

# KIC 009071682

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
009071682-01	OBS	No	1.447415	131.840635	15.3	14.069	9.1	10.6	2.17	7606	0.86	15784.65

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
009071682-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_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.

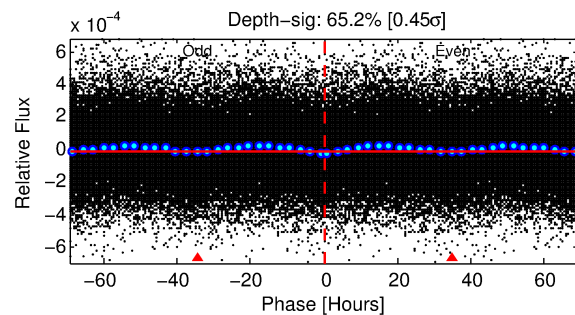
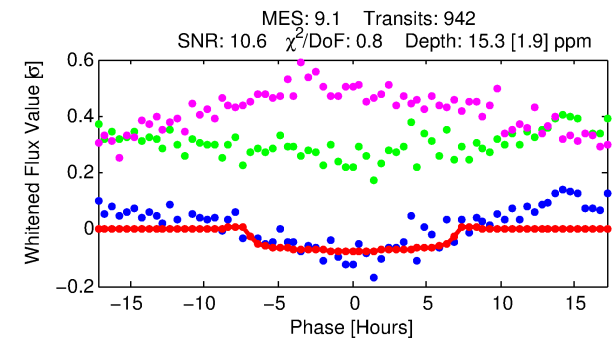
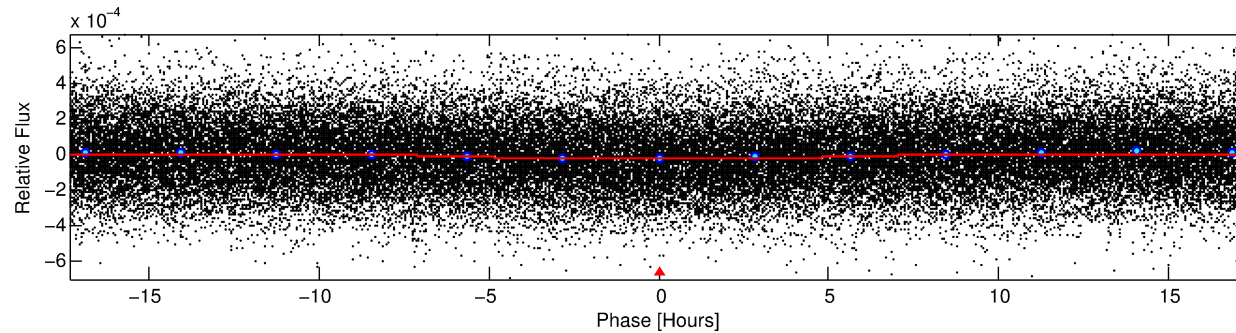
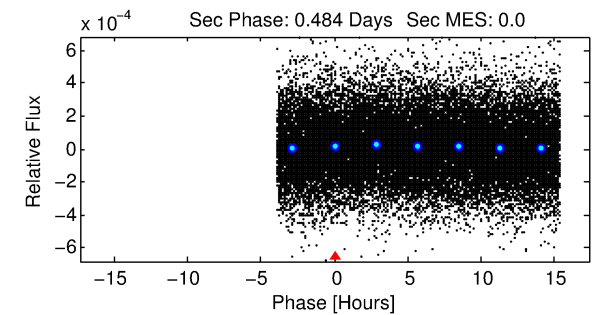
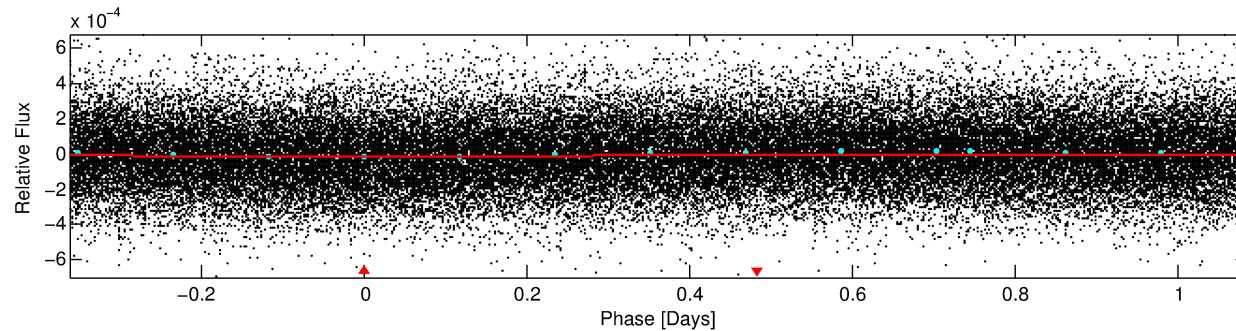
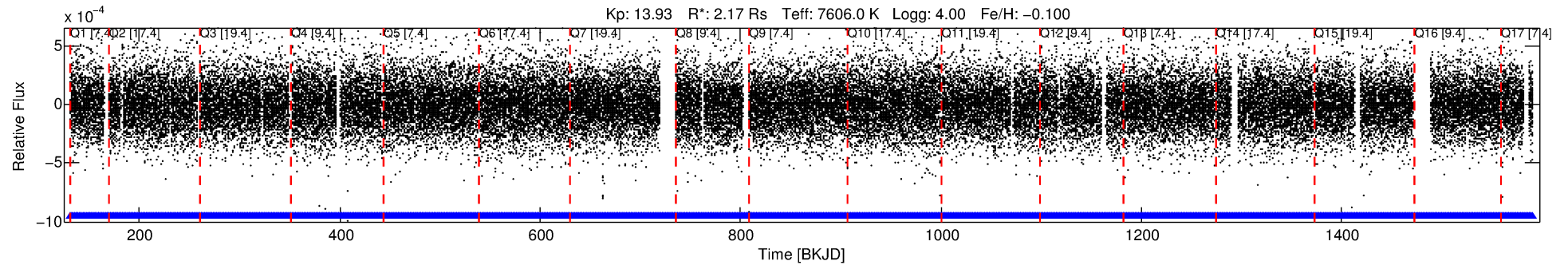
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 009071682-01

No Significant Match Found

# DV One-Page Summary

KIC: 9071682 Candidate: 1 of 1 Period: 1.447 d



## DV Fit Results:

Period = 1.44742 [0.00003] d  
Epoch = 131.8406 [0.0107] BKJD  
Rp/R\* = 0.0036 [0.0032]  
a/R\* = 1.05 [0.52]  
b = 0.00 [1208.84]  
Seff = 15784.65 [6690.25]  
Teff = 2858 [303] K  
Rp = 0.86 [0.81] Re  
a = 0.0300 [0.0079] AU  
Ag = N/A  
Teffp = N/A

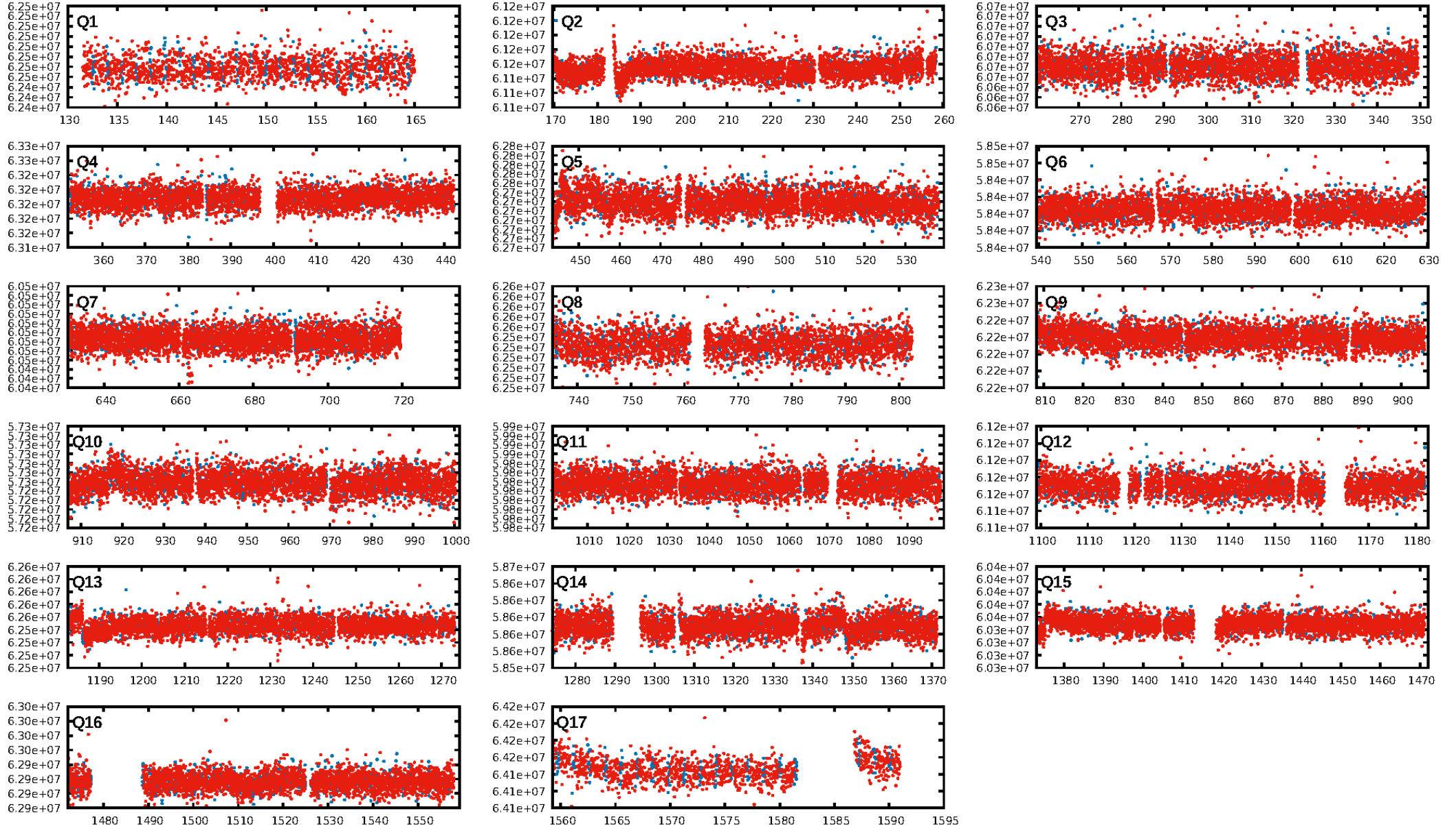
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: N/A  
ModelChiSquareGoF-sig: N/A  
Bootstrap-pfa: N/A  
RollingBand-fgt: 1.00 [899/899]  
GhostDiagnostic-chr: 2.944  
Centroid-sig: 1.7%  
Centroid-so: 1.567 arcsec [1.58σ]  
OotOffset-rm: N/A  
KicOffset-rm: N/A  
OotOffset-st: 0/0/0 [0]  
KicOffset-st: 0/0/0 [0]  
DiffImageQuality-fgm: N/A  
DiffImageOverlap-fno: 1.00 [17/17]

Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 23:39:02 Z

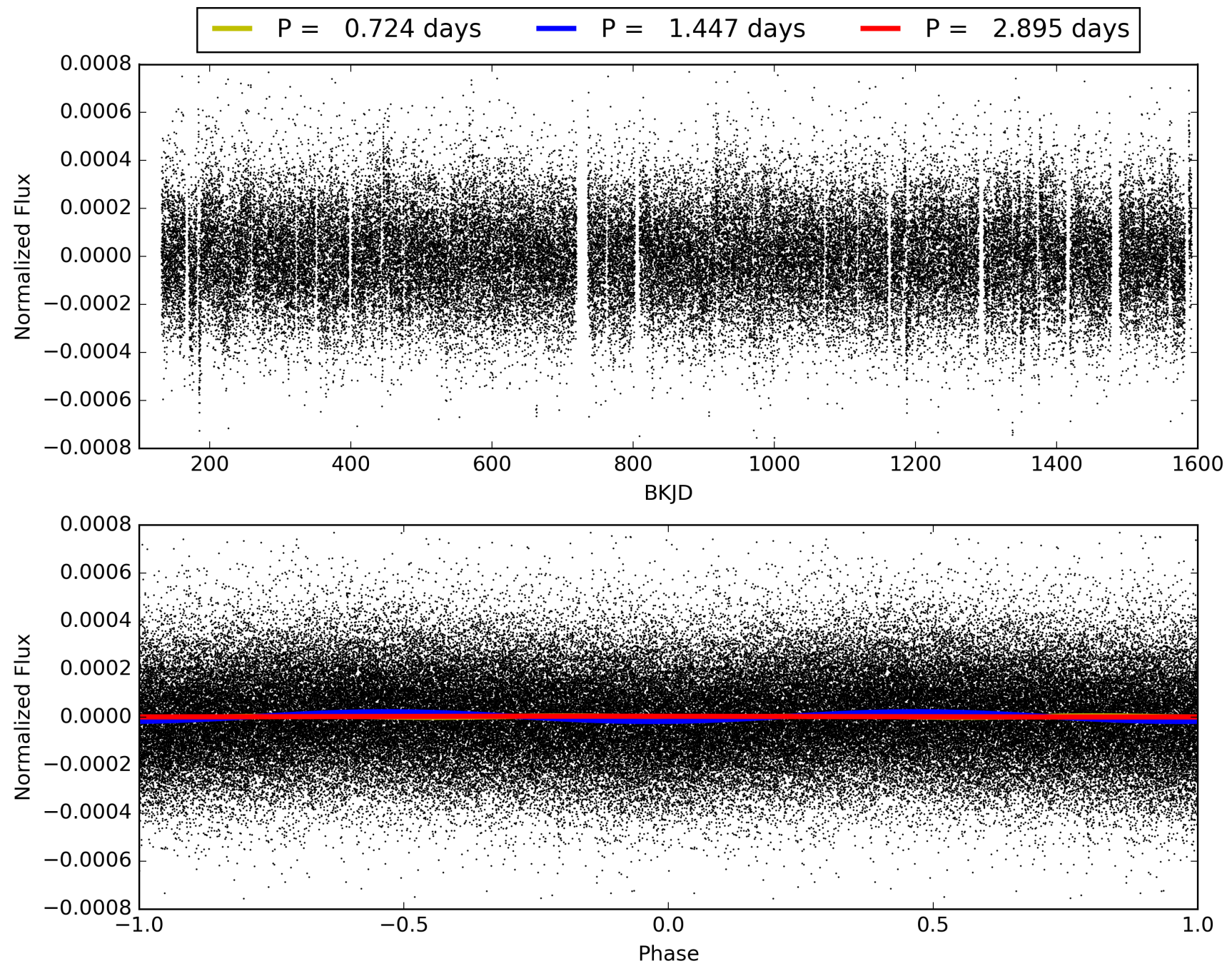
This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

# TCE 009071682-01, PDC Light Curves



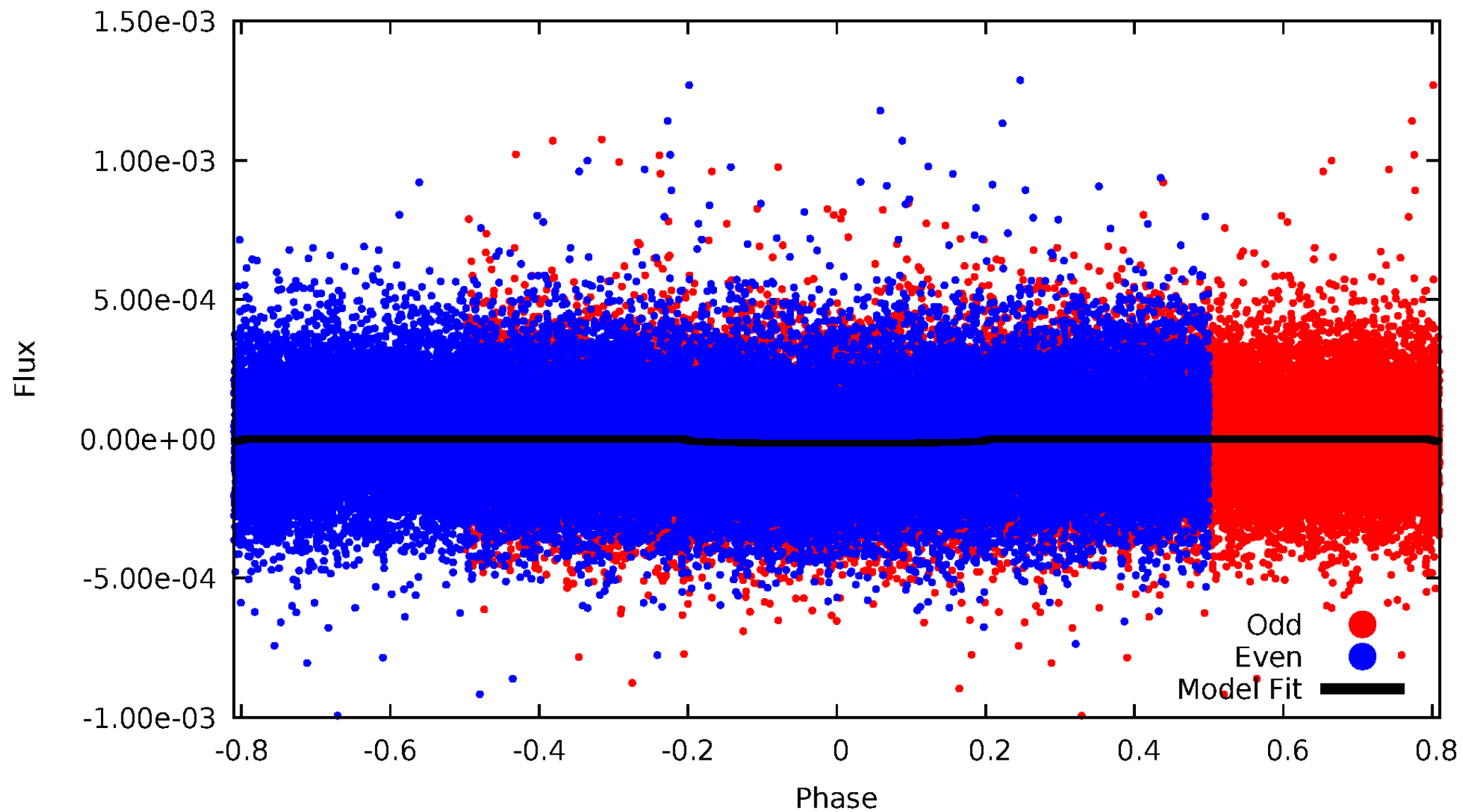


TCE 009071682-01



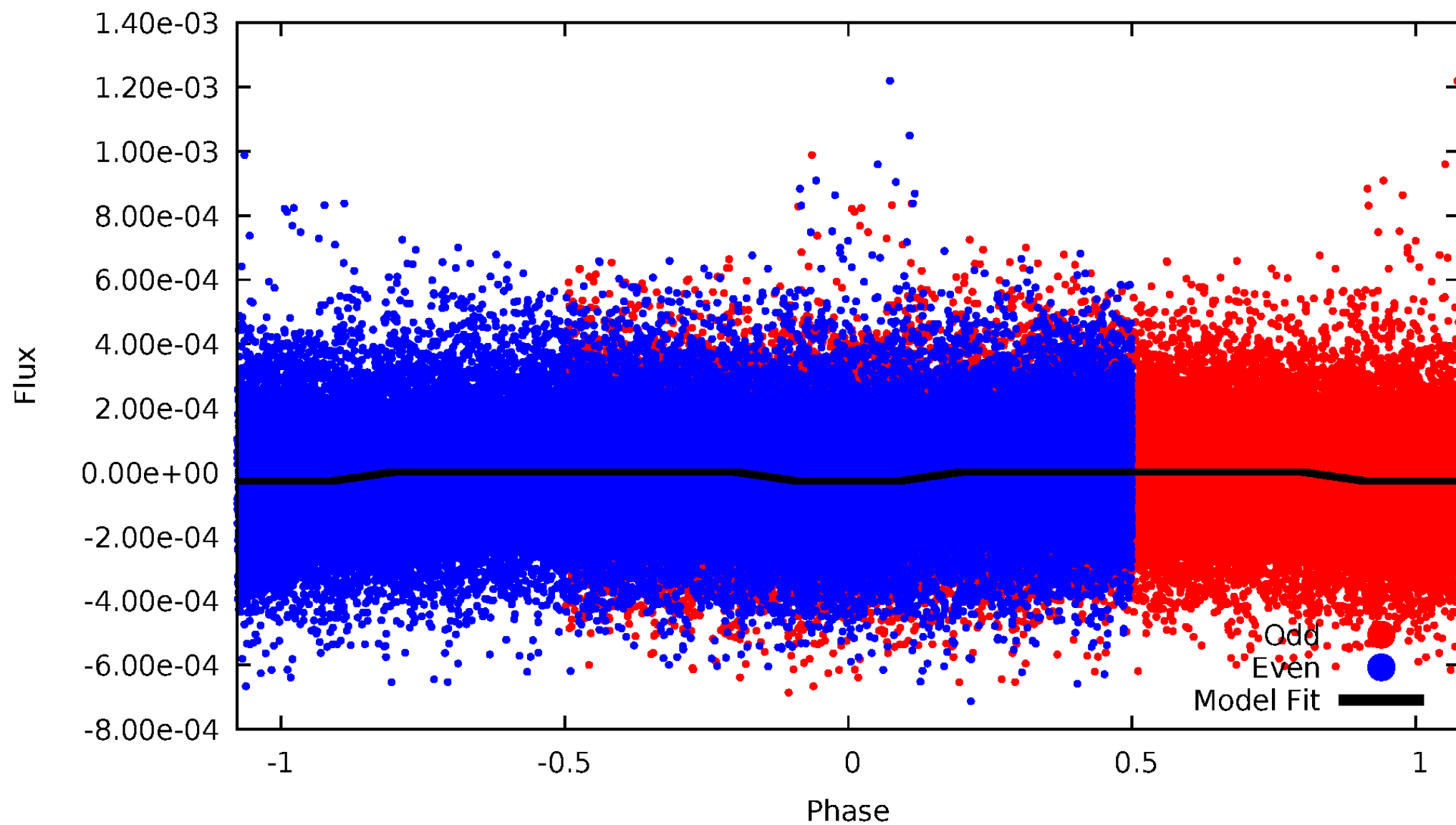
# DV Odd/Even

TCE 009071682-01



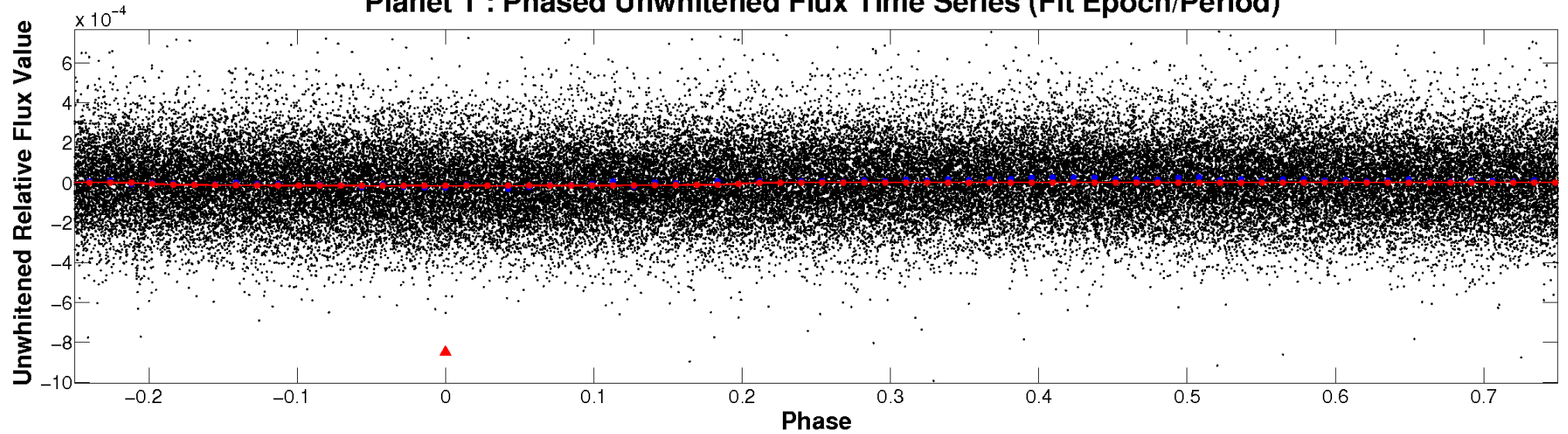
# ALT Odd/Even

TCE 009071682-01

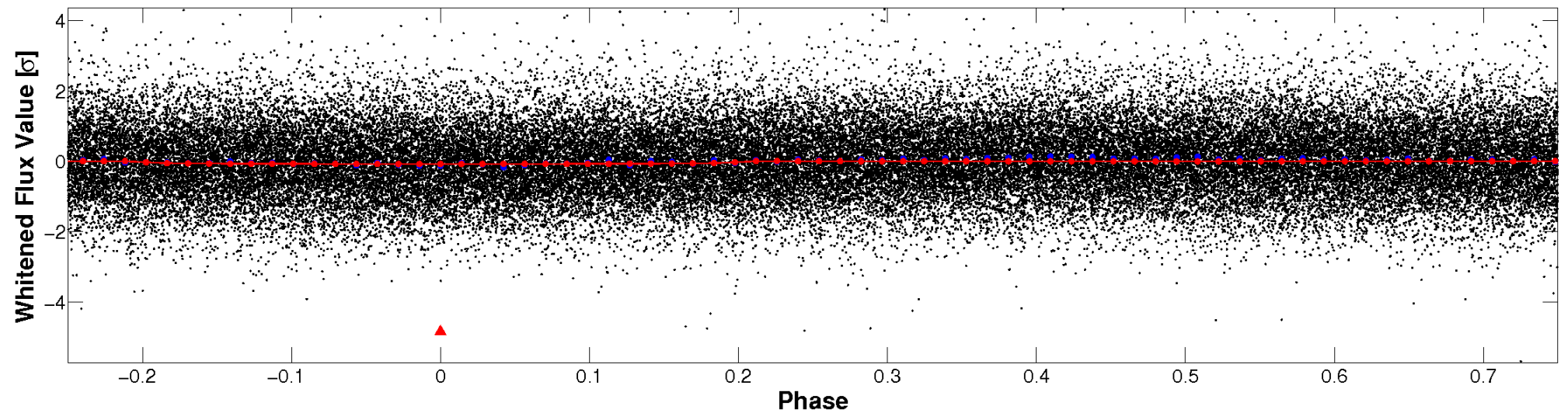


# Non-Whitened Vs. Whitened Light Curve

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



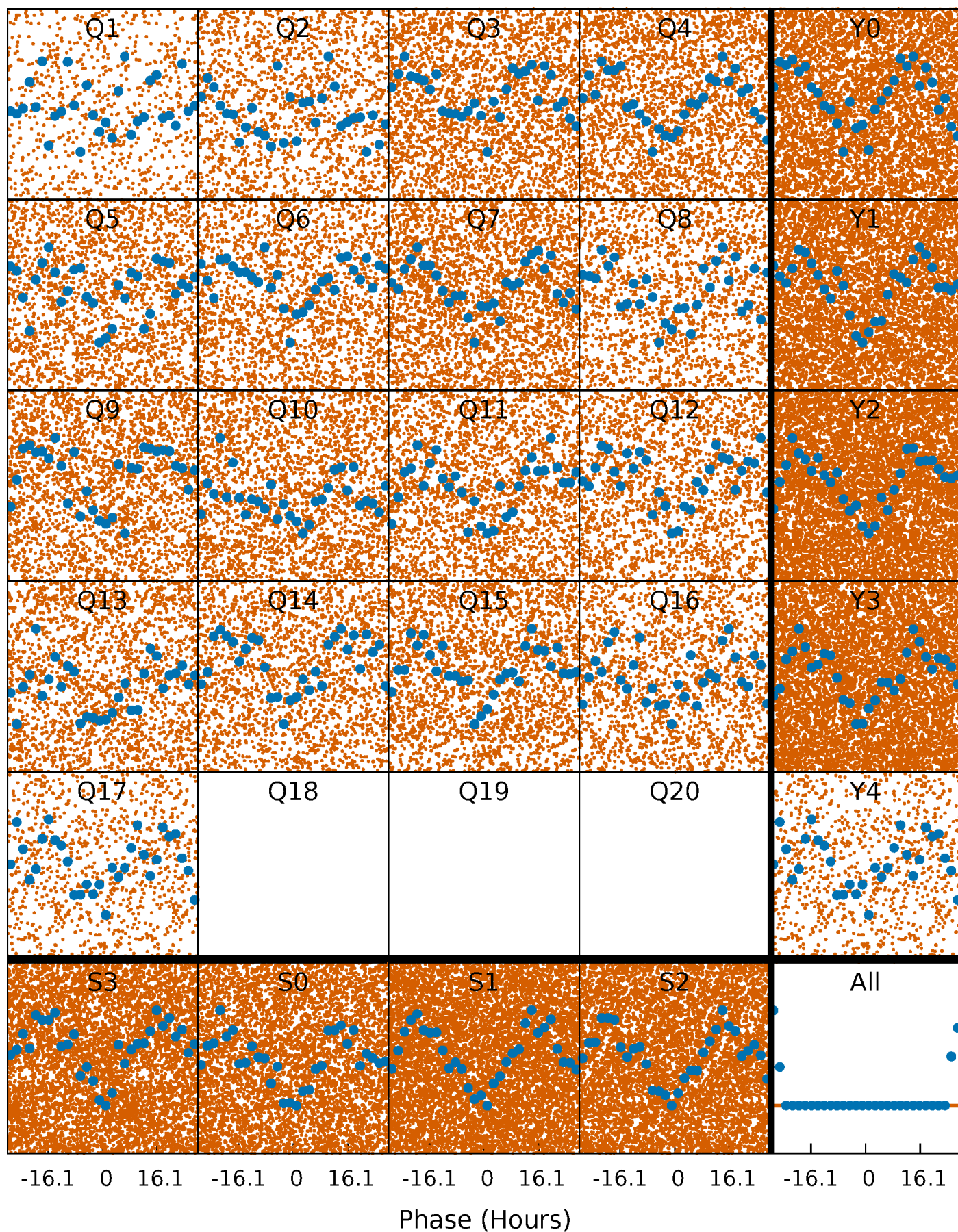
**Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)**





# PDC Quarter-Phased Transit Curves

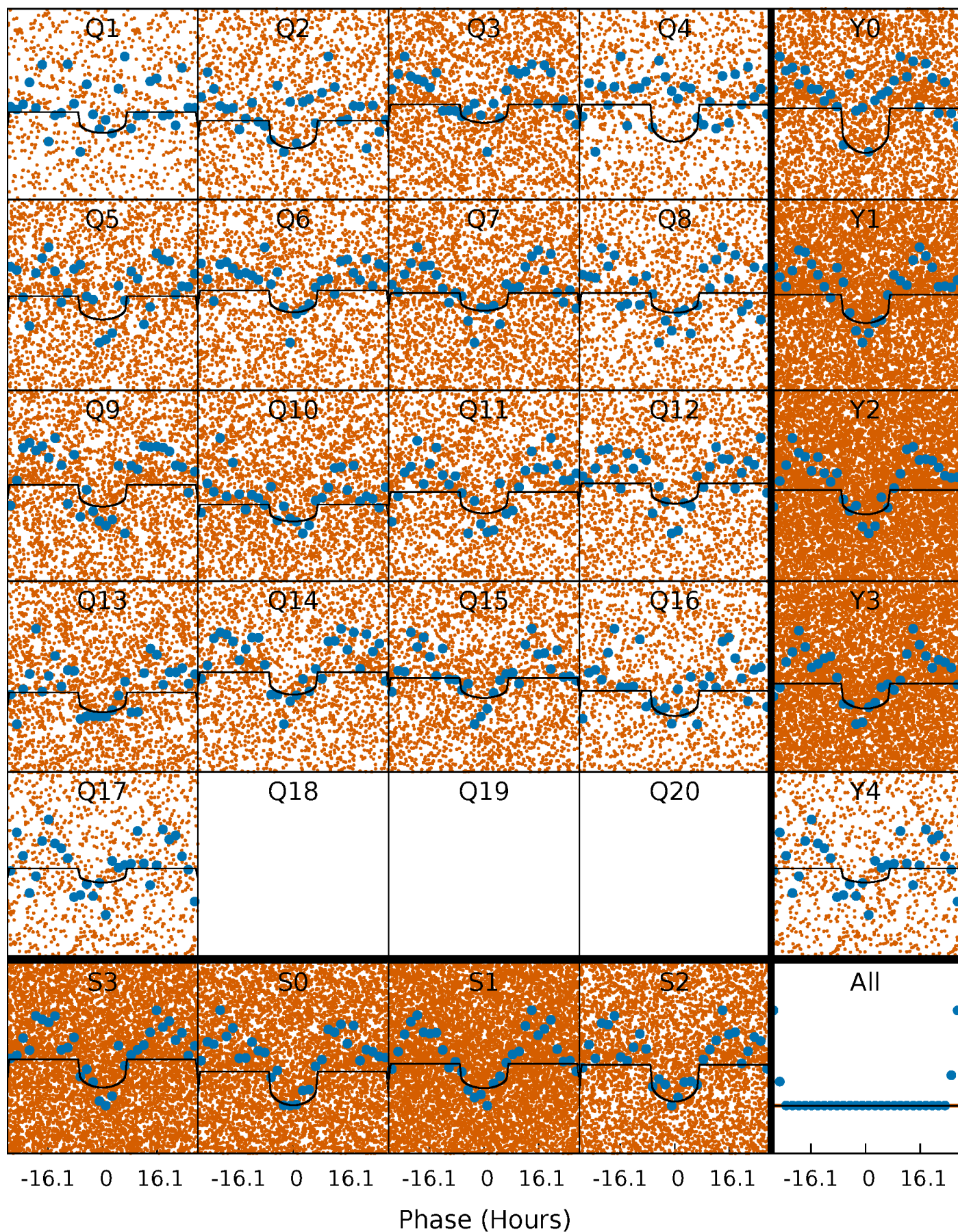
TCE 009071682-01 P= 1.447415 Days  $T_0=131.840635$  (BKJD)





# DV Quarter-Phased Transit Curves

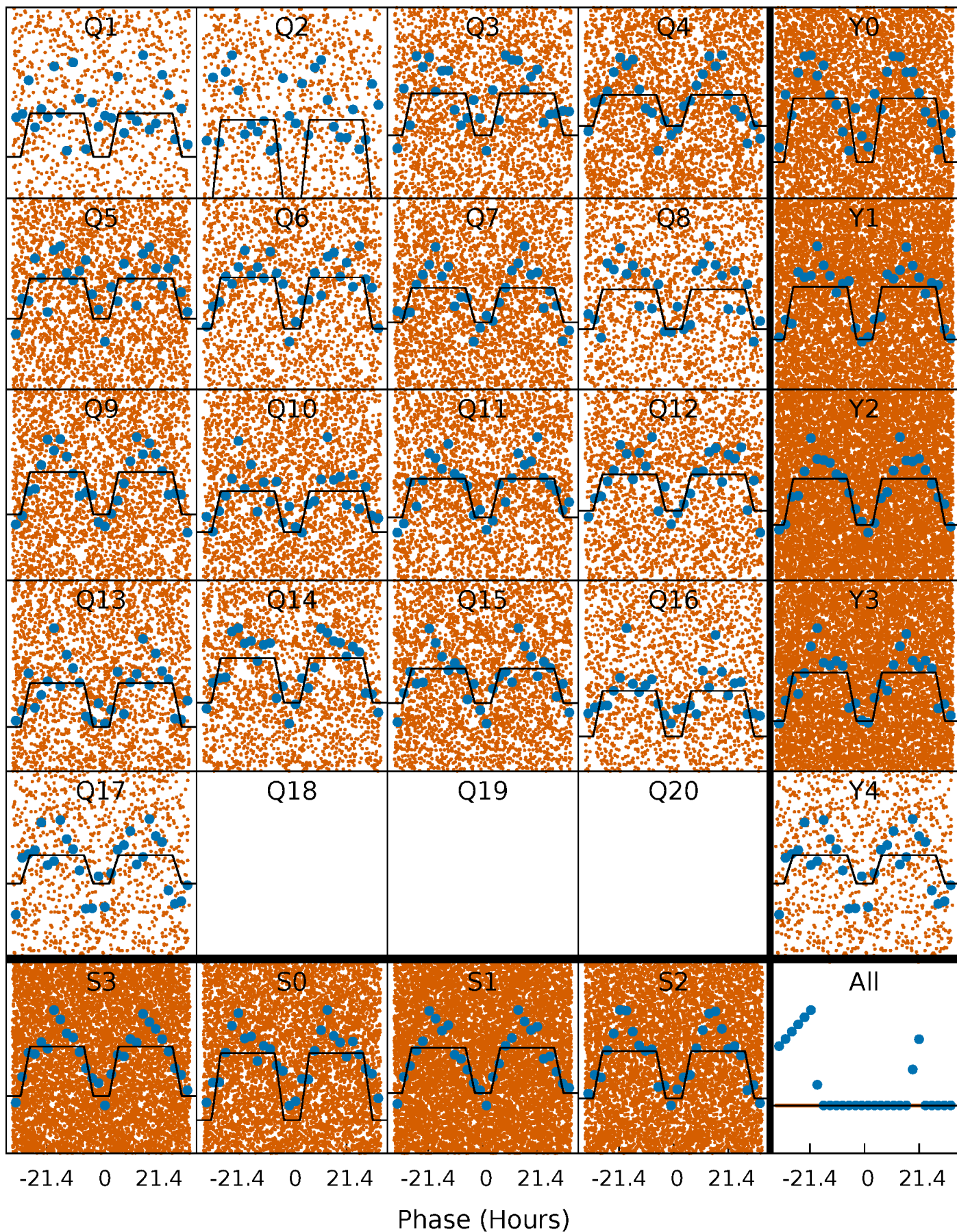
TCE 009071682-01 P= 1.447415 Days  $T_0=131.840635$  (BKJD)





# Alt. Detrend Quarter-Phased Transit Curves

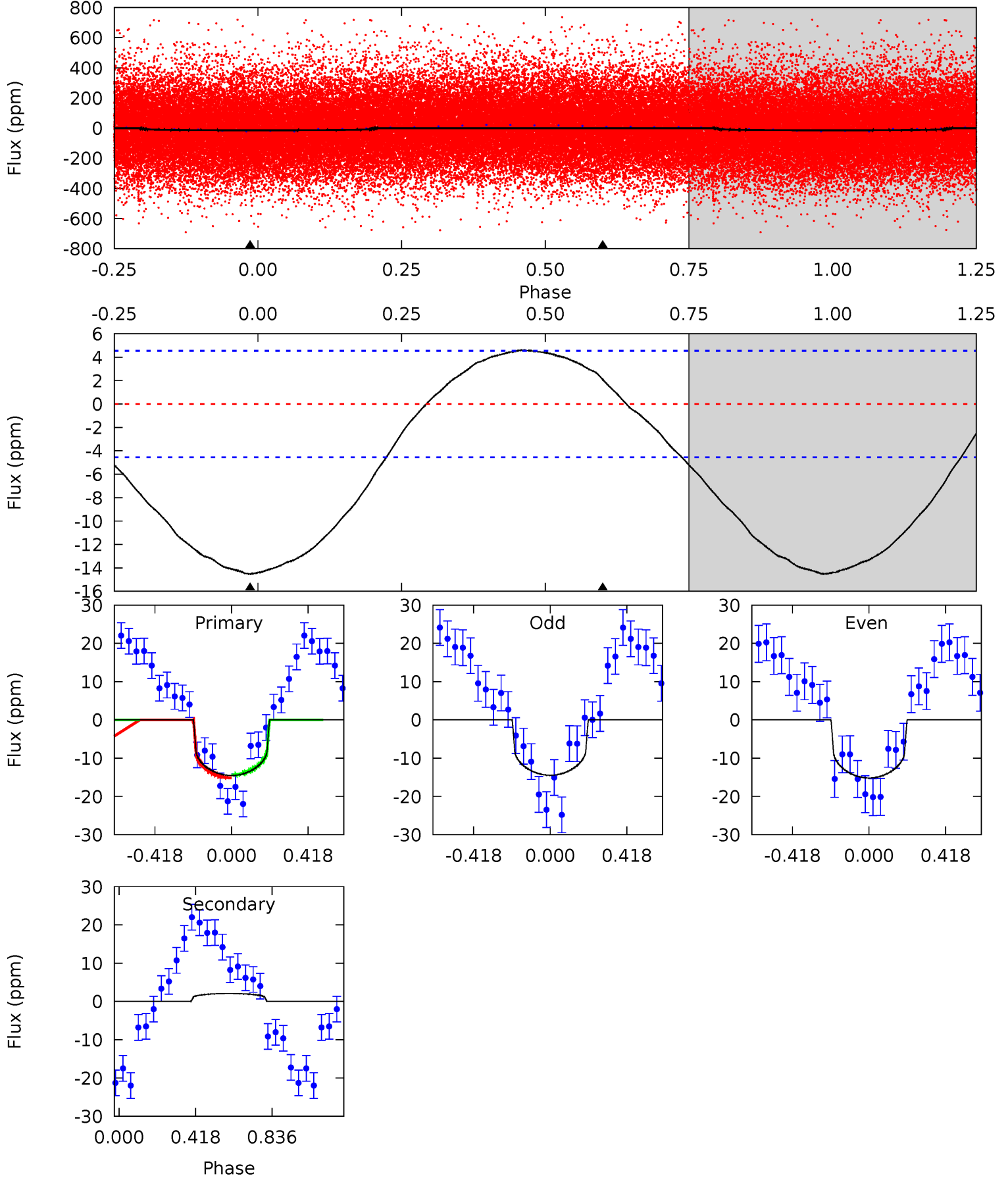
TCE 009071682-01 P= 1.447405 Days  $T_0=131.820096$  (BKJD)



# DV Model-Shift Uniqueness Test

009071682-01,  $P = 1.447415$  Days,  $E = 130.393220$  Days

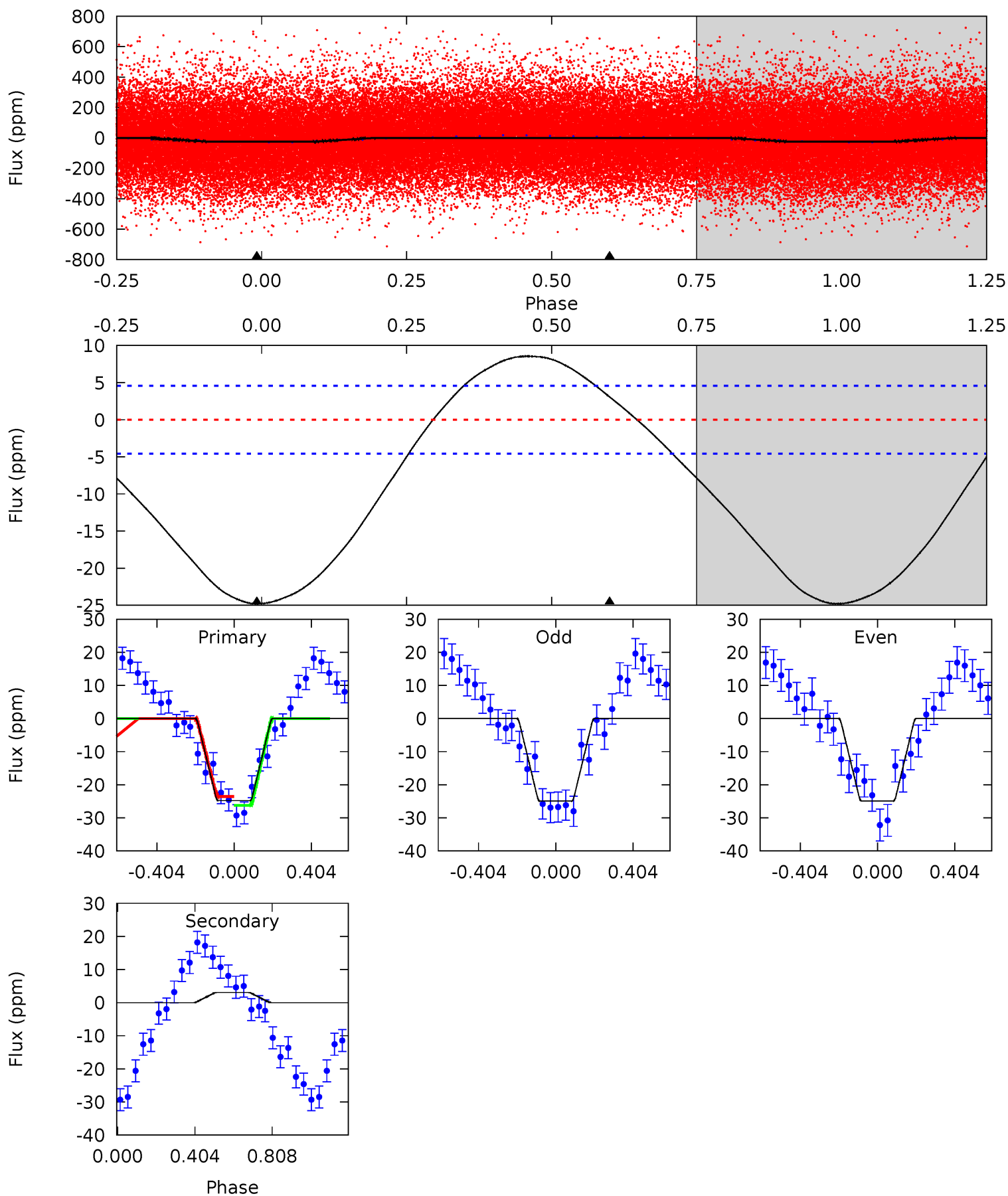
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
13.6	-1.96	0	0	4.26	0.81	1.45	13.6	13.6	-1.96	-1.96	0.33	0.95	0.24	0.35



# Alt Model-Shift Uniqueness Test

009071682-01, P = 1.447405 Days, E = 130.372691 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
23.1	-2.84	0	0	4.26	0.83	2.74	23.1	23.1	-2.84	-2.84	0.02	0.90	0.26	1.25





### Stellar Parameters For KIC 009071682

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$\rho_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$7606^{+211}_{-316}$	$3.997^{+0.216}_{-0.144}$	$-0.100^{+0.200}_{-0.350}$	$2.174^{+0.502}_{-0.669}$	$1.710^{+0.198}_{-0.322}$	$0.234^{+0.312}_{-0.103}$
	+3%/-4%	+5%/-4%	+200%/-350%	+23%/-31%	+12%/-19%	+133%/-44%
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 009071682-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	$A_{\text{obs}}$
DV	$2 \pm 1$	$0.95^{+0.74}_{-0.59}$	$3961^{+309}_{-311}$	$-4759^{+738}_{-2596}$	$-1.042^{+0.796}_{-6.717}$
Alt.	$3 \pm 1$	$1.22^{+0.80}_{-0.64}$	$3953^{+266}_{-322}$	$-4695^{+587}_{-1559}$	$-0.985^{+0.675}_{-3.314}$

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

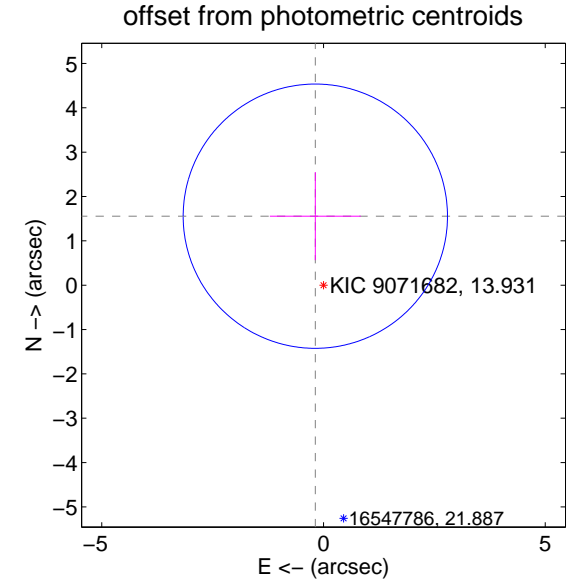
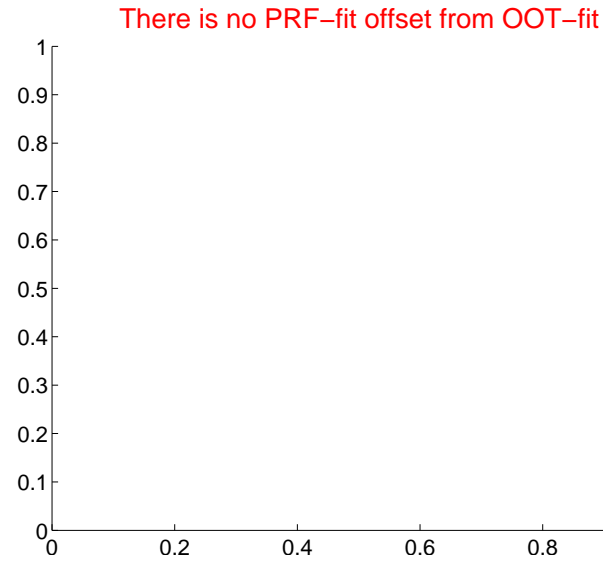
## DV Centroid Data

Supplemental centroid analysis for 009071682-01. Kepler magnitude: 13.93. Transit SNR 10.63

There are 0 quarters with good PRF difference image offsets

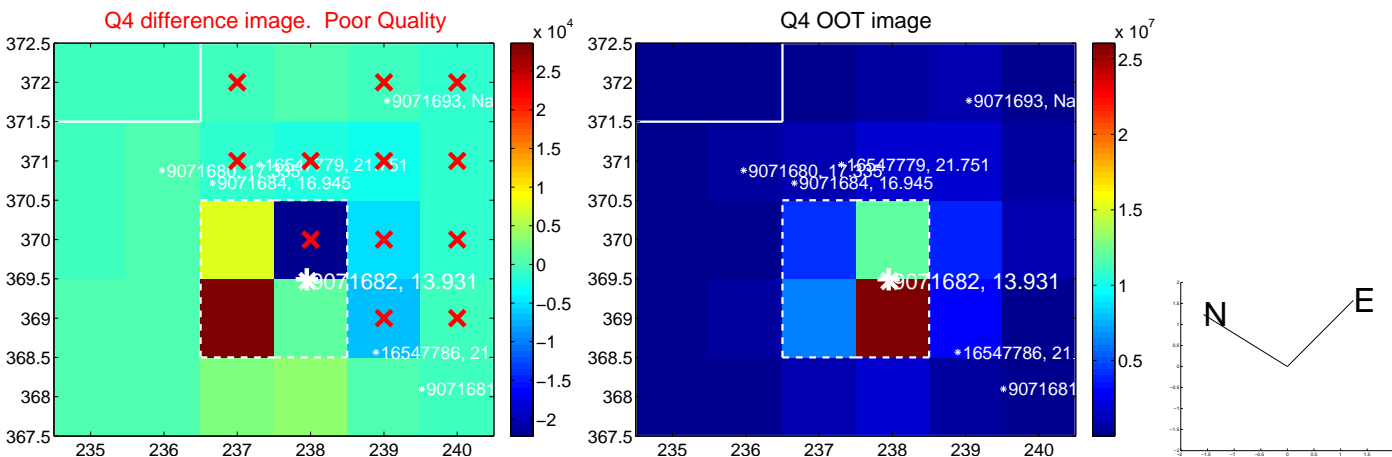
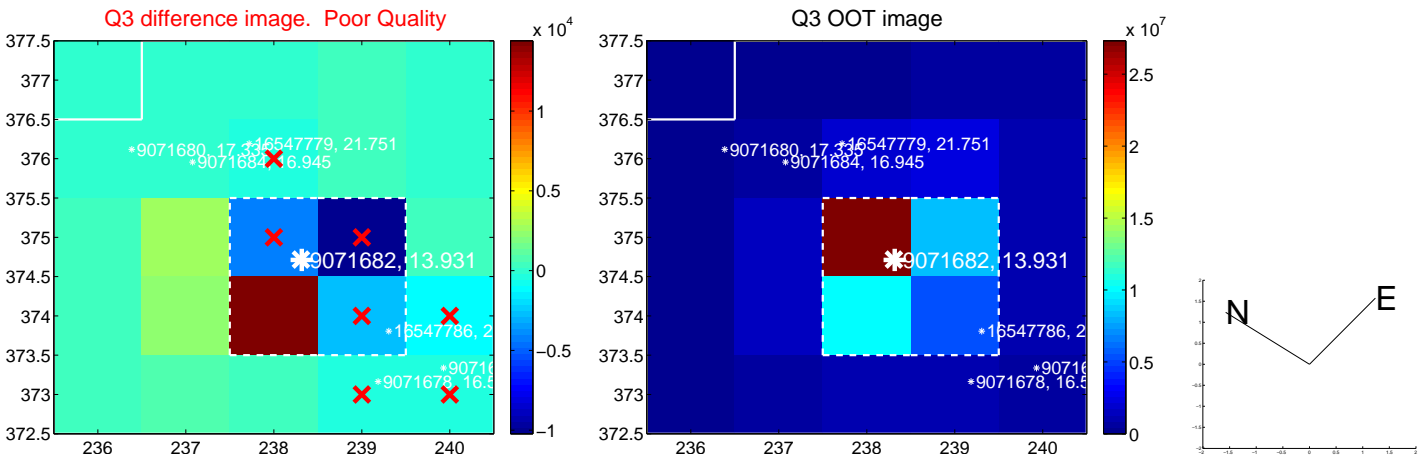
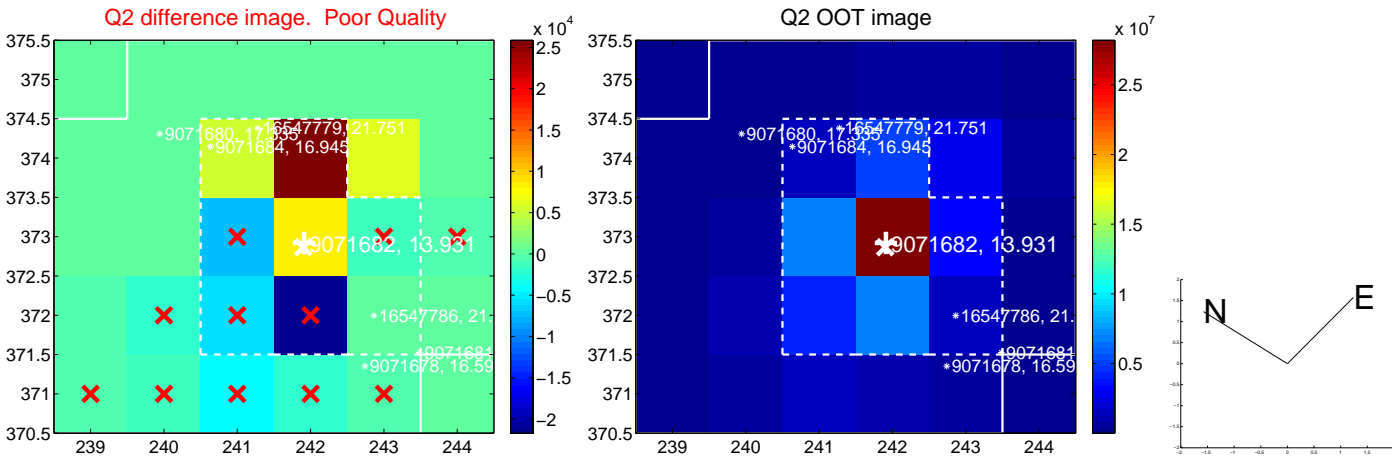
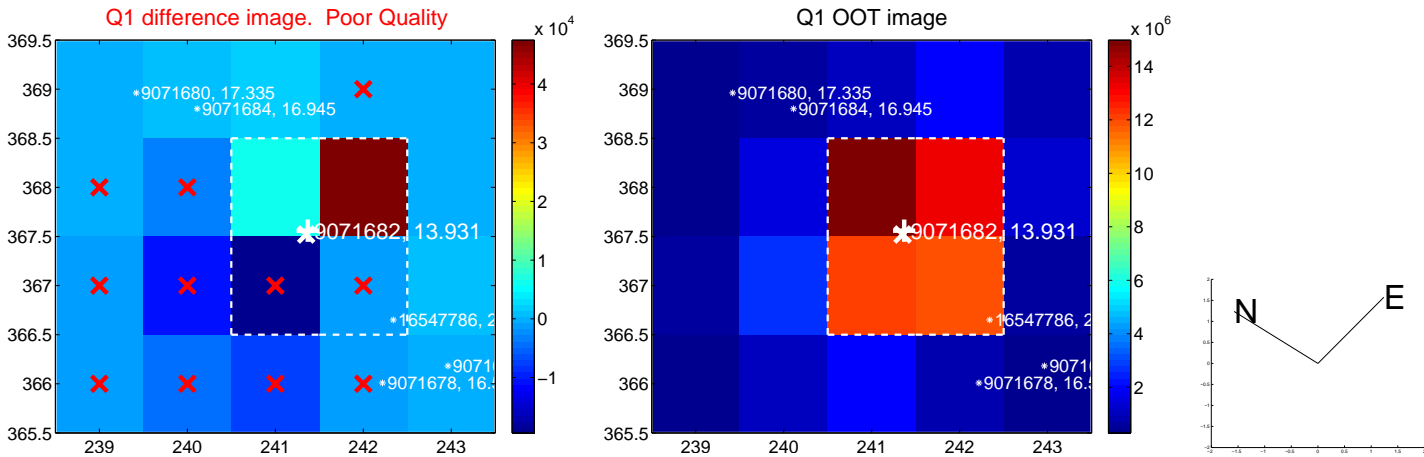
The direct PRF centroid is offset from the target star catalog position by about NaN arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	—	—	—	—
PRF-fit source offset from KIC position	—	—	—	—
photometric centroid source offset	$1.57 \pm 0.99$	1.58	$0.18 \pm 1.03$	$1.56 \pm 0.99$

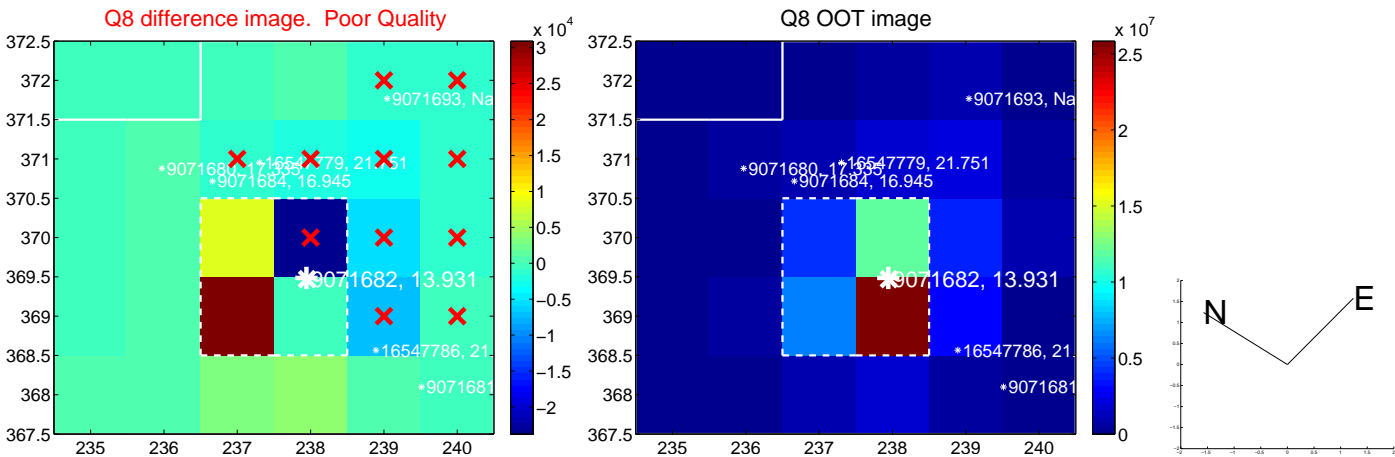
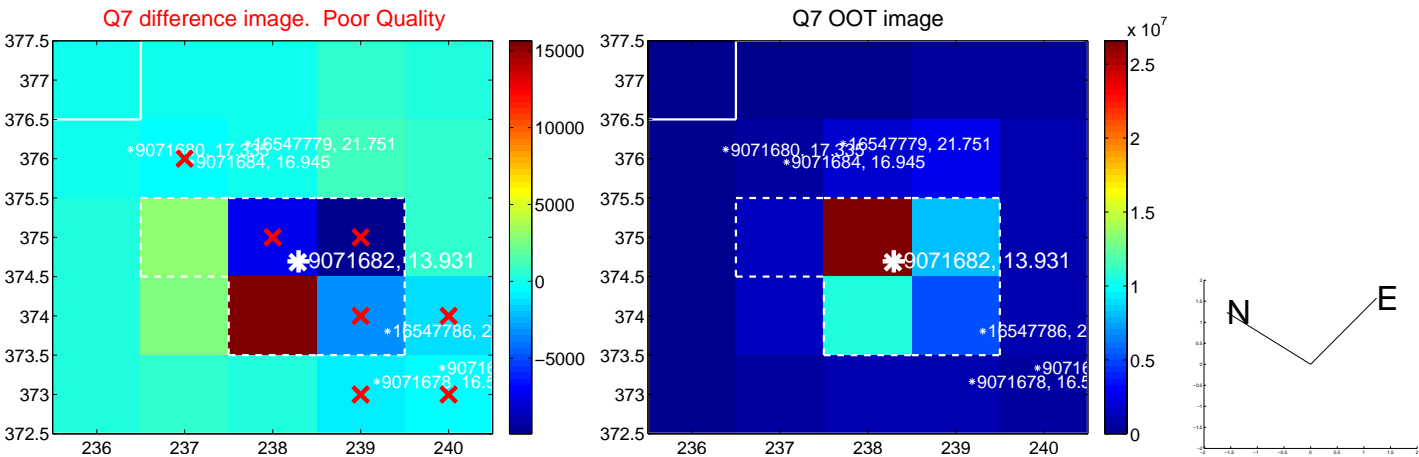
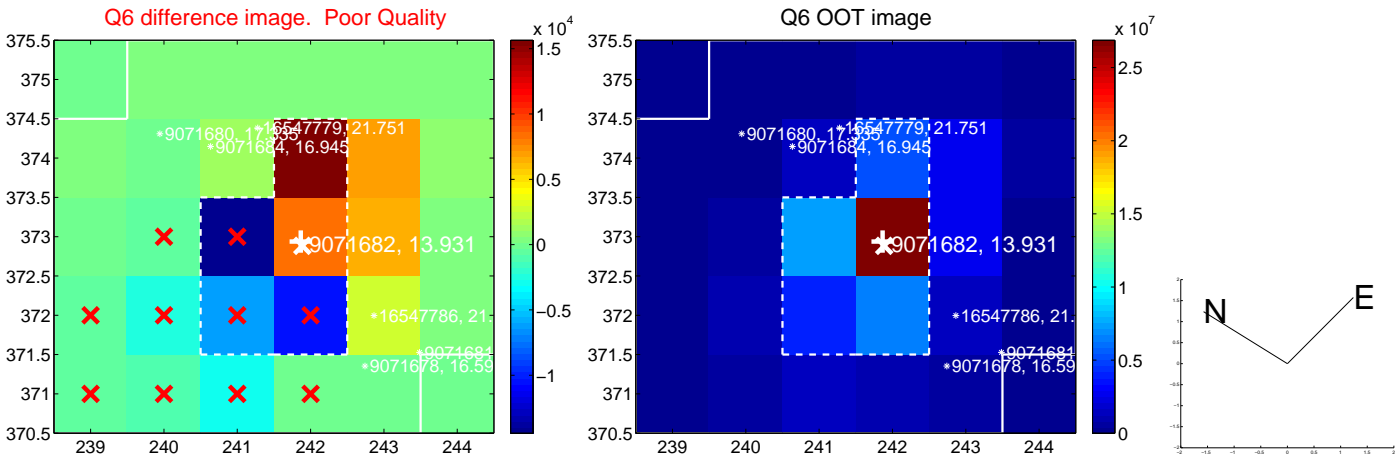
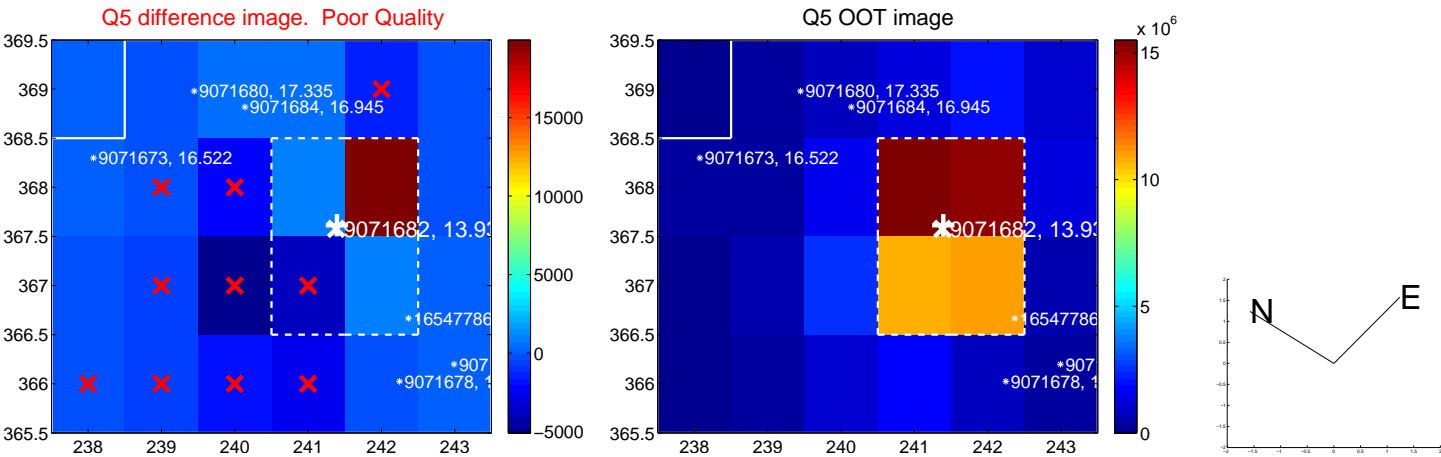


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: three-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

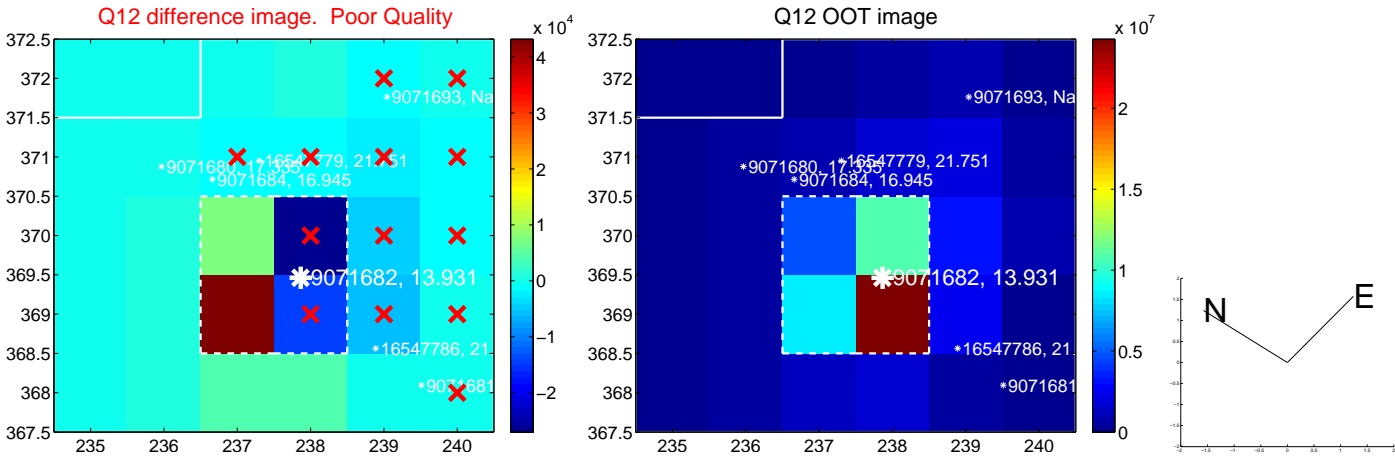
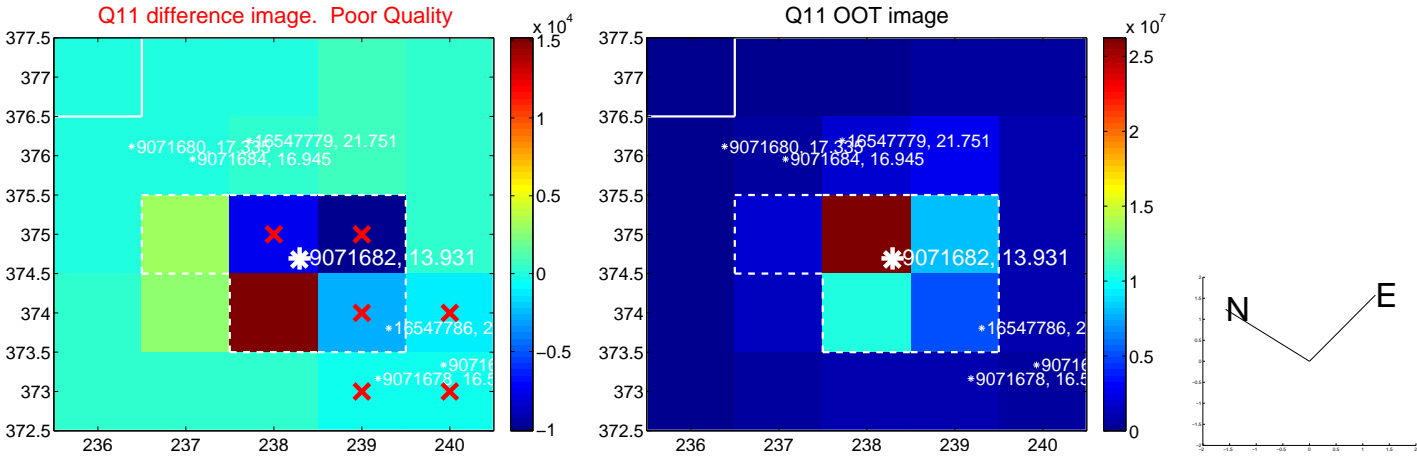
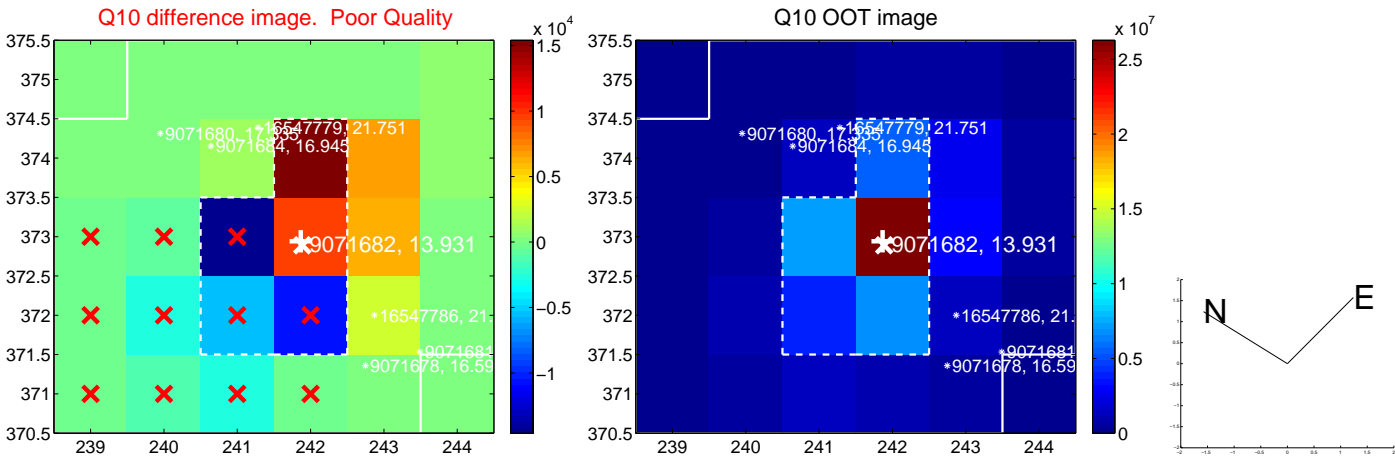
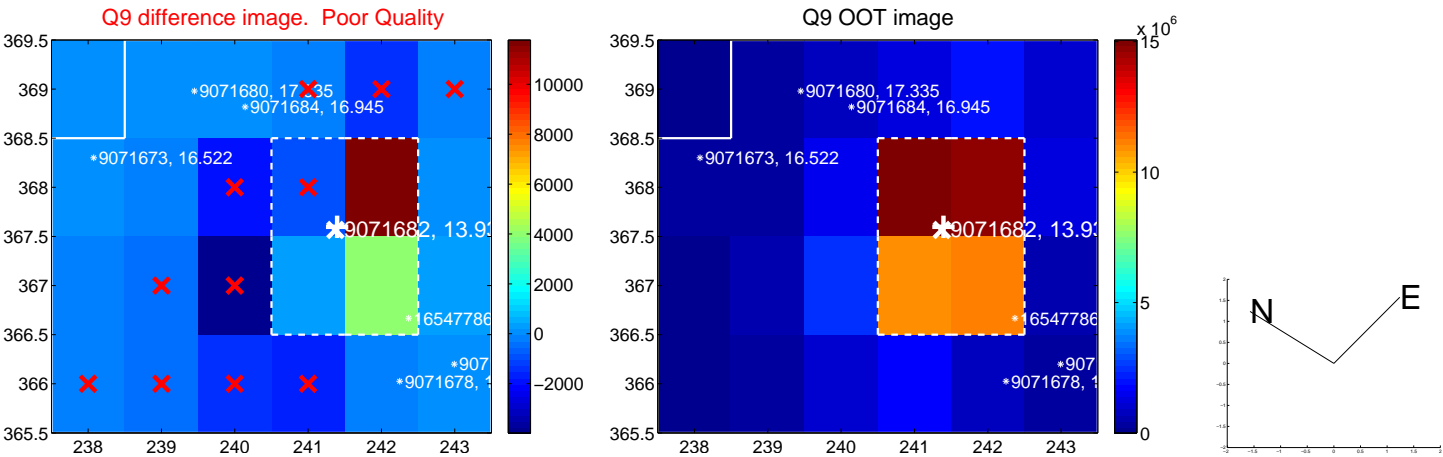


white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

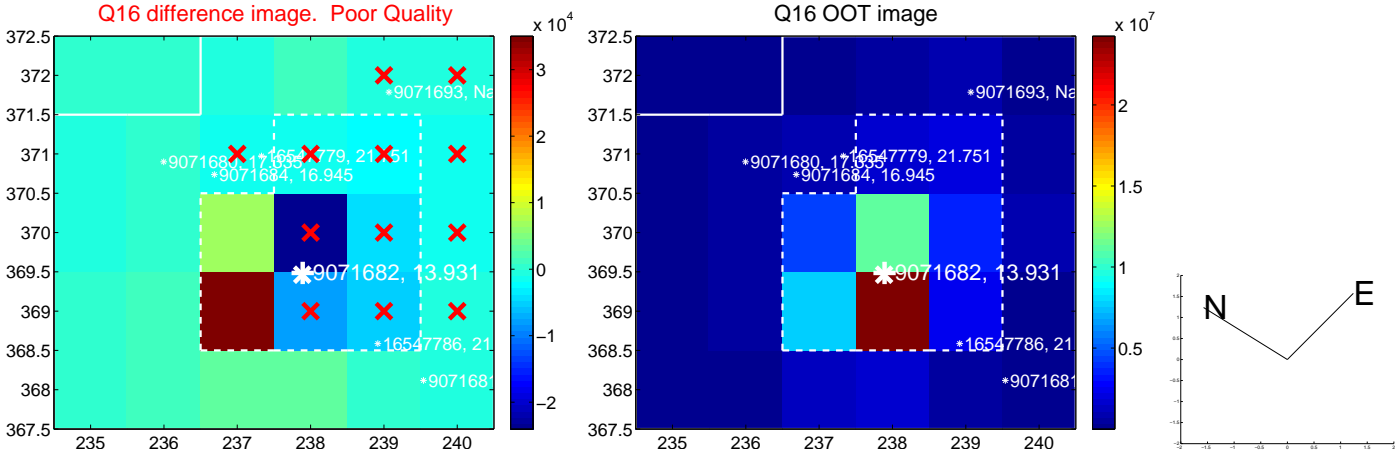
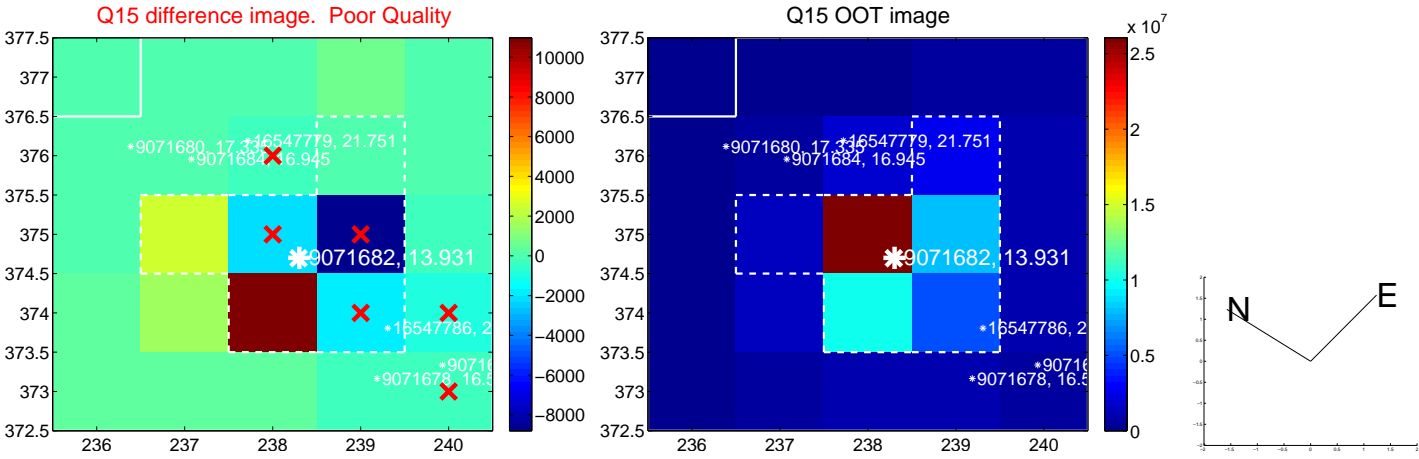
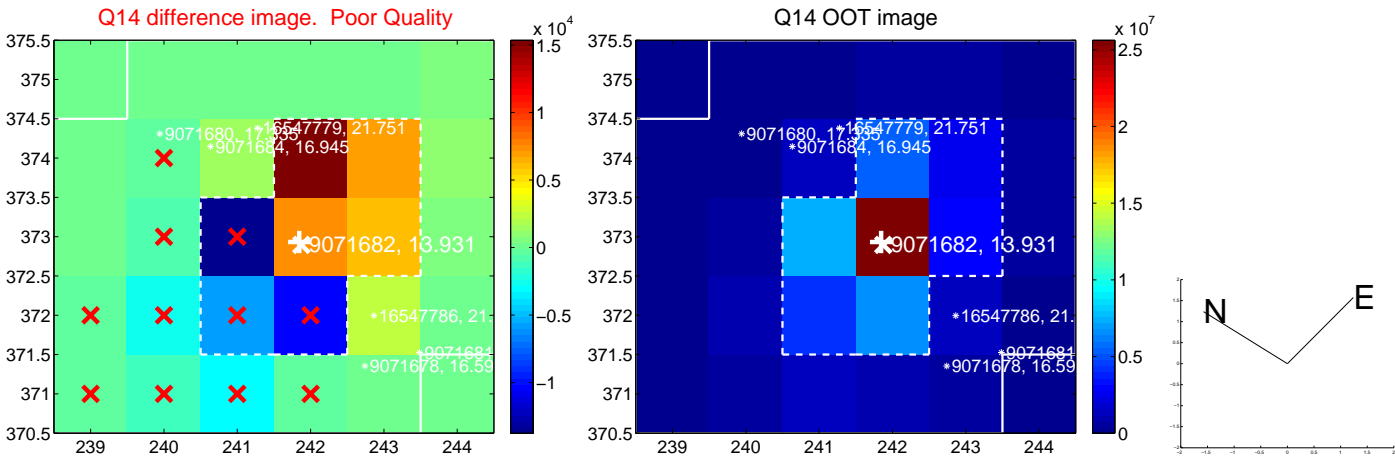
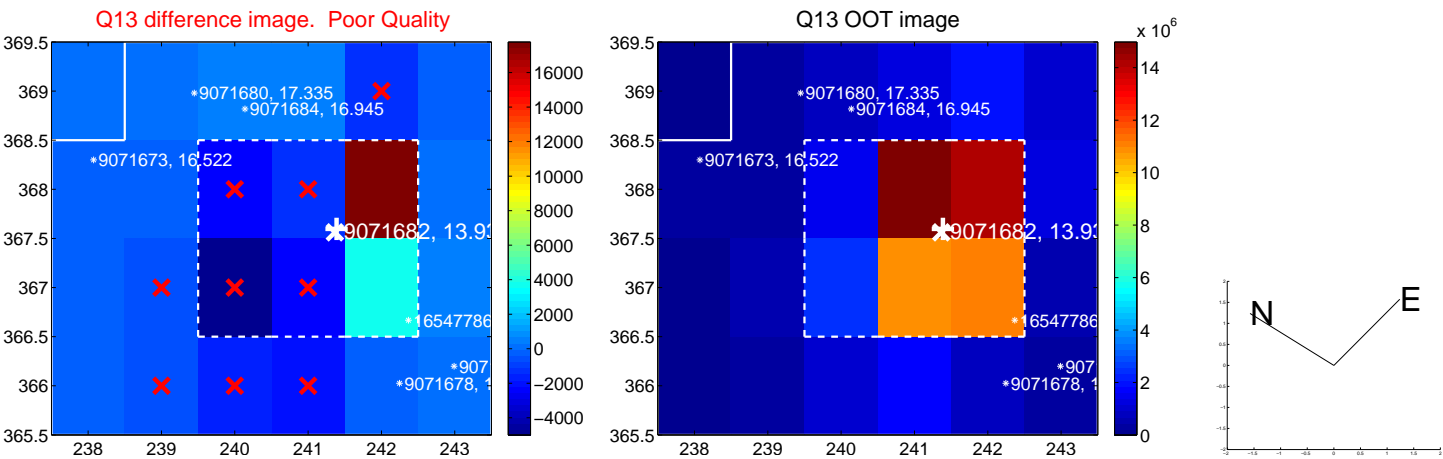




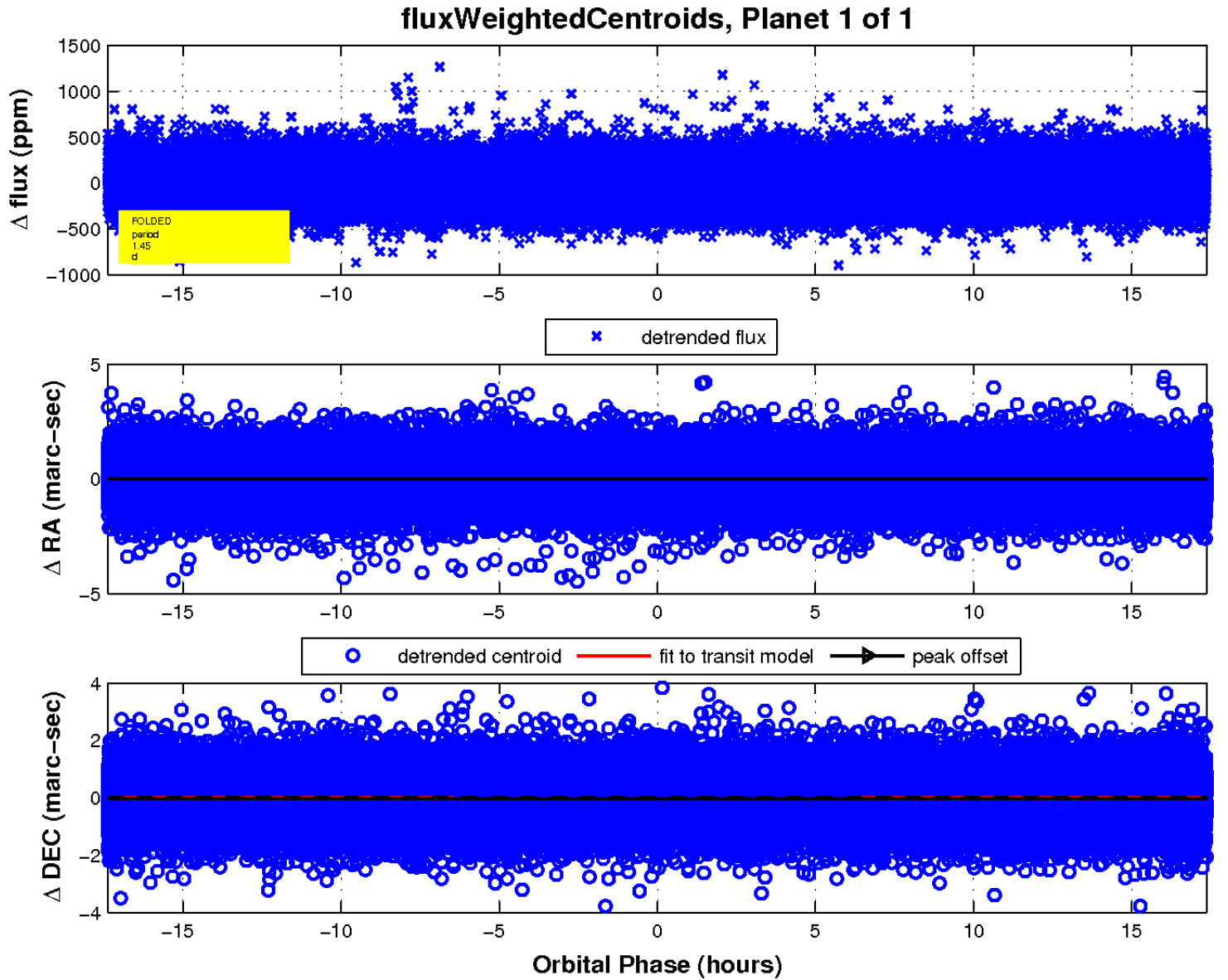
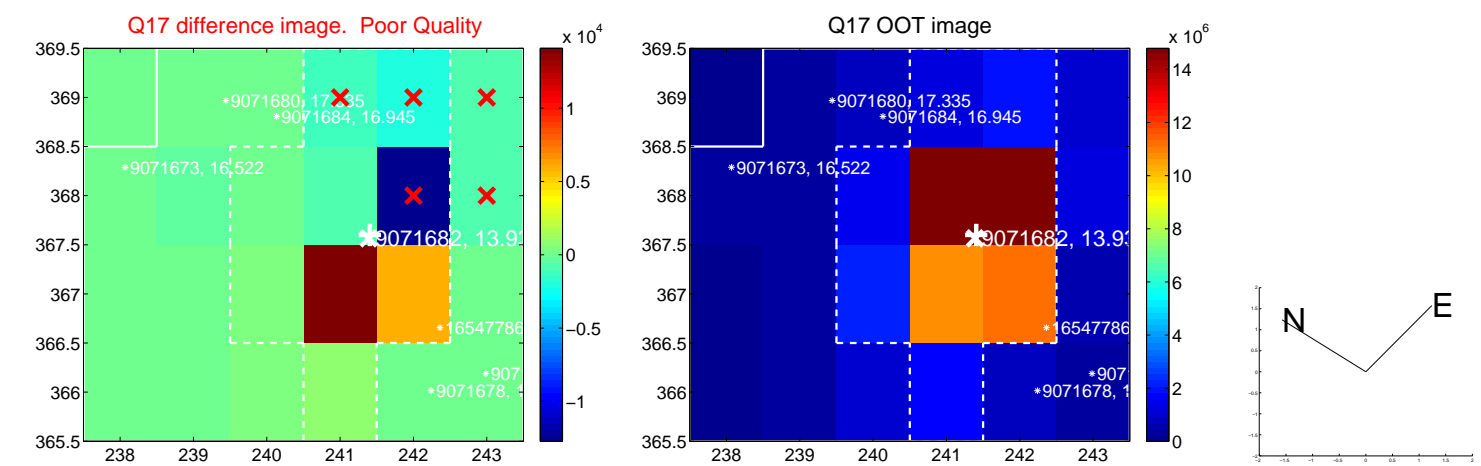
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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.



UKIRT Image

Declination

