

# KIC 008016369

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
008016369-01	OBS	No	0.772554	132.127264	13.6	6.882	8.3	5.5	4.82	6729	1.82	0.00

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008016369-01	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.

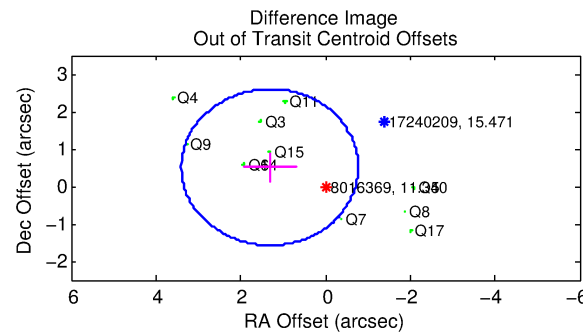
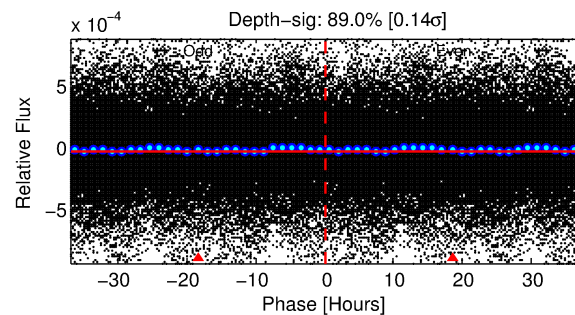
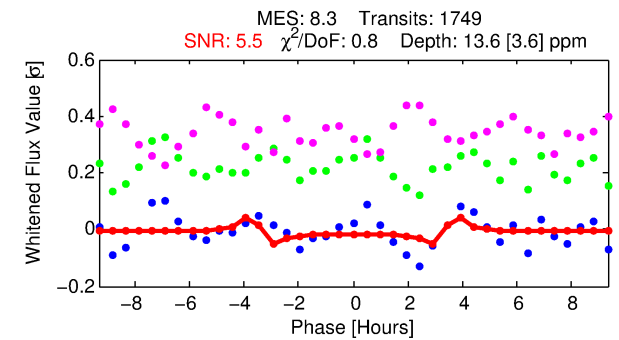
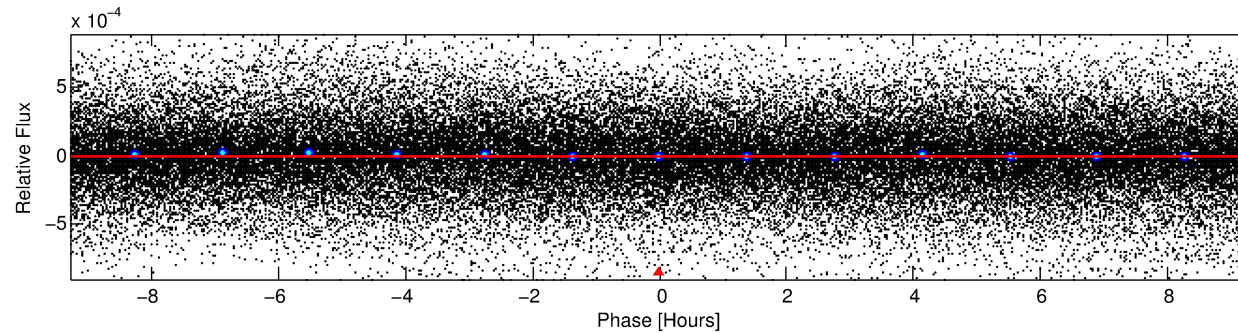
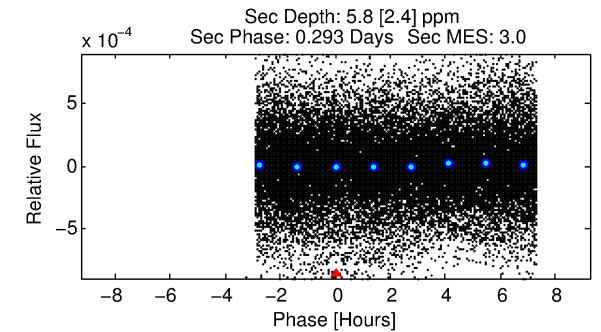
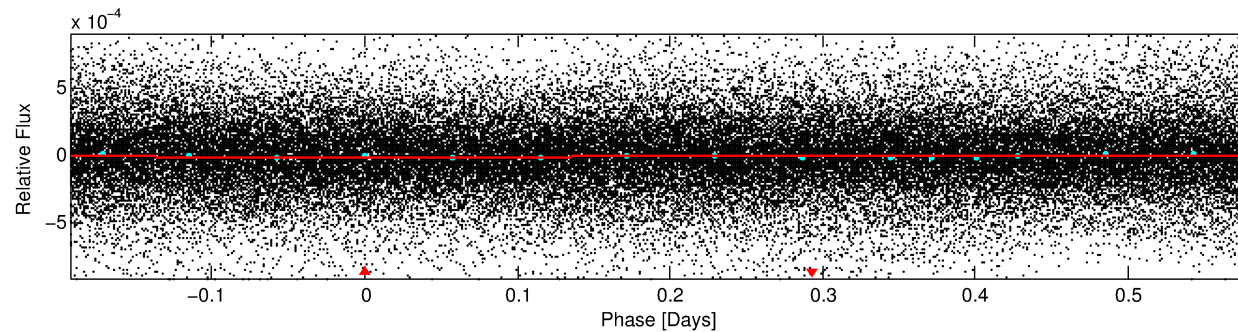
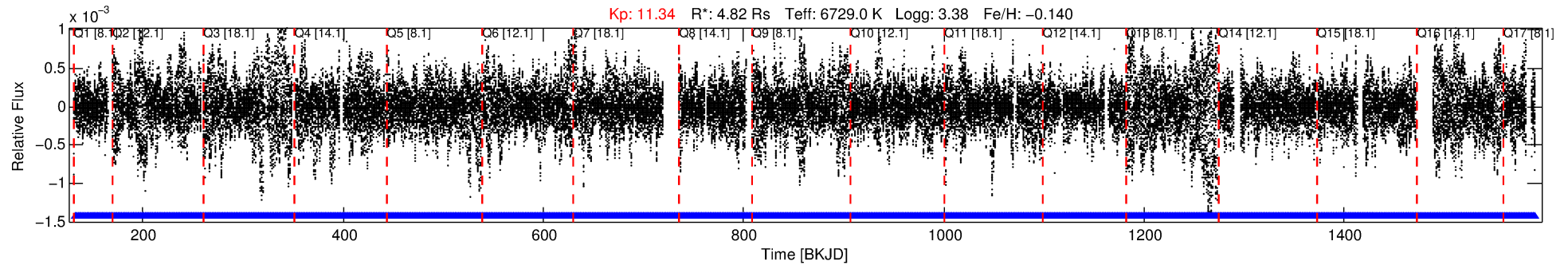
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 008016369-01

No Significant Match Found

# DV One-Page Summary

KIC: 8016369 Candidate: 1 of 1 Period: 0.773 d



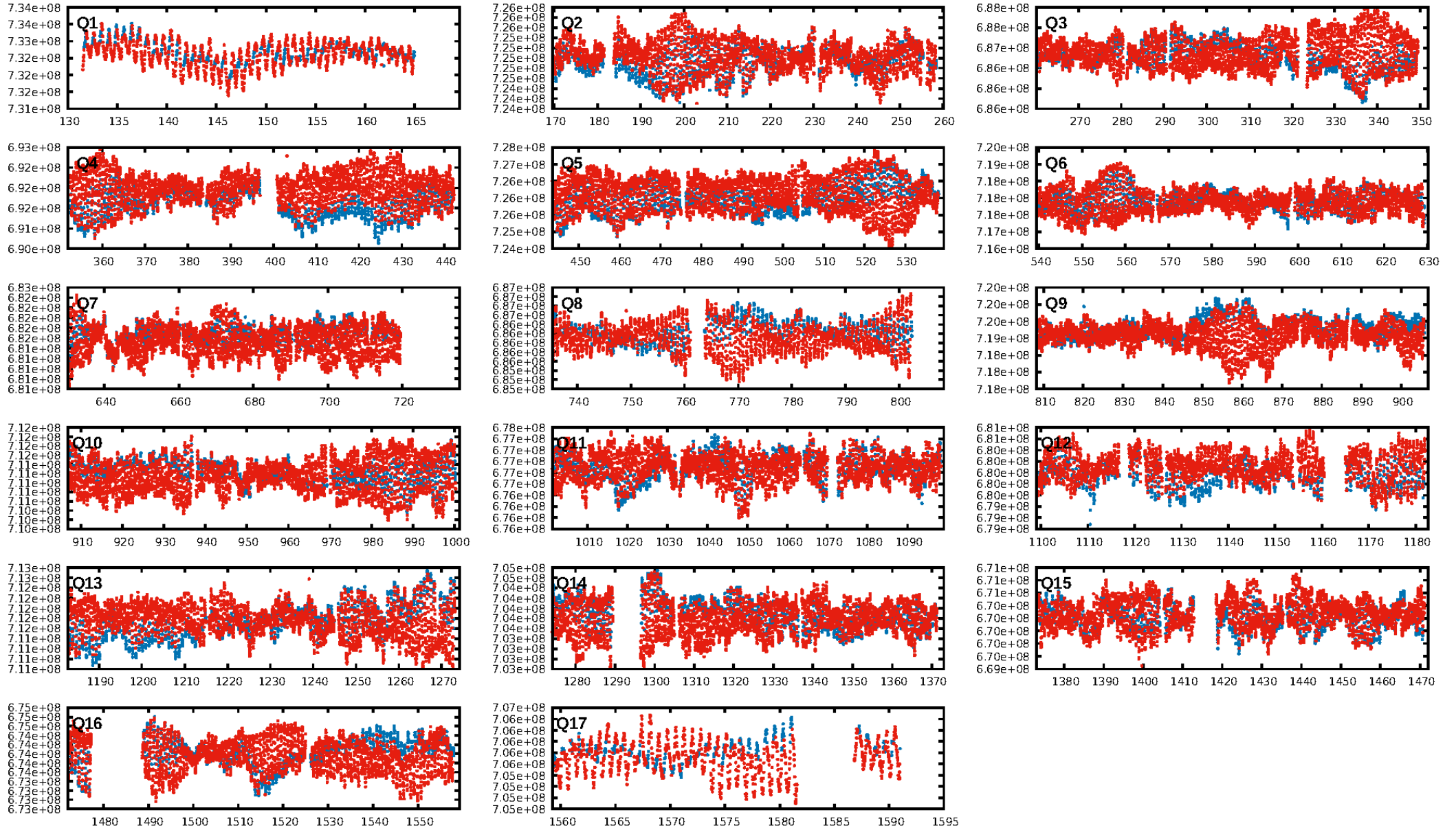
## DV Fit Results:

Period = 0.77255 [0.00002] d  
Epoch = 132.1273 [0.0026] BKJD  
Rp/R\* = 0.0035 [0.0018]  
a/R\* = 1.08 [0.49]  
b = 0.37 [7.47]  
Seff = N/A  
Teq = N/A  
Rp = 1.82 [1.25] Re  
a = N/A  
Ag = N/A  
Teffp = N/A

## DV Diagnostic Results:

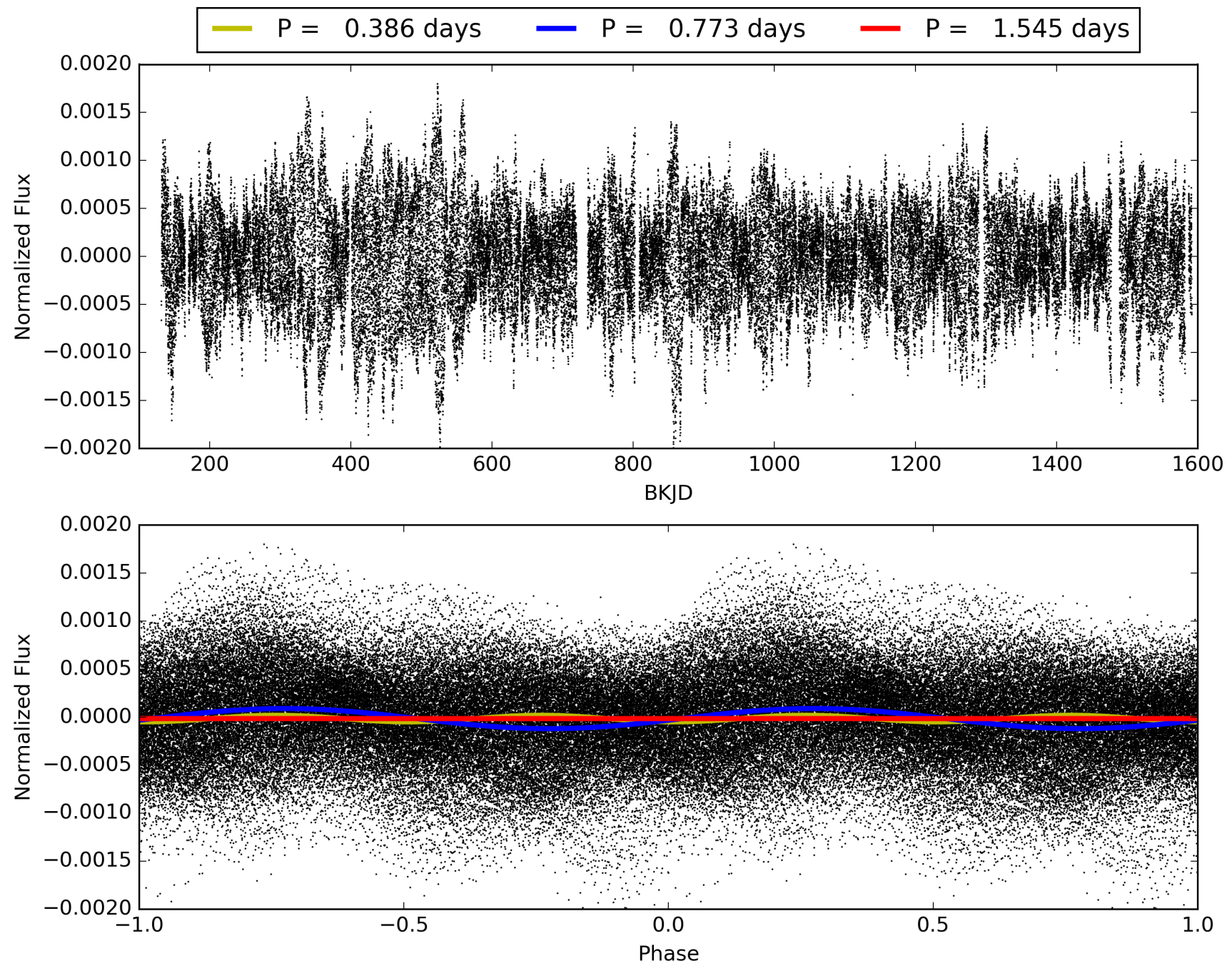
ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: N/A  
ModelChiSquareGof-sig: N/A  
Bootstrap-pfa: N/A  
RollingBand-fgt: 1.00 [1671/1671]  
GhostDiagnostic-chr: 4.167  
Centroid-sig: 1.9%  
Centroid-so: 1.073 arcsec [2.09σ]  
OotOffset-rm: 1.408 arcsec [2.02σ]  
OotOffset-st: 2/4/2/3 [11]  
KicOffset-rm: 2.001 arcsec [3.09σ]  
KicOffset-st: 2/4/2/3 [11]  
DiffImageQuality-fgm: 0.55 [6/11]  
DiffImageOverlap-fno: 1.00 [17/17]

# TCE 008016369-01, PDC Light Curves



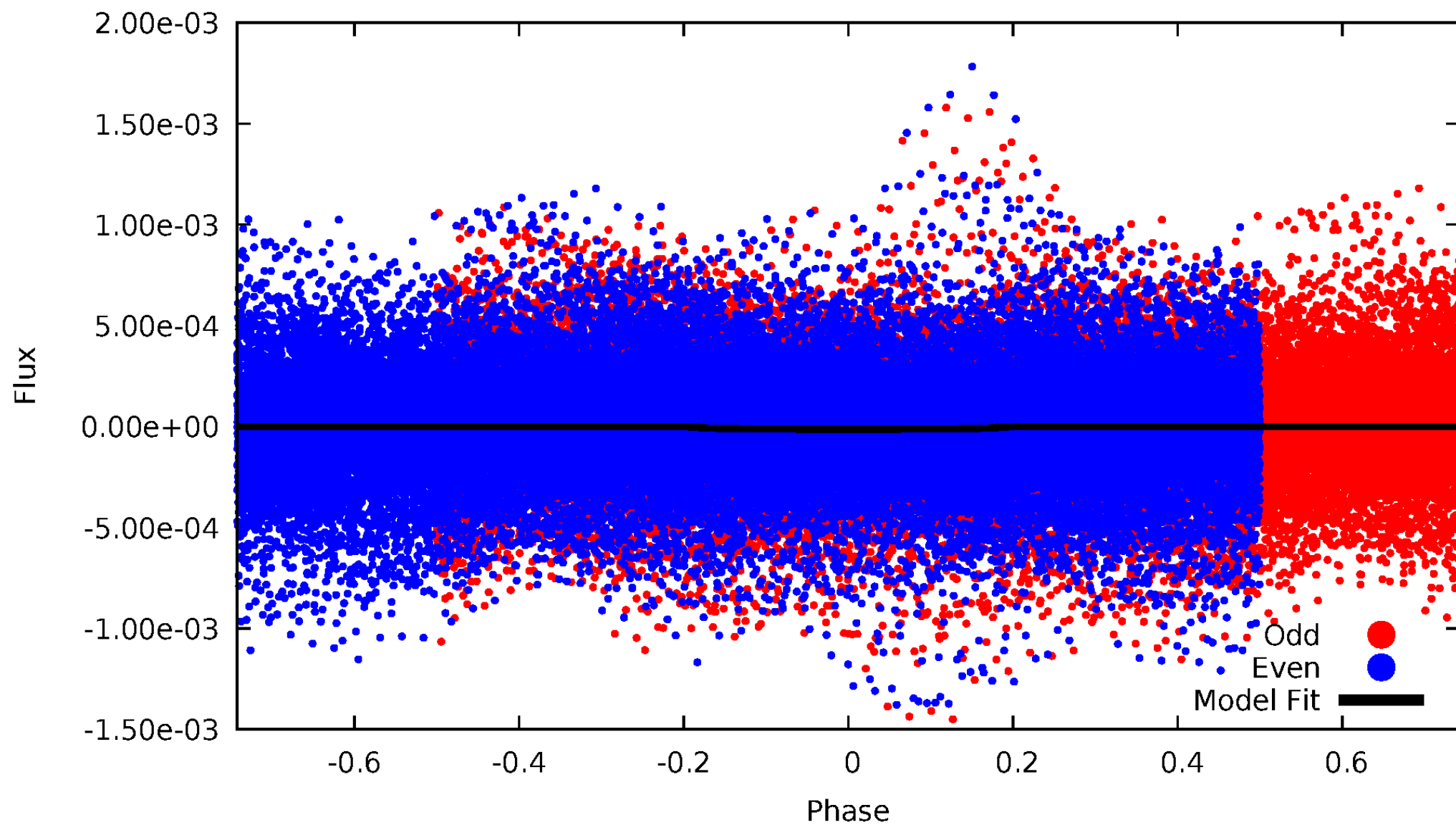


TCE 008016369-01



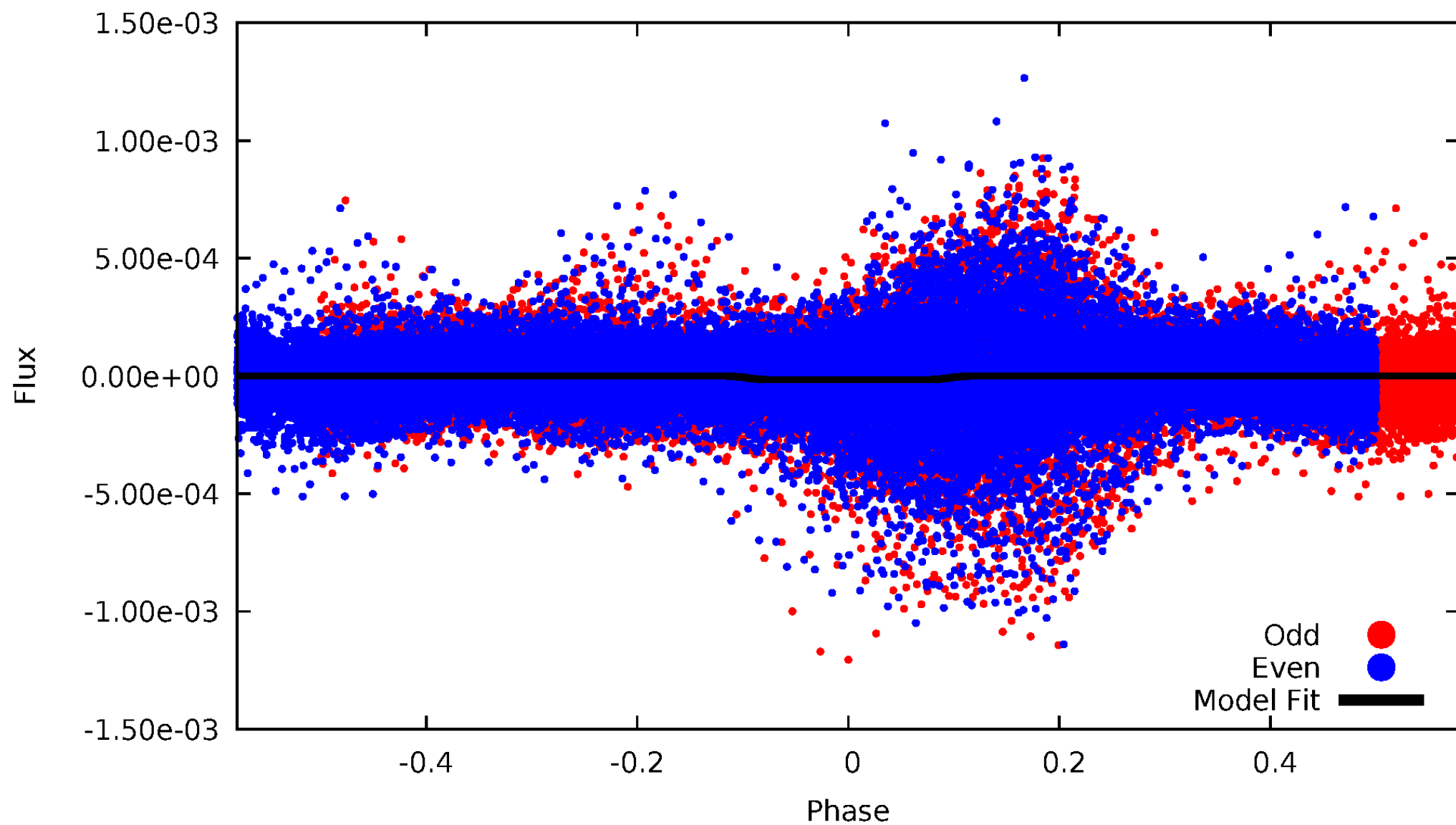
# DV Odd/Even

TCE 008016369-01

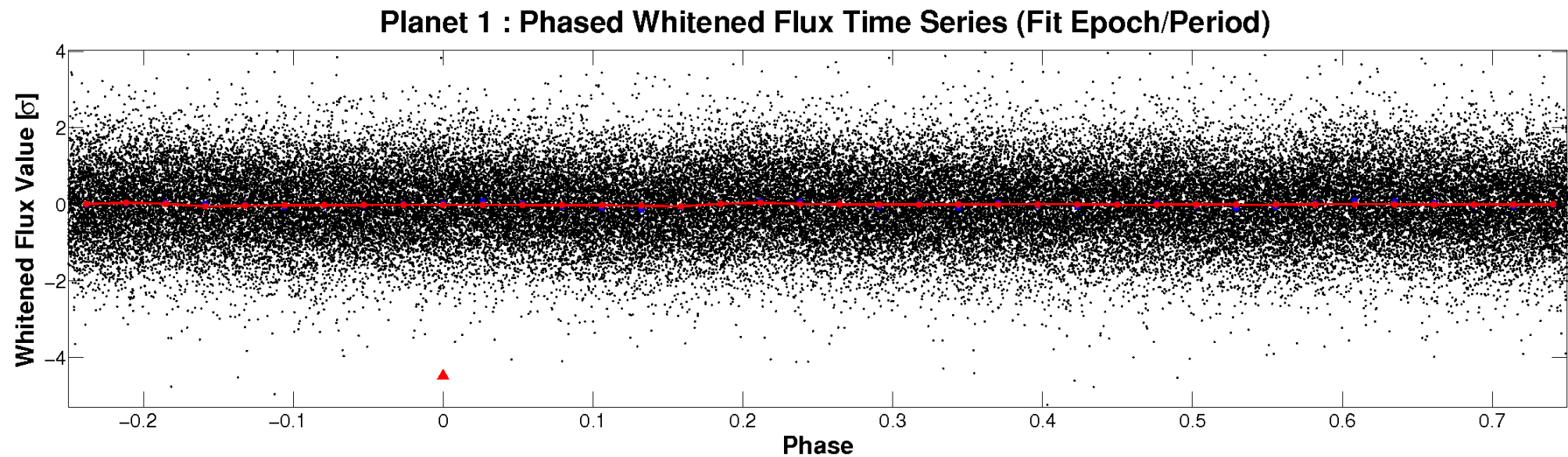
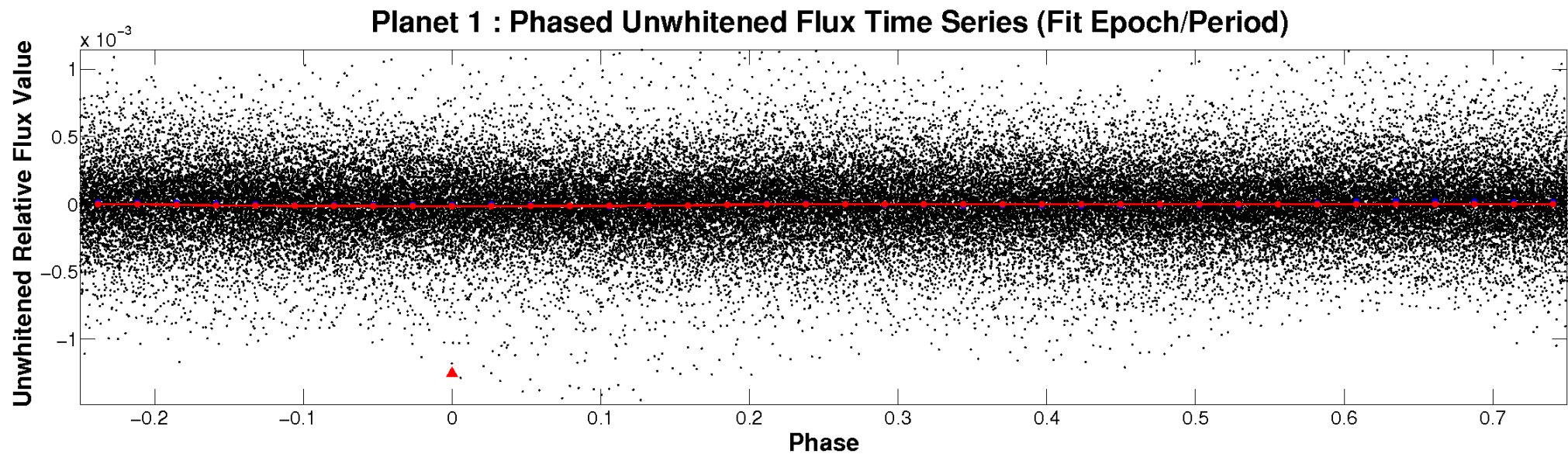


# ALT Odd/Even

TCE 008016369-01



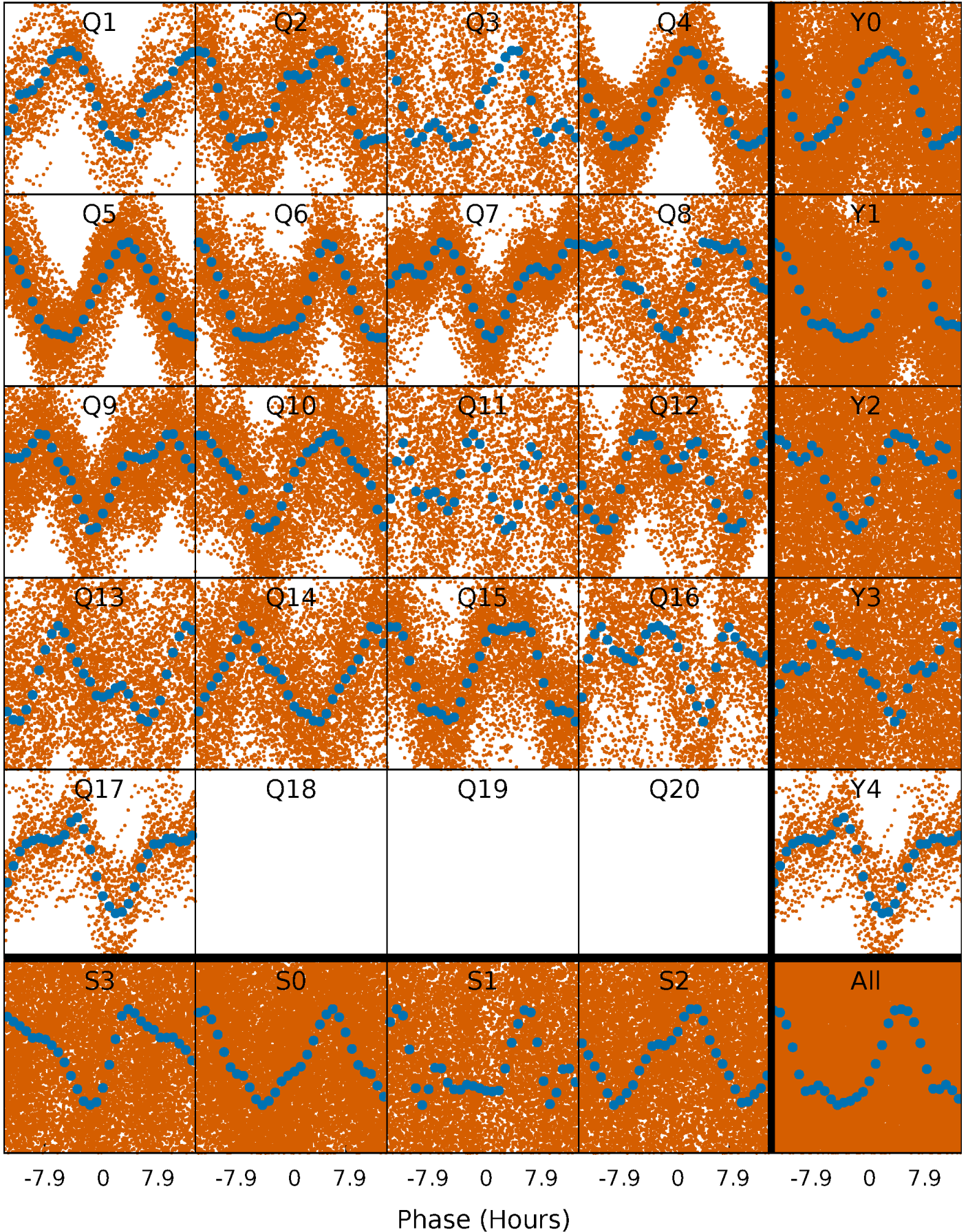
# Non-Whitened Vs. Whitened Light Curve





# PDC Quarter-Phased Transit Curves

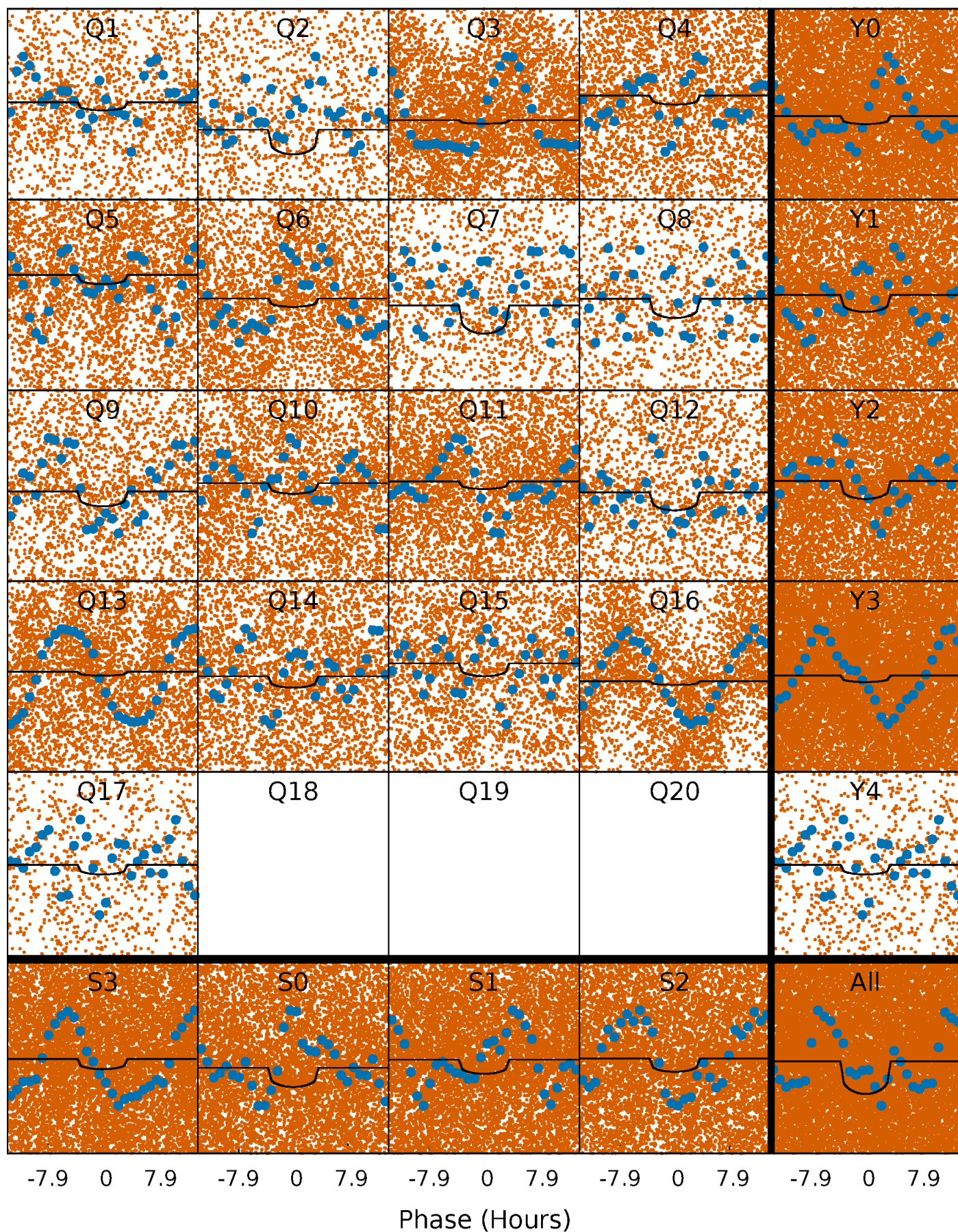
TCE 008016369-01   P= 0.772554 Days    $T_0=132.127264$  (BKJD)





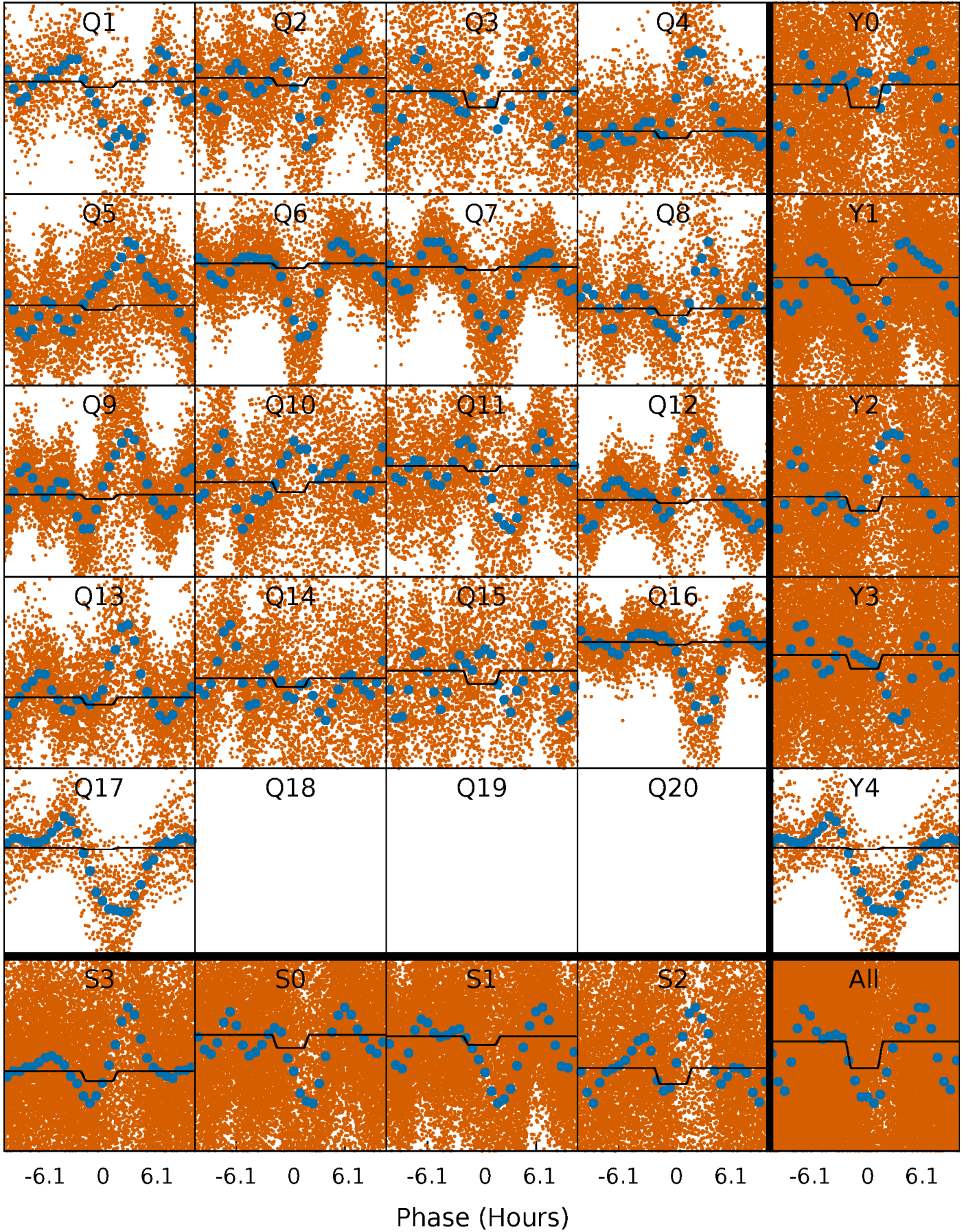
# DV Quarter-Phased Transit Curves

TCE 008016369-01 P= 0.772554 Days  $T_0=132.127264$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

TCE 008016369-01   P= 0.772569 Days    $T_0=132.119046$  (BKJD)

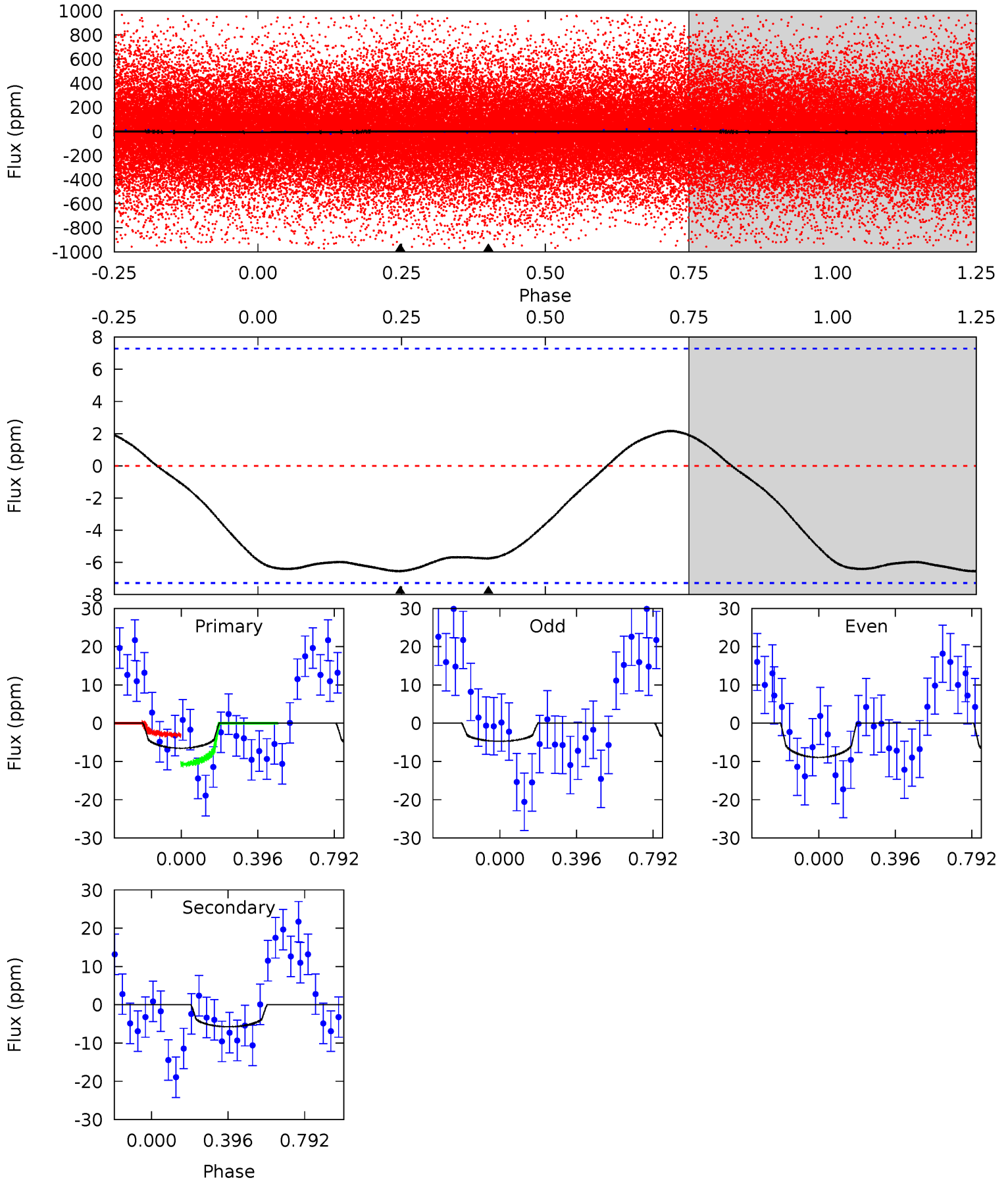




# DV Model-Shift Uniqueness Test

008016369-01, P = 0.772554 Days, E = 131.354710 Days

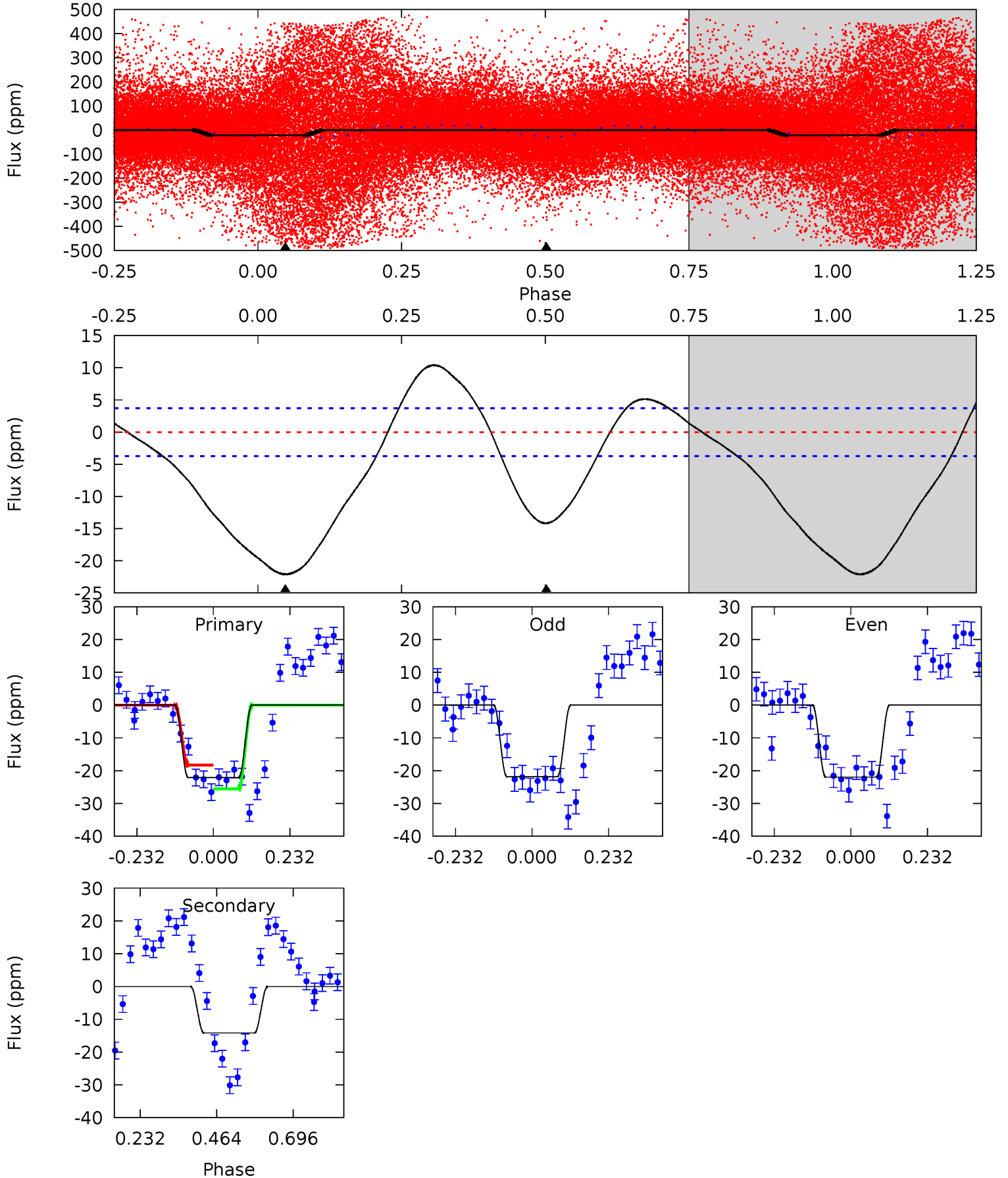
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
3.83	3.37	0	0	4.27	0.85	0.48	3.83	3.83	3.37	3.37	1.23	1.59	0.25	2.32



# Alt Model-Shift Uniqueness Test

008016369-01, P = 0.772569 Days, E = 131.346477 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
26.0	16.7	0	0	4.38	1.19	2.74	26.0	26.0	16.7	16.7	0.07	2.47	0.32	2.58





### Stellar Parameters For KIC 008016369

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R$ ( $R_{\odot}$ )	$M$ ( $M_{\odot}$ )	$p_{\star}$ ( $\text{g}\cdot\text{cm}^{-3}$ )
	$6729^{+168}_{-184}$	$3.380^{+0.405}_{-0.045}$	$-0.140^{+0.350}_{-0.250}$	$4.823^{+0.352}_{-2.114}$	$2.034^{+0.099}_{-0.420}$	$0.026^{+0.086}_{-0.004}$
	+2%/-3%	+12%/-1%	+250%/-179%	+7%/-44%	+5%/-21%	+338%/-15%
Source	PHO1	FLK73	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 008016369-01 / KOI

Detrend	Depth (ppm)	$R_p$ ( $R_{\oplus}$ )	$T_{max}$ (K)	$T_{obs}$ (K)	$A_{obs}$
DV	$-6\pm 2$	$1.64^{+0.96}_{-0.80}$	$6132^{+302}_{-648}$	$4465^{+2861}_{-8605}$	$0.476^{+1.353}_{-0.282}$
Alt.	$-14\pm 1$	$1.82^{+0.94}_{-0.87}$	$6117^{+316}_{-663}$	$6004^{+3178}_{-1658}$	$1.000^{+2.780}_{-0.557}$

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

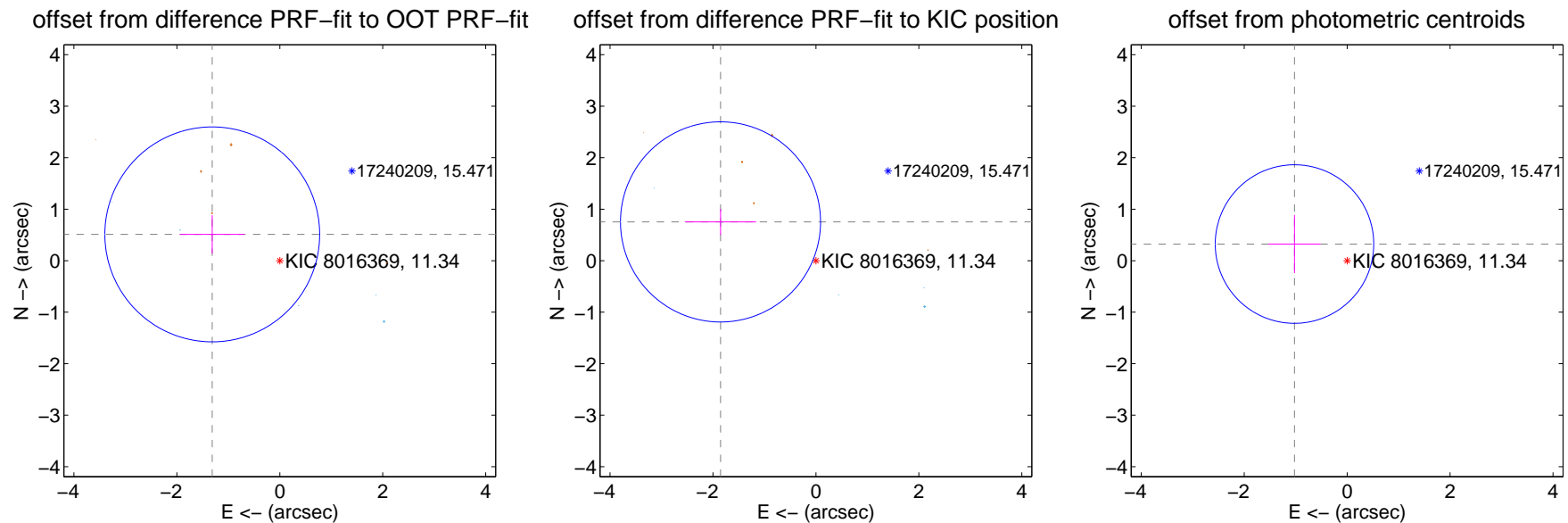
## DV Centroid Data

Supplemental centroid analysis for 008016369-01. **Kepler magnitude: 11.34**. Transit SNR 5.48

There are 6 quarters with good PRF difference image offsets

The direct PRF centroid is offset from the target star catalog position by about 0.30 arcsec

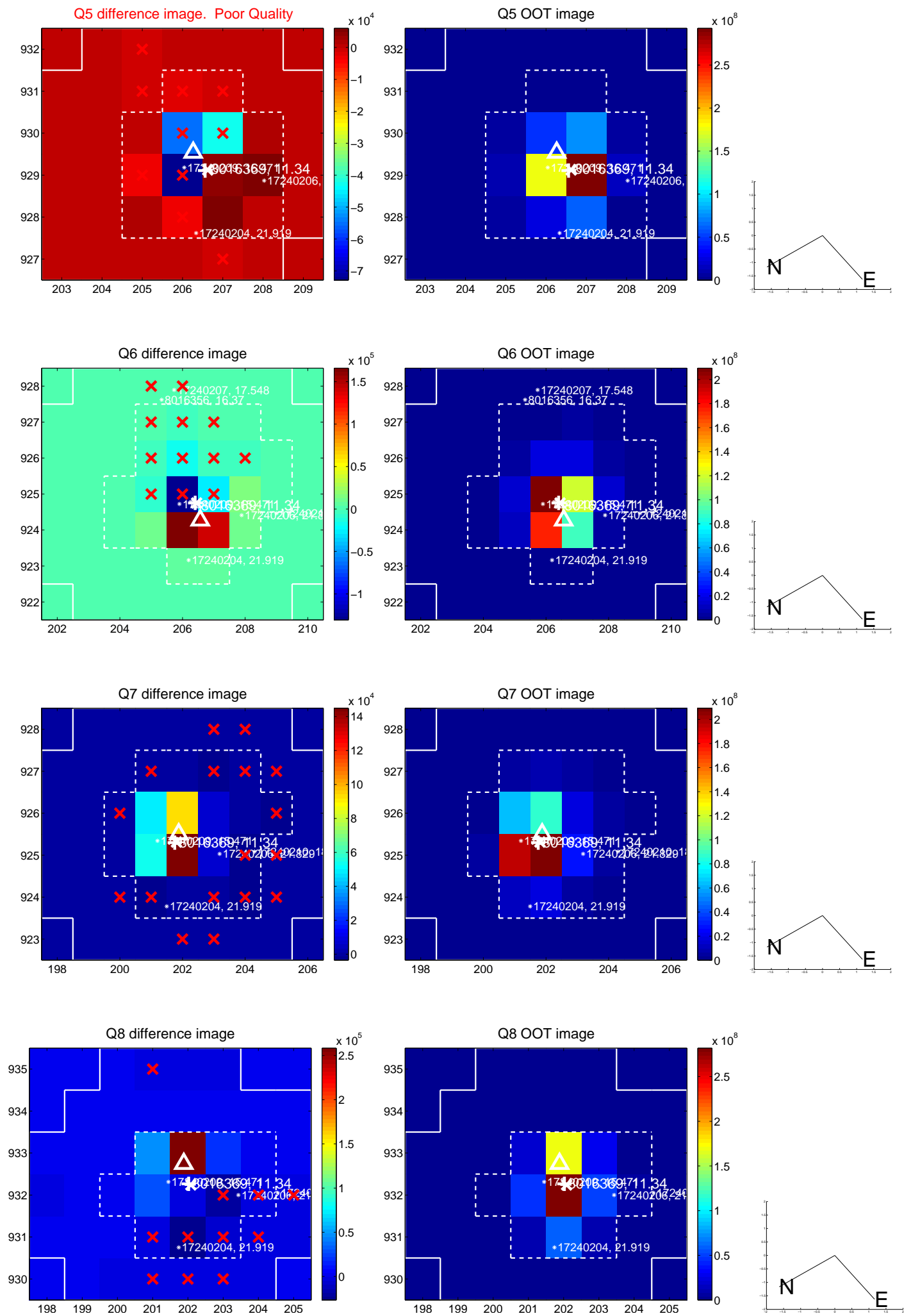
	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$1.408 \pm 0.695$	2.02	$1.312 \pm 0.627$	$0.511 \pm 0.372$
PRF-fit source offset from KIC position	<b><math>2.001 \pm 0.648</math></b>	<b>3.09</b>	$1.853 \pm 0.691$	$0.753 \pm 0.255$
photometric centroid source offset	$1.07 \pm 0.51$	2.09	$1.02 \pm 0.51$	$0.32 \pm 0.56$



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.

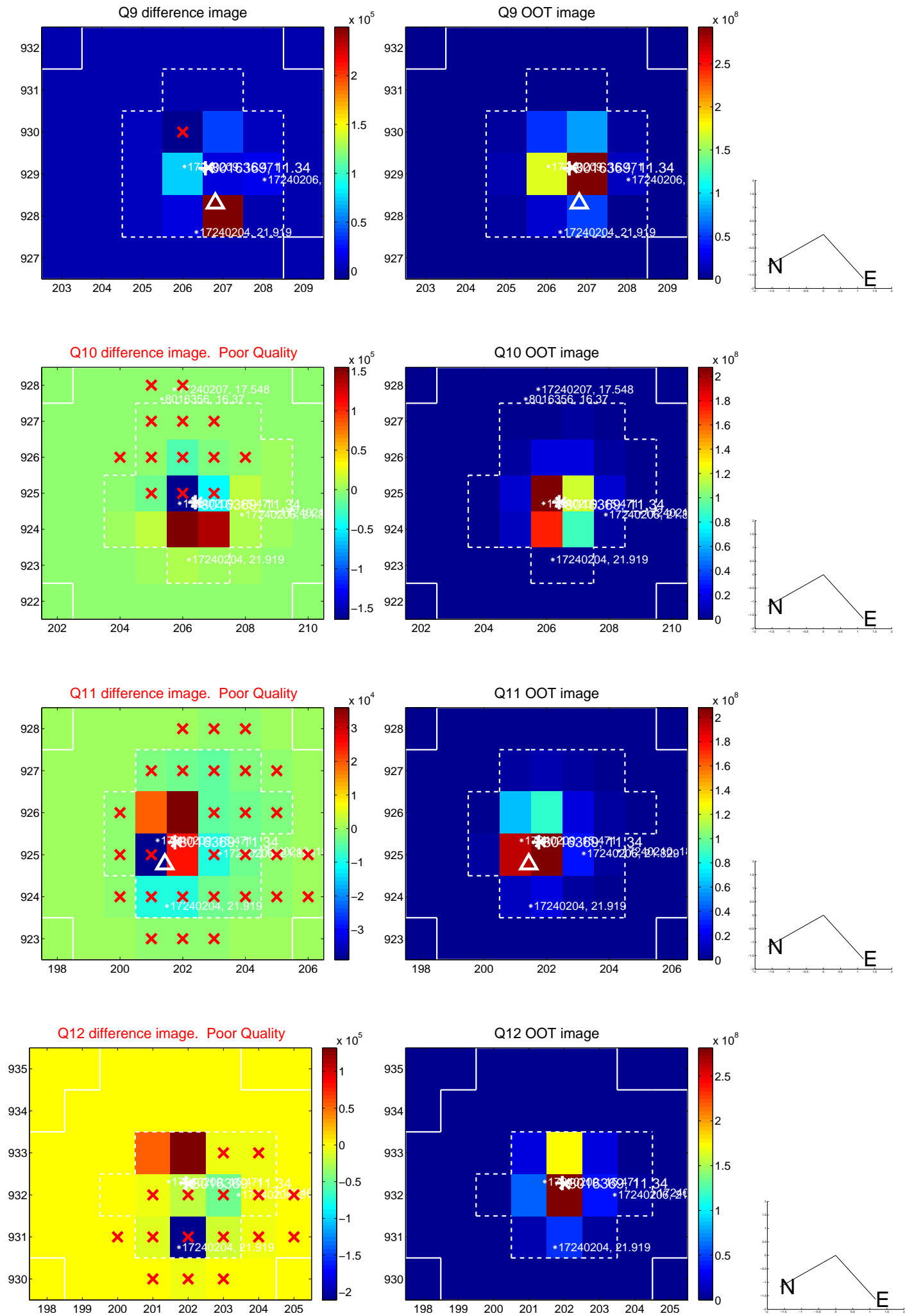


white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

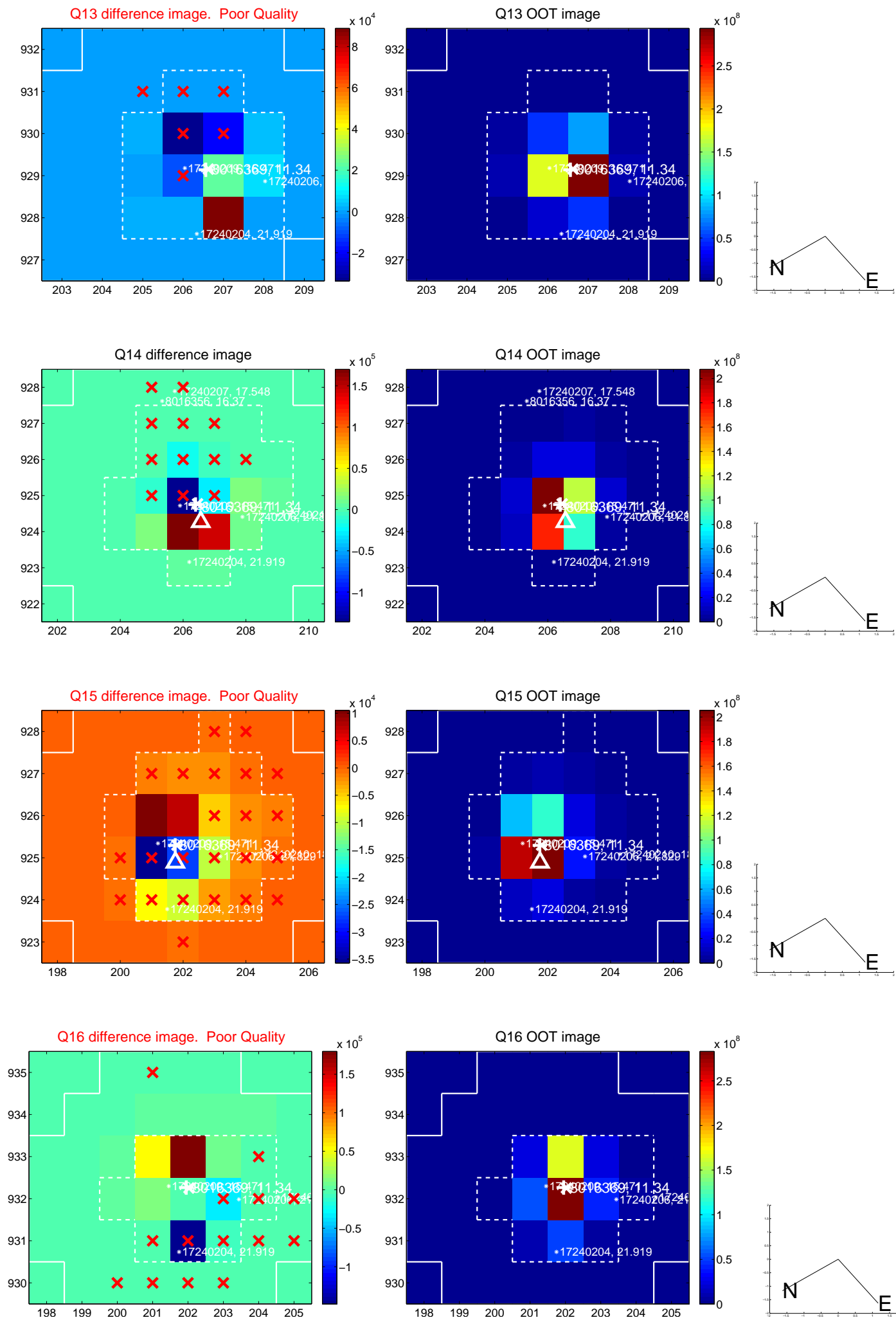




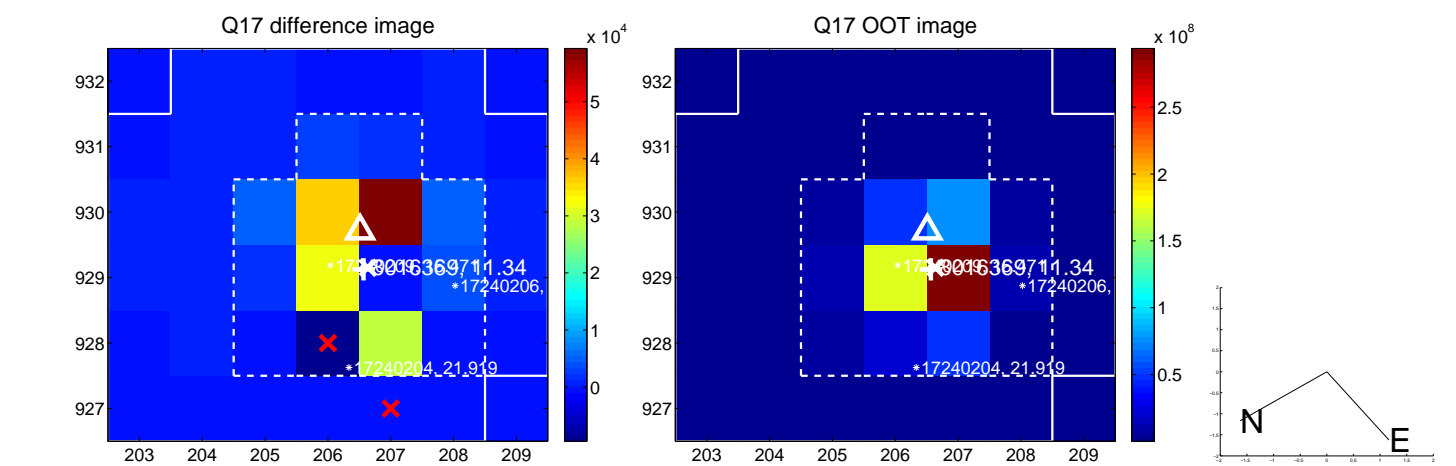
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



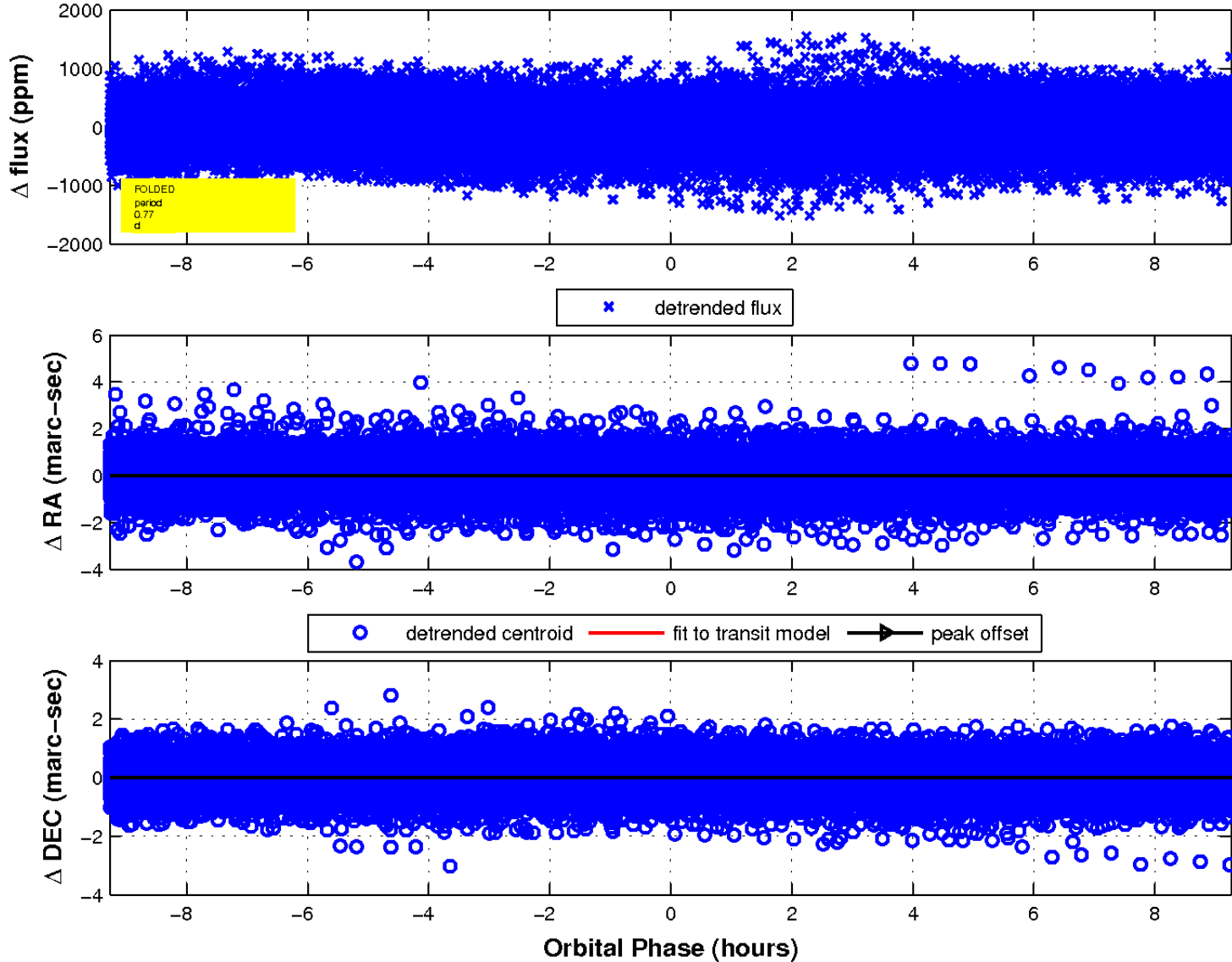
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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



fluxWeightedCentroids, Planet 1 of 1



UKIRT Image

Declination

