

# KIC 009172414

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
009172414-01	OBS	No	420.273826	364.050245	551.7	10.144	7.5	7.3	0.74	5094	1.89	0.34

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
009172414-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—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.

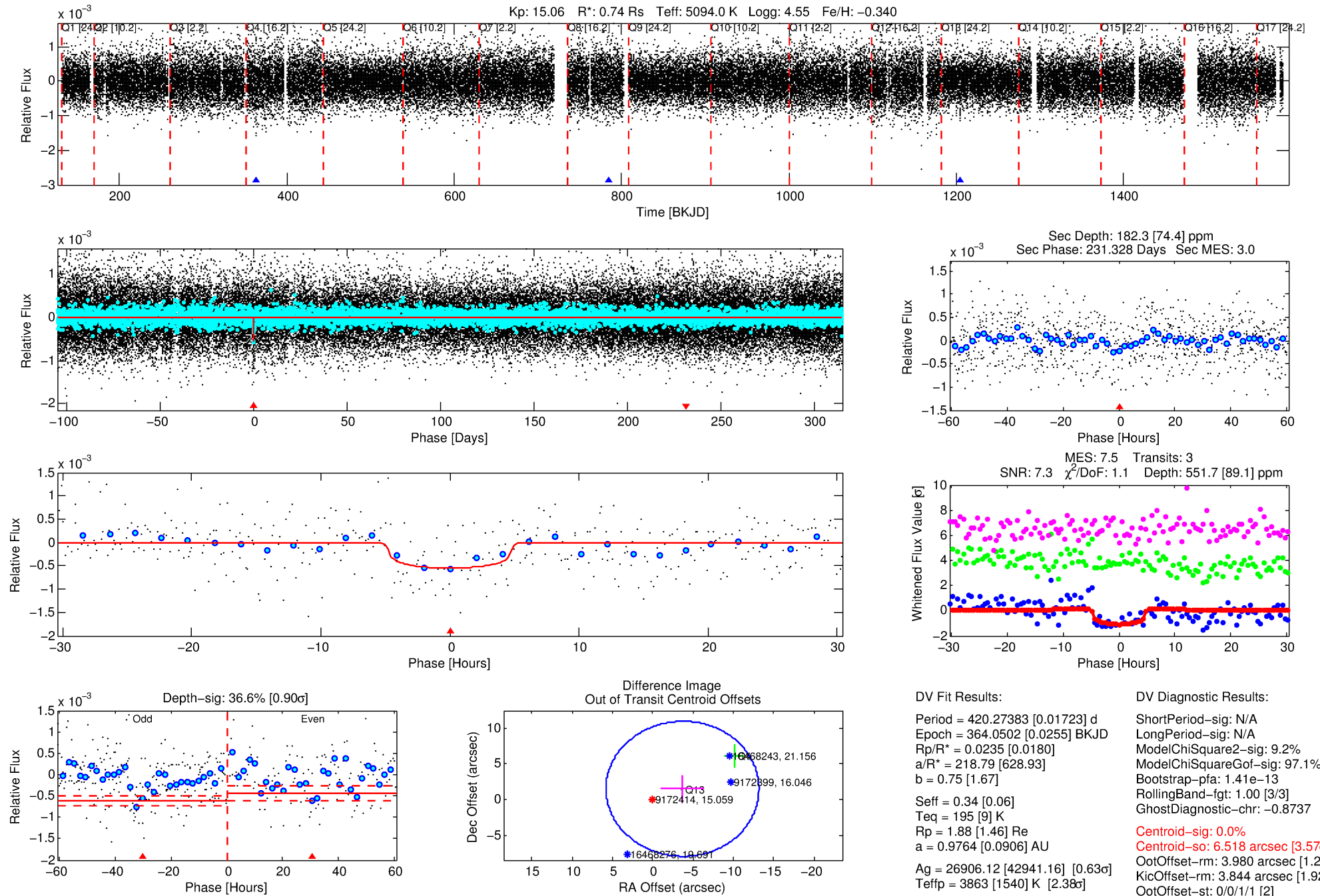
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 009172414-01

No Significant Match Found

# DV One-Page Summary

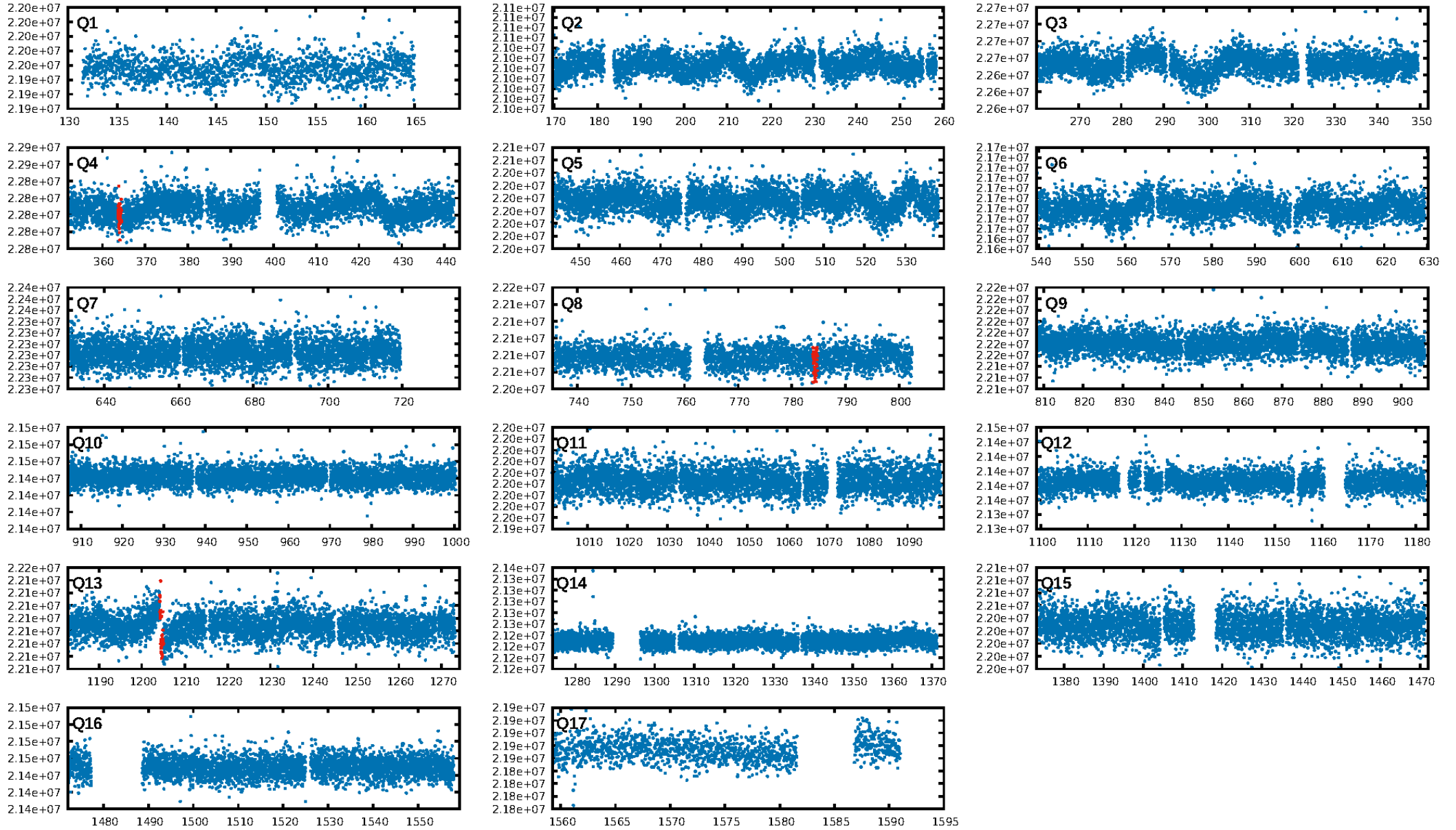
KIC: 9172414 Candidate: 1 of 1 Period: 420.274 d



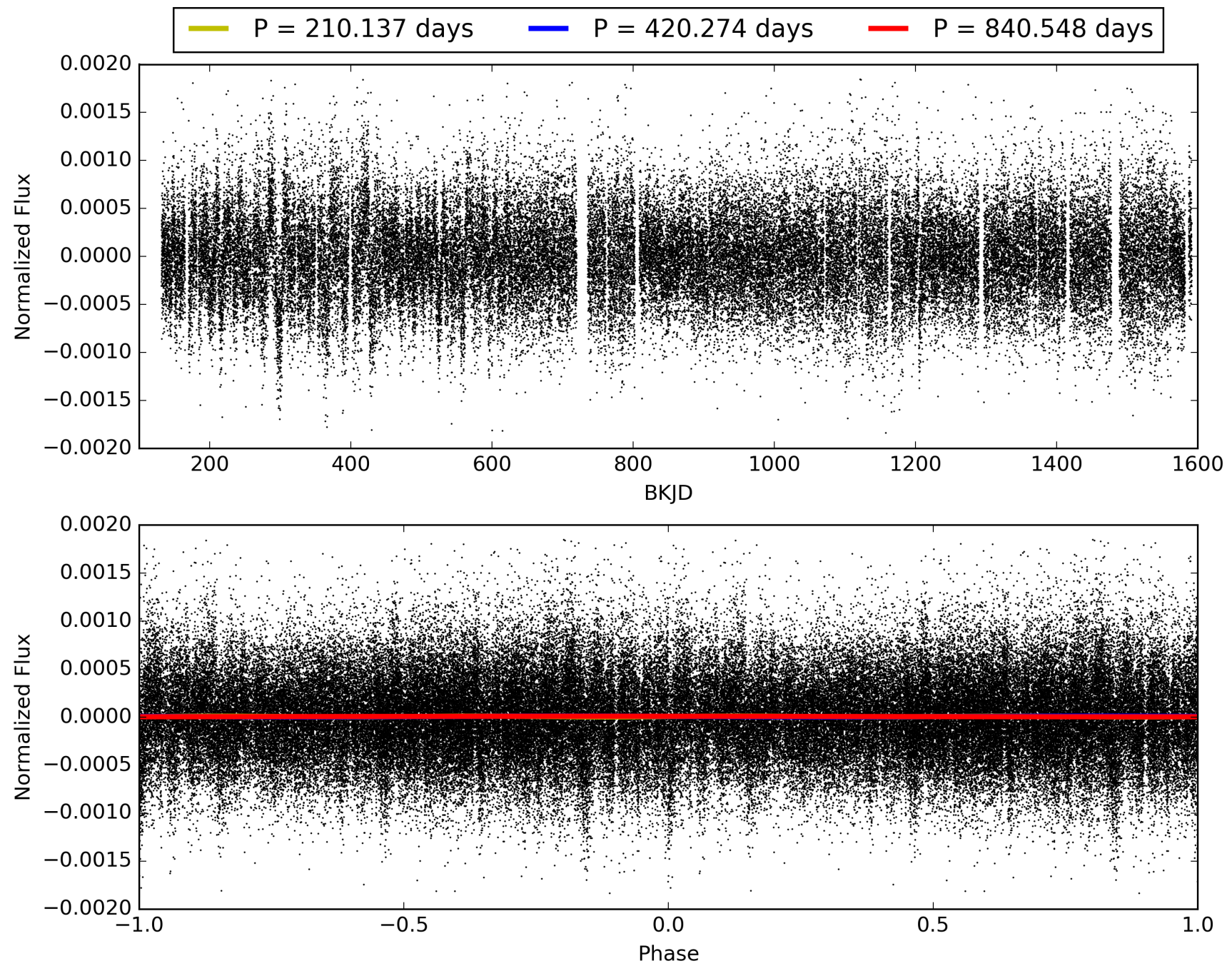
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 12:46:33 Z

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

# TCE 009172414-01, PDC Light Curves

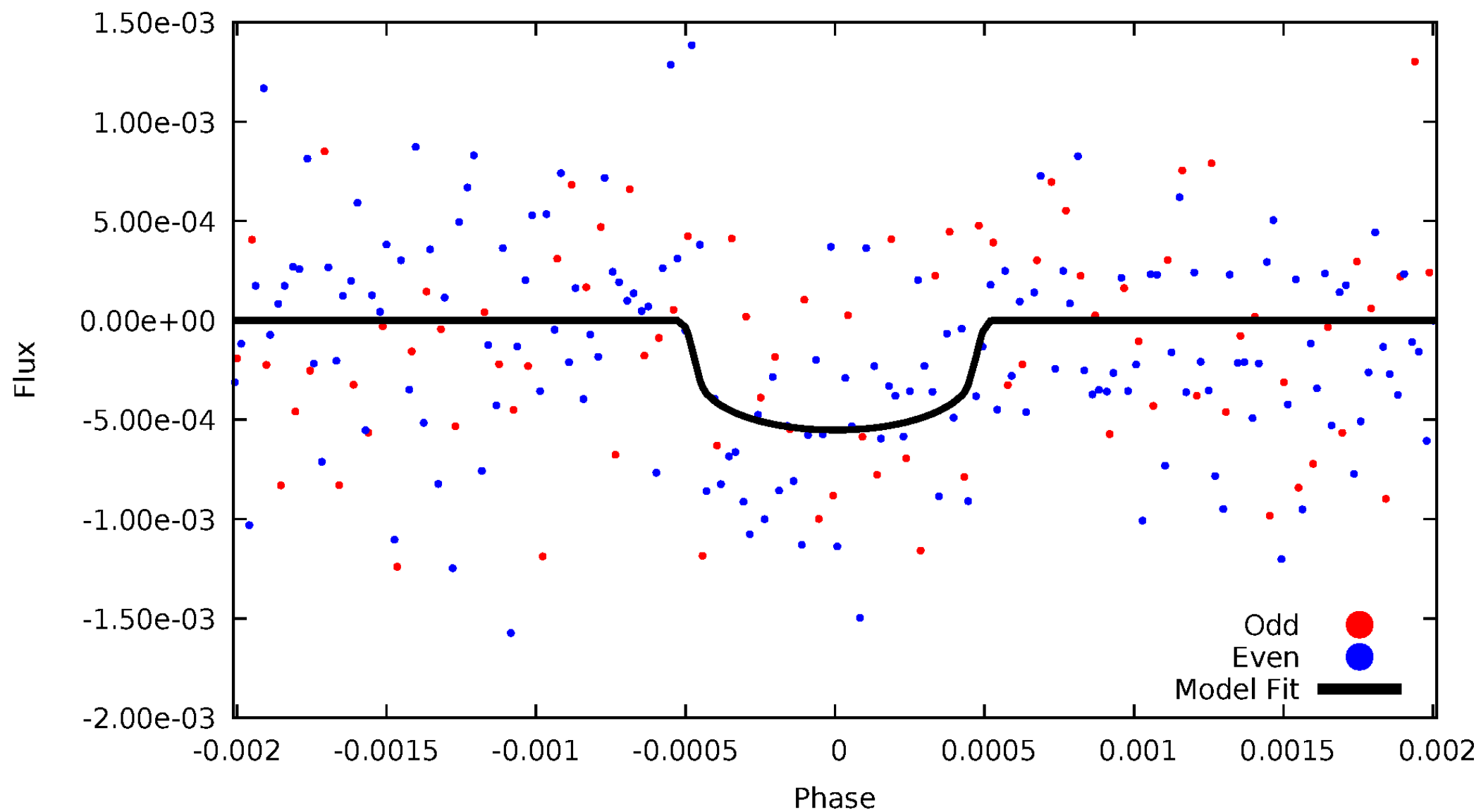


TCE 009172414-01



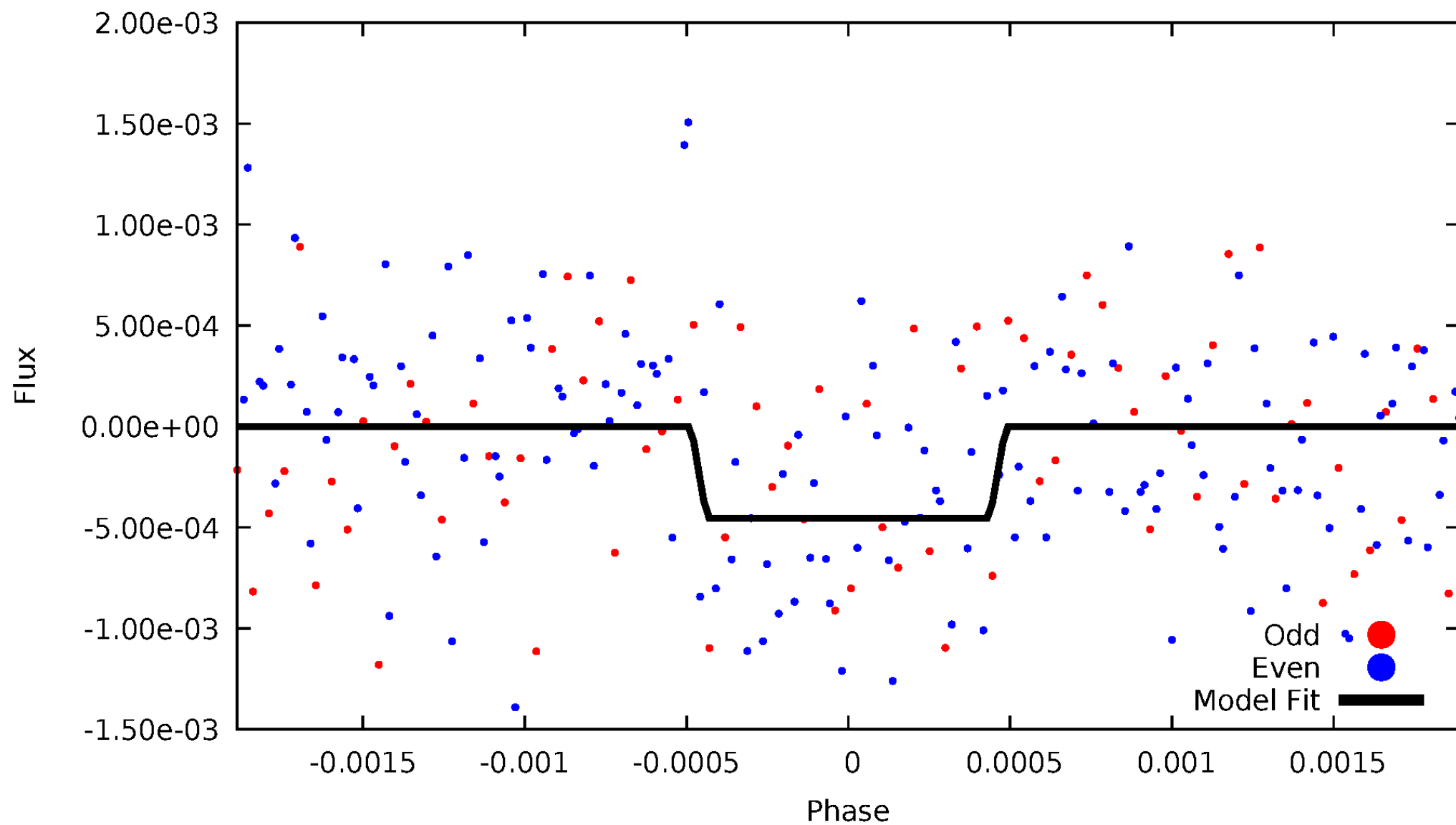
# DV Odd/Even

TCE 009172414-01



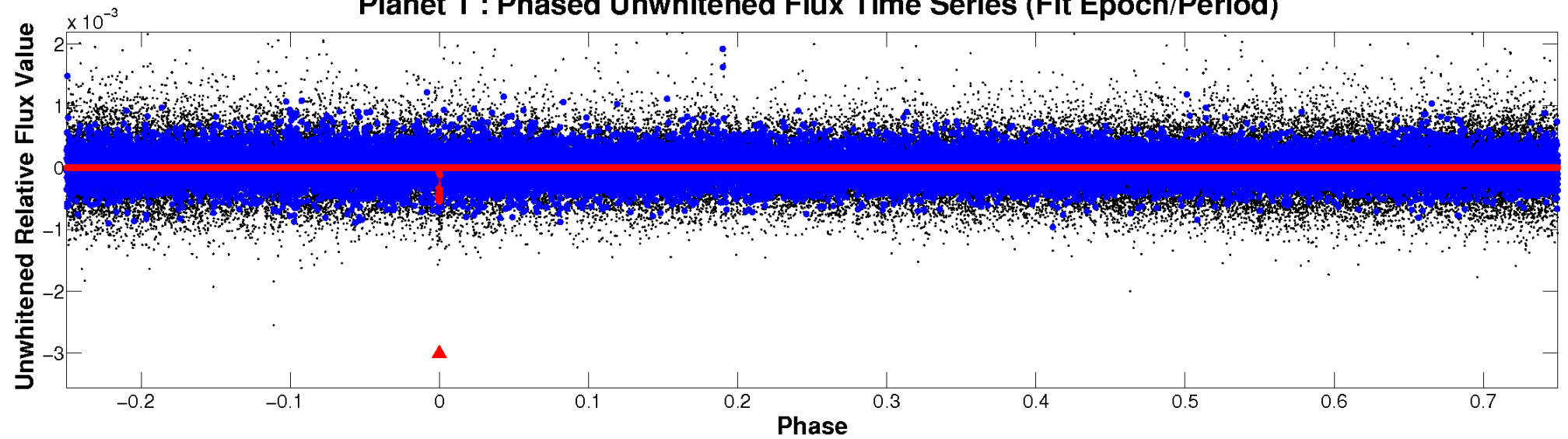
# ALT Odd/Even

TCE 009172414-01

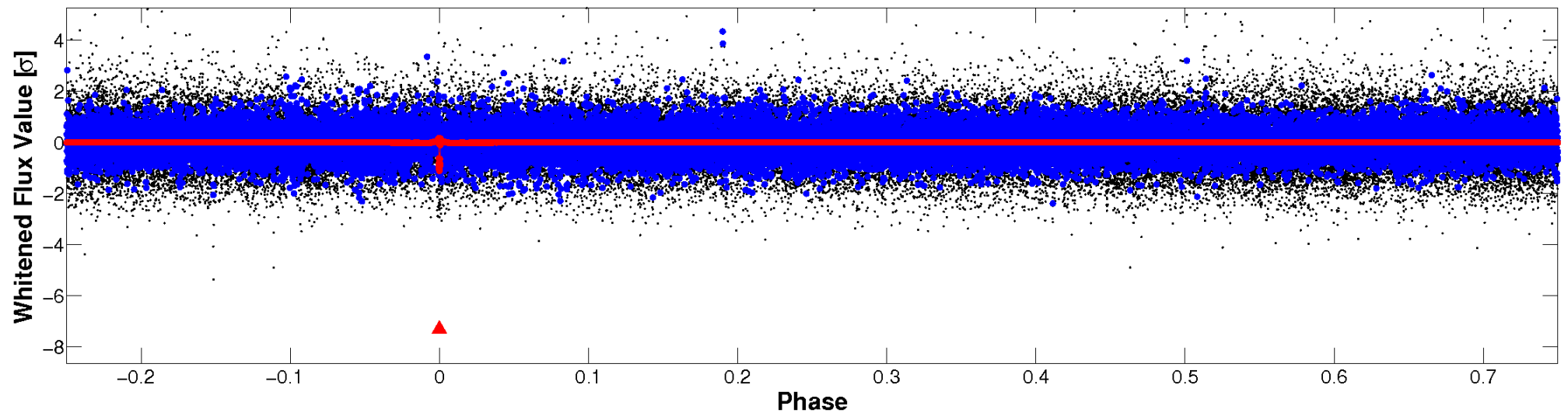


# Non-Whitened Vs. Whitened Light Curve

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

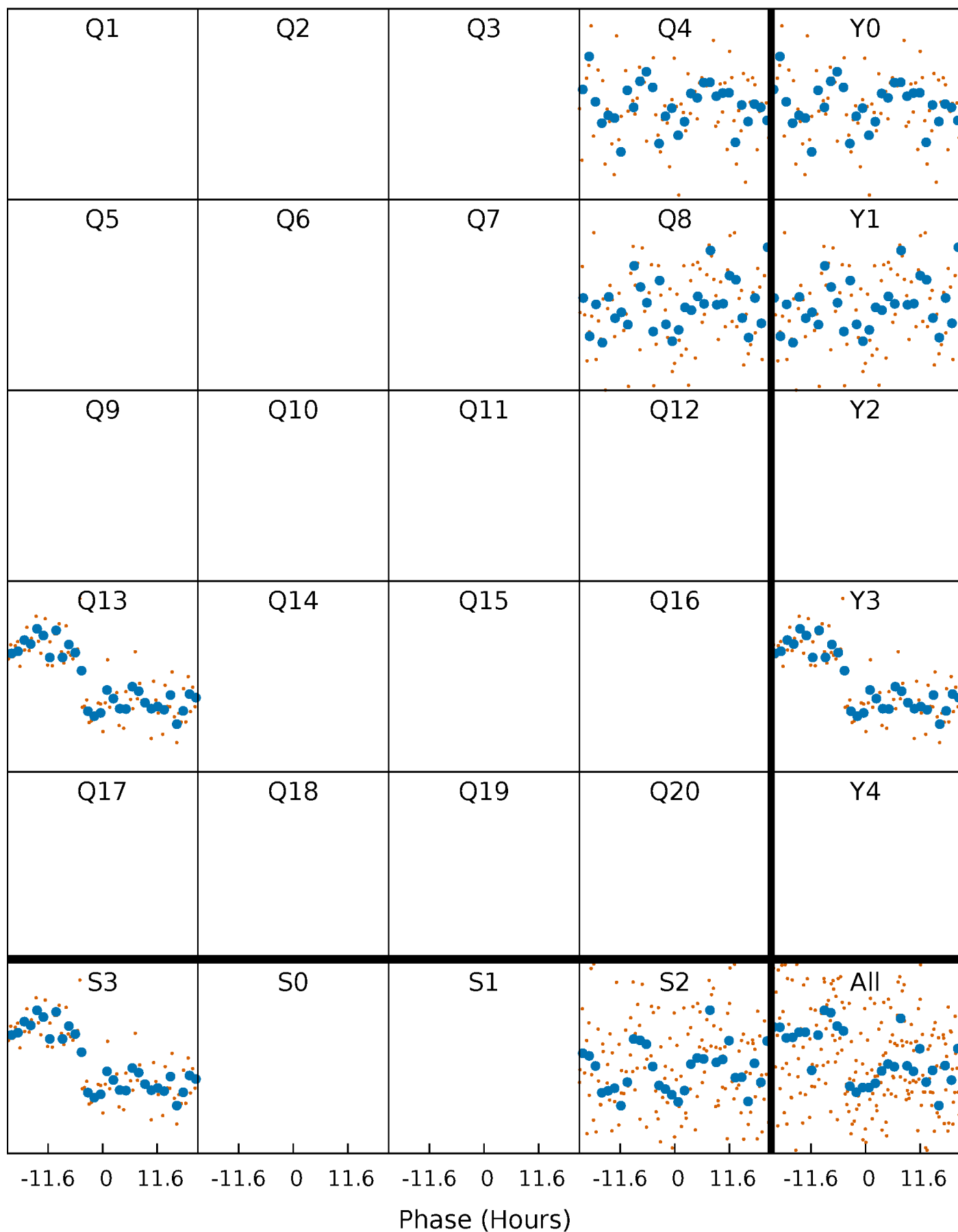


**Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)**



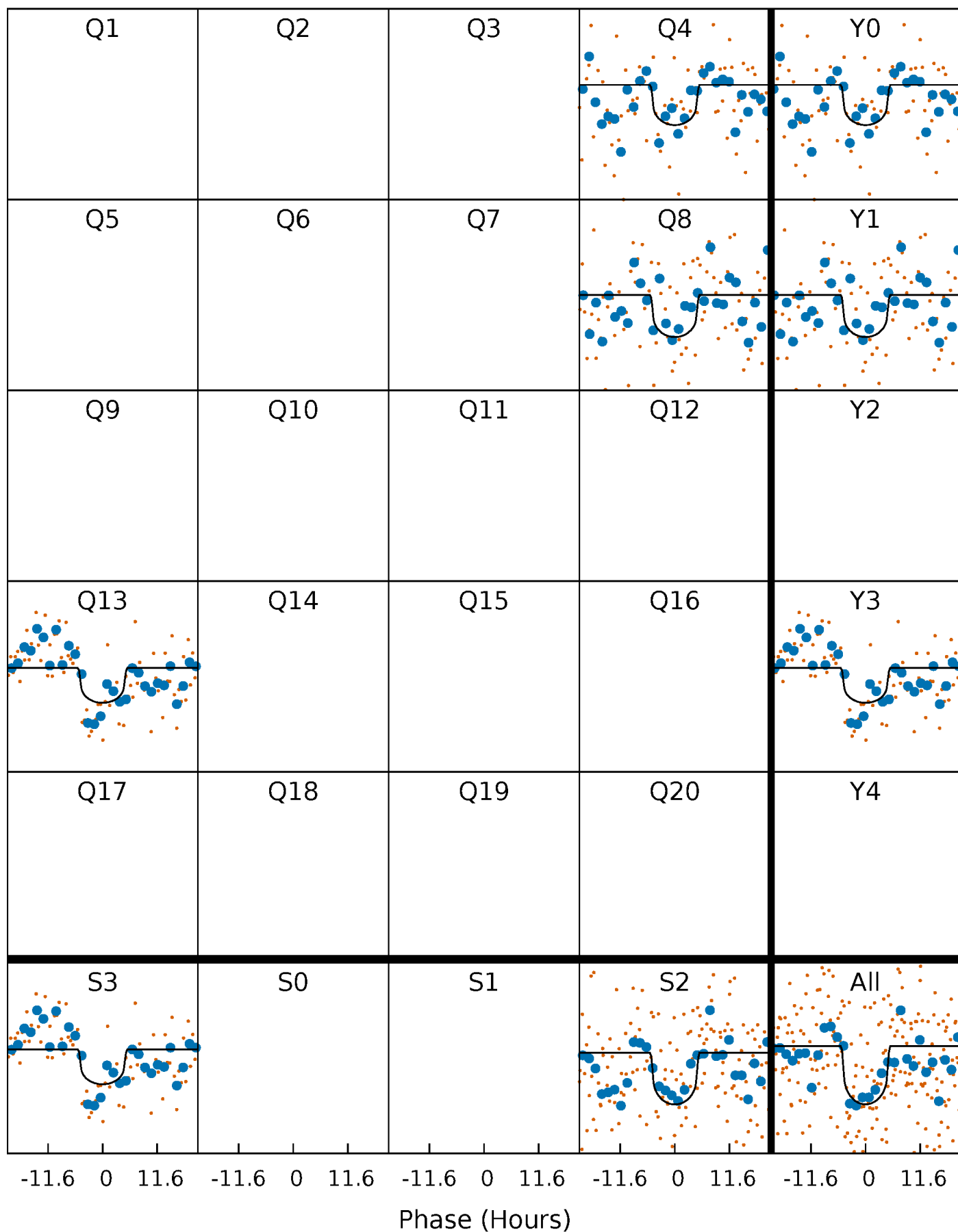
# PDC Quarter-Phased Transit Curves

TCE 009172414-01 P=420.273826 Days  $T_0=364.050245$  (BKJD)



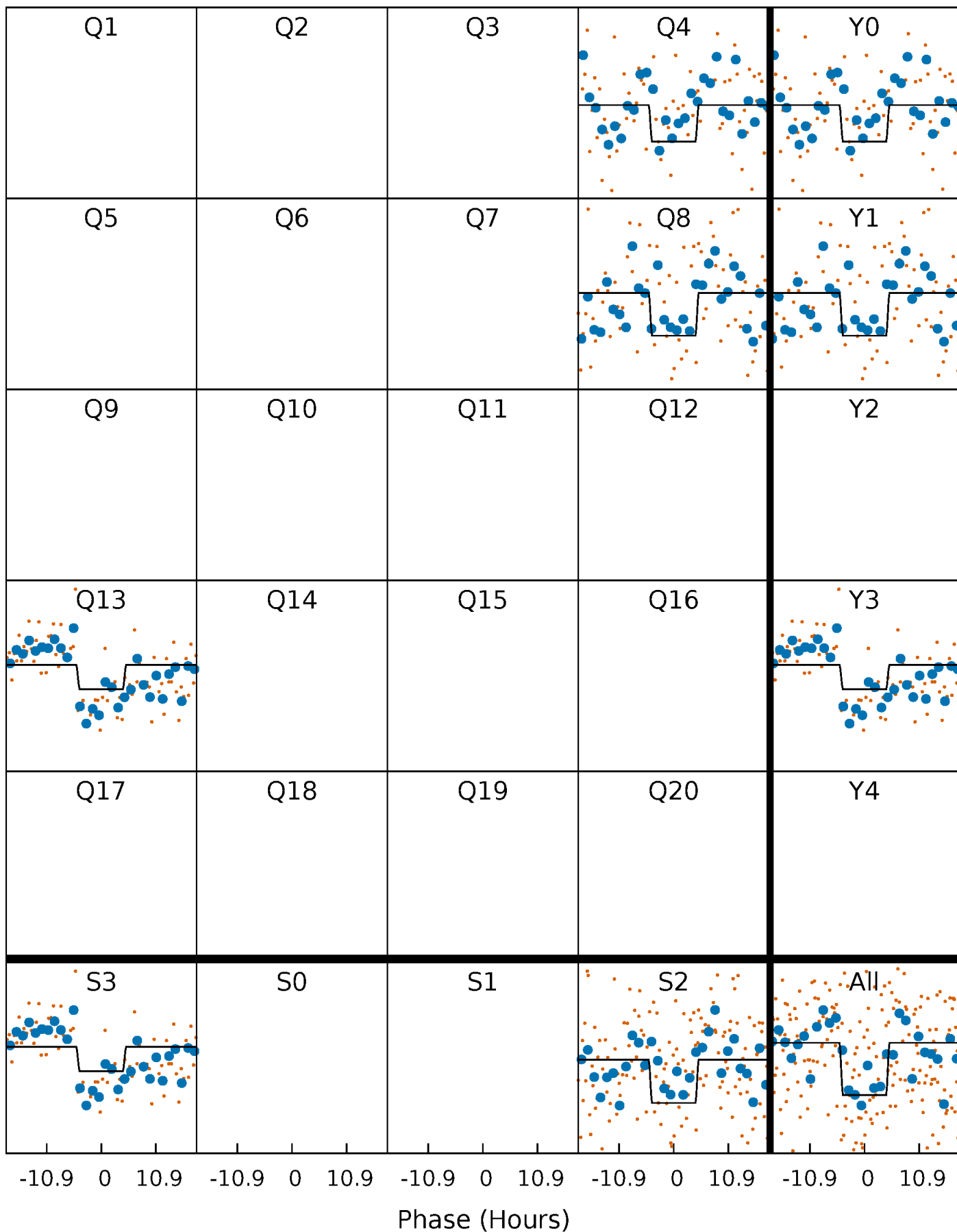
# DV Quarter-Phased Transit Curves

TCE 009172414-01 P=420.273826 Days  $T_0=364.050245$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

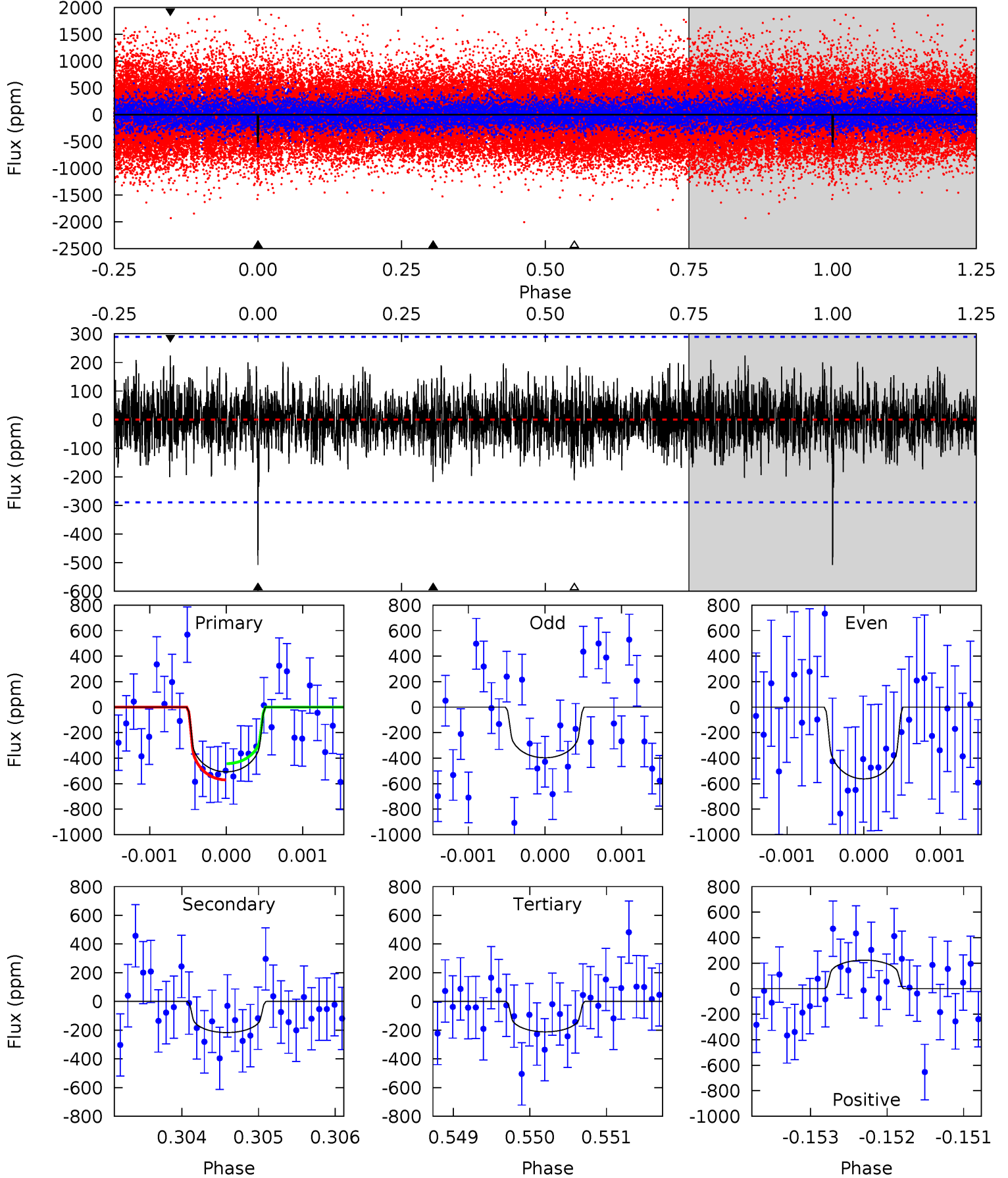
TCE 009172414-01 P=420.291084 Days  $T_0=364.027477$  (BKJD)



# DV Model-Shift Uniqueness Test

009172414-01,  $P = 420.273826$  Days,  $E = 364.050245$  Days

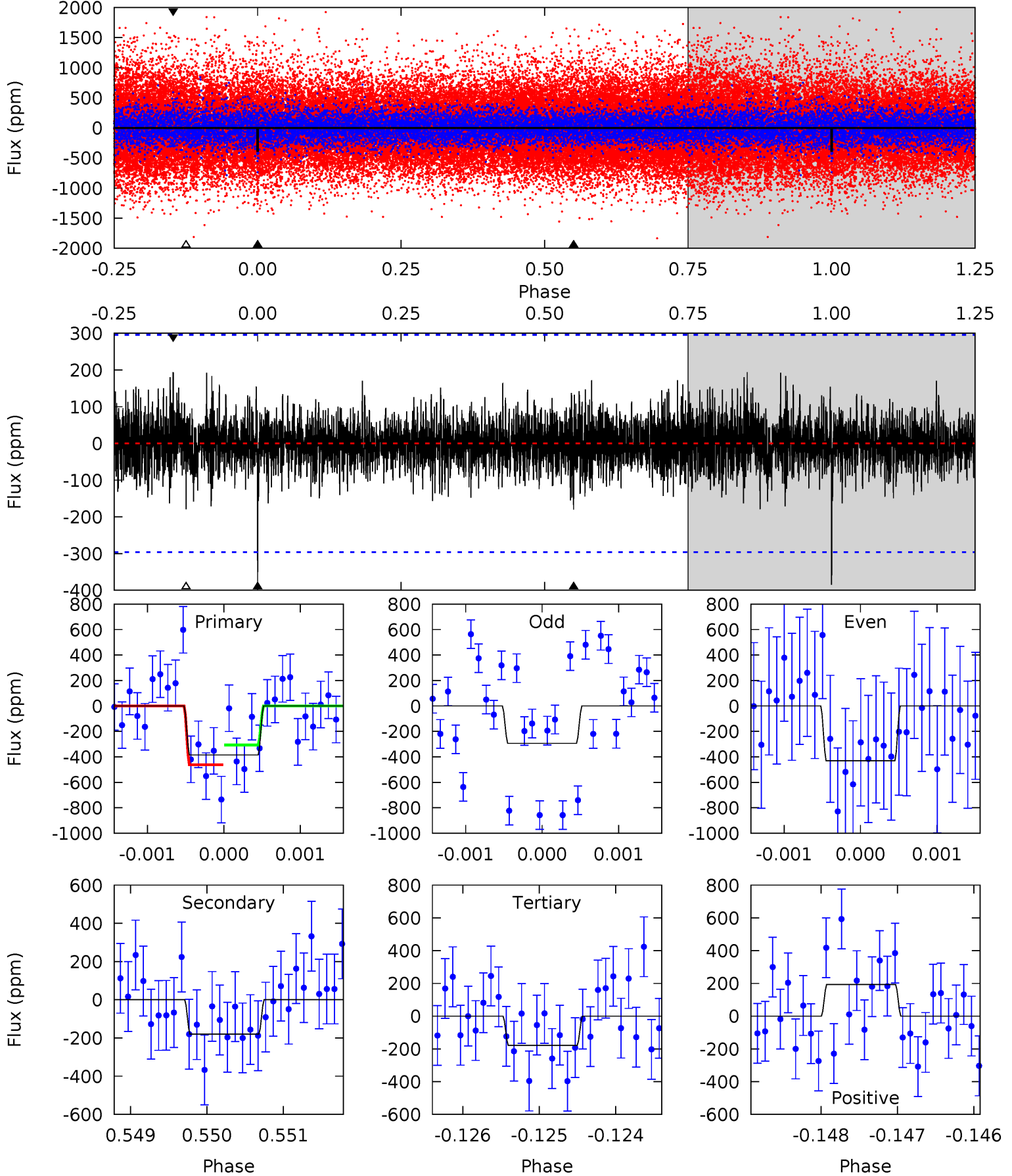
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
9.55	4.08	3.99	4.21	5.45	3.28	1.17	5.57	5.35	0.09	-0.13	1.48	1.15	0.31	1.20



# Alt Model-Shift Uniqueness Test

009172414-01, P = 420.291084 Days, E = 364.027477 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
7.09	3.32	3.31	3.57	5.46	3.30	0.89	3.78	3.52	0.01	-0.25	1.17	1.31	0.33	1.43



### Stellar Parameters For KIC 009172414

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$5094^{+151}_{-136}$	$4.551^{+0.077}_{-0.056}$	$-0.340^{+0.350}_{-0.300}$	$0.736^{+0.079}_{-0.079}$	$0.702^{+0.100}_{-0.050}$	$2.485^{+0.873}_{-0.501}$
	+3%/-3%	+2%/-1%	+103%/-88%	+11%/-11%	+14%/-7%	+35%/-20%
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 009172414-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	$A_{\text{obs}}$
DV	$-217 \pm 53$	$1.99^{+1.40}_{-1.12}$	$271^{+11}_{-11}$	$4135^{+1719}_{-709}$	$29437^{+109132}_{-20030}$
Alt.	$-180 \pm 54$	$2.00^{+1.26}_{-1.27}$	$272^{+11}_{-11}$	$3980^{+1988}_{-634}$	$23344^{+141238}_{-15108}$

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

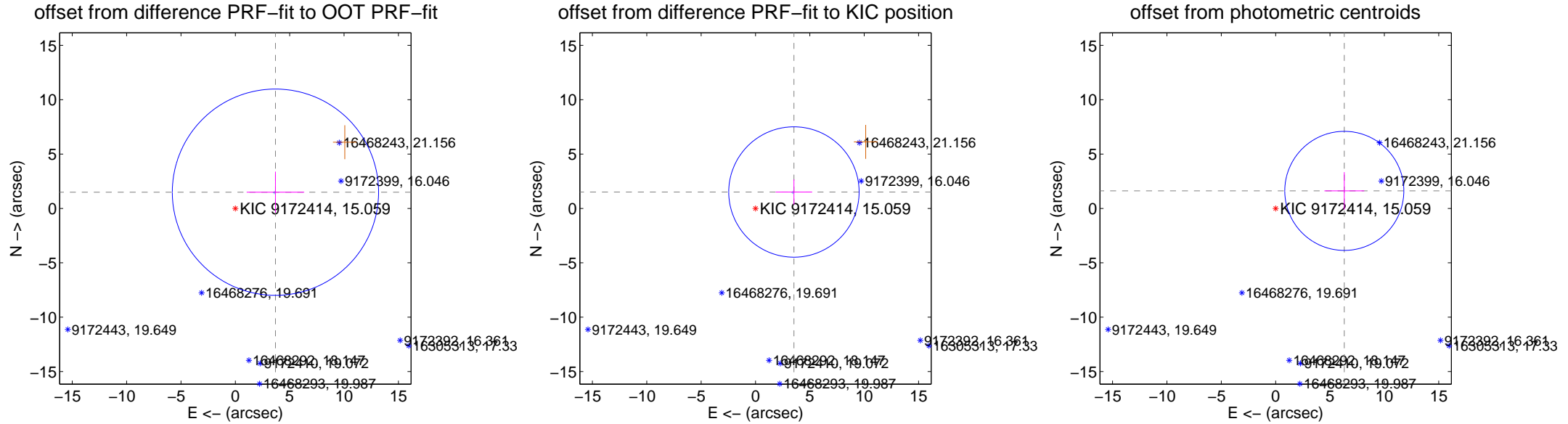
## DV Centroid Data

Supplemental centroid analysis for 009172414-01. Kepler magnitude: 15.06. Transit SNR 7.28

There are 1 quarters with good PRF difference image offsets

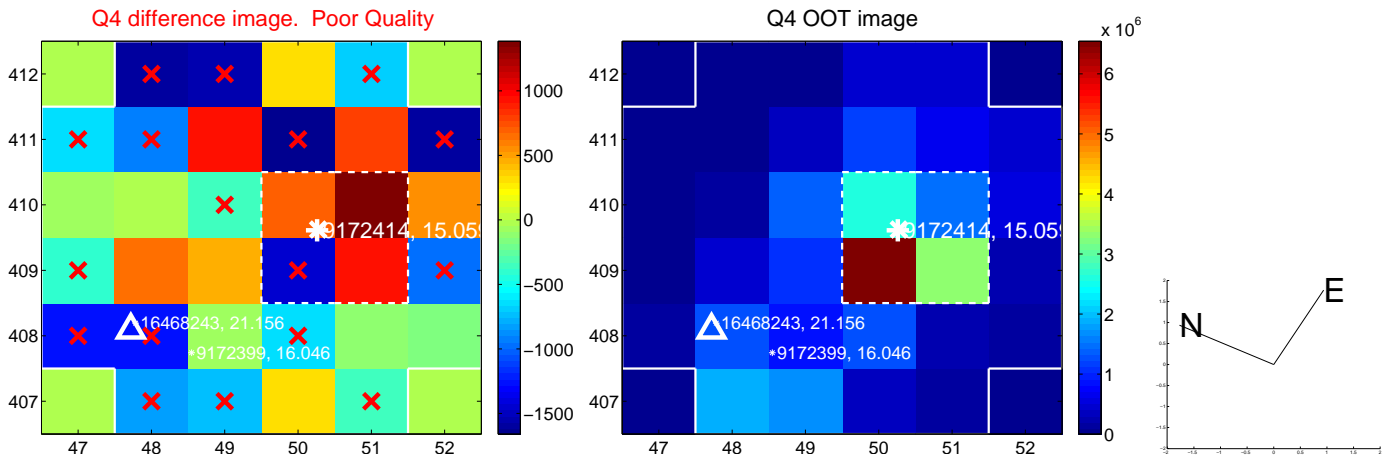
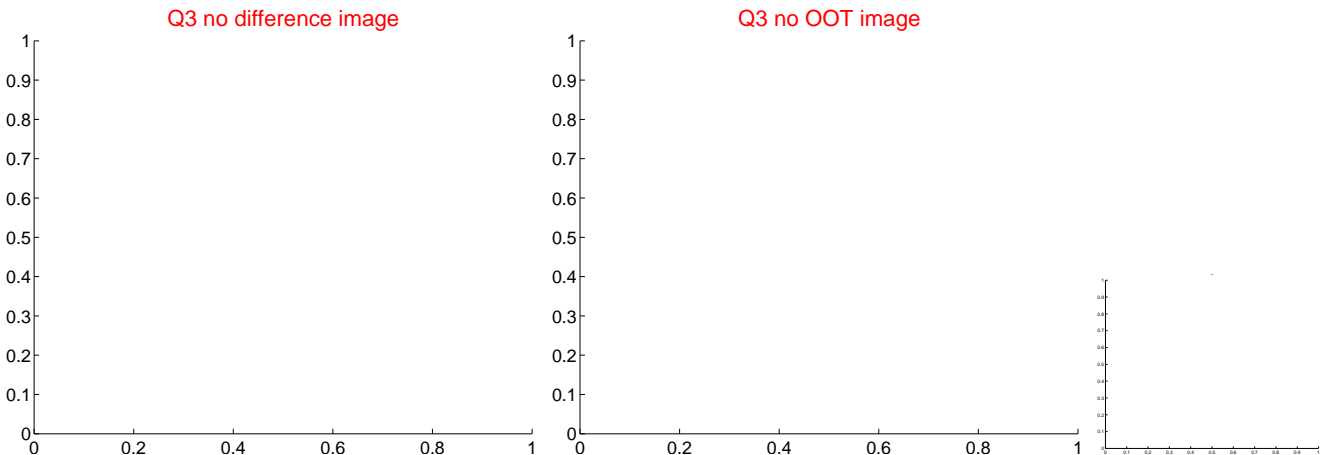
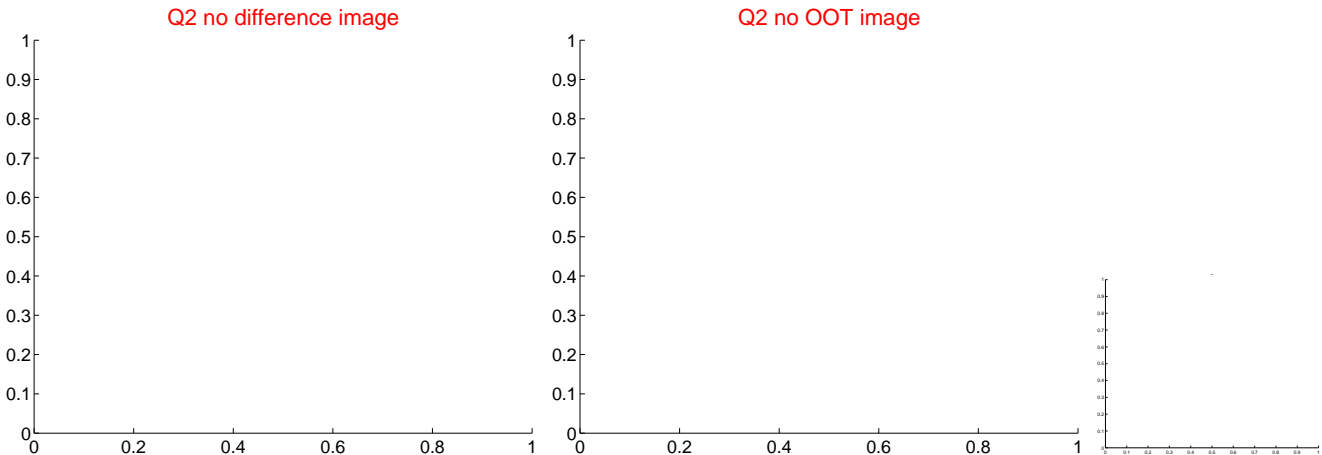
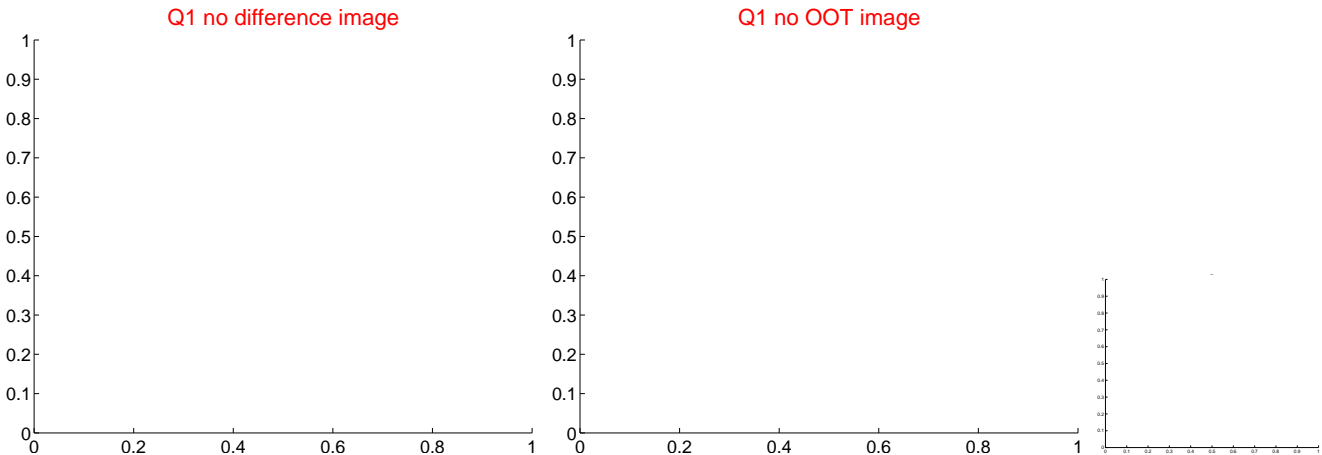
The direct PRF centroid is offset from the target star catalog position by about 0.16 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$3.980 \pm 3.162$	1.26	$-3.689 \pm 2.645$	$1.494 \pm 1.892$
PRF-fit source offset from KIC position	$3.844 \pm 1.998$	1.92	$-3.535 \pm 1.677$	$1.512 \pm 1.163$
photometric centroid source offset	$6.52 \pm 1.82$	3.57	$-6.31 \pm 1.83$	$1.62 \pm 1.72$

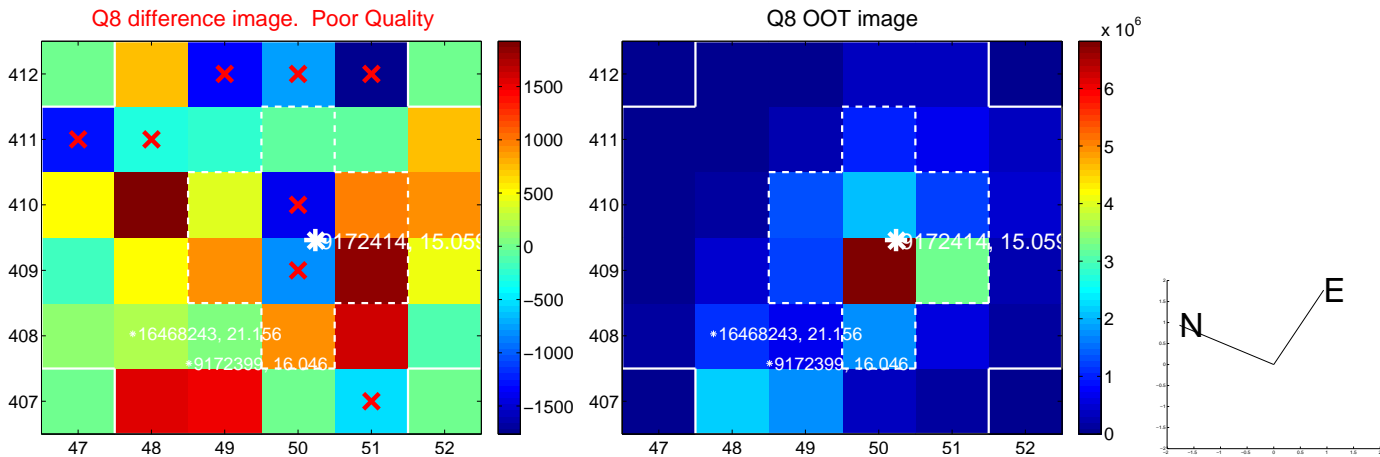
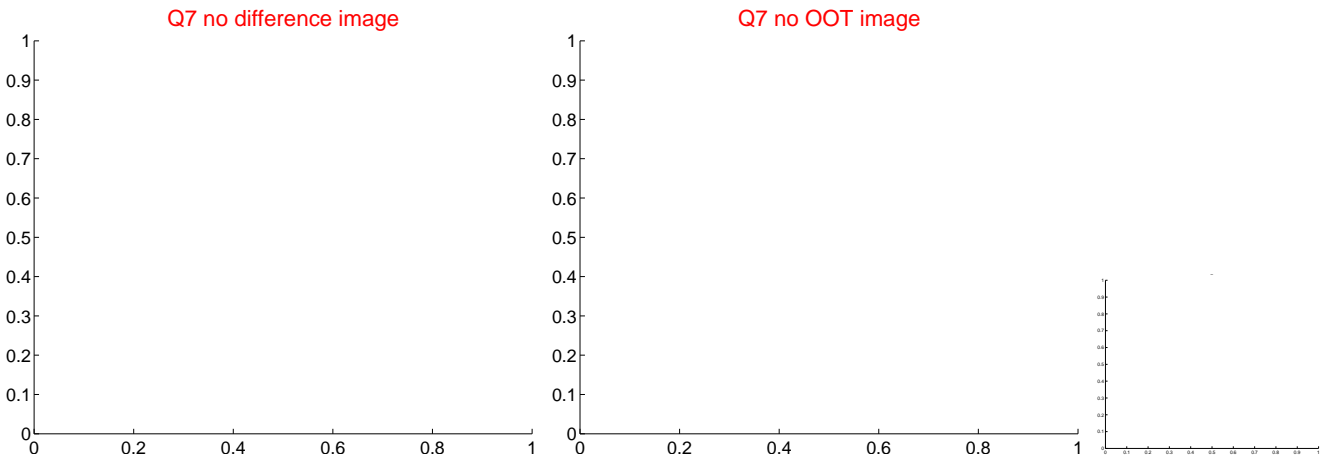
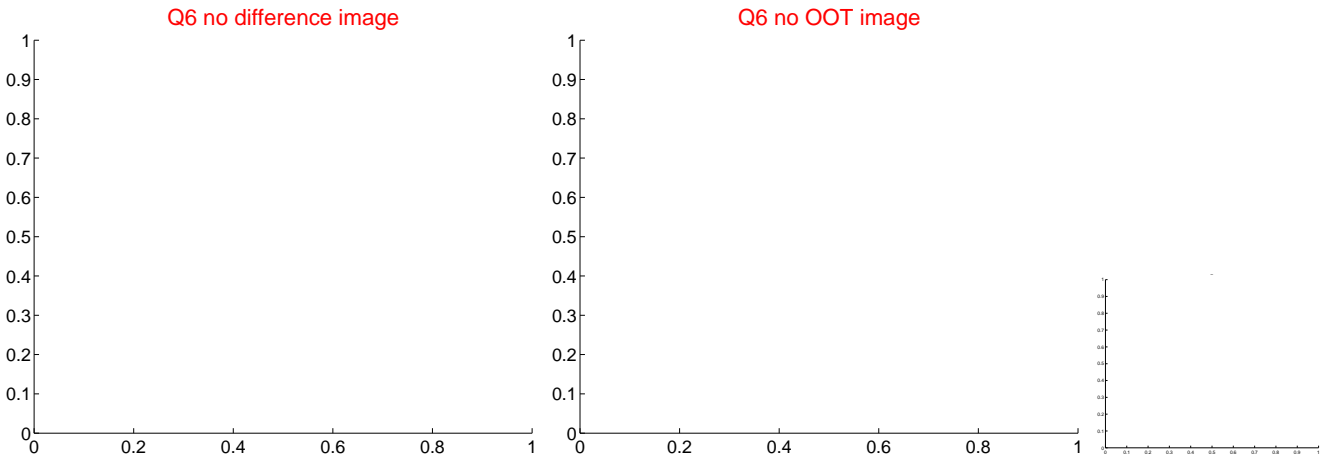
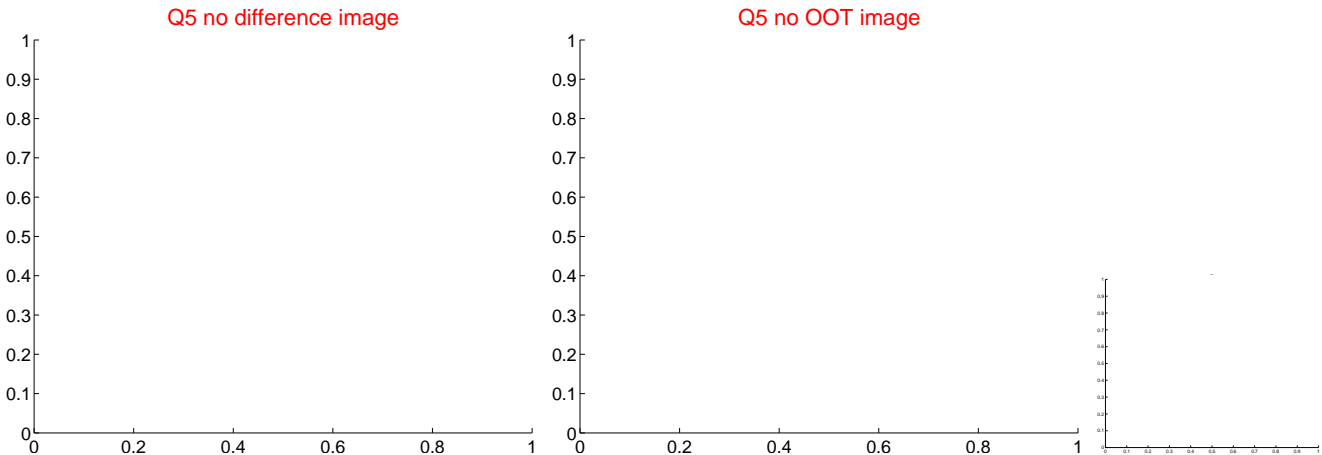


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: three-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



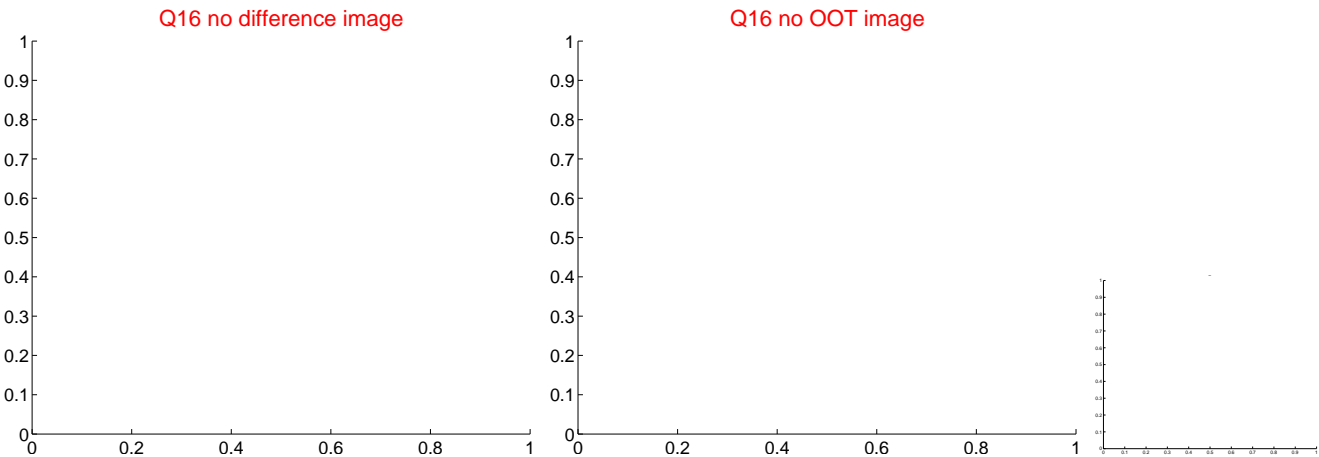
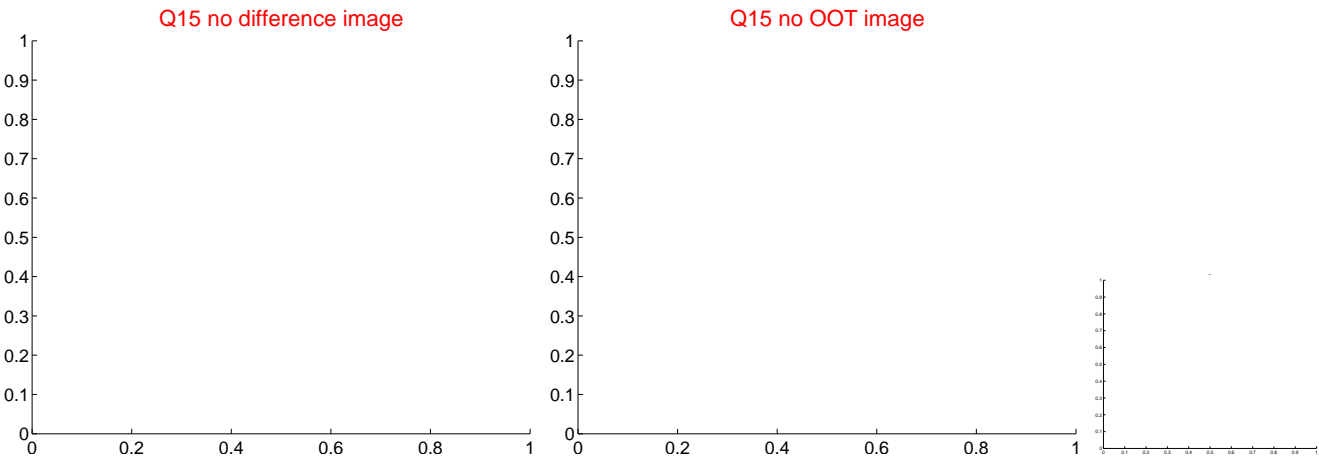
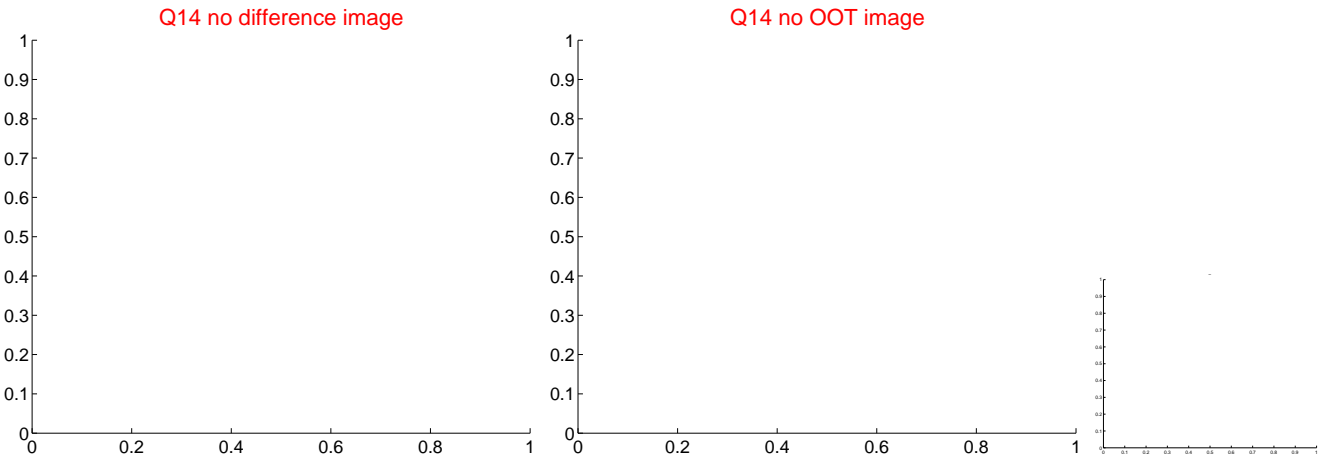
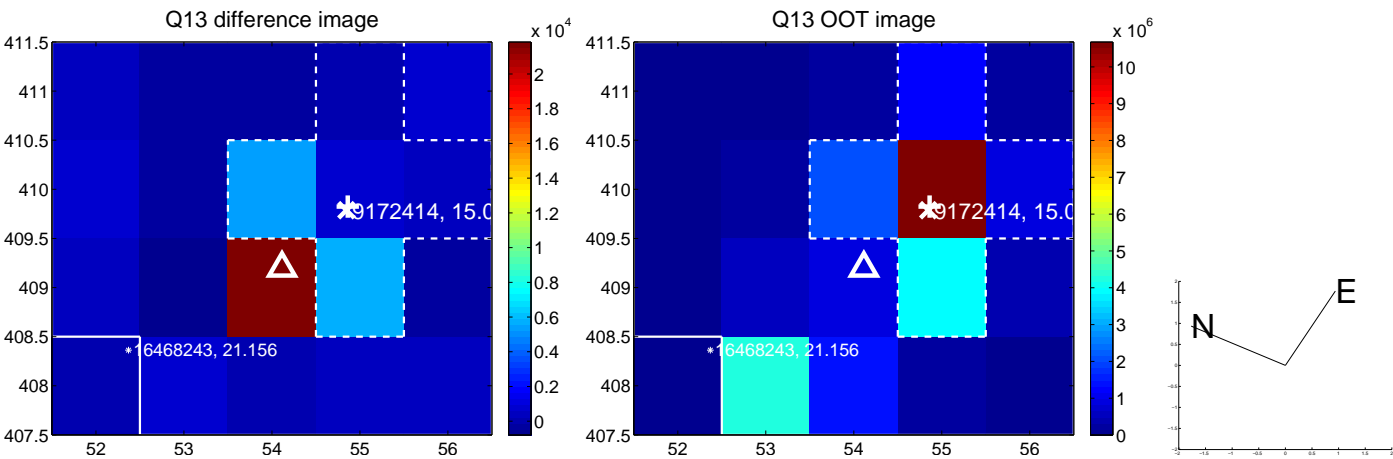
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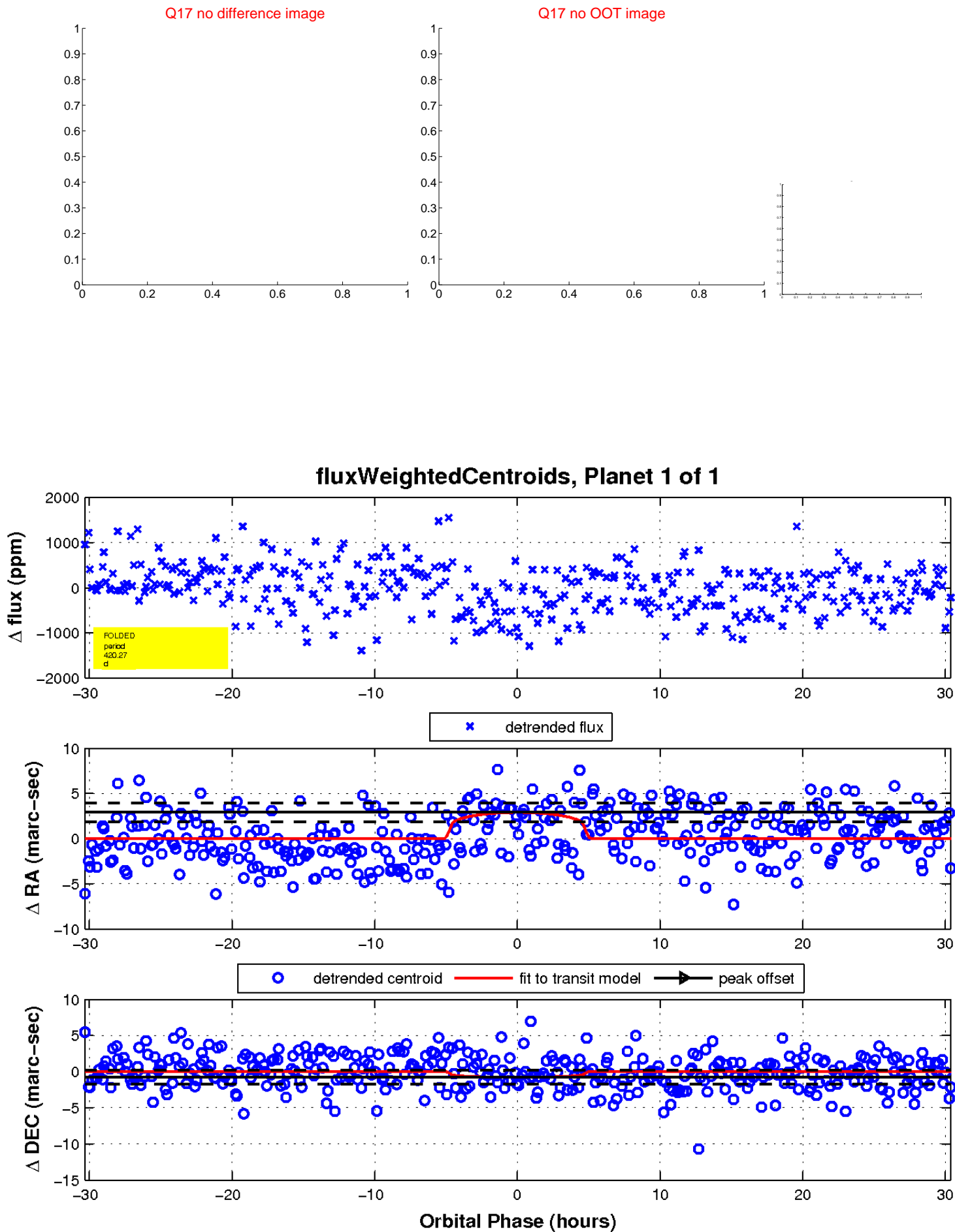
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UKIRT Image

