

# KIC 008702381

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
008702381-01	OBS	No	0.798412	132.229744	167.6	1.500	8.2	-1.0	2.60	7084	3.40	40027.19

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008702381-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—CENT_NOFITS

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

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

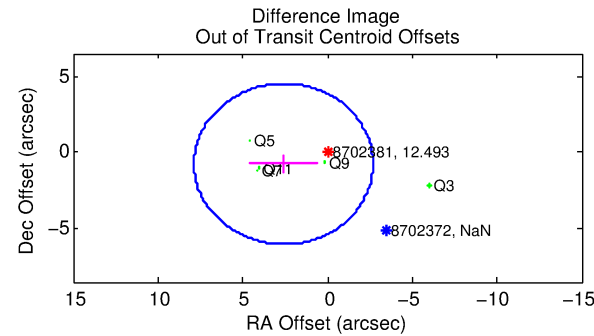
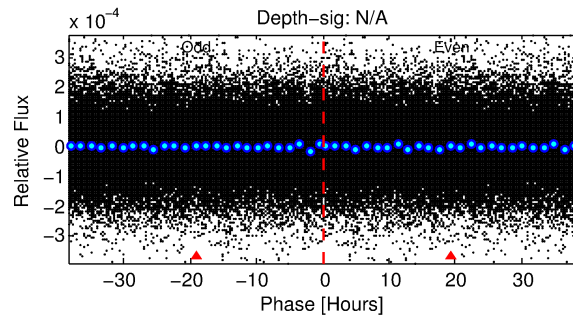
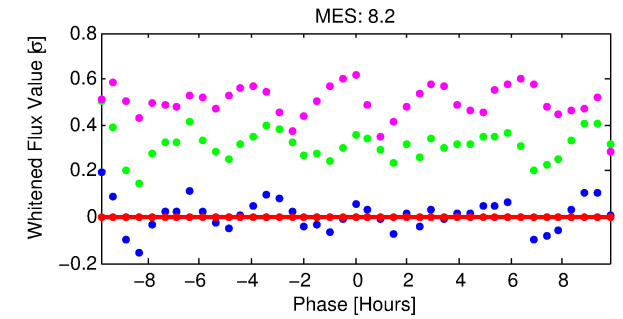
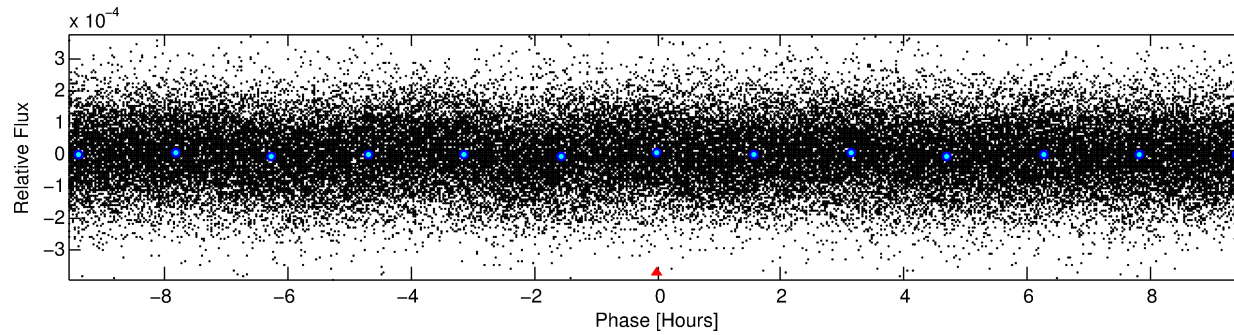
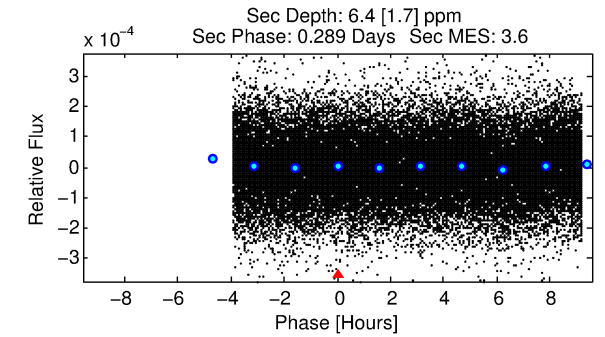
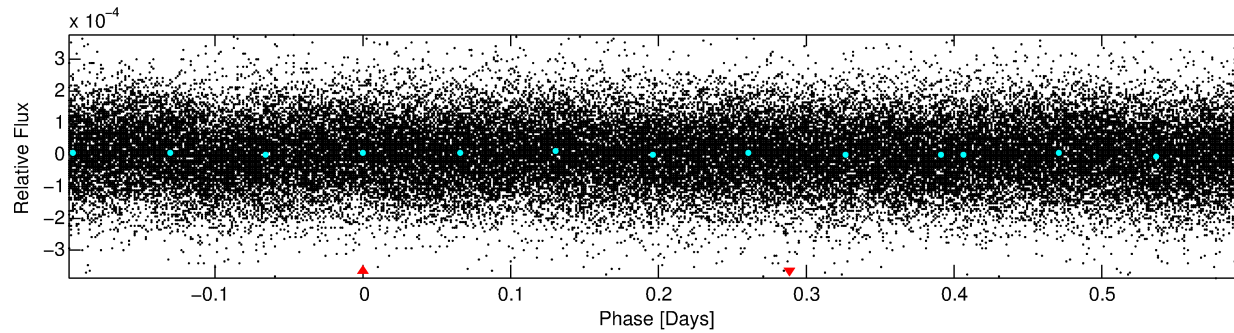
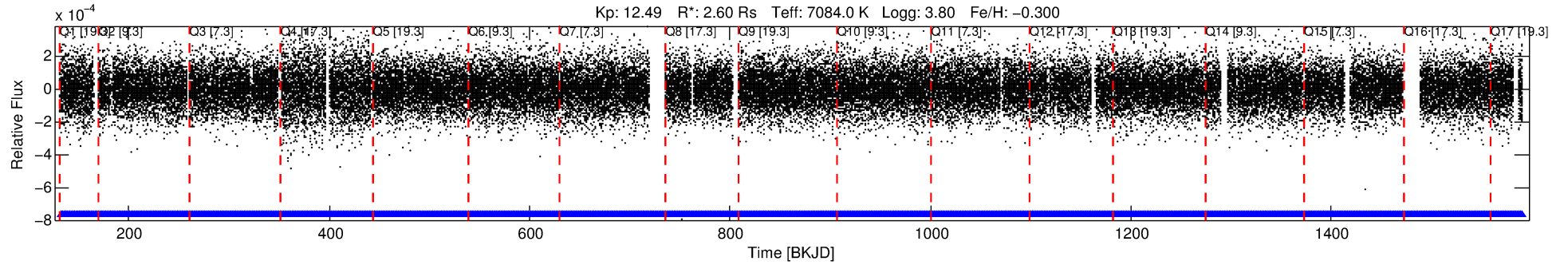
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 008702381-01

No Significant Match Found

# DV One-Page Summary

KIC: 8702381 Candidate: 1 of 1 Period: 0.798 d



## TPS TCE Results:

Period = 0.79841 d  
Epoch = 132.2297 BKJD

DV fit results are unavailable

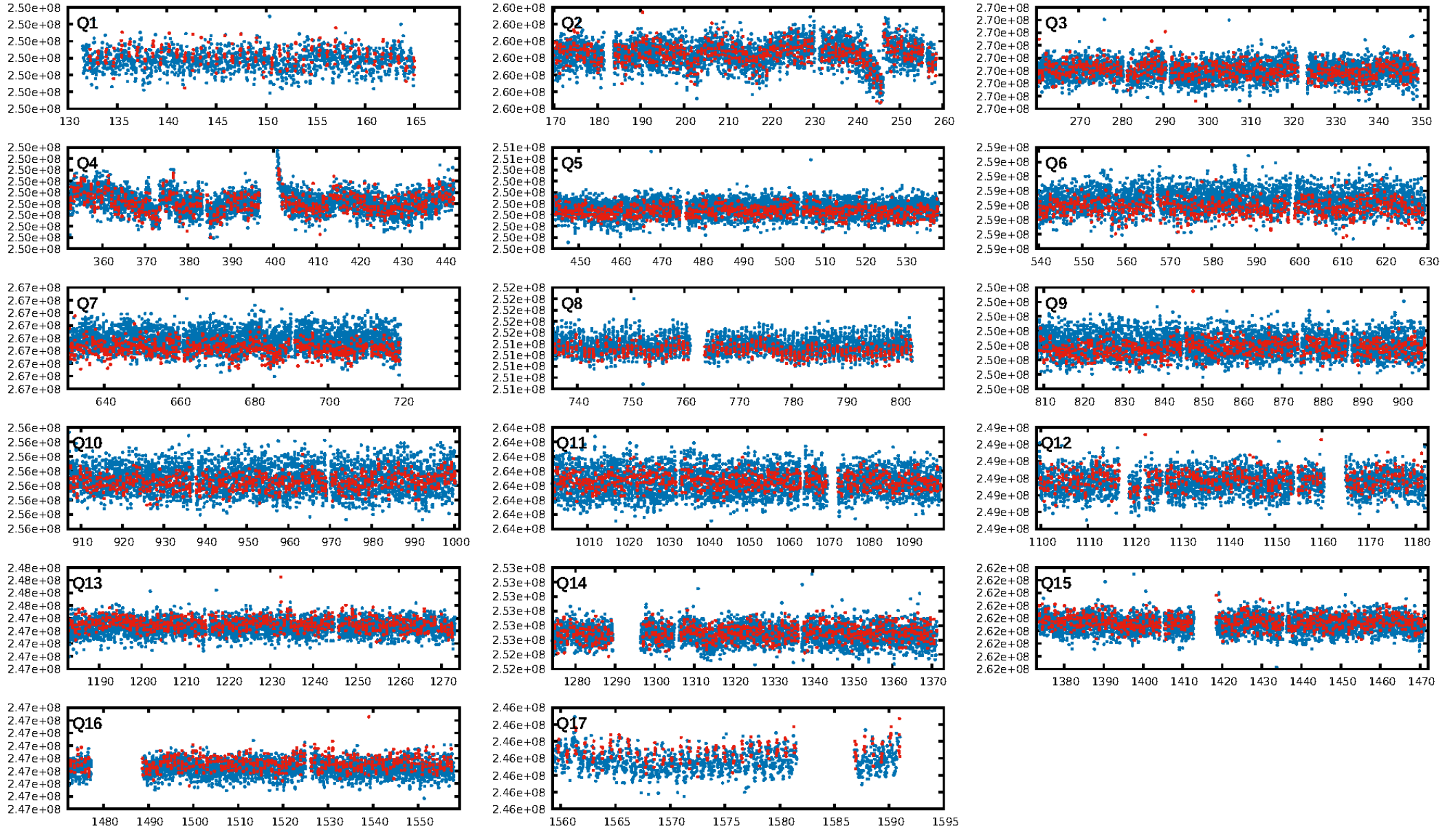
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: N/A  
ModelChiSquareGof-sig: N/A  
Bootstrap-pfa: 1.77e-15  
RollingBand-fgt: 1.00 [1617/1617]  
GhostDiagnostic-chr: -0.8056  
Centroid-sig: 29.3%  
Centroid-so: 0.590 arcsec [0.75σ]  
OotOffset-rm: 2.701 arcsec [1.54σ]  
KicOffset-rm: 2.720 arcsec [1.40σ]  
OotOffset-st: 0/3/0/2 [5]  
KicOffset-st: 0/3/0/2 [5]  
DiffImageQuality-fgm: 0.20 [1/5]  
DiffImageOverlap-fno: 1.00 [17/17]

Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 16:51:57 Z

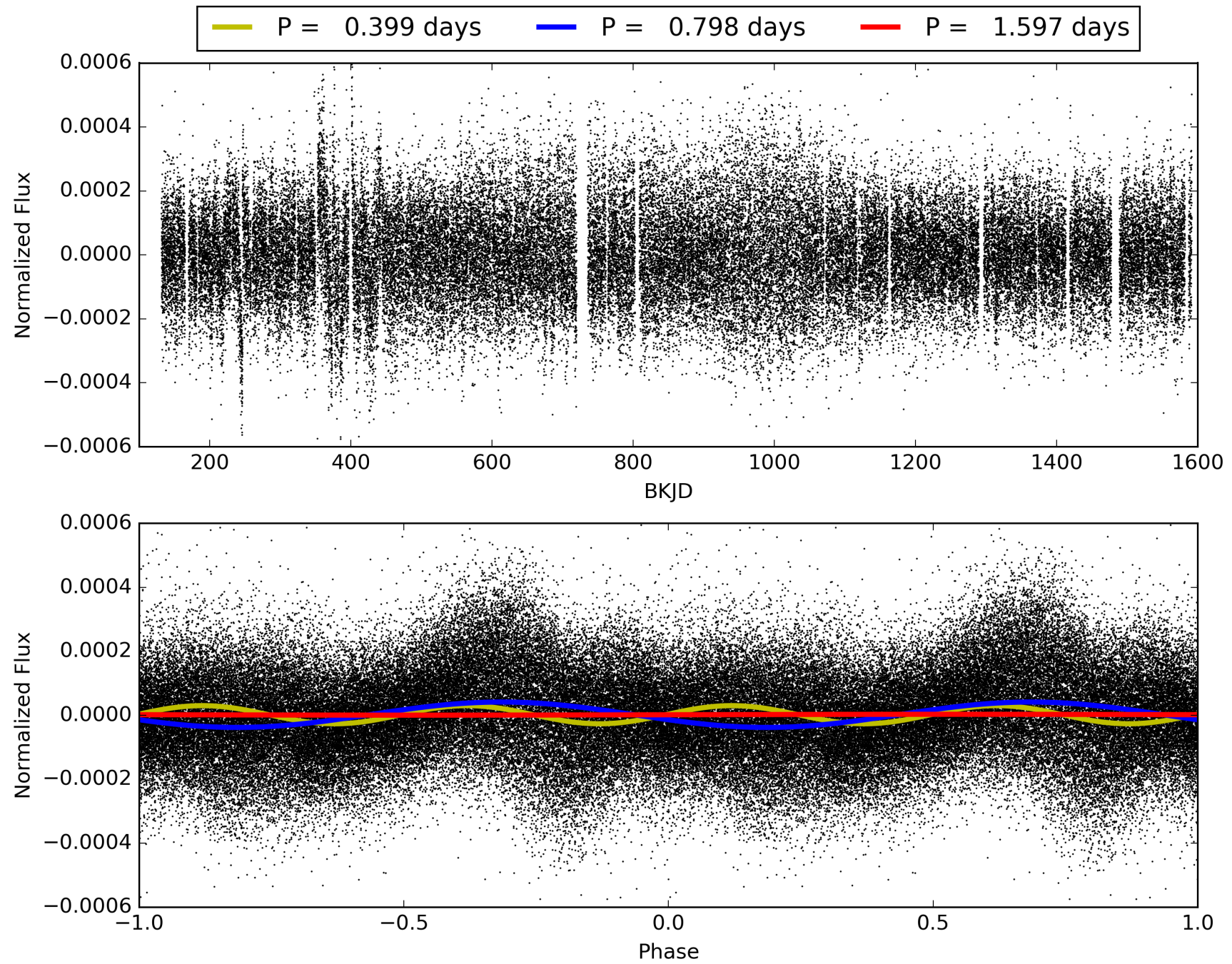
This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

# TCE 008702381-01, PDC Light Curves



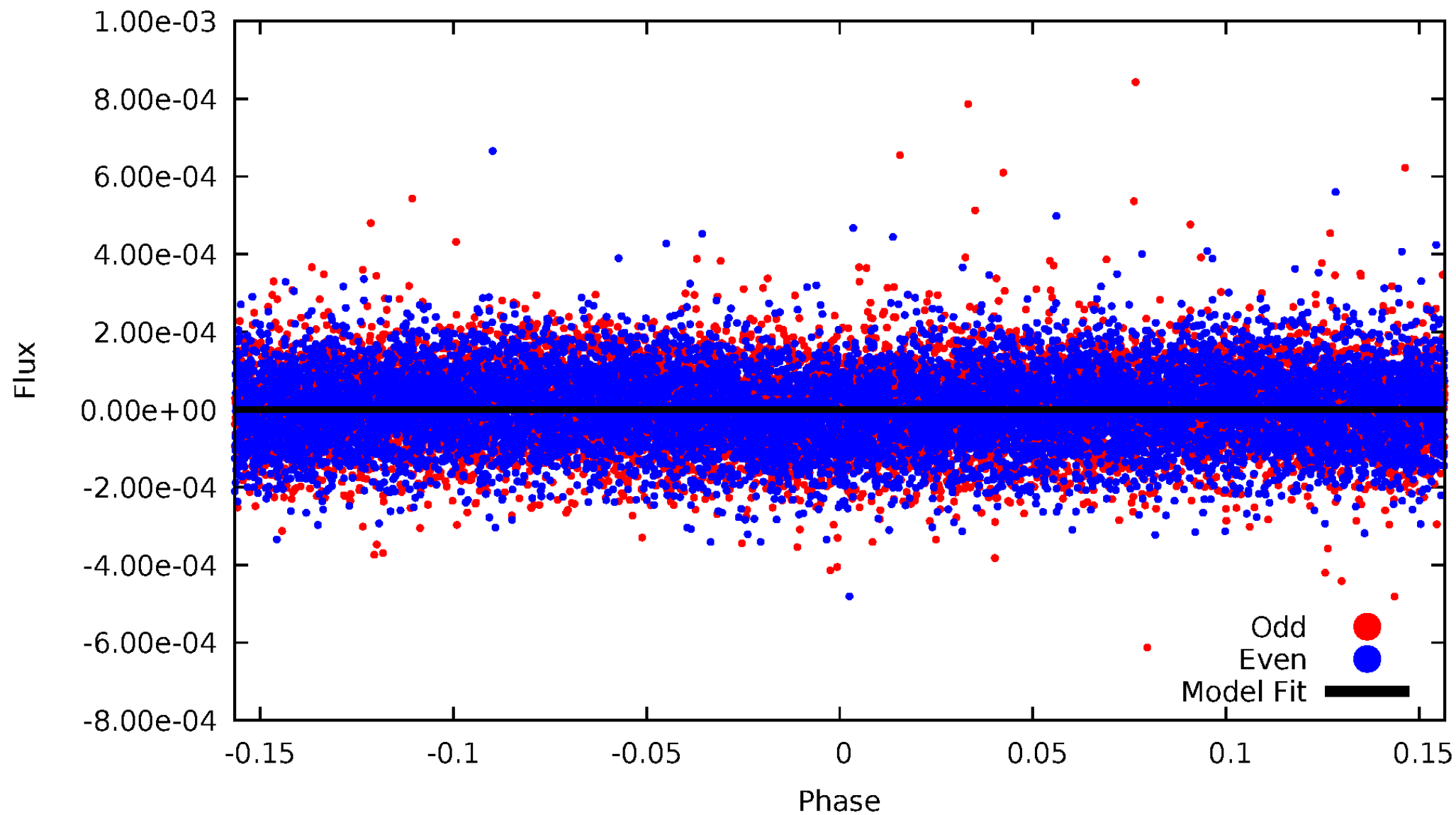


TCE 008702381-01



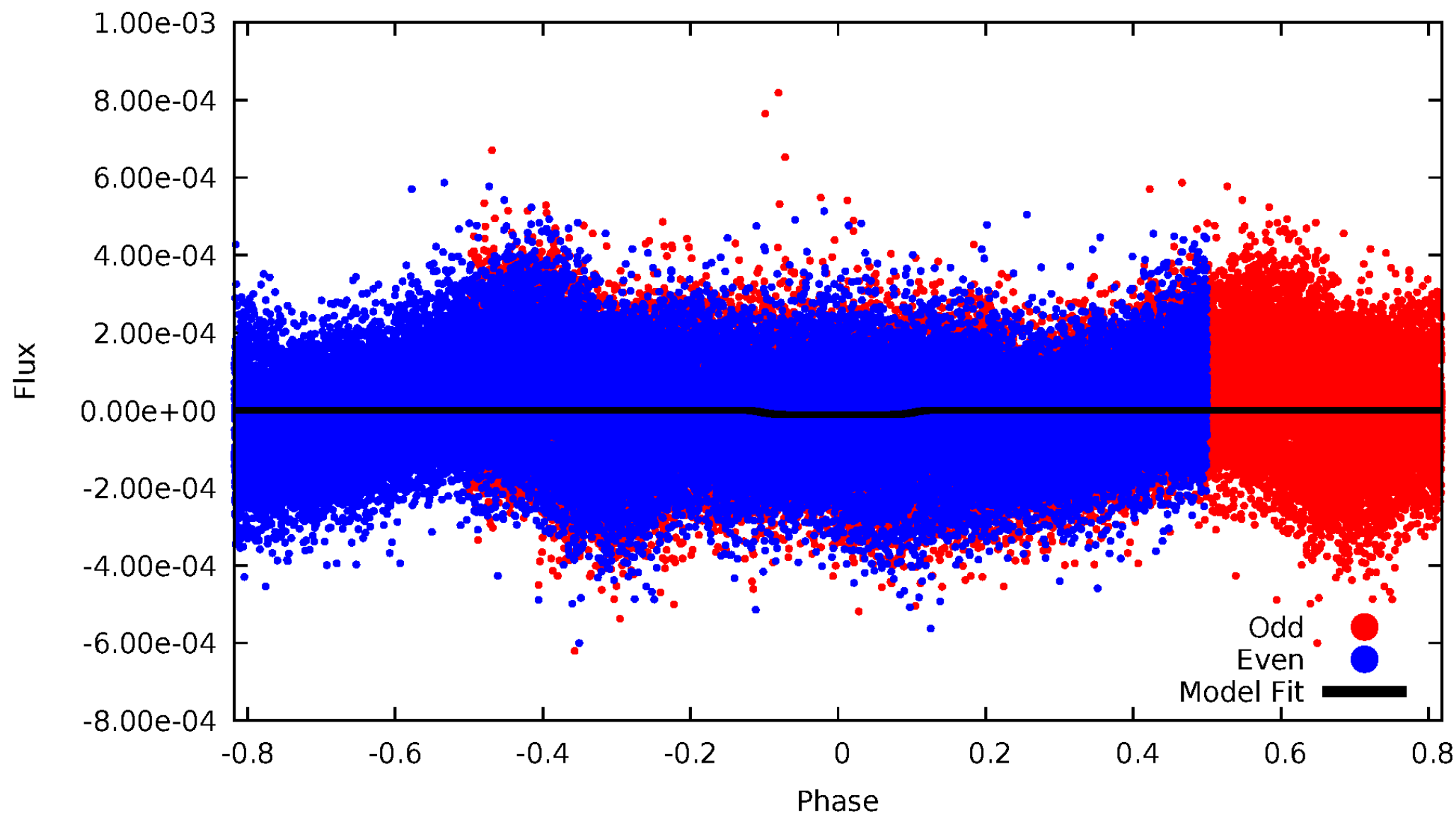
# DV Odd/Even

TCE 008702381-01



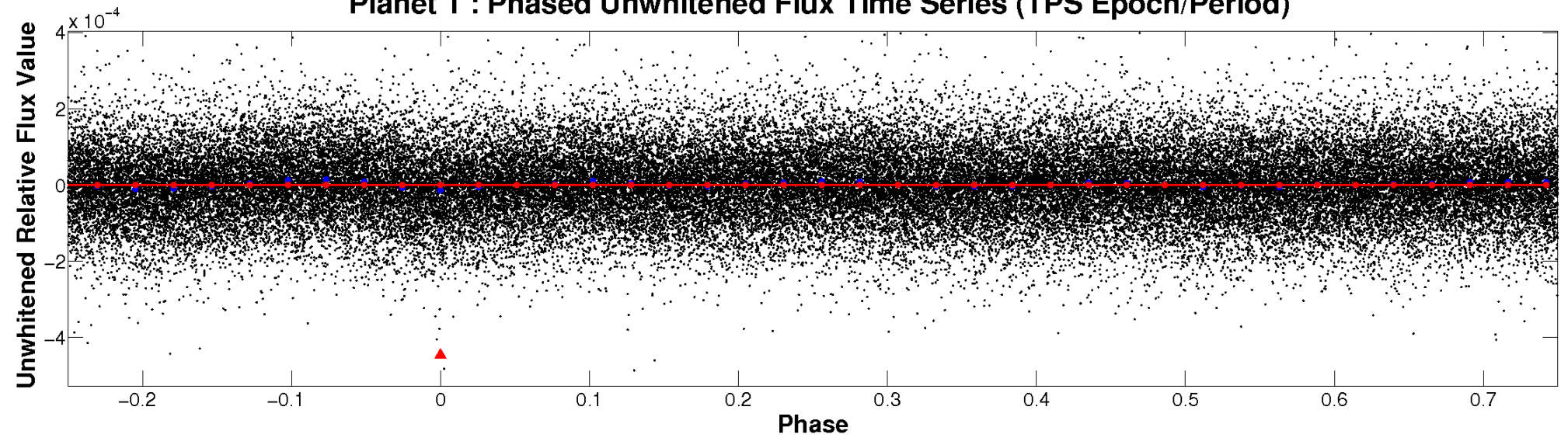
# ALT Odd/Even

TCE 008702381-01

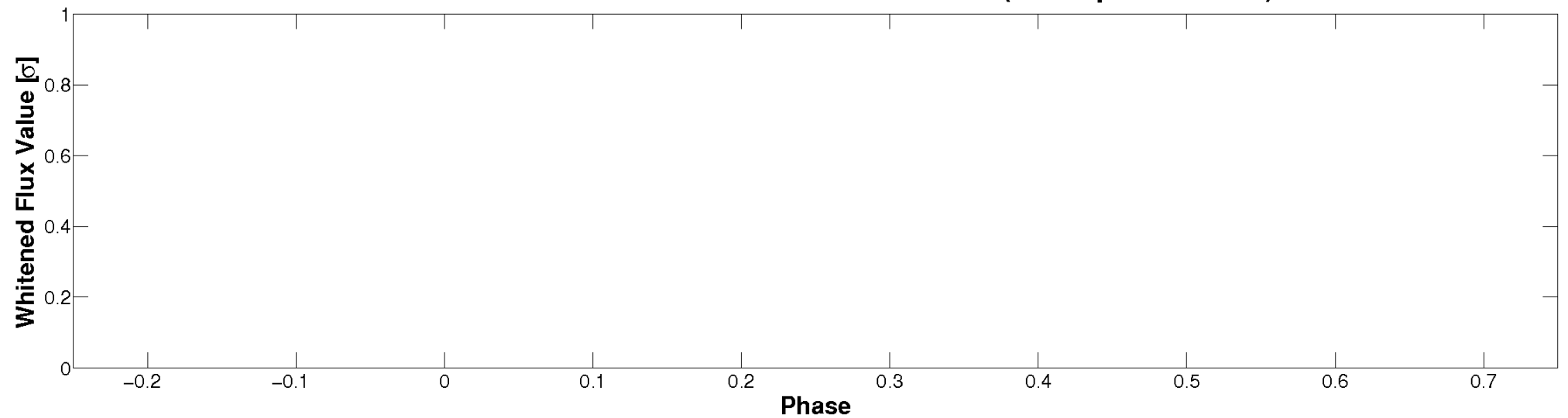


# Non-Whitened Vs. Whitened Light Curve

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



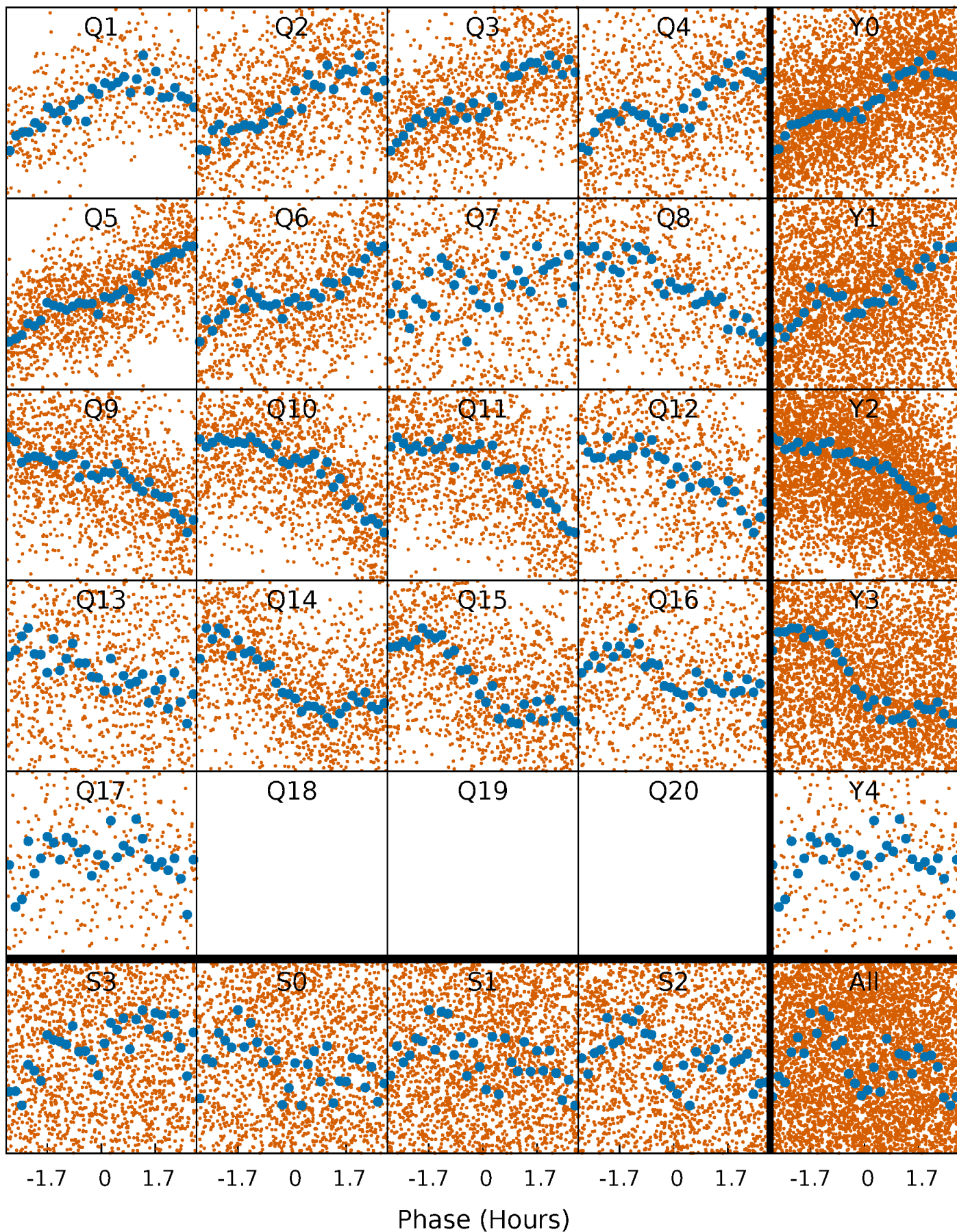
**Planet 1 : Phased Whitened Flux Time Series (TPS Epoch/Period)**





# PDC Quarter-Phased Transit Curves

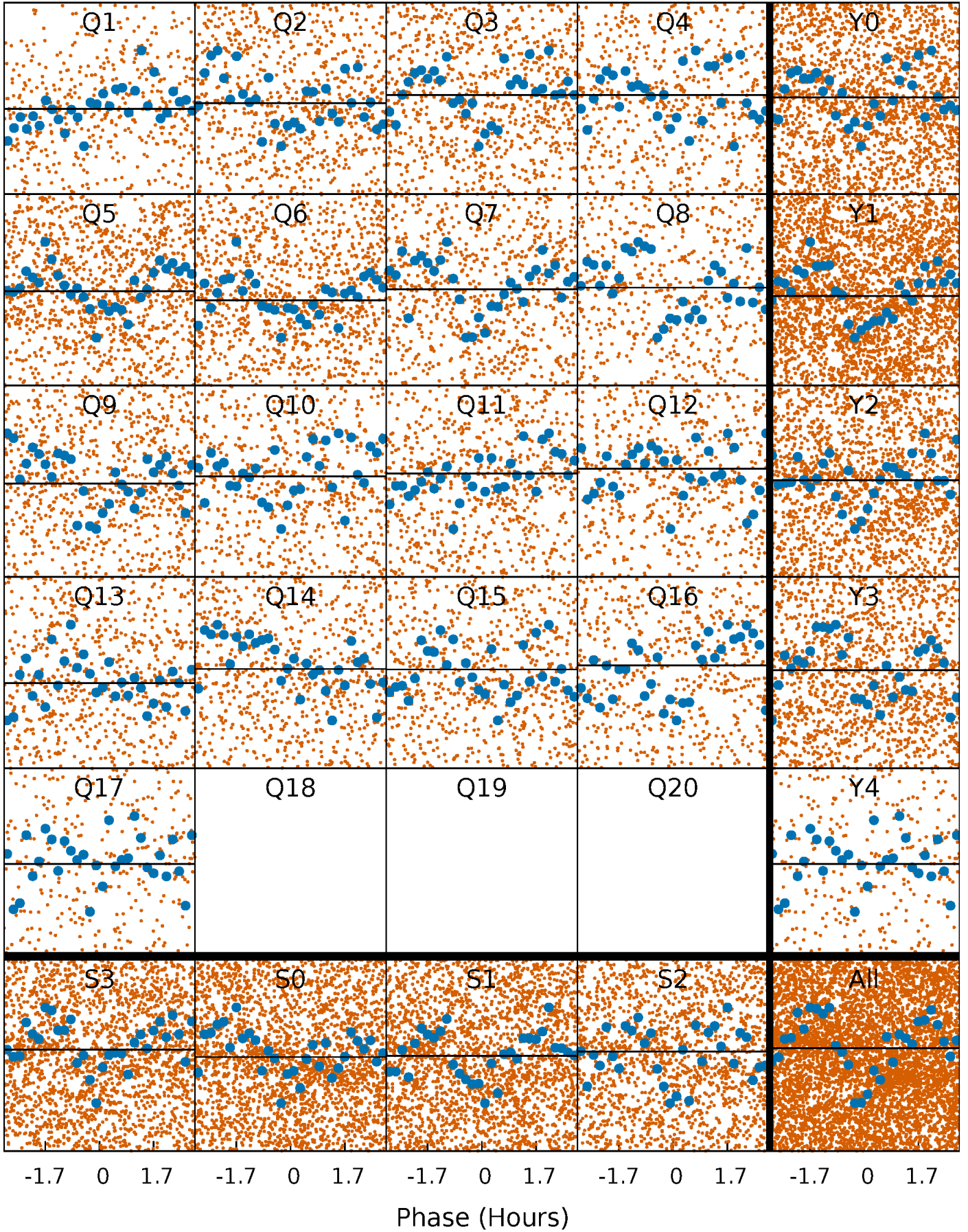
TCE 008702381-01 P= 0.798411 Days  $T_0=132.229744$  (BKJD)





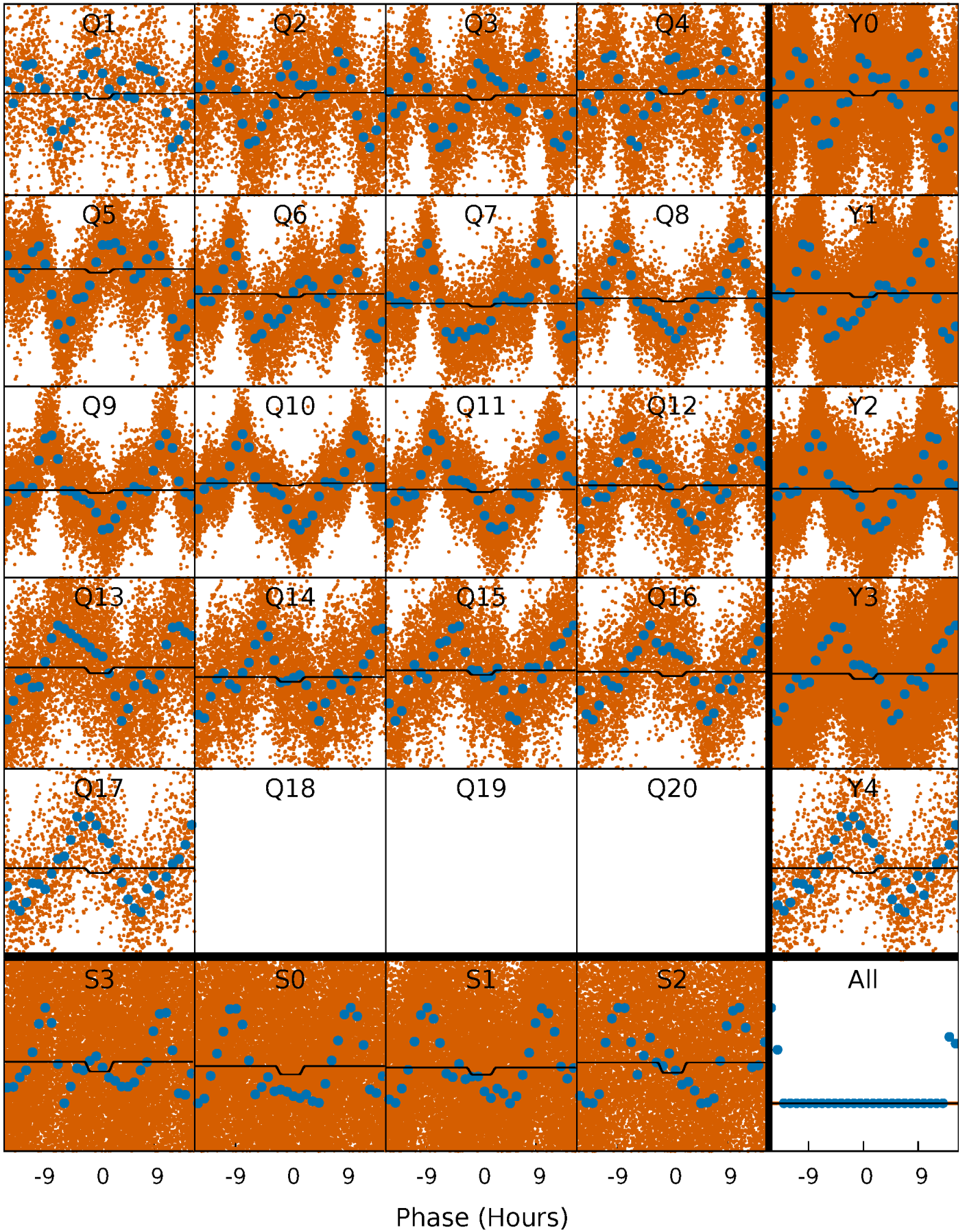
# DV Quarter-Phased Transit Curves

TCE 008702381-01   P= 0.798411 Days    $T_0=132.229744$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

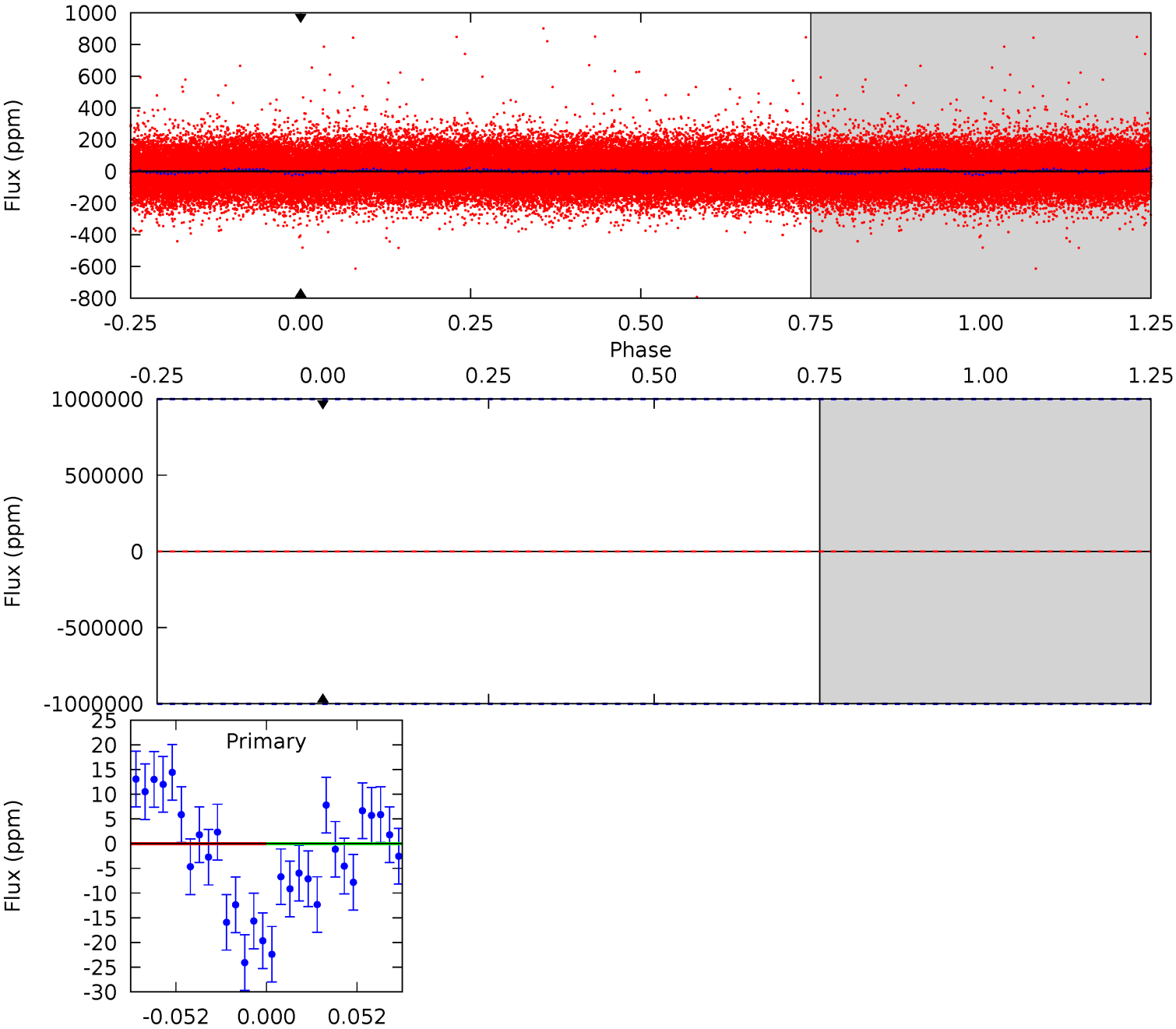
TCE 008702381-01   P= 0.798411 Days    $T_0=132.320826$  (BKJD)



# DV Model-Shift Uniqueness Test

008702381-01, P = 0.798411 Days, E = 131.431333 Days

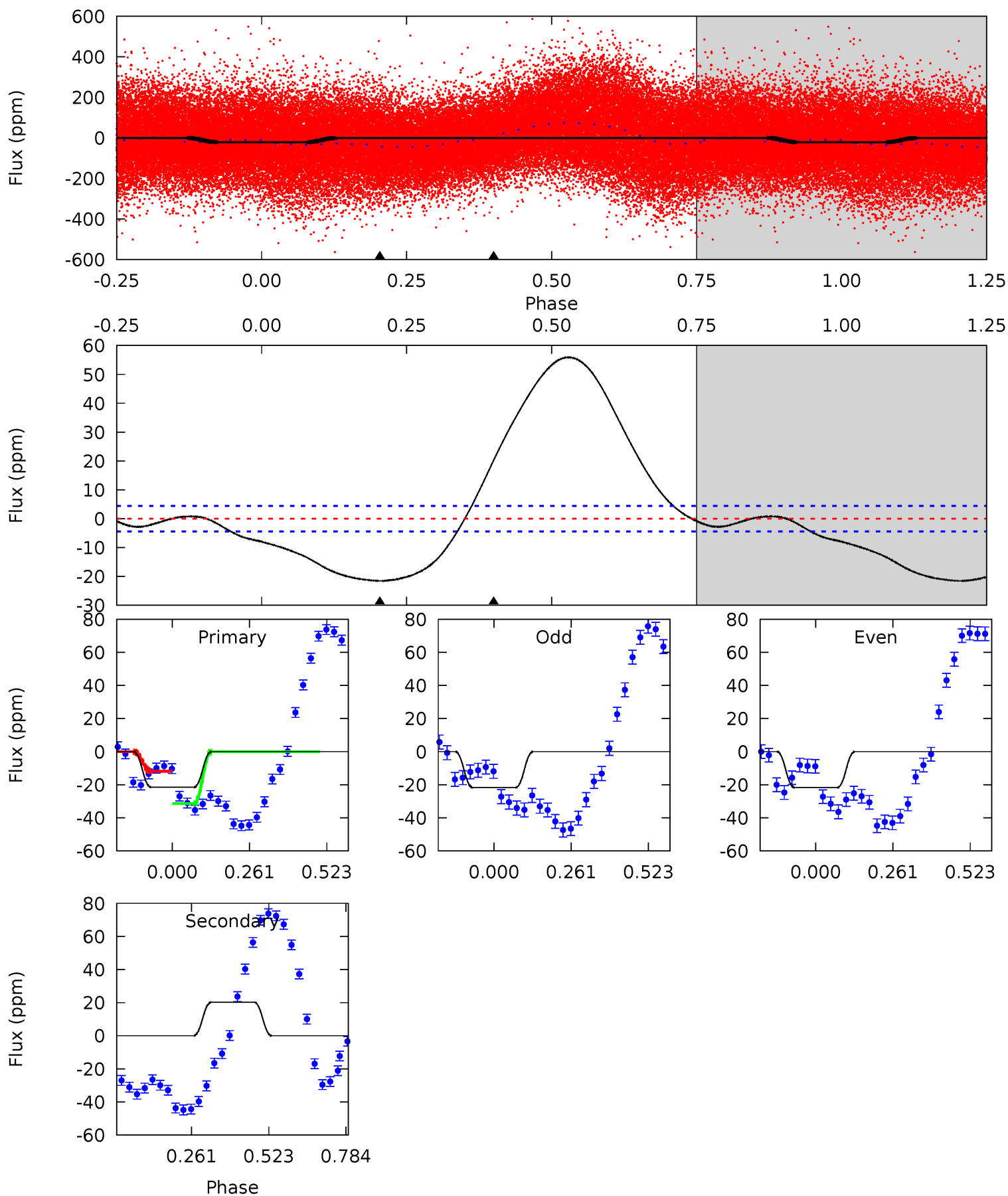
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
0	0	0	0	1.00	1.00	1.00	0	0	0	0	0	0	0	0



# Alt Model-Shift Uniqueness Test

008702381-01, P = 0.798411 Days, E = 130.724004 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
21.3	-20.0	0	0	4.36	1.12	4.52	21.3	21.3	-20.0	-20.0	0.00	1.73	0.72	9.97





### Stellar Parameters For KIC 008702381

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$7084^{+190}_{-232}$	$3.800^{+0.277}_{-0.092}$	$-0.300^{+0.300}_{-0.250}$	$2.600^{+0.460}_{-0.854}$	$1.556^{+0.234}_{-0.286}$	$0.125^{+0.236}_{-0.037}$
	+3%/-3%	+7%/-2%	+100%/-83%	+18%/-33%	+15%/-18%	+190%/-30%
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 008702381-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	$A_{\text{obs}}$
DV	$0 \pm 1000000$	$19.86^{+19.07}_{-13.45}$	$4948^{+280}_{-425}$	$-5294^{+45355}_{-23876}$	$-0.773^{+114.392}_{-77.804}$
Alt.	$20 \pm 1$	$18.32^{+21.36}_{-12.97}$	$4921^{+307}_{-432}$	$-4352^{+265}_{-318}$	$-0.013^{+0.010}_{-0.133}$

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

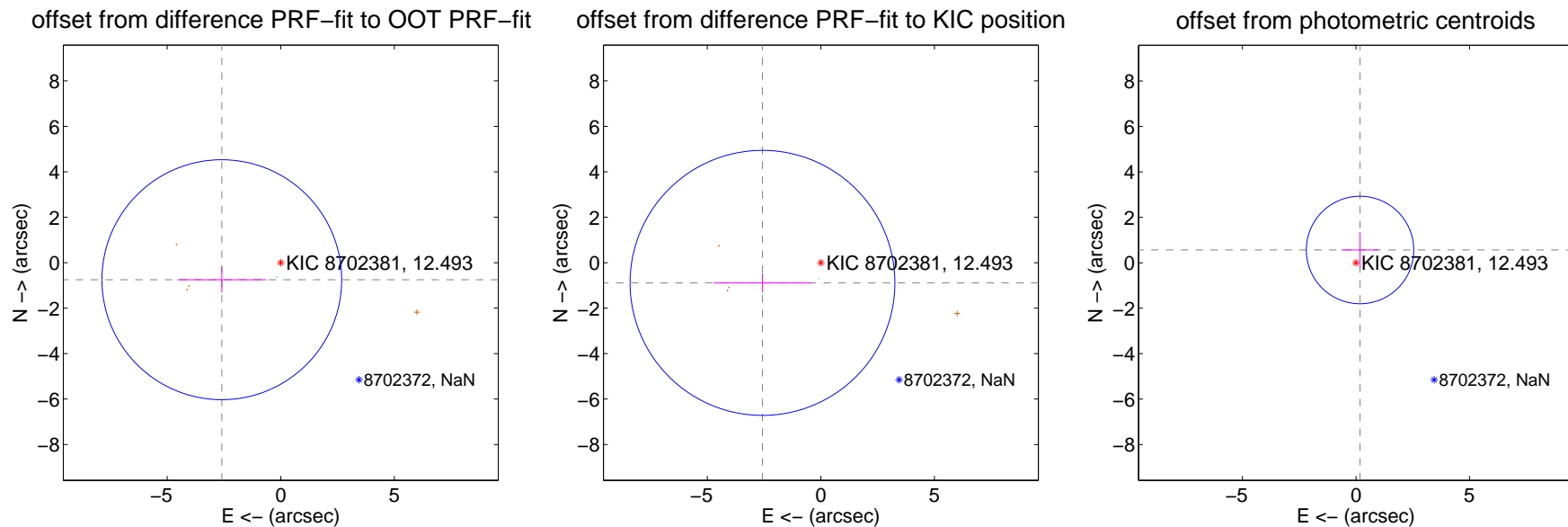
## DV Centroid Data

Supplemental centroid analysis for 008702381-01. Kepler magnitude: 12.49. Transit SNR -1.00

There are 1 quarters with good PRF difference image offsets

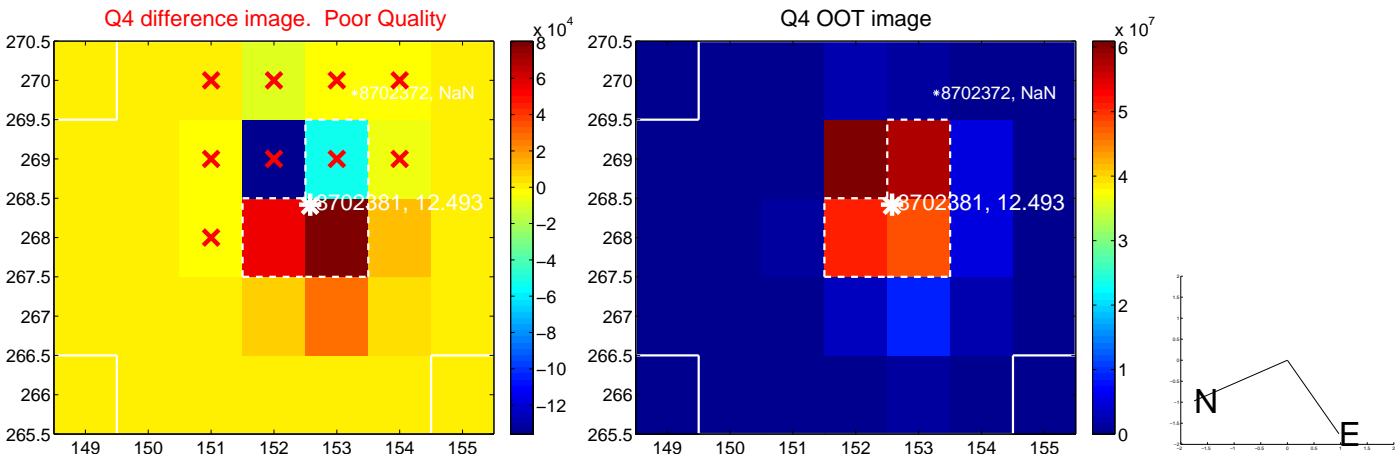
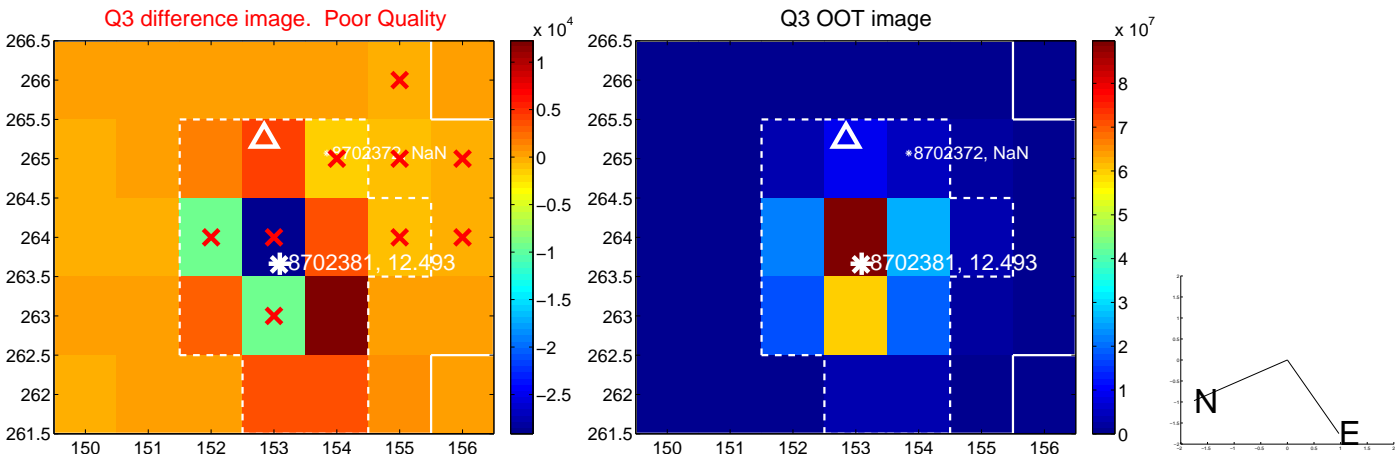
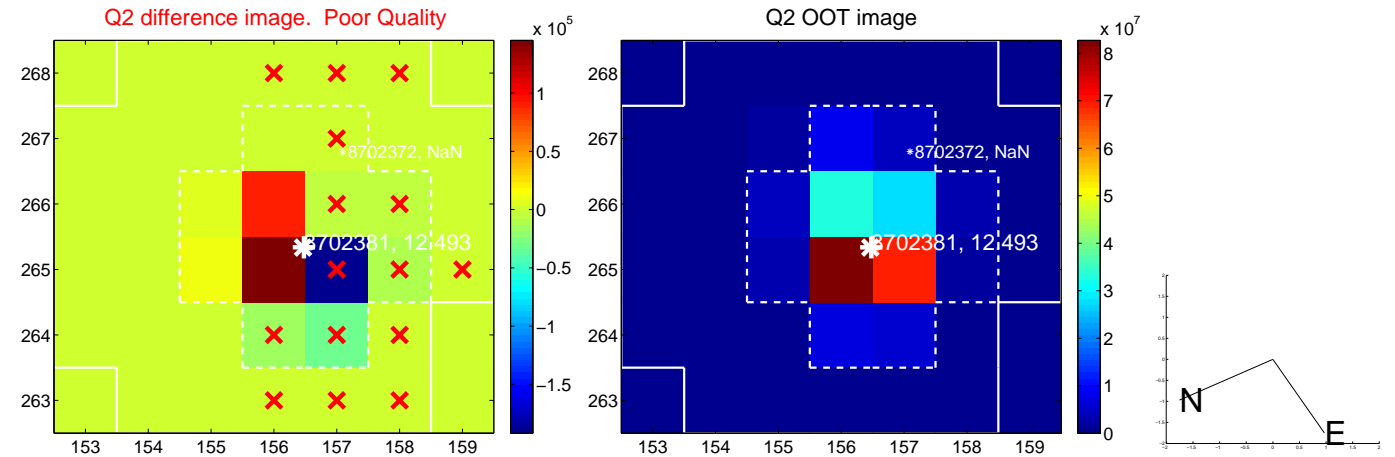
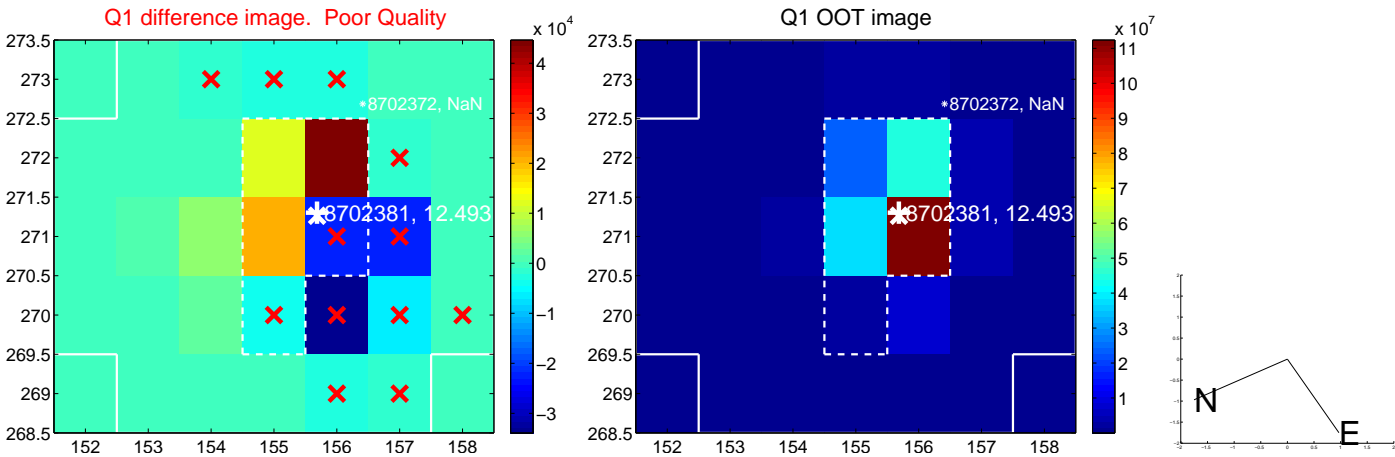
The direct PRF centroid is offset from the target star catalog position by about 0.07 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$2.701 \pm 1.760$	1.54	$2.595 \pm 1.957$	$-0.749 \pm 0.563$
PRF-fit source offset from KIC position	$2.720 \pm 1.943$	1.40	$2.571 \pm 2.155$	$-0.888 \pm 0.414$
photometric centroid source offset	$0.59 \pm 0.79$	0.75	$-0.18 \pm 0.81$	$0.56 \pm 0.79$

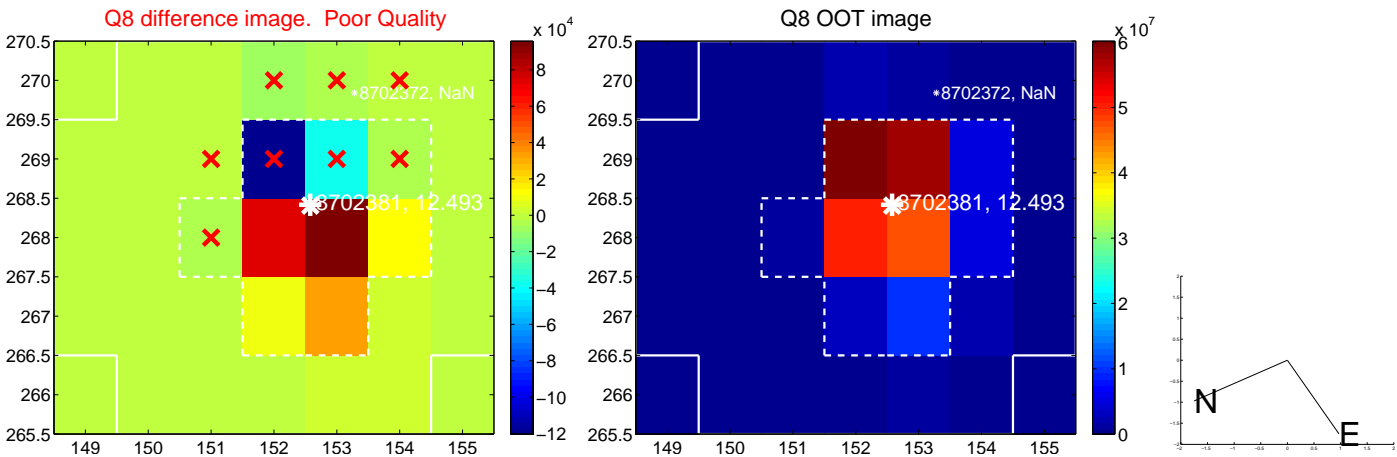
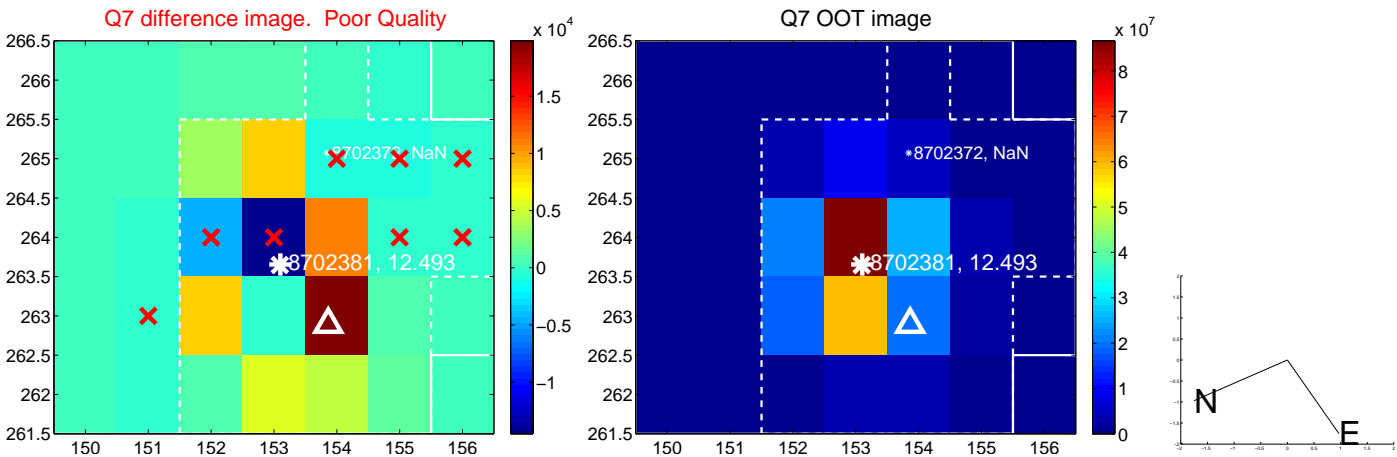
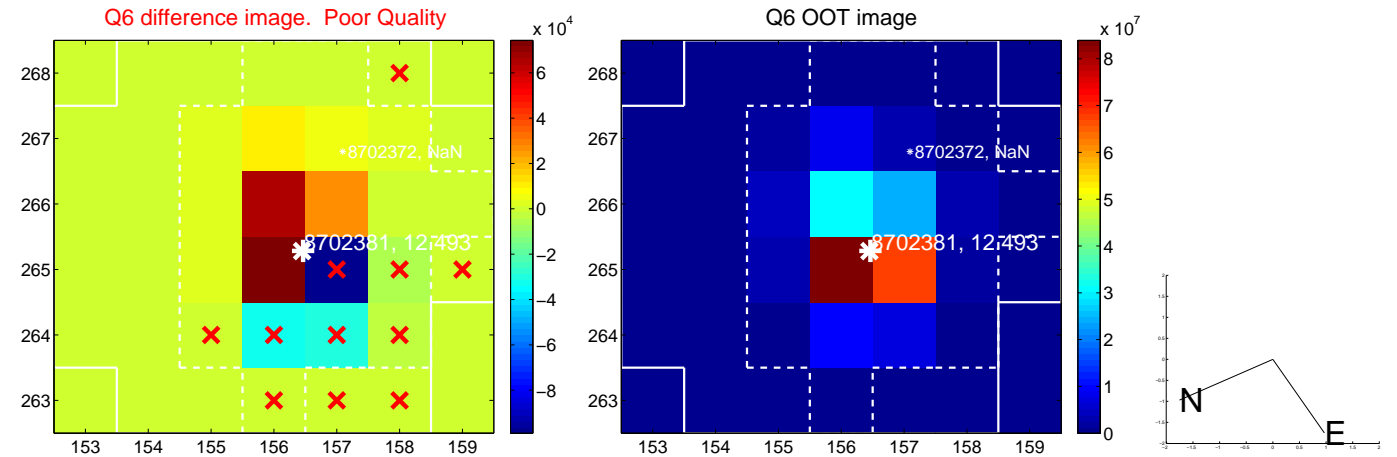
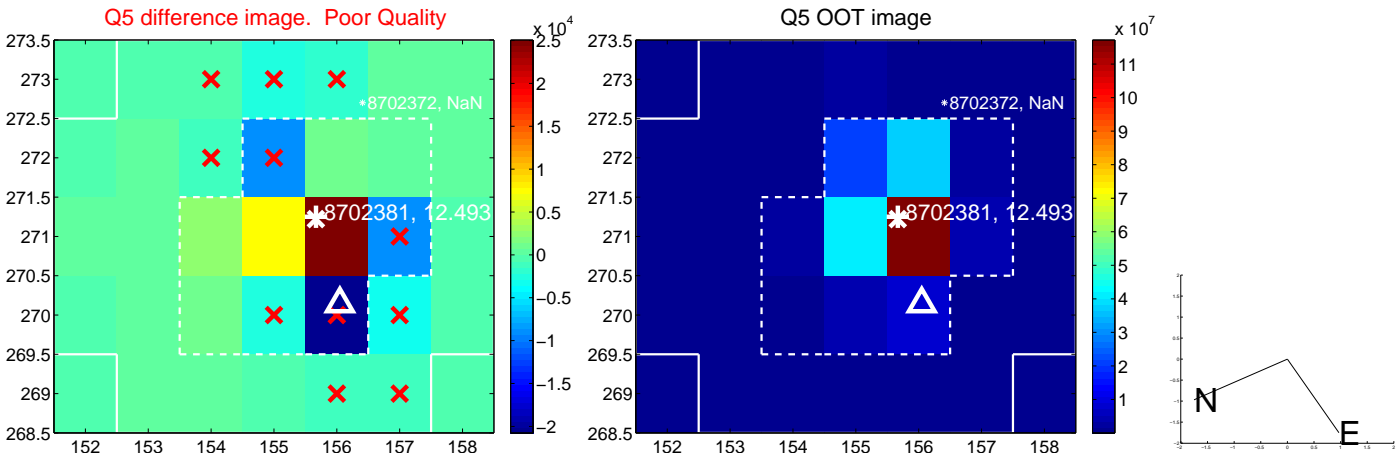


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: three-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

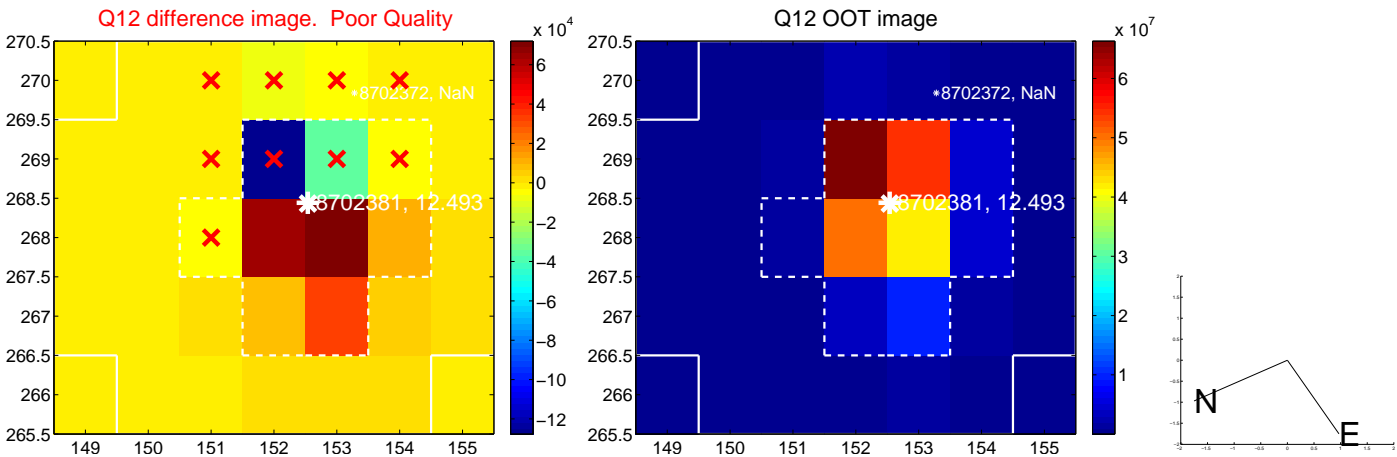
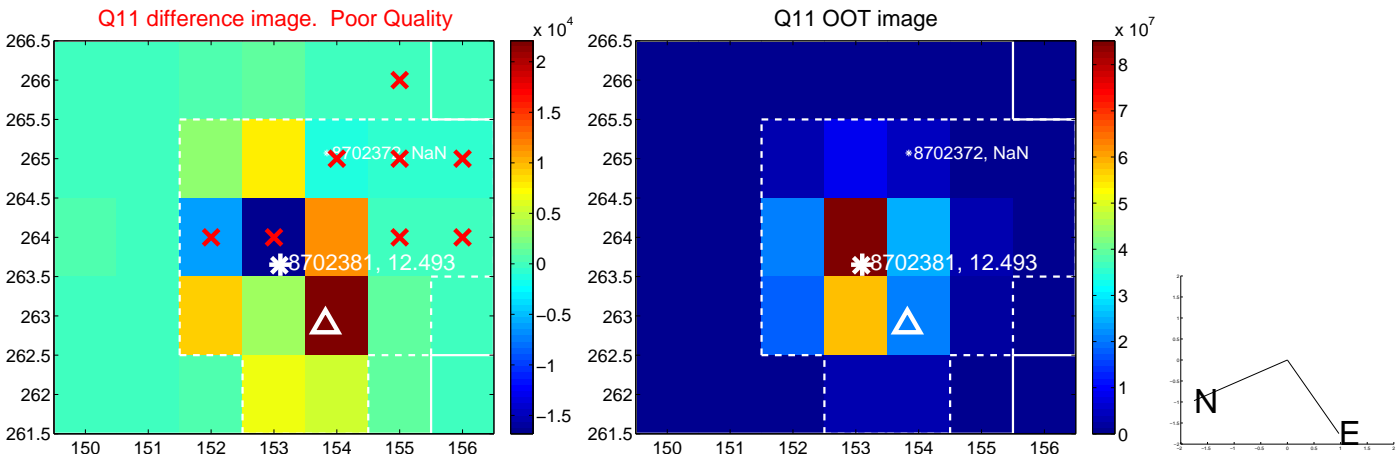
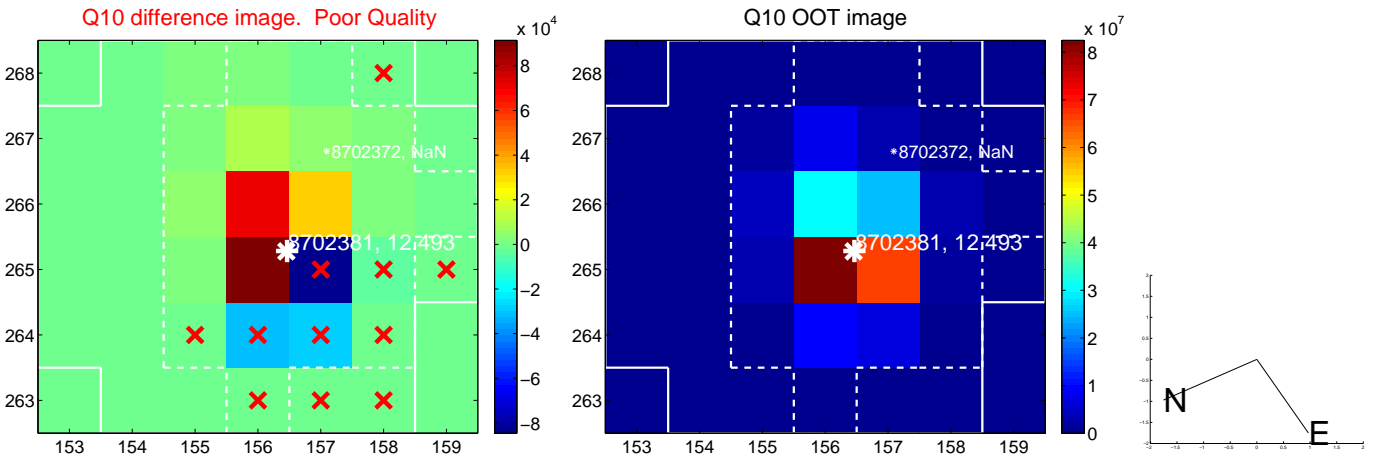
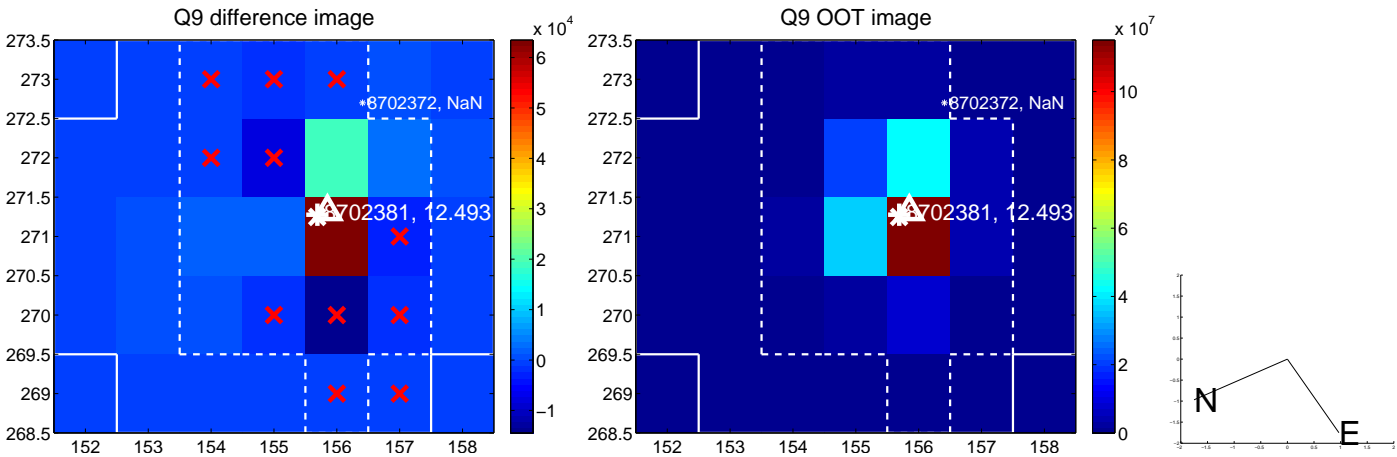


white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

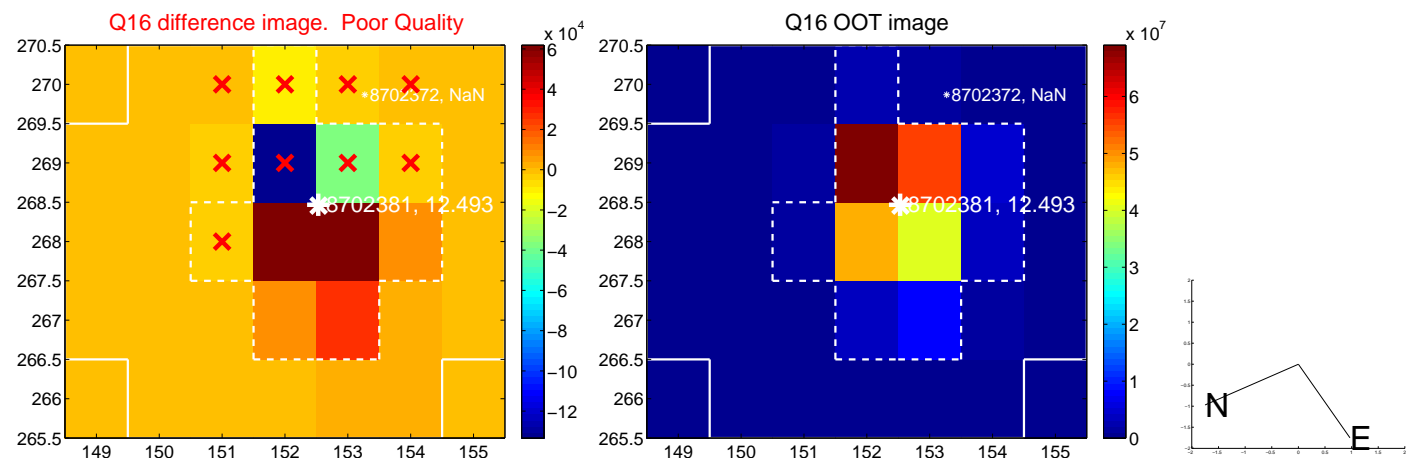
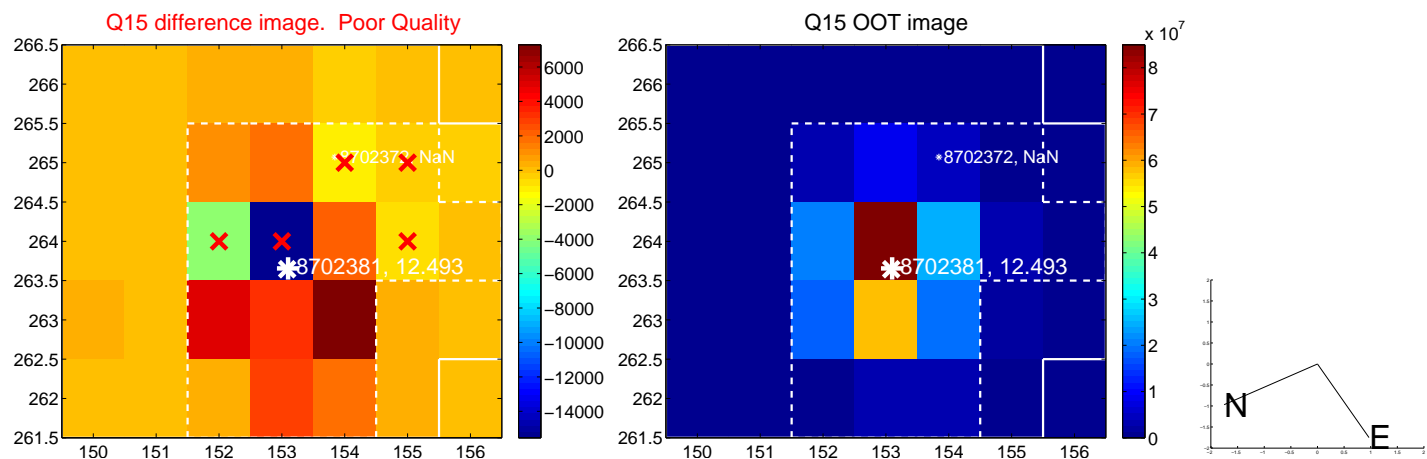
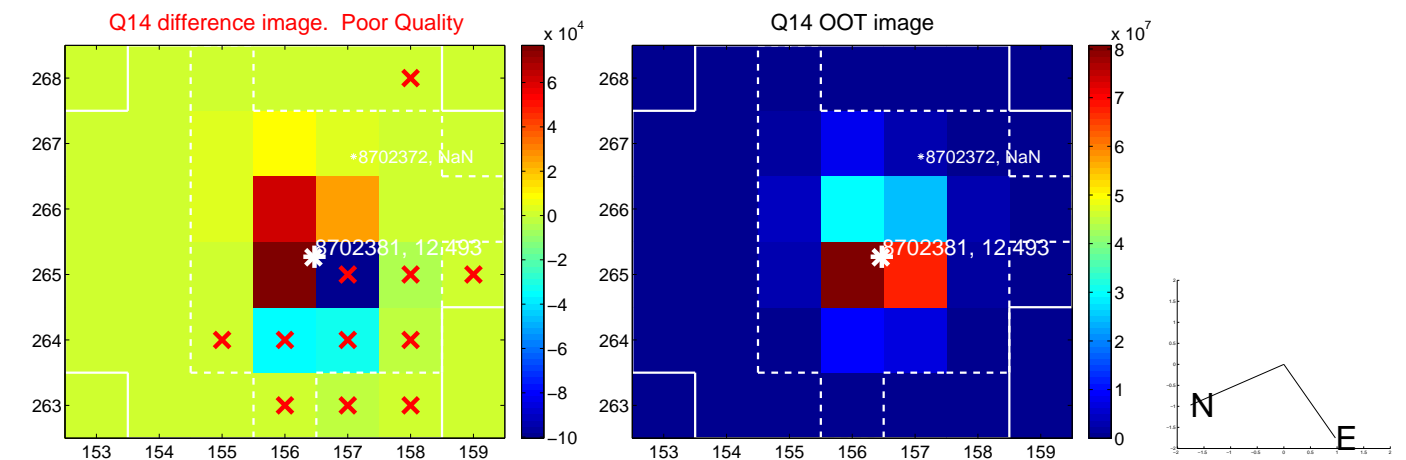
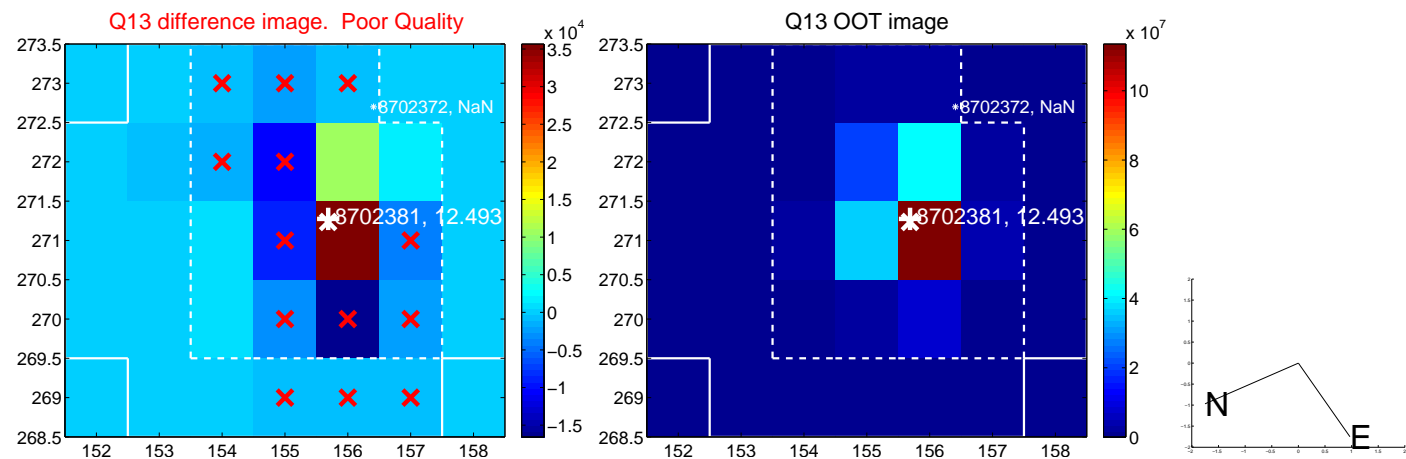




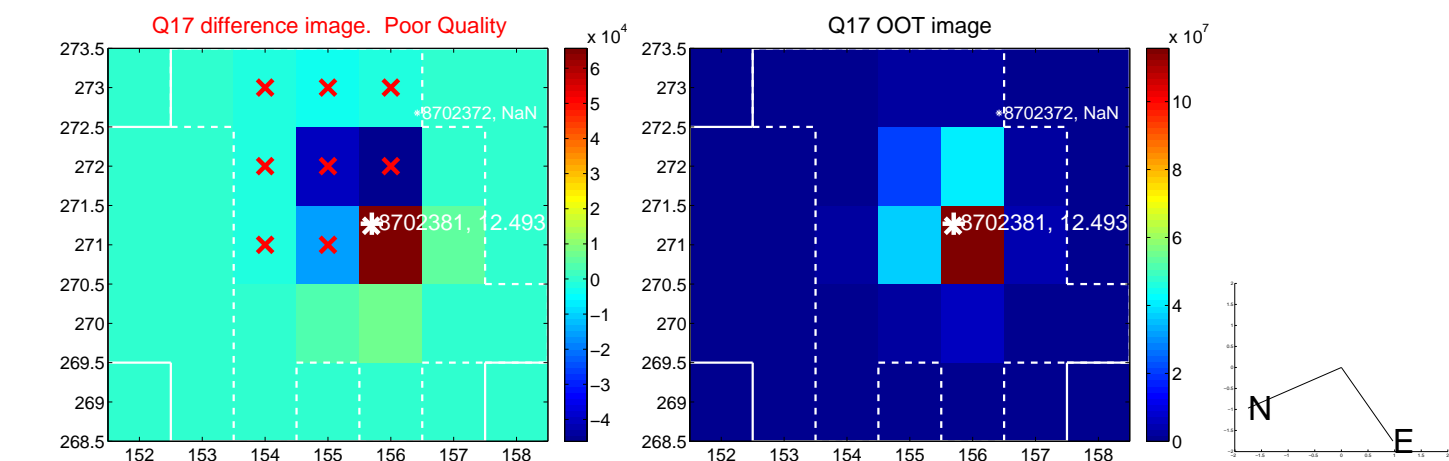
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



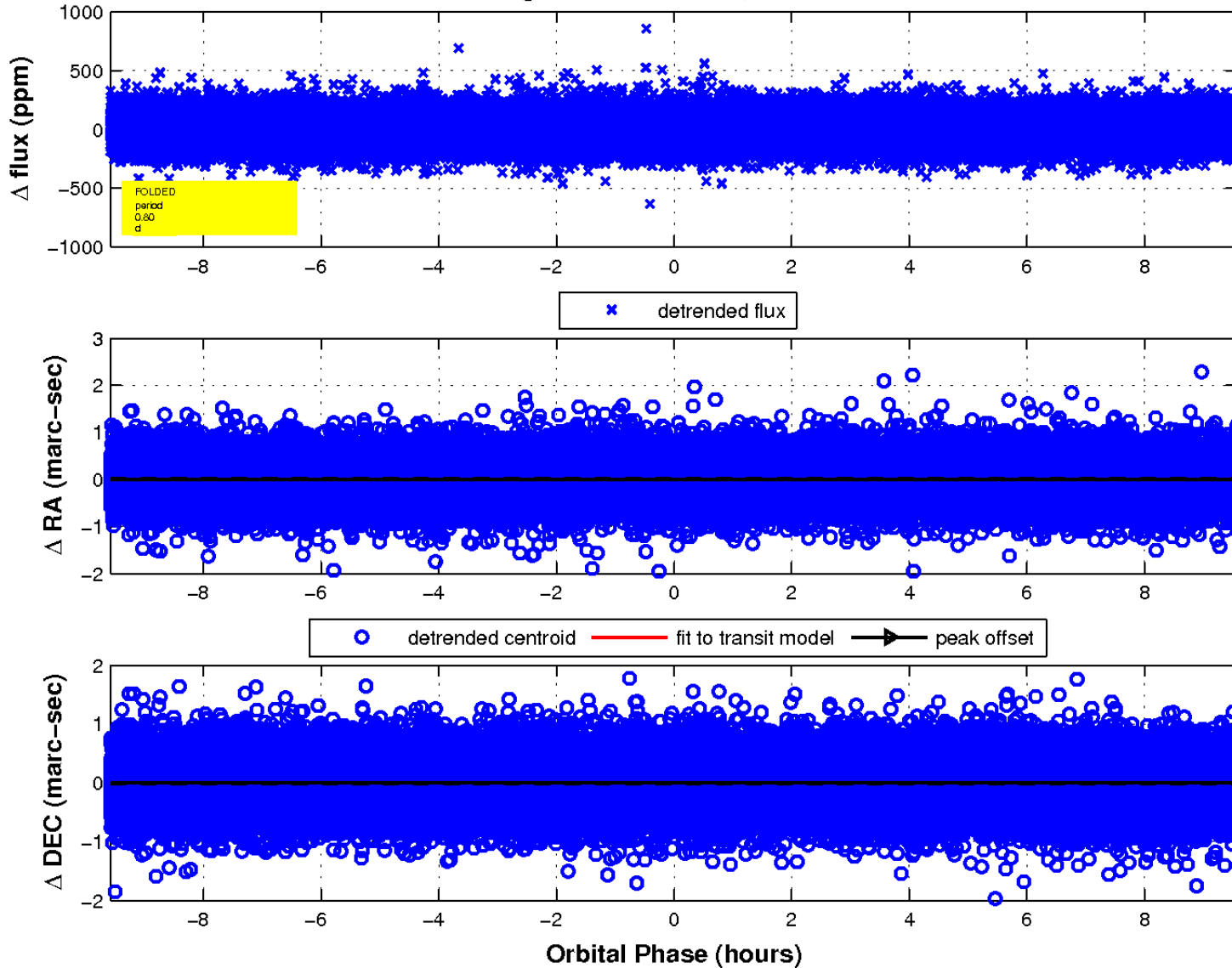
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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



fluxWeightedCentroids, Planet 1 of 1



UKIRT Image

Declination

