

# KIC 008380376

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
008380376-01	OBS	No	0.671699	131.810036	28.2	1.609	8.1	8.3	0.77	5507	0.49	2430.48

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008380376-01	OBS	FP	0.00	1	0	1	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—CENT_RESOLVED_OFFSET

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

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

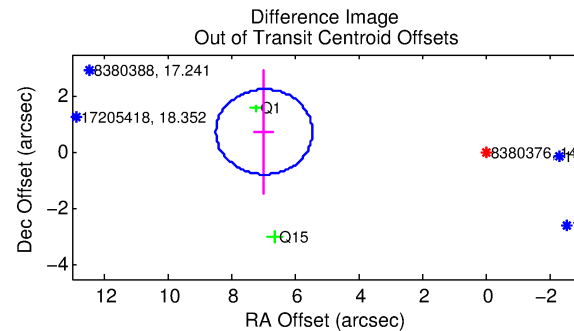
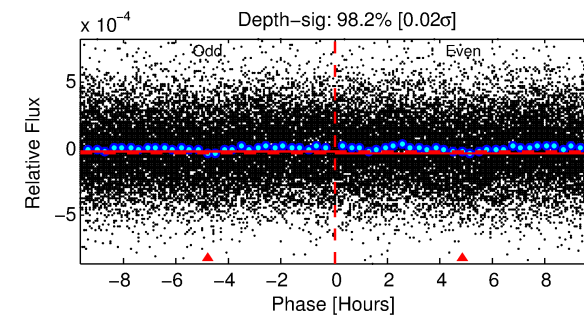
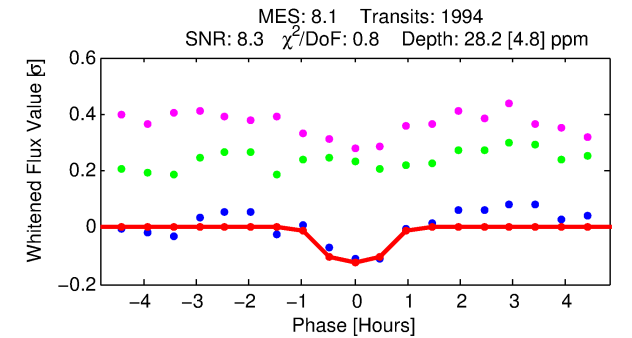
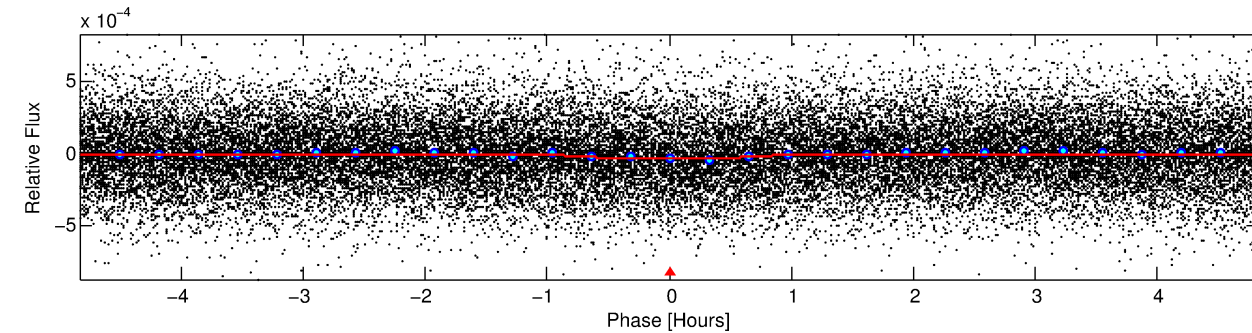
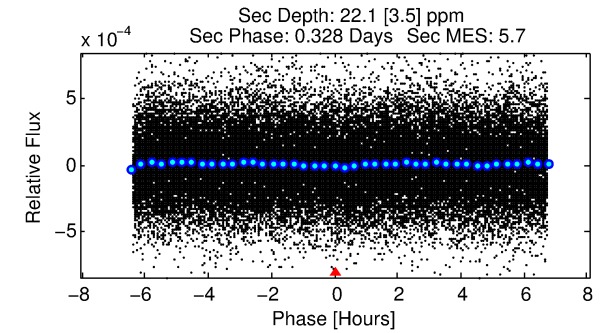
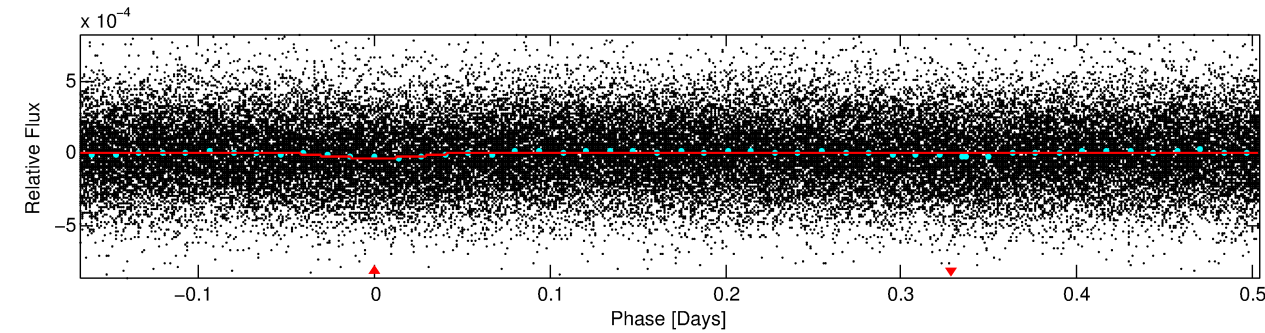
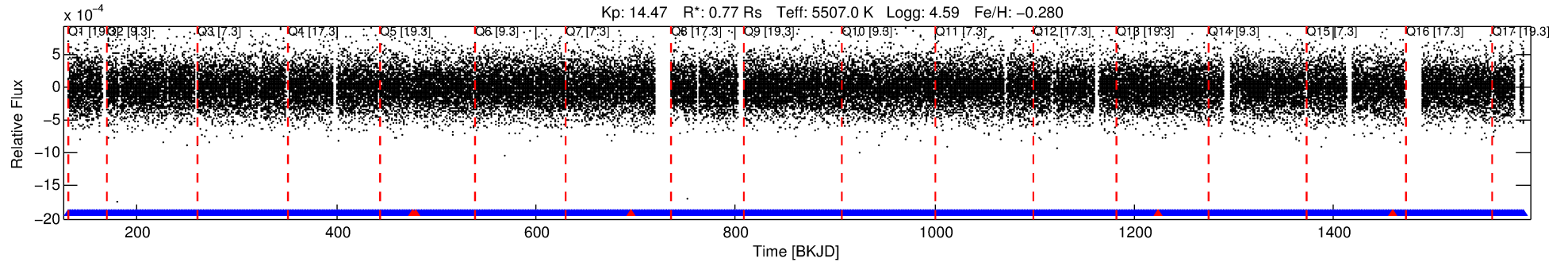
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 008380376-01

No Significant Match Found

# DV One-Page Summary

KIC: 8380376 Candidate: 1 of 1 Period: 0.672 d



## DV Fit Results:

Period = 0.67170 [0.00001] d  
Epoch = 131.8100 [0.0029] BKJD  
Rp/R\* = 0.0058 [0.0035]  
a/R\* = 1.70 [3.11]  
b = 0.90 [0.59]  
Seff = 2430.48 [629.08]  
Teq = 1790 [116] K  
Rp = 0.49 [0.31] Re  
a = 0.0142 [0.0023] AU  
Ag = 10.15 [12.56] [0.73σ]  
Teffp = 4941 [1507] K [2.08σ]

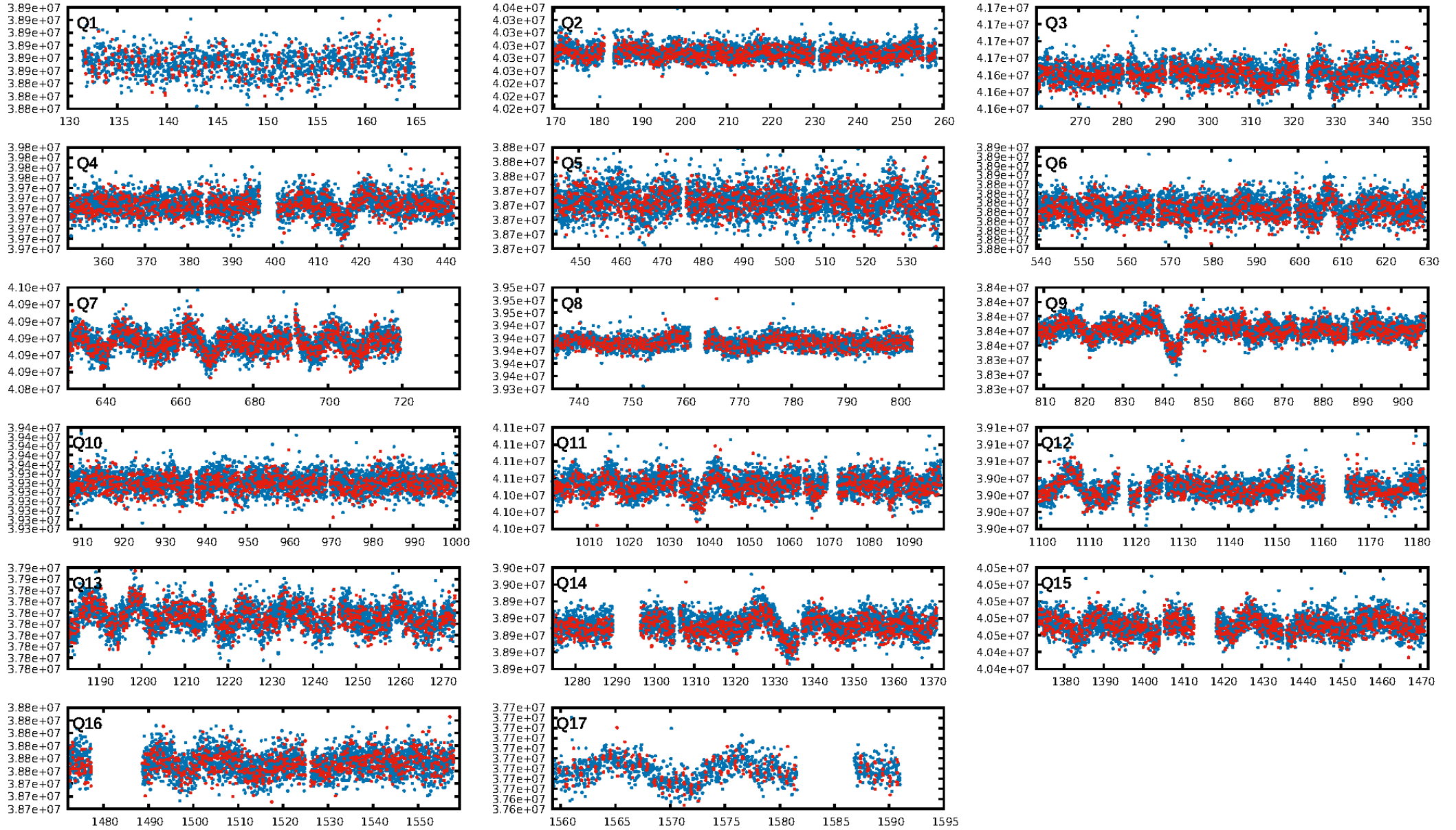
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: N/A  
ModelChiSquareGof-sig: N/A  
Bootstrap-pfa: 1.58e-15  
RollingBand-fgt: 1.00 [1900/1905]  
GhostDiagnostic-chr: -0.4042  
Centroid-sig: 0.0%  
Centroid-so: 4.376 arcsec [2.69σ]  
OotOffset-rm: 6.997 arcsec [13.85σ]  
KicOffset-rm: 6.965 arcsec [15.38σ]  
OotOffset-st: 0/1/0/1 [2]  
KicOffset-st: 0/1/0/1 [2]  
DiffImageQuality-fgm: 1.00 [2/2]  
DiffImageOverlap-fno: 1.00 [17/17]

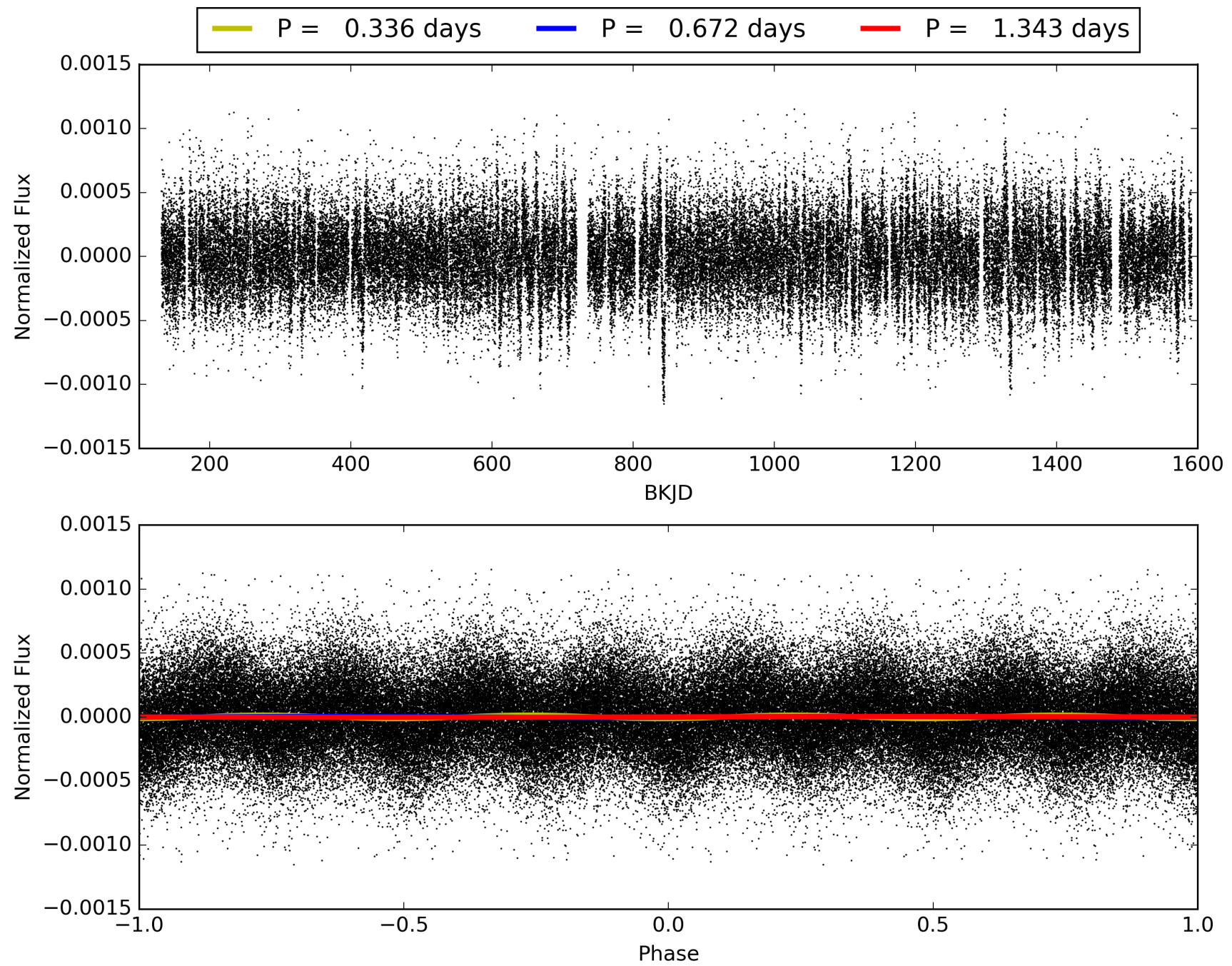
Software Revision: svn-ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 19:00:46 Z

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

# TCE 008380376-01, PDC Light Curves



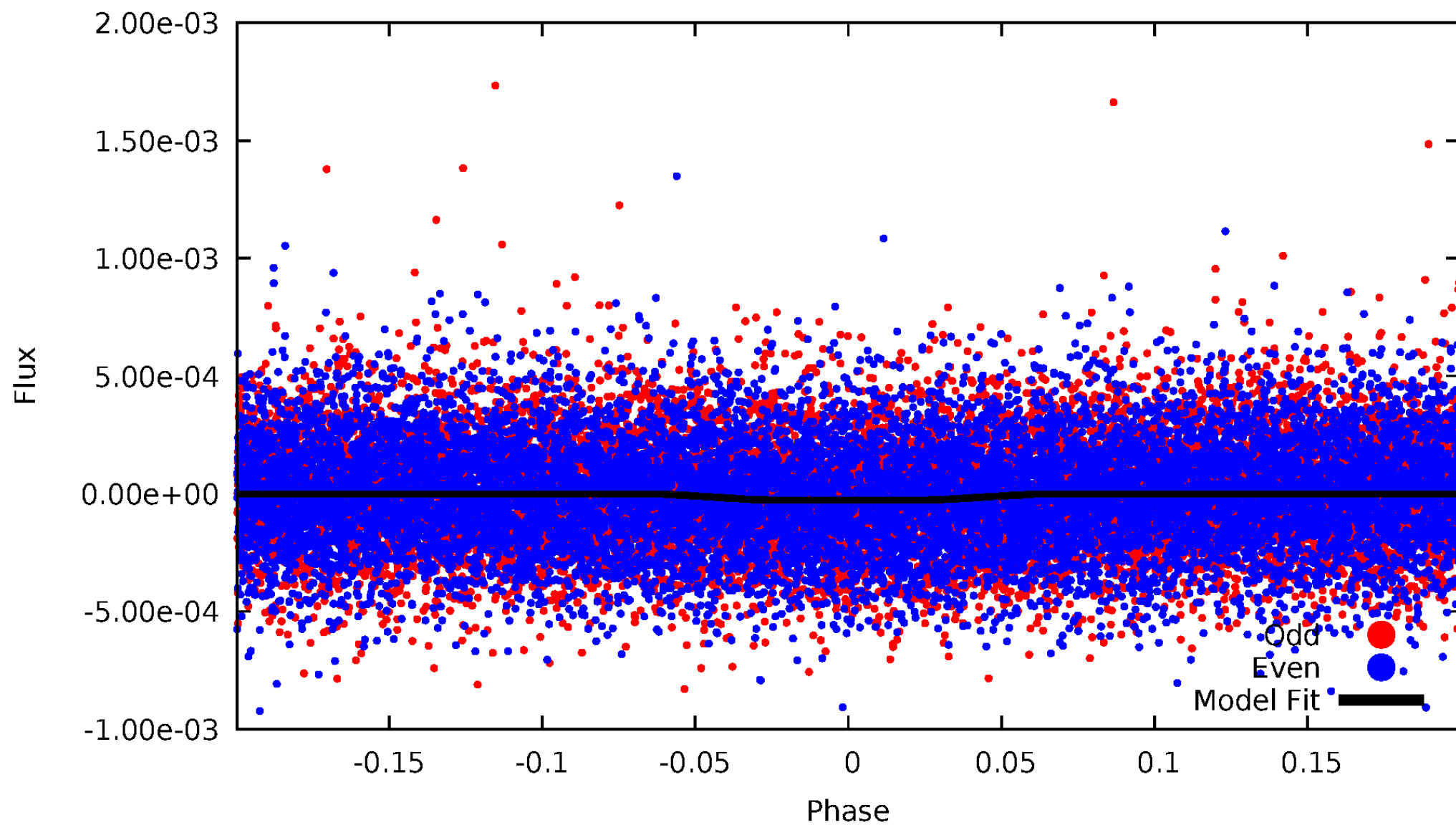
TCE 008380376-01





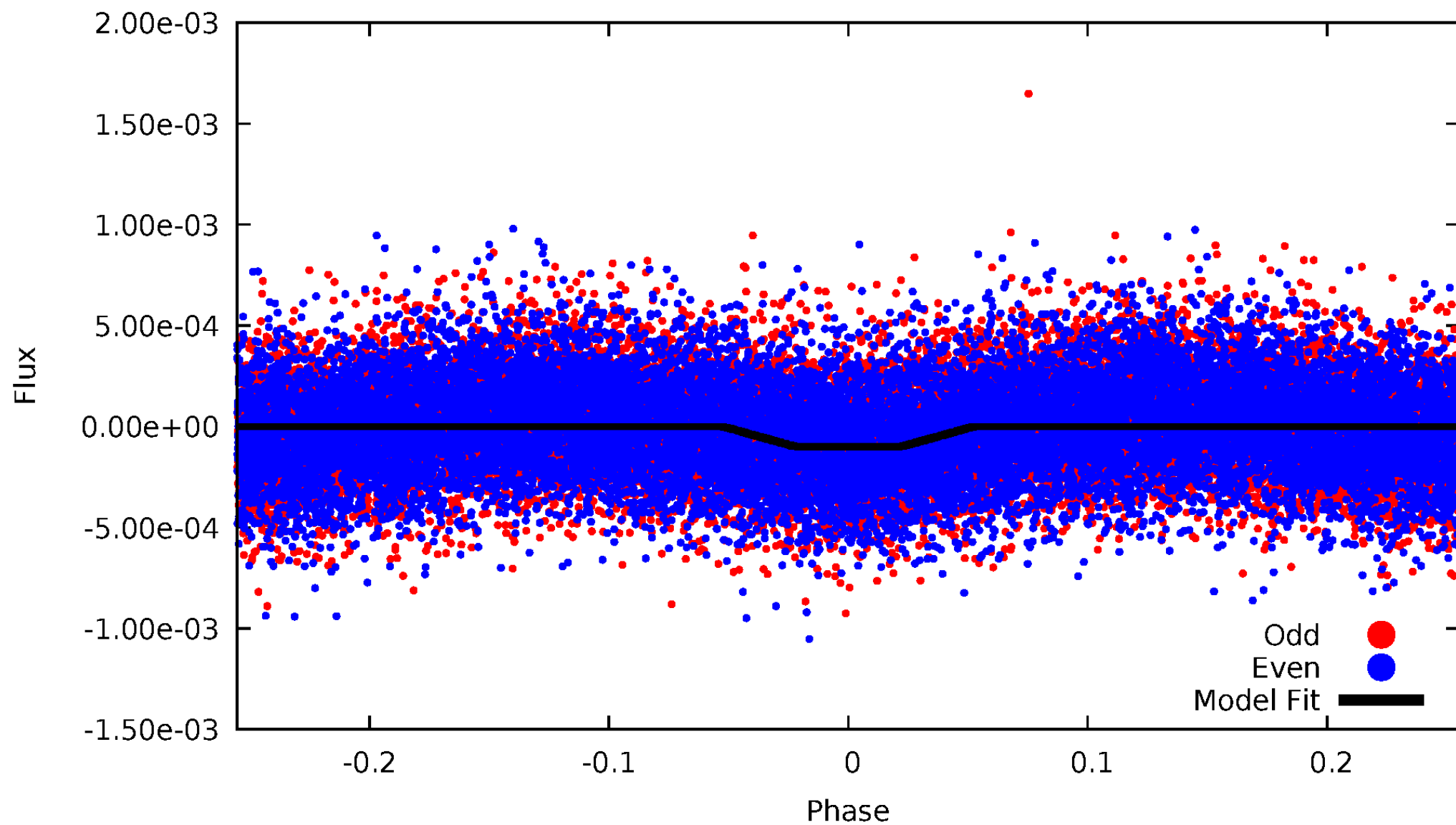
# DV Odd/Even

TCE 008380376-01

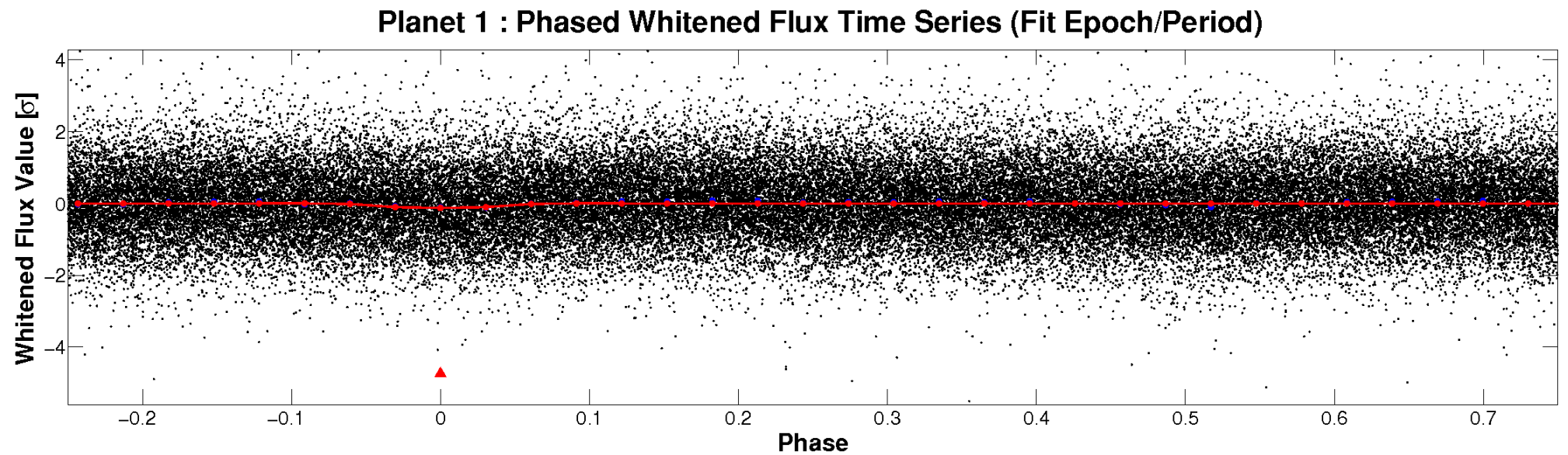
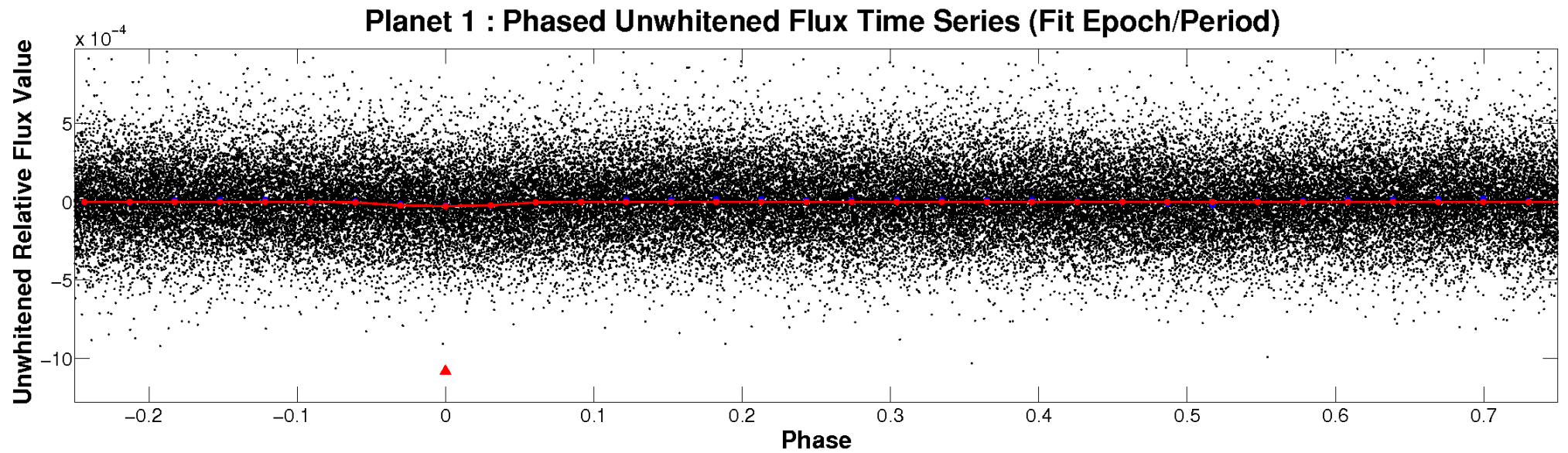


# ALT Odd/Even

TCE 008380376-01

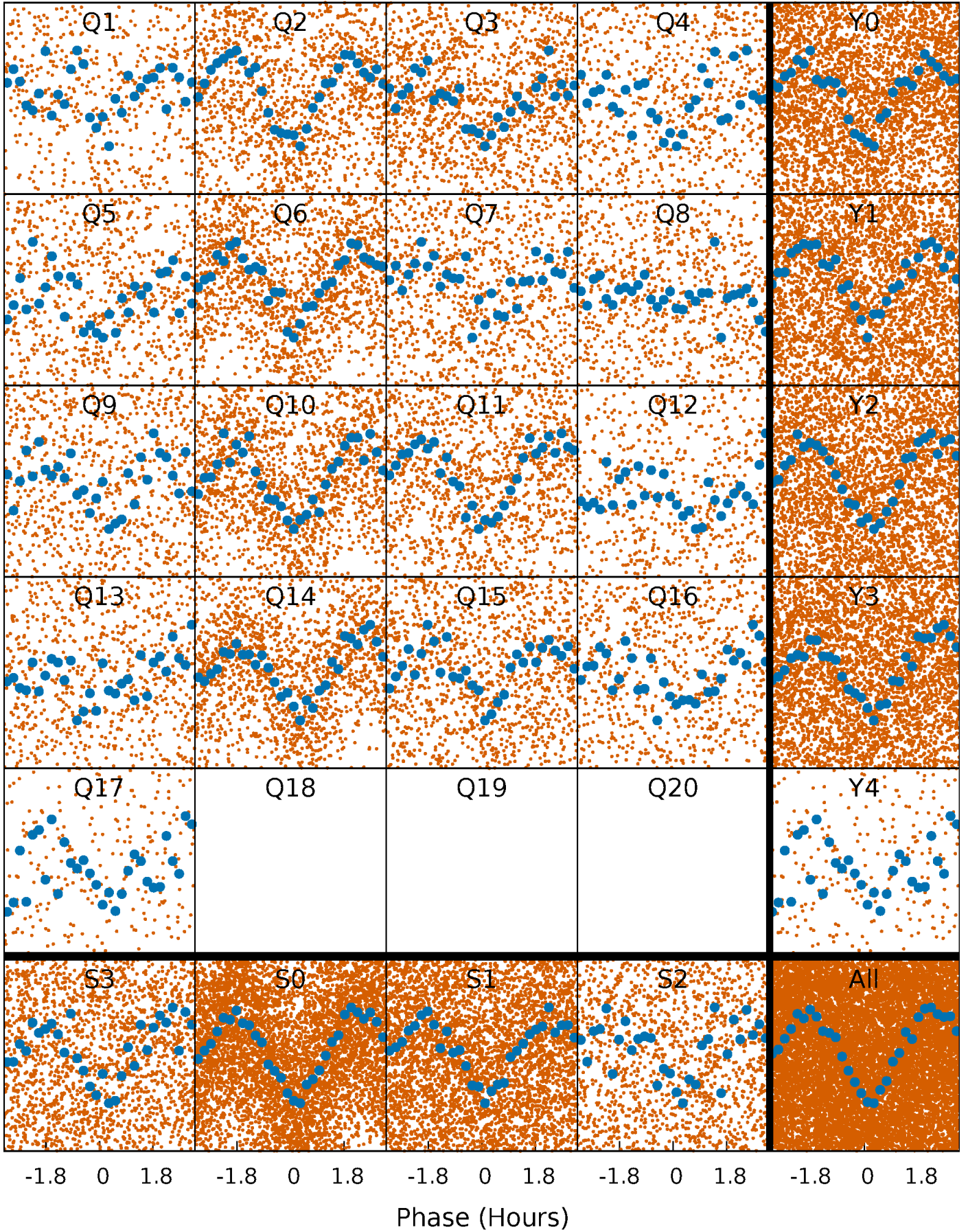


# Non-Whitened Vs. Whitened Light Curve



# PDC Quarter-Phased Transit Curves

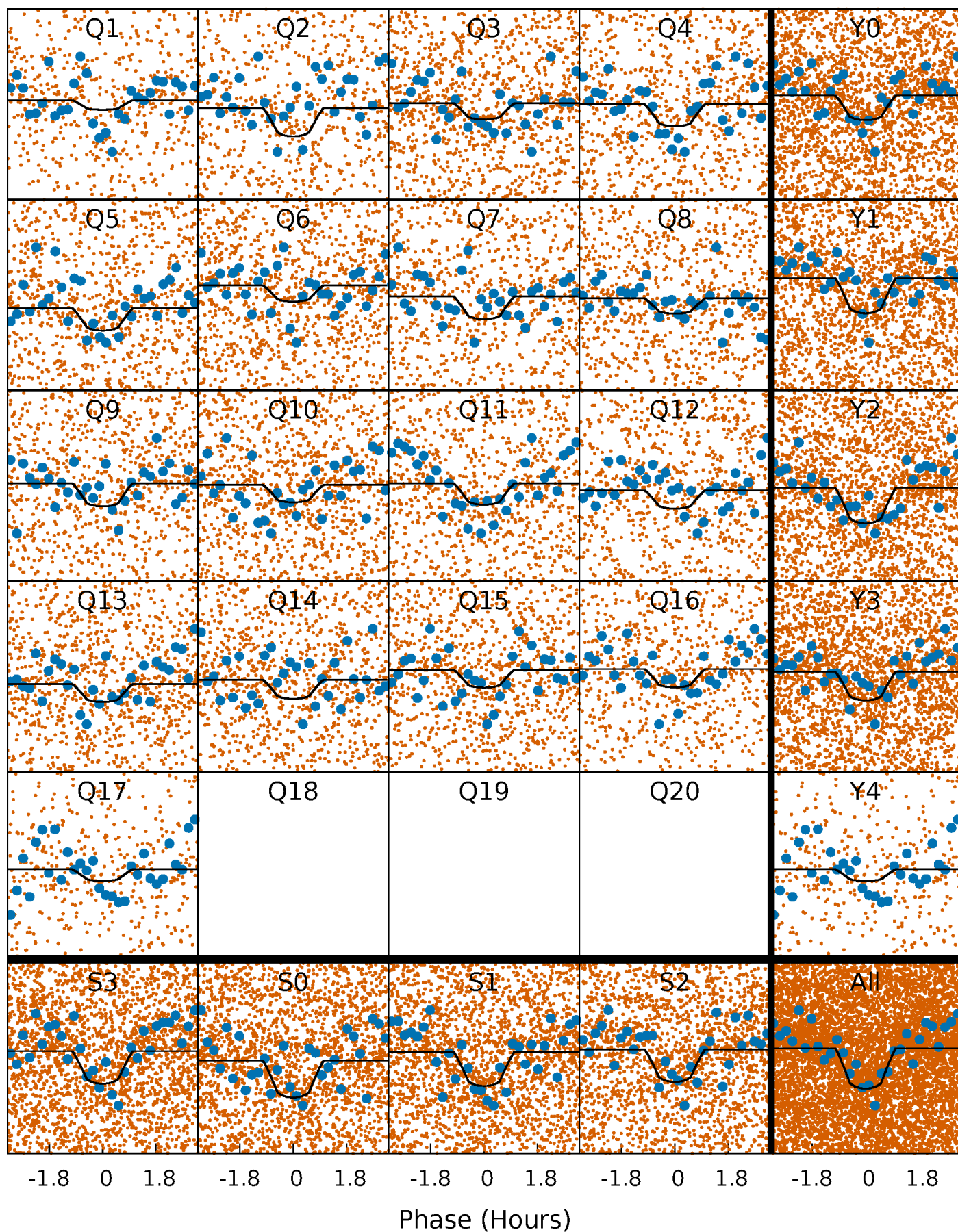
TCE 008380376-01   P= 0.671699 Days    $T_0=131.810036$  (BKJD)





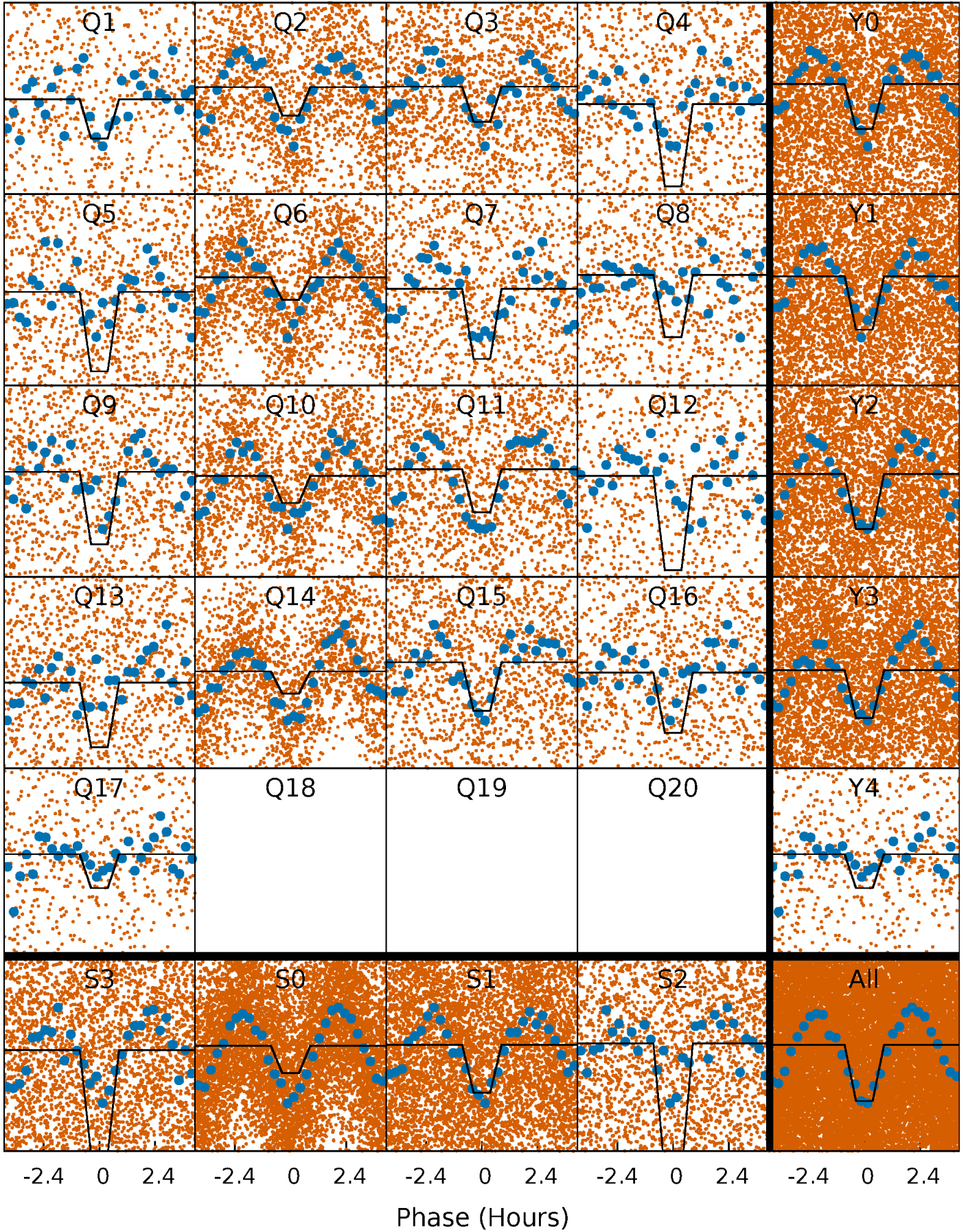
# DV Quarter-Phased Transit Curves

TCE 008380376-01 P= 0.671699 Days  $T_0=131.810036$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

TCE 008380376-01 P= 0.671705 Days  $T_0=131.812130$  (BKJD)

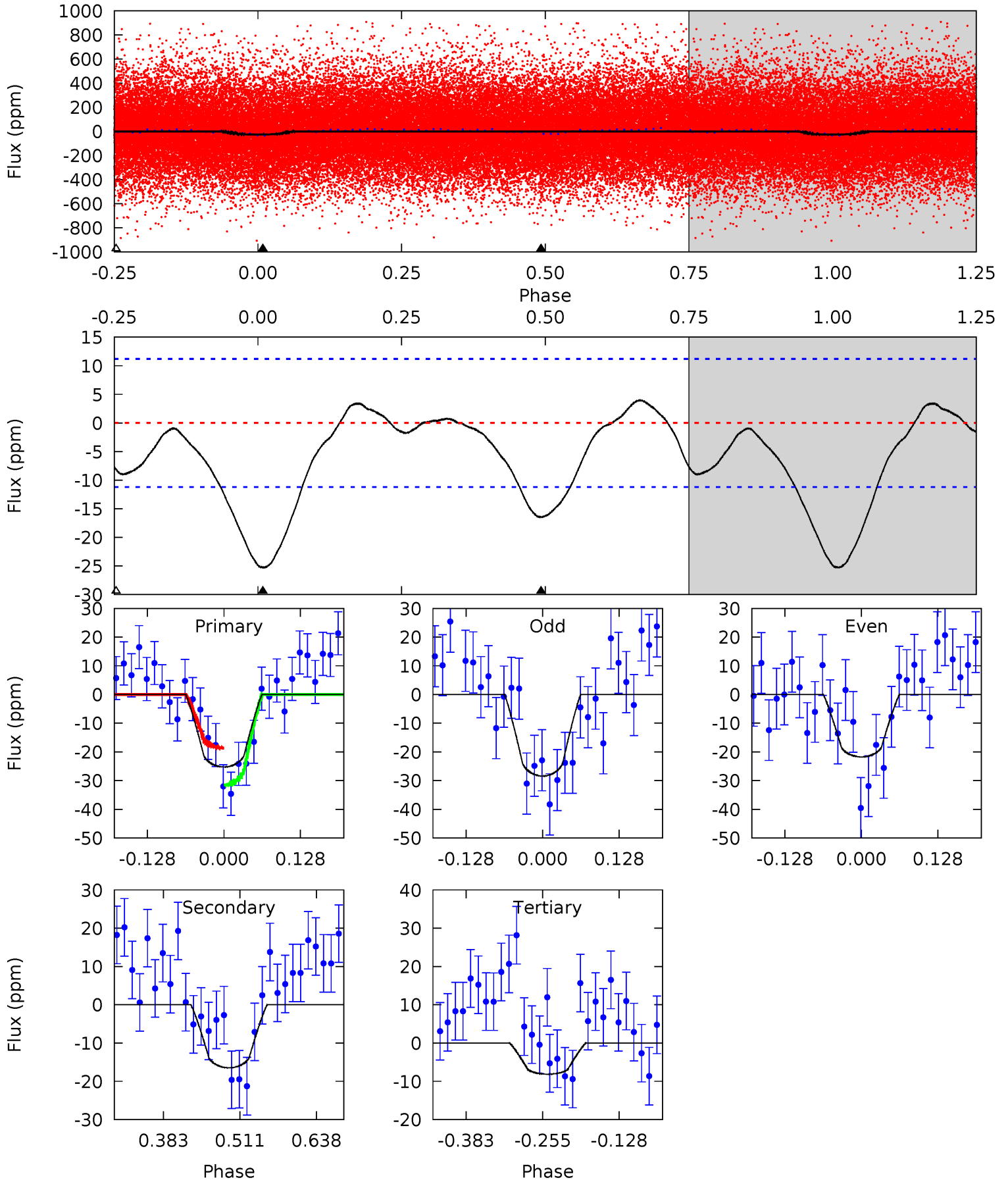




# DV Model-Shift Uniqueness Test

008380376-01, P = 0.671699 Days, E = 131.138337 Days

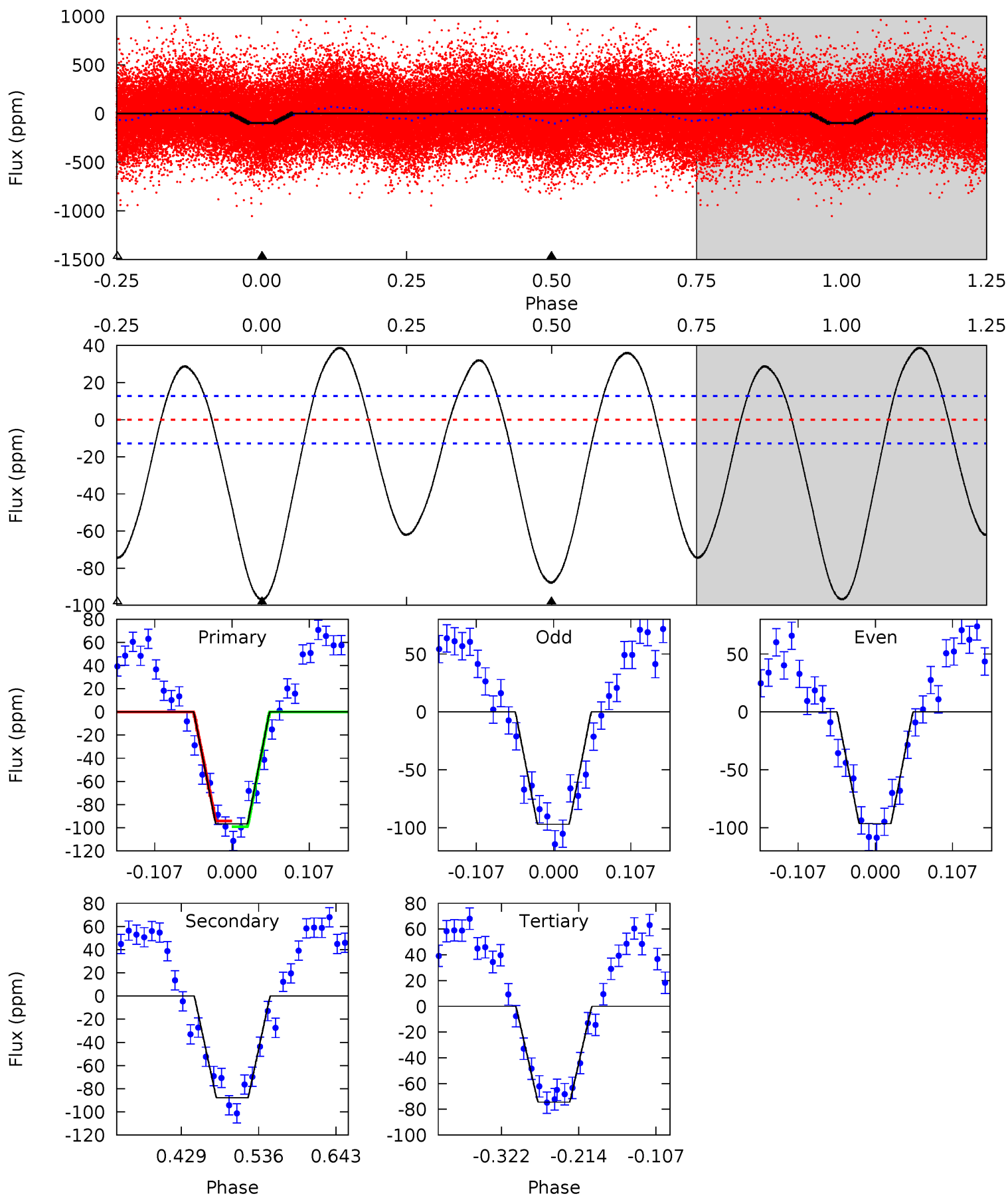
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
10.2	6.64	3.28	0	4.51	1.52	1.41	6.90	10.2	3.36	6.64	1.34	0.87	0.14	2.59



# Alt Model-Shift Uniqueness Test

008380376-01, P = 0.671705 Days, E = 131.140425 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
34.4	31.2	26.5	0	4.55	1.61	13.3	7.95	34.4	4.77	31.2	0.08	1.06	0.29	0.87





### Stellar Parameters For KIC 008380376

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R$ ( $R_{\odot}$ )	$M$ ( $M_{\odot}$ )	$p_{\star}$ ( $\text{g}\cdot\text{cm}^{-3}$ )
	$5507^{+149}_{-149}$	$4.591^{+0.034}_{-0.127}$	$-0.280^{+0.300}_{-0.300}$	$0.771^{+0.152}_{-0.070}$	$0.852^{+0.083}_{-0.092}$	$2.623^{+0.453}_{-0.993}$
	+3%/-3%	+1%/-3%	+107%/-107%	+20%/-9%	+10%/-11%	+17%/-38%
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 008380376-01 / KOI

Detrend	Depth (ppm)	$R_p$ ( $R_{\oplus}$ )	$T_{\text{max}}$ (K)	$T_{\text{obs}}$ (K)	$A_{\text{obs}}$
DV	$-16 \pm 2$	$0.53^{+0.32}_{-0.28}$	$2544^{+114}_{-95}$	$4543^{+1913}_{-732}$	$6.318^{+22.723}_{-3.780}$
Alt.	$-88 \pm 3$	$0.87^{+0.33}_{-0.30}$	$2553^{+113}_{-109}$	$5334^{+1201}_{-699}$	$12^{+18}_{-6}$

$T_{\text{max}}$  = 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

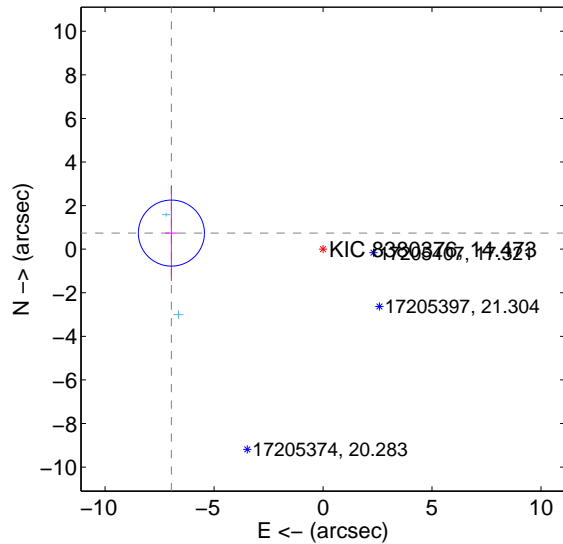
Supplemental centroid analysis for 008380376-01. Kepler magnitude: 14.47. Transit SNR 8.34

There are 2 quarters with good PRF difference image offsets

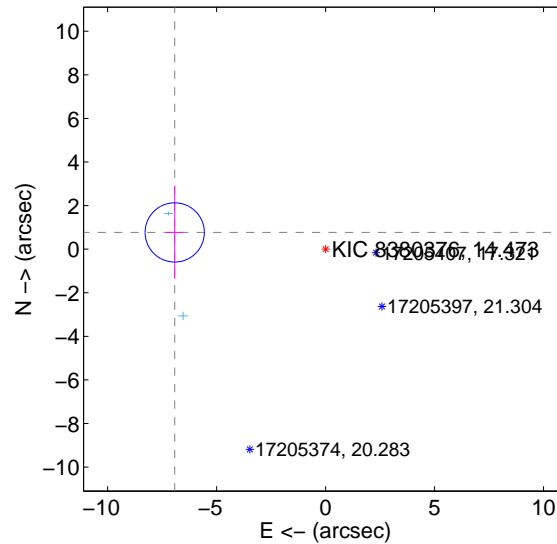
The direct PRF centroid is offset from the target star catalog position by about 0.11 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$6.997 \pm 0.505$	13.85	$6.958 \pm 0.279$	$0.738 \pm 2.197$
PRF-fit source offset from KIC position	$6.965 \pm 0.453$	15.38	$6.923 \pm 0.390$	$0.768 \pm 2.130$
photometric centroid source offset	$4.38 \pm 1.63$	2.69	$0.53 \pm 1.65$	$4.34 \pm 1.63$

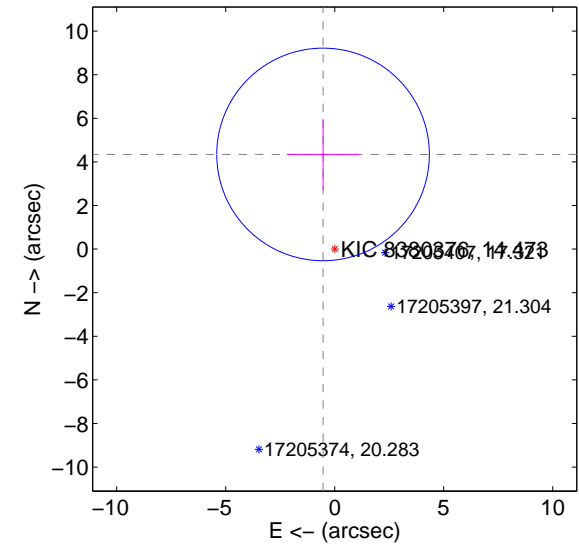
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

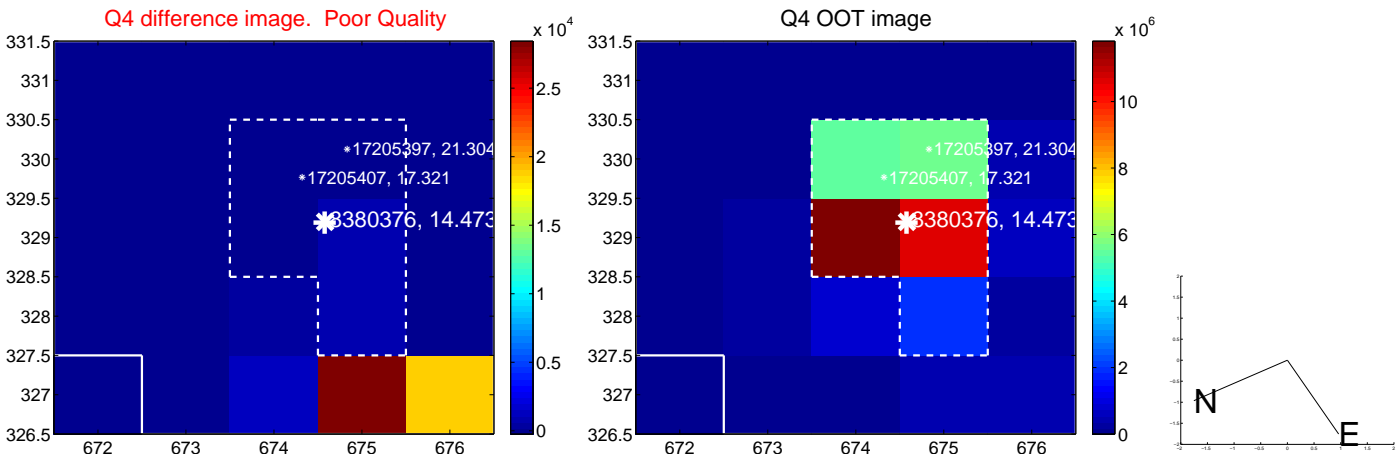
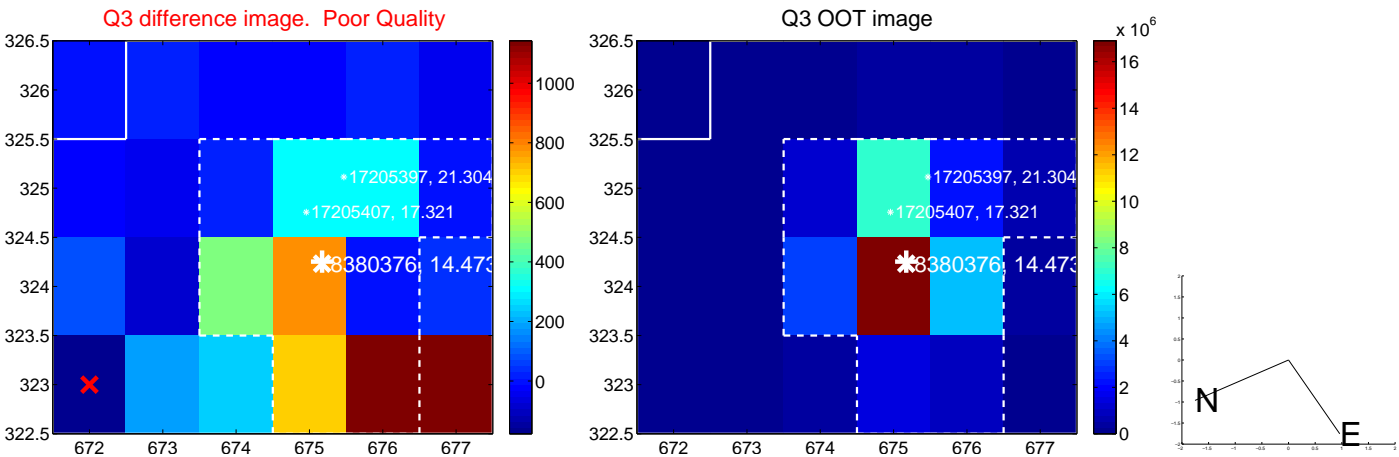
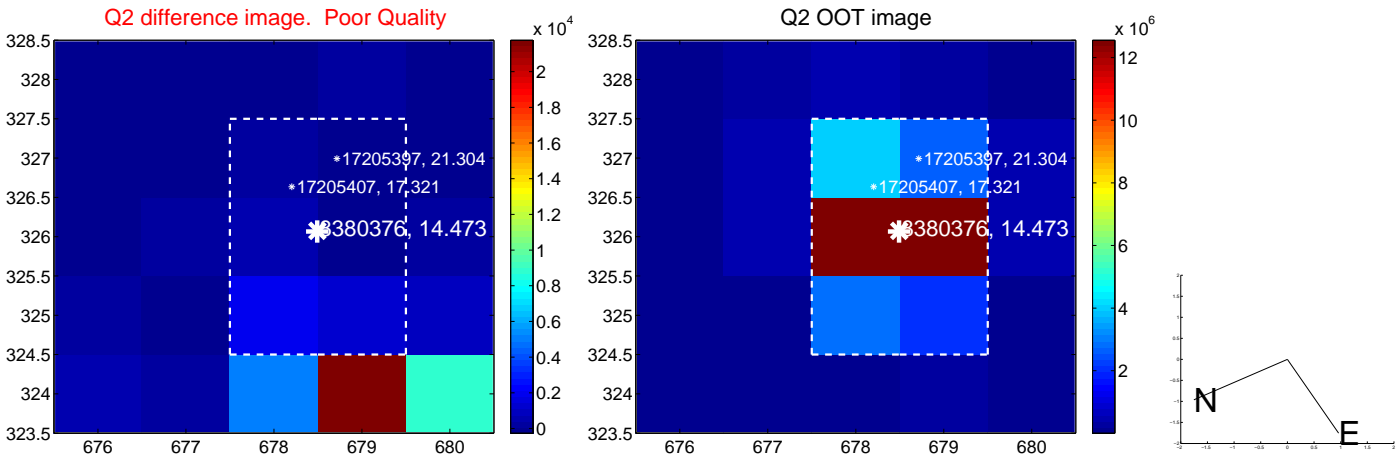
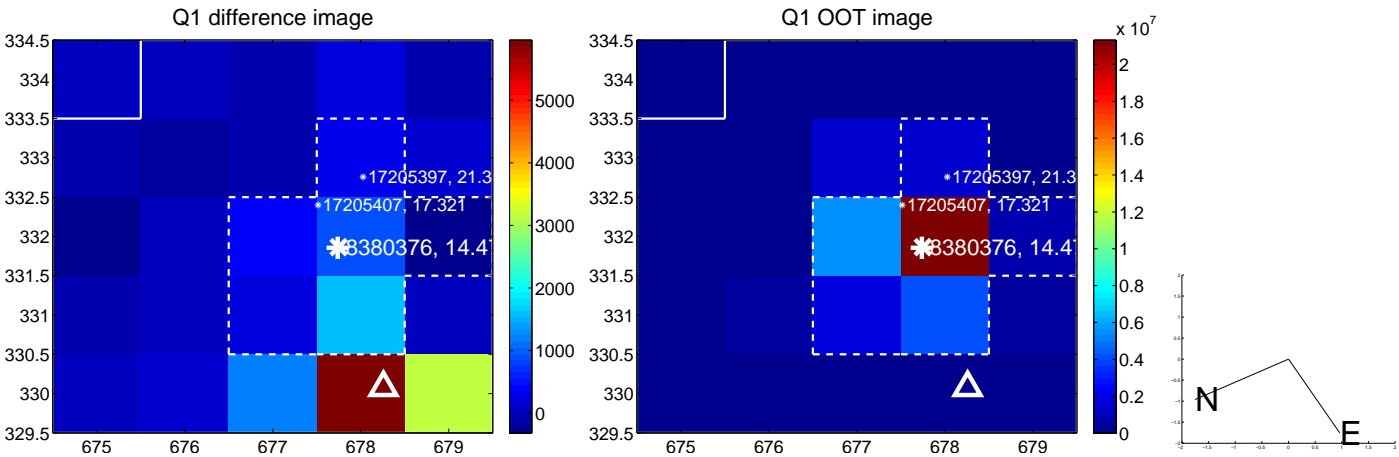


offset from photometric centroids

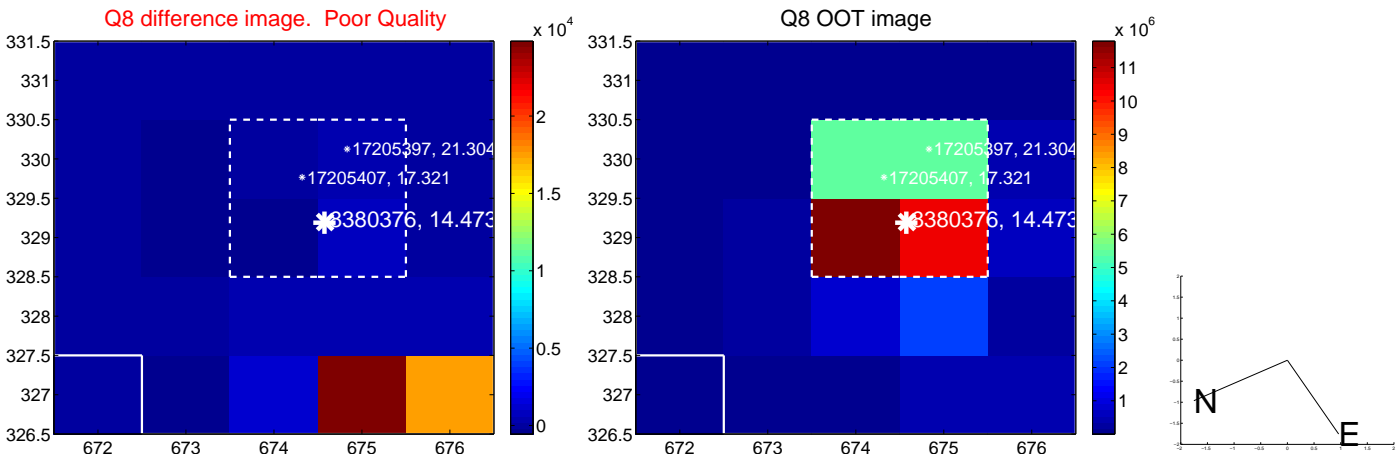
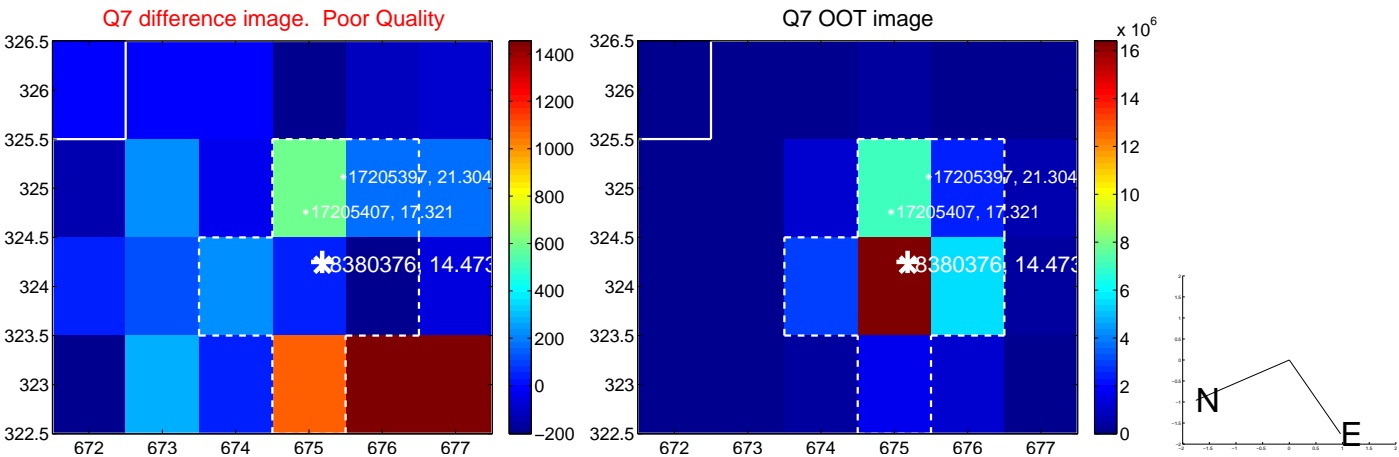
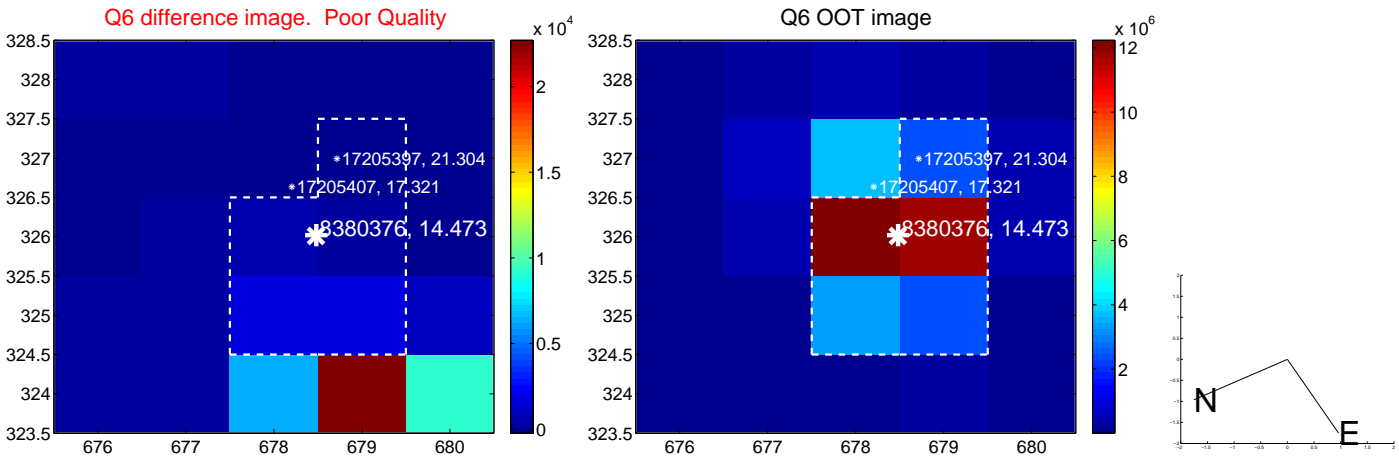
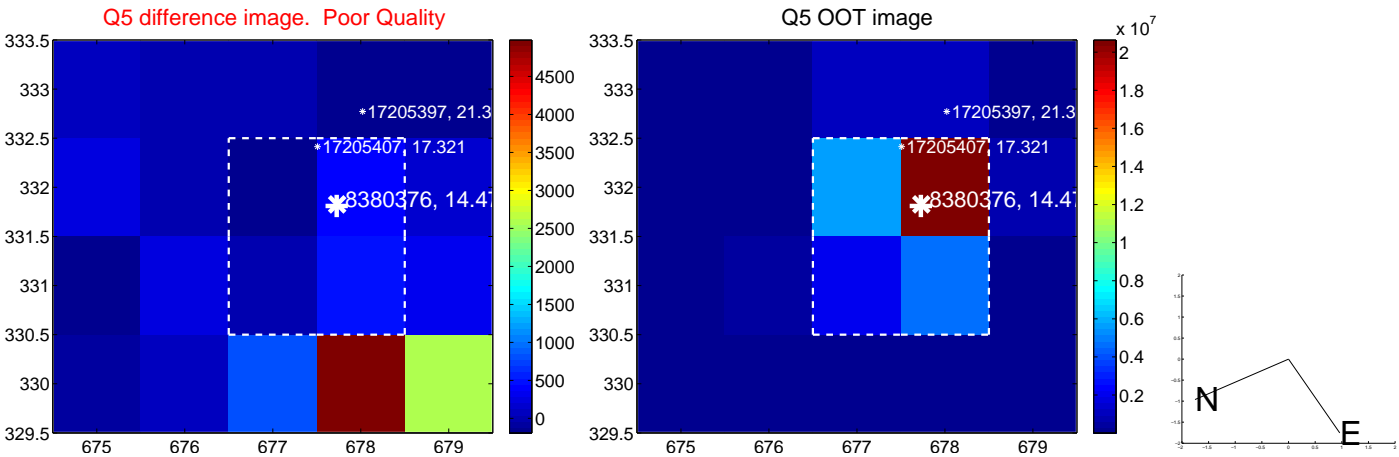


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: three-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

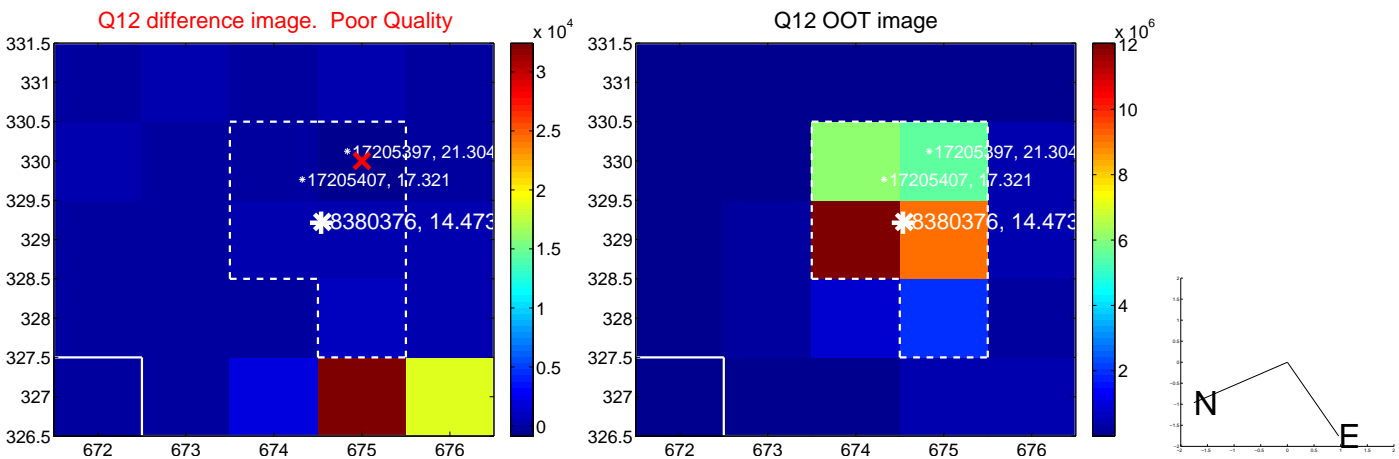
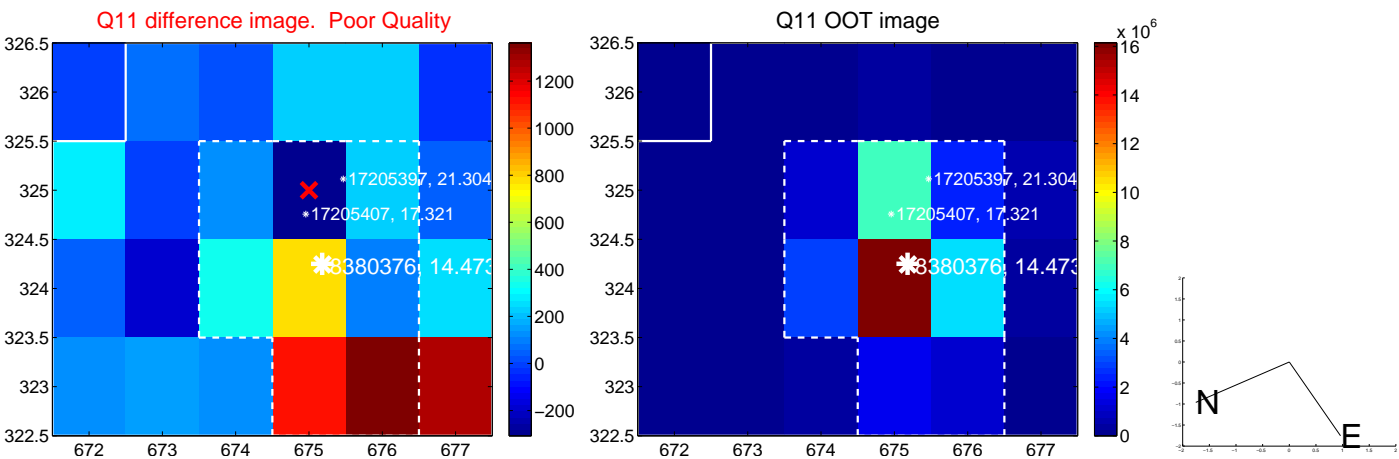
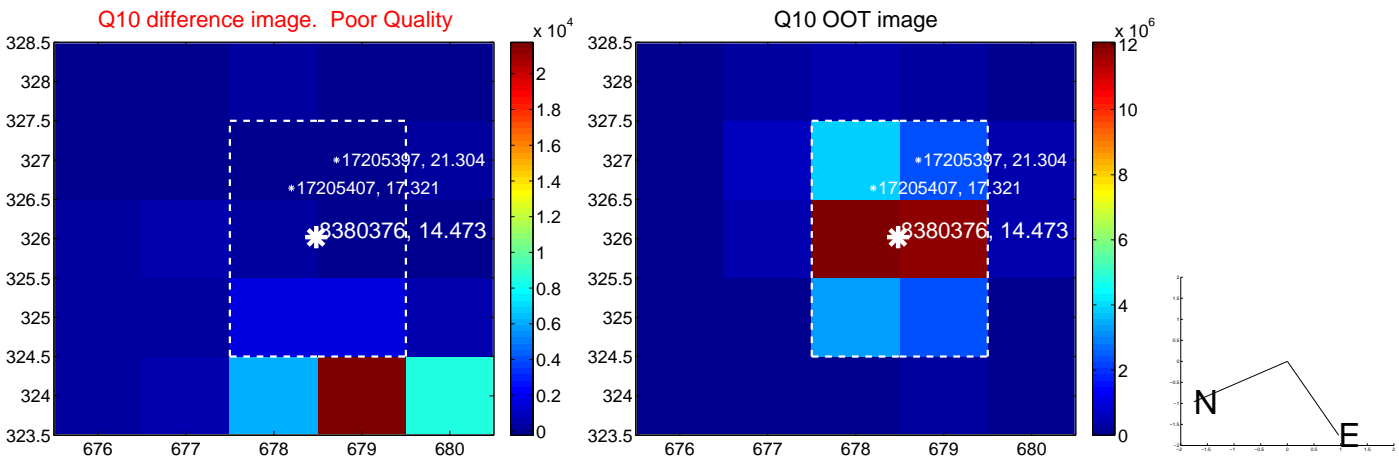
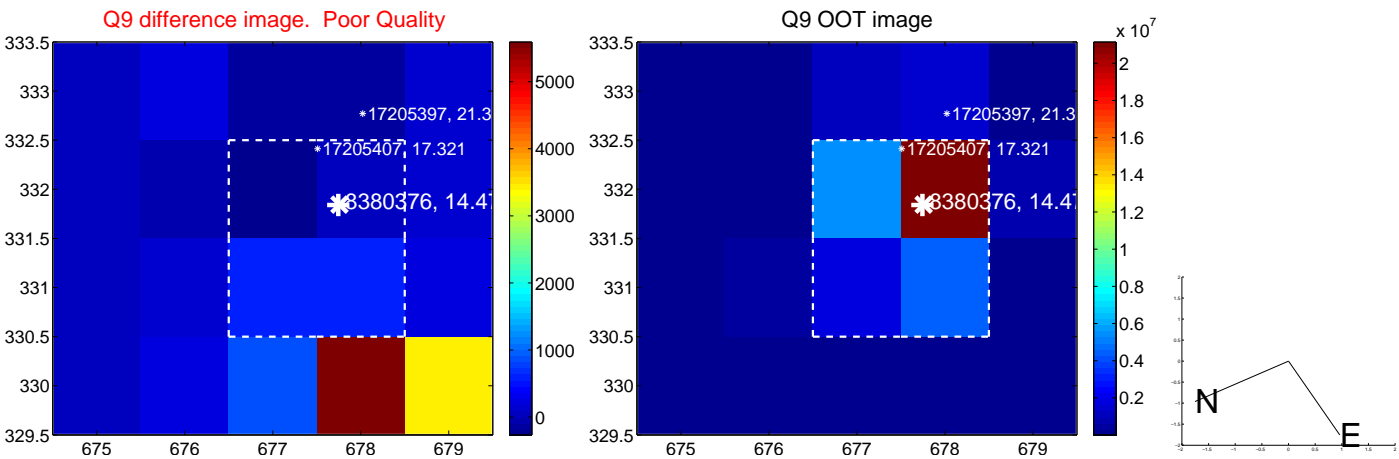


white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

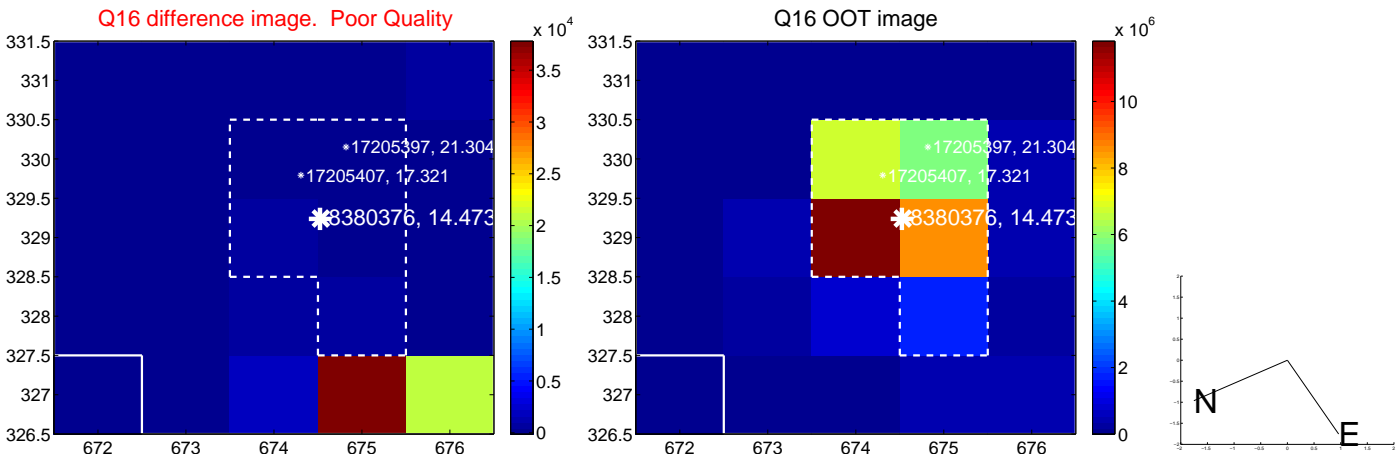
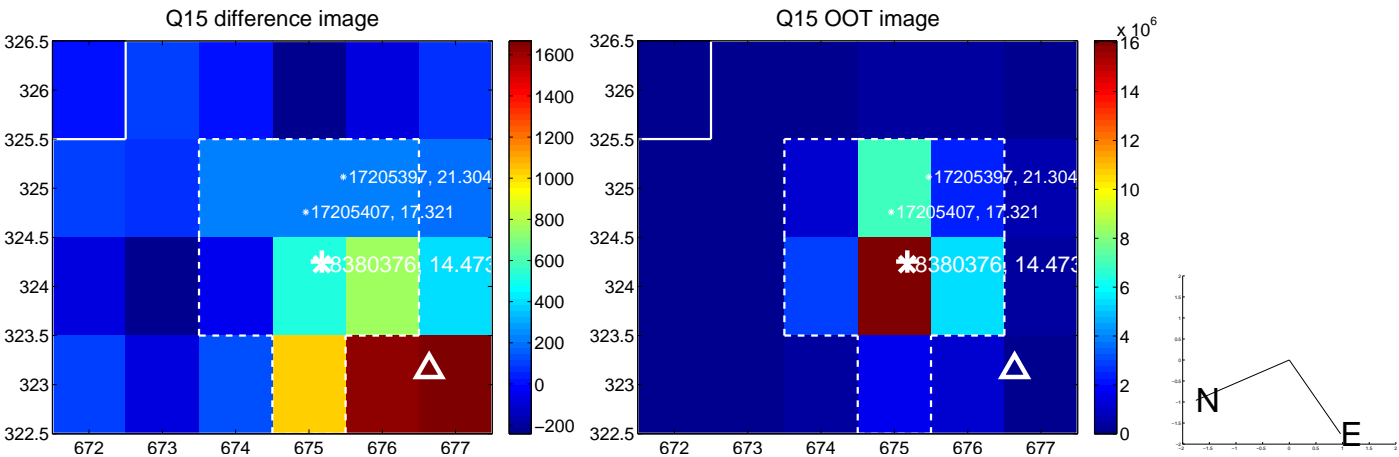
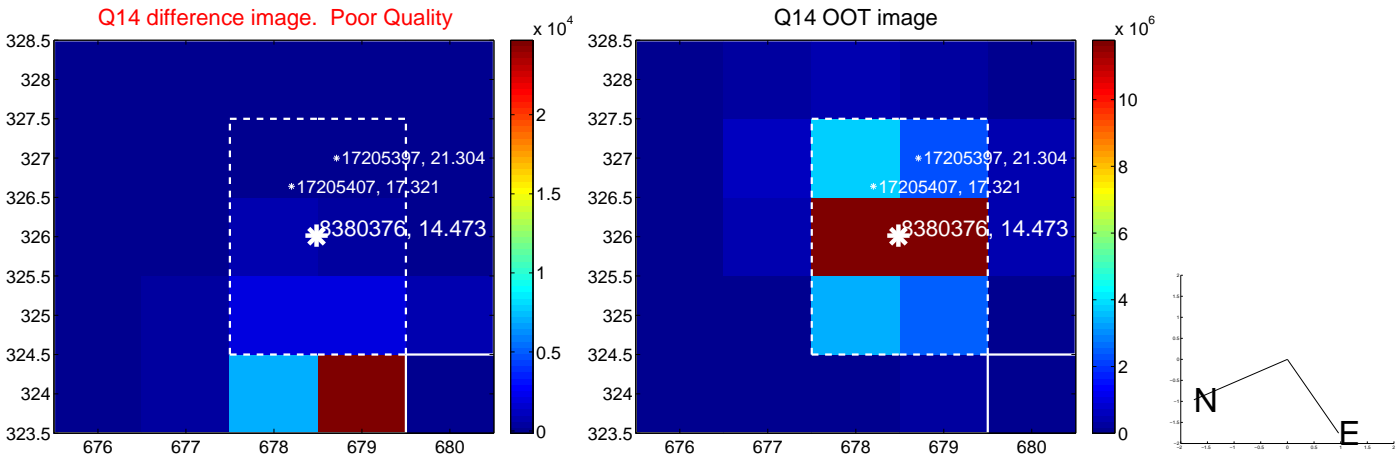
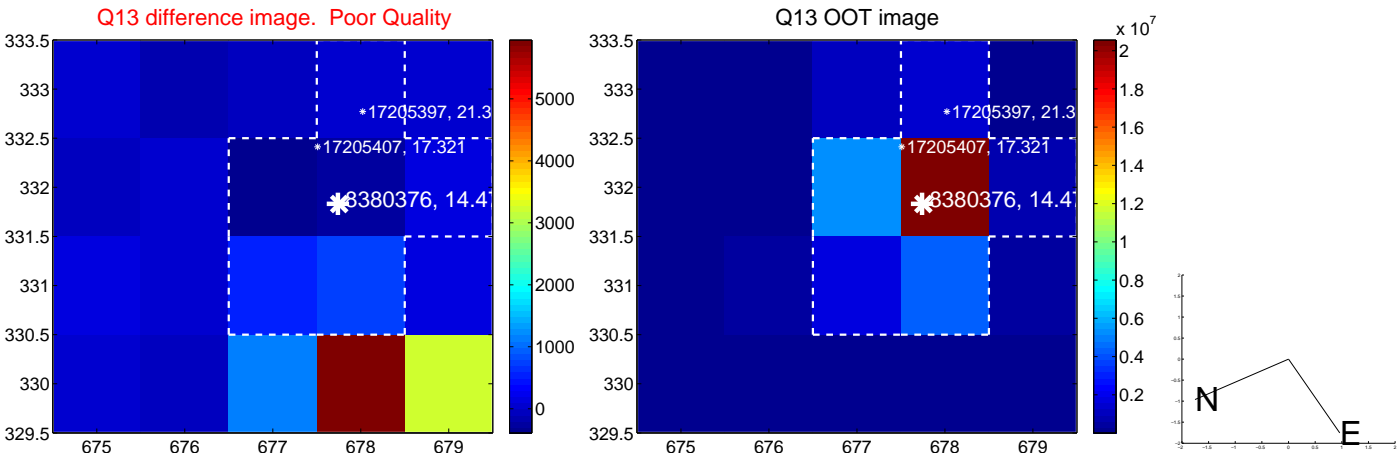




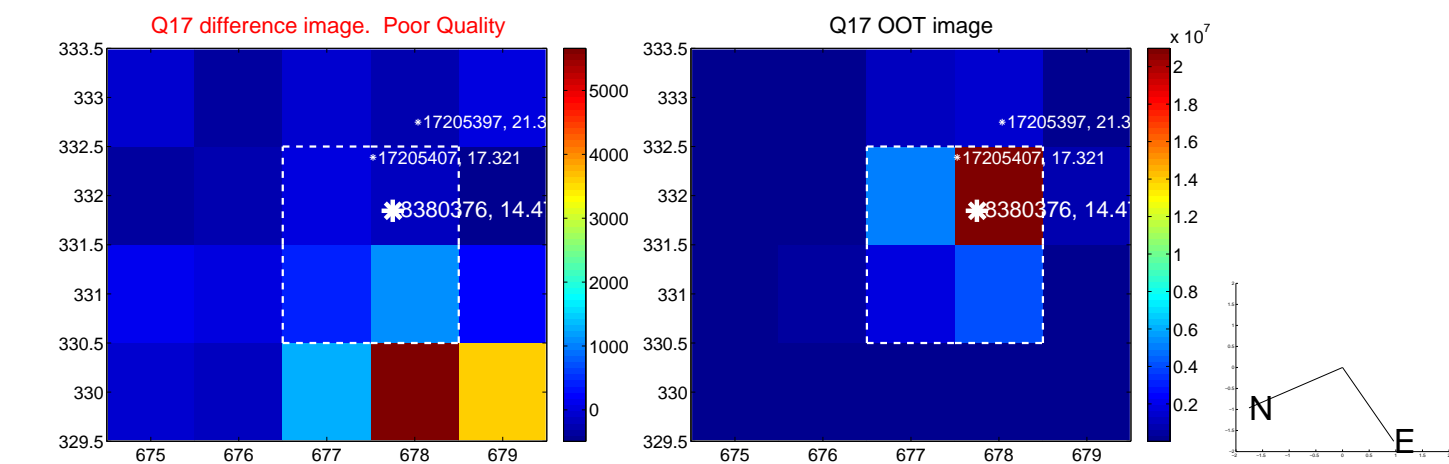
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



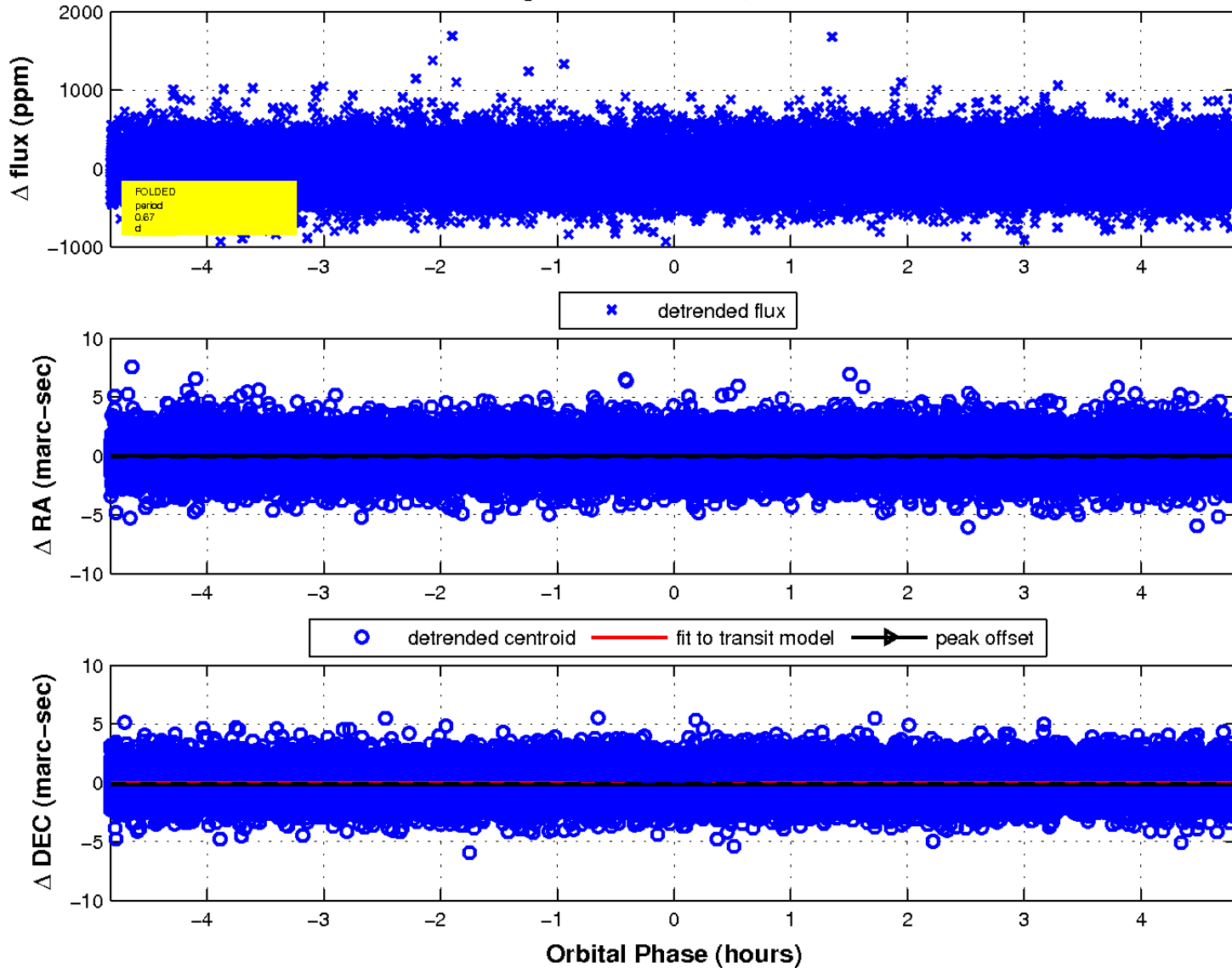
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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



fluxWeightedCentroids, Planet 1 of 1



# UKIRT Image

Declination

