

# KIC 009651065

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
009651065-01	OBS	No	1.340850	131.837514	160.2	16.090	14.6	27.7	2.62	7014	4.27	18412.72

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
009651065-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—CENT_SATURATED

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

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

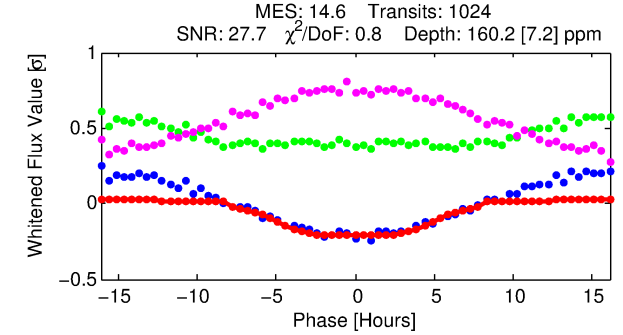
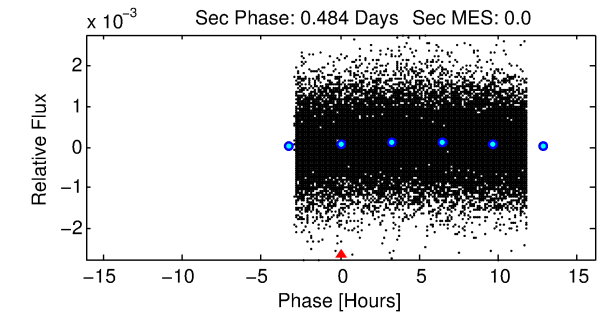
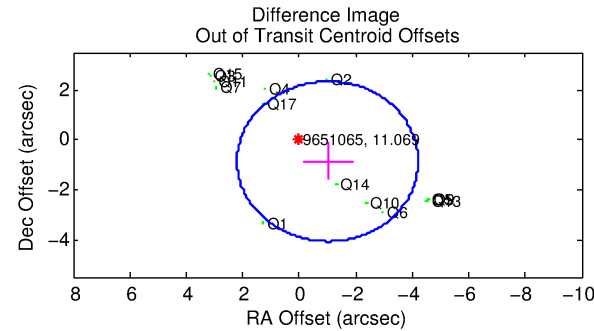
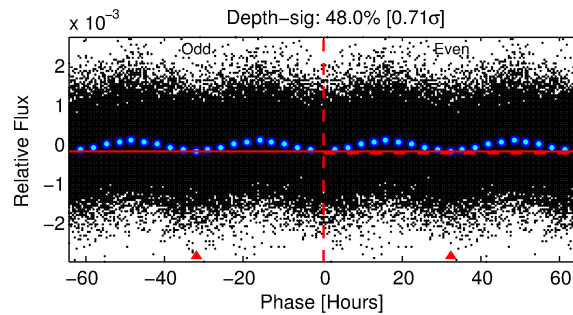
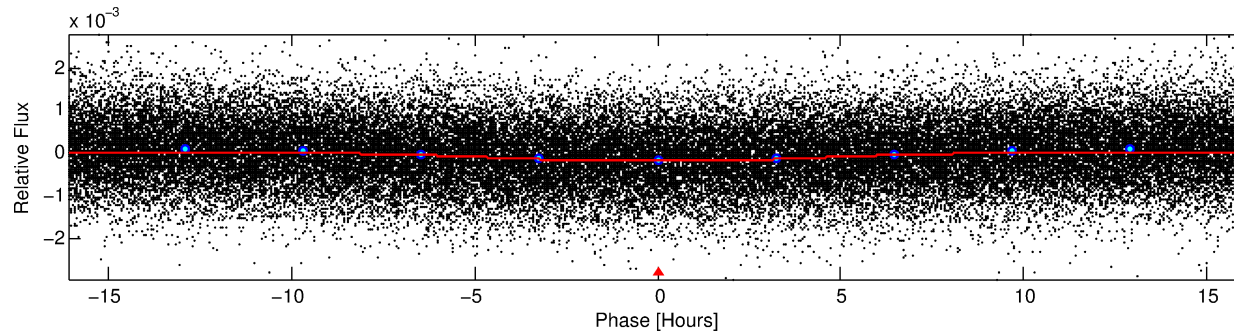
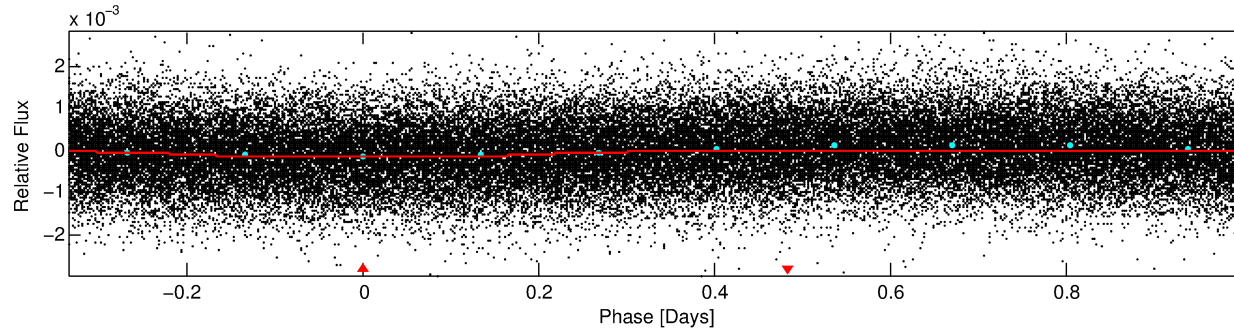
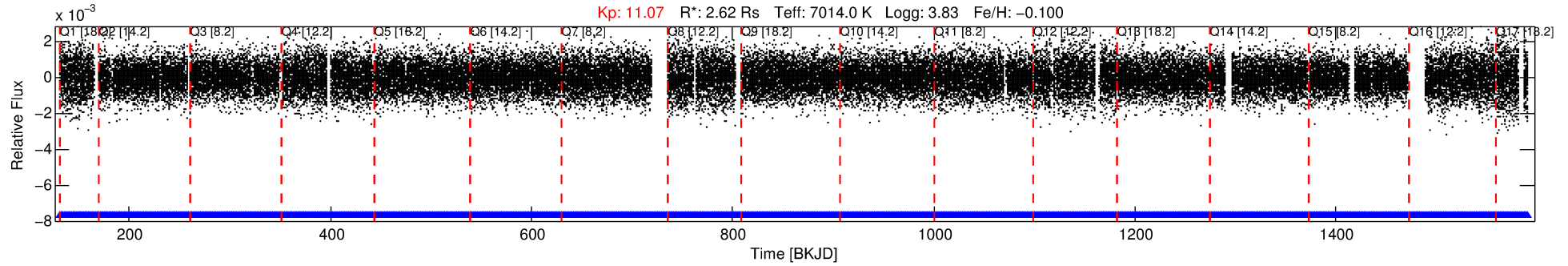
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 009651065-01

No Significant Match Found

# DV One-Page Summary

KIC: 9651065 Candidate: 1 of 1 Period: 1.341 d



## DV Fit Results:

Period = 1.34085 [0.00002] d  
Epoch = 131.8375 [0.0086] BKJD  
Rp/R\* = 0.0149 [0.0005]  
a/R\* = 1.01 [0.00]  
b = 0.97 [0.01]  
Seff = 18412.73 [6325.44]  
Teq = 2970 [255] K  
Rp = 4.27 [1.06] Re  
a = 0.0284 [0.0062] AU  
Ag = N/A  
Teffp = N/A

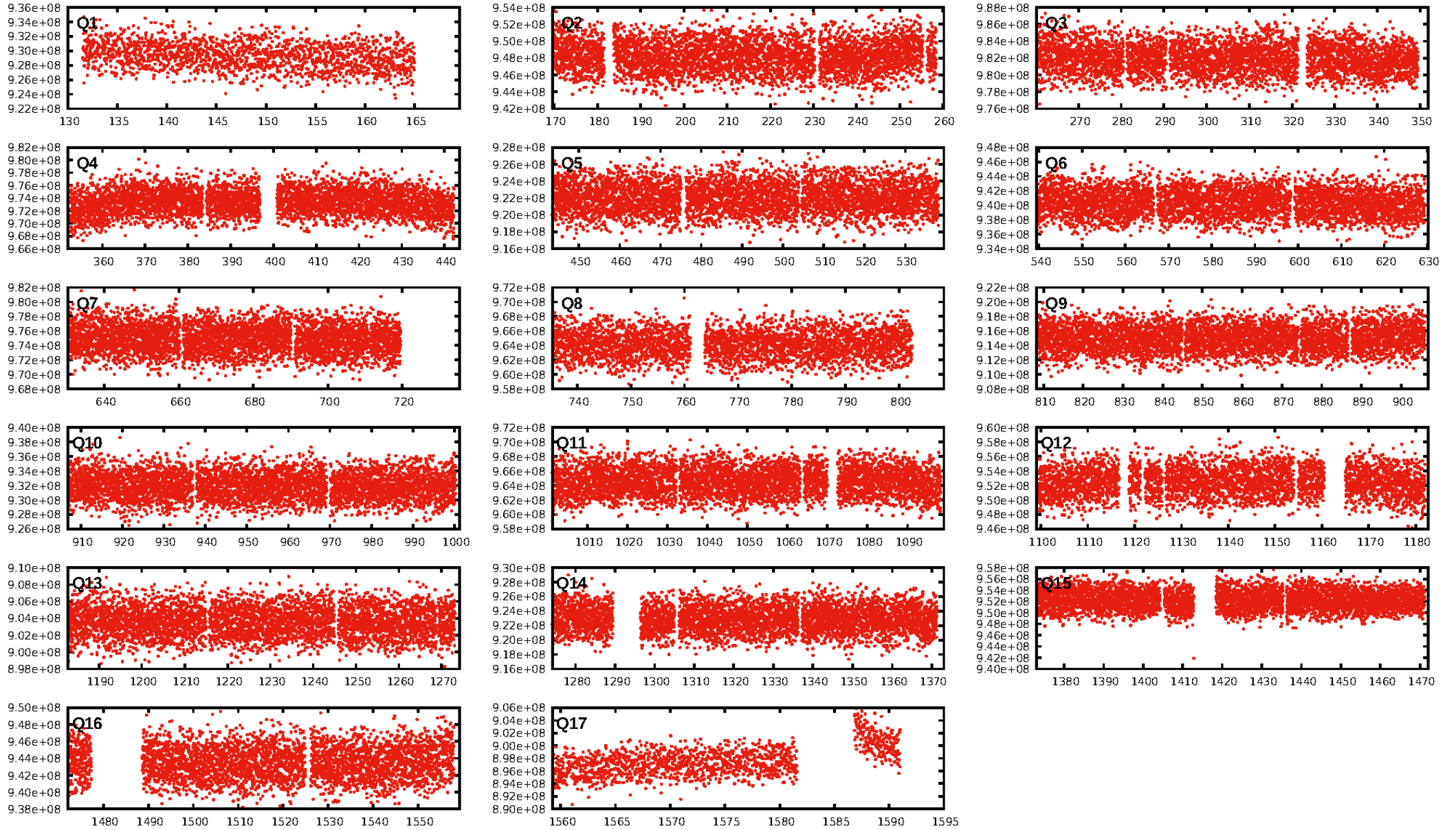
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: N/A  
ModelChiSquareGof-sig: N/A  
Bootstrap-pfa: N/A  
RollingBand-fgt: 1.00 [978/978]  
GhostDiagnostic-chr: 1.615  
Centroid-sig: 0.0%  
Centroid-so: 0.413 arcsec [5.73 $\sigma$ ]  
OotOffset-rm: 1.332 arcsec [1.25 $\sigma$ ]  
KicOffset-rm: 1.704 arcsec [1.94 $\sigma$ ]  
OotOffset-st: 4/4/1/5 [14]  
KicOffset-st: 4/4/1/5 [14]  
DiffImageQuality-fgm: 0.43 [6/14]  
DiffImageOverlap-fno: 1.00 [17/17]

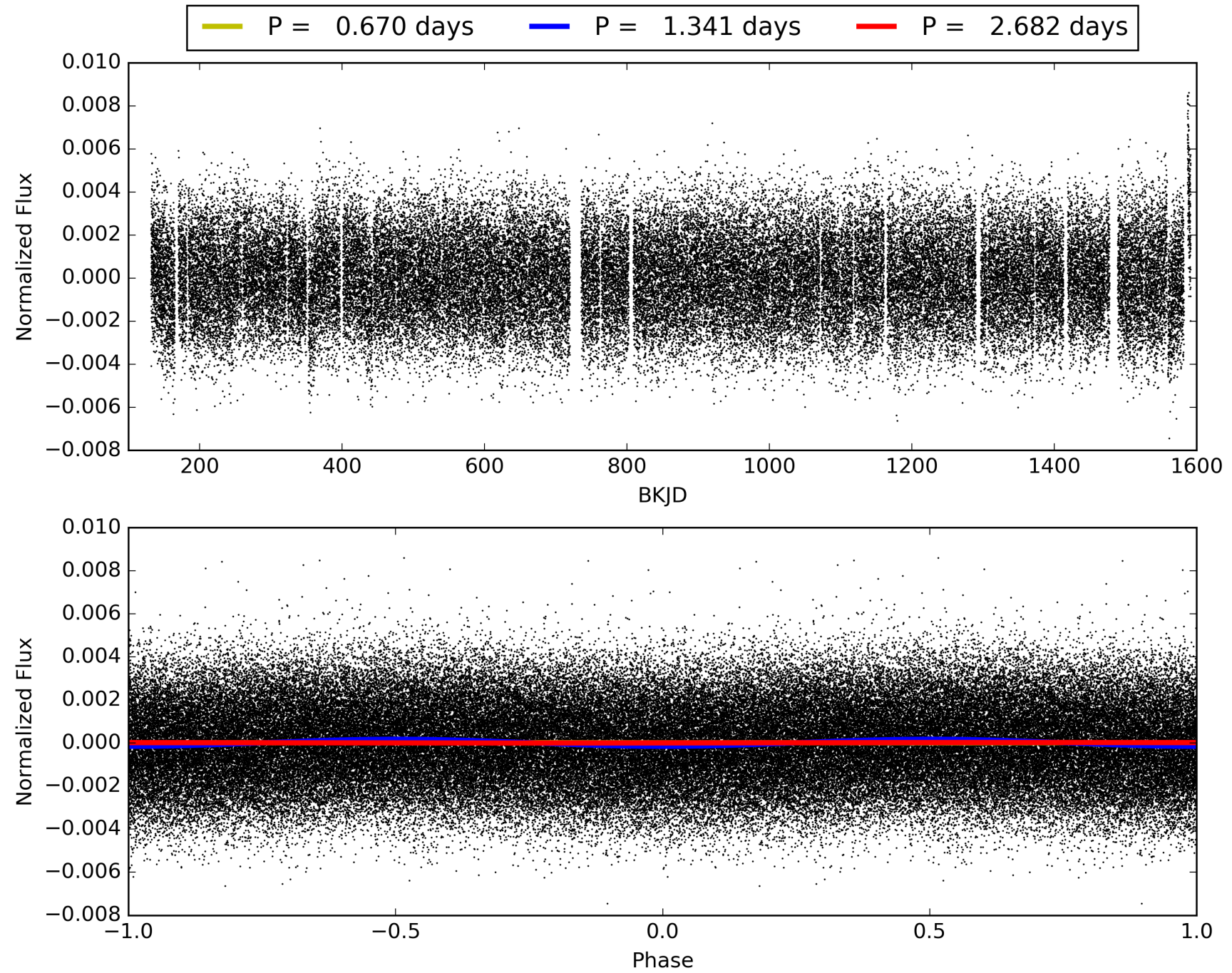
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 06:32:59 Z

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

# TCE 009651065-01, PDC Light Curves



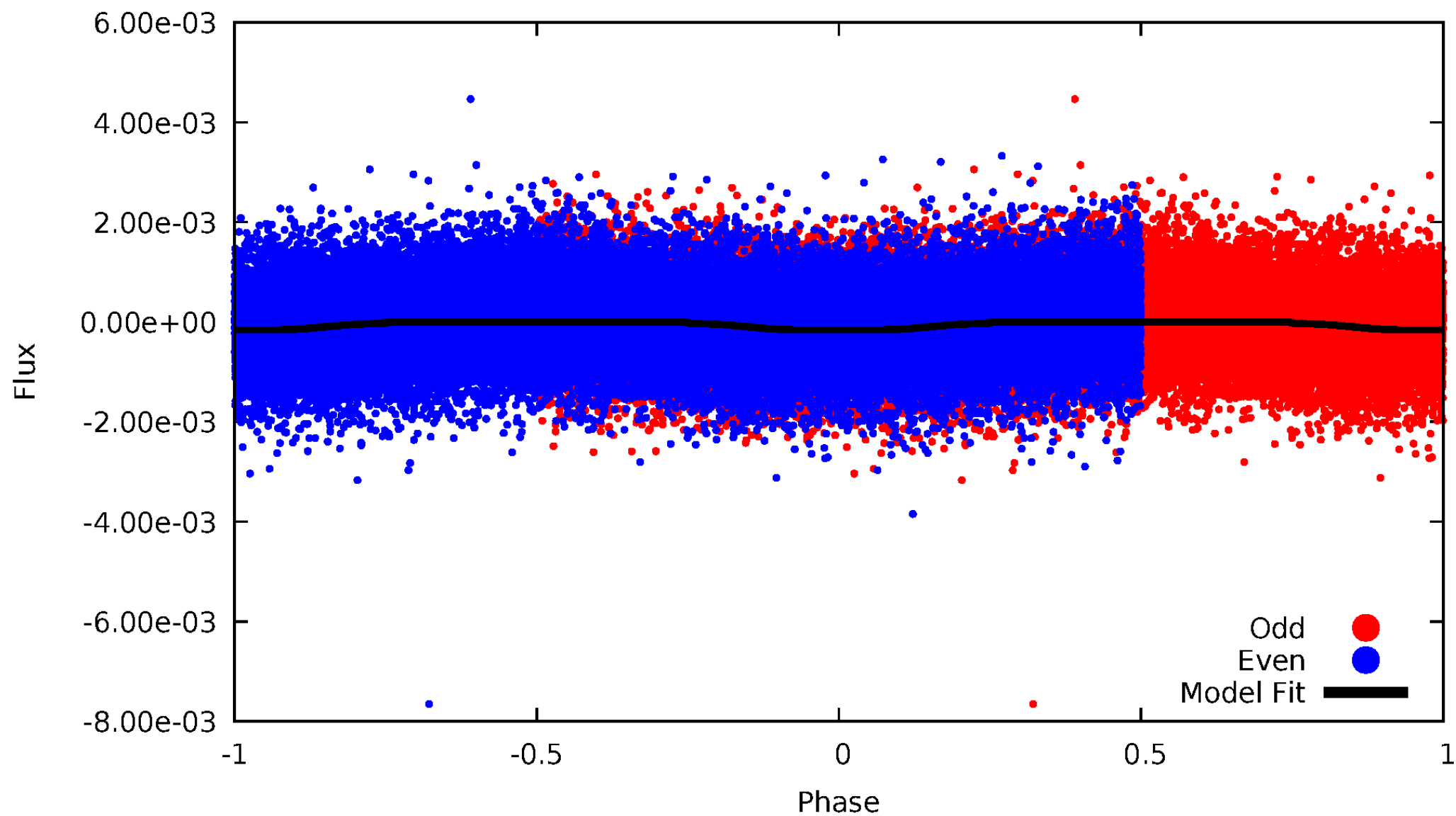
TCE 009651065-01





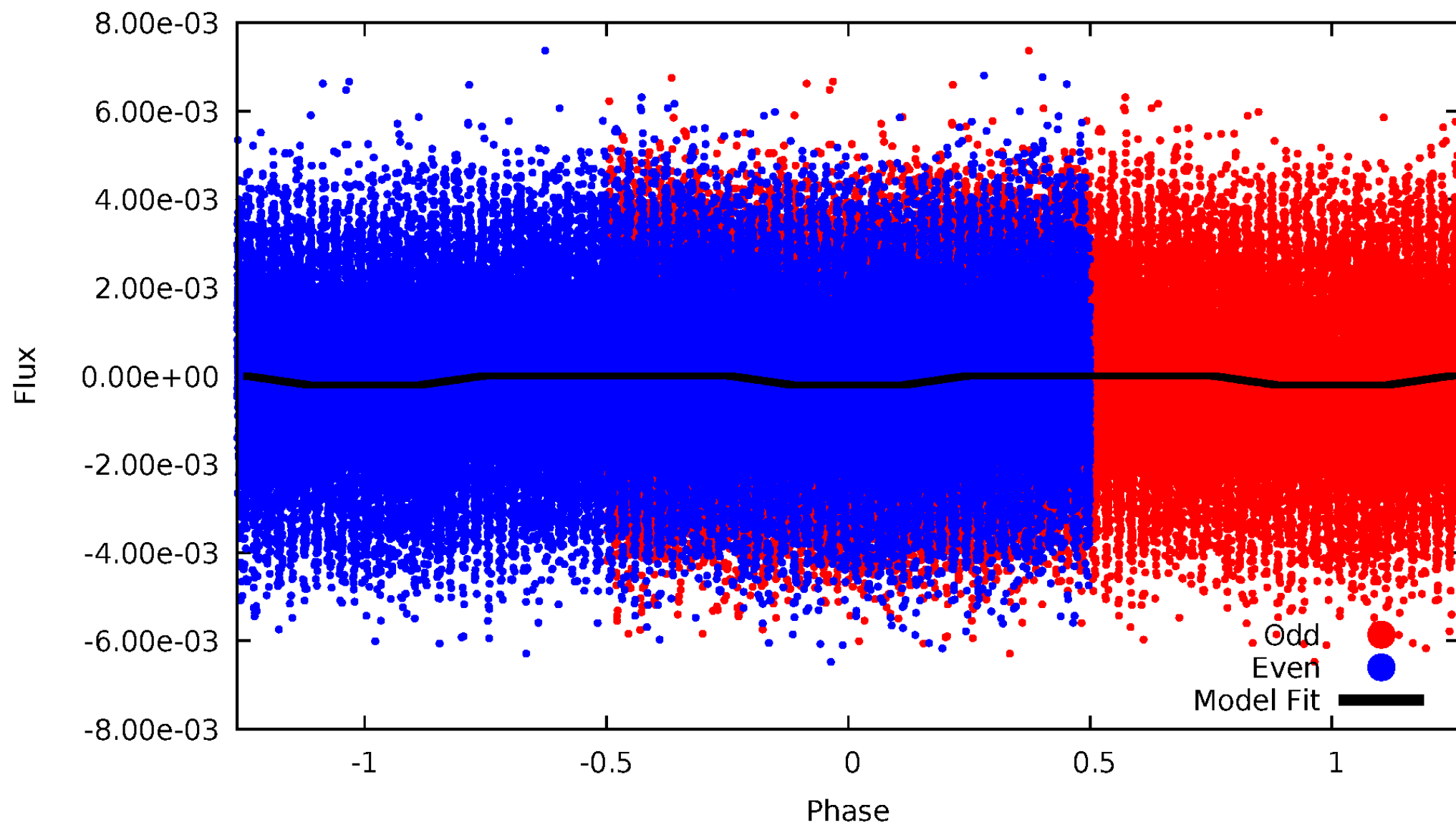
DV Odd/Even

TCE 009651065-01



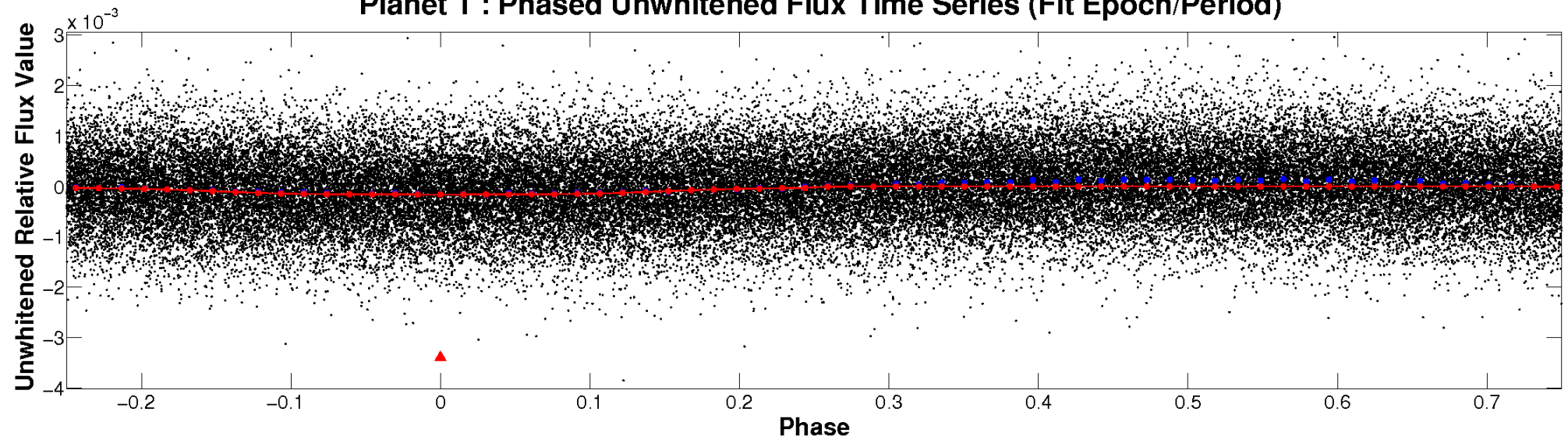
# ALT Odd/Even

TCE 009651065-01

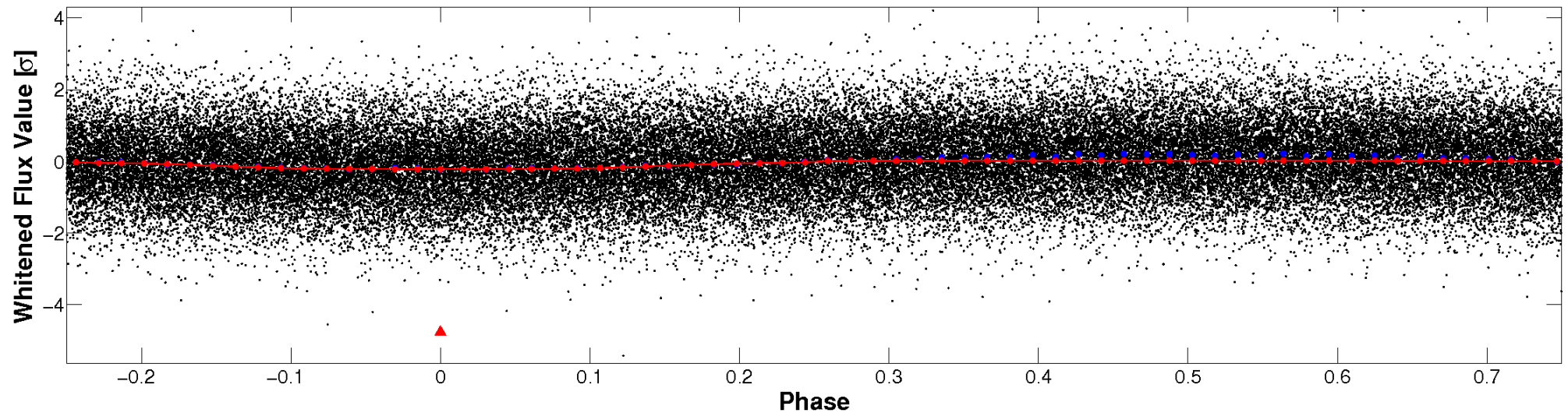


# Non-Whitened Vs. Whitened Light Curve

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

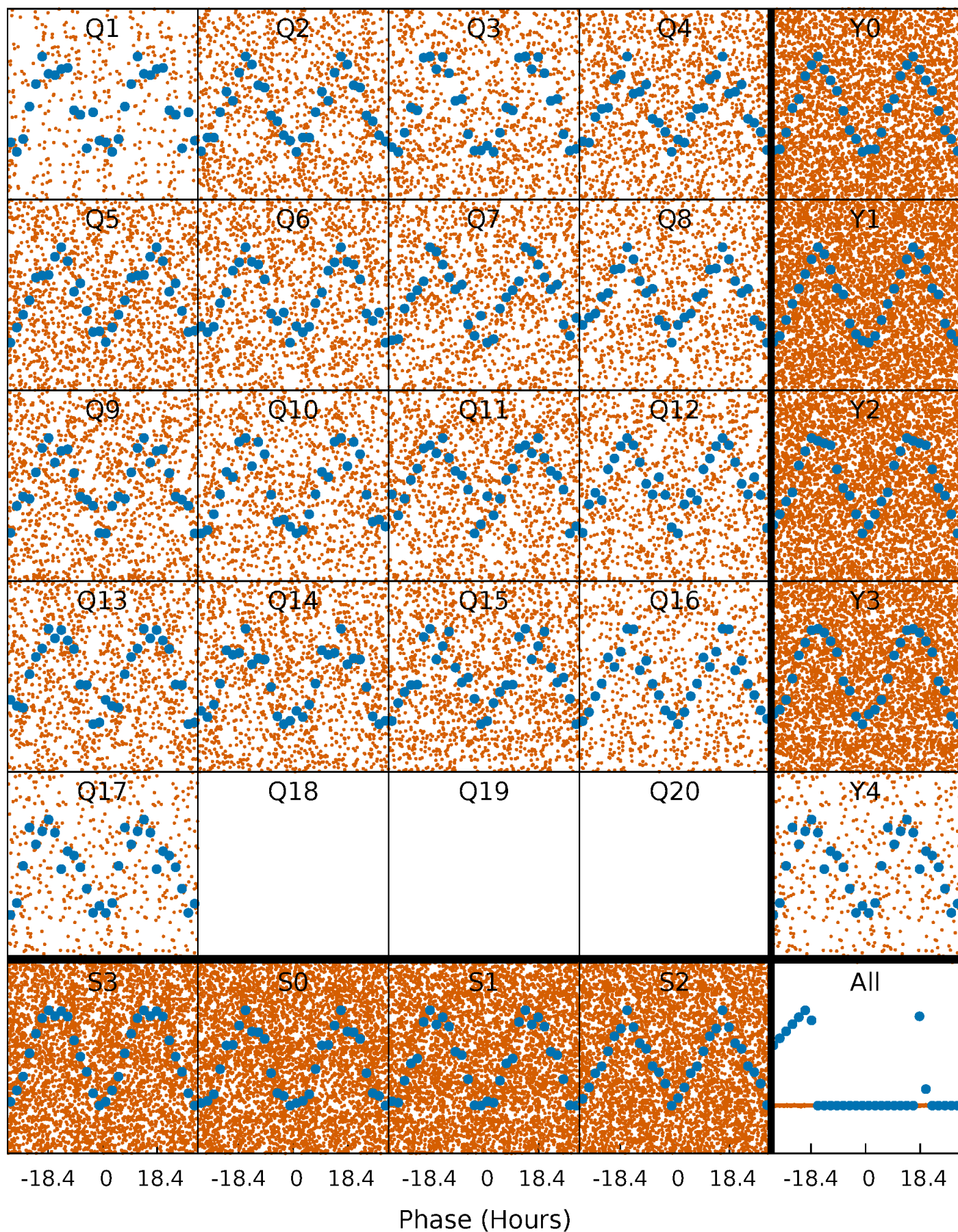


**Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)**



# PDC Quarter-Phased Transit Curves

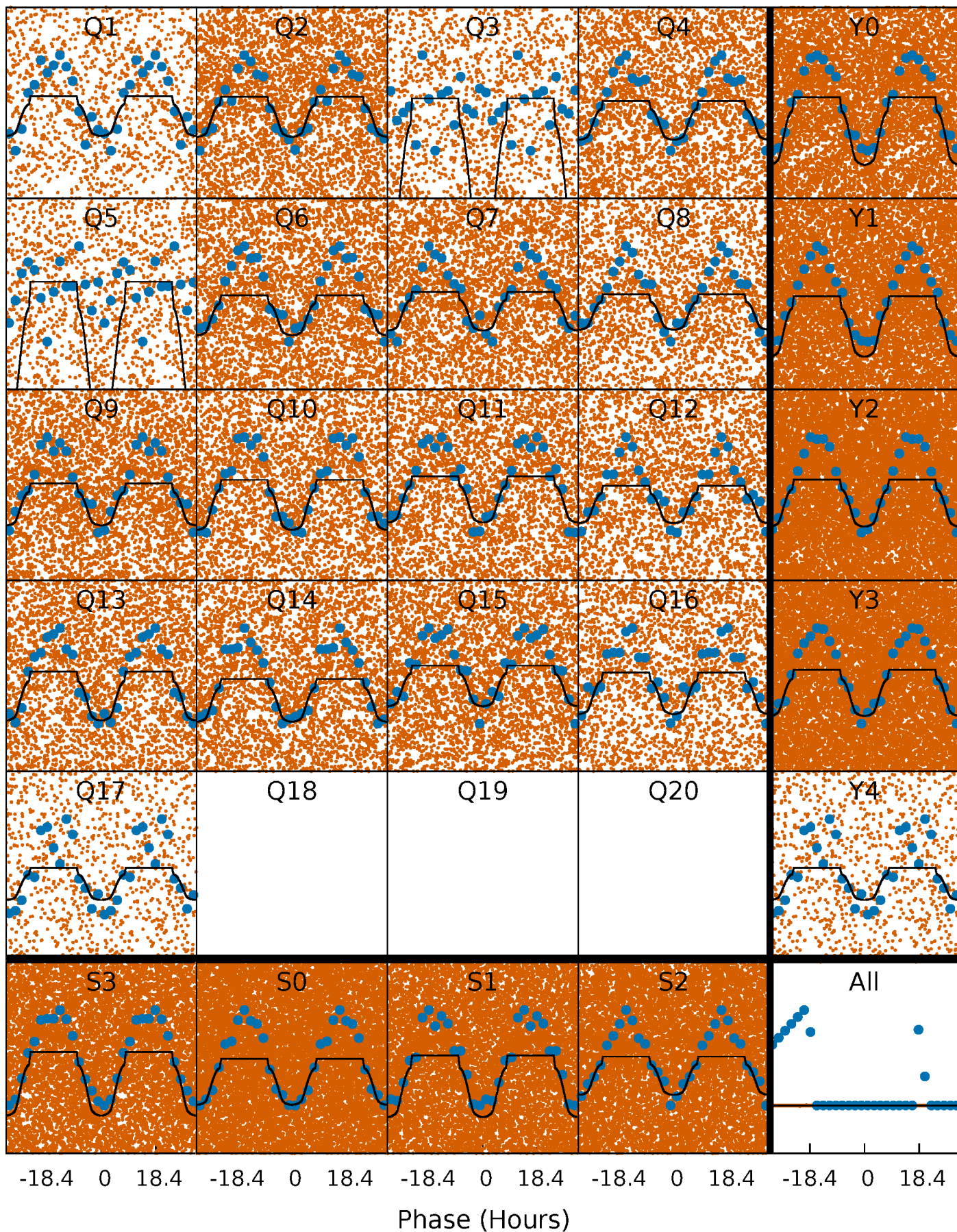
TCE 009651065-01 P= 1.340850 Days  $T_0=131.837514$  (BKJD)





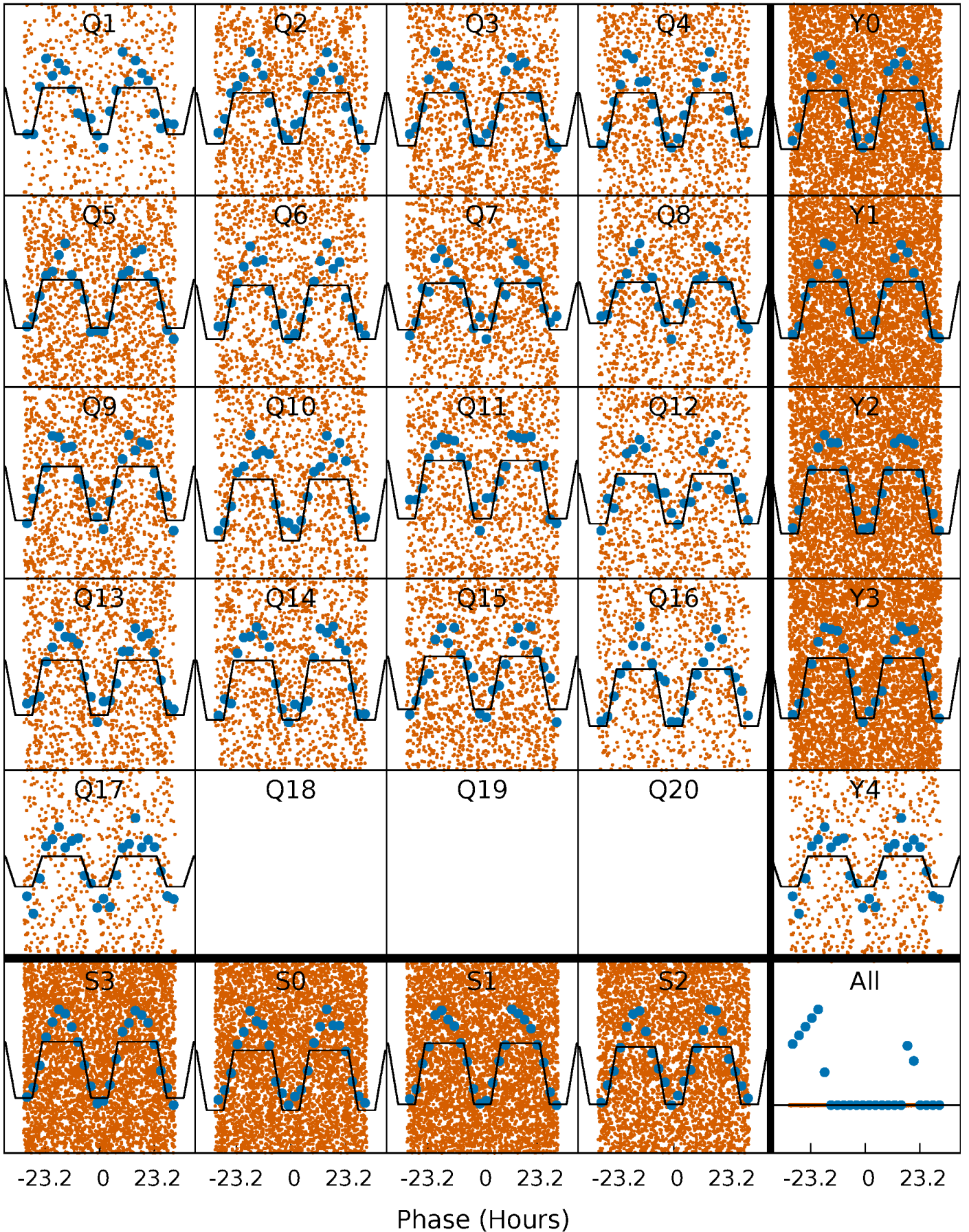
# DV Quarter-Phased Transit Curves

TCE 009651065-01 P= 1.340850 Days  $T_0=131.837514$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

TCE 009651065-01   P= 1.340730 Days    $T_0=131.904300$  (BKJD)

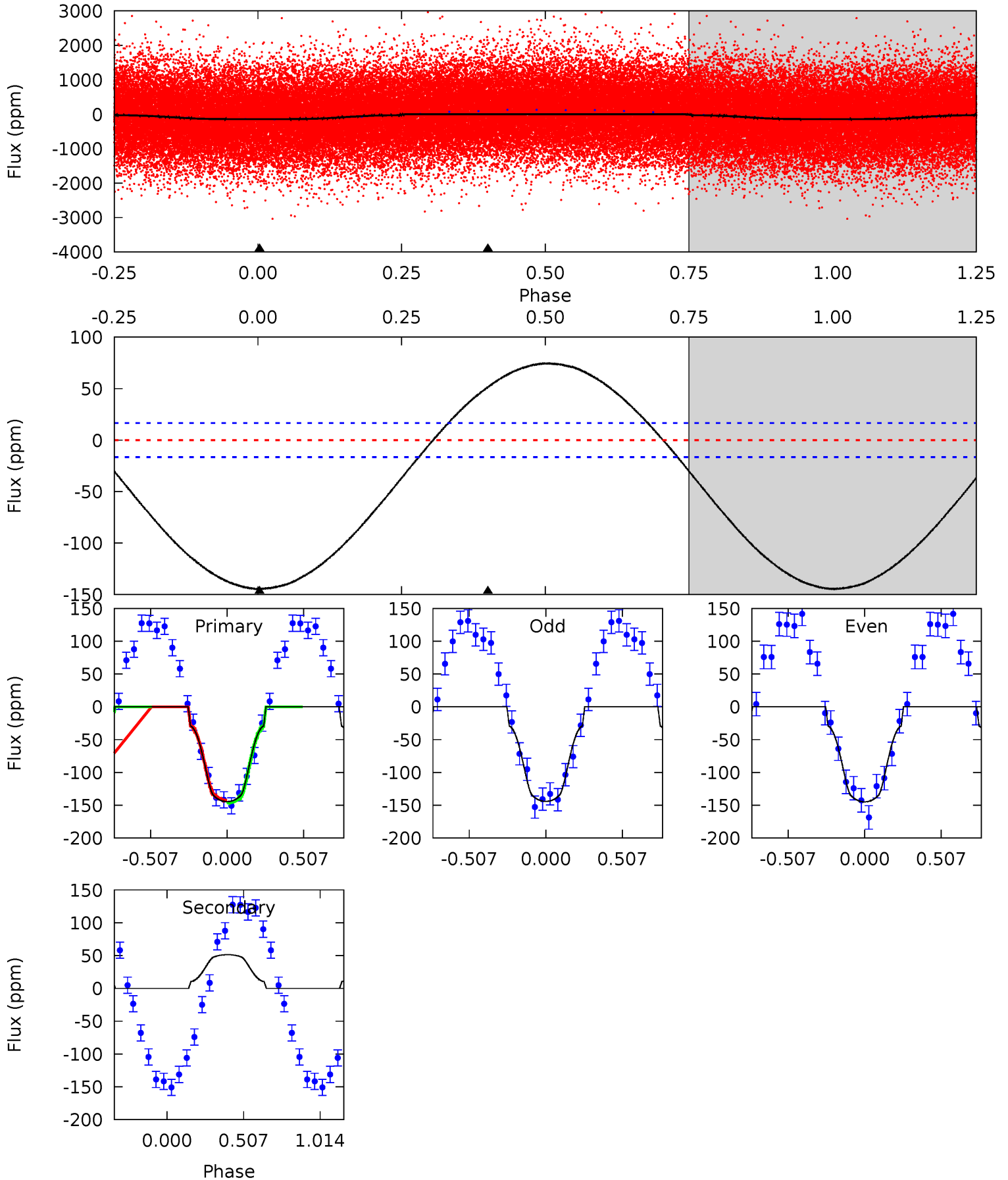




# DV Model-Shift Uniqueness Test

009651065-01, P = 1.340850 Days, E = 130.496664 Days

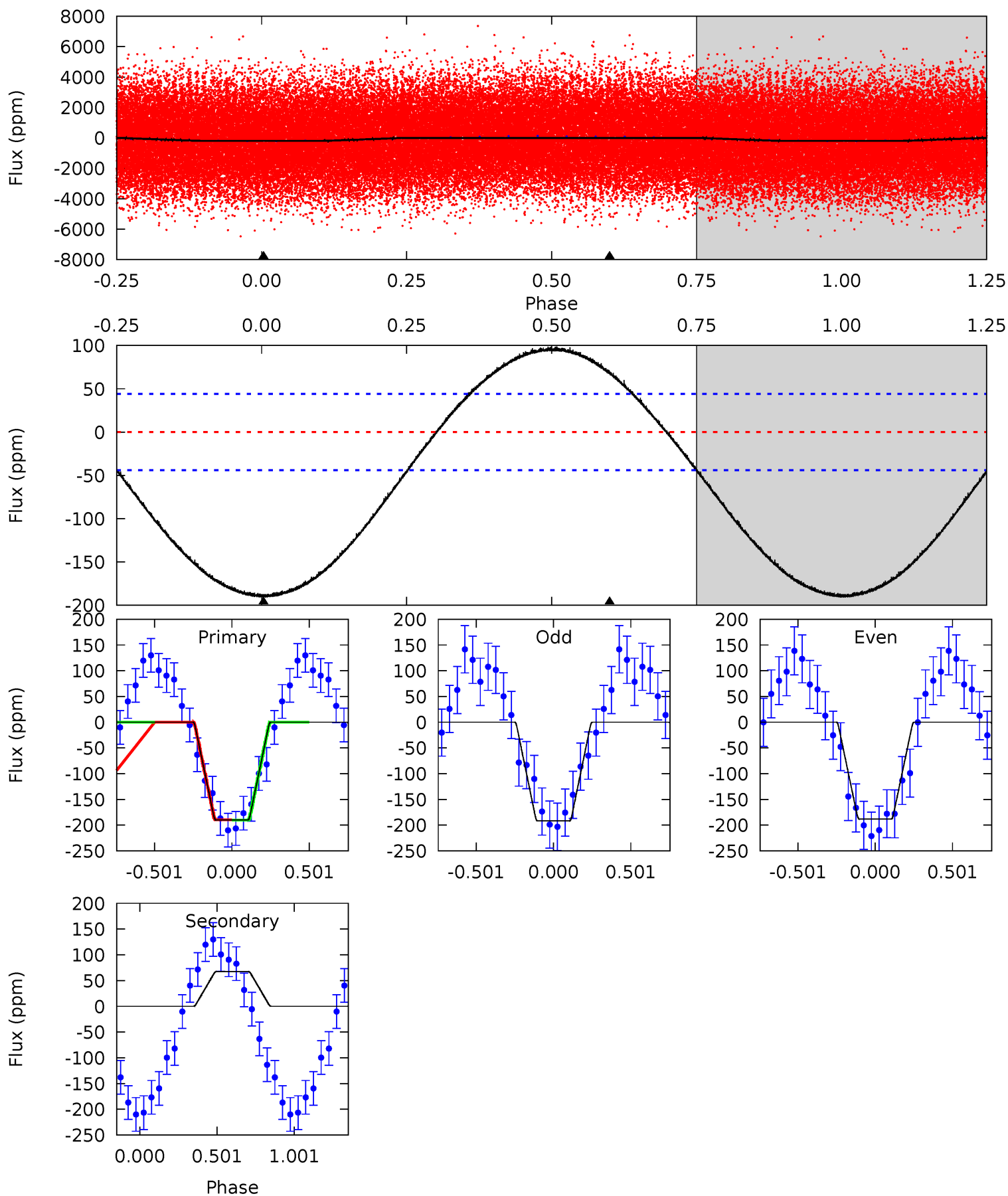
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
37.0	-13.1	0	0	4.21	0.66	4.76	37.0	37.0	-13.1	-13.1	0.07	0.98	0.34	0.49



# Alt Model-Shift Uniqueness Test

009651065-01, P = 1.340730 Days, E = 130.563570 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
18.2	-6.45	0	0	4.21	0.67	2.33	18.2	18.2	-6.45	-6.45	0.18	0.96	0.34	0.03





### Stellar Parameters For KIC 009651065

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$7014^{+126}_{-154}$	$3.833^{+0.188}_{-0.101}$	$-0.100^{+0.150}_{-0.150}$	$2.620^{+0.431}_{-0.646}$	$1.703^{+0.150}_{-0.217}$	$0.133^{+0.142}_{-0.043}$
	+2%/-2%	+5%/-3%	+150%/-150%	+16%/-25%	+9%/-13%	+106%/-32%
Source	SPE4	SPE4	SPE4	DSEP		

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

### Secondary Eclipse Parameters for KIC 009651065-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	$A_{\text{obs}}$
DV	$51 \pm 4$	$4.22^{+0.43}_{-0.50}$	$4124^{+190}_{-249}$	$-5143^{+129}_{-120}$	$-1.279^{+0.234}_{-0.345}$
Alt.	$67 \pm 10$	$4.12^{+0.40}_{-0.51}$	$4125^{+204}_{-233}$	$-5475^{+205}_{-203}$	$-1.784^{+0.399}_{-0.546}$

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

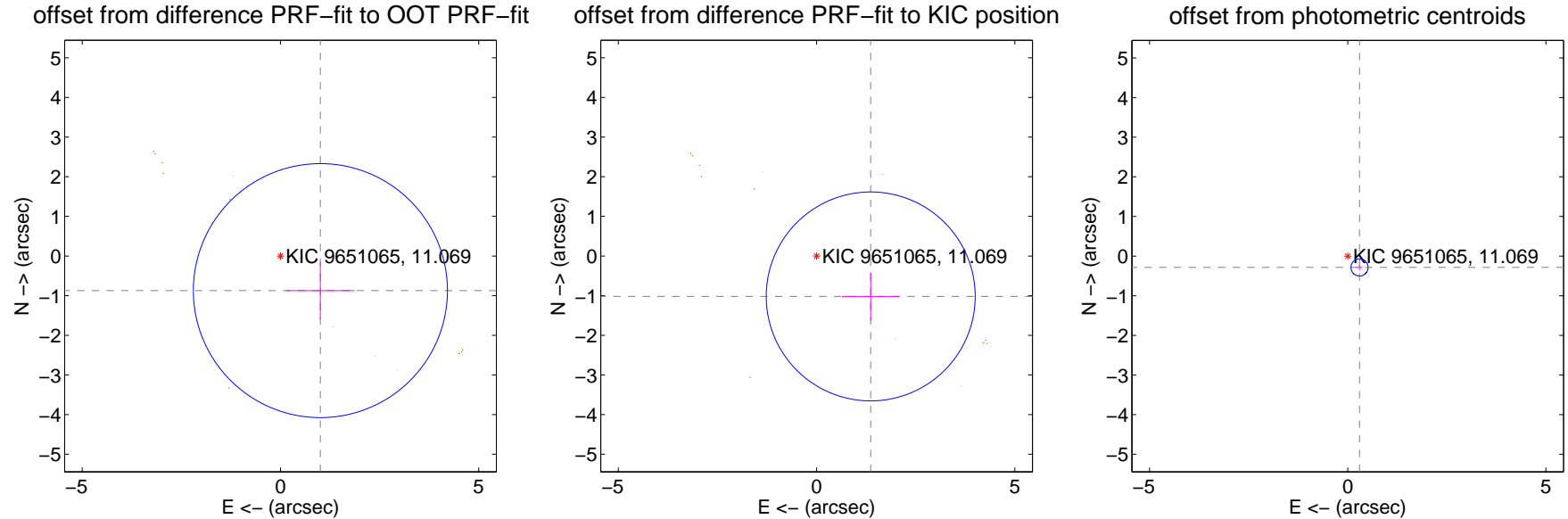
## DV Centroid Data

Supplemental centroid analysis for 009651065-01. **Kepler magnitude: 11.07.** Transit SNR 27.69

There are 6 quarters with good PRF difference image offsets

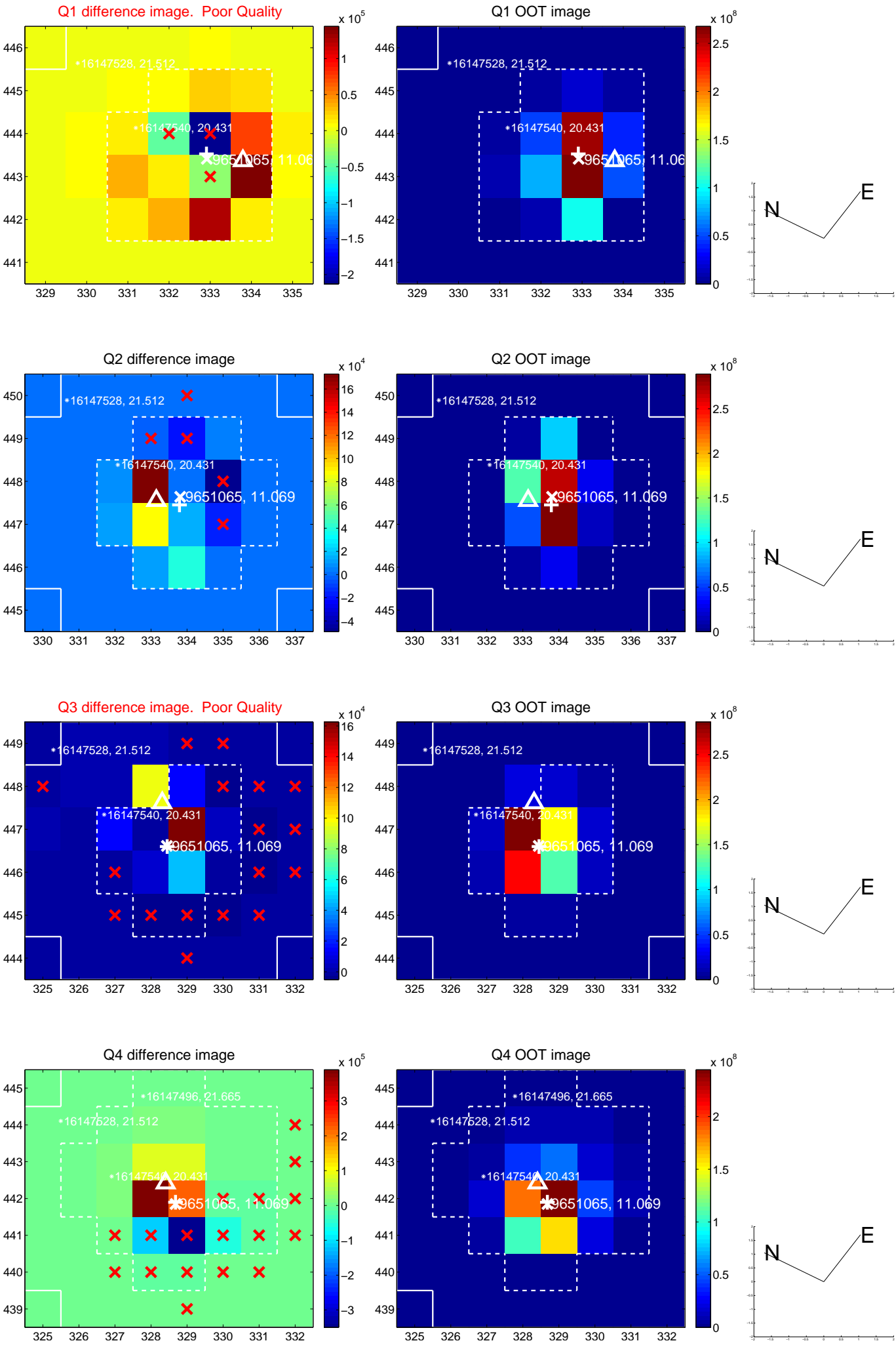
The direct PRF centroid is offset from the target star catalog position by about 0.40 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$1.332 \pm 1.068$	1.25	$-1.007 \pm 0.862$	$-0.872 \pm 0.724$
PRF-fit source offset from KIC position	$1.704 \pm 0.878$	1.94	$-1.365 \pm 0.722$	$-1.019 \pm 0.604$
photometric centroid source offset	$0.41 \pm 0.07$	<b>5.73</b>	$-0.30 \pm 0.08$	$-0.29 \pm 0.06$

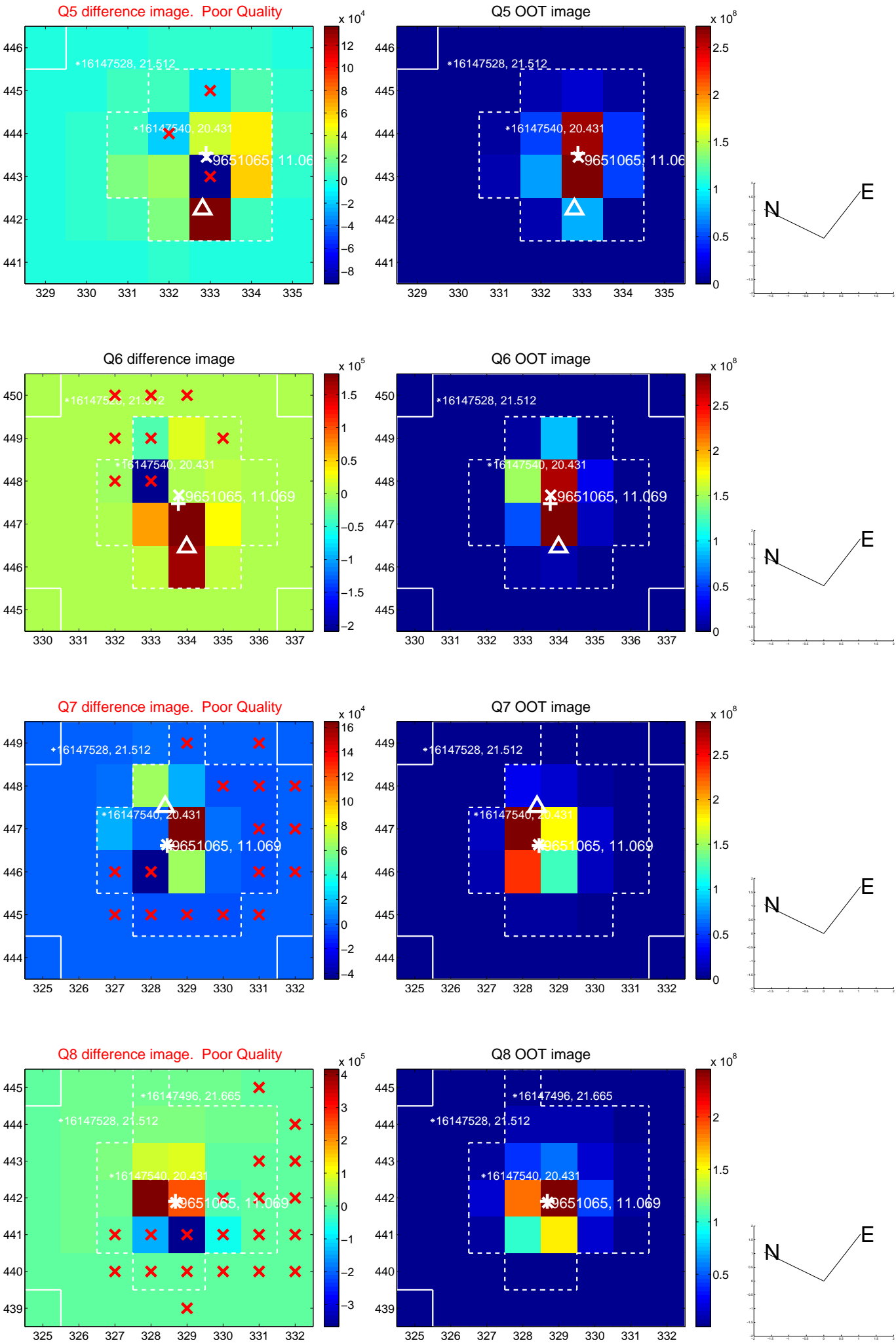


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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

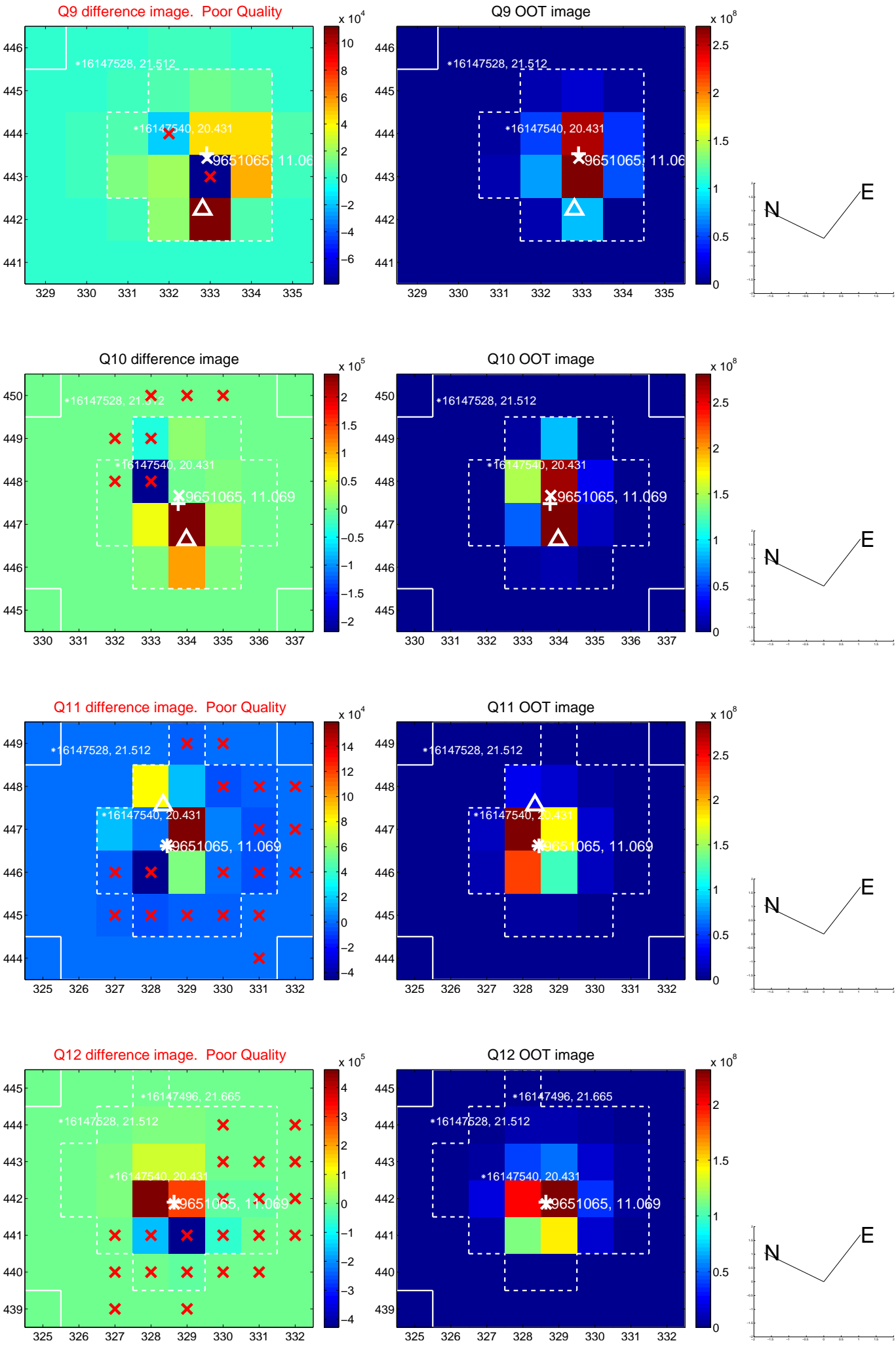


white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

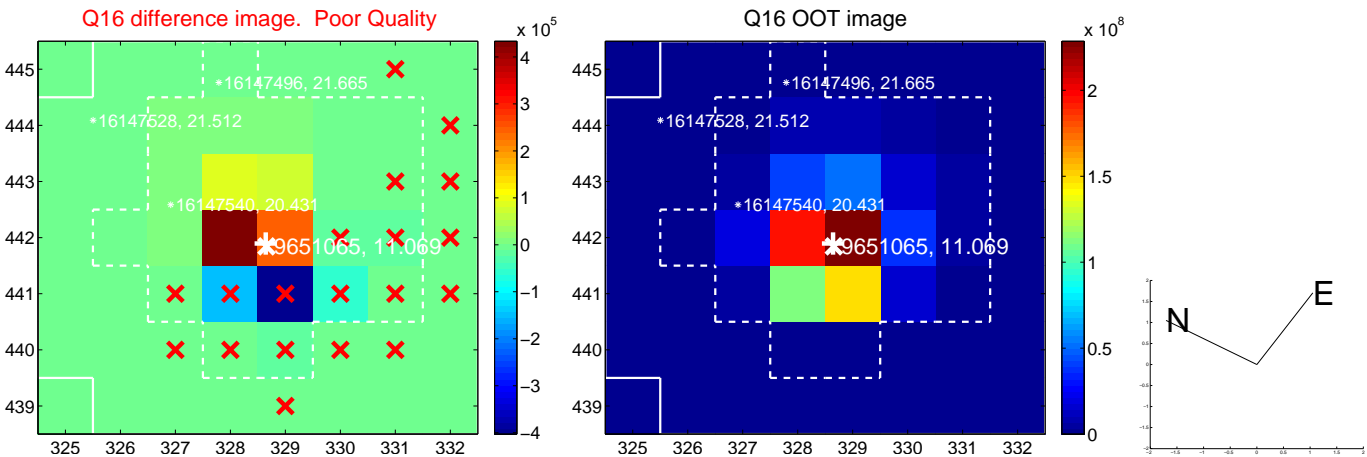
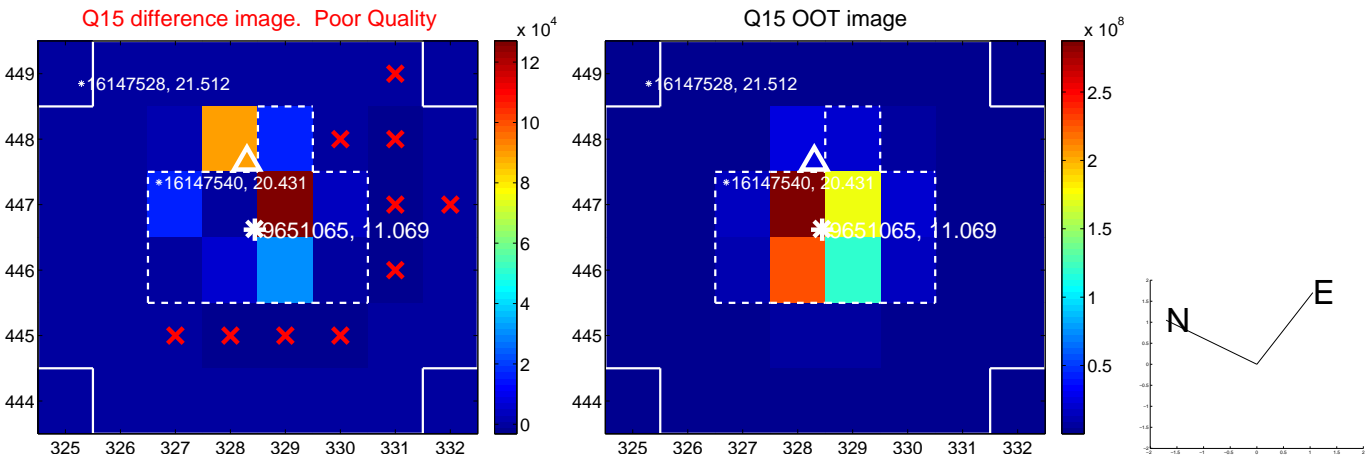
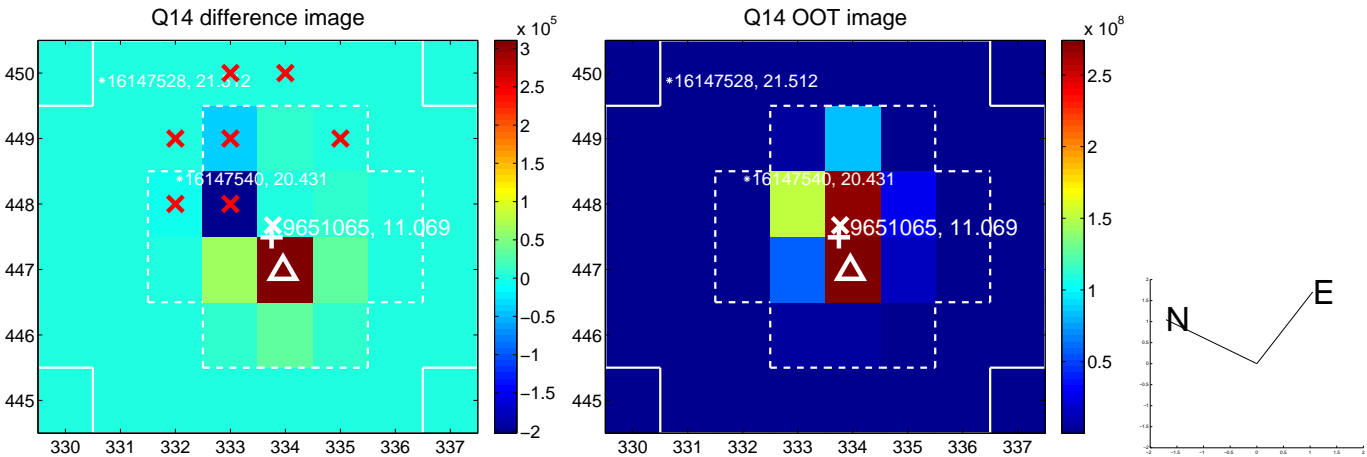
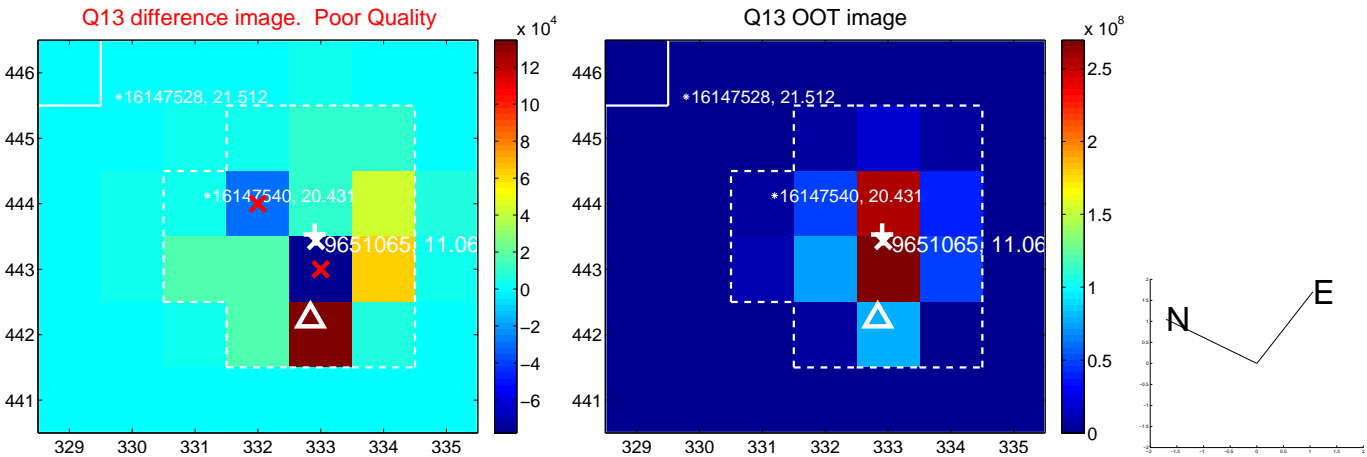




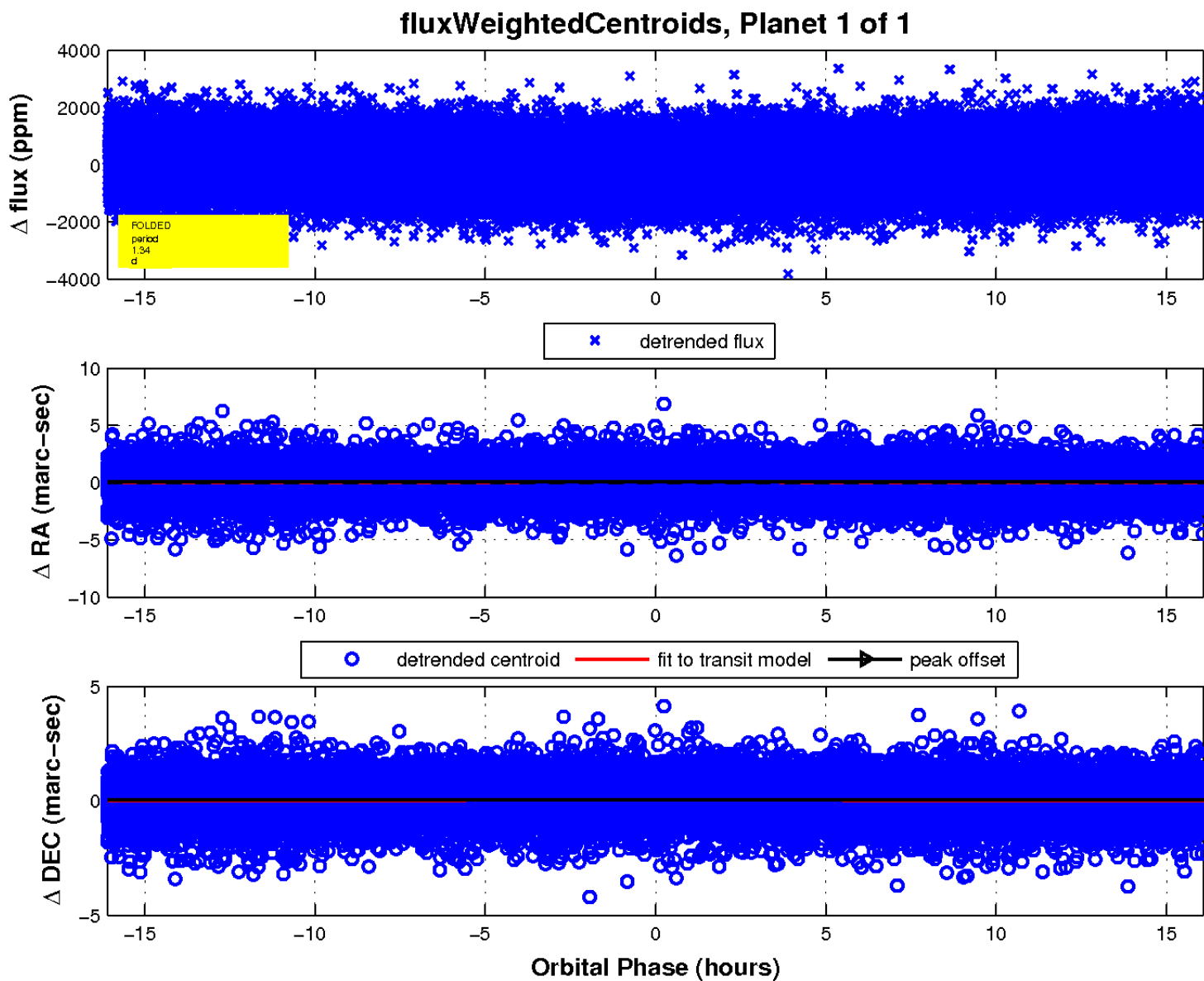
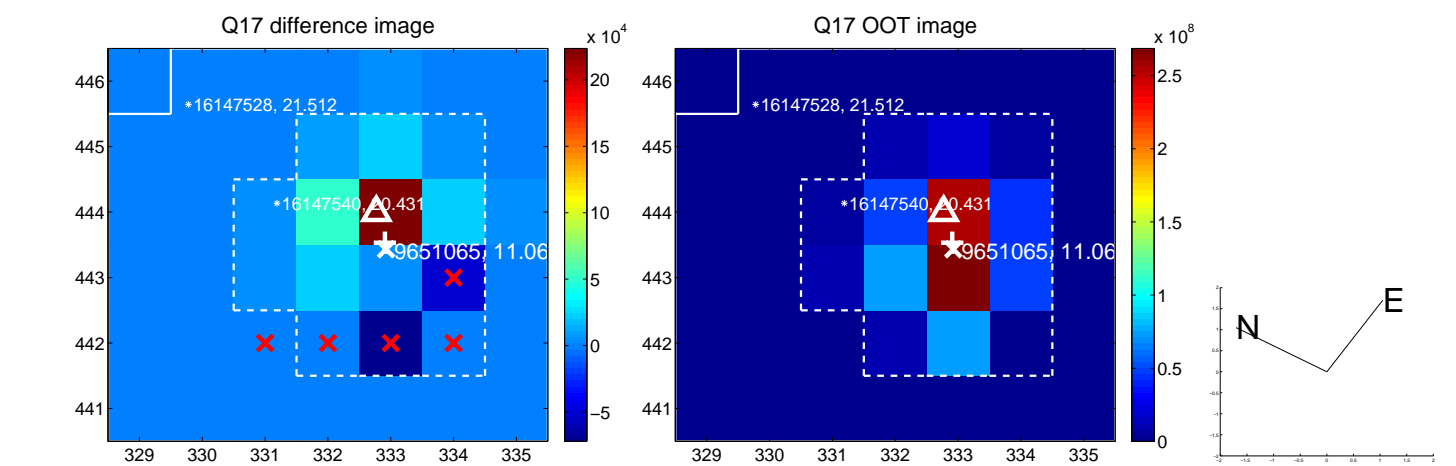
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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



UKIRT Image

Declination

