

# KIC 001872192

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
001872192-01	OBS	No	0.671428	132.144185	80.3	1.629	9.4	5.5	1.60	5314	1.67	8742.44

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
001872192-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA_TRACKER—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_KIC_POS

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

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

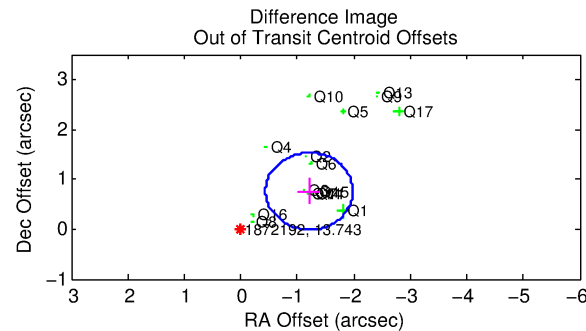
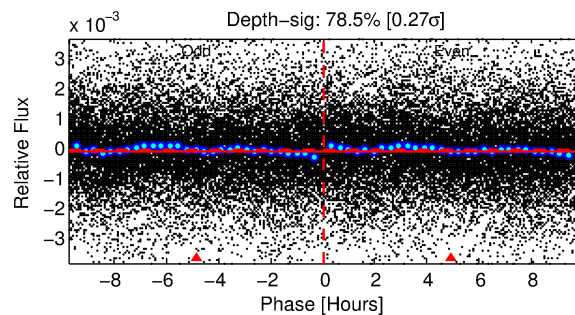
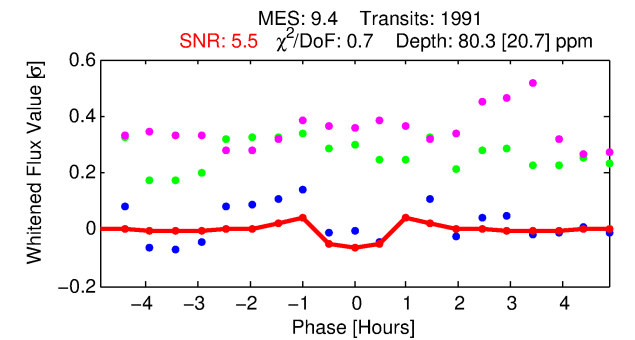
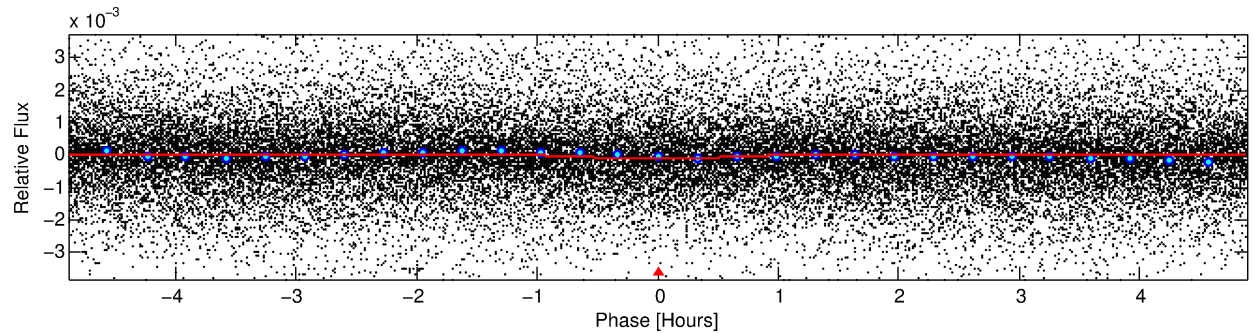
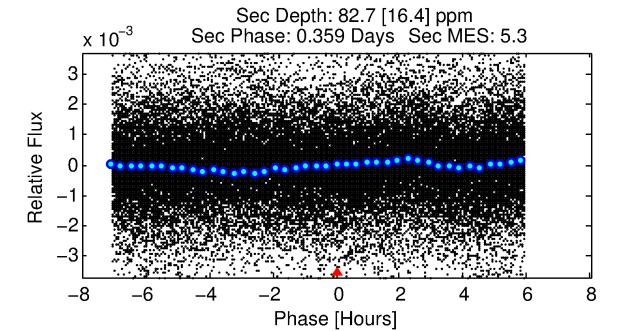
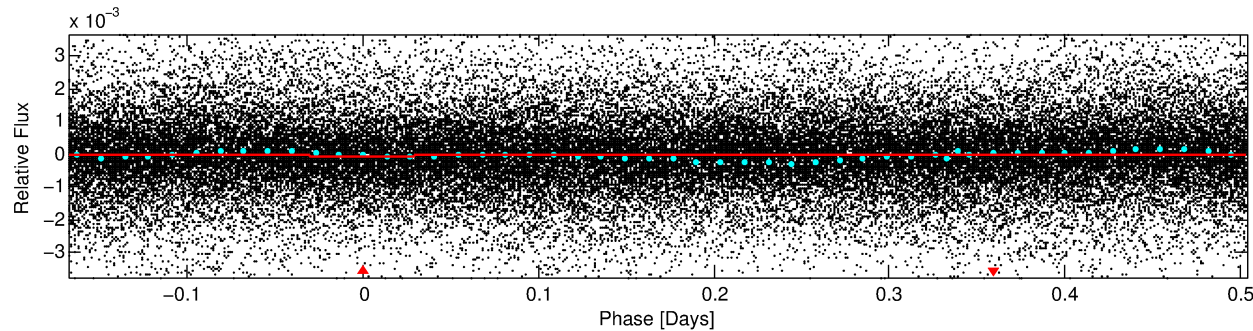
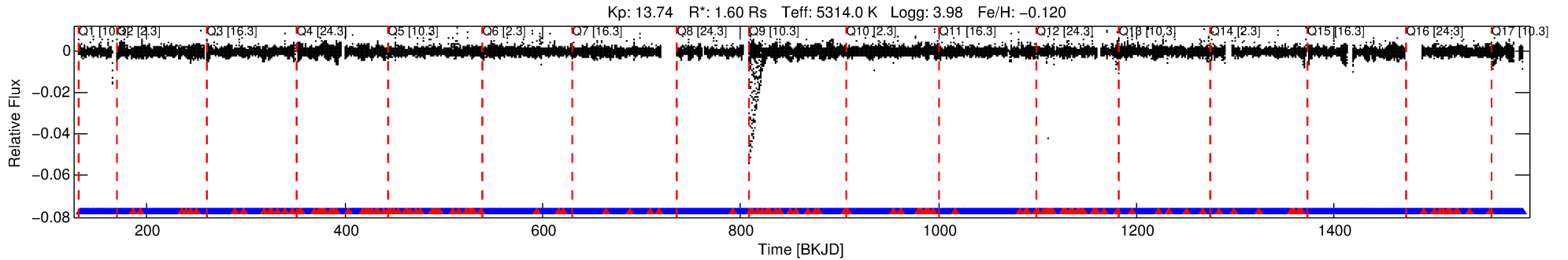
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 001872192-01

No Significant Match Found

# DV One-Page Summary

KIC: 1872192 Candidate: 1 of 1 Period: 0.671 d



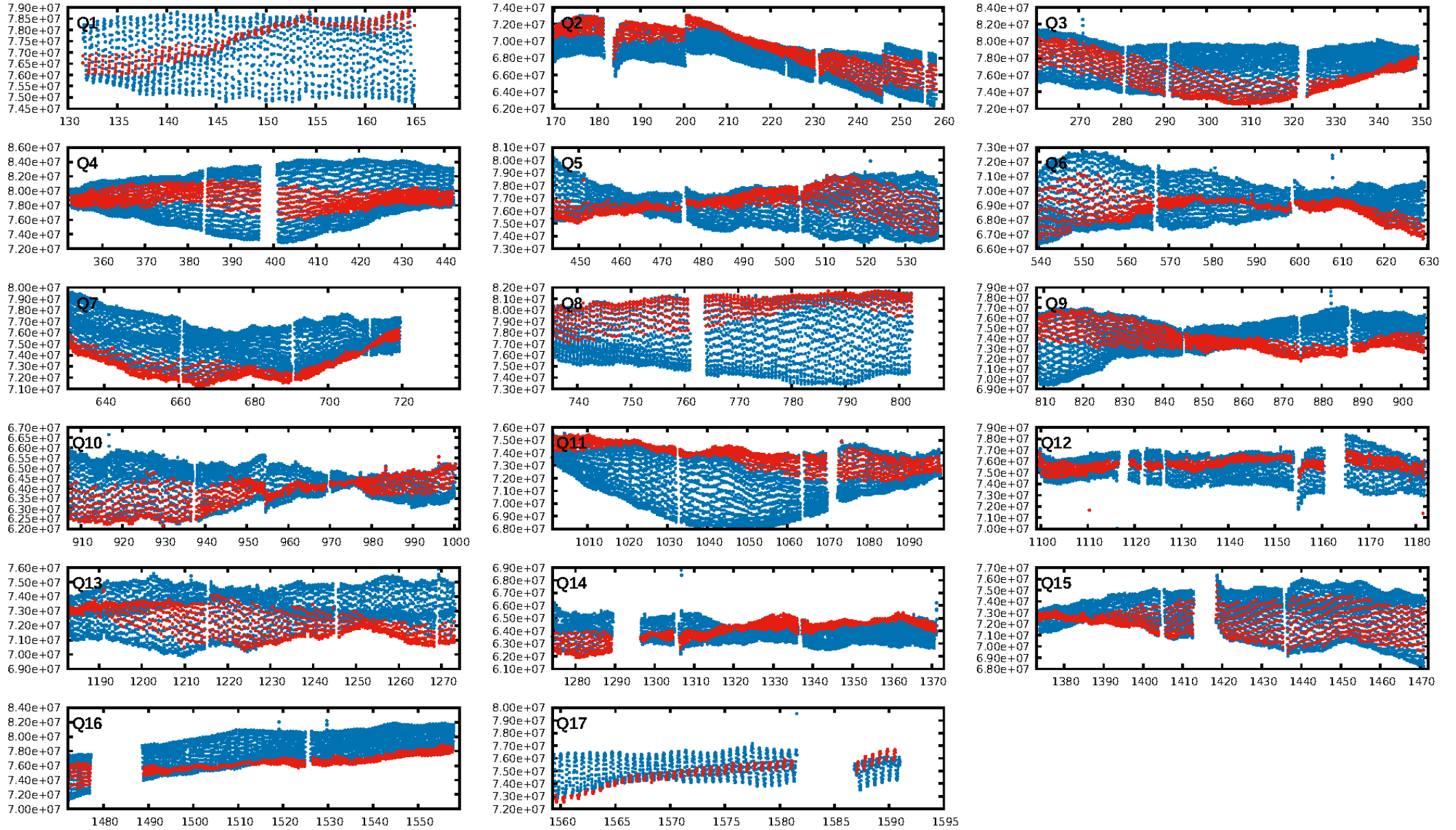
## DV Fit Results:

Period = 0.67143 [0.00002] d  
Epoch = 132.1442 [0.0023] BKJD  
Rp/R\* = 0.0096 [0.0069]  
a/R\* = 1.88 [4.02]  
b = 0.87 [0.90]  
Seff = 8742.44 [2408.87]  
Teff = 2466 [170] K  
Rp = 1.67 [1.27] Re  
a = 0.0144 [0.0028] AU  
Ag = 3.39 [5.01] [0.48σ]  
Teffp = 5175 [1879] K [1.44σ]

## DV Diagnostic Results:

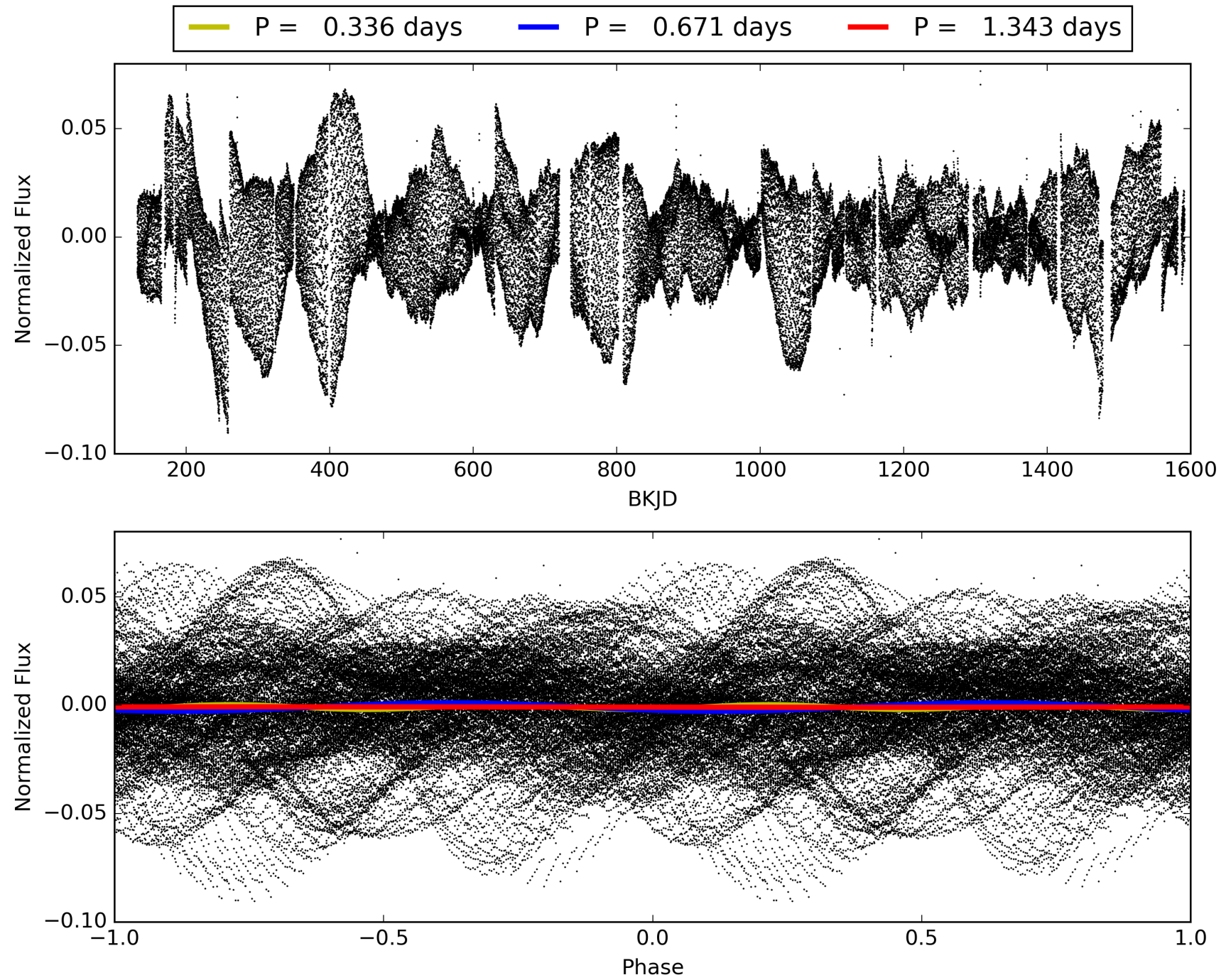
ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: N/A  
ModelChiSquareGof-sig: N/A  
Bootstrap-pfa: 2.40e-18  
RollingBand-fgt: 0.92 [1750/1902]  
**GhostDiagnostic-chr: 0.6636**  
Centroid-sig: N/A  
Centroid-so: 1.811 arcsec [2.23σ]  
**OotOffset-rm: 1.427 arcsec [5.56σ]**  
KicOffset-rm: 0.150 arcsec [1.28σ]  
OotOffset-st: 4/4/3/5 [16]  
KicOffset-st: 4/4/3/5 [16]  
DiffImageQuality-fgm: 0.62 [10/16]  
DiffImageOverlap-fno: 1.00 [17/17]

# TCE 001872192-01, PDC Light Curves



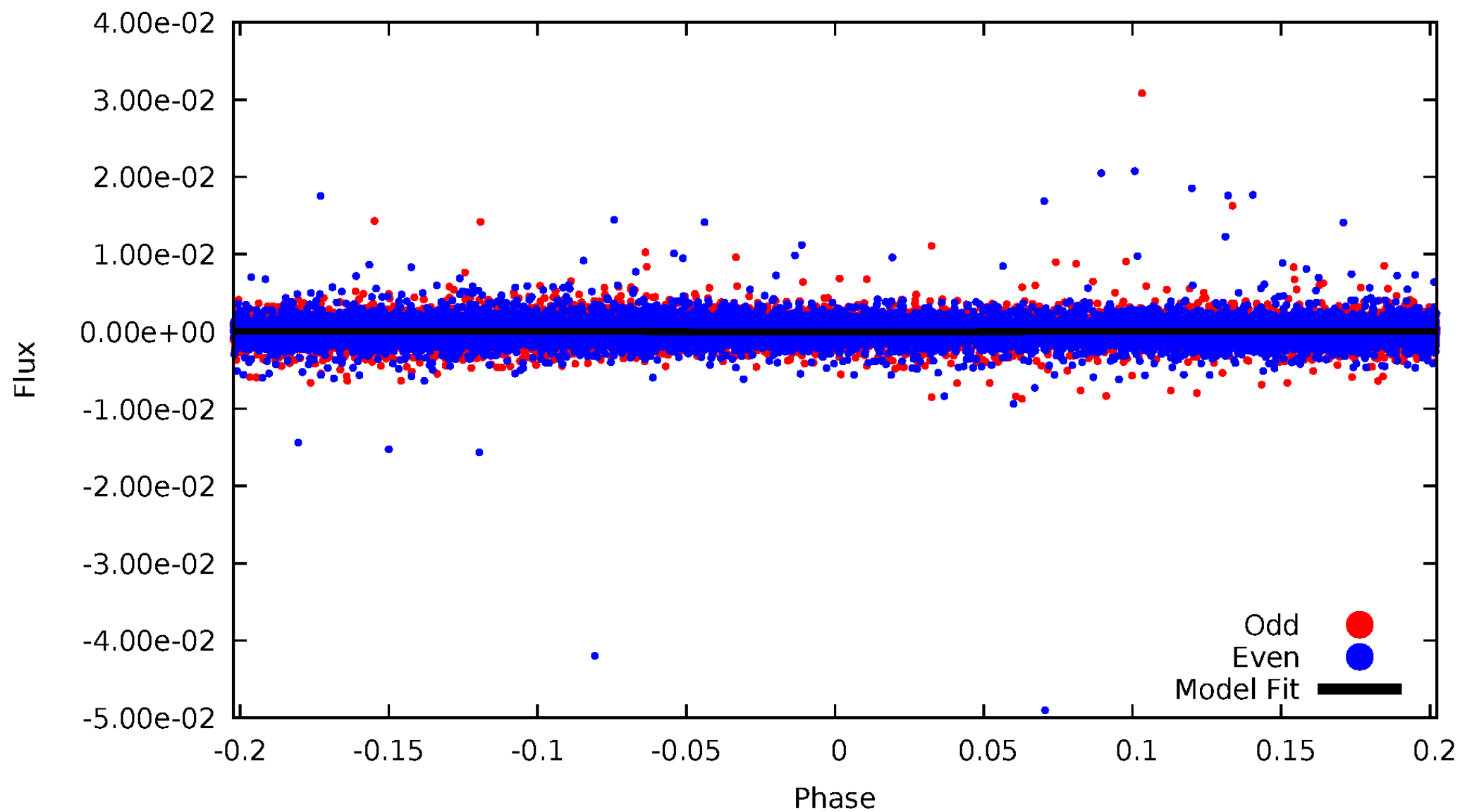


TCE 001872192-01



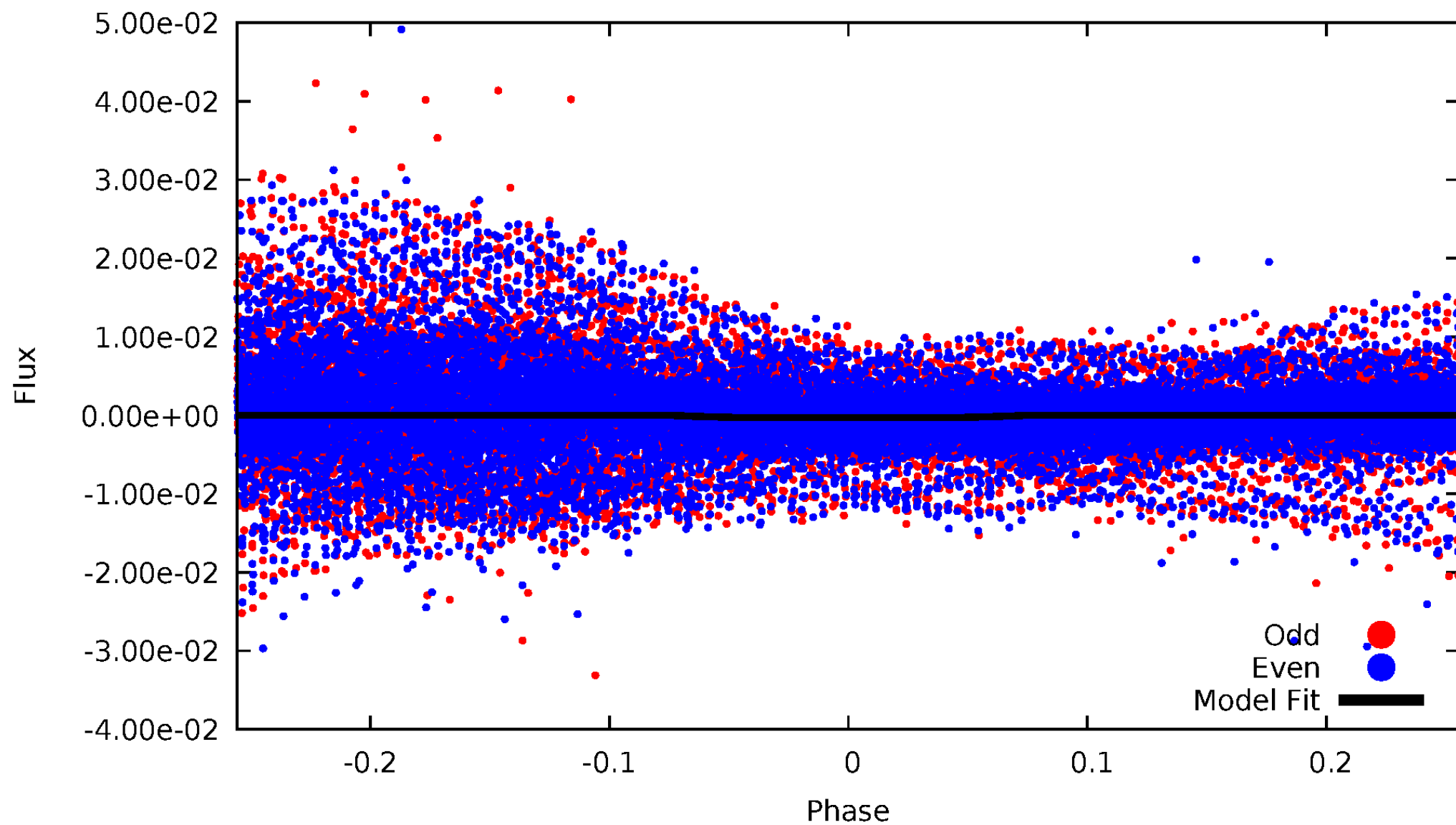
# DV Odd/Even

TCE 001872192-01



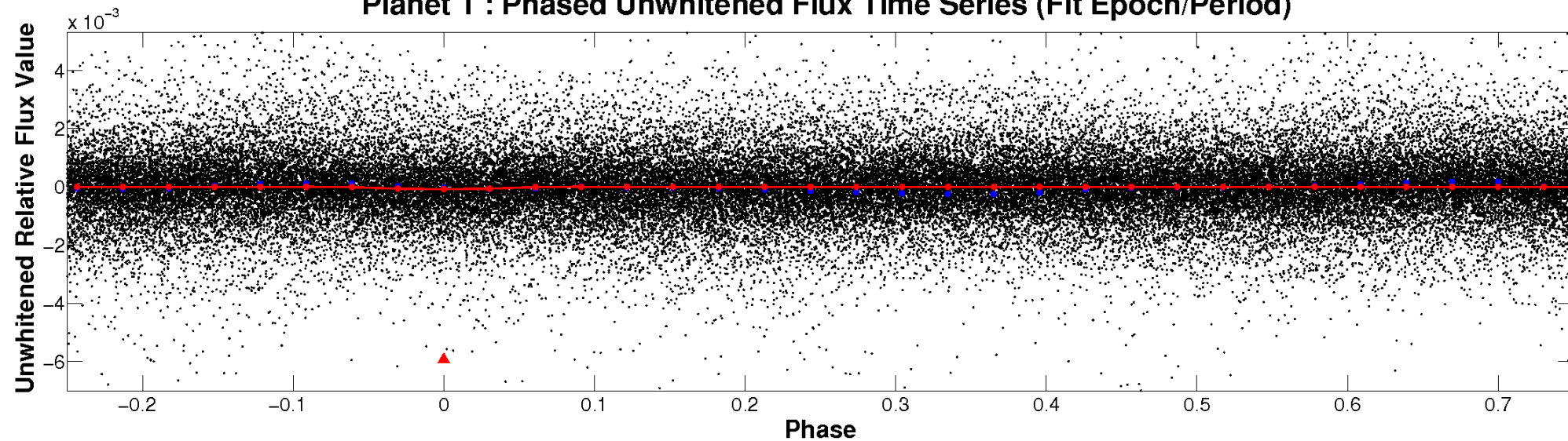
# ALT Odd/Even

TCE 001872192-01

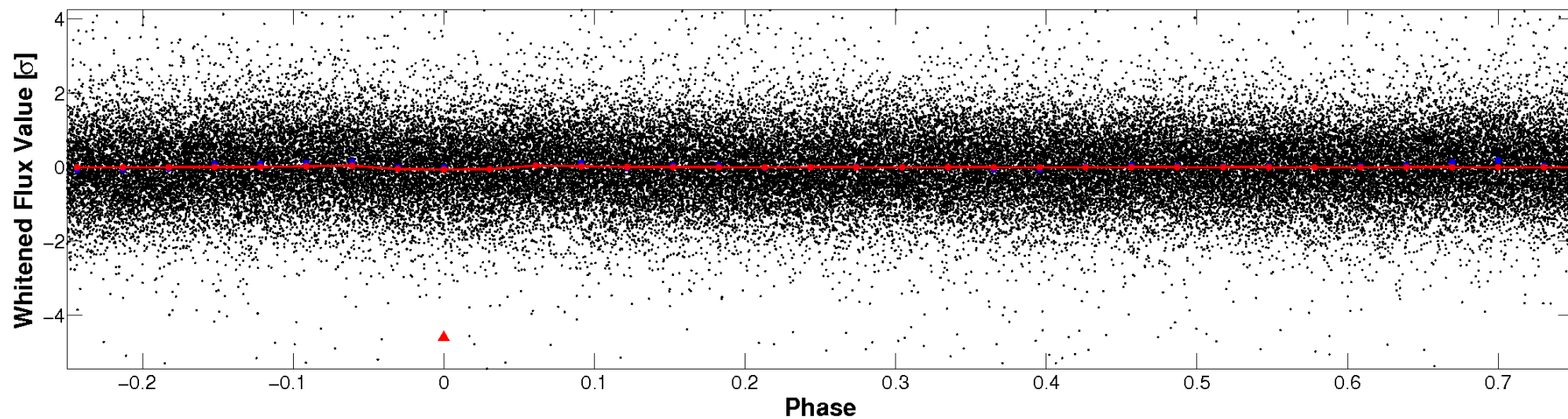


# Non-Whitened Vs. Whitened Light Curve

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



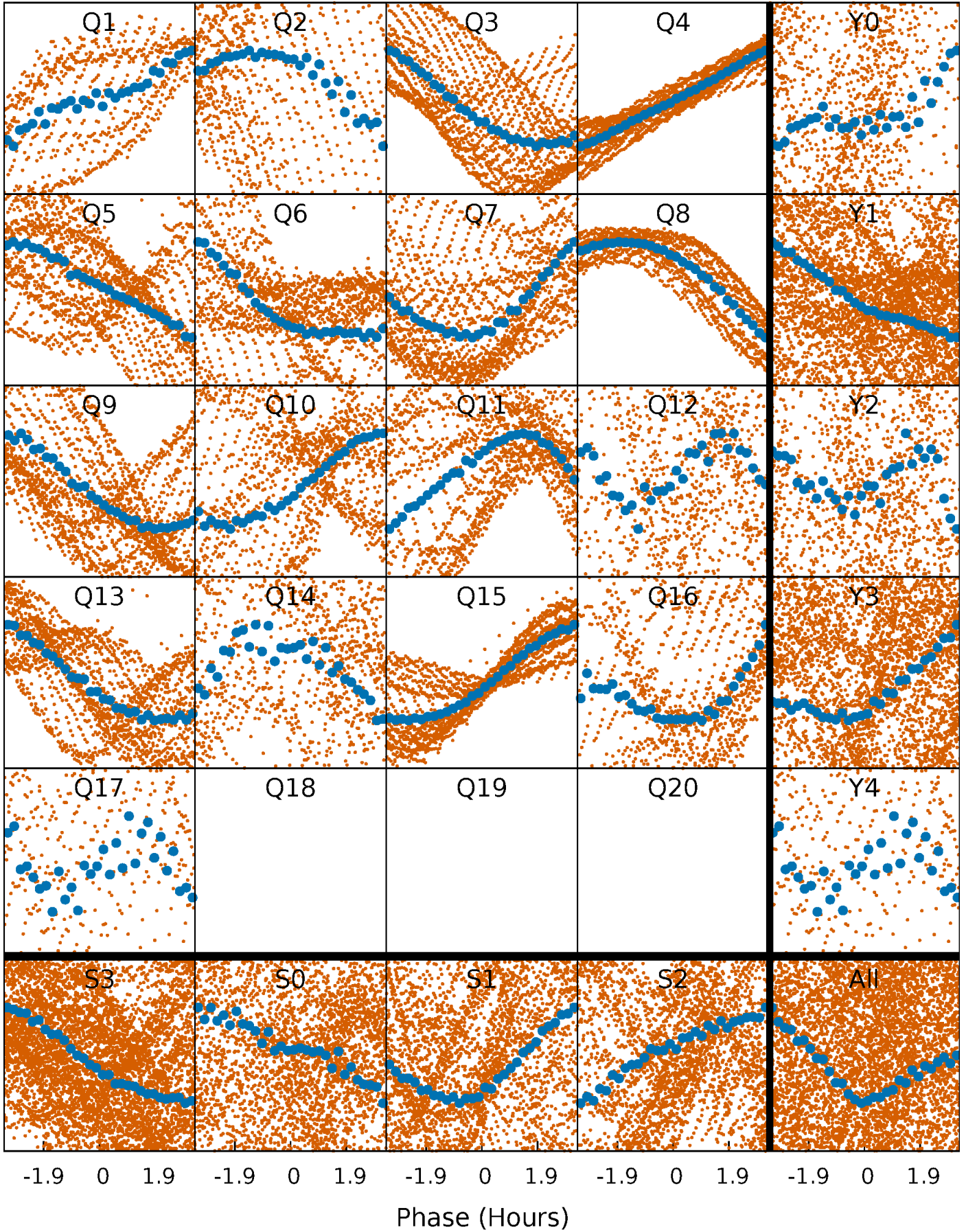
**Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)**





# PDC Quarter-Phased Transit Curves

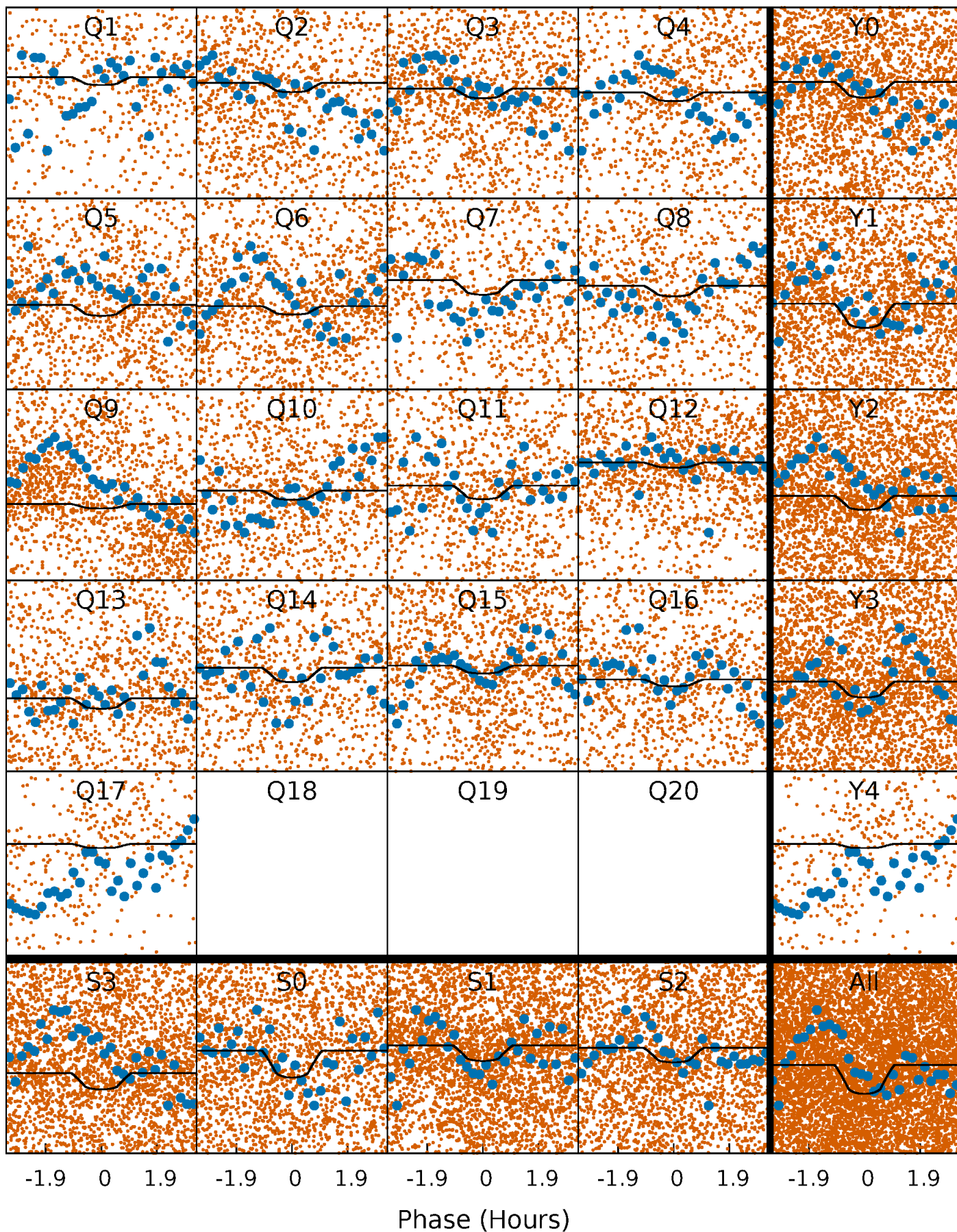
TCE 001872192-01 P= 0.671428 Days  $T_0=132.144185$  (BKJD)





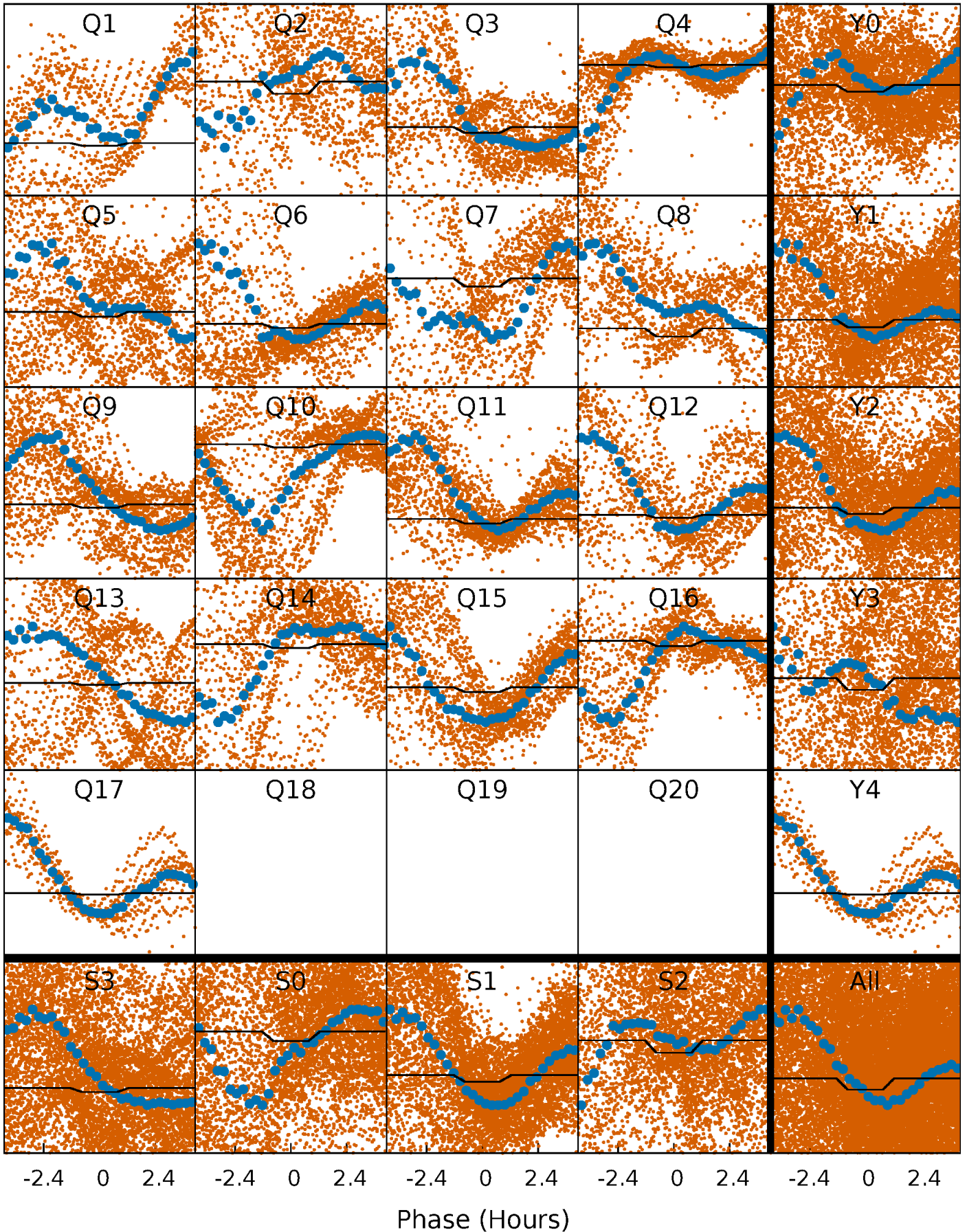
# DV Quarter-Phased Transit Curves

TCE 001872192-01 P= 0.671428 Days  $T_0=132.144185$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

TCE 001872192-01 P= 0.671394 Days  $T_0=132.147470$  (BKJD)

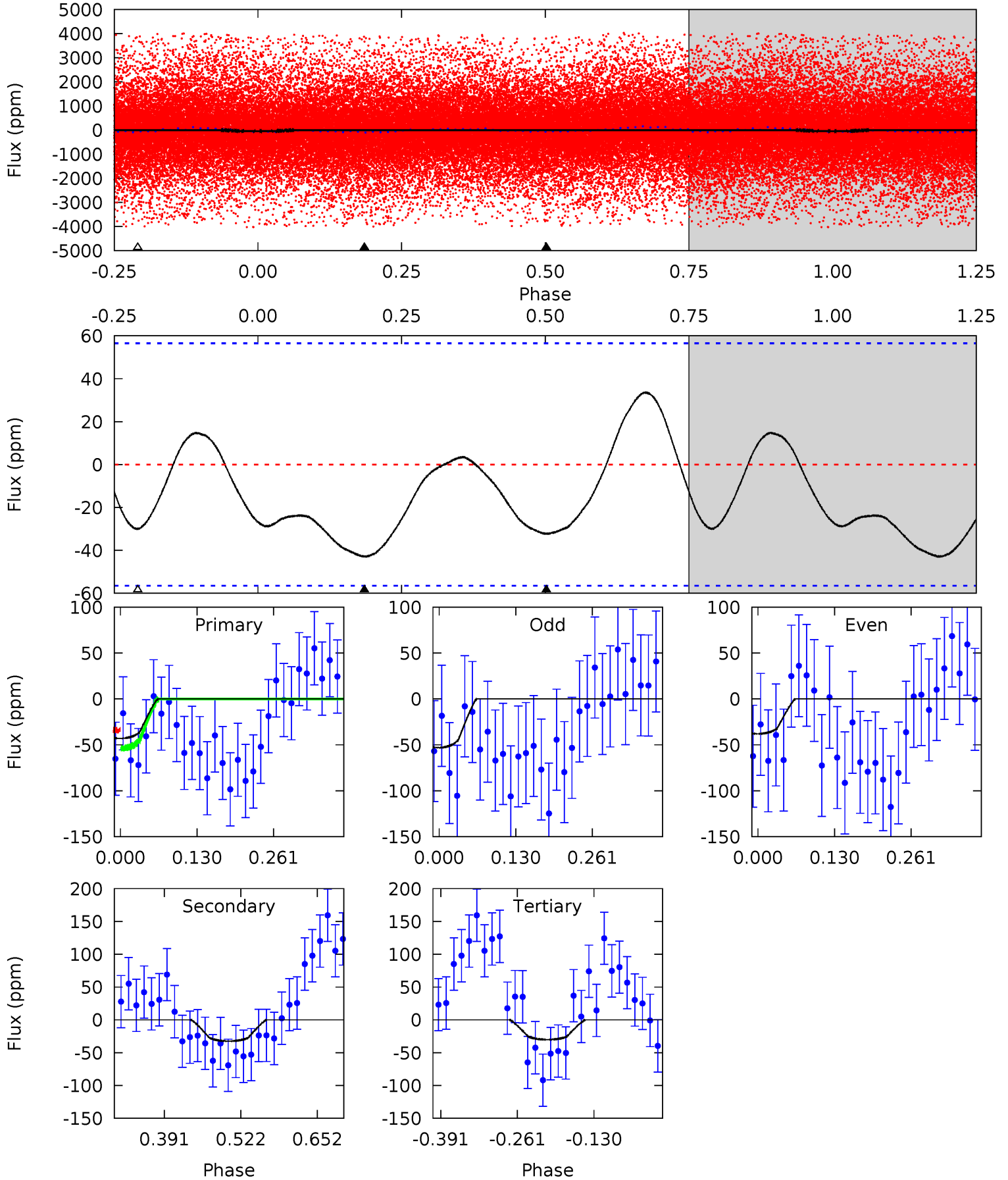




# DV Model-Shift Uniqueness Test

001872192-01, P = 0.671428 Days, E = 131.472757 Days

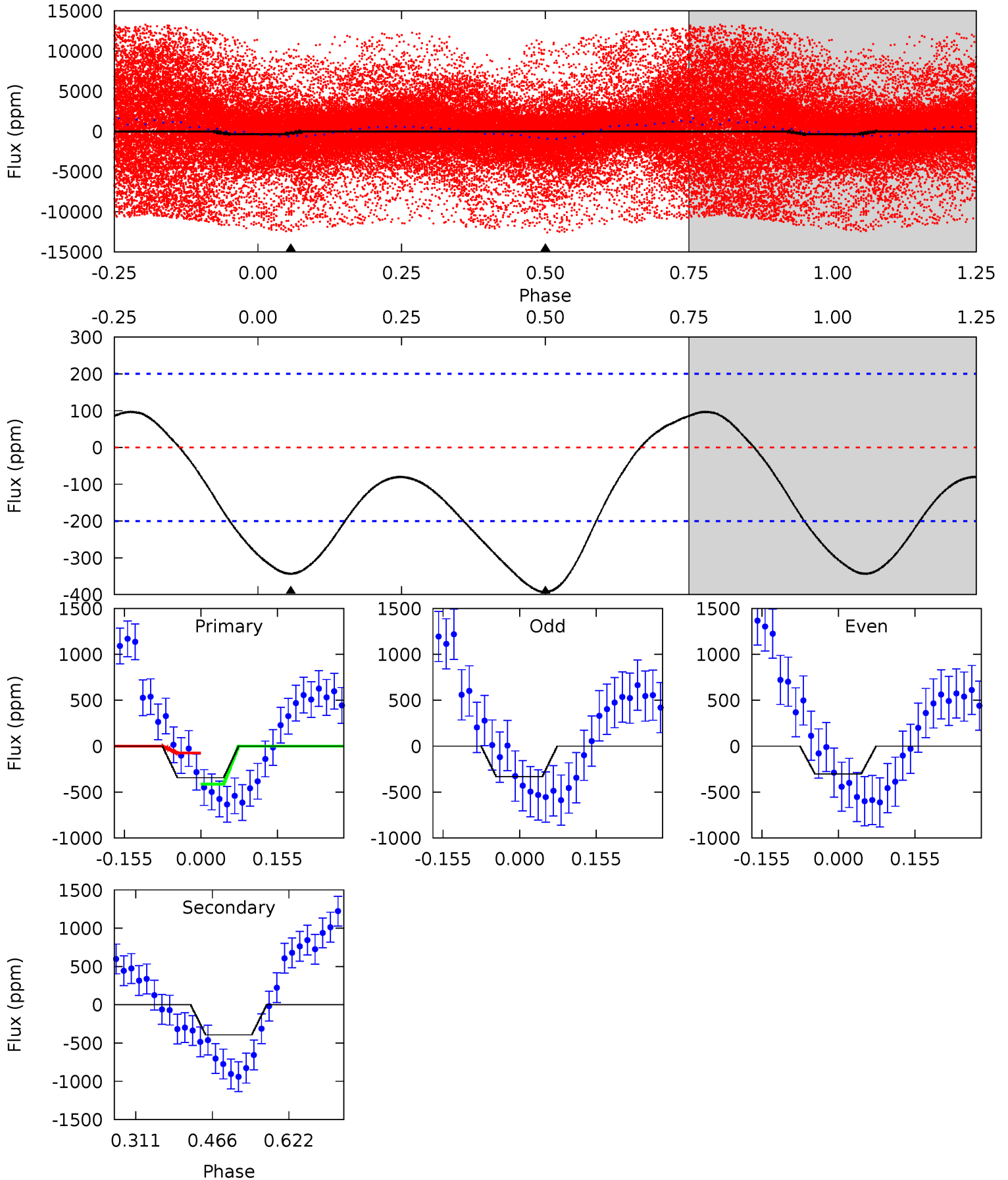
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
3.43	2.58	2.40	0	4.51	1.51	1.56	1.03	3.43	0.19	2.58	0.61	0.54	0.44	0.81



# Alt Model-Shift Uniqueness Test

001872192-01, P = 0.671394 Days, E = 131.476076 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
7.67	8.78	0	0	4.47	1.42	1.86	7.67	7.67	8.78	8.78	0.32	1.56	0.20	3.38





### Stellar Parameters For KIC 001872192

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$5314^{+95}_{-71}$	$3.981^{+0.137}_{-0.138}$	$-0.120^{+0.200}_{-0.150}$	$1.598^{+0.386}_{-0.386}$	$0.891^{+0.126}_{-0.045}$	$0.308^{+0.181}_{-0.123}$
	+2%/-1%	+3%/-3%	+167%/-125%	+24%/-24%	+14%/-5%	+59%/-40%
Source	SPE68	SPE68	SPE68	DSEP		

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

### Secondary Eclipse Parameters for KIC 001872192-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	$A_{obs}$
DV	$-32 \pm 13$	$1.85^{+1.25}_{-1.03}$	$3473^{+196}_{-185}$	$3890^{+1906}_{-1232}$	$1.041^{+5.037}_{-0.684}$
Alt.	$-393 \pm 45$	$3.09^{+1.28}_{-1.31}$	$3458^{+192}_{-169}$	$5523^{+1824}_{-786}$	$4.814^{+9.099}_{-2.397}$

$T_{max}$  = 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

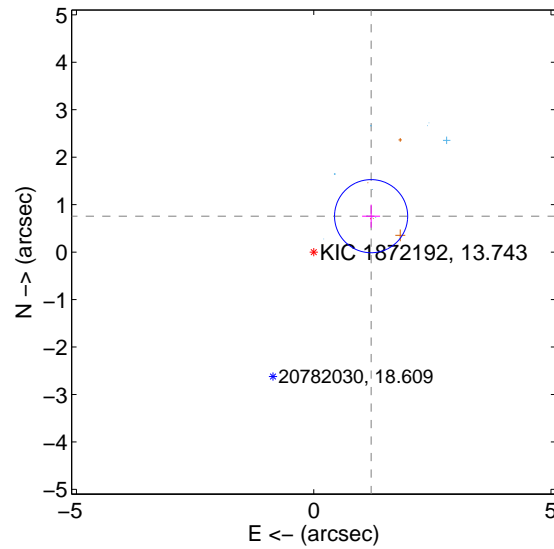
Supplemental centroid analysis for 001872192-01. Kepler magnitude: 13.74. Transit SNR 5.46

There are 10 quarters with good PRF difference image offsets

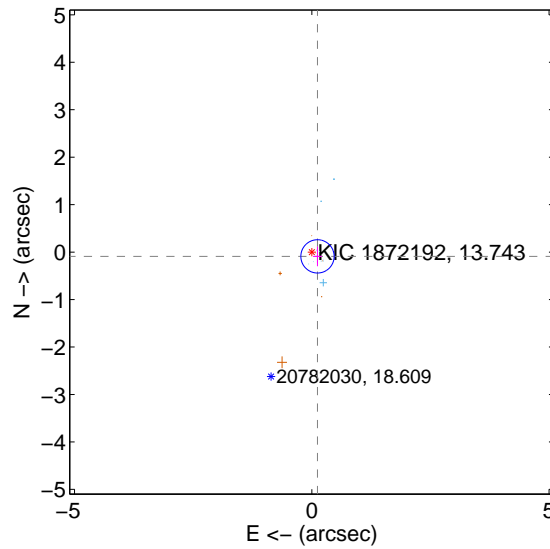
The OOT PRF centroid is offset from the target star catalog position by about 3.94 arcsec so the offset from difference PRF-fit to OOT-fit may be invalid.

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$1.427 \pm 0.257$	5.56	$-1.209 \pm 0.190$	$0.757 \pm 0.242$
PRF-fit source offset from KIC position	$0.150 \pm 0.117$	1.28	$-0.120 \pm 0.094$	$-0.090 \pm 0.207$
photometric centroid source offset	$1.81 \pm 0.81$	2.23	$0.33 \pm 1.32$	$-1.78 \pm 0.79$

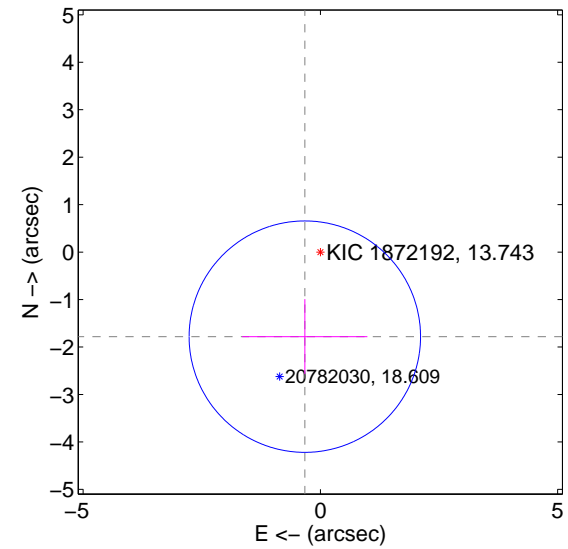
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

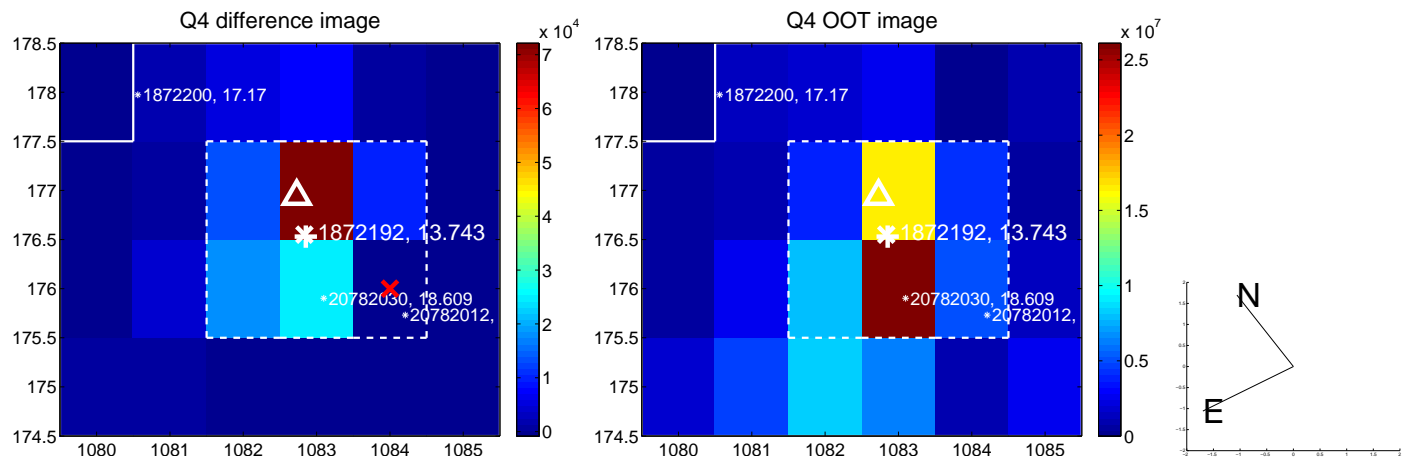
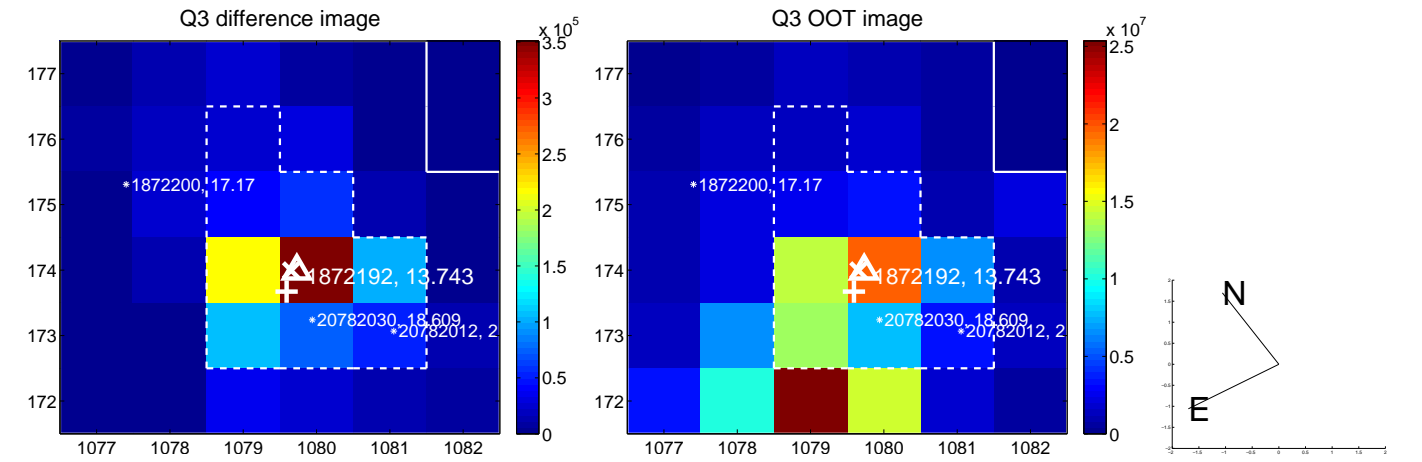
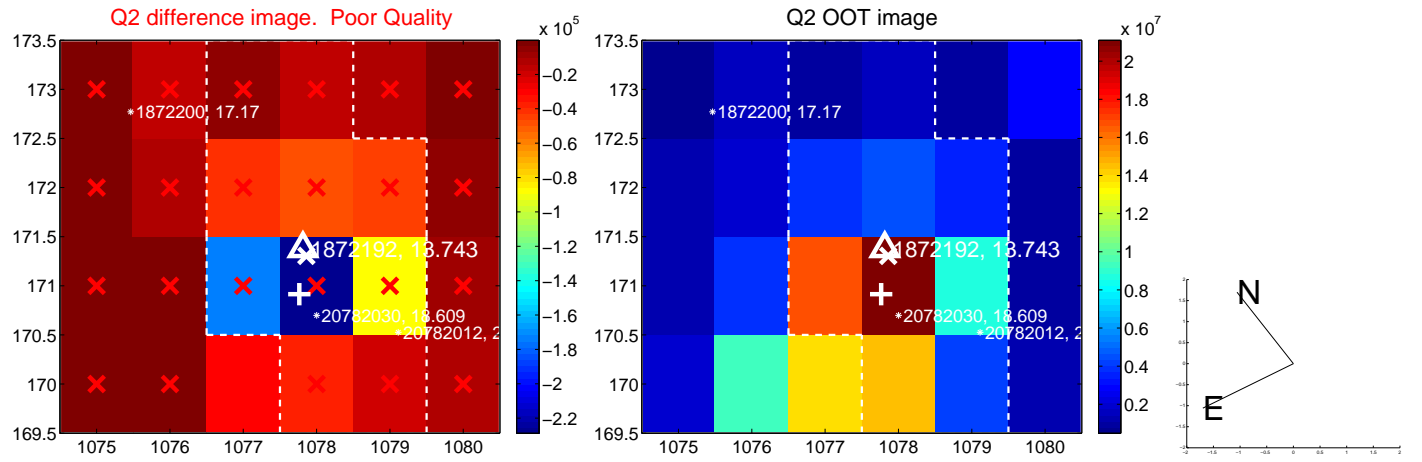
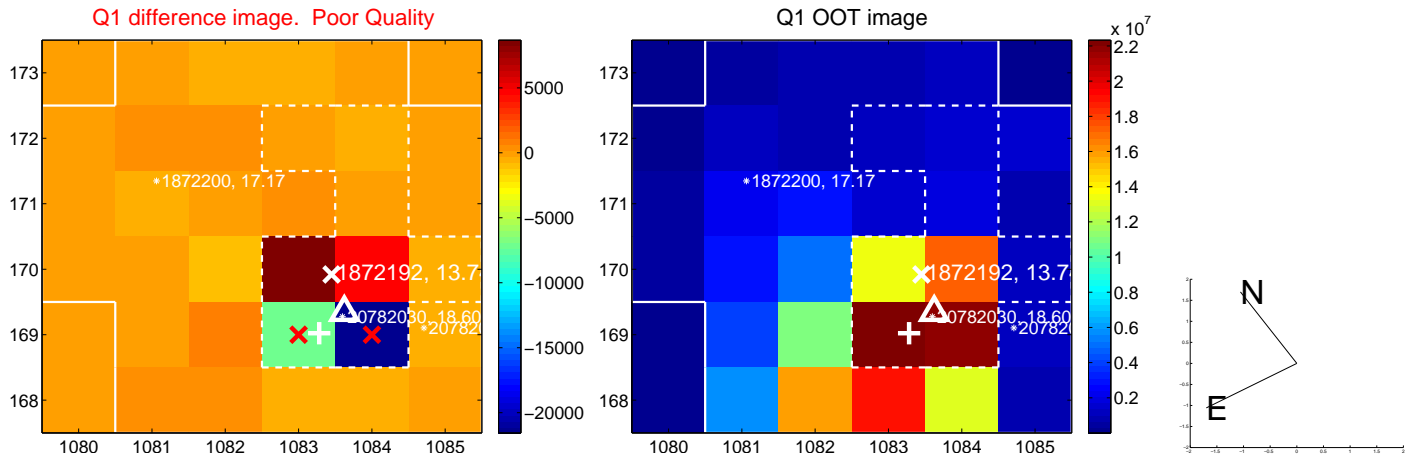


offset from photometric centroids

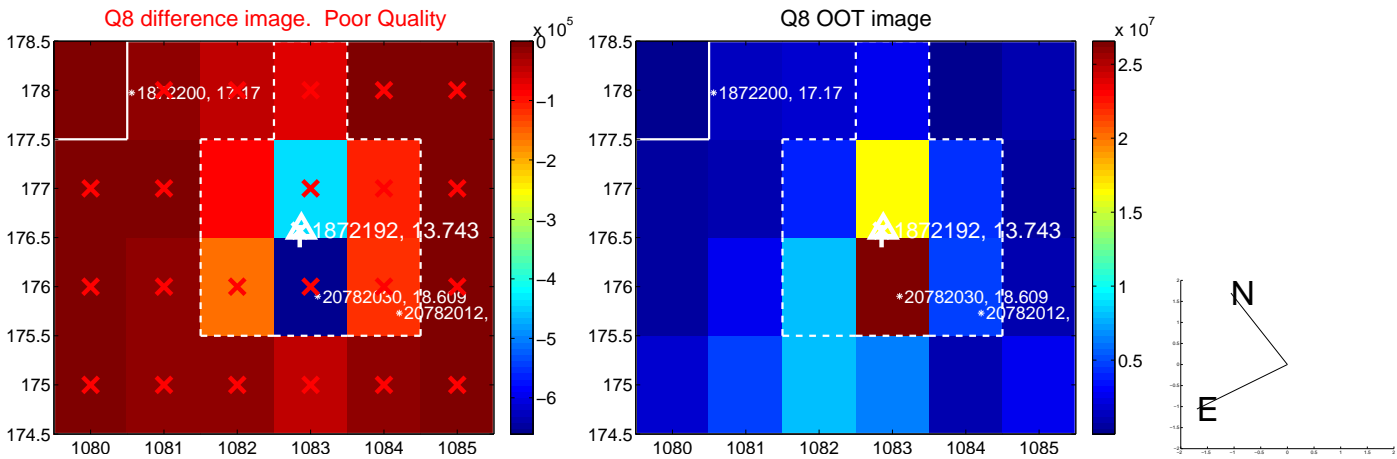
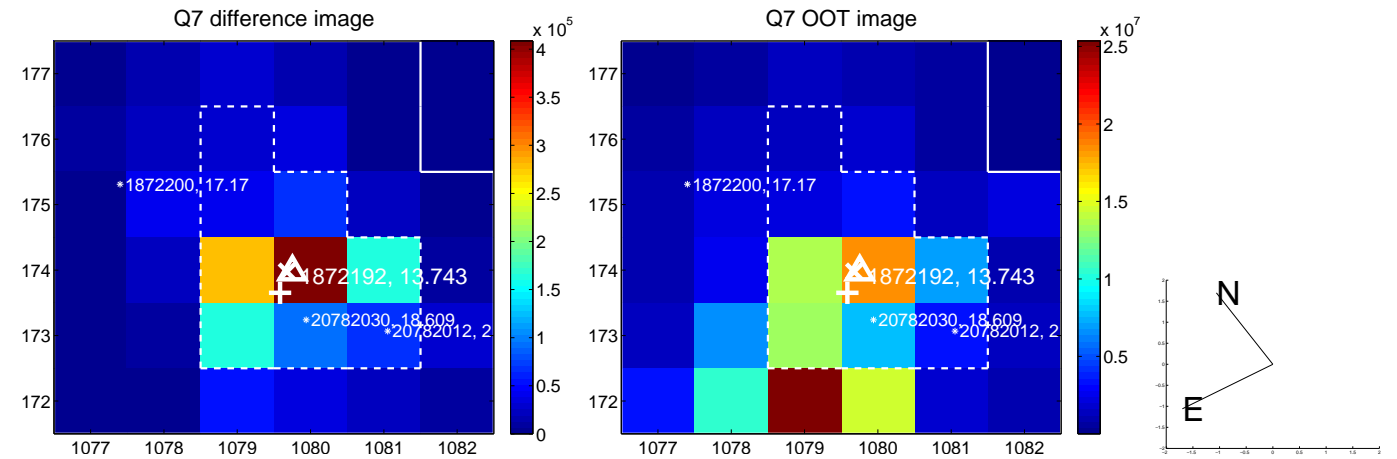
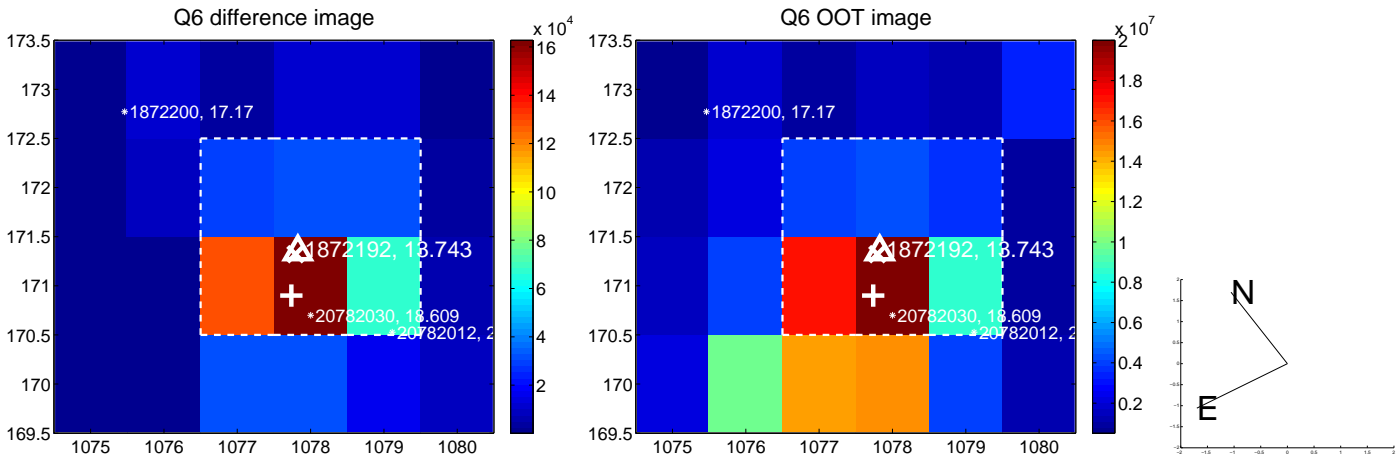
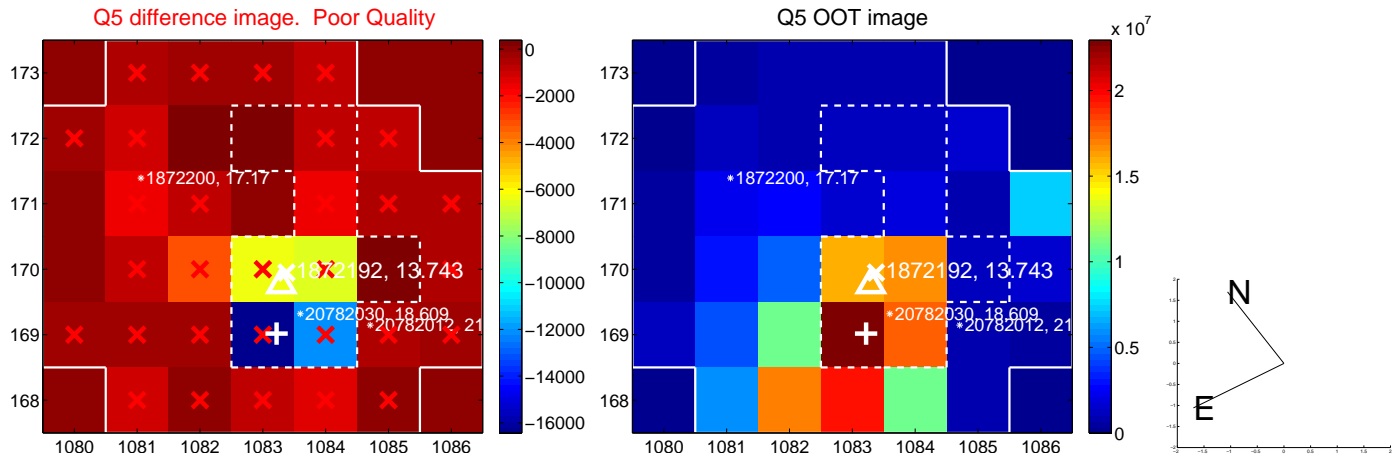


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: three-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

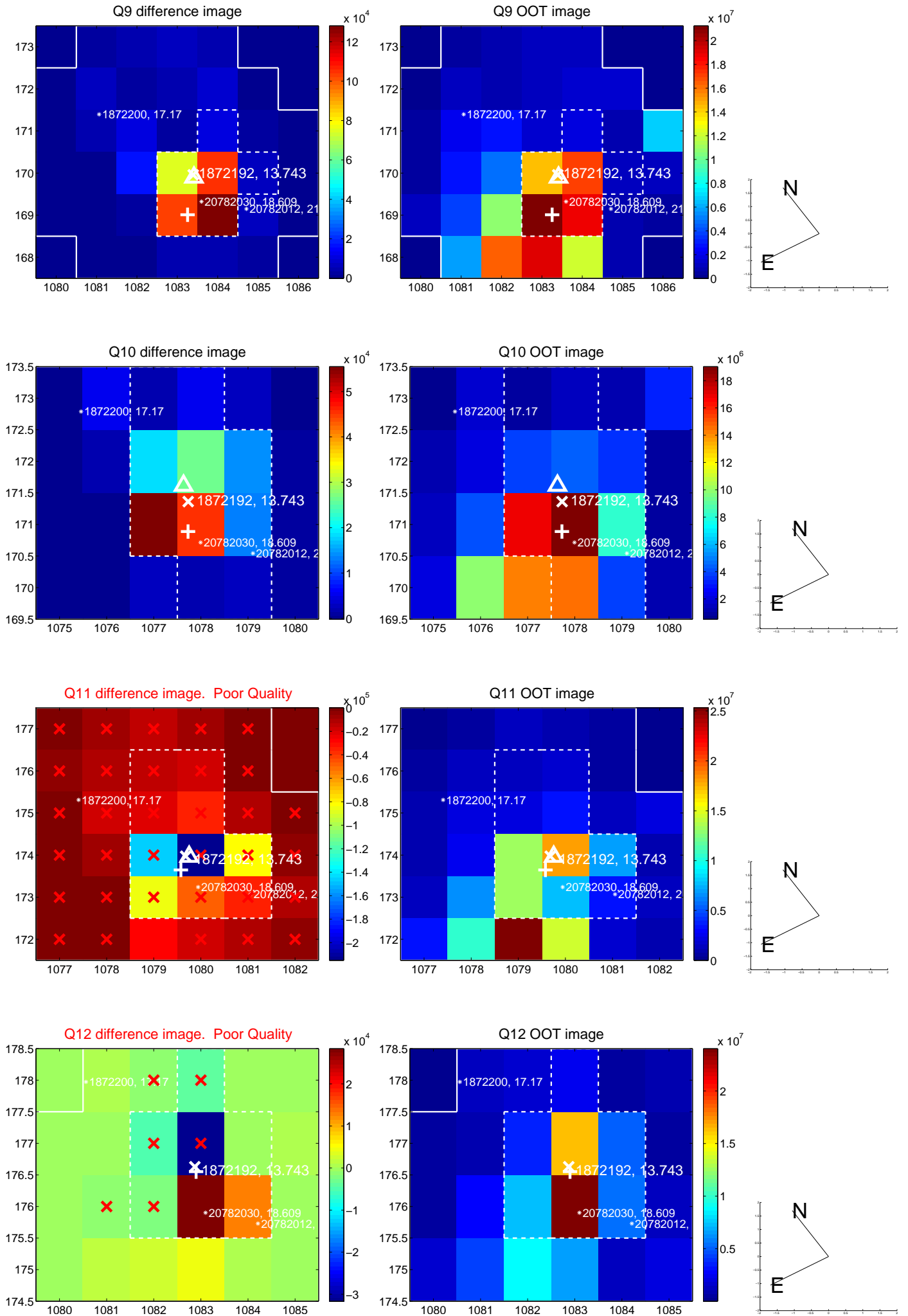


white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

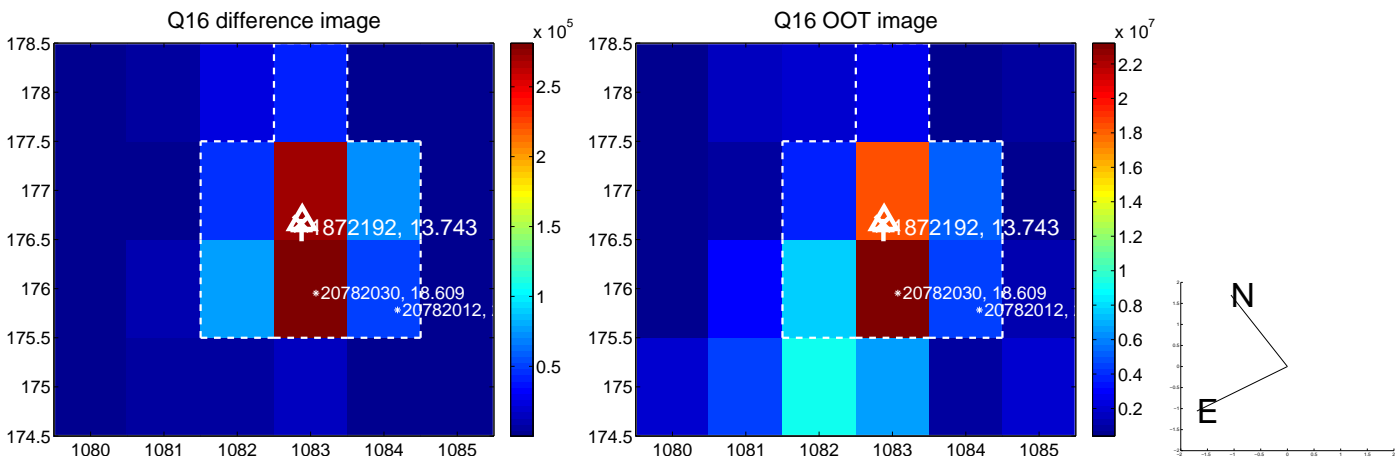
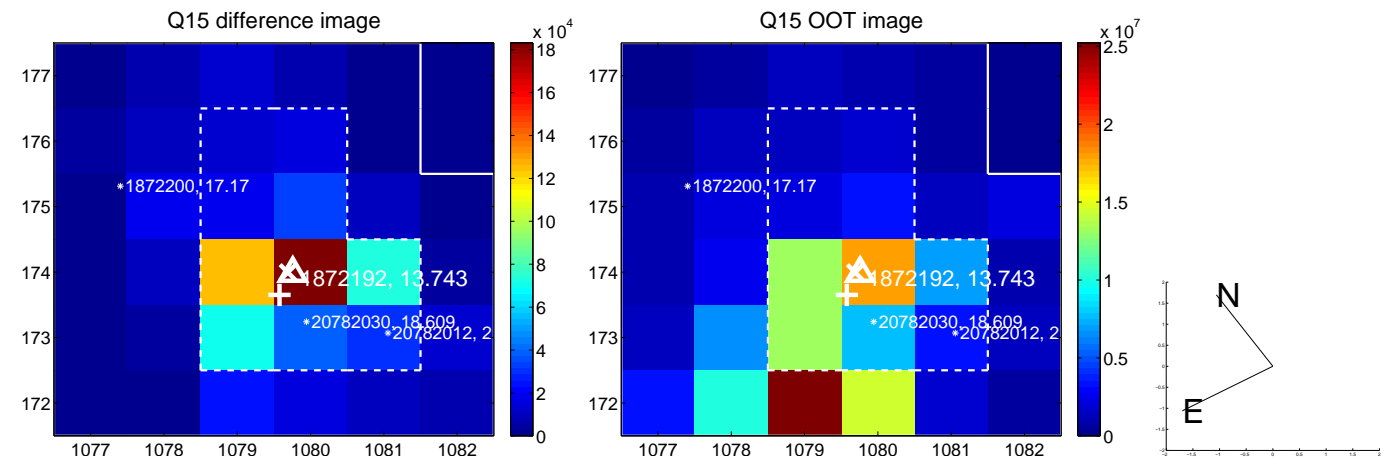
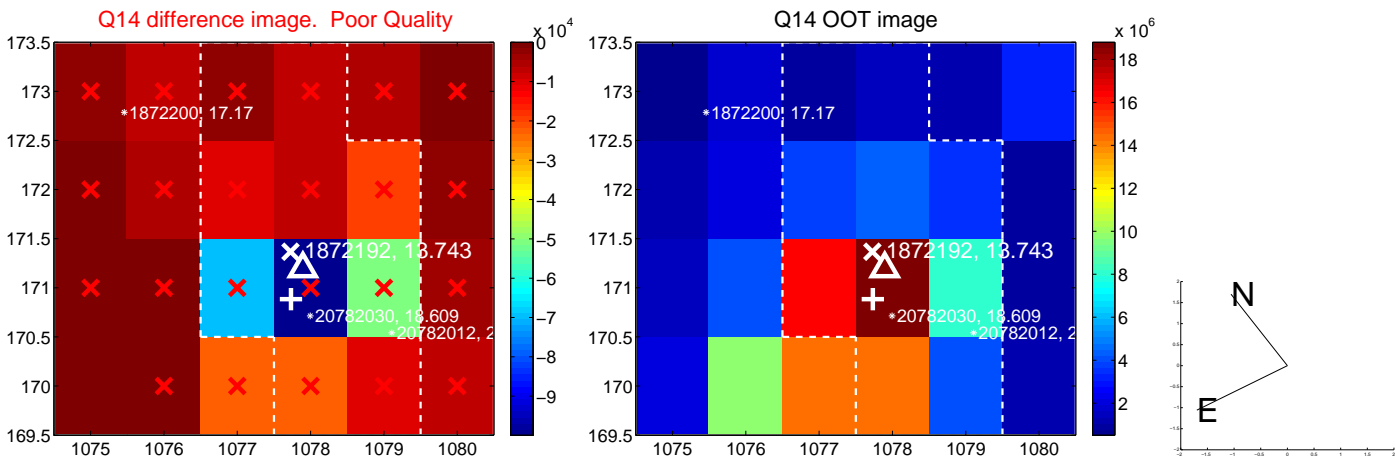
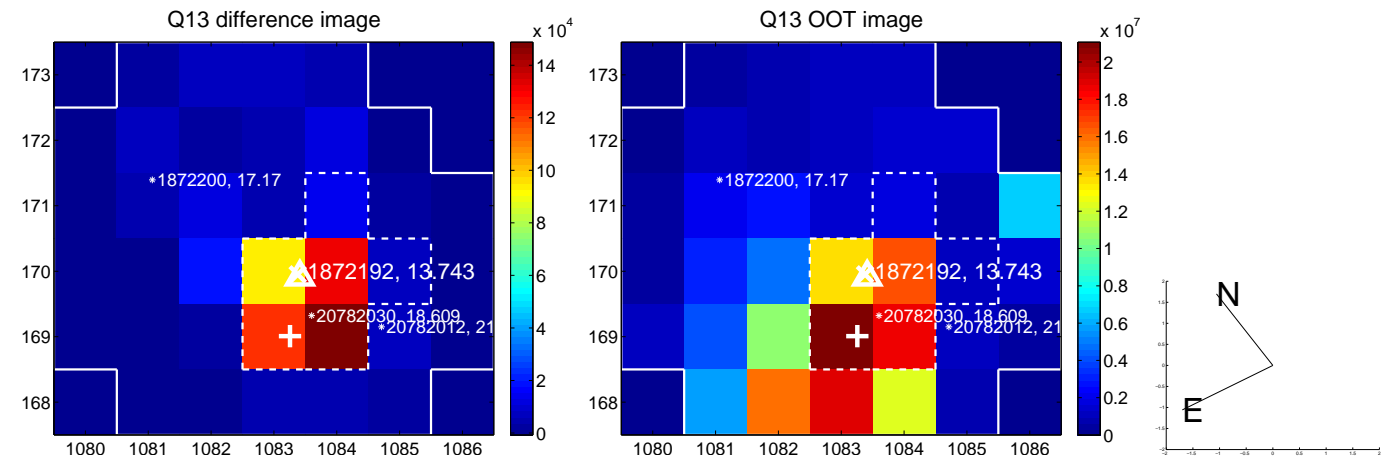




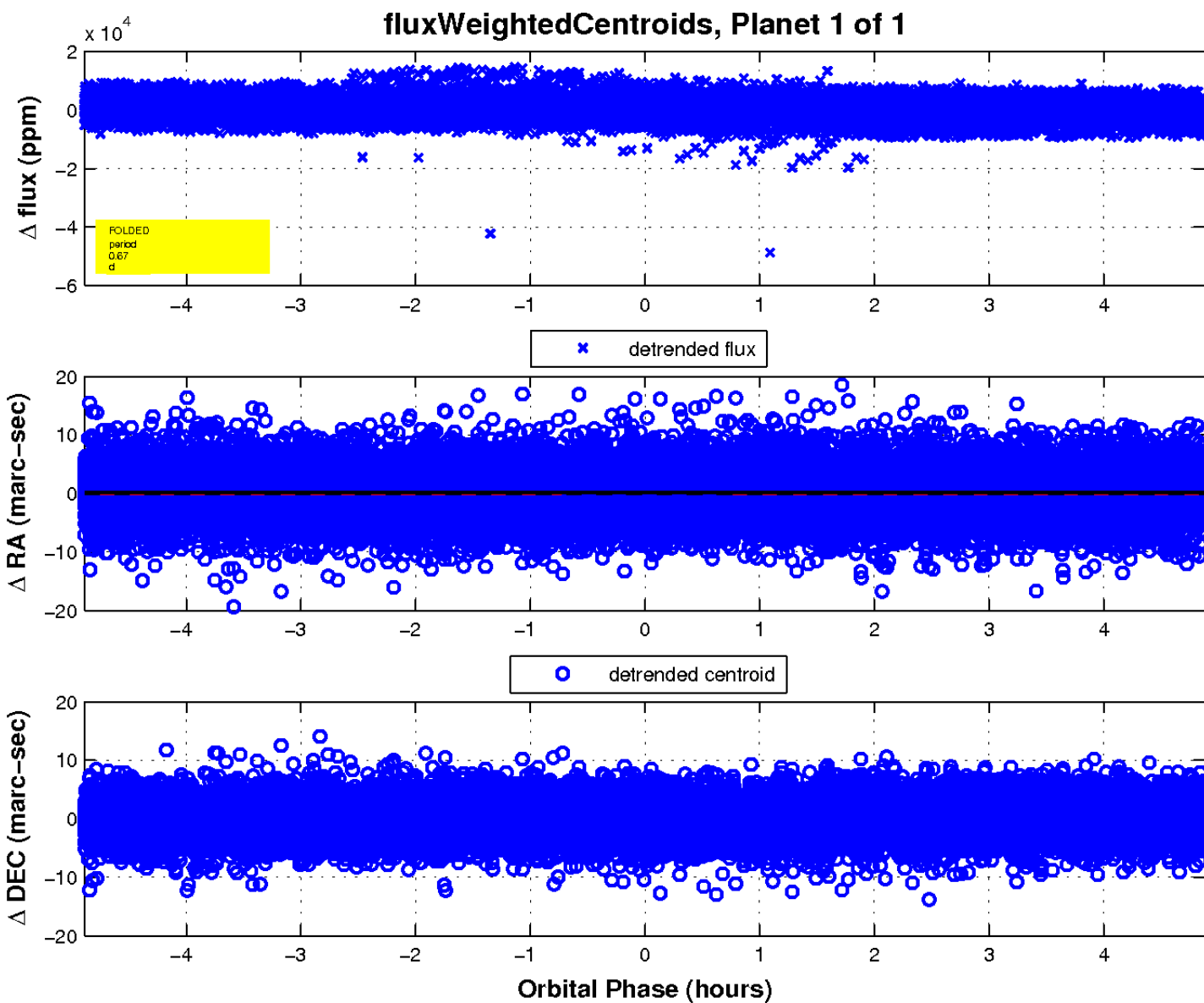
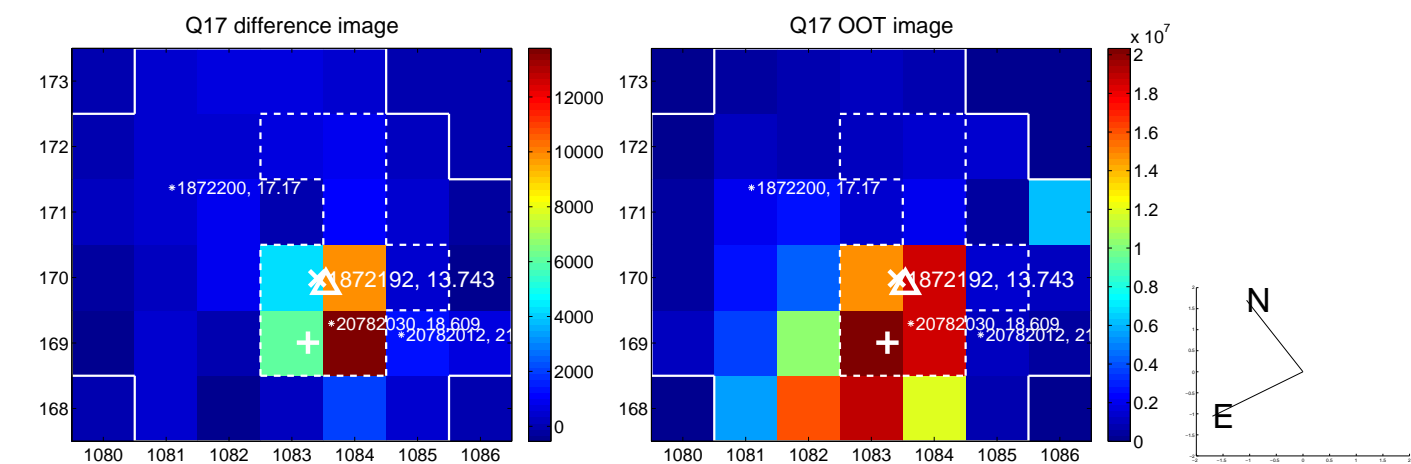
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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UKIRT Image

