

# KIC 007708984

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
007708984-01	OBS	No	1.138325	132.567969	19.0	3.520	9.5	6.7	4.84	6742	2.36	60417.63

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
007708984-01	OBS	FP	0.00	1	0	0	0	SWEET_NTL—LPP_DV—LPP_ALT—MOD_NONUNIQ_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.

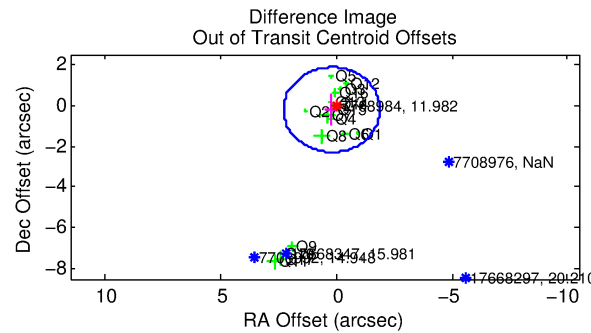
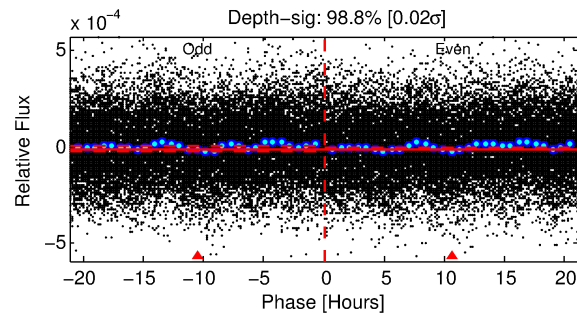
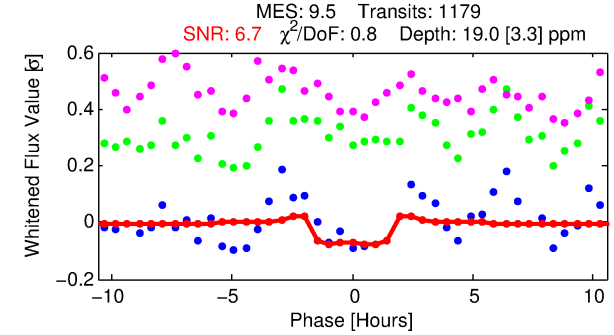
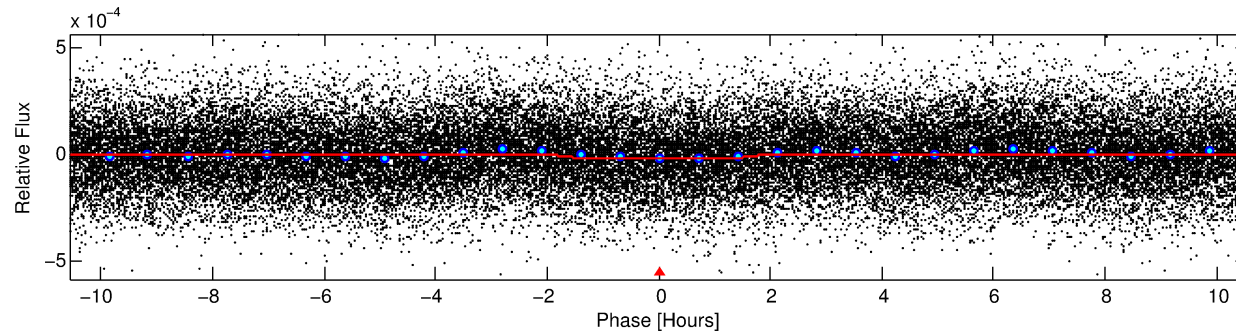
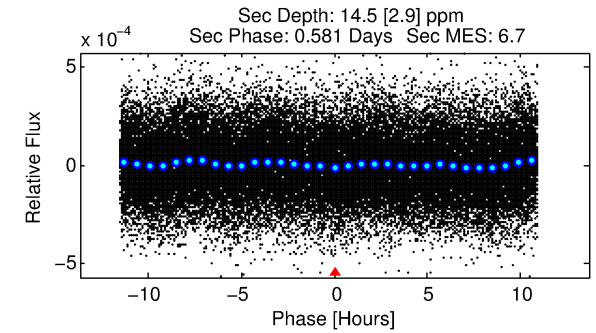
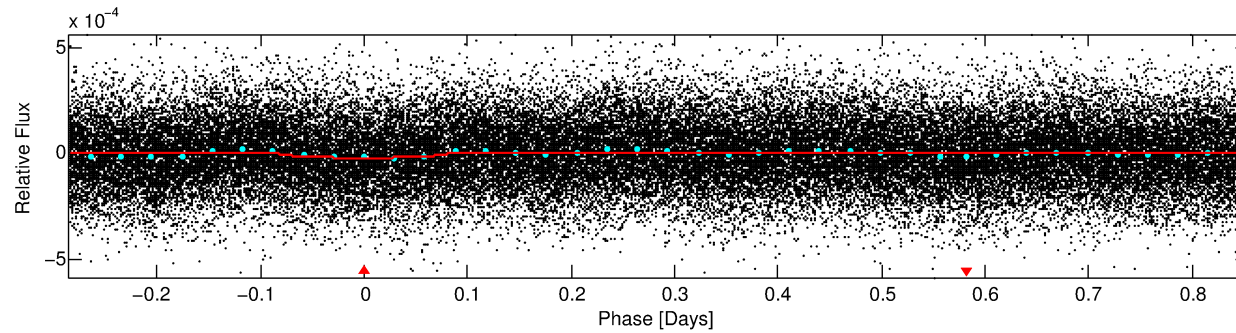
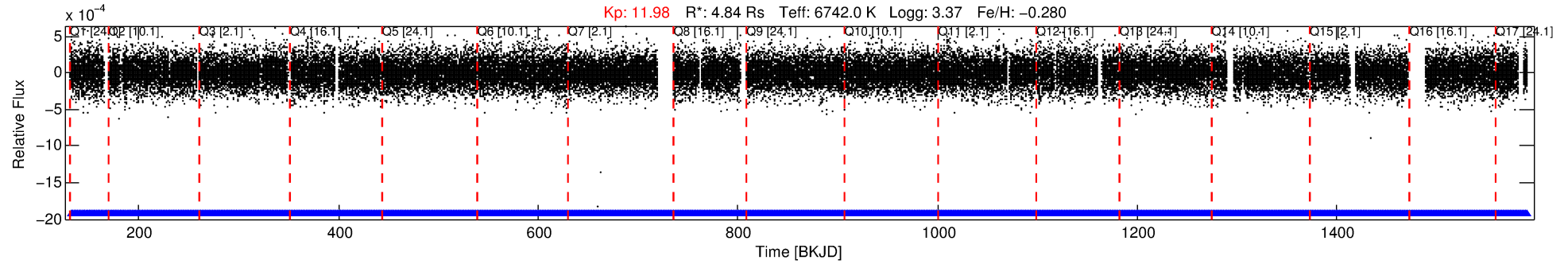
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

Ephemeris Match Information For 007708984-01

No Significant Match Found

# DV One-Page Summary

KIC: 7708984 Candidate: 1 of 1 Period: 1.138 d



## DV Fit Results:

Period = 1.13833 [0.00002] d  
Epoch = 132.5680 [0.0037] BKJD  
Rp/R\* = 0.0045 [0.0012]  
a/R\* = 1.66 [1.63]  
b = 0.83 [0.58]  
Seff = 60417.63 [39961.04]  
Teq = 3998 [661] K  
Rp = 2.36 [1.14] Re  
a = 0.0268 [0.0107] AU  
Ag = 1.03 [0.90] [0.03σ]  
Teffp = 6223 [923] K [1.96σ]

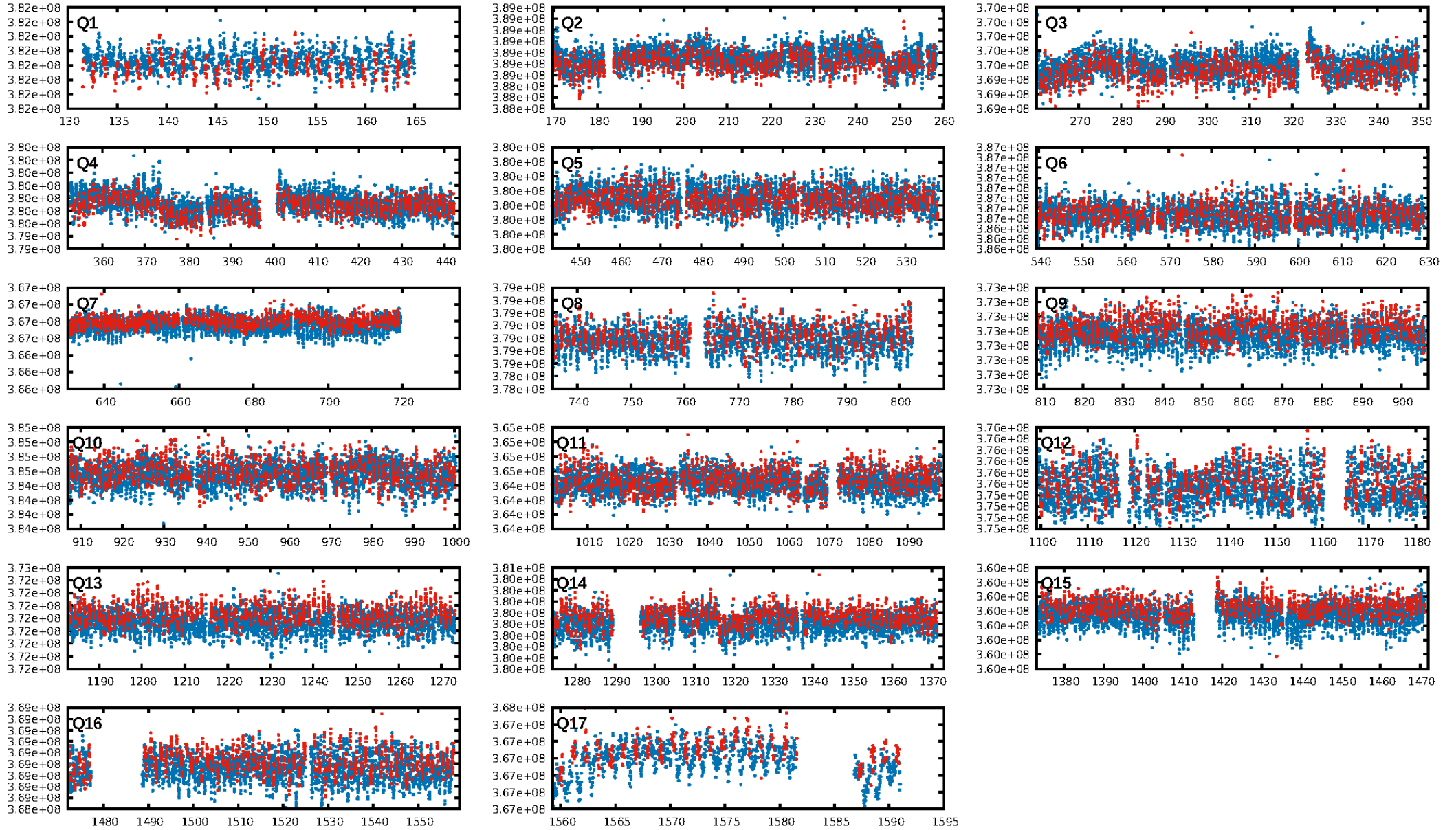
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: N/A  
ModelChiSquareGof-sig: N/A  
Bootstrap-pfa: 2.41e-16  
RollingBand-fgt: 1.00 [1125/1125]  
GhostDiagnostic-chr: 0.3601  
Centroid-sig: 0.0%  
Centroid-so: 2.093 arcsec [1.92σ]  
OotOffset-rm: 0.289 arcsec [0.42σ]  
KicOffset-rm: 0.265 arcsec [0.36σ]  
OotOffset-st: 4/4/4/5 [17]  
KicOffset-st: 4/4/4/5 [17]  
DiffImageQuality-fgm: 0.41 [7/17]  
DiffImageOverlap-fno: 1.00 [17/17]

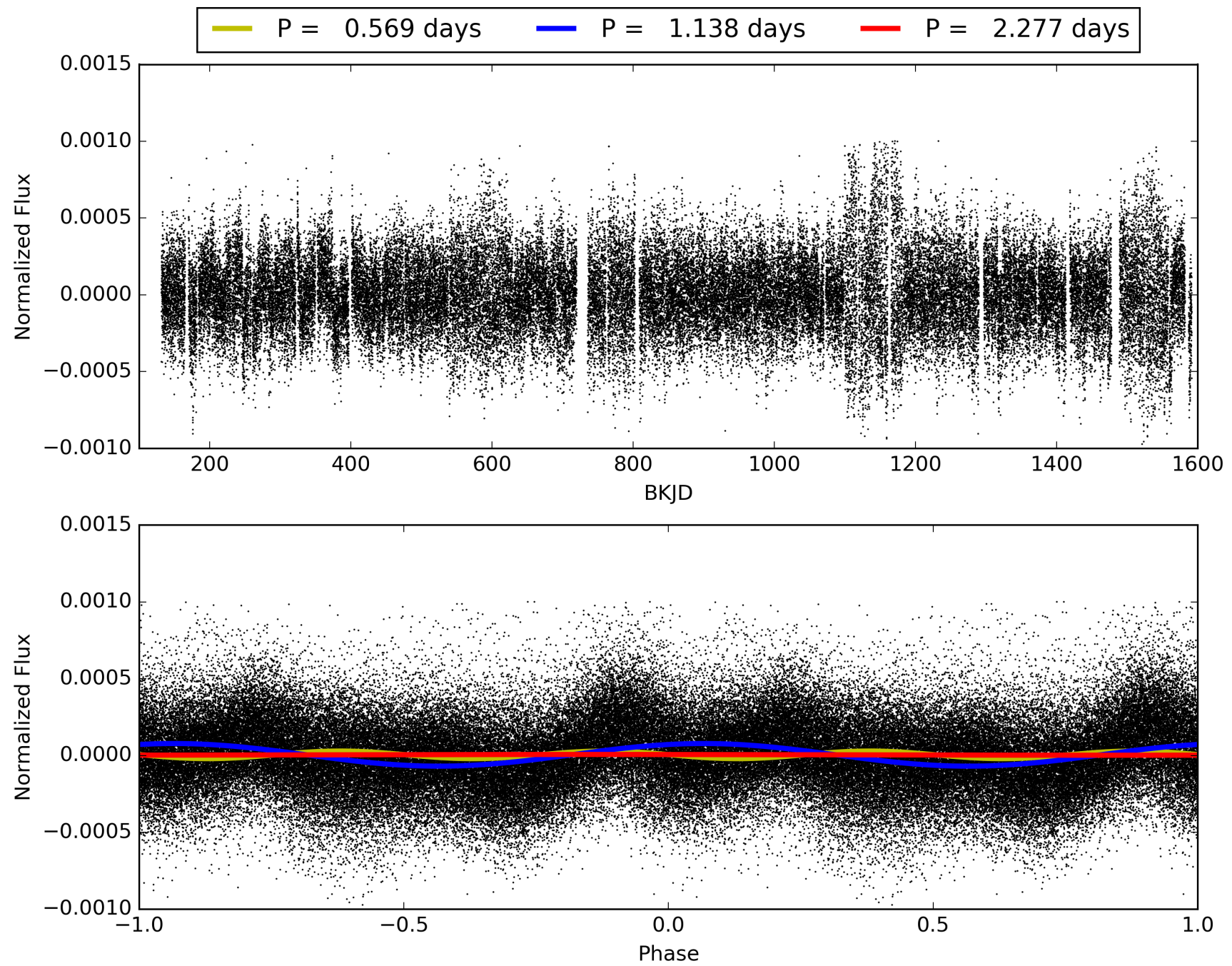
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 18:21:29 Z

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

# TCE 007708984-01, PDC Light Curves

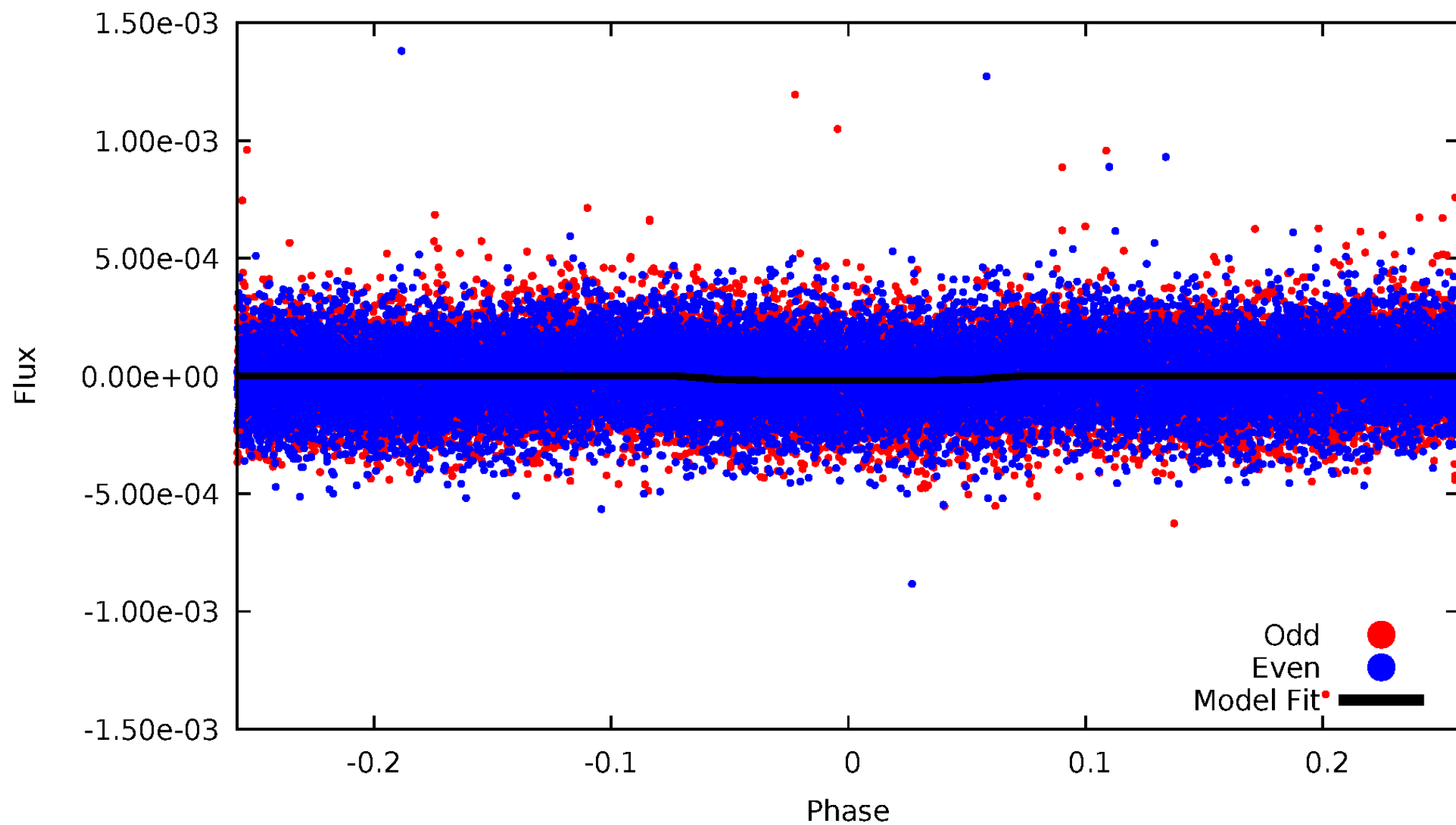


TCE 007708984-01



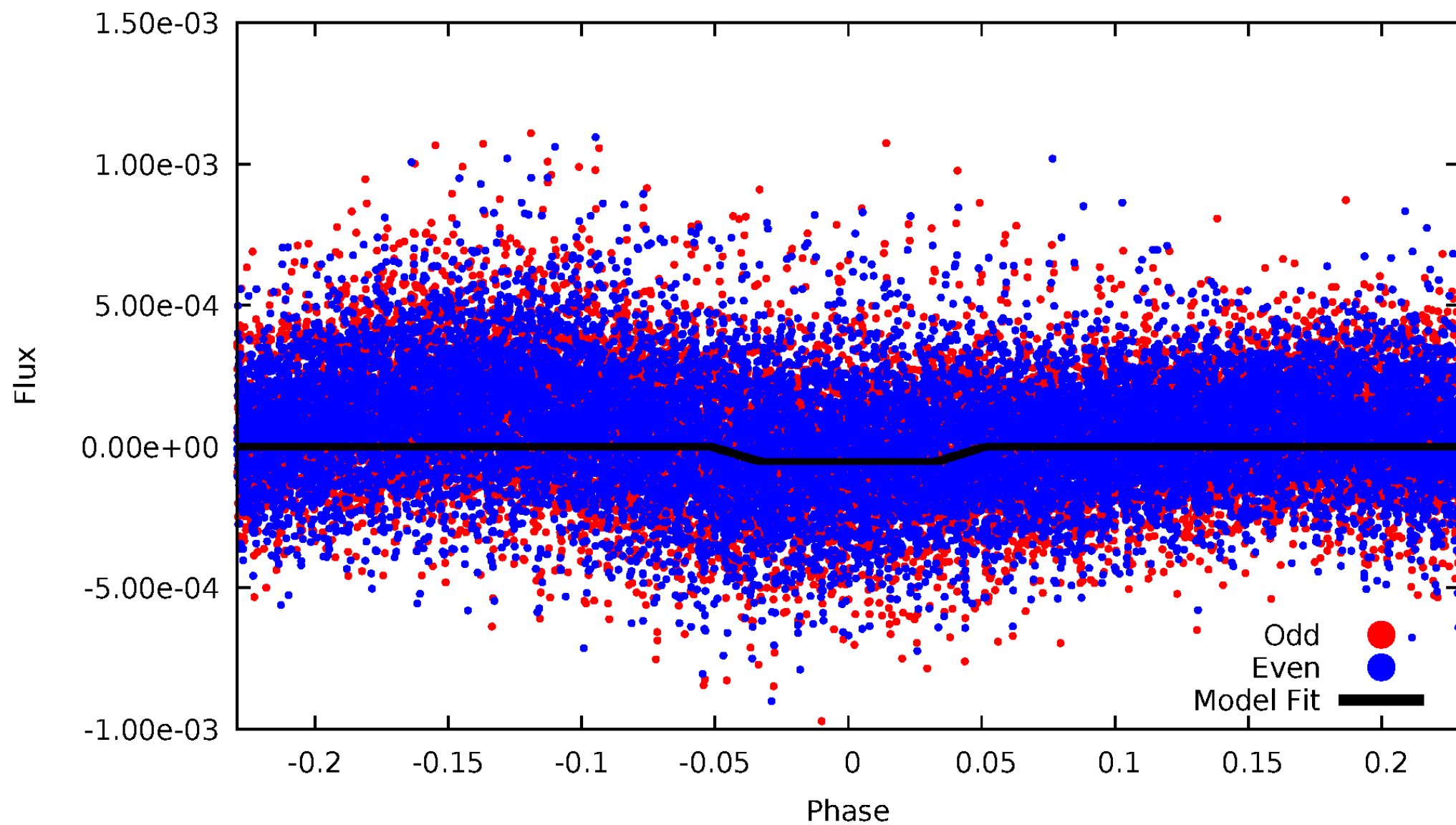
# DV Odd/Even

TCE 007708984-01



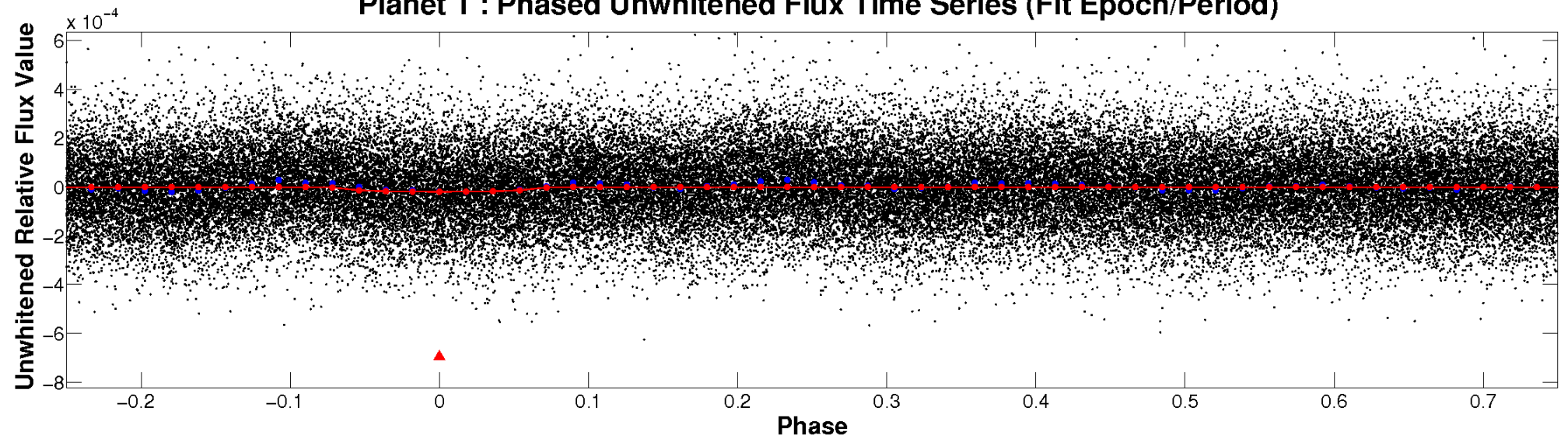
# ALT Odd/Even

TCE 007708984-01

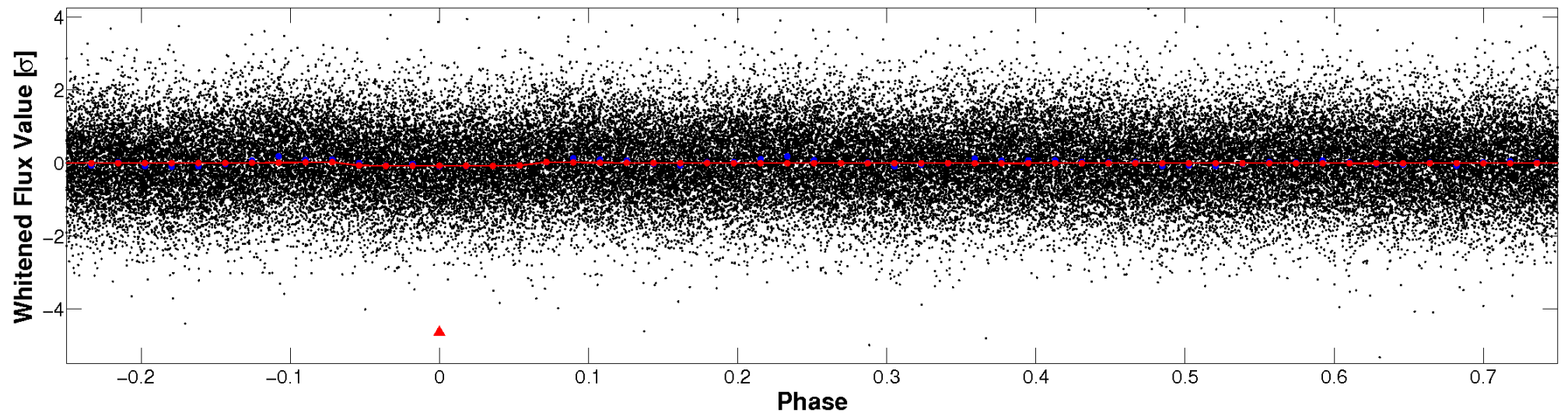


# Non-Whitened Vs. Whitened Light Curve

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

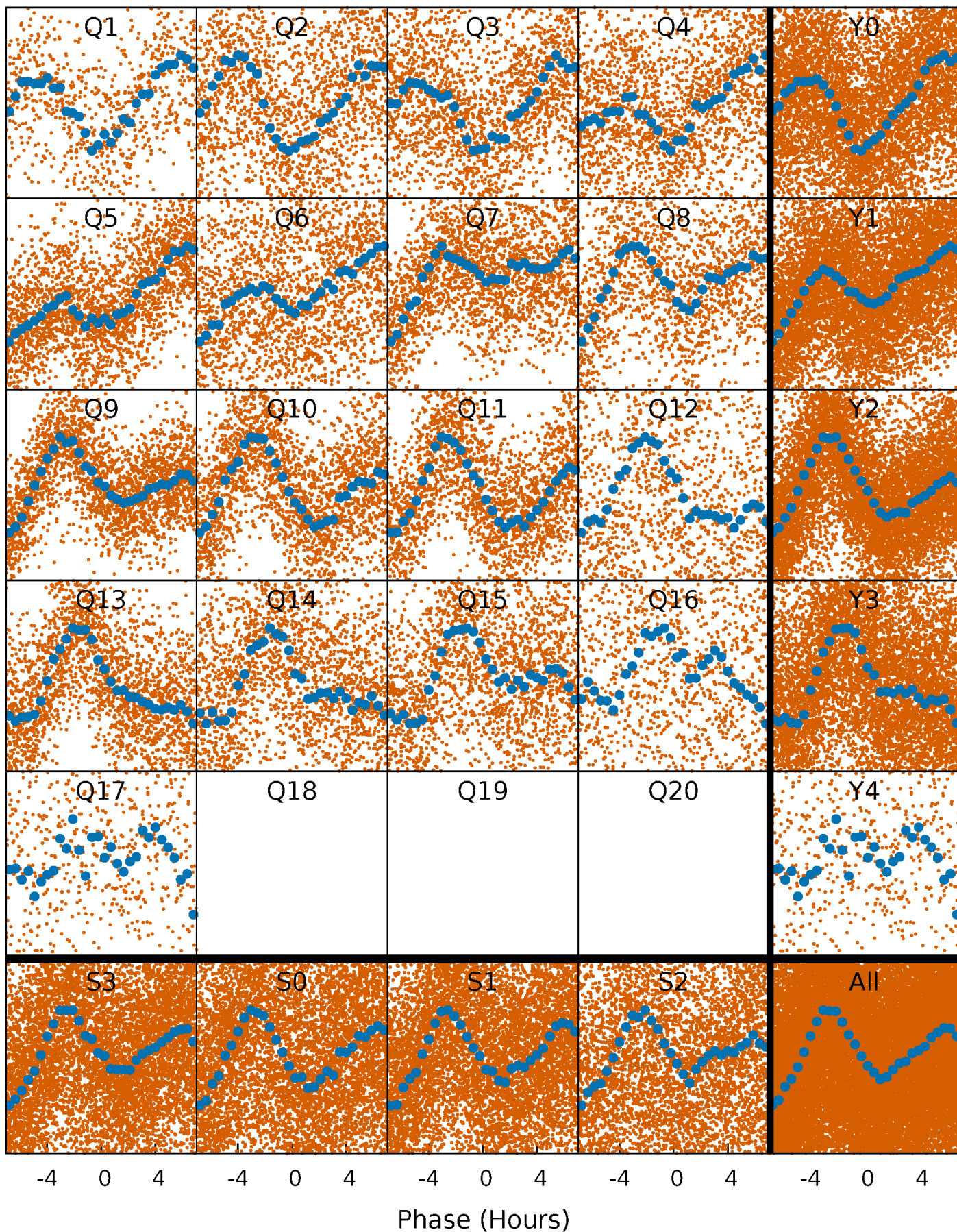


**Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)**



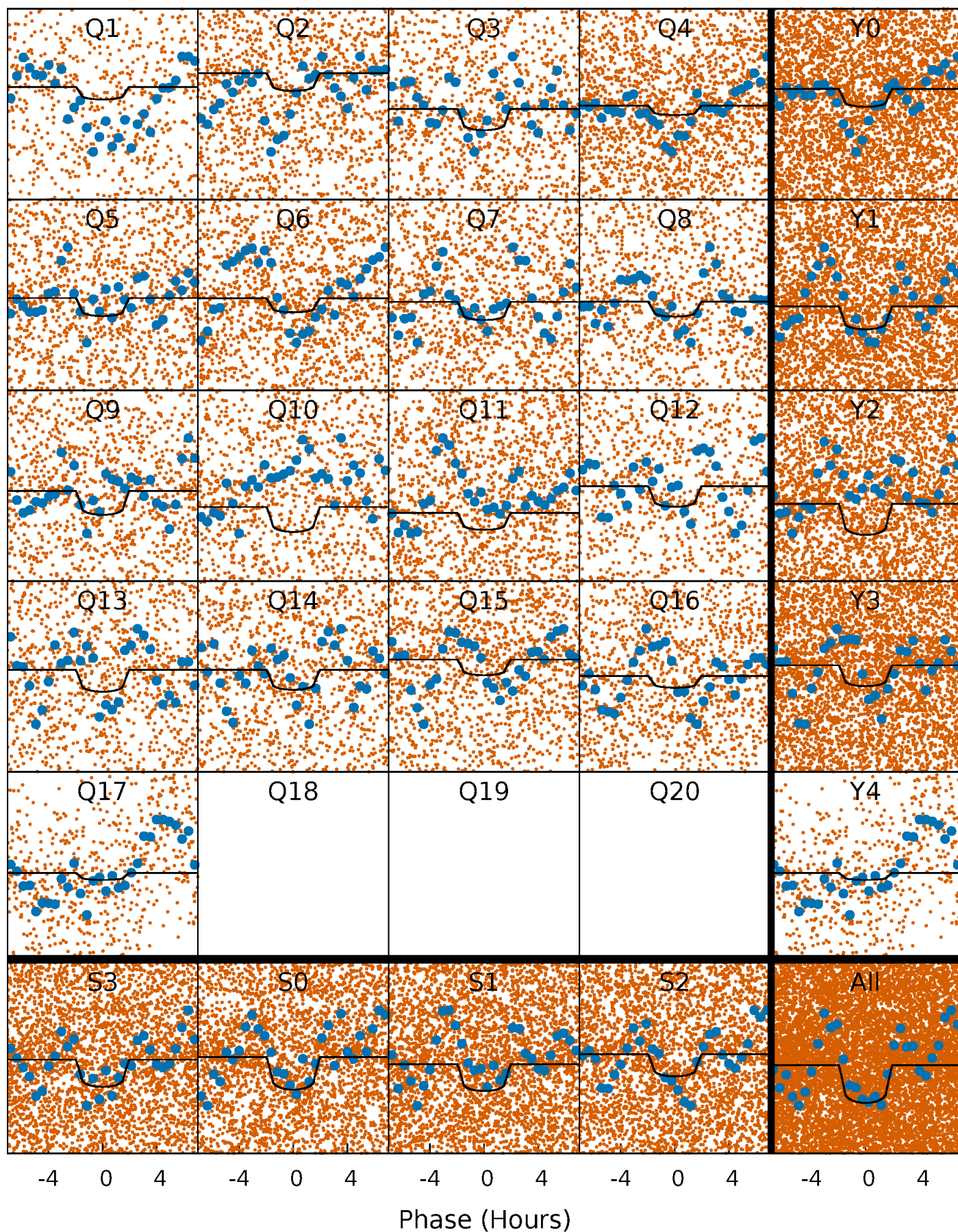
# PDC Quarter-Phased Transit Curves

TCE 007708984-01 P= 1.138325 Days  $T_0=132.567969$  (BKJD)



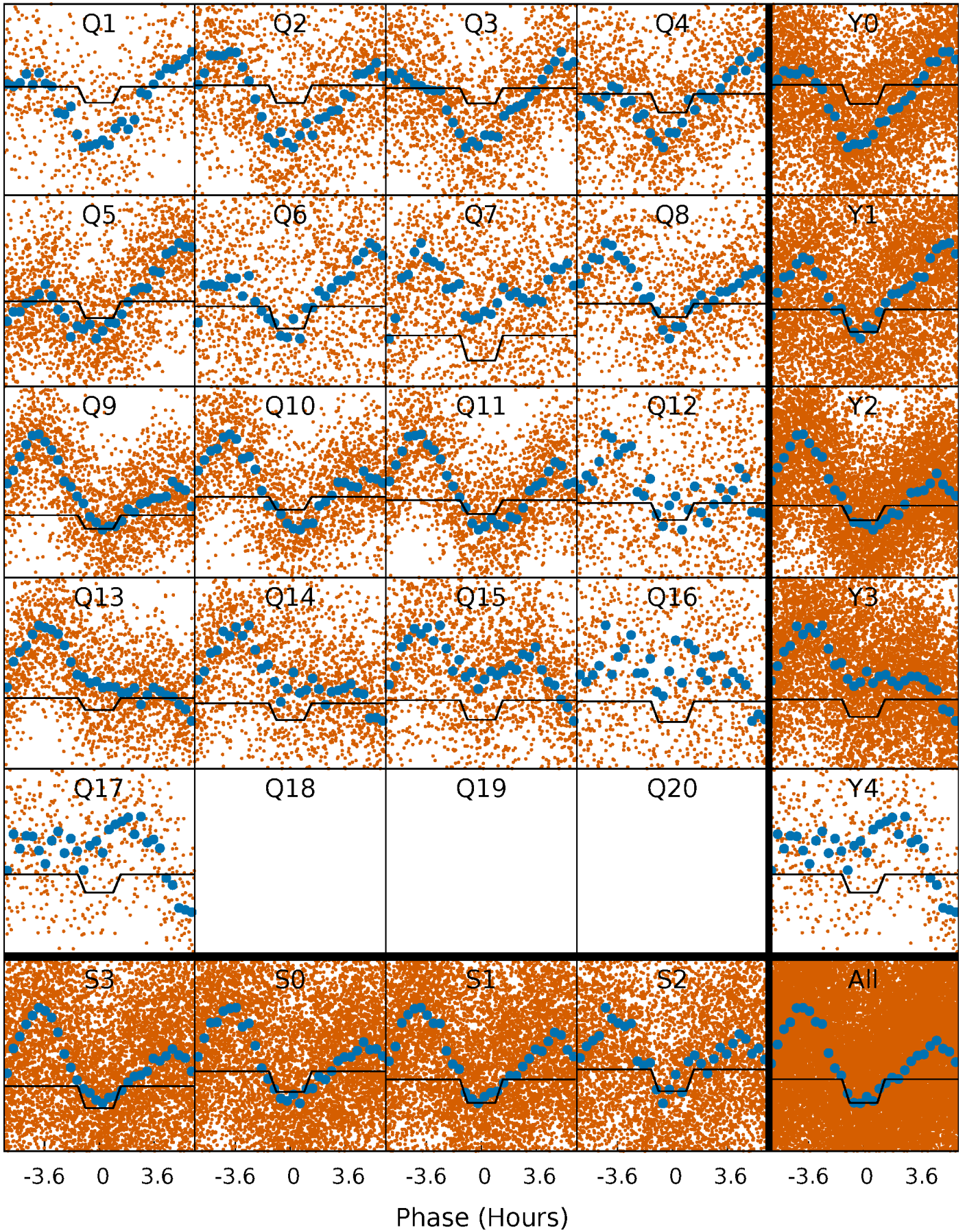
# DV Quarter-Phased Transit Curves

TCE 007708984-01 P= 1.138325 Days  $T_0=132.567969$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

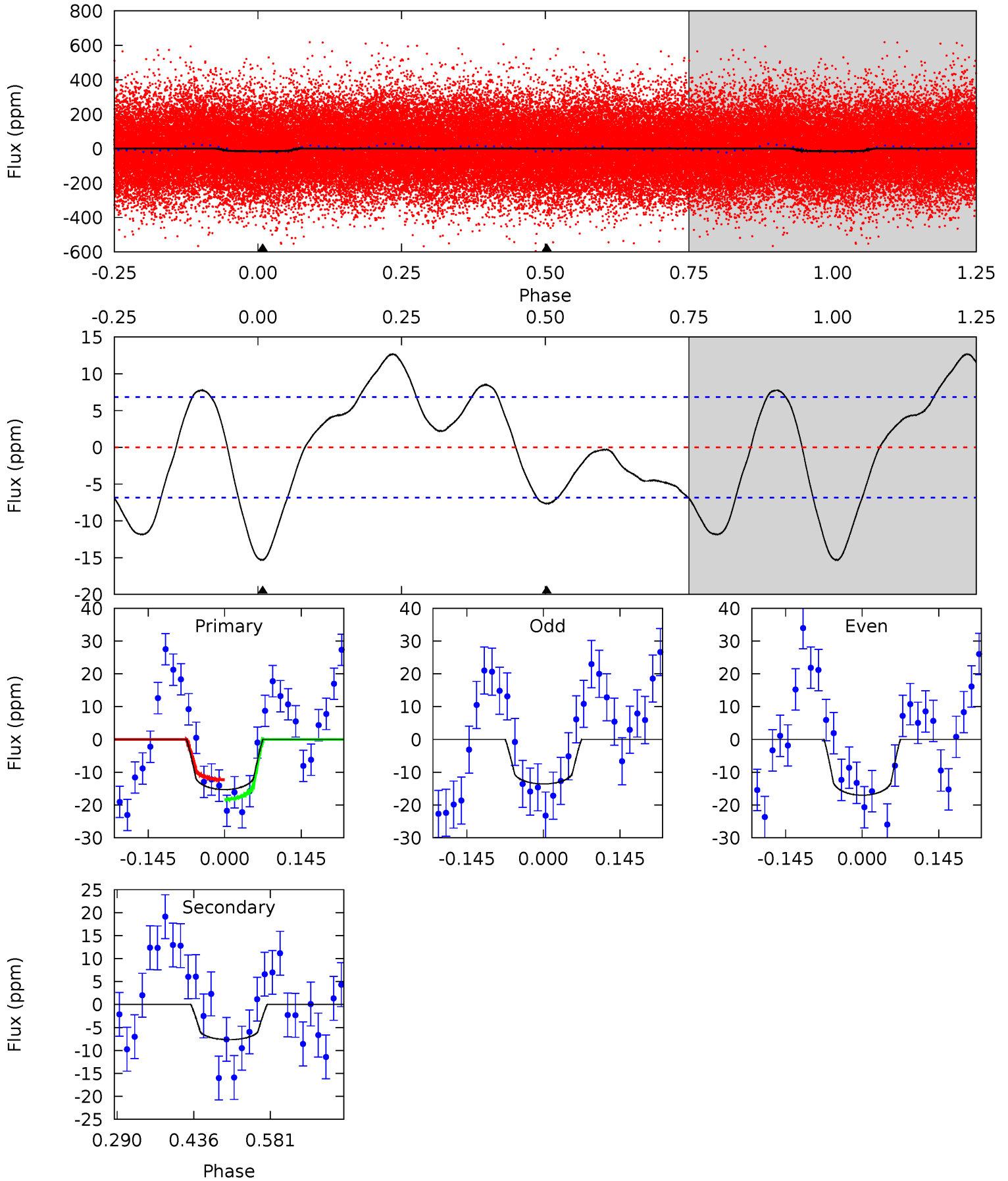
TCE 007708984-01 P= 1.138402 Days  $T_0=132.572238$  (BKJD)



# DV Model-Shift Uniqueness Test

007708984-01, P = 1.138325 Days, E = 131.429644 Days

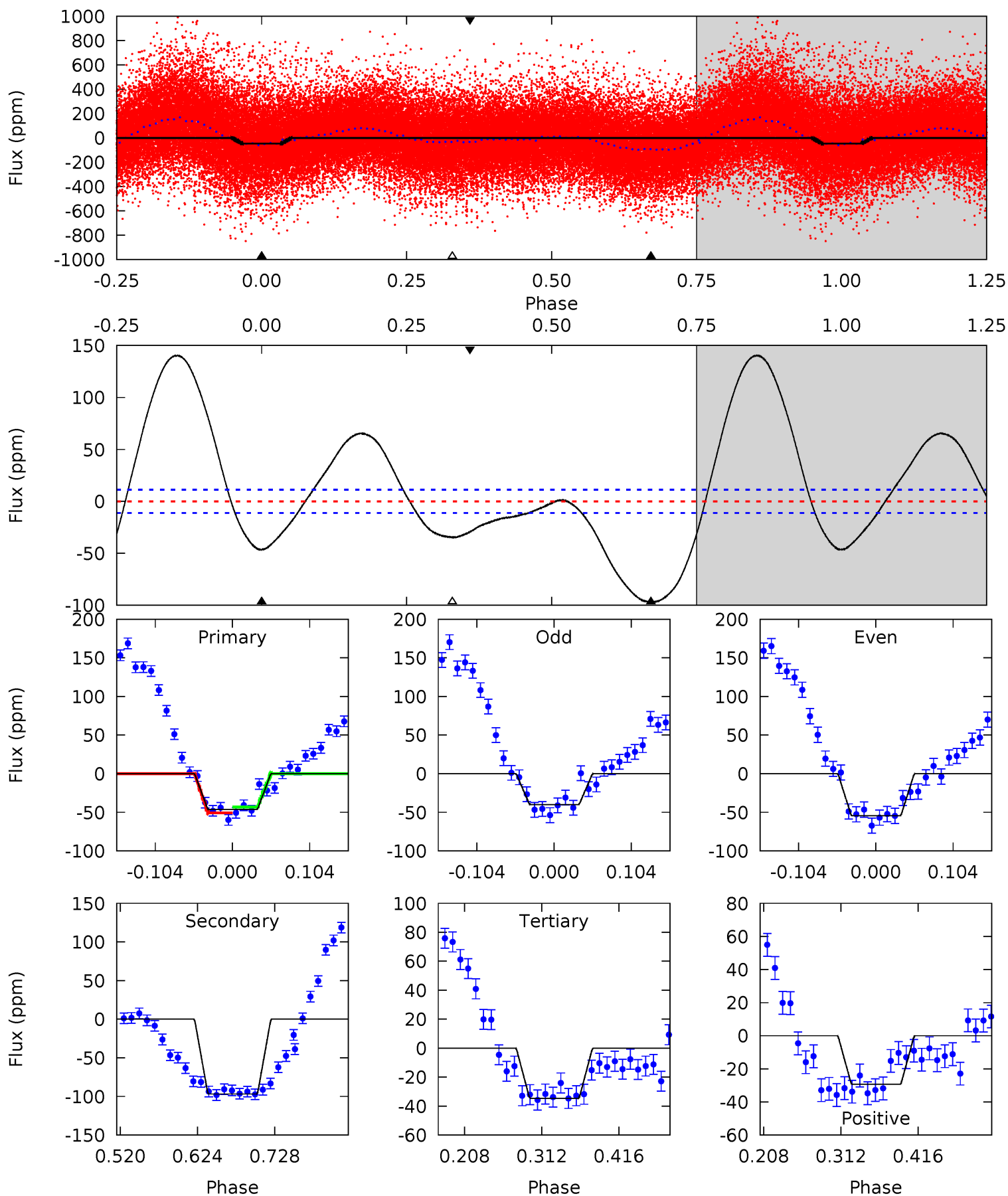
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
10.0	5.02	0	0	4.49	1.46	4.96	10.0	10.0	5.02	5.02	1.13	1.02	0.45	1.98



# Alt Model-Shift Uniqueness Test

007708984-01, P = 1.138402 Days, E = 131.433836 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
18.8	39.3	14.0	-11.9	4.56	1.63	21.6	4.81	30.7	25.3	51.2	2.94	0.85	0.59	1.51



### Stellar Parameters For KIC 007708984

	$T_{\text{eff}} (K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$6742^{+182}_{-202}$	$3.365^{+0.387}_{-0.065}$	$-0.280^{+0.400}_{-0.300}$	$4.844^{+0.340}_{-1.925}$	$1.983^{+0.159}_{-0.371}$	$0.025^{+0.070}_{-0.005}$
	+3%/-3%	+12%/-2%	+143%/-107%	+7%/-40%	+8%/-19%	+286%/-22%
Source	PHO1	FLK73	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 007708984-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	$A_{obs}$
DV	$-8 \pm 2$	$2.21^{+0.72}_{-0.70}$	$5501^{+233}_{-520}$	$4564^{+1208}_{-1299}$	$0.605^{+0.691}_{-0.267}$
Alt.	$-97 \pm 2$	$3.57^{+0.83}_{-0.84}$	$5471^{+285}_{-496}$	$7804^{+1139}_{-800}$	$3.012^{+2.075}_{-1.034}$

$T_{max}$  = 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

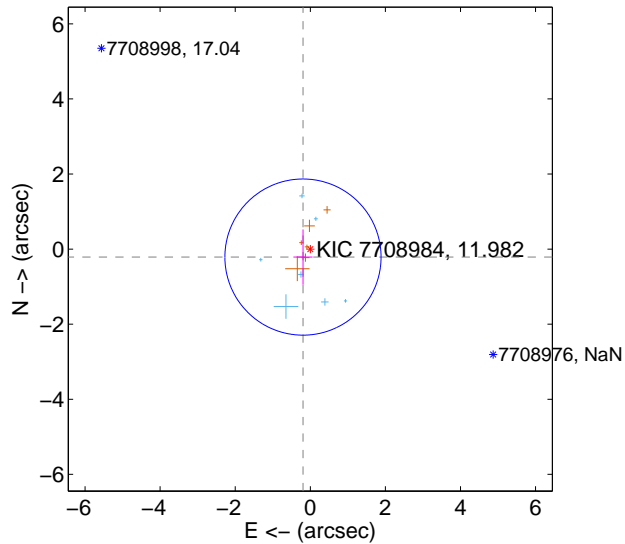
Supplemental centroid analysis for 007708984-01. **Kepler magnitude: 11.98.** Transit SNR 6.71

There are 7 quarters with good PRF difference image offsets

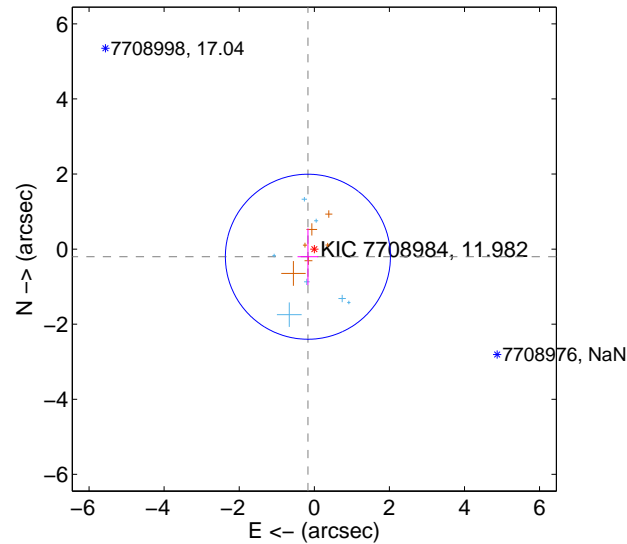
The direct PRF centroid is offset from the target star catalog position by about 0.04 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.289 \pm 0.693$	0.42	$0.195 \pm 0.256$	$-0.213 \pm 0.737$
PRF-fit source offset from KIC position	$0.265 \pm 0.733$	0.36	$0.171 \pm 0.276$	$-0.203 \pm 0.755$
photometric centroid source offset	$2.09 \pm 1.09$	1.92	$-0.62 \pm 0.80$	$2.00 \pm 1.12$

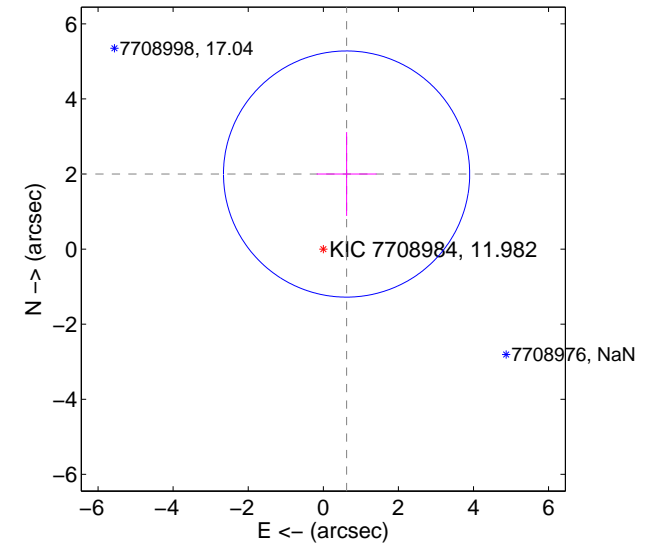
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

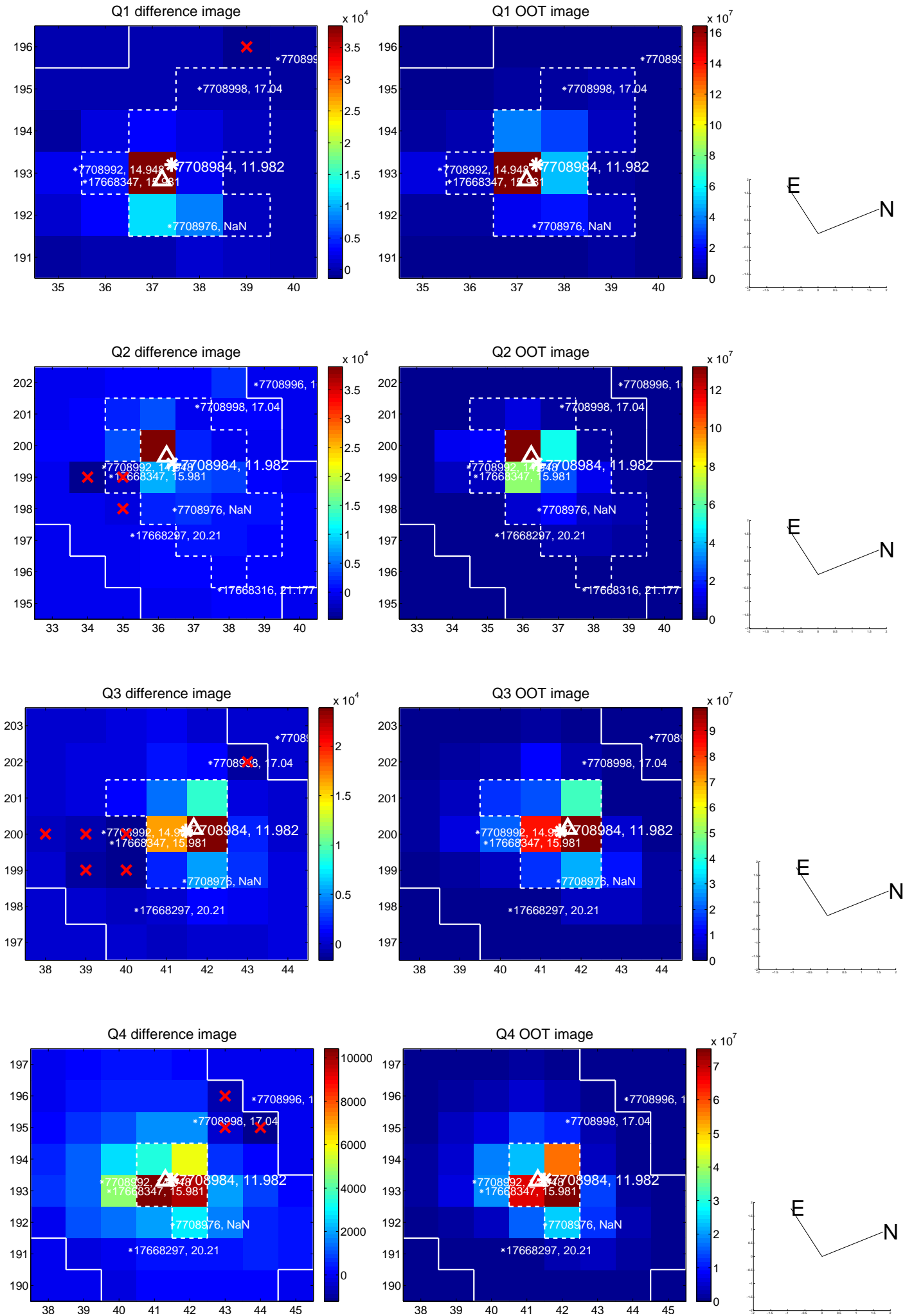


offset from photometric centroids

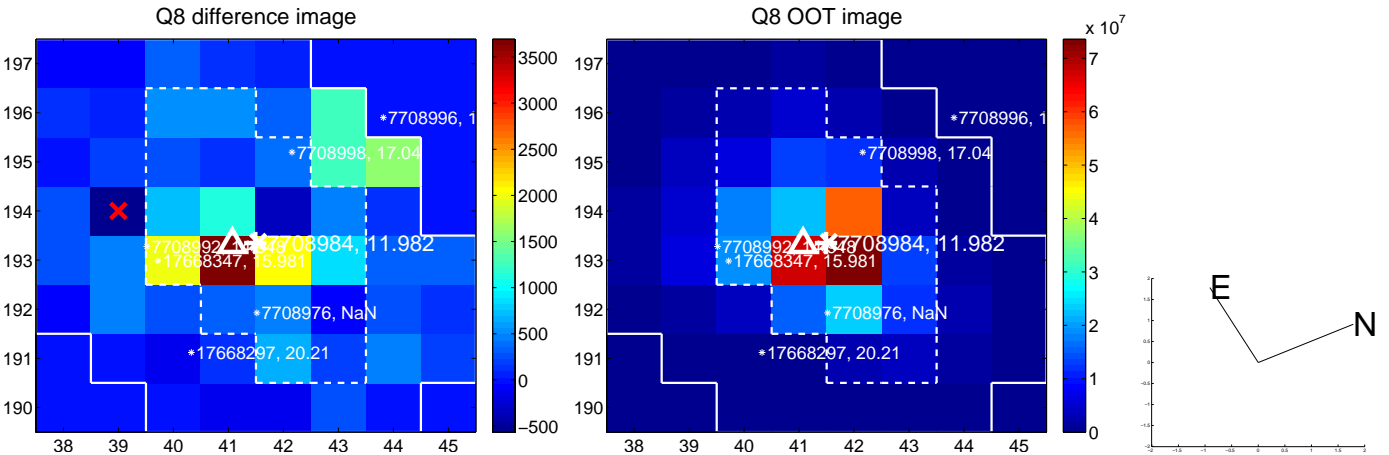
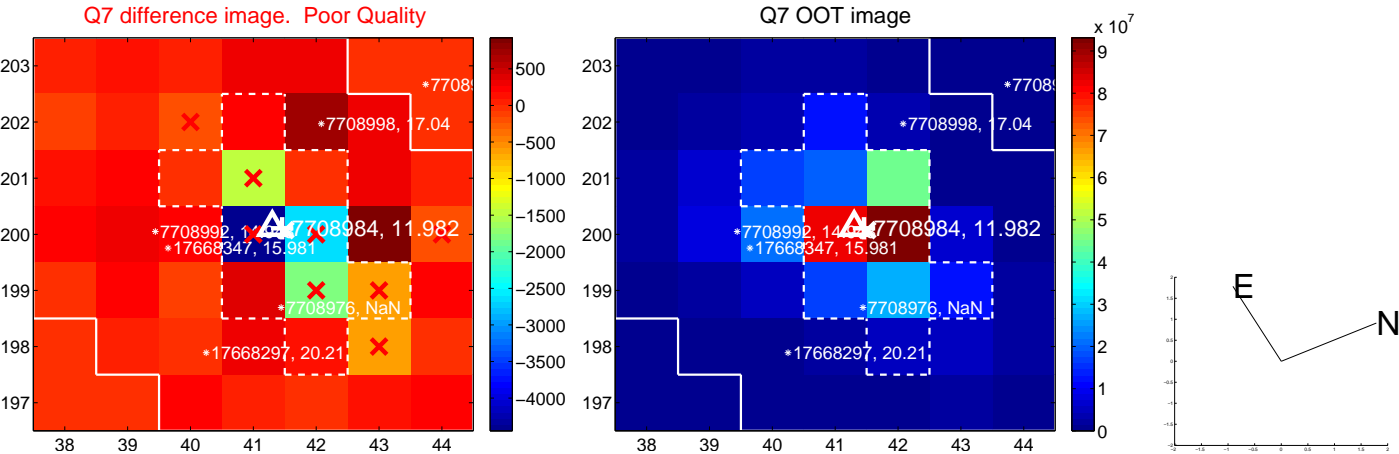
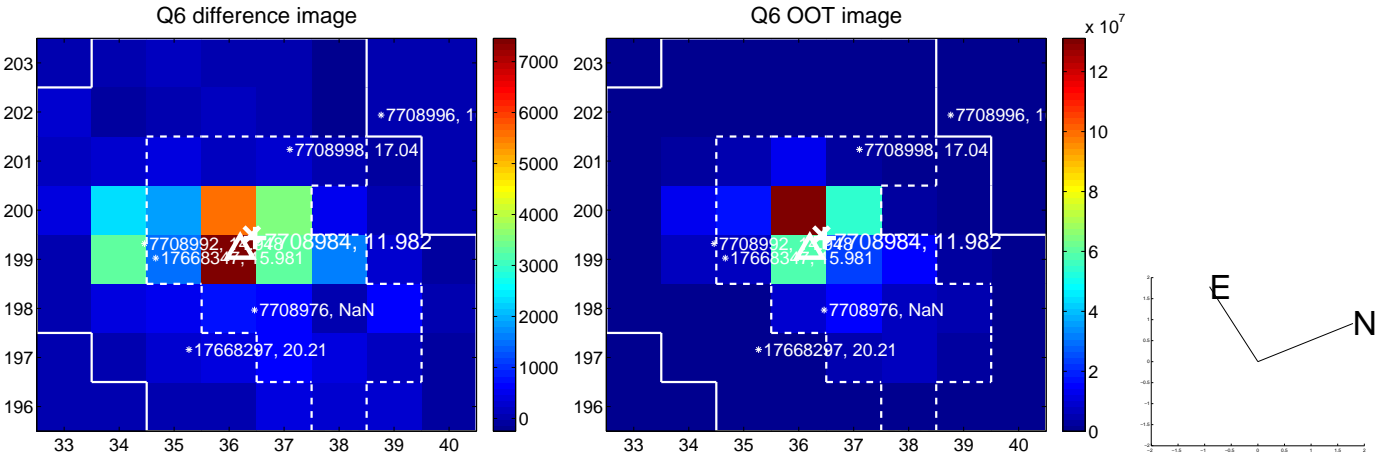
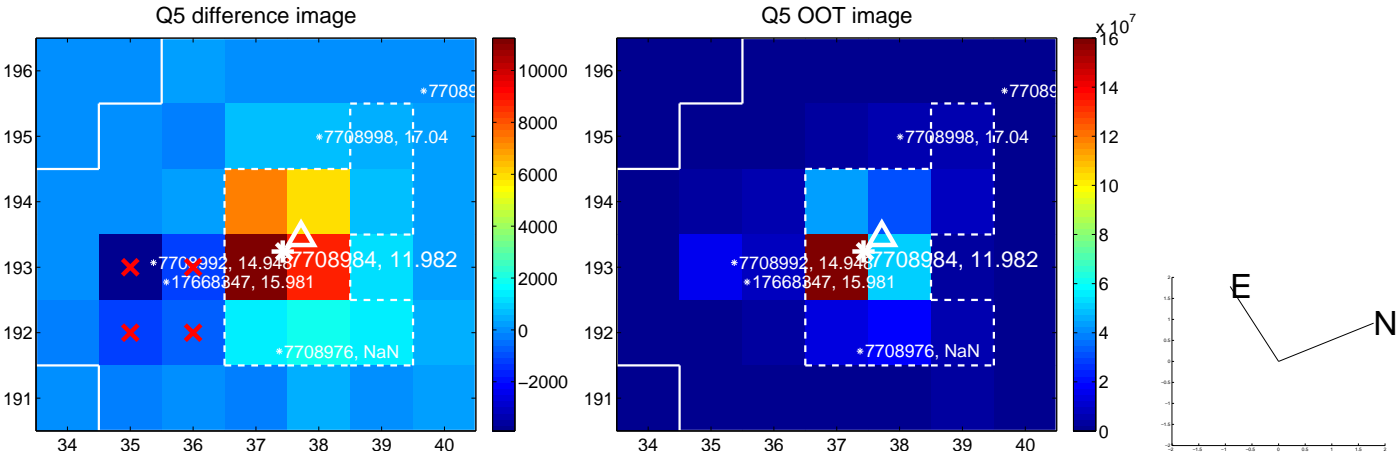


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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

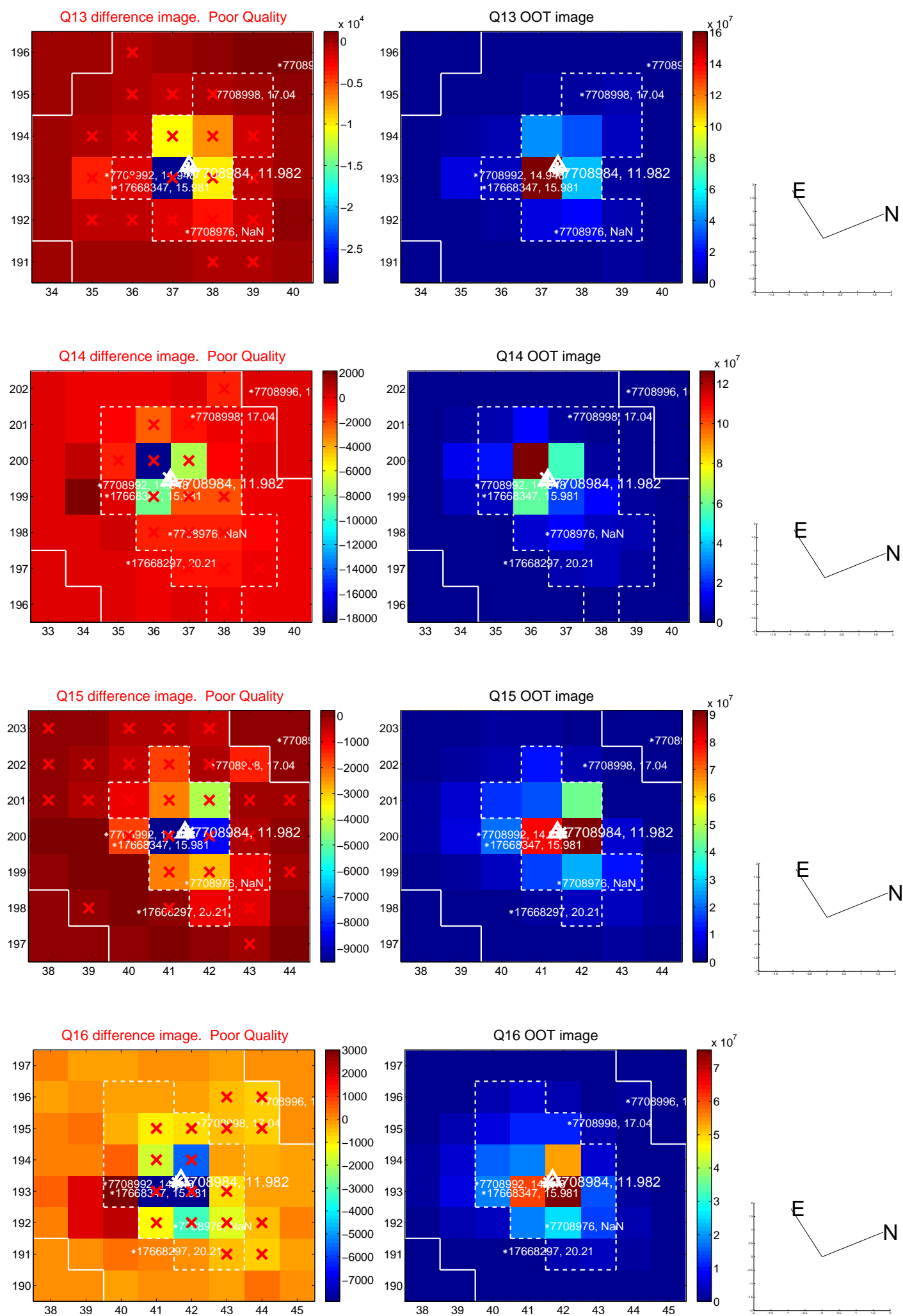


white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

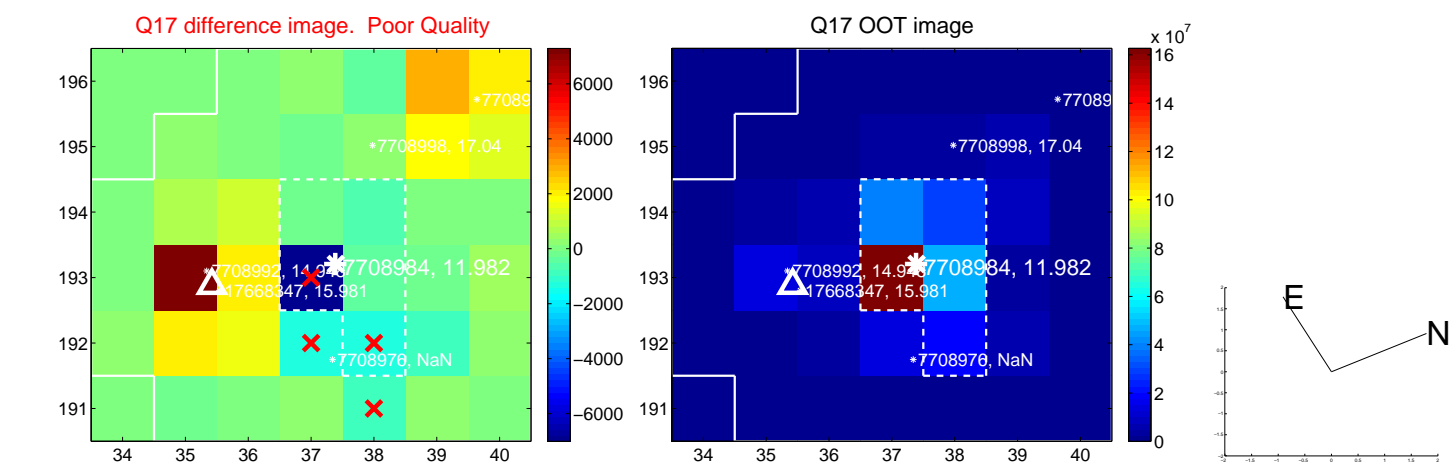




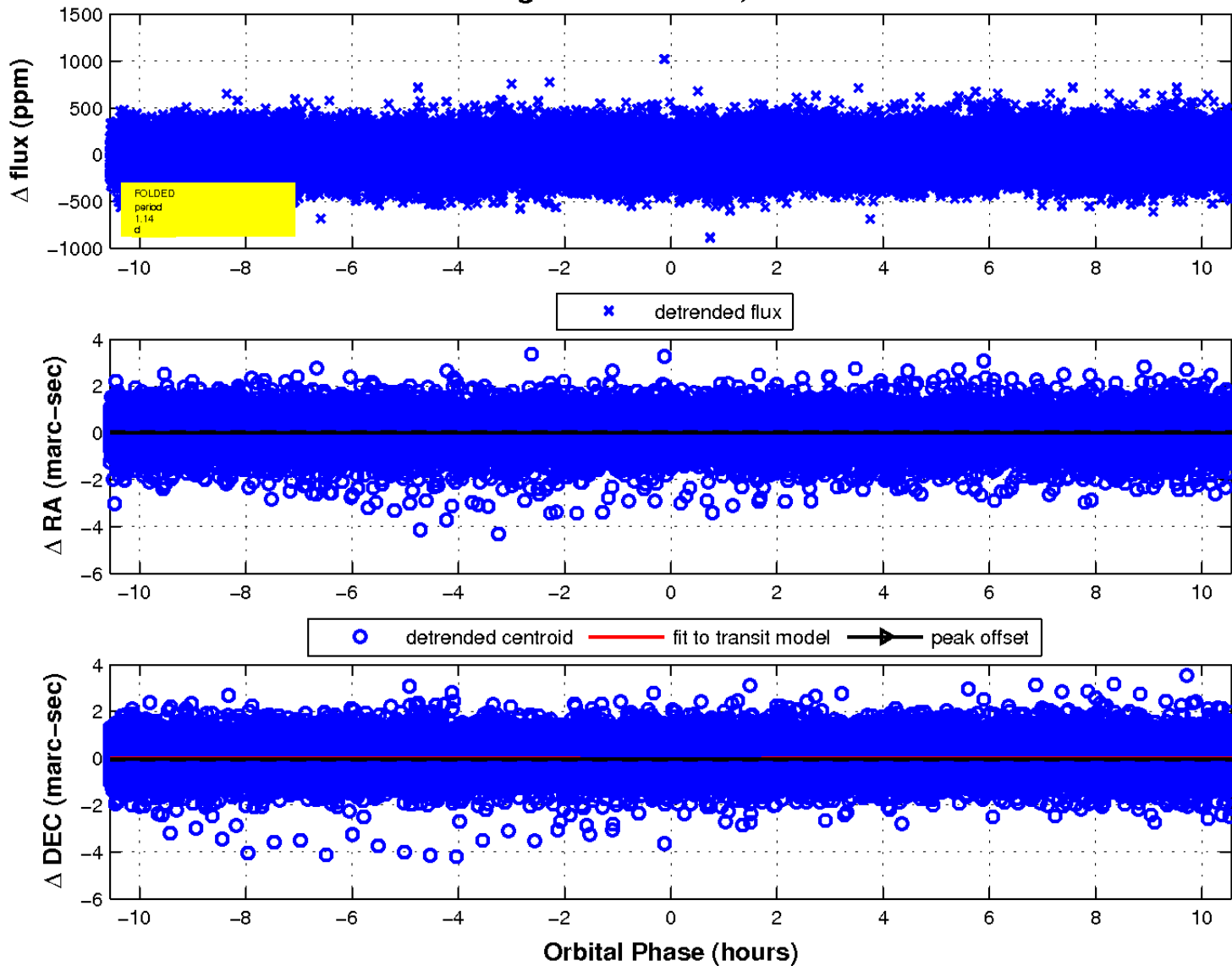
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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



fluxWeightedCentroids, Planet 1 of 1



UKIRT Image

Declination

