

# KIC 007968604

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
007968604-01	OBS	No	367.107548	238.650308	837.0	15.410	9.2	8.5	0.91	5814	3.18	0.88

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
007968604-01	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.

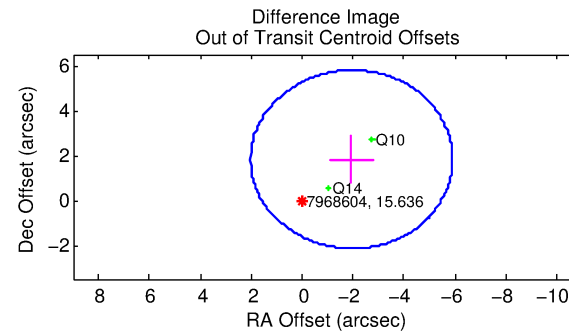
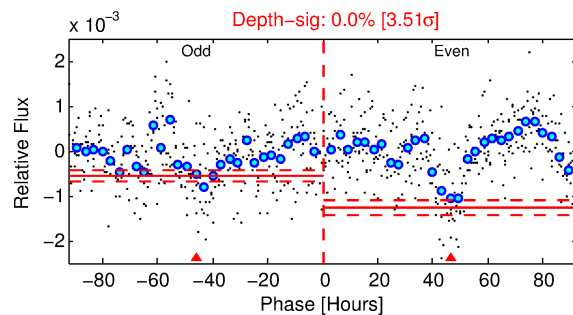
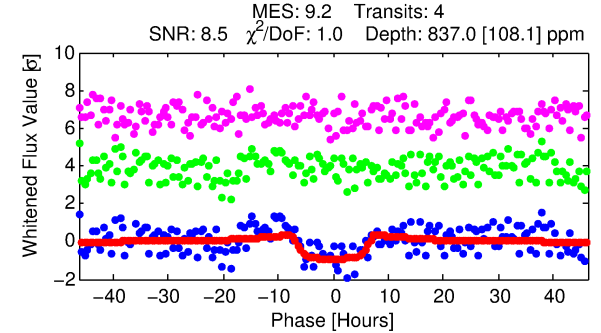
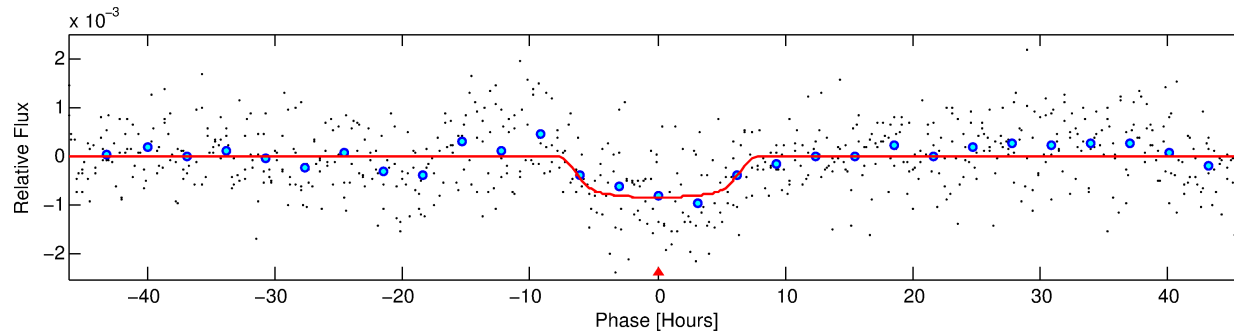
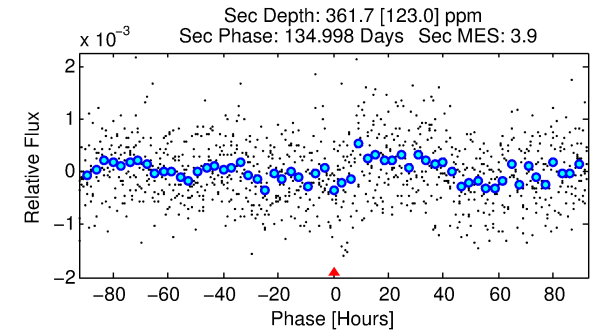
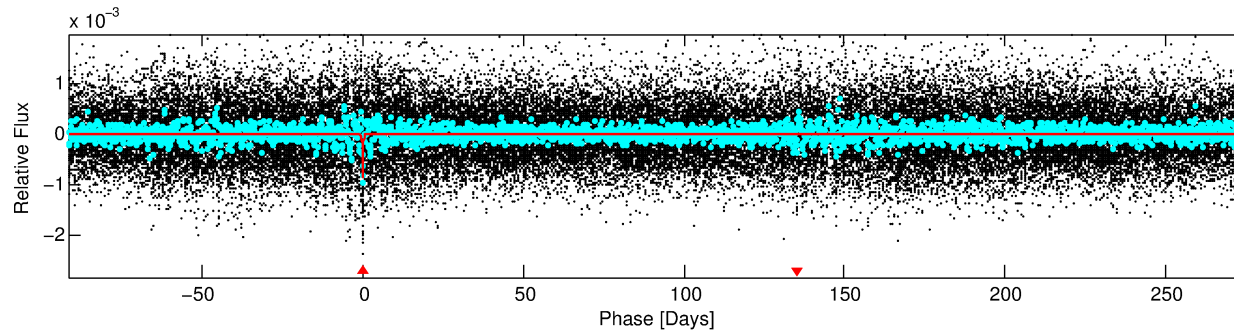
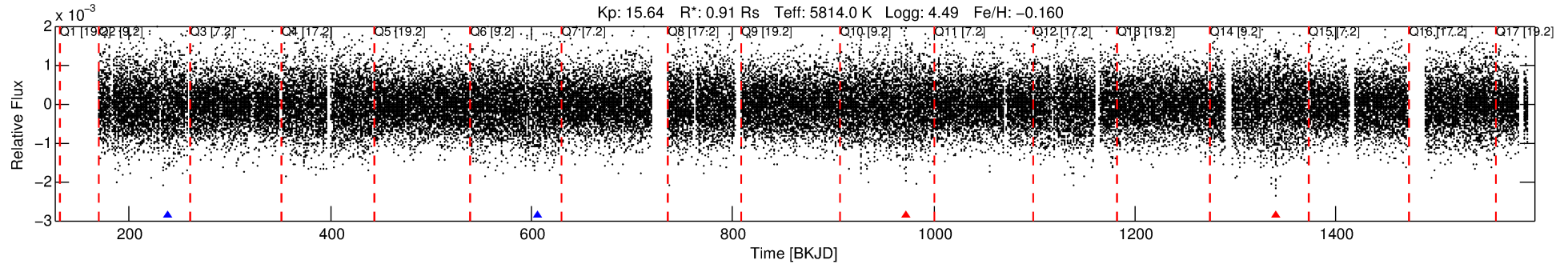
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 007968604-01

No Significant Match Found

# DV One-Page Summary

KIC: 7968604 Candidate: 1 of 1 Period: 367.108 d



## DV Fit Results:

Period = 367.10755 [0.01399] d  
Epoch = 238.6503 [0.0265] BKJD  
Rp/R\* = 0.0319 [0.0033]  
a/R\* = 86.91 [29.00]  
b = 0.91 [0.06]  
Seff = 0.88 [0.33]  
Teq = 247 [23] K  
Rp = 3.18 [0.97] Re  
a = 0.9830 [0.2384] AU  
Ag = 19055.57 [10146.23] [1.88σ]  
Teffp = 4488 [469] K [9.03σ]

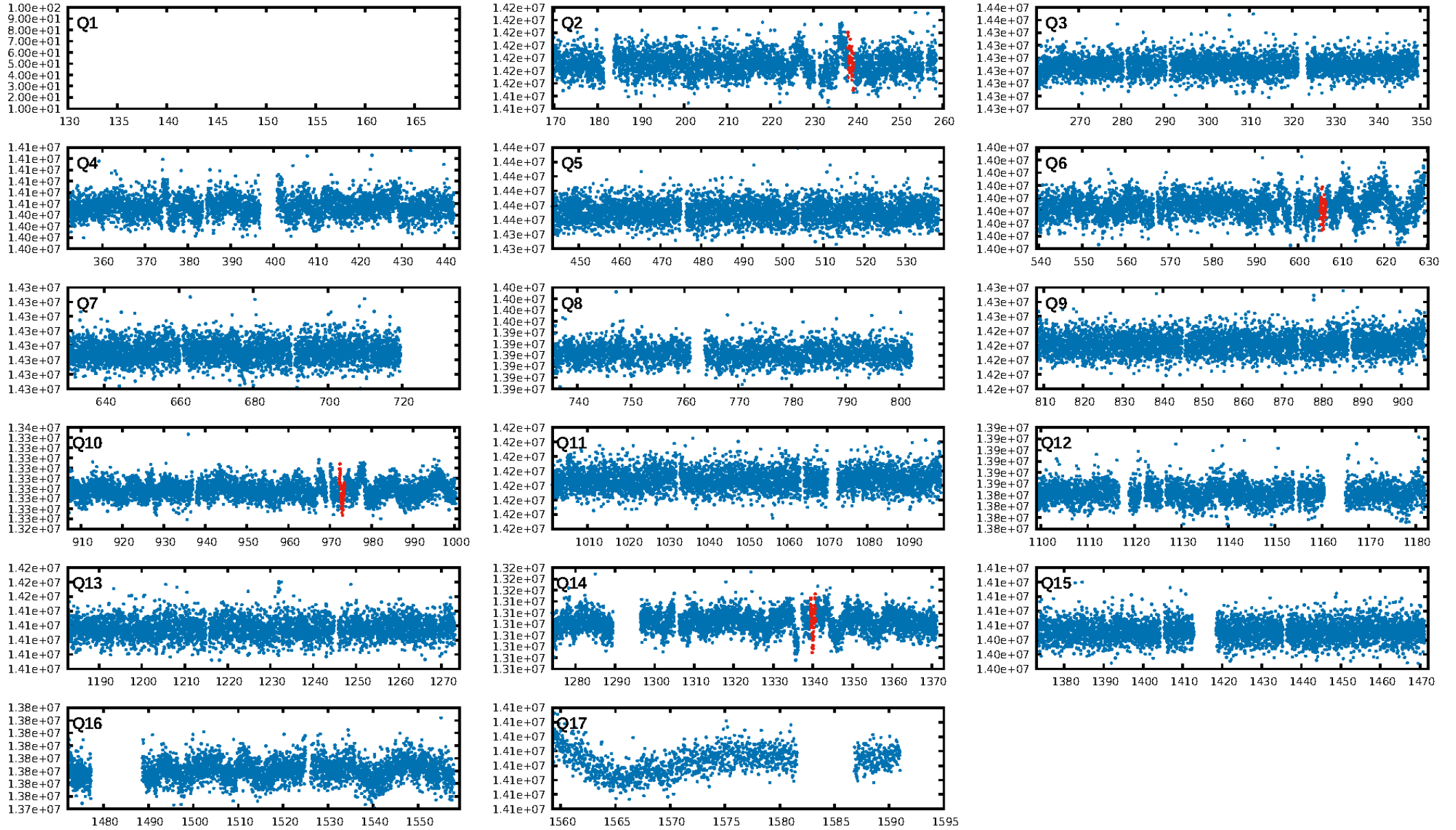
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: 0.0%  
ModelChiSquareGof-sig: 99.9%  
Bootstrap-pfa: 2.63e-12  
RollingBand-fgt: 0.50 [2/4]  
GhostDiagnostic-chr: 0.3795  
Centroid-sig: 0.0%  
Centroid-so: 8.725 arcsec [3.79σ]  
OotOffset-rm: 2.669 arcsec [2.02σ]  
KicOffset-rm: 2.692 arcsec [2.38σ]  
OotOffset-st: 2/0/0/0 [2]  
KicOffset-st: 2/0/0/0 [2]  
DiffImageQuality-fgm: 1.00 [2/2]  
DiffImageOverlap-fno: 1.00 [4/4]

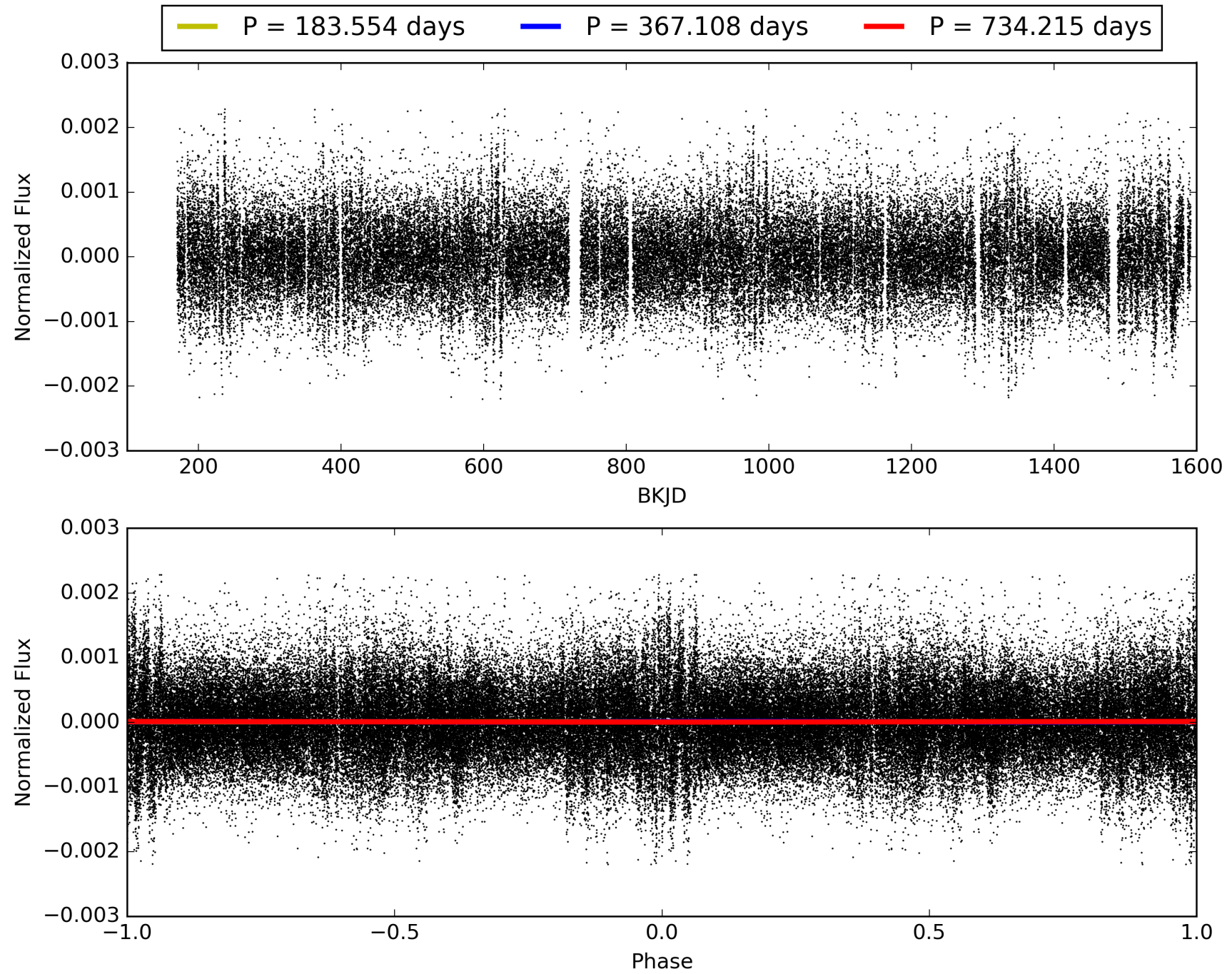
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 02:35:22 Z

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

# TCE 007968604-01, PDC Light Curves

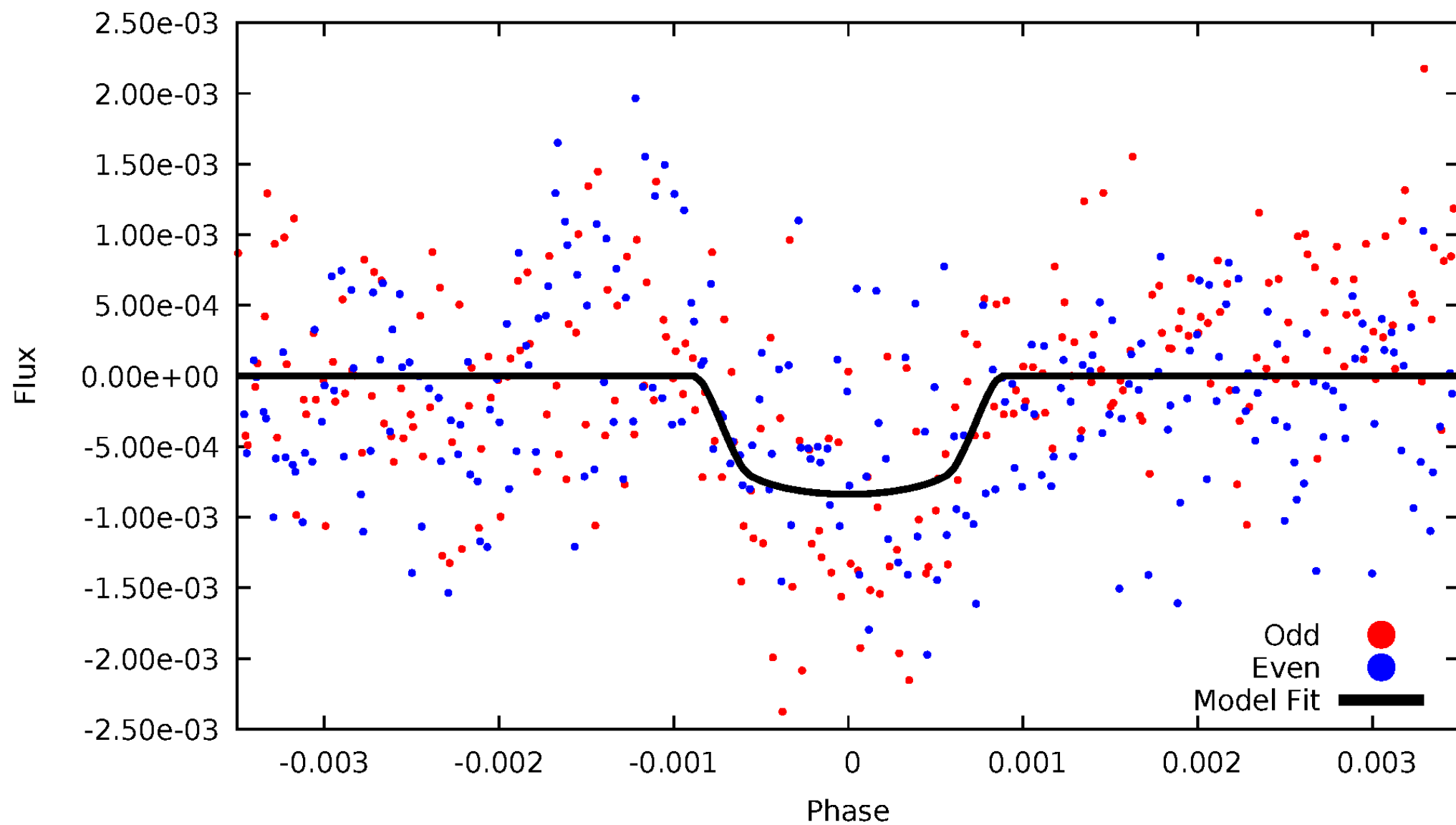


TCE 007968604-01



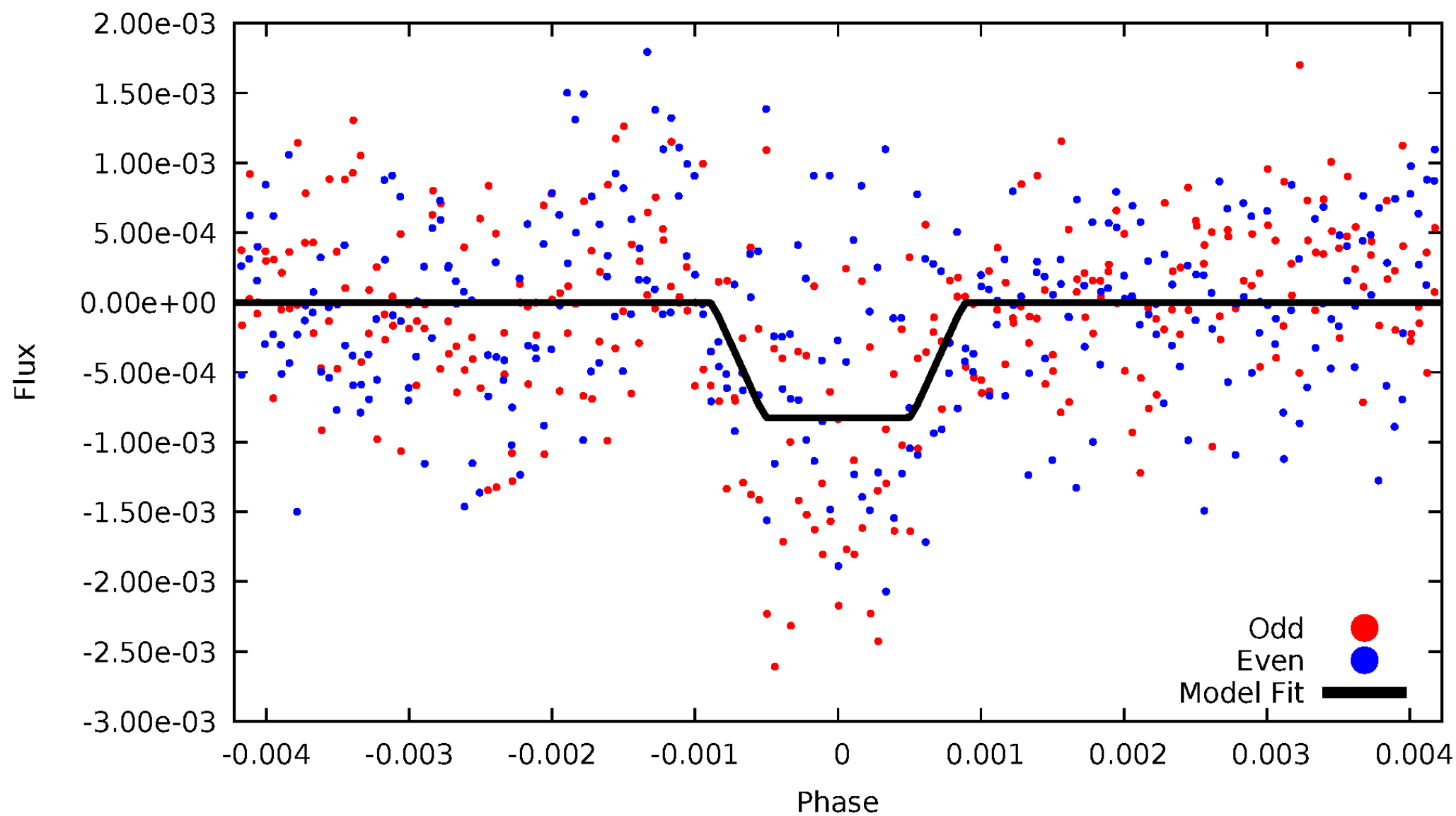
# DV Odd/Even

TCE 007968604-01



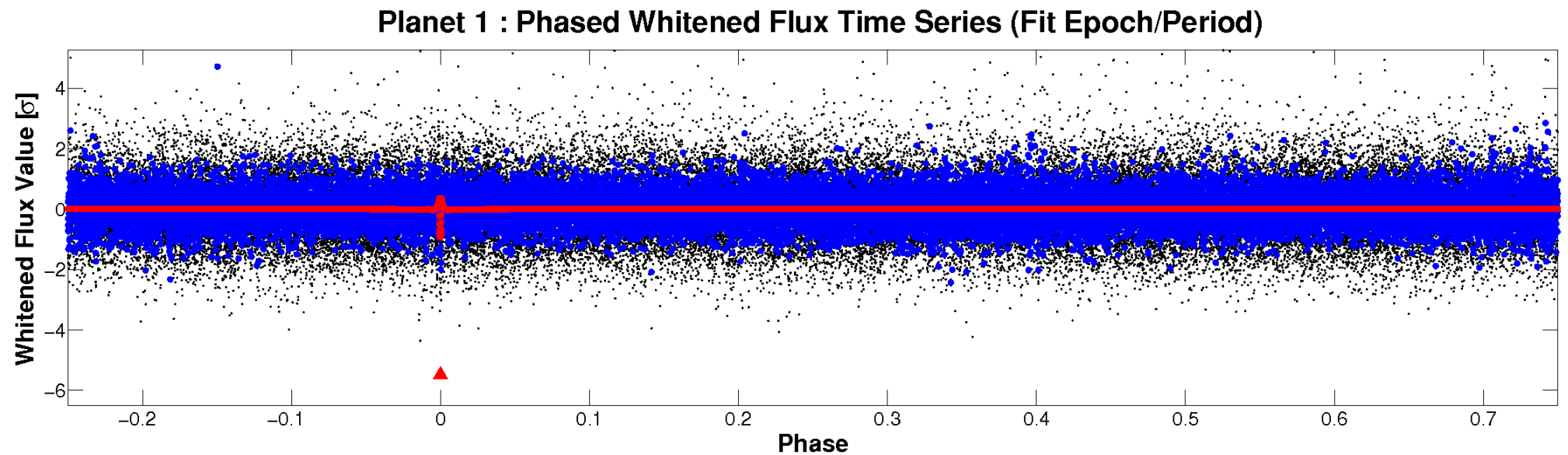
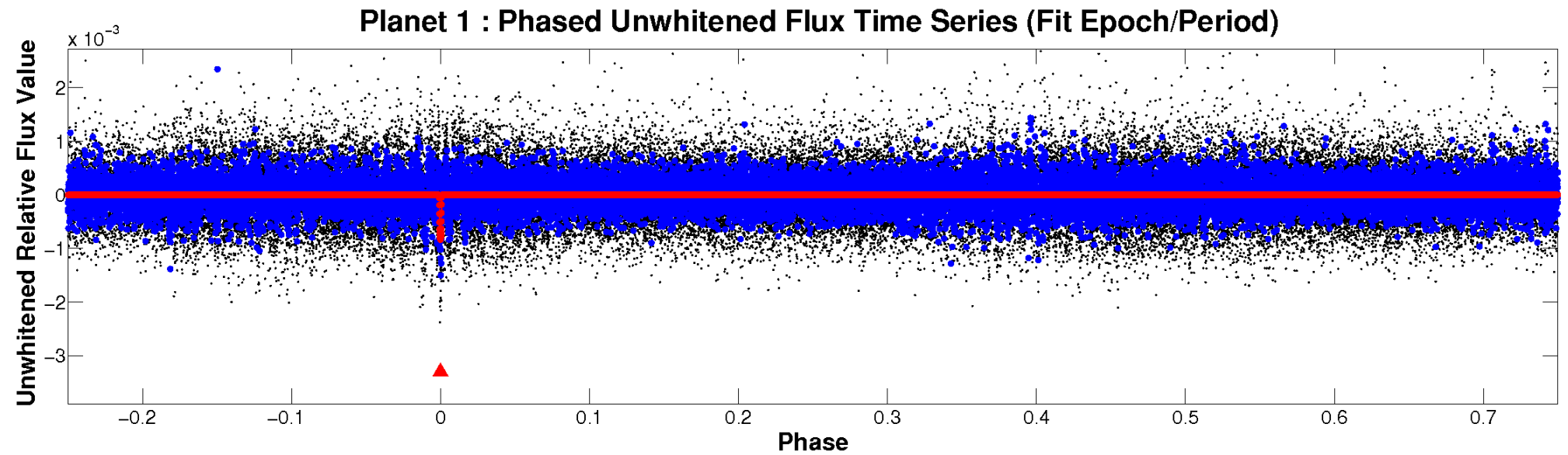
# ALT Odd/Even

TCE 007968604-01



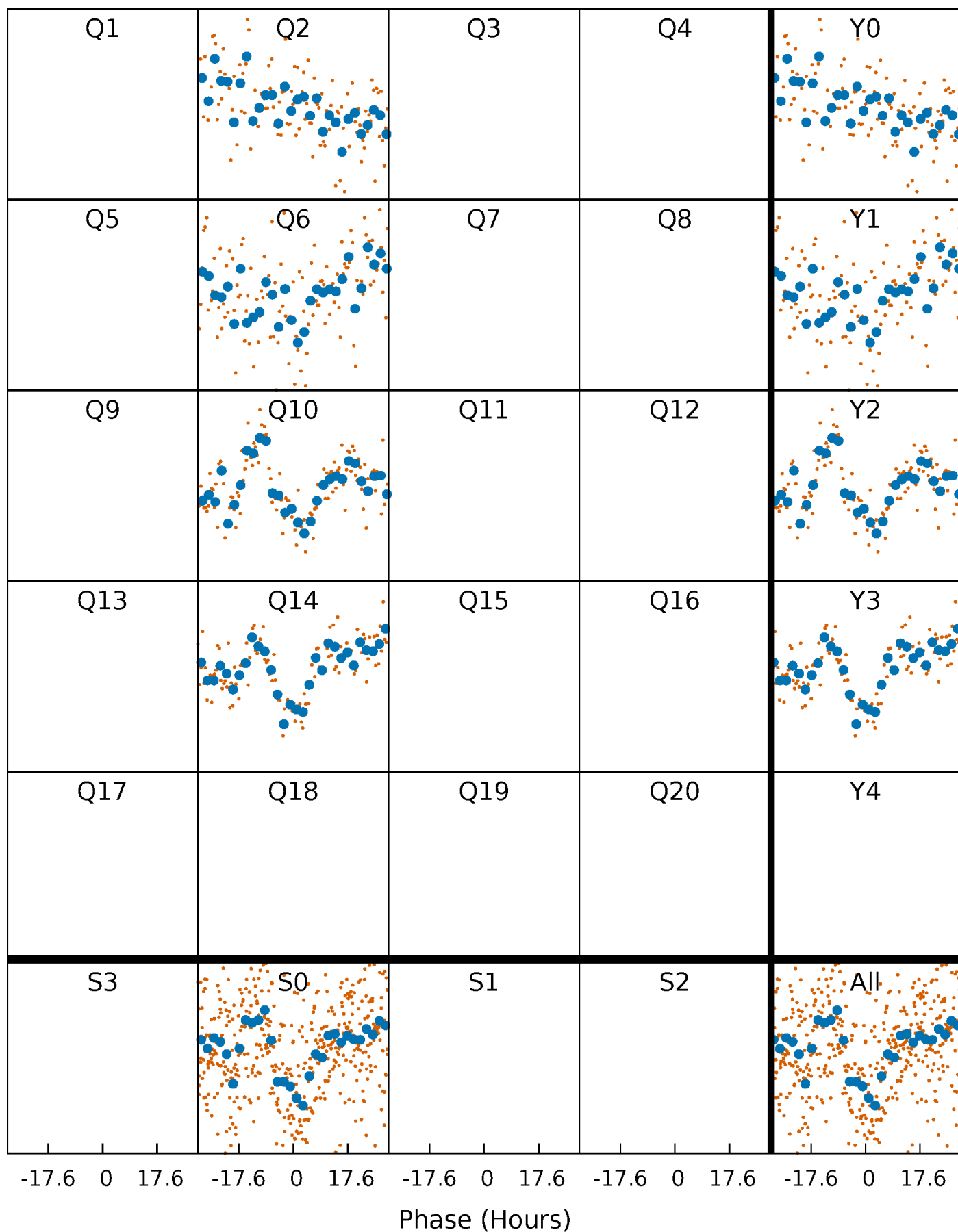


# Non-Whitened Vs. Whitened Light Curve



# PDC Quarter-Phased Transit Curves

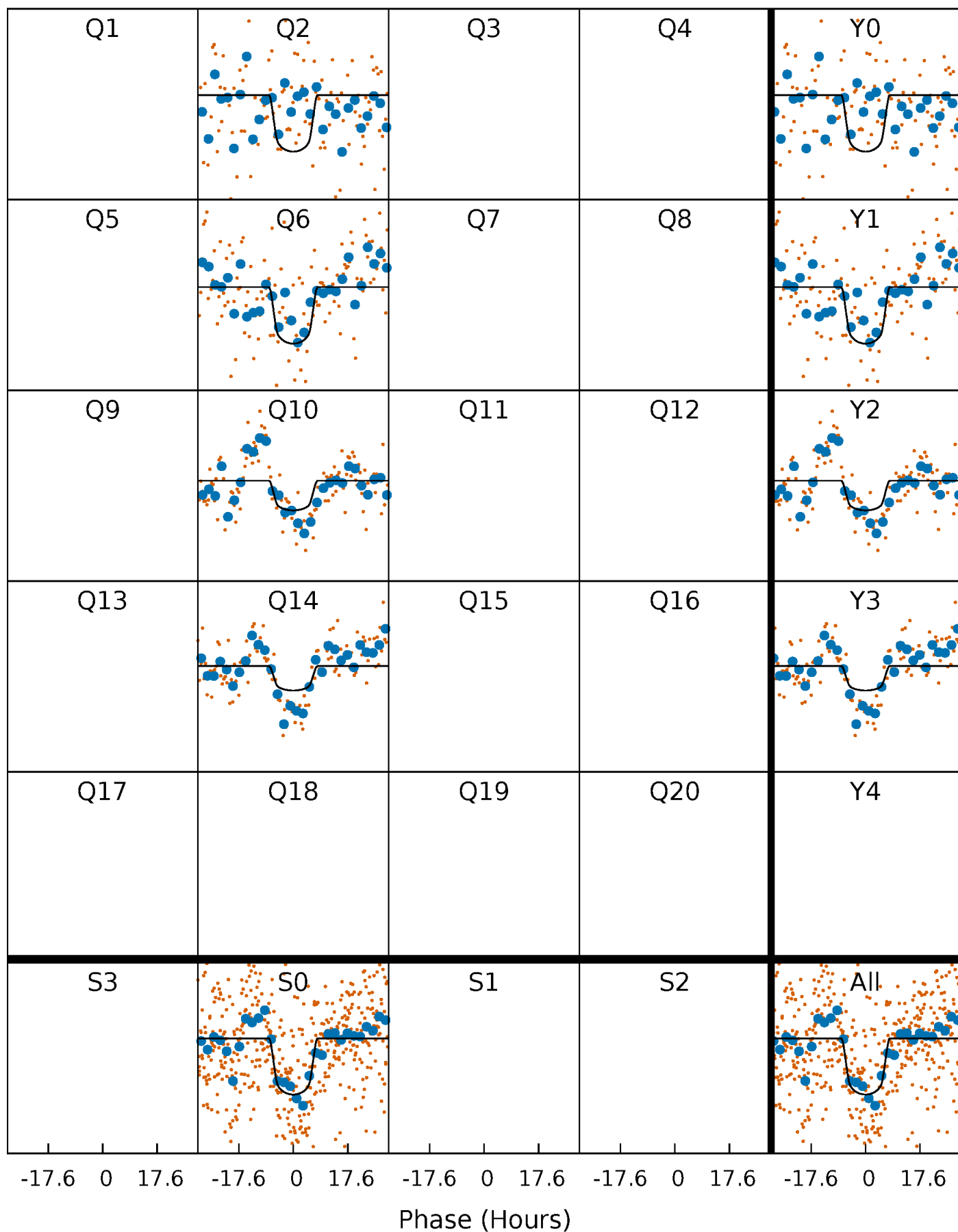
TCE 007968604-01 P=367.107548 Days  $T_0=238.650308$  (BKJD)





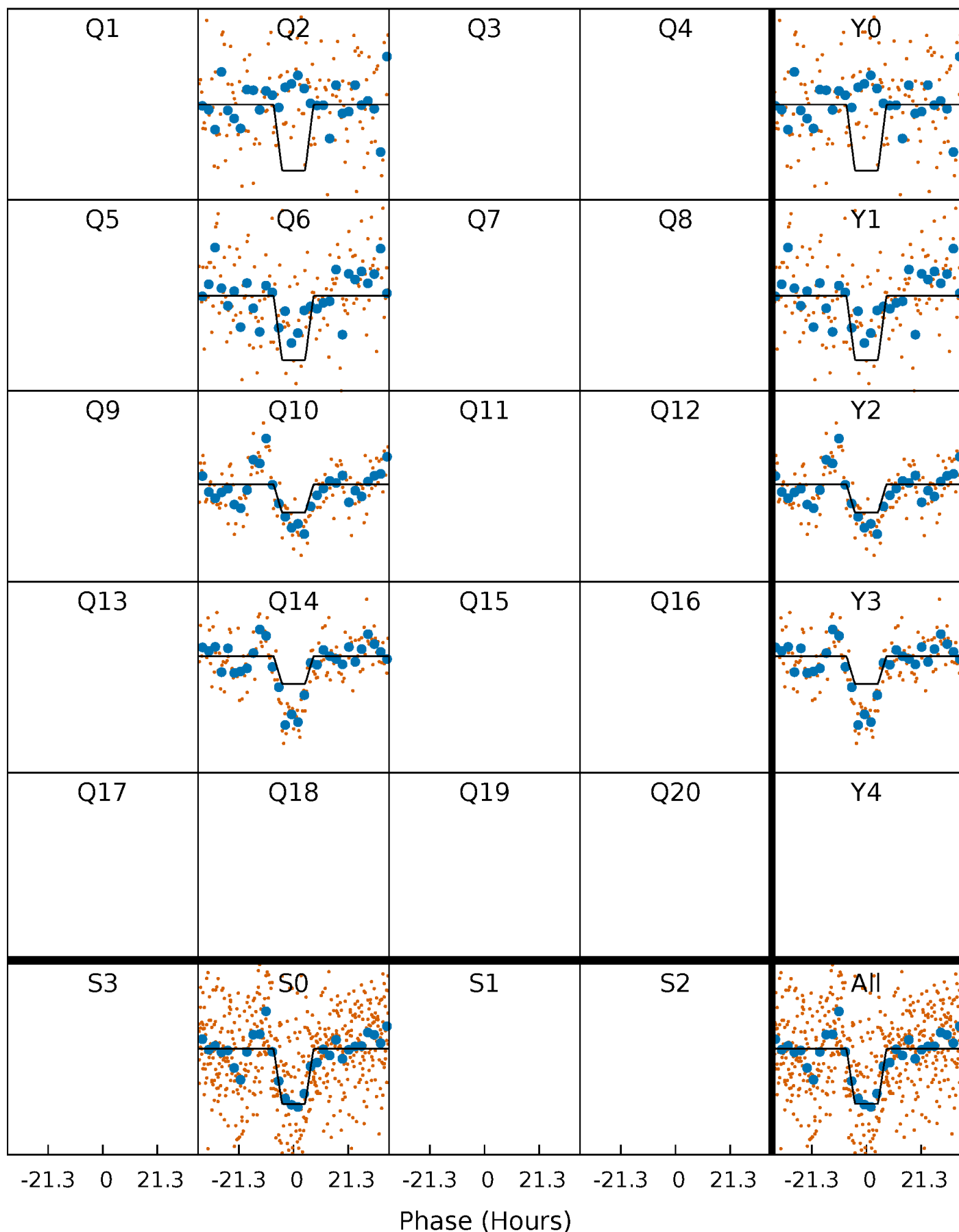
# DV Quarter-Phased Transit Curves

TCE 007968604-01 P=367.107548 Days  $T_0=238.650308$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

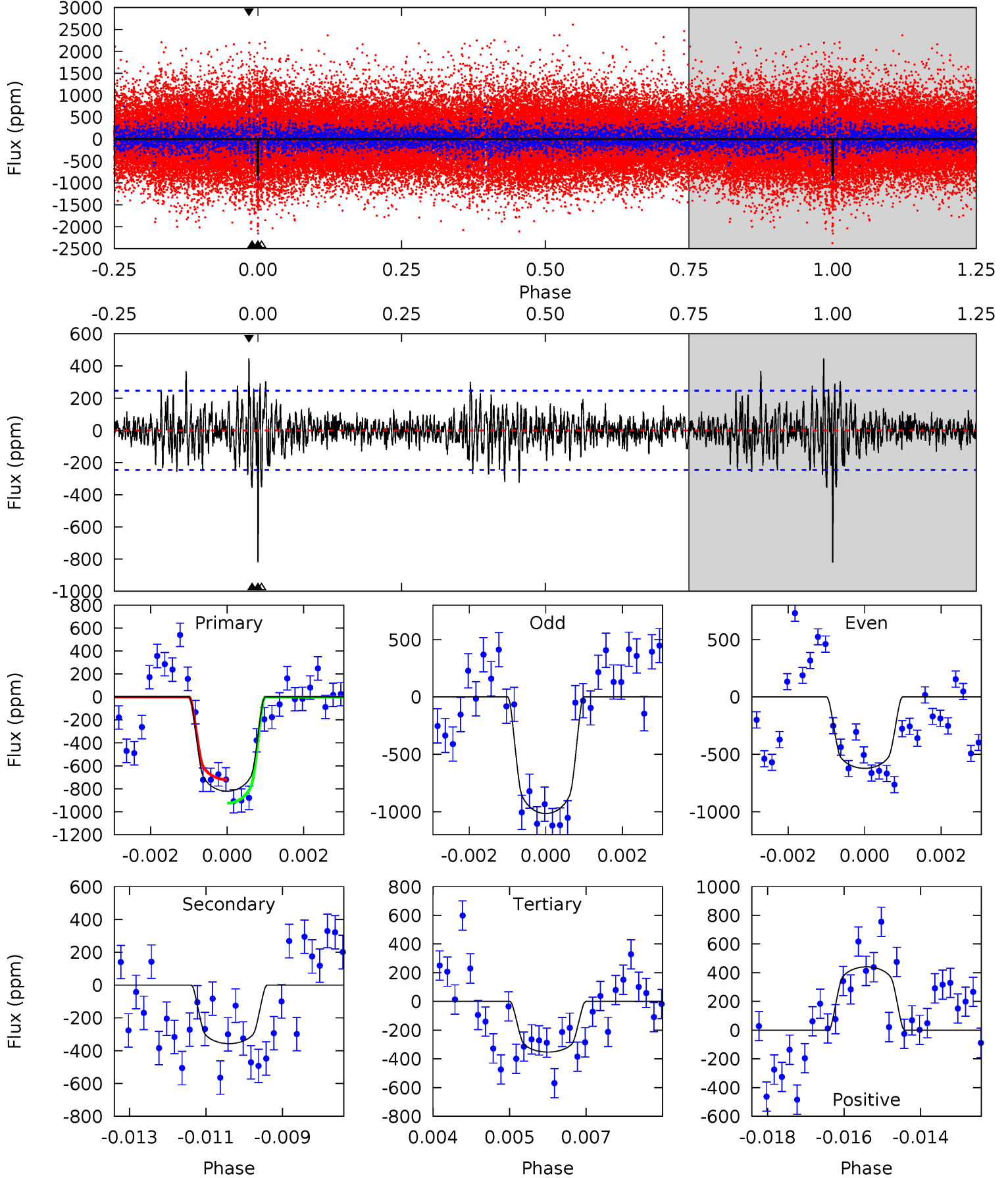
TCE 007968604-01 P=367.088905 Days  $T_0=238.730219$  (BKJD)



# DV Model-Shift Uniqueness Test

007968604-01,  $P = 367.107548$  Days,  $E = 238.650308$  Days

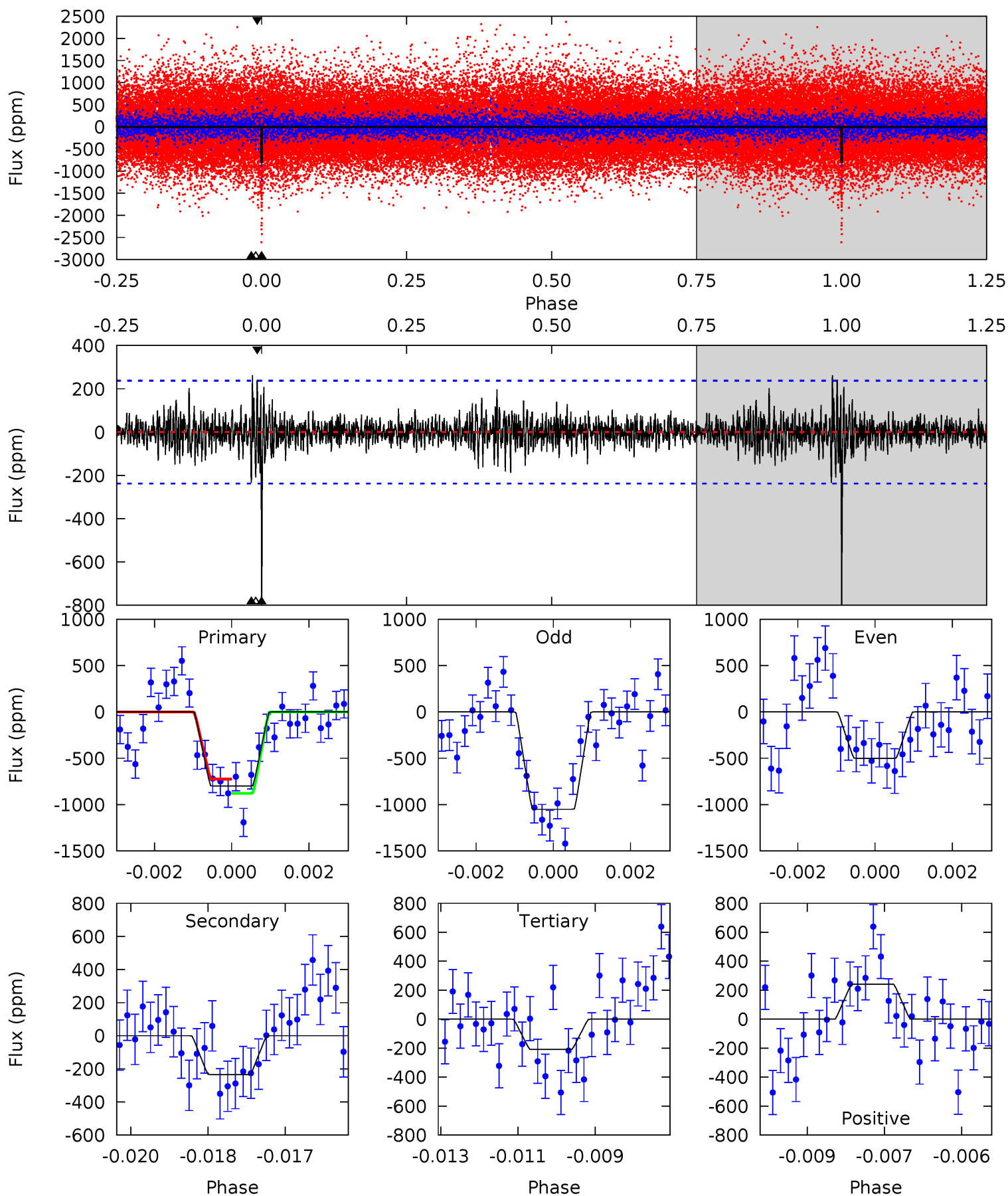
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
17.8	7.75	7.65	9.58	5.35	3.12	1.78	10.2	8.25	0.10	-1.83	4.27	1.01	0.35	2.23



# Alt Model-Shift Uniqueness Test

007968604-01, P = 367.088905 Days, E = 238.730219 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
18.0	5.27	4.69	5.43	5.34	3.12	1.09	13.3	12.5	0.58	-0.16	6.23	0.97	0.25	1.72



### Stellar Parameters For KIC 007968604

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$5814^{+155}_{-190}$	$4.491^{+0.065}_{-0.195}$	$-0.160^{+0.300}_{-0.300}$	$0.912^{+0.261}_{-0.112}$	$0.941^{+0.123}_{-0.100}$	$1.744^{+0.467}_{-0.890}$
	+3%/-3%	+1%/-4%	+188%/-188%	+29%/-12%	+13%/-11%	+27%/-51%
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 007968604-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	$A_{\text{obs}}$
DV	$-357 \pm 46$	$3.26^{+0.65}_{-0.45}$	$352^{+23}_{-17}$	$4625^{+276}_{-230}$	$17437^{+6213}_{-5114}$
Alt.	$-235 \pm 45$	$2.94^{+0.52}_{-0.42}$	$351^{+26}_{-18}$	$4440^{+271}_{-266}$	$14008^{+5481}_{-4516}$

$T_{\text{max}}$  = 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

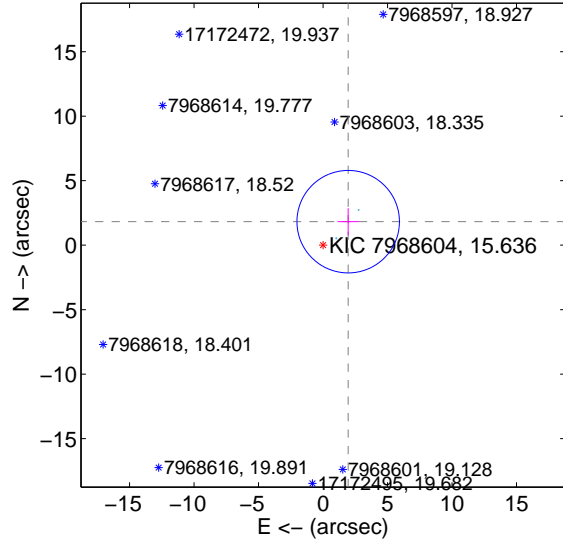
Supplemental centroid analysis for 007968604-01. Kepler magnitude: 15.64. Transit SNR 8.49

There are 2 quarters with good PRF difference image offsets

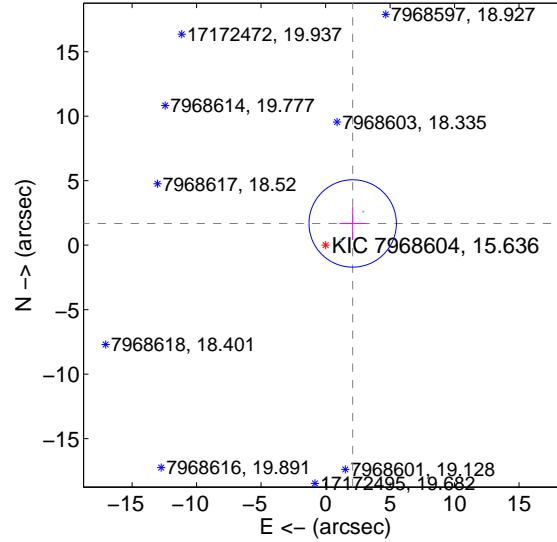
The direct PRF centroid is offset from the target star catalog position by about 0.20 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$2.669 \pm 1.324$	2.02	$-1.950 \pm 0.831$	$1.822 \pm 1.053$
PRF-fit source offset from KIC position	$2.692 \pm 1.129$	2.38	$-2.101 \pm 1.026$	$1.683 \pm 1.274$
photometric centroid source offset	$8.73 \pm 2.30$	3.79	$-8.26 \pm 2.24$	$2.80 \pm 2.76$

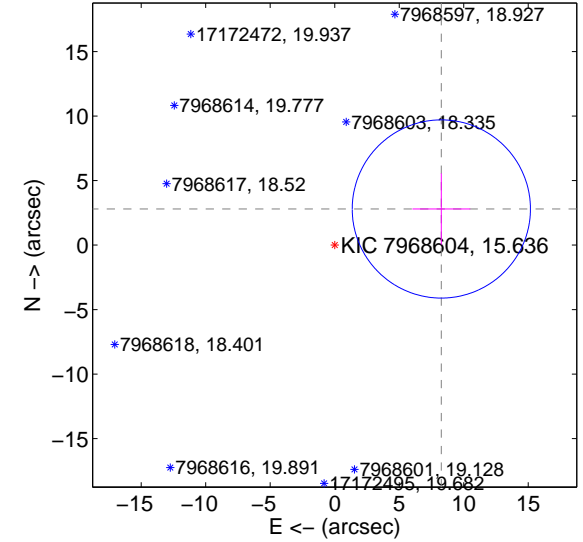
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position



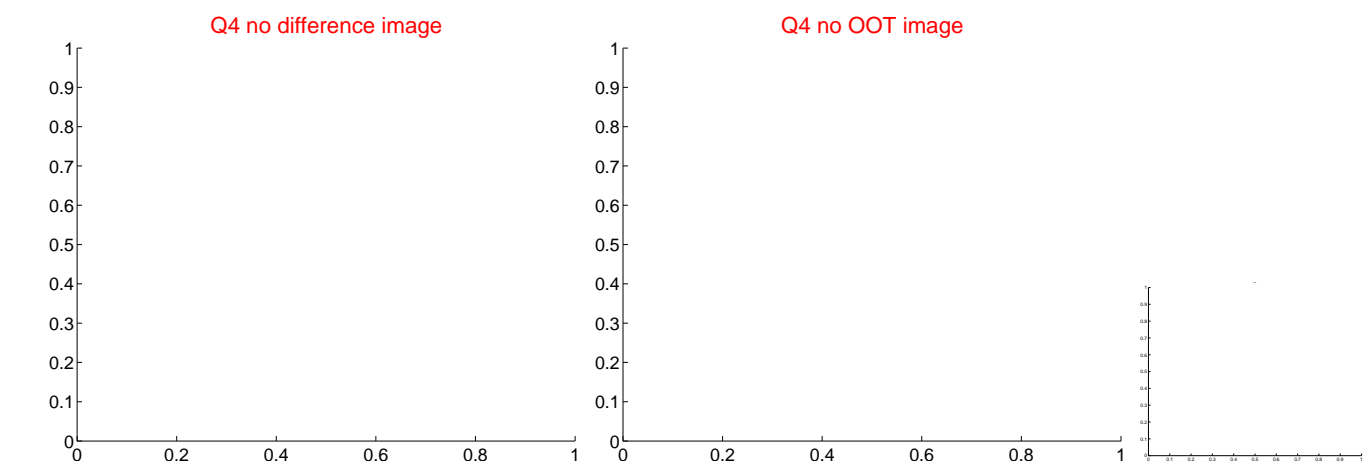
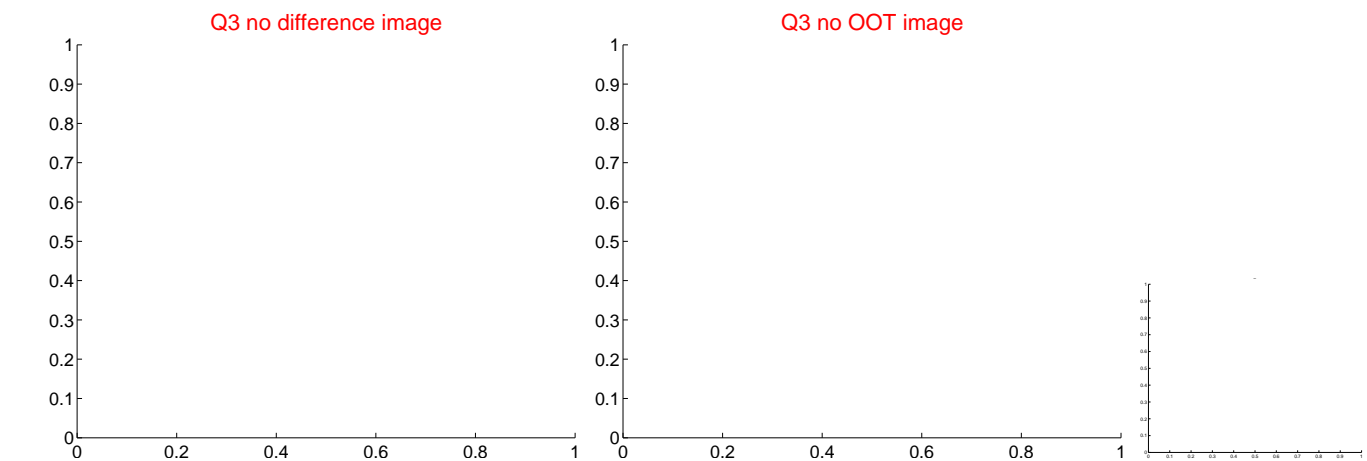
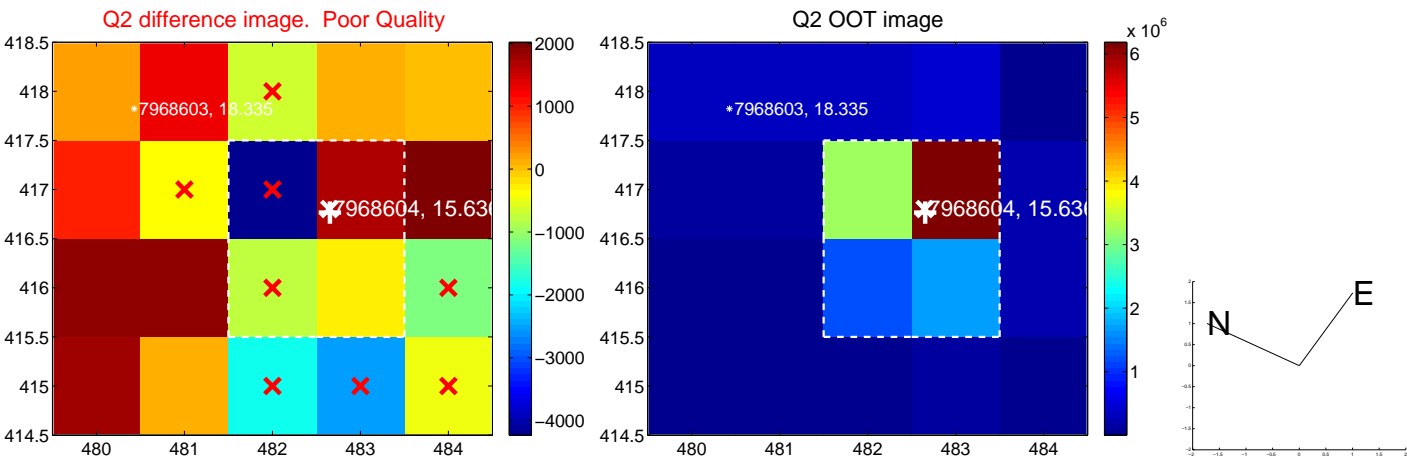
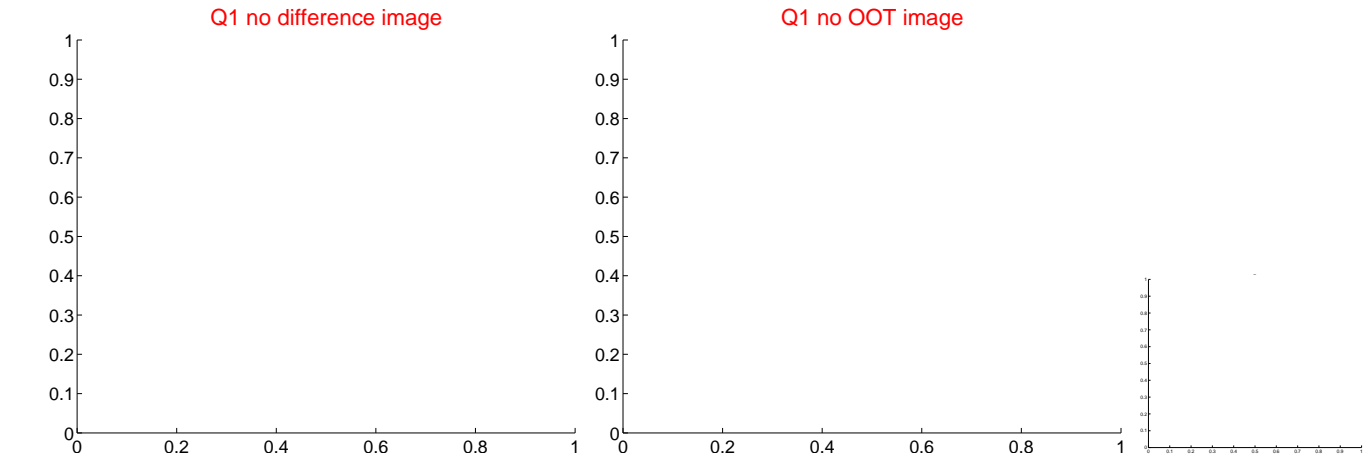
offset from photometric centroids



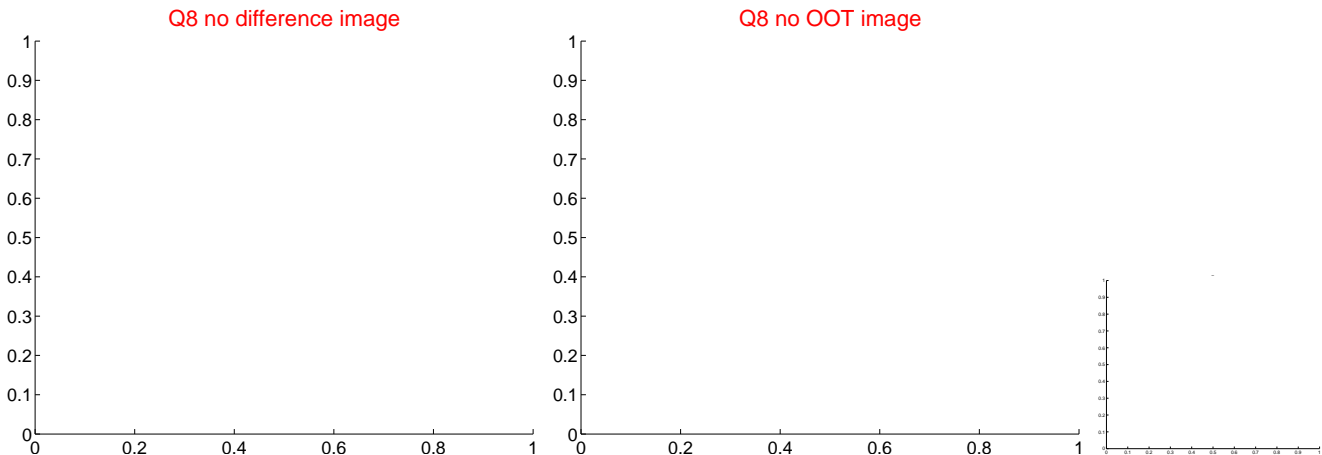
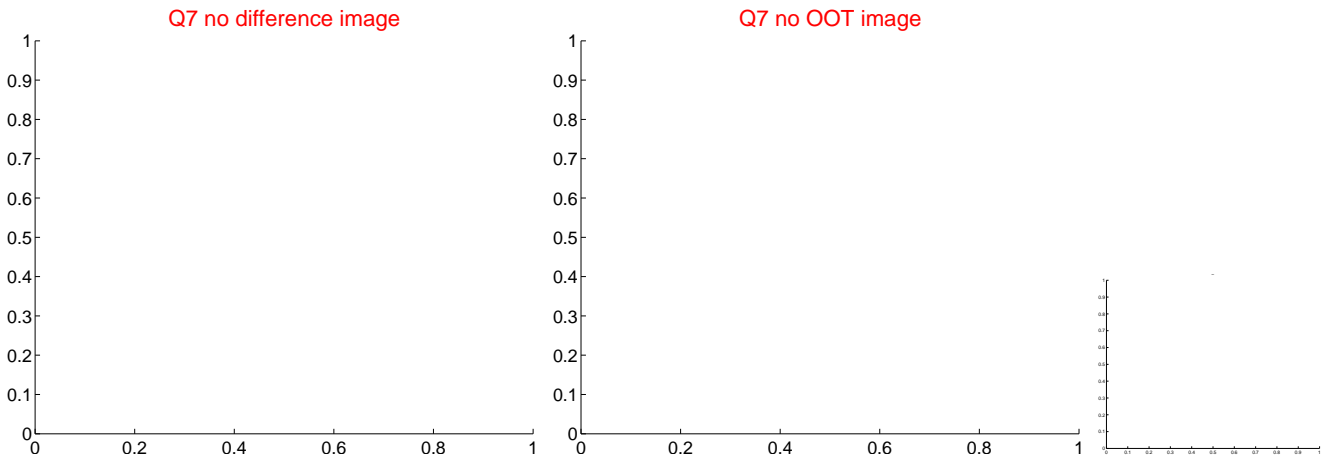
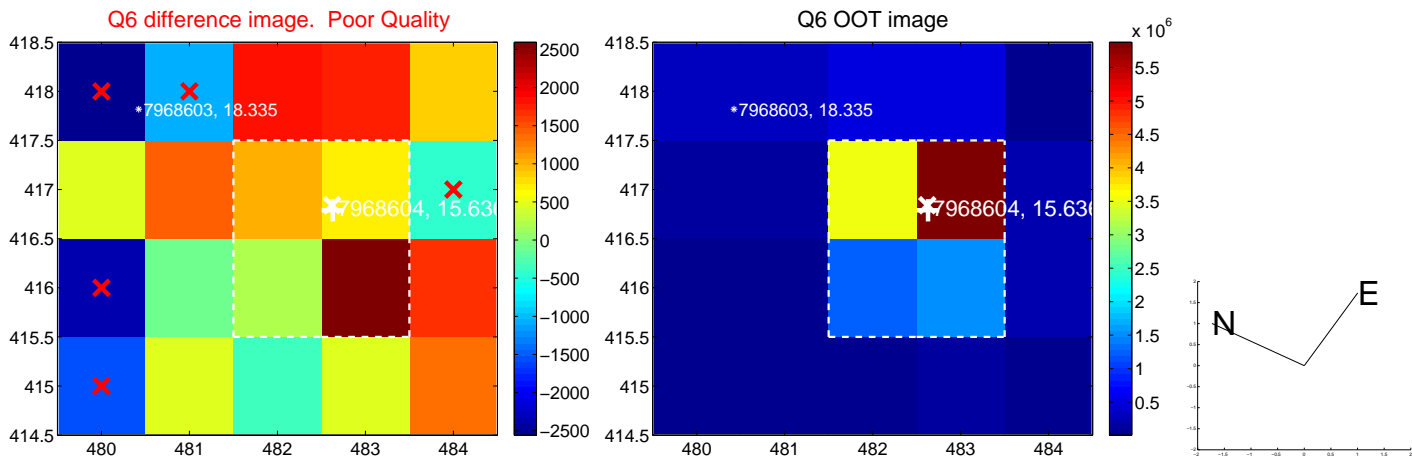
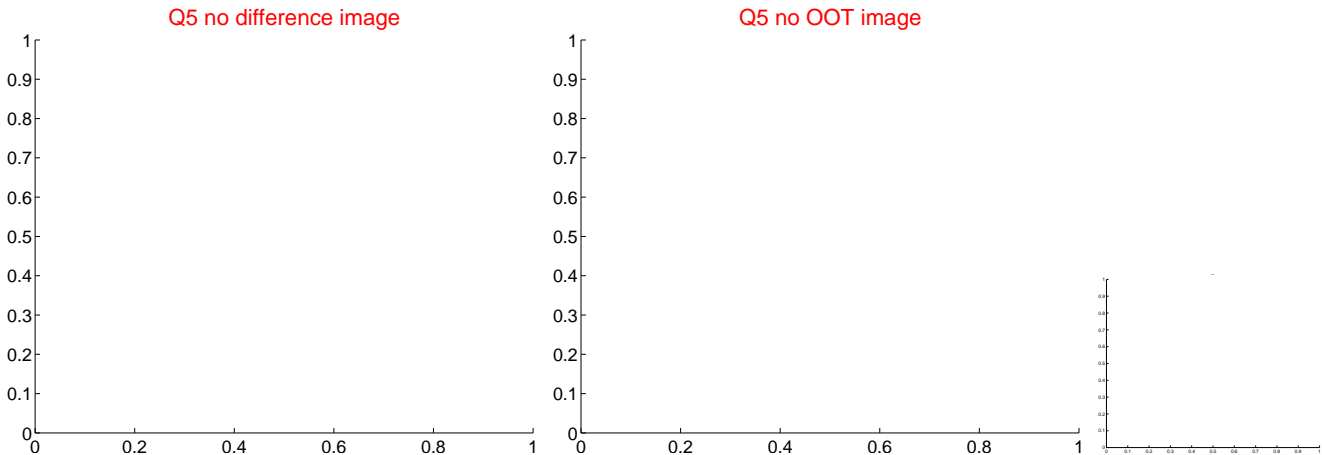
Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: three-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



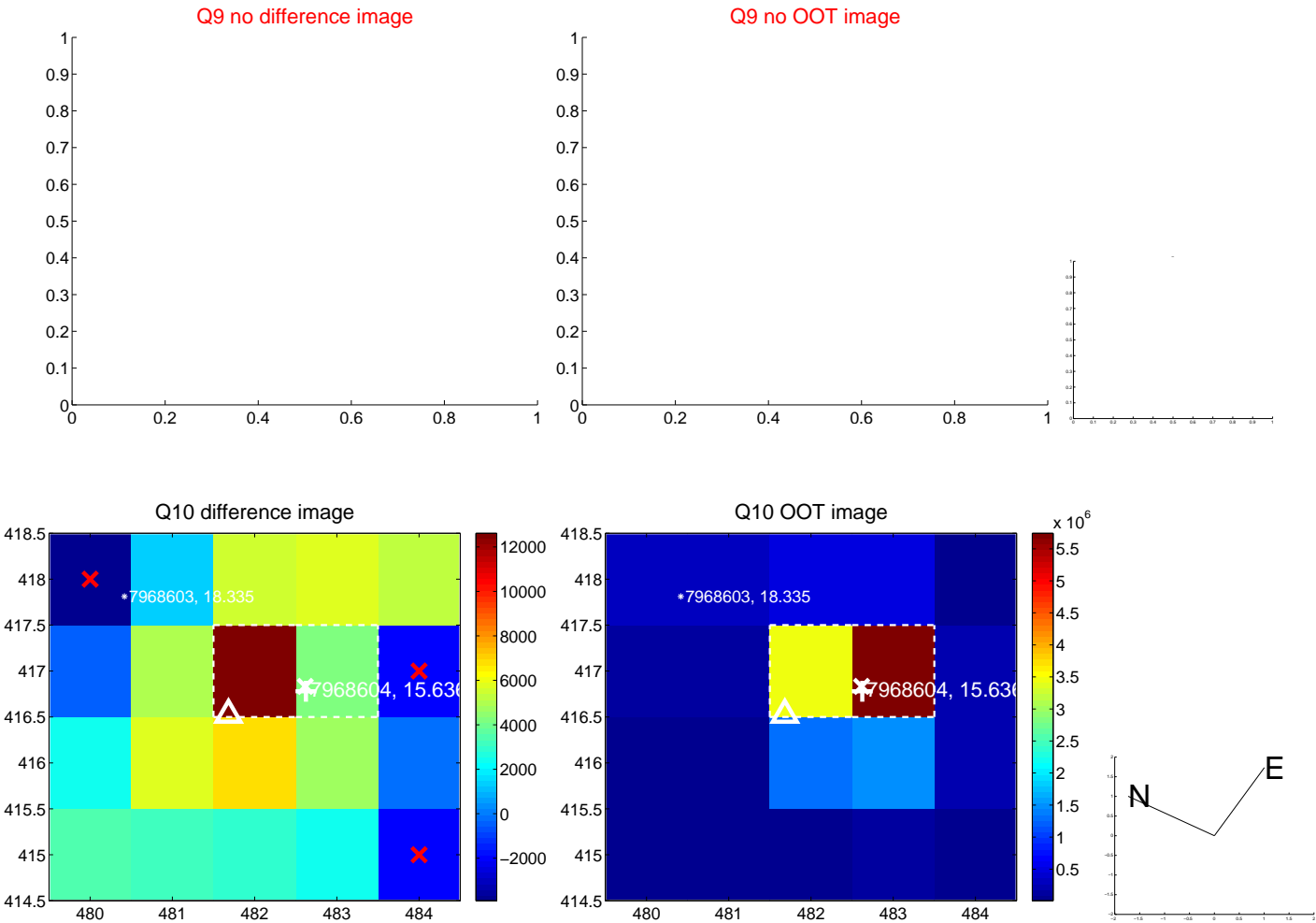
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



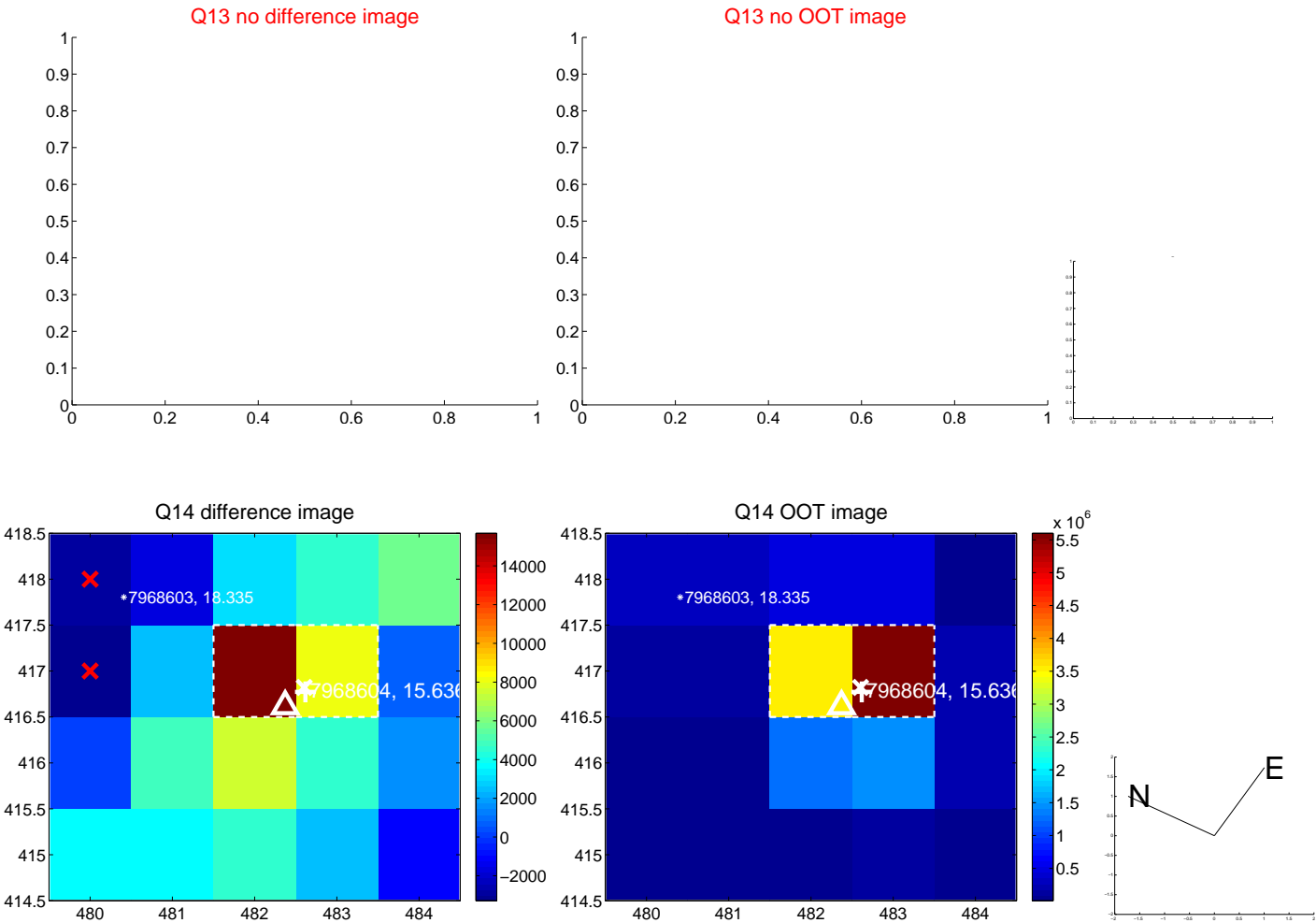
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value



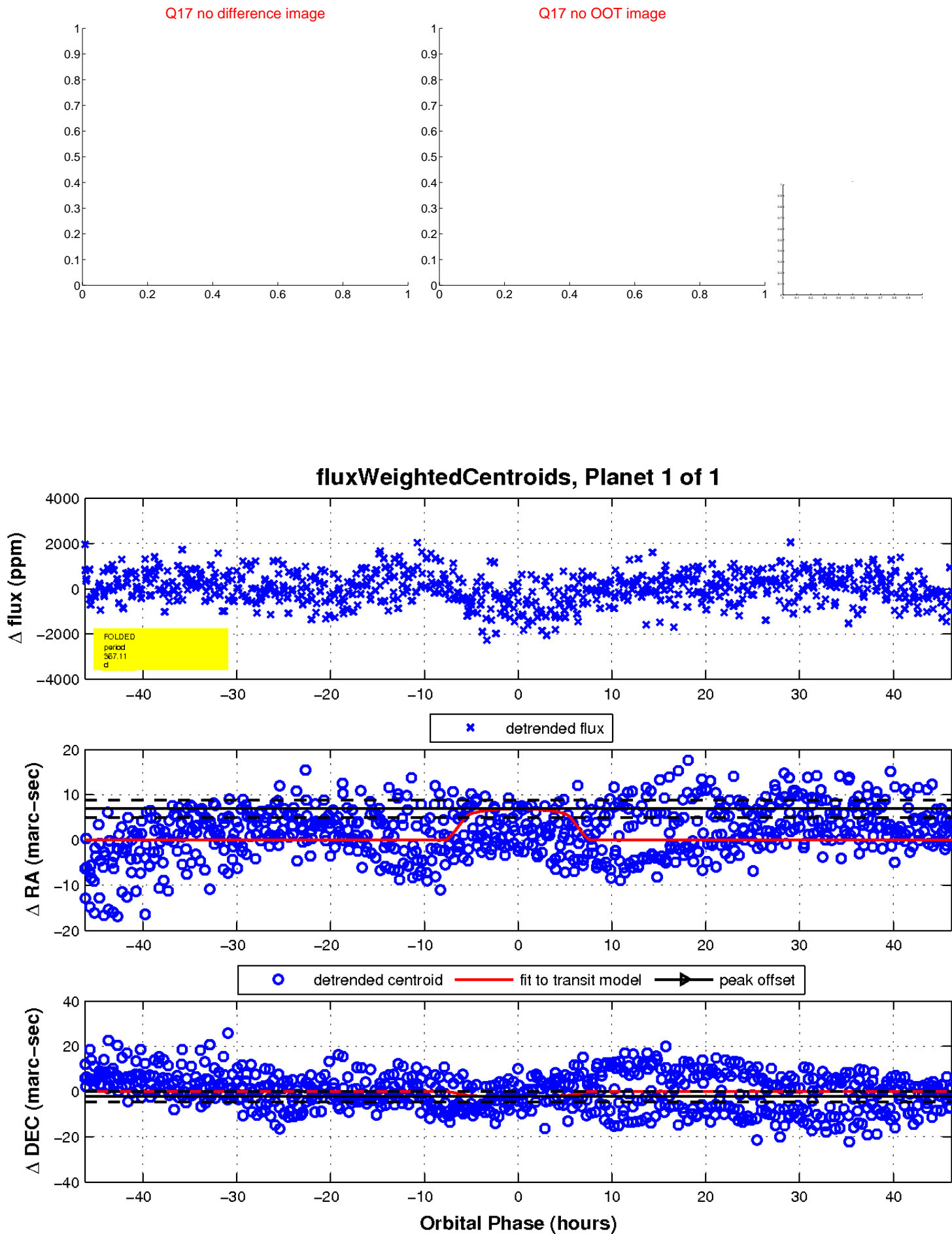
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ✕: large negative pixel value.



white ×: 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

