

# KIC 011296724

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
011296724-01	OBS	7437.01	1.999734	131.930173	81.2	2.070	8.2	8.6	0.90	5838	0.97	872.00

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
011296724-01	OBS	PC	0.67	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.

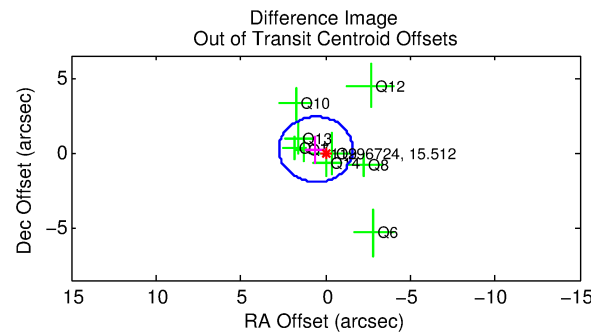
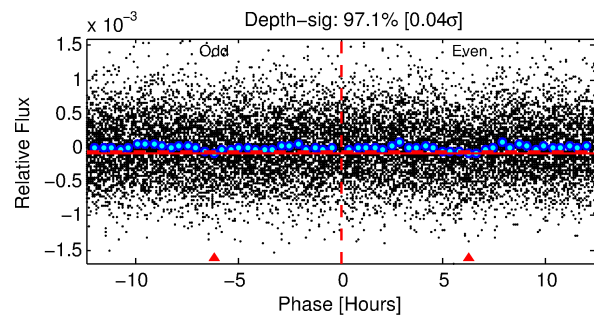
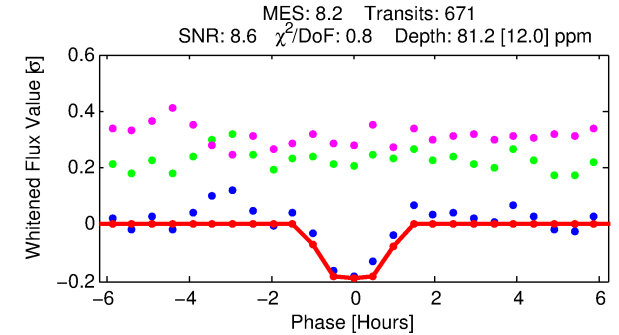
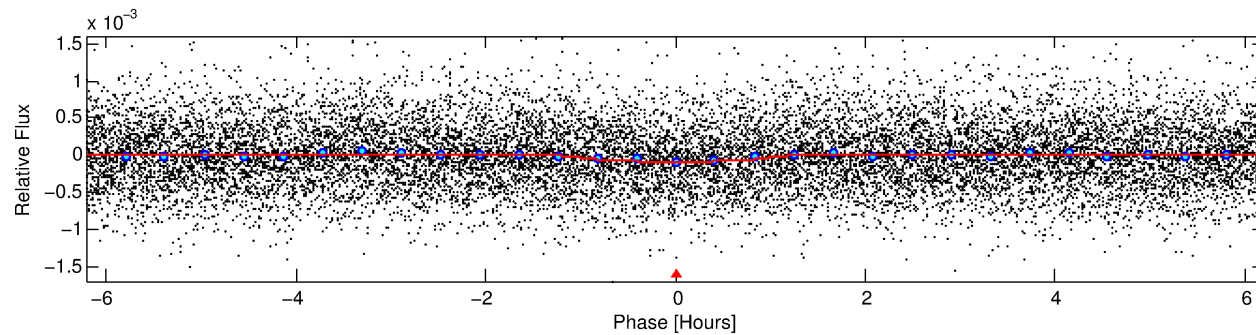
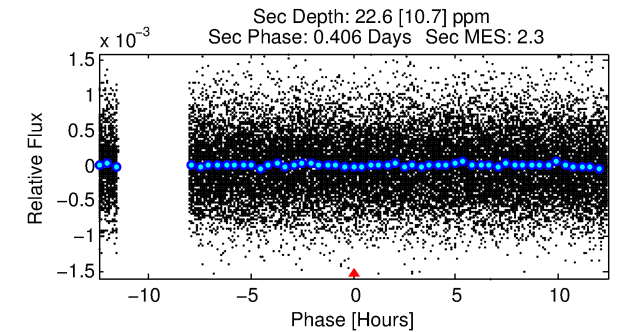
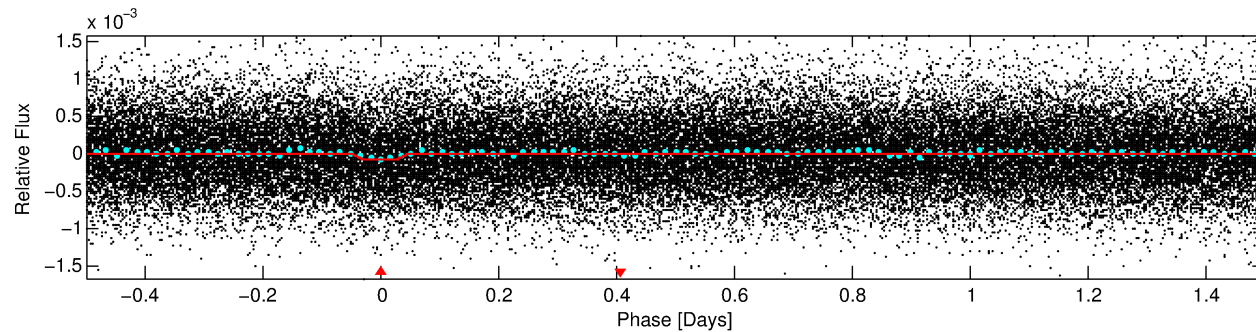
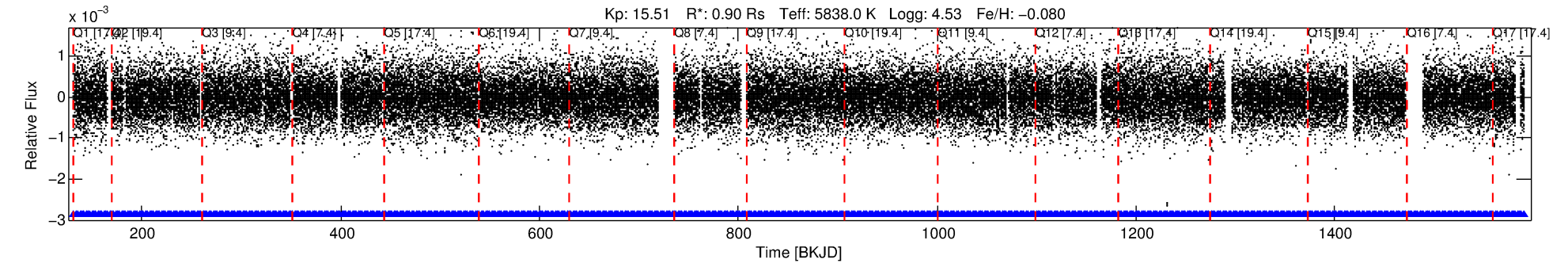
## Ephemeris Match Information For 011296724-01

No Significant Match Found

# DV One-Page Summary

KIC: 11296724 Candidate: 1 of 1 Period: 2.000 d

KOI: K07437.01 Corr: 0.933



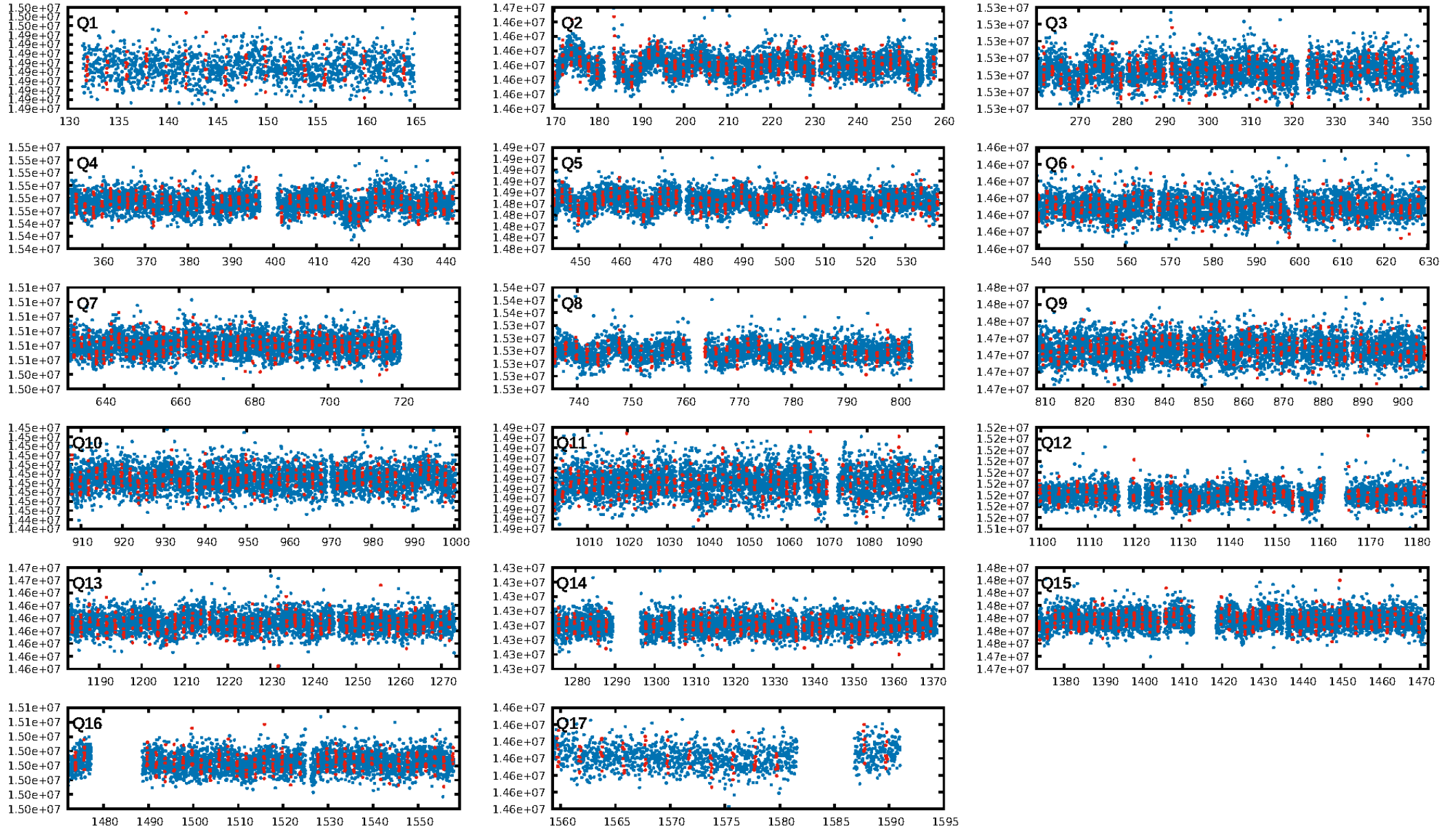
## DV Fit Results:

Period = 1.99973 [0.00002] d  
Epoch = 131.9302 [0.0039] BKJD  
Rp/R\* = 0.0099 [0.0088]  
a/R\* = 3.36 [13.51]  
b = 0.91 [0.85]  
Seff = 872.00 [295.46]  
Teff = 1386 [117] K  
Rp = 0.97 [0.89] Re  
a = 0.0310 [0.0065] AU  
Ag = 12.67 [23.58] [0.49σ]  
Teffp = 4042 [1857] K [1.43σ]

## DV Diagnostic Results:

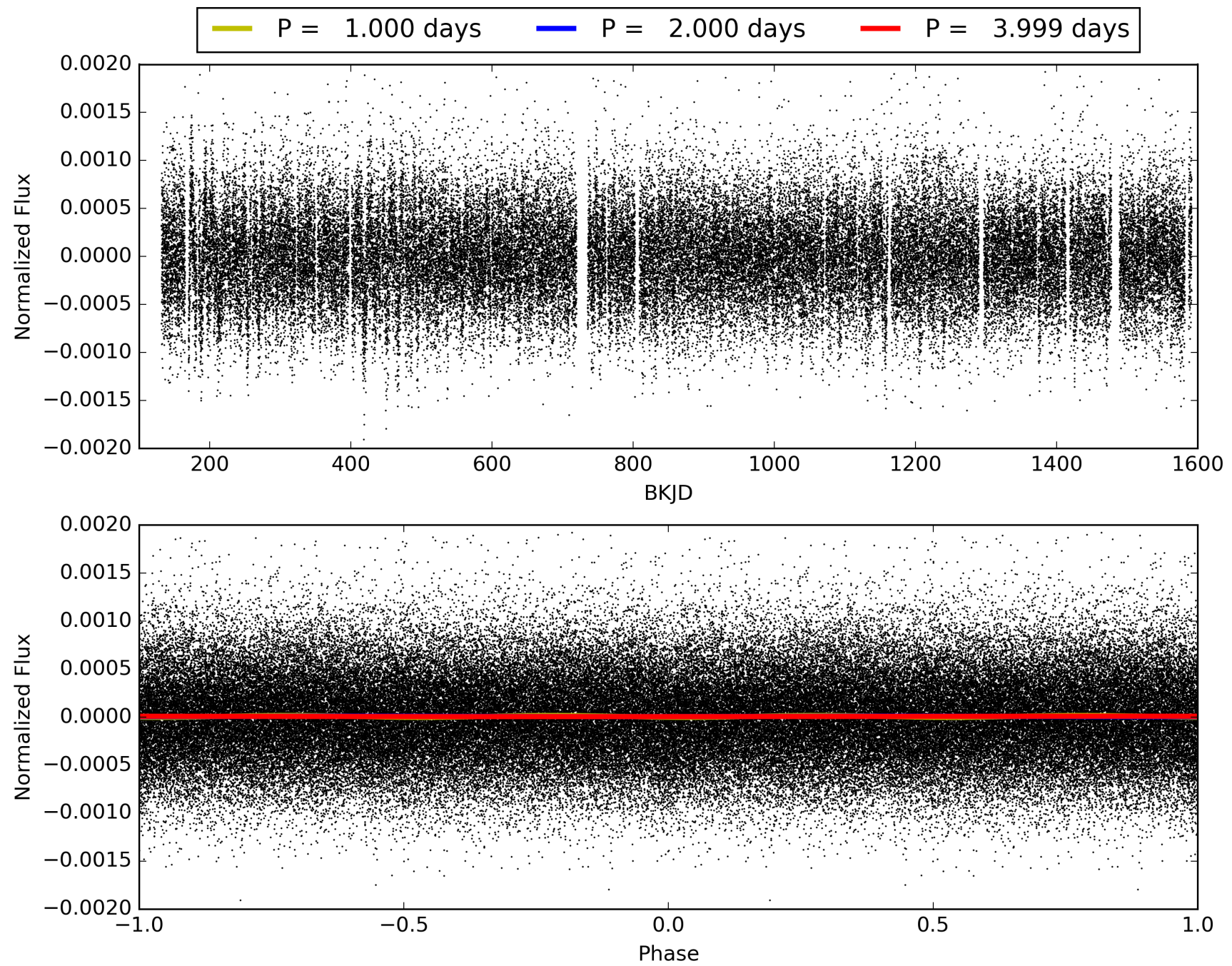
ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: N/A  
ModelChiSquareGof-sig: N/A  
Bootstrap-pfa: 2.49e-16  
RollingBand-fgt: 1.00 [641/641]  
GhostDiagnostic-chr: 21.84  
Centroid-sig: 15.7%  
Centroid-so: 1.909 arcsec [1.17σ]  
OotOffset-rm: 0.613 arcsec [0.85σ]  
KicOffset-rm: 0.600 arcsec [0.90σ]  
OotOffset-st: 3/2/2/2 [9]  
KicOffset-st: 3/2/2/2 [9]  
DiffImageQuality-fgm: 0.56 [5/9]  
DiffImageOverlap-fno: 1.00 [17/17]

# TCE 011296724-01, PDC Light Curves



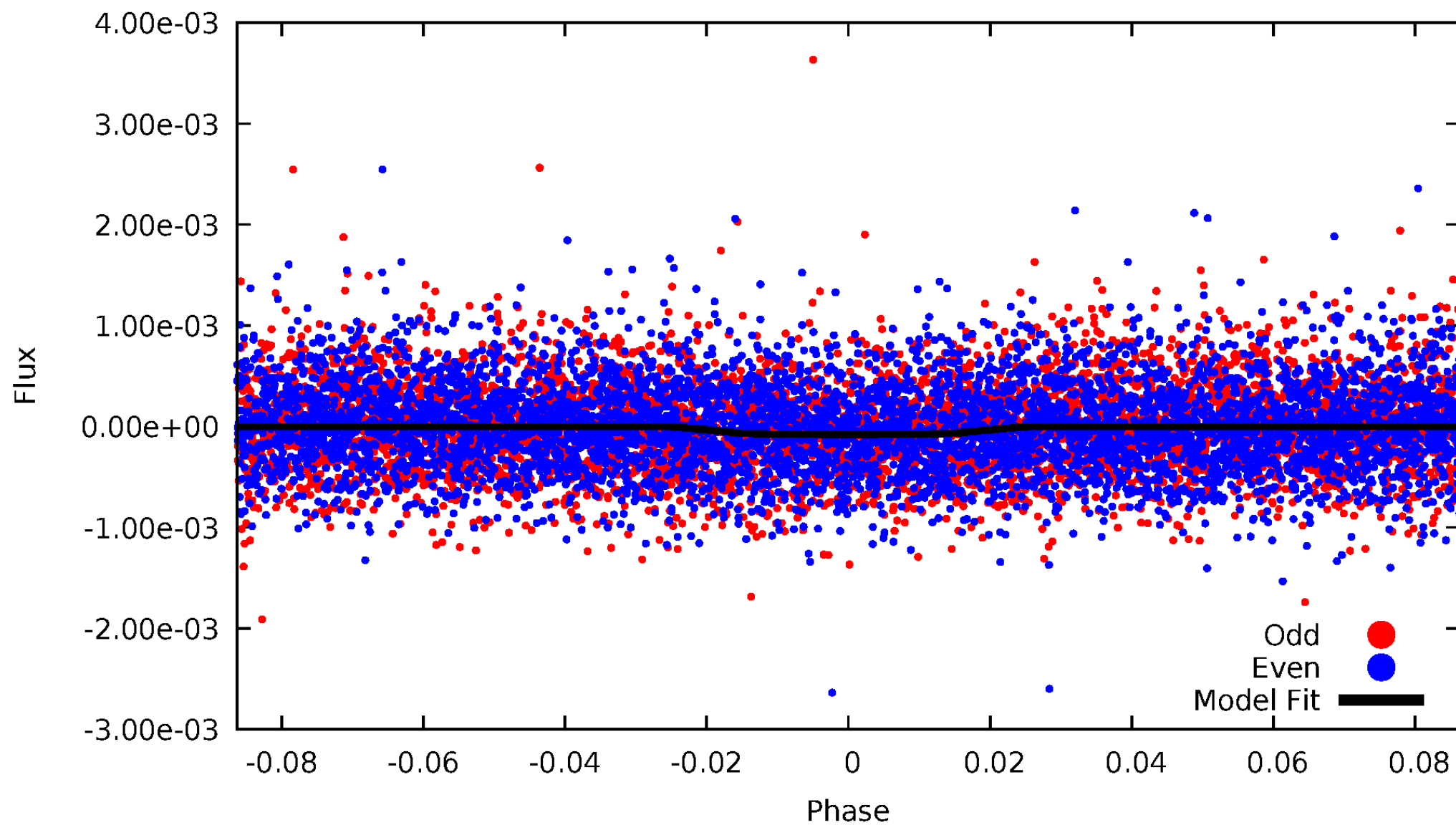


# TCE 011296724-01



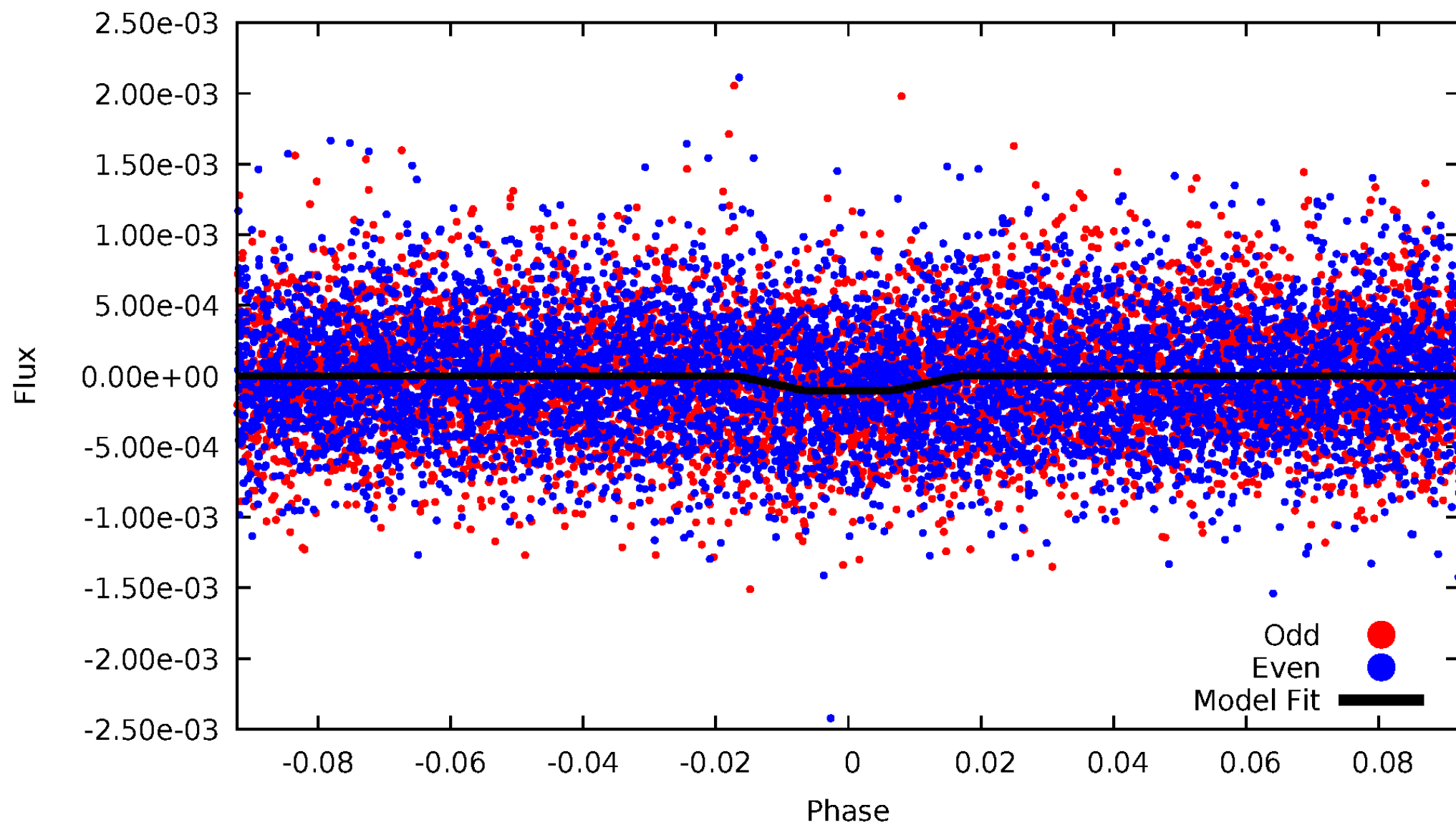
# DV Odd/Even

TCE 011296724-01



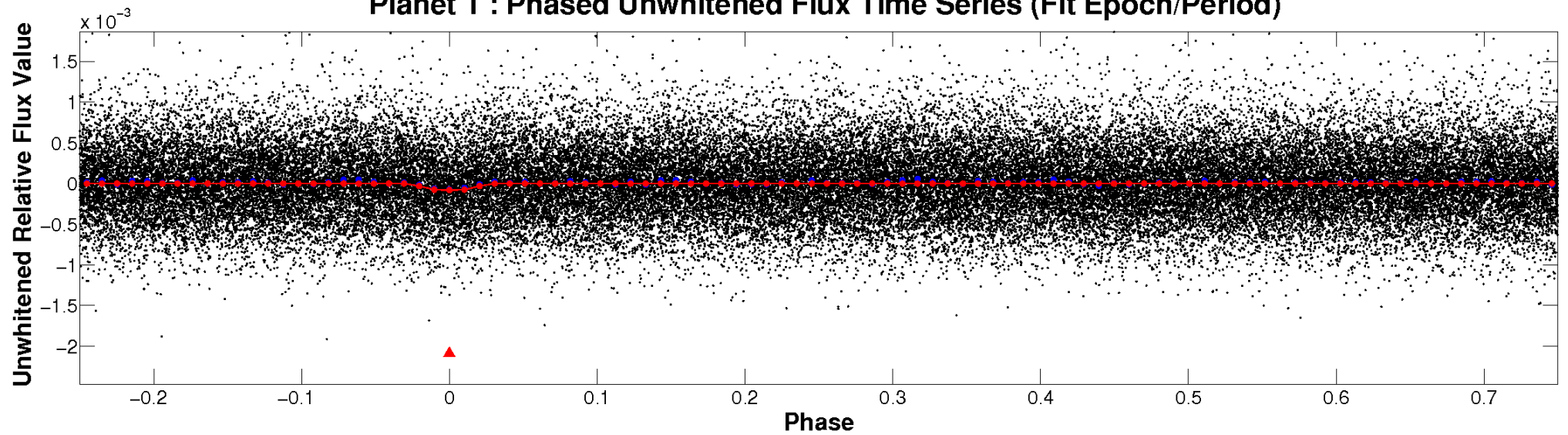
# ALT Odd/Even

TCE 011296724-01

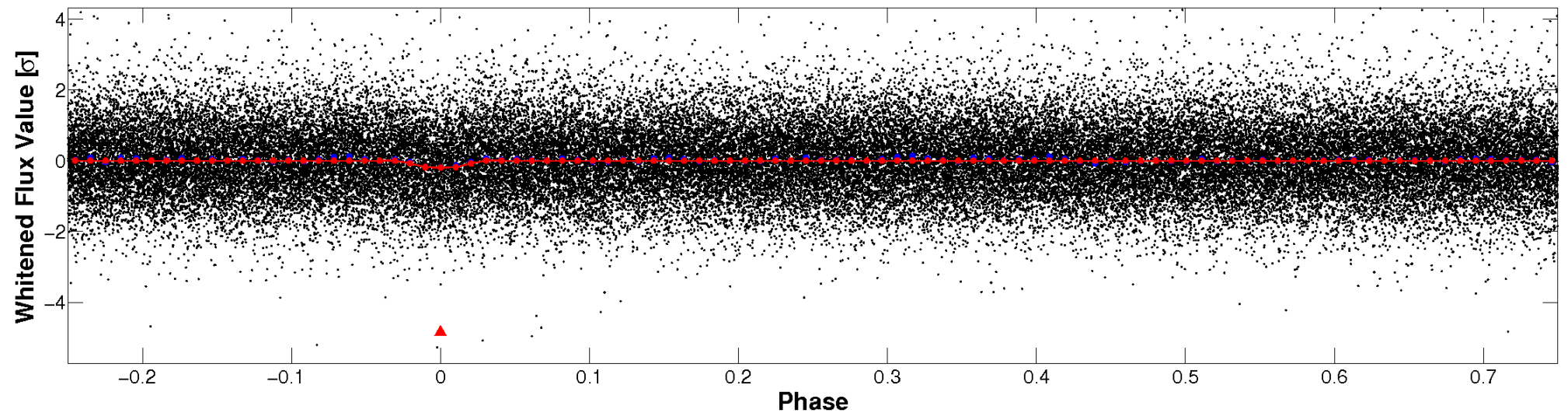


# Non-Whitened Vs. Whitened Light Curve

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



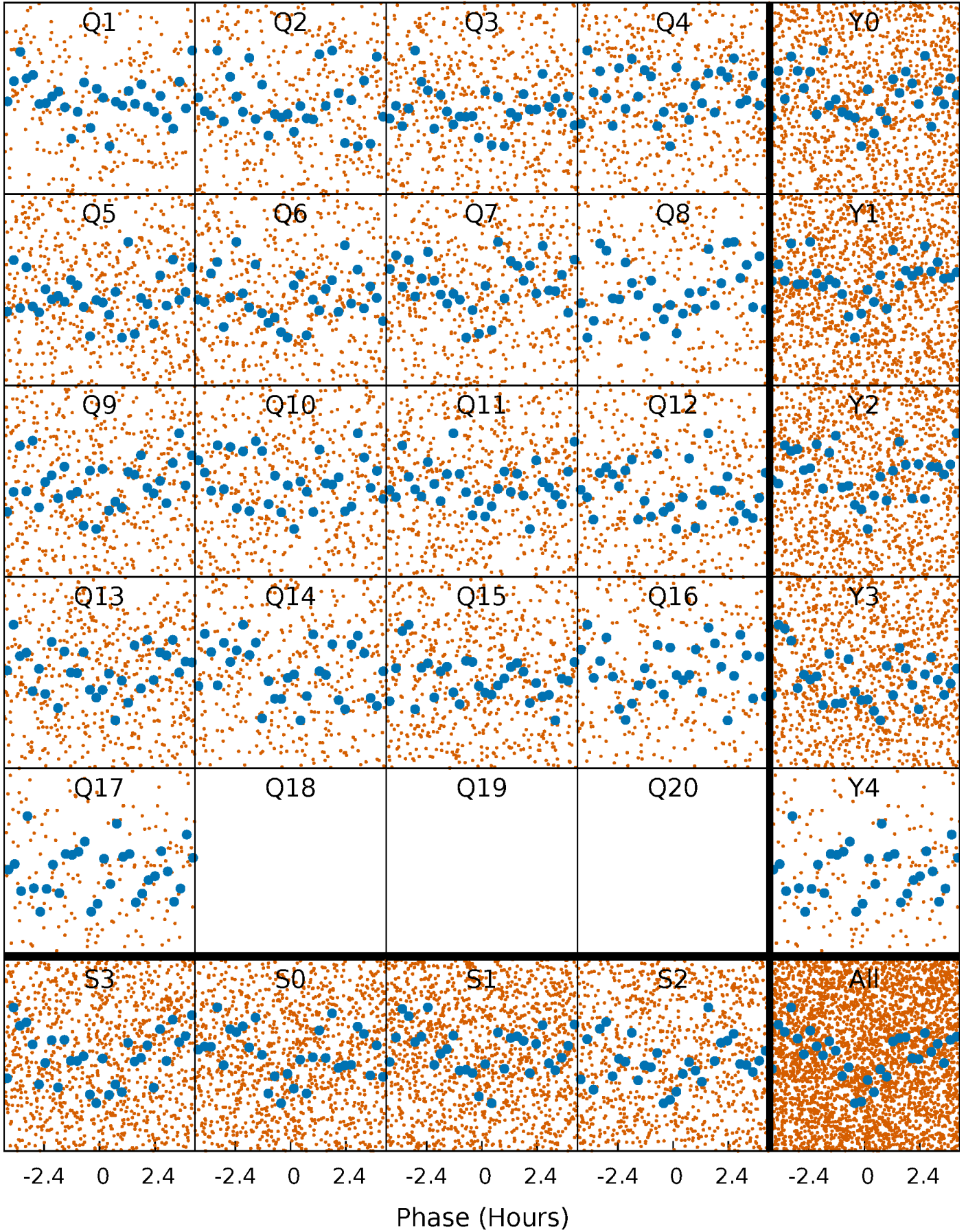
**Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)**





# PDC Quarter-Phased Transit Curves

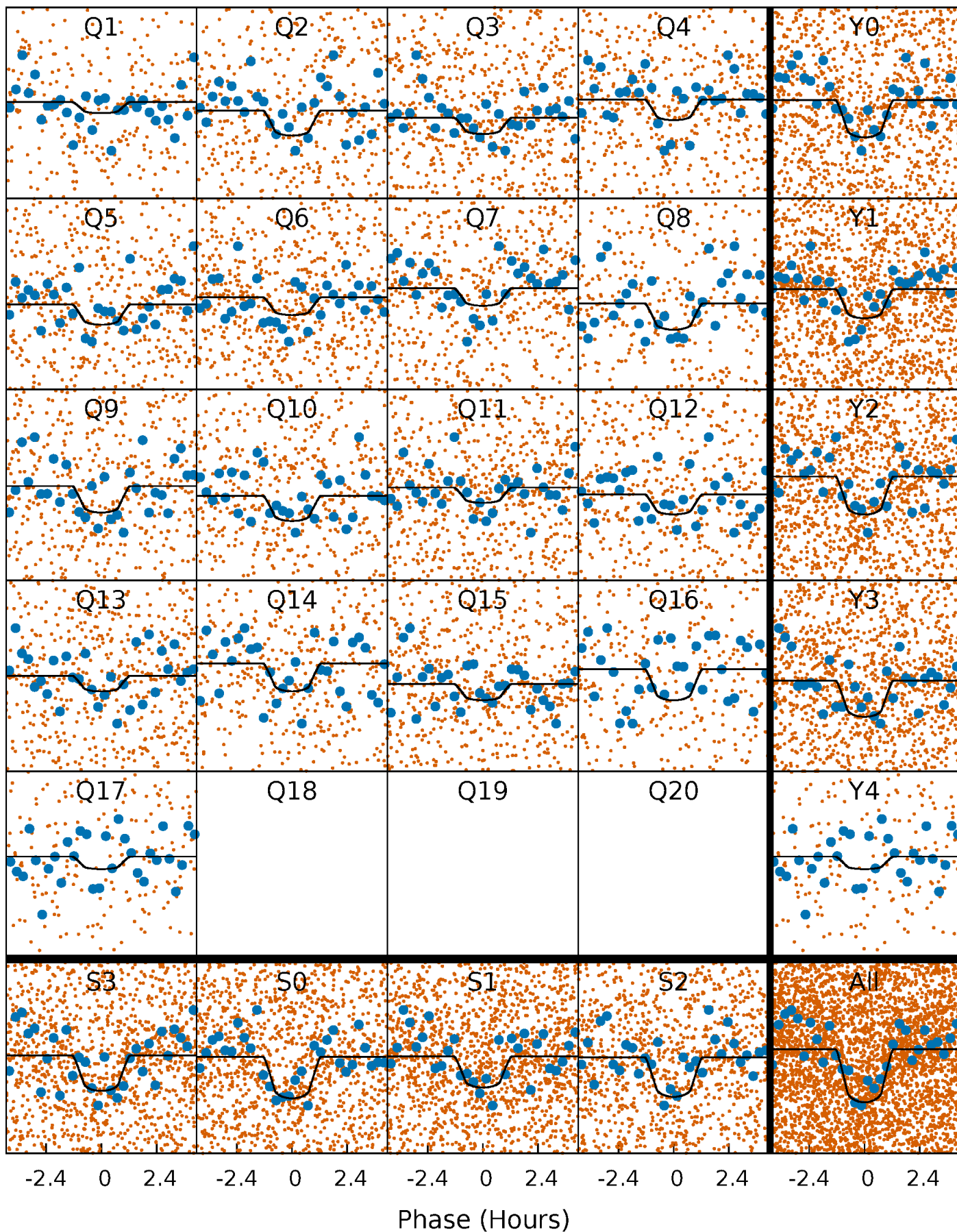
TCE 011296724-01 P= 1.999734 Days  $T_0=131.930173$  (BKJD)





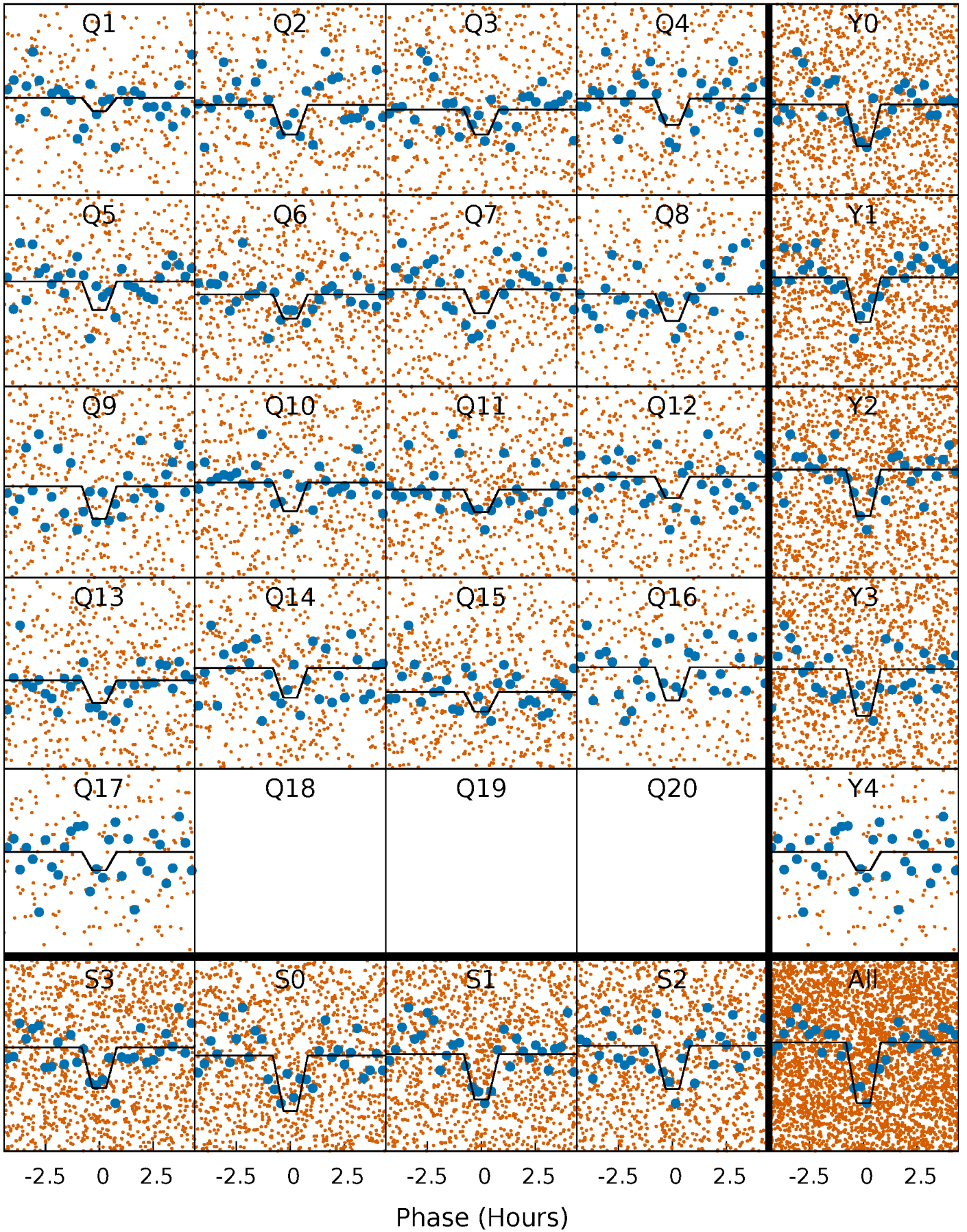
# DV Quarter-Phased Transit Curves

TCE 011296724-01 P= 1.999734 Days  $T_0=131.930173$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

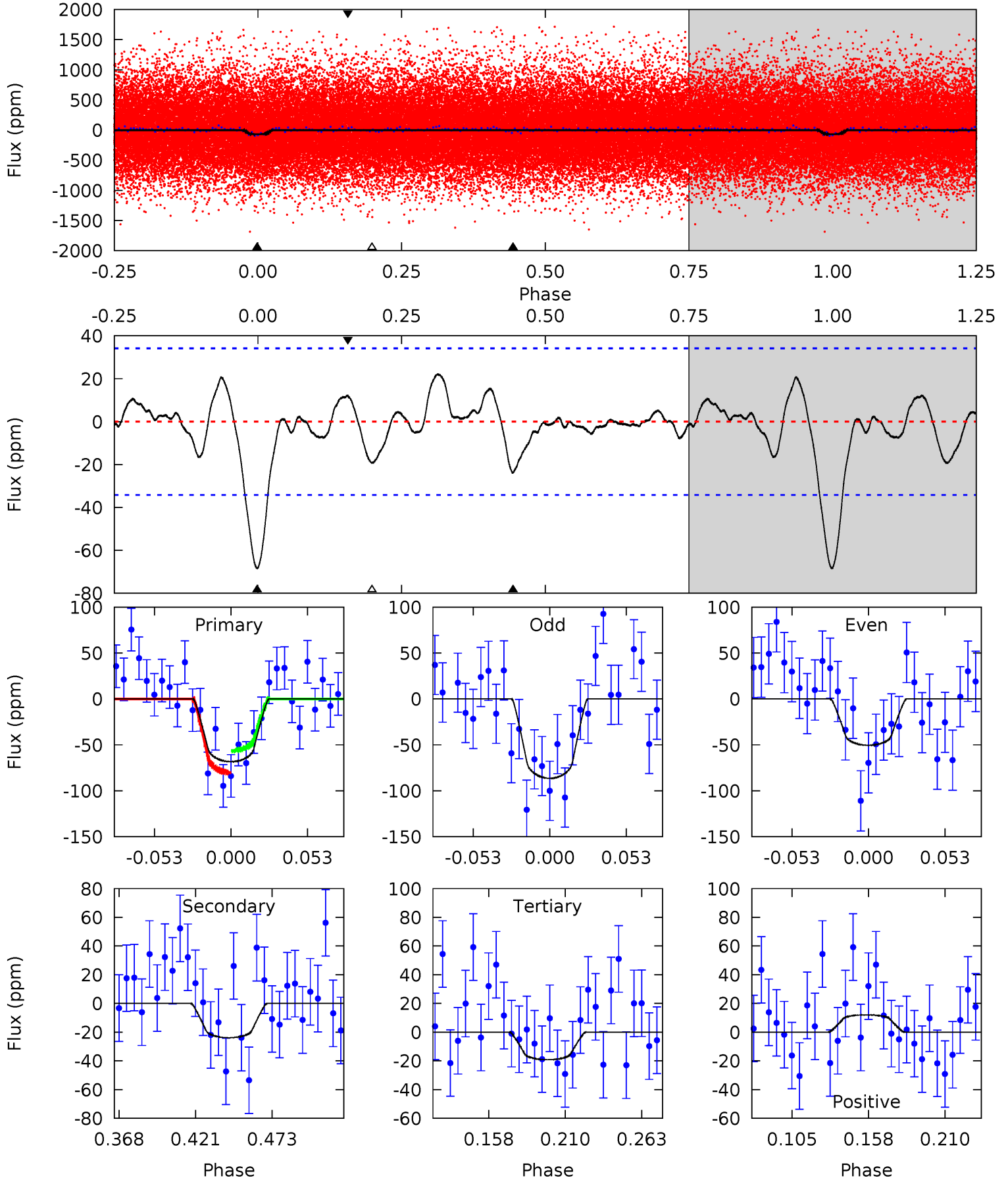
TCE 011296724-01 P= 1.999756 Days  $T_0=131.918676$  (BKJD)



# DV Model-Shift Uniqueness Test

011296724-01, P = 1.999734 Days, E = 129.930439 Days

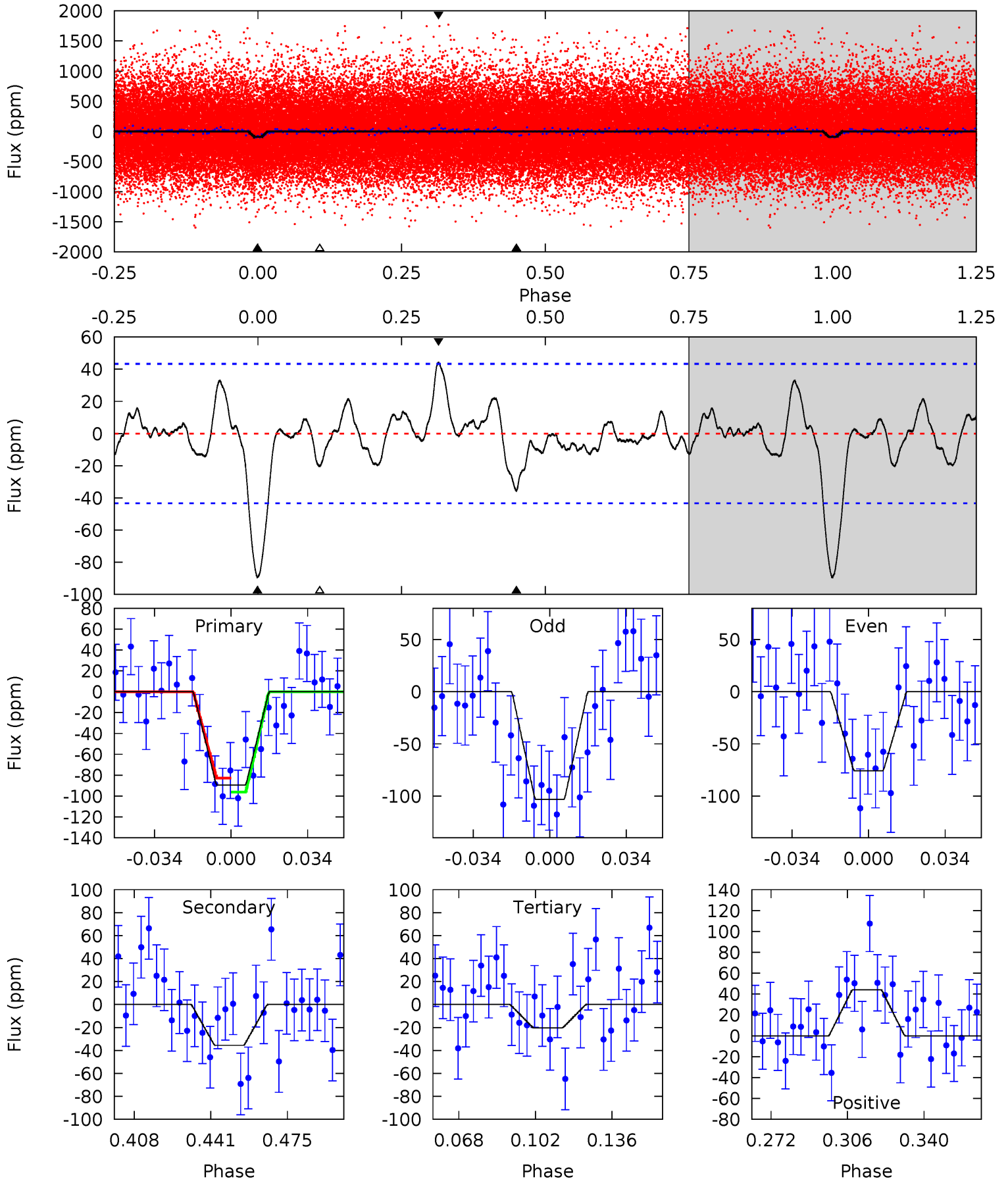
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
9.40	3.28	2.64	1.66	4.70	1.94	1.06	6.76	7.74	0.64	1.63	2.48	0.95	0.24	1.66



# Alt Model-Shift Uniqueness Test

011296724-01, P = 1.999756 Days, E = 129.918920 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
9.88	3.93	2.25	4.87	4.79	2.12	1.26	7.64	5.02	1.69	-0.93	1.51	1.08	0.33	0.74





### Stellar Parameters For KIC 011296724

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$5838^{+146}_{-175}$	$4.529^{+0.042}_{-0.178}$	$-0.080^{+0.250}_{-0.300}$	$0.897^{+0.216}_{-0.093}$	$0.992^{+0.104}_{-0.127}$	$1.938^{+0.442}_{-0.888}$
	+3%/-3%	+1%/-4%	+312%/-375%	+24%/-10%	+10%/-13%	+23%/-46%
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 011296724-01 / KOI 7437.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	$A_{obs}$
DV	$-24 \pm 7$	$1.13^{+0.89}_{-0.69}$	$1971^{+125}_{-84}$	$4070^{+2039}_{-777}$	$8.904^{+52.737}_{-6.309}$
Alt.	$-36 \pm 9$	$1.23^{+0.80}_{-0.71}$	$1975^{+121}_{-84}$	$4324^{+2074}_{-741}$	$13^{+57}_{-8}$

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

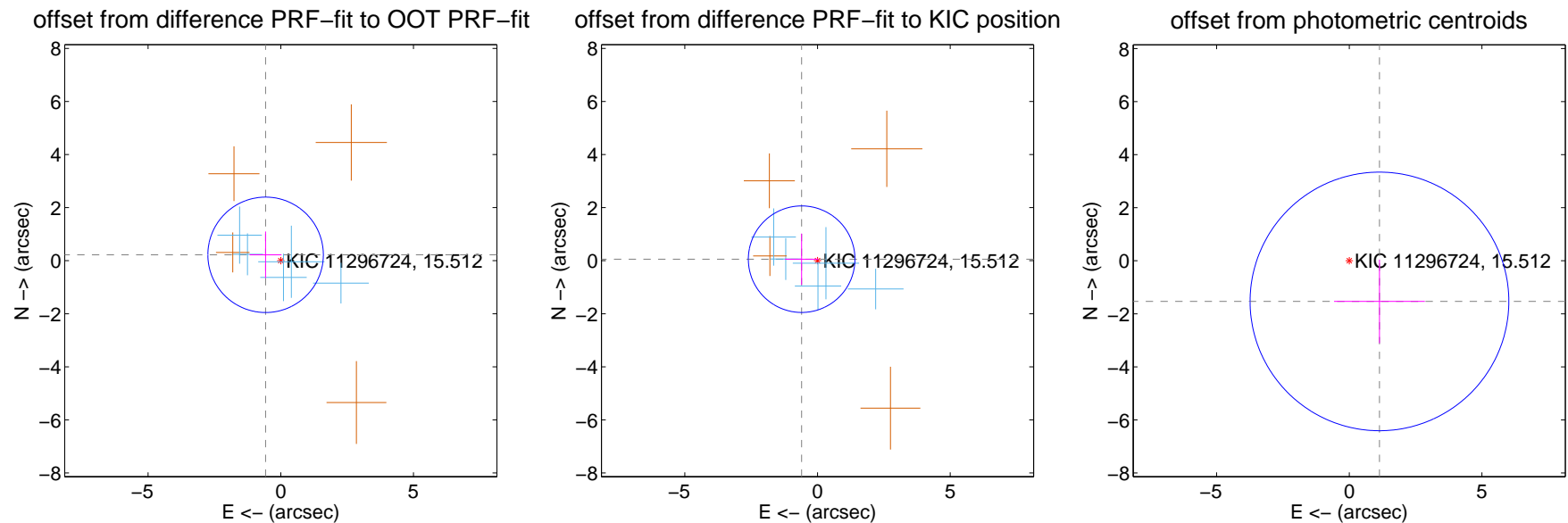
## DV Centroid Data

Supplemental centroid analysis for 011296724-01. Kepler magnitude: 15.51. Transit SNR 8.61

There are 5 quarters with good PRF difference image offsets

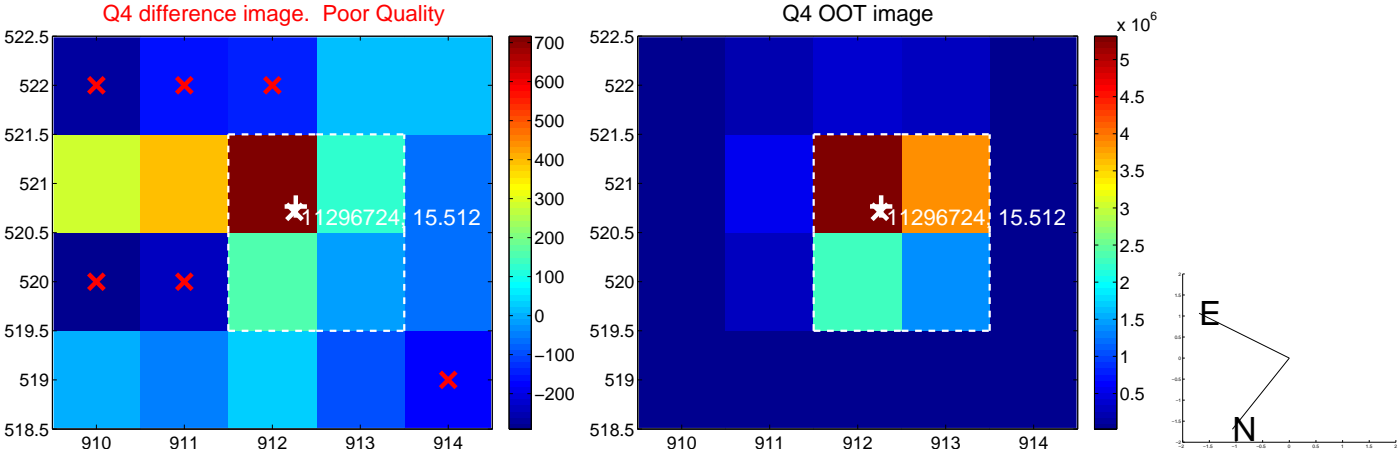
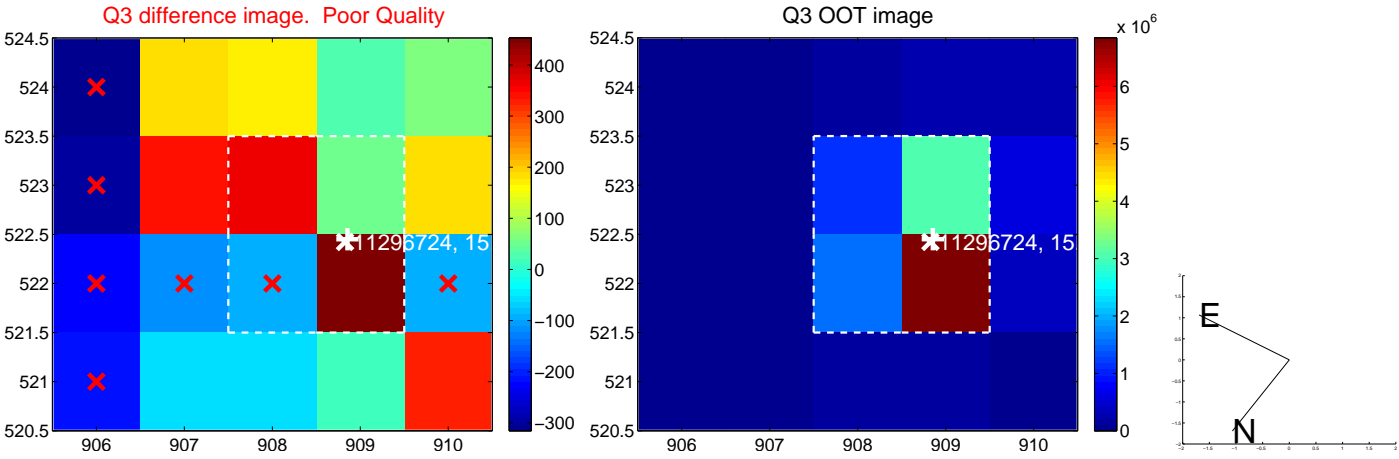
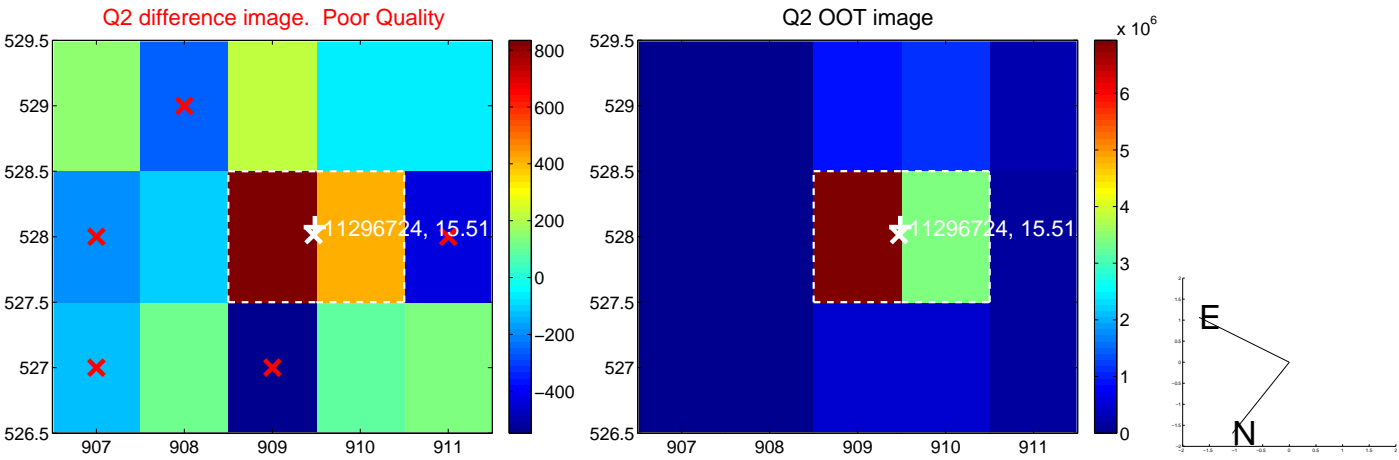
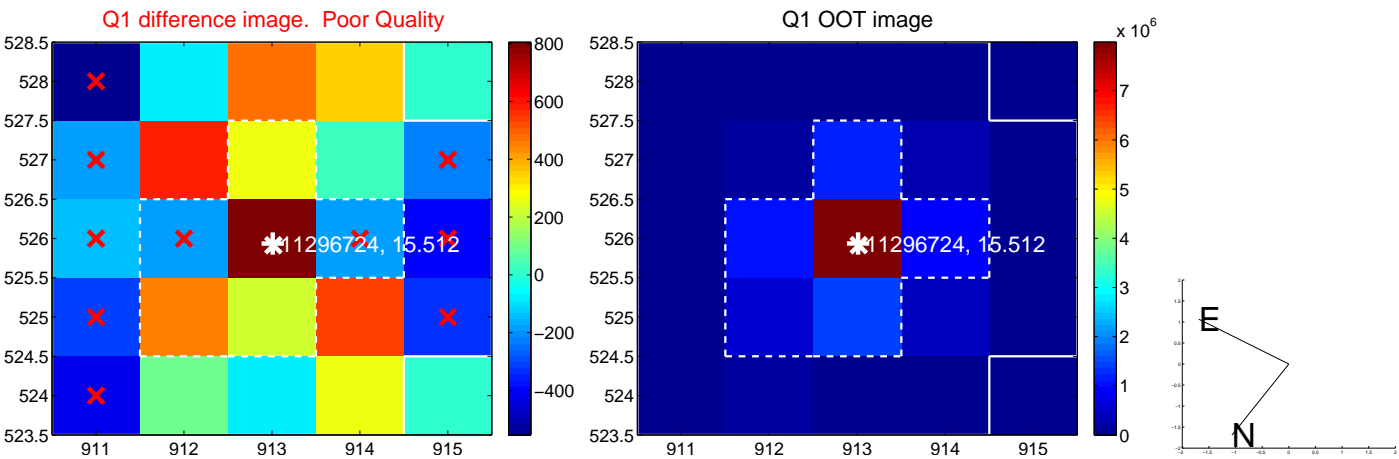
The direct PRF centroid is offset from the target star catalog position by about 0.33 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.613 \pm 0.725$	0.85	$0.572 \pm 0.602$	$0.222 \pm 0.877$
PRF-fit source offset from KIC position	$0.600 \pm 0.669$	0.90	$0.598 \pm 0.629$	$0.057 \pm 0.967$
photometric centroid source offset	$1.91 \pm 1.62$	1.17	$-1.14 \pm 1.71$	$-1.53 \pm 1.58$

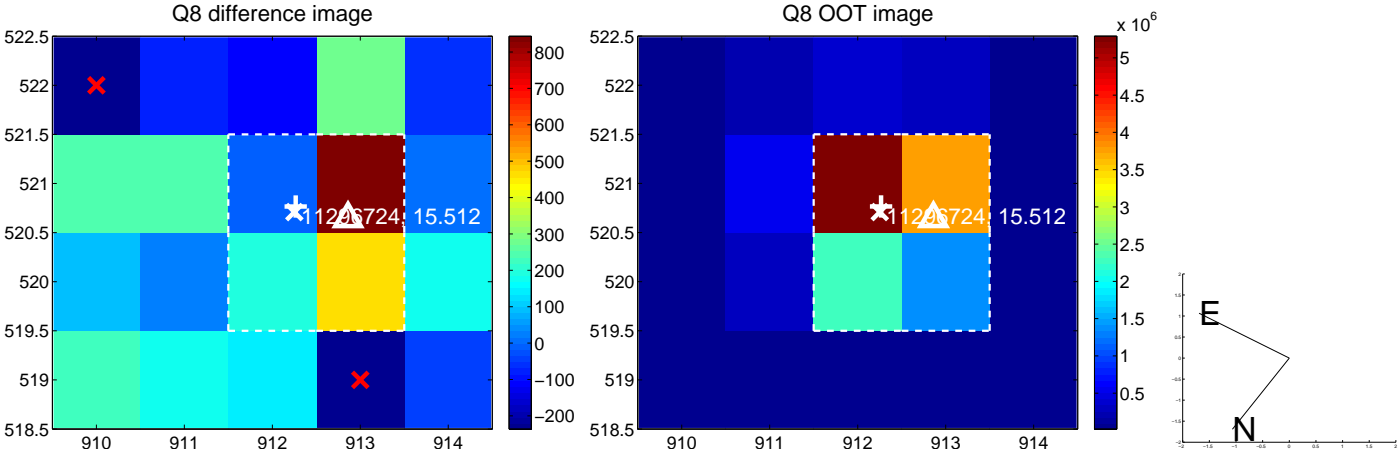
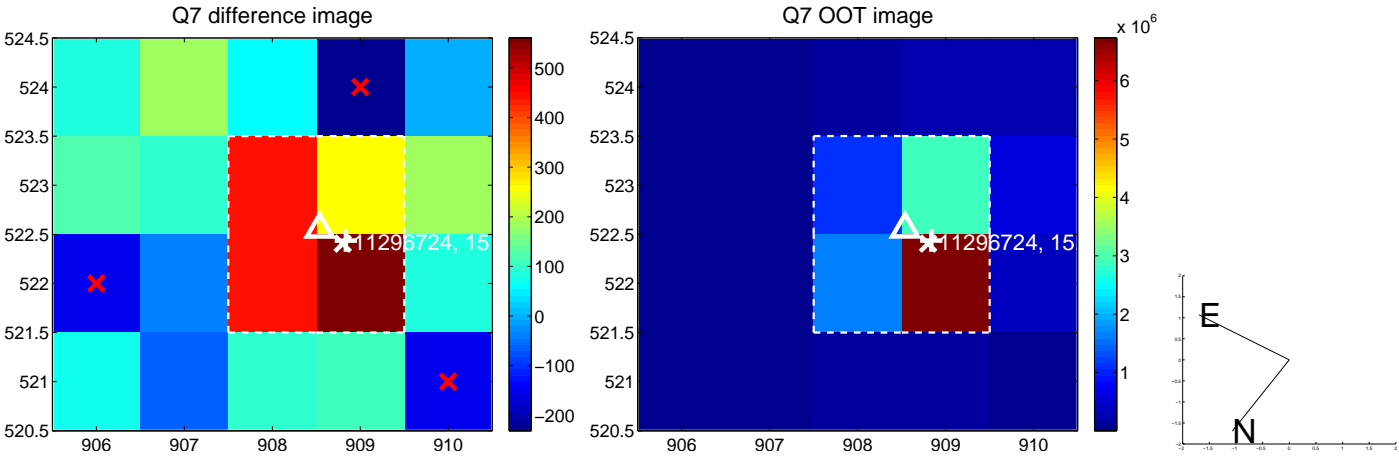
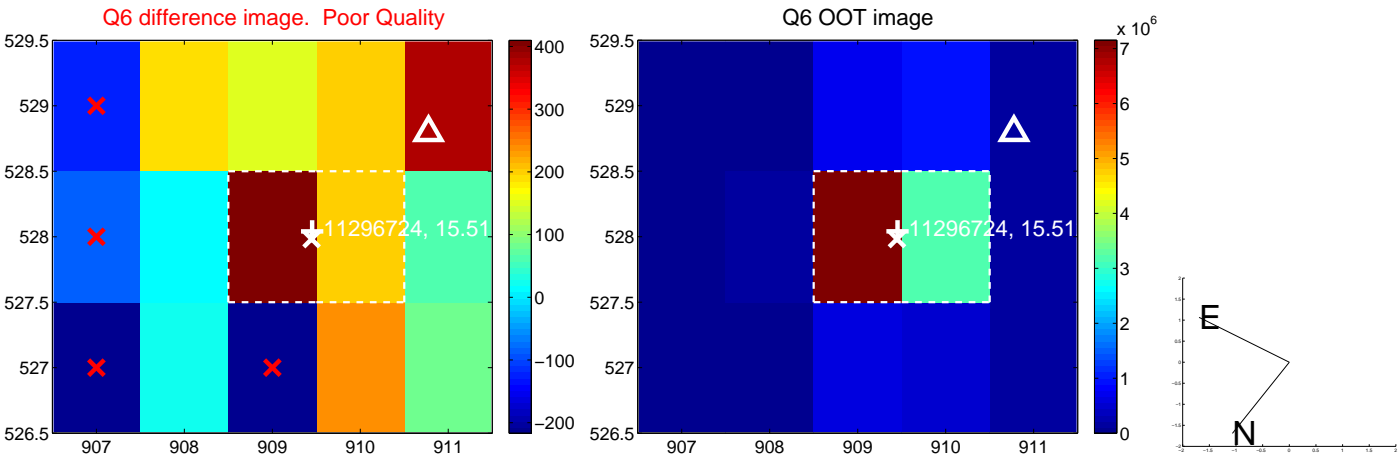
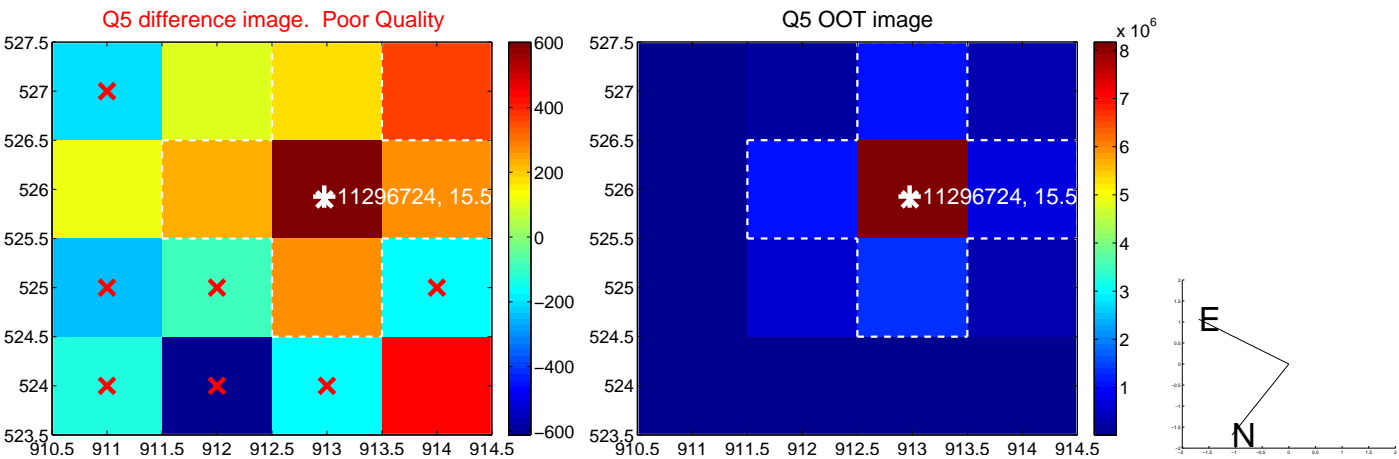


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets**; **Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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

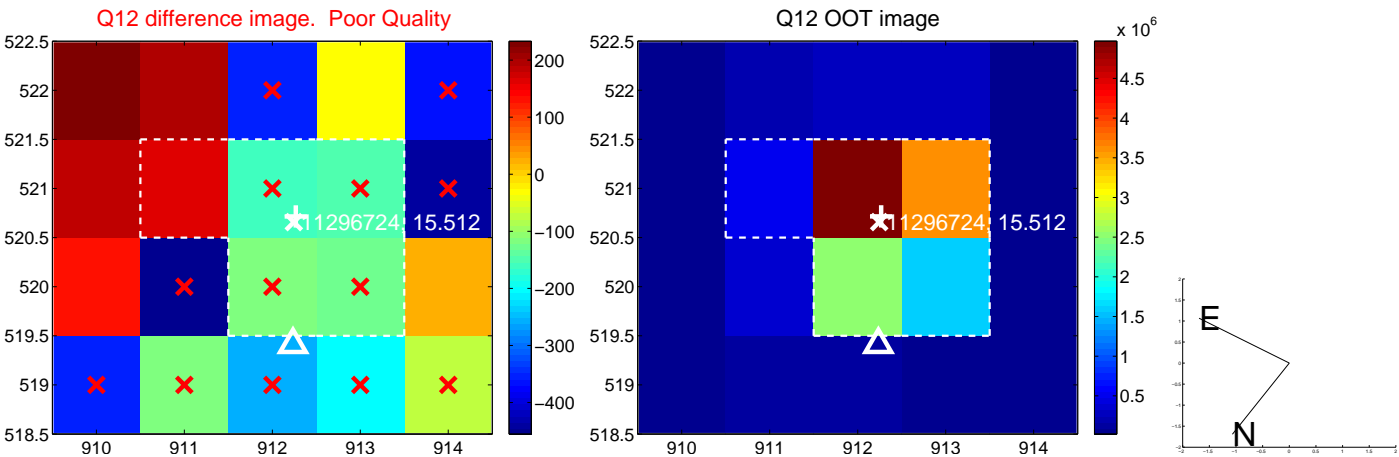
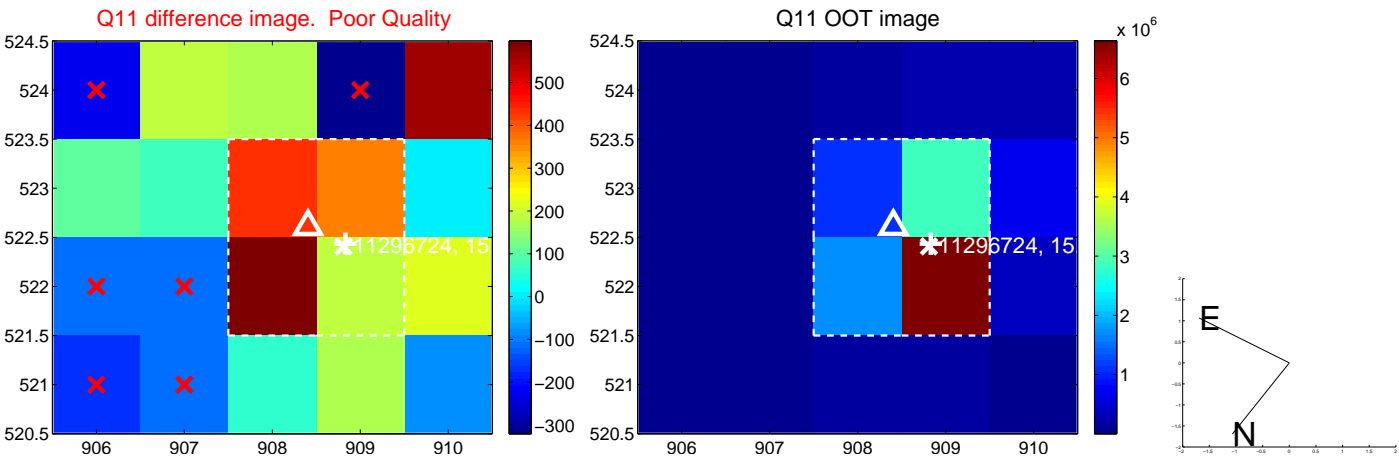
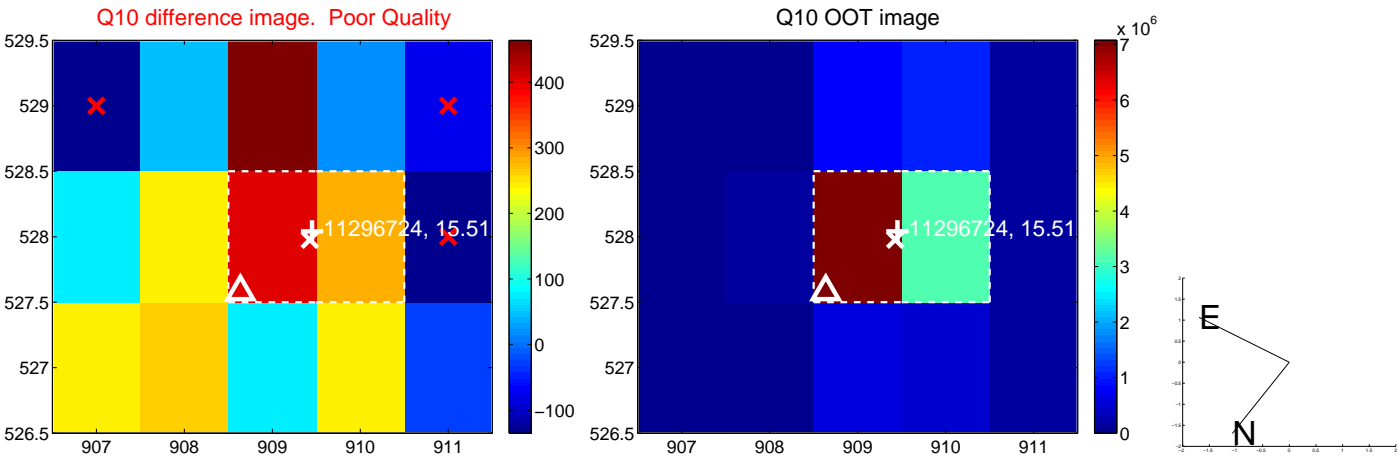
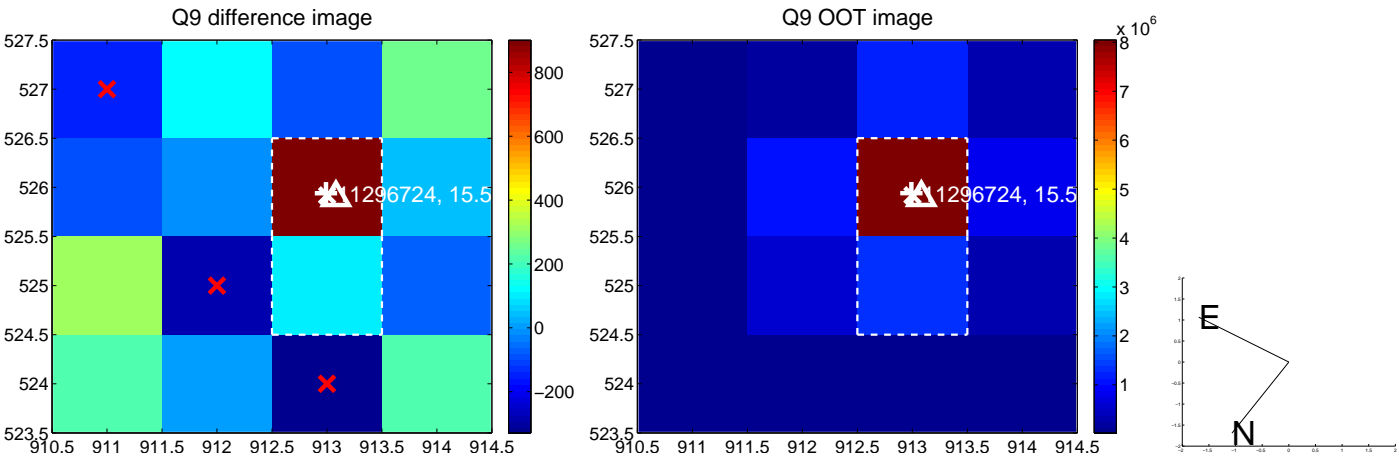


white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

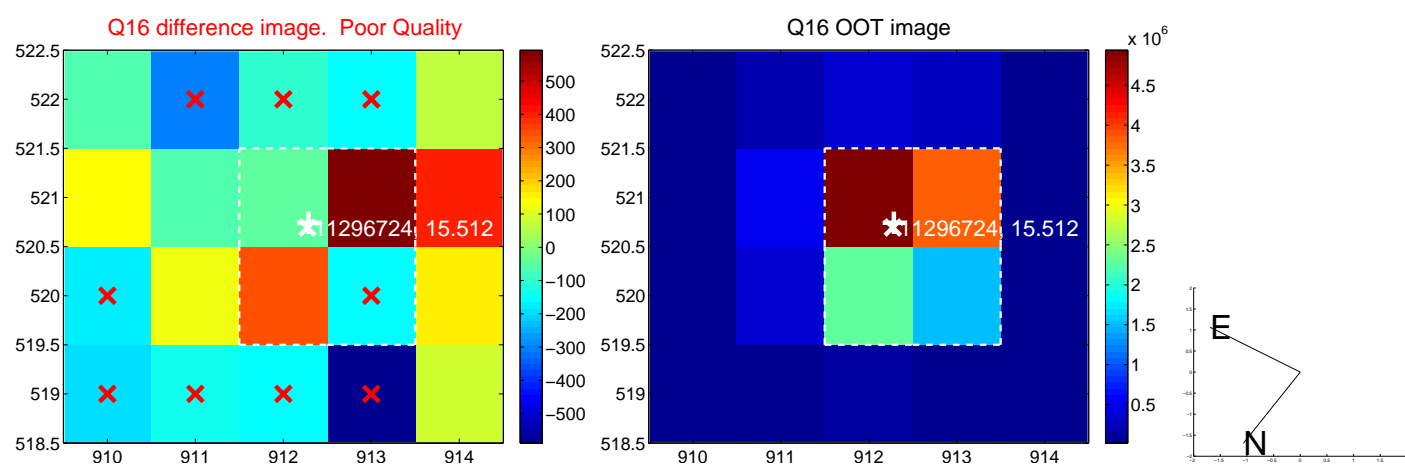
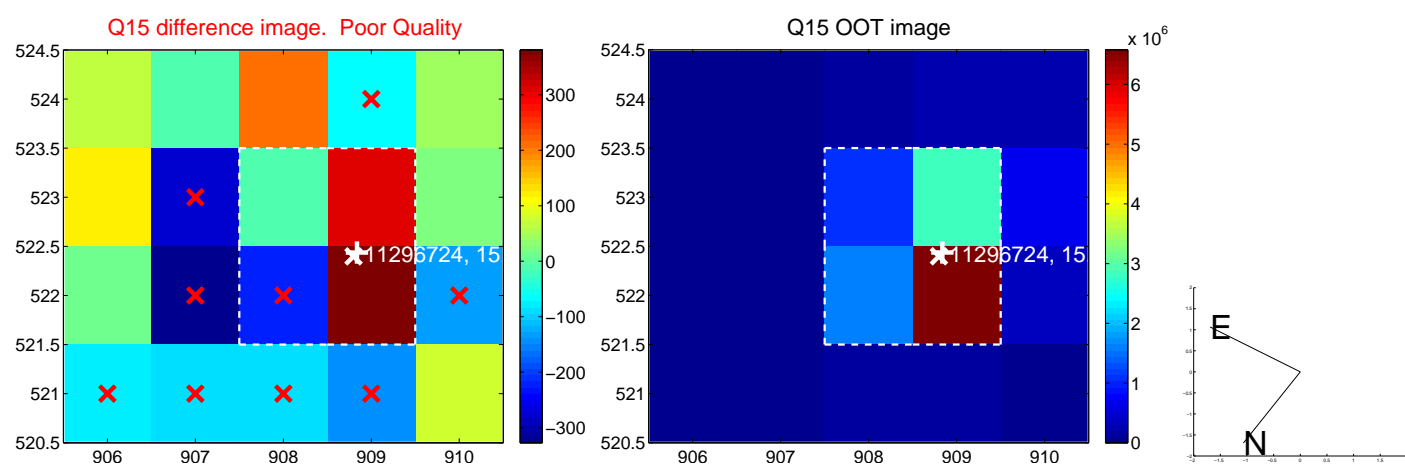
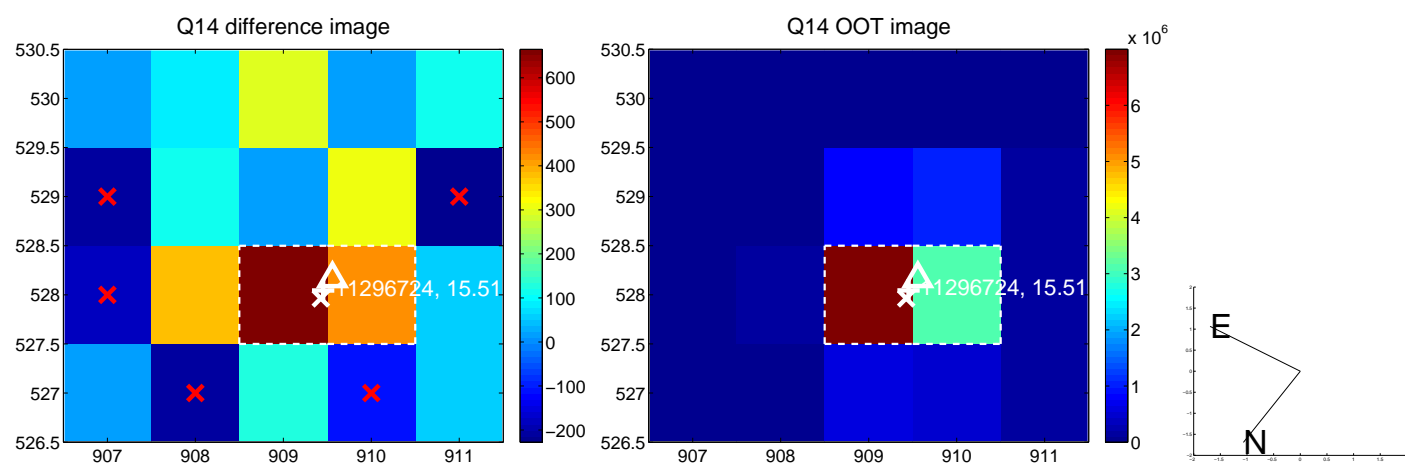
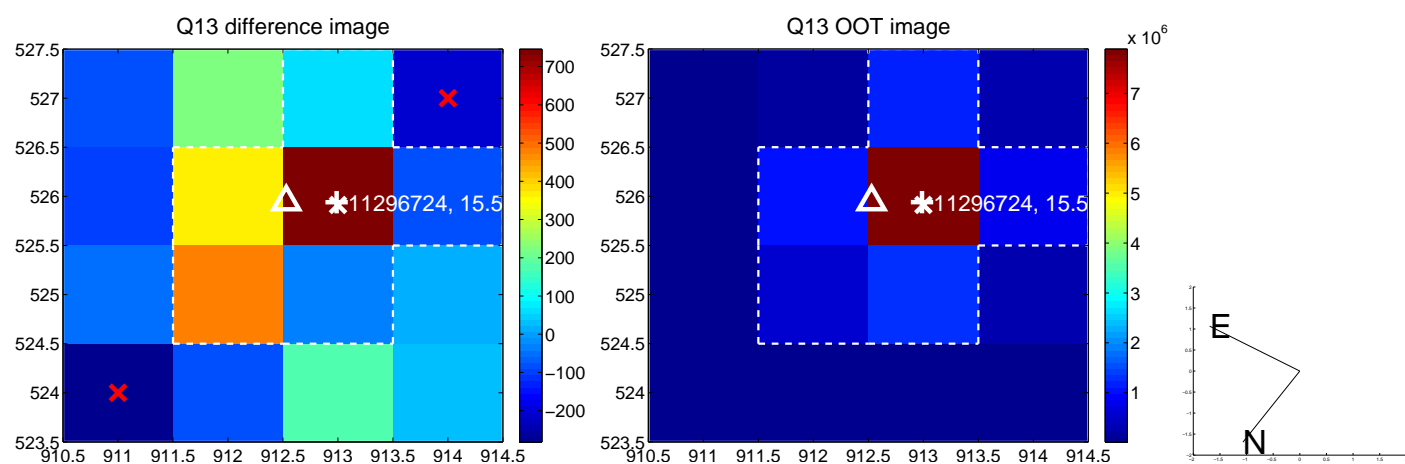




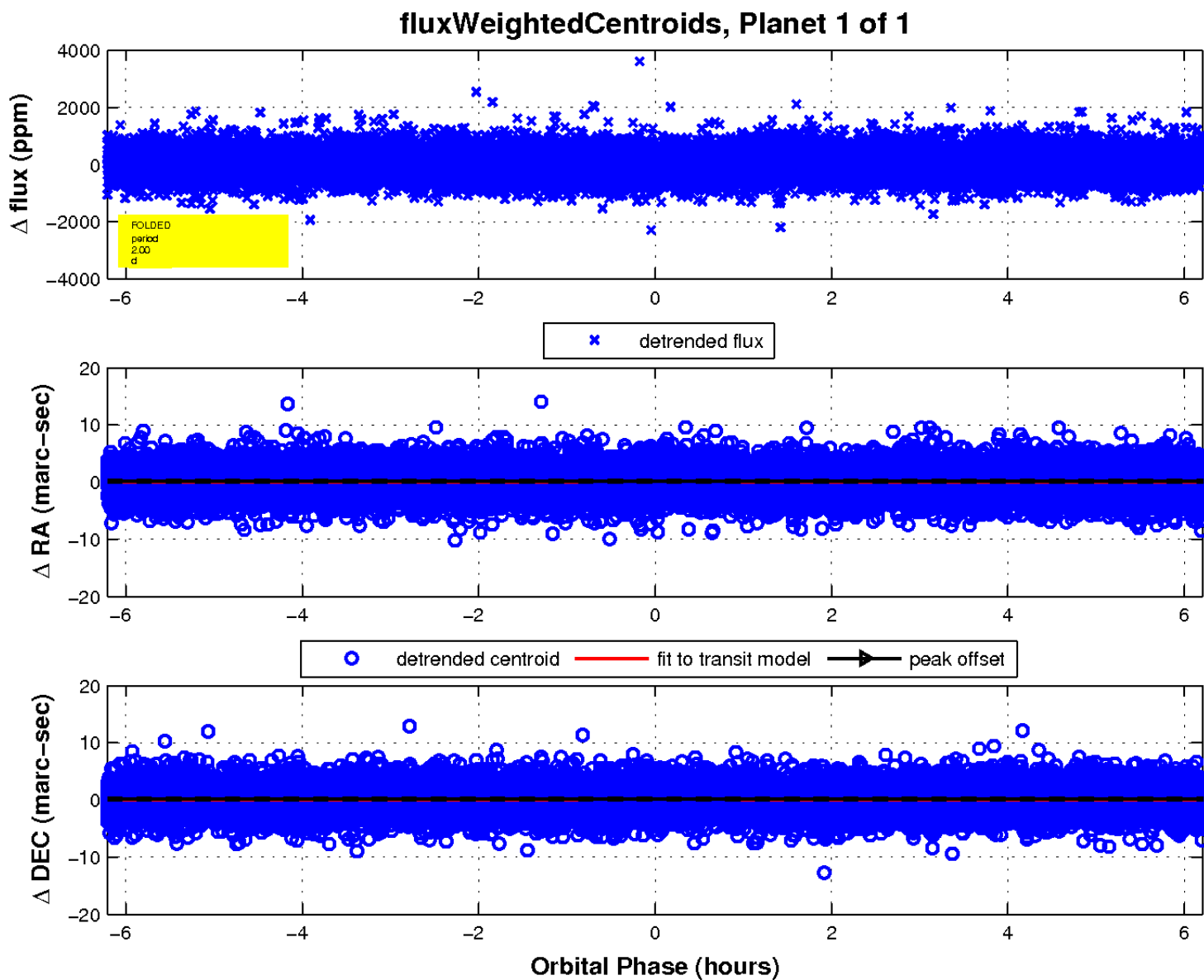
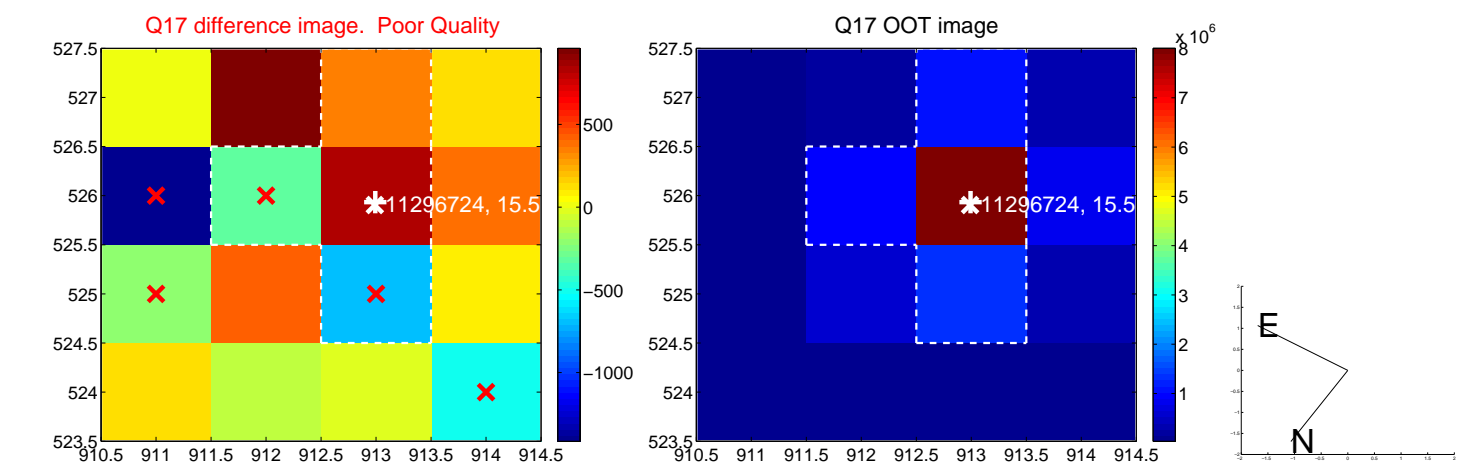
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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

