

# KIC 010342065

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
010342065-01	OBS	1157.01	0.933673	131.571668	578.1	5.367	293.4	113.9	4.32	5438	15.13	28182.56

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
010342065-01	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 010342065-01

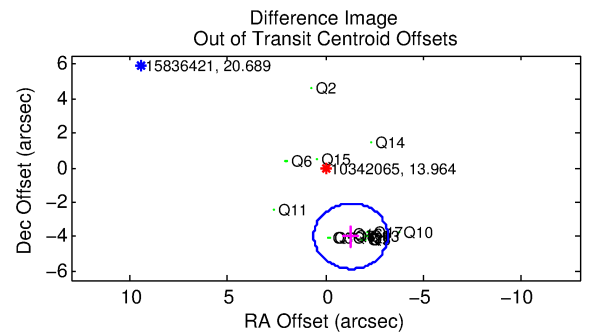
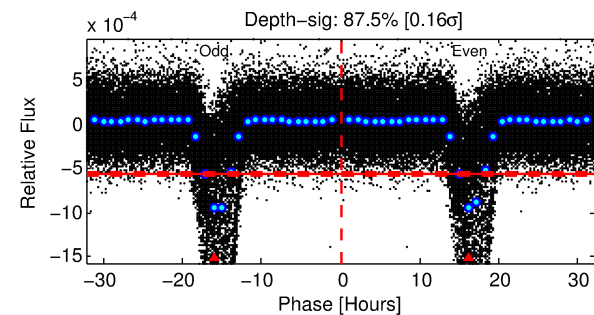
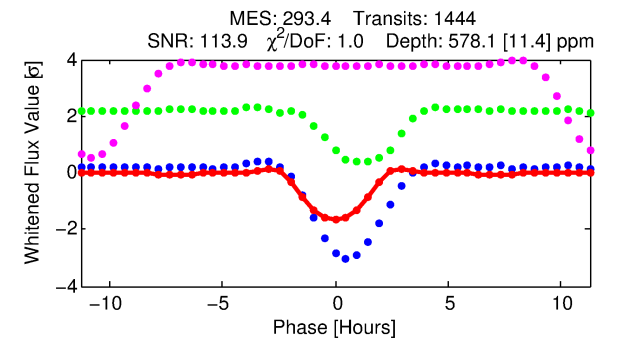
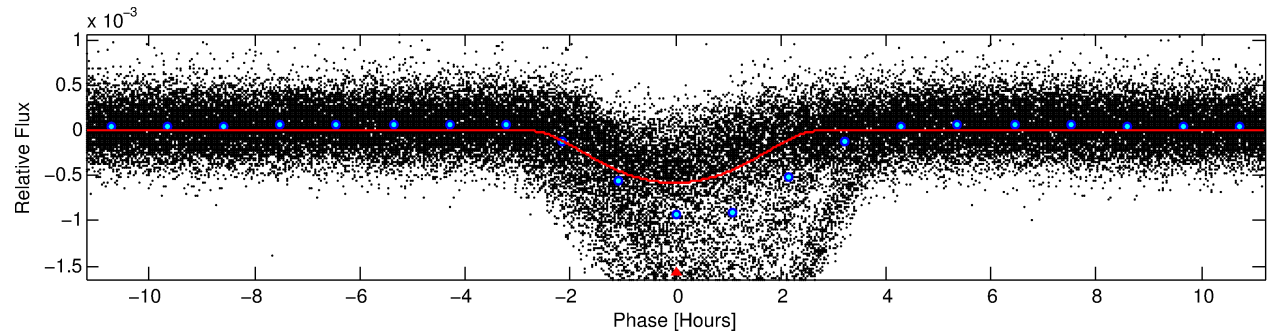
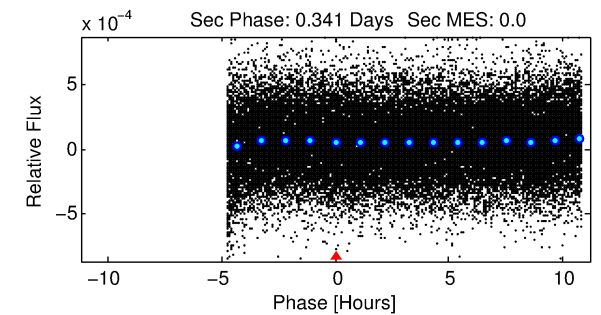
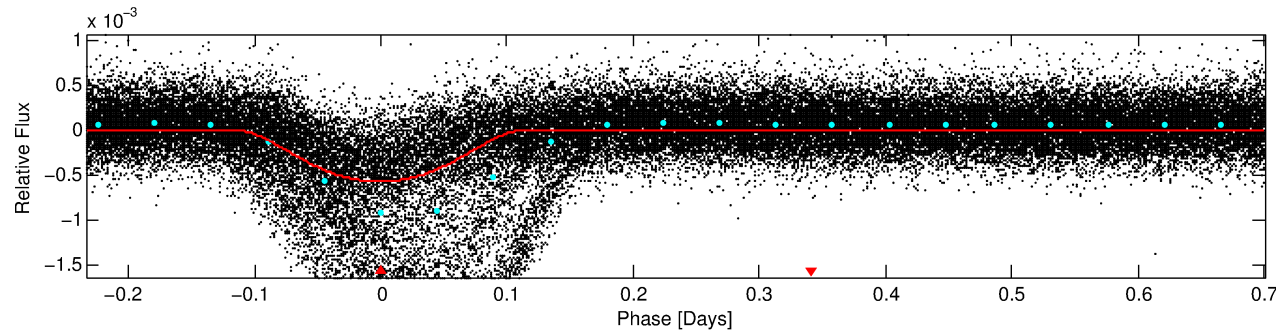
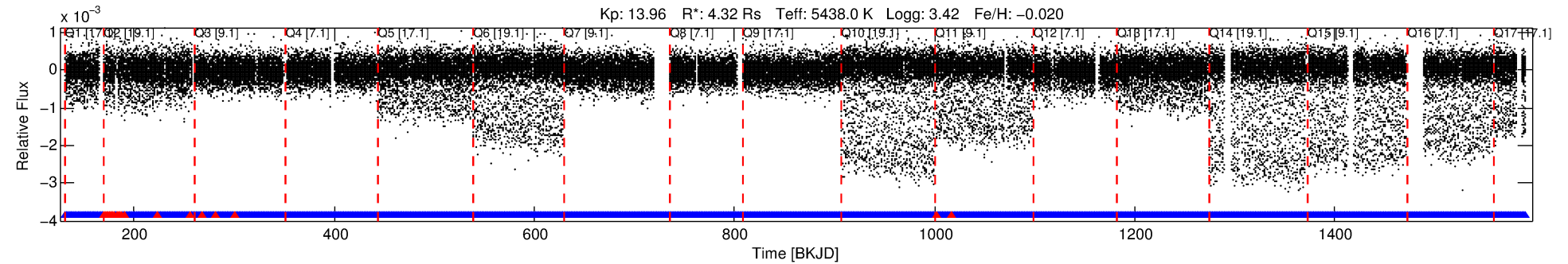
TCE (1)	KIC	Parent (2)	Parent KIC	$P_1:P_2$	Dist ( $''$ )	$\Delta$ Row	$\Delta$ Col	$m_2$	$m_1$	$D_2/D_1$	Mechanism	Flag	$\sigma_P$	$\sigma_T$
010342065-01	10342065	V2083-Cyg-pri	10342012	1:2	58.9	-5	-13	6.90	13.96	343.12	Direct-PRF	0	0.10	2.74

**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: 10342065 Candidate: 1 of 1 Period: 0.934 d

KOI: K01157.01 Corr: 0.866



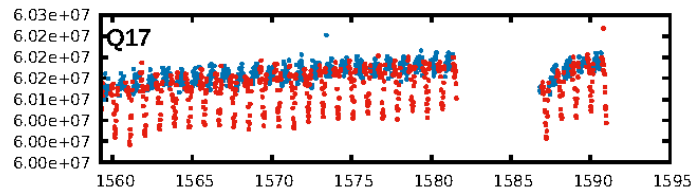
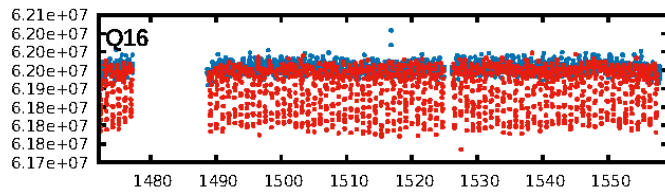
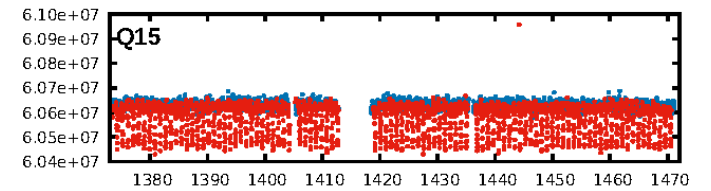
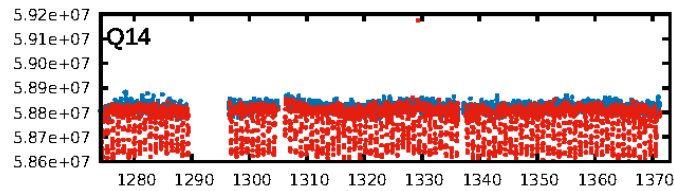
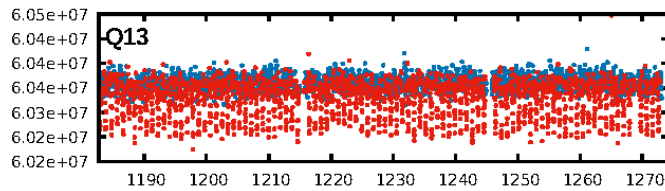
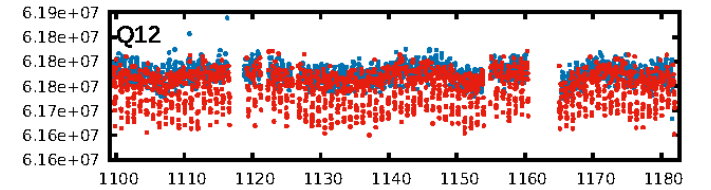
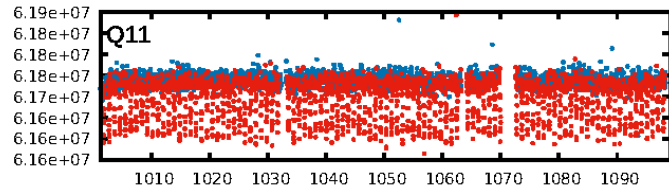
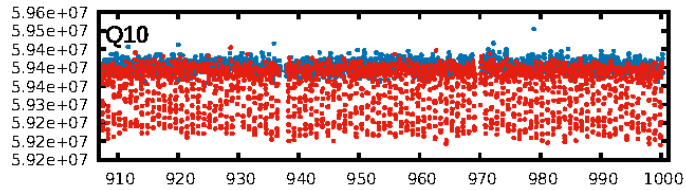
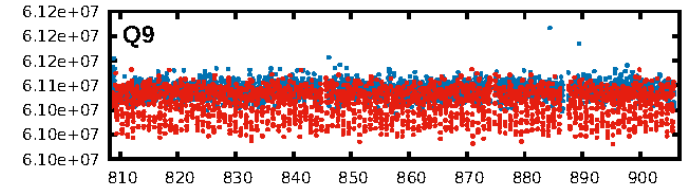
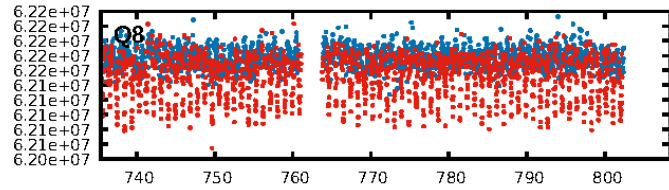
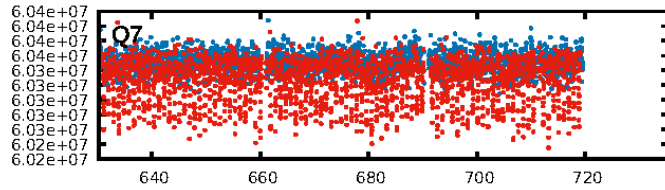
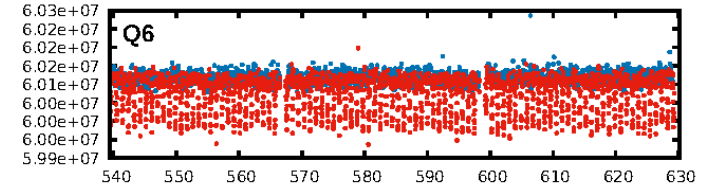
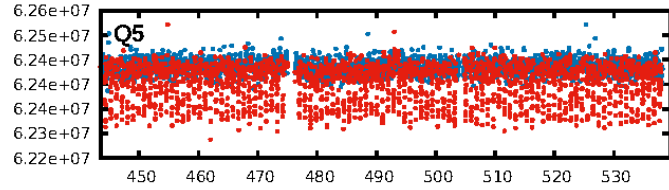
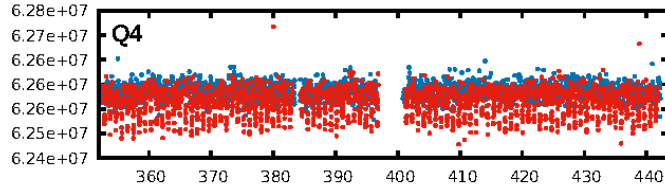
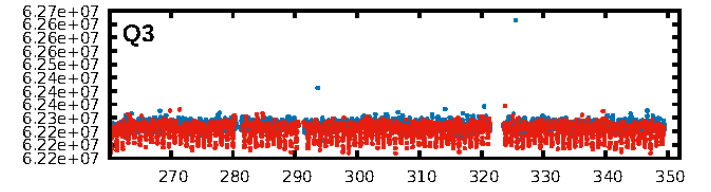
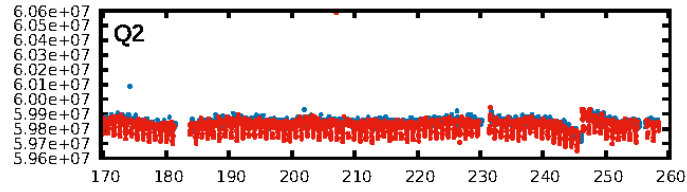
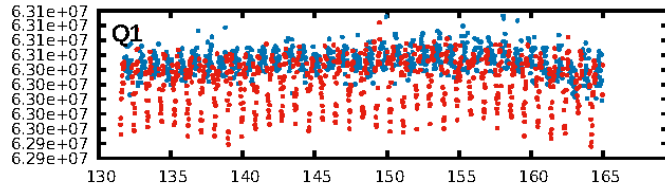
## DV Fit Results:

Period = 0.93367 [0.00000] d  
Epoch = 131.5717 [0.0006] BKJD  
Rp/R\* = 0.0321 [0.0013]  
a/R\* = 1.09 [0.00]  
b = 0.98 [0.00]  
Seff = 28182.56 [38901.13]  
Teff = 3304 [1140] K  
Rp = 15.13 [11.45] Re  
a = 0.0228 [0.0185] AU  
Ag = N/A  
Teffp = N/A

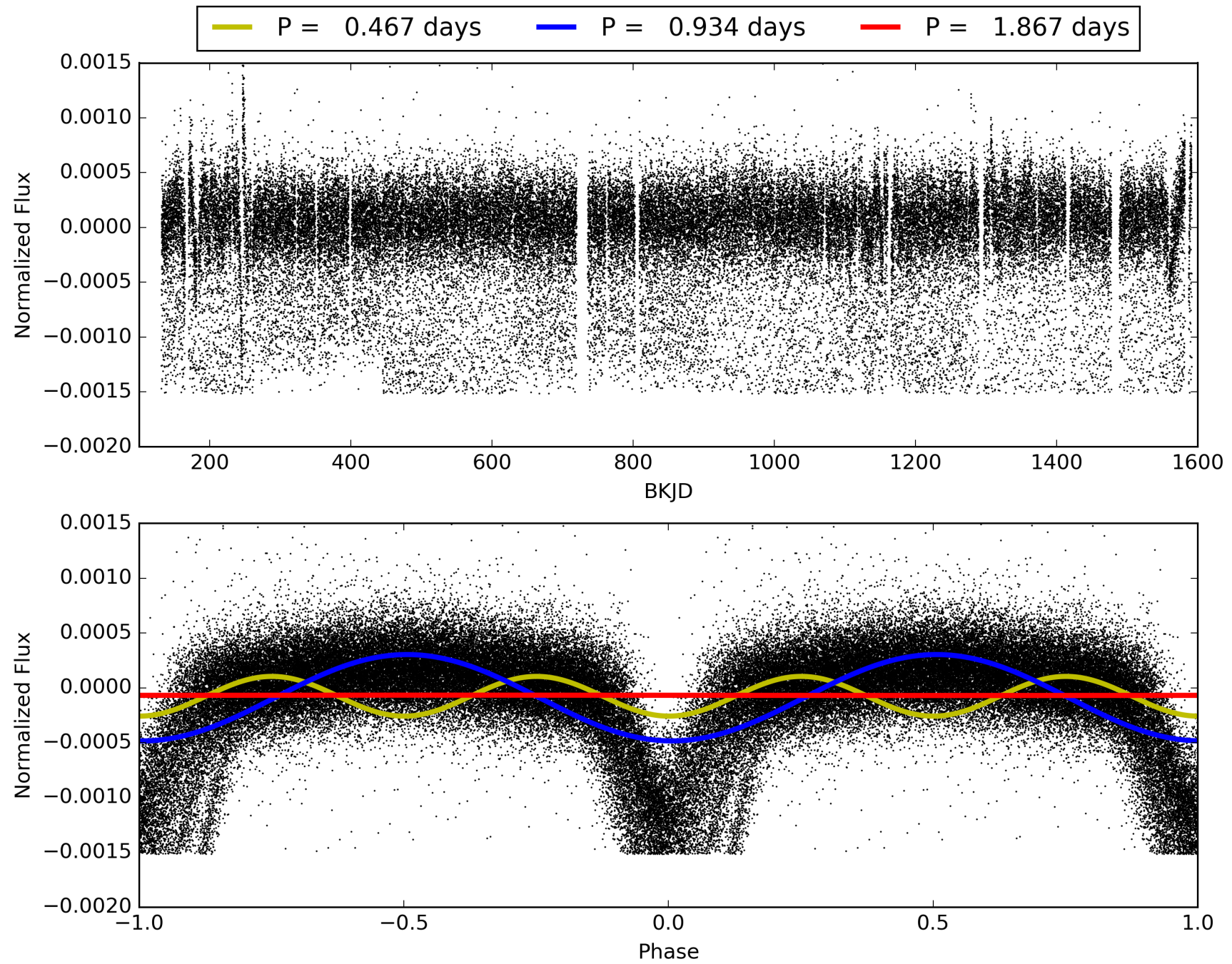
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: N/A  
ModelChiSquareGof-sig: N/A  
Bootstrap-pfa: 0.00e+00  
RollingBand-fgt: 0.98 [1351/1378]  
GhostDiagnostic-chr: -0.01261  
Centroid-sig: 0.0%  
Centroid-so: 1.836 arcsec [28.19 $\sigma$ ]  
OotOffset-rm: 4.171 arcsec [6.61 $\sigma$ ]  
KicOffset-rm: 4.381 arcsec [7.10 $\sigma$ ]  
OotOffset-st: 4/4/4/5 [17]  
KicOffset-st: 4/4/4/5 [17]  
DiffImageQuality-fgm: 0.00 [0/17]  
DiffImageOverlap-fno: 1.00 [17/17]

# TCE 010342065-01, PDC Light Curves



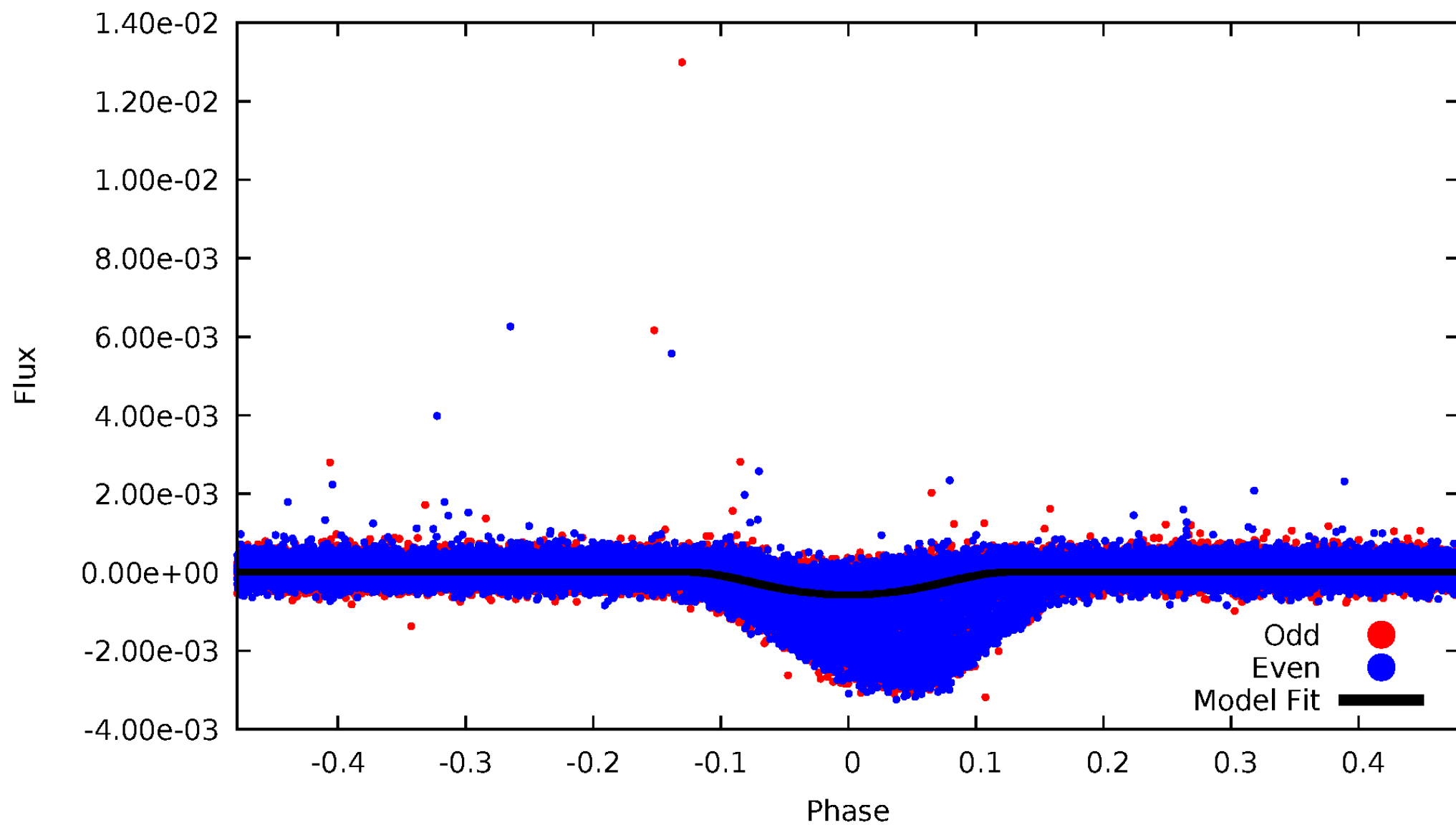
TCE 010342065-01





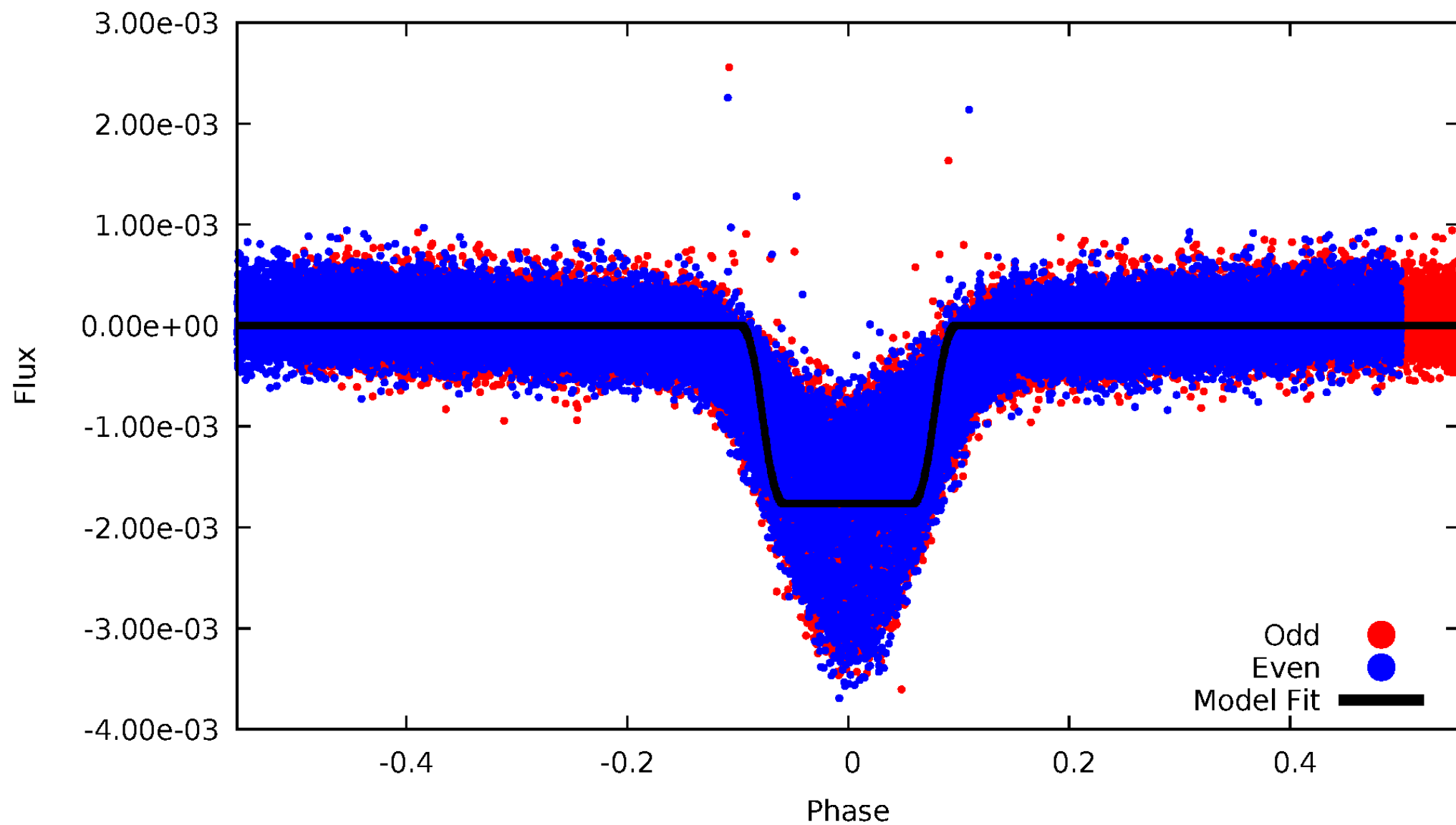
# DV Odd/Even

TCE 010342065-01

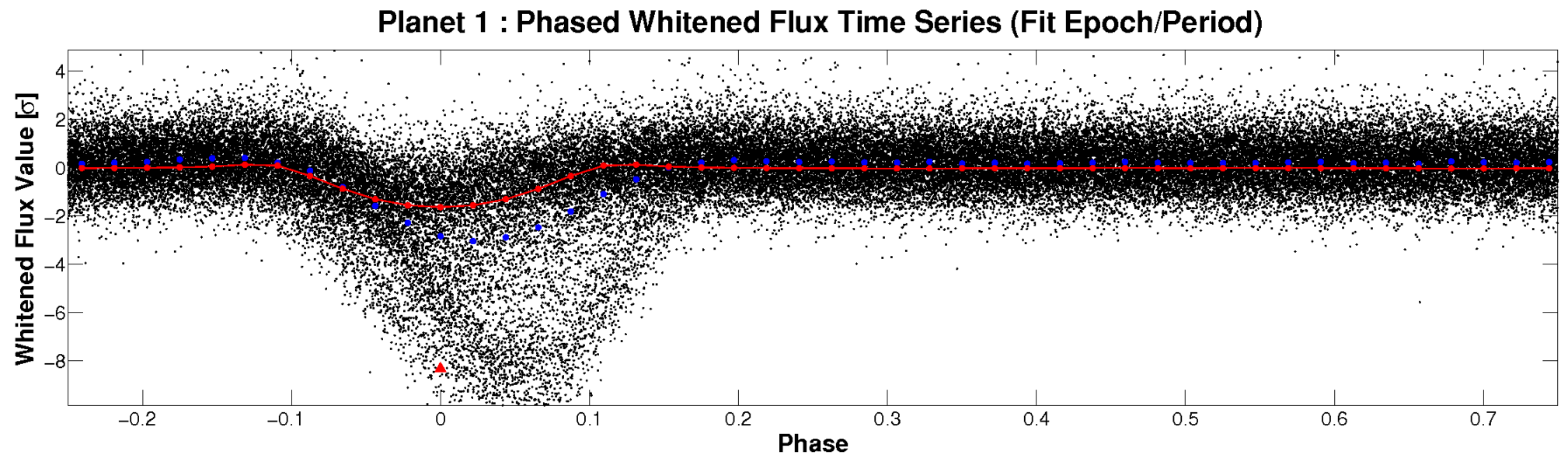
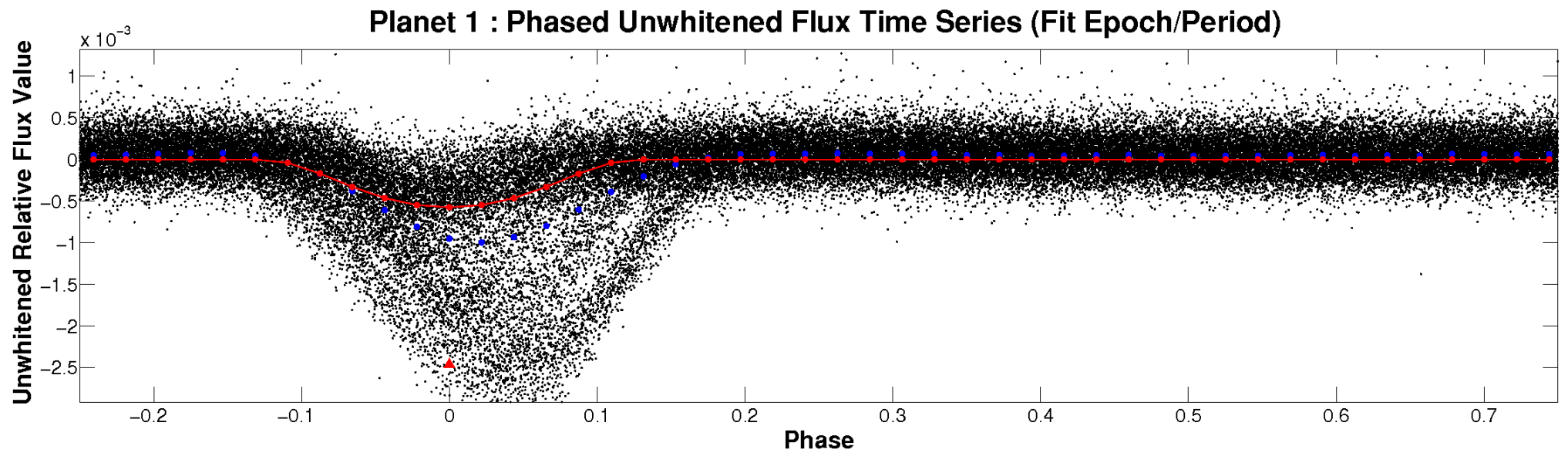


# ALT Odd/Even

TCE 010342065-01

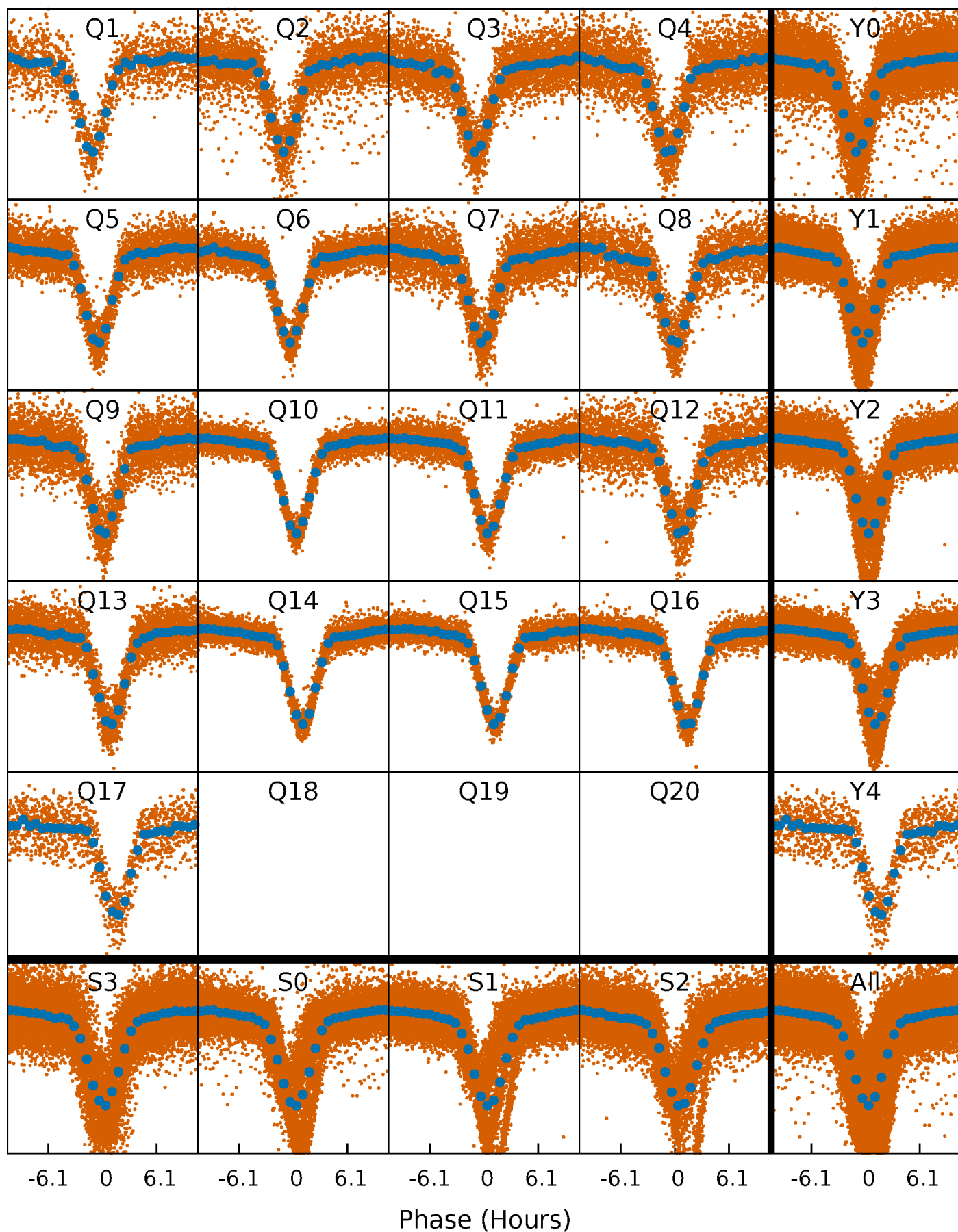


# Non-Whitened Vs. Whitened Light Curve



# PDC Quarter-Phased Transit Curves

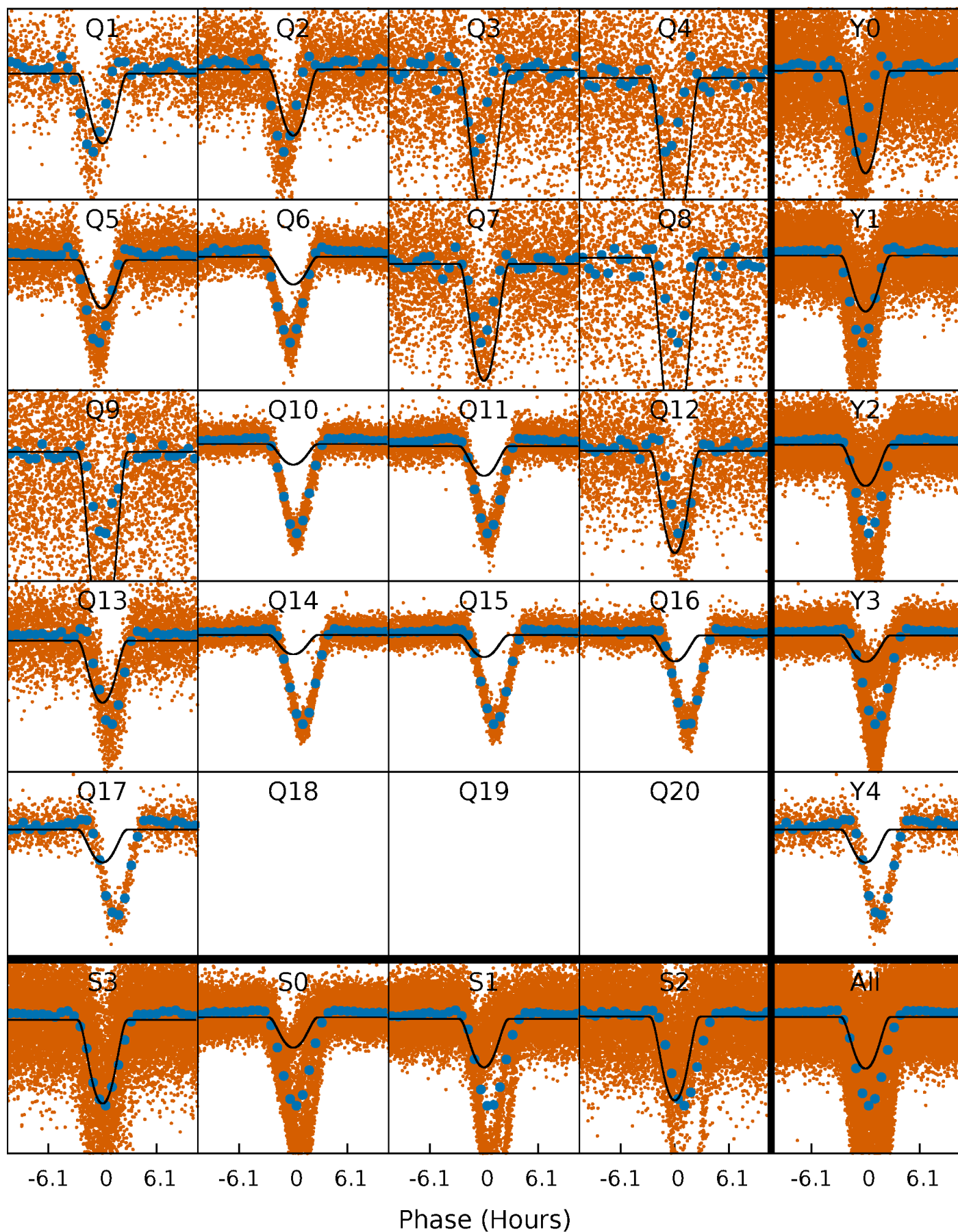
TCE 010342065-01 P= 0.933673 Days  $T_0=131.571668$  (BKJD)





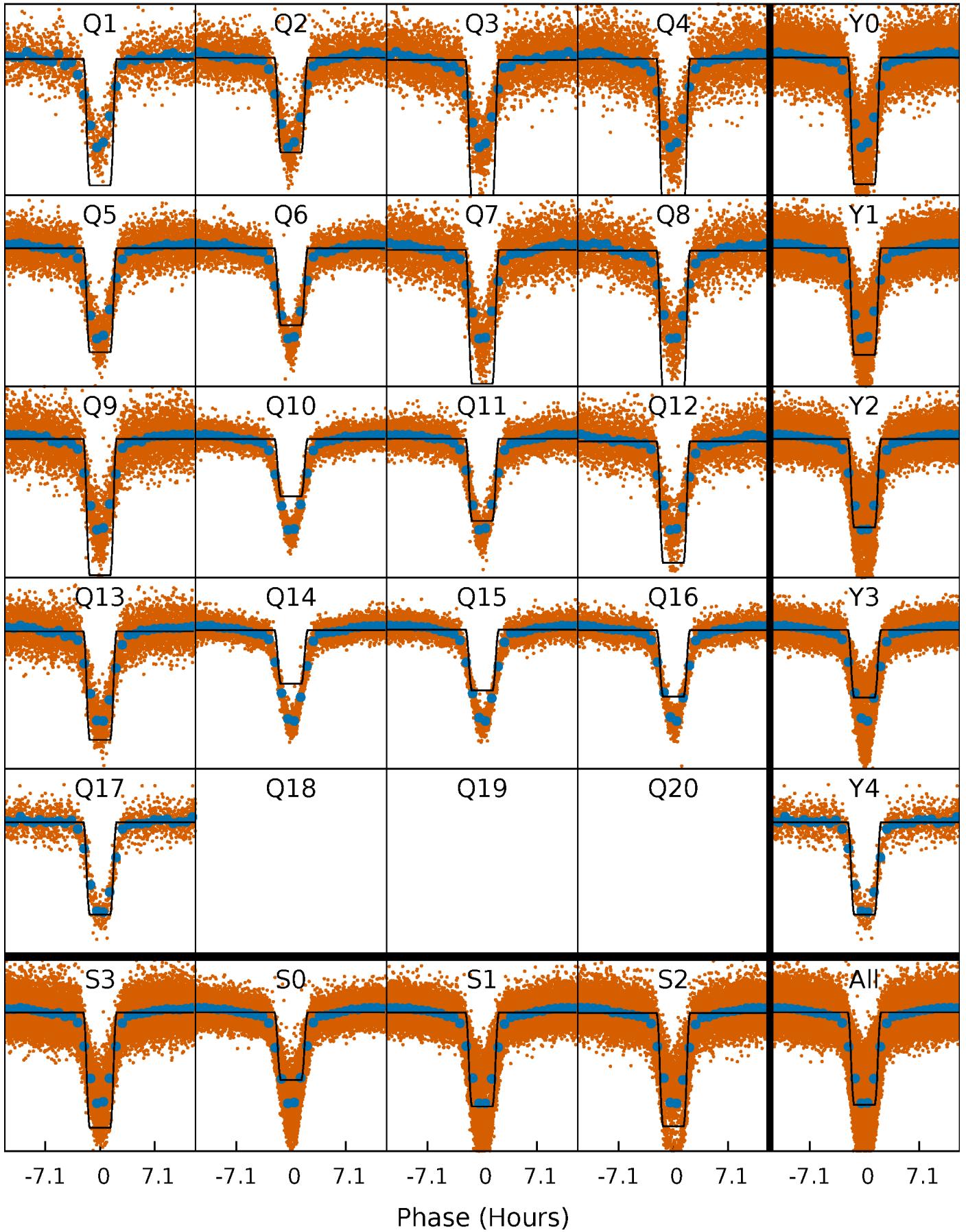
# DV Quarter-Phased Transit Curves

TCE 010342065-01 P= 0.933673 Days  $T_0=131.571668$  (BKJD)



## Alt. Detrend Quarter-Phased Transit Curves

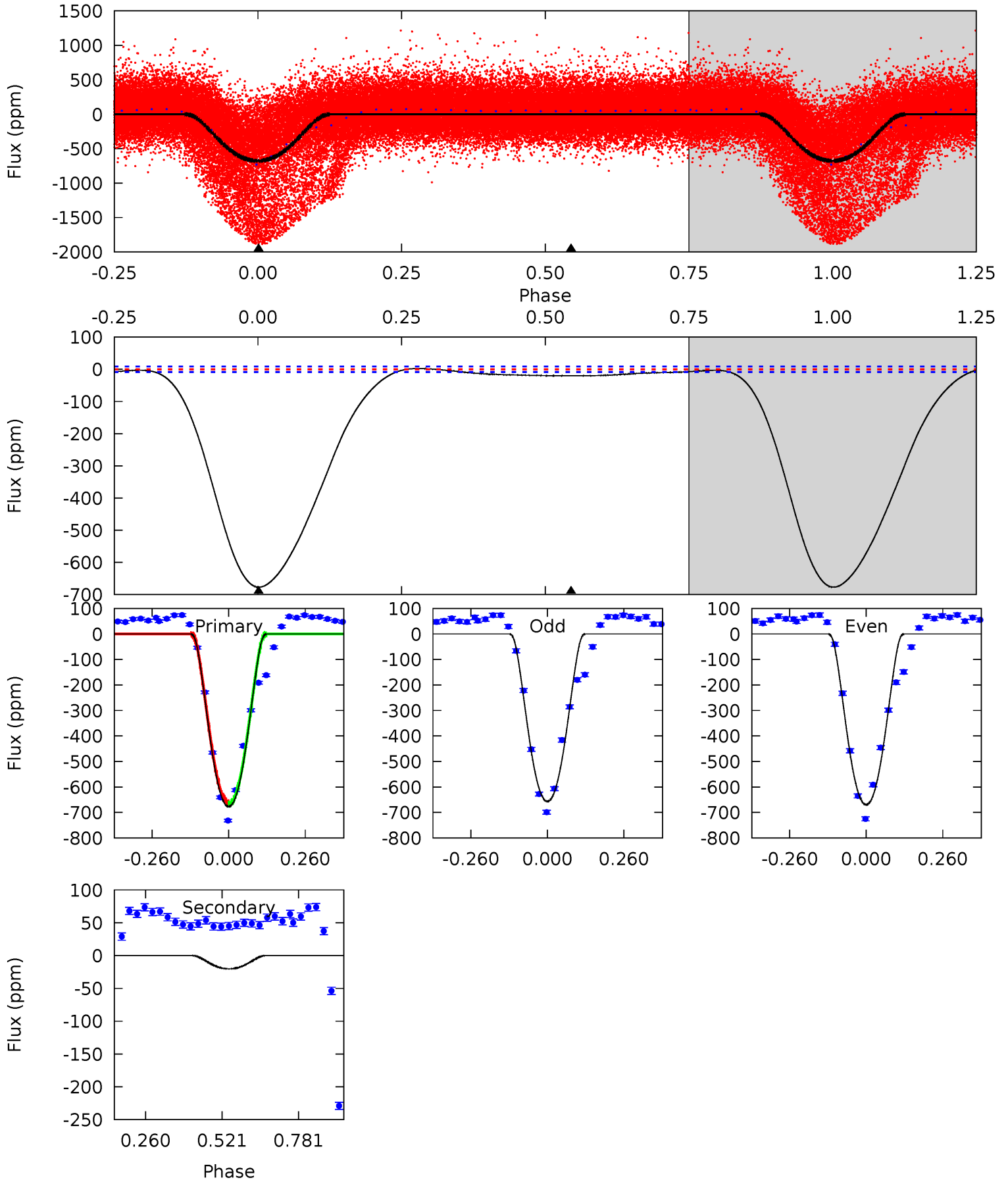
TCE 010342065-01     $P = 0.933740$  Days     $T_0 = 131.525629$  (BKJD)



# DV Model-Shift Uniqueness Test

010342065-01, P = 0.933673 Days, E = 130.637995 Days

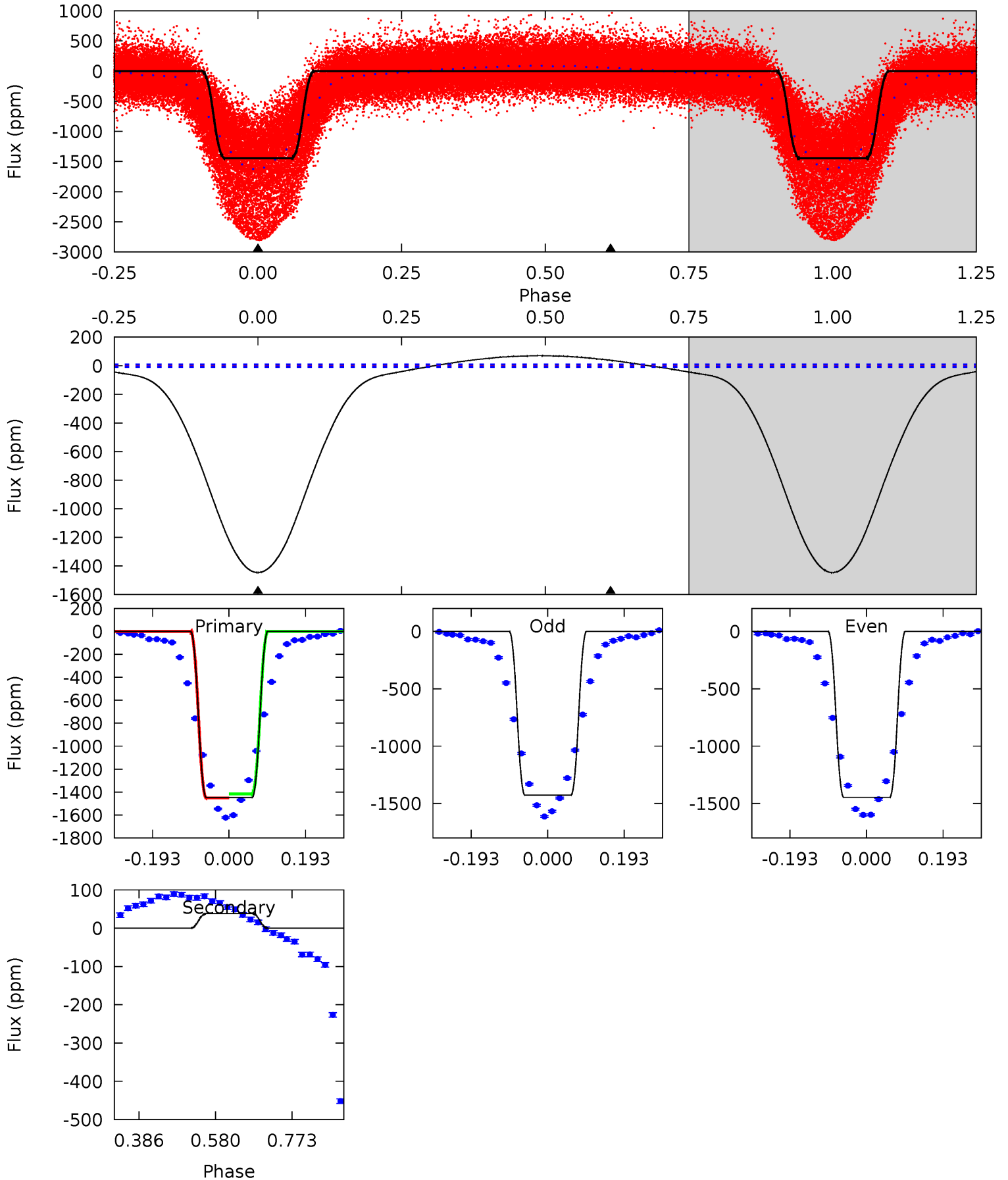
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
346.9	10.4	0	0	4.36	1.13	2.92	346.9	346.9	10.4	10.4	3.29	1.43	0.00	0



# Alt Model-Shift Uniqueness Test

010342065-01, P = 0.933740 Days, E = 130.591889 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
720.8	-19.0	0	0	4.42	1.30	21.6	720.8	720.8	-19.0	-19.0	4.65	1.12	0.05	0



### Stellar Parameters For KIC 010342065

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R$ ( $R_{\odot}$ )	$M$ ( $M_{\odot}$ )	$p_{\star}$ ( $\text{g}\cdot\text{cm}^{-3}$ )
	$5438^{+193}_{-193}$	$3.424^{+0.832}_{-0.156}$	$-0.020^{+0.300}_{-0.300}$	$4.319^{+1.020}_{-3.265}$	$1.807^{+0.208}_{-0.884}$	$0.032^{+0.815}_{-0.013}$
	+4%/-4%	+24%/-5%	+1500%/-1500%	+24%/-76%	+12%/-49%	+2579%/-43%
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 010342065-01 / KOI 1157.01

Detrend	Depth (ppm)	$R_p$ ( $R_{\oplus}$ )	$T_{\text{max}}$ (K)	$T_{\text{obs}}$ (K)	$A_{\text{obs}}$
DV	$-20 \pm 2$	$14.41^{+2.71}_{-5.73}$	$4494^{+433}_{-912}$	$-3913^{+617}_{-290}$	$0.028^{+0.040}_{-0.008}$
Alt.	$38 \pm 2$	$18.85^{+3.47}_{-7.54}$	$4490^{+428}_{-877}$	$-4046^{+484}_{-269}$	$-0.031^{+0.008}_{-0.044}$

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



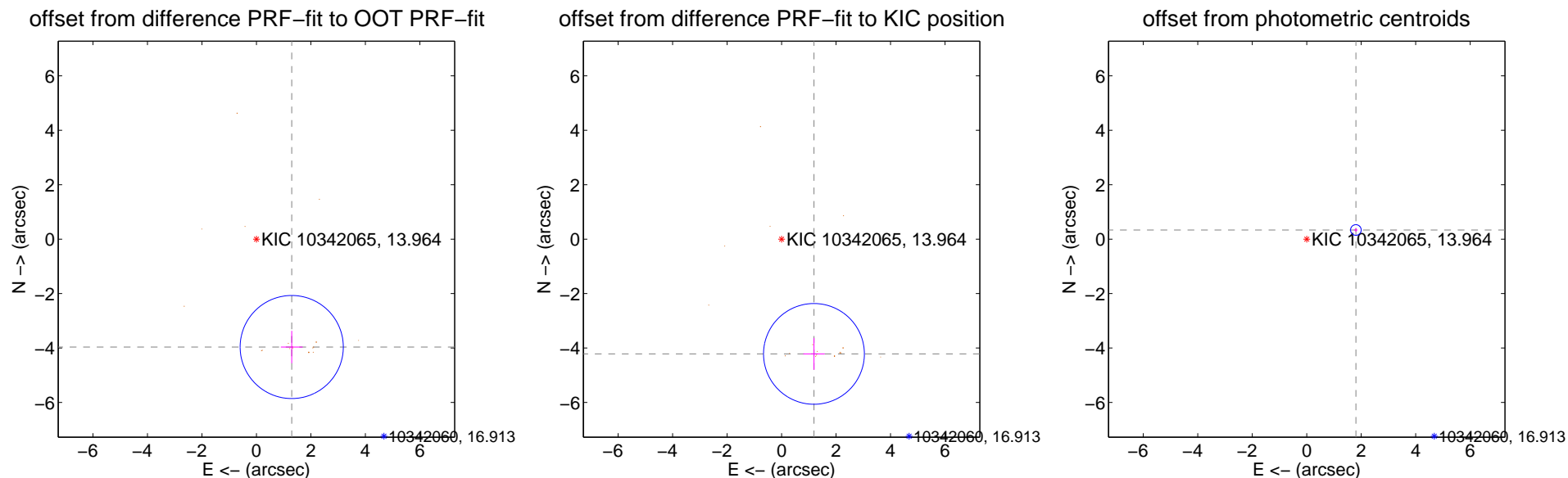
## DV Centroid Data

Supplemental centroid analysis for 010342065-01. Kepler magnitude: 13.96. Transit SNR 113.91

There are 0 quarters with good PRF difference image offsets

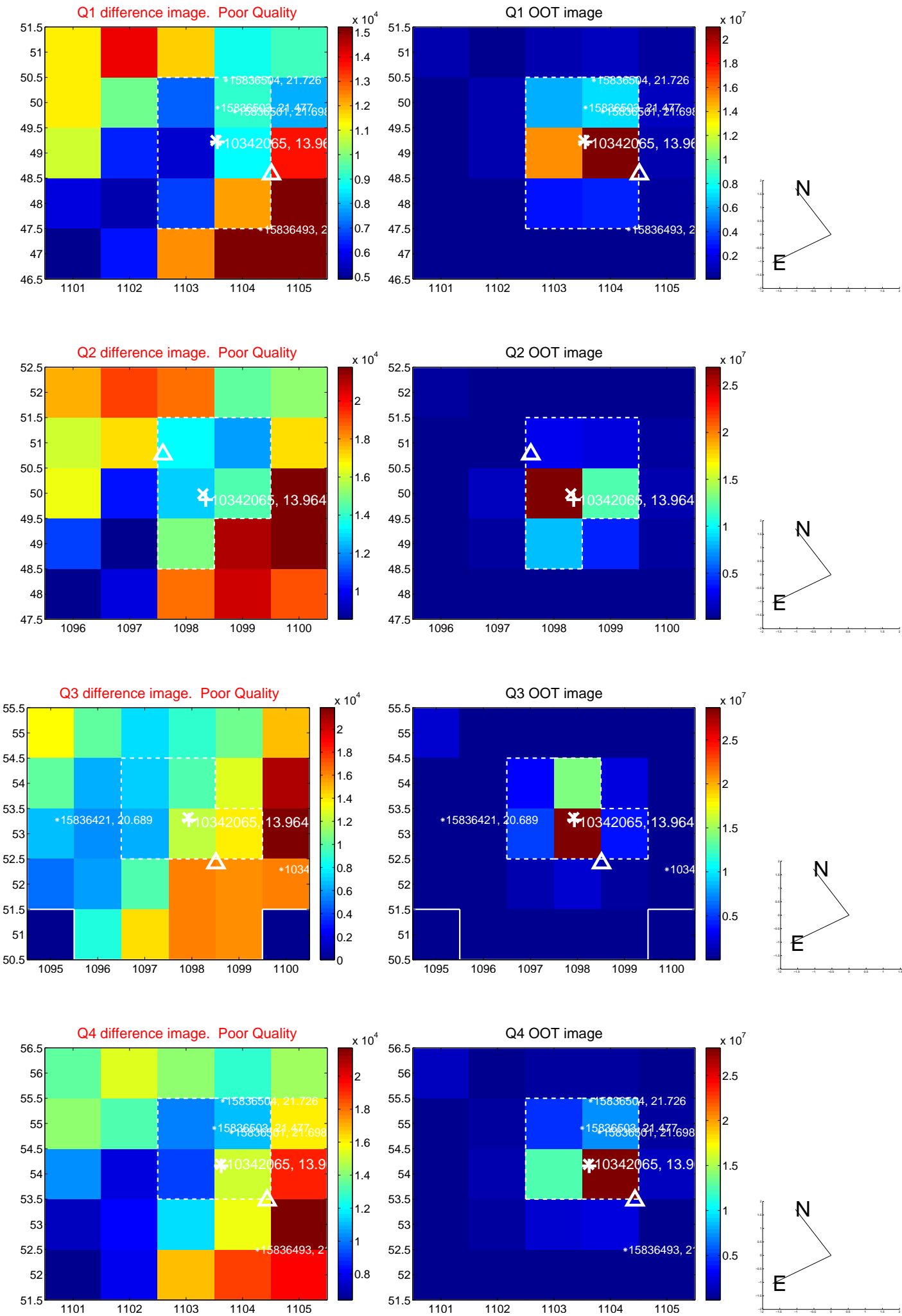
The direct PRF centroid is offset from the target star catalog position by about 0.22 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$4.171 \pm 0.631$	6.61	$-1.296 \pm 0.401$	$-3.964 \pm 0.593$
PRF-fit source offset from KIC position	$4.381 \pm 0.617$	7.10	$-1.189 \pm 0.392$	$-4.217 \pm 0.582$
photometric centroid source offset	$1.84 \pm 0.07$	28.19	$-1.80 \pm 0.07$	$0.34 \pm 0.06$

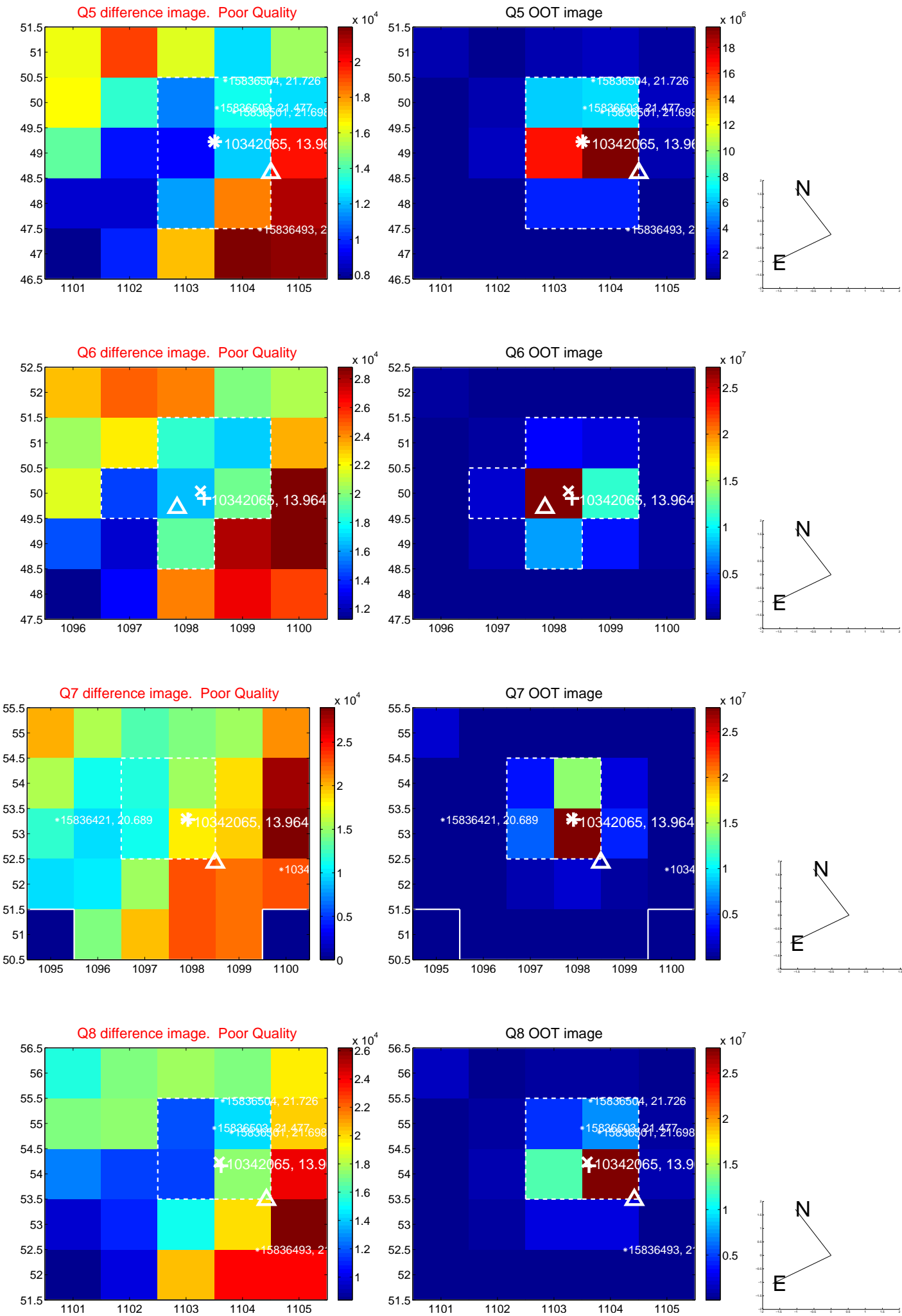


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: three-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

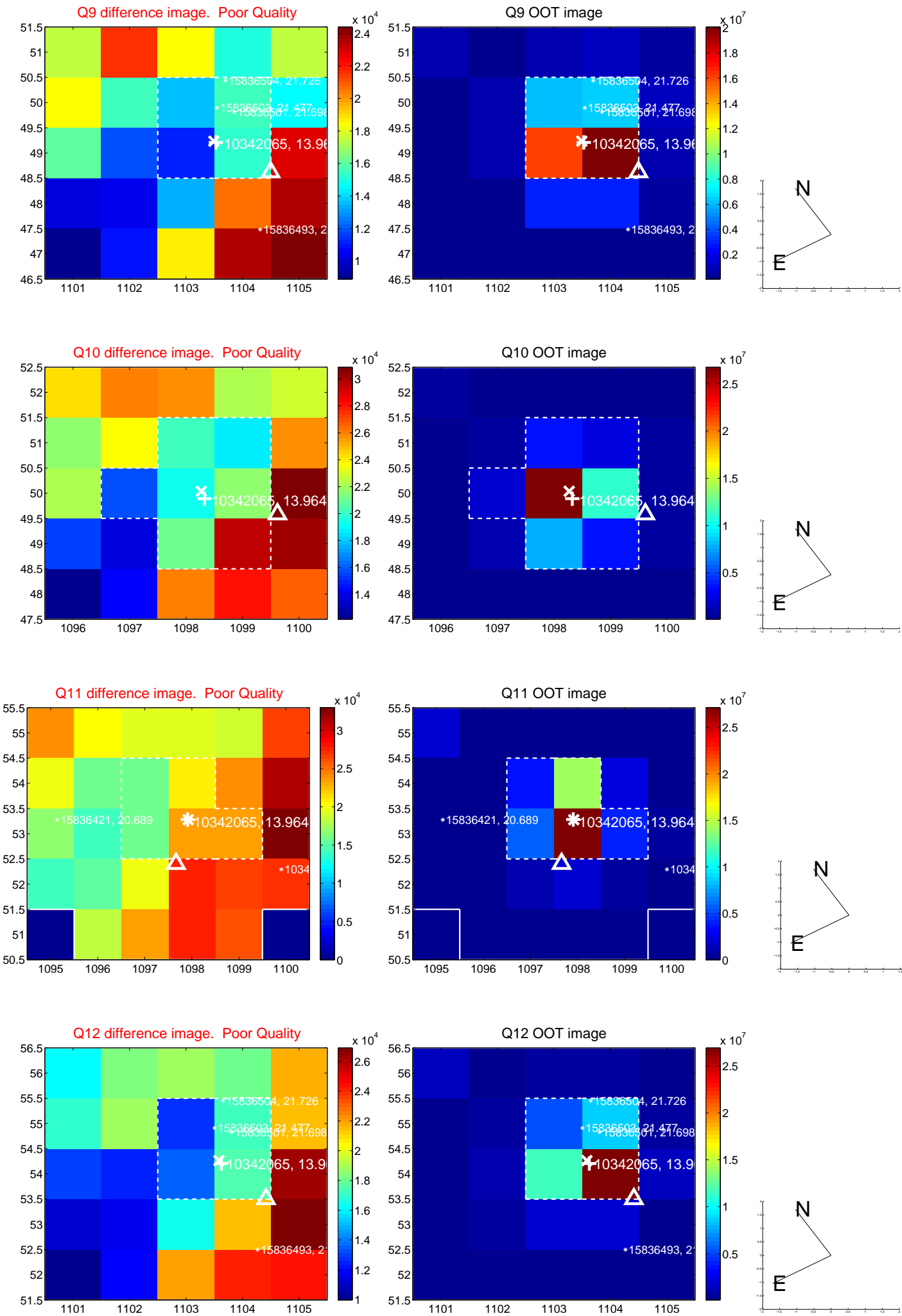
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



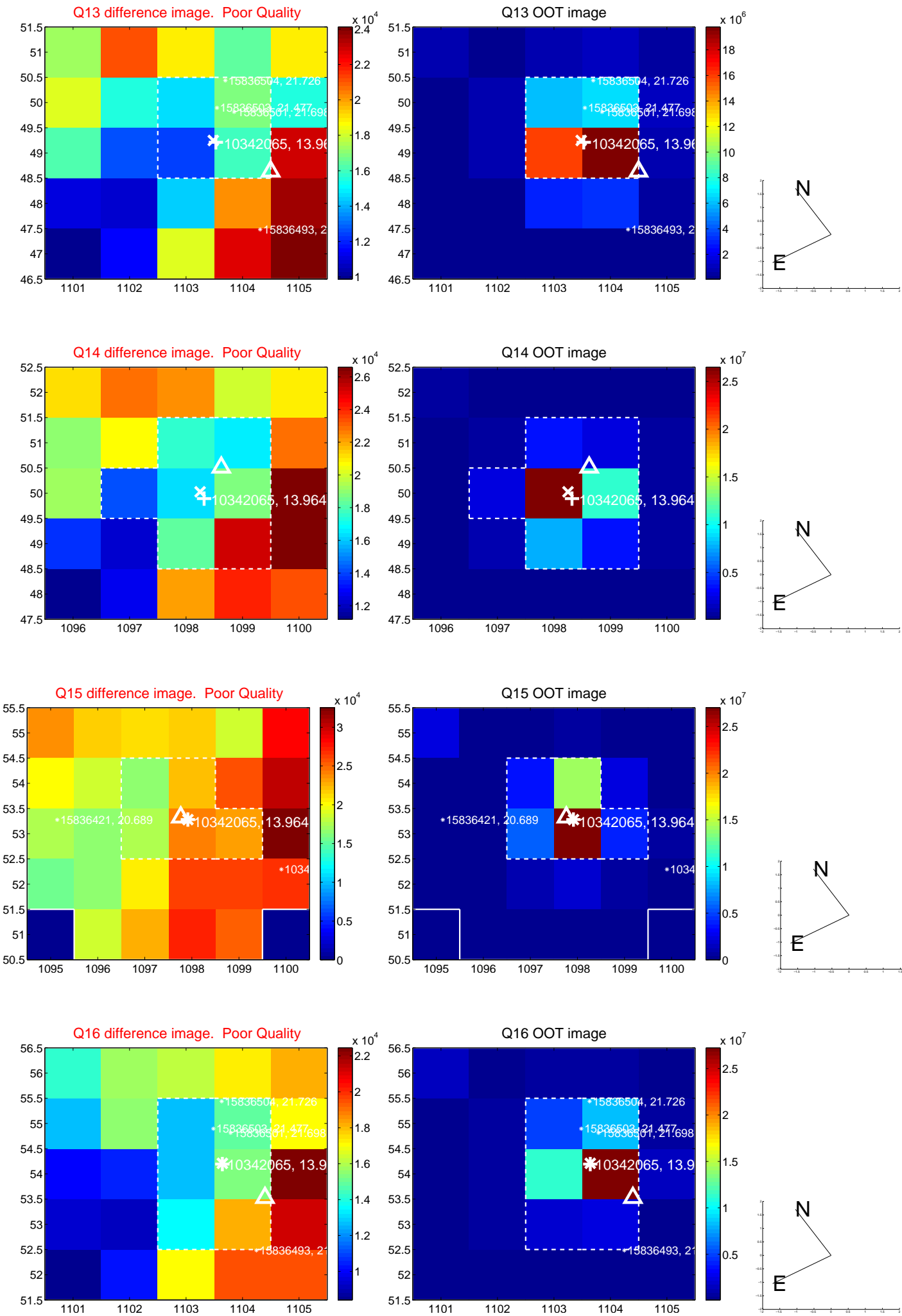
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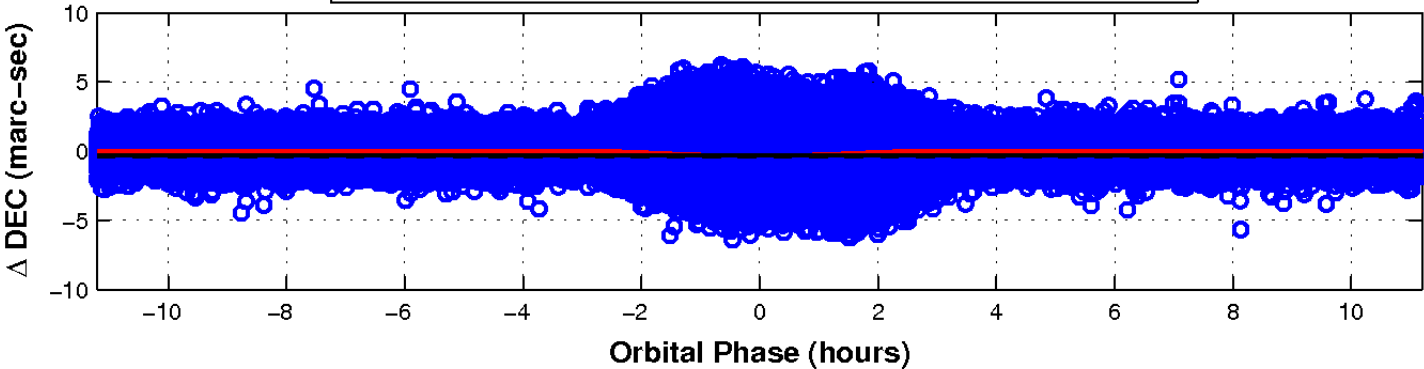
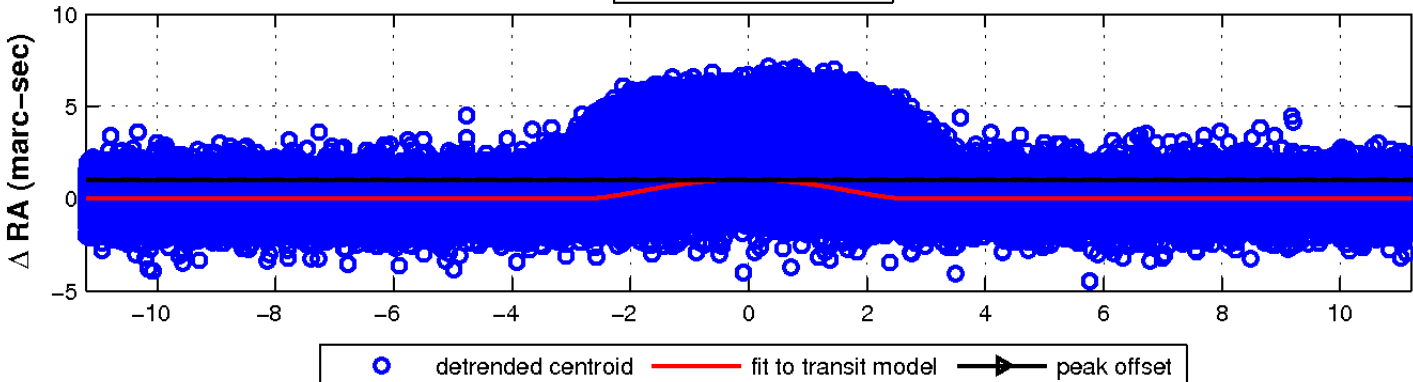
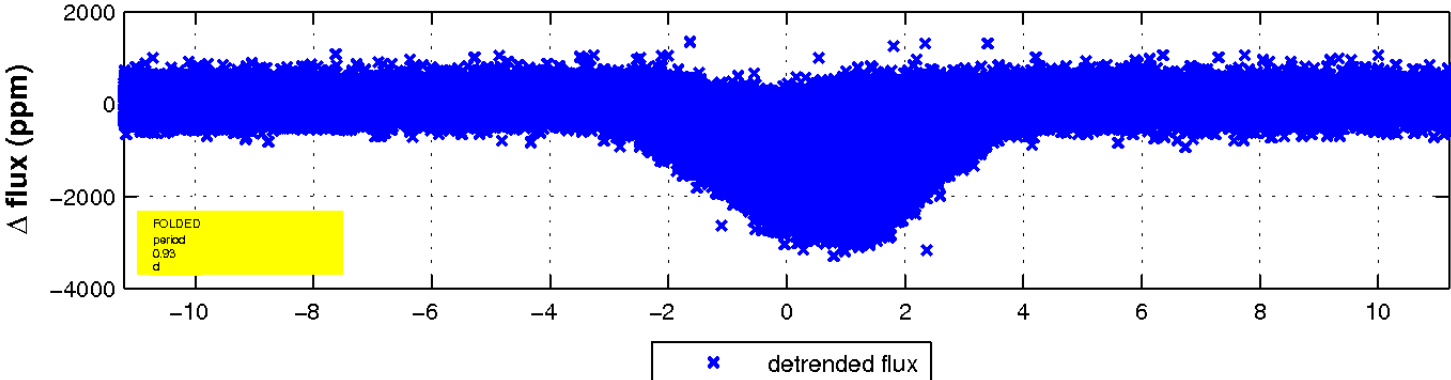
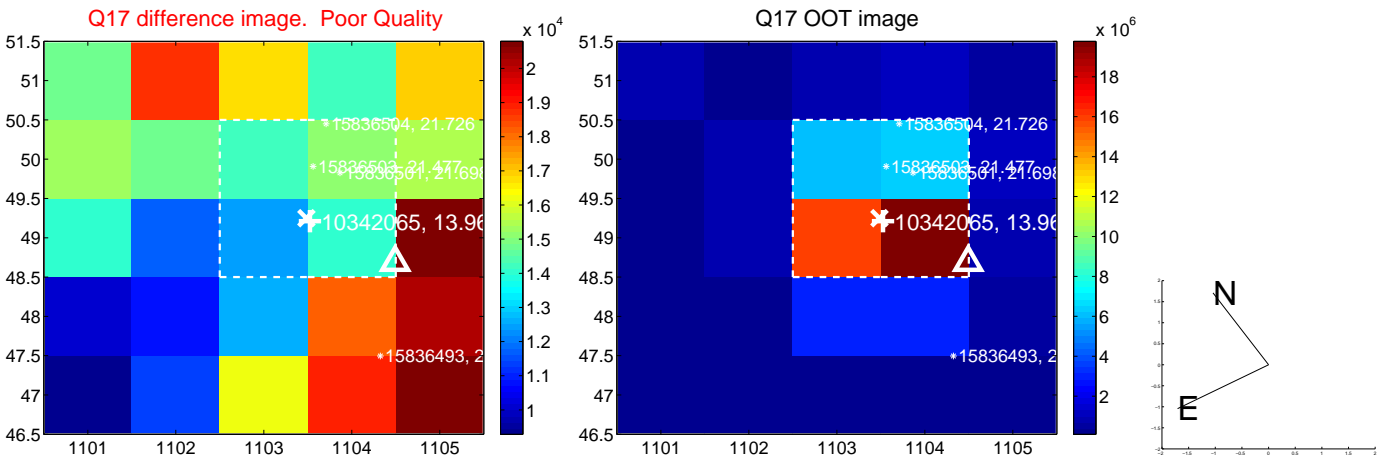


white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.





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



UKIRT Image

