

# KIC 007266212

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
007266212-01	OBS	4737.01	7.795358	138.029307	92.4	3.506	8.4	8.9	1.05	6156	1.19	222.72

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
007266212-01	OBS	PC	0.99	0	0	0	0	NO_COMMENT

**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.

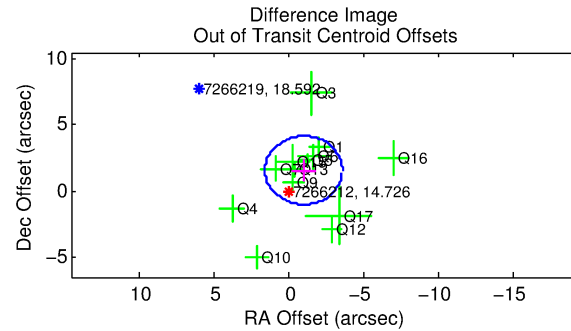
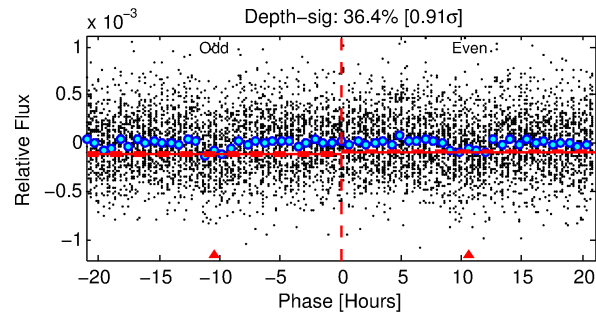
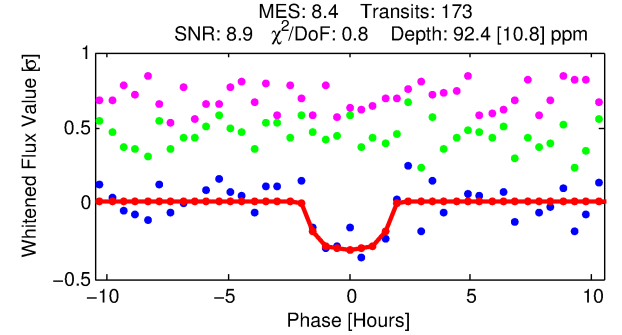
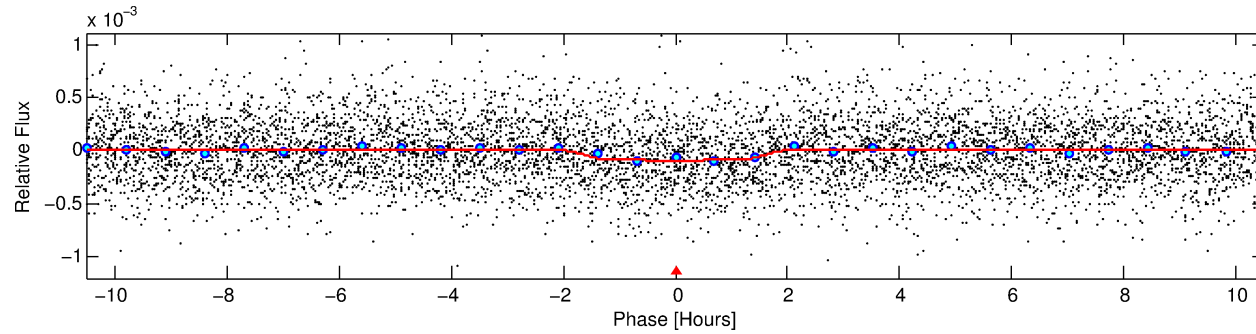
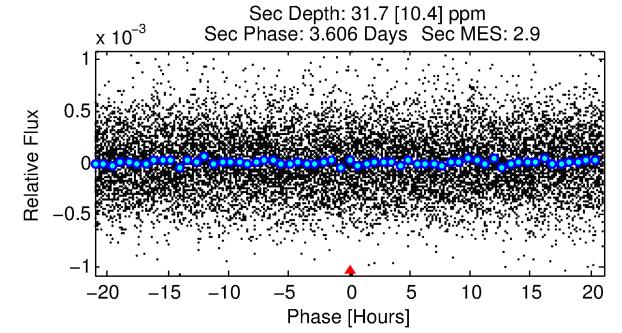
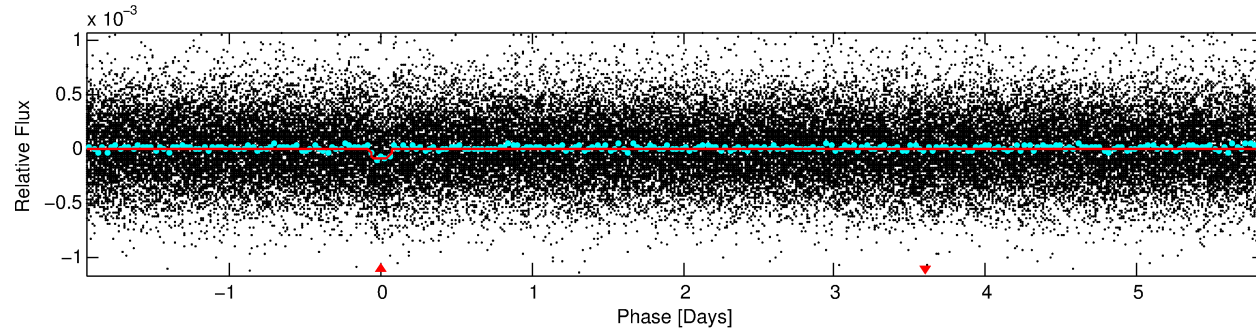
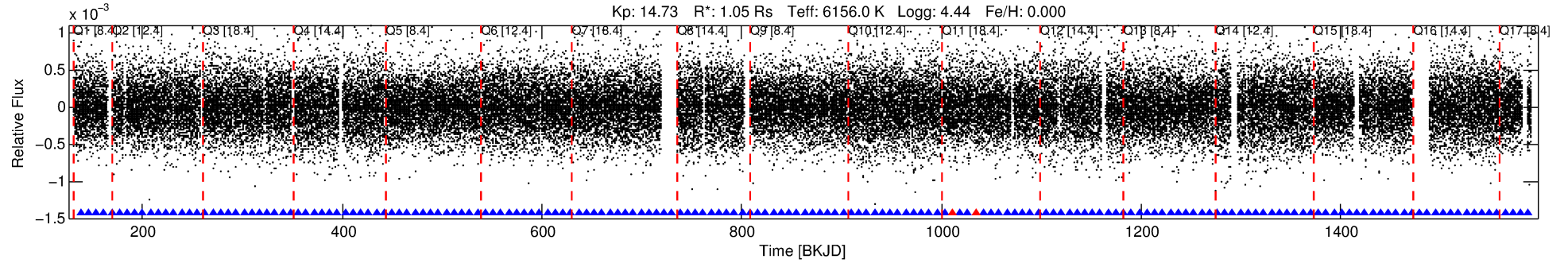
## Ephemeris Match Information For 007266212-01

No Significant Match Found

# DV One-Page Summary

KIC: 7266212 Candidate: 1 of 1 Period: 7.795 d

KOI: K04737.01 Corr: 0.989



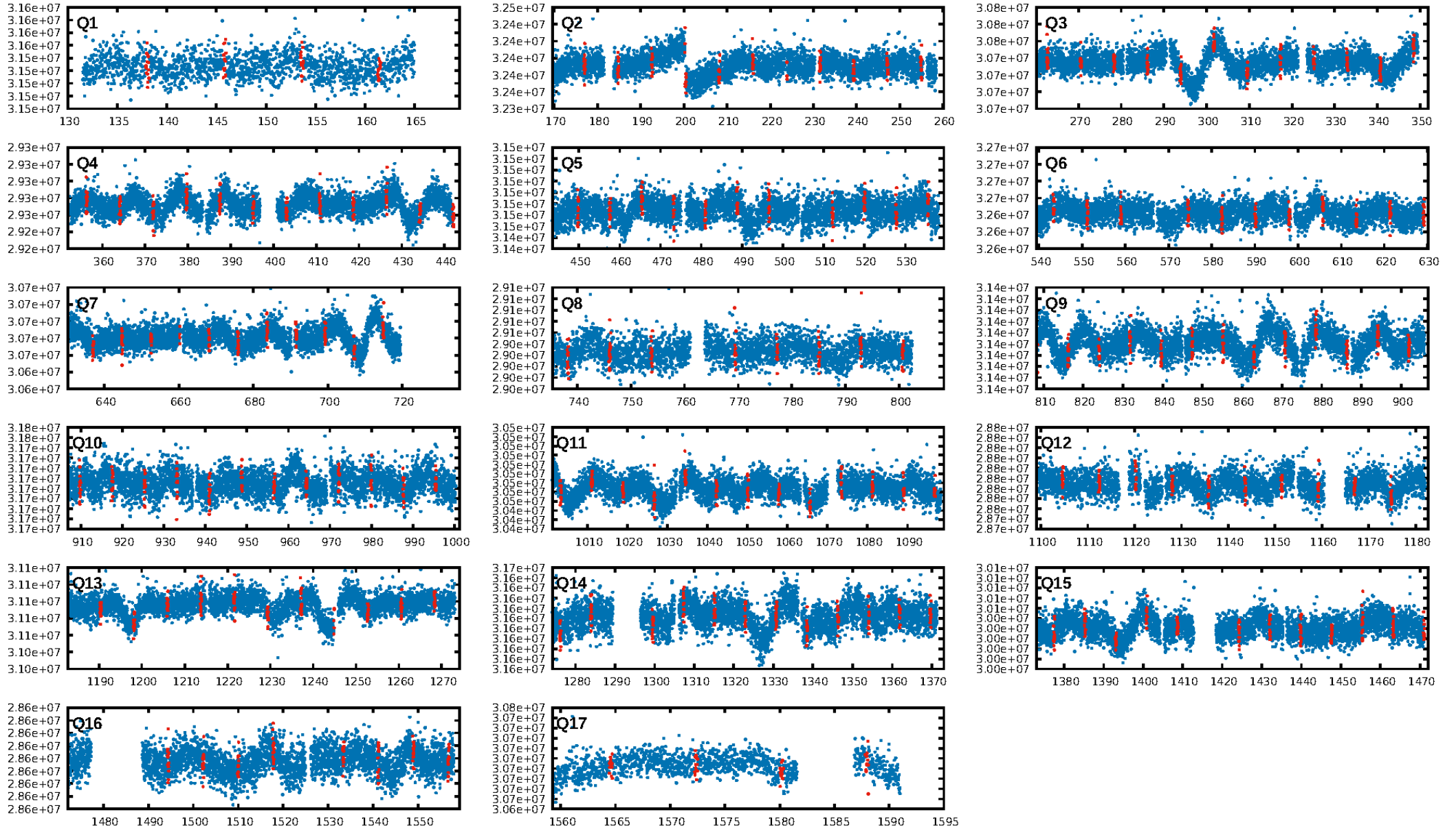
## DV Fit Results:

Period = 7.79536 [0.00008] d  
Epoch = 138.0293 [0.0074] BKJD  
Rp/R\* = 0.0104 [0.0062]  
a/R\* = 7.90 [24.76]  
b = 0.90 [0.69]  
Seff = 222.72 [93.48]  
Teff = 985 [103] K  
Rp = 1.19 [0.81] Re  
a = 0.0798 [0.0218] AU  
Ag = 78.93 [103.34] [0.75σ]  
Teffp = 4540 [1425] K [2.49σ]

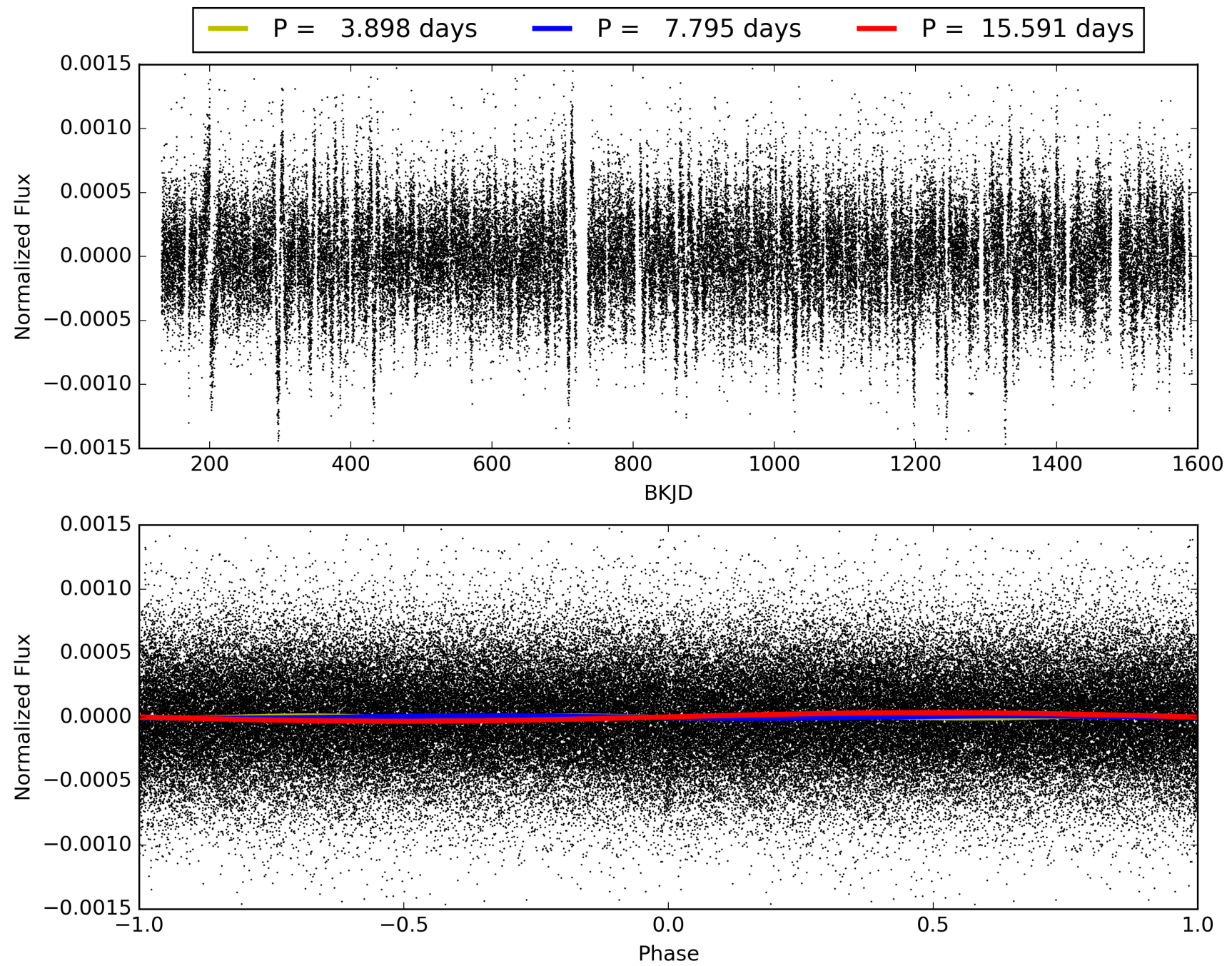
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: 100.0%  
ModelChiSquareGof-sig: 100.0%  
Bootstrap-pfa: 4.28e-17  
RollingBand-fgt: 0.99 [163/165]  
GhostDiagnostic-chr: -5.169  
Centroid-sig: 15.2%  
Centroid-so: 1.781 arcsec [1.20σ]  
OotOffset-rm: 1.890 arcsec [2.19σ]  
KicOffset-rm: 1.956 arcsec [2.13σ]  
OotOffset-st: 2/3/3/5 [13]  
KicOffset-st: 2/3/3/5 [13]  
DiffImageQuality-fgm: 0.54 [7/13]  
DiffImageOverlap-fno: 1.00 [17/17]

# TCE 007266212-01, PDC Light Curves



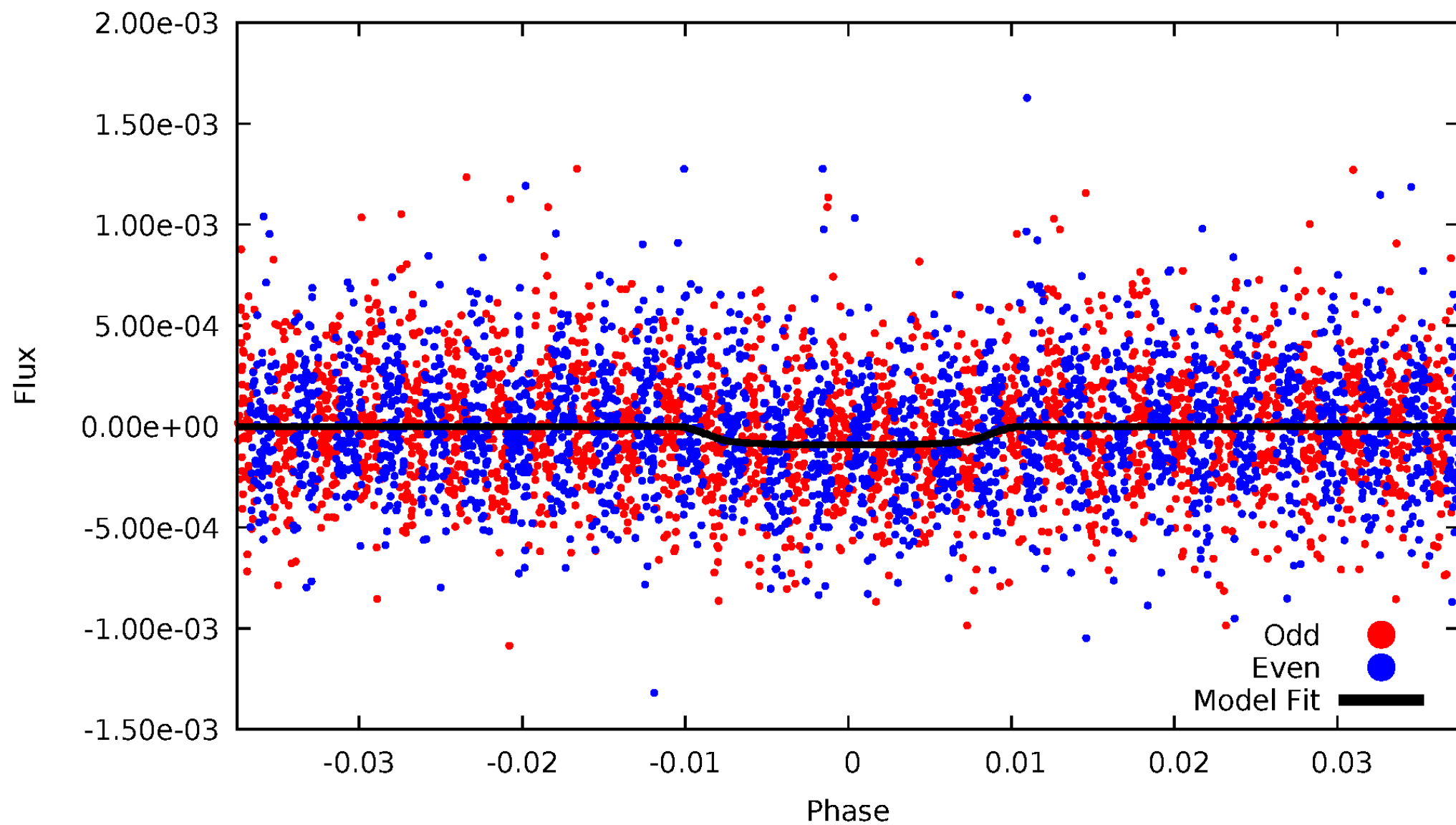
TCE 007266212-01





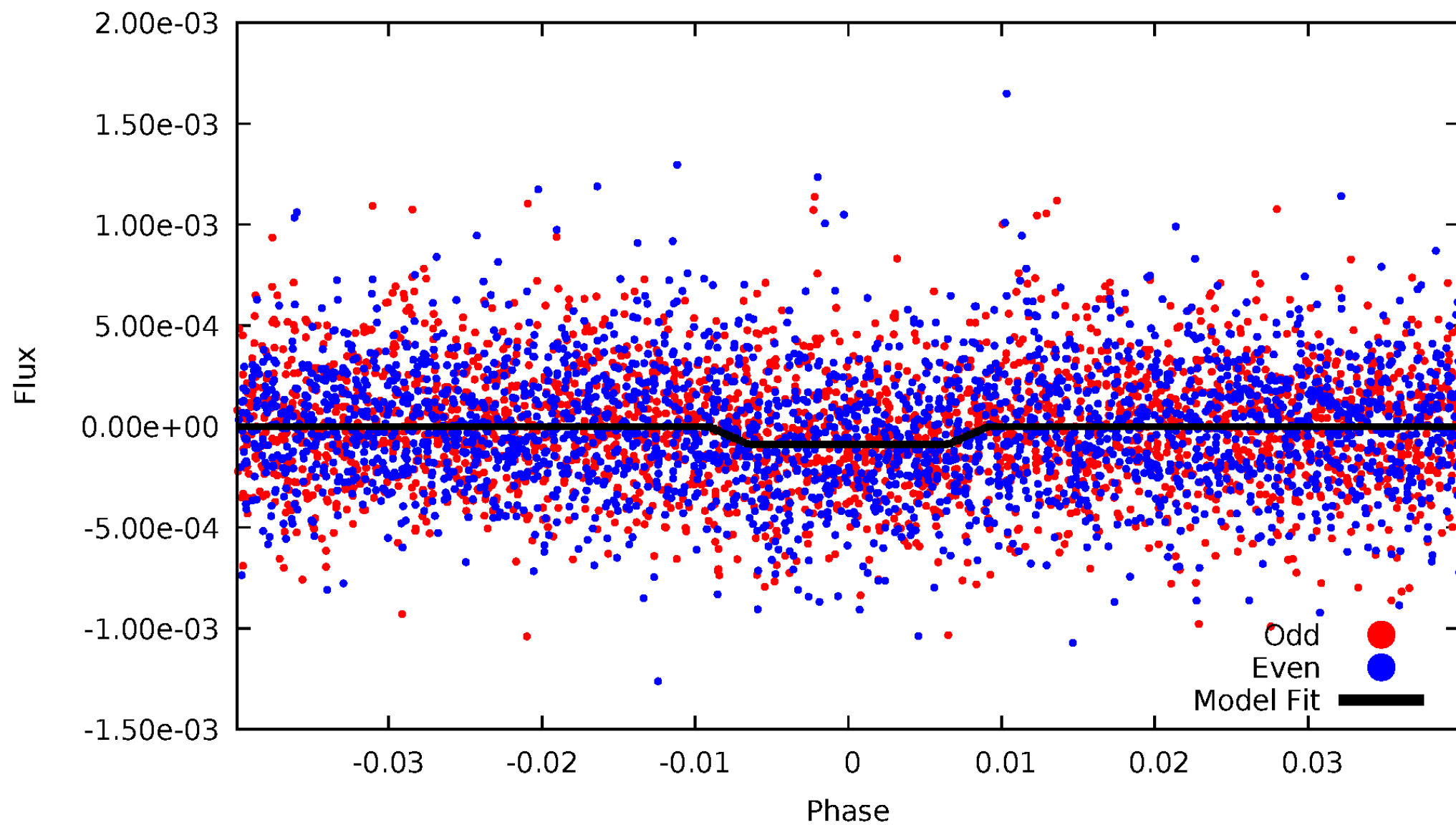
# DV Odd/Even

TCE 007266212-01



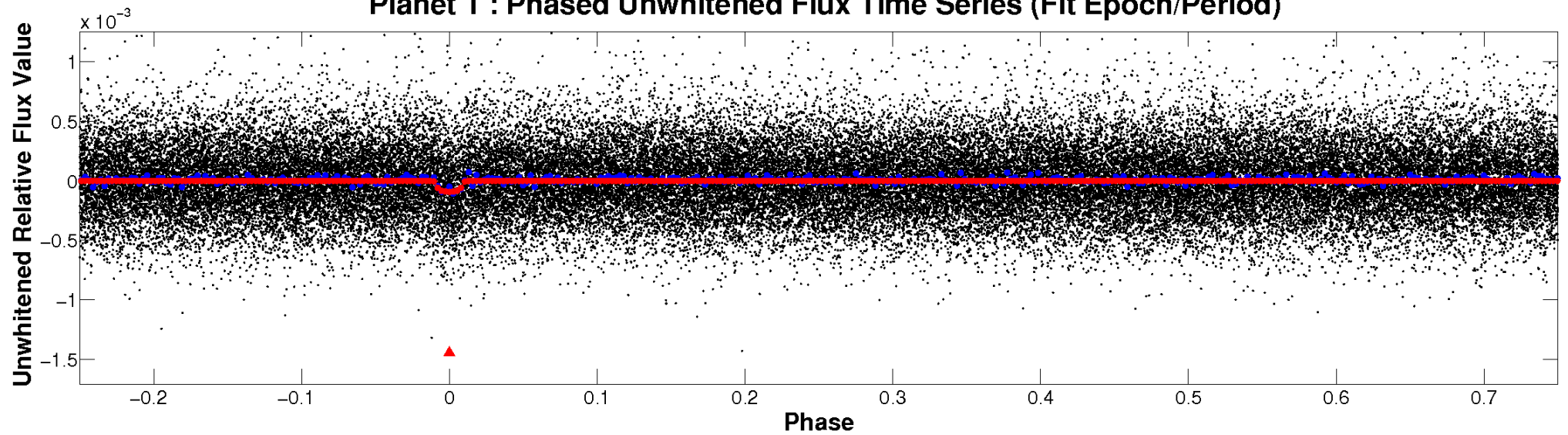
# ALT Odd/Even

TCE 007266212-01

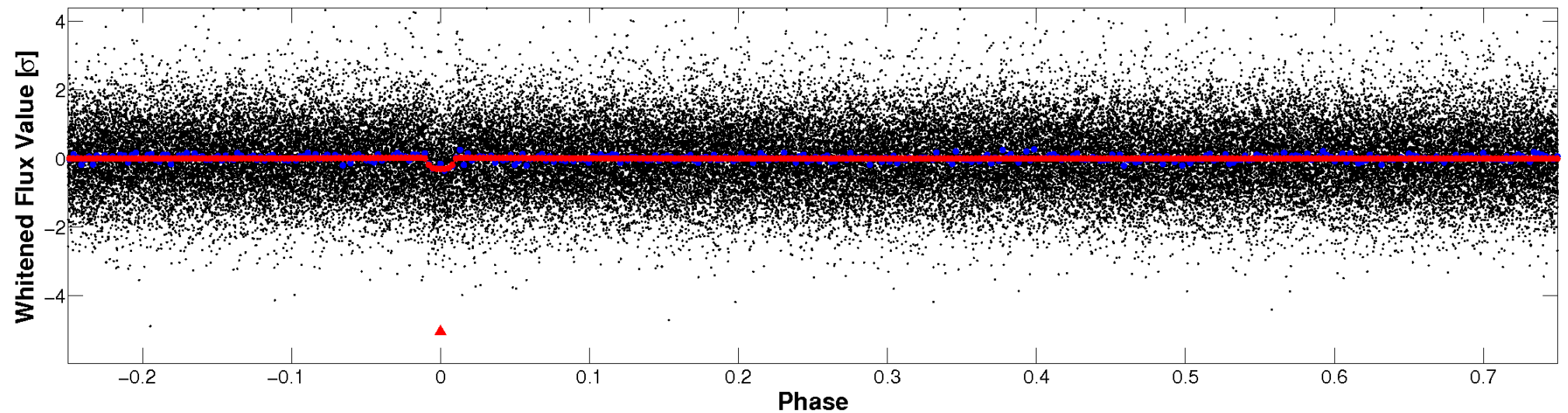


# Non-Whitened Vs. Whitened Light Curve

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

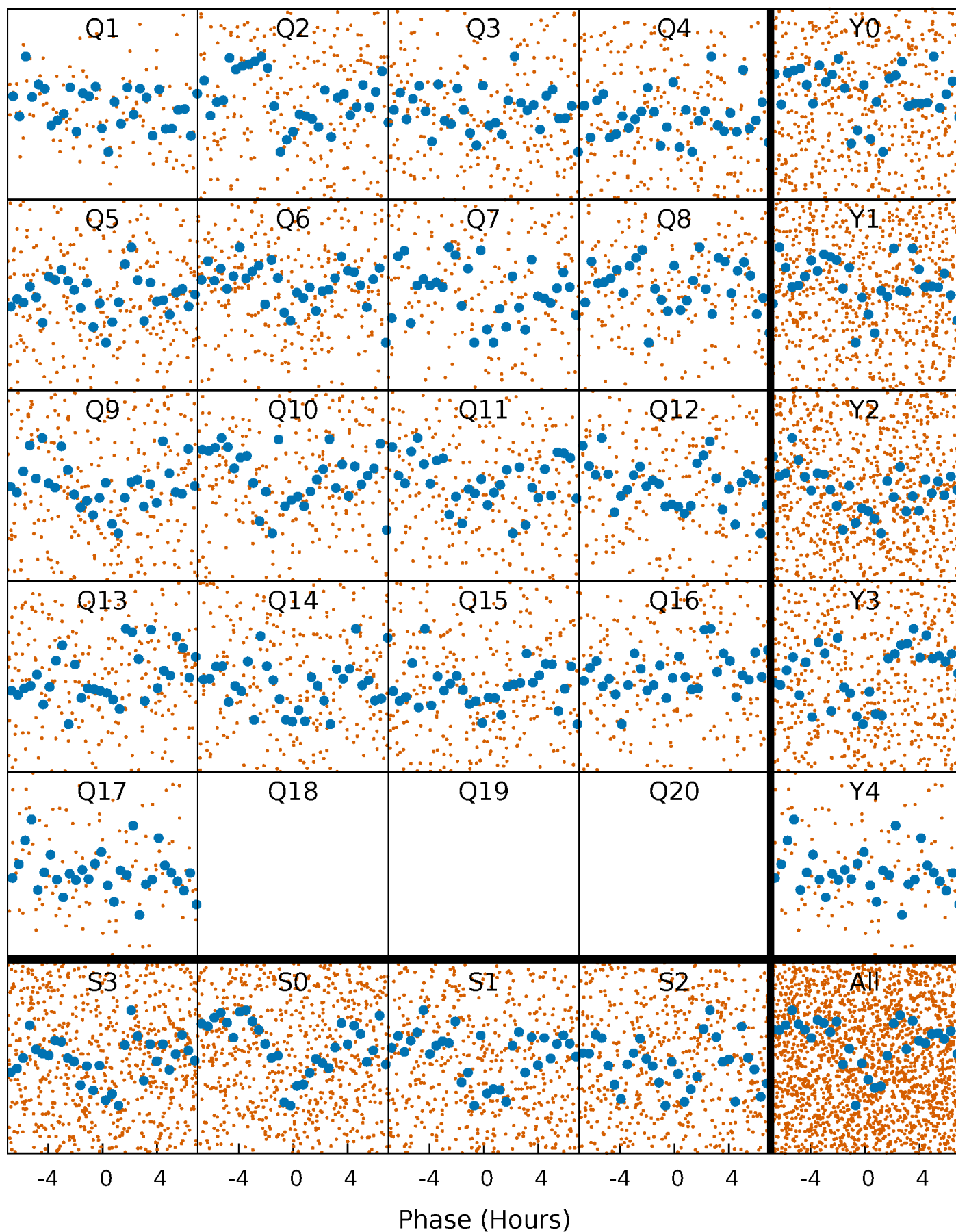


**Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)**



## PDC Quarter-Phased Transit Curves

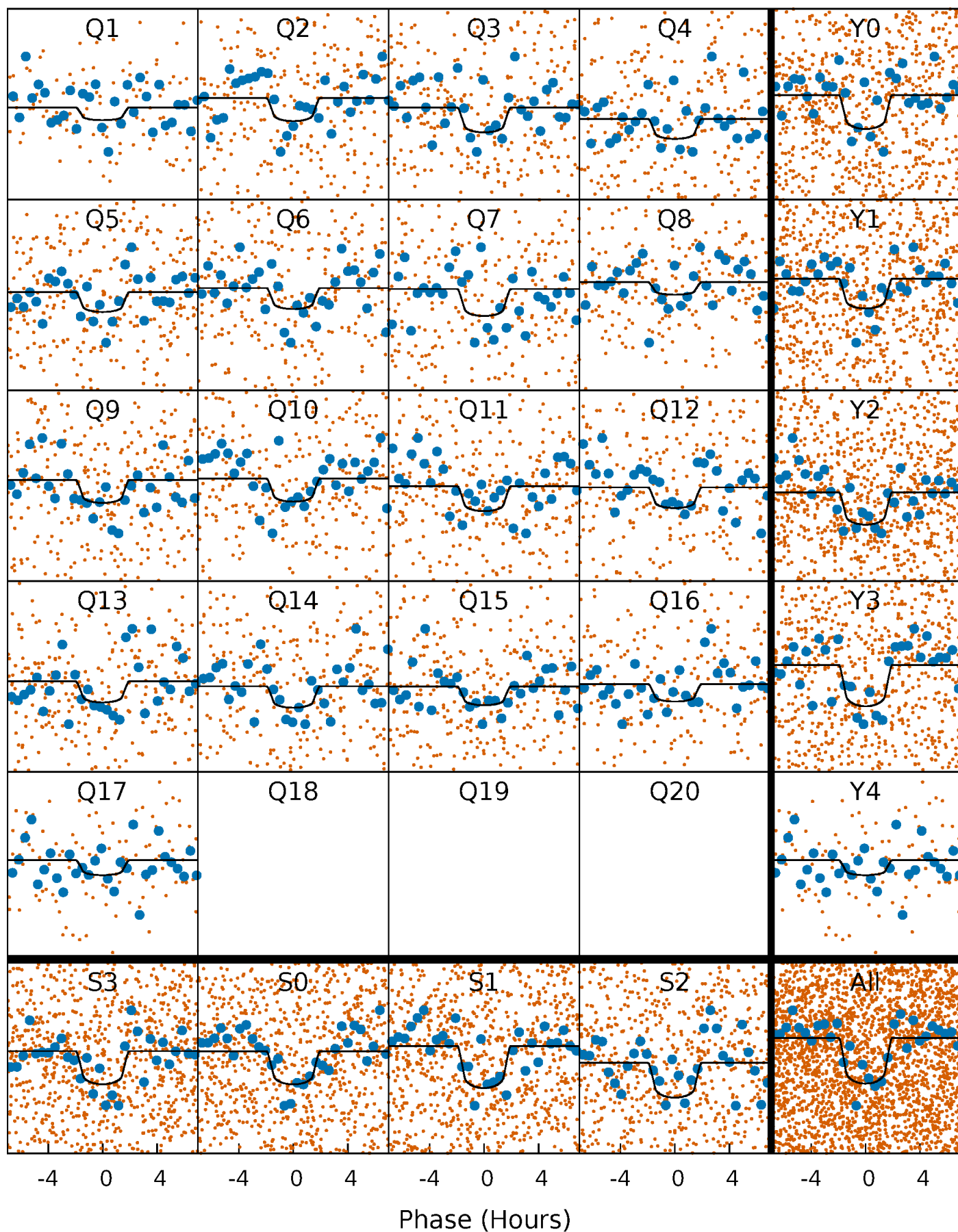
TCE 007266212-01    P= 7.795358 Days     $T_0=138.029307$  (BKJD)





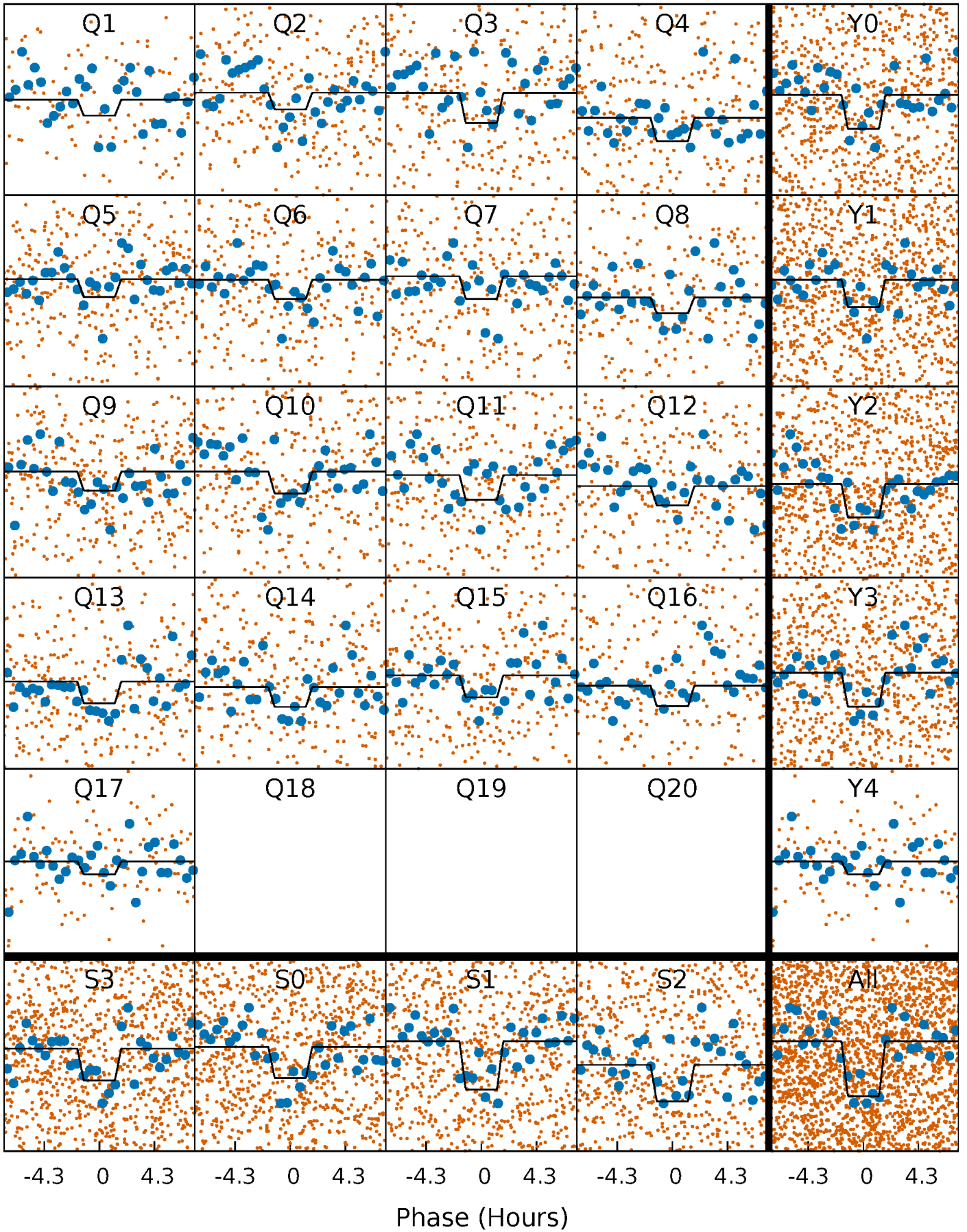
# DV Quarter-Phased Transit Curves

TCE 007266212-01 P= 7.795358 Days  $T_0=138.029307$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

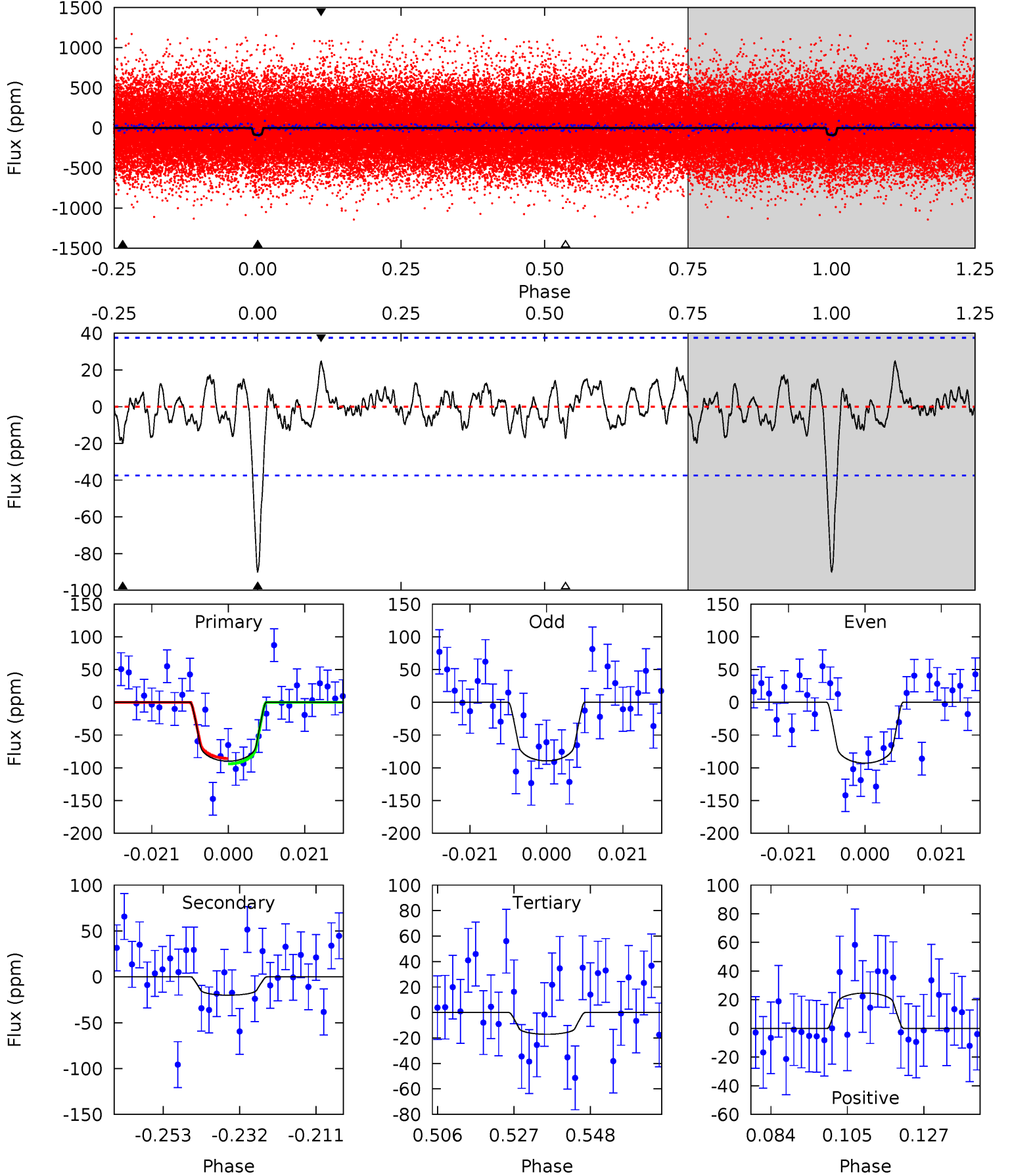
TCE 007266212-01 P= 7.795305 Days  $T_0=138.038709$  (BKJD)



# DV Model-Shift Uniqueness Test

007266212-01, P = 7.795358 Days, E = 130.233949 Days

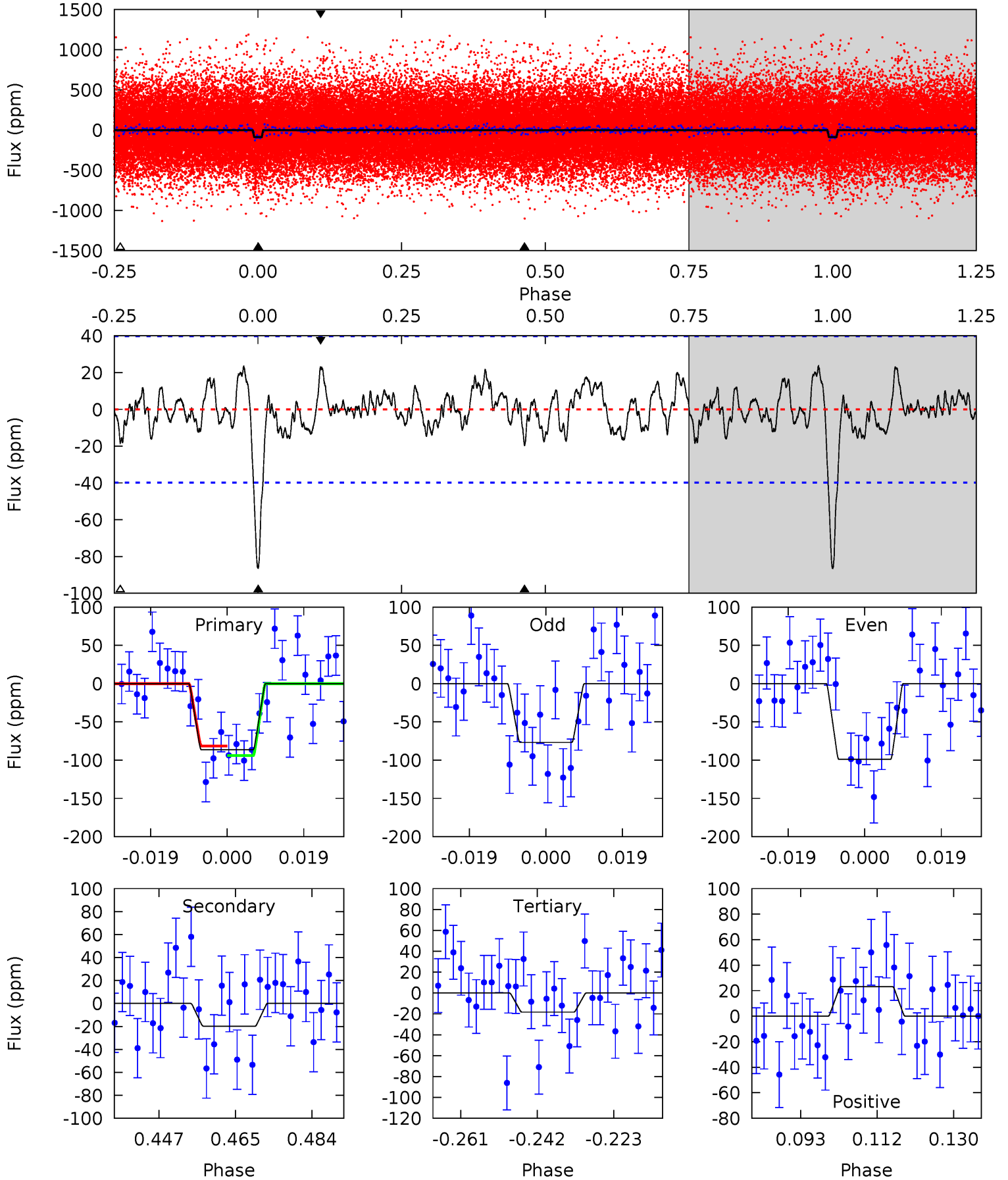
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
11.7	2.60	2.22	3.21	4.88	2.31	1.04	9.47	8.48	0.38	-0.61	0.22	0.89	0.22	0.54



# Alt Model-Shift Uniqueness Test

007266212-01, P = 7.795305 Days, E = 130.243404 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
10.7	2.44	2.26	2.85	4.91	2.35	1.11	8.40	7.80	0.18	-0.41	1.36	0.96	0.21	0.76





### Stellar Parameters For KIC 007266212

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$6156^{+171}_{-214}$	$4.443^{+0.054}_{-0.216}$	$0.000^{+0.250}_{-0.300}$	$1.050^{+0.341}_{-0.114}$	$1.114^{+0.151}_{-0.151}$	$1.357^{+0.388}_{-0.716}$
	+3%/-3%	+1%/-5%	+inf%/-inf%	+32%/-11%	+14%/-14%	+29%/-53%
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 007266212-01 / KOI 4737.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	$A_{\text{obs}}$
DV	$-20 \pm 8$	$1.34^{+0.72}_{-0.67}$	$1412^{+108}_{-75}$	$4122^{+1343}_{-621}$	$36^{+115}_{-22}$
Alt.	$-20 \pm 8$	$1.18^{+0.81}_{-0.64}$	$1403^{+107}_{-73}$	$4270^{+1877}_{-726}$	$45^{+206}_{-30}$

$T_{\text{max}}$  = 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

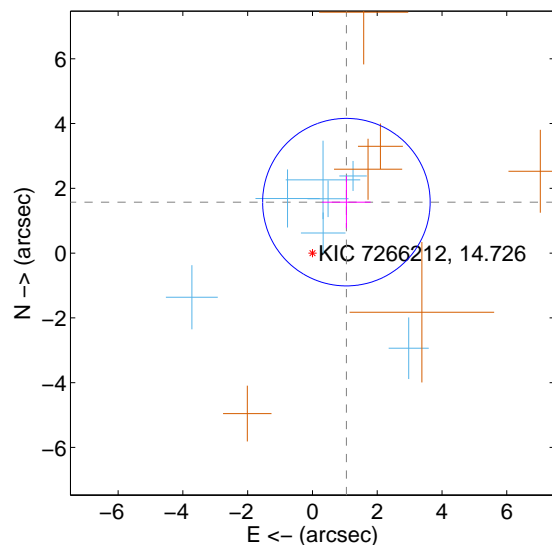
Supplemental centroid analysis for 007266212-01. Kepler magnitude: 14.73. Transit SNR 8.93

There are 7 quarters with good PRF difference image offsets

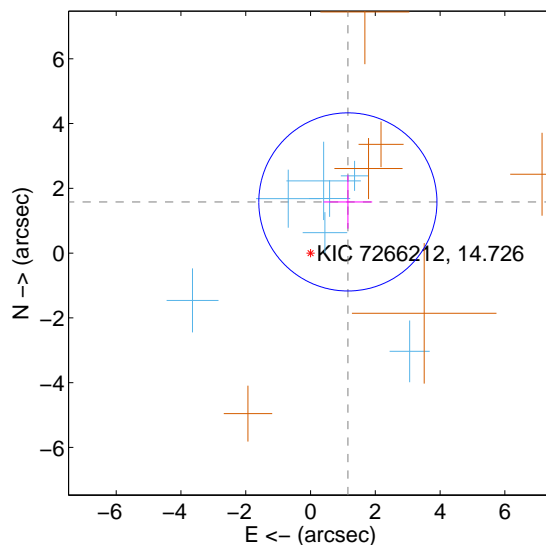
The direct PRF centroid is offset from the target star catalog position by about 0.14 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$1.890 \pm 0.862$	2.19	$-1.048 \pm 0.750$	$1.573 \pm 0.805$
PRF-fit source offset from KIC position	$1.956 \pm 0.917$	2.13	$-1.153 \pm 0.751$	$1.580 \pm 0.827$
photometric centroid source offset	$1.78 \pm 1.48$	1.20	$1.11 \pm 1.43$	$1.39 \pm 1.51$

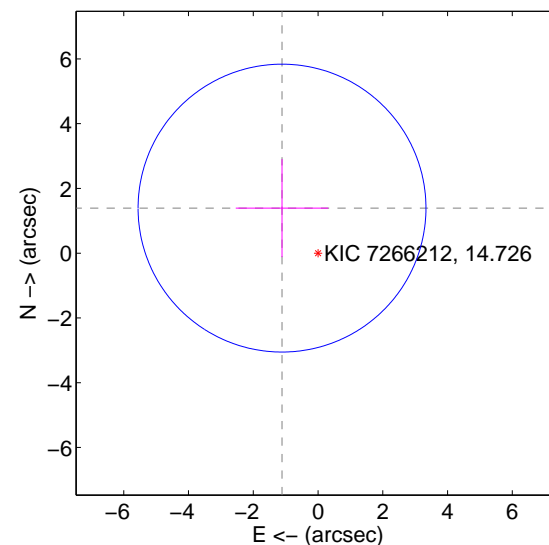
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

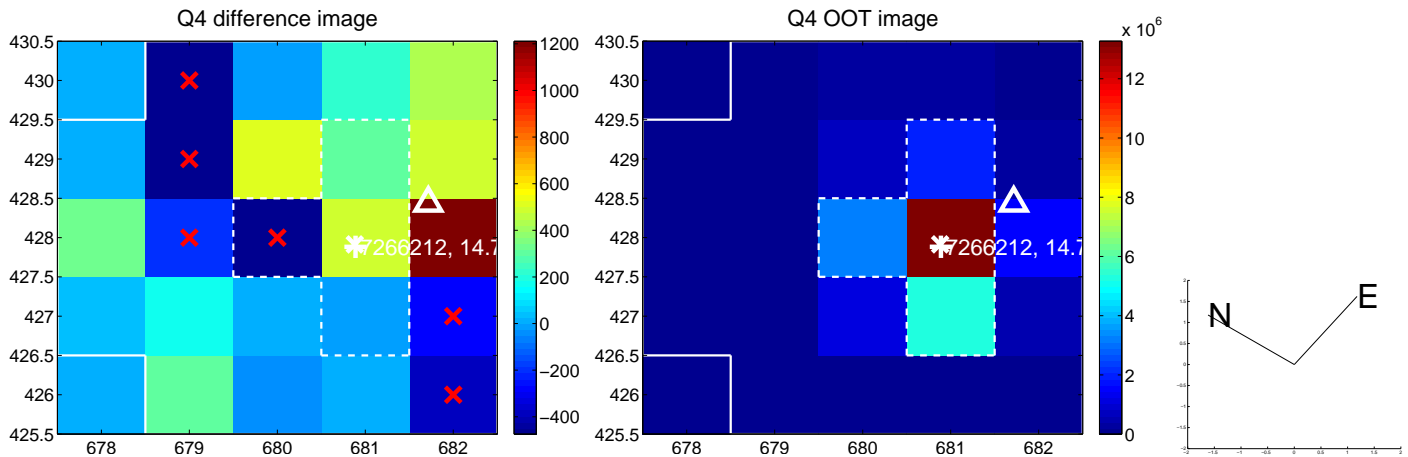
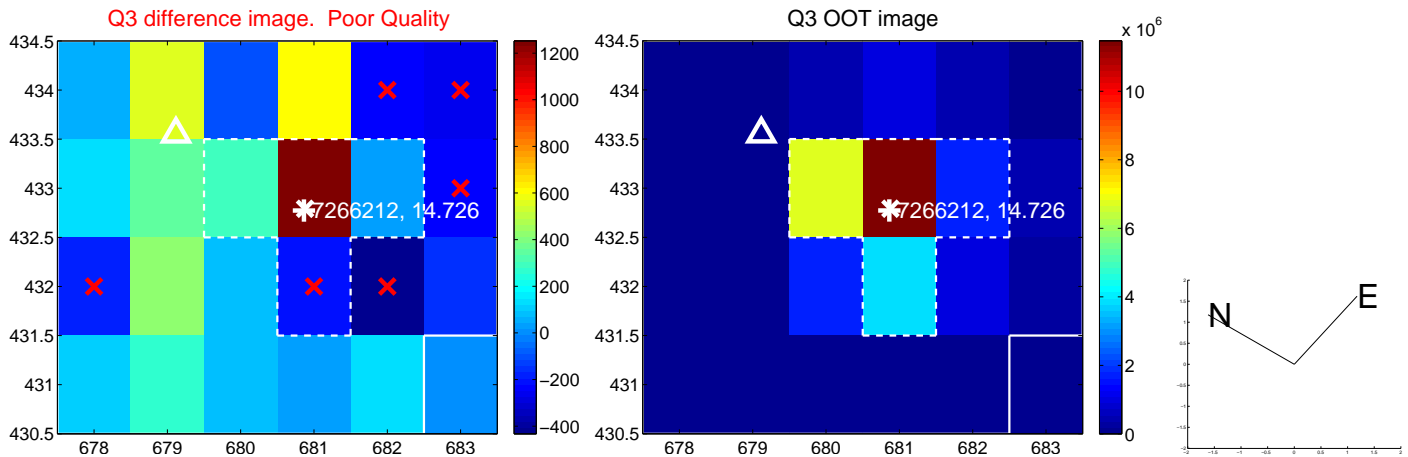
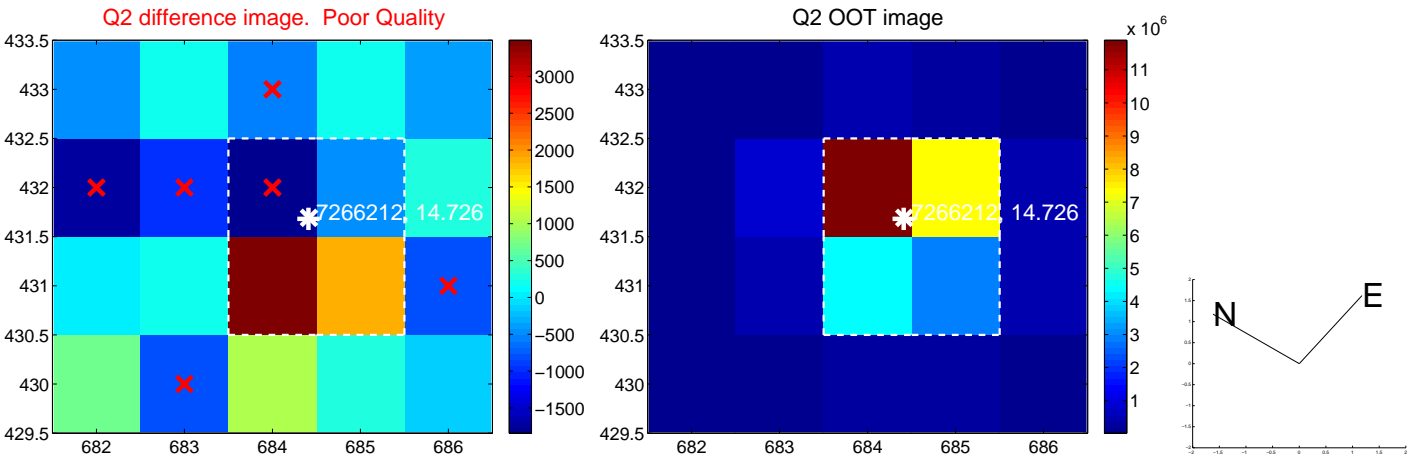
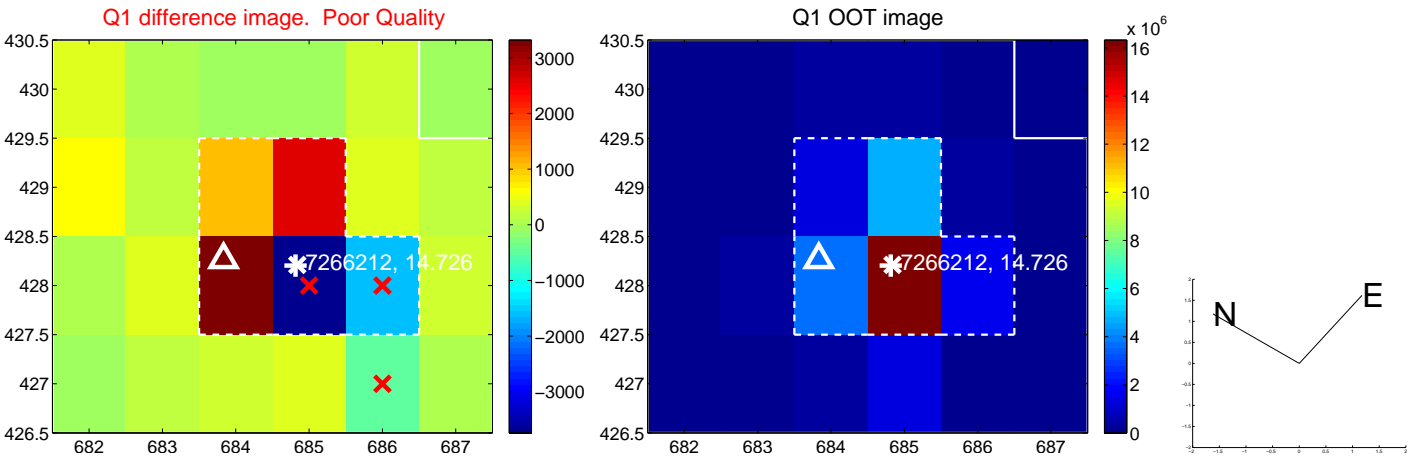


offset from photometric centroids

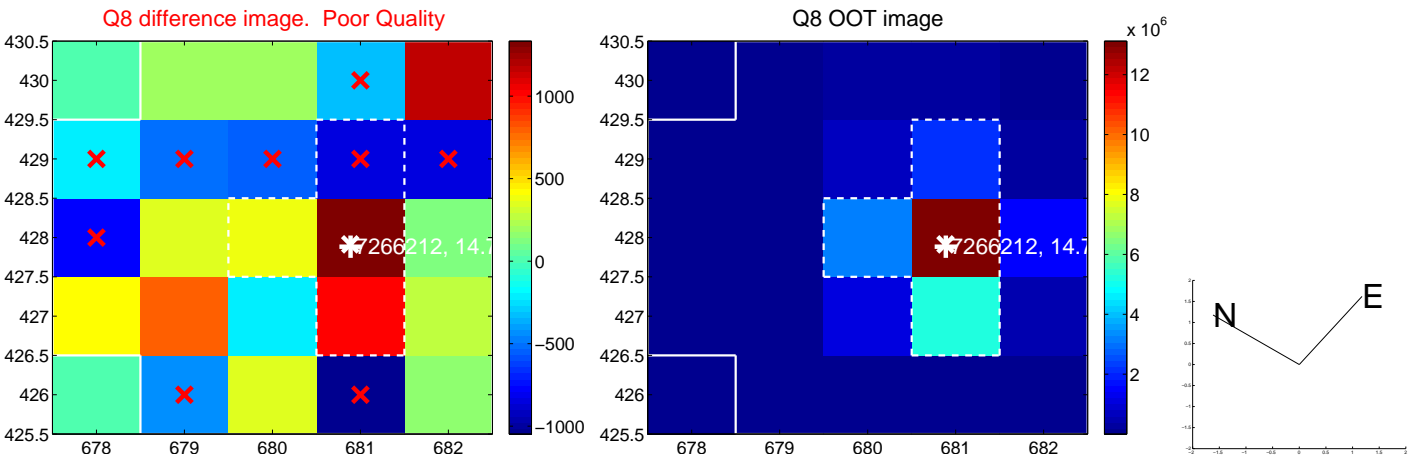
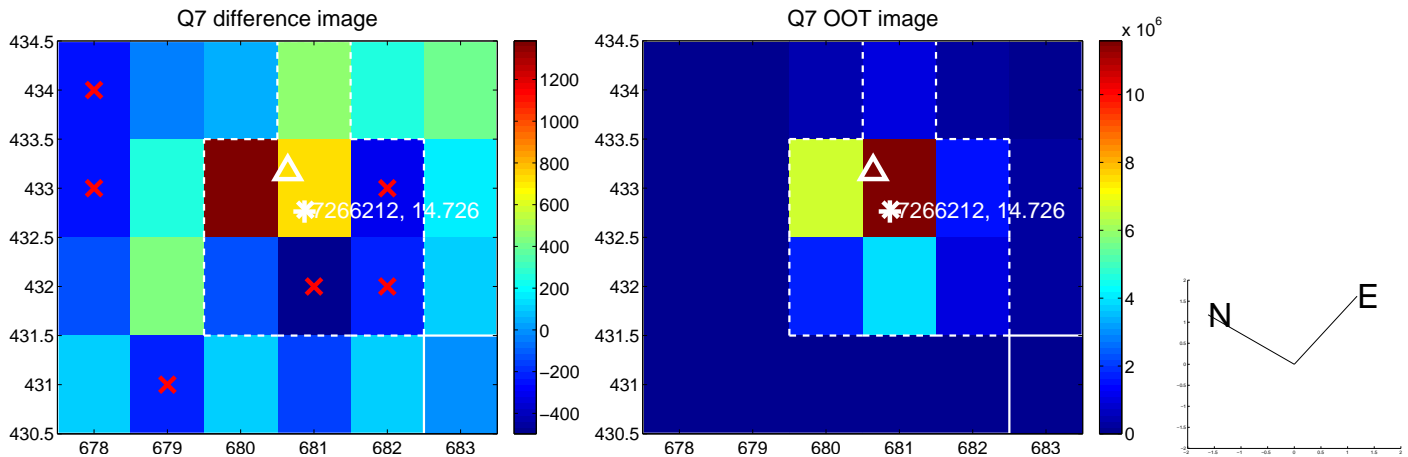
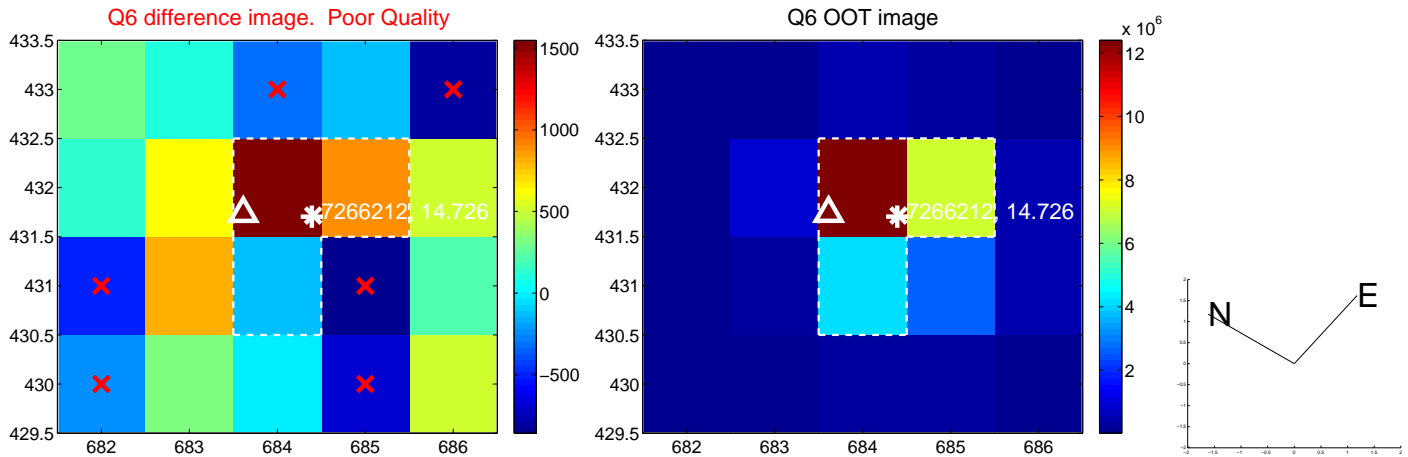
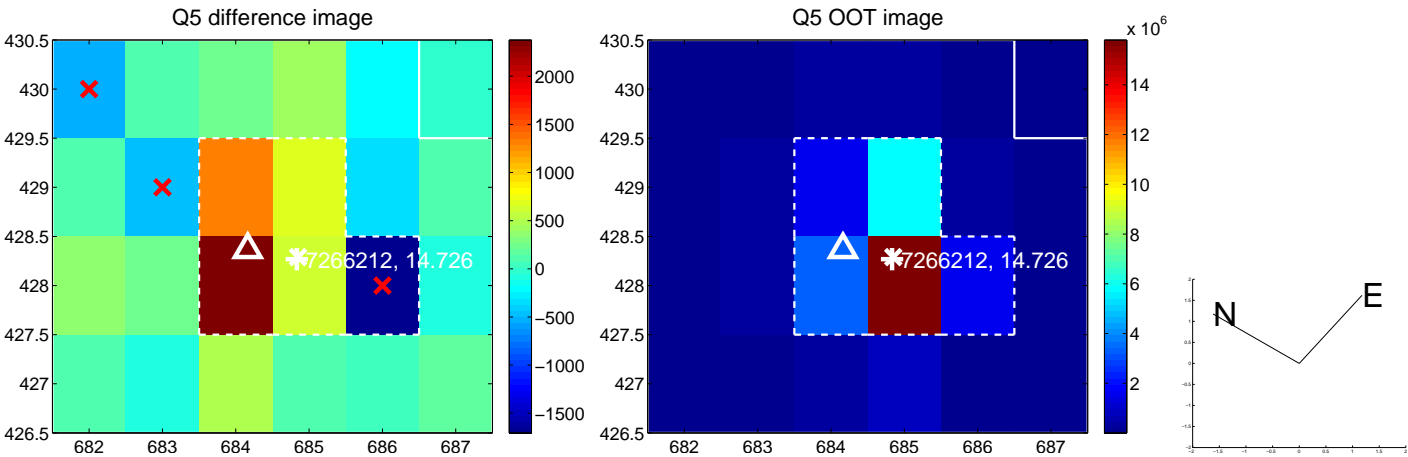


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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

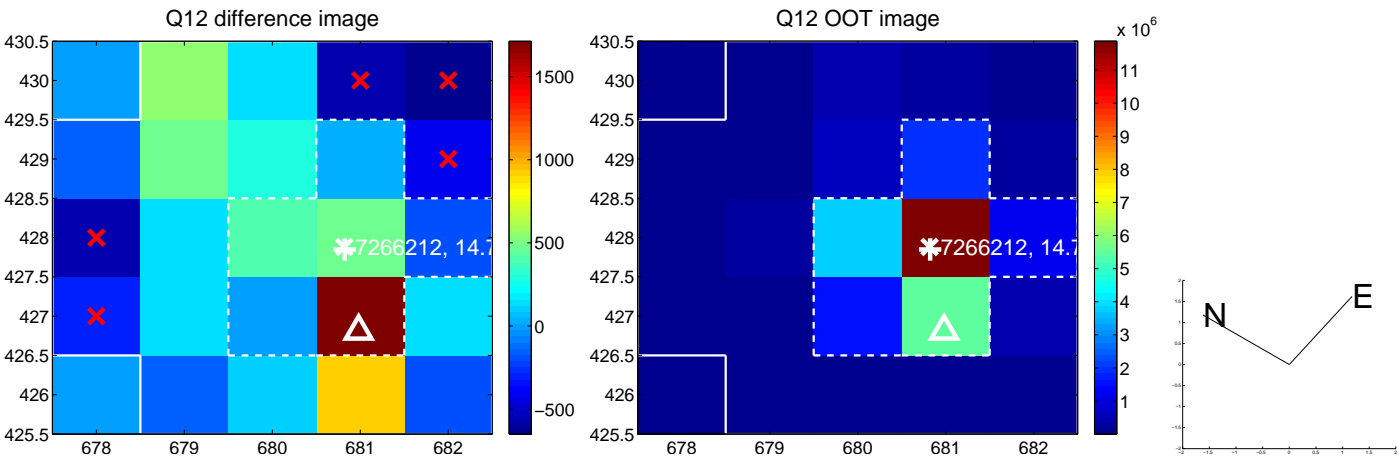
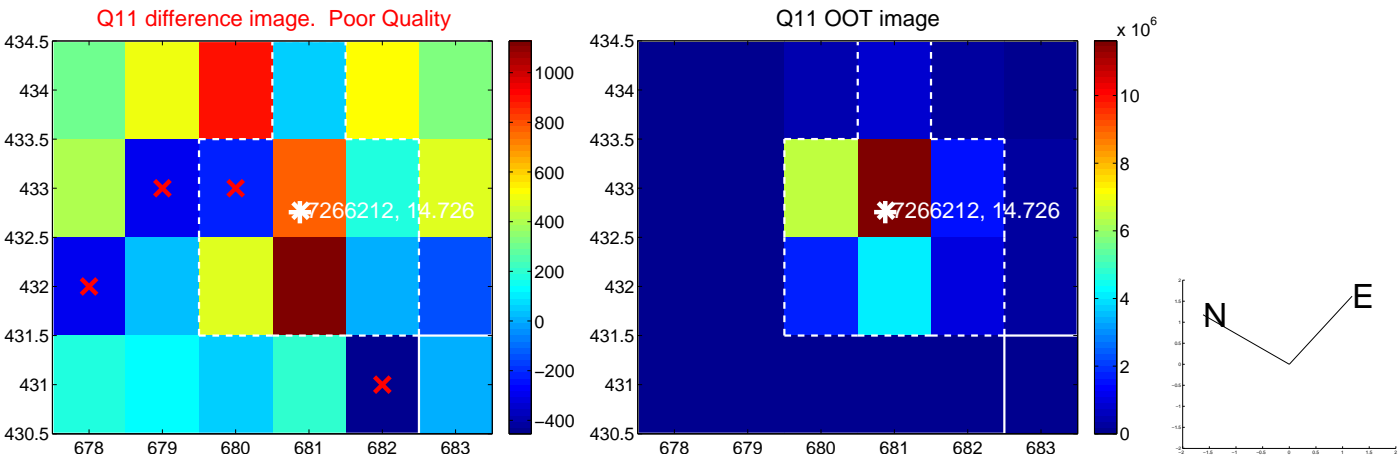
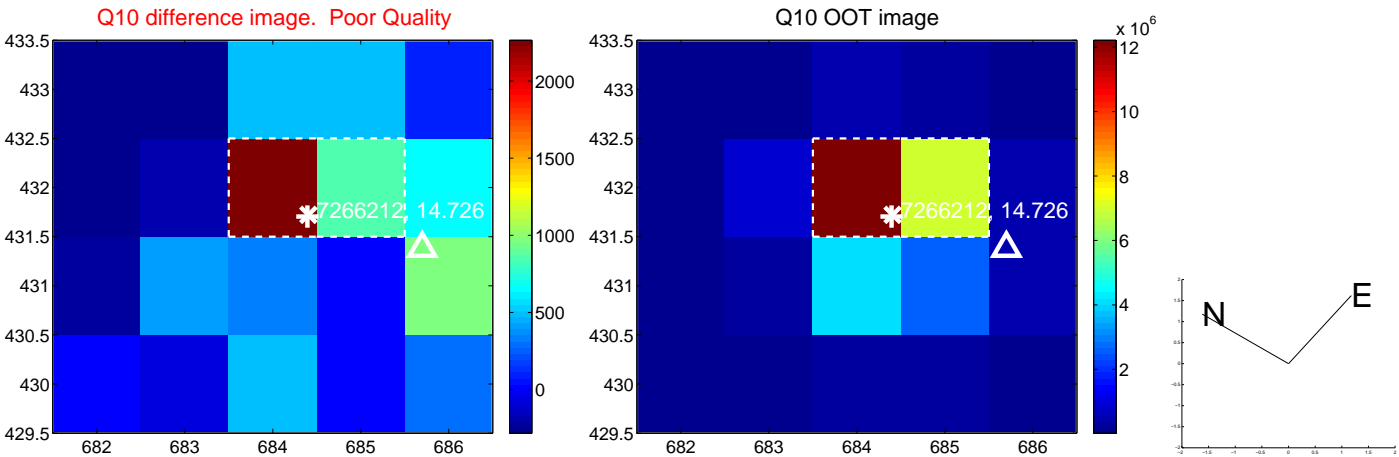
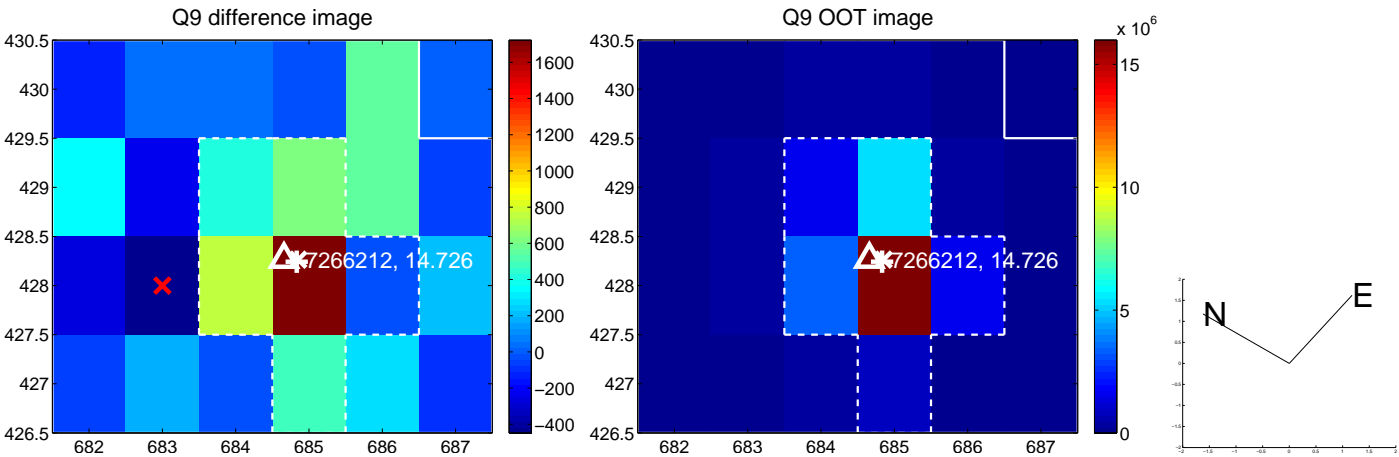


white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

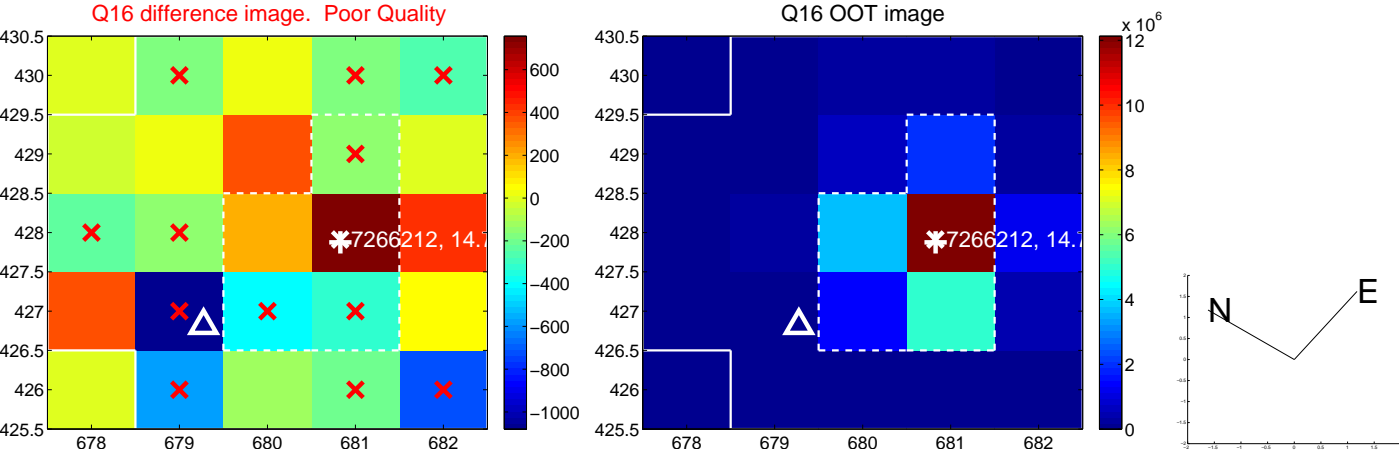
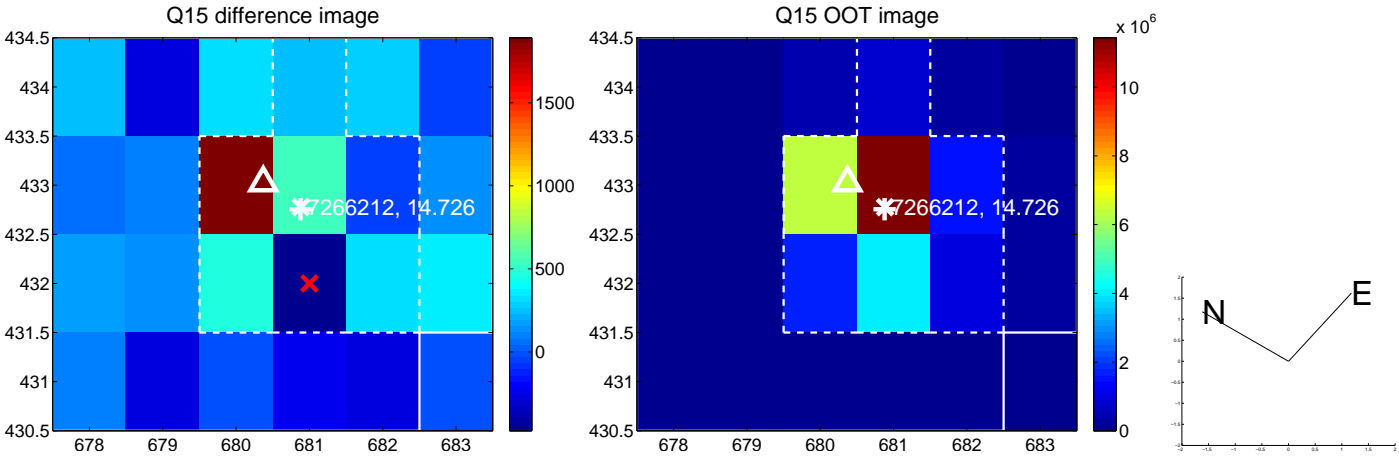
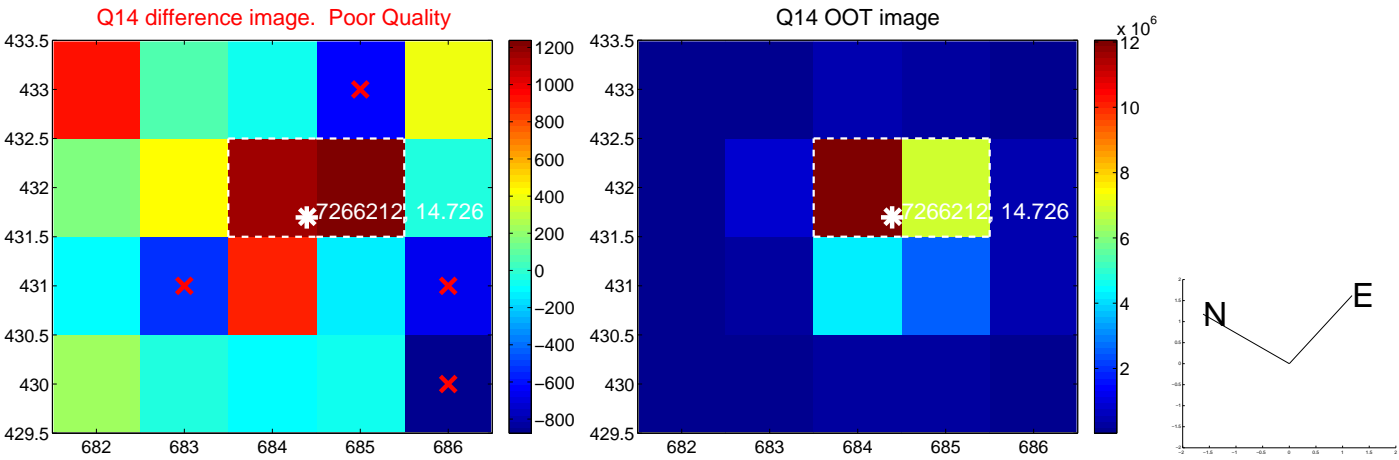
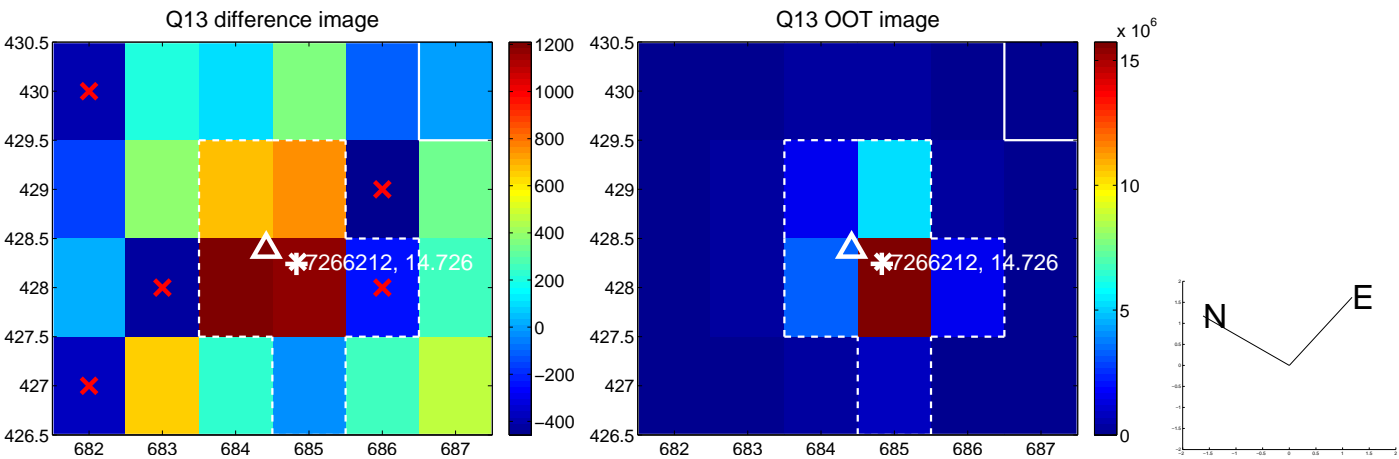




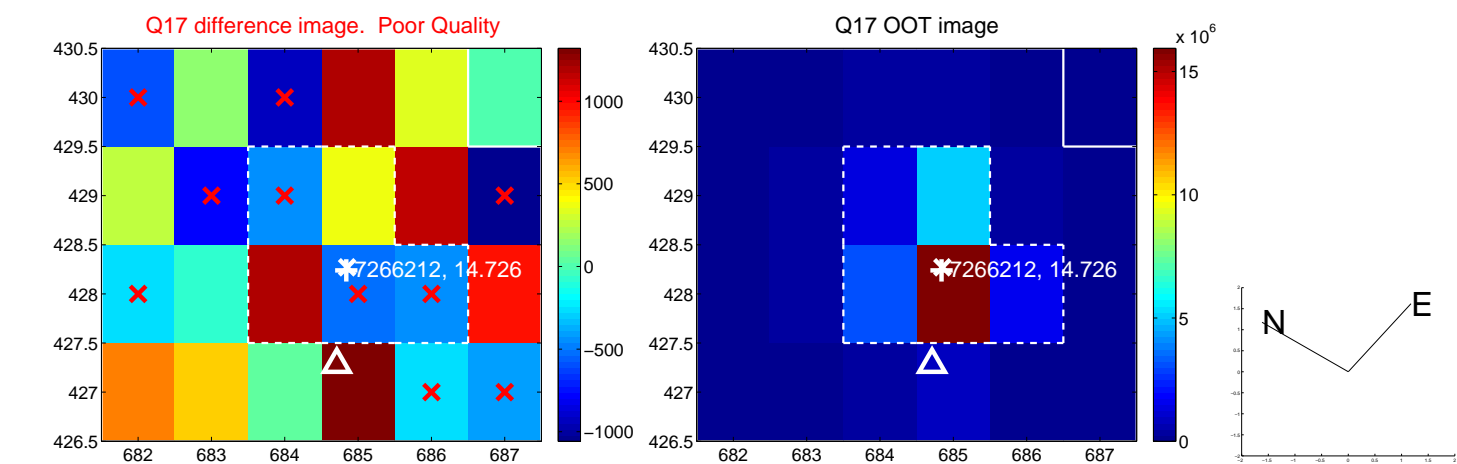
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



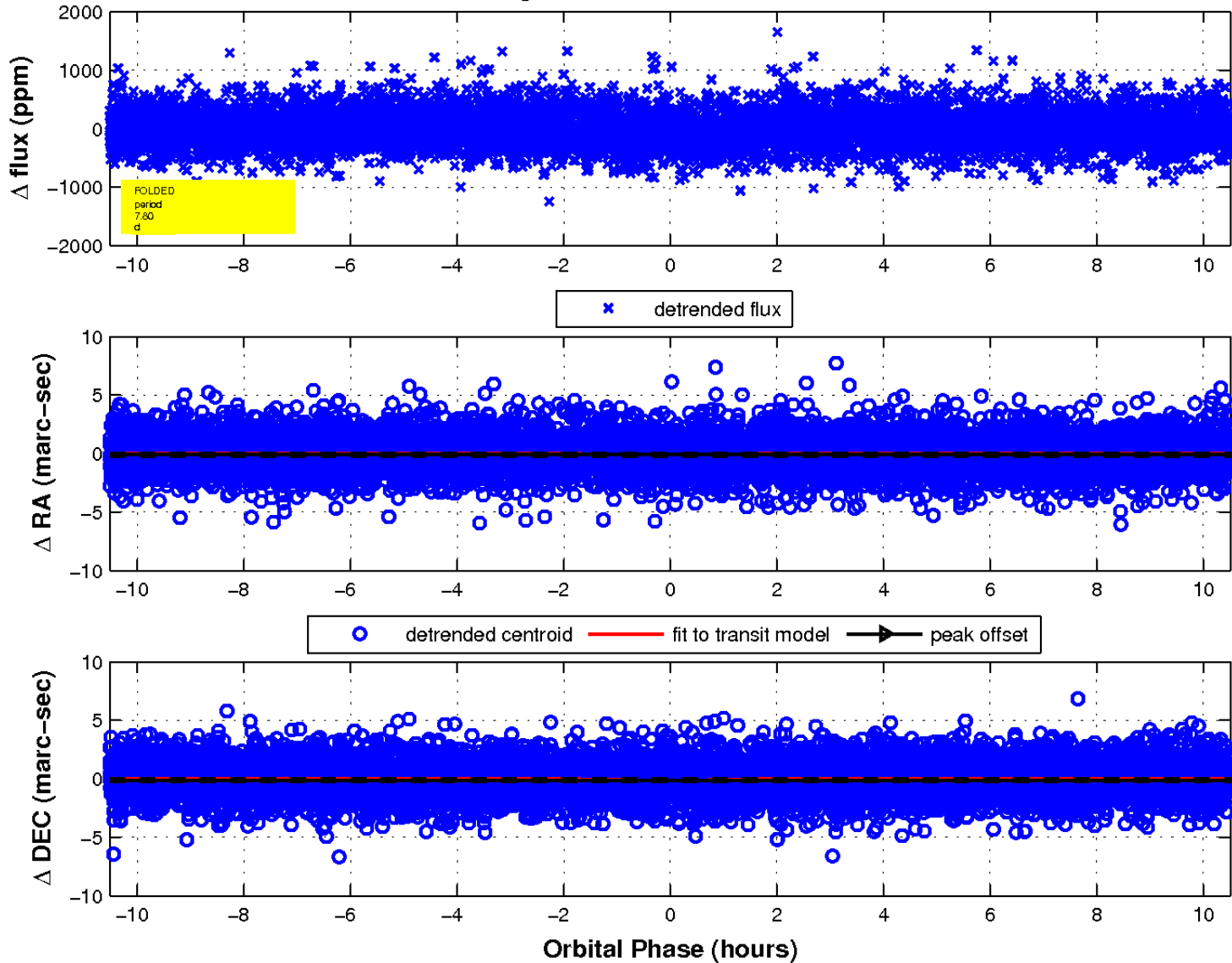
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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



fluxWeightedCentroids, Planet 1 of 1



# UKIRT Image

Declination

