

# KIC 010801100

## Q1-17 DR25 TCE Parameters

TCE	Run Type	KOI?	Period (Days)	Epoch (BKJD)	Depth (ppm)	Duration (Hours)	MES	SNR	R <sub>★</sub> (R <sub>☉</sub> )	T <sub>★</sub> (K)	R <sub>p</sub> (R <sub>⊕</sub> )	S <sub>p</sub> (S <sub>⊕</sub> )
010801100-01	OBS	2228.01	102.667952	223.157733	543.5	37.840	19.2	26.4	1.70	6711	7.55	23.70

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
010801100-01	OBS	FP	0.00	1	0	0	0	LPP_DV

**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 010801100-01

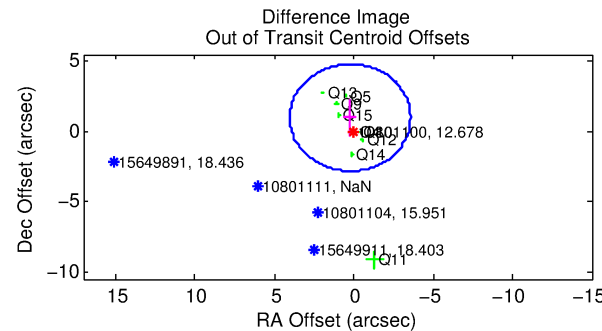
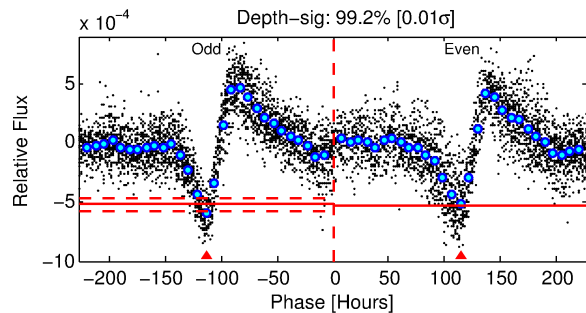
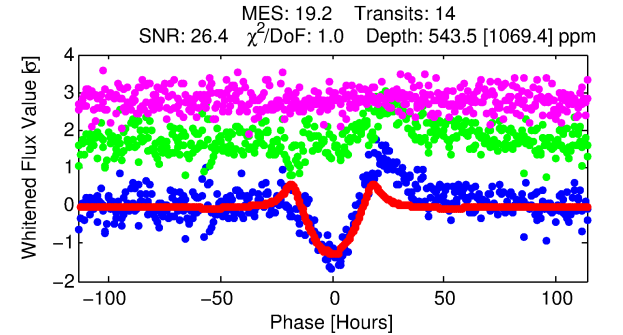
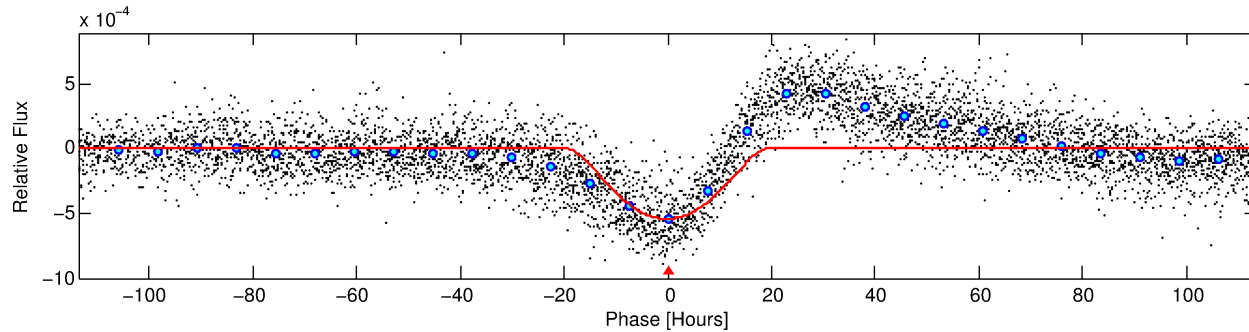
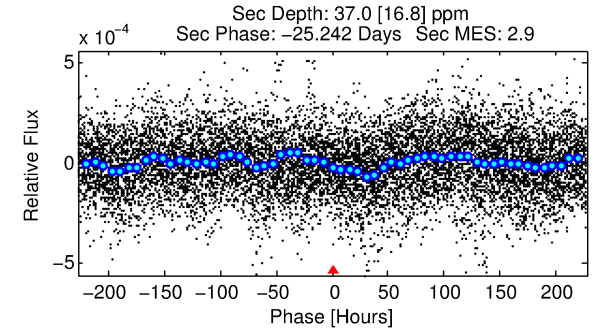
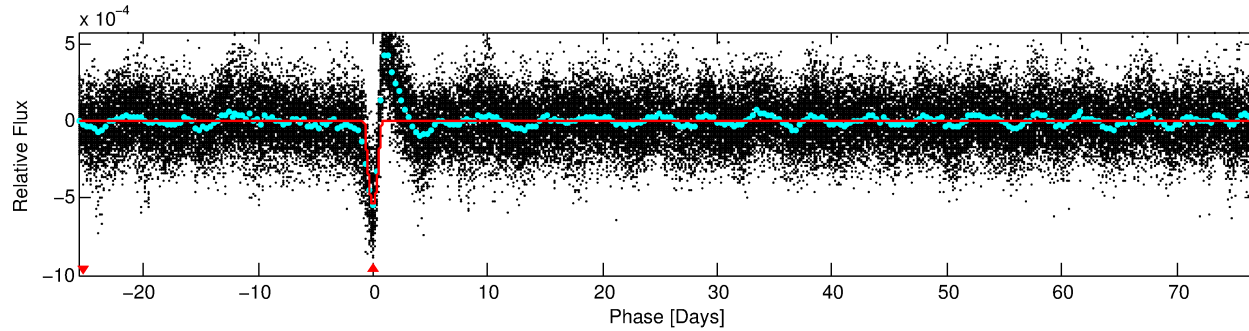
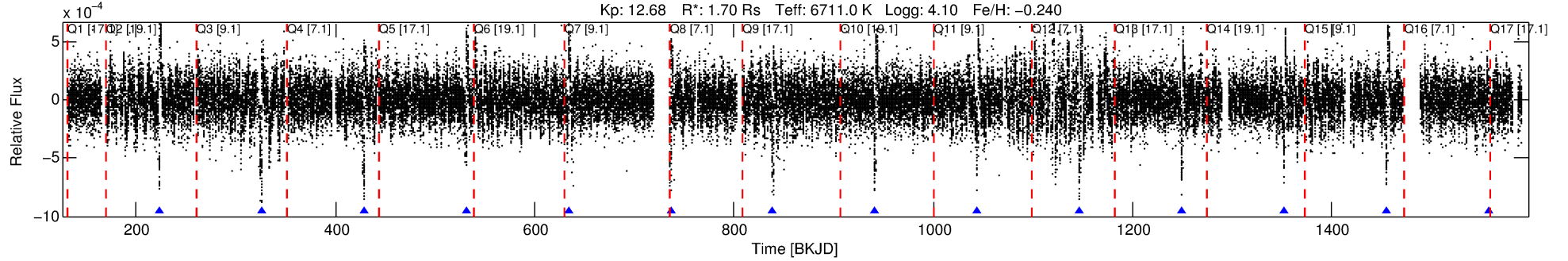
No Significant Match Found

# DV One-Page Summary

KIC: 10801100 Candidate: 1 of 1 Period: 102.668 d

KOI: K02228 Corr: No Ephemeris Match

Kp: 12.68 R\*: 1.70 Rs Teff: 6711.0 K Logg: 4.10 Fe/H: -0.240



## DV Fit Results:

Period = 102.66795 [0.00326] d  
Epoch = 223.1577 [0.0237] BKJD  
Rp/R\* = 0.0408 [0.0237]  
a/R\* = 6.06 [0.86]  
b = 1.00 [0.02]  
Seff = 23.70 [9.90]  
Teq = 563 [59] K  
Rp = 7.55 [4.90] Re  
a = 0.4702 [0.1197] AU  
Ag = 78.92 [103.25] [0.75σ]  
Teffp = 2593 [816] K [2.48σ]

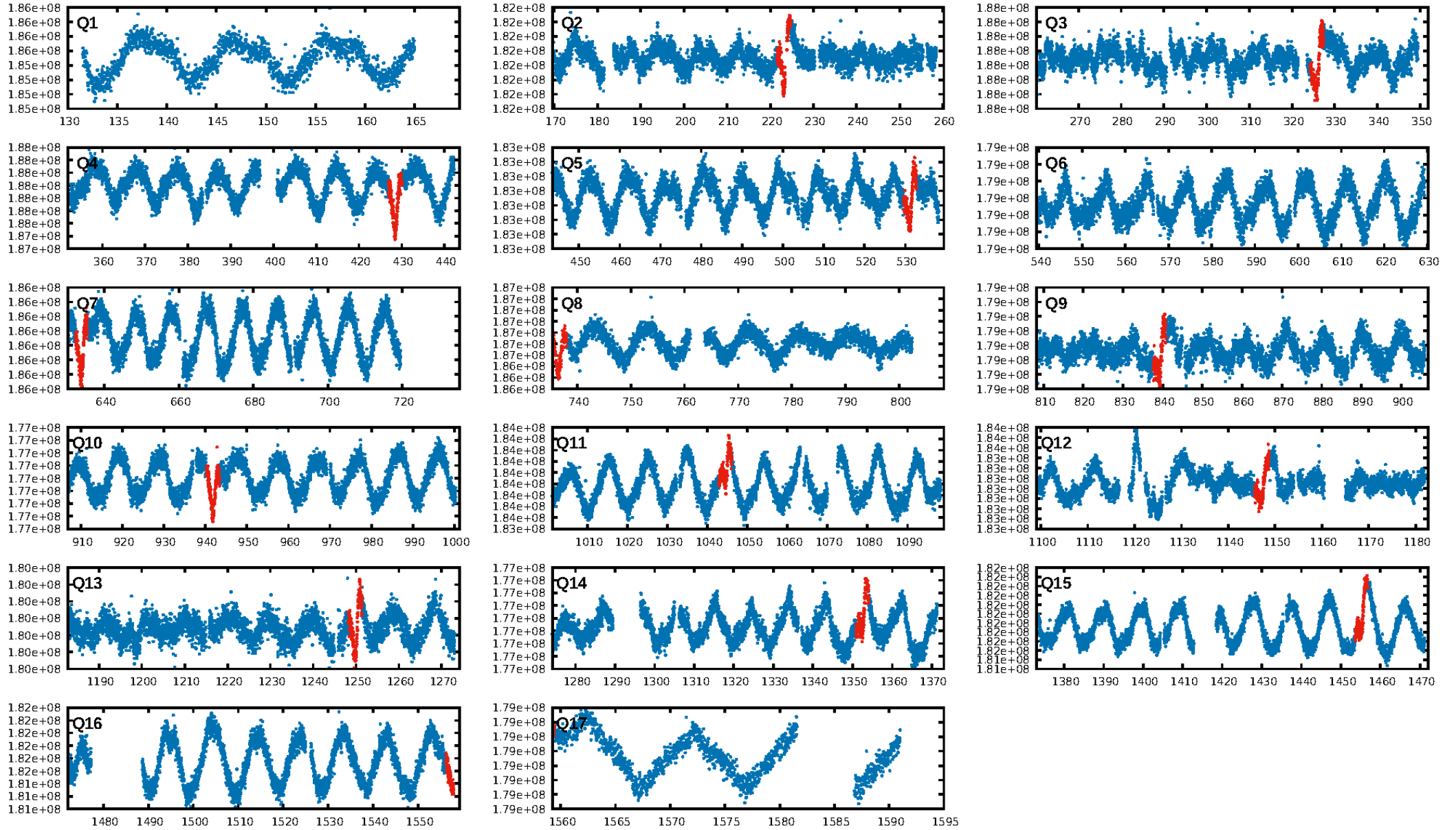
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: 0.0%  
ModelChiSquareGof-sig: 100.0%  
Bootstrap-pfa: 1.95e-80  
RollingBand-fgt: 1.00 [14/14]  
GhostDiagnostic-chr: 1.23  
Centroid-sig: 55.5%  
Centroid-so: 0.068 arcsec [0.53σ]  
OotOffset-rm: 1.011 arcsec [0.80σ]  
OotOffset-st: 2/2/2/3 [9]  
KicOffset-rm: 1.057 arcsec [0.84σ]  
KicOffset-st: 2/2/2/3 [9]  
DiffImageQuality-fgm: 0.89 [8/9]  
DiffImageOverlap-fno: 1.00 [9/9]

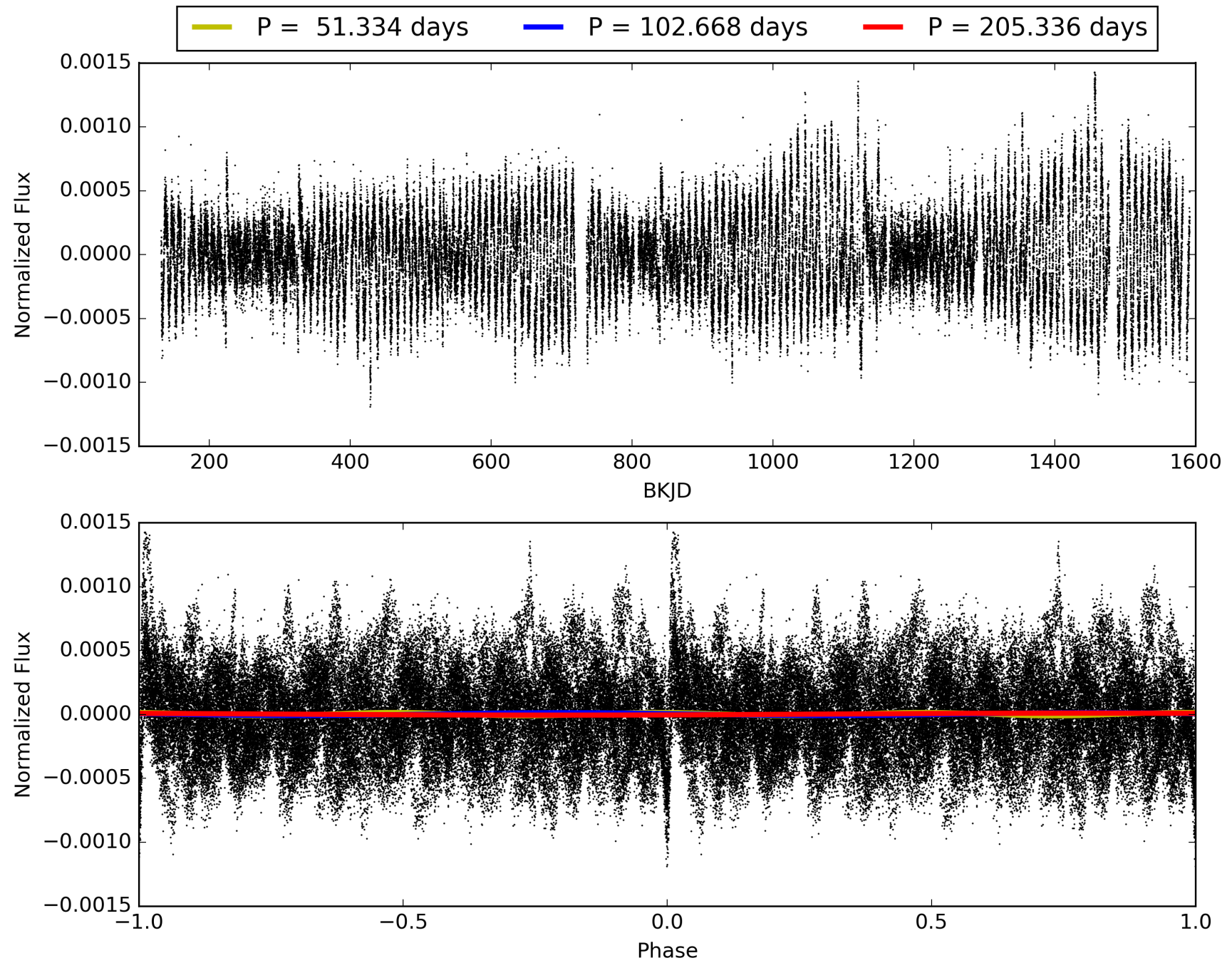
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 28-Jan-2016 20:59:06 Z

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

# TCE 010801100-01, PDC Light Curves

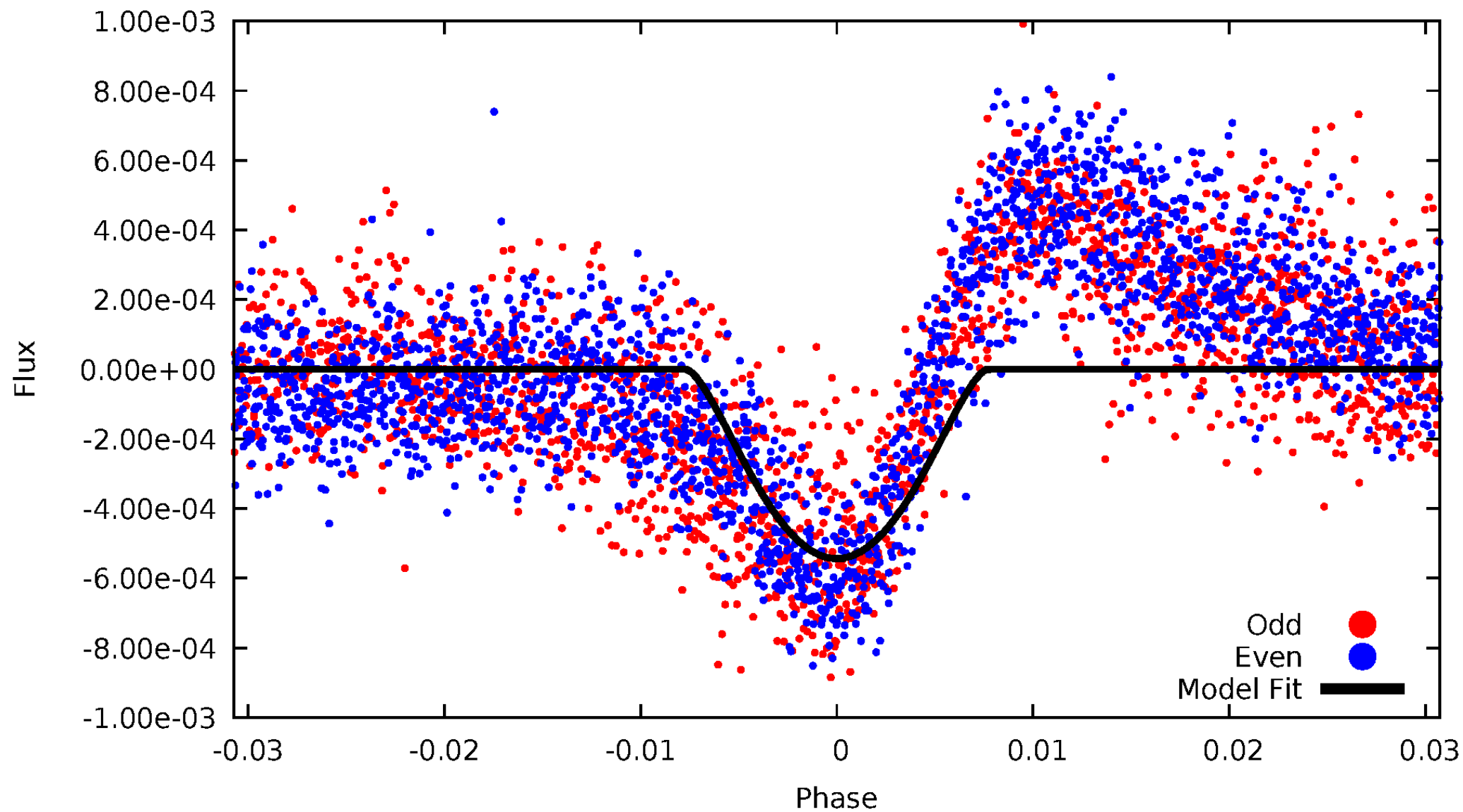


# TCE 010801100-01



# DV Odd/Even

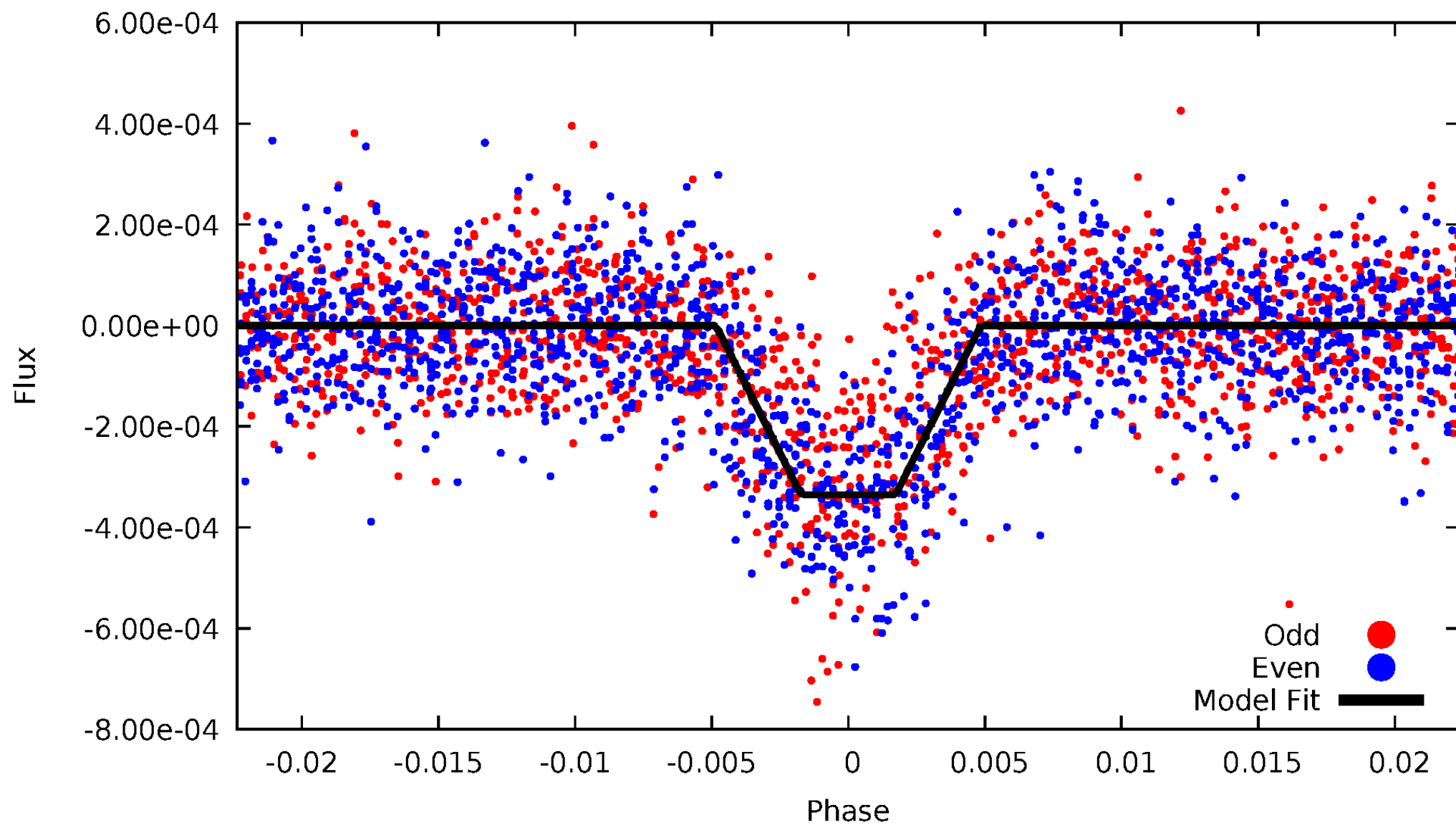
TCE 010801100-01





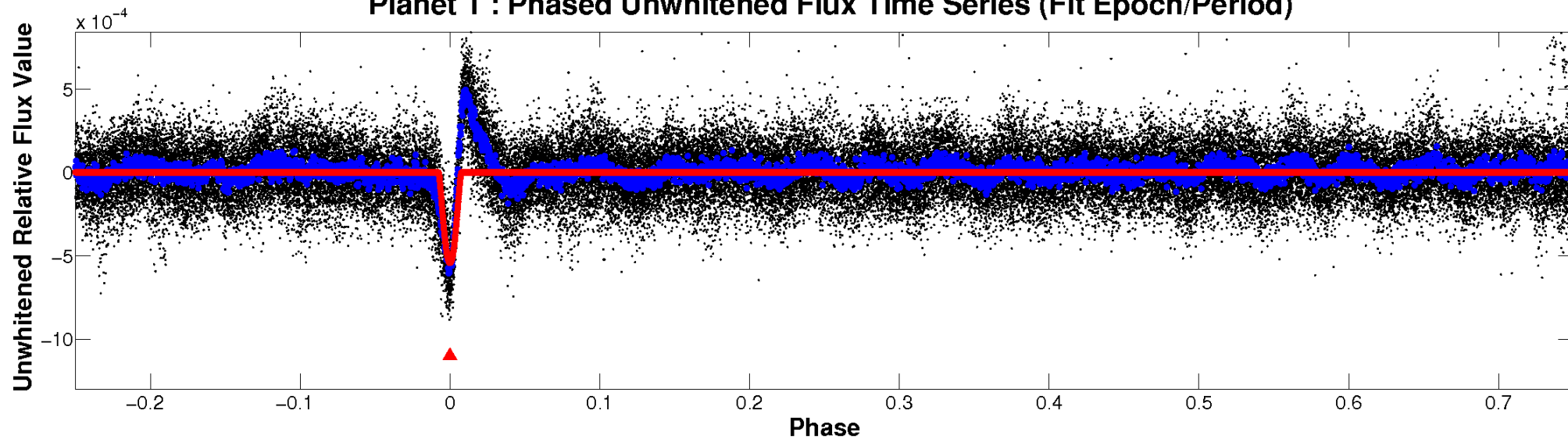
# ALT Odd/Even

TCE 010801100-01

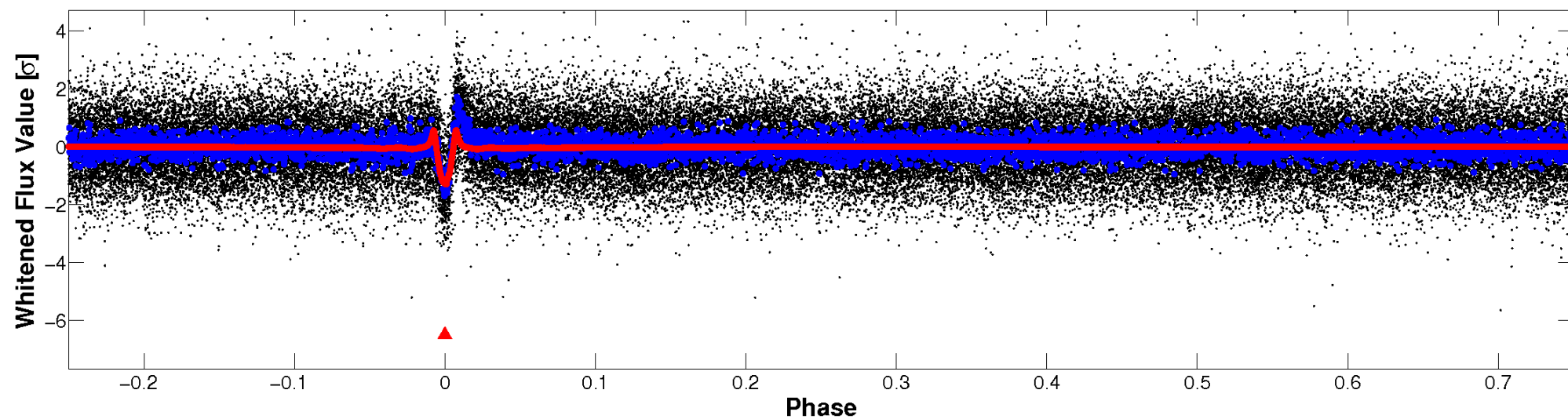


# Non-Whitened Vs. Whitened Light Curve

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

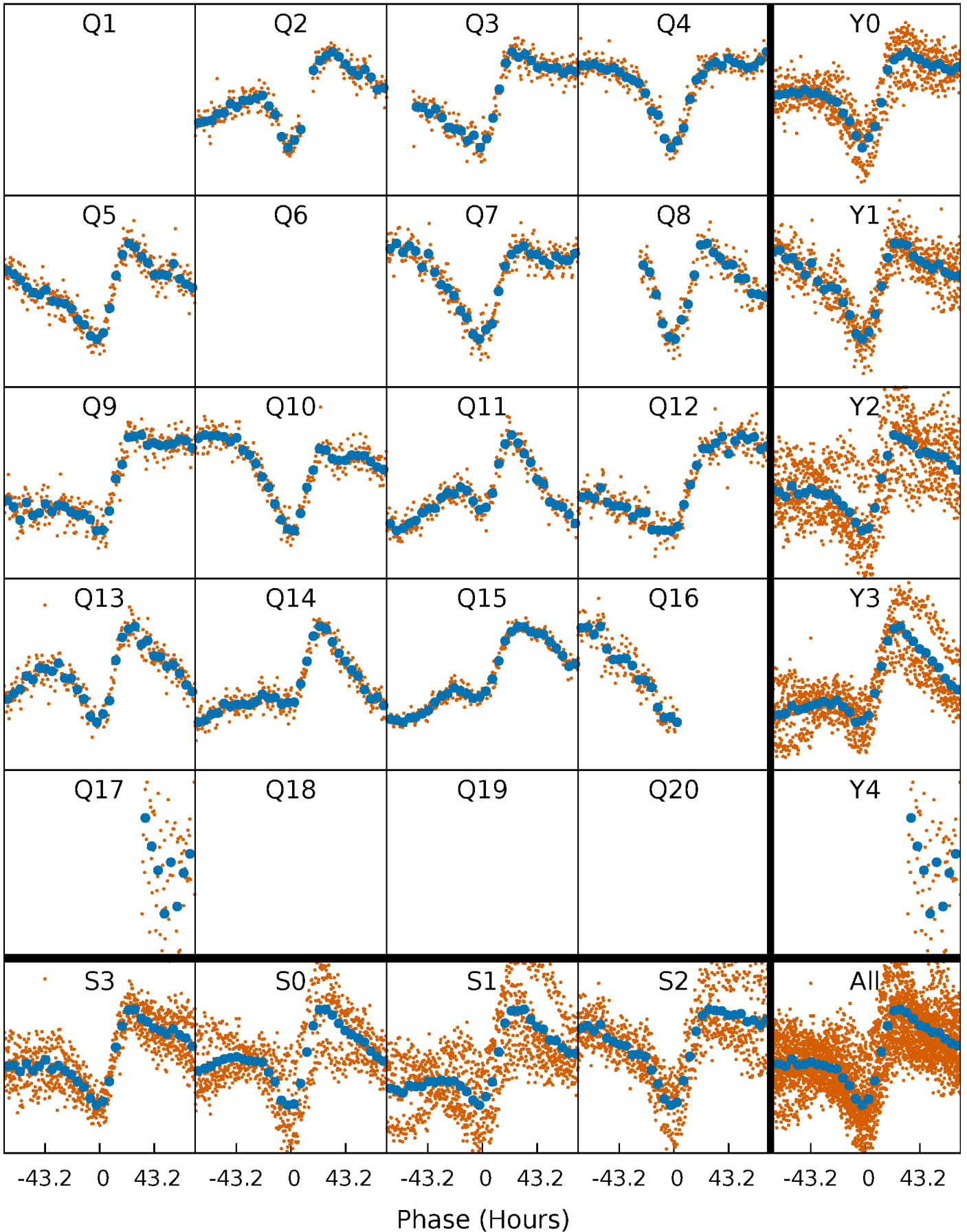


**Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)**



# PDC Quarter-Phased Transit Curves

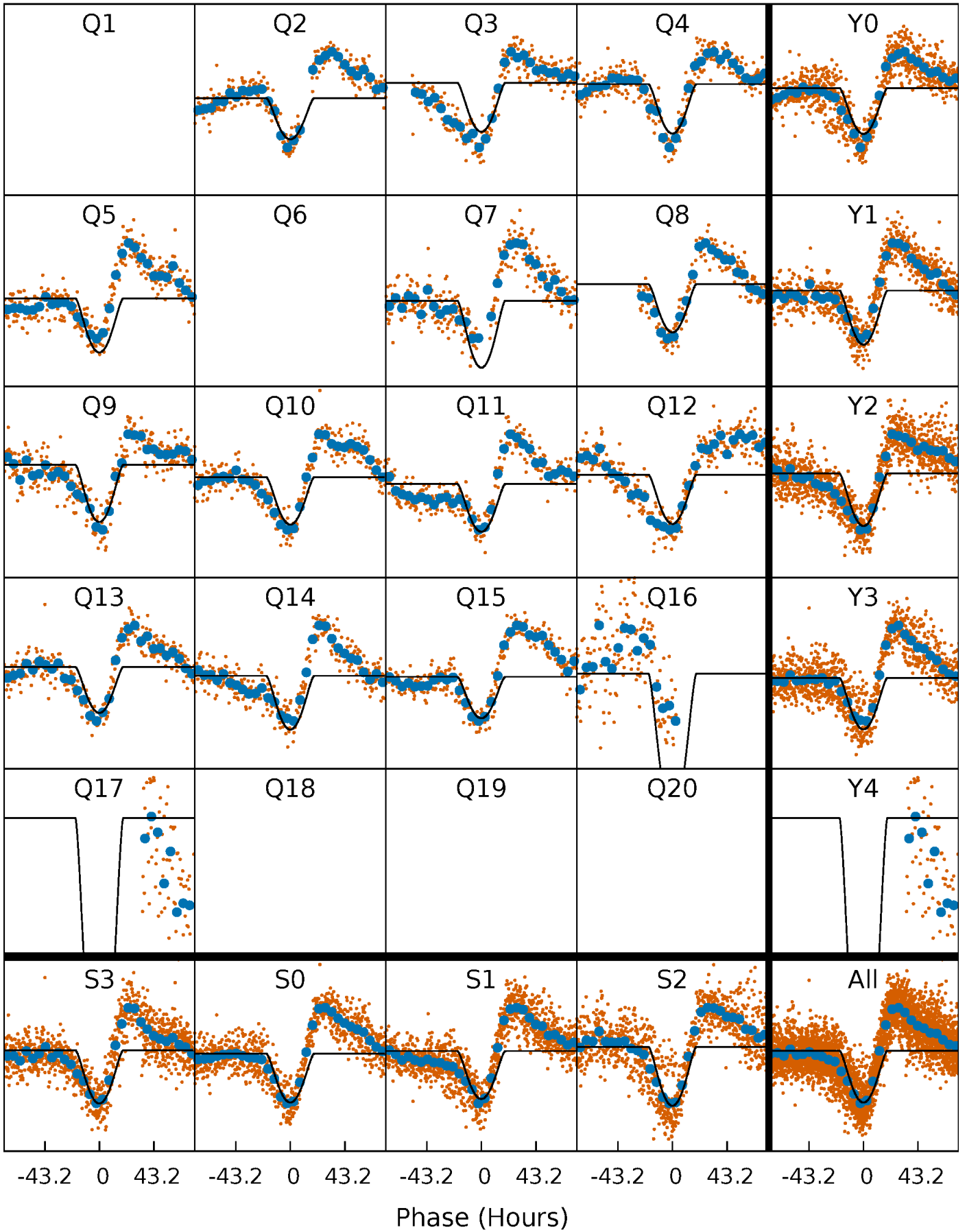
TCE 010801100-01 P=102.667952 Days  $T_0=223.157733$  (BKJD)





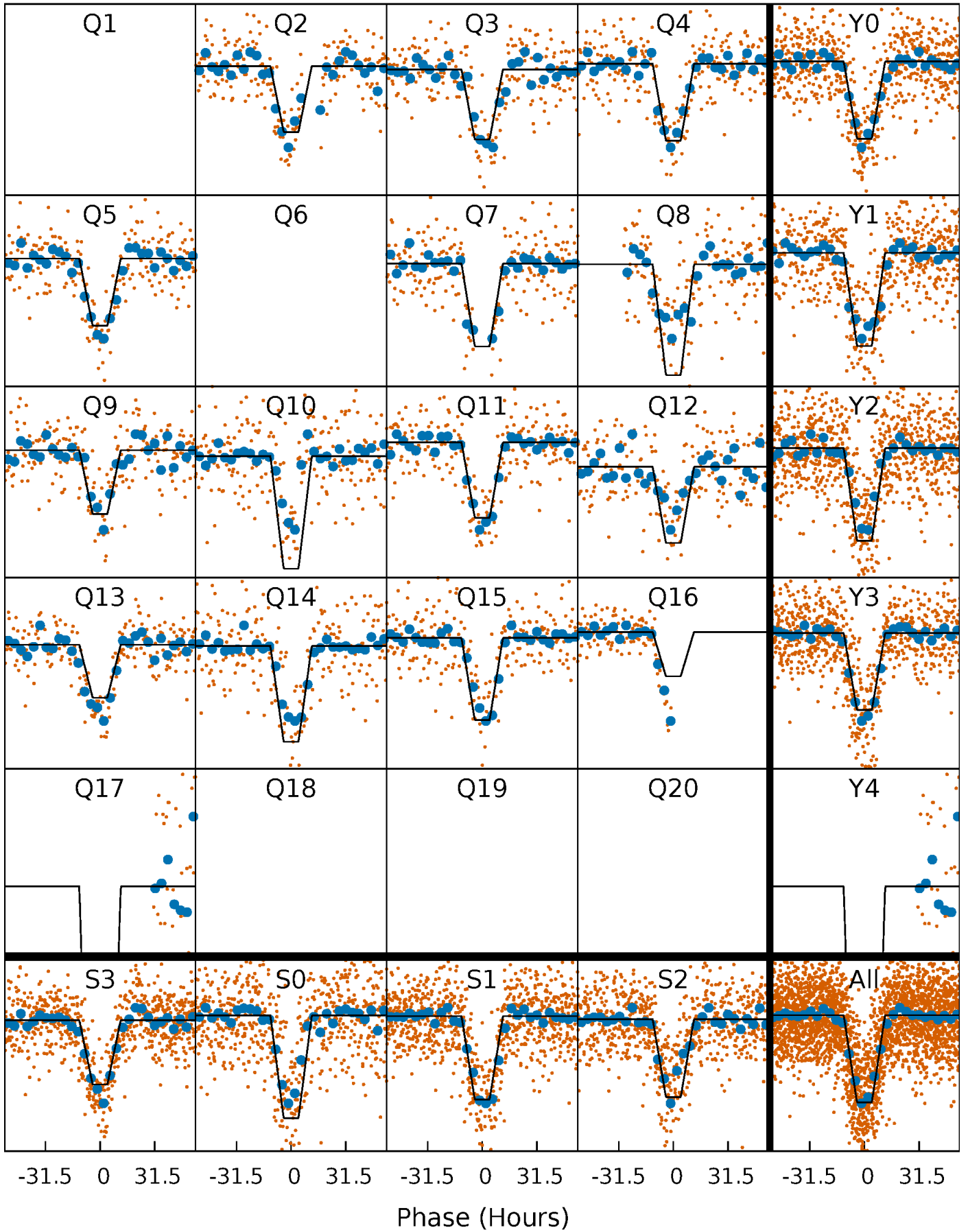
# DV Quarter-Phased Transit Curves

TCE 010801100-01 P=102.667952 Days  $T_0=223.157733$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

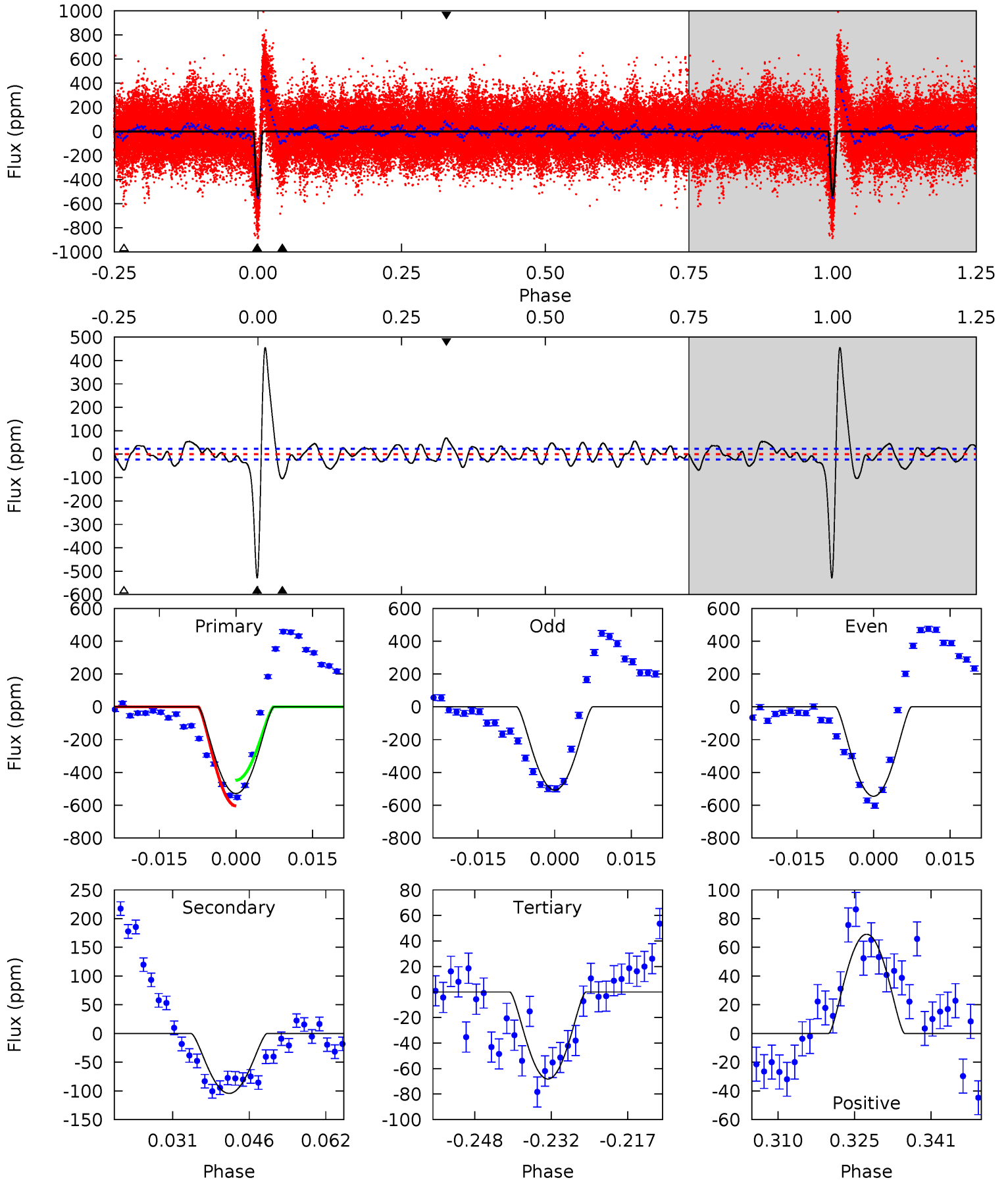
TCE 010801100-01 P=102.678639 Days  $T_0=223.173727$  (BKJD)



# DV Model-Shift Uniqueness Test

010801100-01, P = 102.667952 Days, E = 120.489781 Days

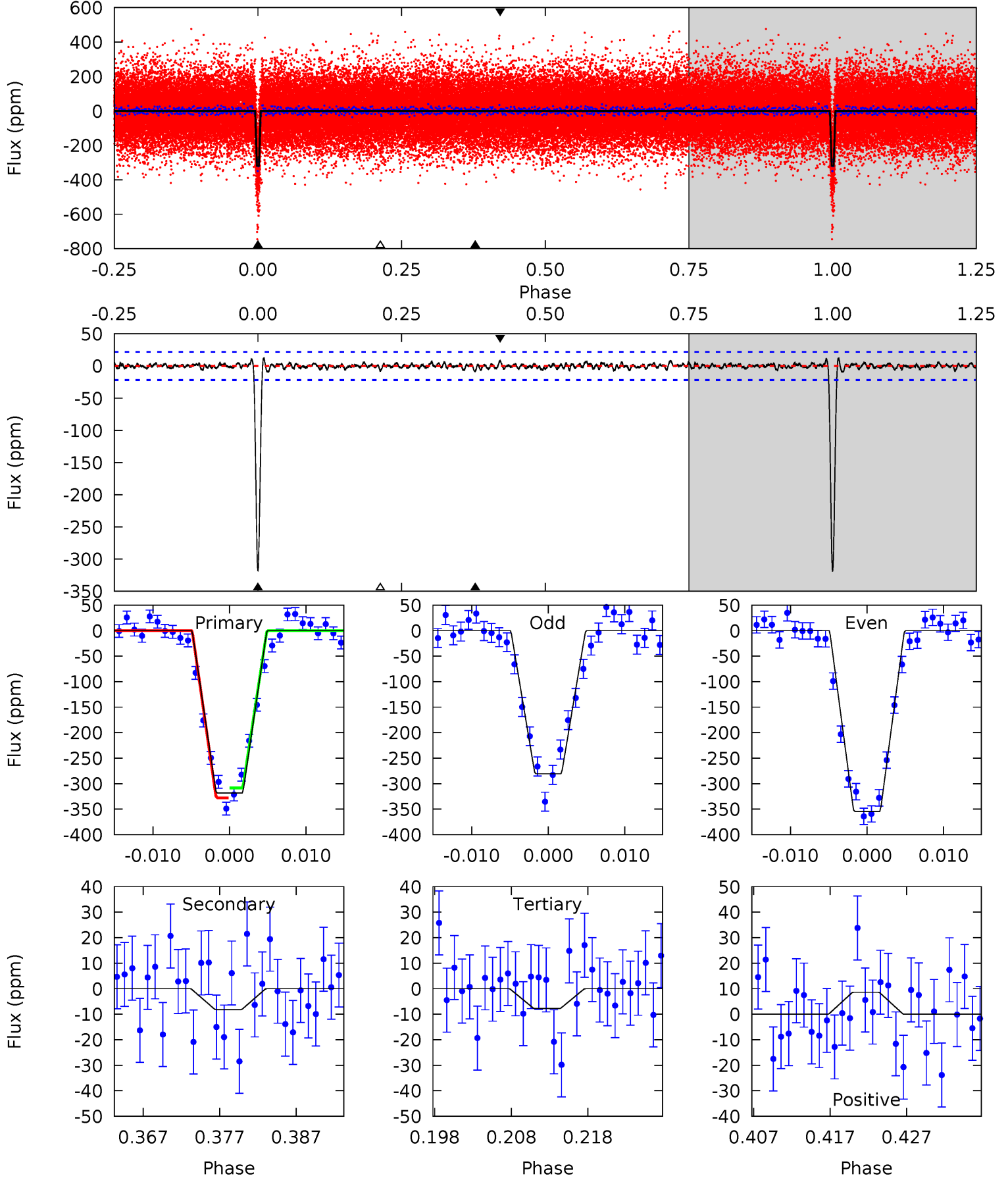
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
113.0	22.3	14.6	14.8	4.94	2.42	9.69	98.4	98.2	7.73	7.53	4.03	0.87	0.46	16.8



# Alt Model-Shift Uniqueness Test

010801100-01, P = 102.678639 Days, E = 120.495088 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
73.3	1.88	1.79	1.98	5.03	2.58	0.64	71.5	71.3	0.10	-0.10	8.51	1.01	0.04	2.23



### Stellar Parameters For KIC 010801100

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$6711^{+189}_{-260}$	$4.097^{+0.220}_{-0.180}$	$-0.240^{+0.300}_{-0.300}$	$1.698^{+0.485}_{-0.485}$	$1.320^{+0.194}_{-0.237}$	$0.380^{+0.490}_{-0.188}$
	+3%/-4%	+5%/-4%	+125%/-125%	+29%/-29%	+15%/-18%	+129%/-49%
Source	PHO54	PHO54	PHO54	DSEP		

KIC = Kepler Input Catalog; PHO = Photometry; SPE = Spectroscopy; AST = Asteroseismology  
 TRA = Transits; DESP = Dartmouth Models; MULT = Multiple Models

### Secondary Eclipse Parameters for KIC 010801100-01 / KOI 2228.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	$A_{\text{obs}}$
DV	$-104 \pm 5$	$7.91^{+4.75}_{-4.33}$	$783^{+63}_{-59}$	$3654^{+1293}_{-452}$	$200^{+802}_{-119}$
Alt.	$-8 \pm 4$	$4.57^{+4.07}_{-3.11}$	$783^{+61}_{-62}$	$2926^{+1261}_{-527}$	$44^{+353}_{-35}$

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



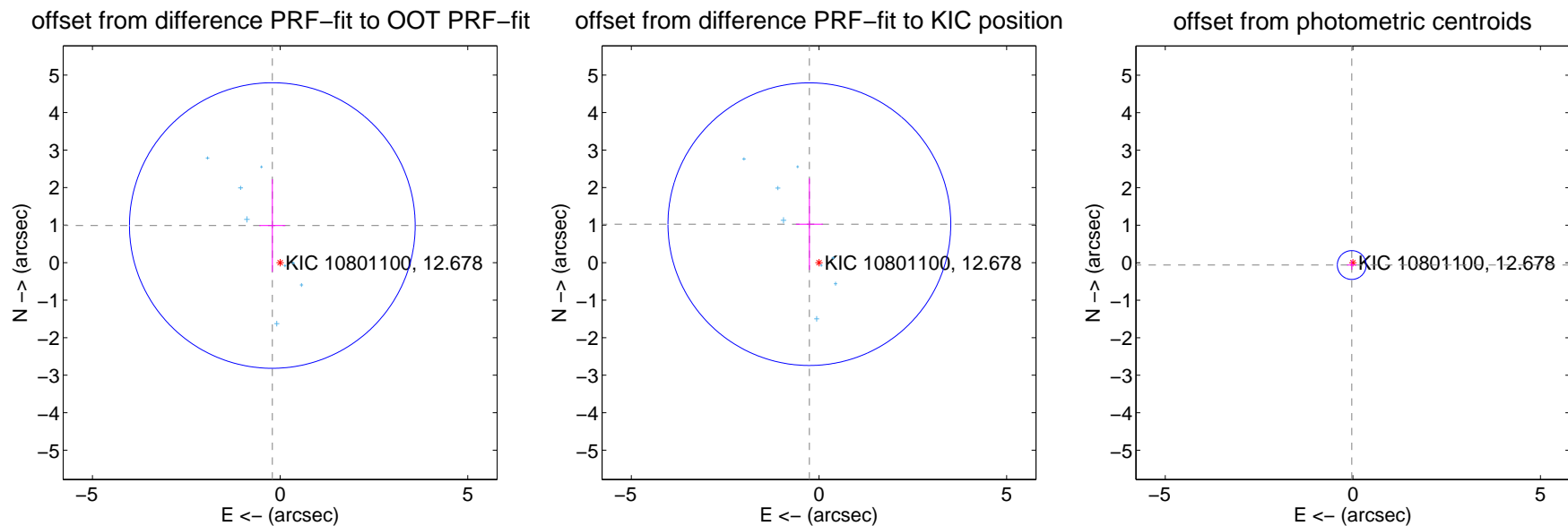
## DV Centroid Data

Supplemental centroid analysis for 010801100-01. Kepler magnitude: 12.68. Transit SNR 26.45

There are 8 quarters with good PRF difference image offsets

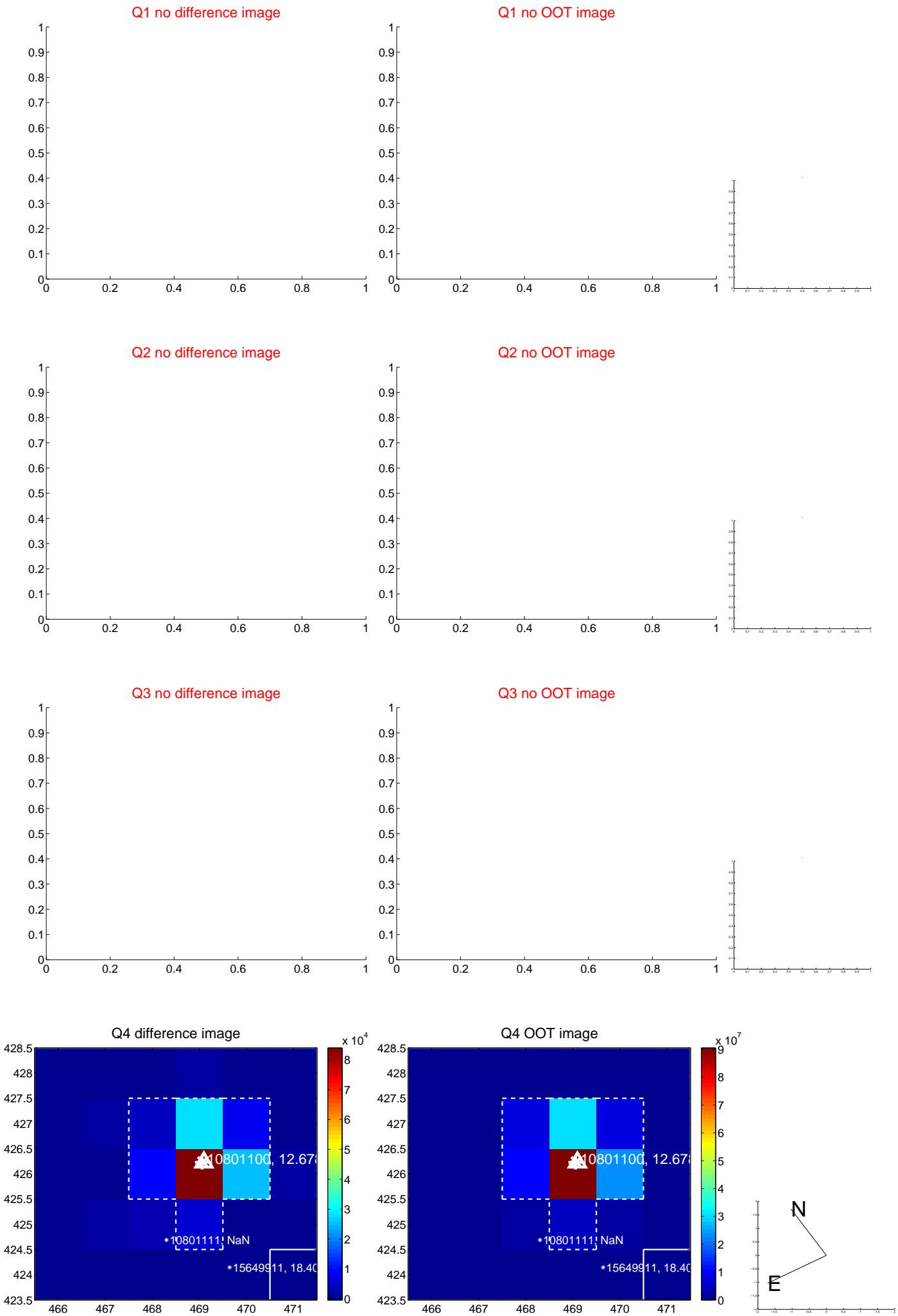
The direct PRF centroid is offset from the target star catalog position by about 0.06 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$1.011 \pm 1.269$	0.80	$0.207 \pm 0.347$	$0.989 \pm 1.235$
PRF-fit source offset from KIC position	$1.057 \pm 1.255$	0.84	$0.256 \pm 0.358$	$1.025 \pm 1.218$
photometric centroid source offset	$0.07 \pm 0.13$	0.53	$0.03 \pm 0.12$	$-0.06 \pm 0.13$

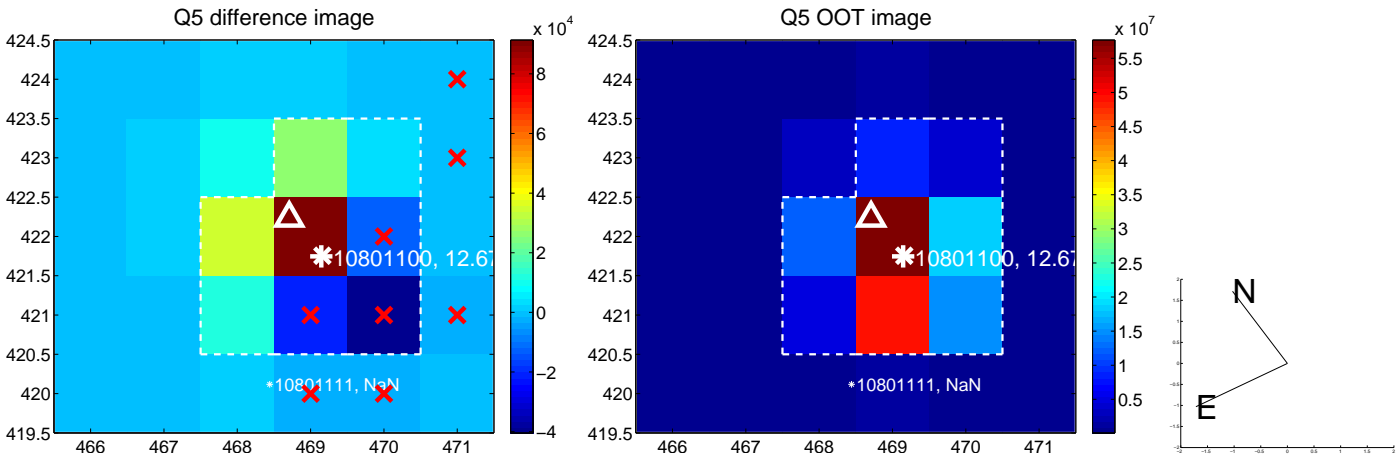


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets**; **Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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

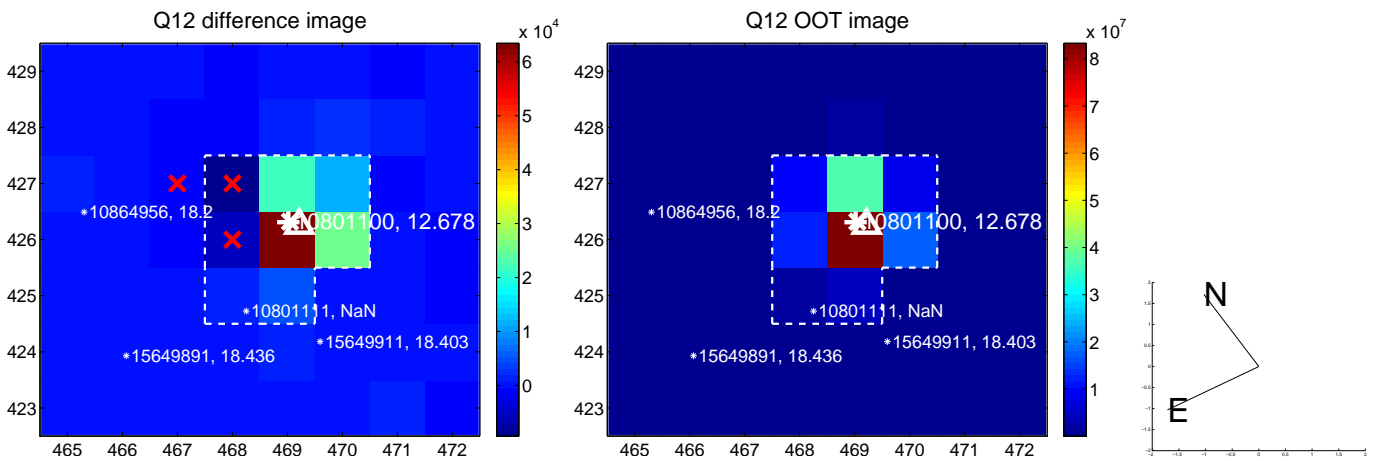
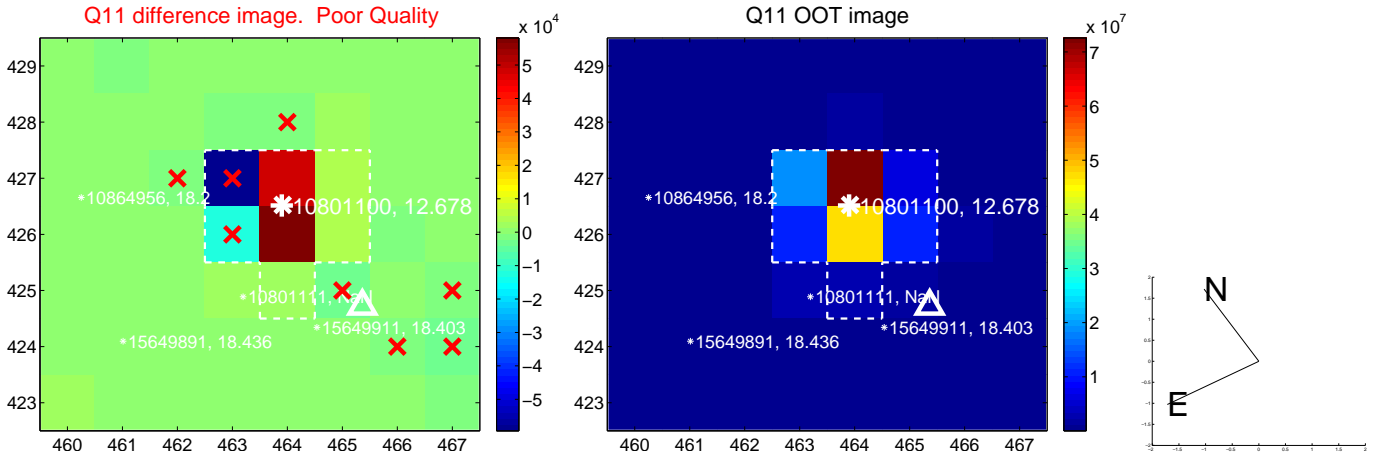
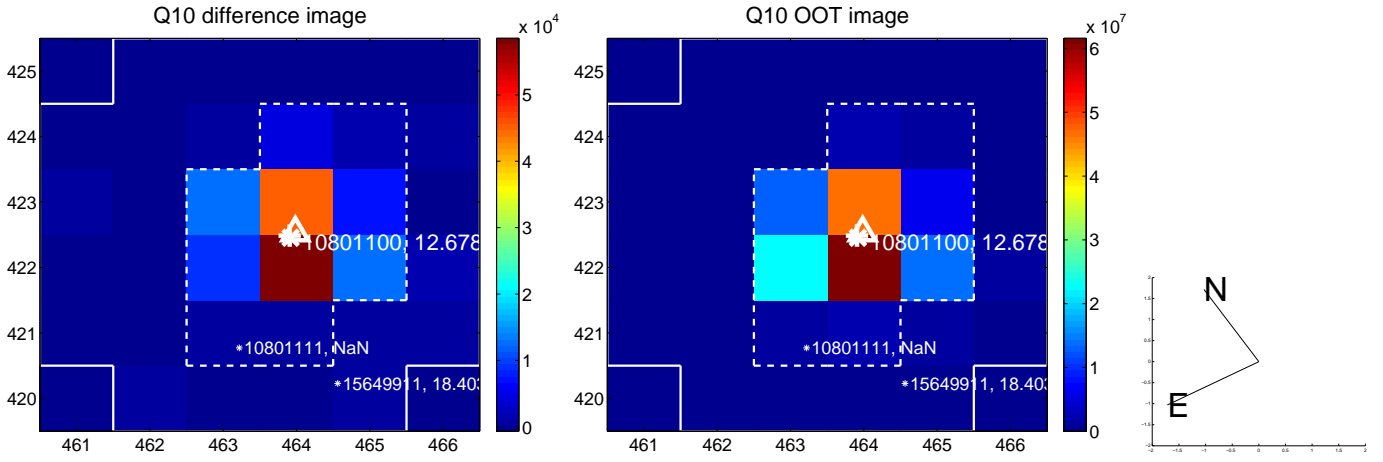
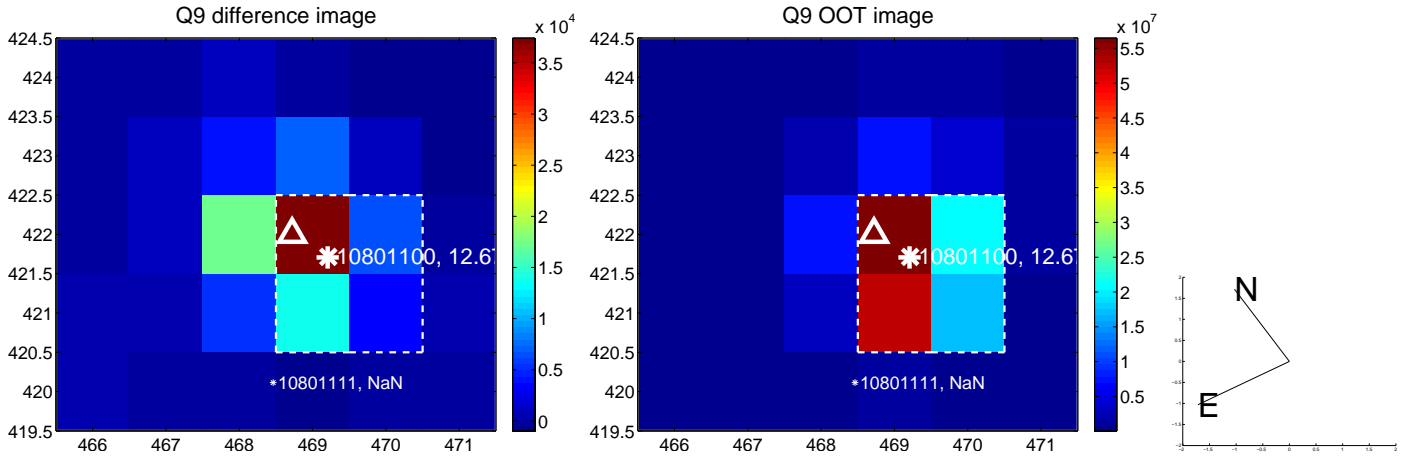
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



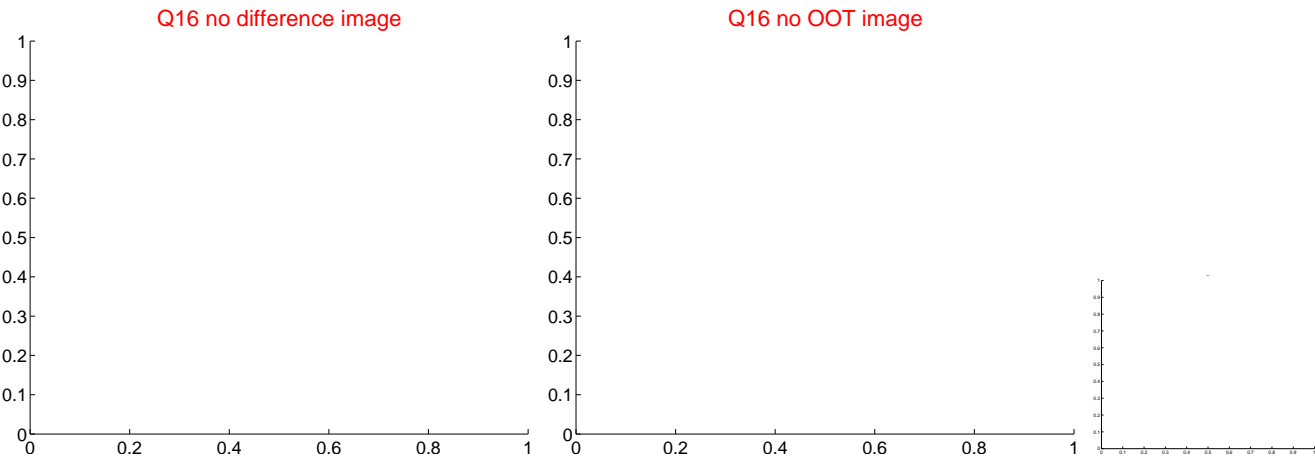
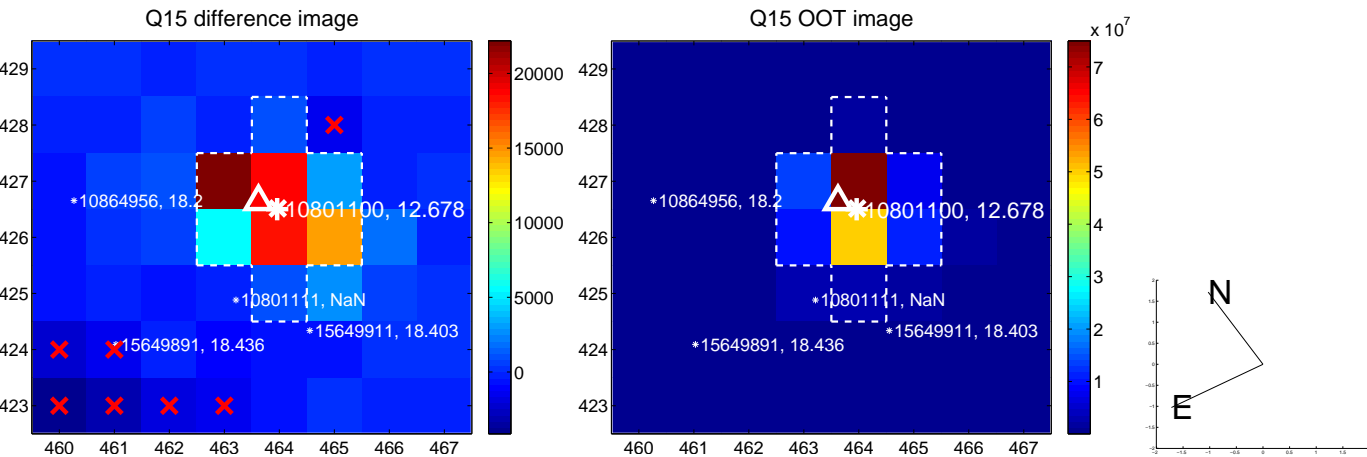
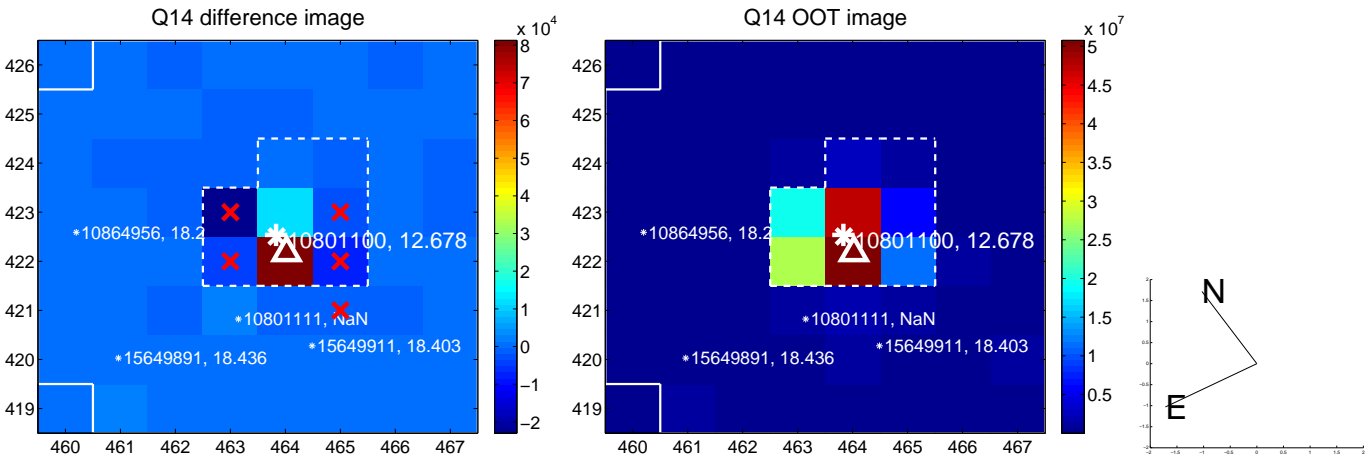
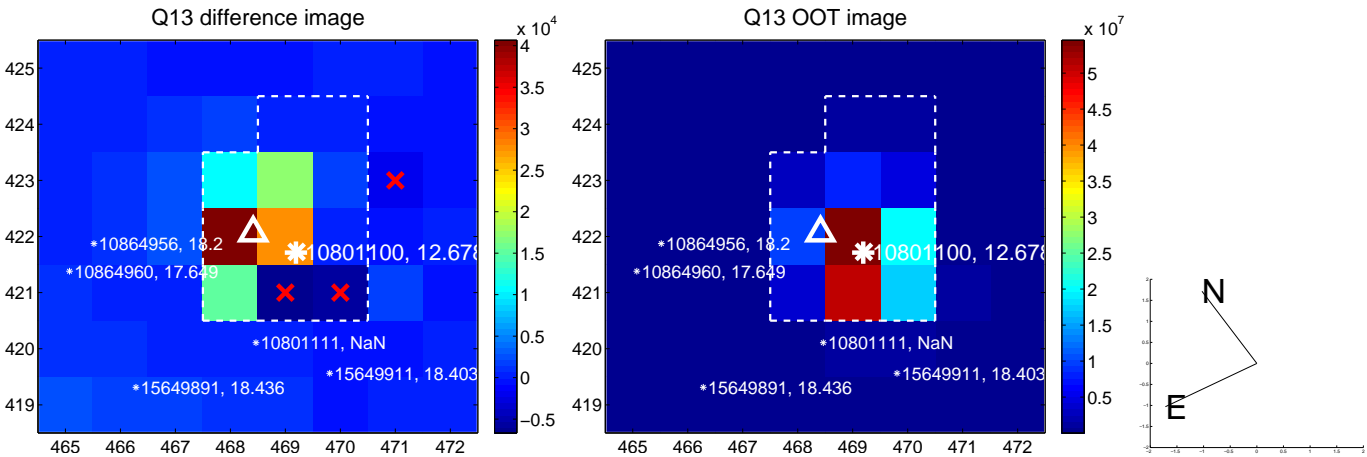
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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

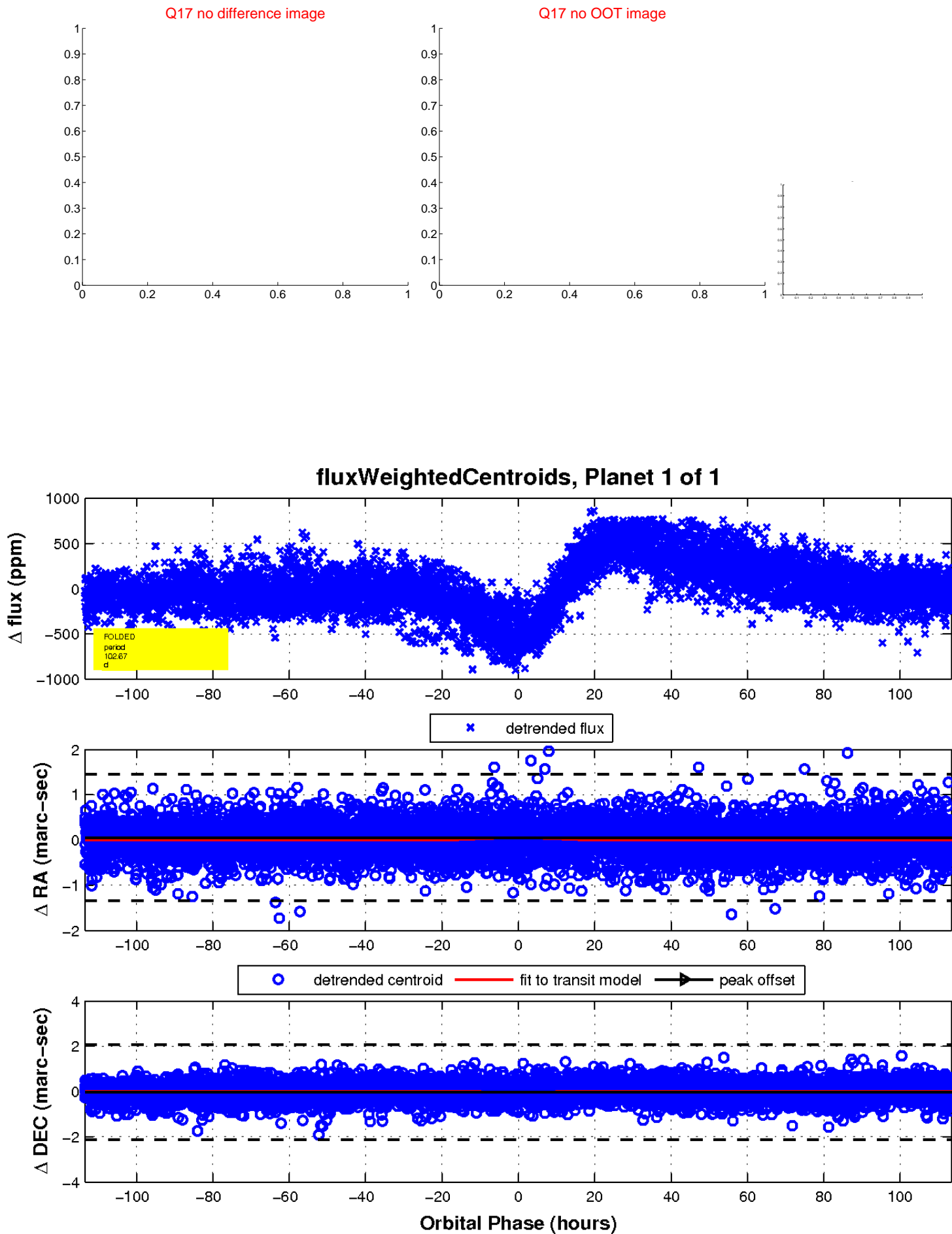


white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.





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



UKIRT Image

Declination

