

# KIC 011709423

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
011709423-01	OBS	3001.01	0.768937	131.738304	424.1	0.732	19.5	29.0	0.78	5390	1.89	2040.21

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
011709423-01	OBS	FP	0.00	0	1	1	0	MOD_SEC_DV—MOD_SEC_ALT—CENT_UNRESOLVED_OFFSET

**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 011709423-01

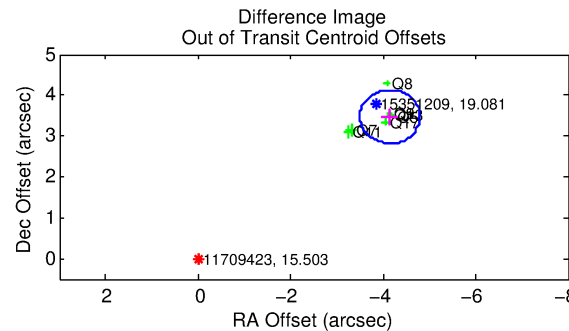
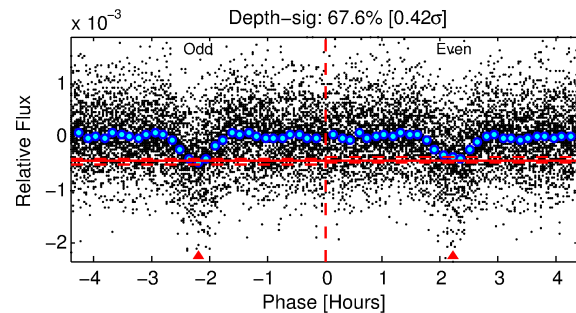
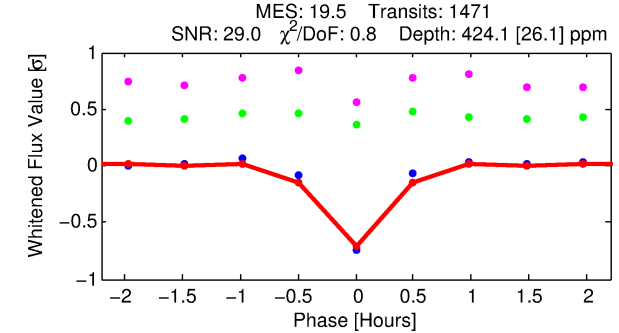
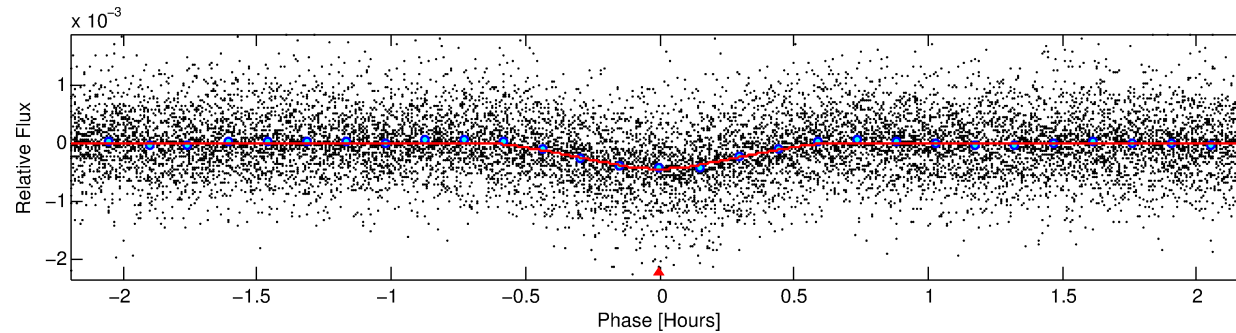
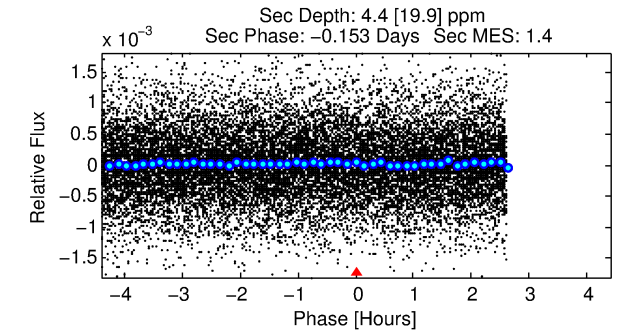
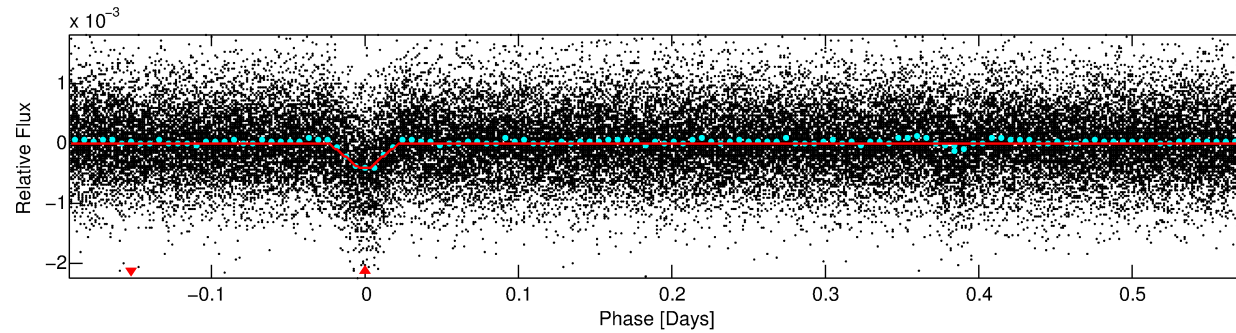
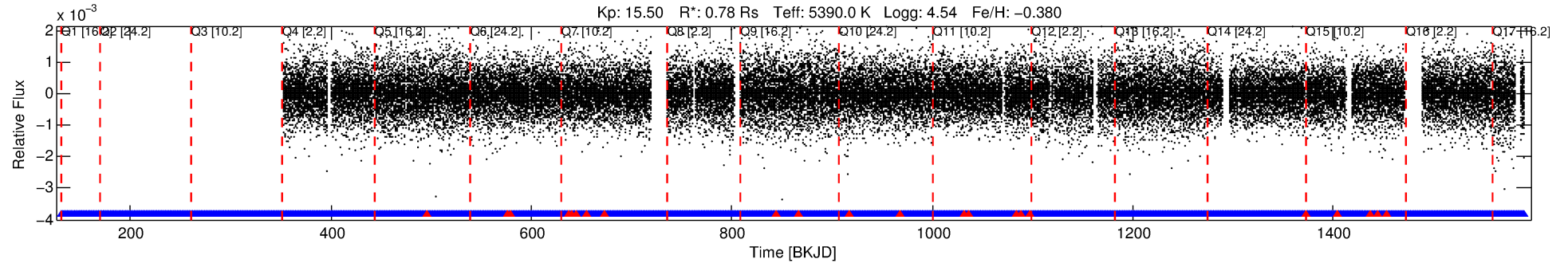
No Significant Match Found

# DV One-Page Summary

KIC: 11709423 Candidate: 1 of 1 Period: 0.769 d

KOI: K03001 Corr: No Ephemeris Match

Kp: 15.50 R\*: 0.78 Rs Teff: 5390.0 K Logg: 4.54 Fe/H: -0.380



## DV Fit Results:

Period = 0.76894 [0.00000] d  
Epoch = 131.7383 [0.0005] BKJD  
Rp/R\* = 0.0223 [0.0061]  
a/R\* = 4.50 [4.96]  
b = 0.86 [0.35]  
Seff = 2040.21 [487.38]  
Teq = 1714 [102] K  
Rp = 1.89 [0.59] Re  
a = 0.0150 [0.0019] AU  
Ag = 0.15 [0.69] [-1.24σ]  
Teffp = 1649 [1888] K [-0.03σ]

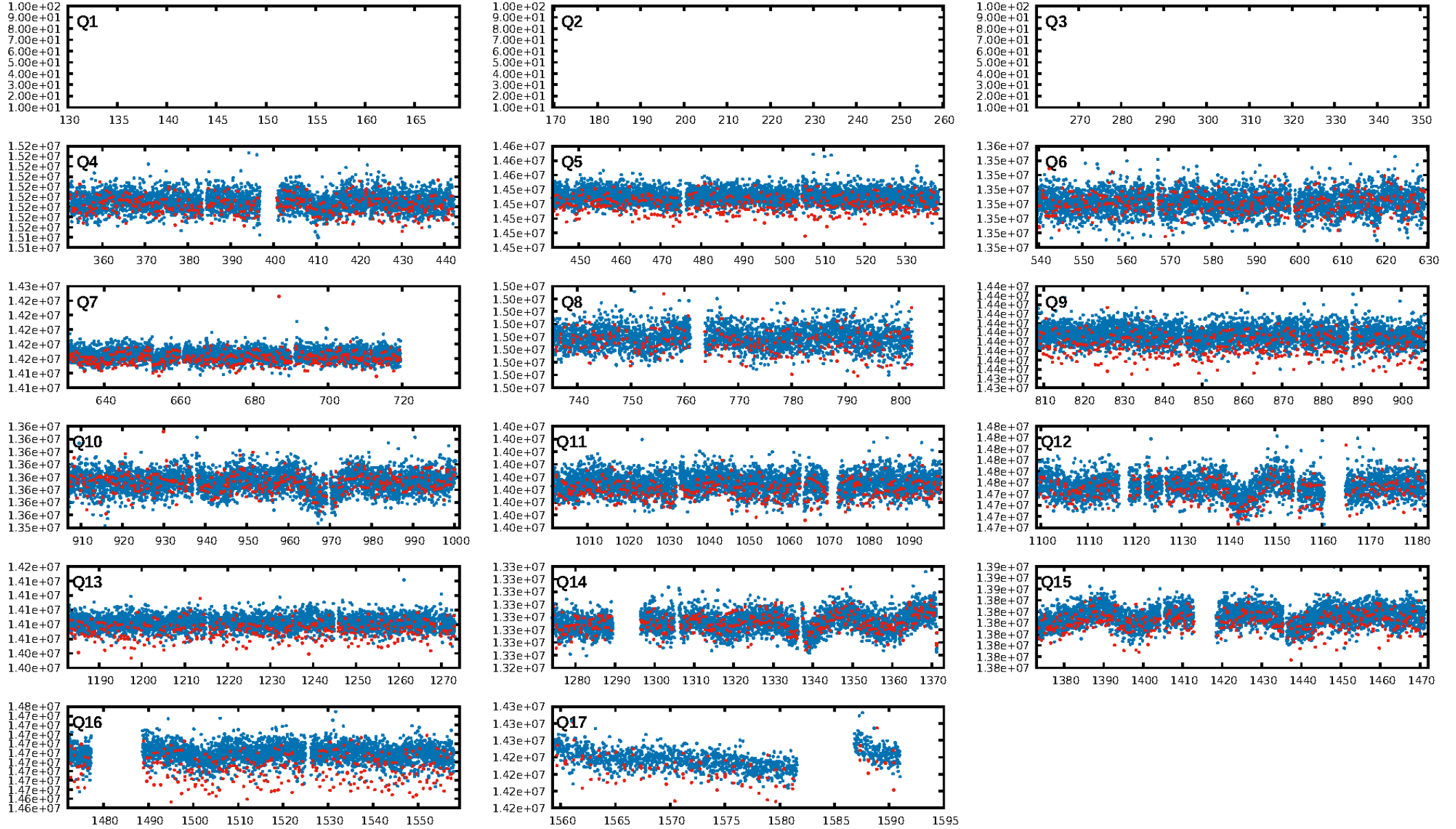
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: N/A  
ModelChiSquareGof-sig: N/A  
Bootstrap-pfa: 1.16e-83  
RollingBand-fgt: 0.98 [1414/1437]  
GhostDiagnostic-chr: -0.2861  
Centroid-sig: 0.0%  
Centroid-so: 10.274 arcsec [25.12σ]  
OotOffset-rm: 5.409 arcsec [24.81σ]  
KicOffset-rm: 5.394 arcsec [29.65σ]  
OotOffset-st: 0/2/1/4 [7]  
KicOffset-st: 0/2/1/4 [7]  
DiffImageQuality-fgm: 1.00 [7/7]  
DiffImageOverlap-fno: 1.00 [14/14]

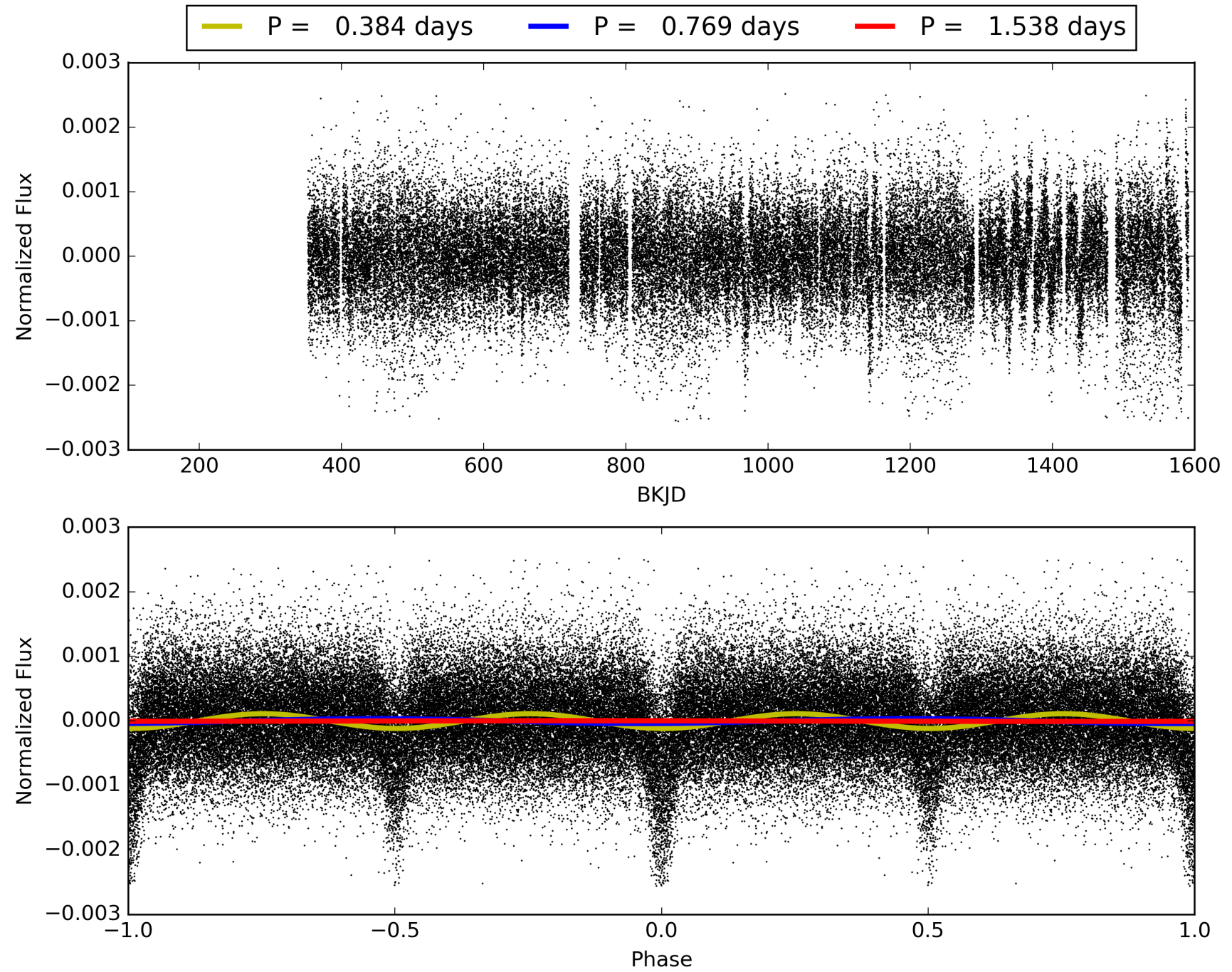
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 08:02:07 Z

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

# TCE 011709423-01, PDC Light Curves



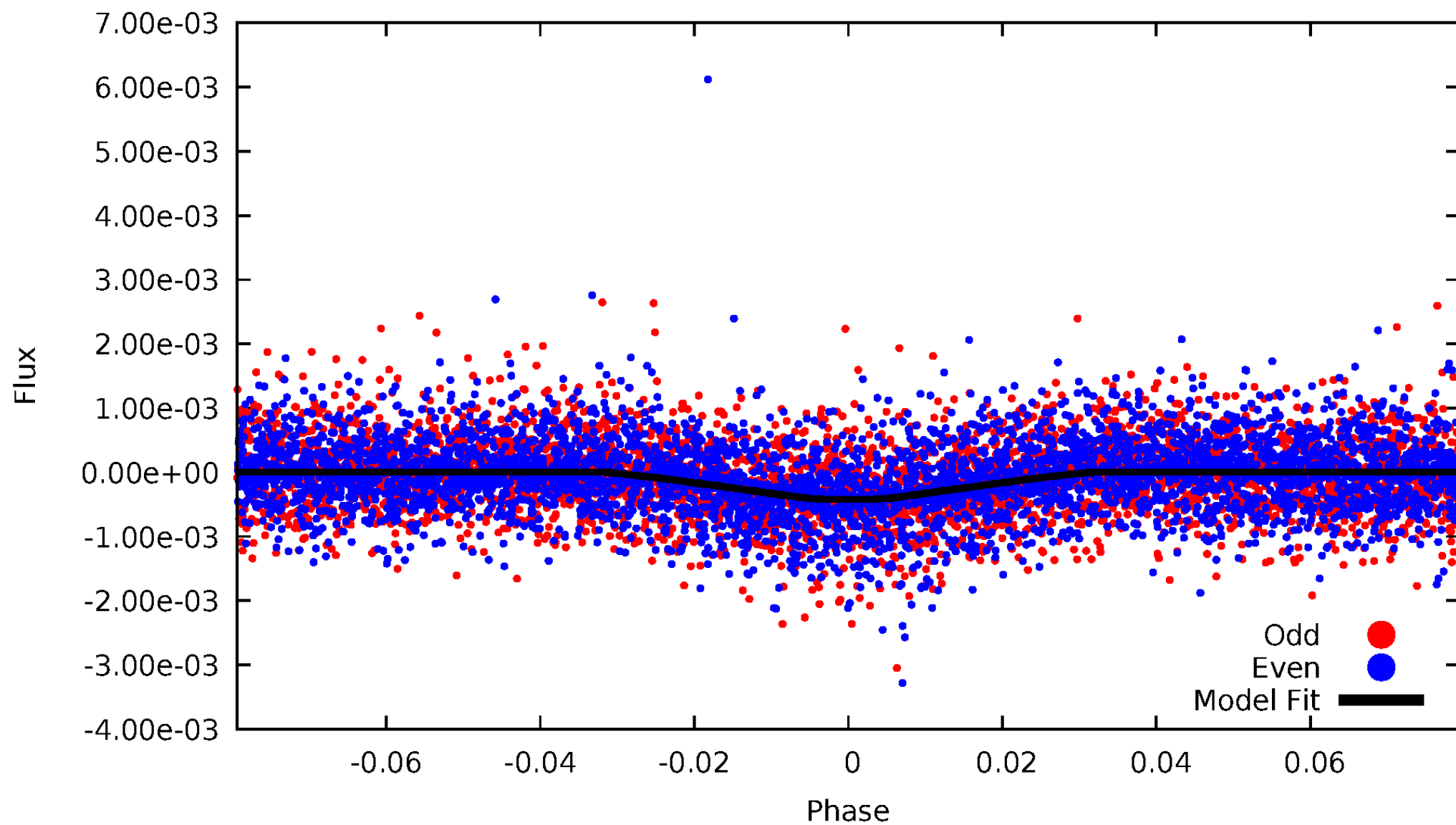
# TCE 011709423-01





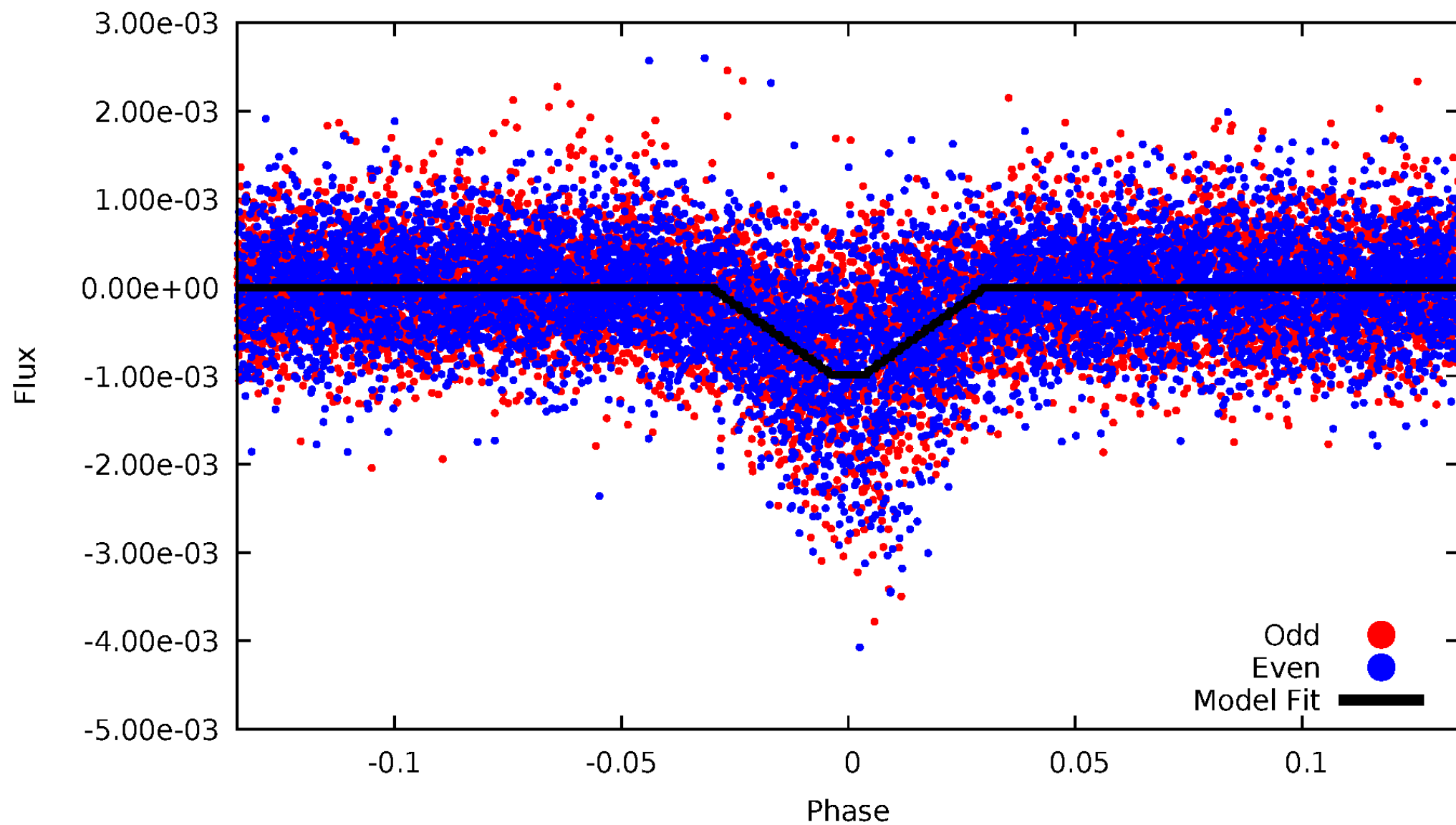
# DV Odd/Even

TCE 011709423-01



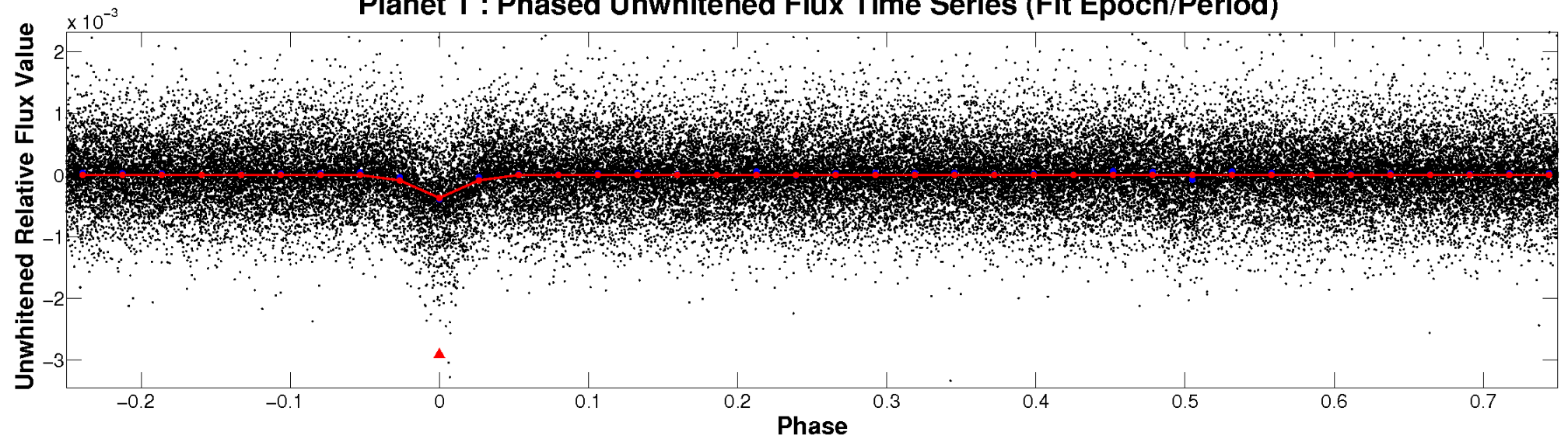
# ALT Odd/Even

TCE 011709423-01

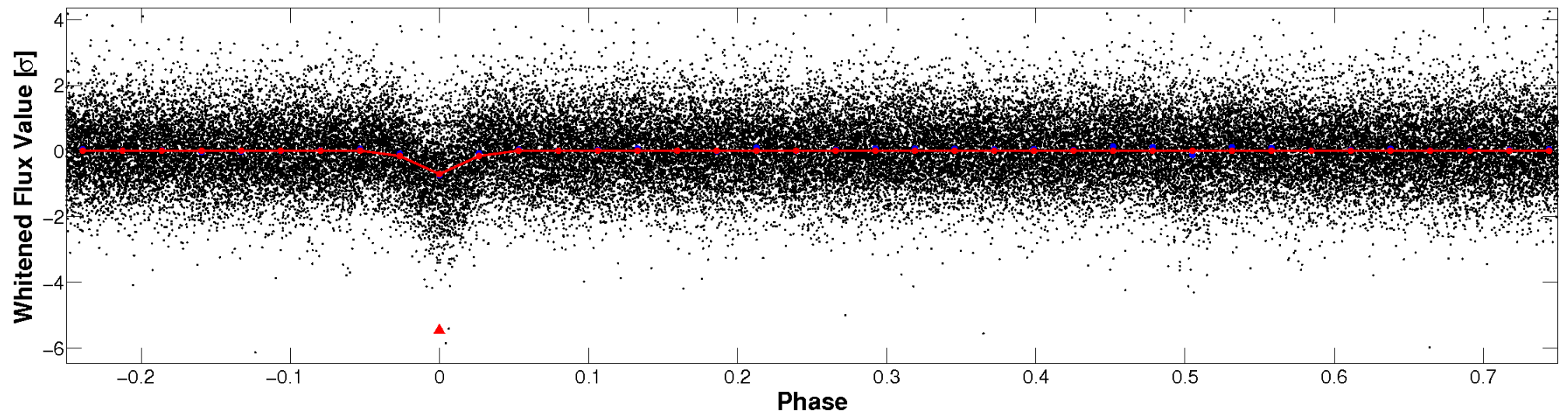


# Non-Whitened Vs. Whitened Light Curve

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

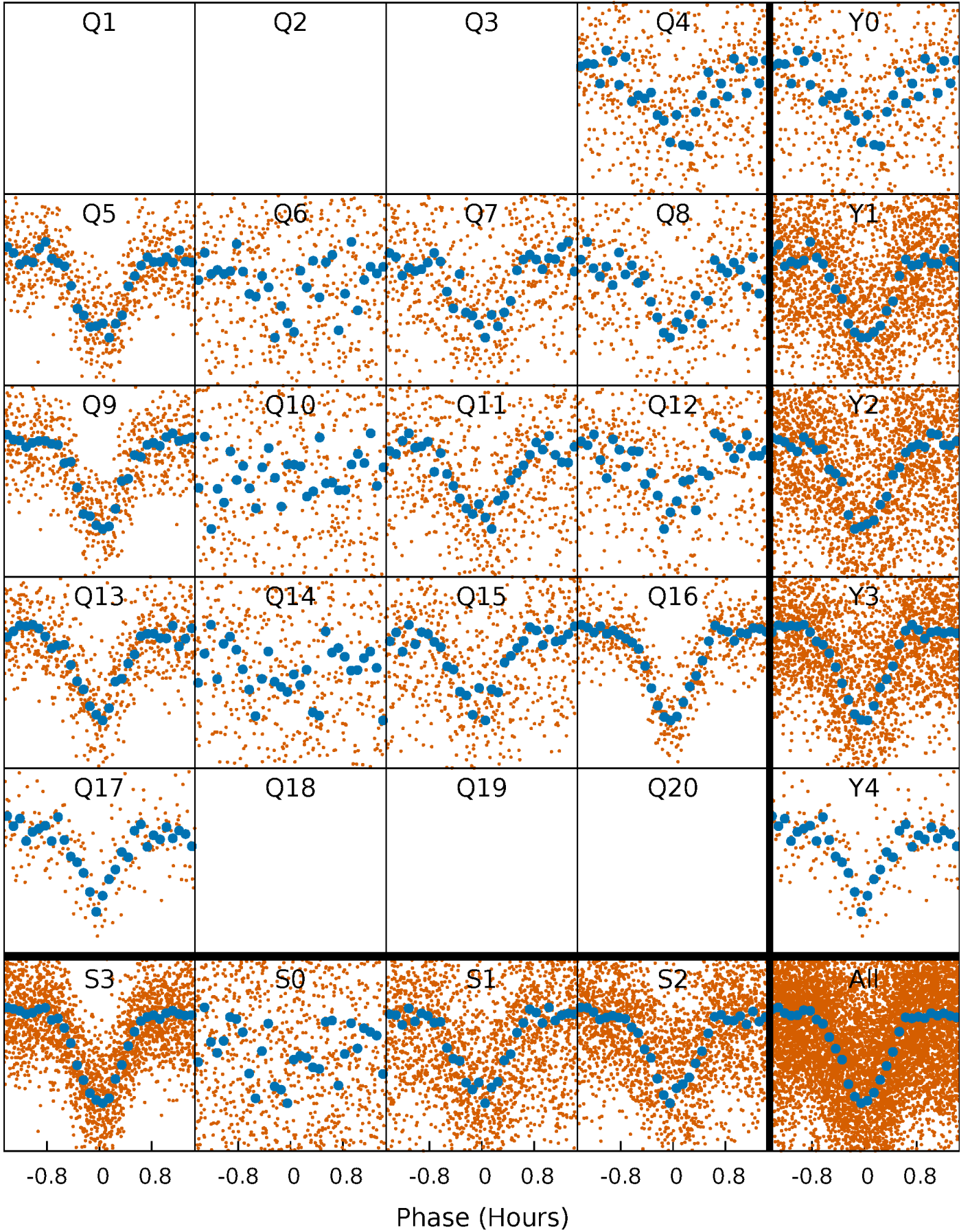


## Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



# PDC Quarter-Phased Transit Curves

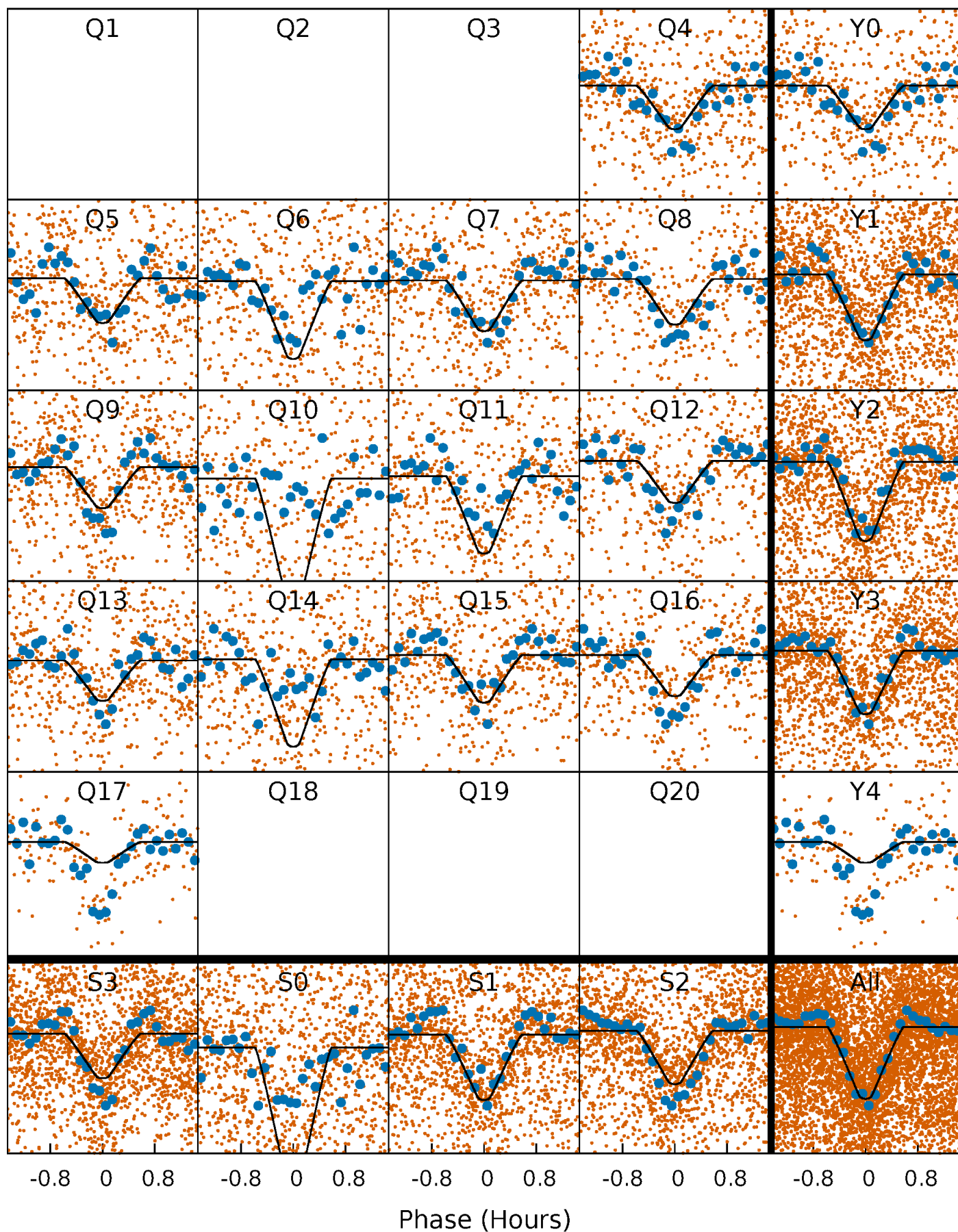
TCE 011709423-01   P= 0.768937 Days    $T_0=131.738304$  (BKJD)





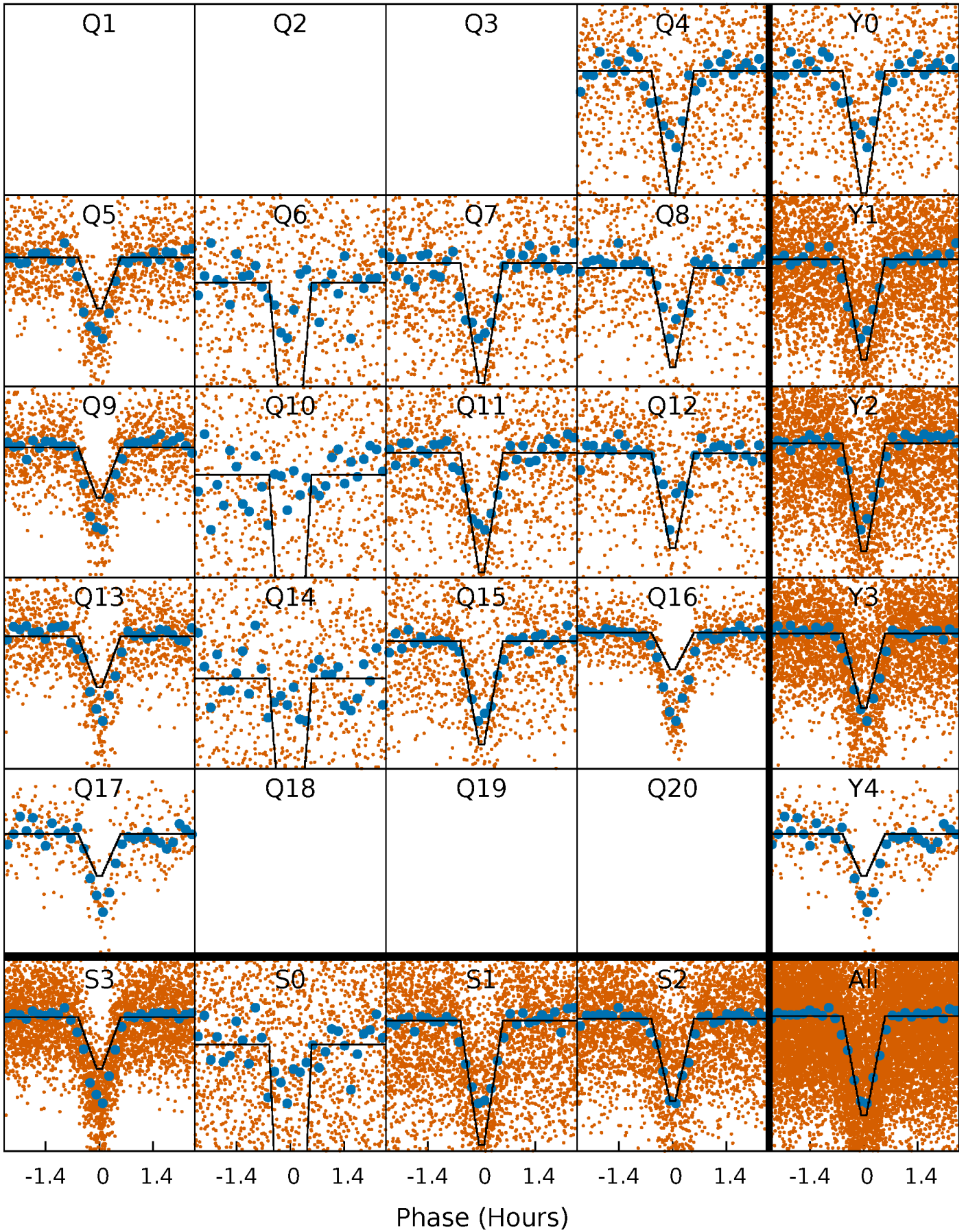
# DV Quarter-Phased Transit Curves

TCE 011709423-01 P= 0.768937 Days  $T_0=131.738304$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

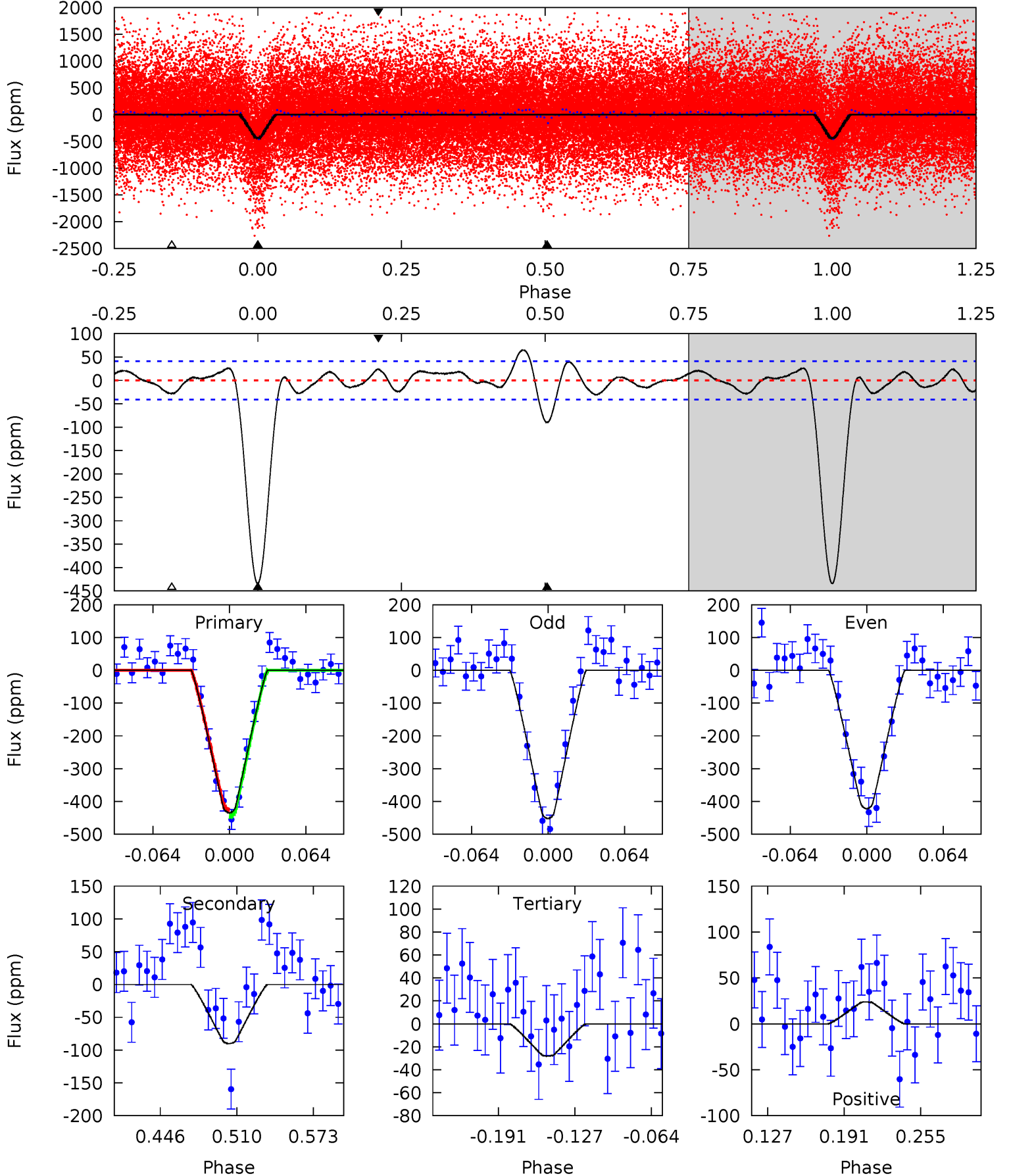
TCE 011709423-01 P= 0.768931 Days  $T_0=131.744447$  (BKJD)



# DV Model-Shift Uniqueness Test

011709423-01, P = 0.768937 Days, E = 131.738304 Days

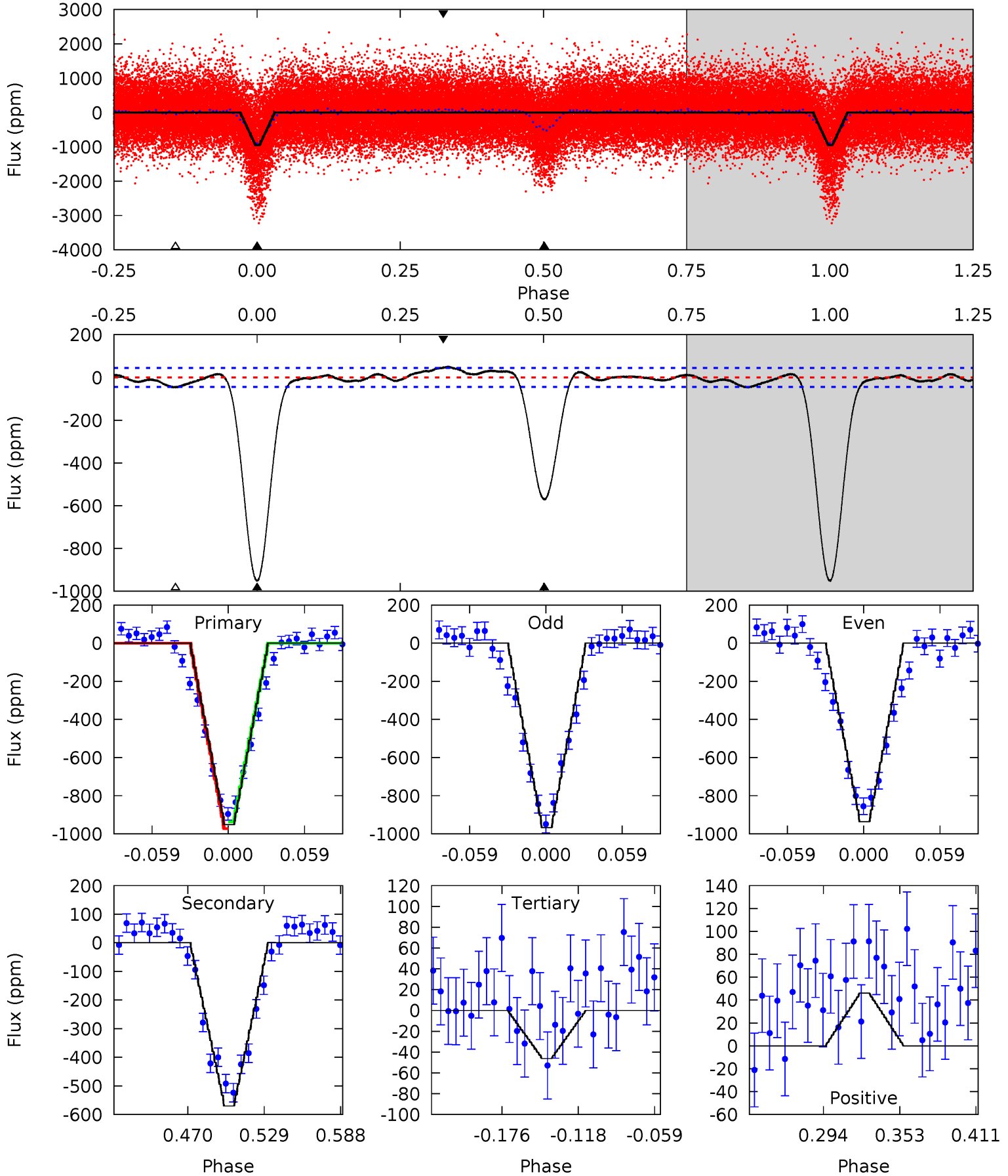
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
49.4	10.2	3.19	2.71	4.66	1.85	1.59	46.2	46.7	7.04	7.52	1.73	1.01	0.13	1.20



# Alt Model-Shift Uniqueness Test

011709423-01, P = 0.768931 Days, E = 131.744447 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
99.6	59.7	4.83	4.81	4.68	1.89	2.09	94.8	94.8	54.8	54.9	1.60	1.14	0.05	1.89





### Stellar Parameters For KIC 011709423

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R$ ( $R_{\odot}$ )	$M(M_{\odot})$	$p_{\star}$ ( $\text{g}\cdot\text{cm}^{-3}$ )
	$5390^{+206}_{-187}$	$4.535^{+0.081}_{-0.099}$	$-0.380^{+0.350}_{-0.300}$	$0.777^{+0.120}_{-0.087}$	$0.755^{+0.109}_{-0.059}$	$2.263^{+0.786}_{-0.689}$
	+4%/-3%	+2%/-2%	+92%/-79%	+15%/-11%	+14%/-8%	+35%/-30%
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 011709423-01 / KOI 3001.01

Detrend	Depth (ppm)	$R_p$ ( $R_{\oplus}$ )	$T_{\text{max}}$ (K)	$T_{\text{obs}}$ (K)	$A_{\text{obs}}$
DV	$-90 \pm 9$	$1.90^{+0.53}_{-0.53}$	$2405^{+117}_{-118}$	$3802^{+486}_{-361}$	$3.032^{+2.911}_{-1.159}$
Alt.	$-570 \pm 10$	$2.73^{+0.54}_{-0.57}$	$2410^{+114}_{-119}$	$4757^{+499}_{-341}$	$9.616^{+5.474}_{-2.969}$

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

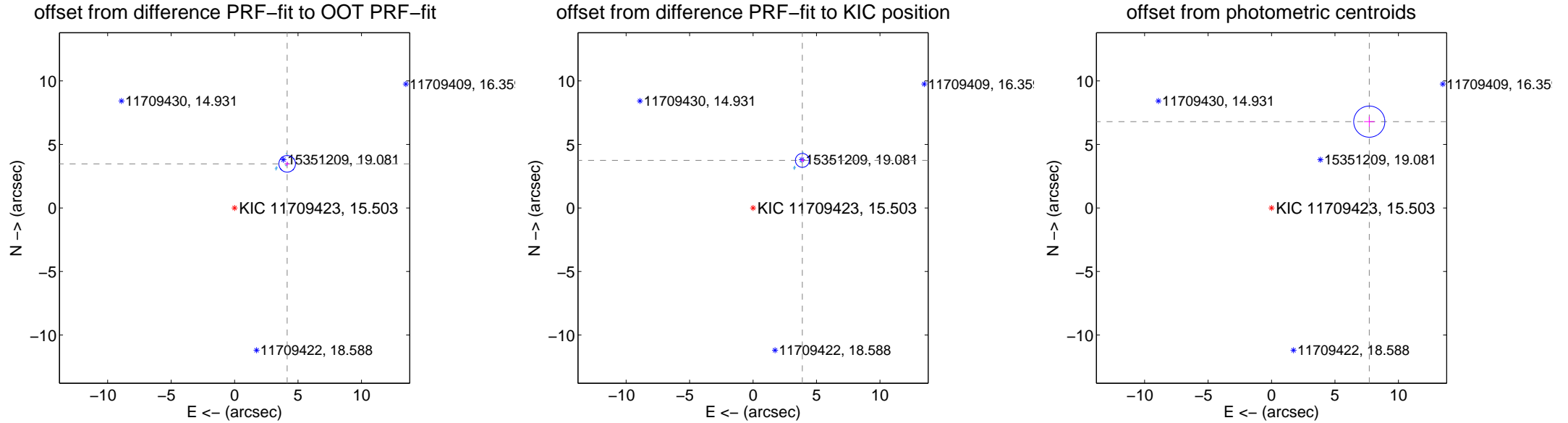
## DV Centroid Data

Supplemental centroid analysis for 011709423-01. Kepler magnitude: 15.50. Transit SNR 29.00

There are 7 quarters with good PRF difference image offsets

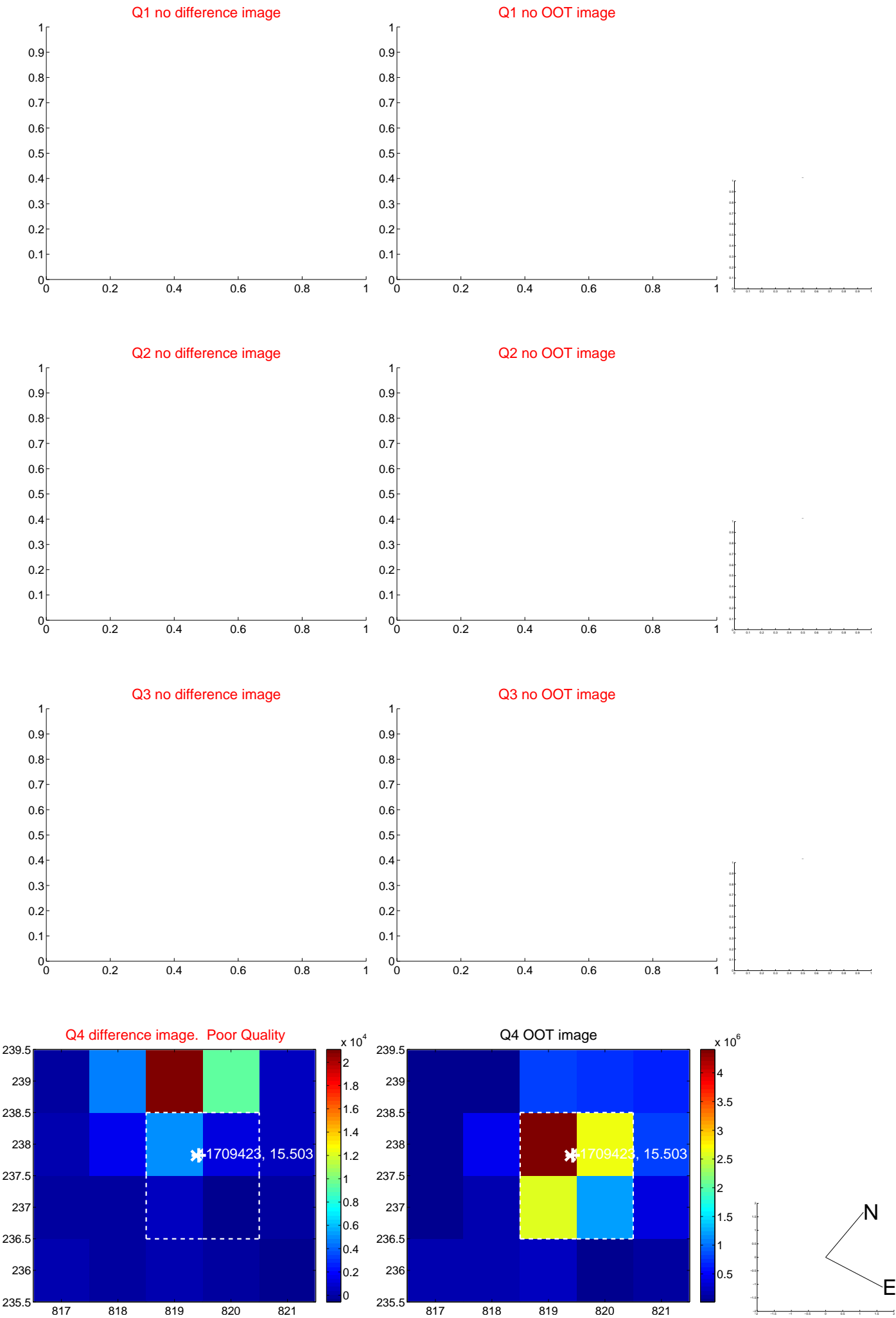
The direct PRF centroid is offset from the target star catalog position by about 0.39 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$5.409 \pm 0.218$	24.81	$-4.145 \pm 0.167$	$3.474 \pm 0.179$
PRF-fit source offset from KIC position	$5.394 \pm 0.182$	29.65	$-3.883 \pm 0.127$	$3.744 \pm 0.158$
photometric centroid source offset	$10.27 \pm 0.41$	25.12	$-7.70 \pm 0.41$	$6.80 \pm 0.41$

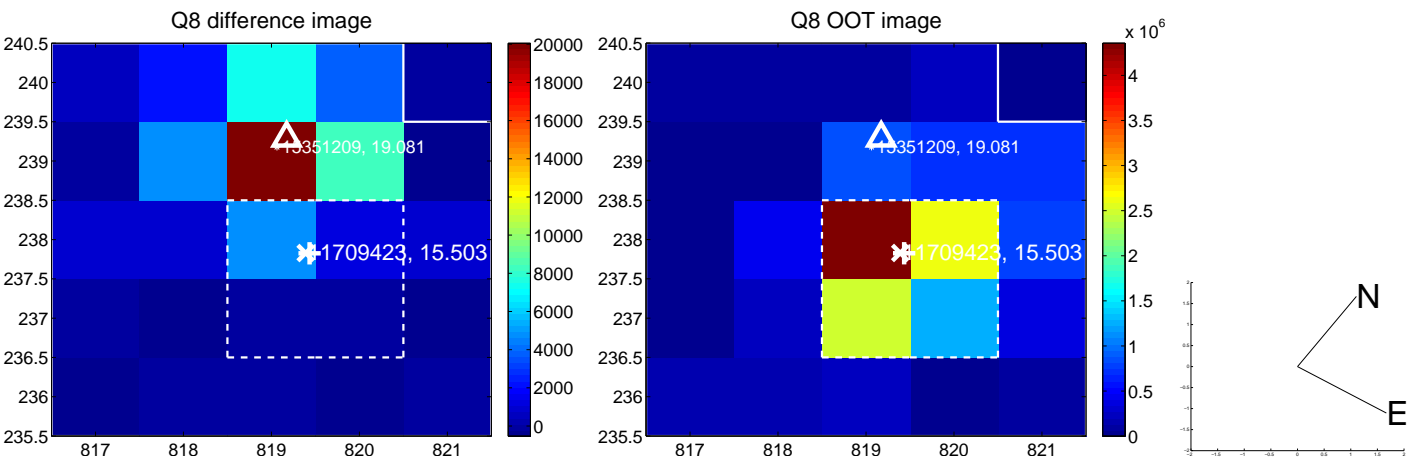
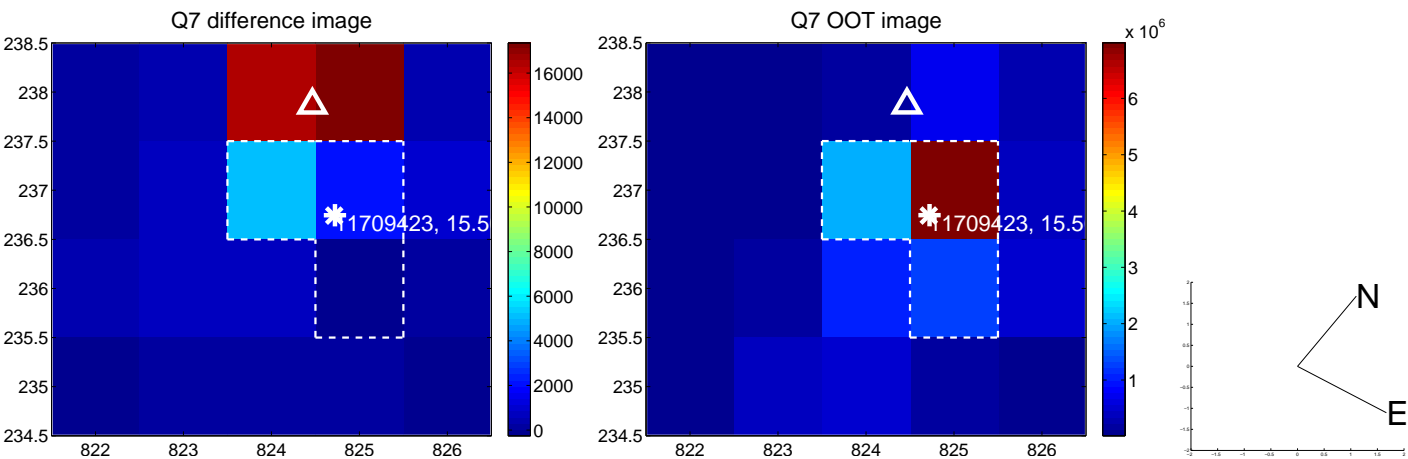
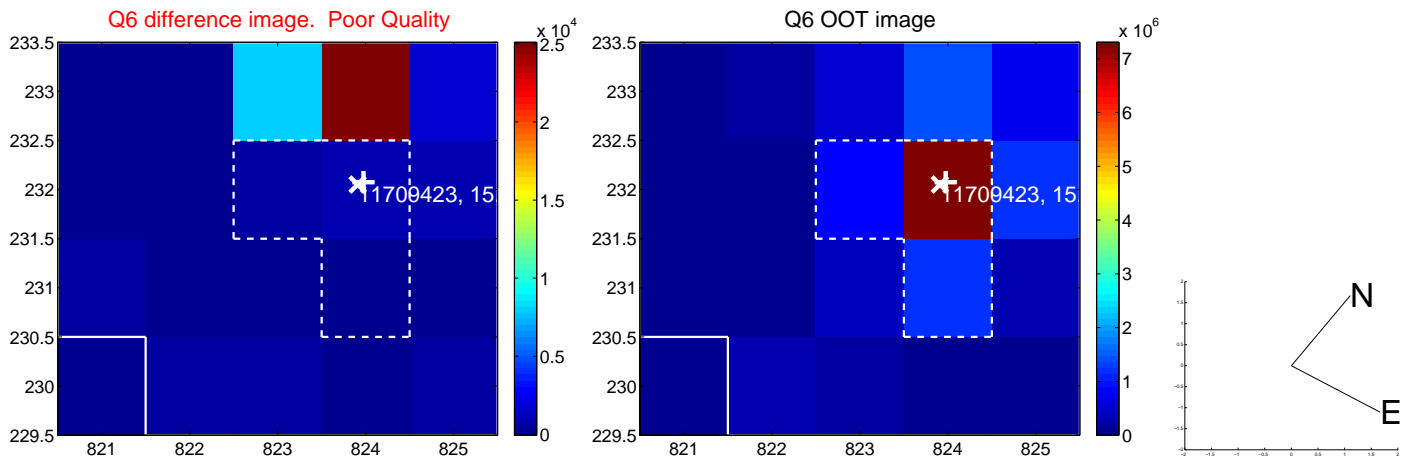
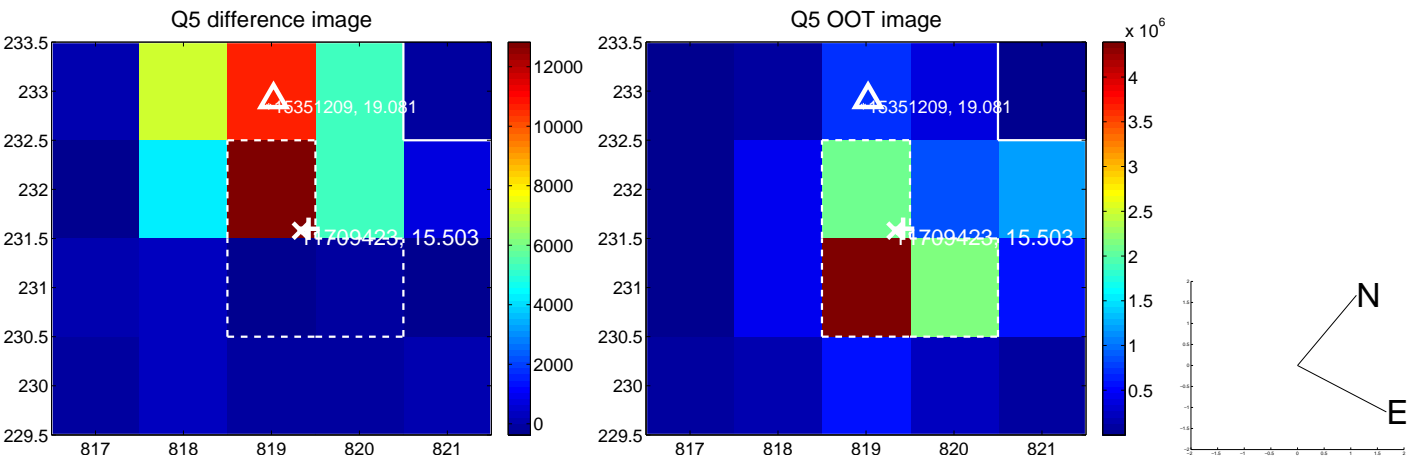


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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

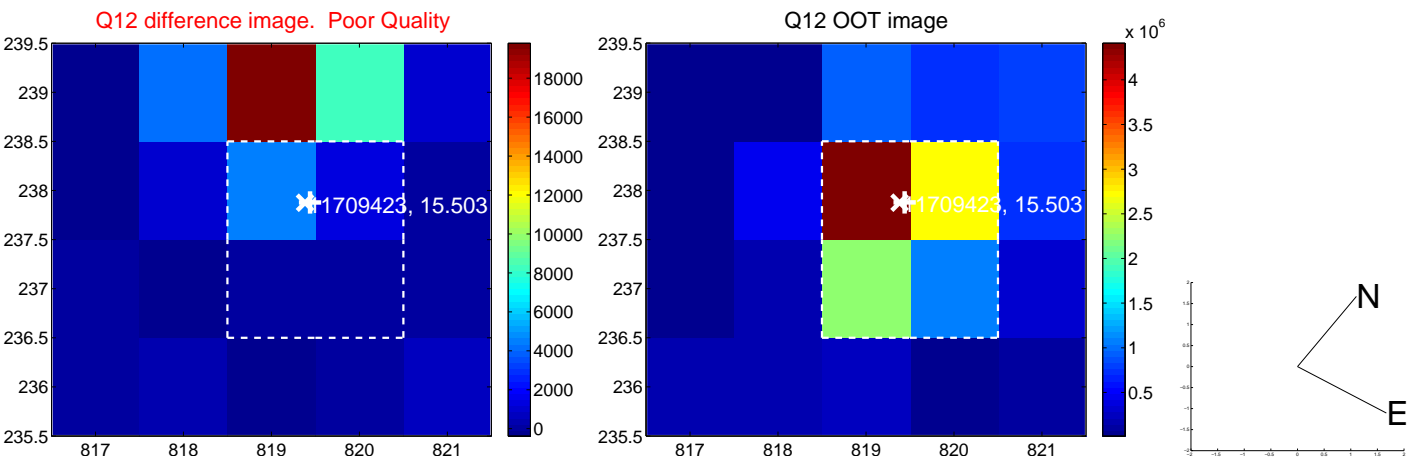
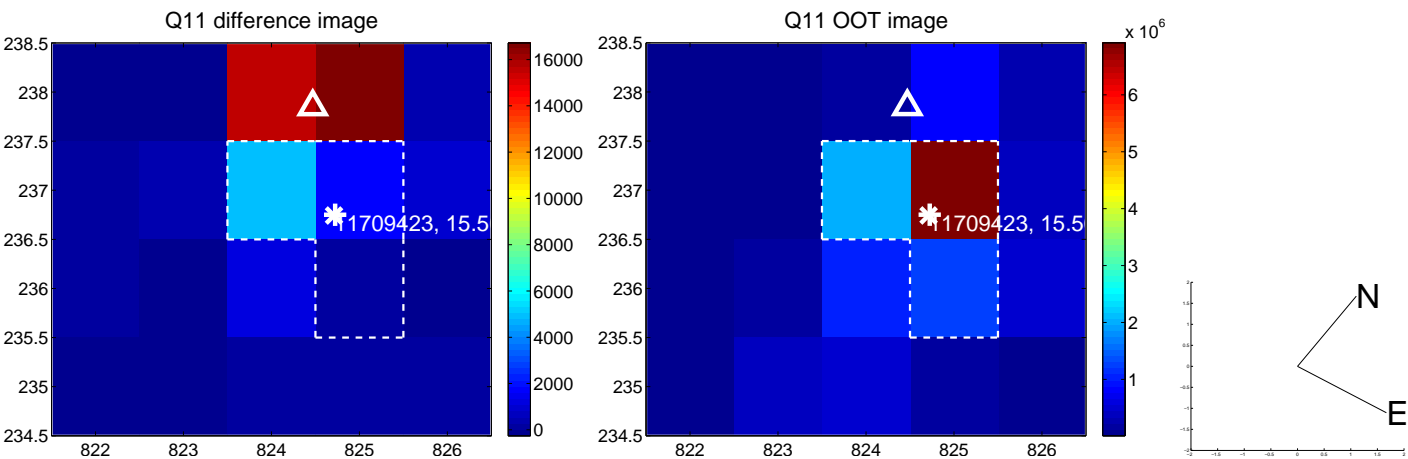
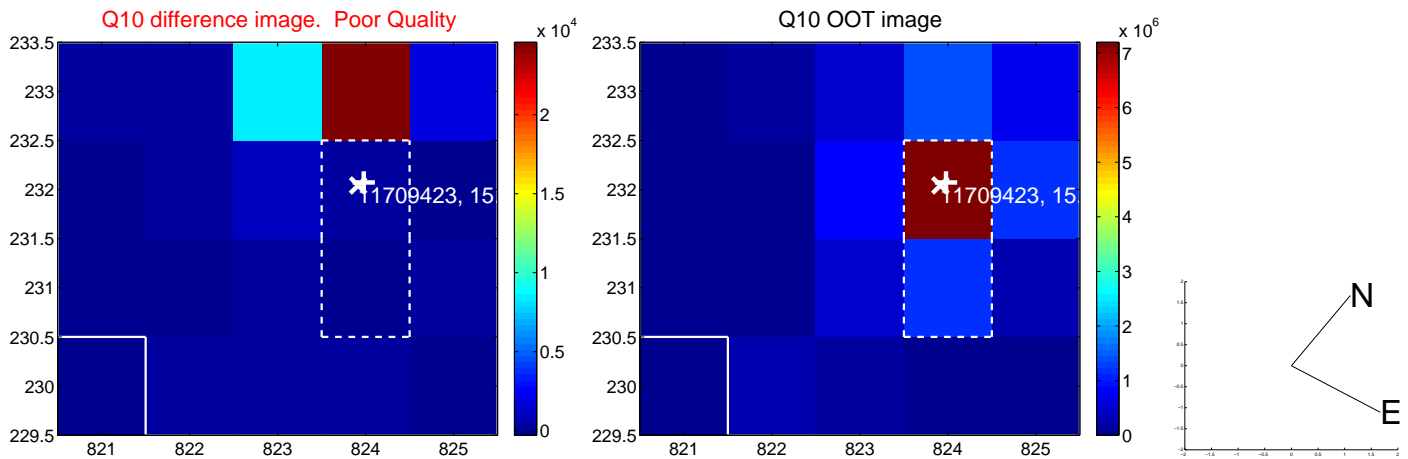
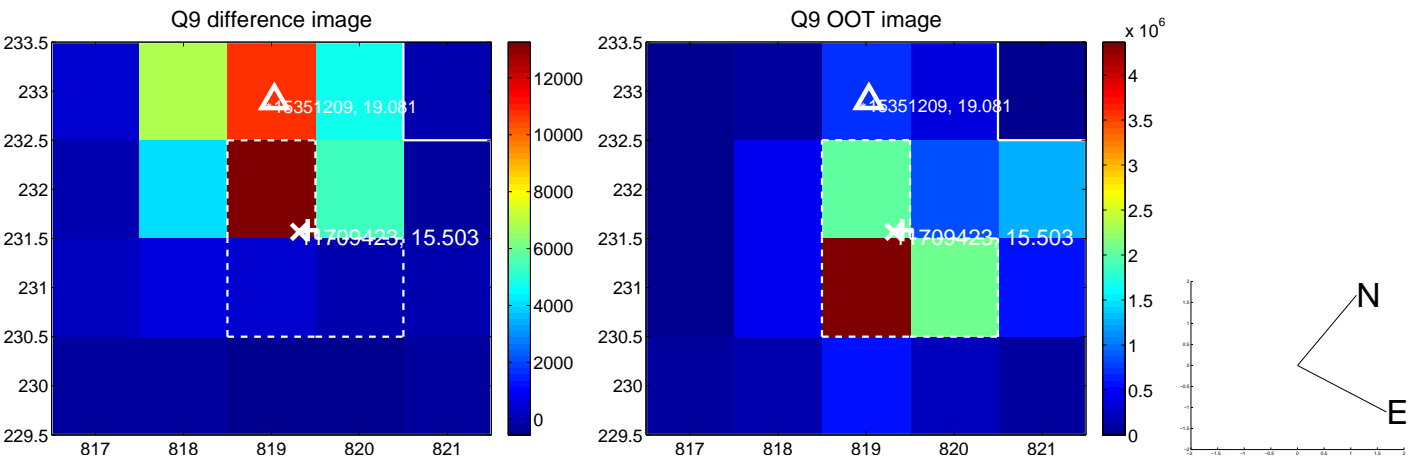


white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

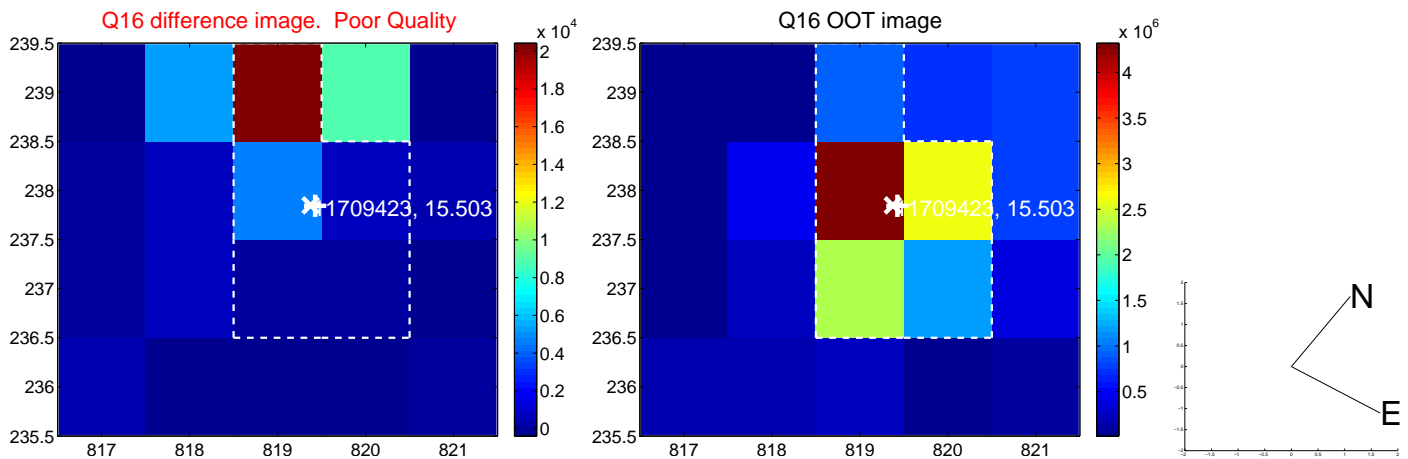
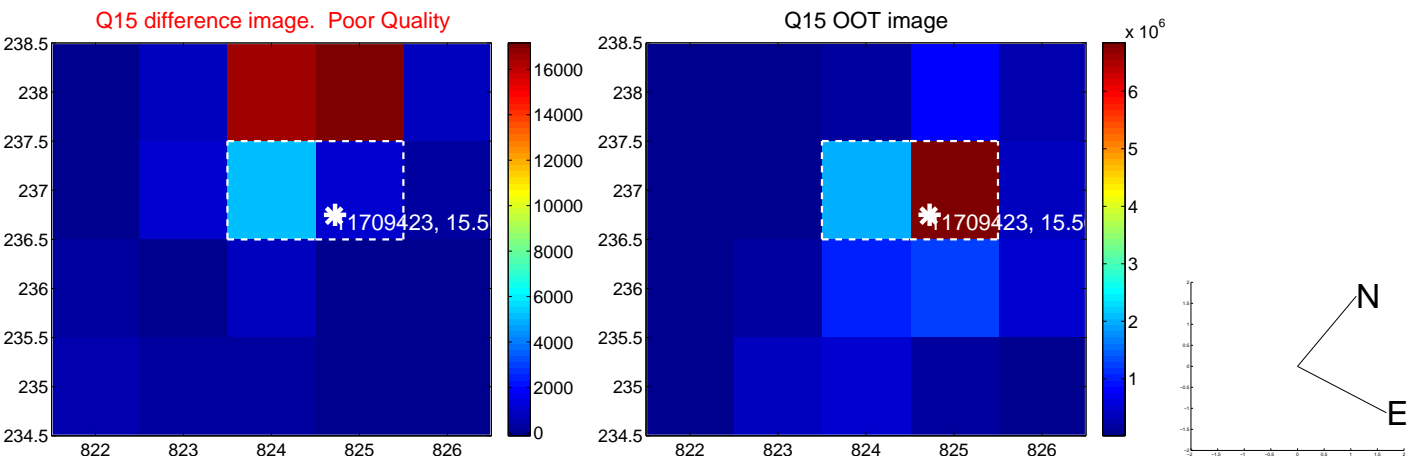
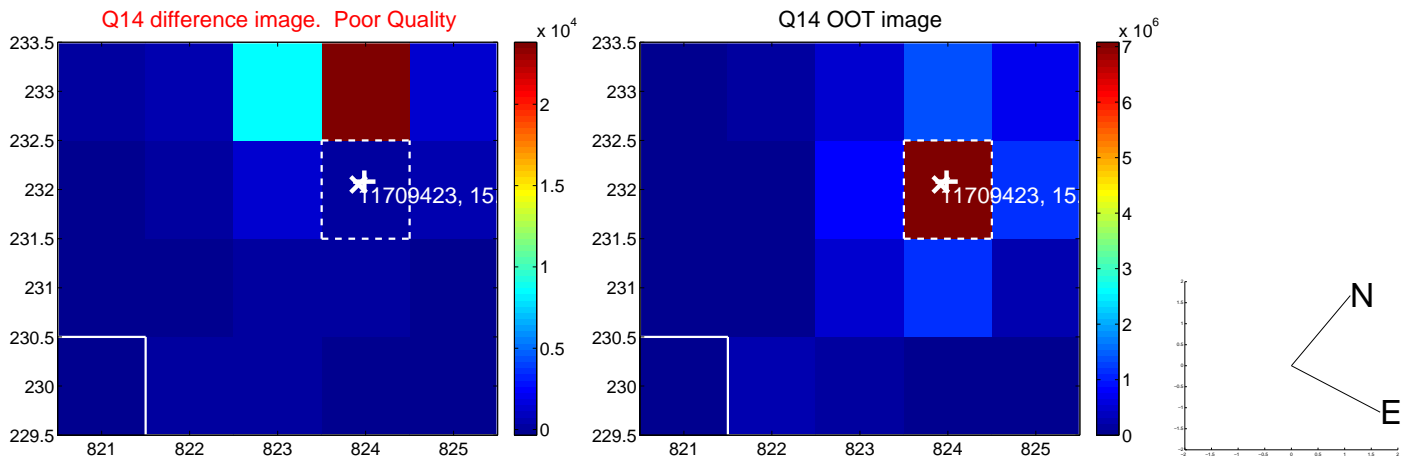
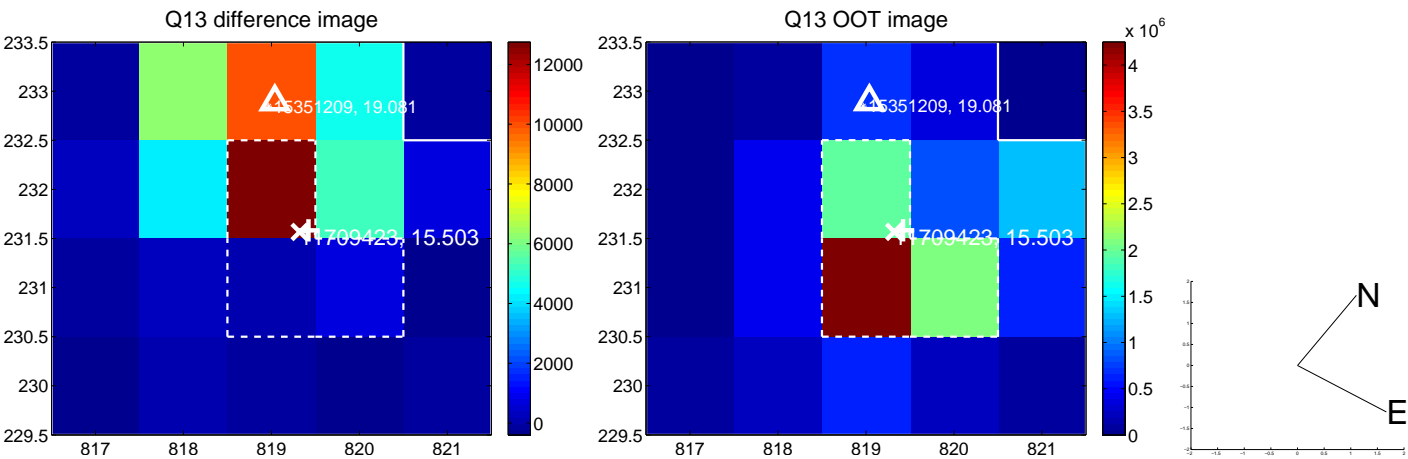




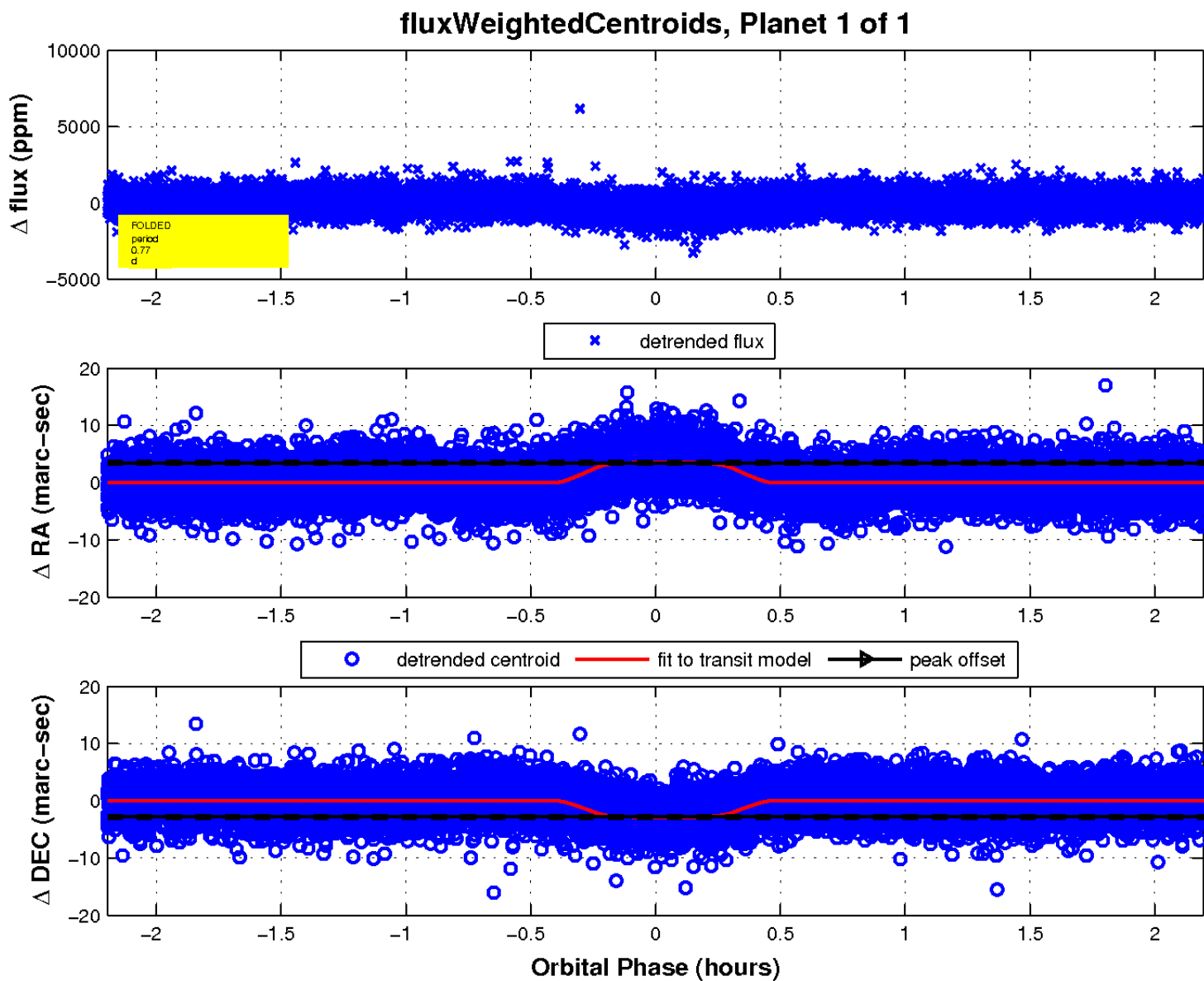
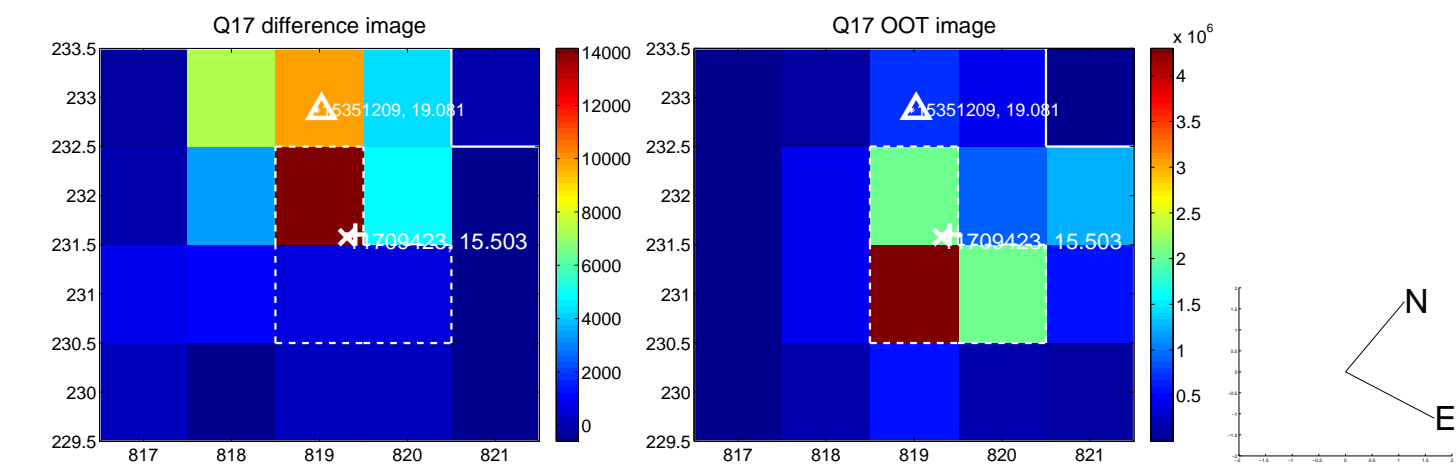
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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



UKIRT Image

Declination

