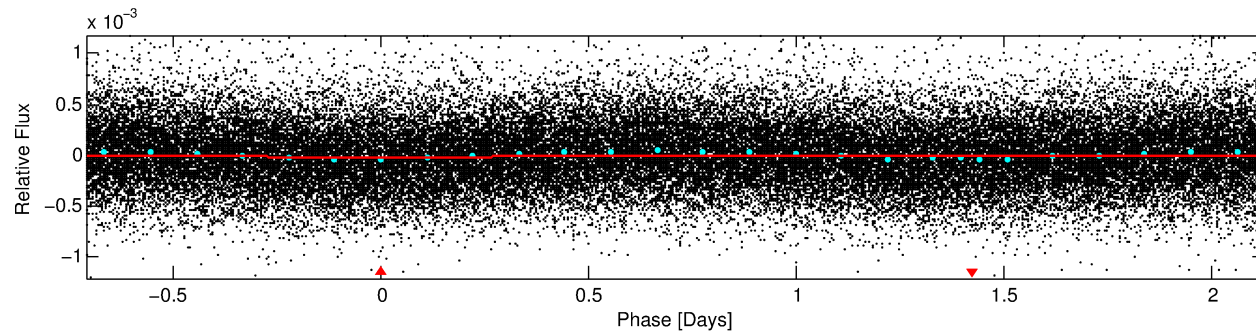
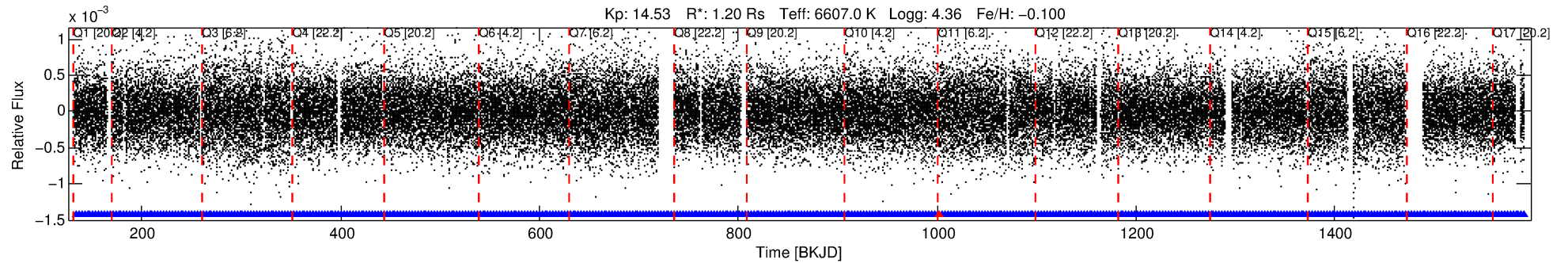
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 006976754-01

No Significant Match Found

# DV One-Page Summary

KIC: 6976754 Candidate: 1 of 1 Period: 2.839 d



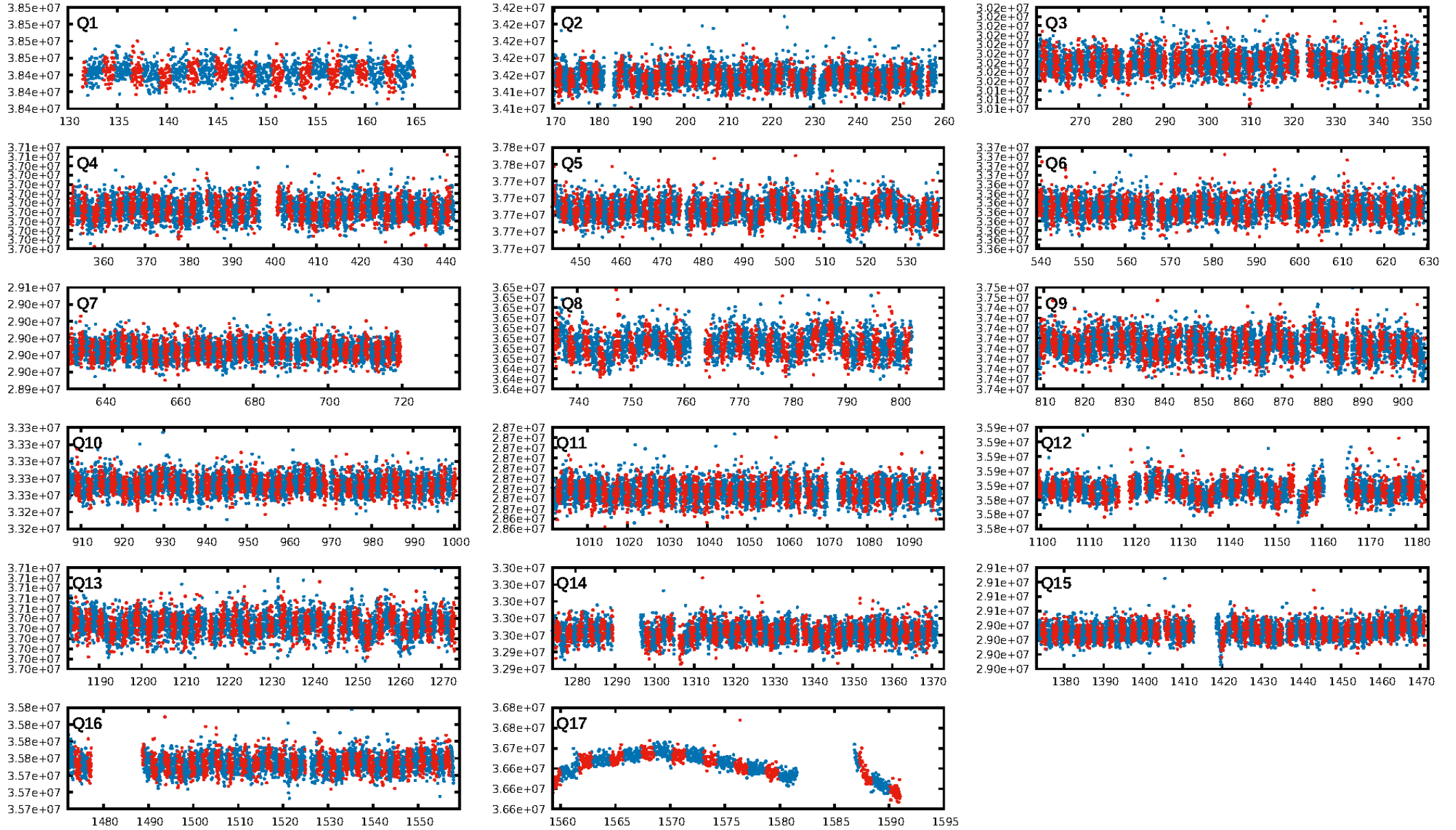
## DV Fit Results:

Period = 2.83922 [0.00008] d  
Epoch = 134.1347 [0.0182] BKJD  
Rp/R\* = 0.0043 [0.0069]  
a/R\* = 1.74 [9.93]  
b = 0.00 [23385.43]  
Seff = 1407.33 [578.33]  
Teff = 1562 [160] K  
Rp = 0.57 [0.92] Re  
a = 0.0419 [0.0113] AU  
Ag = 118.10 [375.71] [0.31σ]  
Teffp = 7960 [6293] K [1.02σ]

## DV Diagnostic Results:

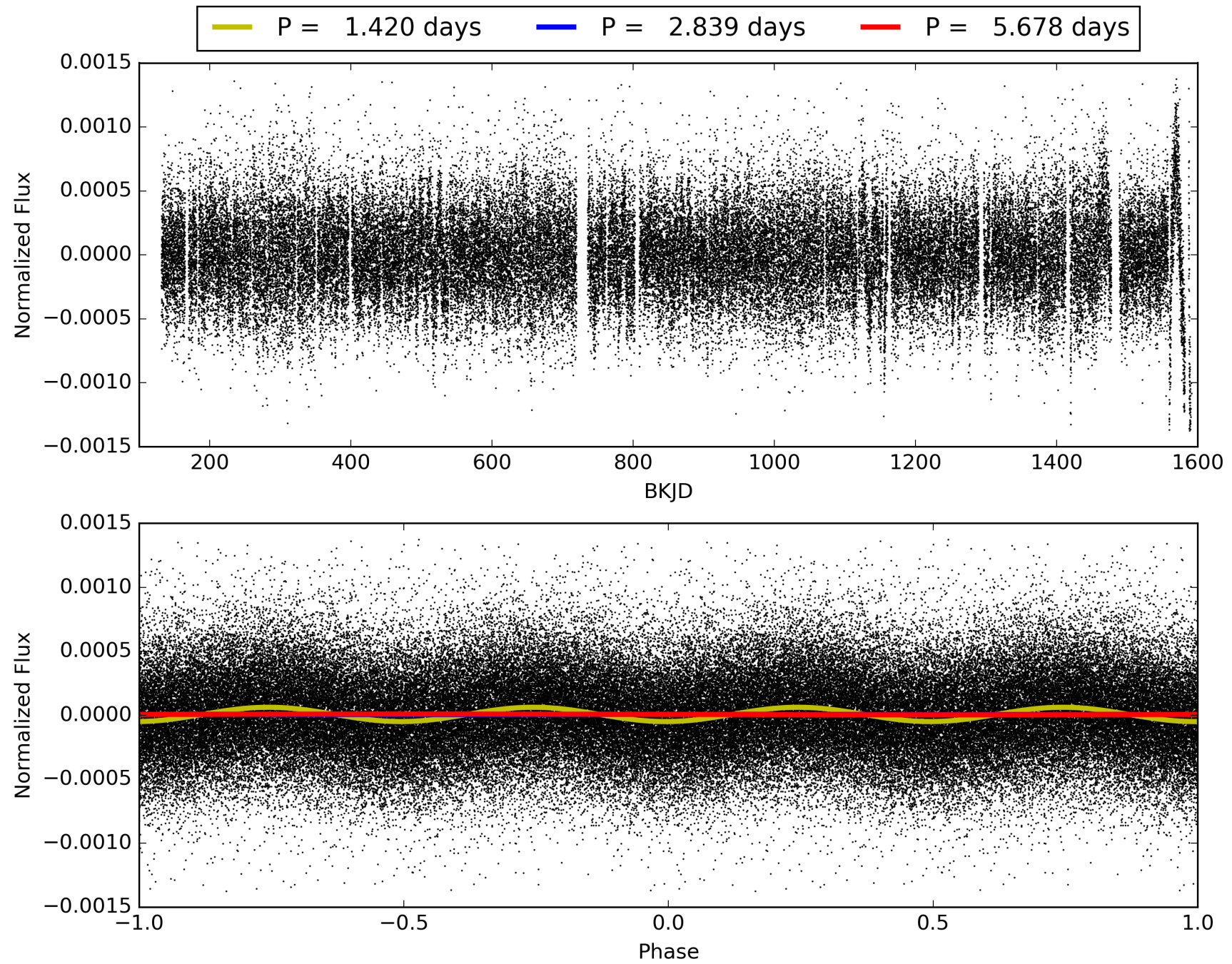
ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: N/A  
ModelChiSquareGof-sig: N/A  
**Bootstrap-pfa: 7.24e-12**  
RollingBand-fgt: 1.00 [458/459]  
GhostDiagnostic-chr: 3.987  
Centroid-sig: 93.4%  
Centroid-so: 0.969 arcsec [0.46σ]  
OotOffset-rm: 0.432 arcsec [1.08σ]  
KicOffset-rm: 0.504 arcsec [1.21σ]  
OotOffset-st: 3/3/3/4 [13]  
KicOffset-st: 3/3/3/4 [13]  
DiffImageQuality-fgm: 0.85 [11/13]  
DiffImageOverlap-fno: 1.00 [17/17]

# TCE 006976754-01, PDC Light Curves



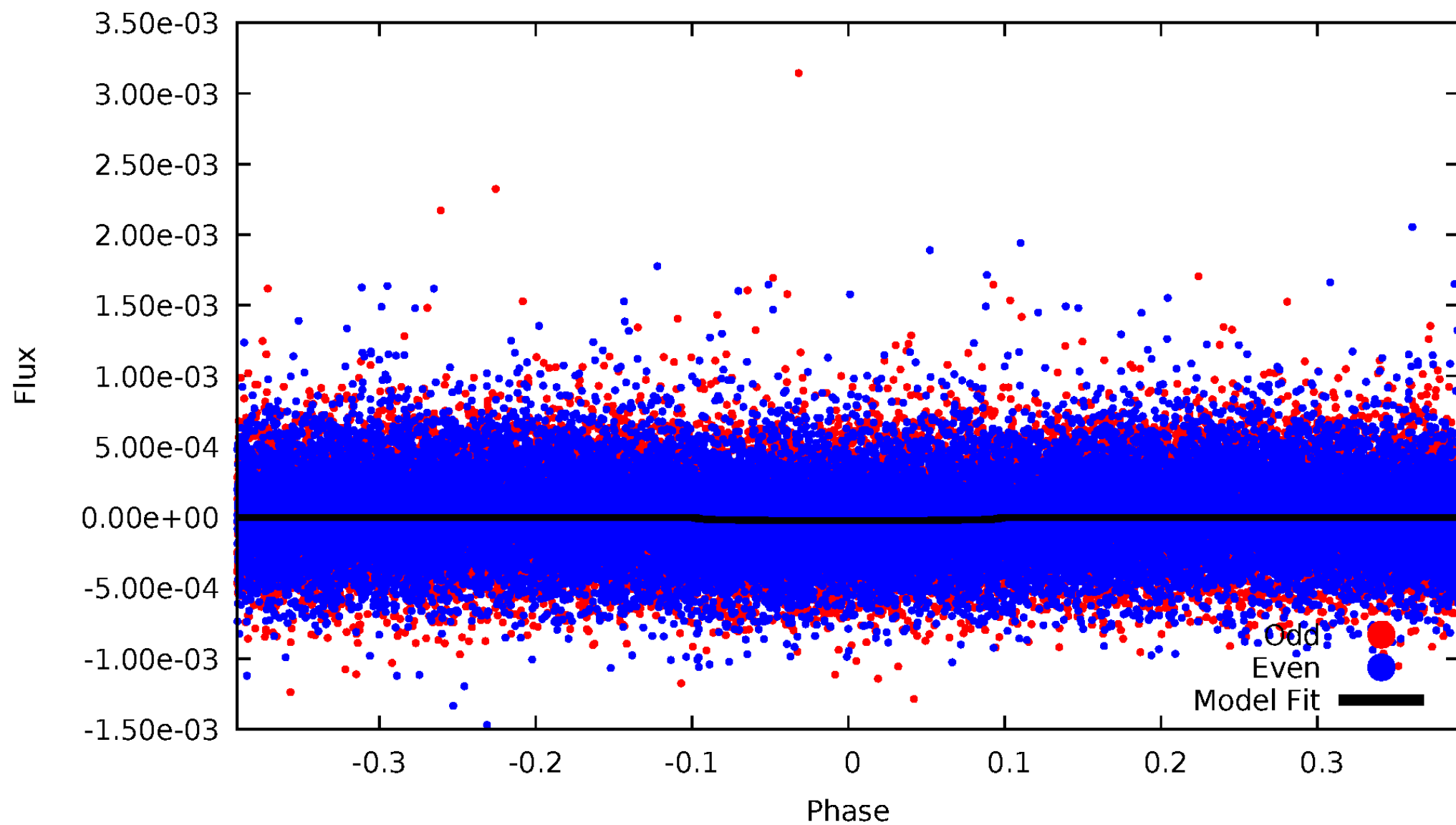


TCE 006976754-01



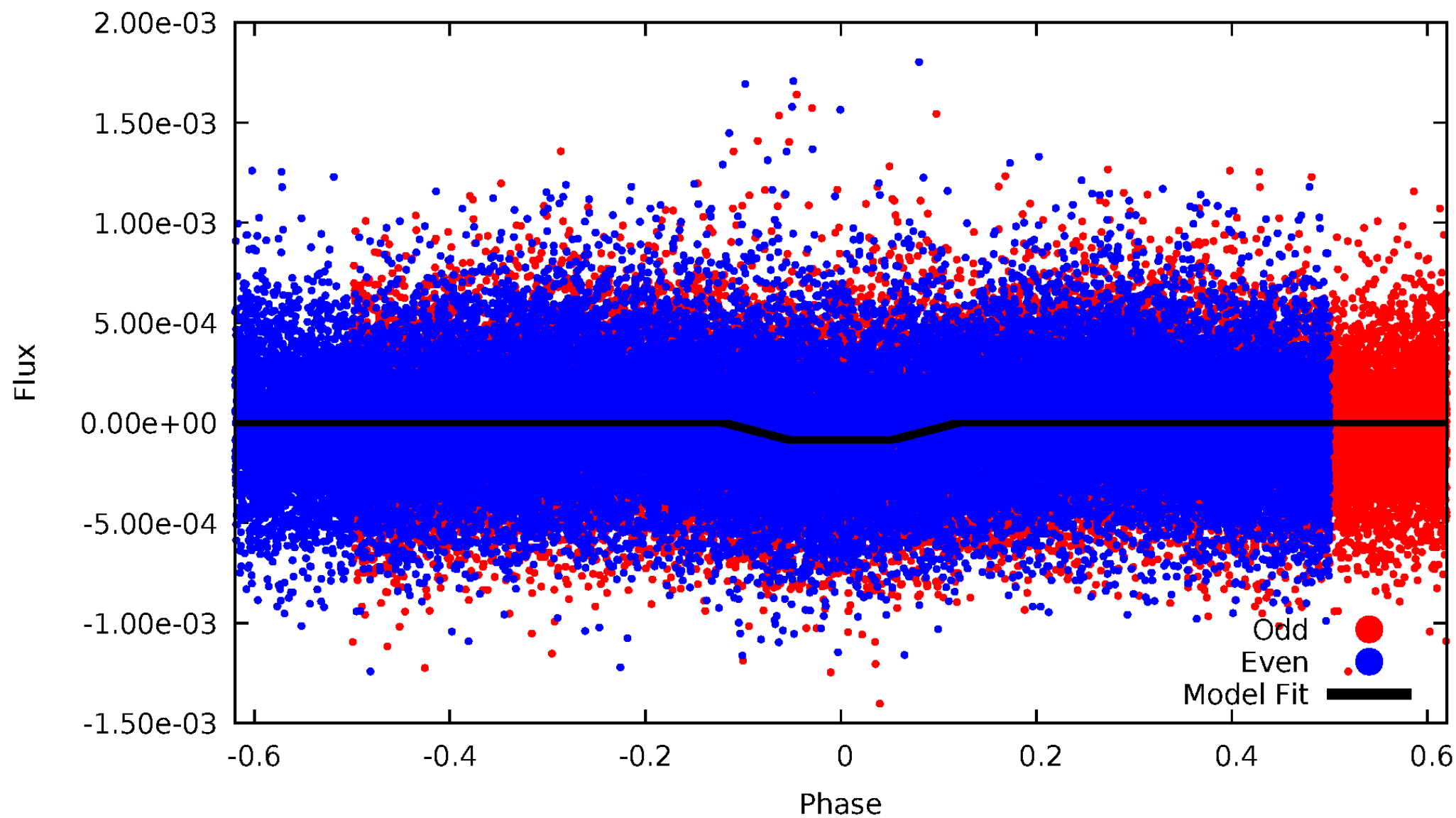
# DV Odd/Even

TCE 006976754-01

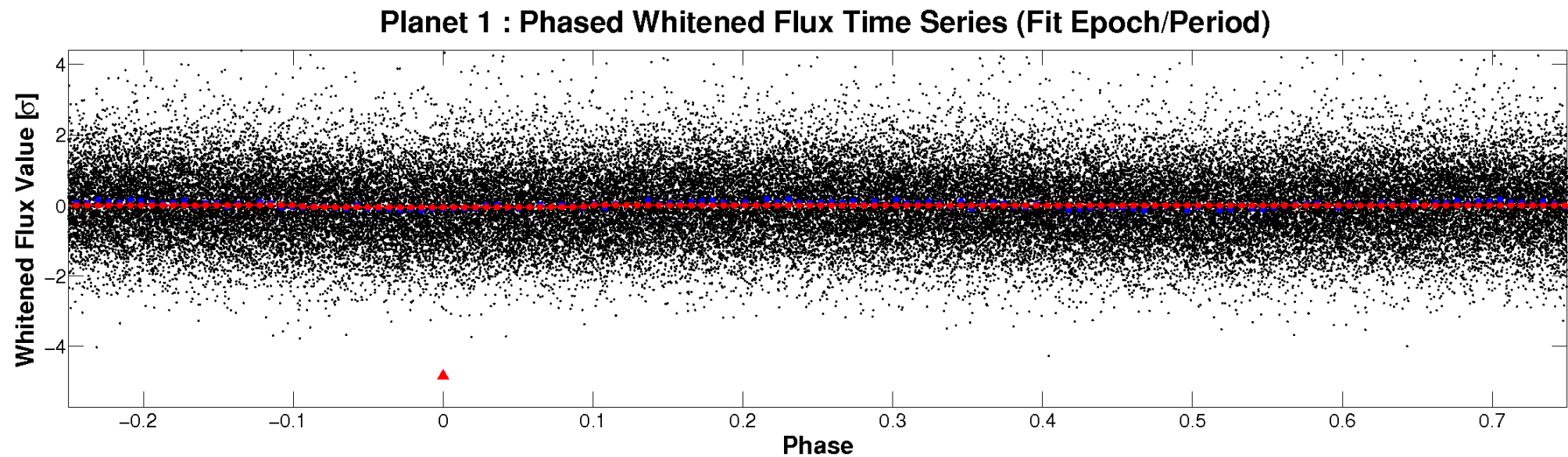
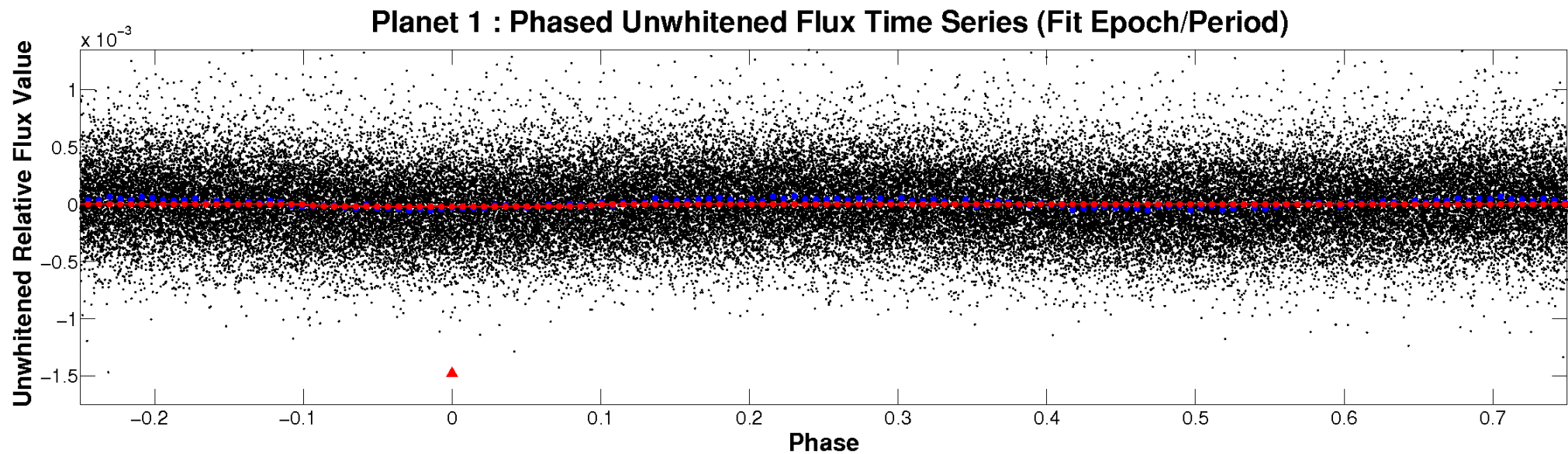


# ALT Odd/Even

TCE 006976754-01



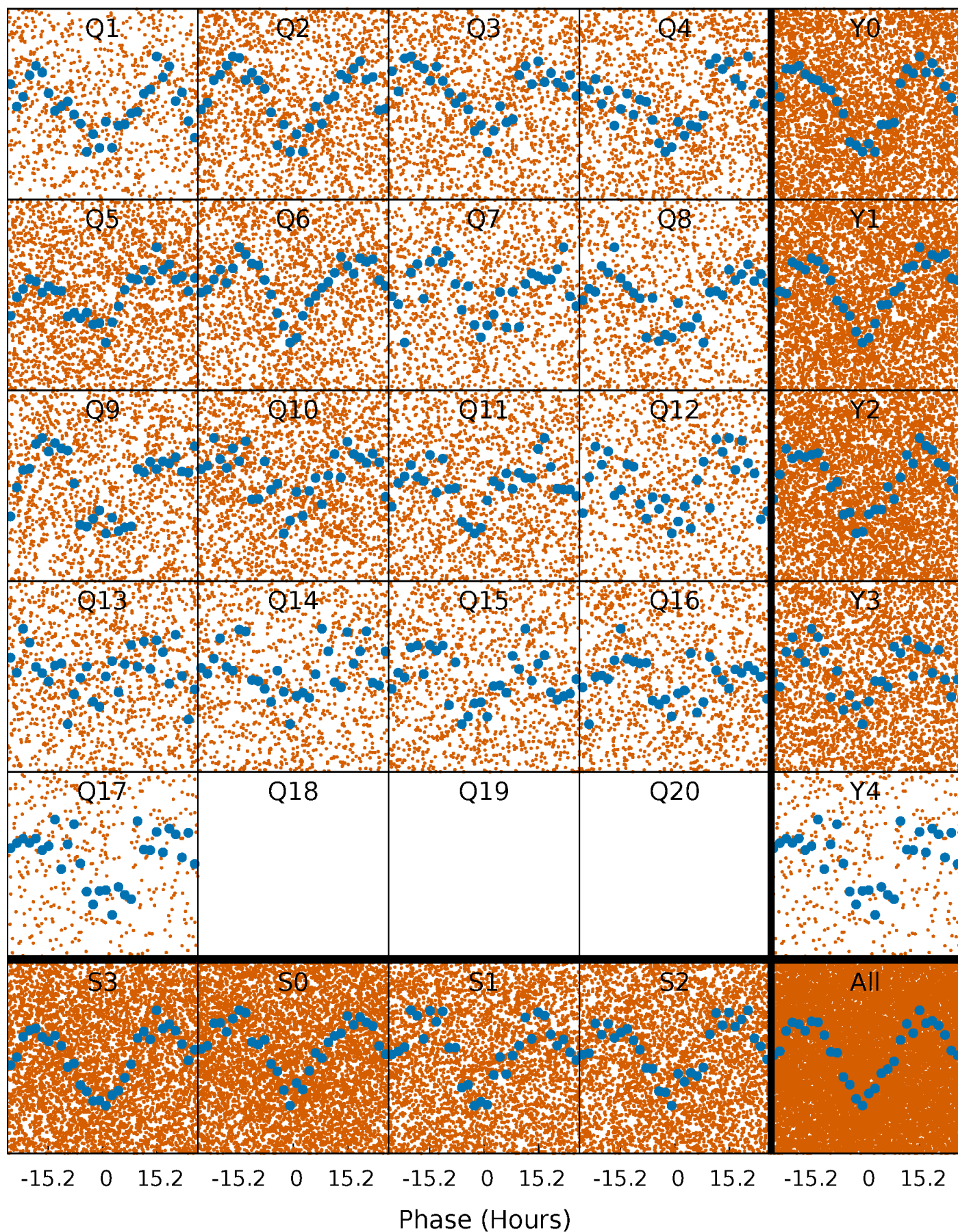
# Non-Whitened Vs. Whitened Light Curve





# PDC Quarter-Phased Transit Curves

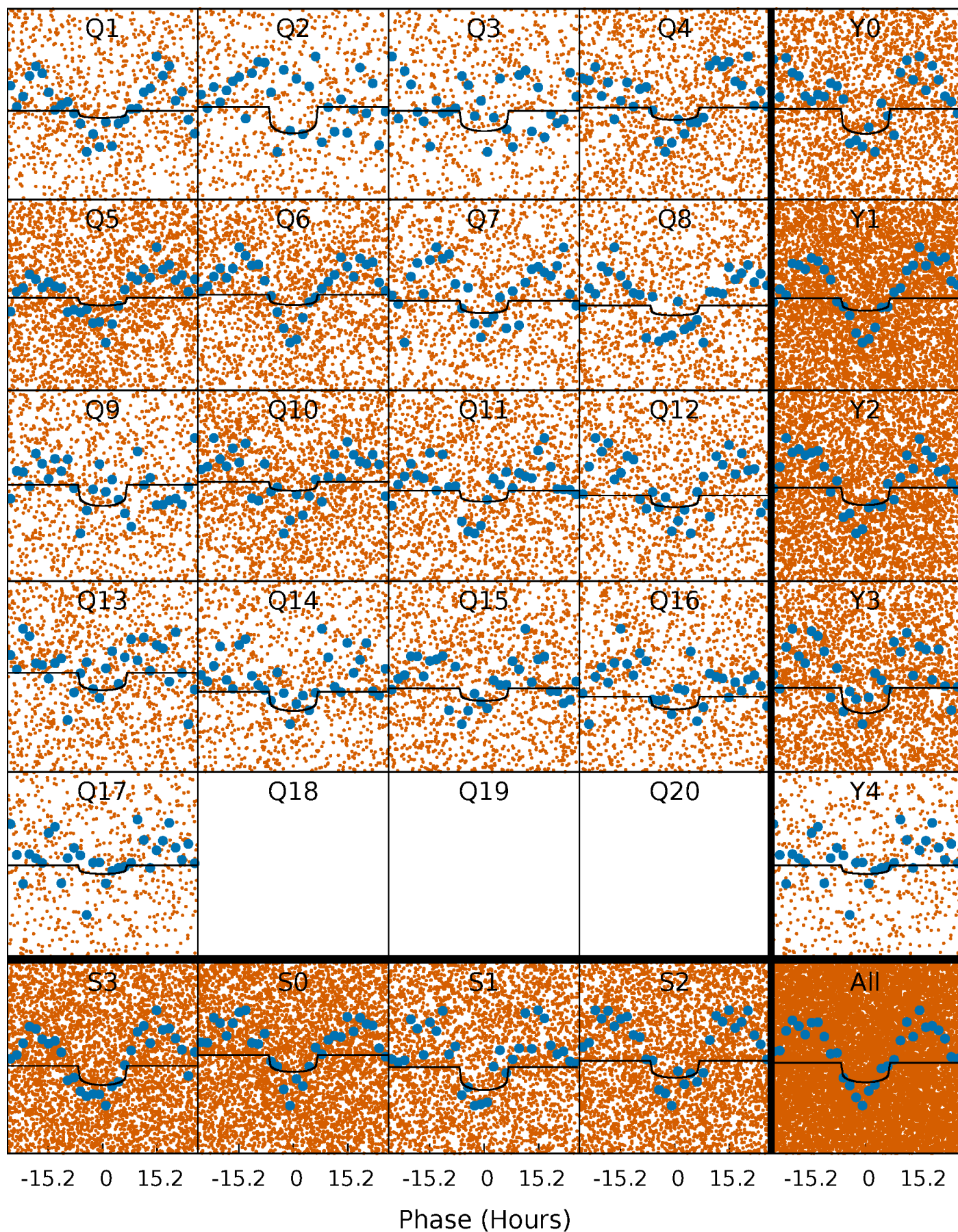
TCE 006976754-01 P= 2.839223 Days  $T_0=134.134735$  (BKJD)





# DV Quarter-Phased Transit Curves

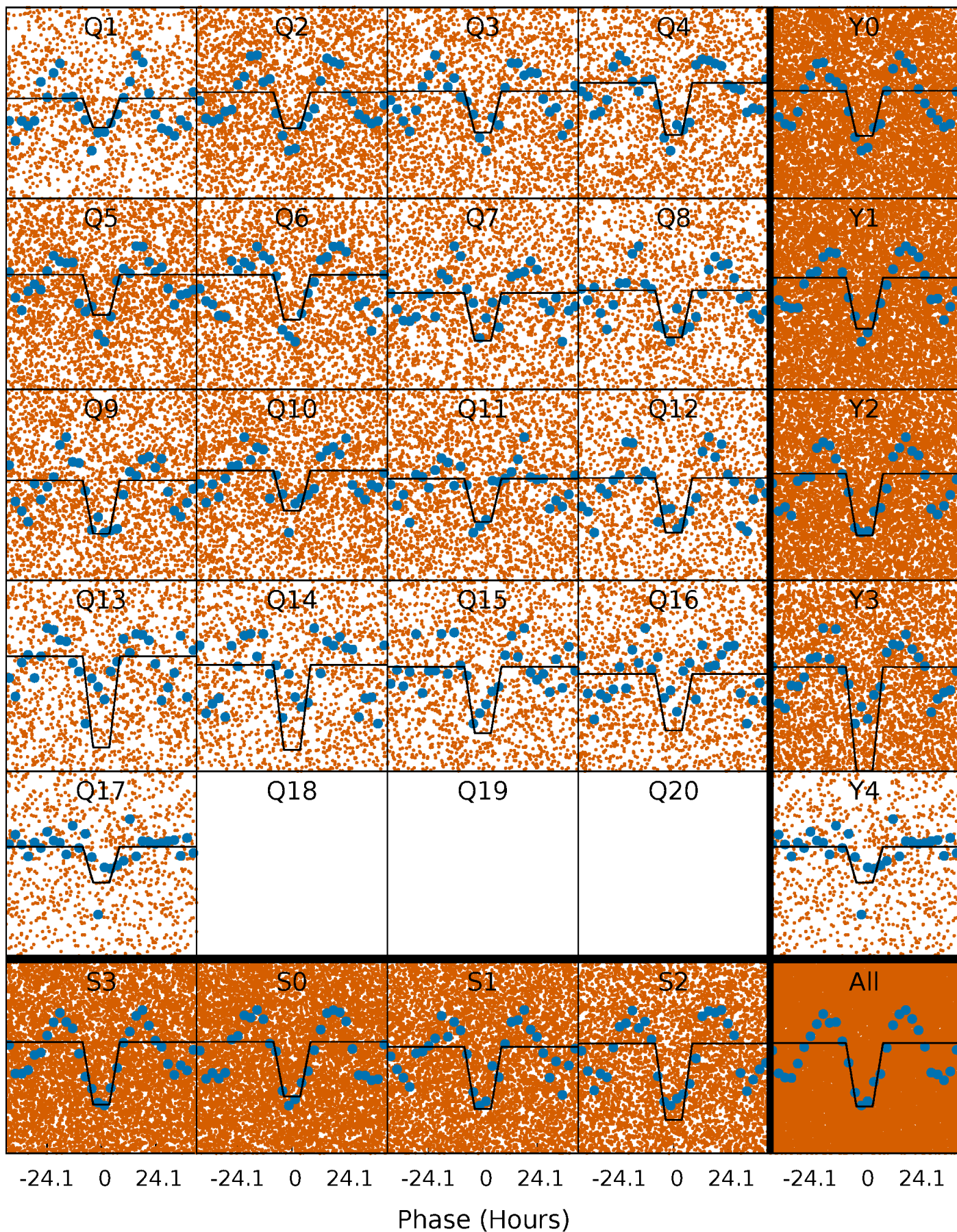
TCE 006976754-01 P= 2.839223 Days  $T_0=134.134735$  (BKJD)





# Alt. Detrend Quarter-Phased Transit Curves

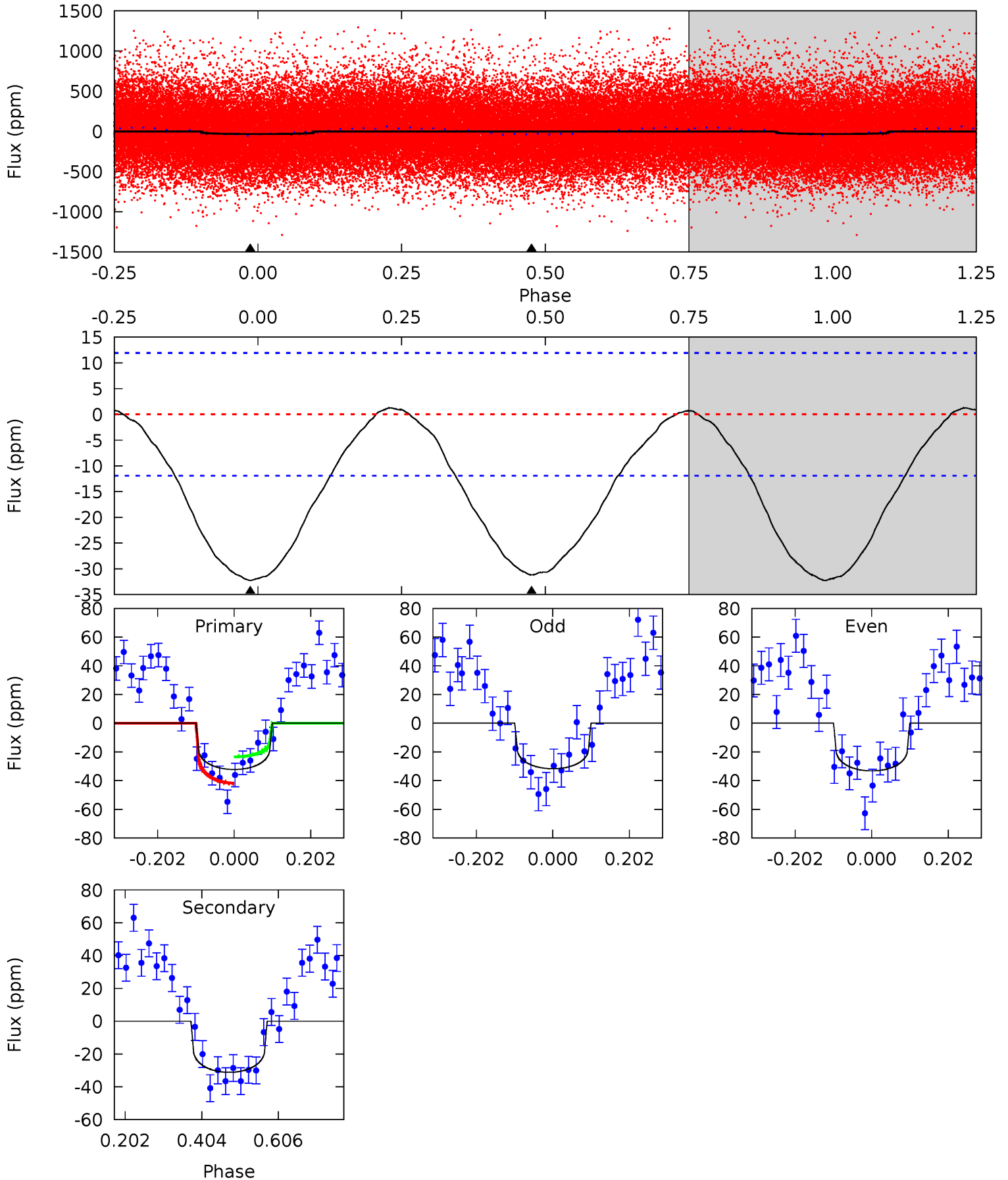
TCE 006976754-01 P= 2.839010 Days  $T_0=134.153951$  (BKJD)



# DV Model-Shift Uniqueness Test

006976754-01, P = 2.839223 Days, E = 131.295512 Days

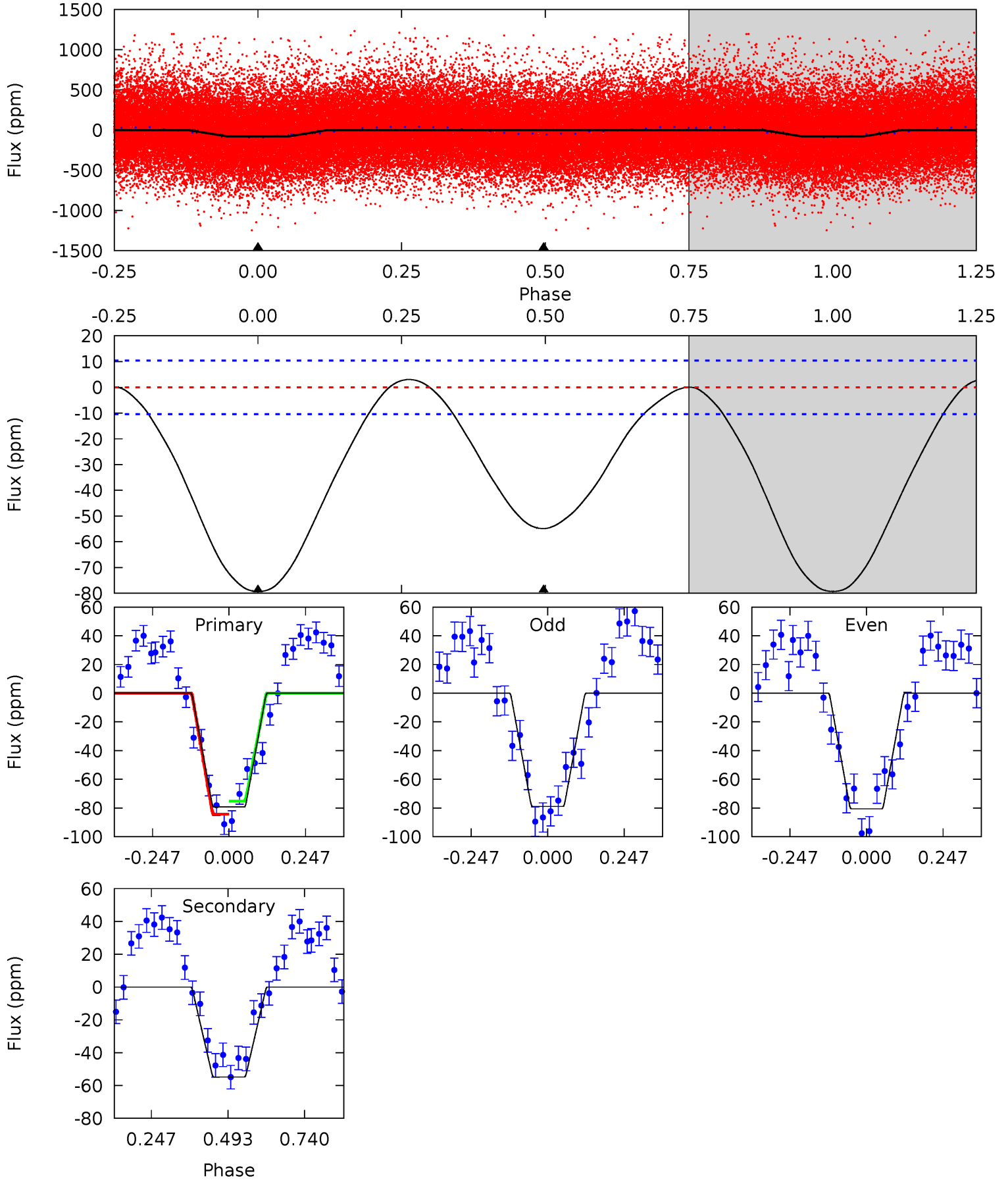
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
11.9	11.5	0	0	4.42	1.28	0.54	11.9	11.9	11.5	11.5	0.28	1.02	0.04	3.44



# Alt Model-Shift Uniqueness Test

006976754-01, P = 2.839010 Days, E = 131.314941 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
33.3	23.1	0	0	4.37	1.16	0.67	33.3	33.3	23.1	23.1	0.35	1.22	0.04	1.93





### Stellar Parameters For KIC 006976754

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$6607^{+164}_{-258}$	$4.363^{+0.067}_{-0.202}$	$-0.100^{+0.250}_{-0.300}$	$1.204^{+0.397}_{-0.132}$	$1.224^{+0.191}_{-0.174}$	$0.988^{+0.287}_{-0.529}$
	+2%/-4%	+2%/-5%	+250%/-300%	+33%/-11%	+16%/-14%	+29%/-54%
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 006976754-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	$A_{obs}$
DV	$-31 \pm 3$	$0.94^{+0.86}_{-0.63}$	$2210^{+155}_{-117}$	$5890^{+6084}_{-1417}$	$34^{+291}_{-24}$
Alt.	$-55 \pm 2$	$1.37^{+0.97}_{-0.81}$	$2207^{+154}_{-105}$	$5640^{+3798}_{-1142}$	$28^{+137}_{-18}$

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

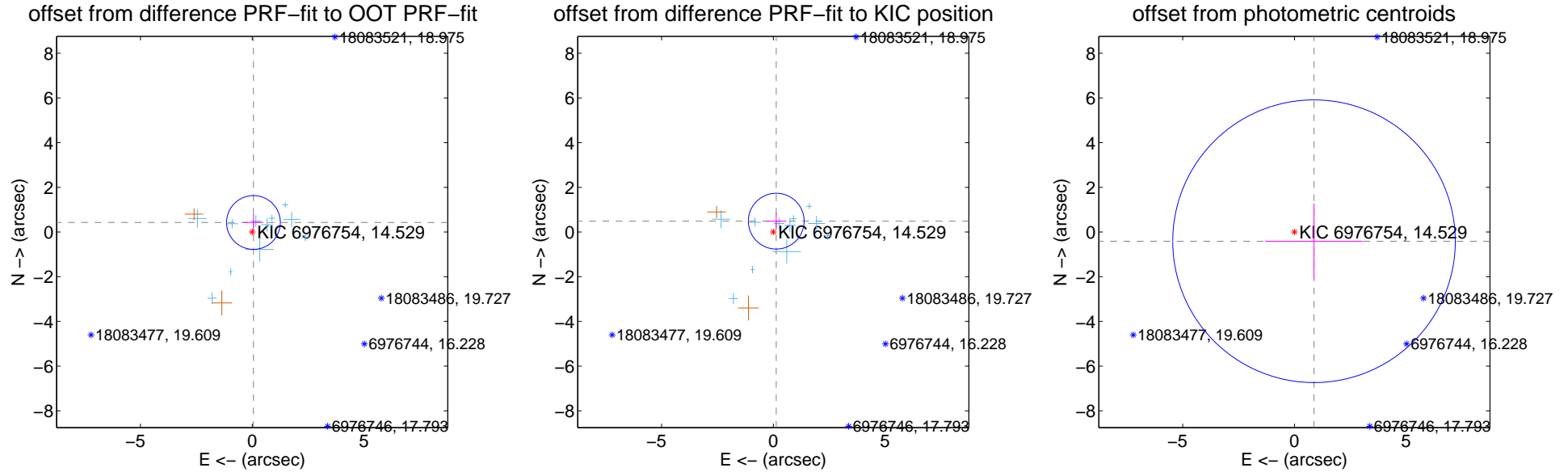
## DV Centroid Data

Supplemental centroid analysis for 006976754-01. Kepler magnitude: 14.53. Transit SNR 5.22

There are 11 quarters with good PRF difference image offsets

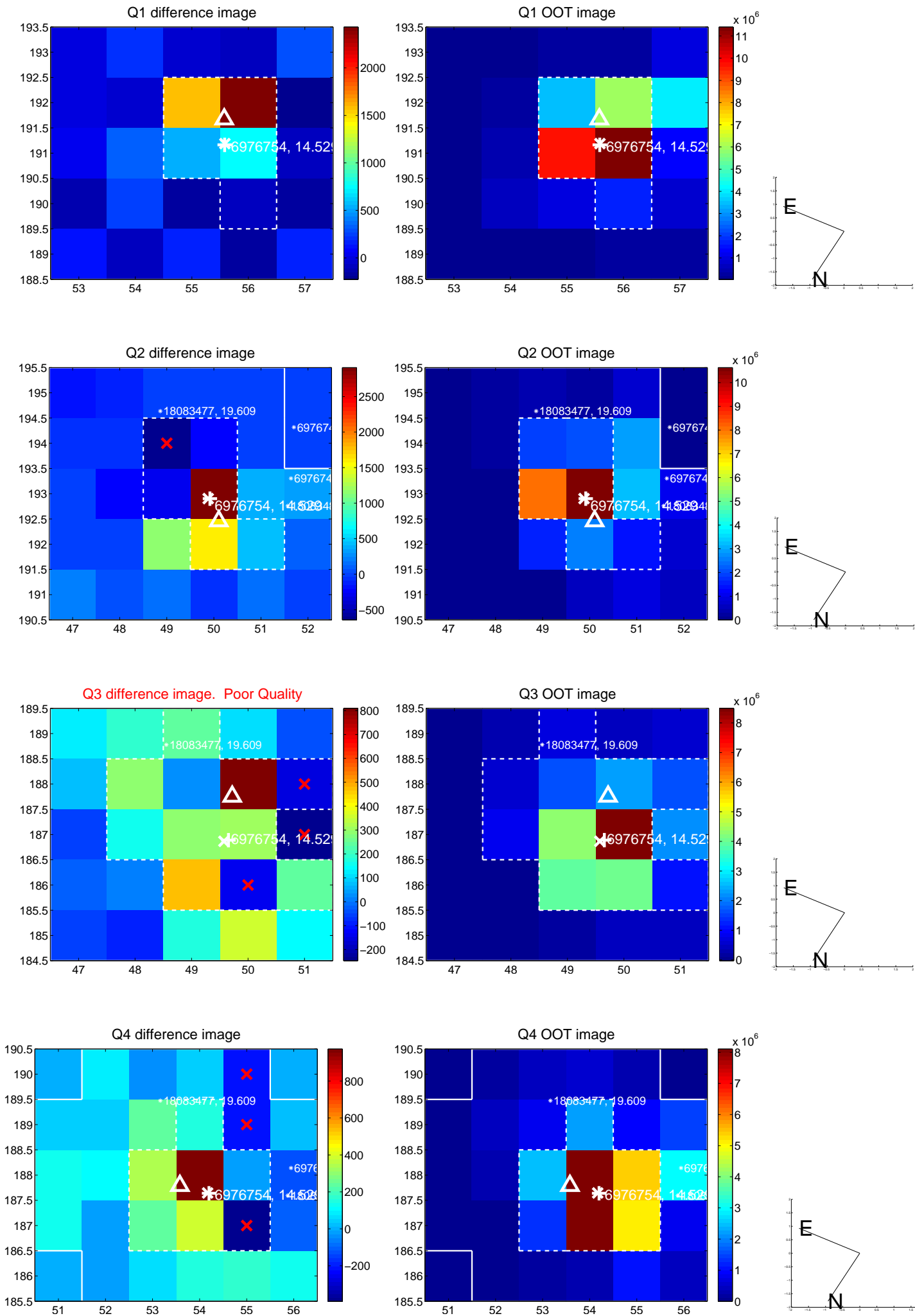
The direct PRF centroid is offset from the target star catalog position by about 0.11 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.432 \pm 0.401$	1.08	$-0.056 \pm 0.437$	$0.428 \pm 0.383$
PRF-fit source offset from KIC position	$0.504 \pm 0.416$	1.21	$-0.131 \pm 0.454$	$0.487 \pm 0.377$
photometric centroid source offset	$0.97 \pm 2.11$	0.46	$-0.88 \pm 2.19$	$-0.41 \pm 1.69$

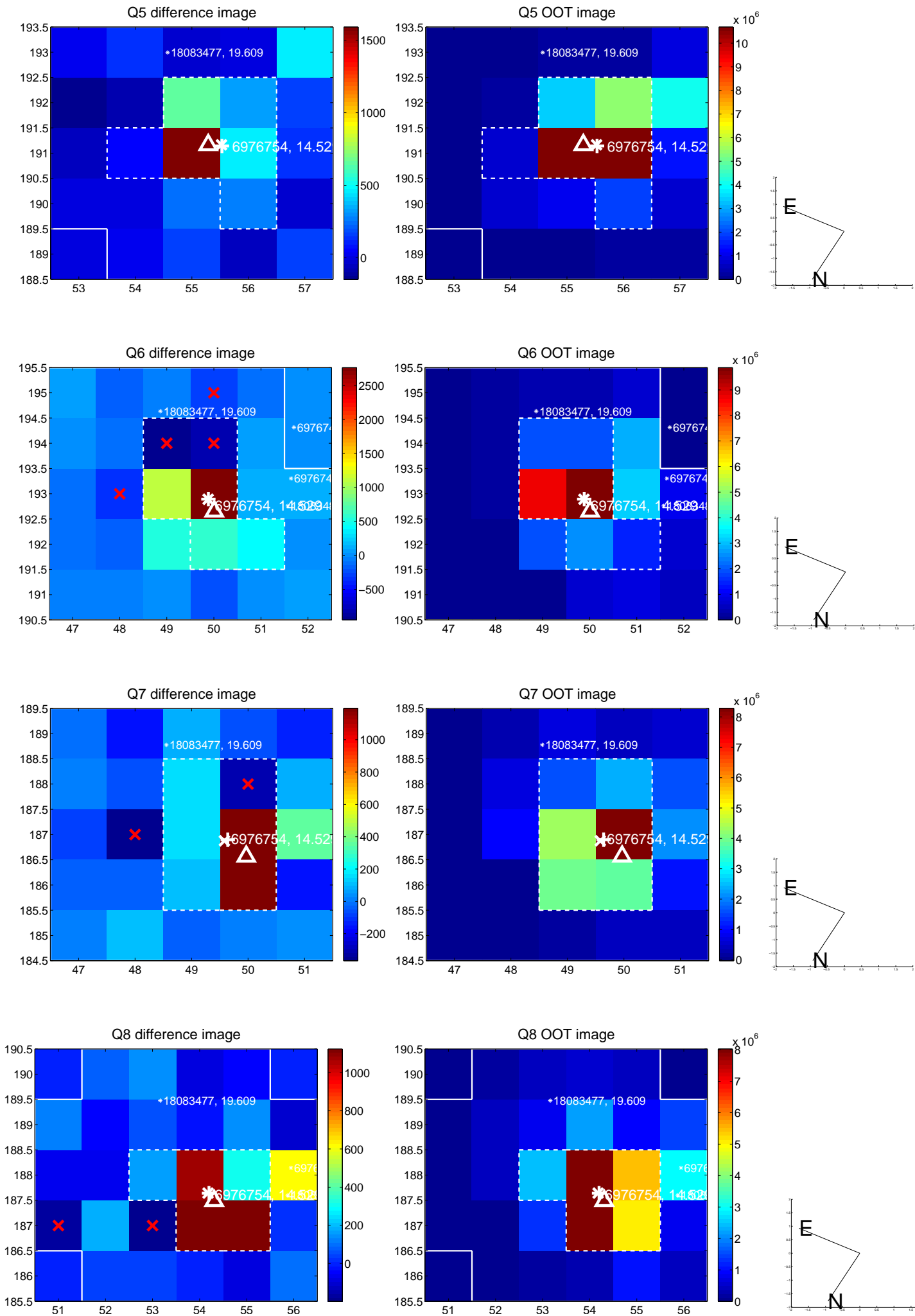


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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

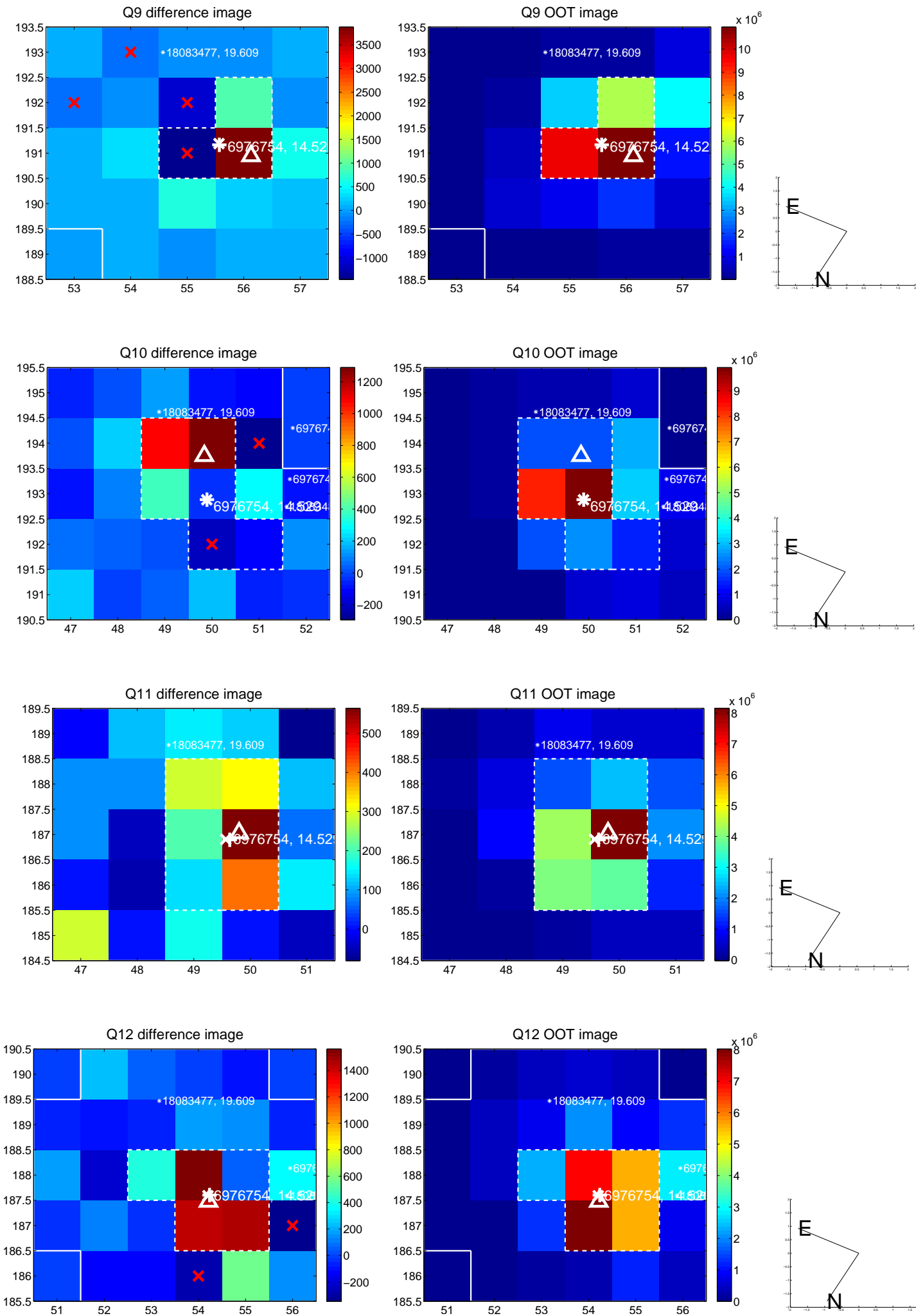


white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

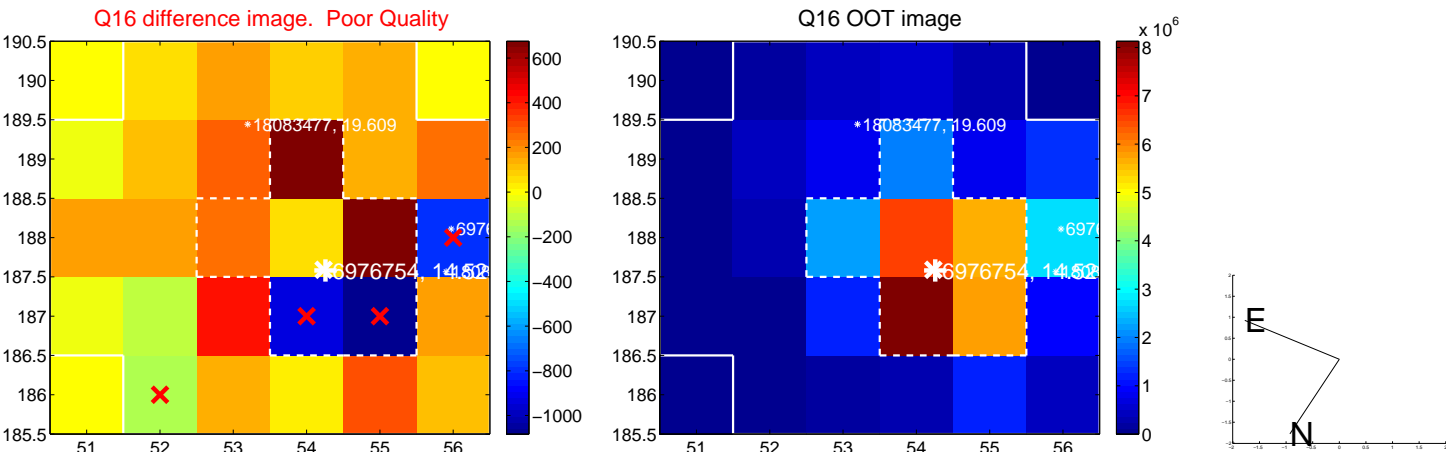
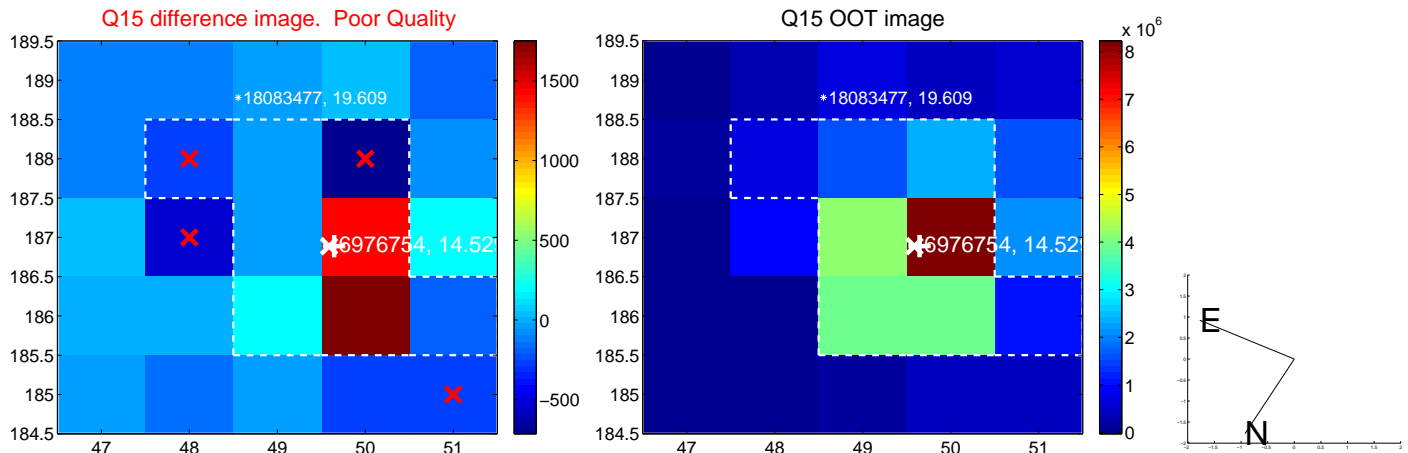
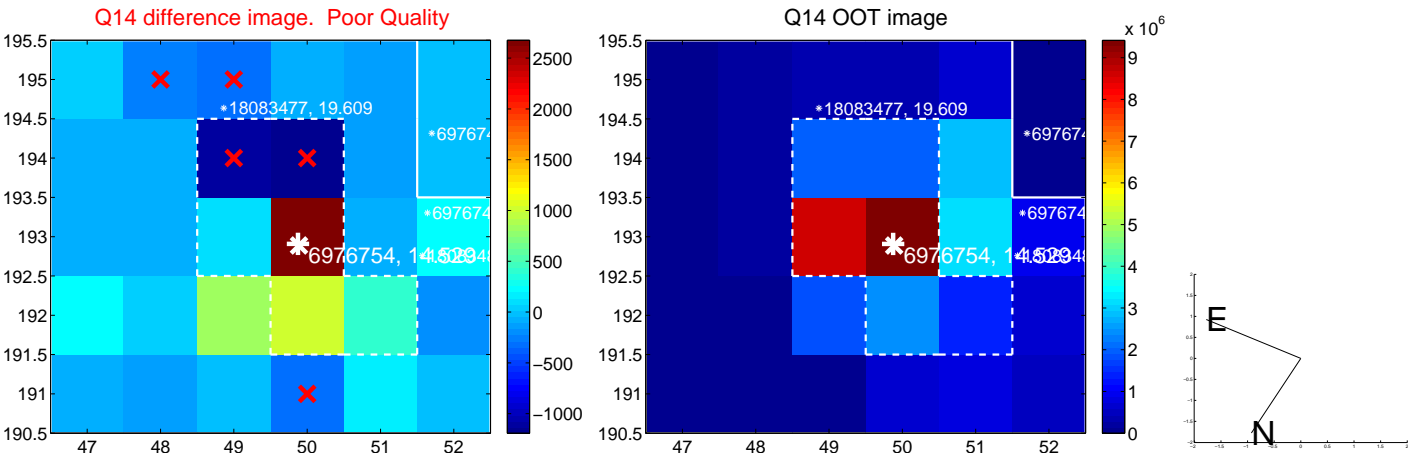
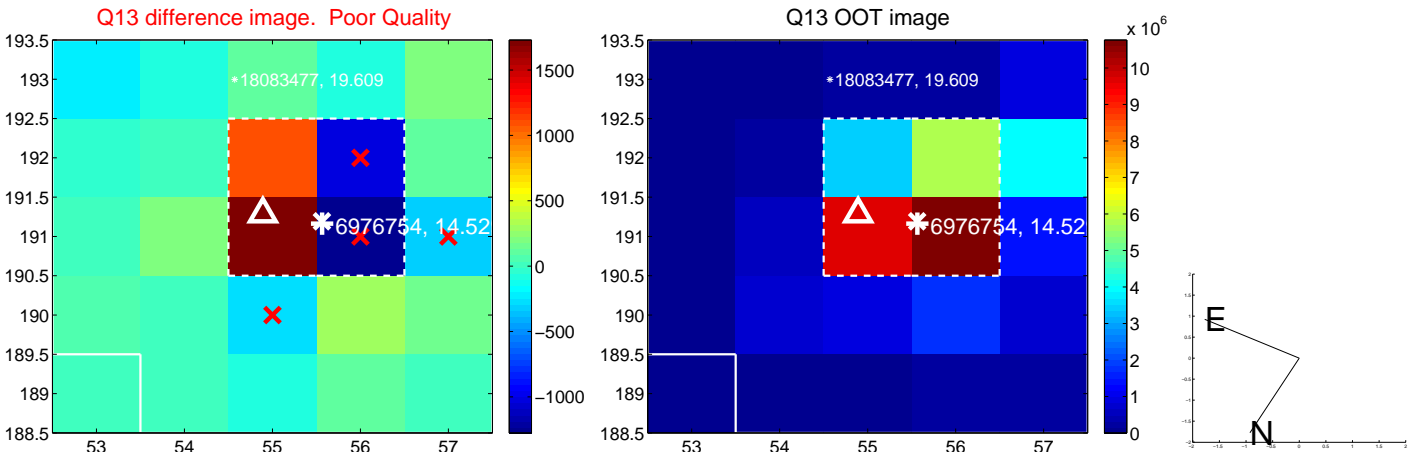




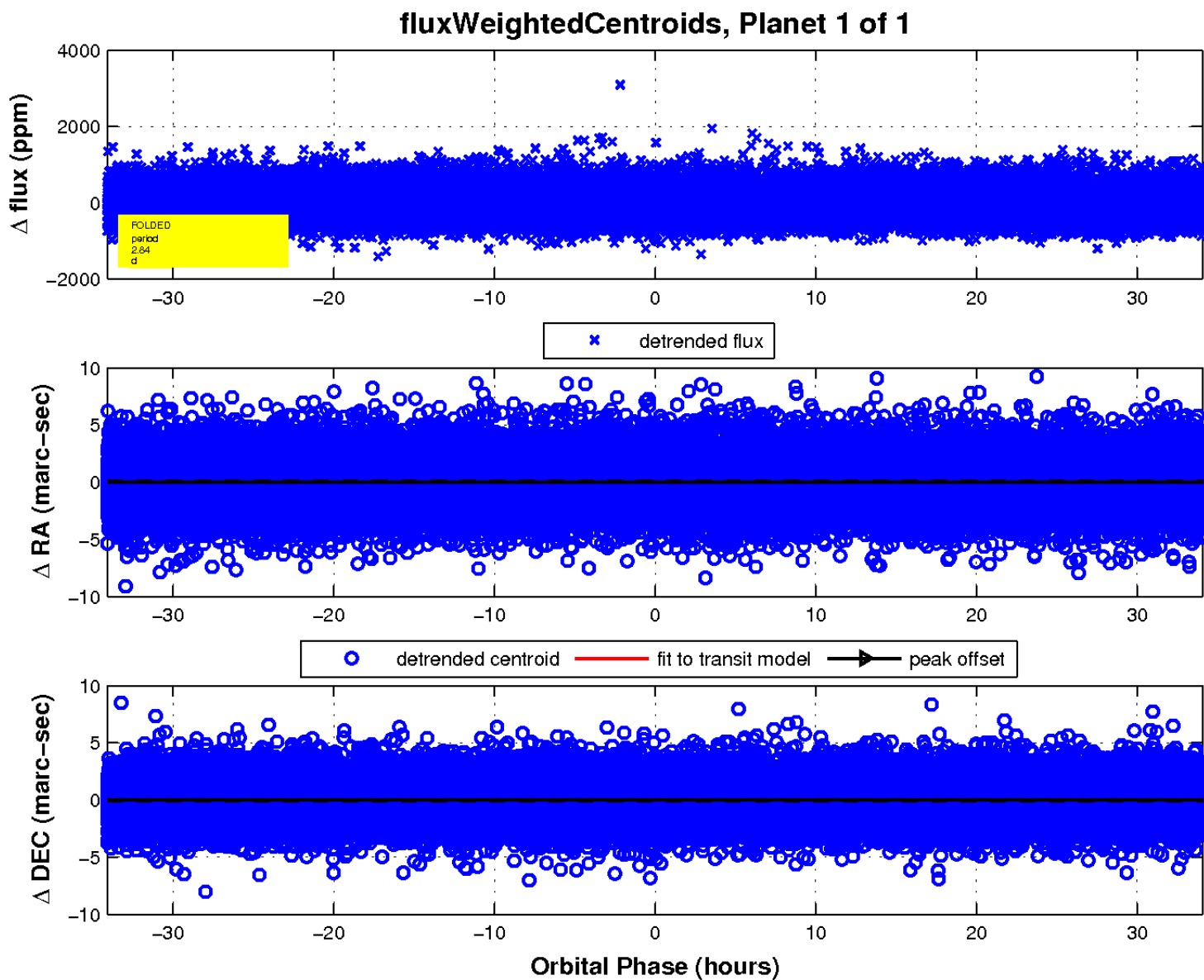
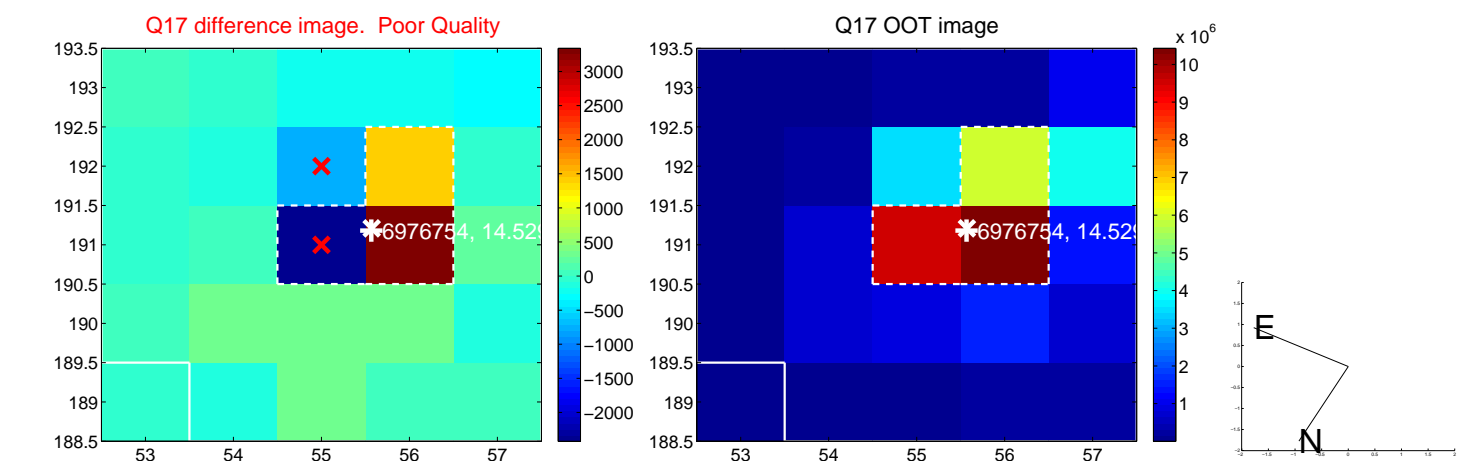
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white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



# UKIRT Image

Declination

