

# KIC 008388318

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
008388318-01	OBS	No	0.856776	131.990512	14.0	4.528	10.0	4.9	1.53	6384	0.58	10503.31

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008388318-01	OBS	FP	0.00	1	0	0	0	LPP_DV—MOD_NONUNIQ_ALT

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

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

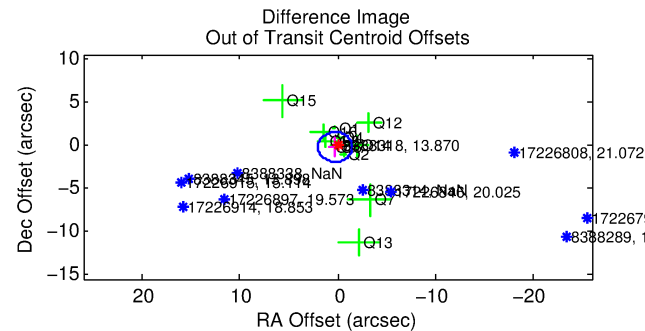
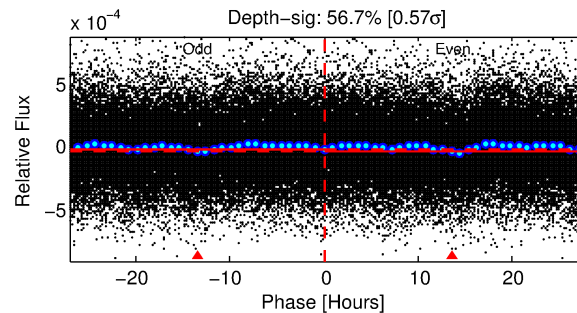
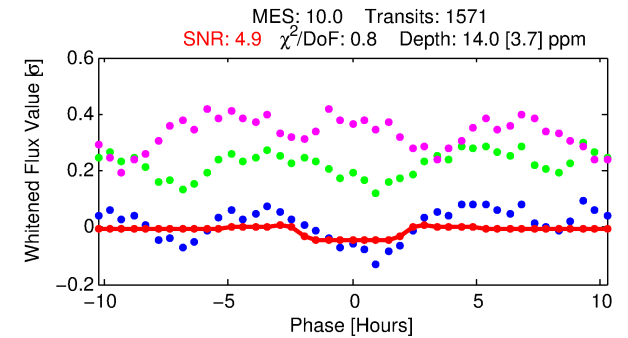
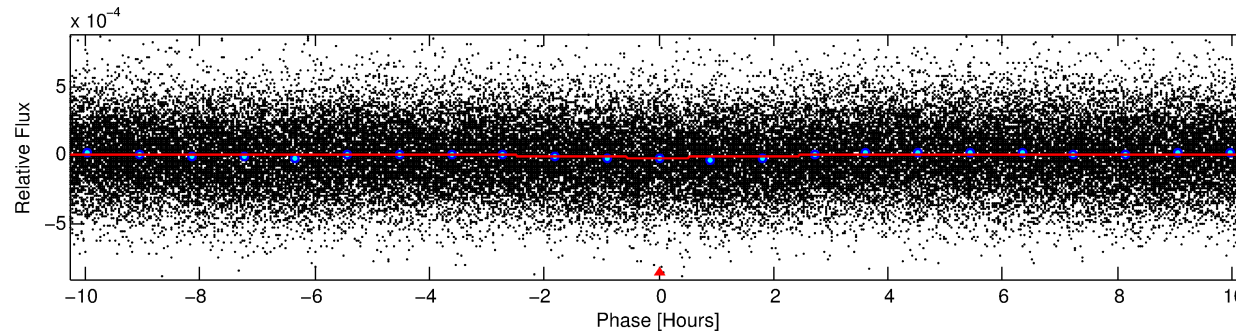
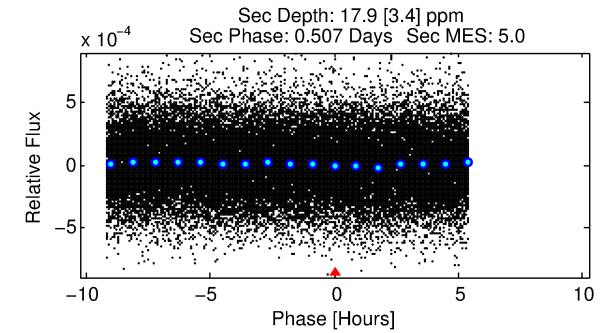
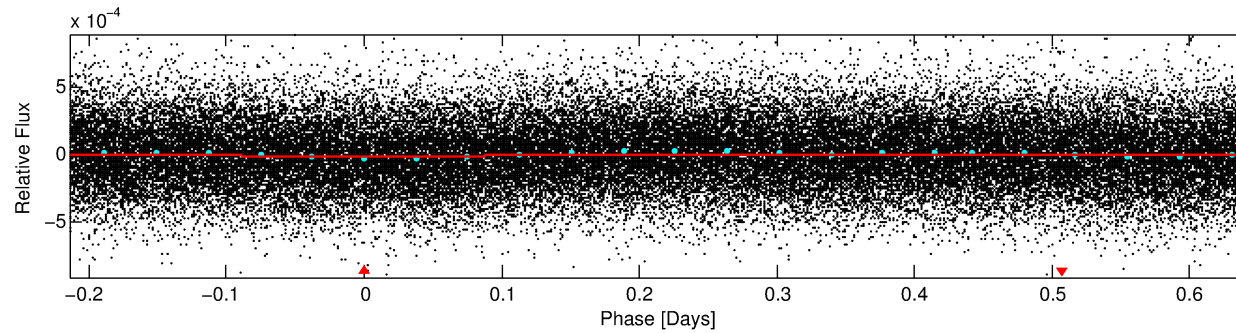
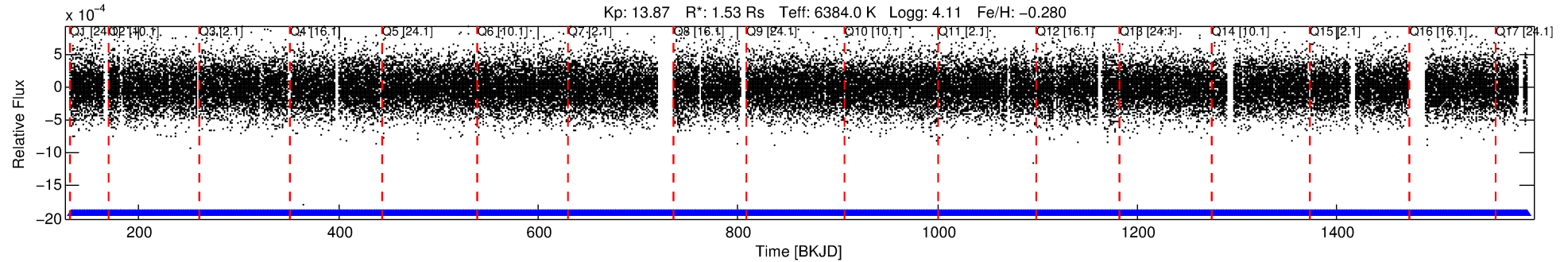
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 008388318-01

No Significant Match Found

# DV One-Page Summary

KIC: 8388318 Candidate: 1 of 1 Period: 0.857 d



## DV Fit Results:

Period = 0.85678 [0.00002] d  
Epoch = 131.9905 [0.0085] BKJD  
Rp/R\* = 0.0034 [0.0071]  
a/R\* = 1.57 [10.17]  
b = 0.06 [182.26]  
Seff = 10503.31 [4691.63]  
Teff = 2581 [288] K  
Rp = 0.58 [1.21] Re  
a = 0.0183 [0.0048] AU  
Ag = 9.88 [41.19] [0.22σ]  
Teffp = 7075 [7341] K [0.61σ]

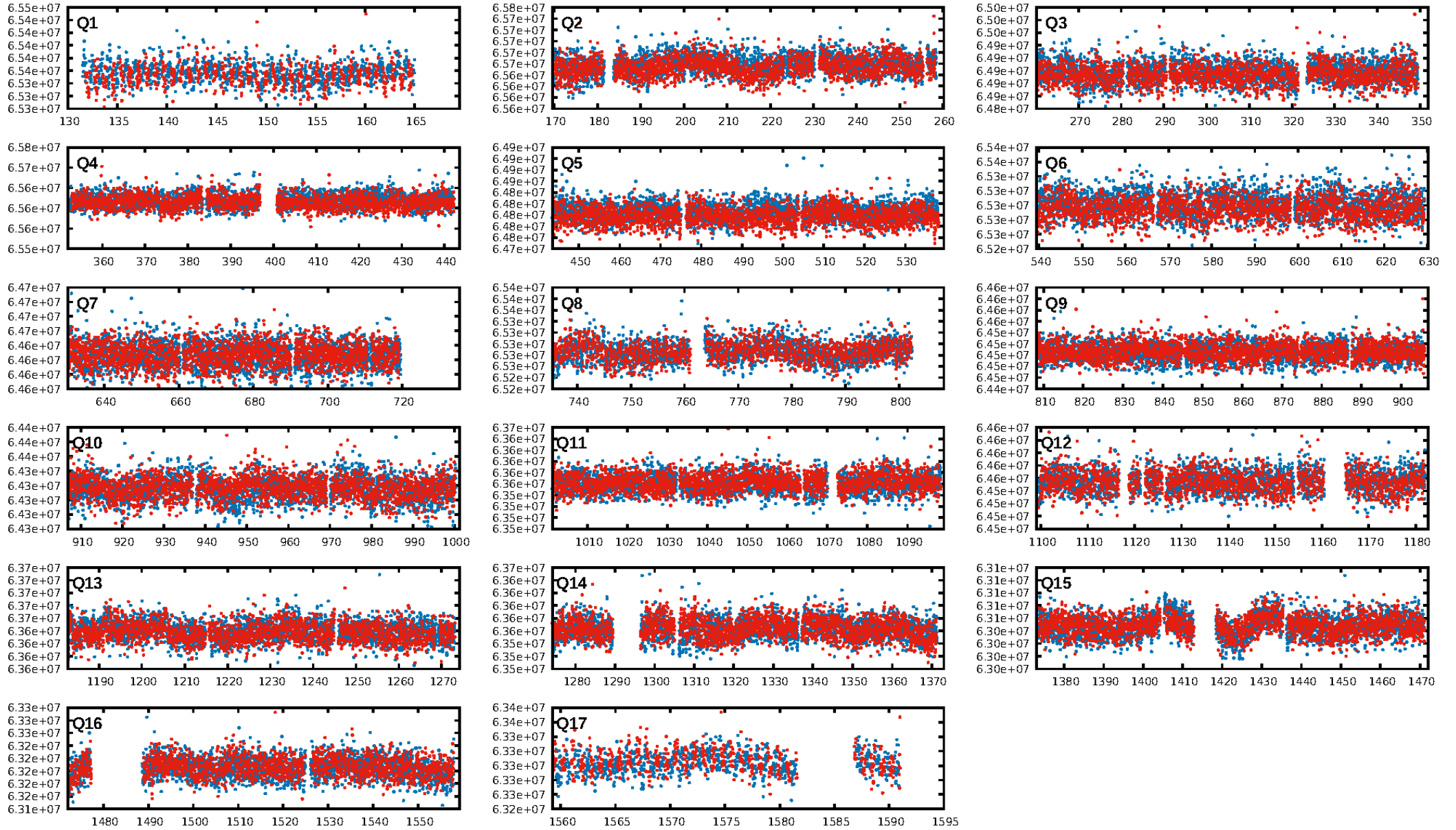
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: N/A  
ModelChiSquareGof-sig: N/A  
Bootstrap-pfa: 2.34e-18  
RollingBand-fgt: 1.00 [1499/1499]  
GhostDiagnostic-chr: 158.8  
Centroid-sig: 1.6%  
Centroid-so: 1.751 arcsec [1.00σ]  
OotOffset-rm: 0.352 arcsec [0.61σ]  
KicOffset-rm: 0.433 arcsec [0.61σ]  
OotOffset-st: 3/3/3/4 [13]  
KicOffset-st: 3/3/3/4 [13]  
DiffImageQuality-fgm: 0.54 [7/13]  
DiffImageOverlap-fno: 1.00 [17/17]

Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 17:49:45 Z

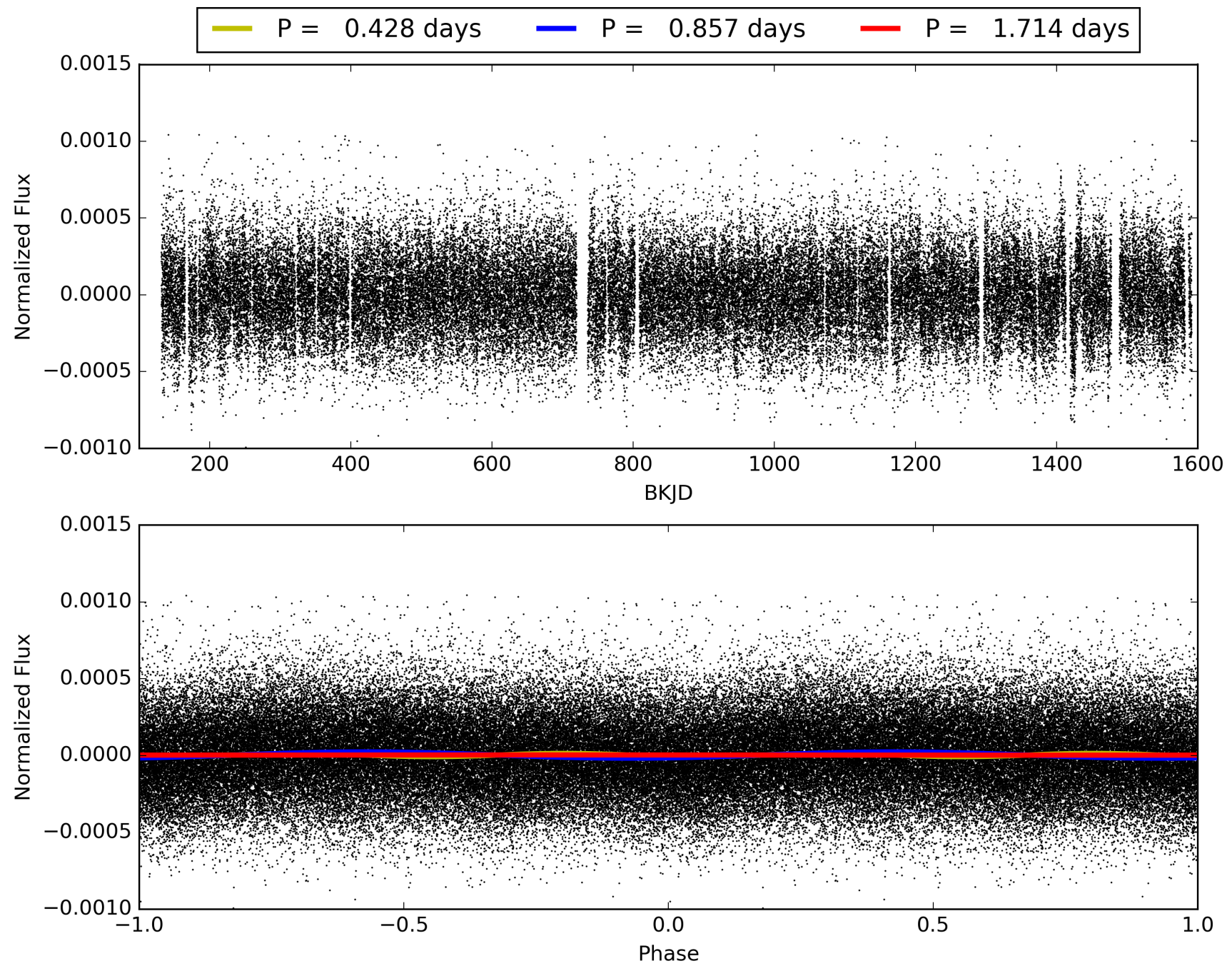
This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

# TCE 008388318-01, PDC Light Curves



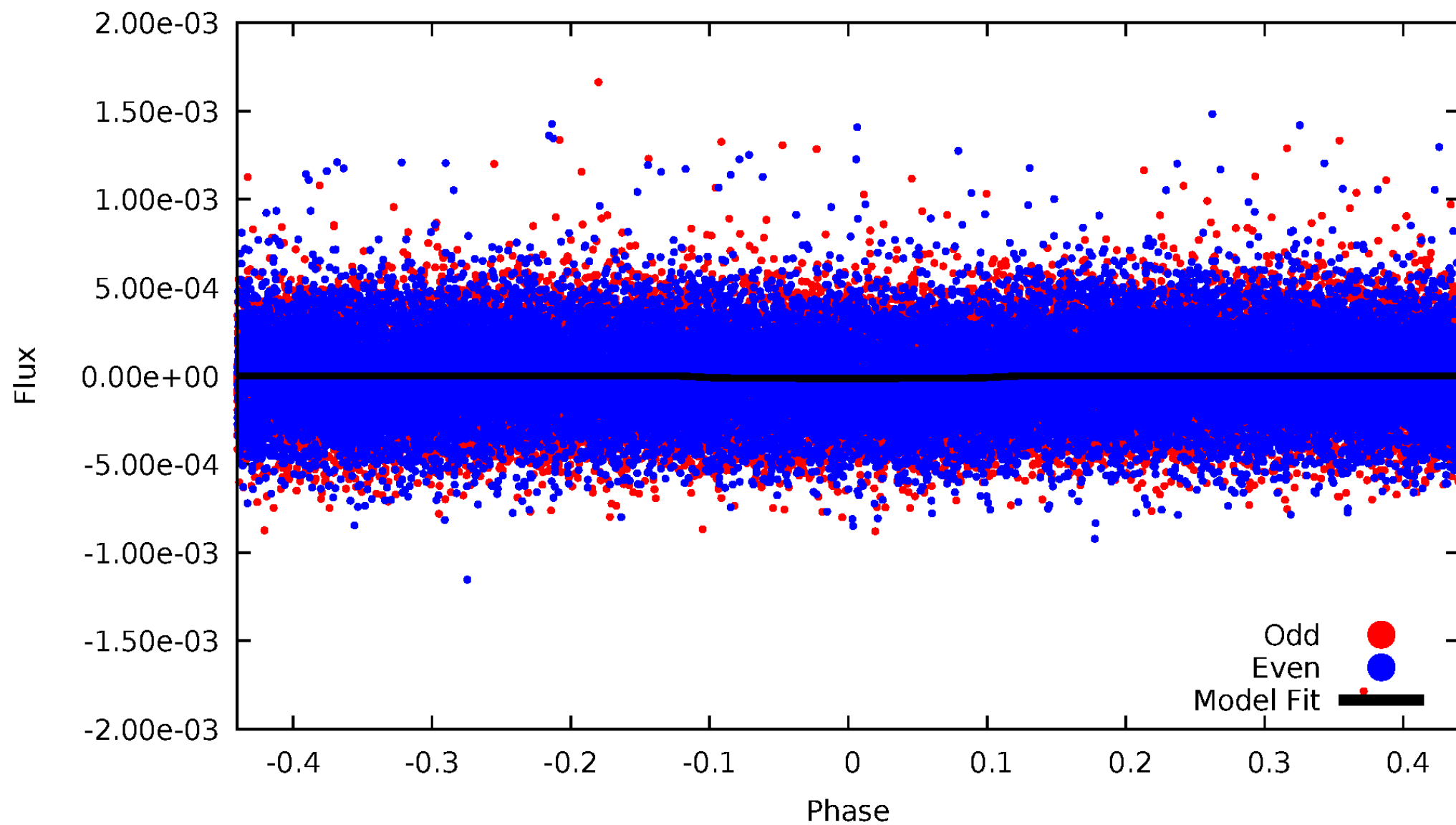


TCE 008388318-01



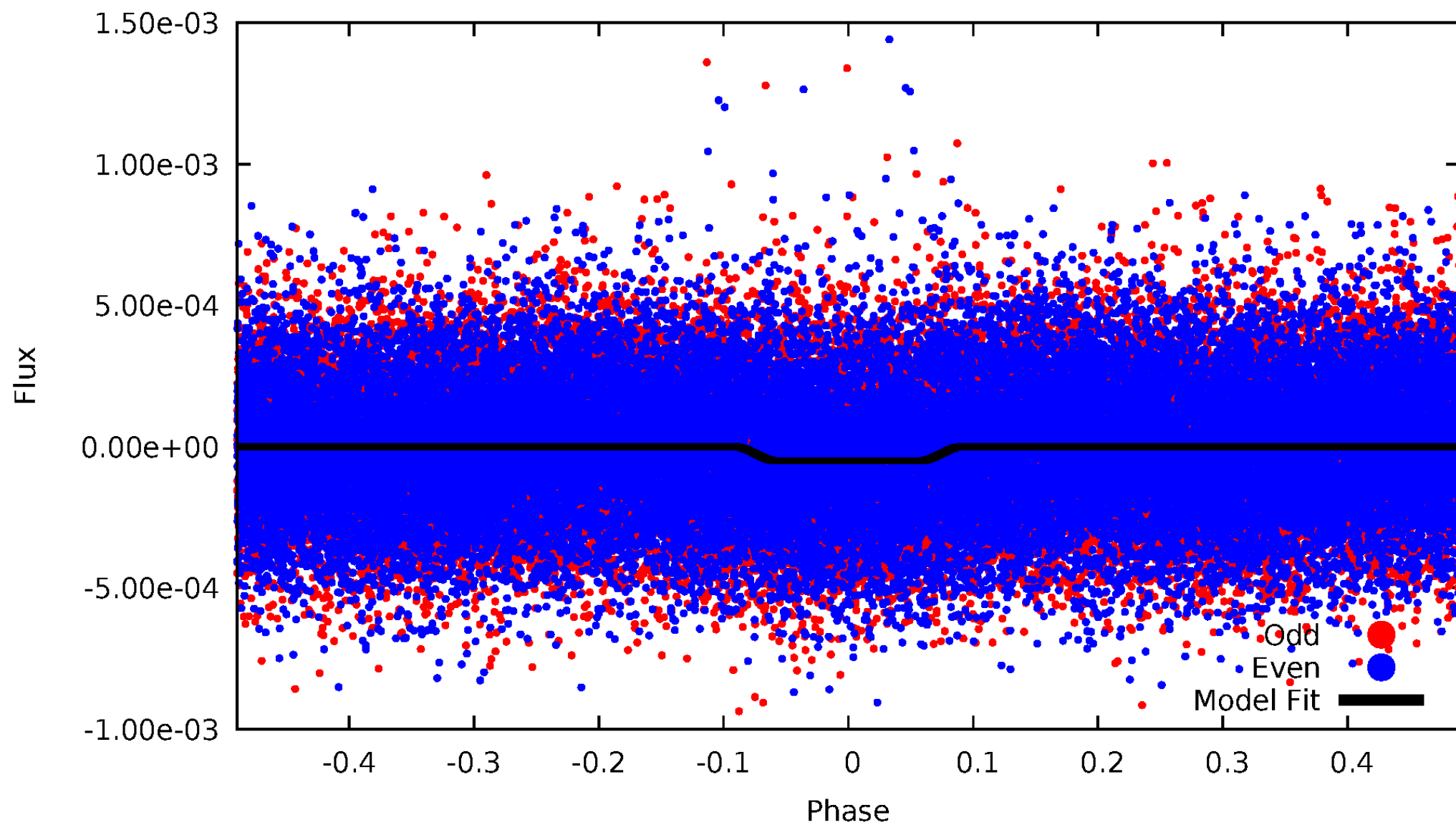
# DV Odd/Even

TCE 008388318-01



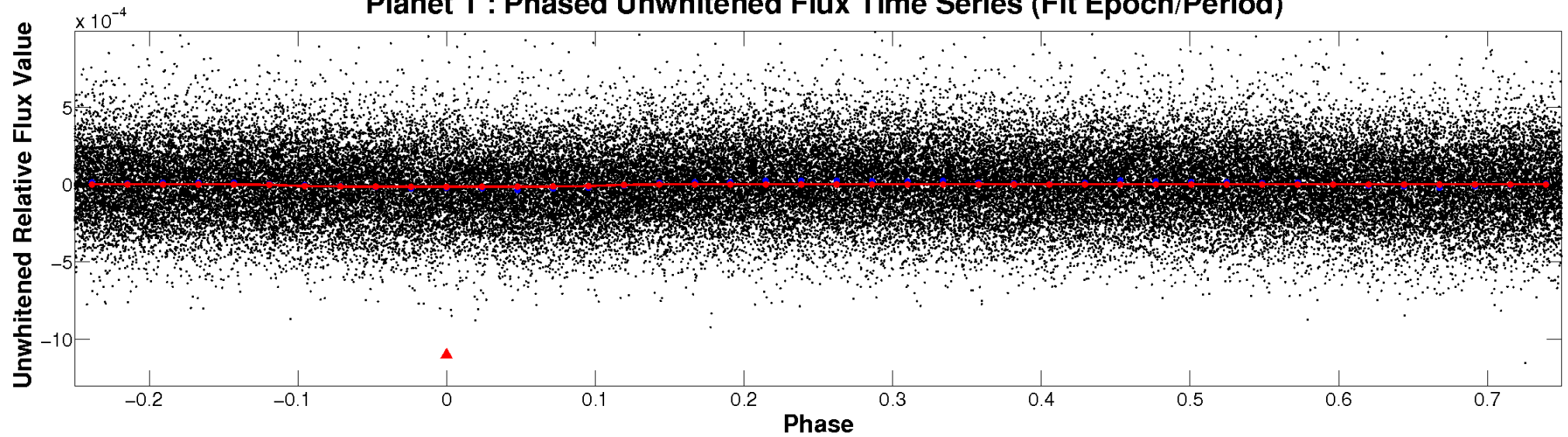
# ALT Odd/Even

TCE 008388318-01

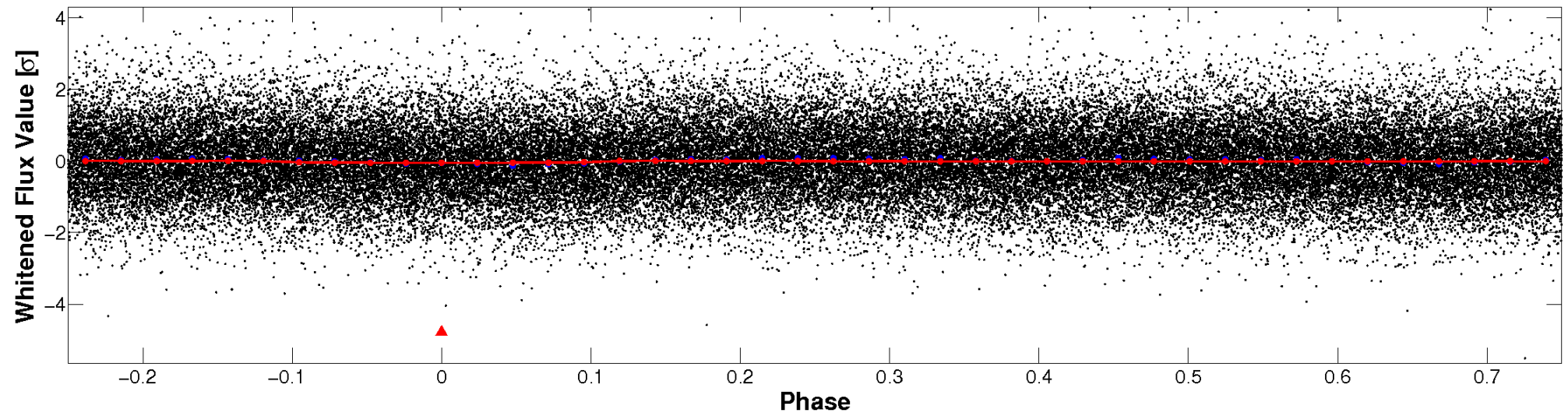


# Non-Whitened Vs. Whitened Light Curve

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



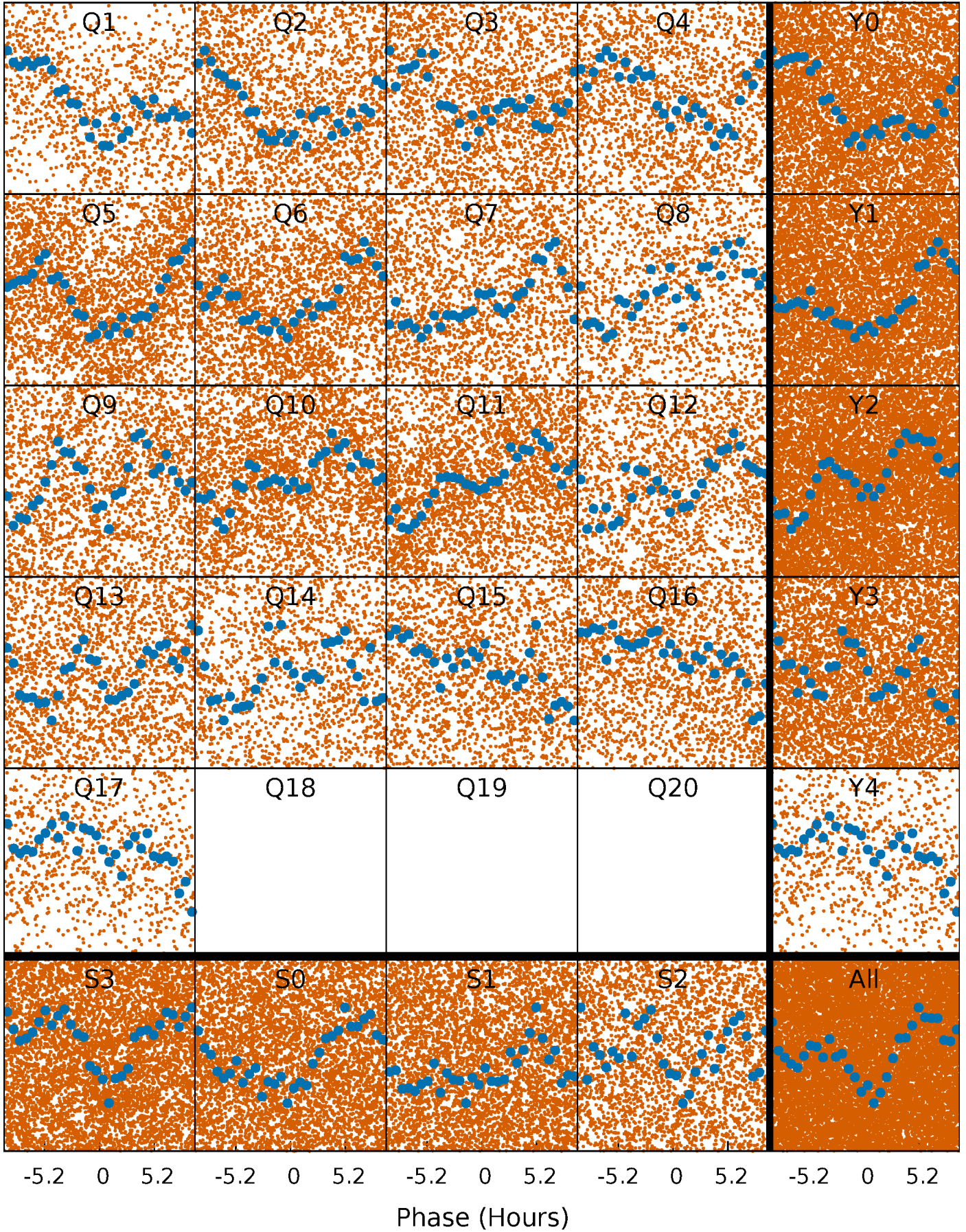
**Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)**





# PDC Quarter-Phased Transit Curves

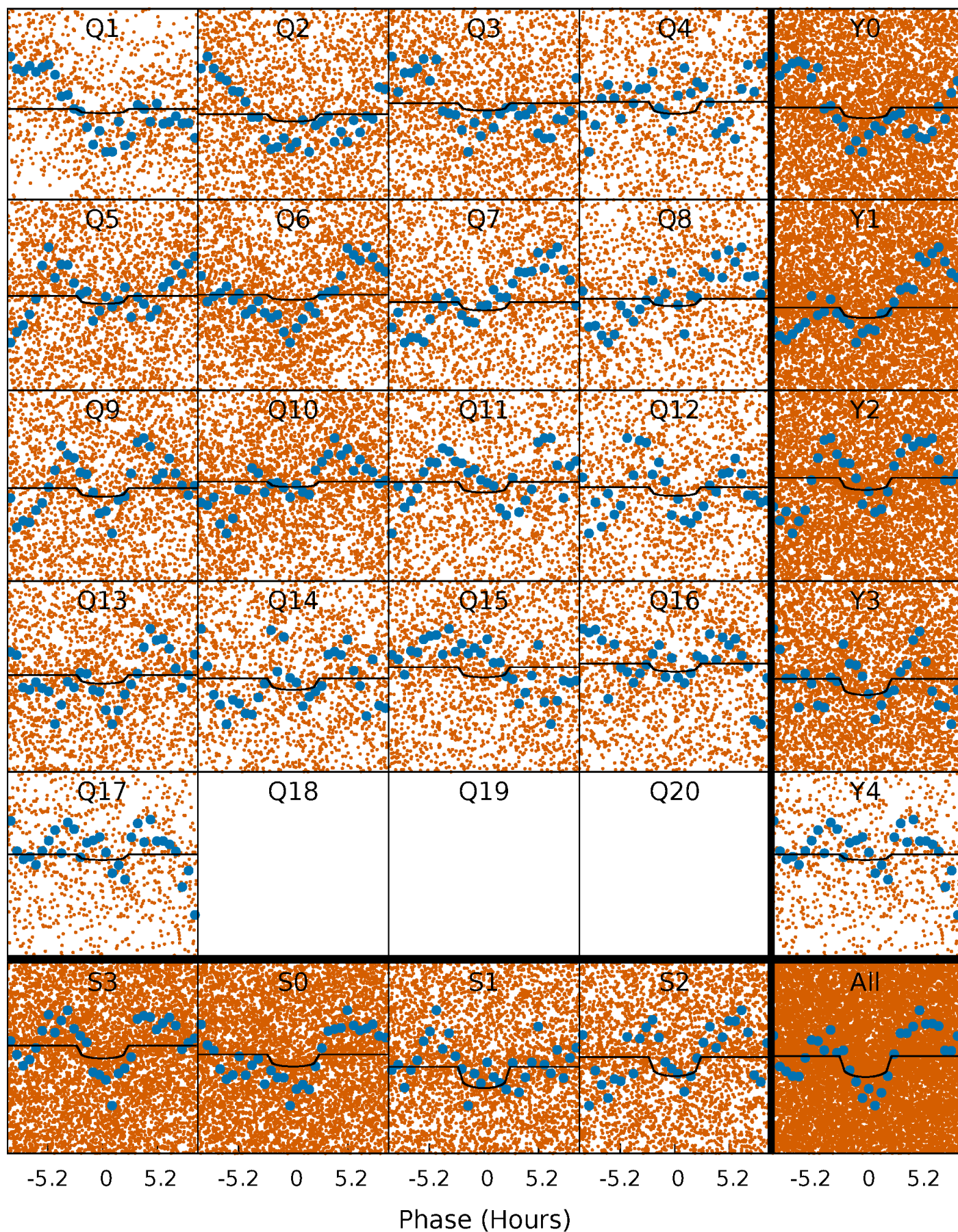
TCE 008388318-01 P= 0.856776 Days  $T_0=131.990512$  (BKJD)





# DV Quarter-Phased Transit Curves

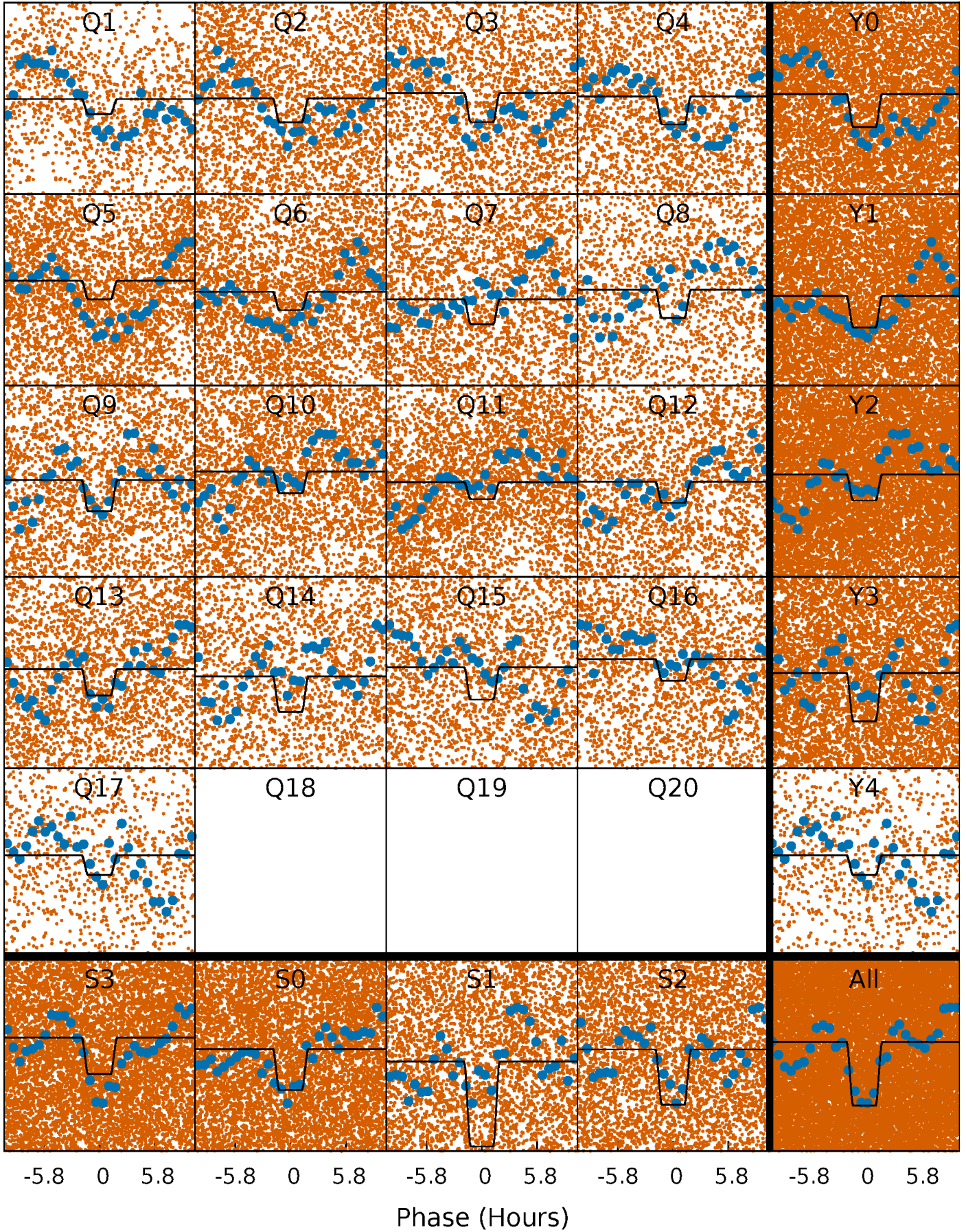
TCE 008388318-01   P= 0.856776 Days    $T_0=131.990512$  (BKJD)





# Alt. Detrend Quarter-Phased Transit Curves

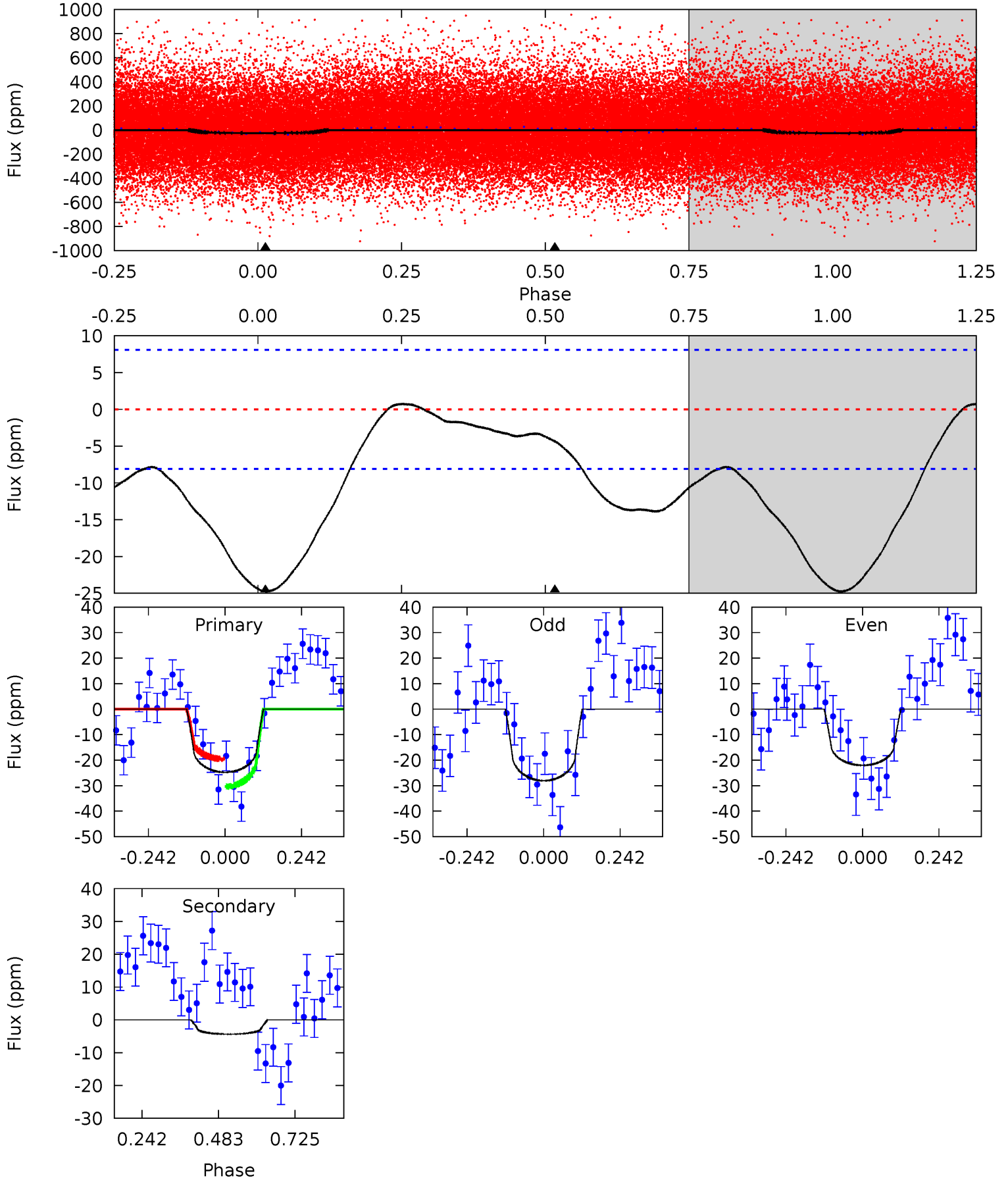
TCE 008388318-01 P= 0.856850 Days  $T_0=131.949274$  (BKJD)



# DV Model-Shift Uniqueness Test

008388318-01, P = 0.856776 Days, E = 131.133736 Days

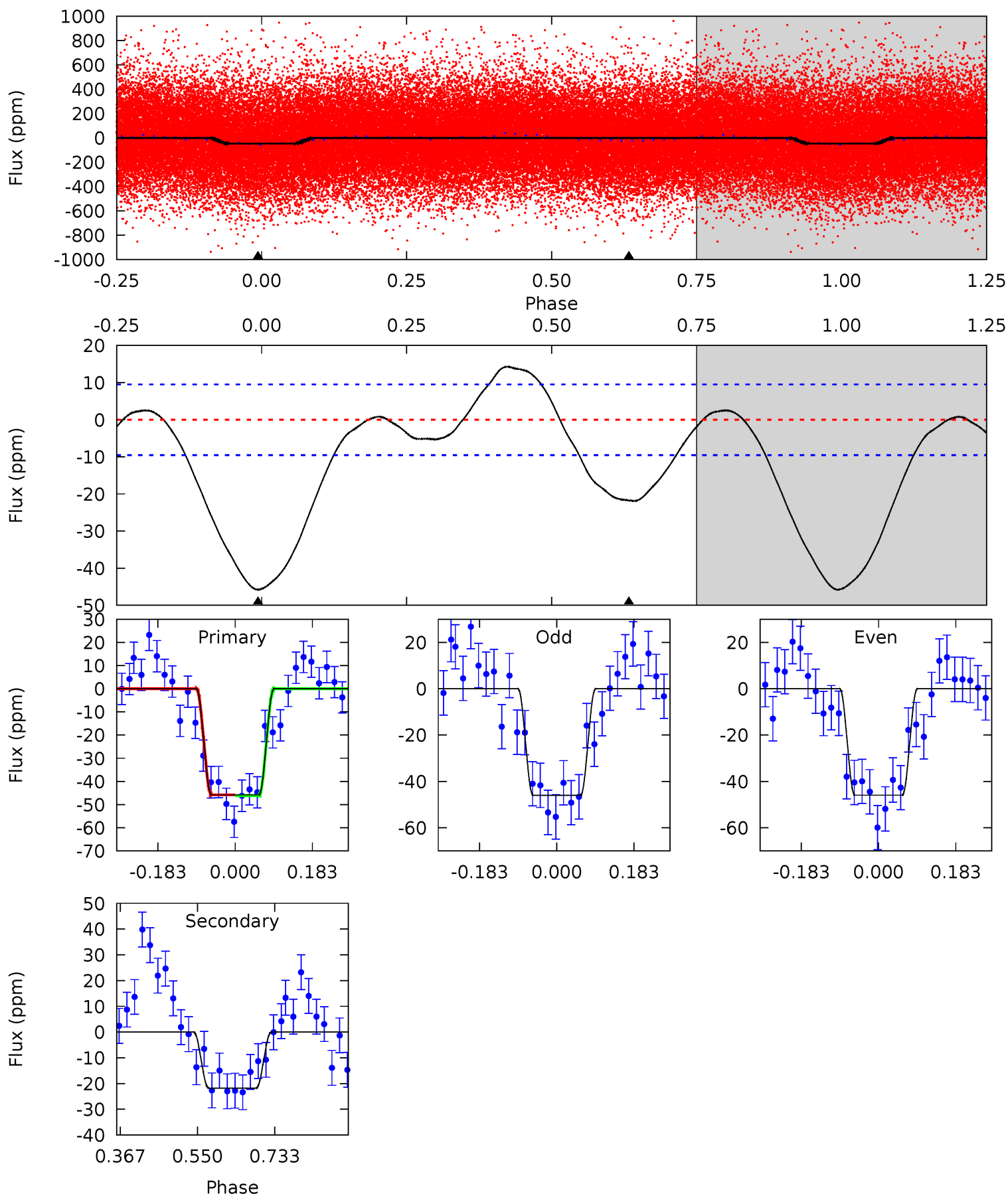
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
13.4	2.36	0	0	4.38	1.17	2.81	13.4	13.4	2.36	2.36	1.63	1.03	0.03	2.90



# Alt Model-Shift Uniqueness Test

008388318-01, P = 0.856850 Days, E = 131.092424 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
21.3	10.1	0	0	4.44	1.33	3.16	21.3	21.3	10.1	10.1	0.00	0.91	0.24	0.07





### Stellar Parameters For KIC 008388318

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$6384^{+175}_{-214}$	$4.110^{+0.252}_{-0.168}$	$-0.280^{+0.250}_{-0.300}$	$1.534^{+0.411}_{-0.411}$	$1.104^{+0.193}_{-0.145}$	$0.431^{+0.681}_{-0.203}$
	+3%/-3%	+6%/-4%	+89%/-107%	+27%/-27%	+17%/-13%	+158%/-47%
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 008388318-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	$A_{obs}$
DV	$-4 \pm 2$	$1.03^{+0.98}_{-0.68}$	$3551^{+315}_{-275}$	$3590^{+2510}_{-6652}$	$0.731^{+5.688}_{-0.575}$
Alt.	$-22 \pm 2$	$1.46^{+1.06}_{-0.96}$	$3607^{+250}_{-310}$	$4595^{+3492}_{-1114}$	$1.908^{+13.741}_{-1.285}$

$T_{max}$  = 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

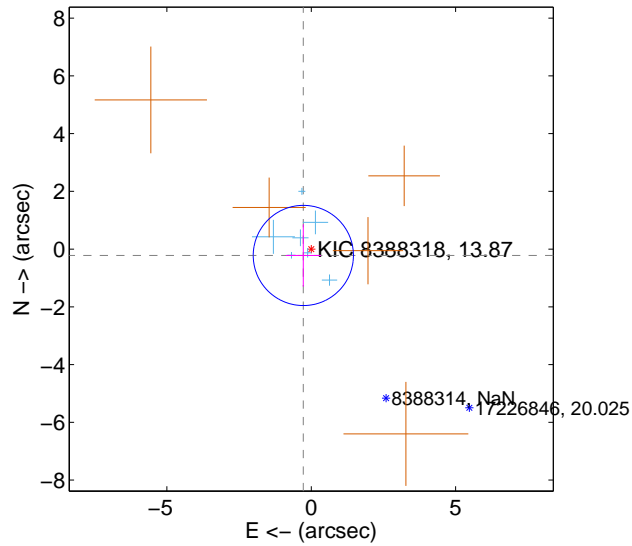
Supplemental centroid analysis for 008388318-01. Kepler magnitude: 13.87. Transit SNR 4.88

There are 7 quarters with good PRF difference image offsets

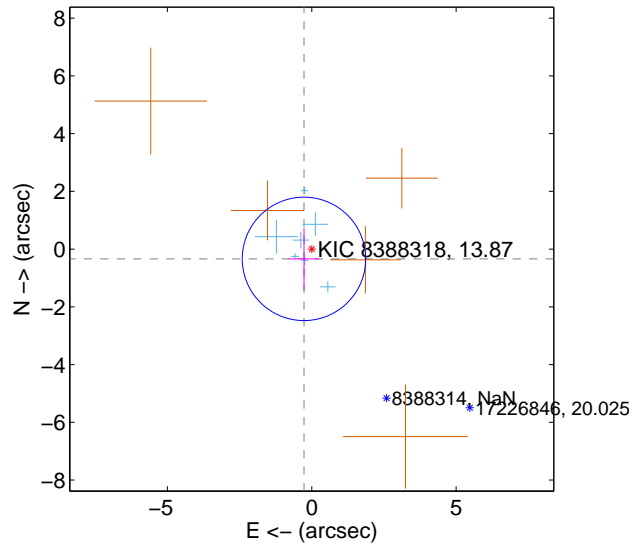
The direct PRF centroid is offset from the target star catalog position by about 0.13 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.352 \pm 0.578$	0.61	$0.274 \pm 0.606$	$-0.221 \pm 1.080$
PRF-fit source offset from KIC position	$0.433 \pm 0.712$	0.61	$0.269 \pm 0.528$	$-0.339 \pm 1.059$
photometric centroid source offset	$1.75 \pm 1.74$	1.00	$-0.20 \pm 1.99$	$1.74 \pm 1.74$

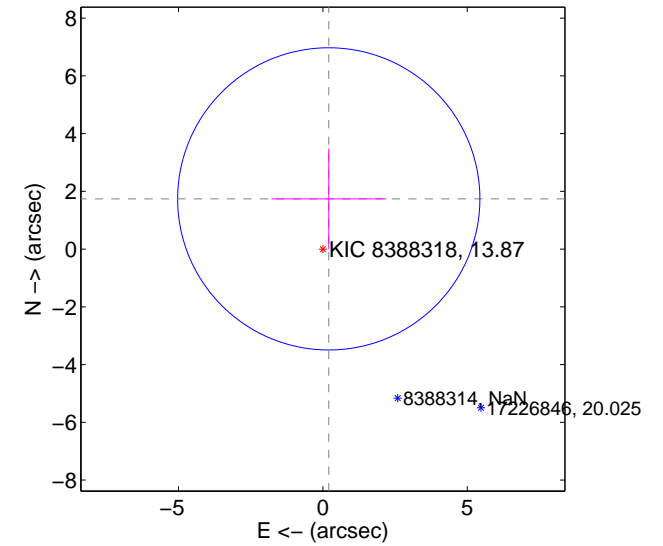
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

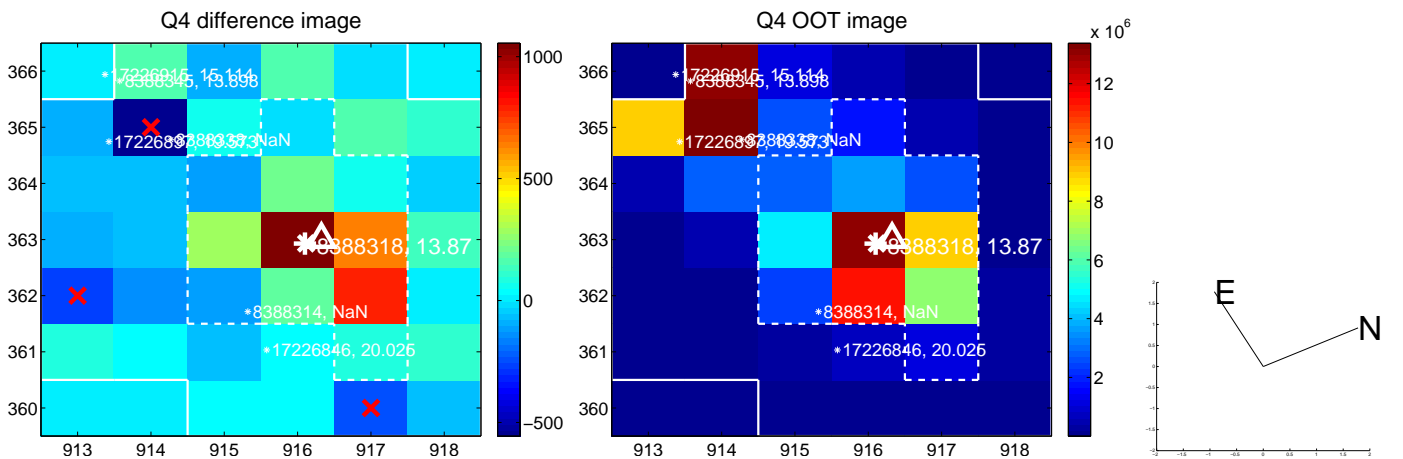
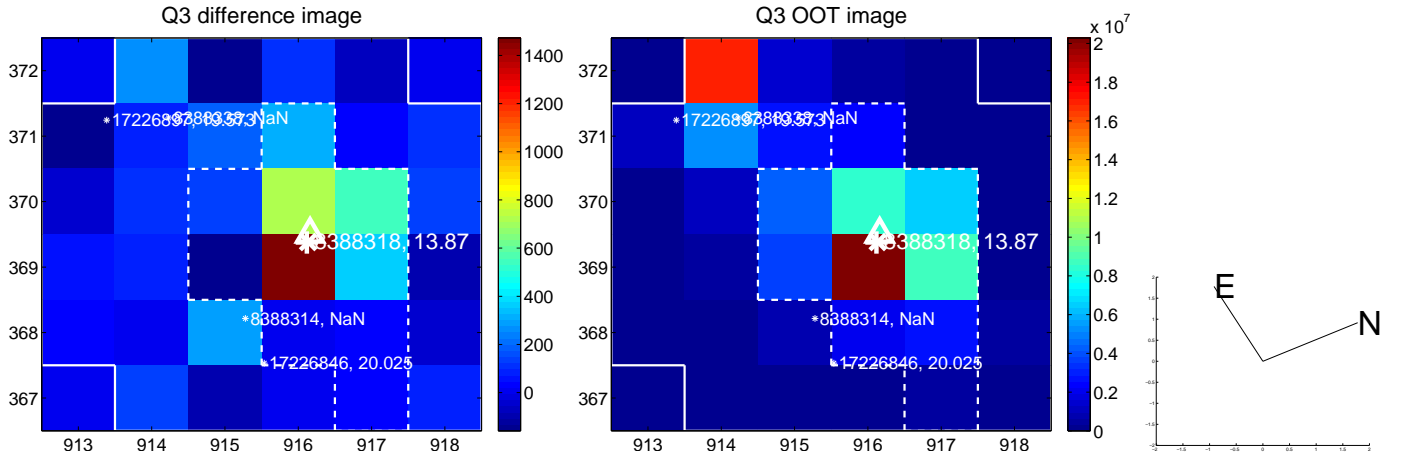
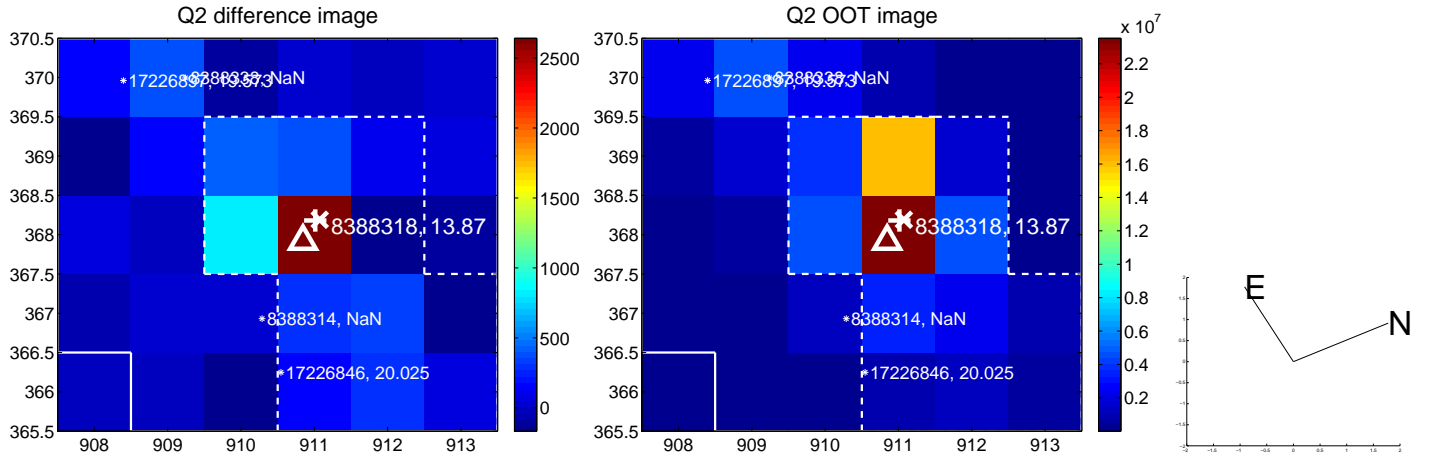
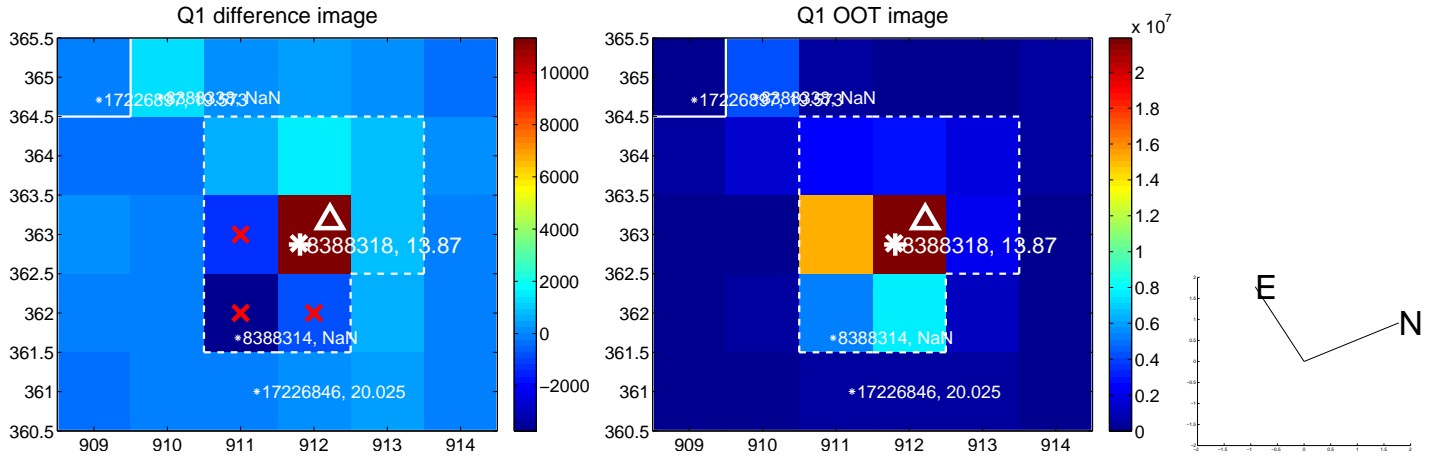


offset from photometric centroids

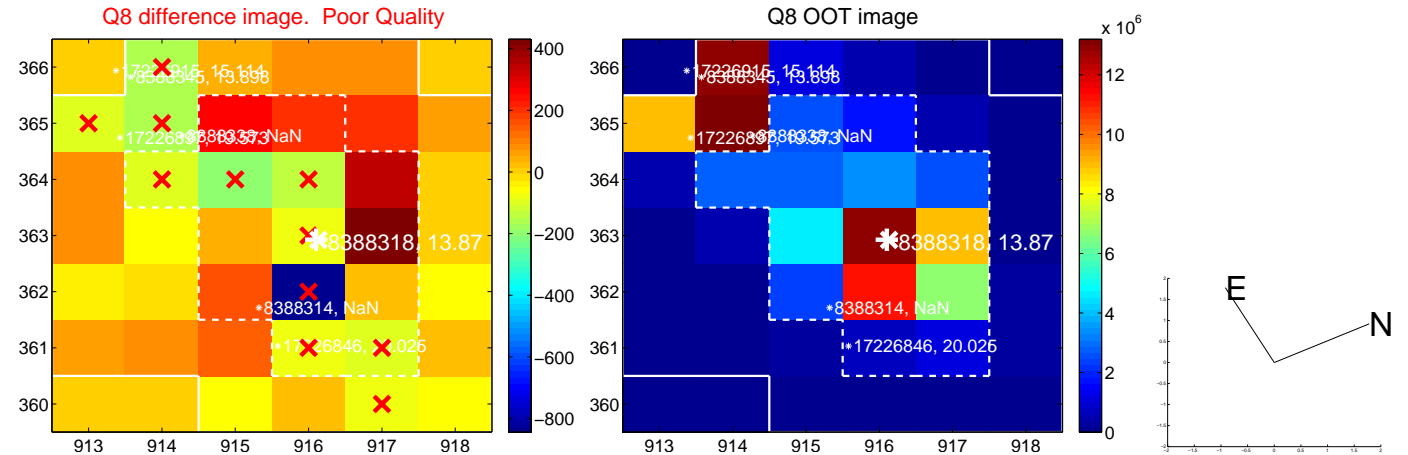
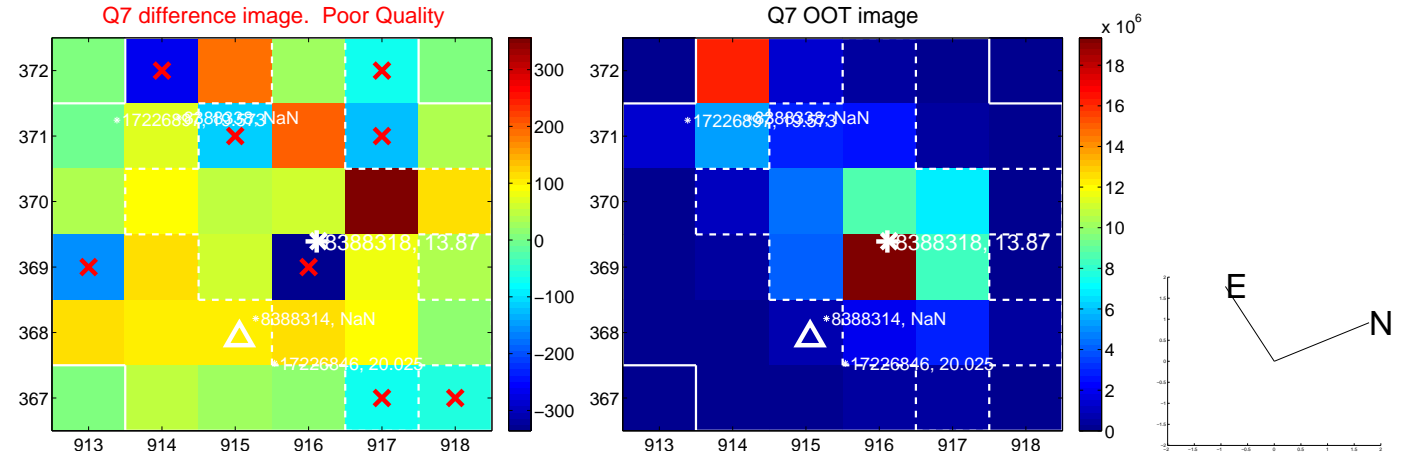
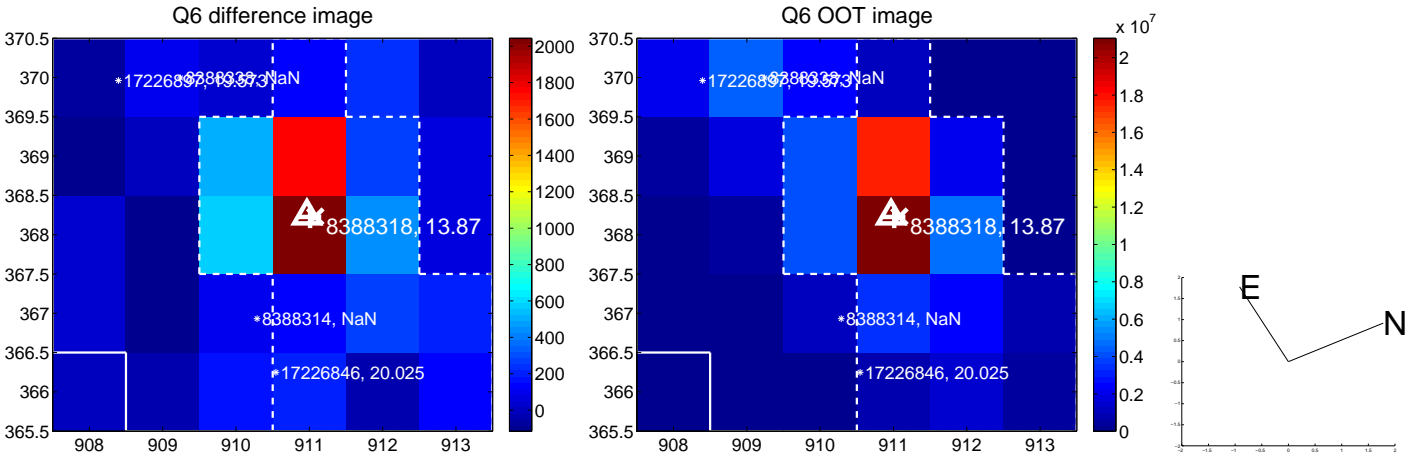
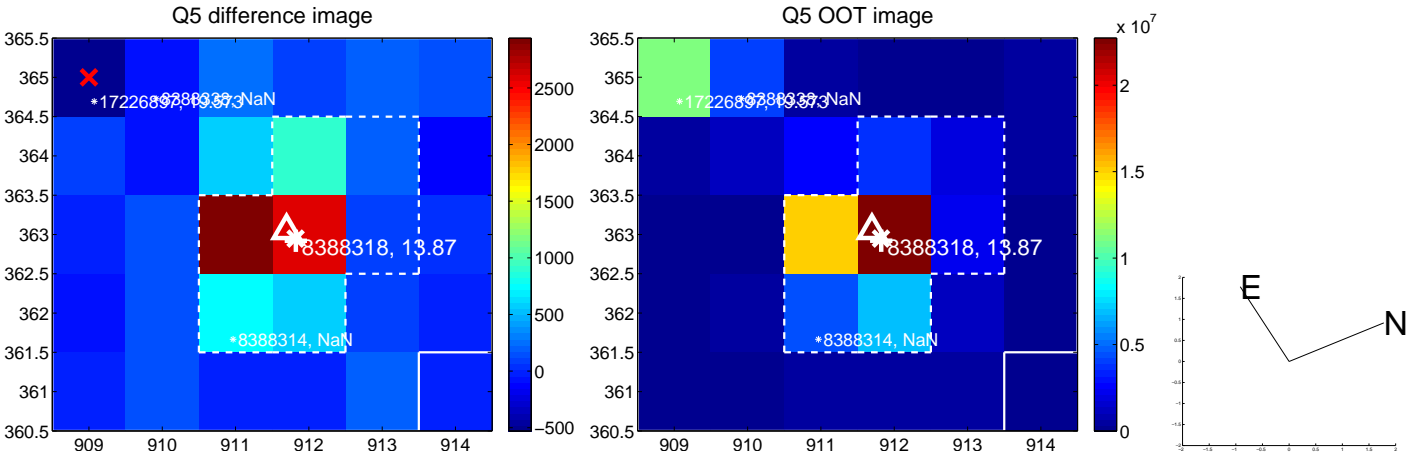


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets**; **Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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

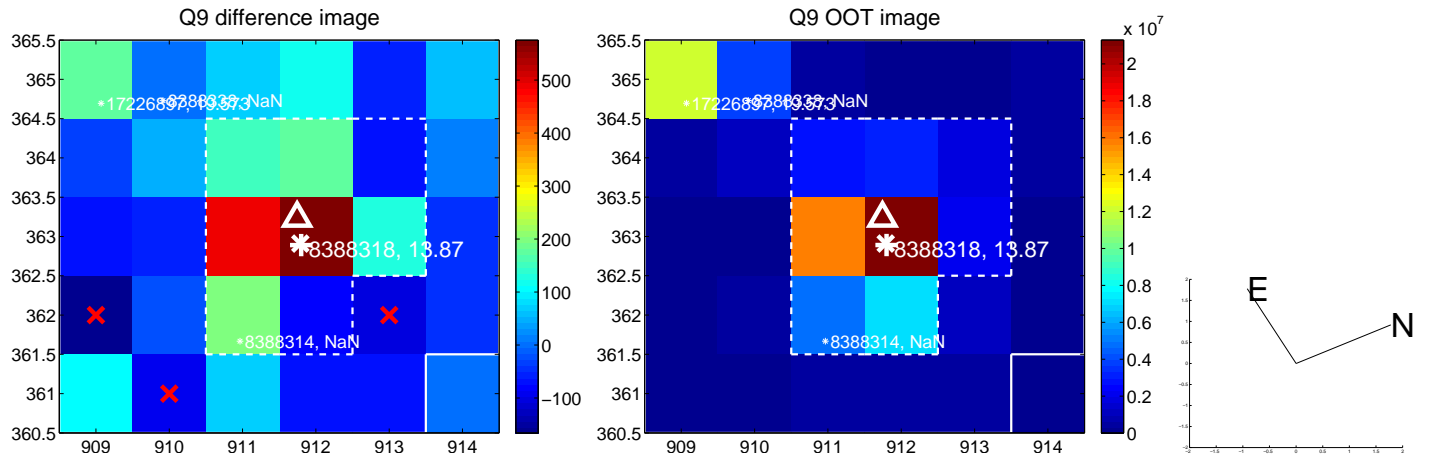


white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

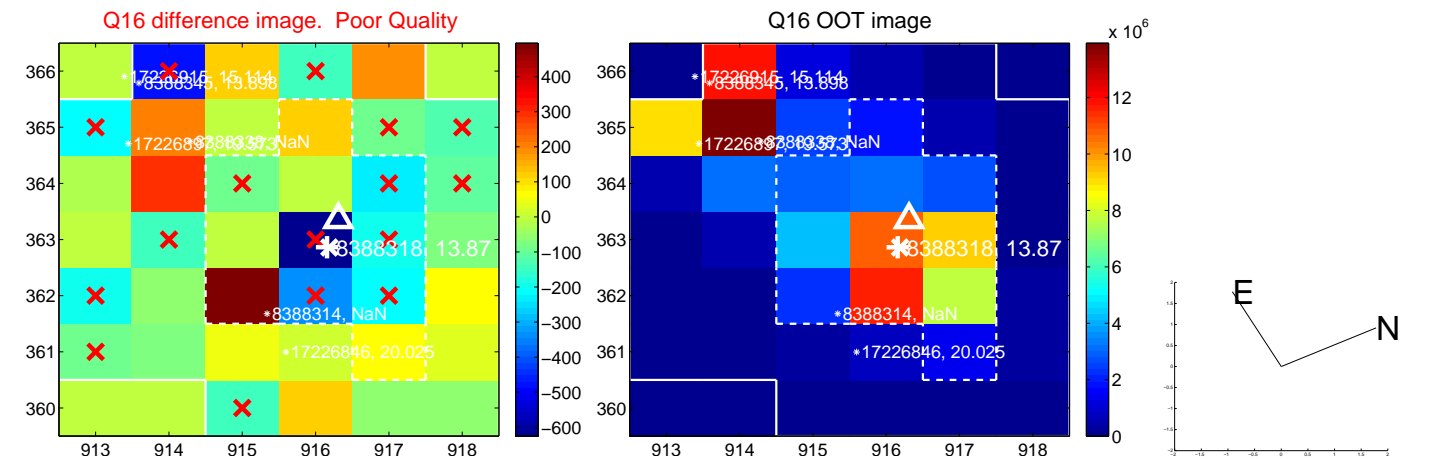
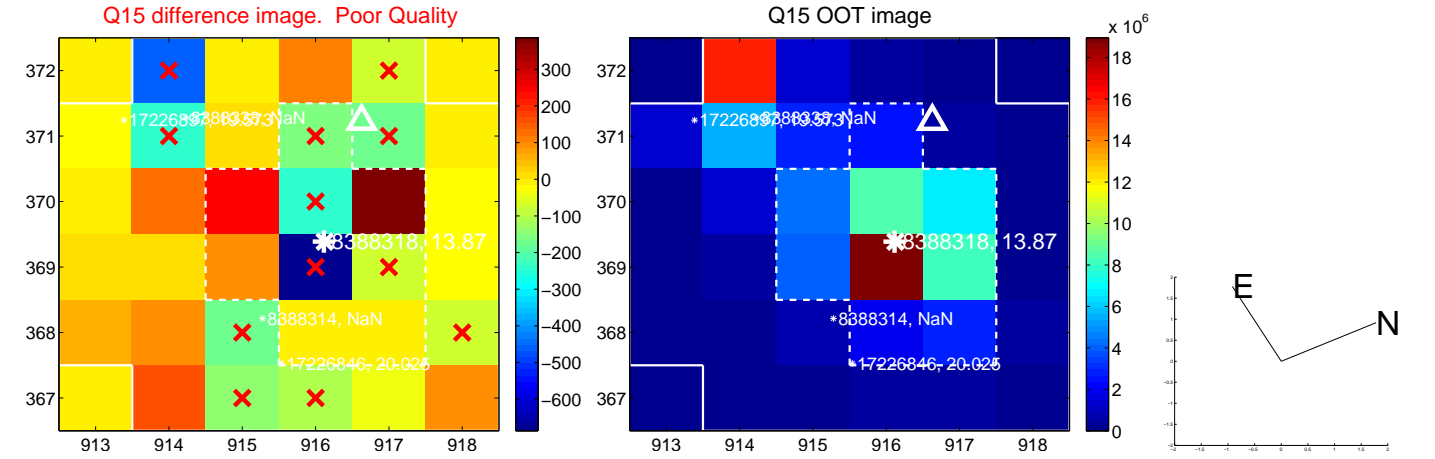
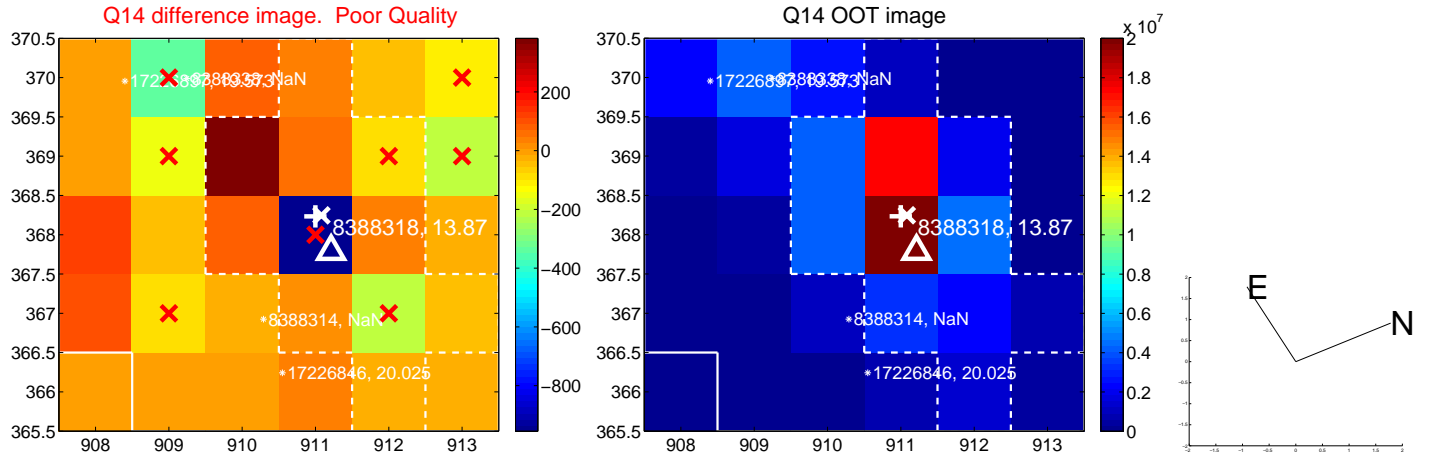
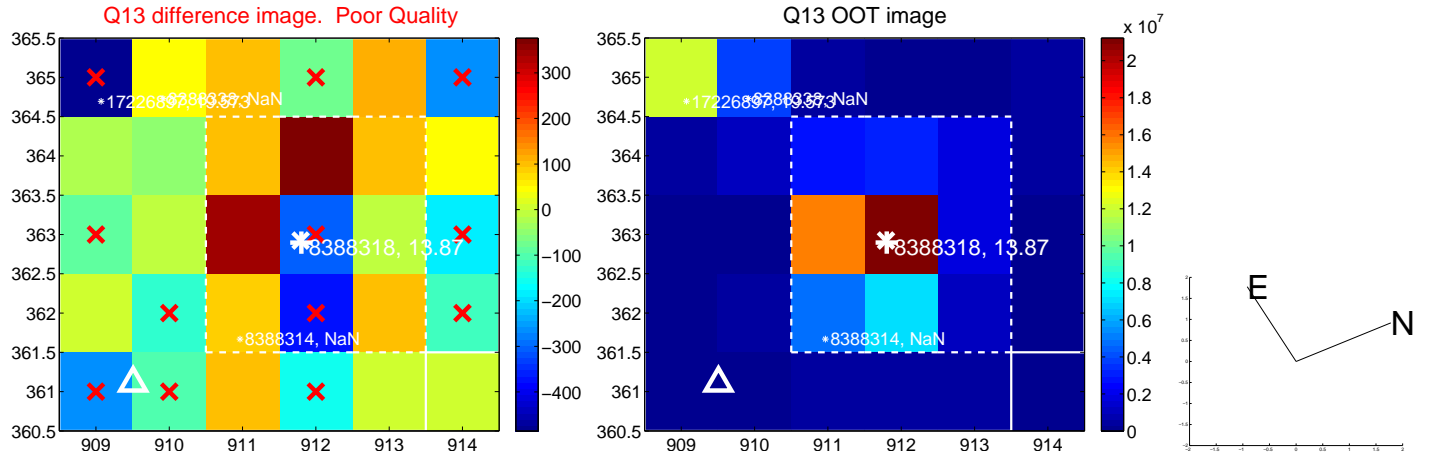




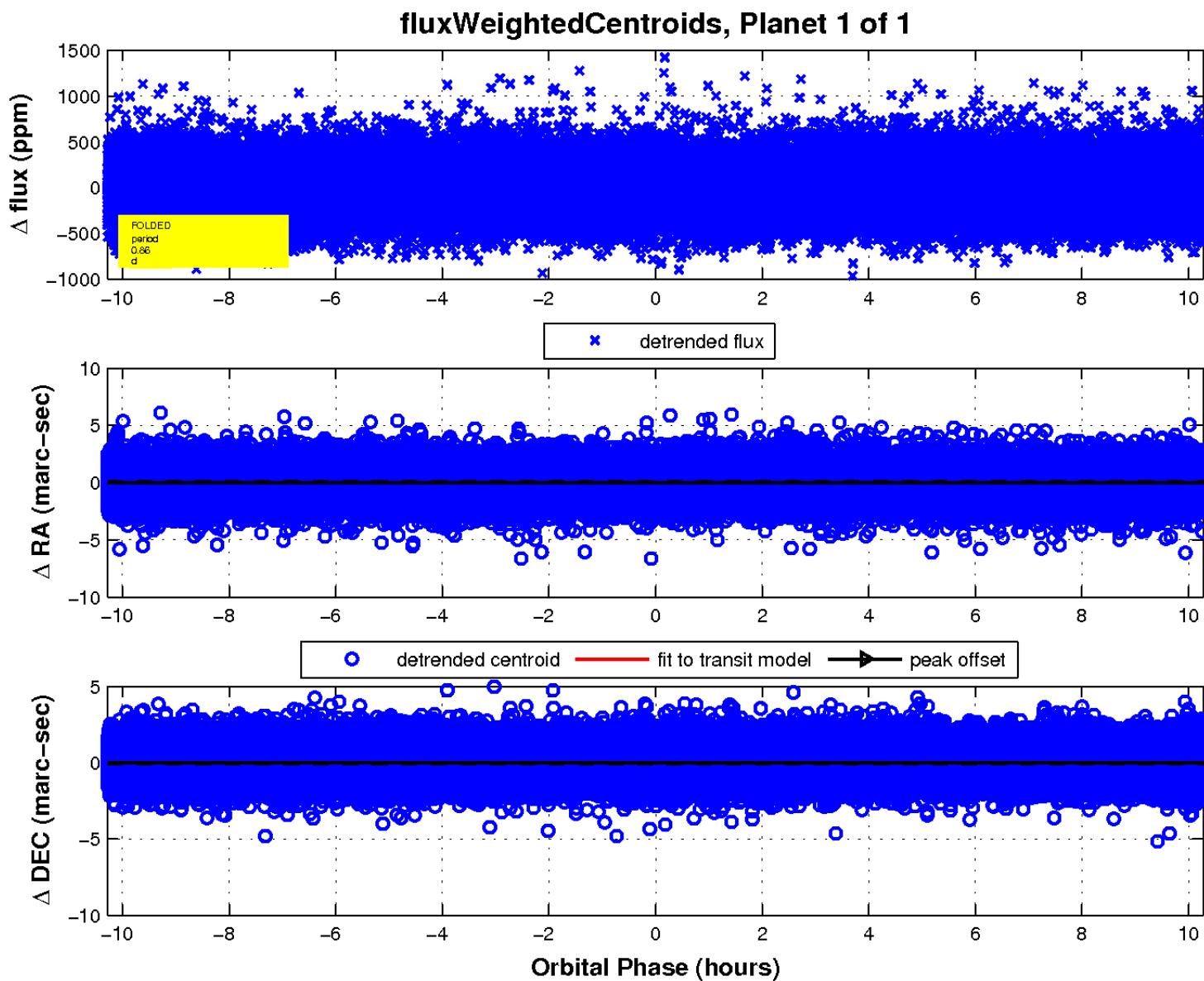
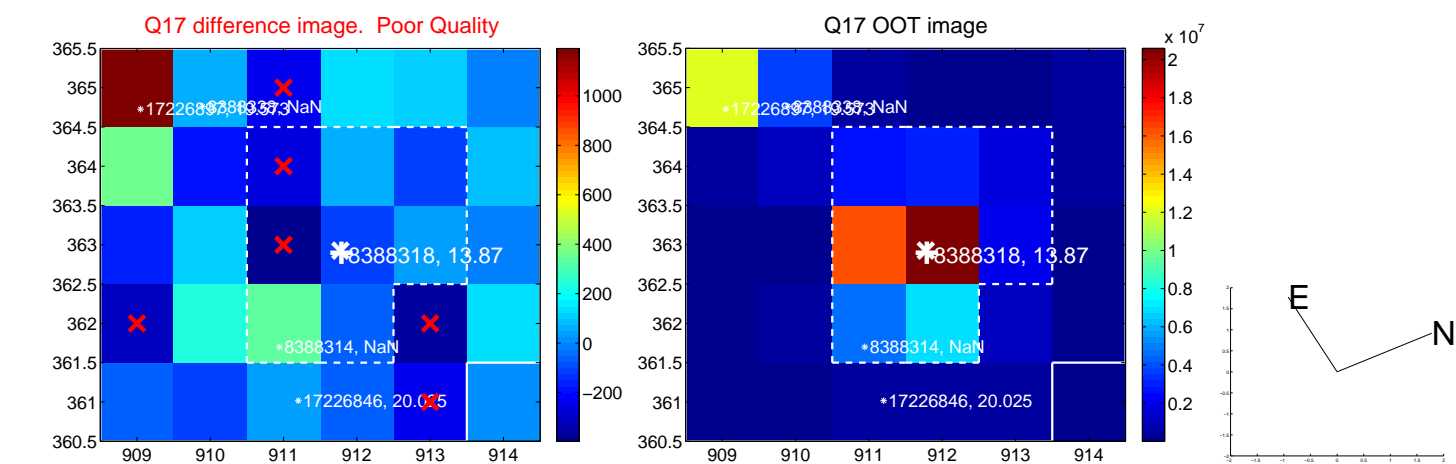
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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UKIRT Image

Declination

