

# KIC 010928043

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
010928043-01	OBS	1315.01	6.846396	133.761643	150.4	3.453	29.8	32.7	1.31	6065	1.89	388.25

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
010928043-01	OBS	PC	1.00	0	0	0	0	CENT_KIC_POS

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

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

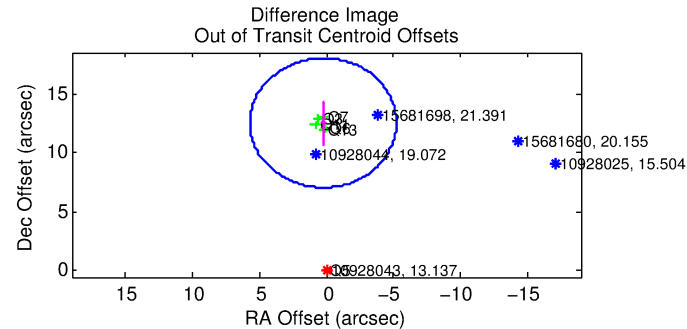
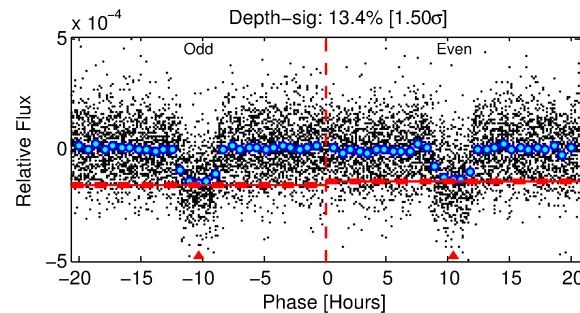
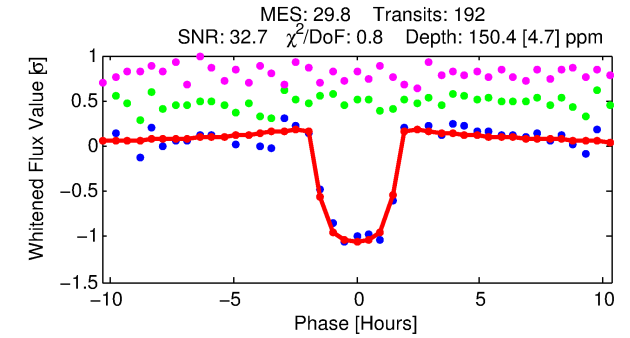
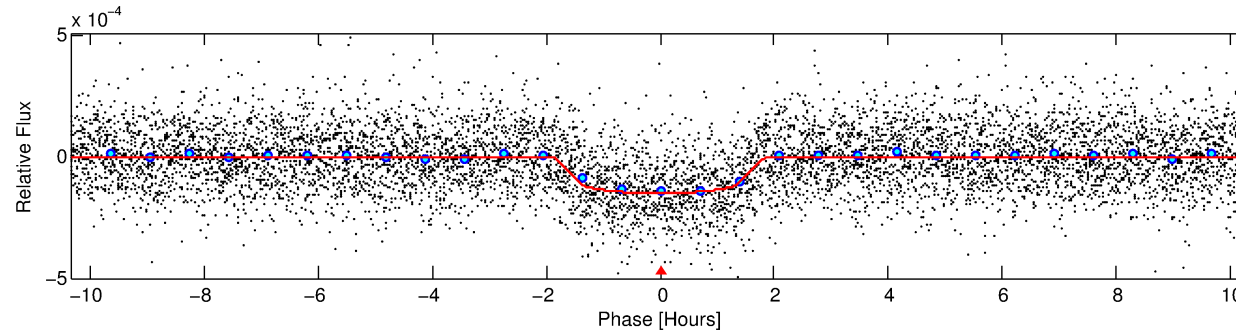
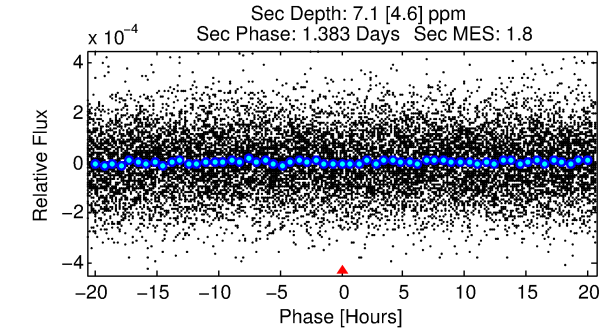
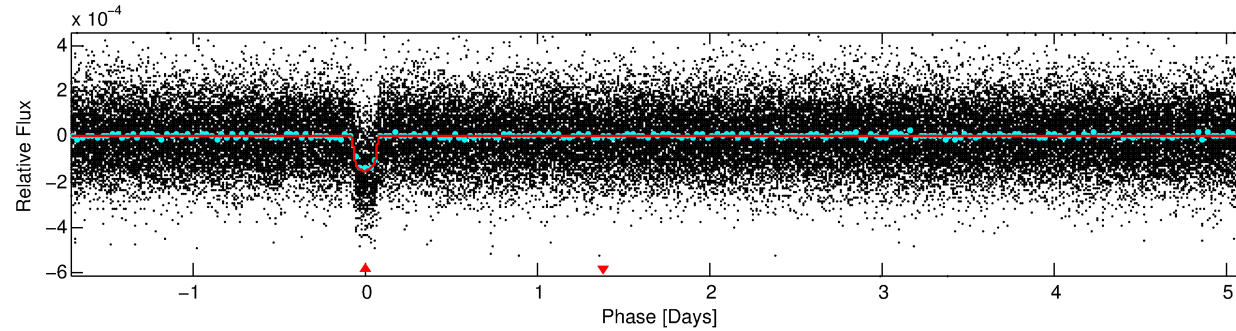
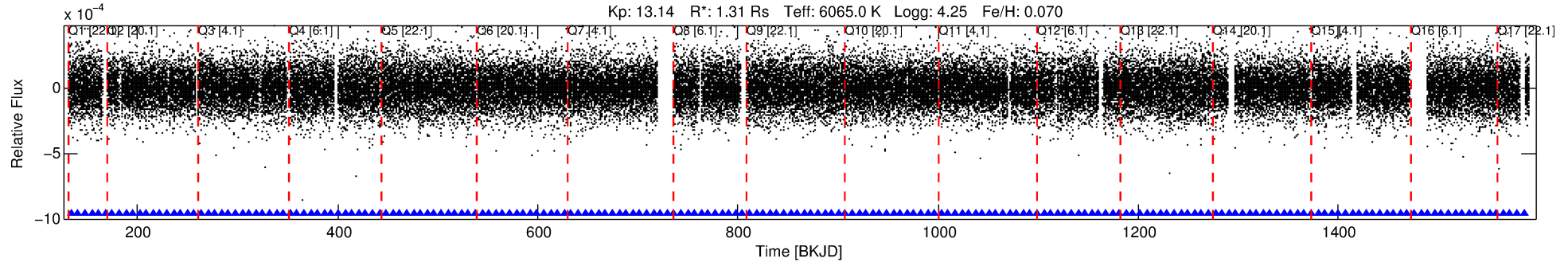
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 010928043-01

No Significant Match Found

# DV One-Page Summary

KIC: 10928043 Candidate: 1 of 1 Period: 6.846 d  
KOI: K01315.01 Corr: 0.986



## DV Fit Results:

Period = 6.84640 [0.00002] d  
Epoch = 133.7616 [0.0018] BKJD  
Rp/R\* = 0.0132 [0.0020]  
a/R\* = 7.29 [5.39]  
b = 0.89 [0.17]  
Seff = 388.25 [94.45]  
Teq = 1132 [69] K  
Rp = 1.89 [0.44] Re  
a = 0.0732 [0.0113] AU  
Ag = 5.90 [4.41] [1.11σ]  
Teffp = 2728 [489] K [3.23σ]

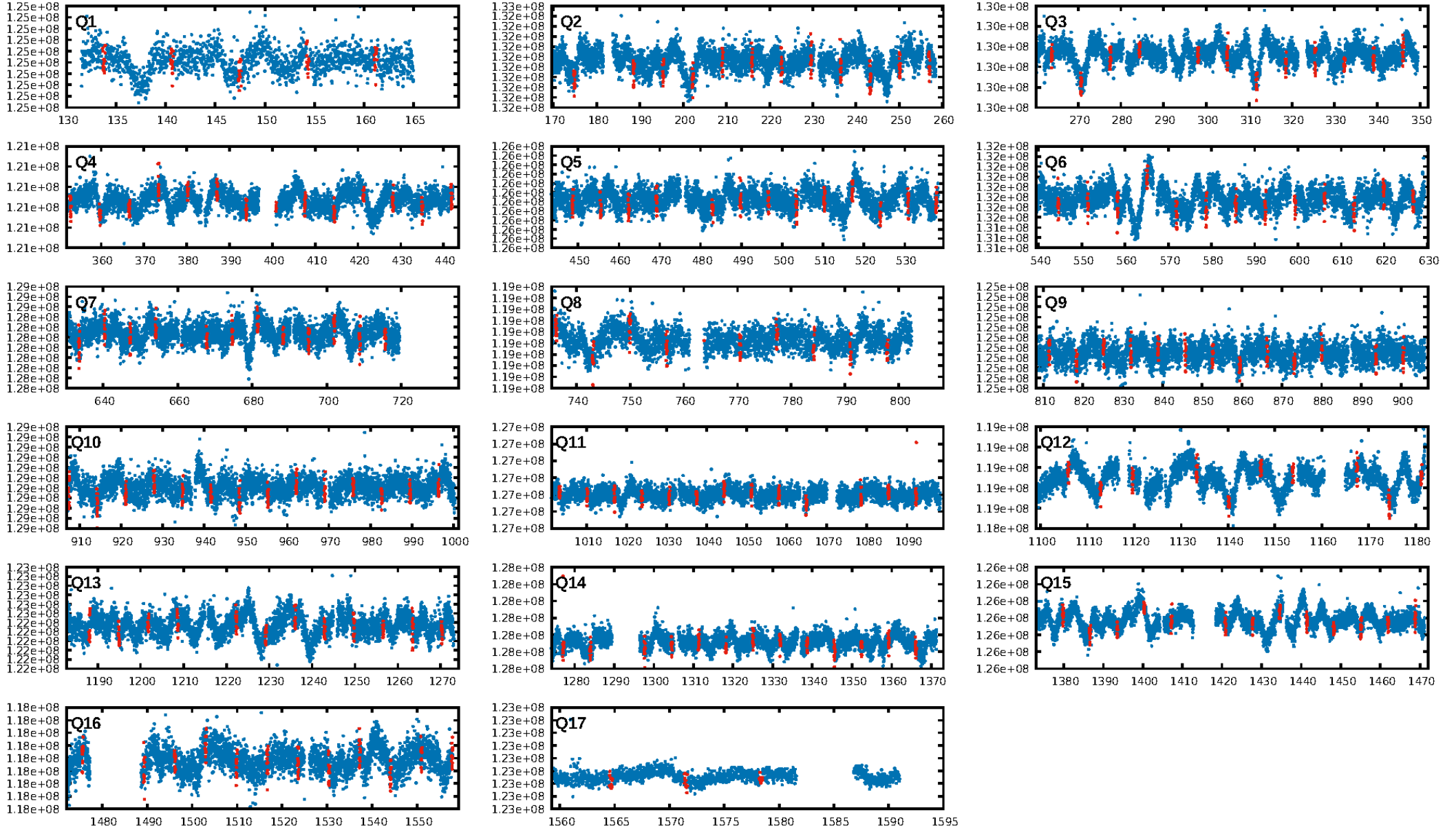
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: 99.1%  
ModelChiSquareGof-sig: 100.0%  
Bootstrap-pfa: 2.76e-189  
RollingBand-fgt: 1.00 [184/184]  
GhostDiagnostic-chr: 13.87  
Centroid-sig: 0.0%  
Centroid-so: 0.637 arcsec [1.72σ]  
OotOffset-rm: 12.532 arcsec [6.88σ]  
KicOffset-rm: 0.342 arcsec [0.25σ]  
OotOffset-st: 1/3/0/2 [6]  
KicOffset-st: 1/3/1/2 [7]  
DiffImageQuality-fgm: 0.57 [4/7]  
DiffImageOverlap-fno: 1.00 [17/17]

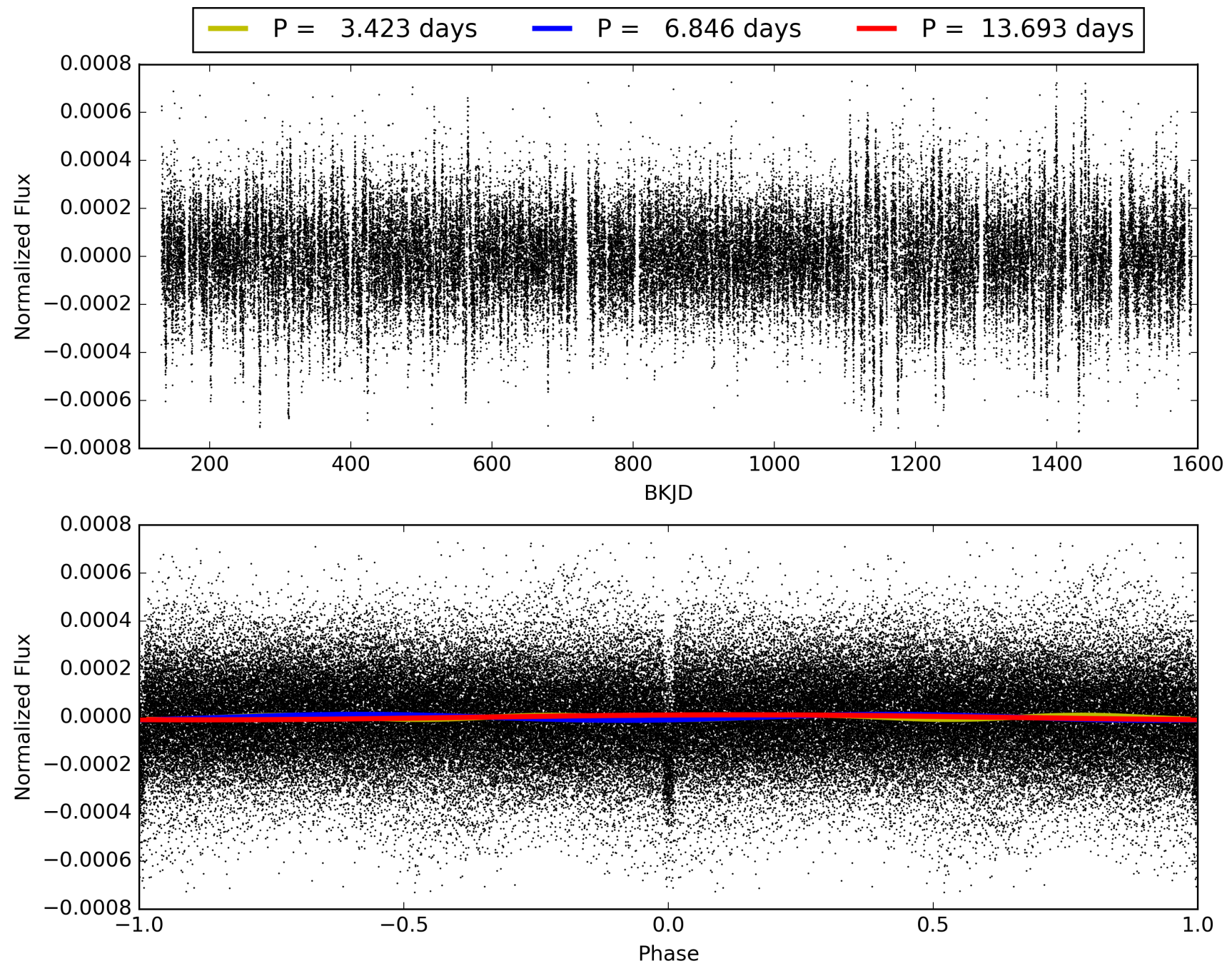
Software Revision: svn-ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 28-Jan-2016 20:38:08 Z

This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

# TCE 010928043-01, PDC Light Curves



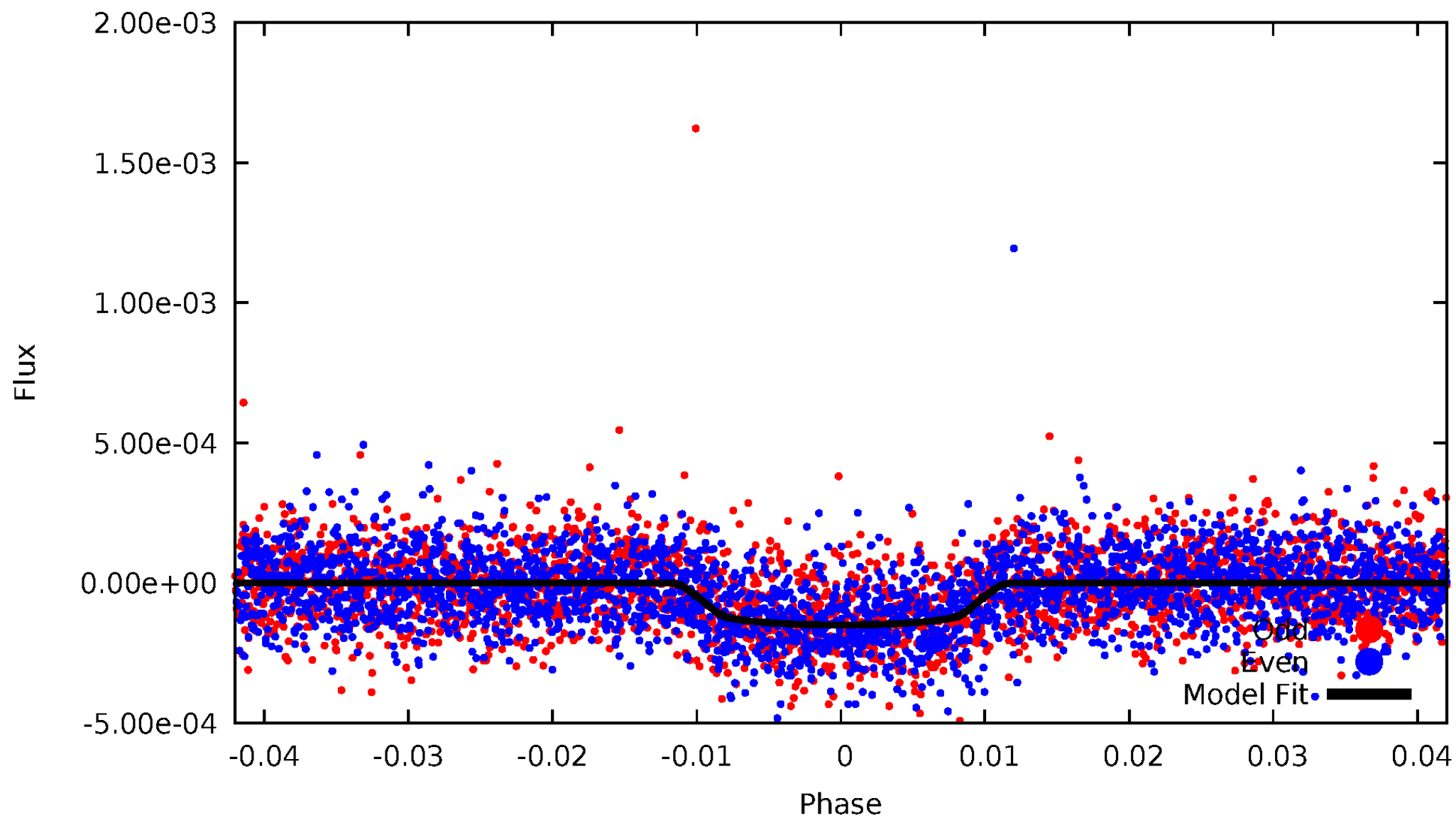
TCE 010928043-01





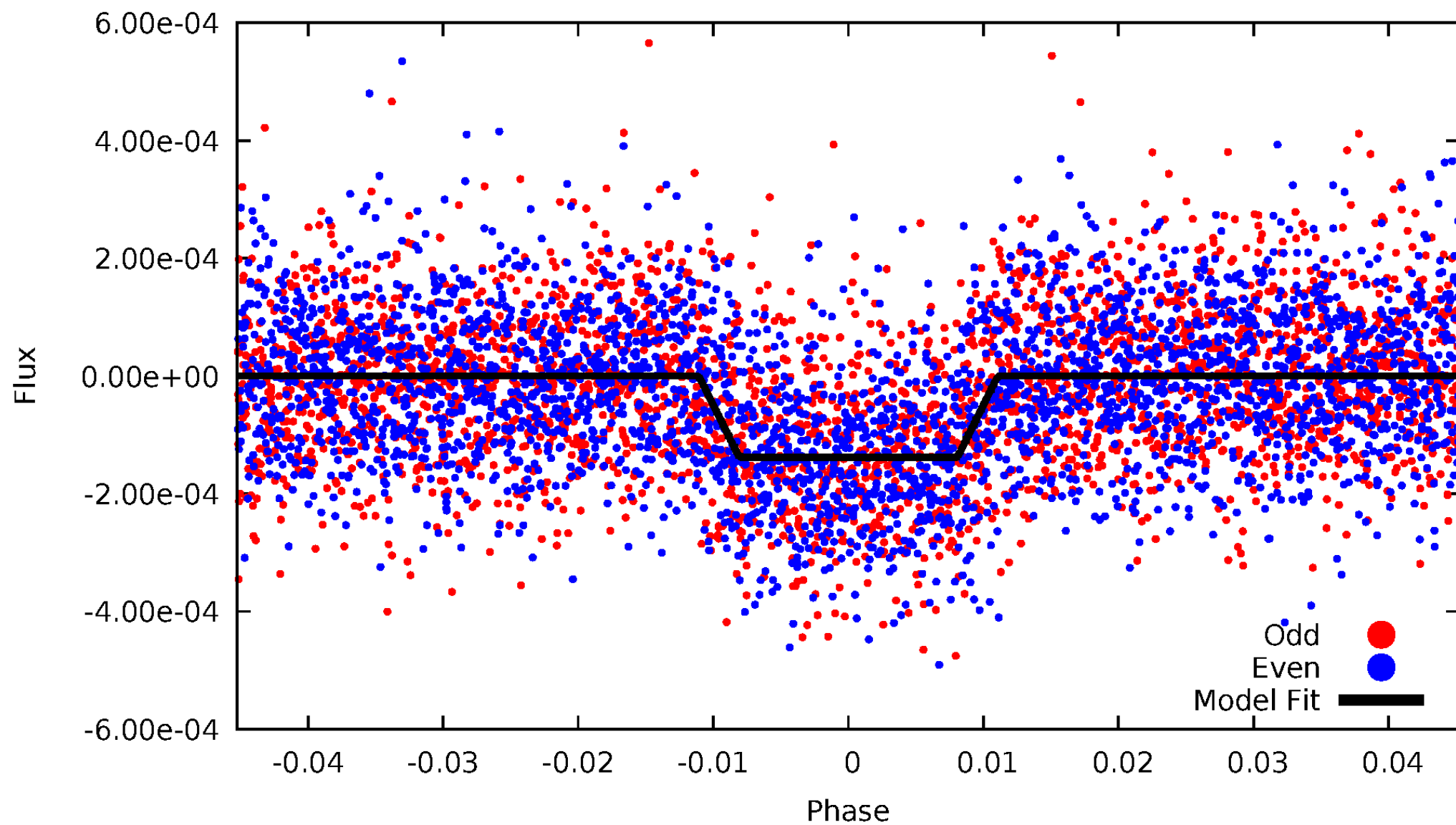
# DV Odd/Even

TCE 010928043-01

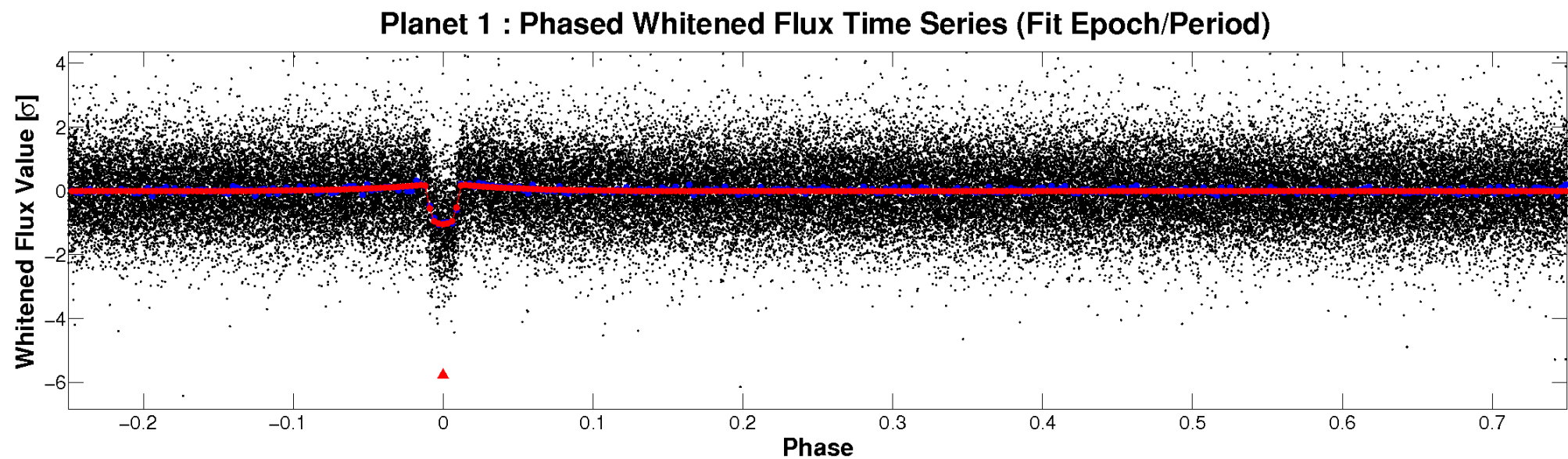
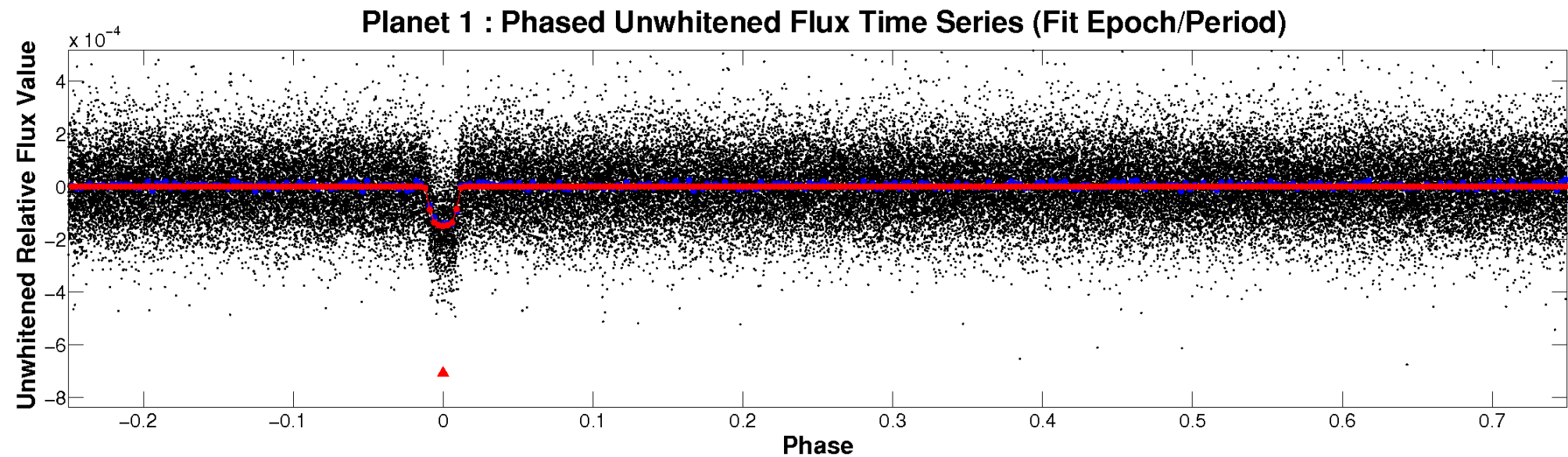


# ALT Odd/Even

TCE 010928043-01

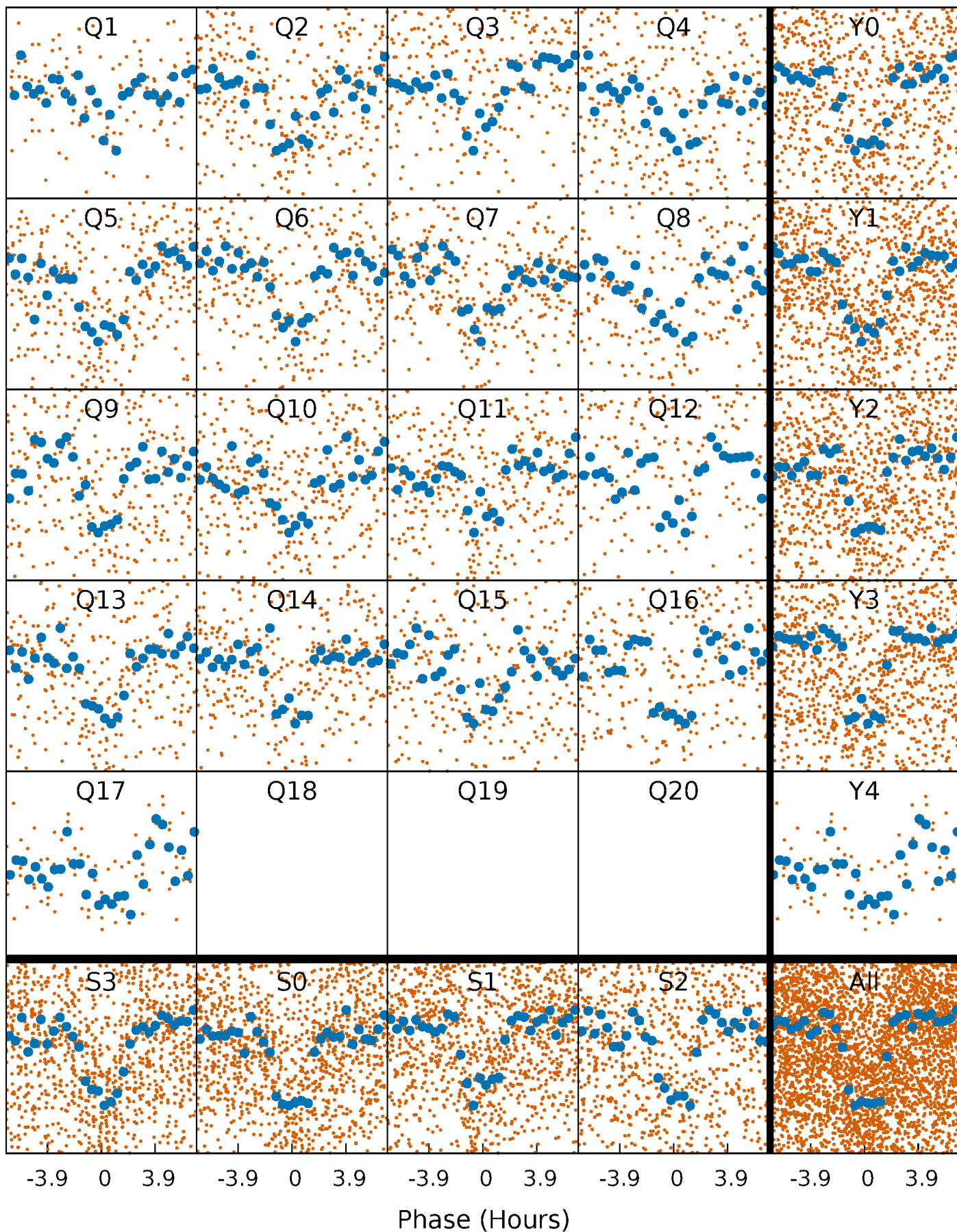


# Non-Whitened Vs. Whitened Light Curve



# PDC Quarter-Phased Transit Curves

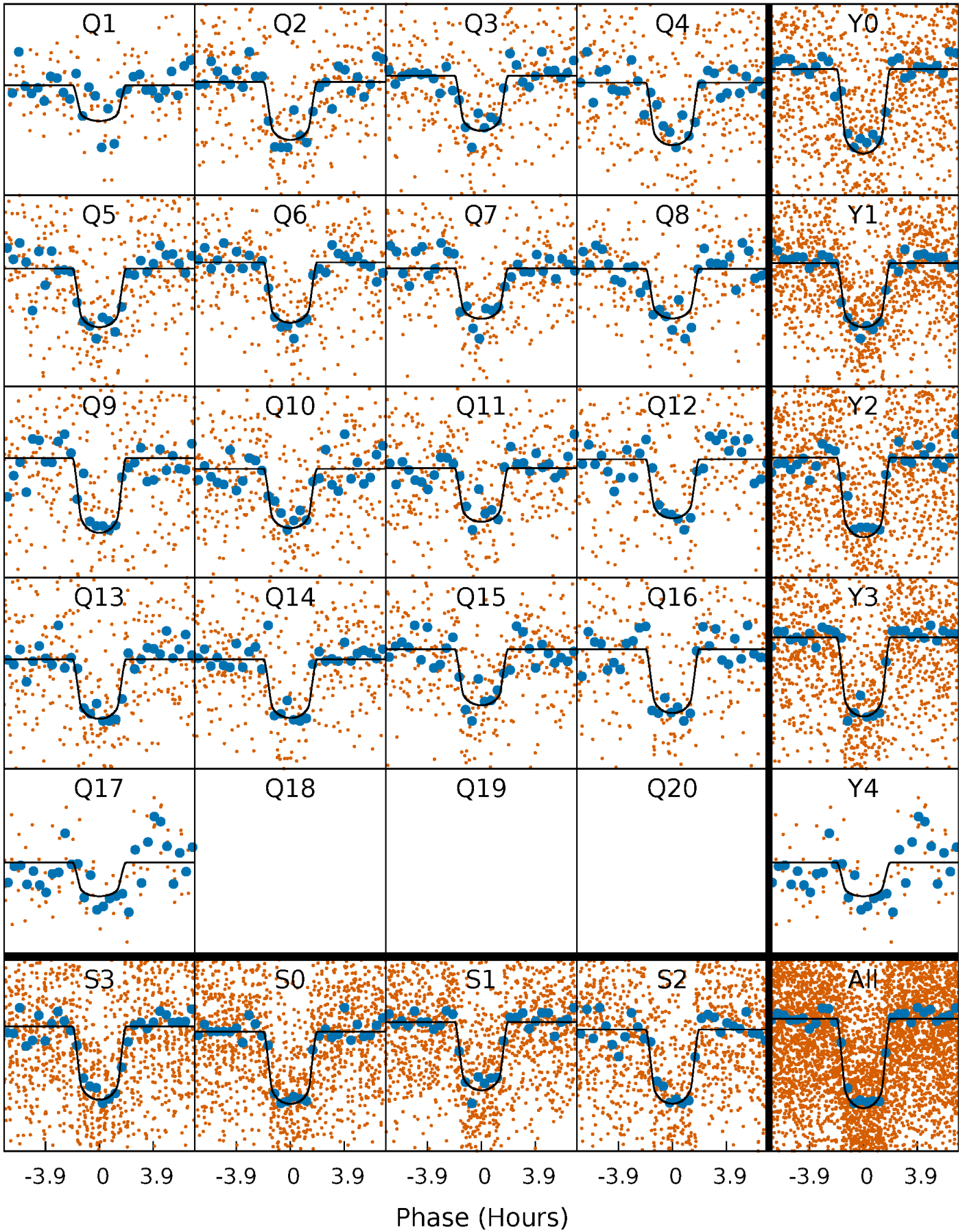
TCE 010928043-01 P= 6.846396 Days  $T_0=133.761643$  (BKJD)





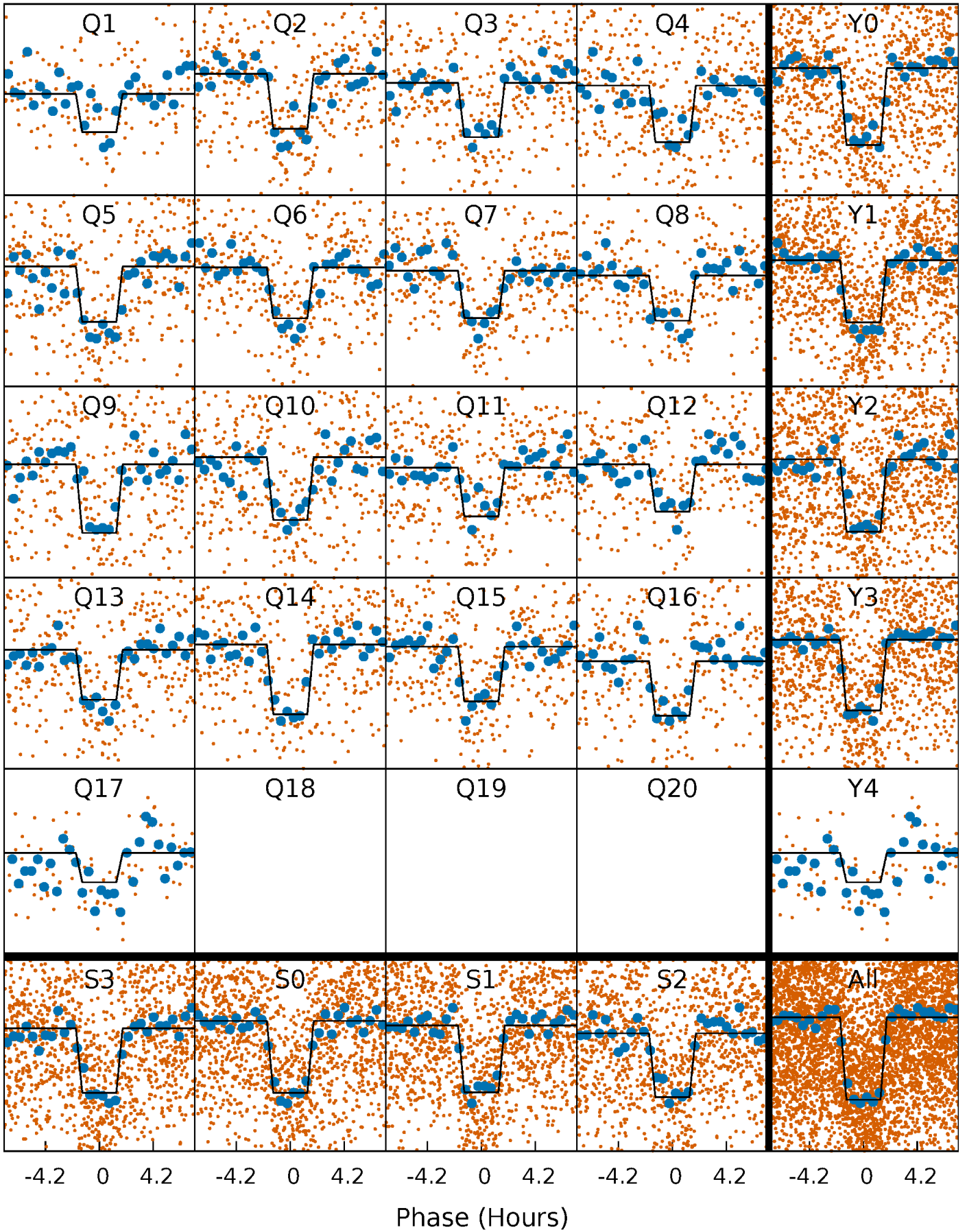
# DV Quarter-Phased Transit Curves

TCE 010928043-01 P= 6.846396 Days  $T_0=133.761643$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

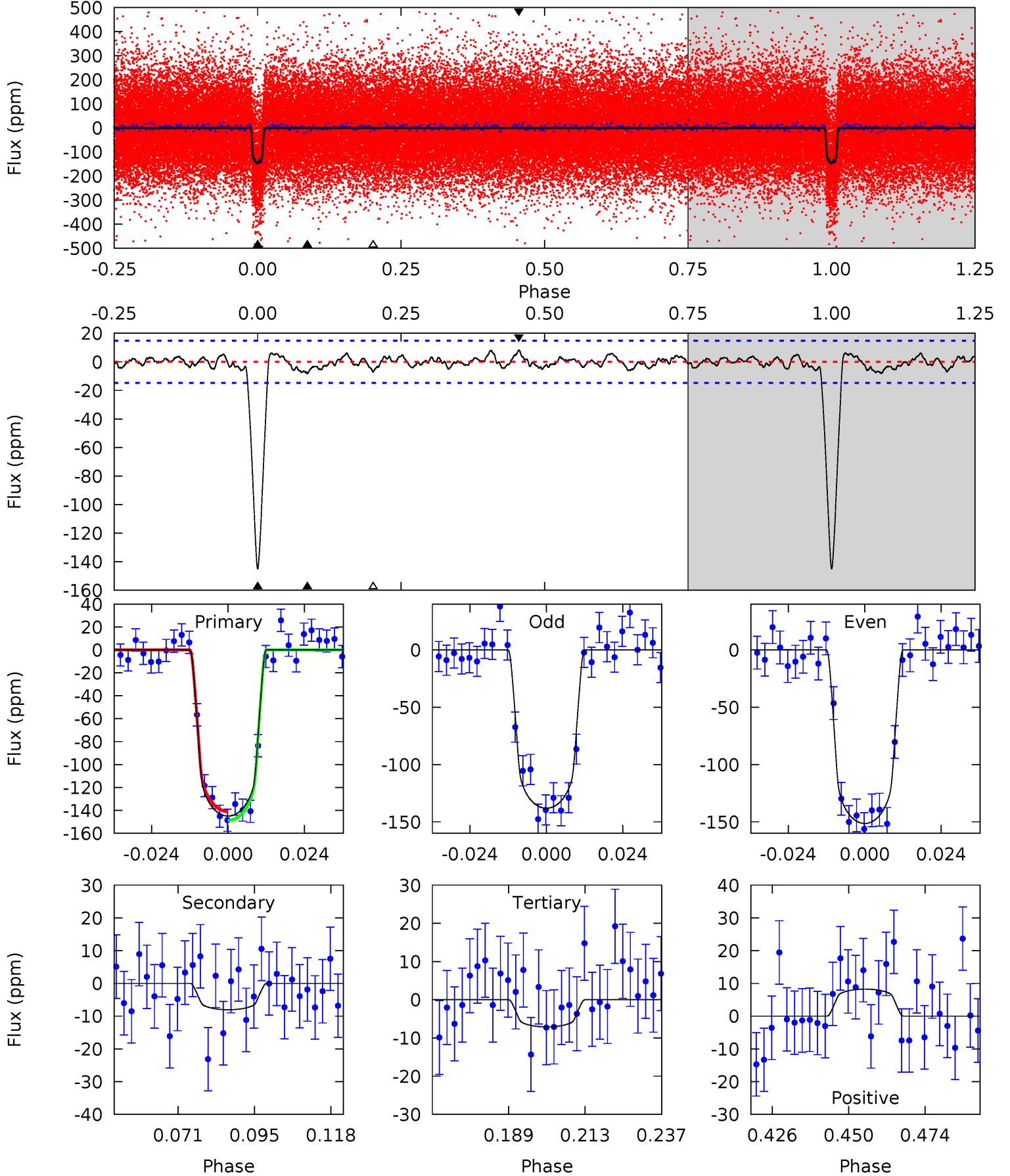
TCE 010928043-01   P= 6.846462 Days    $T_0=133.755205$  (BKJD)



# DV Model-Shift Uniqueness Test

010928043-01, P = 6.846396 Days, E = 126.915247 Days

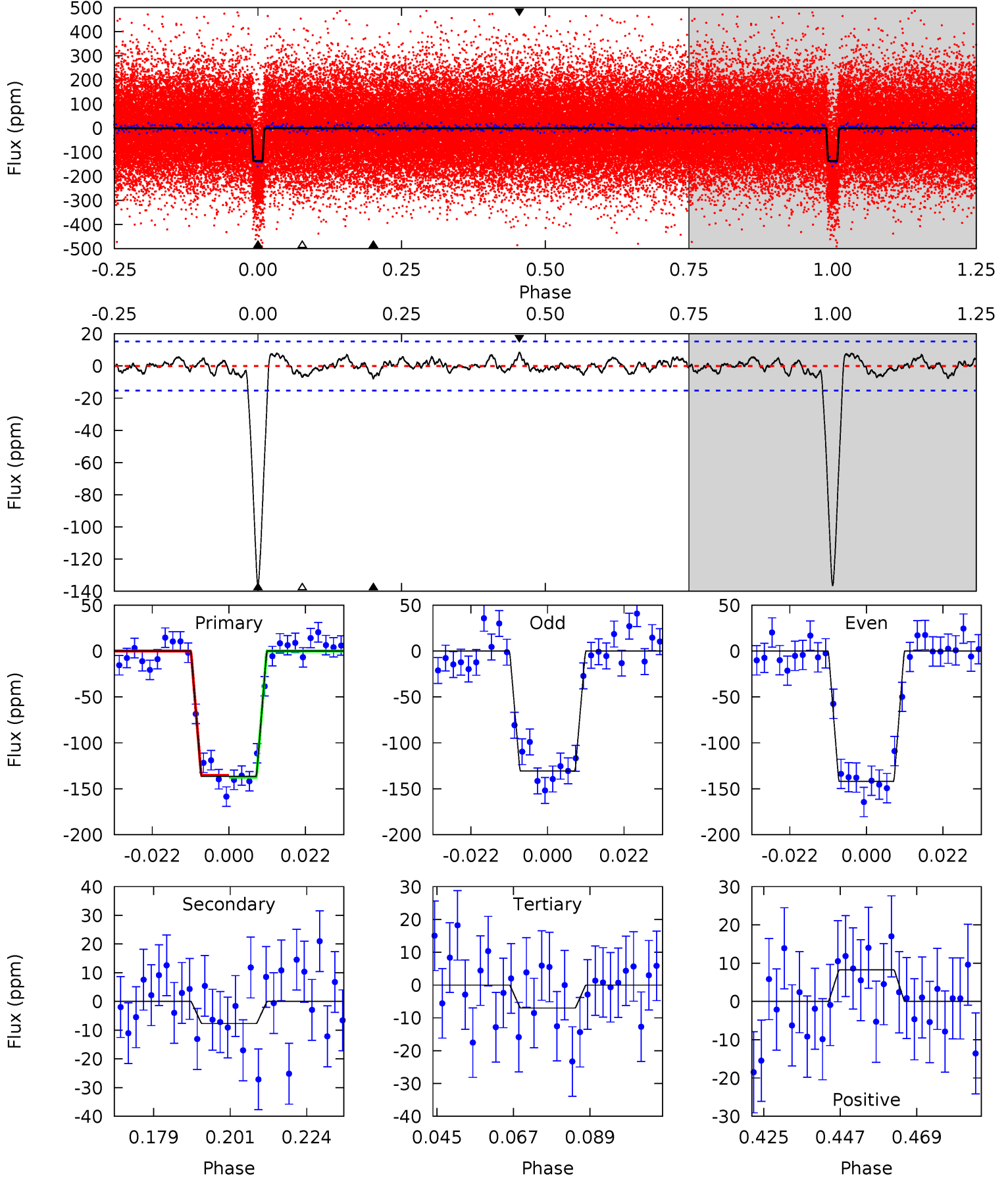
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
47.7	2.64	2.33	2.71	4.86	2.26	0.96	45.3	44.9	0.31	-0.07	2.20	0.99	0.05	1.28



# Alt Model-Shift Uniqueness Test

010928043-01, P = 6.846462 Days, E = 126.908743 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
43.5	2.45	2.23	2.64	4.87	2.28	0.96	41.2	40.8	0.21	-0.19	1.83	0.98	0.06	0.34





### Stellar Parameters For KIC 010928043

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$6065^{+121}_{-133}$	$4.251^{+0.125}_{-0.125}$	$0.070^{+0.150}_{-0.150}$	$1.310^{+0.238}_{-0.194}$	$1.115^{+0.104}_{-0.083}$	$0.698^{+0.392}_{-0.250}$
	+2%/-2%	+3%/-3%	+214%/-214%	+18%/-15%	+9%/-7%	+56%/-36%
Source	SPE59	SPE59	SPE59	DSEP		

KIC = Kepler Input Catalog; PHO = Photometry; SPE = Spectroscopy; AST = Asteroseismology  
 TRA = Transits; DESP = Dartmouth Models; MULT = Multiple Models

### Secondary Eclipse Parameters for KIC 010928043-01 / KOI 1315.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	$A_{\text{obs}}$
DV	$-8 \pm 3$	$1.88^{+0.37}_{-0.33}$	$1579^{+84}_{-69}$	$3337^{+242}_{-271}$	$6.807^{+3.992}_{-3.059}$
Alt.	$-8 \pm 3$	$1.70^{+0.33}_{-0.33}$	$1582^{+77}_{-79}$	$3405^{+311}_{-306}$	$7.765^{+5.603}_{-3.635}$

$T_{\text{max}}$  = 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

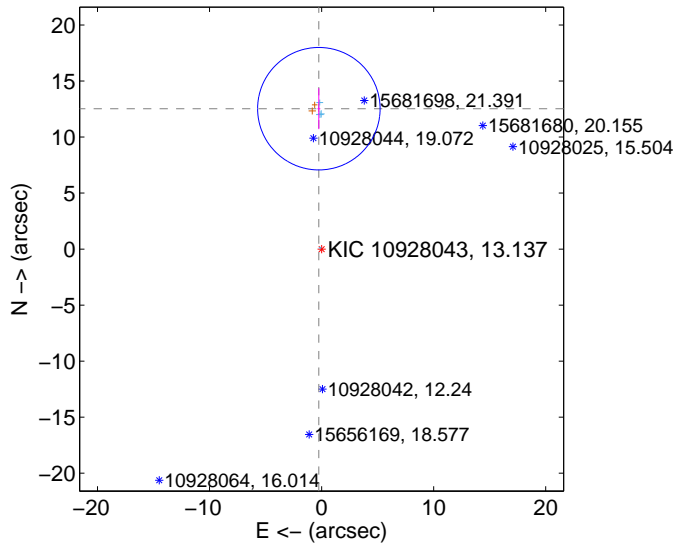
Supplemental centroid analysis for 010928043-01. Kepler magnitude: 13.14. Transit SNR 32.70

There are 4 quarters with good PRF difference image offsets

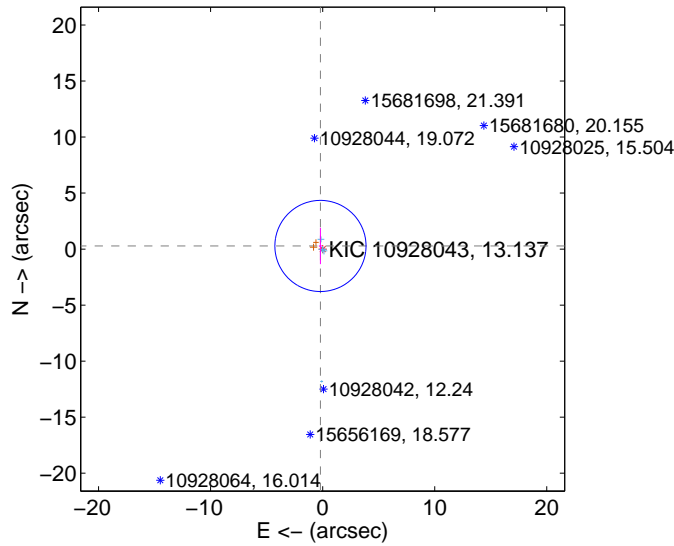
The OOT PRF centroid is offset from the target star catalog position by about 12.03 arcsec so the offset from difference PRF-fit to OOT-fit may be invalid.

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	<b>12.532 <math>\pm</math> 1.822</b>	<b>6.88</b>	0.246 $\pm$ 0.126	12.530 $\pm$ 1.821
PRF-fit source offset from KIC position	0.342 $\pm$ 1.356	0.25	0.197 $\pm$ 0.148	0.280 $\pm$ 1.621
photometric centroid source offset	0.64 $\pm$ 0.37	1.72	0.61 $\pm$ 0.28	-0.17 $\pm$ 0.92

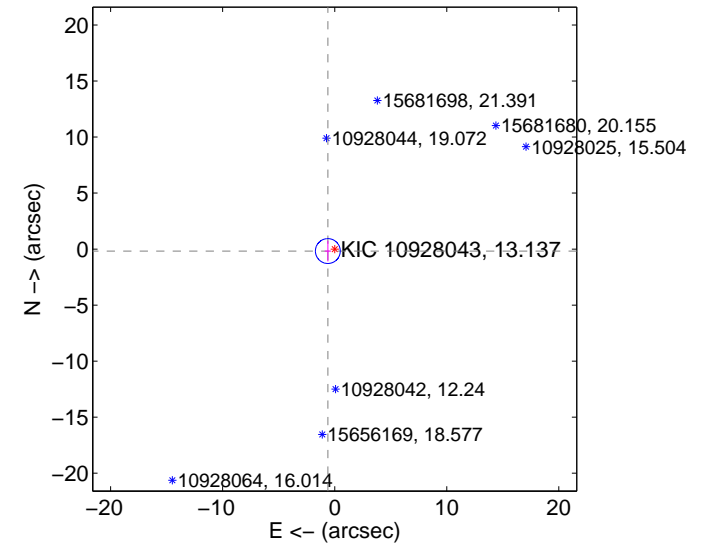
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

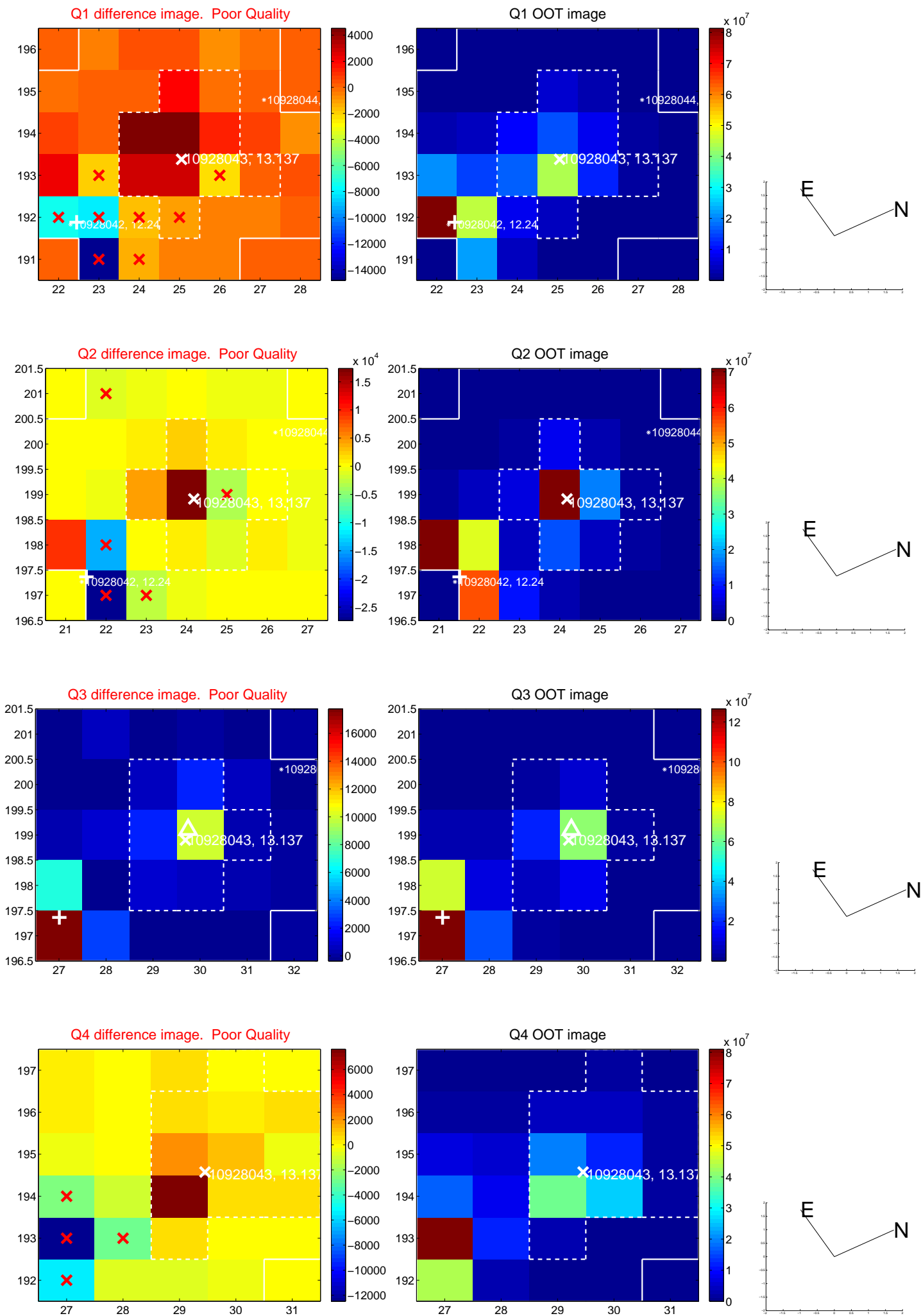


offset from photometric centroids

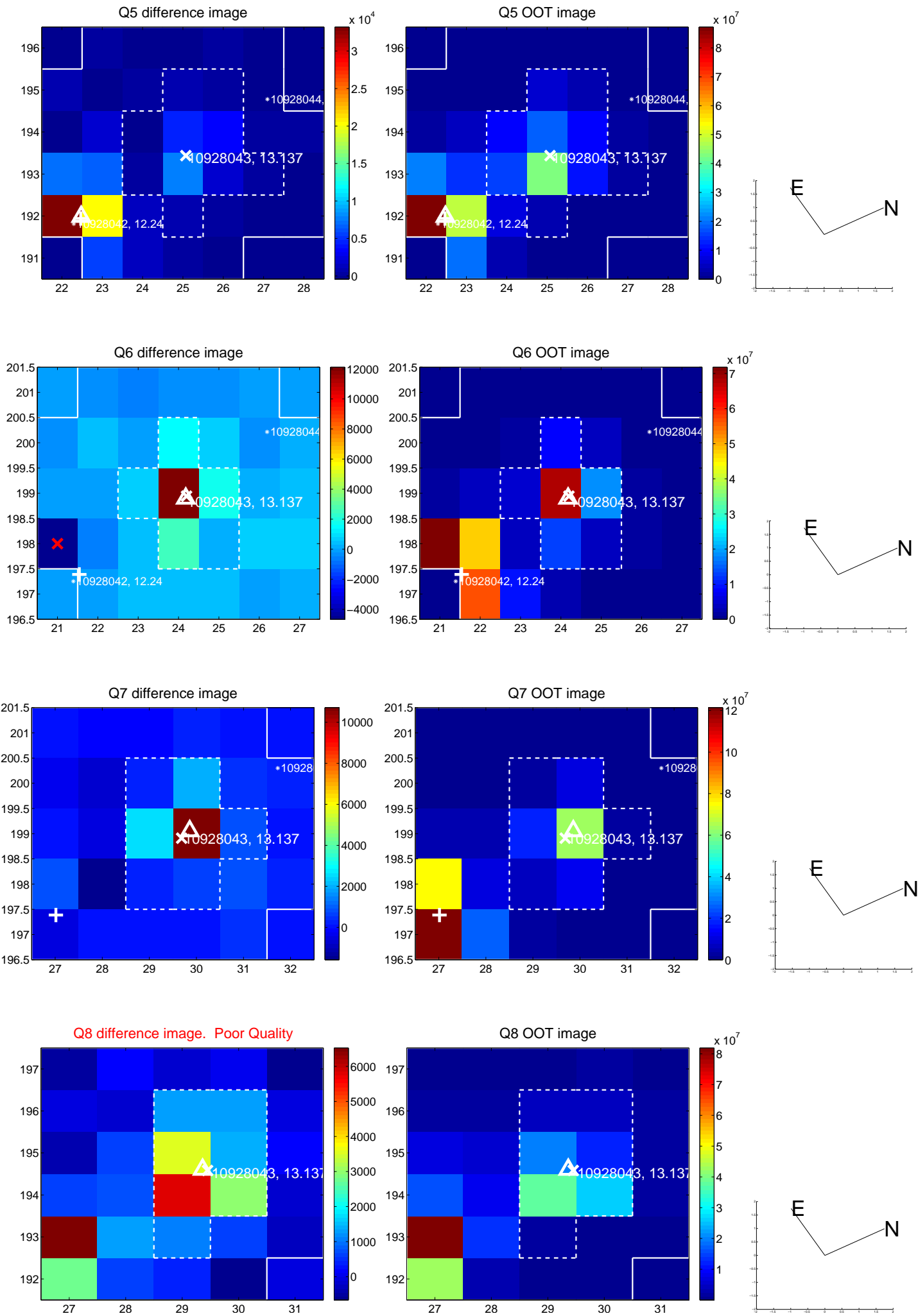


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets**; **Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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

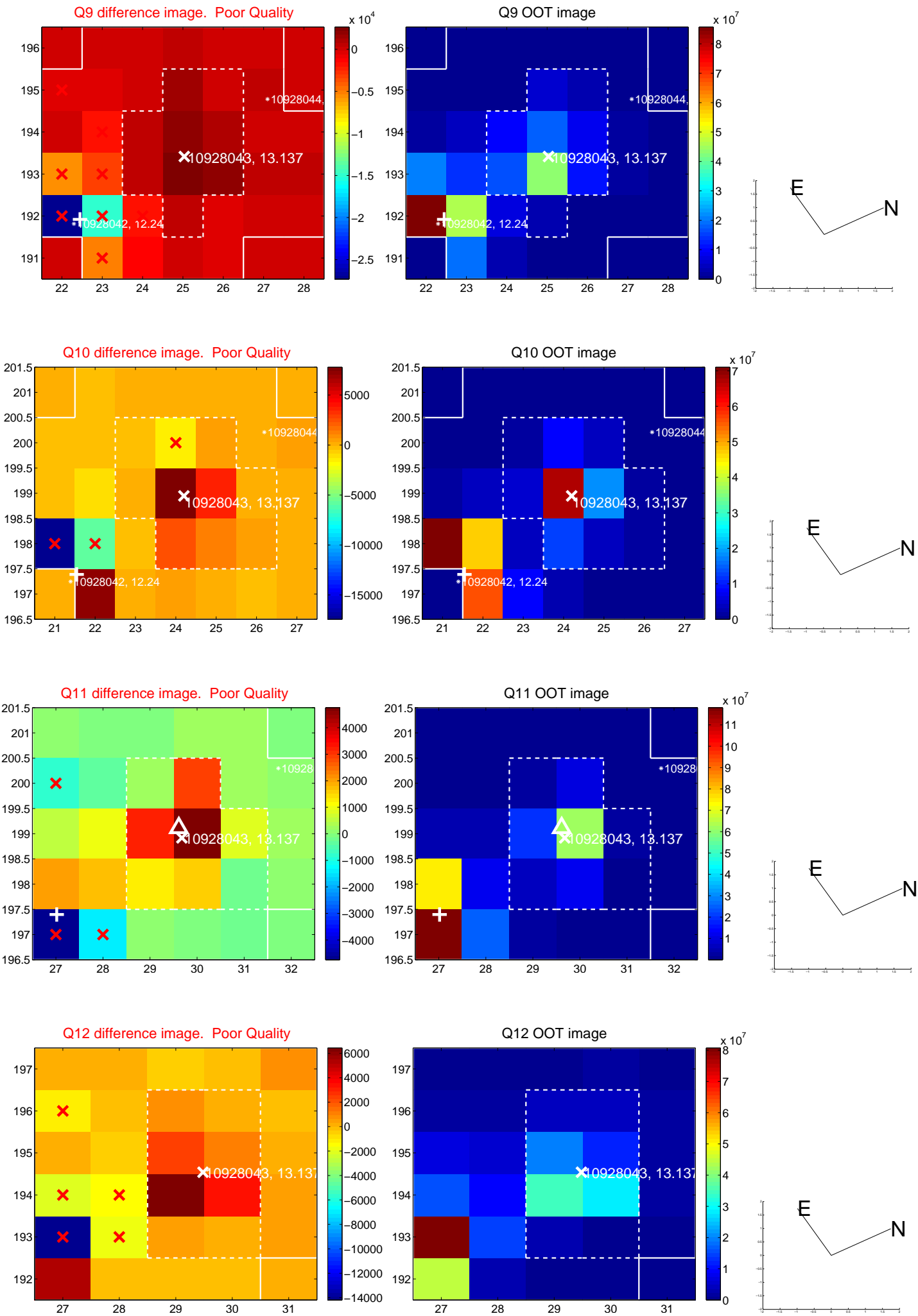


white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

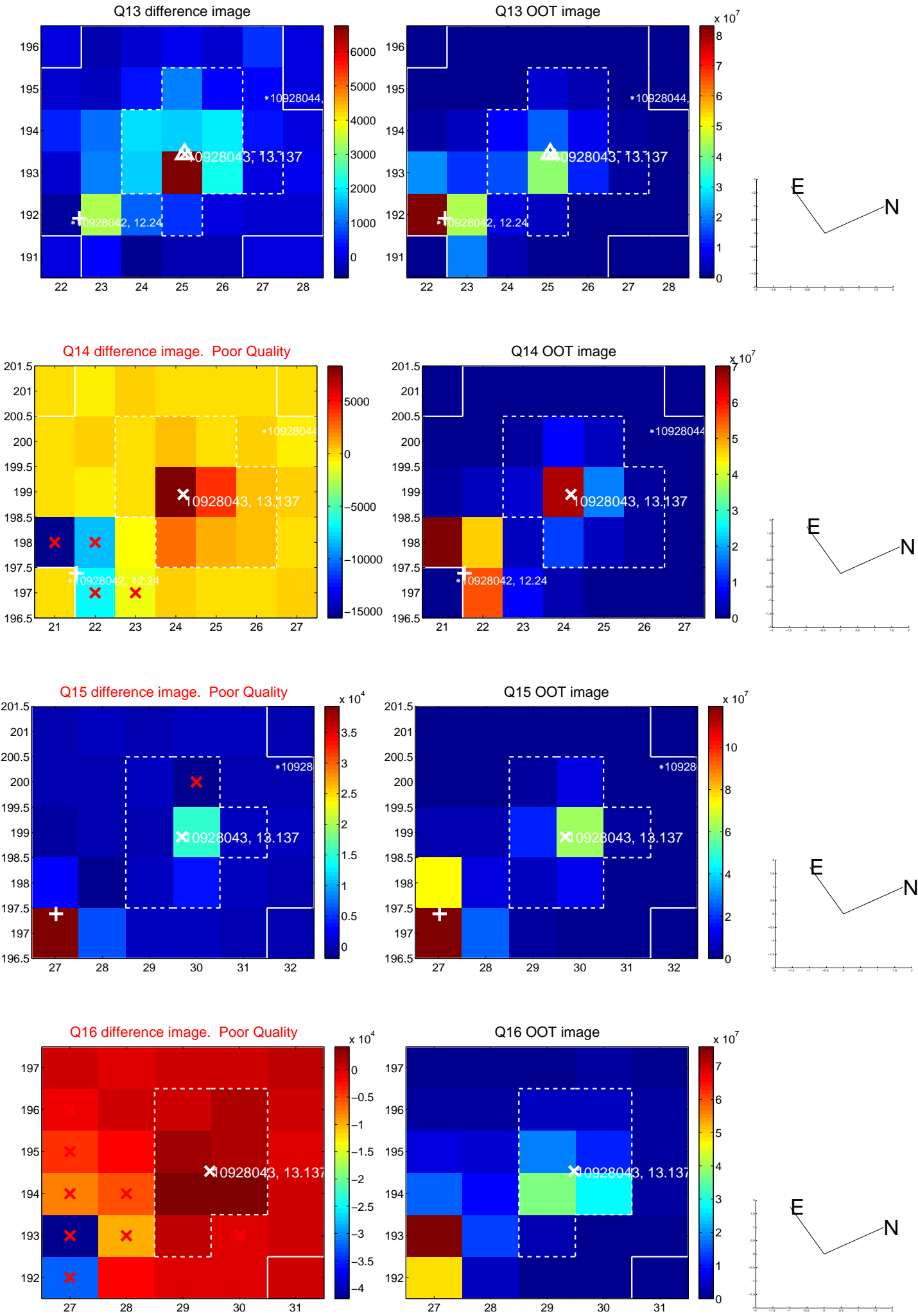




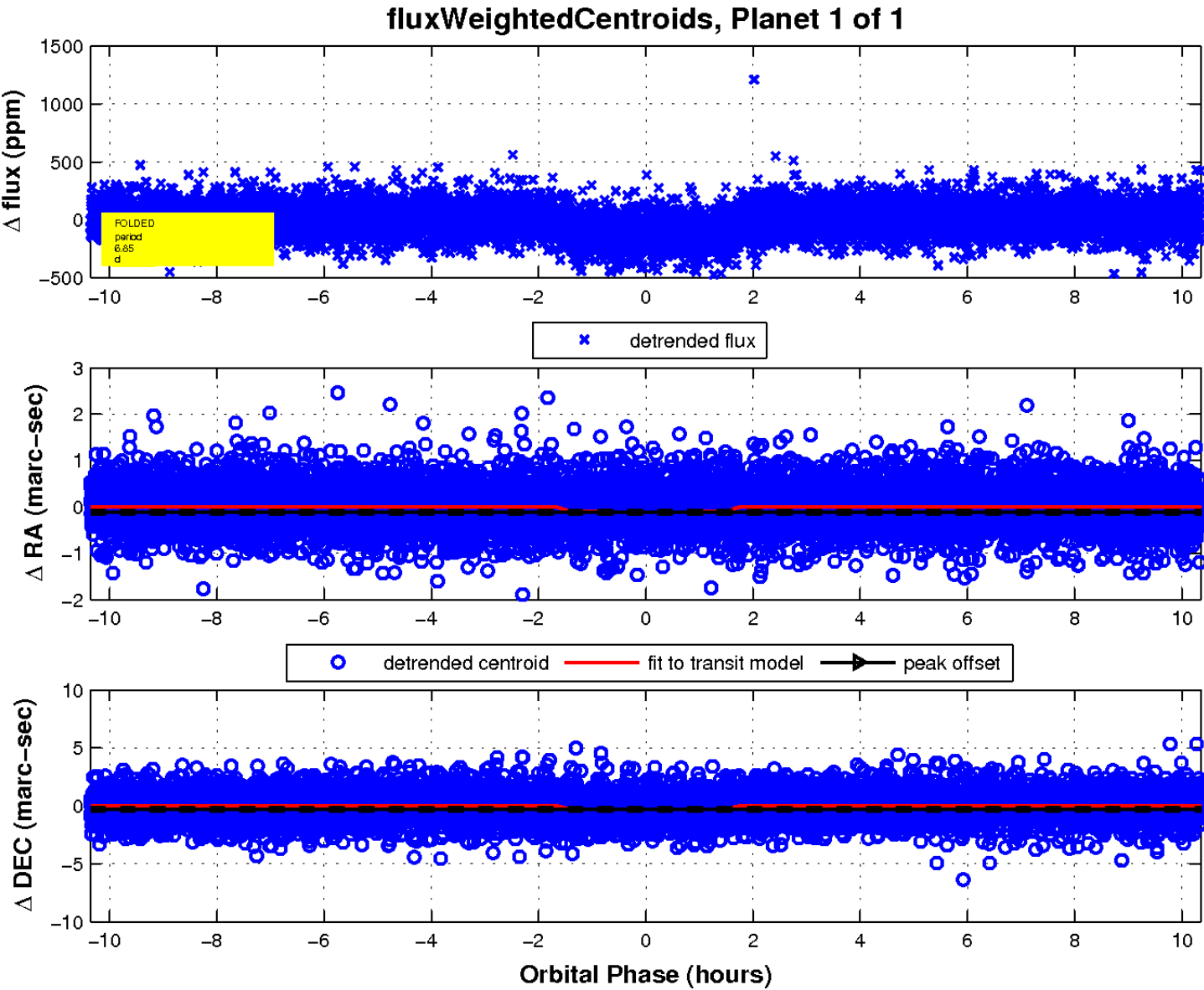
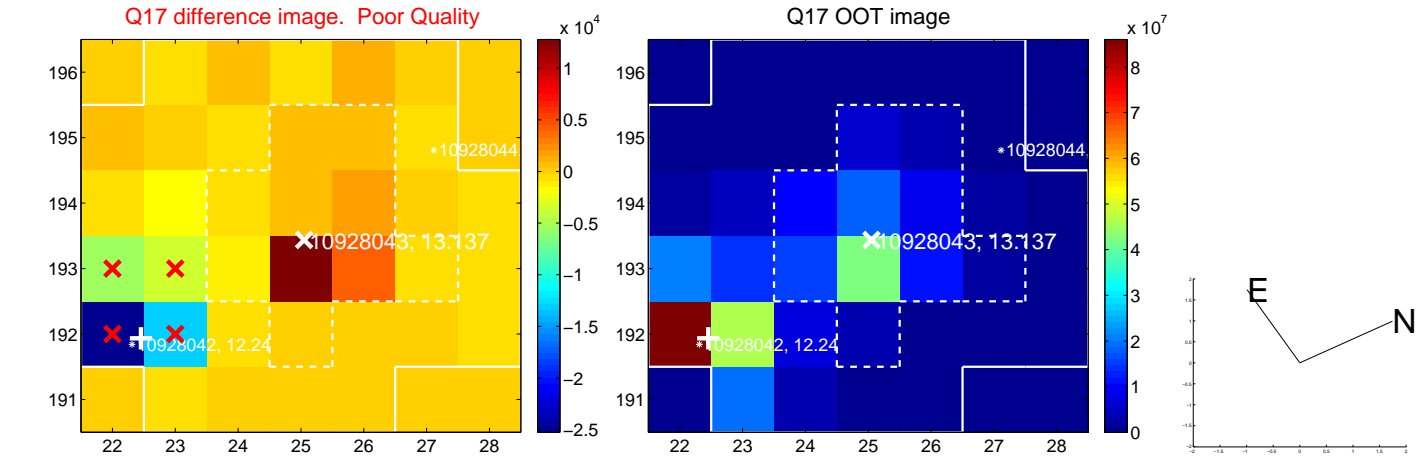
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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

