

# KIC 010161923

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
010161923-01	OBS	No	4.144636	132.577828	0.4	22.231	8.4	0.1	1.38	6215	0.09	997.74

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
010161923-01	OBS	FP	0.00	1	0	0	0	SWEET_NTL—LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT

**Notes:** OBS = Observed. INJ = Injected. INV = Inverted. SCR = Scrambled.

N = Not Transit-Like. S = Stellar Eclipse. C = Centroid Offset. E = Ephemeris Match.

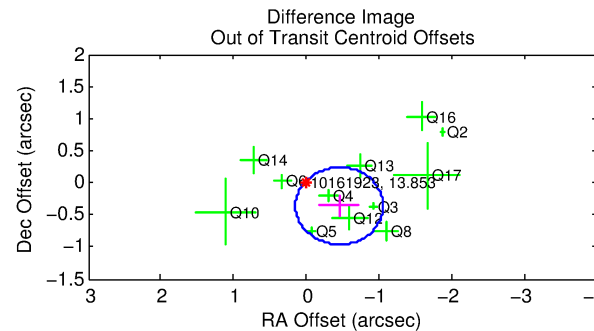
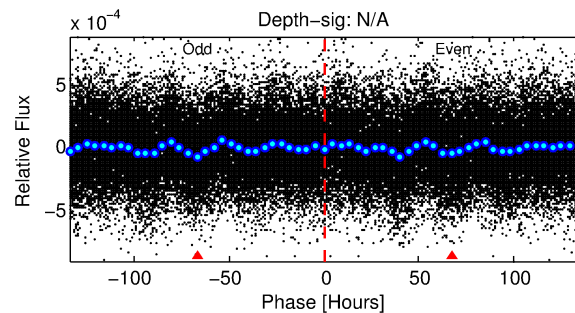
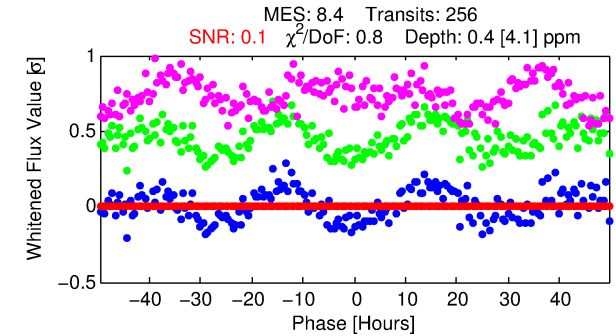
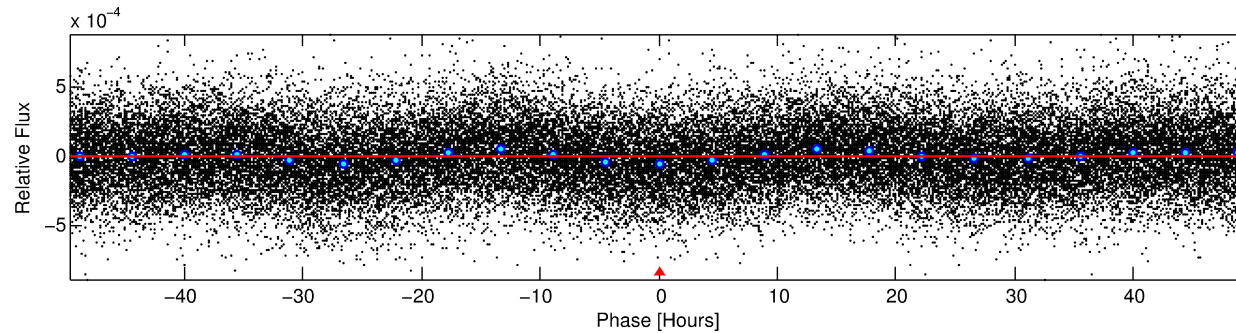
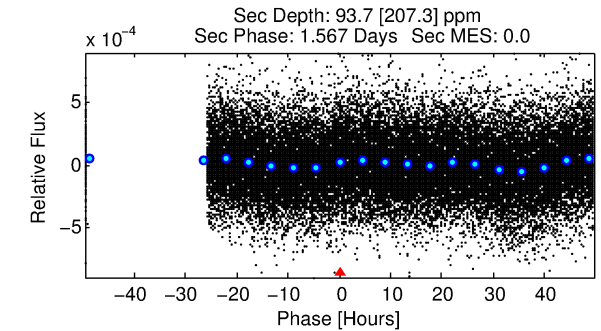
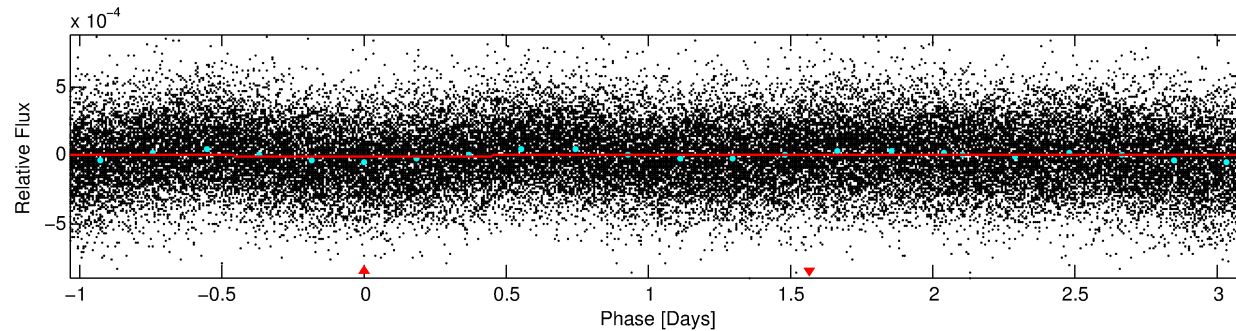
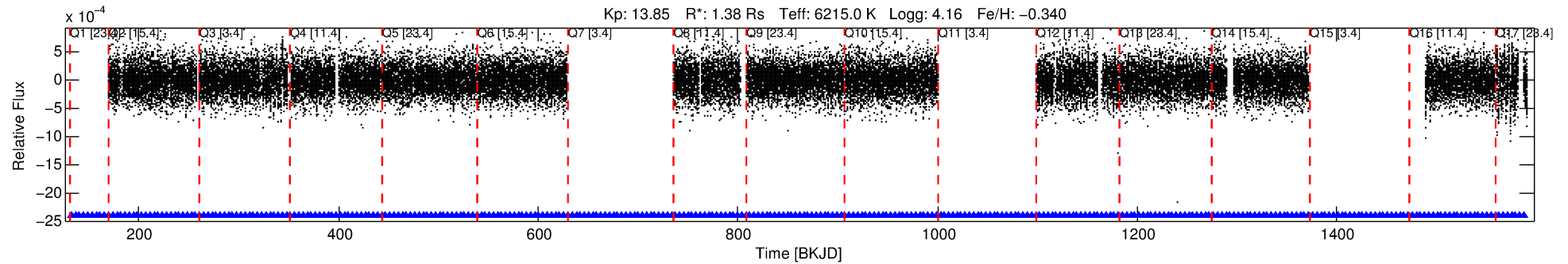
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 010161923-01

No Significant Match Found

# DV One-Page Summary

KIC: 10161923 Candidate: 1 of 1 Period: 4.145 d



## DV Fit Results:

Period = 4.14464 [0.00697] d  
Epoch = 132.5778 [1.0715] BKJD  
Rp/R\* = 0.0006 [0.0243]  
a/R\* = 1.54 [183.10]  
b = 0.16 [1247.33]  
Seff = 997.74 [463.65]  
Teq = 1433 [166] K  
Rp = 0.09 [3.67] Re  
a = 0.0506 [0.0138] AU  
Ag = 15525.48 [1235788.25] [0.01σ]  
Teffp = 24733 [492173] K [0.05σ]

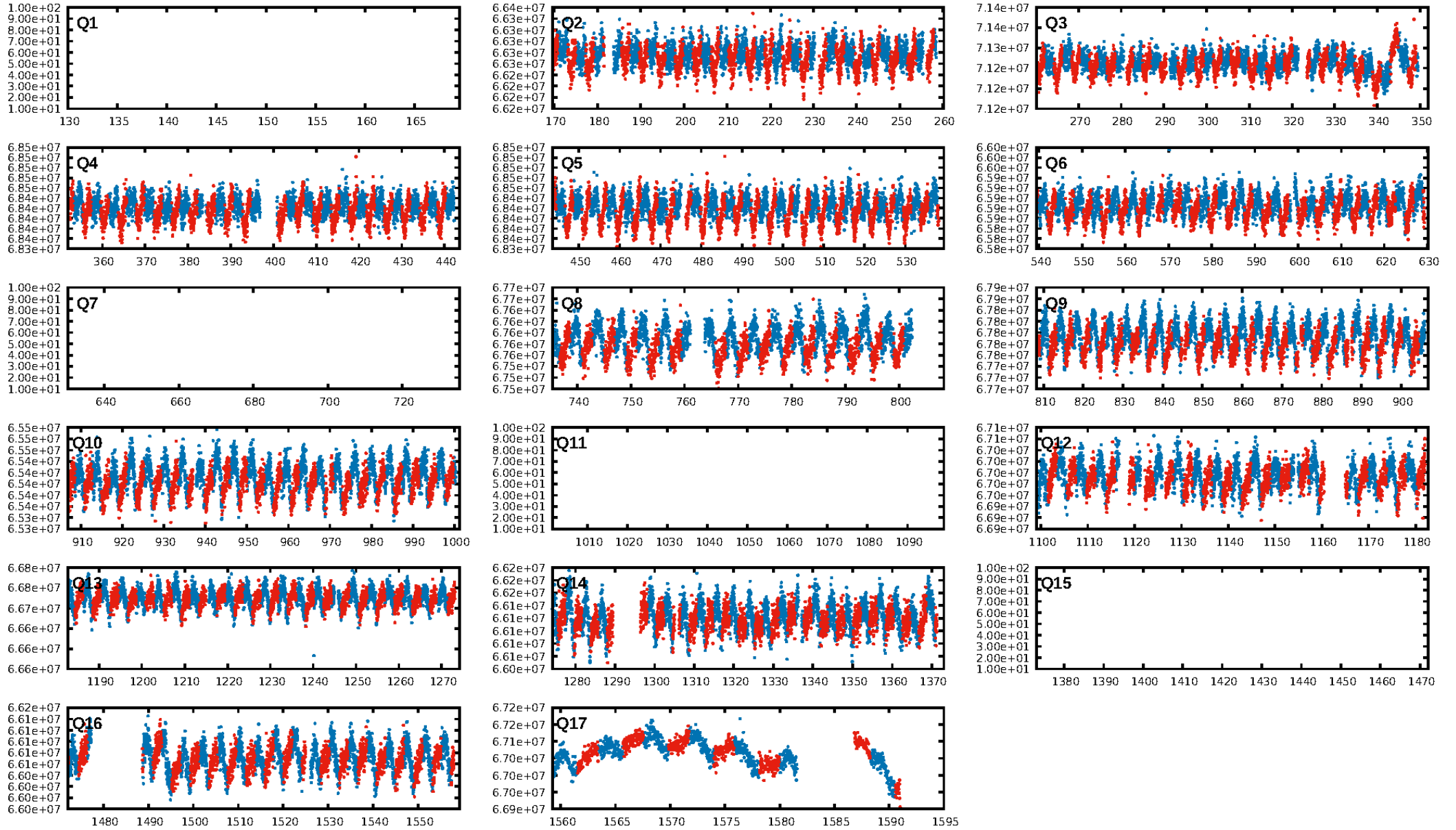
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: N/A  
ModelChiSquareGof-sig: N/A  
Bootstrap-pfa: 1.55e-18  
RollingBand-fgt: 1.00 [250/250]  
GhostDiagnostic-chr: N/A  
Centroid-sig: N/A  
Centroid-so: N/A  
OotOffset-rm: 0.579 arcsec [2.89σ]  
KicOffset-rm: 0.508 arcsec [2.21σ]  
OotOffset-st: 4/1/4/3 [12]  
KicOffset-st: 4/1/4/3 [12]  
DiffImageQuality-fgm: 0.50 [6/12]  
DiffImageOverlap-fno: 1.00 [13/13]

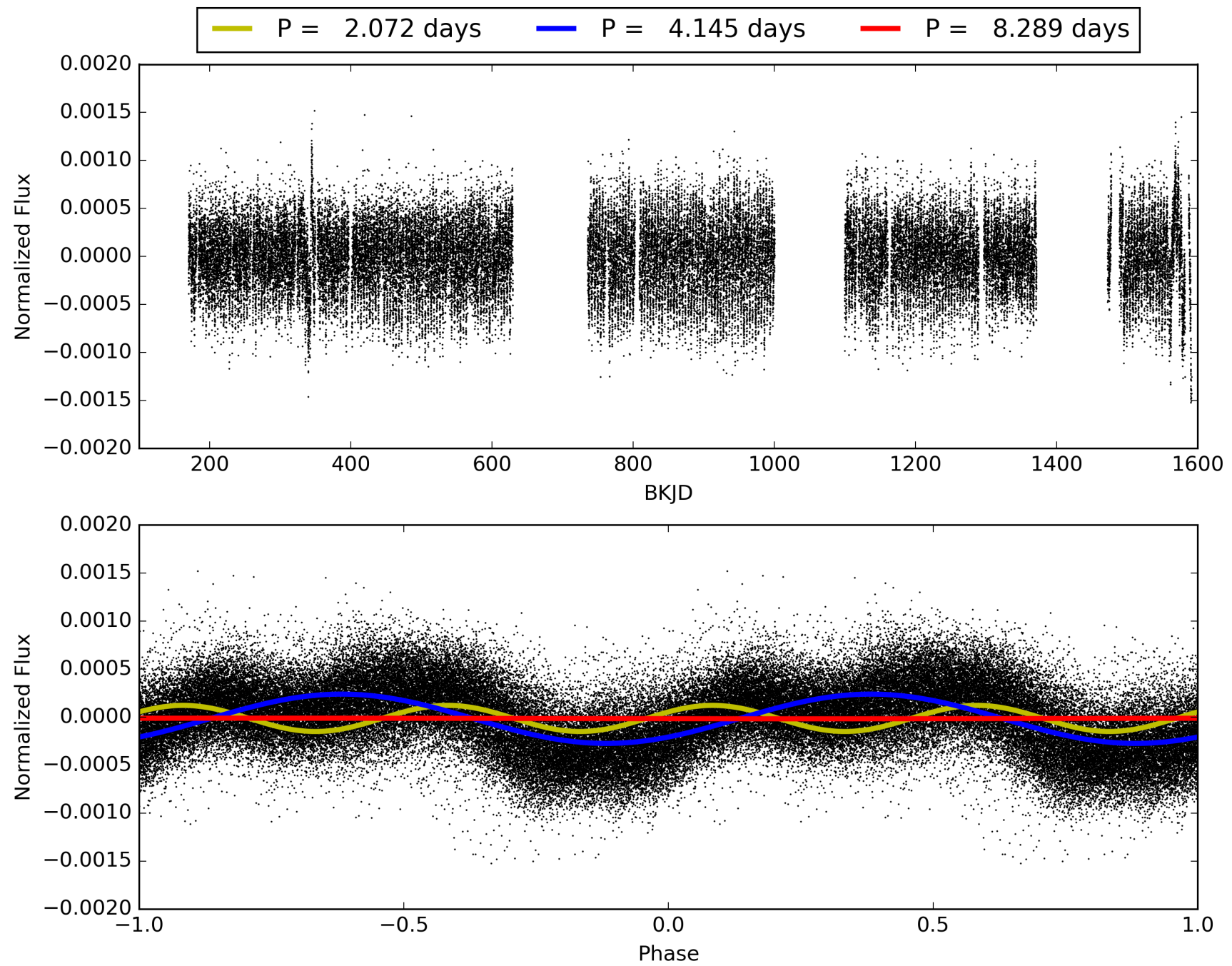
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 08:03:33 Z

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

# TCE 010161923-01, PDC Light Curves

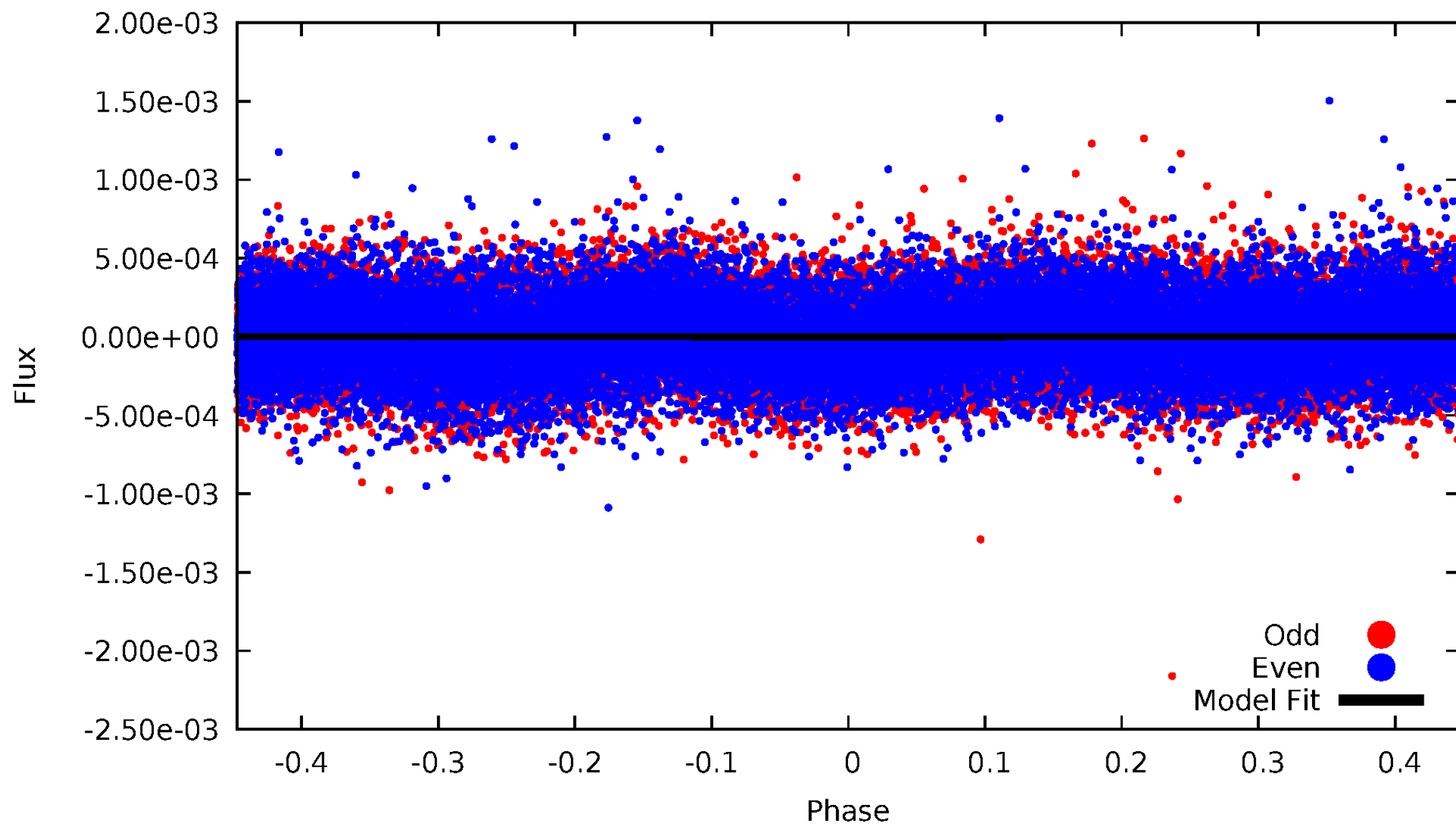


TCE 010161923-01



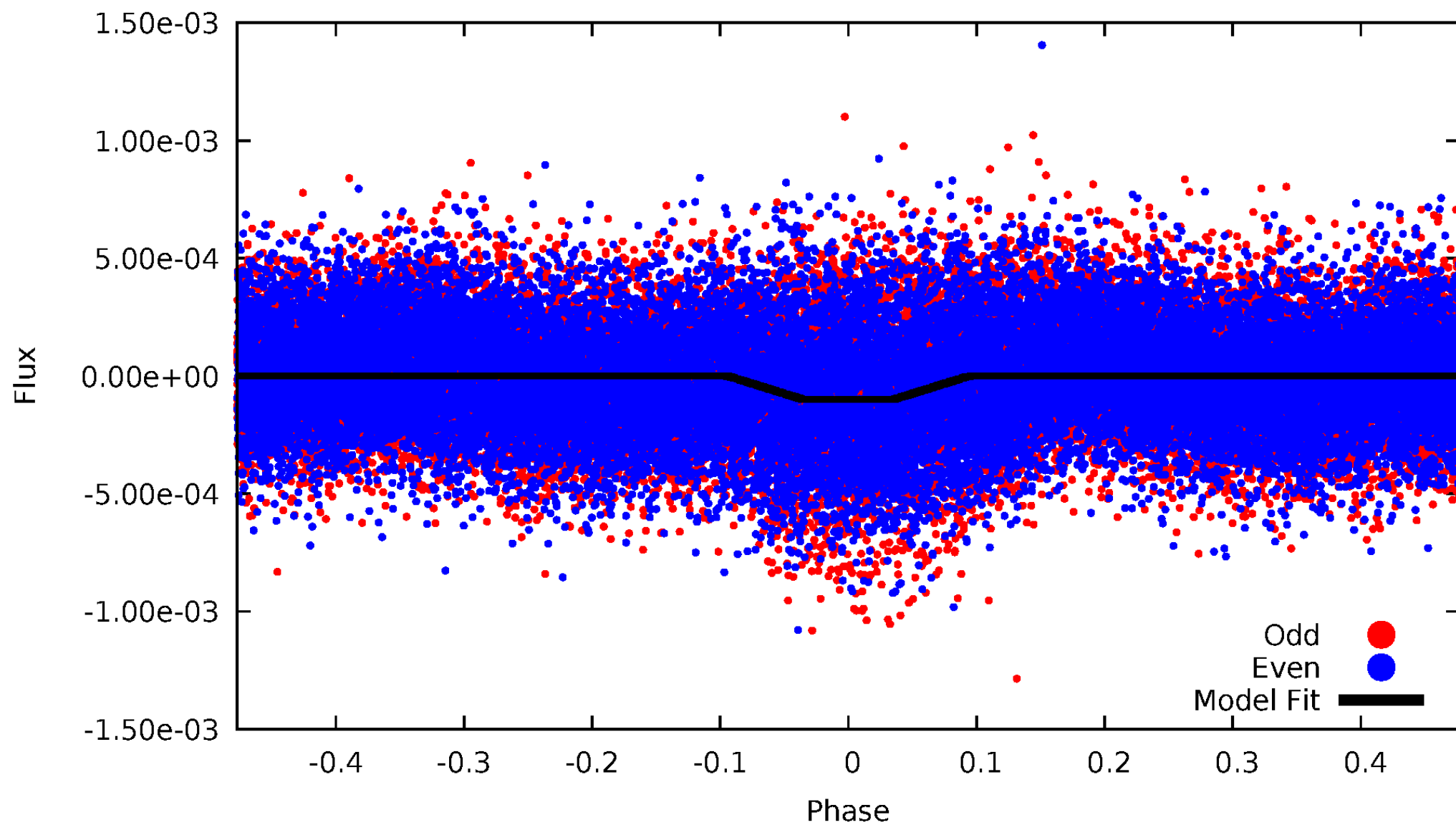
# DV Odd/Even

TCE 010161923-01



# ALT Odd/Even

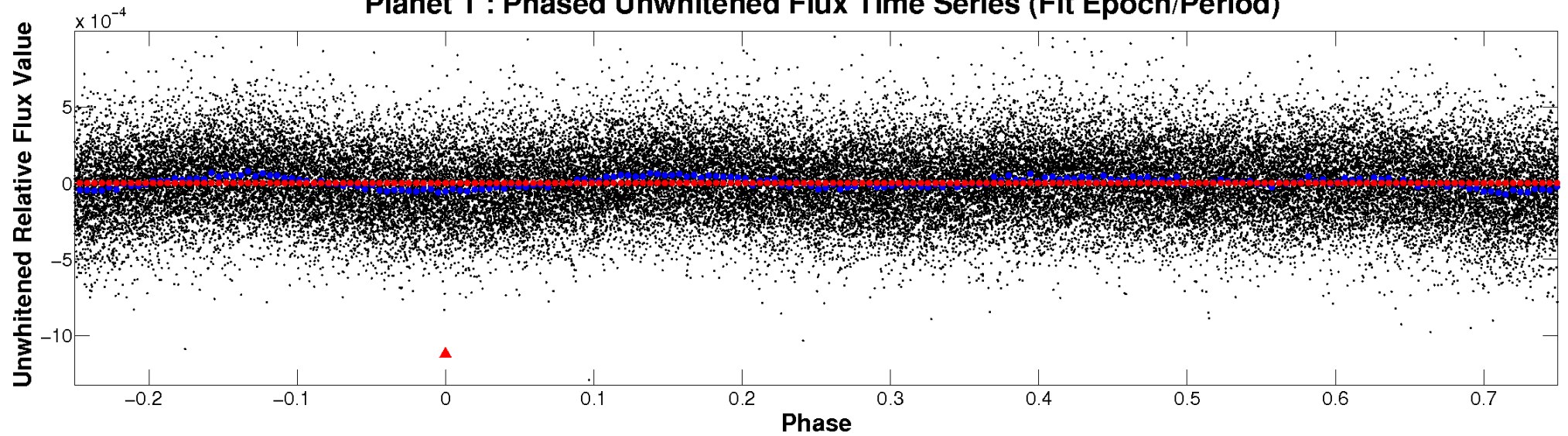
TCE 010161923-01



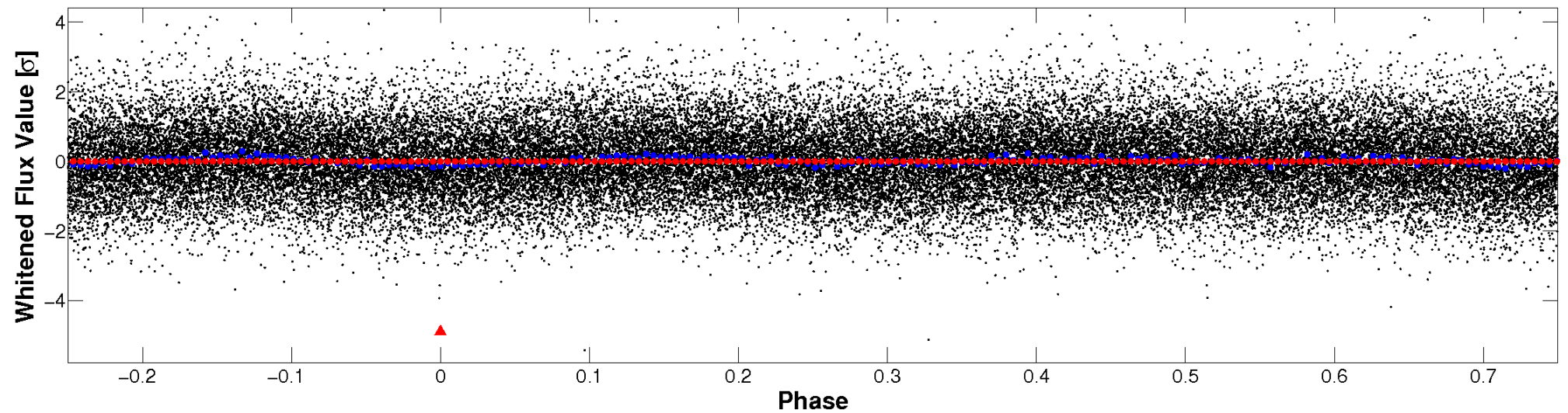


# Non-Whitened Vs. Whitened Light Curve

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

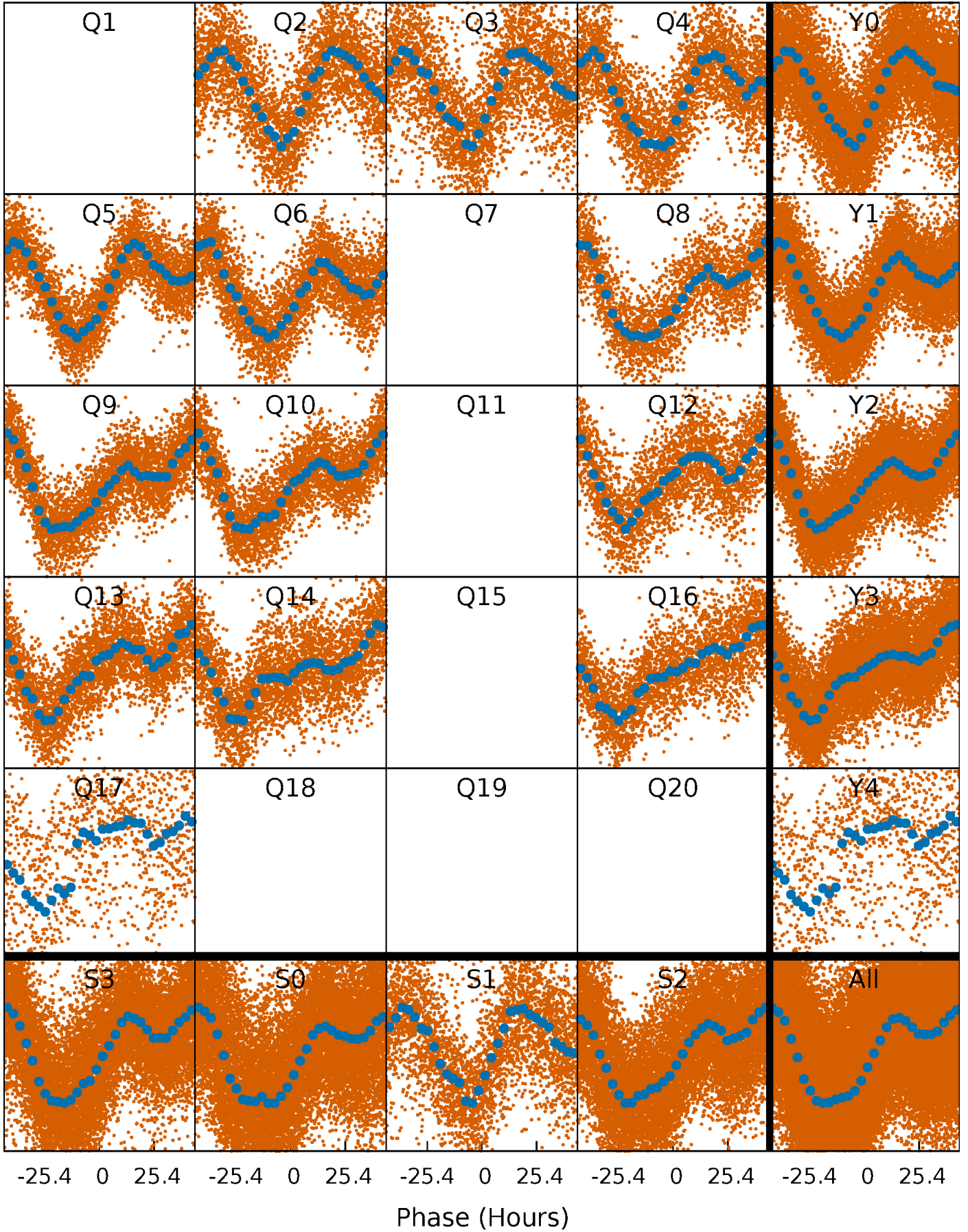


**Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)**



# PDC Quarter-Phased Transit Curves

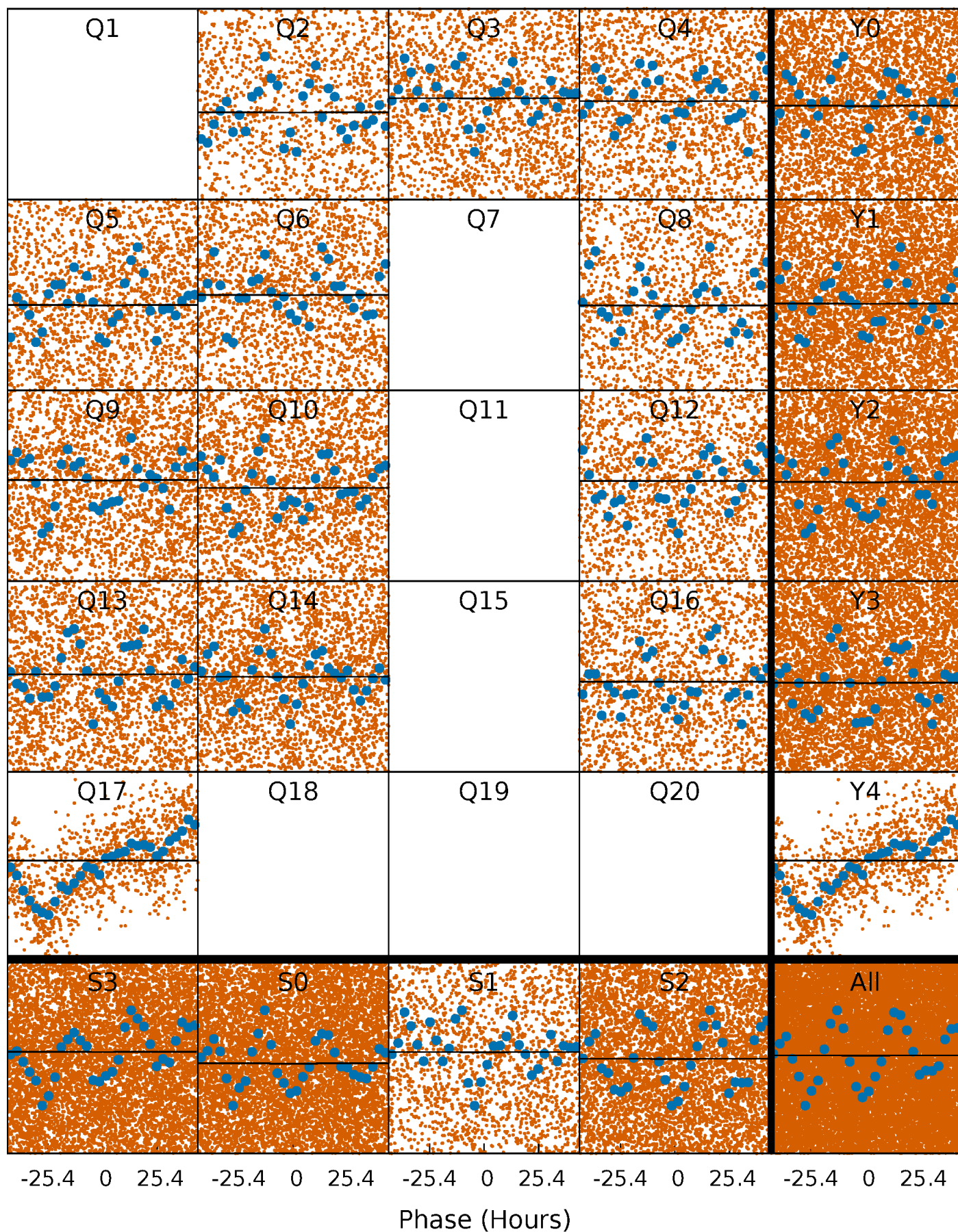
TCE 010161923-01 P= 4.144636 Days  $T_0=132.577828$  (BKJD)





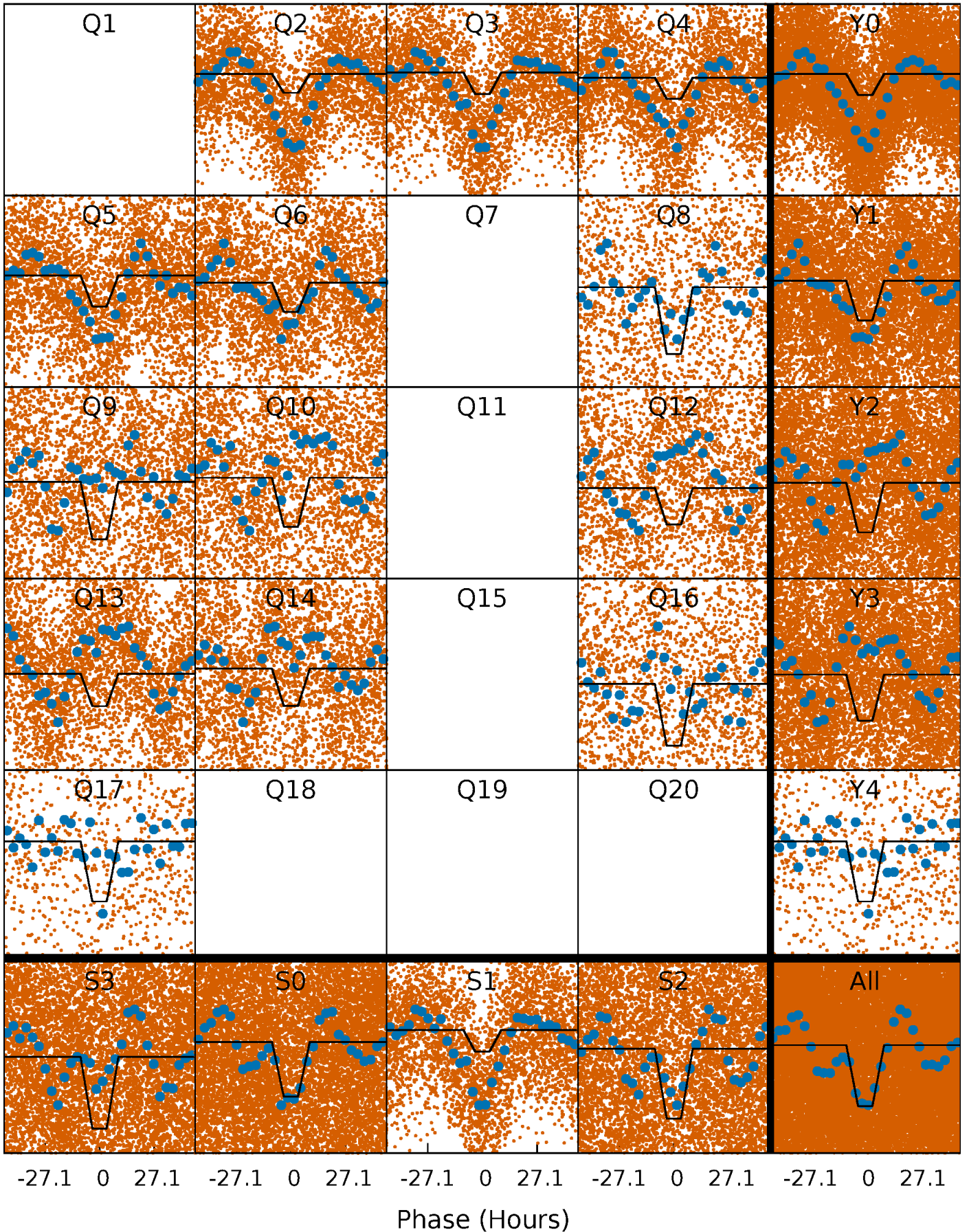
# DV Quarter-Phased Transit Curves

TCE 010161923-01 P= 4.144636 Days  $T_0=132.577828$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

TCE 010161923-01 P= 4.144762 Days  $T_0=132.402320$  (BKJD)

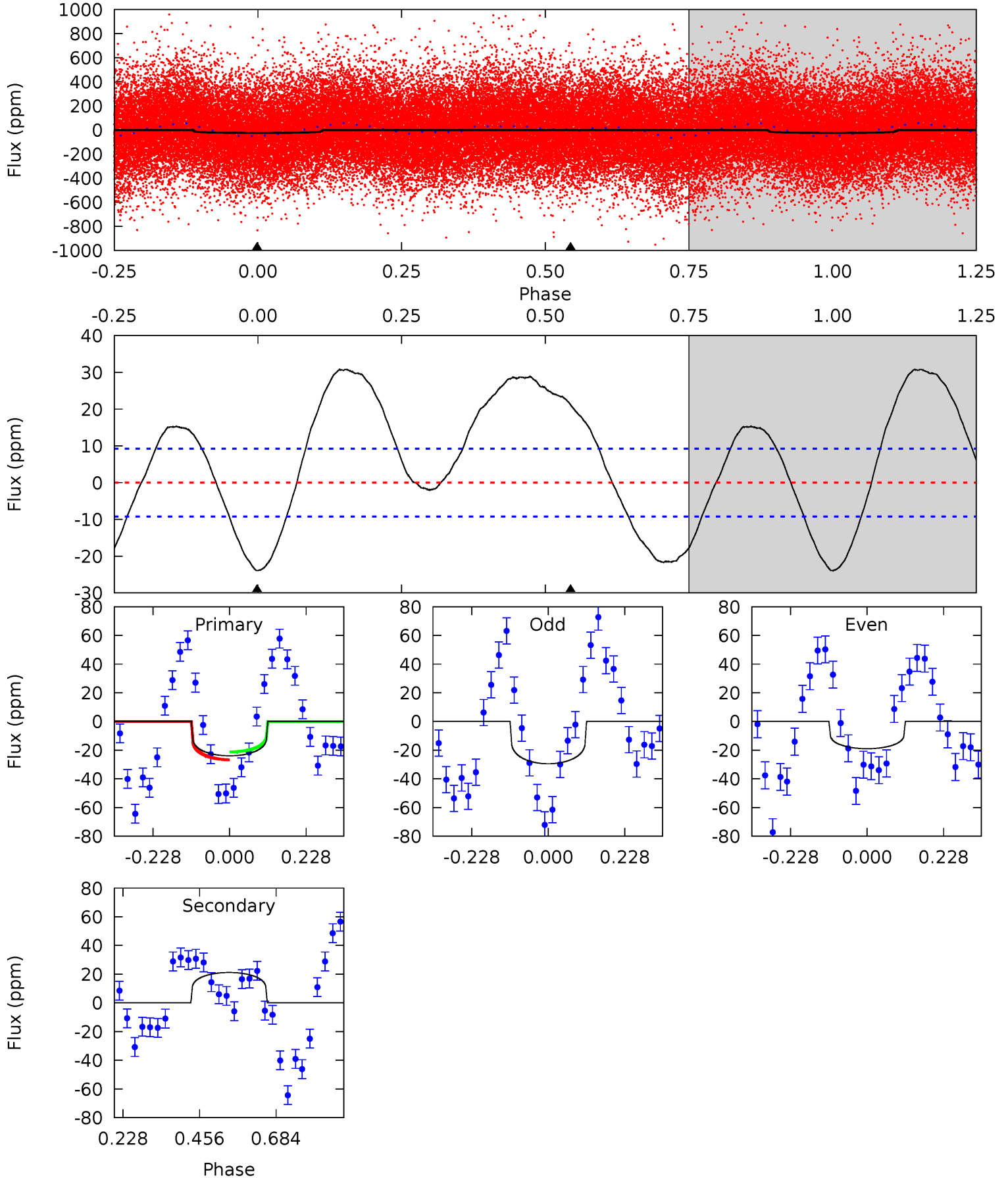




# DV Model-Shift Uniqueness Test

010161923-01, P = 4.144636 Days, E = 132.577828 Days

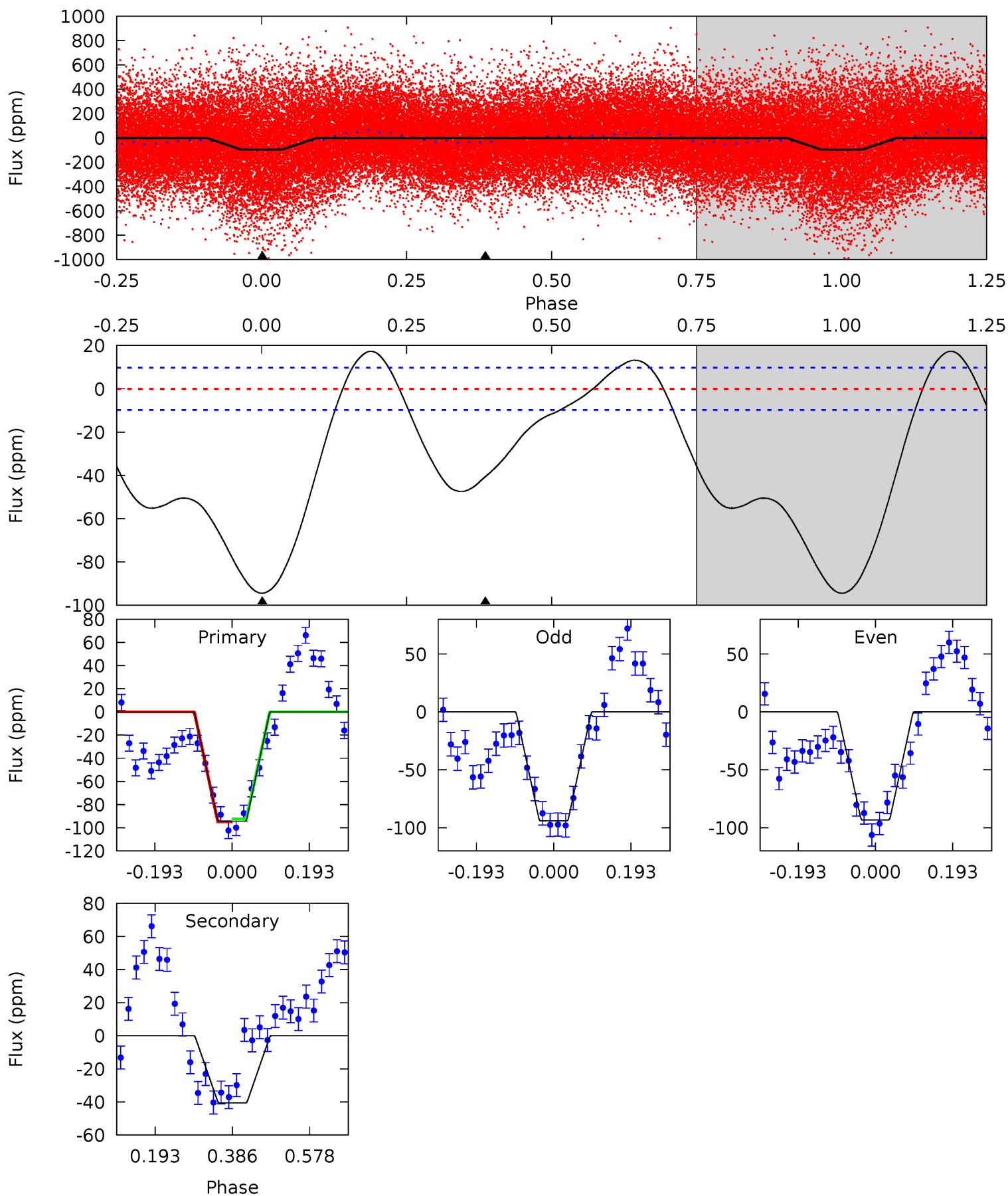
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
11.4	-10.1	0	0	4.39	1.21	3.04	11.4	11.4	-10.1	-10.1	2.50	0.85	0.56	1.30



# Alt Model-Shift Uniqueness Test

010161923-01, P = 4.144762 Days, E = 132.402320 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
42.8	18.4	0	0	4.43	1.30	11.1	42.8	42.8	18.4	18.4	0.21	1.36	0.16	0.53



### Stellar Parameters For KIC 010161923

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (g \cdot \text{cm}^{-3})$
	$6215^{+197}_{-241}$	$4.159^{+0.258}_{-0.172}$	$-0.340^{+0.300}_{-0.300}$	$1.382^{+0.388}_{-0.388}$	$1.005^{+0.173}_{-0.129}$	$0.536^{+0.811}_{-0.245}$
	+3%/-4%	+6%/-4%	+88%/-88%	+28%/-28%	+17%/-13%	+151%/-46%
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 010161923-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	$A_{\text{obs}}$
DV	$21 \pm 2$	$2.40^{+2.73}_{-1.68}$	$1987^{+160}_{-178}$	$-3720^{+673}_{-2185}$	$-5.261^{+4.142}_{-53.079}$
Alt.	$-41 \pm 2$	$3.11^{+2.98}_{-2.03}$	$1992^{+157}_{-170}$	$3800^{+2076}_{-793}$	$5.984^{+46.195}_{-4.453}$

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



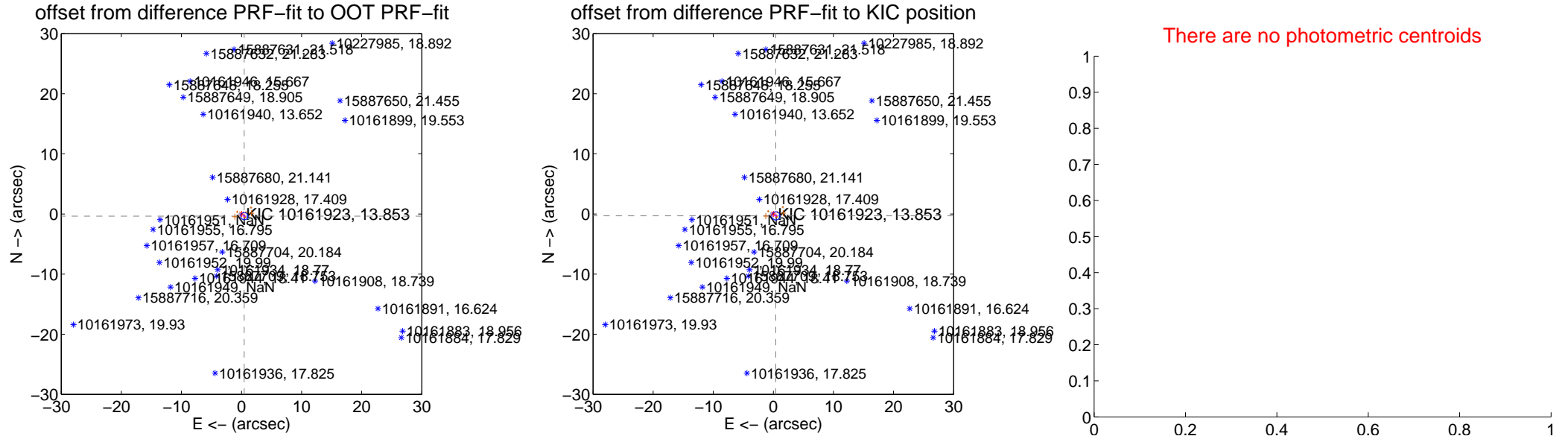
## DV Centroid Data

Supplemental centroid analysis for 010161923-01. Kepler magnitude: 13.85. Transit SNR 0.11

There are 6 quarters with good PRF difference image offsets

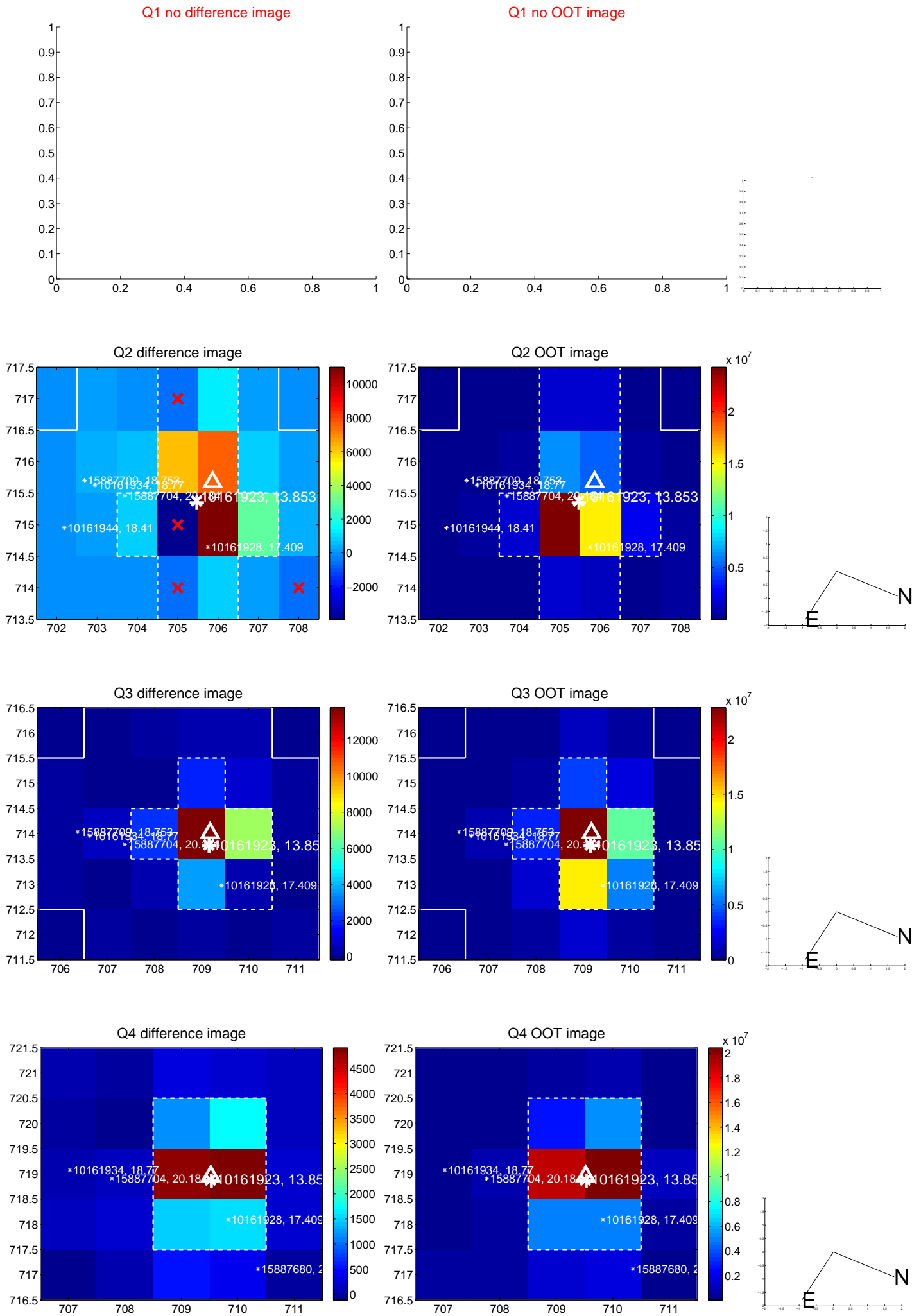
The direct PRF centroid is offset from the target star catalog position by about 0.03 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.579 \pm 0.200$	2.89	$-0.452 \pm 0.261$	$-0.362 \pm 0.168$
PRF-fit source offset from KIC position	$0.508 \pm 0.229$	2.21	$-0.404 \pm 0.298$	$-0.308 \pm 0.162$
photometric centroid source offset	—	—	—	—

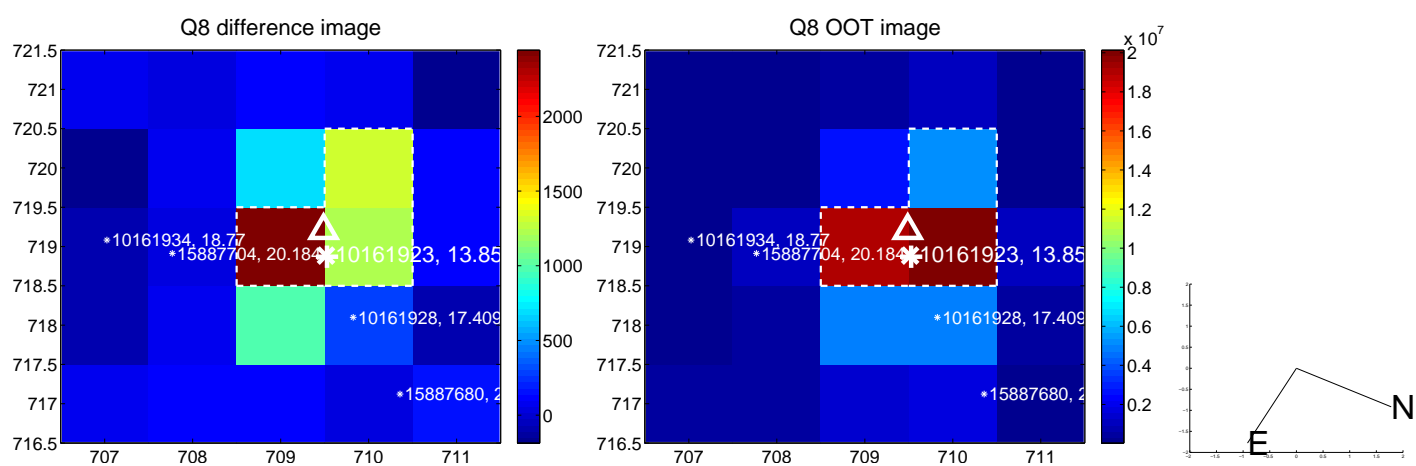
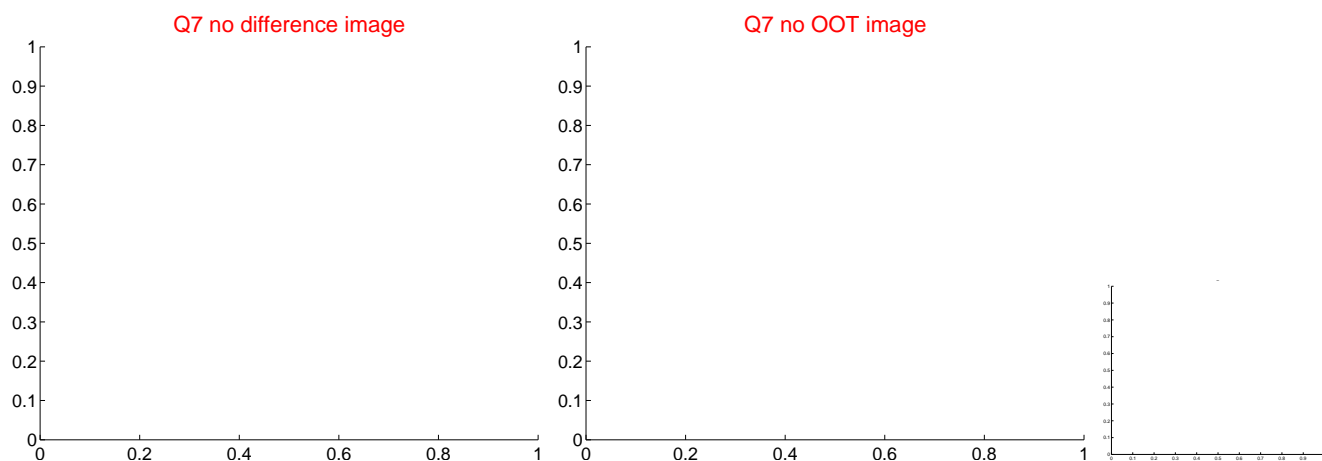
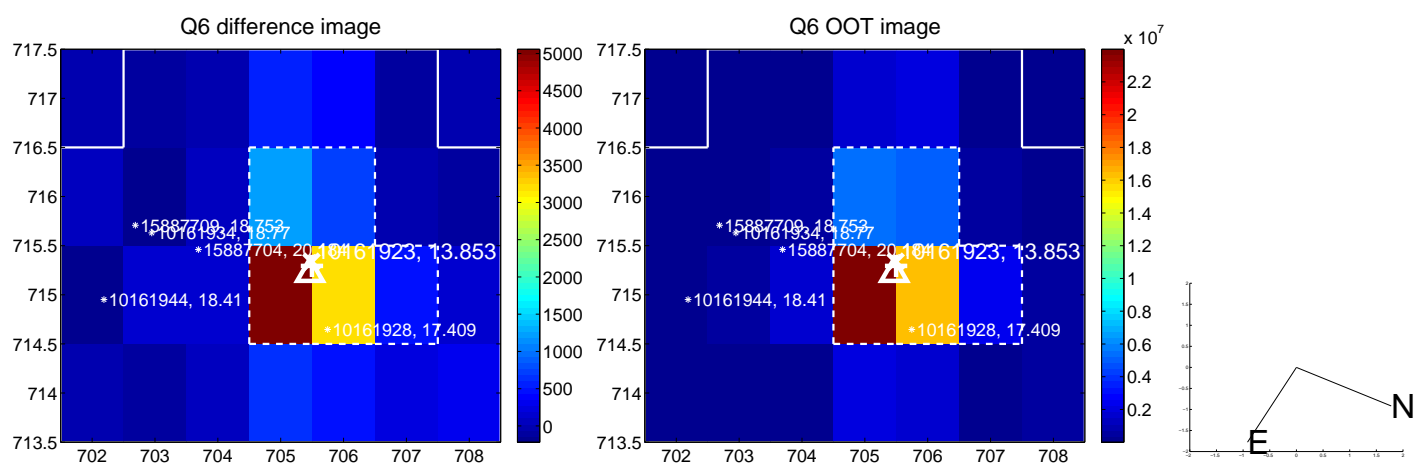
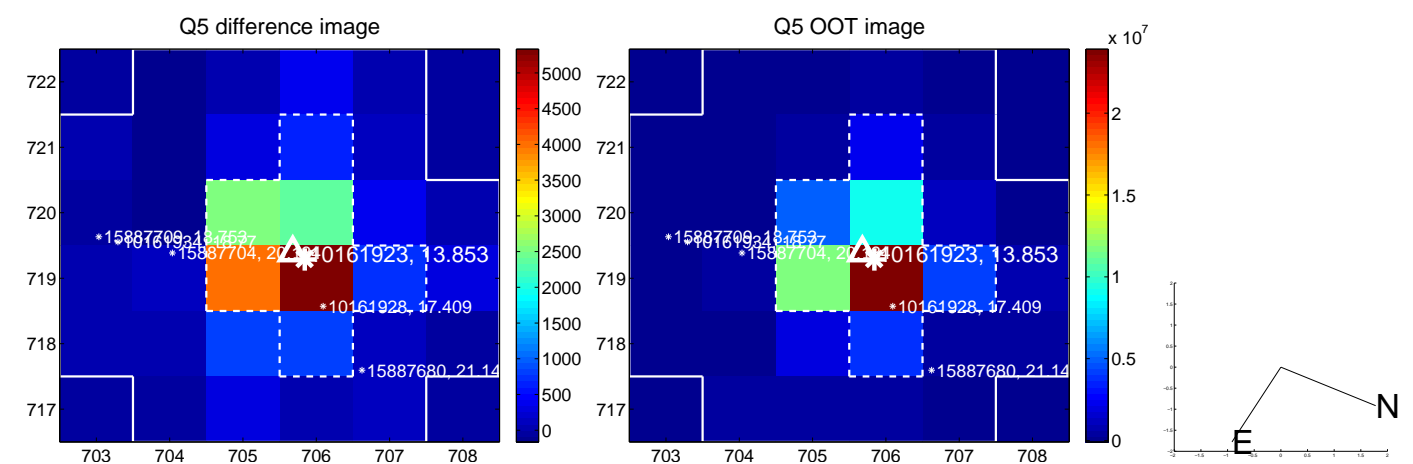


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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

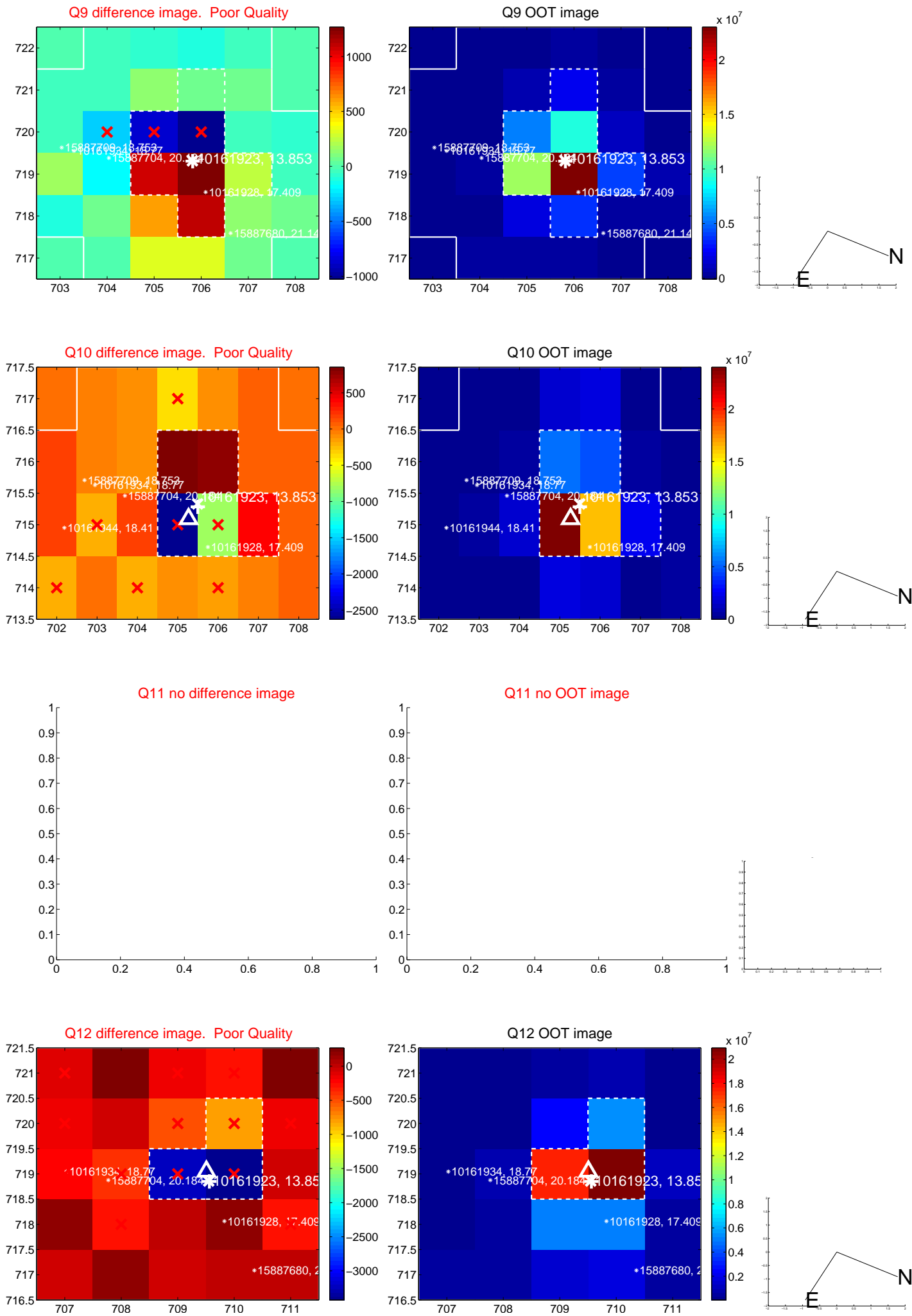
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



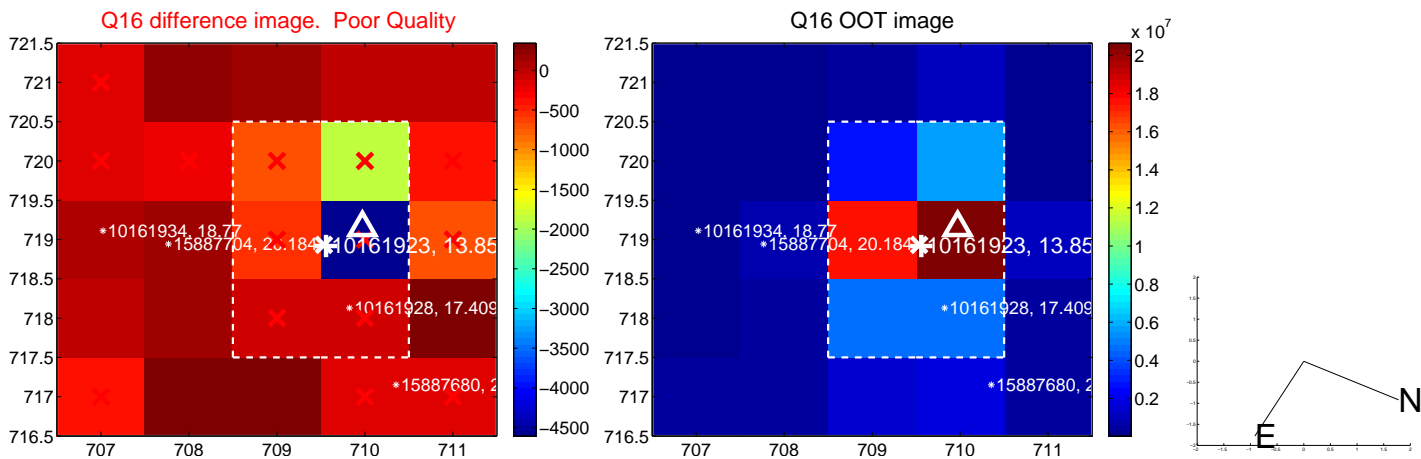
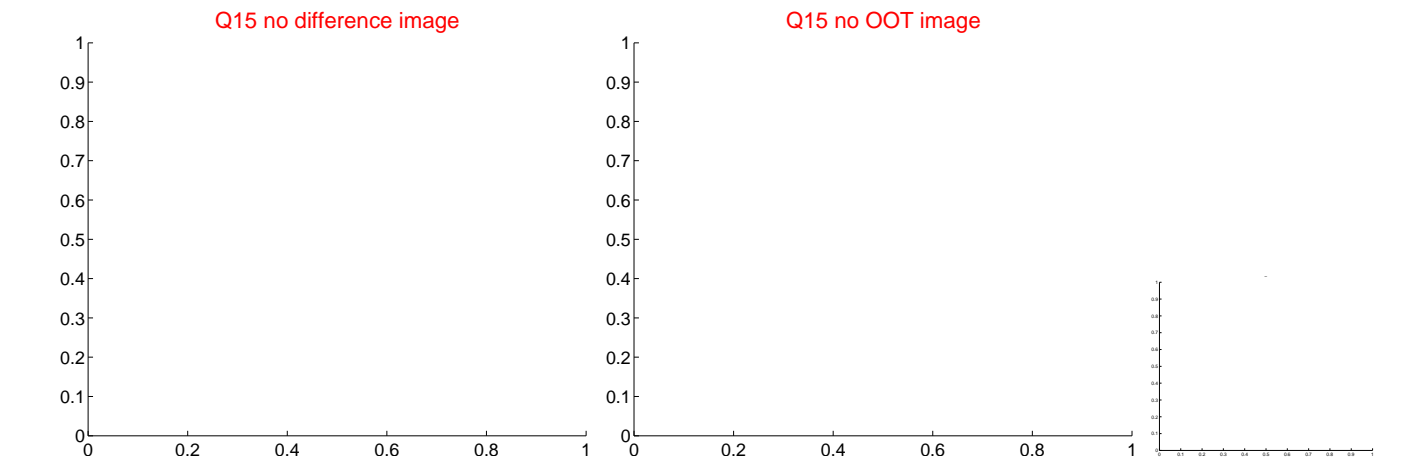
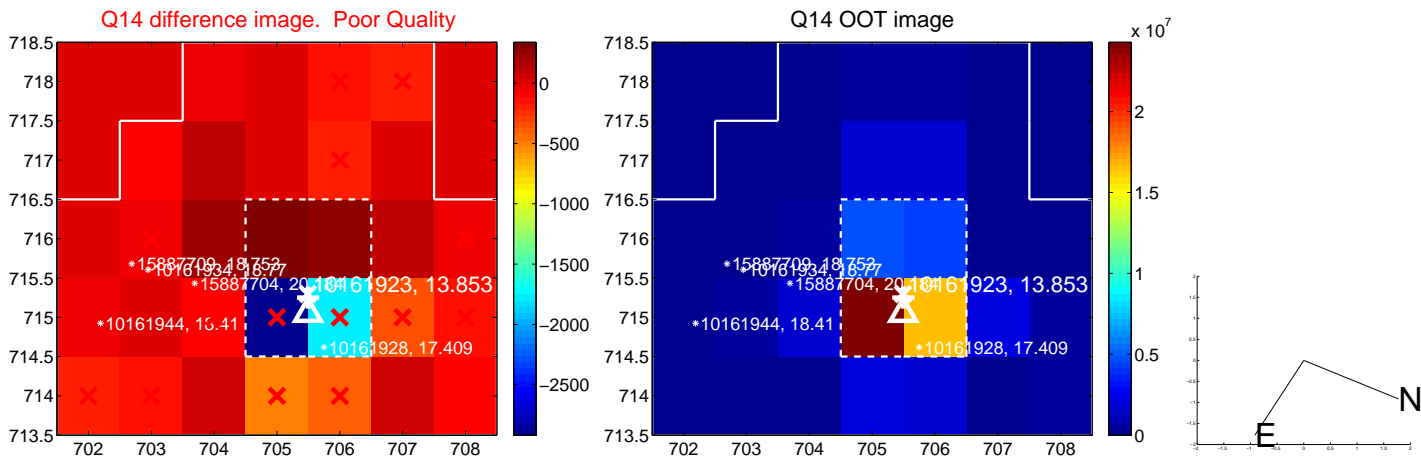
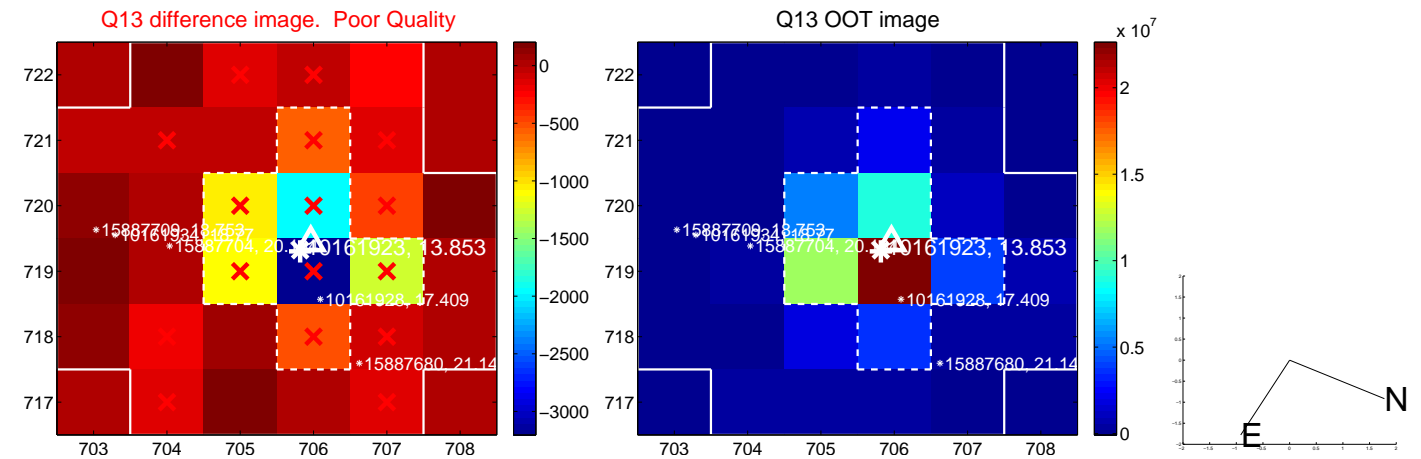
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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

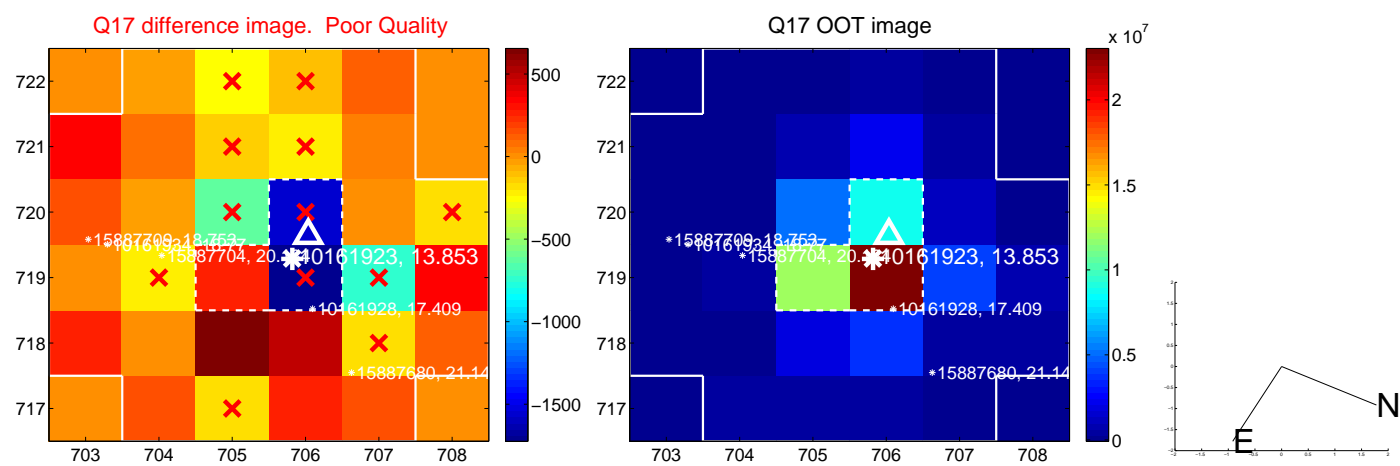


white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.





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



folded centroid time series figure for this object.

UKIRT Image

Declination

