

# KIC 009327226

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
009327226-01	OBS	No	421.599706	274.653517	130.4	13.633	7.3	7.5	0.97	5628	1.28	0.72

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
009327226-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL—ALL_TRANS_CHASES—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.

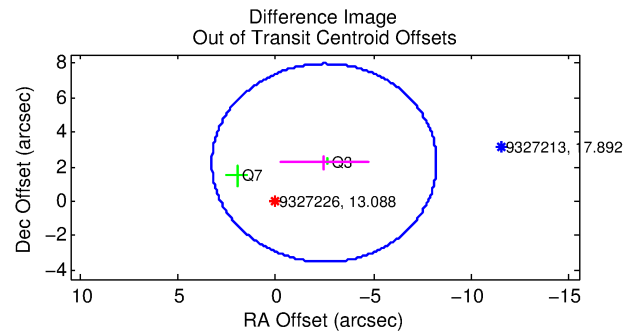
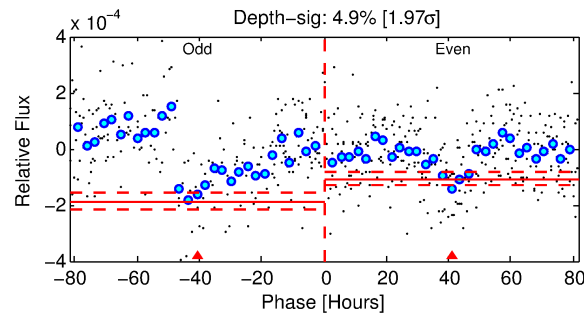
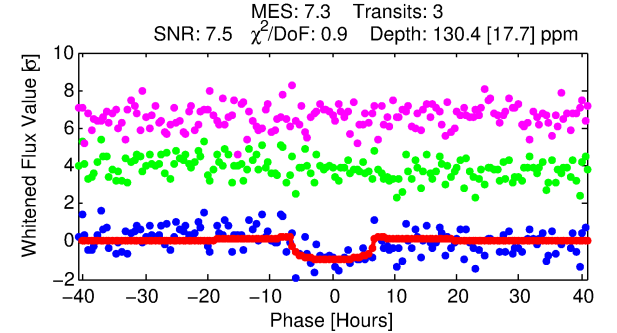
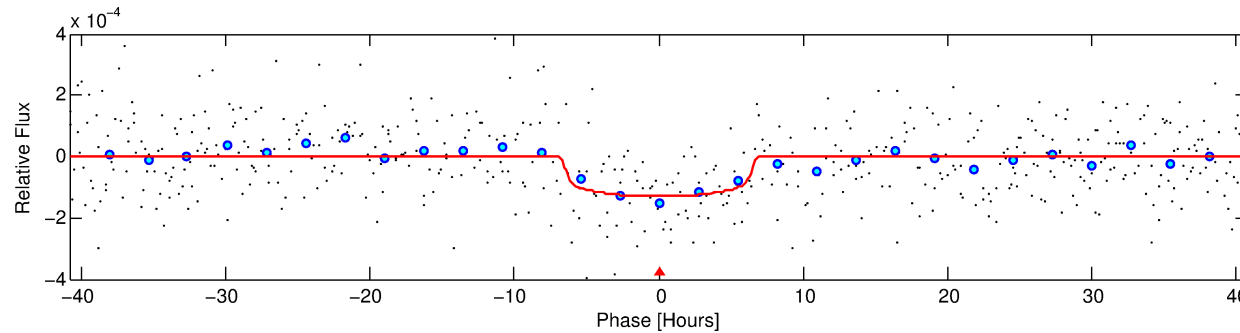
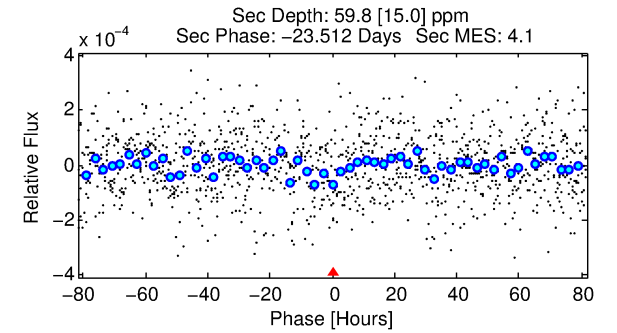
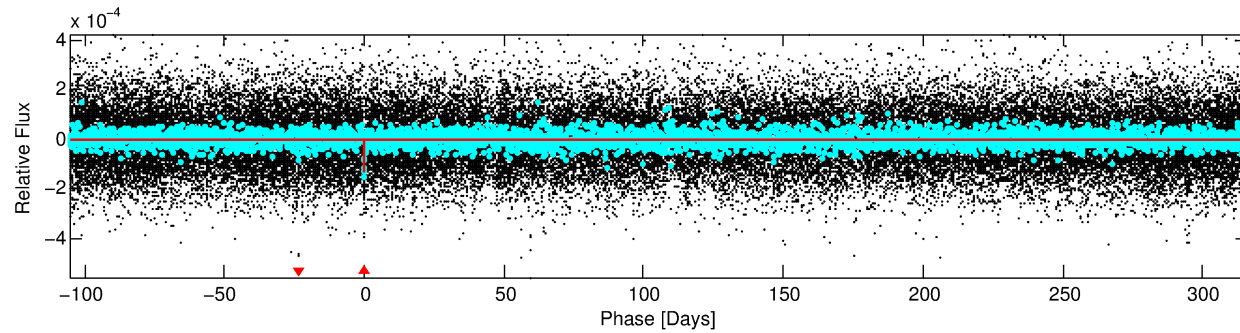
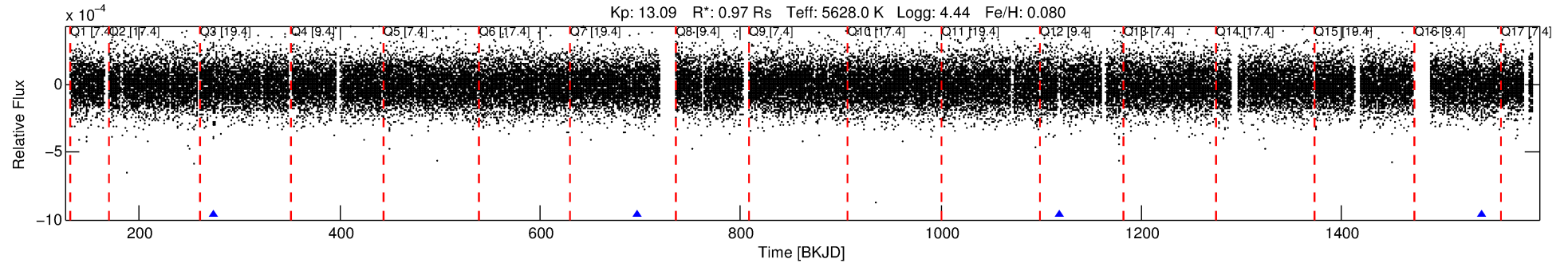
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 009327226-01

No Significant Match Found

# DV One-Page Summary

KIC: 9327226 Candidate: 1 of 1 Period: 421.600 d



## DV Fit Results:

Period = 421.59971 [0.01075] d  
Epoch = 274.6535 [0.0204] BKJD  
Rp/R\* = 0.0121 [0.0040]  
a/R\* = 124.77 [179.98]  
b = 0.86 [0.43]  
Seff = 0.72 [0.20]  
Teff = 235 [16] K  
Rp = 1.28 [0.49] Re  
a = 1.0820 [0.1805] AU  
Ag = 23549.13 [17514.27] [1.34σ]  
Teffp = 4498 [801] K [5.32σ]

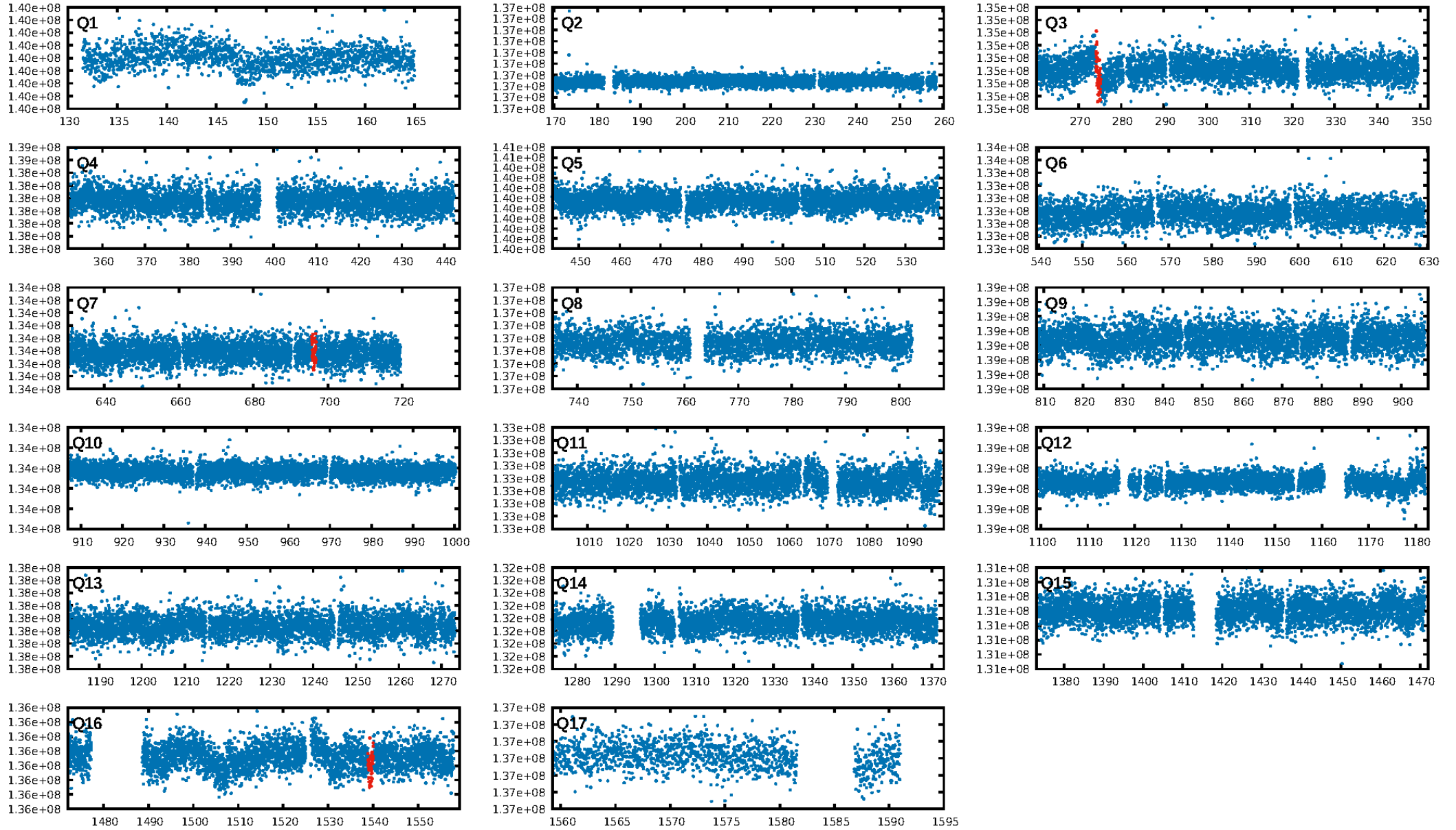
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: 14.9%  
ModelChiSquareGof-sig: 99.9%  
**Bootstrap-pfa: 1.79e-10**  
RollingBand-fgt: 1.00 [3/3]  
GhostDiagnostic-chr: 1.437  
**Centroid-sig: 0.0%**  
Centroid-so: 4.920 arcsec [2.88σ]  
OotOffset-rm: 3.333 arcsec [1.74σ]  
**KicOffset-rm: 3.344 arcsec [3.21σ]**  
OotOffset-st: 0/2/0/0 [2]  
KicOffset-st: 0/2/0/0 [2]  
DiffImageQuality-fgm: 1.00 [2/2]  
DiffImageOverlap-fno: 1.00 [3/3]

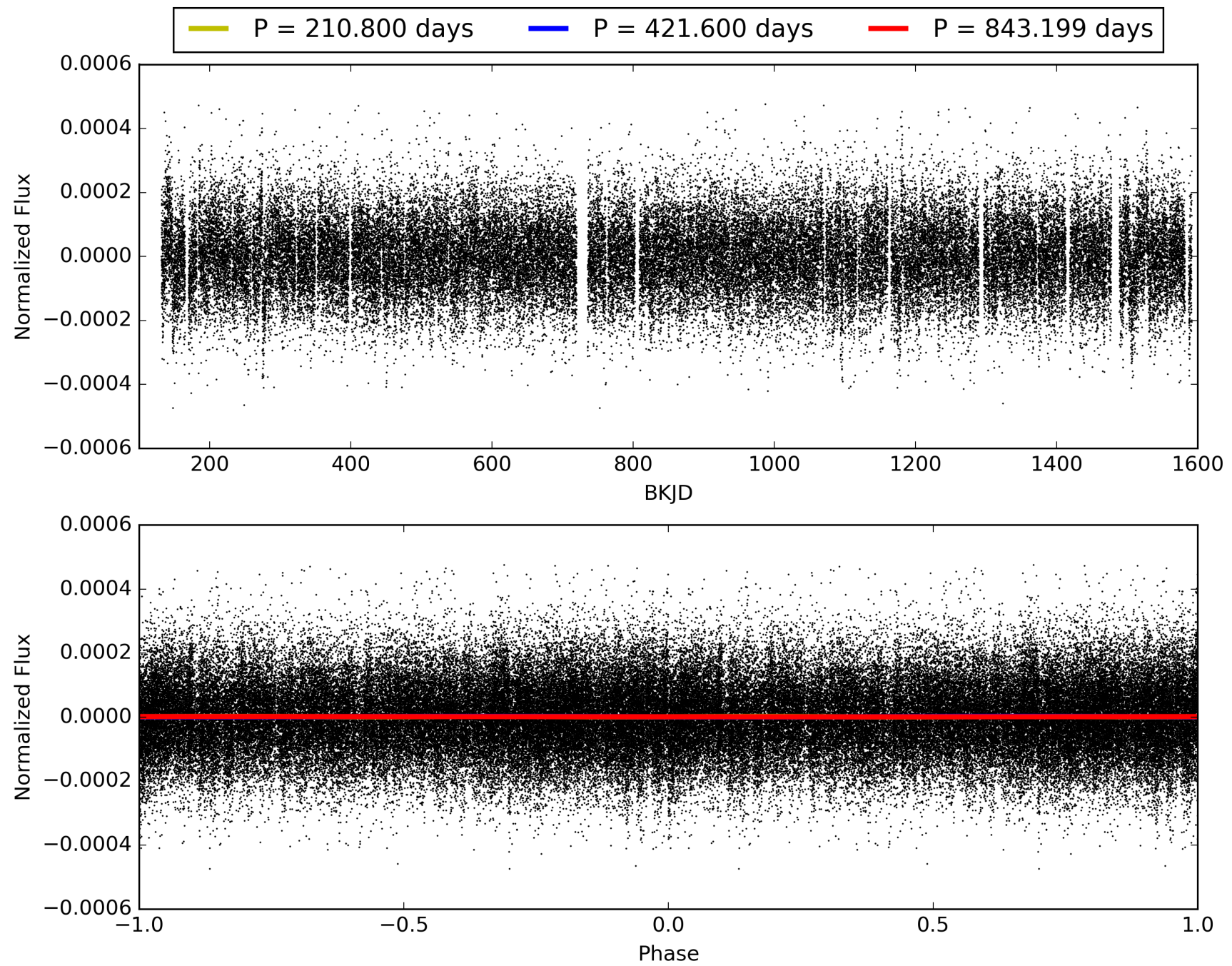
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 21:36:11 Z

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

# TCE 009327226-01, PDC Light Curves

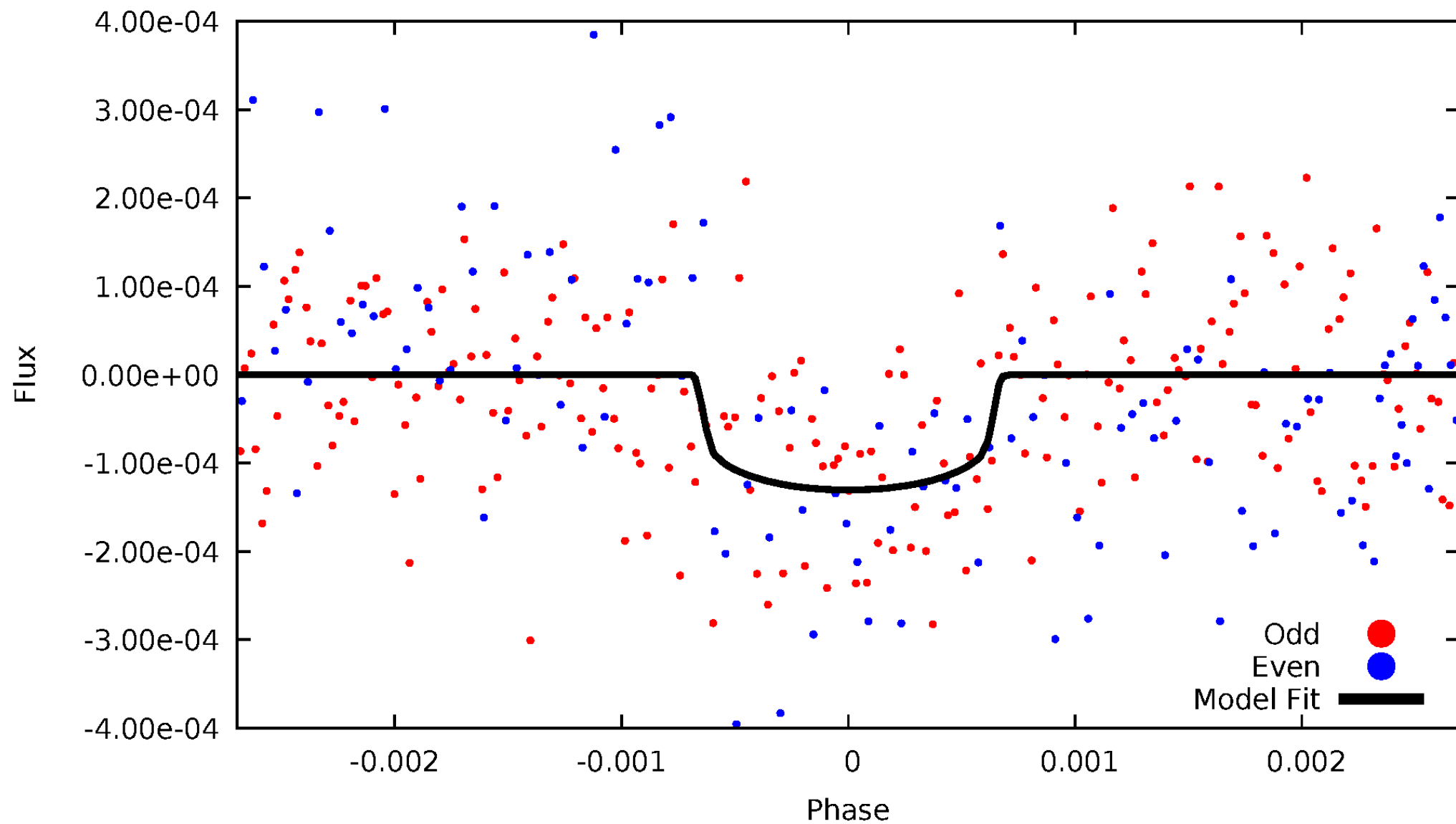


TCE 009327226-01



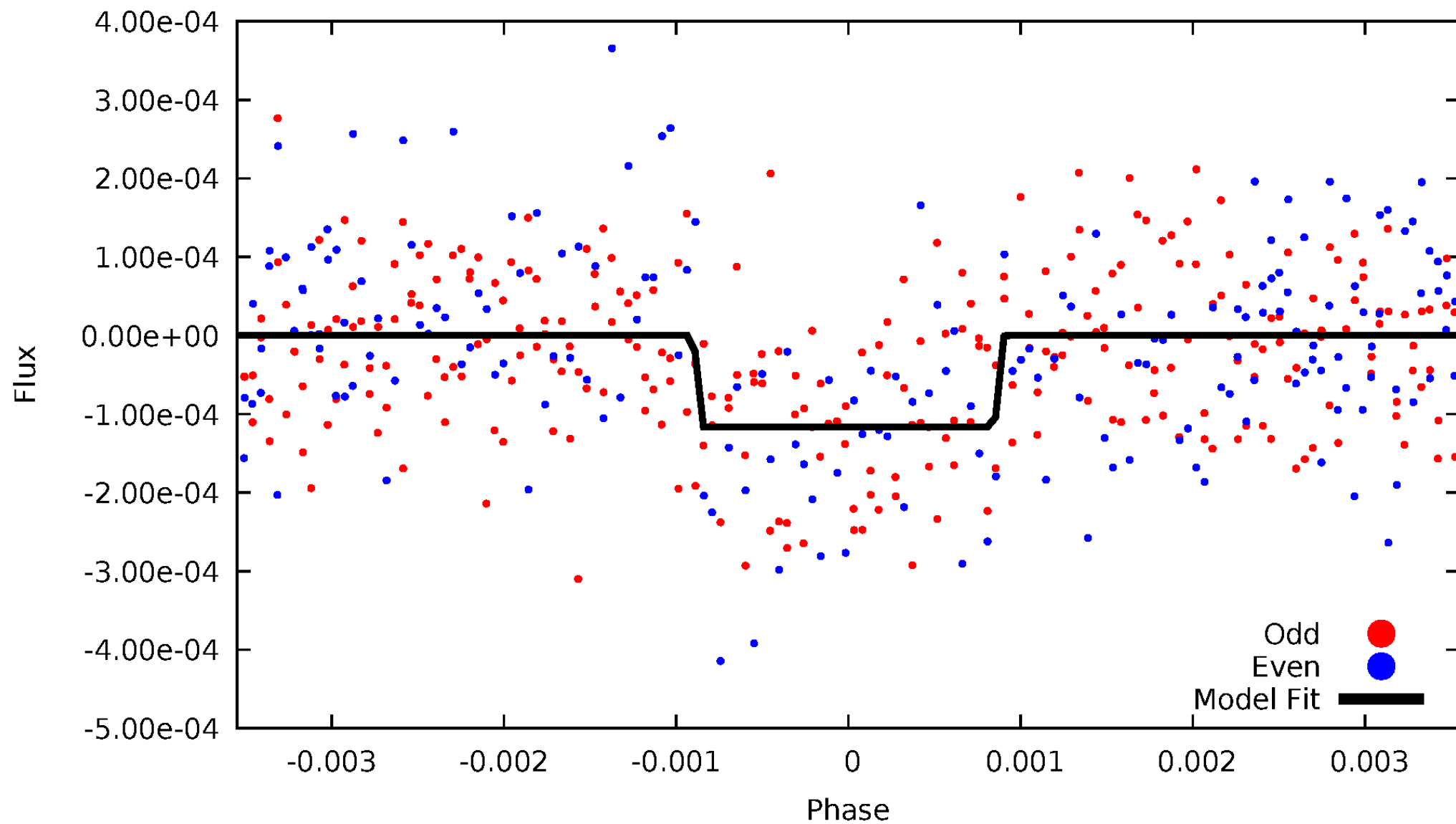
# DV Odd/Even

TCE 009327226-01

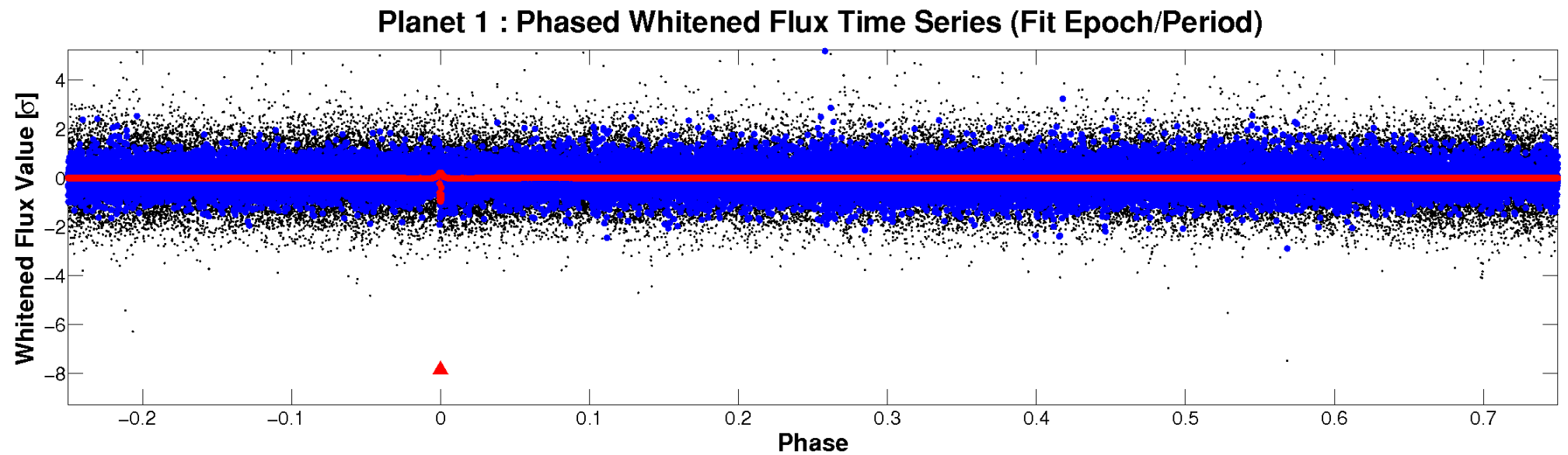
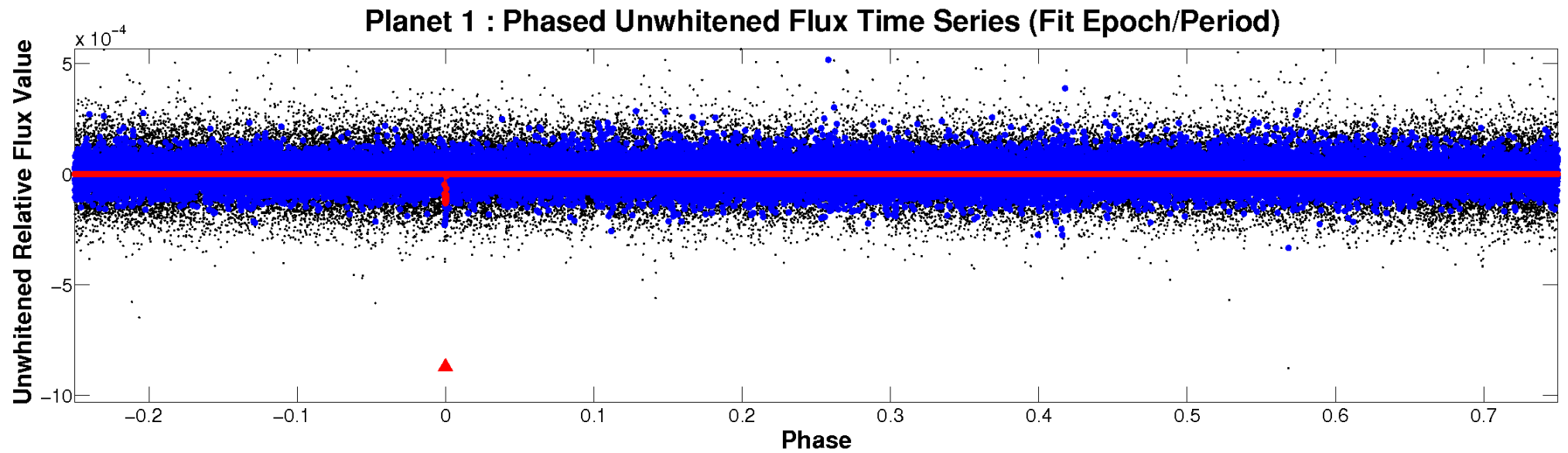


# ALT Odd/Even

TCE 009327226-01



# Non-Whitened Vs. Whitened Light Curve



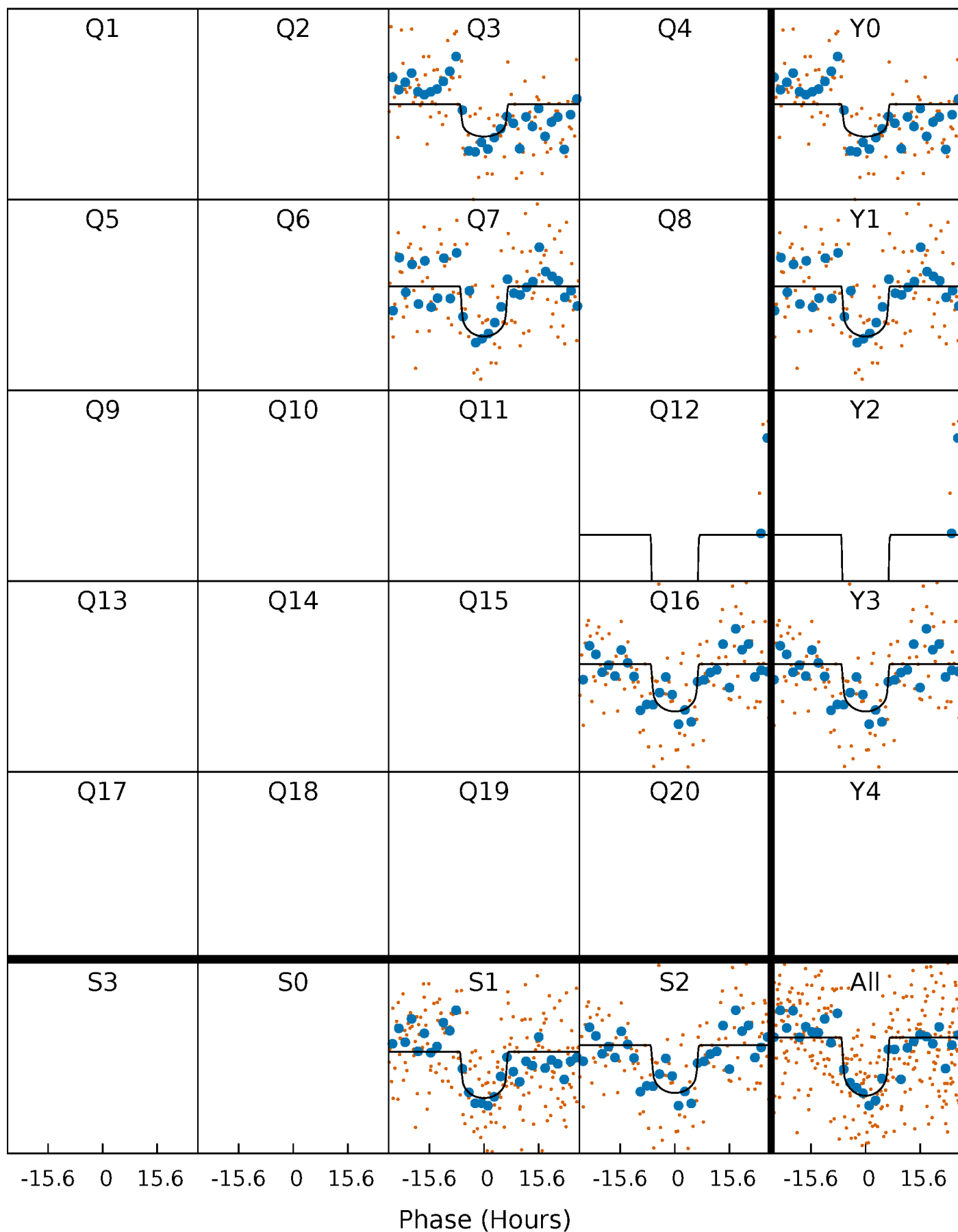
# PDC Quarter-Phased Transit Curves

TCE 009327226-01 P=421.599706 Days  $T_0=274.653517$  (BKJD)



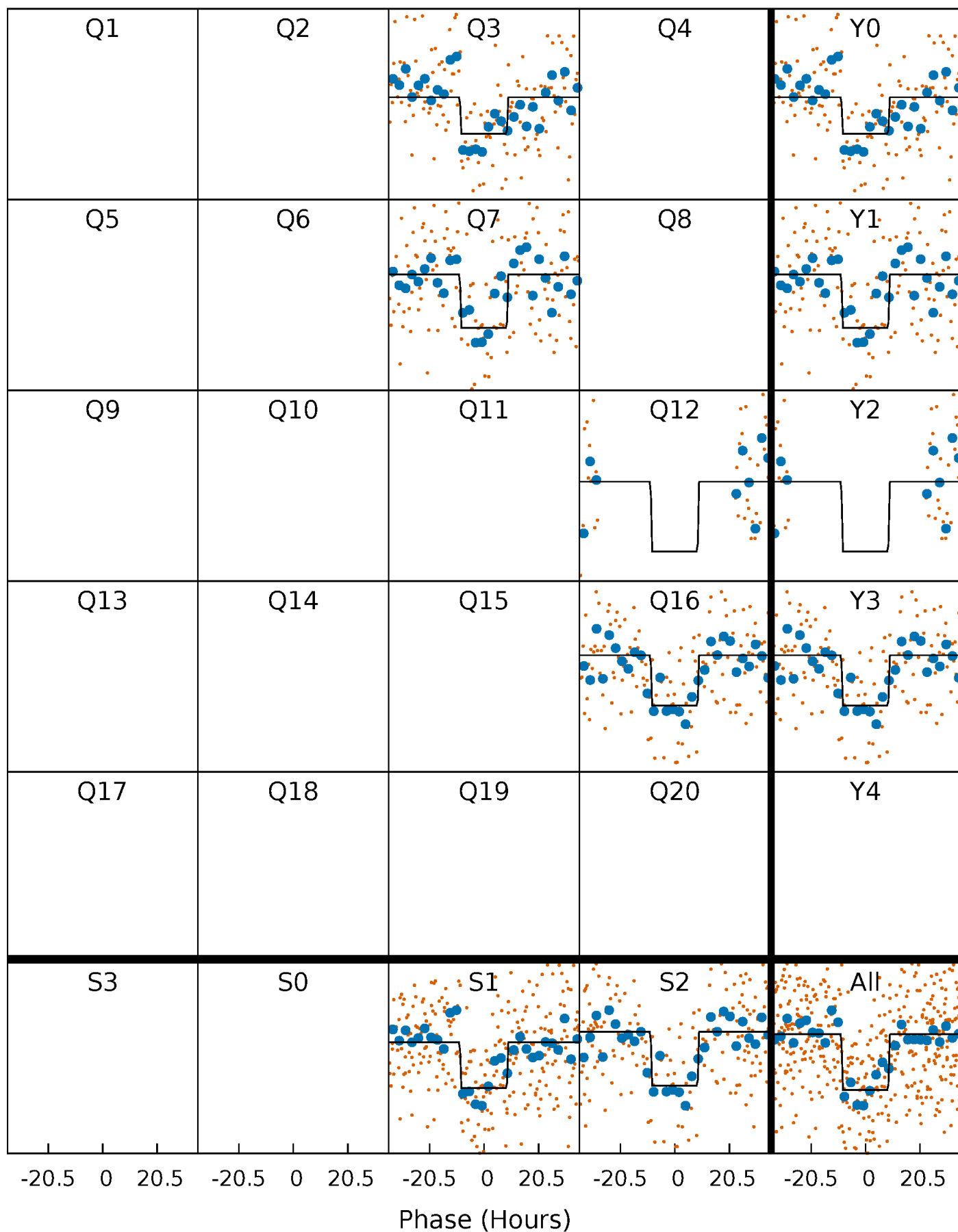
# DV Quarter-Phased Transit Curves

TCE 009327226-01 P=421.599706 Days  $T_0=274.653517$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

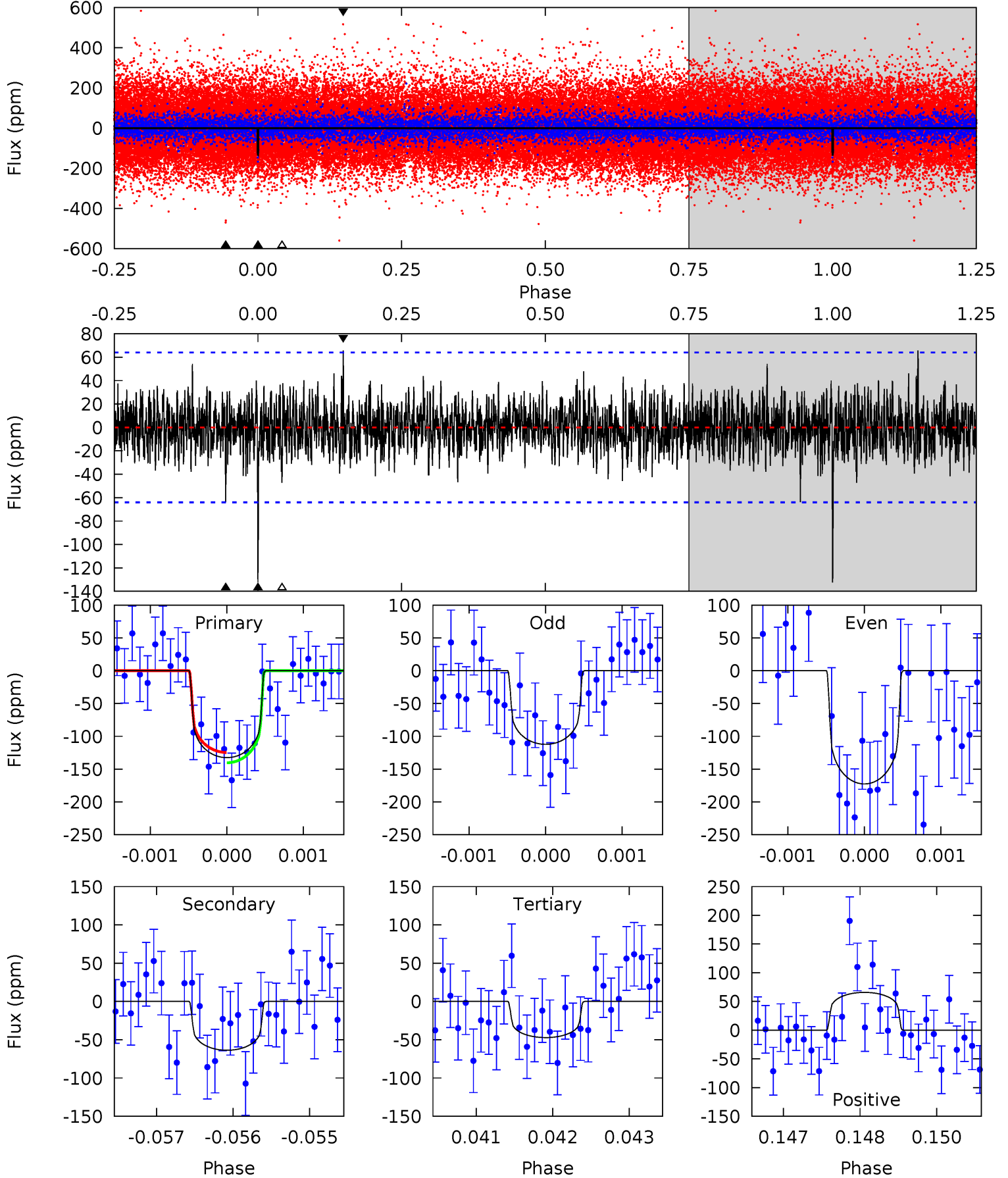
TCE 009327226-01 P=421.564776 Days  $T_0=274.758520$  (BKJD)



# DV Model-Shift Uniqueness Test

009327226-01, P = 421.599706 Days, E = 274.653517 Days

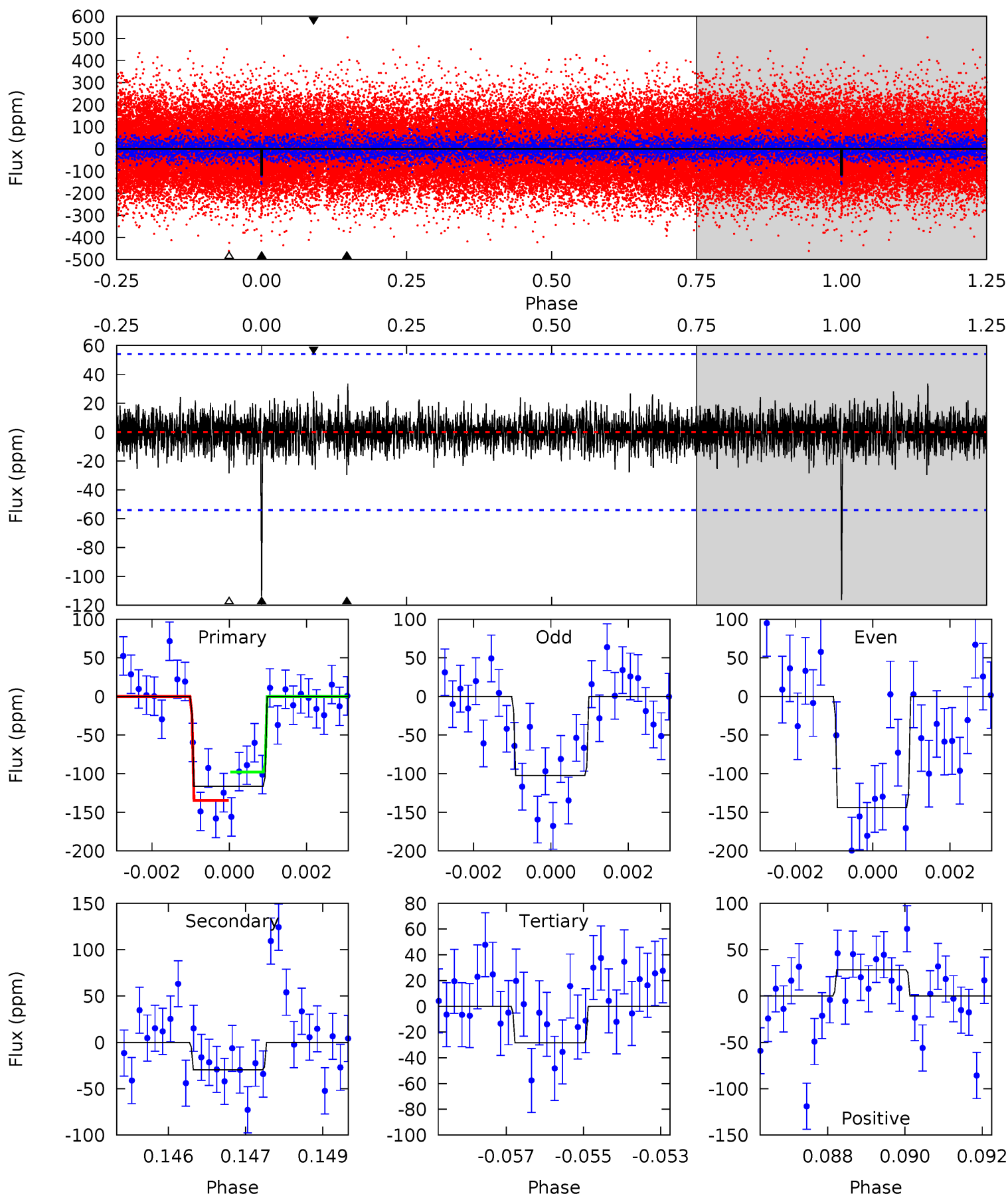
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
11.2	5.37	3.97	5.54	5.39	3.19	1.26	7.18	5.61	1.40	-0.17	2.39	1.06	0.33	0.66



# Alt Model-Shift Uniqueness Test

009327226-01, P = 421.564776 Days, E = 274.758520 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
11.5	2.93	2.81	2.79	5.34	3.11	0.78	8.69	8.71	0.12	0.14	1.94	1.02	0.22	1.82



### Stellar Parameters For KIC 009327226

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$5628^{+154}_{-171}$	$4.444^{+0.084}_{-0.137}$	$0.080^{+0.250}_{-0.300}$	$0.968^{+0.188}_{-0.116}$	$0.951^{+0.097}_{-0.097}$	$1.475^{+0.471}_{-0.561}$
	+3%/-3%	+2%/-3%	+312%/-375%	+19%/-12%	+10%/-10%	+32%/-38%
Source	PHO1	FLK73	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 009327226-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	$A_{\text{obs}}$
DV	$-64 \pm 12$	$1.34^{+0.46}_{-0.44}$	$332^{+17}_{-17}$	$4657^{+862}_{-511}$	$22869^{+26164}_{-10699}$
Alt.	$-30 \pm 10$	$1.15^{+0.46}_{-0.44}$	$332^{+18}_{-17}$	$4242^{+937}_{-542}$	$13994^{+24359}_{-7571}$

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

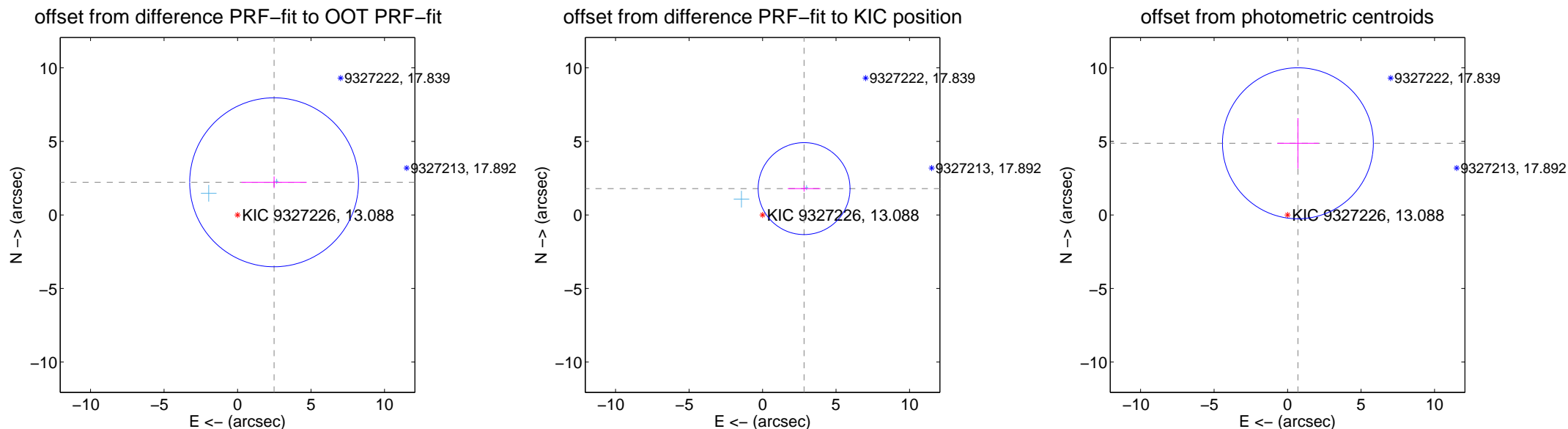
## DV Centroid Data

Supplemental centroid analysis for 009327226-01. Kepler magnitude: 13.09. Transit SNR 7.53

There are 2 quarters with good PRF difference image offsets

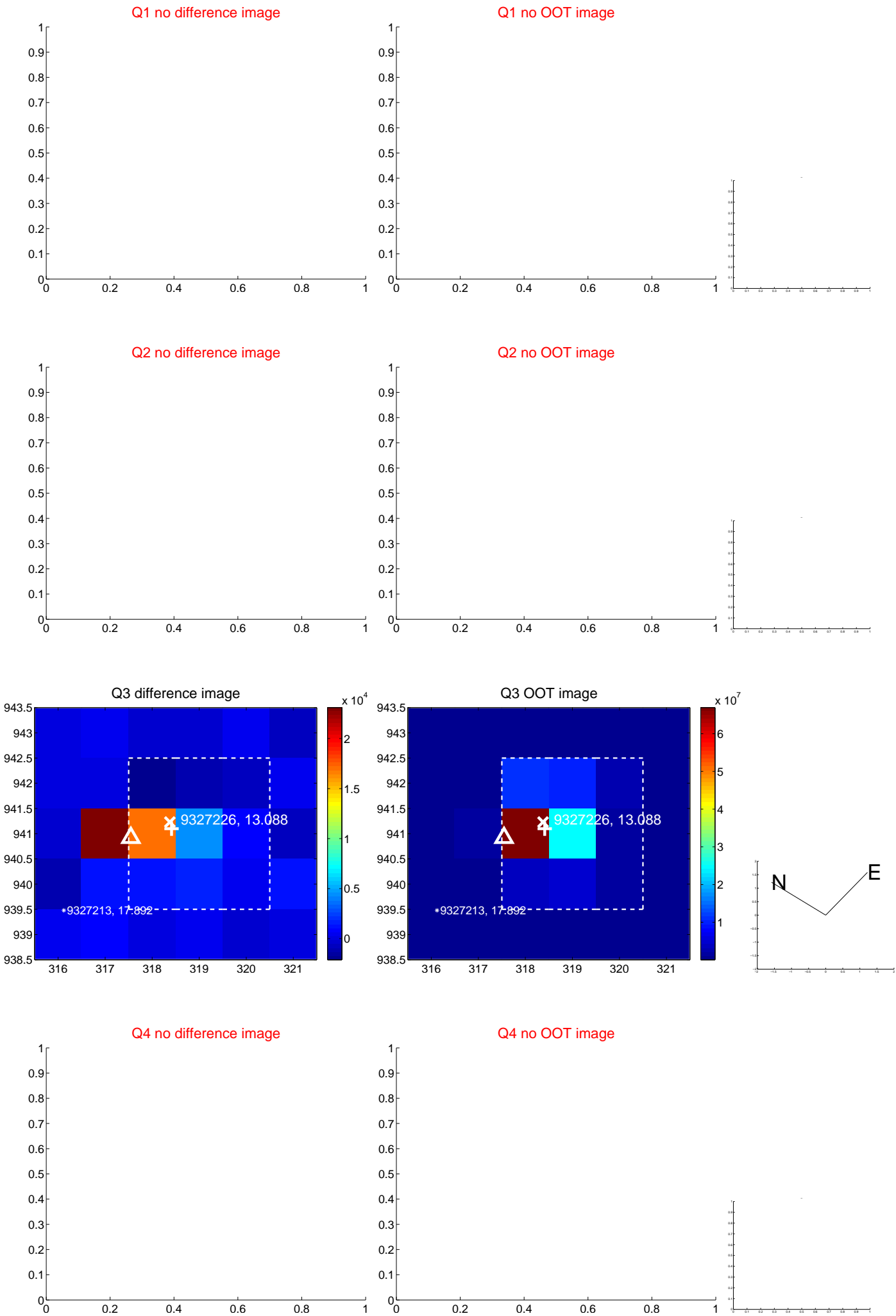
The direct PRF centroid is offset from the target star catalog position by about 0.66 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$3.333 \pm 1.914$	1.74	$-2.487 \pm 2.216$	$2.219 \pm 0.396$
PRF-fit source offset from KIC position	$3.344 \pm 1.041$	3.21	$-2.825 \pm 1.109$	$1.790 \pm 0.206$
photometric centroid source offset	$4.92 \pm 1.71$	2.88	$-0.70 \pm 1.41$	$4.87 \pm 1.72$

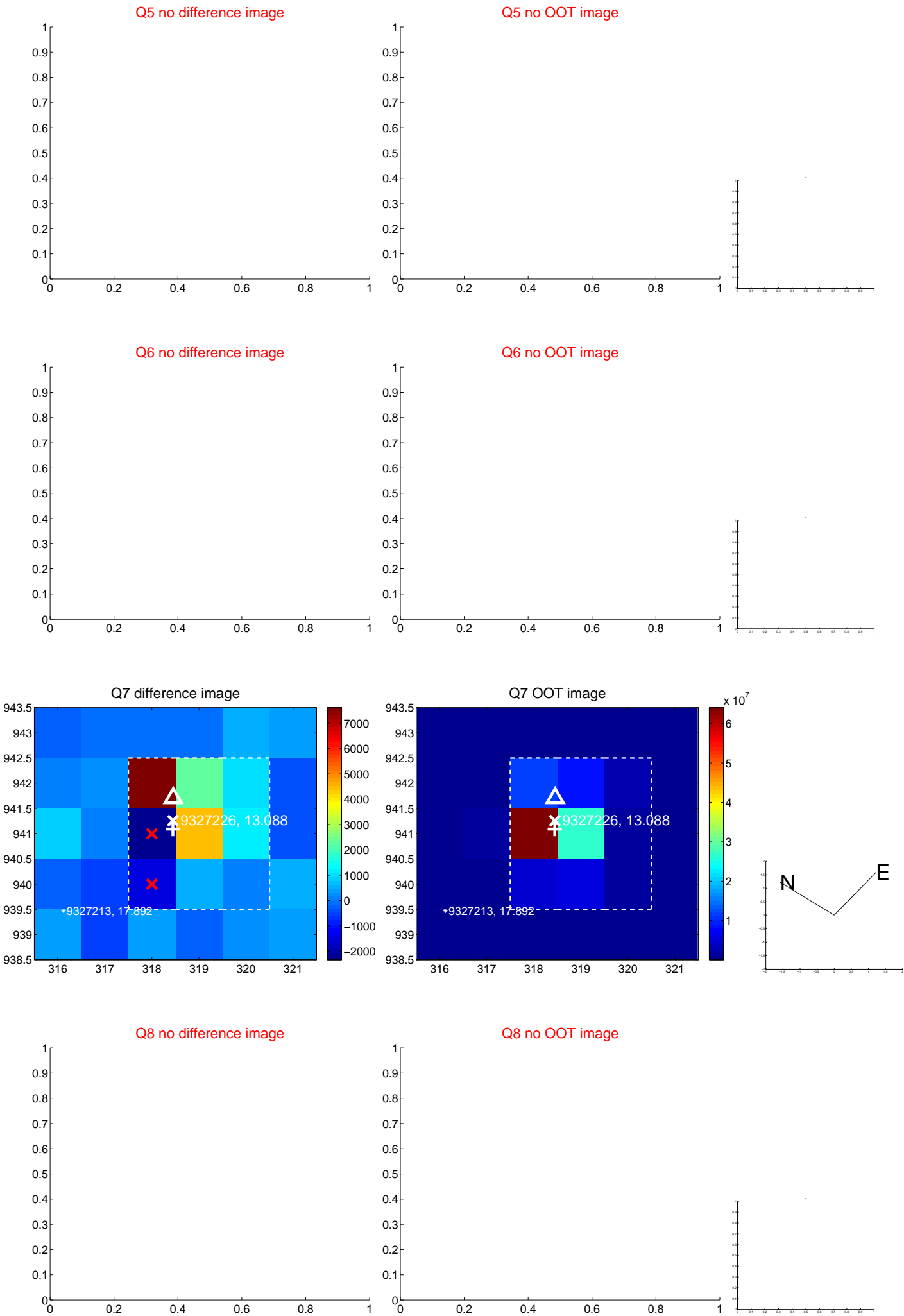


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: three-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

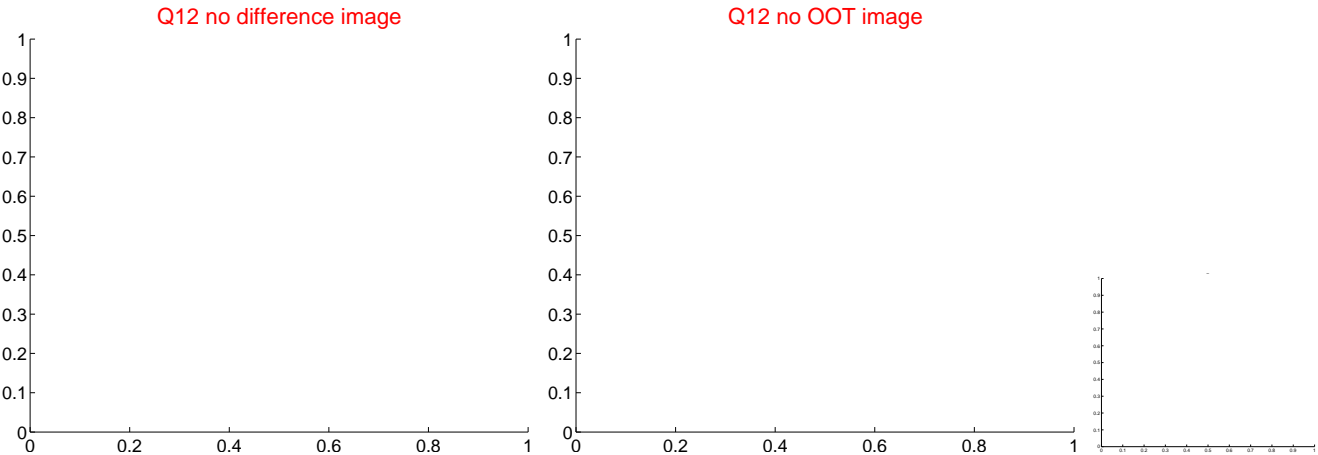
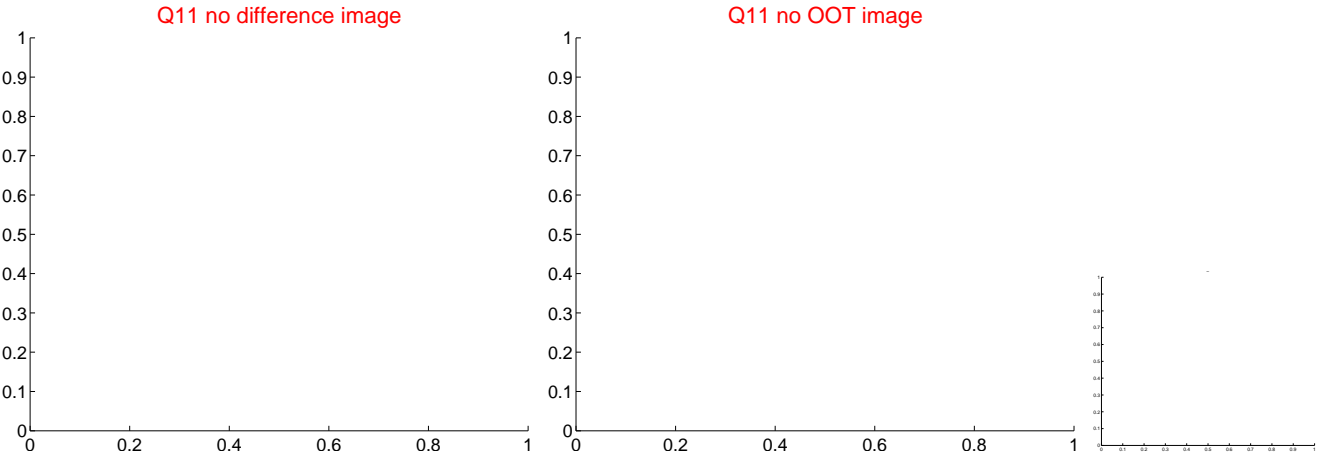
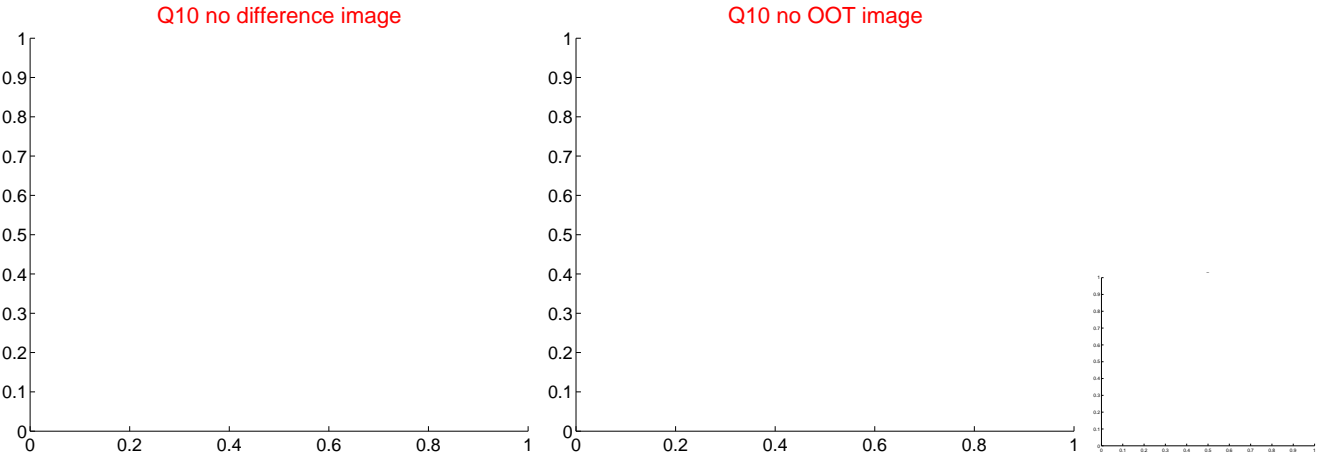
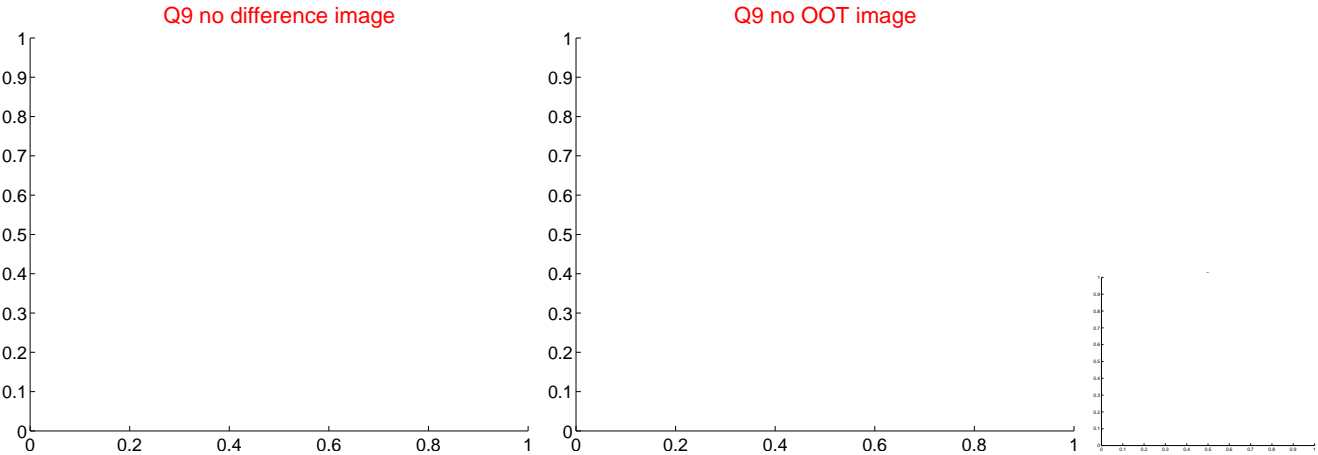
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



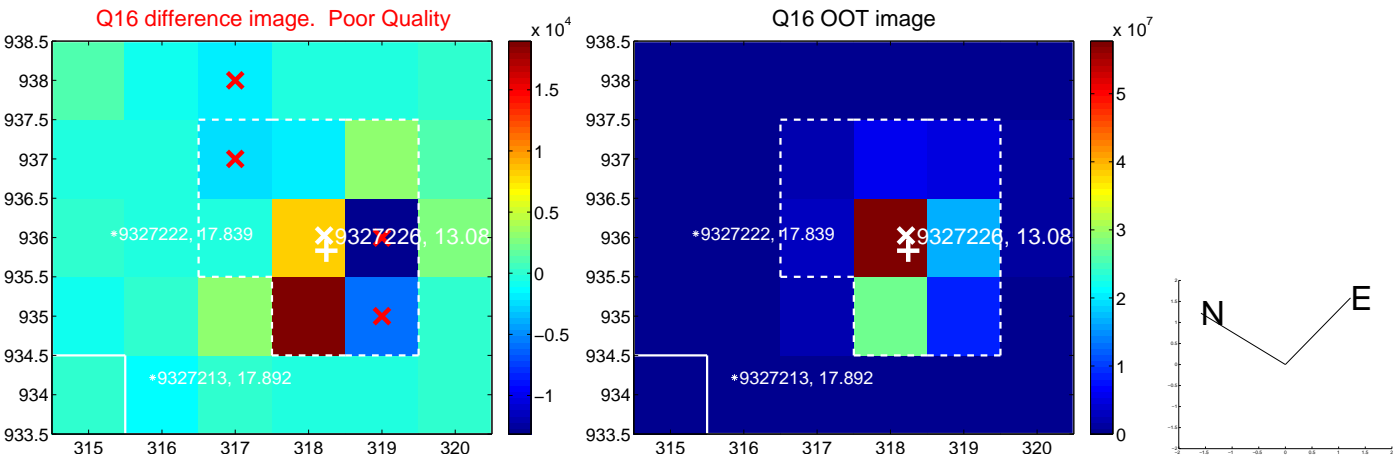
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



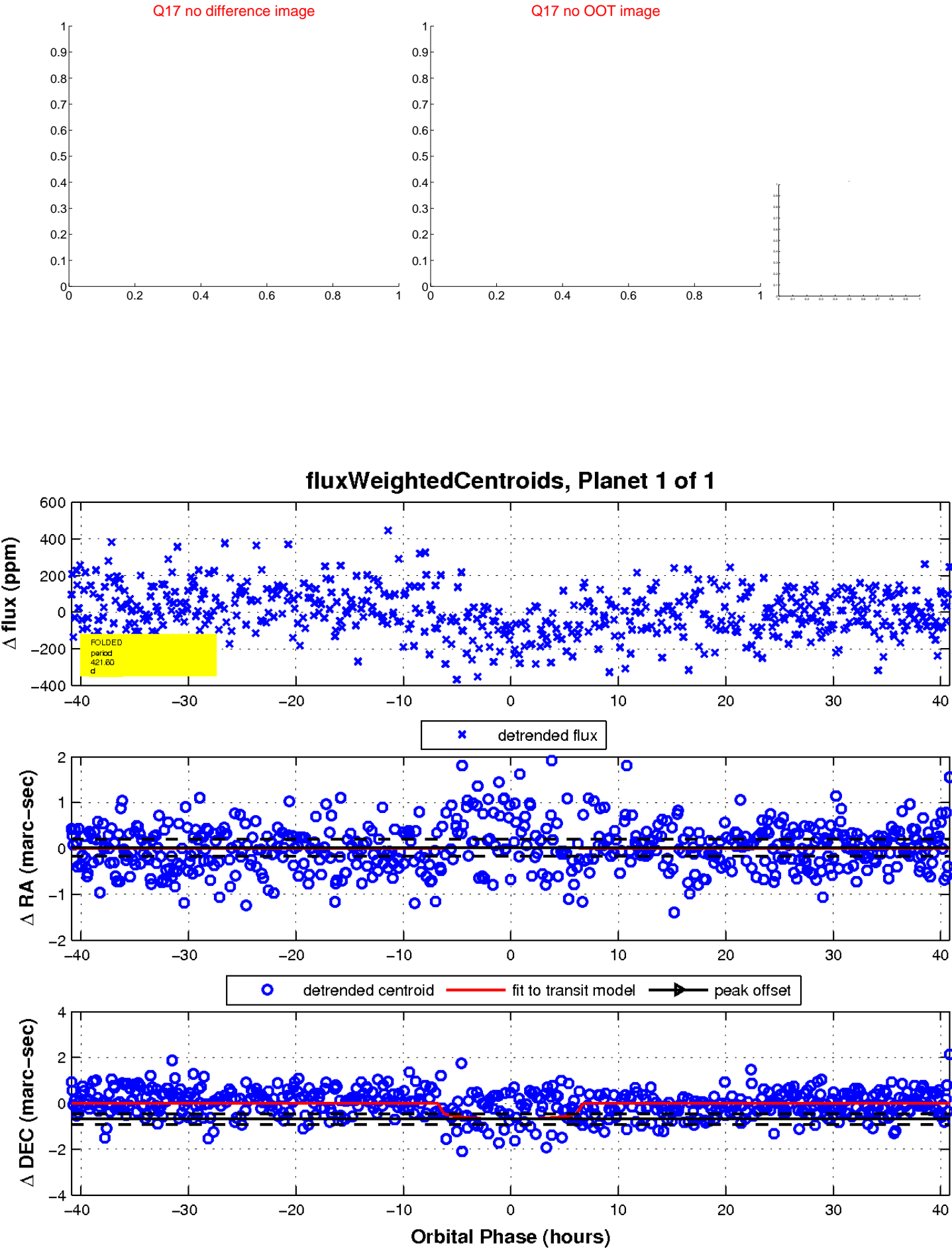
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white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



UKIRT Image

