

# KIC 007771991

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
007771991-01	OBS	No	3.094104	131.656078	11.5	8.369	7.5	6.8	3.84	7493	1.51	14793.01

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
007771991-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_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.

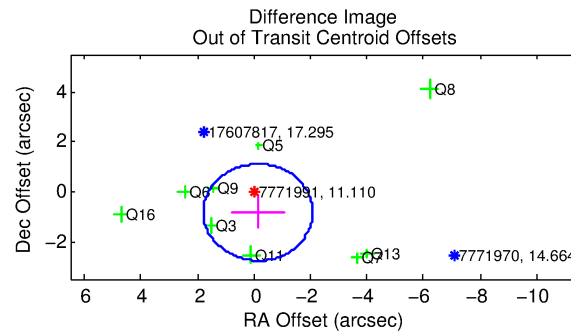
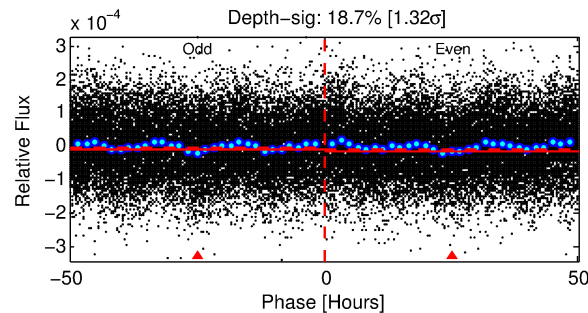
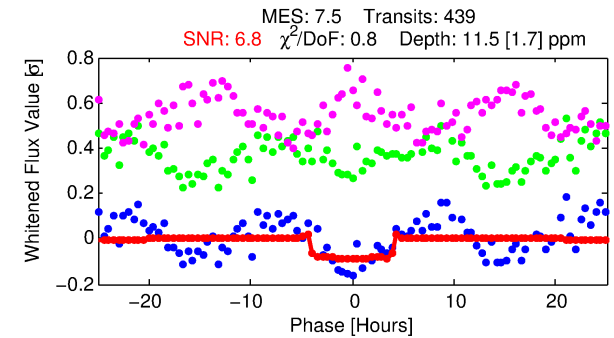
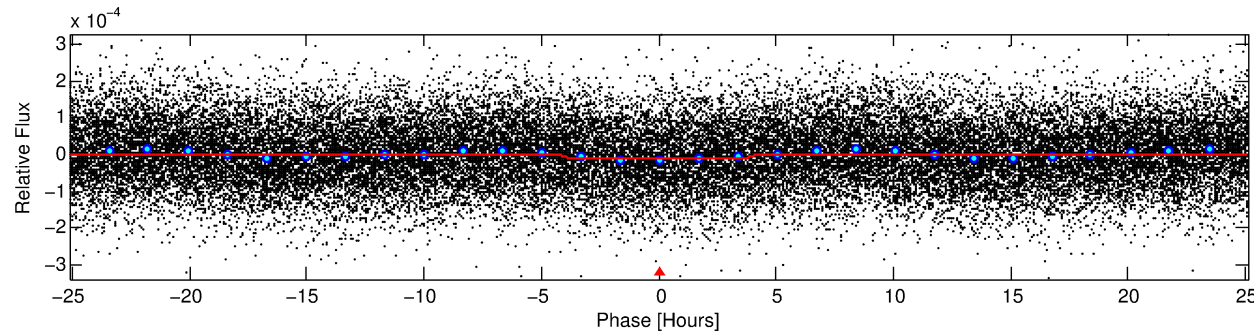
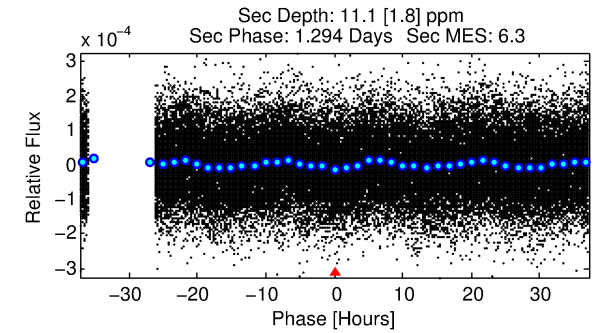
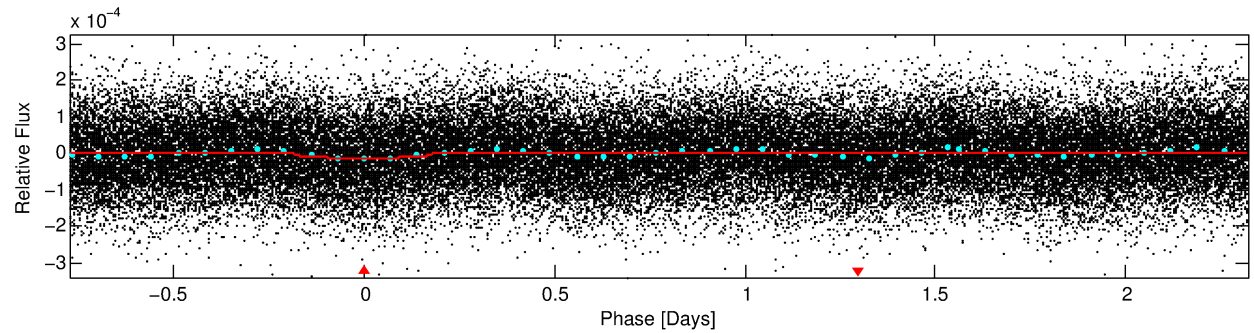
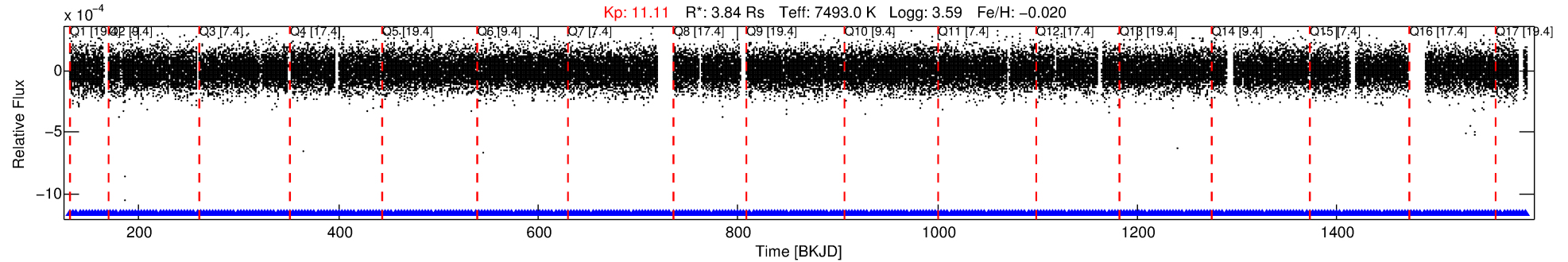
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 007771991-01

No Significant Match Found

# DV One-Page Summary

KIC: 7771991 Candidate: 1 of 1 Period: 3.094 d



## DV Fit Results:

Period = 3.09410 [0.00004] d  
Epoch = 131.6561 [0.0074] BKJD  
Rp/R\* = 0.0036 [0.0007]  
a/R\* = 1.57 [1.08]  
b = 0.90 [0.25]  
Seff = 14793.01 [13002.01]  
Teq = 2812 [618] K  
Rp = 1.51 [0.85] Re  
a = 0.0530 [0.0280] AU  
Ag = 7.57 [7.27] [0.90σ]  
Teffp = 7211 [817] K [4.29σ]

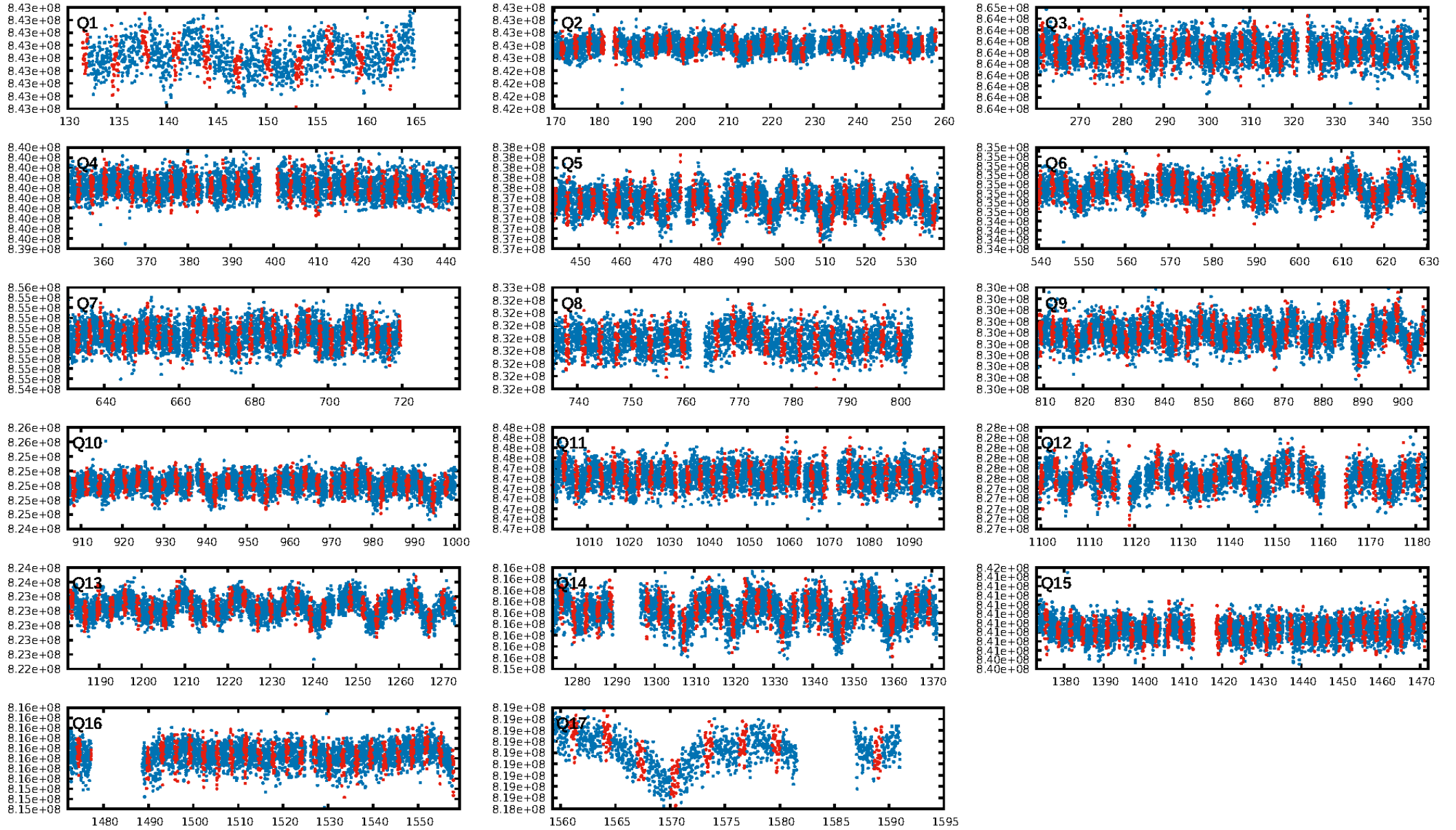
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: N/A  
ModelChiSquareGoF-sig: N/A  
Bootstrap-pfa: 4.52e-11  
RollingBand-fgt: 1.00 [420/420]  
GhostDiagnostic-chr: 1.981  
Centroid-sig: 20.8%  
Centroid-so: 1.608 arcsec [0.89σ]  
OotOffset-rm: 0.842 arcsec [1.30σ]  
KicOffset-rm: 0.772 arcsec [0.84σ]  
OotOffset-st: 1/3/2/3 [9]  
KicOffset-st: 1/3/2/3 [9]  
DiffImageQuality-fgm: 0.78 [7/9]  
DiffImageOverlap-fno: 1.00 [17/17]

Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 21:34:41 Z

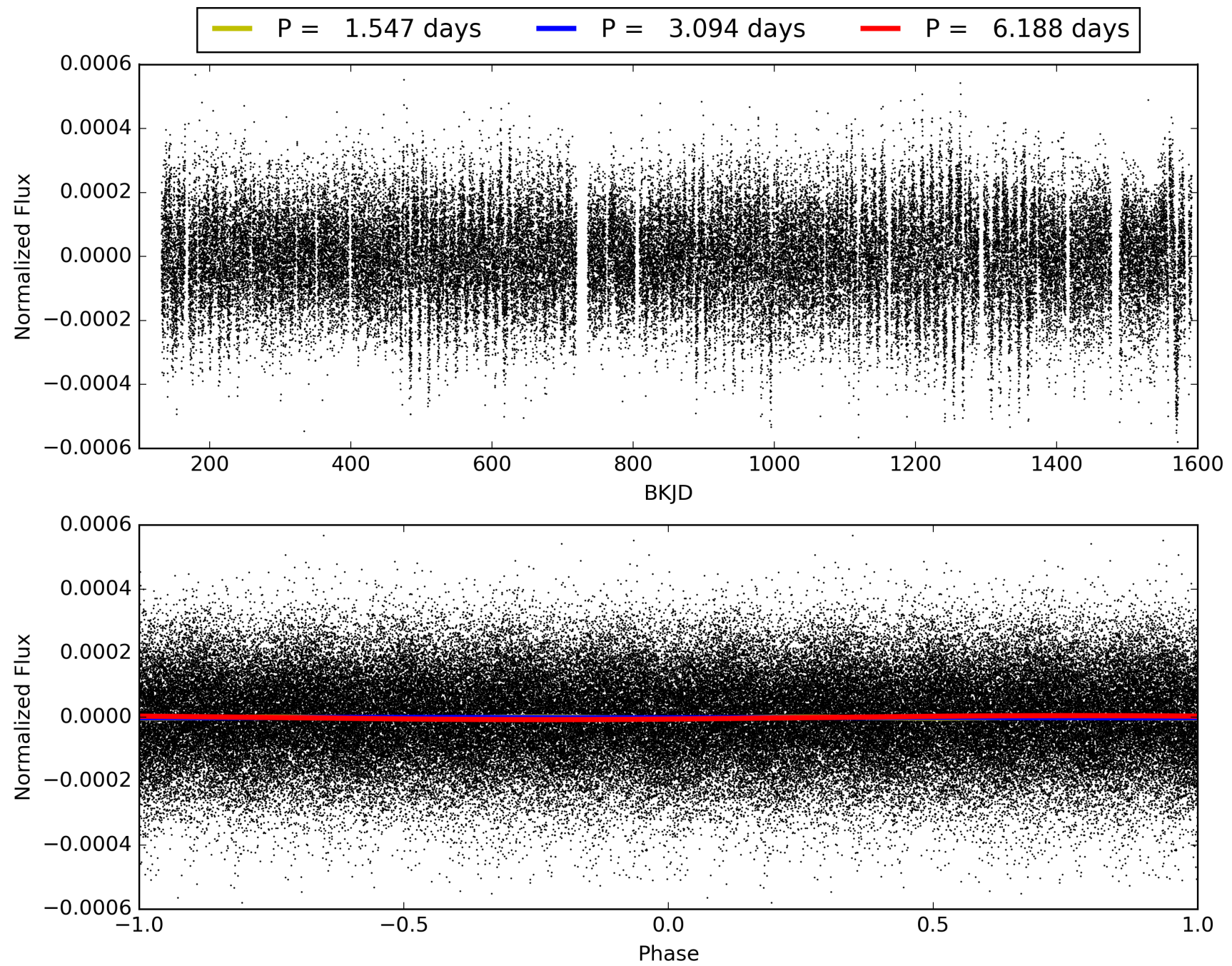
This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

# TCE 007771991-01, PDC Light Curves



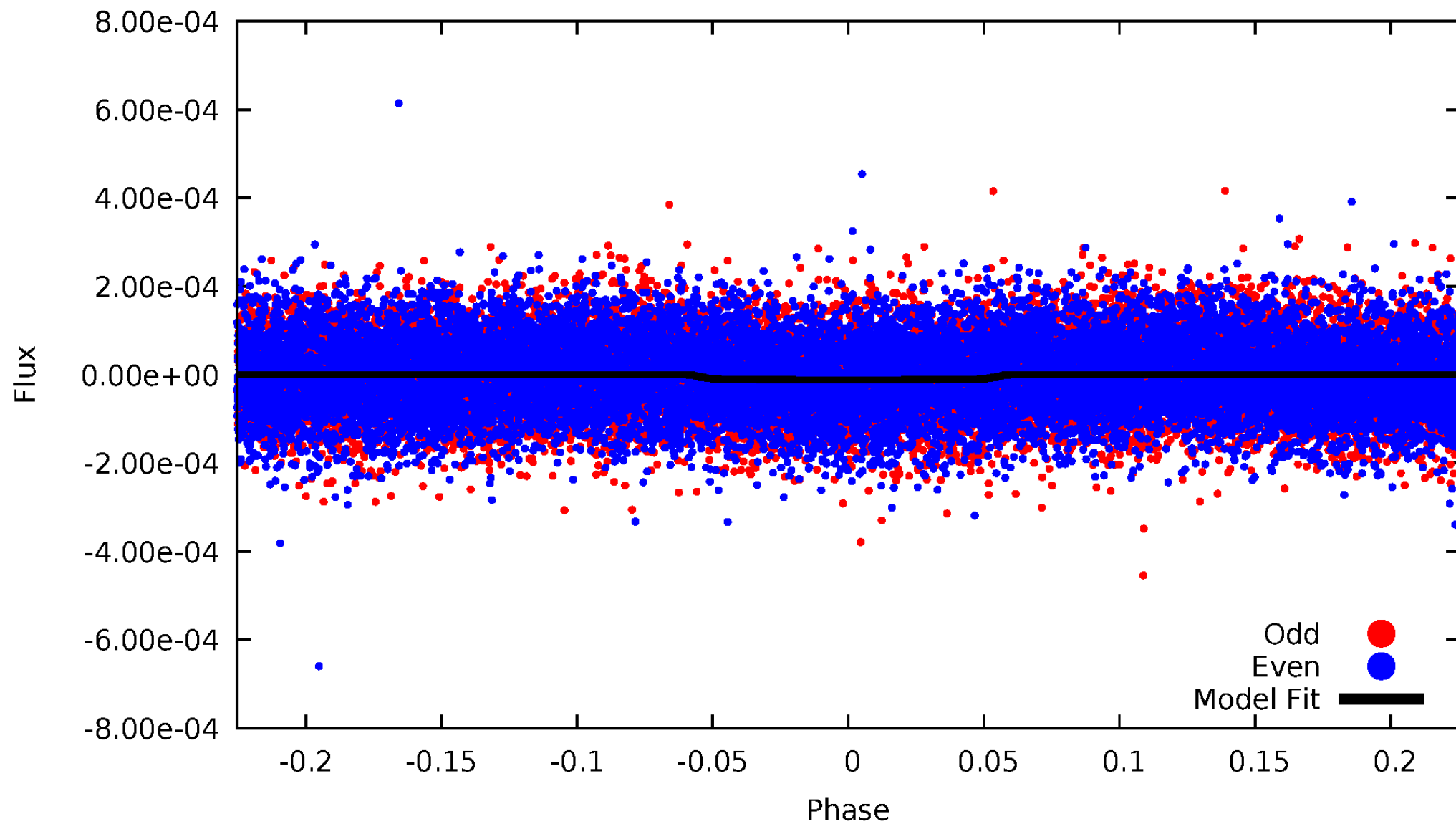


TCE 007771991-01



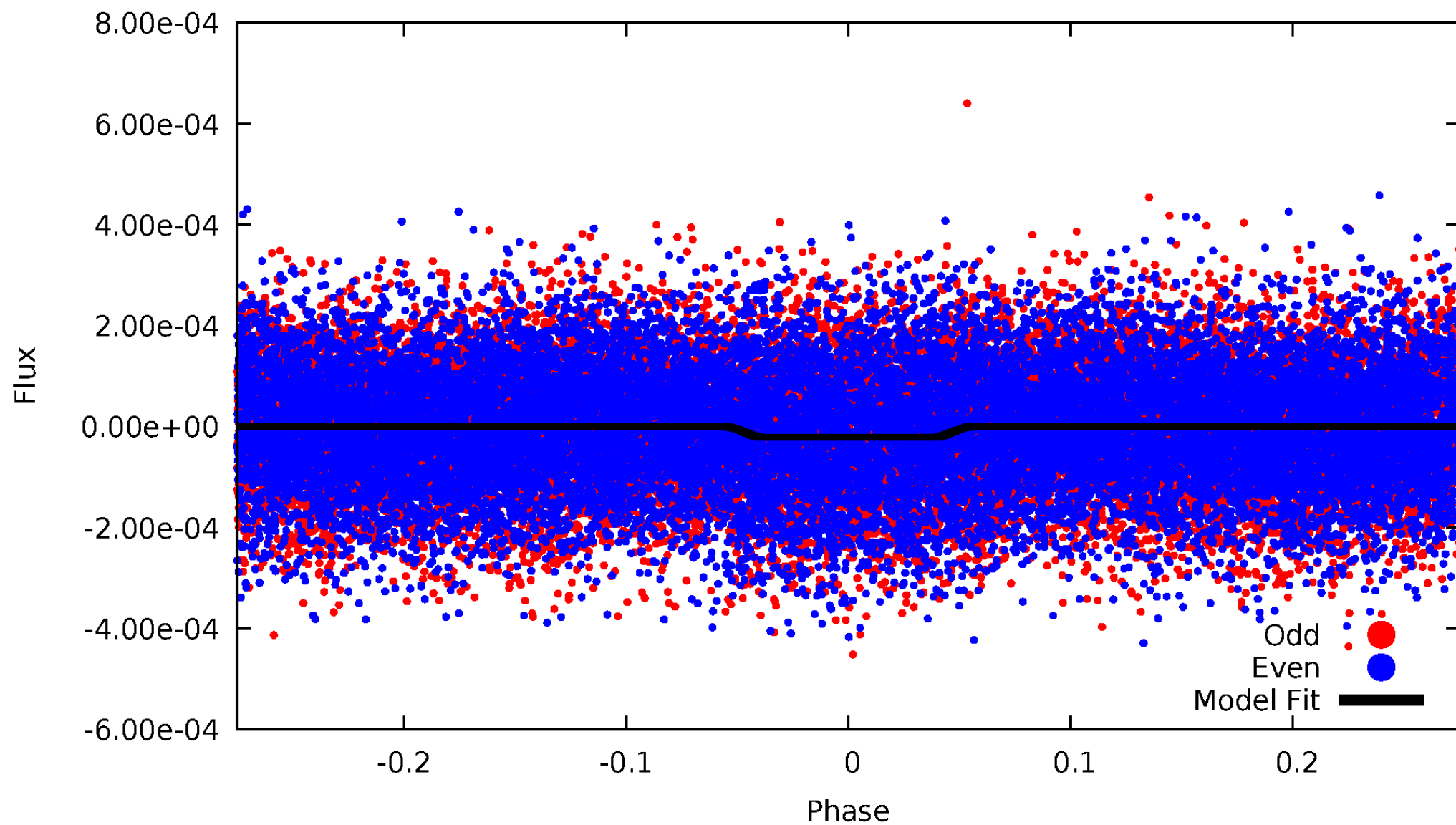
# DV Odd/Even

TCE 007771991-01



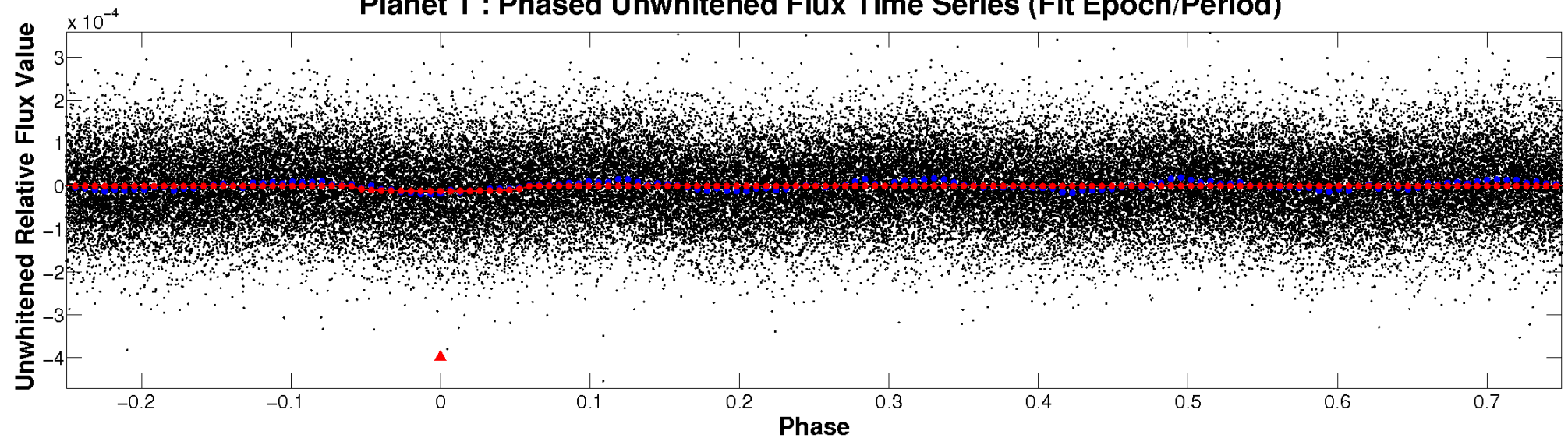
# ALT Odd/Even

TCE 007771991-01

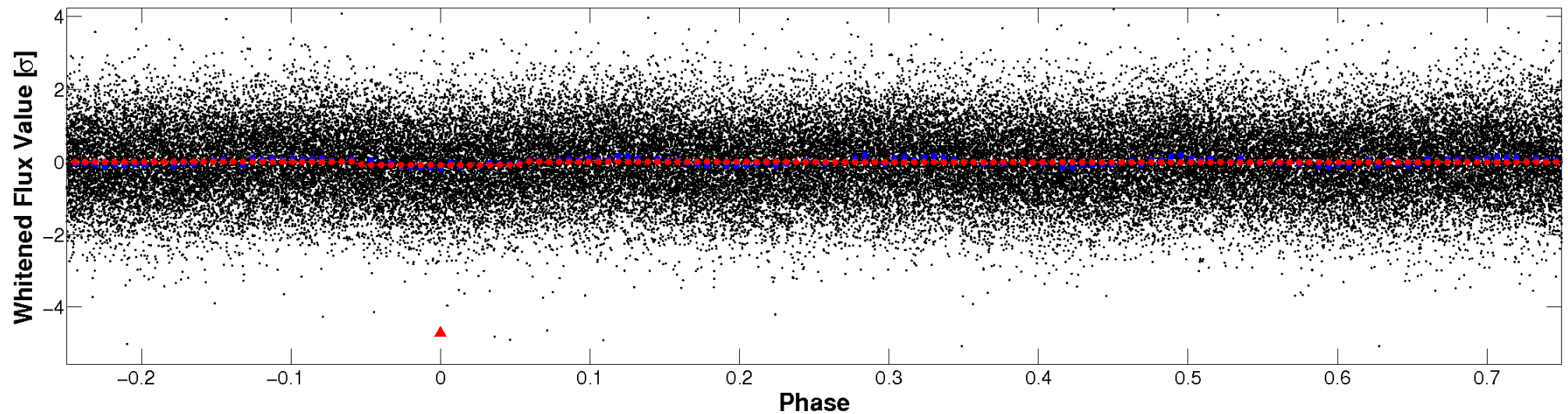


# Non-Whitened Vs. Whitened Light Curve

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



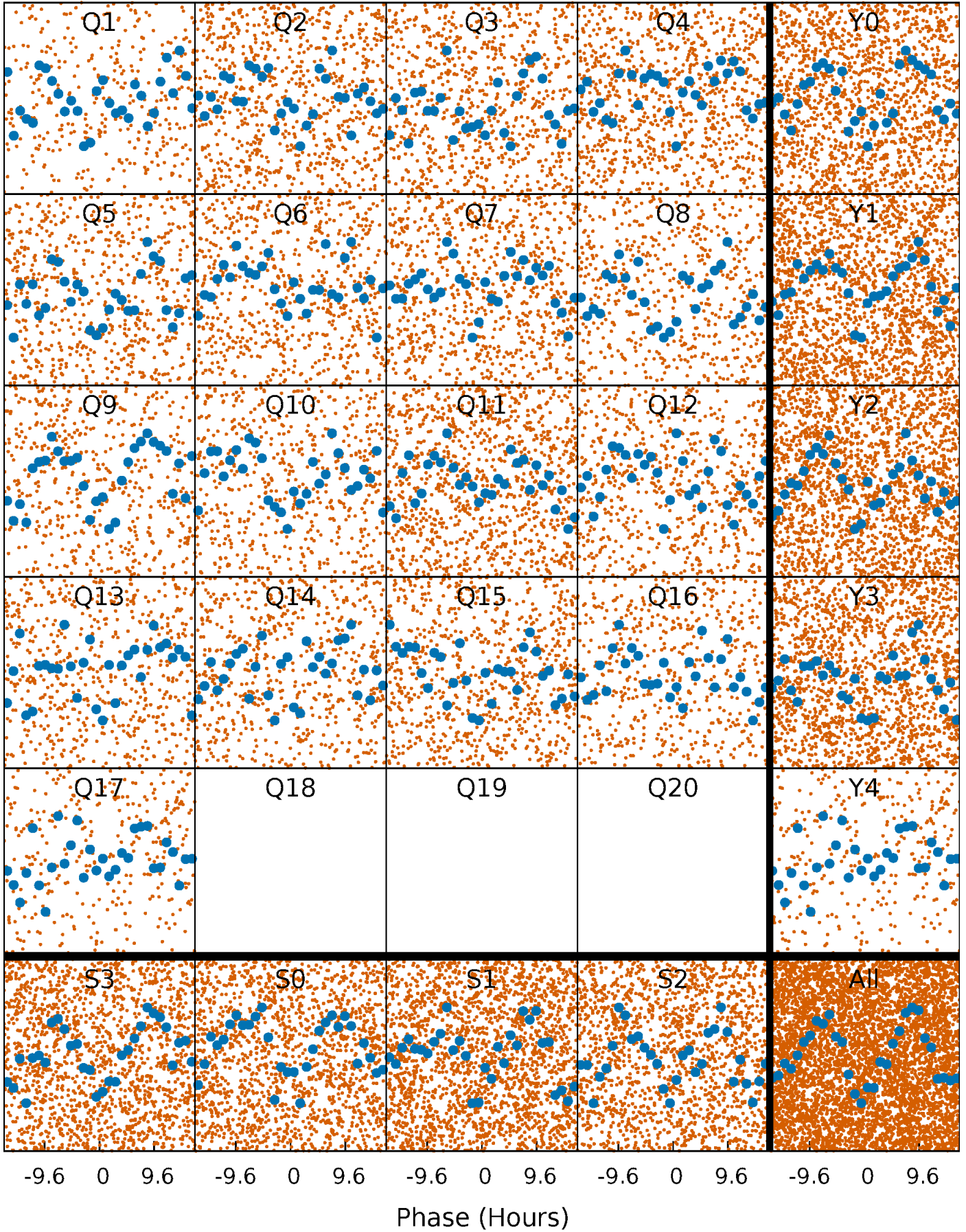
**Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)**





# PDC Quarter-Phased Transit Curves

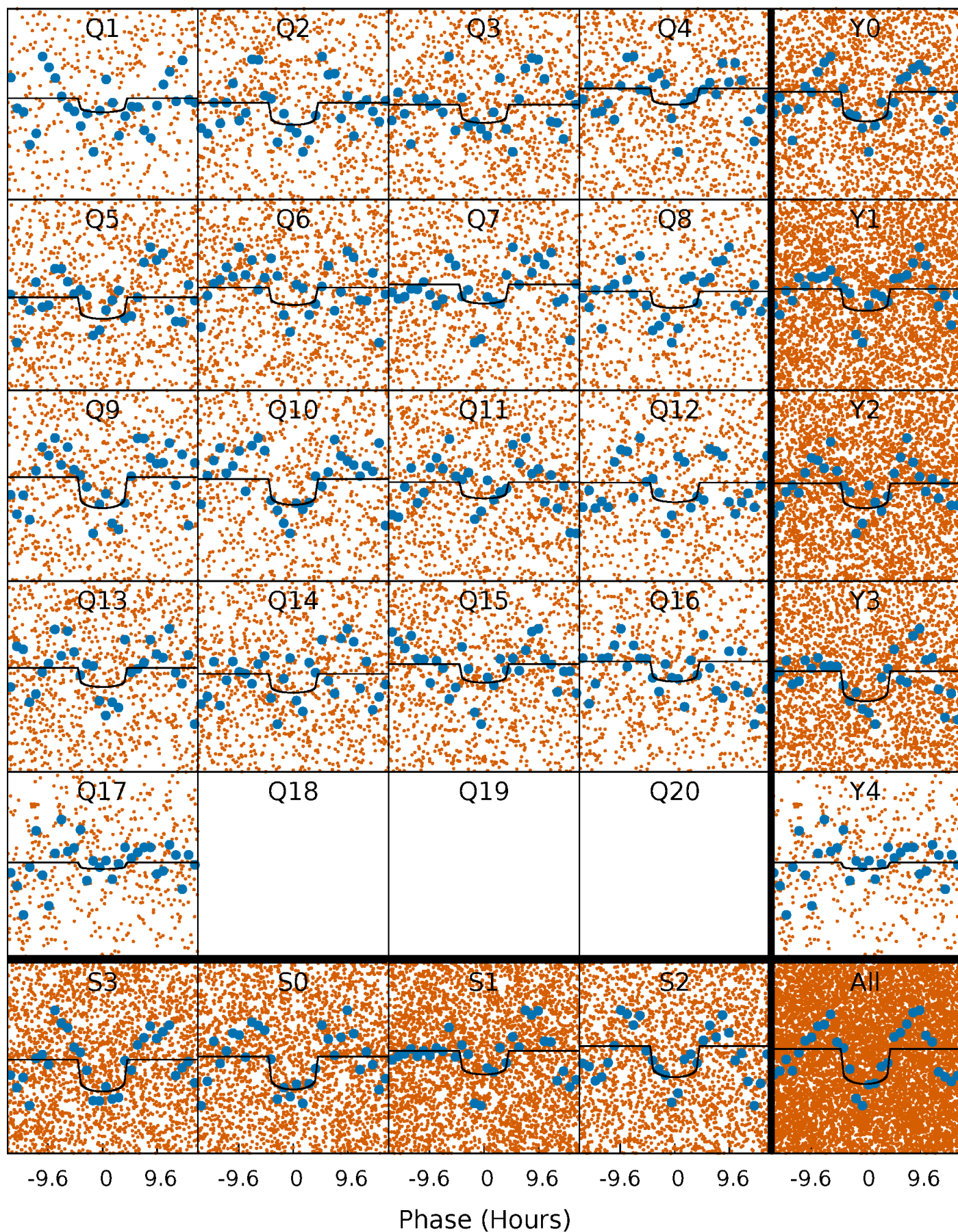
TCE 007771991-01 P= 3.094104 Days  $T_0=131.656078$  (BKJD)





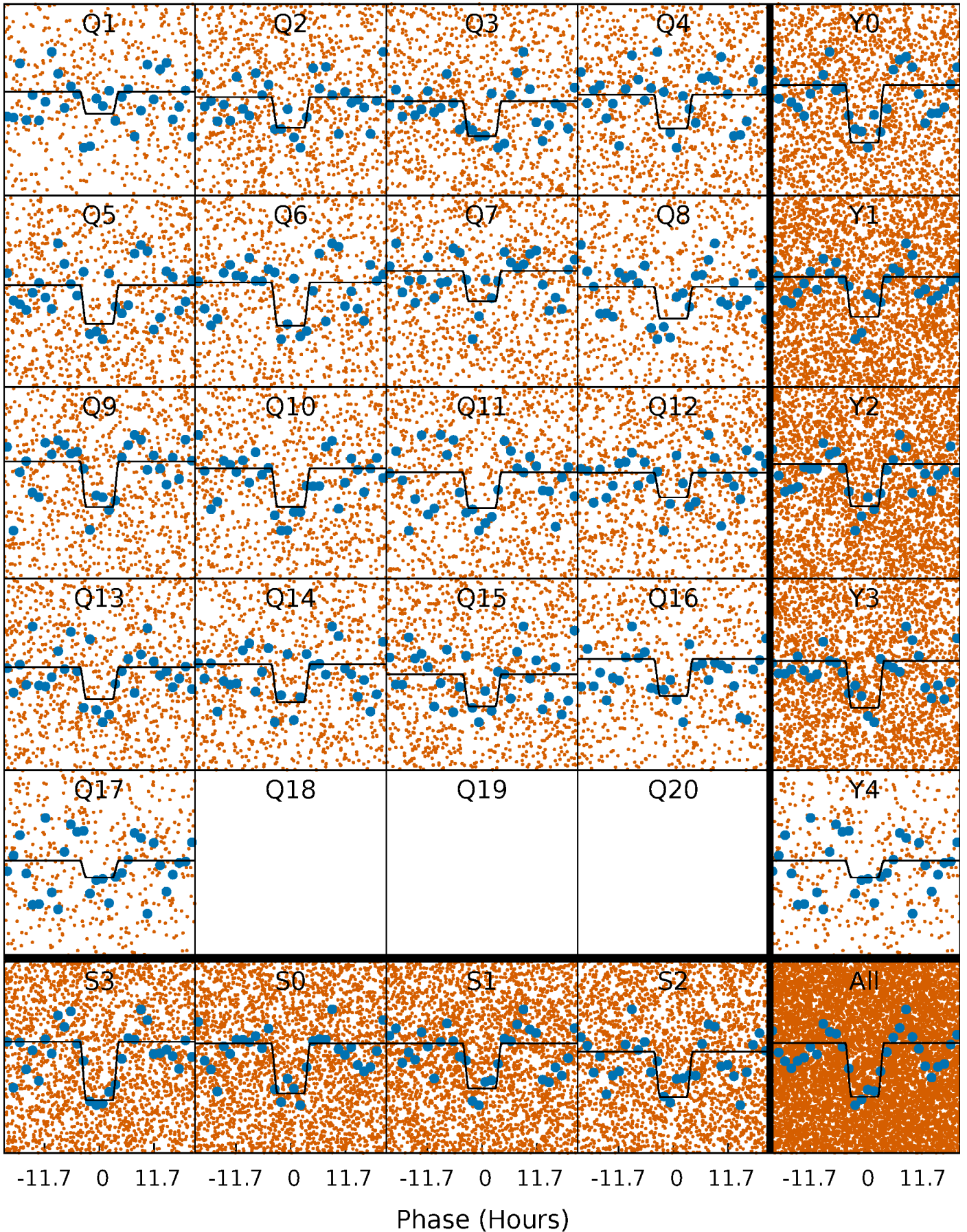
# DV Quarter-Phased Transit Curves

TCE 007771991-01 P= 3.094104 Days  $T_0=131.656078$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

TCE 007771991-01 P= 3.094031 Days  $T_0=131.679074$  (BKJD)

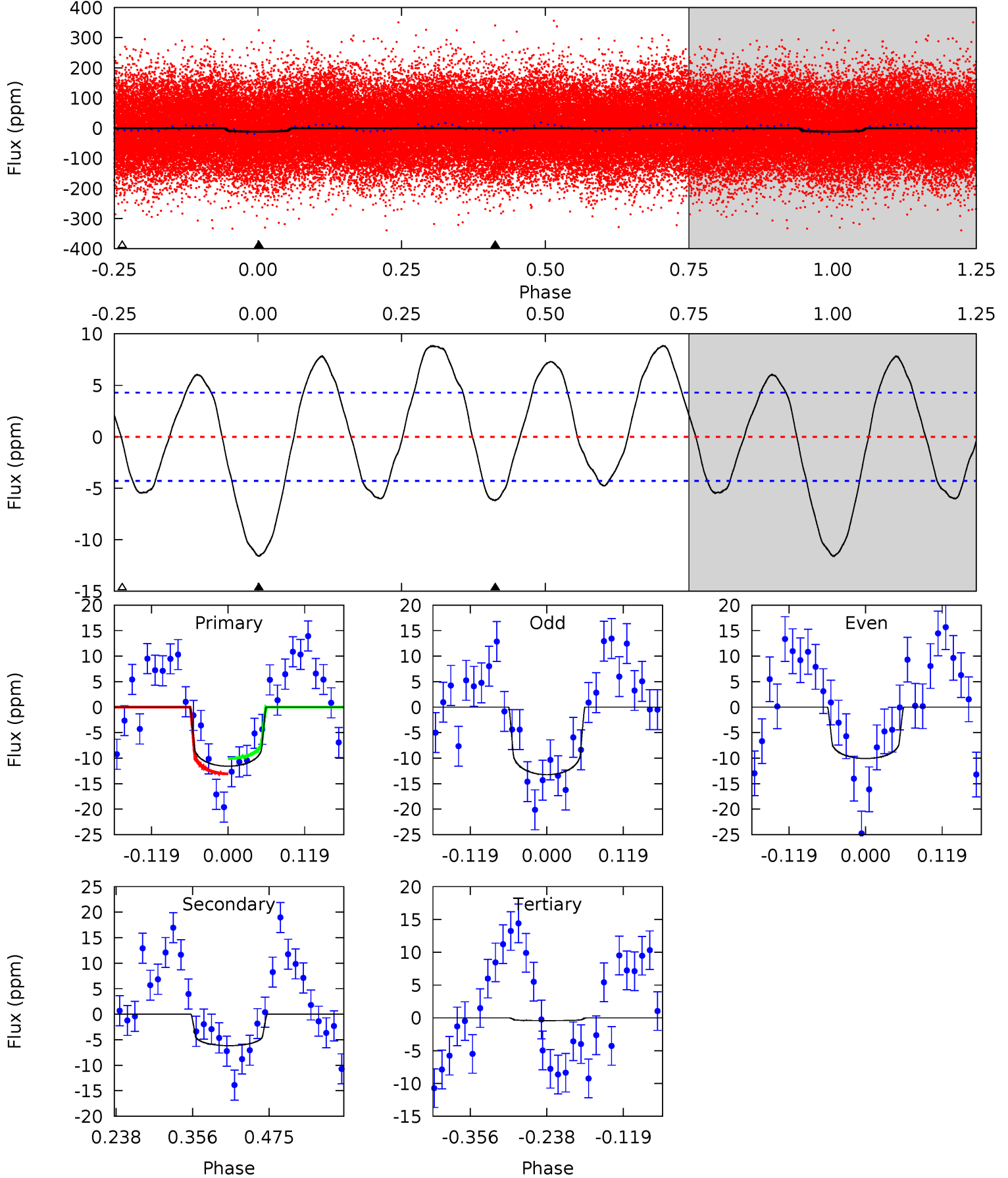




# DV Model-Shift Uniqueness Test

007771991-01, P = 3.094104 Days, E = 128.561974 Days

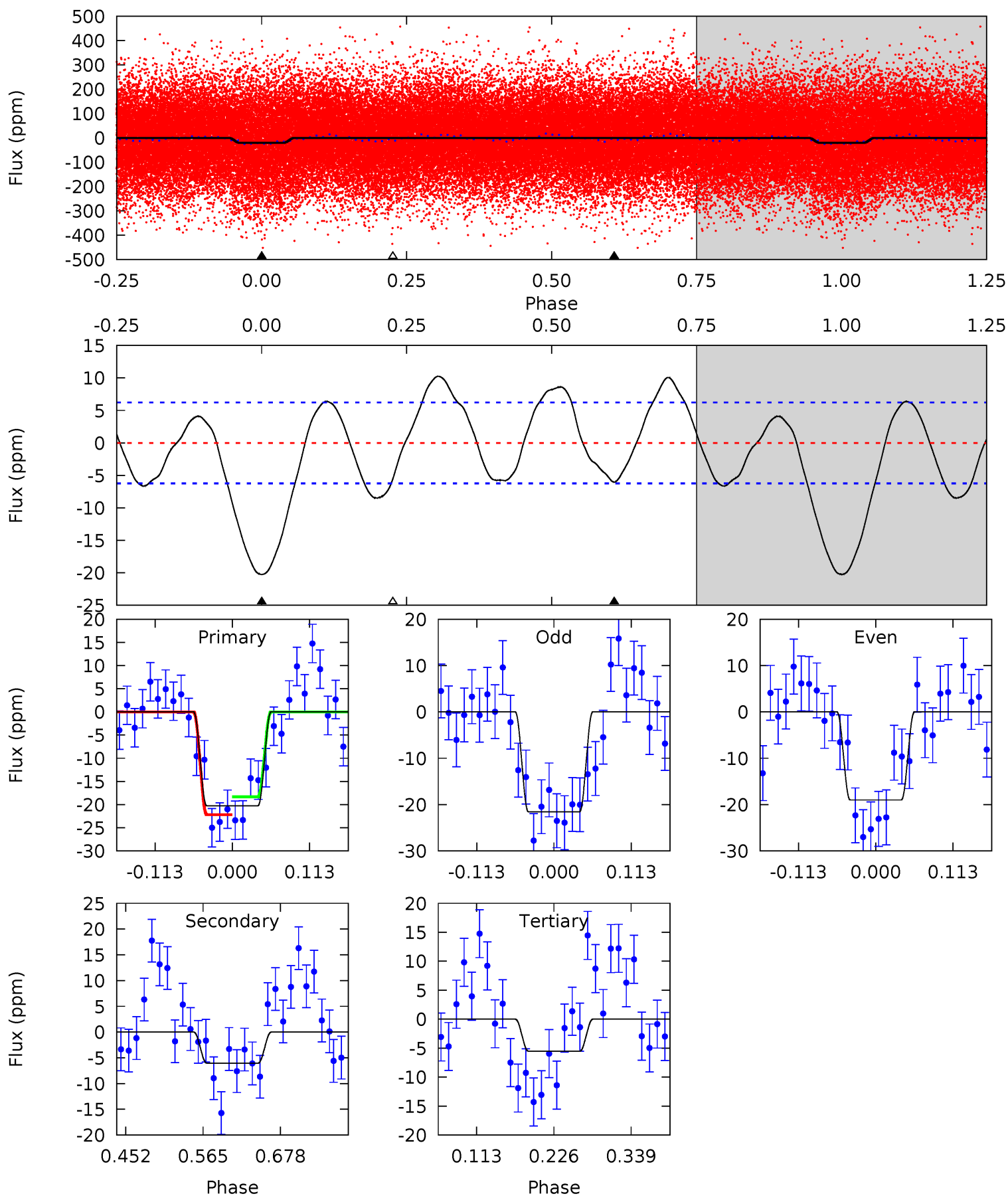
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
12.2	6.51	0.44	0	4.53	1.56	4.76	11.8	12.2	6.07	6.51	1.67	1.26	0.43	1.59



# Alt Model-Shift Uniqueness Test

007771991-01, P = 3.094031 Days, E = 128.585043 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
14.8	4.40	4.03	0	4.54	1.59	3.93	10.7	14.8	0.37	4.40	0.93	0.97	0.34	1.39





### Stellar Parameters For KIC 007771991

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$7493^{+235}_{-313}$	$3.587^{+0.513}_{-0.057}$	$-0.020^{+0.200}_{-0.300}$	$3.836^{+0.508}_{-2.030}$	$2.075^{+0.282}_{-0.524}$	$0.052^{+0.272}_{-0.014}$
	+3%/-4%	+14%/-2%	+1000%/-1500%	+13%/-53%	+14%/-25%	+526%/-28%
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 007771991-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	$A_{\text{obs}}$
DV	$-6 \pm 1$	$1.37^{+0.38}_{-0.40}$	$3763^{+266}_{-459}$	$6041^{+754}_{-625}$	$5.103^{+5.219}_{-1.974}$
Alt.	$-6 \pm 1$	$1.78^{+0.44}_{-0.52}$	$3759^{+283}_{-505}$	$5230^{+548}_{-497}$	$2.925^{+2.663}_{-1.090}$

$T_{\text{max}}$  = Theoretical Maximum Planetary Temperature  
 $T_{\text{obs}}$  = Observed Planetary Temperature (Assuming A=0.3)  
 $A_{\text{obs}}$  = Observed Albedo (Assuming T=0)

If a secondary eclipse is present, the system is likely an EB if  $T_{\text{obs}} \gg T_{\text{max}}$  AND  $A_{\text{obs}} \gg 1.0$

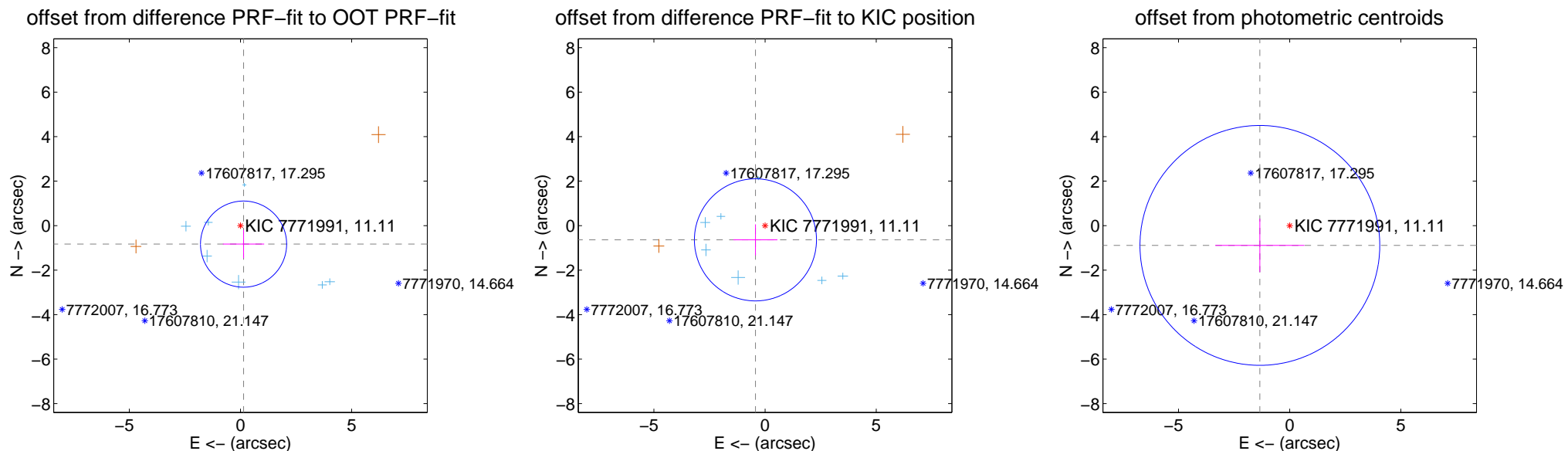
## DV Centroid Data

Supplemental centroid analysis for 007771991-01. **Kepler magnitude: 11.11.** Transit SNR 6.84

There are 7 quarters with good PRF difference image offsets

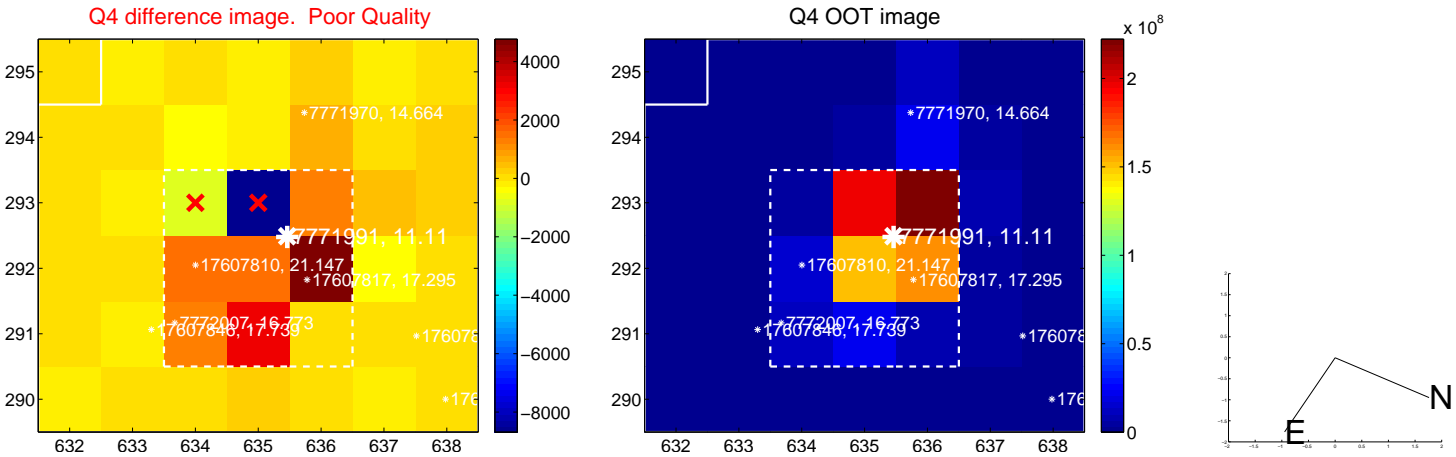
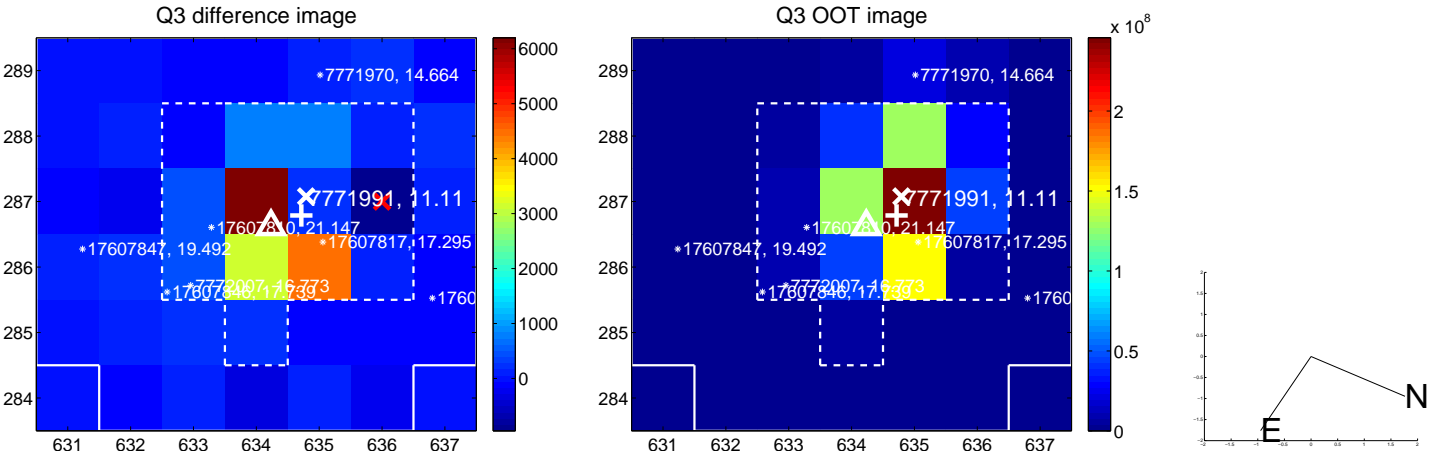
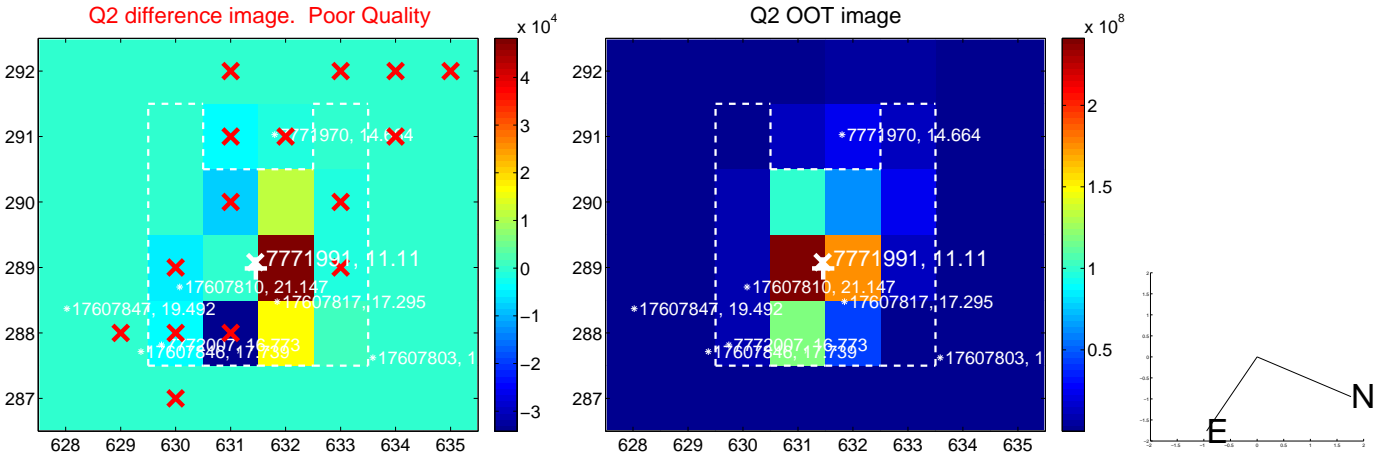
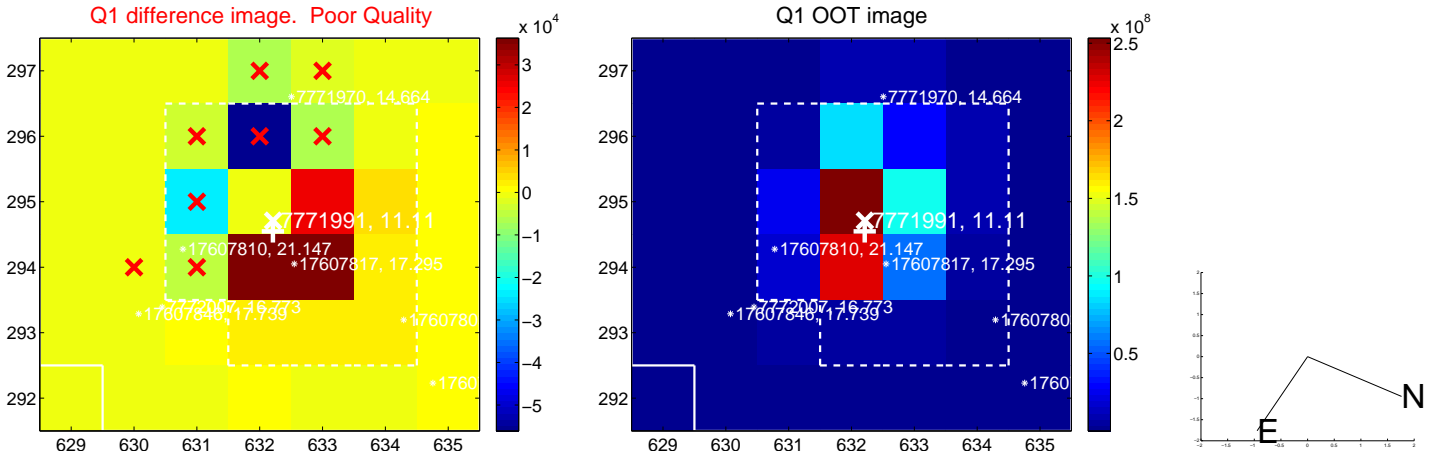
The direct PRF centroid is offset from the target star catalog position by about 0.08 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.842 \pm 0.645$	1.30	$-0.140 \pm 0.928$	$-0.831 \pm 0.636$
PRF-fit source offset from KIC position	$0.772 \pm 0.915$	0.84	$0.433 \pm 0.989$	$-0.640 \pm 0.696$
photometric centroid source offset	$1.61 \pm 1.80$	0.89	$1.34 \pm 2.00$	$-0.89 \pm 1.20$

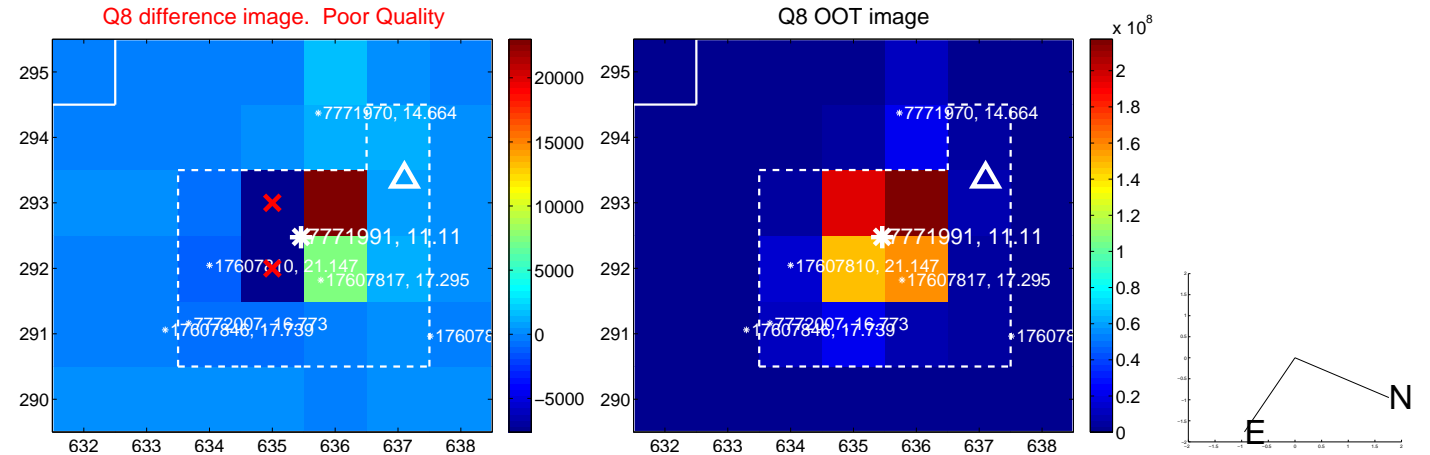
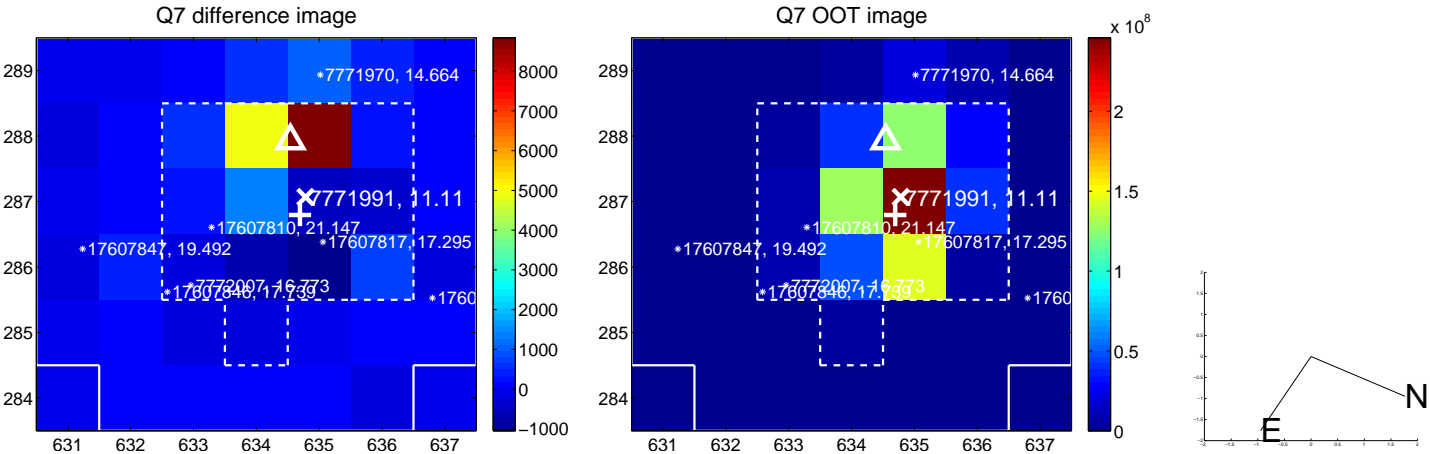
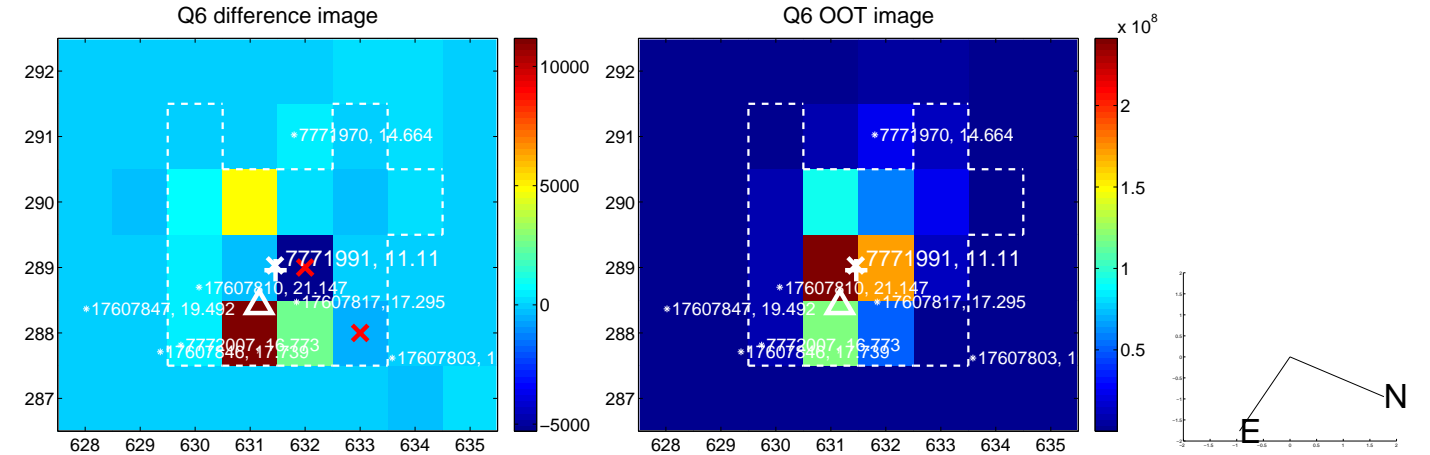
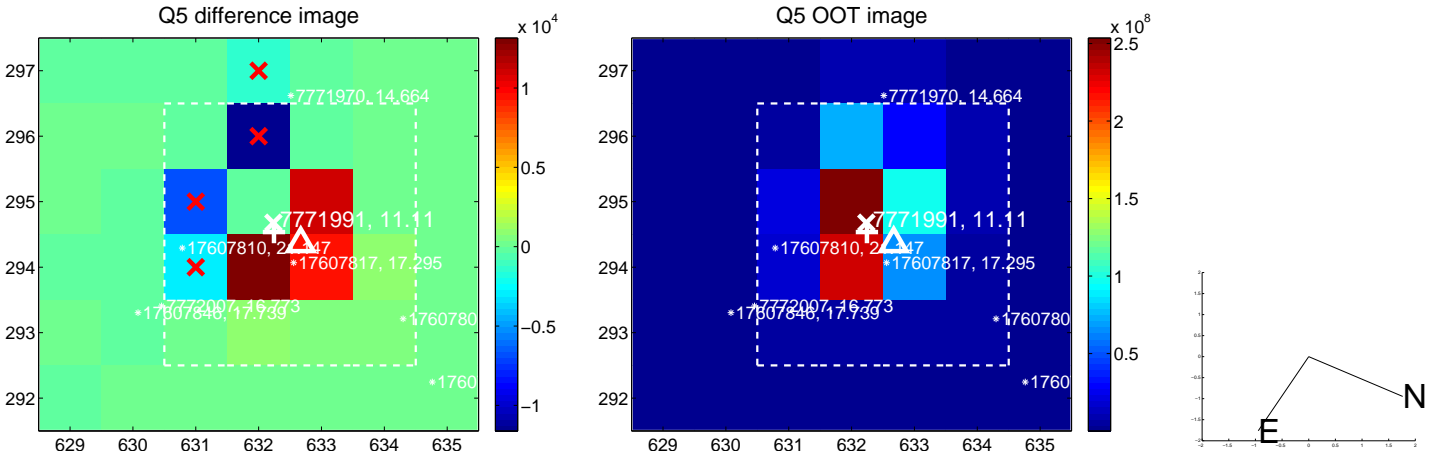


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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

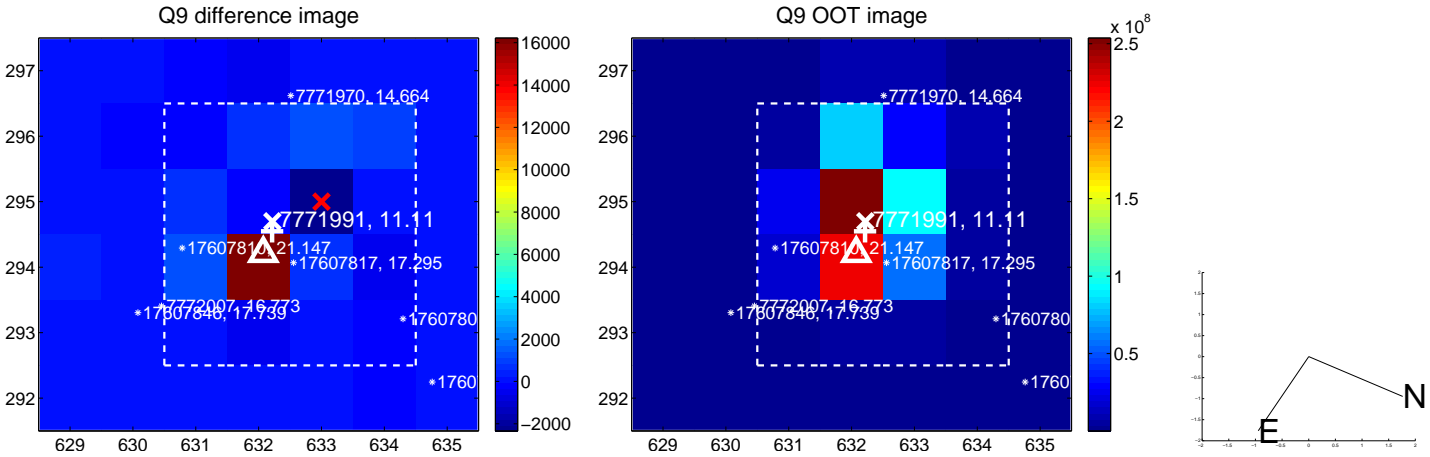


white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

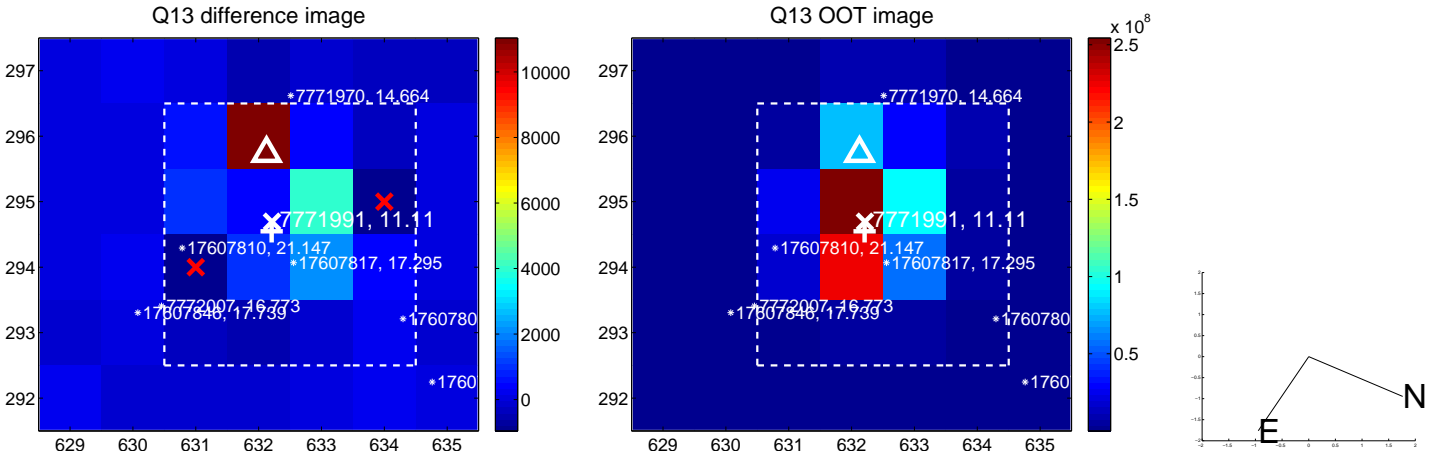




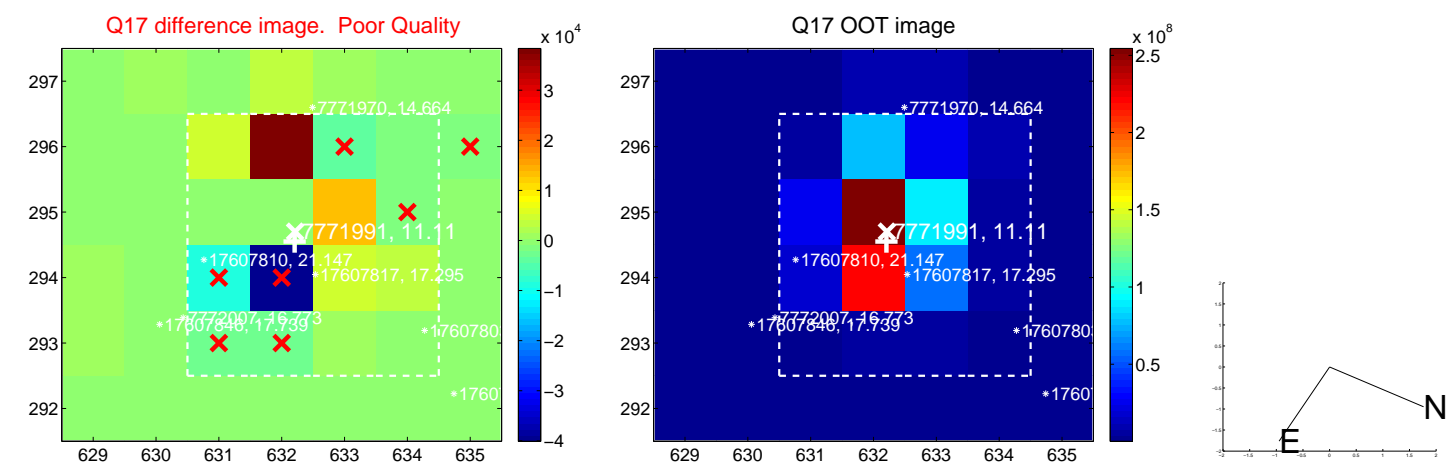
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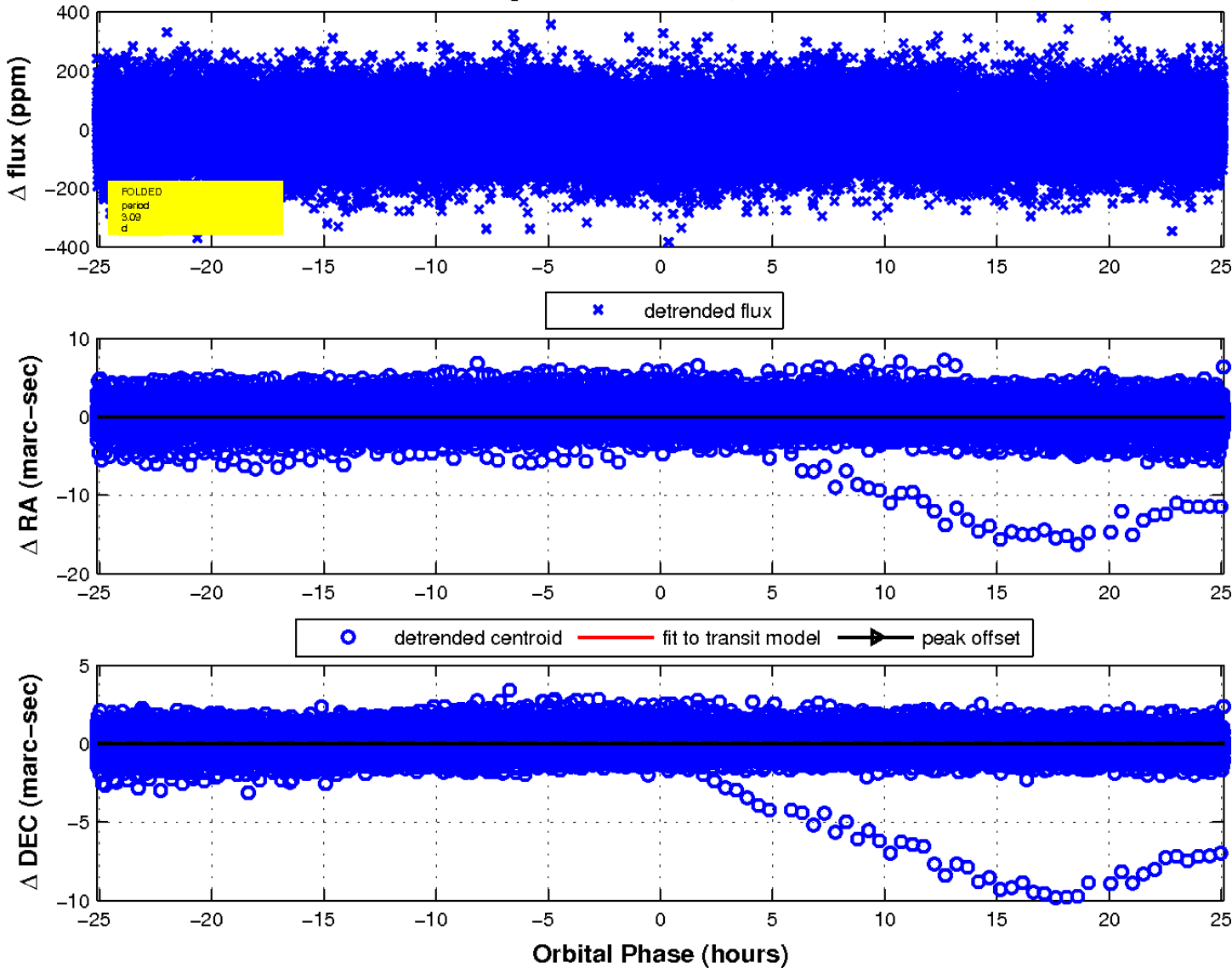
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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



fluxWeightedCentroids, Planet 1 of 1



UKIRT Image

Declination

