

# KIC 004645492

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
004645492-01	OBS	8095.01	508.041889	361.719938	376.6	5.458	8.3	8.4	0.96	5672	2.01	0.53

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
004645492-01	OBS	FP	0.30	1	0	0	0	INCONSISTENT_TRANS—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.

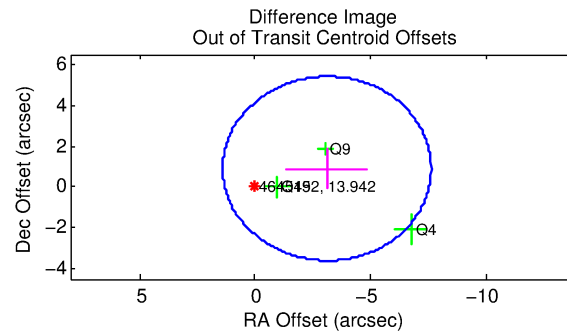
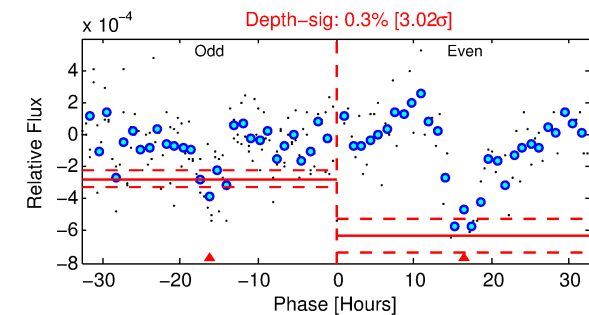
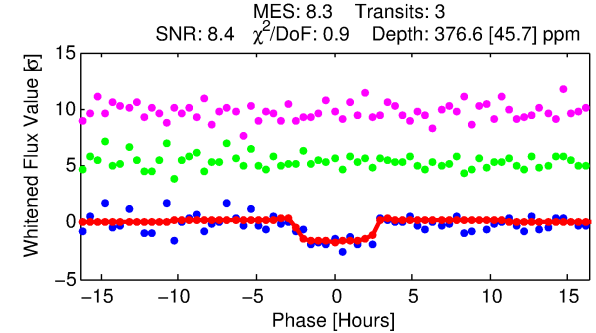
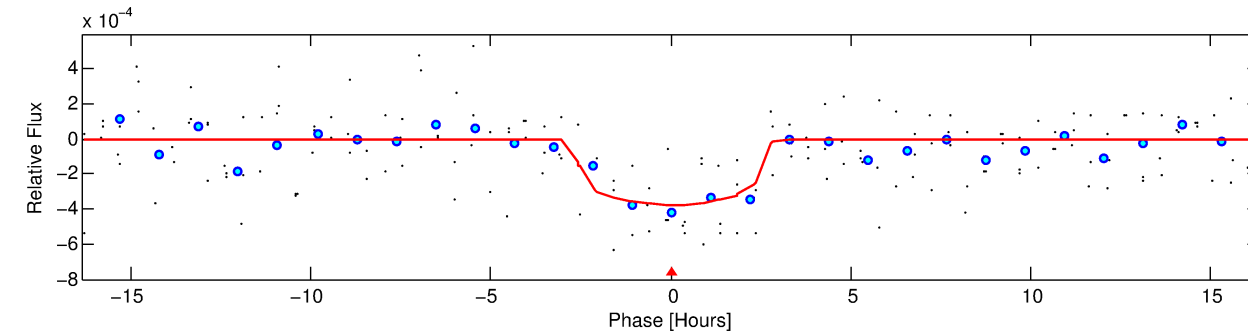
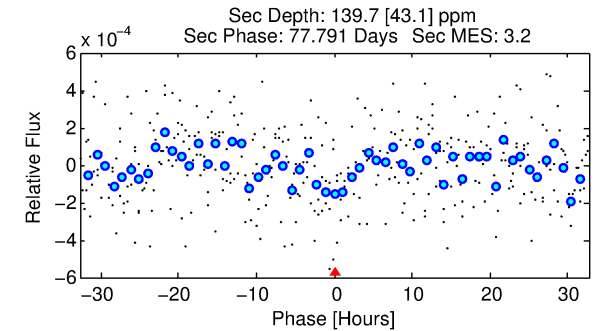
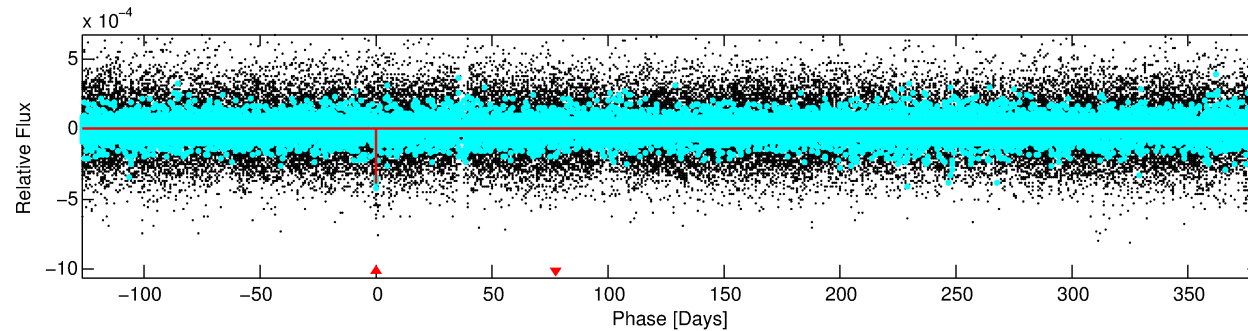
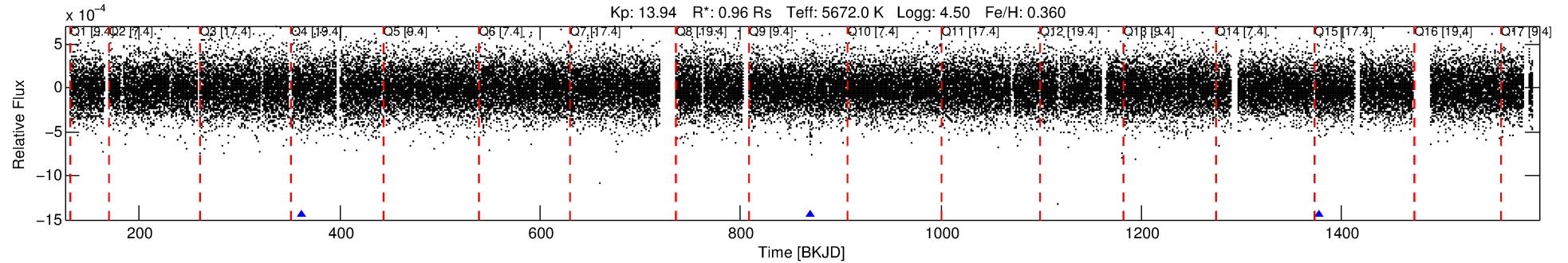
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 004645492-01

No Significant Match Found

# DV One-Page Summary

KIC: 4645492 Candidate: 1 of 1 Period: 508.042 d



## DV Fit Results:

Period = 508.04189 [0.00747] d  
Epoch = 361.7199 [0.0102] BKJD  
Rp/R\* = 0.0191 [0.0190]  
a/R\* = 516.55 [2068.35]  
b = 0.71 [2.79]  
Seff = 0.53 [0.08]  
Teq = 217 [8] K  
Rp = 2.01 [2.01] Re  
a = 1.2793 [0.1143] AU  
Ag = 31173.05 [62921.64] [0.50σ]  
Teffp = 4465 [2249] K [1.89σ]

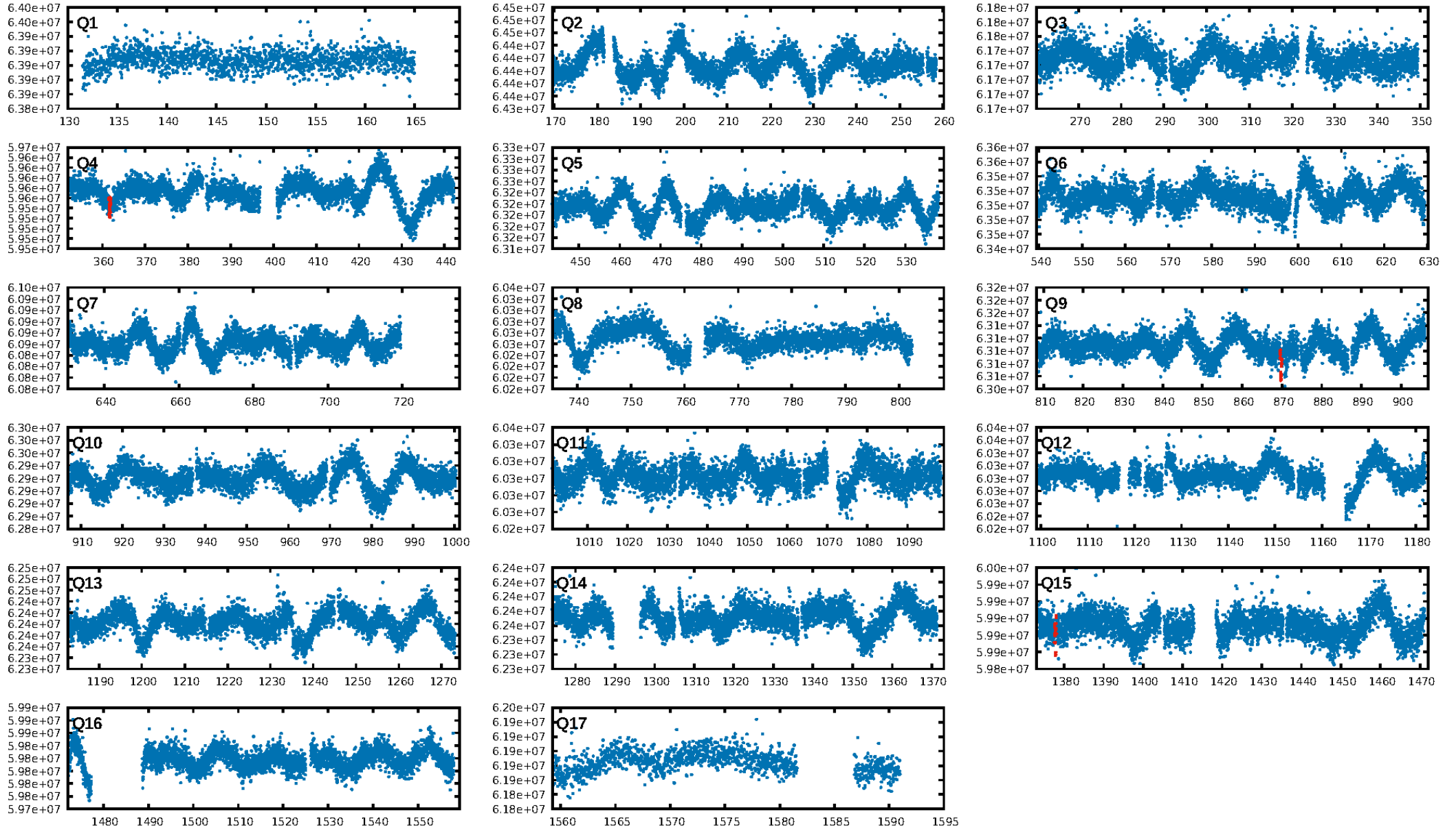
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: 1.1%  
ModelChiSquareGof-sig: 86.9%  
**Bootstrap-pfa: 8.09e-12**  
RollingBand-fgt: 1.00 [3/3]  
GhostDiagnostic-chr: -2.681  
Centroid-sig: 29.3%  
Centroid-so: 1.527 arcsec [1.08σ]  
OotOffset-rm: 3.233 arcsec [2.15σ]  
KicOffset-rm: 3.705 arcsec [1.47σ]  
OotOffset-st: 0/1/1/1 [3]  
KicOffset-st: 0/1/1/1 [3]  
DiffImageQuality-fgm: 1.00 [3/3]  
DiffImageOverlap-fno: 1.00 [3/3]

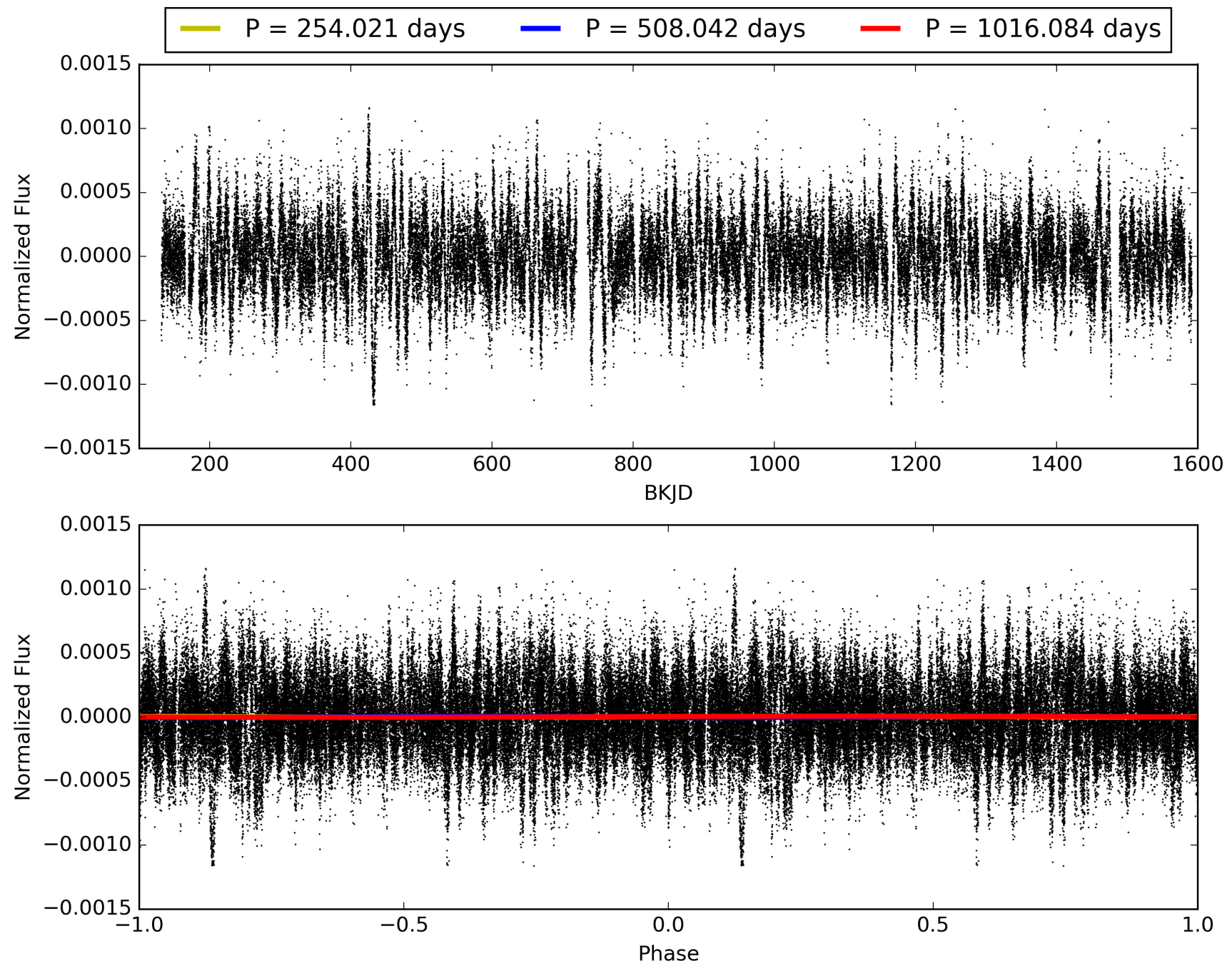
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 14:19:56 Z

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

# TCE 004645492-01, PDC Light Curves

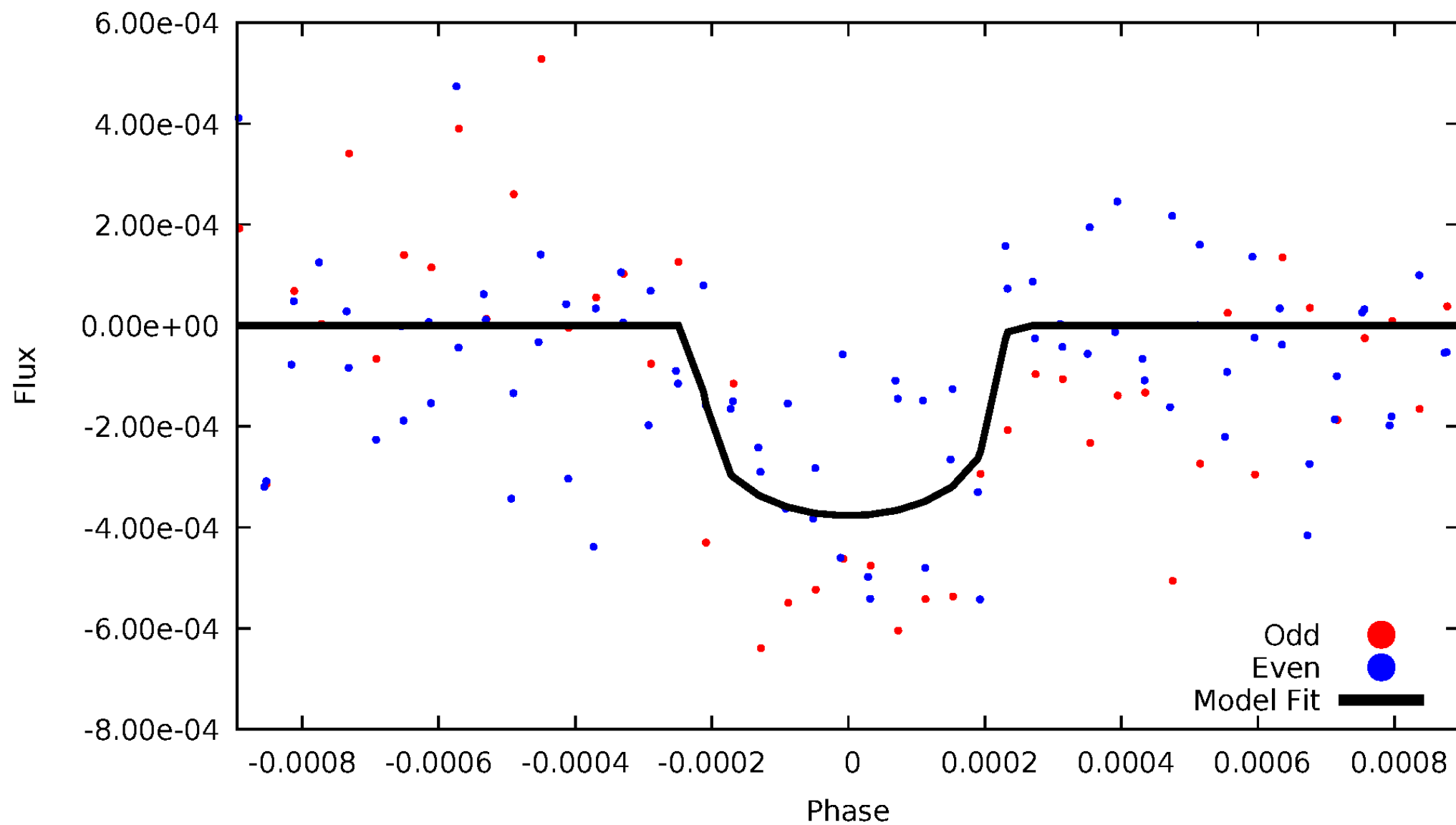


TCE 004645492-01



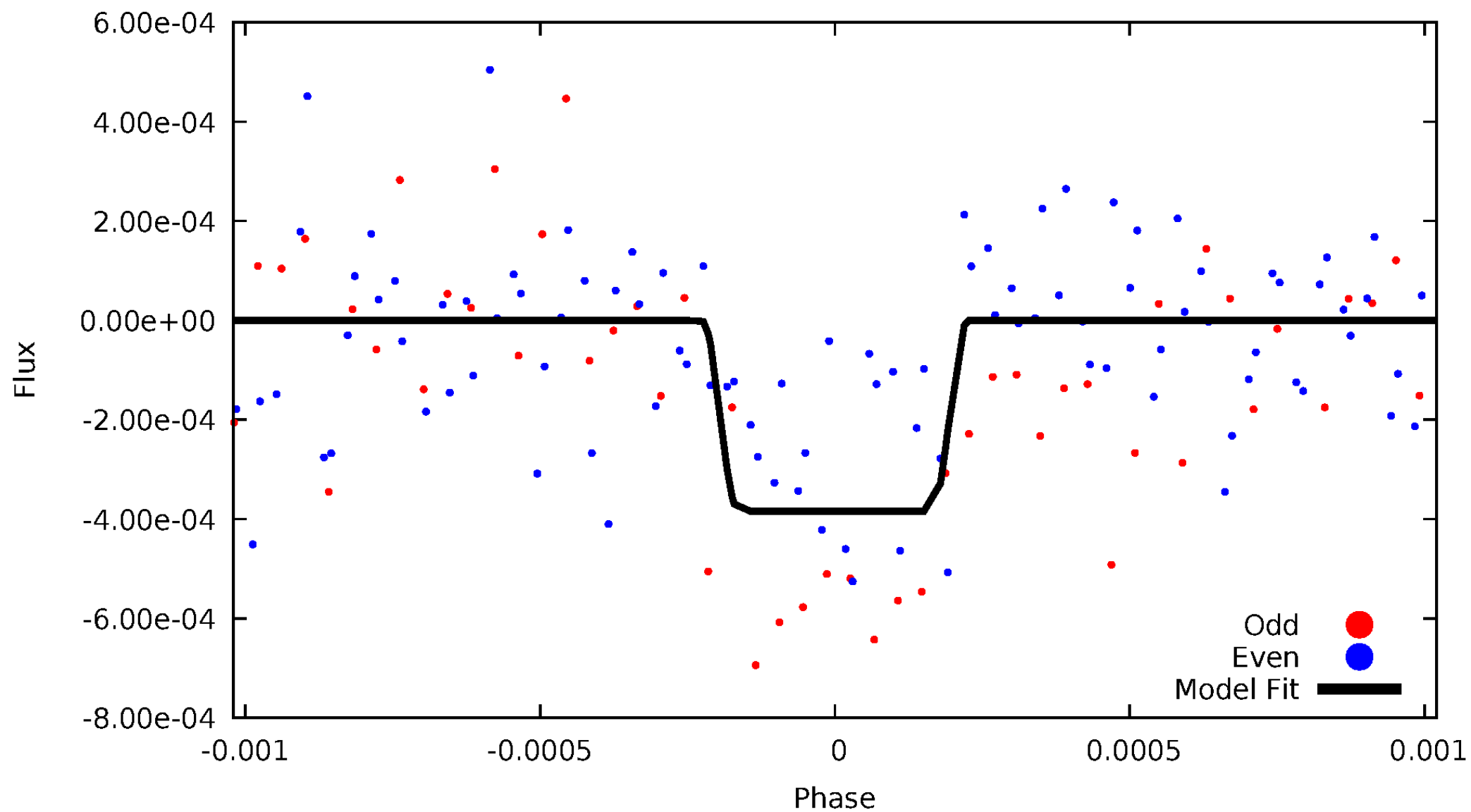
# DV Odd/Even

TCE 004645492-01

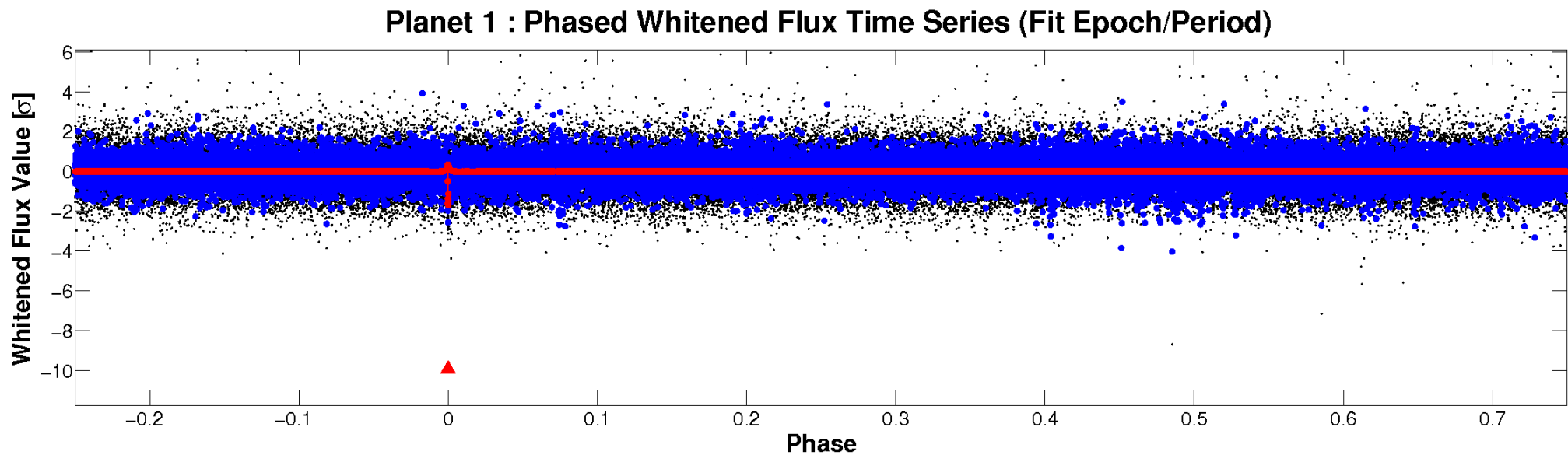
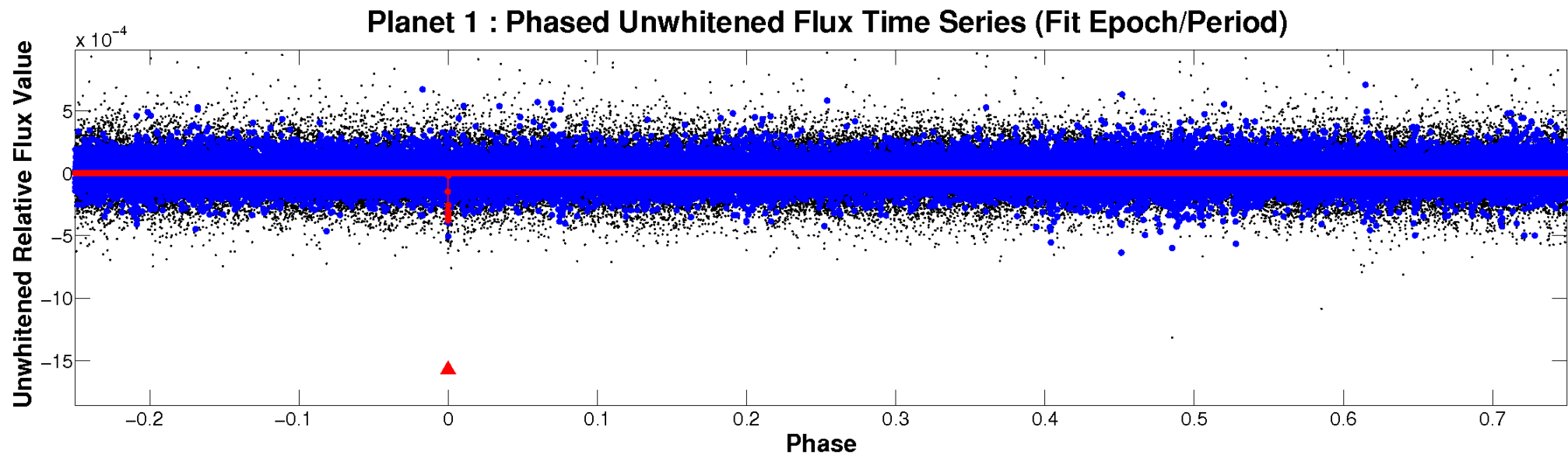


# ALT Odd/Even

TCE 004645492-01

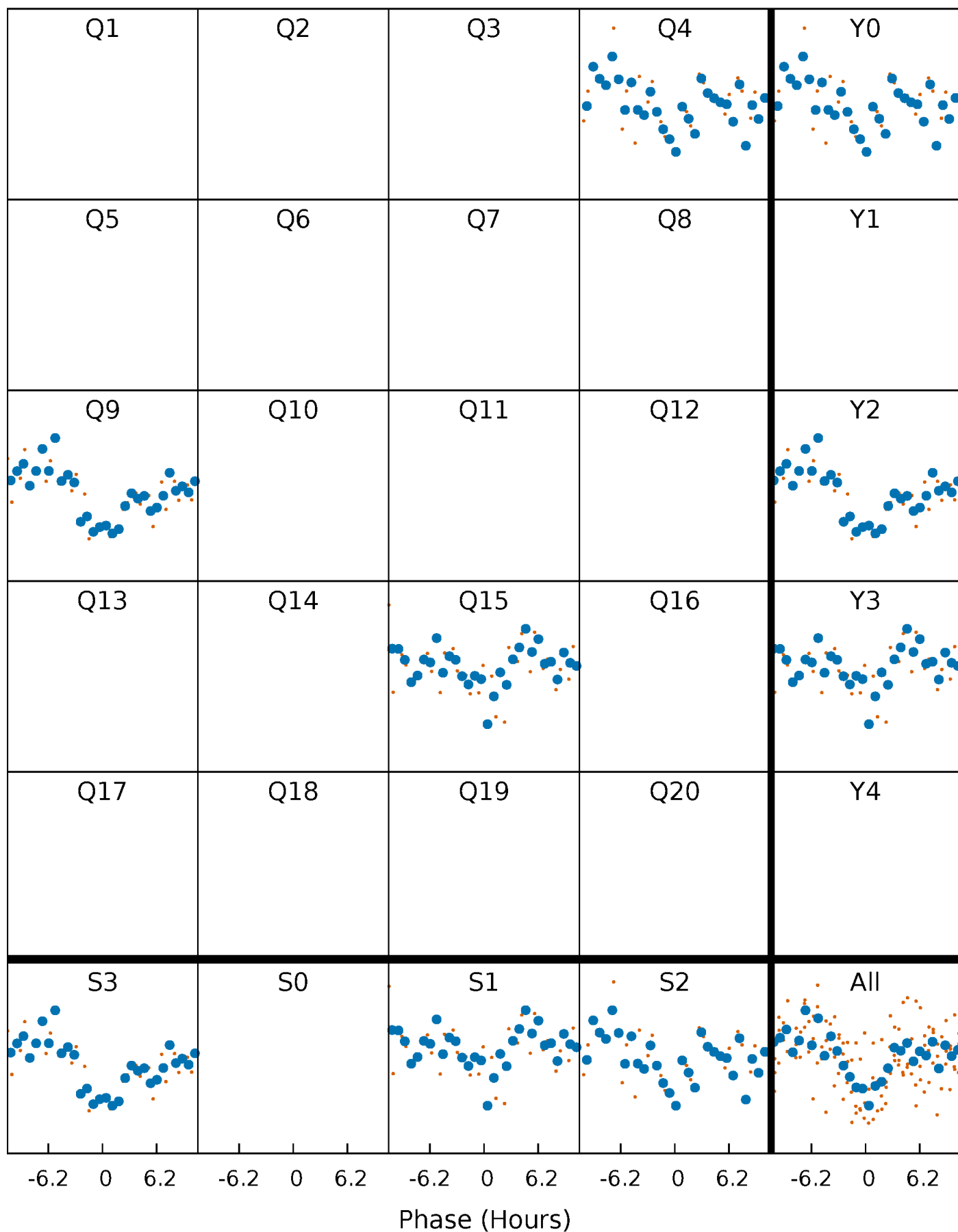


# Non-Whitened Vs. Whitened Light Curve



# PDC Quarter-Phased Transit Curves

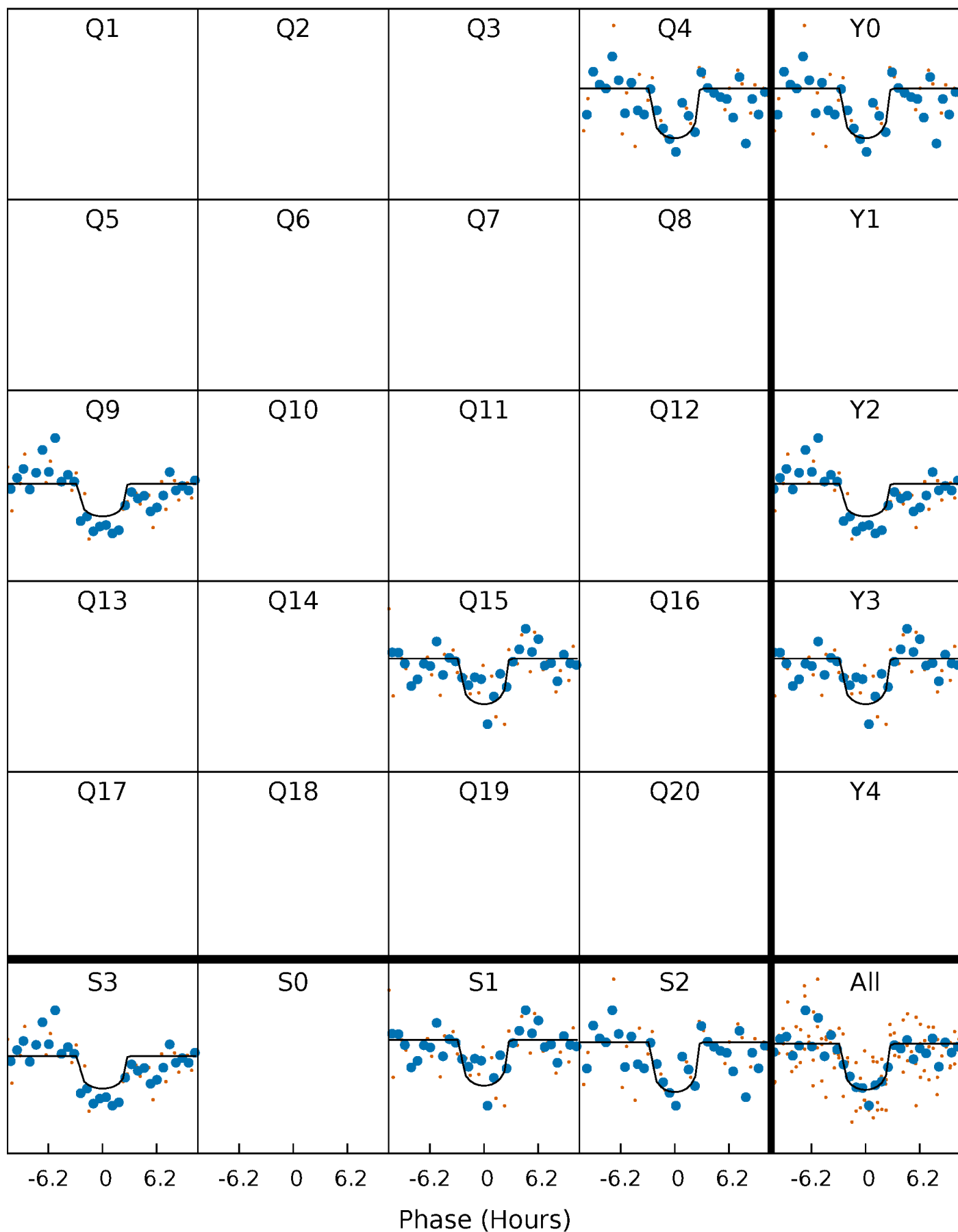
TCE 004645492-01 P=508.041889 Days  $T_0=361.719938$  (BKJD)





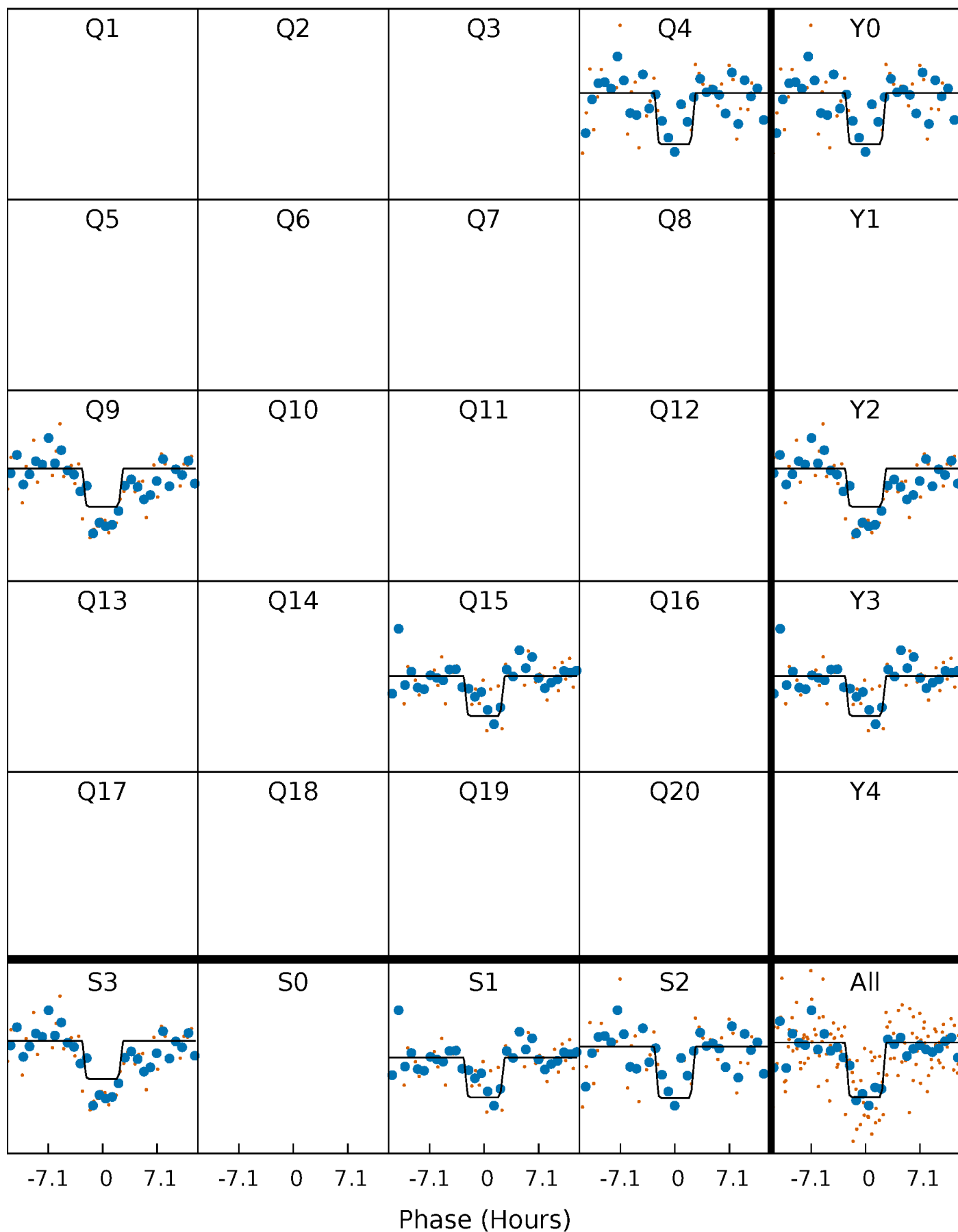
# DV Quarter-Phased Transit Curves

TCE 004645492-01   P=508.041889 Days    $T_0=361.719938$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

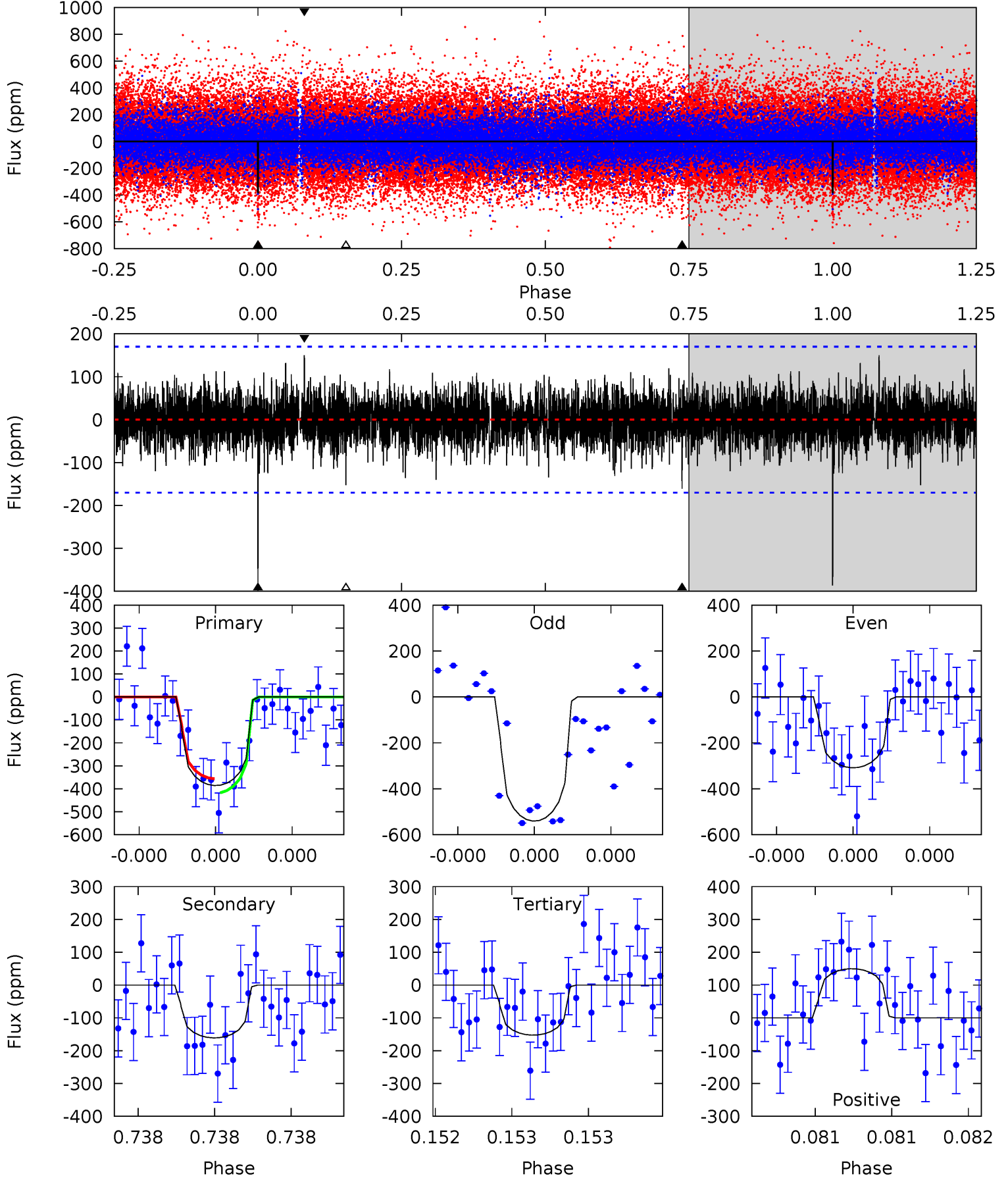
TCE 004645492-01 P=508.039602 Days  $T_0=361.725407$  (BKJD)



# DV Model-Shift Uniqueness Test

004645492-01, P = 508.041889 Days, E = 361.719938 Days

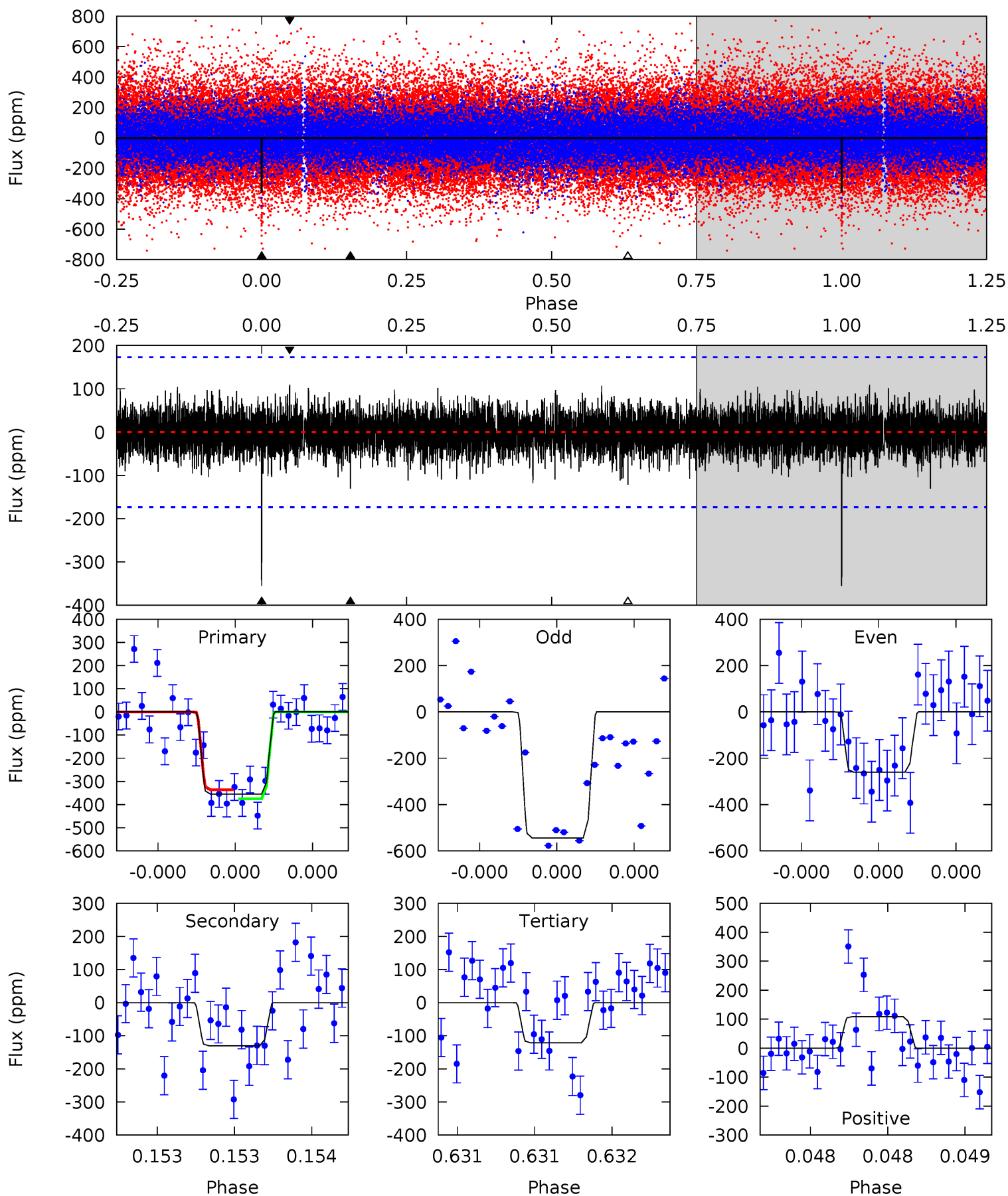
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
12.7	5.28	5.00	4.91	5.58	3.49	1.21	7.65	7.74	0.28	0.37	3.66	1.21	0.28	1.00



# Alt Model-Shift Uniqueness Test

004645492-01, P = 508.039602 Days, E = 361.725407 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	4.21	3.91	3.51	5.59	3.51	1.01	7.55	7.95	0.30	0.69	4.46	1.33	0.23	0.63



### Stellar Parameters For KIC 004645492

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R$ ( $R_{\odot}$ )	$M$ ( $M_{\odot}$ )	$p_{\star}$ ( $\text{g}\cdot\text{cm}^{-3}$ )
	$5672^{+68}_{-85}$	$4.503^{+0.015}_{-0.080}$	$0.360^{+0.100}_{-0.150}$	$0.965^{+0.094}_{-0.036}$	$1.080^{+0.027}_{-0.053}$	$1.694^{+0.121}_{-0.409}$
	+1%/-1%	+0%/-2%	+28%/-42%	+10%/-4%	+2%/-5%	+7%/-24%
Source	SPE68	SPE68	SPE68	DSEP		

KIC = Kepler Input Catalog; PHO = Photometry; SPE = Spectroscopy; AST = Asteroseismology  
 TRA = Transits; DESP = Dartmouth Models; MULT = Multiple Models

### Secondary Eclipse Parameters for KIC 004645492-01 / KOI 8095.01

Detrend	Depth (ppm)	$R_p$ ( $R_{\oplus}$ )	$T_{max}$ (K)	$T_{obs}$ (K)	$A_{obs}$
DV	$-161 \pm 30$	$2.59^{+1.80}_{-1.63}$	$306^{+9}_{-6}$	$4332^{+2362}_{-744}$	$21648^{+133127}_{-14243}$
Alt.	$-130 \pm 31$	$2.41^{+1.96}_{-1.40}$	$306^{+8}_{-6}$	$4231^{+1956}_{-764}$	$18643^{+91002}_{-12689}$

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

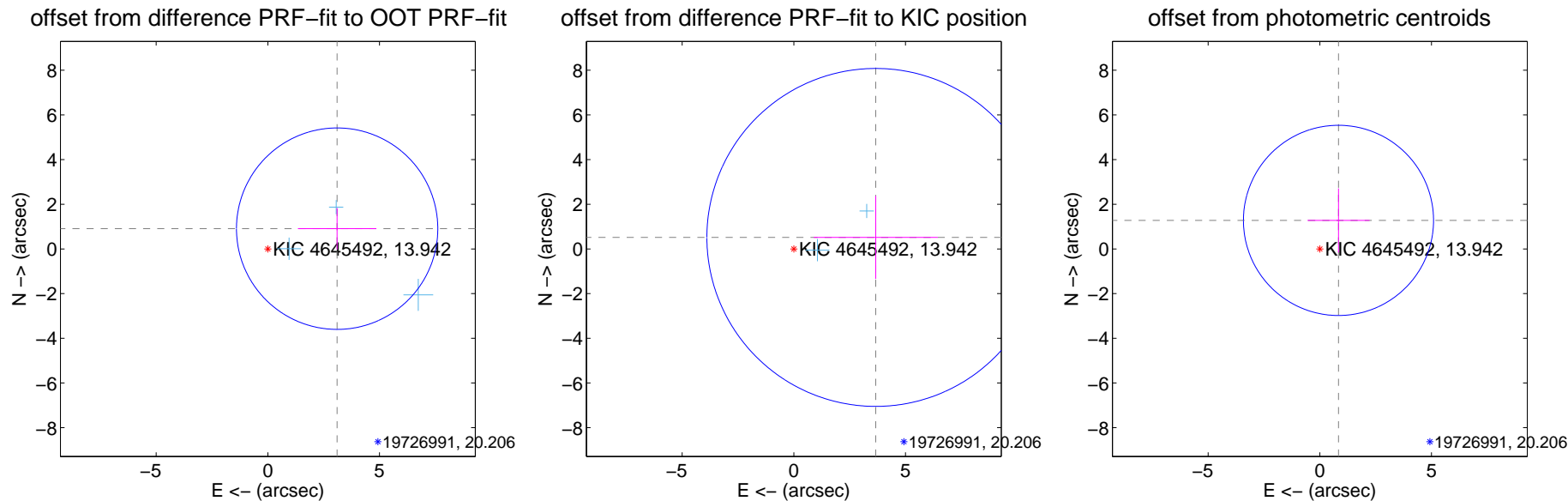
## DV Centroid Data

Supplemental centroid analysis for 004645492-01. Kepler magnitude: 13.94. Transit SNR 8.43

There are 3 quarters with good PRF difference image offsets

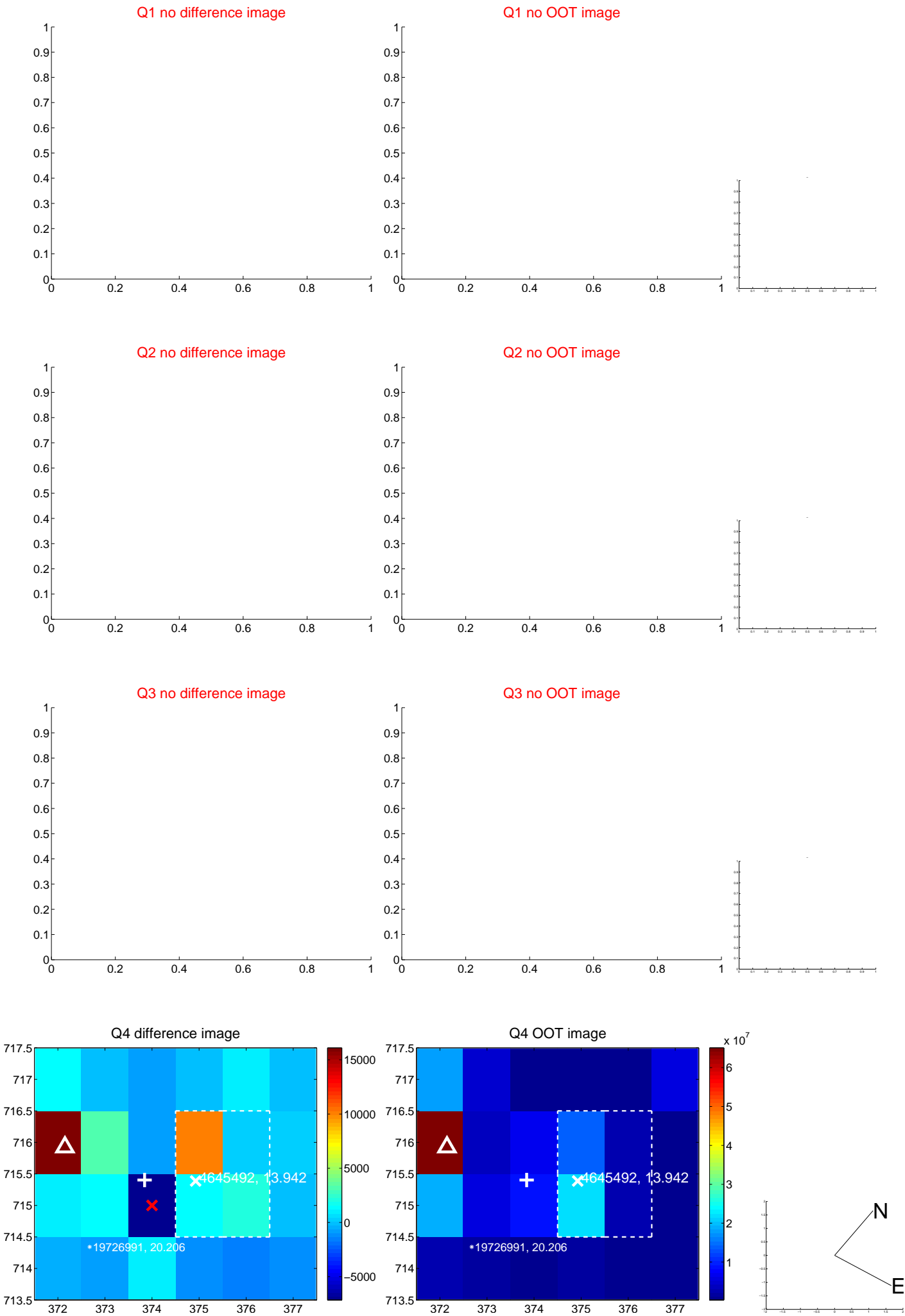
The direct PRF centroid is offset from the target star catalog position by about 0.12 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$3.233 \pm 1.503$	2.15	$-3.103 \pm 1.757$	$0.907 \pm 0.926$
PRF-fit source offset from KIC position	$3.705 \pm 2.521$	1.47	$-3.669 \pm 2.779$	$0.515 \pm 1.856$
photometric centroid source offset	$1.53 \pm 1.42$	1.08	$-0.84 \pm 1.39$	$1.28 \pm 1.43$



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.

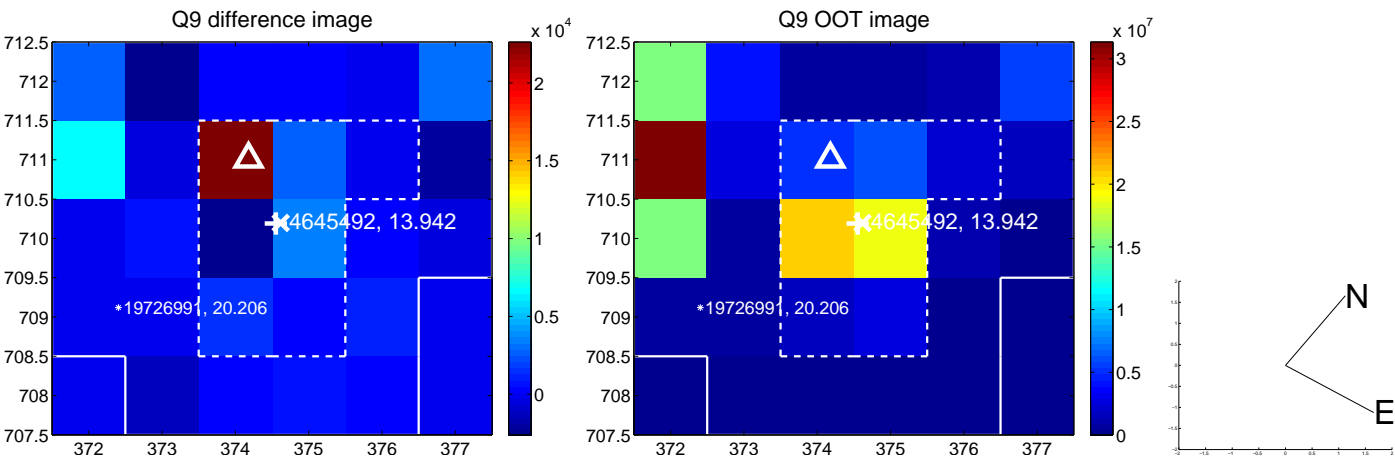


white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

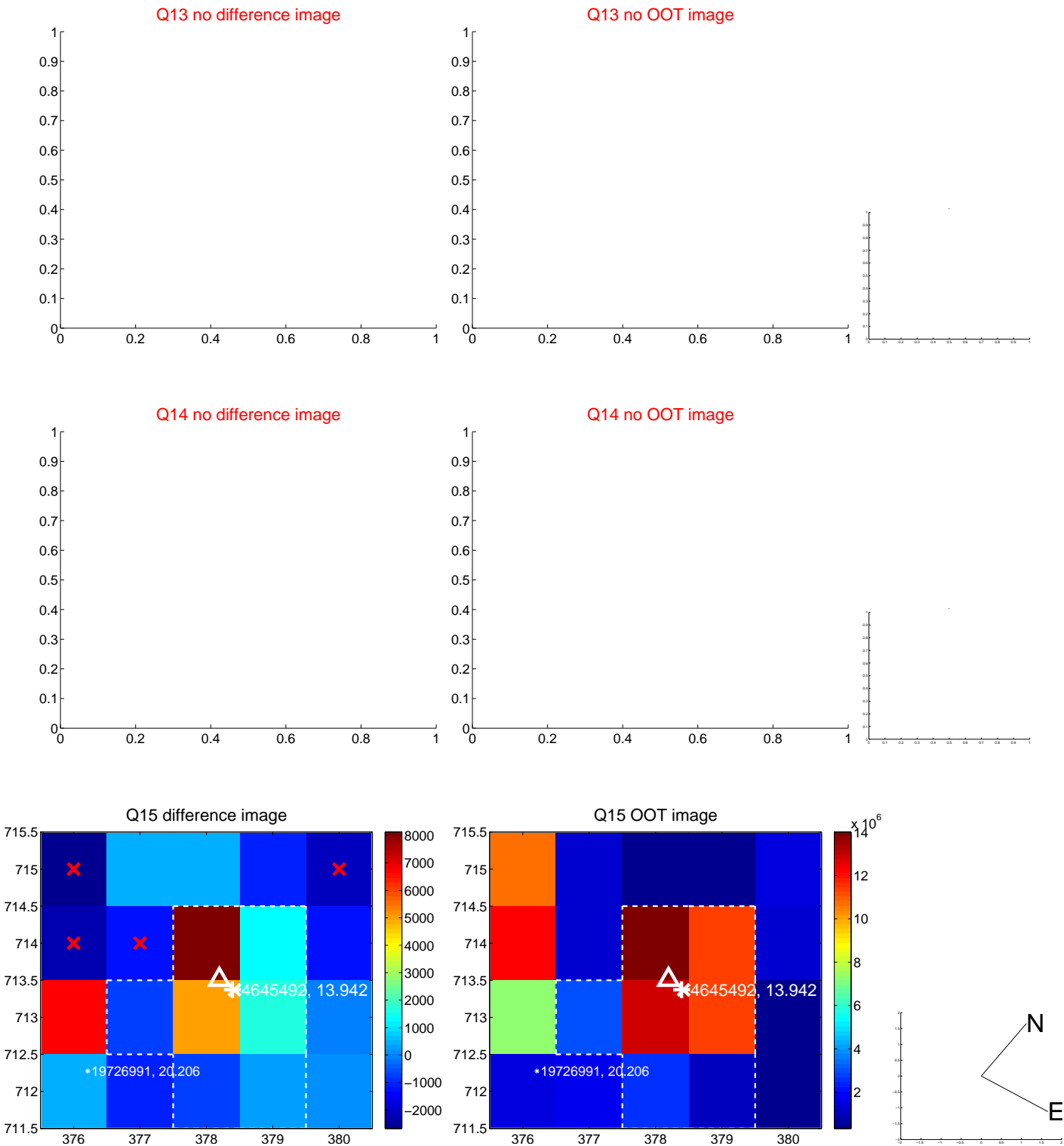




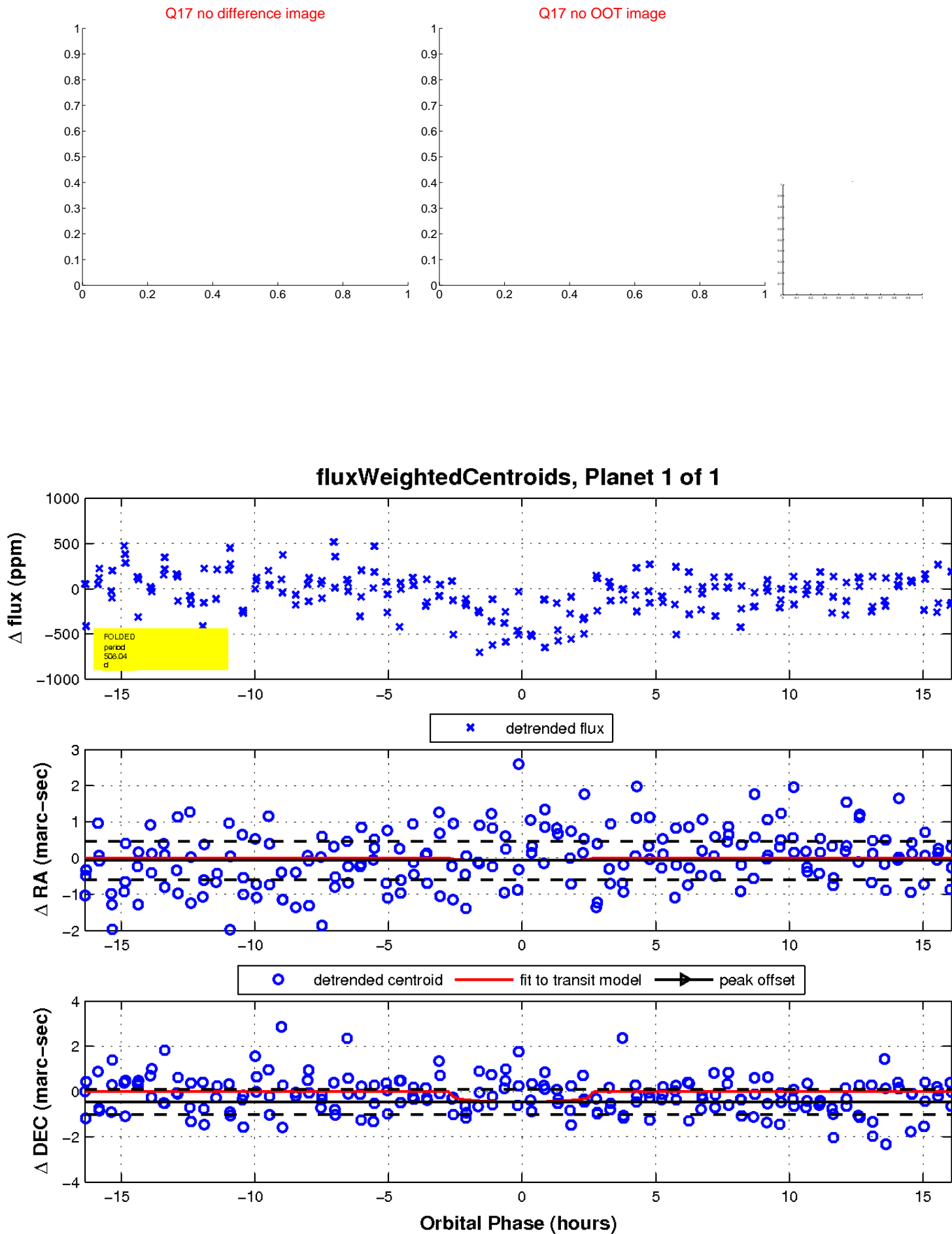
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



white ×: KIC target position; +: OOT centroid; △: difference centroid. red ✕: large negative pixel value.



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



UKIRT Image

Declination

