

# KIC 008381693

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
008381693-01	OBS	4017.01	21.570182	137.255279	220.3	58.713	16.9	27.0	1.63	6070	4.79	147.10

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008381693-01	OBS	FP	0.00	1	0	0	0	LPP_DV

**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 008381693-01

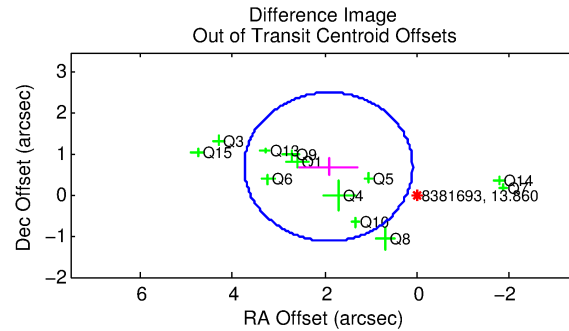
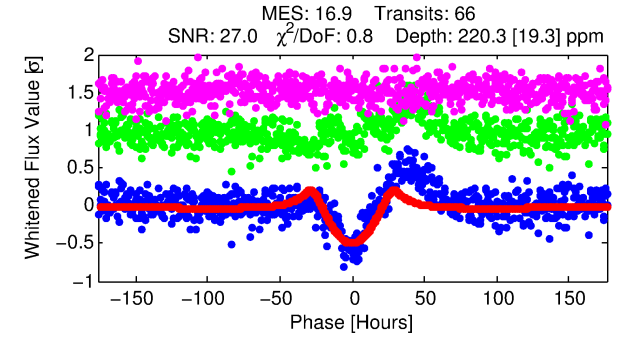
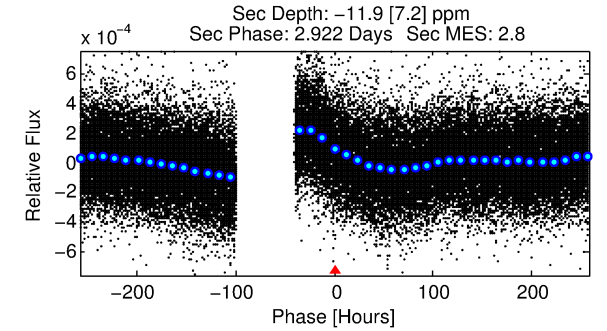
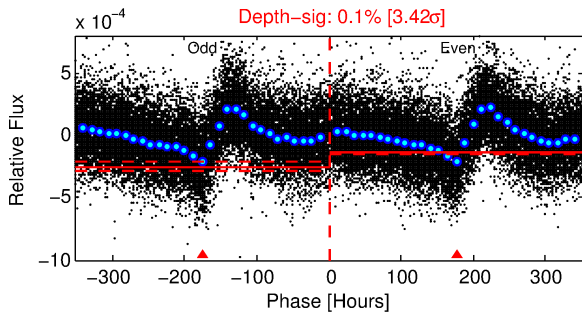
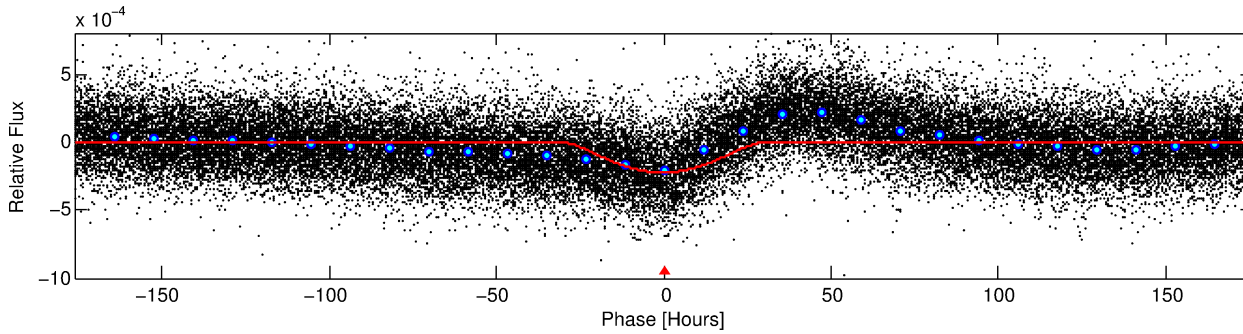
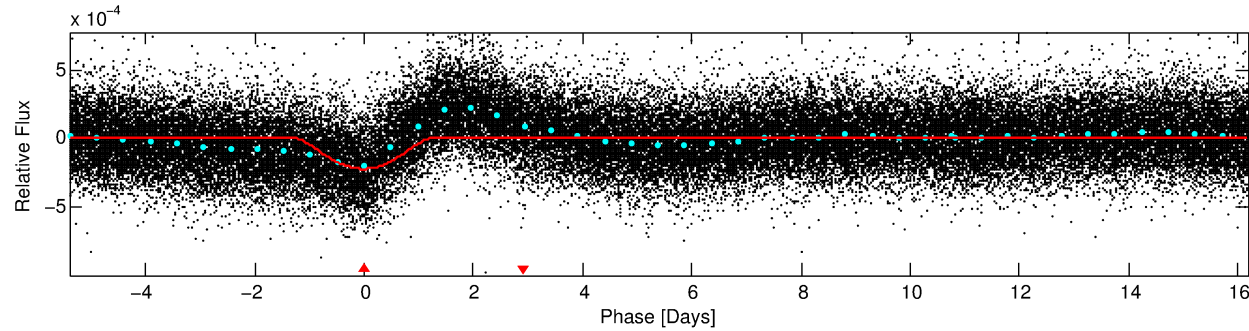
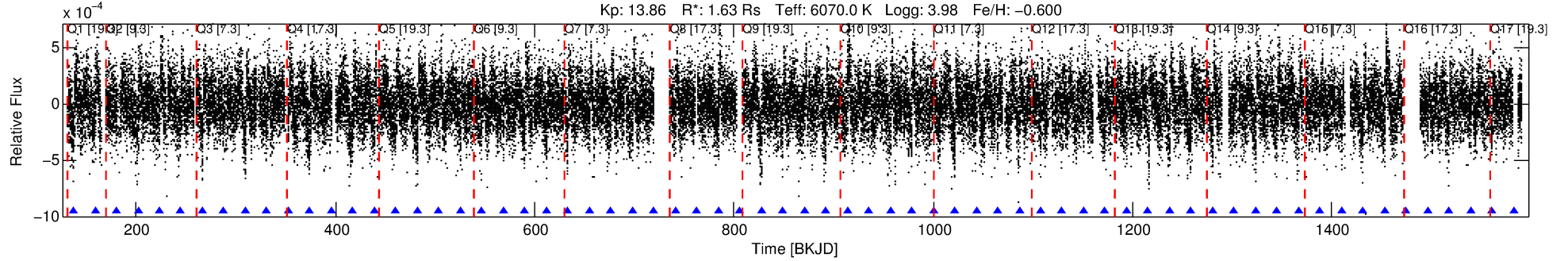
No Significant Match Found

# DV One-Page Summary

KIC: 8381693 Candidate: 1 of 1 Period: 21.570 d

KOI: K04017 Corr: No Ephemeris Match

Kp: 13.86 R\*: 1.63 Rs Teff: 6070.0 K Logg: 3.98 Fe/H: -0.600



## DV Fit Results:

Period = 21.57018 [0.00092] d  
Epoch = 137.2553 [0.0358] BKJD  
Rp/R\* = 0.0270 [0.0159]  
a/R\* = 1.20 [0.04]  
b = 1.00 [0.02]  
Seff = 147.10 [117.27]  
Teq = 888 [177] K  
Rp = 4.79 [3.59] Re  
a = 0.1480 [0.0706] AU  
Ag = N/A  
Teffp = N/A

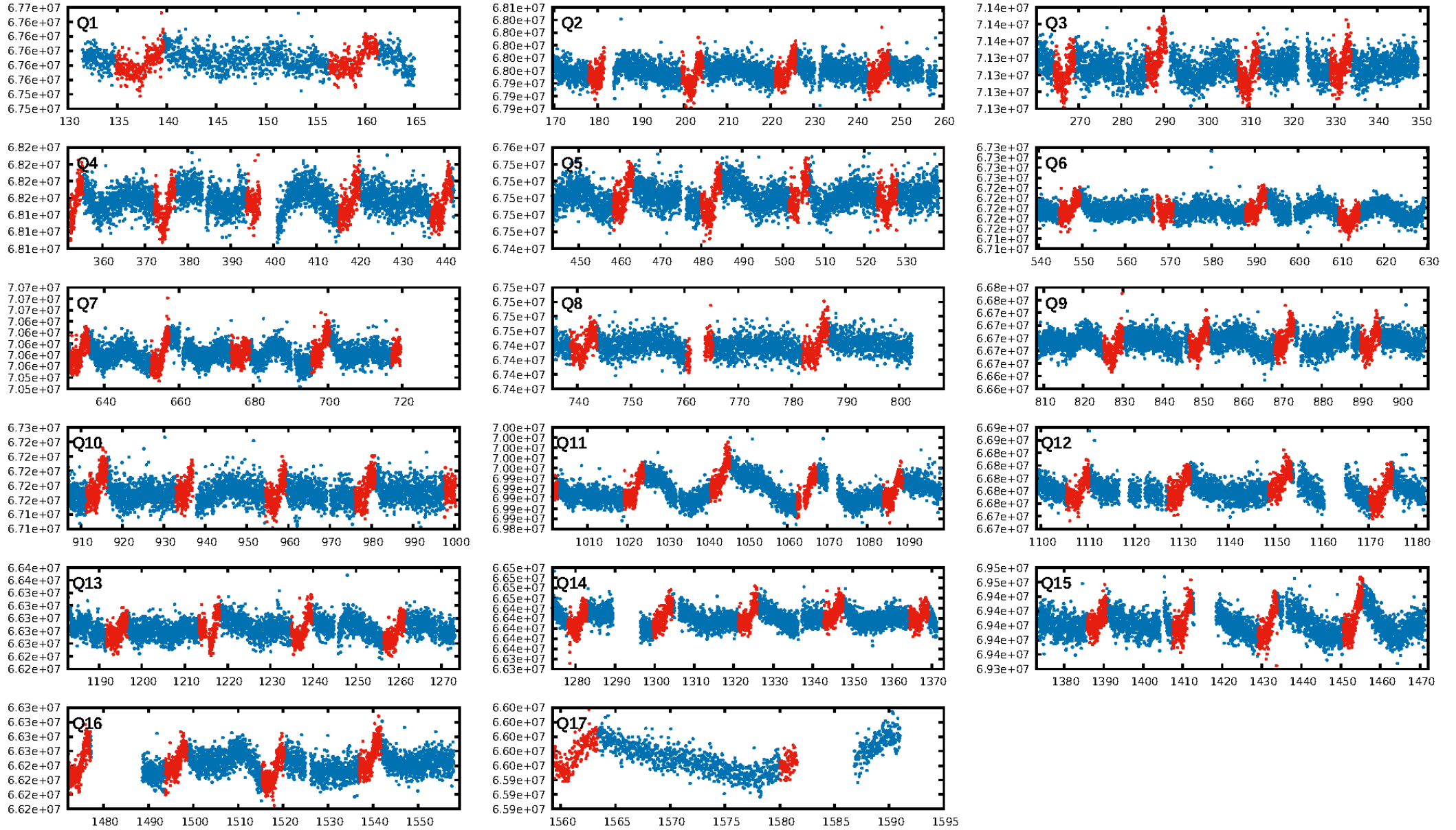
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: 63.0%  
ModelChiSquareGof-sig: 100.0%  
Bootstrap-pfa: 1.88e-66  
RollingBand-fgt: 1.00 [62/62]  
GhostDiagnostic-chr: 6.292  
Centroid-sig: 18.3%  
Centroid-so: 0.387 arcsec [1.62σ]  
OotOffset-rm: 2.038 arcsec [3.36σ]  
KicOffset-rm: 1.977 arcsec [3.24σ]  
OotOffset-st: 3/3/2/4 [12]  
KicOffset-st: 3/3/2/4 [12]  
DiffImageQuality-fgm: 0.83 [10/12]  
DiffImageOverlap-fno: 1.00 [13/13]

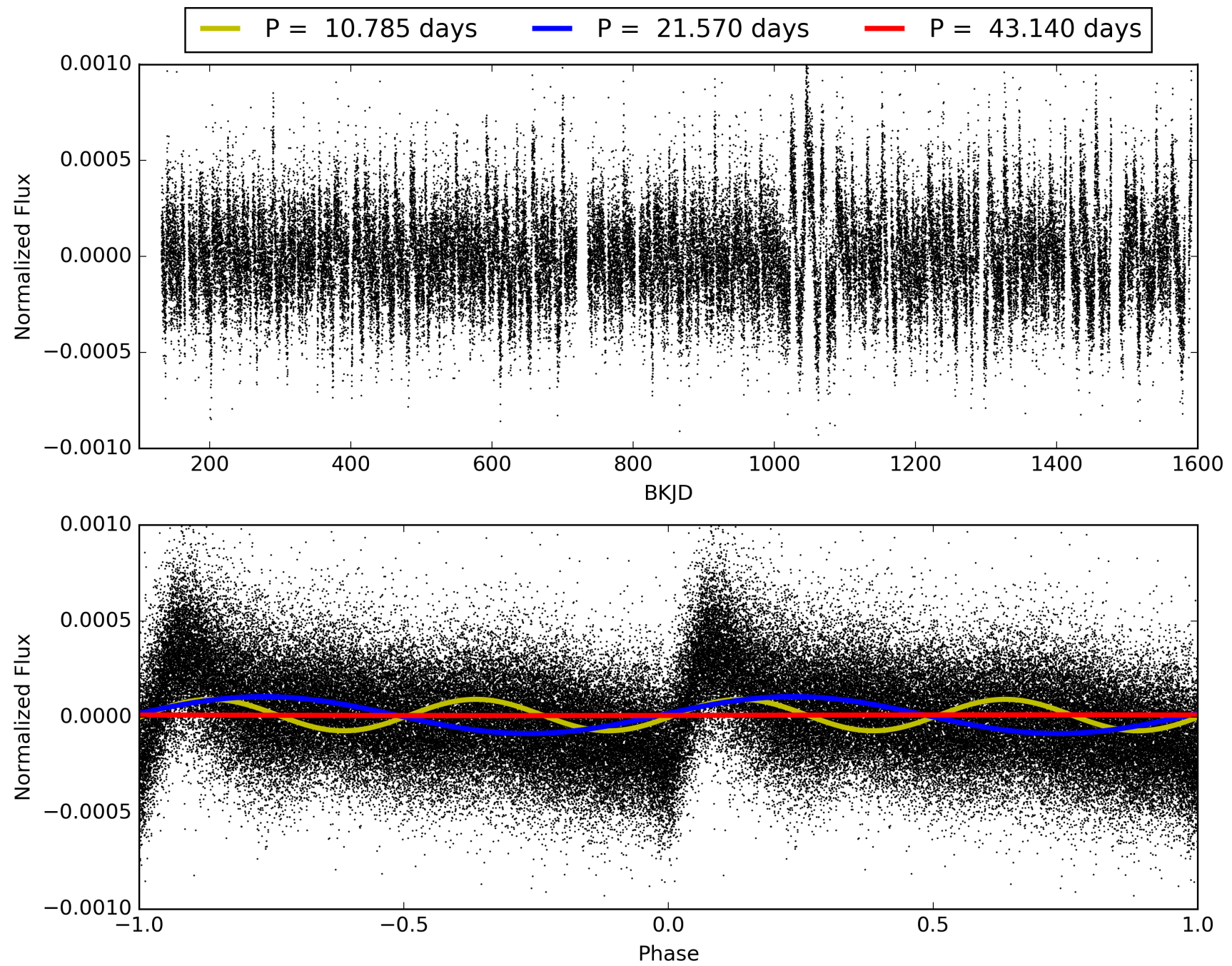
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 18:01:44 Z

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

# TCE 008381693-01, PDC Light Curves



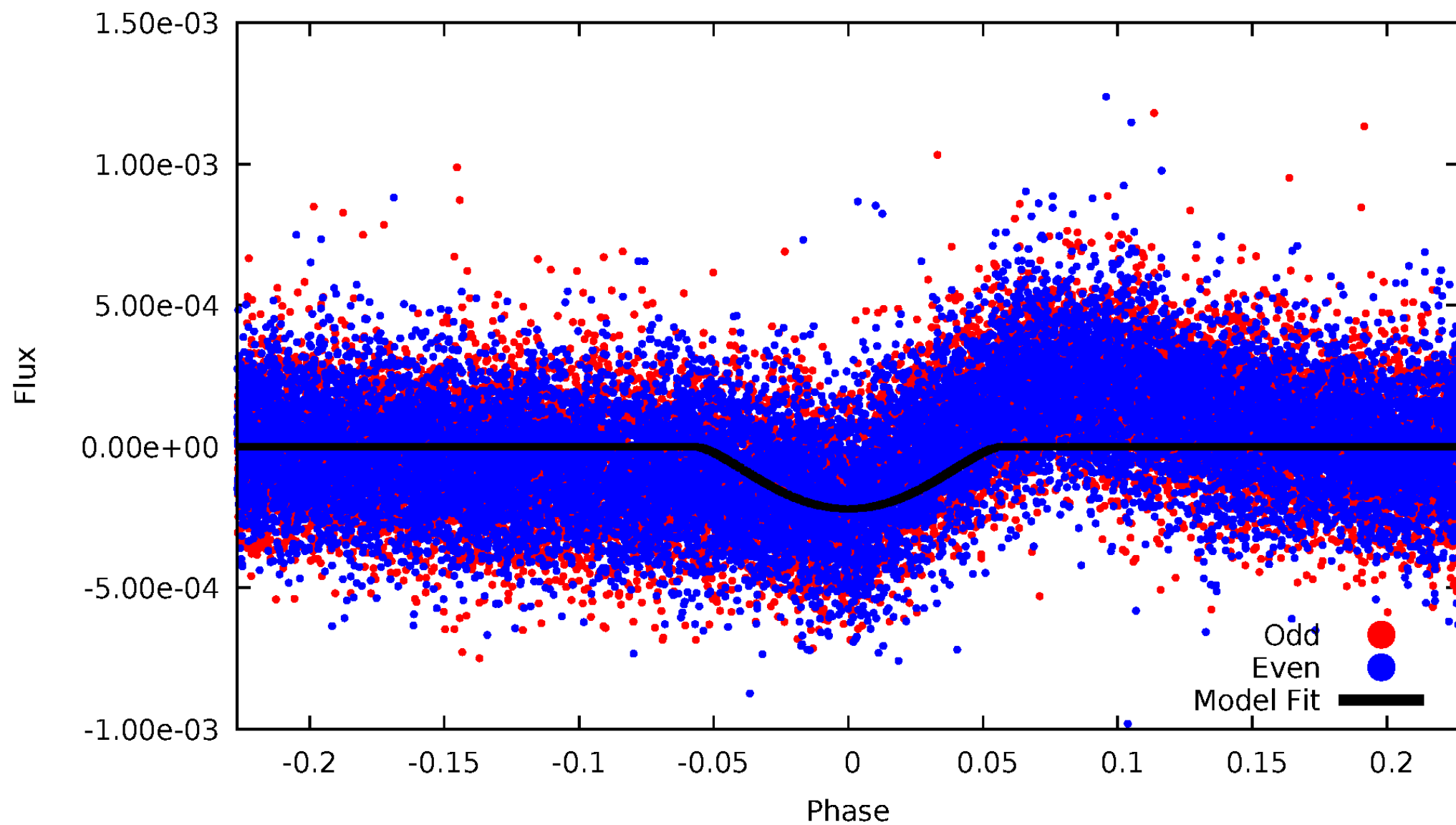
TCE 008381693-01





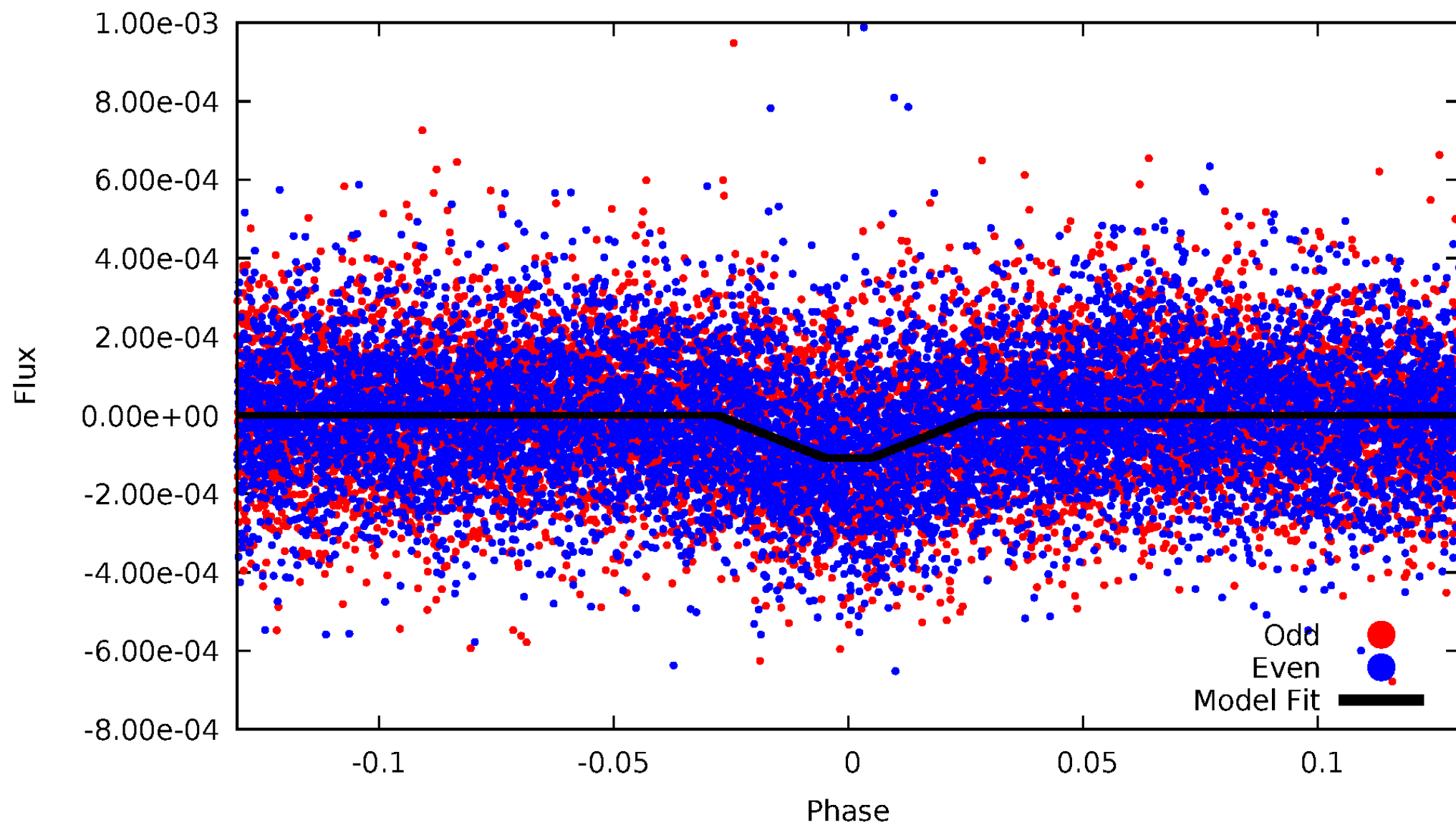
# DV Odd/Even

TCE 008381693-01



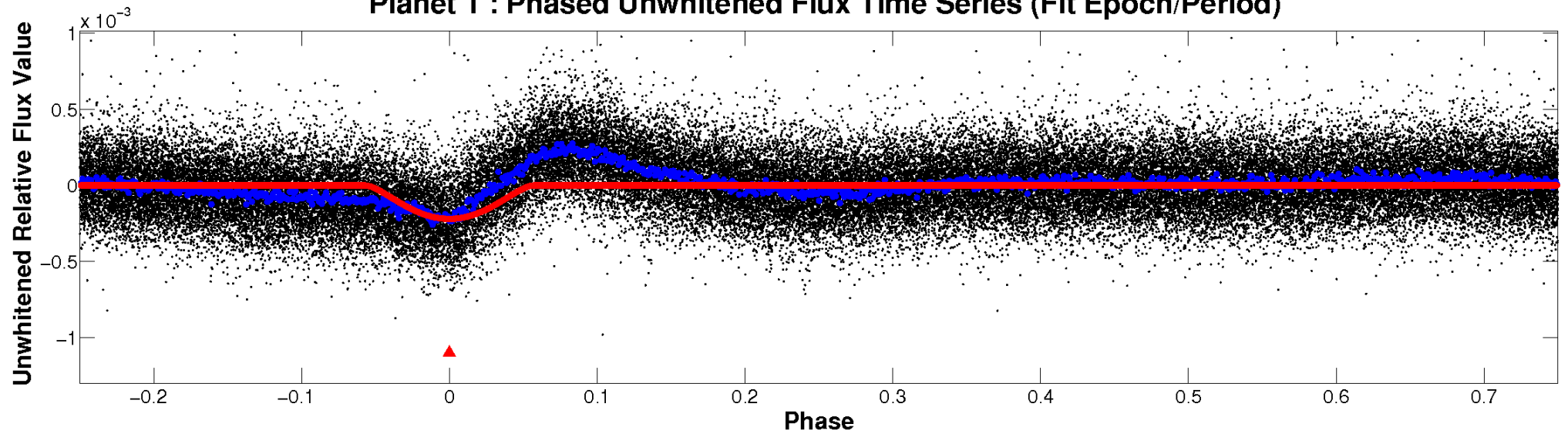
# ALT Odd/Even

TCE 008381693-01

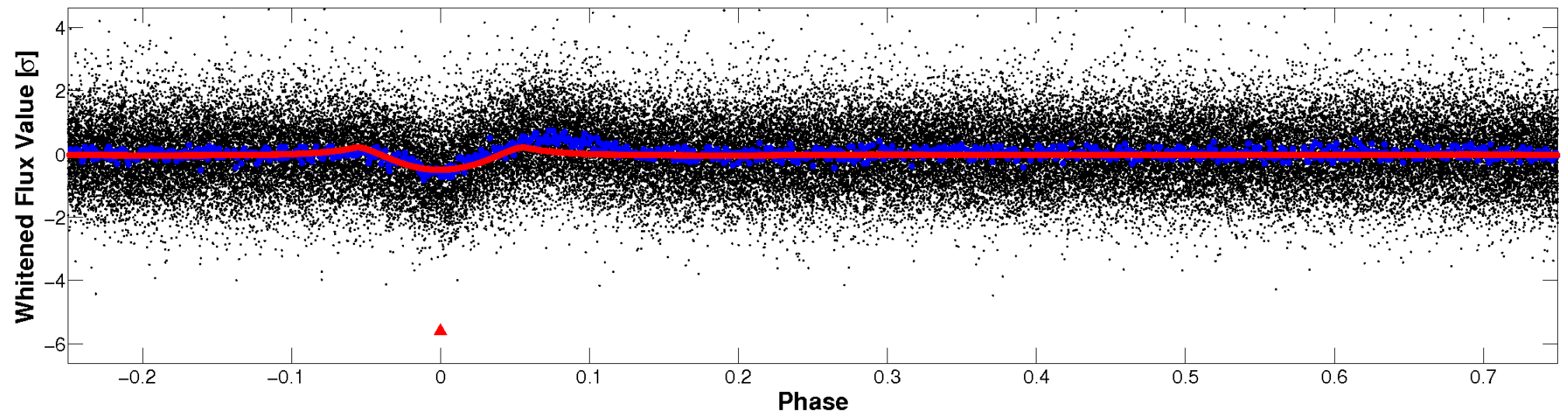


# Non-Whitened Vs. Whitened Light Curve

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

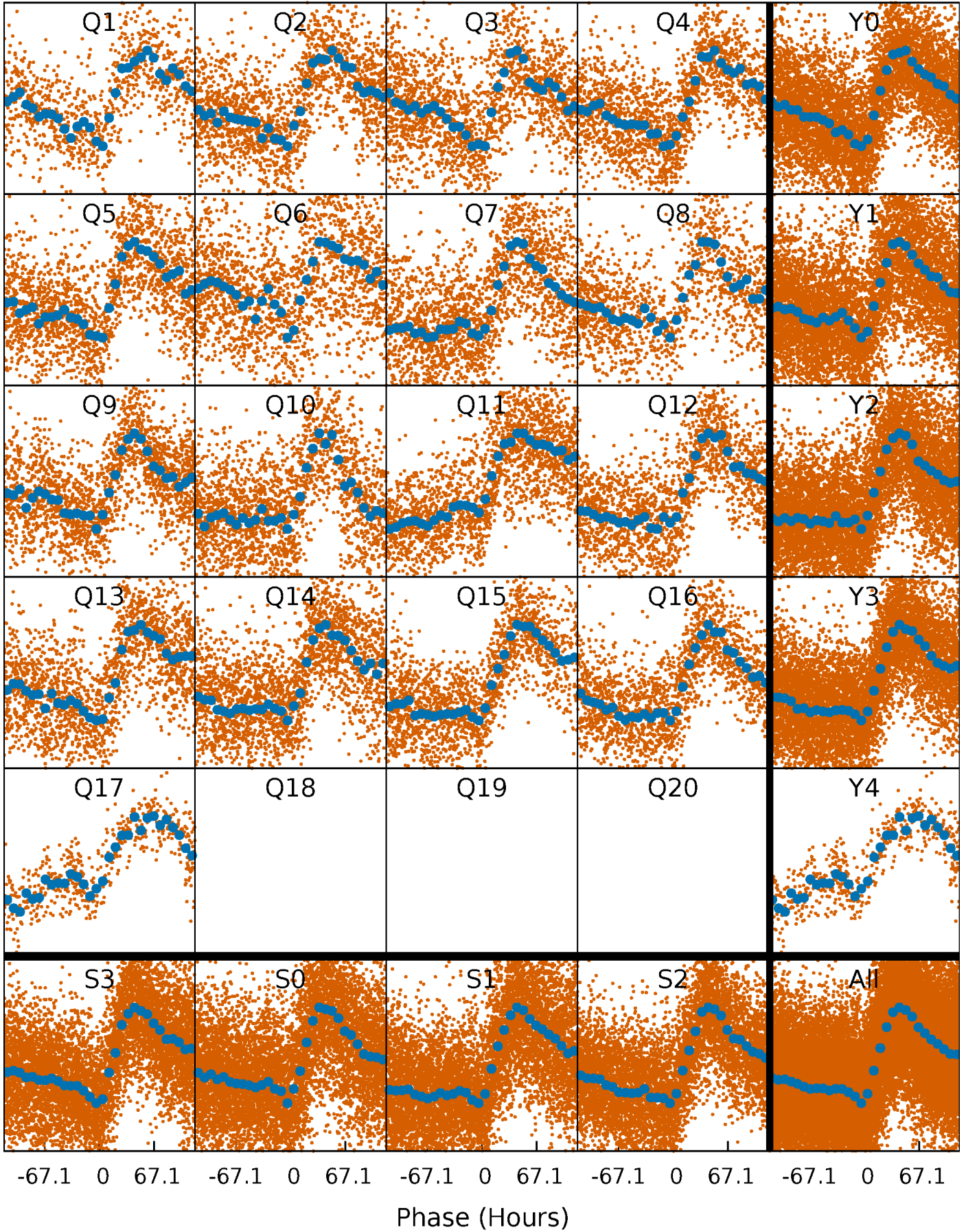


**Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)**



# PDC Quarter-Phased Transit Curves

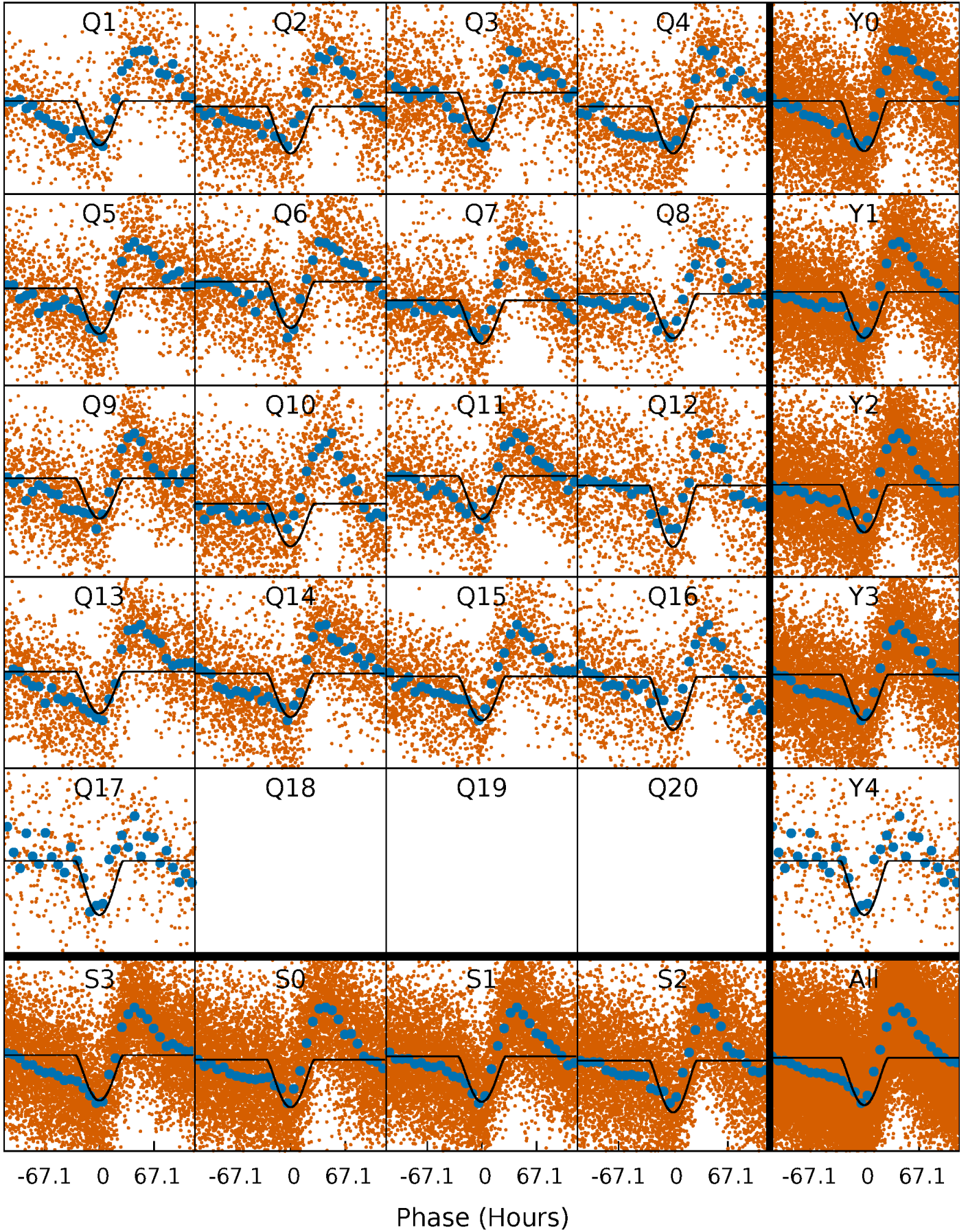
TCE 008381693-01 P= 21.570182 Days  $T_0=137.255279$  (BKJD)





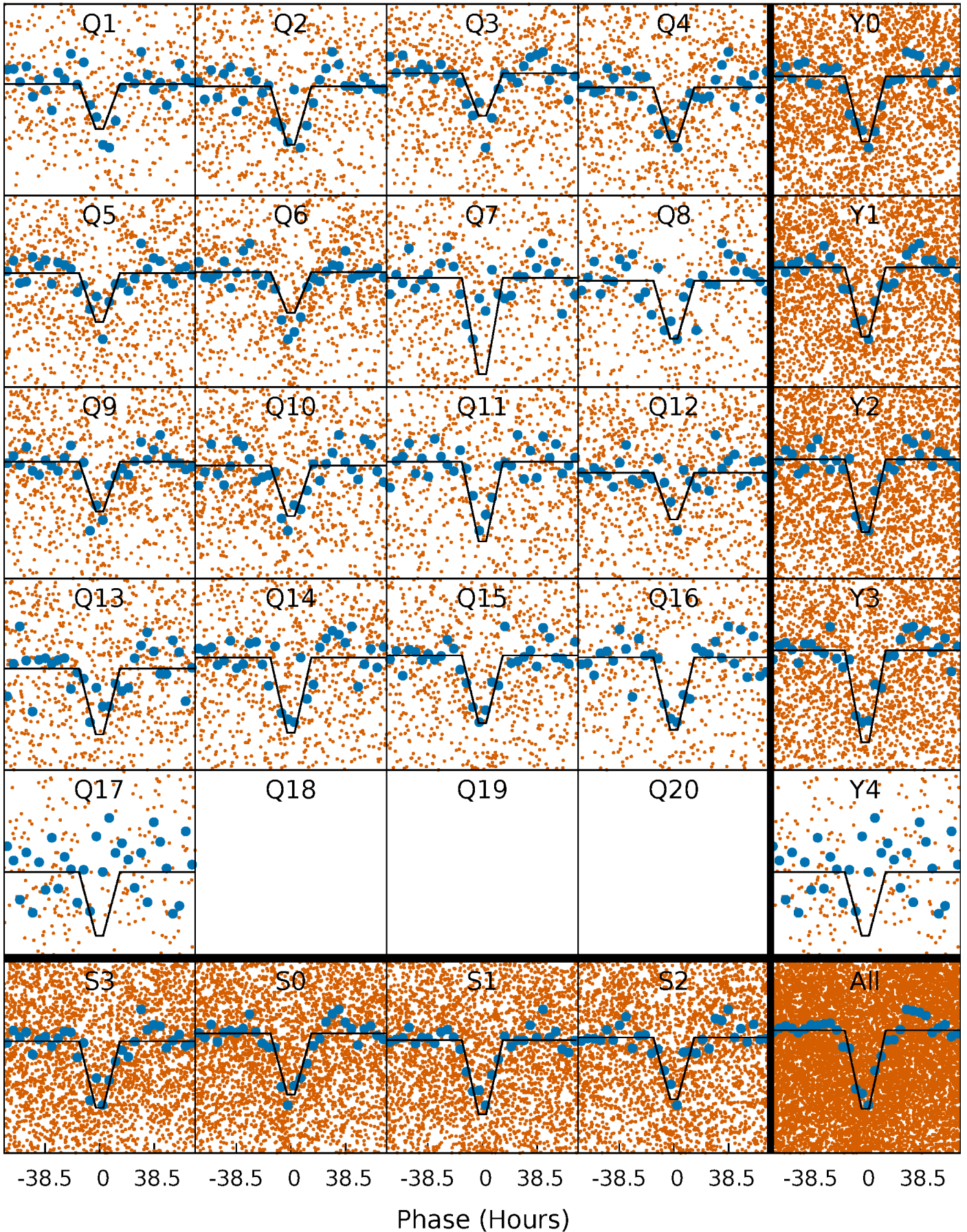
# DV Quarter-Phased Transit Curves

TCE 008381693-01 P= 21.570182 Days  $T_0=137.255279$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

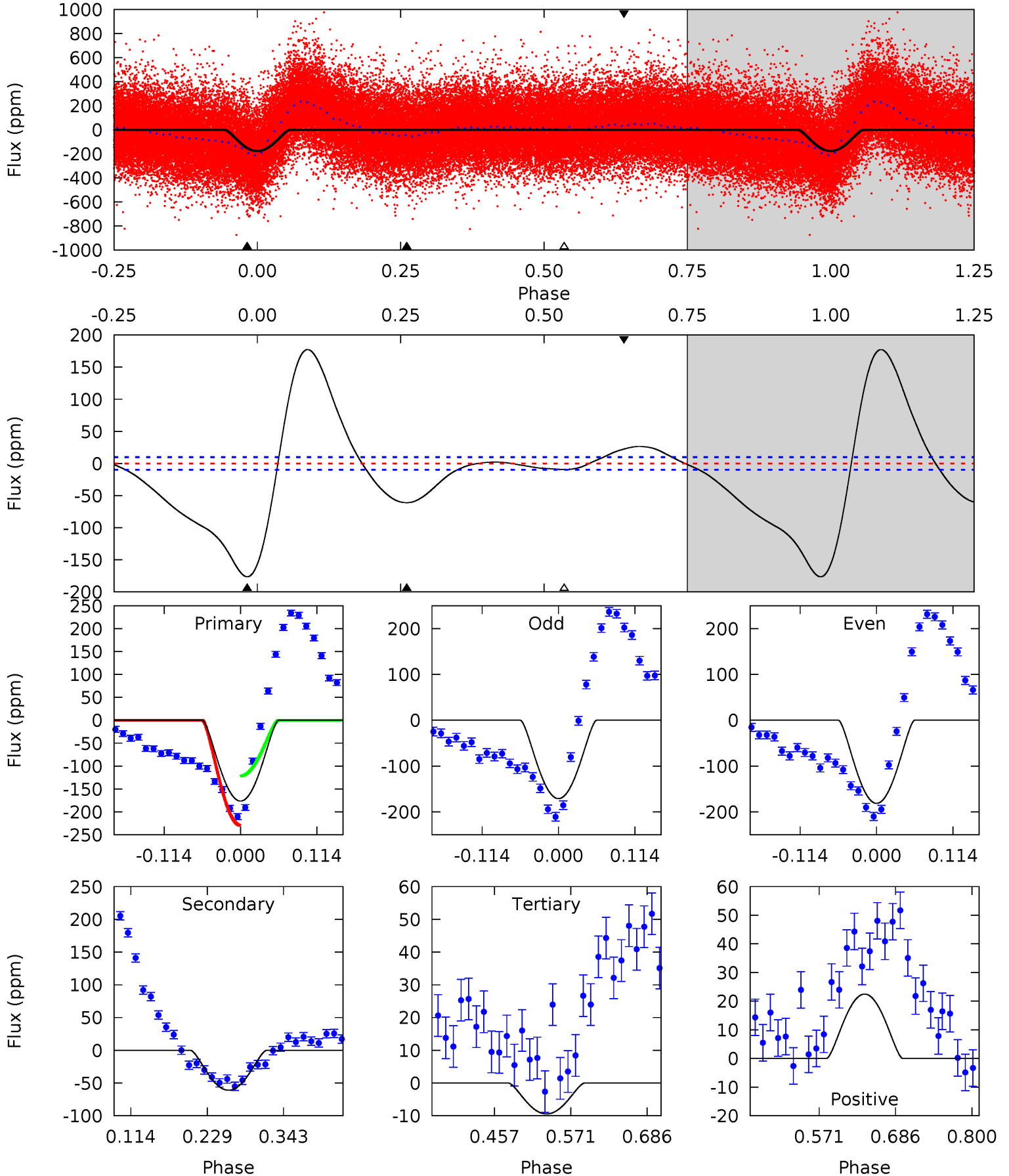
TCE 008381693-01 P= 21.570765 Days  $T_0=137.244458$  (BKJD)



# DV Model-Shift Uniqueness Test

008381693-01, P = 21.570182 Days, E = 115.685097 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
80.5	27.8	4.31	10.3	4.54	1.58	20.2	76.2	70.2	23.5	17.6	2.37	1.02	0.50	24.7

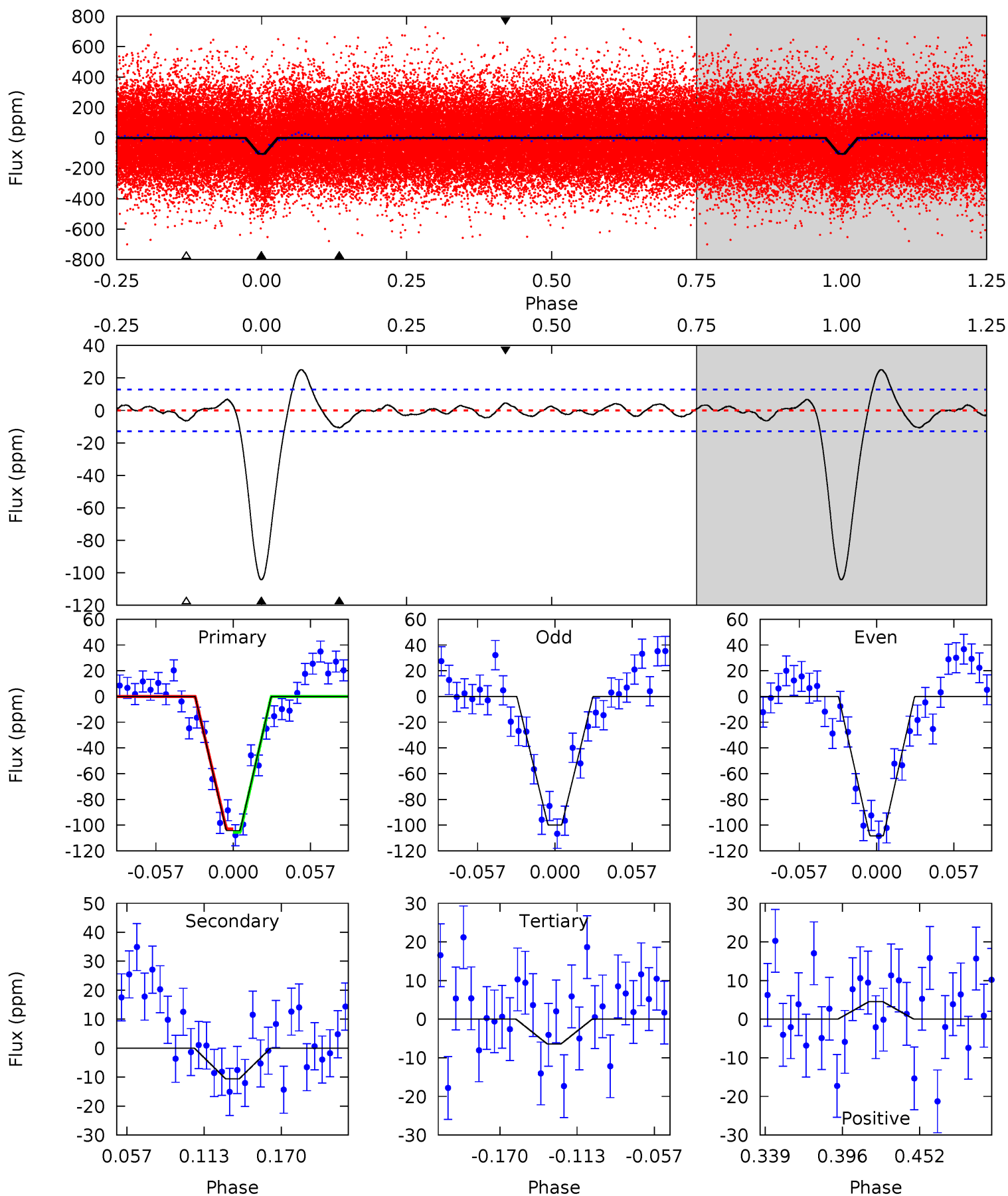




# Alt Model-Shift Uniqueness Test

008381693-01, P = 21.570765 Days, E = 115.673693 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
38.0	3.86	2.34	1.66	4.68	1.91	1.64	35.6	36.3	1.52	2.20	1.51	1.02	0.19	0.49





### Stellar Parameters For KIC 008381693

	$T_{\text{eff}} (K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$6070^{+181}_{-181}$	$3.983^{+0.472}_{-0.157}$	$-0.600^{+0.300}_{-0.250}$	$1.628^{+0.466}_{-0.758}$	$0.930^{+0.126}_{-0.113}$	$0.304^{+1.239}_{-0.137}$
	+3%/-3%	+12%/-4%	+50%/-42%	+29%/-47%	+14%/-12%	+408%/-45%
Source	PHO1	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 008381693-01 / KOI 4017.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	$A_{obs}$
DV	$-61 \pm 2$	$4.63^{+2.96}_{-2.52}$	$1213^{+104}_{-154}$	$3580^{+1126}_{-427}$	$35^{+129}_{-22}$
Alt.	$-11 \pm 3$	$2.57^{+2.53}_{-1.70}$	$1213^{+104}_{-152}$	$3269^{+1472}_{-564}$	$19^{+149}_{-14}$

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

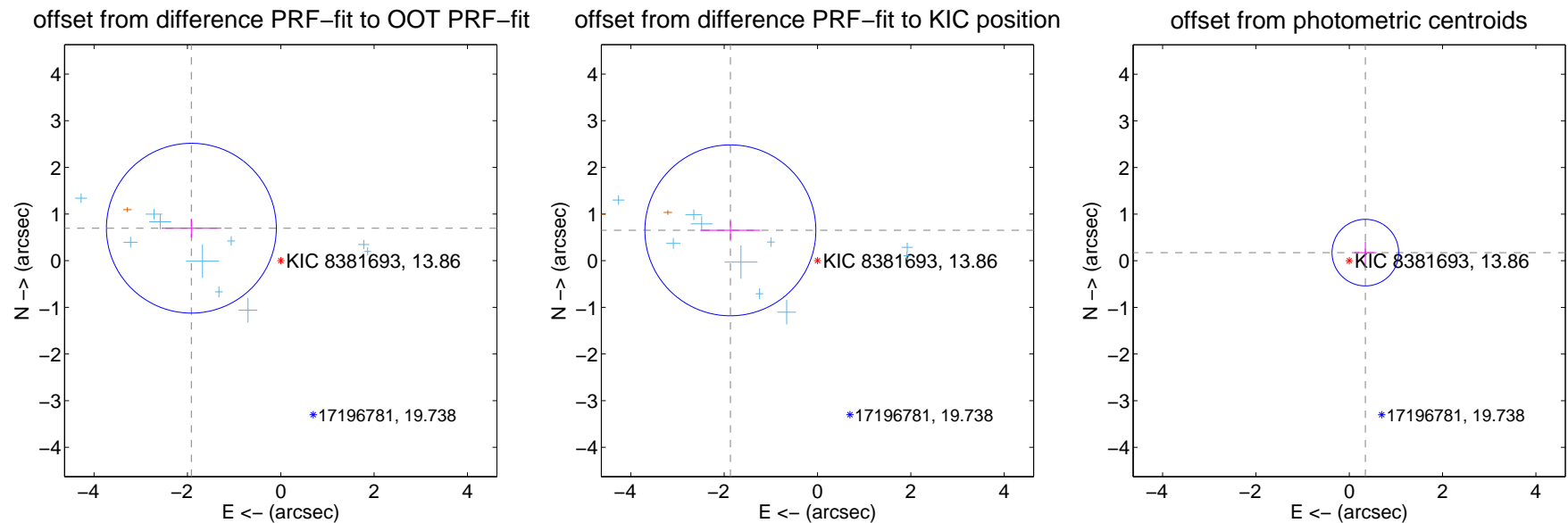
## DV Centroid Data

Supplemental centroid analysis for 008381693-01. Kepler magnitude: 13.86. Transit SNR 27.05

There are 10 quarters with good PRF difference image offsets

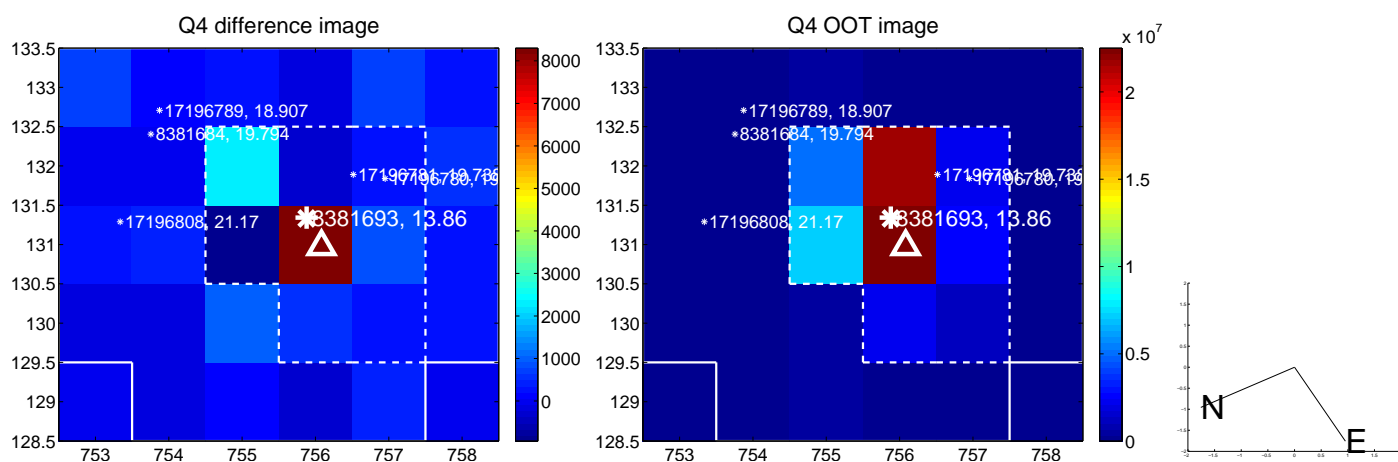
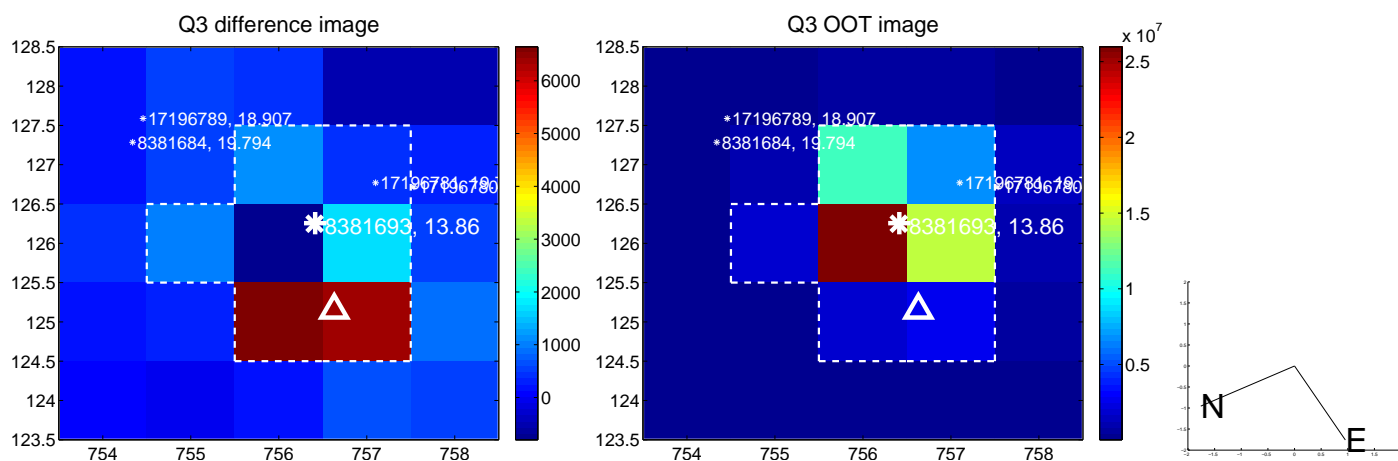
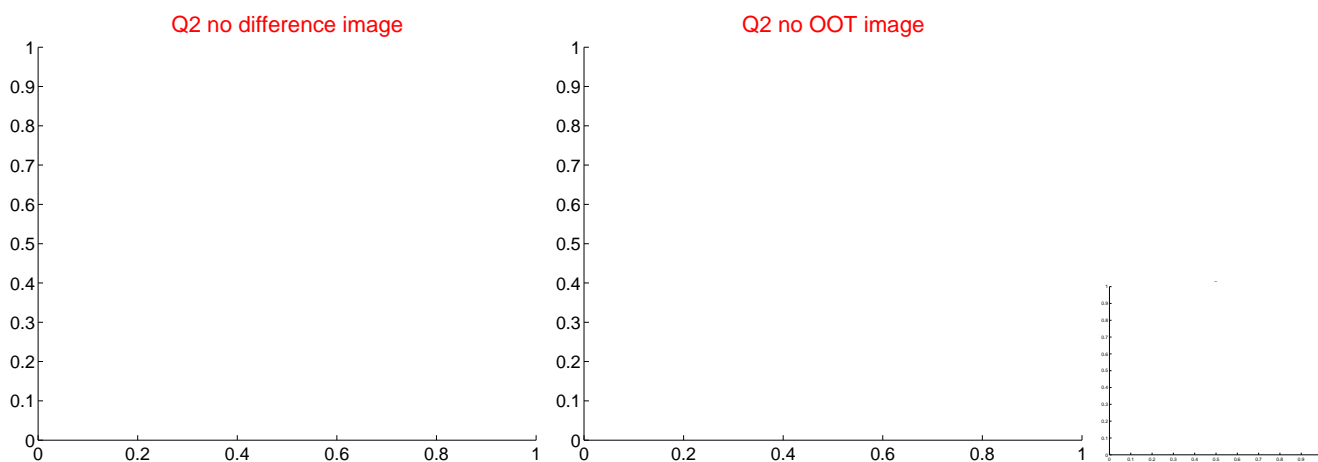
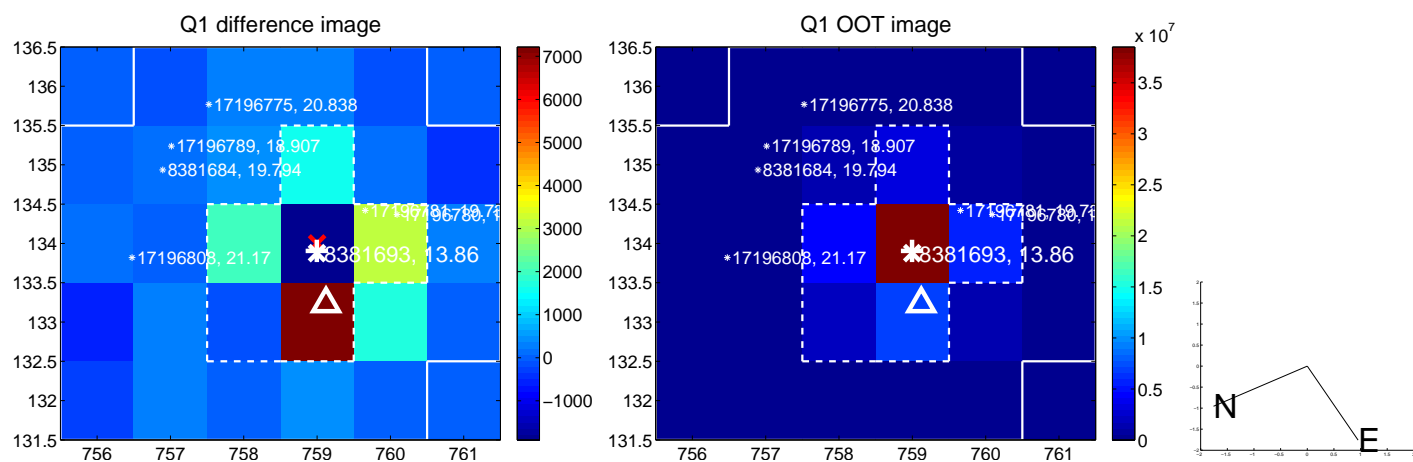
The direct PRF centroid is offset from the target star catalog position by about 0.07 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	<b><math>2.038 \pm 0.607</math></b>	<b>3.36</b>	$1.916 \pm 0.642$	$0.697 \pm 0.200$
PRF-fit source offset from KIC position	<b><math>1.977 \pm 0.611</math></b>	<b>3.24</b>	$1.867 \pm 0.643$	$0.651 \pm 0.200$
photometric centroid source offset	$0.39 \pm 0.24$	1.62	$-0.34 \pm 0.24$	$0.18 \pm 0.23$



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.

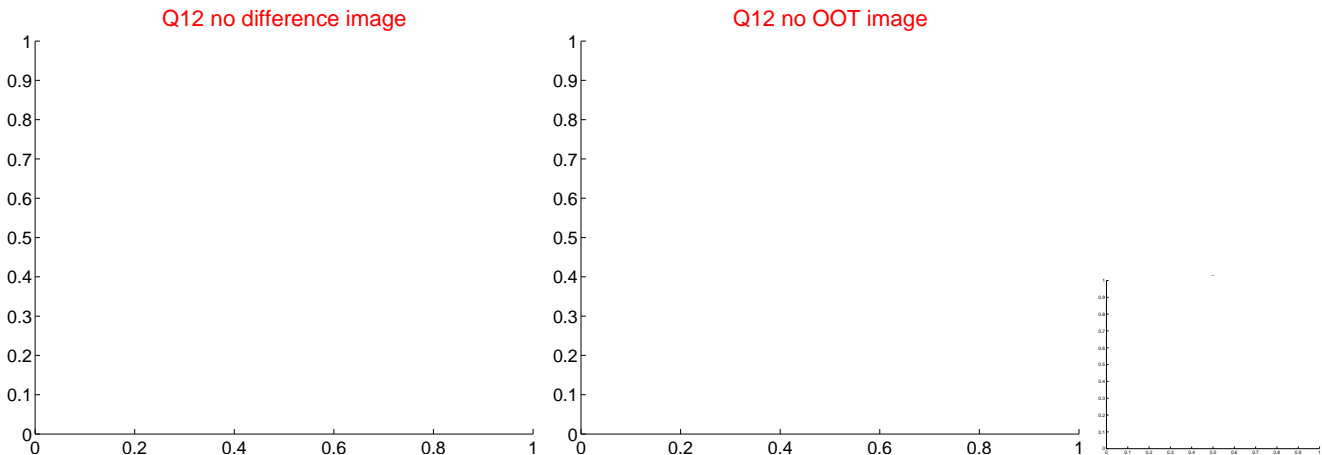
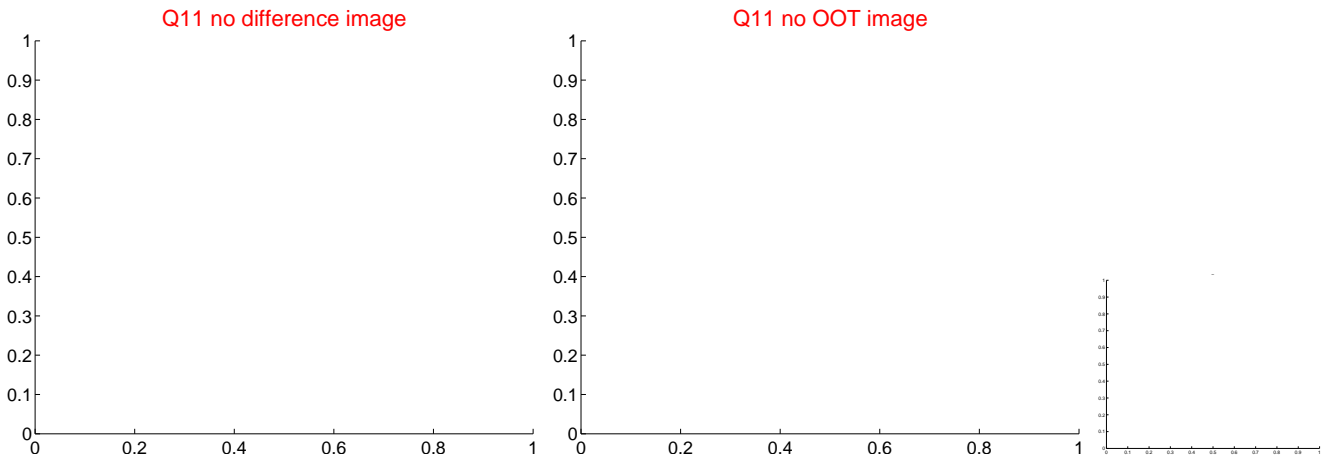
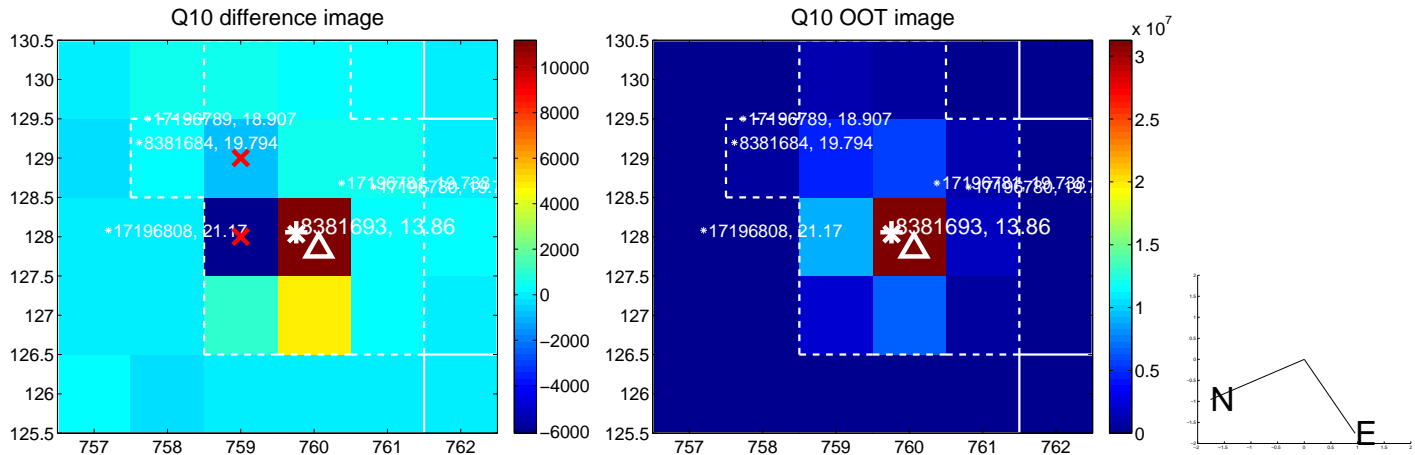
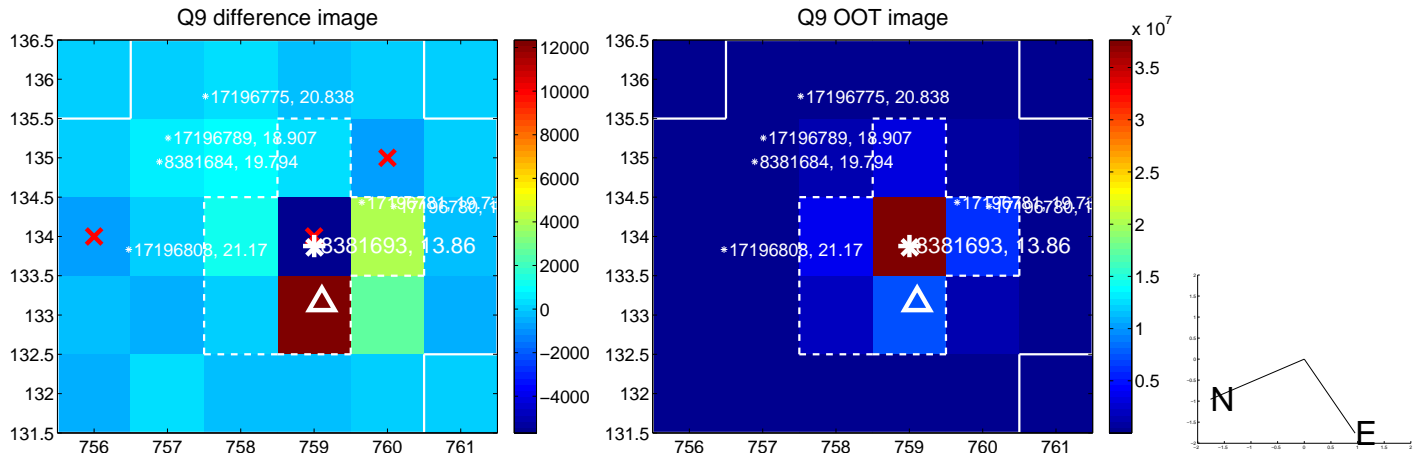
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



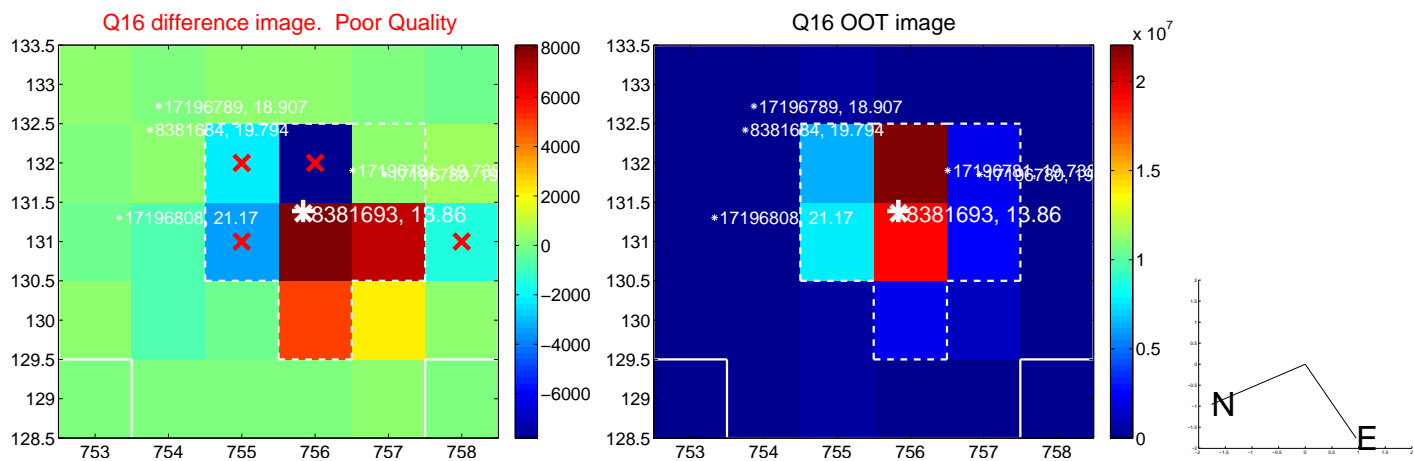
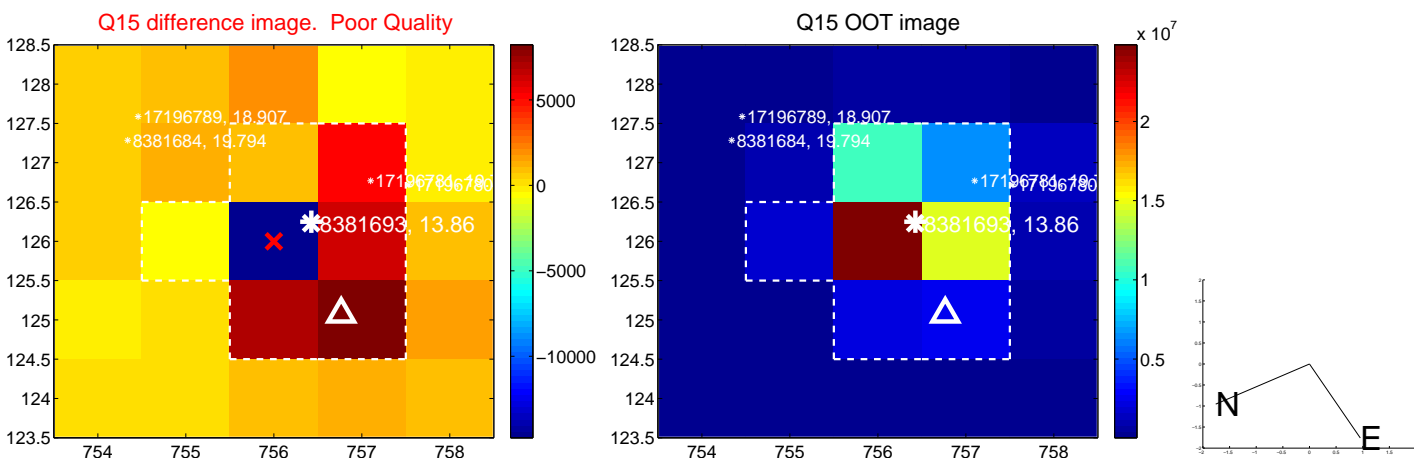
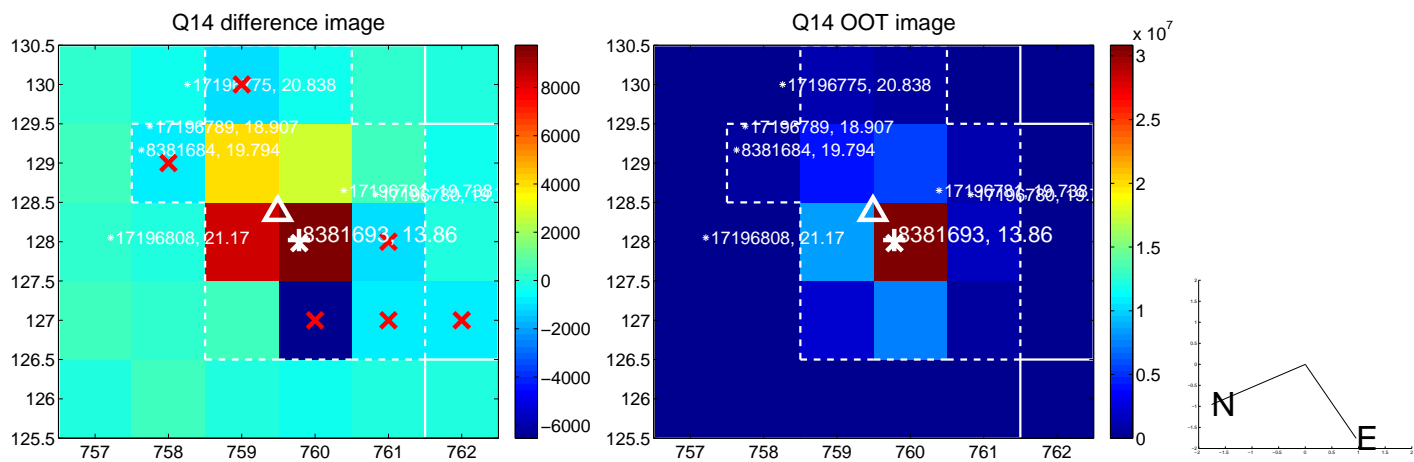
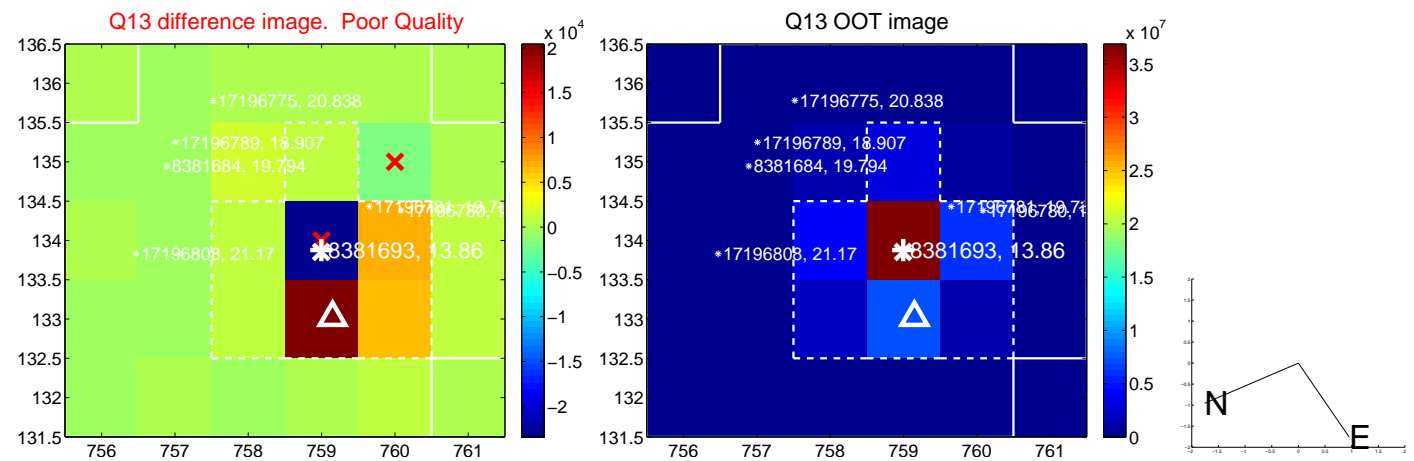




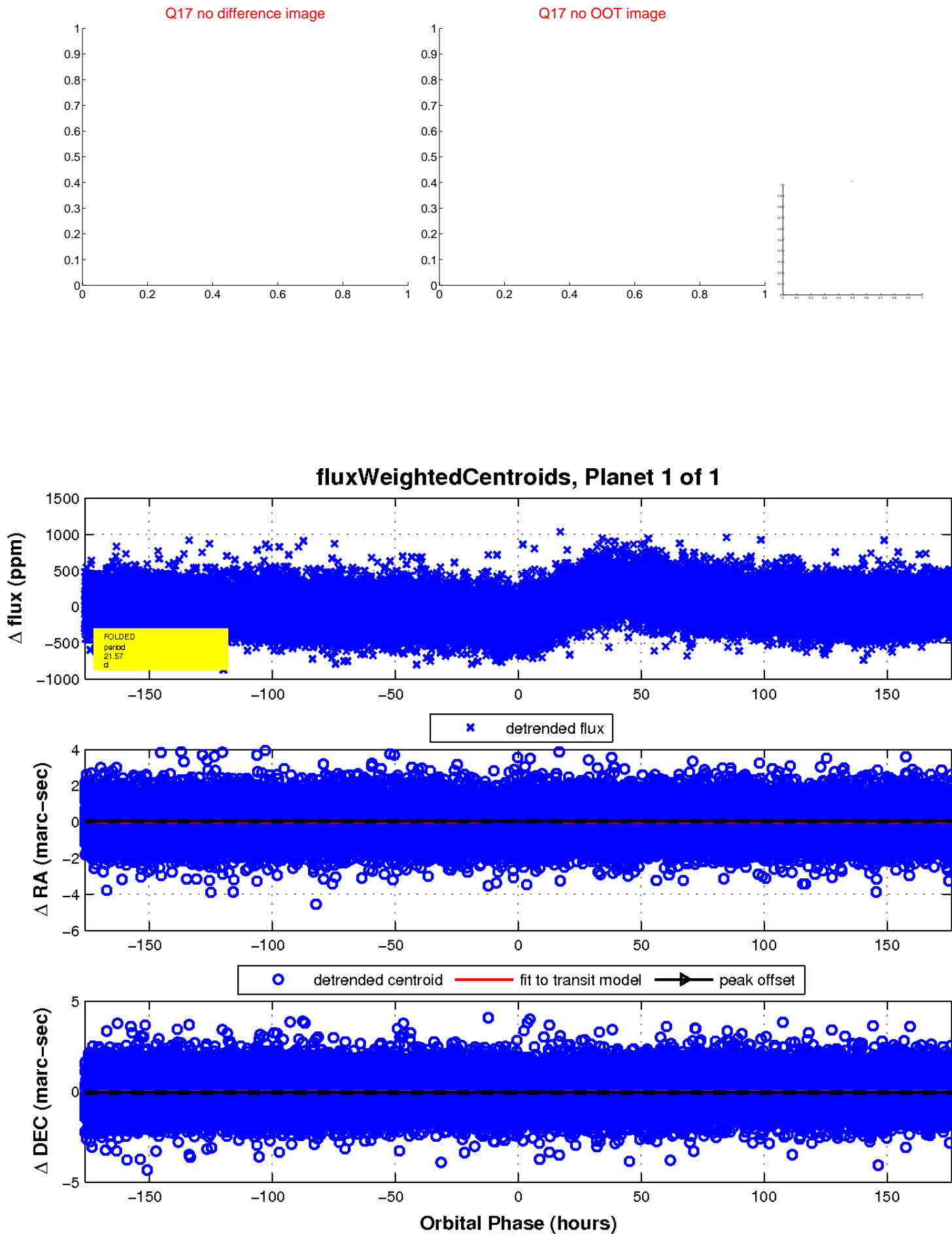
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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.



UKIRT Image

Declination

