

# KIC 010118750

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
010118750-01	OBS	No	0.768682	131.771191	17.2	2.611	8.4	4.8	4.53	11357	2.14	493807.15

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
010118750-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT

**Notes:** OBS = Observed. INJ = Injected. INV = Inverted. SCR = Scrambled.

N = Not Transit-Like. S = Stellar Eclipse. C = Centroid Offset. E = Ephemeris Match.

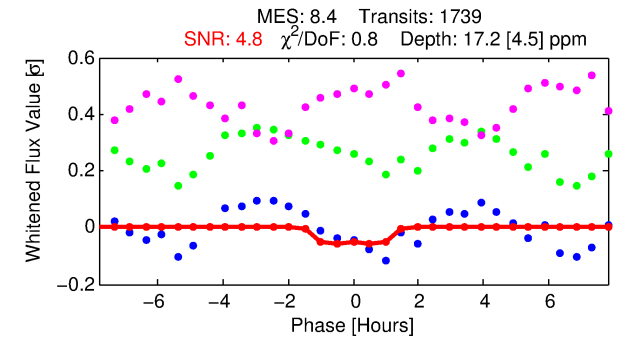
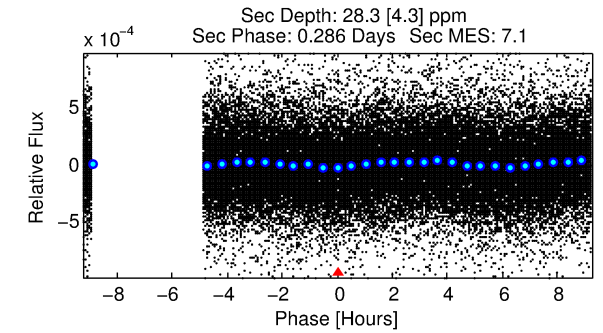
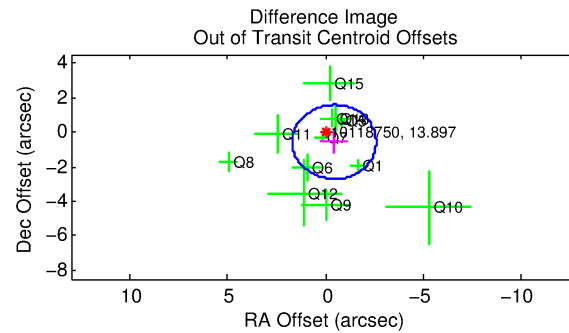
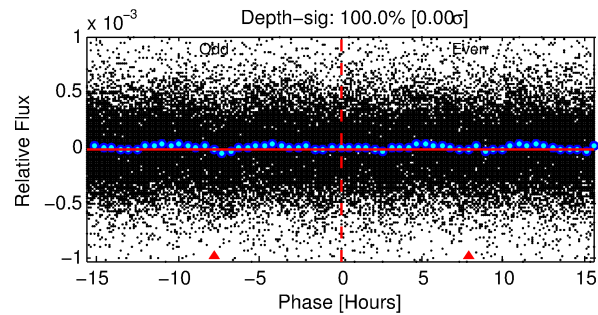
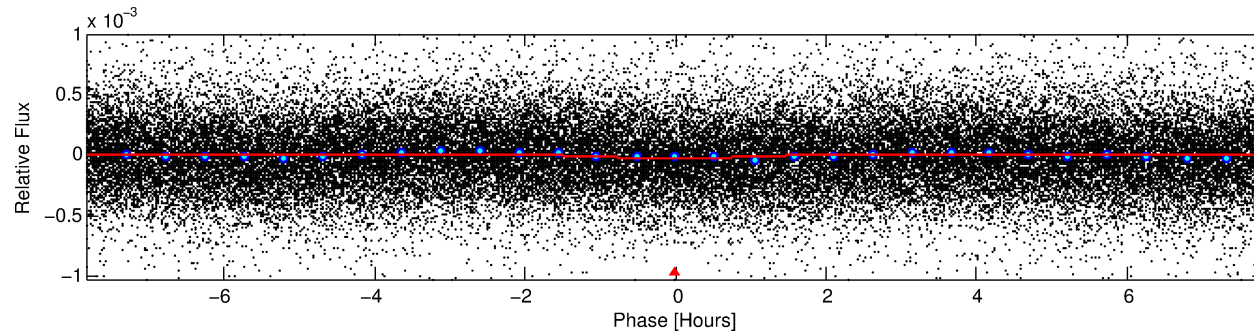
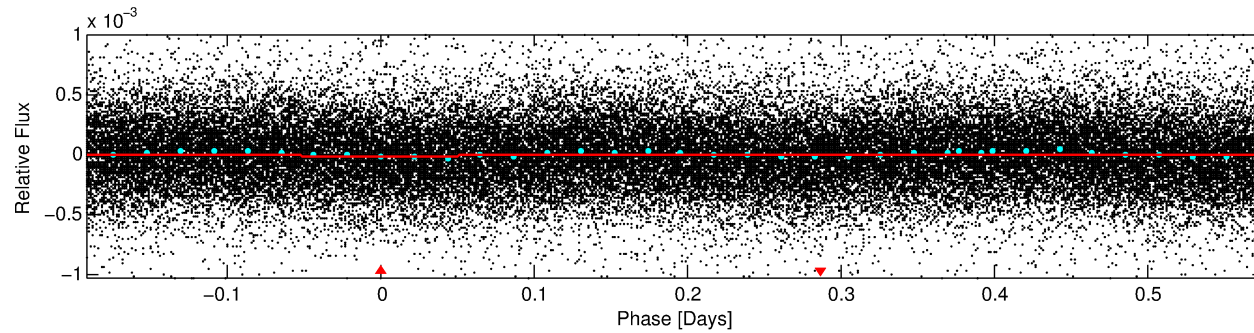
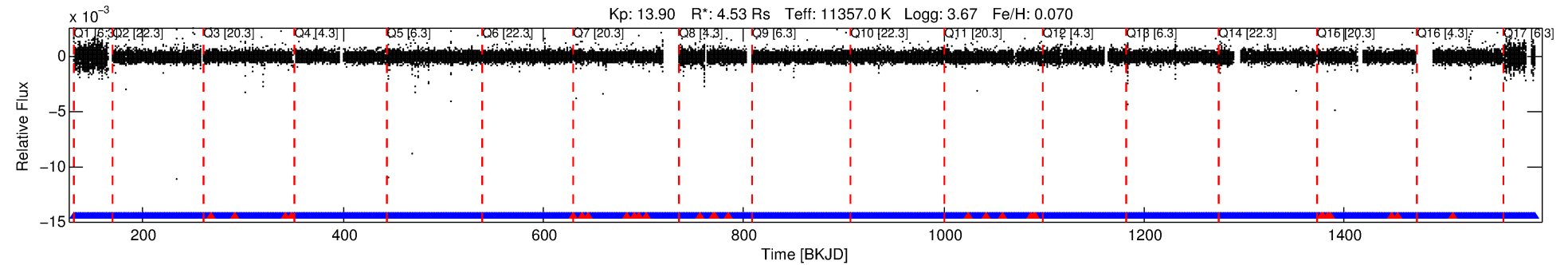
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 010118750-01

No Significant Match Found

# DV One-Page Summary

KIC: 10118750 Candidate: 1 of 1 Period: 0.769 d



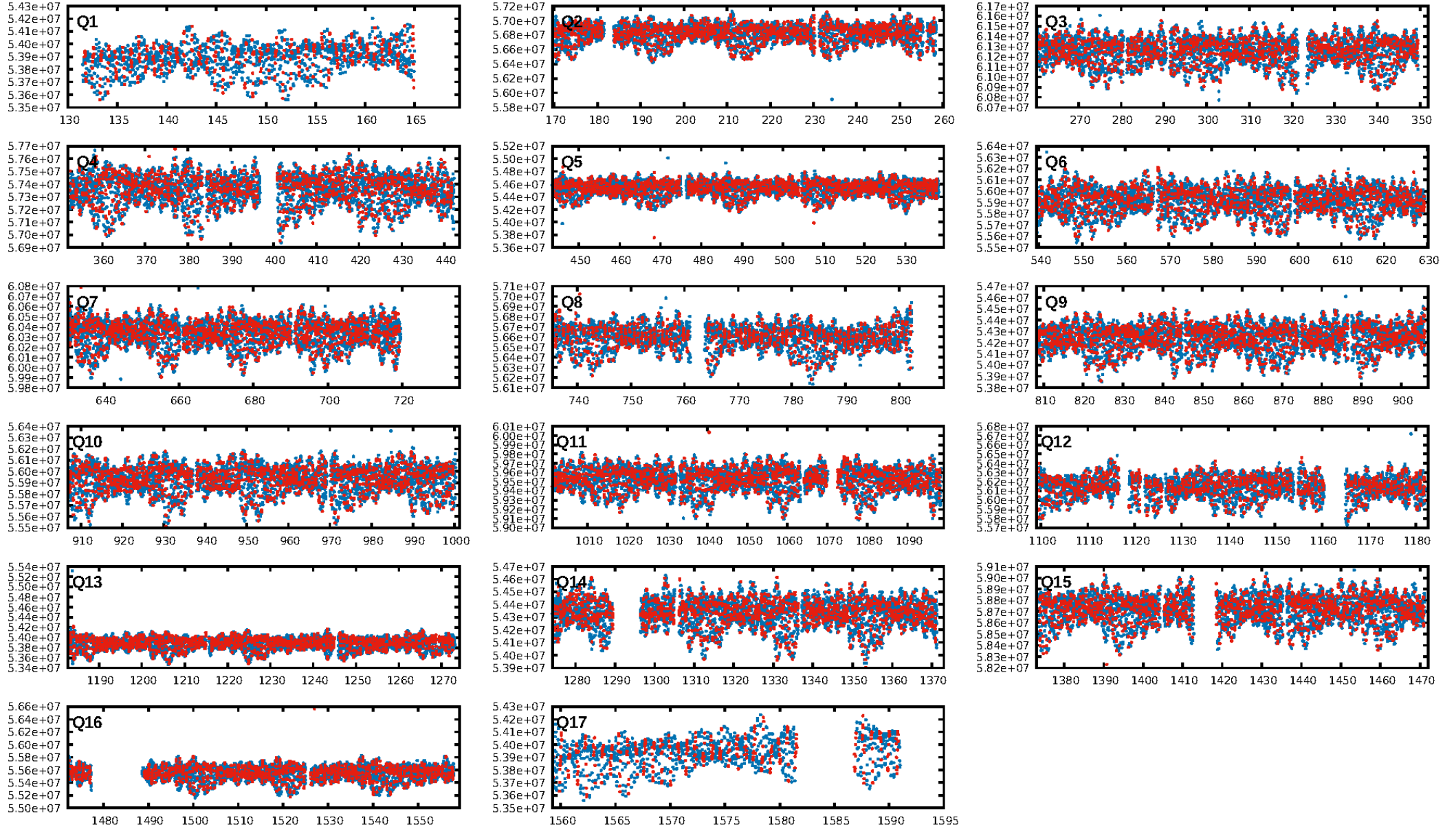
## DV Fit Results:

Period = 0.76868 [0.00002] d  
Epoch = 131.7712 [0.0061] BKJD  
Rp/R\* = 0.0043 [0.0018]  
a/R\* = 1.37 [2.21]  
b = 0.90 [0.73]  
Seff = 493807.15 [492476.22]  
Teff = 6760 [1685] K  
Rp = 2.14 [1.41] Re  
a = 0.0249 [0.0122] AU  
Ag = 2.09 [2.38] [0.46σ]  
Teffp = 12571 [3243] K [1.59σ]

## DV Diagnostic Results:

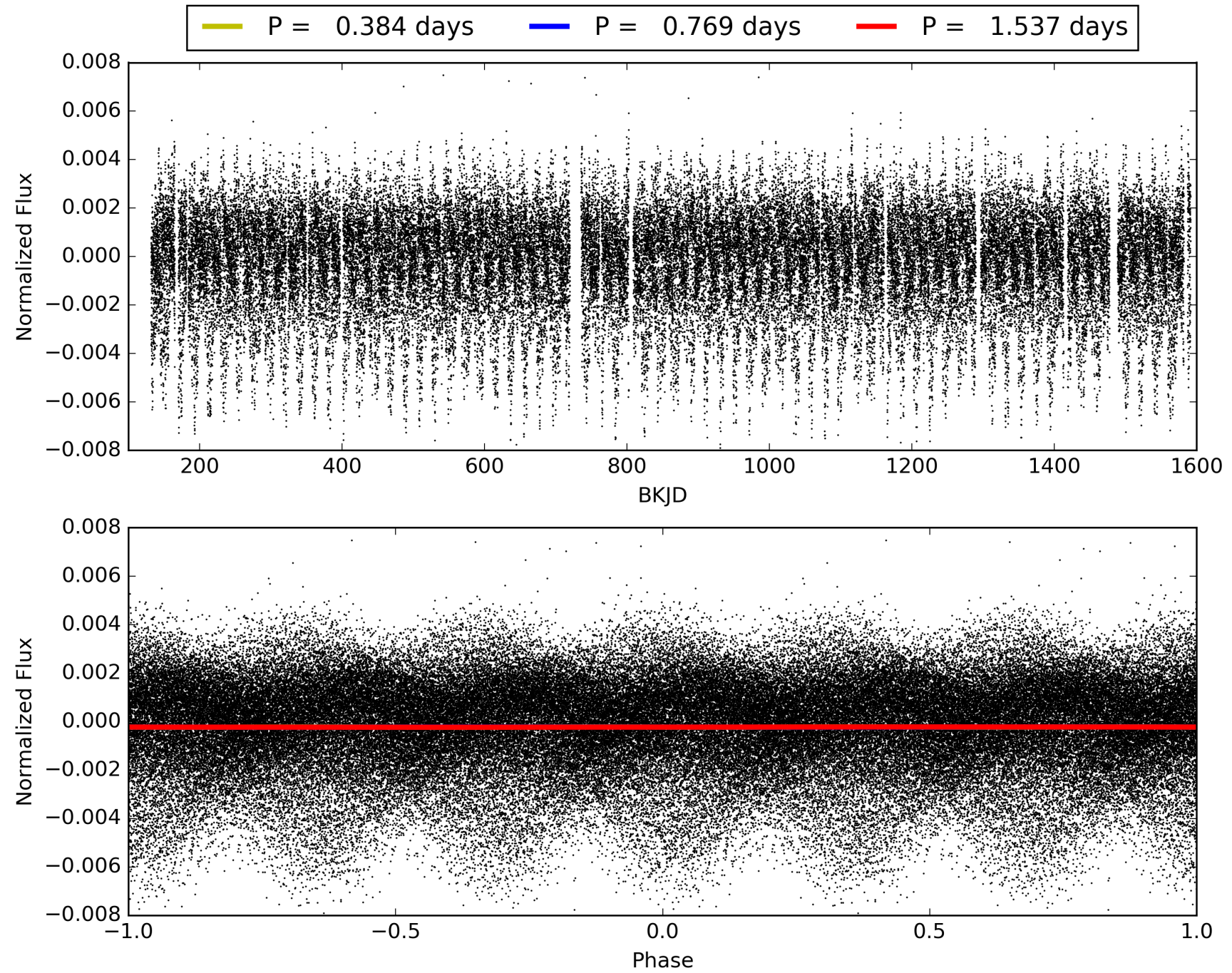
ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: N/A  
ModelChiSquareGof-sig: N/A  
Bootstrap-pfa: 1.11e-14  
RollingBand-fgt: 0.98 [1631/1659]  
**GhostDiagnostic-chr: 0.9712**  
Centroid-sig: 39.9%  
Centroid-so: 1.984 arcsec [0.81σ]  
OotOffset-rm: 0.721 arcsec [1.01σ]  
KicOffset-rm: 0.691 arcsec [1.14σ]  
OotOffset-st: 3/3/2/4 [12]  
KicOffset-st: 3/3/2/4 [12]  
DiffImageQuality-fgm: 0.25 [3/12]  
DiffImageOverlap-fno: 1.00 [17/17]

# TCE 010118750-01, PDC Light Curves



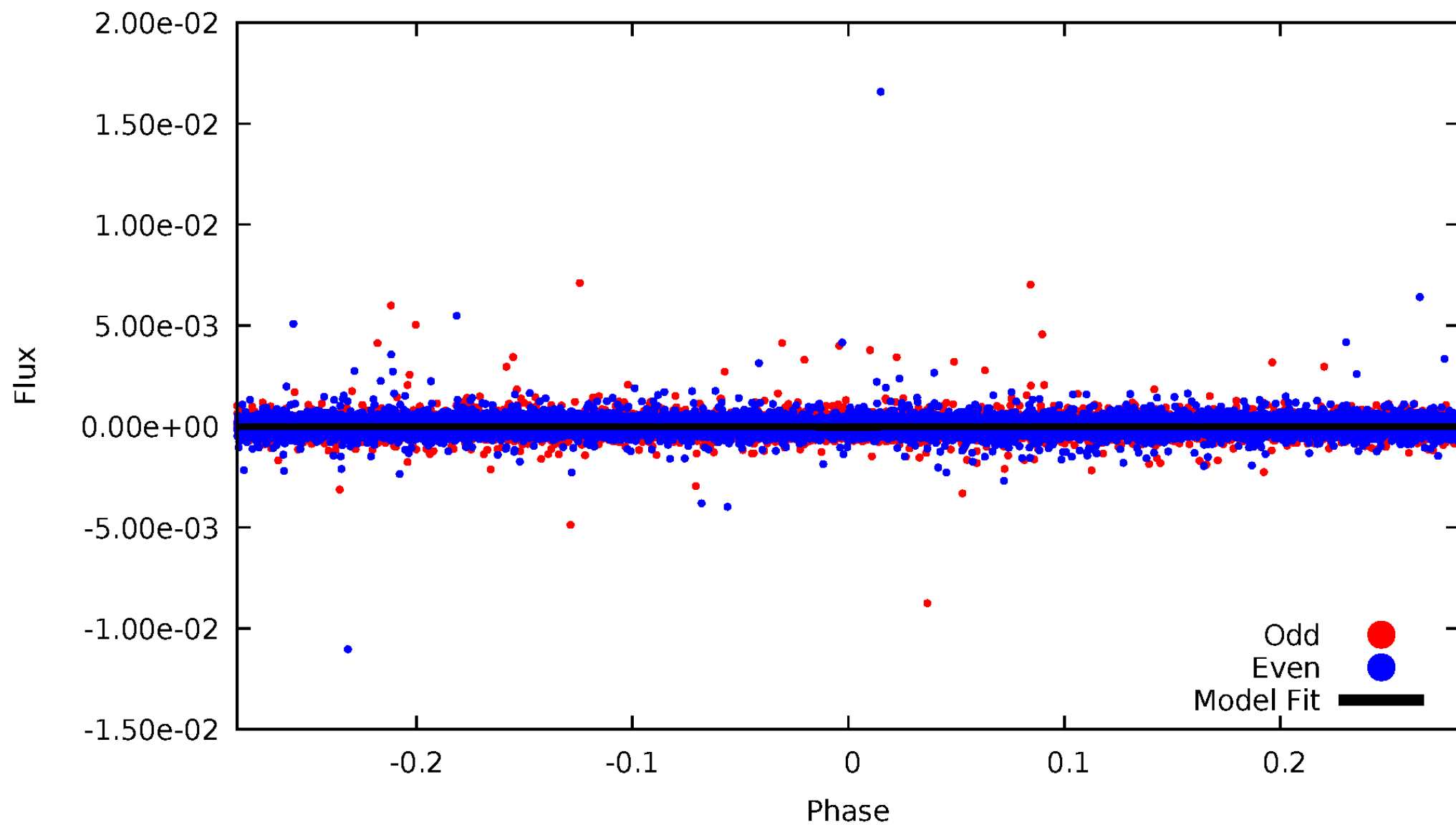


# TCE 010118750-01



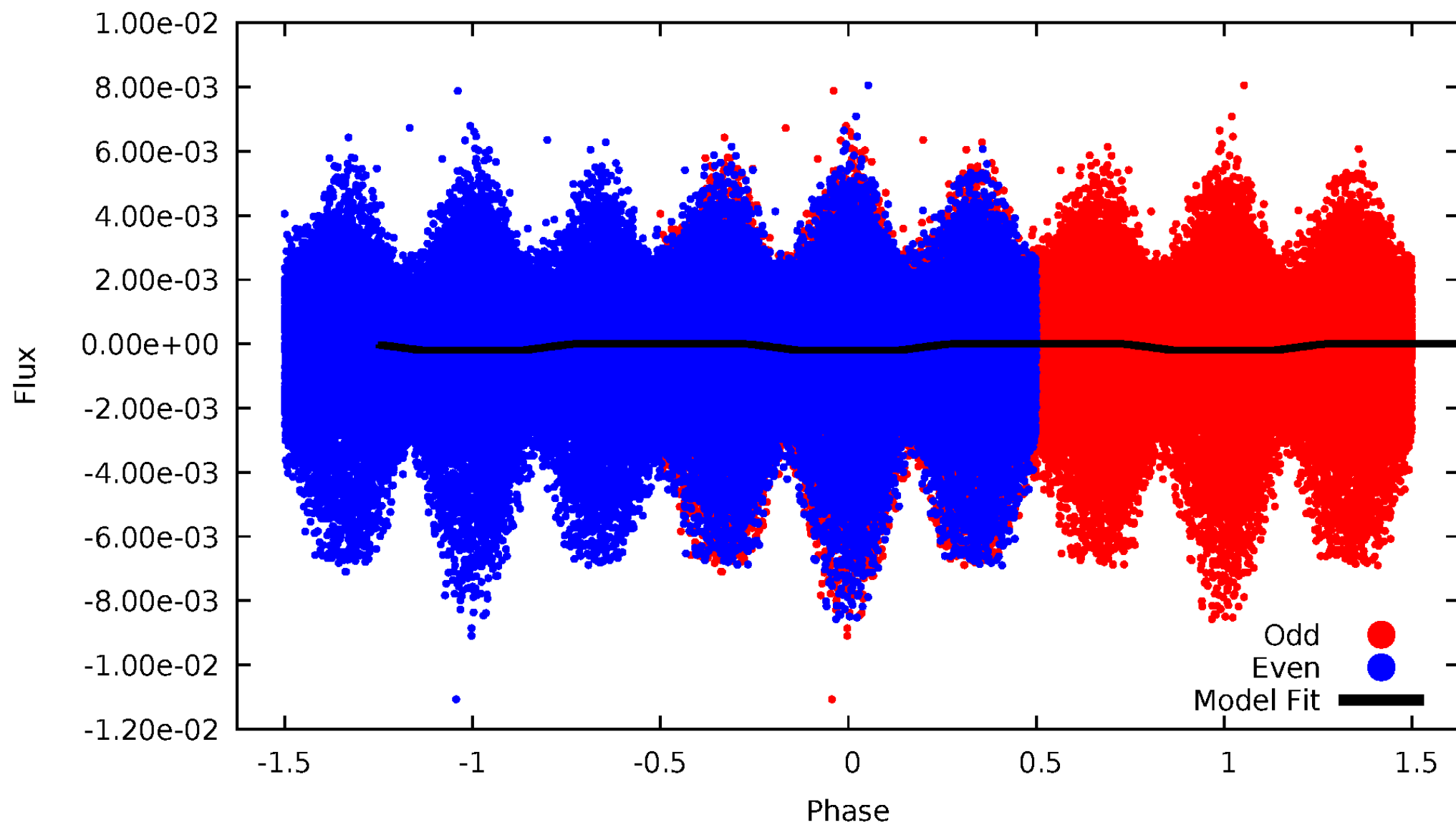
# DV Odd/Even

TCE 010118750-01



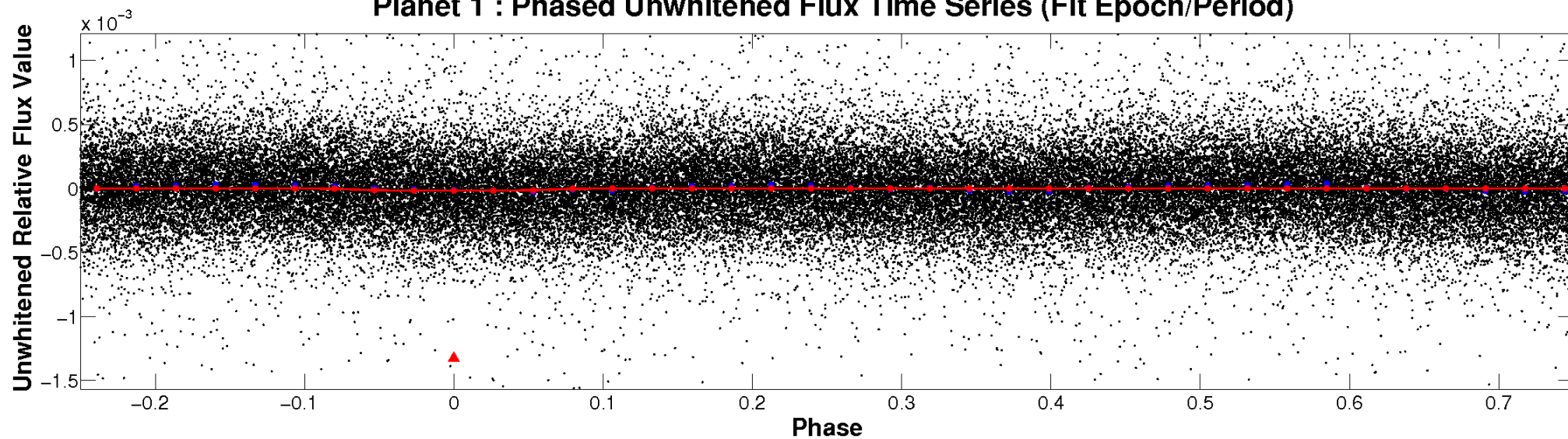
# ALT Odd/Even

TCE 010118750-01

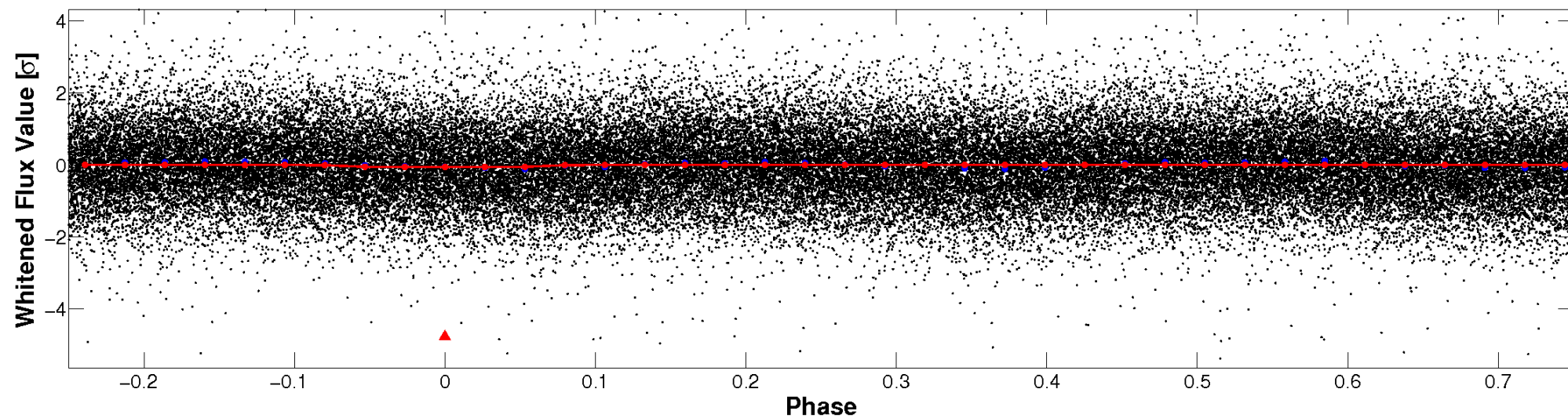


# Non-Whitened Vs. Whitened Light Curve

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



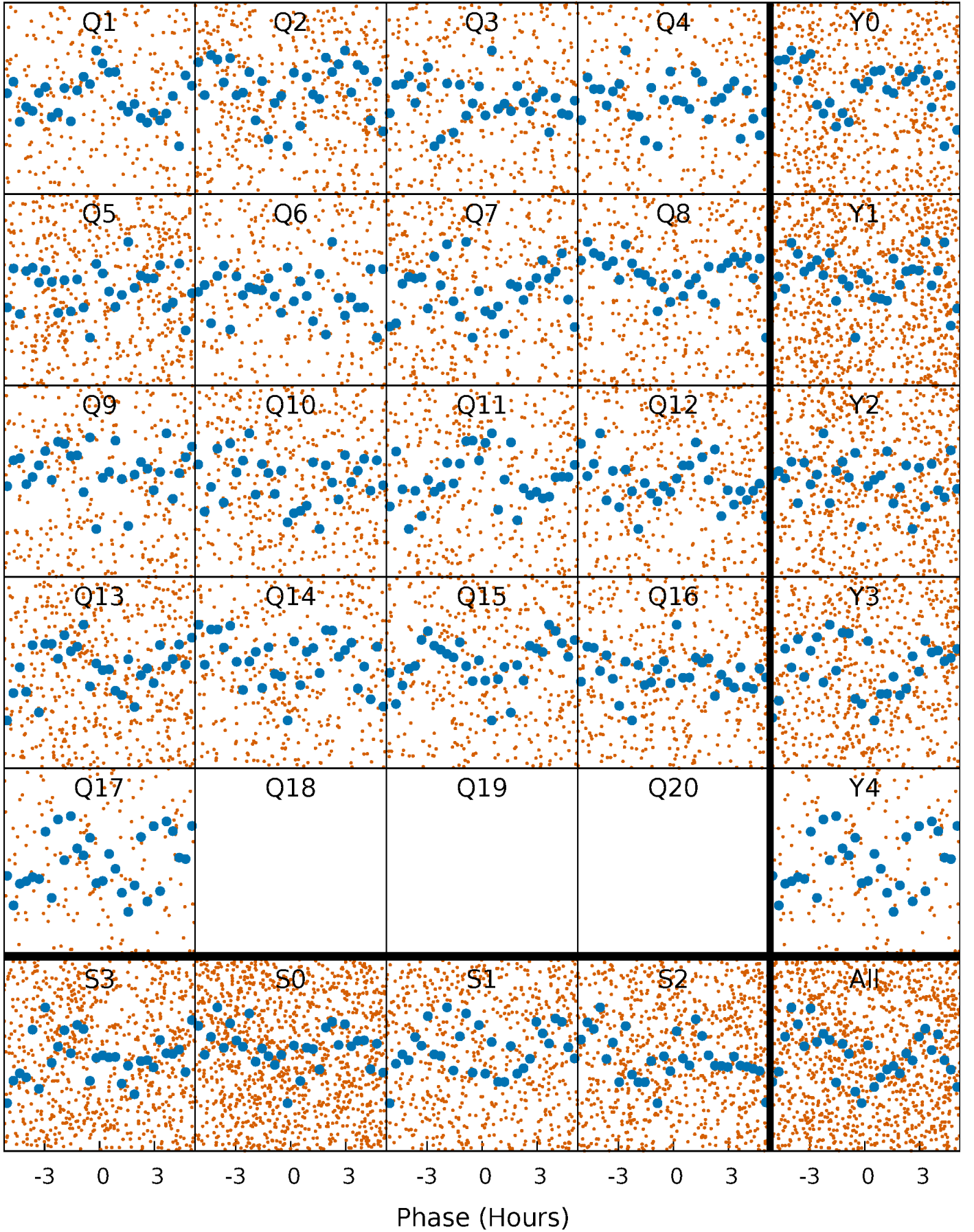
**Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)**





# PDC Quarter-Phased Transit Curves

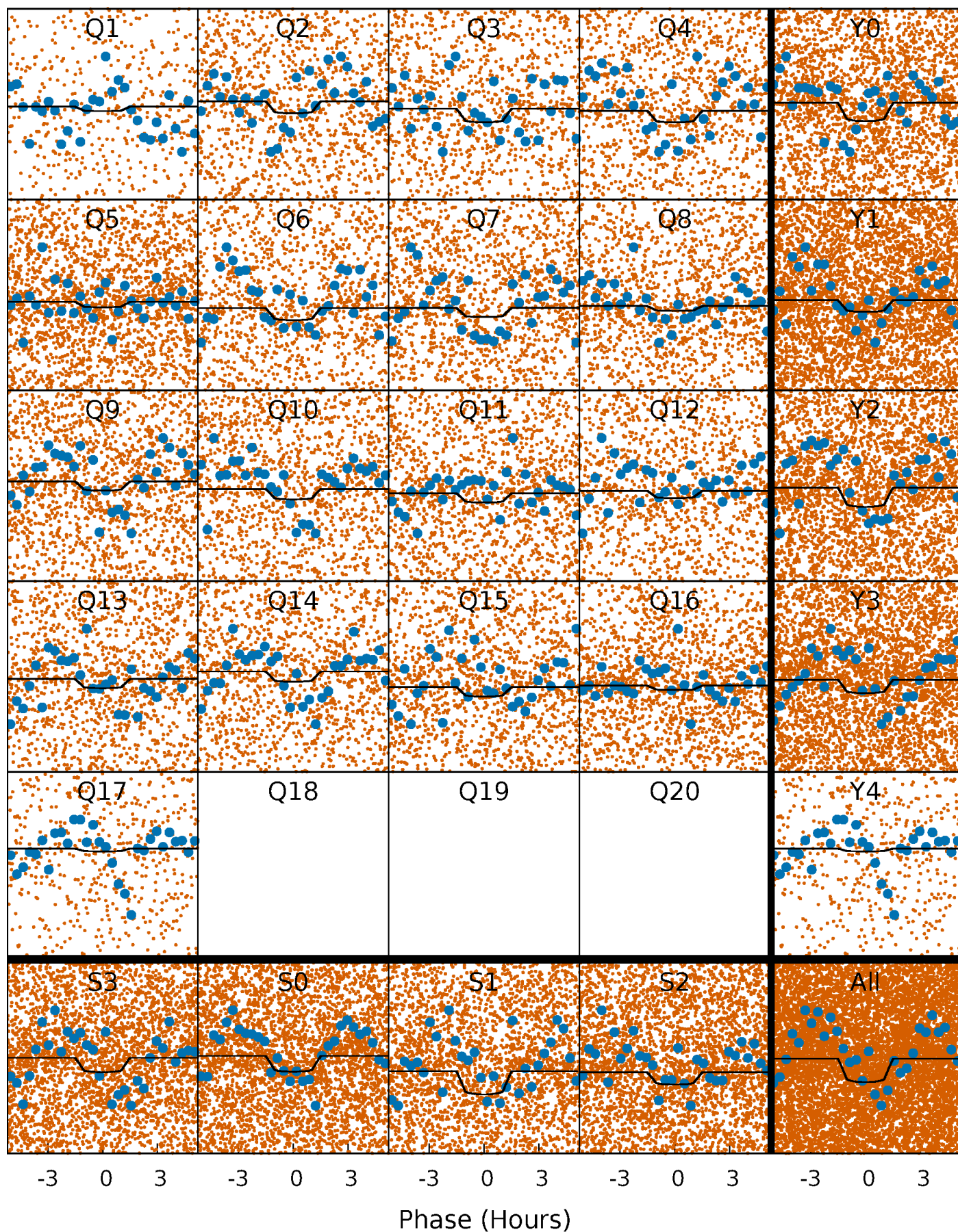
TCE 010118750-01 P= 0.768682 Days  $T_0=131.771191$  (BKJD)





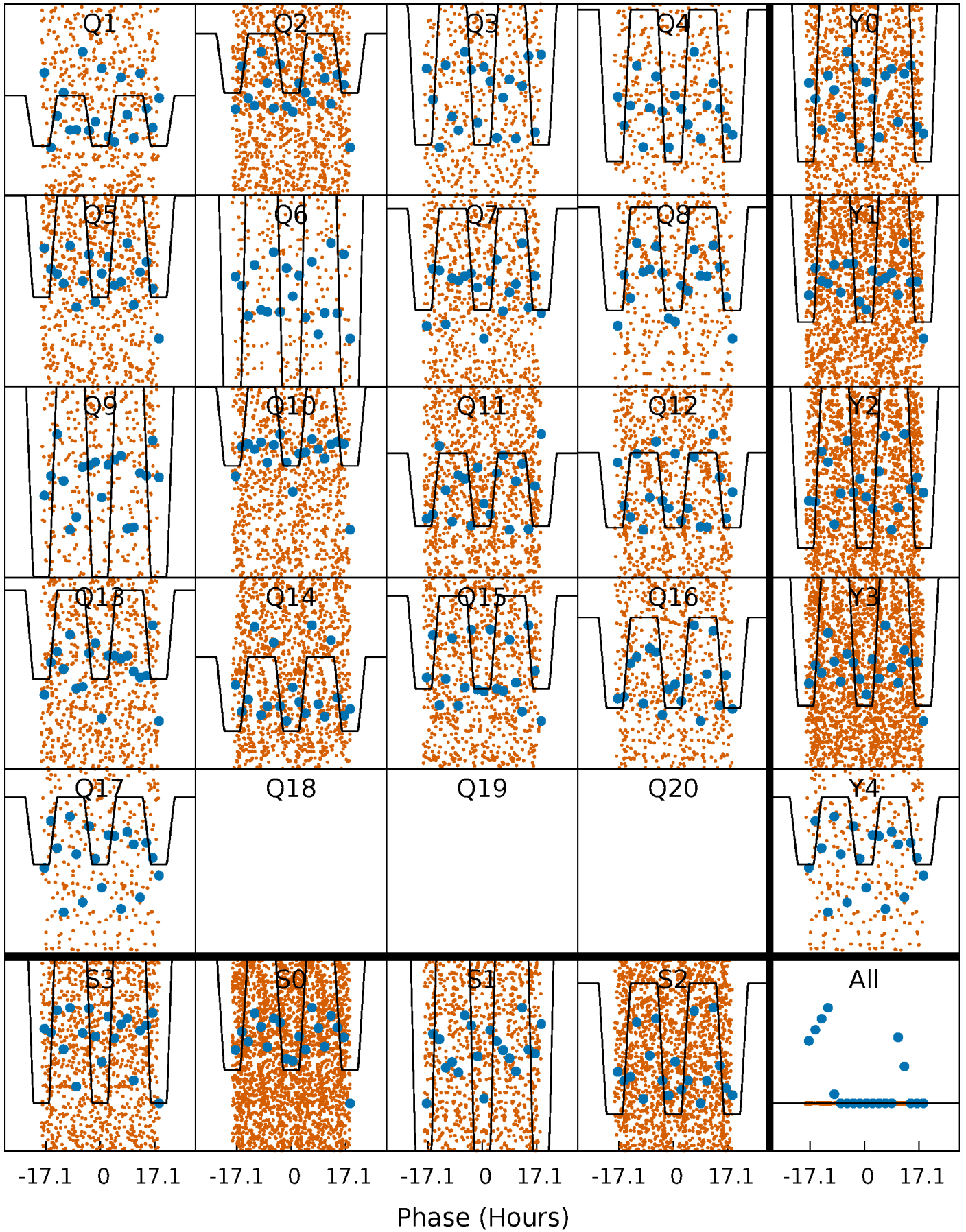
# DV Quarter-Phased Transit Curves

TCE 010118750-01 P= 0.768682 Days  $T_0=131.771191$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

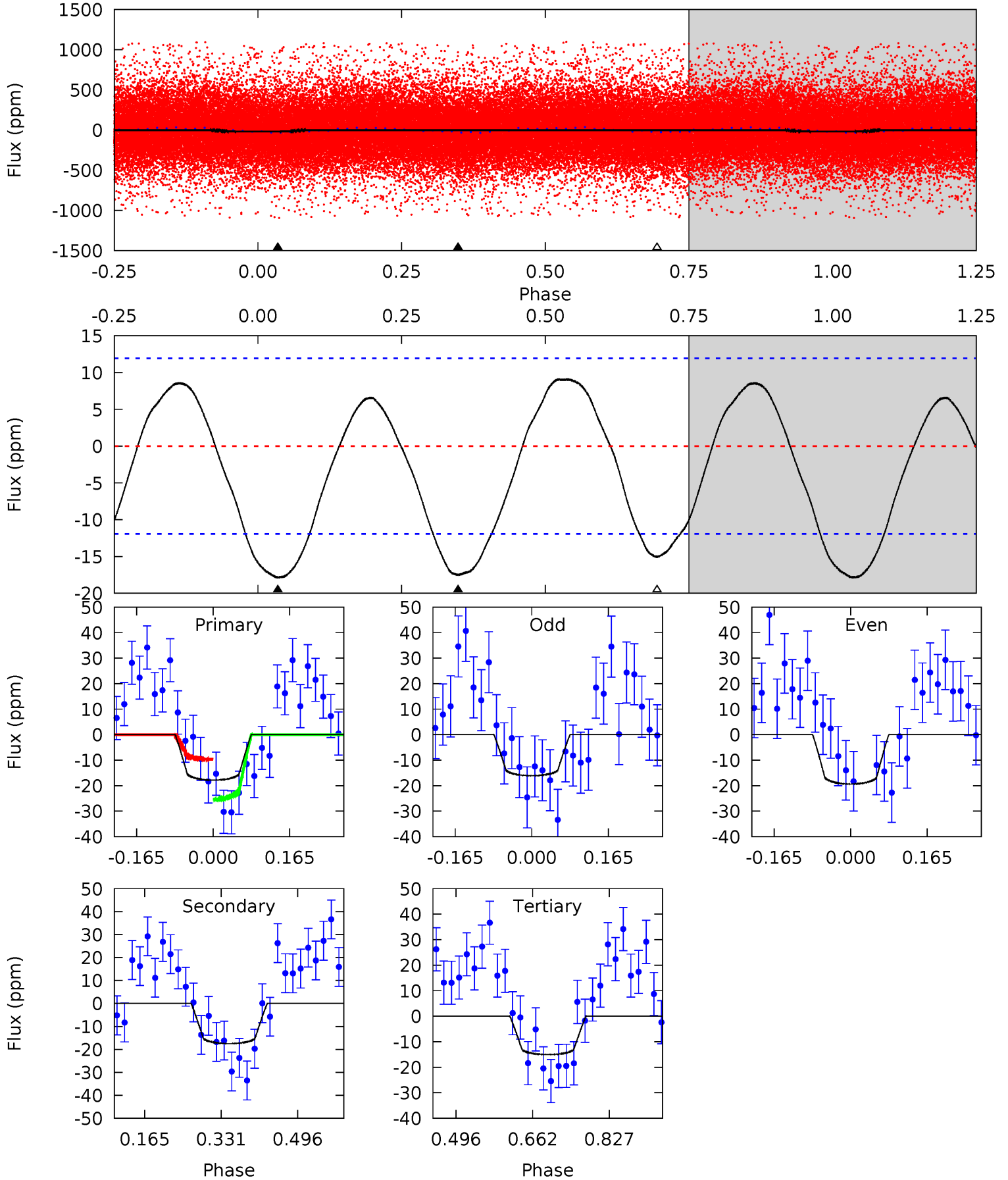
TCE 010118750-01   P= 0.768731 Days    $T_0=131.737628$  (BKJD)



# DV Model-Shift Uniqueness Test

010118750-01, P = 0.768682 Days, E = 131.002509 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
6.67	6.54	5.63	0	4.46	1.39	3.27	1.04	6.67	0.92	6.54	0.62	0.69	0.34	2.96

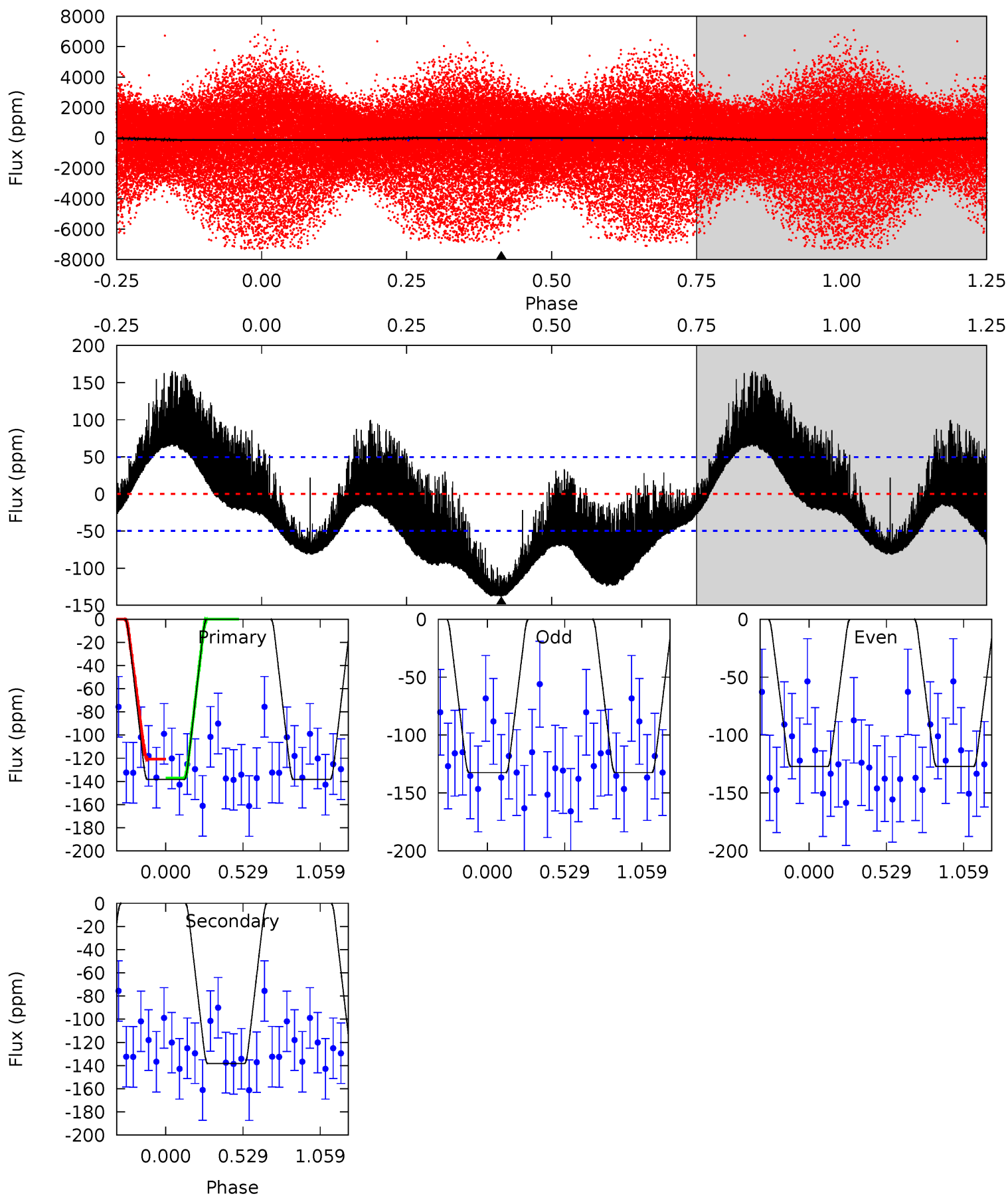




# Alt Model-Shift Uniqueness Test

010118750-01, P = 0.768731 Days, E = 130.968897 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	11.7	0	0	4.20	0.63	2.22	11.7	11.7	11.7	11.7	0.24	2.24	0.54	0.71





### Stellar Parameters For KIC 010118750

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$\rho_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$11357^{+587}_{-1762}$	$3.667^{+0.456}_{-0.114}$	$0.070^{+0.250}_{-0.550}$	$4.528^{+0.587}_{-2.348}$	$3.472^{+0.069}_{-1.164}$	$0.053^{+0.275}_{-0.014}$
	+5%/-16%	+12%/-3%	+357%/-786%	+13%/-52%	+2%/-34%	+522%/-27%
Source	KIC0	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 010118750-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	$A_{\text{obs}}$
DV	$-18 \pm 3$	$1.88^{+0.99}_{-0.81}$	$8893^{+1072}_{-1572}$	$9492^{+7203}_{-2810}$	$1.567^{+3.214}_{-0.873}$
Alt.	$-138 \pm 12$	$6.32^{+1.40}_{-1.70}$	$8883^{+1118}_{-1570}$	$8789^{+1452}_{-1511}$	$1.140^{+0.924}_{-0.381}$

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

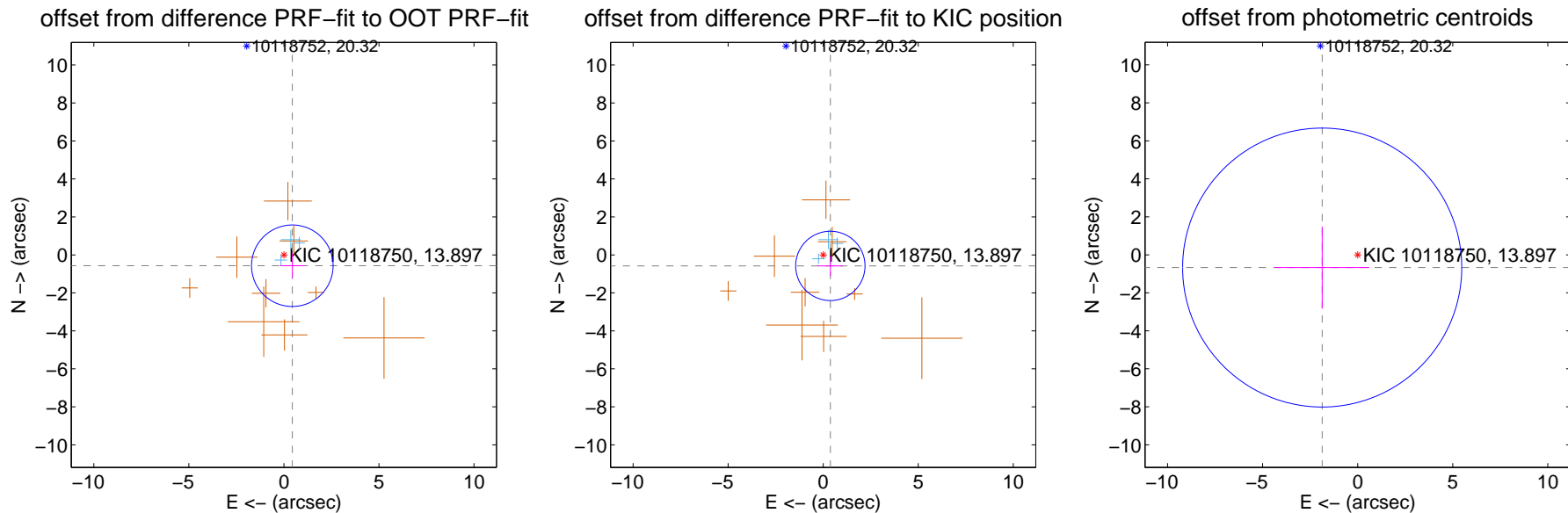
## DV Centroid Data

Supplemental centroid analysis for 010118750-01. Kepler magnitude: 13.90. Transit SNR 4.82

There are 3 quarters with good PRF difference image offsets

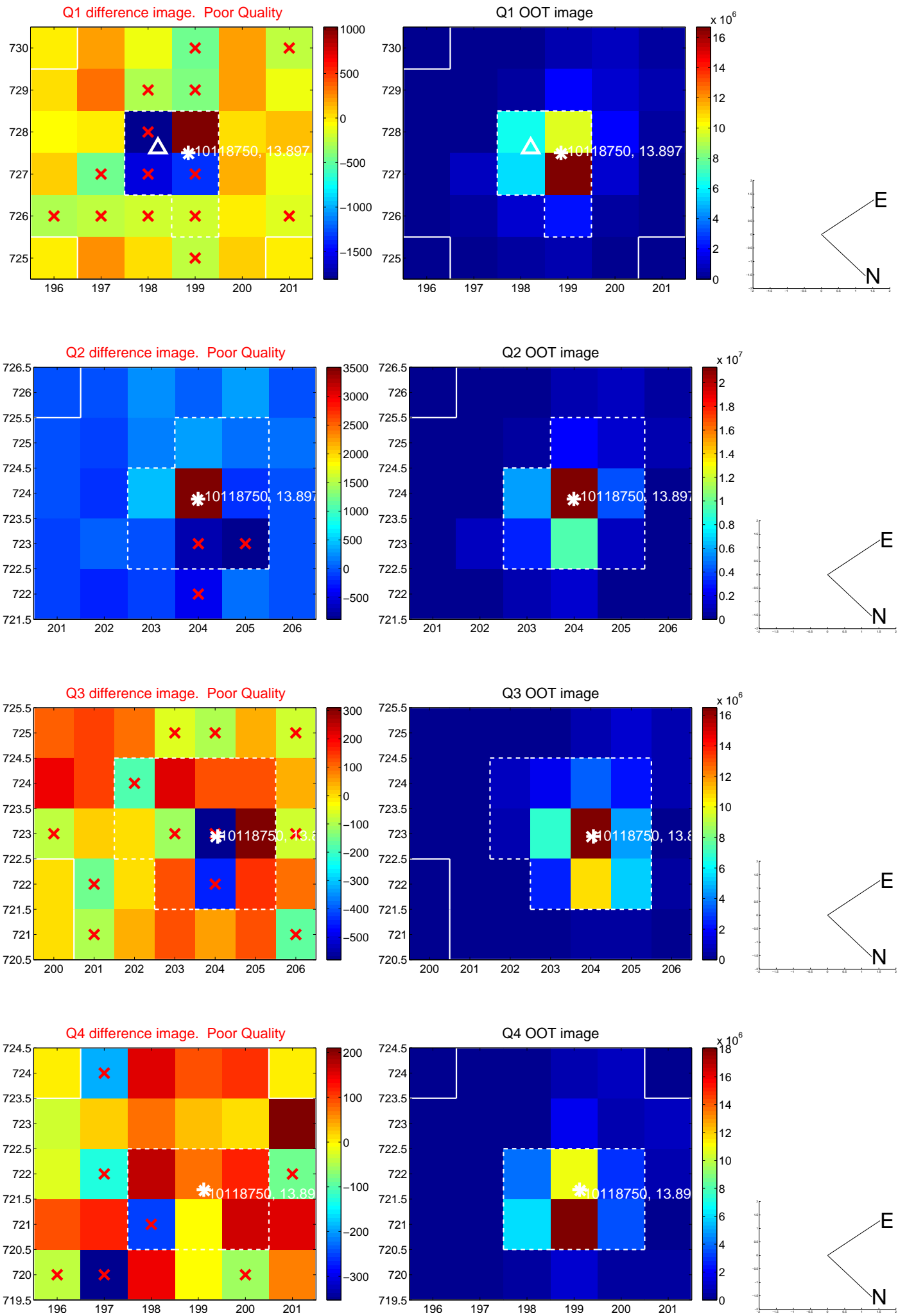
The direct PRF centroid is offset from the target star catalog position by about 0.09 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.721 \pm 0.715$	1.01	$-0.441 \pm 0.649$	$-0.570 \pm 0.654$
PRF-fit source offset from KIC position	$0.691 \pm 0.608$	1.14	$-0.377 \pm 0.671$	$-0.579 \pm 0.538$
photometric centroid source offset	$1.98 \pm 2.45$	0.81	$1.87 \pm 2.48$	$-0.67 \pm 2.16$

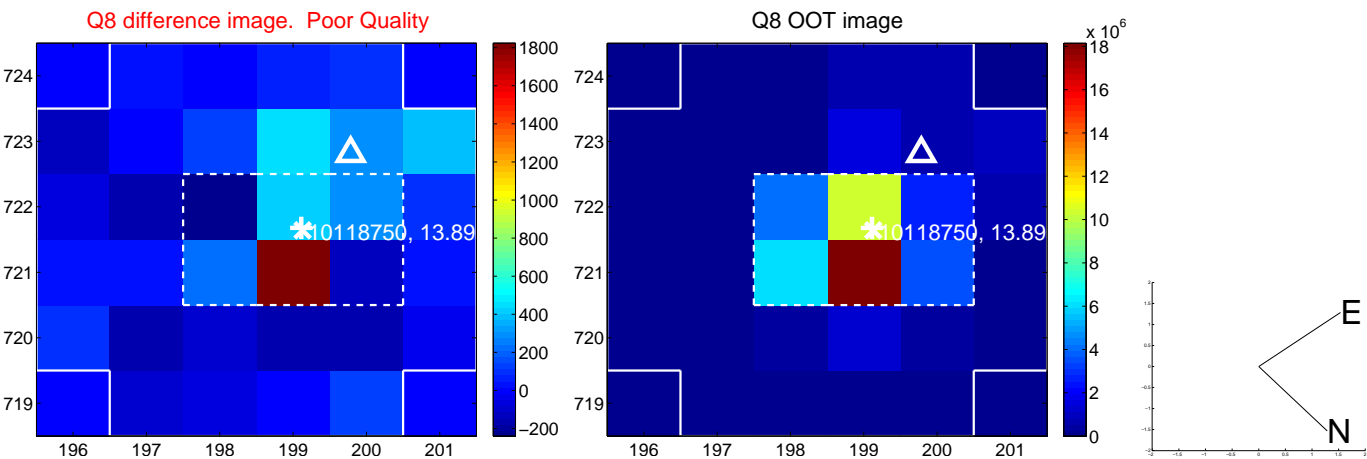
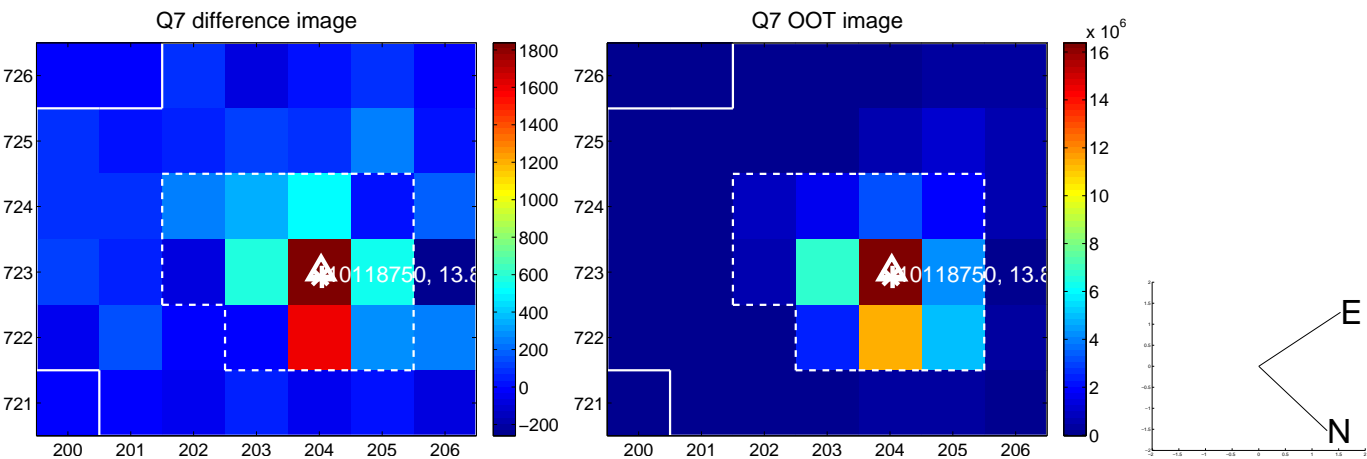
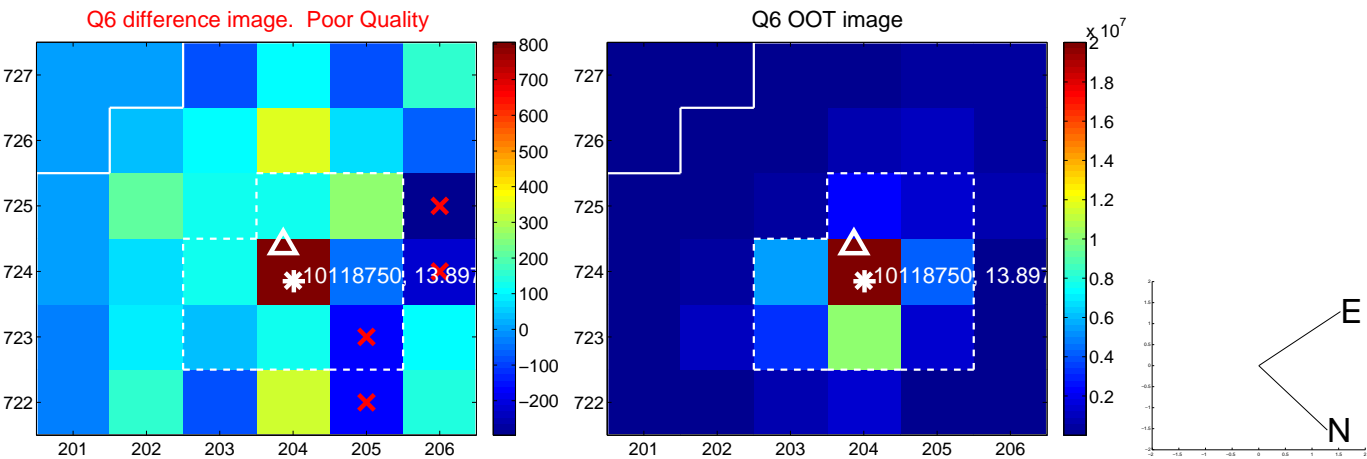
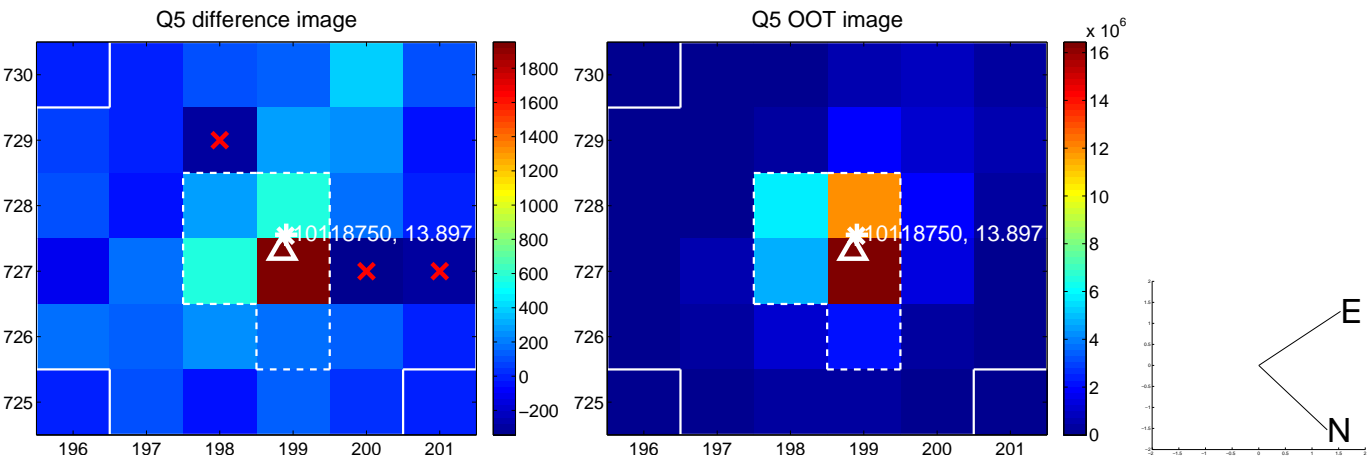


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: three-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

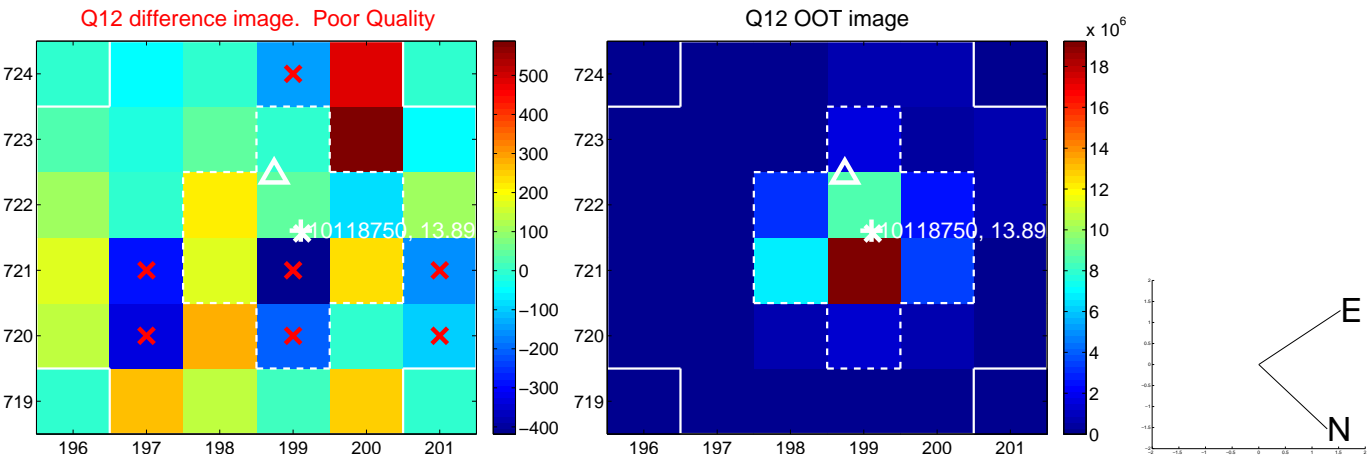
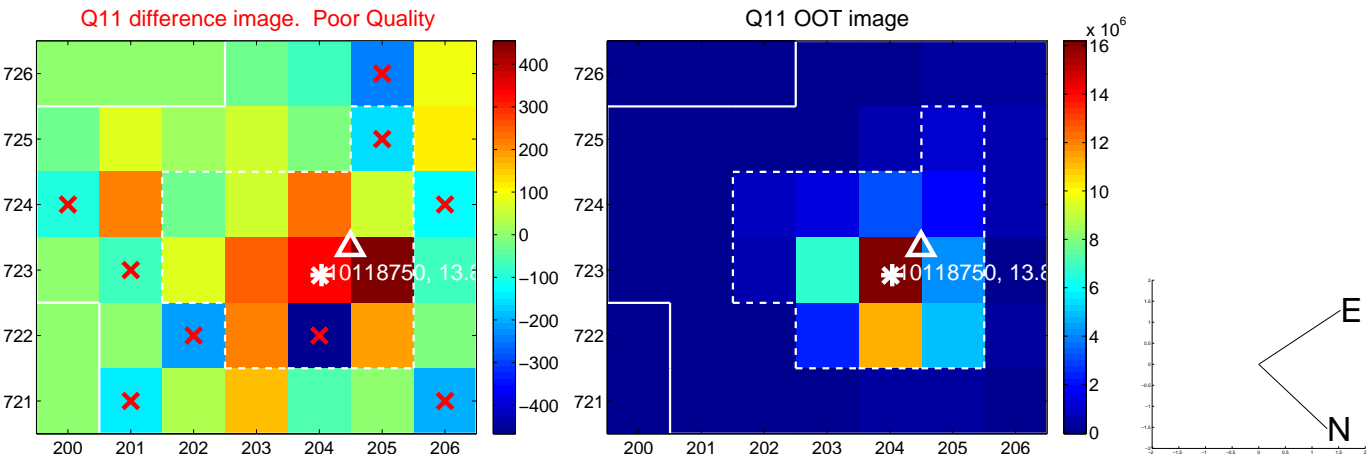
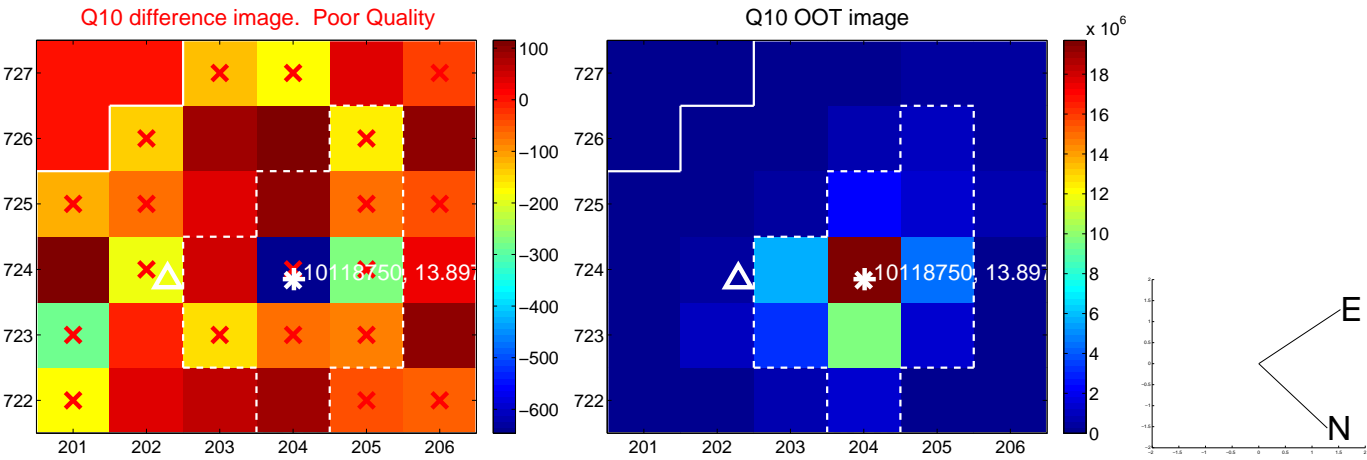
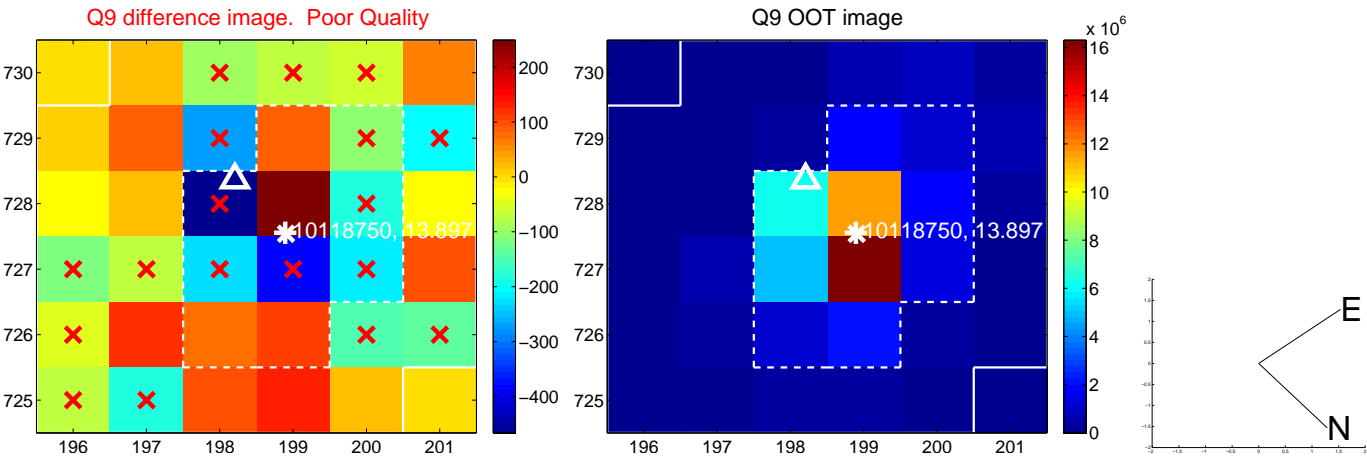


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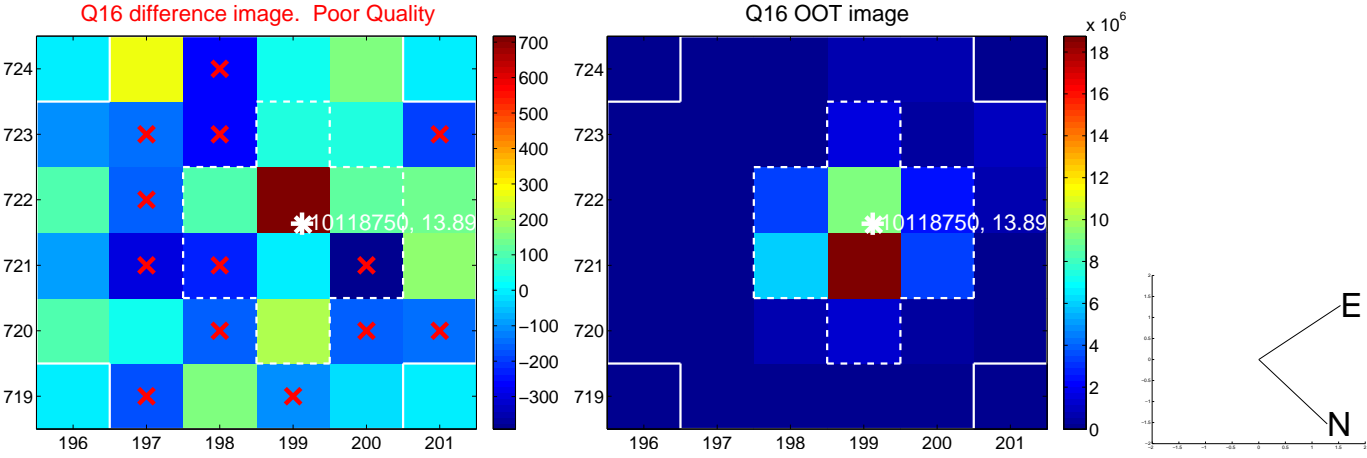
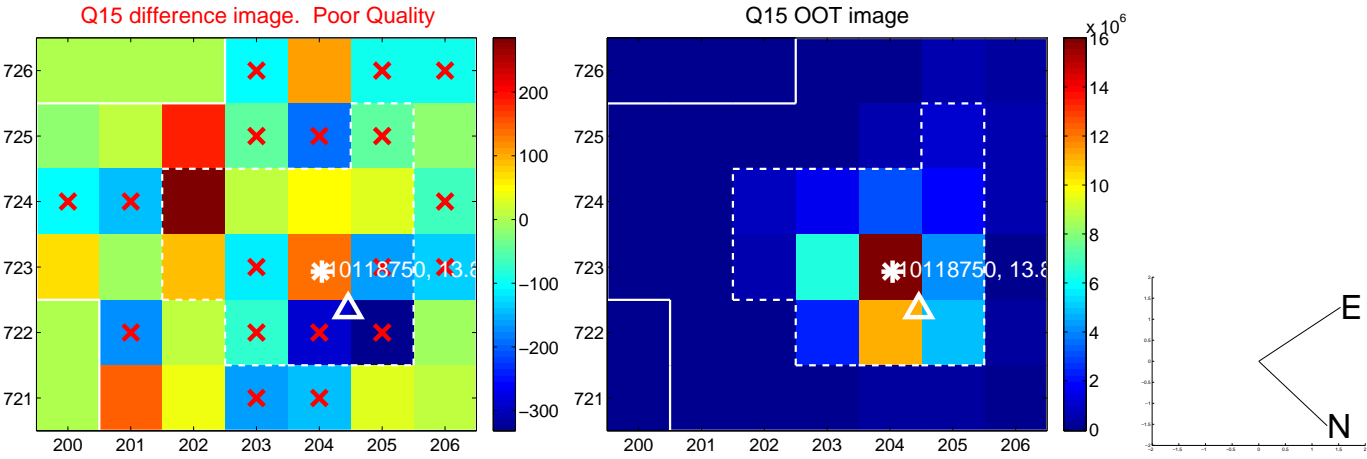
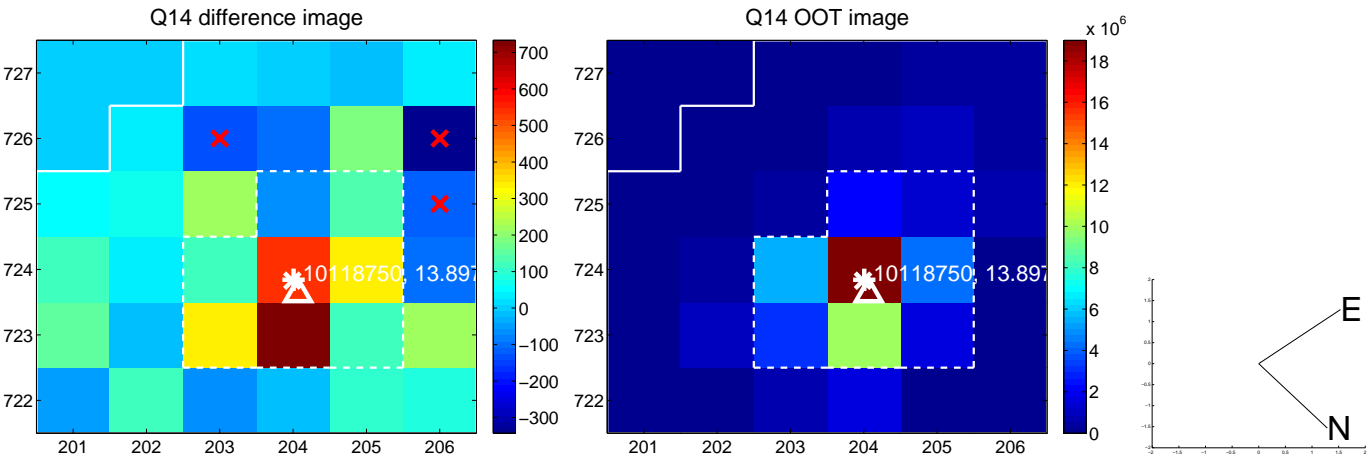
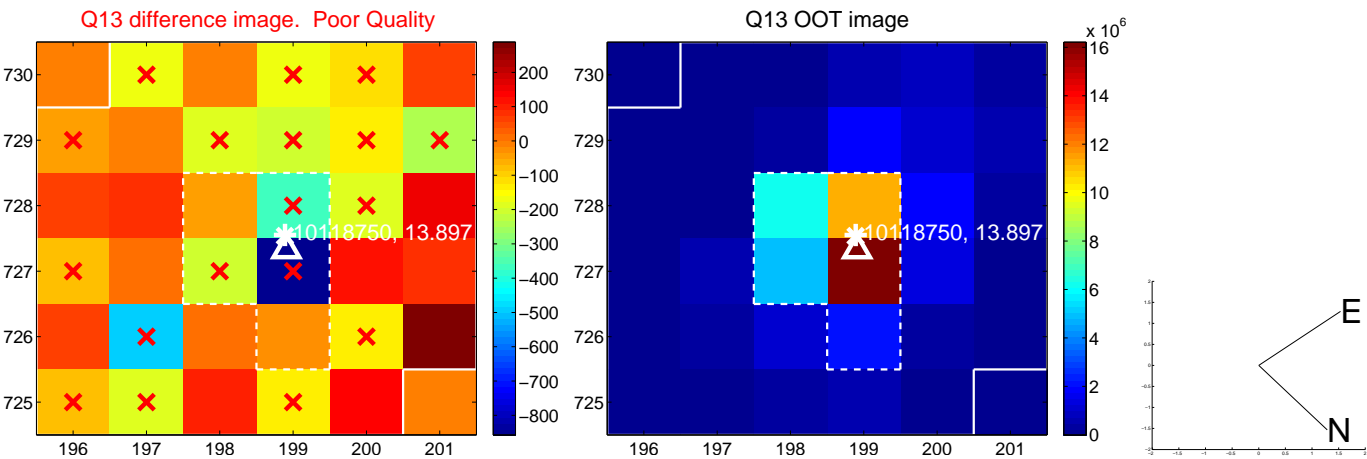




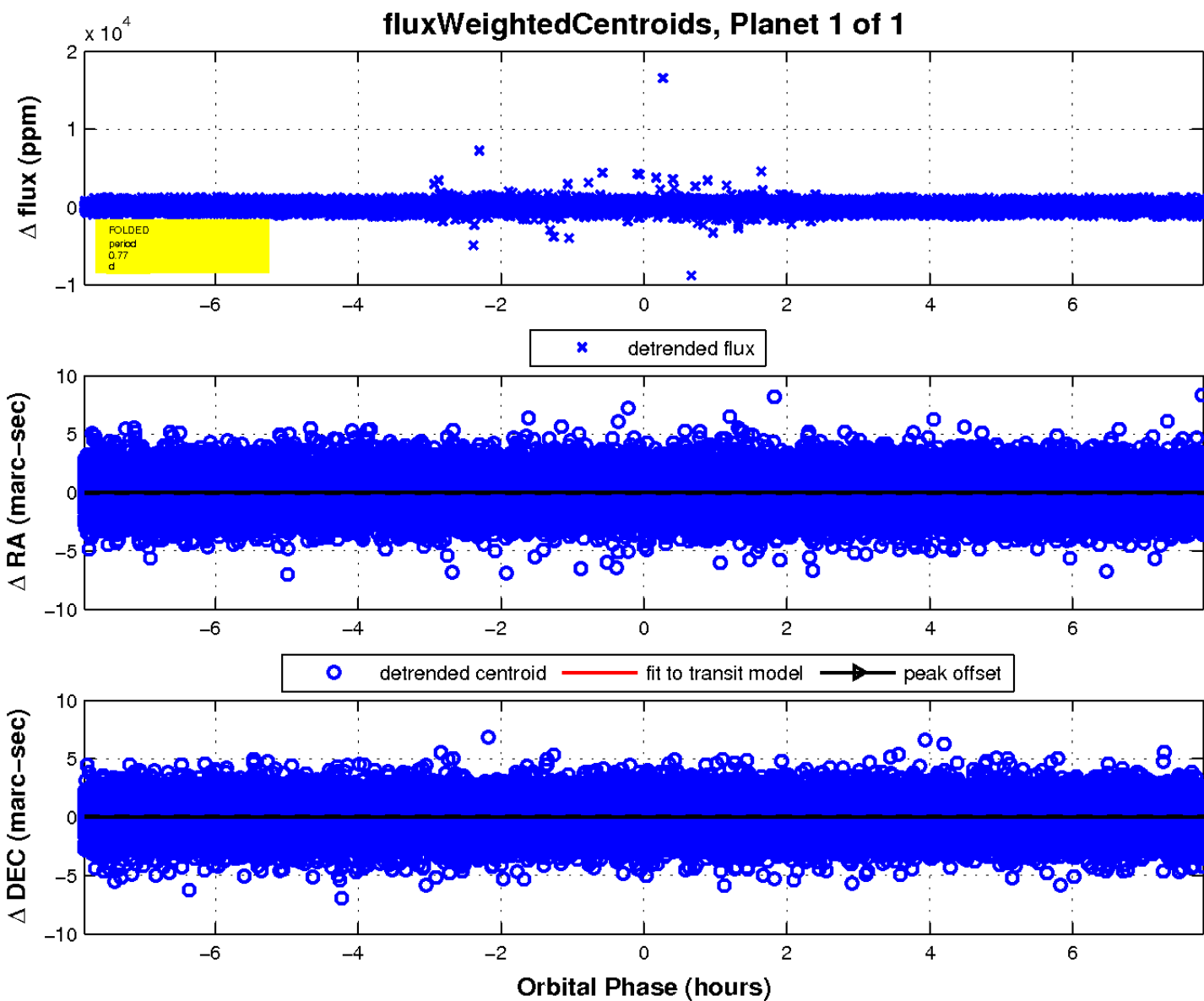
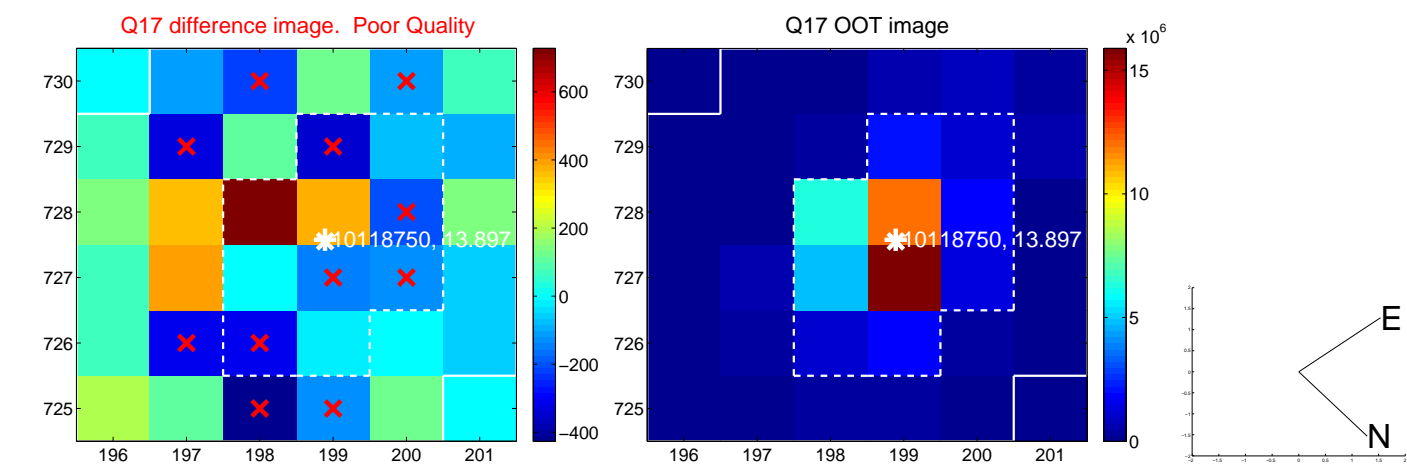
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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UKIRT Image

Declination

