

# KIC 011303322

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
011303322-01	OBS	3345.01	38.130209	159.390617	186.3	6.596	10.4	10.3	1.11	6370	1.64	33.49

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
011303322-01	OBS	PC	1.00	0	0	0	0	NO_COMMENT

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

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

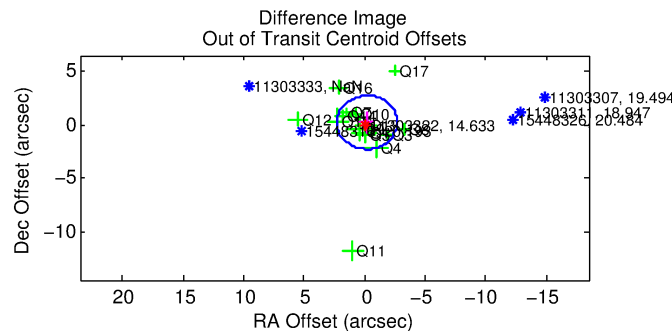
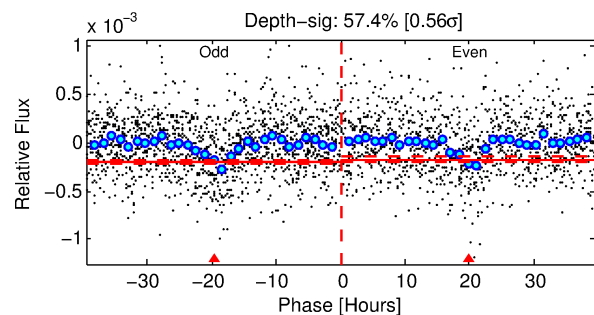
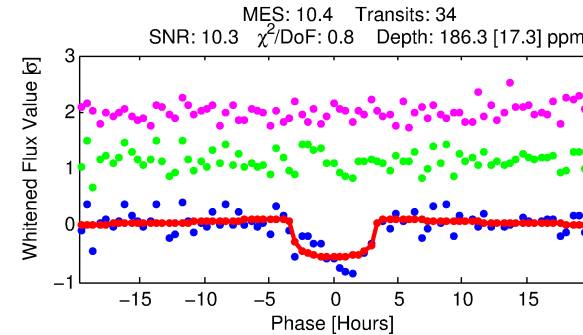
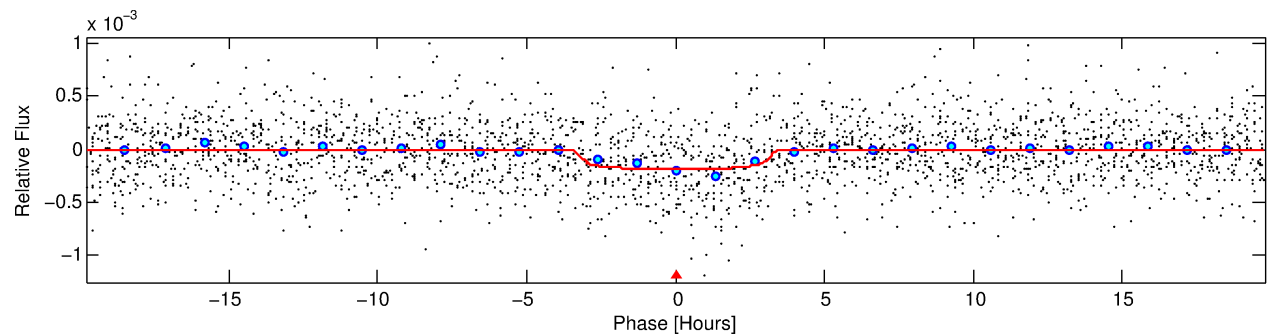
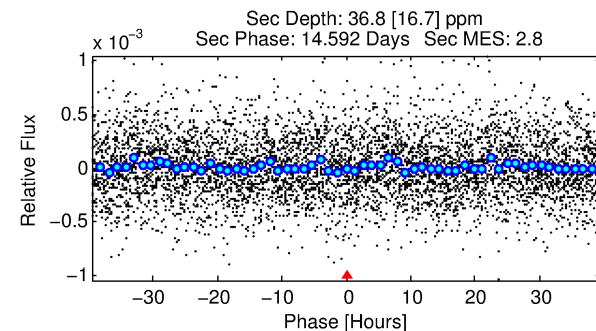
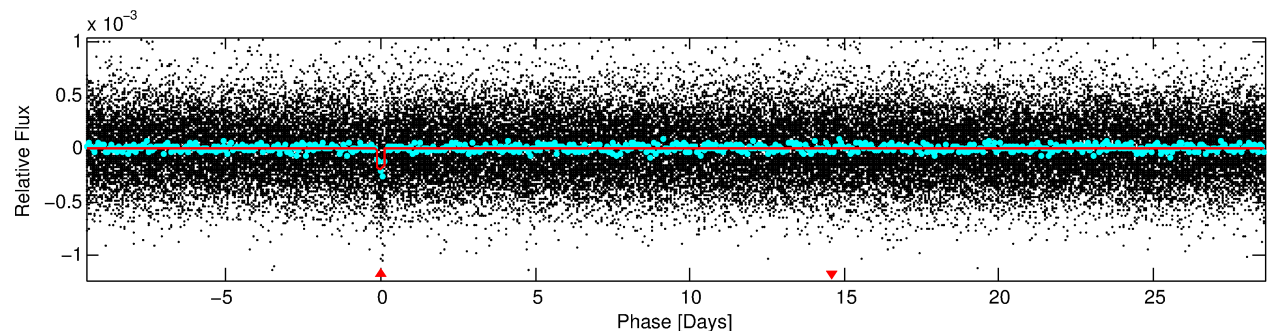
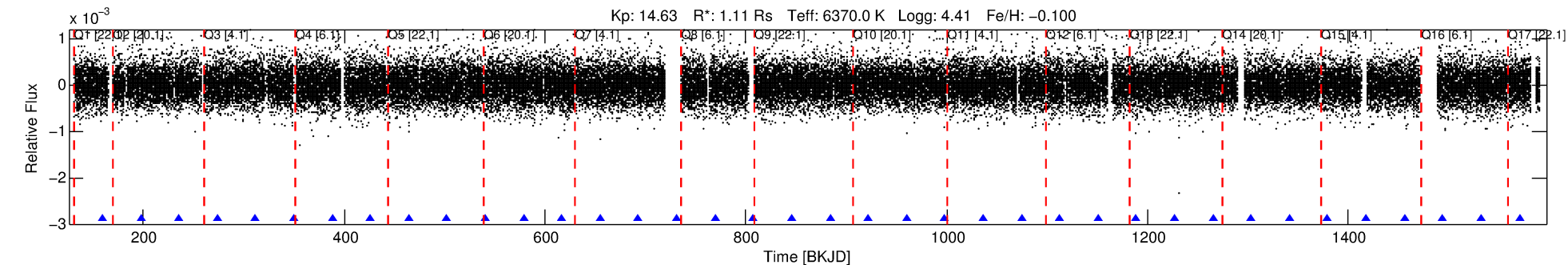
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 011303322-01

No Significant Match Found

# DV One-Page Summary

KIC: 11303322 Candidate: 1 of 1 Period: 38.130 d  
KOI: K03345.01 Corr: 0.958



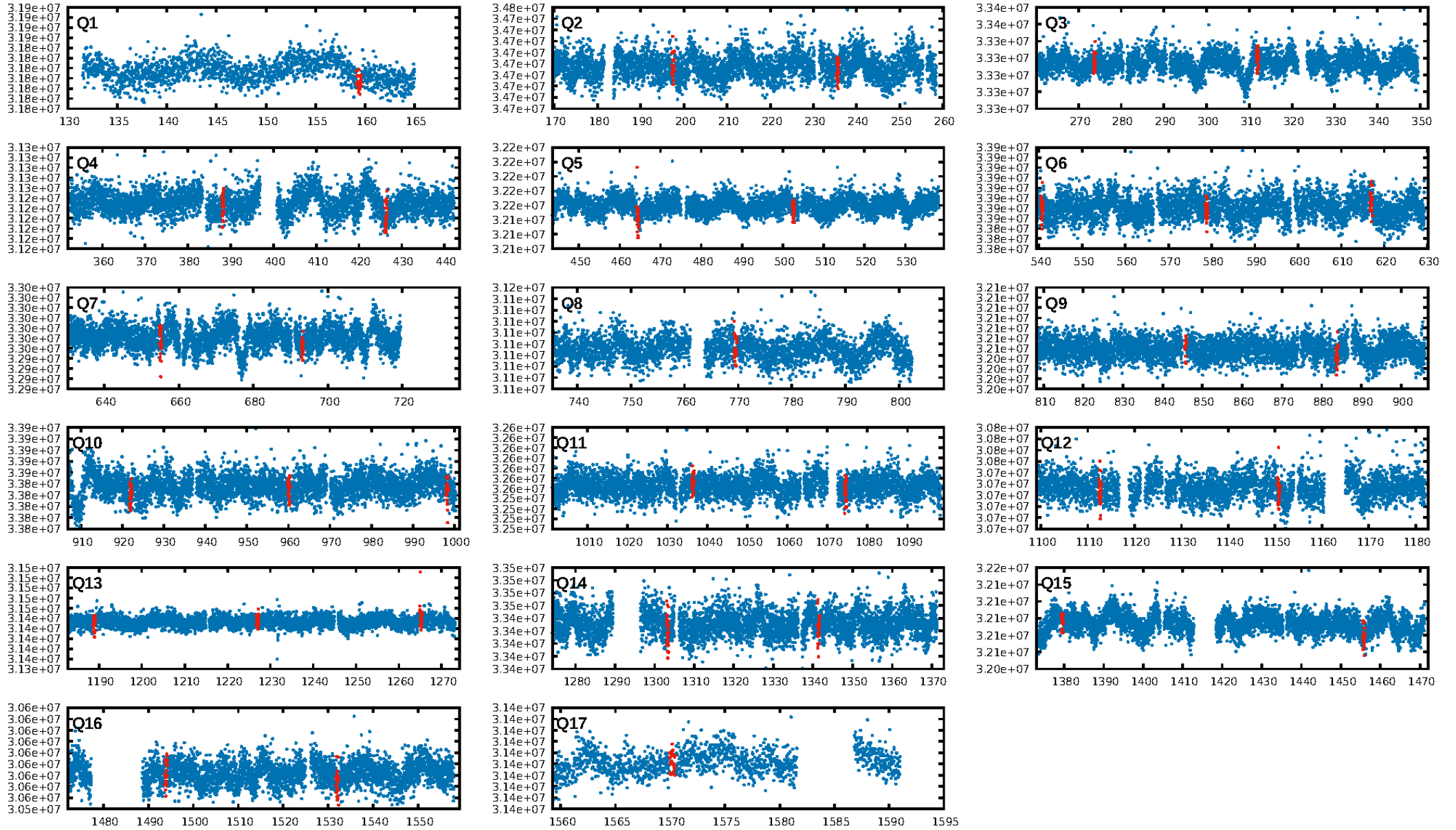
## DV Fit Results:

Period = 38.13021 [0.00048] d  
Epoch = 159.3906 [0.0105] BKJD  
Rp/R\* = 0.0136 [0.0071]  
a/R\* = 29.87 [82.64]  
b = 0.76 [1.59]  
Seff = 33.49 [12.59]  
Teff = 613 [58] K  
Rp = 1.64 [0.99] Re  
a = 0.2321 [0.0577] AU  
Ag = 404.61 [482.05] [0.84σ]  
Teffp = 4254 [1218] K [2.98σ]

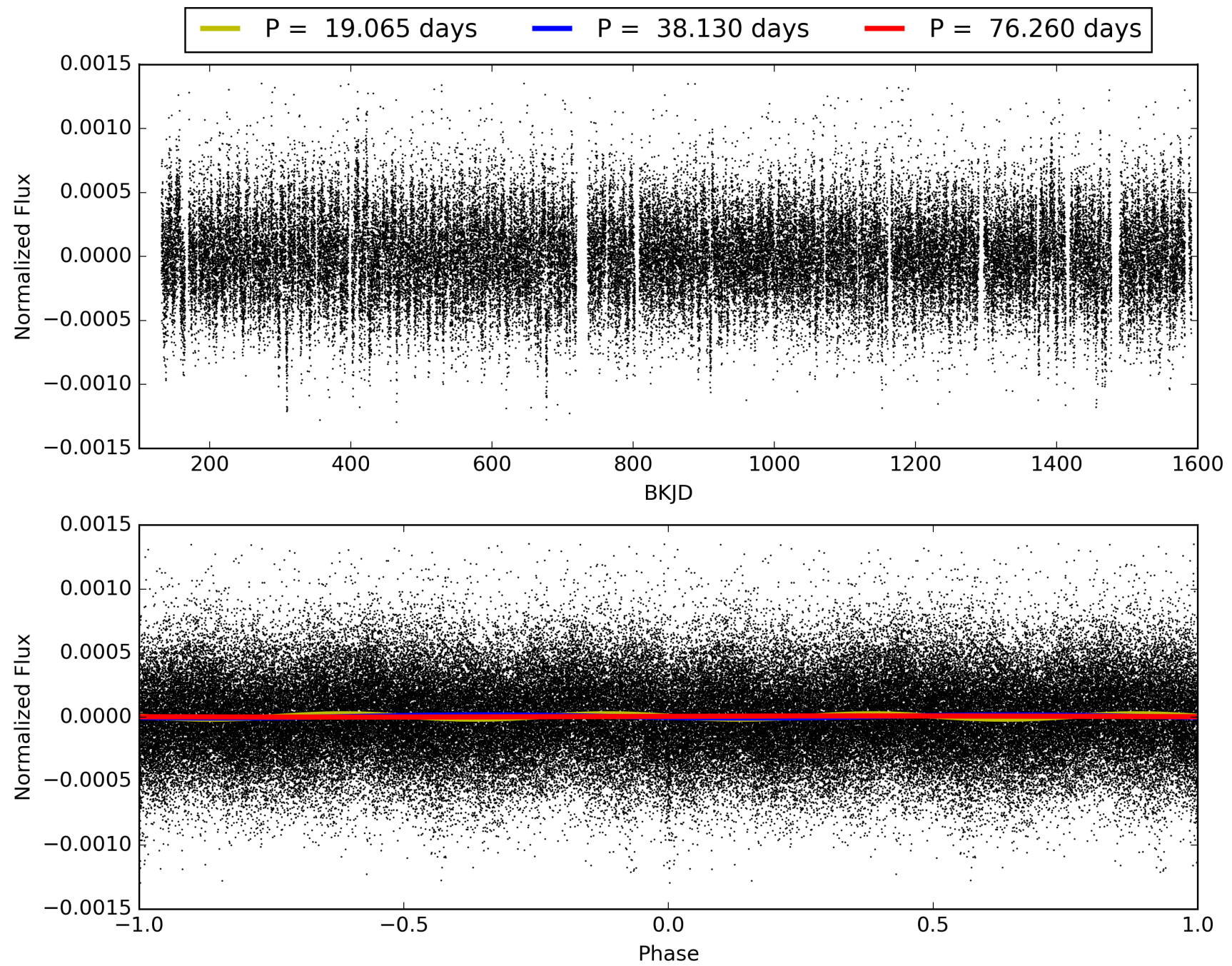
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: 92.4%  
ModelChiSquareGof-sig: 100.0%  
Bootstrap-pfa: 5.54e-25  
RollingBand-fgt: 1.00 [32/32]  
GhostDiagnostic-chr: 0.6525  
Centroid-sig: 46.3%  
Centroid-so: 0.787 arcsec [0.67σ]  
OotOffset-rm: 0.284 arcsec [0.34σ]  
KicOffset-rm: 0.272 arcsec [0.29σ]  
OotOffset-st: 2/4/4/5 [15]  
KicOffset-st: 2/4/4/5 [15]  
DiffImageQuality-fgm: 0.73 [11/15]  
DiffImageOverlap-fno: 1.00 [17/17]

# TCE 011303322-01, PDC Light Curves

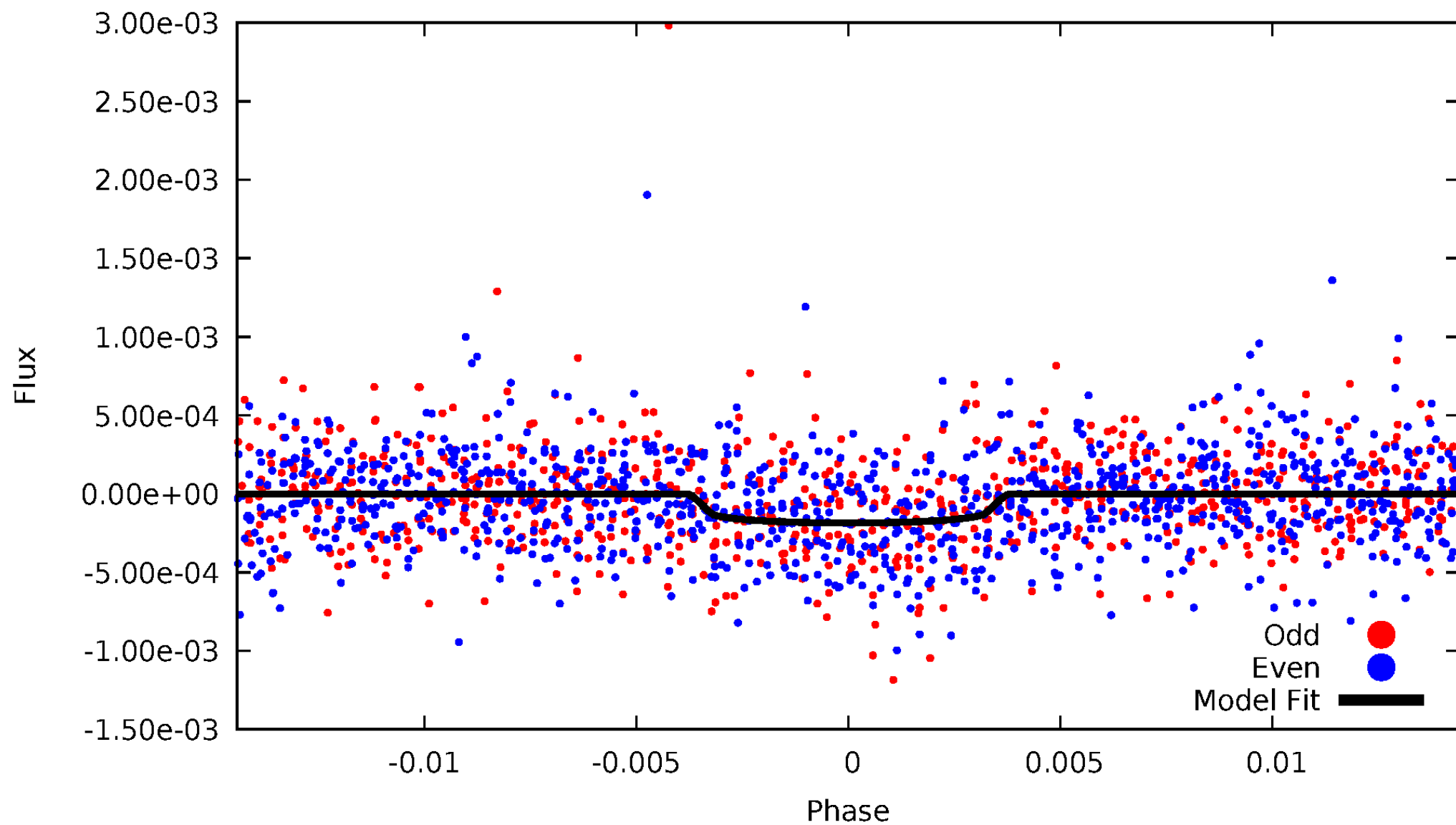


# TCE 011303322-01



# DV Odd/Even

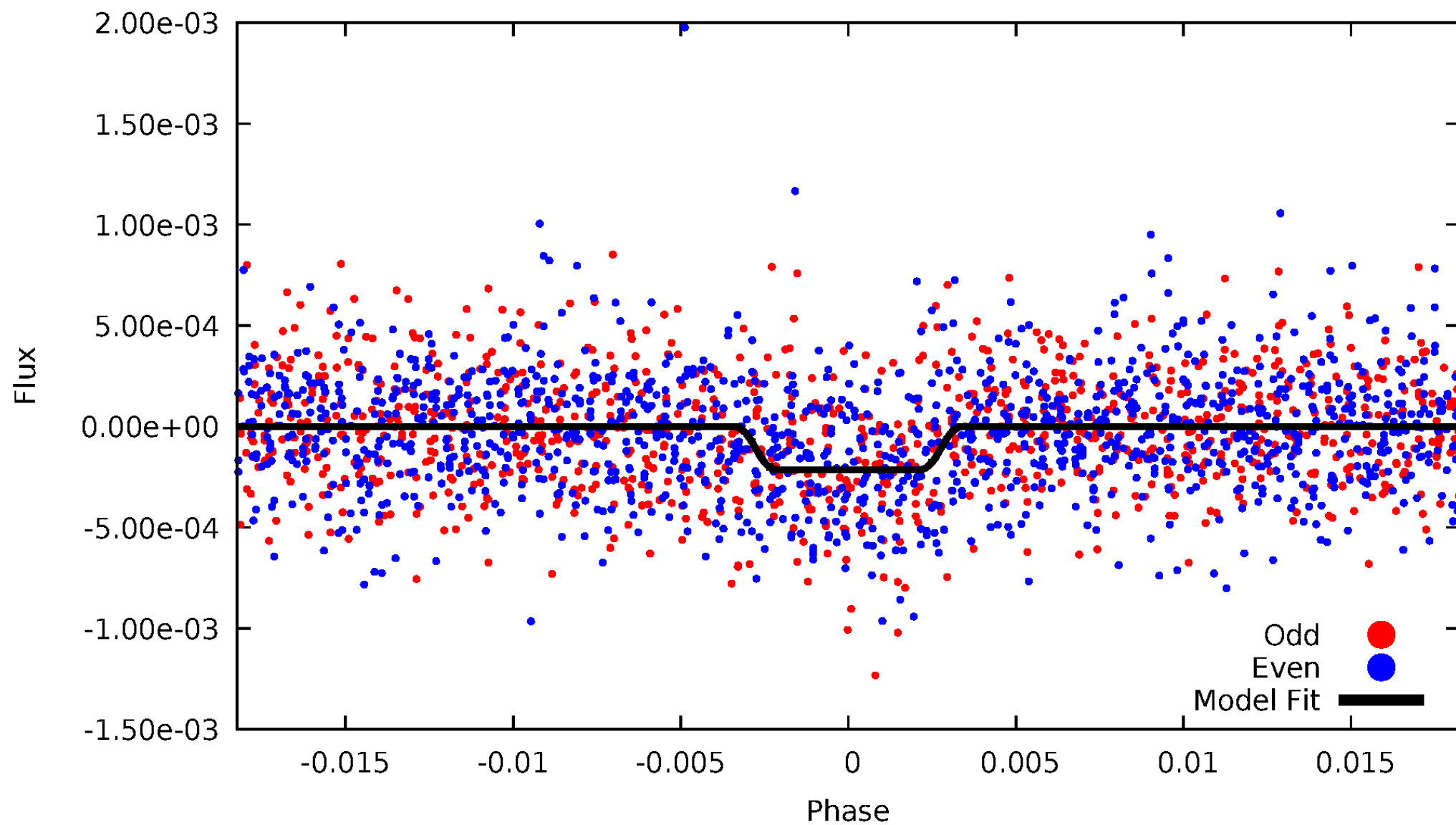
TCE 011303322-01





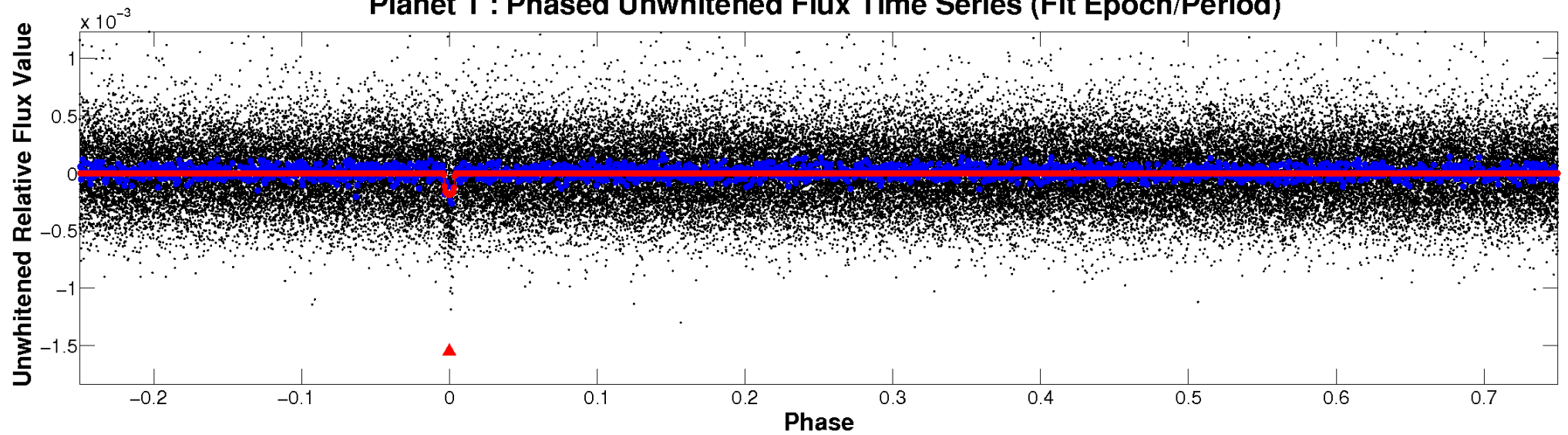
# ALT Odd/Even

TCE 011303322-01

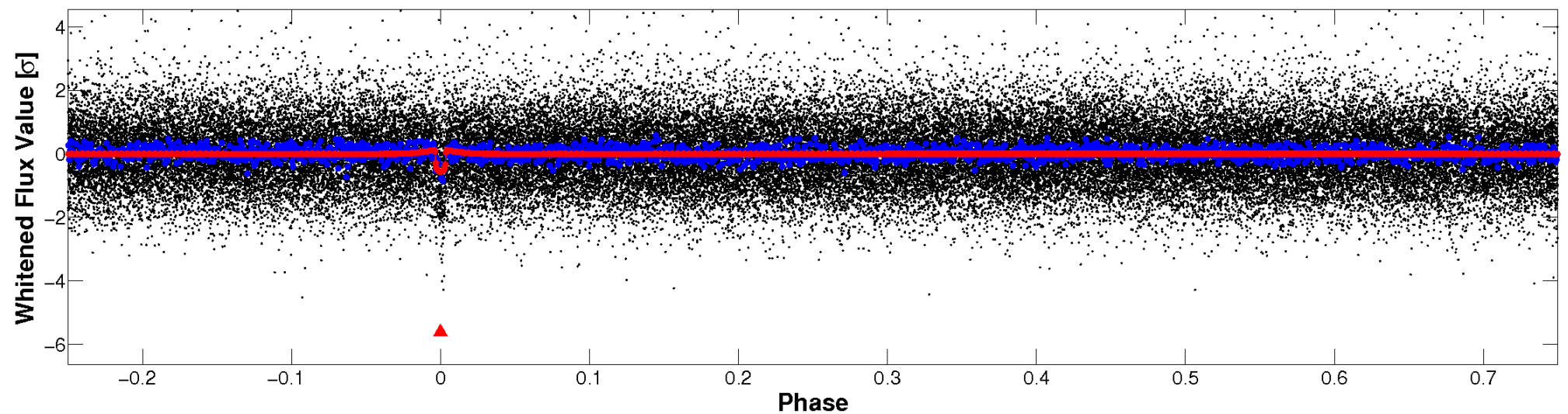


# Non-Whitened Vs. Whitened Light Curve

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

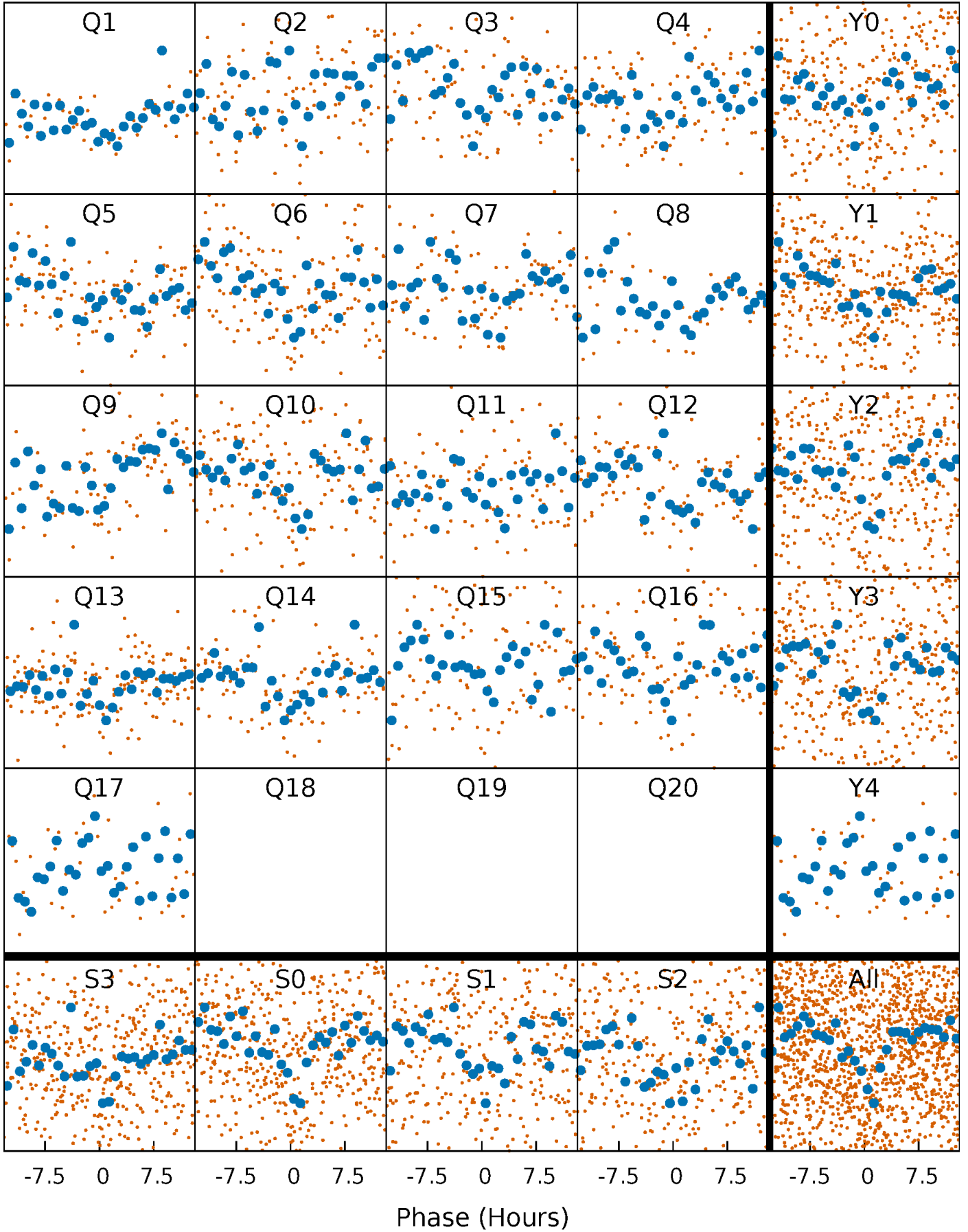


**Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)**



# PDC Quarter-Phased Transit Curves

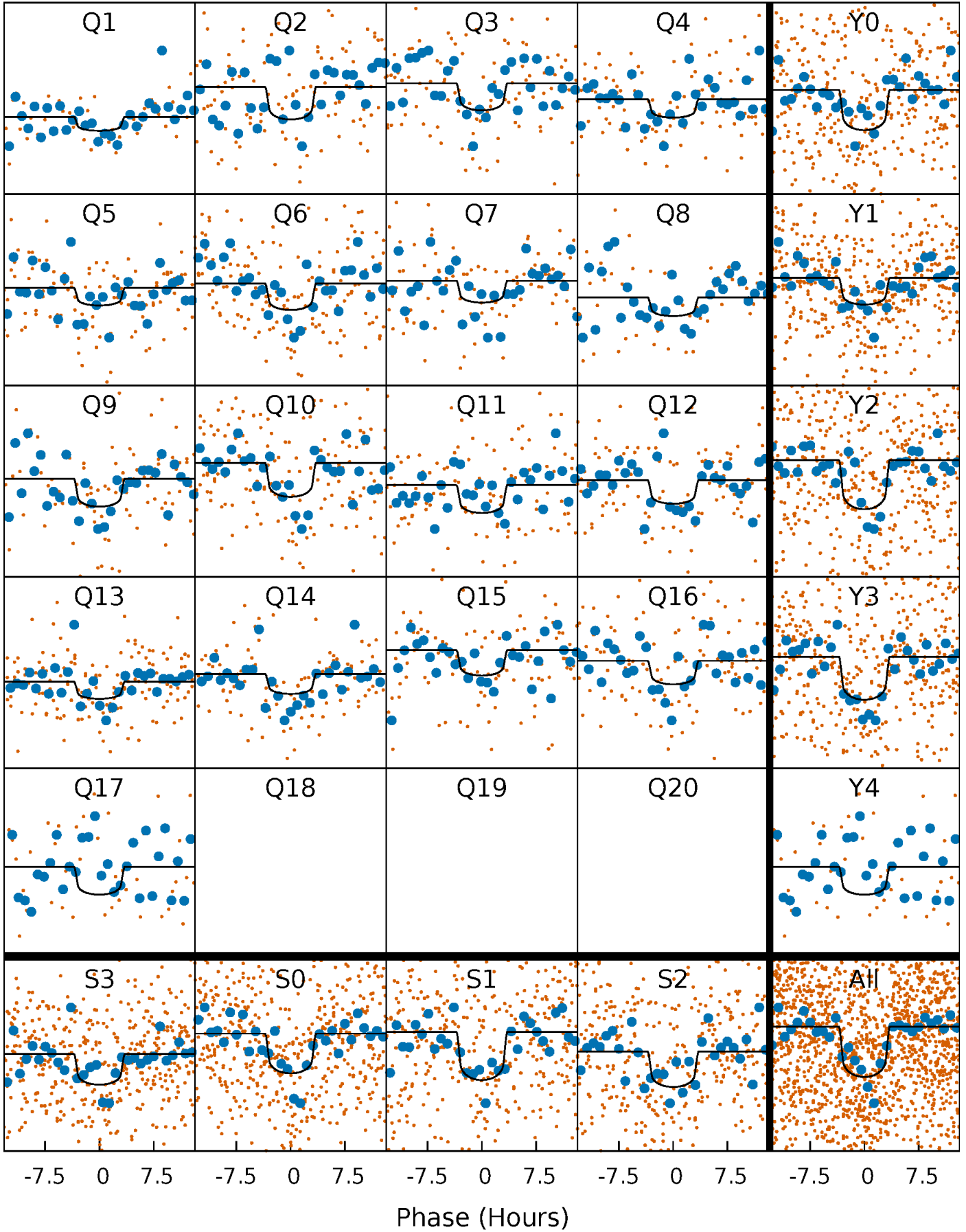
TCE 011303322-01 P= 38.130209 Days  $T_0=159.390617$  (BKJD)





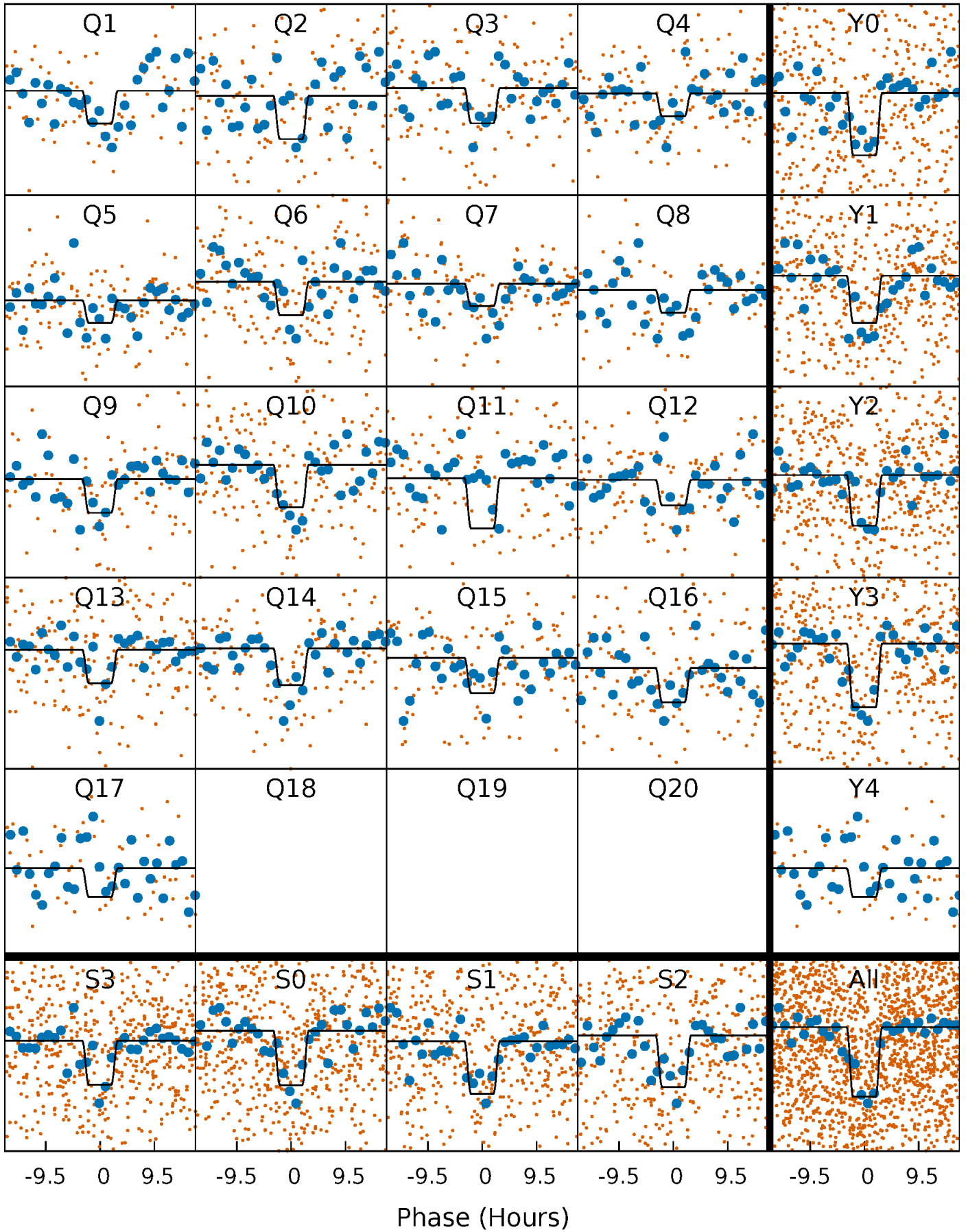
# DV Quarter-Phased Transit Curves

TCE 011303322-01 P= 38.130209 Days  $T_0=159.390617$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

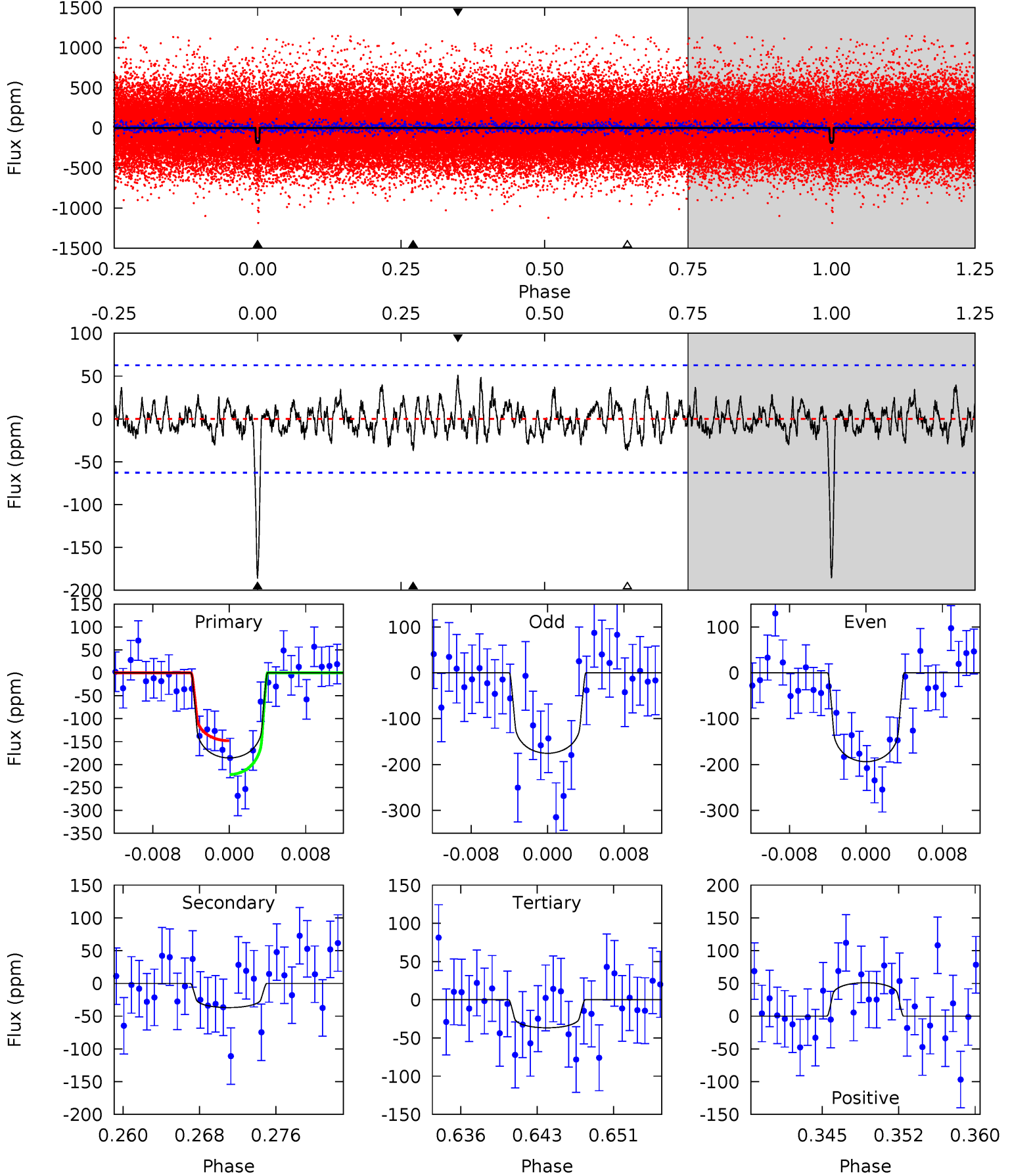
TCE 011303322-01 P= 38.131139 Days  $T_0=159.388306$  (BKJD)



# DV Model-Shift Uniqueness Test

011303322-01, P = 38.130209 Days, E = 121.260408 Days

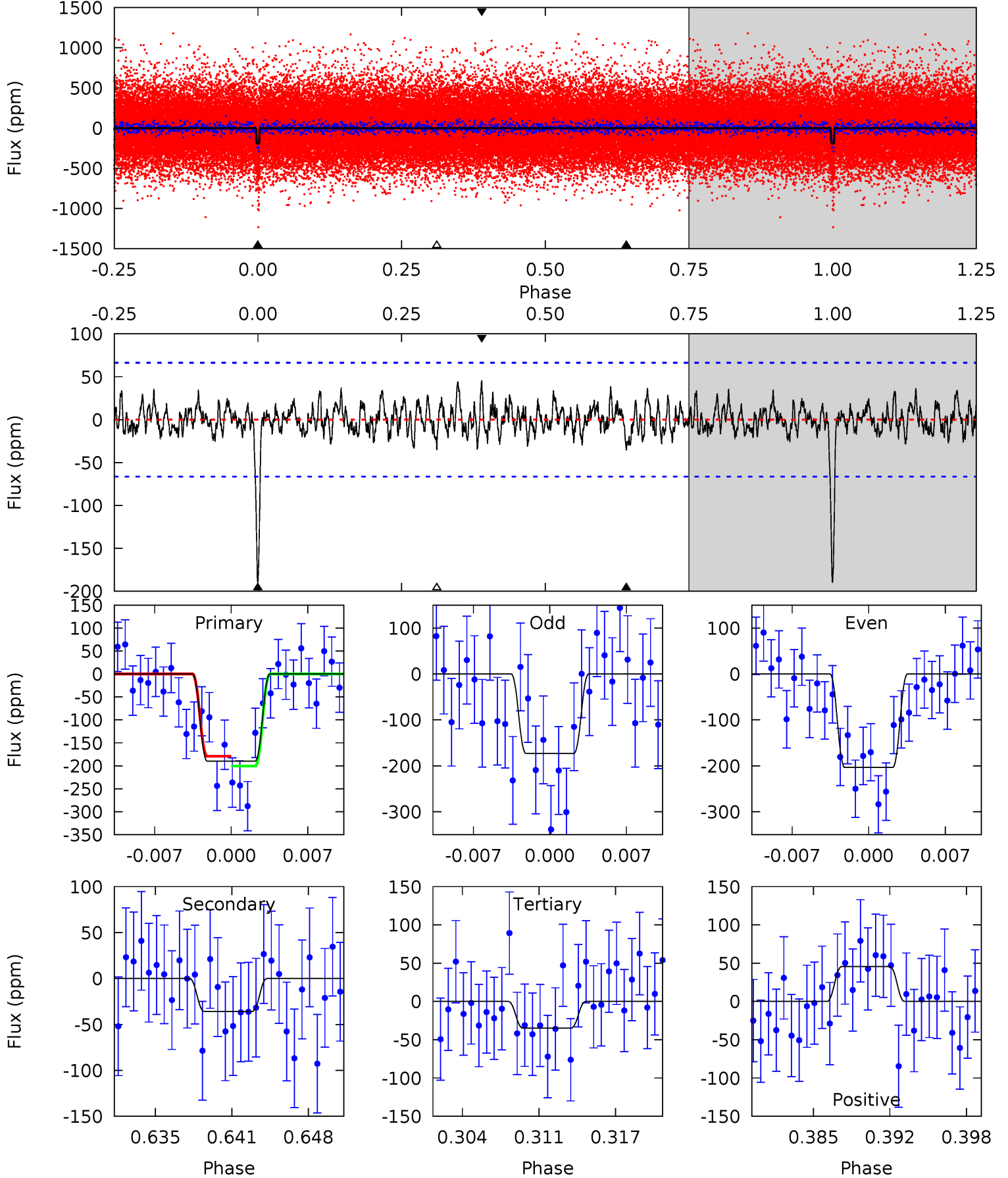
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
15.0	2.99	2.98	4.14	5.08	2.67	1.17	12.1	10.9	0.02	-1.14	0.74	0.94	0.22	2.99



# Alt Model-Shift Uniqueness Test

011303322-01,  $P = 38.131139$  Days,  $E = 121.257167$  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
14.6	2.76	2.69	3.51	5.10	2.71	1.04	11.9	11.1	0.07	-0.76	1.17	0.89	0.19	0.83



### Stellar Parameters For KIC 011303322

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$6370^{+160}_{-208}$	$4.410^{+0.062}_{-0.188}$	$-0.100^{+0.250}_{-0.300}$	$1.106^{+0.336}_{-0.134}$	$1.148^{+0.150}_{-0.150}$	$1.194^{+0.388}_{-0.602}$
	+3%/-3%	+1%/-4%	+250%/-300%	+30%/-12%	+13%/-13%	+33%/-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 011303322-01 / KOI 3345.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	$A_{obs}$
DV	$-37 \pm 12$	$1.69^{+1.01}_{-0.86}$	$873^{+59}_{-44}$	$4440^{+1681}_{-725}$	$366^{+1194}_{-232}$
Alt.	$-36 \pm 13$	$1.87^{+0.91}_{-0.90}$	$869^{+58}_{-43}$	$4222^{+1326}_{-623}$	$284^{+799}_{-170}$

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



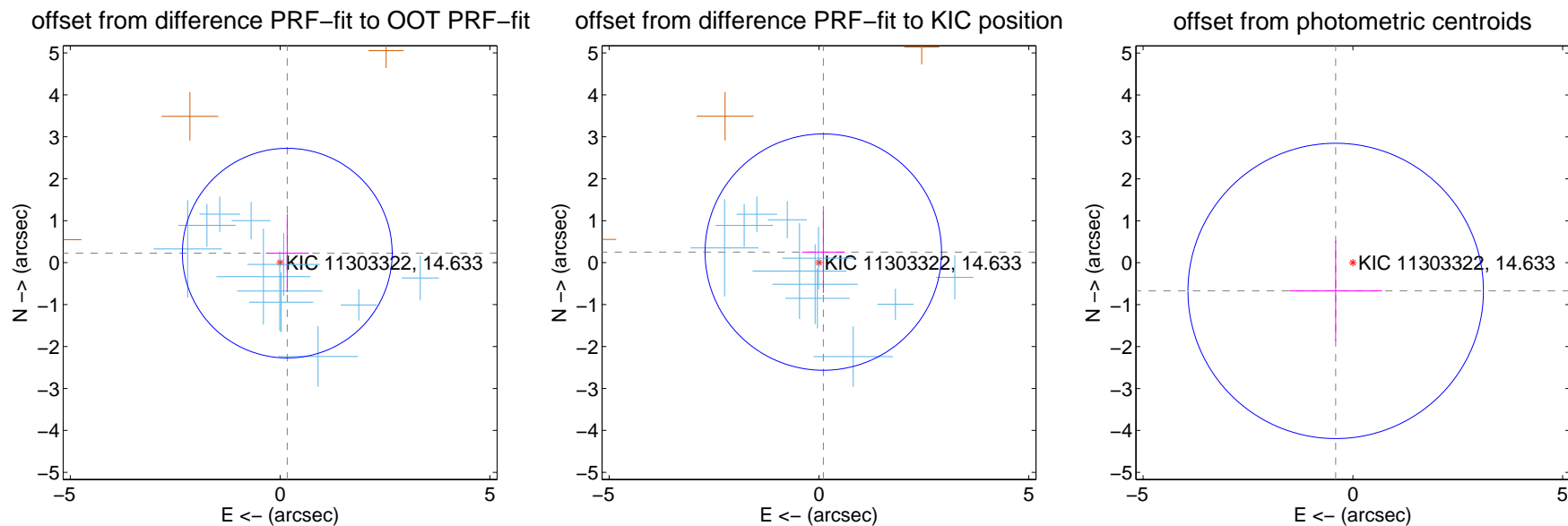
## DV Centroid Data

Supplemental centroid analysis for 011303322-01. Kepler magnitude: 14.63. Transit SNR 10.28

There are 11 quarters with good PRF difference image offsets

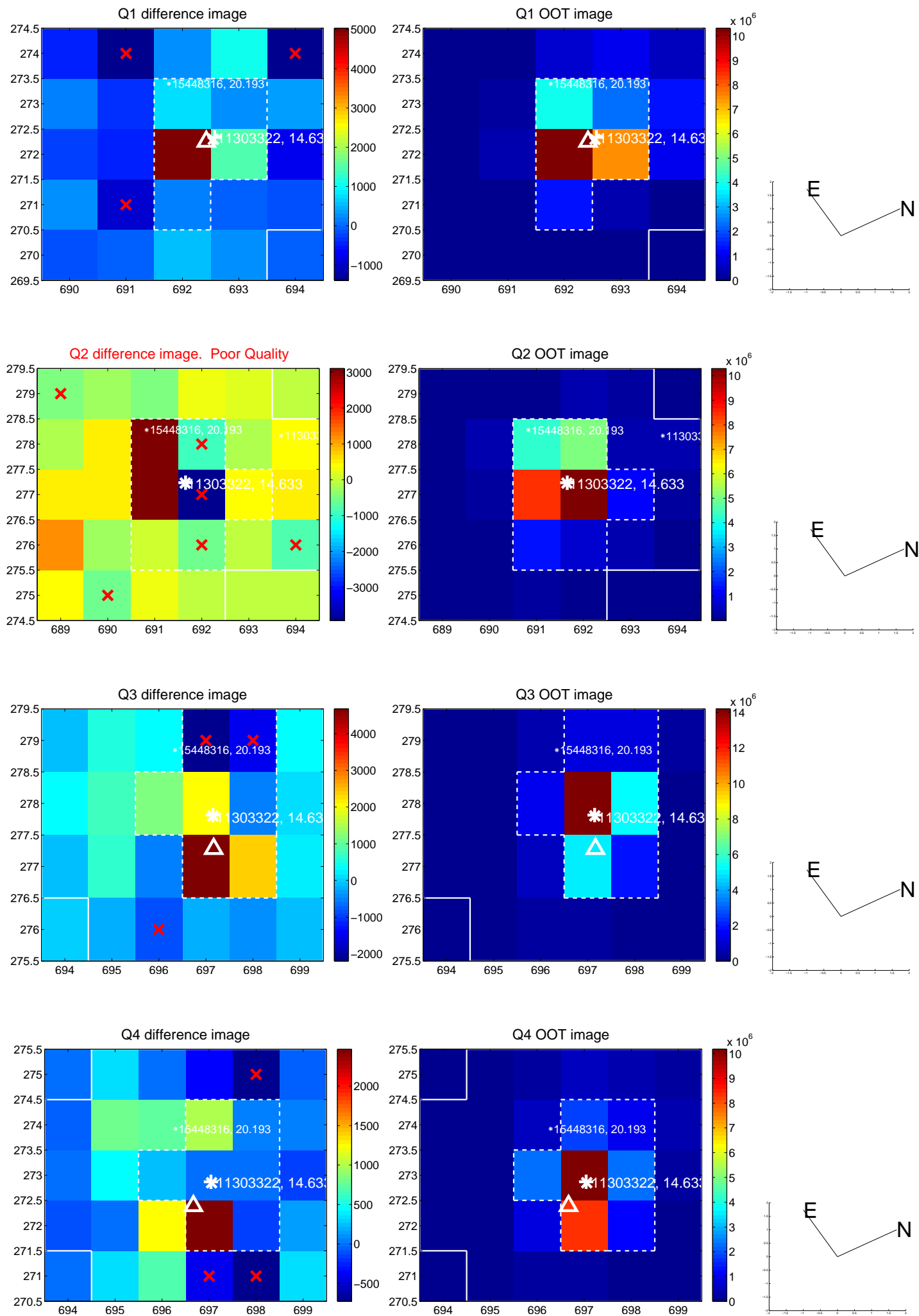
The direct PRF centroid is offset from the target star catalog position by about 0.12 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.284 \pm 0.833$	0.34	$-0.171 \pm 0.513$	$0.226 \pm 0.930$
PRF-fit source offset from KIC position	$0.272 \pm 0.939$	0.29	$-0.103 \pm 0.509$	$0.251 \pm 0.972$
photometric centroid source offset	$0.79 \pm 1.17$	0.67	$0.41 \pm 1.11$	$-0.67 \pm 1.20$

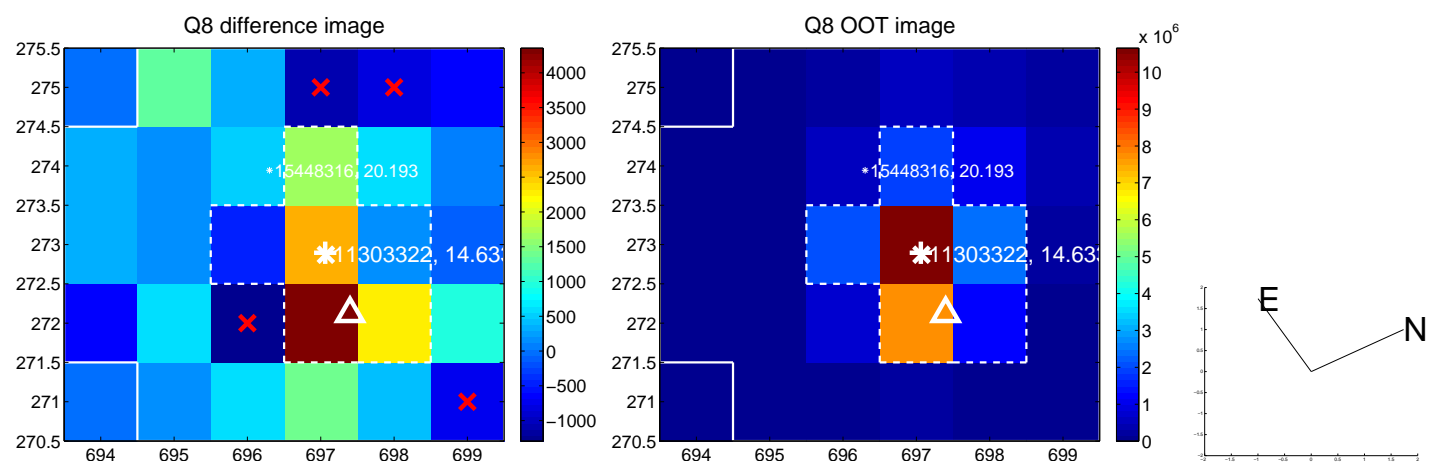
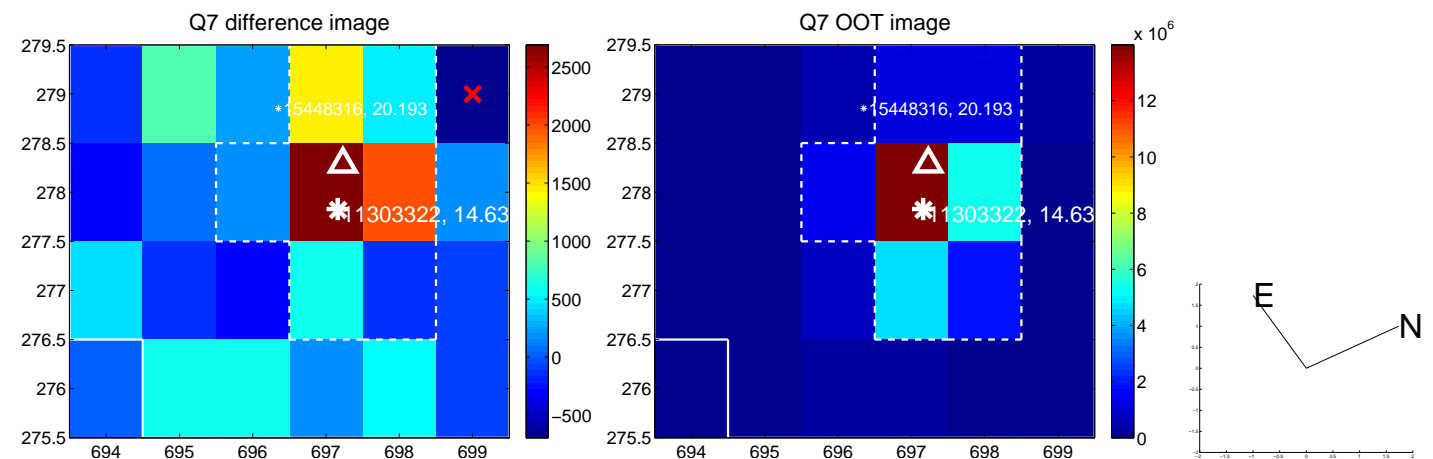
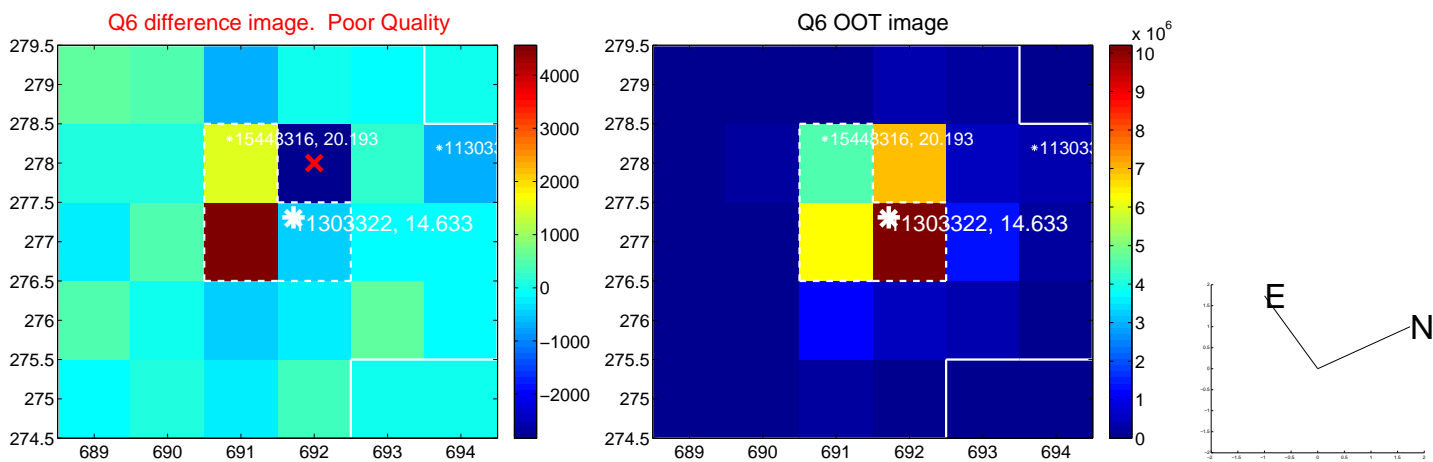
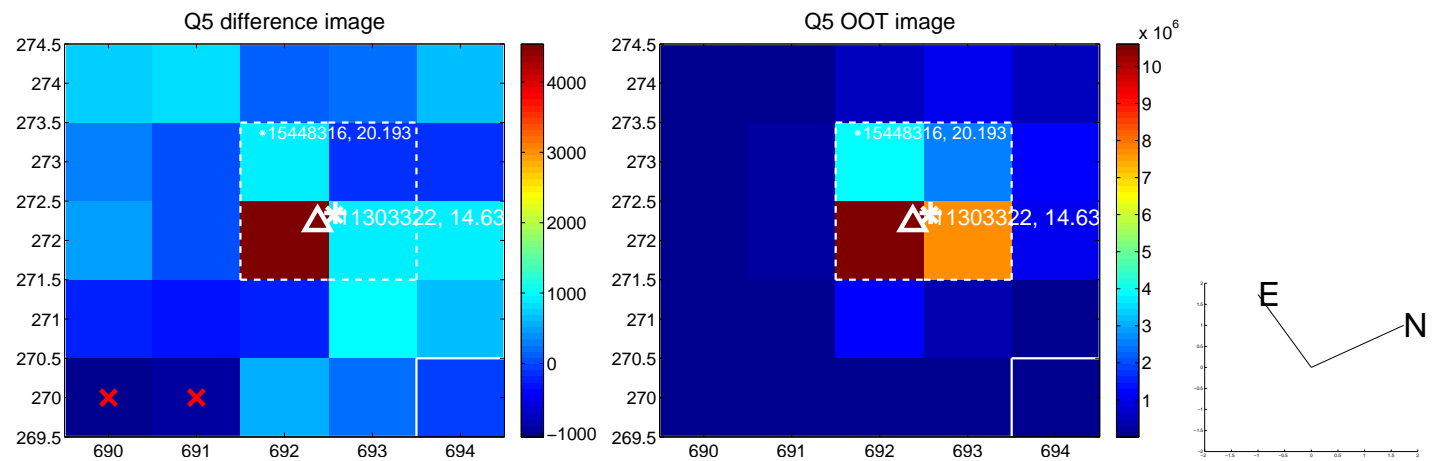


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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

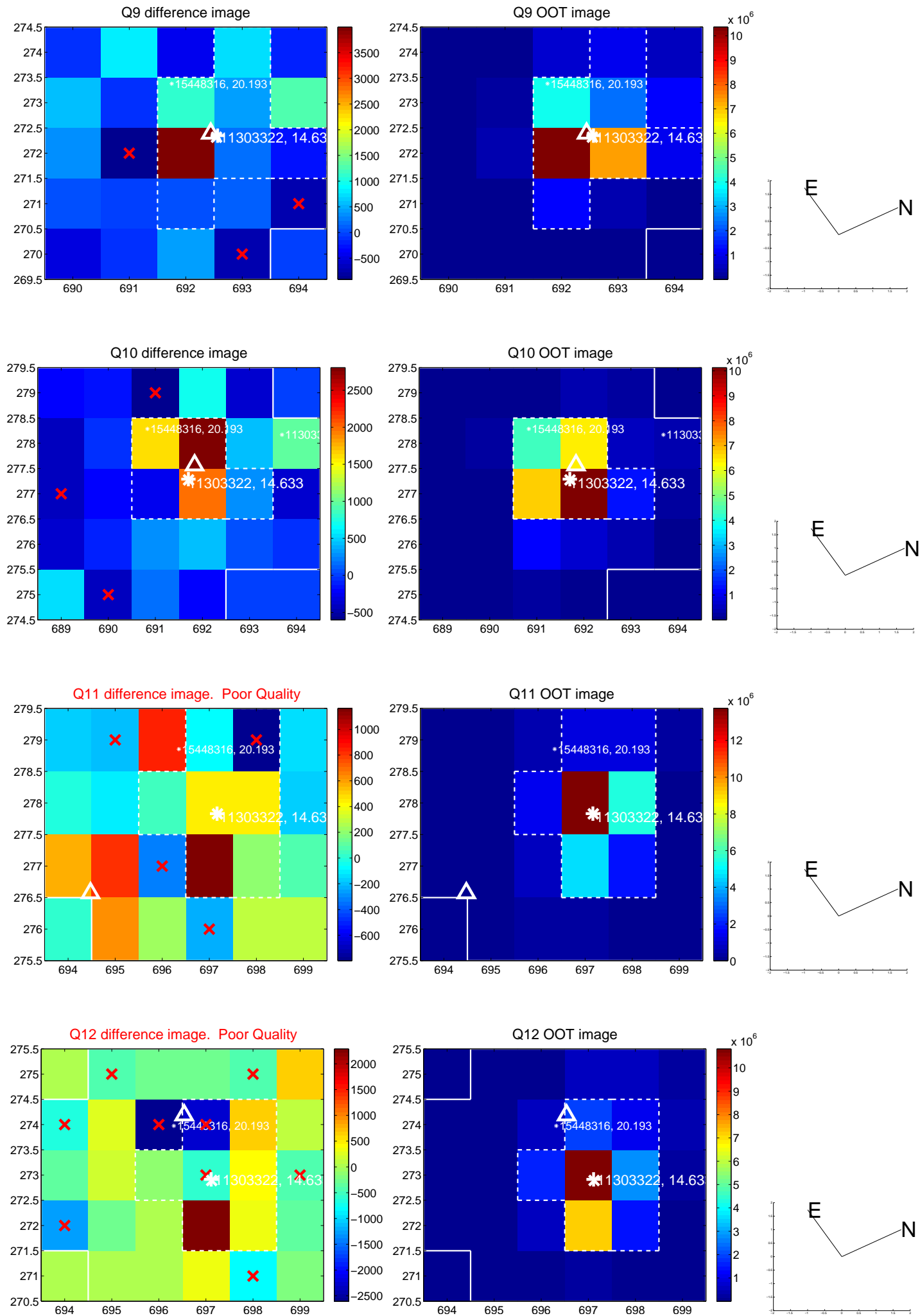
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



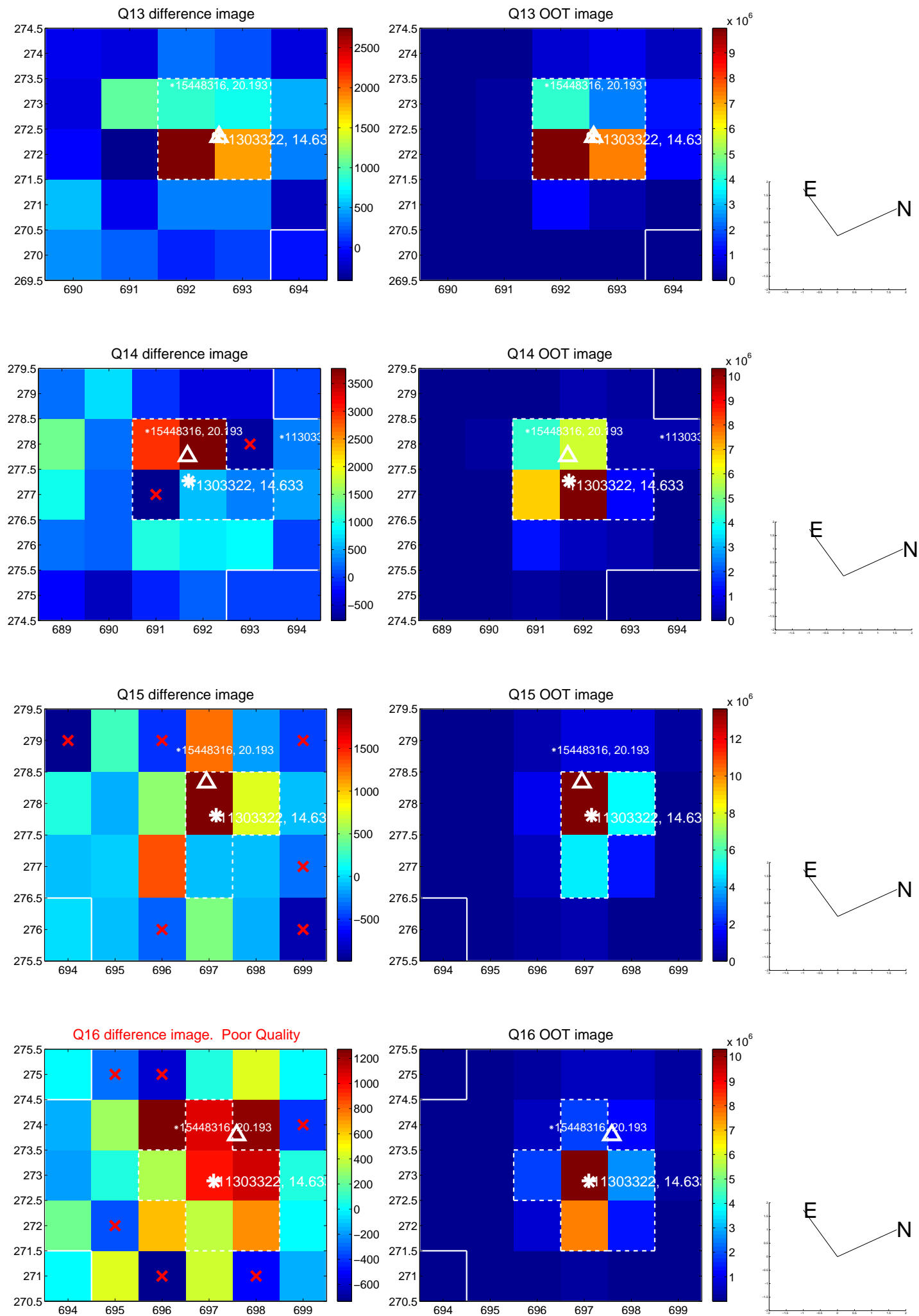
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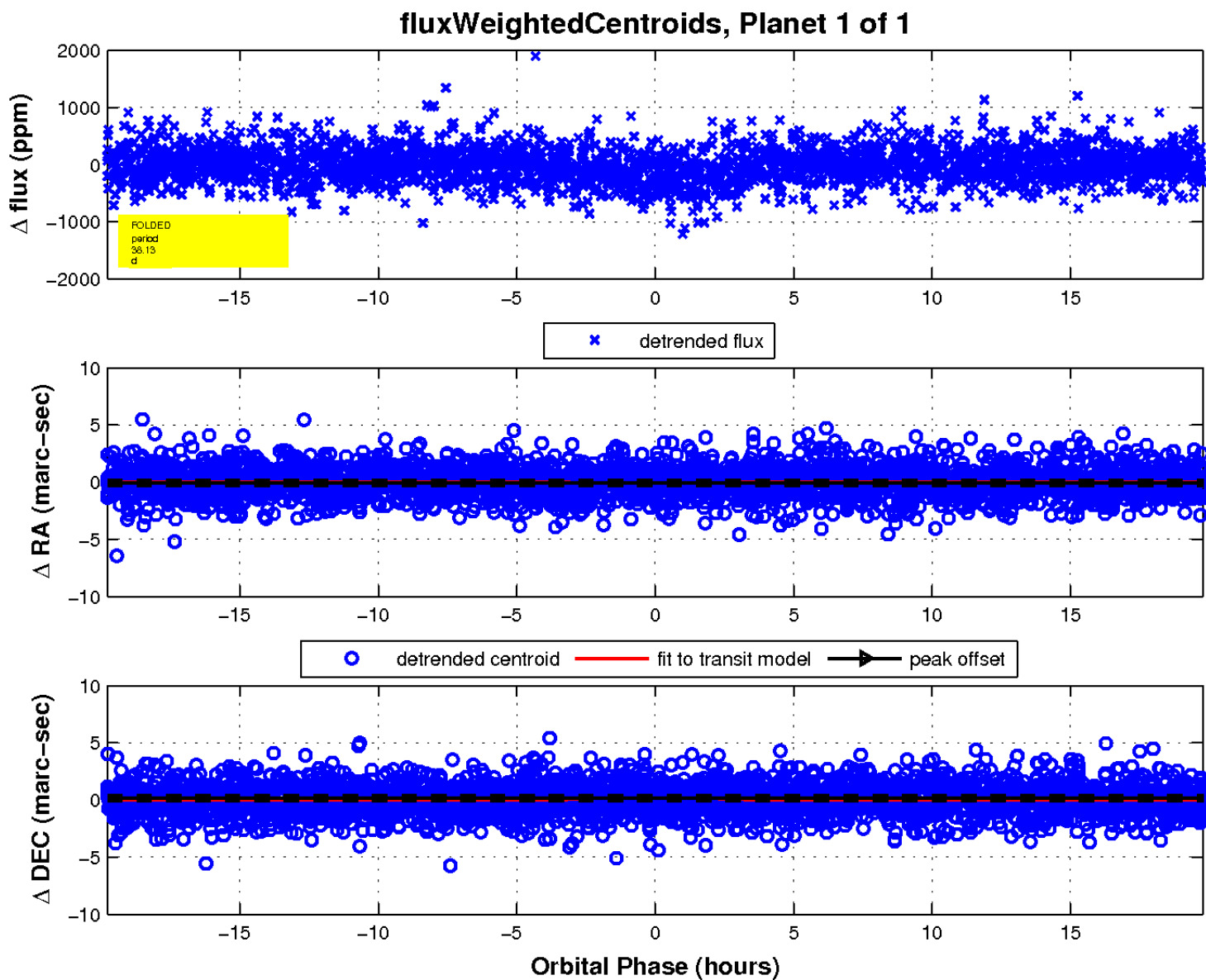
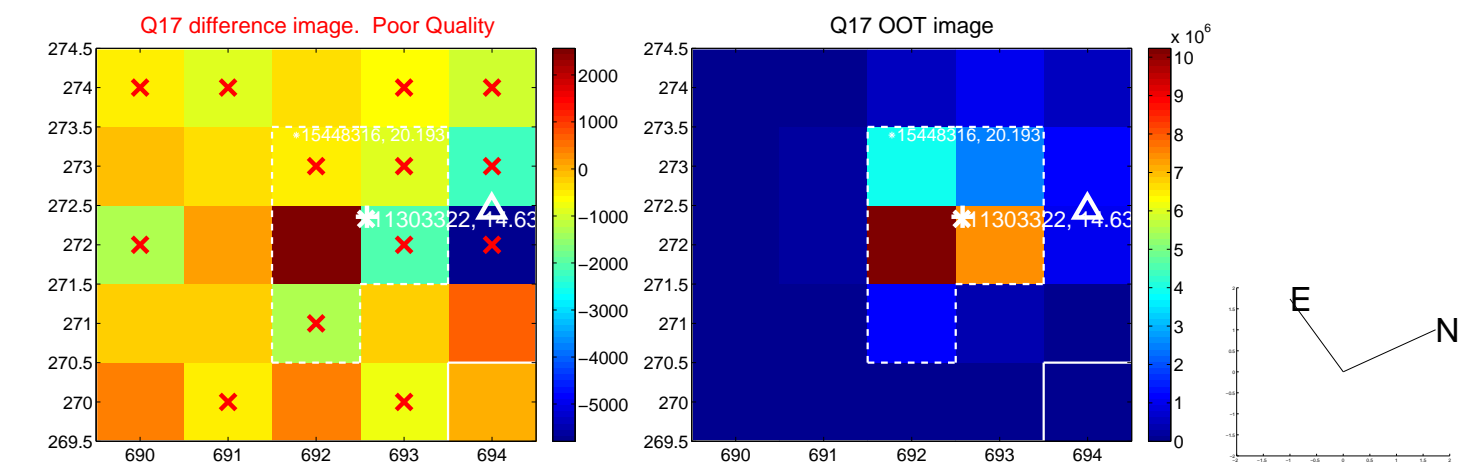


white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.





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



UKIRT Image

Declination

