

# KIC 010342041

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
010342041-01	OBS	1155.01	0.933639	131.630787	1702.8	4.220	592.0	218.9	0.72	5252	2.90	1224.33

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
010342041-01	OBS	FP	0.00	0	0	1	1	CENT_RESOLVED_OFFSET—HALO_GHOST—EPHEM_MATCH

**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 010342041-01

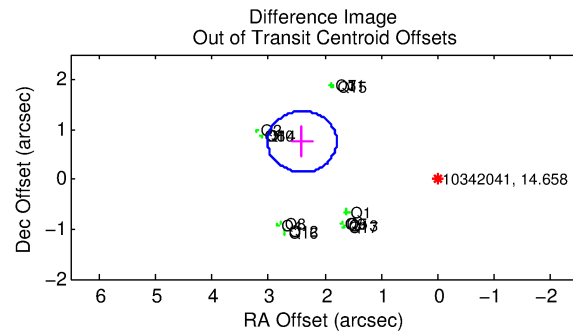
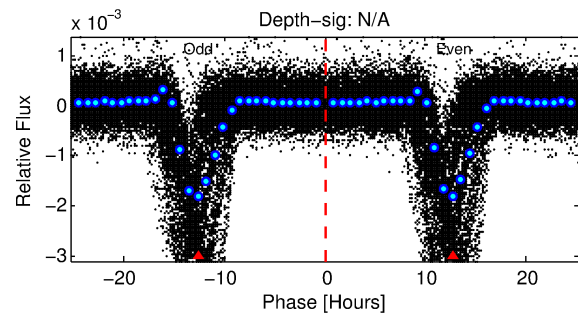
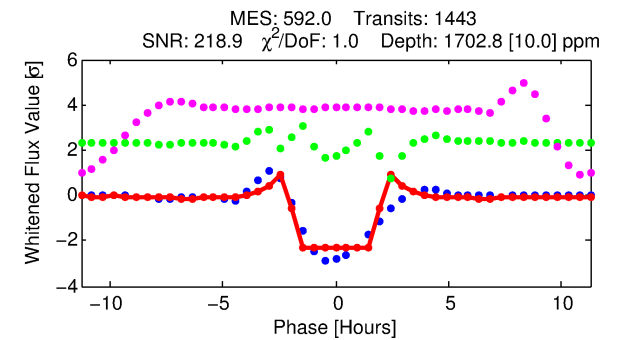
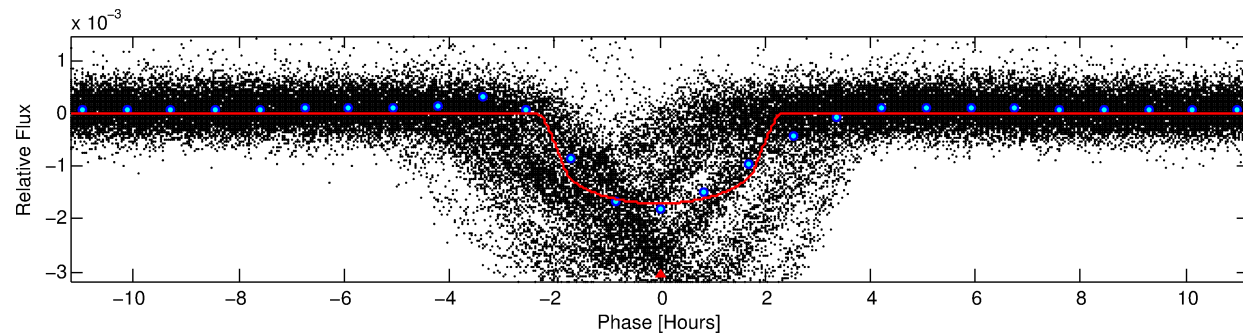
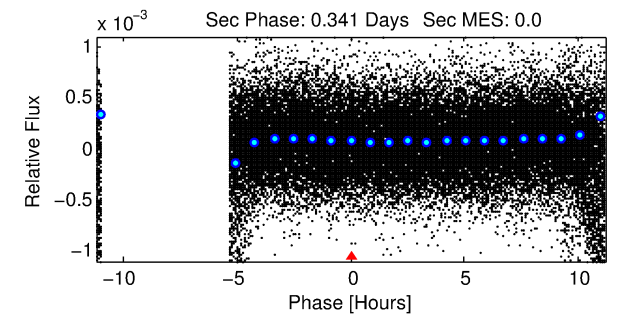
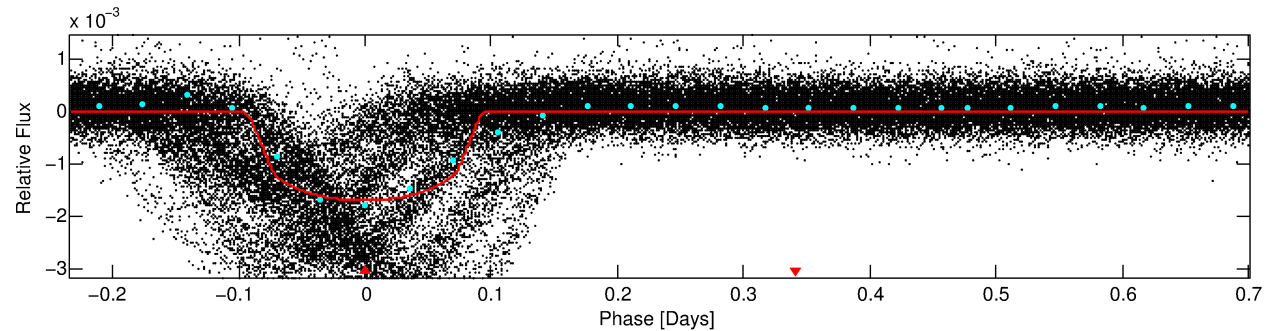
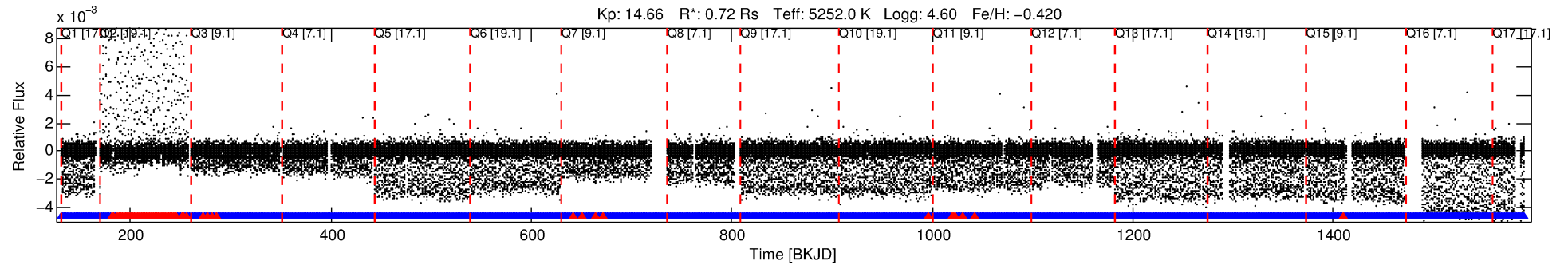
TCE (1)	KIC	Parent (2)	Parent KIC	$P_1:P_2$	Dist ( $\prime$ )	$\Delta$ Row	$\Delta$ Col	$m_2$	$m_1$	$D_2/D_1$	Mechanism	Flag	$\sigma_P$	$\sigma_T$
010342041-01	10342041	010342065-01	10342065	1:1	47.6	12	0	13.96	14.65	0.34	Direct-PRF	1	3.46	4.42

**Notes:**  $P_1:P_2$  is the period ratio. Dist is the distance in arcseconds.  $\Delta$ Row and  $\Delta$ Col are the number of pixels apart in row and column.  $m_2$  and  $m_1$  are the magnitudes of the parent and child.  $D_2/D_1$  is the parent's transit depth divided by the child's.  $\sigma_P$  and  $\sigma_T$  are the significance of the match in period and epoch. For a match to be considered significant  $\sigma_P < 5.0$  and  $\sigma_T < 5.0$ . Matches which have  $\sigma_P$  and  $\sigma_T$  very close to this cutoff should receive extra scrutiny, especially if the period ratio is very large.

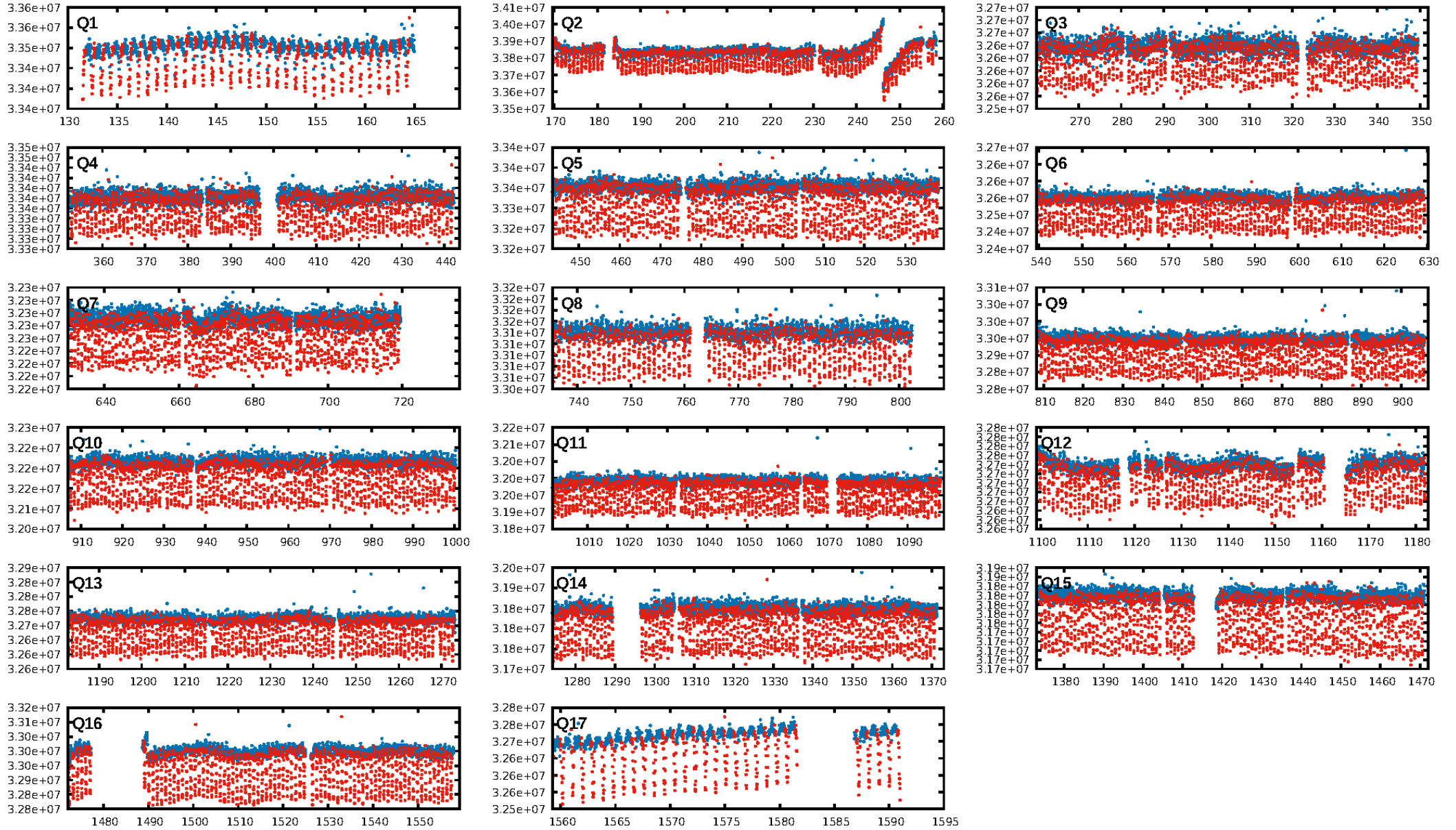
# DV One-Page Summary

KIC: 10342041 Candidate: 1 of 1 Period: 0.934 d  
KOI: K01155 Corr: No Ephemeris Match

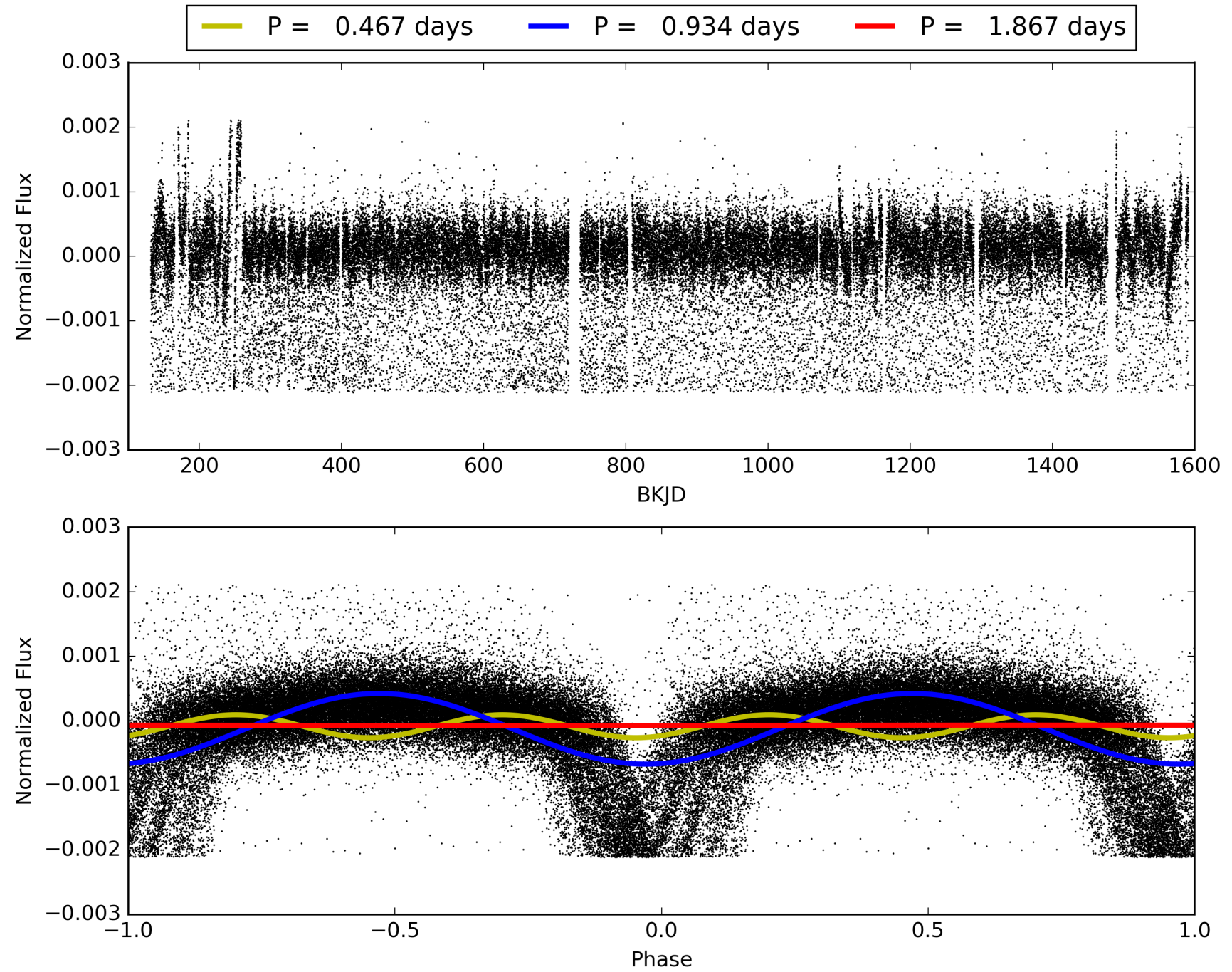
Kp: 14.66 R\*: 0.72 Rs Teff: 5252.0 K Logg: 4.60 Fe/H: -0.420



# TCE 010342041-01, PDC Light Curves

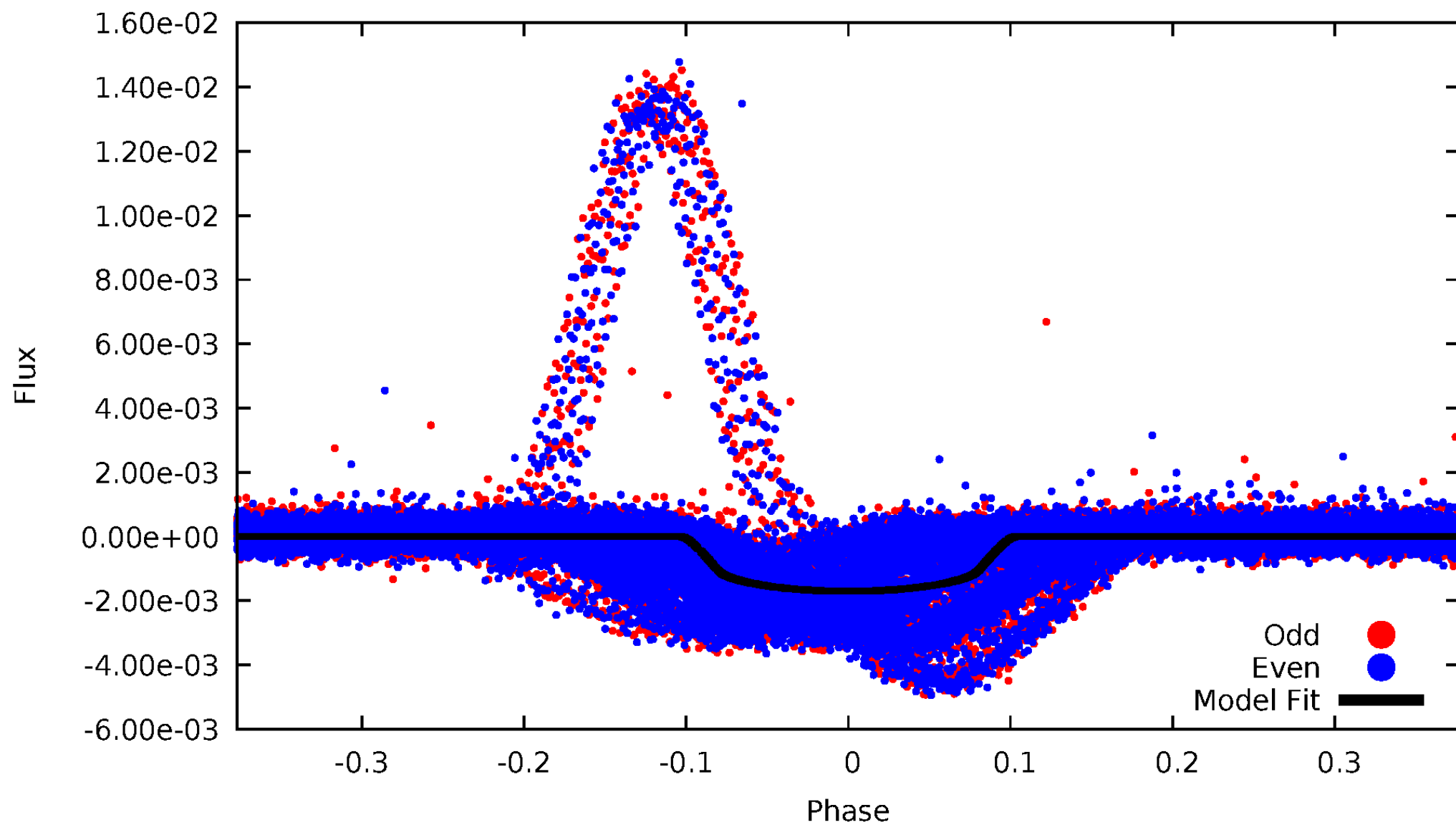


# TCE 010342041-01



# DV Odd/Even

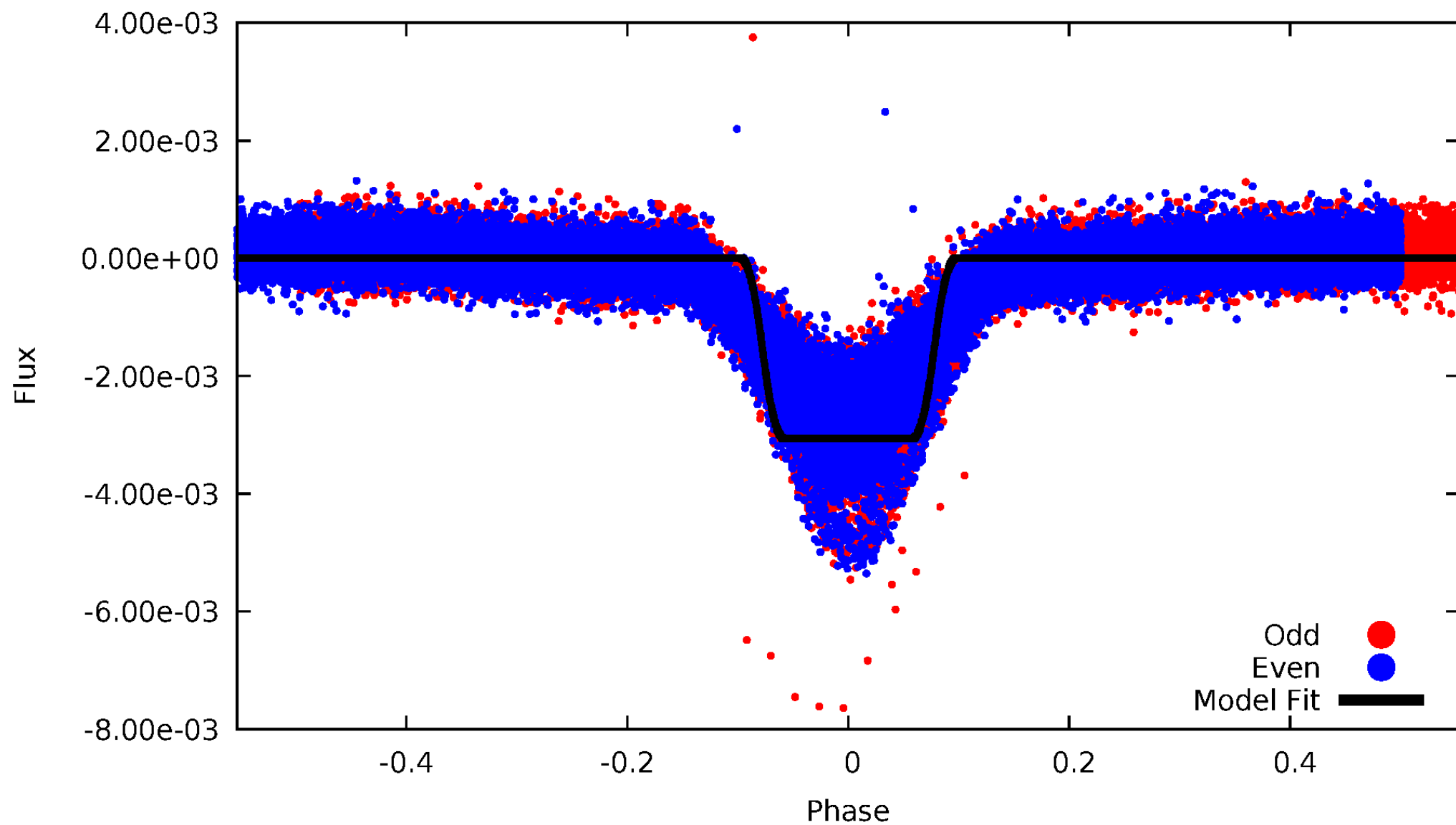
TCE 010342041-01





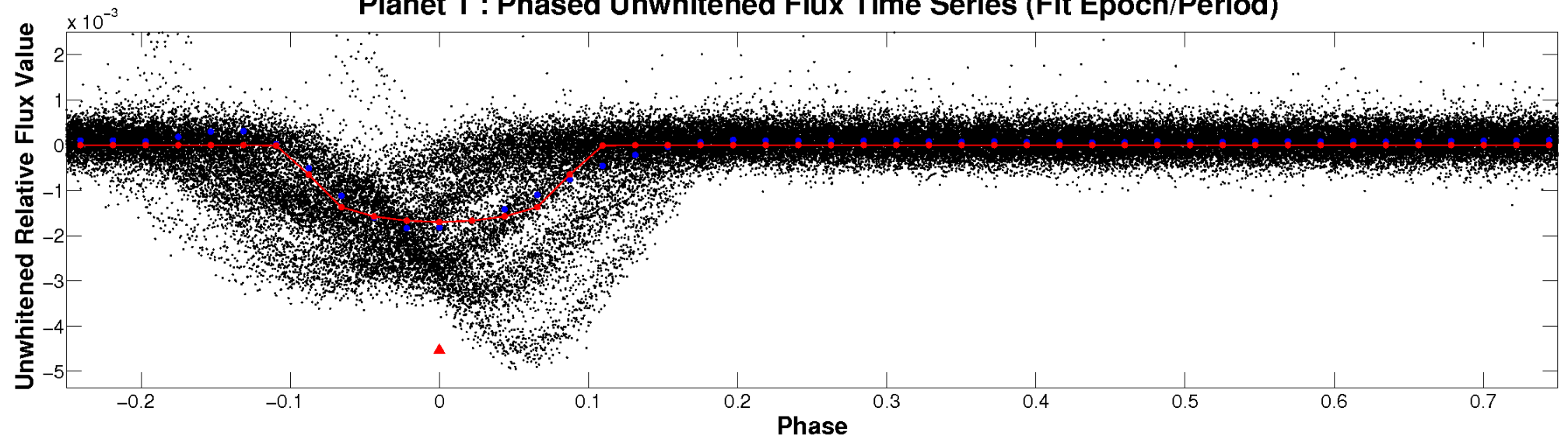
# ALT Odd/Even

TCE 010342041-01

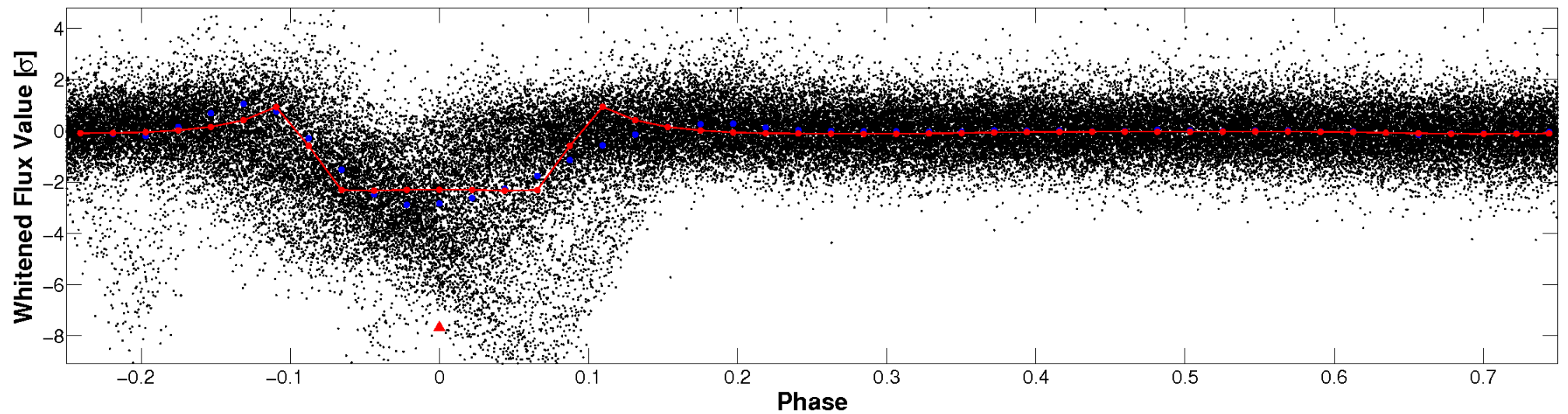


# Non-Whitened Vs. Whitened Light Curve

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

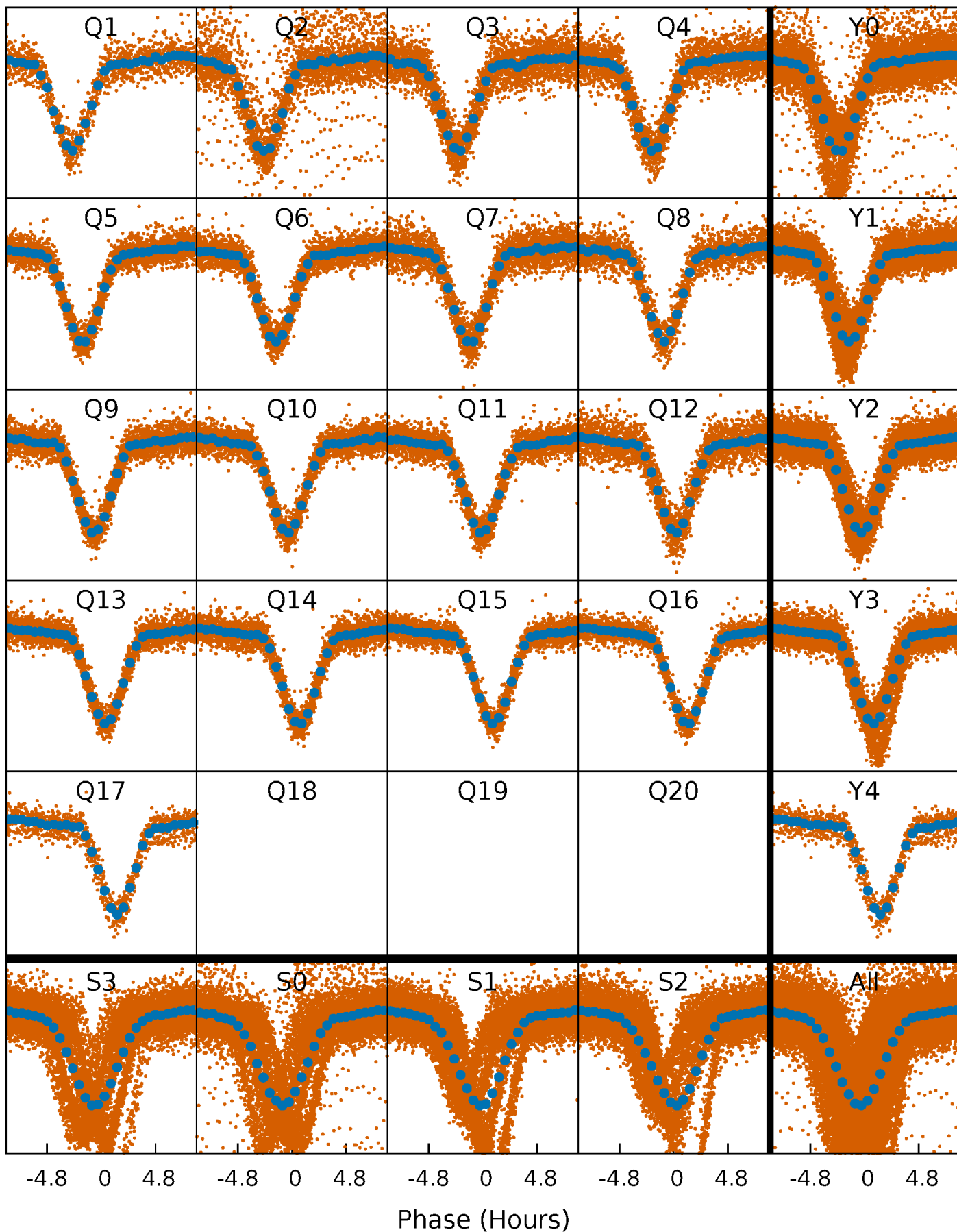


## Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



# PDC Quarter-Phased Transit Curves

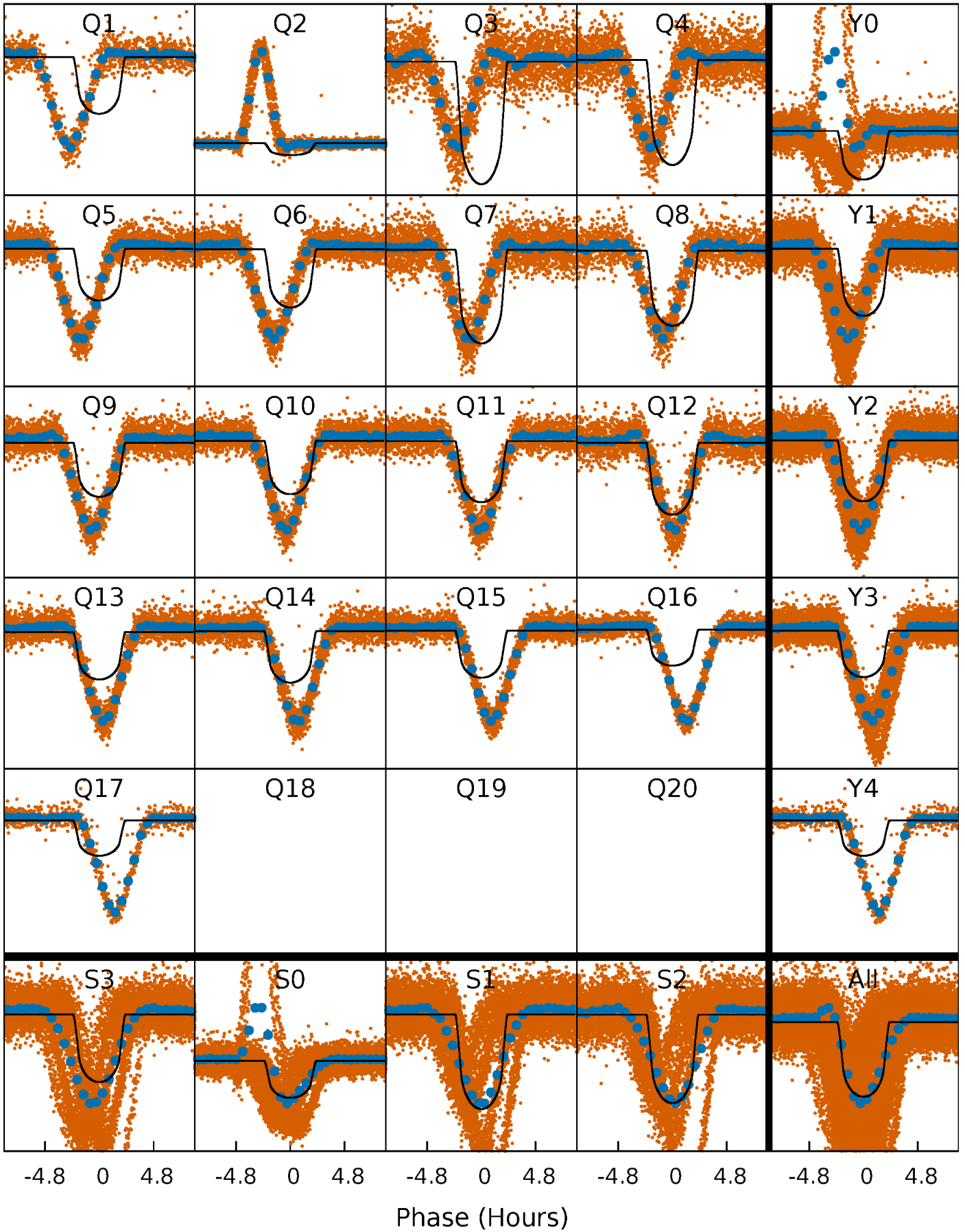
TCE 010342041-01 P= 0.933639 Days  $T_0=131.630787$  (BKJD)





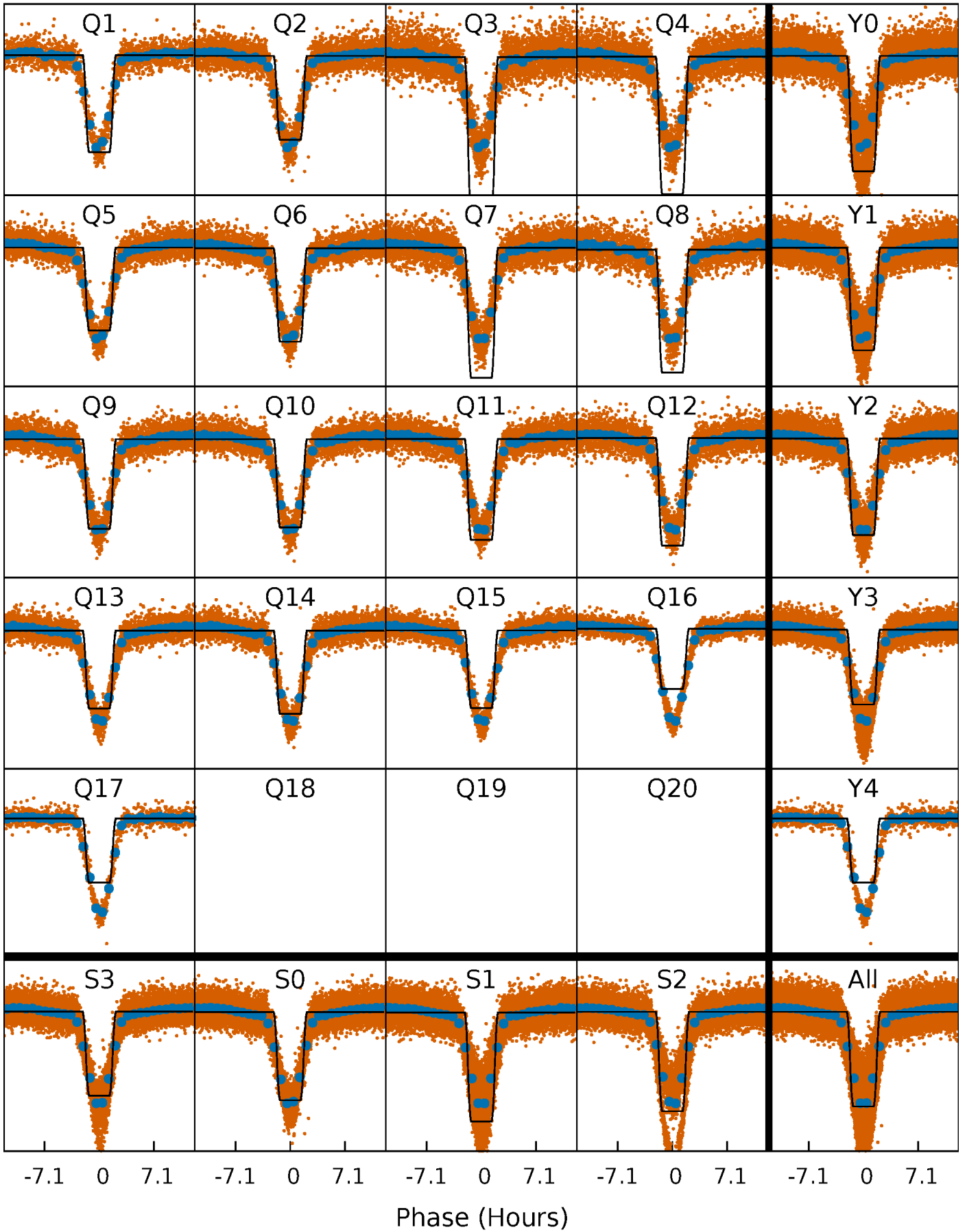
# DV Quarter-Phased Transit Curves

TCE 010342041-01   P= 0.933639 Days    $T_0=131.630787$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

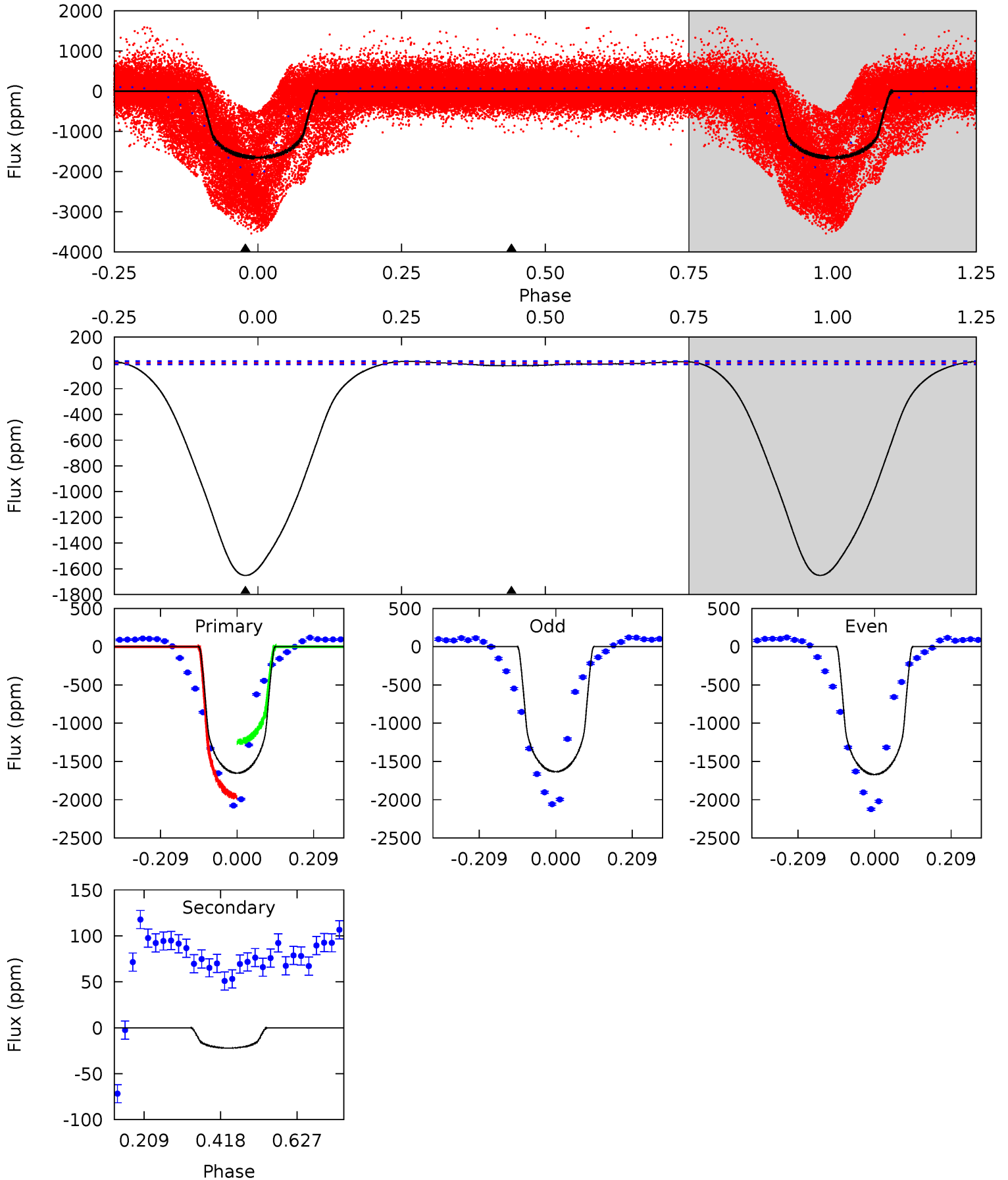
TCE 010342041-01   P= 0.933740 Days    $T_0=131.525102$  (BKJD)



# DV Model-Shift Uniqueness Test

010342041-01, P = 0.933639 Days, E = 130.697148 Days

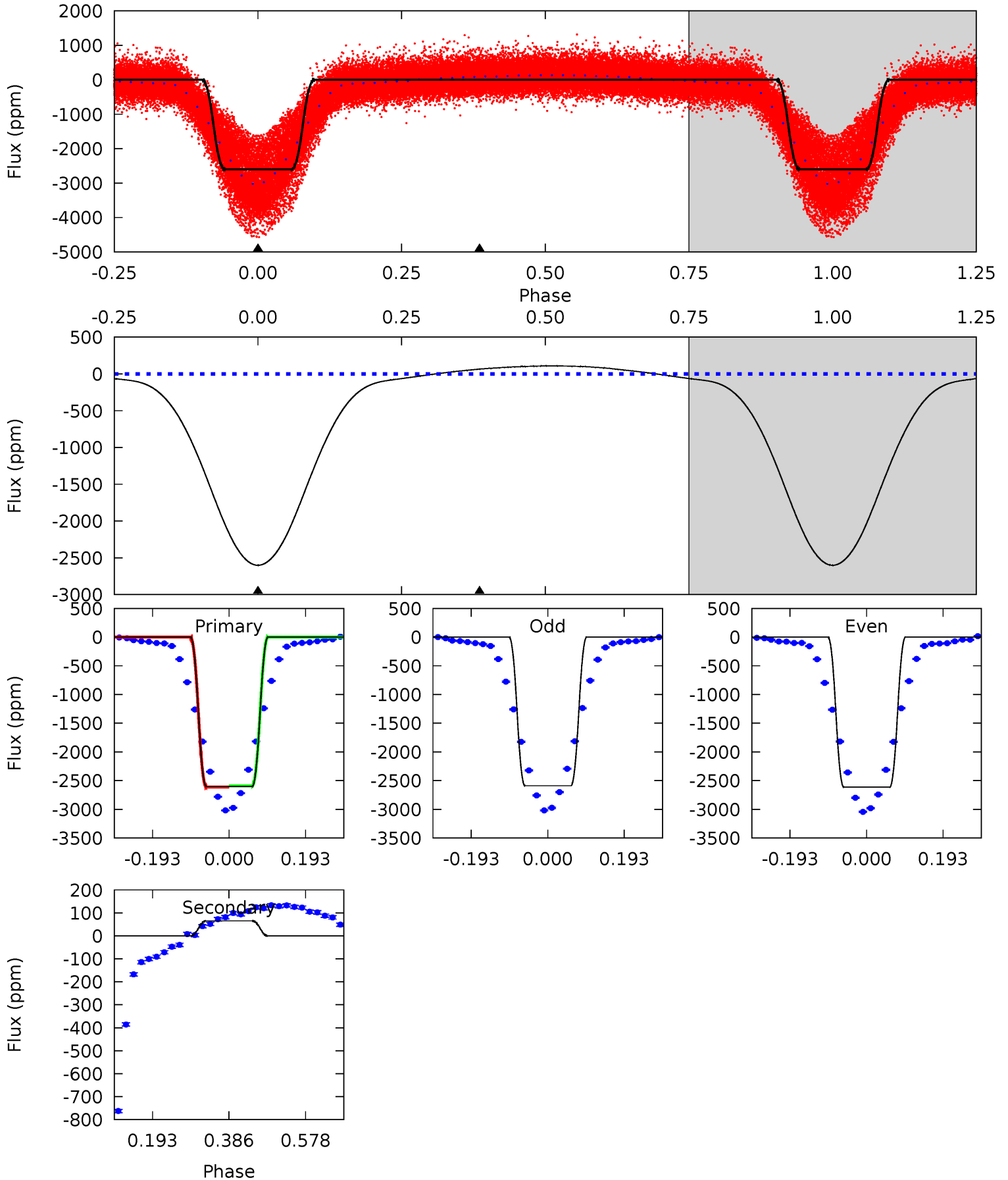
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
598.3	8.01	0	0	4.41	1.26	5.59	598.3	598.3	8.01	8.01	6.45	0.90	0.01	0



# Alt Model-Shift Uniqueness Test

010342041-01, P = 0.933740 Days, E = 130.591362 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
1058	-26.6	0	0	4.43	1.30	27.2	1058	1058	-26.6	-26.6	4.88	0.98	0.04	4.63



### Stellar Parameters For KIC 010342041

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$5252^{+157}_{-141}$	$4.596^{+0.054}_{-0.072}$	$-0.420^{+0.300}_{-0.300}$	$0.716^{+0.095}_{-0.063}$	$0.737^{+0.090}_{-0.060}$	$2.831^{+0.607}_{-0.716}$
	+3%/-3%	+1%/-2%	+71%/-71%	+13%/-9%	+12%/-8%	+21%/-25%
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 010342041-01 / KOI 1155.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	$A_{obs}$
DV	$-22 \pm 3$	$2.91^{+0.24}_{-0.21}$	$2116^{+81}_{-76}$	$2263^{+150}_{-244}$	$0.409^{+0.084}_{-0.074}$
Alt.	$65 \pm 2$	$4.37^{+0.33}_{-0.29}$	$2115^{+83}_{-79}$	$-2920^{+53}_{-62}$	$-0.542^{+0.068}_{-0.070}$

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



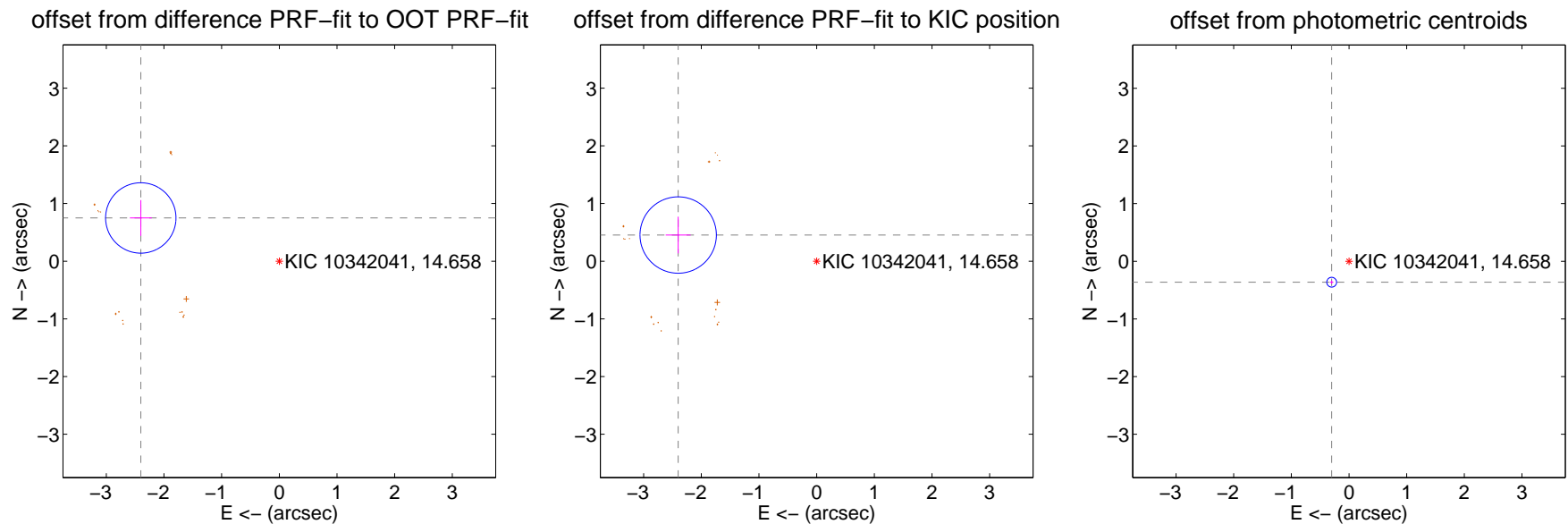
## DV Centroid Data

Supplemental centroid analysis for 010342041-01. Kepler magnitude: 14.66. Transit SNR 218.87

There are 0 quarters with good PRF difference image offsets

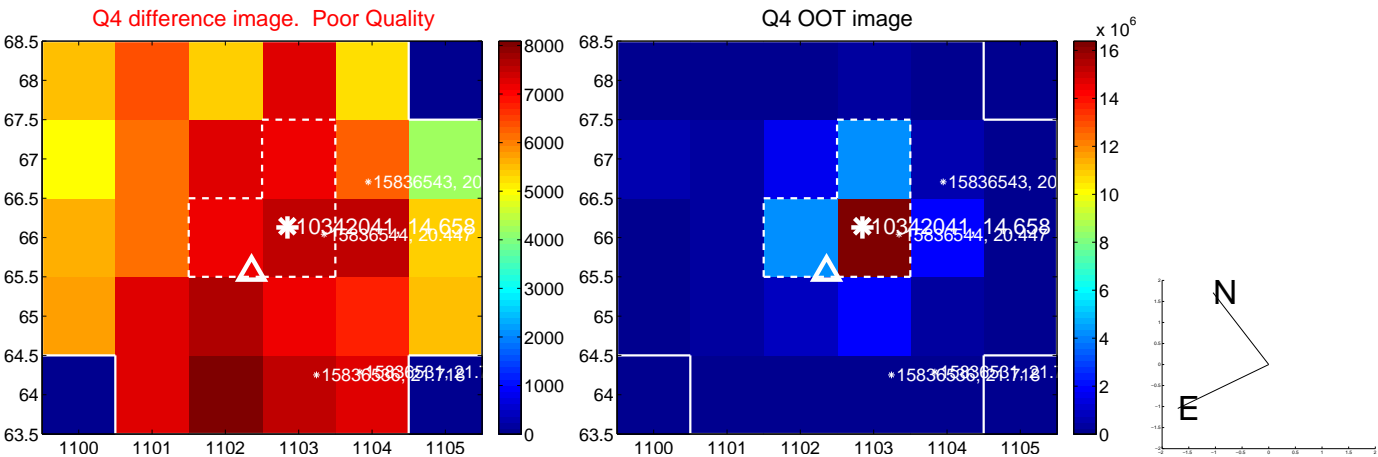
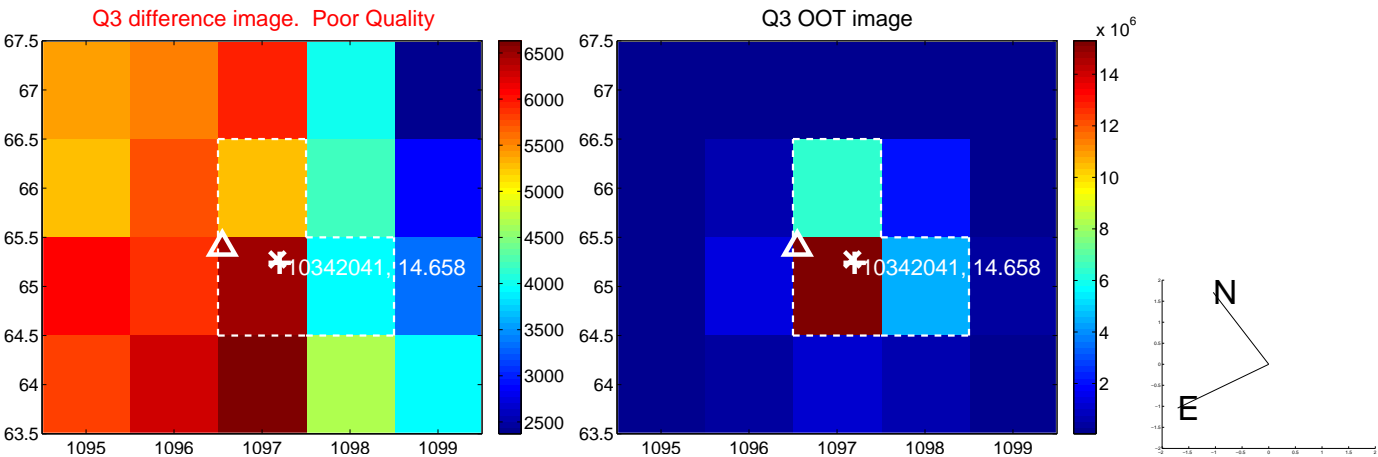
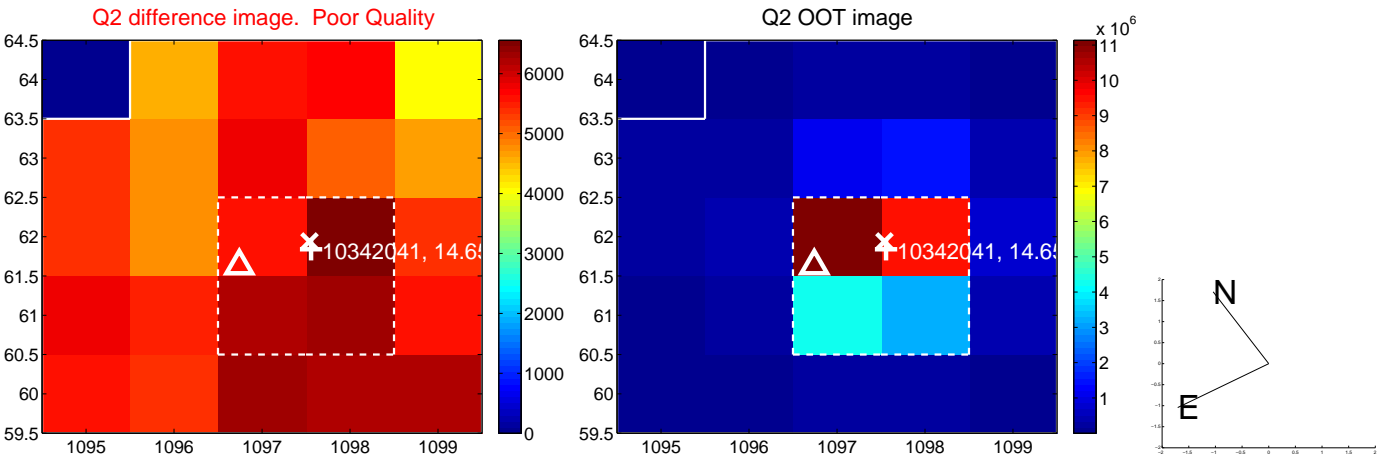
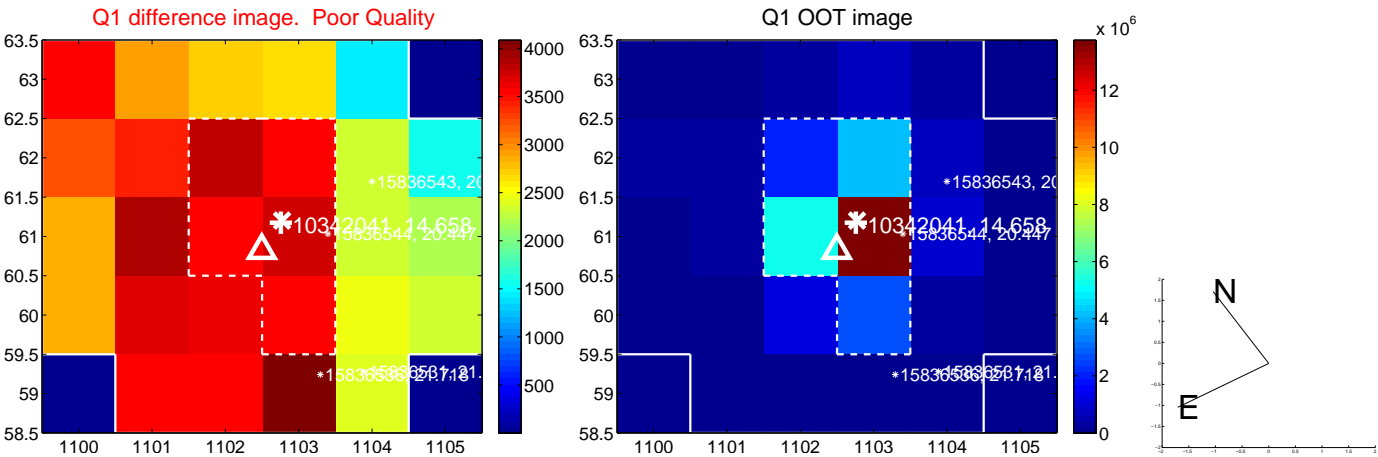
The direct PRF centroid is offset from the target star catalog position by about 0.14 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$2.516 \pm 0.203$	12.37	$2.402 \pm 0.190$	$0.750 \pm 0.309$
PRF-fit source offset from KIC position	$2.444 \pm 0.221$	11.07	$2.401 \pm 0.216$	$0.454 \pm 0.317$
photometric centroid source offset	$0.47 \pm 0.03$	16.67	$0.30 \pm 0.03$	$-0.36 \pm 0.03$

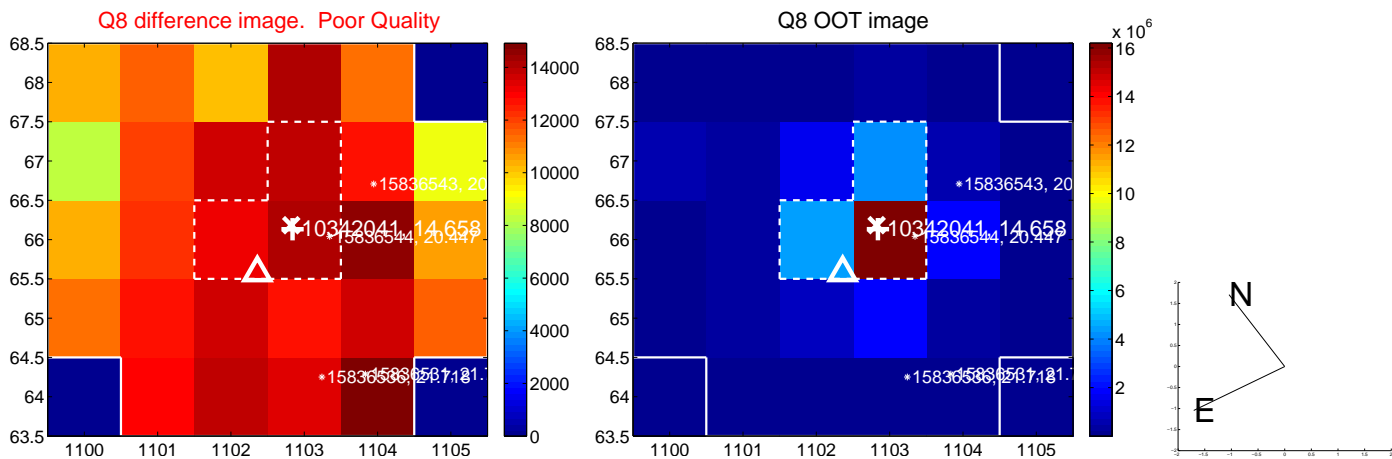
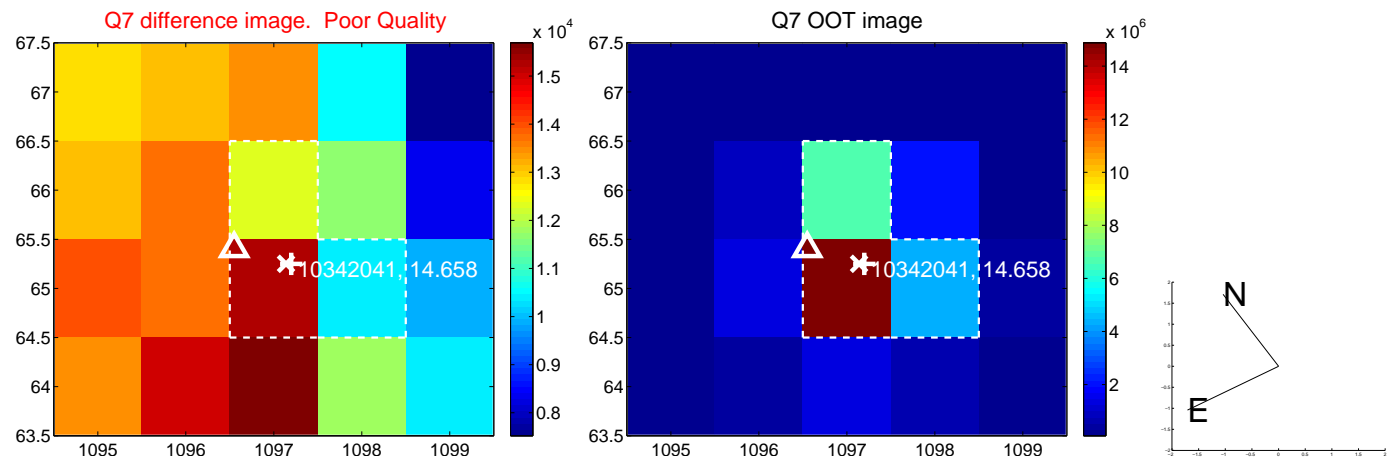
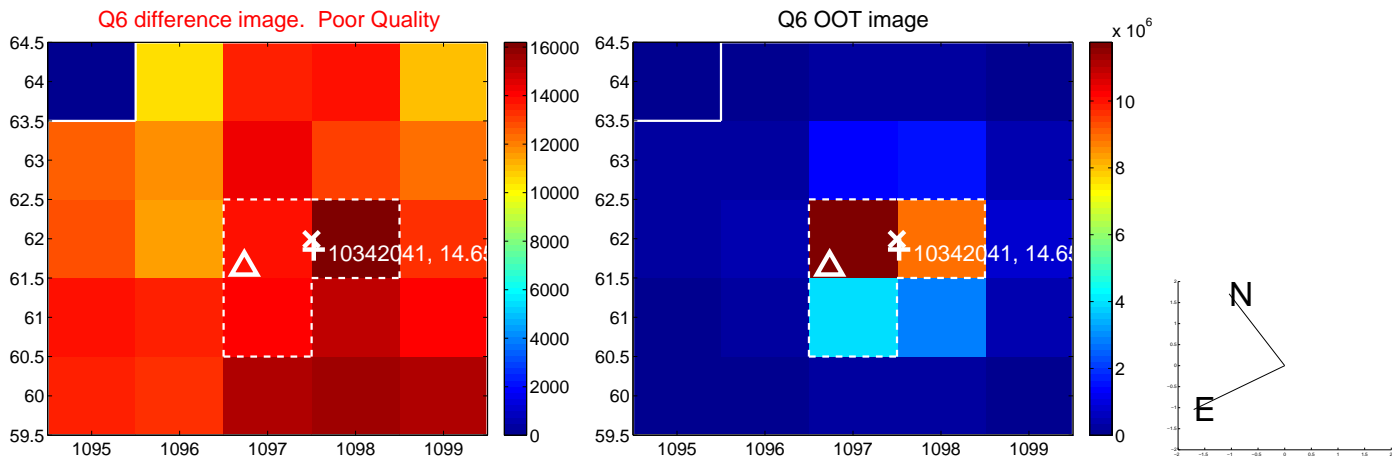
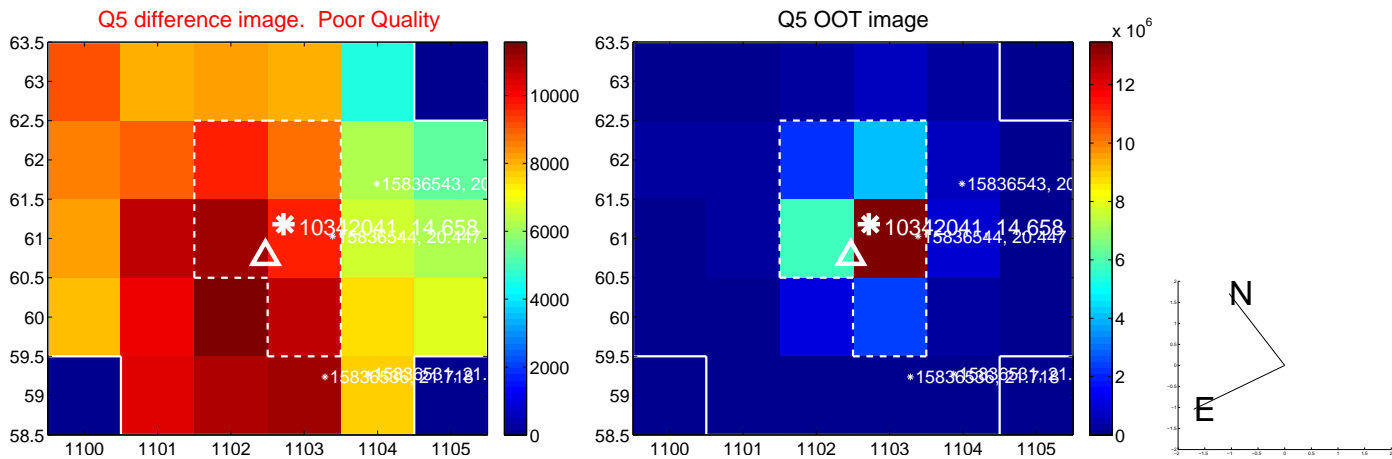


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: three-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

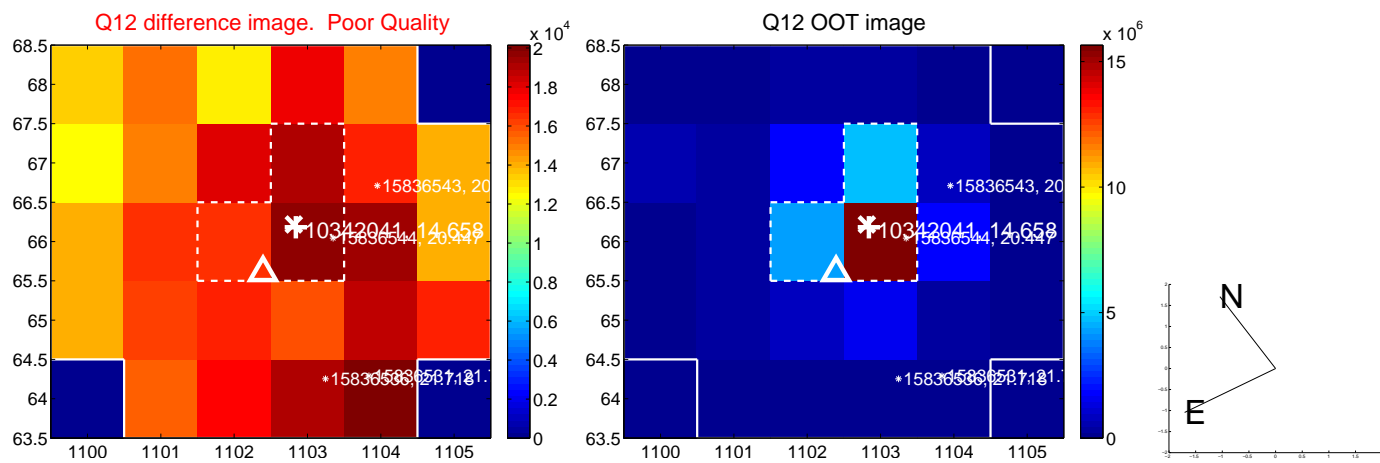
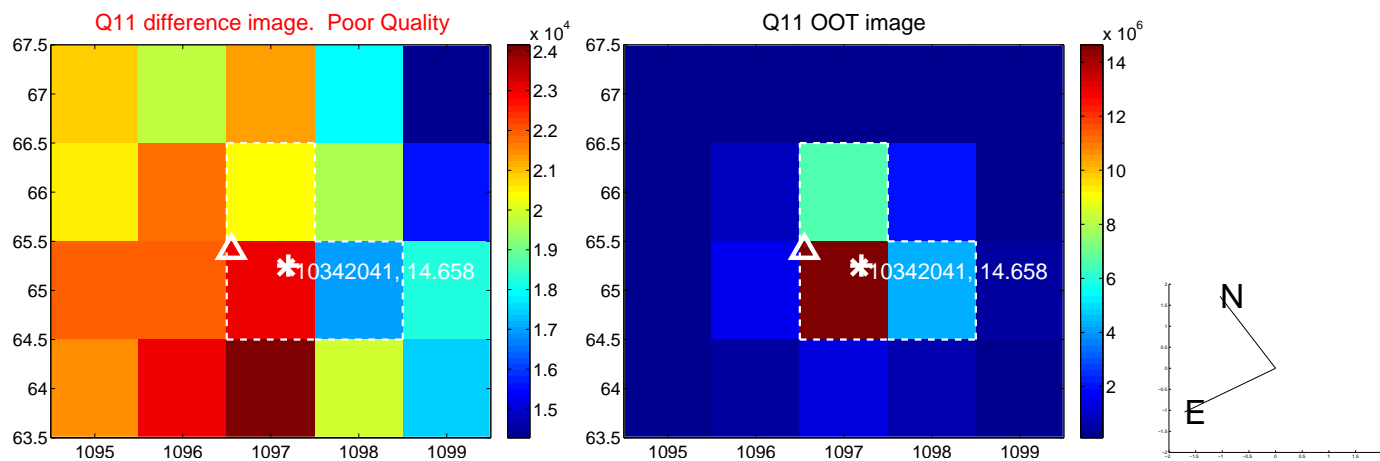
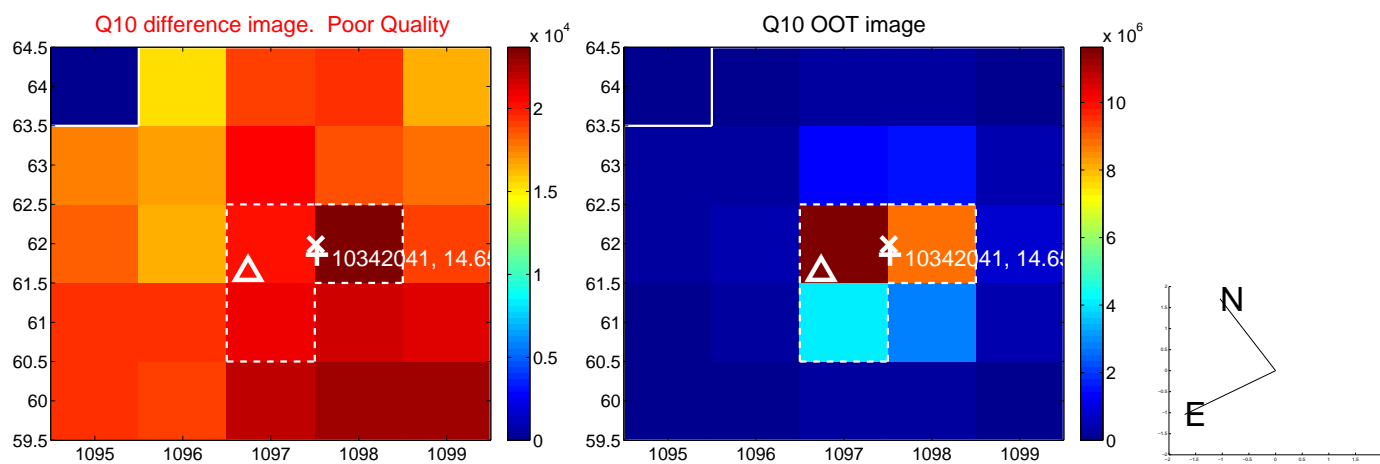
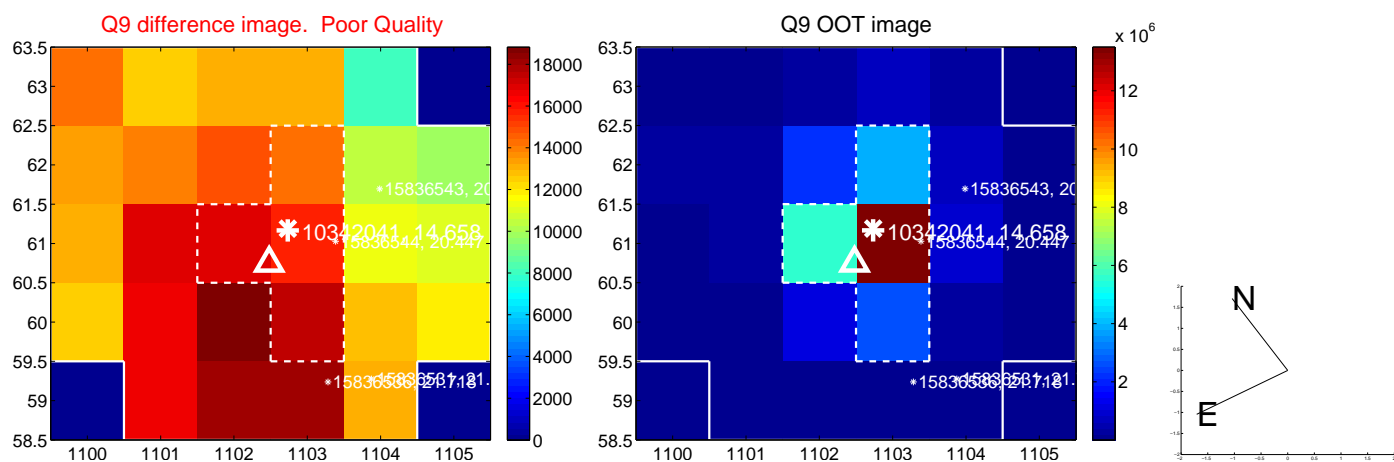
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



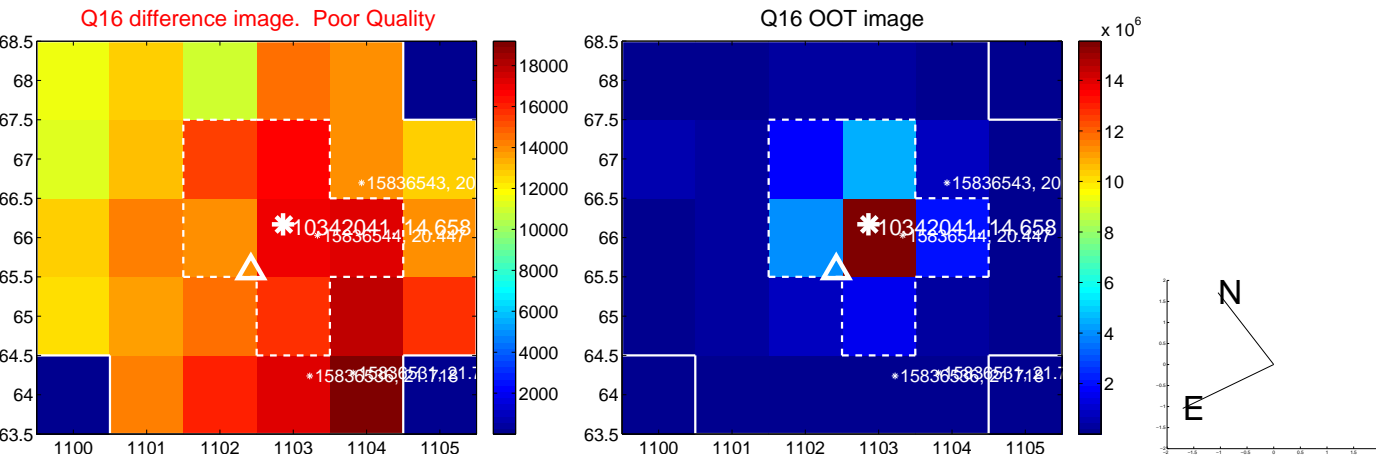
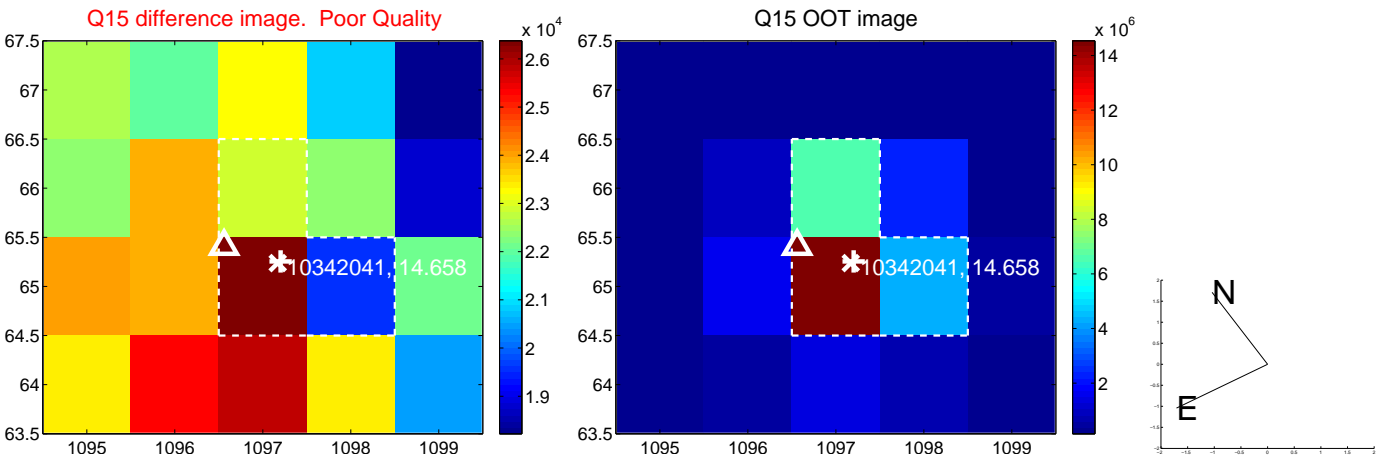
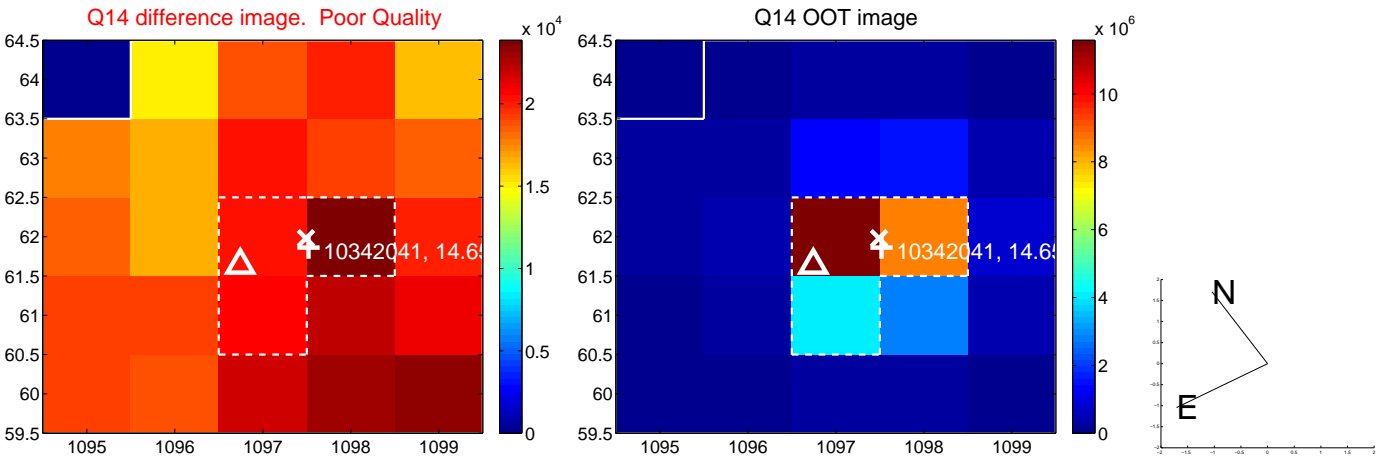
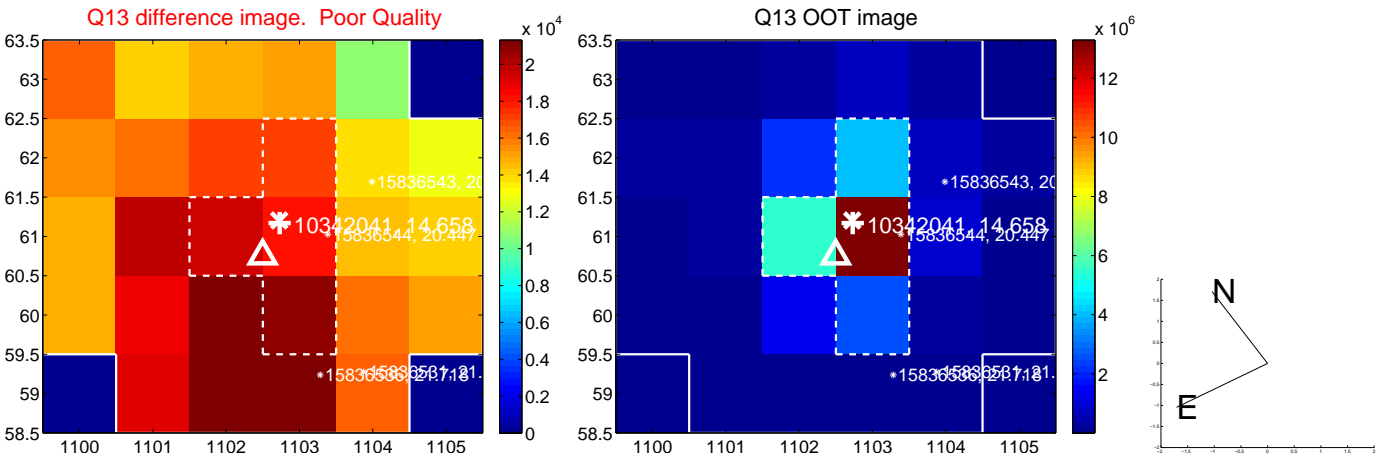
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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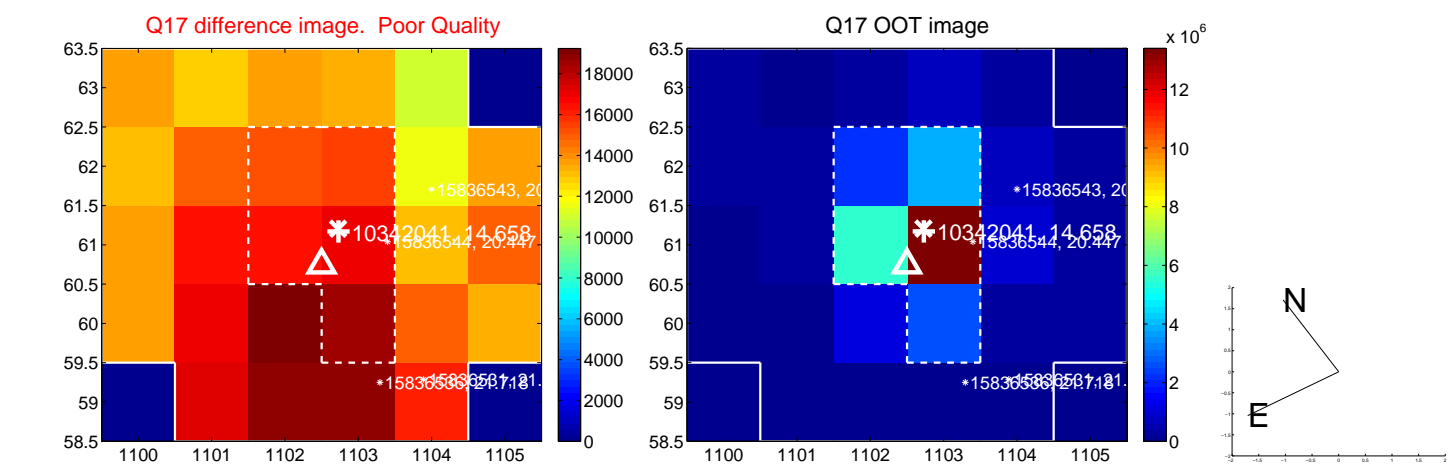


white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

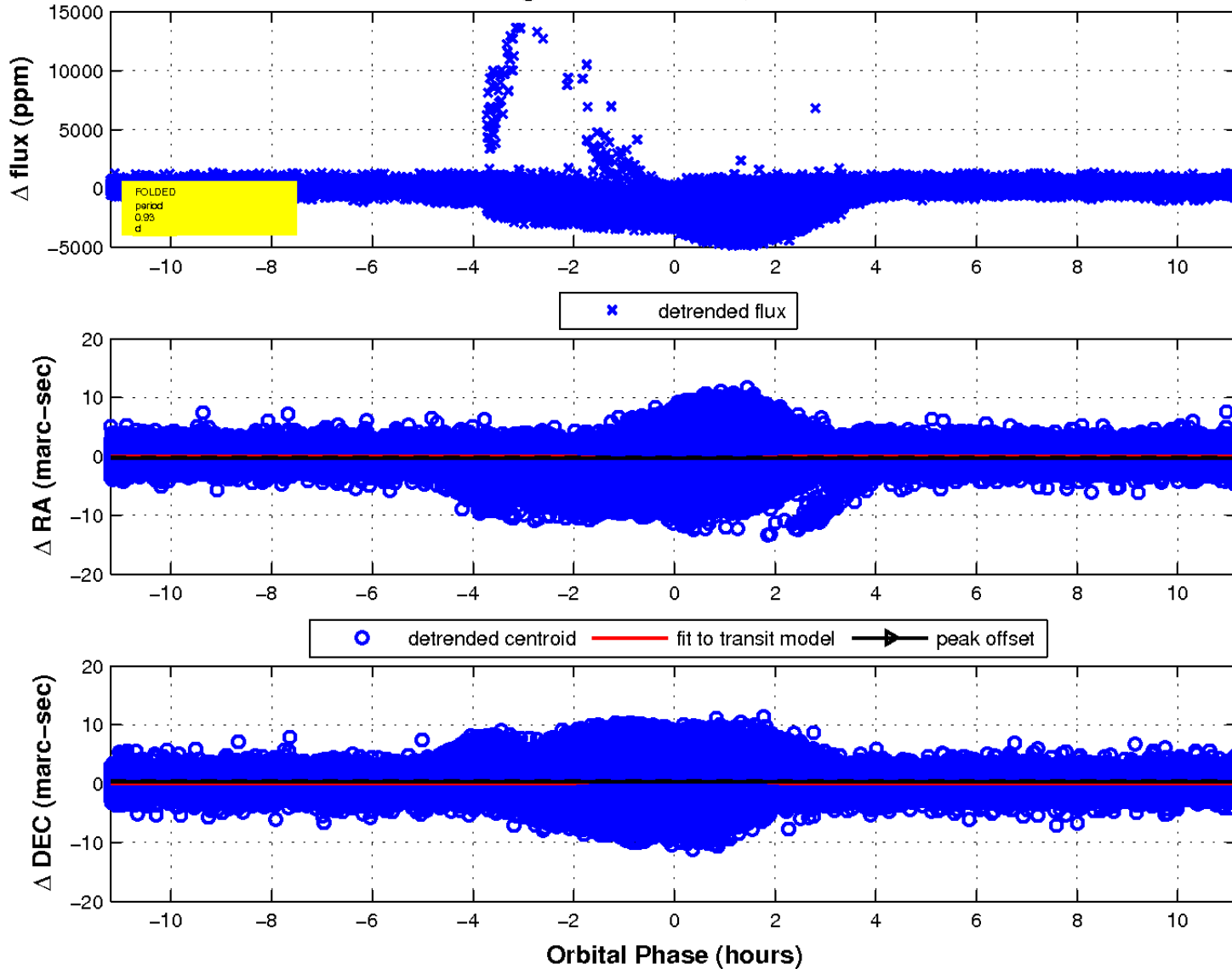




white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



fluxWeightedCentroids, Planet 1 of 1



UKIRT Image

Declination

