

# KIC 010484409

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
010484409-01	OBS	3366.01	10.678460	140.158336	199.7	2.526	8.5	9.2	0.80	5459	1.30	60.76

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
010484409-01	OBS	FP	0.00	0	0	1	0	CENT_RESOLVED_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 010484409-01

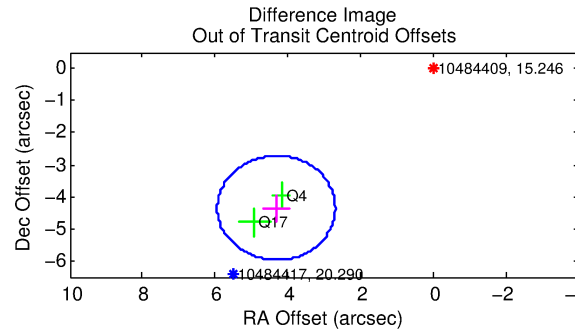
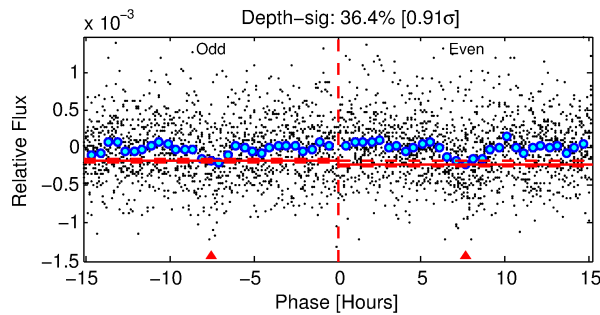
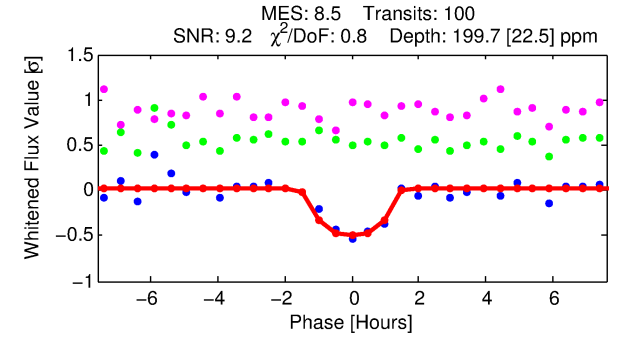
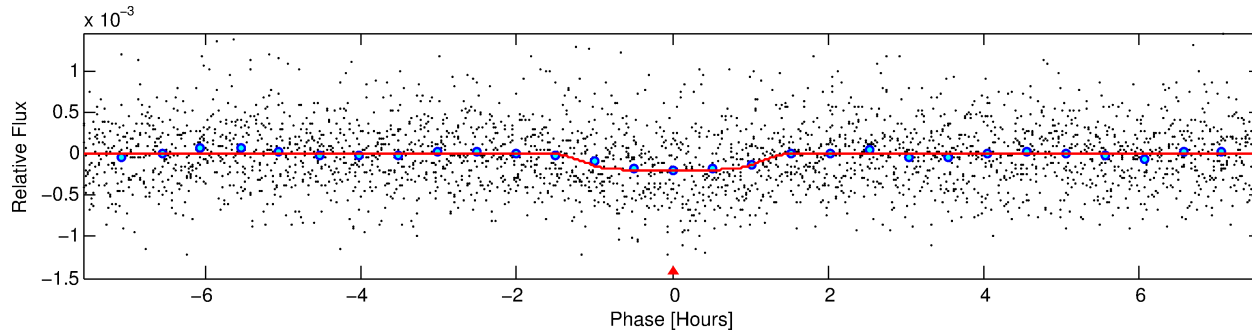
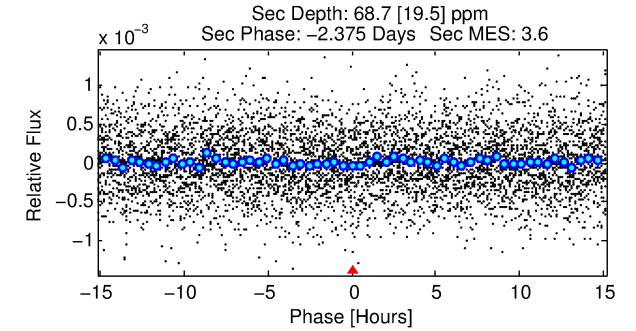
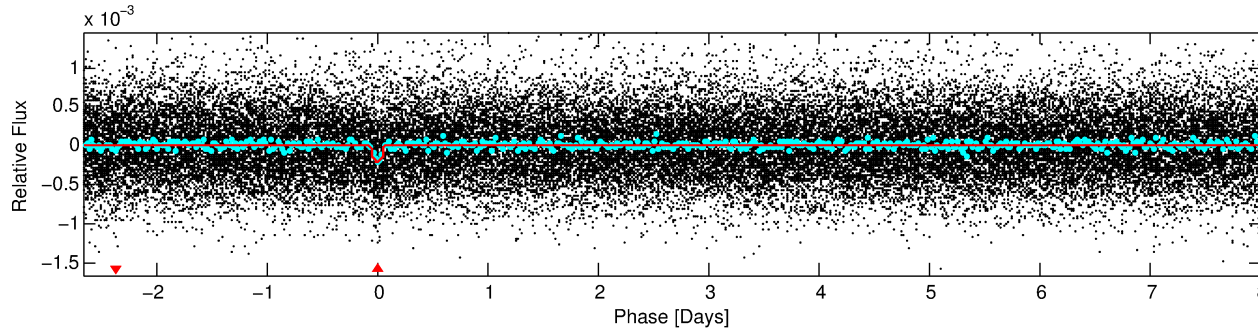
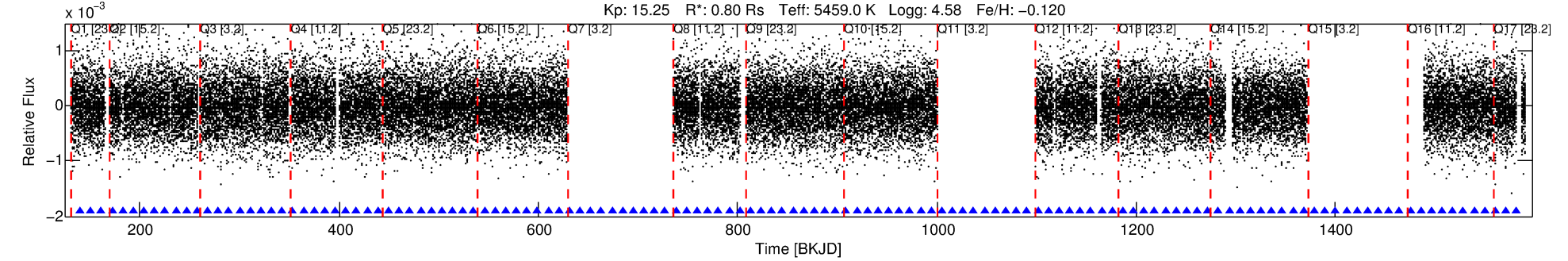
No Significant Match Found

# DV One-Page Summary

KIC: 10484409 Candidate: 1 of 1 Period: 10.678 d

KOI: K03366.01 Corr: 0.951

Kp: 15.25 R\*: 0.80 Rs Teff: 5459.0 K Logg: 4.58 Fe/H: -0.120



## DV Fit Results:

Period = 10.67846 [0.00009] d  
Epoch = 140.1583 [0.0060] BKJD  
Rp/R\* = 0.0150 [0.0146]  
a/R\* = 17.58 [73.64]  
b = 0.86 [1.33]  
Seff = 60.76 [17.69]  
Teff = 712 [52] K  
Rp = 1.30 [1.30] Re  
a = 0.0912 [0.0167] AU  
Ag = 185.89 [369.17] [0.50σ]  
Teffp = 4064 [2004] K [1.67σ]

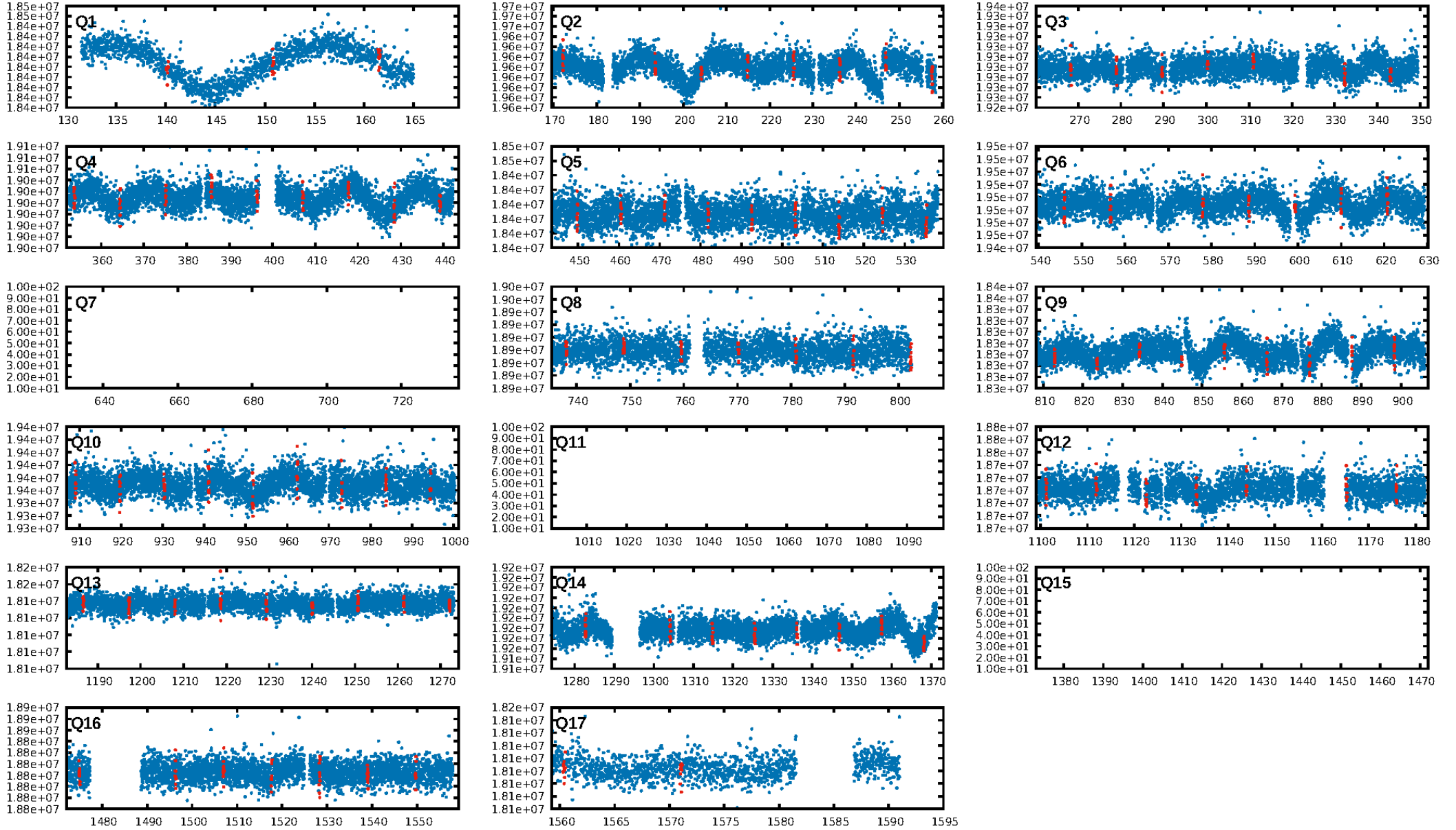
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: 81.9%  
ModelChiSquareGof-sig: 100.0%  
Bootstrap-pfa: 6.73e-18  
RollingBand-fgt: 1.00 [95/95]  
GhostDiagnostic-chr: -0.4415  
Centroid-sig: 0.0%  
Centroid-so: 50.183 arcsec [29.99σ]  
OotOffset-rm: 6.128 arcsec [11.32σ]  
KicOffset-rm: 6.183 arcsec [13.98σ]  
OotOffset-st: 0/0/1/1 [2]  
KicOffset-st: 0/0/1/1 [2]  
DiffImageQuality-fgm: 1.00 [2/2]  
DiffImageOverlap-fno: 1.00 [14/14]

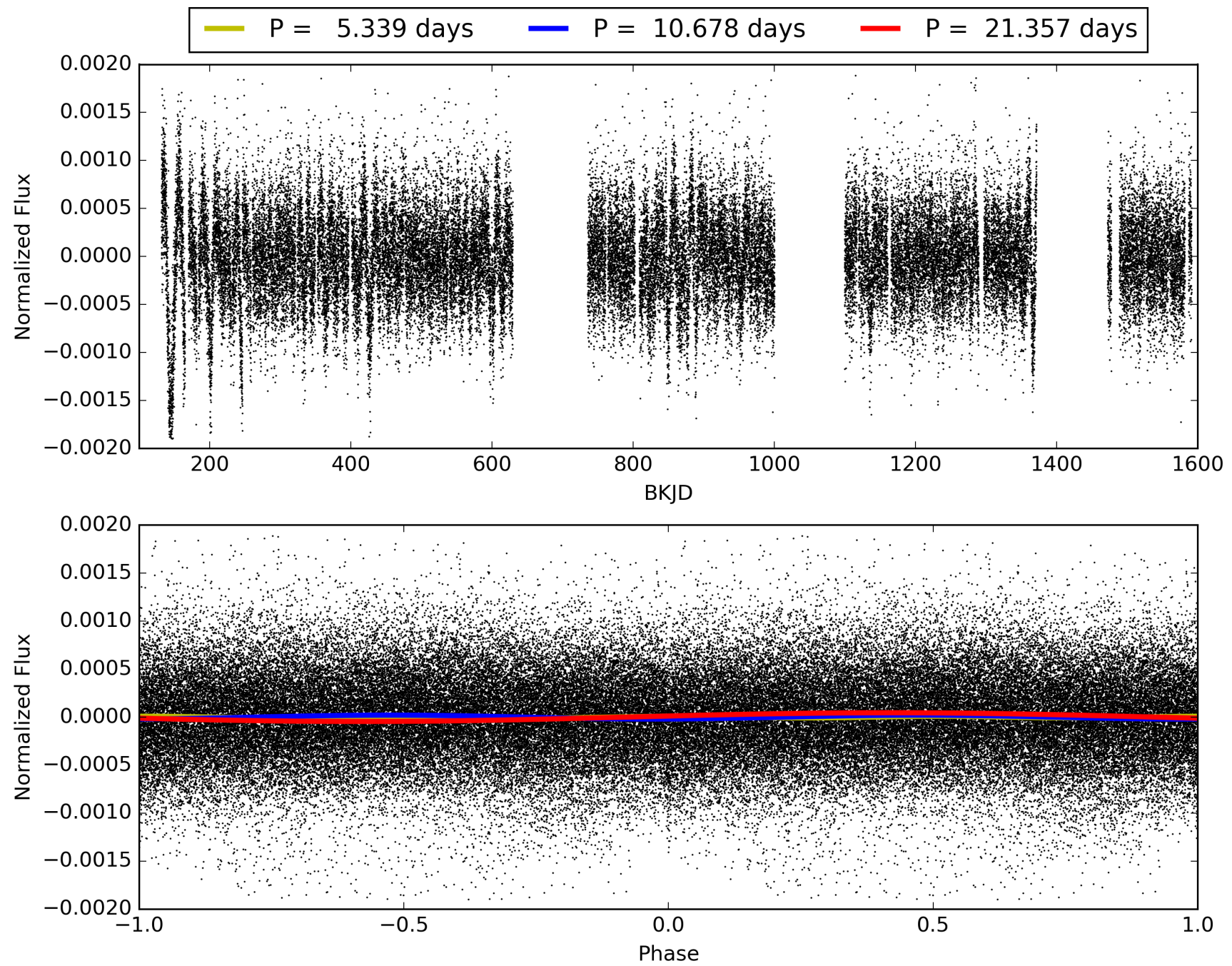
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 28-Jan-2016 20:39:02 Z

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

# TCE 010484409-01, PDC Light Curves

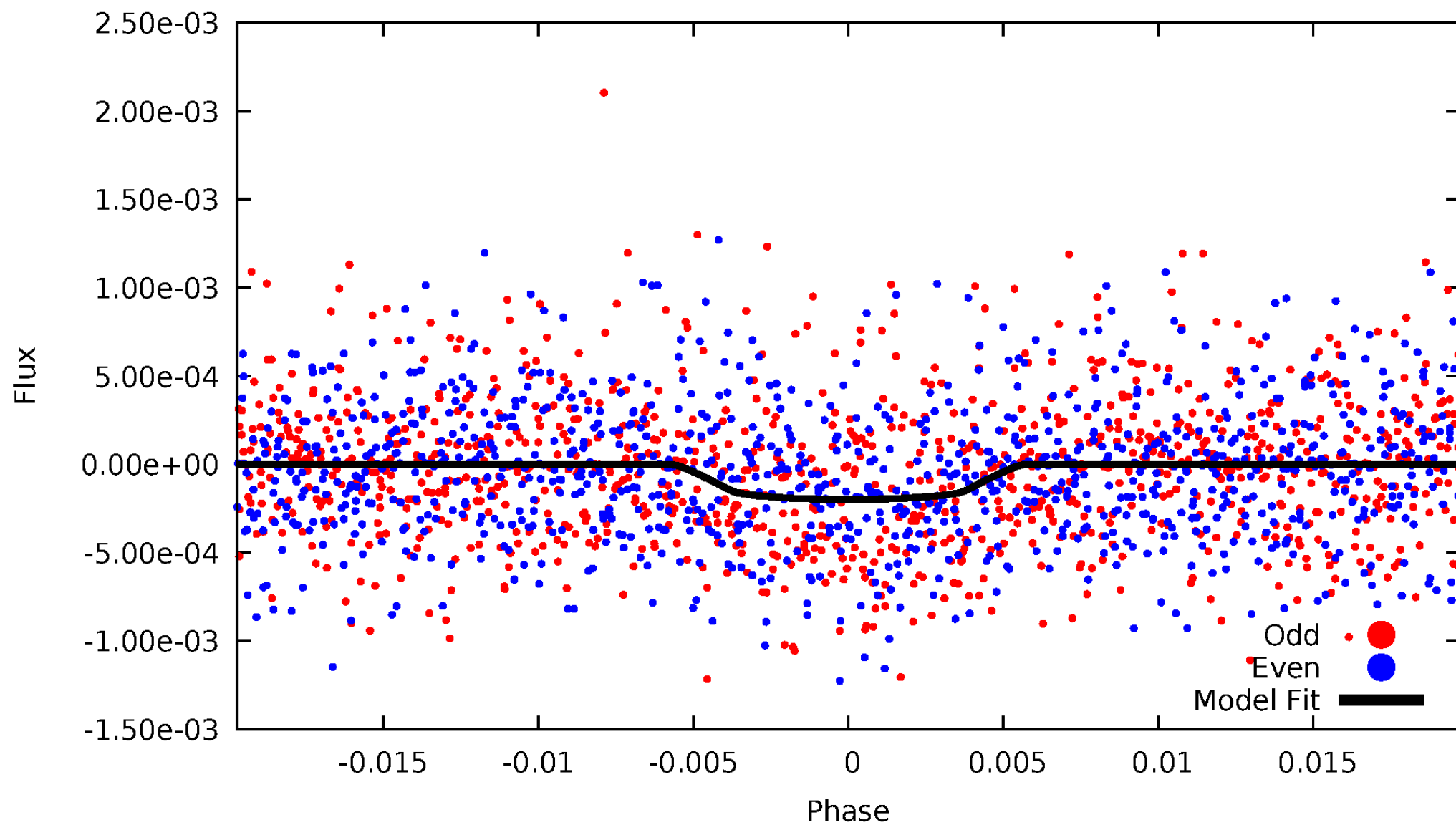


TCE 010484409-01



# DV Odd/Even

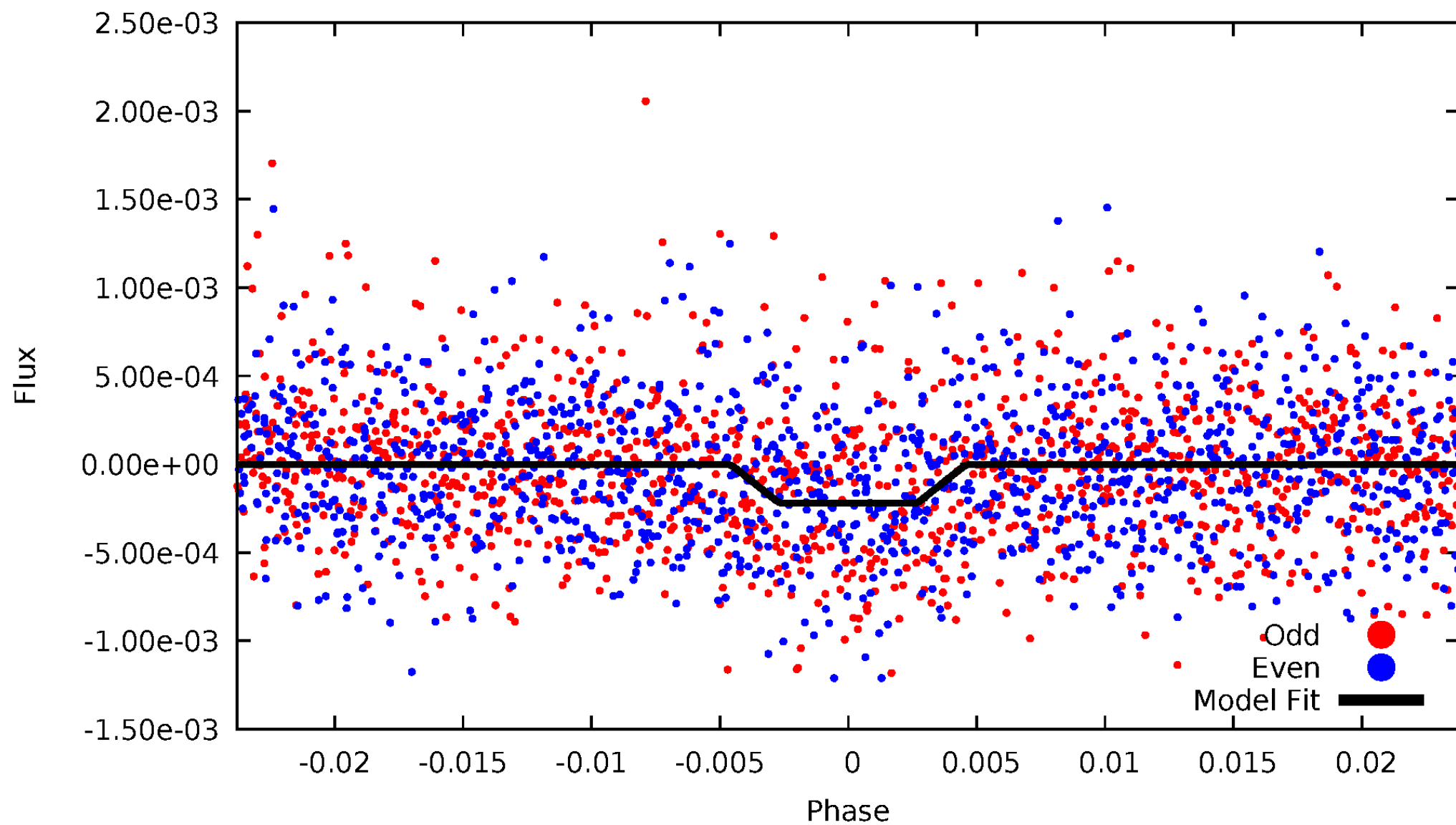
TCE 010484409-01





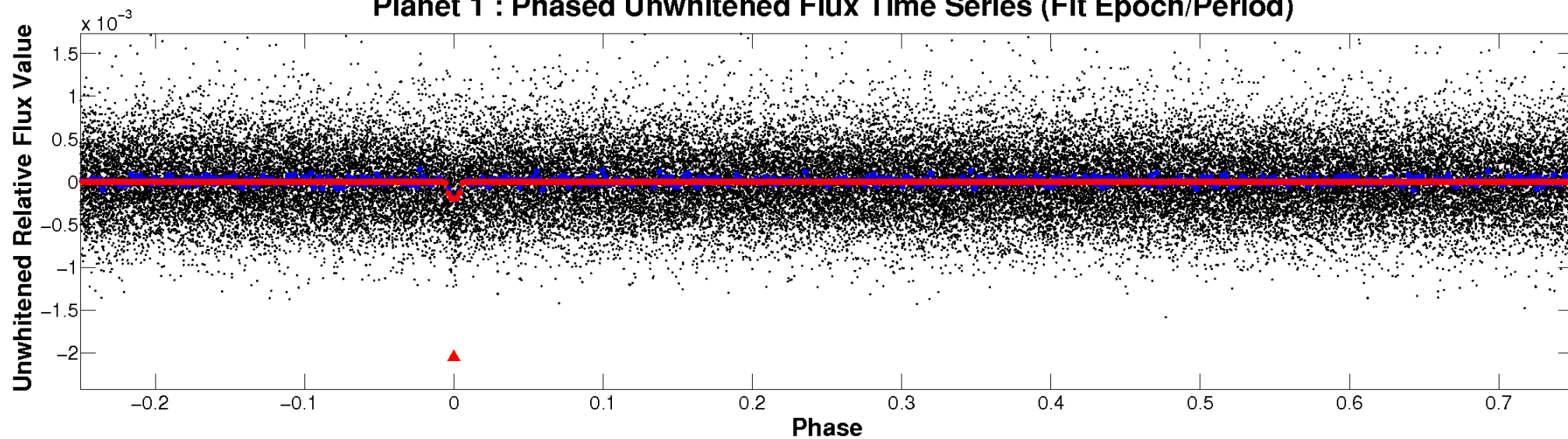
# ALT Odd/Even

TCE 010484409-01

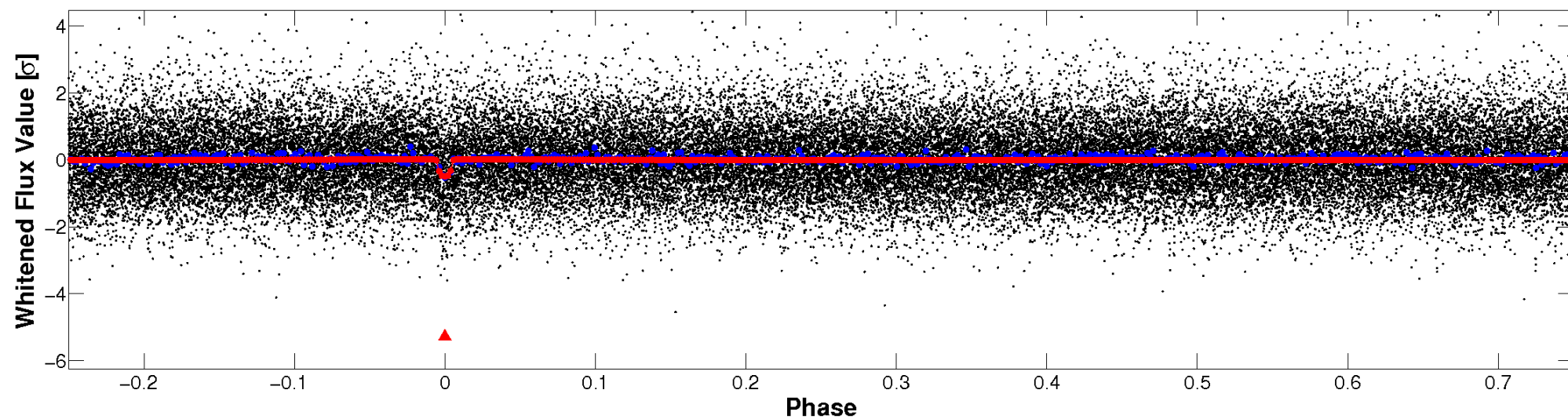


# Non-Whitened Vs. Whitened Light Curve

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

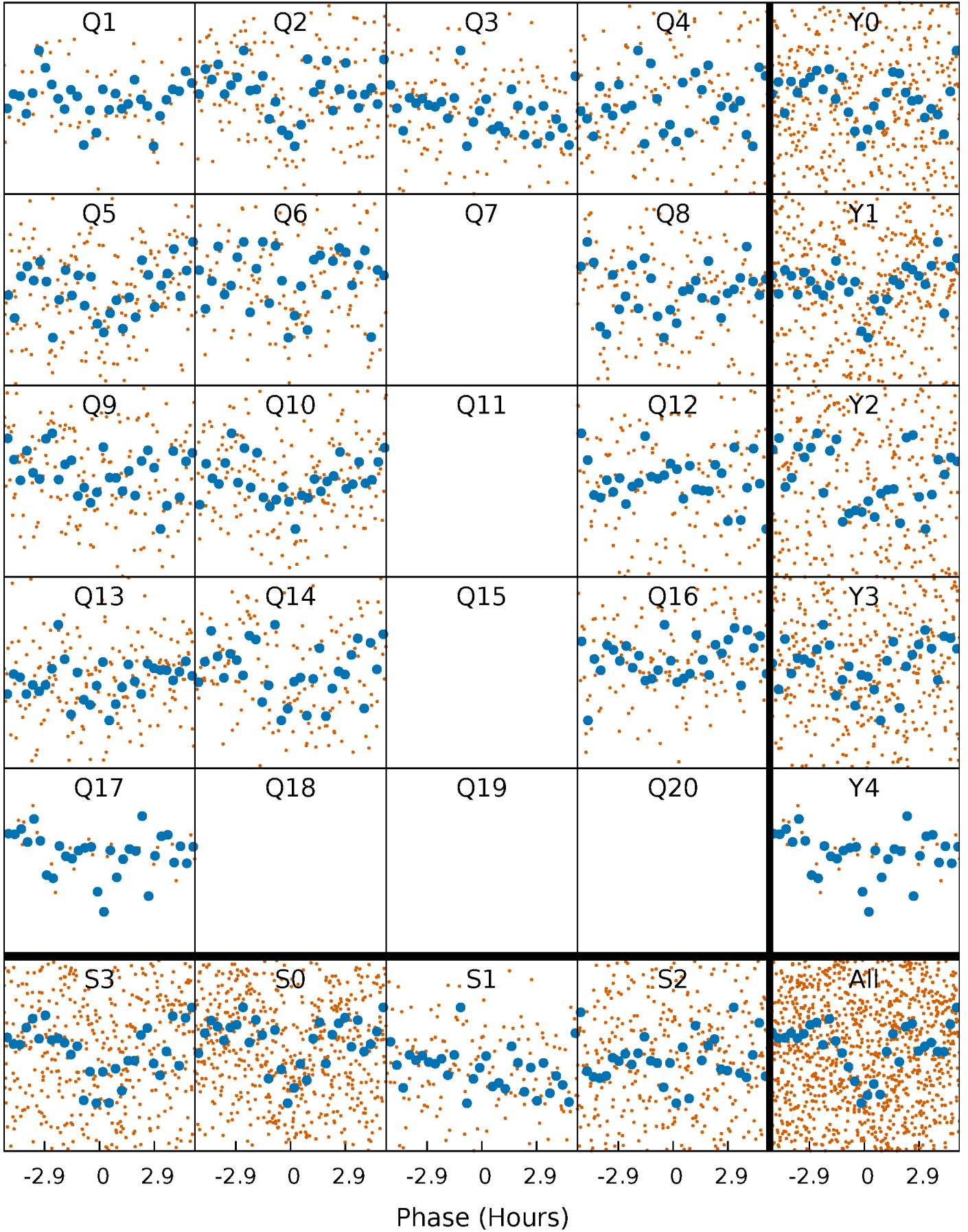


**Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)**



# PDC Quarter-Phased Transit Curves

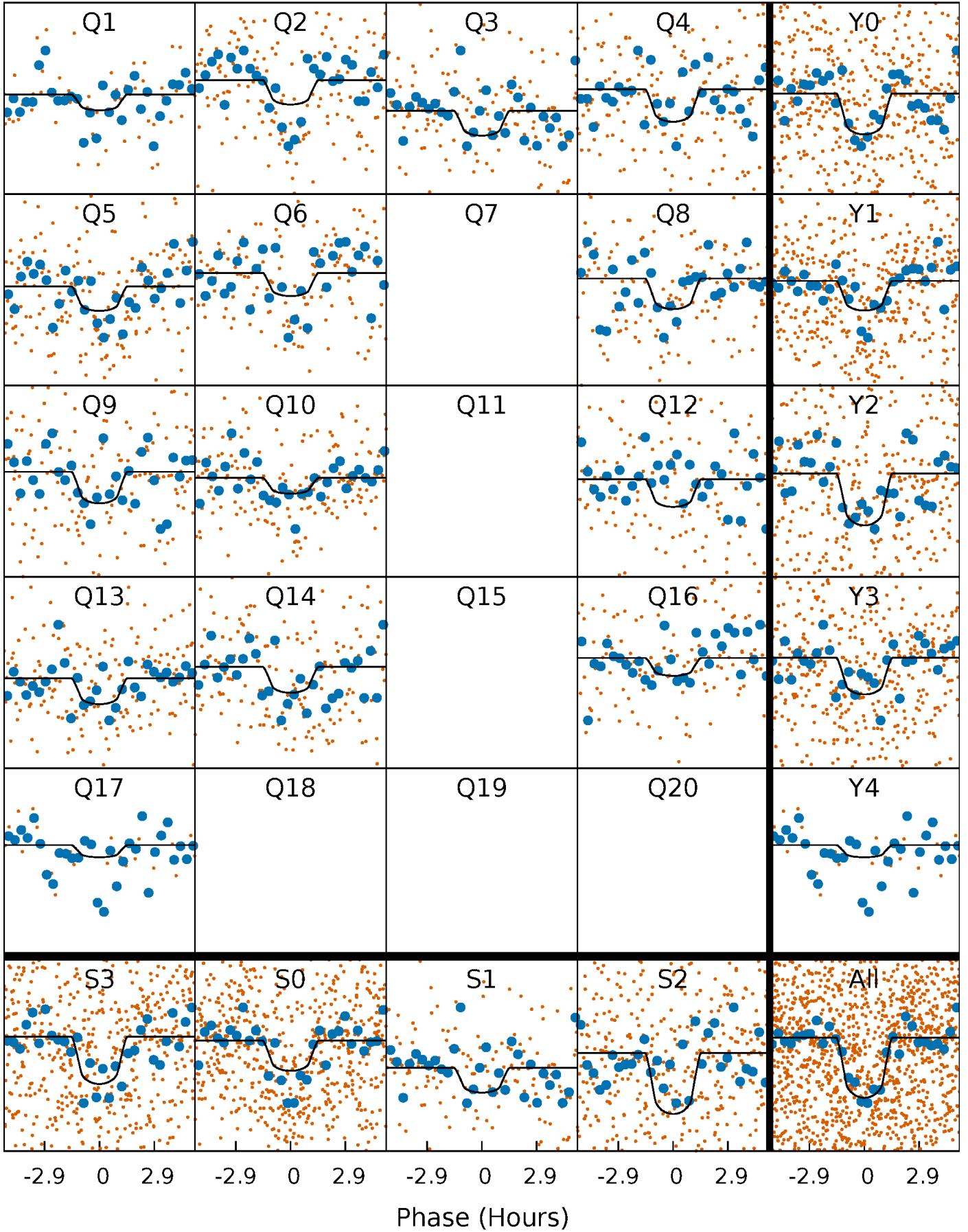
TCE 010484409-01 P= 10.678460 Days  $T_0=140.158335$  (BKJD)





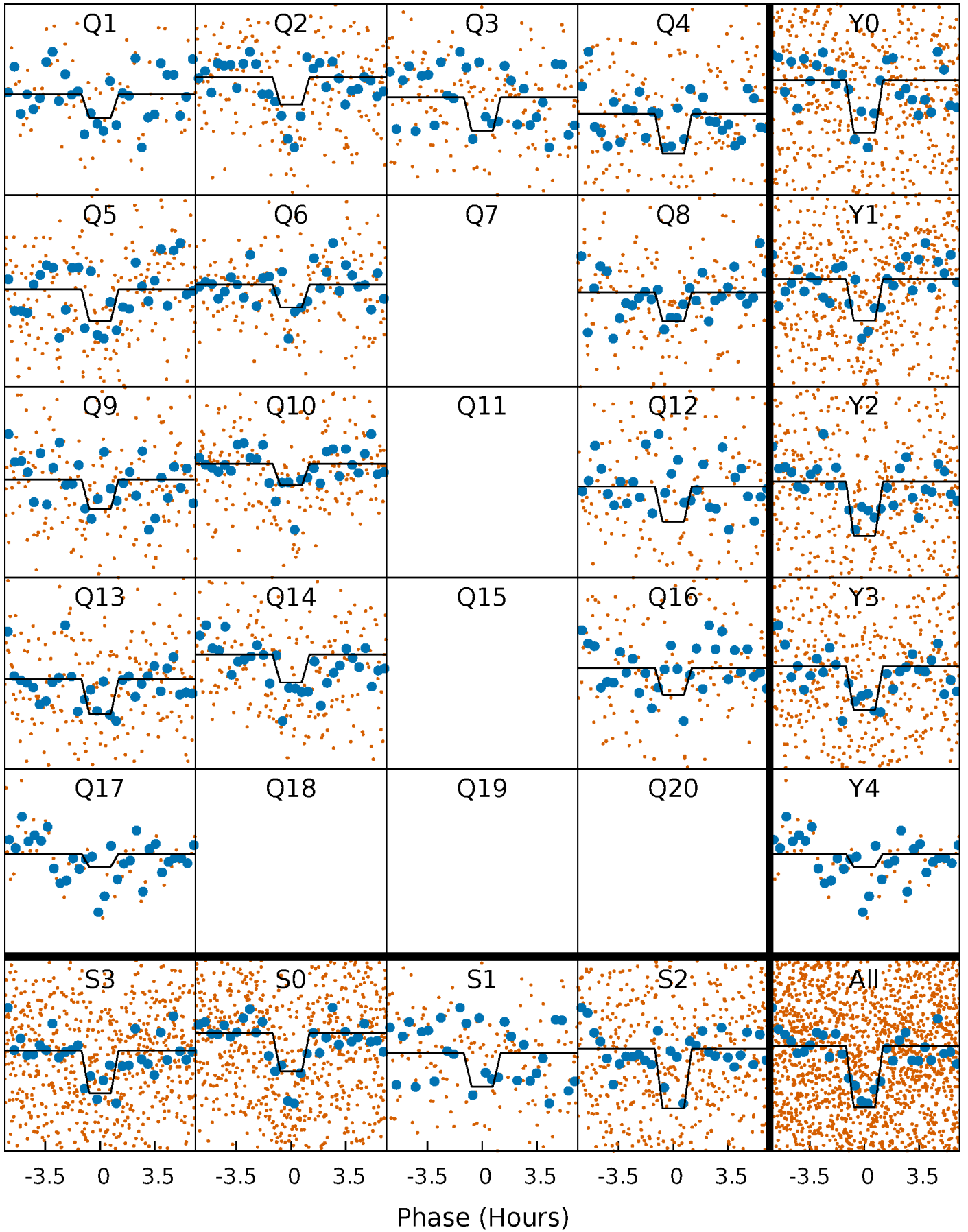
# DV Quarter-Phased Transit Curves

TCE 010484409-01 P= 10.678460 Days  $T_0=140.158335$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

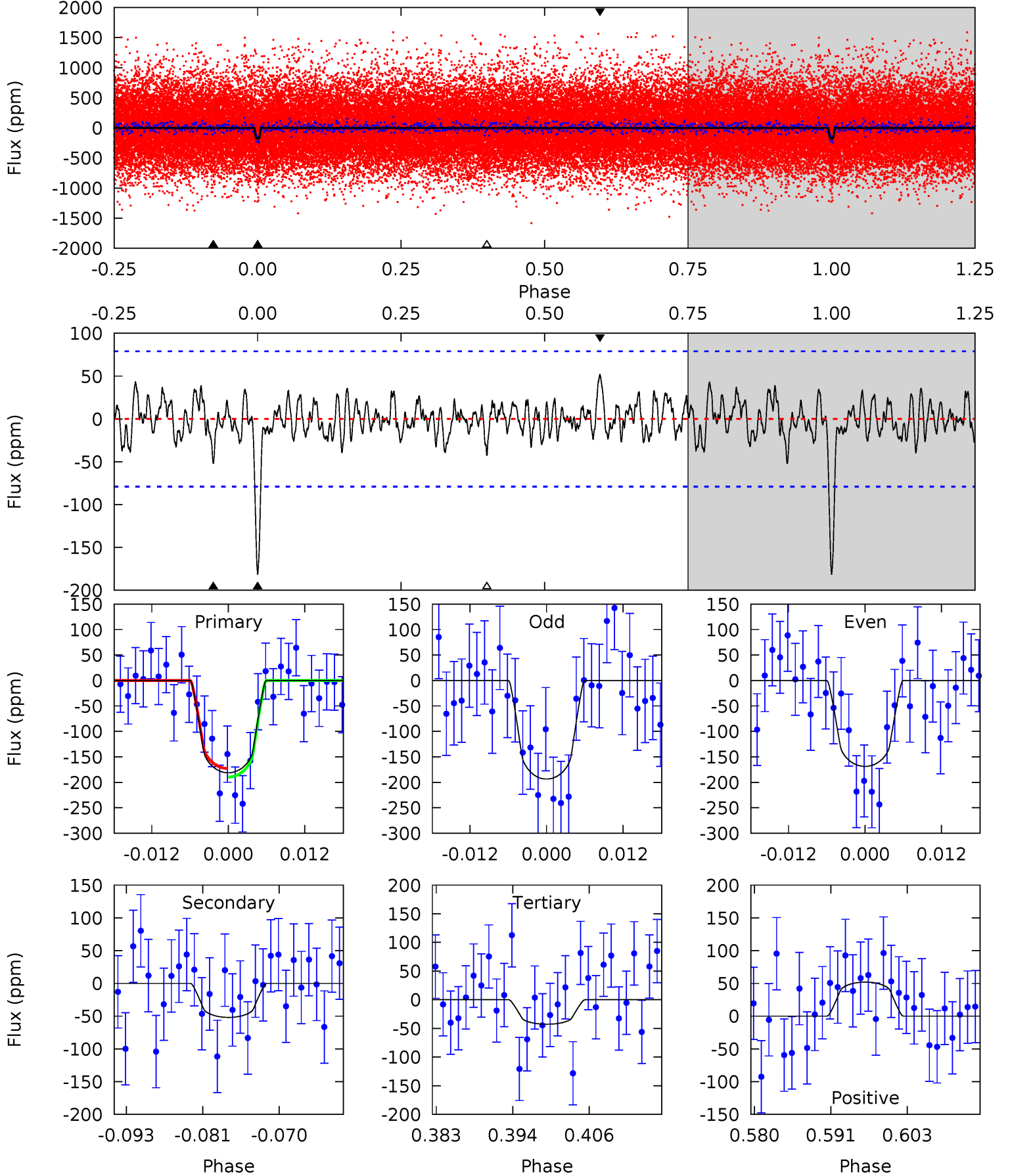
TCE 010484409-01 P= 10.678410 Days  $T_0=140.163503$  (BKJD)



# DV Model-Shift Uniqueness Test

010484409-01,  $P = 10.678460$  Days,  $E = 129.479875$  Days

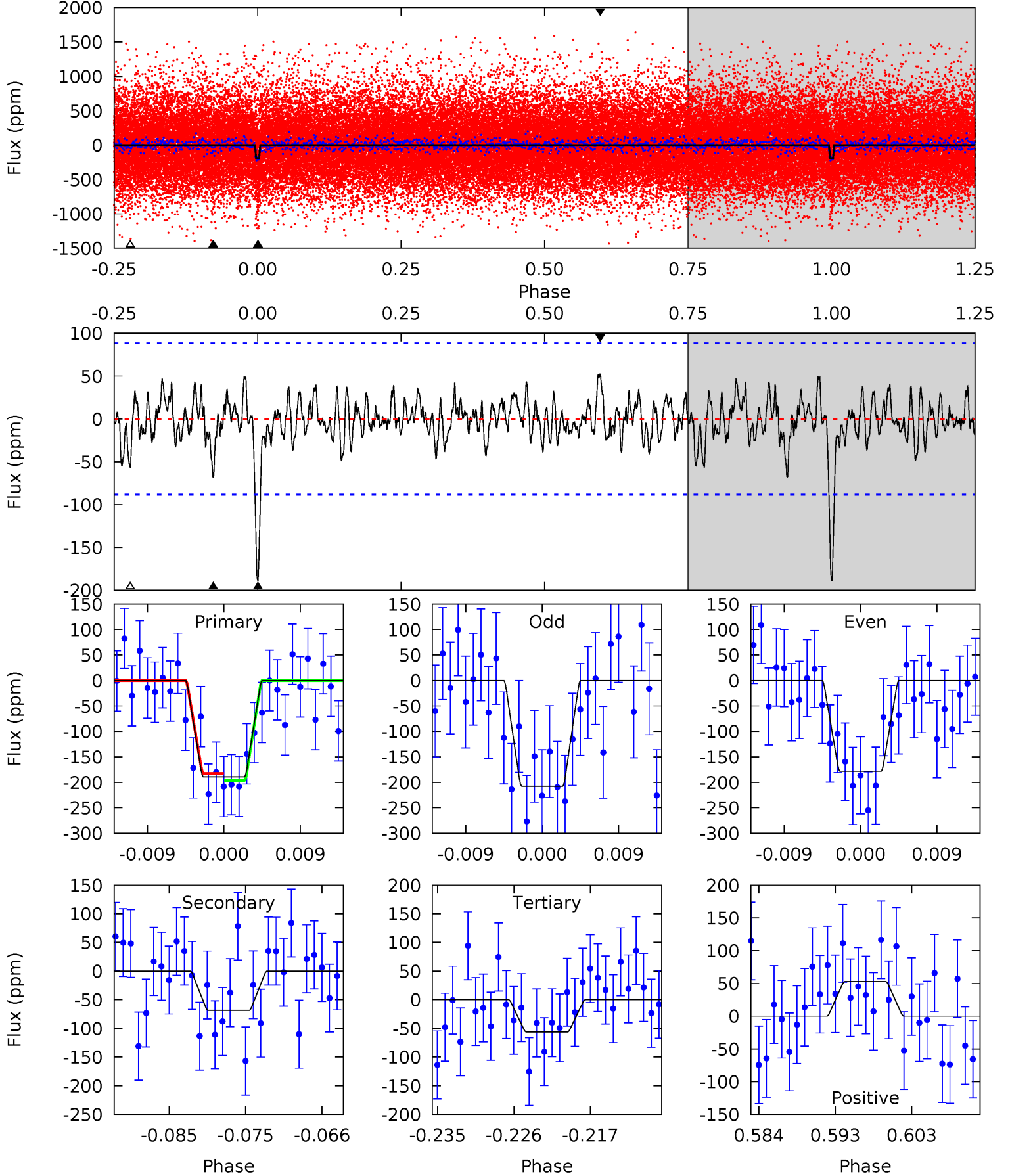
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
11.5	3.28	2.70	3.29	5.00	2.52	1.04	8.76	8.17	0.58	-0.00	0.79	1.18	0.22	0.53



# Alt Model-Shift Uniqueness Test

010484409-01,  $P = 10.678410$  Days,  $E = 129.485093$  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
10.8	3.90	3.21	3.00	5.04	2.60	1.09	7.57	7.78	0.69	0.90	0.83	1.10	0.22	0.40



### Stellar Parameters For KIC 010484409

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$5459^{+164}_{-147}$	$4.583^{+0.034}_{-0.144}$	$-0.120^{+0.300}_{-0.300}$	$0.797^{+0.175}_{-0.070}$	$0.893^{+0.082}_{-0.101}$	$2.489^{+0.451}_{-0.978}$
	+3%/-3%	+1%/-3%	+250%/-250%	+22%/-9%	+9%/-11%	+18%/-39%
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 010484409-01 / KOI 3366.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	$A_{\text{obs}}$
DV	$-52 \pm 16$	$1.55^{+1.30}_{-1.00}$	$1015^{+53}_{-39}$	$3830^{+1909}_{-697}$	$93^{+598}_{-66}$
Alt.	$-68 \pm 18$	$1.58^{+1.27}_{-0.96}$	$1015^{+57}_{-40}$	$4028^{+1993}_{-729}$	$122^{+722}_{-85}$

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



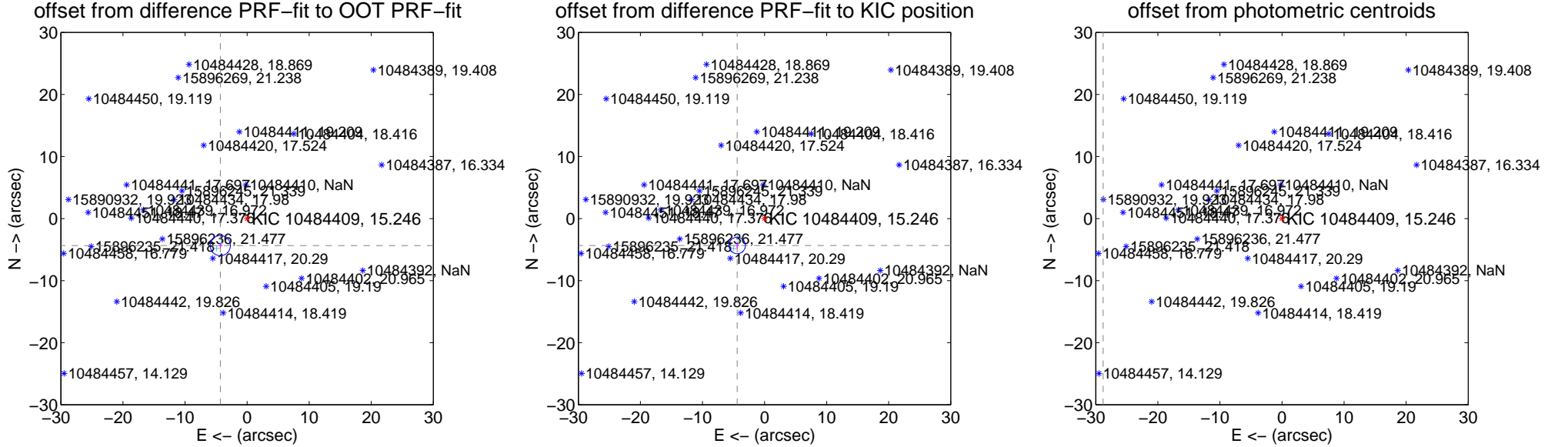
## DV Centroid Data

Supplemental centroid analysis for 010484409-01. Kepler magnitude: 15.25. Transit SNR 9.16

There are 2 quarters with good PRF difference image offsets

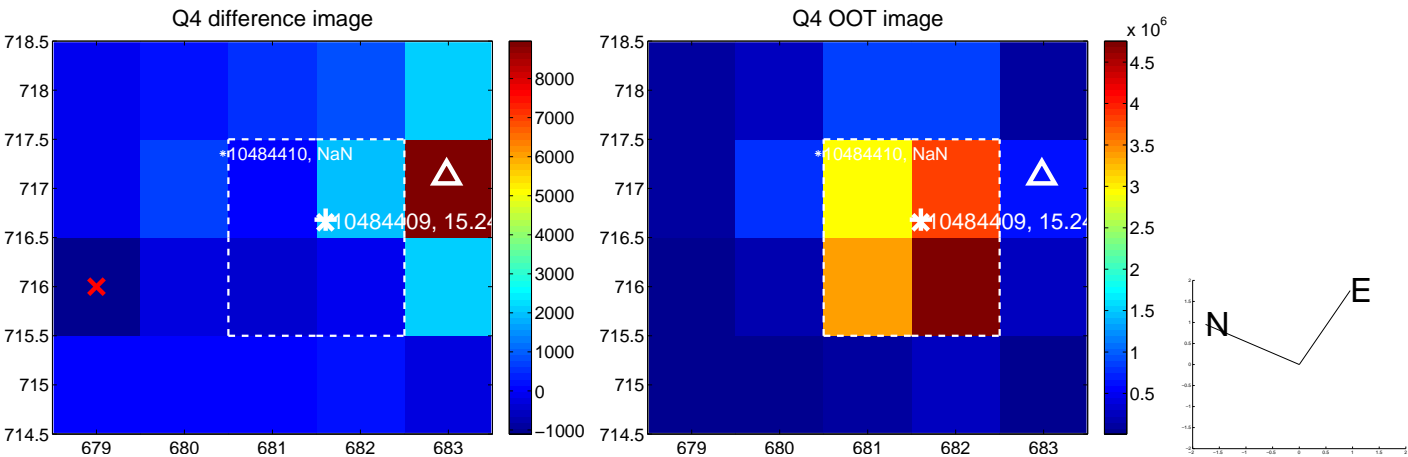
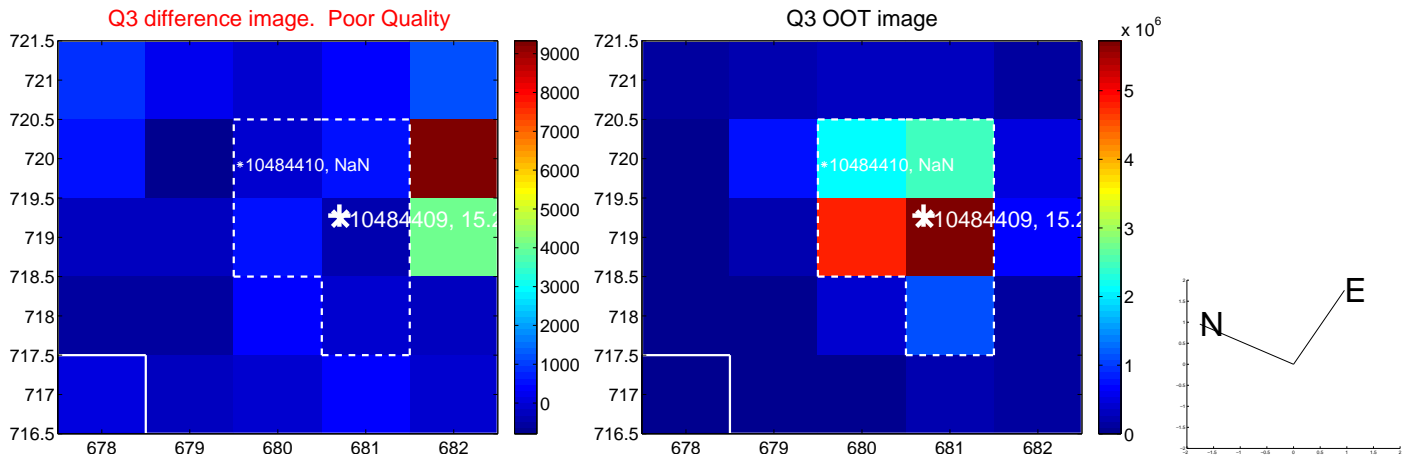
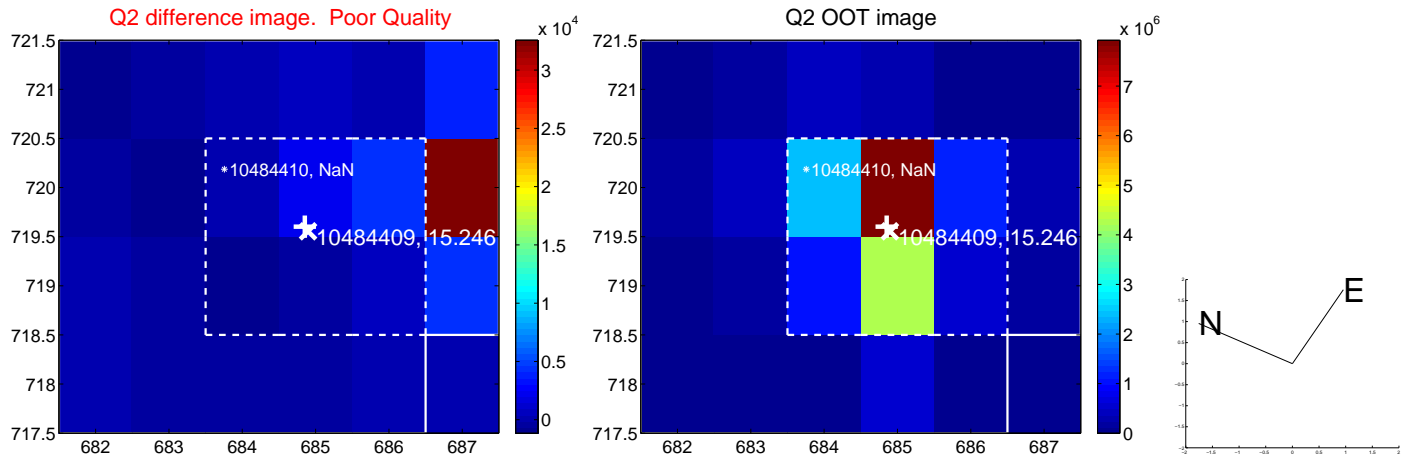
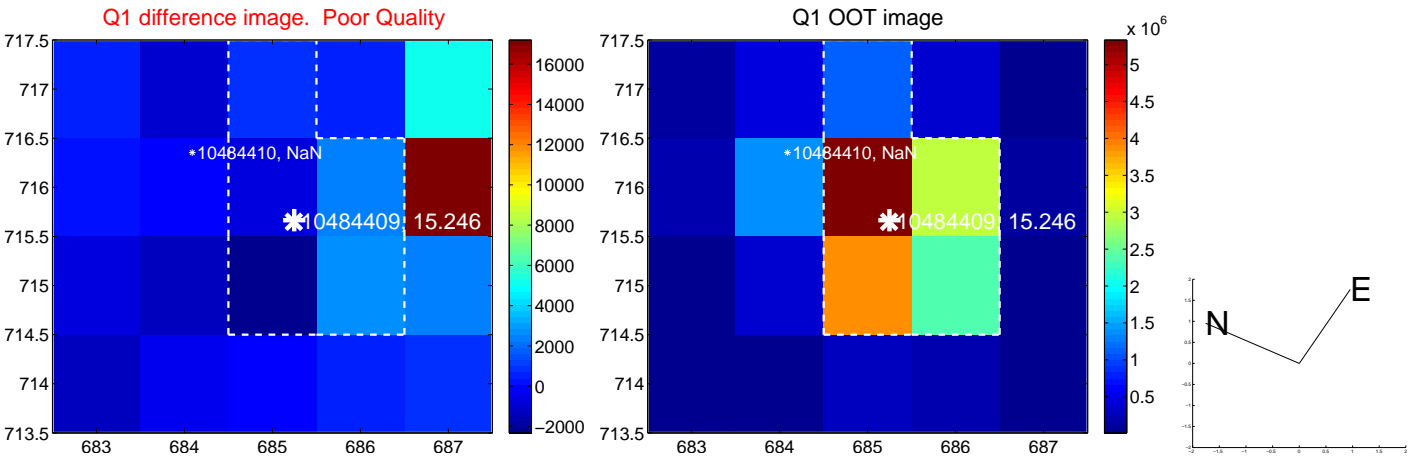
The direct PRF centroid is offset from the target star catalog position by about 0.07 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	6.128 $\pm$ 0.541	11.32	4.315 $\pm$ 0.360	-4.351 $\pm$ 0.411
PRF-fit source offset from KIC position	6.183 $\pm$ 0.442	13.98	4.411 $\pm$ 0.341	-4.333 $\pm$ 0.527
photometric centroid source offset	50.19 $\pm$ 1.67	29.99	28.82 $\pm$ 1.62	-41.09 $\pm$ 1.70

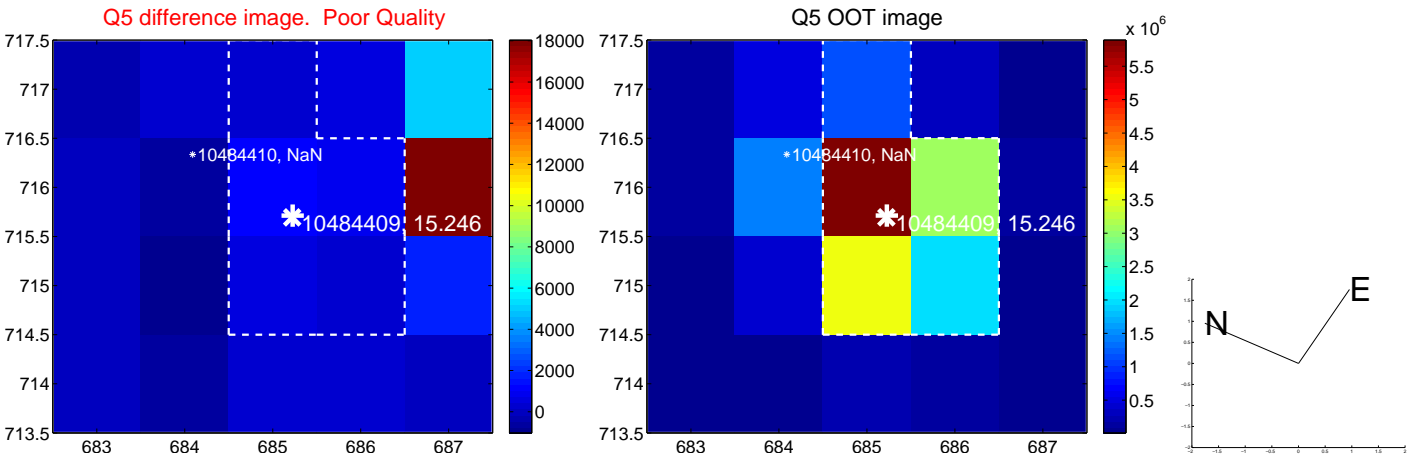


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: three-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

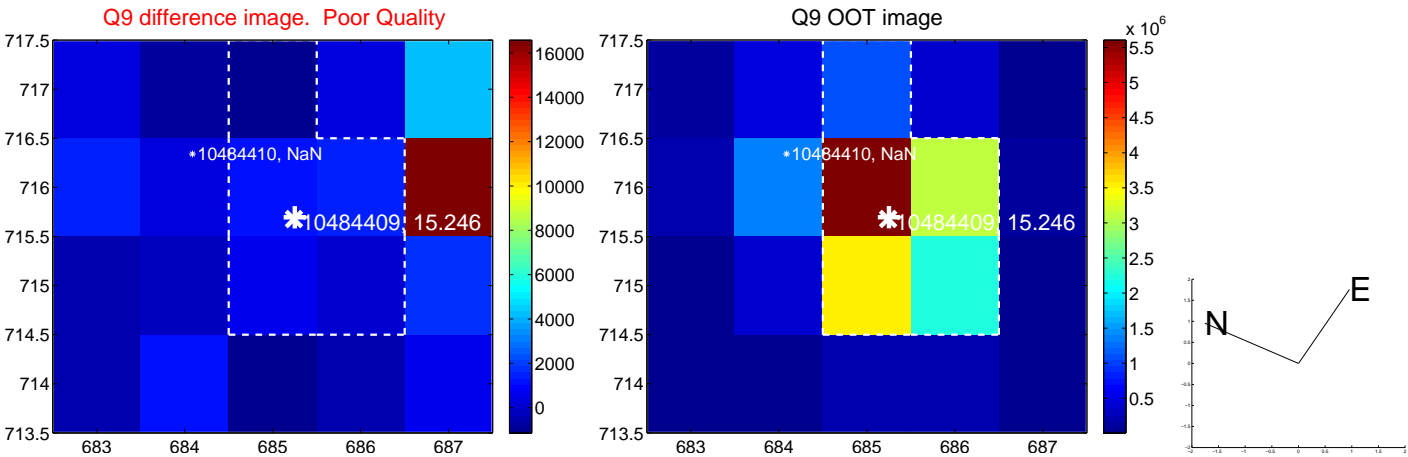
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



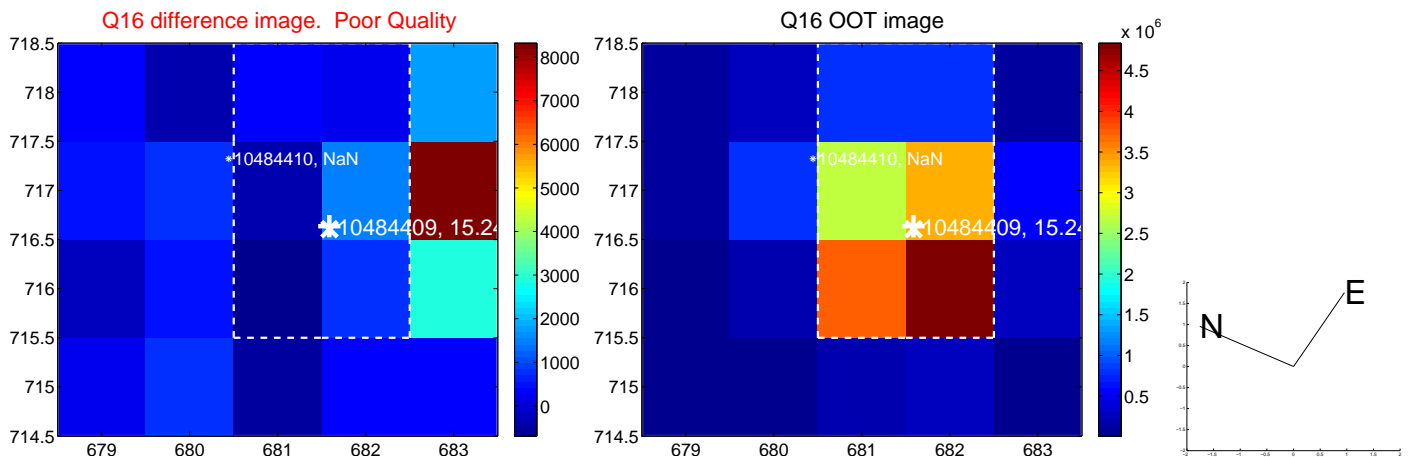
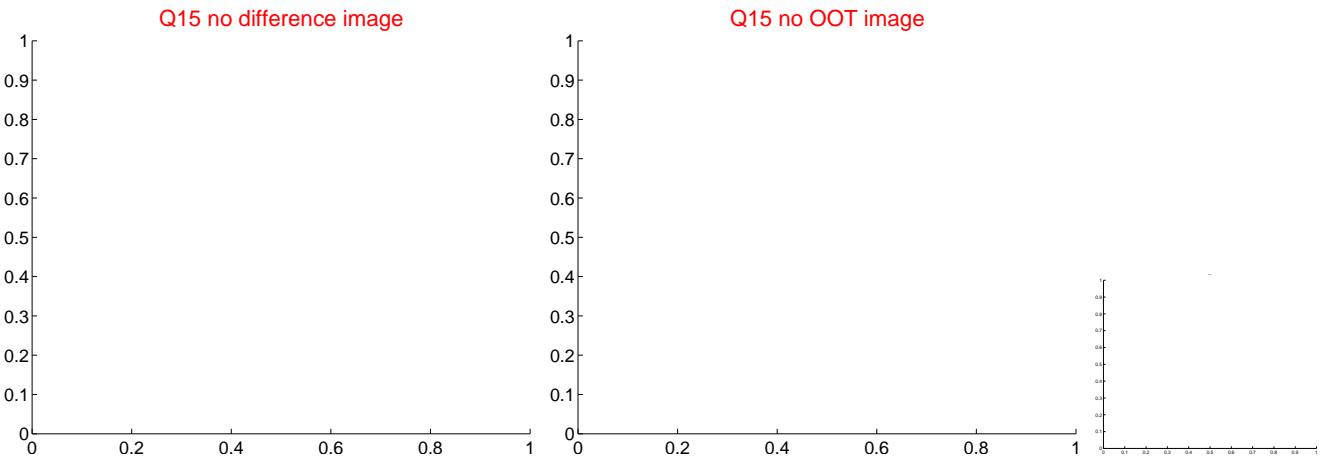
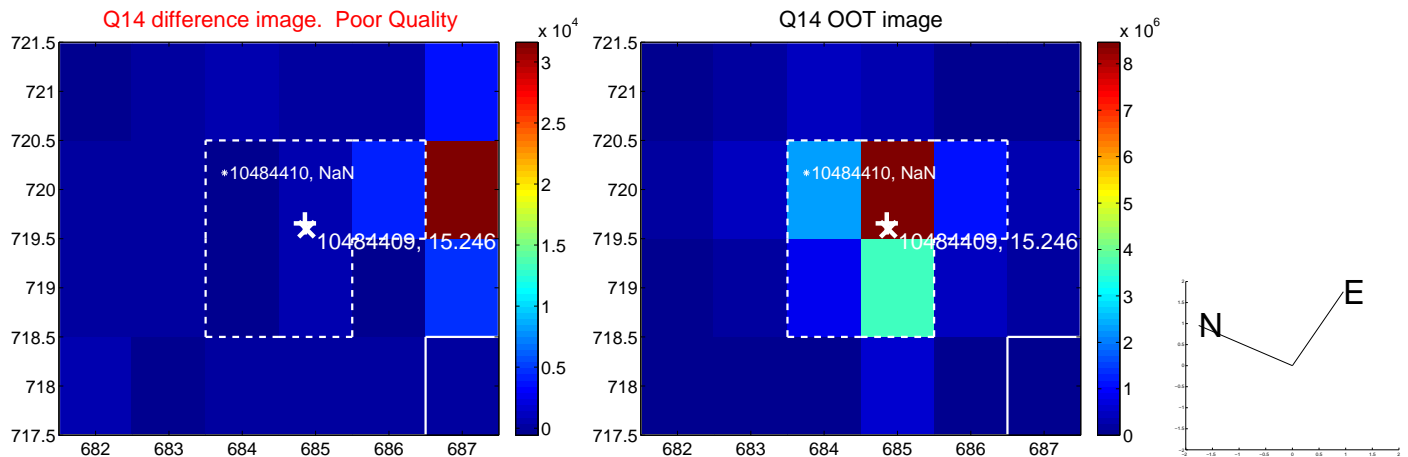
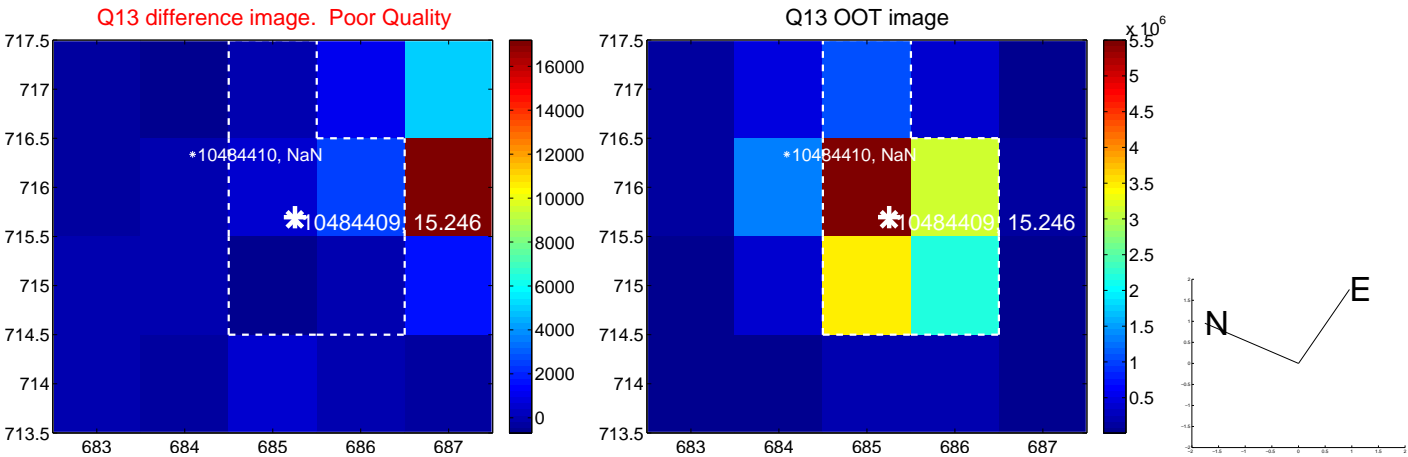
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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

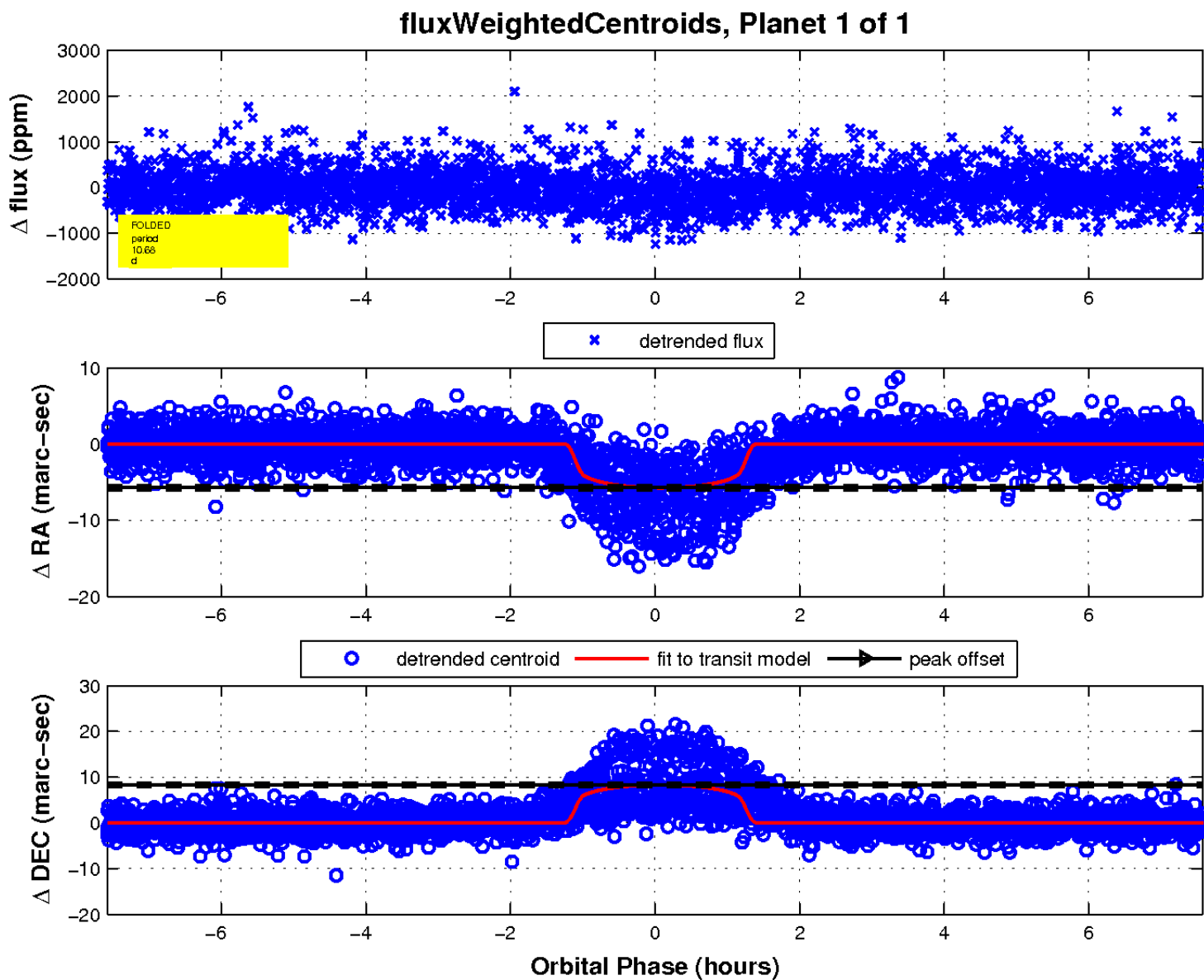
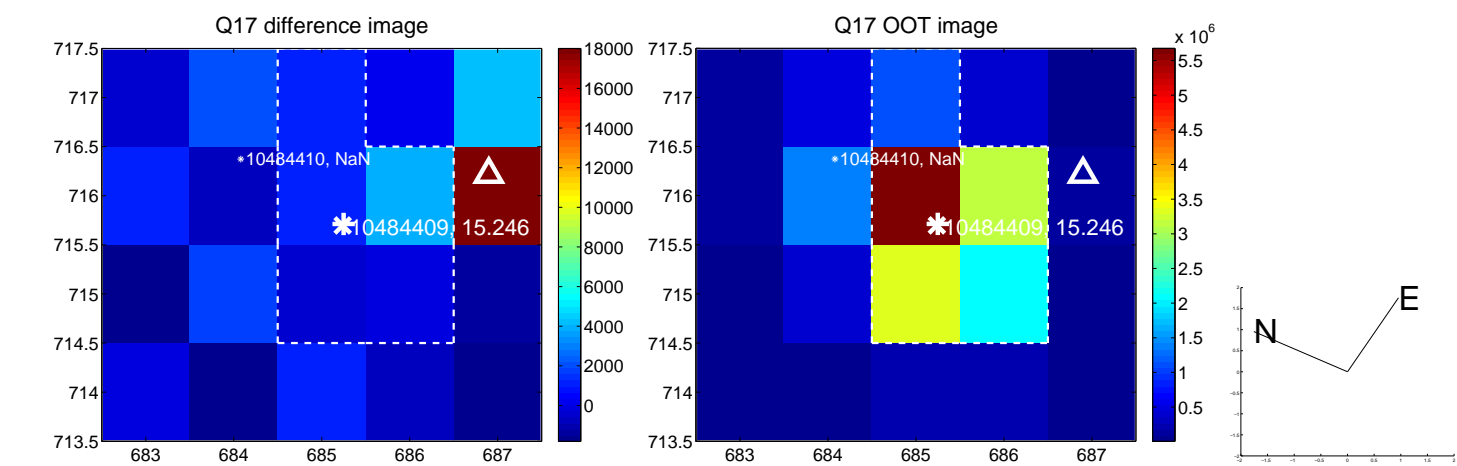


white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.





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



UKIRT Image

Declination

