

# KIC 006302903

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
006302903-01	OBS	No	4.005440	132.505937	29.5	12.366	10.3	7.8	1.38	6845	0.86	1307.01

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
006302903-01	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.

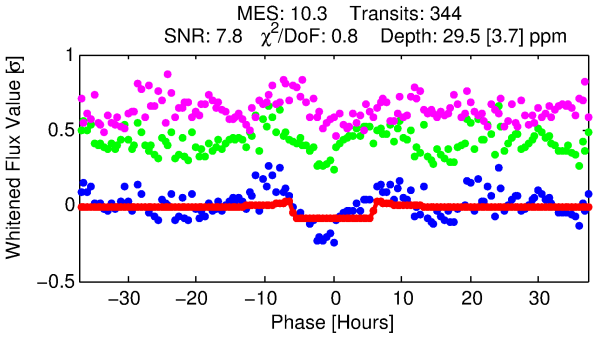
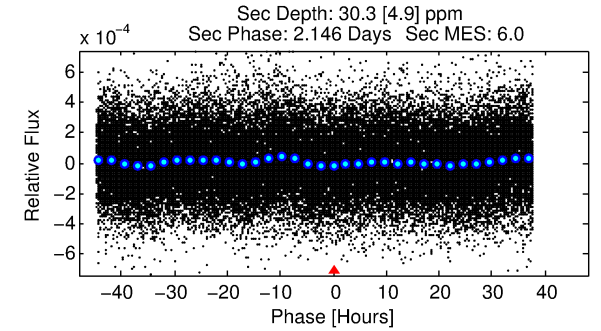
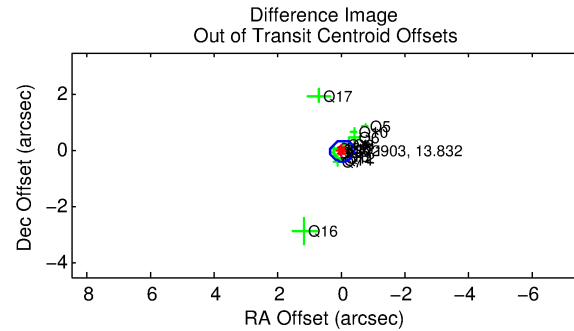
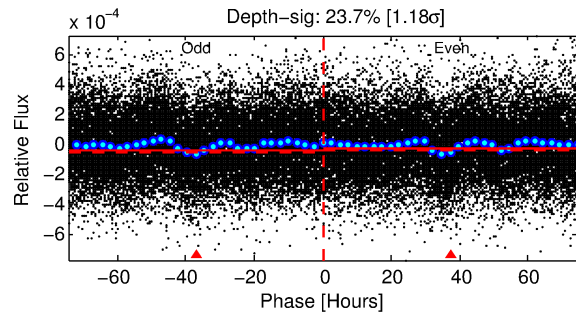
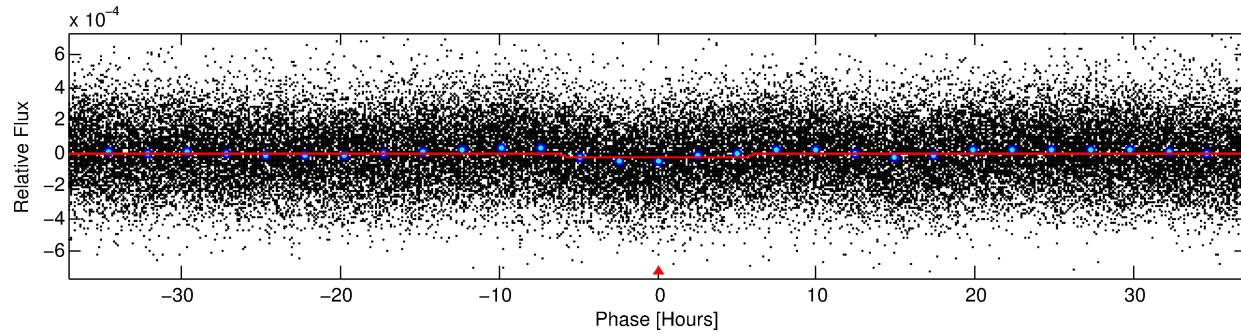
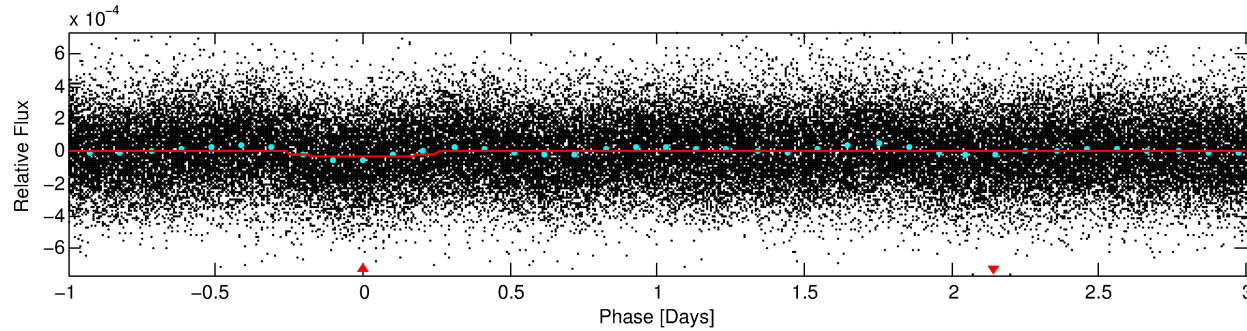
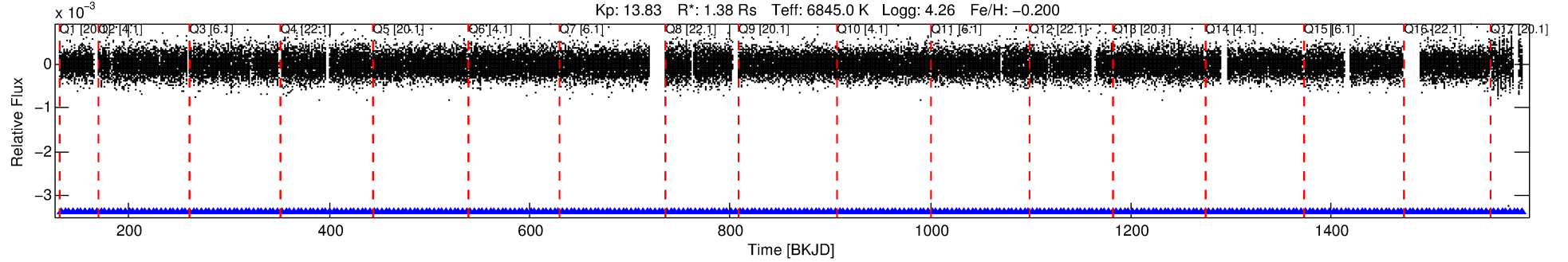
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 006302903-01

No Significant Match Found

# DV One-Page Summary

KIC: 6302903 Candidate: 1 of 1 Period: 4.005 d



## DV Fit Results:

Period = 4.00544 [0.00006] d  
Epoch = 132.5059 [0.0102] BKJD  
Rp/R\* = 0.0057 [0.0011]  
a/R\* = 1.50 [0.92]  
b = 0.89 [0.27]  
Seff = 1307.01 [526.14]  
Teff = 1533 [154] K  
Rp = 0.87 [0.32] Re  
a = 0.0537 [0.0139] AU  
Ag = 64.16 [35.70] [1.77 $\sigma$ ]  
Teffp = 6709 [756] K [6.70 $\sigma$ ]

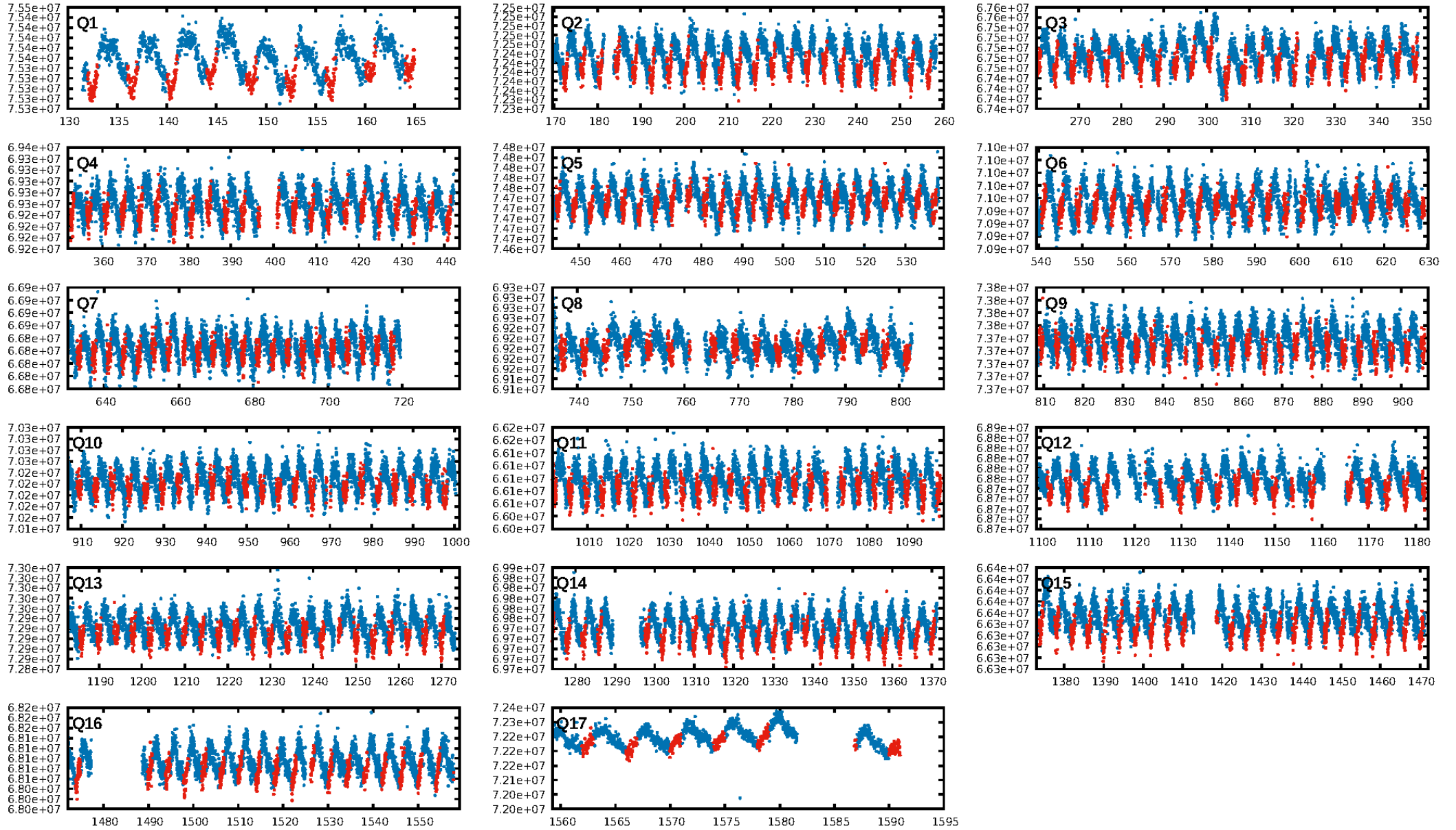
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: N/A  
ModelChiSquareGof-sig: N/A  
Bootstrap-pfa: 7.28e-20  
RollingBand-fgt: 1.00 [329/329]  
**GhostDiagnostic-chr: 0.7536**  
Centroid-sig: 37.0%  
Centroid-so: 0.781 arcsec [0.82 $\sigma$ ]  
OotOffset-rm: 0.023 arcsec [0.19 $\sigma$ ]  
KicOffset-rm: 0.206 arcsec [1.83 $\sigma$ ]  
OotOffset-st: 4/4/4/5 [17]  
KicOffset-st: 4/4/4/5 [17]  
DiffImageQuality-fgm: 0.94 [16/17]  
DiffImageOverlap-fno: 1.00 [17/17]

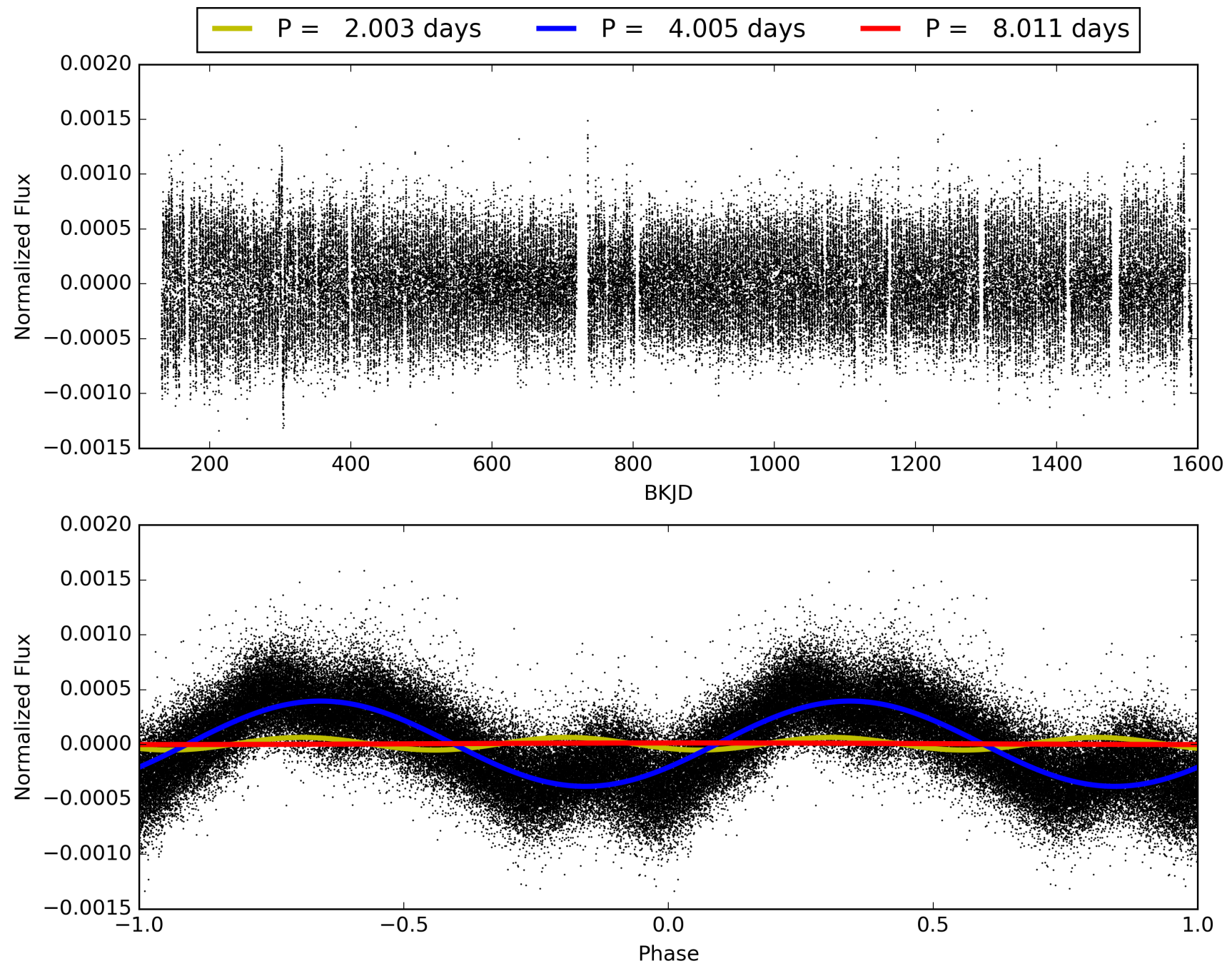
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 16:16:22 Z

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

# TCE 006302903-01, PDC Light Curves

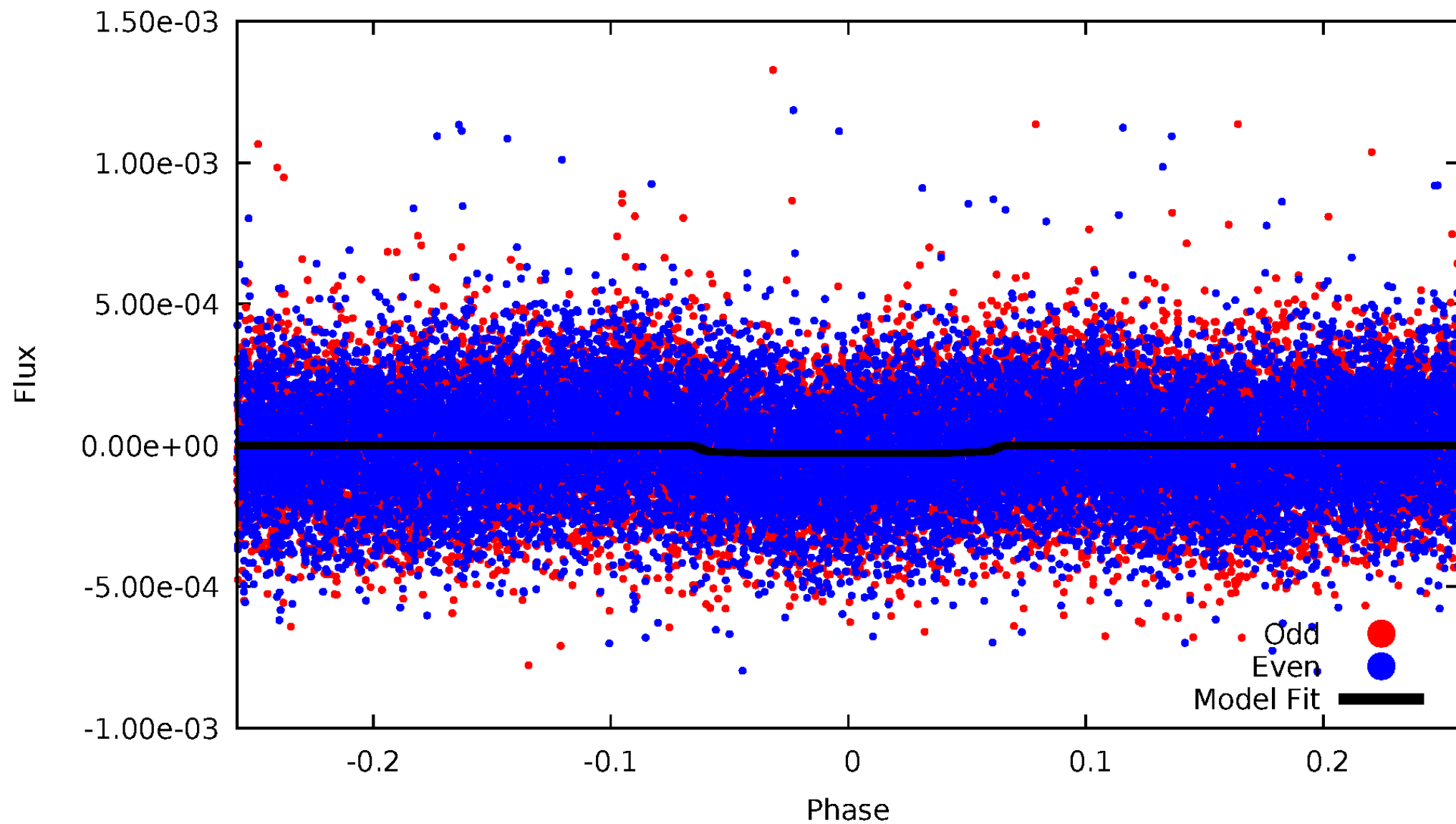


TCE 006302903-01



# DV Odd/Even

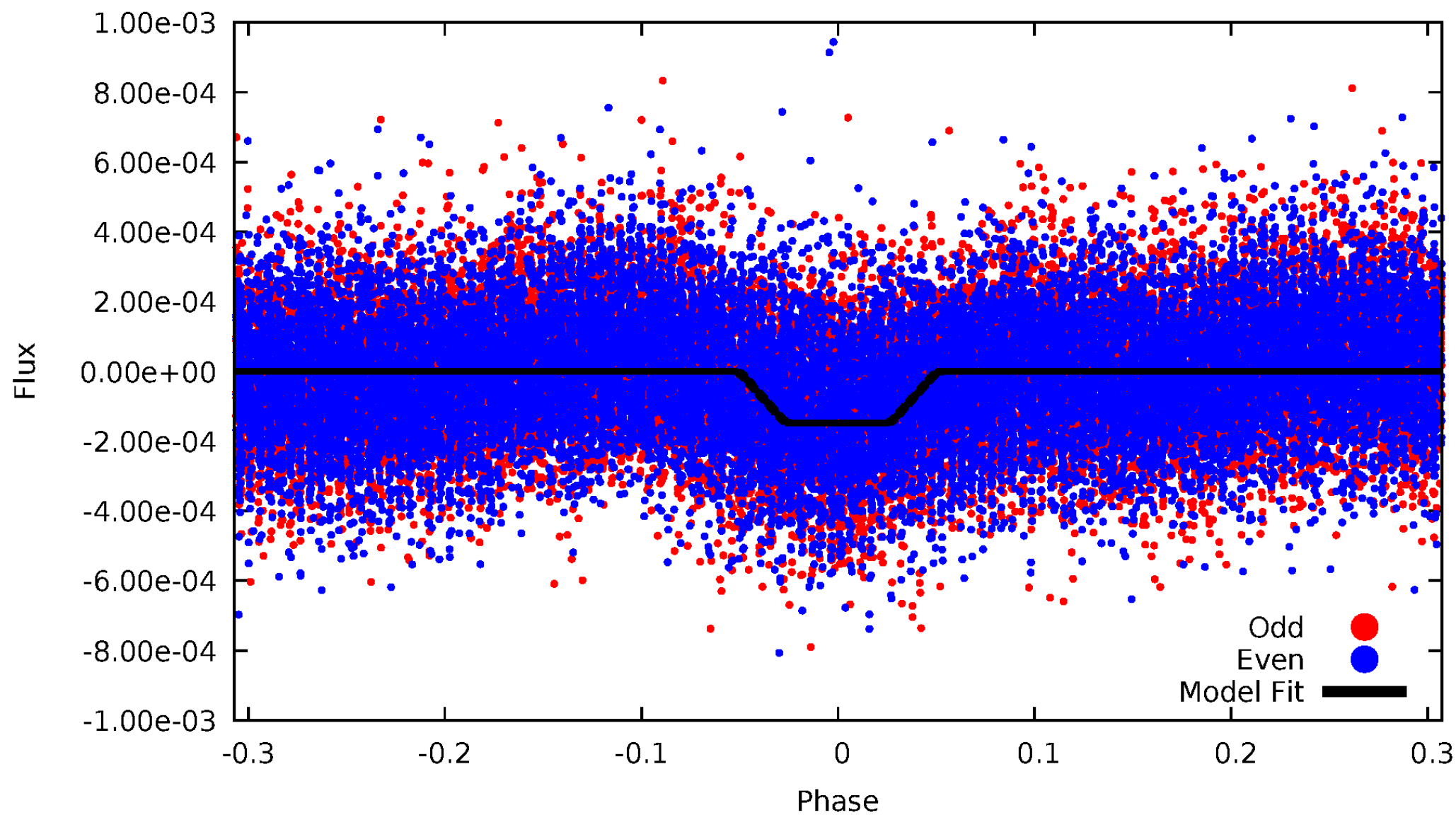
TCE 006302903-01





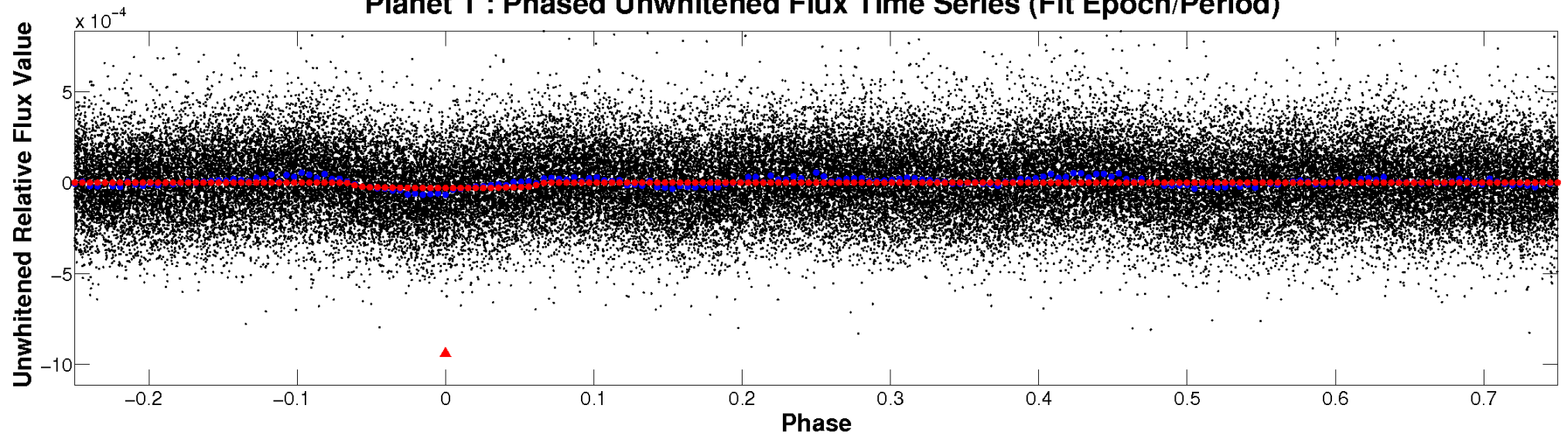
# ALT Odd/Even

TCE 006302903-01

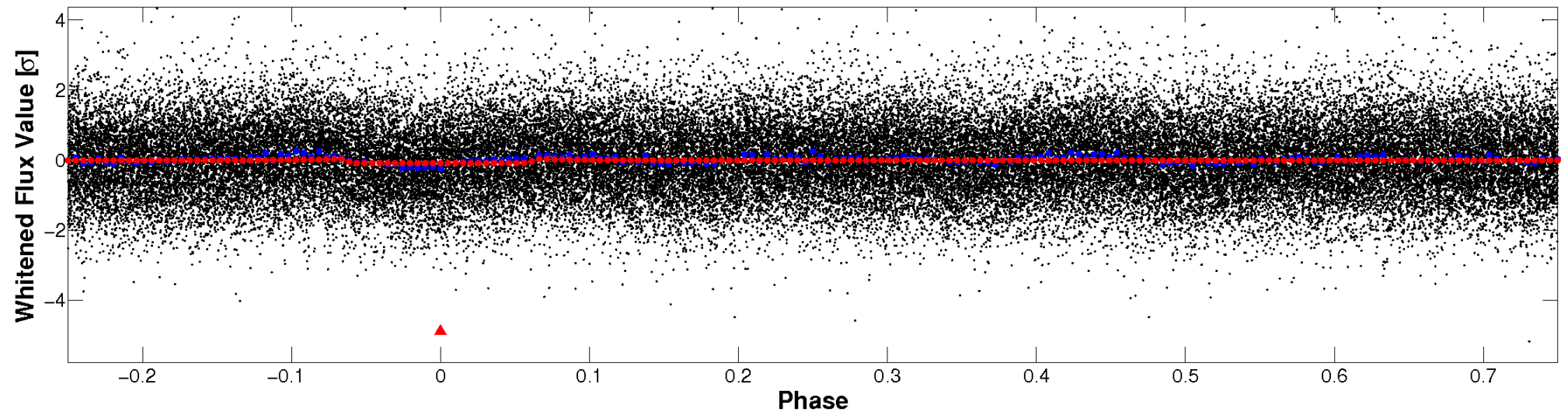


# Non-Whitened Vs. Whitened Light Curve

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

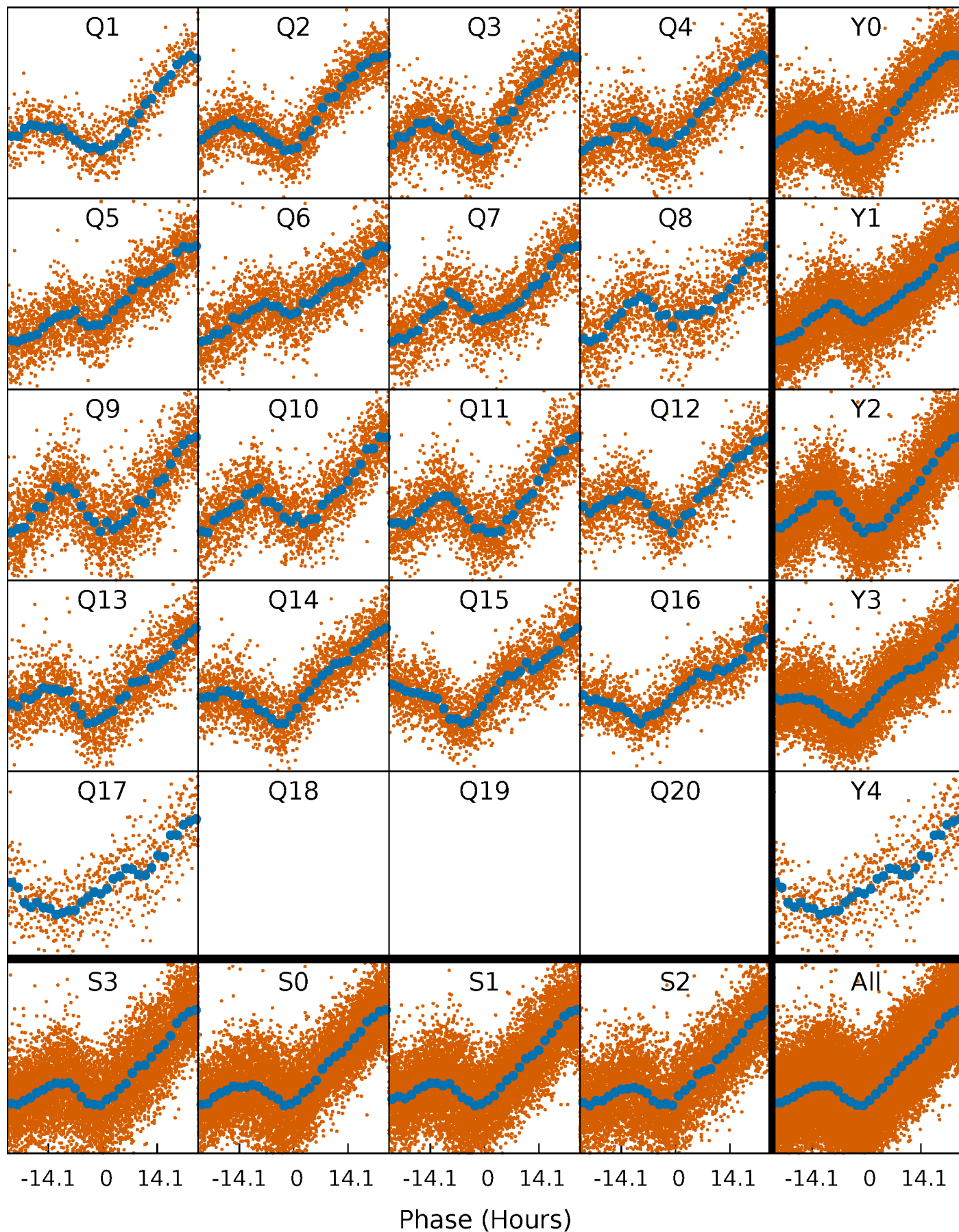


**Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)**



# PDC Quarter-Phased Transit Curves

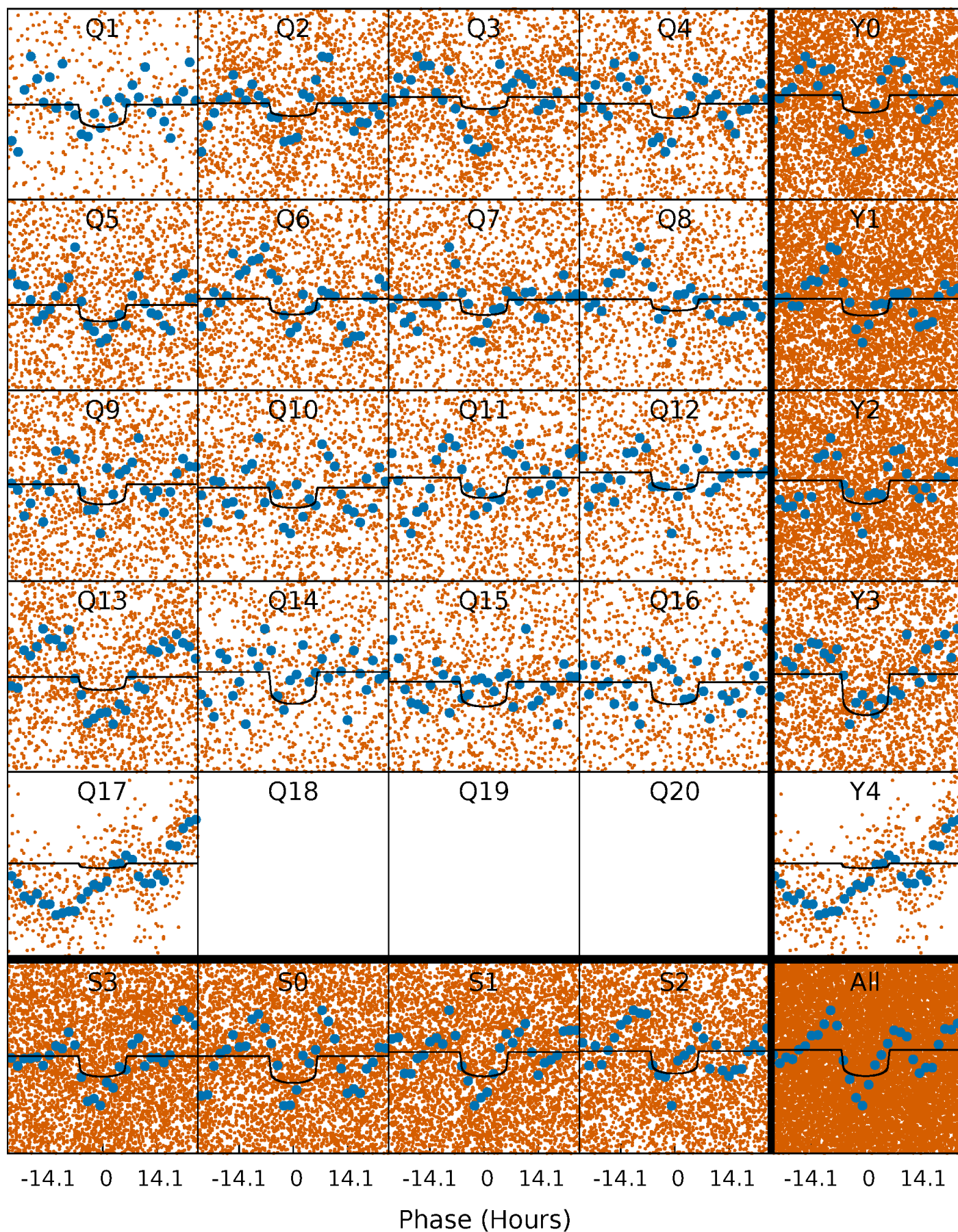
TCE 006302903-01   P= 4.005440 Days    $T_0=132.505937$  (BKJD)





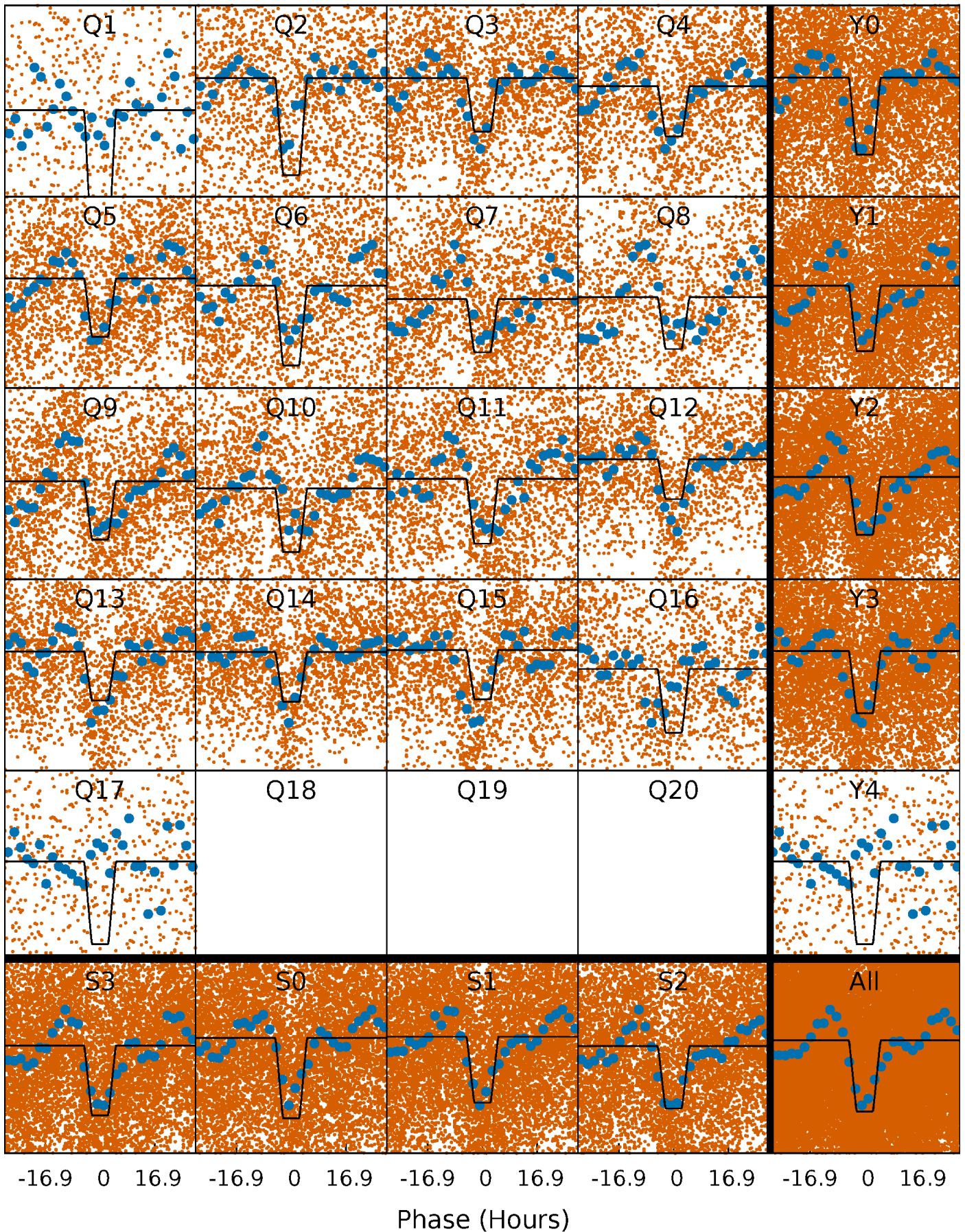
# DV Quarter-Phased Transit Curves

TCE 006302903-01 P= 4.005440 Days  $T_0=132.505937$  (BKJD)



### Alt. Detrend Quarter-Phased Transit Curves

TCE 006302903-01    P= 4.005013 Days     $T_0=132.541546$  (BKJD)

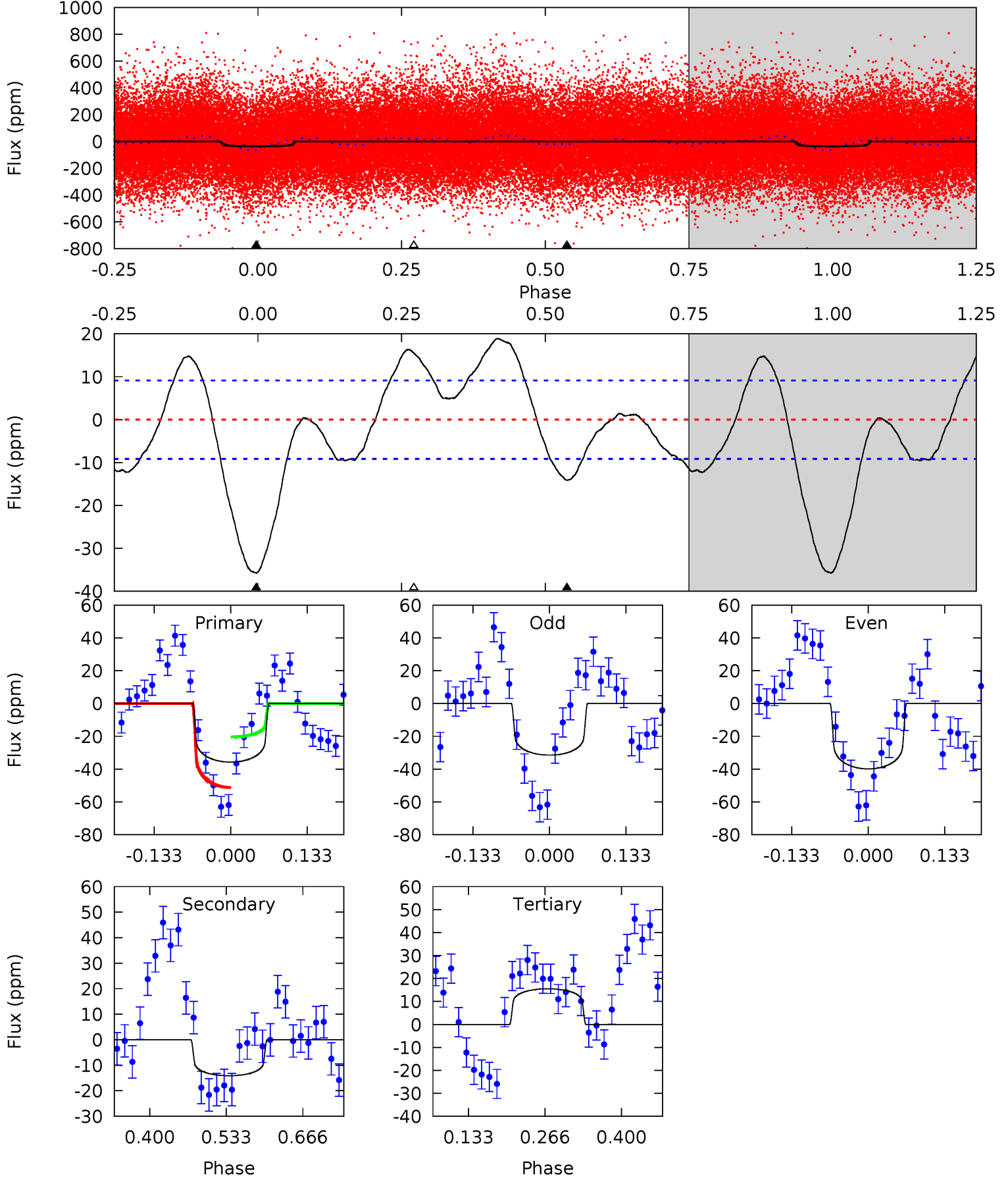




# DV Model-Shift Uniqueness Test

006302903-01, P = 4.005440 Days, E = 128.500497 Days

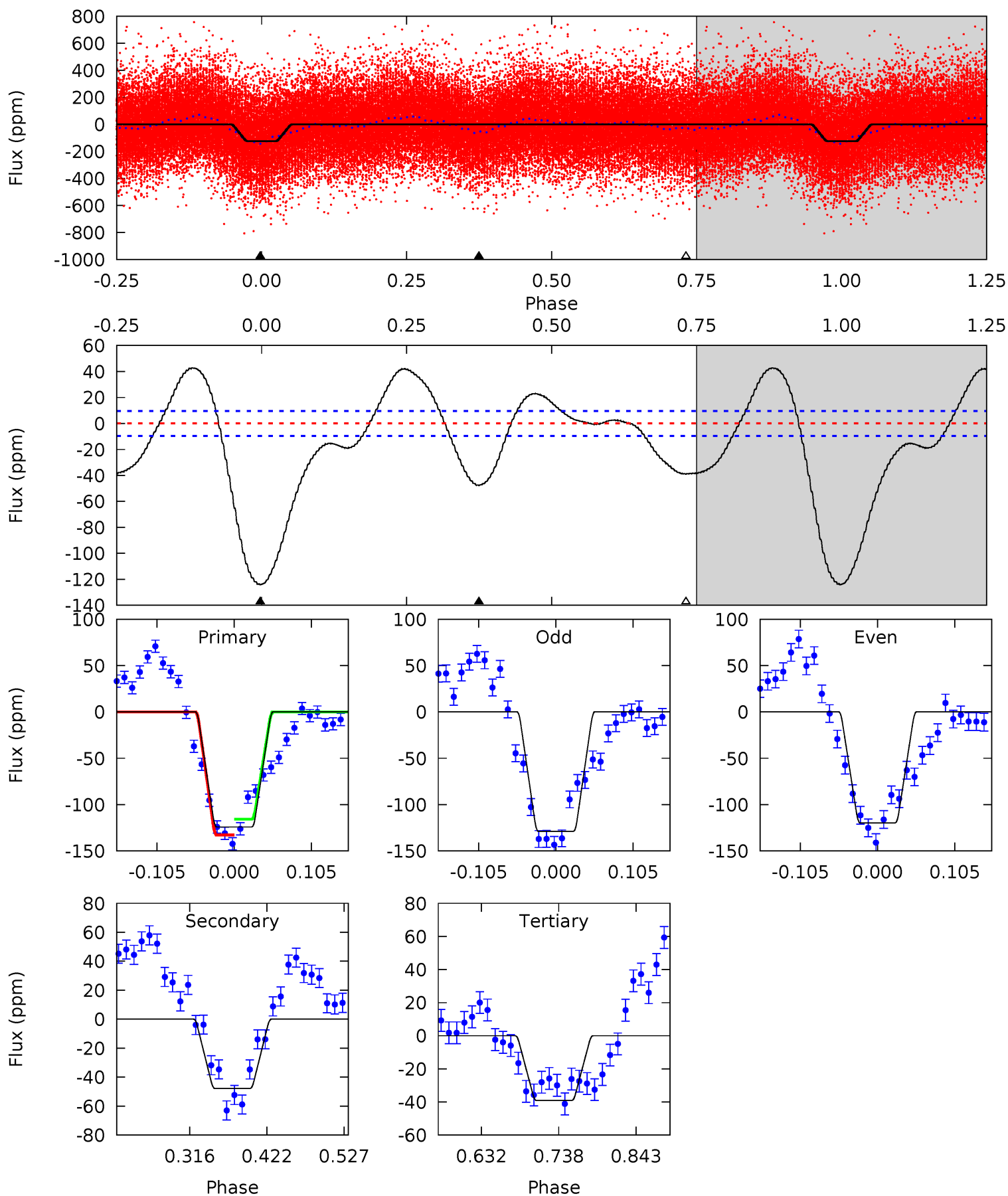
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
17.6	6.96	-7.65	0	4.50	1.50	4.63	25.3	17.6	14.6	6.96	2.07	1.07	0.35	7.57



# Alt Model-Shift Uniqueness Test

006302903-01, P = 4.005013 Days, E = 128.536533 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
58.9	22.7	18.6	0	4.55	1.62	11.3	40.3	58.9	4.11	22.7	2.16	1.17	0.26	4.01





### Stellar Parameters For KIC 006302903

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$6845^{+190}_{-286}$	$4.265^{+0.105}_{-0.195}$	$-0.200^{+0.250}_{-0.350}$	$1.384^{+0.438}_{-0.236}$	$1.296^{+0.196}_{-0.196}$	$0.689^{+0.346}_{-0.367}$
	+3%/-4%	+2%/-5%	+125%/-175%	+32%/-17%	+15%/-15%	+50%/-53%
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 006302903-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	$A_{obs}$
DV	$-14 \pm 2$	$0.89^{+0.24}_{-0.19}$	$2155^{+163}_{-124}$	$5481^{+650}_{-491}$	$28^{+17}_{-10}$
Alt.	$-48 \pm 2$	$1.88^{+0.34}_{-0.28}$	$2163^{+145}_{-139}$	$5166^{+265}_{-244}$	$21^{+8}_{-6}$

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

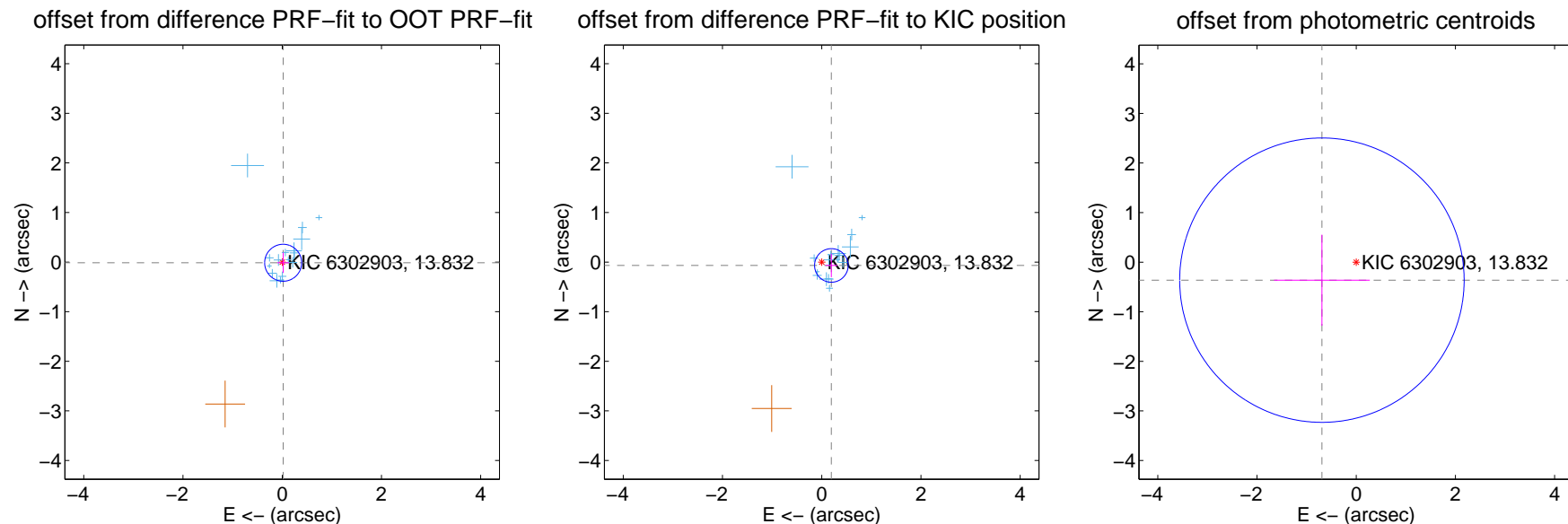
## DV Centroid Data

Supplemental centroid analysis for 006302903-01. Kepler magnitude: 13.83. Transit SNR 7.81

There are 16 quarters with good PRF difference image offsets

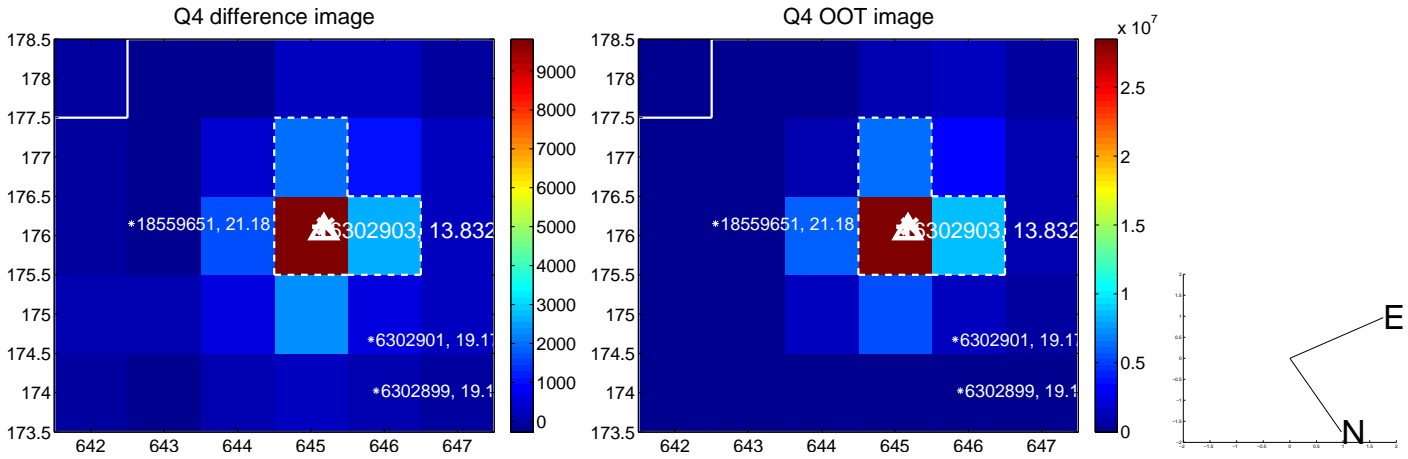
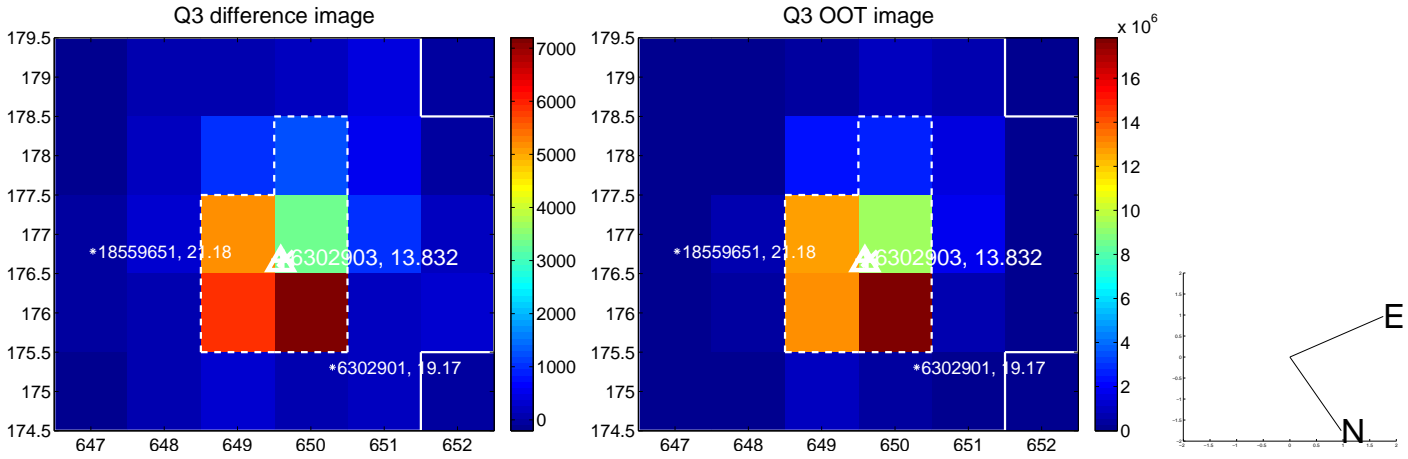
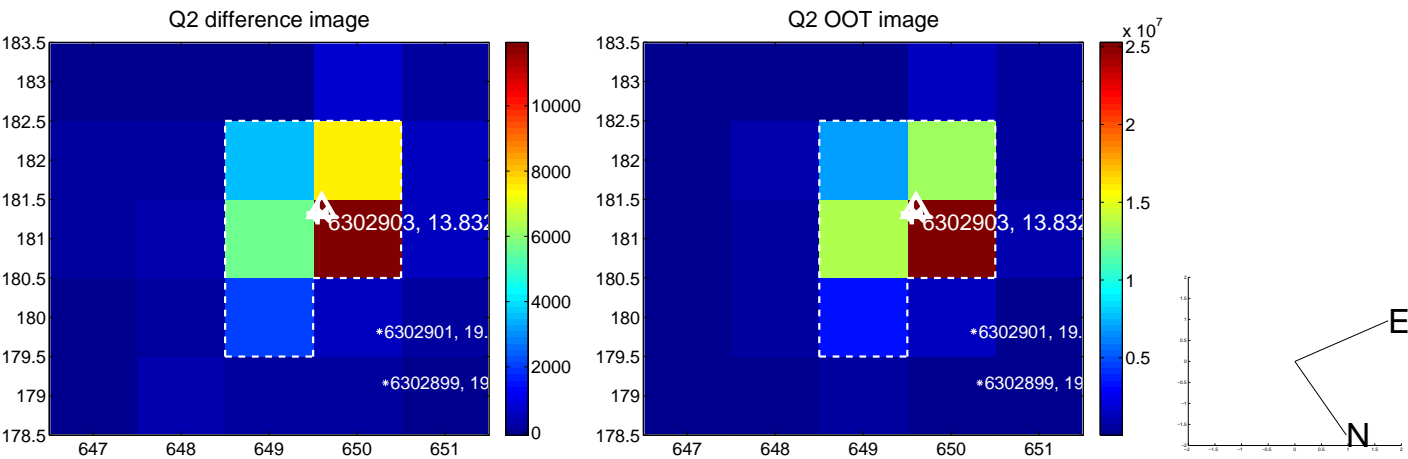
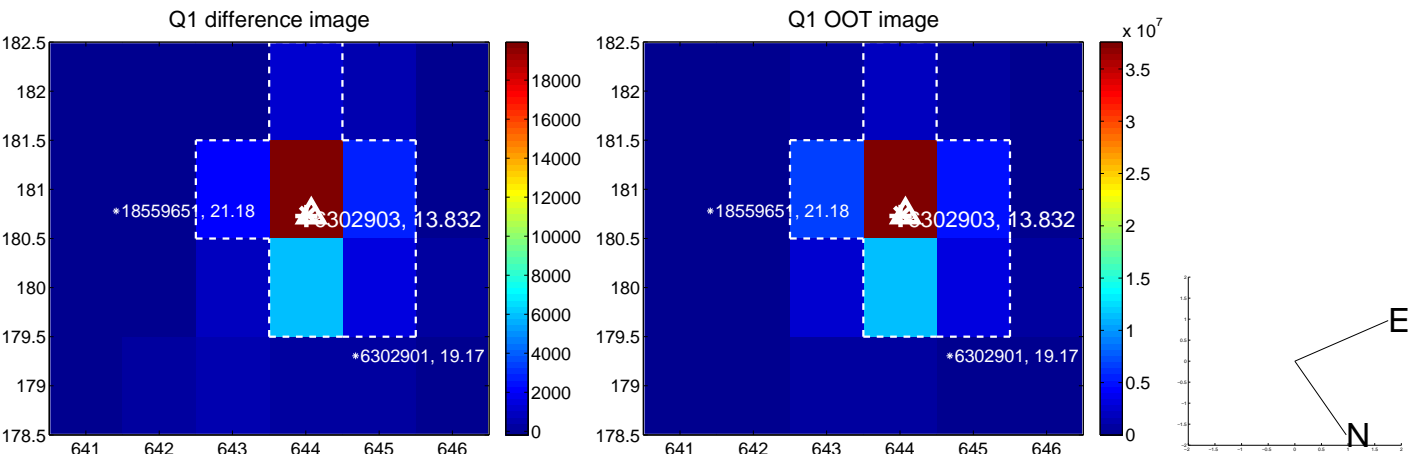
The direct PRF centroid is offset from the target star catalog position by about 0.10 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.023 \pm 0.124$	0.19	$-0.019 \pm 0.120$	$-0.013 \pm 0.205$
PRF-fit source offset from KIC position	$0.206 \pm 0.113$	1.83	$-0.195 \pm 0.121$	$-0.068 \pm 0.236$
photometric centroid source offset	$0.78 \pm 0.96$	0.82	$0.69 \pm 0.97$	$-0.36 \pm 0.92$

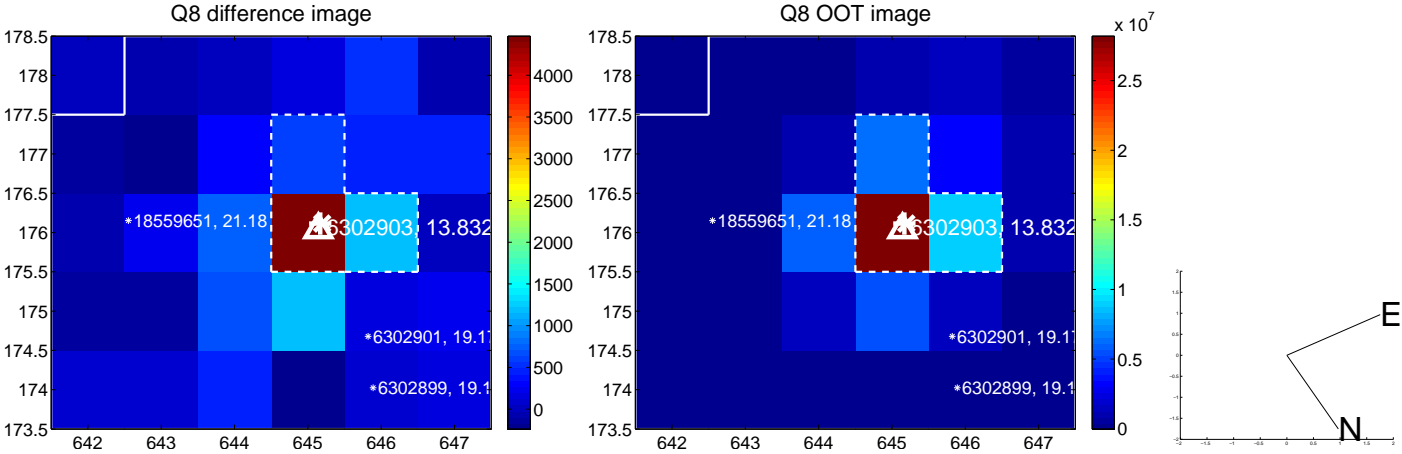
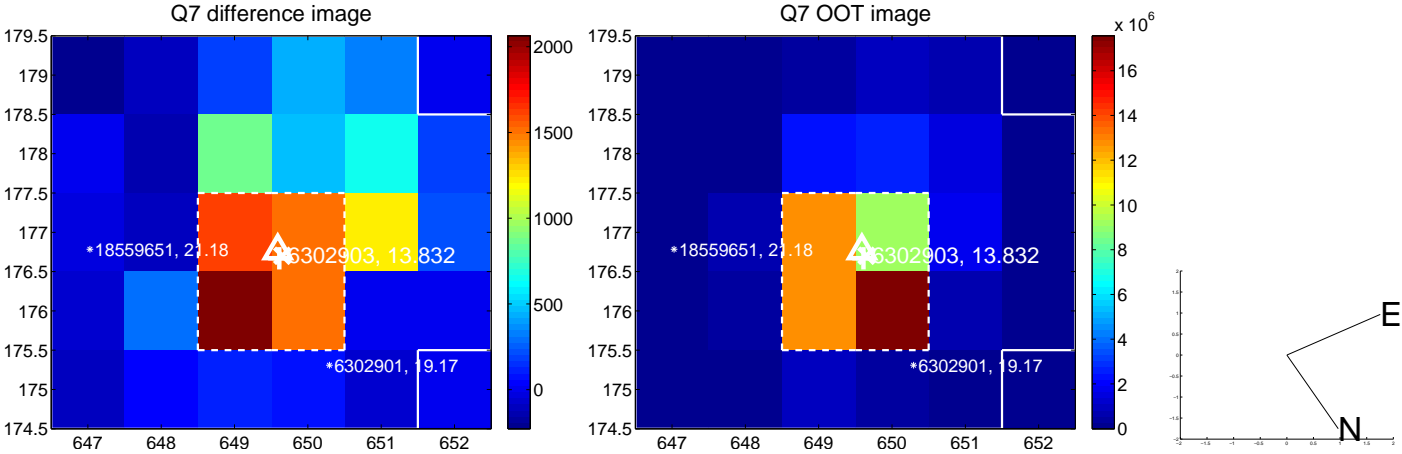
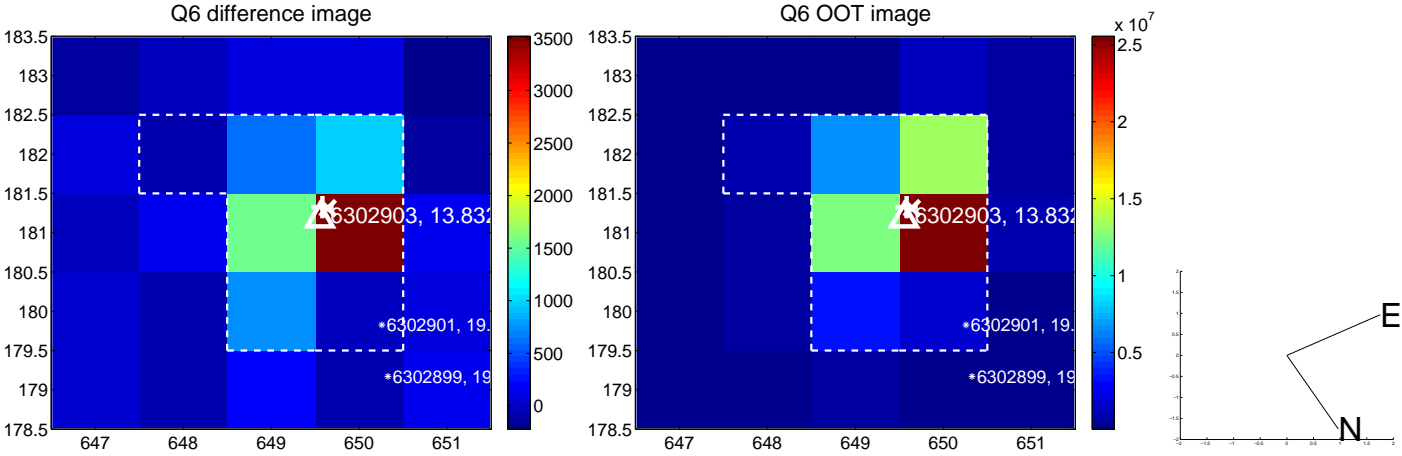
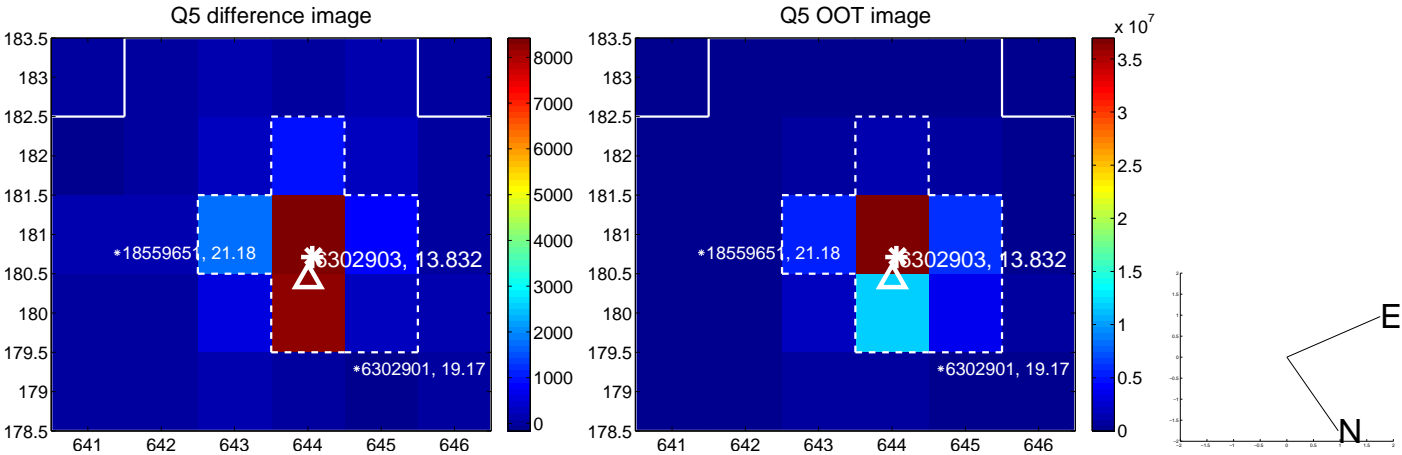


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets**; **Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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

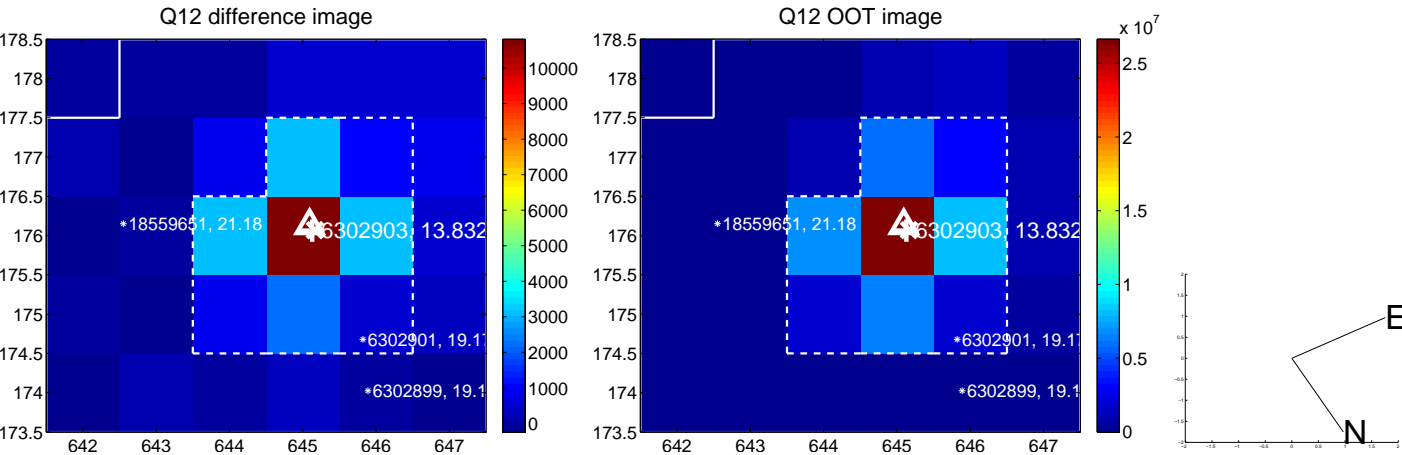
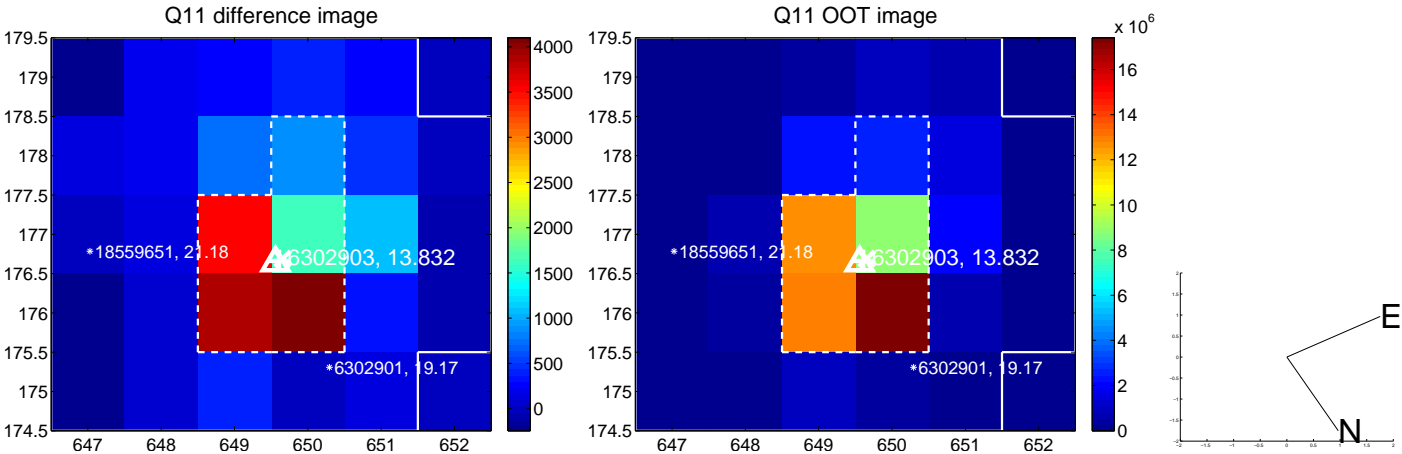
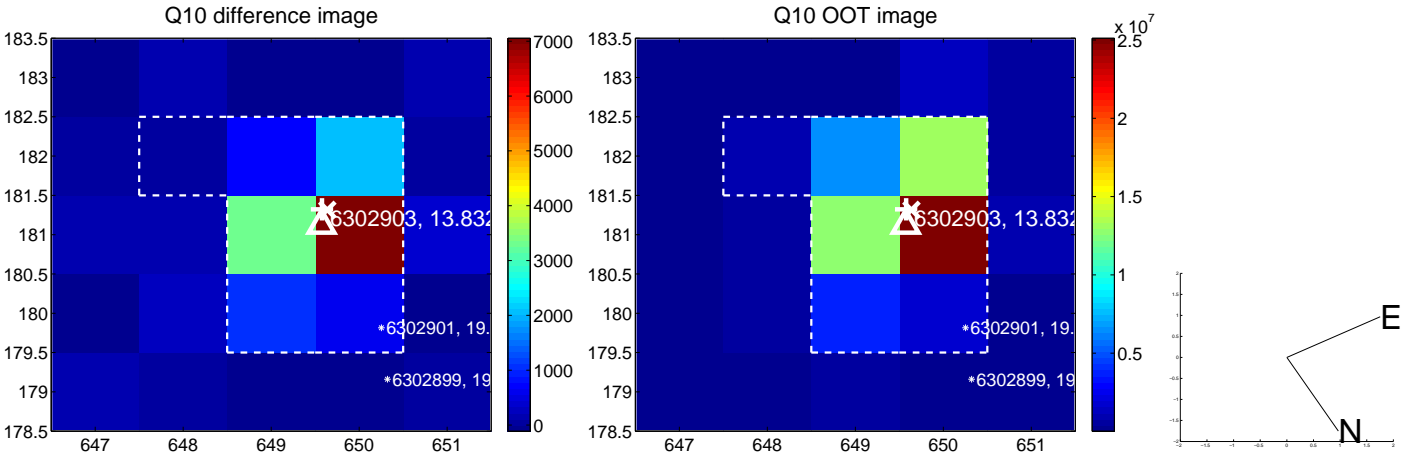
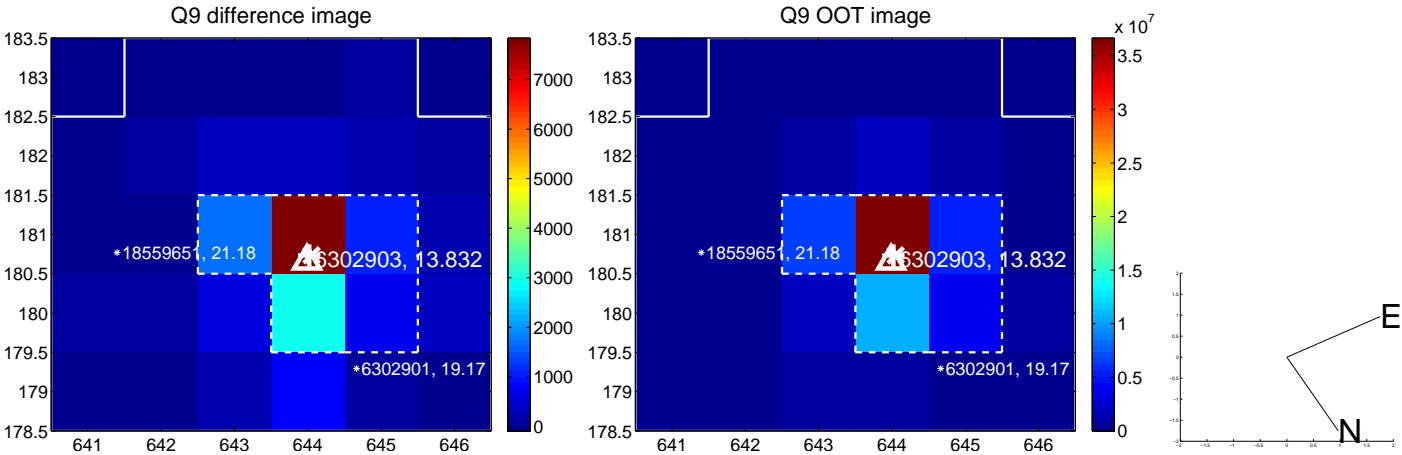


white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

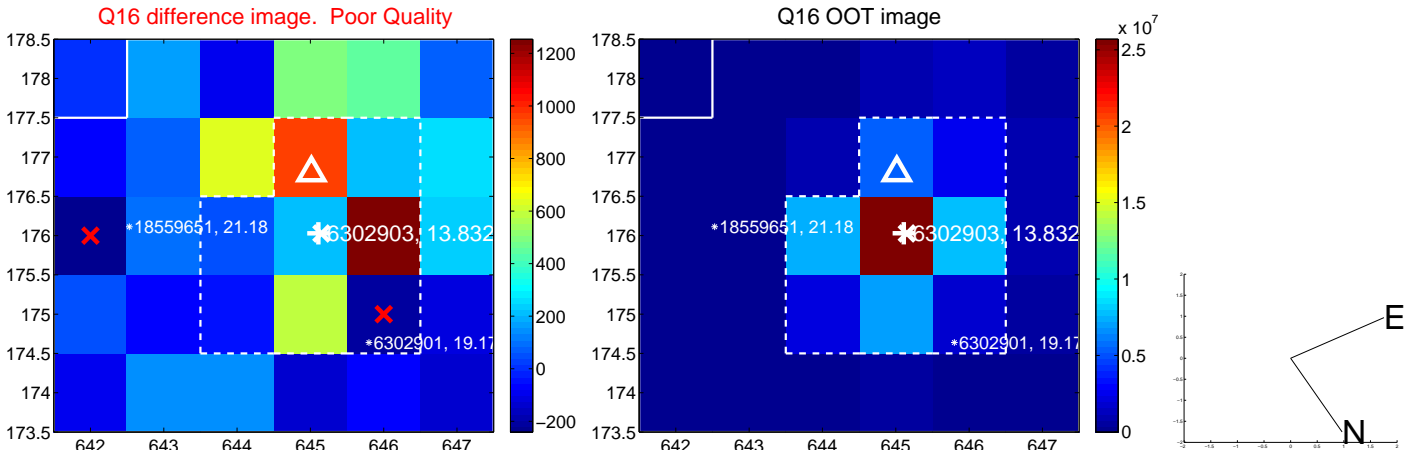
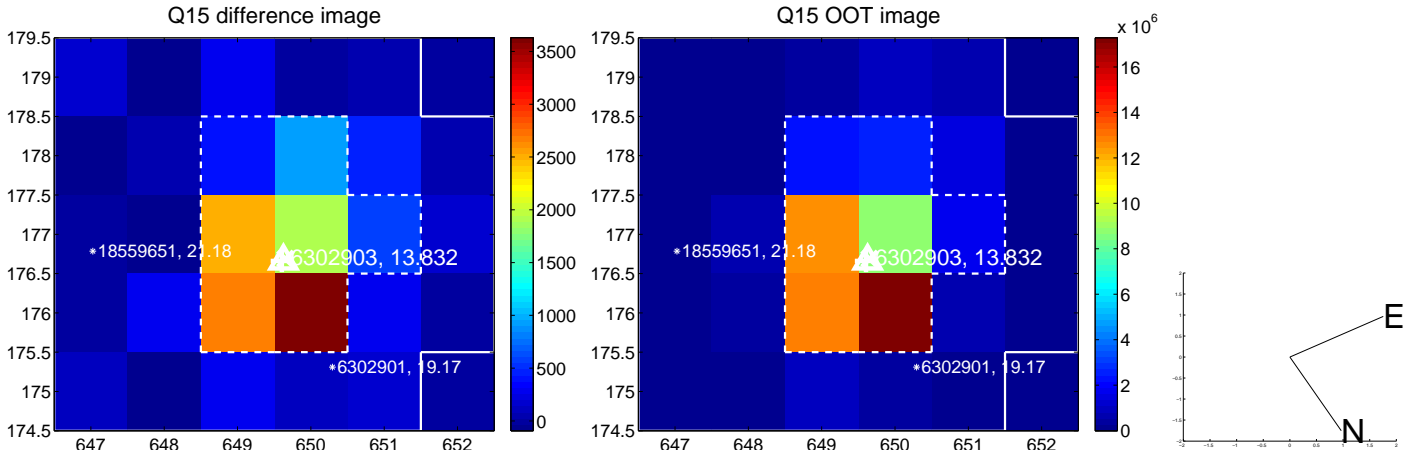
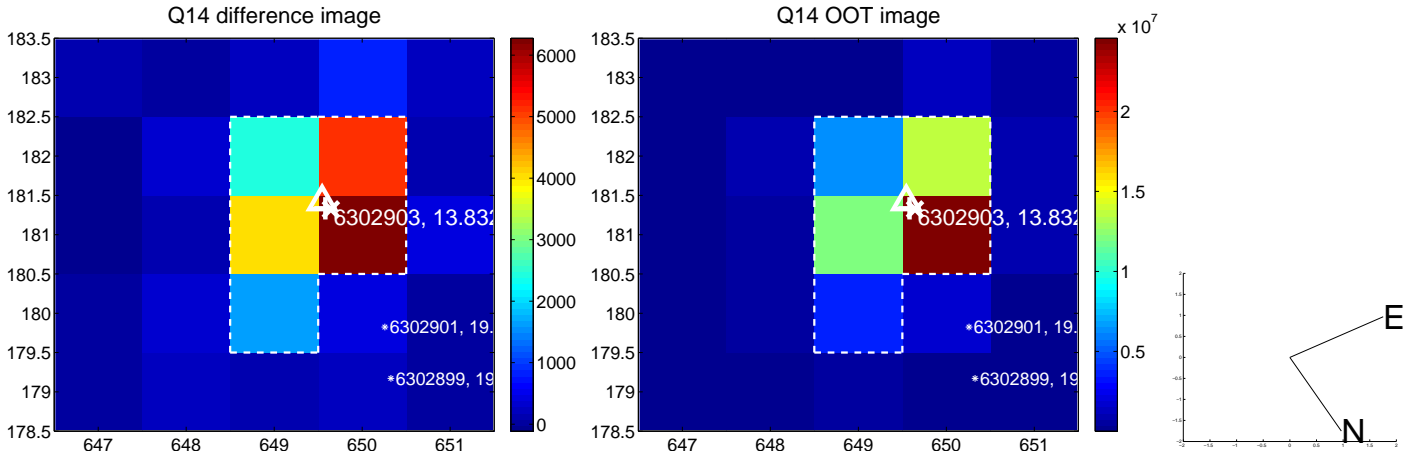
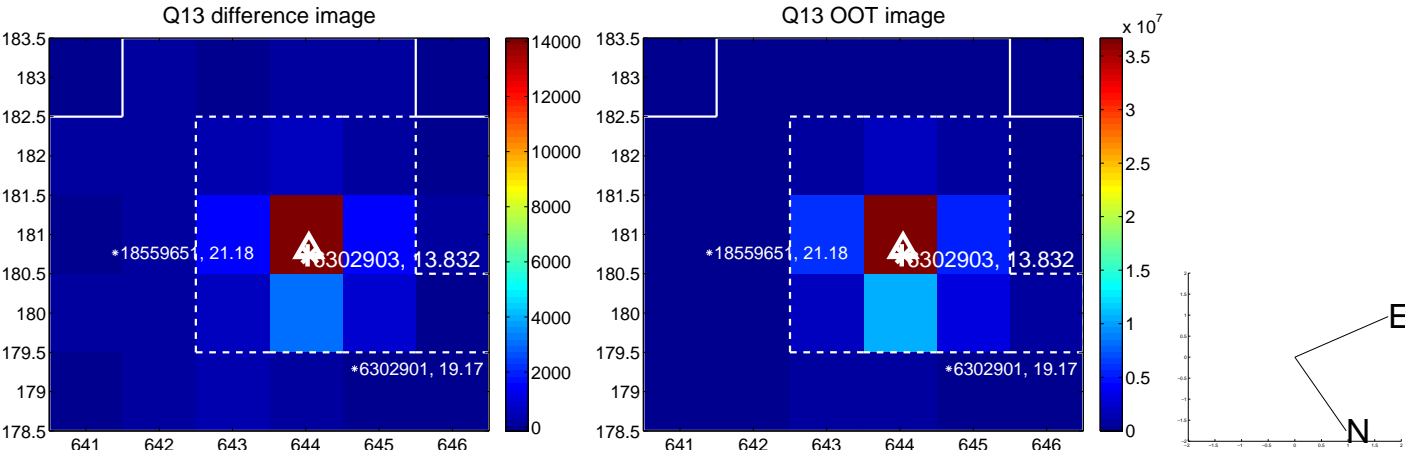




white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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





# UKIRT Image

Declination

