

# KIC 010346522

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
010346522-01	OBS	7316.01	3.989234	132.566728	43194.4	7.500	3228.0	-1.0	0.72	5538	14.93	233.13

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
010346522-01	OBS	FP	0.00	0	1	0	0	SWEET_EB—MOD_SEC_ALT—MOD_ODDEVEN_ALT—CENT_NOFITS

**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 010346522-01

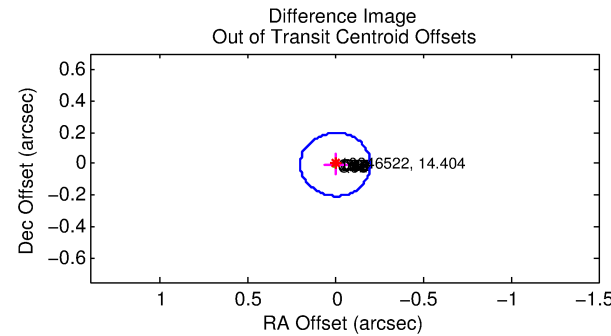
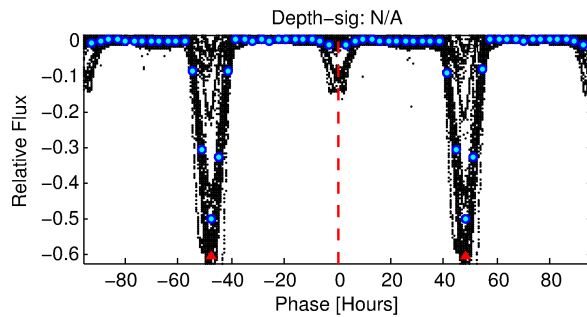
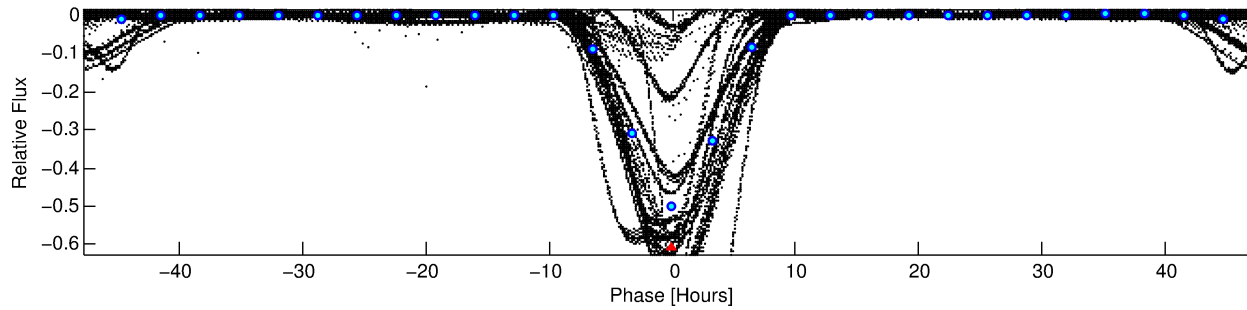
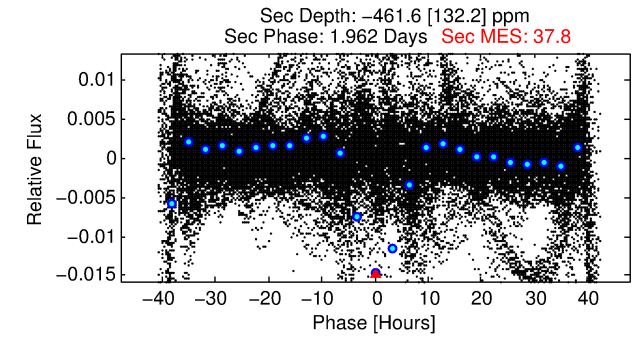
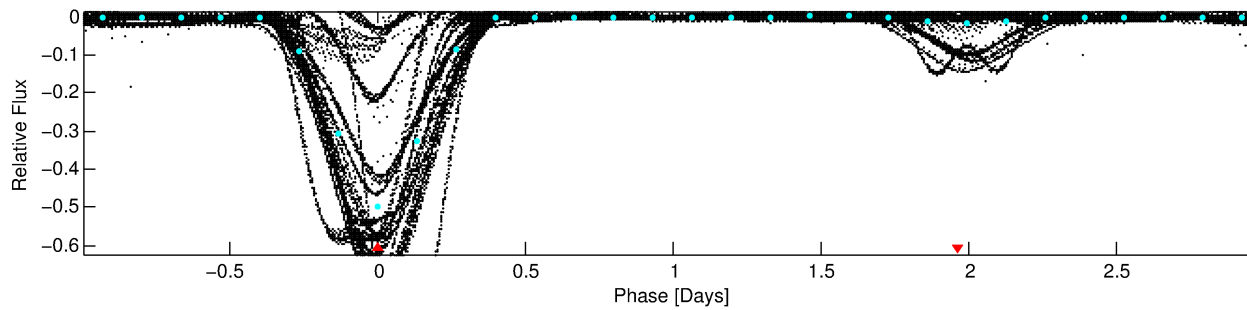
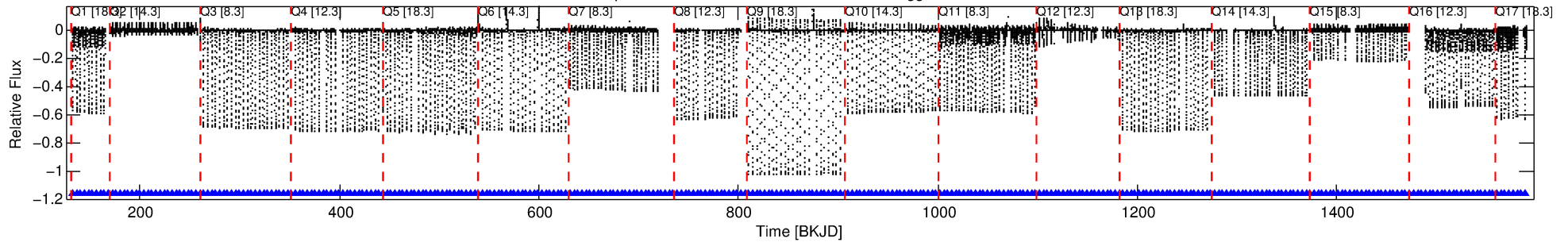
No Significant Match Found

# DV One-Page Summary

KIC: 10346522 Candidate: 1 of 1 Period: 3.989 d

KOI: K07316 Corr: No Ephemeris Match

Kp: 14.40 R\*: 0.72 Rs Teff: 5538.0 K Logg: 4.55 Fe/H: -0.880



## TPS TCE Results:

Period = 3.98923 d  
Epoch = 132.5667 BKJD

DV fit results are unavailable

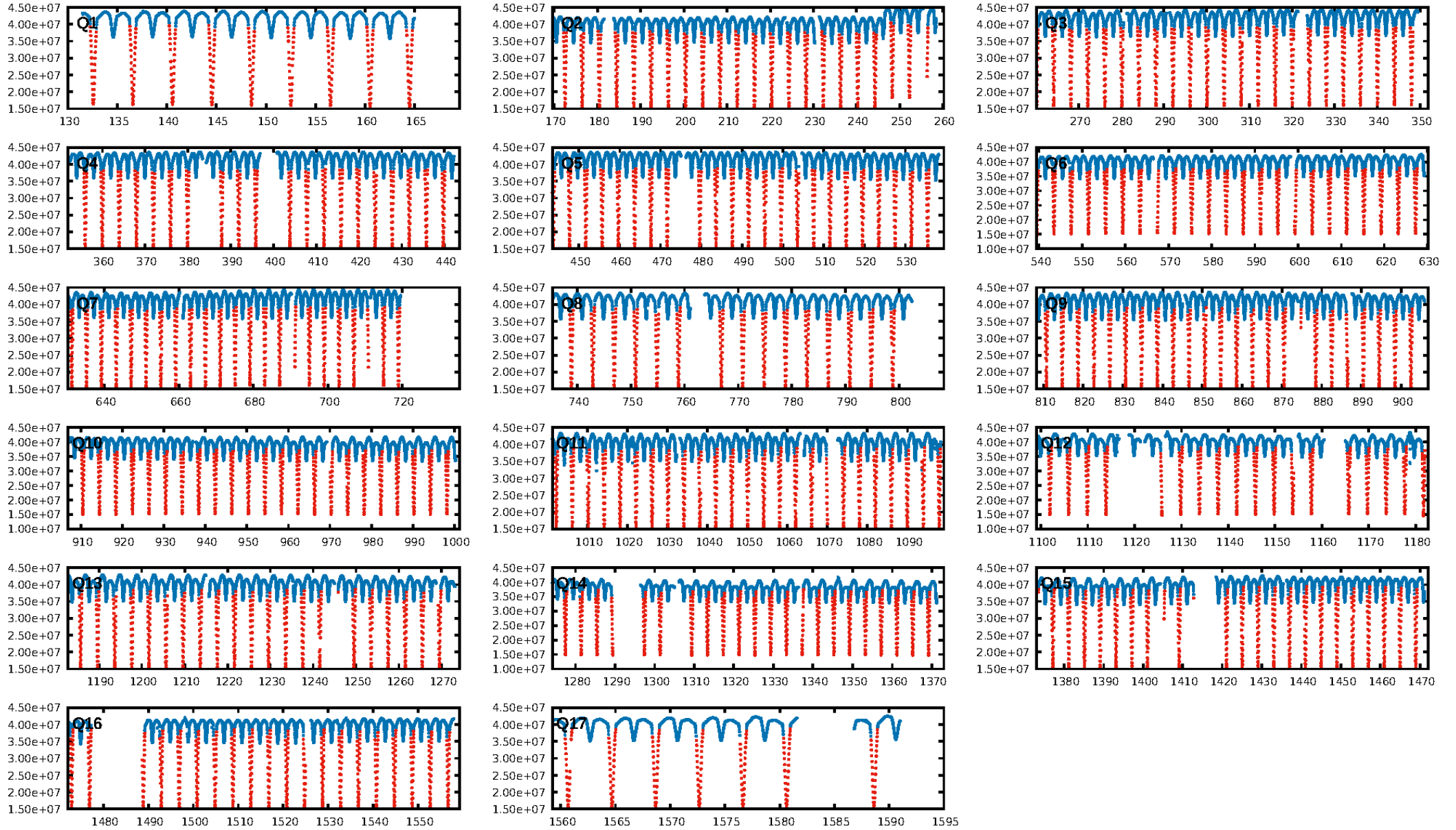
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: N/A  
ModelChiSquareGof-sig: N/A  
Bootstrap-pfa: N/A  
RollingBand-fgt: 1.00 [325/325]  
GhostDiagnostic-chr: 0.6812  
Centroid-sig: 0.0%  
Centroid-so: 0.122 arcsec [406.95σ]  
OotOffset-rm: 0.004 arcsec [0.07σ]  
KicOffset-rm: 0.041 arcsec [0.62σ]  
OotOffset-st: 4/4/4/5 [17]  
KicOffset-st: 4/4/4/5 [17]  
DiffImageQuality-fgm: 1.00 [17/17]  
DiffImageOverlap-fno: 1.00 [17/17]

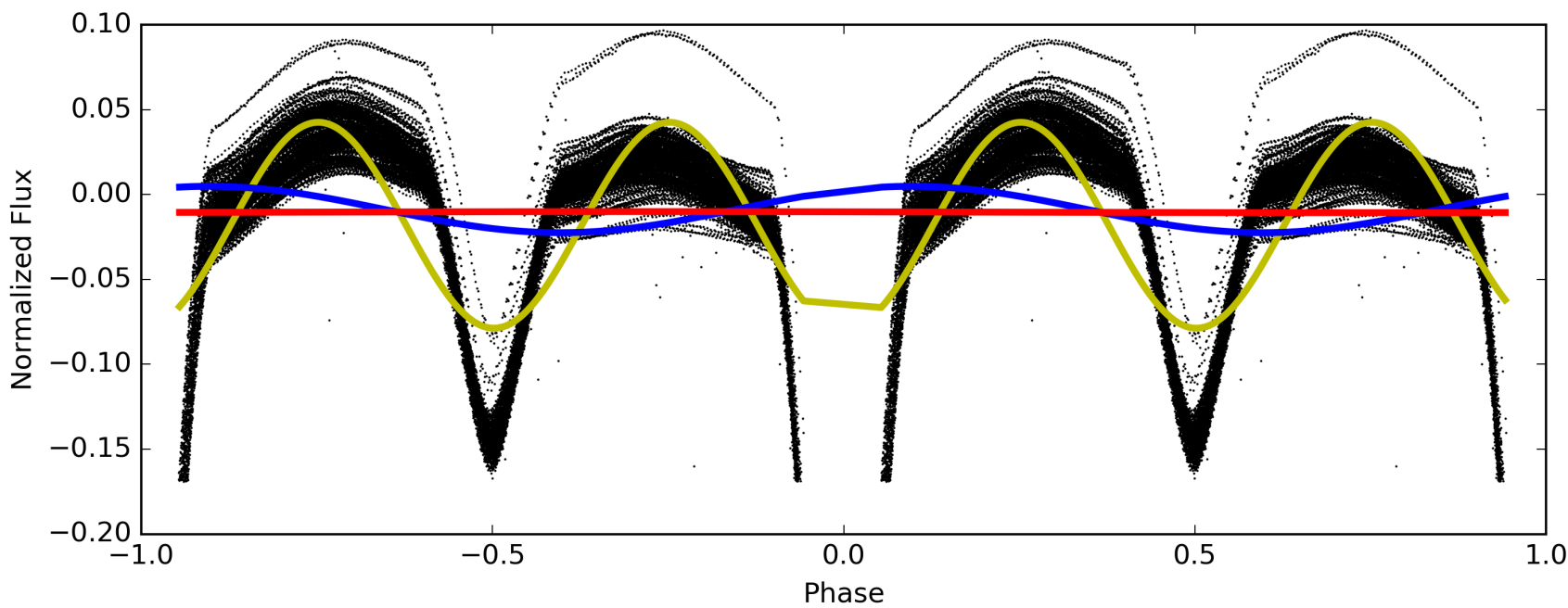
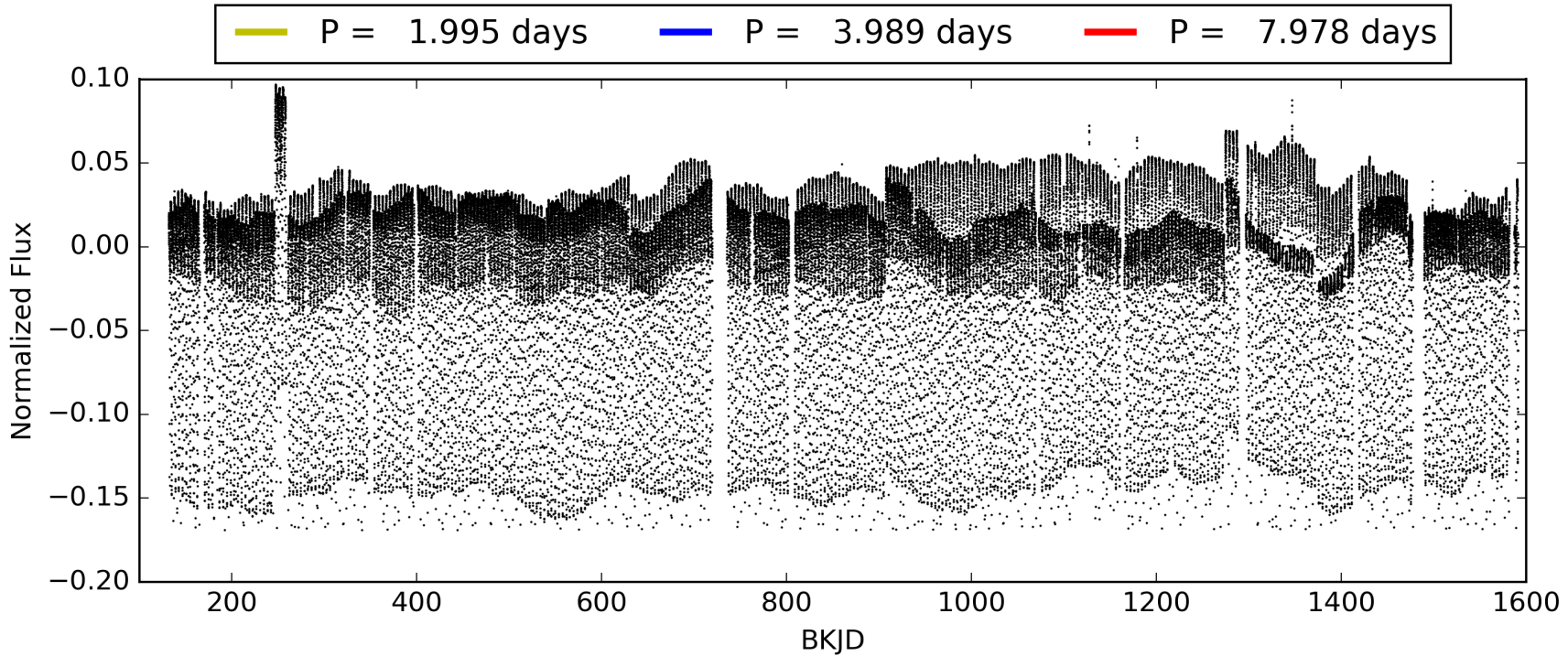
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 01:34:32 Z

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

# TCE 010346522-01, PDC Light Curves

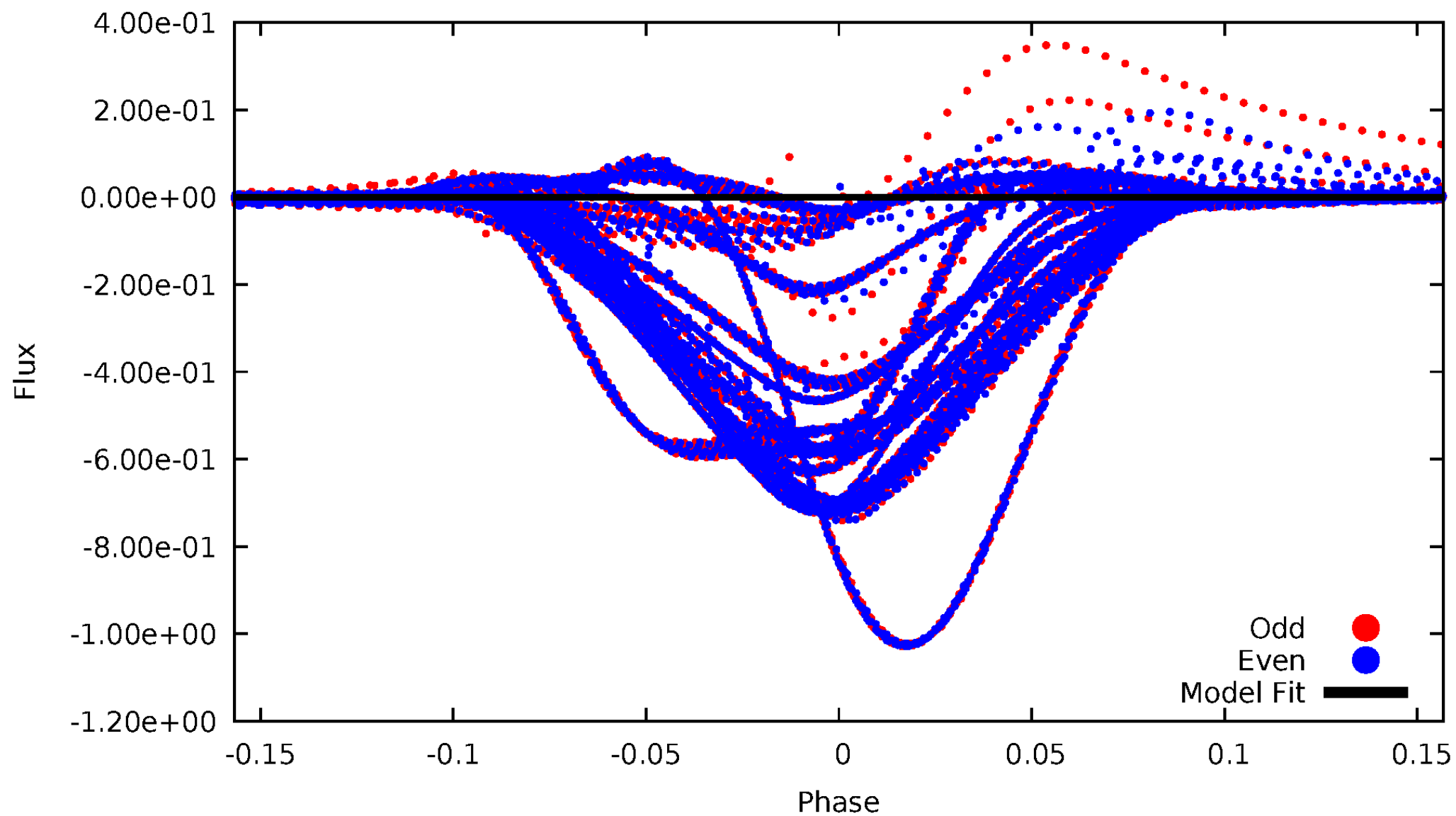


TCE 010346522-01



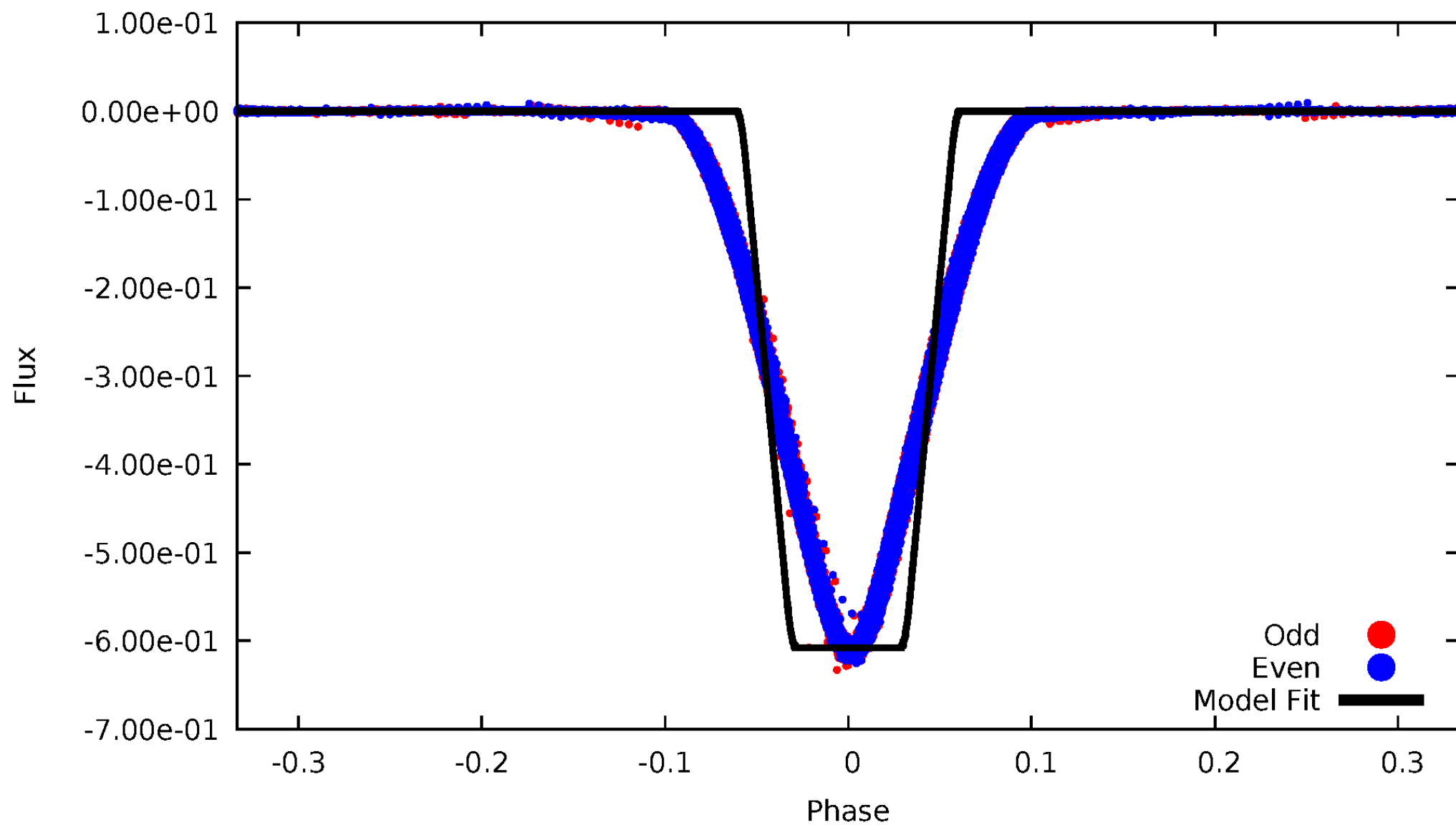
# DV Odd/Even

TCE 010346522-01



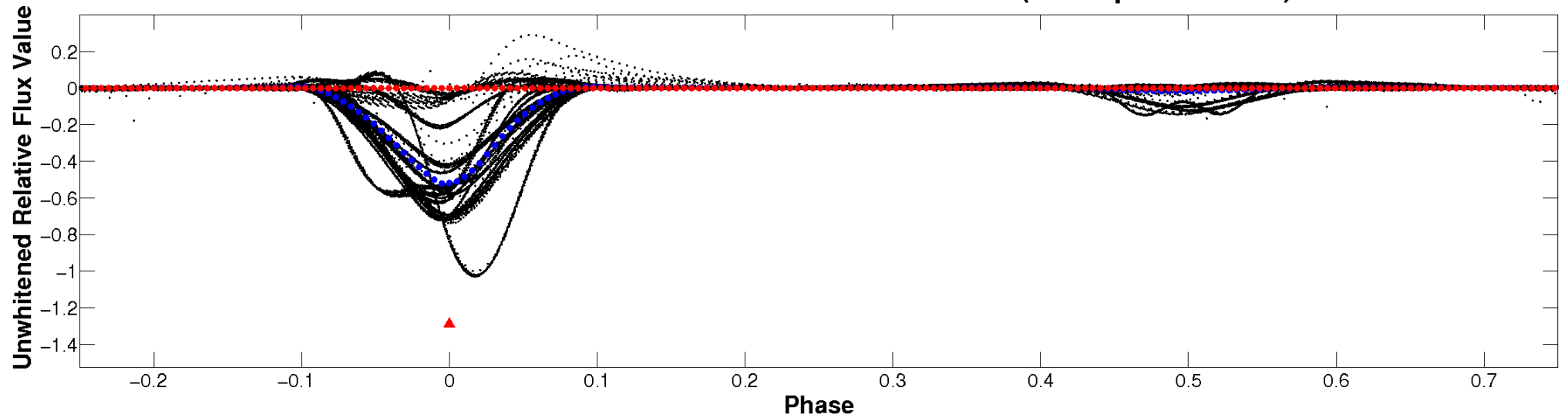
# ALT Odd/Even

TCE 010346522-01

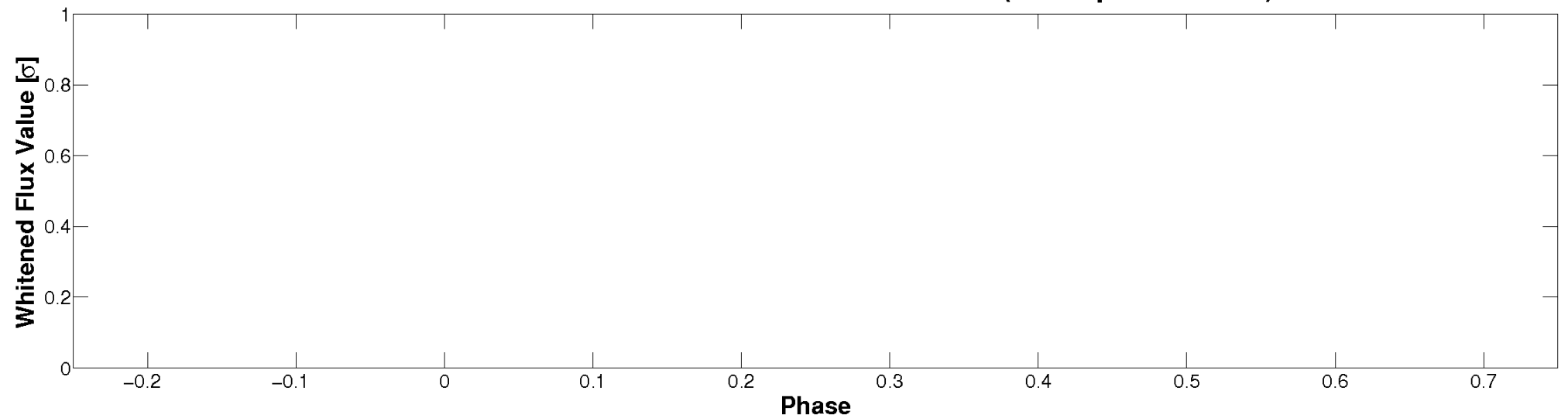


# Non-Whitened Vs. Whitened Light Curve

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

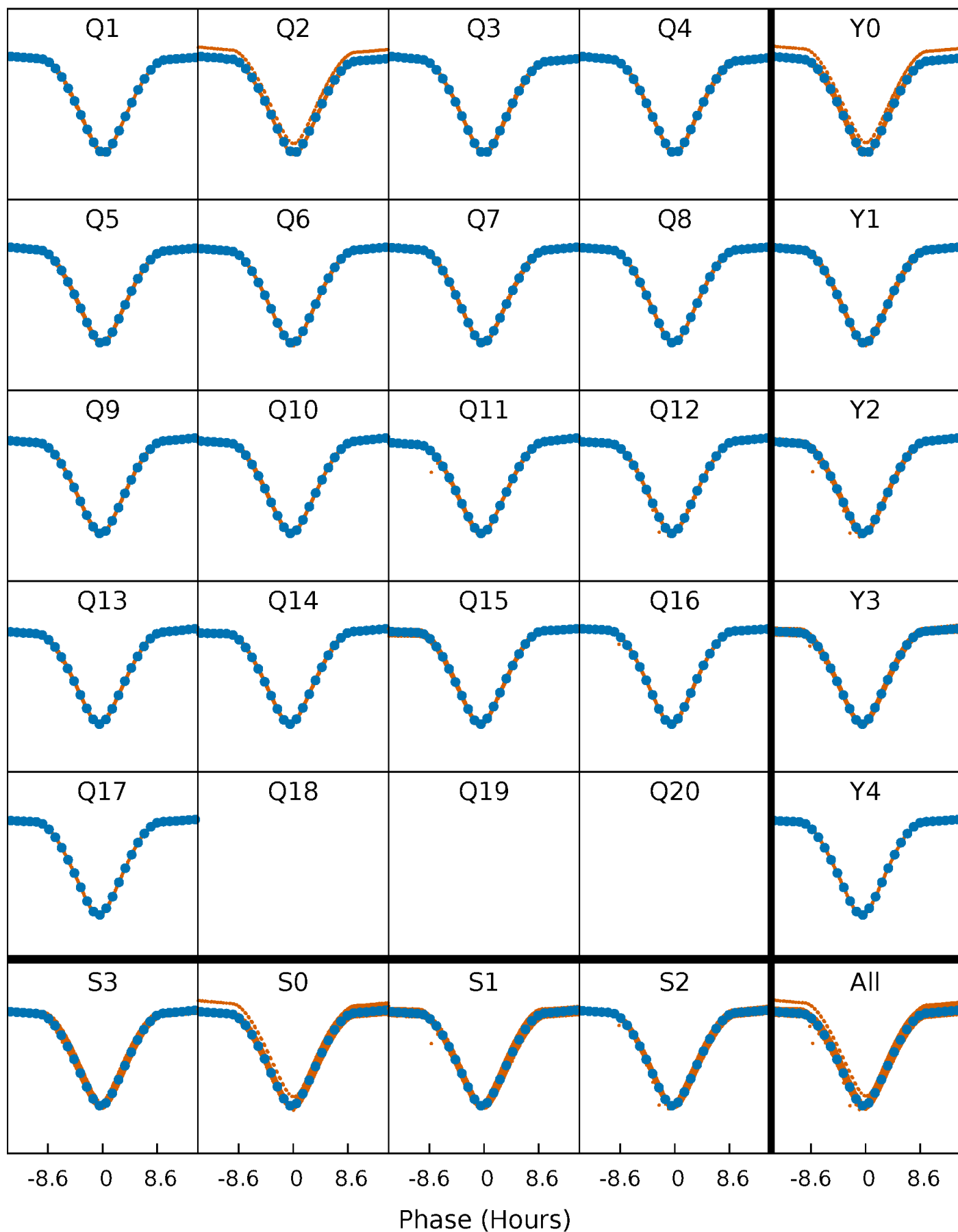


**Planet 1 : Phased Whitened Flux Time Series (TPS Epoch/Period)**



# PDC Quarter-Phased Transit Curves

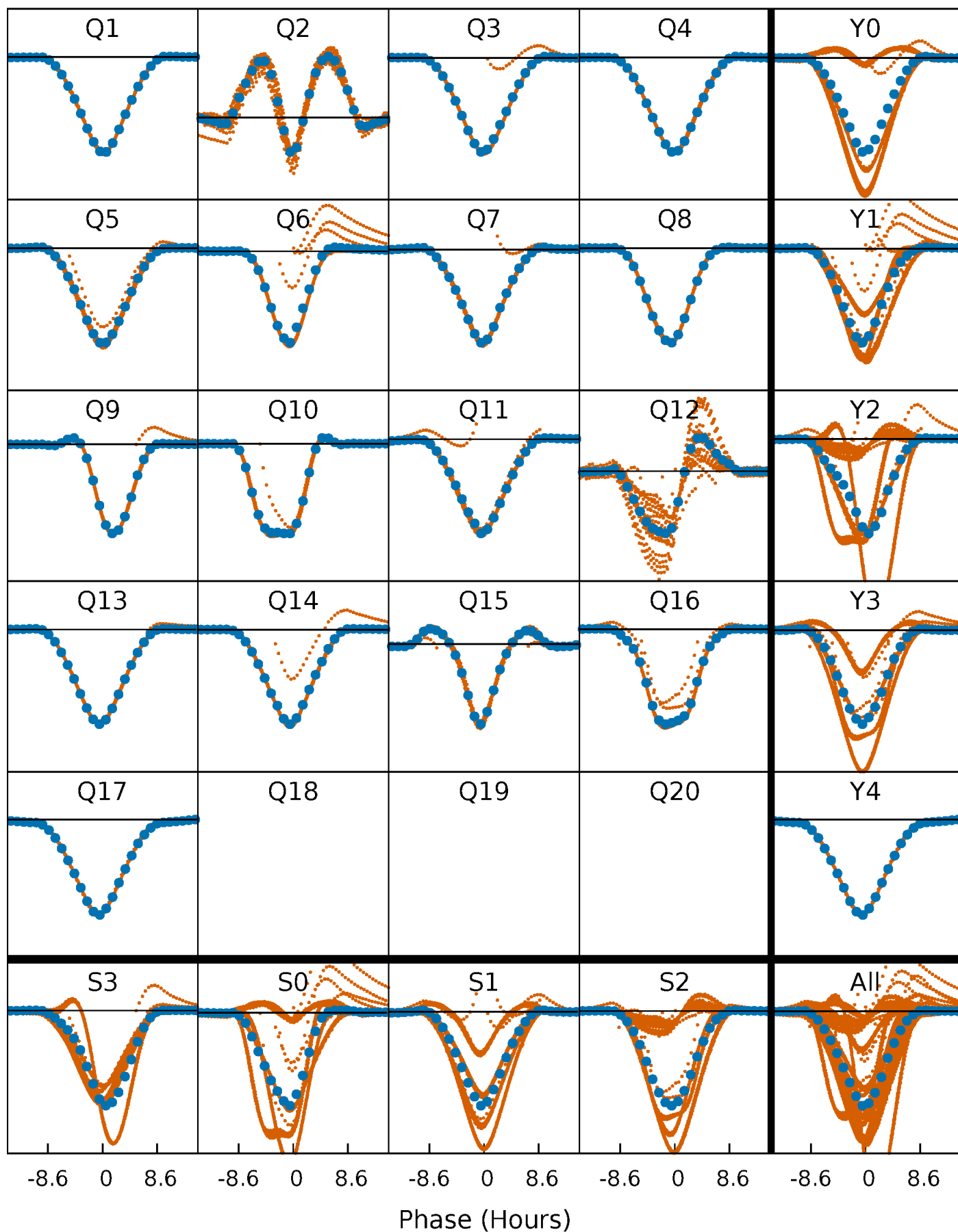
TCE 010346522-01 P= 3.989234 Days  $T_0=132.566728$  (BKJD)





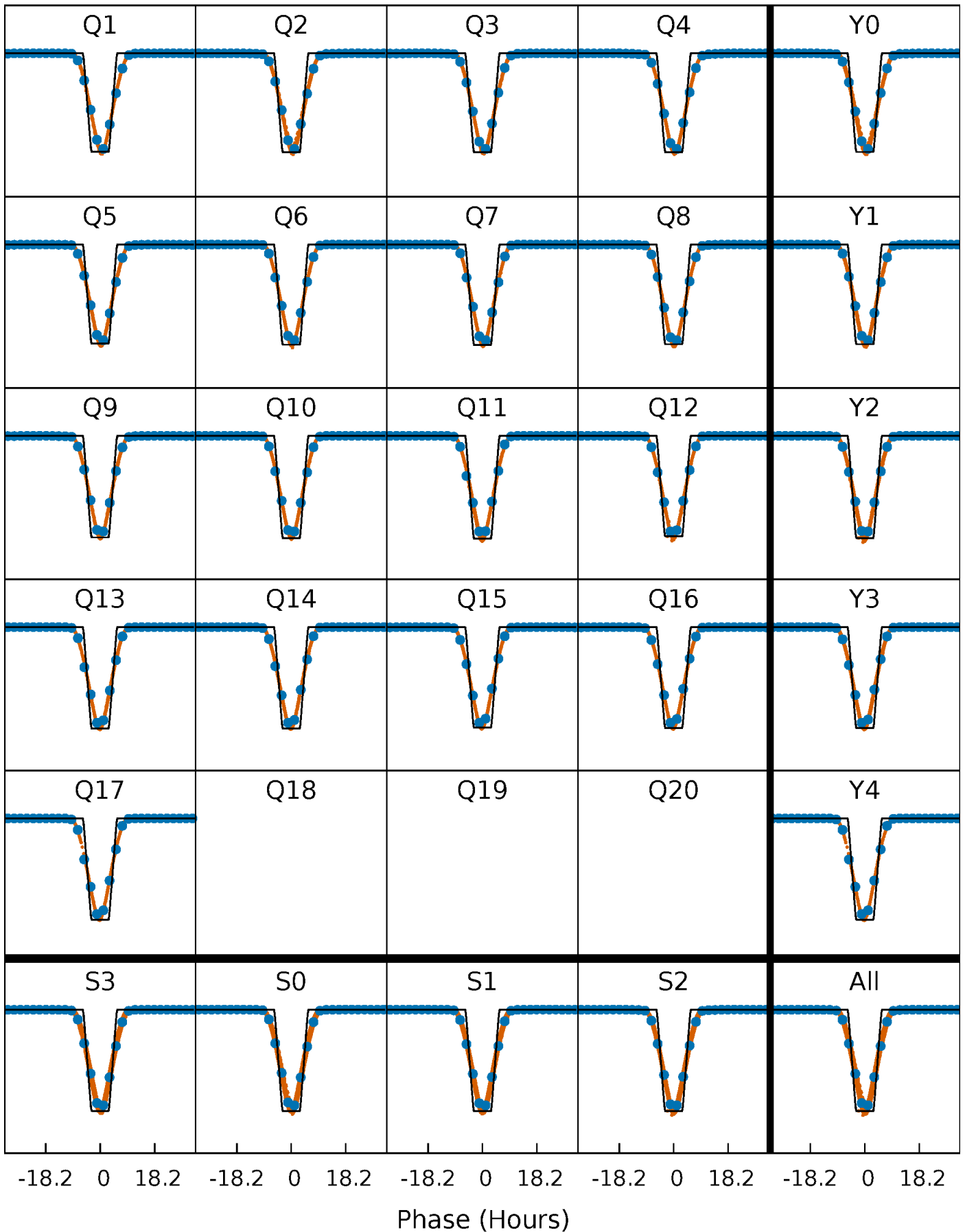
# DV Quarter-Phased Transit Curves

TCE 010346522-01 P= 3.989234 Days  $T_0=132.566728$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

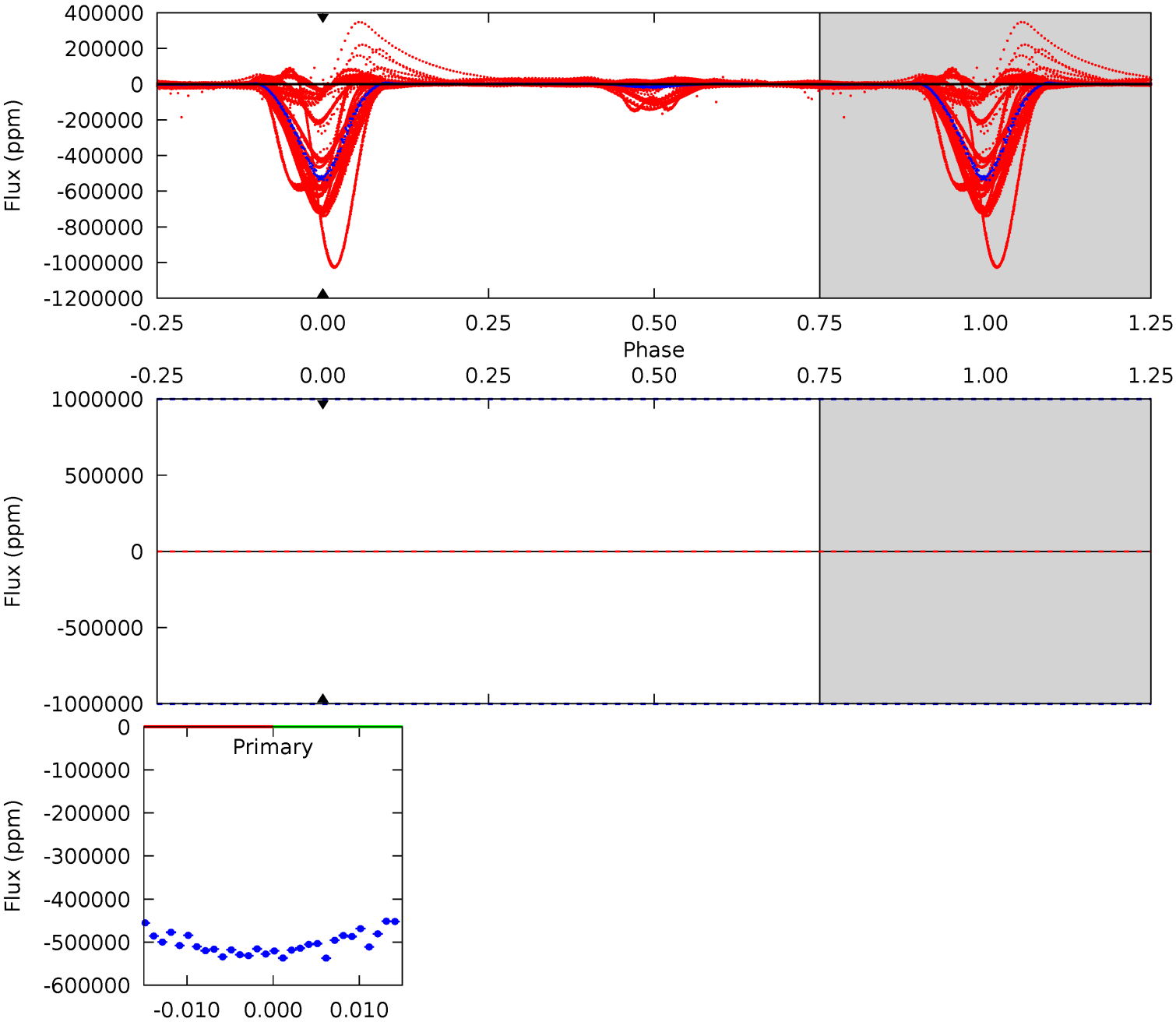
TCE 010346522-01 P= 3.989234 Days  $T_0=132.550888$  (BKJD)



DV Model-Shift Uniqueness Test

010346522-01, P = 3.989234 Days, E = 128.577494 Days

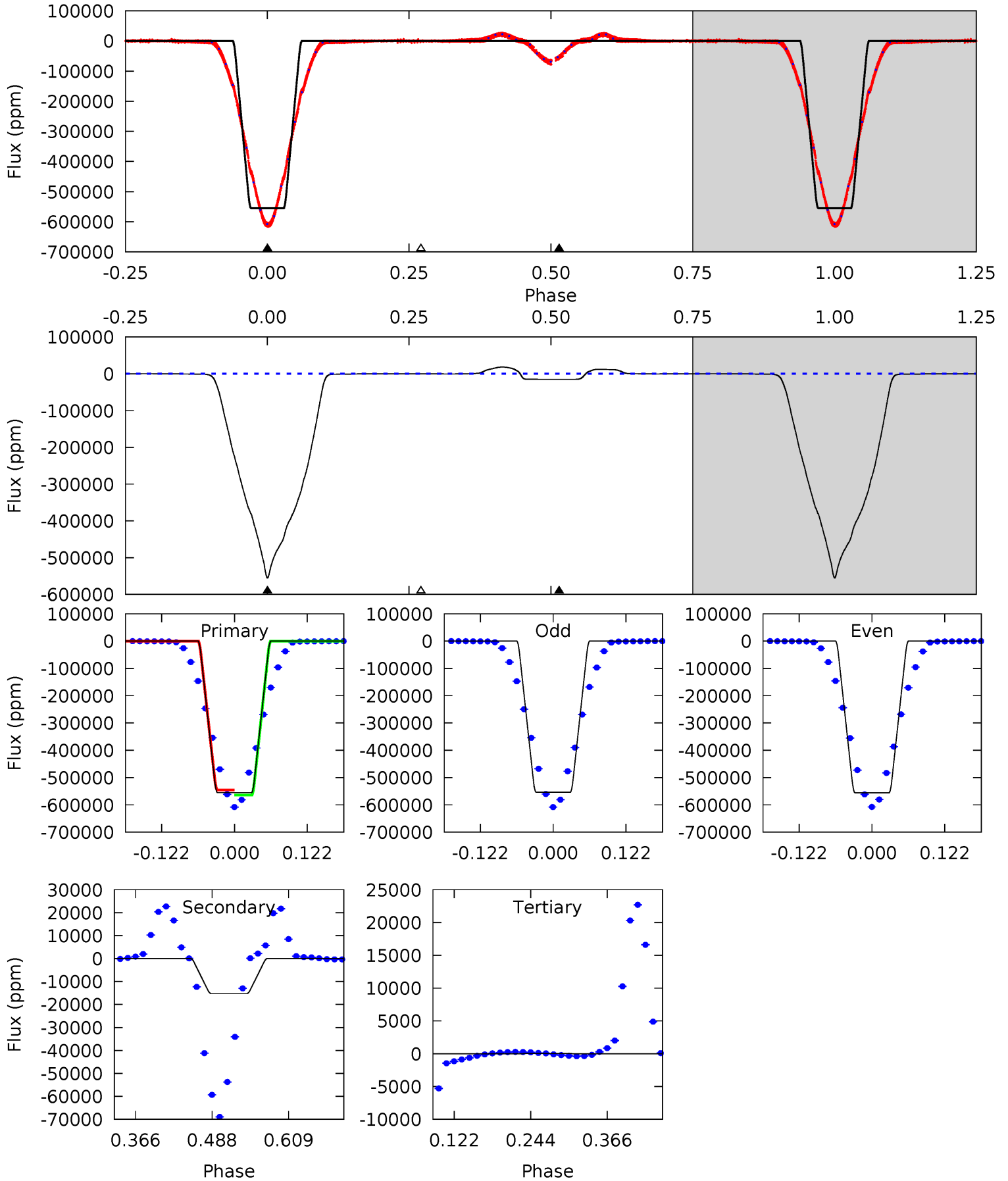
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
0	0	0	0	1.00	1.00	1.00	0	0	0	0	0	0	0	0



# Alt Model-Shift Uniqueness Test

010346522-01, P = 3.989234 Days, E = 128.561654 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
16651	455.8	-0.41	0	4.52	1.55	37.2	16651	16651	456.2	455.8	30.2	1.00	0.03	0



### Stellar Parameters For KIC 010346522

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R$ ( $R_{\odot}$ )	$M(M_{\odot})$	$p_{\star}$ ( $\text{g}\cdot\text{cm}^{-3}$ )
	$5538^{+166}_{-166}$	$4.555^{+0.095}_{-0.086}$	$-0.880^{+0.350}_{-0.300}$	$0.719^{+0.088}_{-0.079}$	$0.676^{+0.075}_{-0.030}$	$2.564^{+1.030}_{-0.675}$
	+3%/-3%	+2%/-2%	+40%/-34%	+12%/-11%	+11%/-4%	+40%/-26%
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 010346522-01 / KOI 7316.01

Detrend	Depth (ppm)	$R_p$ ( $R_{\oplus}$ )	$T_{max}$ (K)	$T_{obs}$ (K)	$A_{obs}$
DV	$0 \pm 1000000$	$15.28^{+8.13}_{-7.74}$	$1393^{+58}_{-64}$	$-2891^{+10752}_{-4583}$	$-3.721^{+636.195}_{-514.960}$
Alt.	$-15200 \pm 33$	$61.26^{+9.92}_{-8.84}$	$1393^{+53}_{-61}$	$2879^{+129}_{-113}$	$4.309^{+1.487}_{-1.105}$

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

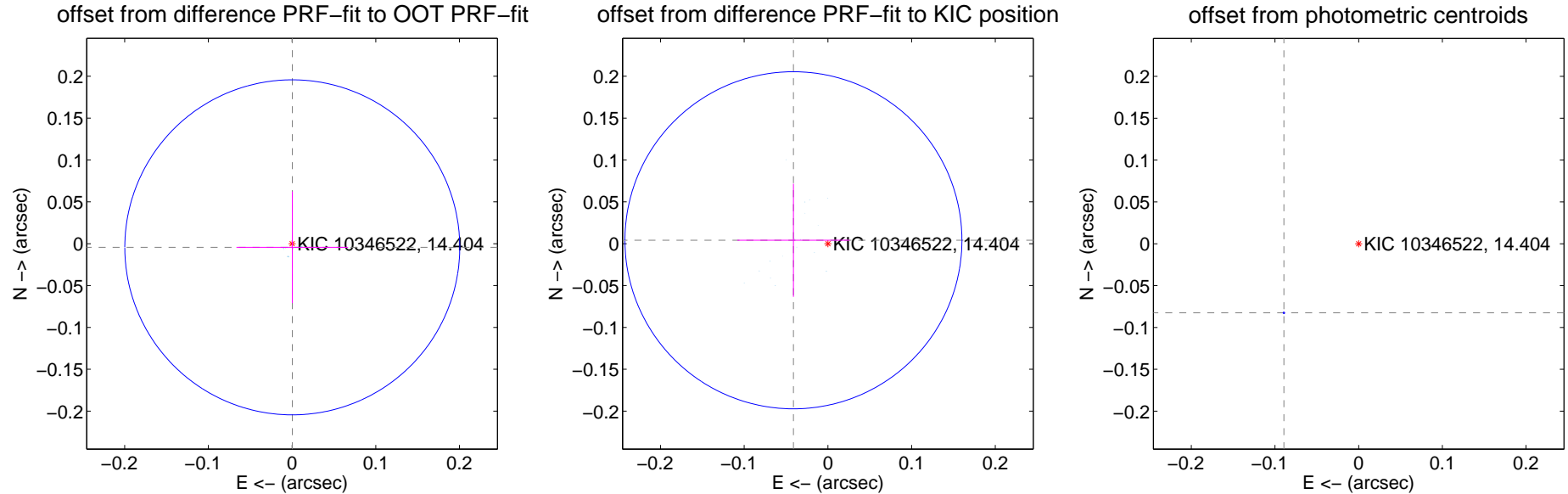
## DV Centroid Data

Supplemental centroid analysis for 010346522-01. Kepler magnitude: 14.40. Transit SNR -1.00

There are 17 quarters with good PRF difference image offsets

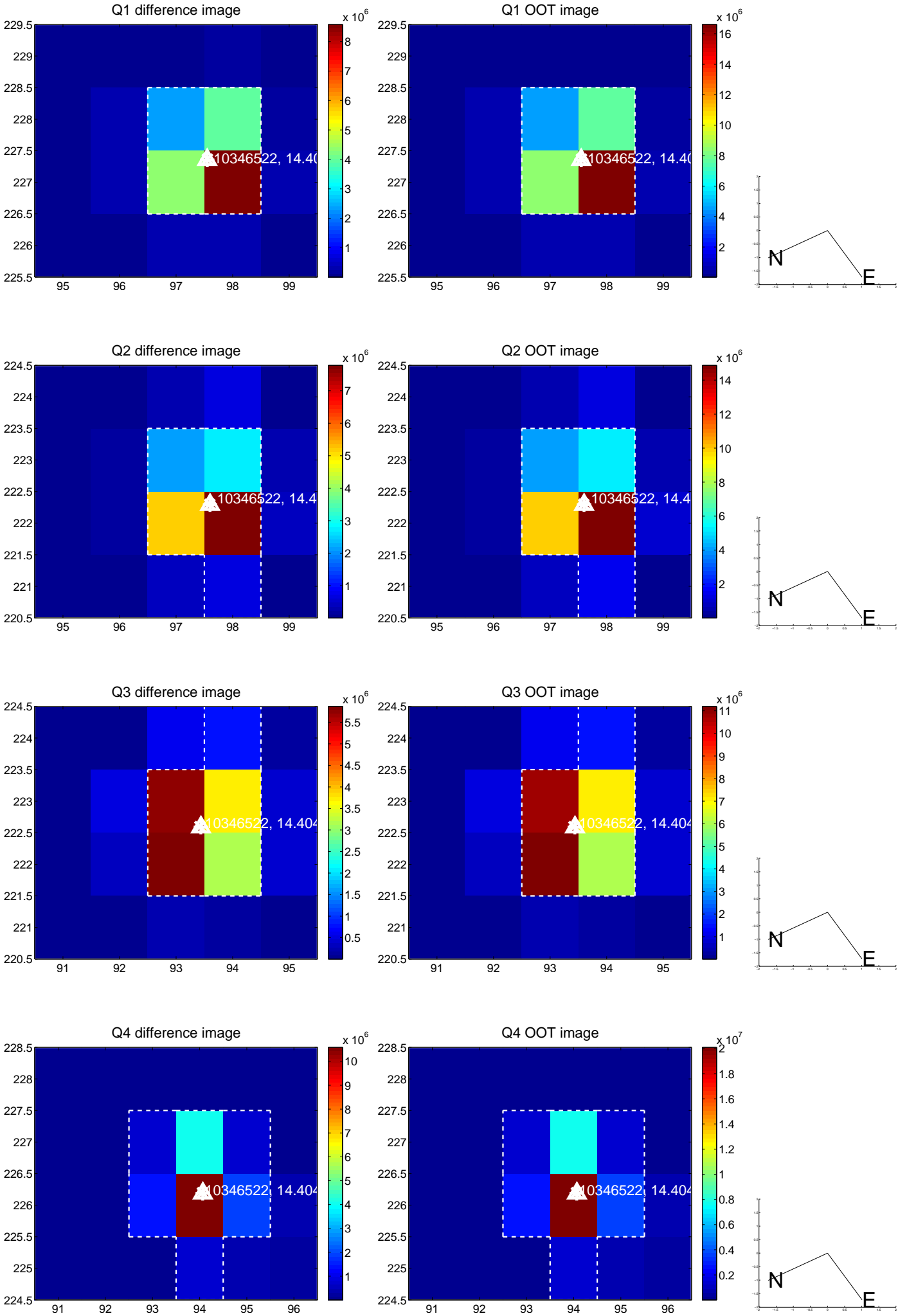
The direct PRF centroid is offset from the target star catalog position by about 0.07 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.004 \pm 0.067$	0.07	$-0.000 \pm 0.067$	$-0.004 \pm 0.067$
PRF-fit source offset from KIC position	$0.041 \pm 0.067$	0.62	$0.041 \pm 0.067$	$0.004 \pm 0.068$
photometric centroid source offset	$0.12 \pm 0.00$	406.95	$0.09 \pm 0.00$	$-0.08 \pm 0.00$

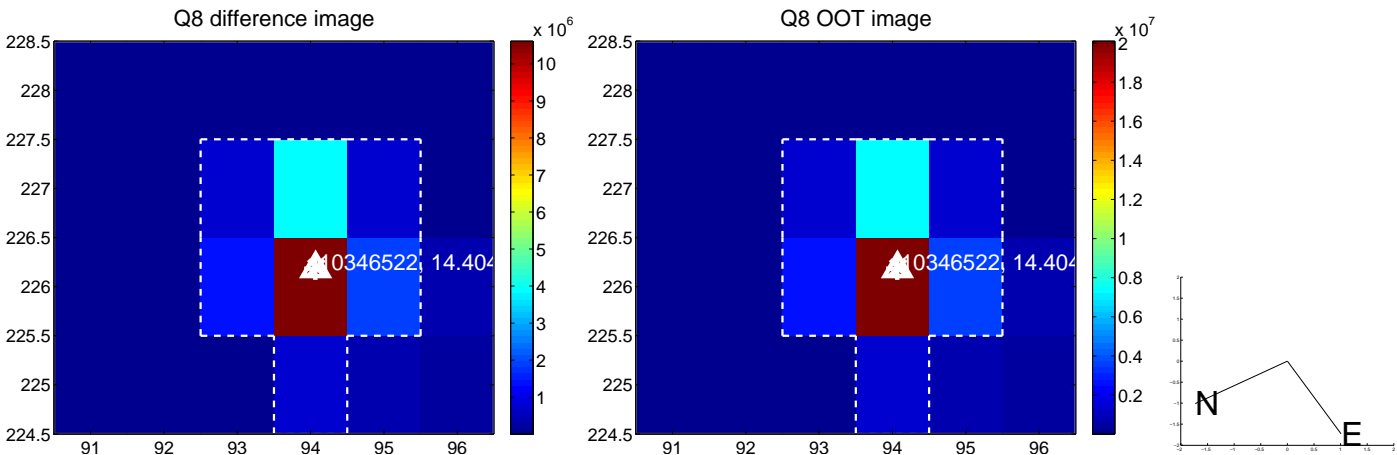
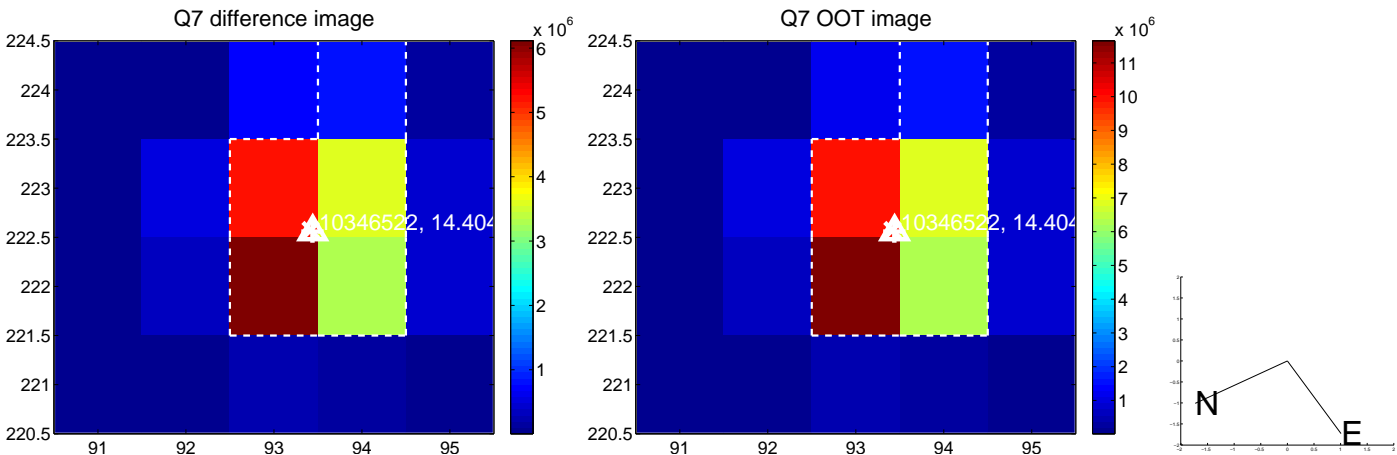
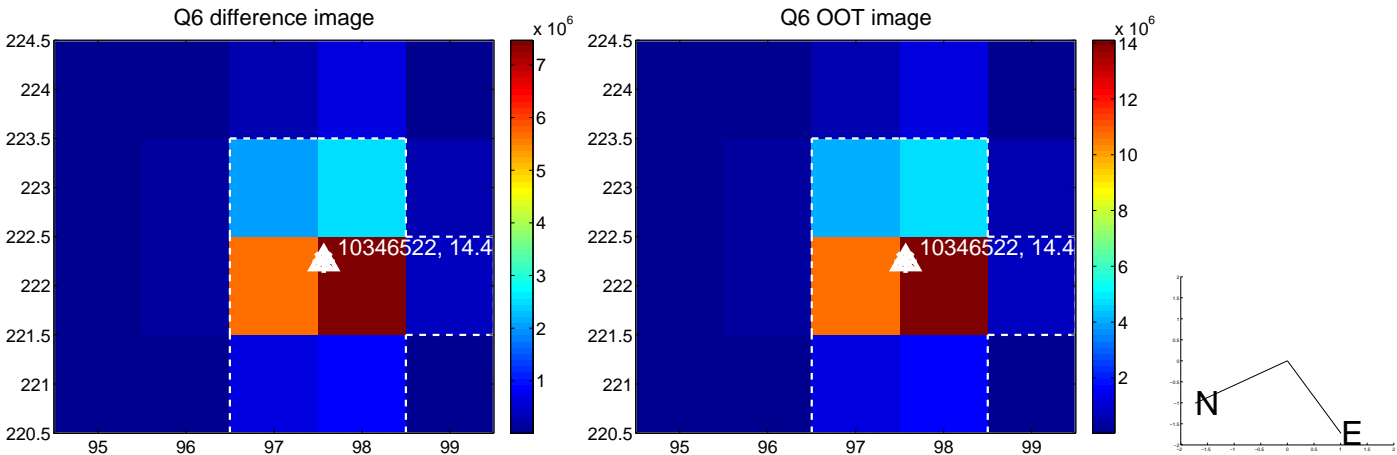
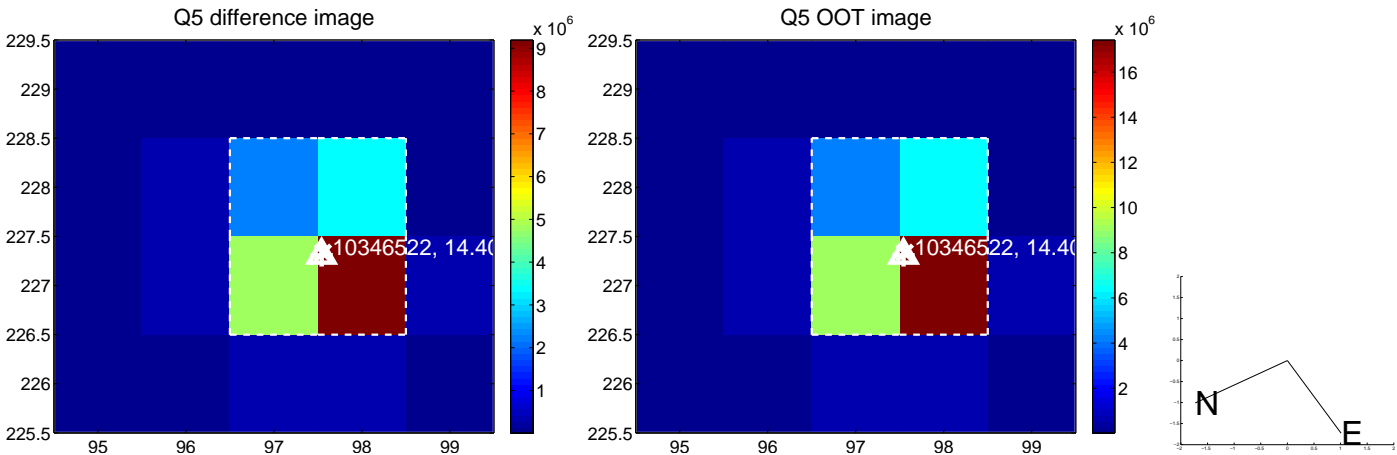


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: three-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

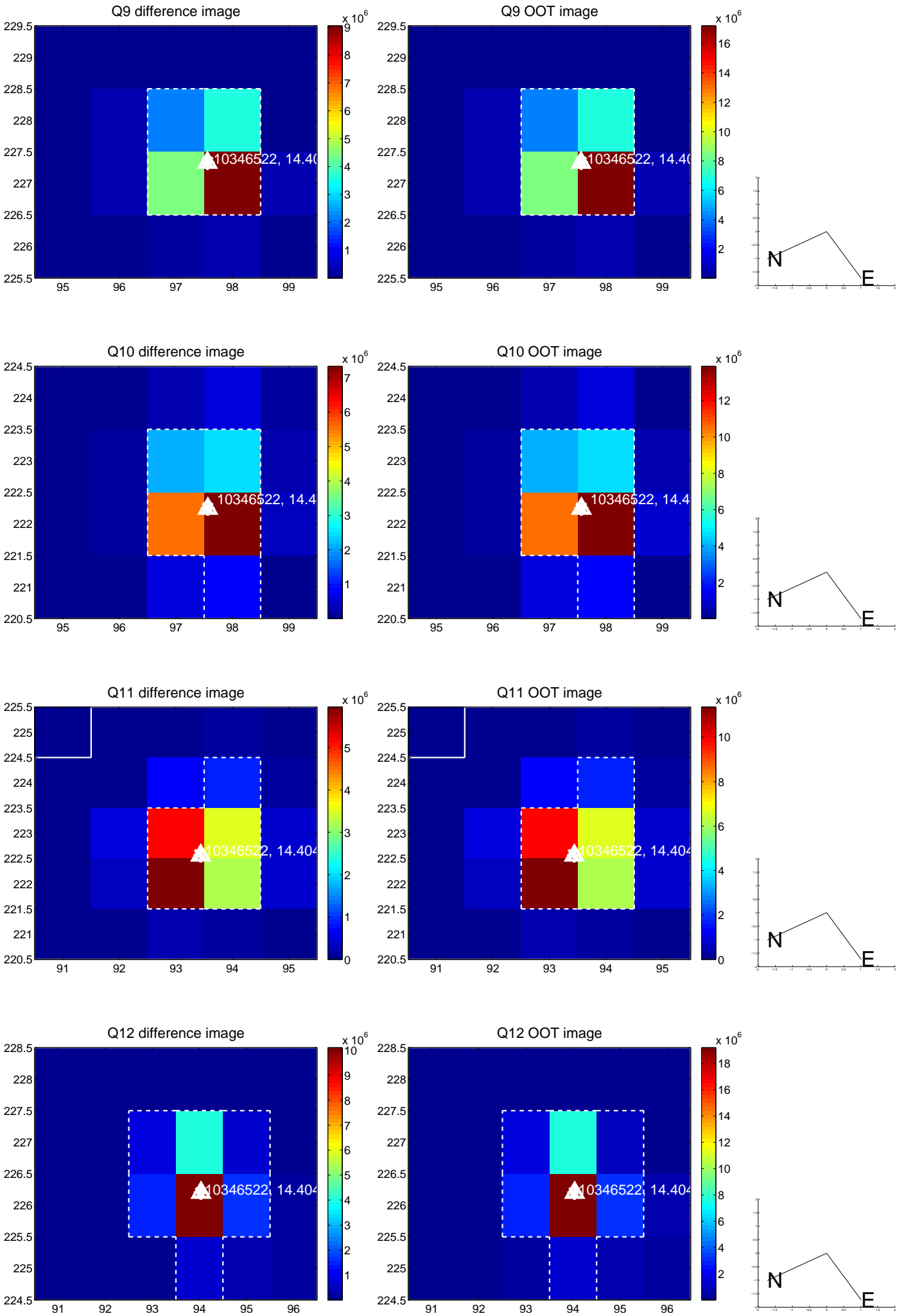


white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

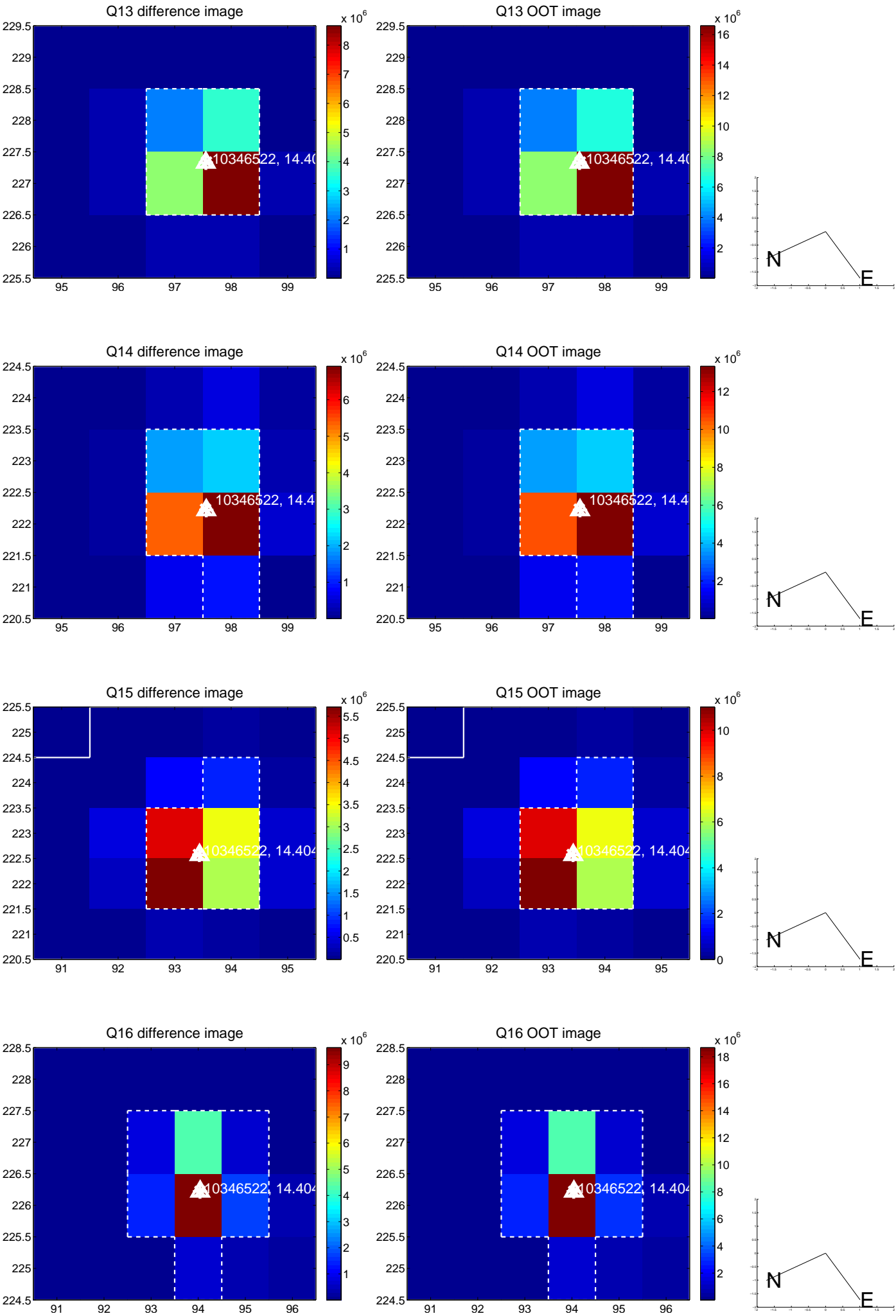




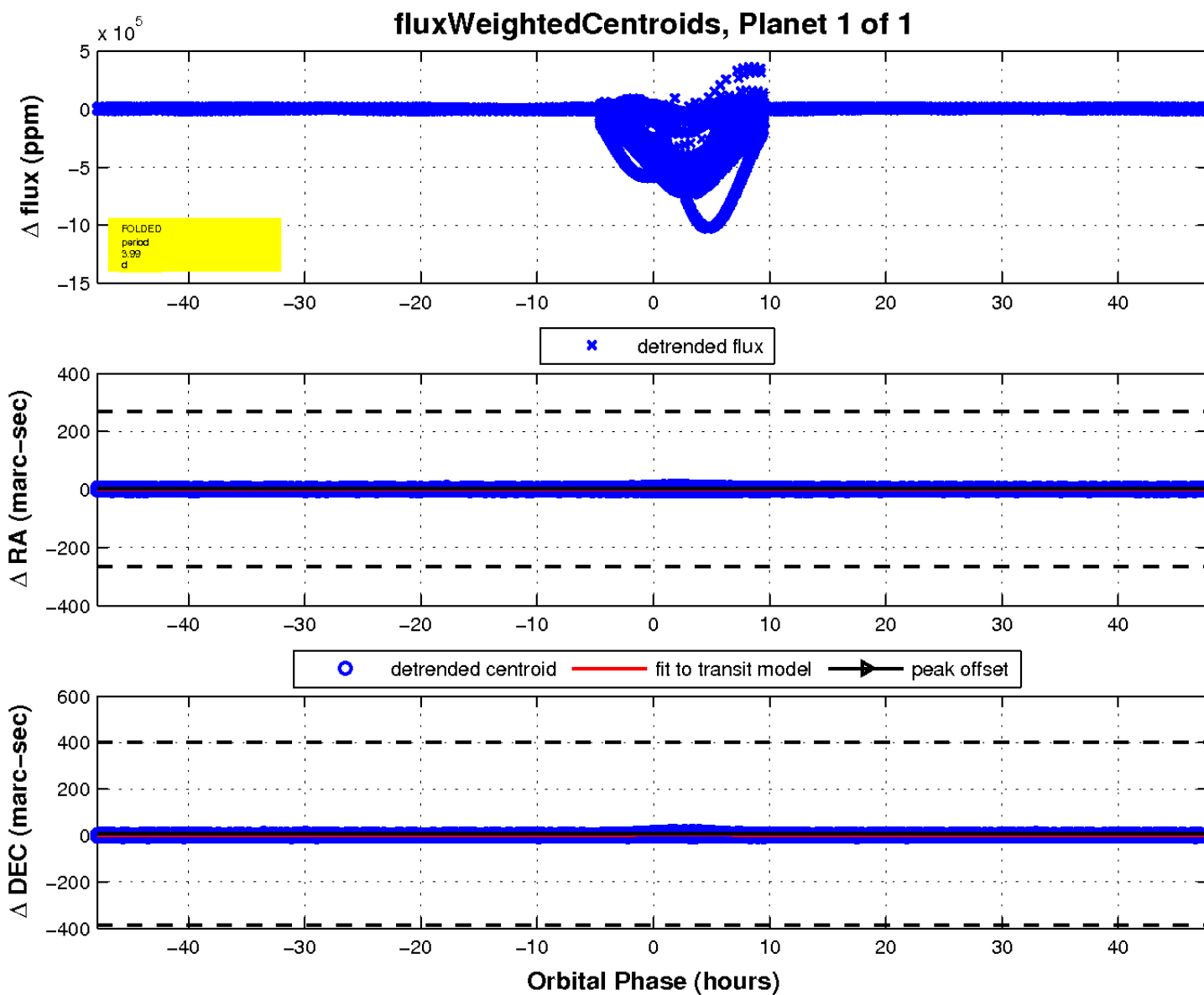
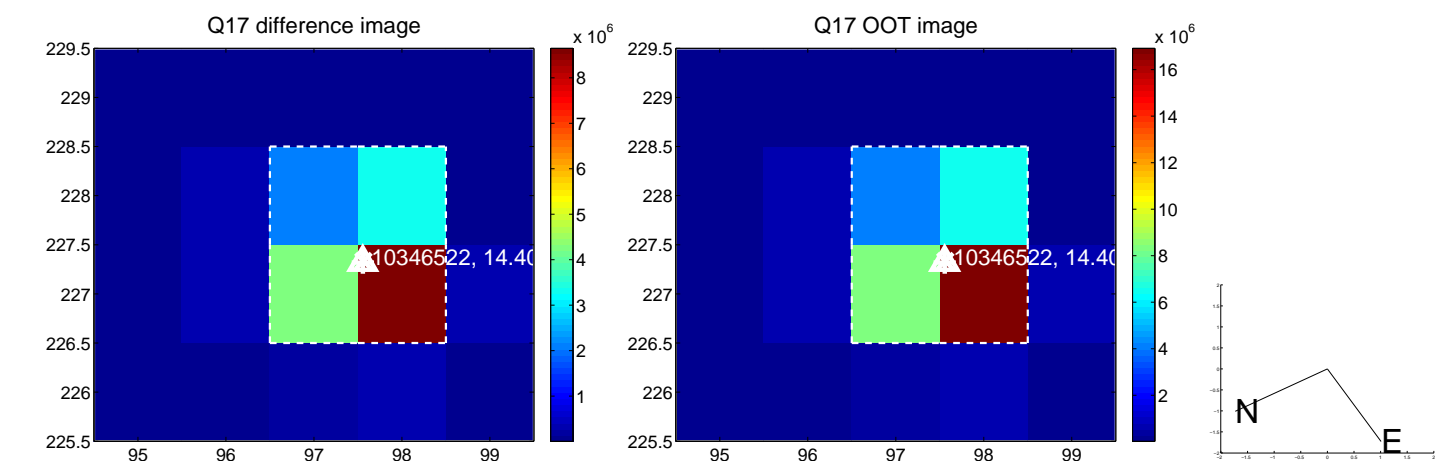
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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



UKIRT Image

Declination

