

# KIC 009582465

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
009582465-01	OBS	No	652.486139	208.520947	415.8	16.498	10.3	10.1	0.99	6164	2.19	0.60

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
009582465-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_SKYE—INCONSISTENT_TRANS—CENT_FEW_MEAS

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

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

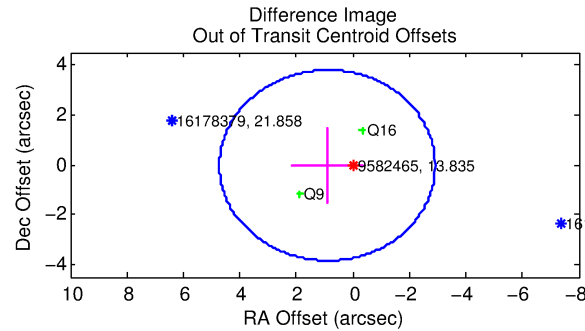
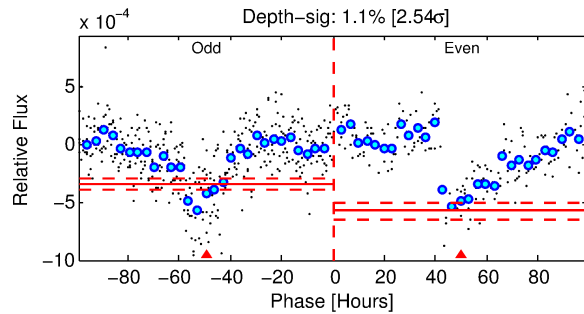
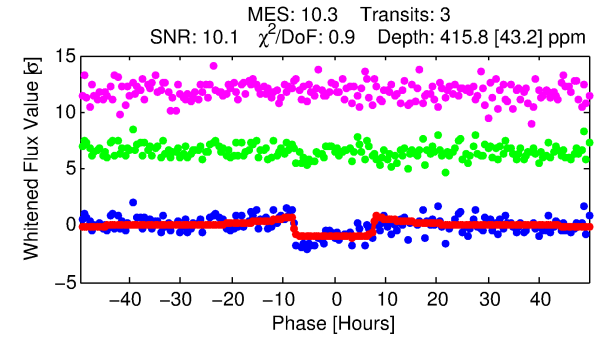
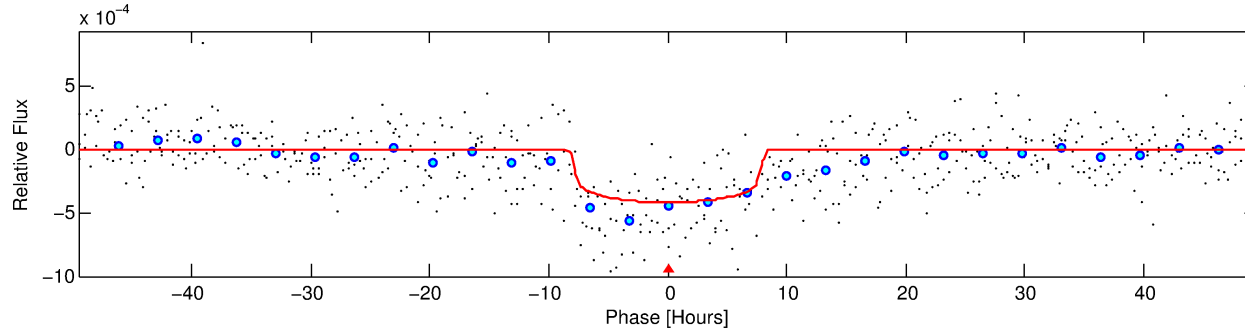
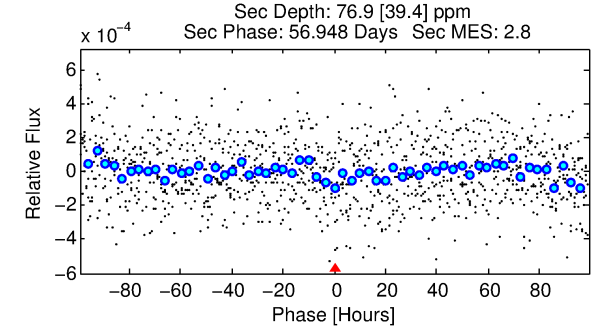
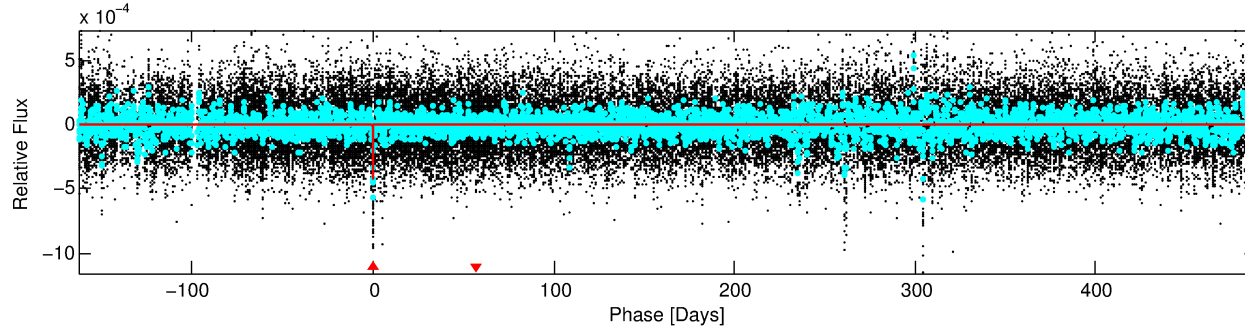
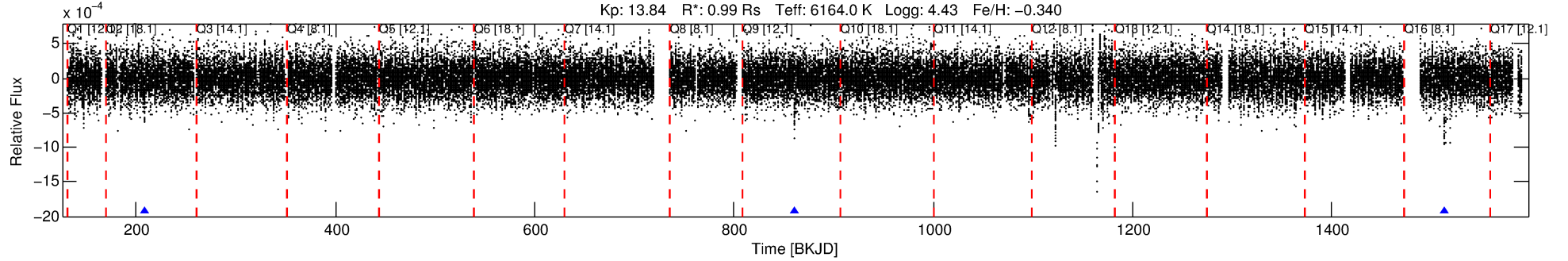
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 009582465-01

No Significant Match Found

# DV One-Page Summary

KIC: 9582465 Candidate: 1 of 1 Period: 652.486 d



## DV Fit Results:

Period = 652.48614 [0.00952] d  
Epoch = 208.5209 [0.0130] BKJD  
Rp/R\* = 0.0202 [0.0031]  
a/R\* = 211.49 [156.34]  
b = 0.74 [0.45]  
Seff = 0.60 [0.23]  
Teq = 224 [22] K  
Rp = 2.19 [0.75] Re  
a = 1.4612 [0.3705] AU  
Ag = 18800.66 [13189.67] [1.43σ]  
Teffp = 4058 [623] K [6.15σ]

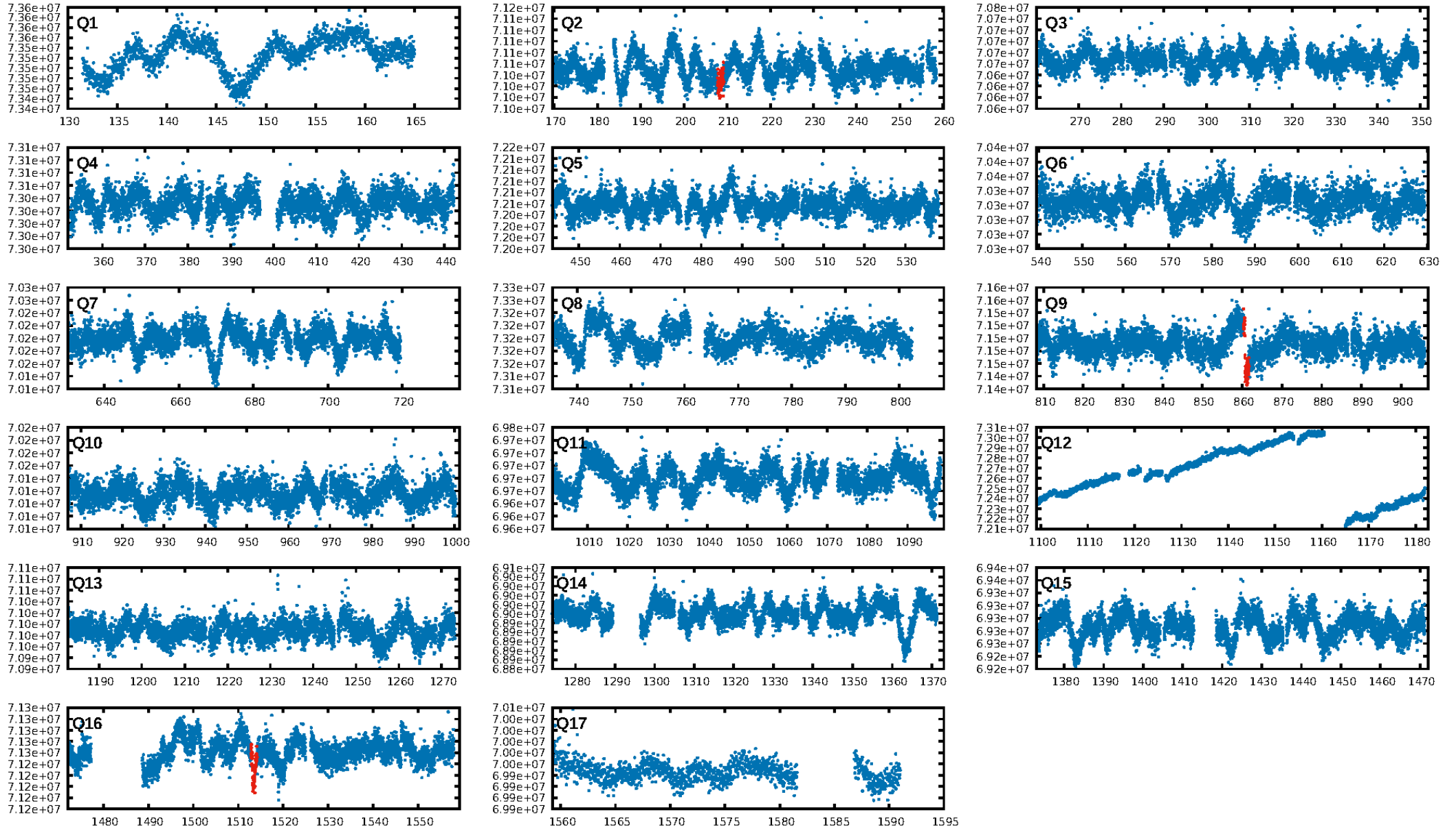
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: 0.2%  
ModelChiSquareGof-sig: 98.3%  
Bootstrap-pfa: 7.36e-15  
RollingBand-fgt: 1.00 [3/3]  
GhostDiagnostic-chr: -6.102  
Centroid-sig: 18.4%  
Centroid-so: 0.724 arcsec [0.97σ]  
OotOffset-rm: 0.903 arcsec [0.71σ]  
OotOffset-st: 0/0/1/1 [2]  
KicOffset-rm: 0.887 arcsec [0.69σ]  
KicOffset-st: 0/0/1/1 [2]  
DiffImageQuality-fgm: 1.00 [2/2]  
DiffImageOverlap-fno: 1.00 [3/3]

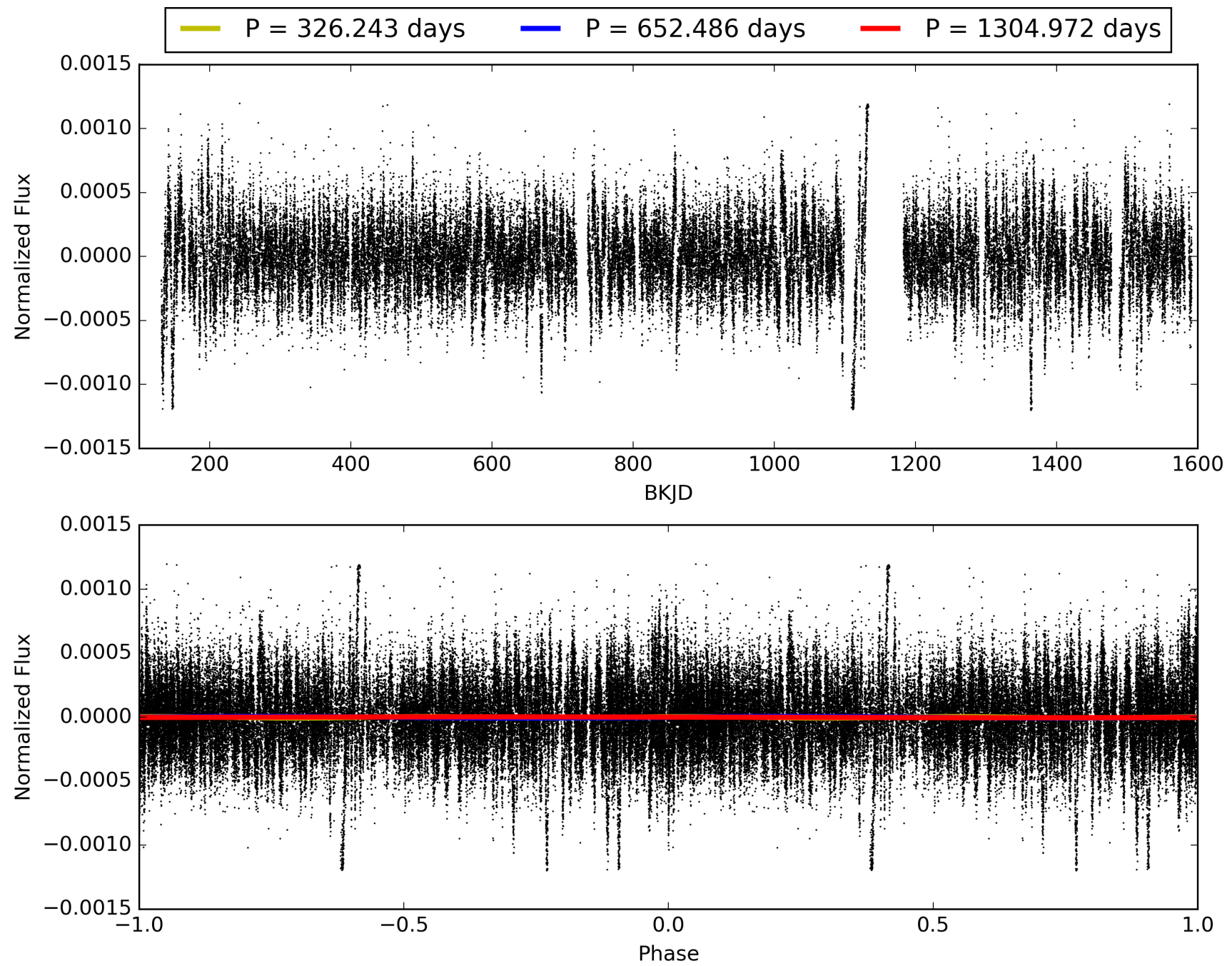
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 28-Jan-2016 22:09:29 Z

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

# TCE 009582465-01, PDC Light Curves

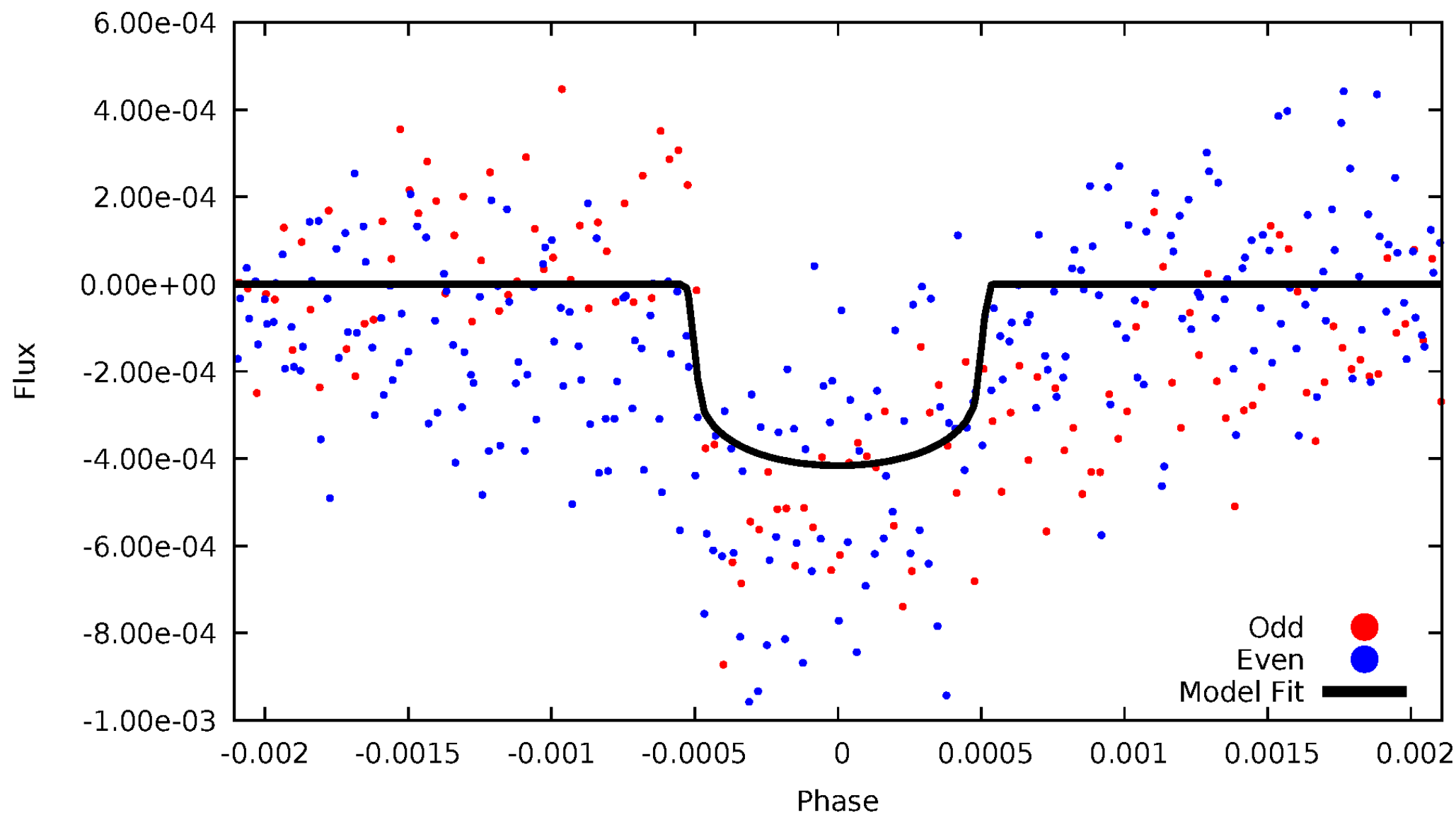


TCE 009582465-01



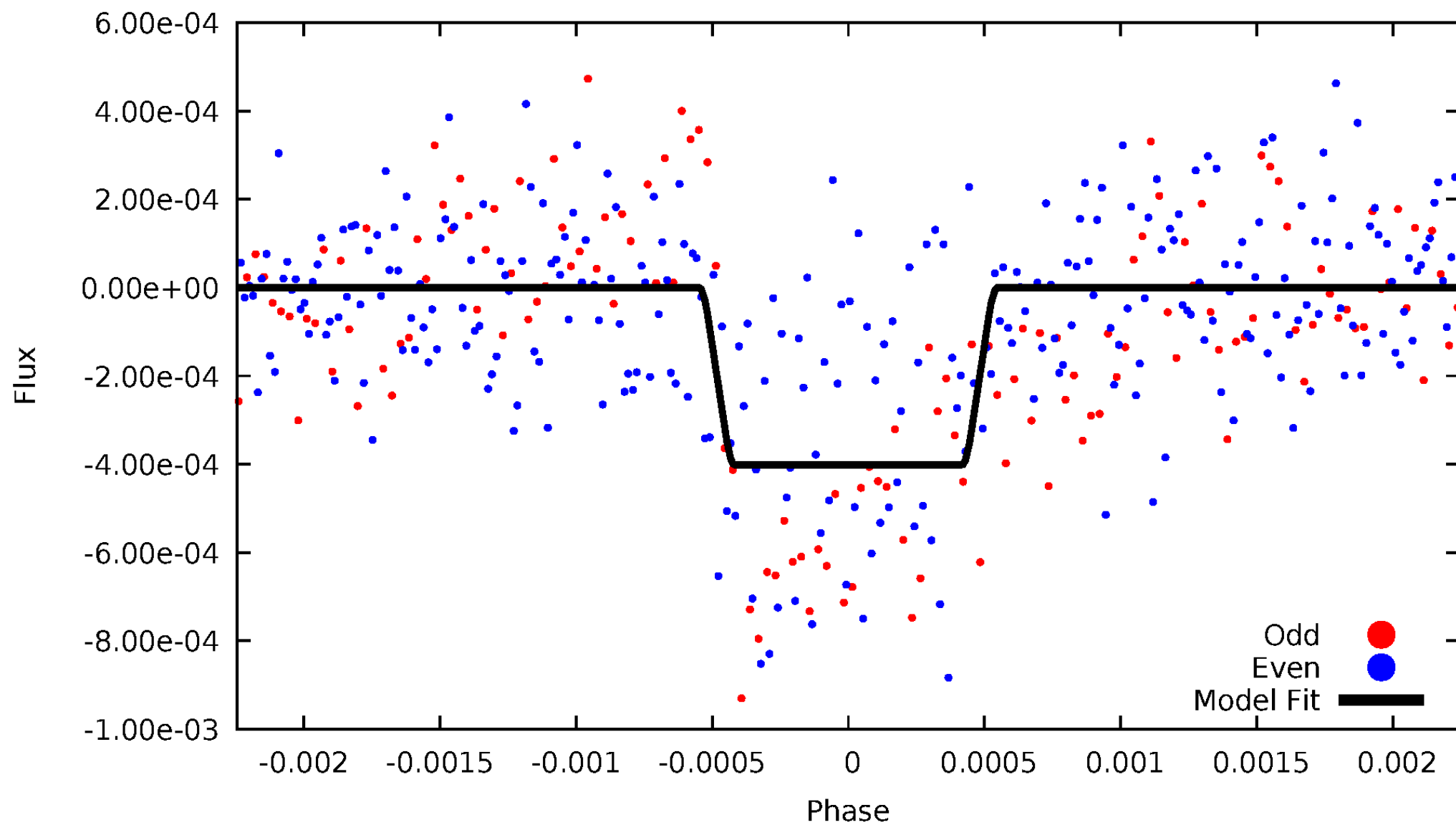
# DV Odd/Even

TCE 009582465-01



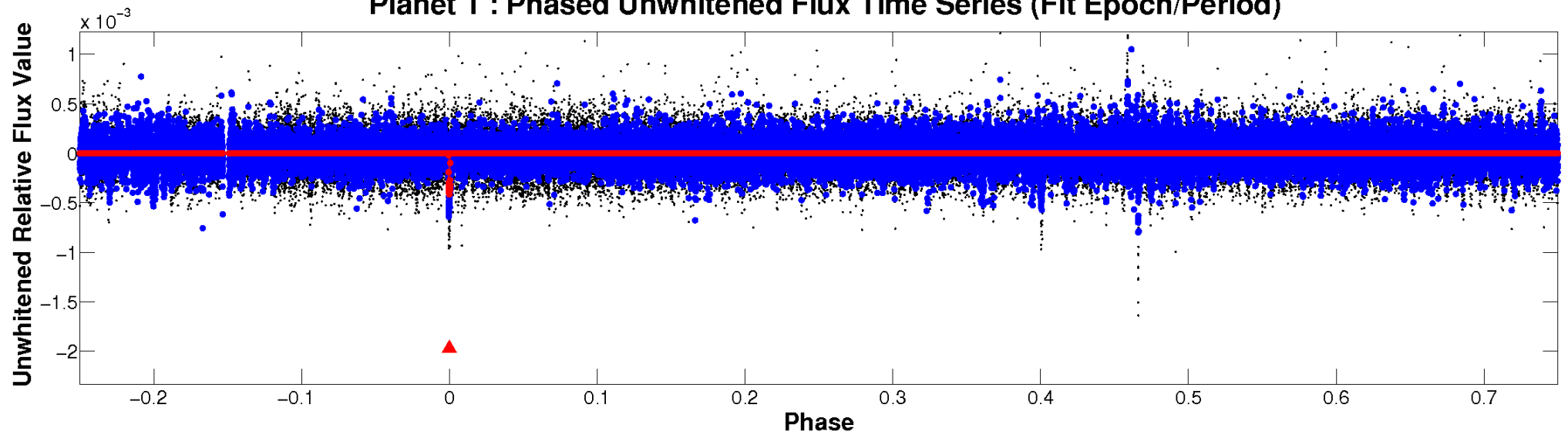
# ALT Odd/Even

TCE 009582465-01

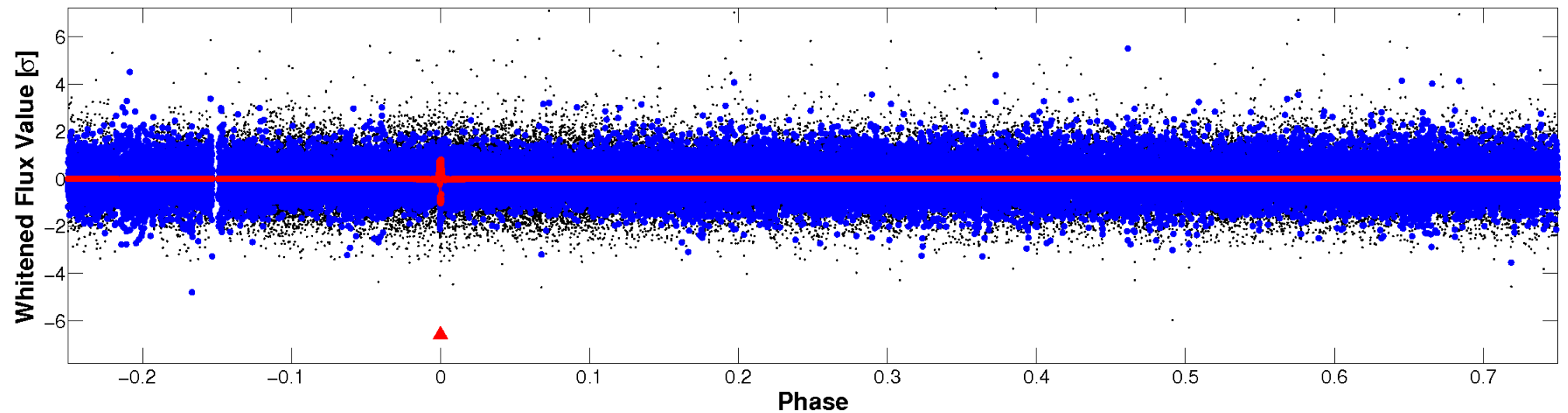


# Non-Whitened Vs. Whitened Light Curve

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

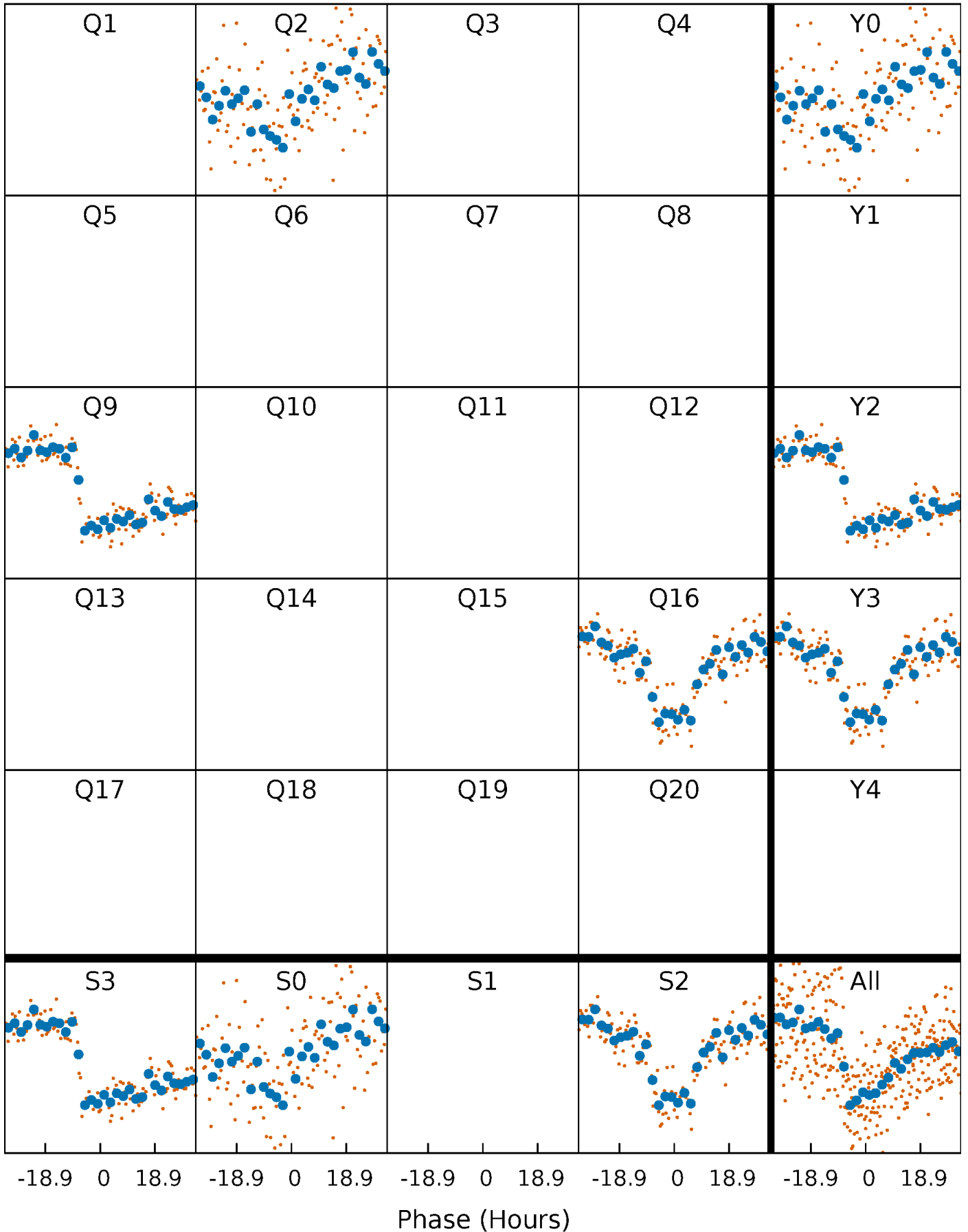


**Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)**



# PDC Quarter-Phased Transit Curves

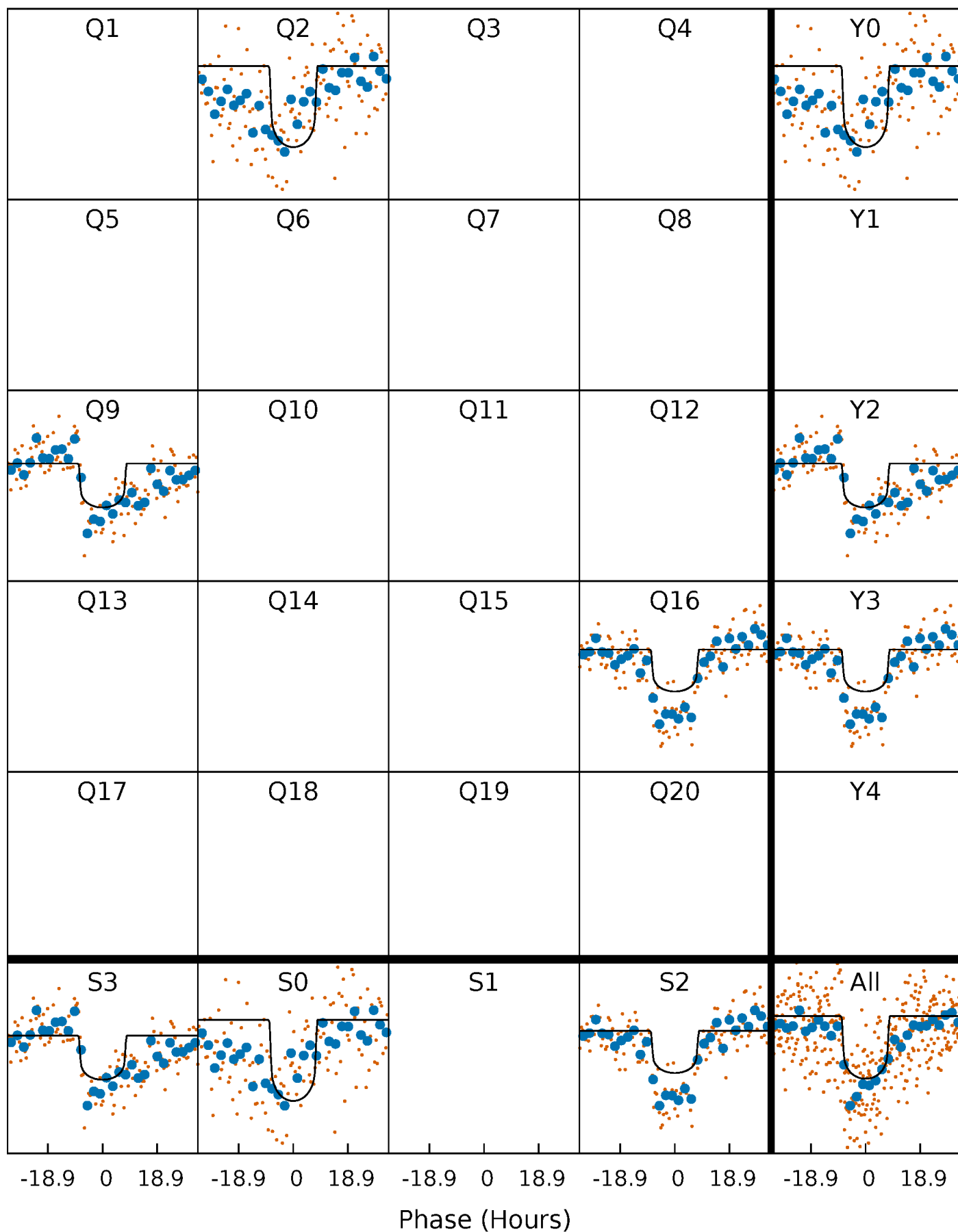
TCE 009582465-01   P=652.486139 Days    $T_0=208.520947$  (BKJD)





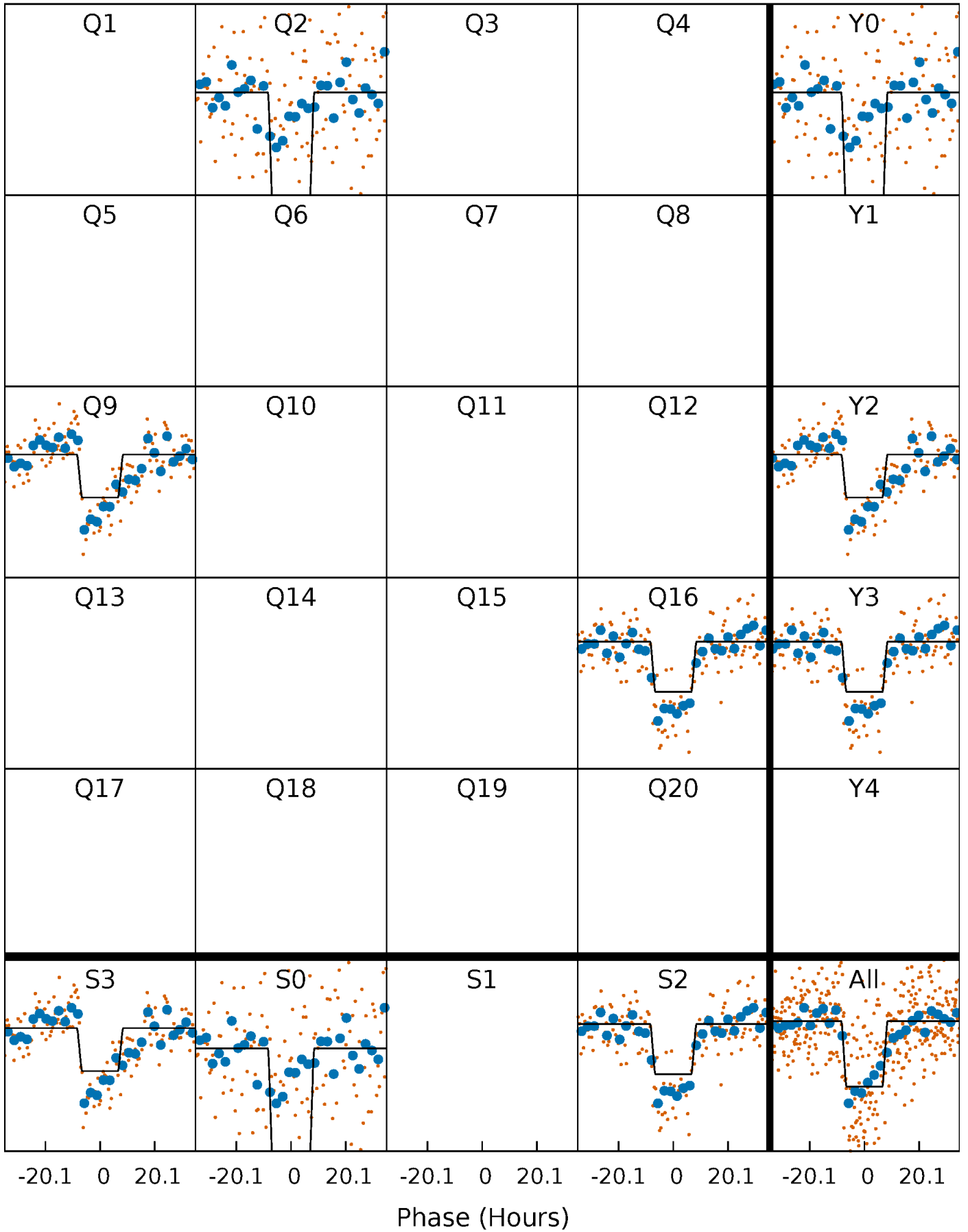
# DV Quarter-Phased Transit Curves

TCE 009582465-01 P=652.486139 Days  $T_0=208.520947$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

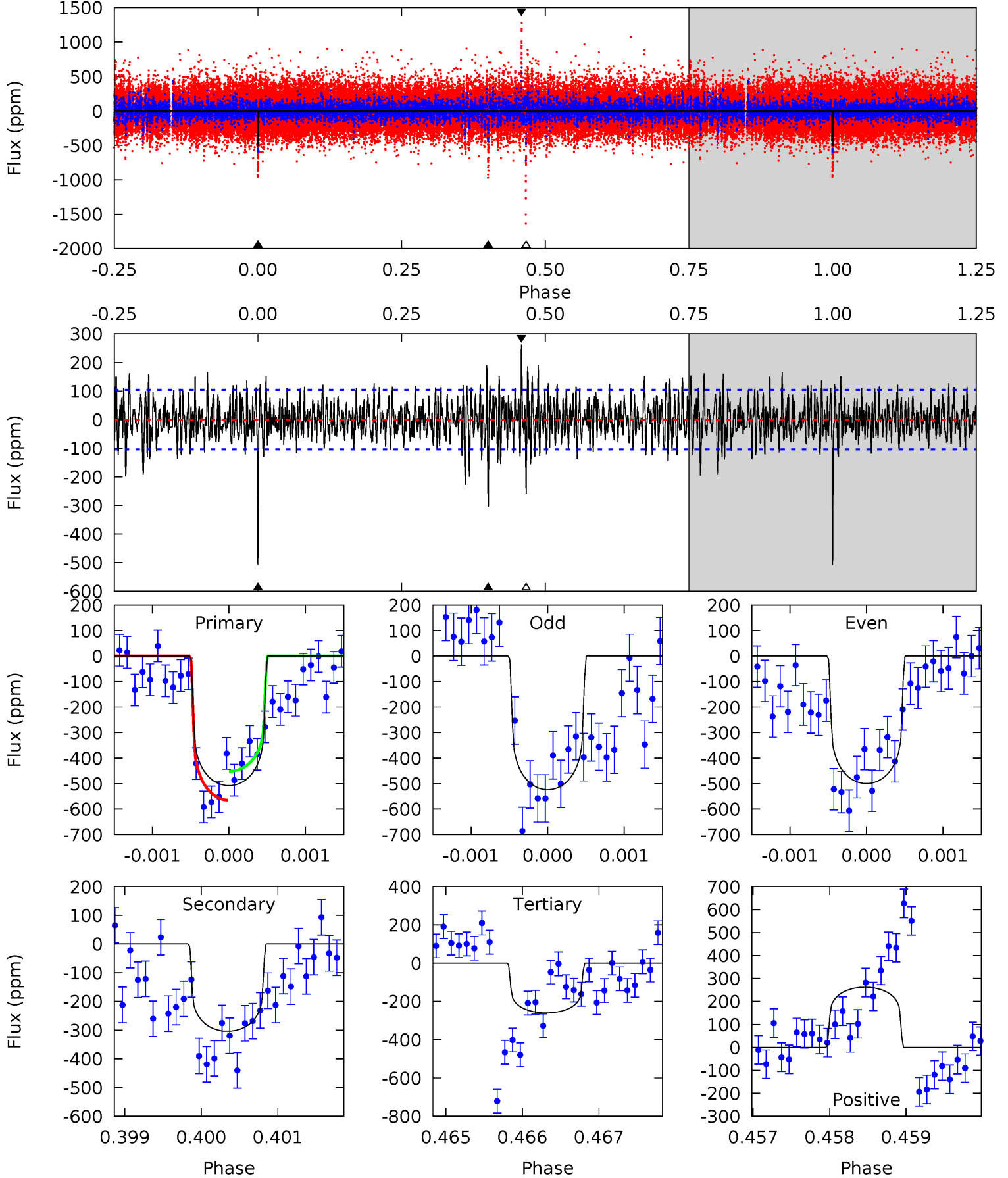
TCE 009582465-01 P=652.498060 Days  $T_0=208.504083$  (BKJD)



# DV Model-Shift Uniqueness Test

009582465-01, P = 652.486139 Days, E = 208.520947 Days

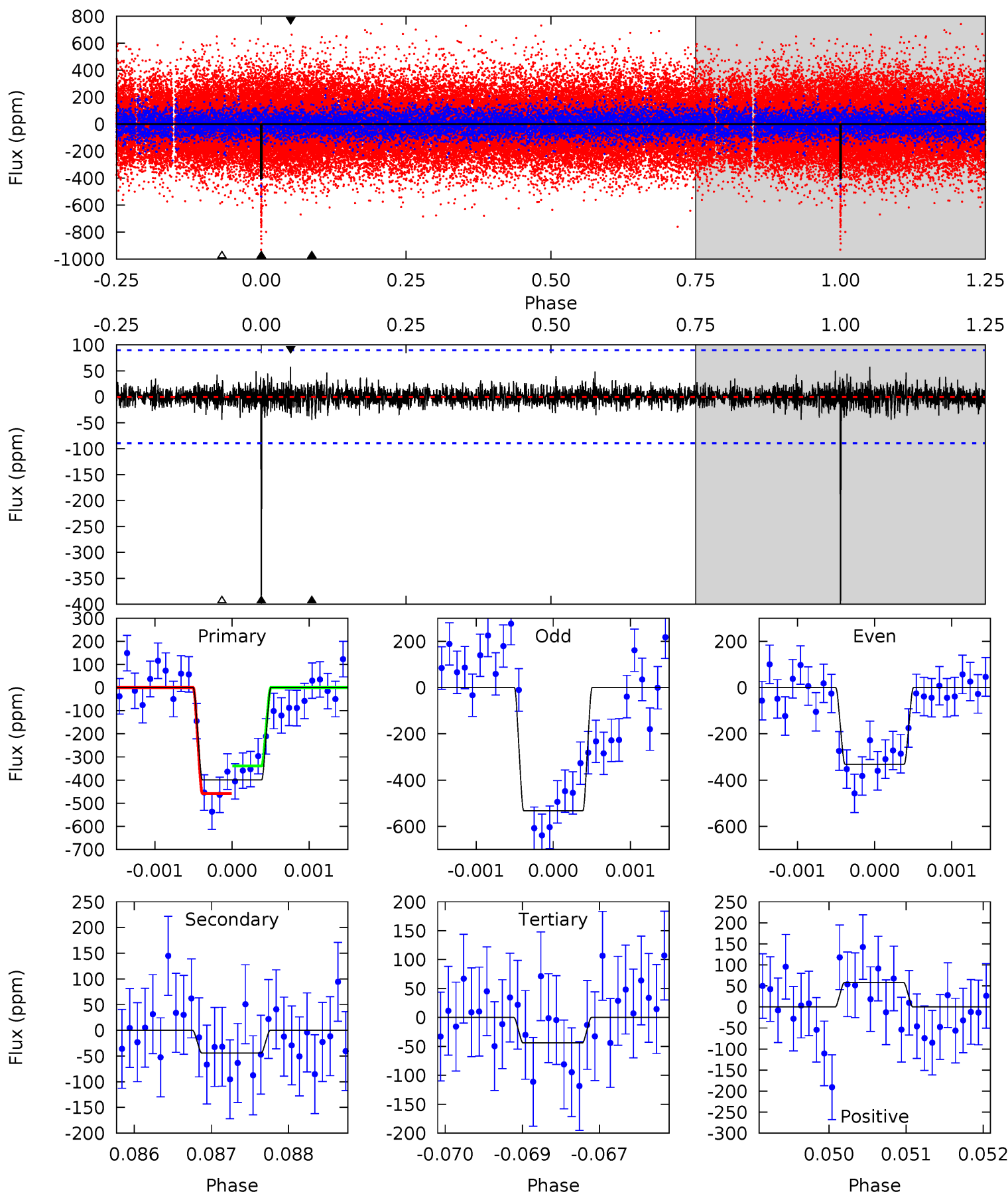
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
26.5	15.9	13.6	13.7	5.44	3.27	2.97	13.0	12.8	2.30	2.18	0.60	0.97	0.34	2.96



# Alt Model-Shift Uniqueness Test

009582465-01, P = 652.498060 Days, E = 208.504083 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
24.2	2.68	2.66	3.51	5.44	3.27	0.69	21.5	20.7	0.02	-0.83	5.80	0.75	0.13	3.61



### Stellar Parameters For KIC 009582465

	$T_{\text{eff}}(K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$6164^{+165}_{-202}$	$4.434^{+0.084}_{-0.196}$	$-0.340^{+0.300}_{-0.300}$	$0.993^{+0.304}_{-0.130}$	$0.976^{+0.139}_{-0.114}$	$1.404^{+0.504}_{-0.713}$
	+3%/-3%	+2%/-4%	+88%/-88%	+31%/-13%	+14%/-12%	+36%/-51%
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 009582465-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	$A_{\text{obs}}$
DV	$-304 \pm 19$	$2.27^{+0.50}_{-0.45}$	$317^{+24}_{-16}$	$5727^{+551}_{-395}$	$68652^{+37311}_{-22160}$
Alt.	$-44 \pm 17$	$2.24^{+0.47}_{-0.40}$	$317^{+22}_{-16}$	$3883^{+374}_{-386}$	$9952^{+7763}_{-4889}$

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

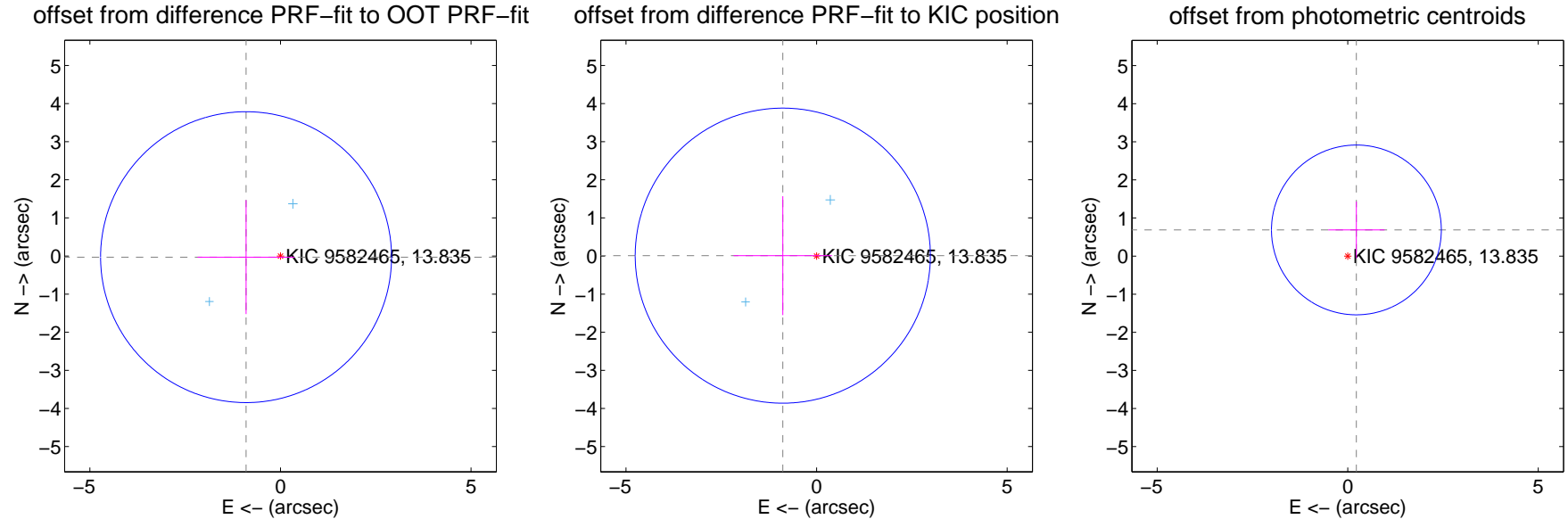
## DV Centroid Data

Supplemental centroid analysis for 009582465-01. Kepler magnitude: 13.84. Transit SNR 10.15

There are 2 quarters with good PRF difference image offsets

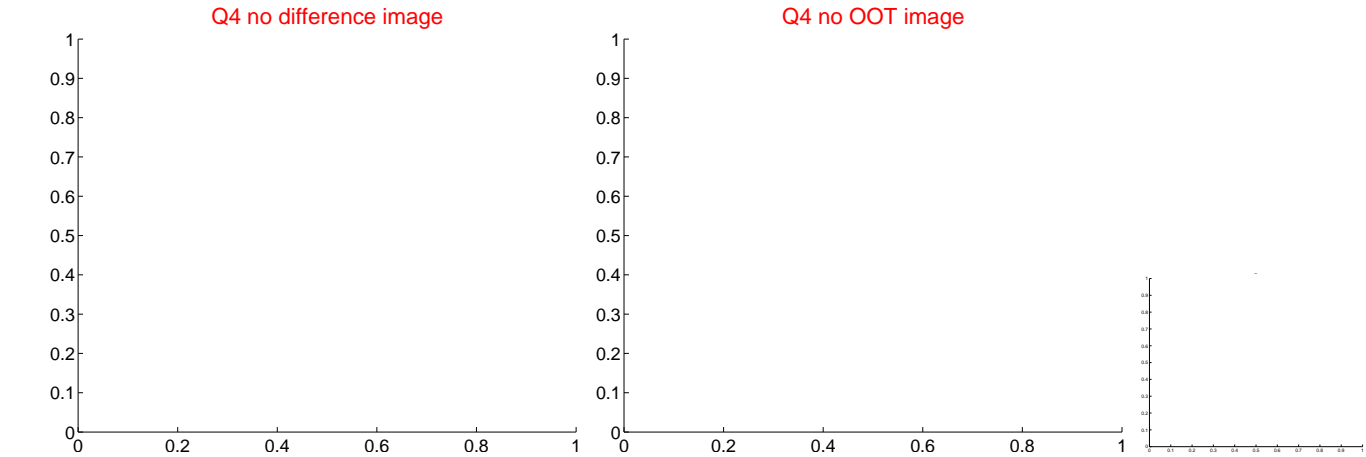
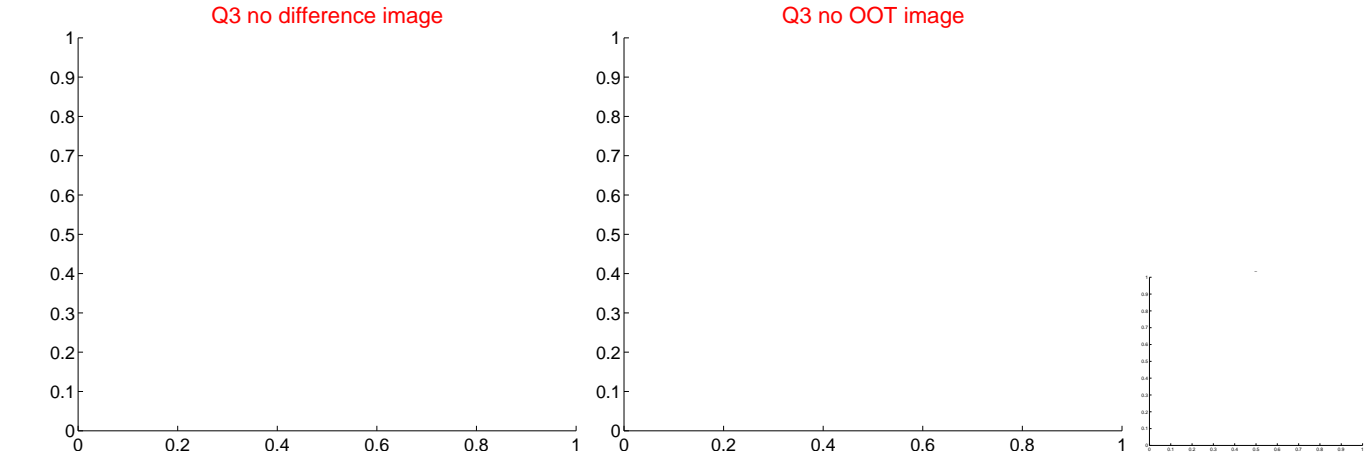
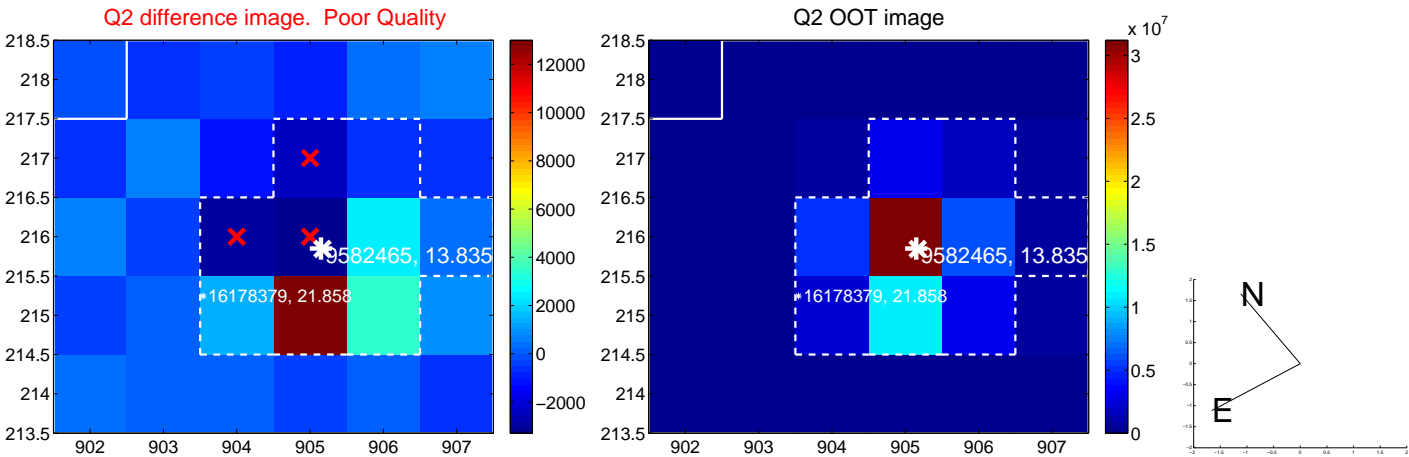
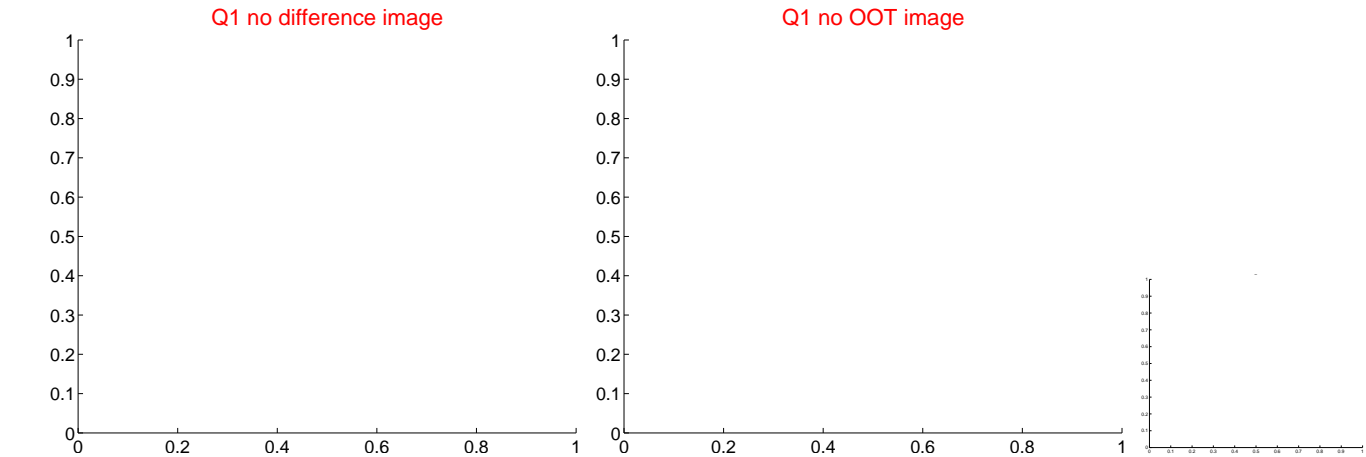
The direct PRF centroid is offset from the target star catalog position by about 0.11 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.903 \pm 1.272$	0.71	$0.902 \pm 1.272$	$-0.030 \pm 1.494$
PRF-fit source offset from KIC position	$0.887 \pm 1.291$	0.69	$0.886 \pm 1.291$	$0.010 \pm 1.560$
photometric centroid source offset	$0.72 \pm 0.74$	0.97	$-0.23 \pm 0.74$	$0.69 \pm 0.74$



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.

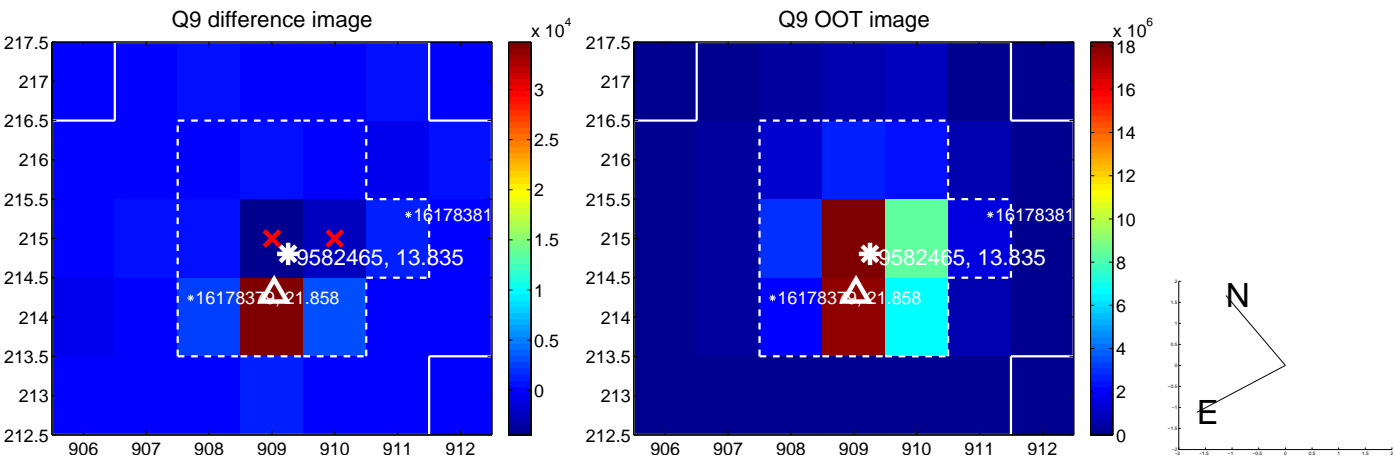


white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

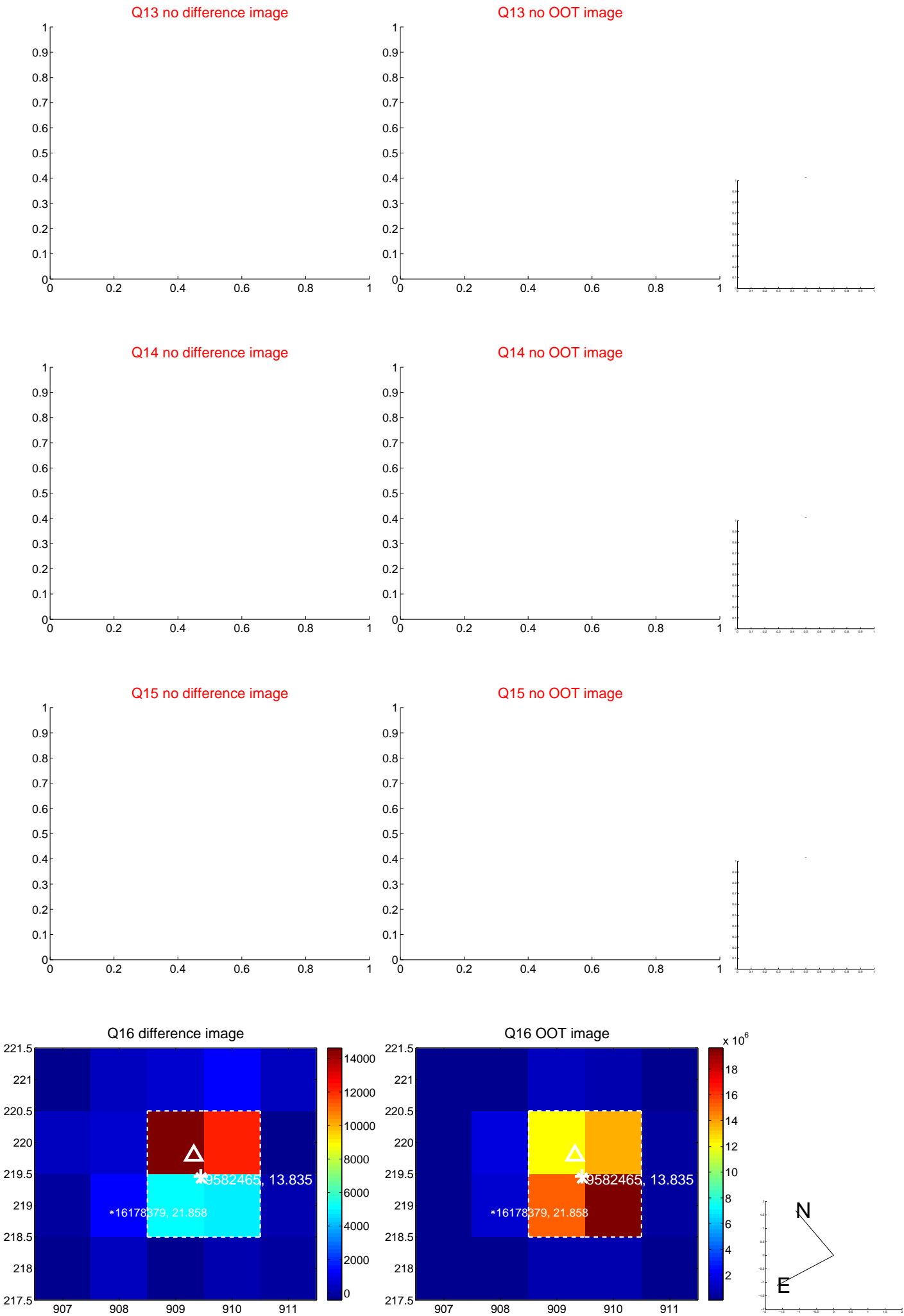




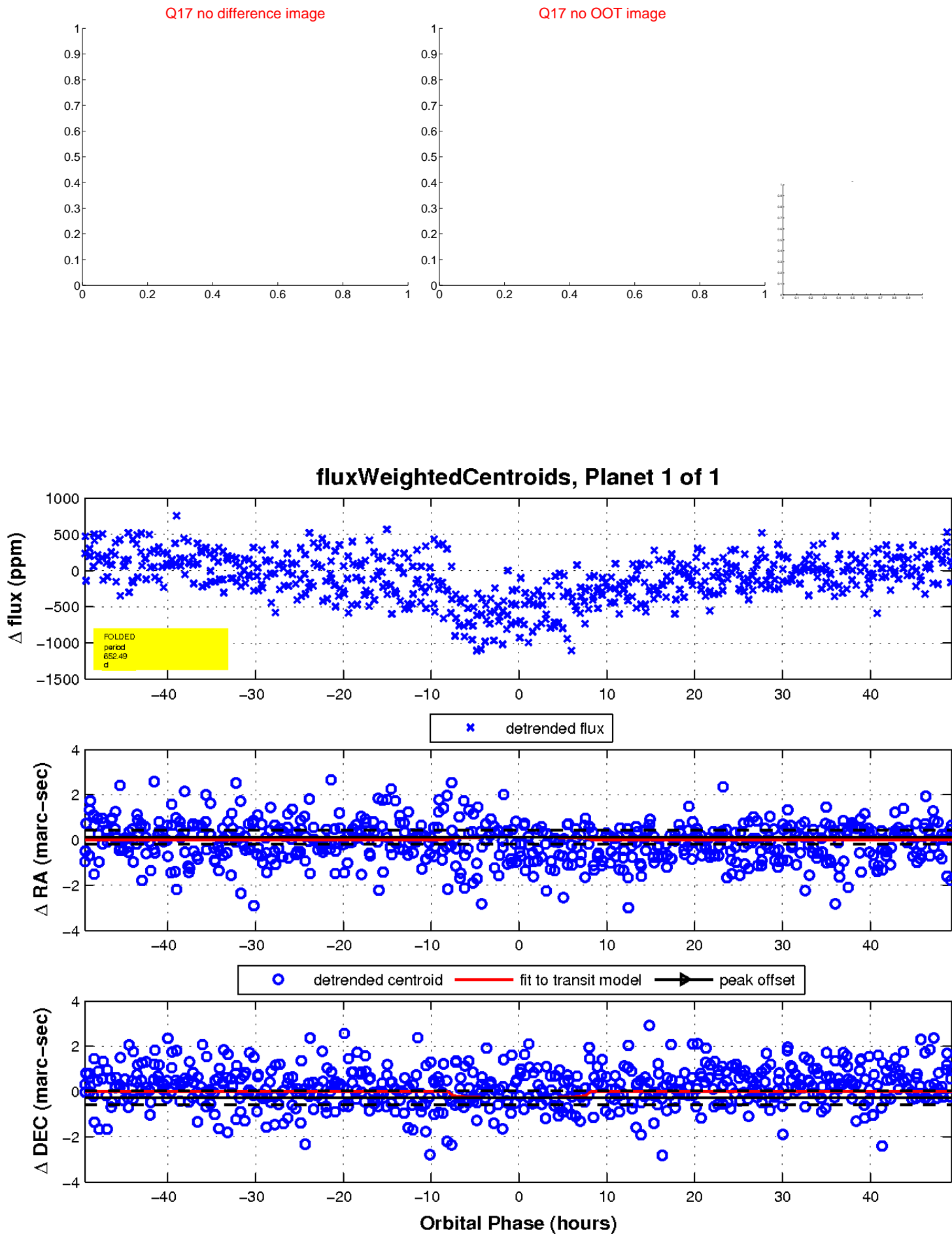
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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

