

# KIC 002991460

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
002991460-01	OBS	No	0.547495	131.555698	8.6	4.763	7.9	6.4	2.69	7762	0.81	88467.44

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
002991460-01	OBS	FP	0.00	1	0	0	0	LPP_DV—CENT_FEW_DIFFS

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

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

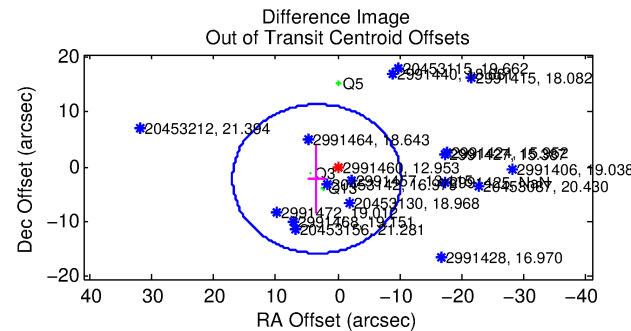
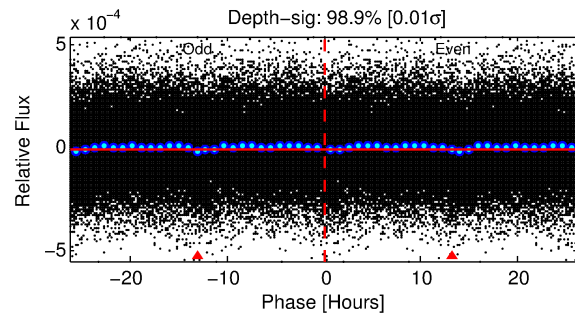
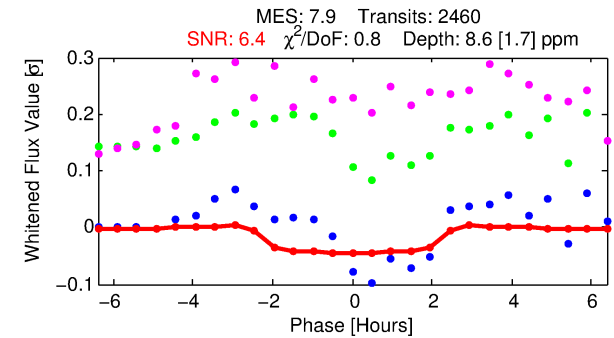
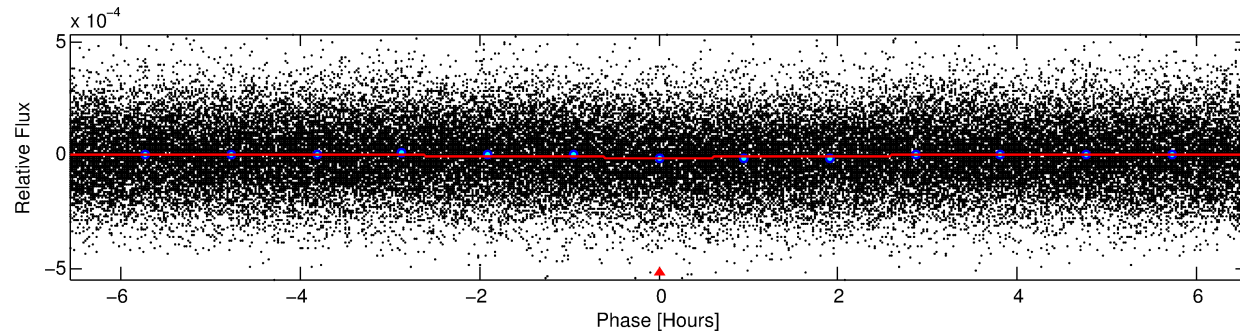
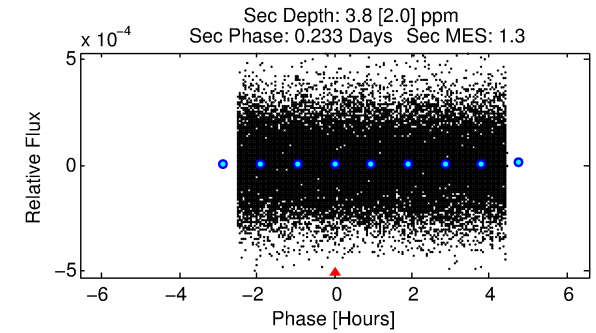
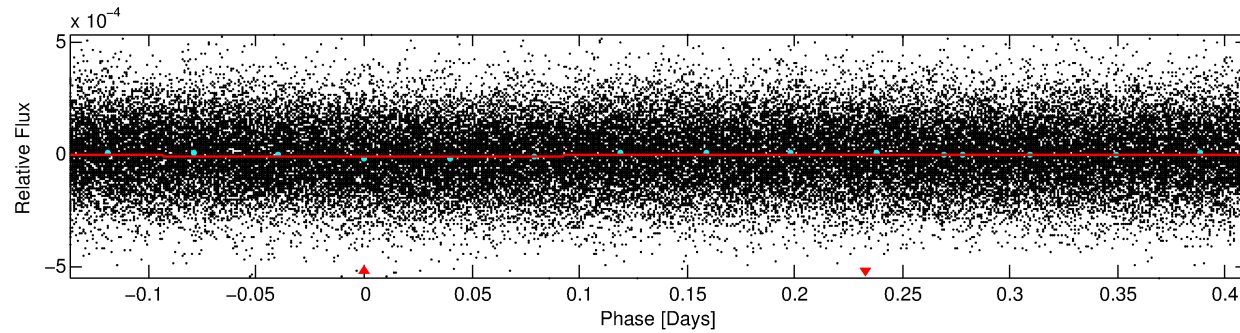
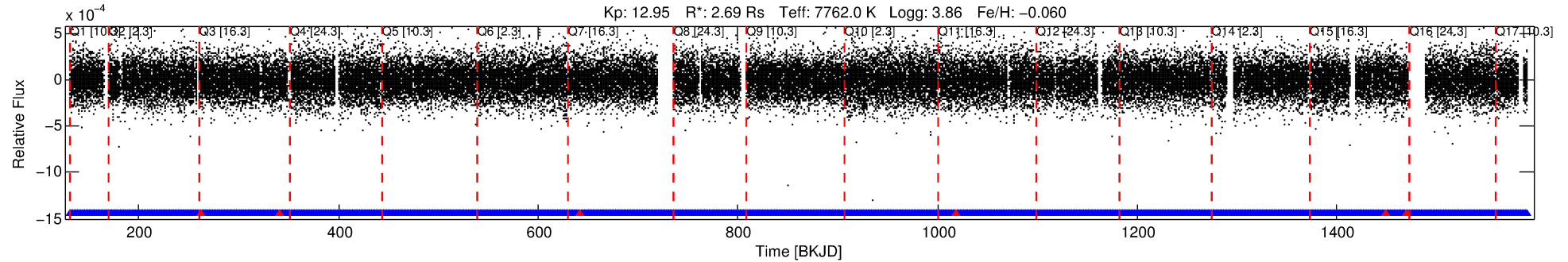
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 002991460-01

No Significant Match Found

# DV One-Page Summary

KIC: 2991460 Candidate: 1 of 1 Period: 0.547 d



## DV Fit Results:

Period = 0.54750 [0.00002] d  
Epoch = 131.5557 [0.0067] BKJD  
Rp/R\* = 0.0027 [0.0035]  
a/R\* = 1.10 [1.38]  
b = 0.30 [22.96]  
Seff = 88467.44 [47786.85]  
Teq = 4398 [594] K  
Rp = 0.80 [1.07] Re  
a = 0.0163 [0.0054] AU  
Ag = 0.85 [2.27] [-0.07σ]  
Teffp = 6527 [4285] K [0.49σ]

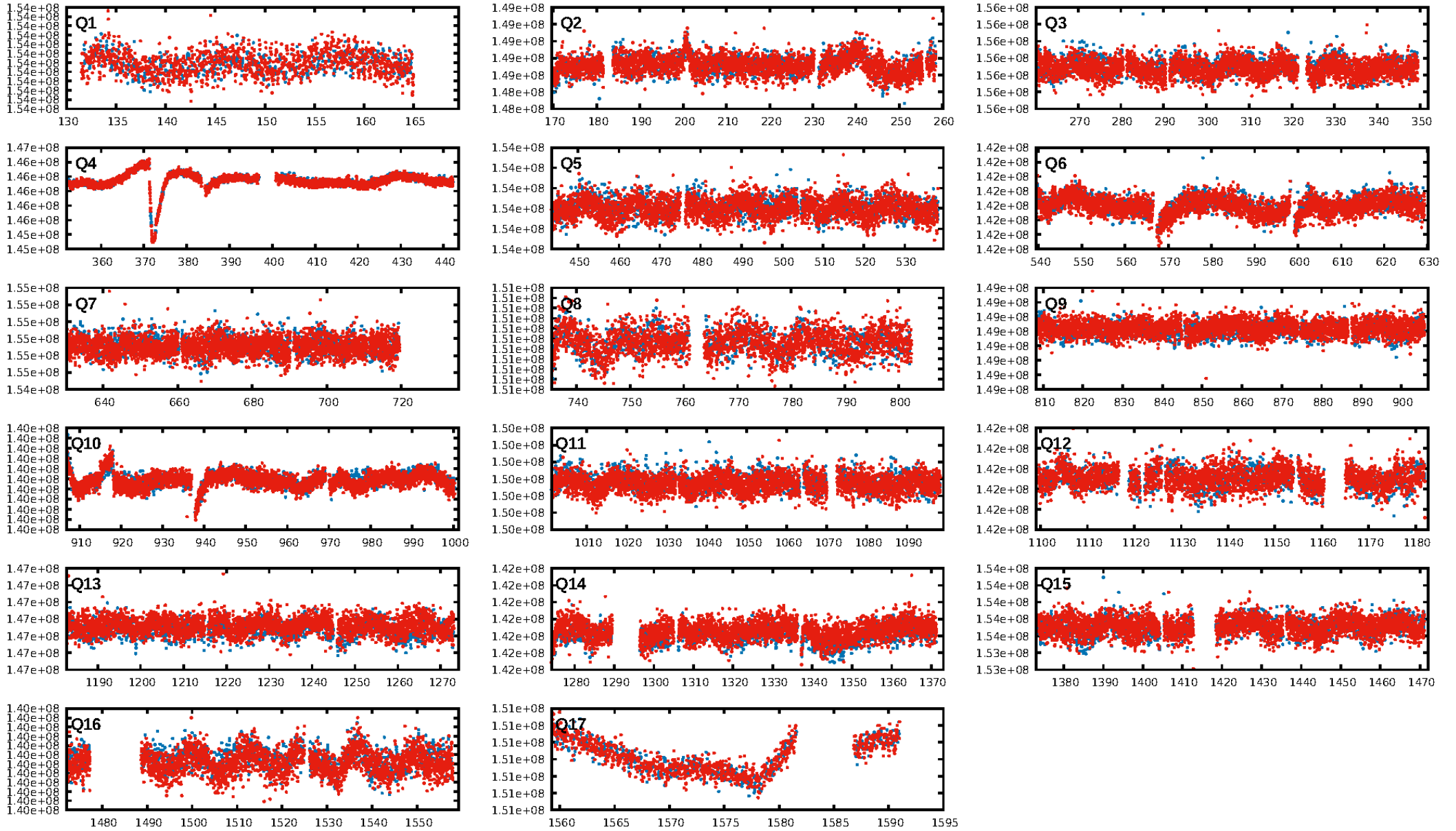
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: N/A  
ModelChiSquareGof-sig: N/A  
Bootstrap-pfa: N/A  
RollingBand-fgt: 1.00 [2343/2349]  
GhostDiagnostic-chr: 1.013  
Centroid-sig: 0.1%  
Centroid-so: 3.301 arcsec [2.04σ]  
OotOffset-rm: 4.016 arcsec [0.89σ]  
KicOffset-rm: 4.102 arcsec [1.87σ]  
OotOffset-st: 0/1/0/2 [3]  
KicOffset-st: 0/1/0/2 [3]  
DiffImageQuality-fgm: 0.00 [0/3]  
DiffImageOverlap-fno: 1.00 [17/17]

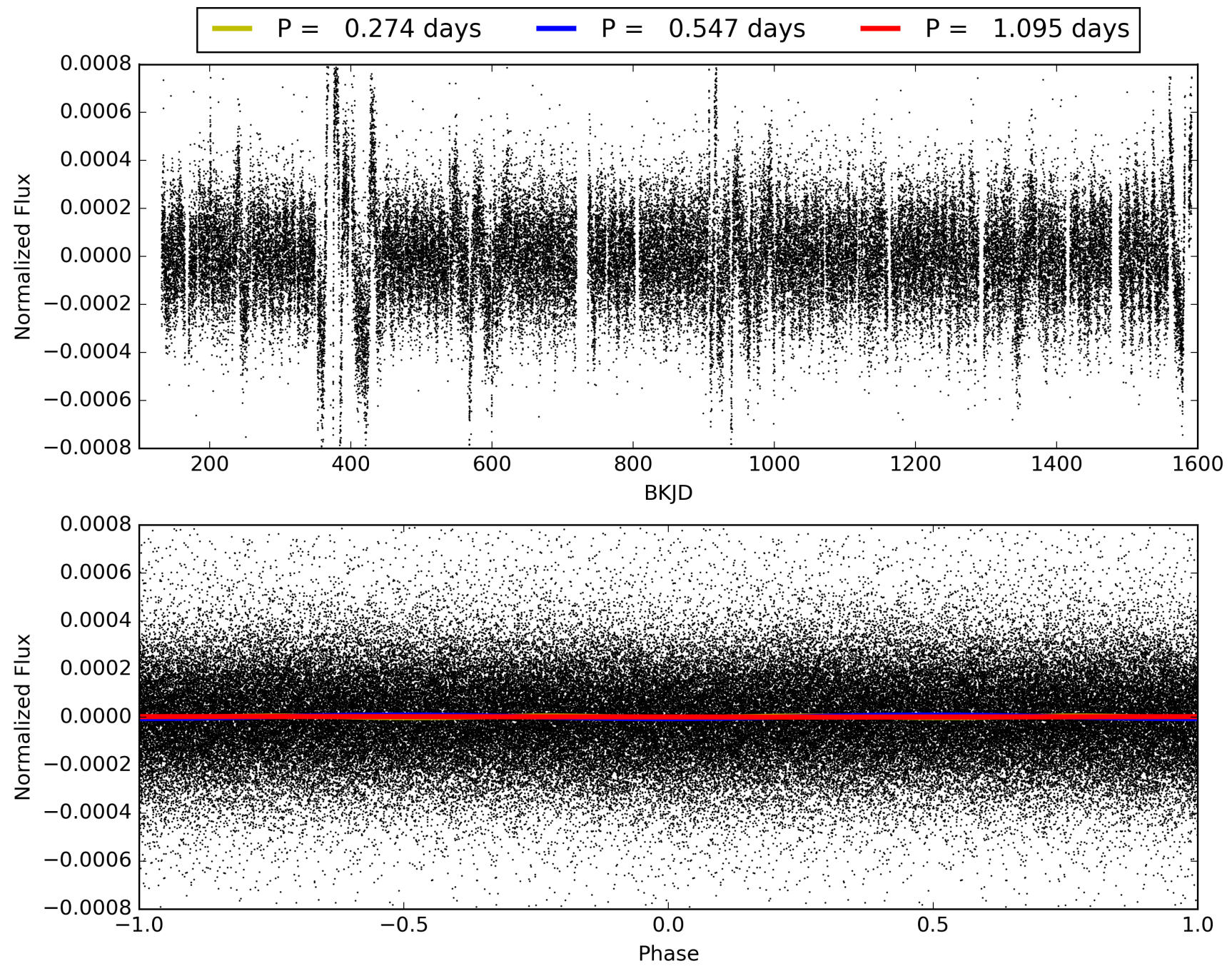
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 00:09:11 Z

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

# TCE 002991460-01, PDC Light Curves



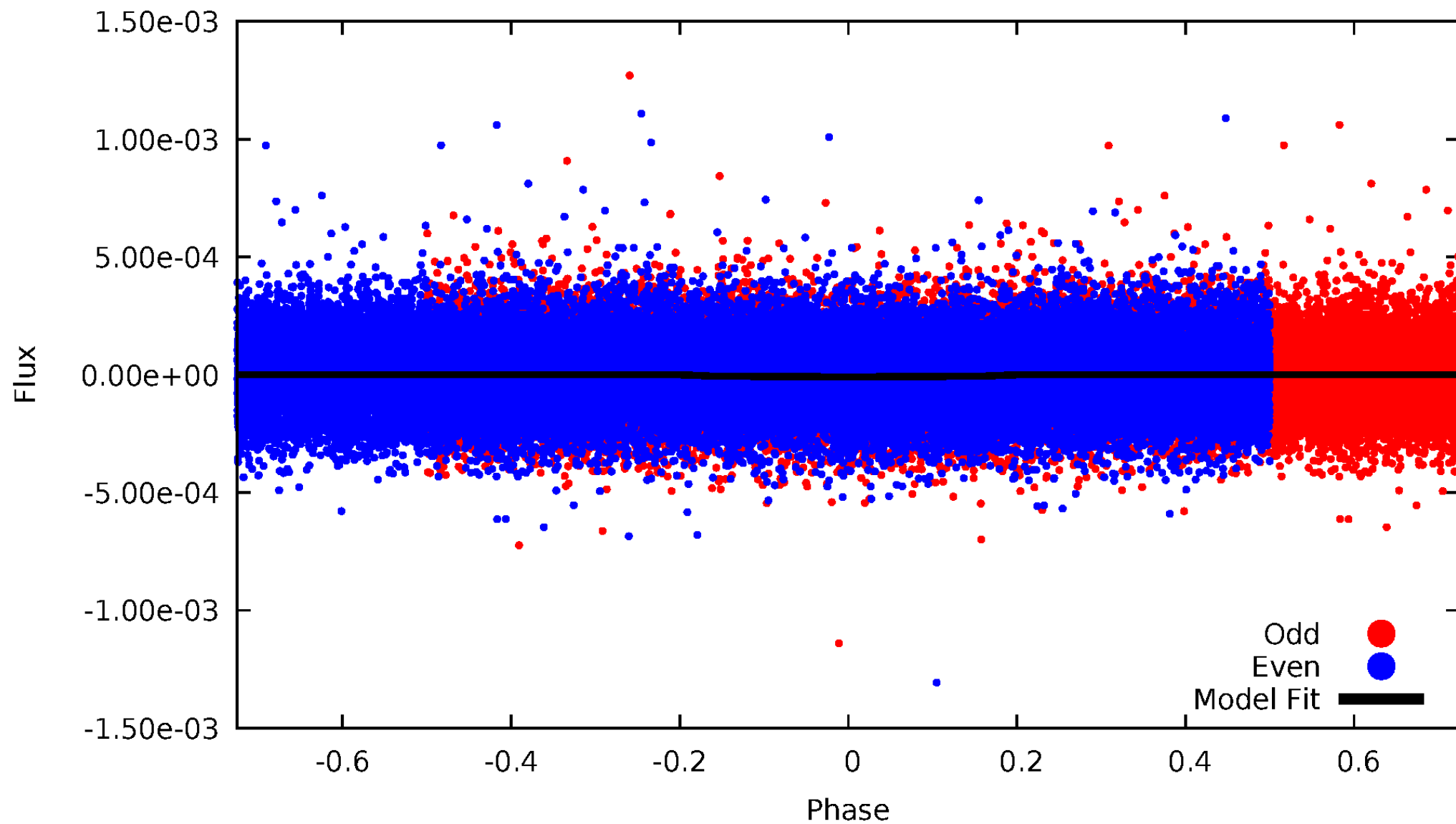
TCE 002991460-01





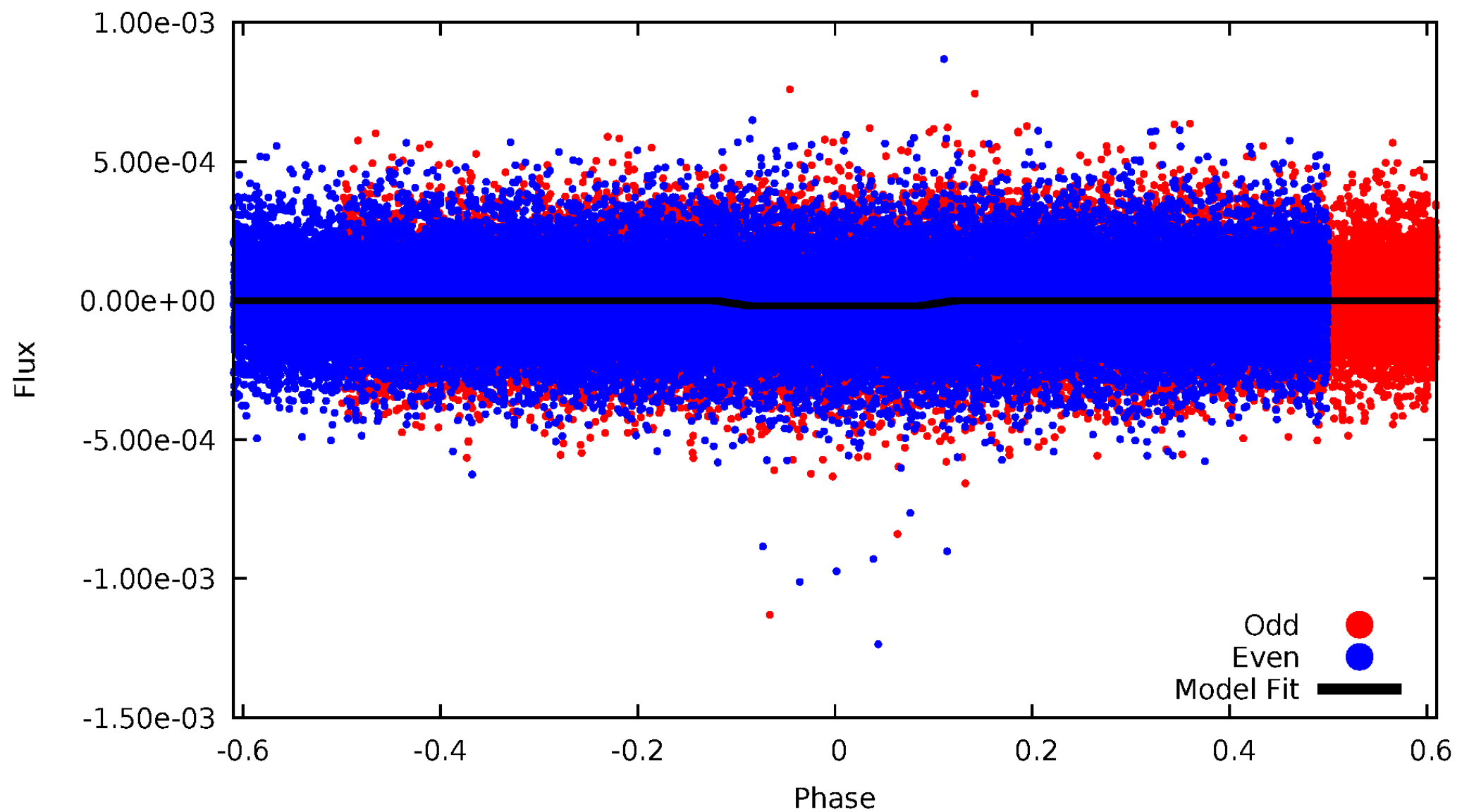
# DV Odd/Even

TCE 002991460-01



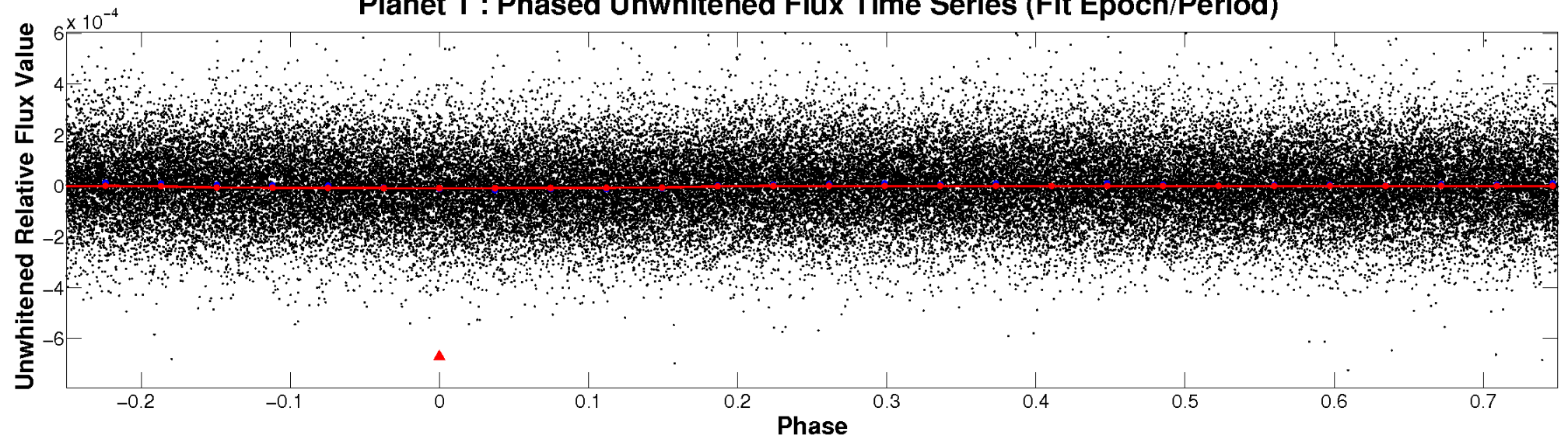
# ALT Odd/Even

TCE 002991460-01

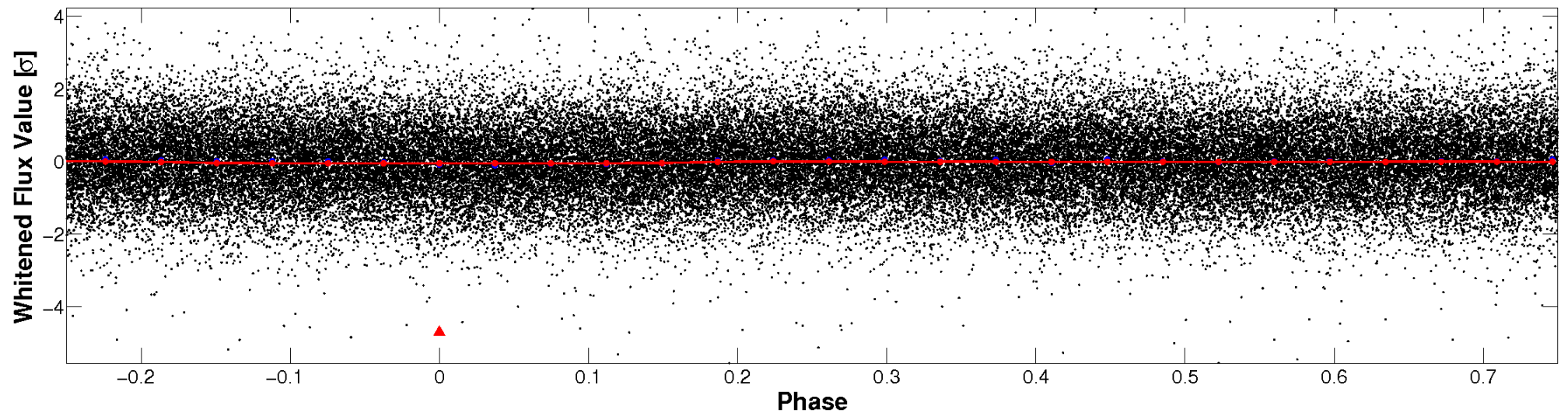


# Non-Whitened Vs. Whitened Light Curve

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

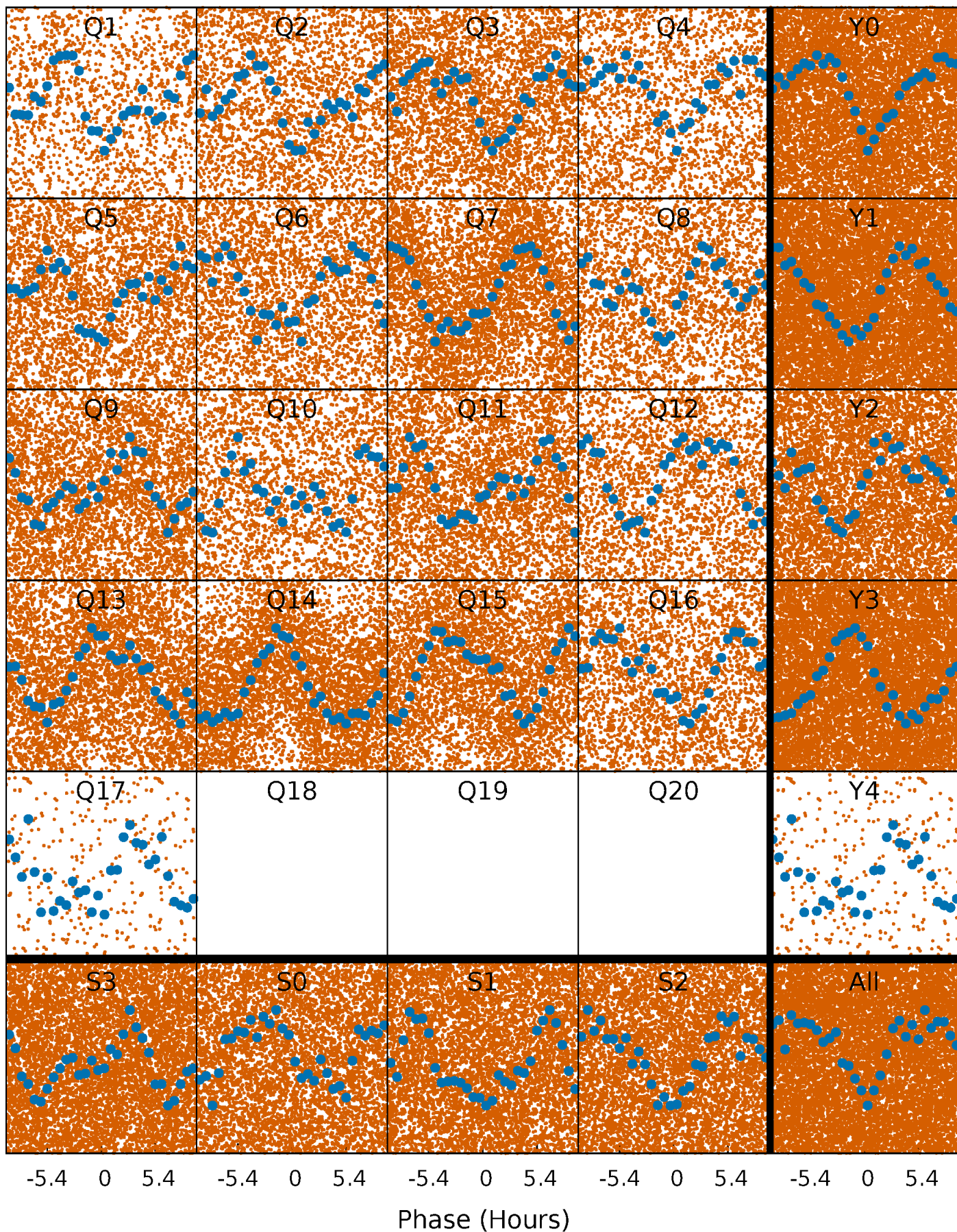


**Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)**



# PDC Quarter-Phased Transit Curves

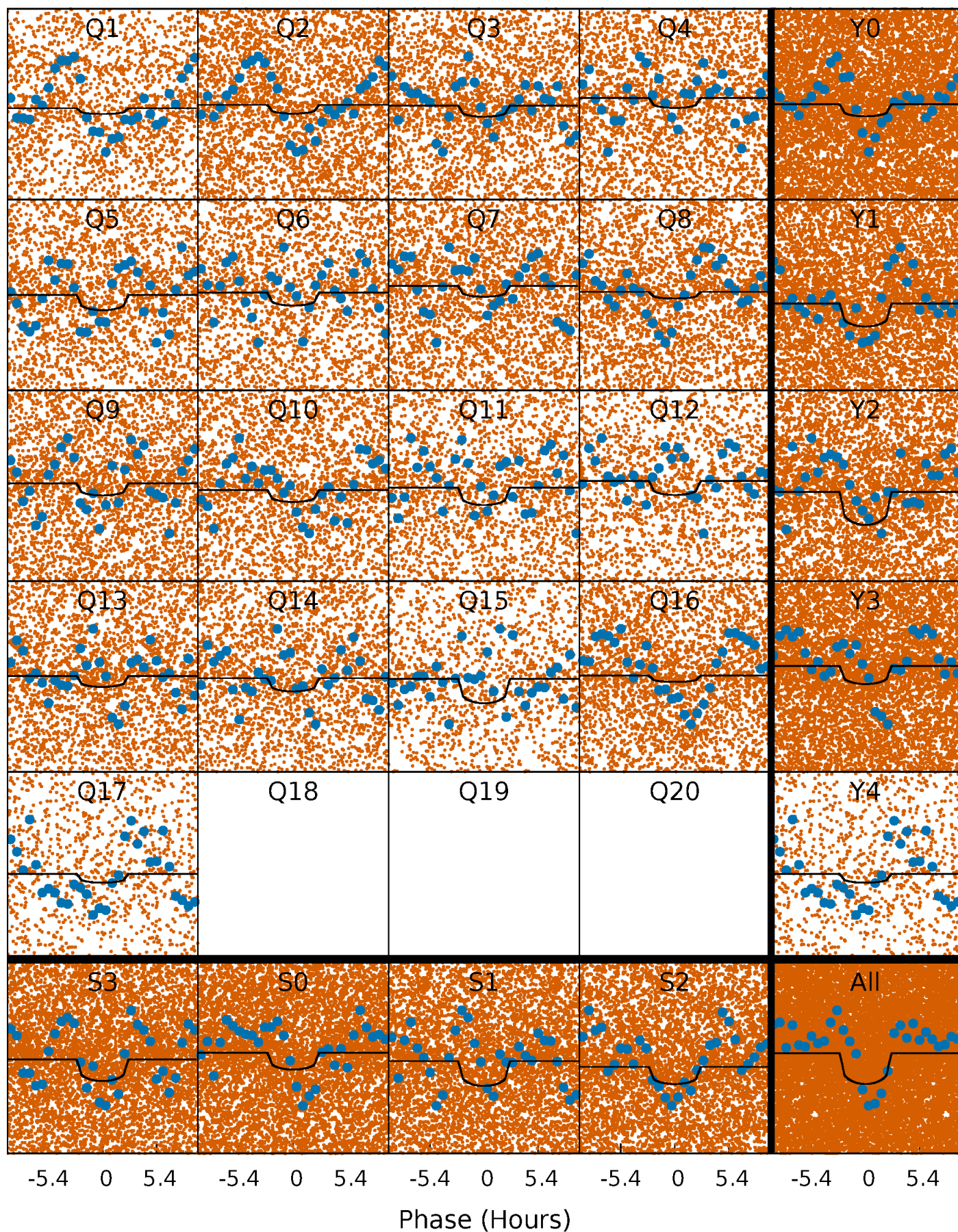
TCE 002991460-01   P= 0.547495 Days    $T_0=131.555698$  (BKJD)





# DV Quarter-Phased Transit Curves

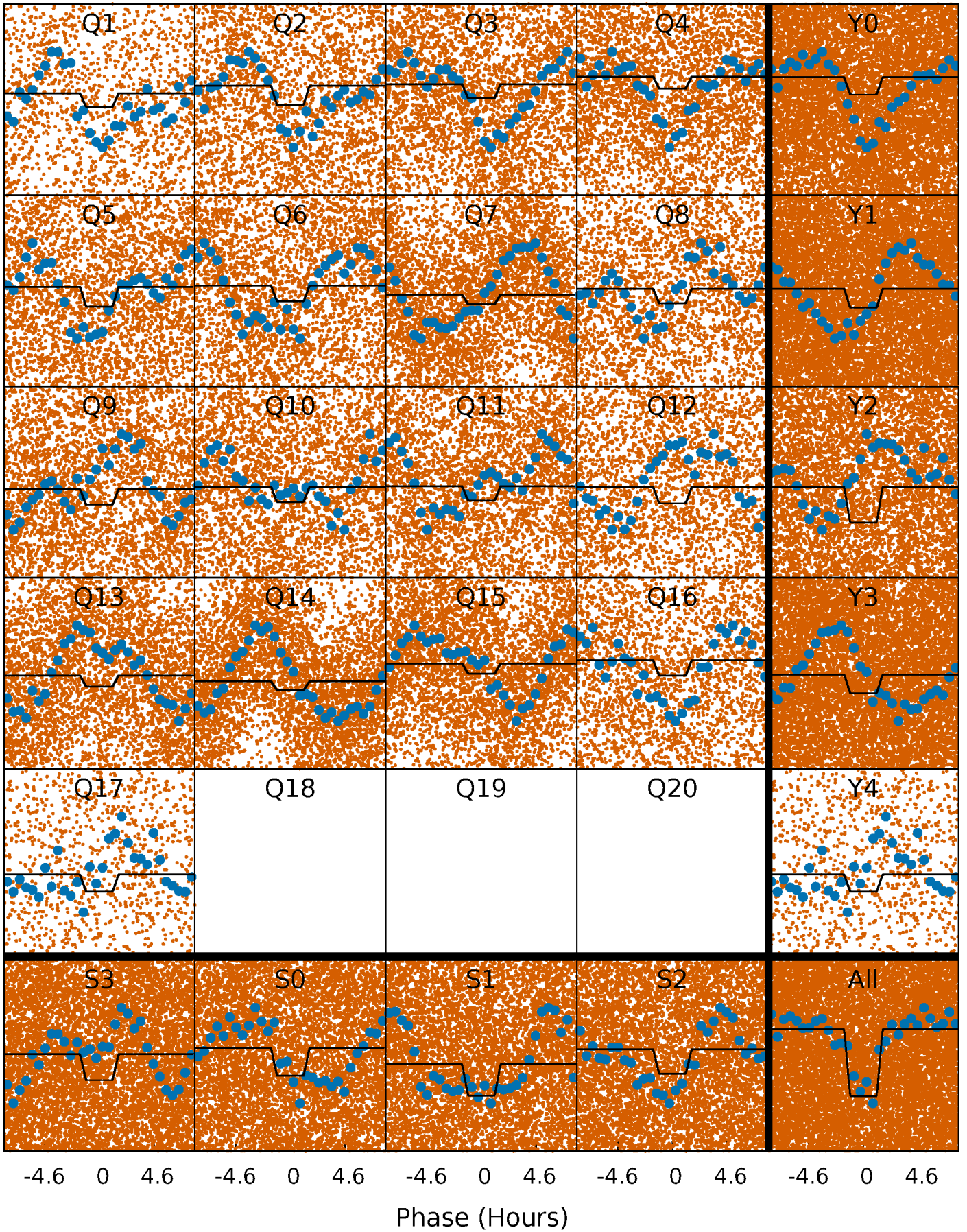
TCE 002991460-01 P= 0.547495 Days  $T_0=131.555698$  (BKJD)





# Alt. Detrend Quarter-Phased Transit Curves

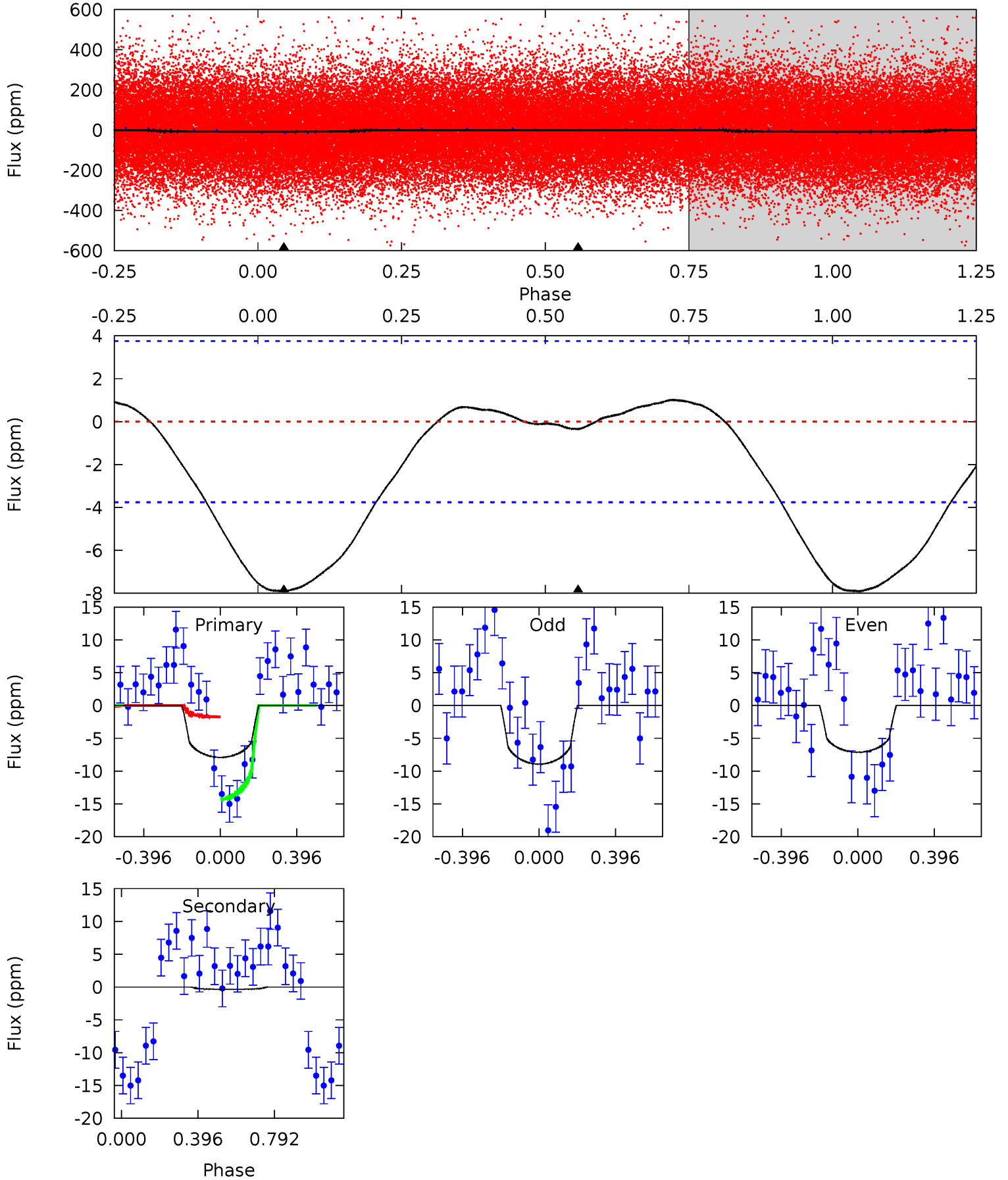
TCE 002991460-01 P= 0.547516 Days  $T_0=131.558106$  (BKJD)



# DV Model-Shift Uniqueness Test

002991460-01, P = 0.547495 Days, E = 131.008203 Days

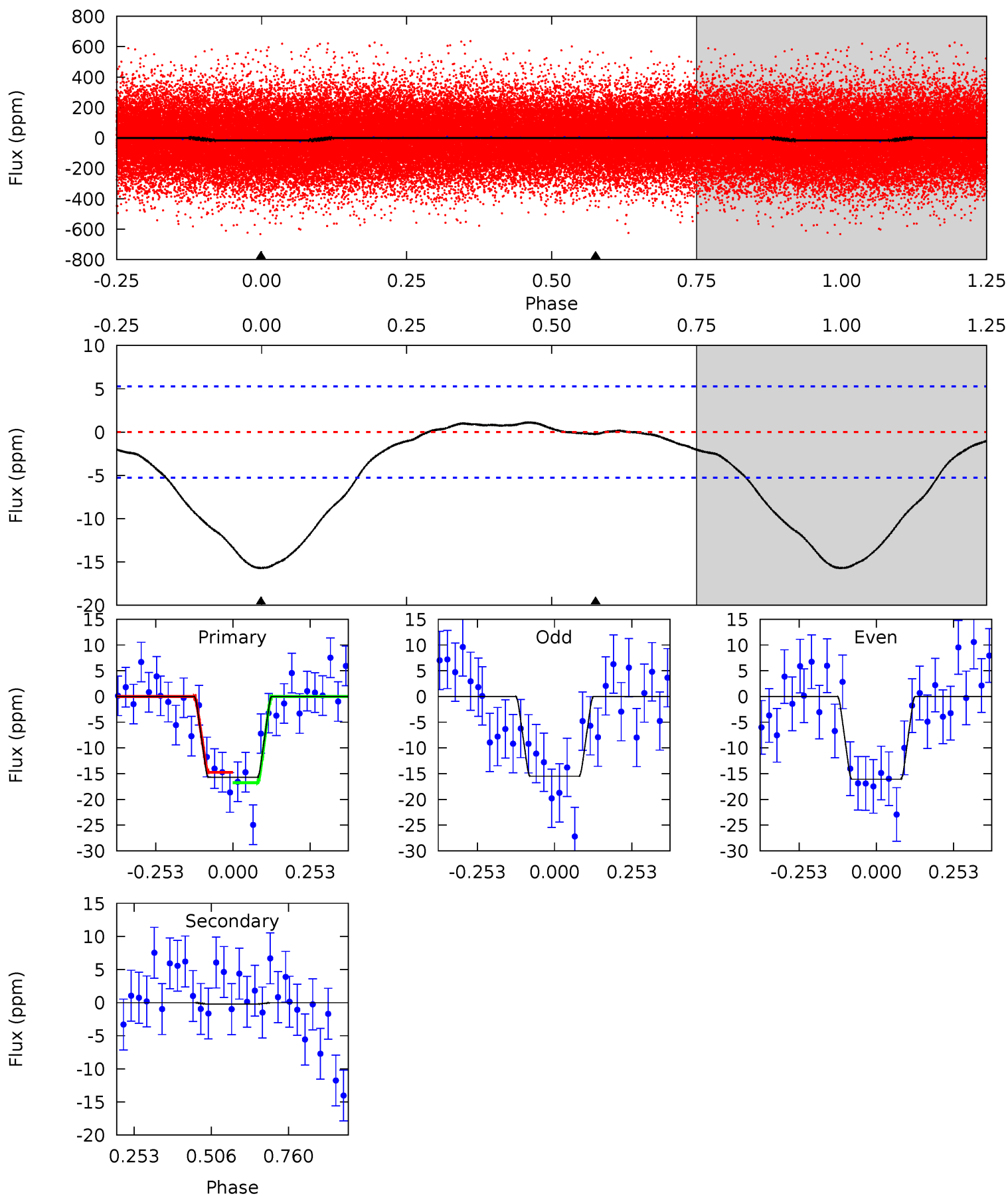
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
8.98	0.39	0	0	4.27	0.85	0.57	8.98	8.98	0.39	0.39	1.02	0.93	0.11	7.05



# Alt Model-Shift Uniqueness Test

002991460-01, P = 0.547516 Days, E = 131.010590 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
13.0	0.19	0	0	4.37	1.14	0.55	13.0	13.0	0.19	0.19	0.24	0.93	0.07	0.81





### Stellar Parameters For KIC 002991460

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$7762^{+214}_{-322}$	$3.864^{+0.294}_{-0.105}$	$-0.060^{+0.200}_{-0.350}$	$2.690^{+0.426}_{-0.993}$	$1.932^{+0.110}_{-0.439}$	$0.140^{+0.322}_{-0.047}$
	+3%/-4%	+8%/-3%	+333%/-583%	+16%/-37%	+6%/-23%	+230%/-33%
Source	KIC0	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 002991460-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	$A_{obs}$
DV	-0±1	$1.04^{+0.95}_{-0.68}$	$6030^{+389}_{-503}$	$-4798^{+8821}_{-543}$	$0.029^{+0.386}_{-0.107}$
Alt.	-0±1	$1.29^{+0.96}_{-0.77}$	$6023^{+391}_{-551}$	$-4853^{+904}_{-506}$	$0.012^{+0.184}_{-0.100}$

$T_{max}$  = 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

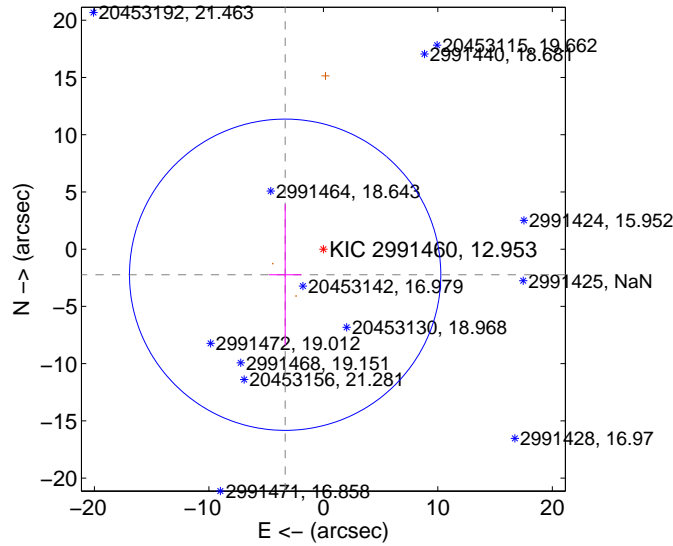
Supplemental centroid analysis for 002991460-01. Kepler magnitude: 12.95. Transit SNR 6.43

There are 0 quarters with good PRF difference image offsets

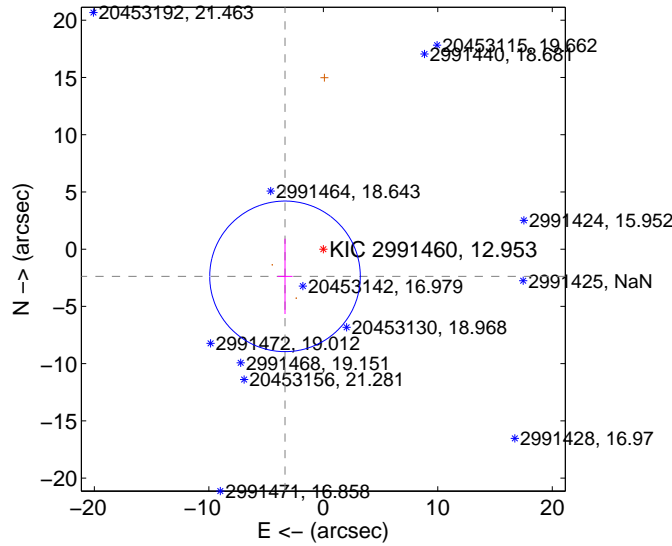
The direct PRF centroid is offset from the target star catalog position by about 0.19 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$4.016 \pm 4.532$	0.89	$3.339 \pm 1.408$	$-2.232 \pm 6.158$
PRF-fit source offset from KIC position	$4.102 \pm 2.192$	1.87	$3.345 \pm 0.655$	$-2.374 \pm 3.287$
photometric centroid source offset	$3.30 \pm 1.62$	2.04	$-2.06 \pm 1.48$	$2.58 \pm 1.70$

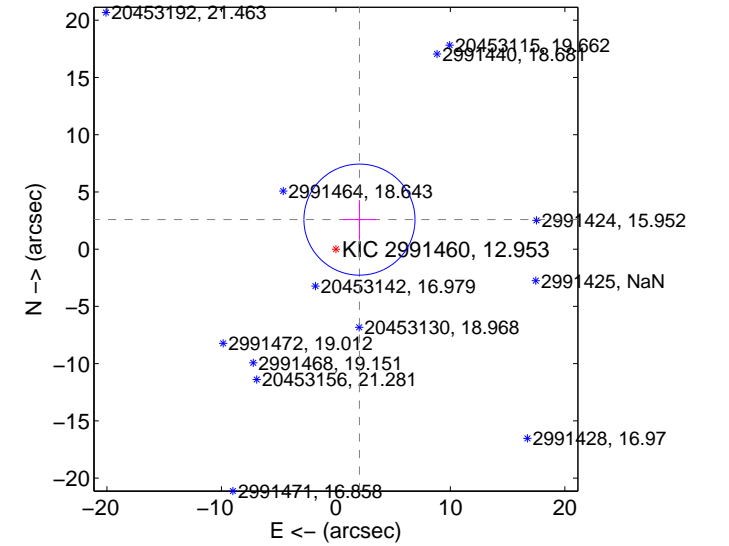
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

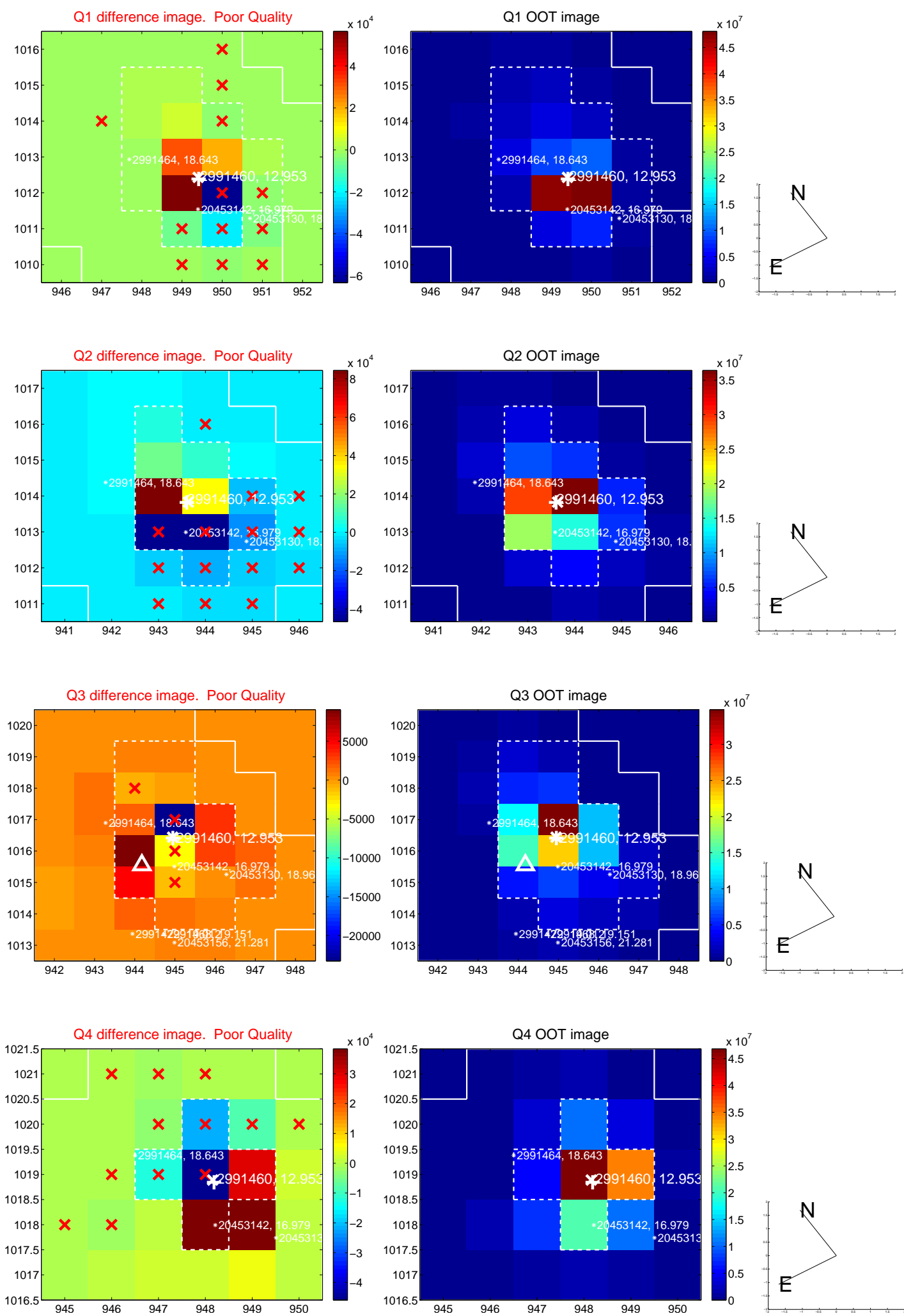


offset from photometric centroids

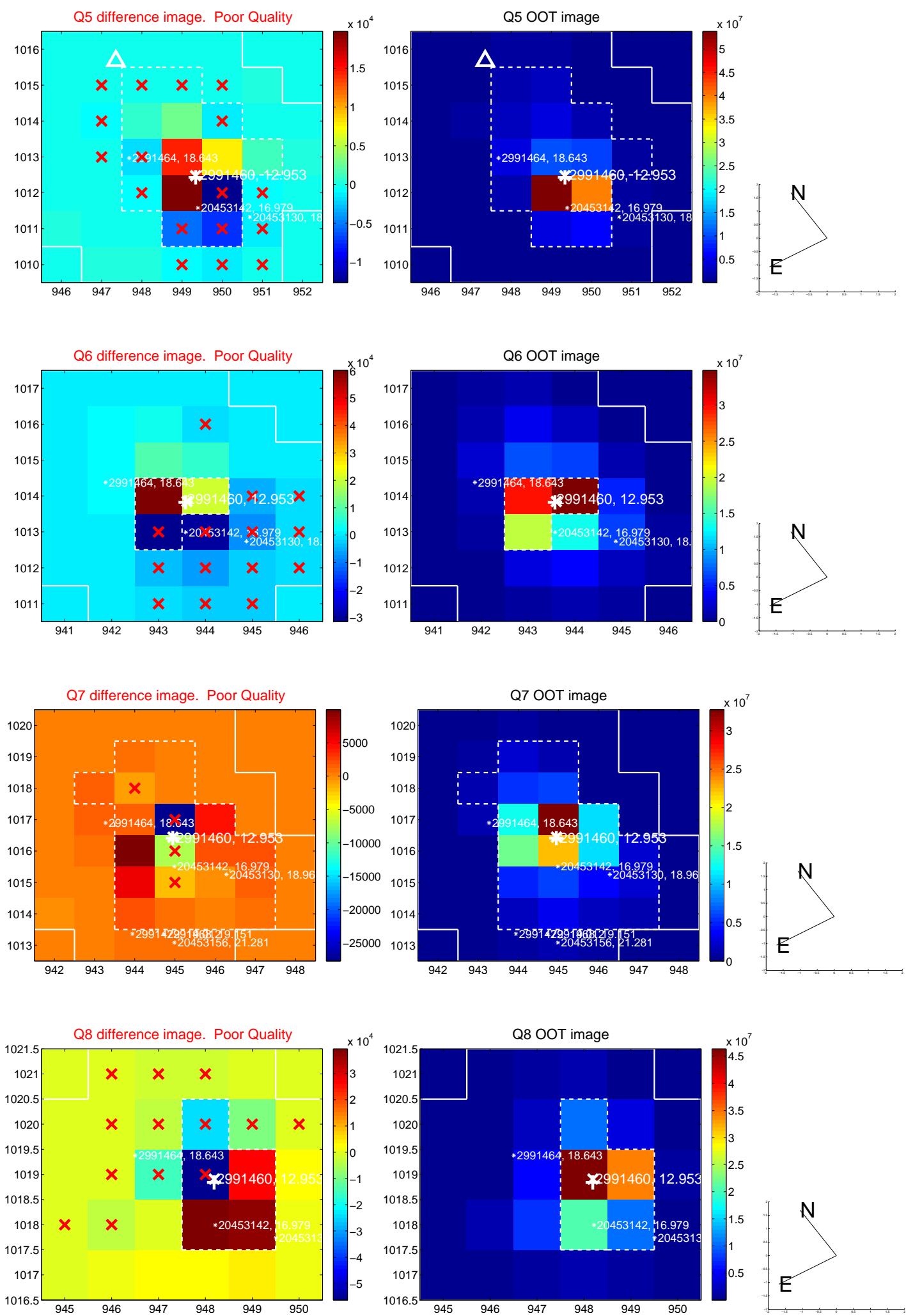


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: three-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

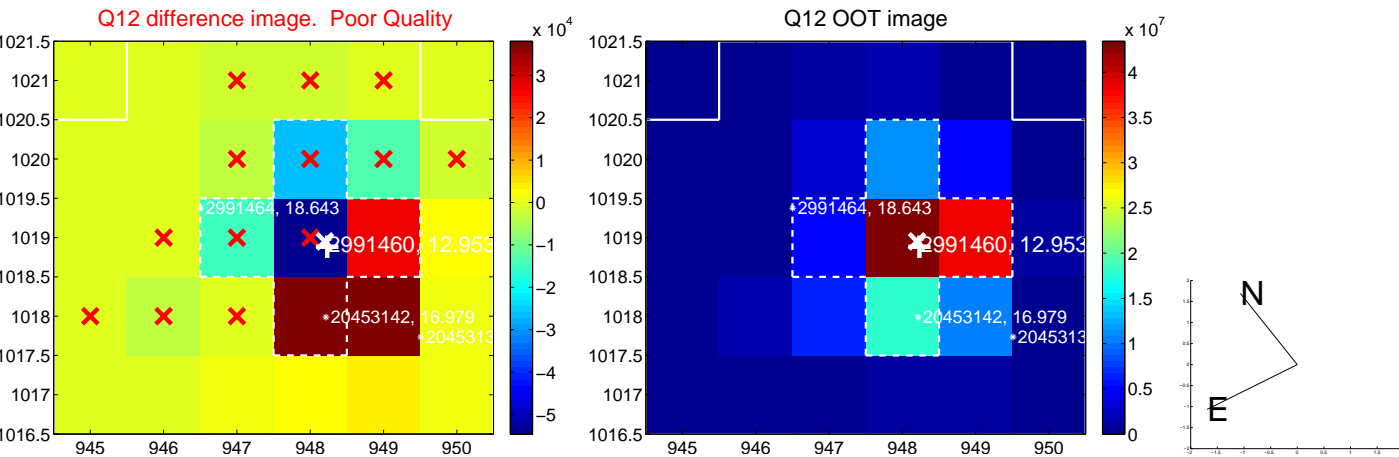
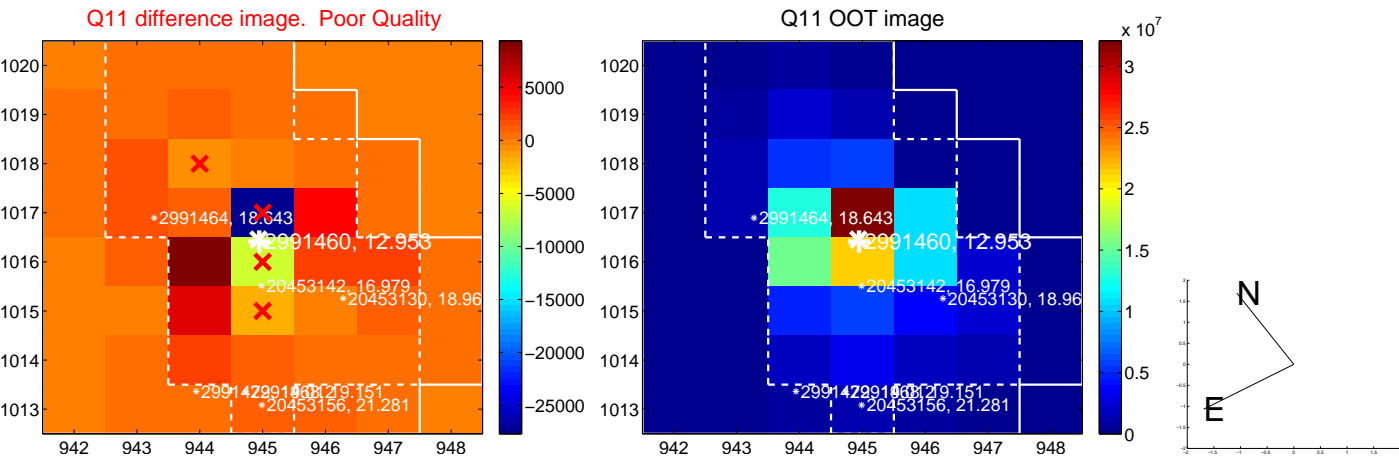
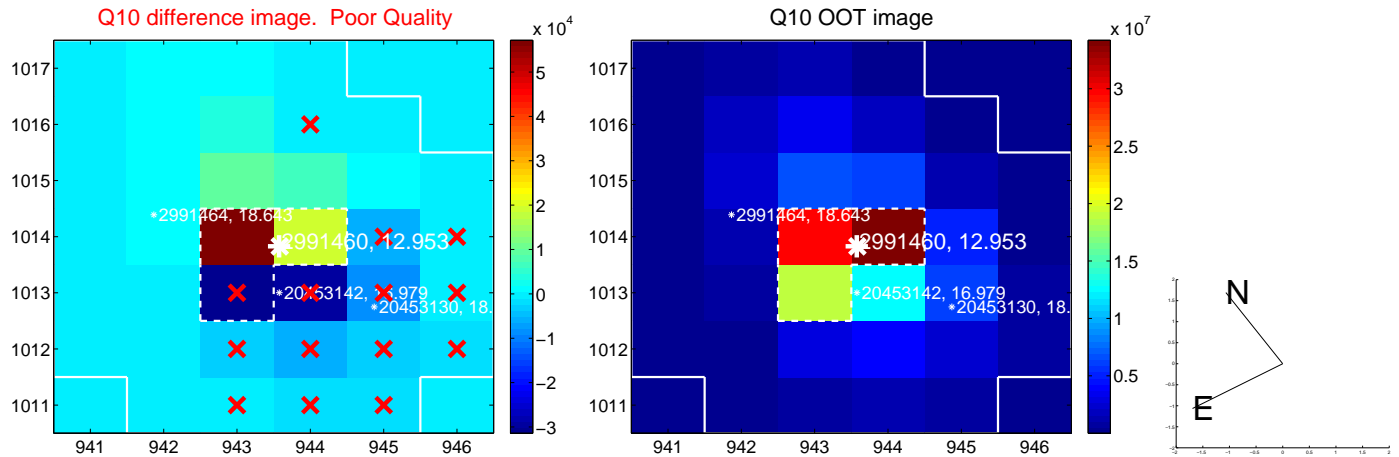
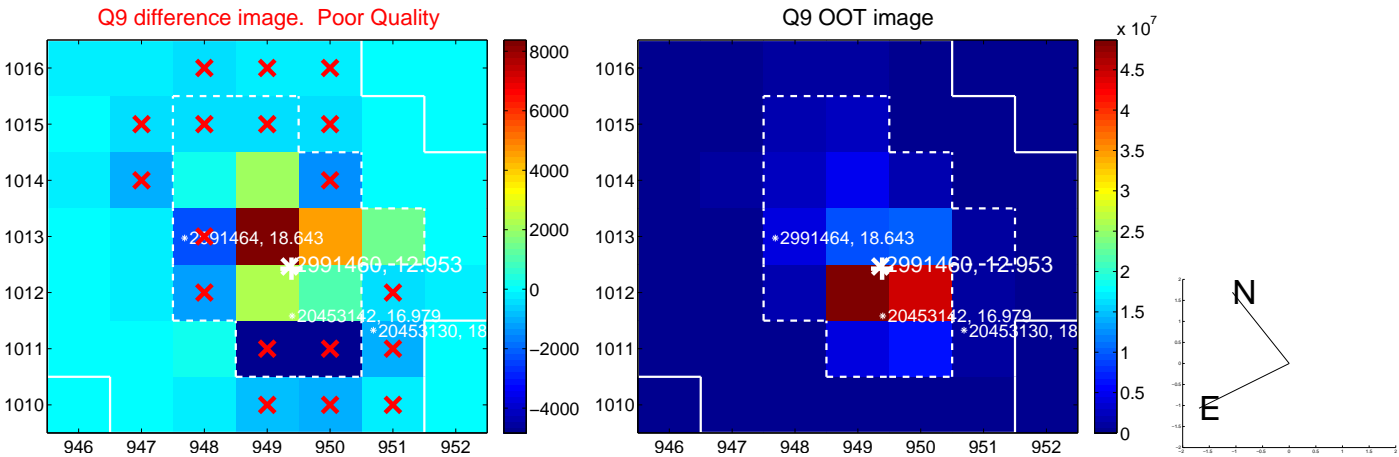


white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

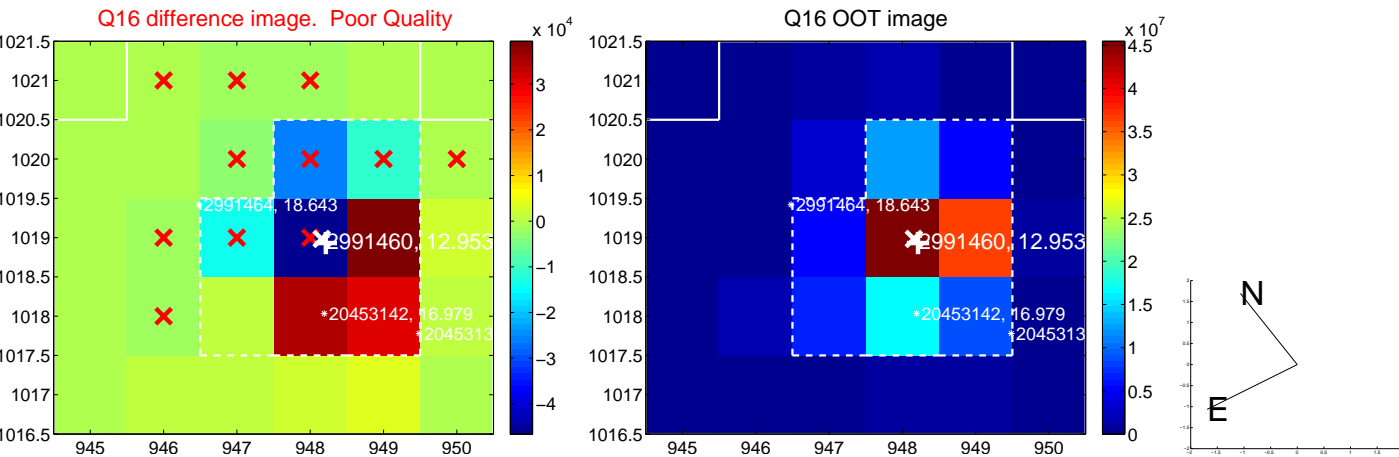
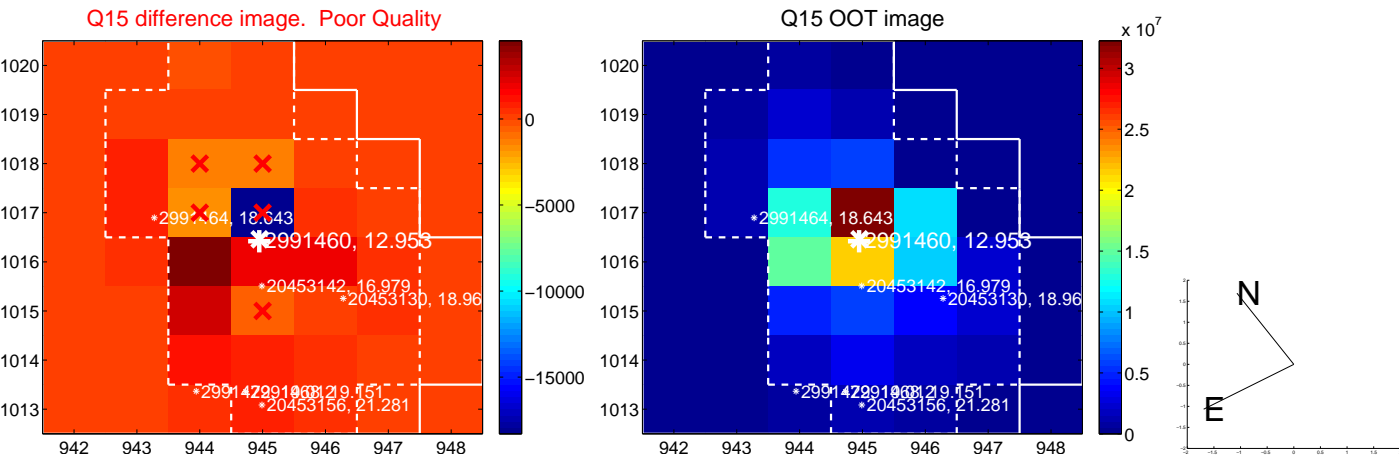
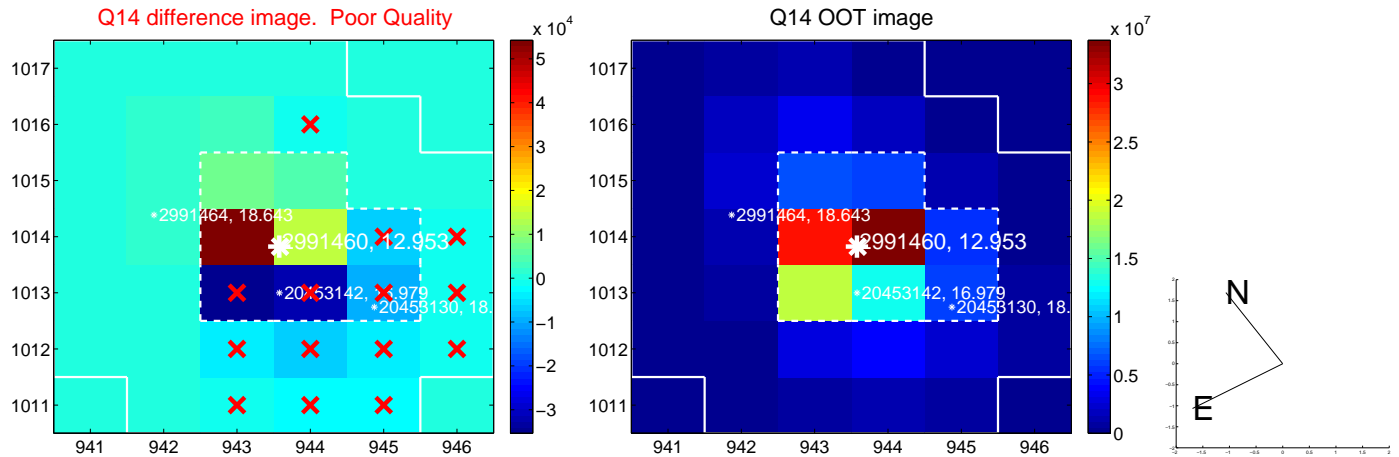
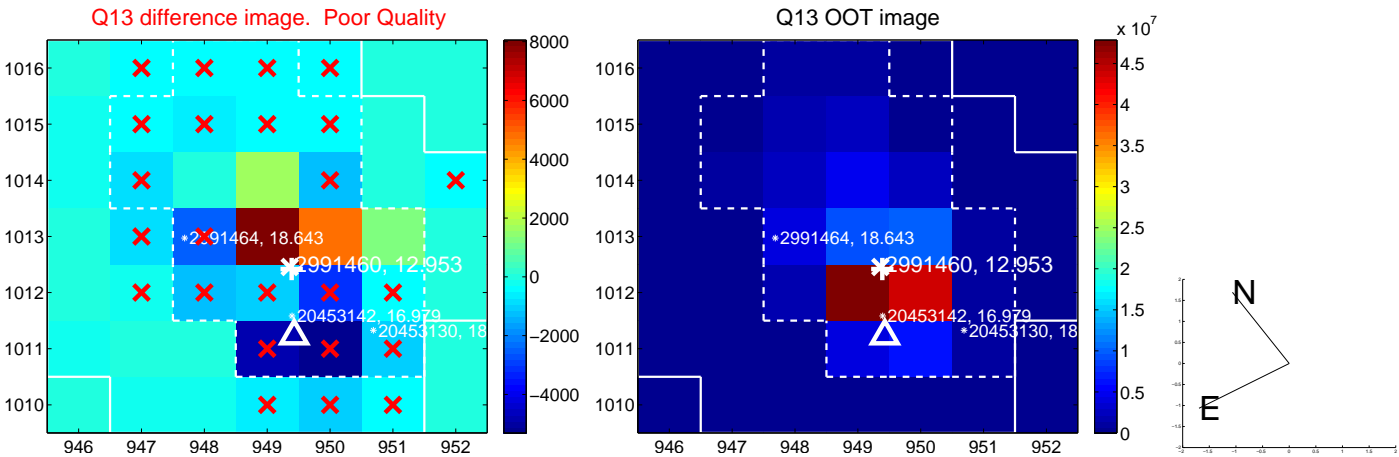




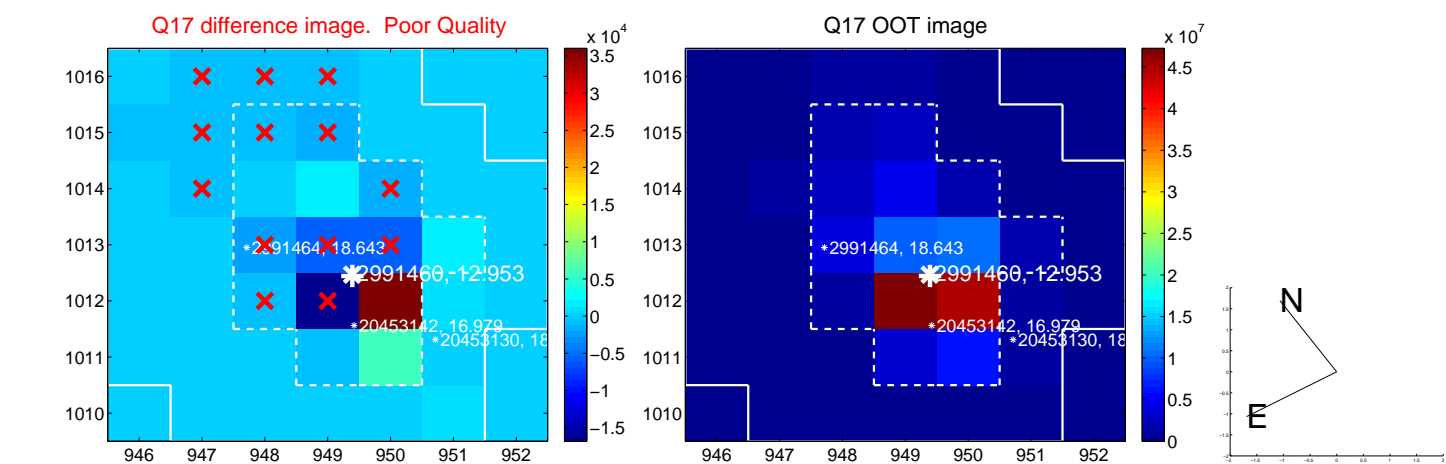
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



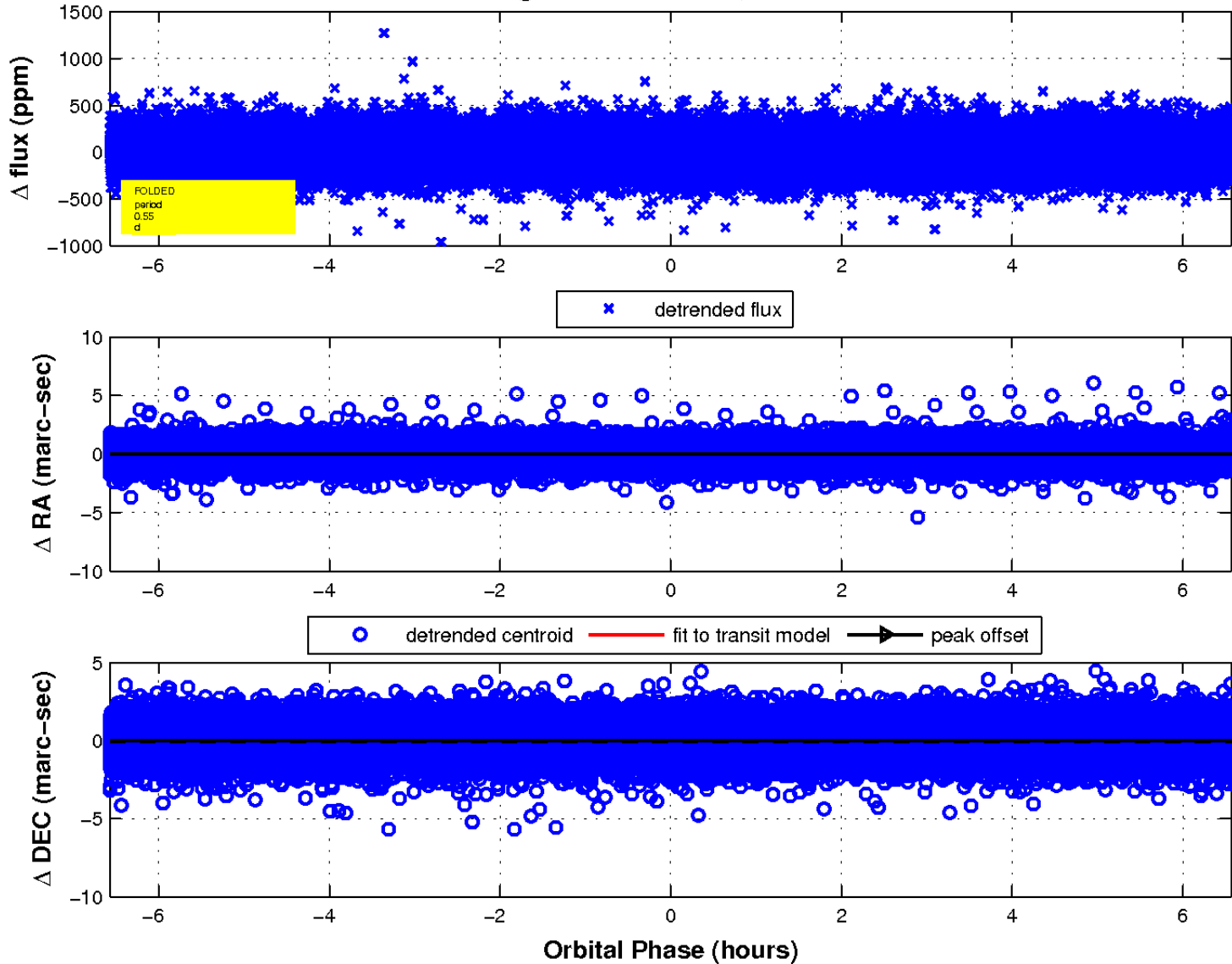
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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



fluxWeightedCentroids, Planet 1 of 1



UKIRT Image

