

# KIC 003974043

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
003974043-01	OBS	No	360.269284	373.730309	1406.9	27.003	11.7	9.7	0.83	4945	6.30	0.44

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
003974043-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—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.

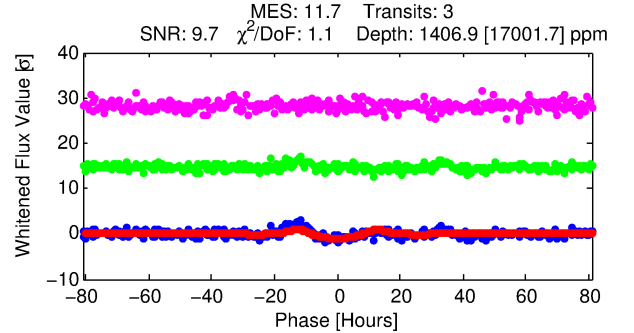
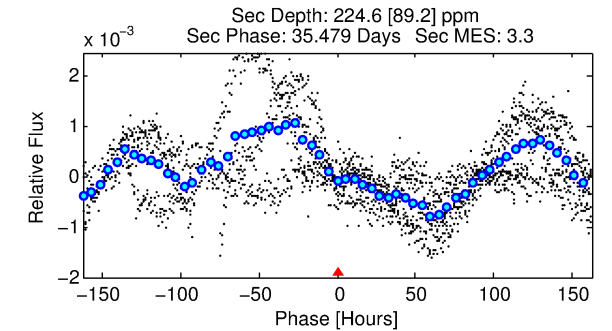
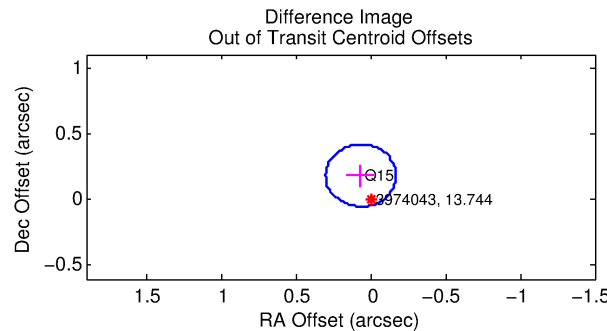
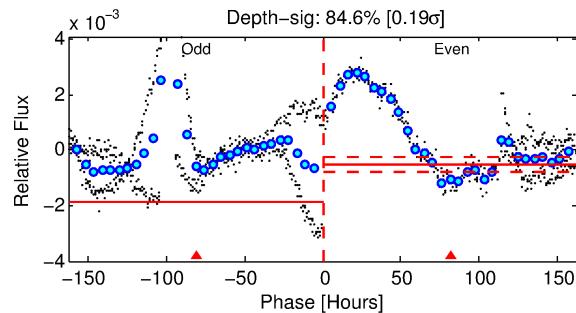
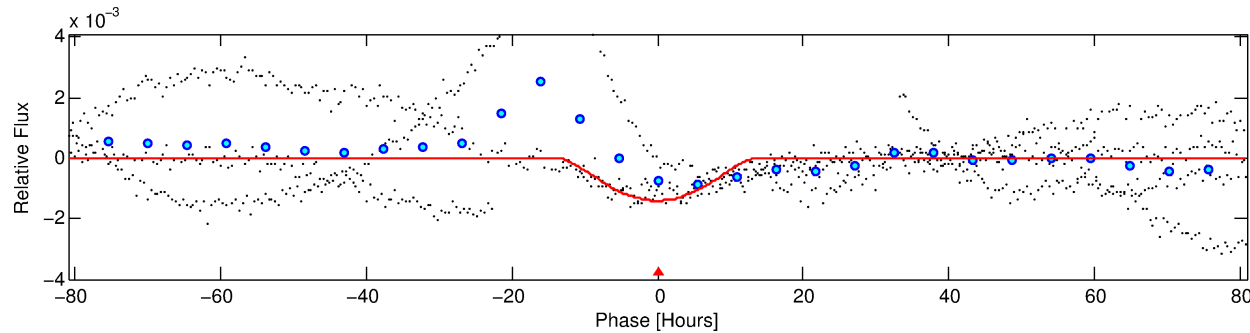
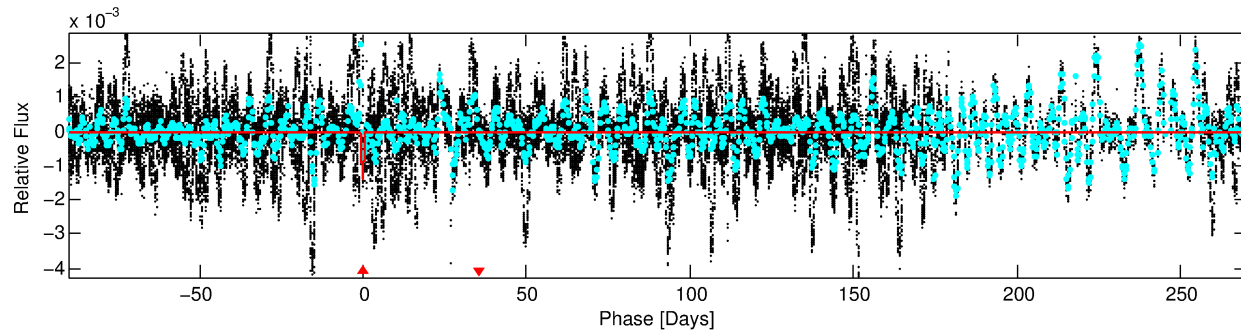
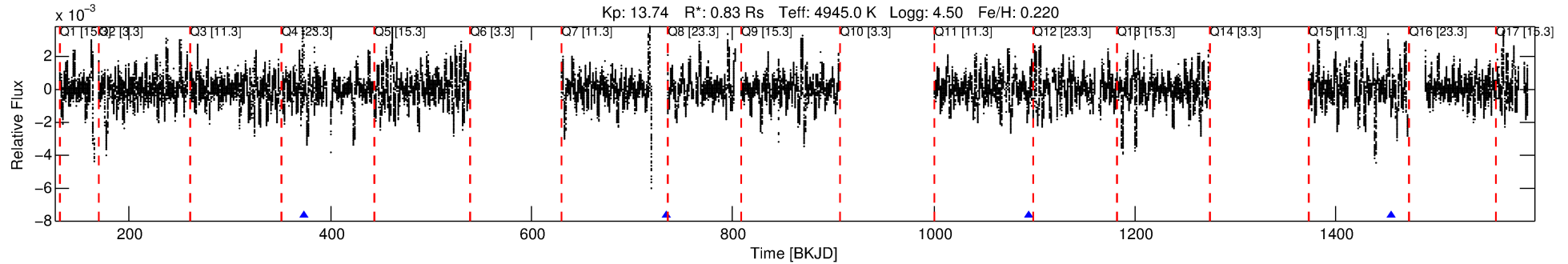
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 003974043-01

No Significant Match Found

# DV One-Page Summary

KIC: 3974043 Candidate: 1 of 1 Period: 360.269 d



## DV Fit Results:

Period = 360.26928 [0.01574] d  
Epoch = 373.7303 [0.0321] BKJD  
Rp/R\* = 0.0694 [0.0984]  
a/R\* = 38.64 [11.75]  
b = 1.00 [0.69]  
Seff = 0.44 [0.08]  
Teq = 207 [10] K  
Rp = 6.30 [8.95] Re  
a = 0.9202 [0.0872] AU  
Ag = 2636.08 [7557.01] [0.35 $\sigma$ ]  
Teffp = 2298 [1646] K [1.27 $\sigma$ ]

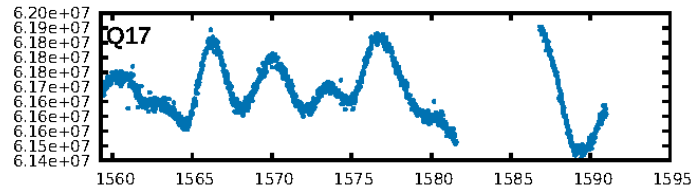
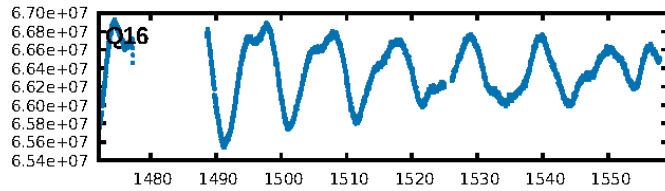
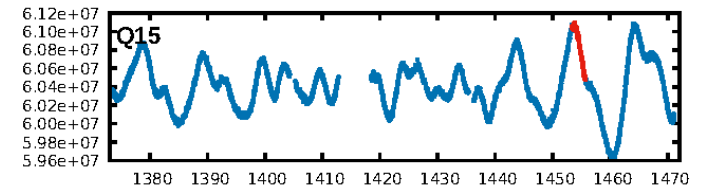
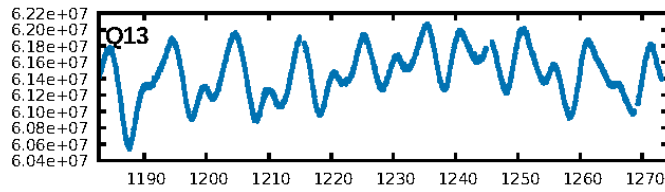
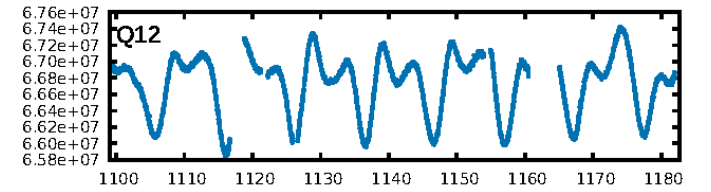
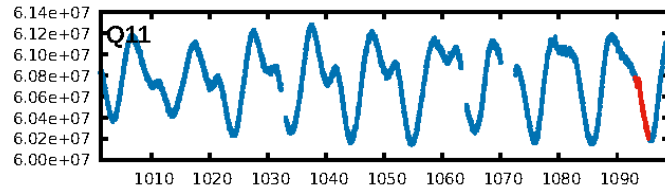
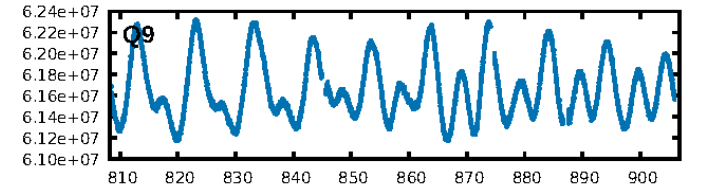
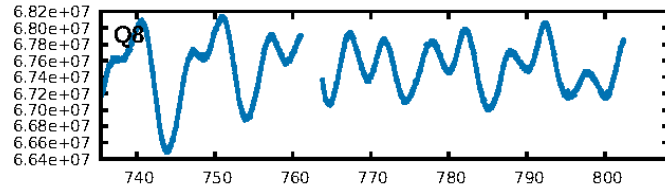
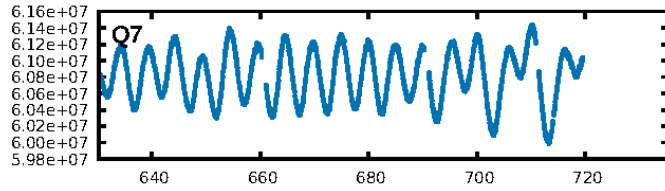
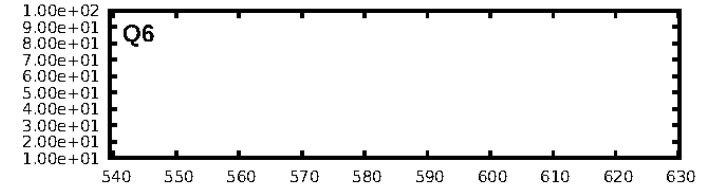
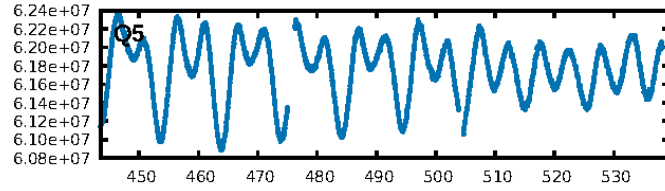
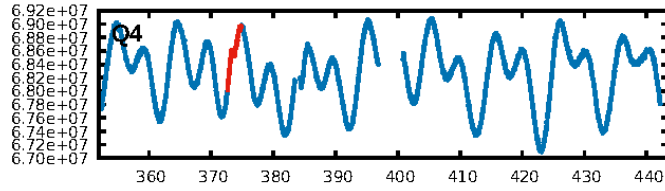
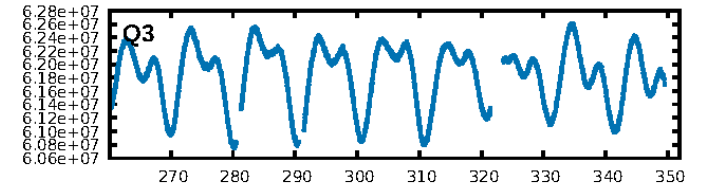
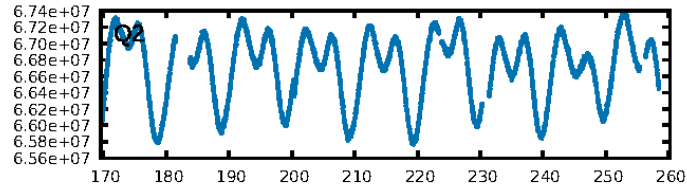
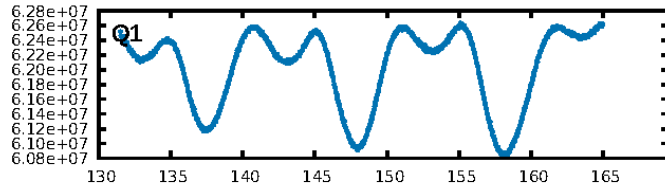
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: 0.0%  
ModelChiSquareGof-sig: 96.9%  
Bootstrap-pfa: 1.52e-16  
RollingBand-fgt: 1.00 [3/3]  
GhostDiagnostic-chr: 0.5018  
Centroid-sig: 8.9%  
Centroid-so: 0.702 arcsec [1.41 $\sigma$ ]  
OotOffset-rm: 0.195 arcsec [2.48 $\sigma$ ]  
KicOffset-rm: 0.108 arcsec [1.39 $\sigma$ ]  
OotOffset-st: 0/1/0/0 [1]  
KicOffset-st: 0/1/0/0 [1]  
DiffImageQuality-fgm: 0.00 [0/1]  
DiffImageOverlap-fno: 1.00 [1/1]

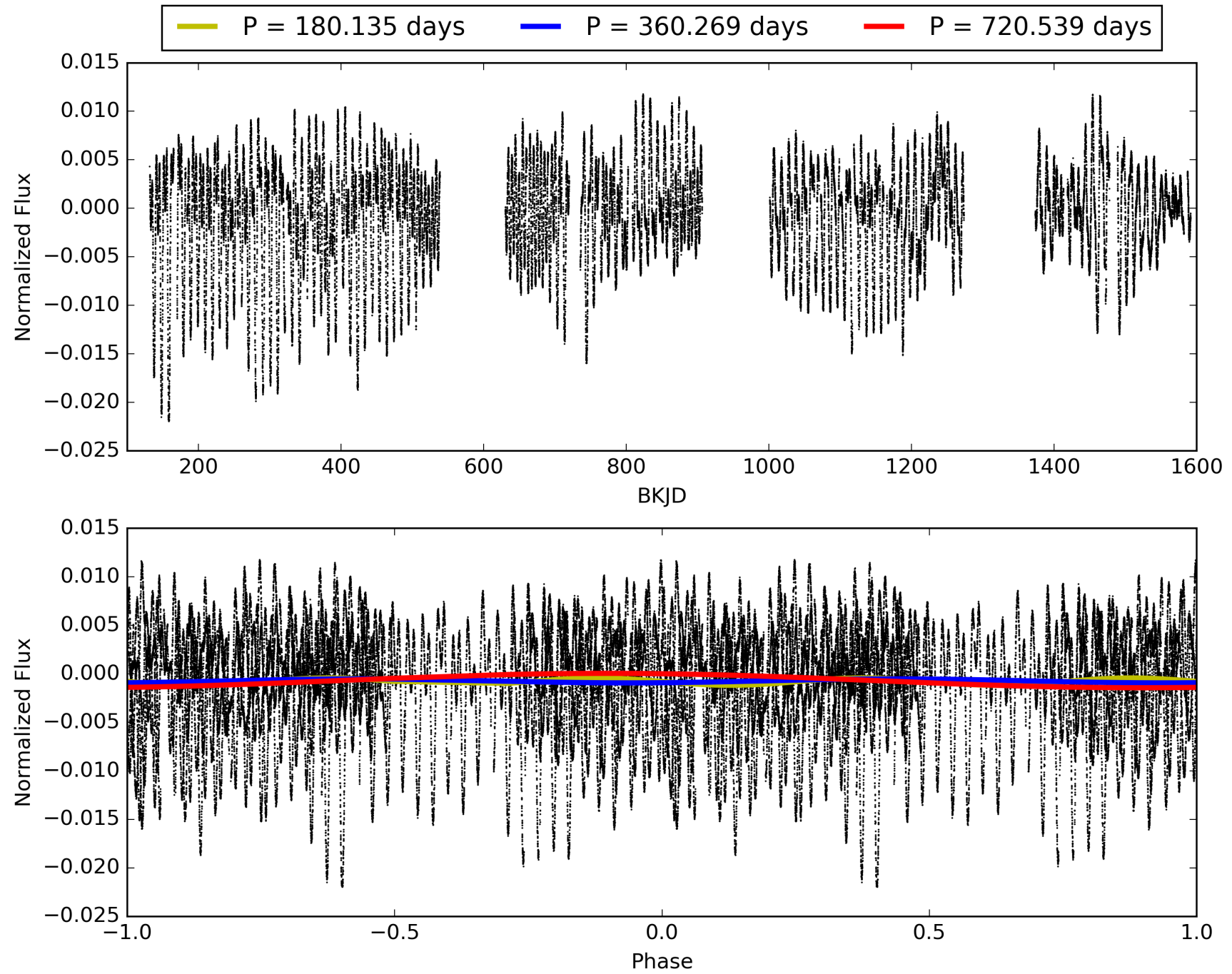
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 19:56:58 Z

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

# TCE 003974043-01, PDC Light Curves

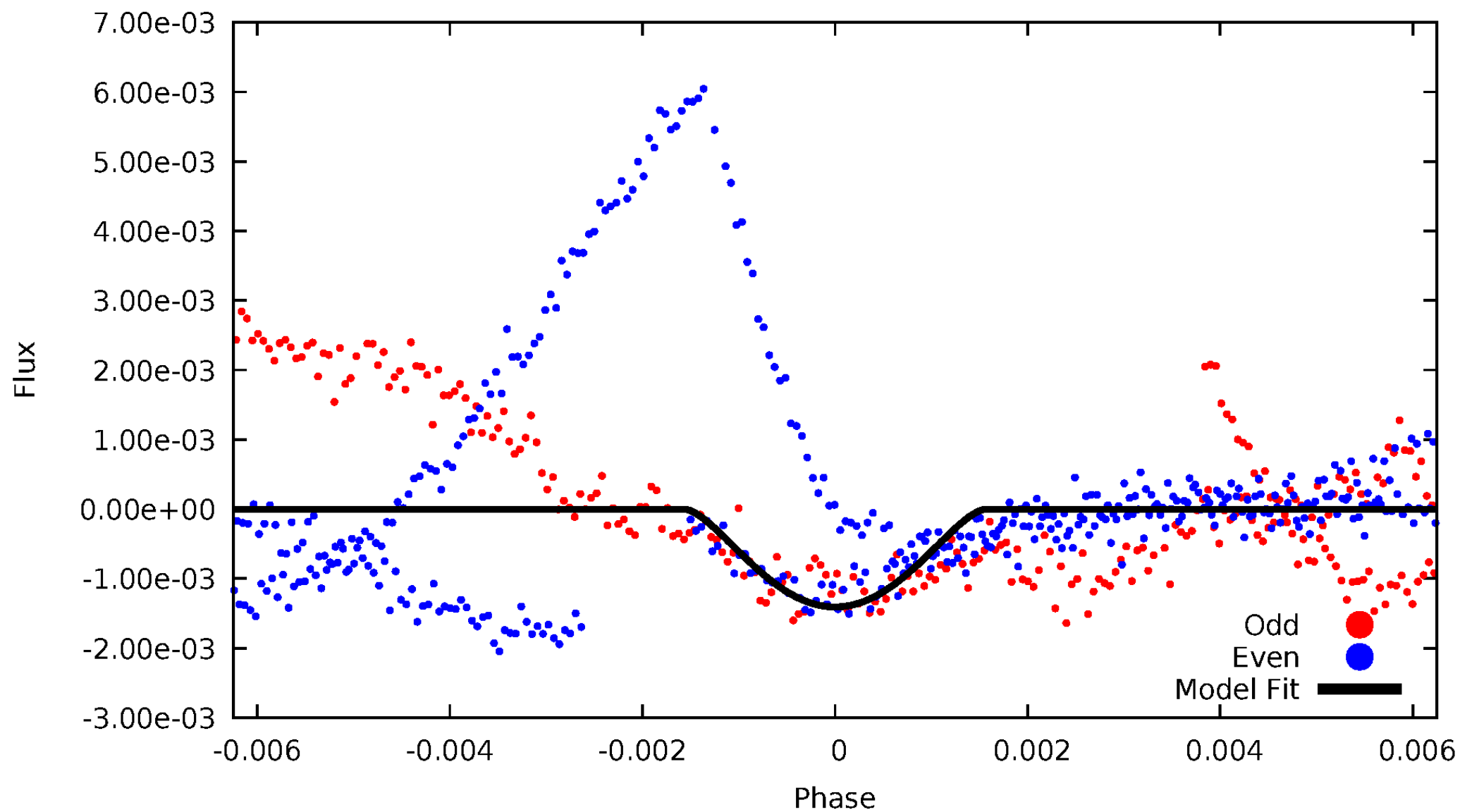


TCE 003974043-01



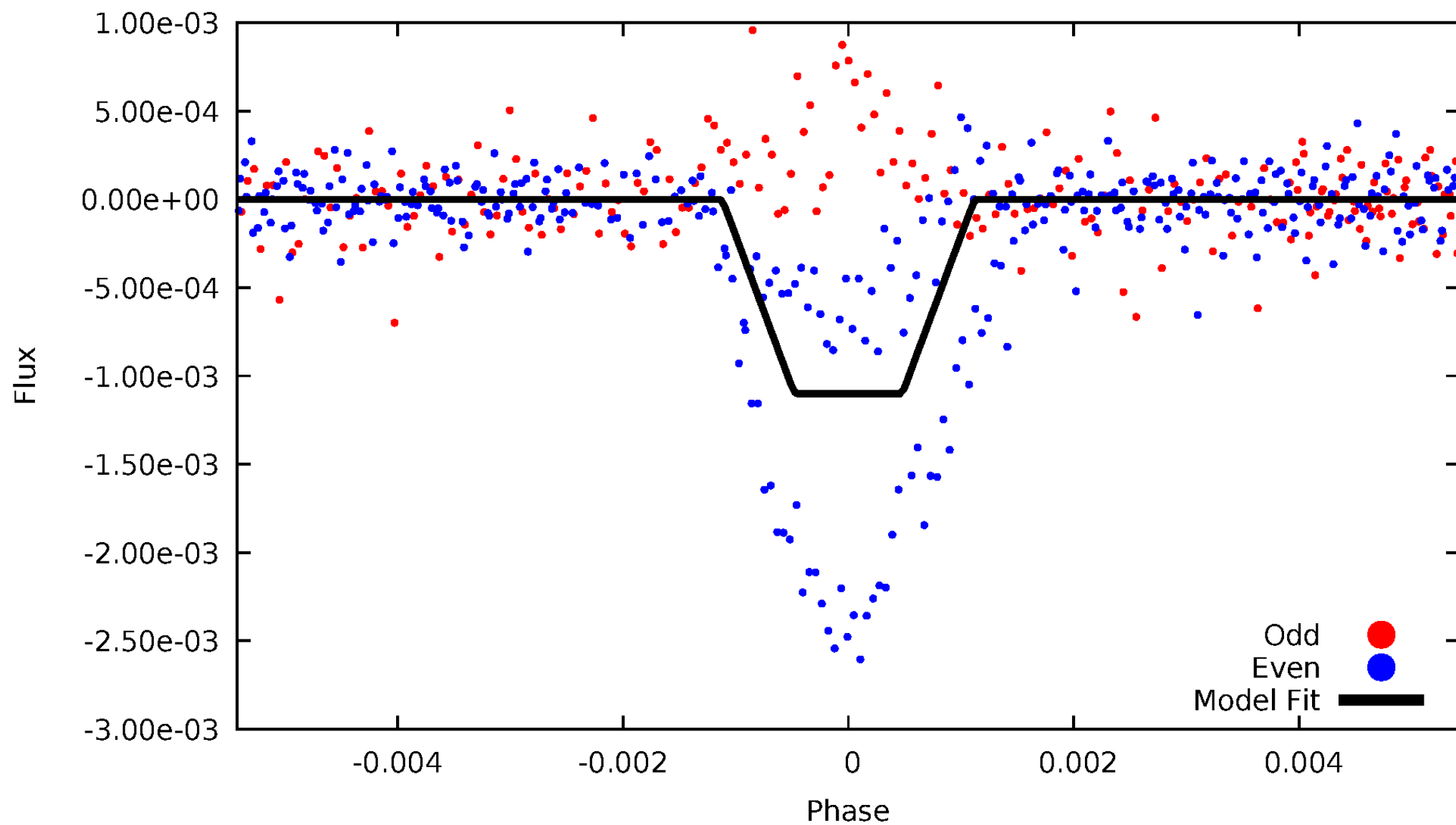
# DV Odd/Even

TCE 003974043-01

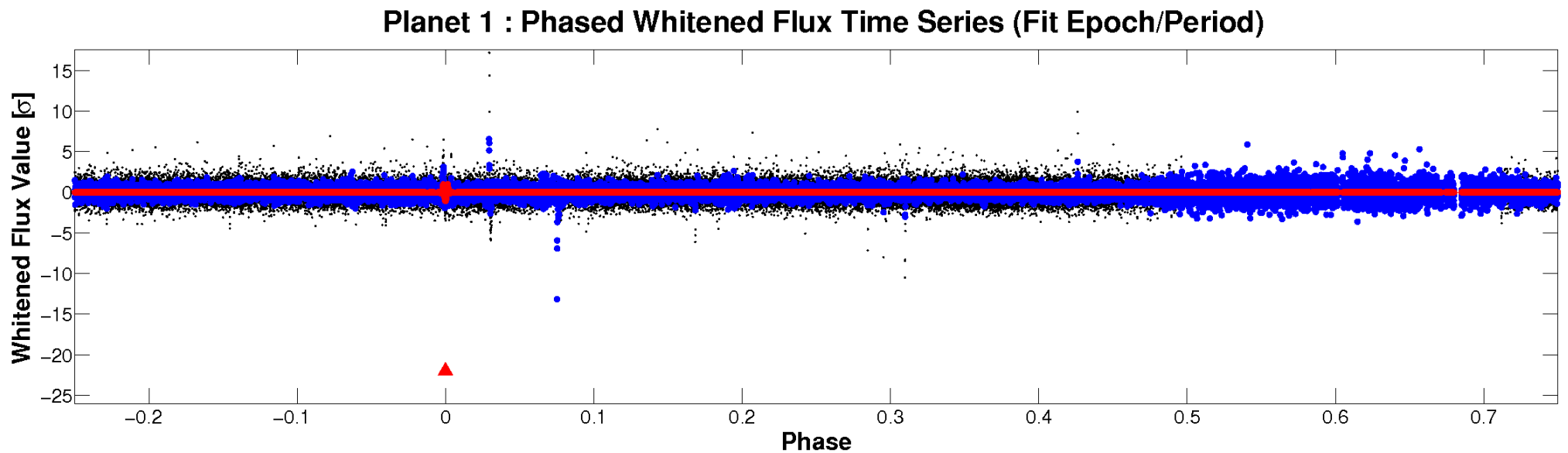
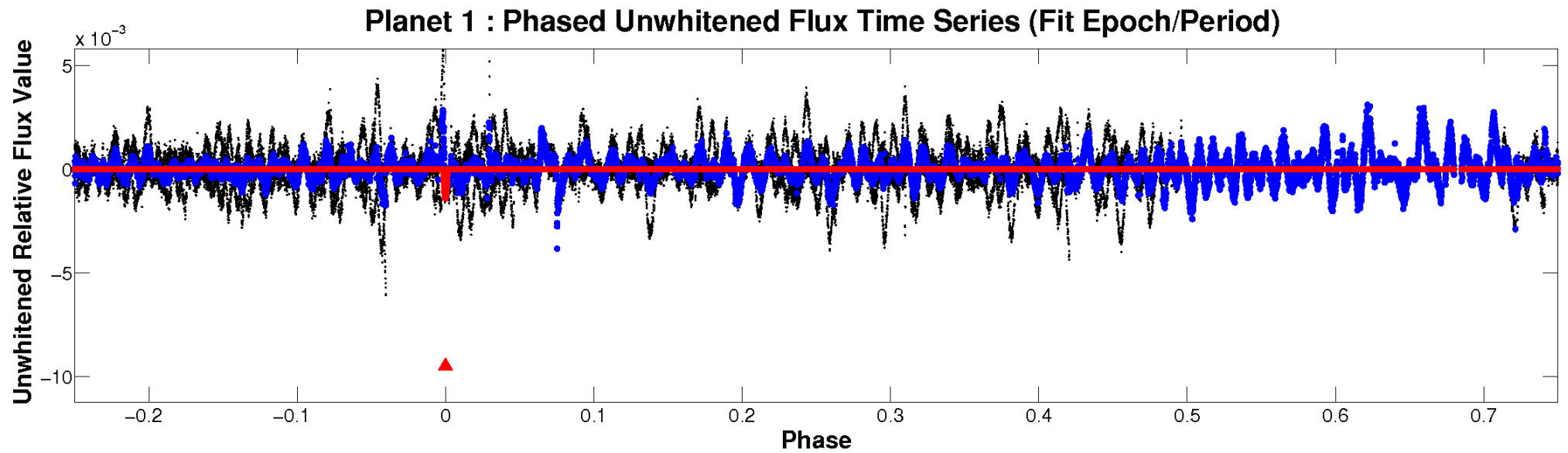


# ALT Odd/Even

TCE 003974043-01

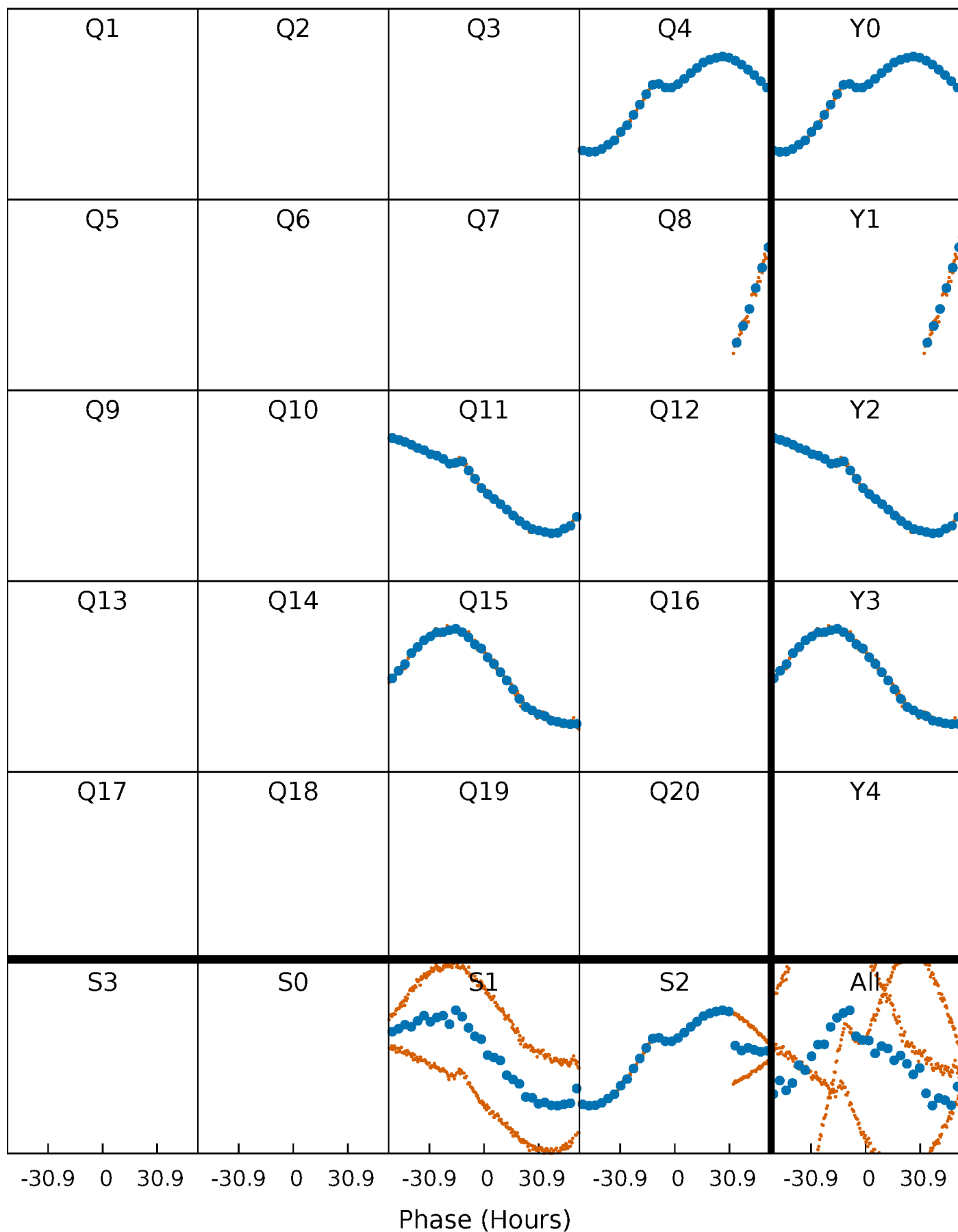


# Non-Whitened Vs. Whitened Light Curve



# PDC Quarter-Phased Transit Curves

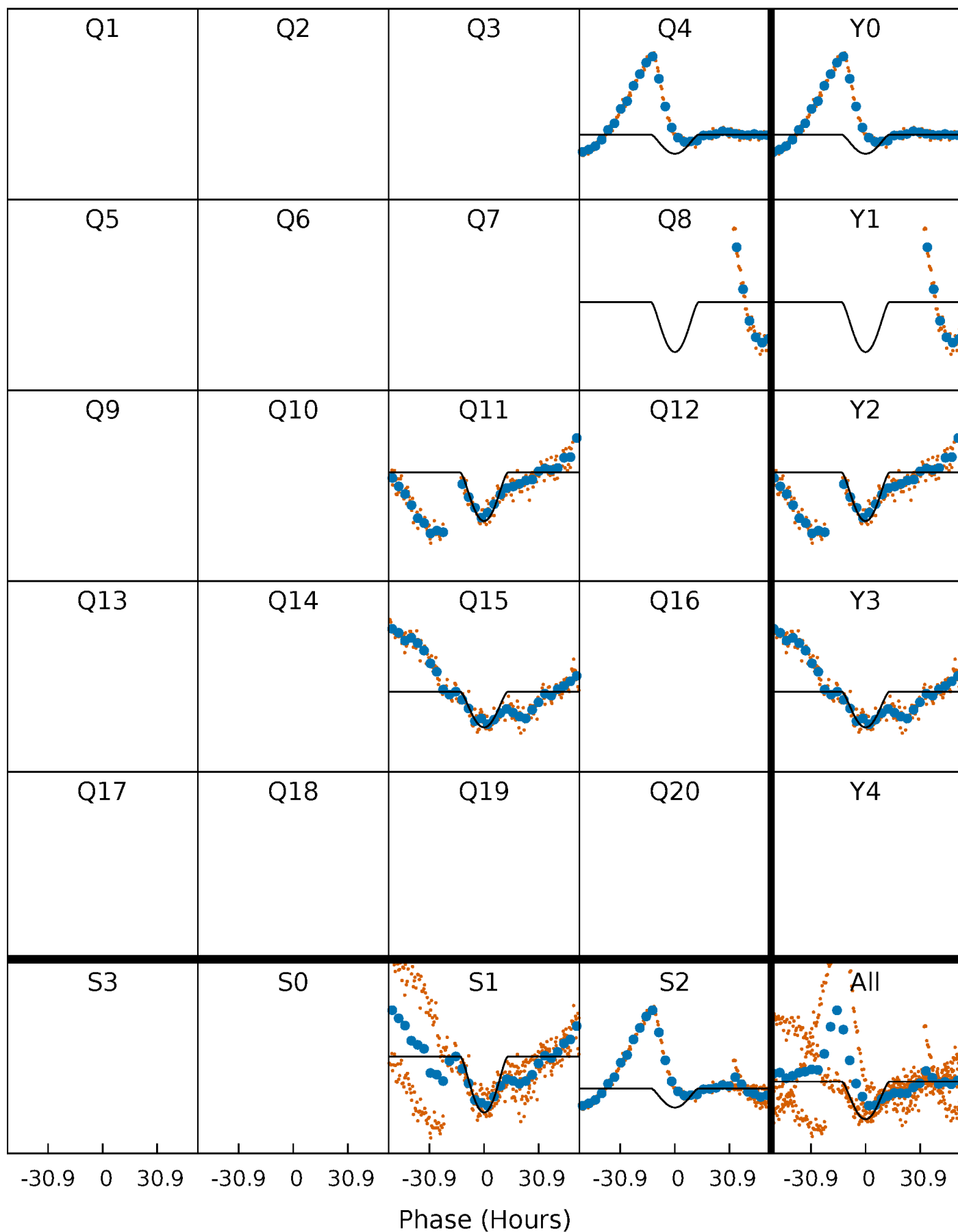
TCE 003974043-01 P=360.269284 Days  $T_0=373.730309$  (BKJD)





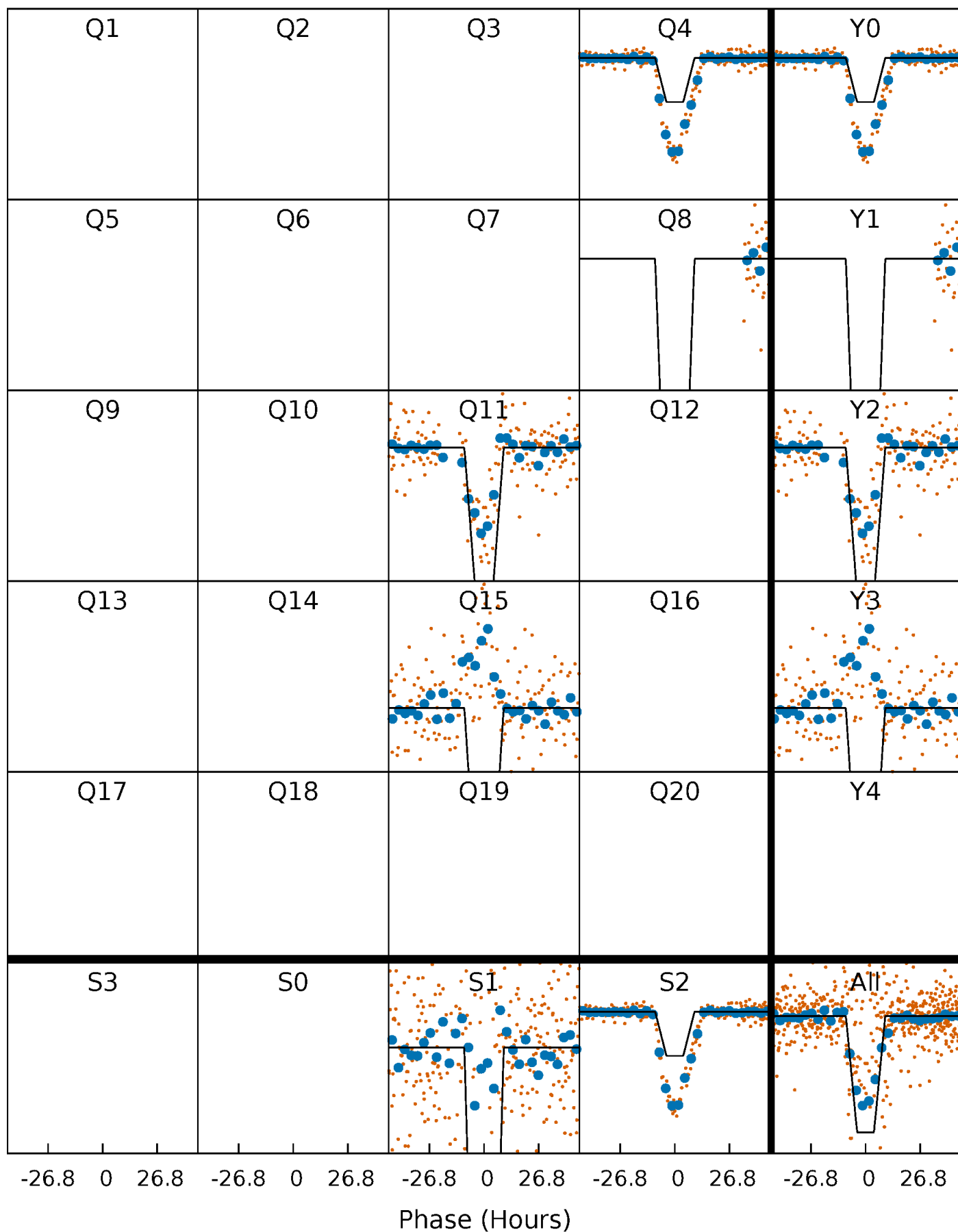
# DV Quarter-Phased Transit Curves

TCE 003974043-01 P=360.269284 Days  $T_0=373.730309$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

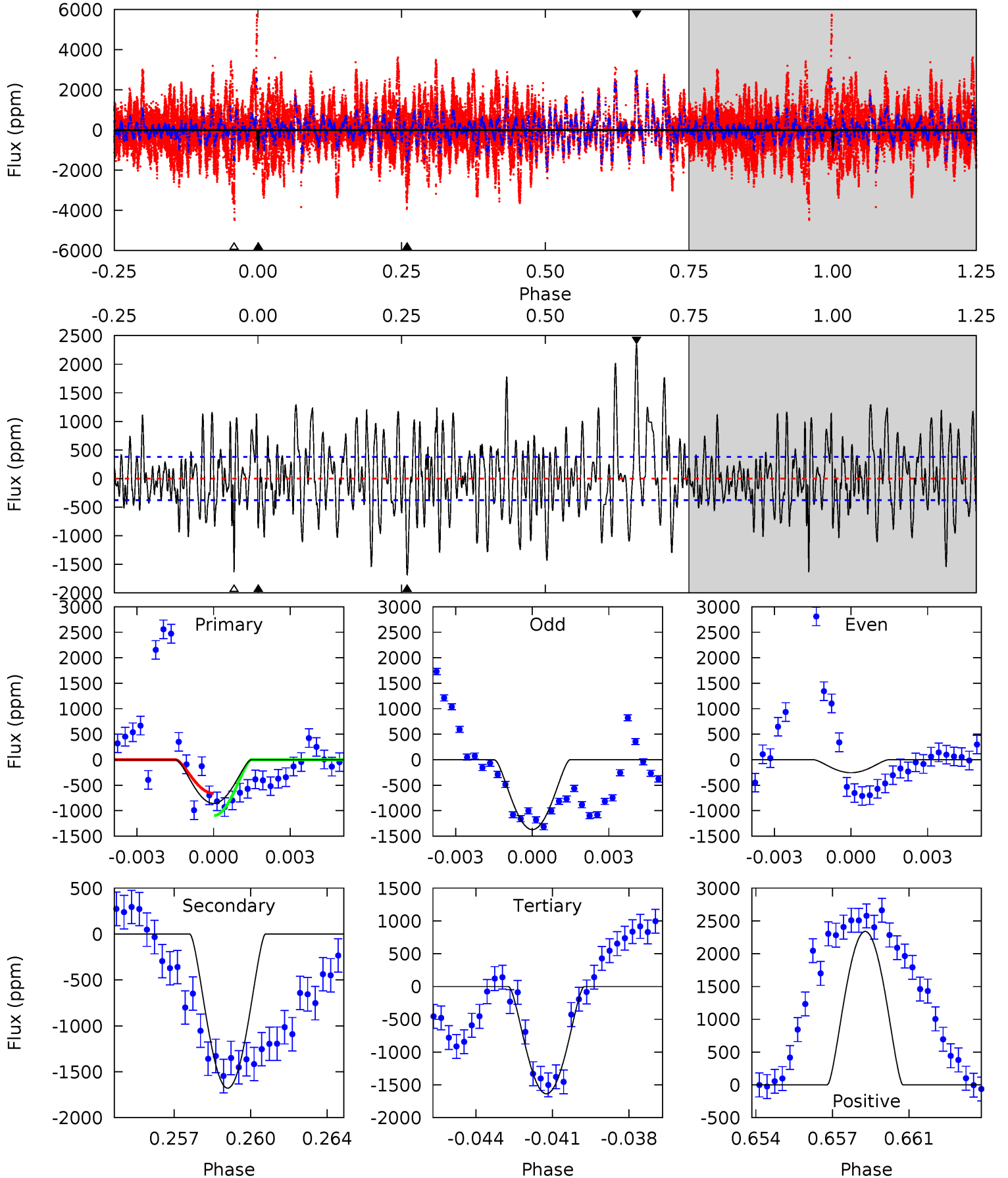
TCE 003974043-01 P=360.257285 Days  $T_0=373.711247$  (BKJD)



# DV Model-Shift Uniqueness Test

003974043-01,  $P = 360.269284$  Days,  $E = 13.461025$  Days

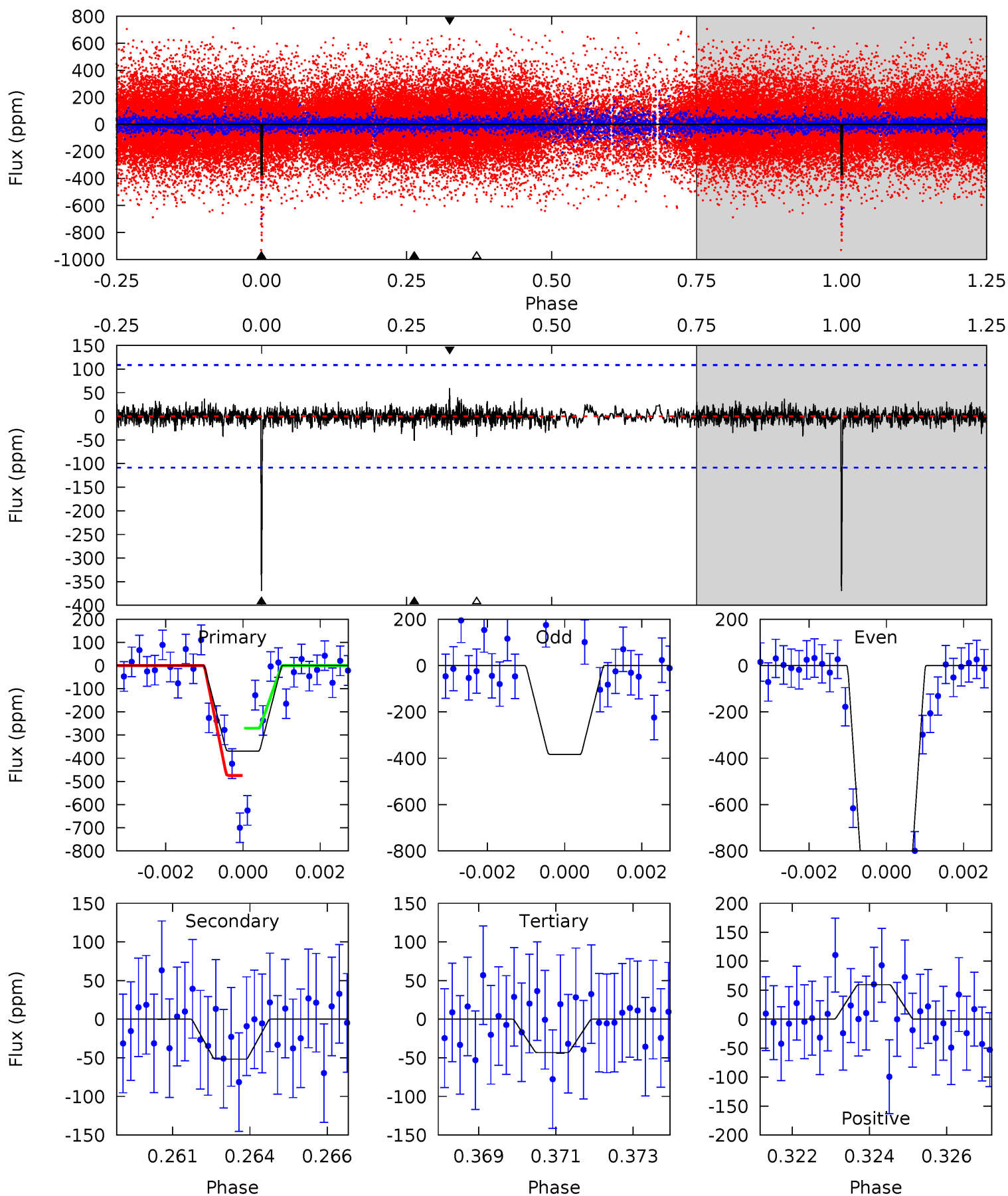
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
11.9	23.2	22.6	32.3	5.24	2.95	7.24	-10.8	-20.5	0.59	-9.13	7.41	0.45	0.58	3.04



# Alt Model-Shift Uniqueness Test

003974043-01, P = 360.257285 Days, E = 13.453962 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
18.0	2.53	2.11	2.91	5.31	3.06	0.50	15.9	15.1	0.42	-0.38	31.8	1.44	0.14	0



### Stellar Parameters For KIC 003974043

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R$ ( $R_{\odot}$ )	$M(M_{\odot})$	$p_{\star}$ ( $\text{g}\cdot\text{cm}^{-3}$ )
	$4945^{+148}_{-133}$	$4.501^{+0.090}_{-0.060}$	$0.220^{+0.200}_{-0.300}$	$0.832^{+0.059}_{-0.081}$	$0.800^{+0.061}_{-0.055}$	$1.955^{+0.695}_{-0.359}$
	+3%/-3%	+2%/-1%	+91%/-136%	+7%/-10%	+8%/-7%	+36%/-18%
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 003974043-01 / KOI

Detrend	Depth (ppm)	$R_p$ ( $R_{\oplus}$ )	$T_{\text{max}}$ (K)	$T_{\text{obs}}$ (K)	$A_{\text{obs}}$
DV	$-1679 \pm 72$	$8.78^{+7.68}_{-5.92}$	$289^{+10}_{-11}$	$3594^{+1966}_{-615}$	$10122^{+82412}_{-7240}$
Alt.	$-52 \pm 20$	$7.07^{+7.61}_{-4.77}$	$289^{+11}_{-11}$	$2361^{+799}_{-360}$	$455^{+3947}_{-356}$

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

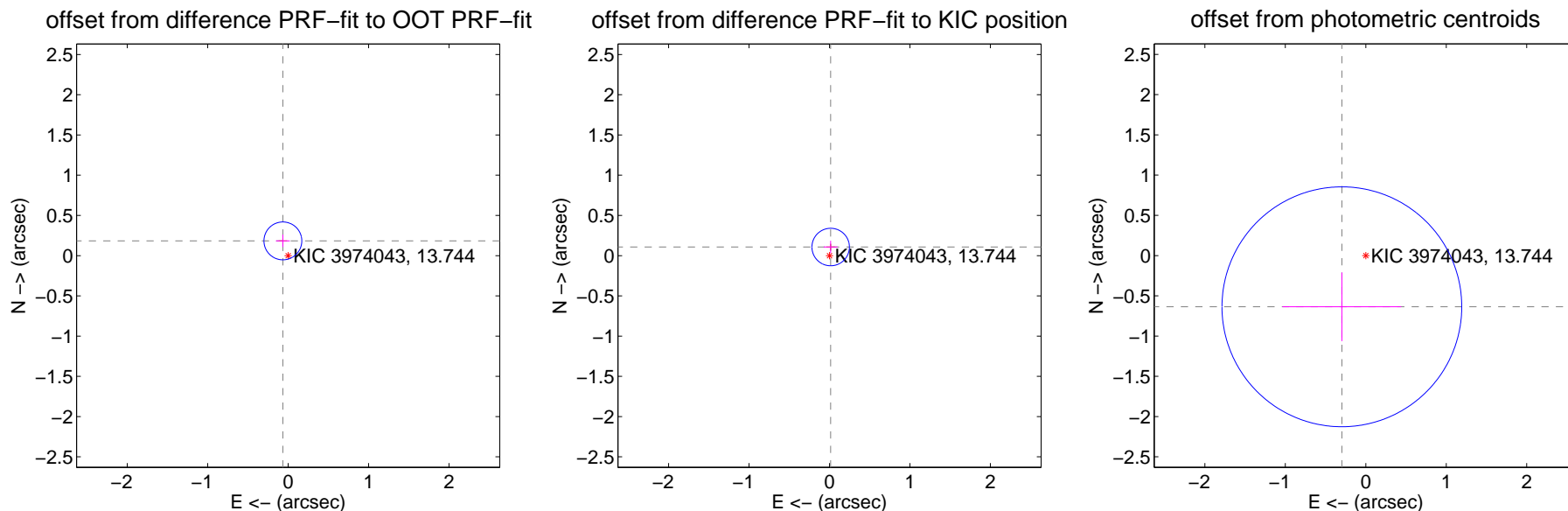
## DV Centroid Data

Supplemental centroid analysis for 003974043-01. Kepler magnitude: 13.74. Transit SNR 9.67

There are 0 quarters with good PRF difference image offsets

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

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.195 \pm 0.078$	2.48	$0.065 \pm 0.086$	$0.183 \pm 0.077$
PRF-fit source offset from KIC position	$0.108 \pm 0.078$	1.39	$-0.015 \pm 0.086$	$0.107 \pm 0.077$
photometric centroid source offset	$0.70 \pm 0.50$	1.41	$0.30 \pm 0.74$	$-0.64 \pm 0.43$



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.

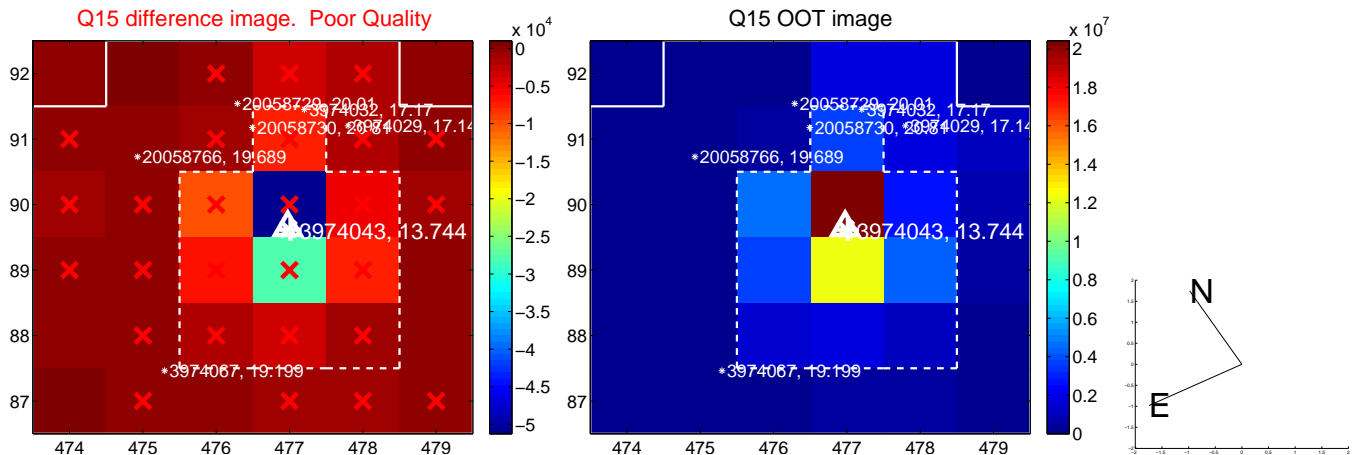




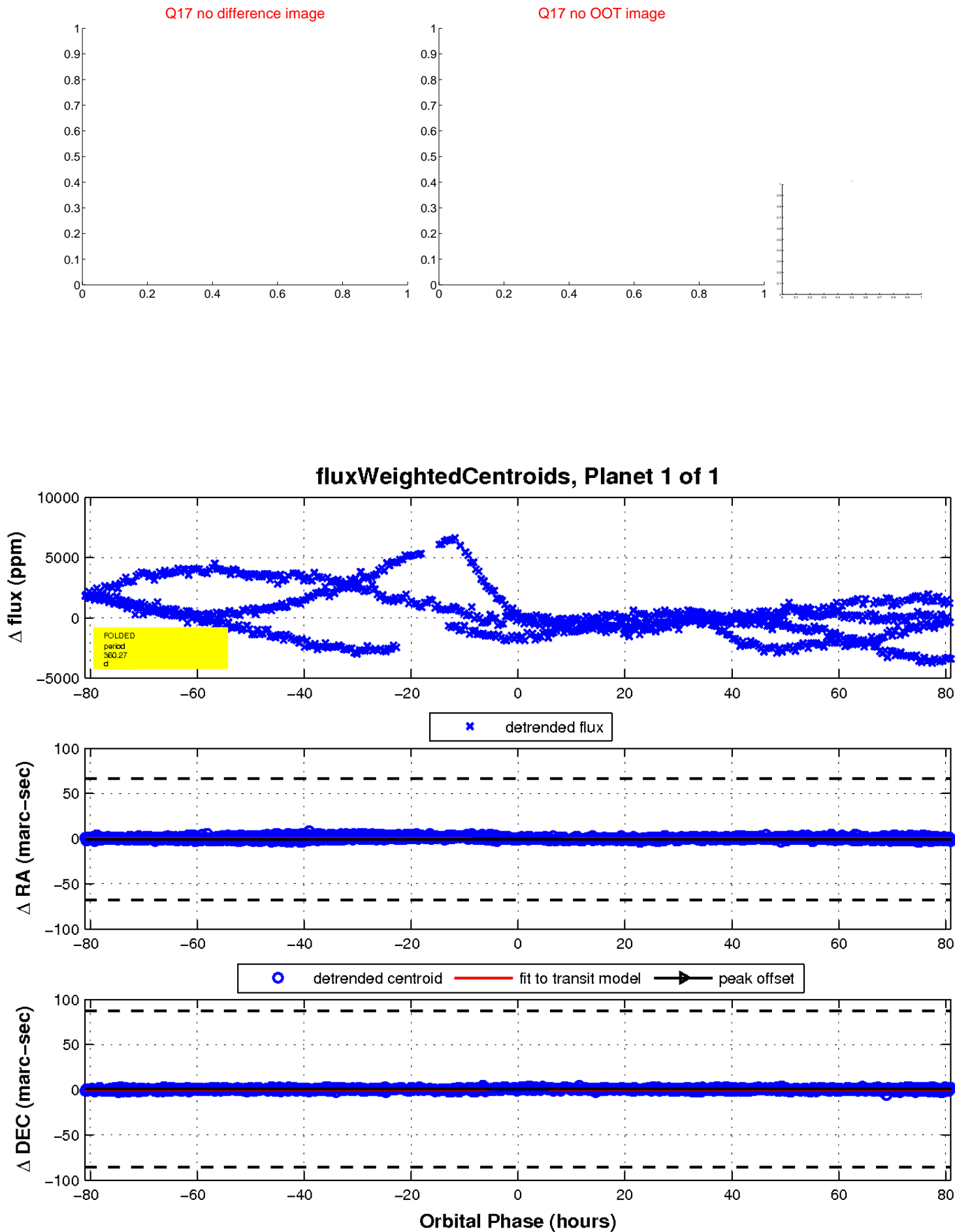
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



white  $\times$ : 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

