

# KIC 010664005

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
010664005-01	OBS	No	370.534732	309.153862	588.6	19.436	9.1	8.2	1.14	6343	2.80	1.62

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
010664005-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL_SKYE—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.

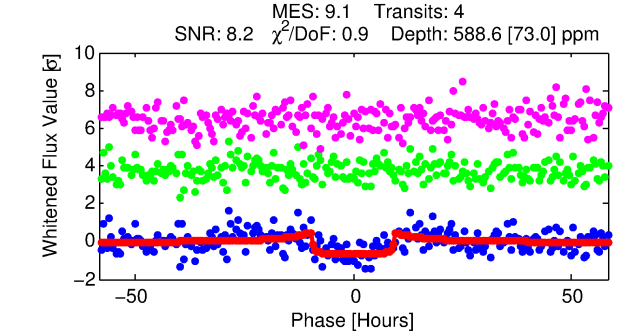
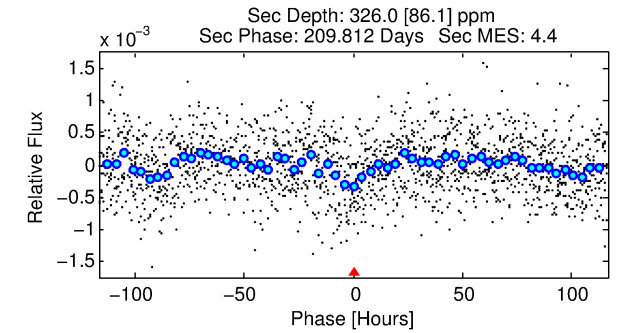
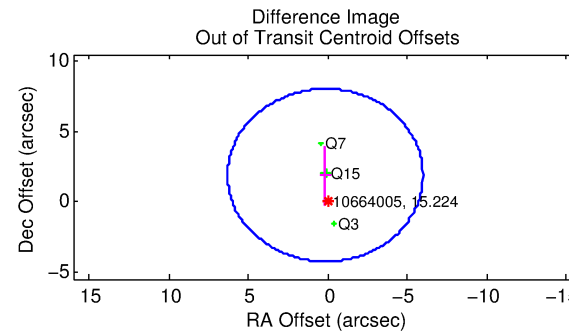
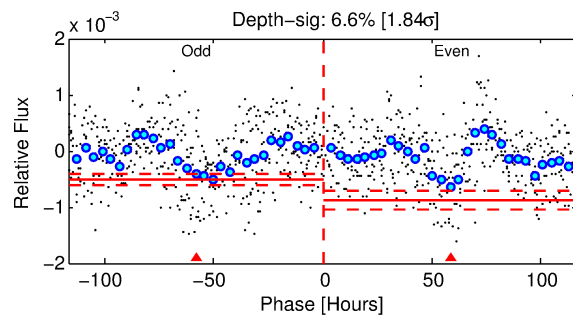
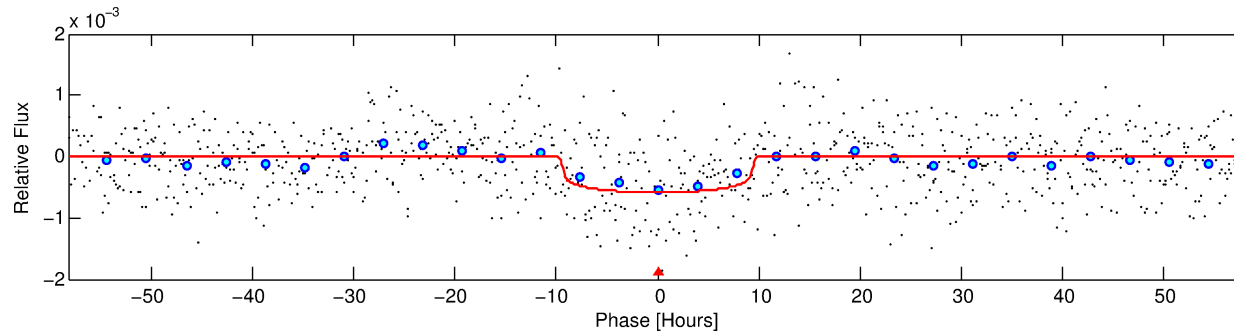
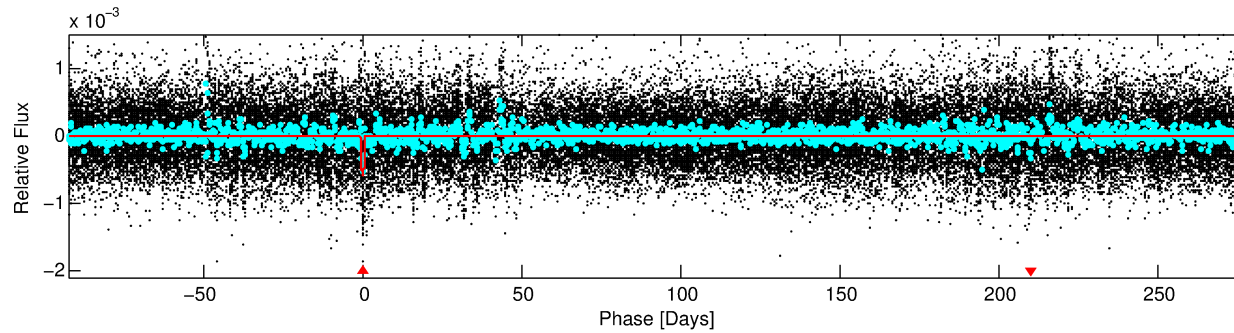
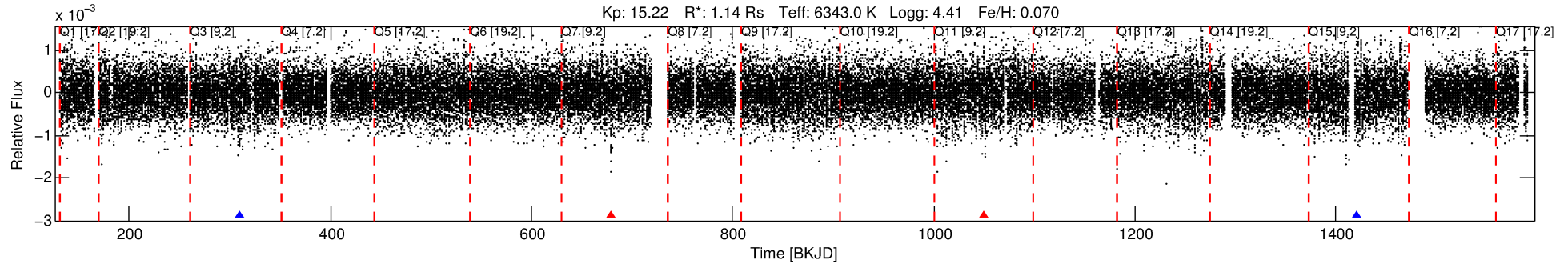
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 010664005-01

No Significant Match Found

# DV One-Page Summary

KIC: 10664005 Candidate: 1 of 1 Period: 370.535 d



## DV Fit Results:

Period = 370.53473 [0.00887] d  
Epoch = 309.1539 [0.0160] BKJD  
Rp/R\* = 0.0225 [0.0104]  
a/R\* = 141.48 [324.72]  
b = 0.32 [6.49]  
Seff = 1.63 [0.73]  
Teq = 288 [32] K  
Rp = 2.80 [1.66] Re  
a = 1.0769 [0.3260] AU  
Ag = 26596.45 [27973.56] [0.95 $\sigma$ ]  
Teffp = 5685 [1382] K [3.90 $\sigma$ ]

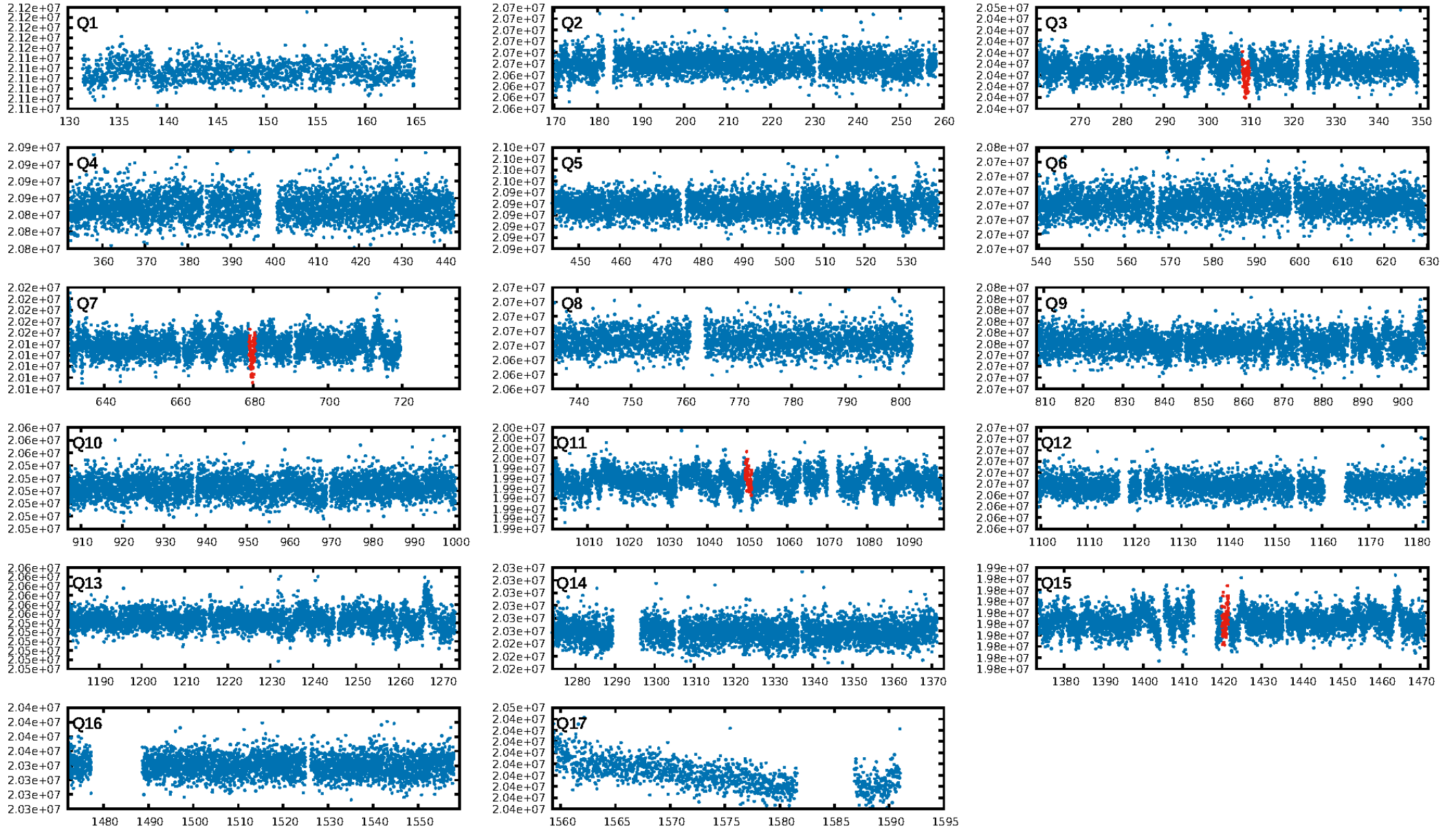
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: 7.1%  
ModelChiSquareGof-sig: 100.0%  
**Bootstrap-pfa: 2.38e-12**  
**RollingBand-fgt: 0.50 [2/4]**  
GhostDiagnostic-chr: -21.46  
Centroid-sig: 13.9%  
Centroid-so: 2.305 arcsec [1.16 $\sigma$ ]  
OotOffset-rm: 1.893 arcsec [0.92 $\sigma$ ]  
KicOffset-rm: 1.838 arcsec [0.89 $\sigma$ ]  
OotOffset-st: 0/3/0/0 [3]  
KicOffset-st: 0/3/0/0 [3]  
DiffImageQuality-fgm: 0.33 [1/3]  
DiffImageOverlap-fno: 1.00 [4/4]

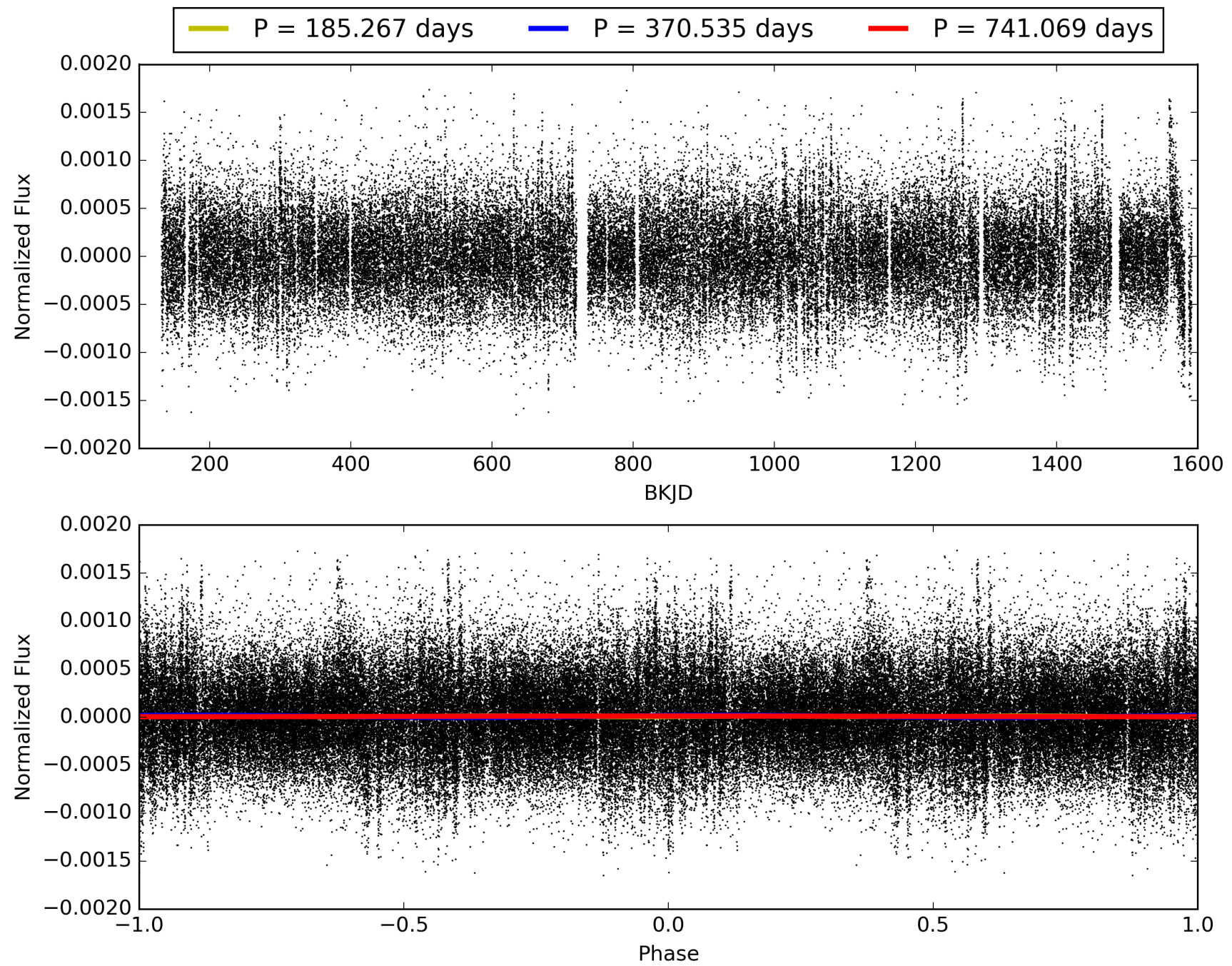
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 28-Jan-2016 21:39:31 Z

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

# TCE 010664005-01, PDC Light Curves

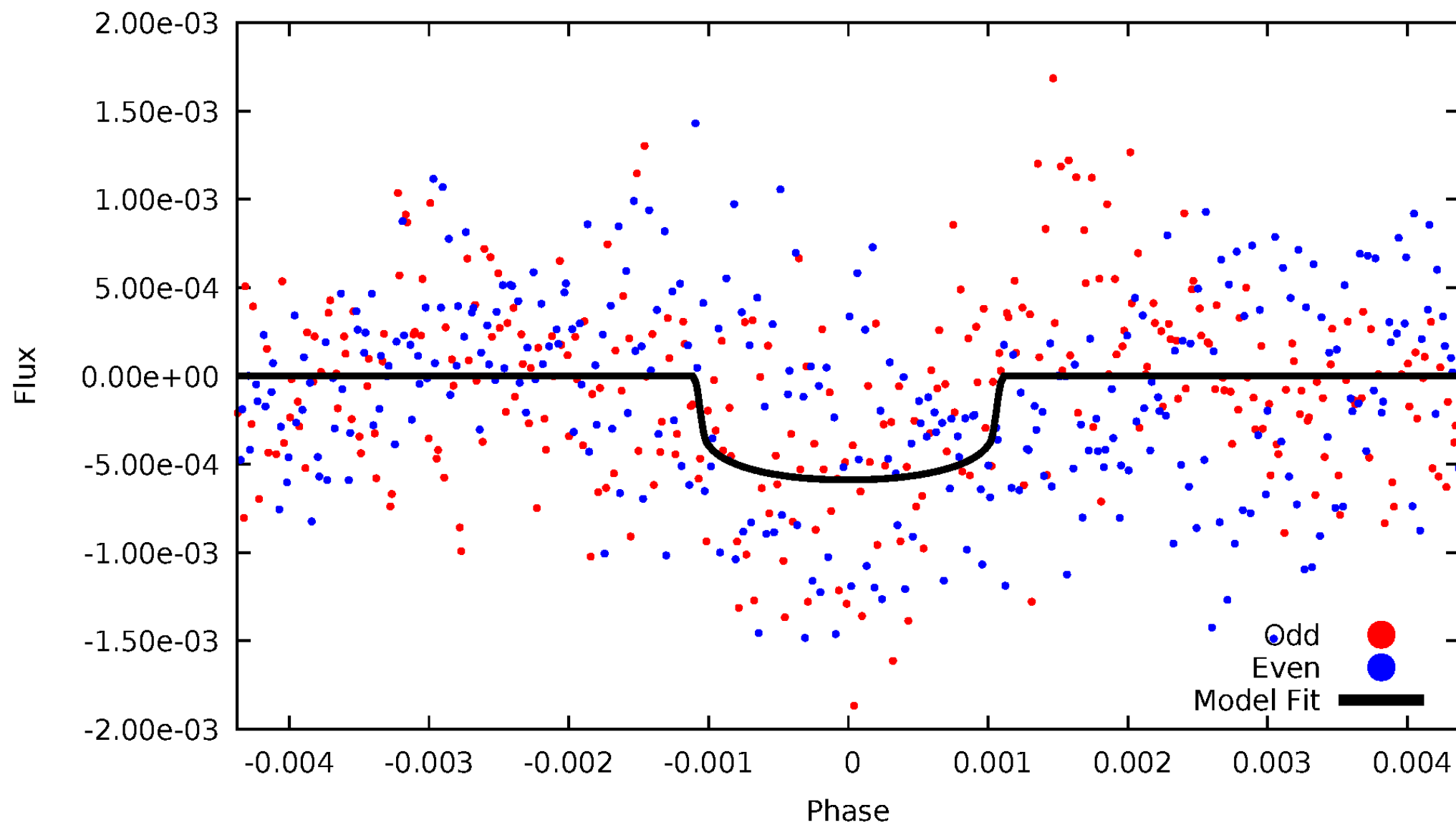


TCE 010664005-01



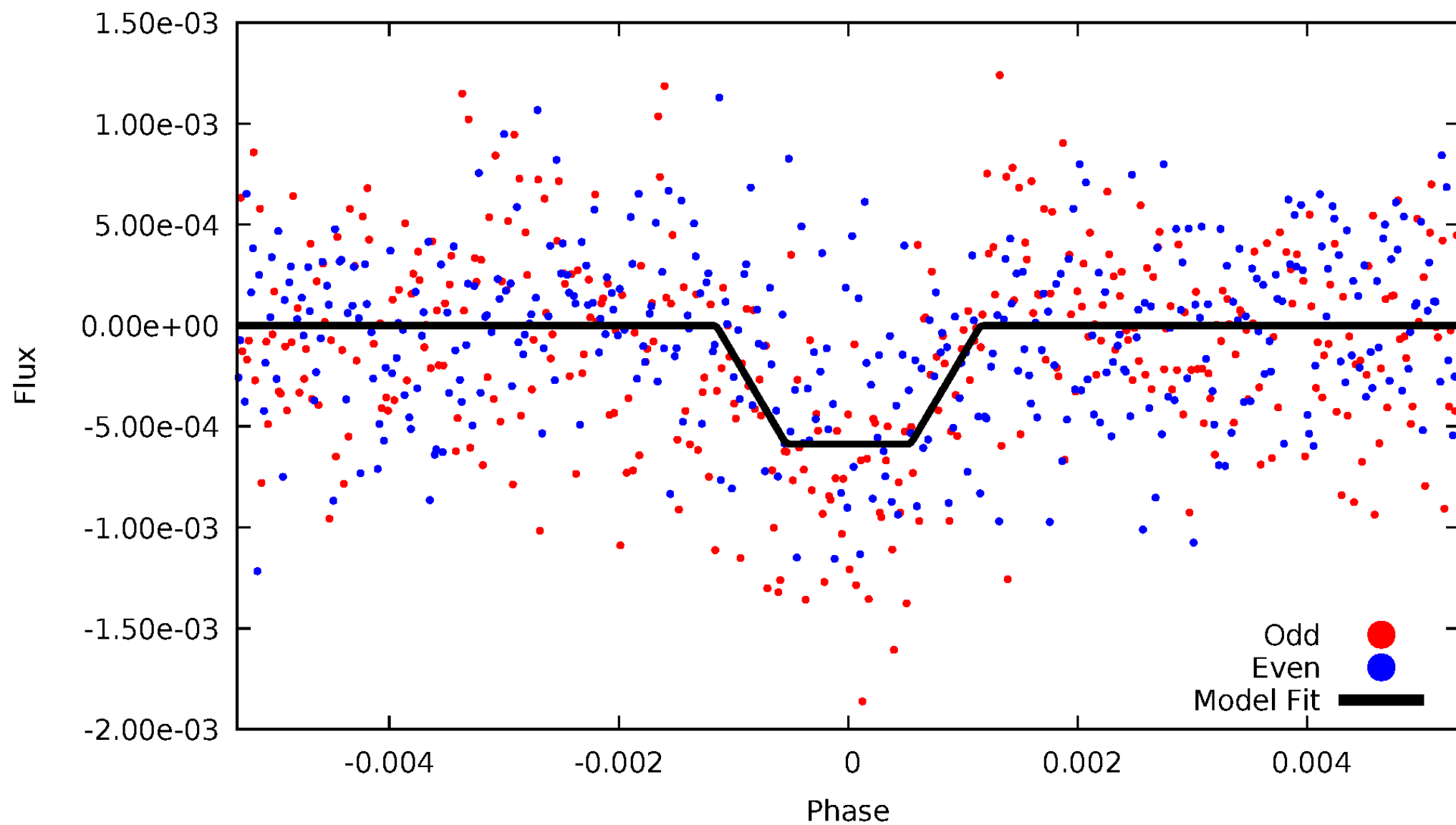
# DV Odd/Even

TCE 010664005-01



# ALT Odd/Even

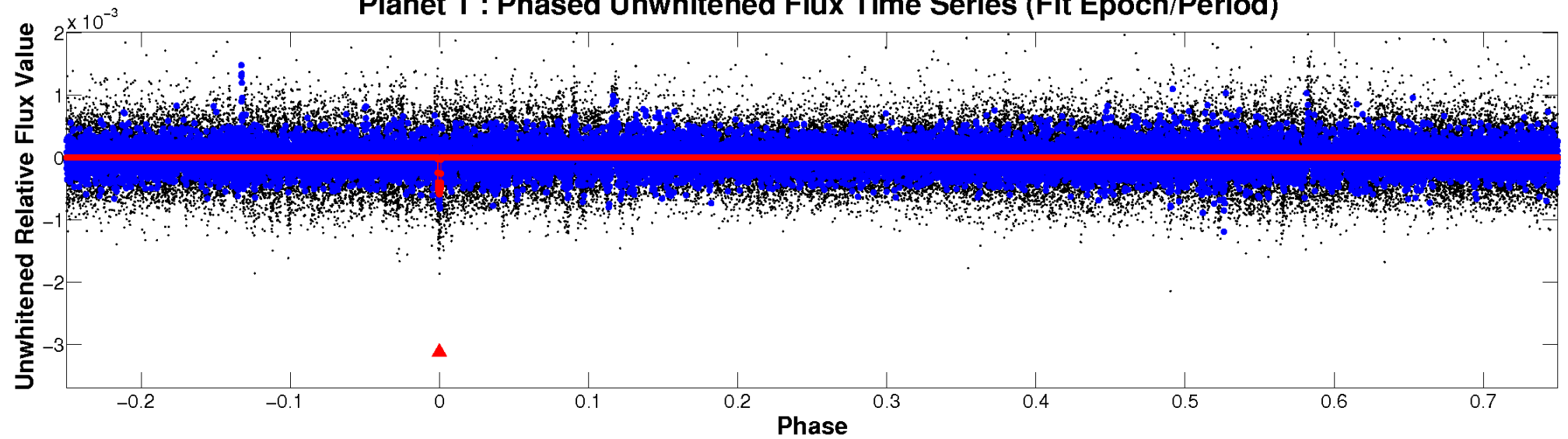
TCE 010664005-01



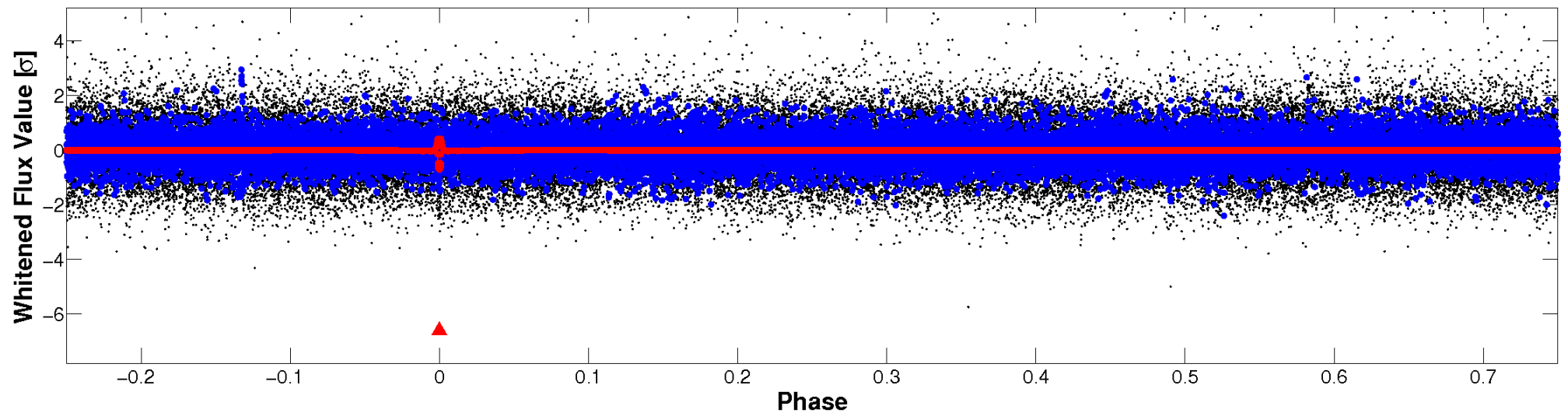


# Non-Whitened Vs. Whitened Light Curve

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

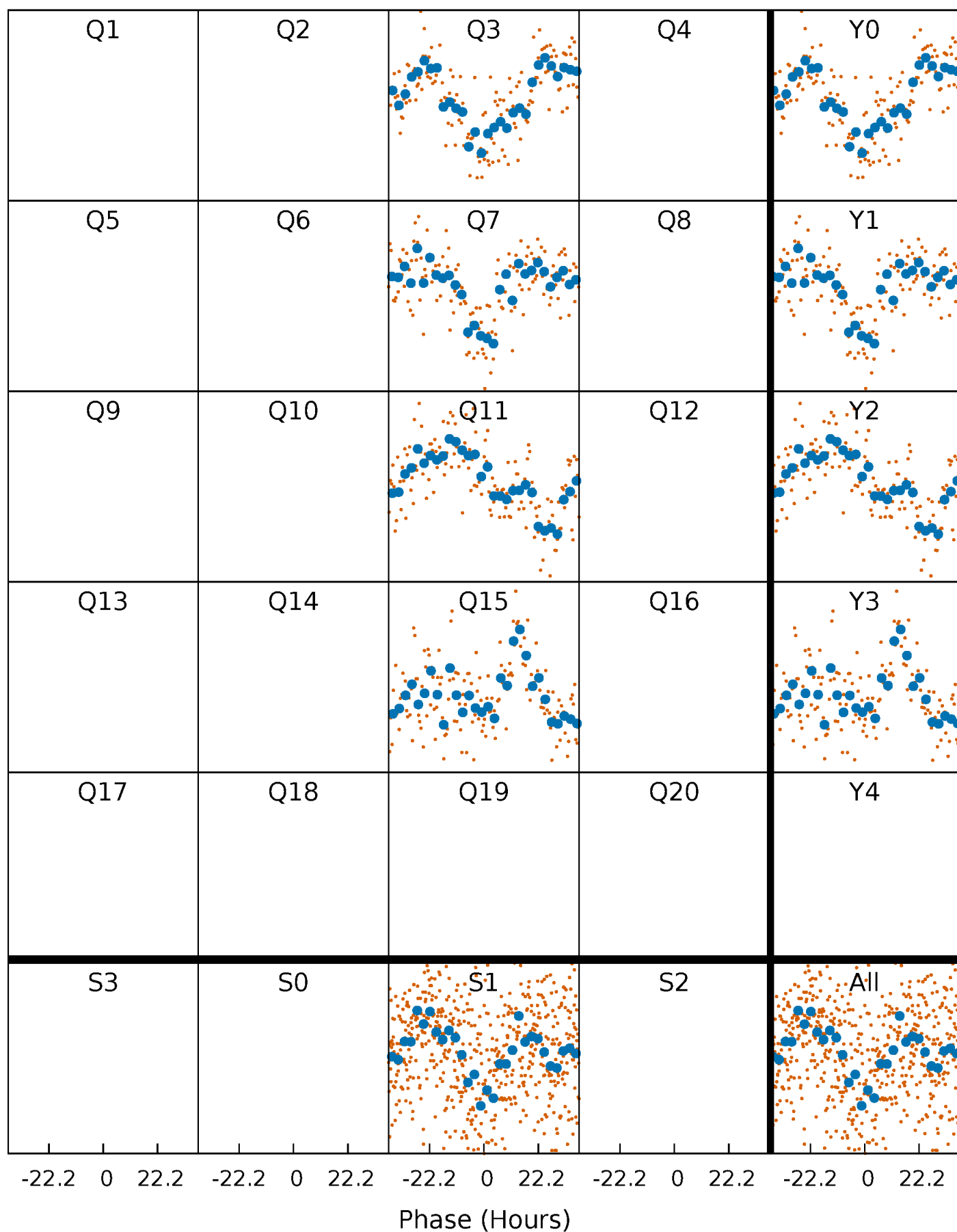


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



# PDC Quarter-Phased Transit Curves

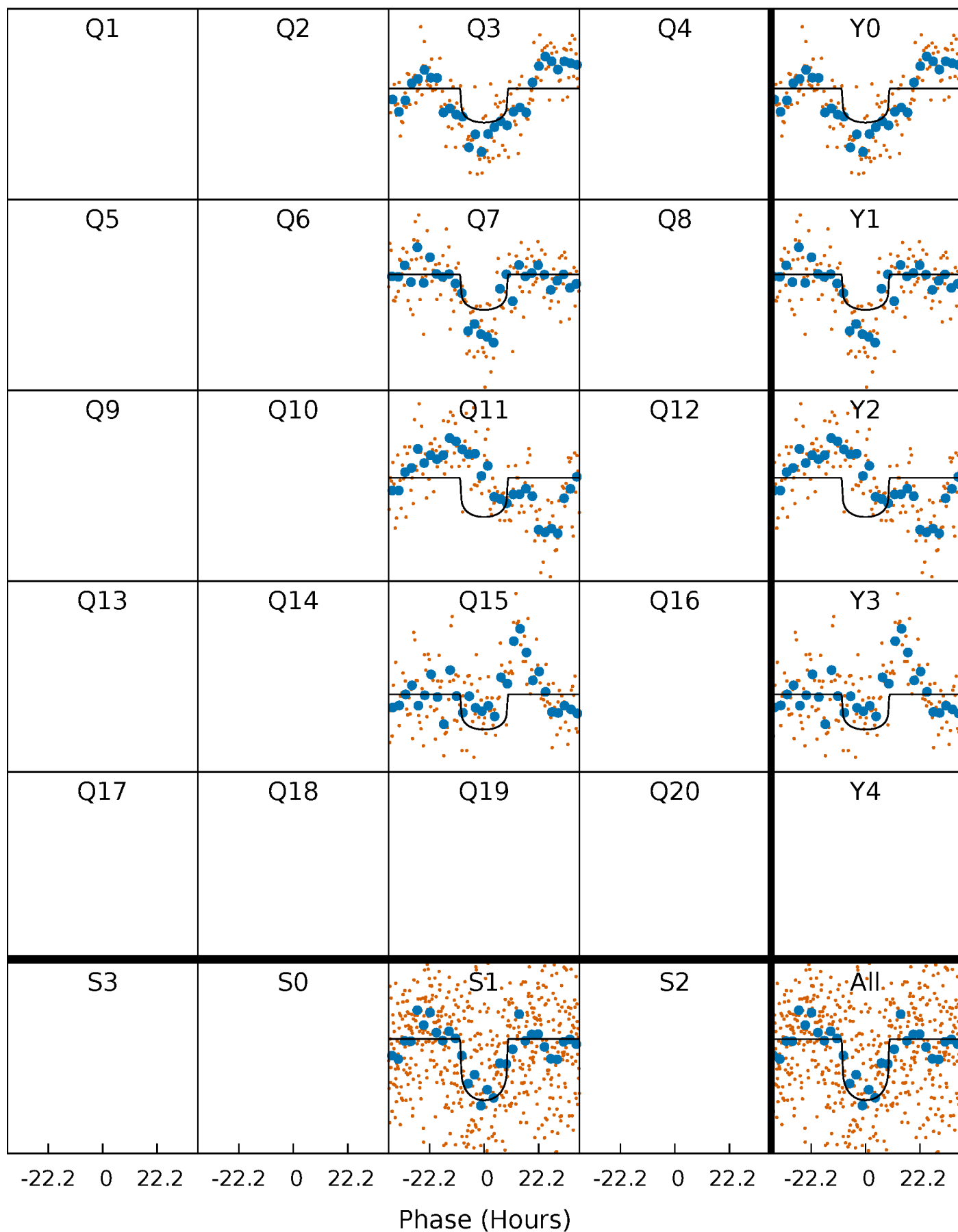
TCE 010664005-01 P=370.534732 Days  $T_0=309.153862$  (BKJD)





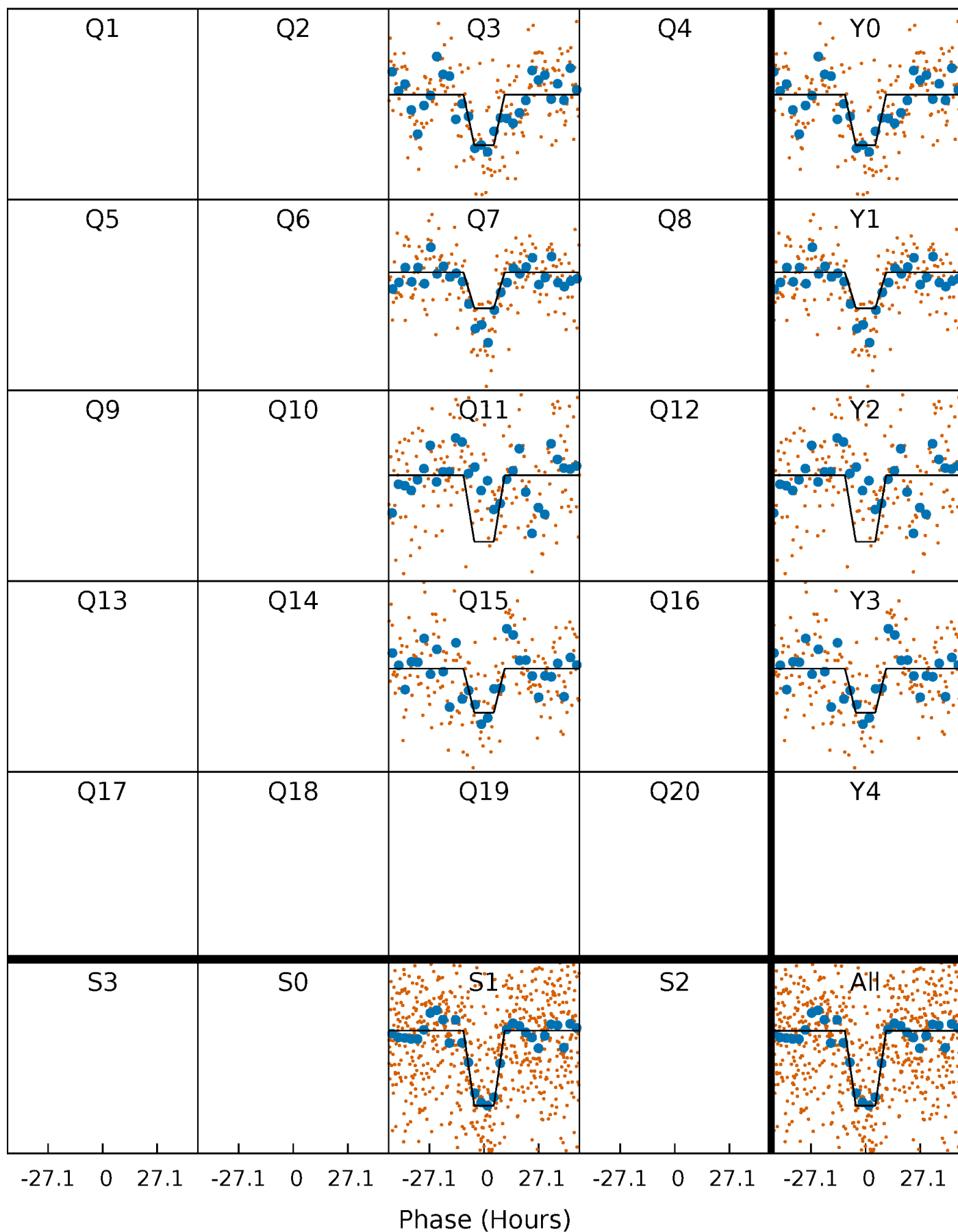
# DV Quarter-Phased Transit Curves

TCE 010664005-01 P=370.534732 Days  $T_0=309.153862$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

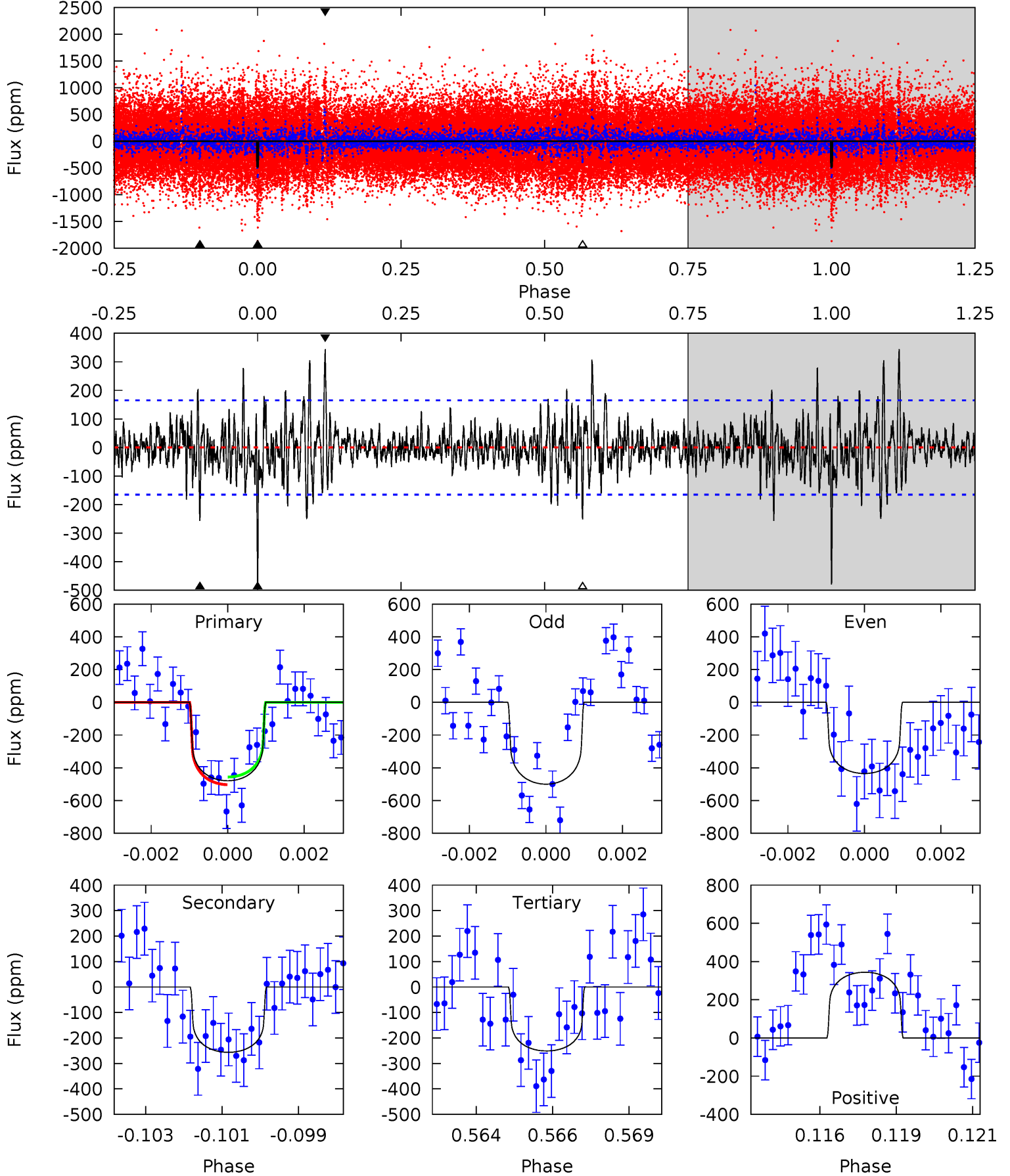
TCE 010664005-01 P=370.576233 Days  $T_0=309.082933$  (BKJD)



# DV Model-Shift Uniqueness Test

010664005-01, P = 370.534732 Days, E = 309.153862 Days

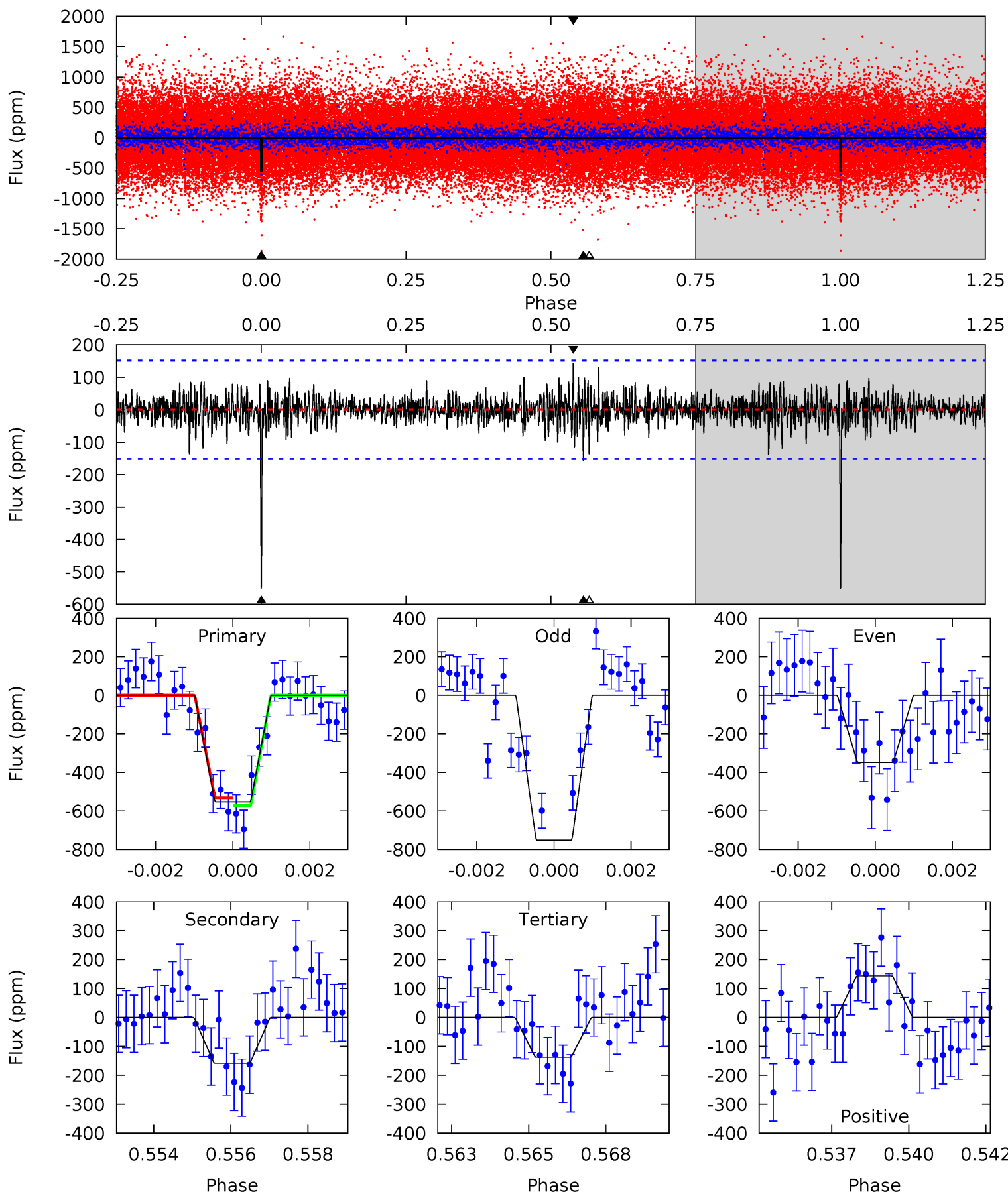
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
15.4	8.24	8.07	11.1	5.31	3.06	2.10	7.33	4.34	0.17	-2.82	1.05	0.93	0.42	0.74



# Alt Model-Shift Uniqueness Test

010664005-01, P = 370.576233 Days, E = 309.082933 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
19.3	5.53	4.81	5.02	5.30	3.04	1.14	14.4	14.2	0.72	0.51	7.04	0.95	0.21	0.71



### Stellar Parameters For KIC 010664005

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R$ ( $R_{\odot}$ )	$M$ ( $M_{\odot}$ )	$p_{\star}$ ( $\text{g}\cdot\text{cm}^{-3}$ )
	$6343^{+177}_{-221}$	$4.408^{+0.056}_{-0.224}$	$0.070^{+0.250}_{-0.300}$	$1.140^{+0.426}_{-0.107}$	$1.213^{+0.168}_{-0.168}$	$1.155^{+0.271}_{-0.657}$
	+3%/-3%	+1%/-5%	+357%/-429%	+37%/-9%	+14%/-14%	+23%/-57%
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 010664005-01 / KOI

Detrend	Depth (ppm)	$R_p$ ( $R_{\oplus}$ )	$T_{max}$ (K)	$T_{obs}$ (K)	$A_{obs}$
DV	$-256 \pm 31$	$2.98^{+1.57}_{-1.32}$	$412^{+33}_{-20}$	$5346^{+1827}_{-818}$	$18114^{+42911}_{-10491}$
Alt.	$-159 \pm 29$	$3.17^{+1.55}_{-1.35}$	$410^{+34}_{-20}$	$4685^{+1228}_{-618}$	$9678^{+20645}_{-5318}$

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

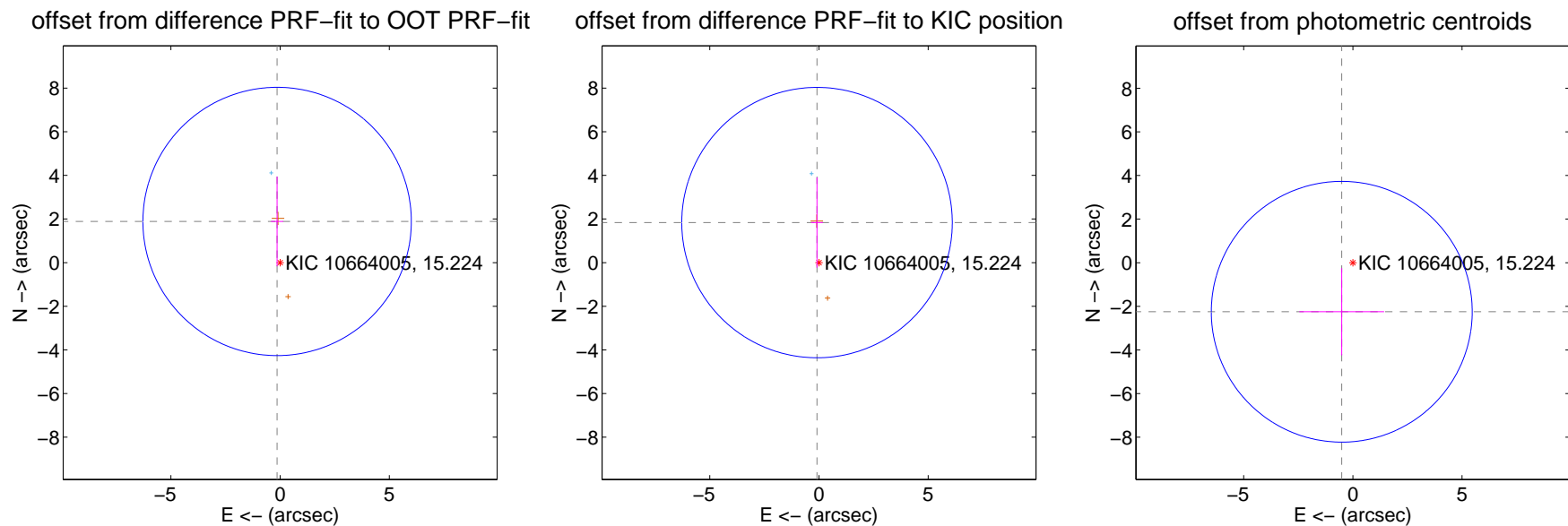
## DV Centroid Data

Supplemental centroid analysis for 010664005-01. Kepler magnitude: 15.22. Transit SNR 8.16

There are 1 quarters with good PRF difference image offsets

The direct PRF centroid is offset from the target star catalog position by about 0.12 arcsec

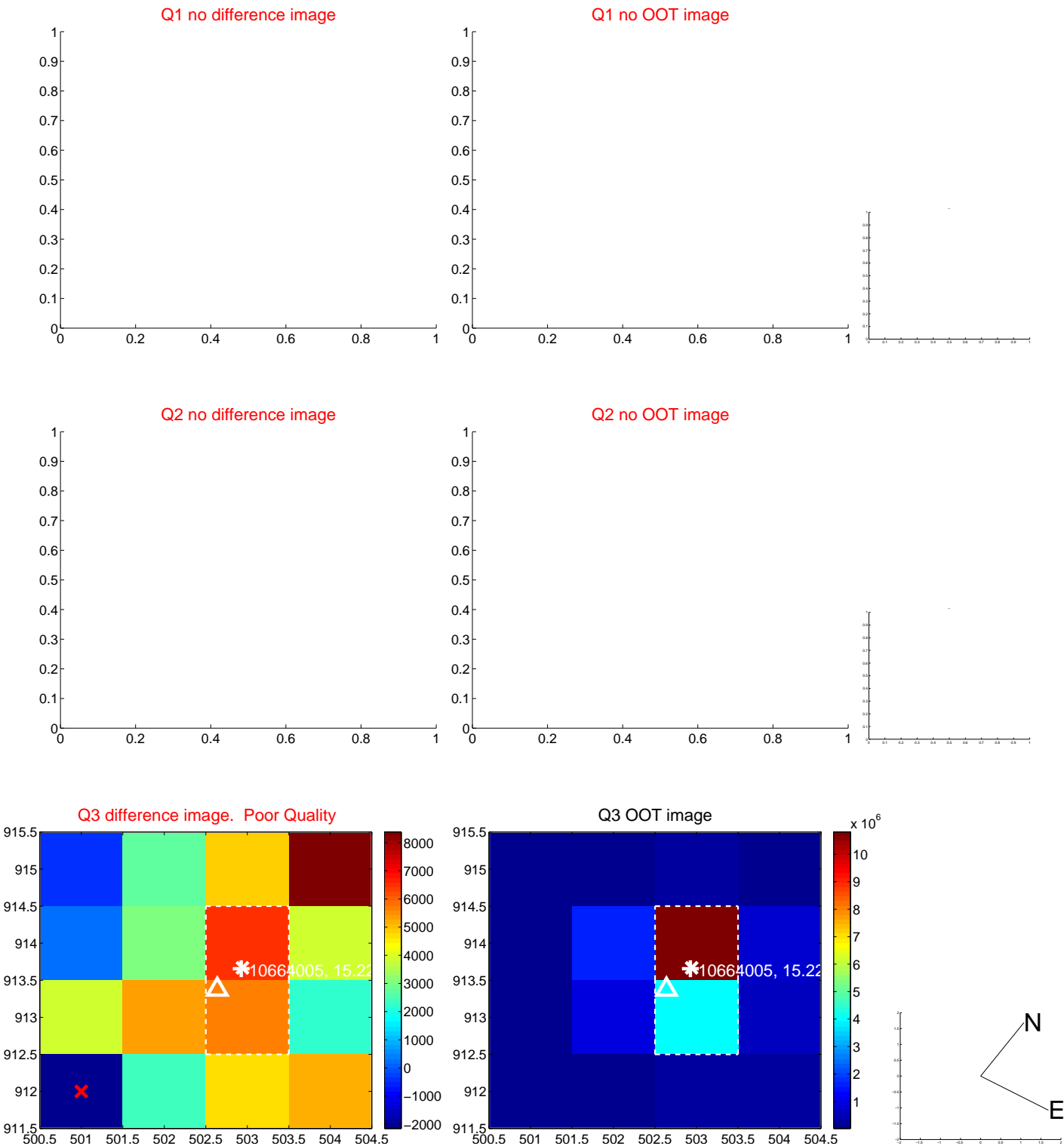
	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$1.893 \pm 2.049$	0.92	$0.137 \pm 0.278$	$1.888 \pm 2.054$
PRF-fit source offset from KIC position	$1.838 \pm 2.065$	0.89	$0.090 \pm 0.266$	$1.836 \pm 2.068$
photometric centroid source offset	$2.30 \pm 1.99$	1.16	$0.51 \pm 1.94$	$-2.25 \pm 1.99$



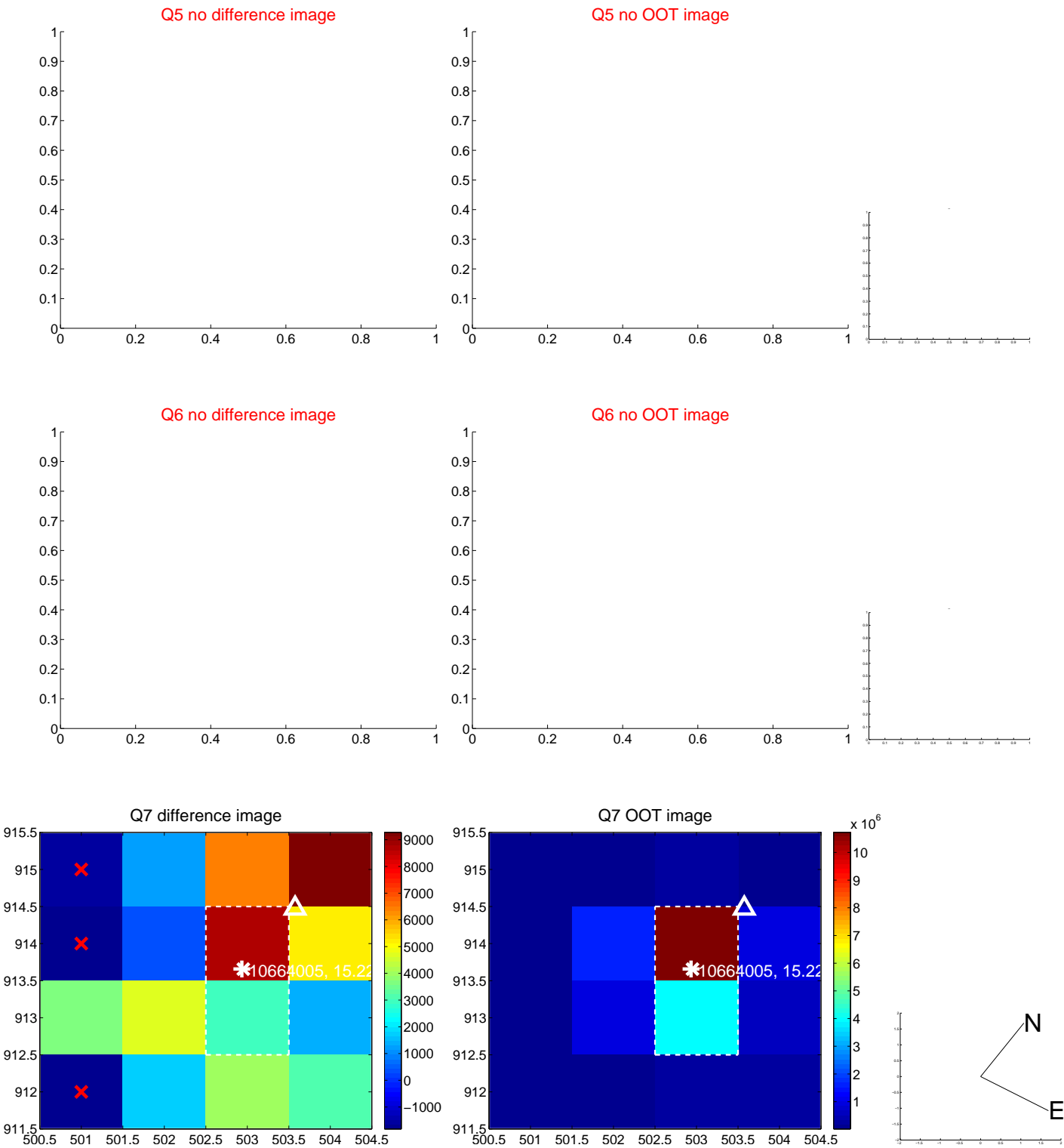
Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: three-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



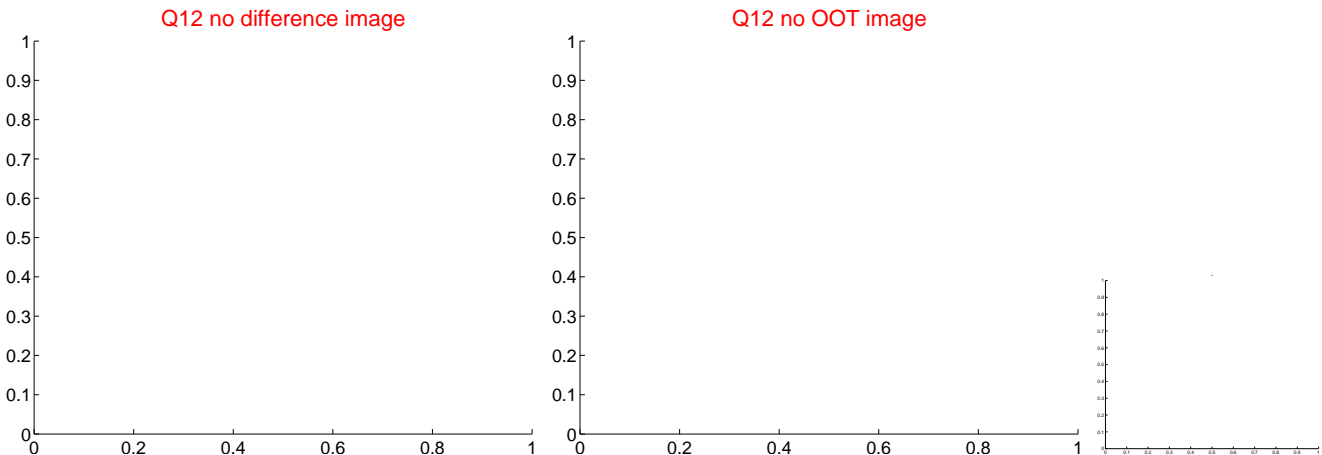
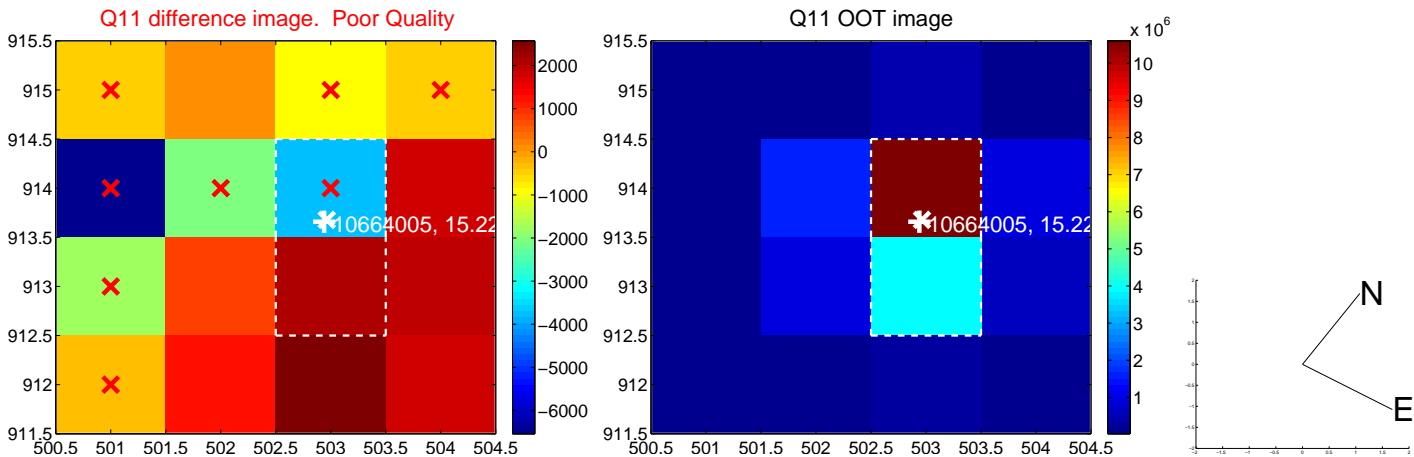
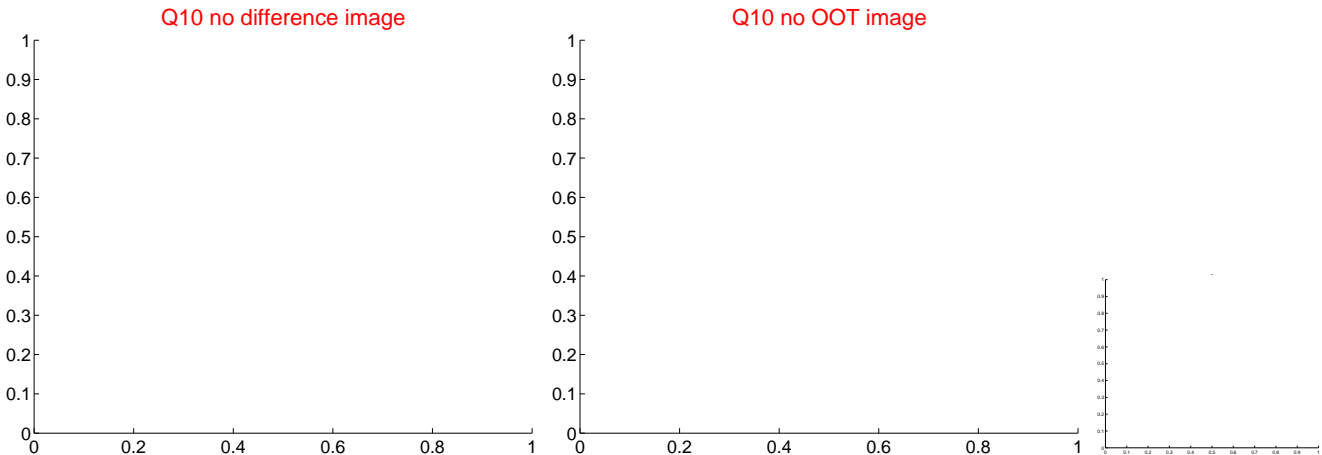
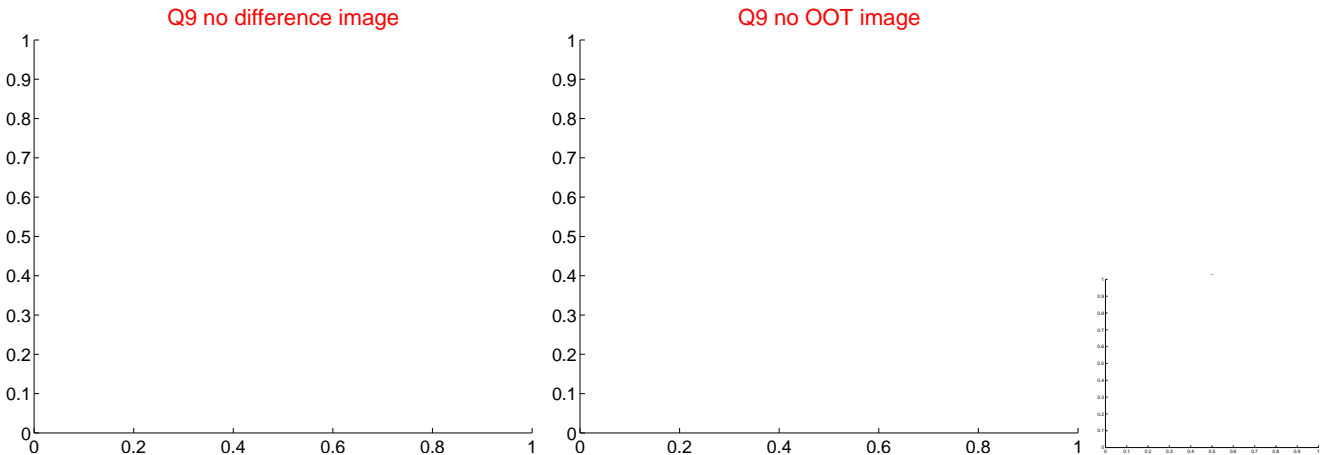
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ✕: large negative pixel value.



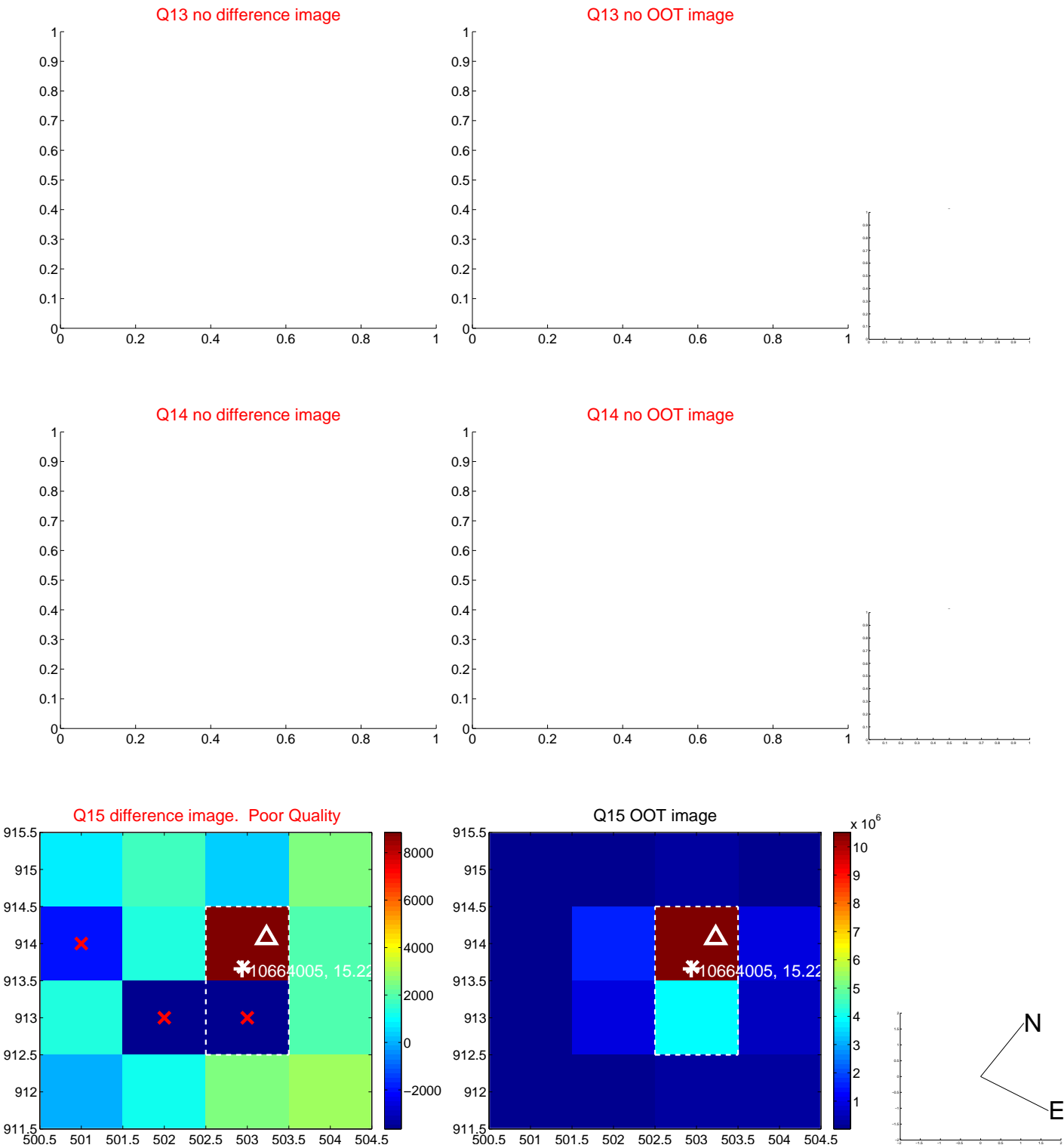
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ✕: large negative pixel value.



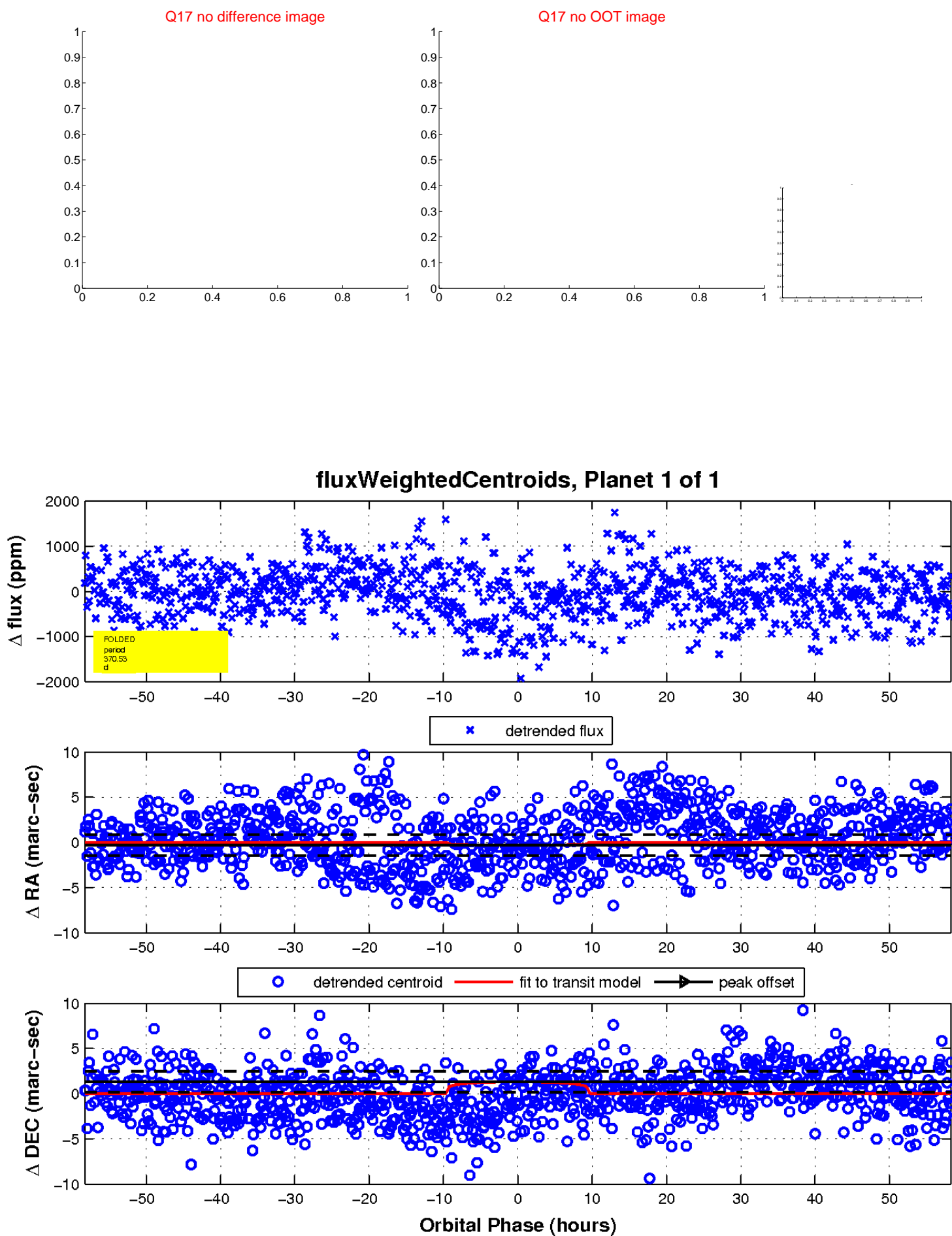
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value



white ×: 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.



# UKIRT Image

Declination

