

# KIC 006940654

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
006940654-01	OBS	No	332.536785	429.919788	801.8	18.831	8.1	8.3	0.42	3604	1.19	0.05

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
006940654-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL_SKYE—ALL_TRANS_CHASES—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.

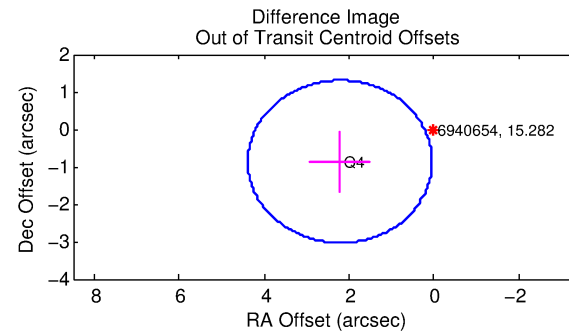
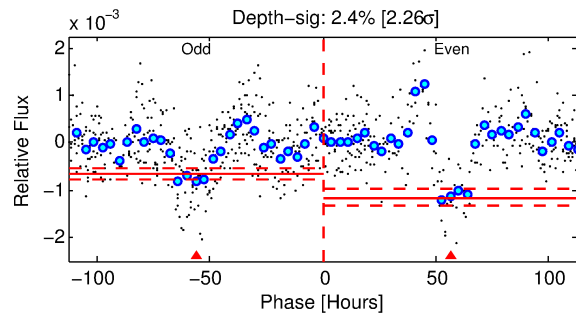
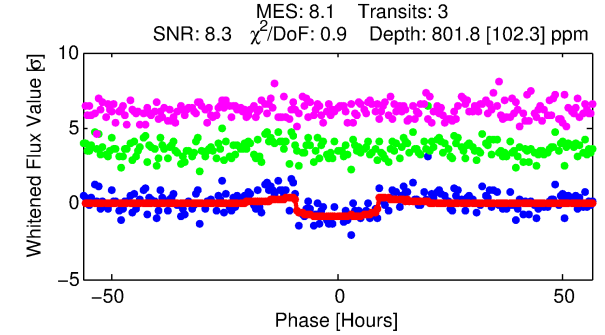
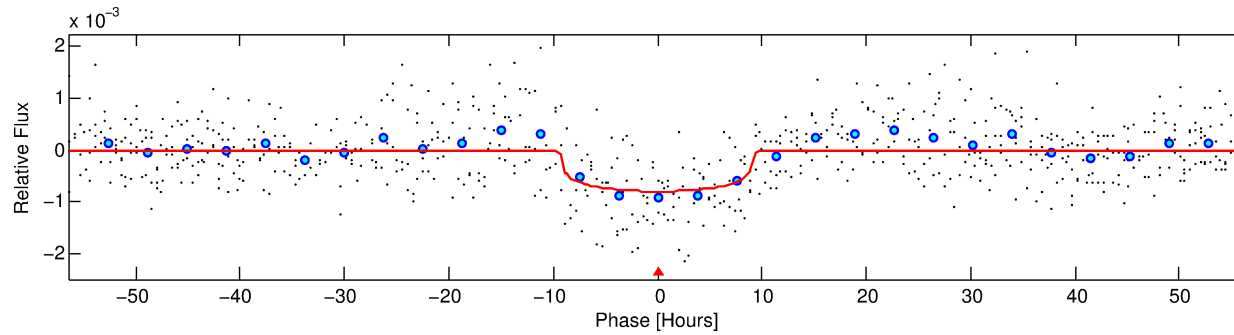
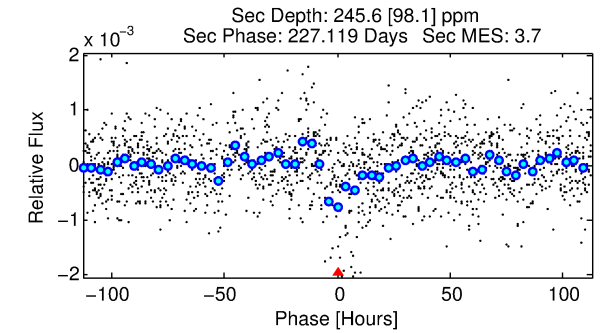
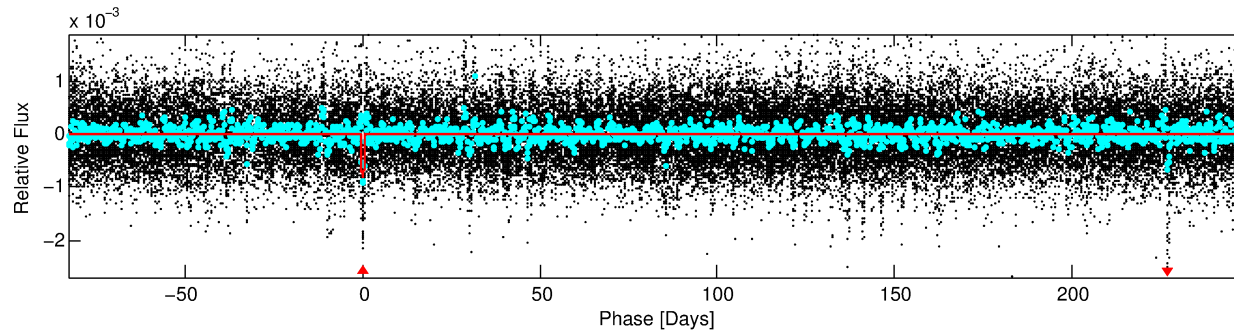
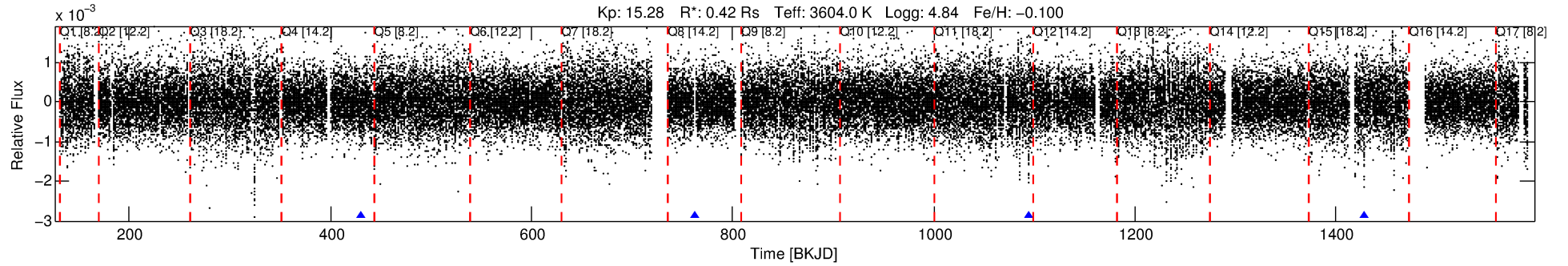
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 006940654-01

No Significant Match Found

# DV One-Page Summary

KIC: 6940654 Candidate: 1 of 1 Period: 332.537 d



## DV Fit Results:

Period = 332.53678 [0.00958] d  
Epoch = 429.9198 [0.0182] BKJD  
Rp/R\* = 0.0259 [0.0107]  
a/R\* = 132.63 [233.99]  
b = 0.29 [5.53]  
Seff = 0.05 [0.01]  
Teq = 122 [3] K  
Rp = 1.19 [0.50] Re  
a = 0.7175 [0.0522] AU  
Ag = 48950.93 [45004.76] [1.09σ]  
Teffp = 2804 [643] K [4.17σ]

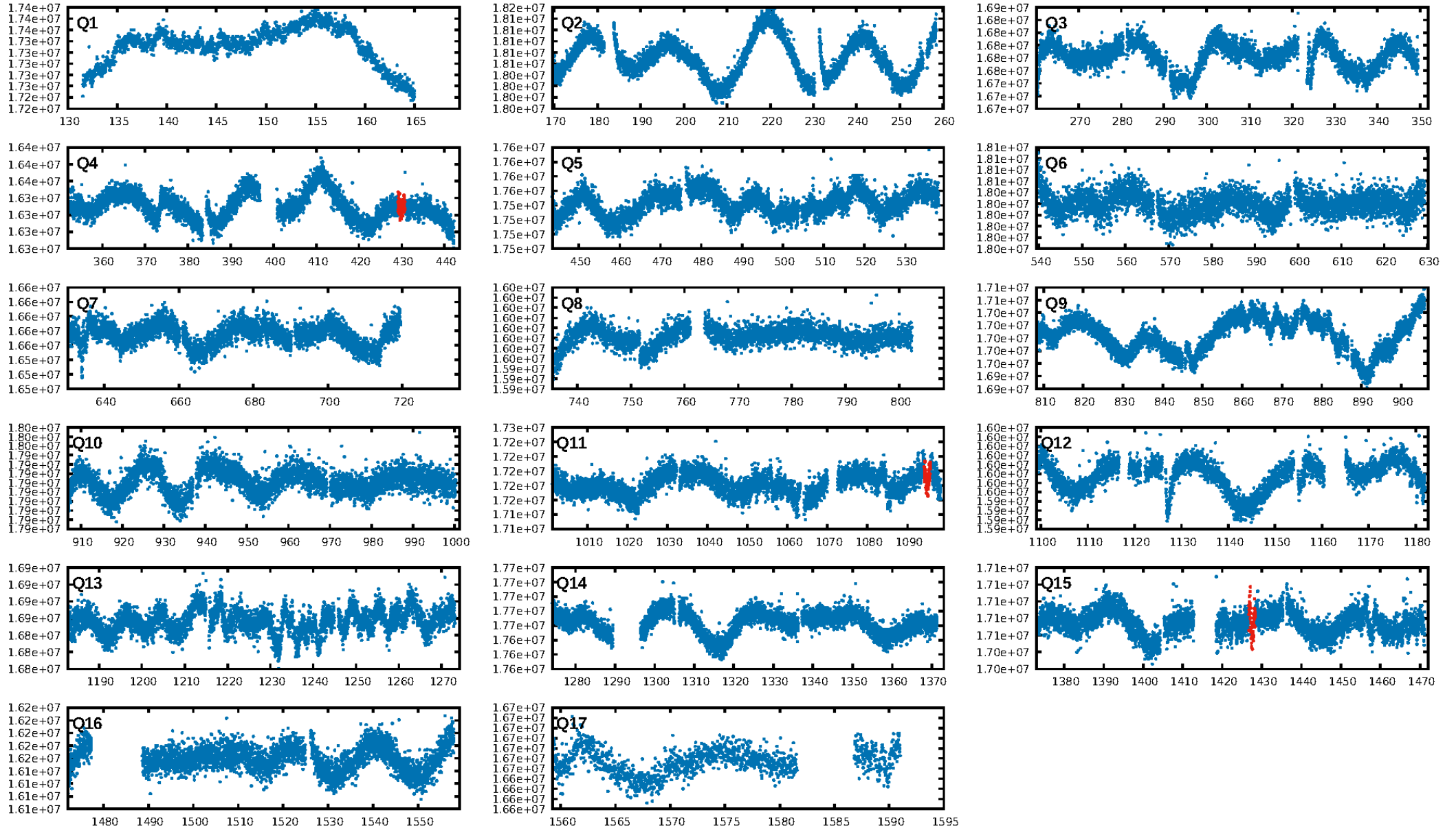
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: 4.7%  
ModelChiSquareGof-sig: 99.7%  
**Bootstrap-pfa: 5.93e-10**  
RollingBand-fgt: 1.00 [3/3]  
GhostDiagnostic-chr: 5.59  
**Centroid-sig: 0.0%**  
Centroid-so: 3.564 arcsec [2.92σ]  
**OotOffset-rm: 2.371 arcsec [3.28σ]**  
**KicOffset-rm: 2.525 arcsec [3.50σ]**  
OotOffset-st: 0/0/1/0 [1]  
KicOffset-st: 0/0/1/0 [1]  
DiffImageQuality-fgm: 0.00 [0/1]  
DiffImageOverlap-fno: 1.00 [2/2]

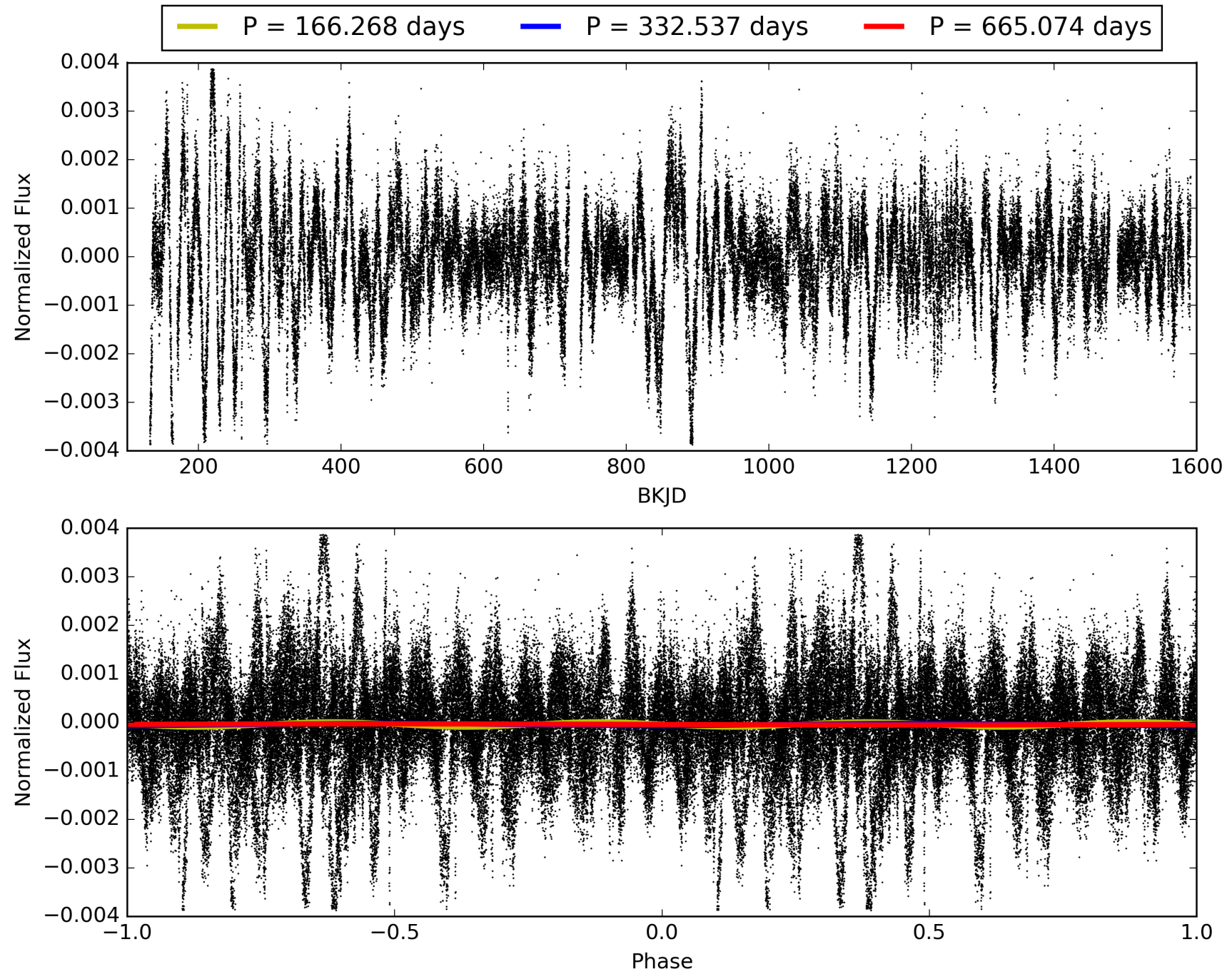
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 15:54:10 Z

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

# TCE 006940654-01, PDC Light Curves

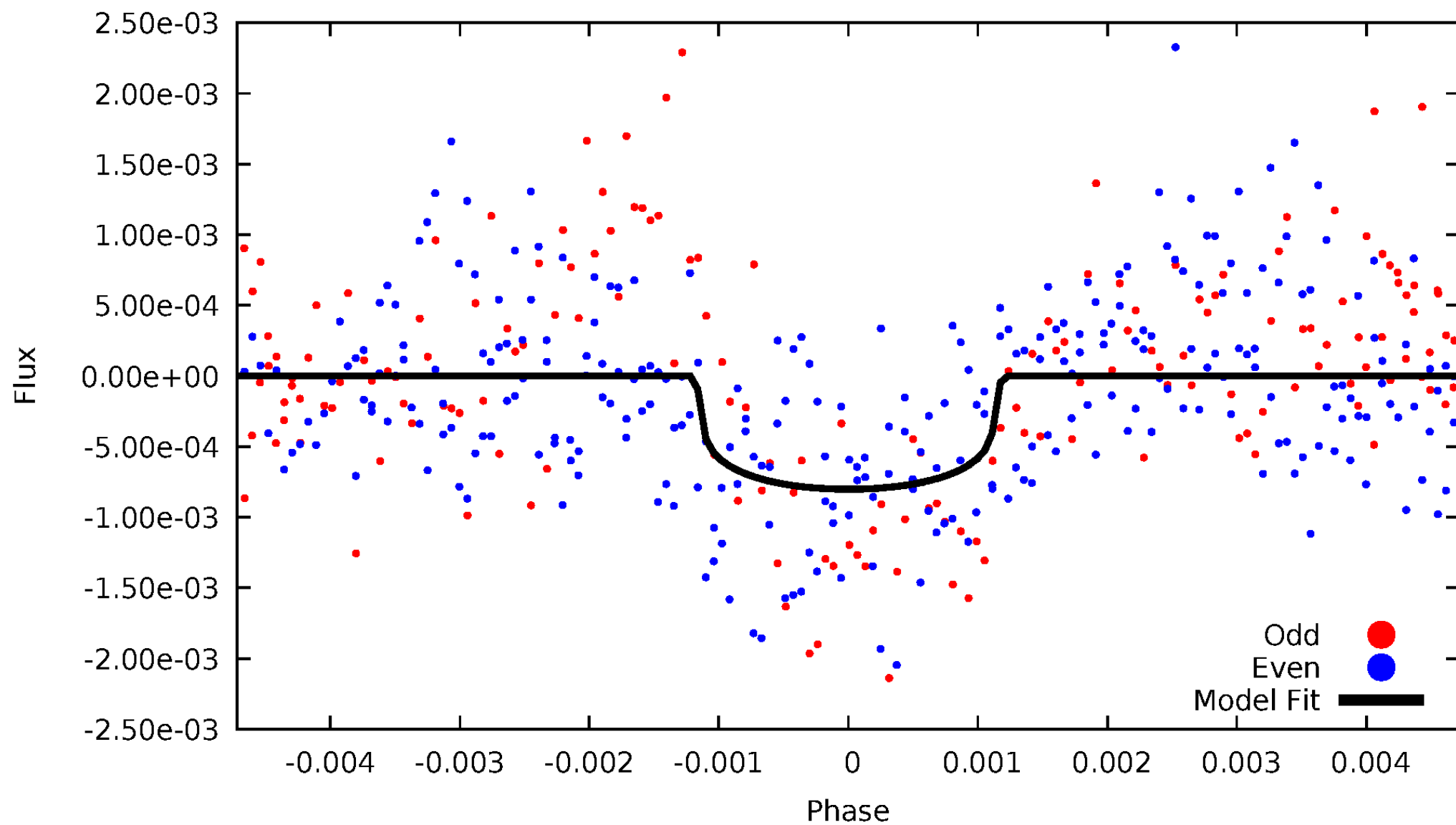


TCE 006940654-01



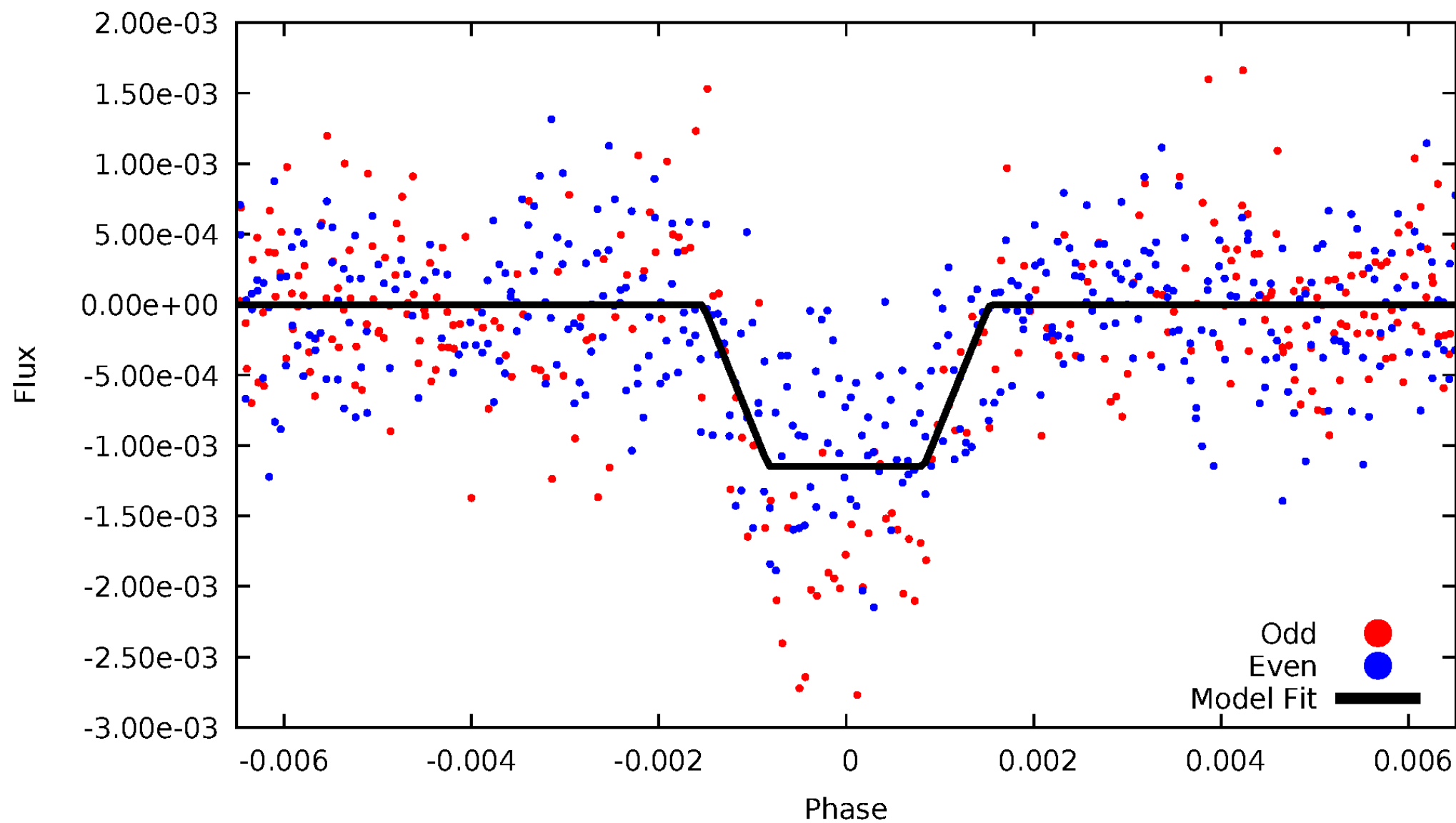
# DV Odd/Even

TCE 006940654-01



# ALT Odd/Even

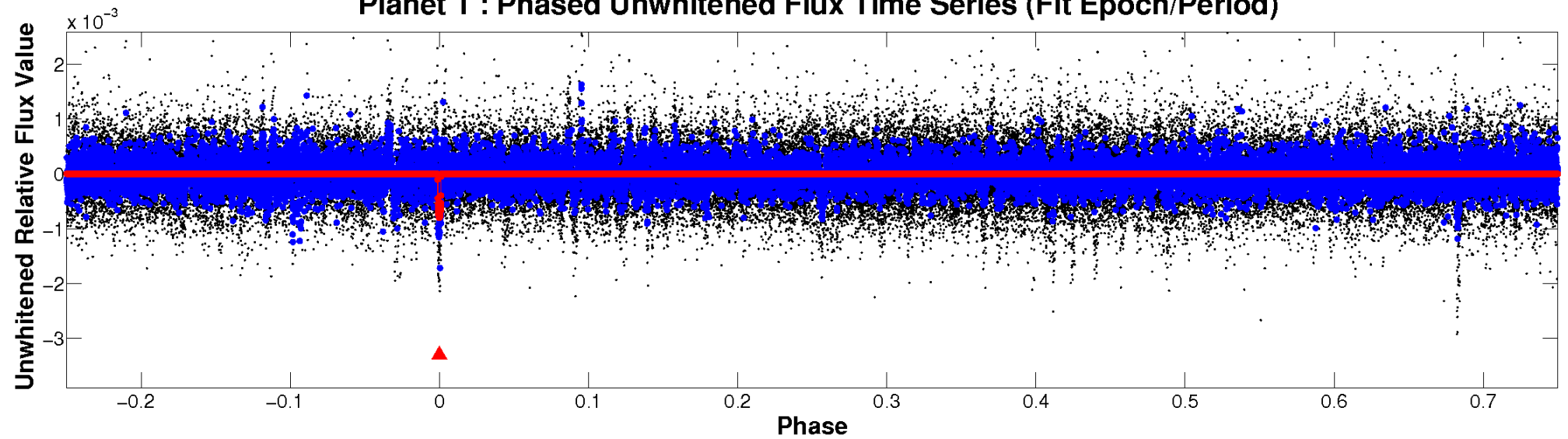
TCE 006940654-01



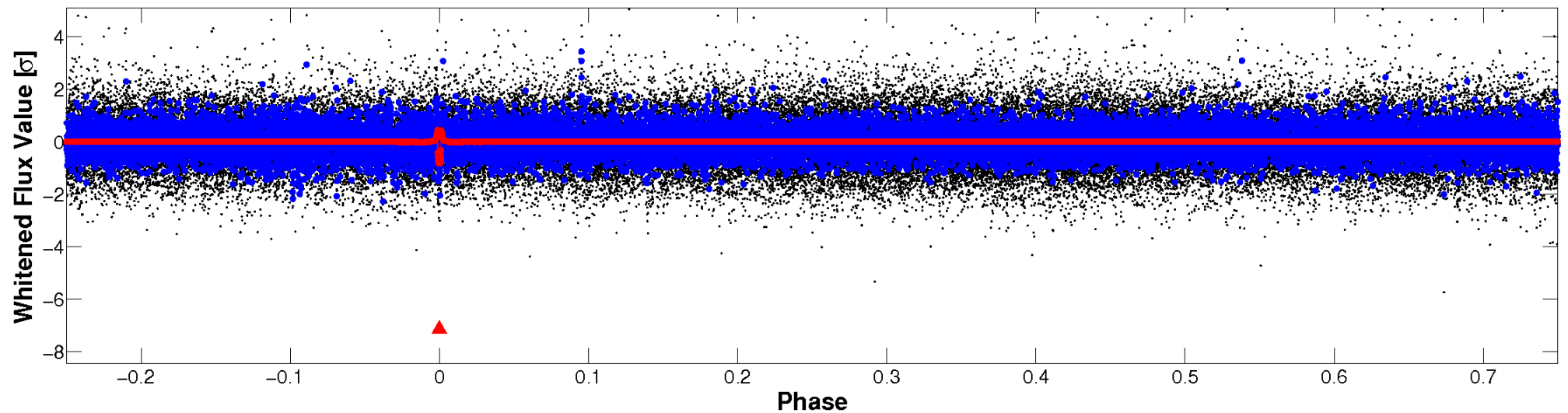


# Non-Whitened Vs. Whitened Light Curve

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

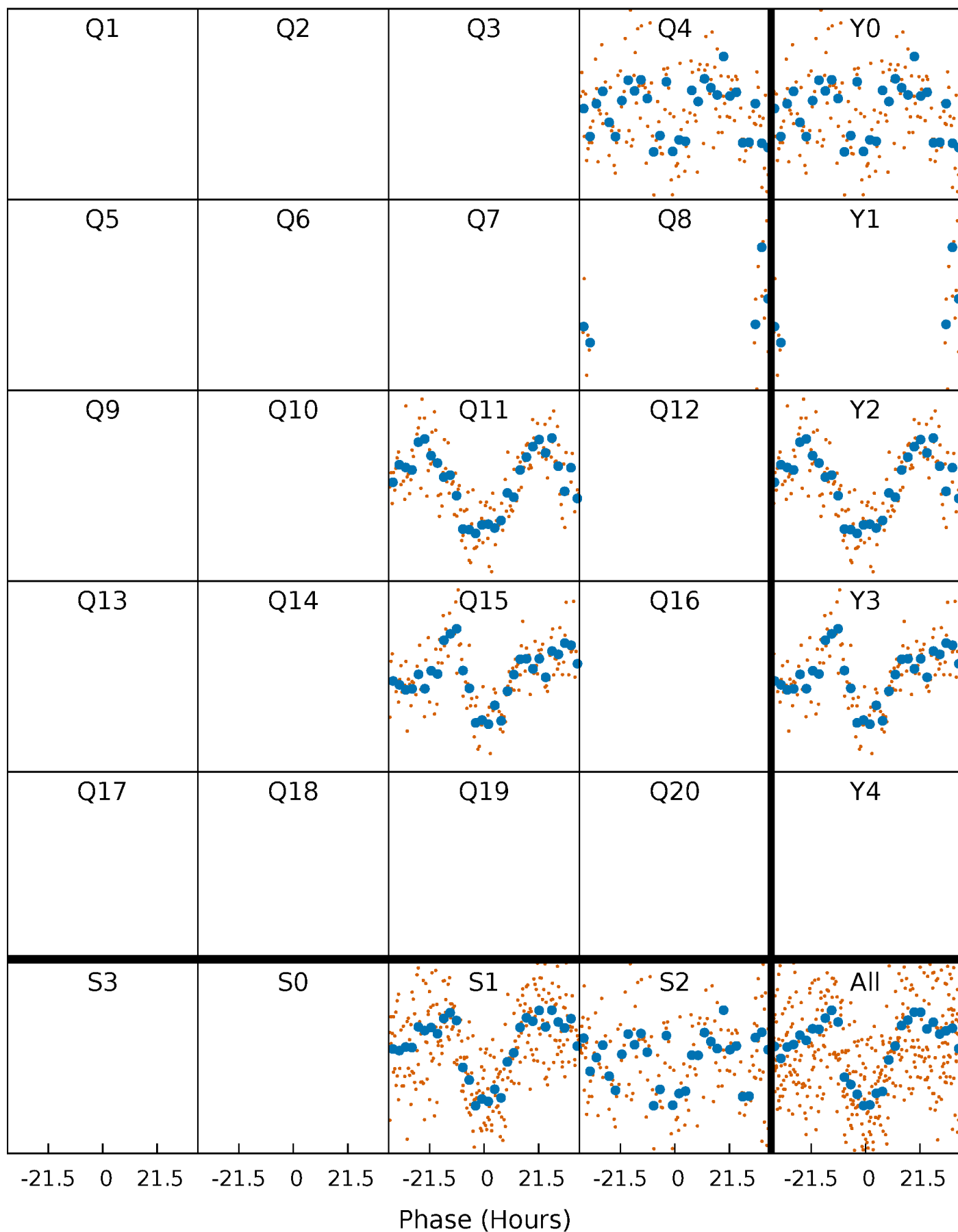


**Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)**



# PDC Quarter-Phased Transit Curves

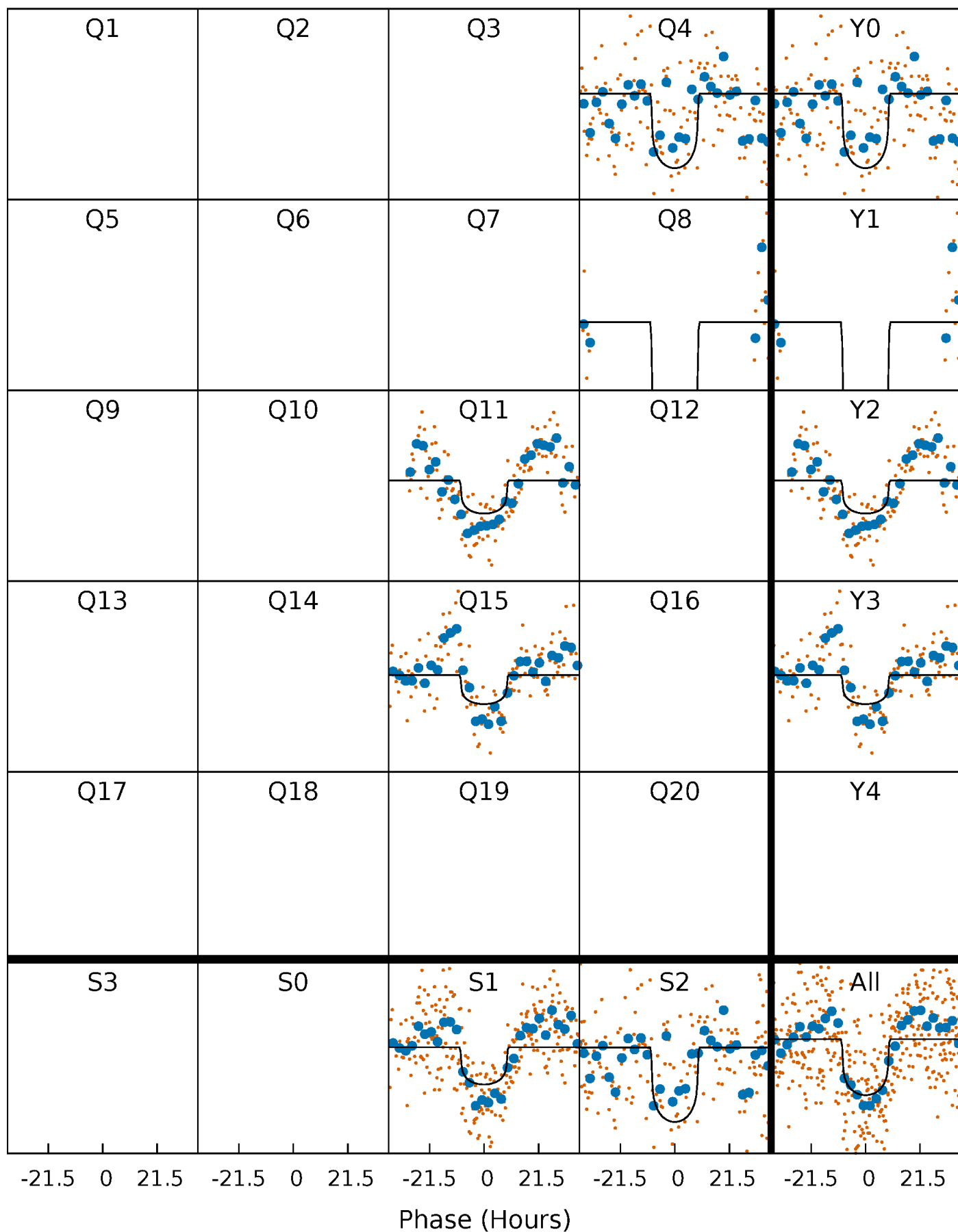
TCE 006940654-01 P=332.536785 Days  $T_0=429.919788$  (BKJD)





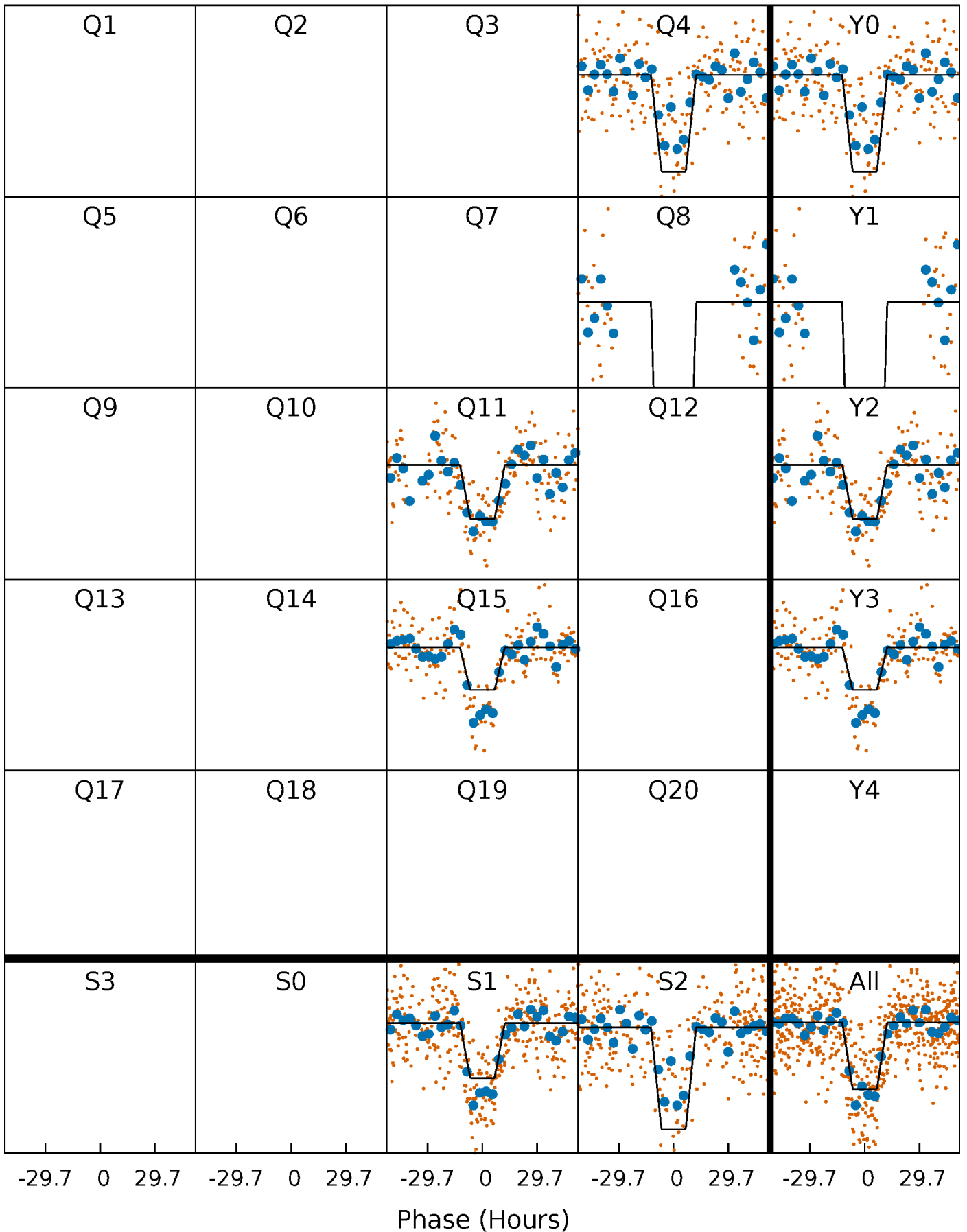
# DV Quarter-Phased Transit Curves

TCE 006940654-01 P=332.536785 Days  $T_0=429.919788$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

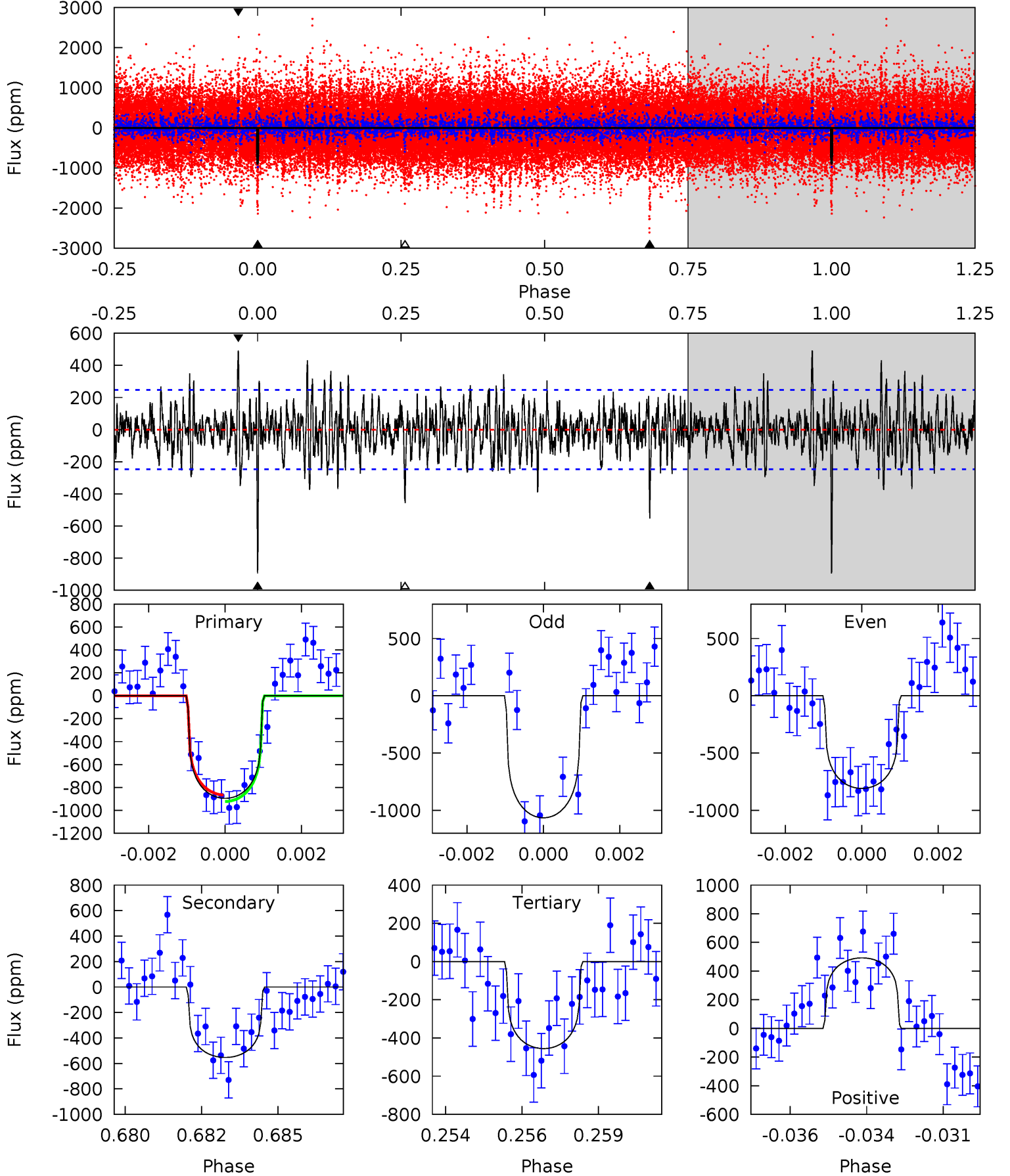
TCE 006940654-01 P=332.576622 Days  $T_0=429.866406$  (BKJD)



# DV Model-Shift Uniqueness Test

006940654-01, P = 332.536785 Days, E = 97.383003 Days

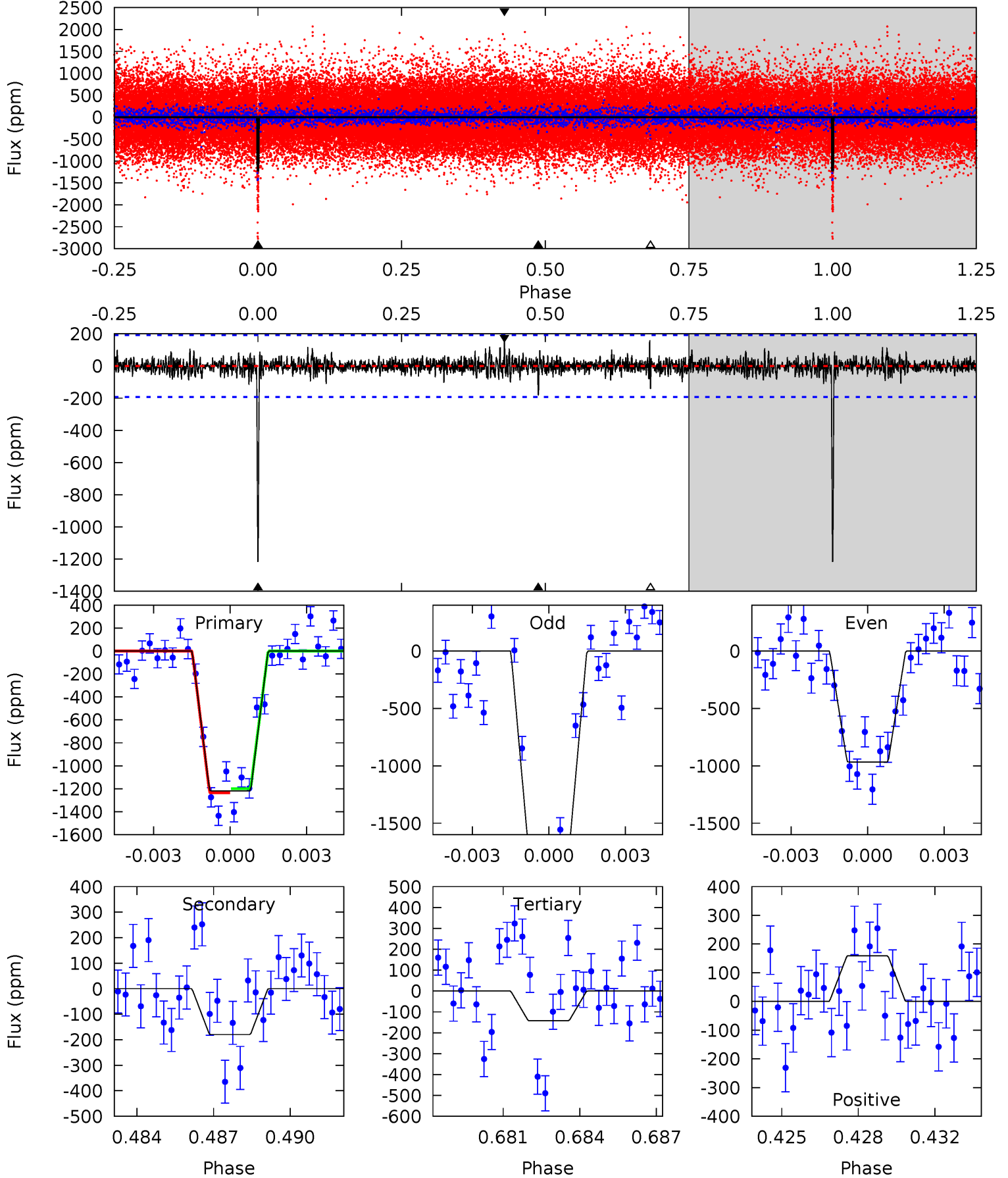
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
19.2	11.9	9.77	10.6	5.29	3.04	2.41	9.42	8.64	2.09	1.31	2.62	0.84	0.35	0.60



# Alt Model-Shift Uniqueness Test

006940654-01, P = 332.576622 Days, E = 97.289784 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
33.3	4.91	3.89	4.35	5.25	2.96	0.86	29.4	29.0	1.03	0.56	9.67	0.98	0.12	0.50



### Stellar Parameters For KIC 006940654

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$\rho_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$3604^{+54}_{-54}$	$4.836^{+0.039}_{-0.032}$	$-0.100^{+0.100}_{-0.100}$	$0.422^{+0.030}_{-0.042}$	$0.444^{+0.029}_{-0.047}$	$8.317^{+1.746}_{-1.202}$
	+1%/-1%	+1%/-1%	+100%/-100%	+7%/-10%	+7%/-11%	+21%/-14%
Source	PHO2	PHO2	PHO2	DSEP		

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

### Secondary Eclipse Parameters for KIC 006940654-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	$A_{\text{obs}}$
DV	$-553 \pm 47$	$1.17^{+0.54}_{-0.48}$	$170^{+4}_{-4}$	$3503^{+714}_{-380}$	$112883^{+207985}_{-59710}$
Alt.	$-180 \pm 37$	$1.60^{+0.48}_{-0.51}$	$170^{+4}_{-4}$	$2727^{+277}_{-192}$	$19789^{+21026}_{-8353}$

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

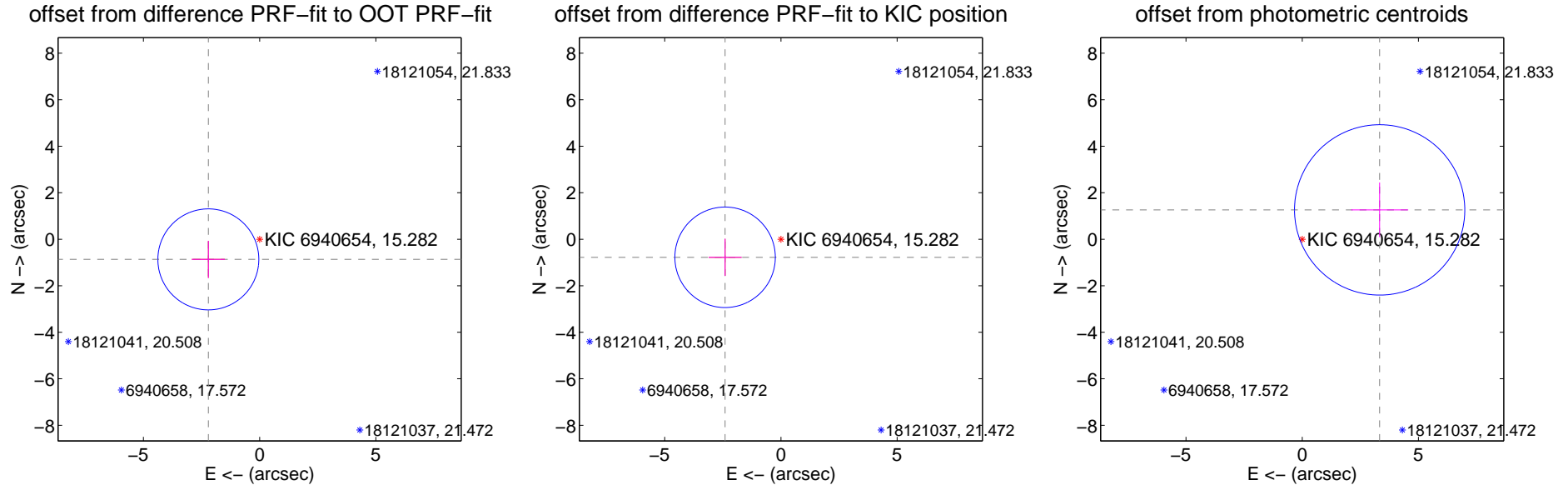
## DV Centroid Data

Supplemental centroid analysis for 006940654-01. Kepler magnitude: 15.28. Transit SNR 8.27

There are 0 quarters with good PRF difference image offsets

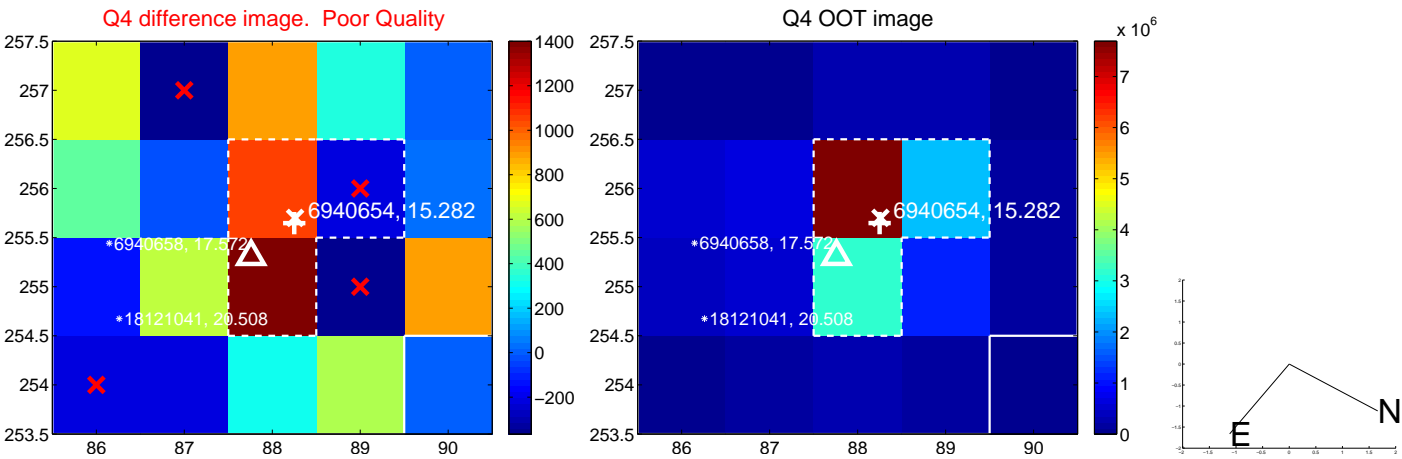
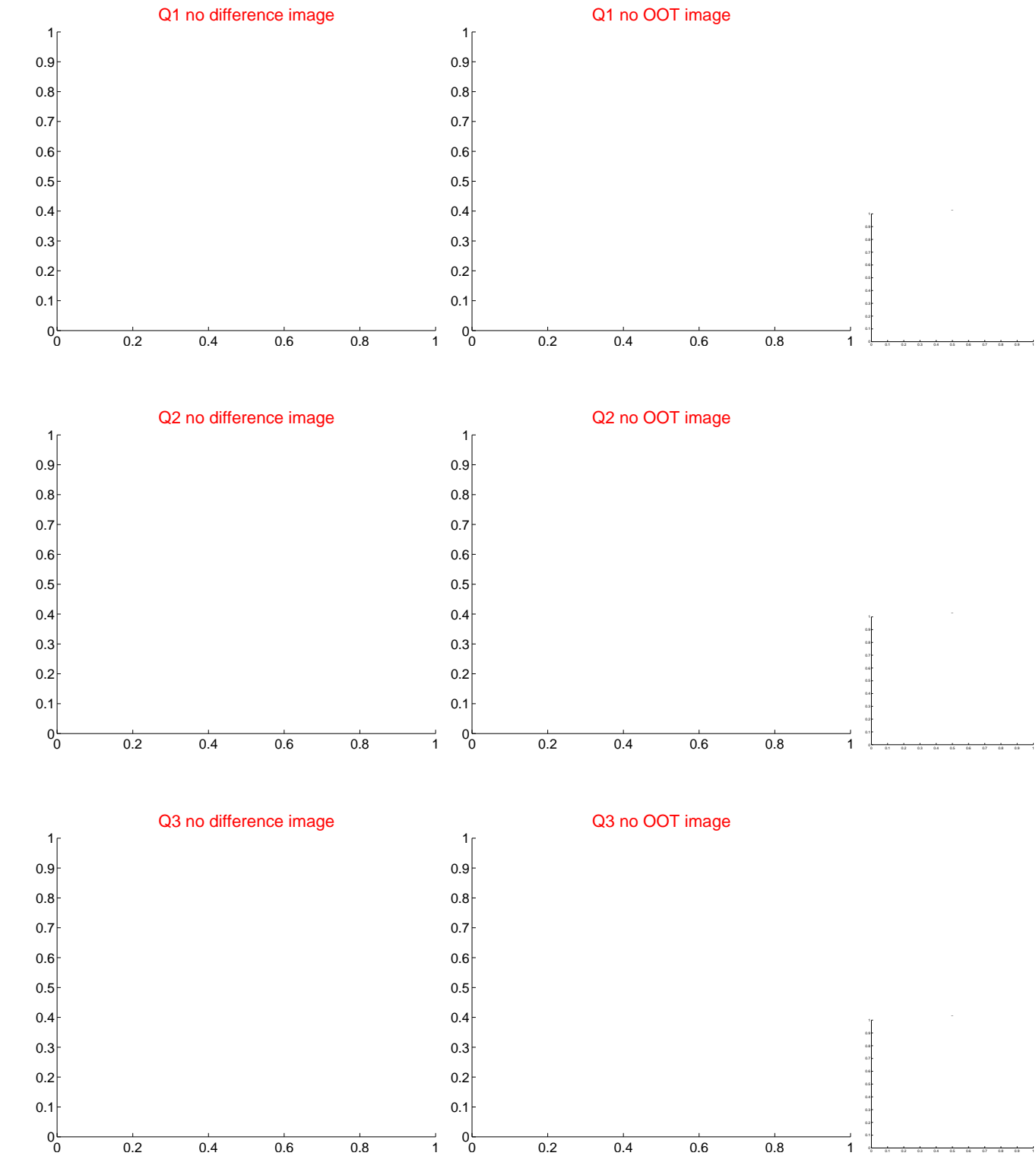
The direct PRF centroid is offset from the target star catalog position by about 0.21 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$2.371 \pm 0.724$	3.28	$2.207 \pm 0.712$	$-0.866 \pm 0.799$
PRF-fit source offset from KIC position	$2.525 \pm 0.720$	3.50	$2.403 \pm 0.712$	$-0.776 \pm 0.799$
photometric centroid source offset	$3.56 \pm 1.22$	2.92	$-3.33 \pm 1.23$	$1.26 \pm 1.18$



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





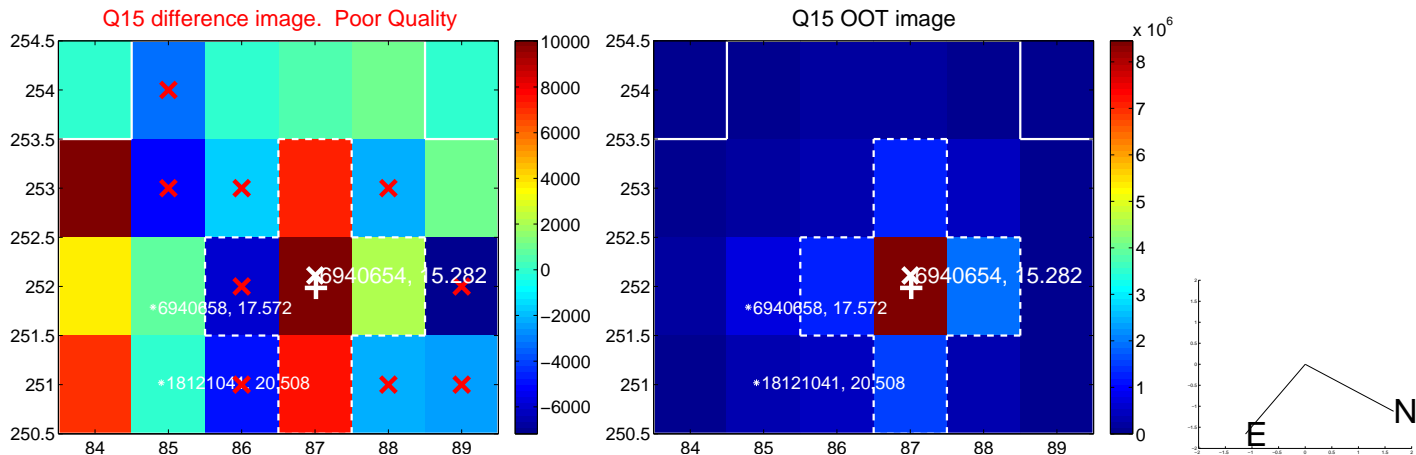
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



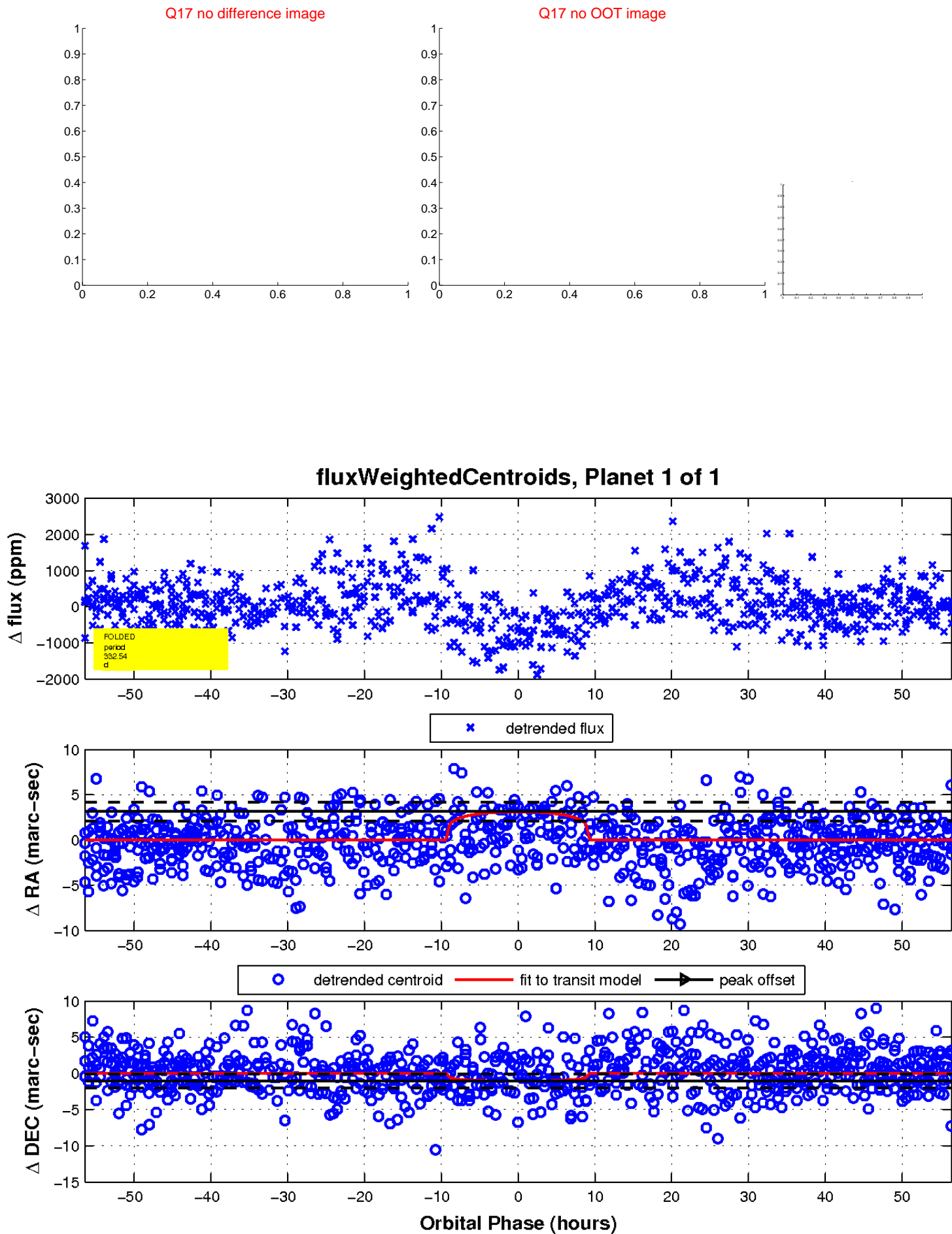
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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

