

# KIC 008229411

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
008229411-01	OBS	No	374.166523	261.723395	900.2	18.371	8.0	8.5	0.87	5730	2.65	0.72

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008229411-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL_SKYE—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.

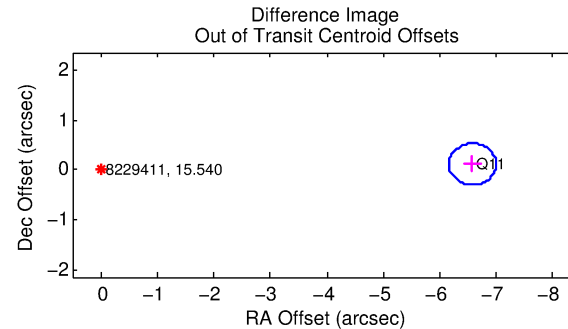
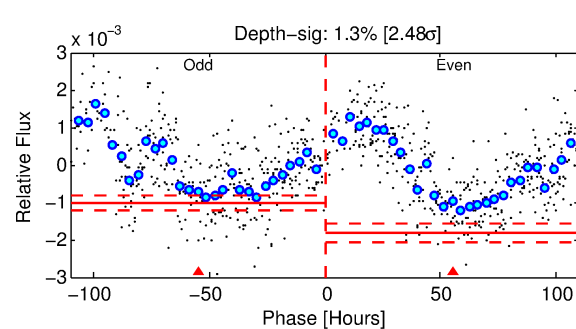
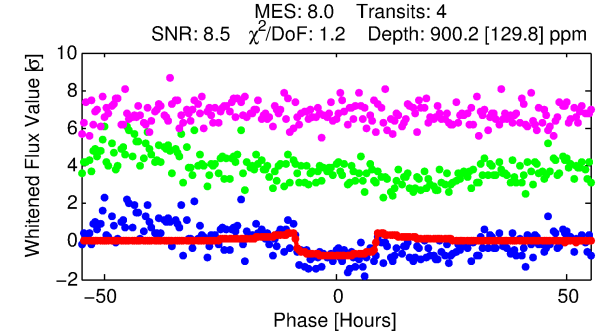
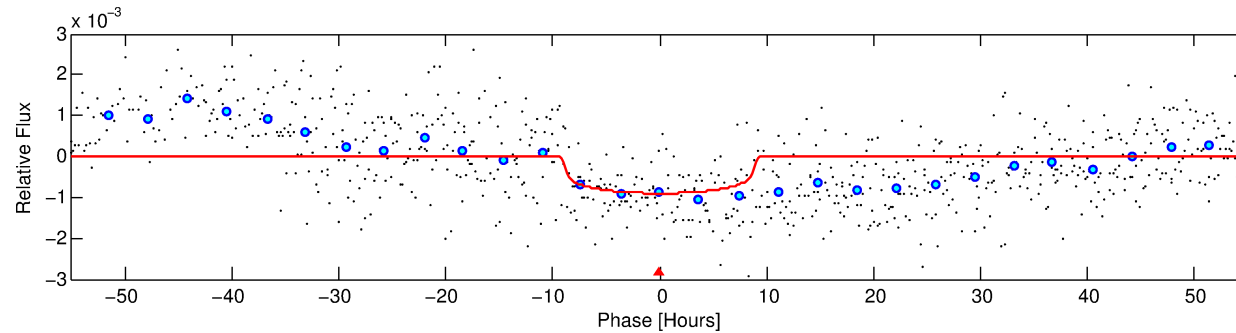
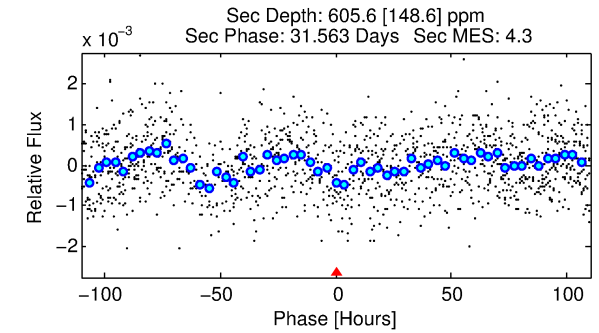
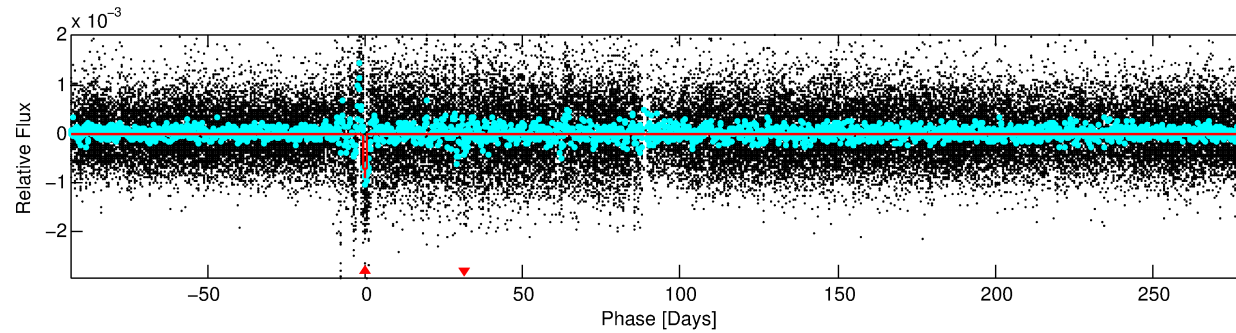
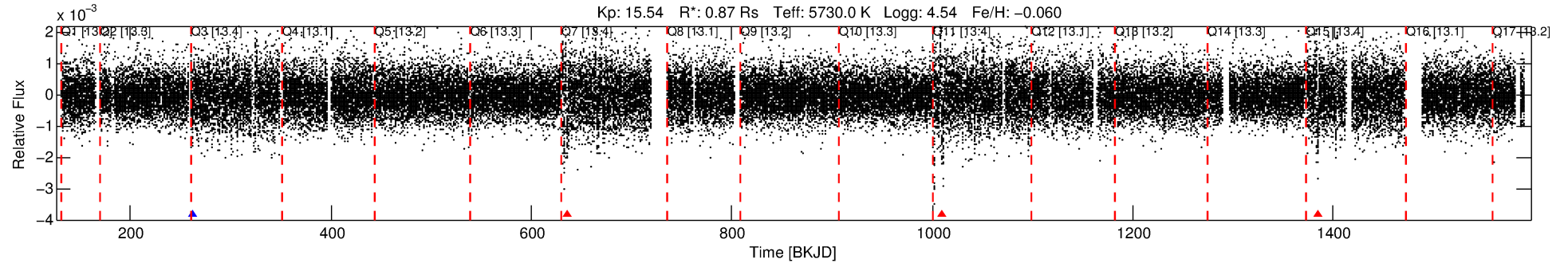
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 008229411-01

No Significant Match Found

# DV One-Page Summary

KIC: 8229411 Candidate: 1 of 1 Period: 374.167 d



## DV Fit Results:

Period = 374.16652 [0.01215] d  
Epoch = 261.7234 [0.0225] BKJD  
Rp/R\* = 0.0280 [0.0115]  
a/R\* = 142.11 [247.89]  
b = 0.47 [2.89]  
Seff = 0.72 [0.27]  
Teq = 235 [22] K  
Rp = 2.65 [1.33] Re  
a = 1.0056 [0.2419] AU  
Ag = 47801.11 [44526.64] [1.07σ]  
Teff = 5375 [1169] K [4.40σ]

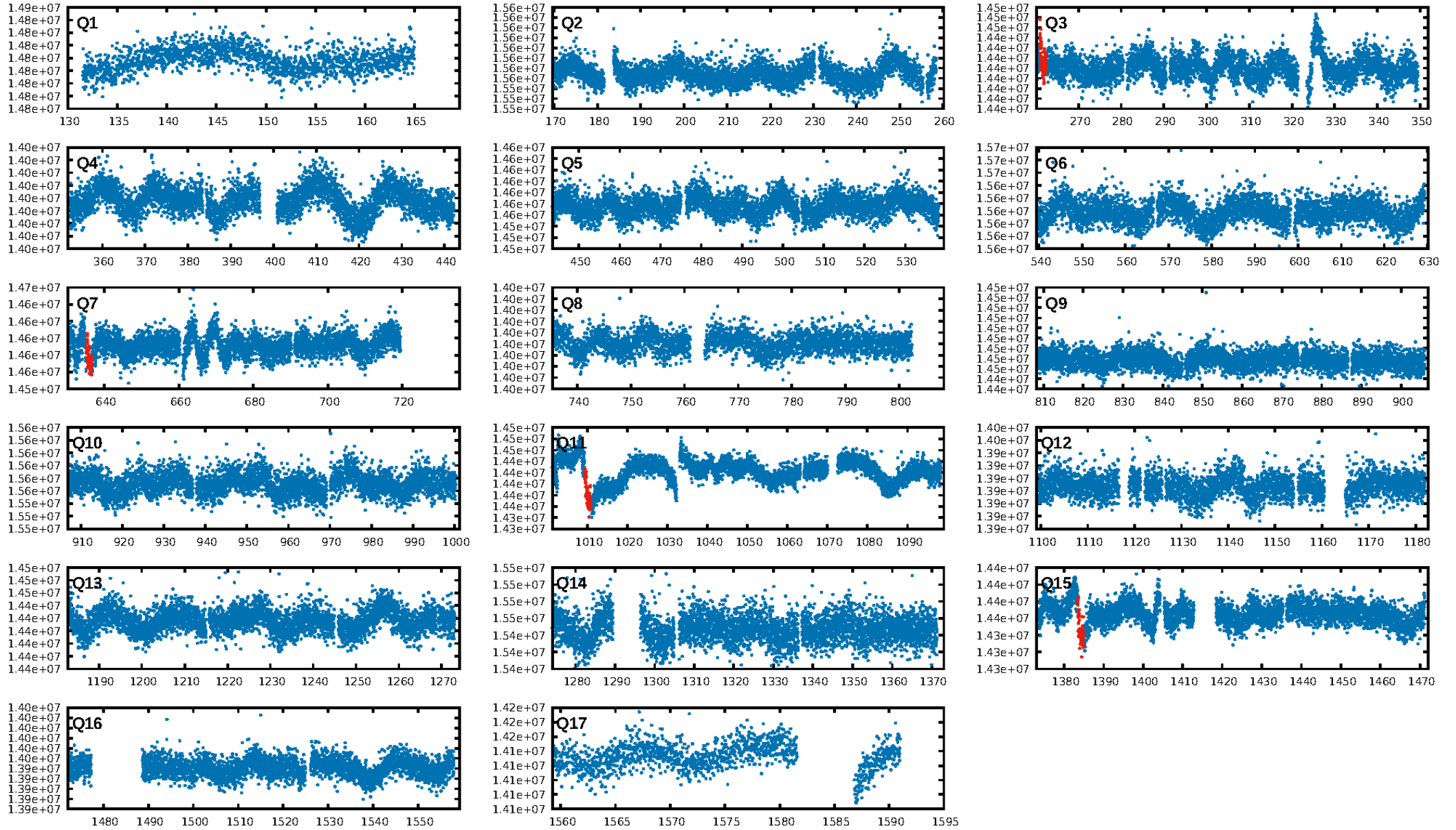
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: 0.4%  
ModelChiSquareGoF-sig: 100.0%  
Bootstrap-pfa: 1.56e-11  
RollingBand-fgt: 0.25 [1/4]  
GhostDiagnostic-chr: 0.5861  
Centroid-sig: 0.8%  
Centroid-so: 6.141 arcsec [2.52σ]  
OotOffset-rm: 6.576 arcsec [47.18σ]  
KicOffset-rm: 6.564 arcsec [47.10σ]  
OotOffset-st: 0/1/0/0 [1]  
KicOffset-st: 0/1/0/0 [1]  
DiffImageQuality-fgm: 0.00 [0/1]  
DiffImageOverlap-fno: 1.00 [3/3]

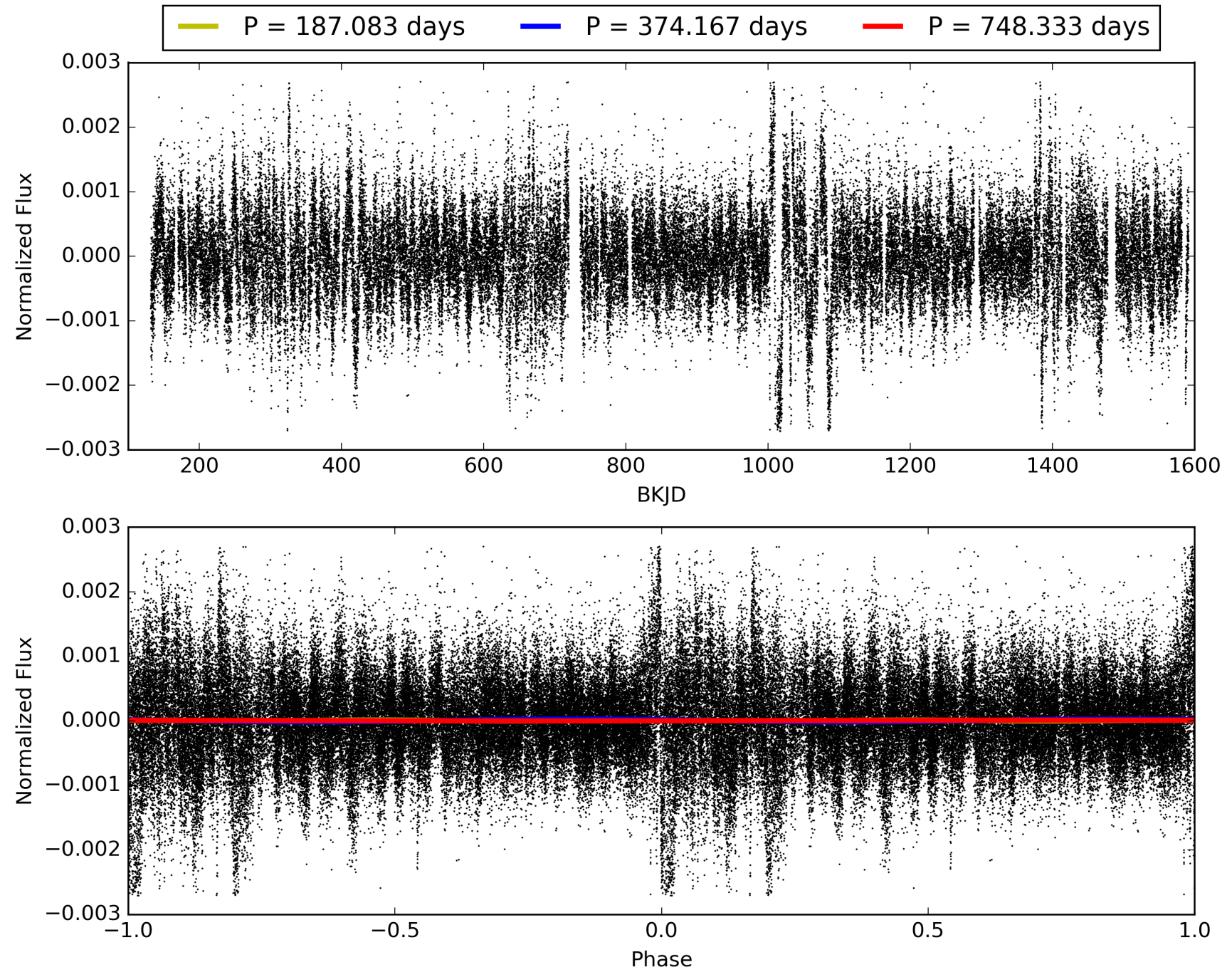
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 14:58:38 Z

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

# TCE 008229411-01, PDC Light Curves

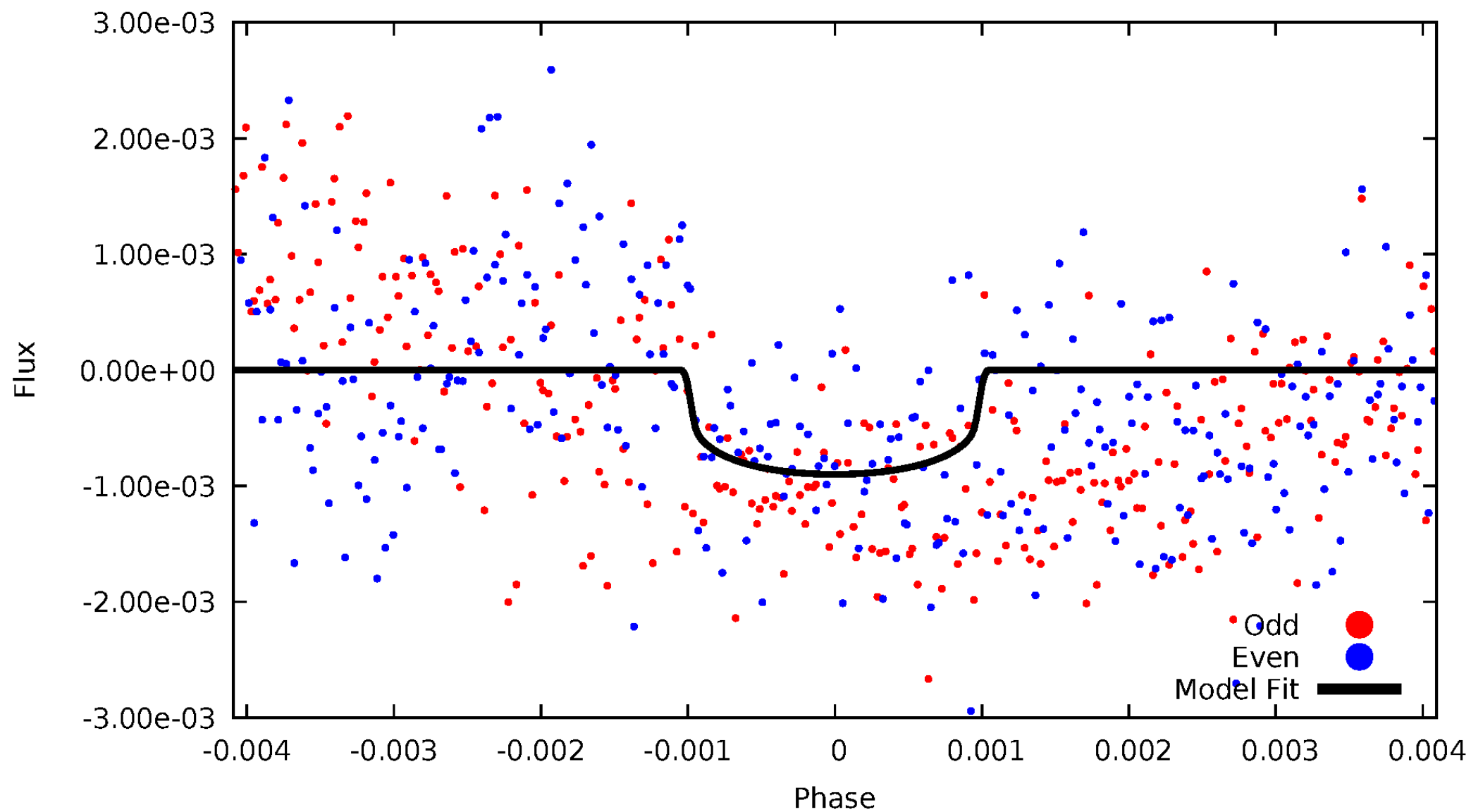


TCE 008229411-01



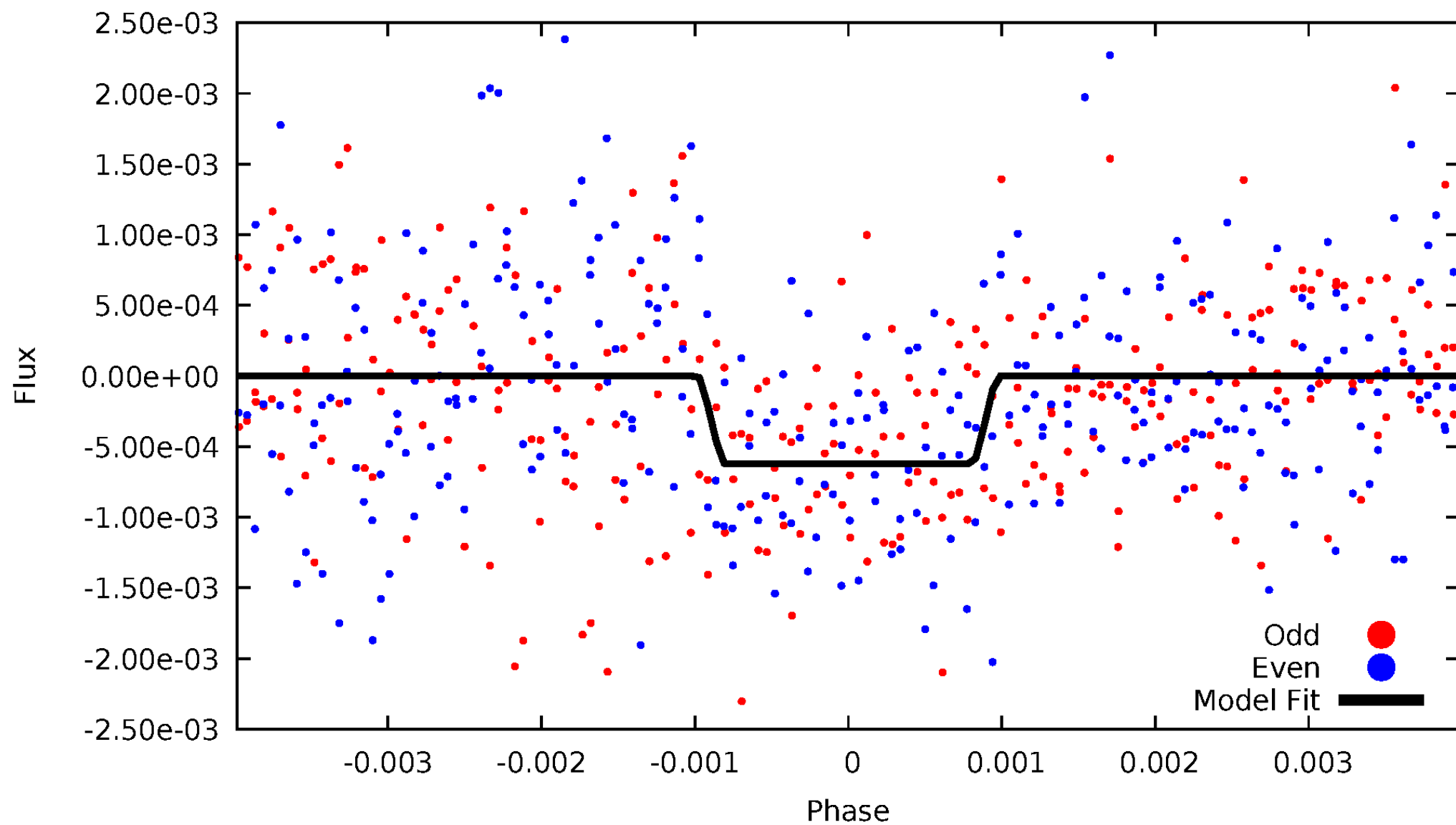
# DV Odd/Even

TCE 008229411-01



# ALT Odd/Even

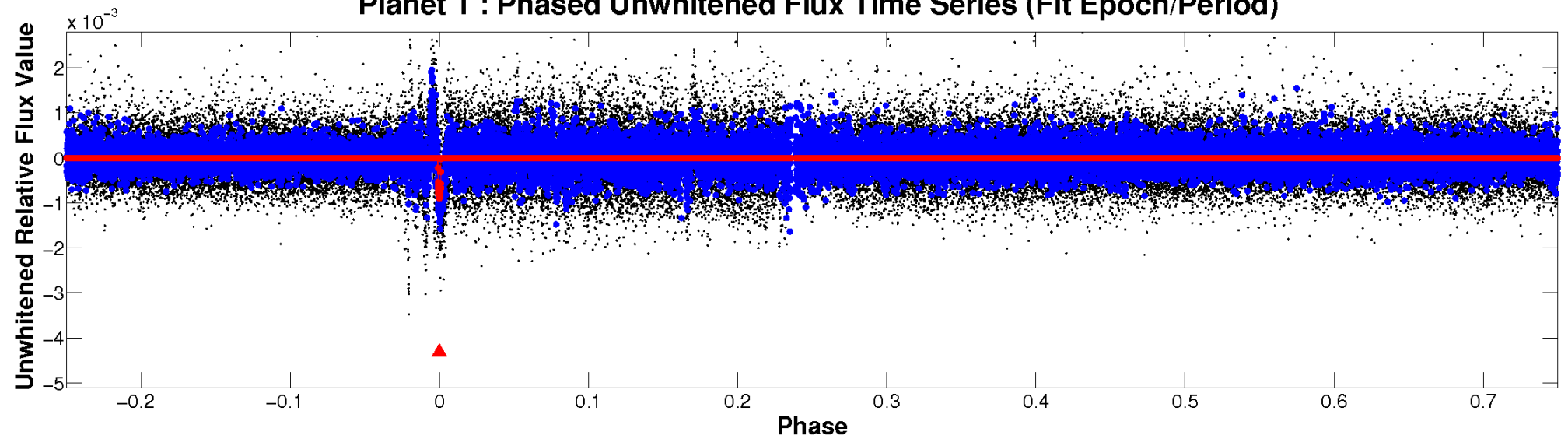
TCE 008229411-01



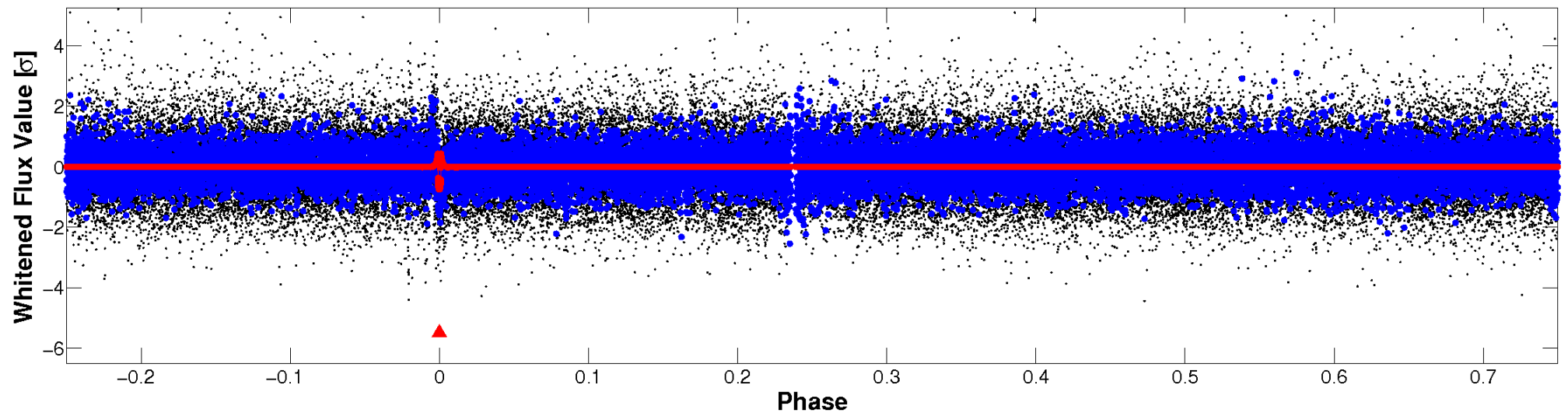


# Non-Whitened Vs. Whitened Light Curve

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

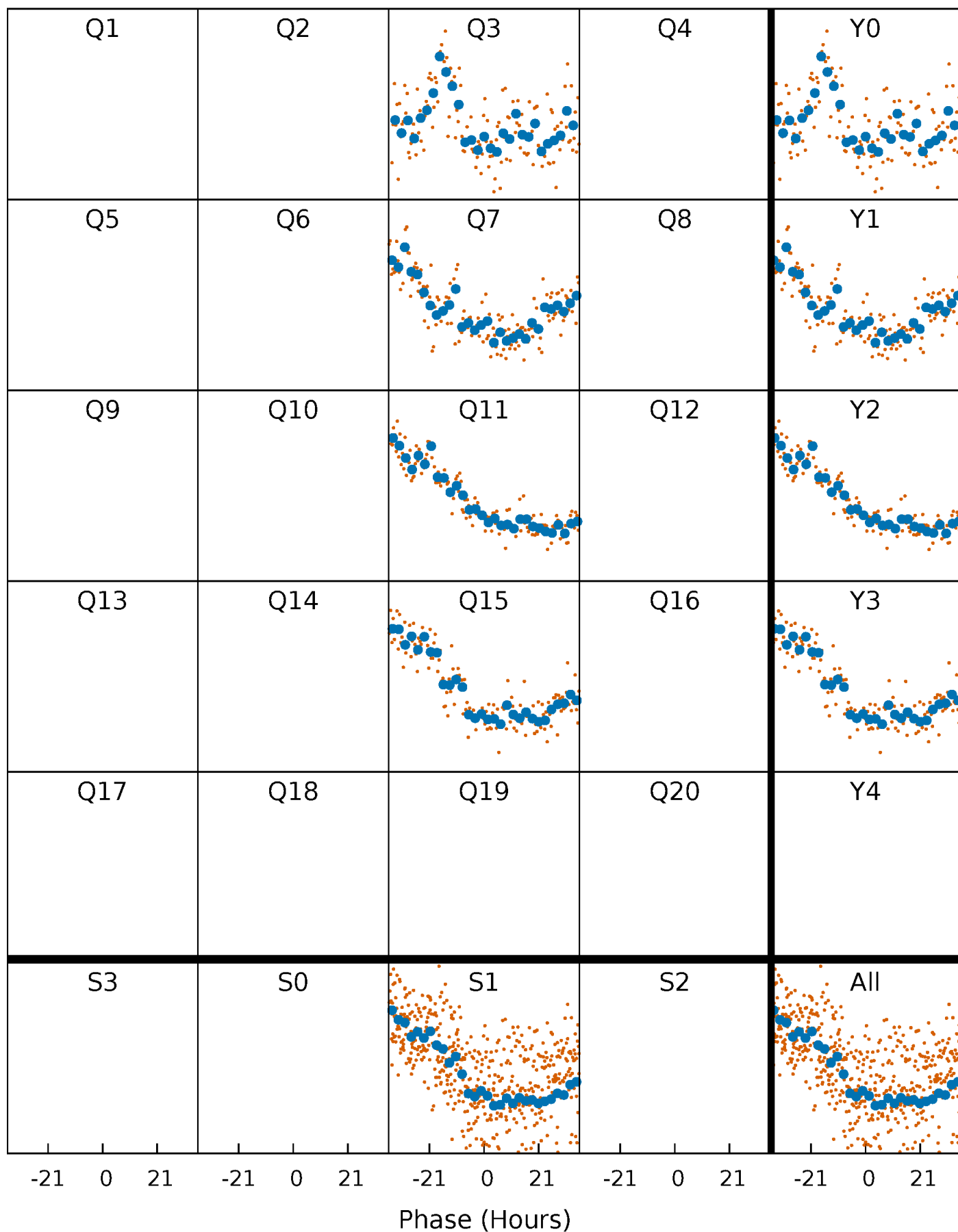


**Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)**



# PDC Quarter-Phased Transit Curves

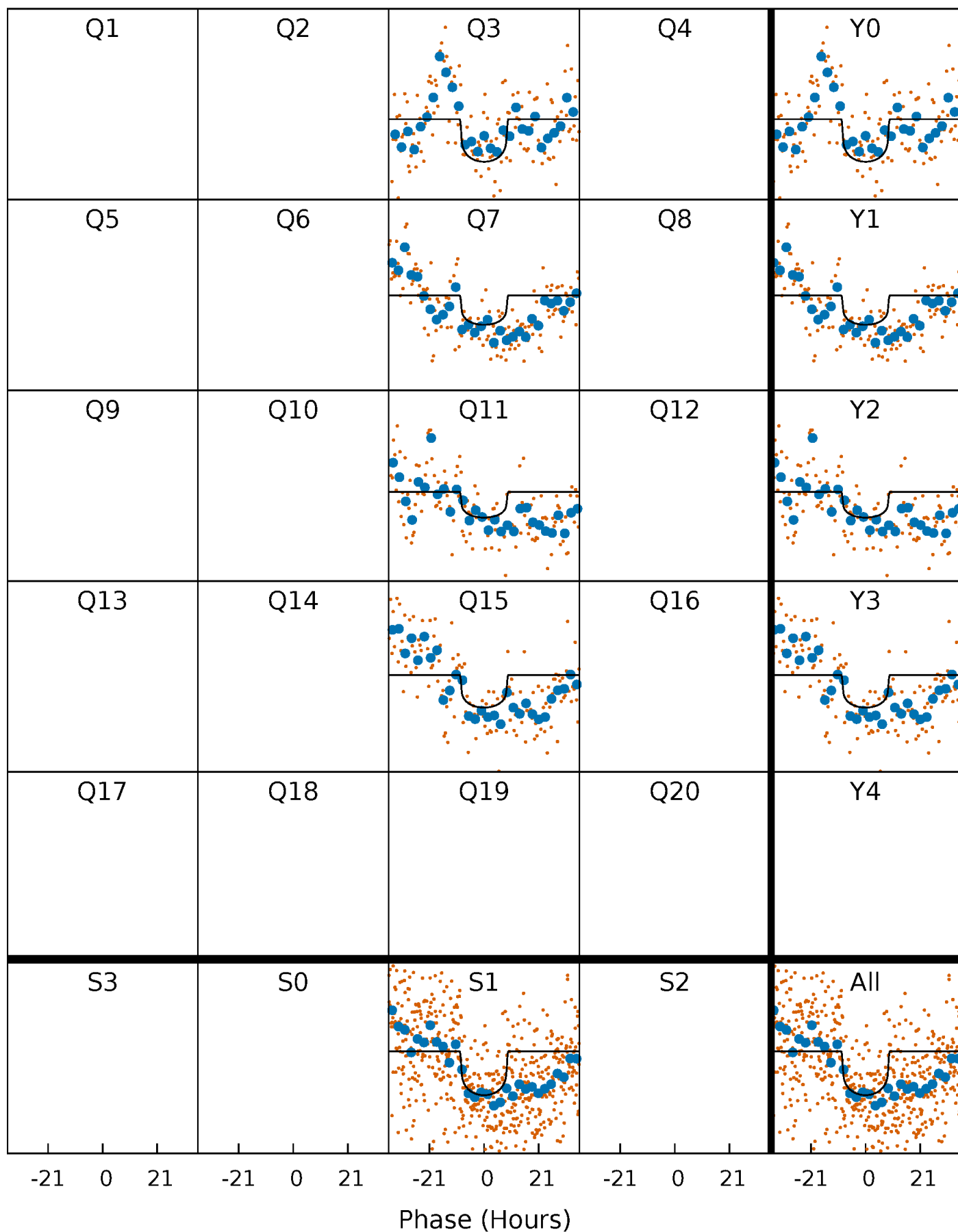
TCE 008229411-01 P=374.166523 Days  $T_0=261.723394$  (BKJD)





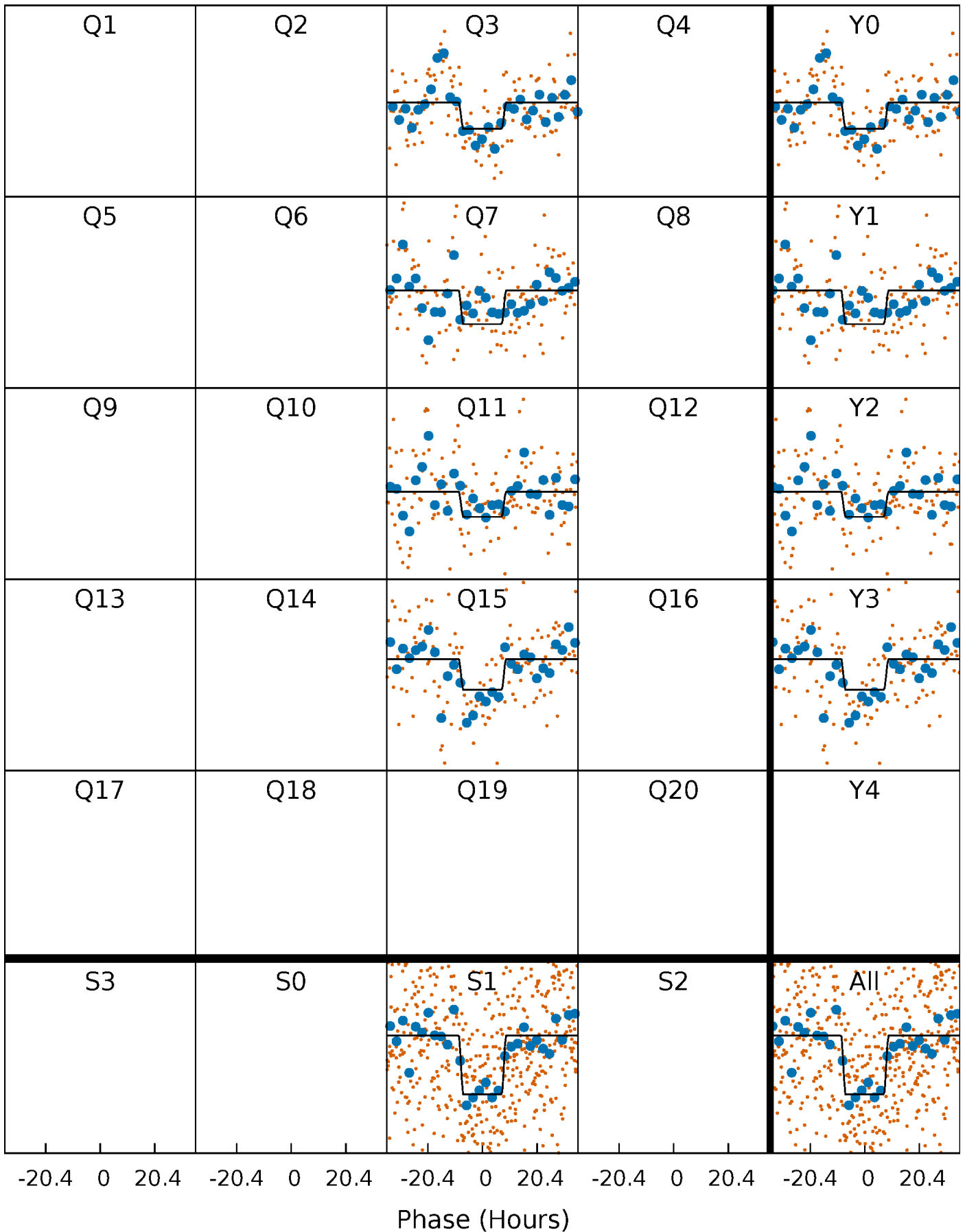
# DV Quarter-Phased Transit Curves

TCE 008229411-01 P=374.166523 Days  $T_0=261.723394$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

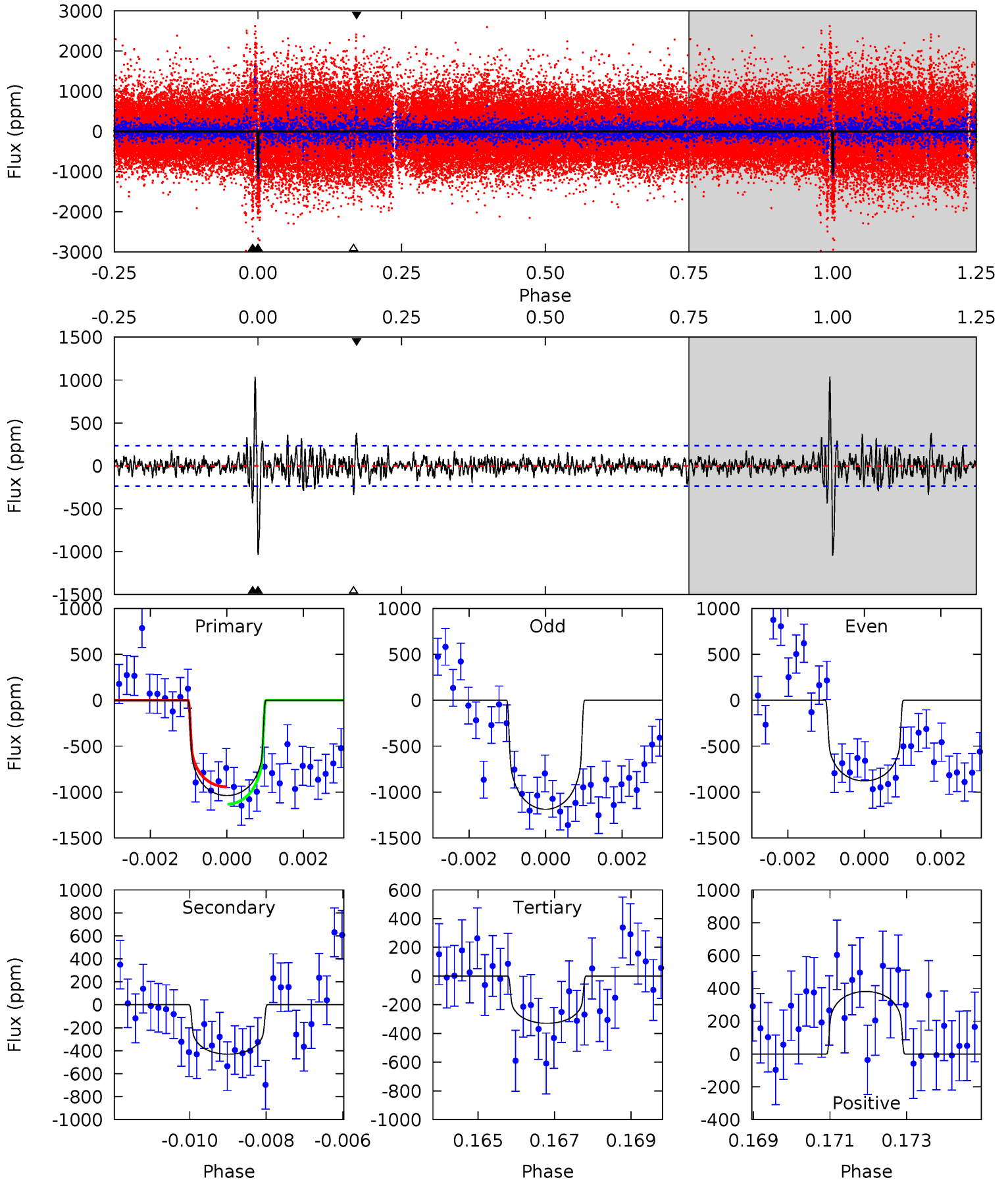
TCE 008229411-01 P=374.179351 Days  $T_0=261.692460$  (BKJD)



# DV Model-Shift Uniqueness Test

008229411-01, P = 374.166523 Days, E = 261.723394 Days

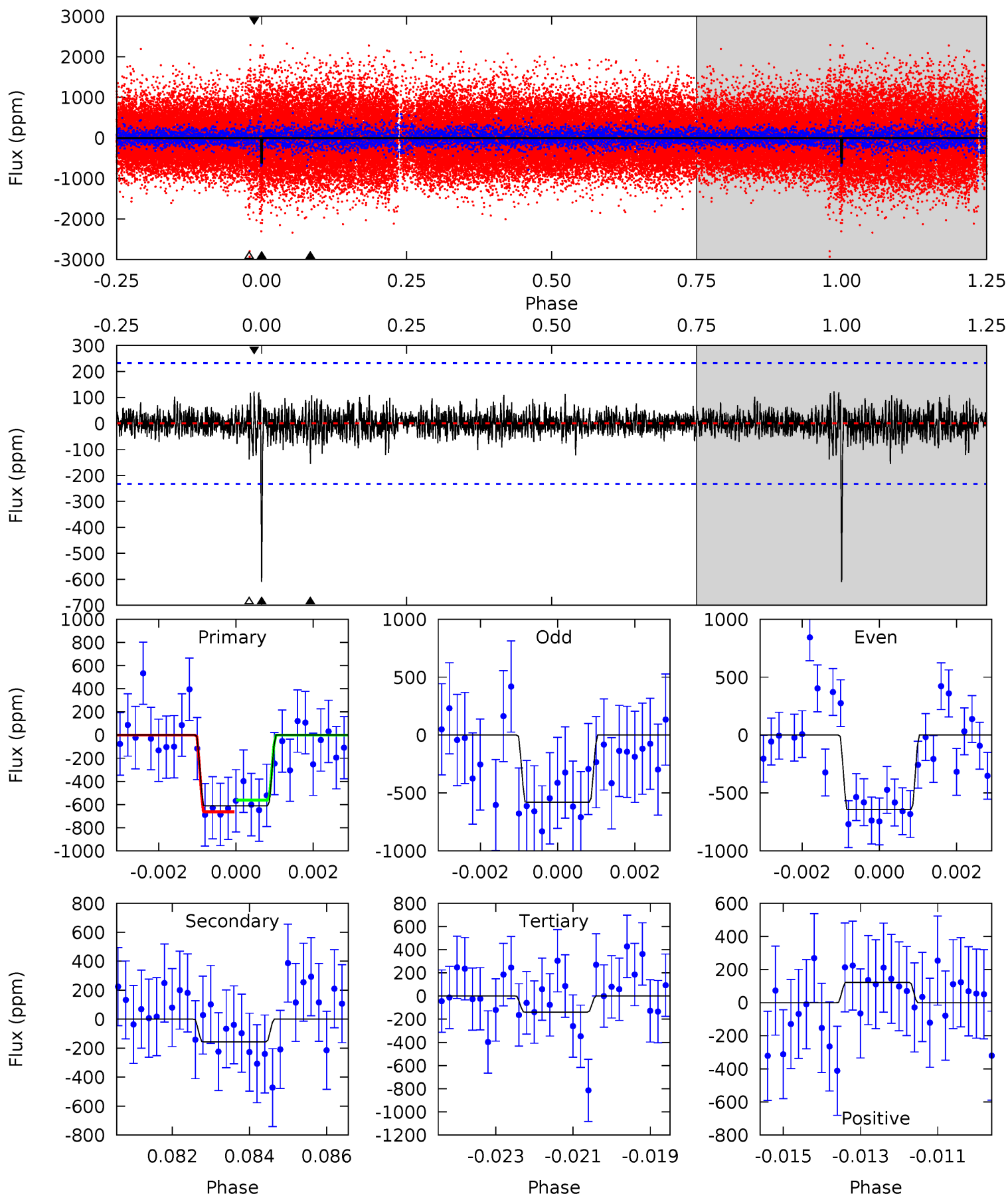
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
23.4	9.69	7.41	8.58	5.32	3.08	2.06	16.0	14.8	2.28	1.11	3.48	0.88	0.50	2.12



# Alt Model-Shift Uniqueness Test

008229411-01, P = 374.179351 Days, E = 261.692460 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
14.0	3.57	3.17	2.80	5.33	3.10	0.72	10.8	11.2	0.39	0.77	0.73	0.96	0.17	1.17



### Stellar Parameters For KIC 008229411

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R$ ( $R_{\odot}$ )	$M$ ( $M_{\odot}$ )	$p_{\star}$ ( $\text{g}\cdot\text{cm}^{-3}$ )
	$5730^{+156}_{-173}$	$4.545^{+0.035}_{-0.196}$	$-0.060^{+0.300}_{-0.300}$	$0.870^{+0.245}_{-0.077}$	$0.968^{+0.102}_{-0.114}$	$2.069^{+0.391}_{-1.040}$
	+3%/-3%	+1%/-4%	+500%/-500%	+28%/-9%	+11%/-12%	+19%/-50%
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 008229411-01 / KOI

Detrend	Depth (ppm)	$R_p$ ( $R_{\oplus}$ )	$T_{max}$ (K)	$T_{obs}$ (K)	$A_{obs}$
DV	$-431 \pm 44$	$2.85^{+1.20}_{-1.16}$	$337^{+23}_{-15}$	$4984^{+1320}_{-665}$	$28800^{+52238}_{-14409}$
Alt.	$-156 \pm 44$	$2.52^{+1.26}_{-1.15}$	$336^{+21}_{-15}$	$4221^{+1354}_{-569}$	$12662^{+35505}_{-7373}$

$T_{max}$  = Theoretical Maximum Planetary Temperature

$T_{obs}$  = Observed Planetary Temperature (Assuming  $A=0.3$ )

$A_{obs}$  = Observed Albedo (Assuming  $T=0$ )

If a secondary eclipse is present, the system is likely an EB if  $T_{obs} \gg T_{max}$  AND  $A_{obs} \gg 1.0$

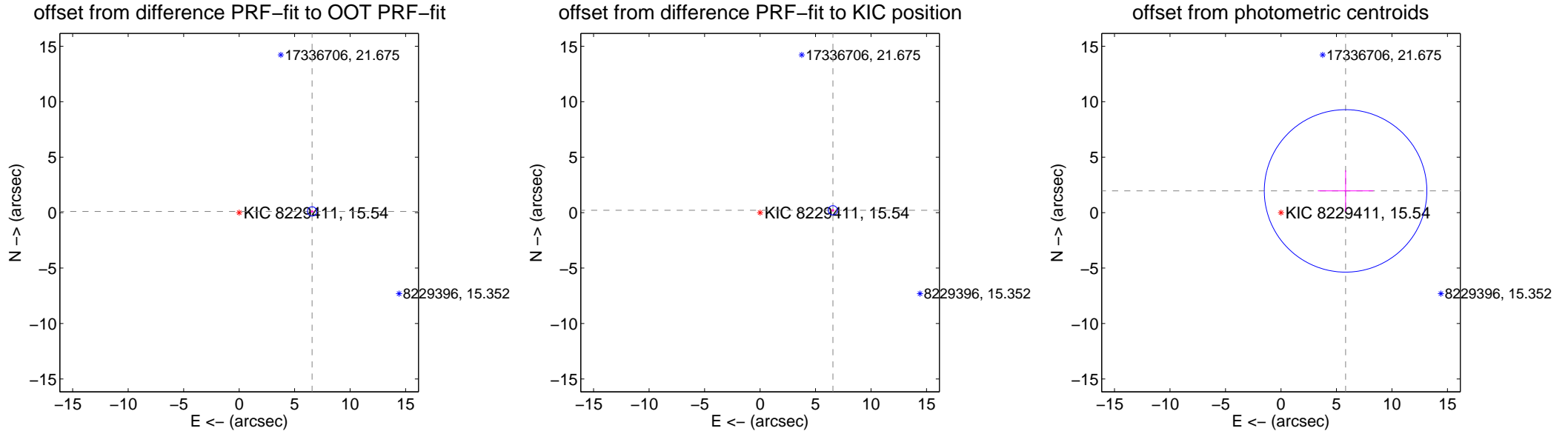
## DV Centroid Data

Supplemental centroid analysis for 008229411-01. Kepler magnitude: 15.54. Transit SNR 8.47

There are 0 quarters with good PRF difference image offsets

The direct PRF centroid is offset from the target star catalog position by about 0.10 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$6.576 \pm 0.139$	47.18	$-6.575 \pm 0.139$	$0.107 \pm 0.150$
PRF-fit source offset from KIC position	$6.564 \pm 0.139$	47.10	$-6.561 \pm 0.139$	$0.209 \pm 0.150$
photometric centroid source offset	$6.14 \pm 2.44$	2.52	$-5.82 \pm 2.50$	$1.96 \pm 1.85$



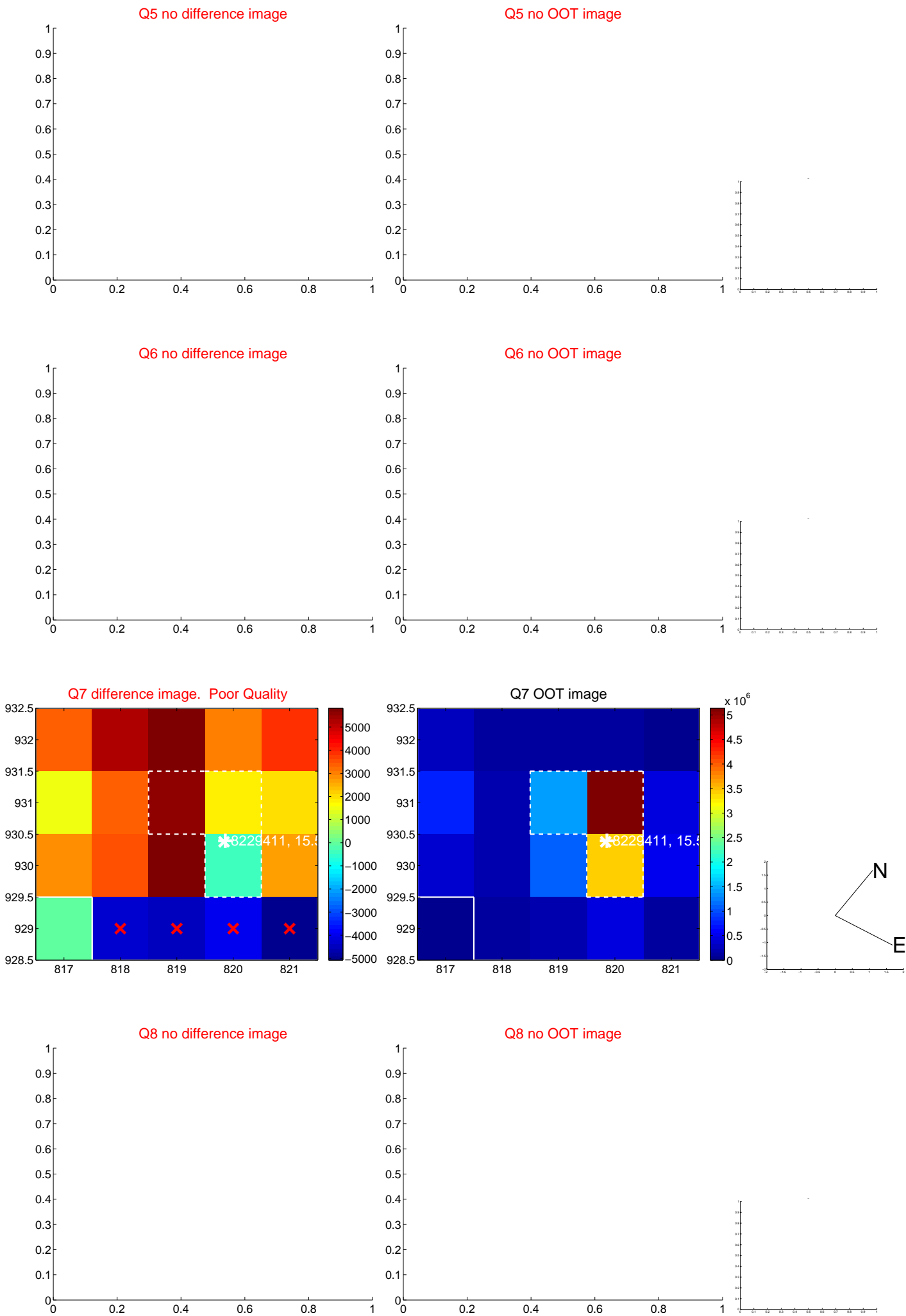
Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: three-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



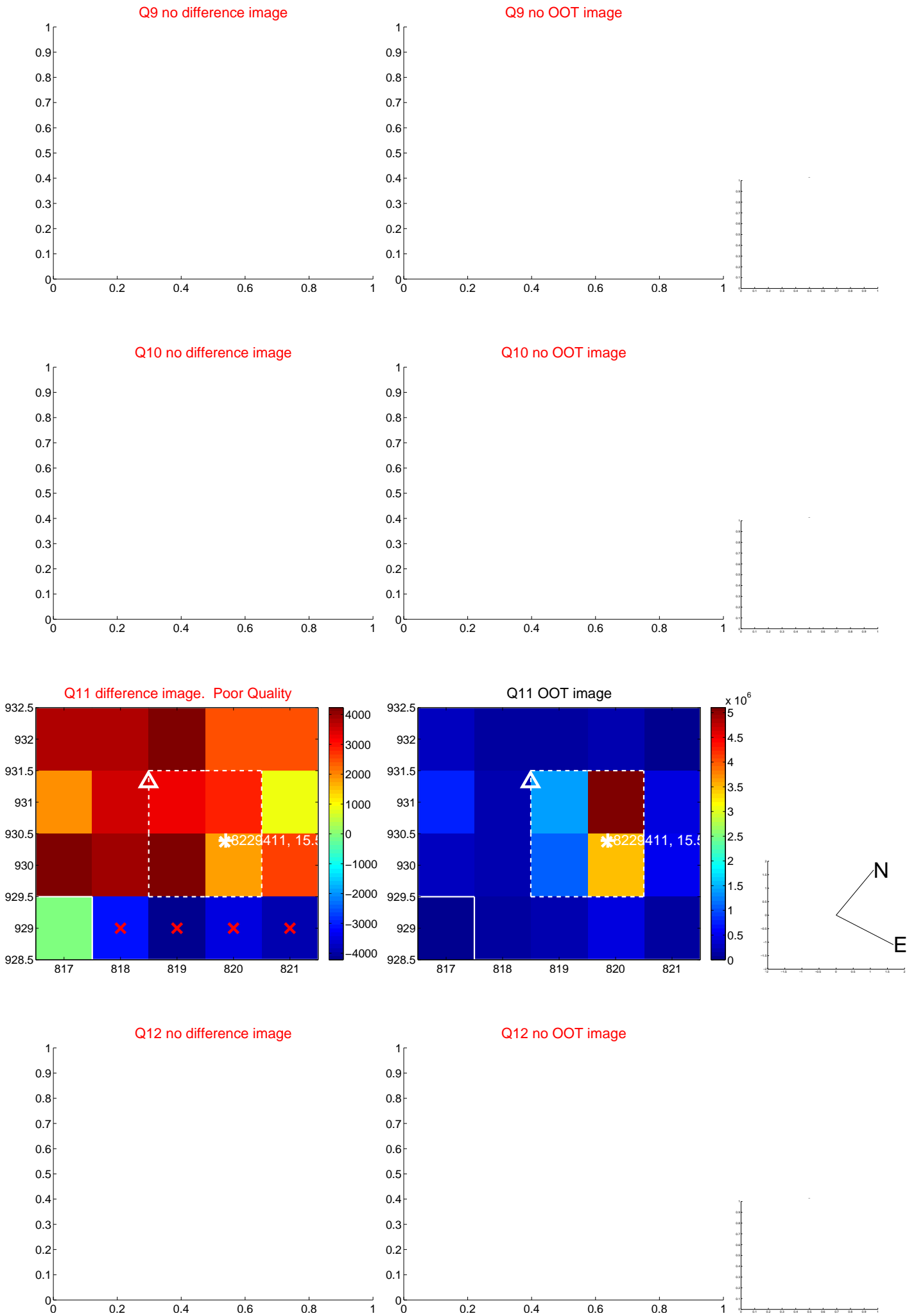
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



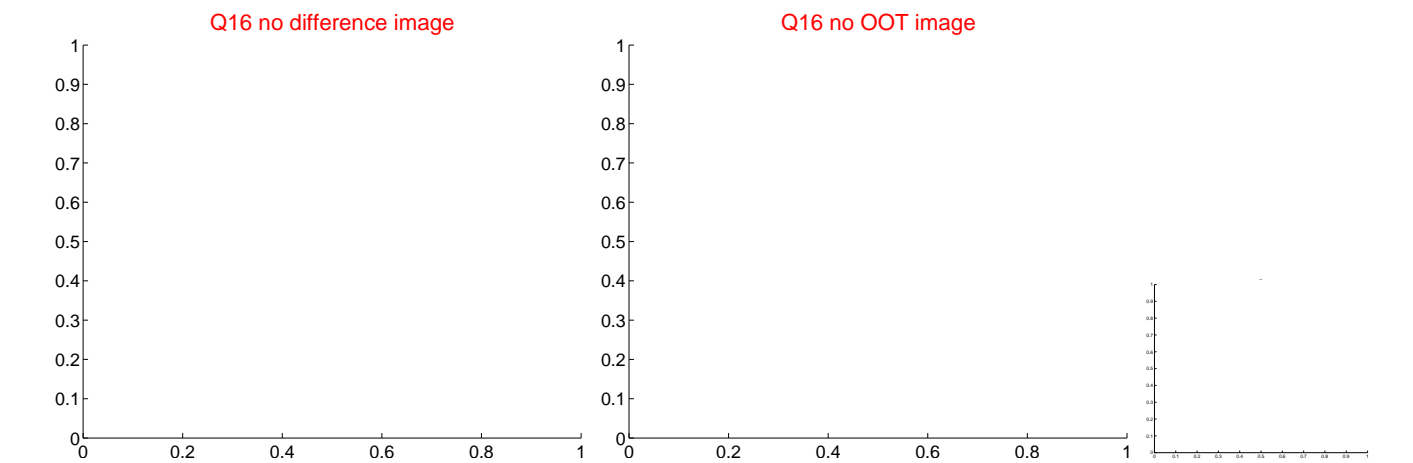
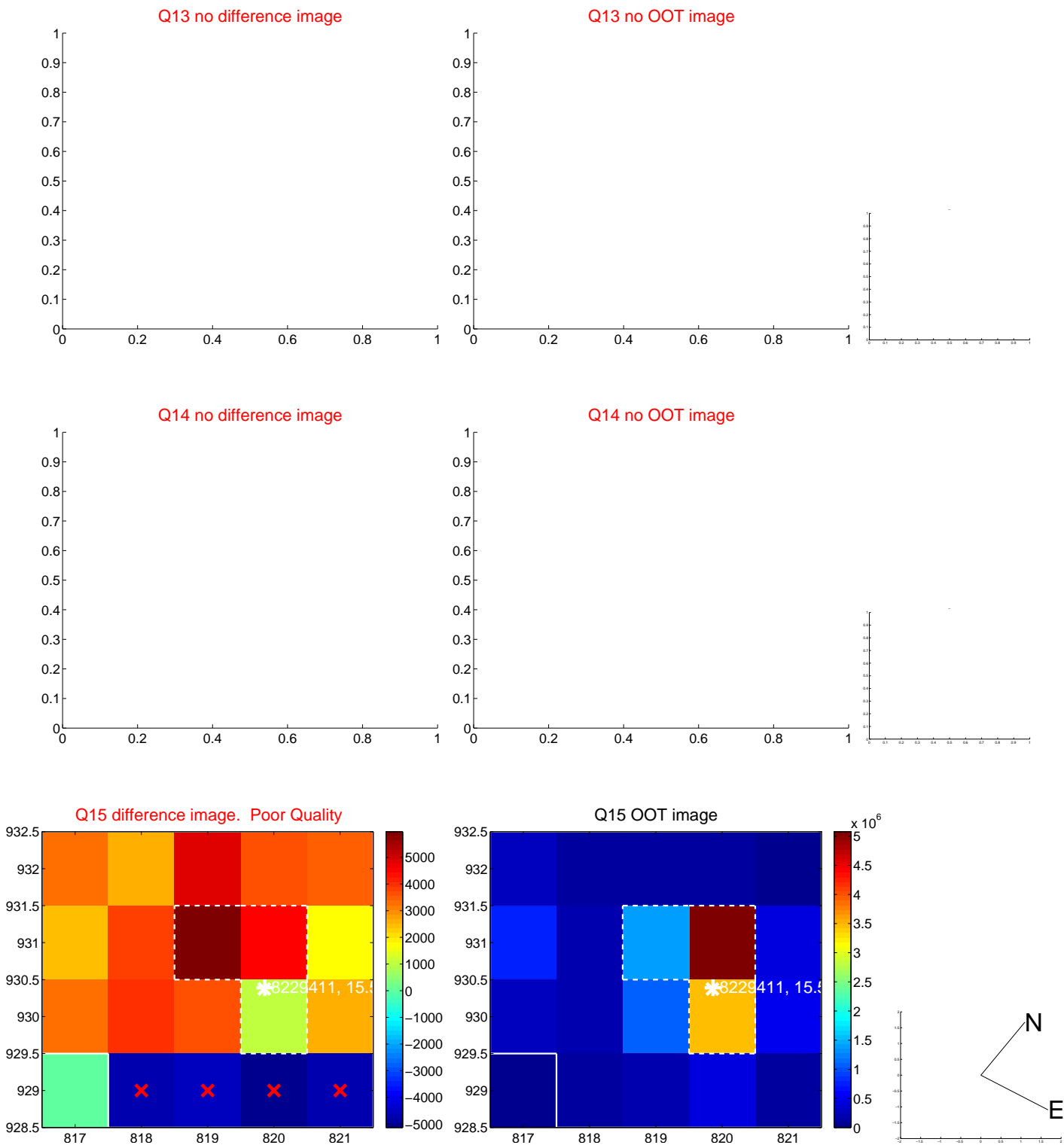
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ✕: large negative pixel value.



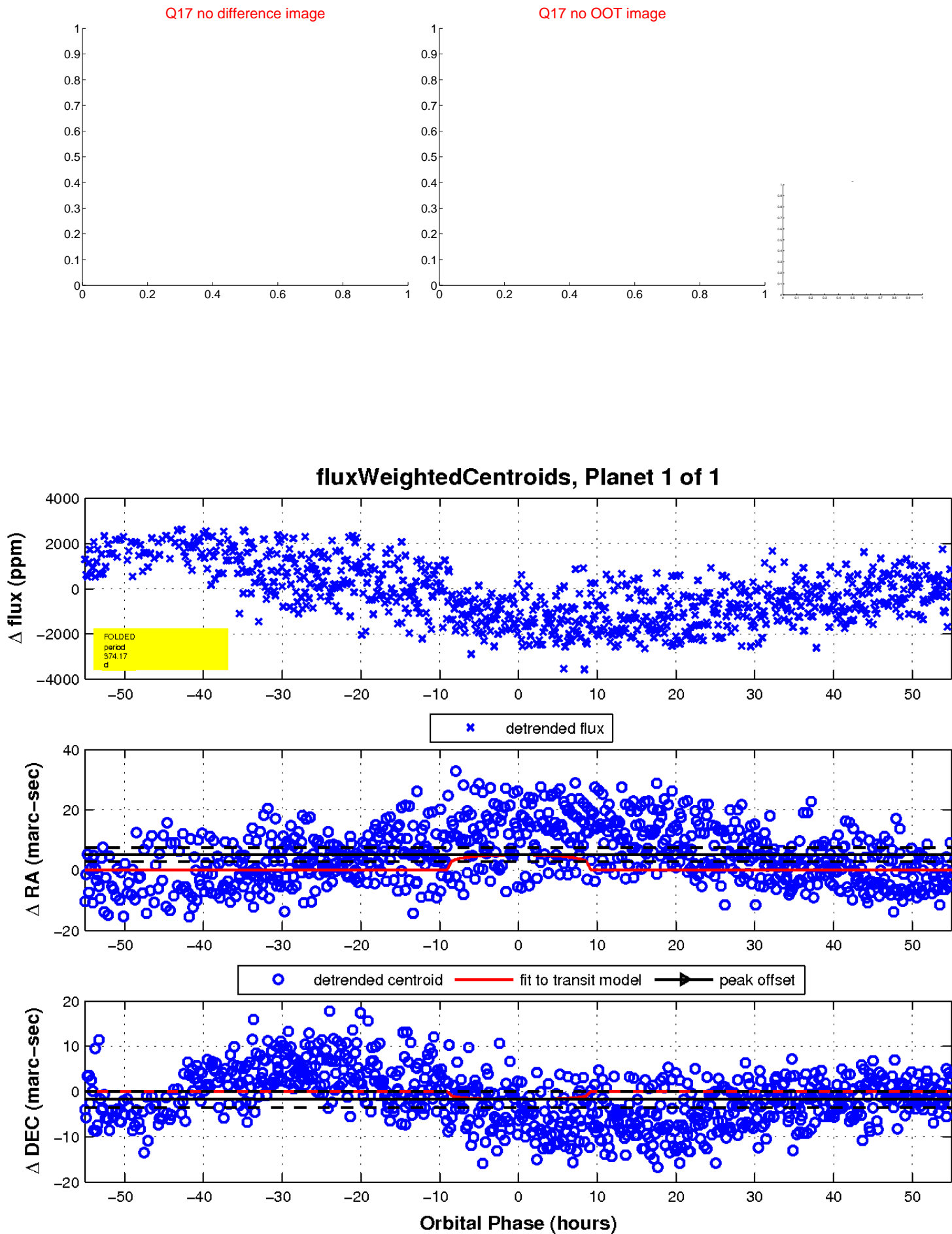
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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



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



UKIRT Image

Declination

