

# KIC 006206559

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
006206559-01	OBS	3240.01	1.245281	132.256192	27.2	2.735	18.0	15.9	2.48	6106	1.55	12176.31

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
006206559-01	OBS	FP	0.00	0	1	1	1	MOD_SEC_ALT—CENT_UNRESOLVED_OFFSET—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.

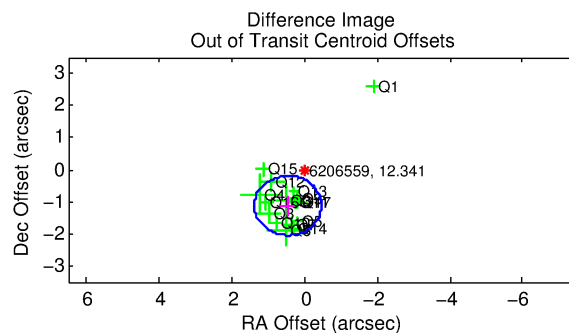
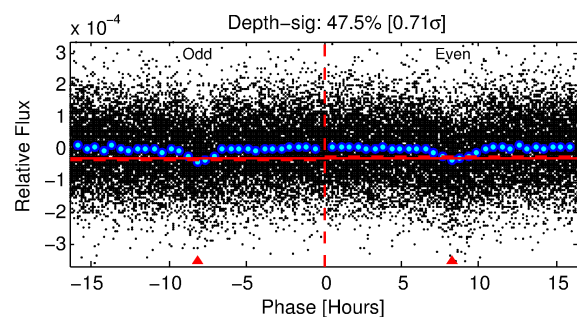
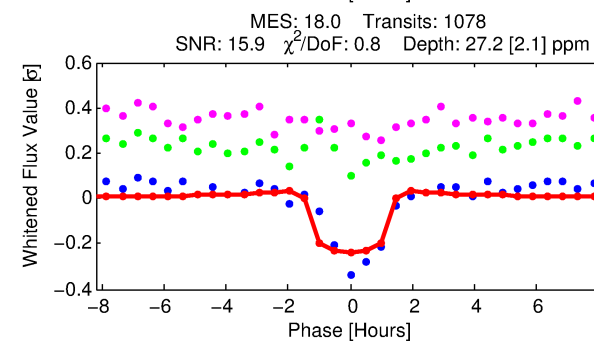
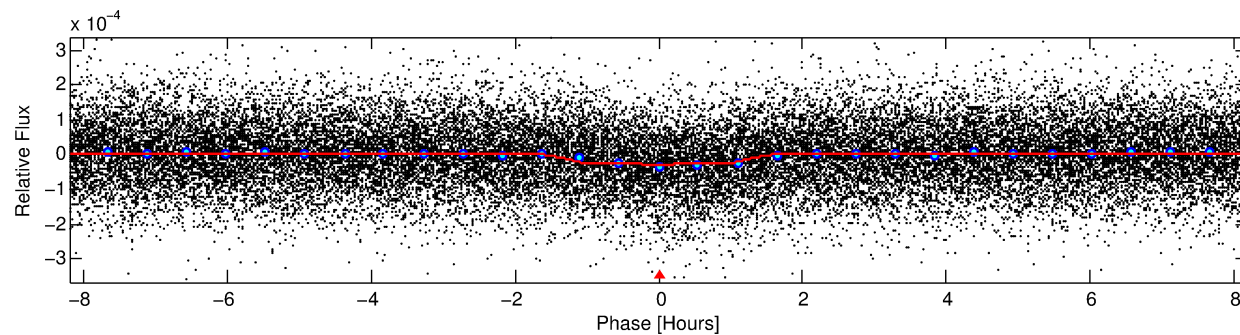
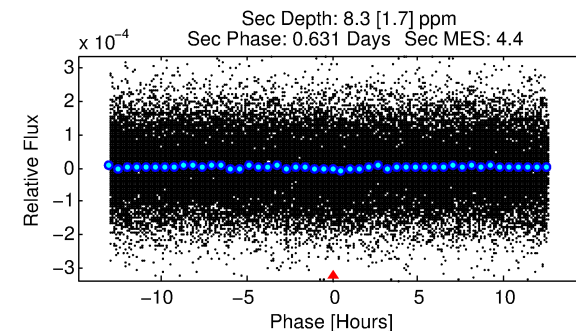
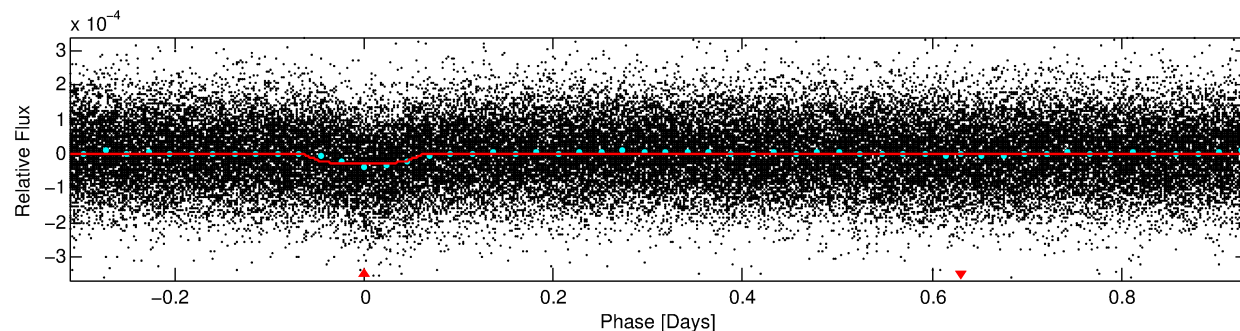
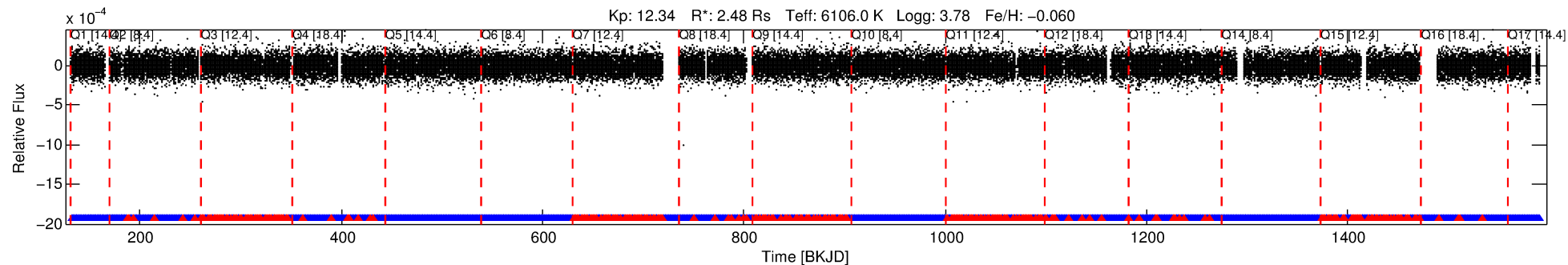
## Ephemeris Match Information For 006206559-01

TCE (1)	KIC	Parent (2)	Parent KIC	P <sub>1</sub> :P <sub>2</sub>	Dist ( $''$ )	$\Delta$ Row	$\Delta$ Col	m <sub>2</sub>	m <sub>1</sub>	D <sub>2</sub> /D <sub>1</sub>	Mechanism	Flag	$\sigma_P$	$\sigma_T$
006206559-01	6206559	006206751-pri	6206751	1:1	308.0	78	-1	12.14	12.34	8966.70	Col-Anomaly	0	3.57	2.39

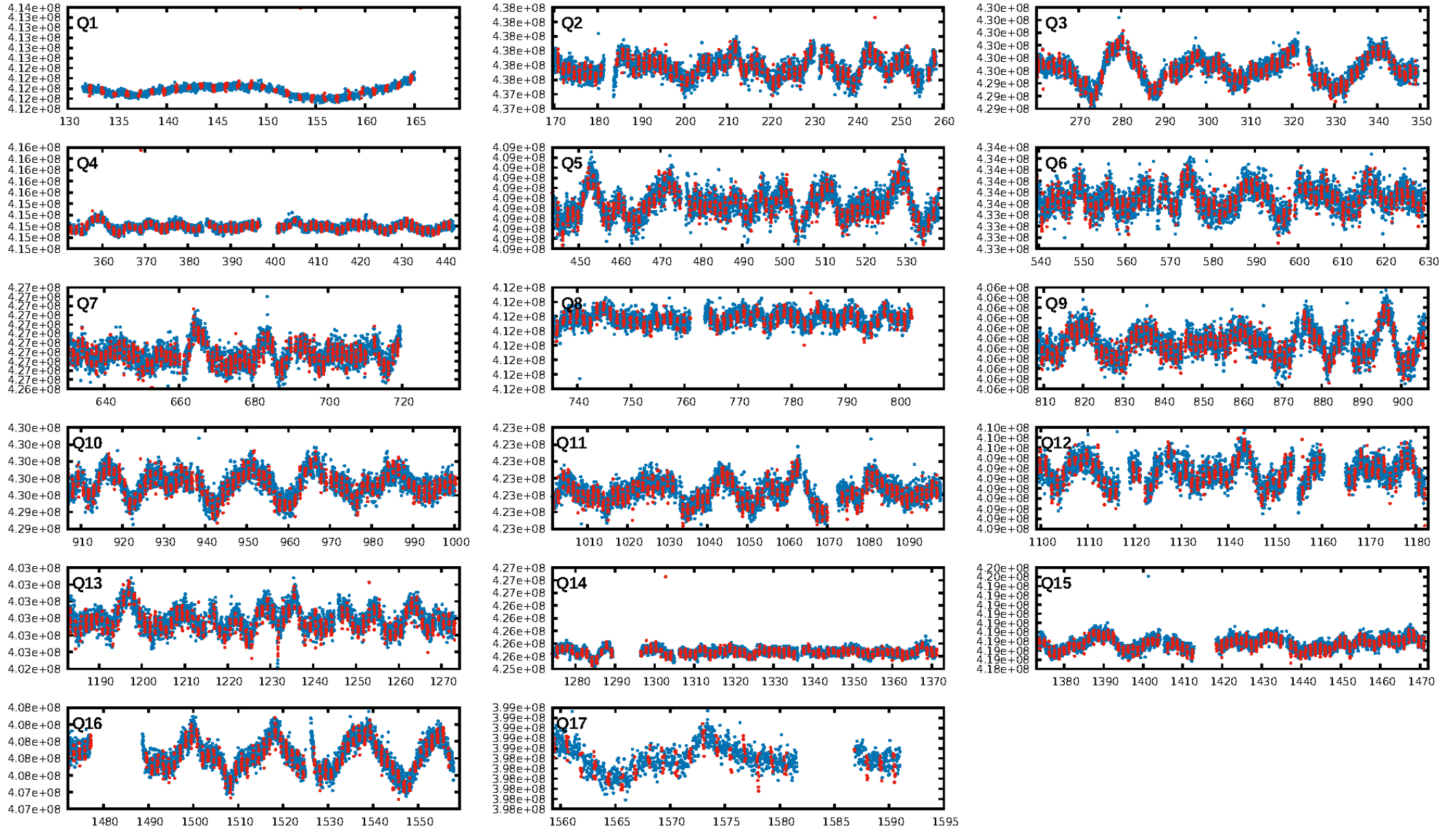
**Notes:** P<sub>1</sub>:P<sub>2</sub> is the period ratio. Dist is the distance in arcseconds.  $\Delta$ Row and  $\Delta$ Col are the number of pixels apart in row and column. m<sub>2</sub> and m<sub>1</sub> are the magnitudes of the parent and child. D<sub>2</sub>/D<sub>1</sub> is the parent's transit 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

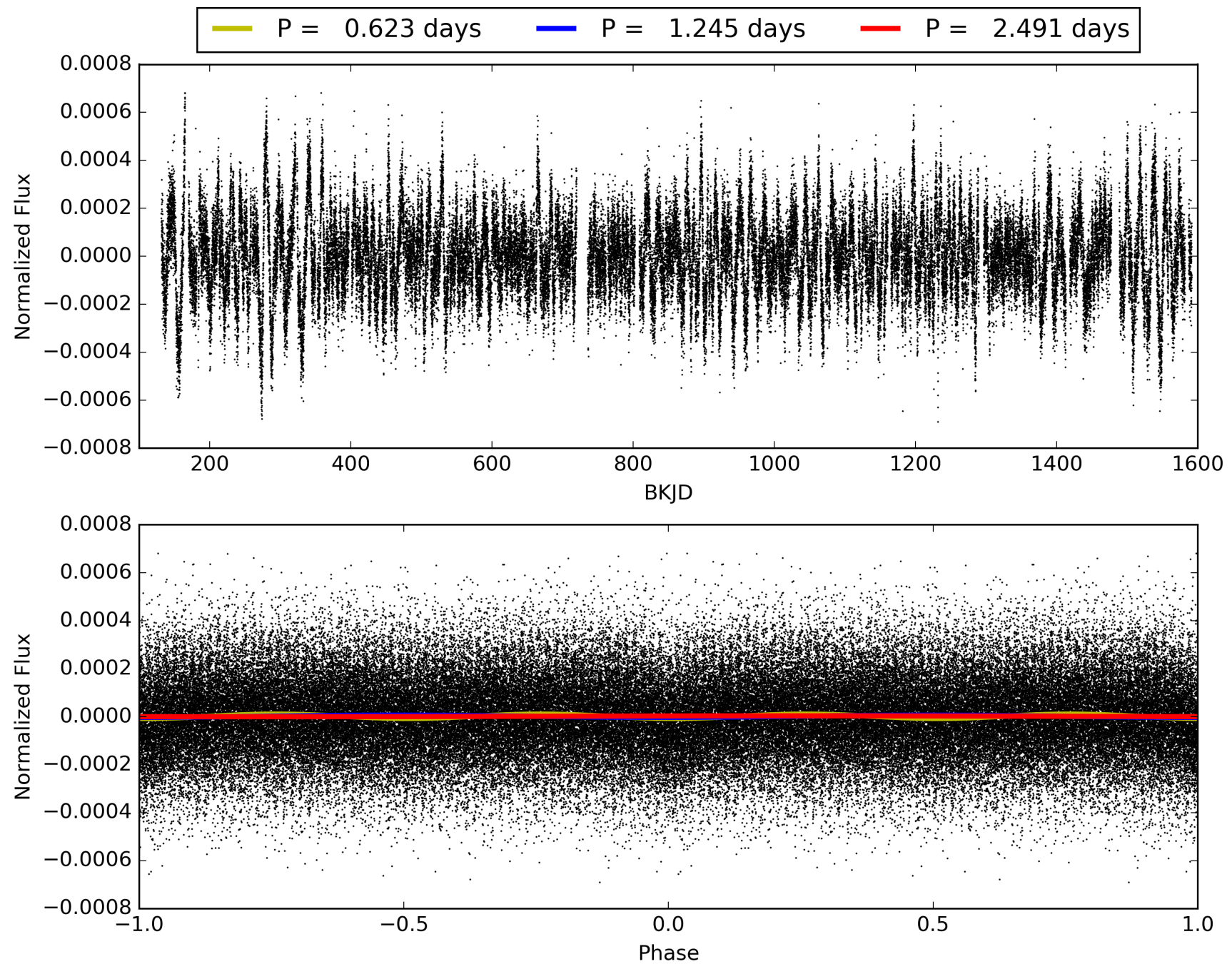
KIC: 6206559 Candidate: 1 of 1 Period: 1.245 d  
KOI: K03240.01 Corr: 0.879



# TCE 006206559-01, PDC Light Curves

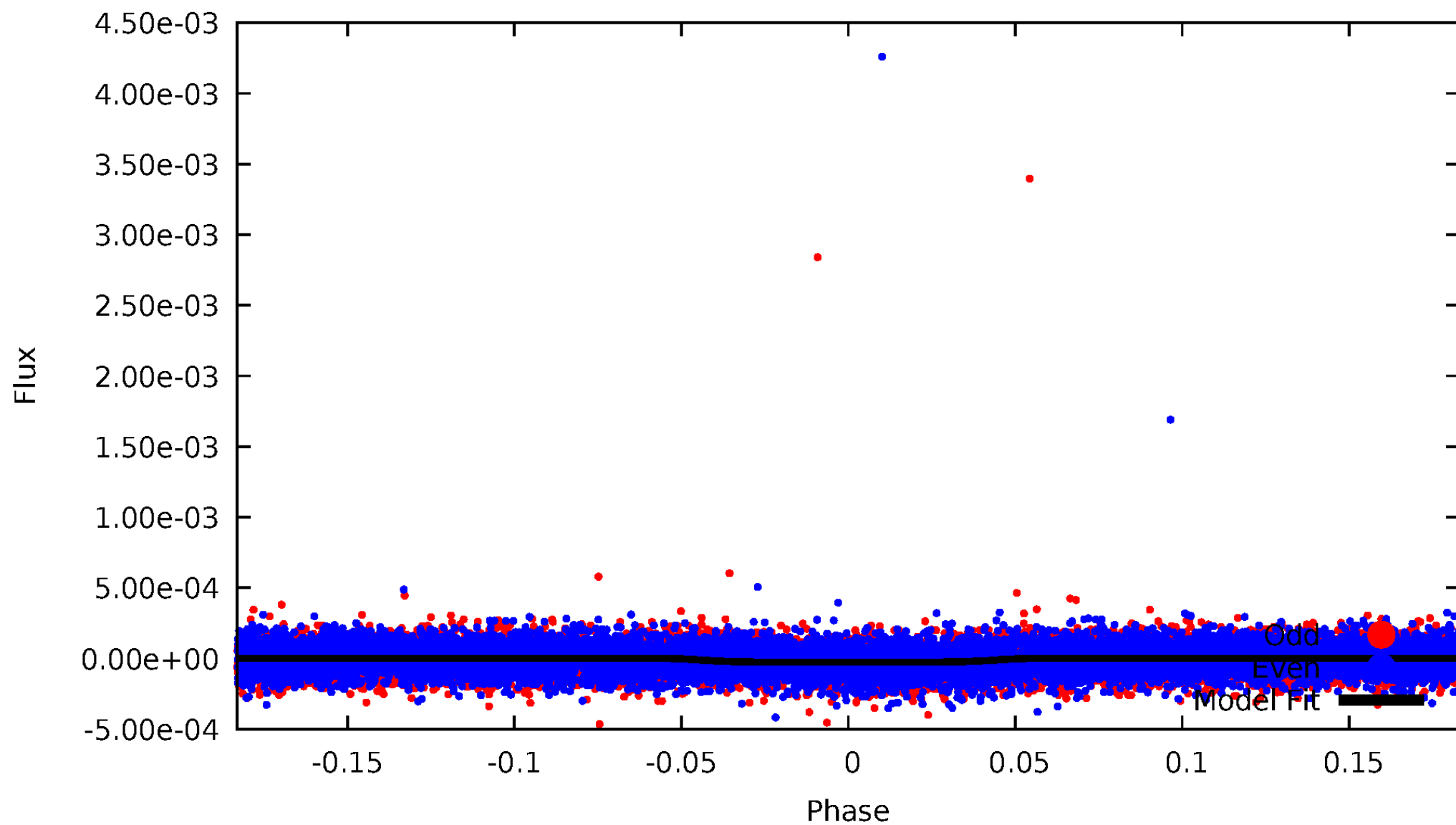


TCE 006206559-01



# DV Odd/Even

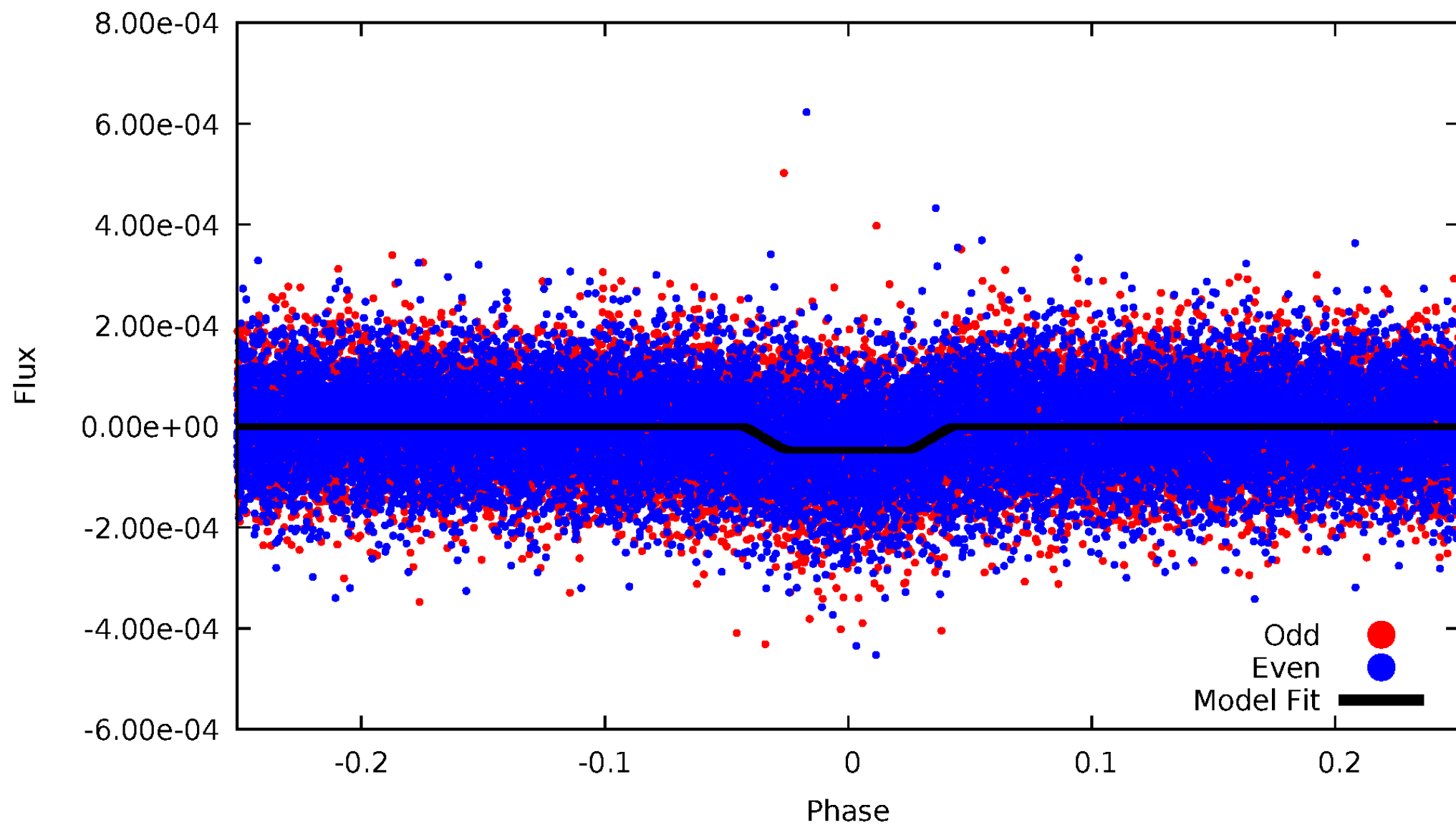
TCE 006206559-01





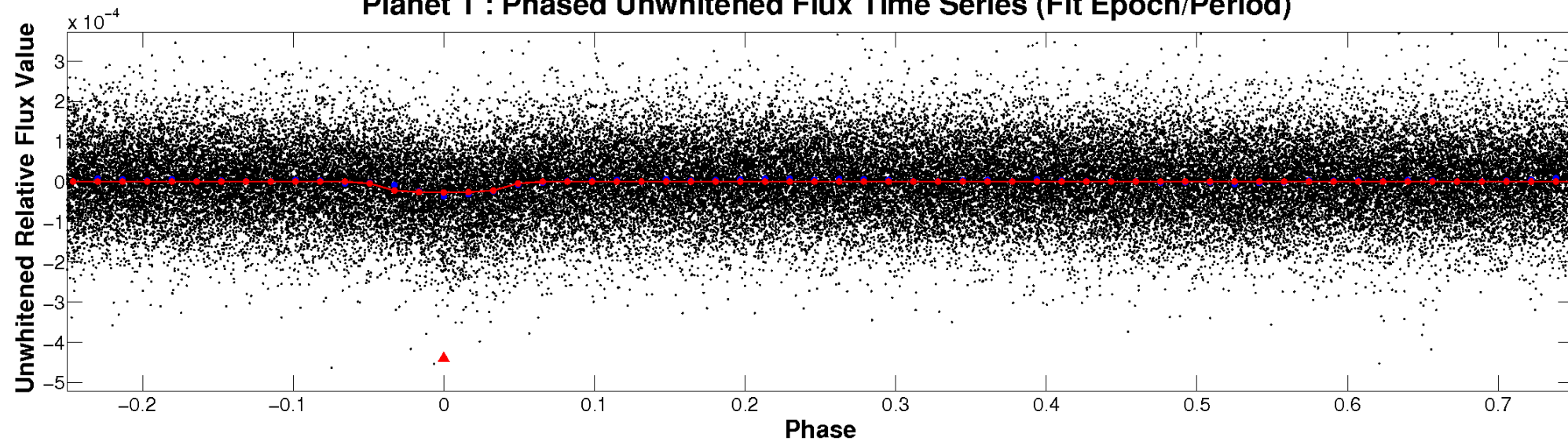
# ALT Odd/Even

TCE 006206559-01

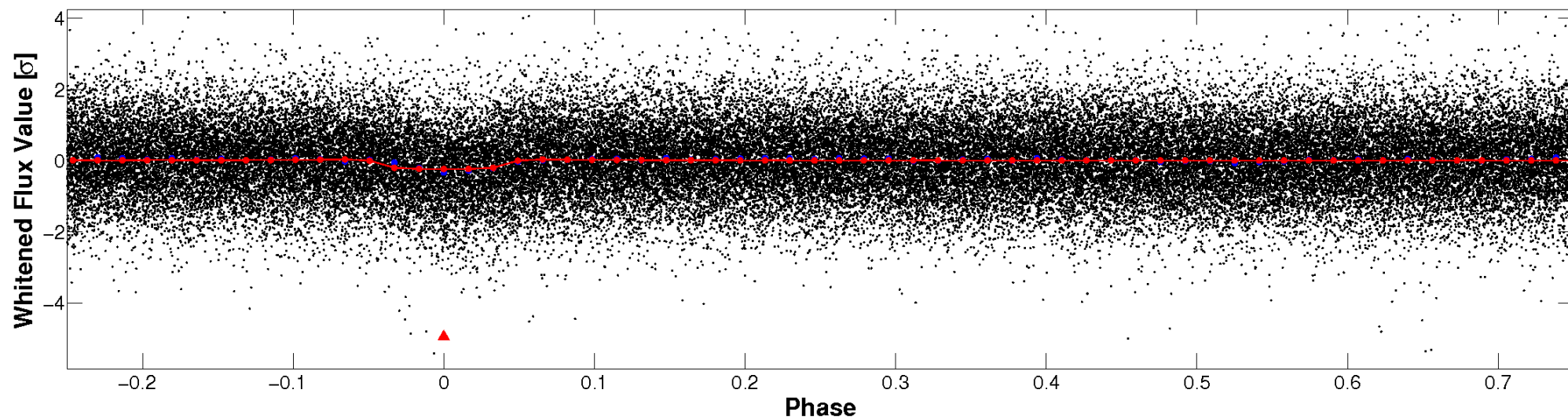


# Non-Whitened Vs. Whitened Light Curve

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

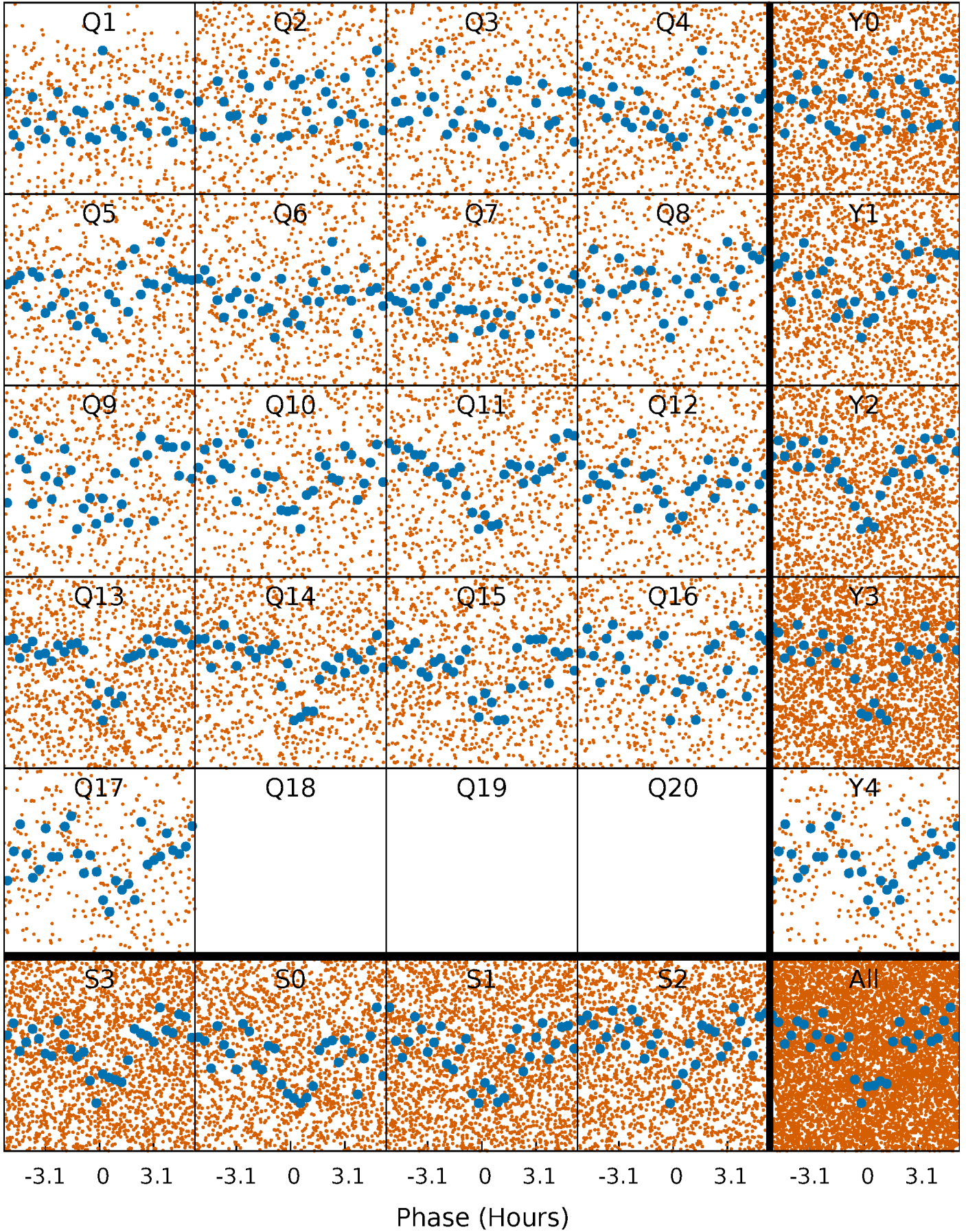


## Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



# PDC Quarter-Phased Transit Curves

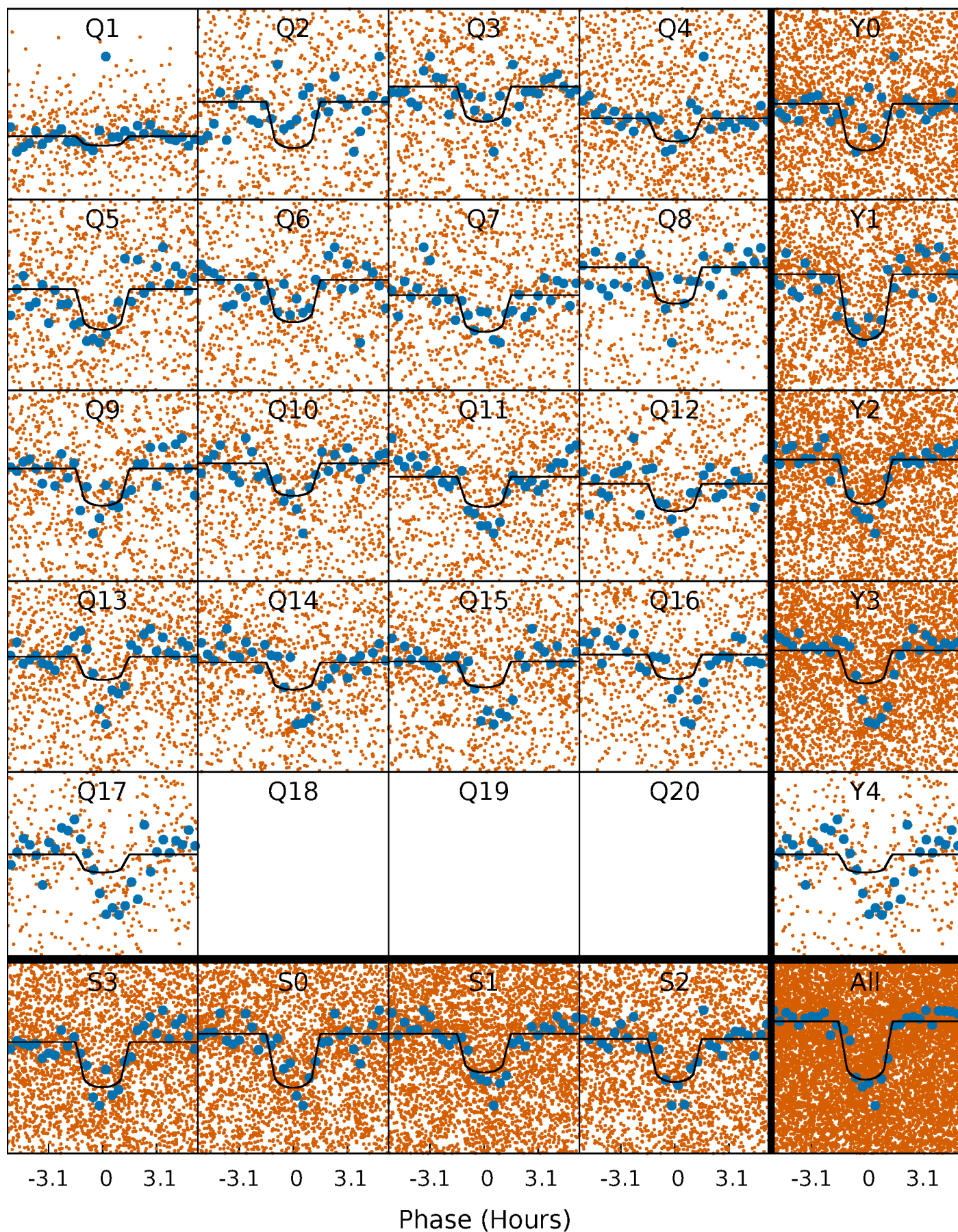
TCE 006206559-01 P= 1.245281 Days  $T_0=132.256192$  (BKJD)





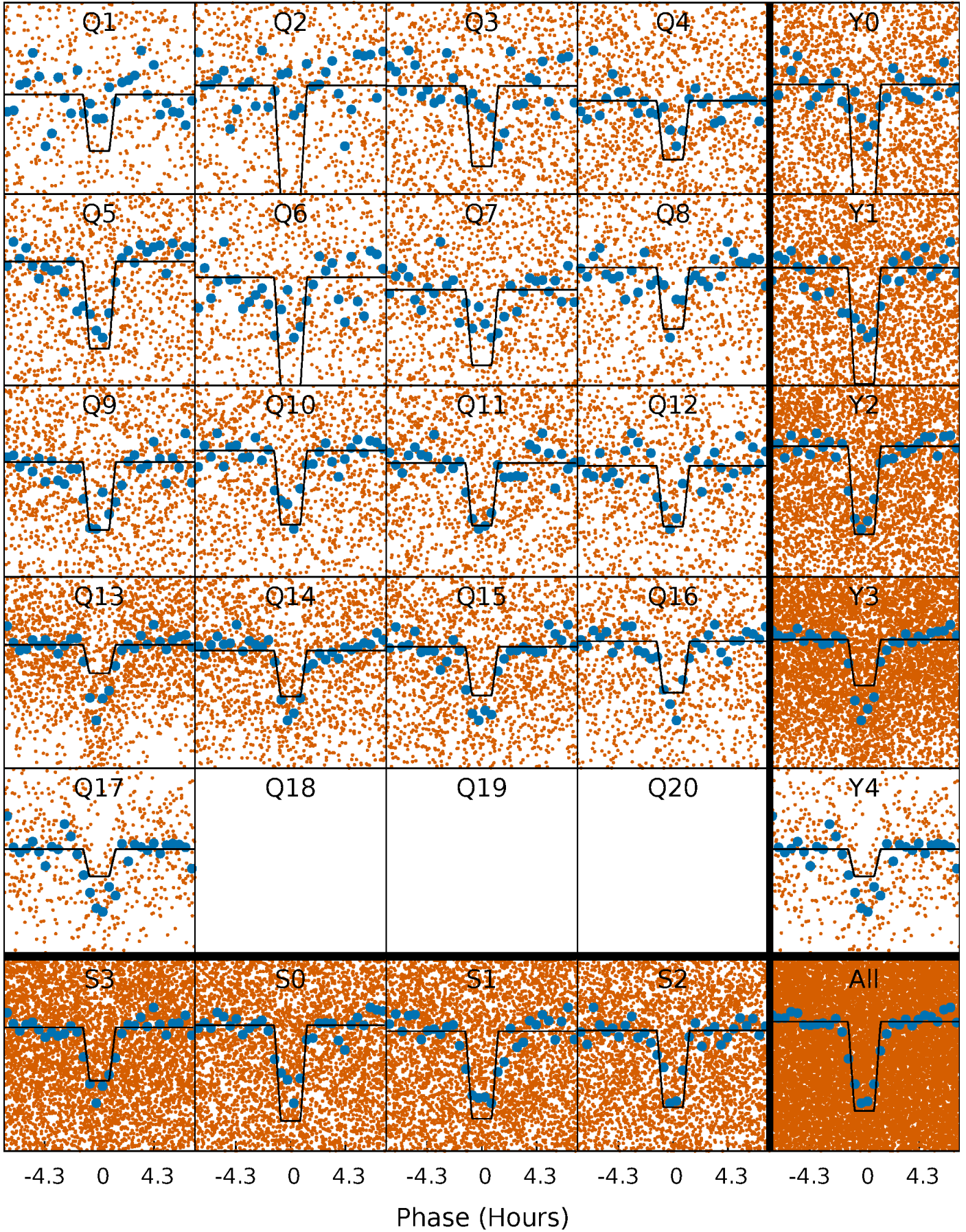
# DV Quarter-Phased Transit Curves

TCE 006206559-01 P= 1.245281 Days  $T_0=132.256192$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

TCE 006206559-01 P= 1.245332 Days  $T_0=132.228742$  (BKJD)

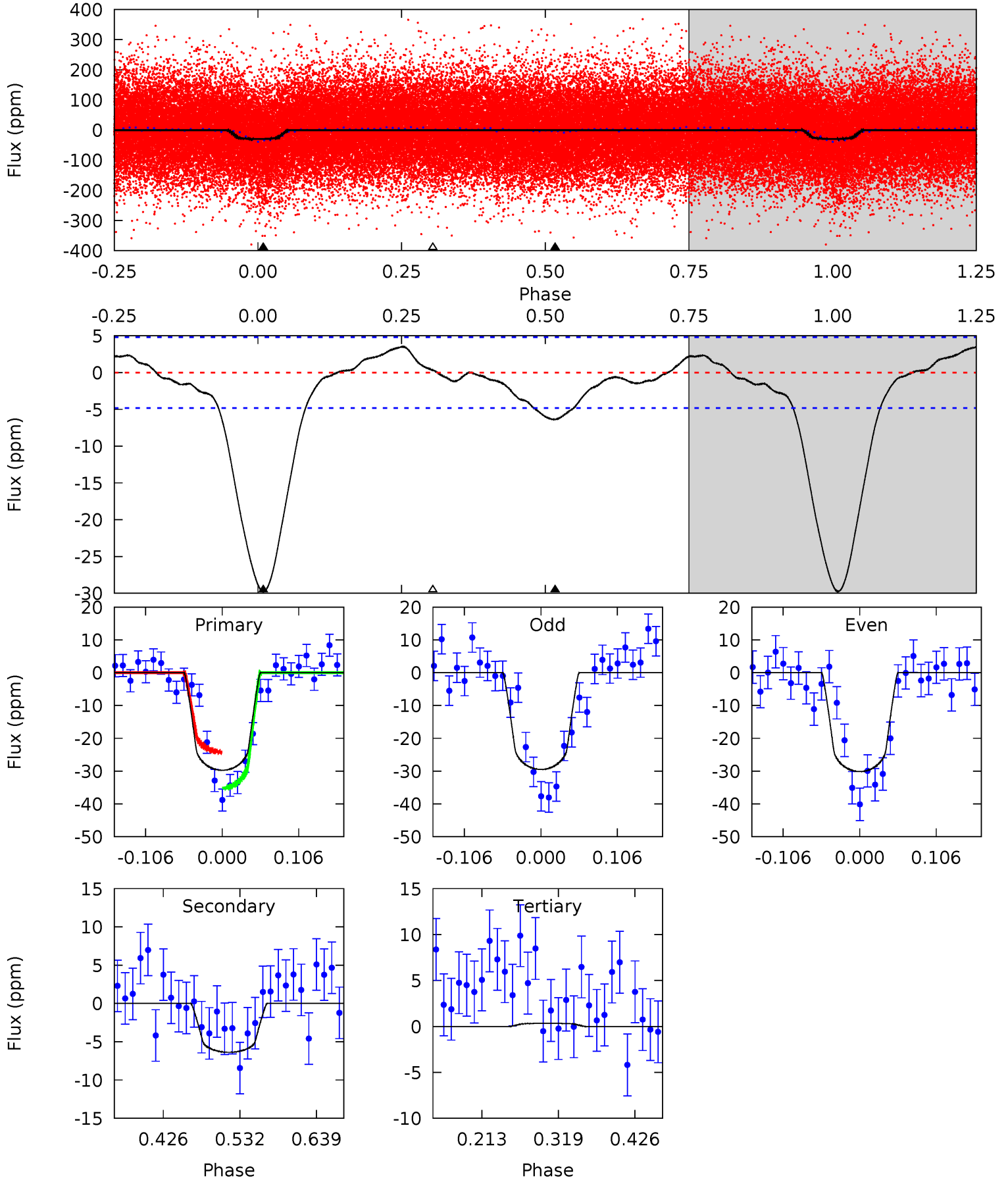




# DV Model-Shift Uniqueness Test

006206559-01, P = 1.245281 Days, E = 131.010911 Days

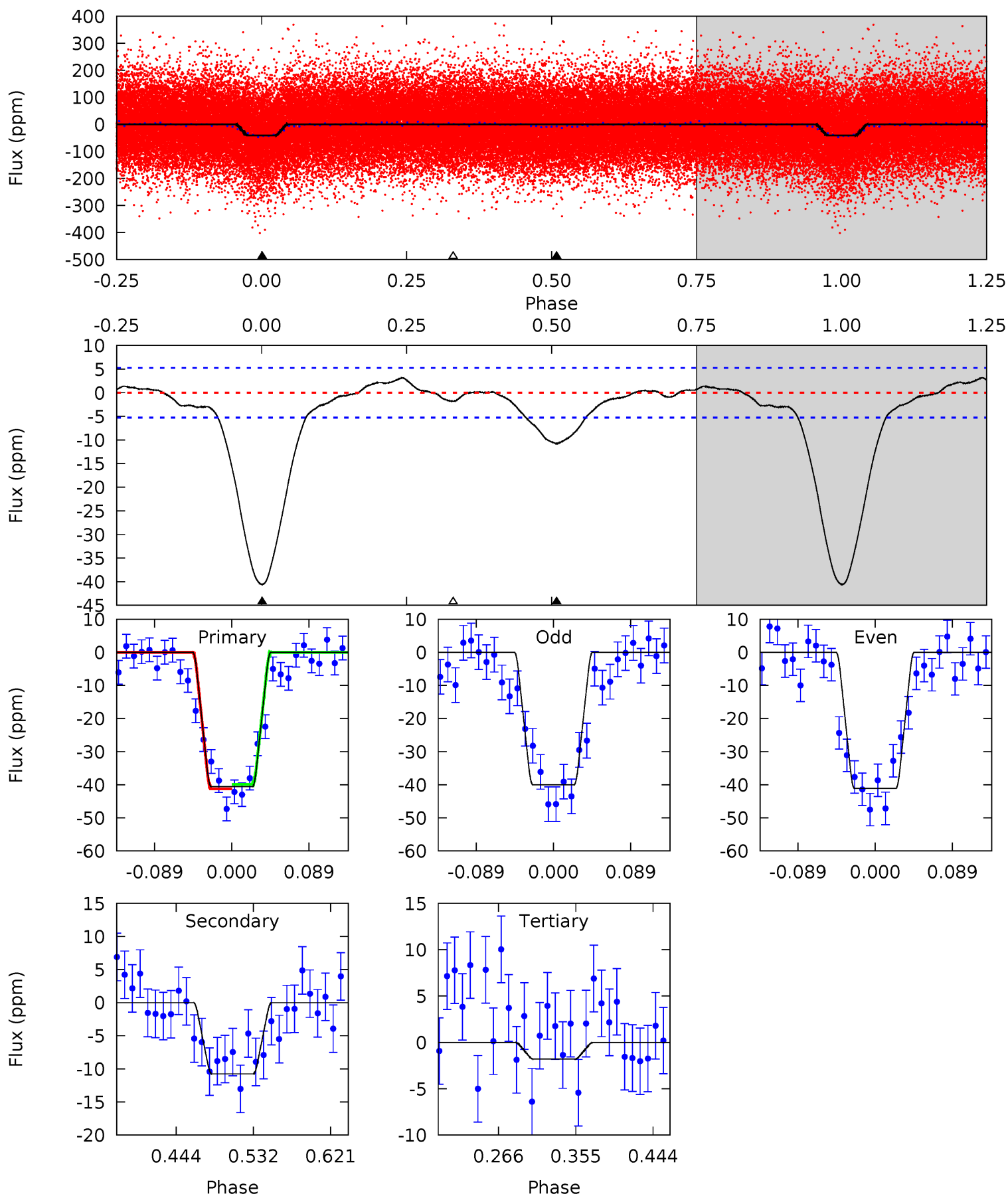
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
28.1	6.03	-0.32	0	4.55	1.61	1.41	28.4	28.1	6.35	6.03	0.30	1.00	0.11	5.19



# Alt Model-Shift Uniqueness Test

006206559-01, P = 1.245332 Days, E = 130.983410 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
35.4	9.40	1.57	0	4.59	1.70	1.29	33.9	35.4	7.83	9.40	0.49	1.02	0.07	0.60





### Stellar Parameters For KIC 006206559

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R$ ( $R_{\odot}$ )	$M(M_{\odot})$	$p_{\star}$ ( $\text{g}\cdot\text{cm}^{-3}$ )
	$6106^{+217}_{-217}$	$3.781^{+0.535}_{-0.094}$	$-0.060^{+0.250}_{-0.300}$	$2.477^{+0.534}_{-1.246}$	$1.352^{+0.185}_{-0.344}$	$0.125^{+0.726}_{-0.048}$
	+4%/-4%	+14%/-2%	+417%/-500%	+22%/-50%	+14%/-25%	+579%/-39%
Source	PHO54	PHO54	PHO54	DSEP		

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

### Secondary Eclipse Parameters for KIC 006206559-01 / KOI 3240.01

Detrend	Depth (ppm)	$R_p$ ( $R_{\oplus}$ )	$T_{max}$ (K)	$T_{obs}$ (K)	$A_{obs}$
DV	$-6 \pm 1$	$1.38^{+0.49}_{-0.46}$	$3601^{+293}_{-508}$	$4035^{+644}_{-512}$	$1.141^{+1.437}_{-0.517}$
Alt.	$-11 \pm 1$	$1.65^{+0.55}_{-0.54}$	$3572^{+319}_{-449}$	$4217^{+522}_{-426}$	$1.370^{+1.396}_{-0.593}$

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

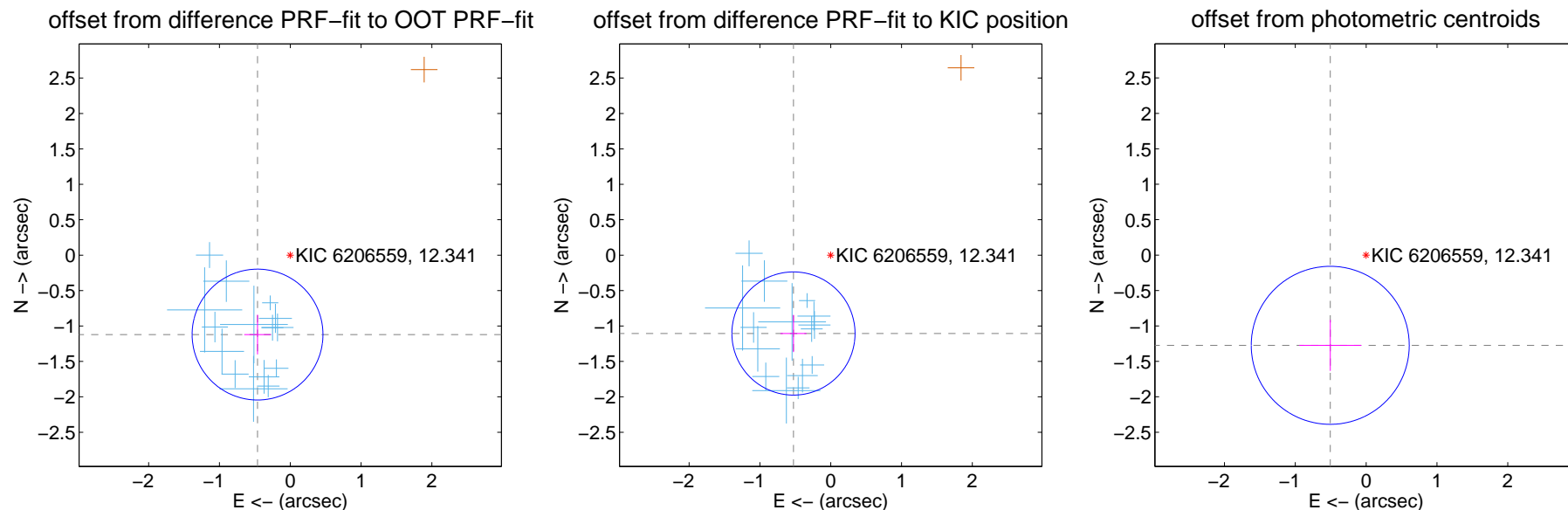
## DV Centroid Data

Supplemental centroid analysis for 006206559-01. Kepler magnitude: 12.34. Transit SNR 15.92

There are 15 quarters with good PRF difference image offsets

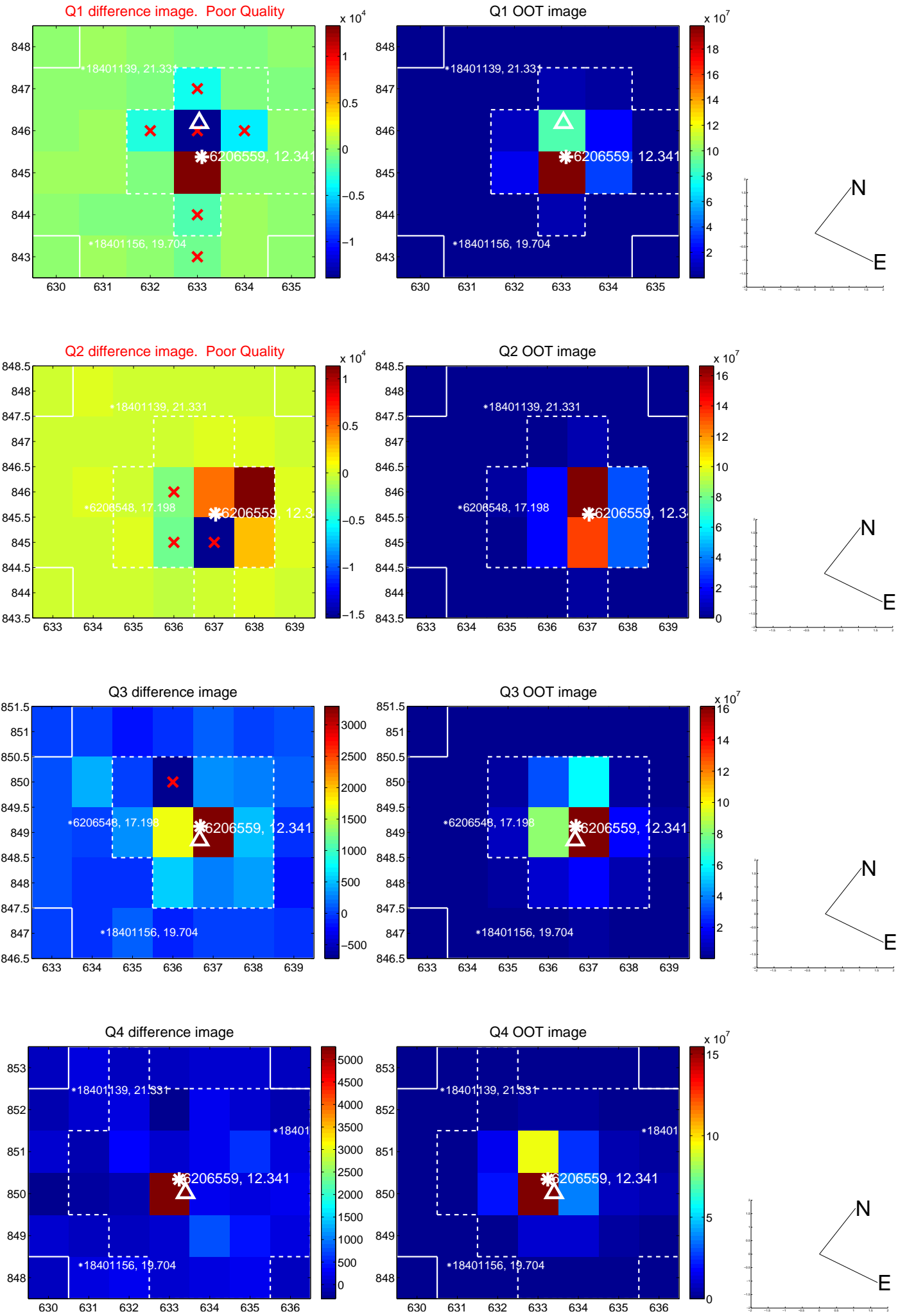
The direct PRF centroid is offset from the target star catalog position by about 0.06 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$1.213 \pm 0.308$	3.94	$0.462 \pm 0.188$	$-1.121 \pm 0.280$
PRF-fit source offset from KIC position	$1.225 \pm 0.290$	4.23	$0.526 \pm 0.184$	$-1.106 \pm 0.262$
photometric centroid source offset	$1.37 \pm 0.37$	3.69	$0.51 \pm 0.44$	$-1.27 \pm 0.36$

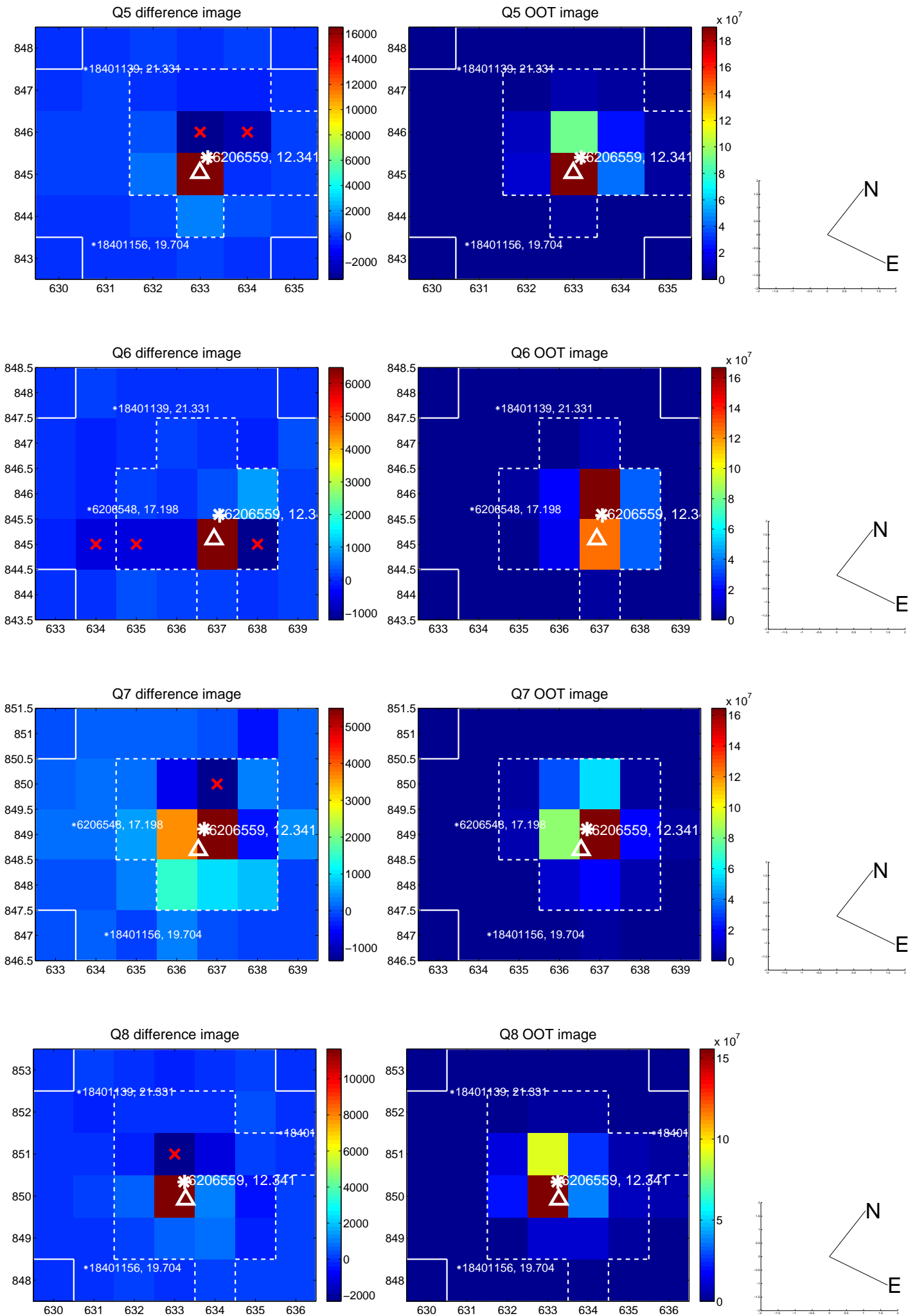


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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

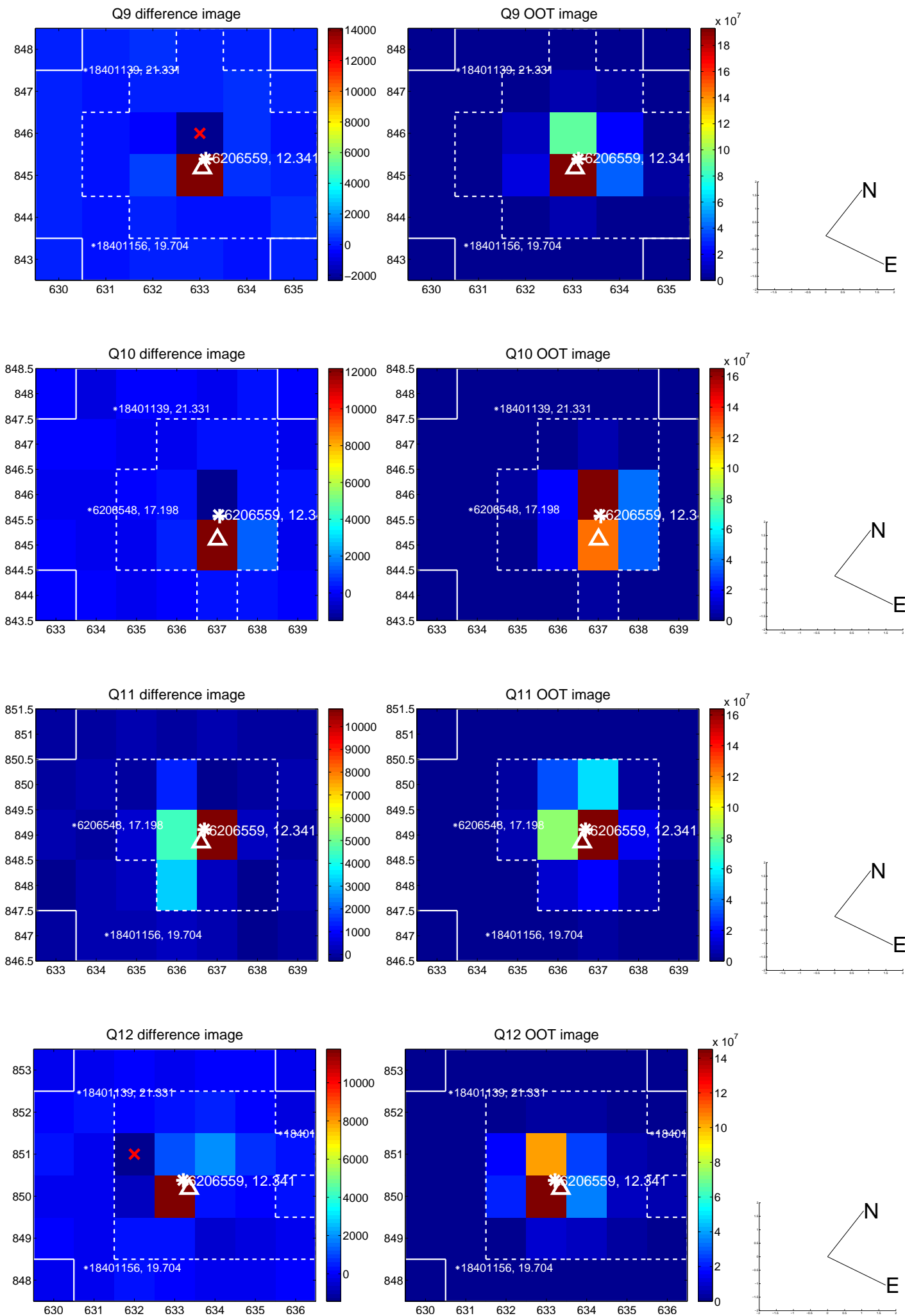


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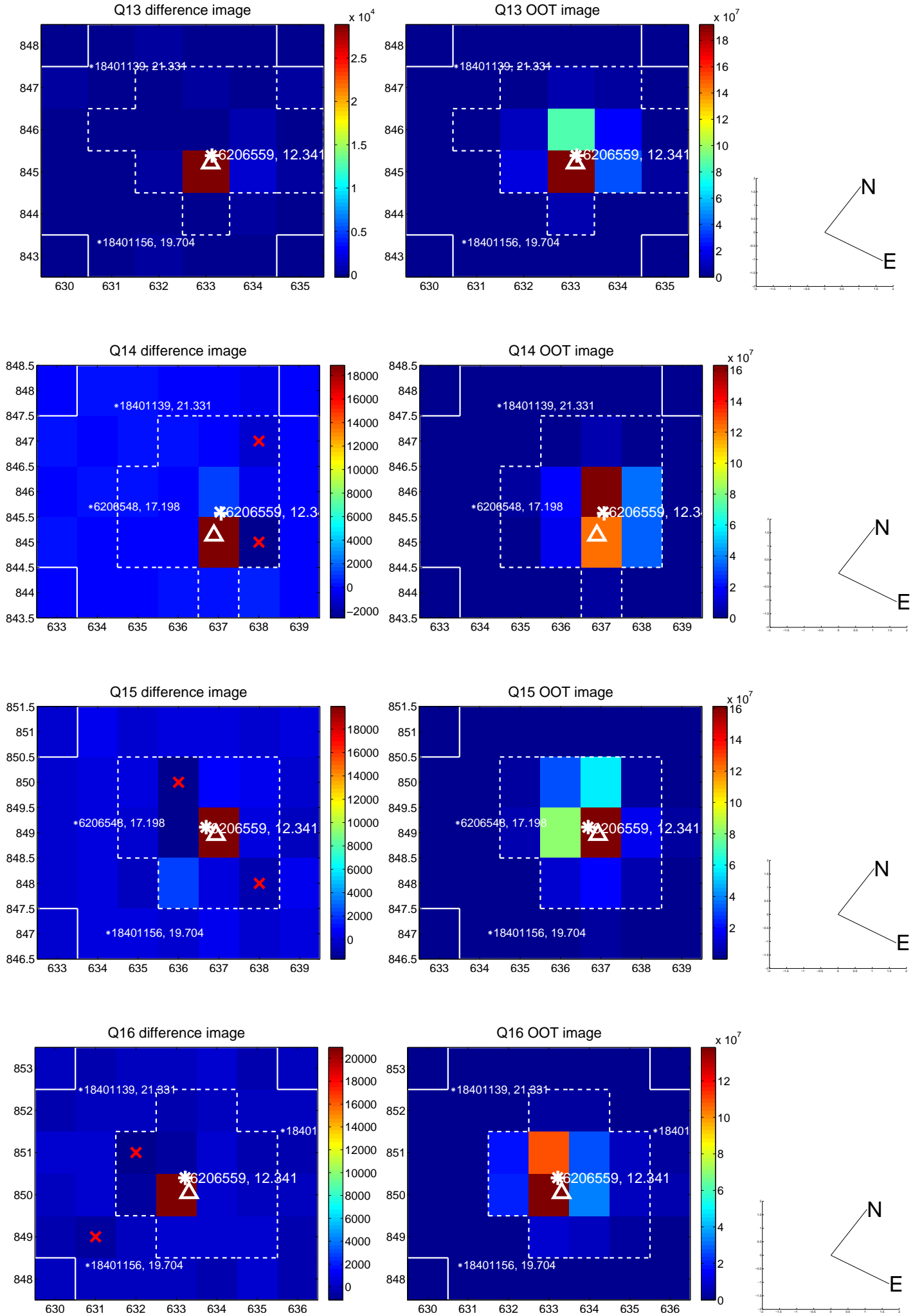




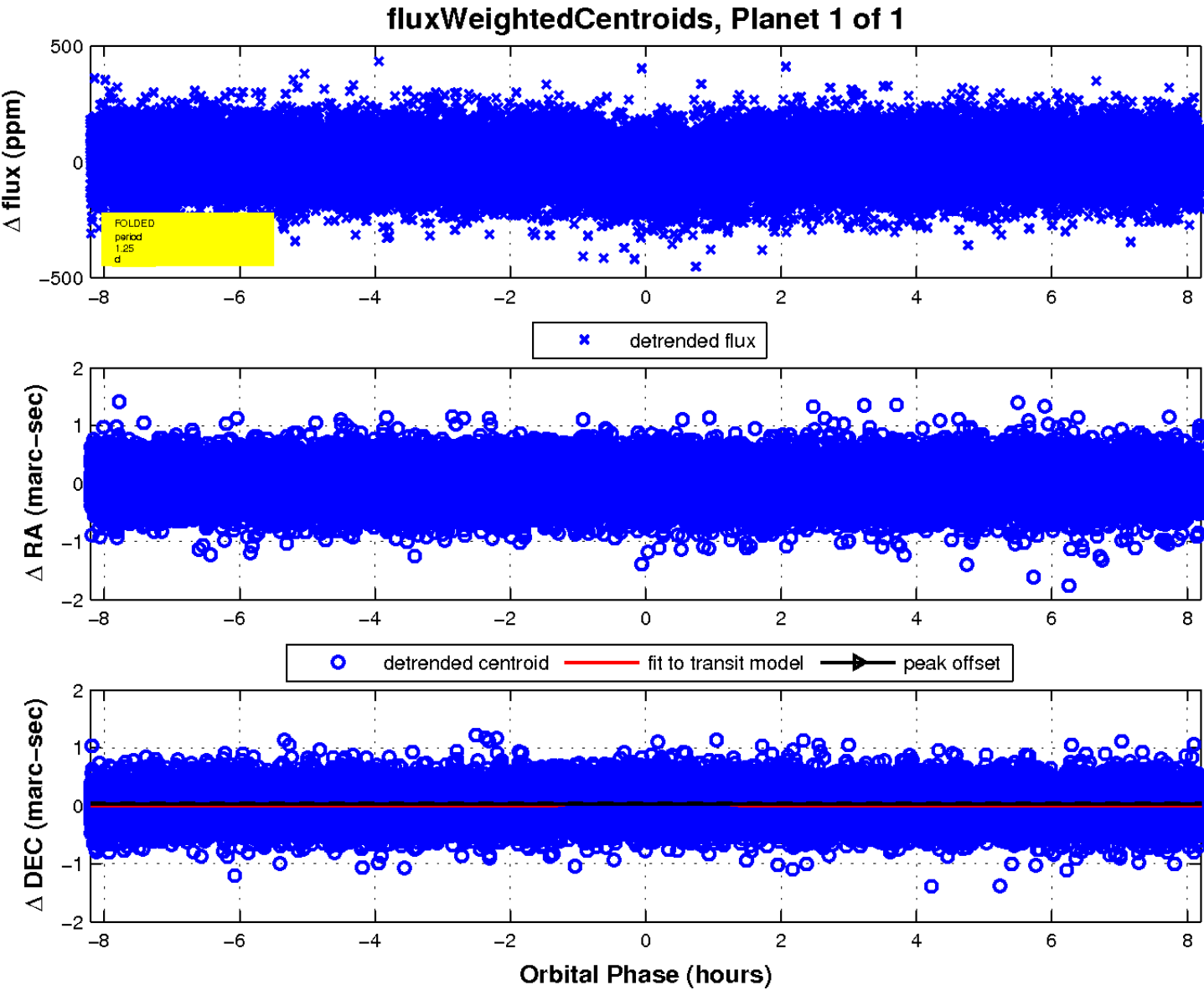
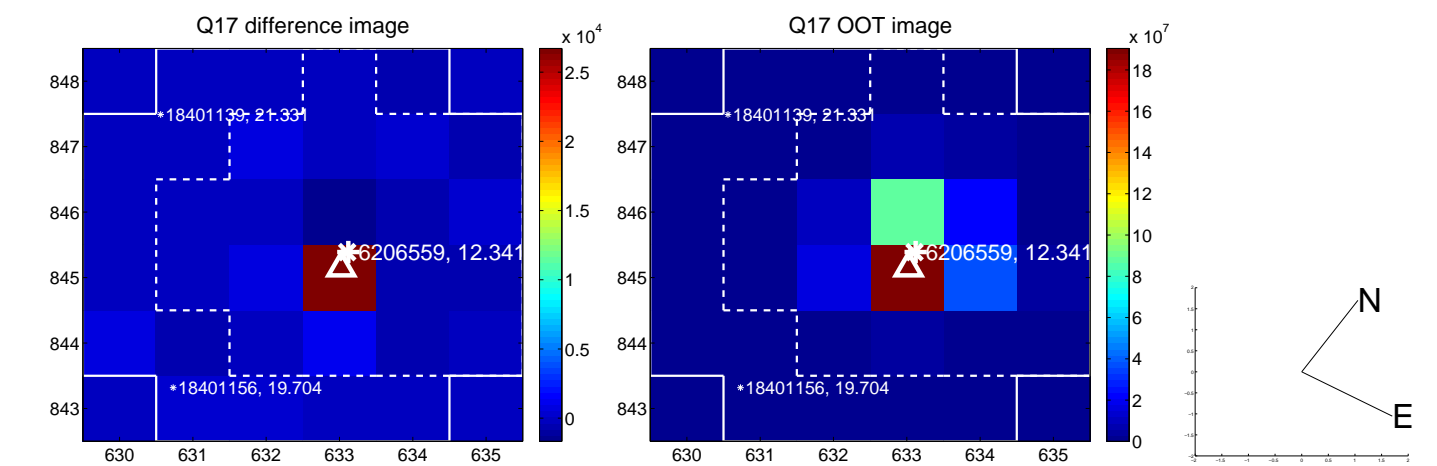
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UKIRT Image

Declination

