

# KIC 004544628

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
004544628-01	OBS	4753.01	0.729664	132.084766	10.2	3.639	11.1	6.8	1.03	6084	0.37	5066.55

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
004544628-01	OBS	FP	0.00	0	0	1	0	CENT_UNRESOLVED_OFFSET

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

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

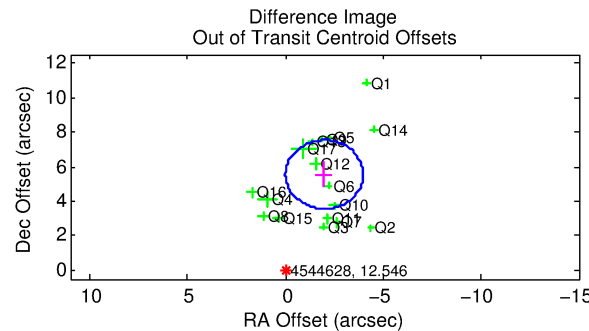
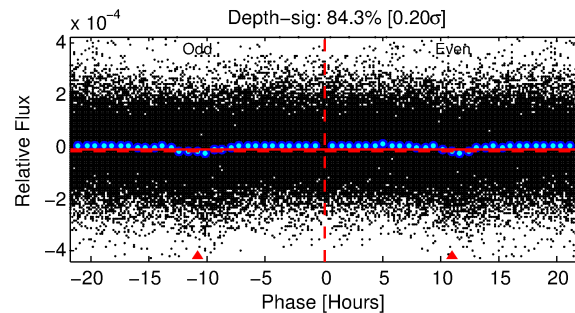
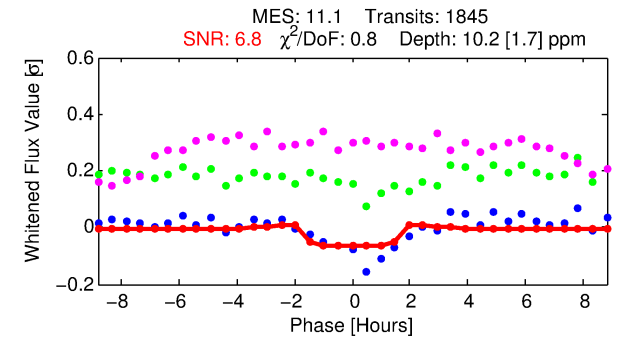
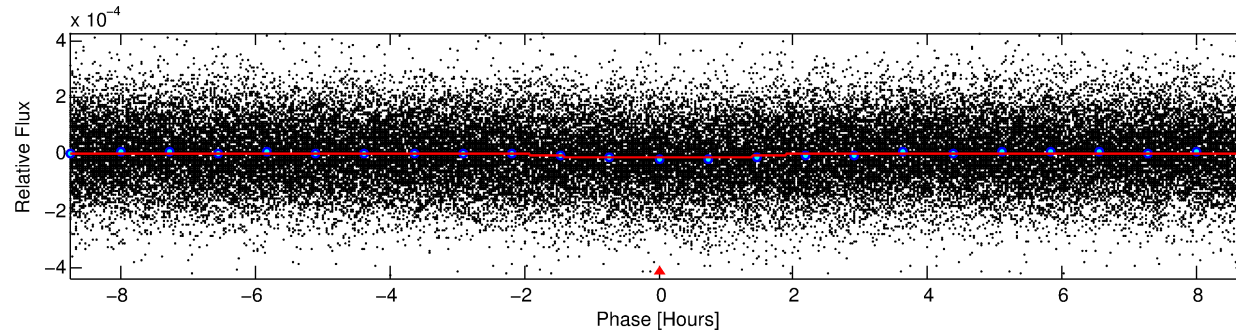
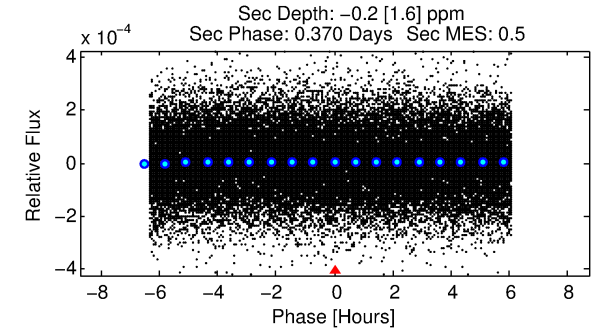
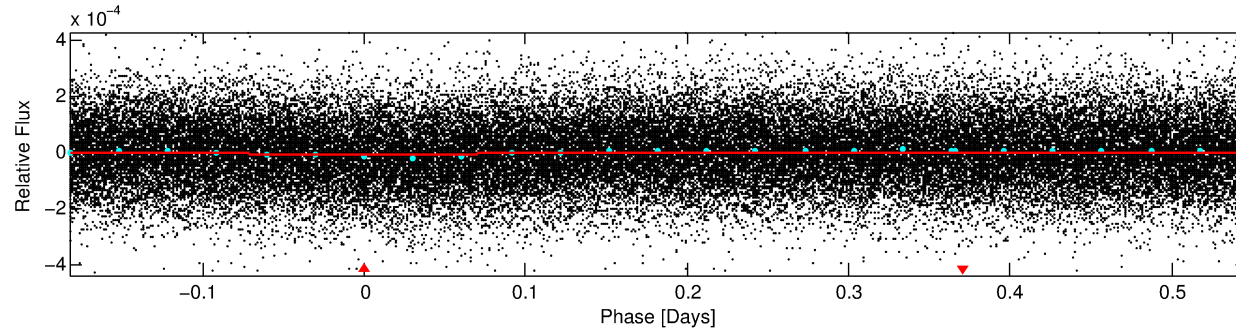
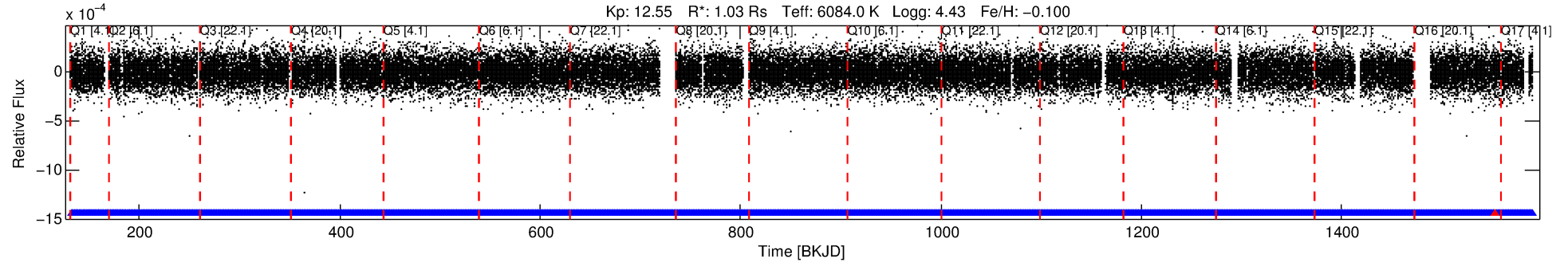
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 004544628-01

No Significant Match Found

# DV One-Page Summary

KIC: 4544628 Candidate: 1 of 1 Period: 0.730 d  
KOI: K04753.01 Corr: 0.761



## DV Fit Results:

Period = 0.72966 [0.00002] d  
Epoch = 132.0848 [0.0046] BKJD  
Rp/R\* = 0.0033 [0.0013]  
a/R\* = 1.24 [0.82]  
b = 0.84 [0.69]  
Seff = 5066.55 [2074.60]  
Teq = 2151 [220] K  
Rp = 0.37 [0.19] Re  
a = 0.0160 [0.0043] AU  
Ag = N/A  
Teffp = N/A

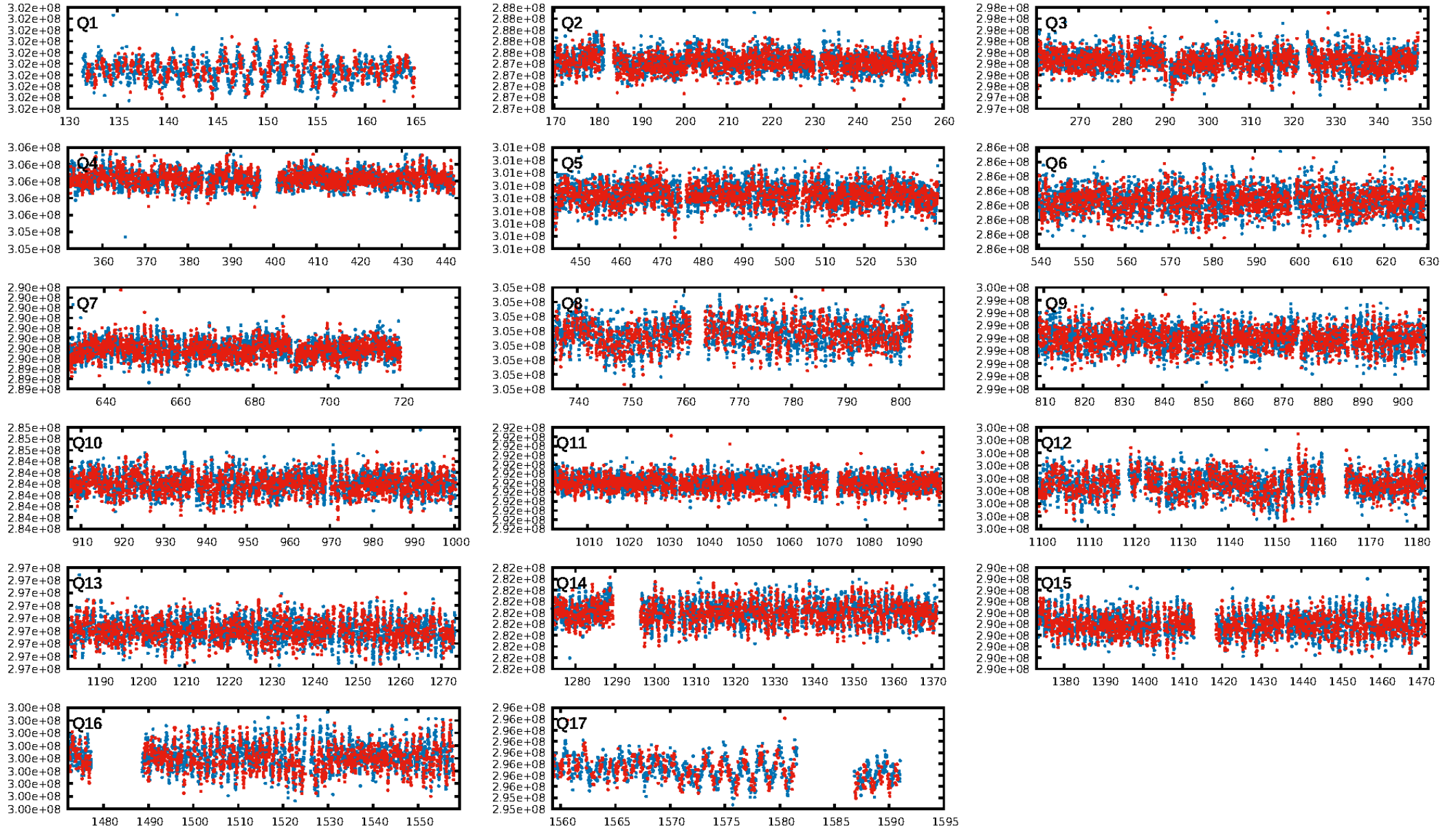
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: N/A  
ModelChiSquareGof-sig: N/A  
Bootstrap-pfa: 8.18e-19  
RollingBand-fgt: 1.00 [1761/1762]  
GhostDiagnostic-chr: 0.3082  
Centroid-sig: 0.0%  
Centroid-so: 3.359 arcsec [3.69σ]  
OotOffset-rm: 5.887 arcsec [8.90σ]  
KicOffset-rm: 5.727 arcsec [8.64σ]  
OotOffset-st: 4/4/4/5 [17]  
KicOffset-st: 4/4/4/5 [17]  
DiffImageQuality-fgm: 0.12 [2/17]  
DiffImageOverlap-fno: 1.00 [17/17]

Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 02:23:21 Z

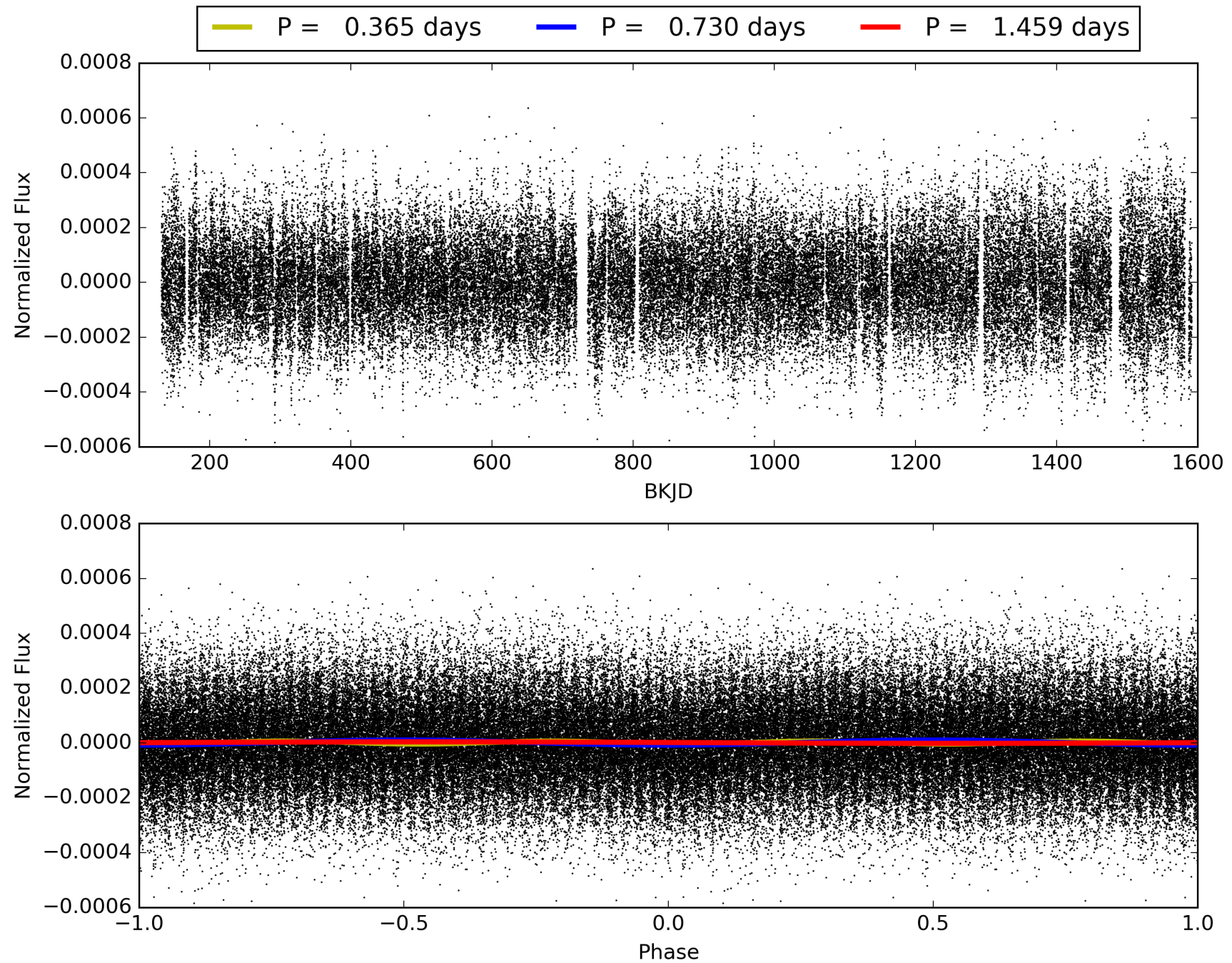
This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

# TCE 004544628-01, PDC Light Curves



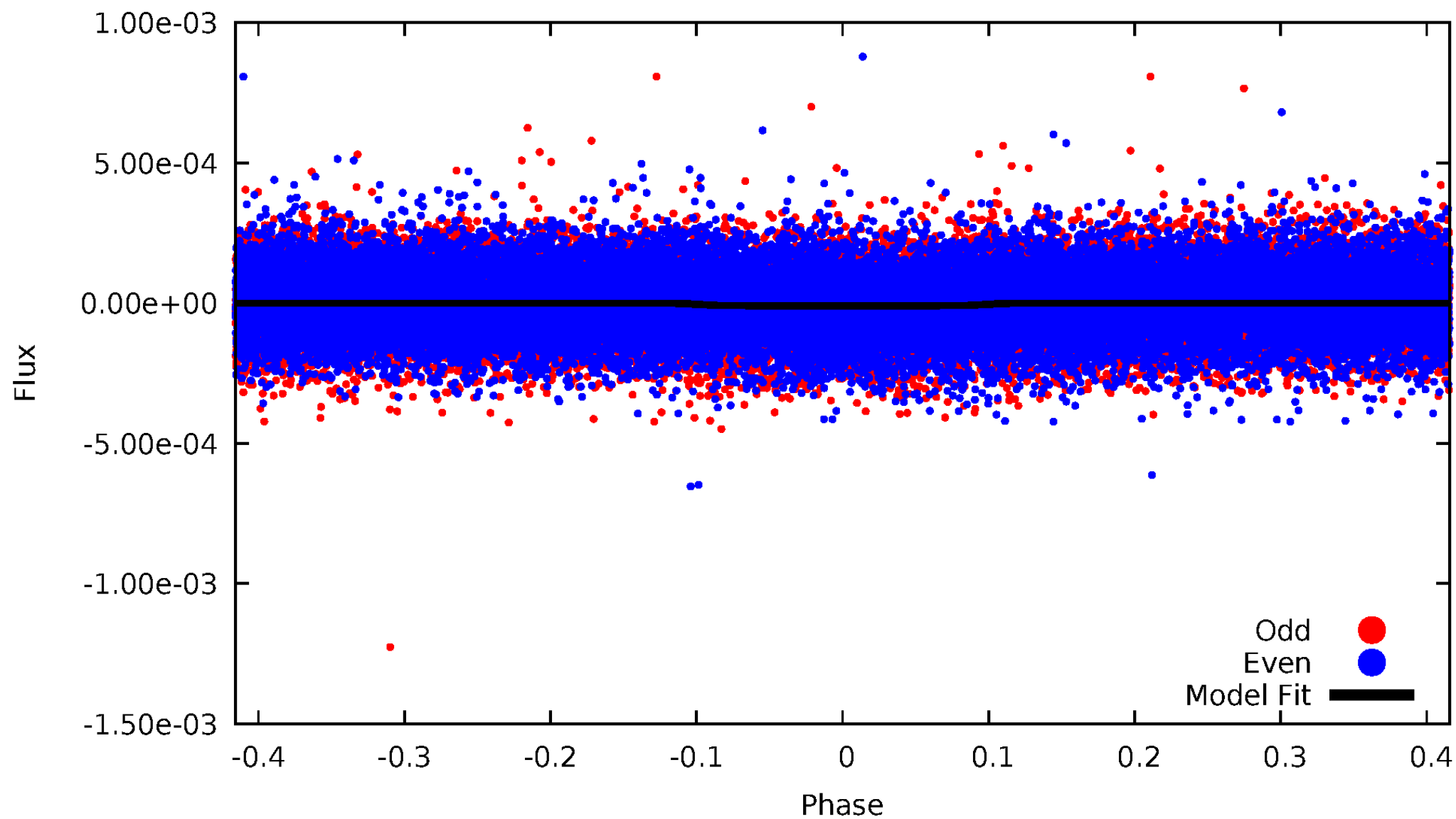


TCE 004544628-01



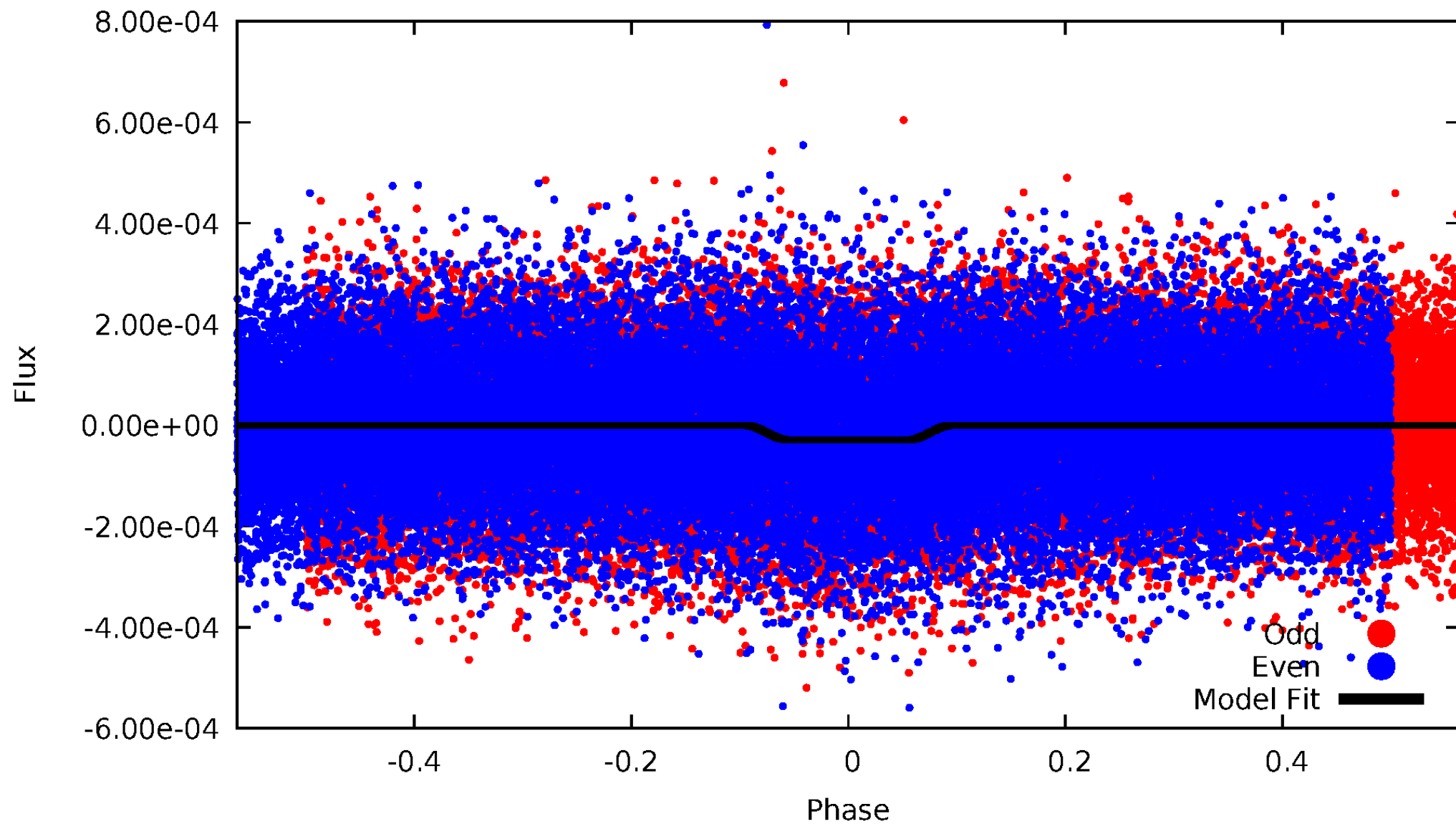
# DV Odd/Even

TCE 004544628-01

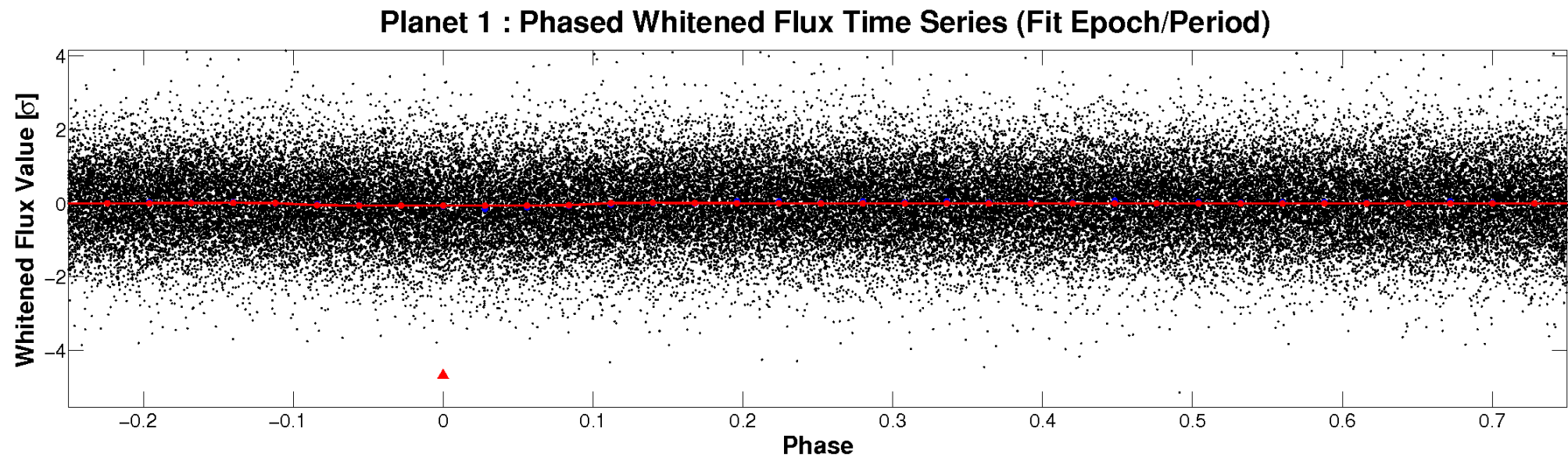
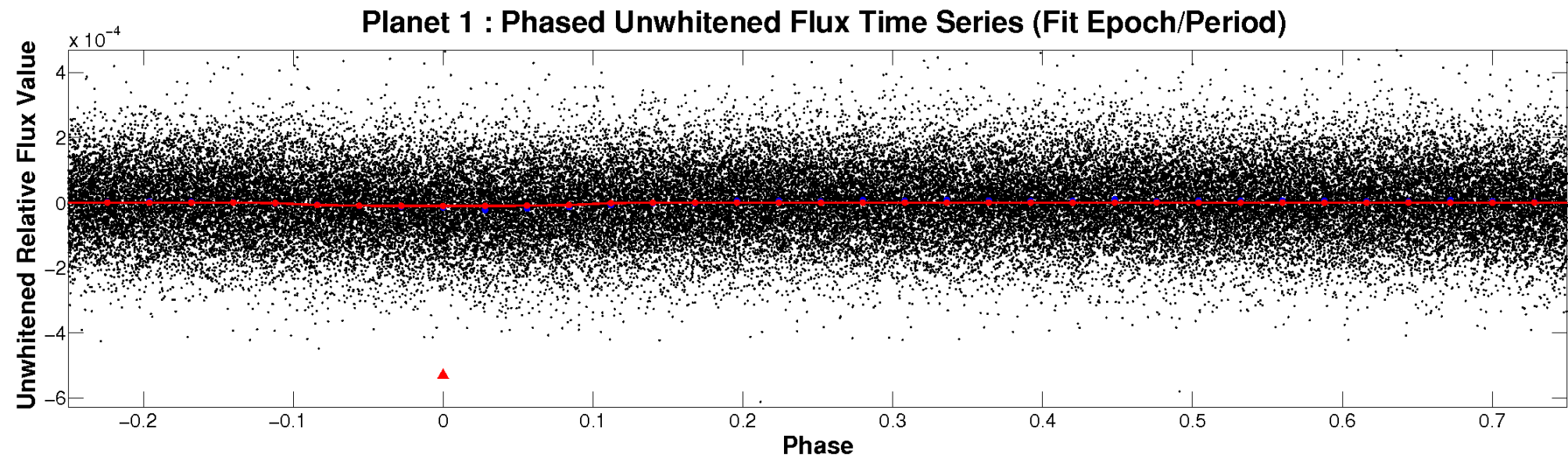


# ALT Odd/Even

TCE 004544628-01



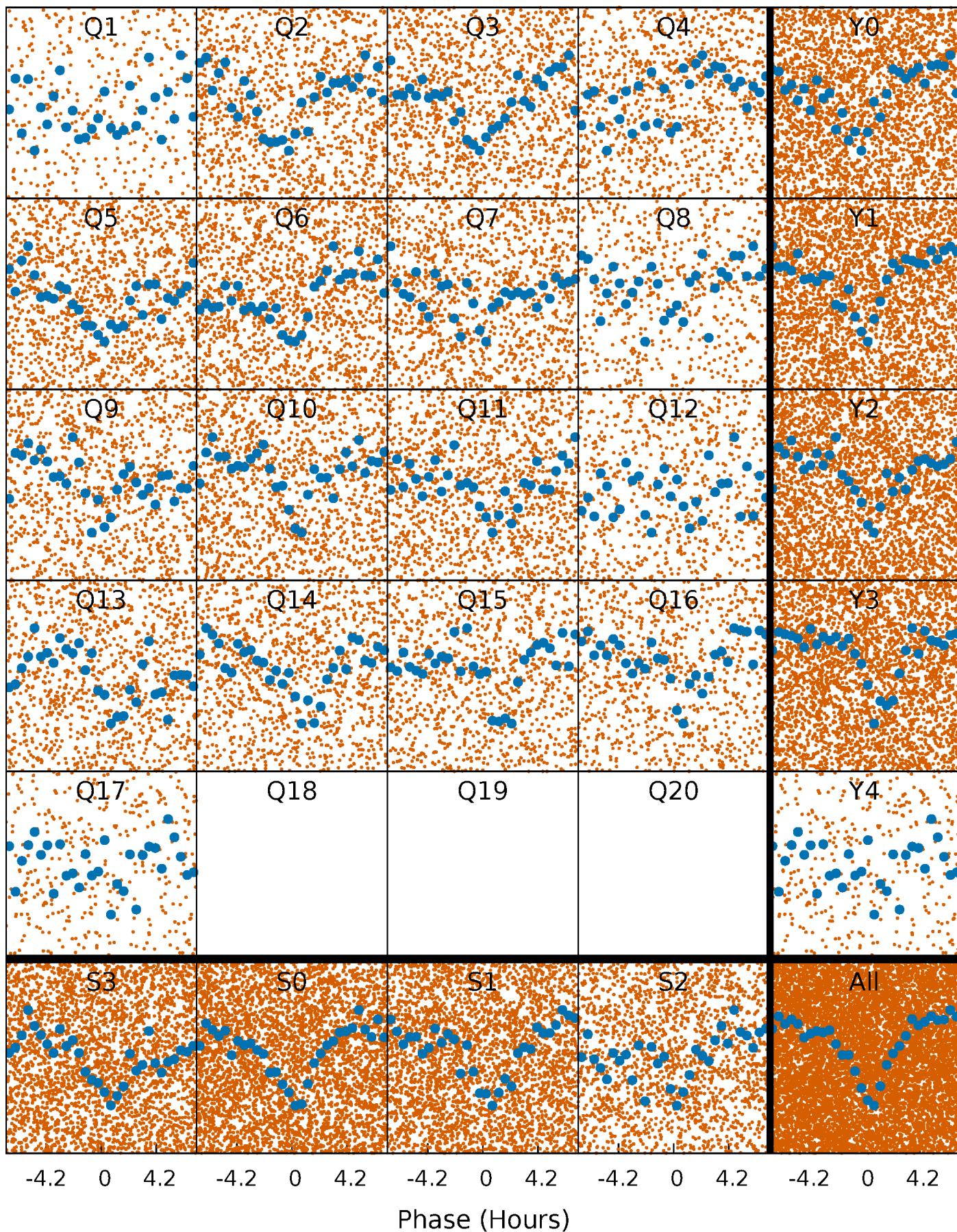
# Non-Whitened Vs. Whitened Light Curve





# PDC Quarter-Phased Transit Curves

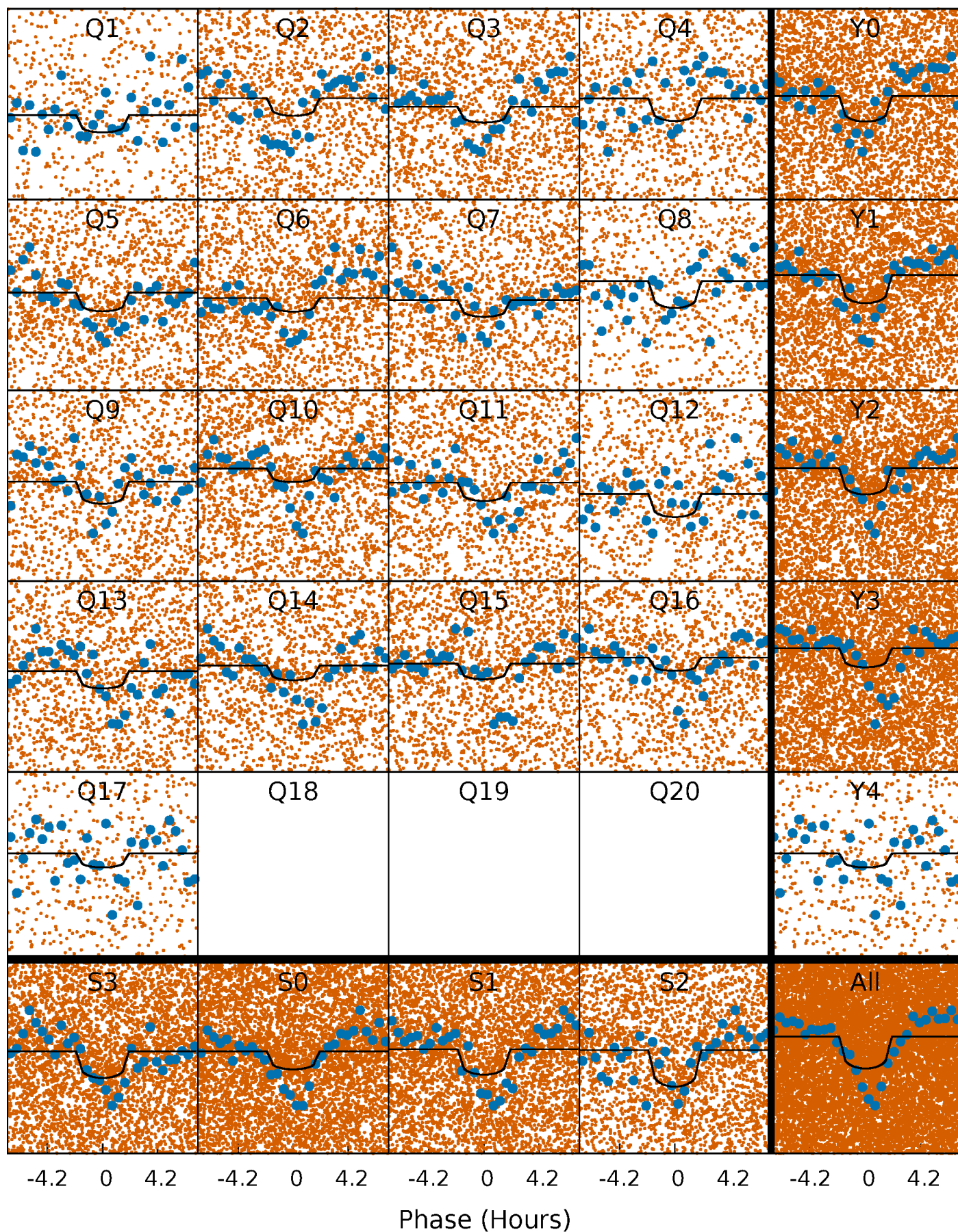
TCE 004544628-01 P= 0.729664 Days  $T_0=132.084766$  (BKJD)





# DV Quarter-Phased Transit Curves

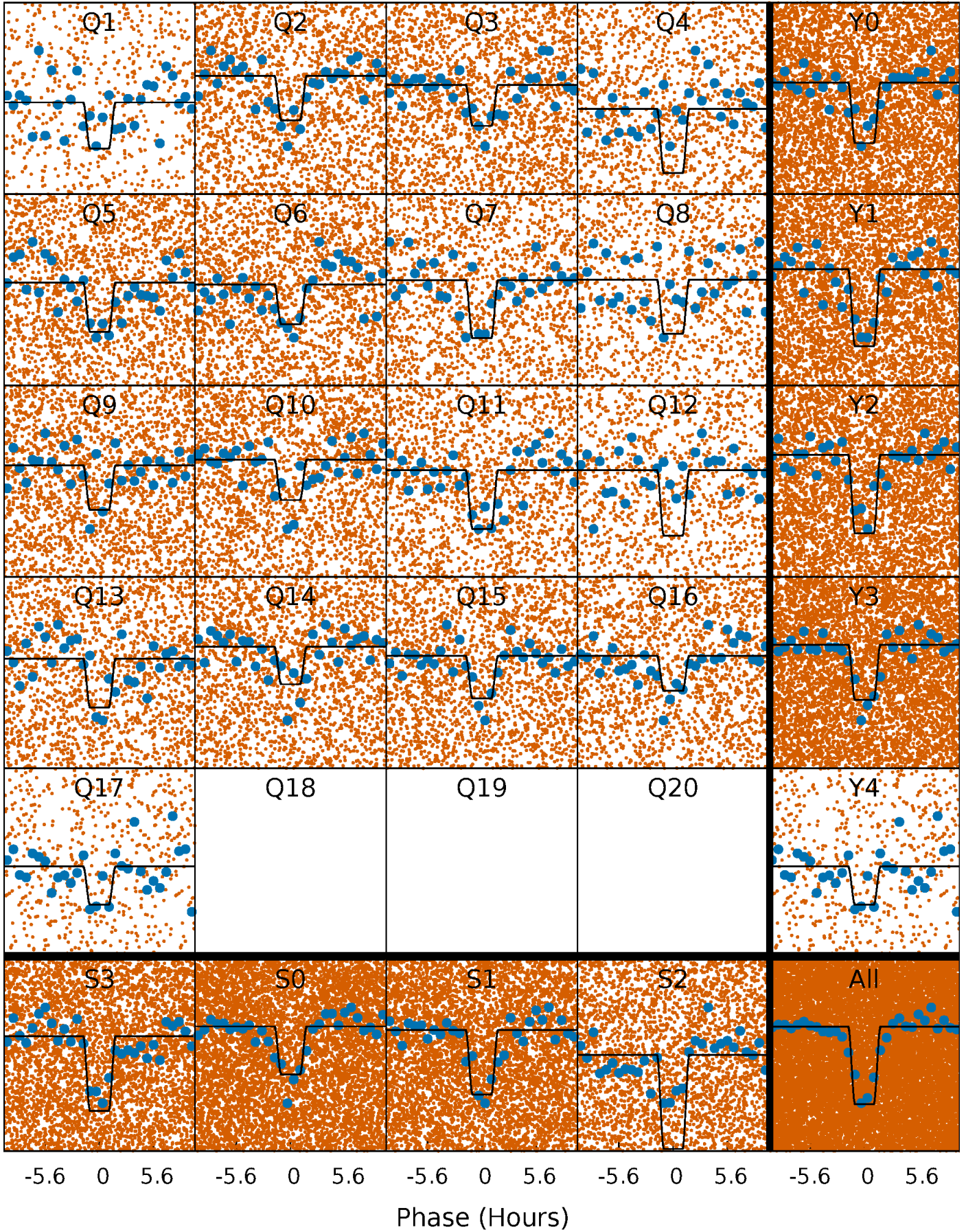
TCE 004544628-01 P= 0.729664 Days  $T_0=132.084766$  (BKJD)





# Alt. Detrend Quarter-Phased Transit Curves

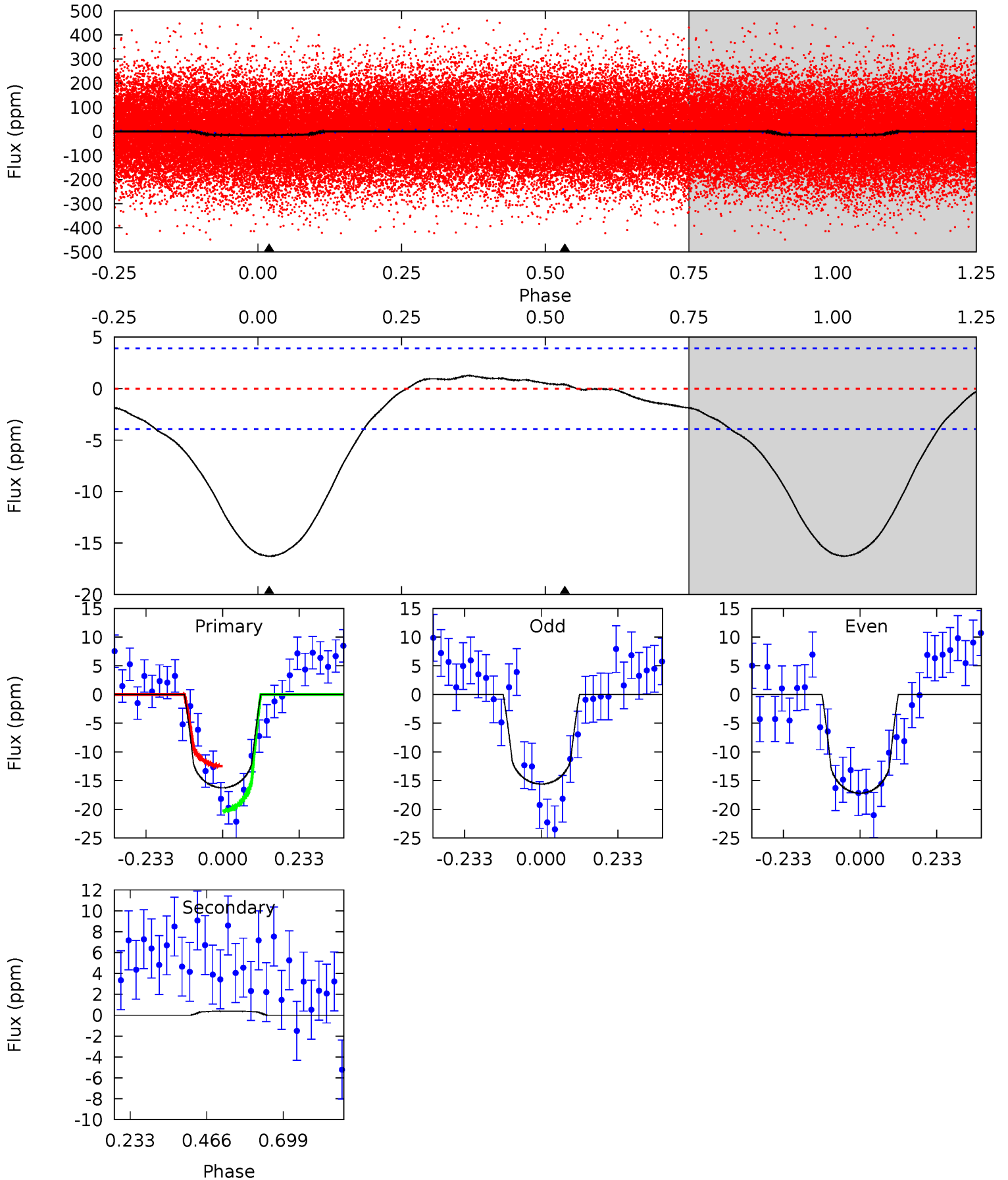
TCE 004544628-01 P= 0.729715 Days  $T_0=132.048733$  (BKJD)



# DV Model-Shift Uniqueness Test

004544628-01, P = 0.729664 Days, E = 131.355102 Days

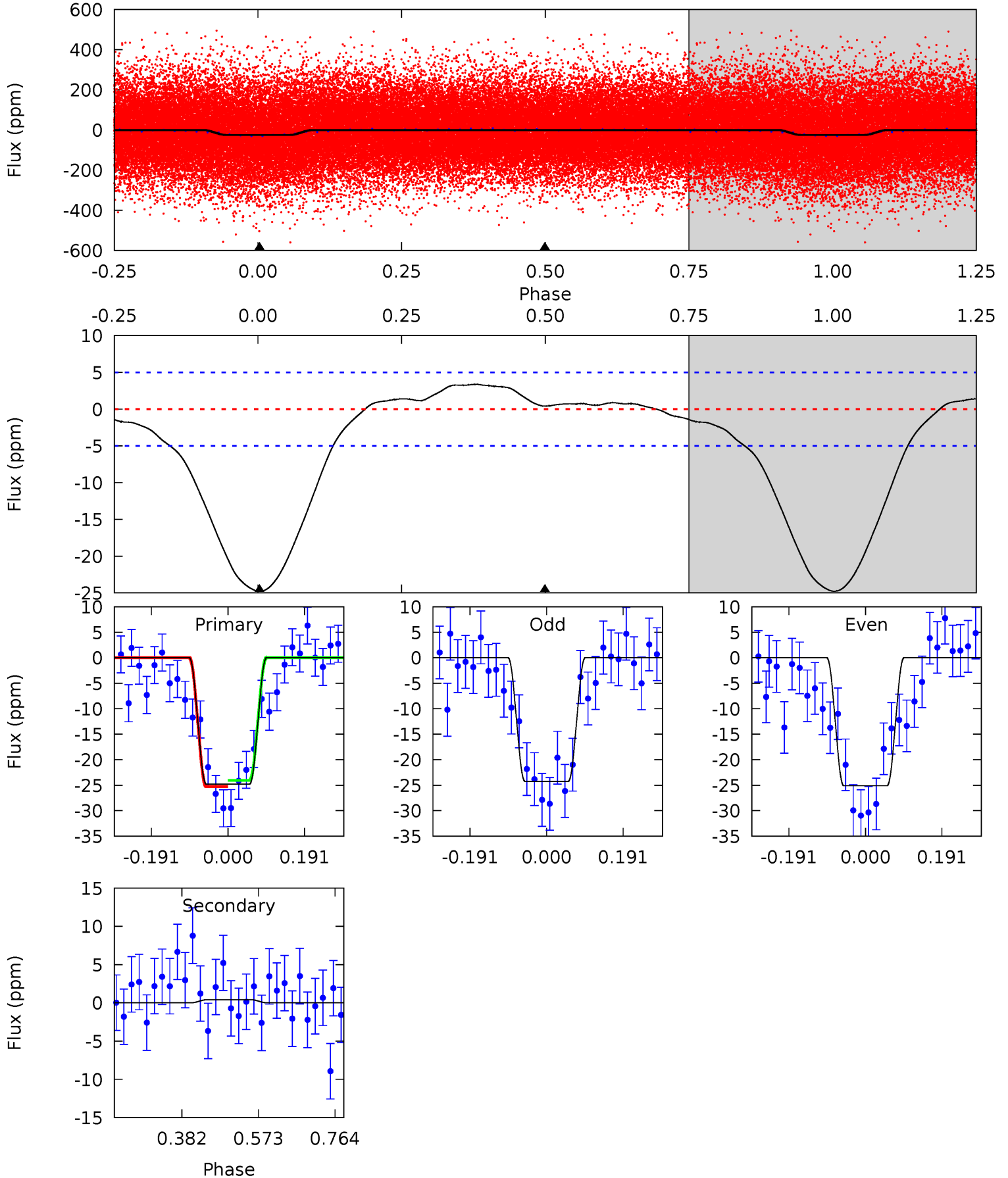
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
18.2	-0.44	0	0	4.38	1.19	1.62	18.2	18.2	-0.44	-0.44	0.90	1.00	0.07	4.33



# Alt Model-Shift Uniqueness Test

004544628-01, P = 0.729715 Days, E = 131.319018 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
21.9	-0.37	0	0	4.43	1.31	1.26	21.9	21.9	-0.37	-0.37	0.38	0.95	0.12	0.52





### Stellar Parameters For KIC 004544628

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$6084^{+210}_{-232}$	$4.426^{+0.072}_{-0.203}$	$-0.100^{+0.250}_{-0.300}$	$1.030^{+0.336}_{-0.120}$	$1.030^{+0.153}_{-0.139}$	$1.328^{+0.502}_{-0.696}$
	+3%/-4%	+2%/-5%	+250%/-300%	+33%/-12%	+15%/-13%	+38%/-52%
Source	PHO54	PHO54	PHO54	DSEP		

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

### Secondary Eclipse Parameters for KIC 004544628-01 / KOI 4753.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	$A_{obs}$
DV	$0 \pm 1$	$0.39^{+0.15}_{-0.15}$	$3046^{+235}_{-159}$	$-3525^{+6227}_{-704}$	$-0.336^{+0.751}_{-1.293}$
Alt.	$0 \pm 1$	$0.63^{+0.17}_{-0.16}$	$3053^{+218}_{-173}$	$-3334^{+794}_{-405}$	$-0.131^{+0.361}_{-0.488}$

$T_{max}$  = 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

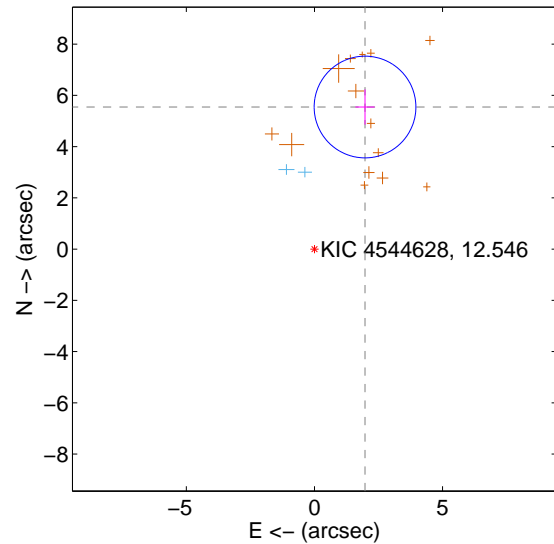
Supplemental centroid analysis for 004544628-01. Kepler magnitude: 12.55. Transit SNR 6.83

There are 2 quarters with good PRF difference image offsets

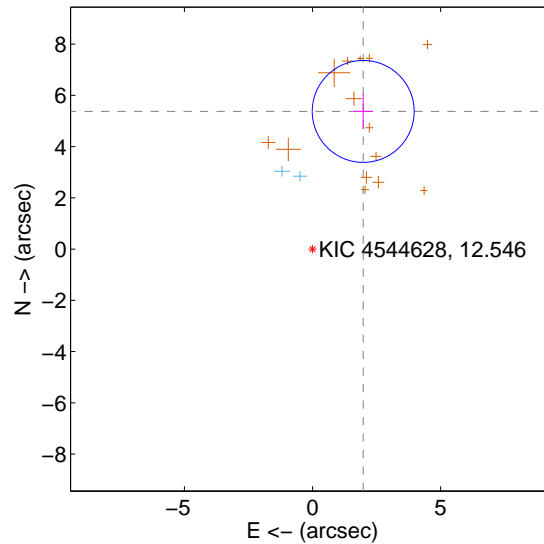
The direct PRF centroid is offset from the target star catalog position by about 0.19 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$5.887 \pm 0.662$	8.90	$-1.975 \pm 0.375$	$5.546 \pm 0.690$
PRF-fit source offset from KIC position	$5.727 \pm 0.663$	8.64	$-1.978 \pm 0.372$	$5.374 \pm 0.693$
photometric centroid source offset	$3.36 \pm 0.91$	3.69	$-3.32 \pm 0.90$	$0.51 \pm 1.11$

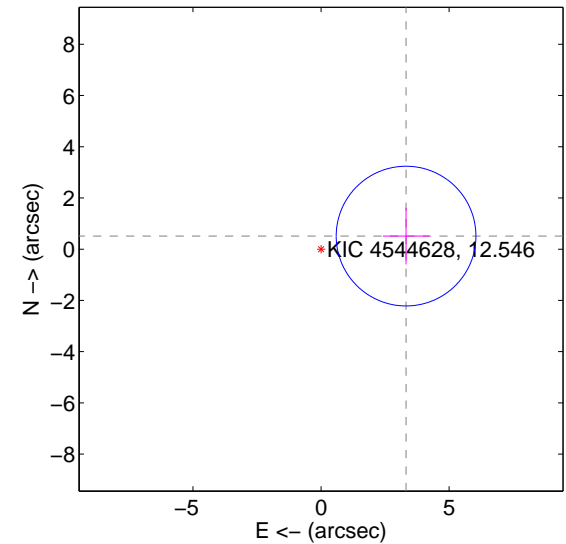
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

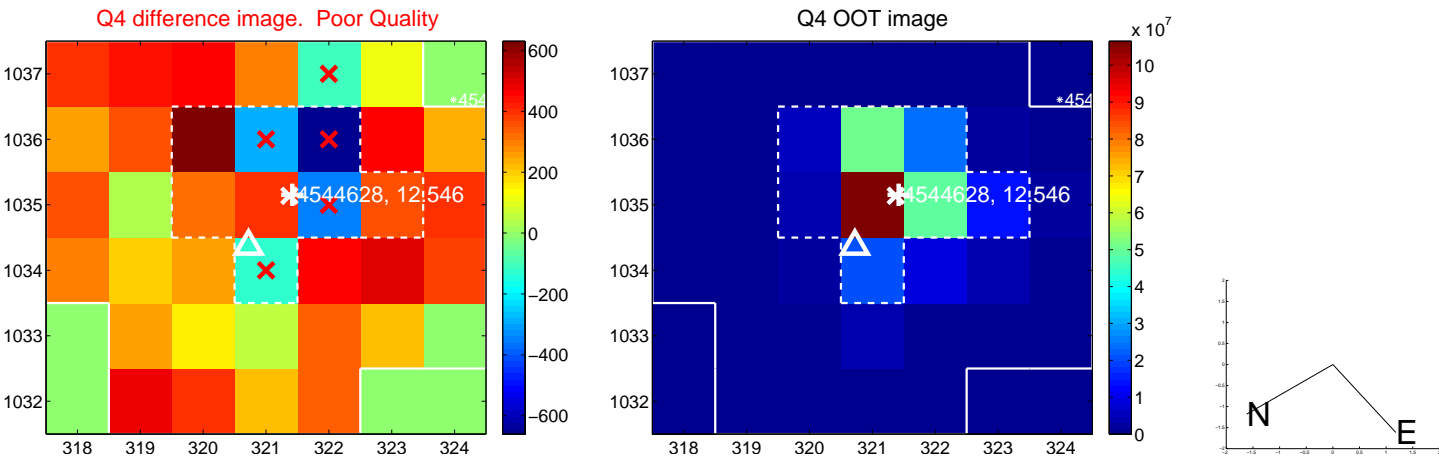
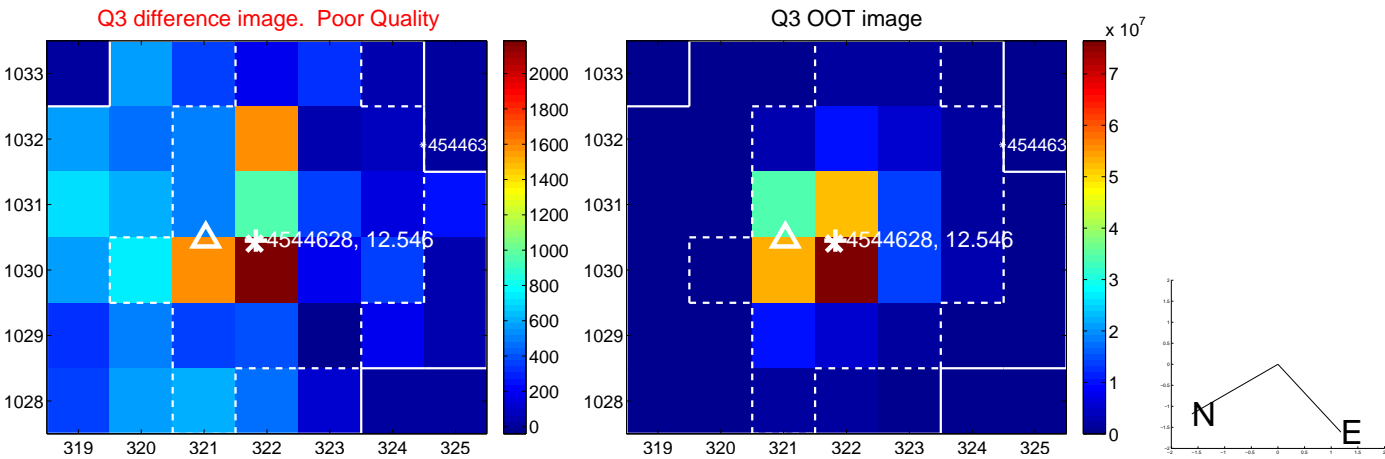
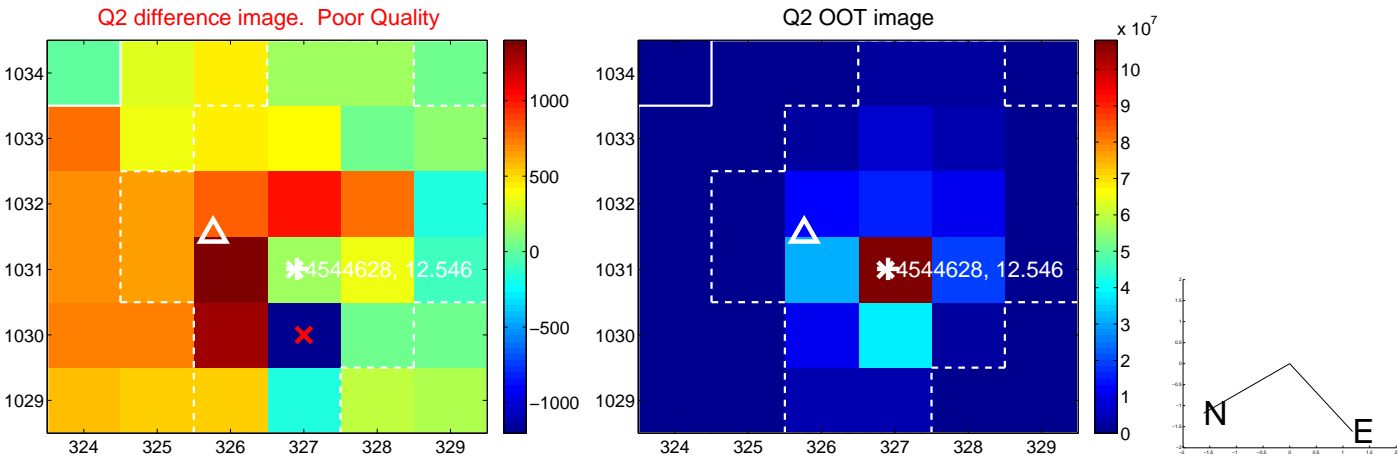
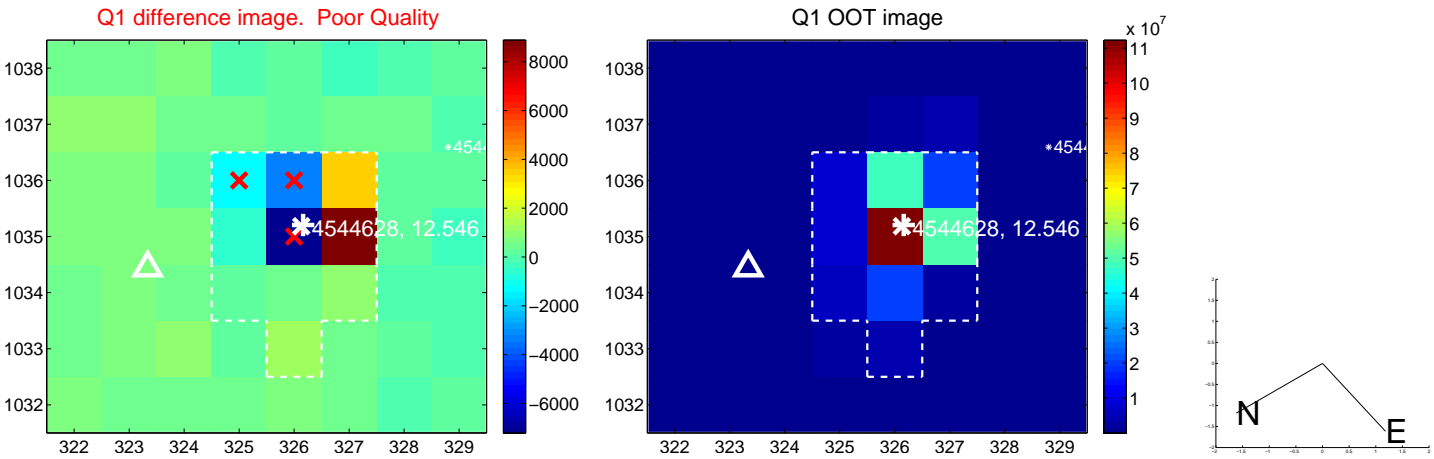


offset from photometric centroids

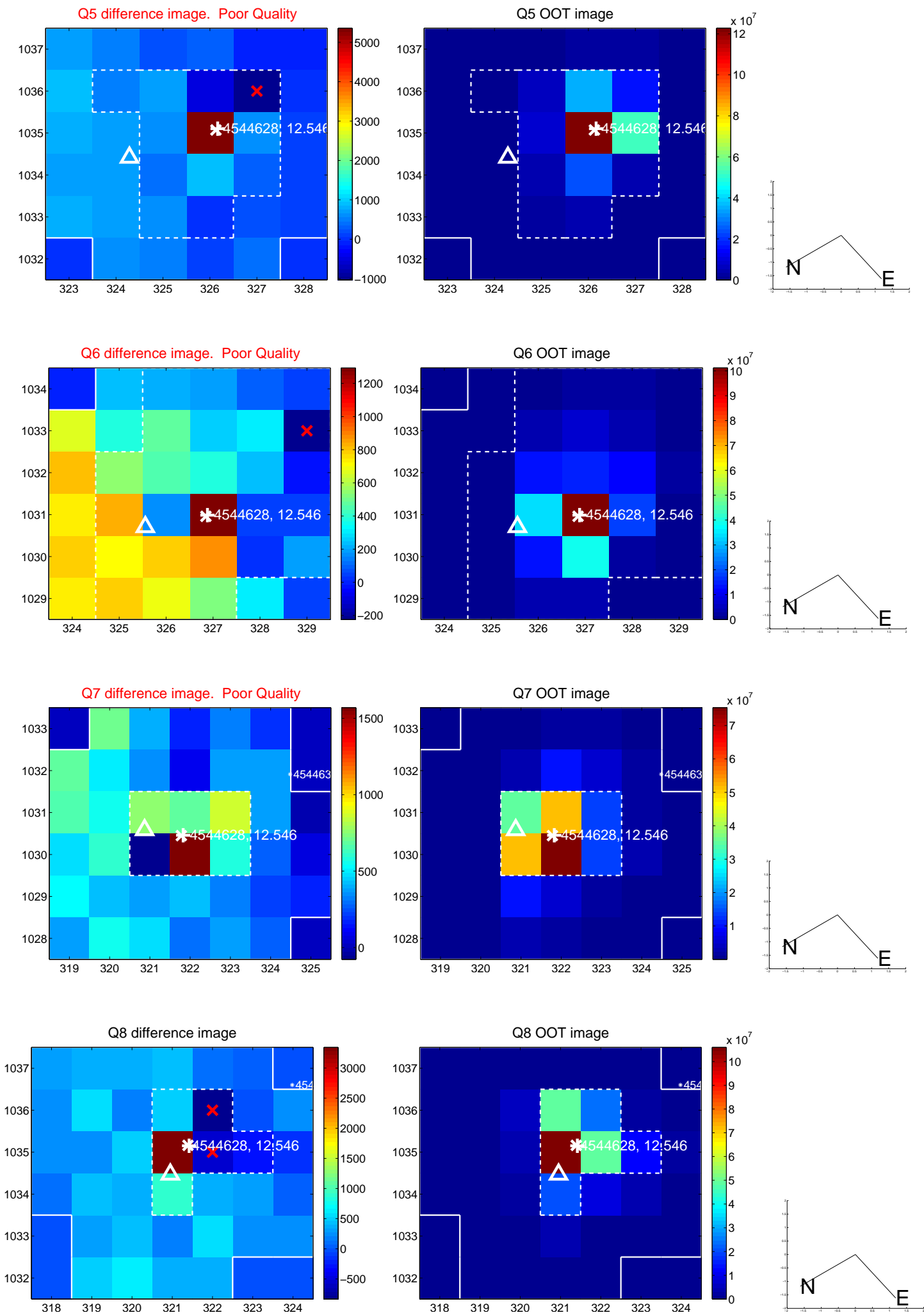


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: three-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

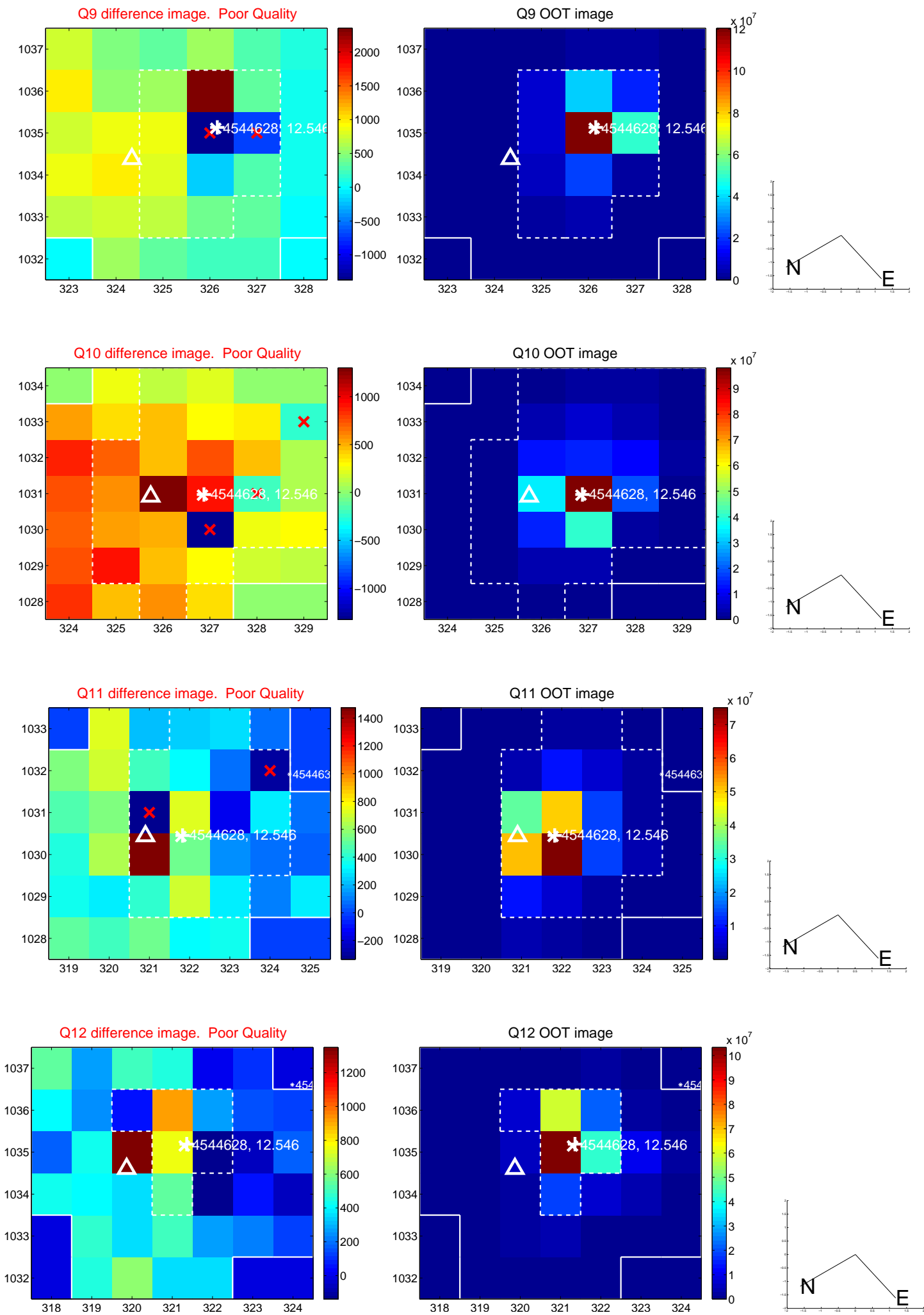


white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

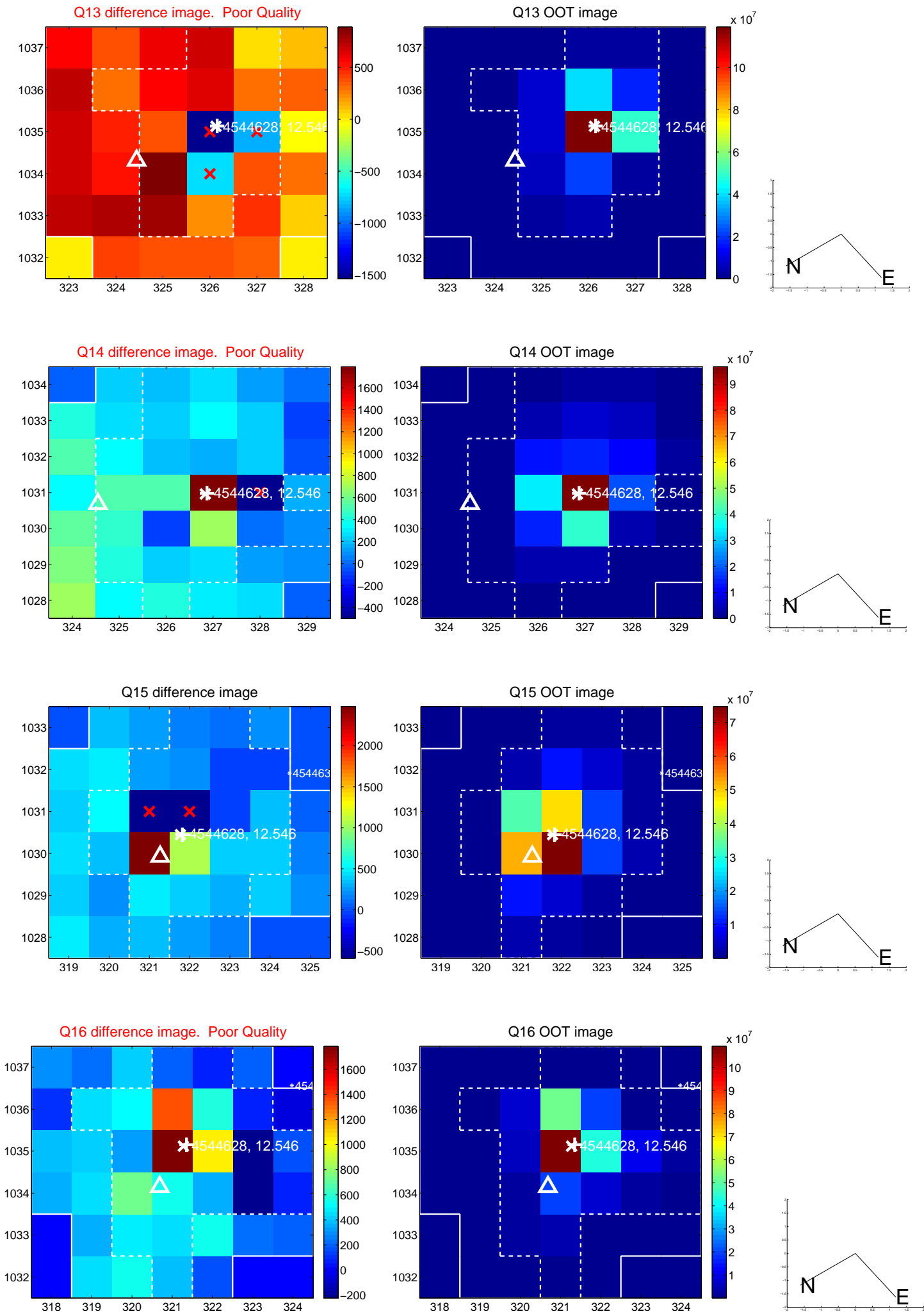




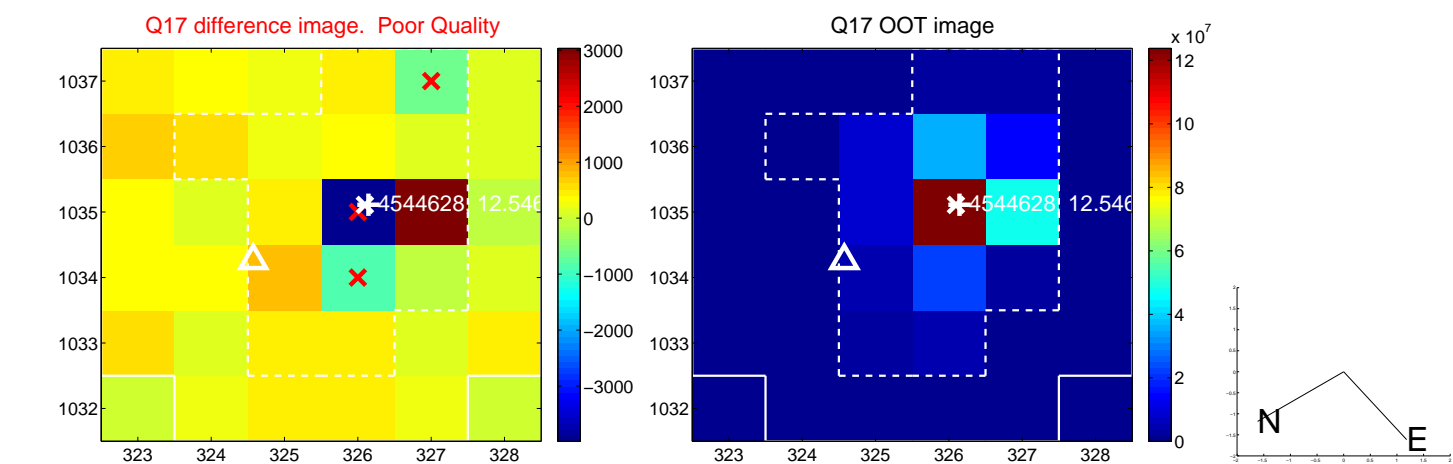
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



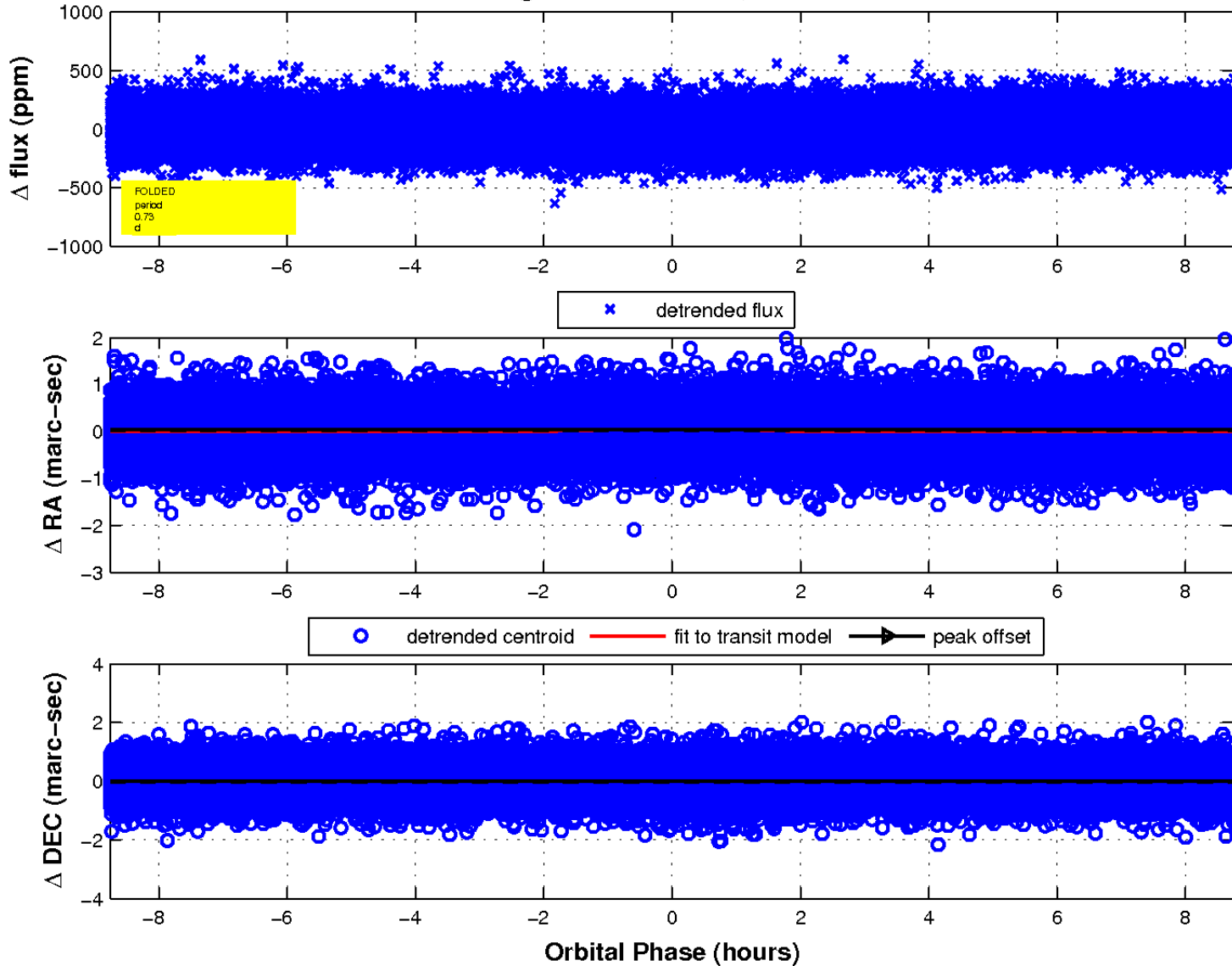
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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



fluxWeightedCentroids, Planet 1 of 1



UKIRT Image

