

# KIC 004936463

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
004936463-01	OBS	No	112.295666	188.651343	535.3	4.115	7.6	4.6	11.73	4827	27.04	212.14

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
004936463-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_SKYE—ALL_TRANS_CHASES—MOD_NONUNIQU_ALT—INCONSISTENT_TRANS

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

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

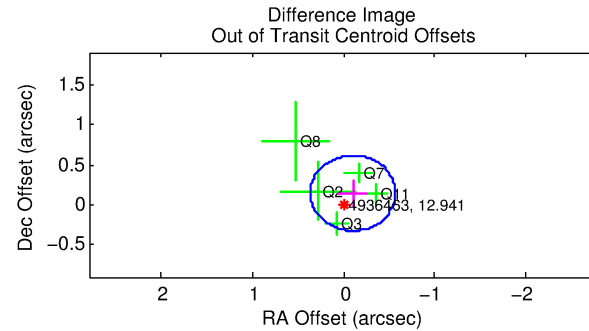
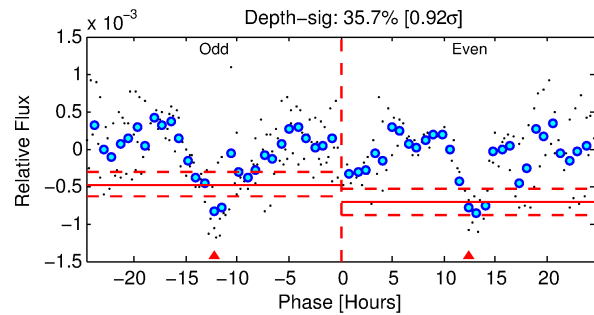
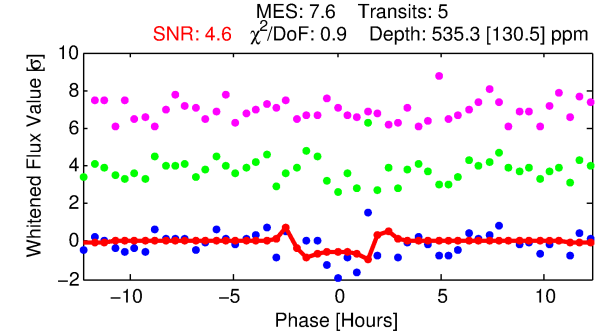
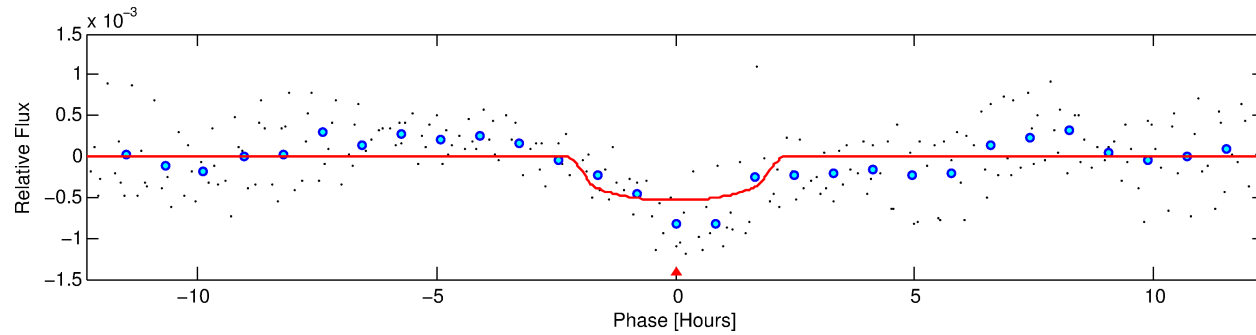
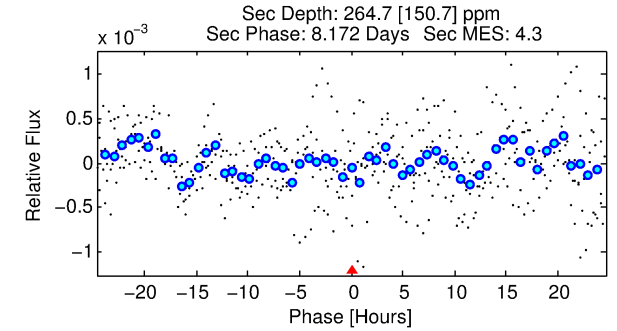
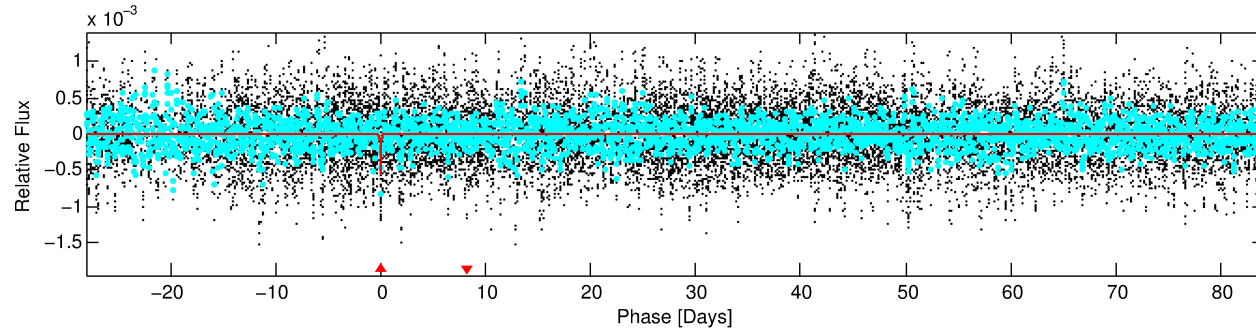
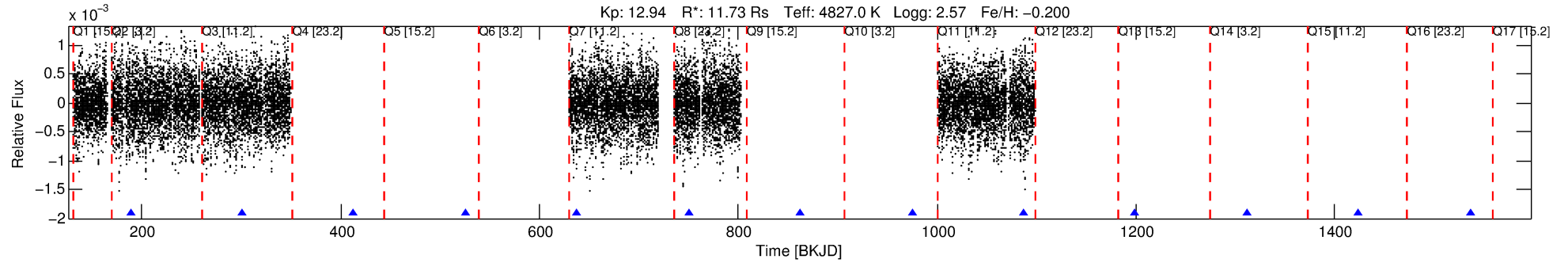
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 004936463-01

No Significant Match Found

# DV One-Page Summary

KIC: 4936463 Candidate: 1 of 1 Period: 112.296 d



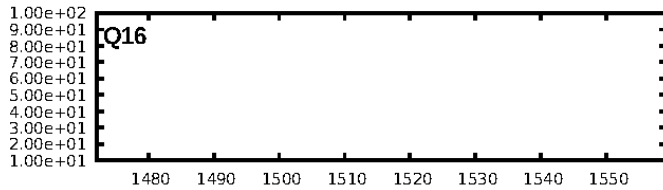
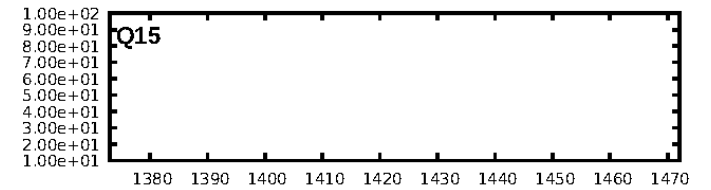
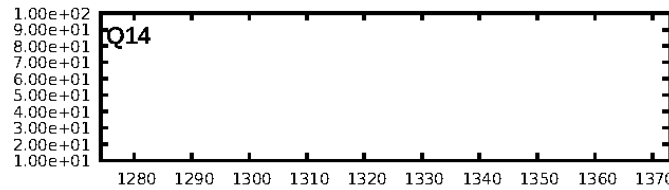
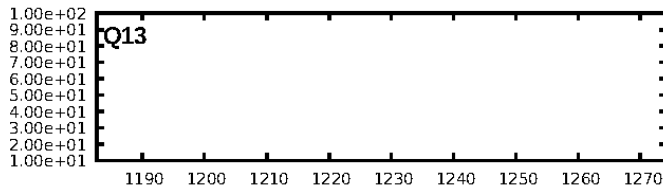
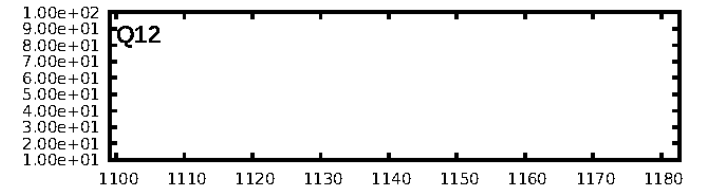
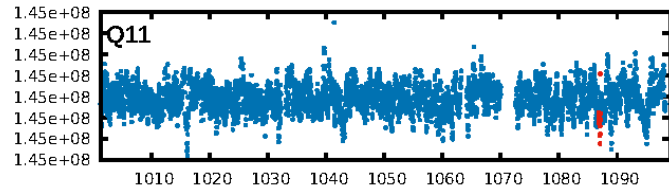
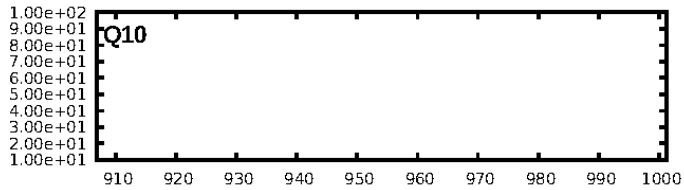
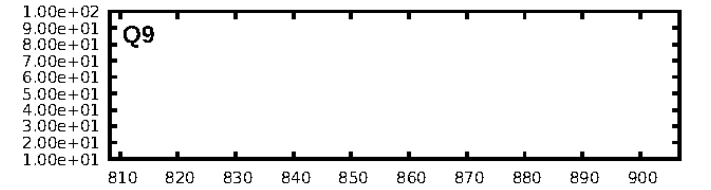
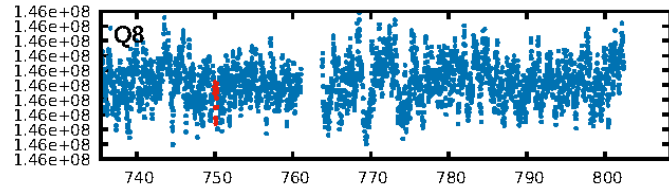
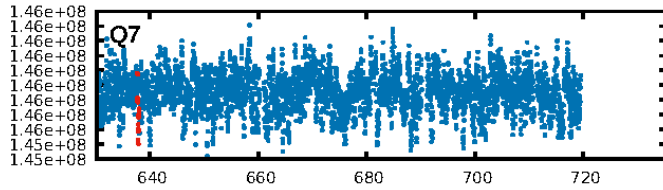
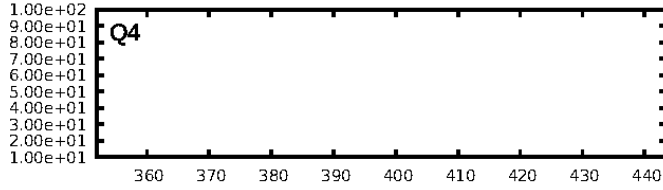
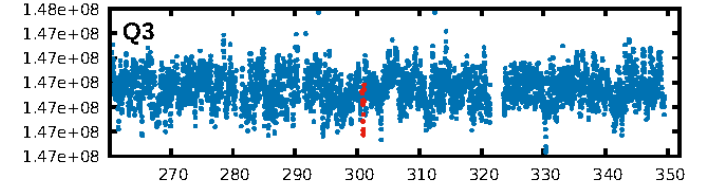
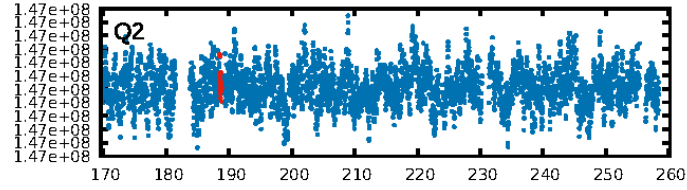
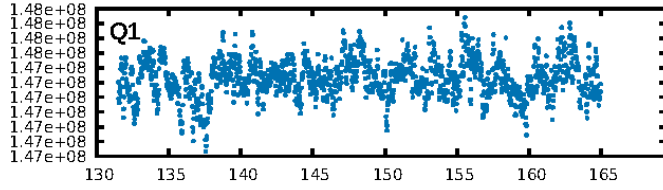
## DV Fit Results:

Period = 112.29567 [0.00142] d  
Epoch = 188.6513 [0.0054] BKJD  
Rp/R\* = 0.0211 [0.0300]  
a/R\* = 192.62 [931.91]  
b = 0.43 [9.18]  
Seff = 212.14 [39.70]  
Teff = 973 [46] K  
Rp = 27.04 [38.90] Re  
a = 0.5616 [0.0876] AU  
Ag = 62.85 [182.33] [0.34 $\sigma$ ]  
Teffp = 4236 [3069] K [1.06 $\sigma$ ]

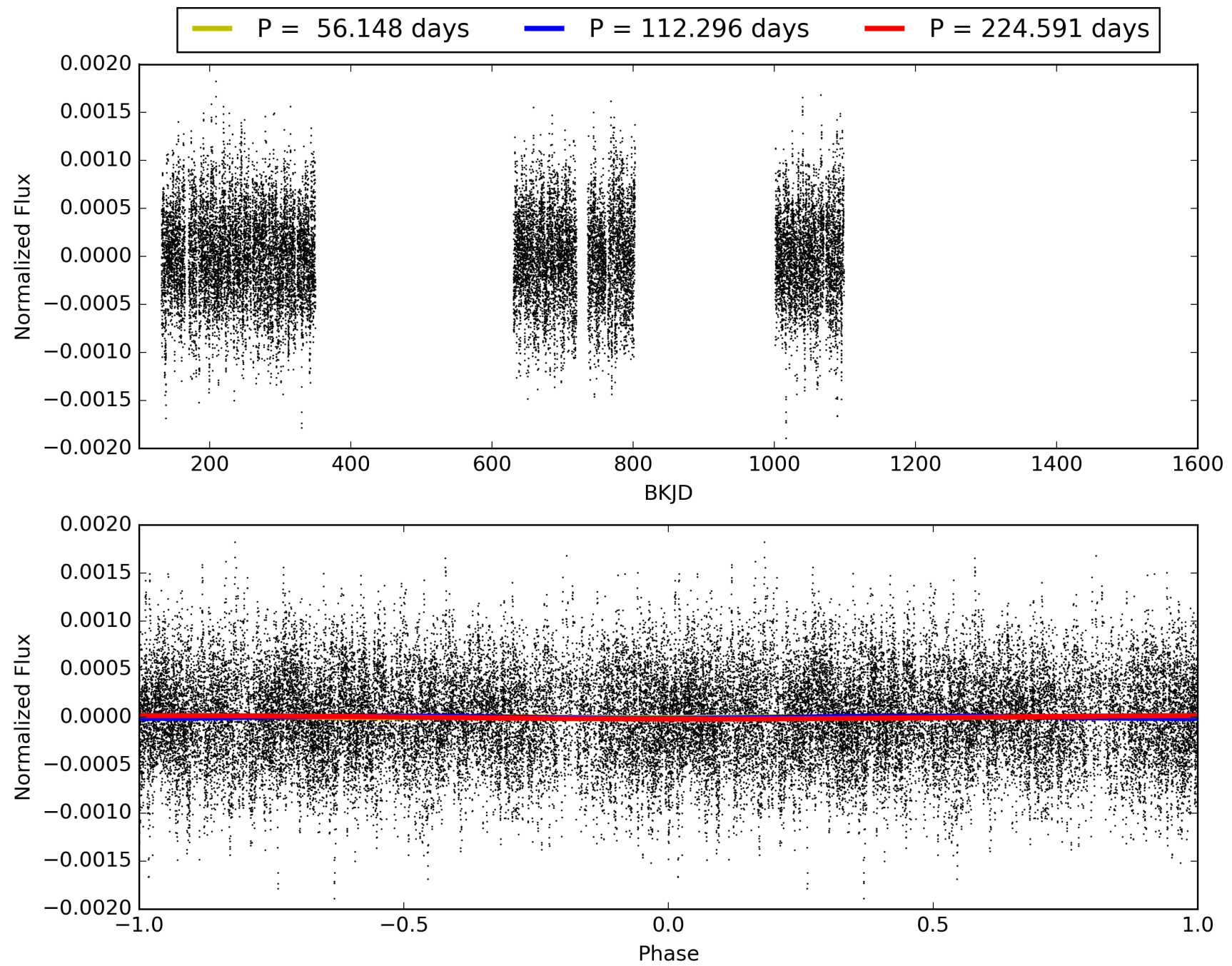
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: 67.5%  
ModelChiSquareGof-sig: 98.3%  
Bootstrap-pfa: 5.11e-11  
RollingBand-fgt: 1.00 [5/5]  
GhostDiagnostic-chr: 0.2565  
Centroid-sig: 3.2%  
Centroid-so: 0.828 arcsec [1.41 $\sigma$ ]  
OotOffset-rm: 0.178 arcsec [1.14 $\sigma$ ]  
KicOffset-rm: 0.095 arcsec [0.46 $\sigma$ ]  
OotOffset-st: 1/3/1/0 [5]  
KicOffset-st: 1/3/1/0 [5]  
DiffImageQuality-fgm: 1.00 [5/5]  
DiffImageOverlap-fno: 1.00 [5/5]

# TCE 004936463-01, PDC Light Curves

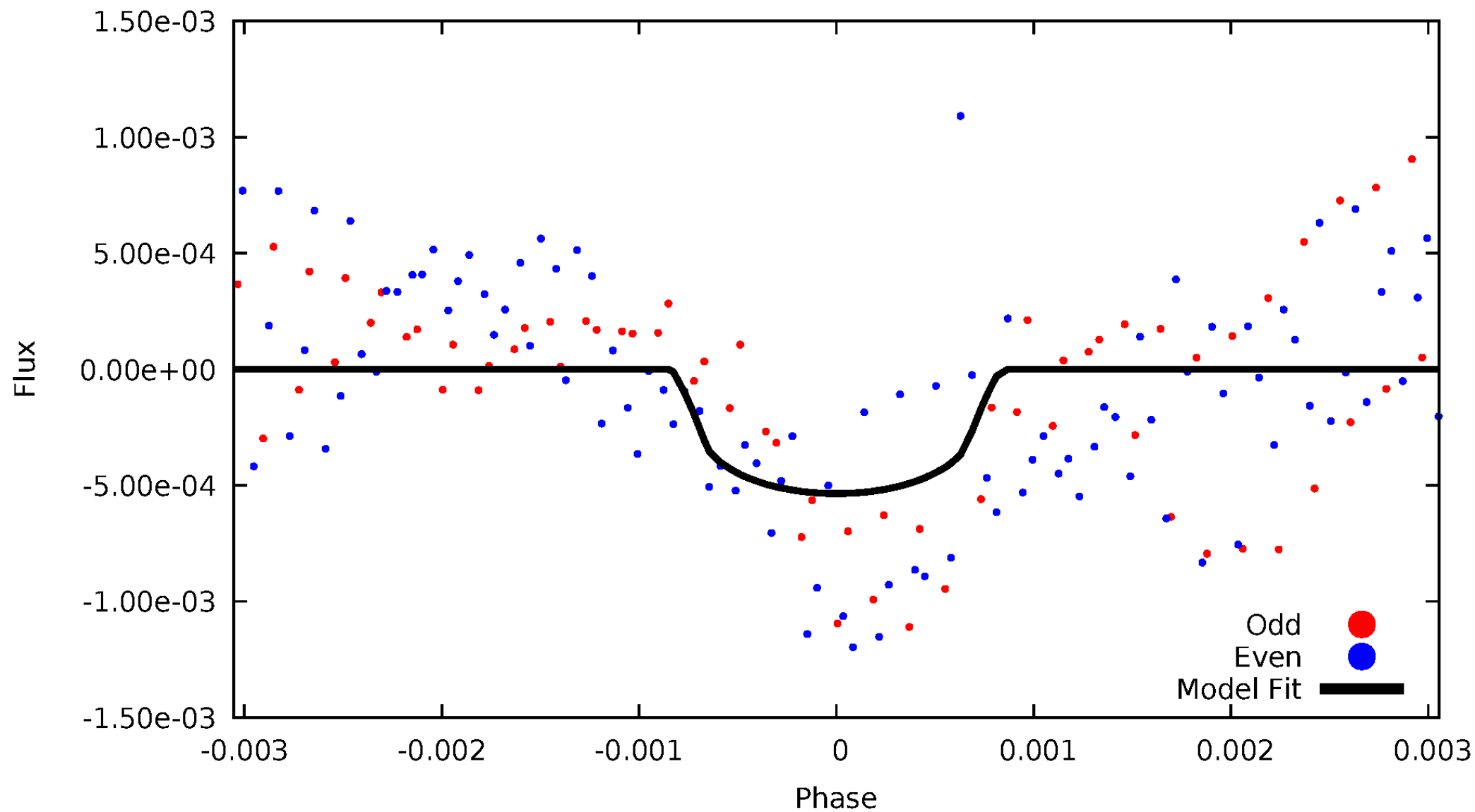


TCE 004936463-01



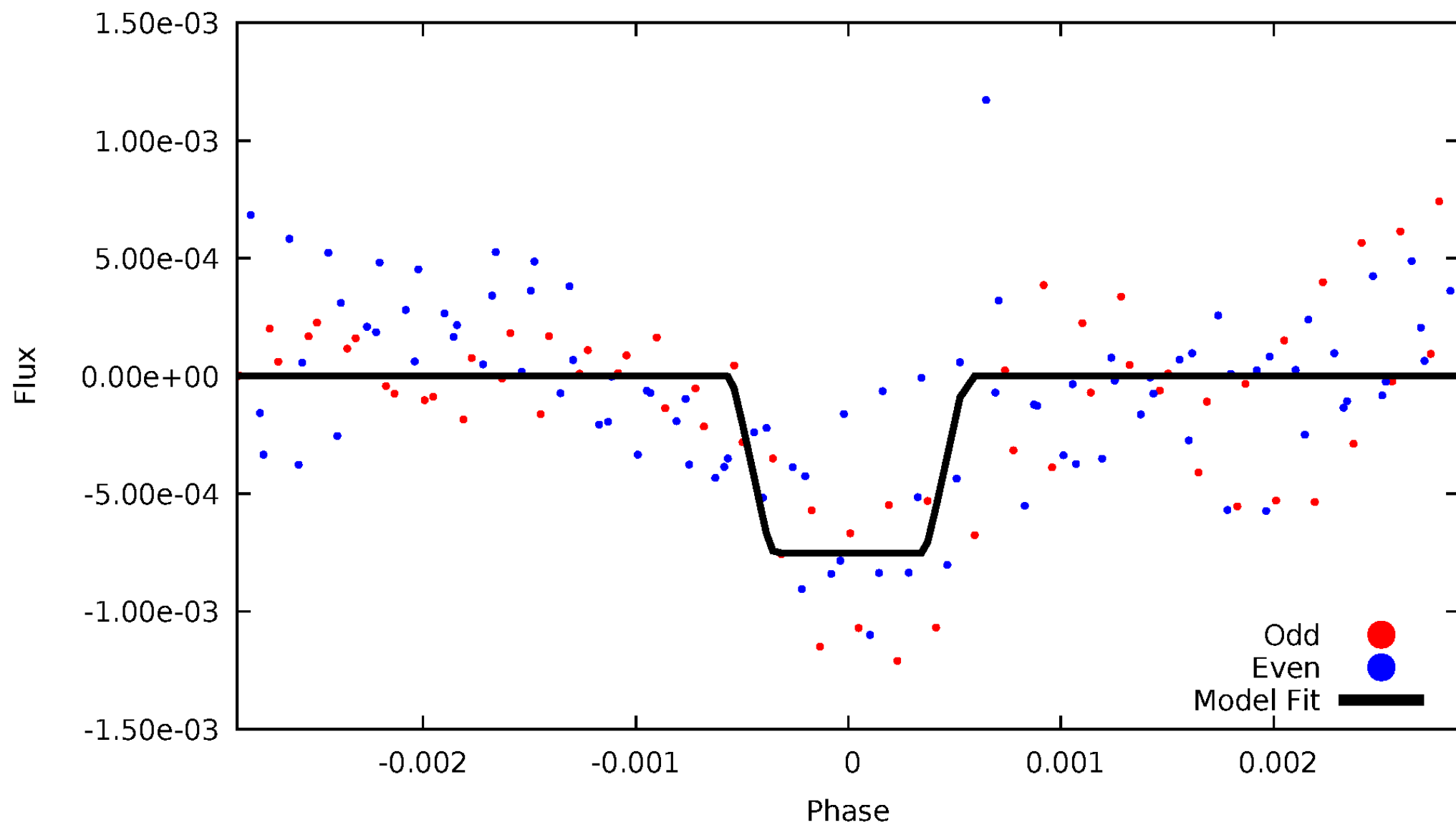
# DV Odd/Even

TCE 004936463-01



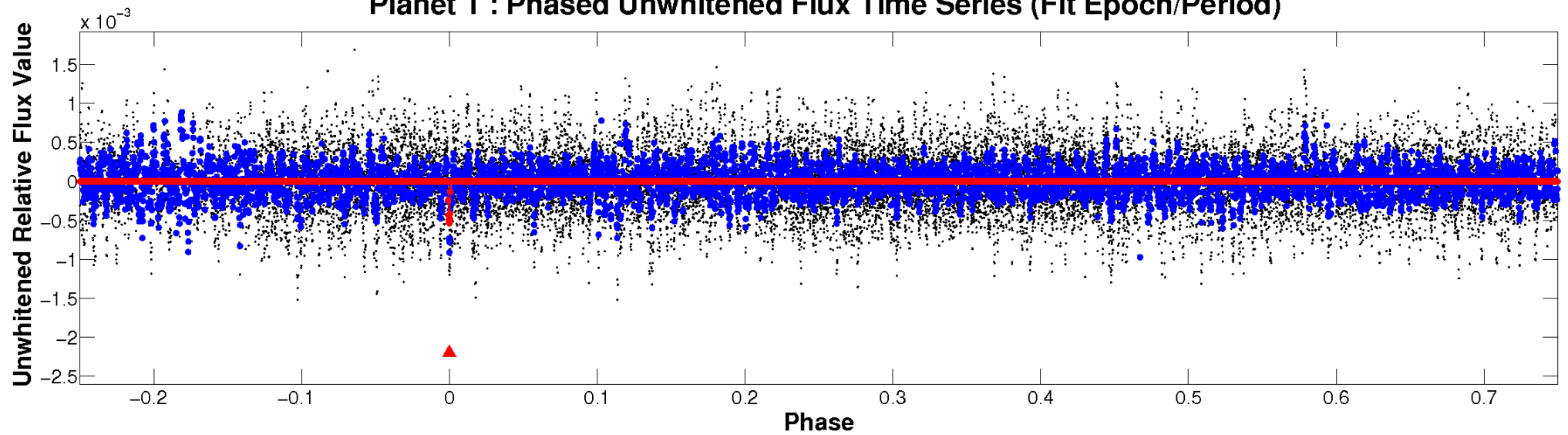
# ALT Odd/Even

TCE 004936463-01

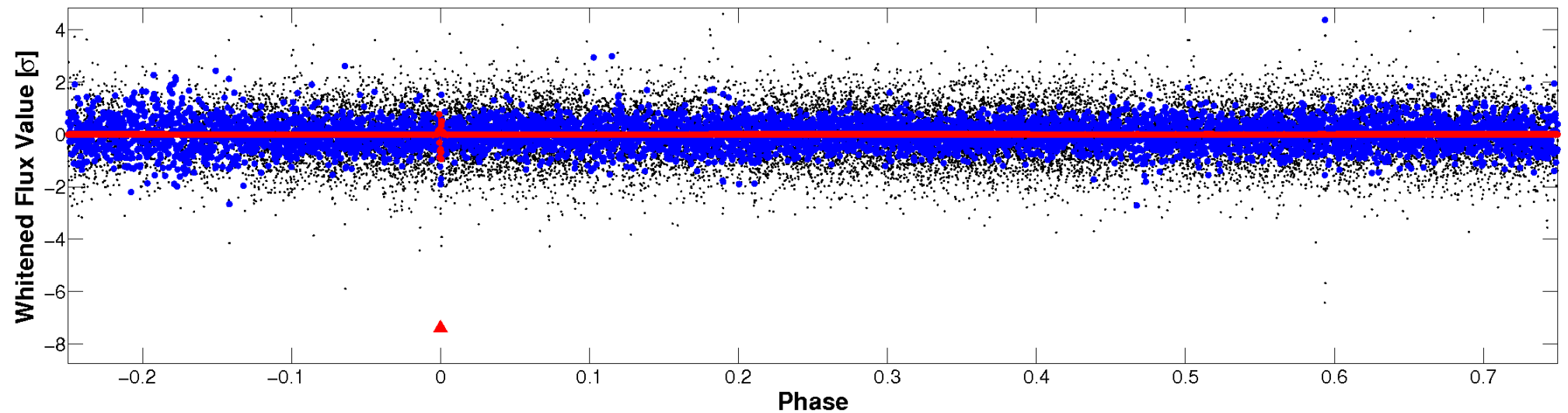


# Non-Whitened Vs. Whitened Light Curve

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

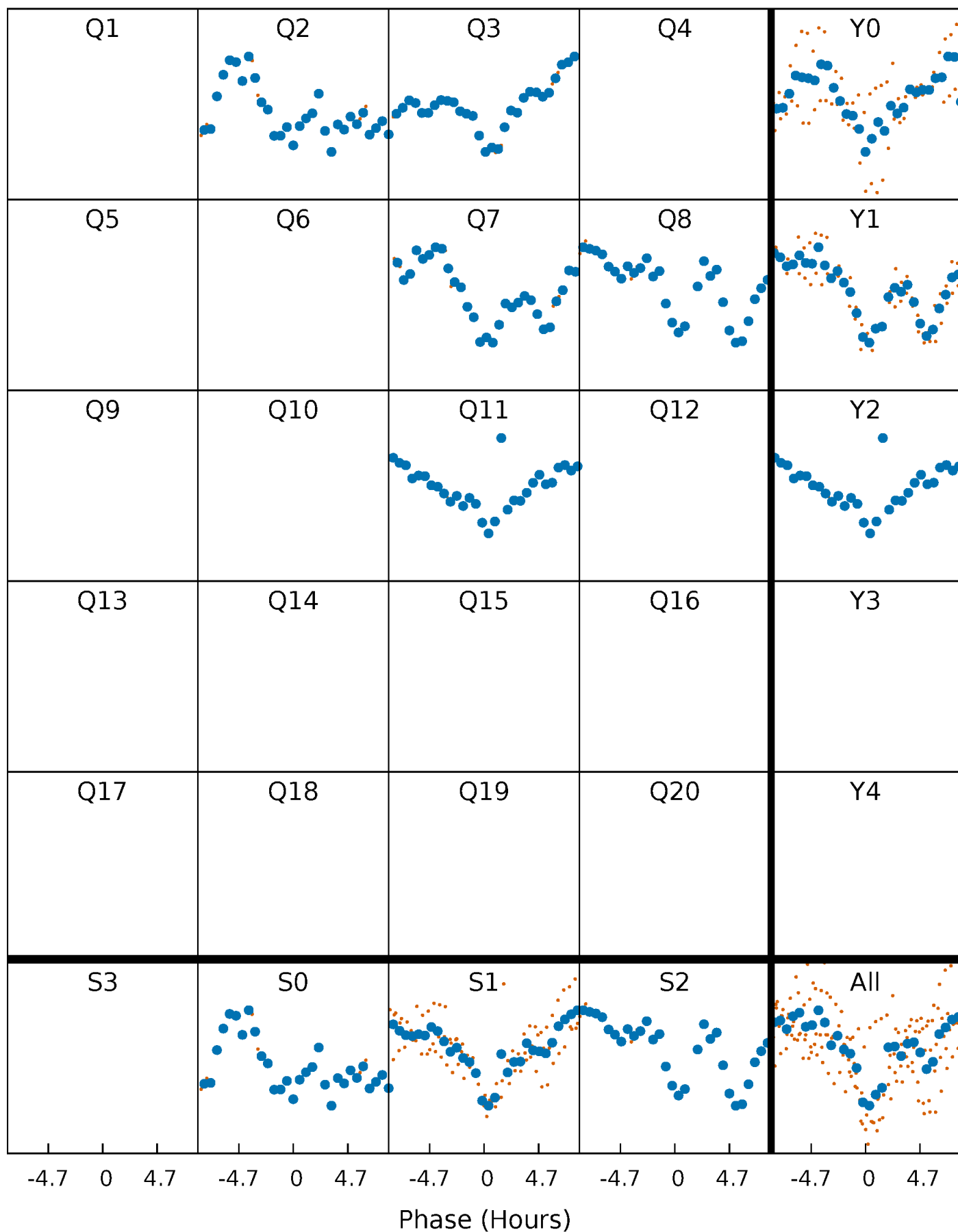


**Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)**



# PDC Quarter-Phased Transit Curves

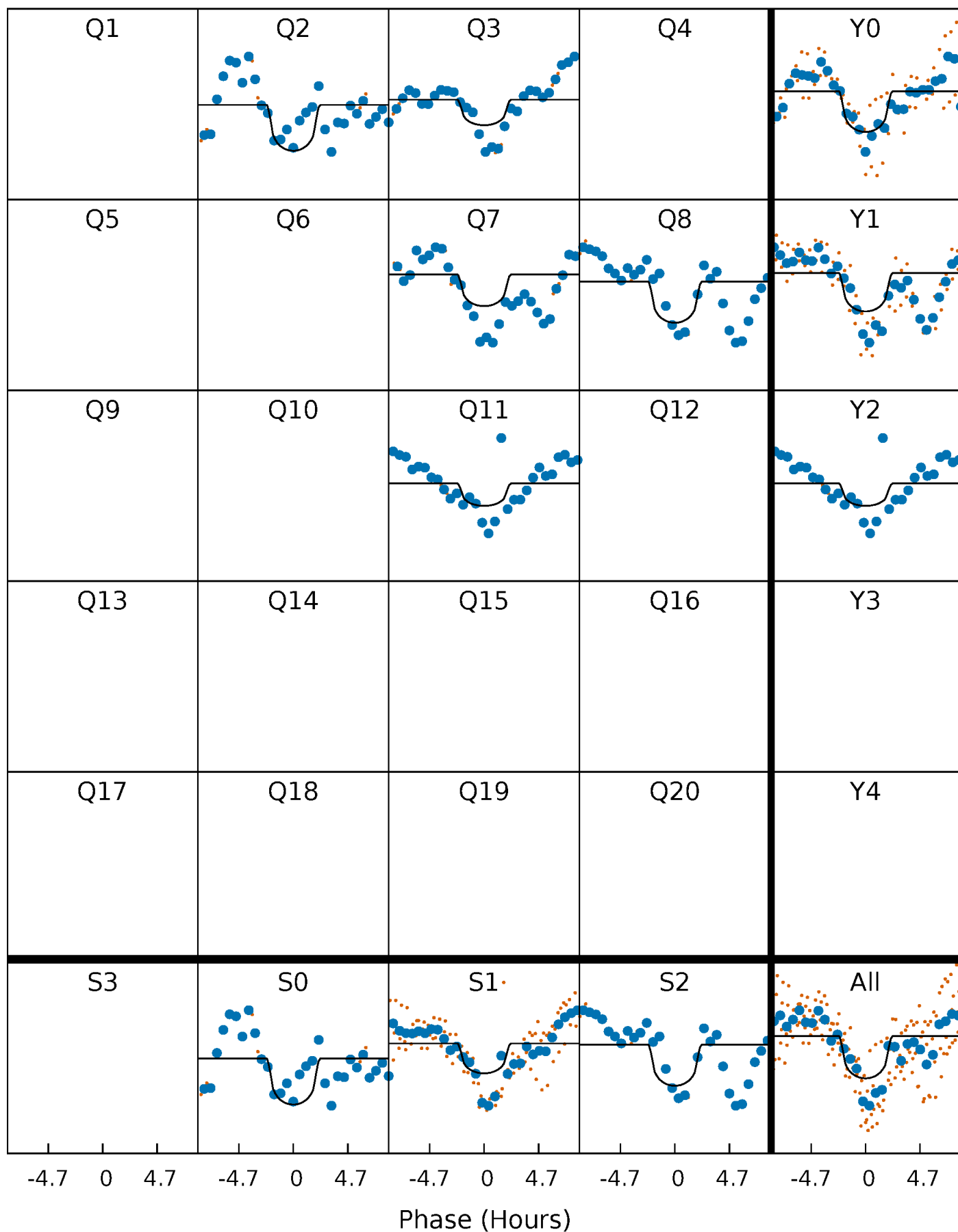
TCE 004936463-01 P=112.295666 Days  $T_0=188.651343$  (BKJD)





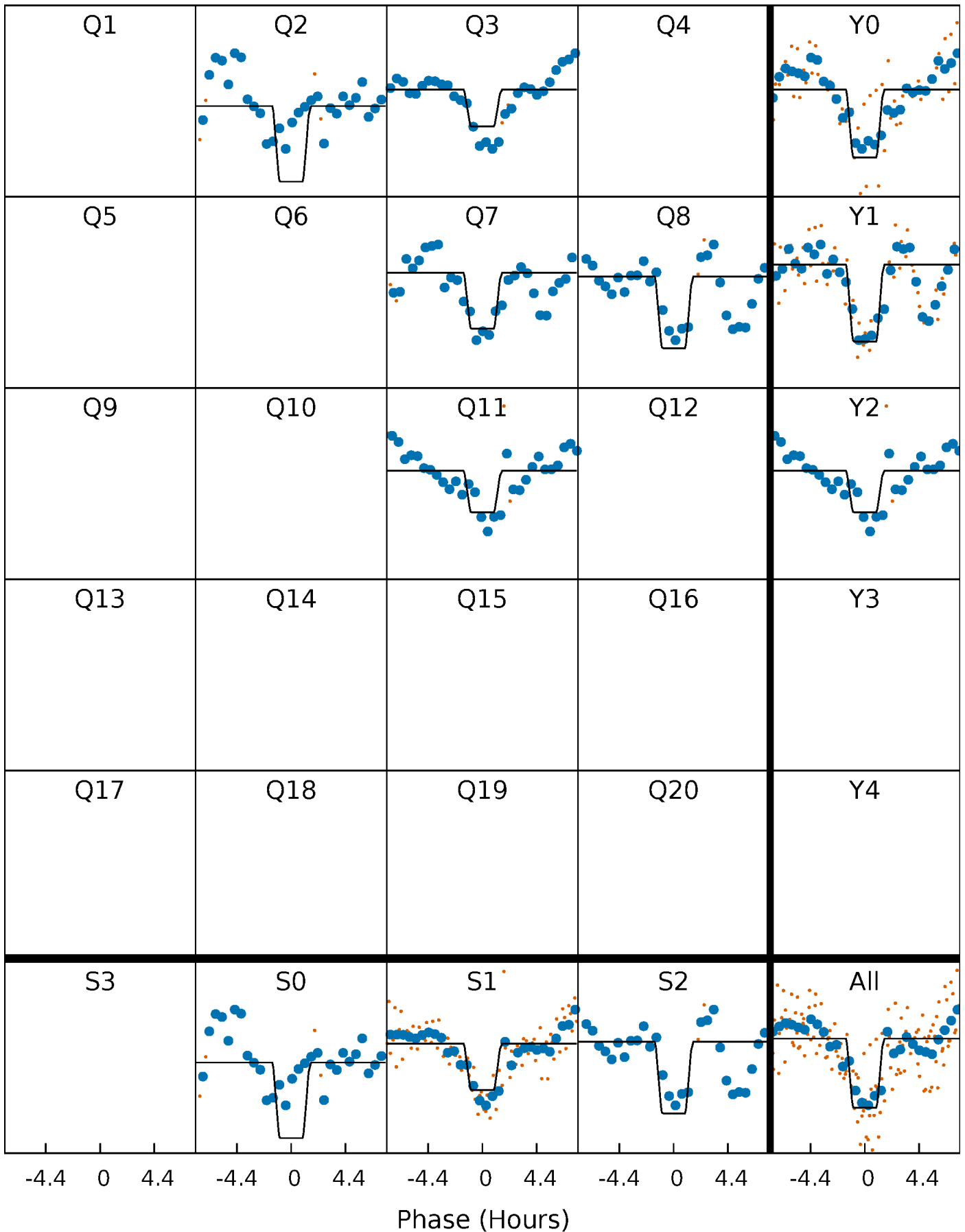
# DV Quarter-Phased Transit Curves

TCE 004936463-01 P=112.295666 Days  $T_0=188.651343$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

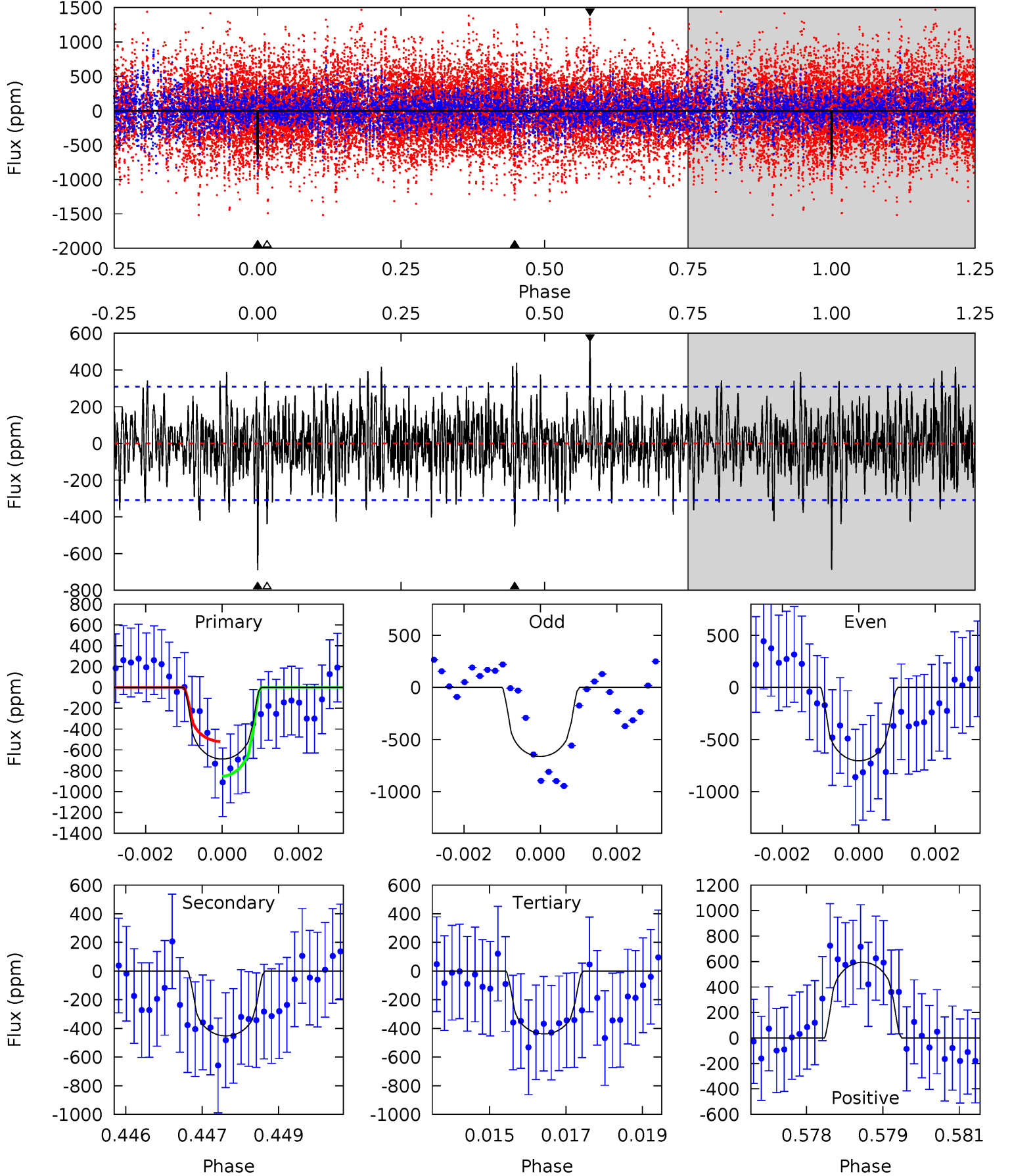
TCE 004936463-01 P=112.293154 Days  $T_0=188.669466$  (BKJD)



# DV Model-Shift Uniqueness Test

004936463-01, P = 112.295666 Days, E = 76.355677 Days

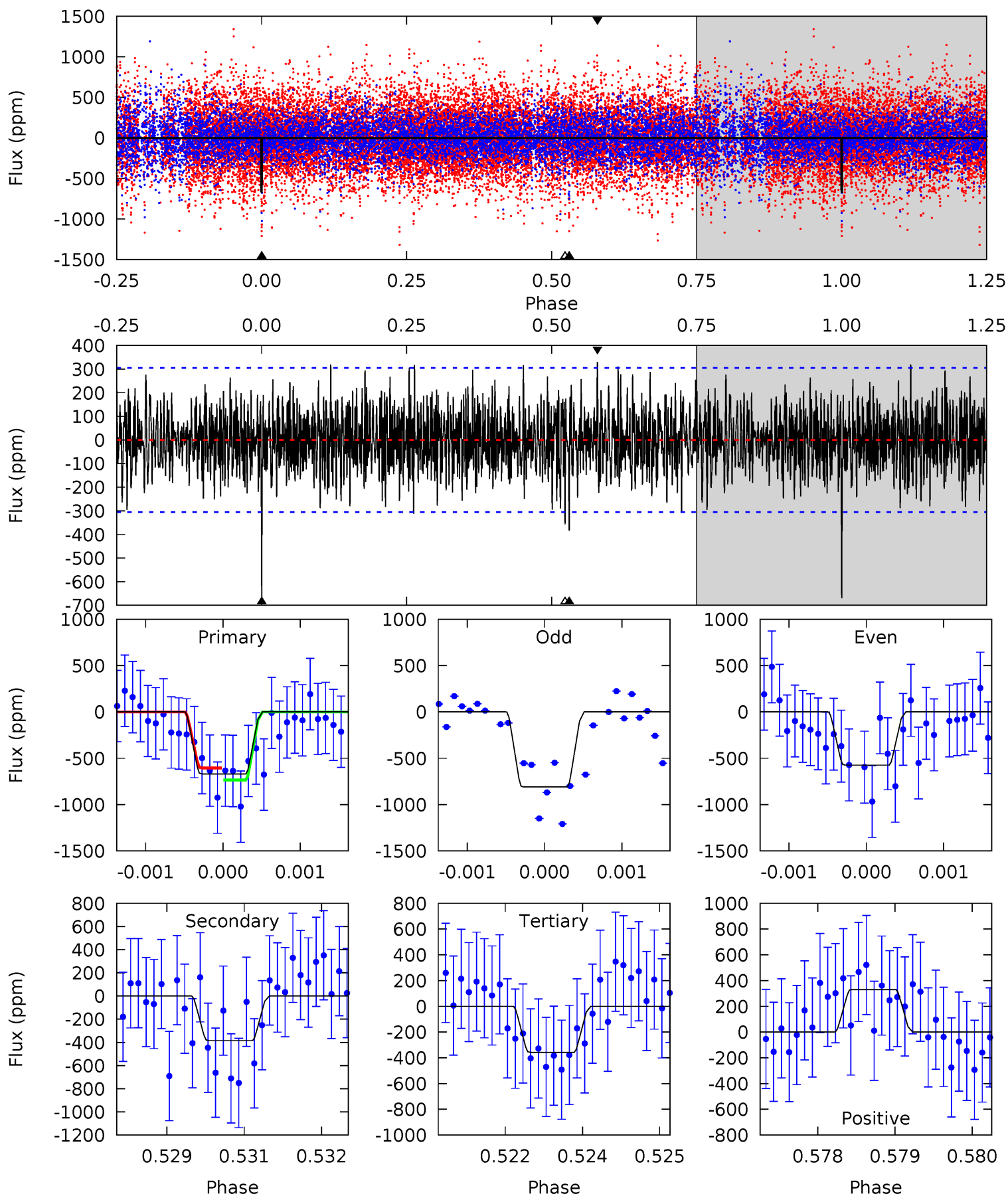
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
11.9	7.83	7.60	10.3	5.36	3.14	2.35	4.32	1.62	0.23	-2.47	0.35	0.97	0.46	2.87



# Alt Model-Shift Uniqueness Test

004936463-01, P = 112.293154 Days, E = 76.376312 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
11.9	6.83	6.35	5.87	5.42	3.25	1.87	5.56	6.04	0.48	0.96	2.06	0.89	0.33	1.15



### Stellar Parameters For KIC 004936463

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$4827^{+77}_{-115}$	$2.572^{+0.030}_{-0.030}$	$-0.200^{+0.200}_{-0.300}$	$11.729^{+2.443}_{-2.715}$	$1.872^{+0.984}_{-0.805}$	$0.002^{+0.001}_{-0.000}$
	+2%/-2%	+1%/-1%	+100%/-150%	+21%/-23%	+53%/-43%	+34%/-12%
Source	PHO56	AST56	PHO56	DSEP		

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

### Secondary Eclipse Parameters for KIC 004936463-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	$A_{\text{obs}}$
DV	$-452 \pm 58$	$38.97^{+32.72}_{-25.01}$	$1363^{+41}_{-55}$	$4208^{+2368}_{-793}$	$54^{+365}_{-38}$
Alt.	$-384 \pm 56$	$46.99^{+35.43}_{-29.46}$	$1365^{+45}_{-50}$	$3820^{+1831}_{-626}$	$31^{+183}_{-21}$

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

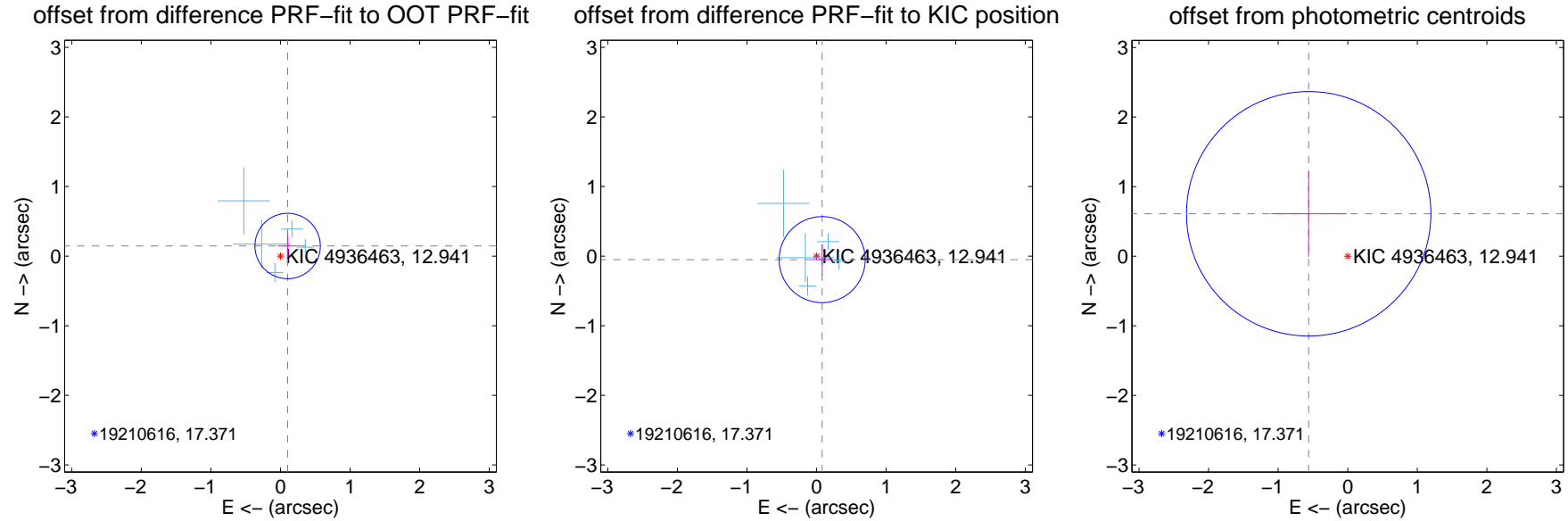
## DV Centroid Data

Supplemental centroid analysis for 004936463-01. Kepler magnitude: 12.94. Transit SNR 4.64

There are 5 quarters with good PRF difference image offsets

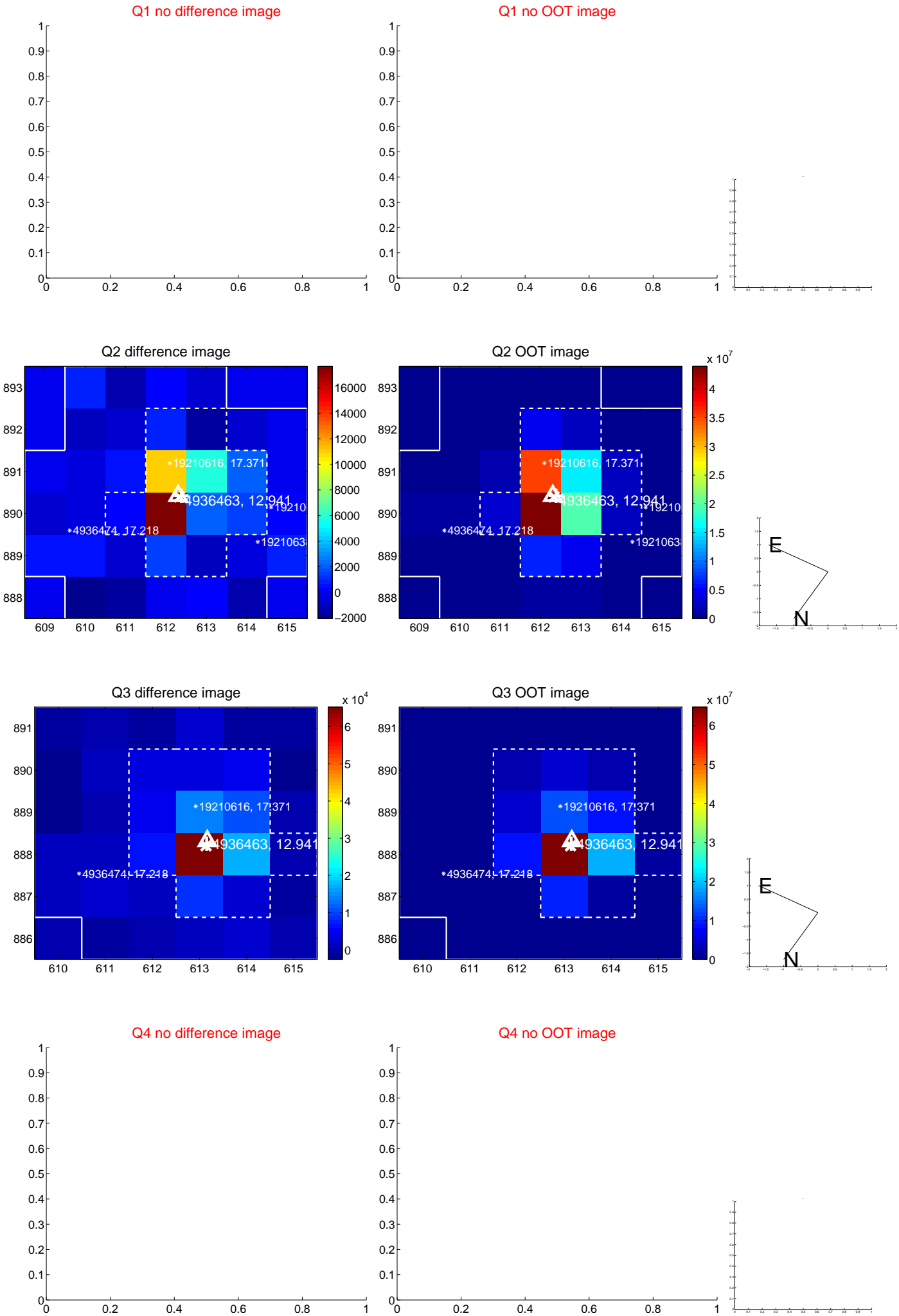
The direct PRF centroid is offset from the target star catalog position by about 0.21 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.178 \pm 0.157$	1.14	$-0.103 \pm 0.145$	$0.146 \pm 0.162$
PRF-fit source offset from KIC position	$0.095 \pm 0.206$	0.46	$-0.080 \pm 0.144$	$-0.050 \pm 0.218$
photometric centroid source offset	$0.83 \pm 0.59$	1.41	$0.56 \pm 0.55$	$0.61 \pm 0.62$

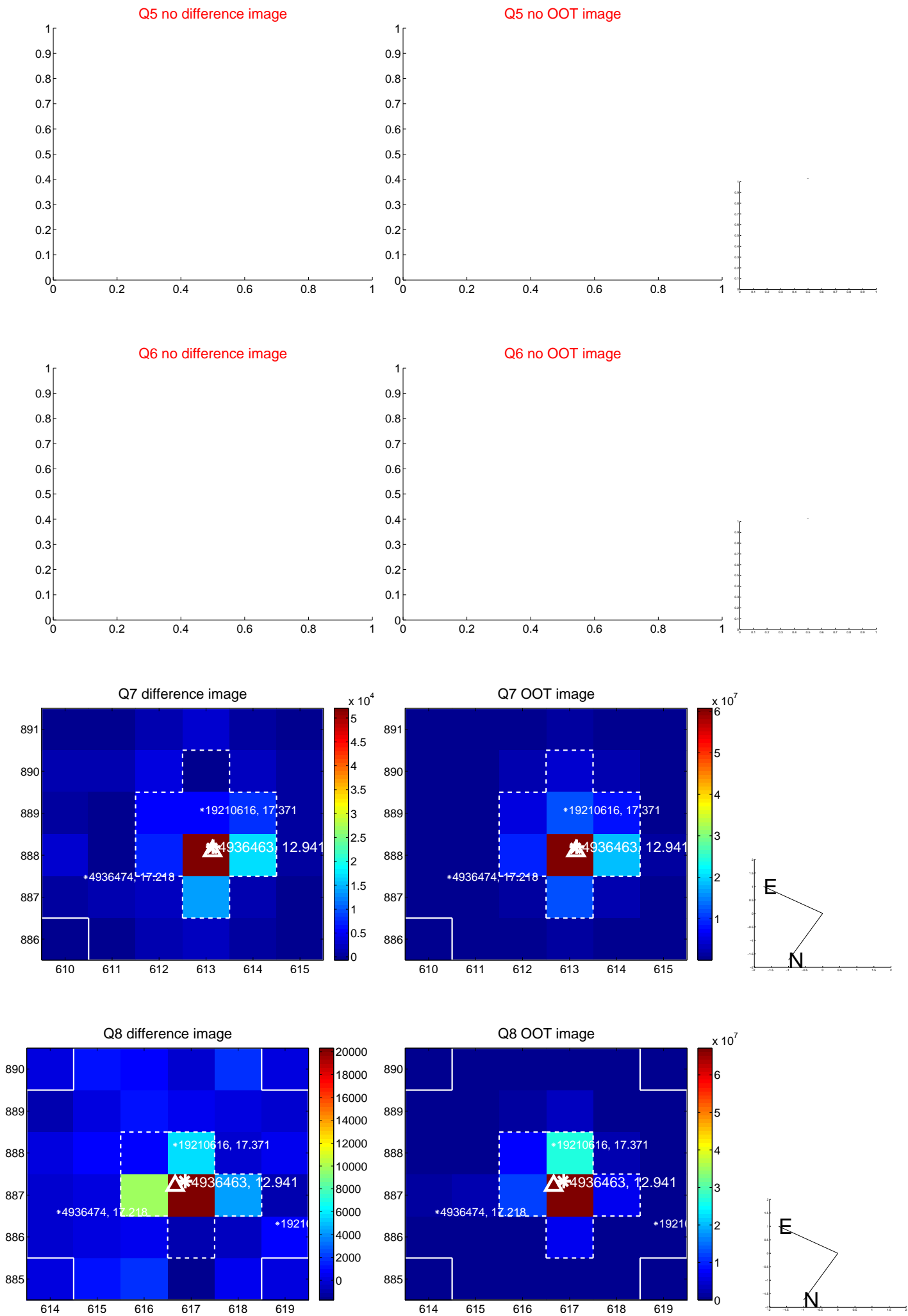


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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

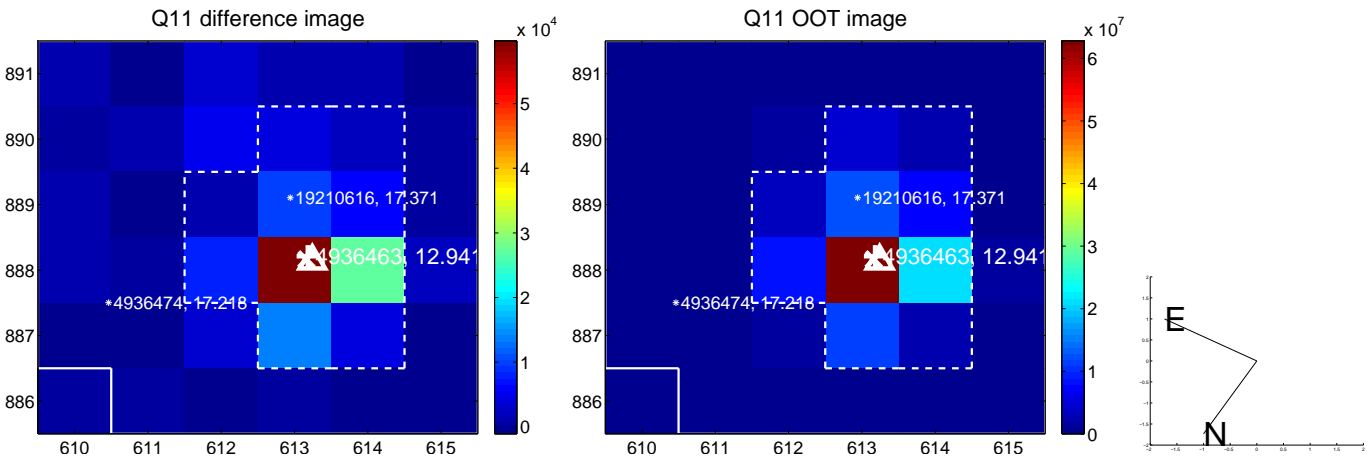


white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.





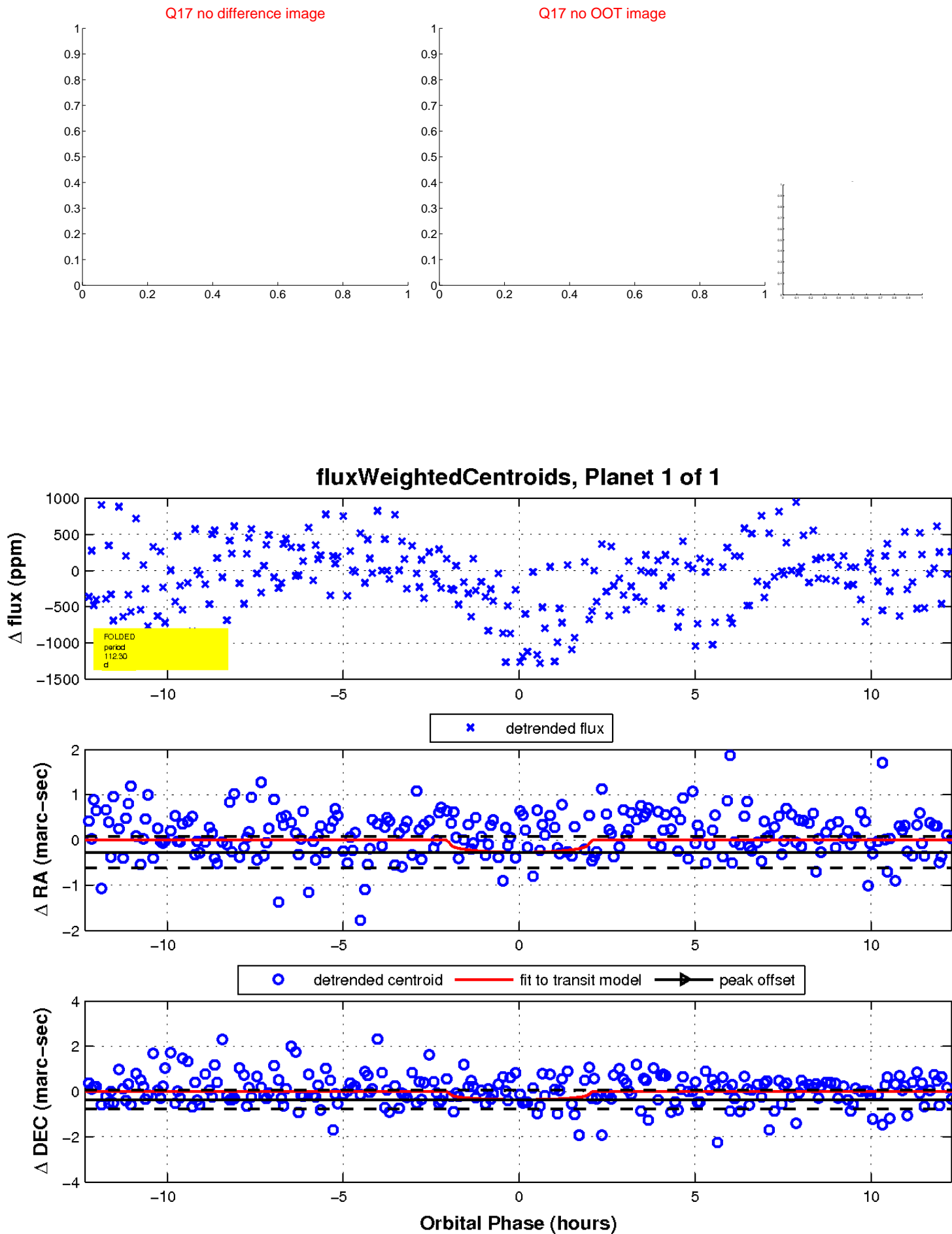
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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.



UKIRT Image

Declination

