

# KIC 006924431

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
006924431-01	OBS	No	515.350491	309.050229	269.2	15.682	7.6	7.4	2.12	5749	3.70	2.50

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
006924431-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_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.

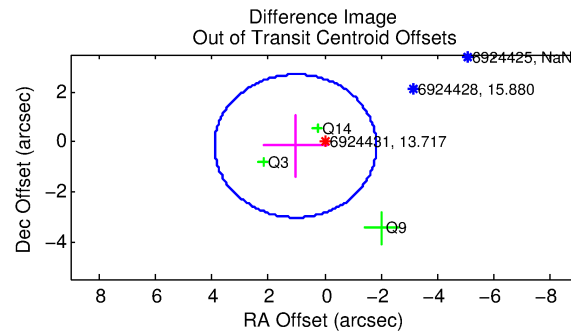
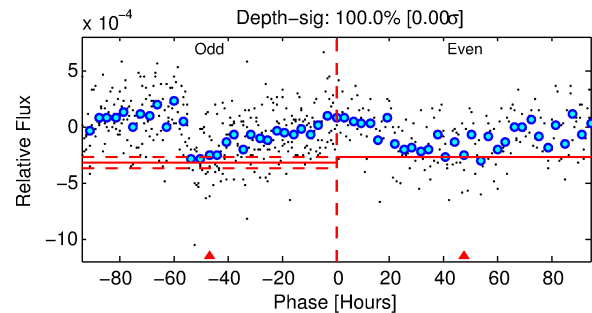
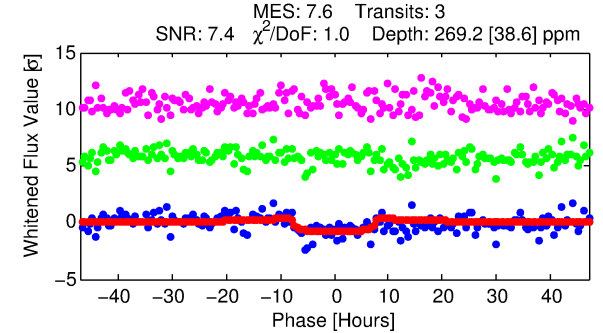
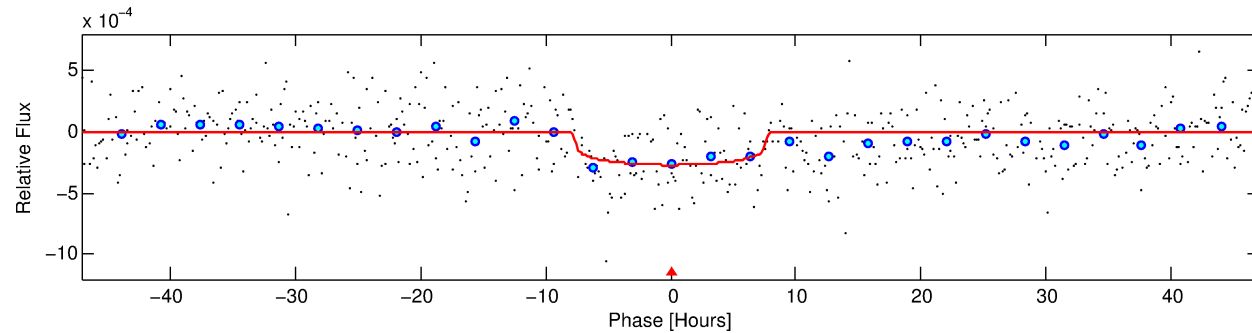
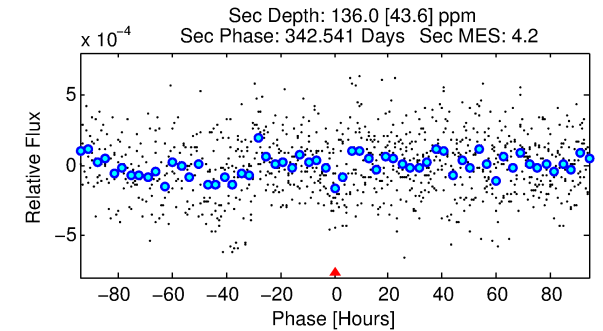
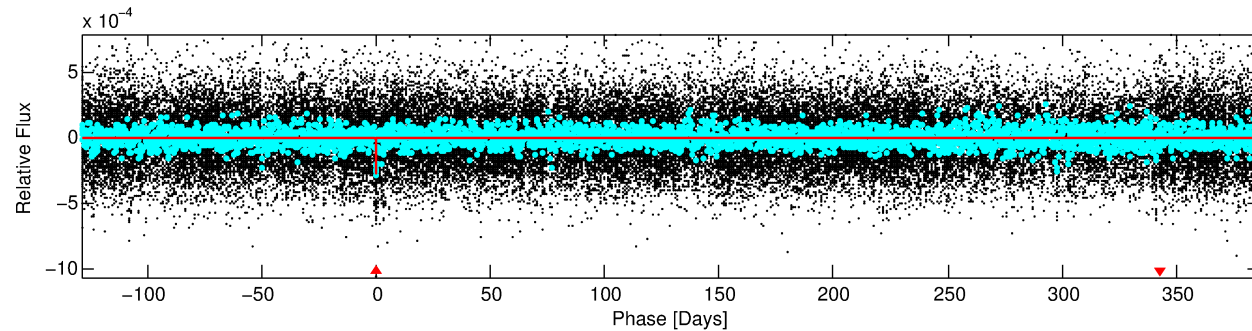
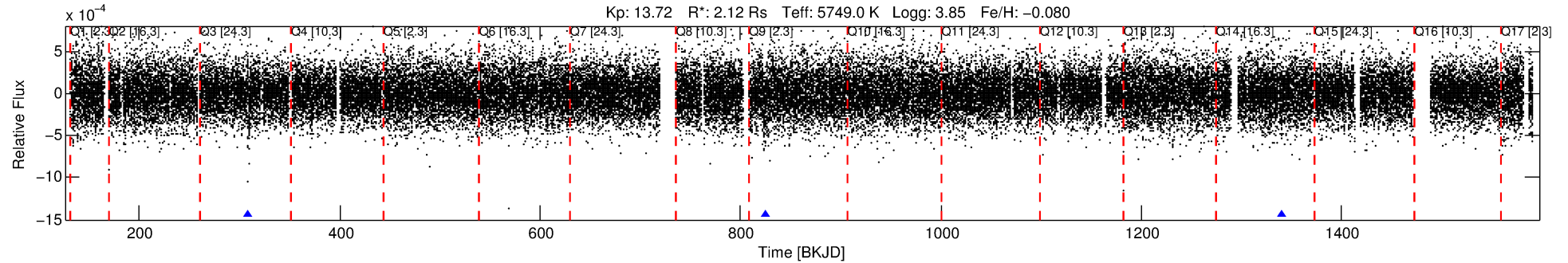
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 006924431-01

No Significant Match Found

# DV One-Page Summary

KIC: 6924431 Candidate: 1 of 1 Period: 515.350 d



## DV Fit Results:

Period = 515.35049 [0.01603] d  
Epoch = 309.0502 [0.0178] BKJD  
Rp/R\* = 0.0160 [0.0084]  
a/R\* = 186.55 [437.70]  
b = 0.69 [1.77]  
Seff = 2.50 [2.31]  
Teq = 321 [74] K  
Rp = 3.70 [2.77] Re  
a = 1.3259 [0.7312] AU  
Ag = 9593.43 [13755.33] [0.70σ]  
Teffp = 4906 [1358] K [3.37σ]

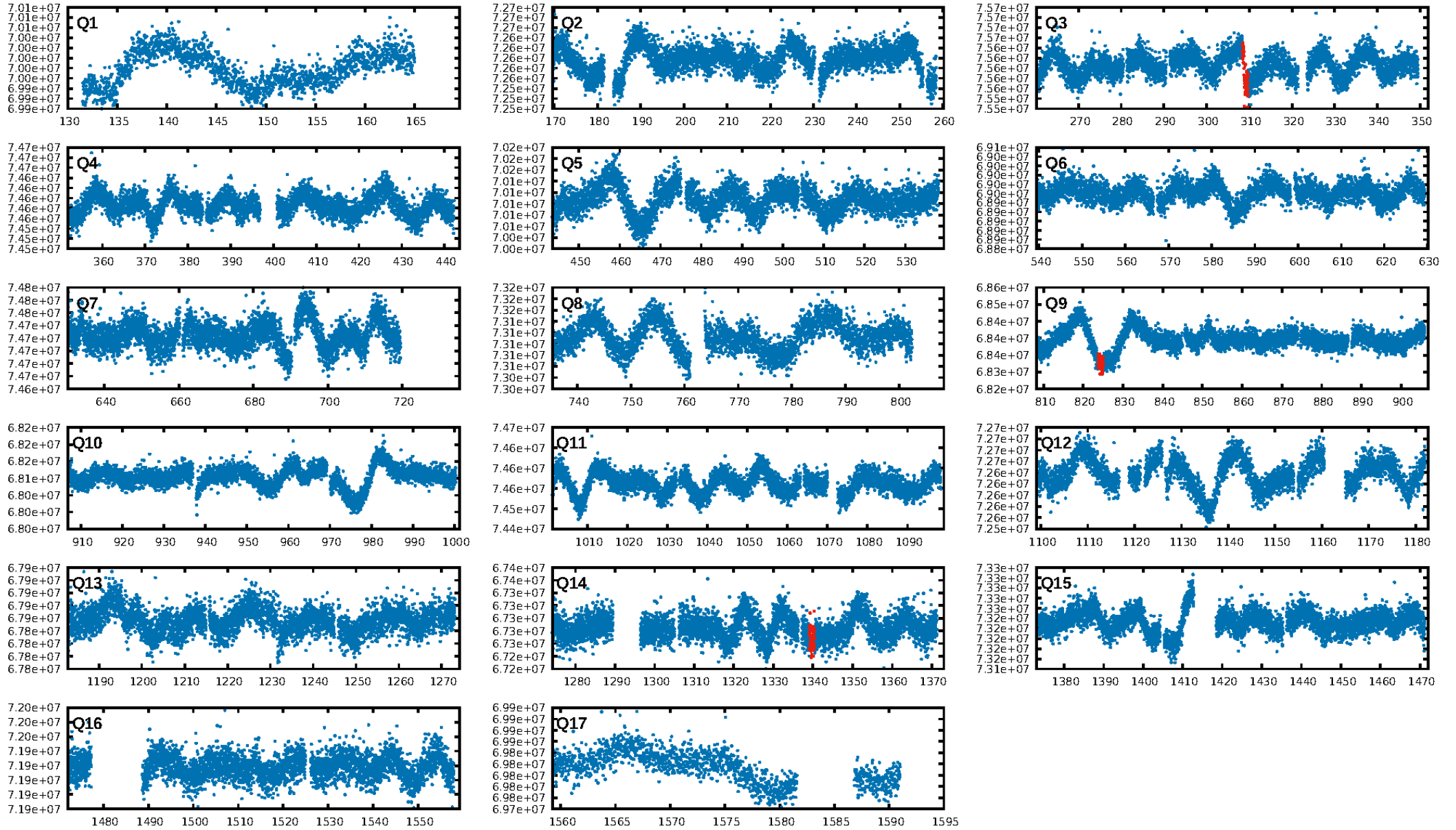
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: 6.4%  
ModelChiSquareGof-sig: 99.9%  
**Bootstrap-pfa: 8.58e-10**  
RollingBand-fgt: 1.00 [3/3]  
GhostDiagnostic-chr: 1.65  
Centroid-sig: 0.4%  
Centroid-so: 2.880 arcsec [2.09σ]  
OotOffset-rm: 1.050 arcsec [1.10σ]  
KicOffset-rm: 1.103 arcsec [1.20σ]  
OotOffset-st: 1/1/0/1 [3]  
KicOffset-st: 1/1/0/1 [3]  
DiffImageQuality-fgm: 0.33 [1/3]  
DiffImageOverlap-fno: 1.00 [3/3]

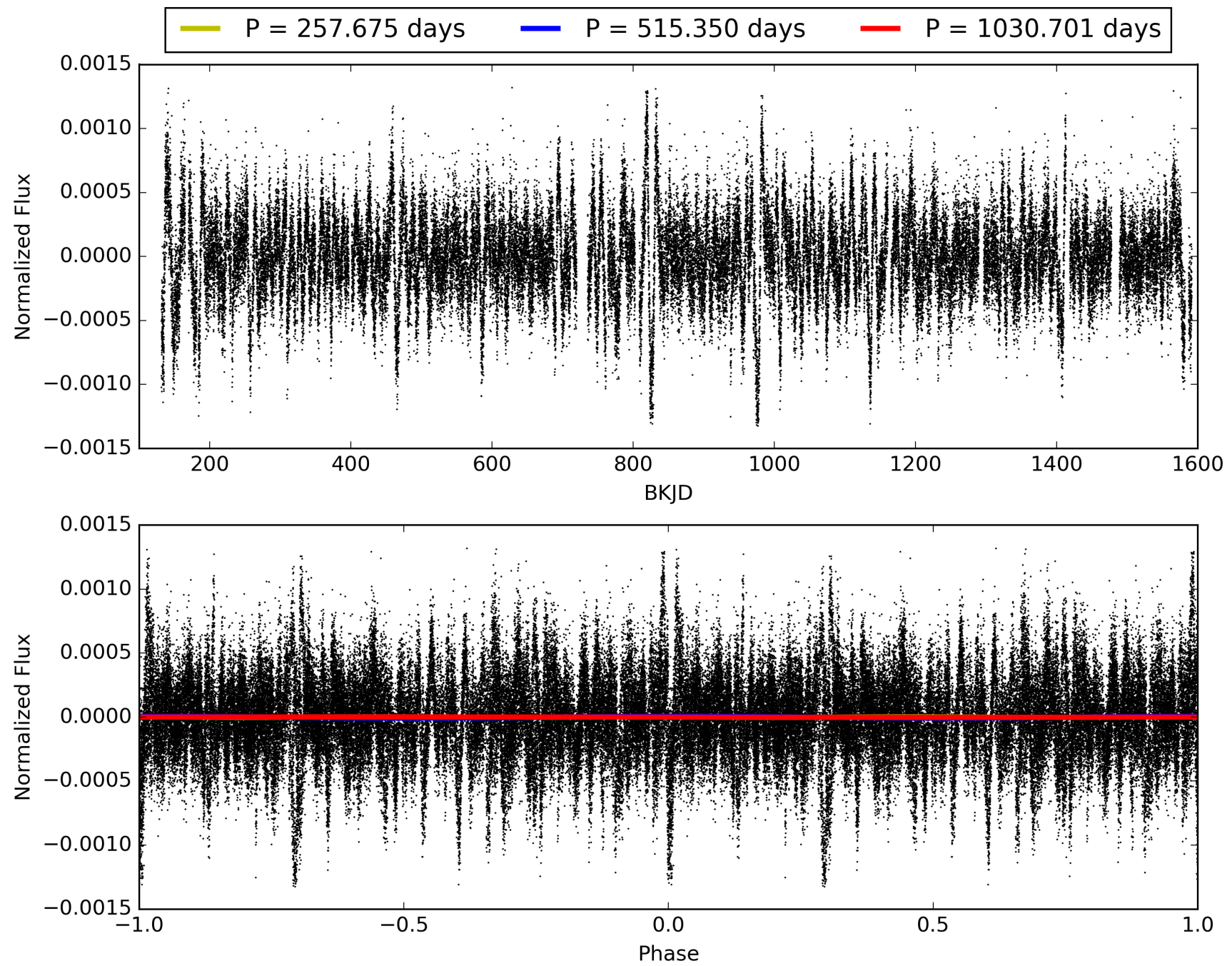
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 22:32:25 Z

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

# TCE 006924431-01, PDC Light Curves

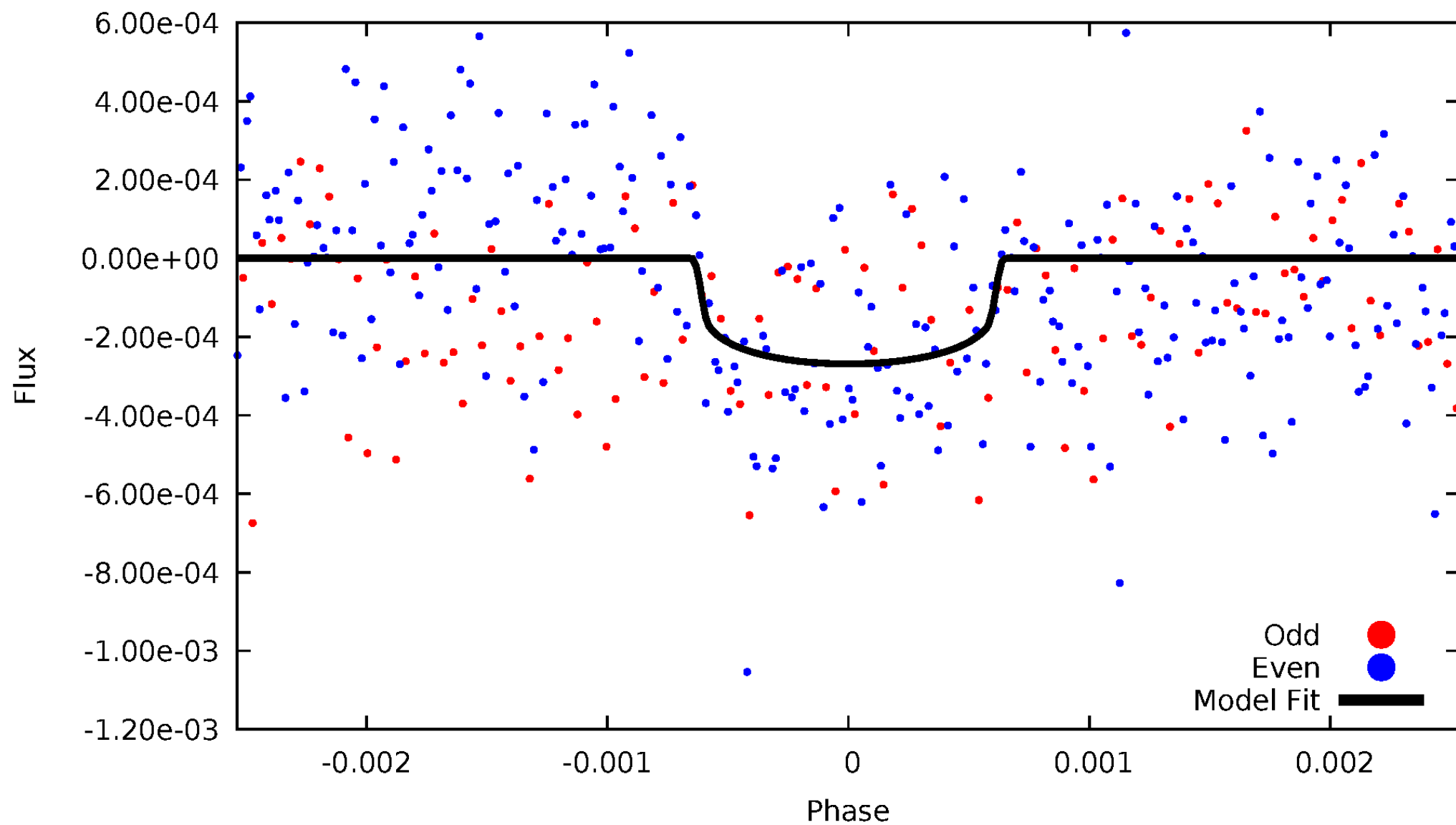


TCE 006924431-01



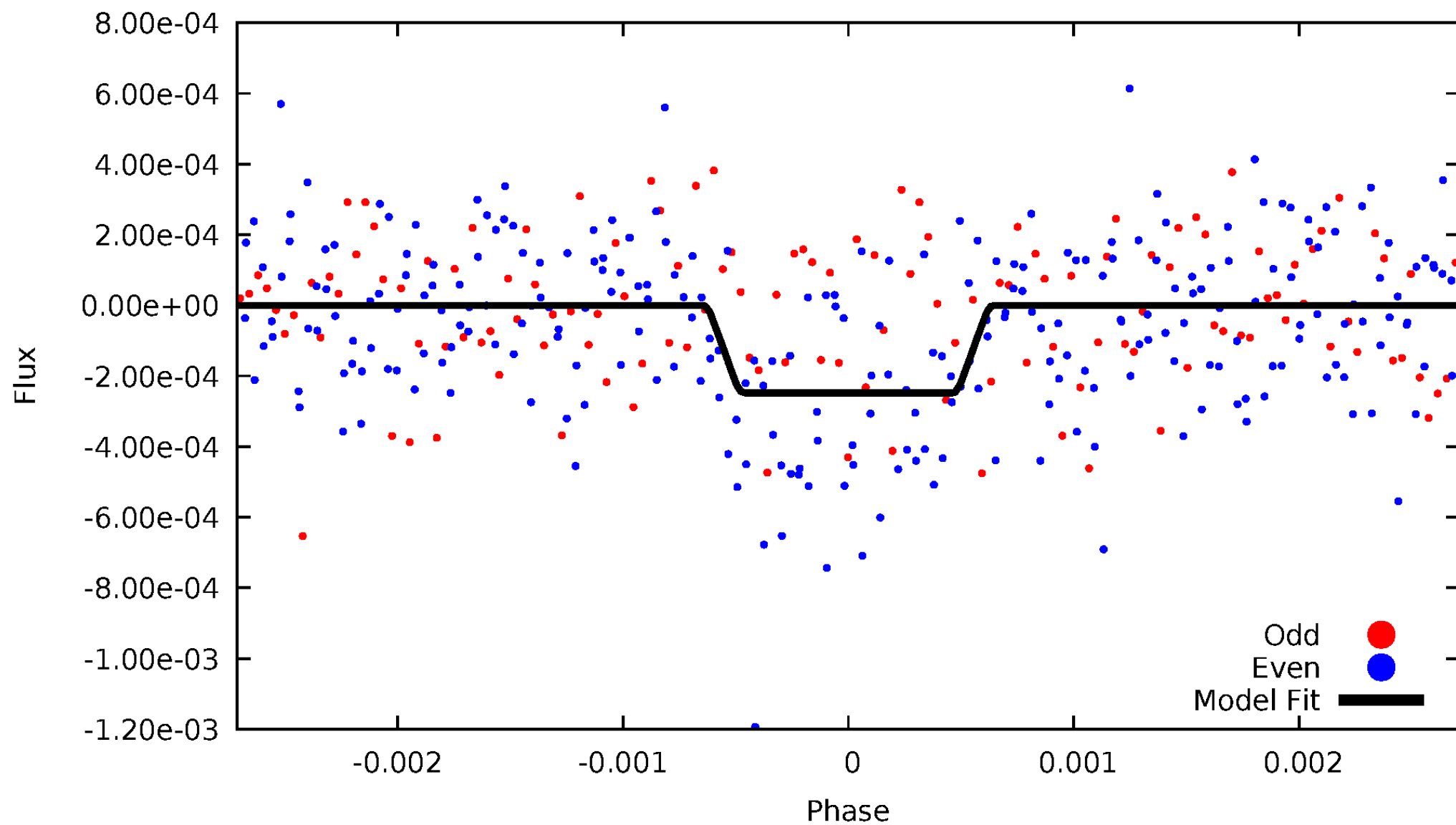
# DV Odd/Even

TCE 006924431-01

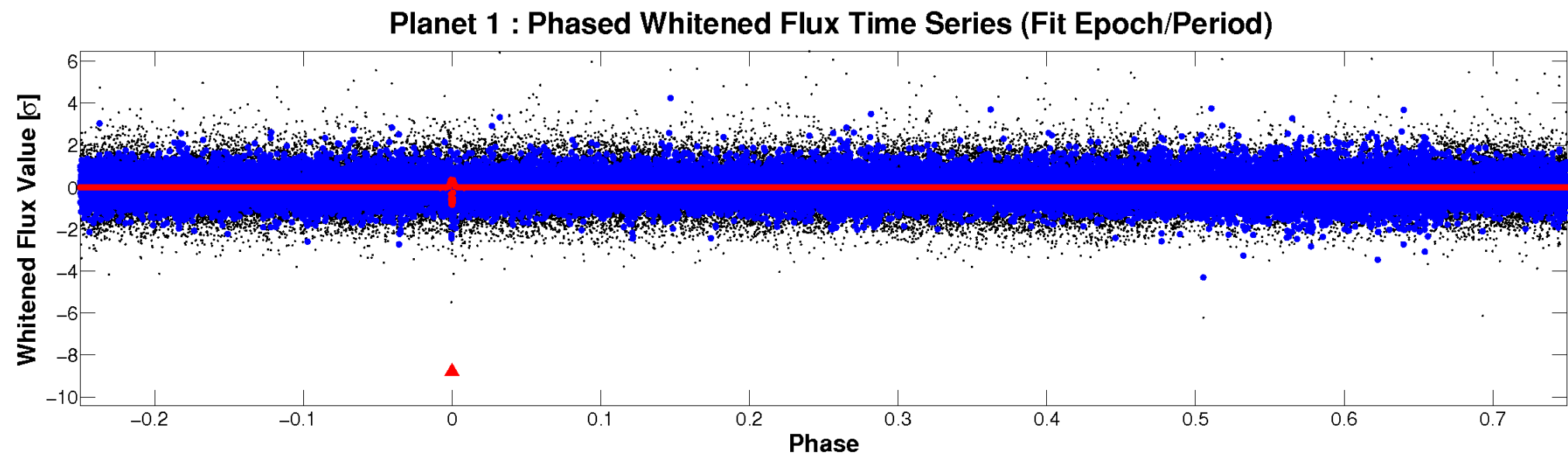
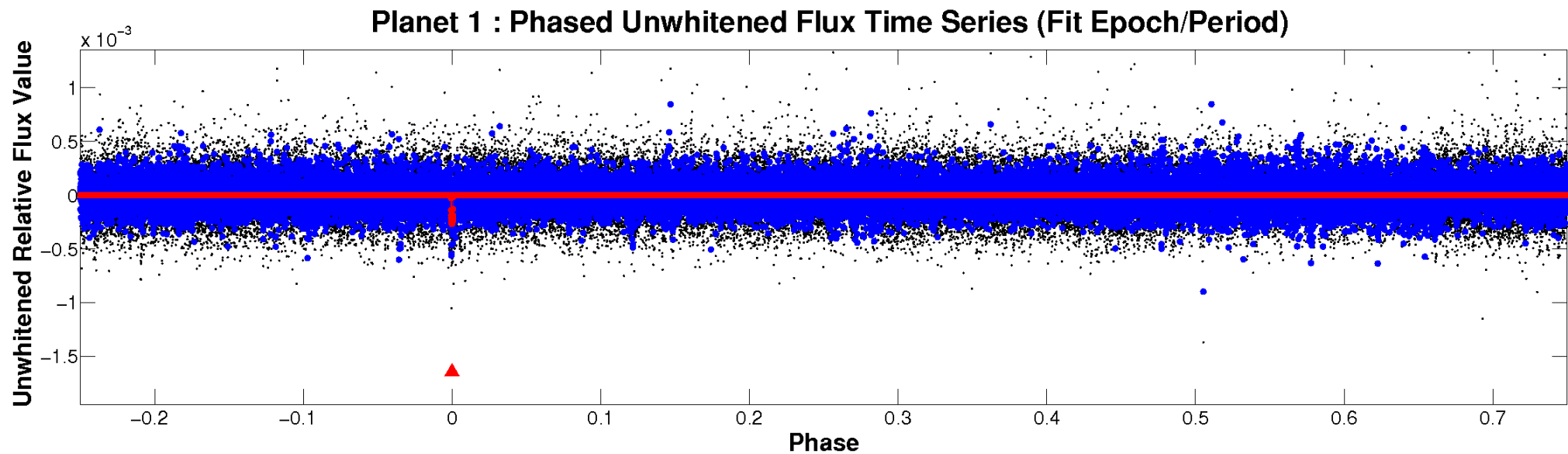


# ALT Odd/Even

TCE 006924431-01



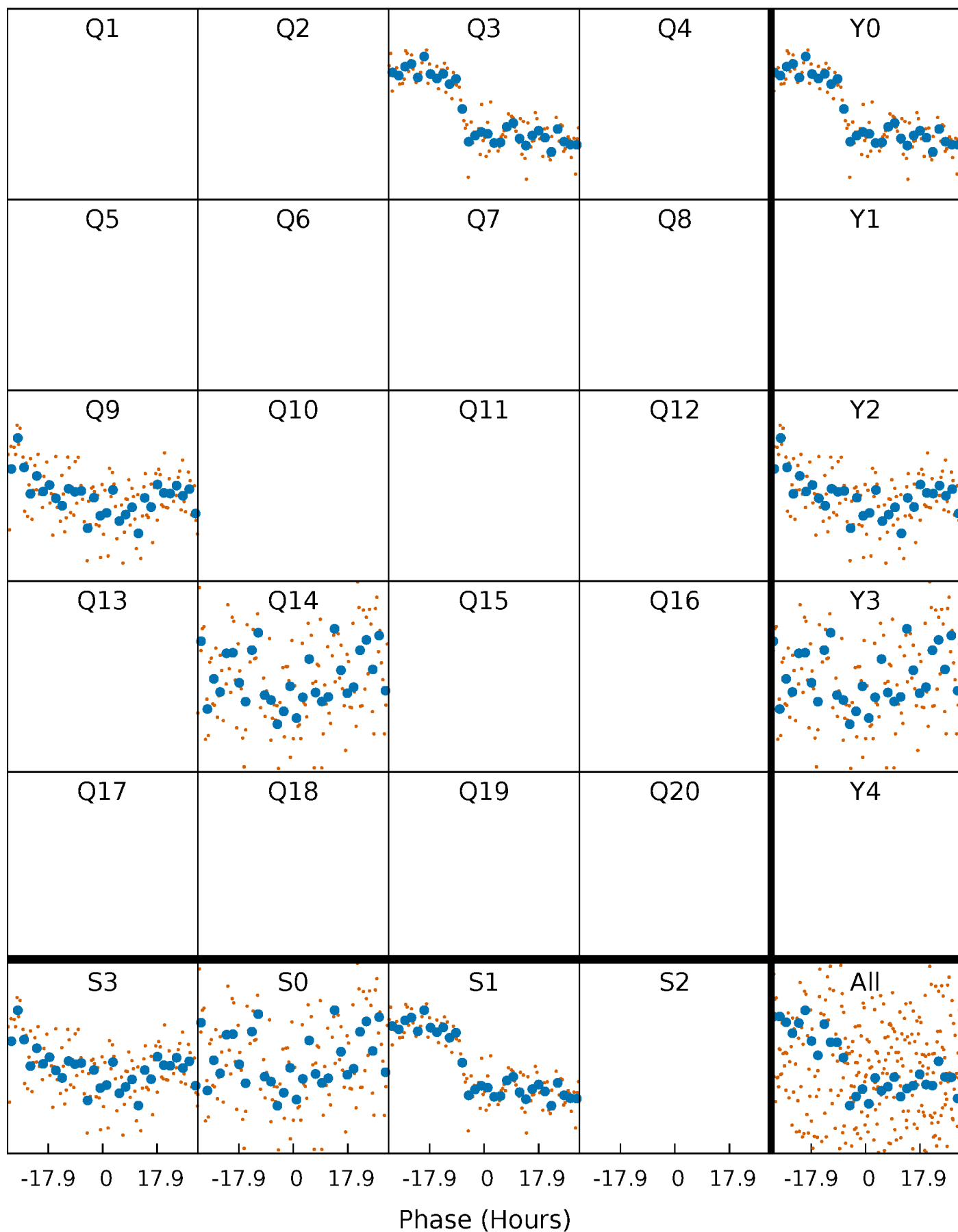
# Non-Whitened Vs. Whitened Light Curve





# PDC Quarter-Phased Transit Curves

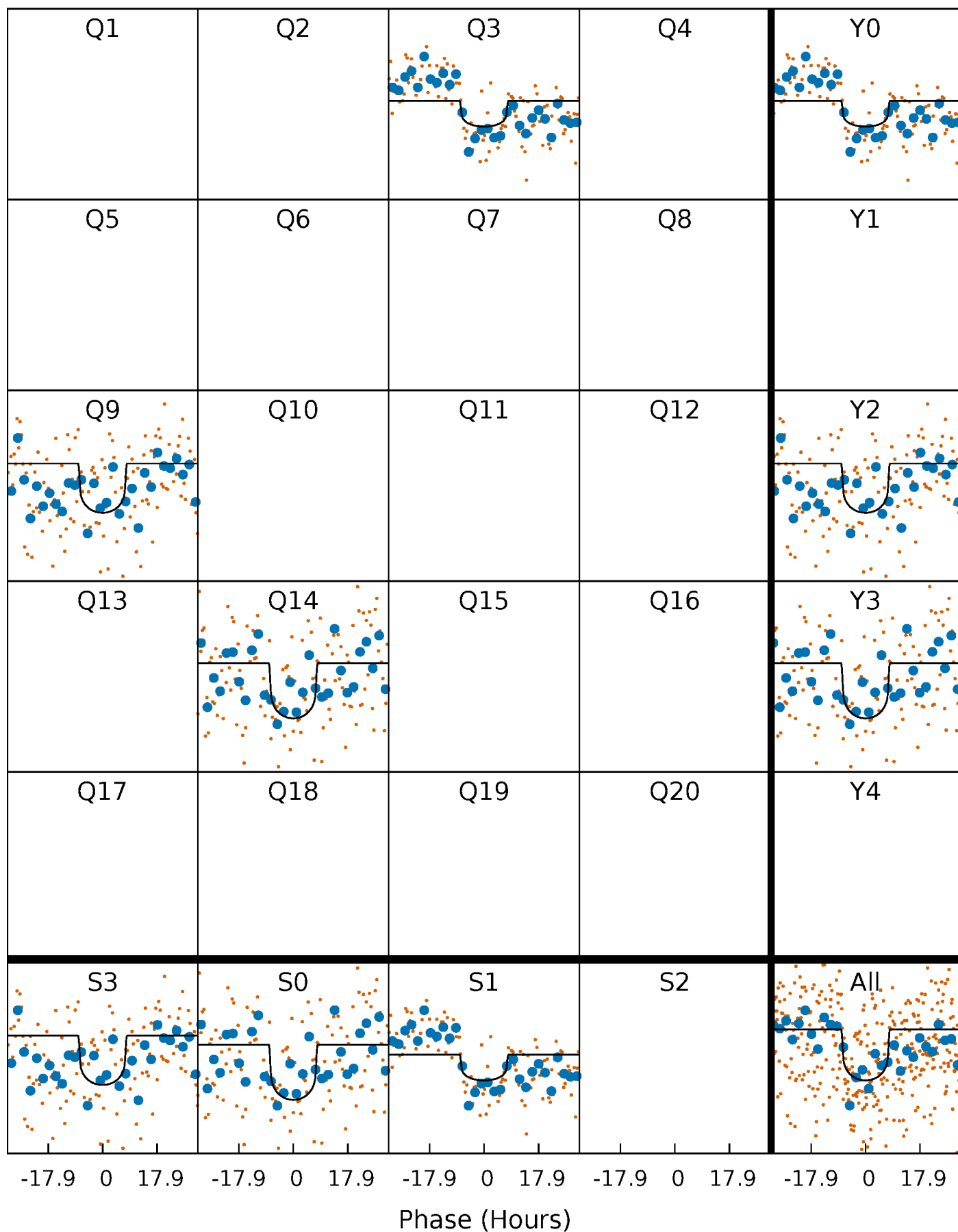
TCE 006924431-01 P=515.350490 Days  $T_0=309.050229$  (BKJD)





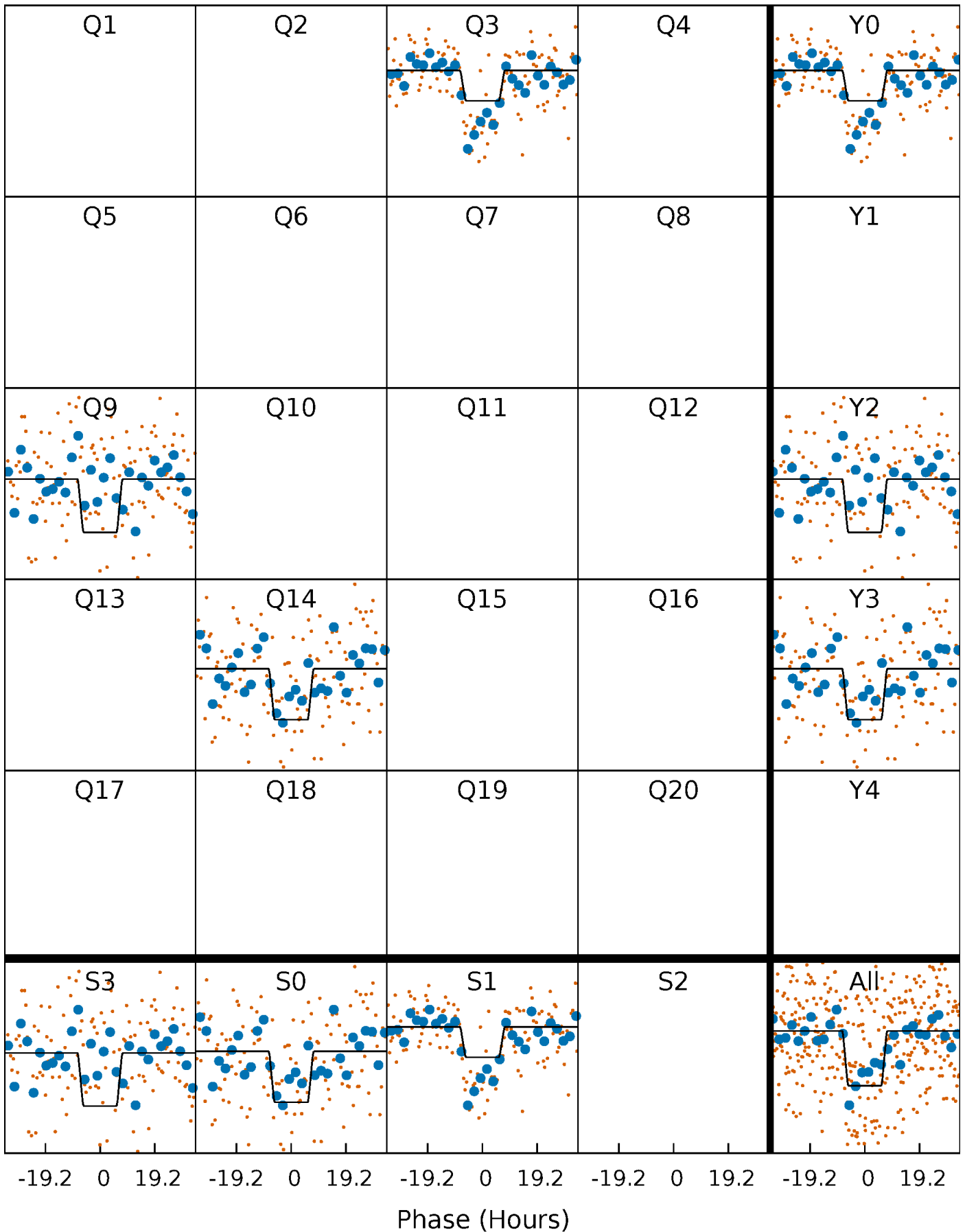
# DV Quarter-Phased Transit Curves

TCE 006924431-01 P=515.350490 Days  $T_0=309.050229$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

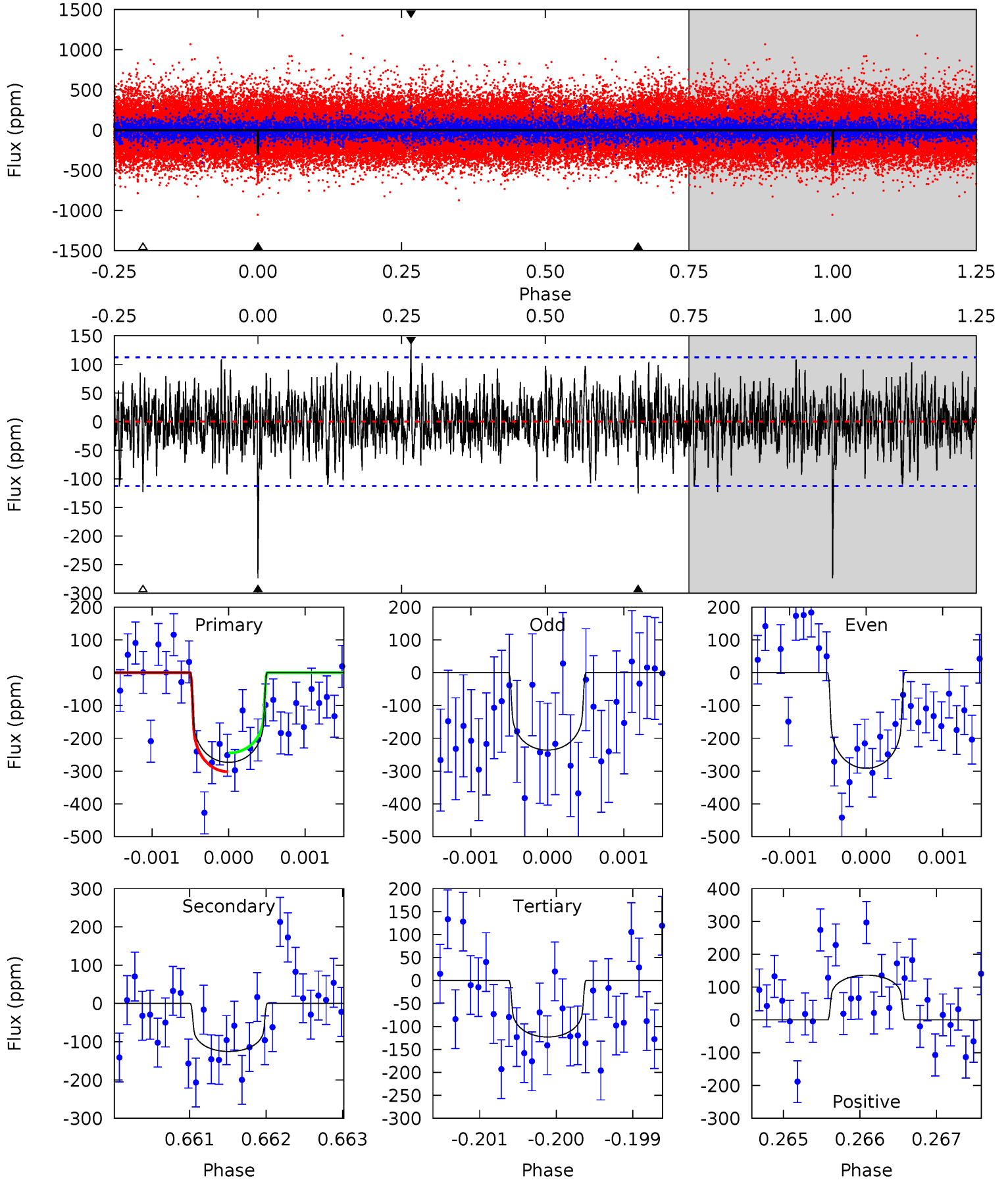
TCE 006924431-01 P=515.327572 Days  $T_0=309.046920$  (BKJD)



# DV Model-Shift Uniqueness Test

006924431-01, P = 515.350490 Days, E = 309.050229 Days

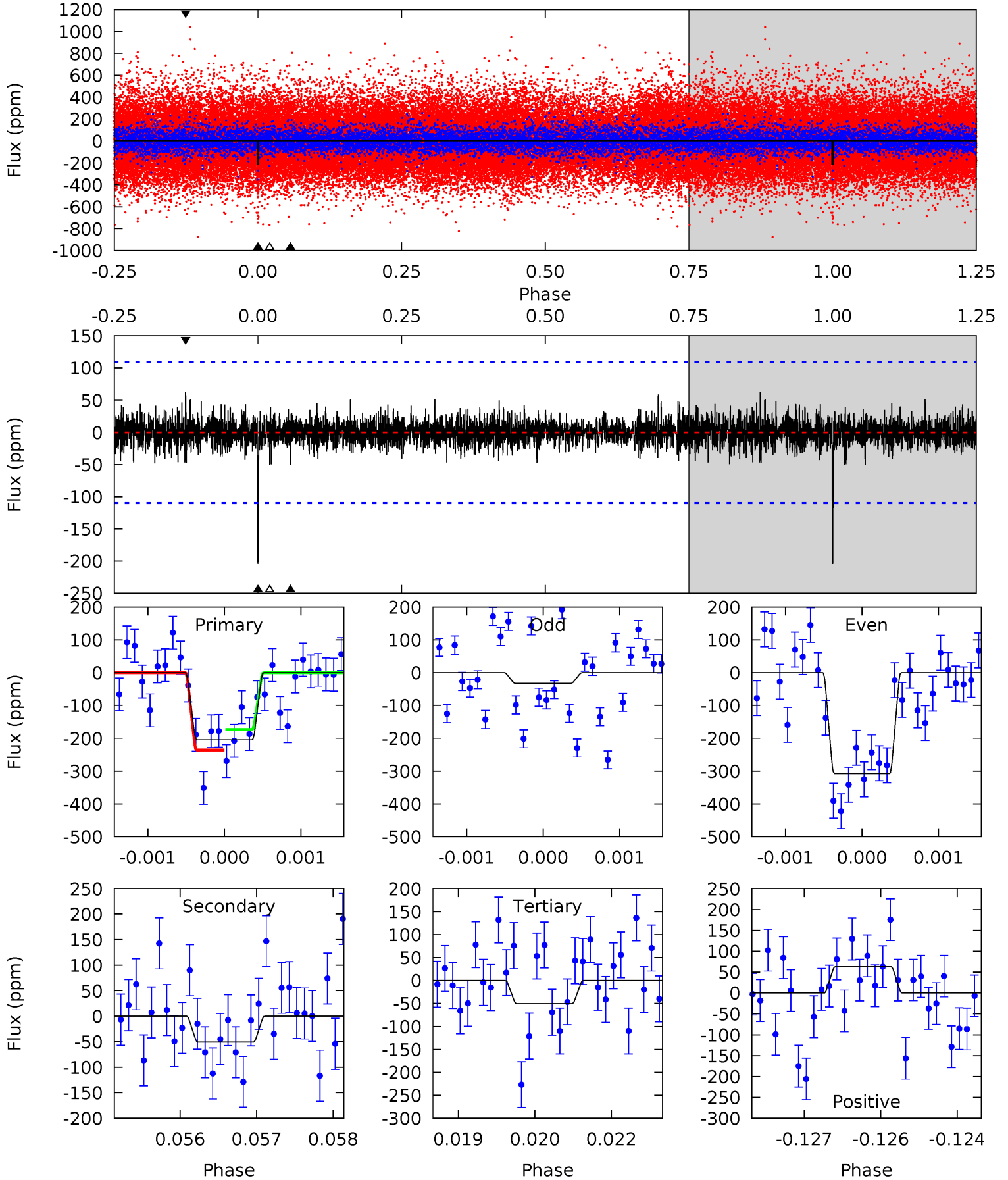
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
13.1	6.02	5.90	6.54	5.40	3.22	1.66	7.21	6.58	0.12	-0.51	1.23	1.16	0.33	1.37



# Alt Model-Shift Uniqueness Test

006924431-01, P = 515.327572 Days, E = 309.046920 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
10.1	2.49	2.47	3.11	5.41	3.22	0.71	7.60	6.96	0.02	-0.62	6.37	1.46	0.24	1.56



### Stellar Parameters For KIC 006924431

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R$ ( $R_{\odot}$ )	$M(M_{\odot})$	$p_{\star}$ ( $\text{g}\cdot\text{cm}^{-3}$ )
	$5749^{+156}_{-156}$	$3.854^{+0.552}_{-0.138}$	$-0.080^{+0.300}_{-0.250}$	$2.119^{+0.481}_{-1.122}$	$1.171^{+0.138}_{-0.277}$	$0.173^{+1.072}_{-0.065}$
	+3%/-3%	+14%/-4%	+375%/-312%	+23%/-53%	+12%/-24%	+618%/-37%
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 006924431-01 / KOI

Detrend	Depth (ppm)	$R_p$ ( $R_{\oplus}$ )	$T_{\text{max}}$ (K)	$T_{\text{obs}}$ (K)	$A_{\text{obs}}$
DV	$-125 \pm 21$	$3.29^{+2.12}_{-1.64}$	$437^{+37}_{-57}$	$4904^{+1605}_{-790}$	$10967^{+32895}_{-6913}$
Alt.	$-51 \pm 20$	$3.32^{+2.09}_{-1.86}$	$437^{+34}_{-57}$	$4066^{+1430}_{-627}$	$4068^{+17718}_{-2730}$

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

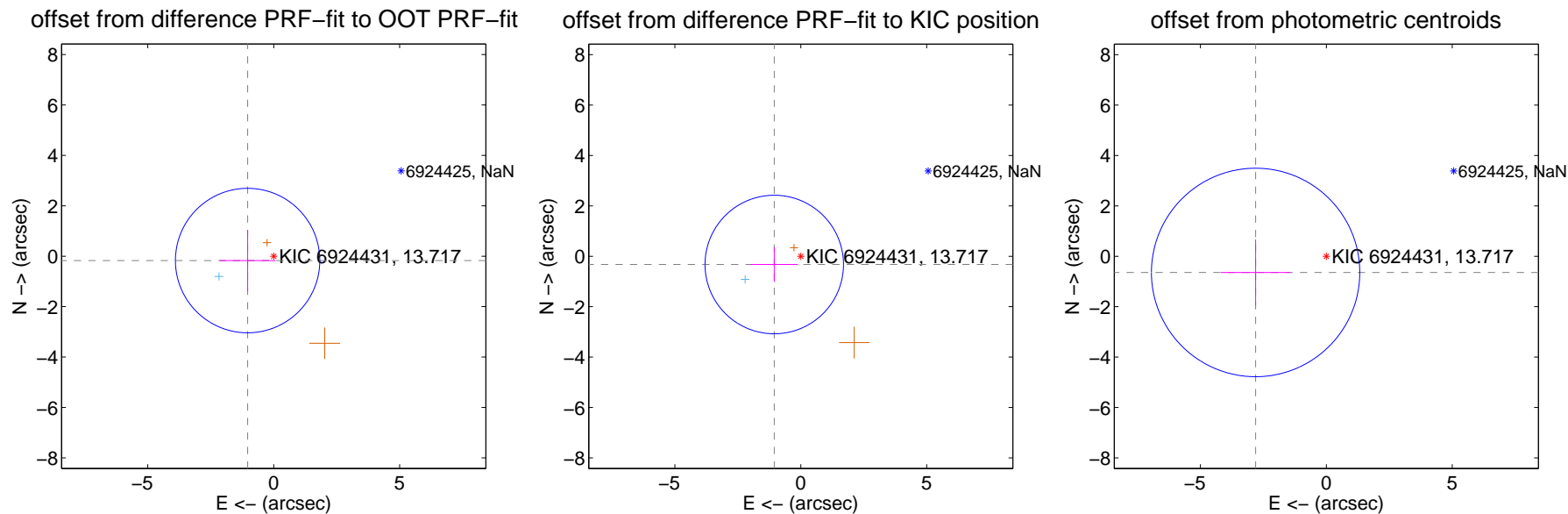
## DV Centroid Data

Supplemental centroid analysis for 006924431-01. Kepler magnitude: 13.72. Transit SNR 7.35

There are 1 quarters with good PRF difference image offsets

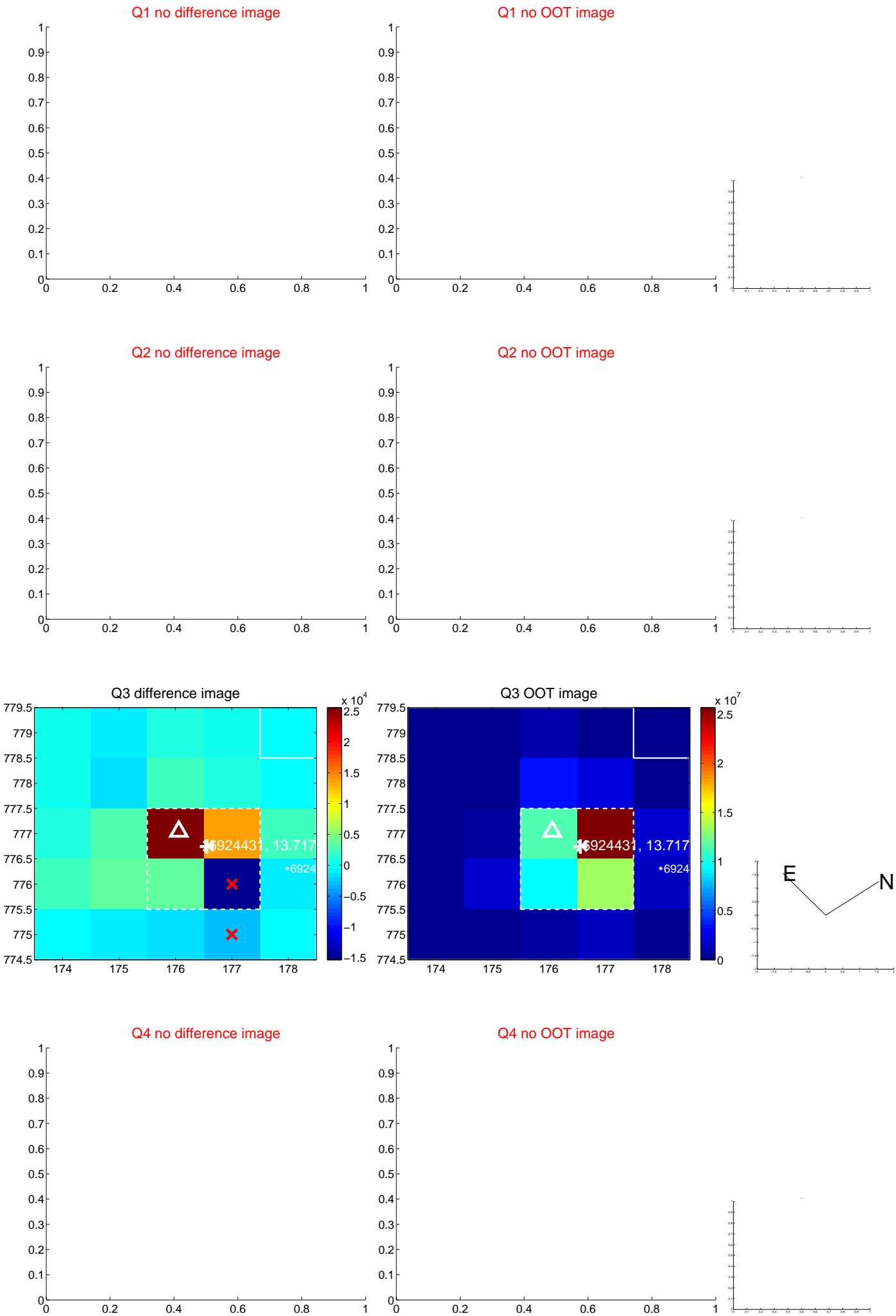
The direct PRF centroid is offset from the target star catalog position by about 0.20 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$1.050 \pm 0.955$	1.10	$1.036 \pm 1.110$	$-0.172 \pm 1.211$
PRF-fit source offset from KIC position	$1.103 \pm 0.916$	1.20	$1.053 \pm 0.935$	$-0.326 \pm 0.688$
photometric centroid source offset	$2.88 \pm 1.38$	2.09	$2.81 \pm 1.38$	$-0.64 \pm 1.31$



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.

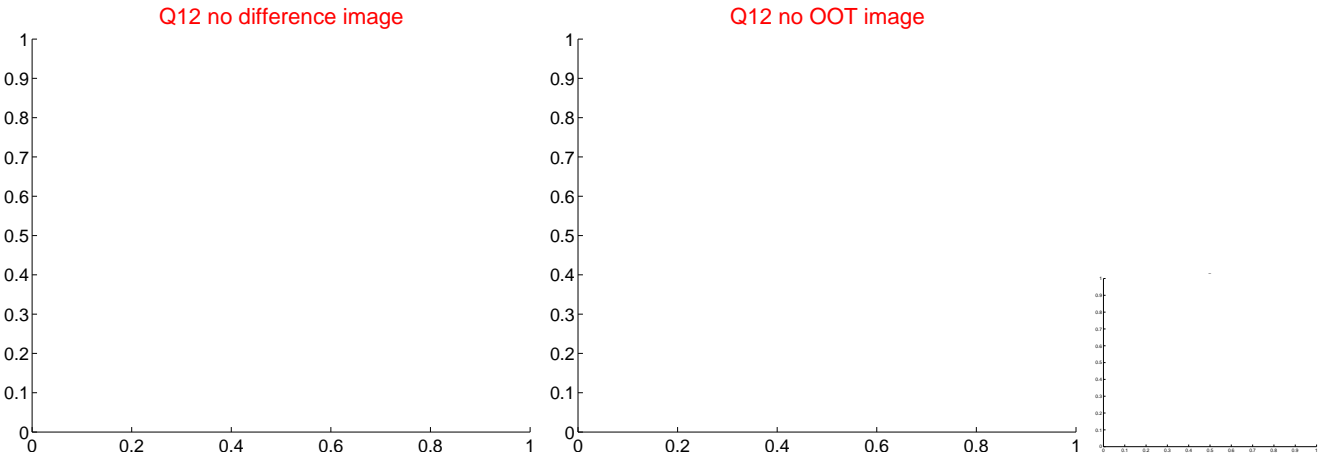
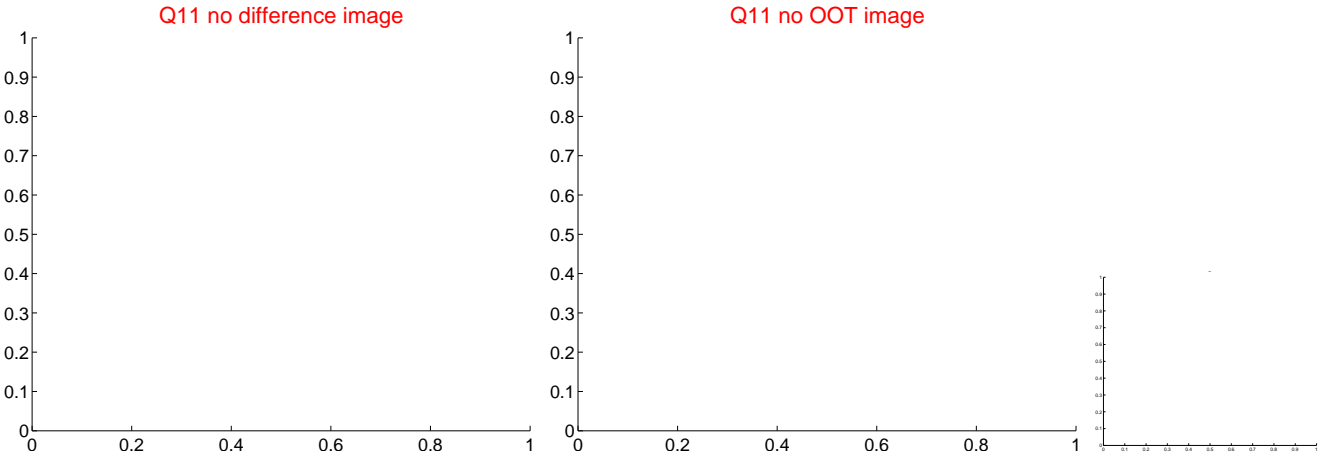
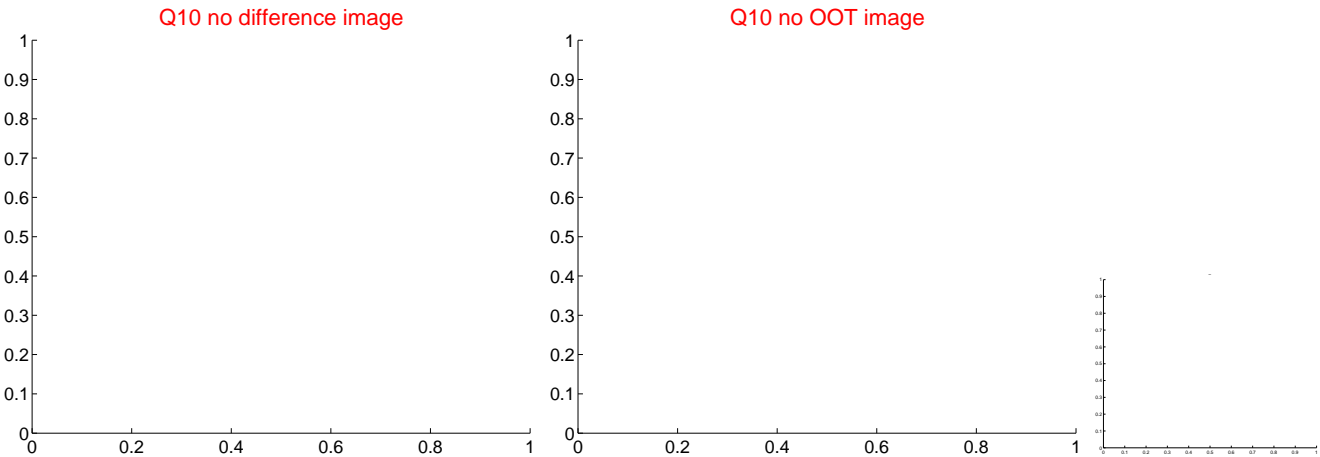
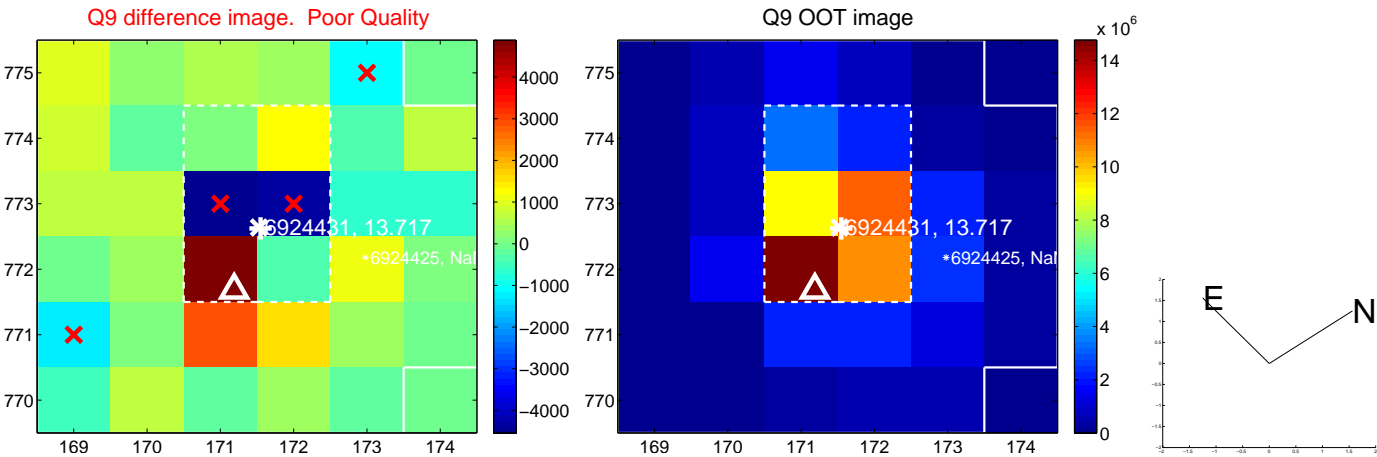




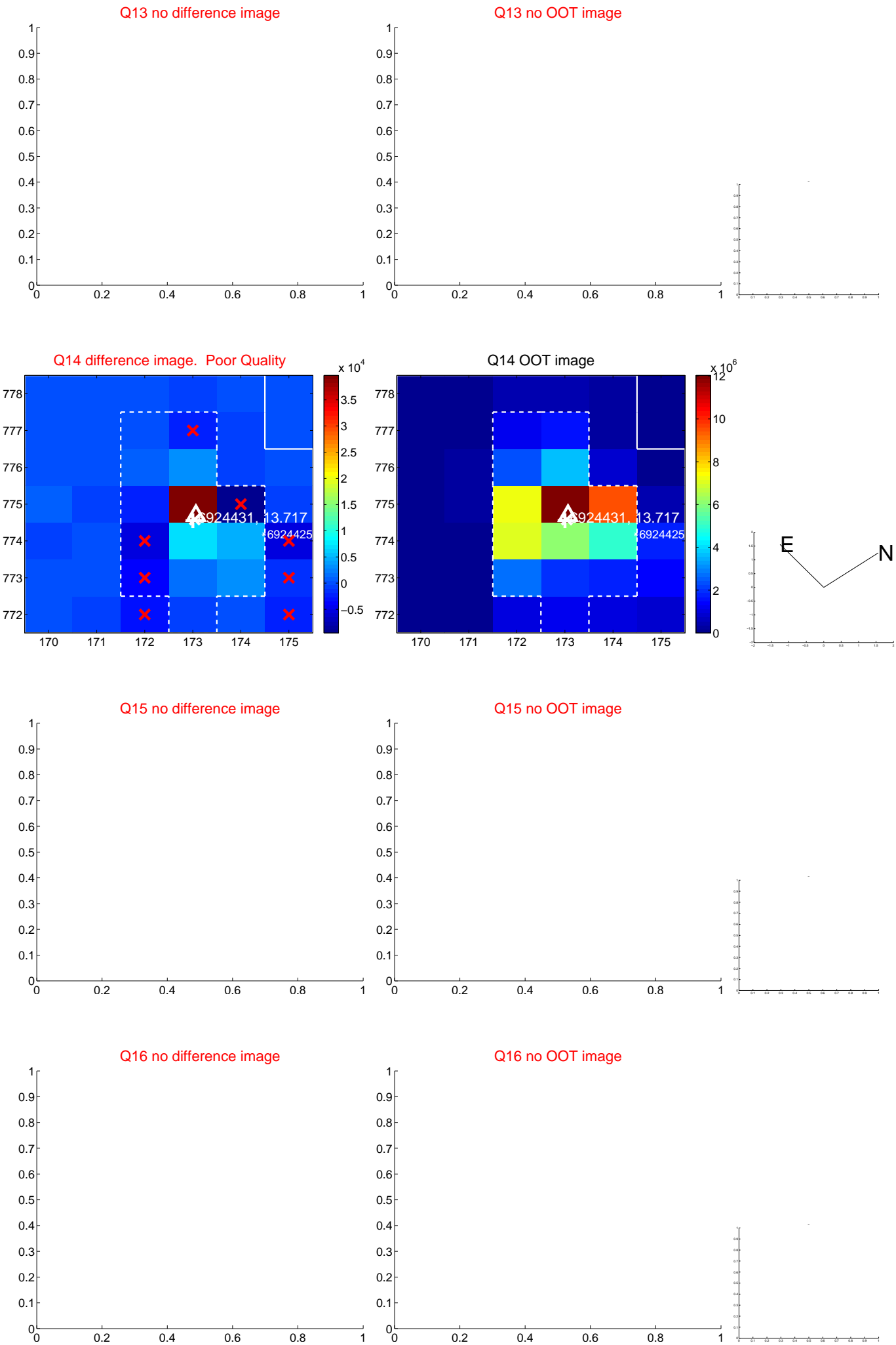
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



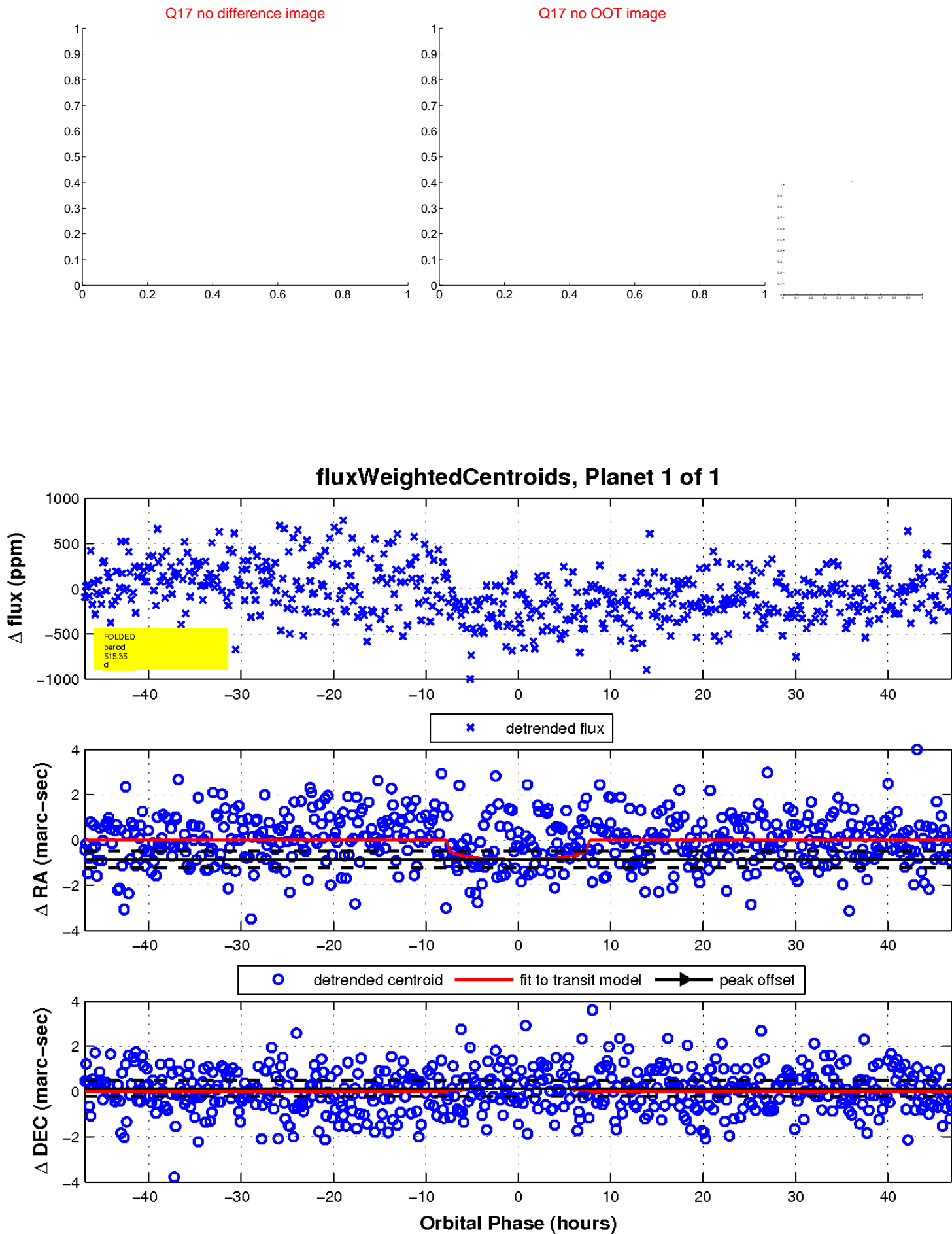
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ×: large negative pixel value.



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.



UKIRT Image

Declination

