

# KIC 009290948

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
009290948-01	OBS	No	629.412017	207.215956	308.7	12.642	7.2	7.2	1.99	7492	3.85	4.11

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
009290948-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—ALL_TRANS_CHASES

**Notes:** OBS = Observed. INJ = Injected. INV = Inverted. SCR = Scrambled.

N = Not Transit-Like. S = Stellar Eclipse. C = Centroid Offset. E = Ephemeris Match.

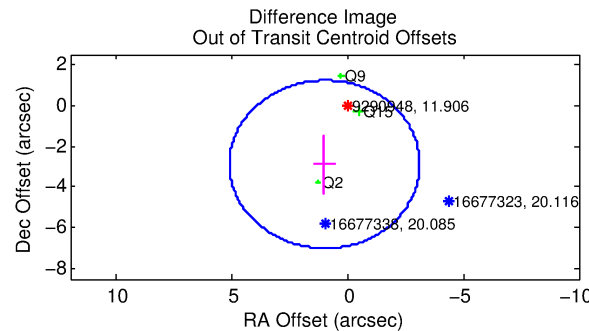
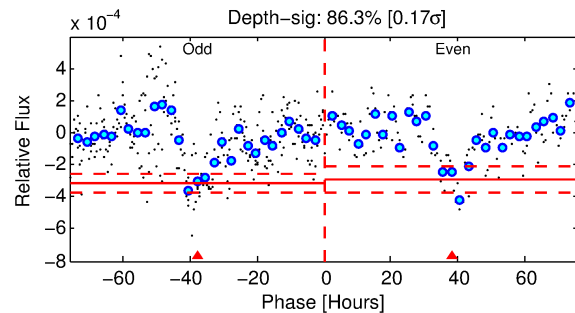
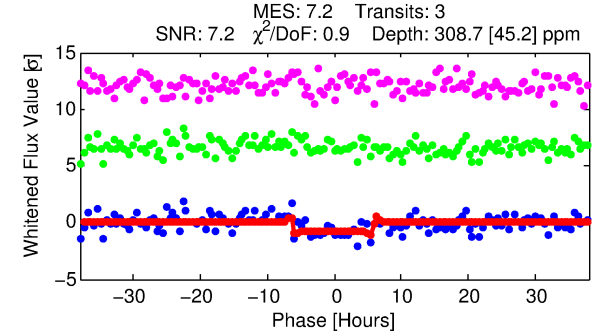
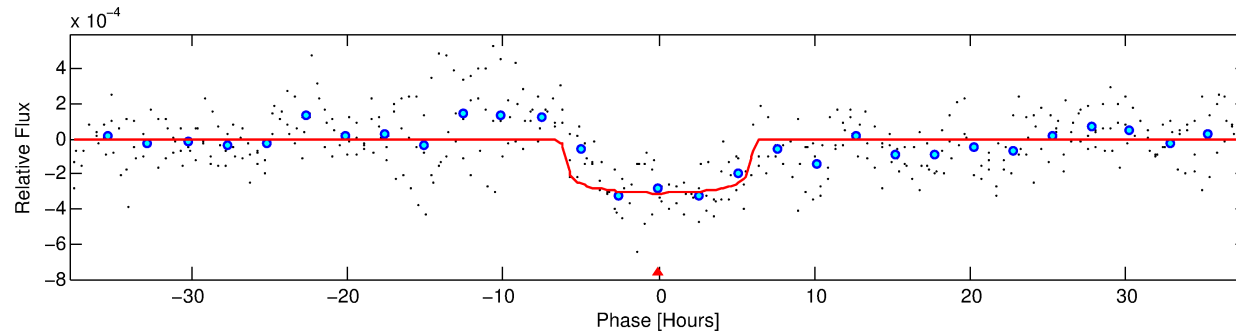
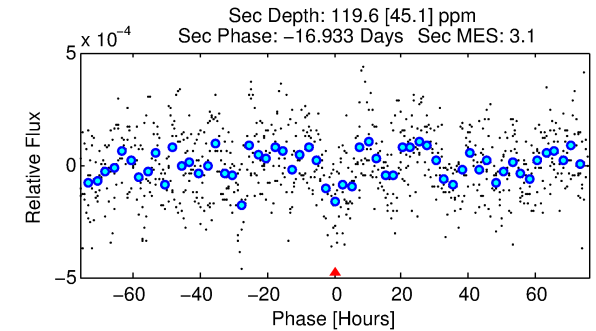
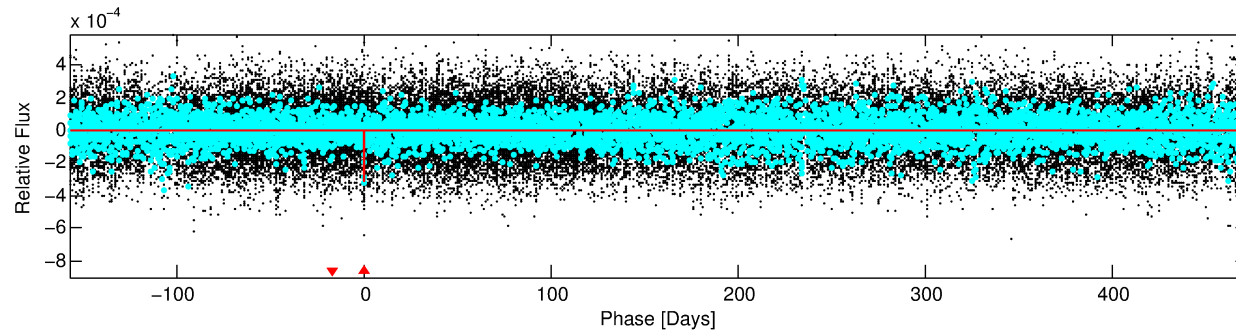
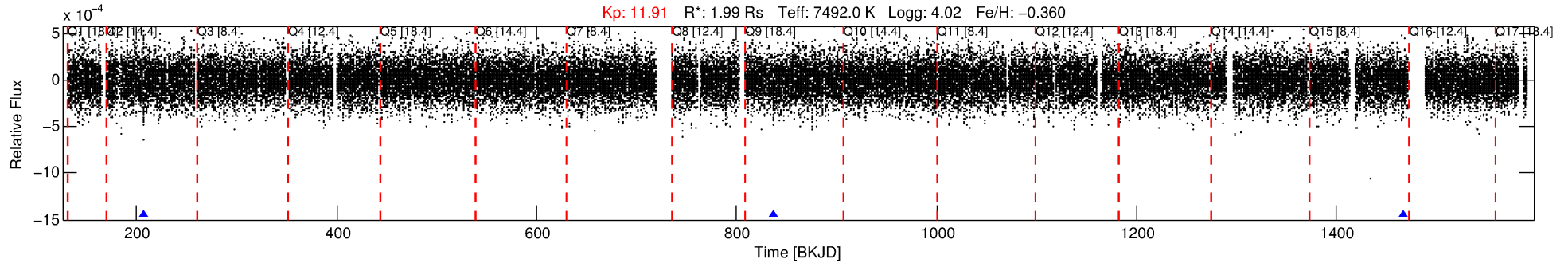
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 009290948-01

No Significant Match Found

# DV One-Page Summary

KIC: 9290948 Candidate: 1 of 1 Period: 629.412 d



## DV Fit Results:

Period = 629.41202 [0.00741] d  
Epoch = 207.2160 [0.0098] BKJD  
Rp/R\* = 0.0178 [0.0020]  
a/R\* = 236.57 [114.12]  
b = 0.81 [0.21]  
Seff = 4.11 [1.83]  
Teq = 363 [41] K  
Rp = 3.85 [1.27] Re  
a = 1.6473 [0.4511] AU  
Ag = 12033.87 [7275.81] [1.65σ]  
Teffp = 5878 [691] K [7.96σ]

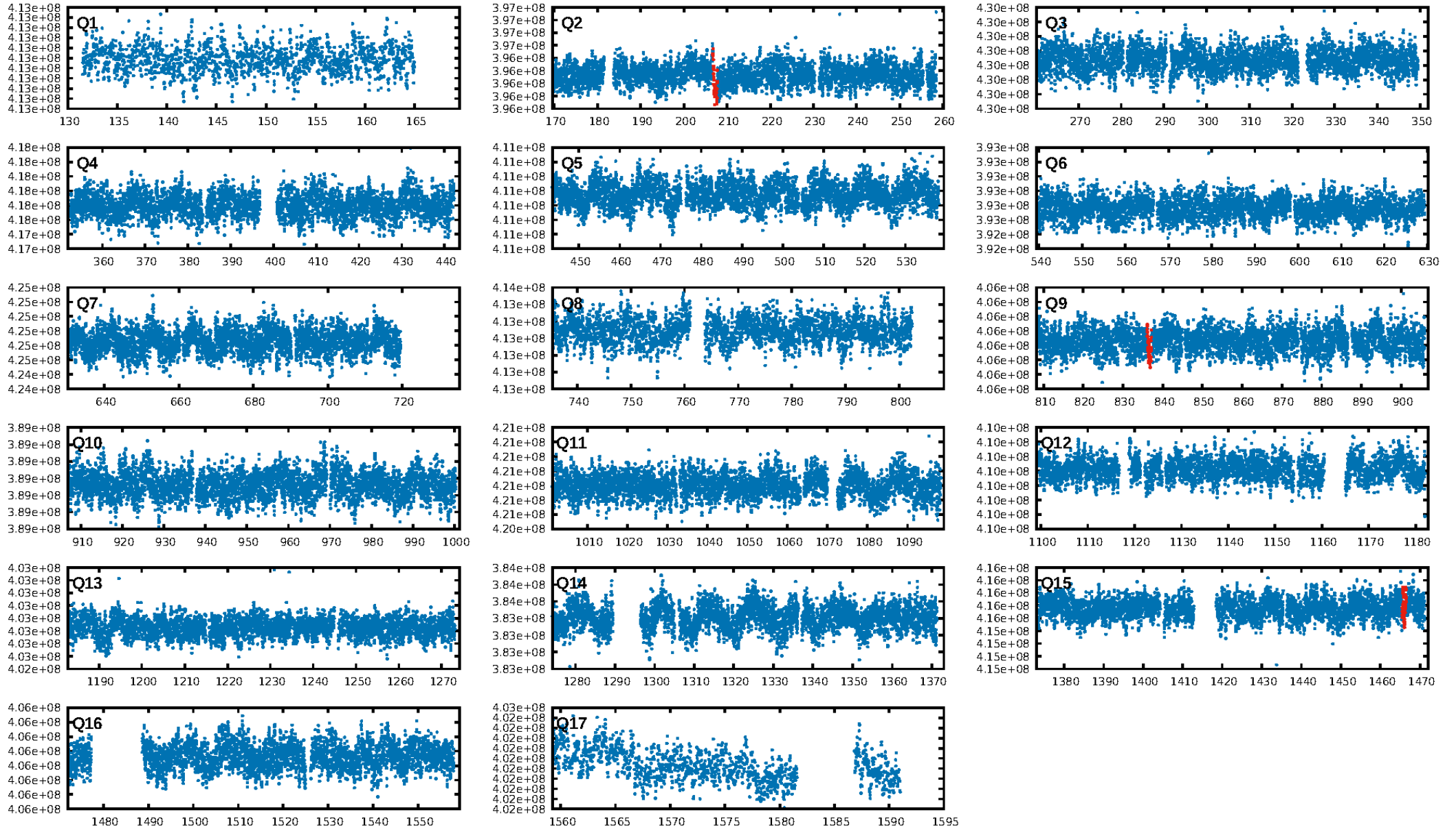
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: 6.3%  
ModelChiSquareGof-sig: 99.1%  
**Bootstrap-pfa: 2.09e-12**  
RollingBand-fgt: 1.00 [3/3]  
GhostDiagnostic-chr: 2.237  
Centroid-sig: 6.3%  
Centroid-so: 0.751 arcsec [1.71σ]  
OotOffset-rm: 3.056 arcsec [2.23σ]  
OotOffset-st: 1/1/0/1 [3]  
KicOffset-rm: 3.109 arcsec [1.93σ]  
KicOffset-st: 1/1/0/1 [3]  
DiffImageQuality-fgm: 1.00 [3/3]  
DiffImageOverlap-fno: 1.00 [3/3]

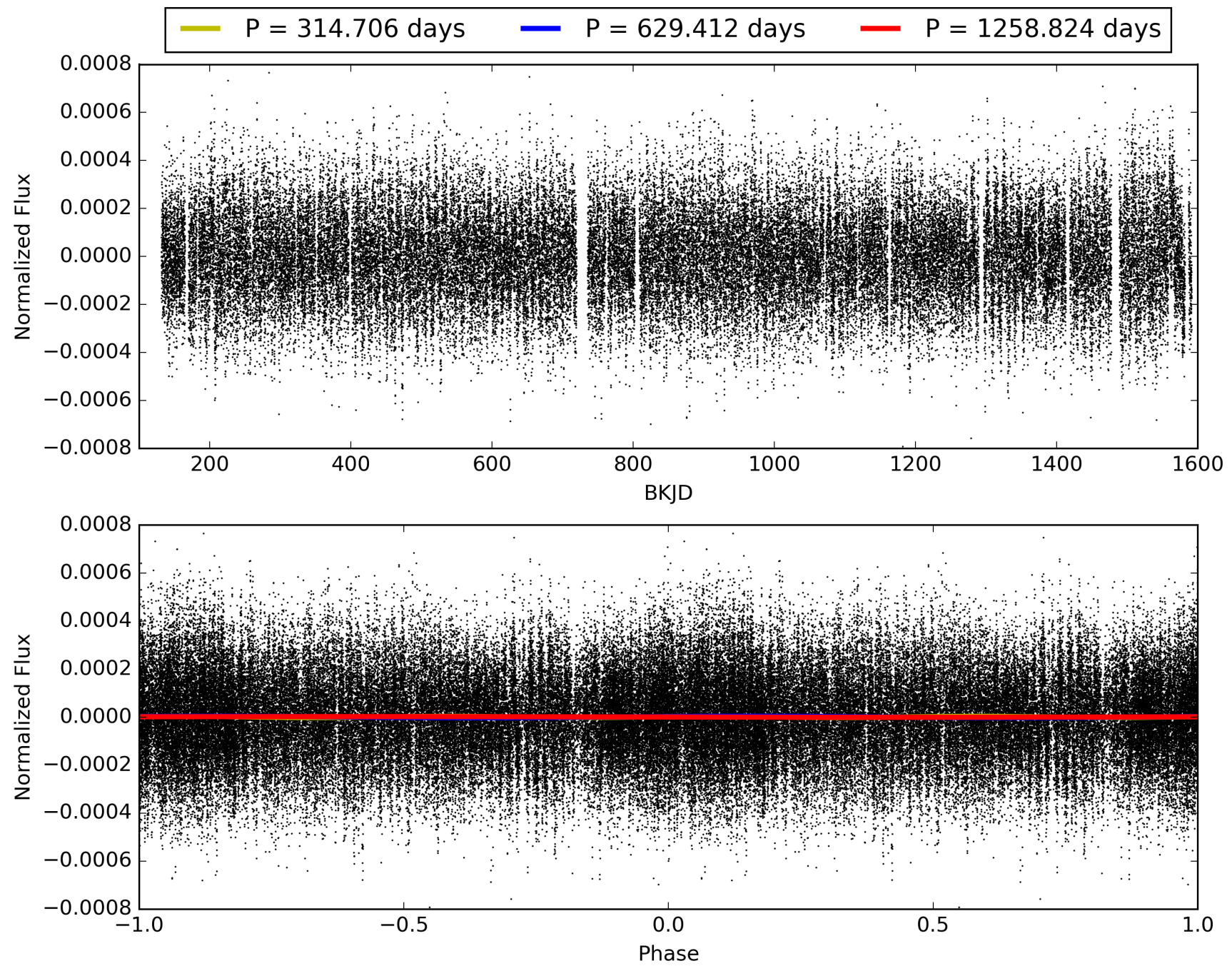
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 01:05:09 Z

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

# TCE 009290948-01, PDC Light Curves

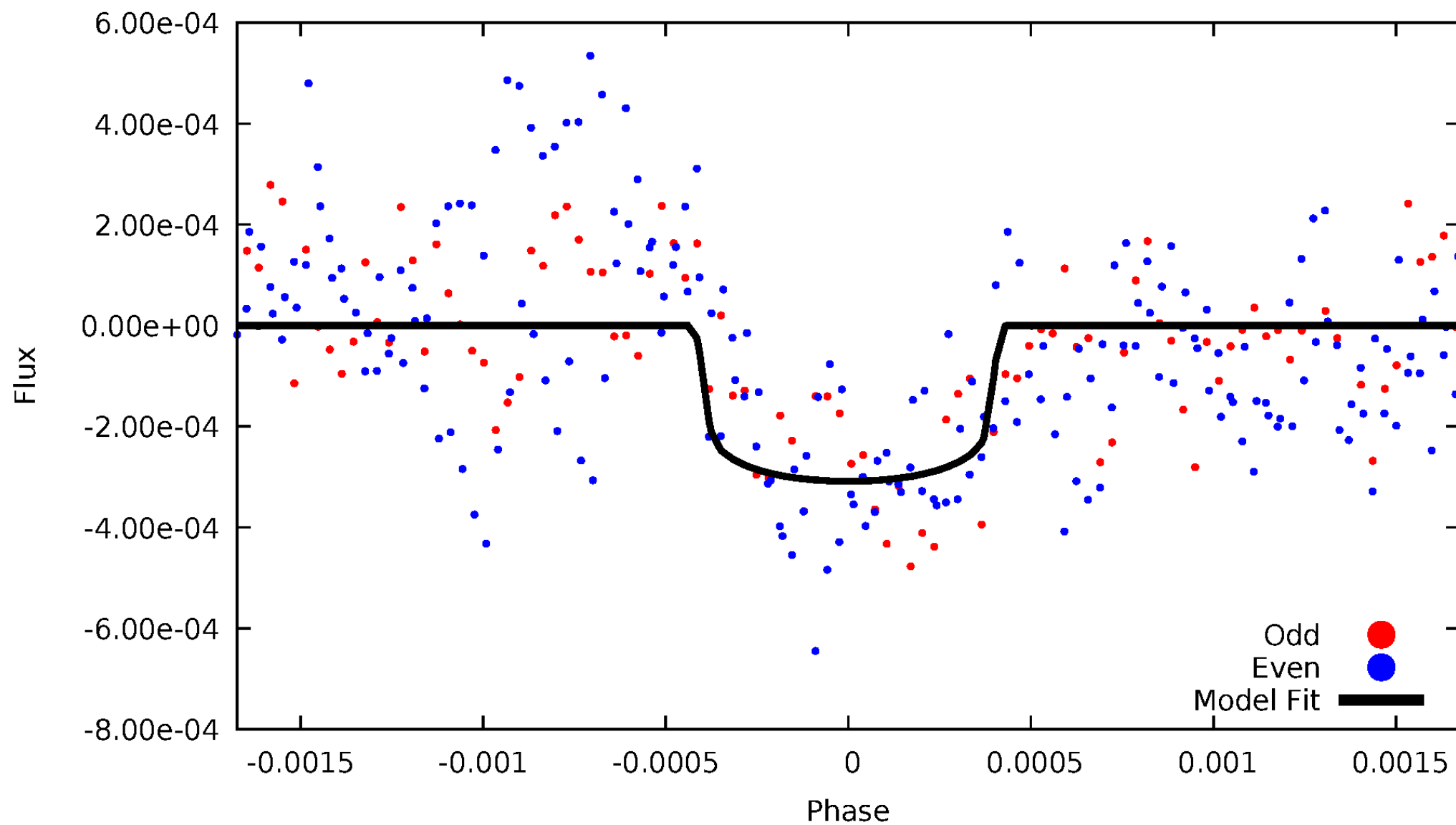


TCE 009290948-01



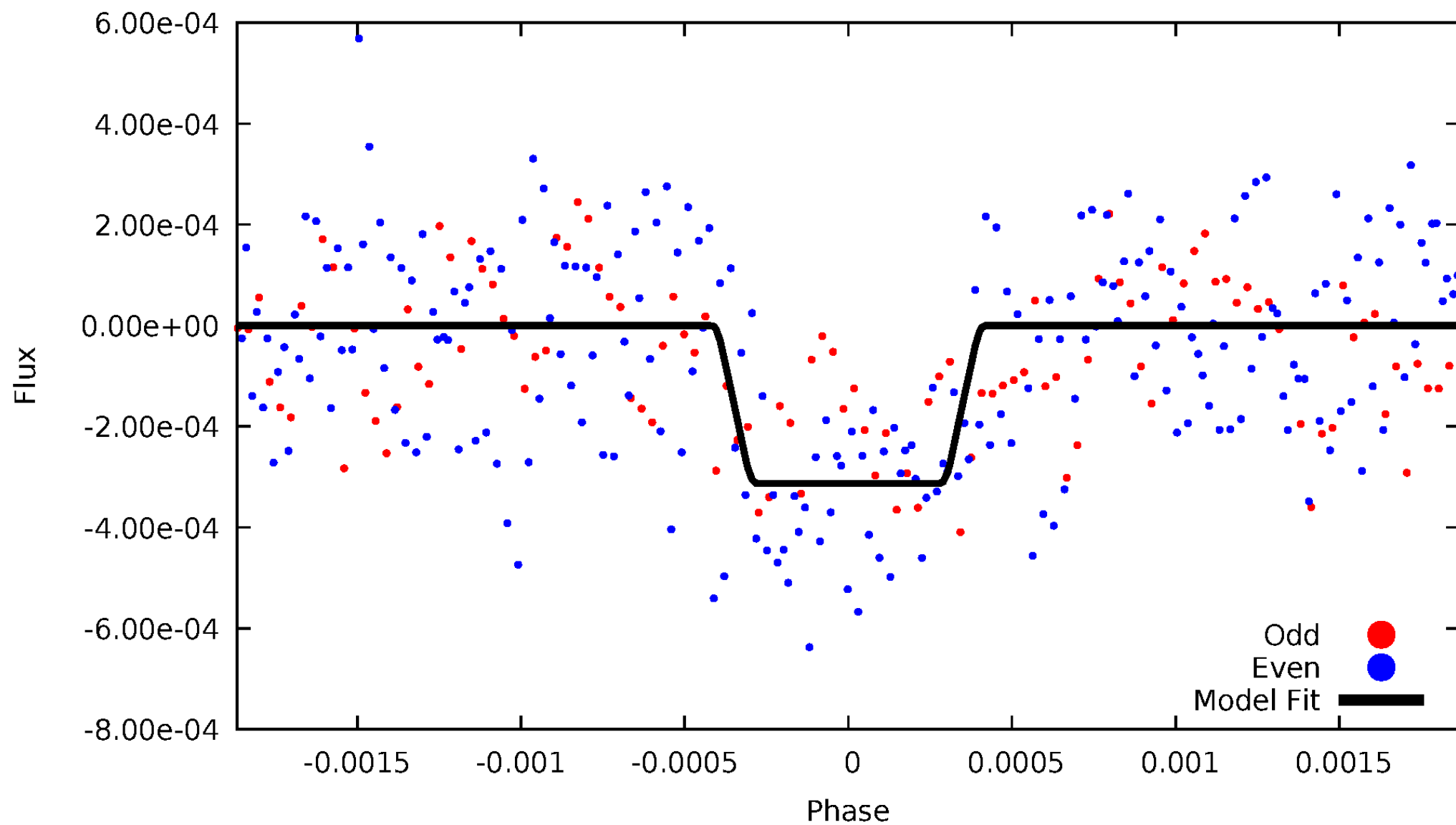
# DV Odd/Even

TCE 009290948-01

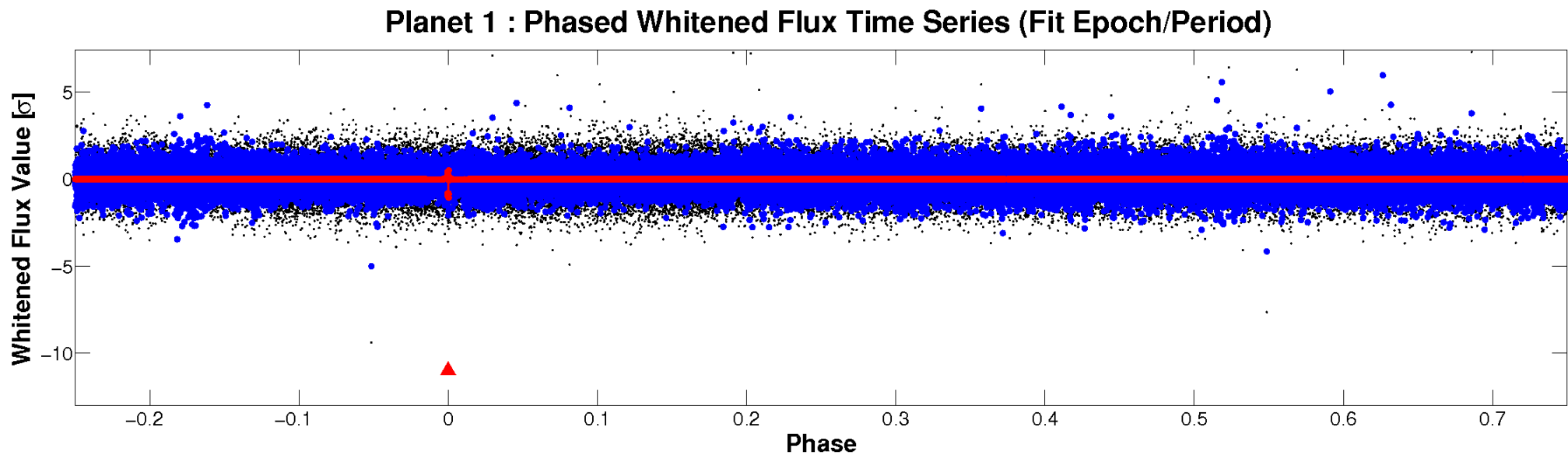
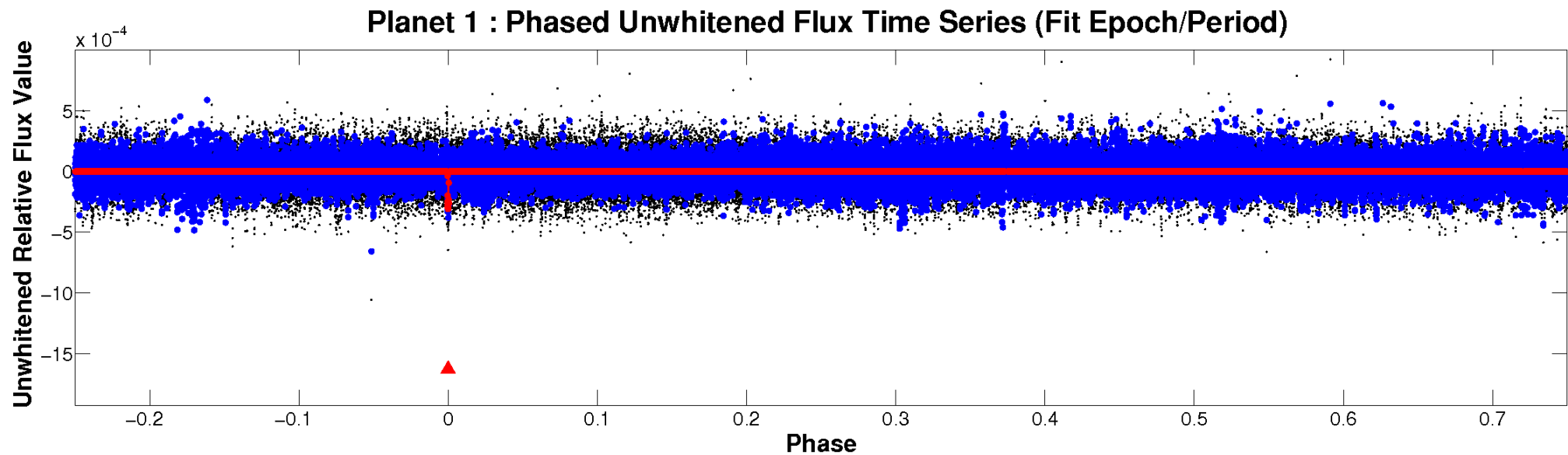


# ALT Odd/Even

TCE 009290948-01

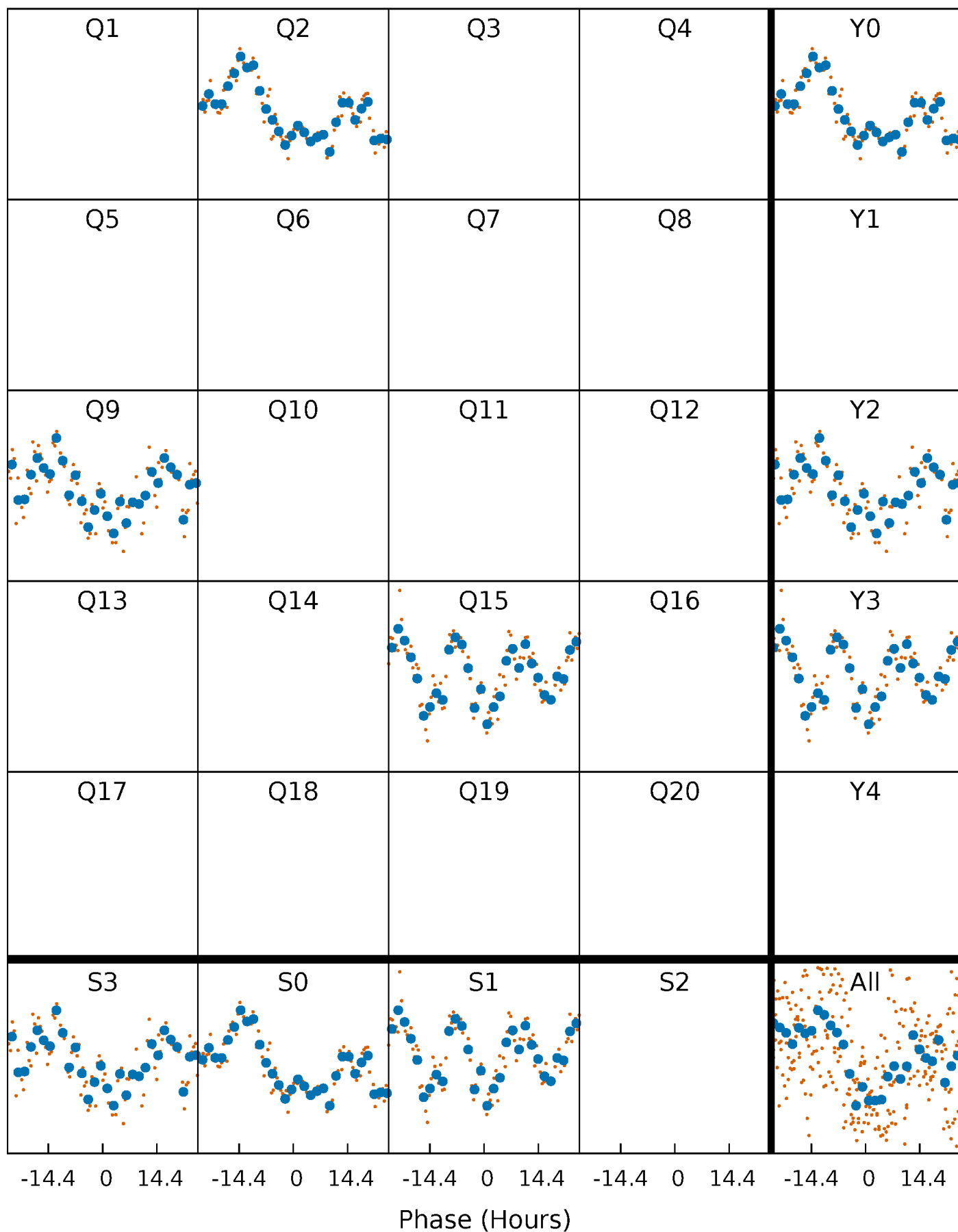


# Non-Whitened Vs. Whitened Light Curve



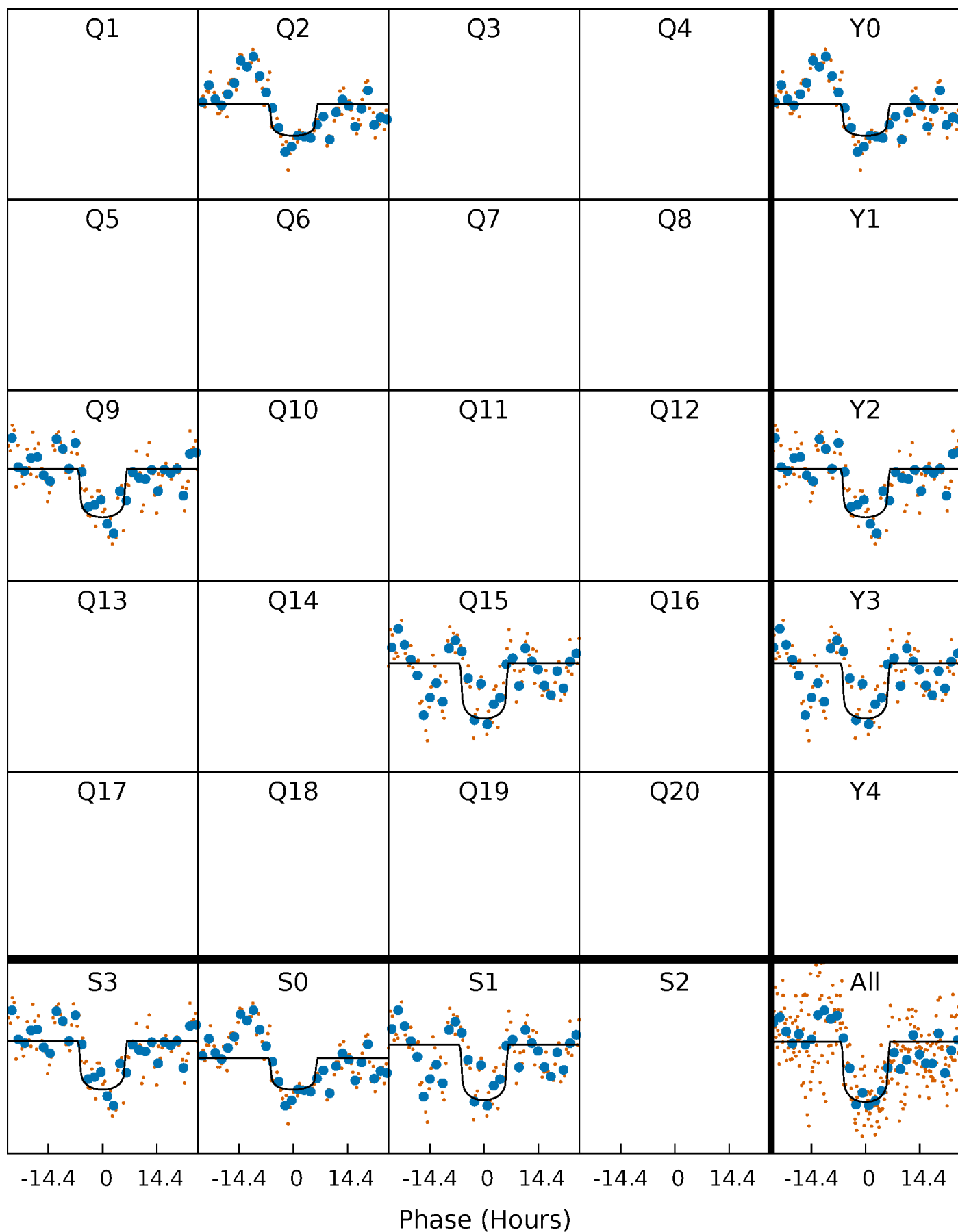
# PDC Quarter-Phased Transit Curves

TCE 009290948-01 P=629.412017 Days  $T_0=207.215956$  (BKJD)



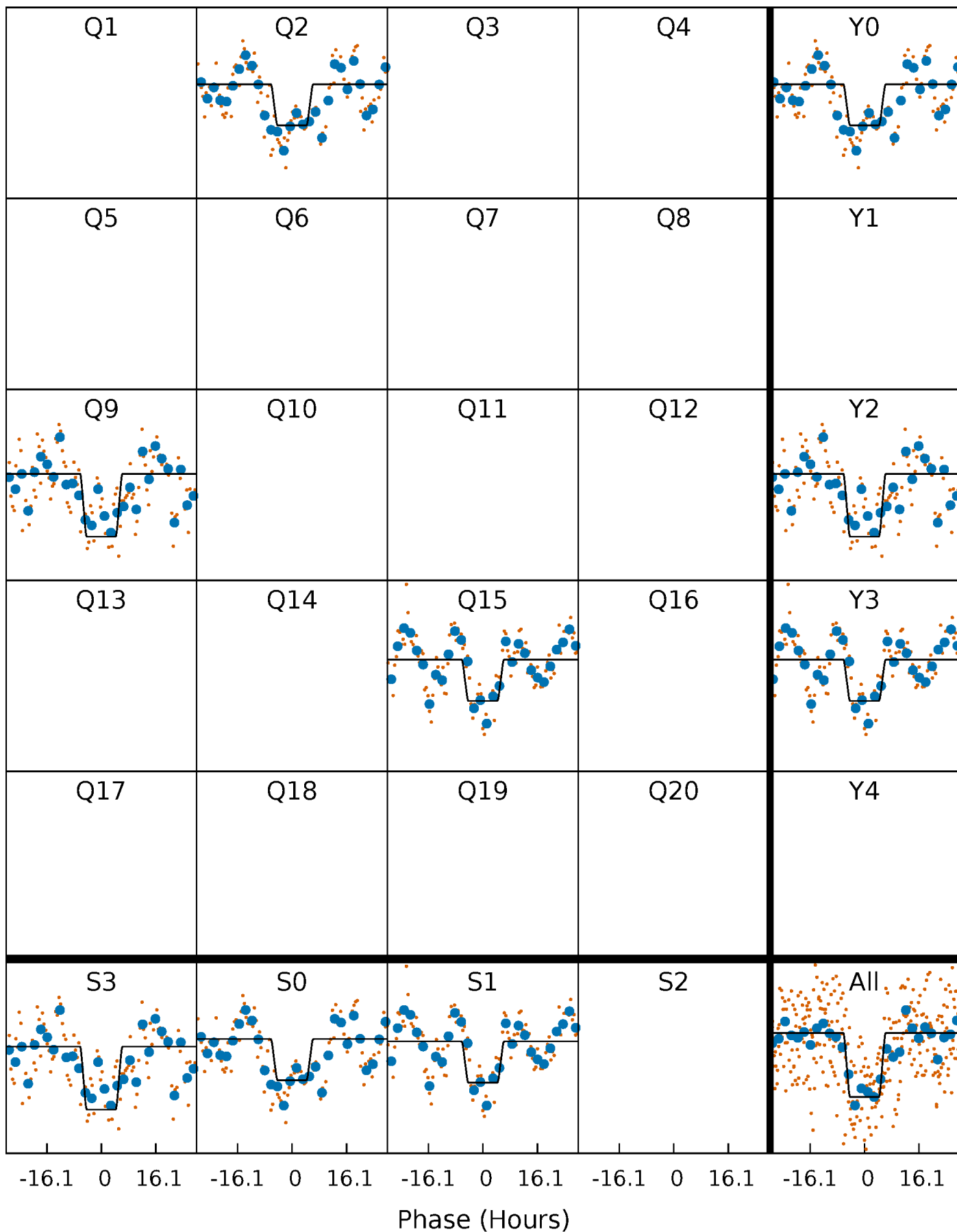
# DV Quarter-Phased Transit Curves

TCE 009290948-01 P=629.412017 Days  $T_0=207.215956$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

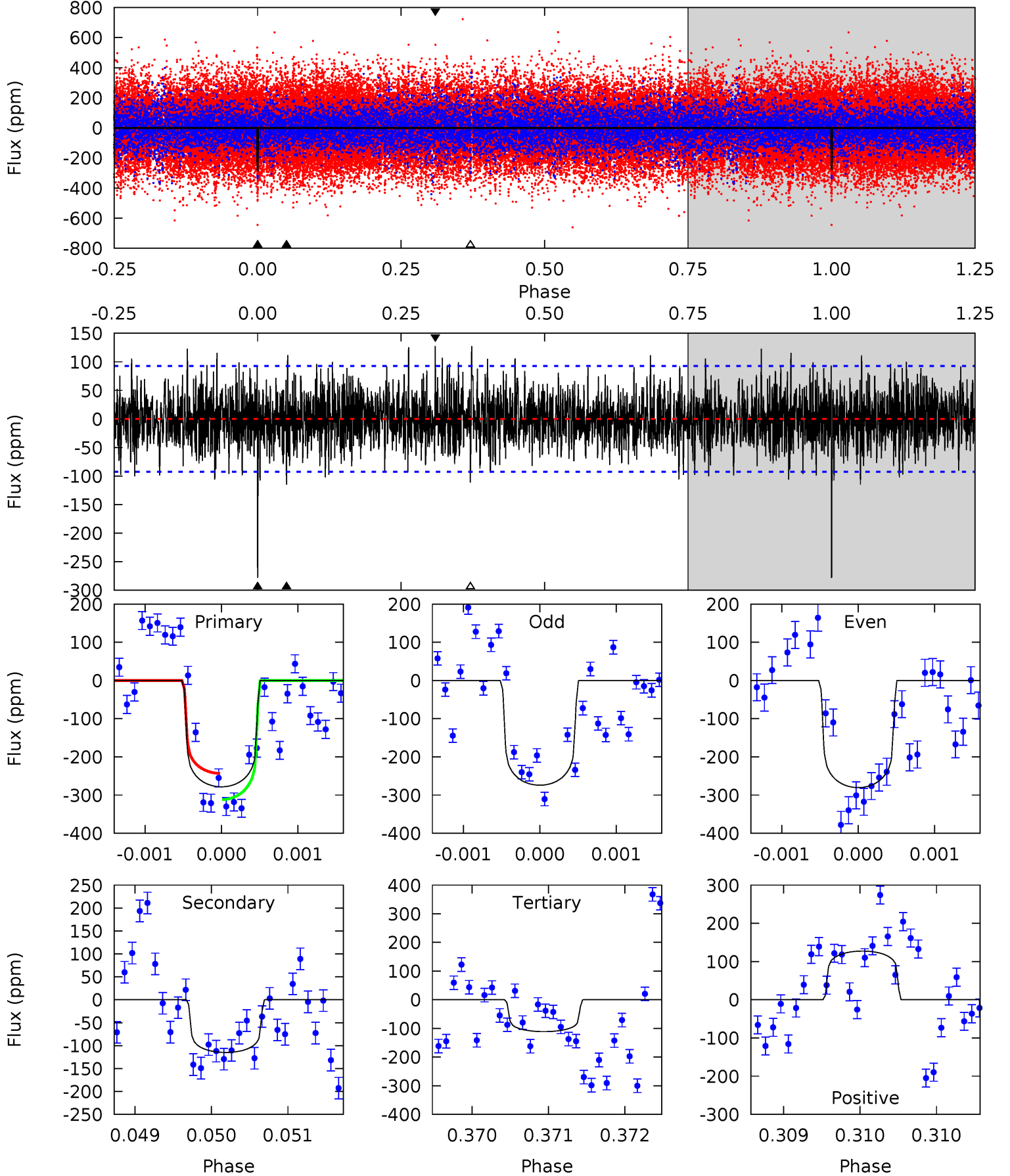
TCE 009290948-01 P=629.408137 Days  $T_0=207.234238$  (BKJD)



# DV Model-Shift Uniqueness Test

009290948-01, P = 629.412017 Days, E = 207.215956 Days

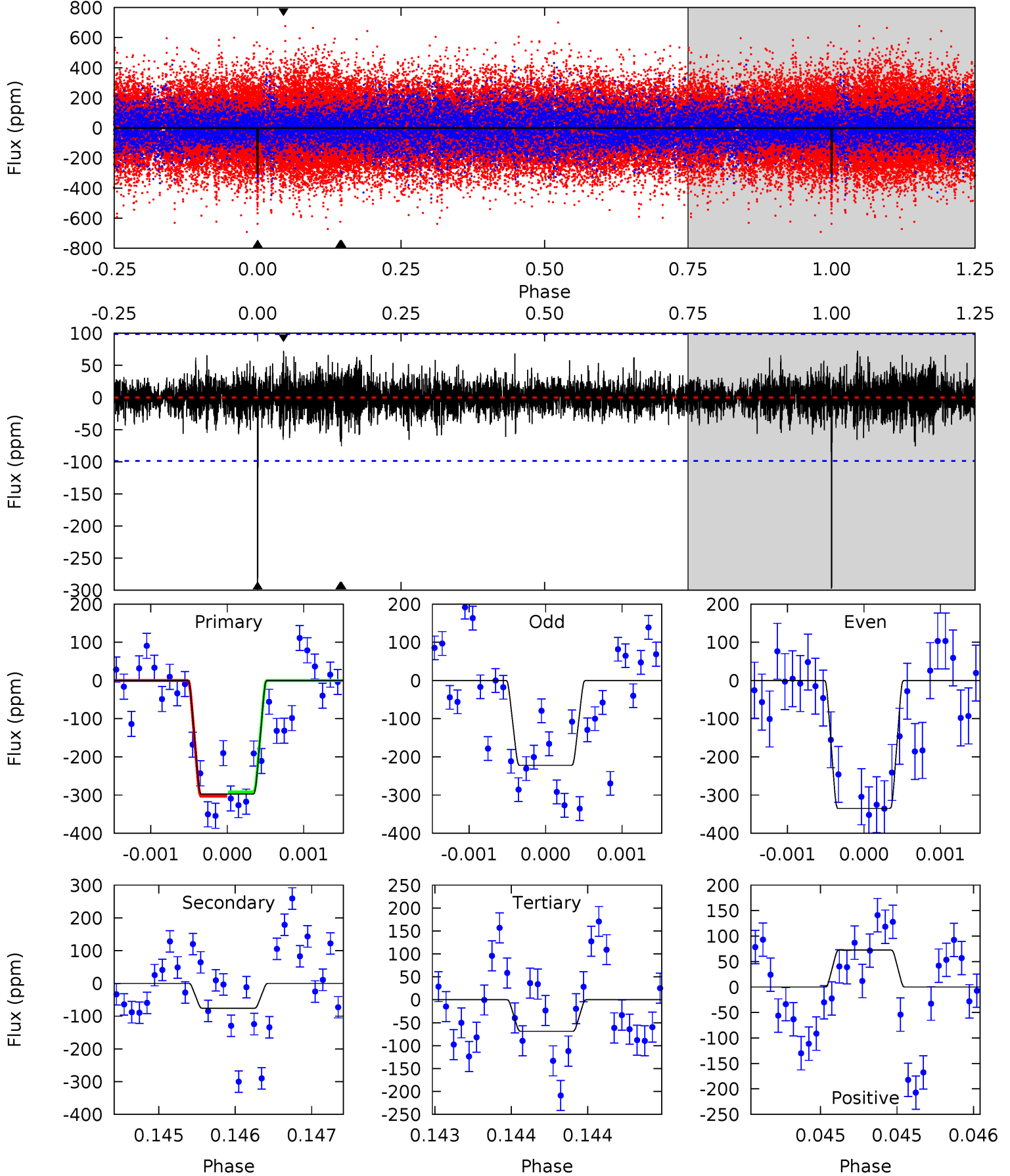
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
16.5	6.80	6.58	7.54	5.48	3.34	2.03	9.89	8.93	0.22	-0.74	0.18	1.02	0.31	2.02



# Alt Model-Shift Uniqueness Test

009290948-01, P = 629.408137 Days, E = 207.234238 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
16.5	4.22	3.83	4.03	5.49	3.35	0.98	12.7	12.5	0.39	0.18	2.93	0.96	0.20	0.31



### Stellar Parameters For KIC 009290948

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R$ ( $R_{\odot}$ )	$M(M_{\odot})$	$p_{\star}$ ( $\text{g}\cdot\text{cm}^{-3}$ )
	$7492^{+233}_{-311}$	$4.019^{+0.234}_{-0.156}$	$-0.360^{+0.250}_{-0.350}$	$1.987^{+0.504}_{-0.616}$	$1.505^{+0.222}_{-0.272}$	$0.270^{+0.391}_{-0.121}$
	+3%/-4%	+6%/-4%	+69%/-97%	+25%/-31%	+15%/-18%	+145%/-45%
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 009290948-01 / KOI

Detrend	Depth (ppm)	$R_p$ ( $R_{\oplus}$ )	$T_{max}$ (K)	$T_{obs}$ (K)	$A_{obs}$
DV	$-115 \pm 17$	$3.78^{+0.82}_{-0.74}$	$502^{+42}_{-46}$	$5725^{+430}_{-391}$	$11712^{+6521}_{-3683}$
Alt.	$-76 \pm 18$	$3.76^{+0.71}_{-0.69}$	$501^{+38}_{-40}$	$5203^{+415}_{-379}$	$7983^{+4169}_{-2900}$

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

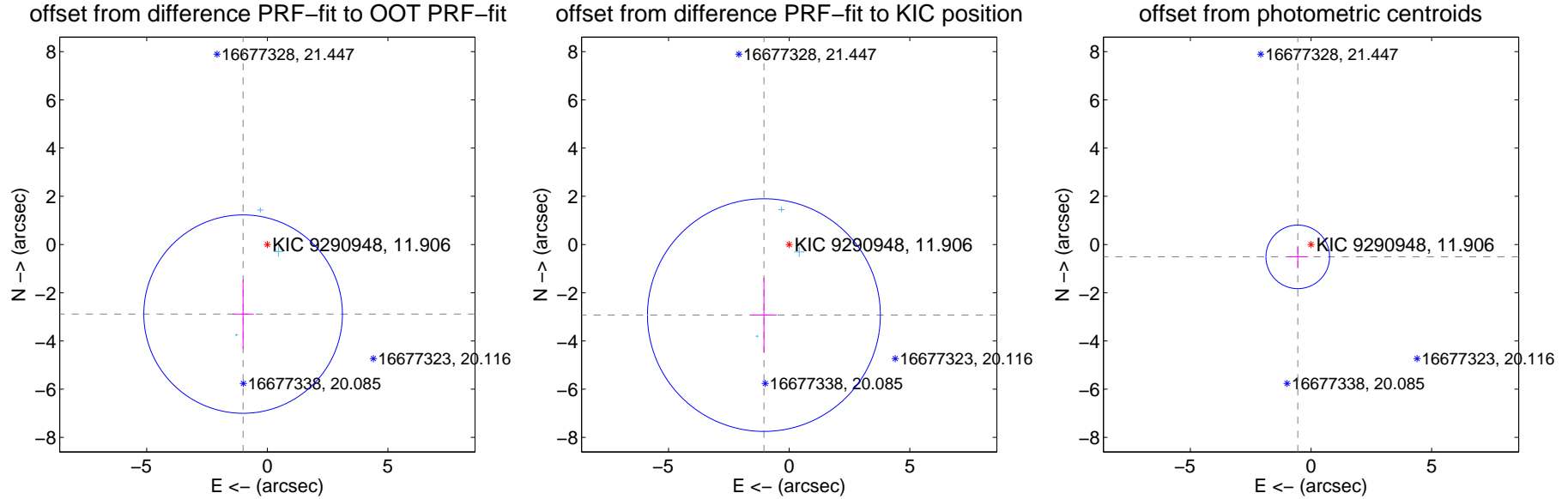
## DV Centroid Data

Supplemental centroid analysis for 009290948-01. **Kepler magnitude: 11.91.** Transit SNR 7.16

**There are 3 quarters with good PRF difference image offsets**

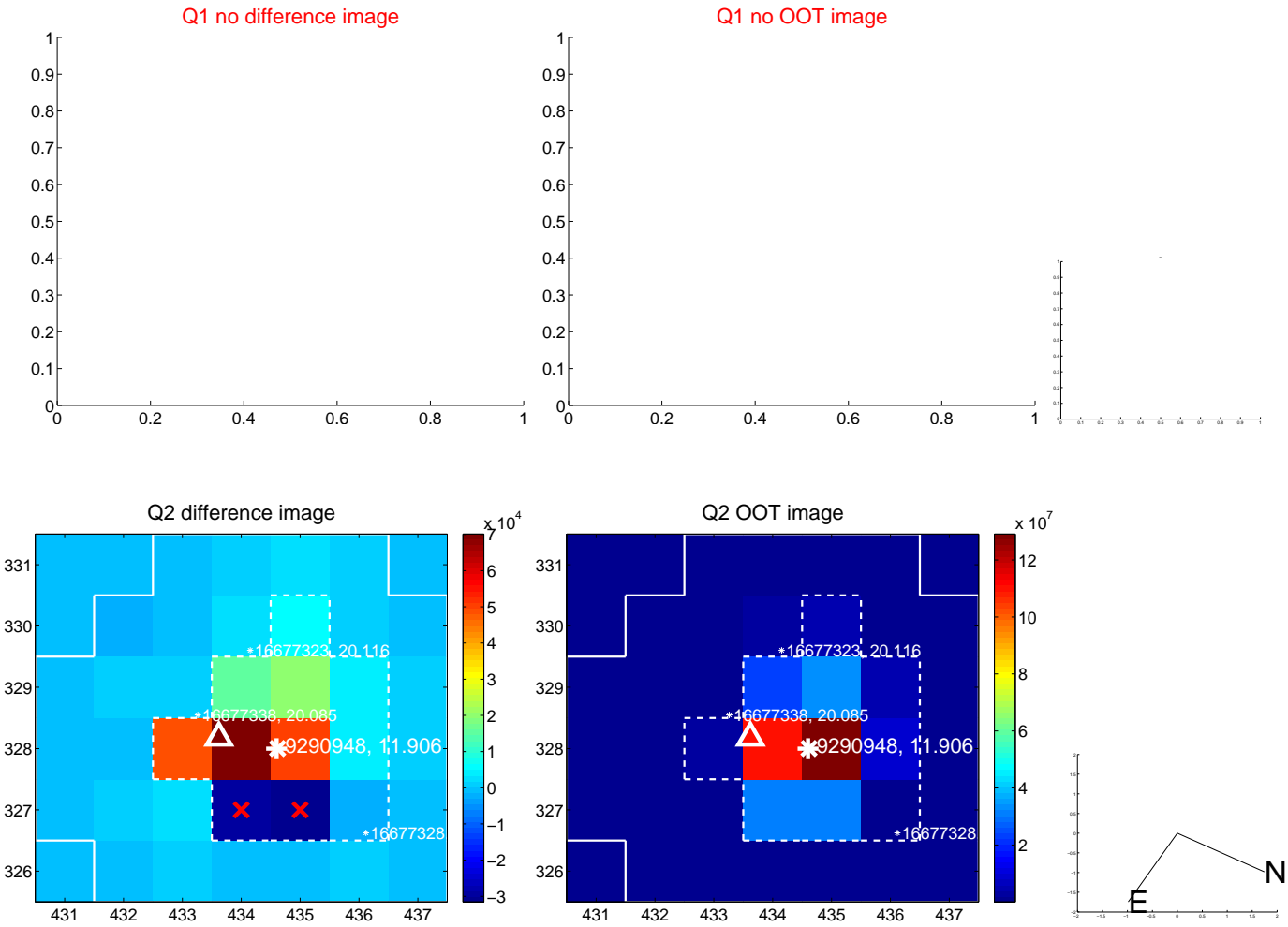
The direct PRF centroid is offset from the target star catalog position by about 0.04 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$3.056 \pm 1.372$	2.23	$1.003 \pm 0.443$	$-2.887 \pm 1.444$
PRF-fit source offset from KIC position	$3.109 \pm 1.609$	1.93	$1.046 \pm 0.527$	$-2.928 \pm 1.545$
photometric centroid source offset	$0.75 \pm 0.44$	1.71	$0.55 \pm 0.43$	$-0.51 \pm 0.45$



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.

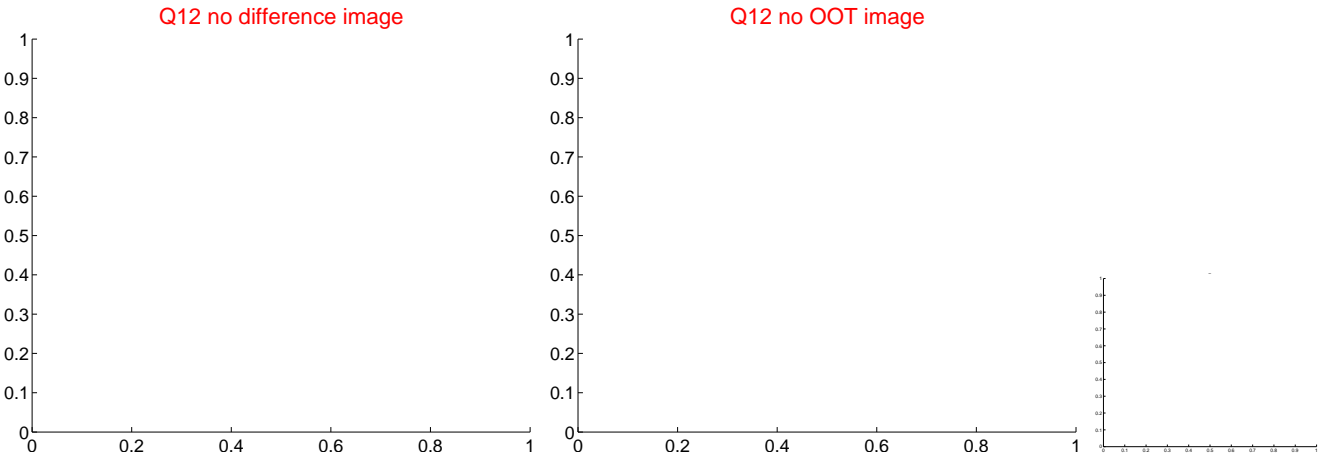
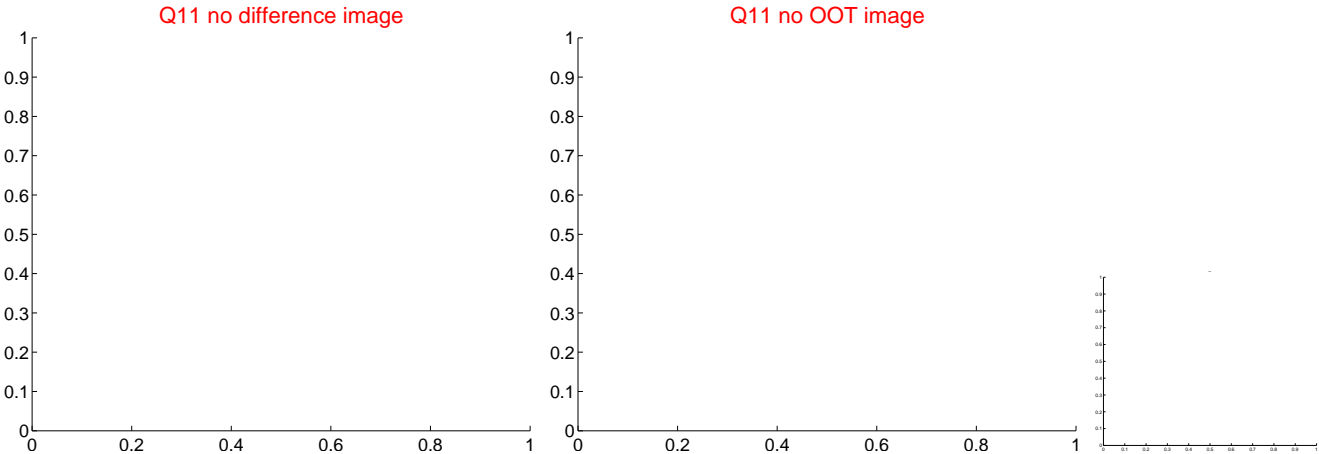
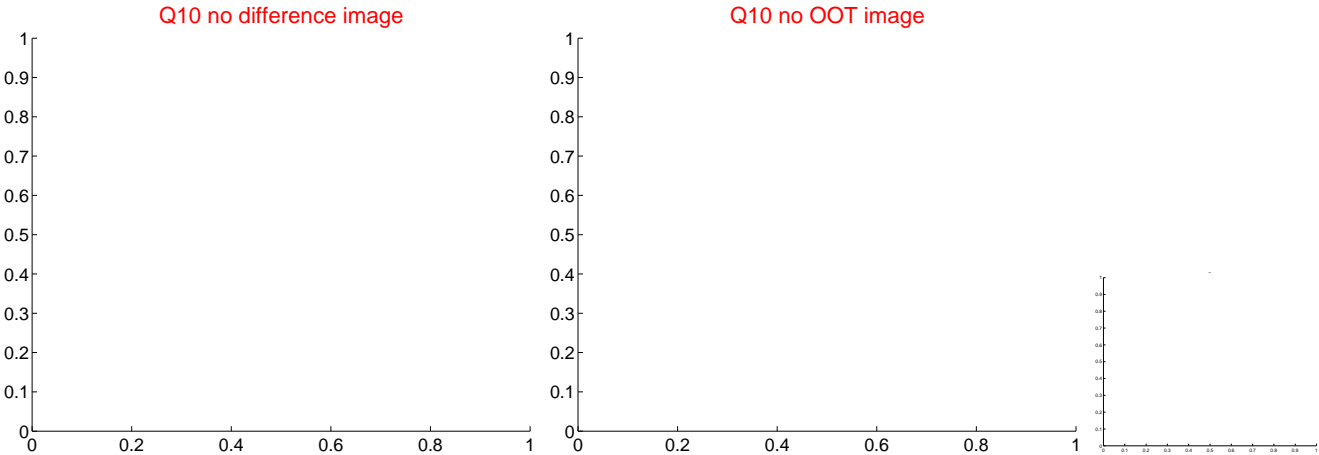
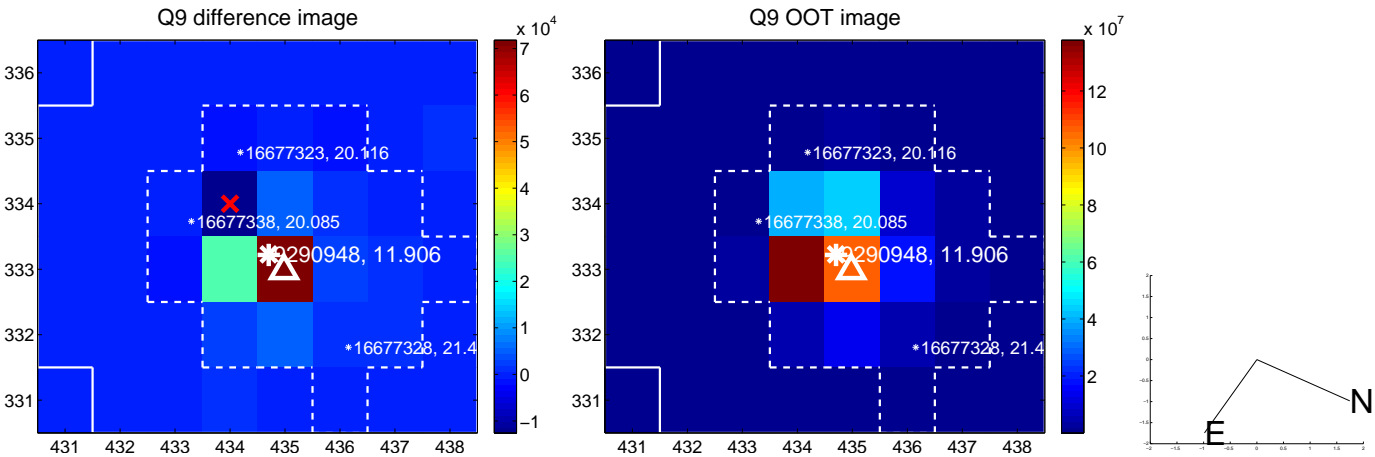
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



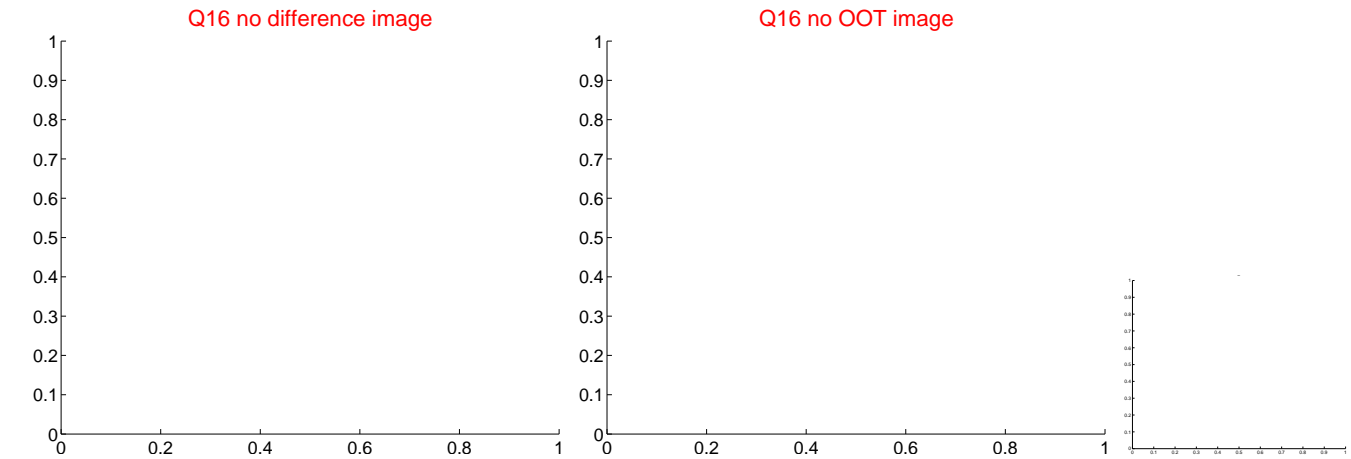
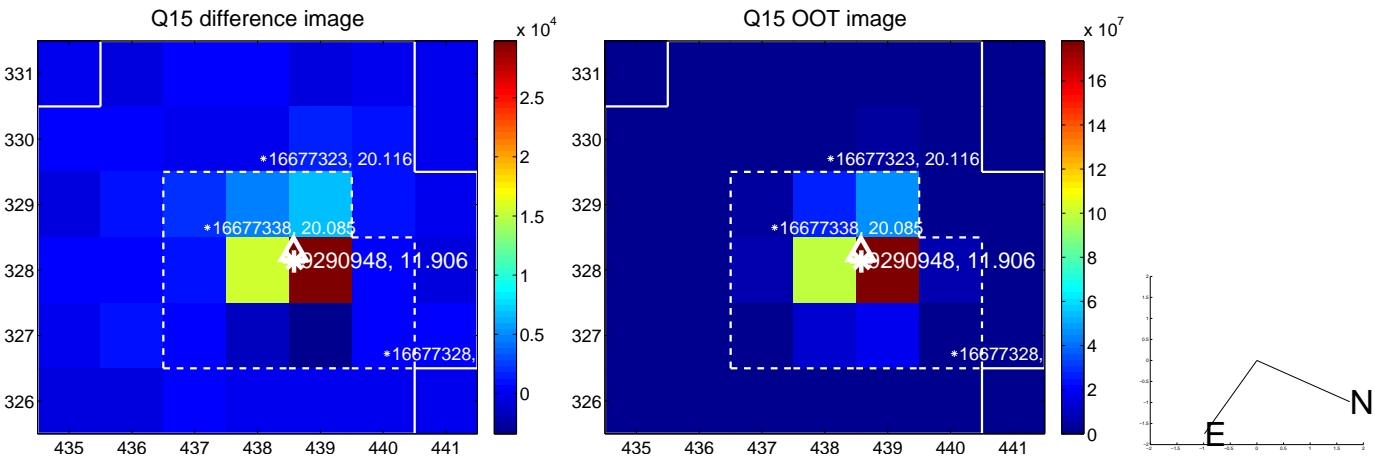
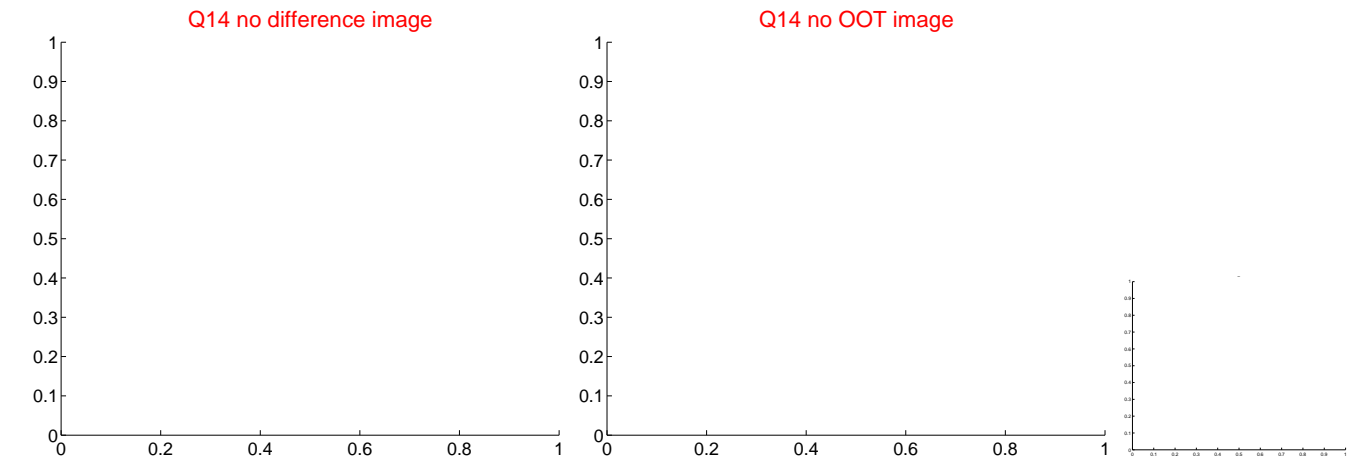
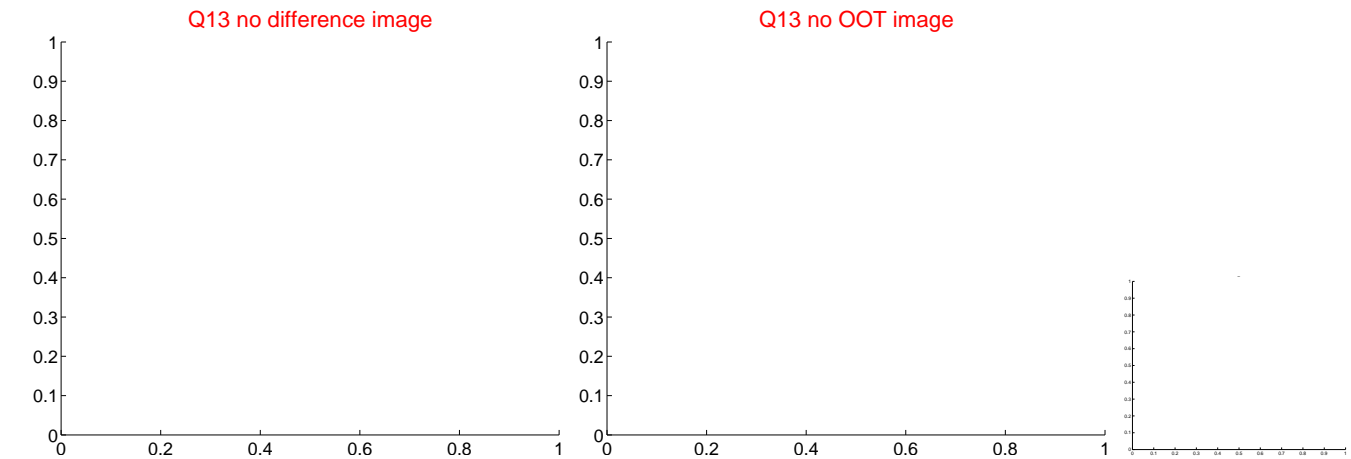
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



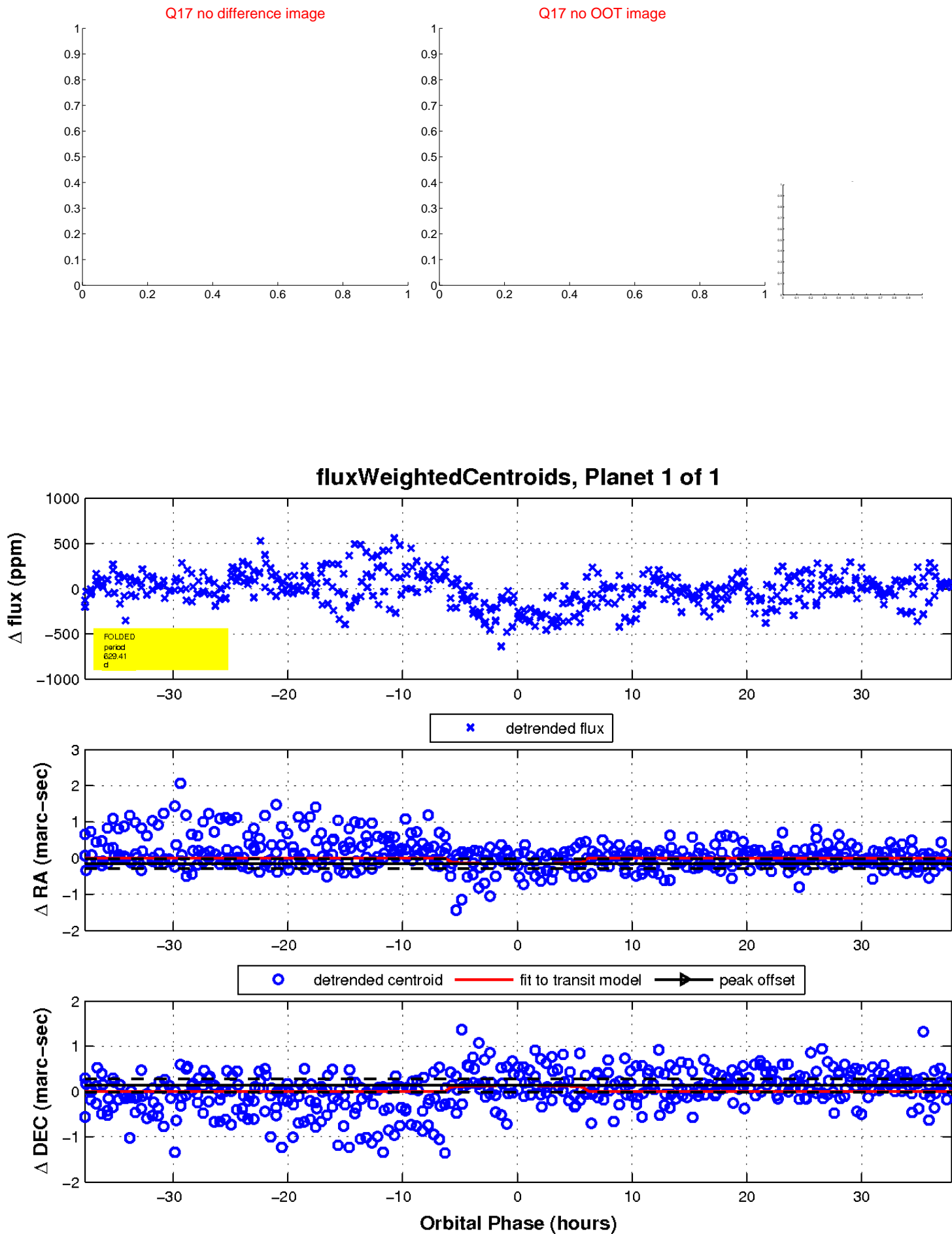
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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



UKIRT Image

Declination

