

# KIC 010222702

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
010222702-01	OBS	No	1.312131	132.569083	0.0	10.398	8.1	0.0	2.79	6779	0.01	17579.73

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
010222702-01	OBS	FP	0.00	1	0	0	0	LPP_DV—MOD_NONUNIQ_ALT—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.

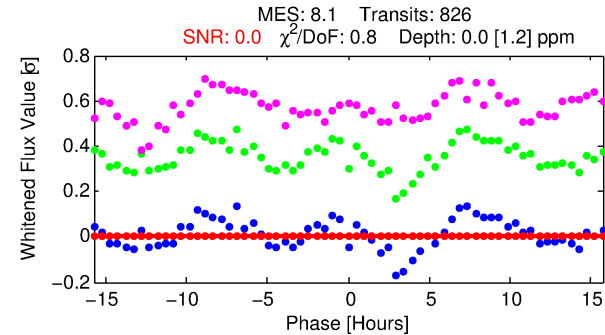
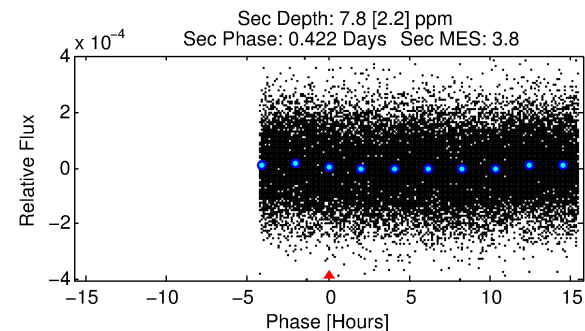
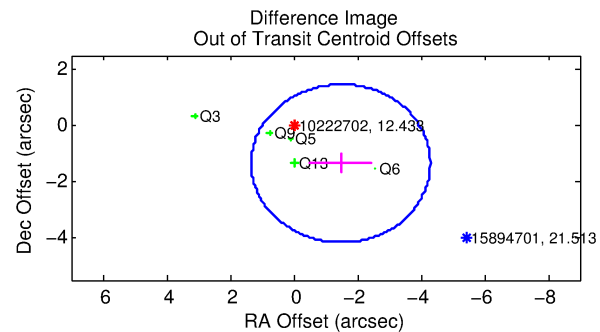
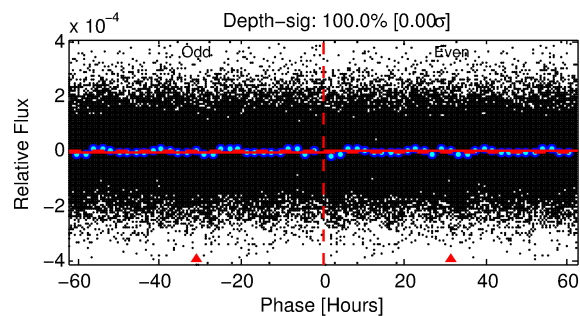
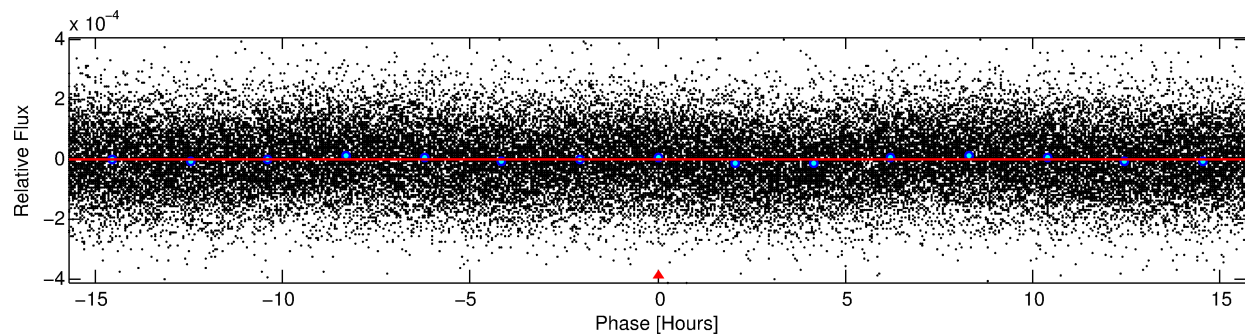
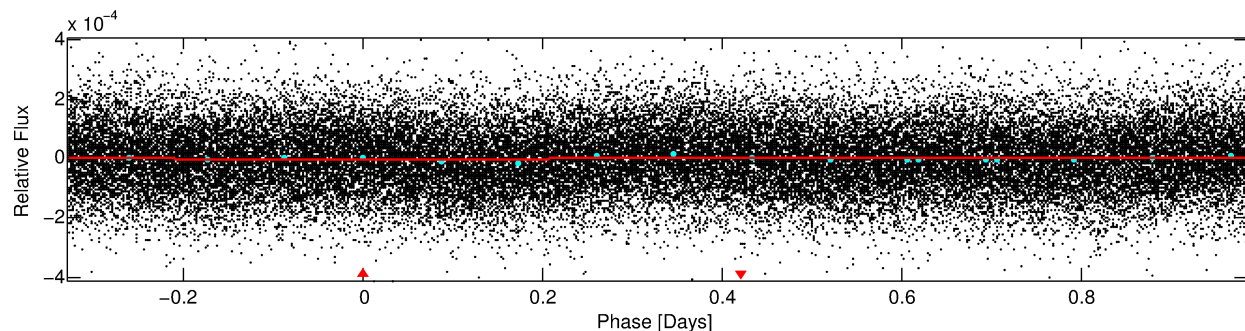
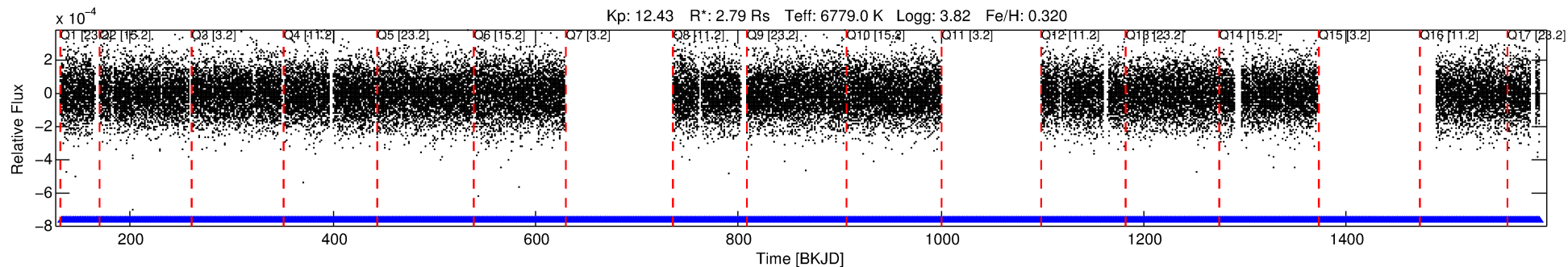
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 010222702-01

No Significant Match Found

# DV One-Page Summary

KIC: 10222702 Candidate: 1 of 1 Period: 1.312 d



## DV Fit Results:

Period = 1.31213 [0.29864] d  
Epoch = 132.5691 [89.1882] BKJD  
Rp/R\* = 0.0000 [0.0183]  
a/R\* = 1.12 [53.09]  
b = 0.49 [459.55]  
Seff = 17579.73 [10330.70]  
Teq = 2936 [431] K  
Rp = 0.01 [5.57] Re  
a = 0.0289 [0.0102] AU  
Ag = 43441.27 [53132944.64] [0.00σ]  
Teffp = 65538 [20041070] K [0.00σ]

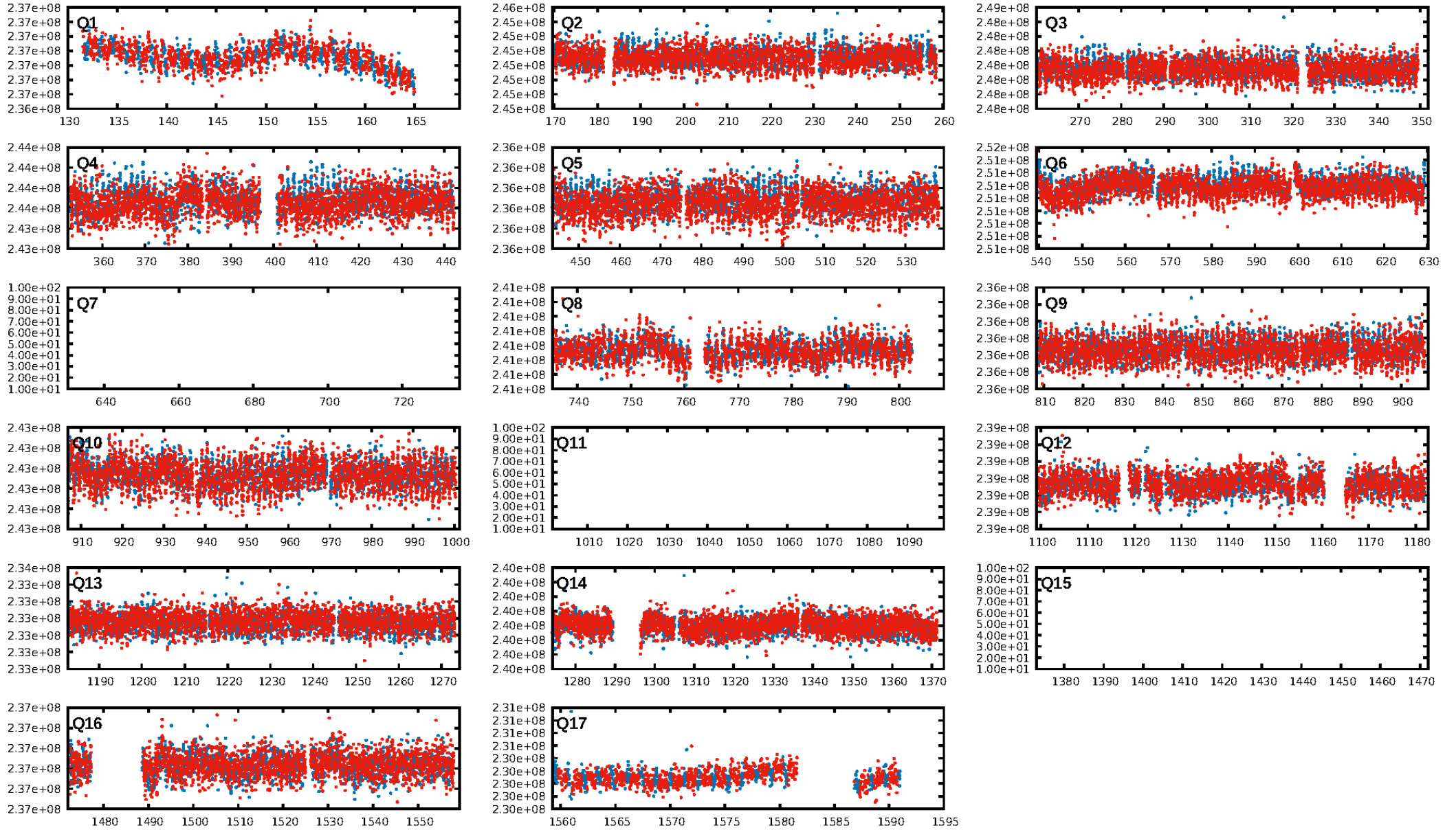
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: N/A  
ModelChiSquareGof-sig: N/A  
Bootstrap-pfa: N/A  
RollingBand-fgt: 1.00 [781/781]  
GhostDiagnostic-chr: N/A  
Centroid-sig: N/A  
Centroid-so: N/A  
OotOffset-rm: 2.004 arcsec [2.14σ]  
KicOffset-rm: 1.378 arcsec [4.26σ]  
OotOffset-st: 1/1/0/3 [5]  
KicOffset-st: 1/1/0/3 [5]  
DiffImageQuality-fgm: 1.00 [5/5]  
DiffImageOverlap-fno: 1.00 [14/14]

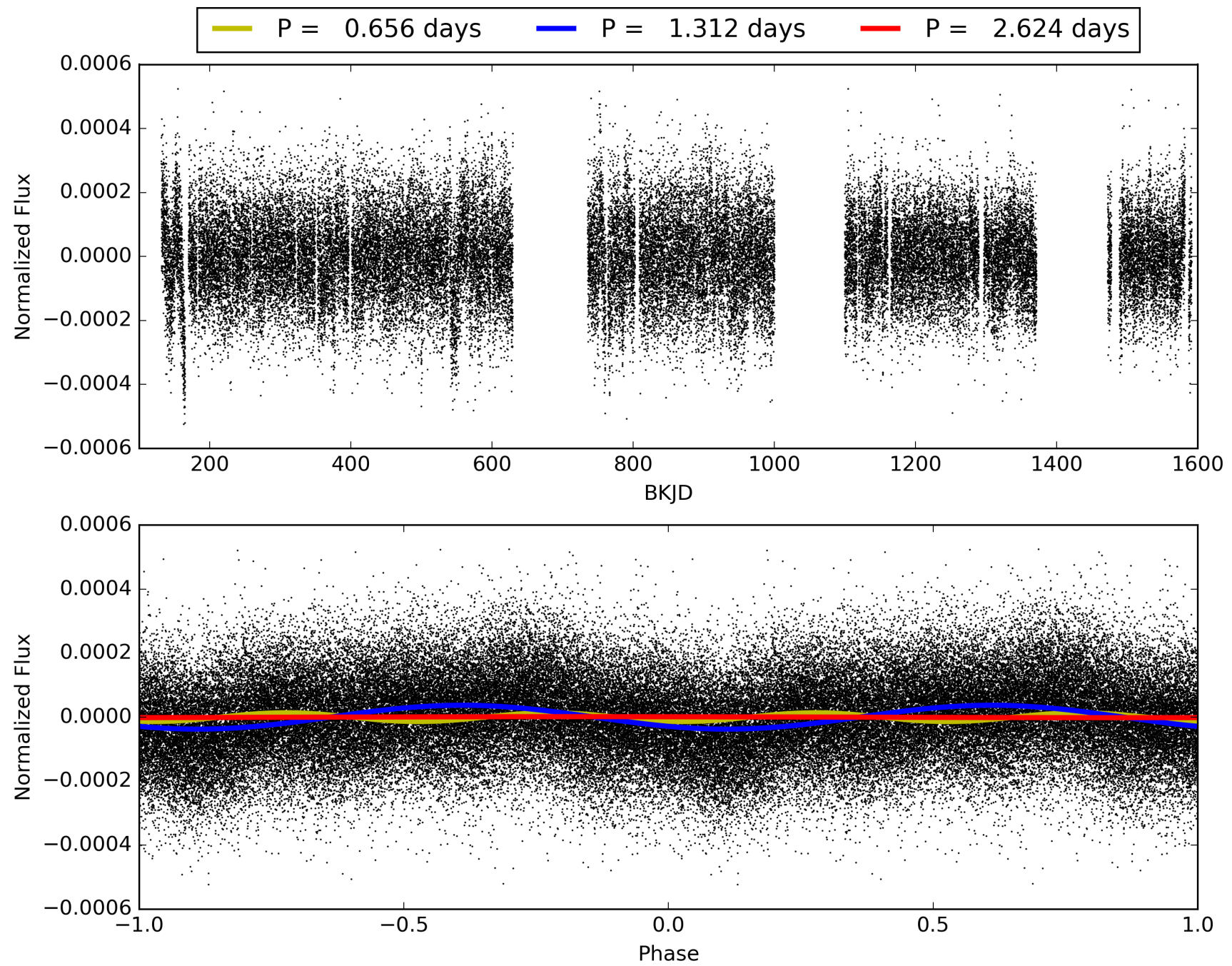
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 28-Jan-2016 21:23:22 Z

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

# TCE 010222702-01, PDC Light Curves

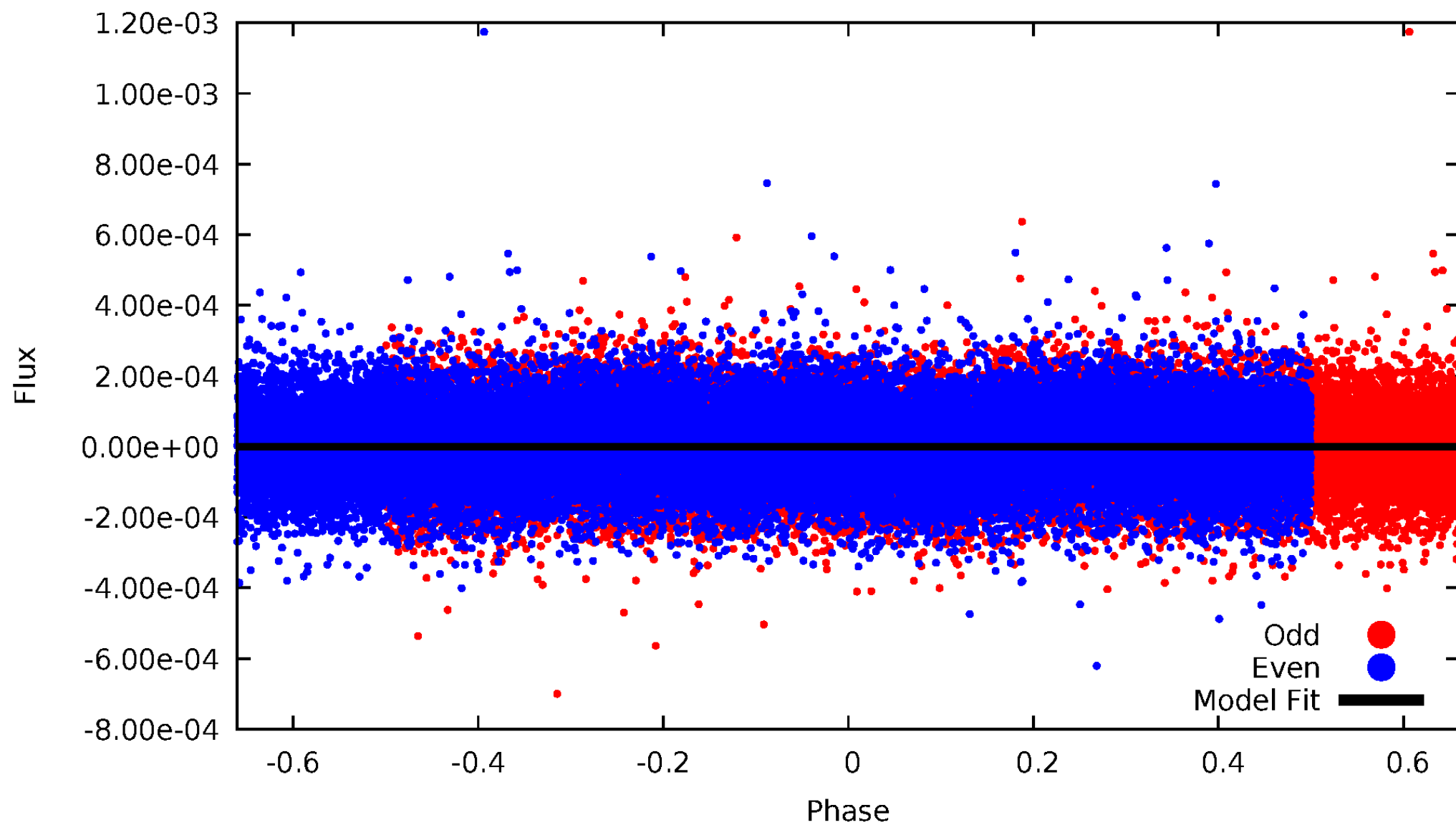


TCE 010222702-01



# DV Odd/Even

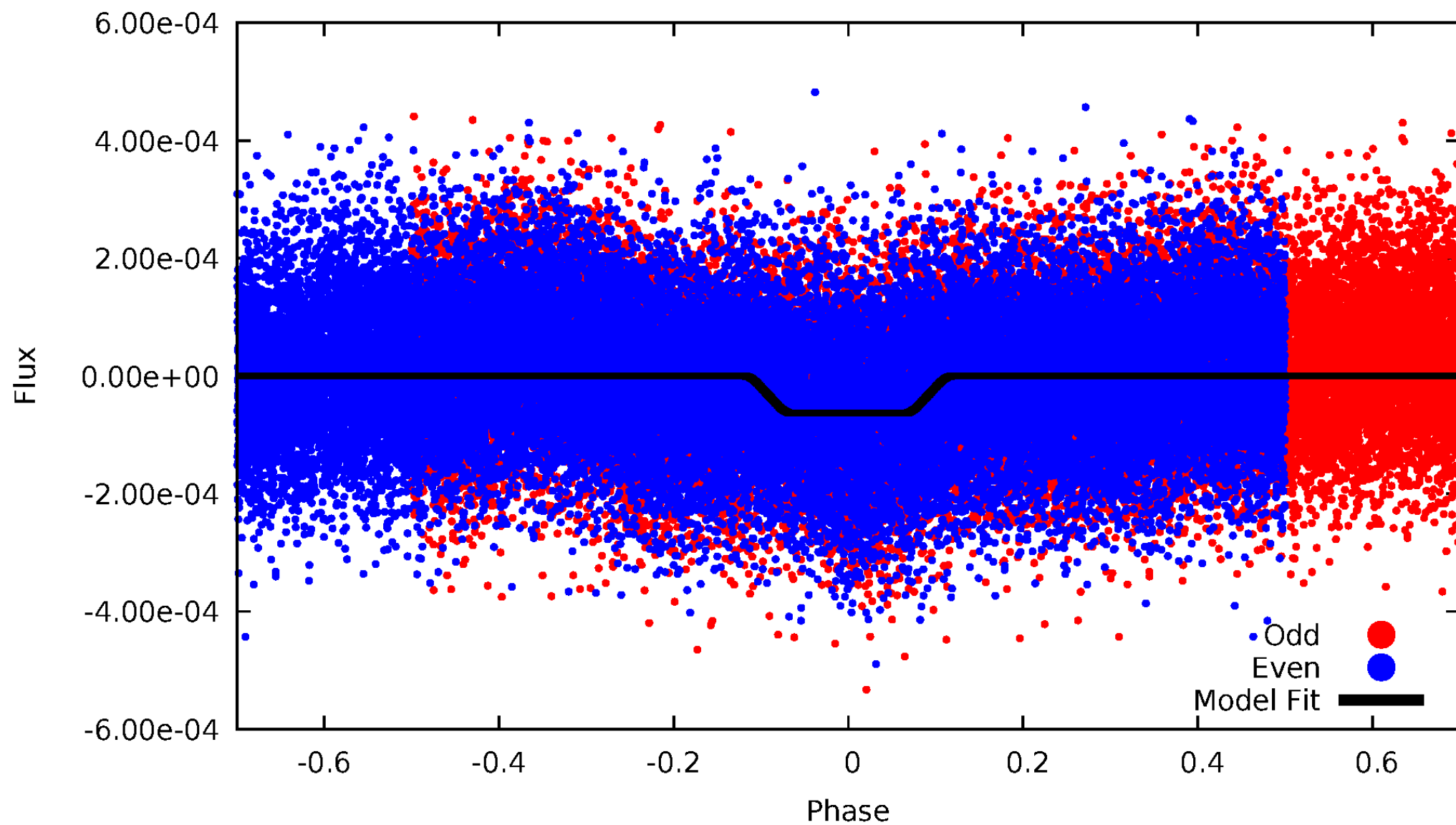
TCE 010222702-01



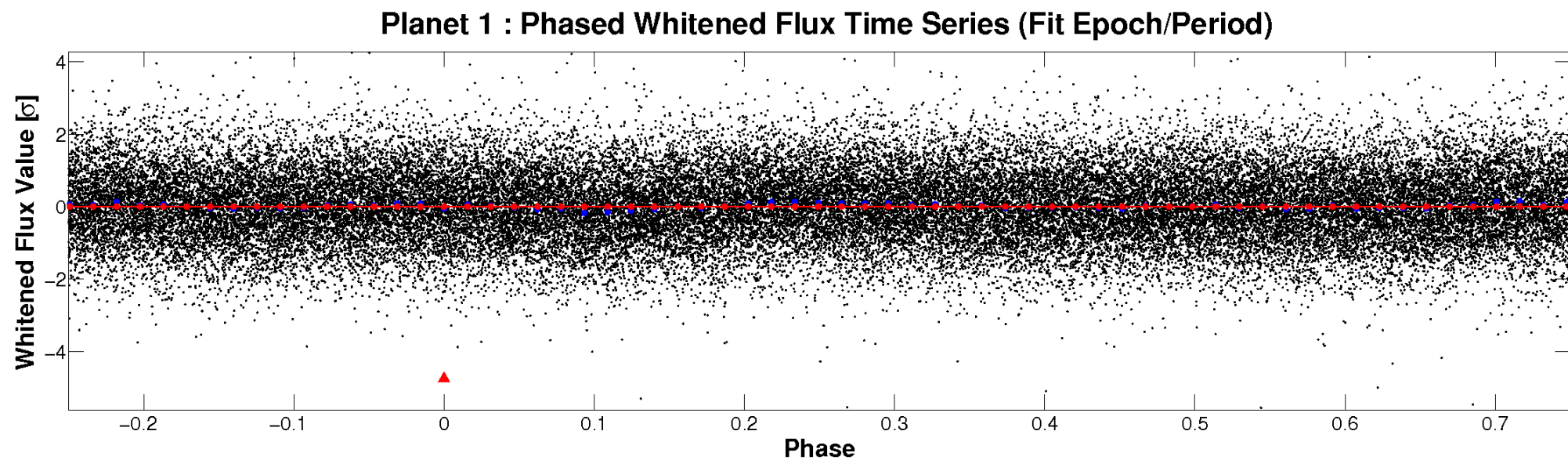
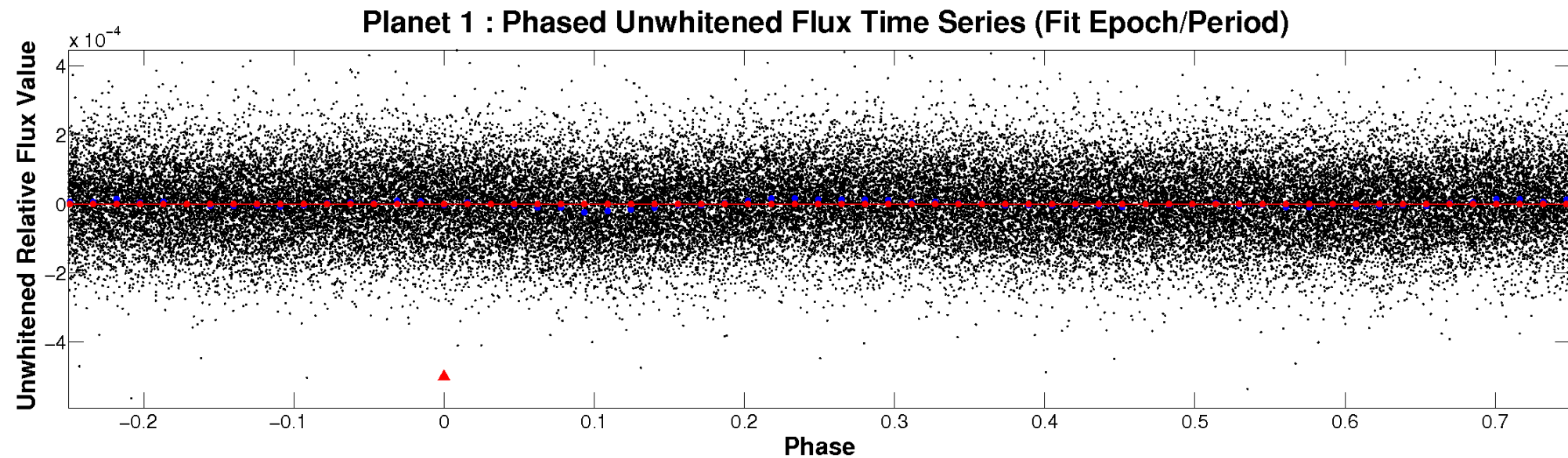


# ALT Odd/Even

TCE 010222702-01

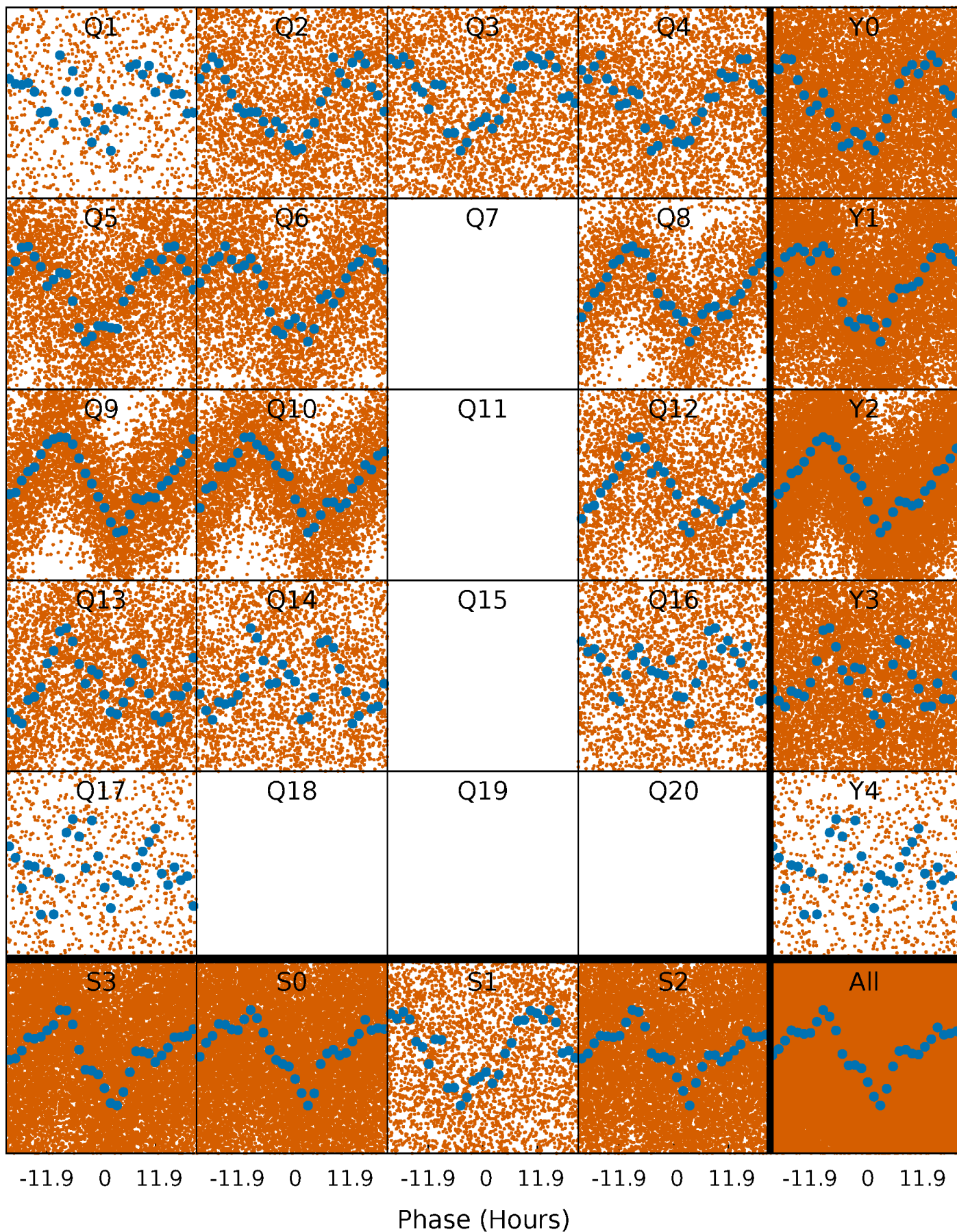


# Non-Whitened Vs. Whitened Light Curve



# PDC Quarter-Phased Transit Curves

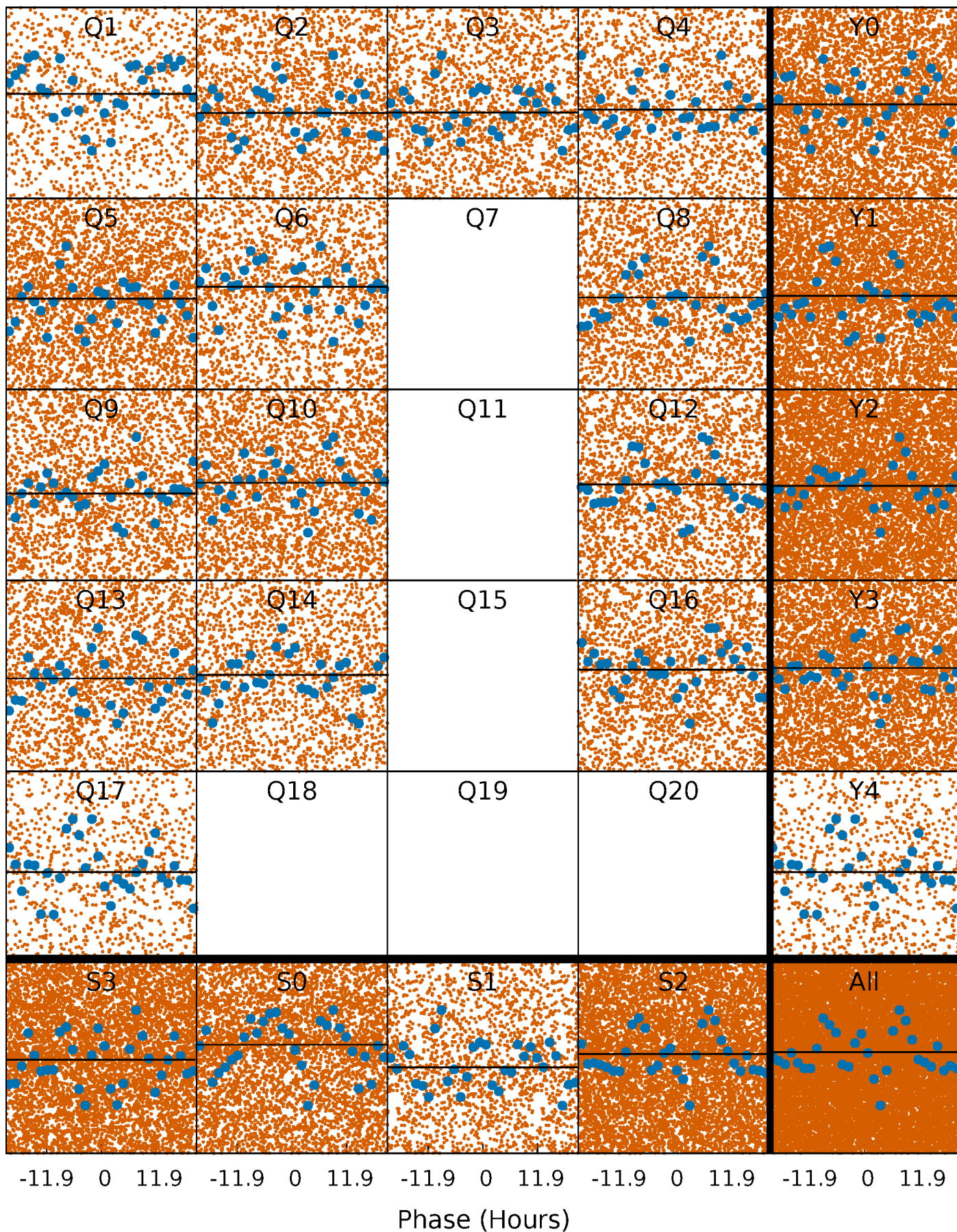
TCE 010222702-01 P= 1.312131 Days  $T_0=132.569083$  (BKJD)





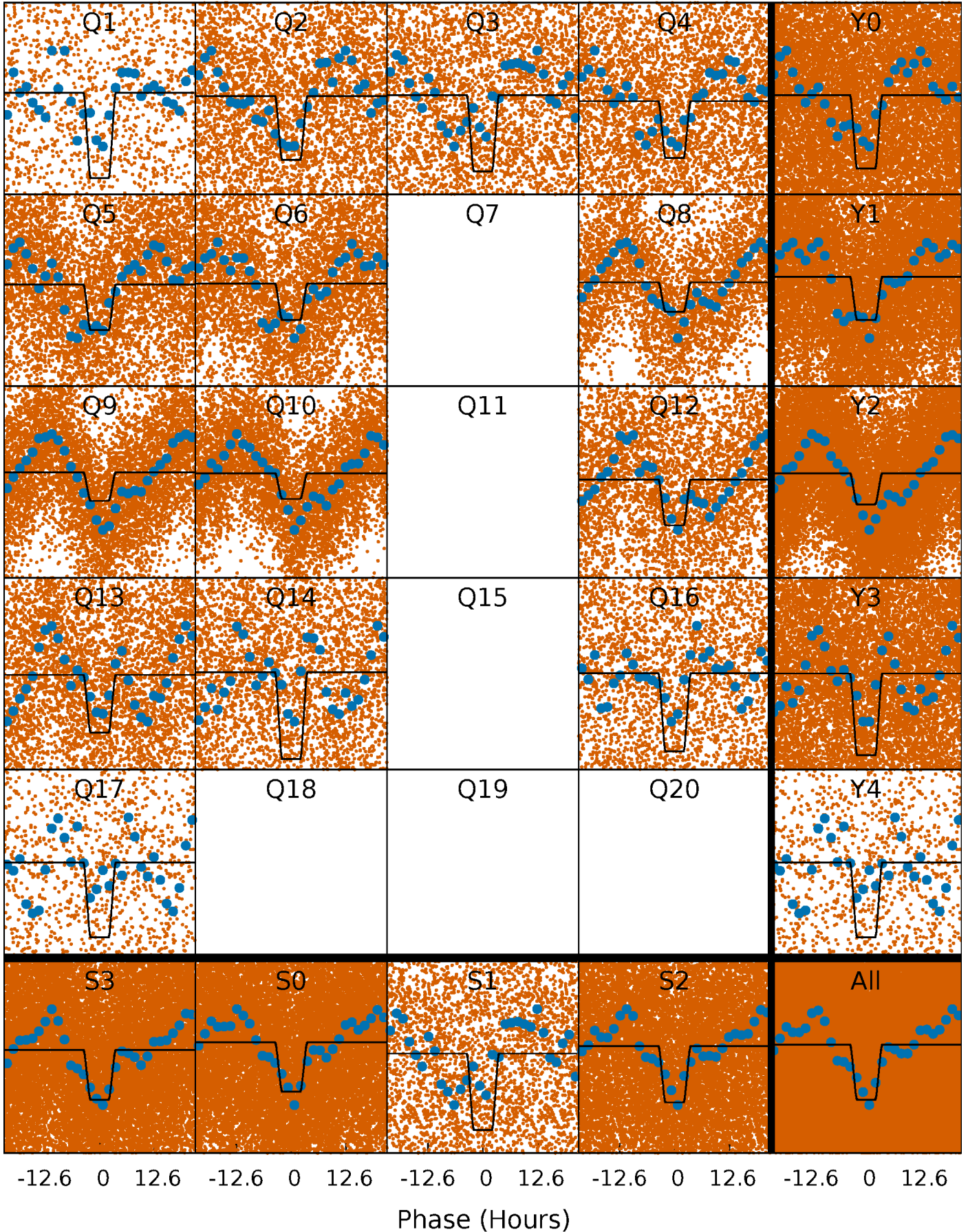
# DV Quarter-Phased Transit Curves

TCE 010222702-01 P= 1.312131 Days  $T_0=132.569083$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

TCE 010222702-01 P= 1.312185 Days  $T_0=132.653141$  (BKJD)

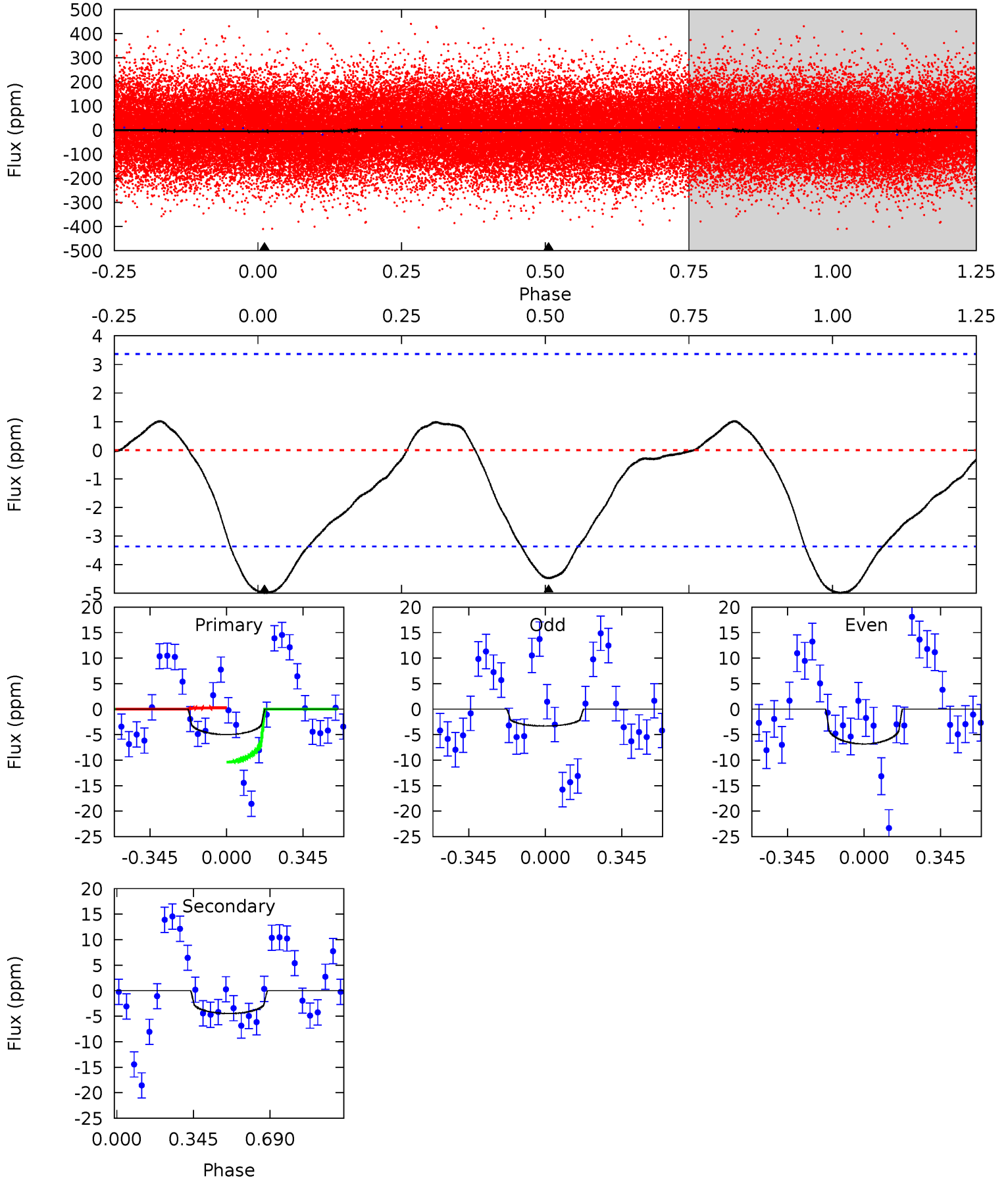




# DV Model-Shift Uniqueness Test

010222702-01, P = 1.312131 Days, E = 131.256952 Days

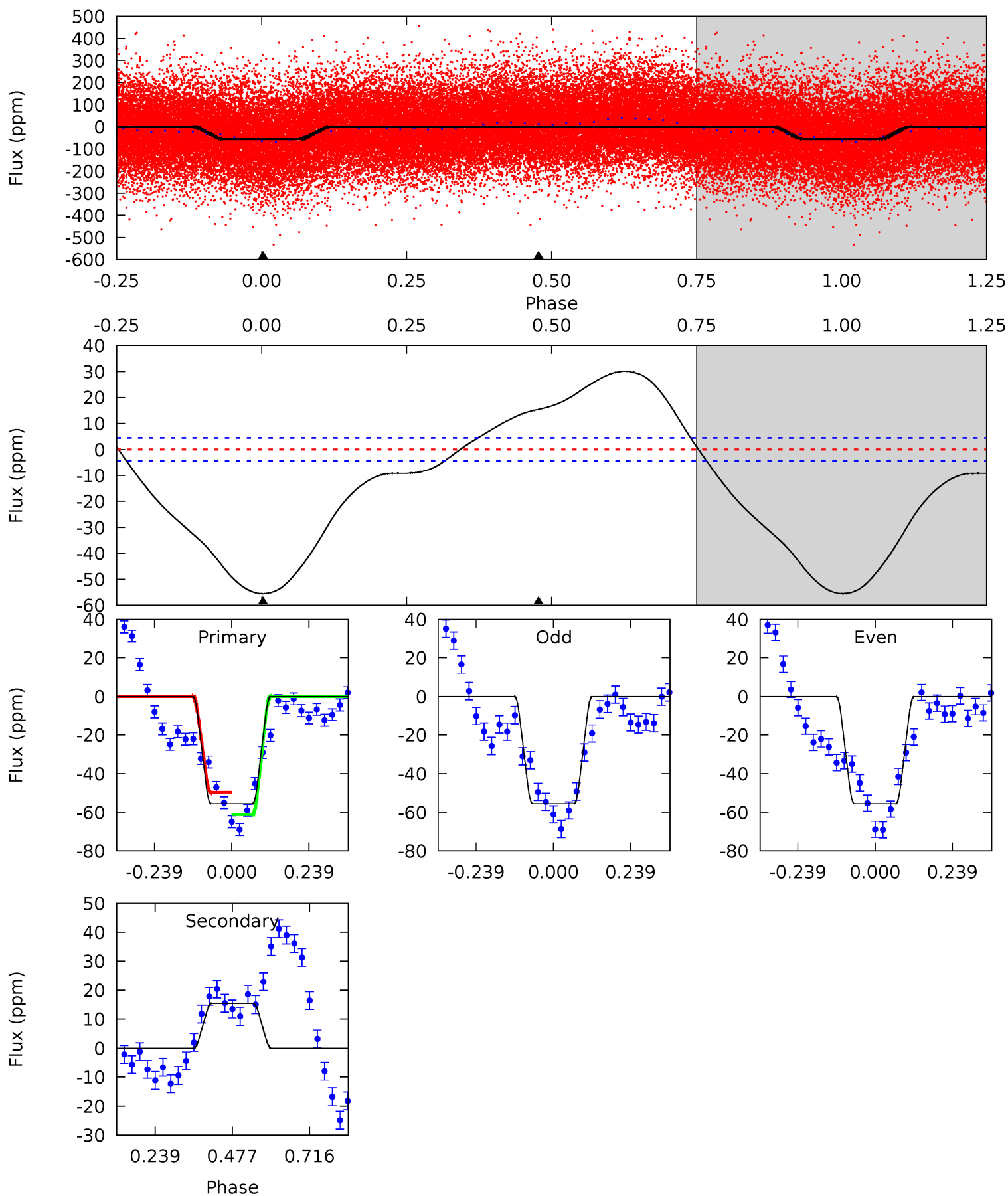
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
6.38	5.72	0	0	4.30	0.94	0.40	6.38	6.38	5.72	5.72	2.23	0.89	0.17	6.49



# Alt Model-Shift Uniqueness Test

010222702-01, P = 1.312185 Days, E = 131.340956 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
54.7	-15.2	0	0	4.38	1.18	8.68	54.7	54.7	-15.2	-15.2	0.02	0.93	0.35	5.68





### Stellar Parameters For KIC 010222702

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R$ ( $R_{\odot}$ )	$M$ ( $M_{\odot}$ )	$p_{\star}$ ( $\text{g}\cdot\text{cm}^{-3}$ )
	$6779^{+160}_{-240}$	$3.820^{+0.273}_{-0.117}$	$0.320^{+0.100}_{-0.350}$	$2.787^{+0.501}_{-1.003}$	$1.869^{+0.163}_{-0.407}$	$0.121^{+0.218}_{-0.043}$
	+2%/-4%	+7%/-3%	+31%/-109%	+18%/-36%	+9%/-22%	+179%/-35%
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 010222702-01 / KOI

Detrend	Depth (ppm)	$R_p$ ( $R_{\oplus}$ )	$T_{max}$ (K)	$T_{obs}$ (K)	$A_{obs}$
DV	$-4 \pm 1$	$3.41^{+4.17}_{-2.44}$	$4025^{+440}_{-395}$	$-3144^{+8277}_{-580}$	$0.173^{+1.986}_{-0.140}$
Alt.	$15 \pm 1$	$4.37^{+4.63}_{-2.96}$	$4008^{+472}_{-418}$	$-4311^{+477}_{-1681}$	$-0.336^{+0.255}_{-3.060}$

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

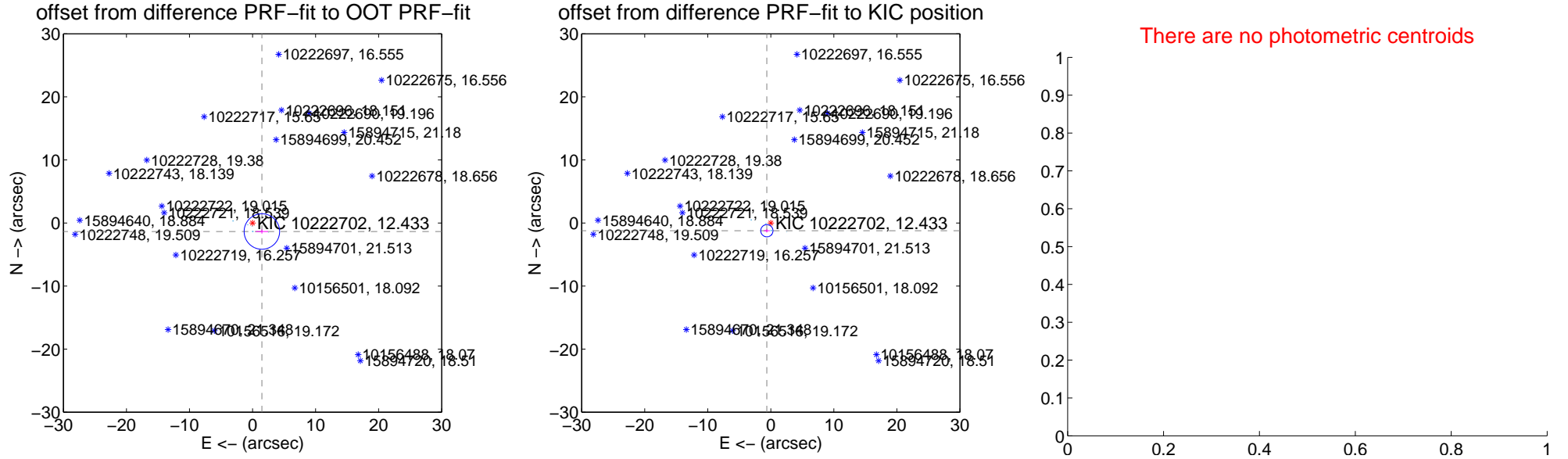
## DV Centroid Data

Supplemental centroid analysis for 010222702-01. Kepler magnitude: 12.43. Transit SNR 0.00

There are 5 quarters with good PRF difference image offsets

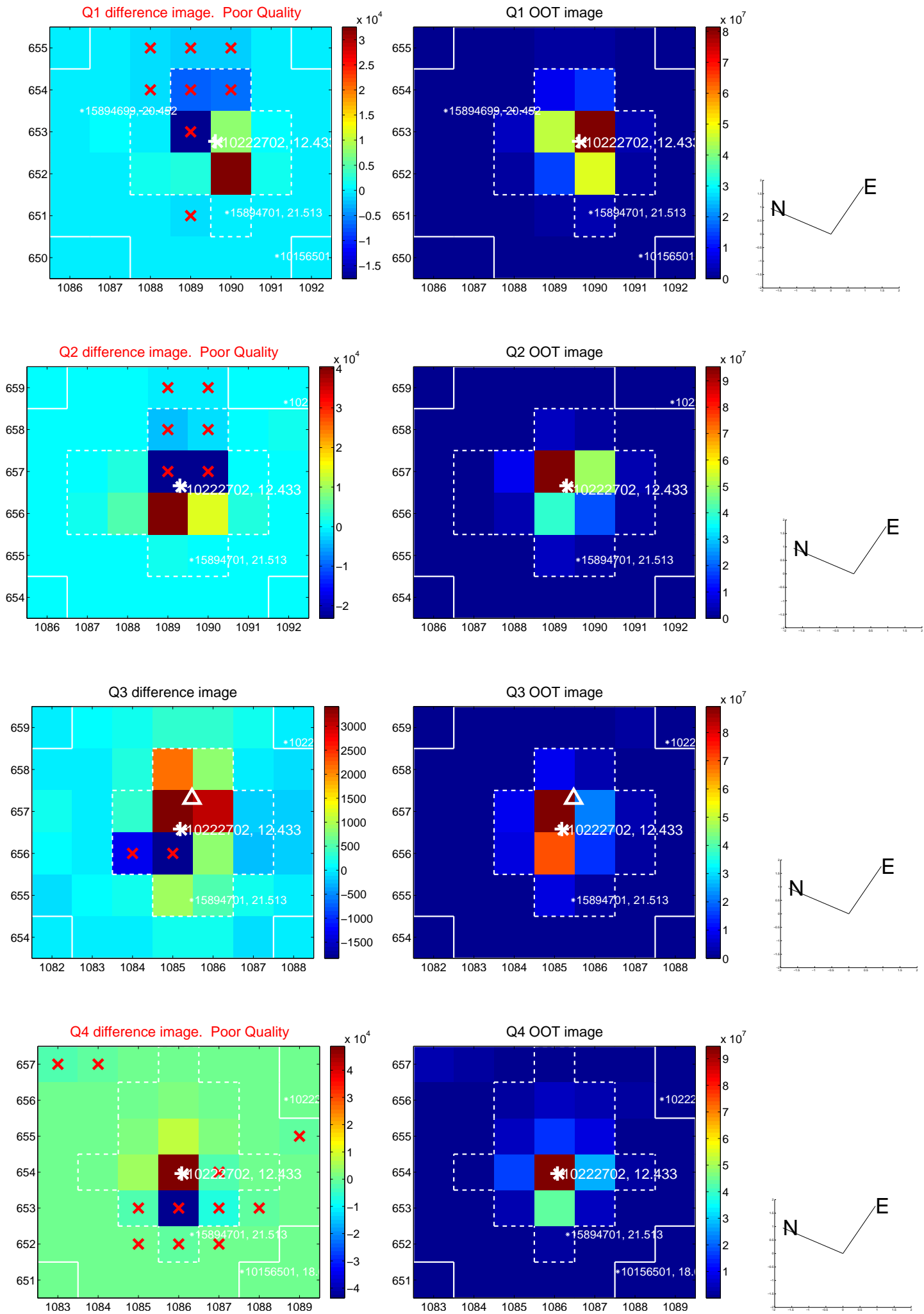
The direct PRF centroid is offset from the target star catalog position by about 0.16 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$2.004 \pm 0.938$	2.14	$-1.481 \pm 0.983$	$-1.351 \pm 0.337$
PRF-fit source offset from KIC position	<b><math>1.378 \pm 0.324</math></b>	<b>4.26</b>	$0.625 \pm 0.474$	$-1.228 \pm 0.271$
photometric centroid source offset	—	—	—	—

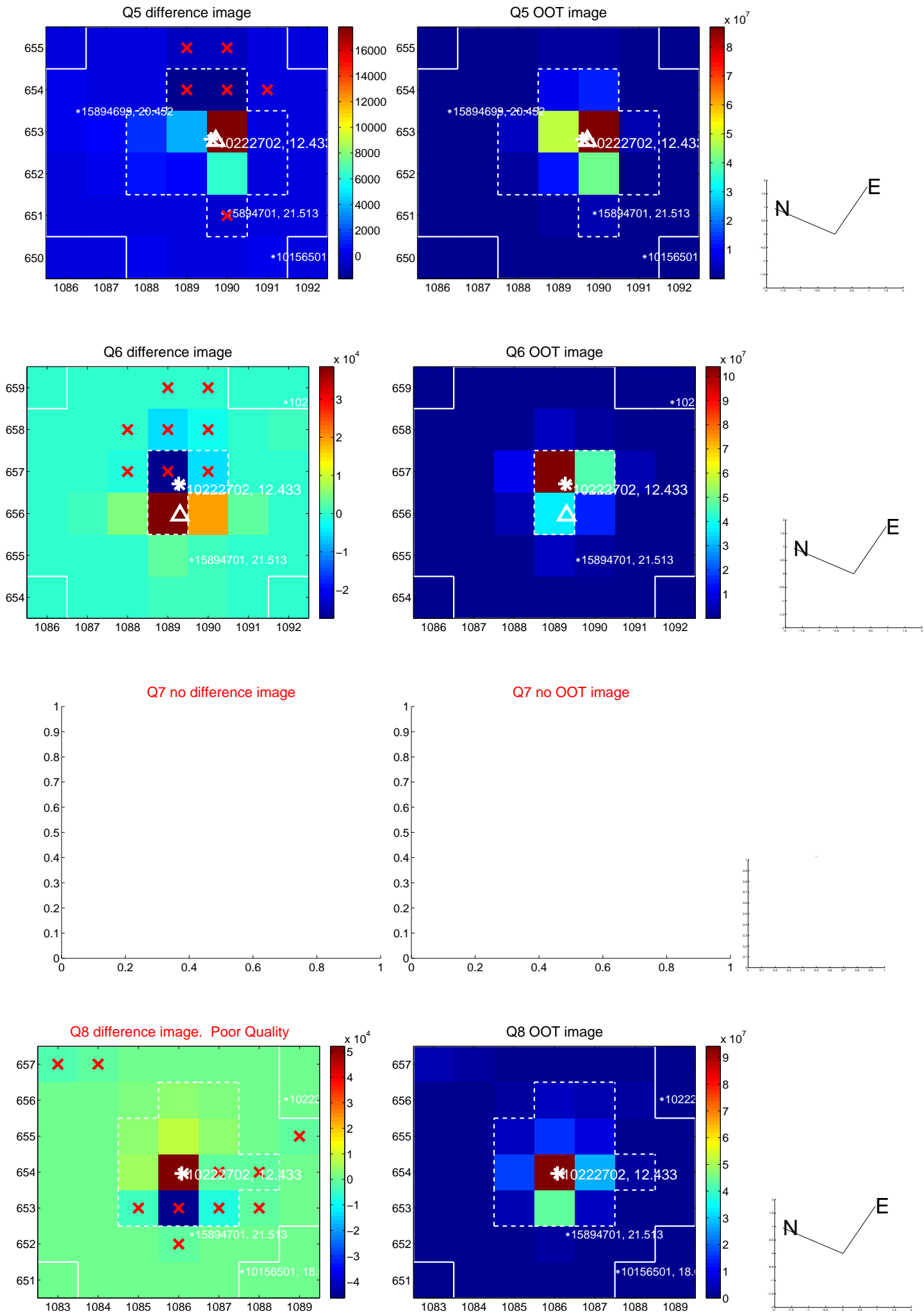


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: three-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

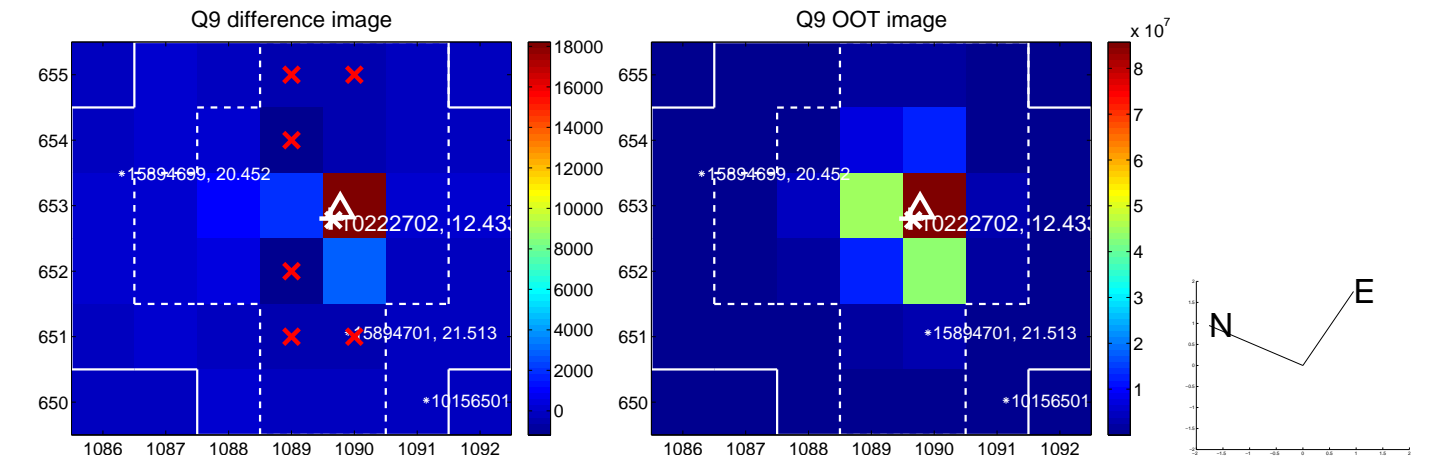


white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

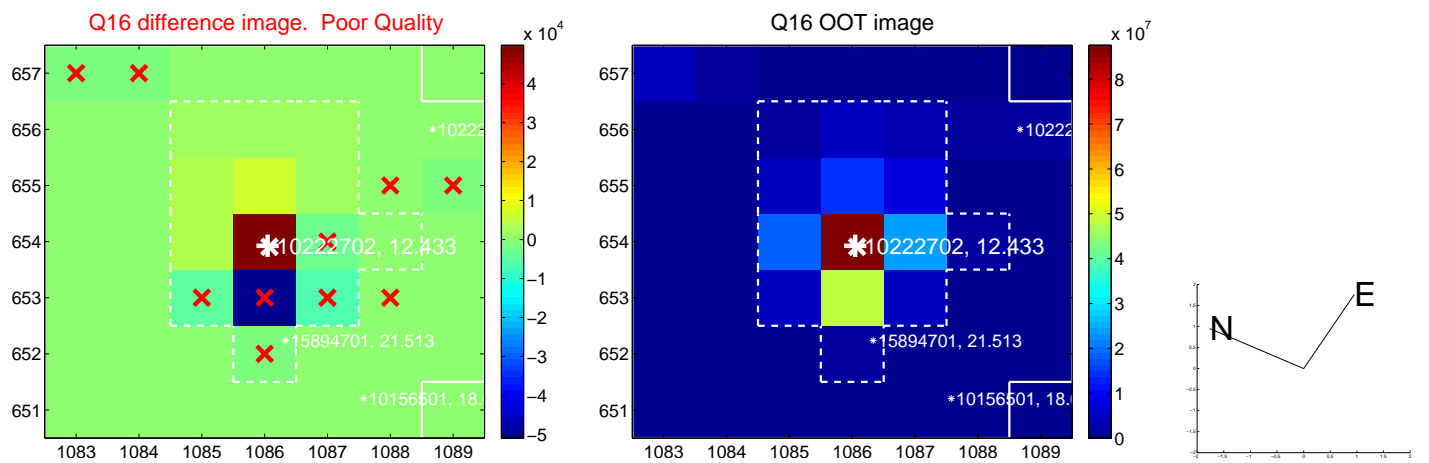
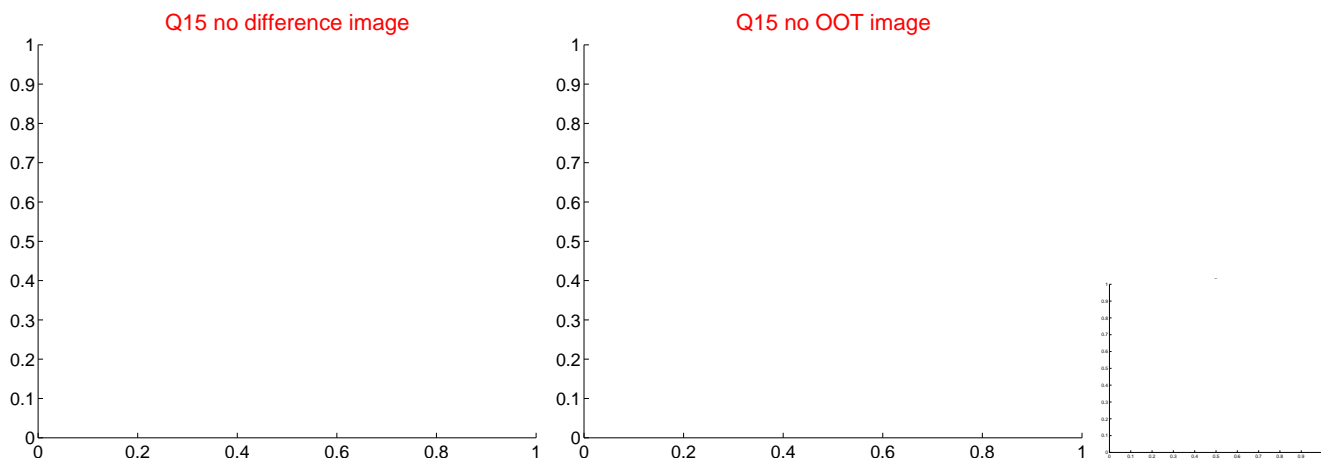
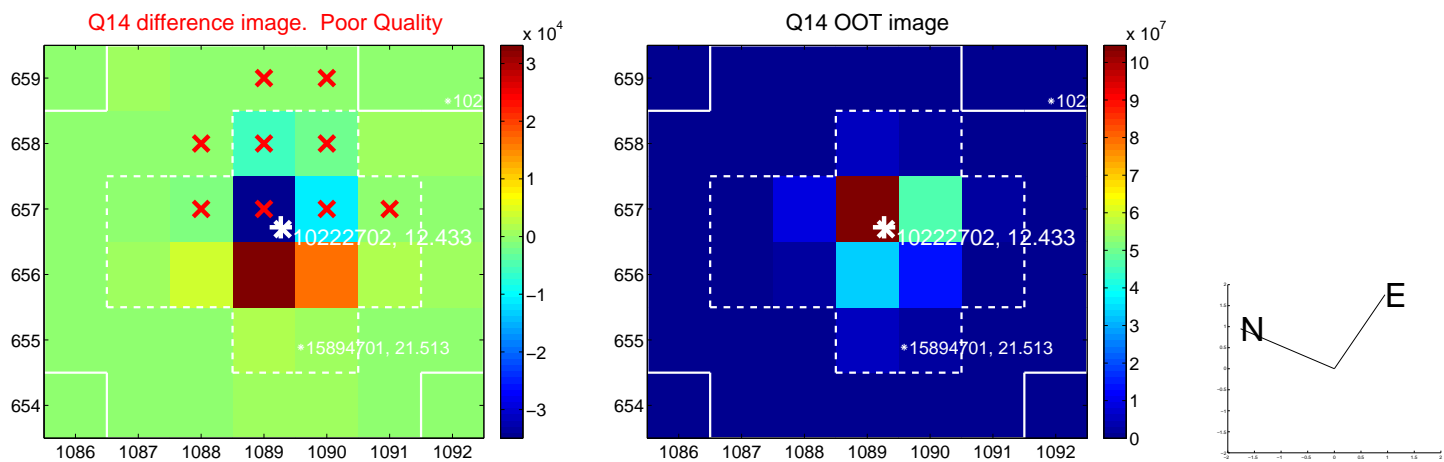
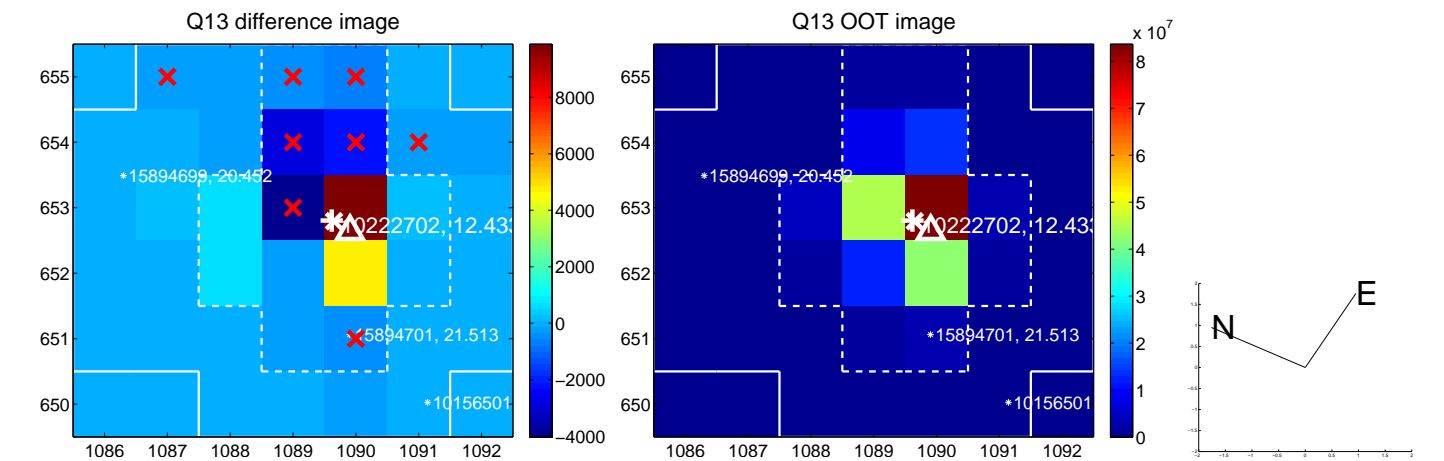




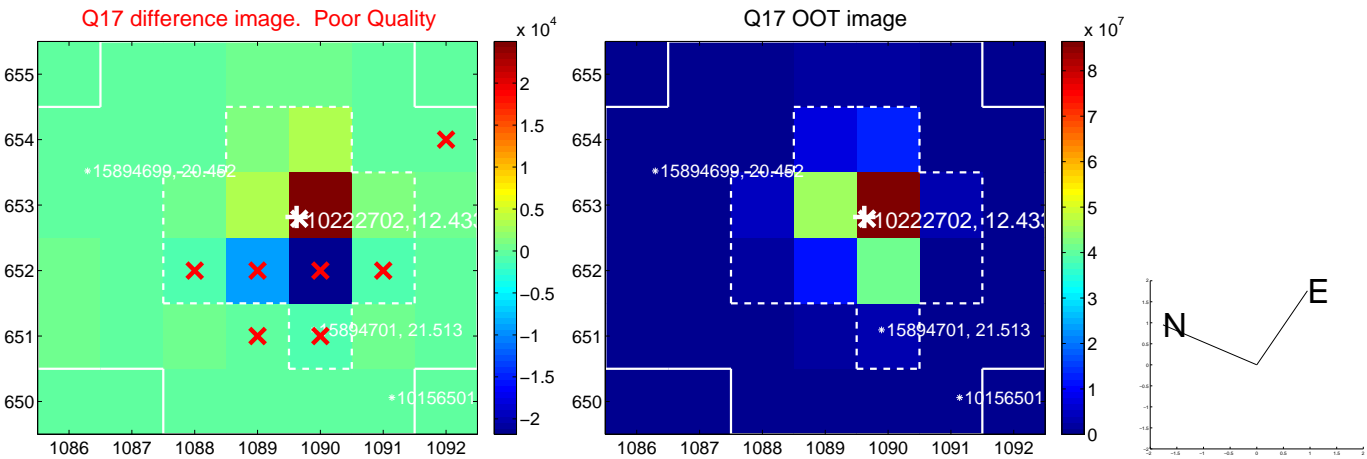
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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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

