

# KIC 010471090

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
010471090-01	OBS	8291.01	0.933757	132.424959	24.1	2.845	8.4	7.9	1.08	6292	0.62	4300.15

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
010471090-01	OBS	FP	0.00	0	0	1	1	HALO_GHOST—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.

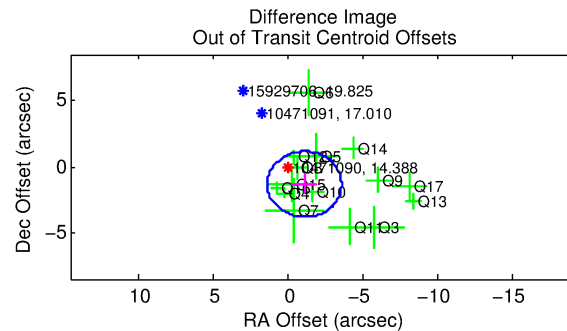
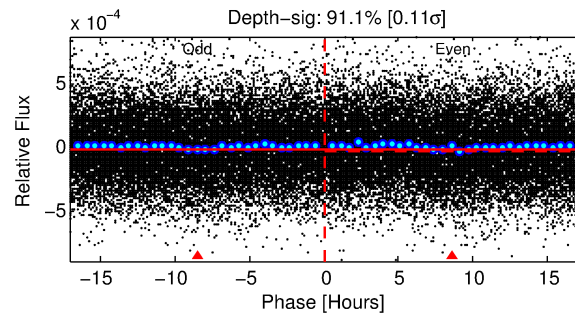
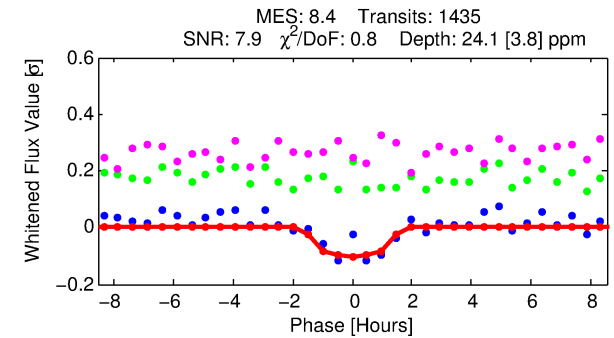
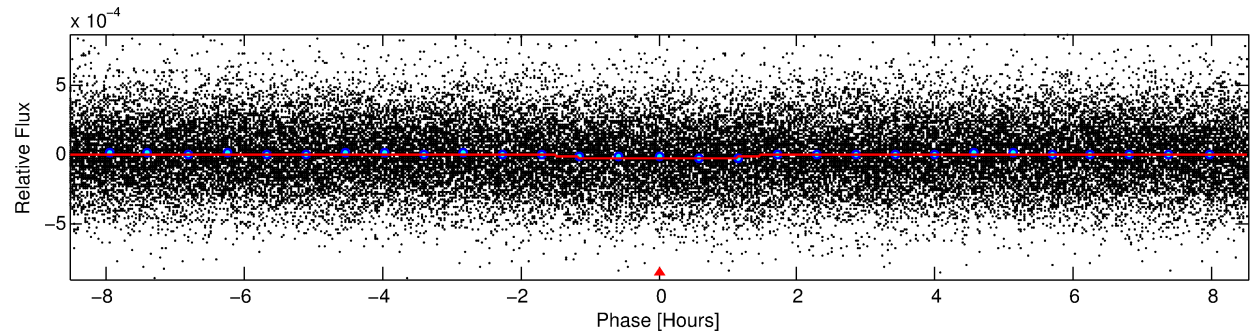
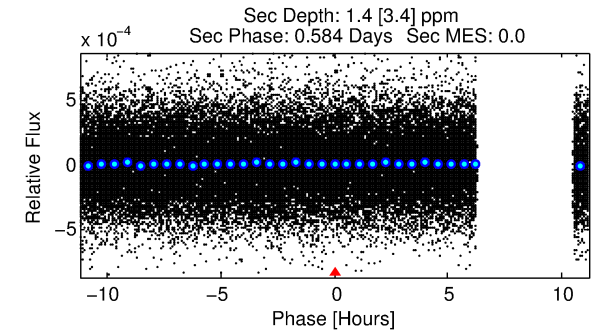
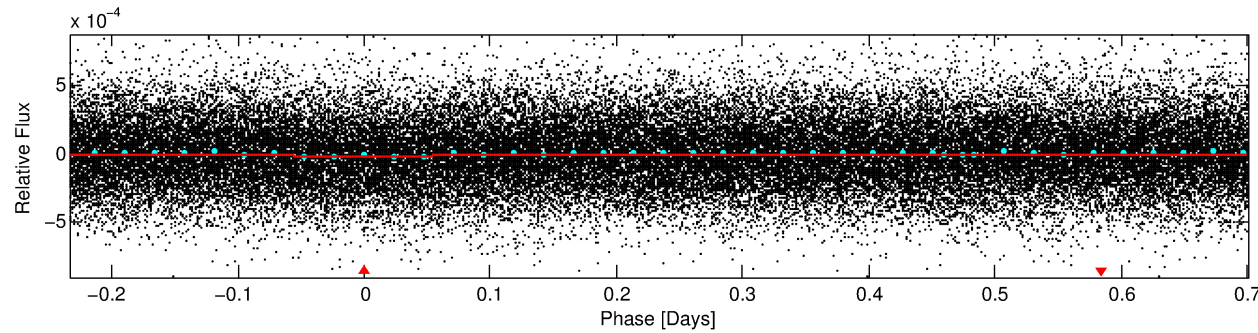
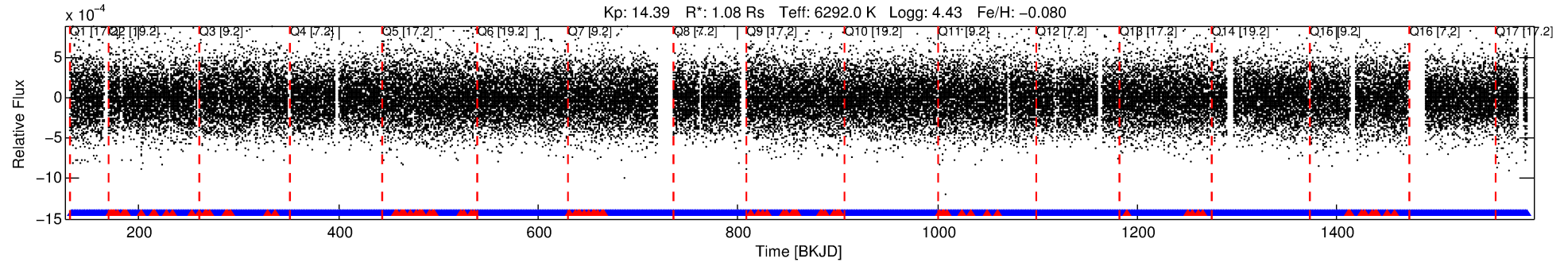
## Ephemeris Match Information For 010471090-01

TCE (1)	KIC	Parent (2)	Parent KIC	$P_1:P_2$	Dist ( $''$ )	$\Delta$ Row	$\Delta$ Col	$m_2$	$m_1$	$D_2/D_1$	Mechanism	Flag	$\sigma_P$	$\sigma_T$
010471090-01	10471090	V2083-Cyg-pri	10342012	1:2	1744.6	360	-252	6.90	14.39	8263.40	Direct-PRF	0	1.59	2.11

**Notes:**  $P_1:P_2$  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.  $m_2$  and  $m_1$  are the magnitudes of the parent and child.  $D_2/D_1$  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: 10471090 Candidate: 1 of 1 Period: 0.934 d



## DV Fit Results:

Period = 0.93376 [0.00001] d  
Epoch = 132.4250 [0.0046] BKJD  
Rp/R\* = 0.0053 [0.0028]  
a/R\* = 1.47 [2.27]  
b = 0.90 [0.63]  
Seff = 4300.15 [1796.73]  
Teq = 2065 [216] K  
Rp = 0.62 [0.38] Re  
a = 0.0195 [0.0053] AU  
Ag = 0.75 [2.03] [-0.12σ]  
Teffp = 2976 [1980] K [0.46σ]

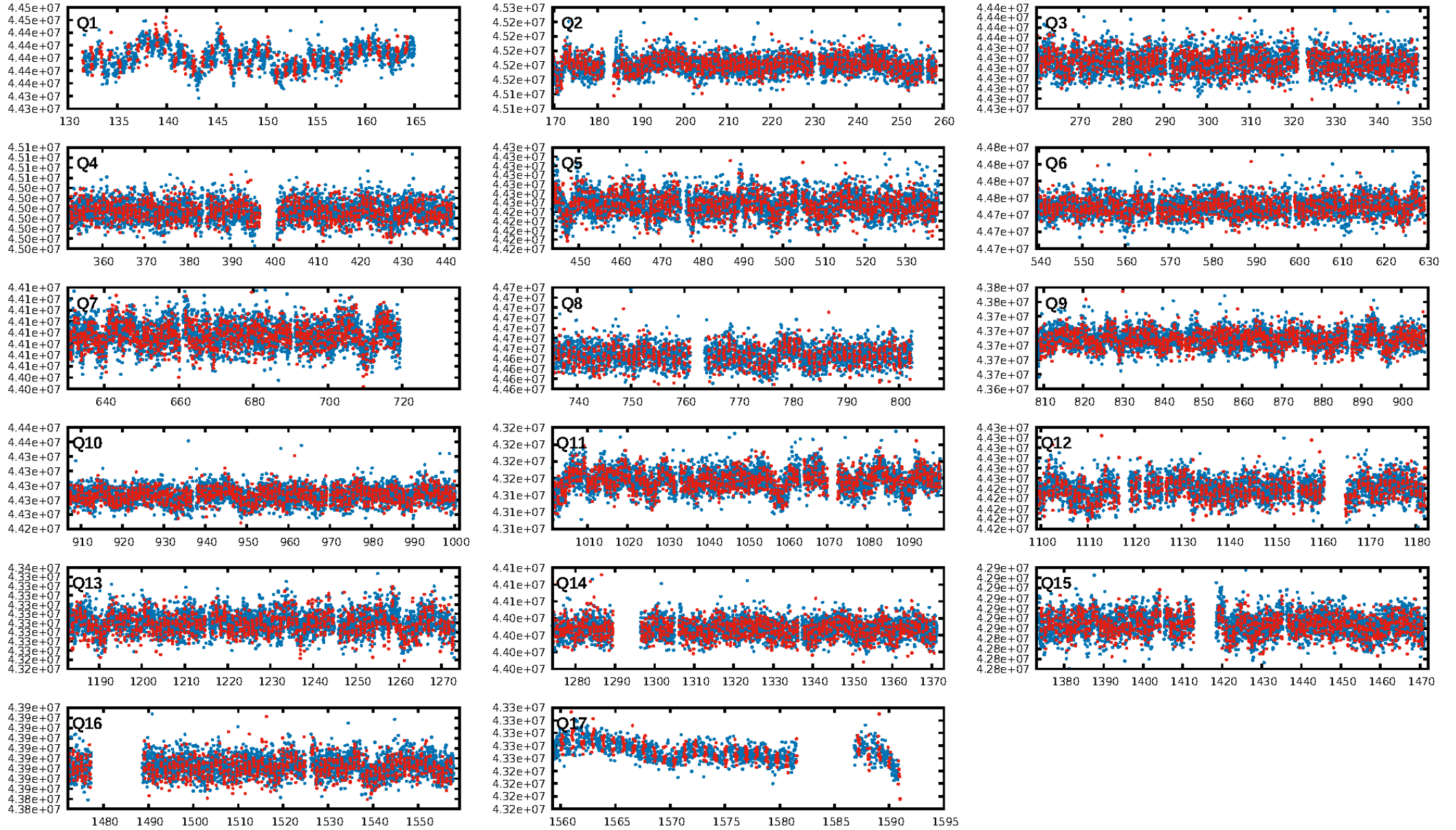
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: N/A  
ModelChiSquareGof-sig: N/A  
Bootstrap-pfa: 4.51e-17  
RollingBand-fgt: 0.93 [1272/1369]  
GhostDiagnostic-chr: -0.124  
Centroid-sig: 0.0%  
Centroid-so: 7.792 arcsec [4.10σ]  
OotOffset-rm: 1.755 arcsec [2.12σ]  
OotOffset-st: 3/4/4/4 [15]  
KicOffset-rm: 1.867 arcsec [2.52σ]  
KicOffset-st: 3/4/4/4 [15]  
DiffImageQuality-fgm: 0.07 [1/15]  
DiffImageOverlap-fno: 1.00 [17/17]

Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 01:11:38 Z

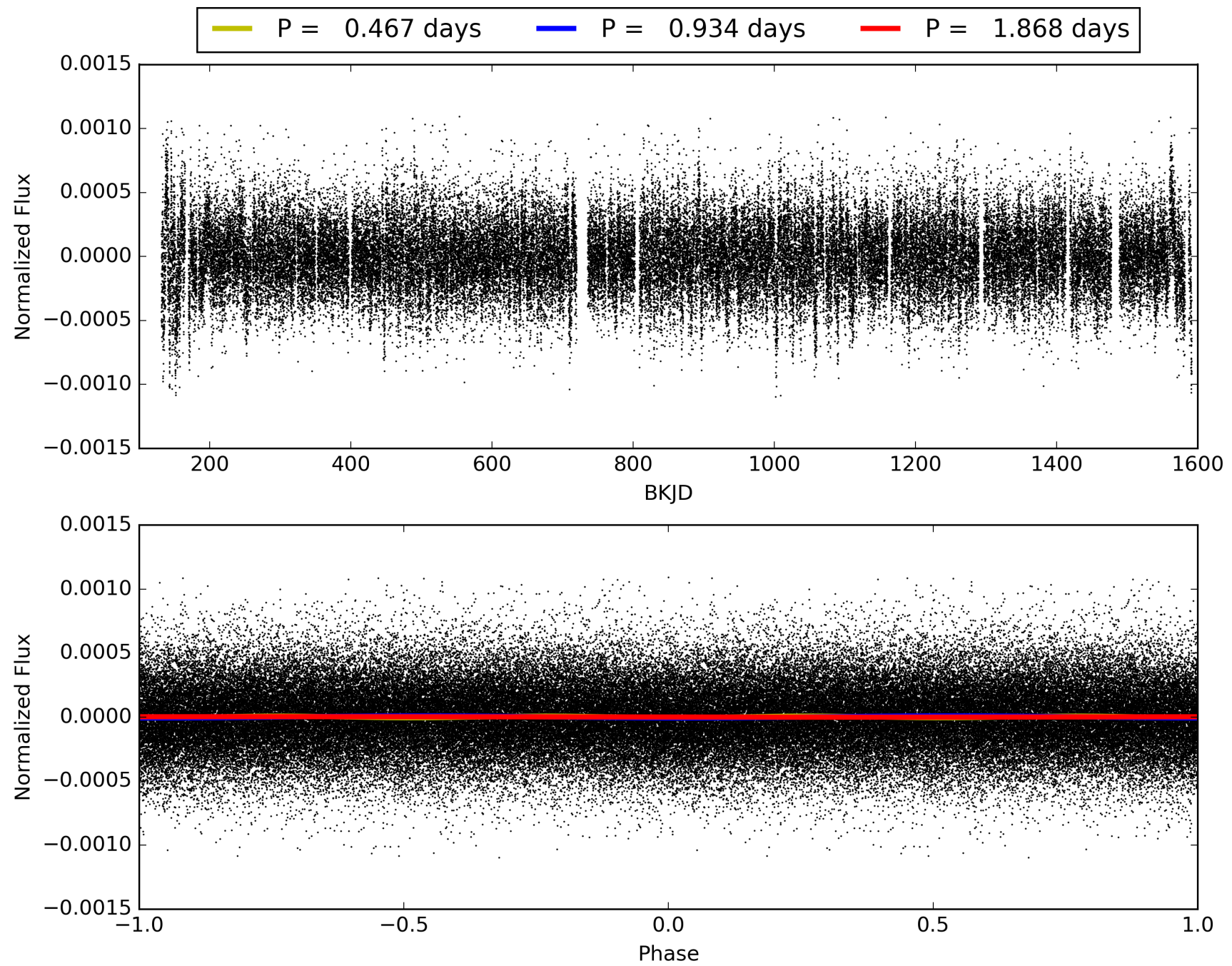
This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

# TCE 010471090-01, PDC Light Curves



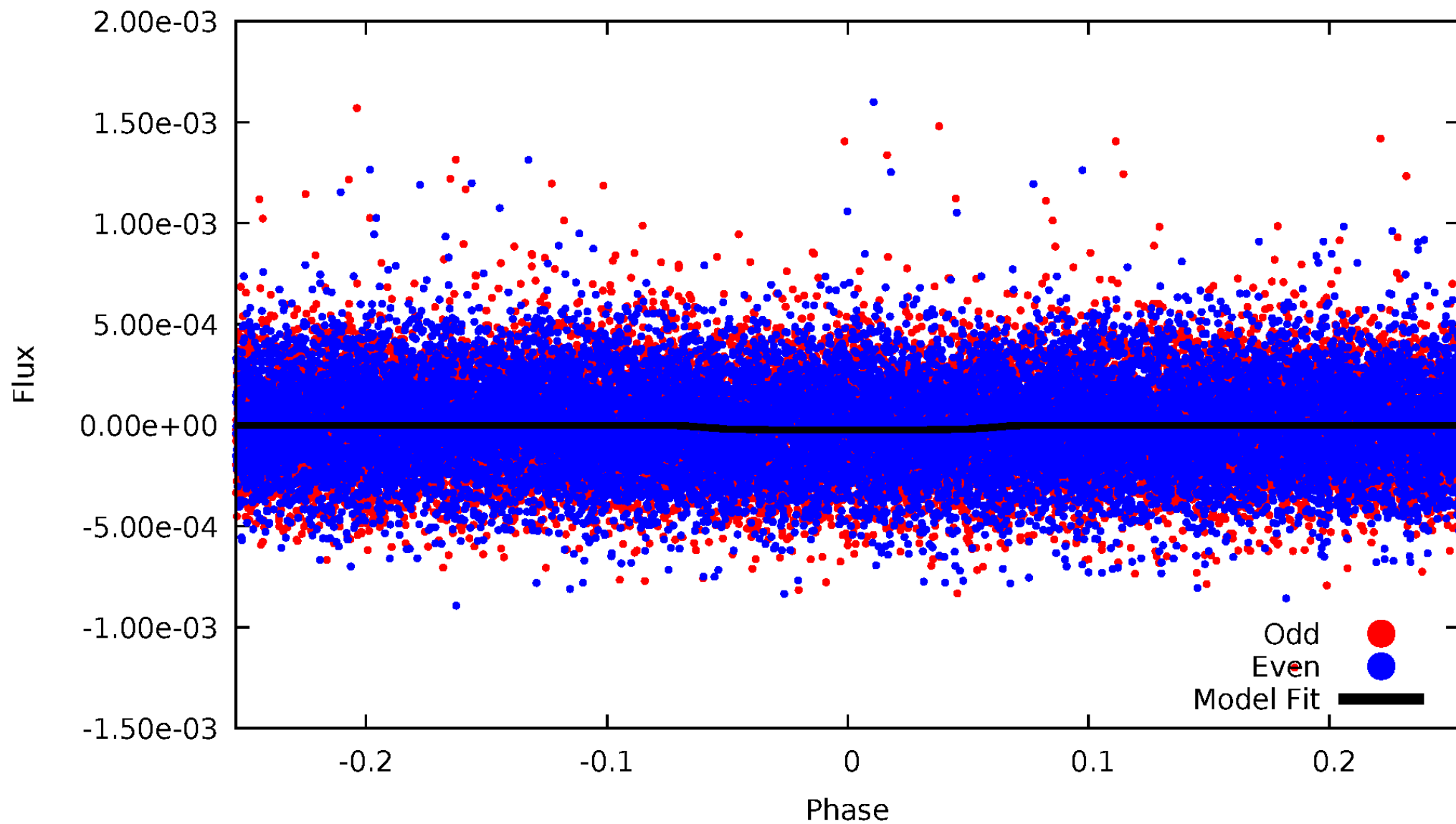


TCE 010471090-01



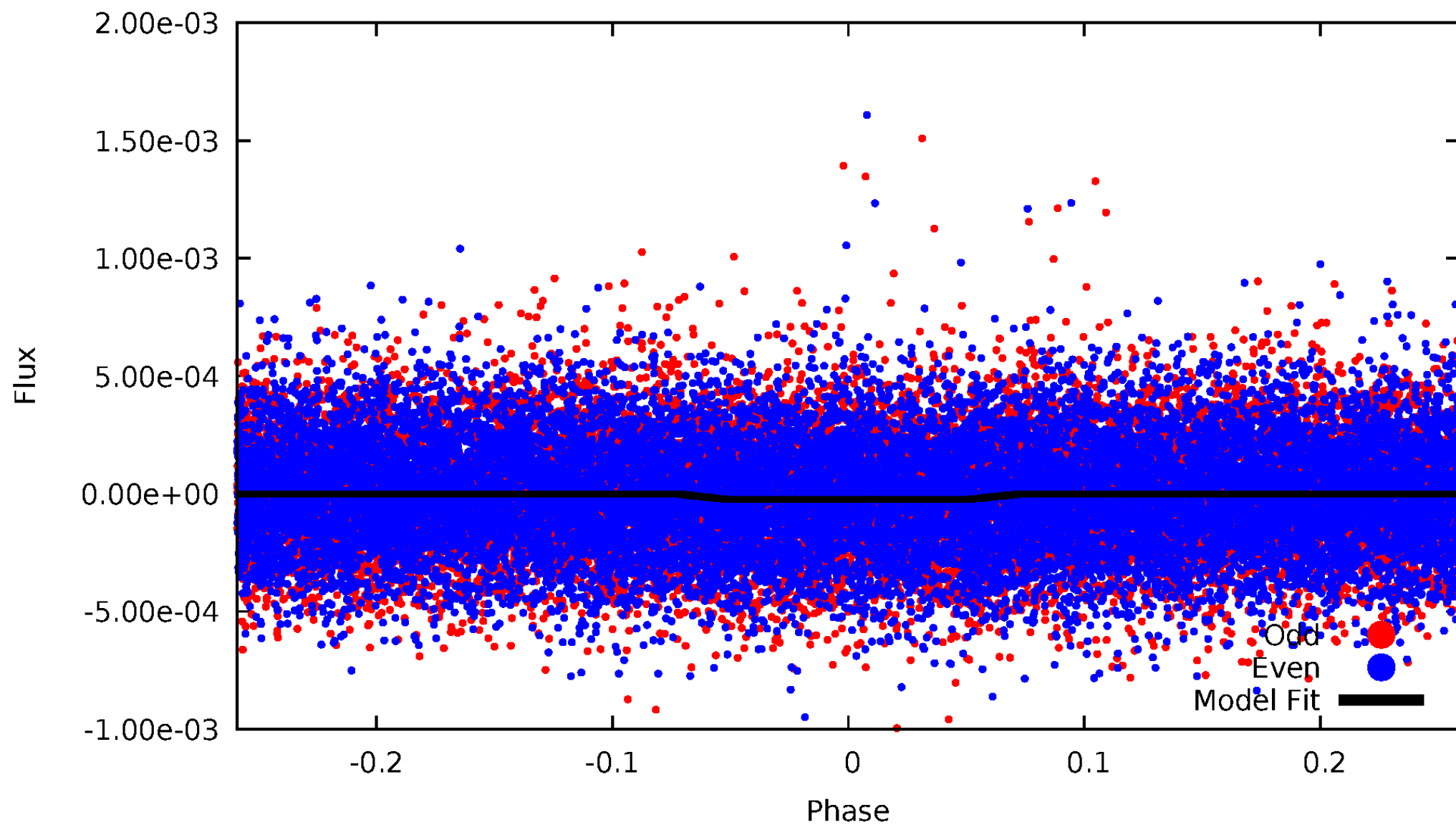
# DV Odd/Even

TCE 010471090-01

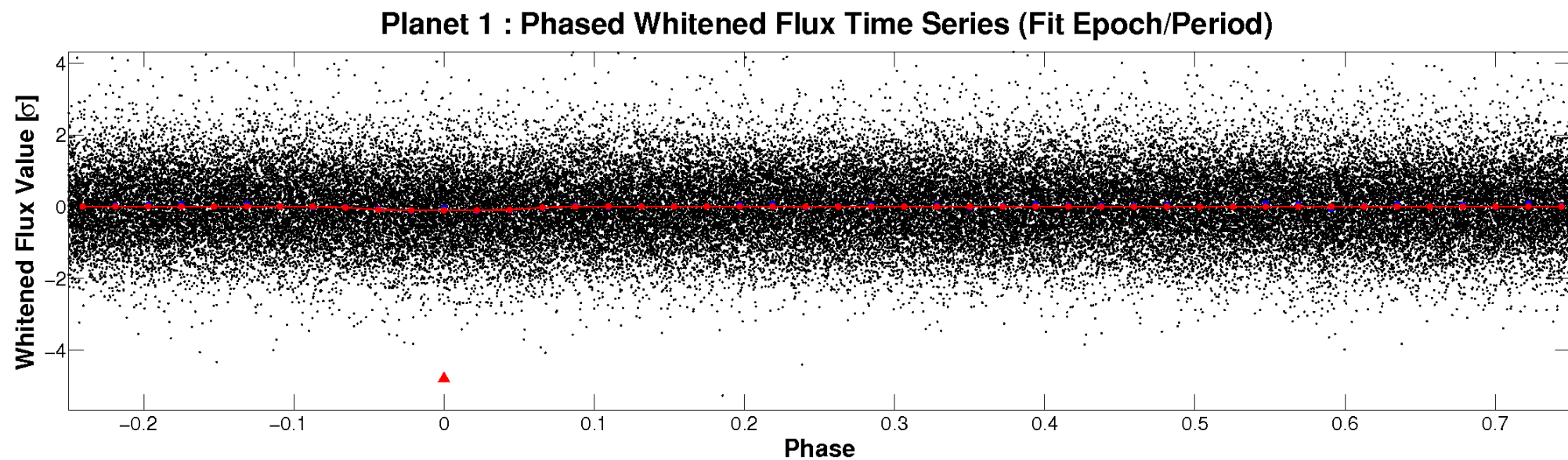
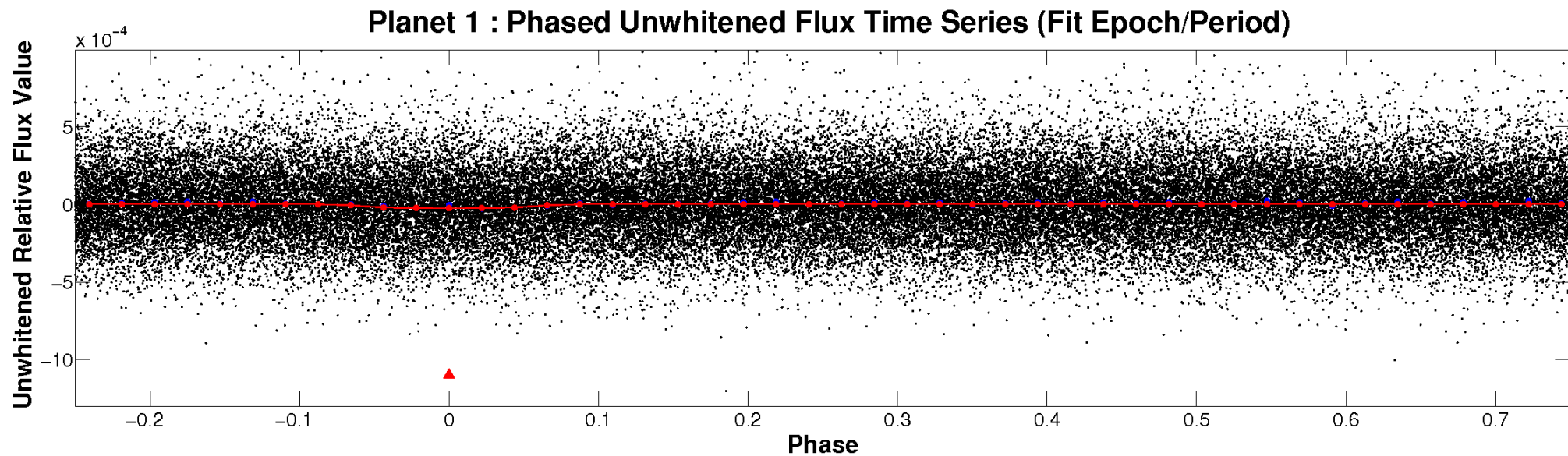


# ALT Odd/Even

TCE 010471090-01



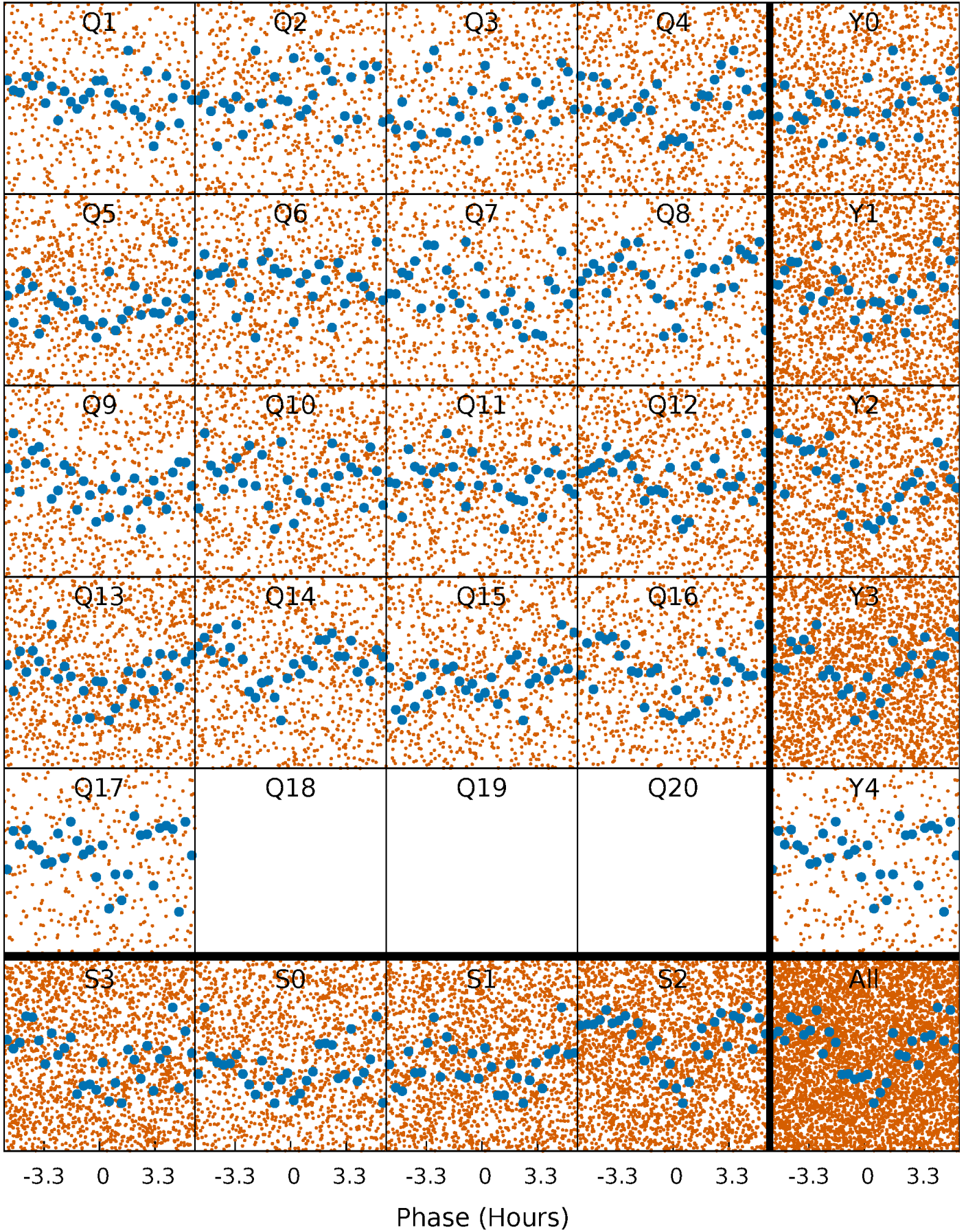
# Non-Whitened Vs. Whitened Light Curve





# PDC Quarter-Phased Transit Curves

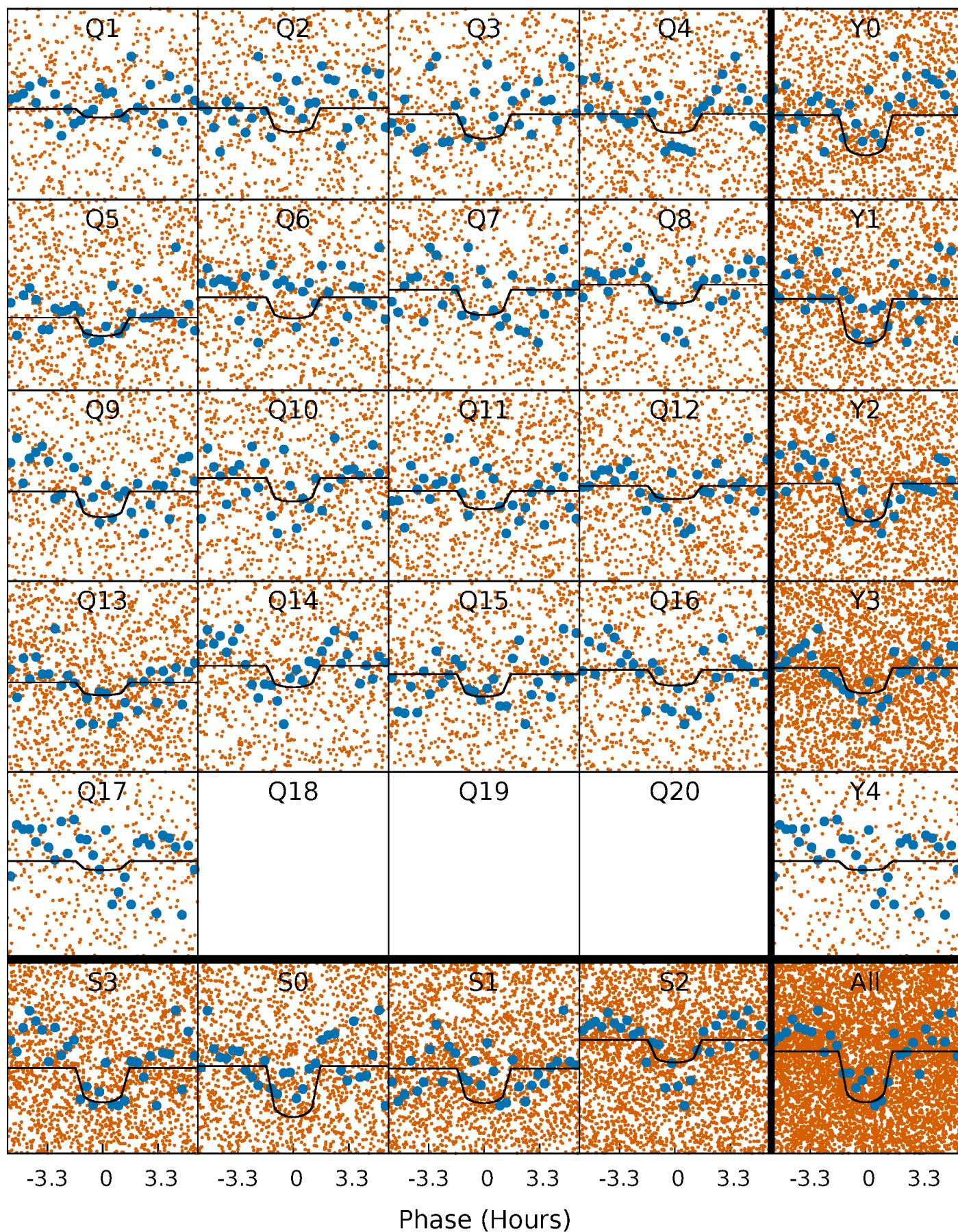
TCE 010471090-01   P= 0.933757 Days    $T_0=132.424959$  (BKJD)





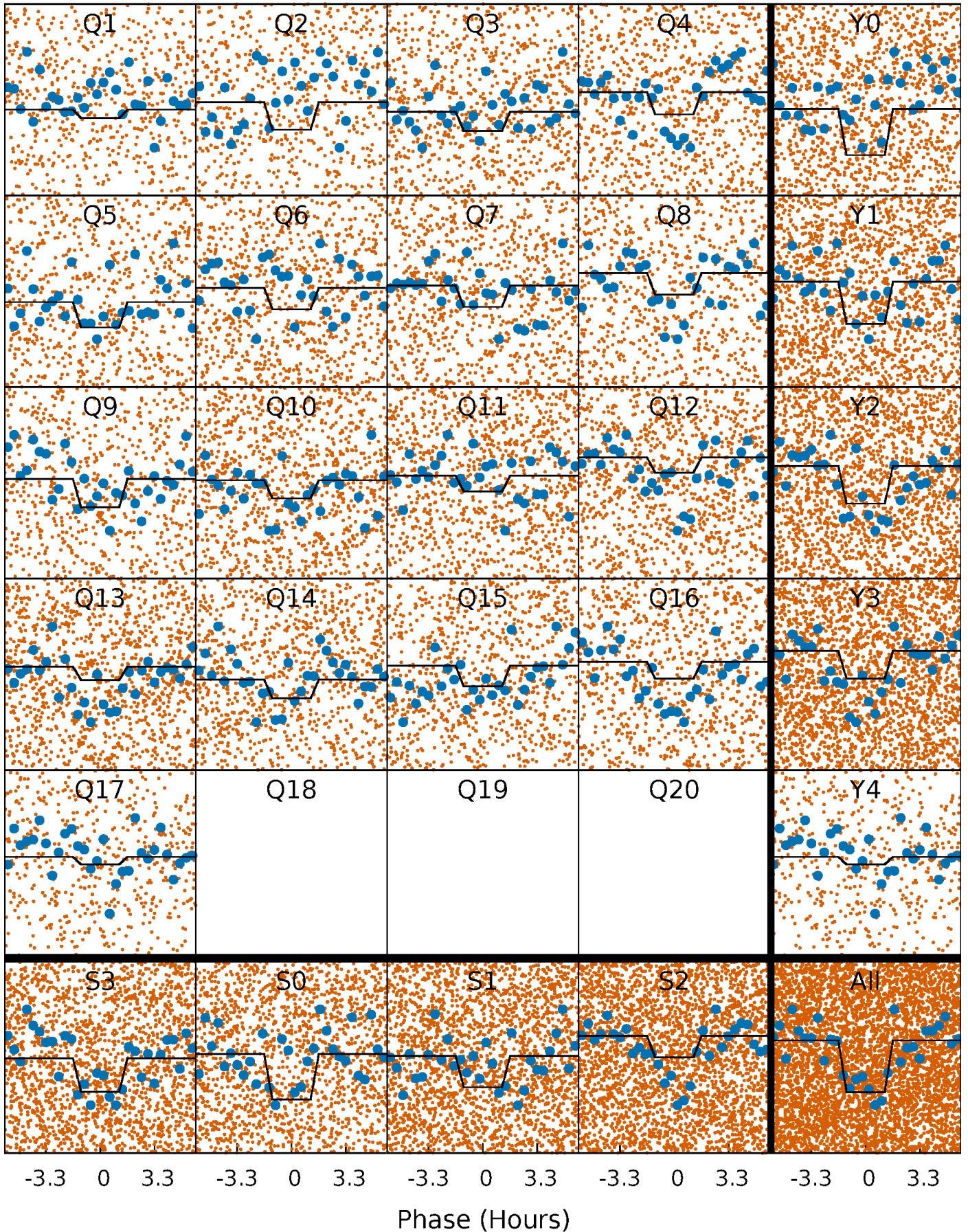
# DV Quarter-Phased Transit Curves

TCE 010471090-01 P= 0.933757 Days  $T_0=132.424959$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

TCE 010471090-01 P= 0.933764 Days  $T_0=132.422492$  (BKJD)

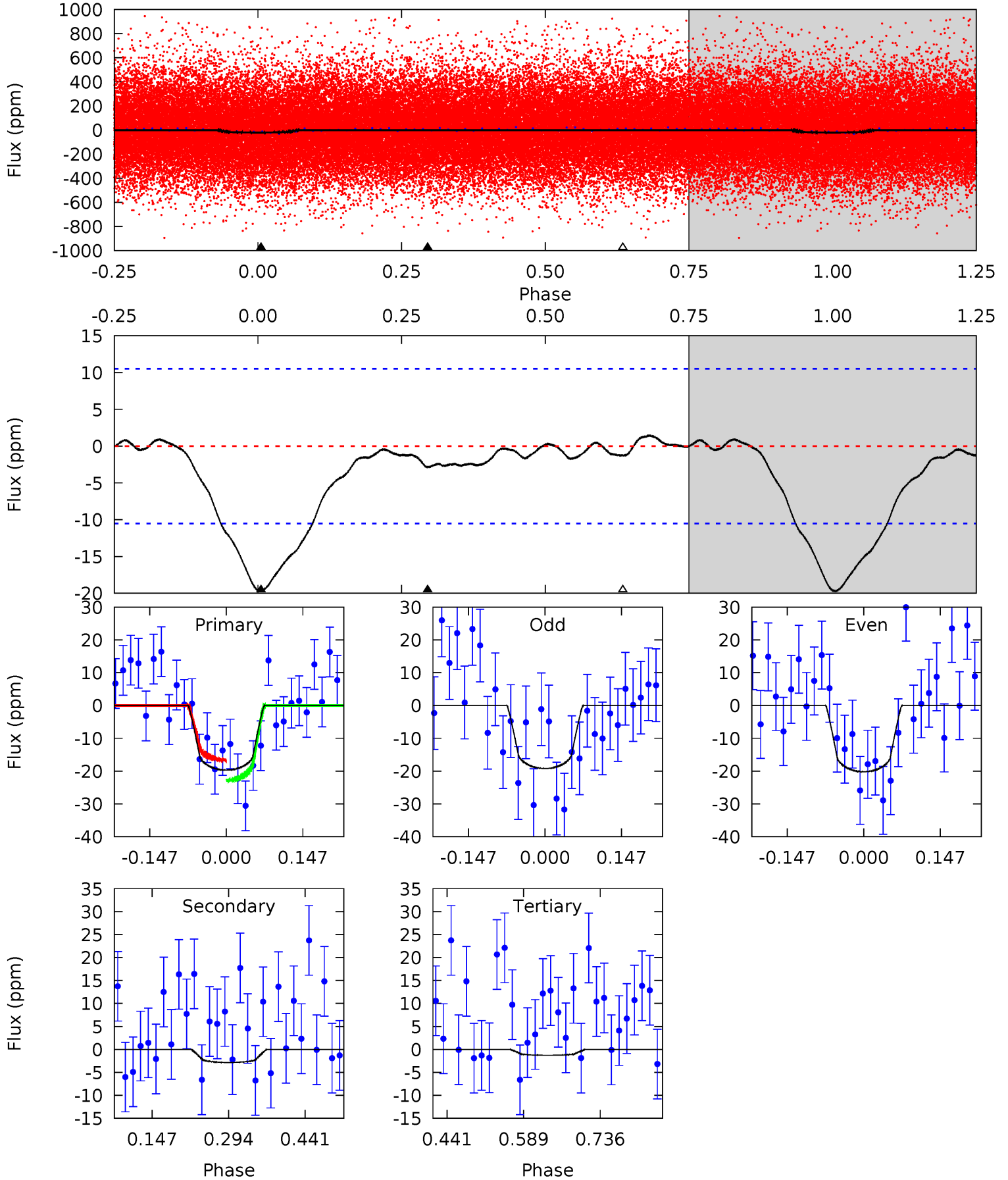




# DV Model-Shift Uniqueness Test

010471090-01, P = 0.933757 Days, E = 131.491202 Days

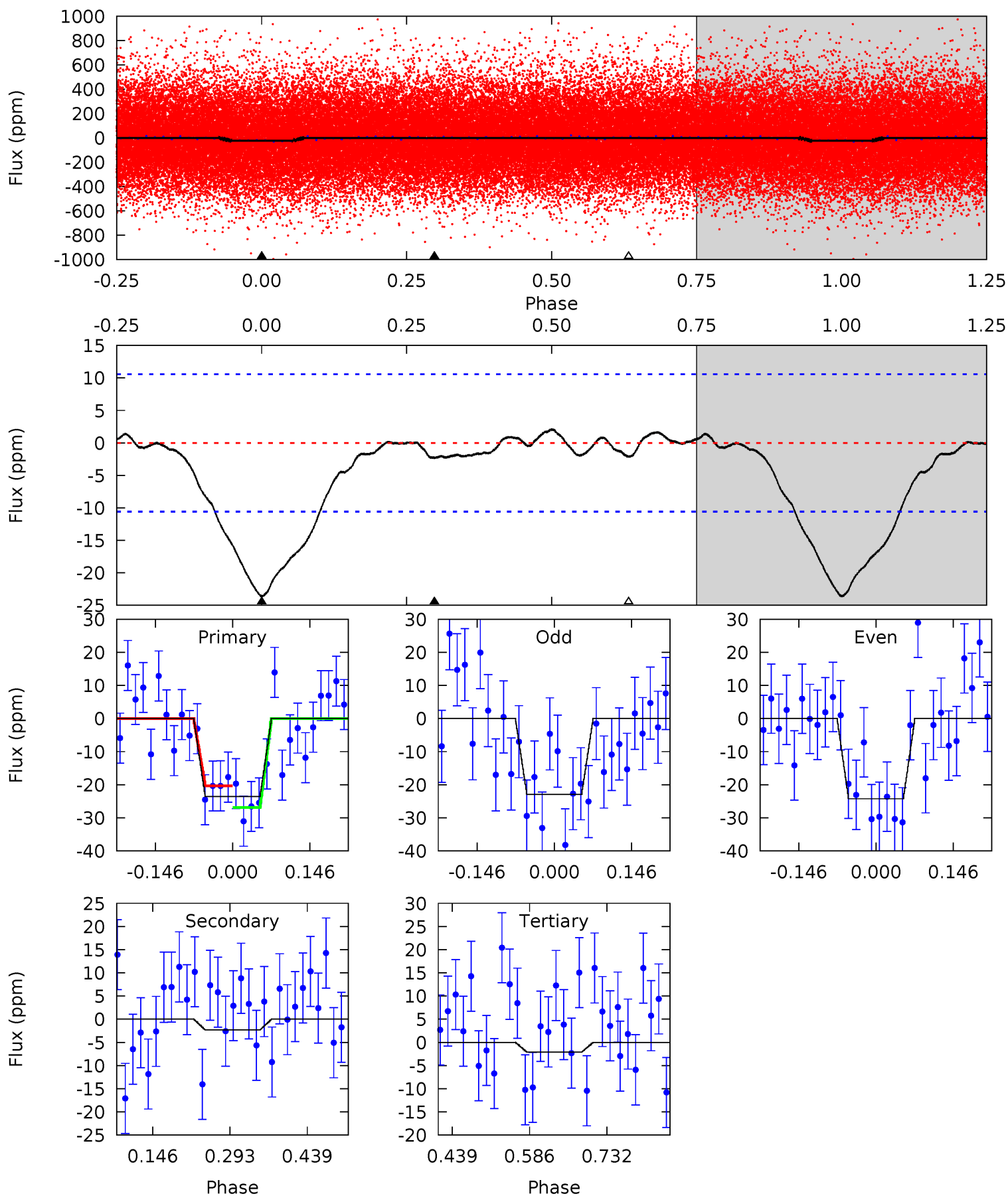
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
8.39	1.22	0.55	0	4.48	1.45	0.35	7.85	8.39	0.67	1.22	0.22	1.12	0.07	1.34



# Alt Model-Shift Uniqueness Test

010471090-01, P = 0.933764 Days, E = 131.488728 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
10.0	0.98	0.90	0	4.48	1.45	0.48	9.11	10.0	0.09	0.98	0.28	1.16	0.08	1.38





### Stellar Parameters For KIC 010471090

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$6292^{+168}_{-205}$	$4.426^{+0.054}_{-0.216}$	$-0.080^{+0.250}_{-0.300}$	$1.078^{+0.353}_{-0.118}$	$1.129^{+0.157}_{-0.141}$	$1.269^{+0.361}_{-0.667}$
	+3%/-3%	+1%/-5%	+312%/-375%	+33%/-11%	+14%/-12%	+28%/-53%
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 010471090-01 / KOI 8291.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	$A_{\text{obs}}$
DV	$-3\pm 2$	$0.65^{+0.35}_{-0.34}$	$2943^{+197}_{-145}$	$3702^{+1521}_{-6366}$	$1.319^{+5.673}_{-1.128}$
Alt.	$-2\pm 2$	$0.61^{+0.37}_{-0.31}$	$2947^{+199}_{-150}$	$3445^{+1476}_{-6619}$	$0.943^{+3.875}_{-0.999}$

$T_{\text{max}}$  = 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

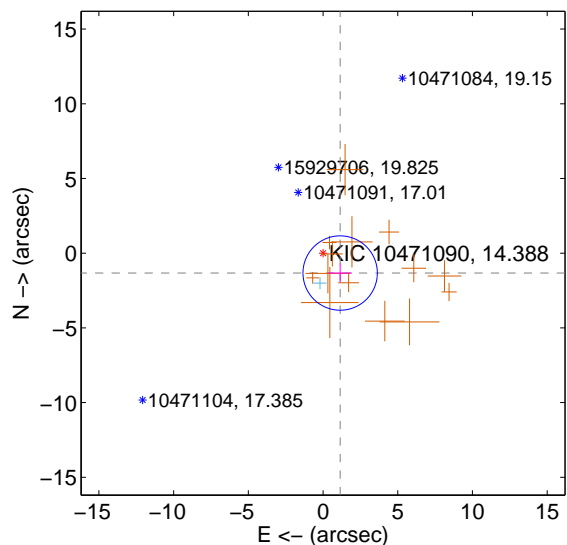
Supplemental centroid analysis for 010471090-01. Kepler magnitude: 14.39. Transit SNR 7.95

There are 1 quarters with good PRF difference image offsets

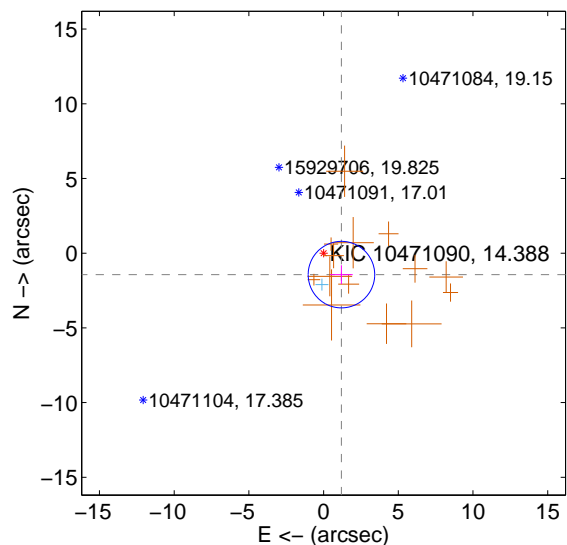
The direct PRF centroid is offset from the target star catalog position by about 0.10 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$1.755 \pm 0.829$	2.12	$-1.146 \pm 0.795$	$-1.329 \pm 0.643$
PRF-fit source offset from KIC position	$1.867 \pm 0.742$	2.52	$-1.195 \pm 0.754$	$-1.435 \pm 0.627$
photometric centroid source offset	$7.79 \pm 1.90$	4.10	$-6.34 \pm 1.97$	$-4.52 \pm 1.75$

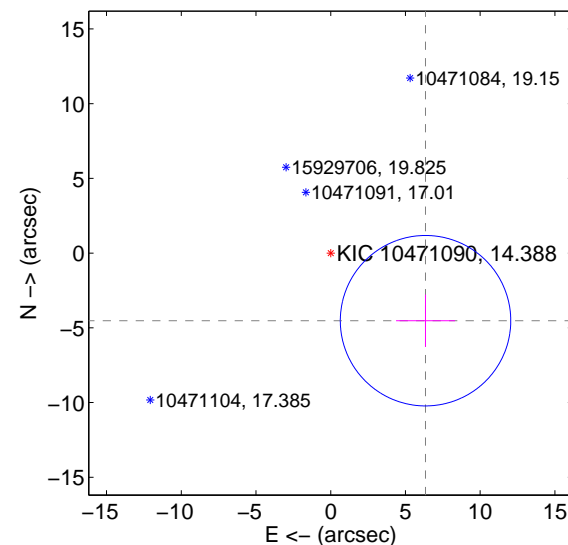
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

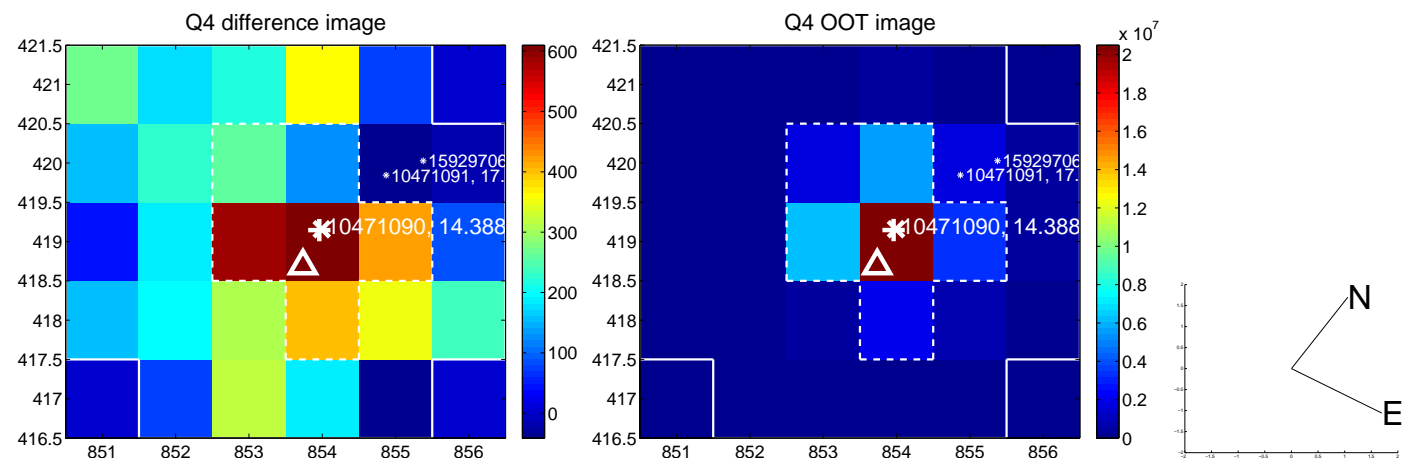
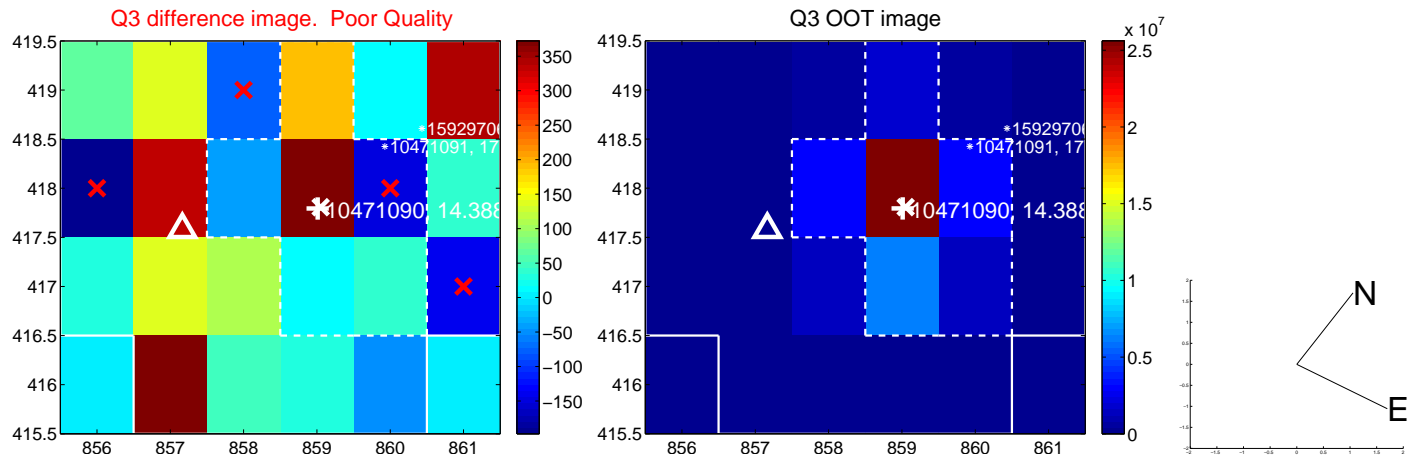
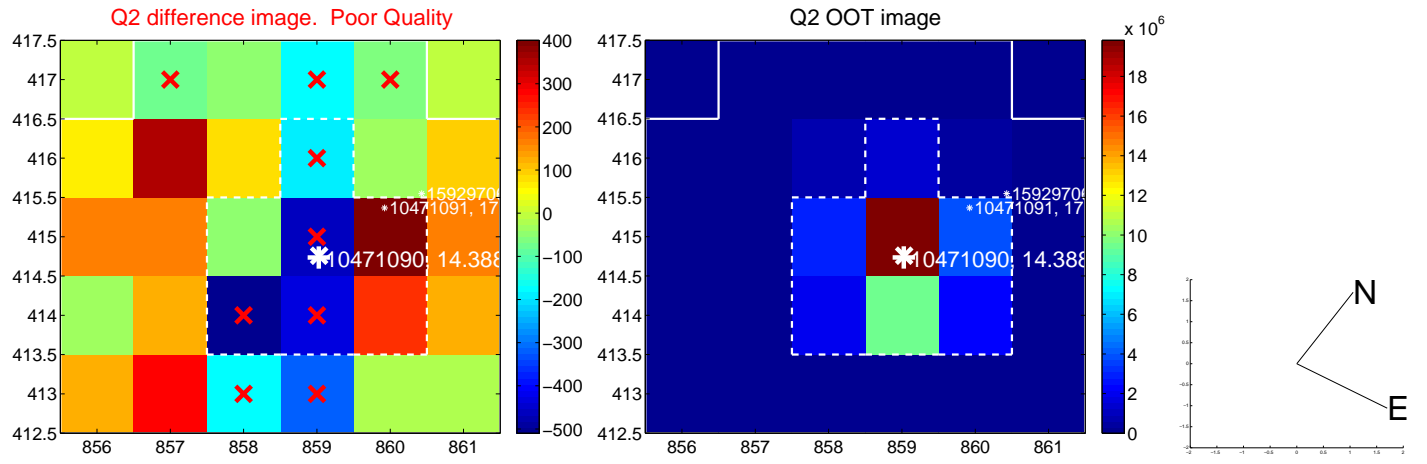
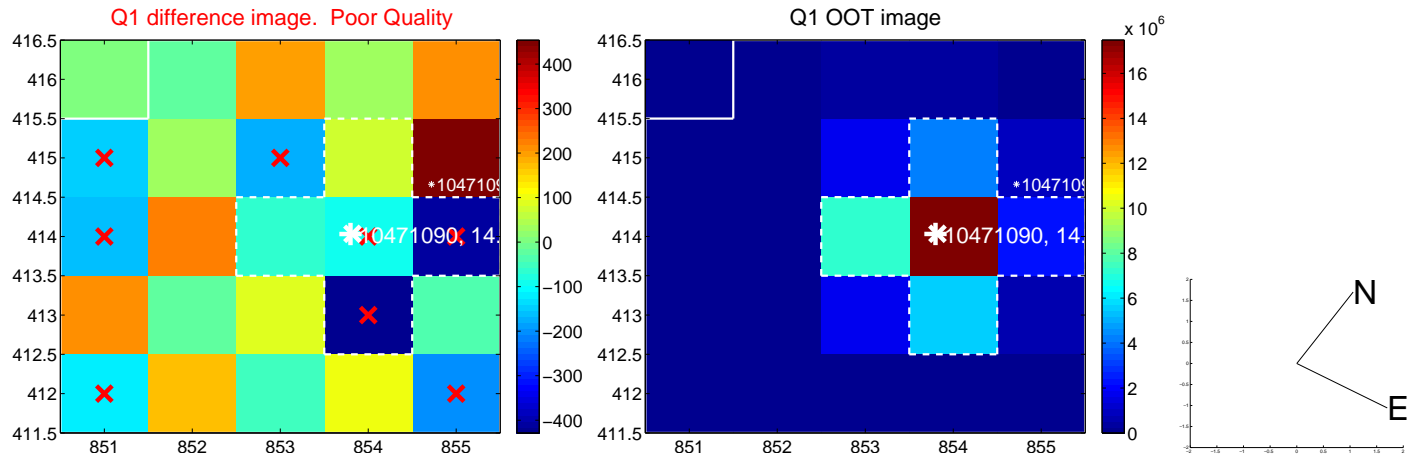


offset from photometric centroids



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.

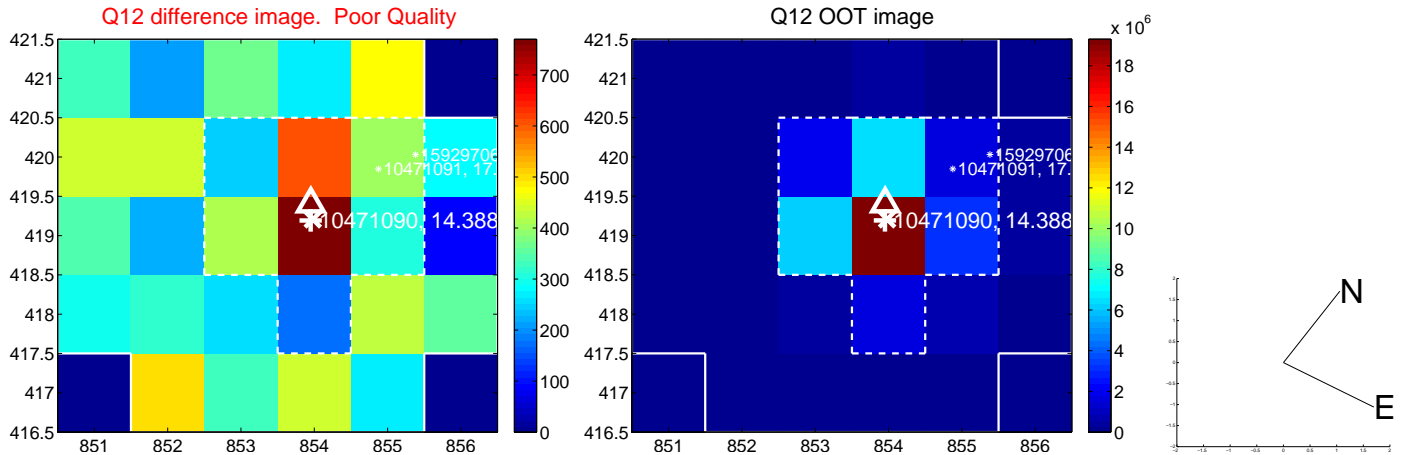
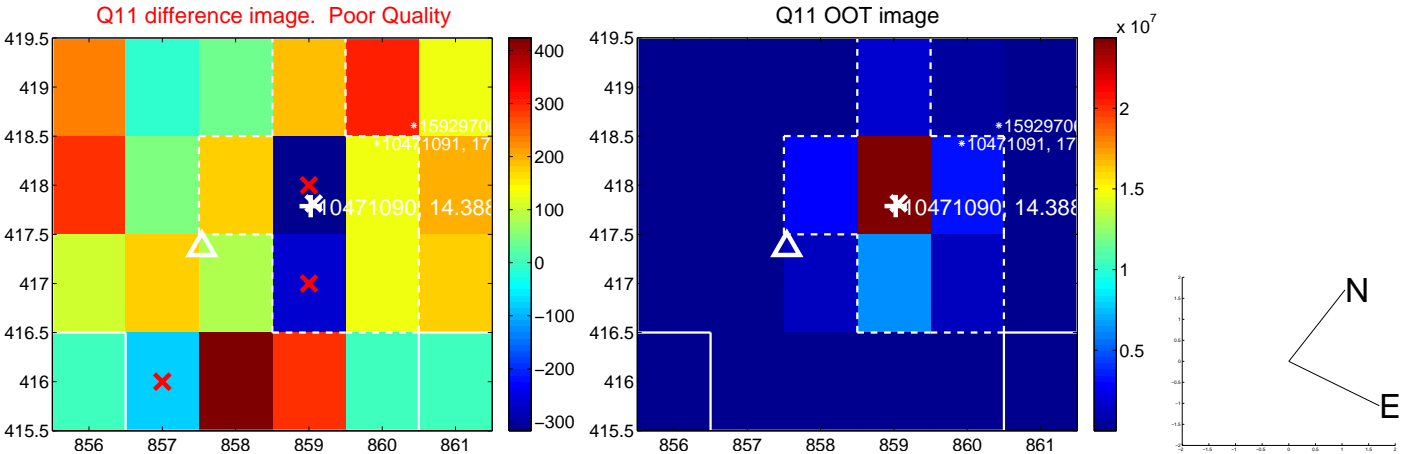
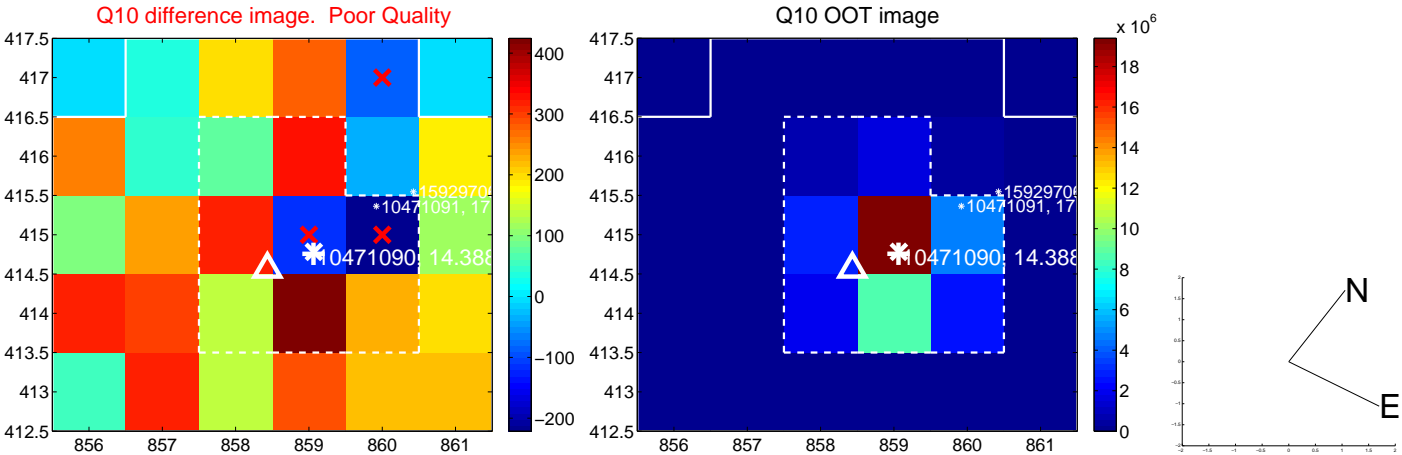
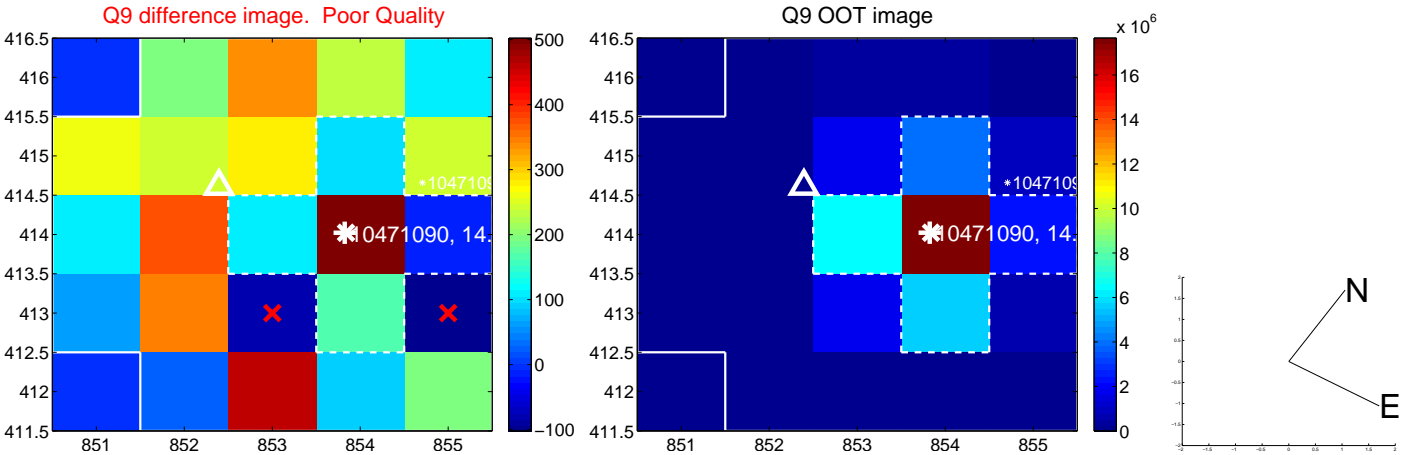
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



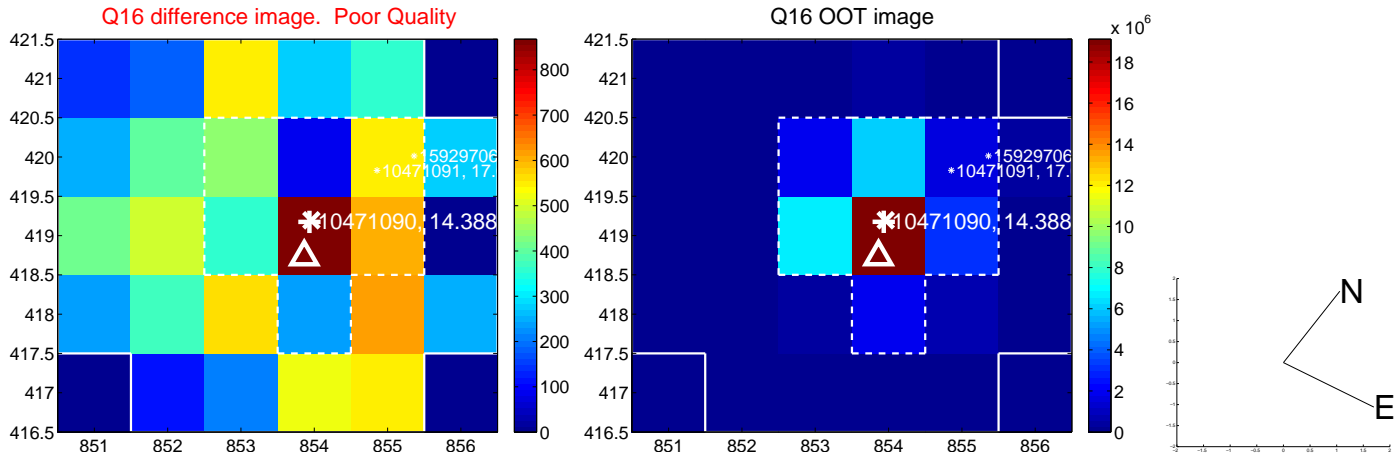
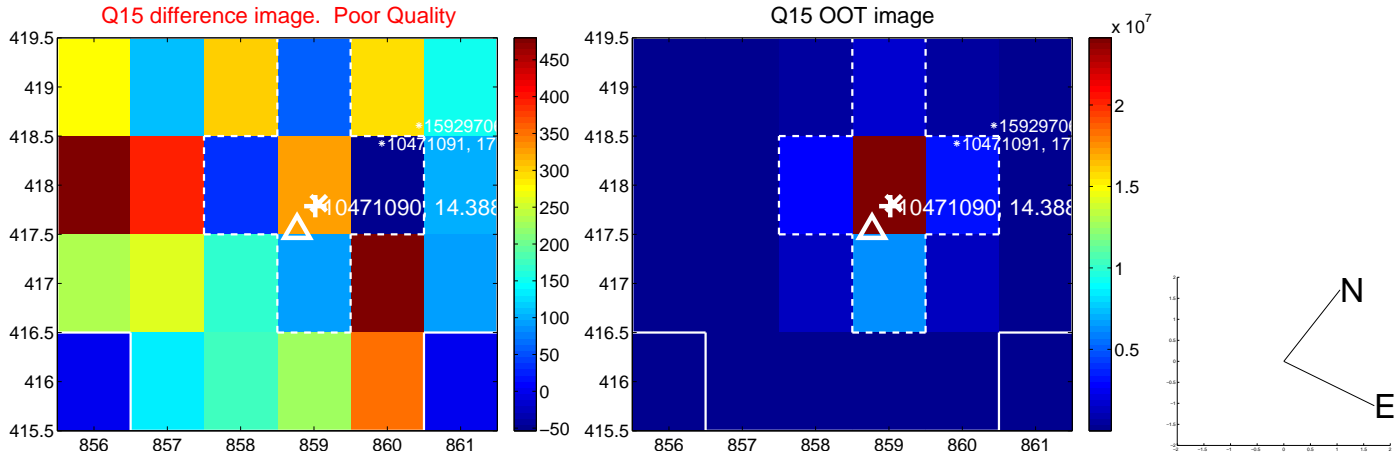
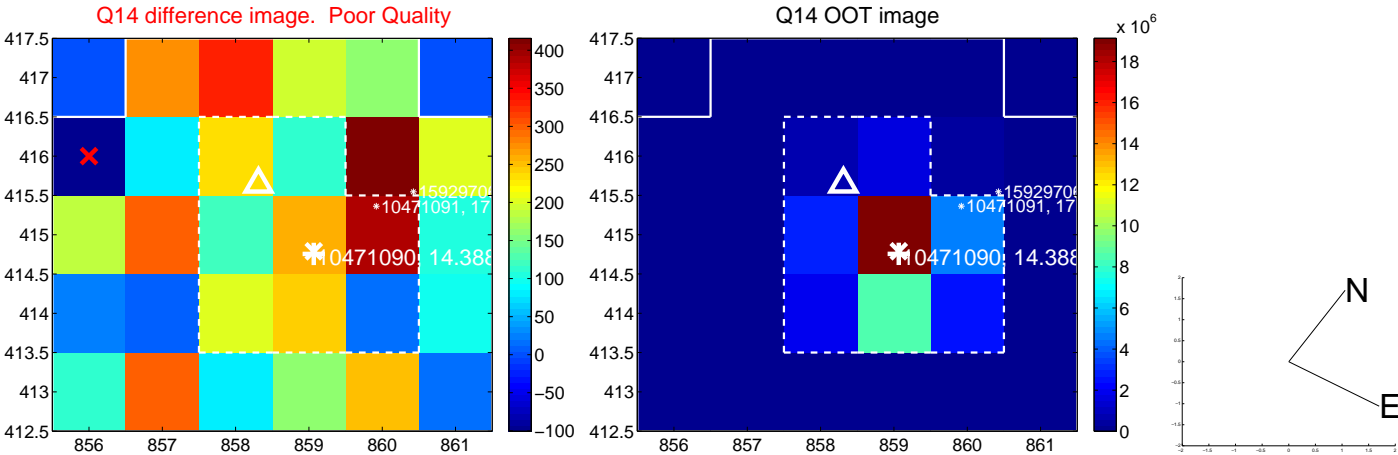
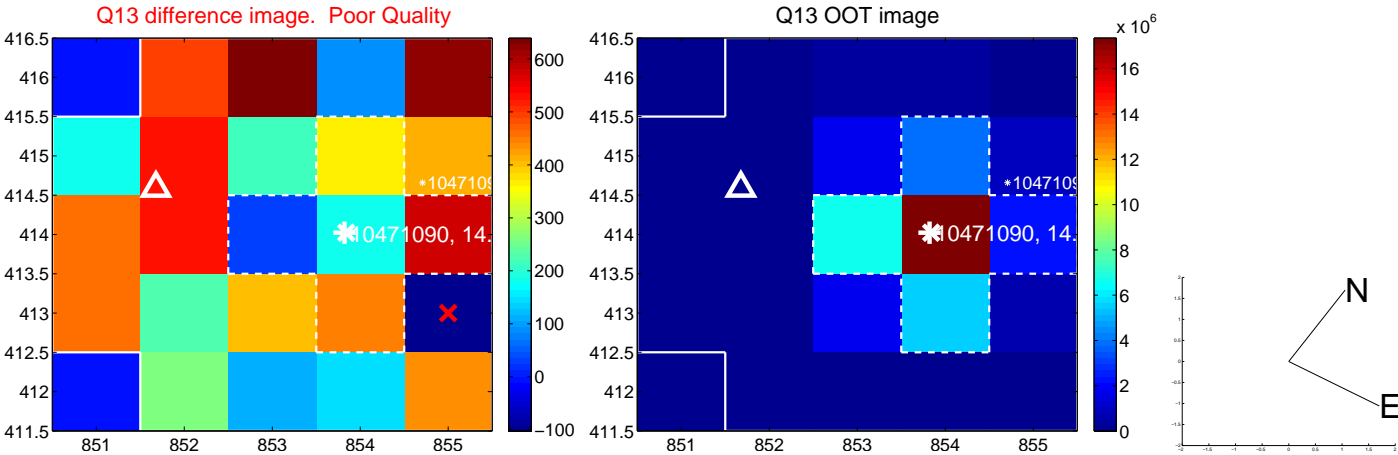




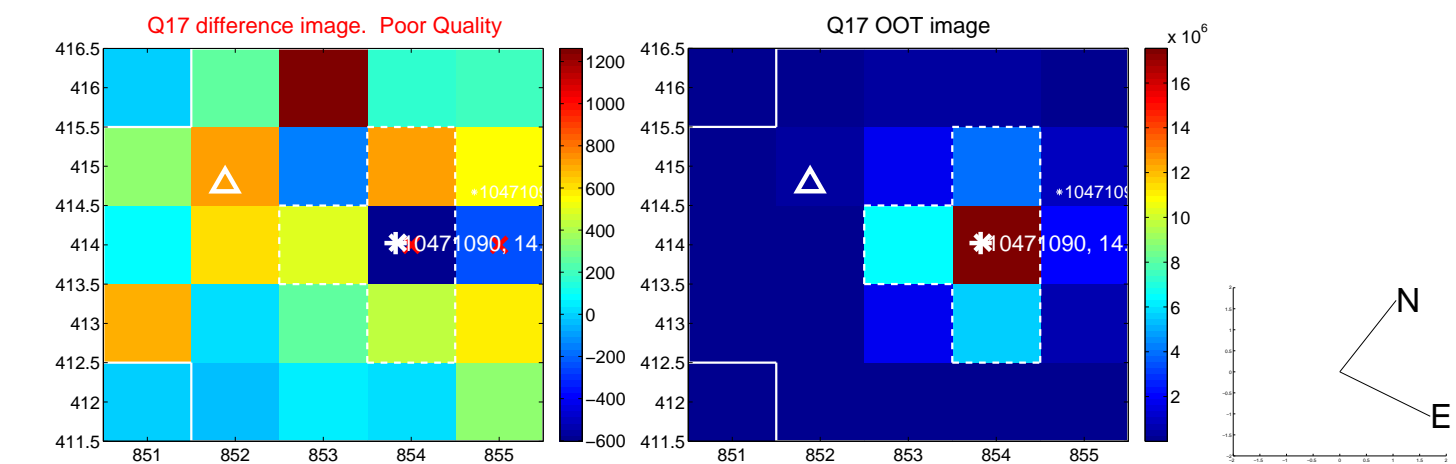
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



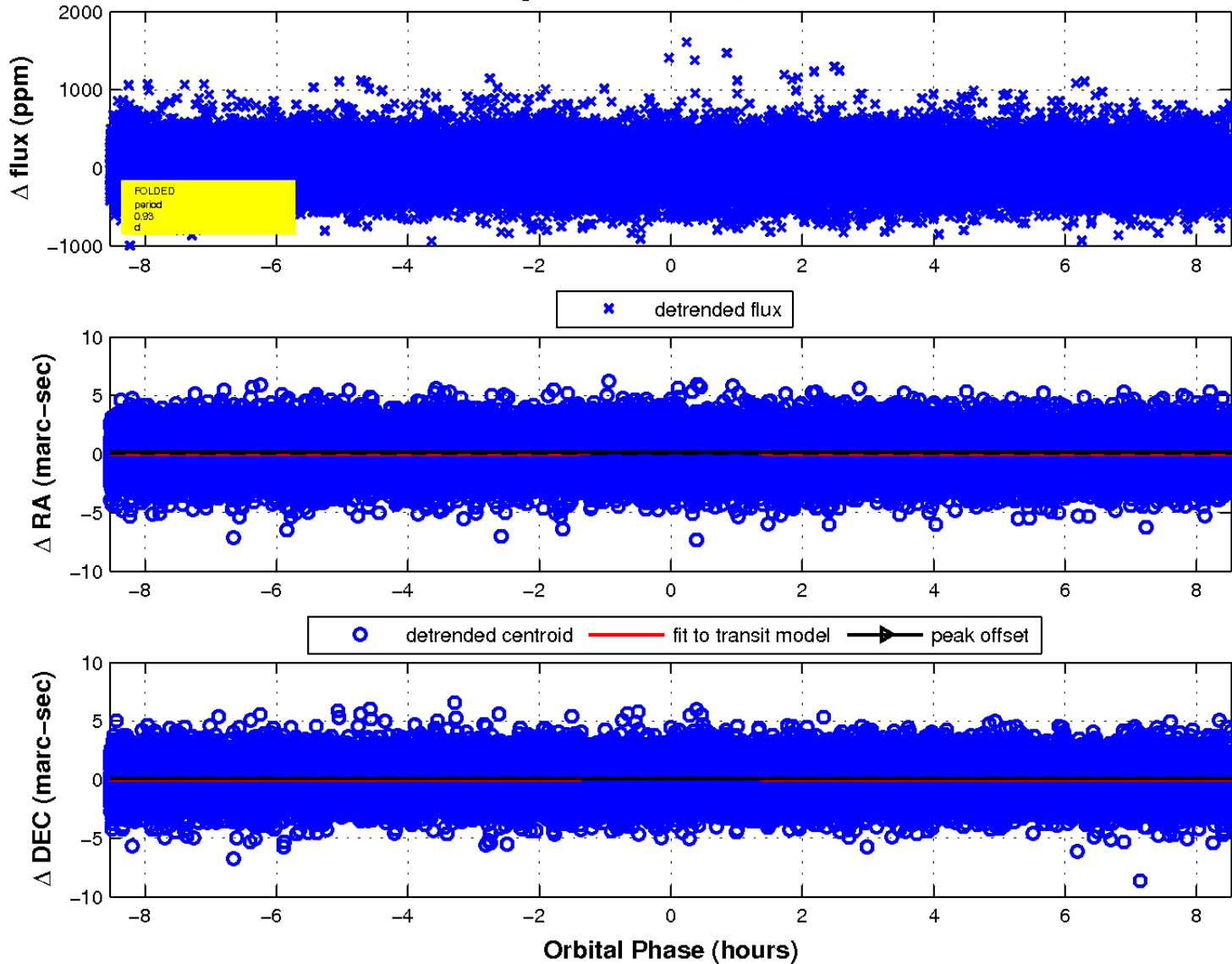
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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



fluxWeightedCentroids, Planet 1 of 1



UKIRT Image

Declination

