

# KIC 006380765

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
006380765-01	OBS	No	1.022163	132.530247	31.6	8.742	7.4	8.4	0.74	4776	0.42	804.04

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
006380765-01	OBS	FP	0.00	1	0	0	1	LPP_DV—CENT_FEW_MEAS—EPHEM_MATCH

**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.

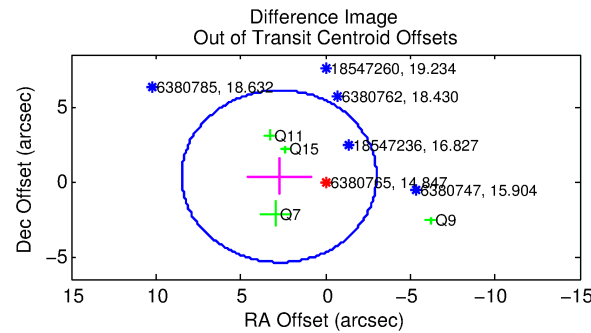
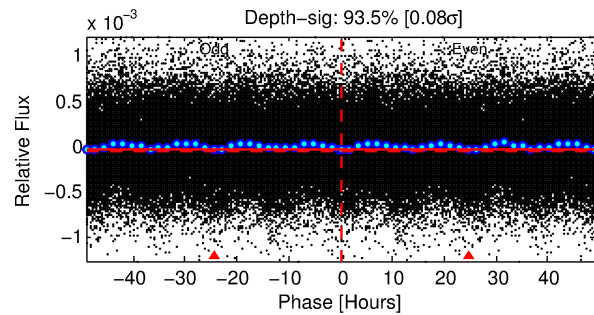
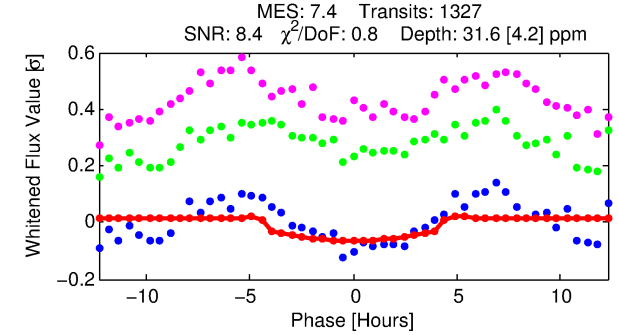
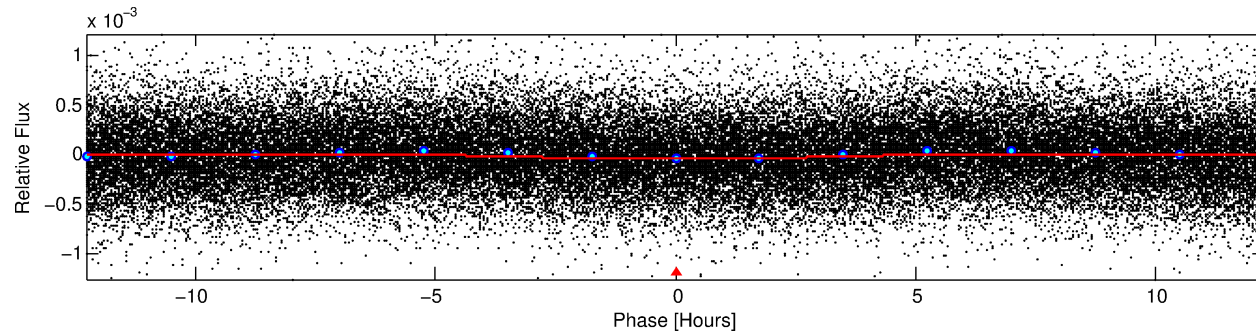
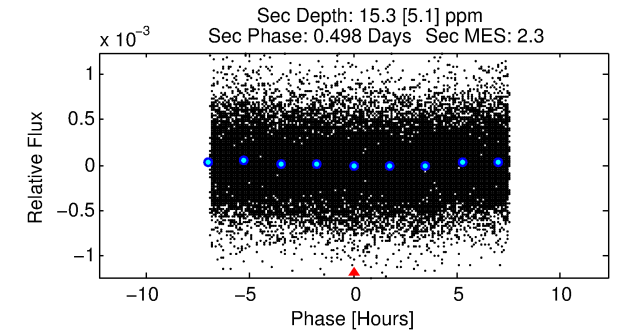
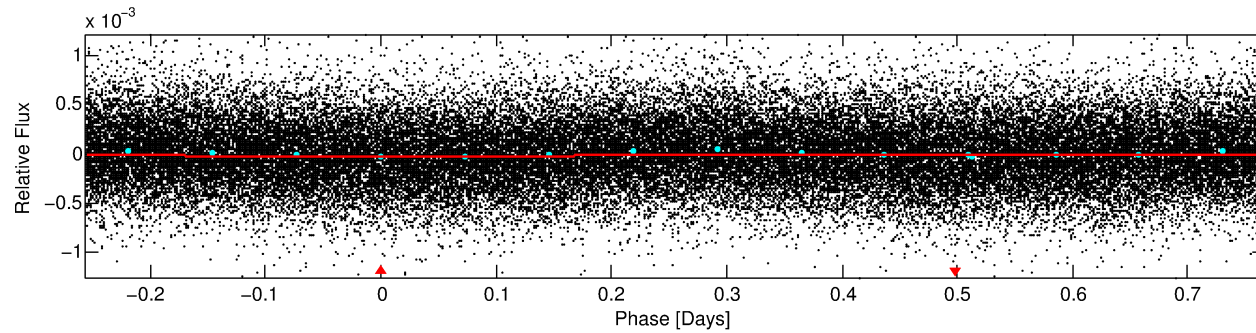
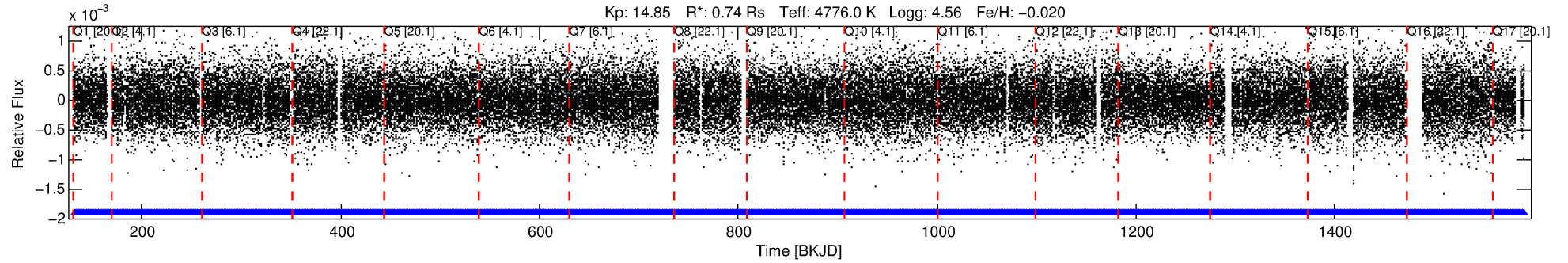
## Ephemeris Match Information For 006380765-01

TCE (1)	KIC	Parent (2)	Parent KIC	P <sub>1</sub> :P <sub>2</sub>	Dist (″)	$\Delta$ Row	$\Delta$ Col	m <sub>2</sub>	m <sub>1</sub>	D <sub>2</sub> /D <sub>1</sub>	Mechanism	Flag	$\sigma_P$	$\sigma_T$
006380765-01	6380765	006380750-01	6380750	1:1	53.6	13	-5	14.27	14.85	0.59	Direct-PRF	1	1.80	1.00

**Notes:** P<sub>1</sub>:P<sub>2</sub> is the period ratio. Dist is the distance in arcseconds.  $\Delta$ Row and  $\Delta$ Col are the number of pixels apart in row and column. m<sub>2</sub> and m<sub>1</sub> are the magnitudes of the parent and child. D<sub>2</sub>/D<sub>1</sub> is the parent's transit depth divided by the child's.  $\sigma_P$  and  $\sigma_T$  are the significance of the match in period and epoch. For a match to be considered significant  $\sigma_P < 5.0$  and  $\sigma_T < 5.0$ . Matches which have  $\sigma_P$  and  $\sigma_T$  very close to this cutoff should receive extra scrutiny, especially if the period ratio is very large.

# DV One-Page Summary

KIC: 6380765 Candidate: 1 of 1 Period: 1.022 d



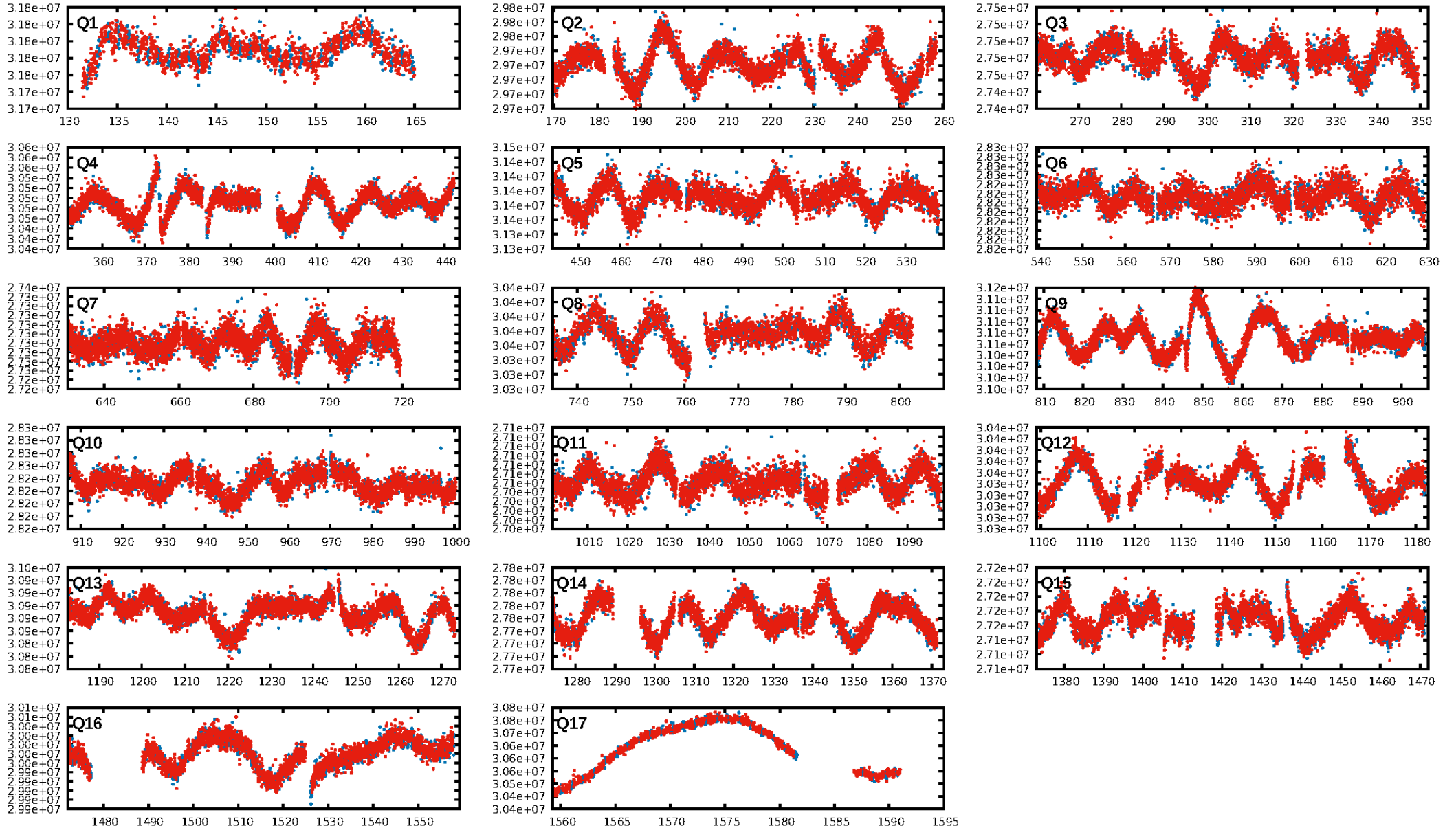
## DV Fit Results:

Period = 1.02216 [0.00002] d  
Epoch = 132.5302 [0.0088] BKJD  
Rp/R\* = 0.0052 [0.0032]  
a/R\* = 1.09 [0.32]  
b = 0.53 [2.76]  
Seff = 804.04 [130.55]  
Teff = 1358 [55] K  
Rp = 0.42 [0.26] Re  
a = 0.0178 [0.0013] AU  
Ag = 15.08 [19.45] [0.72σ]  
Teffp = 4137 [1335] K [2.08σ]

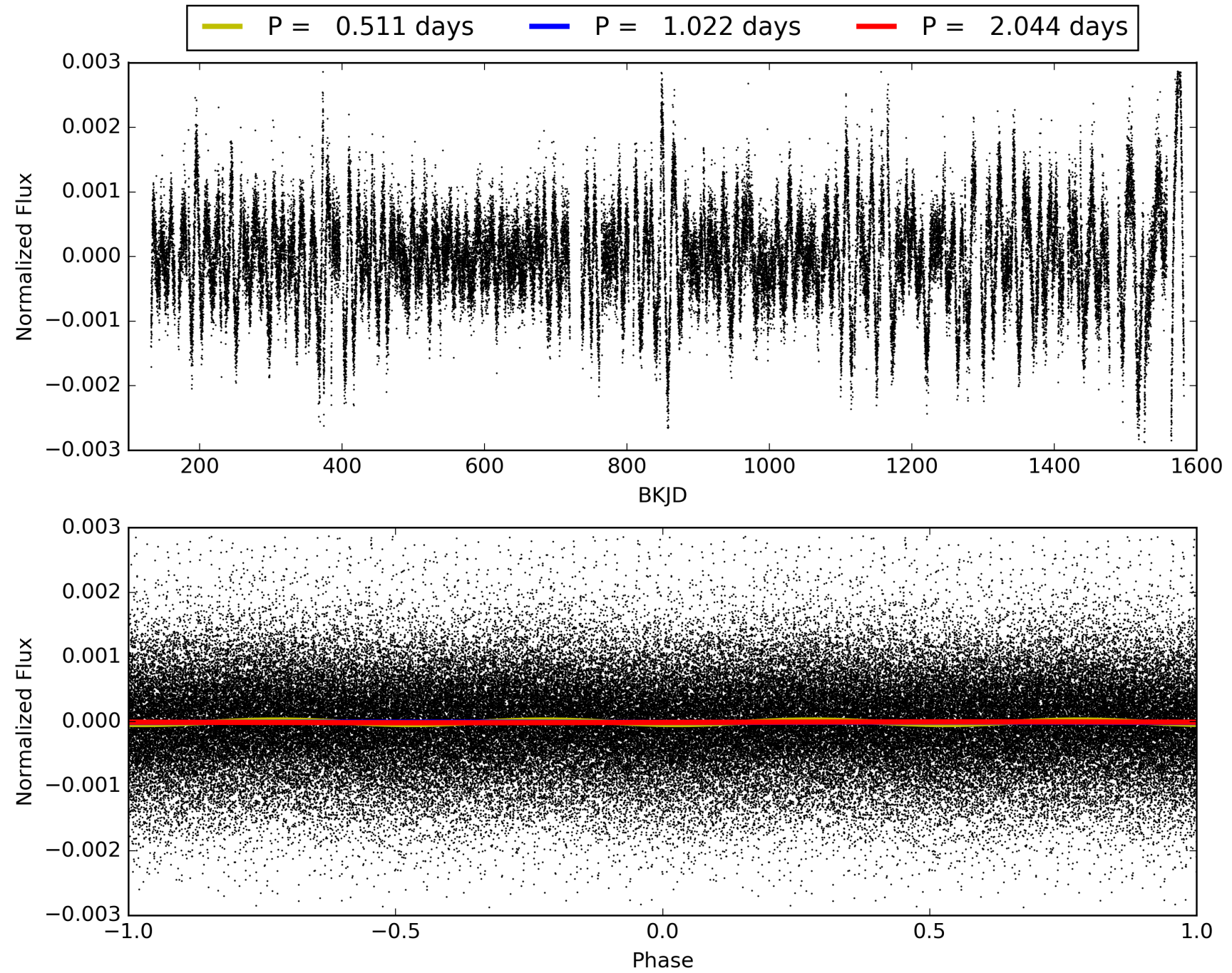
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: N/A  
ModelChiSquareGof-sig: N/A  
Bootstrap-pfa: N/A  
RollingBand-fgt: 1.00 [1267/1267]  
GhostDiagnostic-chr: 1.636  
Centroid-sig: 0.0%  
Centroid-so: 3.017 arcsec [3.64σ]  
OotOffset-rm: 2.751 arcsec [1.44σ]  
KicOffset-rm: 2.618 arcsec [1.52σ]  
OotOffset-st: 0/3/0/1 [4]  
KicOffset-st: 0/3/0/1 [4]  
DiffImageQuality-fgm: 0.00 [0/4]  
DiffImageOverlap-fno: 1.00 [17/17]

# TCE 006380765-01, PDC Light Curves



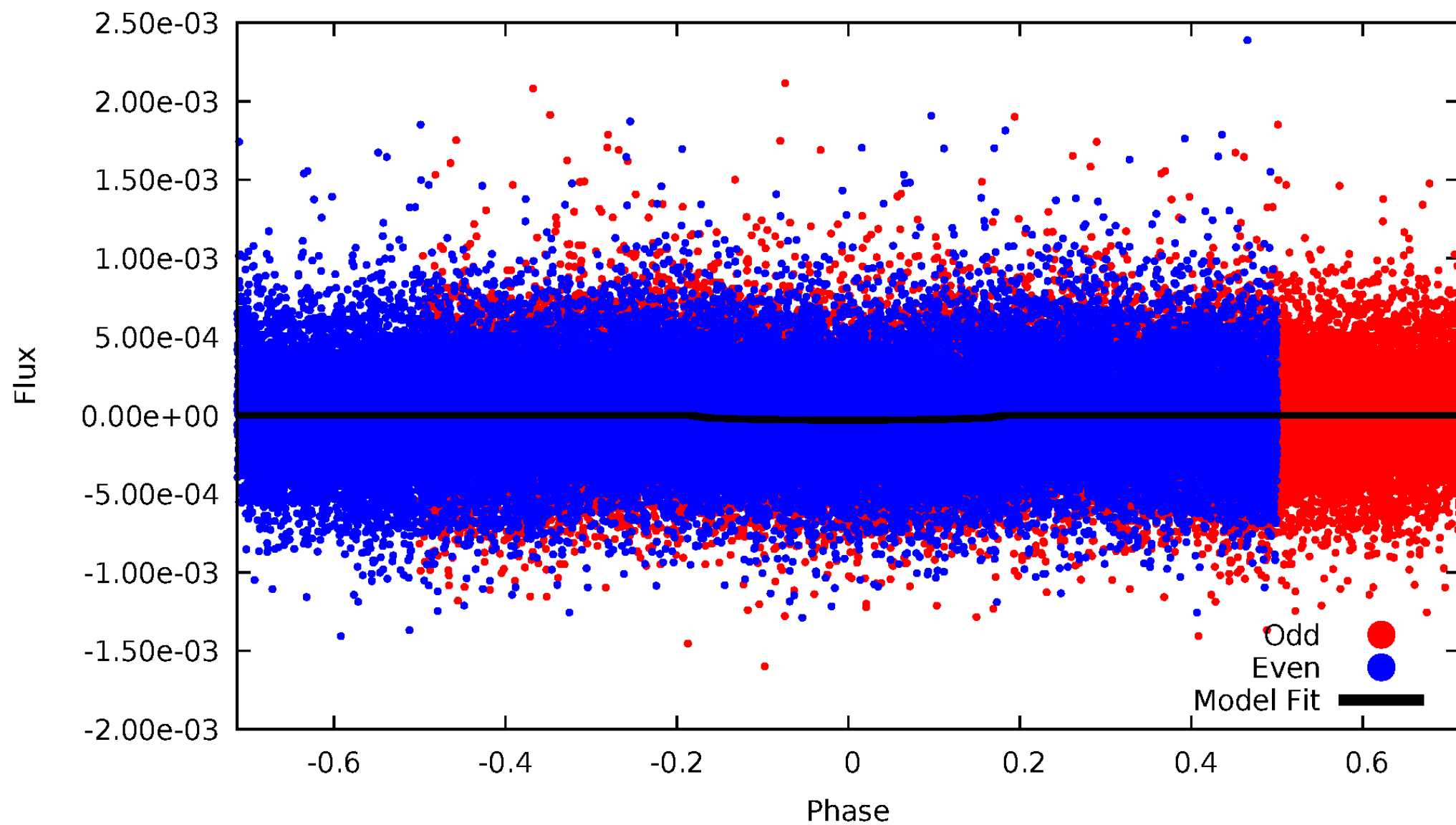
TCE 006380765-01





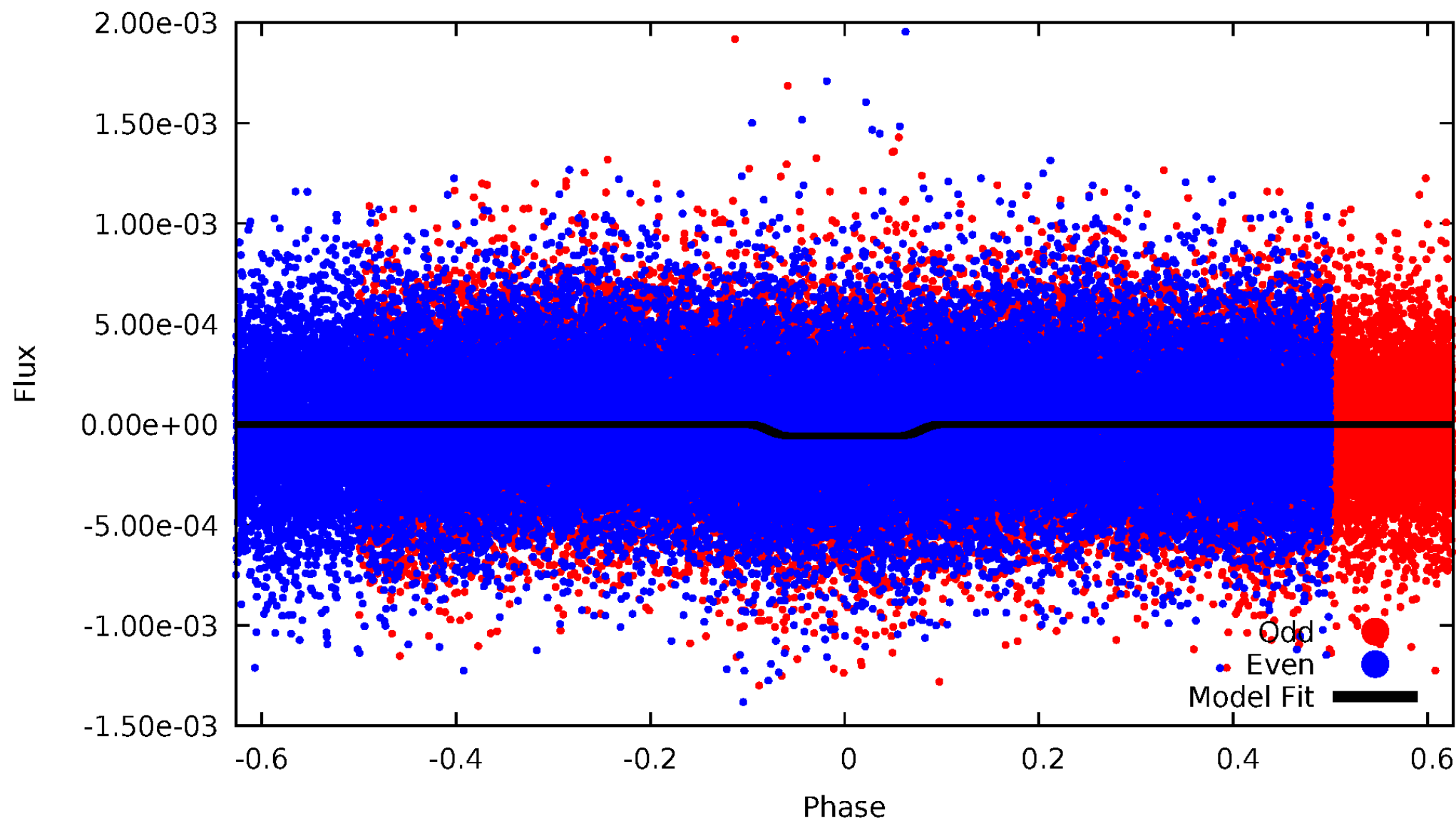
# DV Odd/Even

TCE 006380765-01



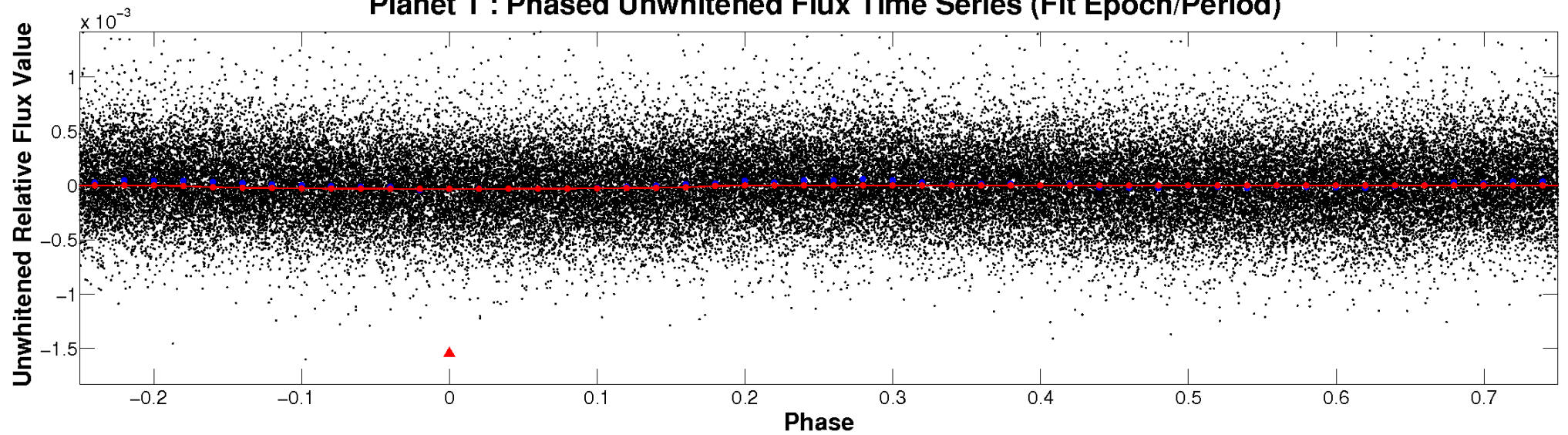
# ALT Odd/Even

TCE 006380765-01

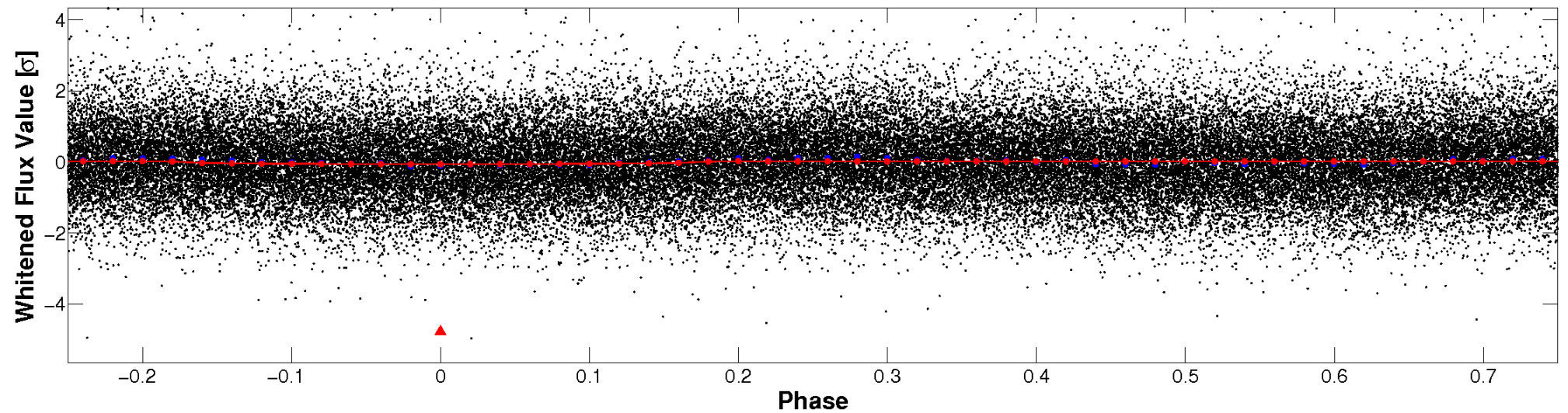


# Non-Whitened Vs. Whitened Light Curve

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

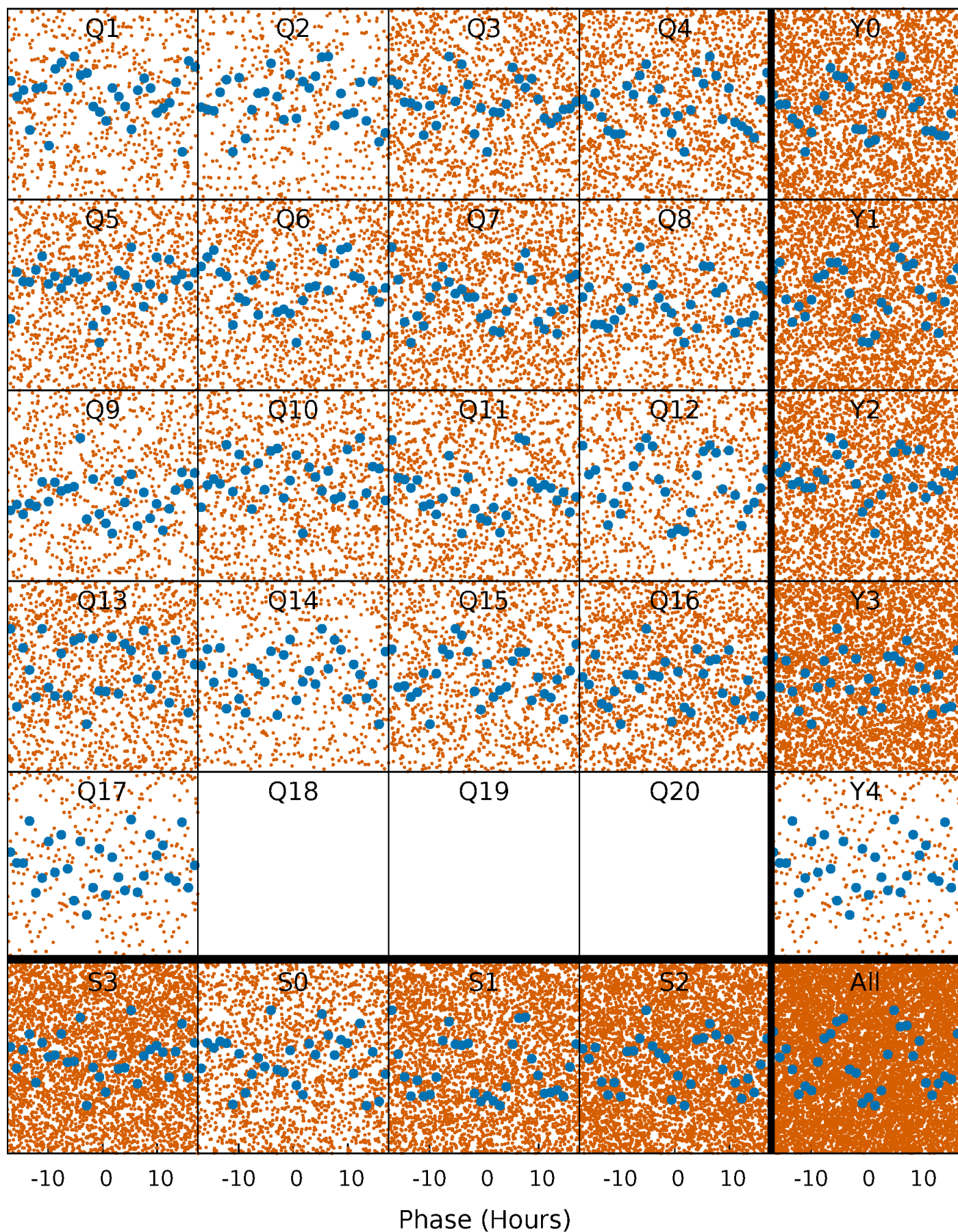


**Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)**



# PDC Quarter-Phased Transit Curves

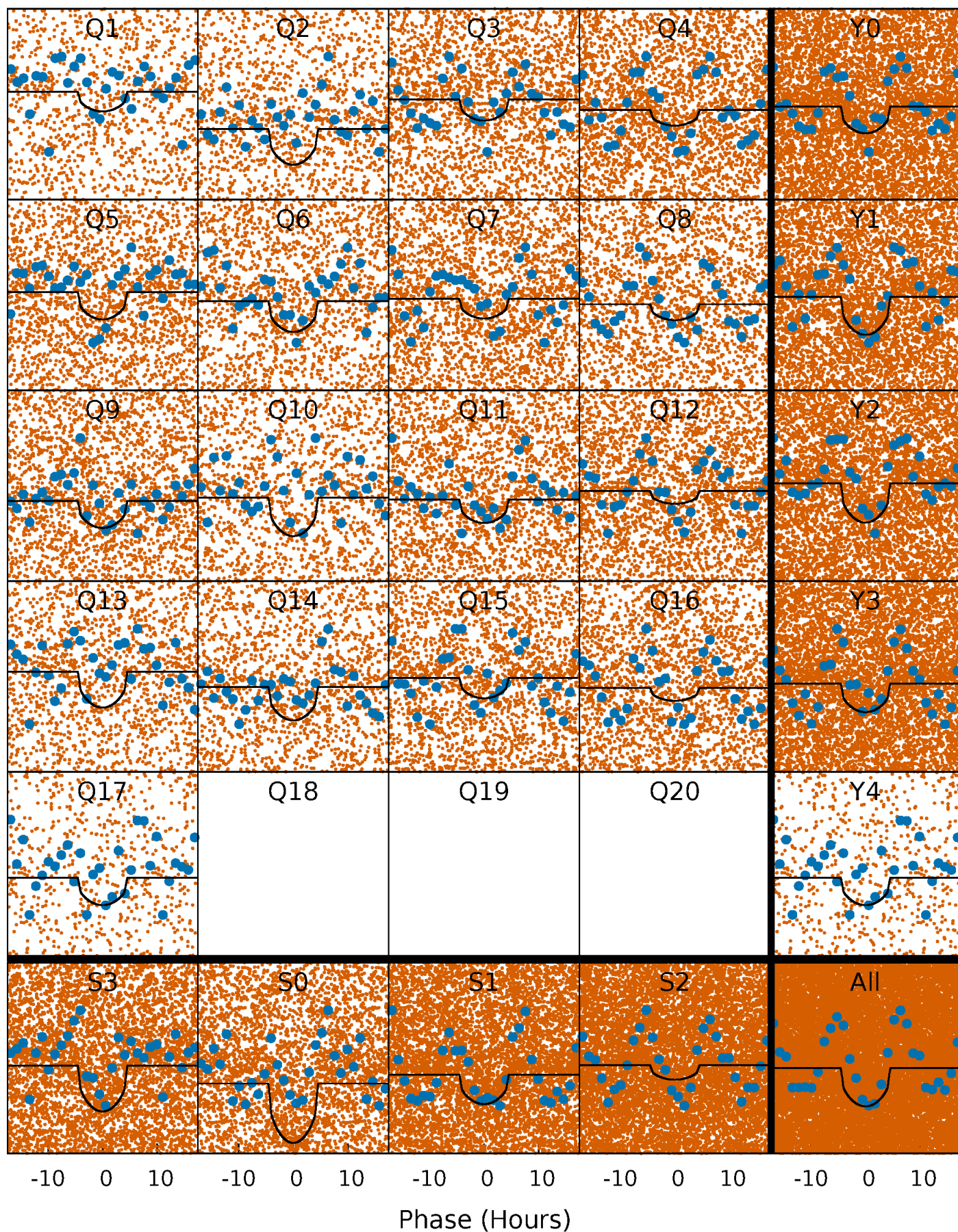
TCE 006380765-01 P= 1.022163 Days  $T_0=132.530247$  (BKJD)





# DV Quarter-Phased Transit Curves

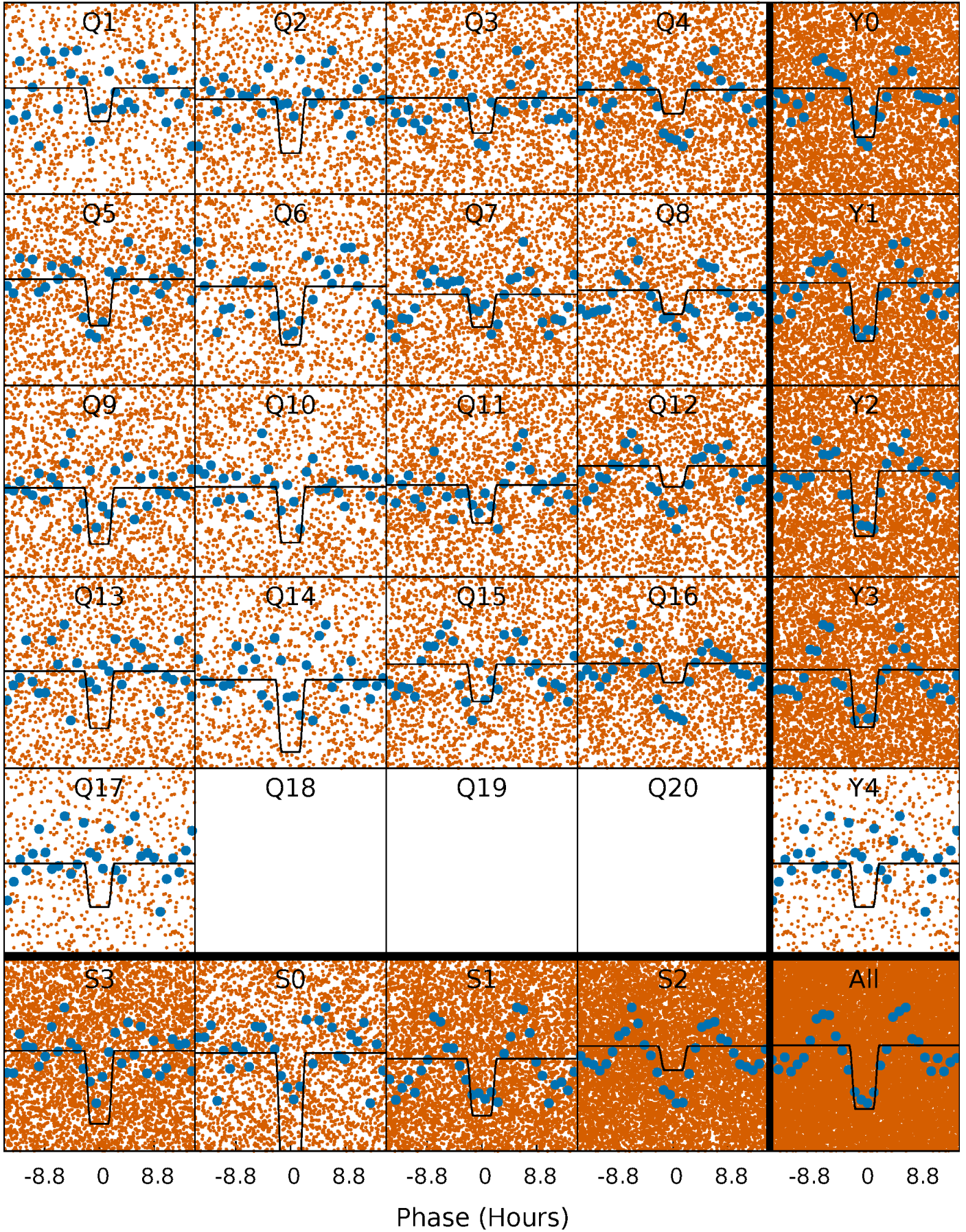
TCE 006380765-01 P= 1.022163 Days  $T_0=132.530247$  (BKJD)





# Alt. Detrend Quarter-Phased Transit Curves

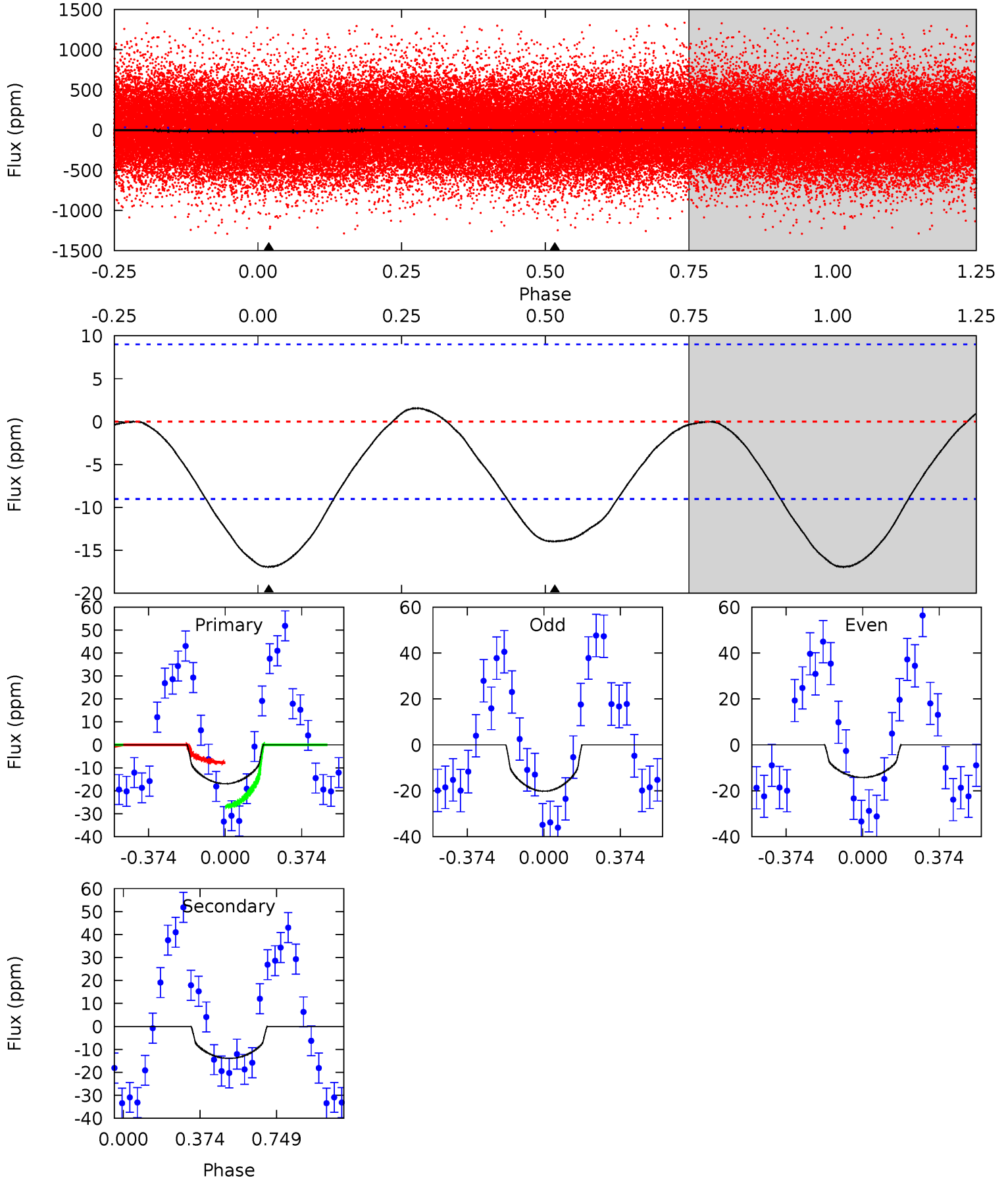
TCE 006380765-01 P= 1.022202 Days  $T_0=132.531485$  (BKJD)



# DV Model-Shift Uniqueness Test

006380765-01, P = 1.022163 Days, E = 131.508084 Days

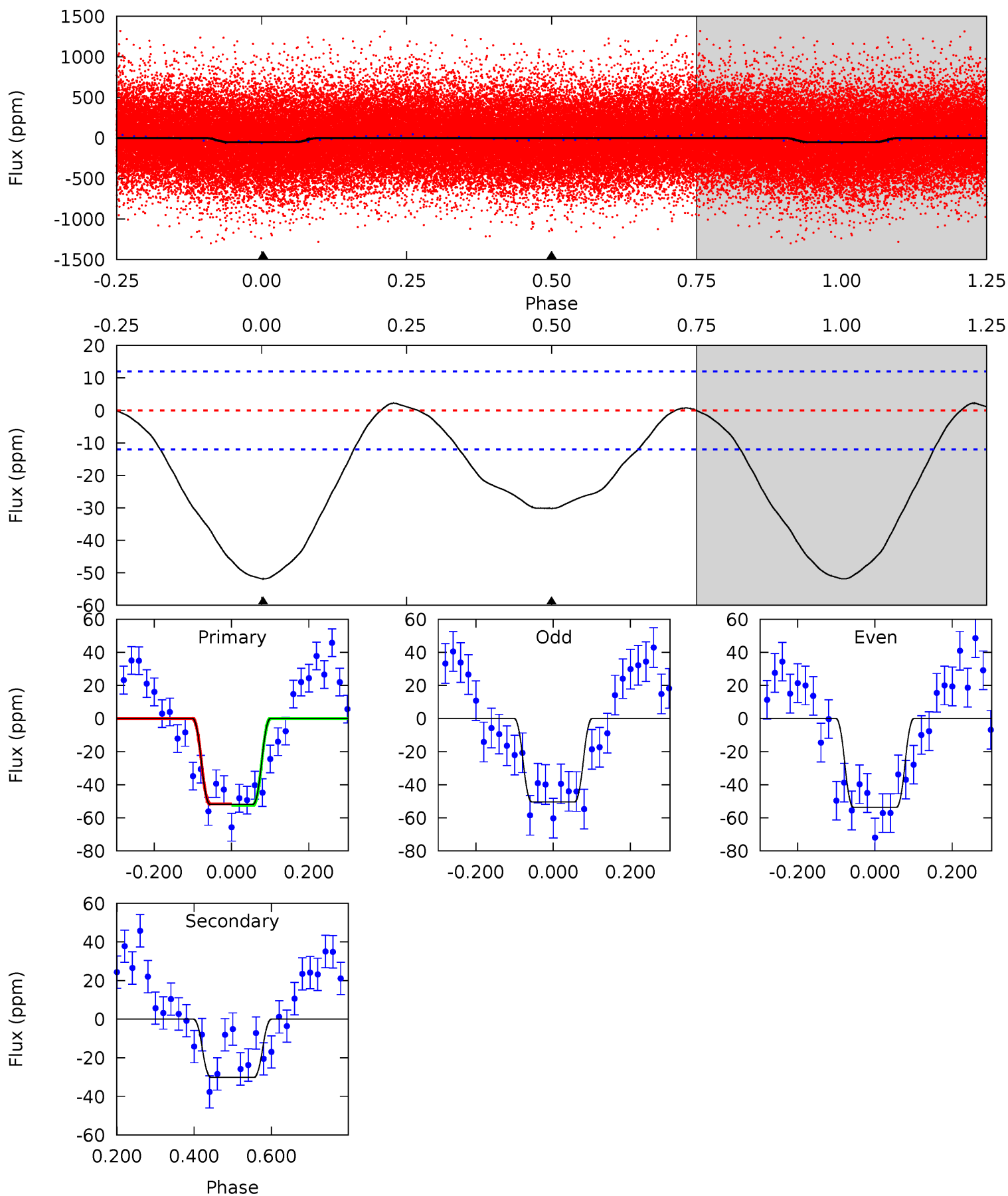
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
8.04	6.63	0	0	4.28	0.89	0.37	8.04	8.04	6.63	6.63	1.43	1.05	0.08	4.65



# Alt Model-Shift Uniqueness Test

006380765-01, P = 1.022202 Days, E = 131.509283 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
19.0	11.1	0	0	4.42	1.28	0.74	19.0	19.0	11.1	11.1	0.61	1.25	0.04	0.13





### Stellar Parameters For KIC 006380765

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$4776^{+143}_{-129}$	$4.558^{+0.060}_{-0.035}$	$-0.020^{+0.300}_{-0.300}$	$0.740^{+0.054}_{-0.066}$	$0.721^{+0.076}_{-0.053}$	$2.508^{+0.673}_{-0.301}$
	+3%/-3%	+1%/-1%	+1500%/-1500%	+7%/-9%	+11%/-7%	+27%/-12%
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 006380765-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	$A_{obs}$
DV	$-14 \pm 2$	$0.44^{+0.23}_{-0.23}$	$1886^{+72}_{-65}$	$4102^{+1425}_{-616}$	$13^{+41}_{-8}$
Alt.	$-30 \pm 3$	$0.62^{+0.25}_{-0.24}$	$1890^{+67}_{-62}$	$4160^{+903}_{-487}$	$13^{+22}_{-6}$

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

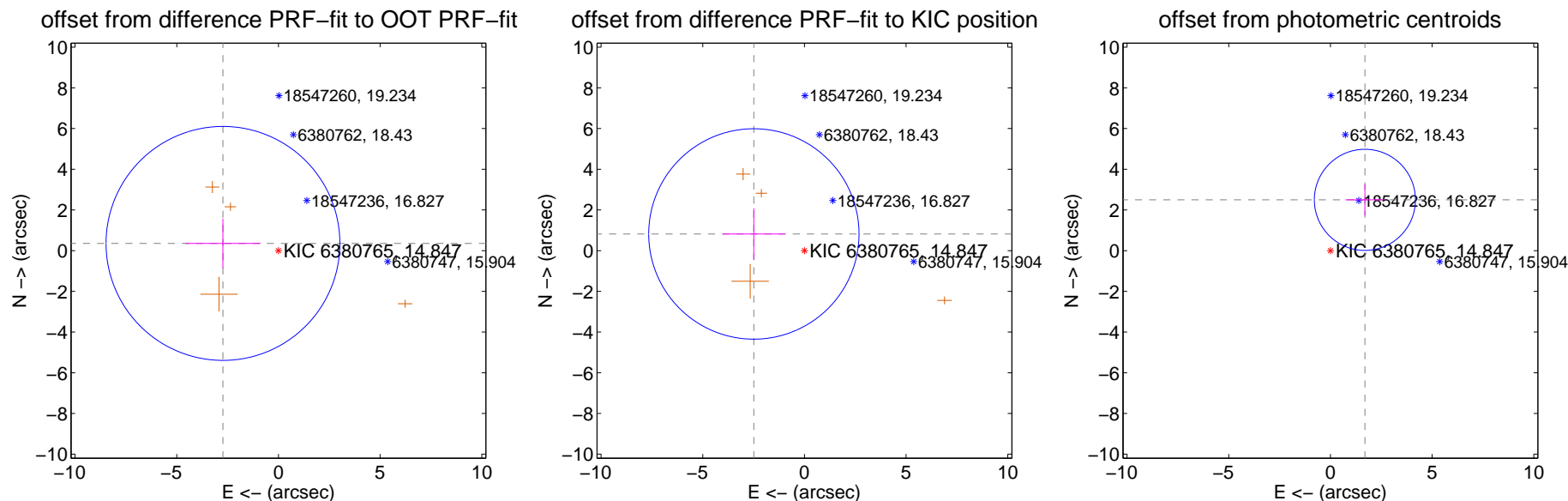
## DV Centroid Data

Supplemental centroid analysis for 006380765-01. Kepler magnitude: 14.85. Transit SNR 8.42

There are 0 quarters with good PRF difference image offsets

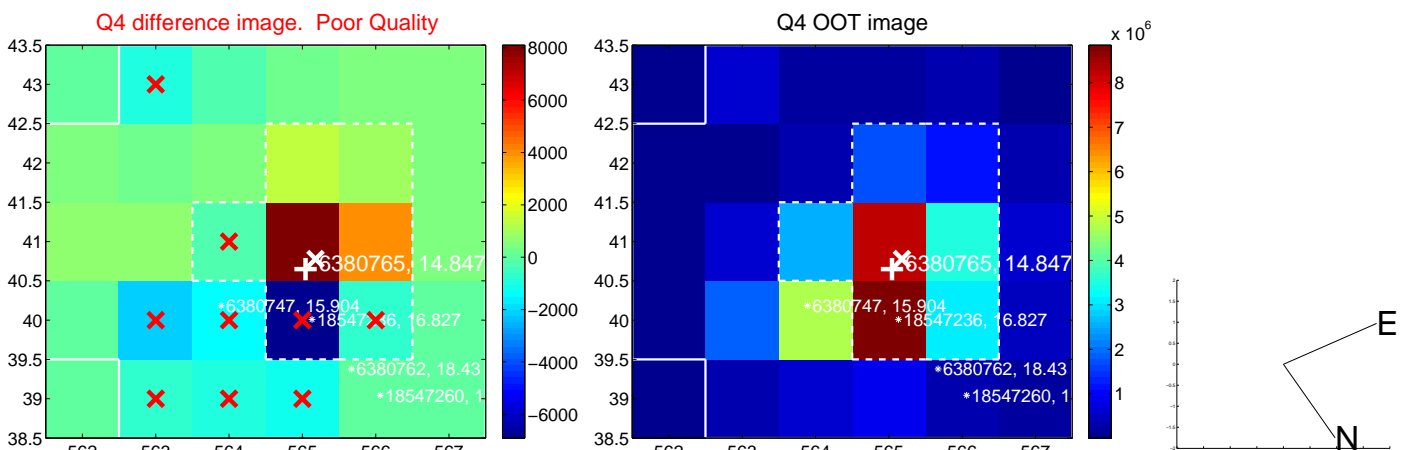
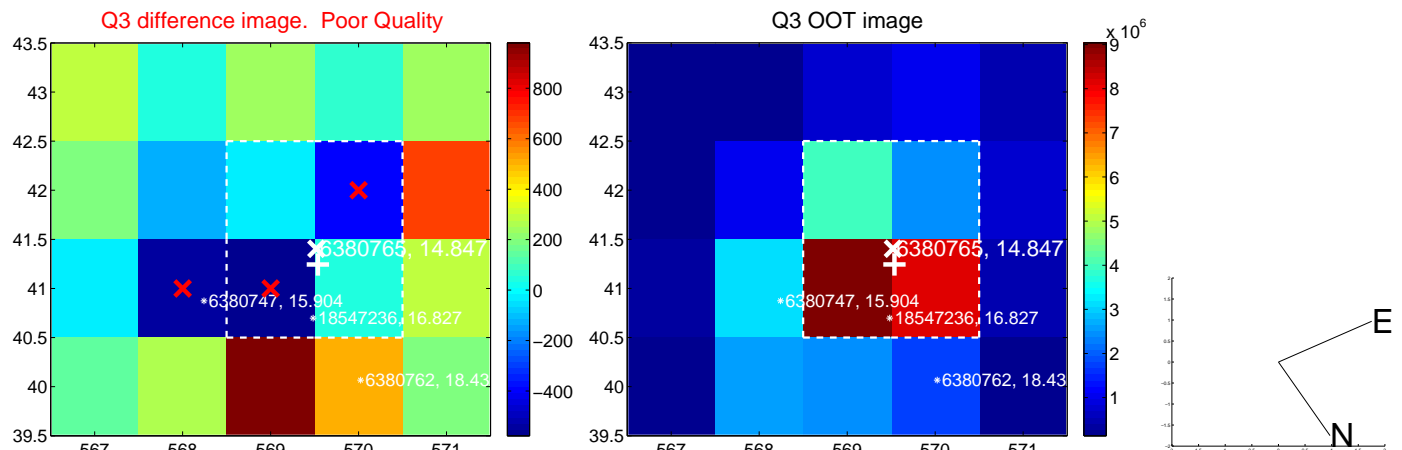
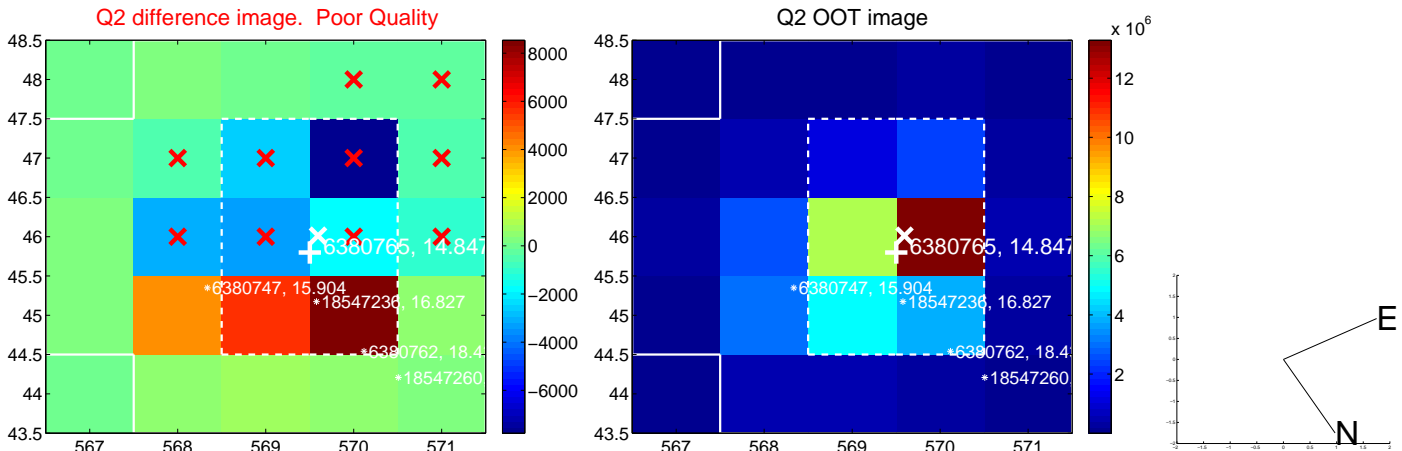
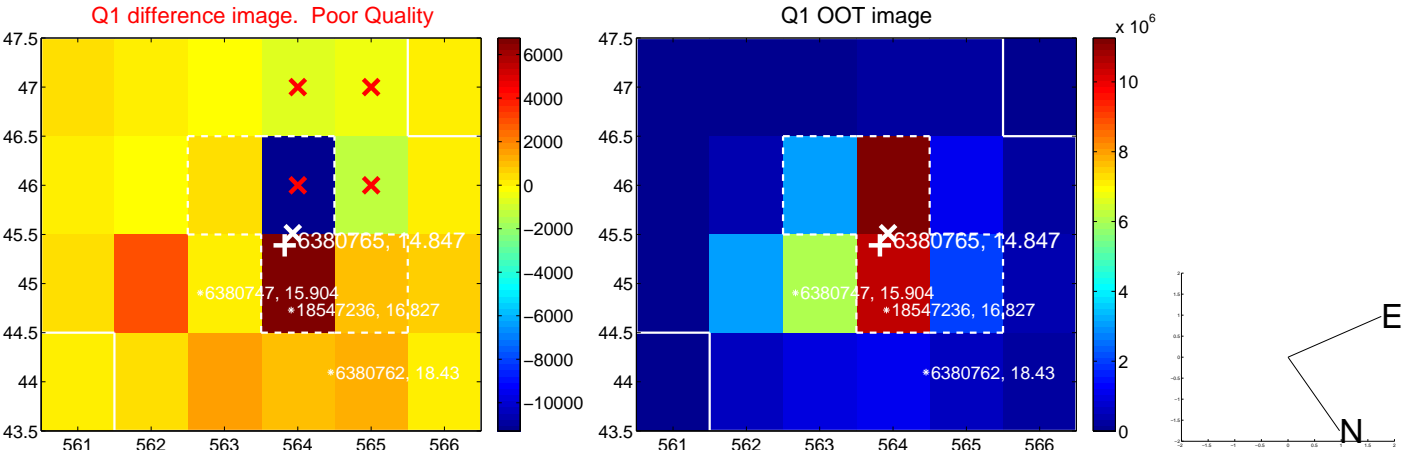
The direct PRF centroid is offset from the target star catalog position by about 0.71 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$2.751 \pm 1.916$	1.44	$2.728 \pm 1.846$	$0.356 \pm 1.217$
PRF-fit source offset from KIC position	$2.618 \pm 1.723$	1.52	$2.486 \pm 1.537$	$0.820 \pm 1.263$
photometric centroid source offset	$3.02 \pm 0.83$	3.64	$-1.69 \pm 0.95$	$2.50 \pm 0.76$

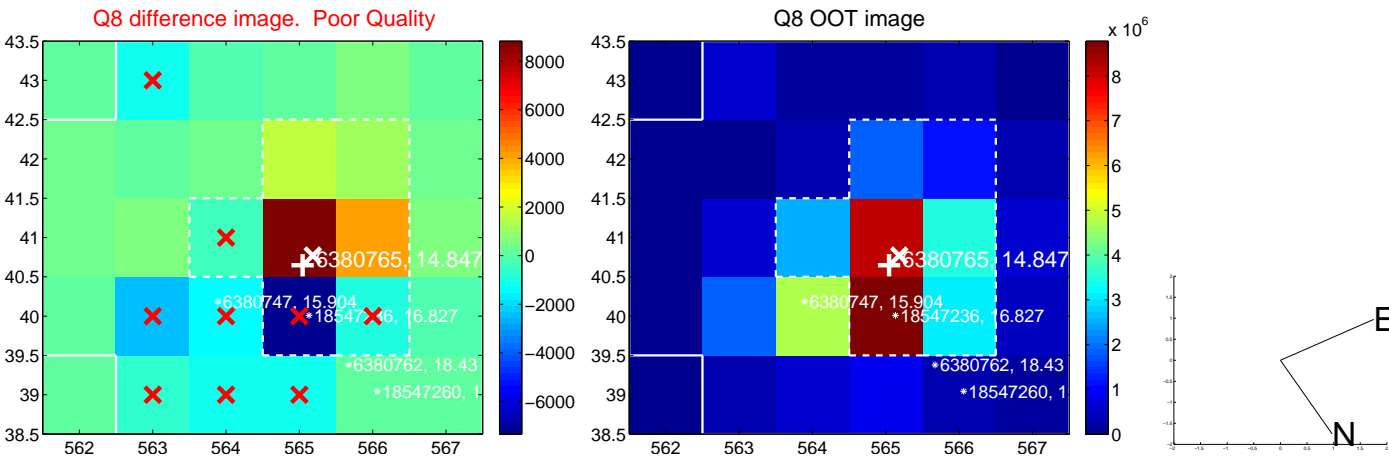
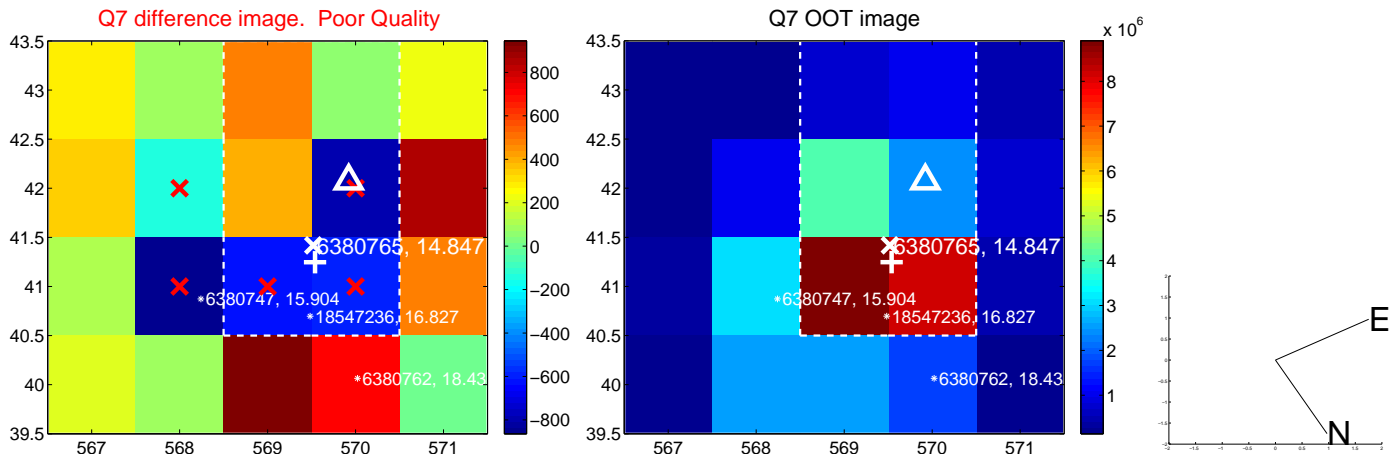
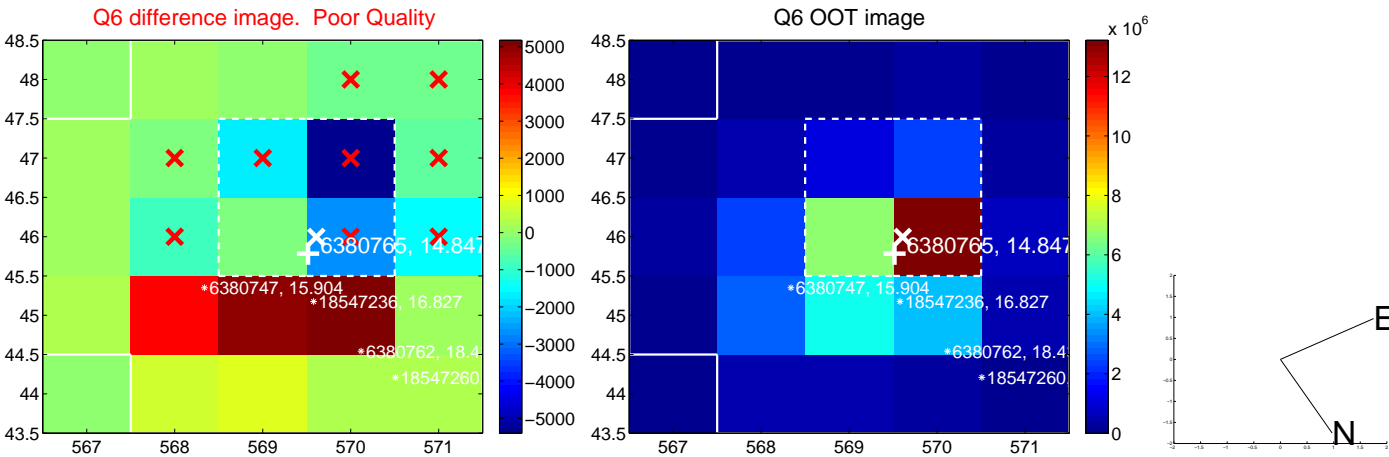
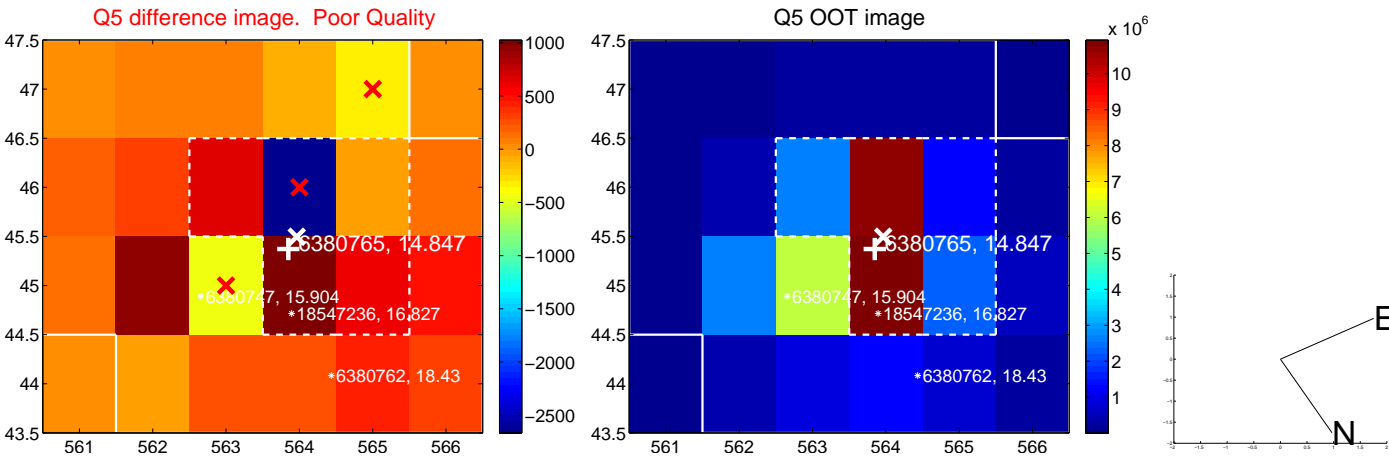


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: three-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

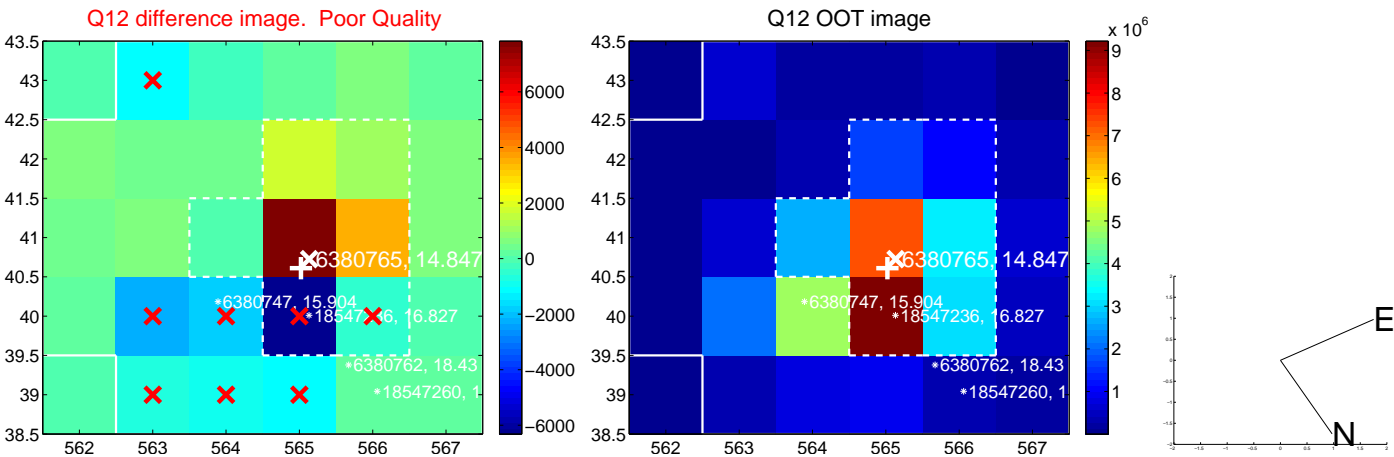
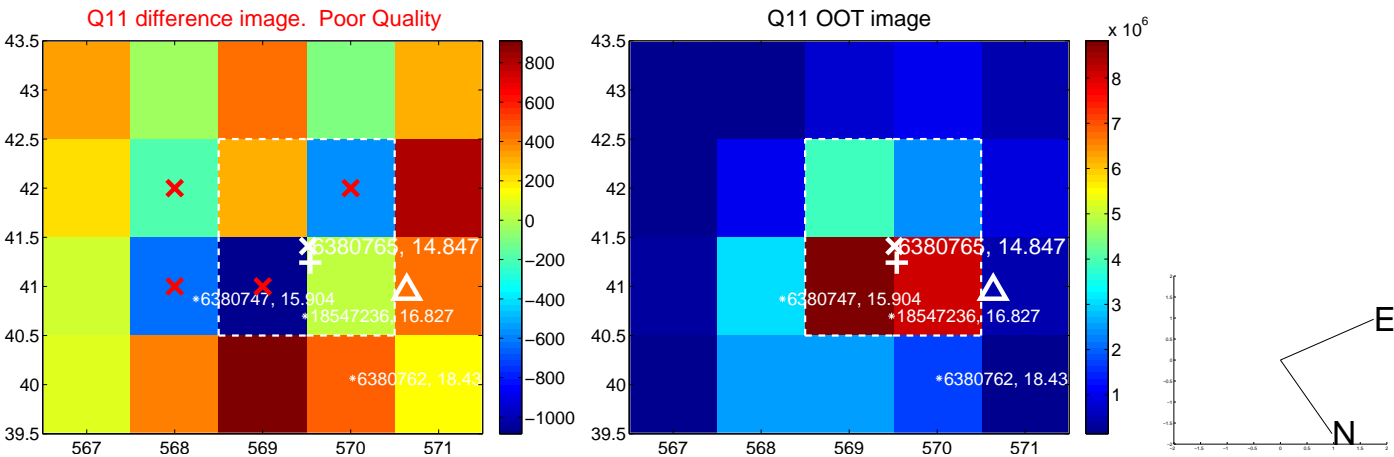
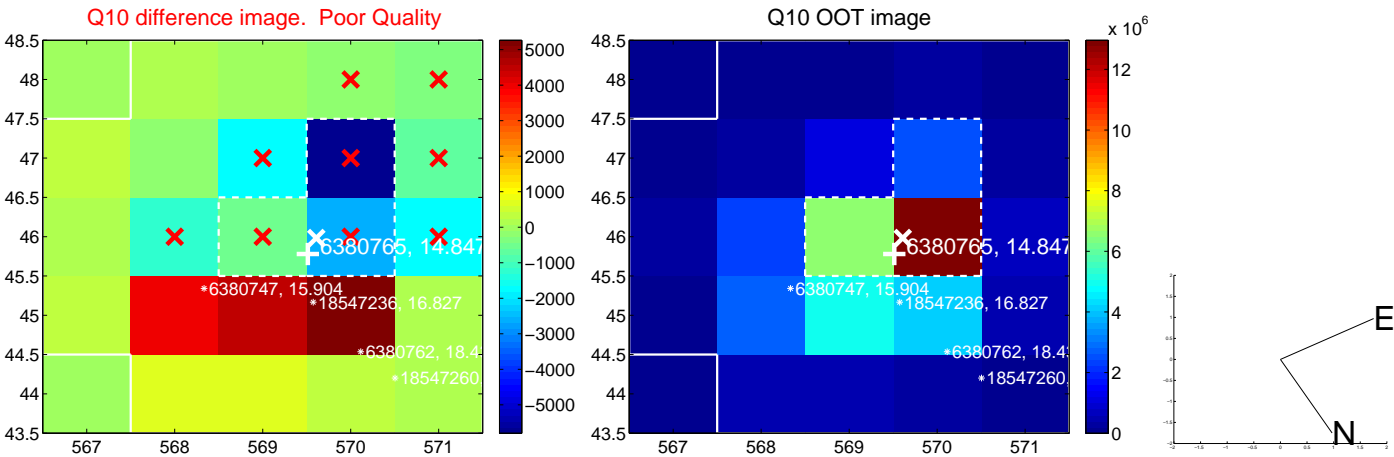
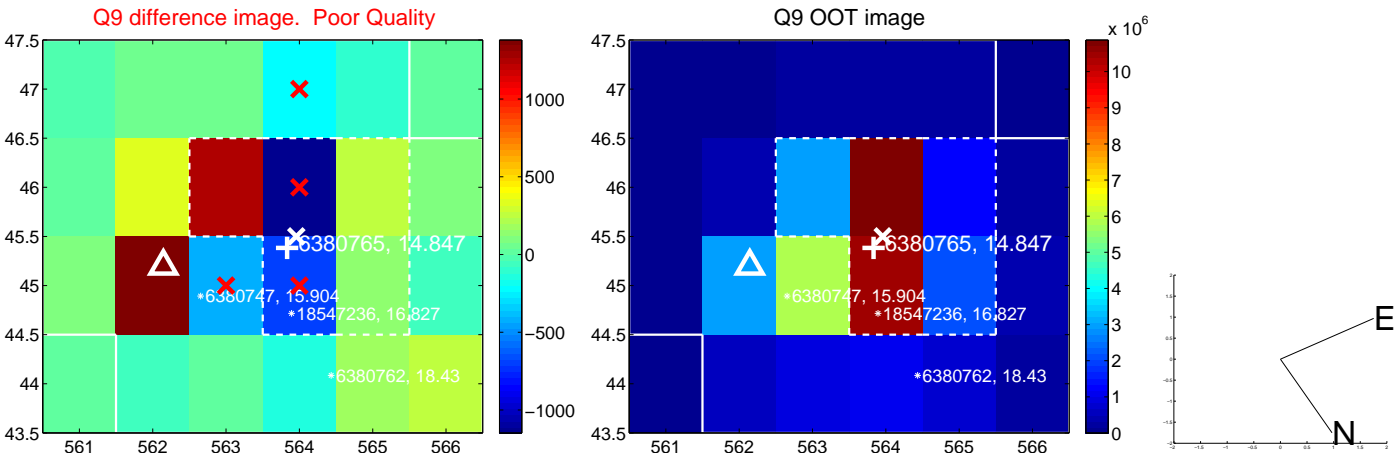


white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

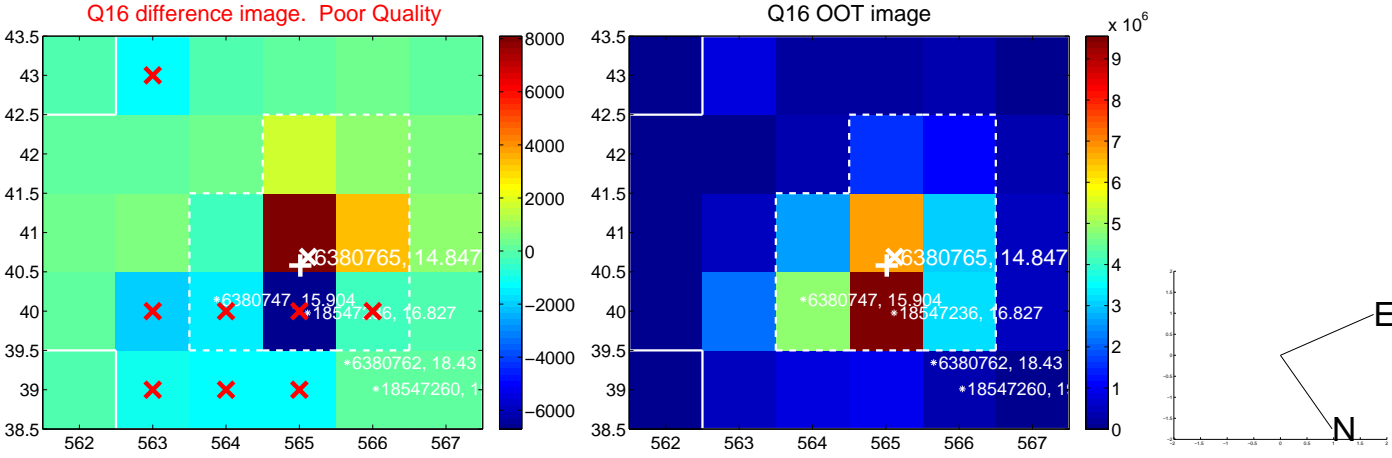
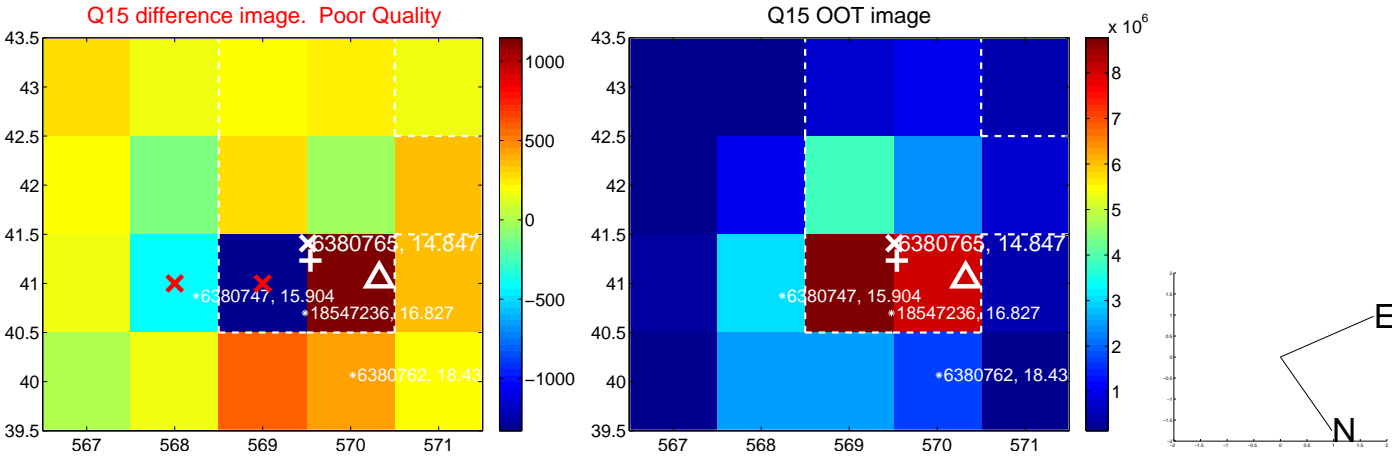
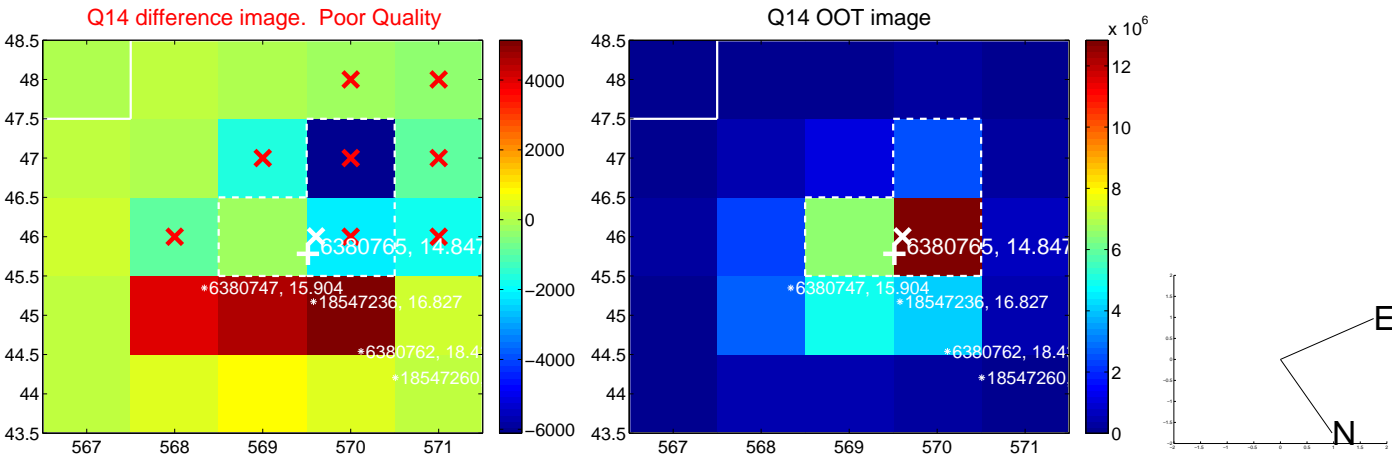
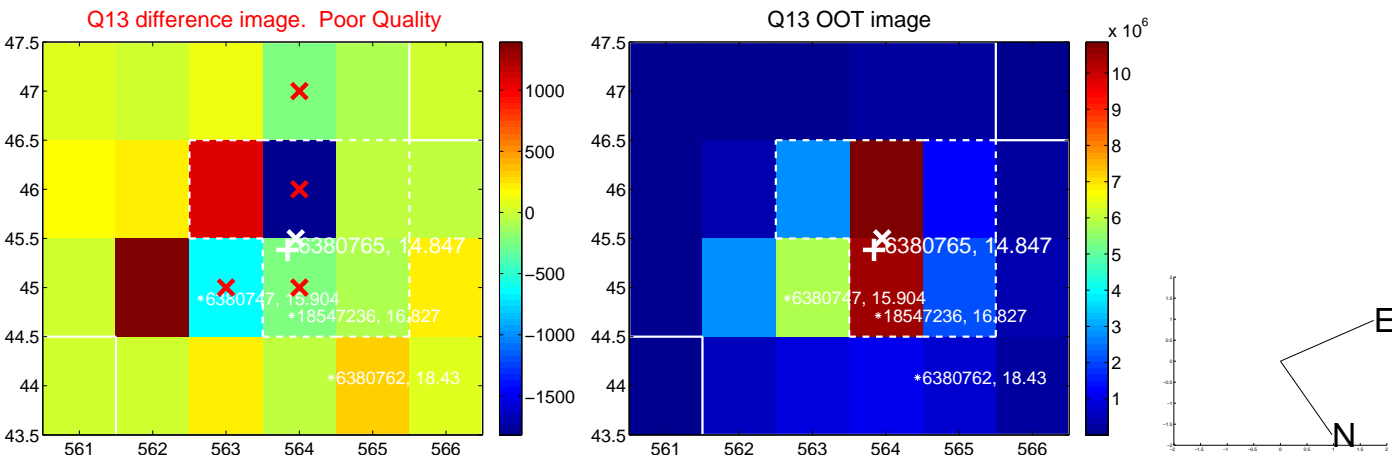




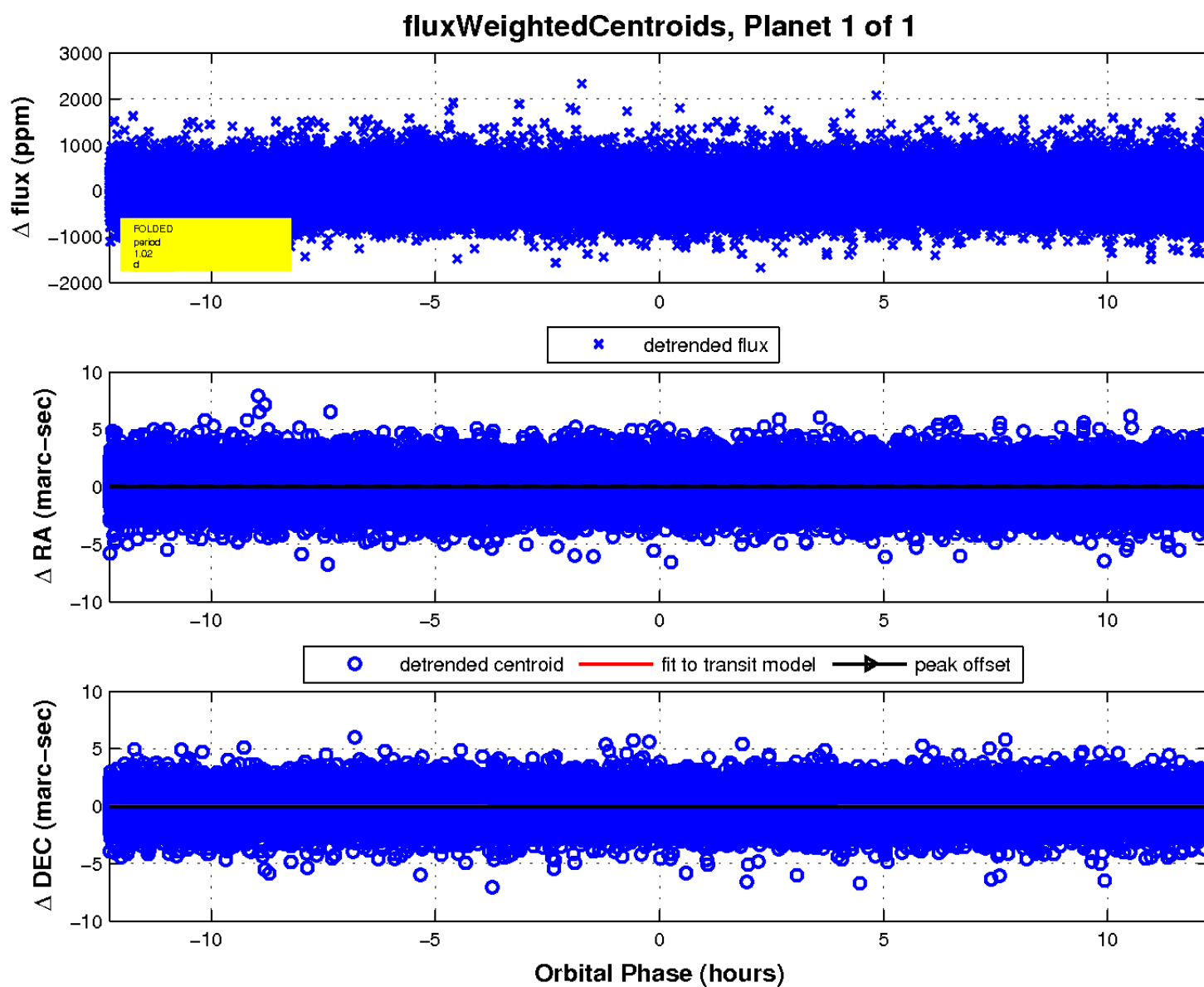
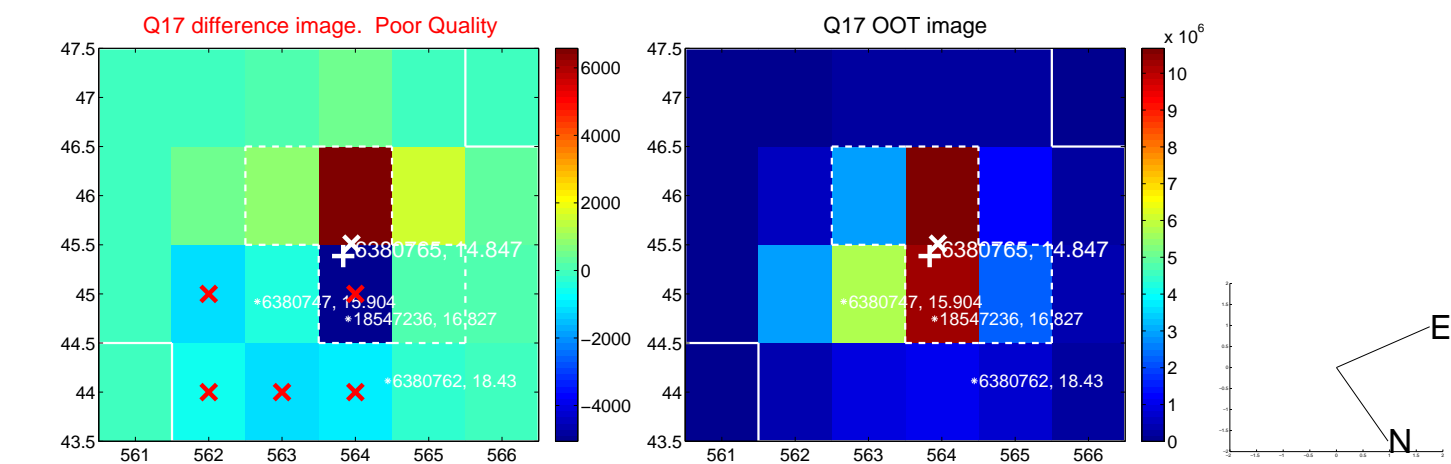
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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



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



# UKIRT Image

Declination

