

# KIC 006974705

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
006974705-01	OBS	No	325.501749	258.907052	103.0	7.338	8.9	7.9	3.02	8859	3.53	32.85

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
006974705-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—CENT_SATURATED

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

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

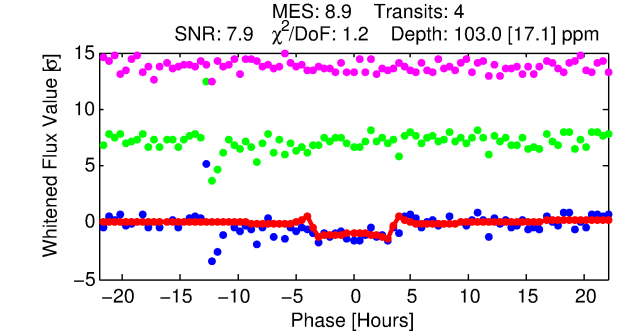
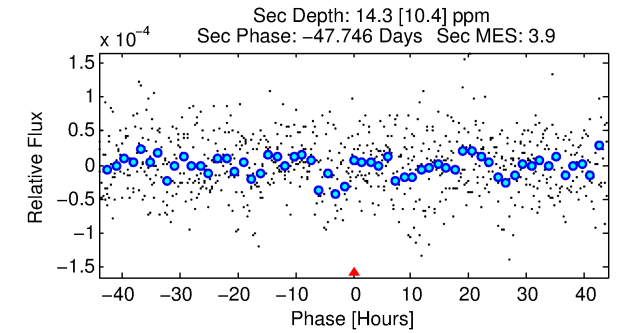
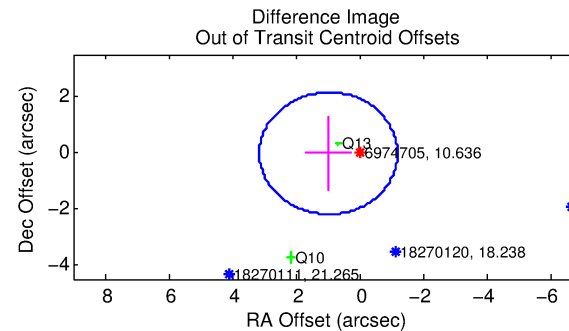
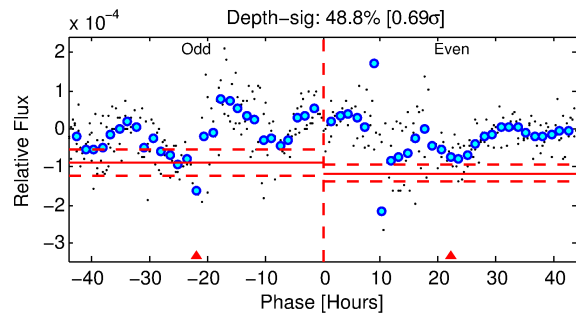
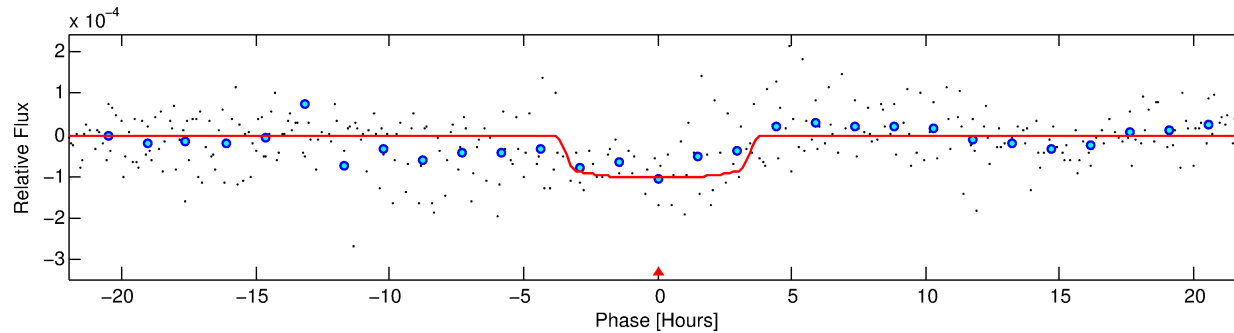
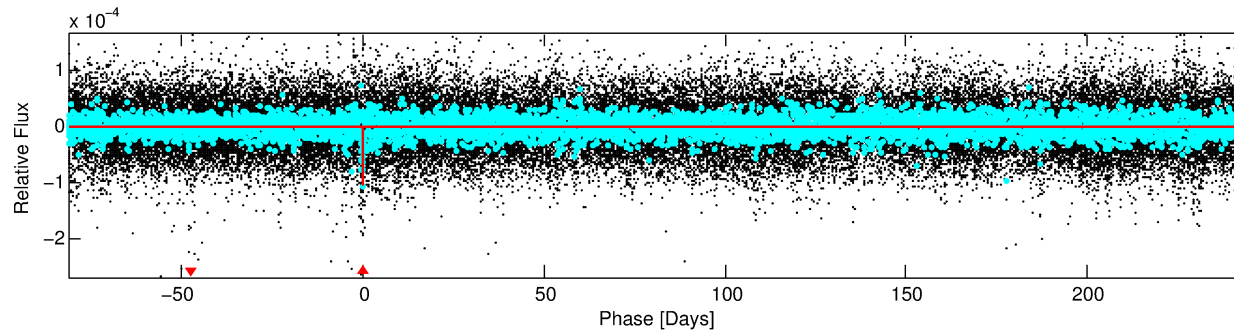
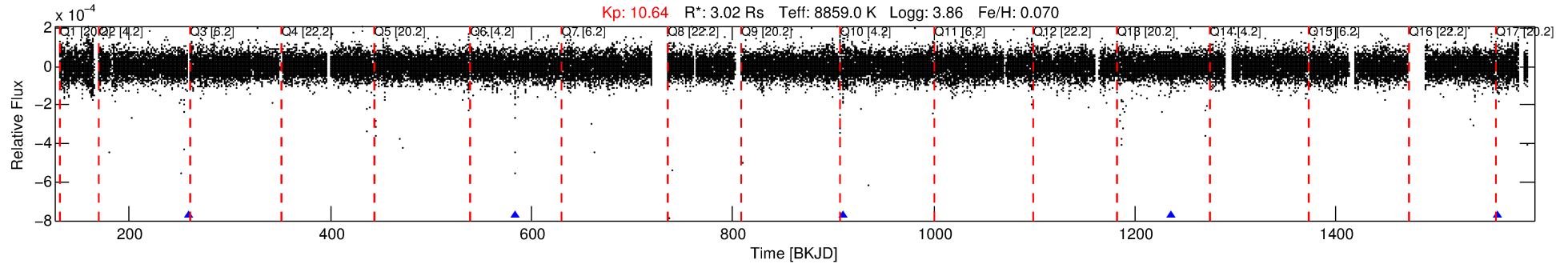
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 006974705-01

No Significant Match Found

# DV One-Page Summary

KIC: 6974705 Candidate: 1 of 1 Period: 325.502 d



## DV Fit Results:

Period = 325.50175 [0.00595] d  
Epoch = 258.9071 [0.0147] BKJD  
Rp/R\* = 0.0107 [0.0022]  
a/R\* = 160.07 [198.43]  
b = 0.89 [0.28]  
Seff = 32.85 [19.47]  
Teff = 610 [90] K  
Rp = 3.53 [1.61] Re  
a = 1.2386 [0.4551] AU  
Ag = 968.10 [972.23] [0.99 $\sigma$ ]  
Teffp = 5265 [1125] K [4.13 $\sigma$ ]

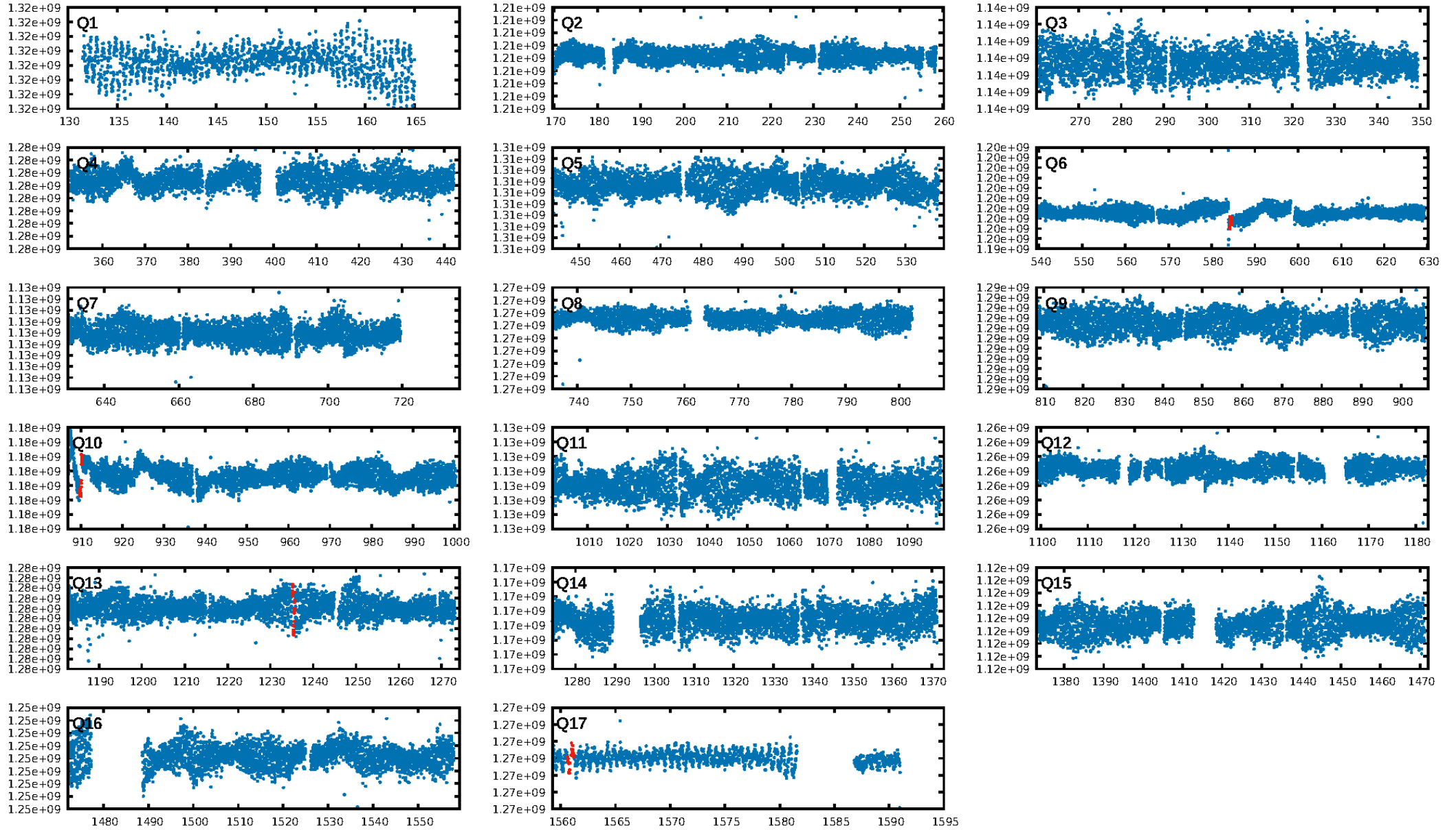
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: 2.7%  
ModelChiSquareGof-sig: 100.0%  
Bootstrap-pfa: 4.47e-13  
RollingBand-fgt: 1.00 [3/3]  
GhostDiagnostic-chr: -226.1  
Centroid-sig: 2.2%  
Centroid-so: 3.245 arcsec [1.70 $\sigma$ ]  
OotOffset-rm: 0.972 arcsec [1.34 $\sigma$ ]  
KicOffset-rm: 1.013 arcsec [2.20 $\sigma$ ]  
OotOffset-st: 1/0/0/1 [2]  
KicOffset-st: 1/0/0/1 [2]  
DiffImageQuality-fgm: 0.50 [1/2]  
DiffImageOverlap-fno: 1.00 [3/3]

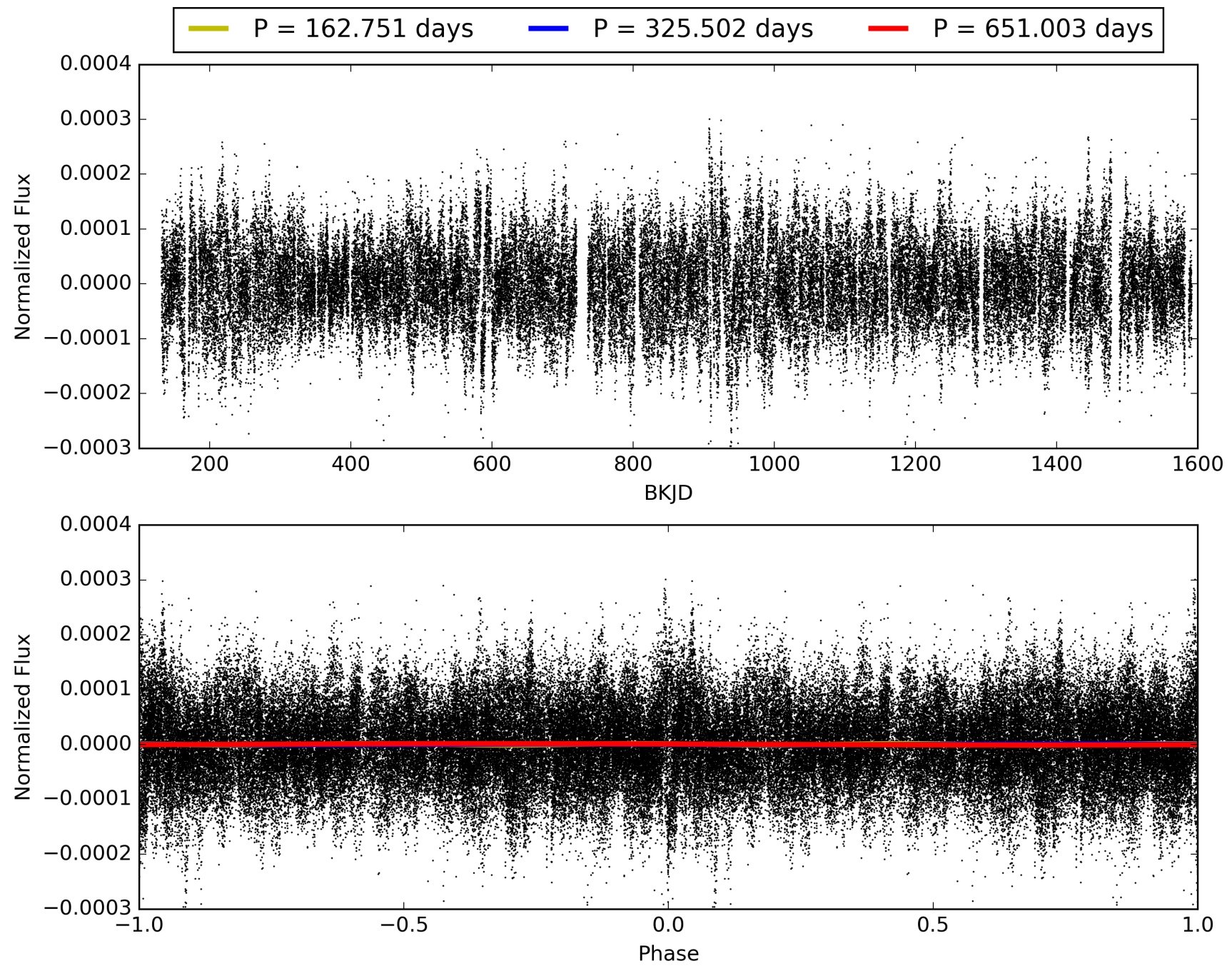
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 20:19:23 Z

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

# TCE 006974705-01, PDC Light Curves

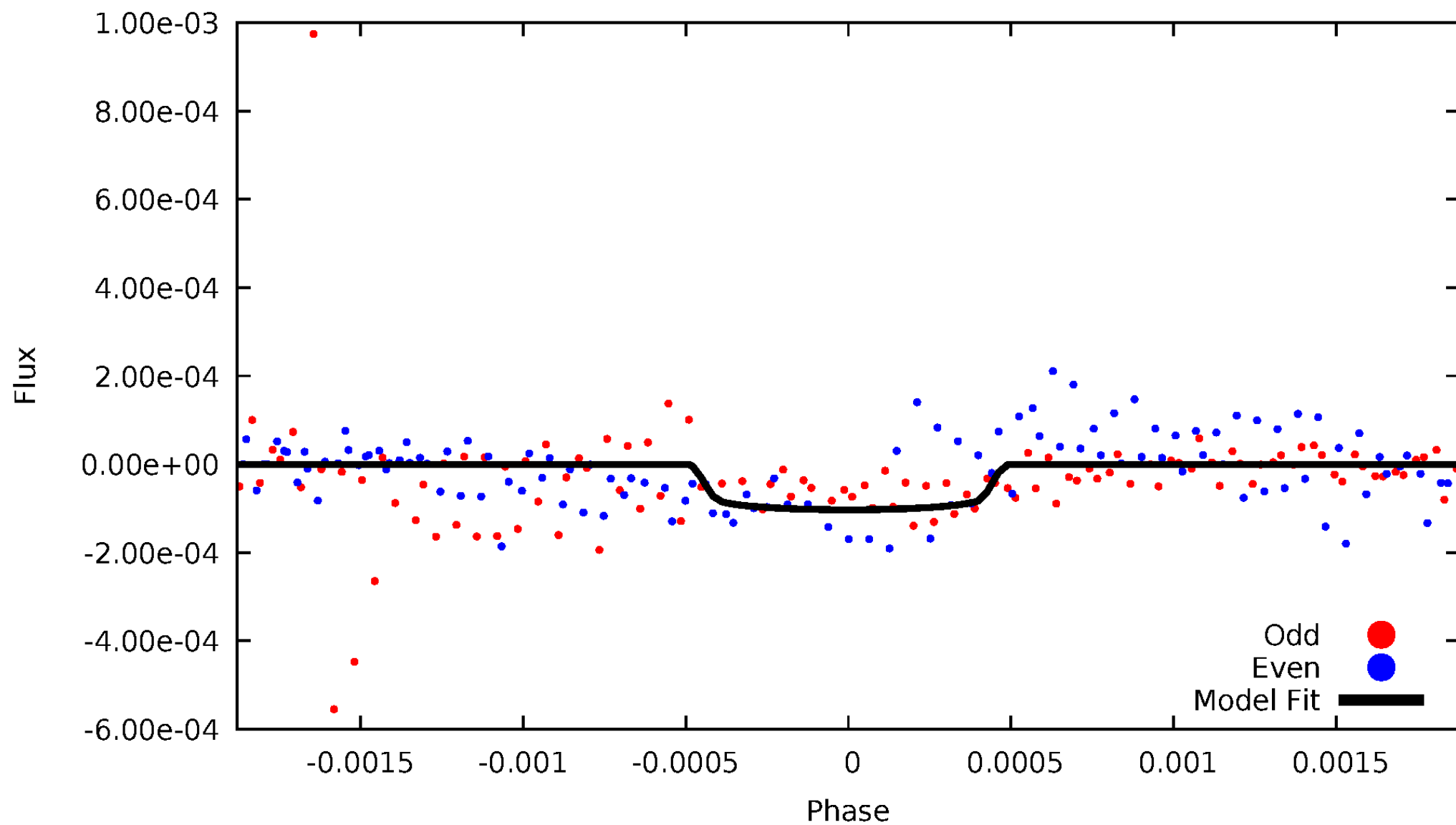


TCE 006974705-01



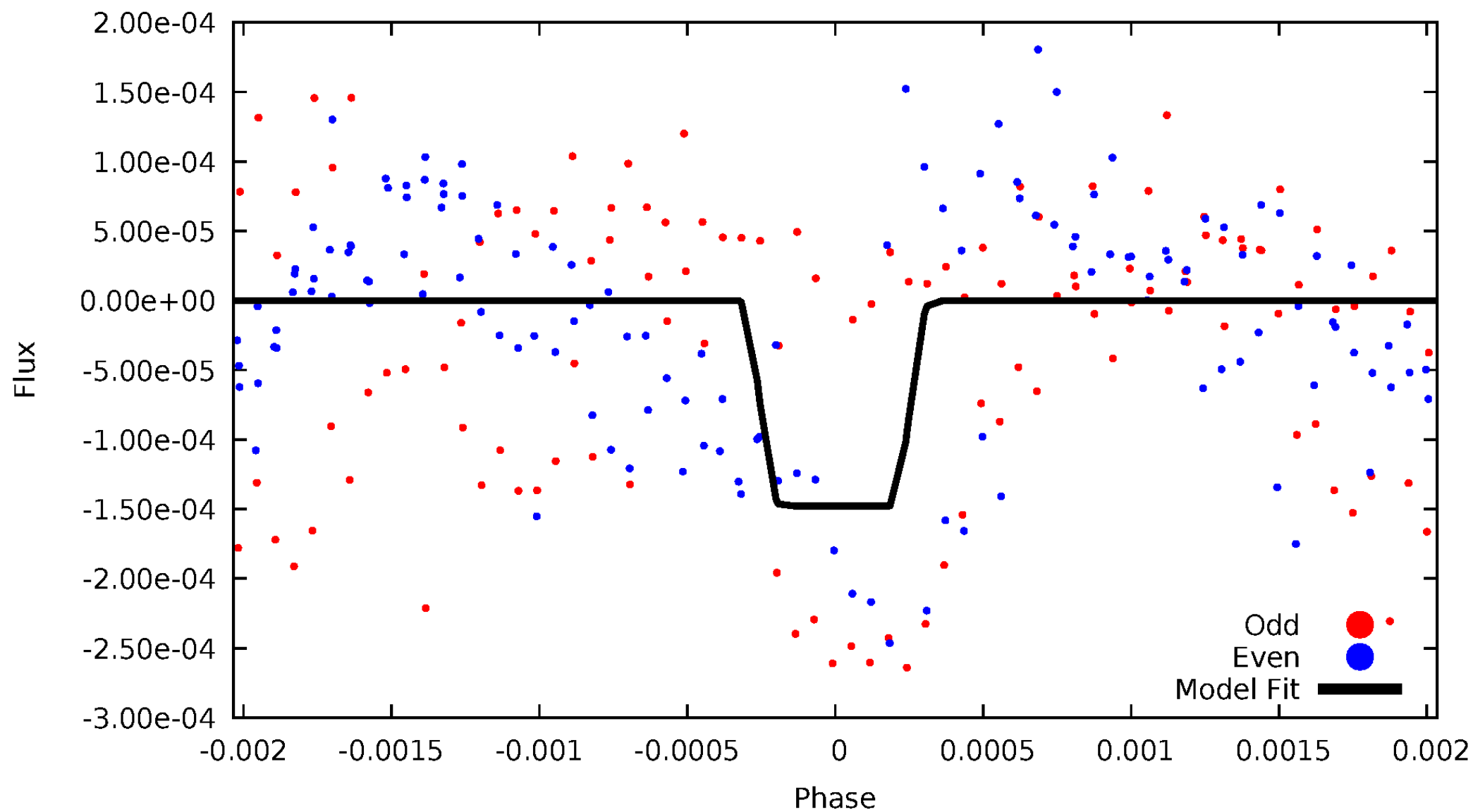
# DV Odd/Even

TCE 006974705-01



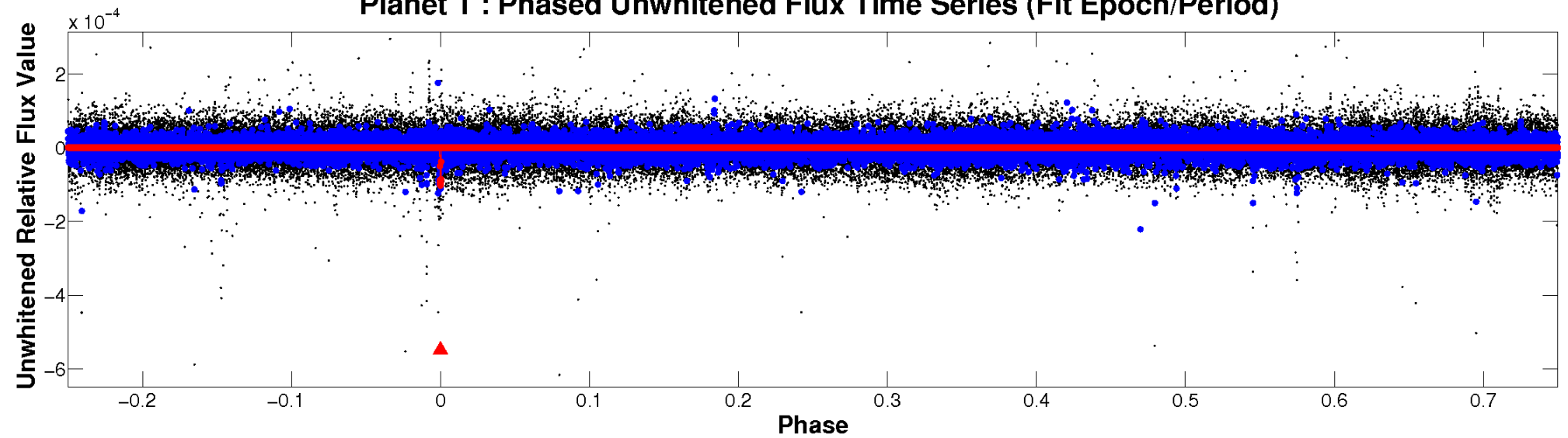
# ALT Odd/Even

TCE 006974705-01

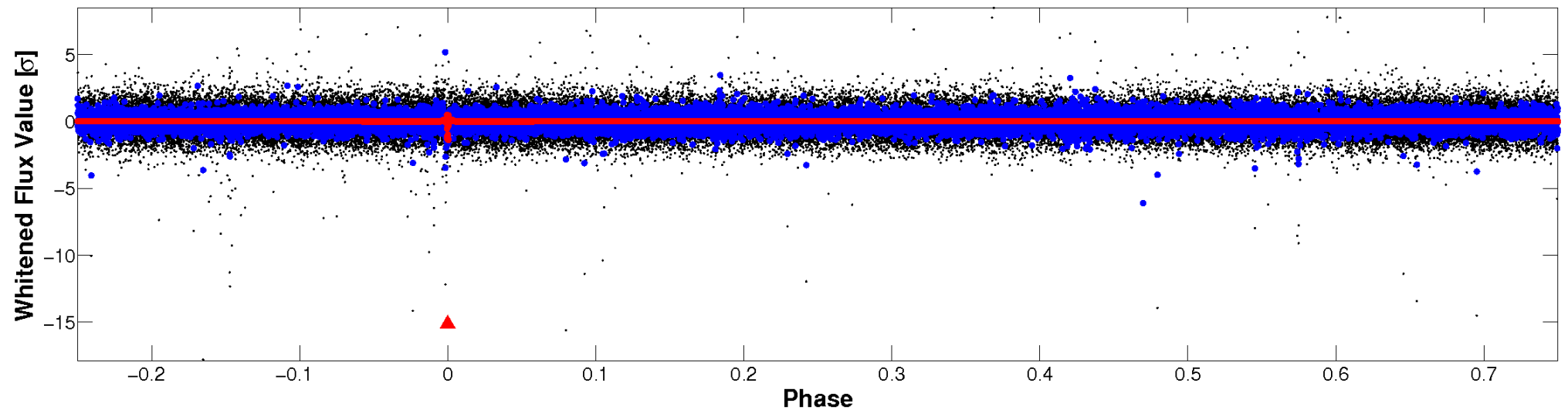


# Non-Whitened Vs. Whitened Light Curve

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

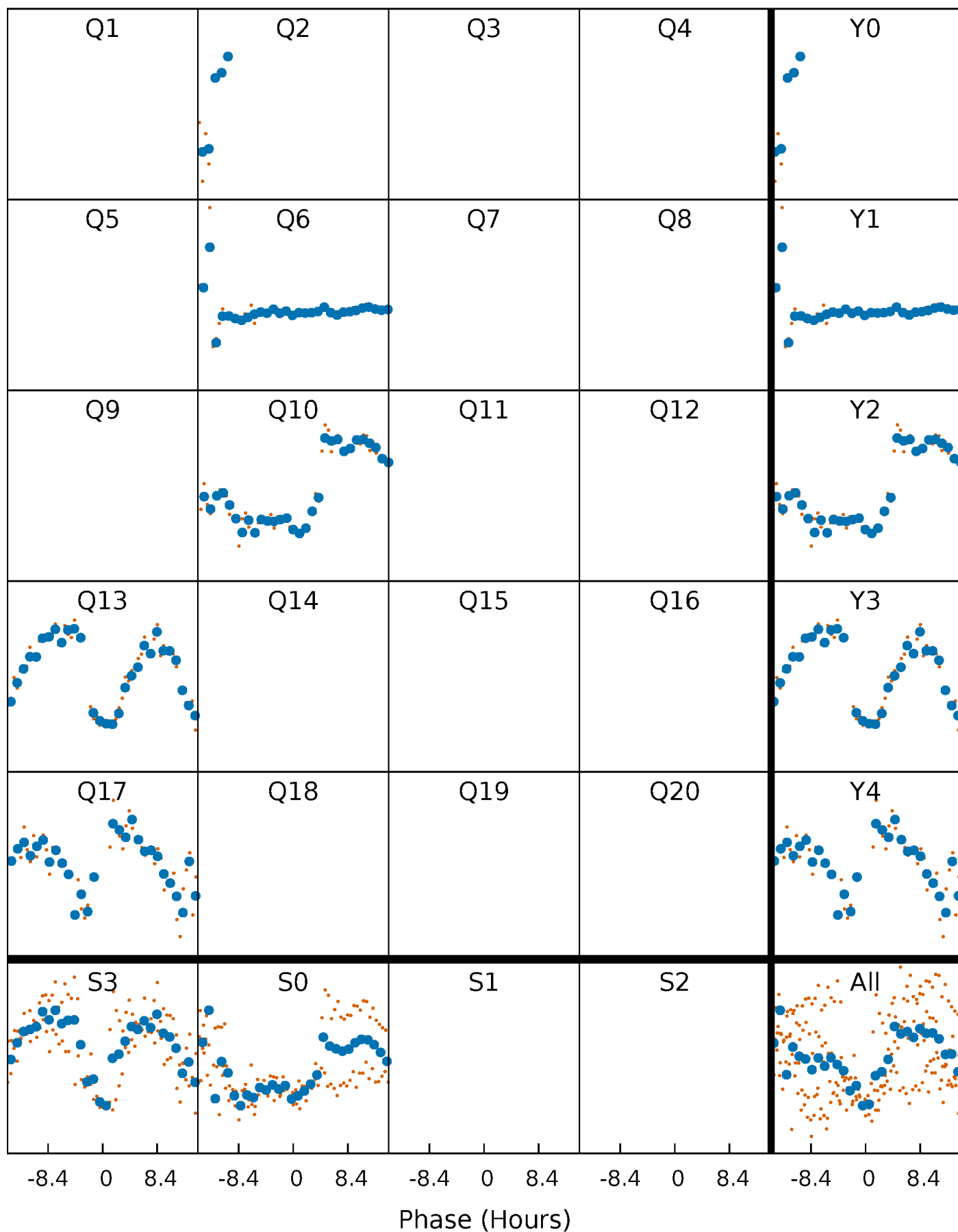


**Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)**



# PDC Quarter-Phased Transit Curves

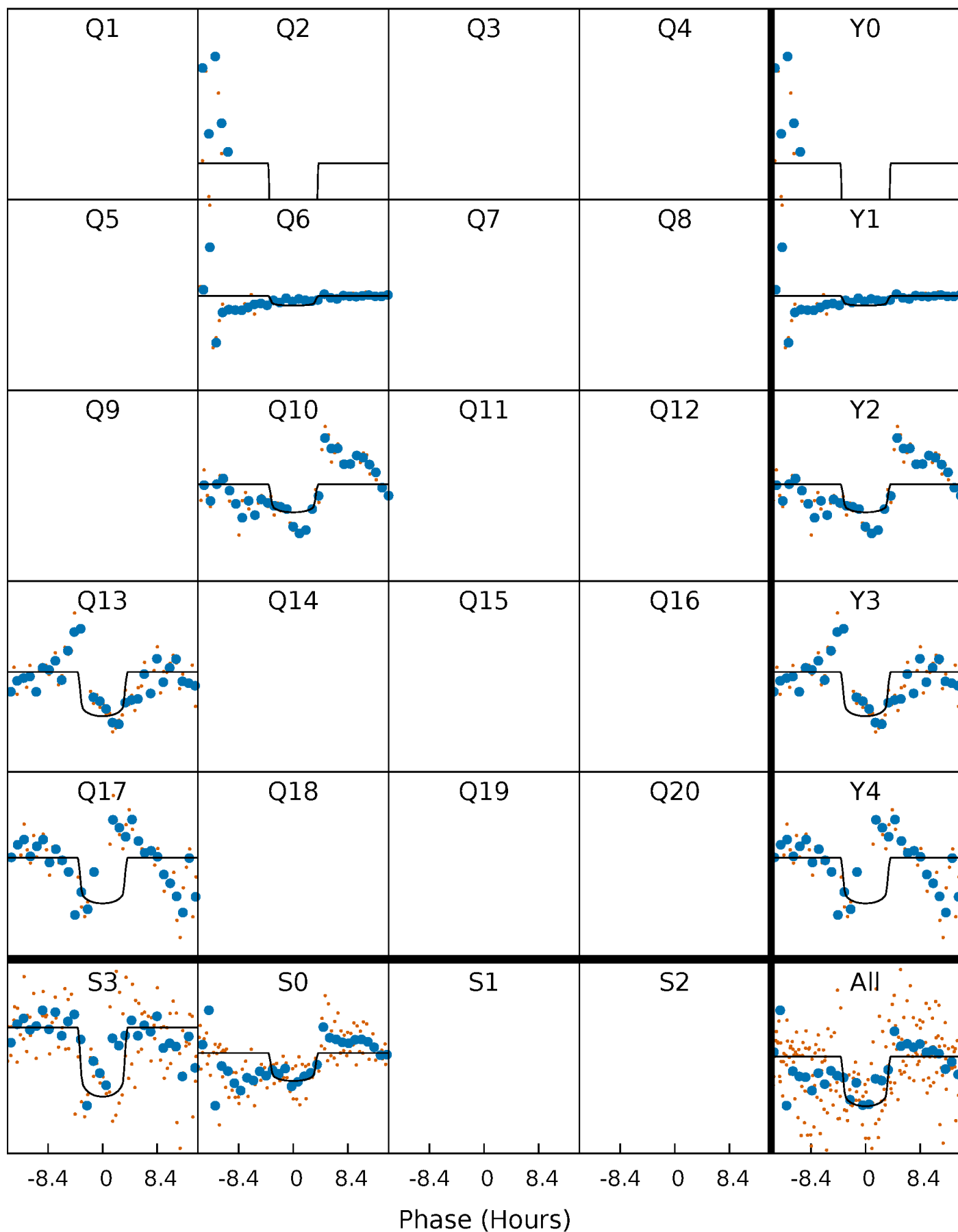
TCE 006974705-01 P=325.501750 Days  $T_0=258.907052$  (BKJD)





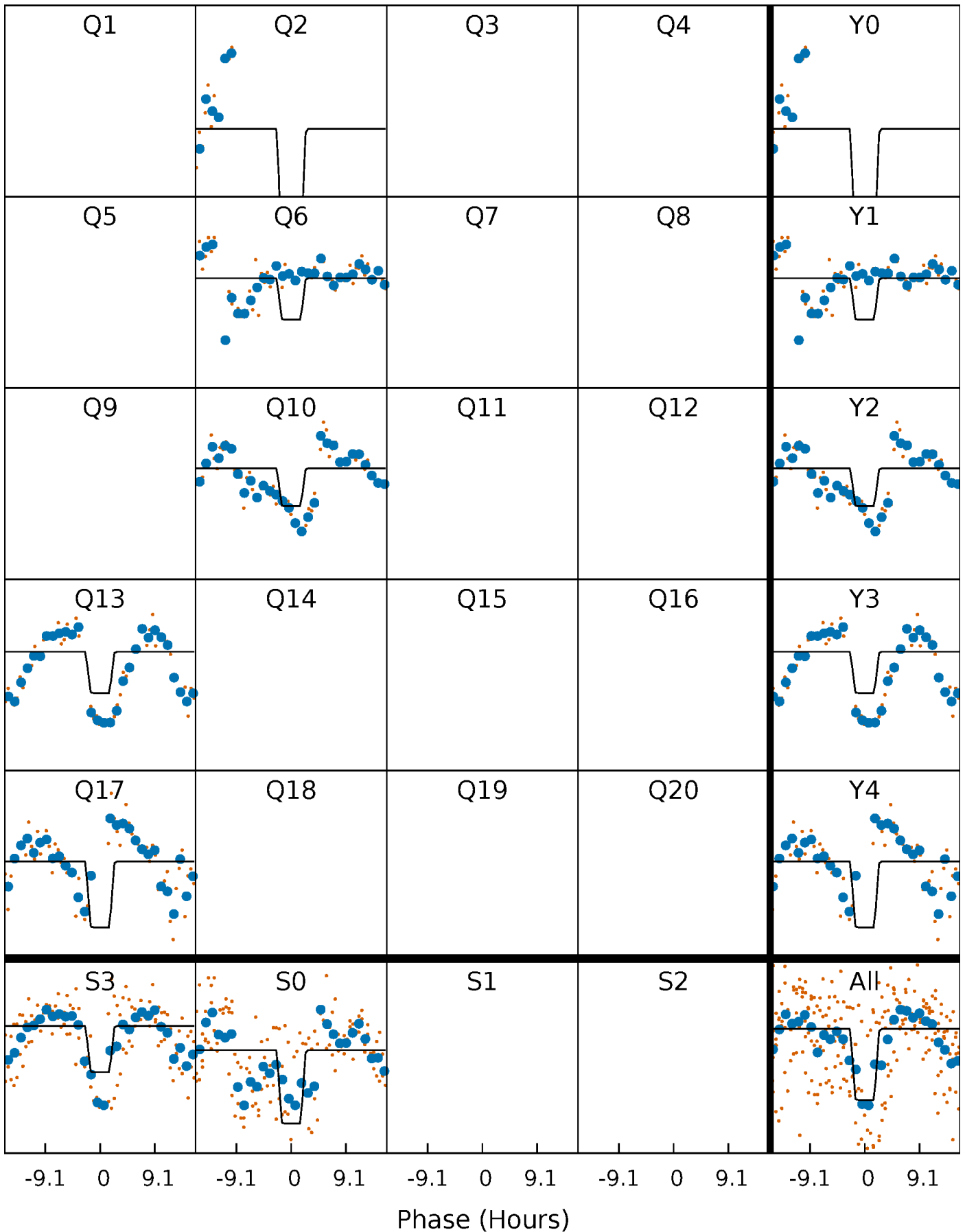
# DV Quarter-Phased Transit Curves

TCE 006974705-01 P=325.501750 Days  $T_0=258.907052$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

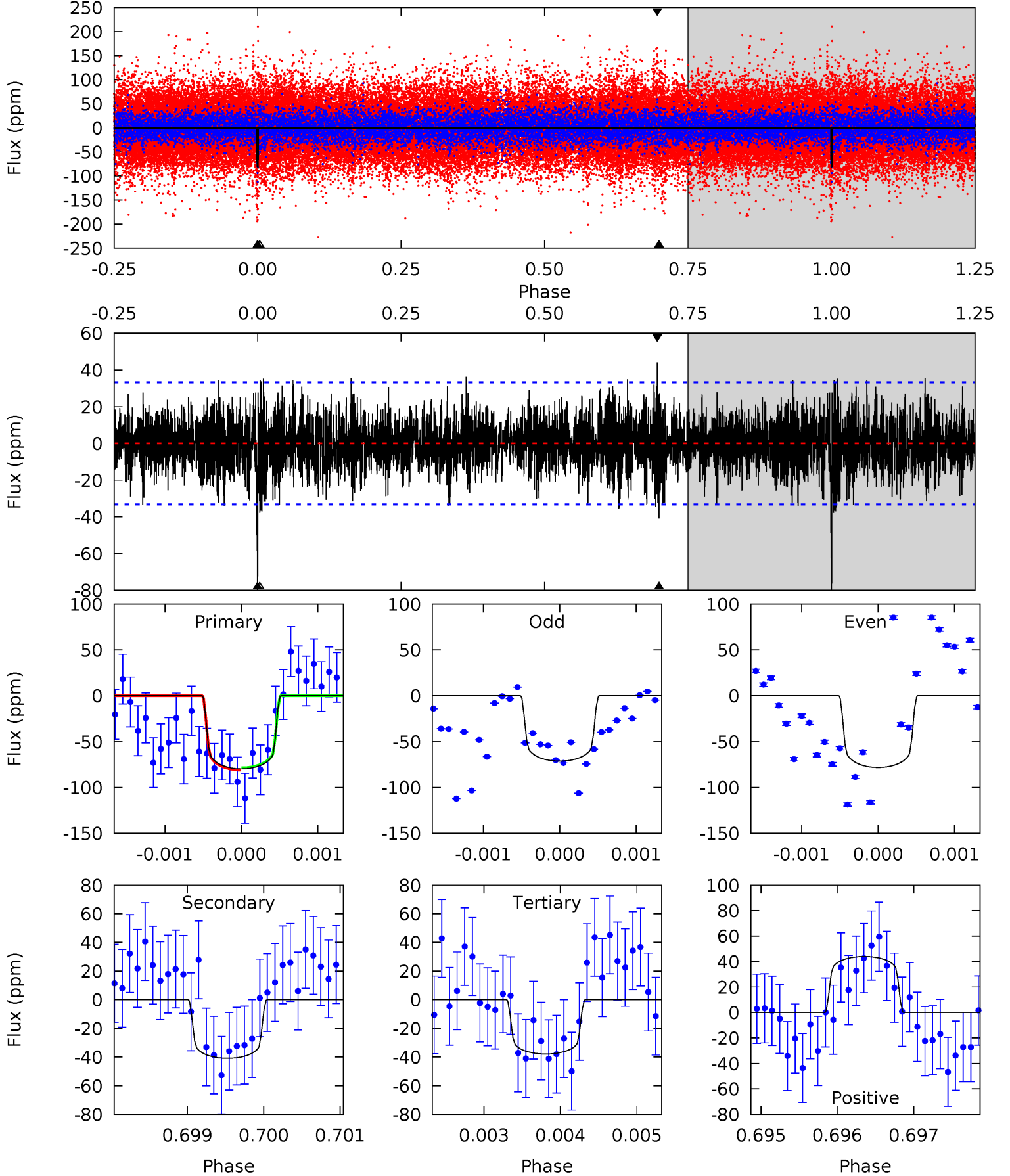
TCE 006974705-01 P=325.506611 Days  $T_0=258.878782$  (BKJD)



# DV Model-Shift Uniqueness Test

006974705-01, P = 325.501750 Days, E = 258.907052 Days

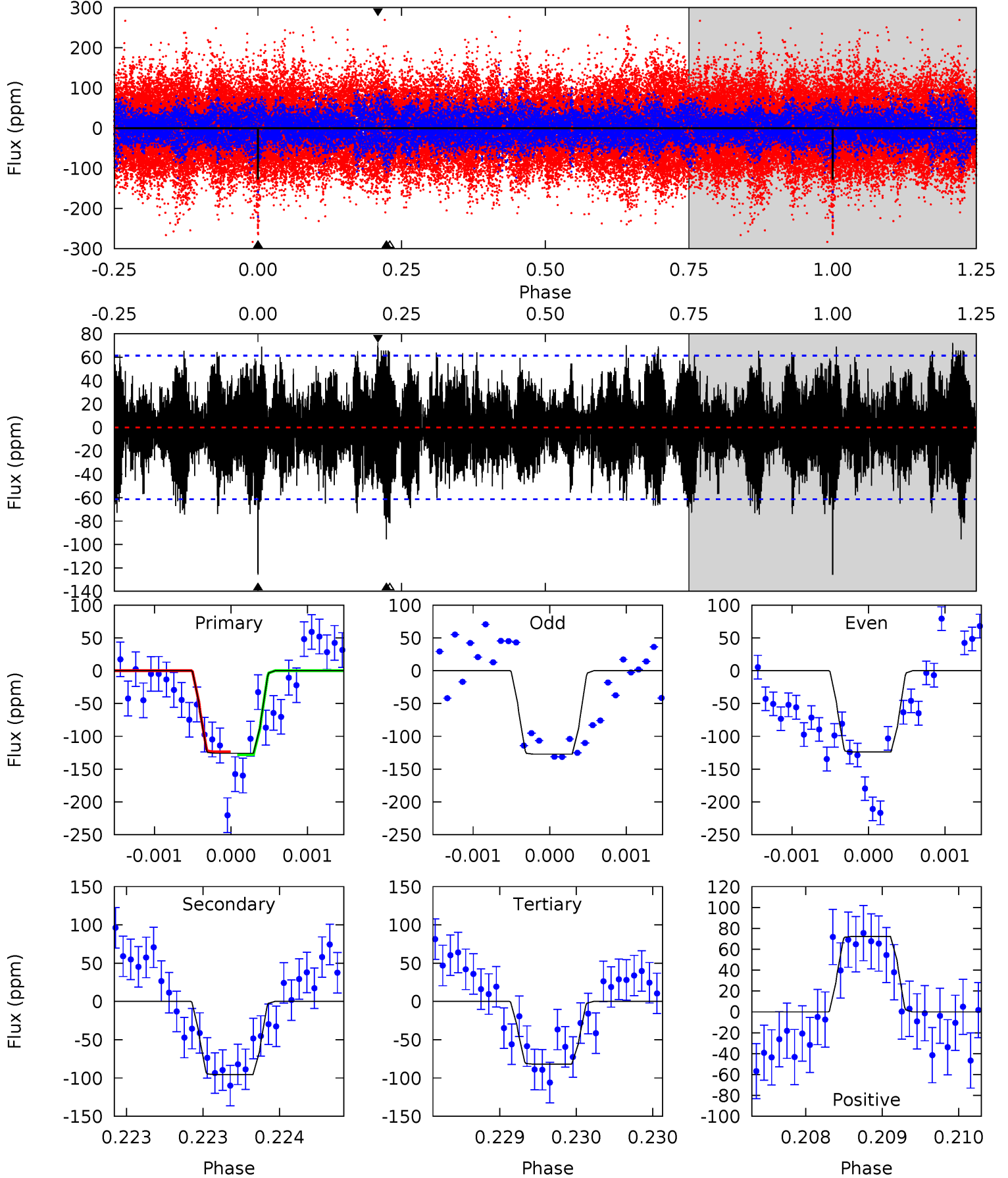
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
13.1	6.70	6.20	7.21	5.46	3.30	1.89	6.88	5.87	0.49	-0.52	0.58	0.95	0.36	0.19



# Alt Model-Shift Uniqueness Test

006974705-01, P = 325.506611 Days, E = 258.878782 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
11.4	8.62	7.38	6.52	5.53	3.42	2.21	3.97	4.83	1.24	2.10	0.15	1.16	0.36	0.19



### Stellar Parameters For KIC 006974705

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$\rho_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$8859^{+246}_{-422}$	$3.856^{+0.319}_{-0.172}$	$0.070^{+0.250}_{-0.600}$	$3.022^{+1.017}_{-1.242}$	$2.393^{+0.317}_{-0.739}$	$0.122^{+0.321}_{-0.062}$
	+3%/-5%	+8%/-4%	+357%/-857%	+34%/-41%	+13%/-31%	+262%/-51%
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 006974705-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	$A_{\text{obs}}$
DV	$-41 \pm 6$	$3.34^{+1.01}_{-0.89}$	$833^{+73}_{-87}$	$6468^{+923}_{-642}$	$3040^{+2463}_{-1245}$
Alt.	$-96 \pm 11$	$3.91^{+1.13}_{-1.07}$	$841^{+71}_{-86}$	$7606^{+1127}_{-793}$	$5216^{+4383}_{-2119}$

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

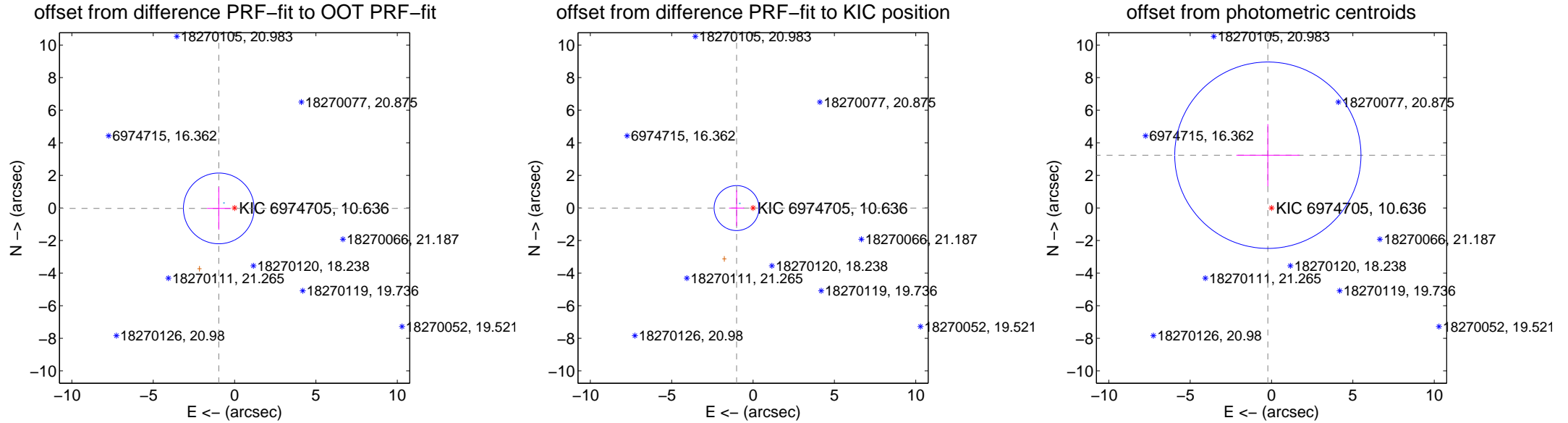
## DV Centroid Data

Supplemental centroid analysis for 006974705-01. **Kepler magnitude: 10.64.** Transit SNR 7.94

**There are 1 quarters with good PRF difference image offsets**

The direct PRF centroid is offset from the target star catalog position by about 0.16 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.972 \pm 0.724$	1.34	$0.971 \pm 0.723$	$-0.028 \pm 1.304$
PRF-fit source offset from KIC position	$1.013 \pm 0.460$	2.20	$1.013 \pm 0.460$	$-0.007 \pm 1.099$
photometric centroid source offset	$3.25 \pm 1.91$	1.70	$0.23 \pm 1.94$	$3.24 \pm 1.91$

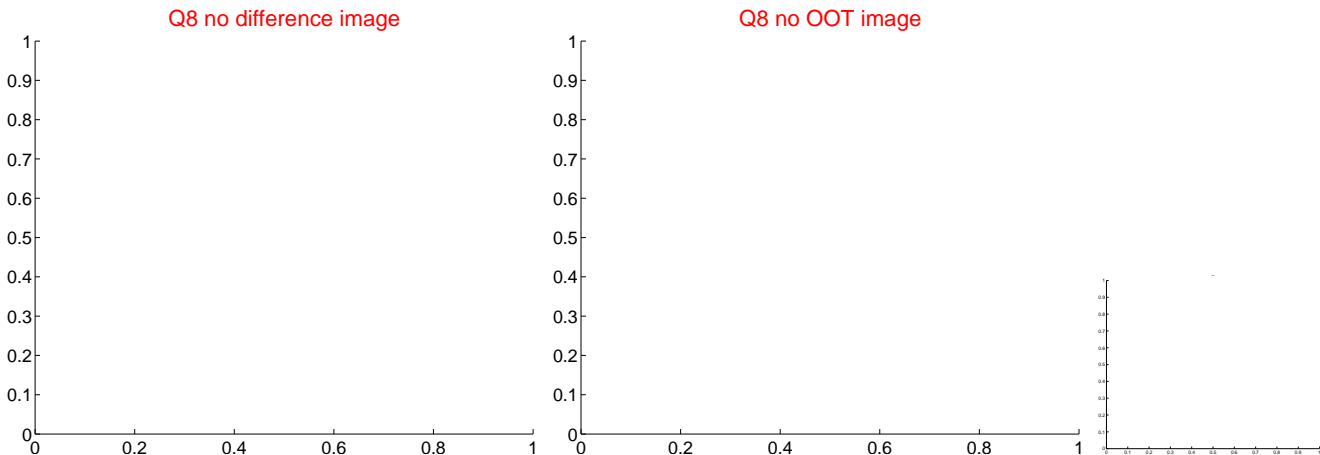
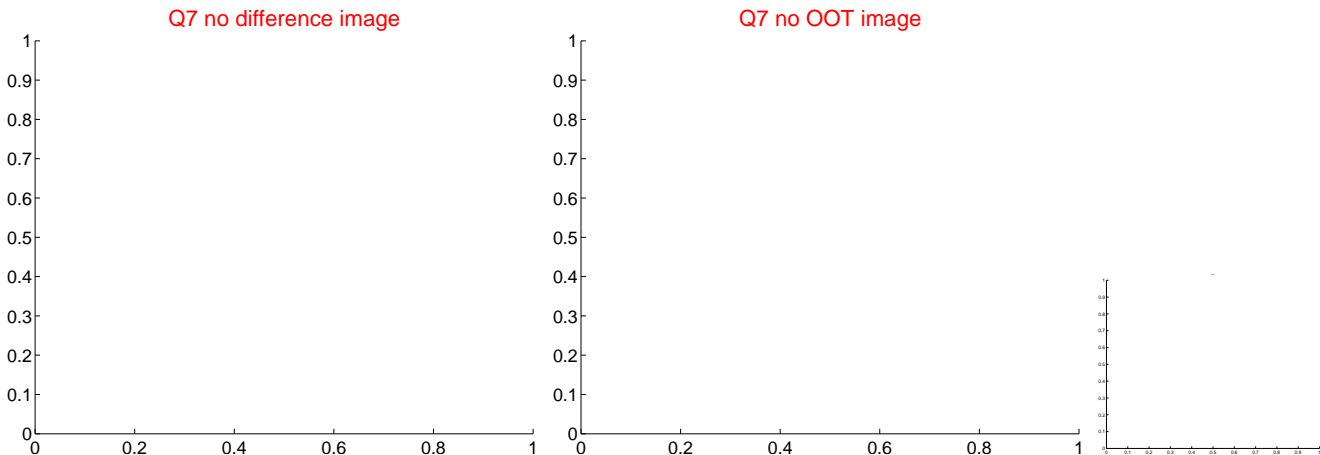
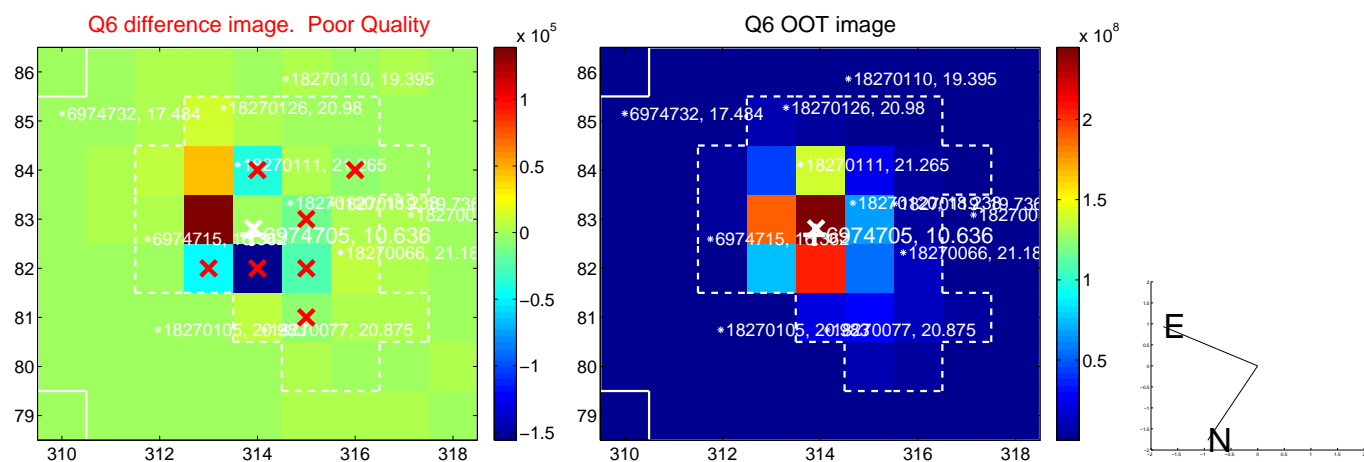
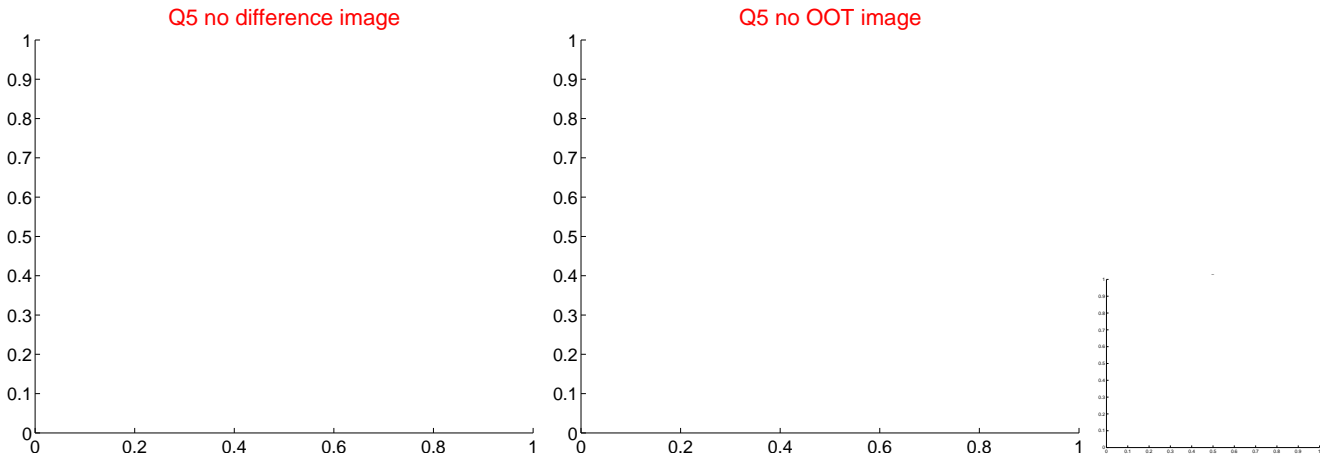


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: three- $\sigma$ . 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.

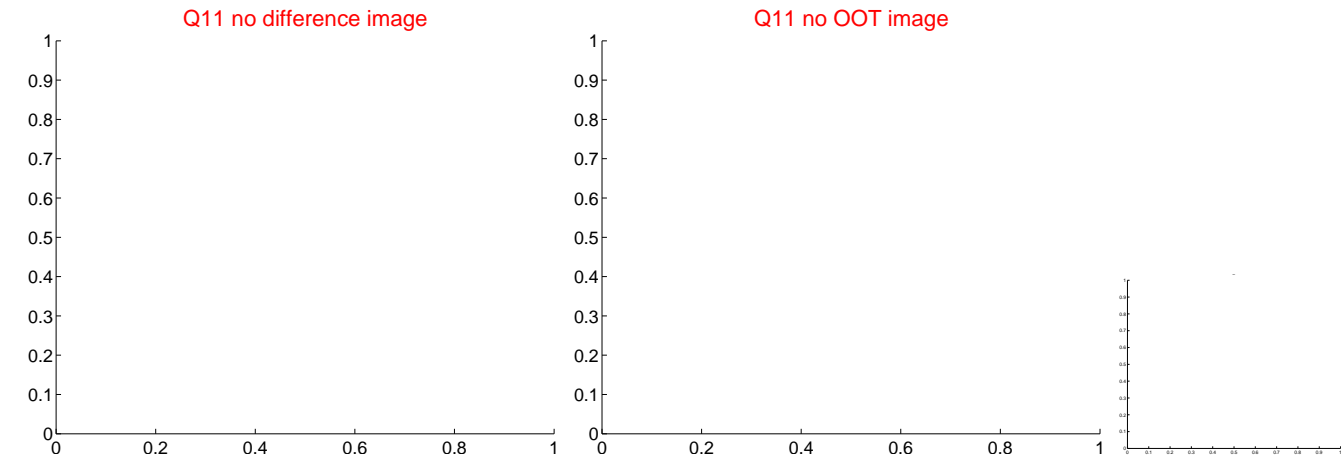
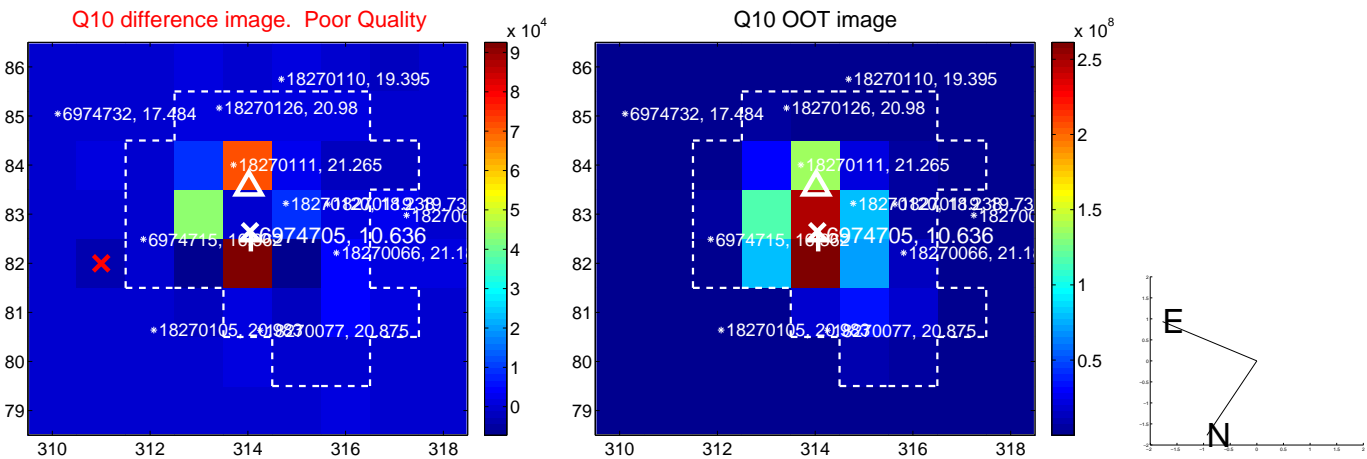


white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

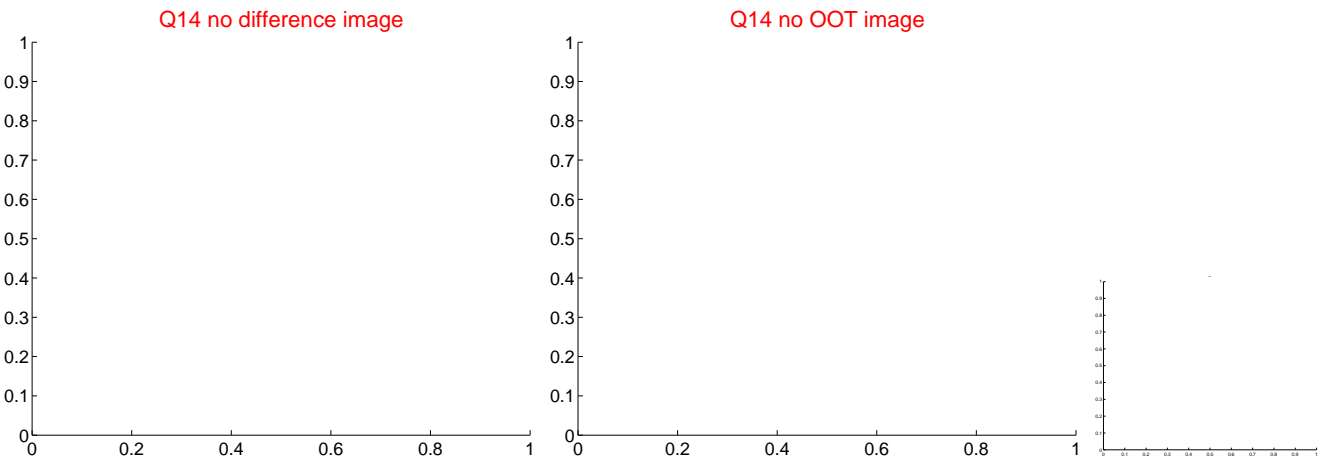
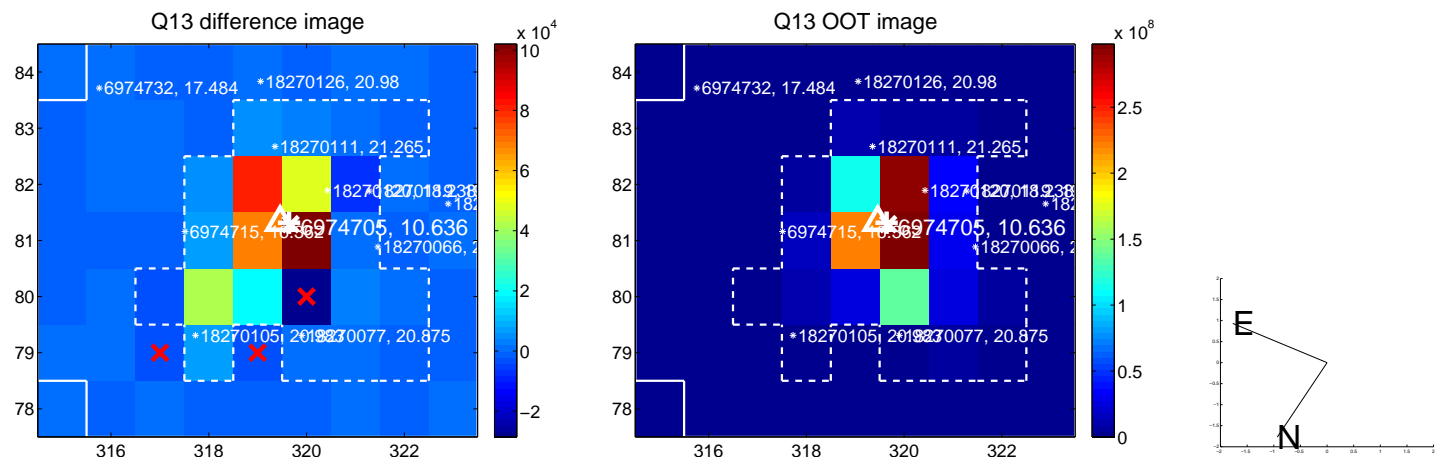




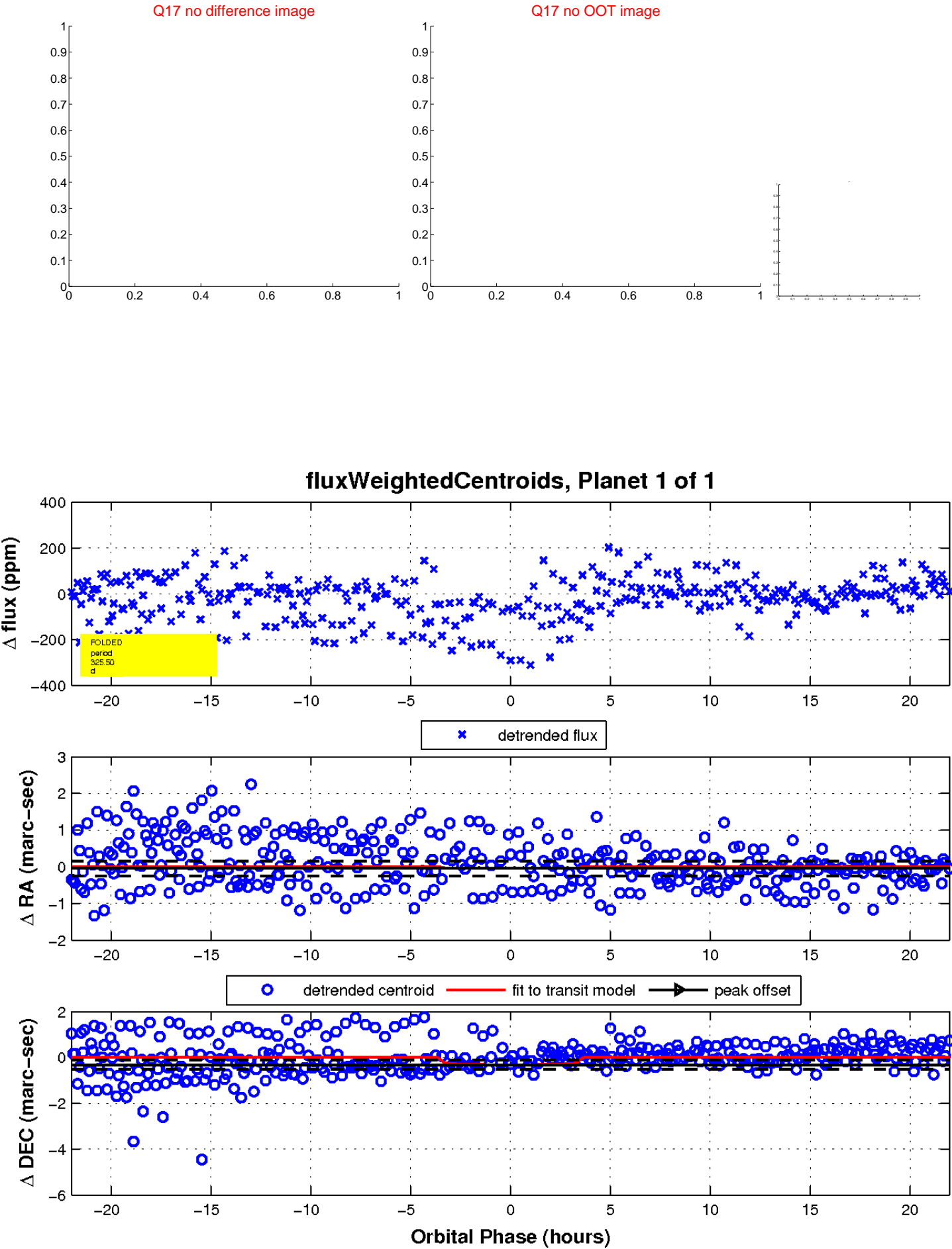
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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

