

# KIC 010388286

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
010388286-01	OBS	0596.01	1.682693	131.751734	644.4	1.504	62.0	73.3	0.47	3669	1.42	74.90

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
010388286-01	OBS	PC	1.00	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.

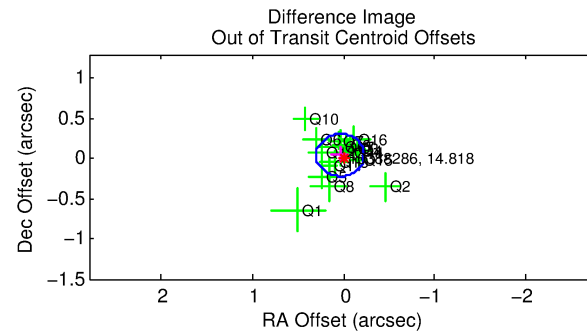
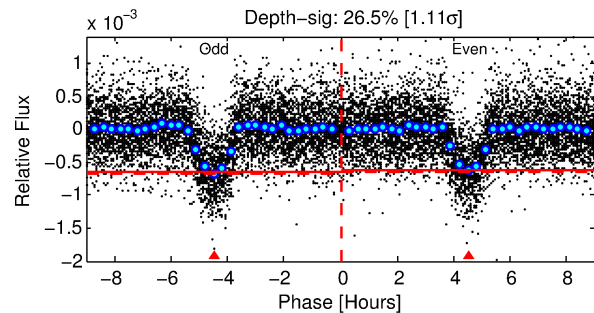
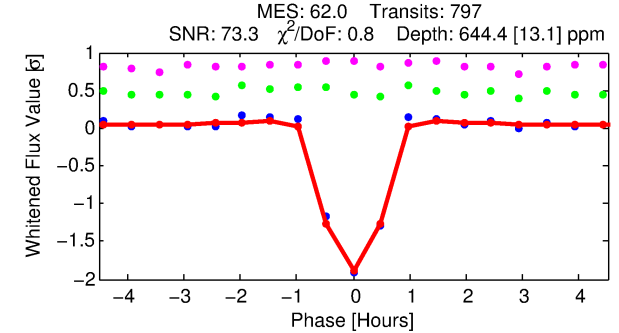
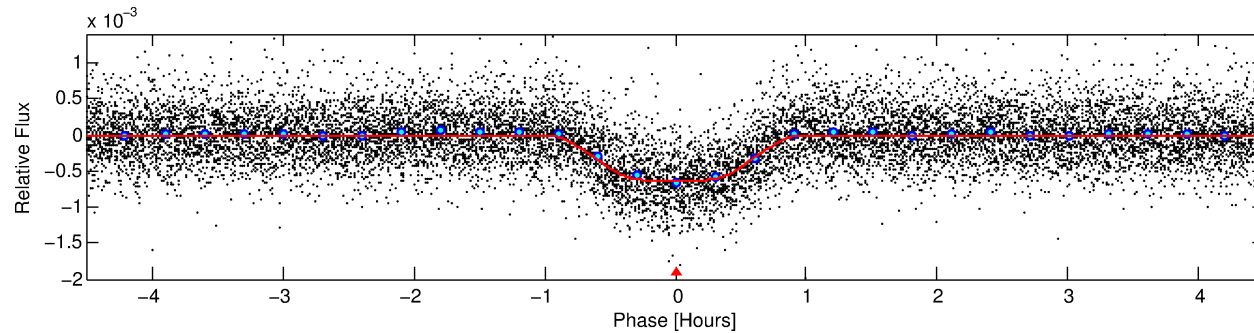
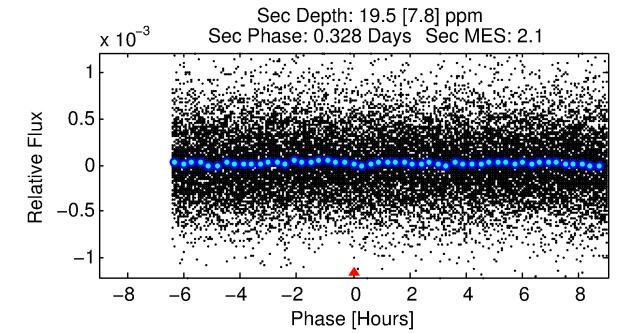
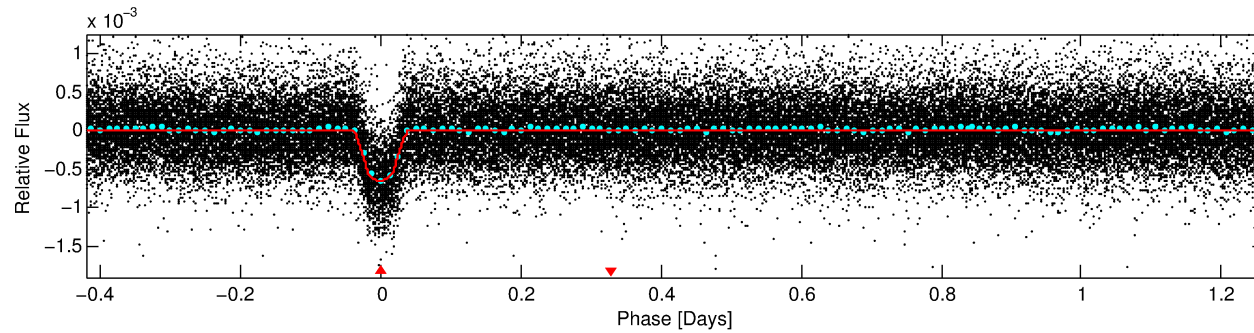
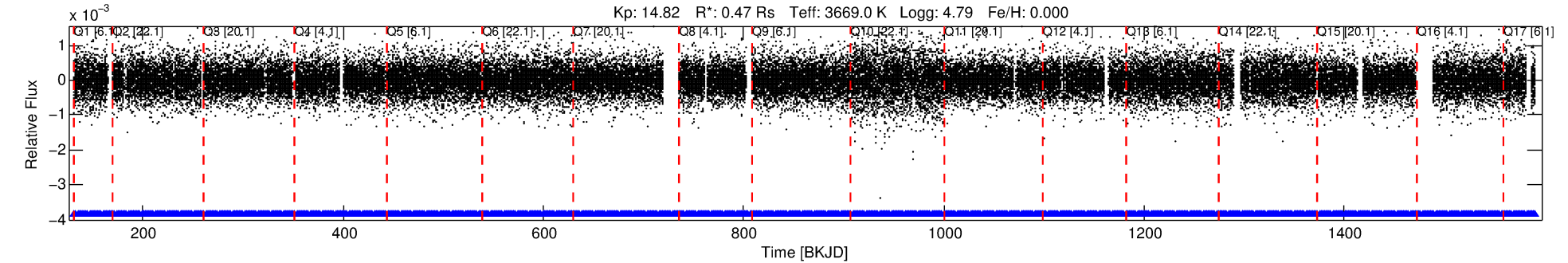
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 010388286-01

No Significant Match Found

# DV One-Page Summary

KIC: 10388286 Candidate: 1 of 1 Period: 1.683 d  
KOI: K00596.01 Corr: 0.958



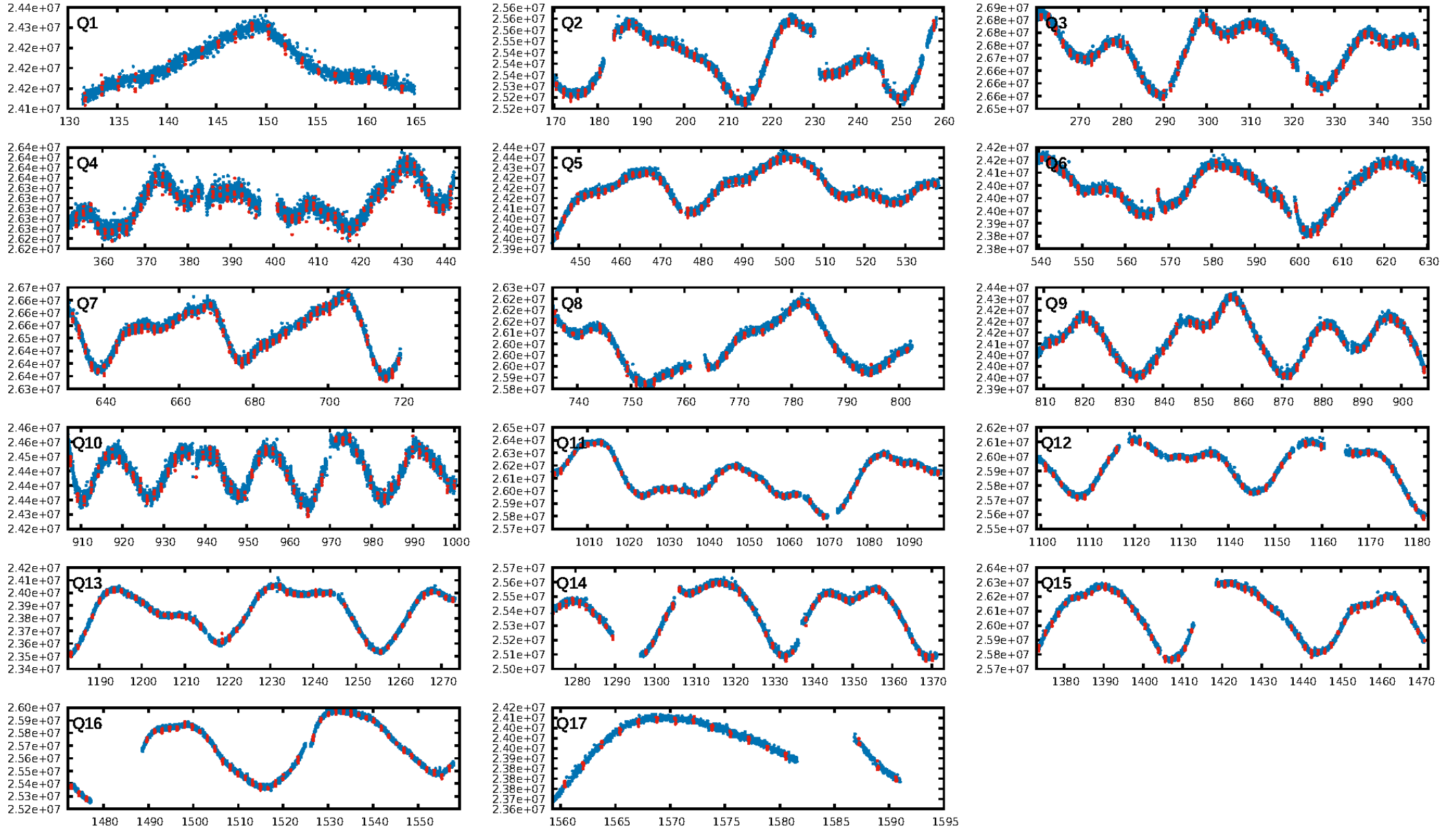
## DV Fit Results:

Period = 1.68269 [0.00000] d  
Epoch = 131.7517 [0.0003] BKJD  
Rp/R\* = 0.0277 [0.0021]  
a/R\* = 4.40 [1.35]  
b = 0.90 [0.07]  
Seff = 74.90 [11.10]  
Teff = 750 [28] K  
Rp = 1.42 [0.19] Re  
a = 0.0219 [0.0018] AU  
Ag = 2.54 [1.12] [1.37 $\sigma$ ]  
Teffp = 1464 [160] K [4.39 $\sigma$ ]

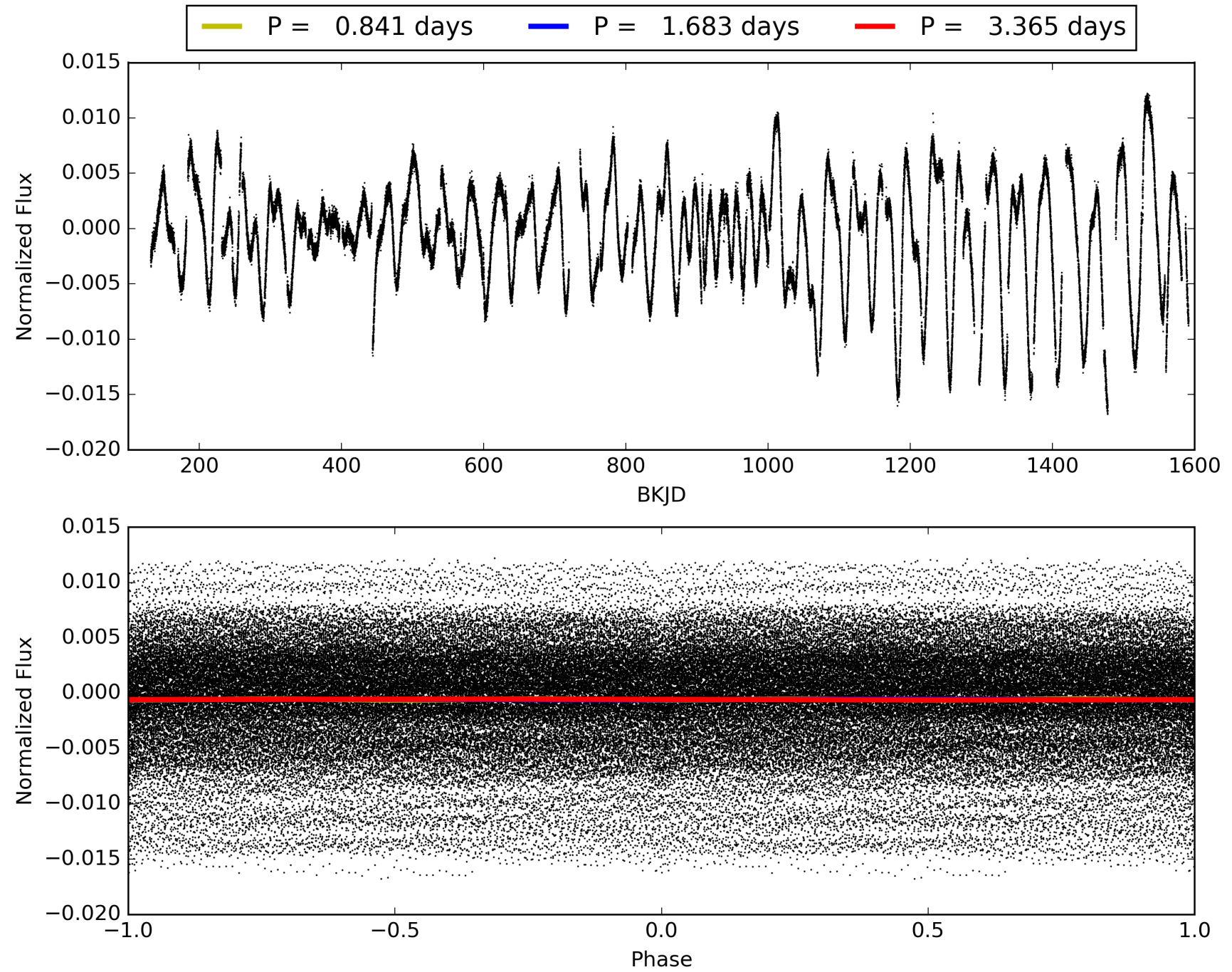
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: N/A  
ModelChiSquareGof-sig: N/A  
Bootstrap-pfa: 0.00e+00  
RollingBand-fgt: 1.00 [761/761]  
GhostDiagnostic-chr: 2.892  
Centroid-sig: 0.0%  
Centroid-so: 0.556 arcsec [2.95 $\sigma$ ]  
OotOffset-rm: 0.057 arcsec [0.65 $\sigma$ ]  
KicOffset-rm: 0.287 arcsec [3.16 $\sigma$ ]  
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]

# TCE 010388286-01, PDC Light Curves

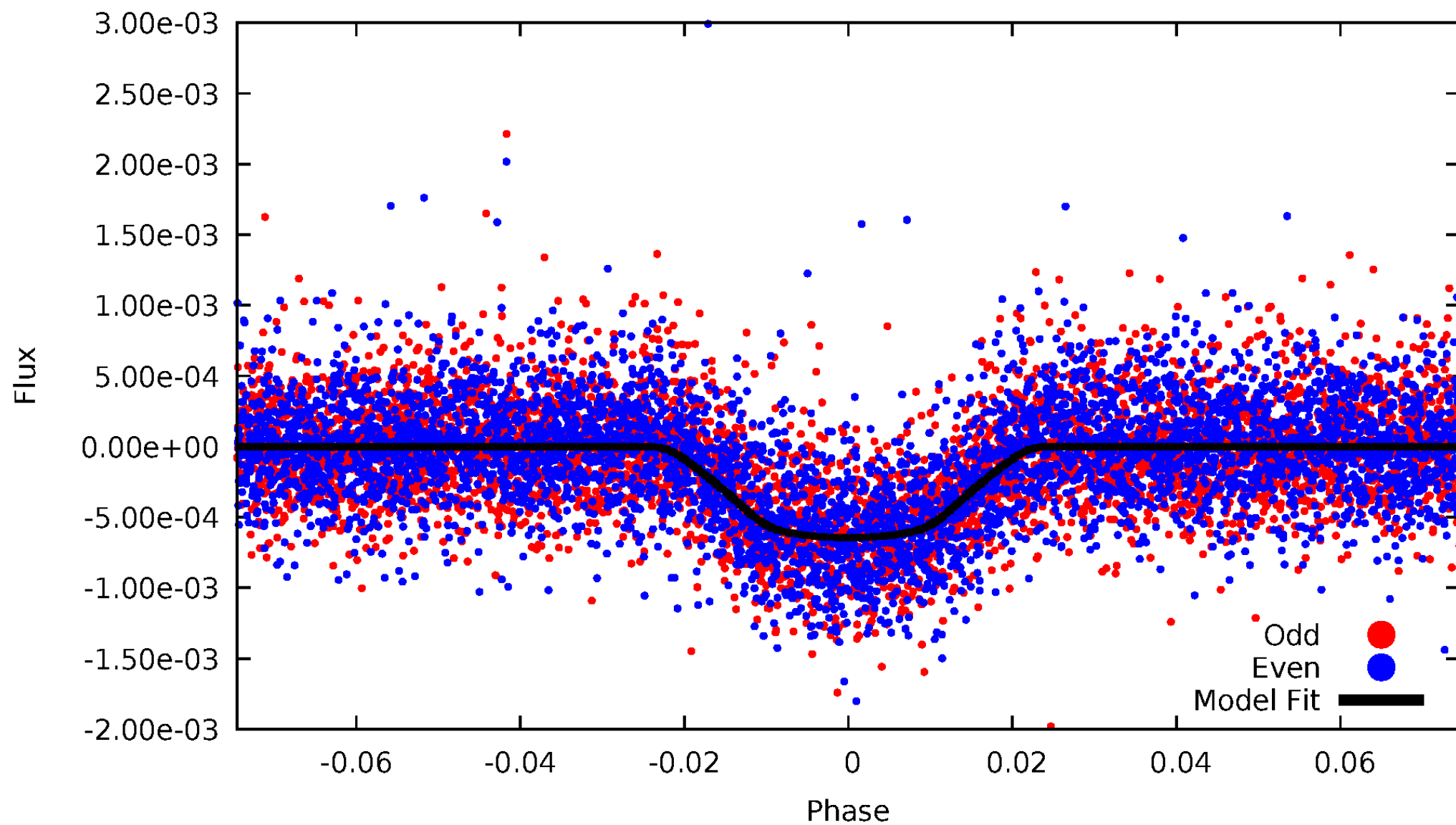


# TCE 010388286-01



# DV Odd/Even

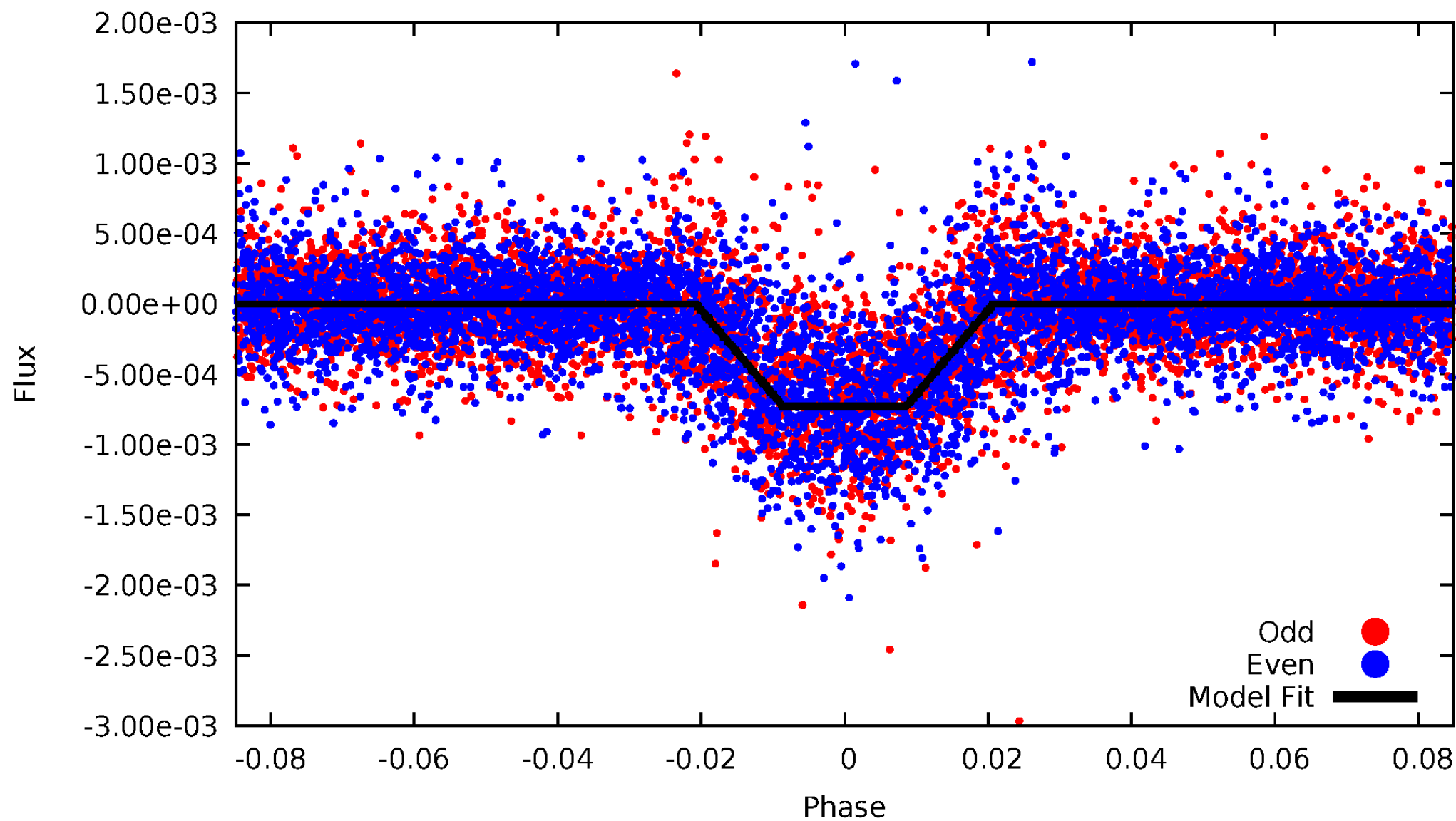
TCE 010388286-01





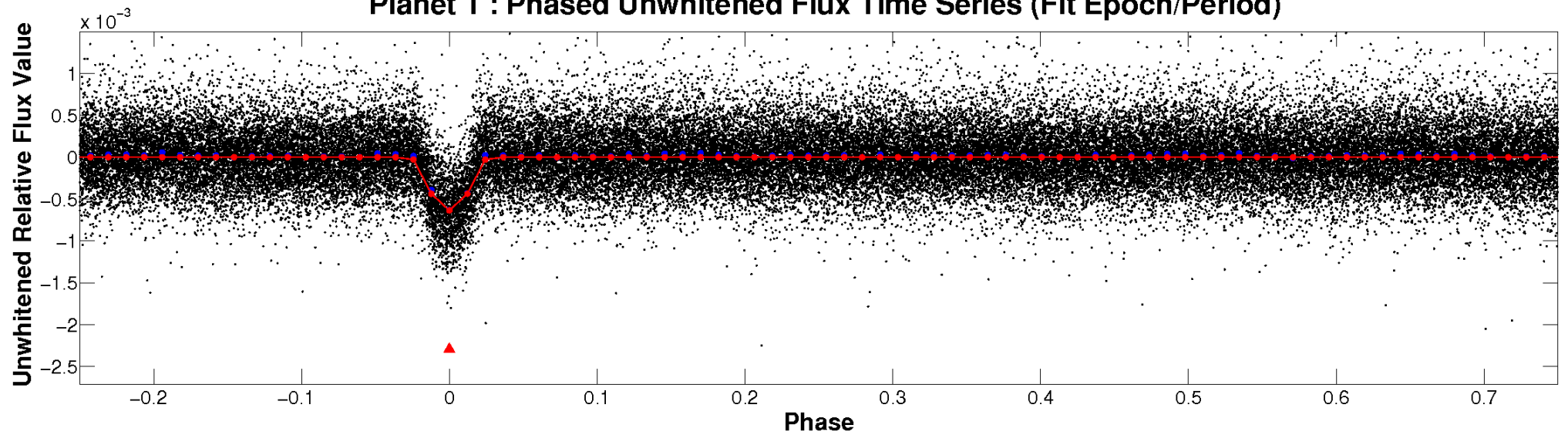
# ALT Odd/Even

TCE 010388286-01

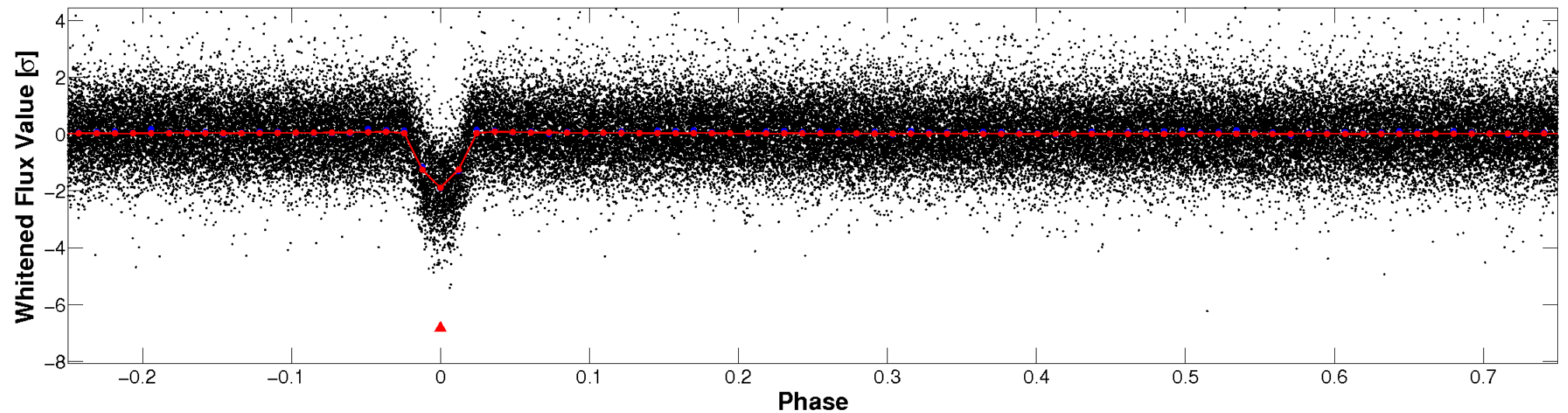


# Non-Whitened Vs. Whitened Light Curve

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

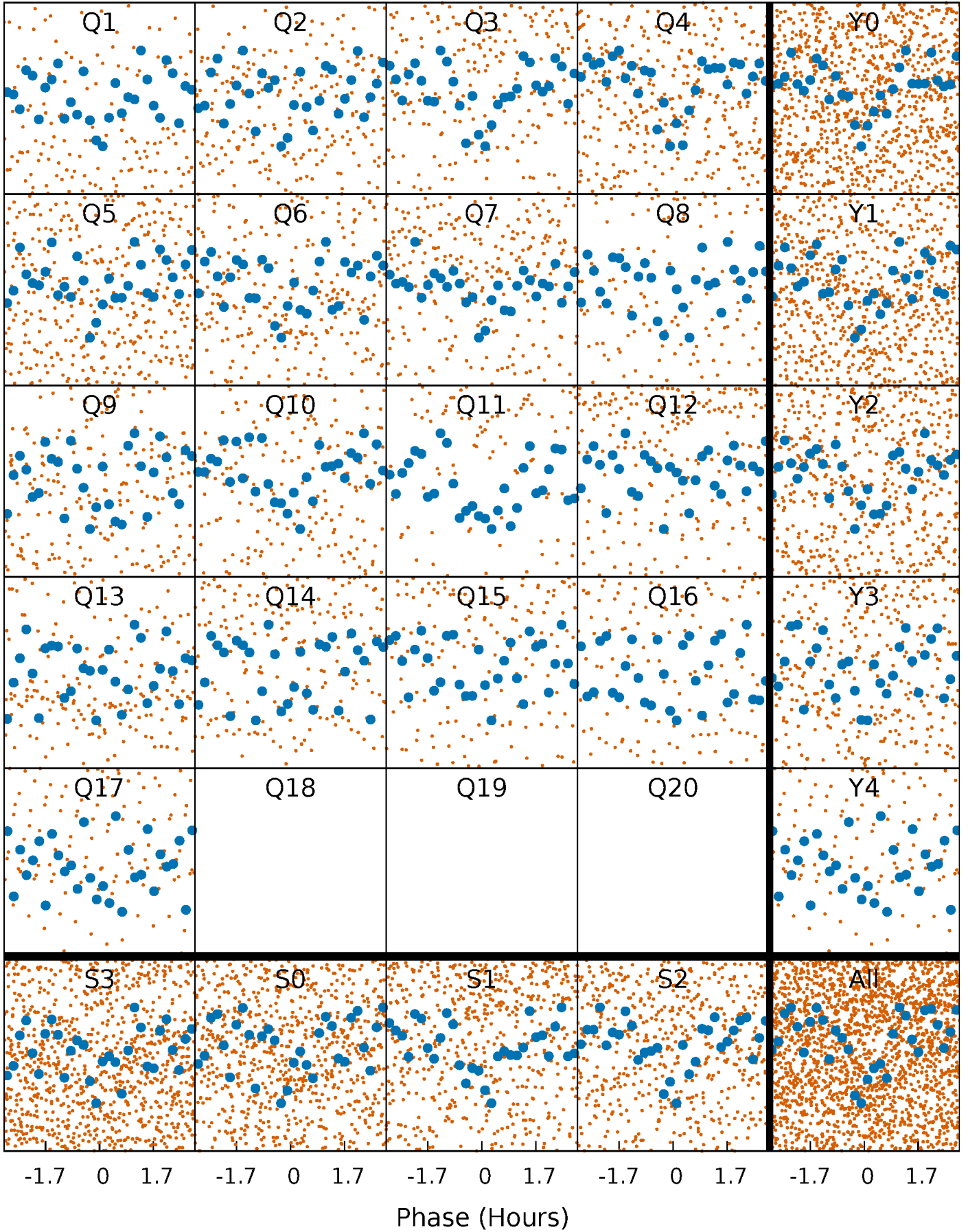


## Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



# PDC Quarter-Phased Transit Curves

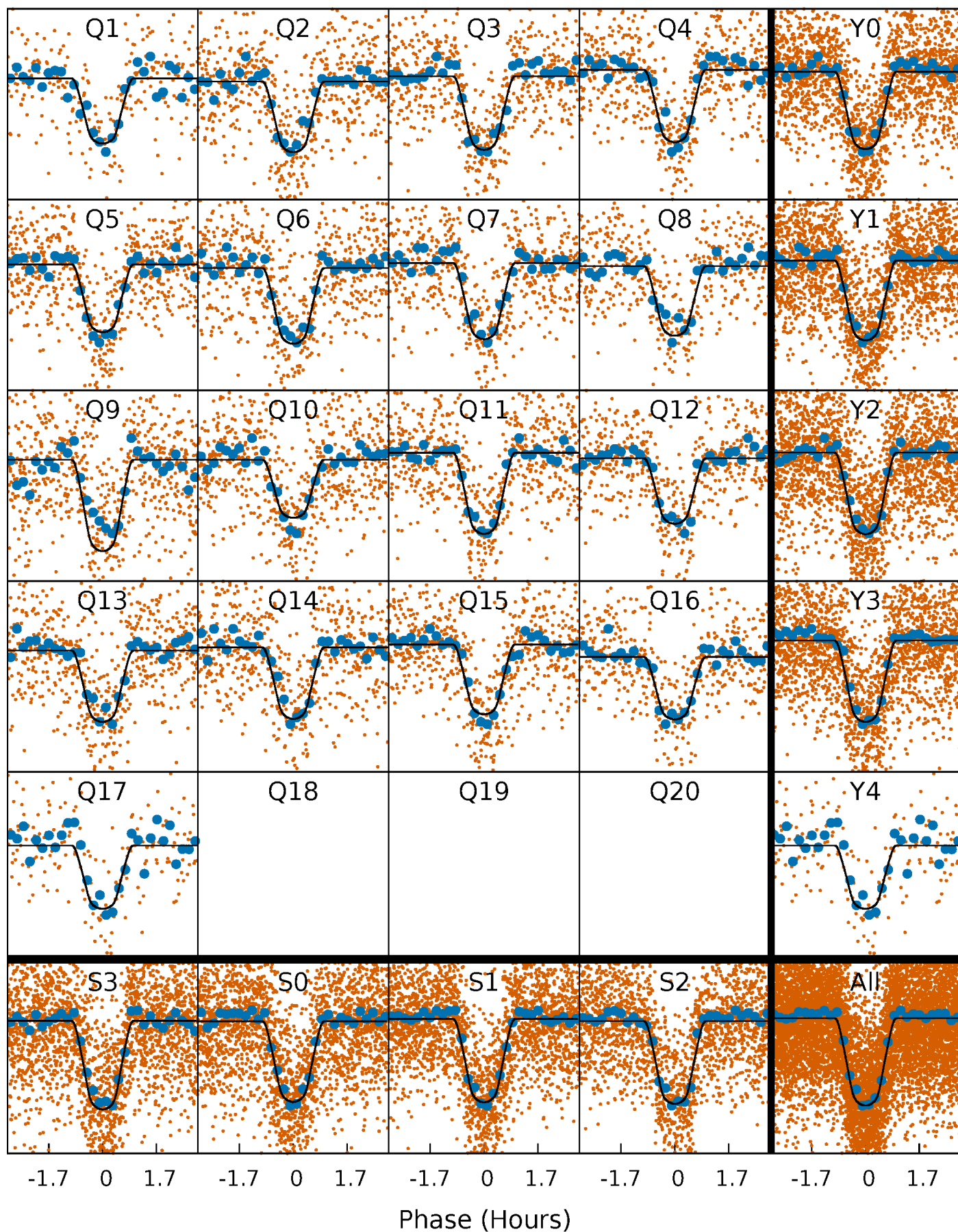
TCE 010388286-01   P= 1.682693 Days    $T_0=131.751734$  (BKJD)





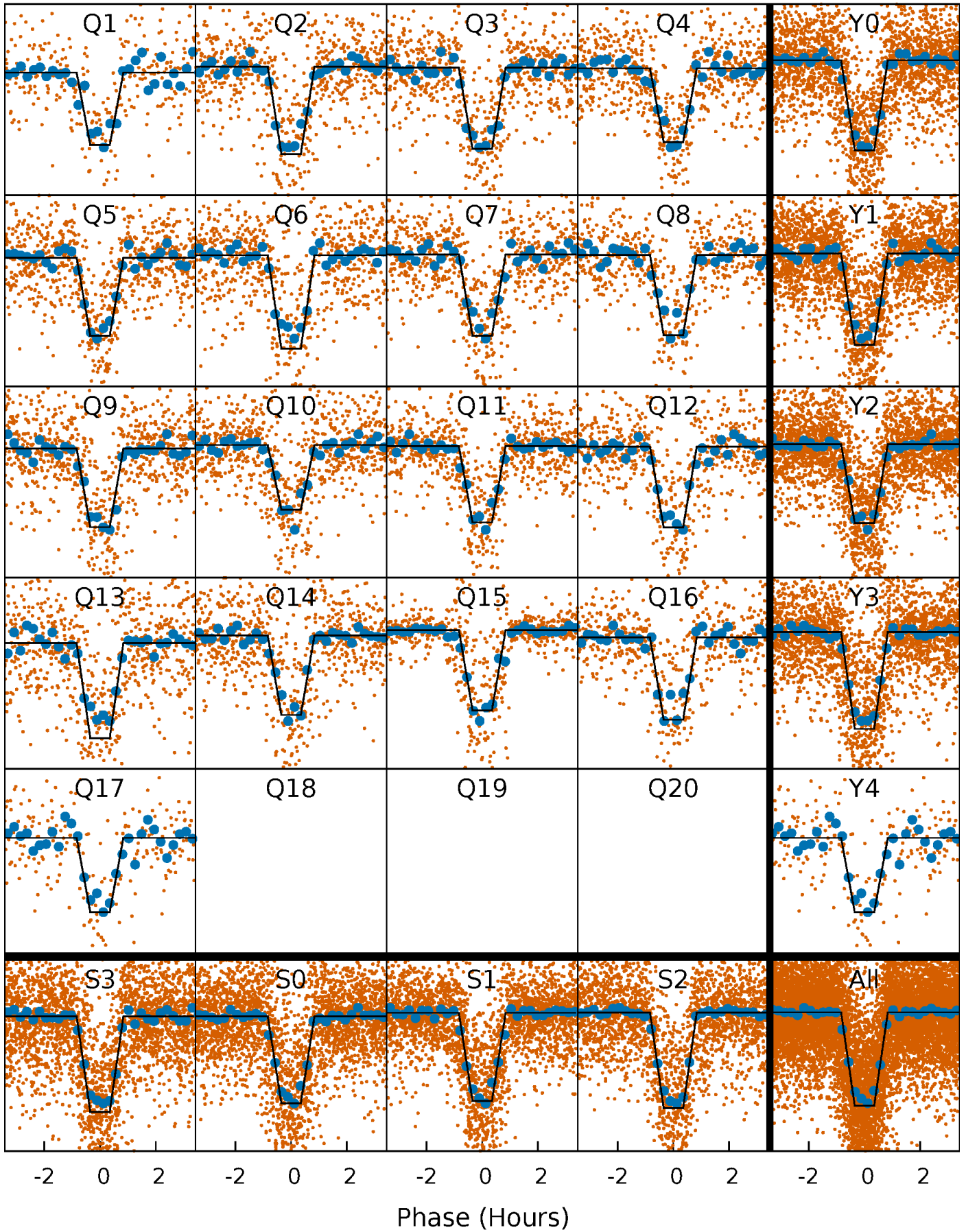
# DV Quarter-Phased Transit Curves

TCE 010388286-01 P= 1.682693 Days  $T_0=131.751734$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

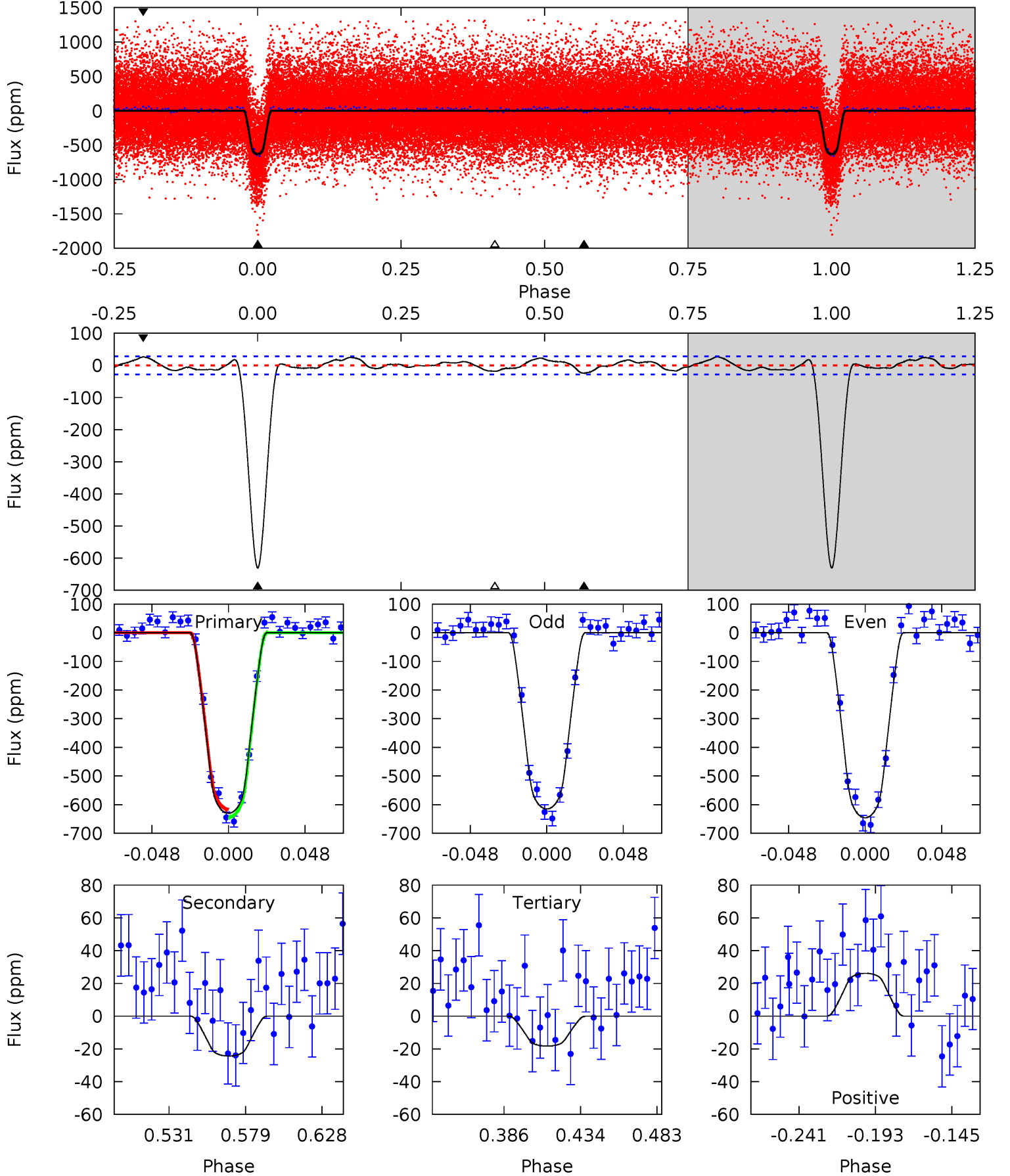
TCE 010388286-01   P= 1.682695 Days    $T_0=131.751447$  (BKJD)



# DV Model-Shift Uniqueness Test

010388286-01, P = 1.682693 Days, E = 130.069041 Days

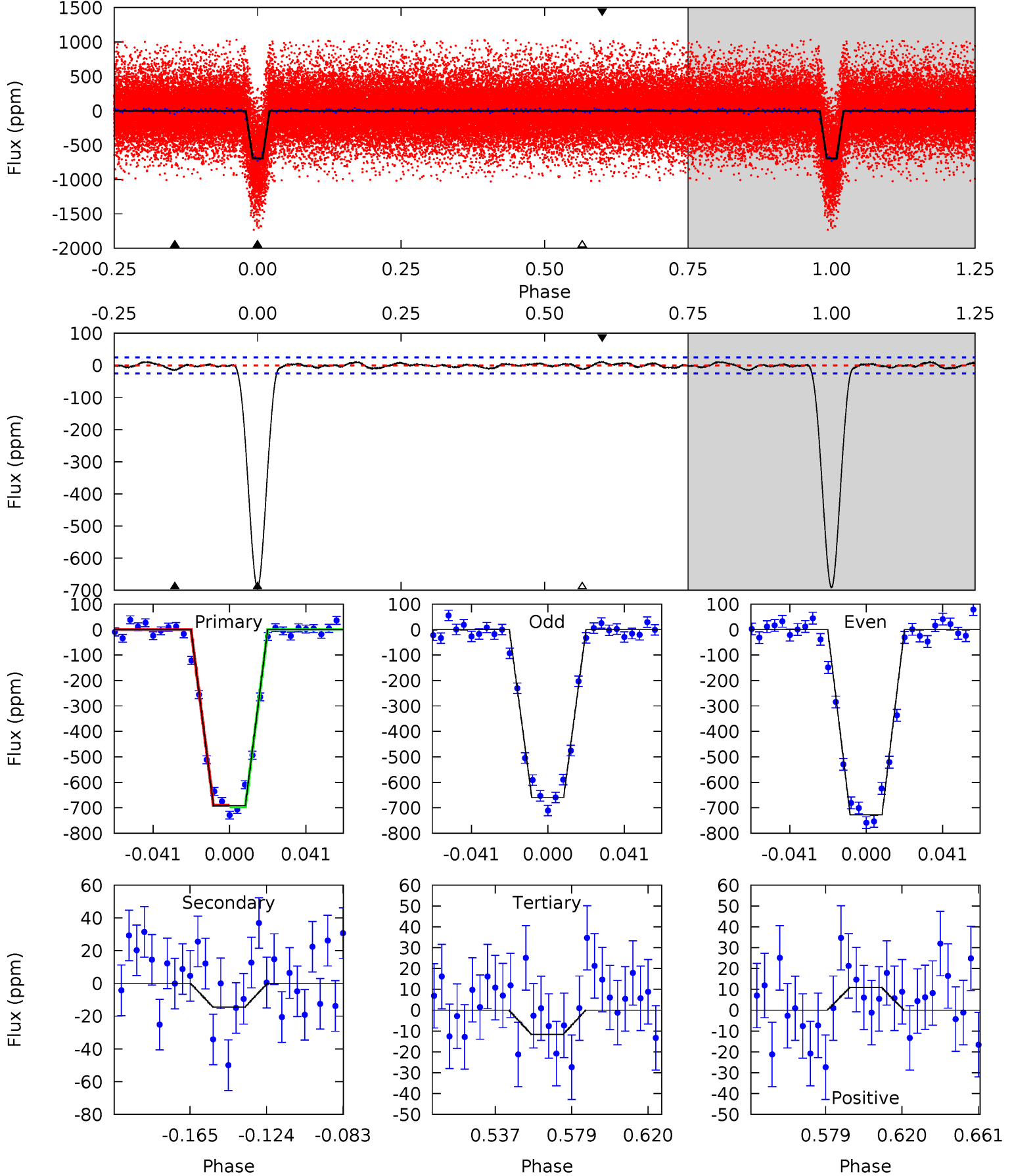
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
105.6	4.08	3.06	4.38	4.72	1.97	1.96	102.5	101.2	1.02	-0.30	2.58	0.97	0.04	2.41



# Alt Model-Shift Uniqueness Test

010388286-01, P = 1.682695 Days, E = 130.068752 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
131.2	2.75	2.21	2.06	4.75	2.04	0.90	129.0	129.1	0.55	0.69	6.49	0.98	0.02	0.55



### Stellar Parameters For KIC 010388286

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$3669^{+73}_{-91}$	$4.787^{+0.054}_{-0.041}$	$0.000^{+0.150}_{-0.150}$	$0.470^{+0.041}_{-0.051}$	$0.494^{+0.039}_{-0.054}$	$6.704^{+1.885}_{-1.020}$
	+2%/-2%	+1%/-1%	+inf%/-inf%	+9%/-11%	+8%/-11%	+28%/-15%
Source	SPE70	SPE60	SPE70	DSEP		

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

### Secondary Eclipse Parameters for KIC 010388286-01 / KOI 0596.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	$A_{\text{obs}}$
DV	$-24 \pm 6$	$1.42^{+0.13}_{-0.13}$	$1046^{+29}_{-32}$	$2265^{+87}_{-100}$	$3.213^{+0.992}_{-0.963}$
Alt.	$-15 \pm 5$	$1.37^{+0.14}_{-0.12}$	$1044^{+29}_{-34}$	$2138^{+99}_{-131}$	$2.029^{+0.884}_{-0.740}$

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



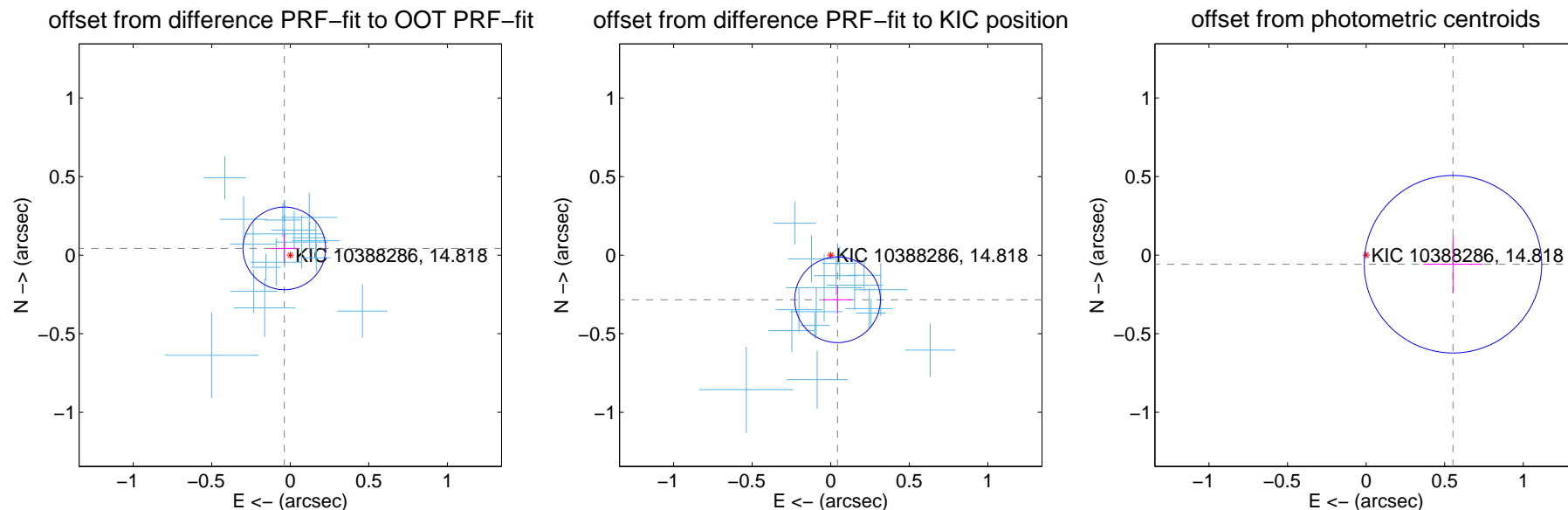
## DV Centroid Data

Supplemental centroid analysis for 010388286-01. Kepler magnitude: 14.82. Transit SNR 73.28

There are 17 quarters with good PRF difference image offsets

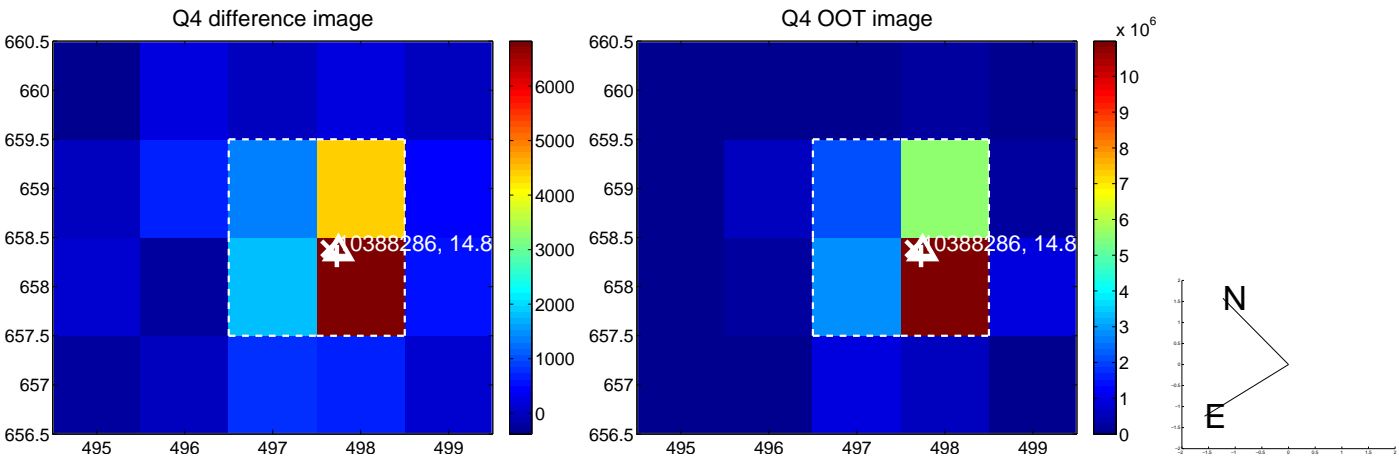
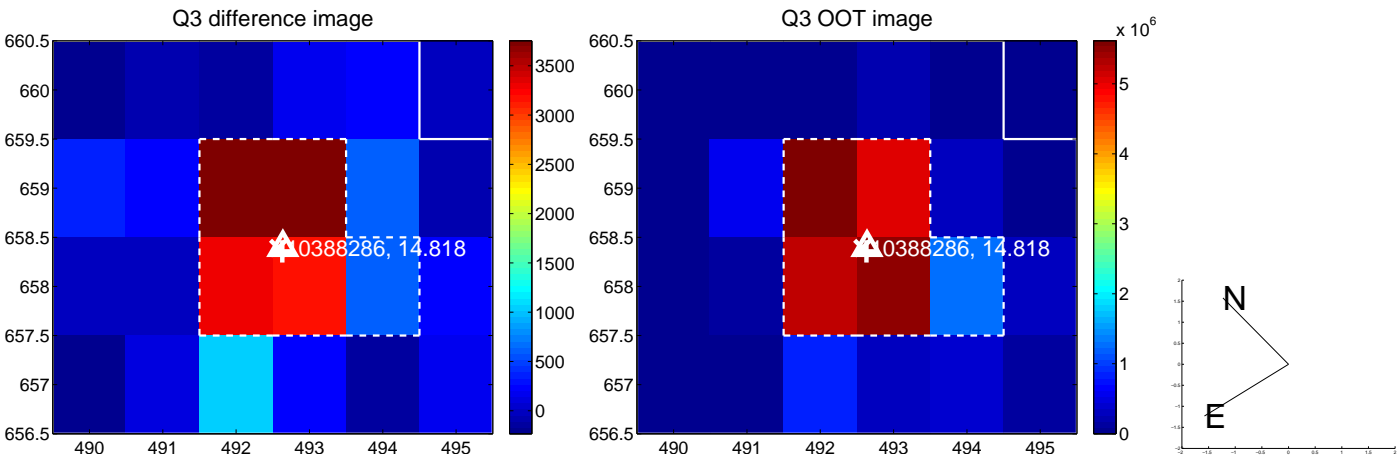
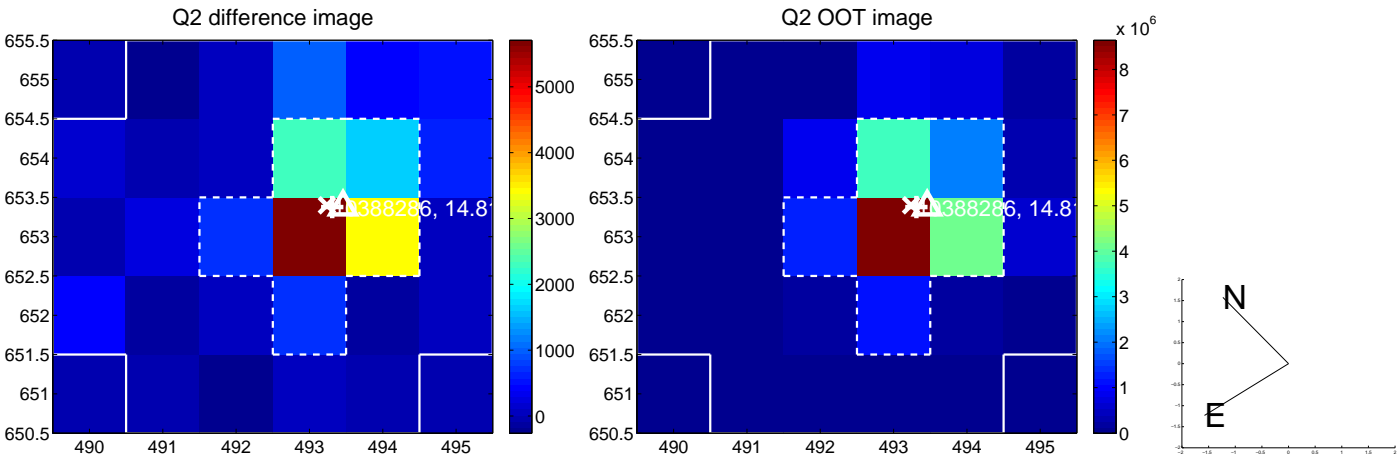
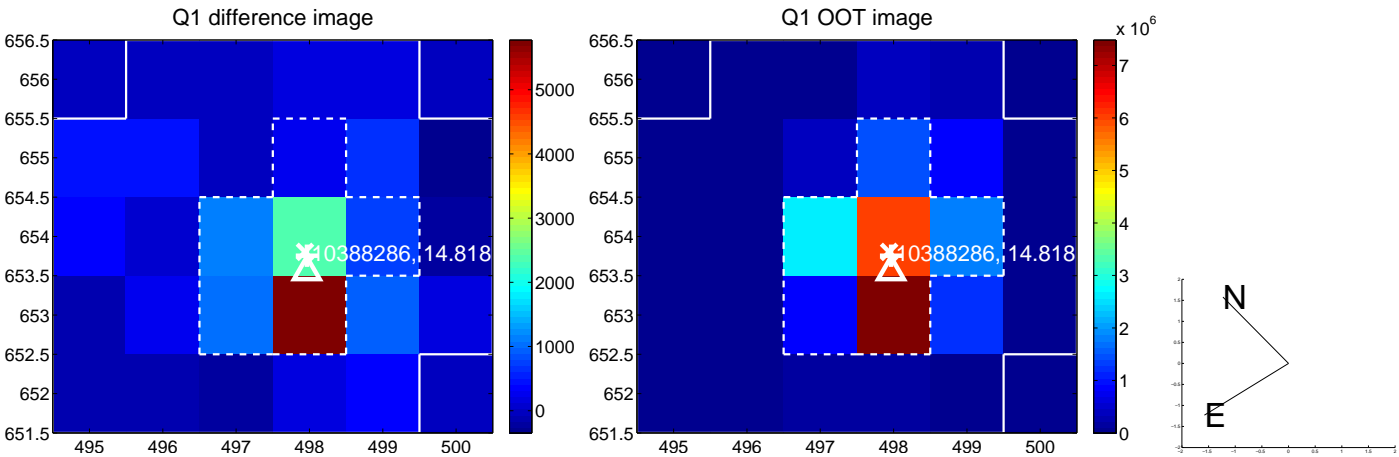
The direct PRF centroid is offset from the target star catalog position by about 0.34 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.057 \pm 0.088$	0.65	$0.038 \pm 0.086$	$0.043 \pm 0.092$
PRF-fit source offset from KIC position	<b><math>0.287 \pm 0.091</math></b>	<b>3.16</b>	$-0.044 \pm 0.093$	$-0.284 \pm 0.091$
photometric centroid source offset	$0.56 \pm 0.19$	2.95	$-0.55 \pm 0.19$	$-0.06 \pm 0.18$

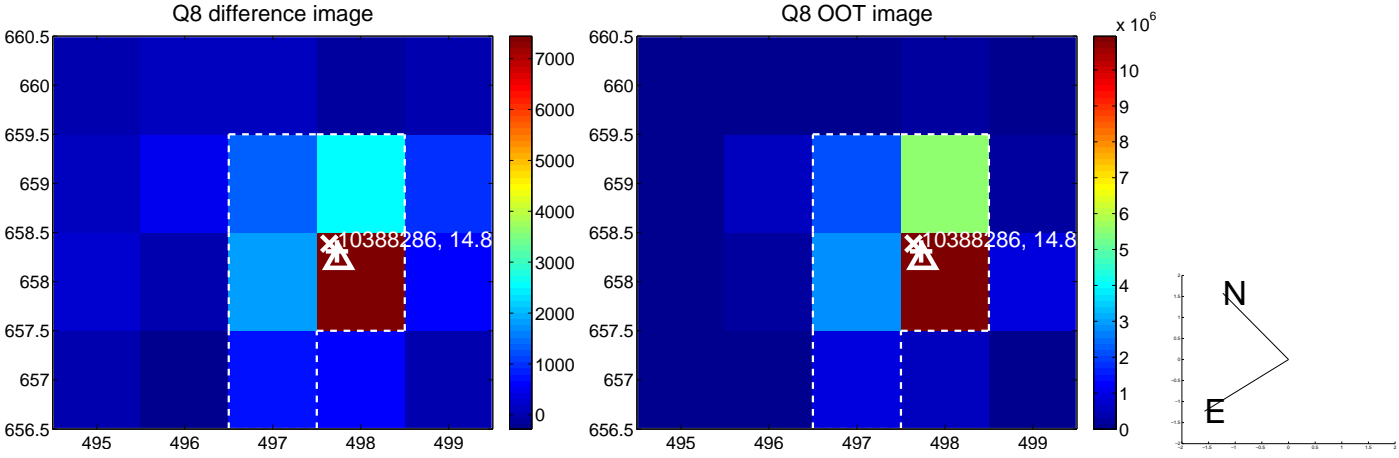
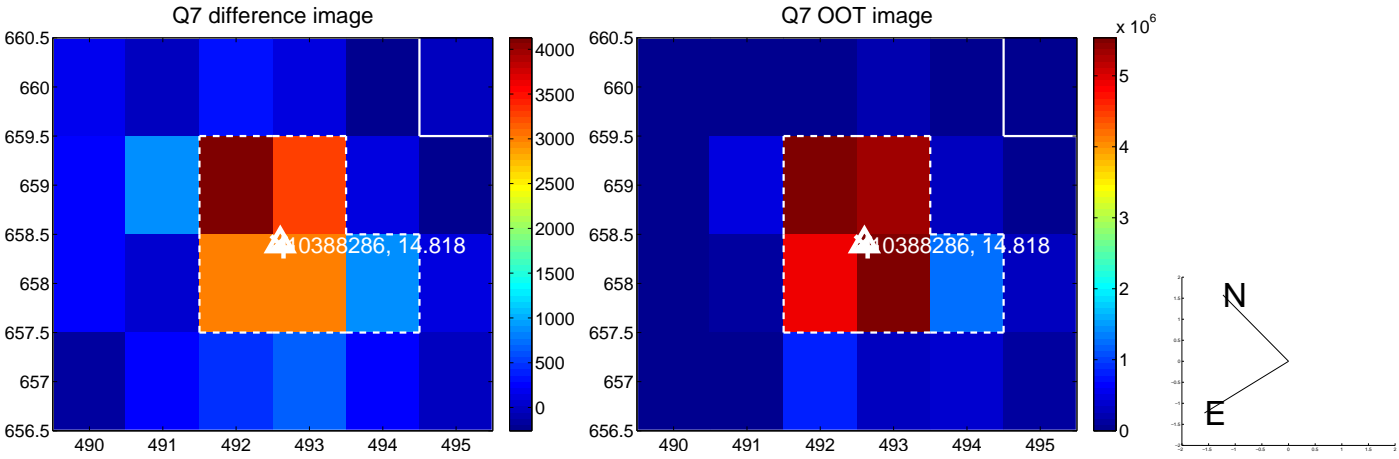
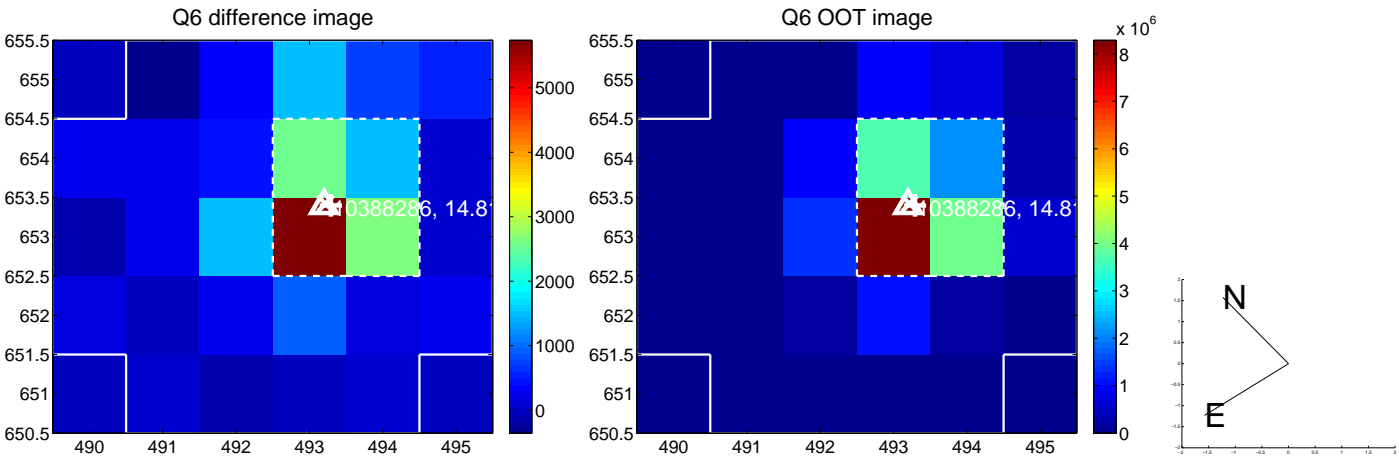
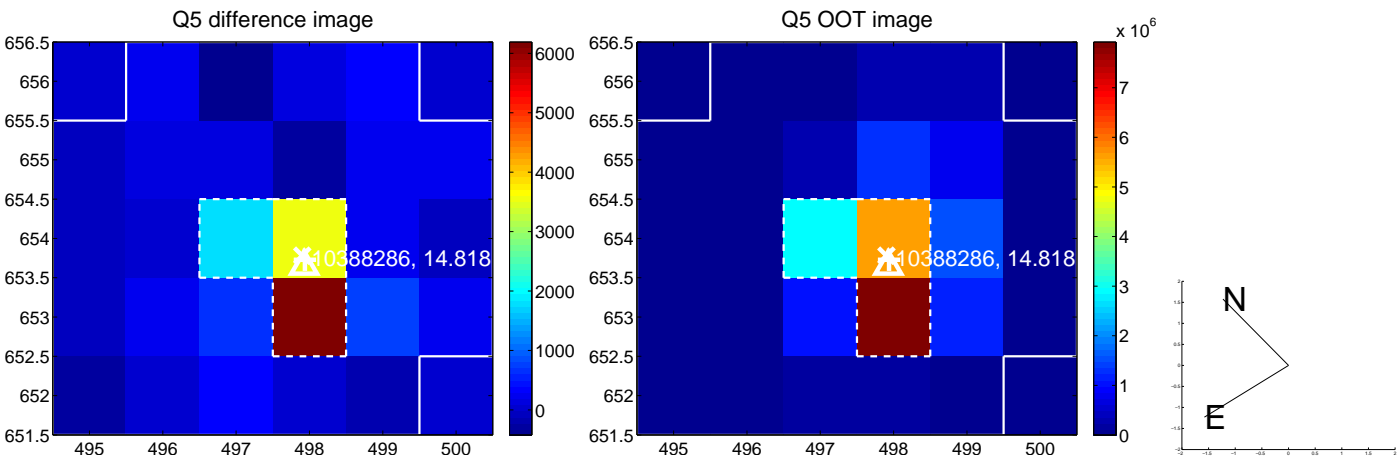


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets**; **Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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

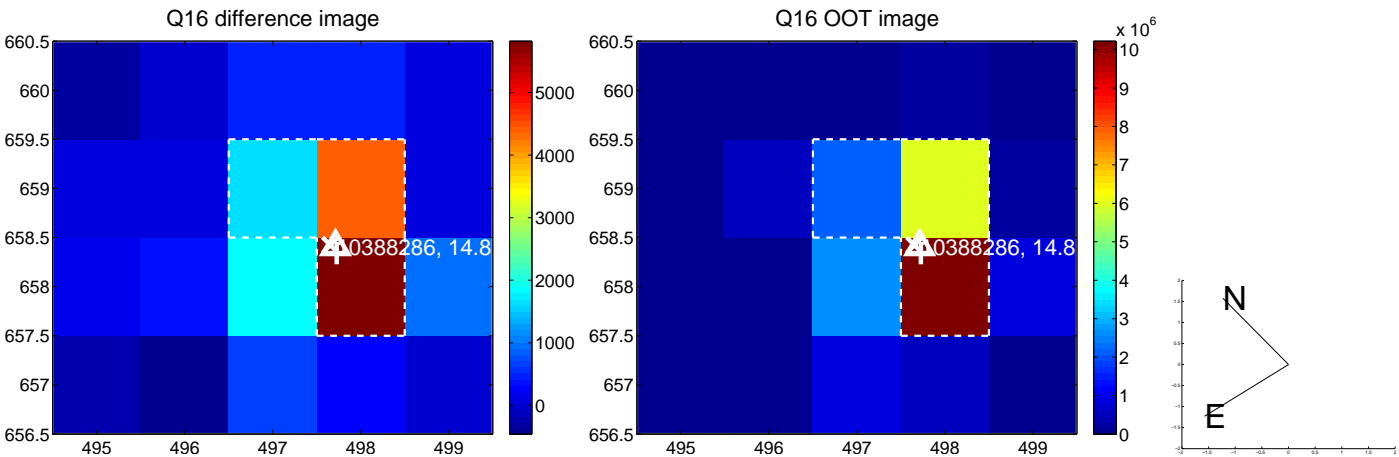
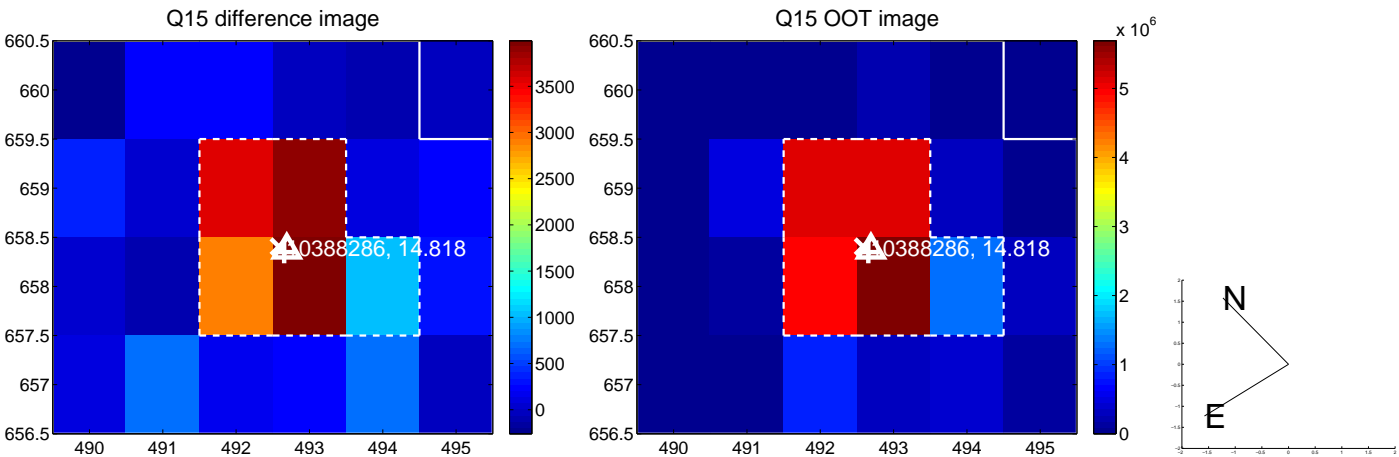
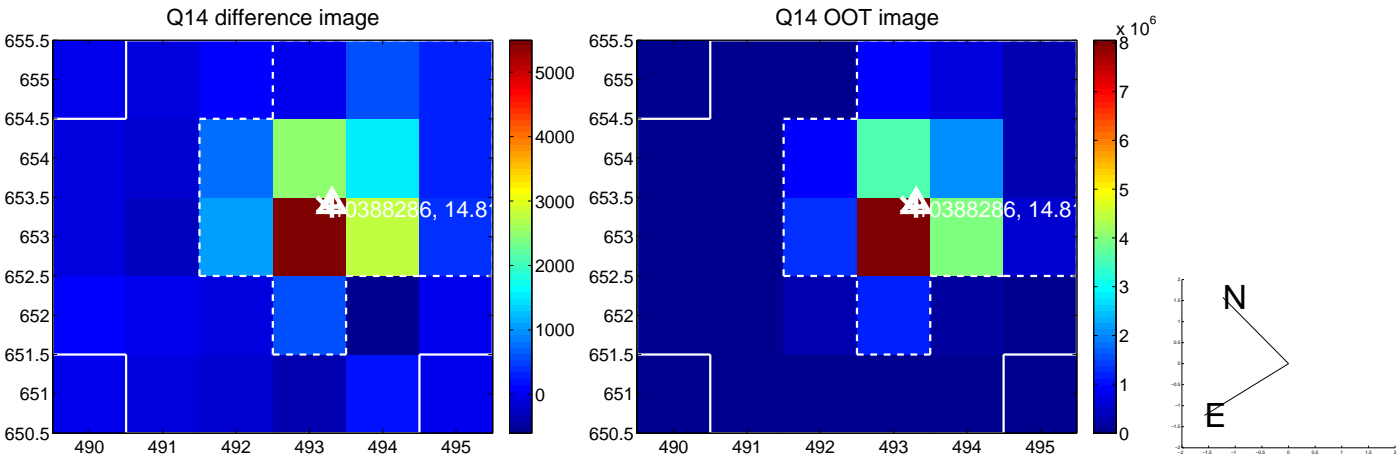
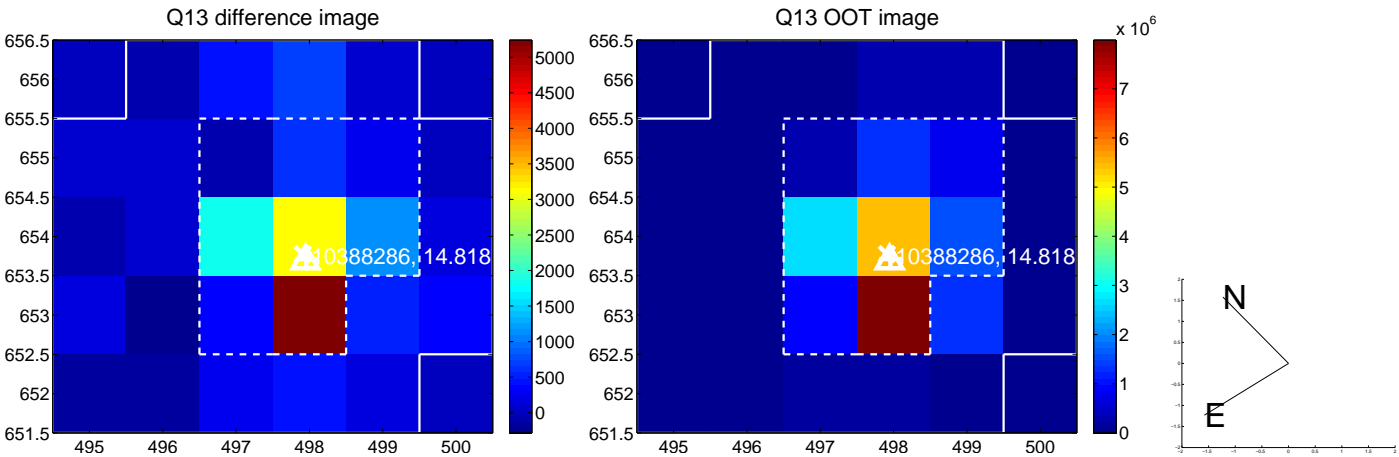


white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



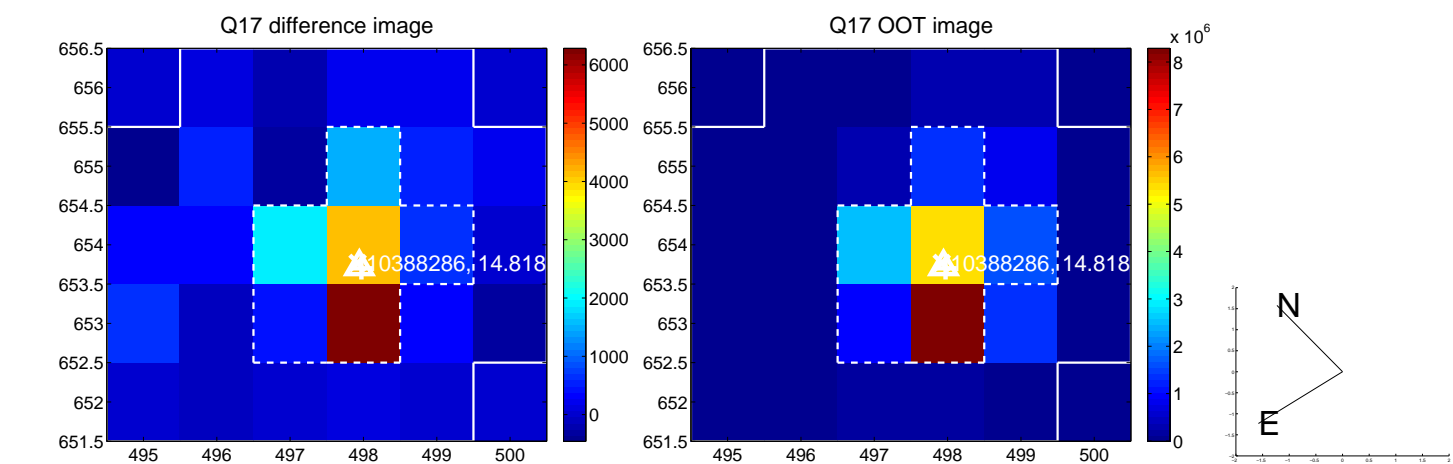


white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

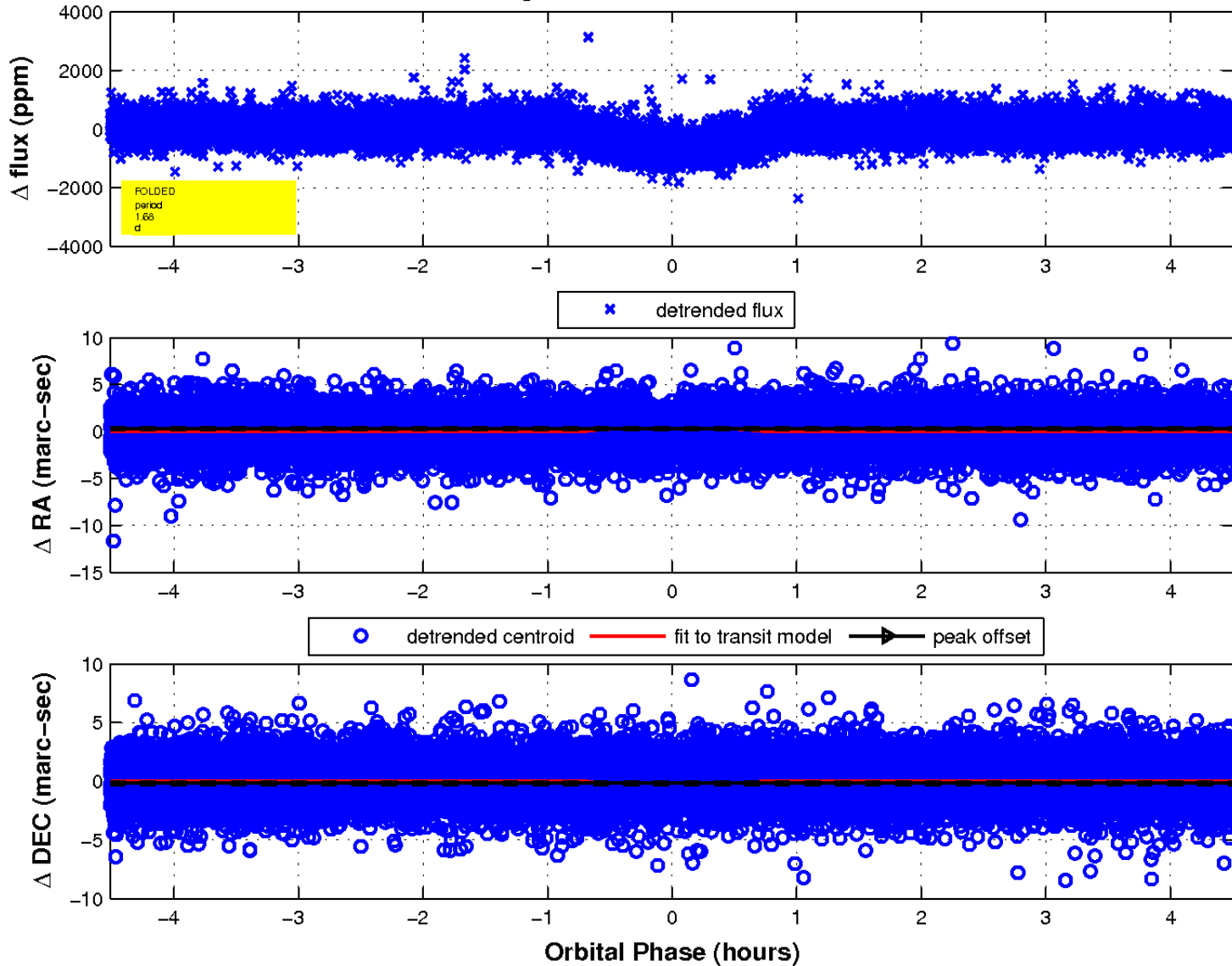




white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



fluxWeightedCentroids, Planet 1 of 1



UKIRT Image

Declination

