

# KIC 003228959

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
003228959-01	OBS	1107.01	0.730895	132.262933	41.2	3.522	13.3	7.5	0.85	5901	0.56	3233.86

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
003228959-01	OBS	FP	0.00	1	0	1	0	LPP_DV—CENT_RESOLVED_OFFSET—HALO_GHOST

**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 003228959-01

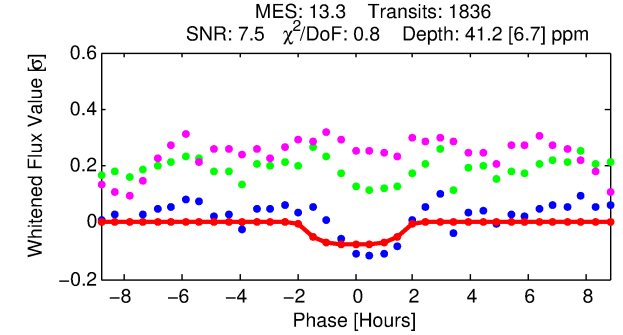
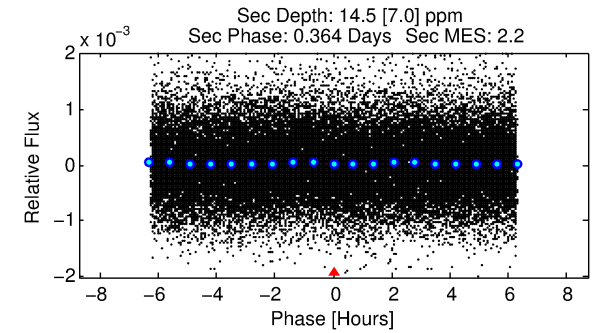
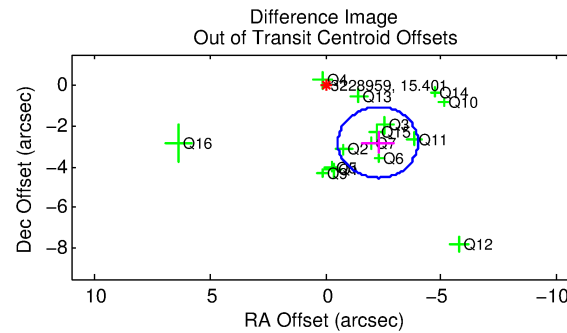
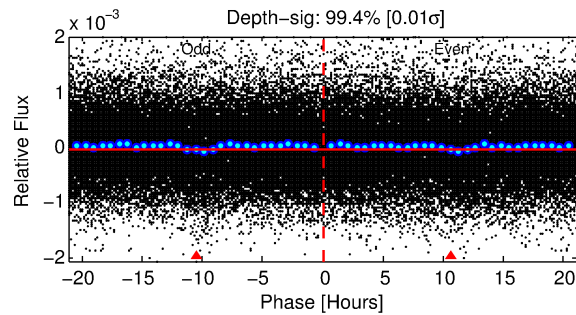
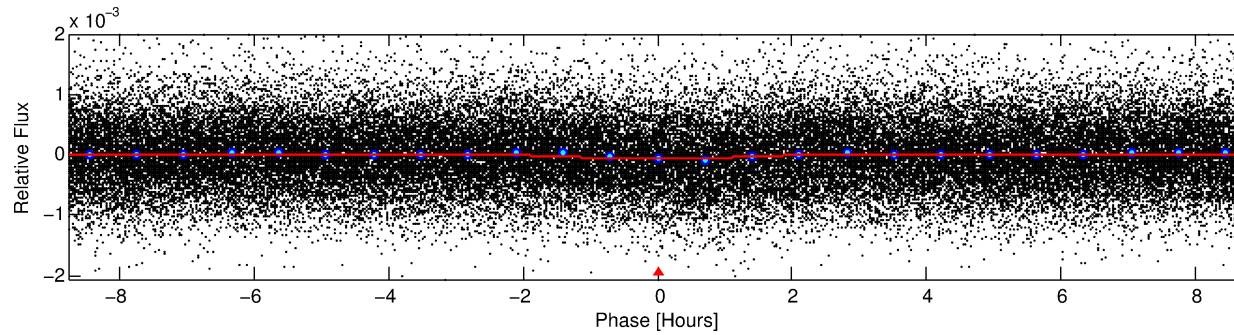
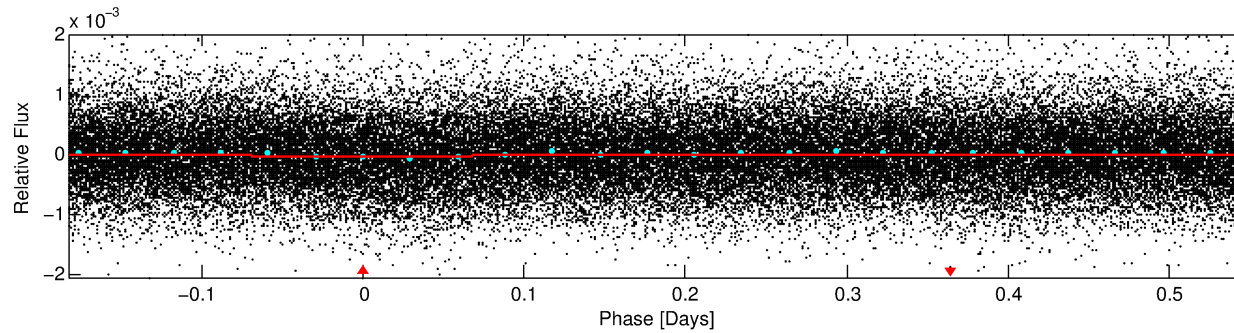
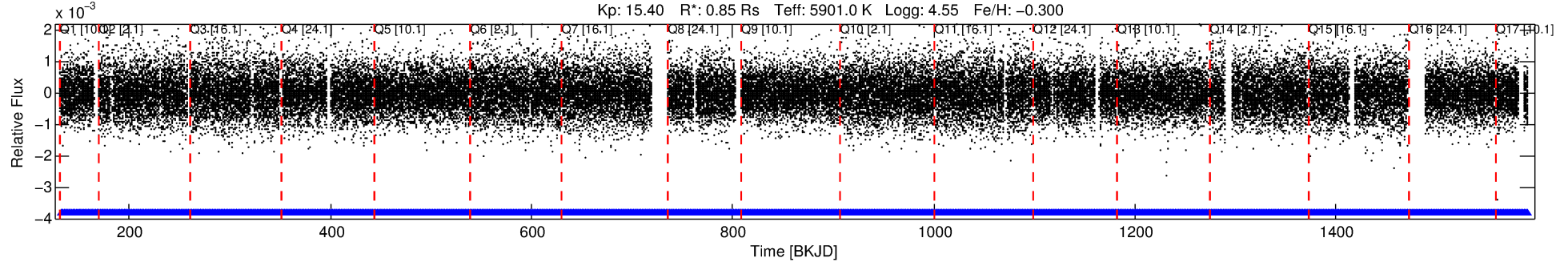
No Significant Match Found

# DV One-Page Summary

KIC: 3228959 Candidate: 1 of 1 Period: 0.731 d

KOI: K01107.01 Corr: 0.816

Kp: 15.40 R\*: 0.85 Rs Teff: 5901.0 K Logg: 4.55 Fe/H: -0.300



## DV Fit Results:

Period = 0.73089 [0.00001] d  
Epoch = 132.2629 [0.0058] BKJD  
Rp/R\* = 0.0060 [0.0055]  
a/R\* = 1.56 [3.98]  
b = 0.51 [6.41]  
Seff = 3233.86 [1269.54]  
Teq = 1923 [189] K  
Rp = 0.56 [0.54] Re  
a = 0.0155 [0.0039] AU  
Ag = 6.14 [11.80] [0.44σ]  
Teffp = 4679 [2212] K [1.24σ]

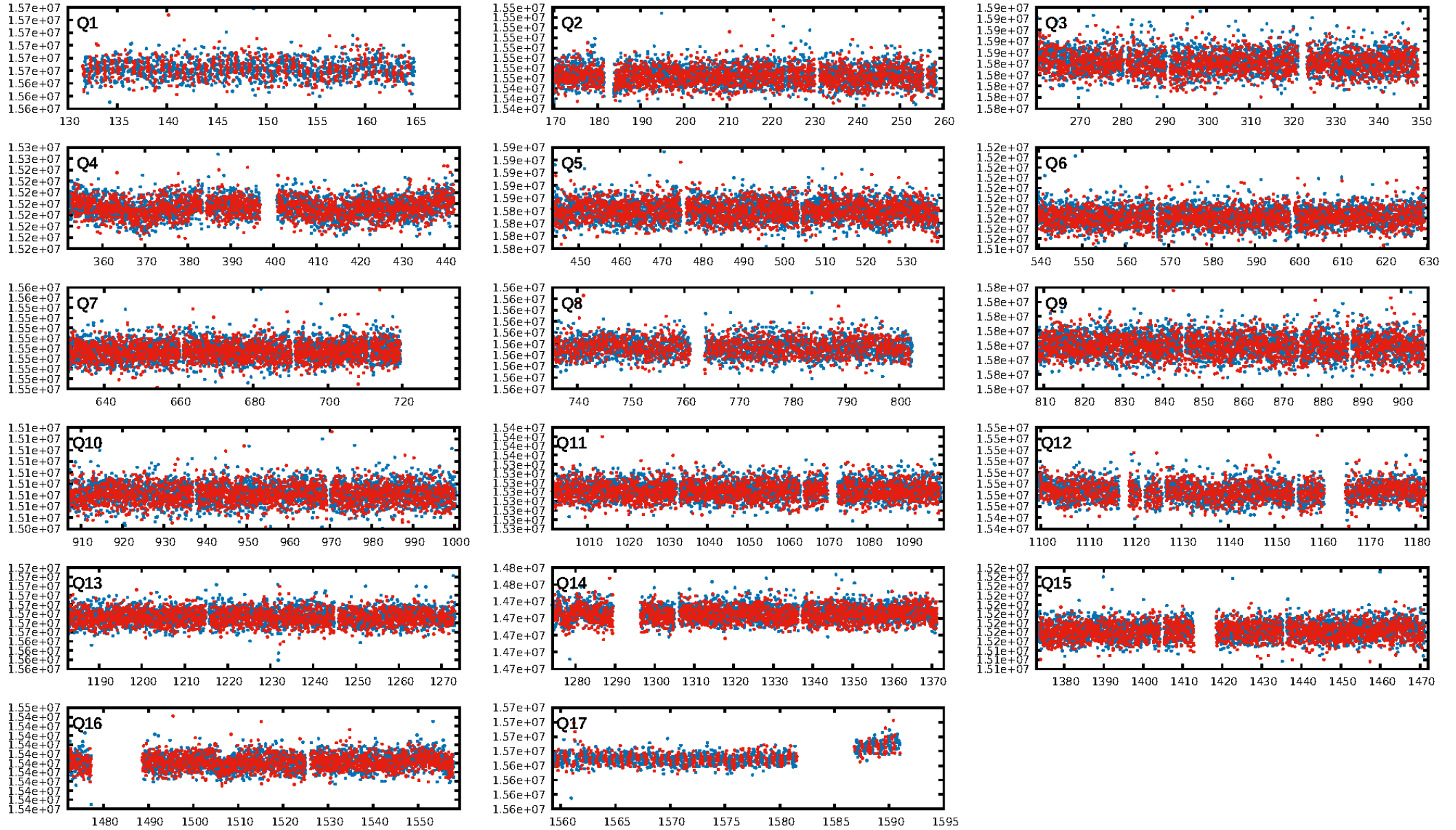
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: N/A  
ModelChiSquareGof-sig: N/A  
Bootstrap-pfa: 1.19e-33  
RollingBand-fgt: 1.00 [1754/1754]  
**GhostDiagnostic-chr: -0.2464**  
Centroid-sig: 0.0%  
Centroid-so: 8.258 arcsec [4.29σ]  
OotOffset-rm: 3.613 arcsec [6.25σ]  
KicOffset-rm: 3.546 arcsec [5.49σ]  
OotOffset-st: 4/4/3/4 [15]  
KicOffset-st: 4/4/3/4 [15]  
DiffImageQuality-fgm: 0.00 [0/15]  
DiffImageOverlap-fno: 1.00 [17/17]

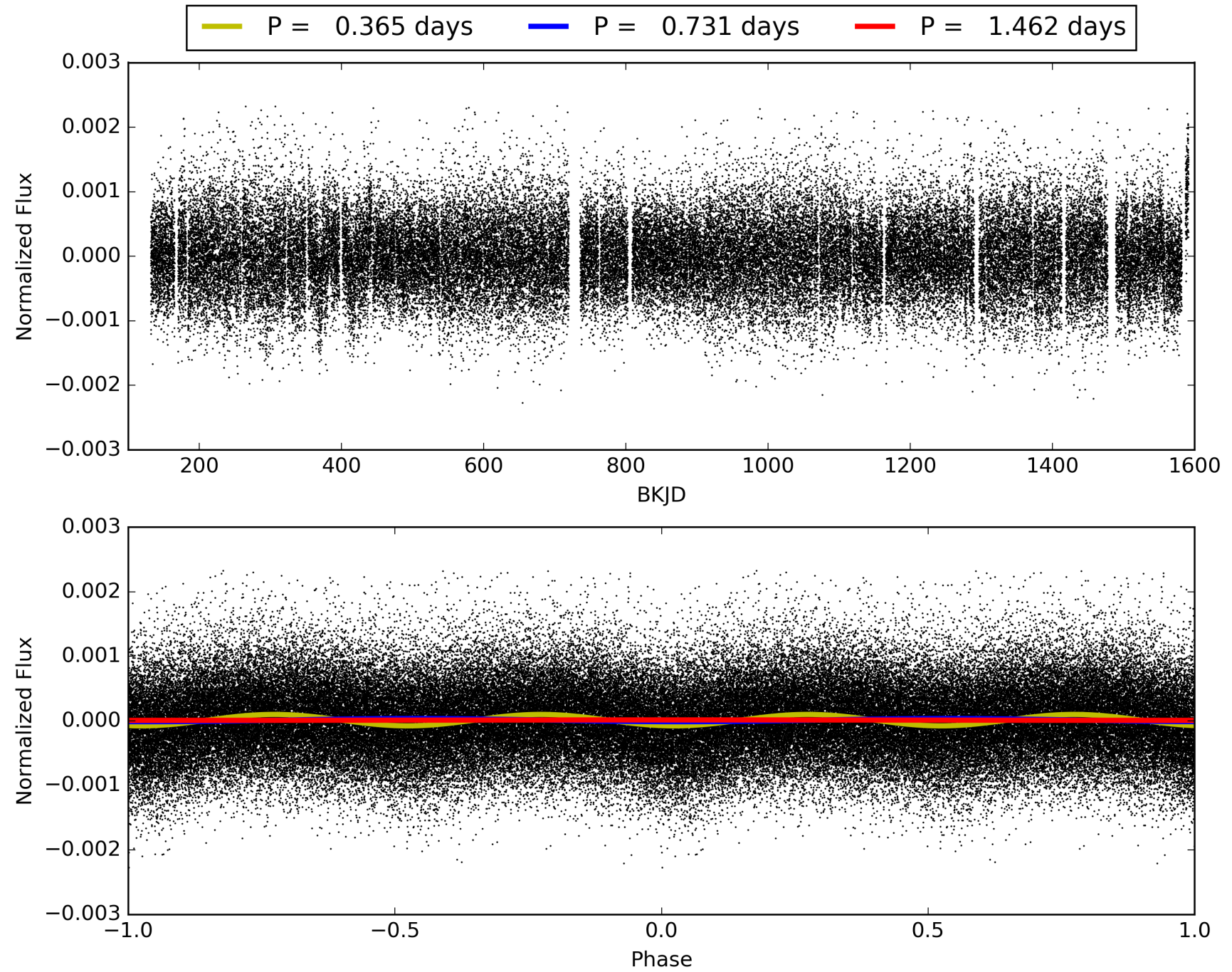
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 18:52:41 Z

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

# TCE 003228959-01, PDC Light Curves



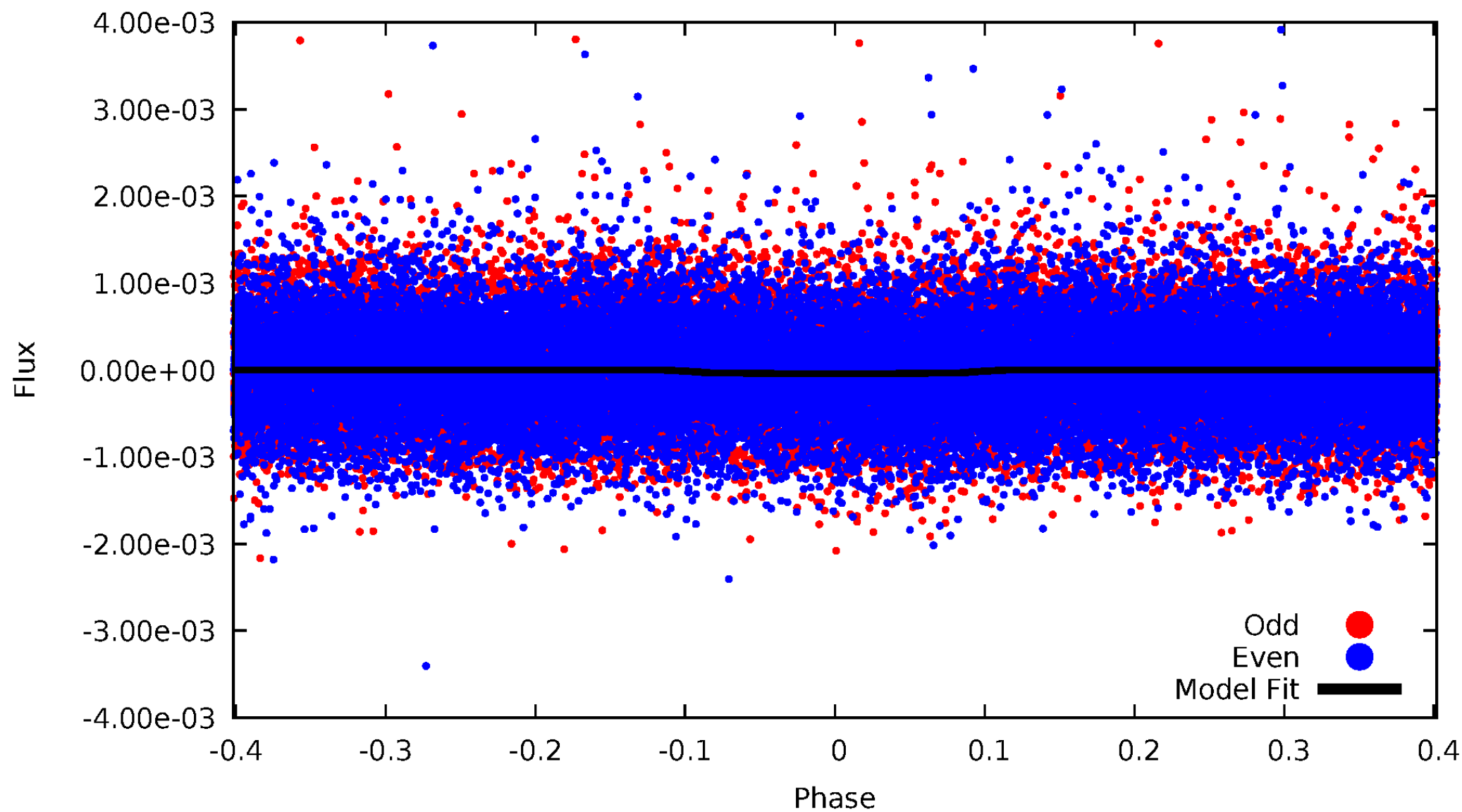
# TCE 003228959-01





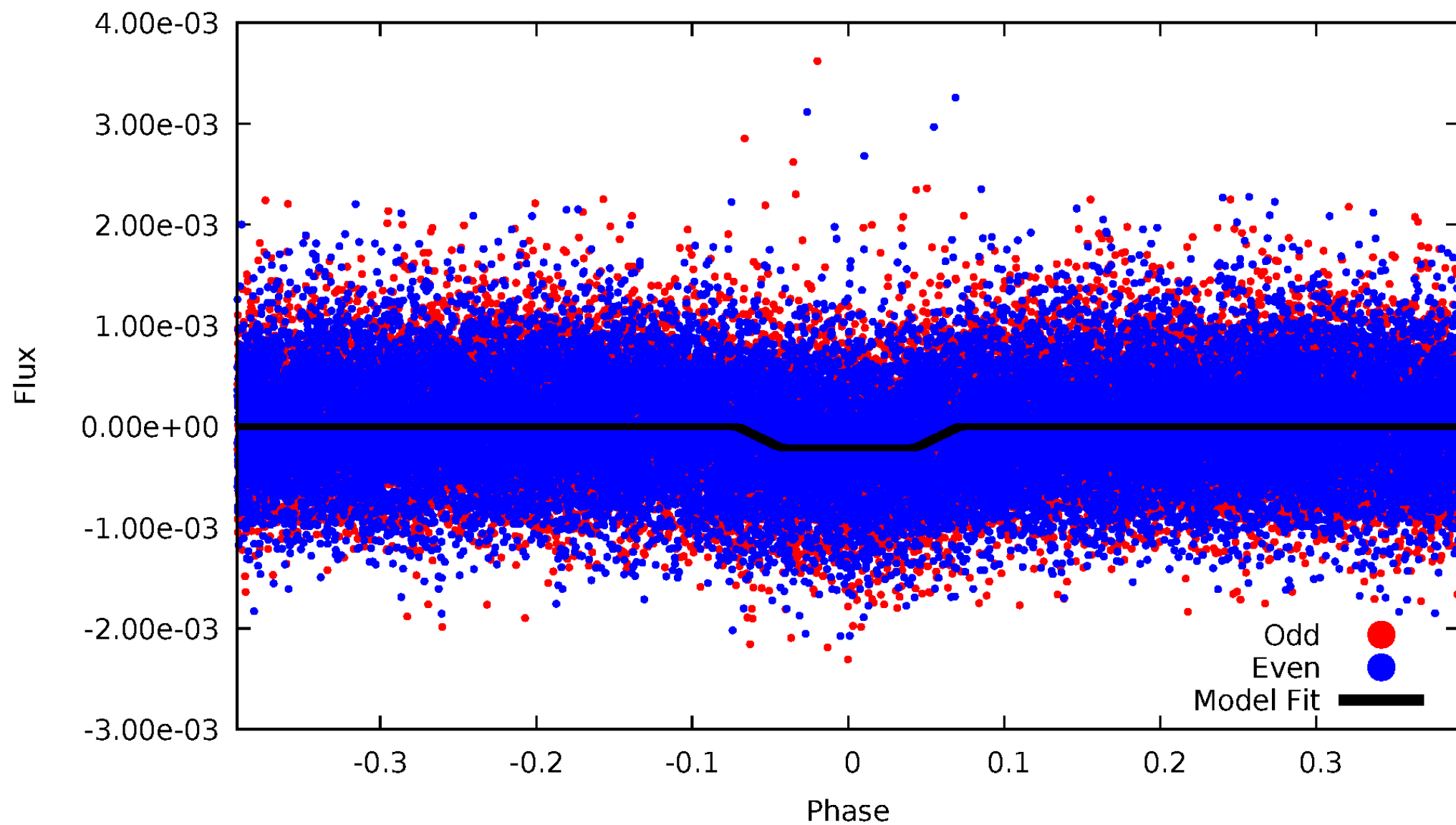
# DV Odd/Even

TCE 003228959-01



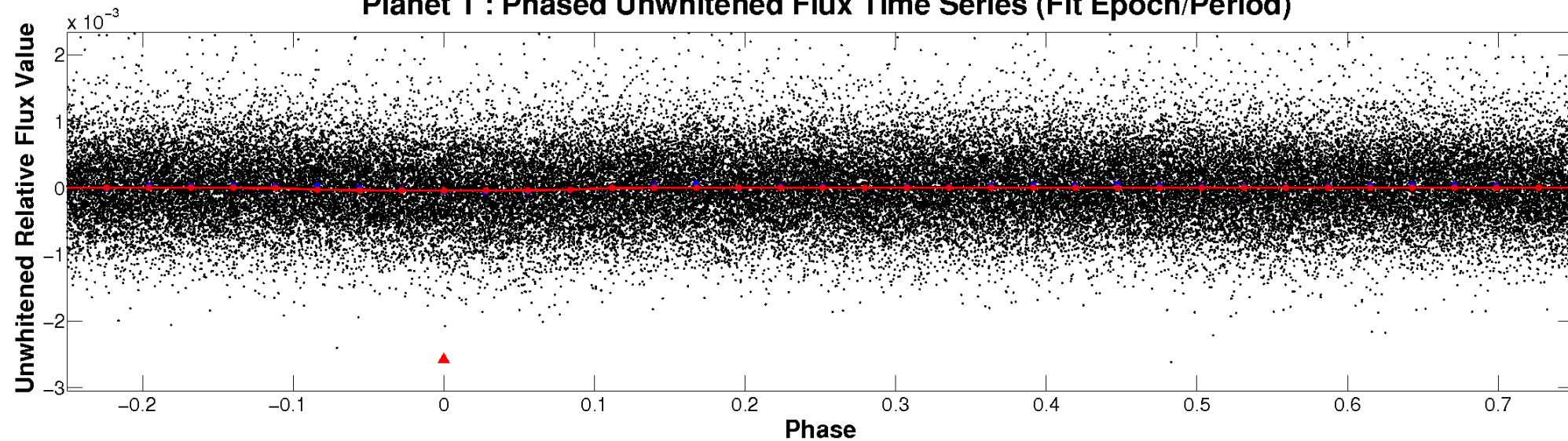
# ALT Odd/Even

TCE 003228959-01

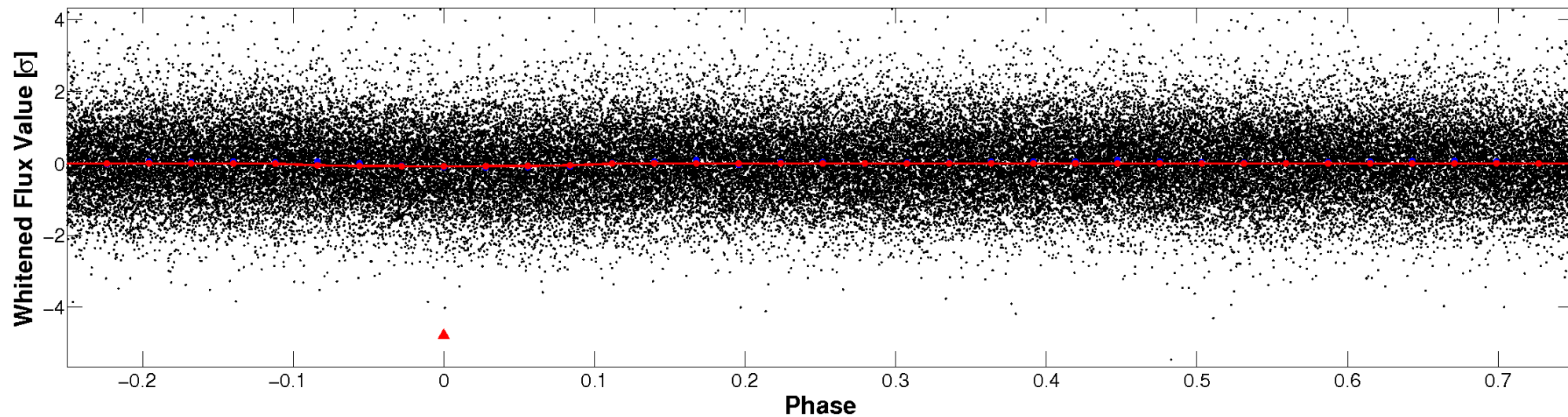


# Non-Whitened Vs. Whitened Light Curve

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

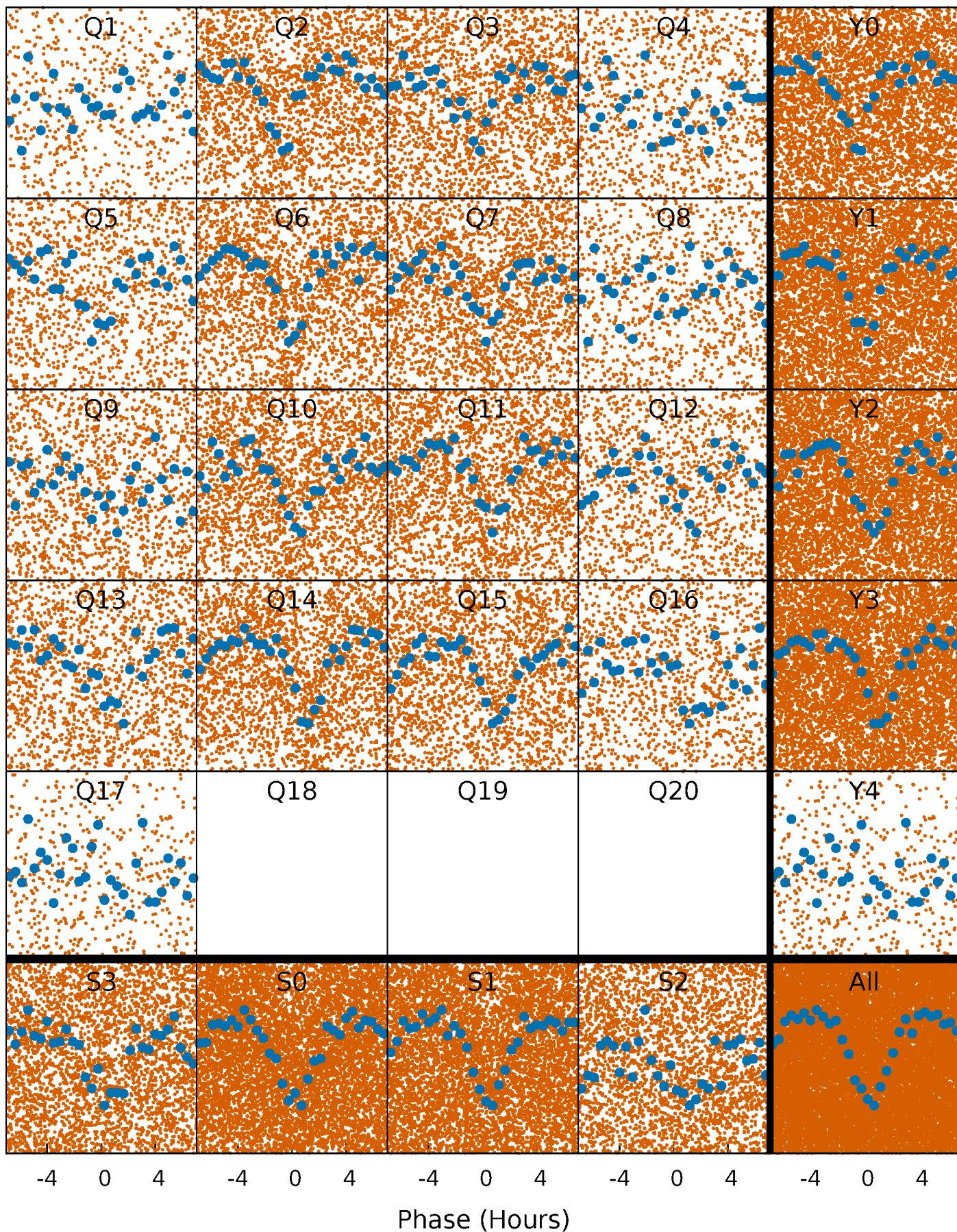


**Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)**



# PDC Quarter-Phased Transit Curves

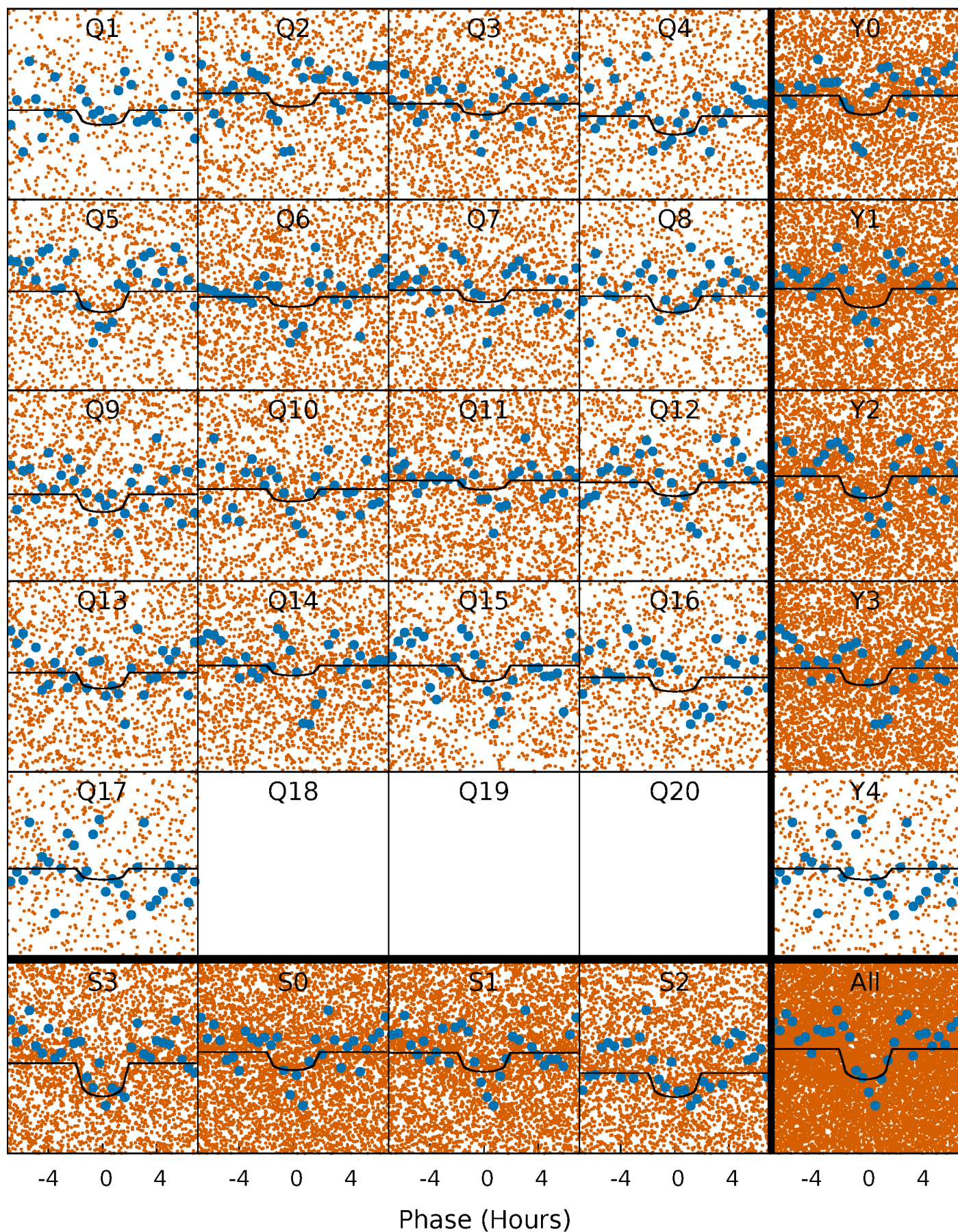
TCE 003228959-01 P= 0.730895 Days  $T_0=132.262933$  (BKJD)





# DV Quarter-Phased Transit Curves

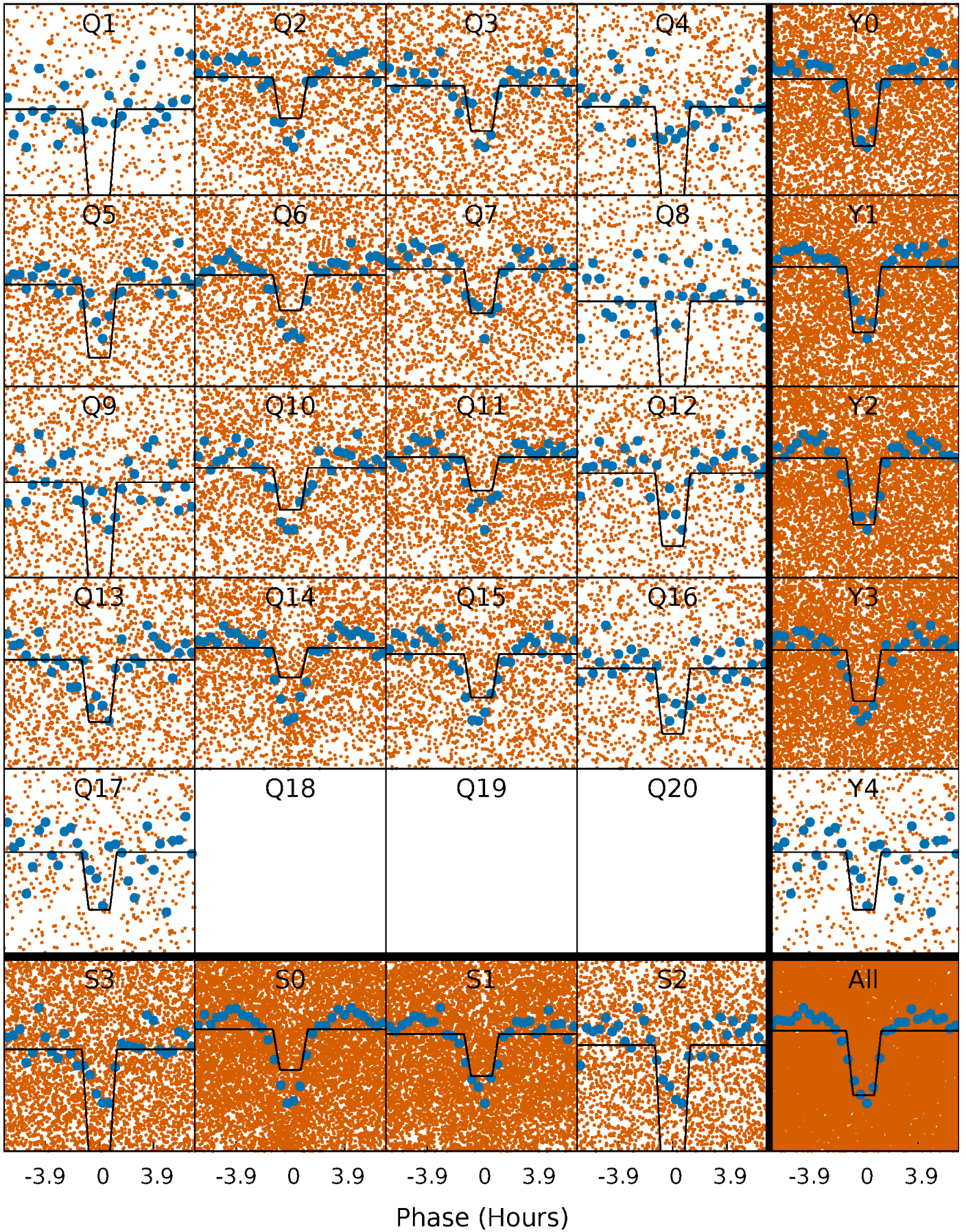
TCE 003228959-01 P= 0.730895 Days  $T_0=132.262933$  (BKJD)





# Alt. Detrend Quarter-Phased Transit Curves

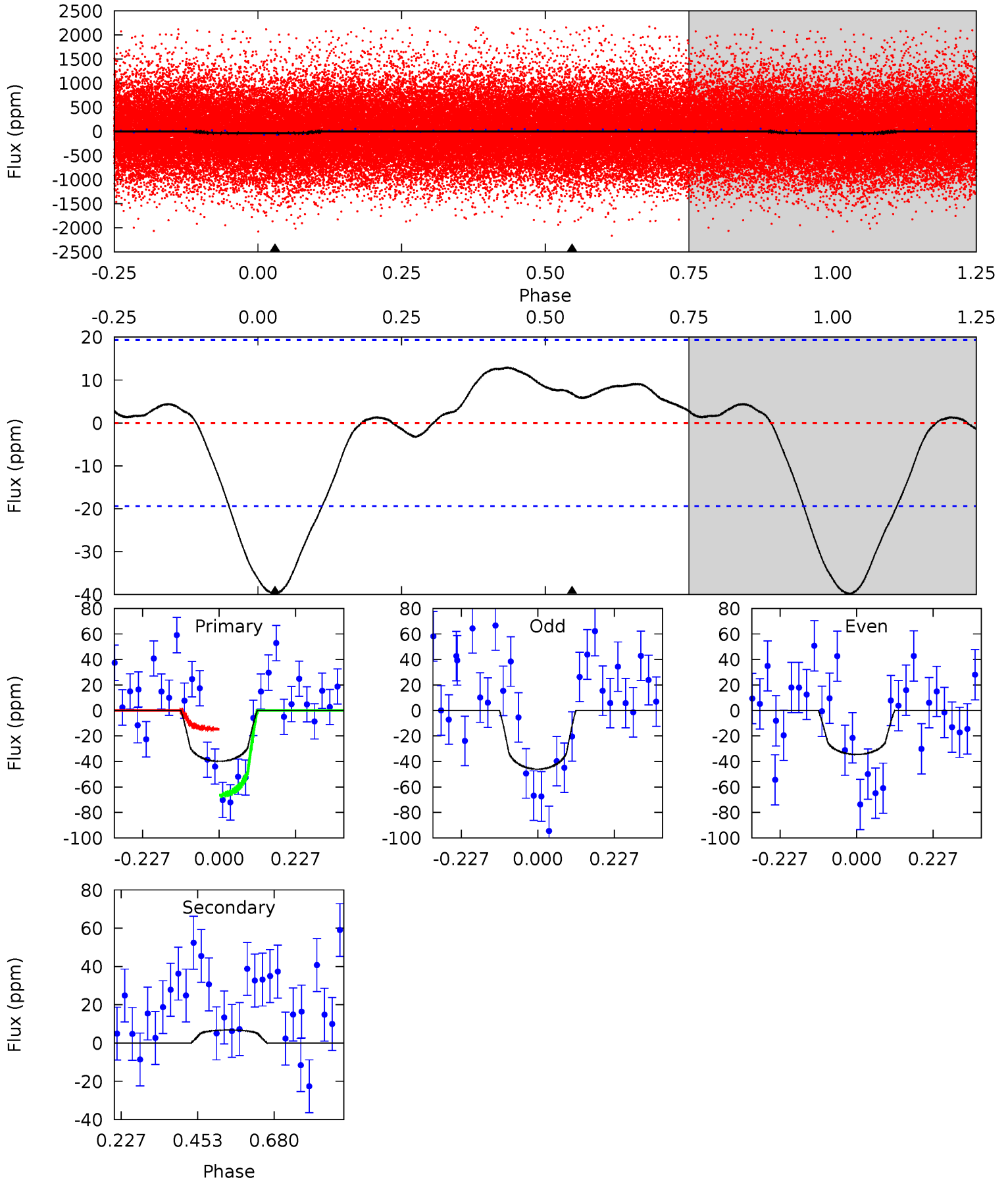
TCE 003228959-01 P= 0.730947 Days  $T_0=132.226756$  (BKJD)



# DV Model-Shift Uniqueness Test

003228959-01, P = 0.730895 Days, E = 130.801143 Days

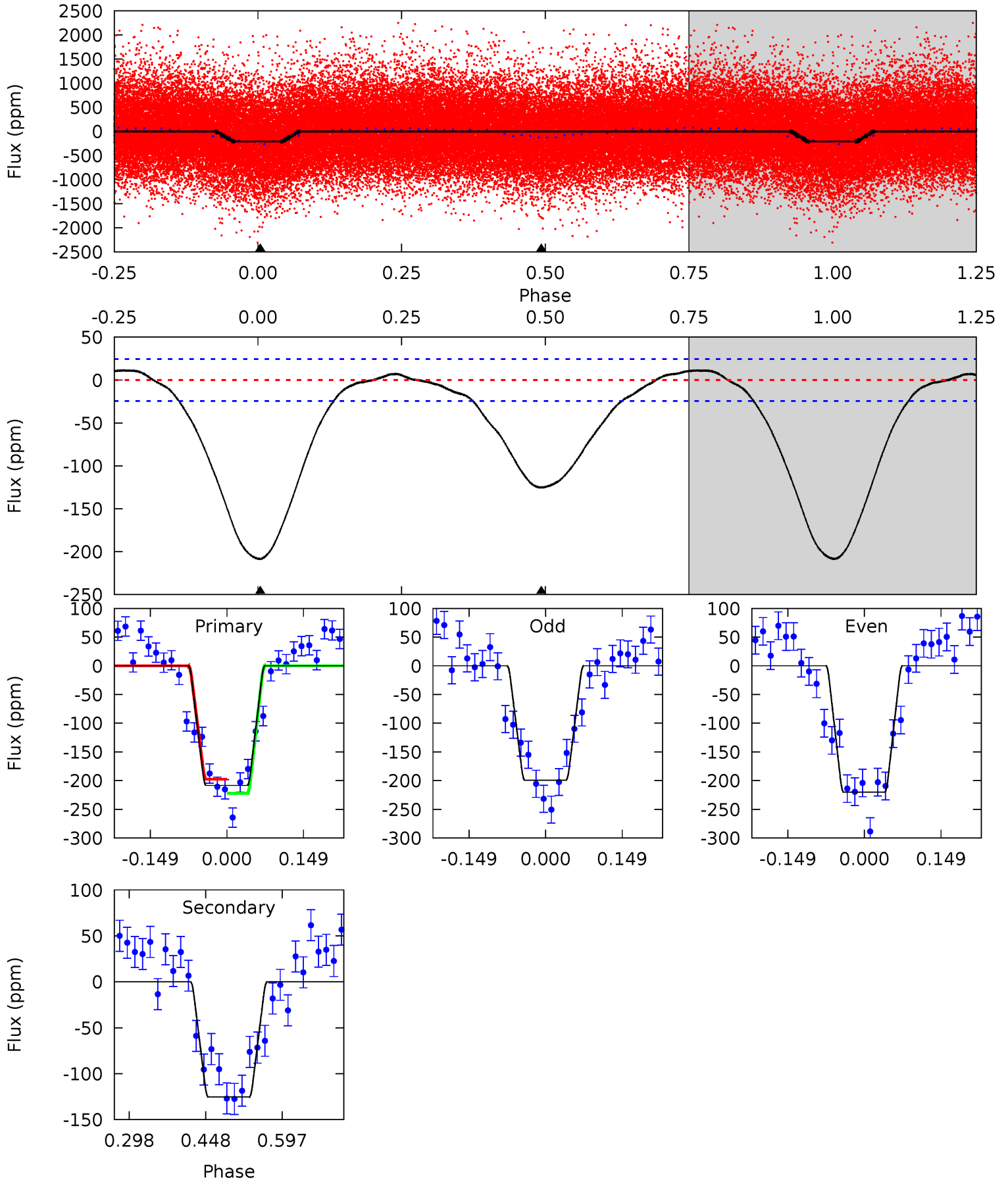
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
9.03	-1.55	0	0	4.39	1.21	0.44	9.03	9.03	-1.55	-1.55	1.31	0.95	0.24	5.87



# Alt Model-Shift Uniqueness Test

003228959-01, P = 0.730947 Days, E = 131.495809 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
38.3	23.1	0	0	4.48	1.44	1.44	38.3	38.3	23.1	23.1	1.90	1.03	0.05	2.25





### Stellar Parameters For KIC 003228959

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R$ ( $R_{\odot}$ )	$M$ ( $M_{\odot}$ )	$p_{\star}$ ( $\text{g}\cdot\text{cm}^{-3}$ )
	$5901^{+158}_{-193}$	$4.553^{+0.036}_{-0.204}$	$-0.300^{+0.300}_{-0.300}$	$0.848^{+0.251}_{-0.079}$	$0.938^{+0.105}_{-0.117}$	$2.165^{+0.426}_{-1.110}$
	+3%/-3%	+1%/-4%	+100%/-100%	+30%/-9%	+11%/-12%	+20%/-51%
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 003228959-01 / KOI 1107.01

Detrend	Depth (ppm)	$R_p$ ( $R_{\oplus}$ )	$T_{max}$ (K)	$T_{obs}$ (K)	$A_{obs}$
DV	$7\pm4$	$0.69^{+0.48}_{-0.42}$	$2751^{+177}_{-124}$	$-3932^{+632}_{-1644}$	$-1.598^{+1.255}_{-8.971}$
Alt.	$-125\pm5$	$1.45^{+0.54}_{-0.56}$	$2760^{+195}_{-133}$	$5161^{+1323}_{-680}$	$7.721^{+12.748}_{-3.665}$

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

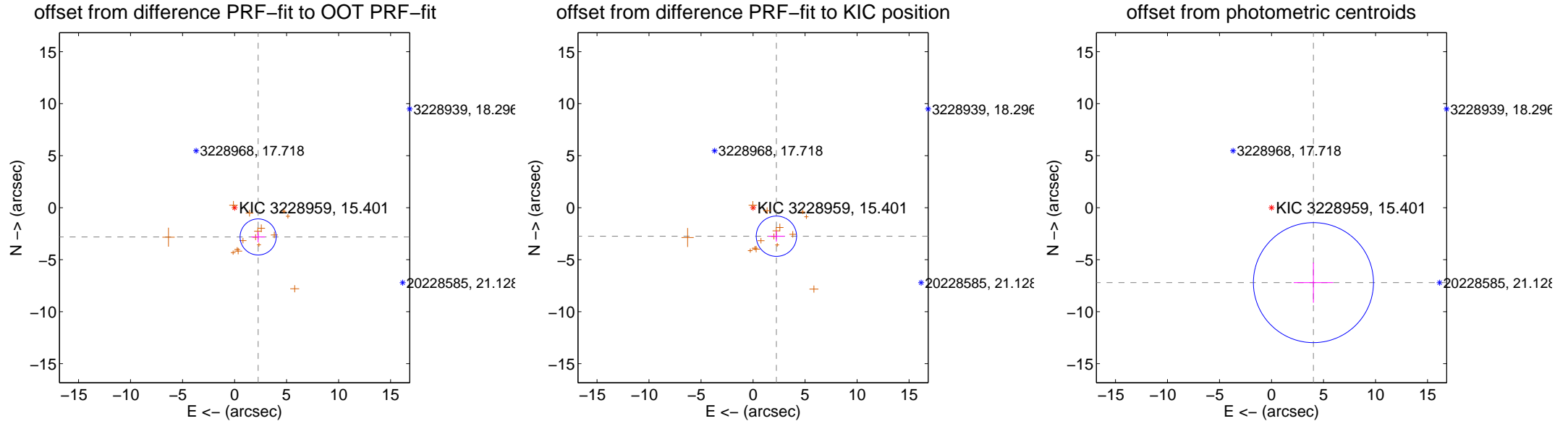
## DV Centroid Data

Supplemental centroid analysis for 003228959-01. Kepler magnitude: 15.40. Transit SNR 7.55

There are 0 quarters with good PRF difference image offsets

The direct PRF centroid is offset from the target star catalog position by about 0.07 arcsec

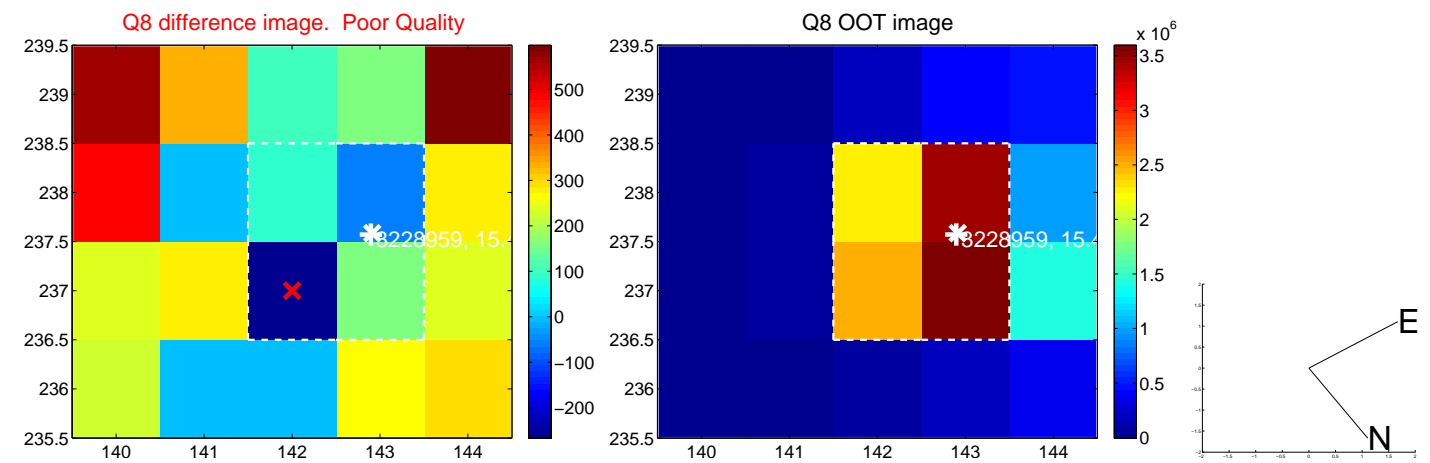
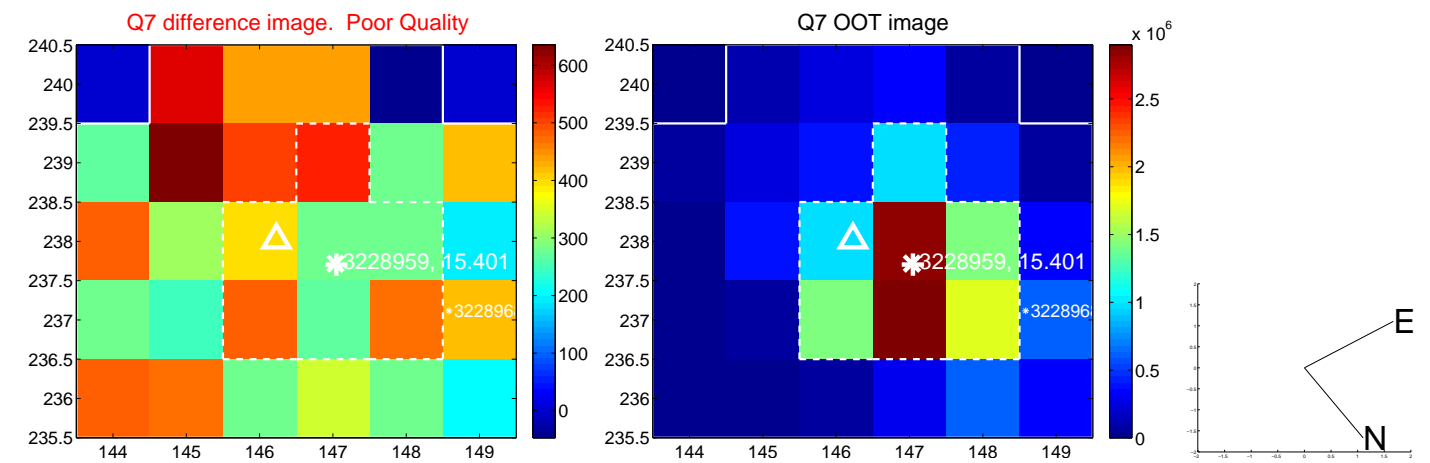
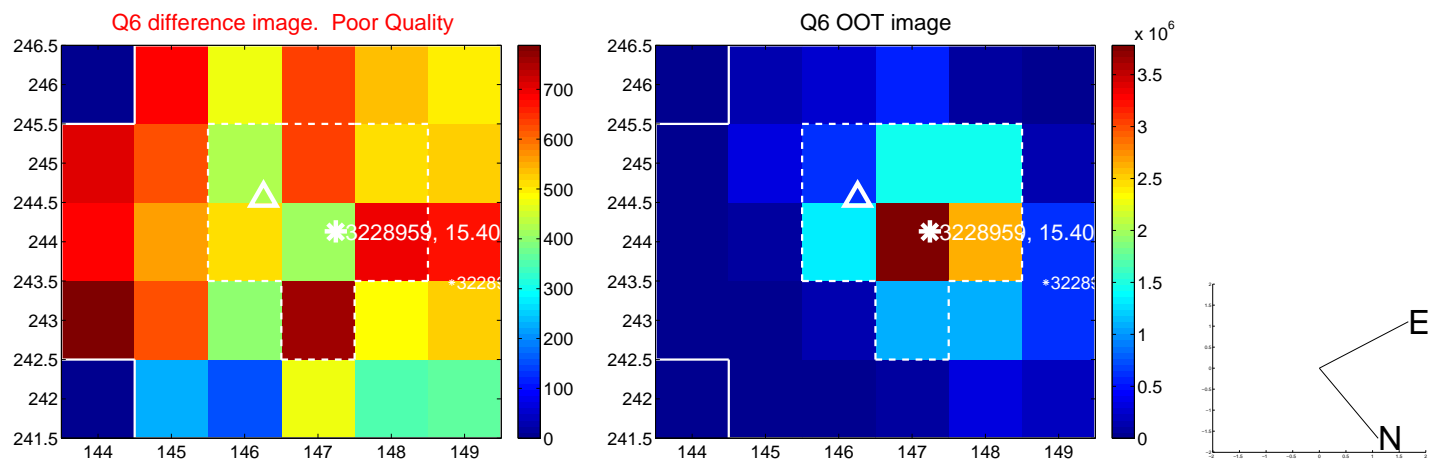
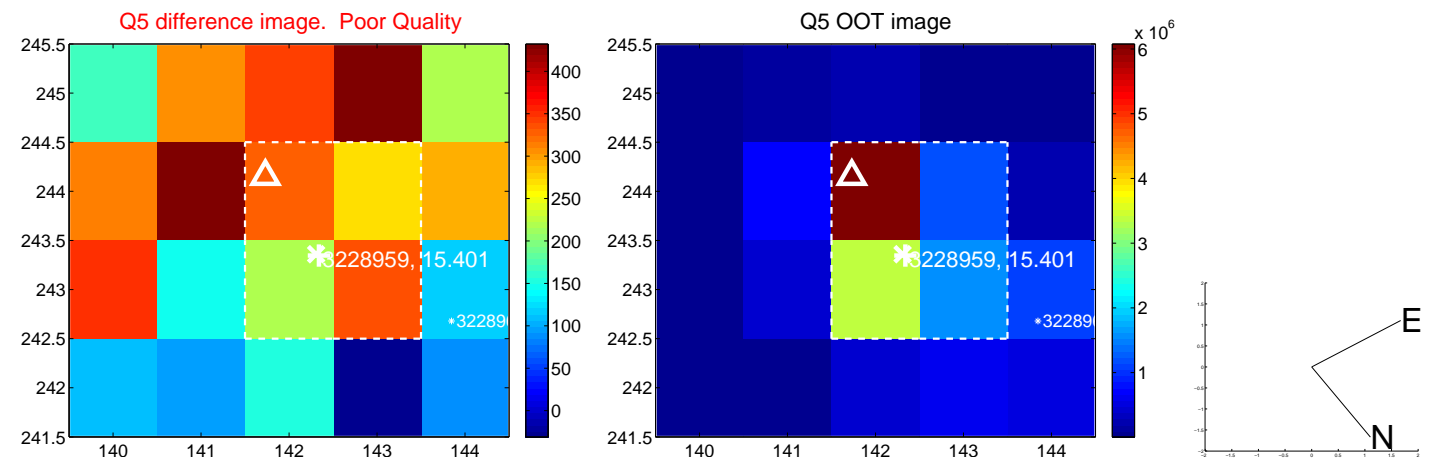
	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$3.613 \pm 0.578$	6.25	$-2.265 \pm 0.656$	$-2.815 \pm 0.522$
PRF-fit source offset from KIC position	$3.546 \pm 0.646$	5.49	$-2.246 \pm 0.783$	$-2.745 \pm 0.515$
photometric centroid source offset	$8.26 \pm 1.92$	4.29	$-4.03 \pm 1.90$	$-7.21 \pm 1.93$



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.

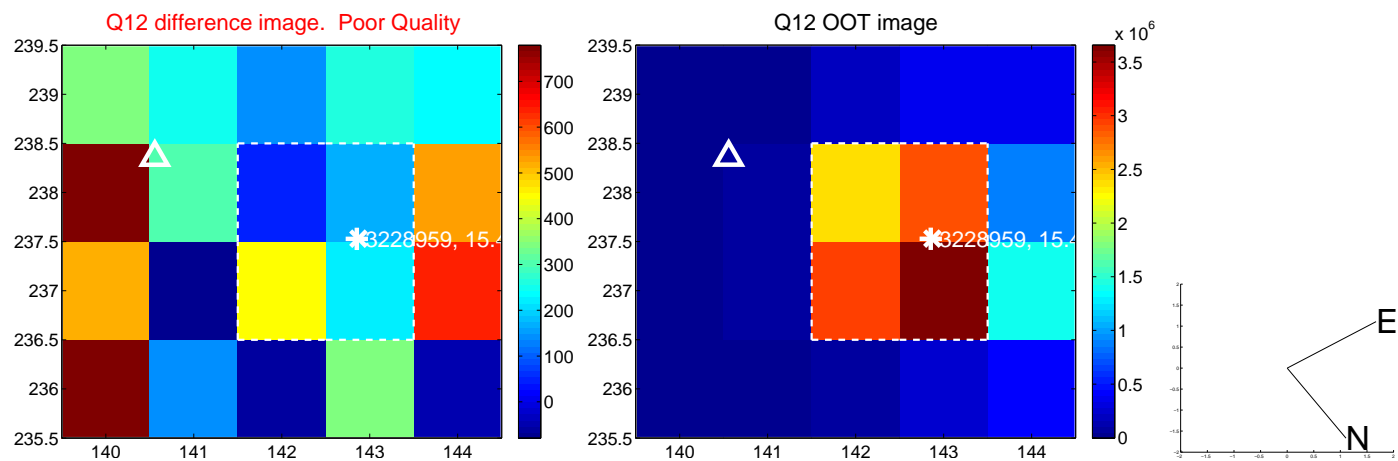
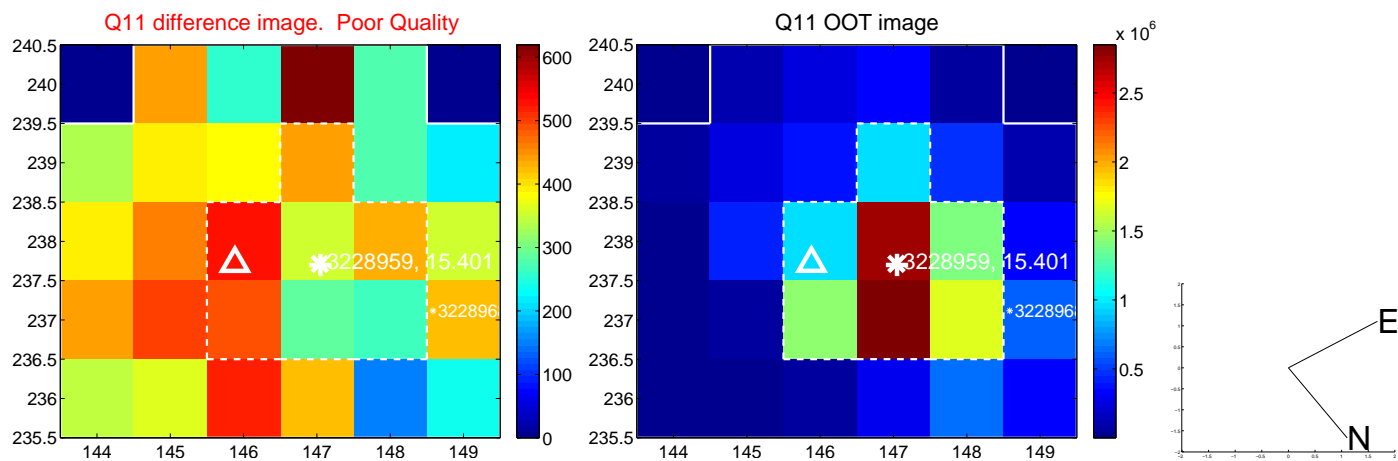
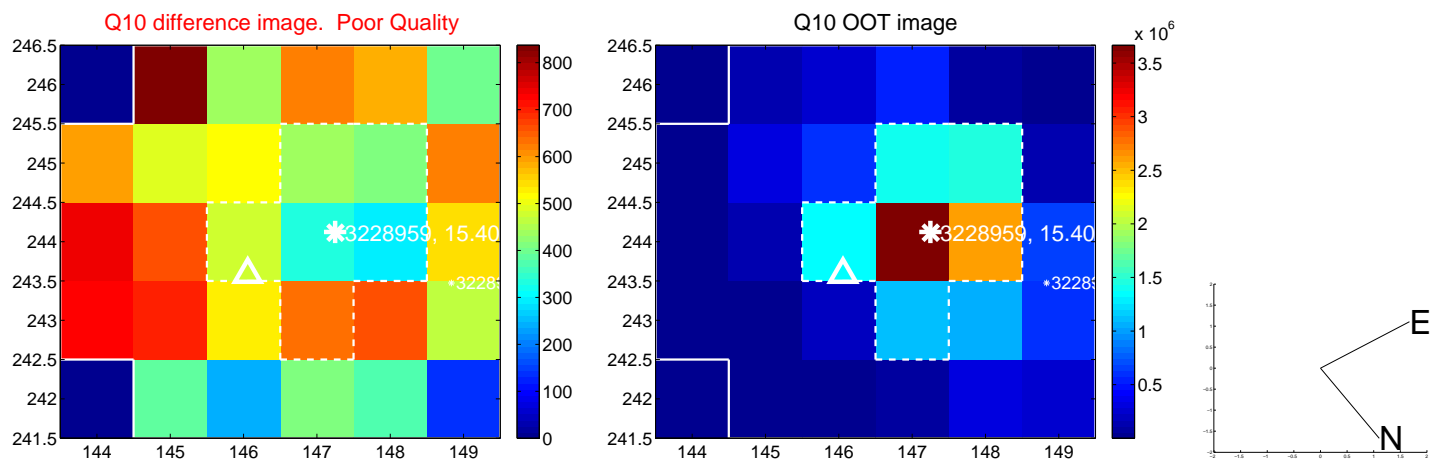
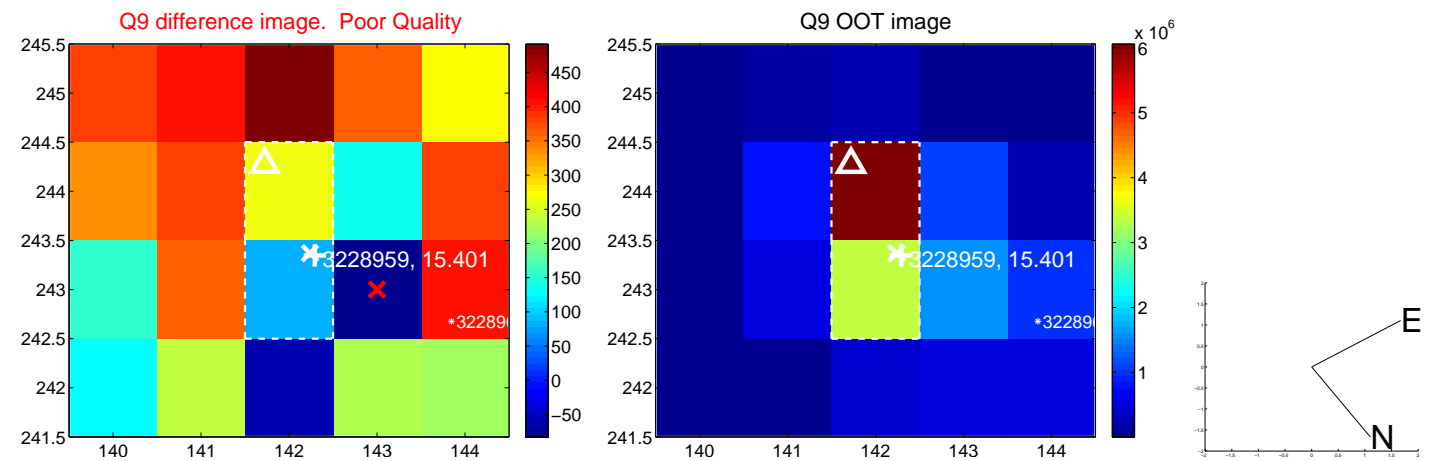


white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

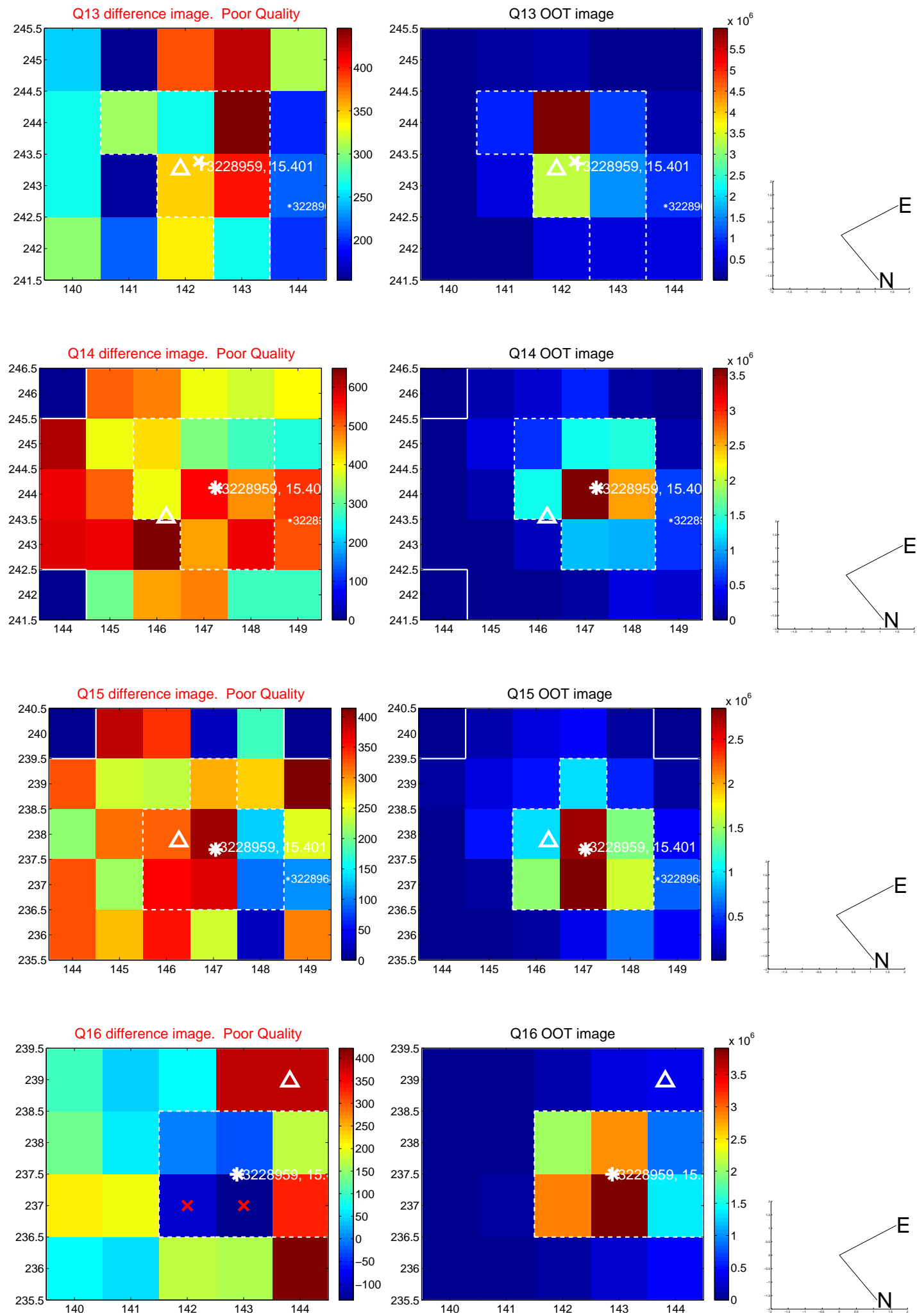




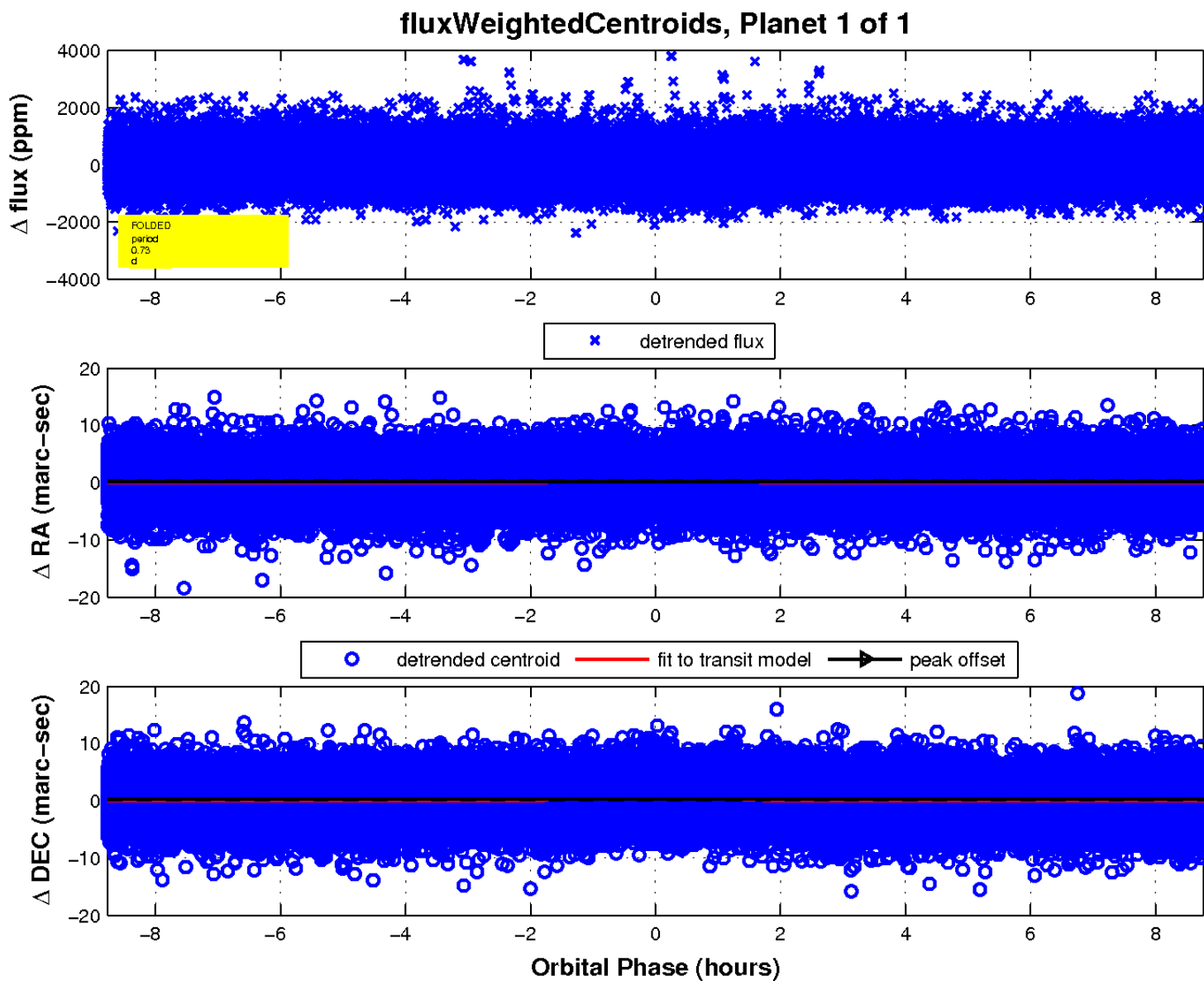
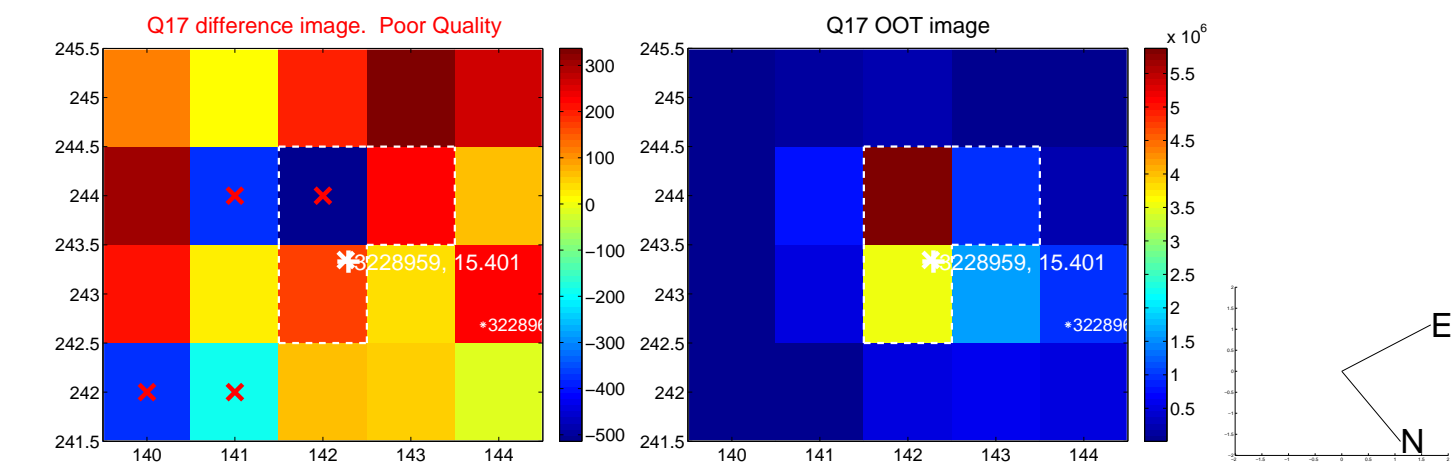
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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.



# UKIRT Image

Declination

