

# KIC 004994971

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
004994971-01	OBS	No	1.064242	131.634740	1.8	7.828	8.7	1.7	2.27	7017	0.36	20642.73

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
004994971-01	OBS	FP	0.00	1	0	0	0	SWEET_NTL—LPP_DV—LPP_ALT—CENT_SATURATED

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

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

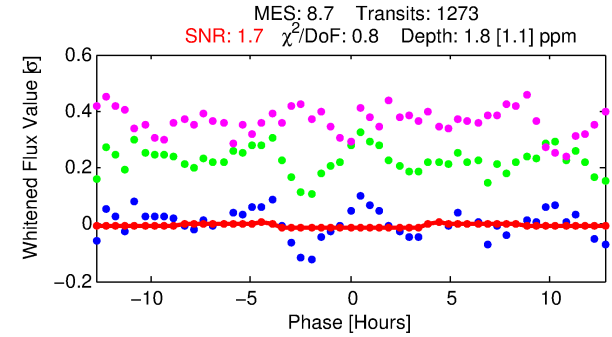
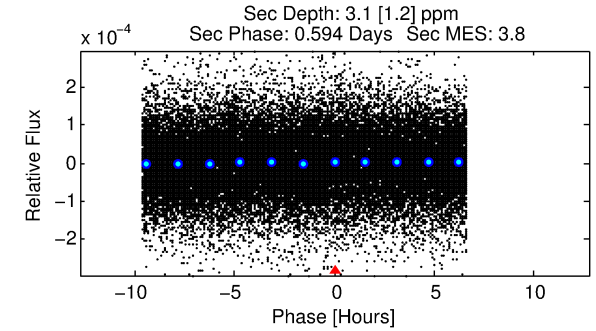
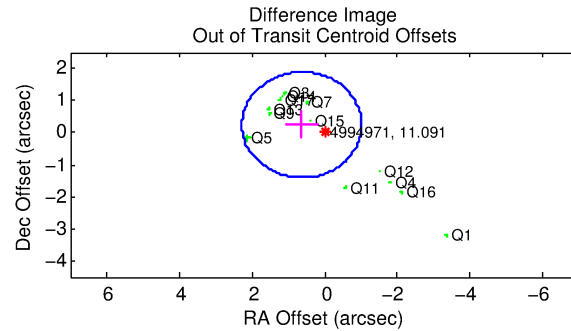
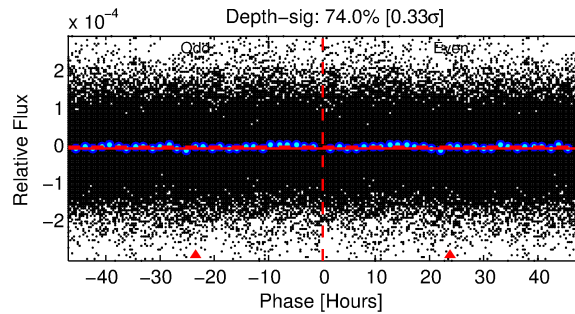
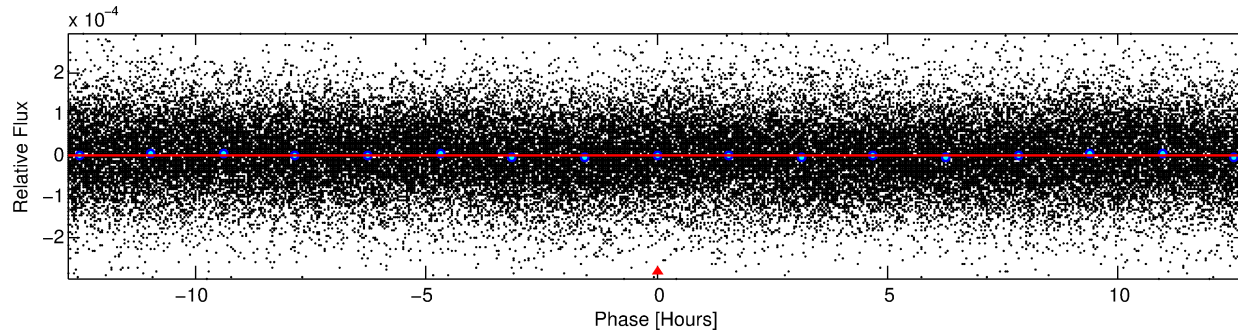
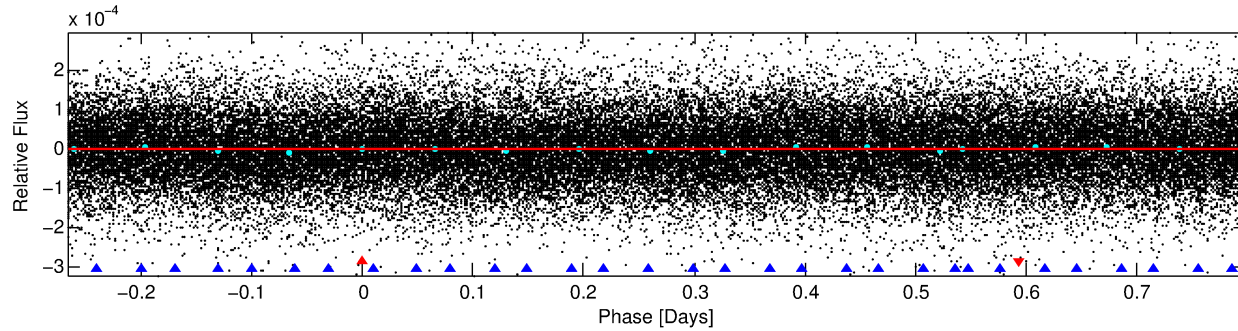
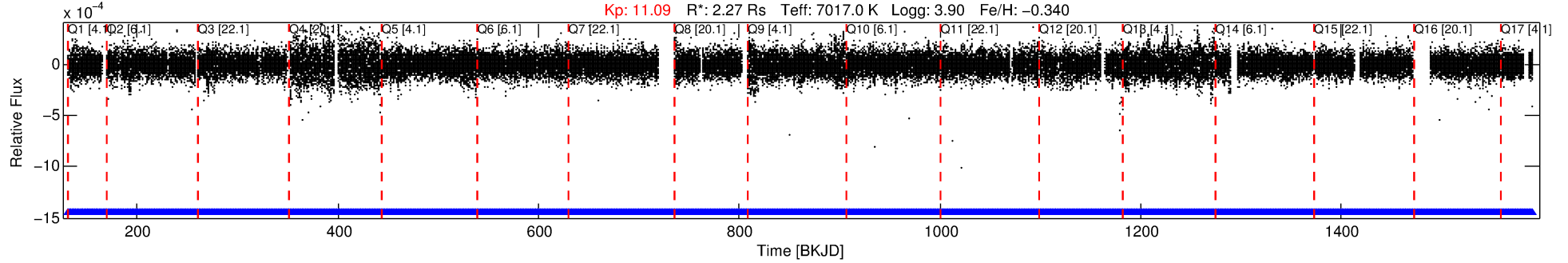
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 004994971-01

No Significant Match Found

# DV One-Page Summary

KIC: 4994971 Candidate: 1 of 2 Period: 1.064 d



## DV Fit Results:

Period = 1.06424 [0.00008] d  
Epoch = 131.6347 [0.0198] BKJD  
Rp/R\* = 0.0014 [0.0017]  
a/R\* = 1.04 [0.59]  
b = 0.91 [1.33]  
Seff = 20642.73 [9720.64]  
Teq = 3056 [360] K  
Rp = 0.36 [0.43] Re  
a = 0.0233 [0.0070] AU  
Ag = 7.35 [17.62] [0.36 $\sigma$ ]  
Teffp = 7780 [4586] K [1.03 $\sigma$ ]

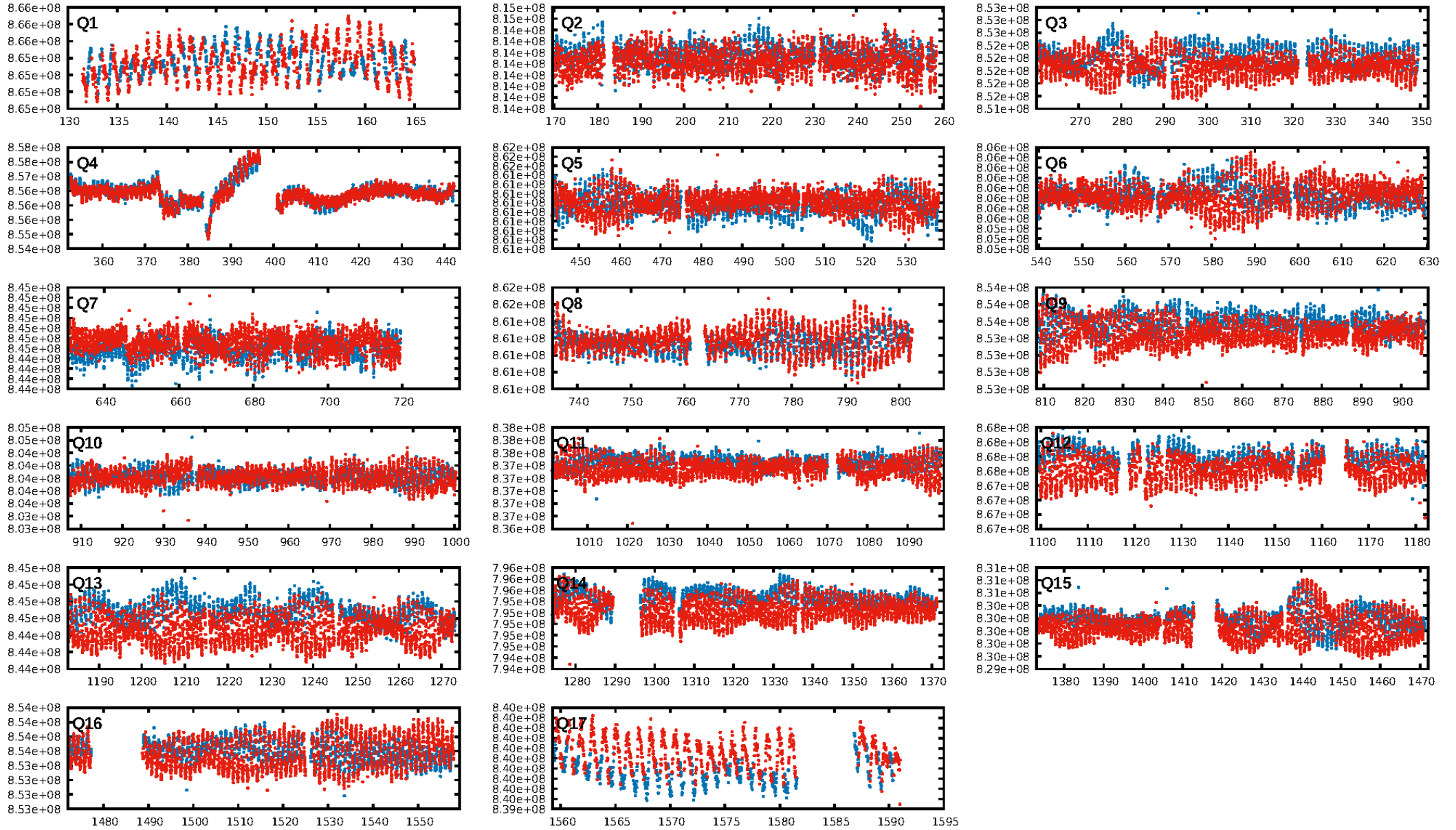
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: 100.0% [97.15 $\sigma$ ]  
ModelChiSquare2-sig: N/A  
ModelChiSquareGof-sig: N/A  
Bootstrap-pfa: 1.01e-32  
RollingBand-fgt: 1.00 [1216/1216]  
GhostDiagnostic-chr: N/A  
Centroid-sig: N/A  
Centroid-so: N/A  
OotOffset-rm: 0.675 arcsec [1.23 $\sigma$ ]  
KicOffset-rm: 0.757 arcsec [1.24 $\sigma$ ]  
OotOffset-st: 1/4/3/5 [13]  
KicOffset-st: 1/4/3/5 [13]  
DiffImageQuality-fgm: 0.69 [9/13]  
DiffImageOverlap-fno: 1.00 [17/17]

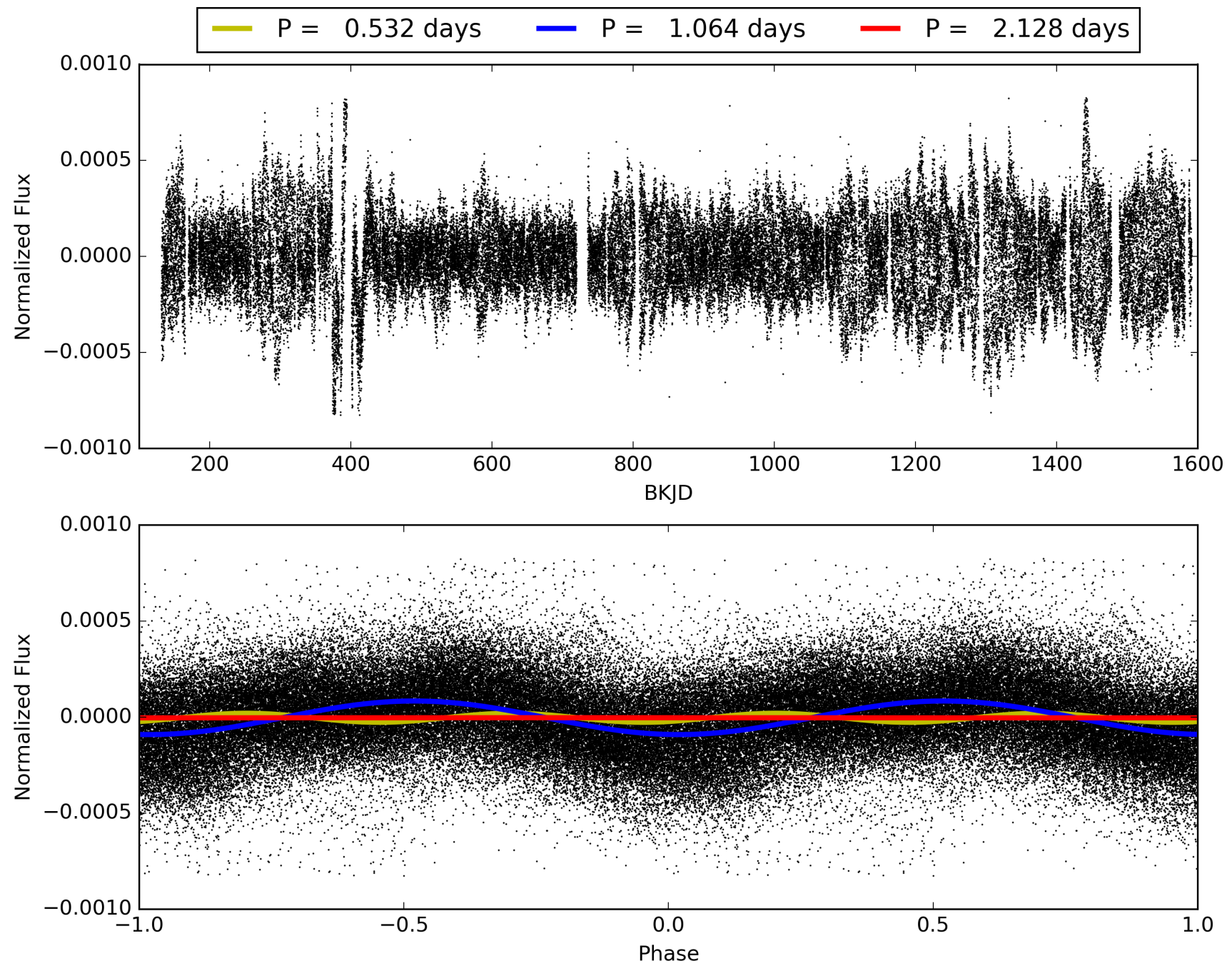
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 08:27:07 Z

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

# TCE 004994971-01, PDC Light Curves

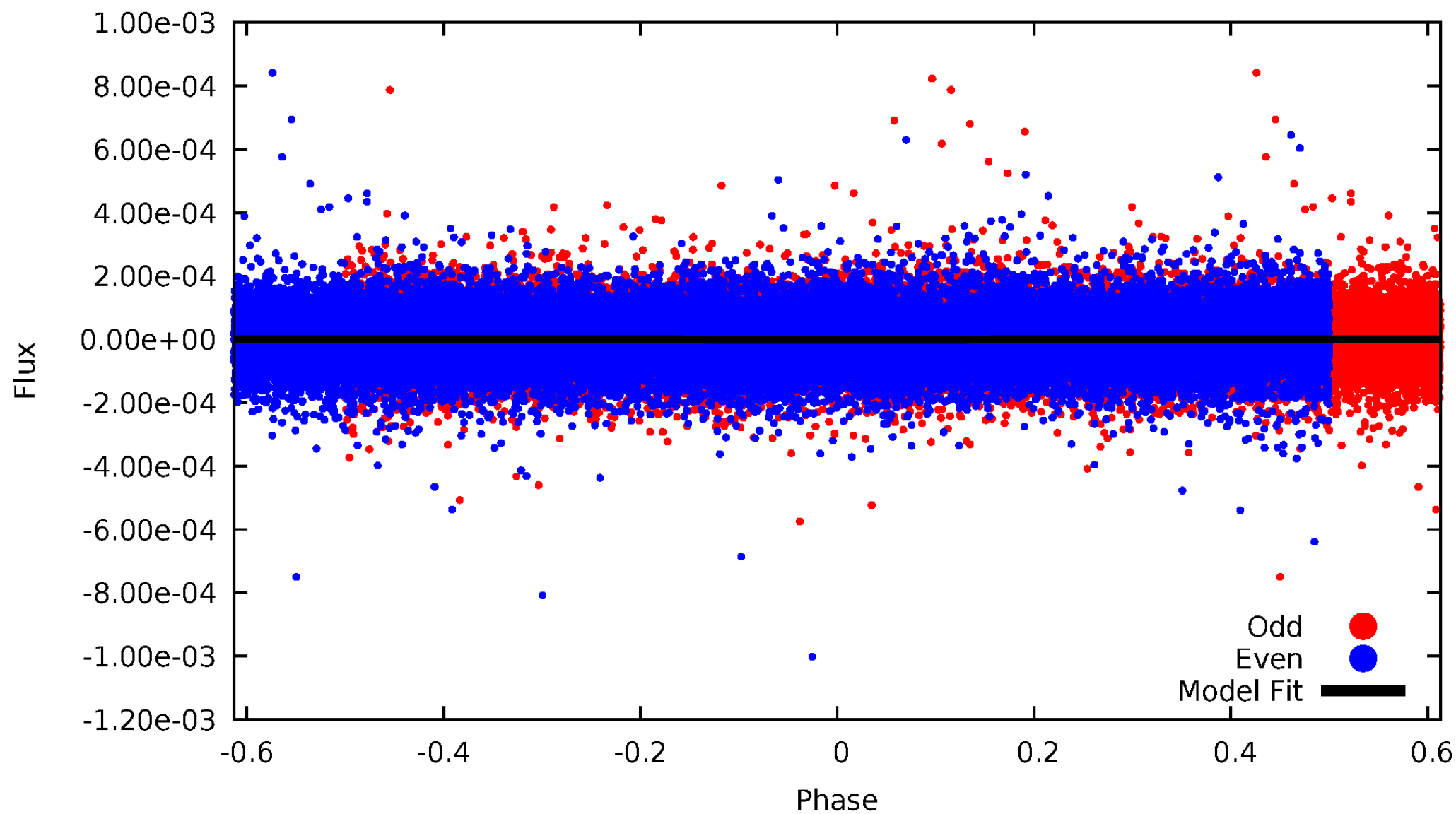


TCE 004994971-01



# DV Odd/Even

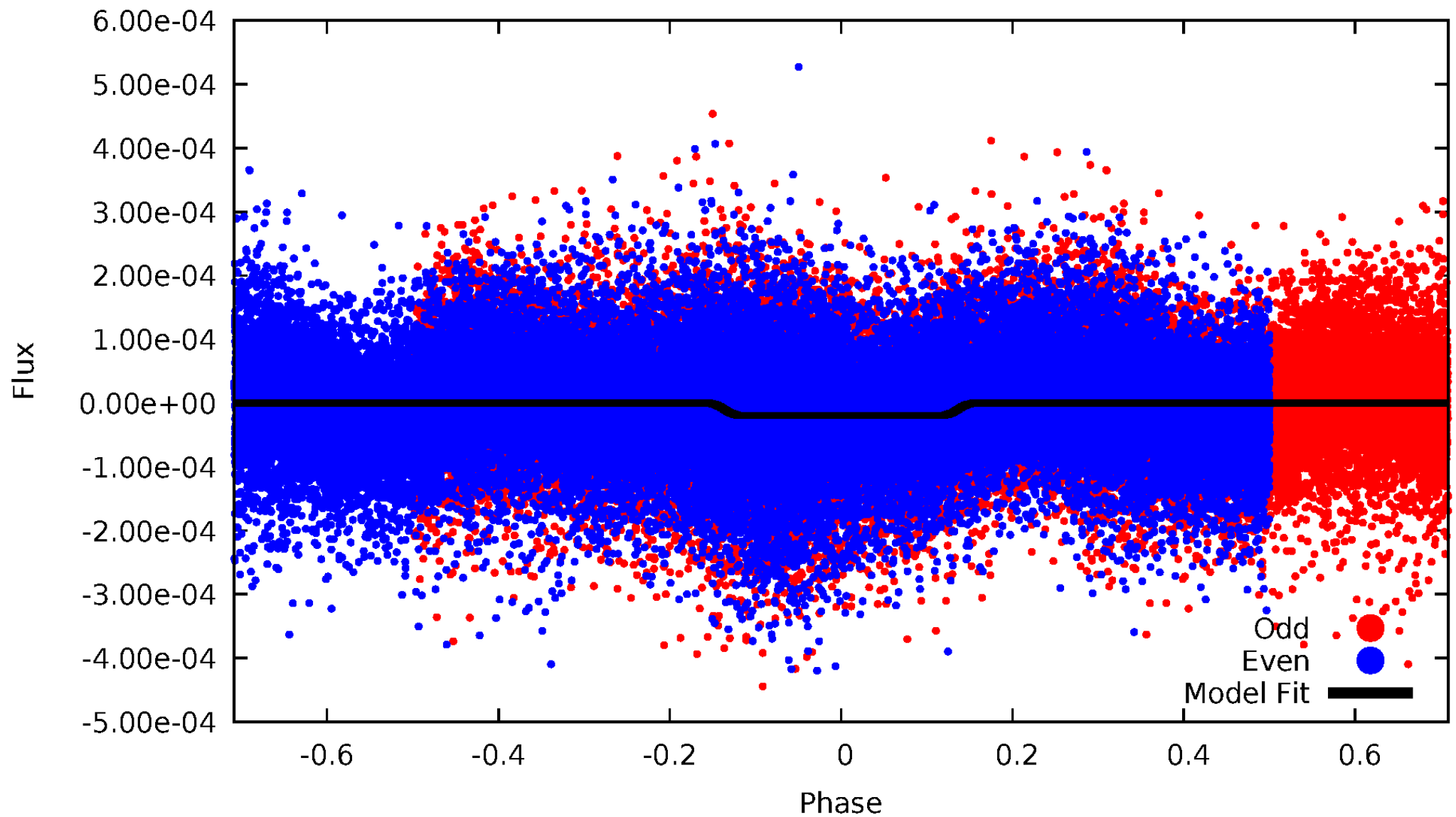
TCE 004994971-01





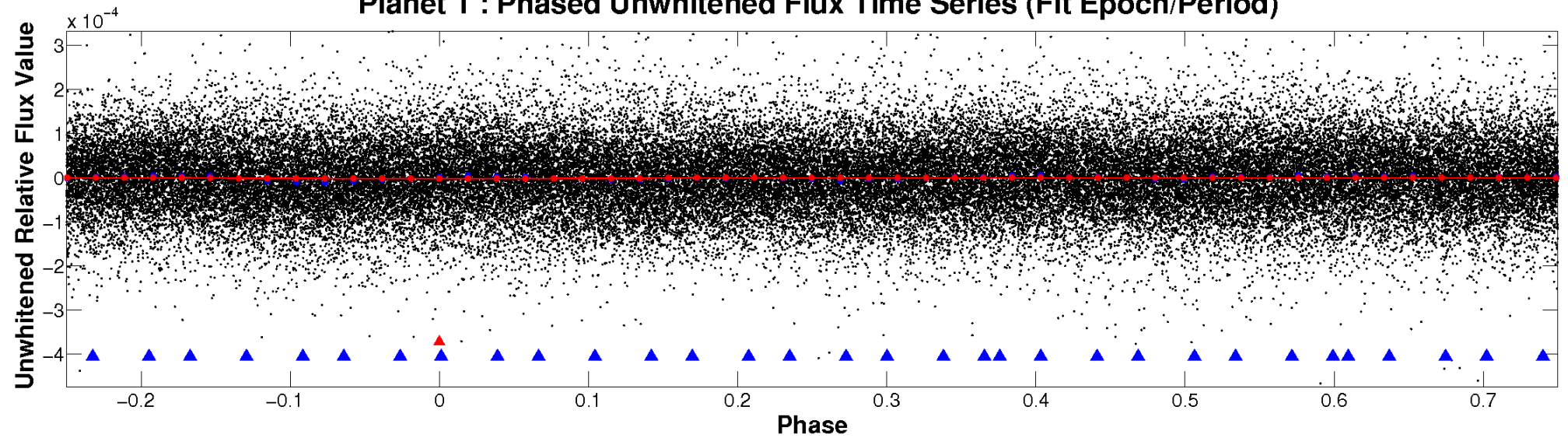
# ALT Odd/Even

TCE 004994971-01

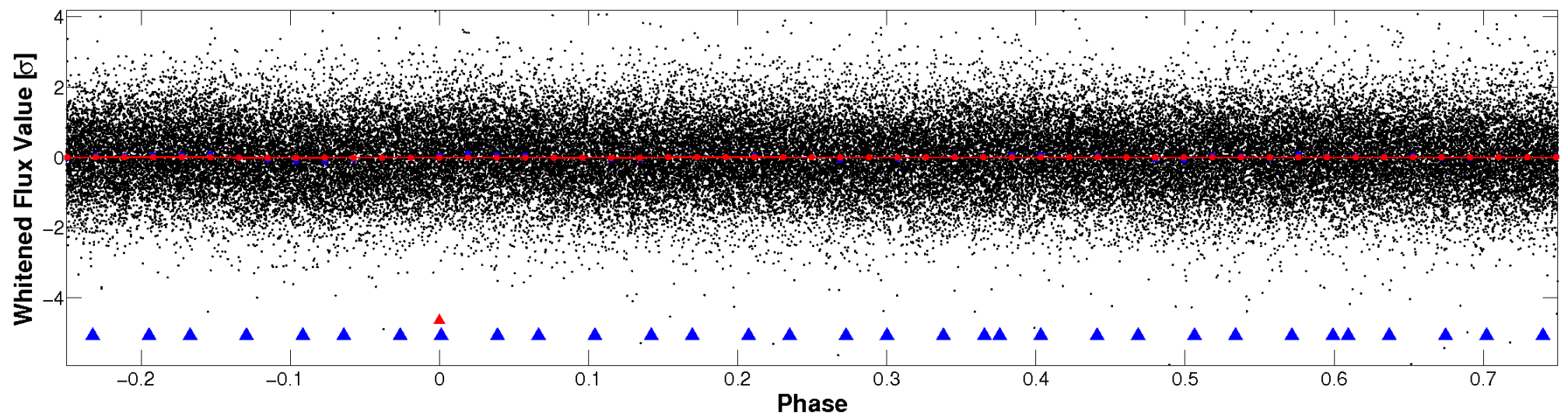


# Non-Whitened Vs. Whitened Light Curve

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

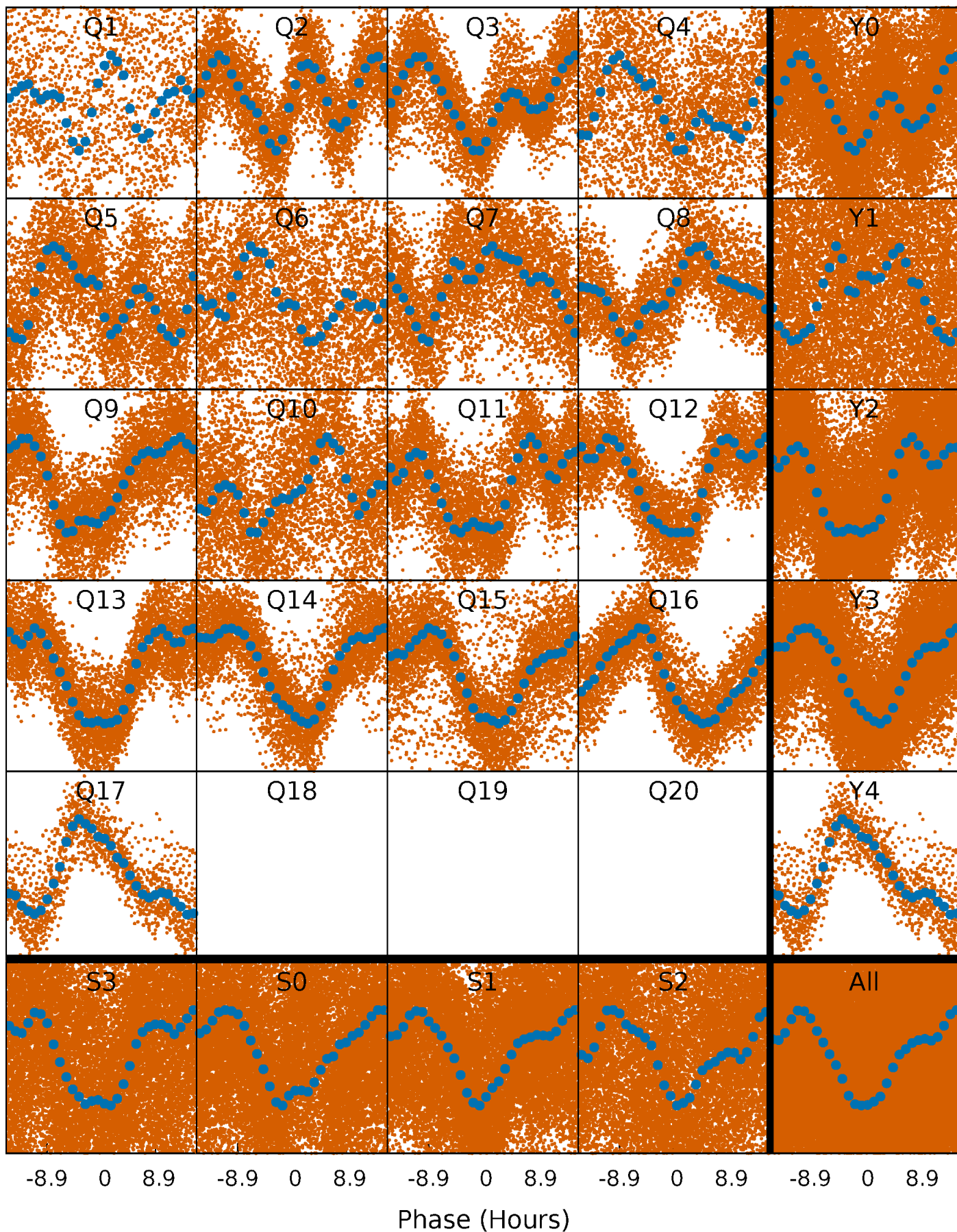


**Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)**



# PDC Quarter-Phased Transit Curves

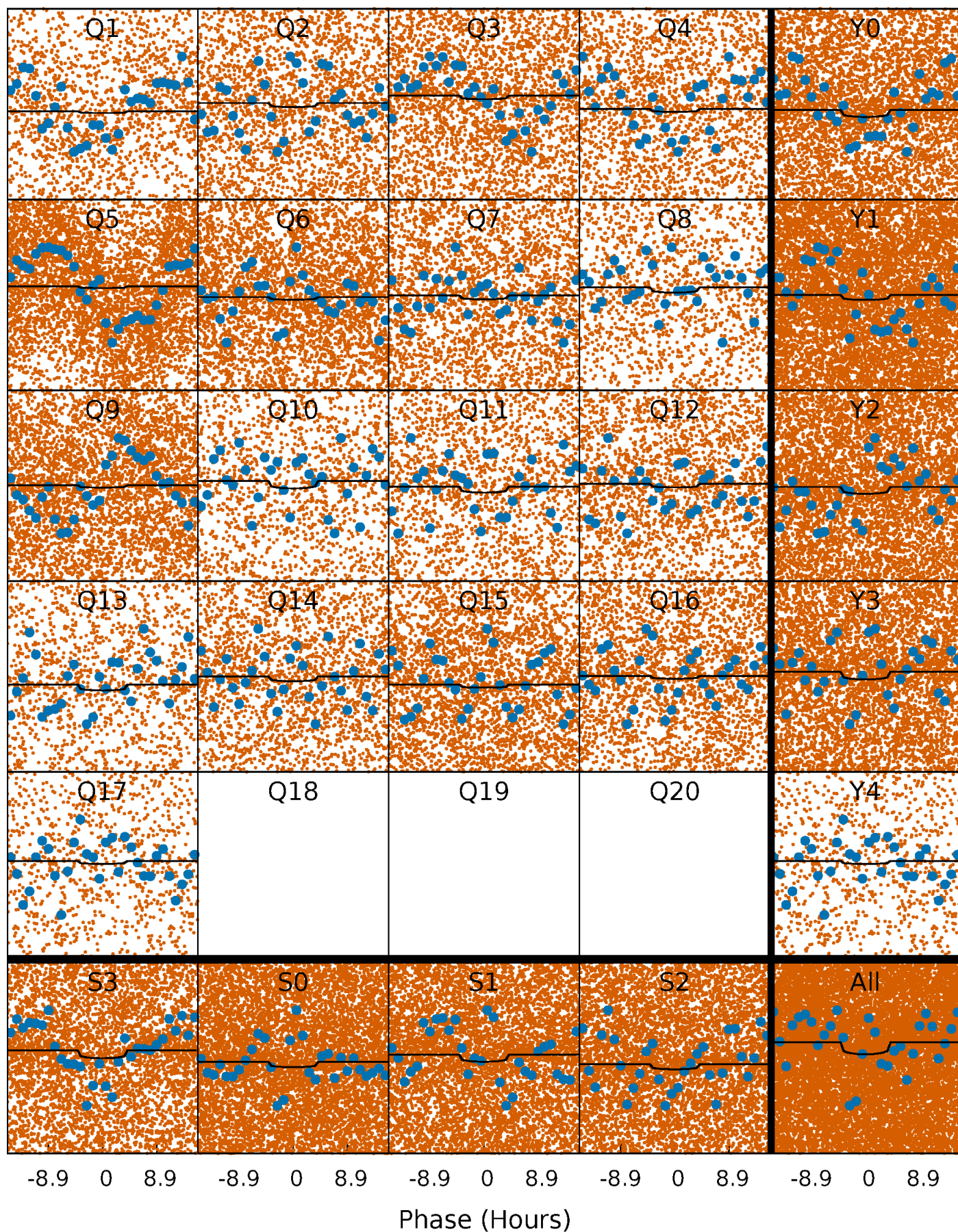
TCE 004994971-01   P= 1.064242 Days    $T_0=131.634740$  (BKJD)





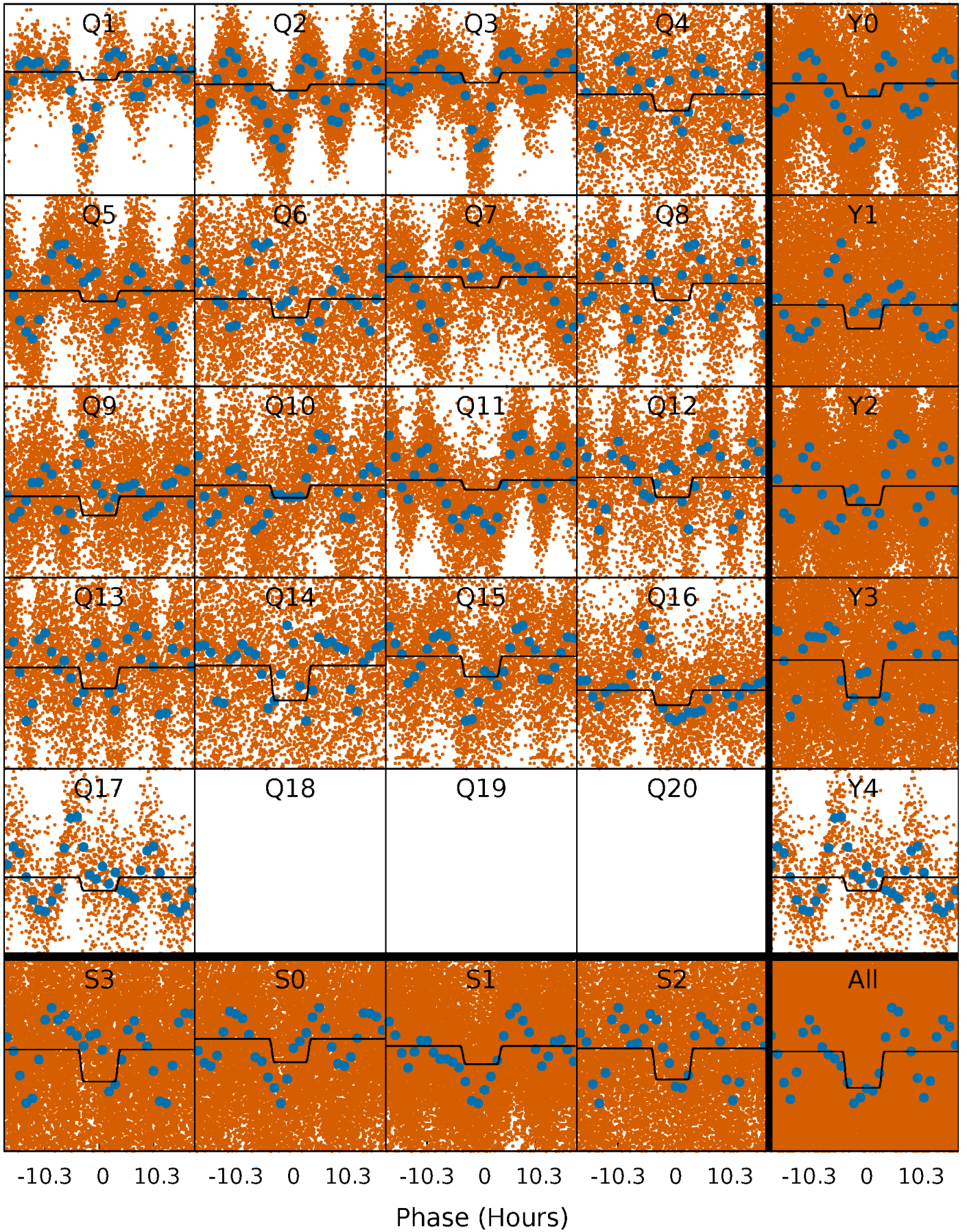
# DV Quarter-Phased Transit Curves

TCE 004994971-01 P= 1.064242 Days  $T_0=131.634740$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

TCE 004994971-01 P= 1.064288 Days  $T_0=131.601649$  (BKJD)

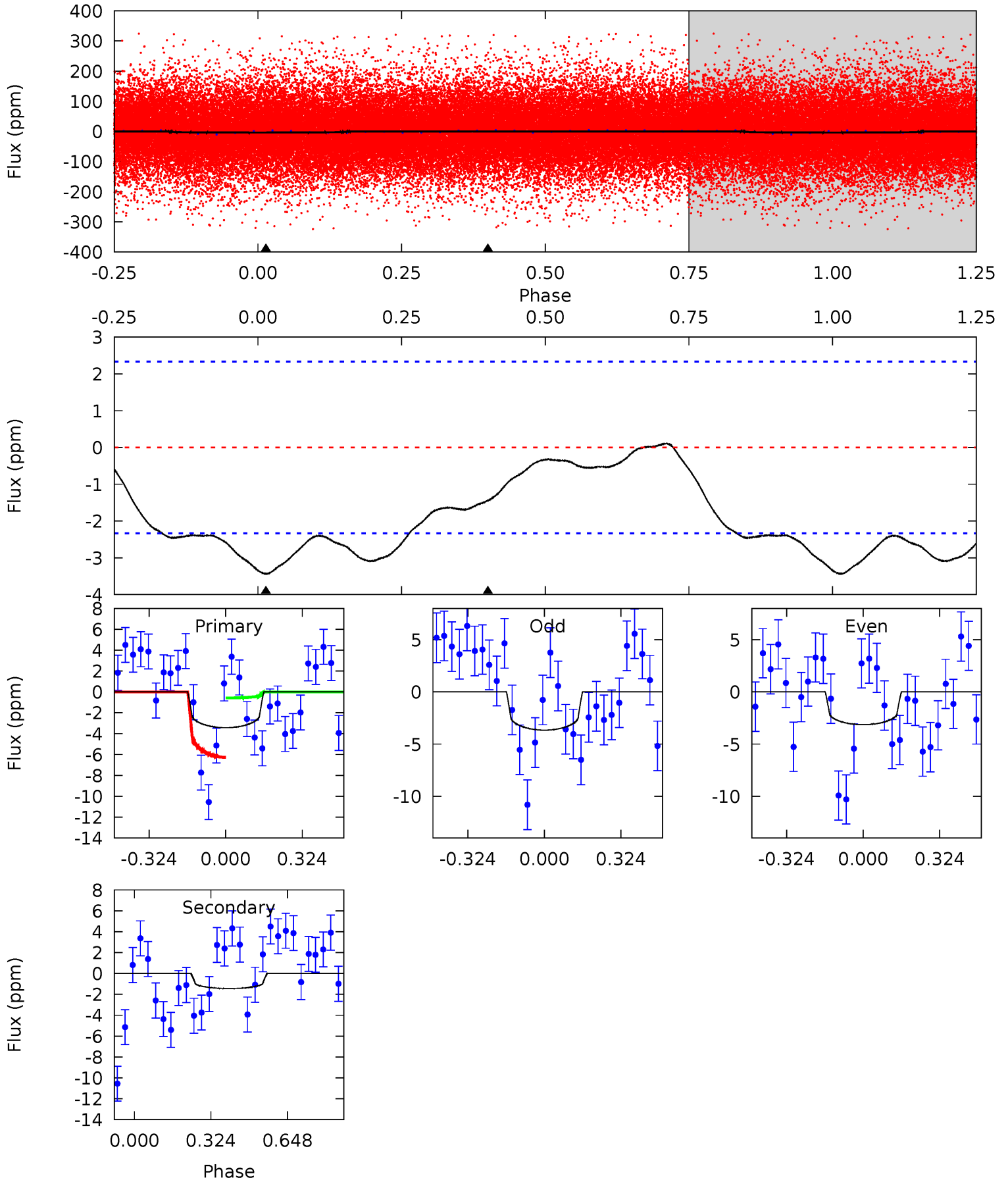




# DV Model-Shift Uniqueness Test

004994971-01, P = 1.064242 Days, E = 130.570498 Days

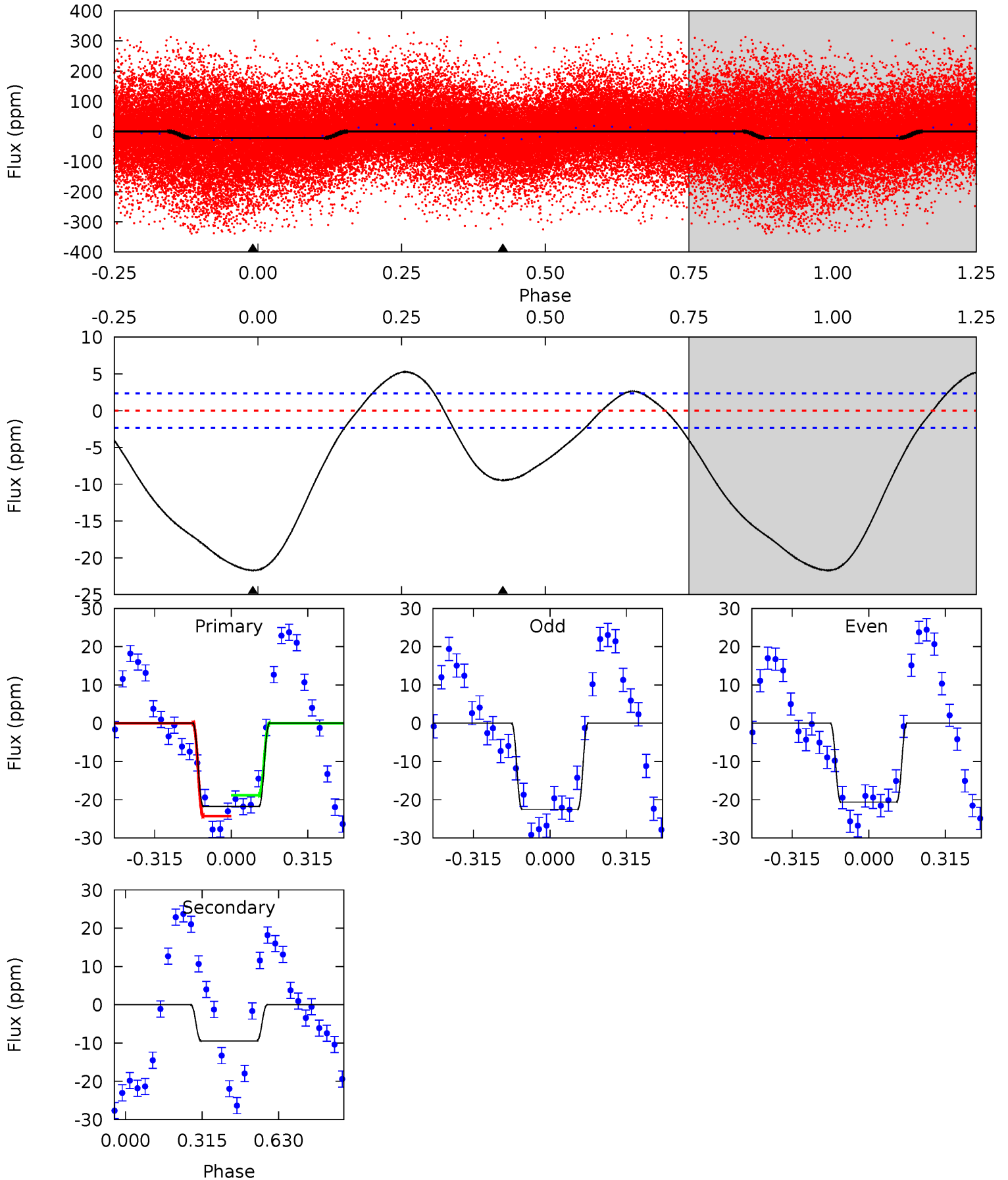
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
6.34	2.67	0	0	4.31	0.99	0.45	6.34	6.34	2.67	2.67	0.49	0.91	0.03	5.17



# Alt Model-Shift Uniqueness Test

004994971-01, P = 1.064288 Days, E = 130.537361 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
40.0	17.4	0	0	4.32	1.00	4.20	40.0	40.0	17.4	17.4	1.71	1.32	0.20	4.13





### Stellar Parameters For KIC 004994971

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R$ ( $R_{\odot}$ )	$M$ ( $M_{\odot}$ )	$\rho_{\star}$ ( $\text{g}\cdot\text{cm}^{-3}$ )
	$7017^{+176}_{-211}$	$3.899^{+0.259}_{-0.111}$	$-0.340^{+0.300}_{-0.250}$	$2.275^{+0.466}_{-0.757}$	$1.497^{+0.197}_{-0.271}$	$0.179^{+0.291}_{-0.060}$
	+3%/-3%	+7%/-3%	+88%/-74%	+20%/-33%	+13%/-18%	+163%/-33%
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 004994971-01 / KOI

Detrend	Depth (ppm)	$R_p$ ( $R_{\oplus}$ )	$T_{max}$ (K)	$T_{obs}$ (K)	$A_{obs}$
DV	$-1 \pm 1$	$0.44^{+0.37}_{-0.30}$	$4210^{+270}_{-328}$	$5307^{+5189}_{-1598}$	$2.071^{+16.540}_{-1.519}$
Alt.	$-9 \pm 1$	$1.06^{+0.44}_{-0.44}$	$4208^{+279}_{-353}$	$5617^{+1707}_{-903}$	$2.545^{+4.612}_{-1.274}$

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

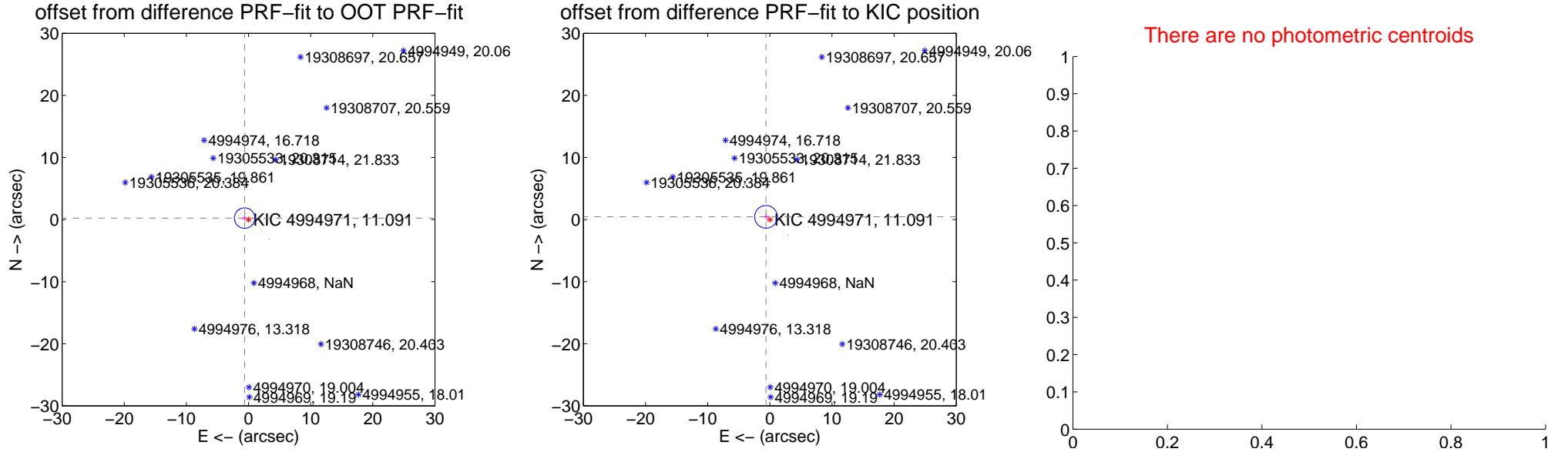
## DV Centroid Data

Supplemental centroid analysis for 004994971-01. **Kepler magnitude: 11.09.** Transit SNR 1.67

There are 9 quarters with good PRF difference image offsets

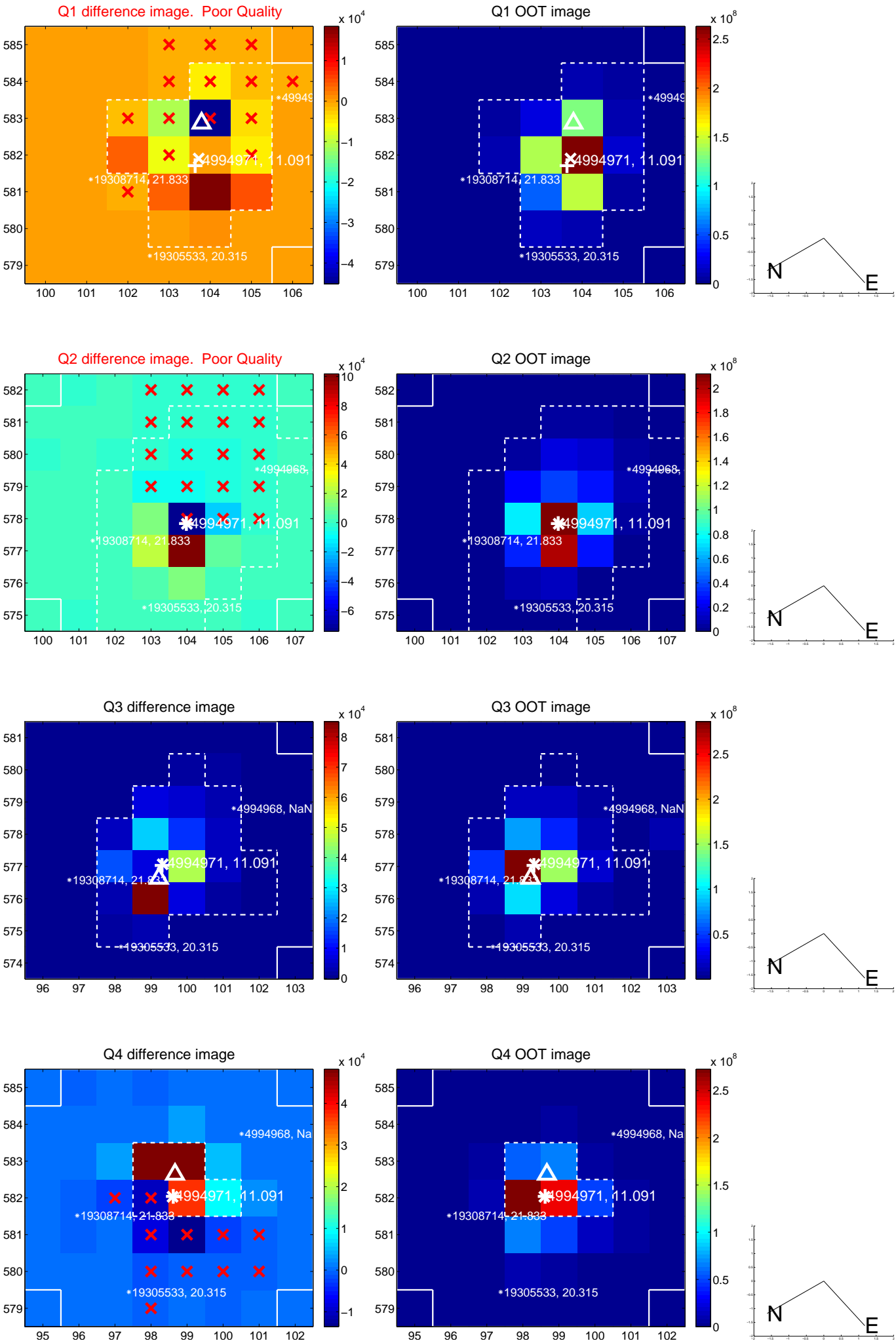
The direct PRF centroid is offset from the target star catalog position by about 0.60 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.675 \pm 0.549$	1.23	$0.631 \pm 0.449$	$0.239 \pm 0.402$
PRF-fit source offset from KIC position	$0.757 \pm 0.609$	1.24	$0.614 \pm 0.473$	$0.442 \pm 0.413$
photometric centroid source offset	—	—	—	—

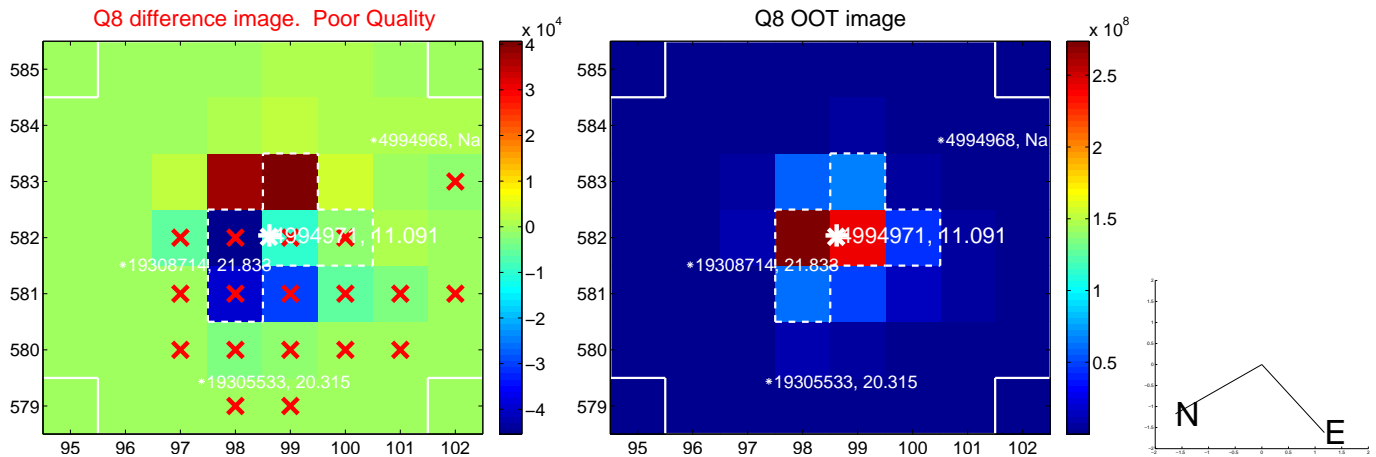
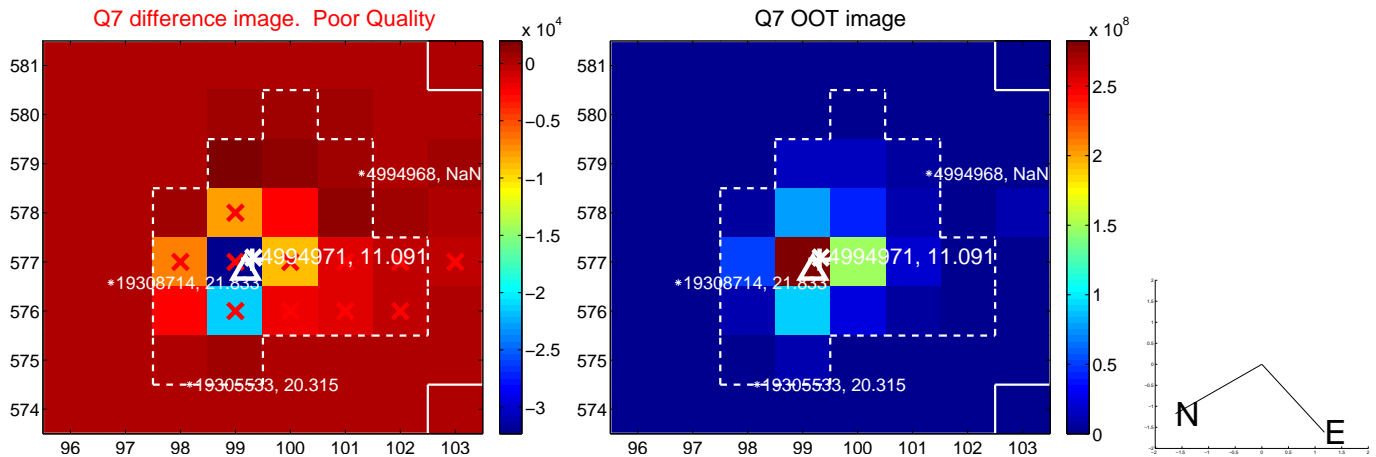
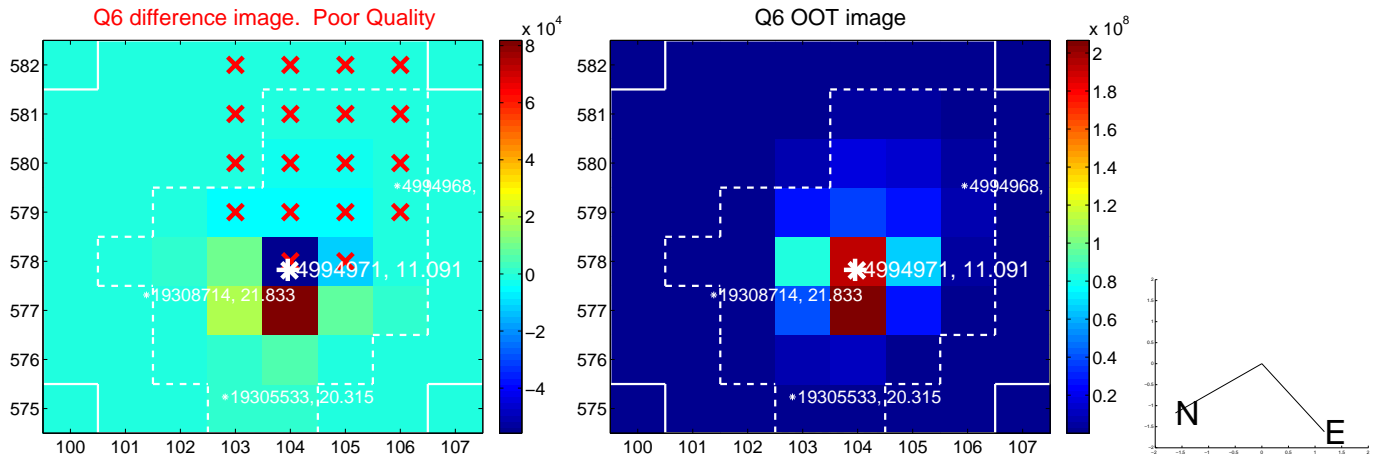
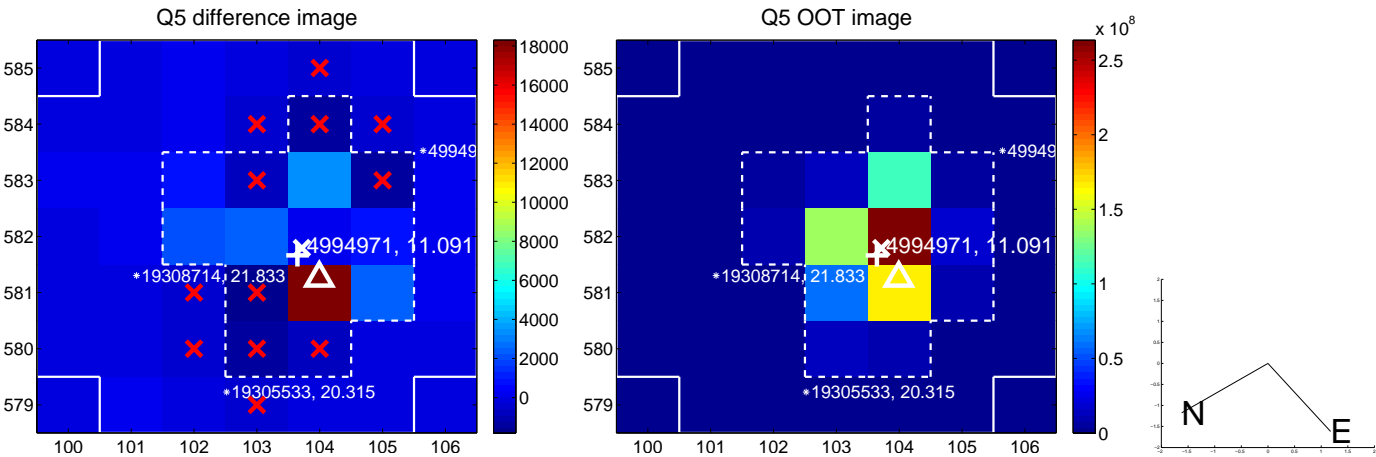


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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

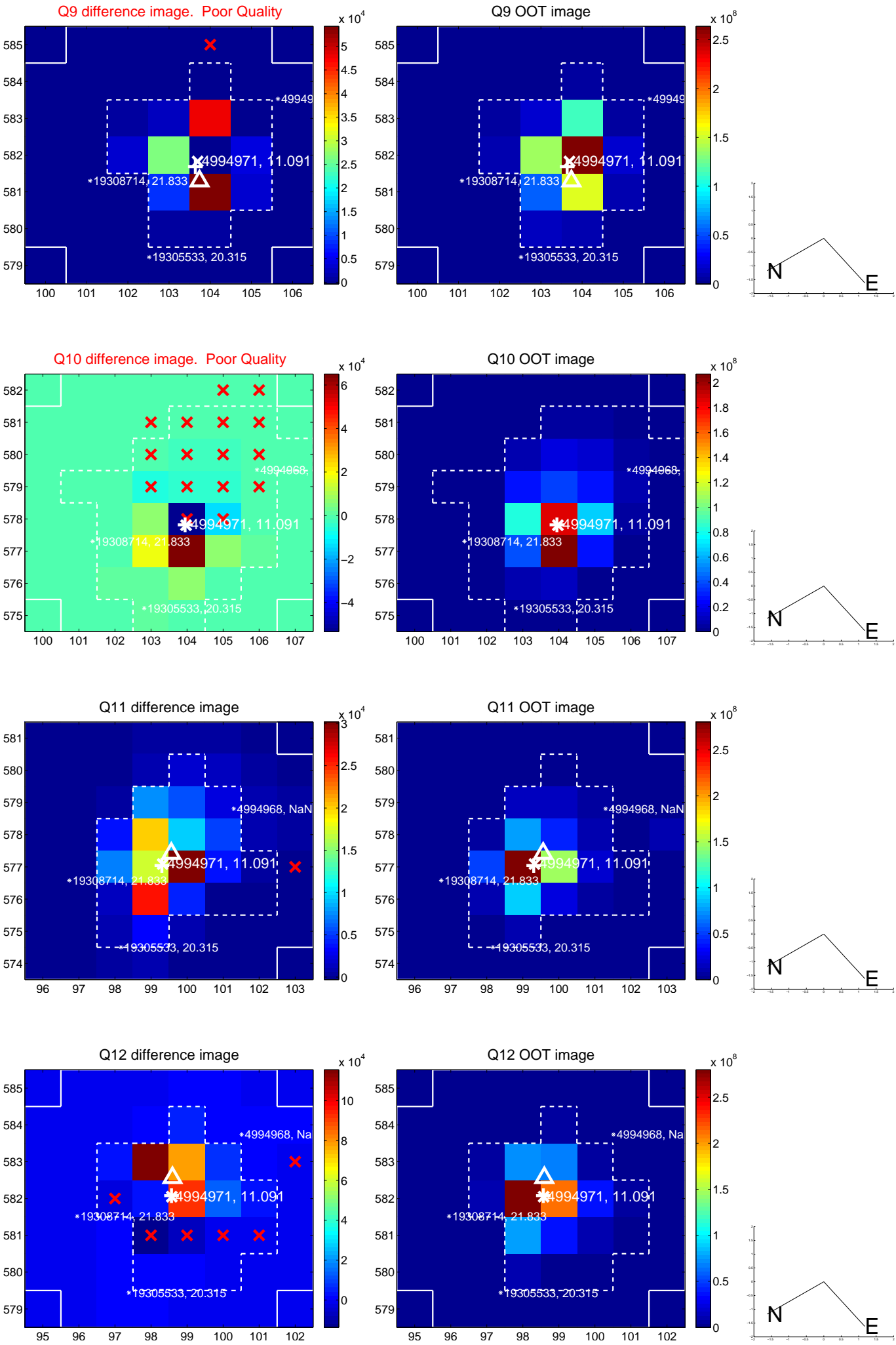


white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

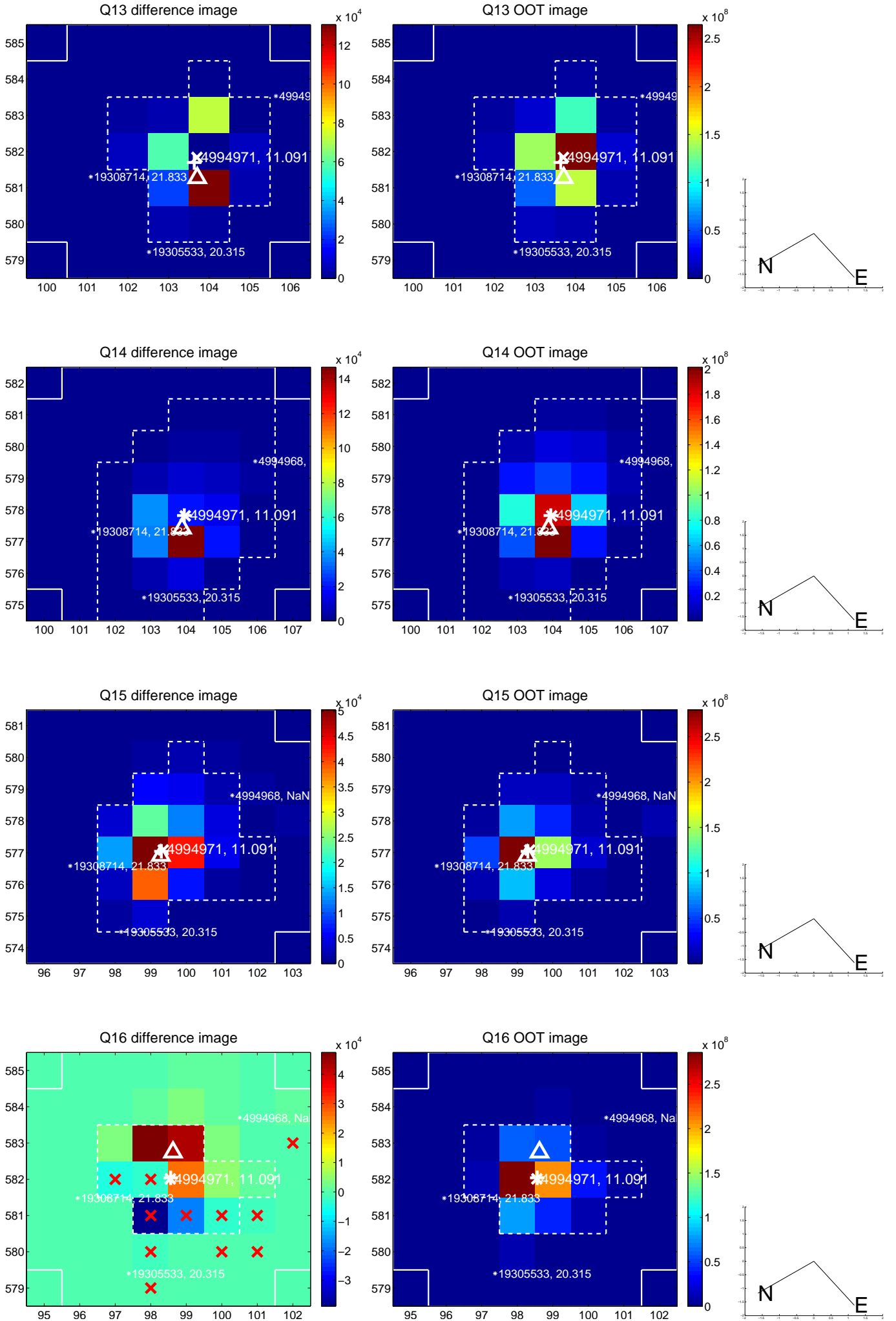




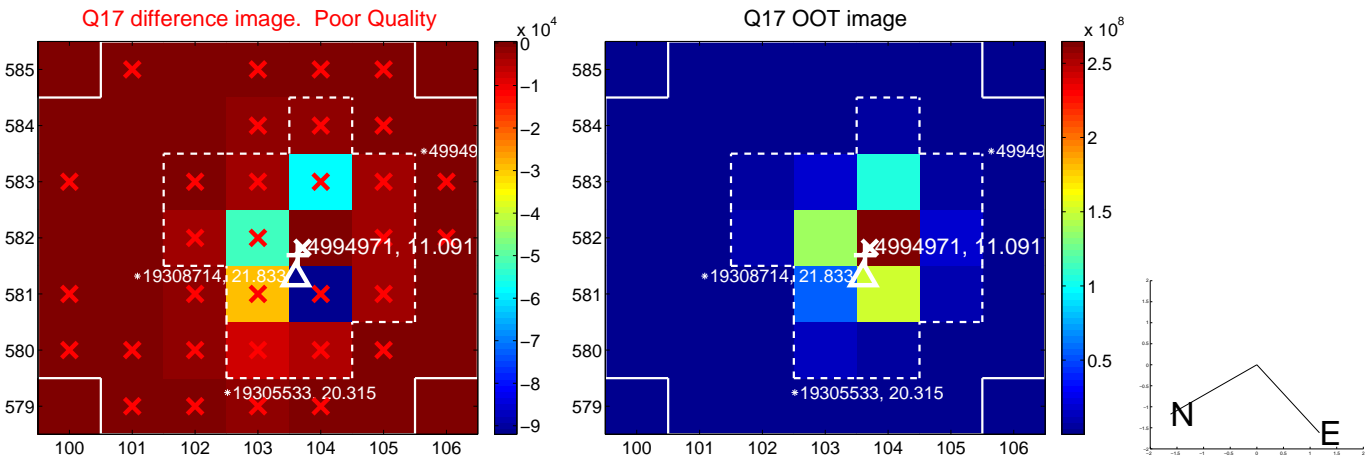
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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.



folded centroid time series figure for this object.

UKIRT Image

Declination

