

# KIC 004902475

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
004902475-01	OBS	No	1.019341	131.806020	51.2	3.760	8.6	7.2	2.00	7390	1.67	19964.33

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
004902475-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT

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

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

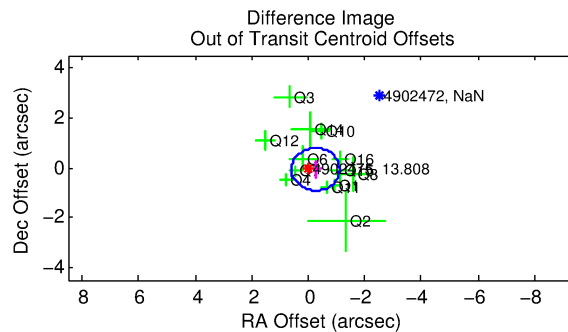
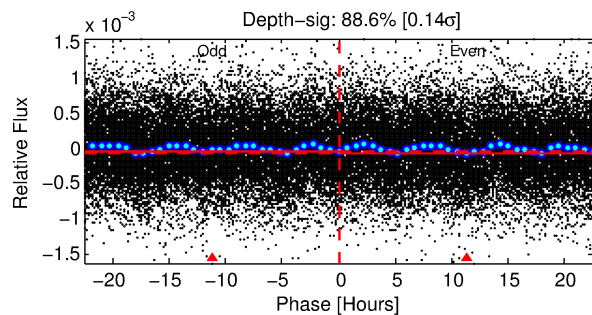
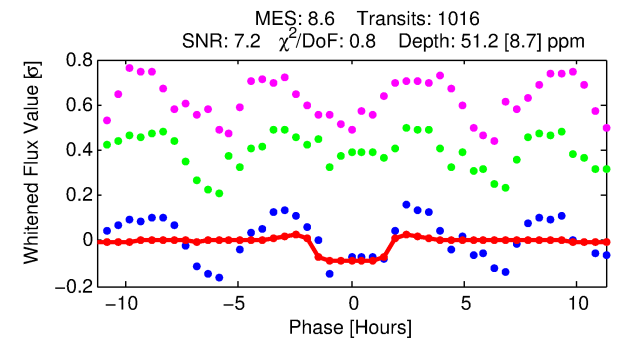
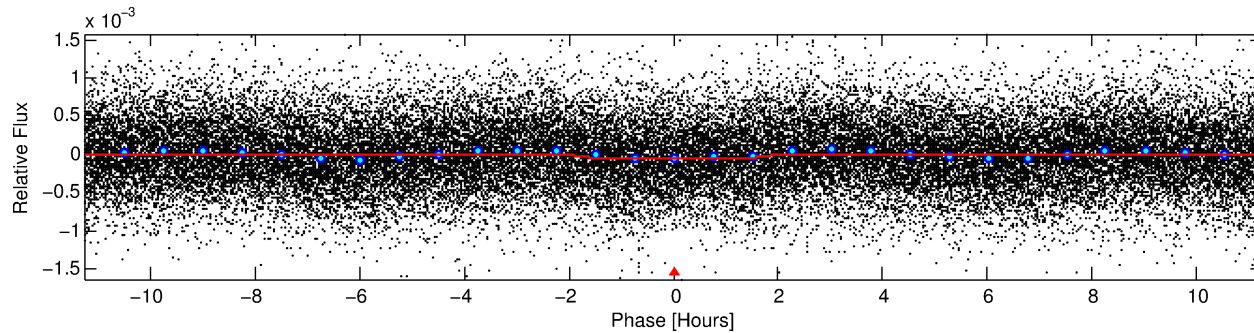
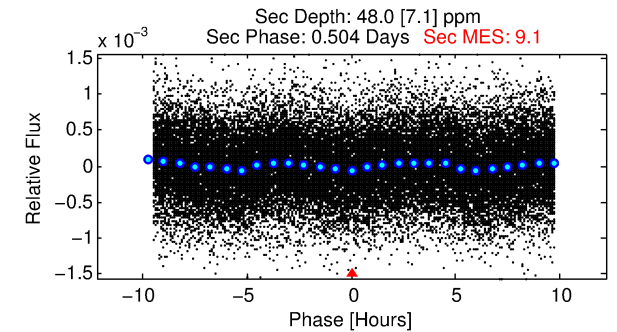
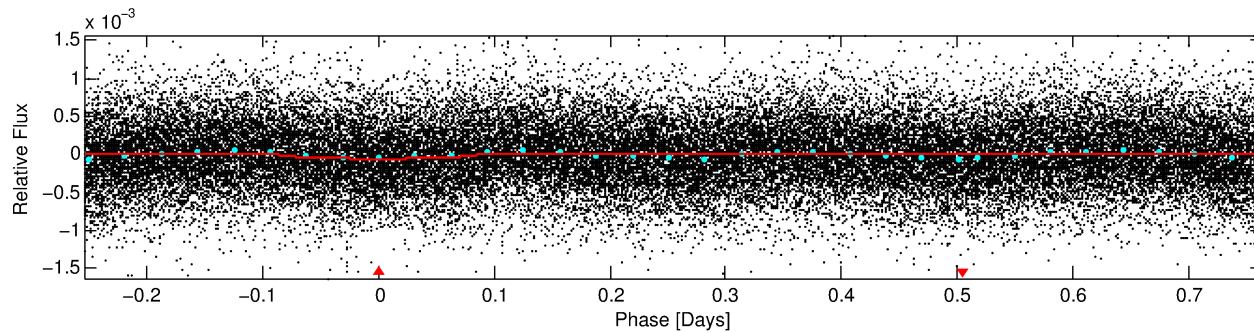
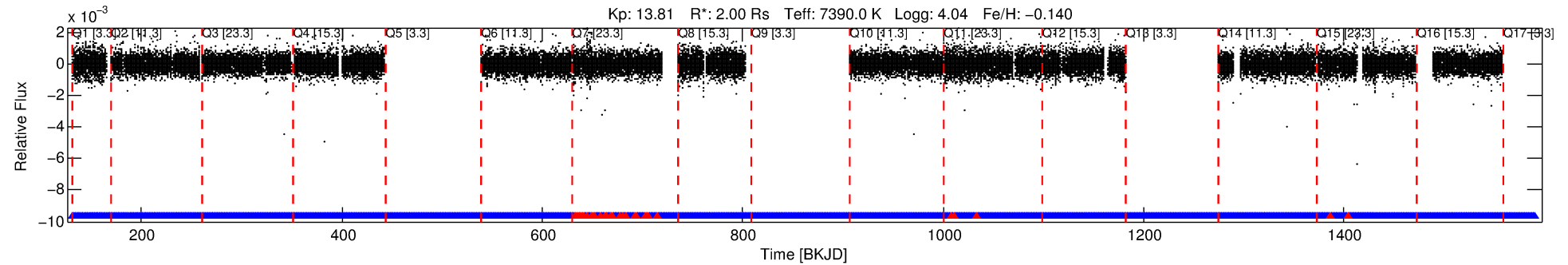
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 004902475-01

No Significant Match Found

# DV One-Page Summary

KIC: 4902475 Candidate: 1 of 1 Period: 1.019 d



## DV Fit Results:

Period = 1.01934 [0.00002] d  
Epoch = 131.8060 [0.0045] BKJD  
Rp/R\* = 0.0077 [0.0041]  
a/R\* = 1.32 [1.82]  
b = 0.90 [0.67]  
Seff = 19964.34 [7800.56]  
Teq = 3031 [296] K  
Rp = 1.67 [1.00] Re  
a = 0.0231 [0.0055] AU  
Ag = 5.07 [5.75] [0.71σ]  
Teffp = 7031 [1916] K [2.06σ]

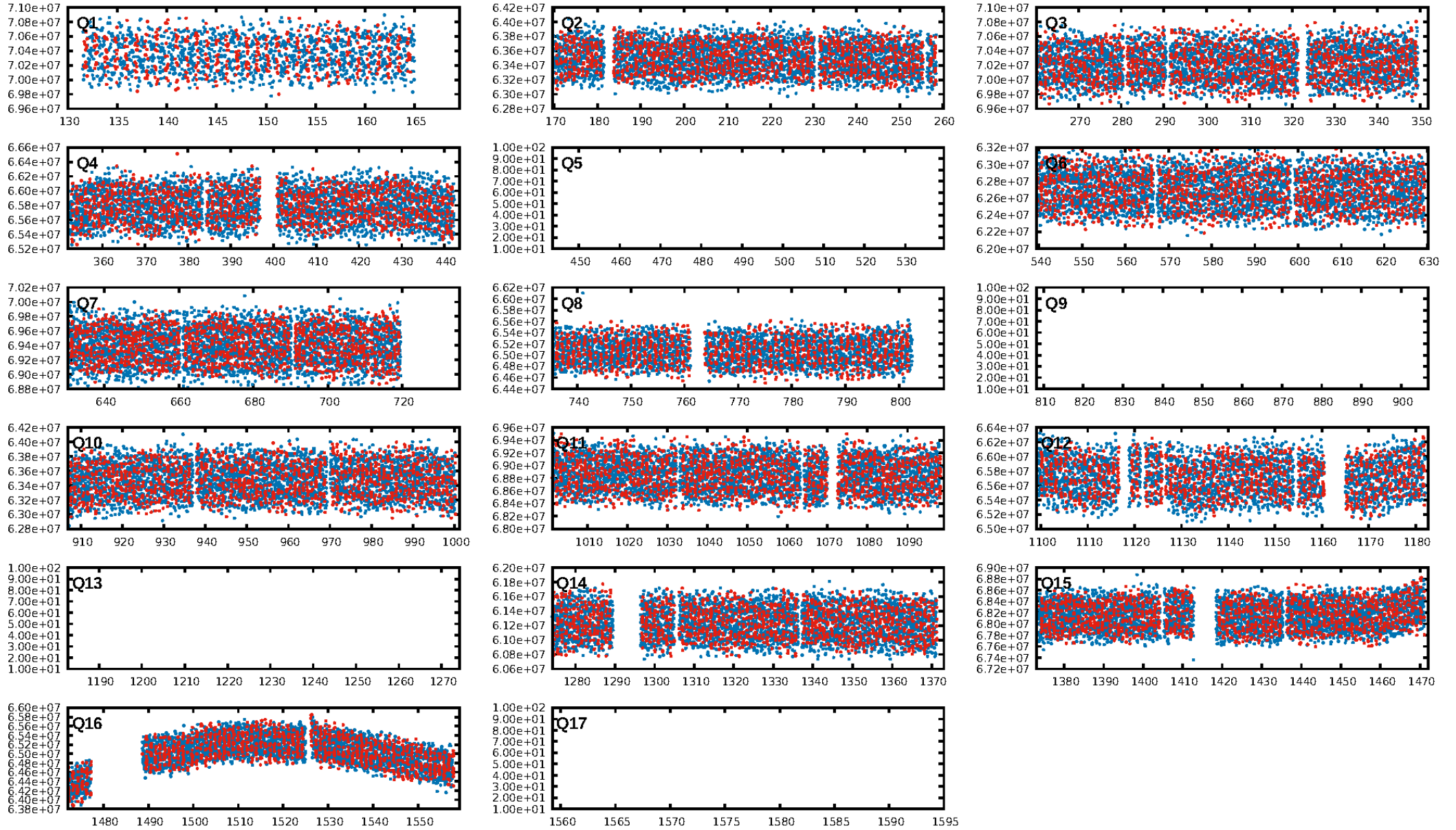
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: N/A  
ModelChiSquareGof-sig: N/A  
Bootstrap-pfa: 8.18e-15  
RollingBand-fgt: 0.96 [948/983]  
GhostDiagnostic-chr: 1.319  
Centroid-sig: 27.7%  
Centroid-so: 0.973 arcsec [1.39σ]  
OotOffset-rm: 0.255 arcsec [0.89σ]  
KicOffset-rm: 0.301 arcsec [1.04σ]  
OotOffset-st: 4/4/4/1 [13]  
KicOffset-st: 4/4/4/1 [13]  
DiffImageQuality-fgm: 0.62 [8/13]  
DiffImageOverlap-fno: 1.00 [13/13]

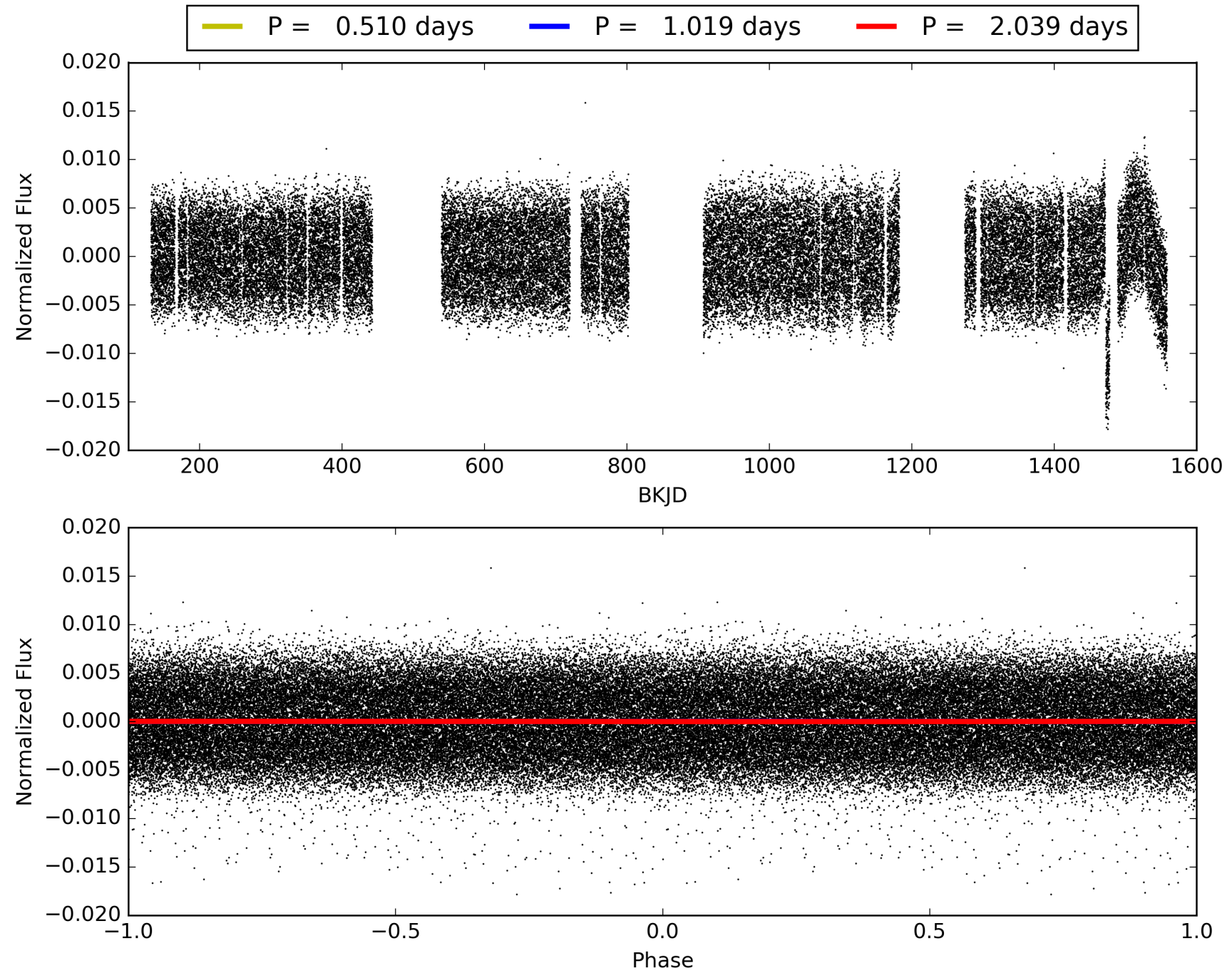
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 02:07:50 Z

This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

# TCE 004902475-01, PDC Light Curves

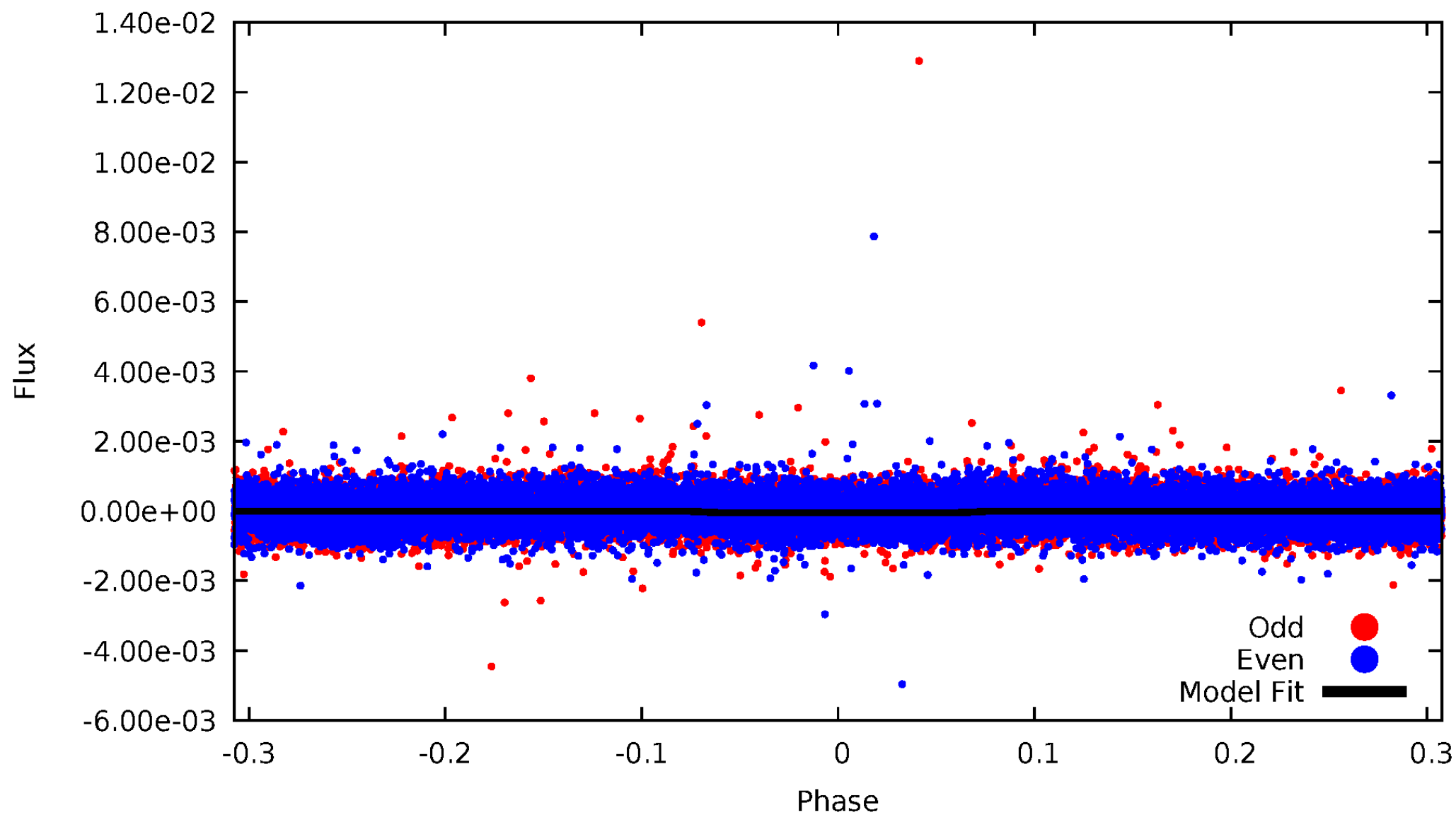


TCE 004902475-01



# DV Odd/Even

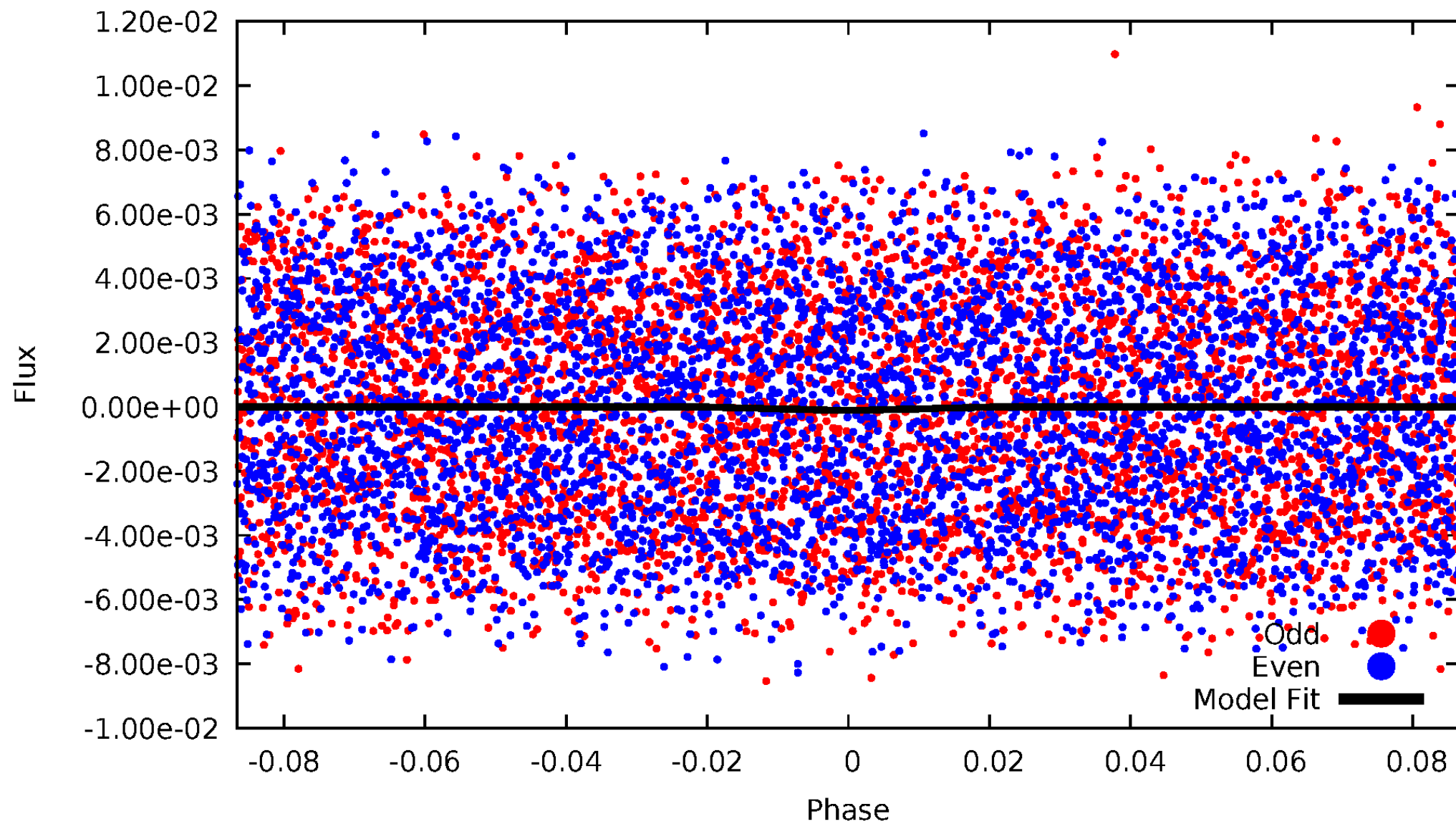
TCE 004902475-01





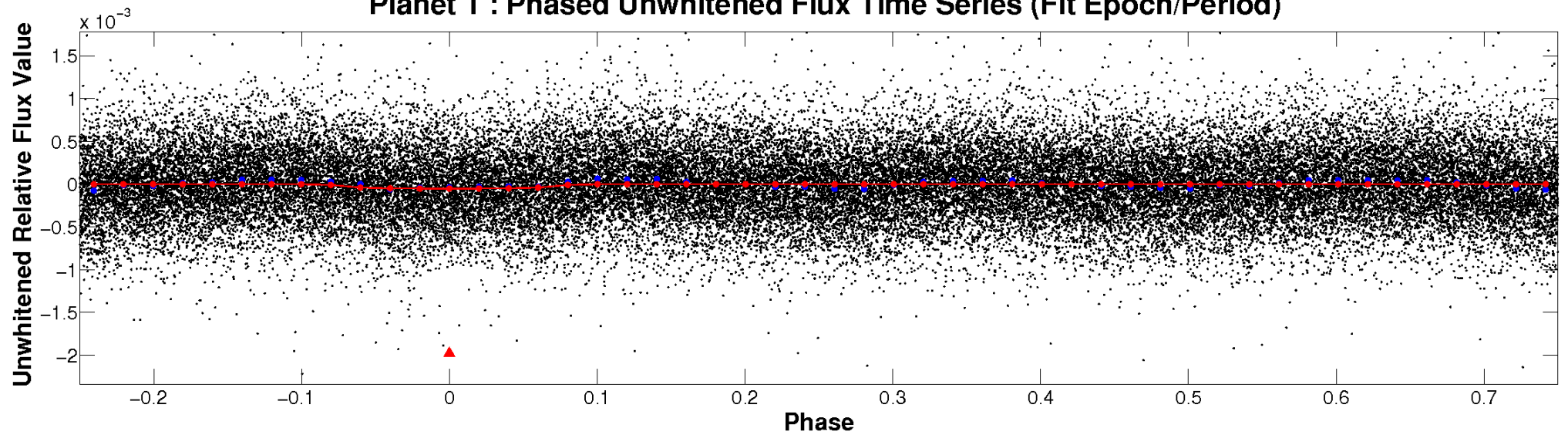
# ALT Odd/Even

TCE 004902475-01

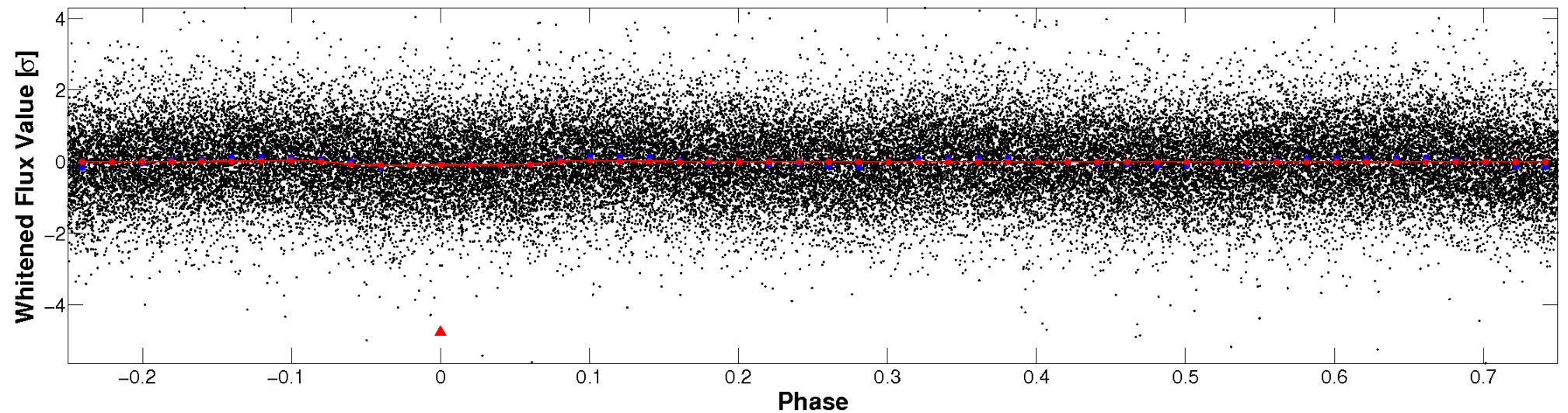


# Non-Whitened Vs. Whitened Light Curve

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

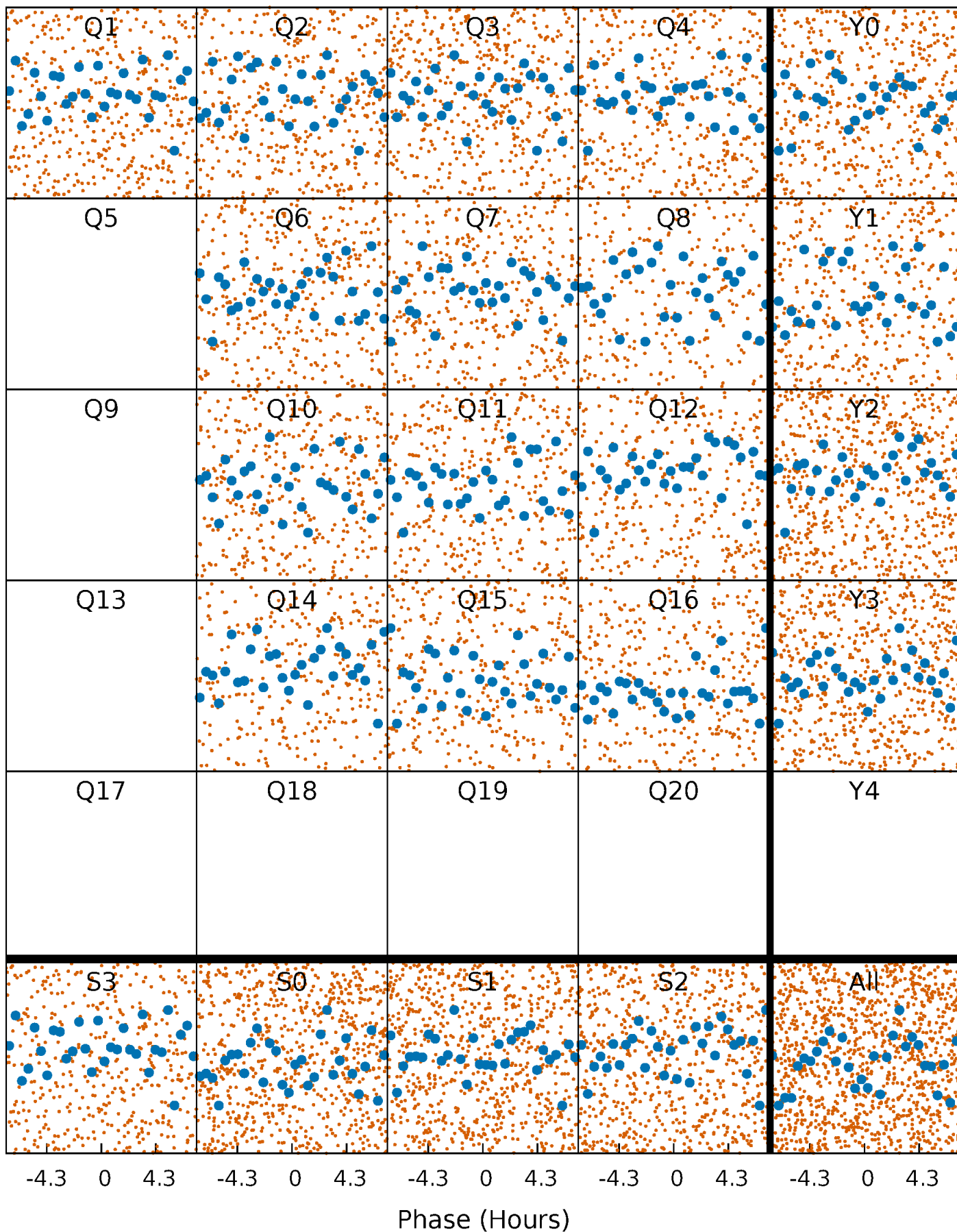


**Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)**



# PDC Quarter-Phased Transit Curves

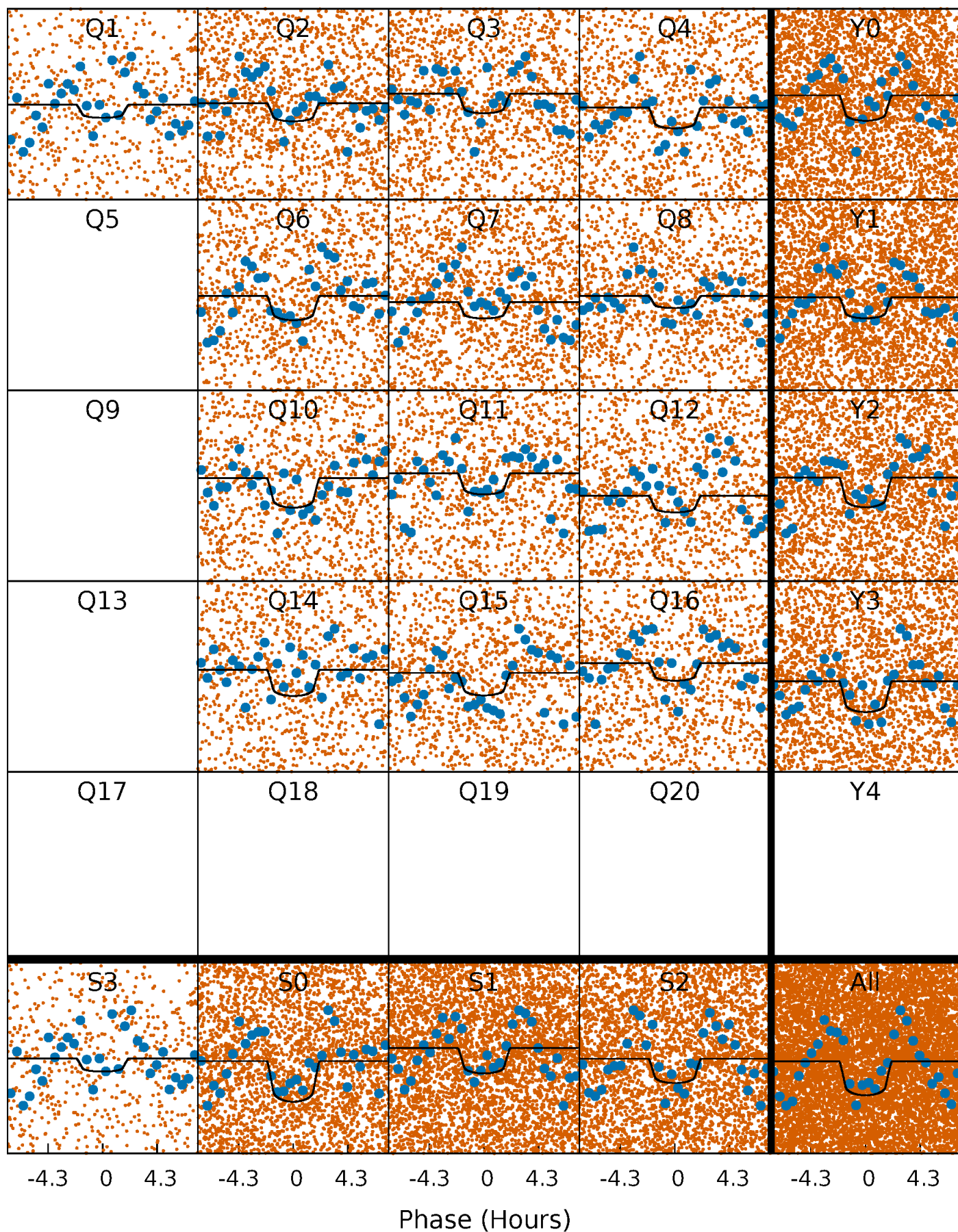
TCE 004902475-01 P= 1.019341 Days  $T_0=131.806020$  (BKJD)





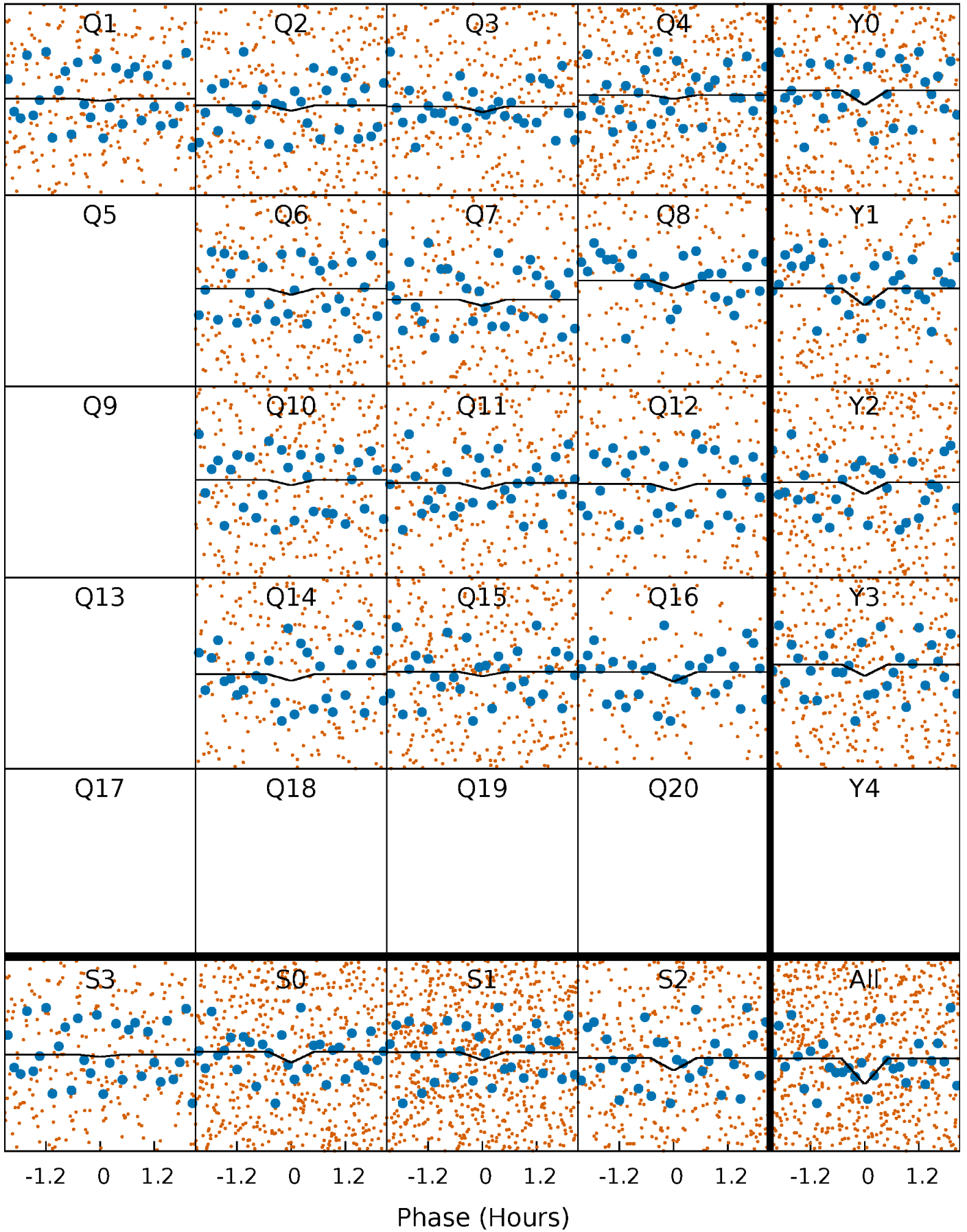
# DV Quarter-Phased Transit Curves

TCE 004902475-01 P= 1.019341 Days  $T_0=131.806020$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

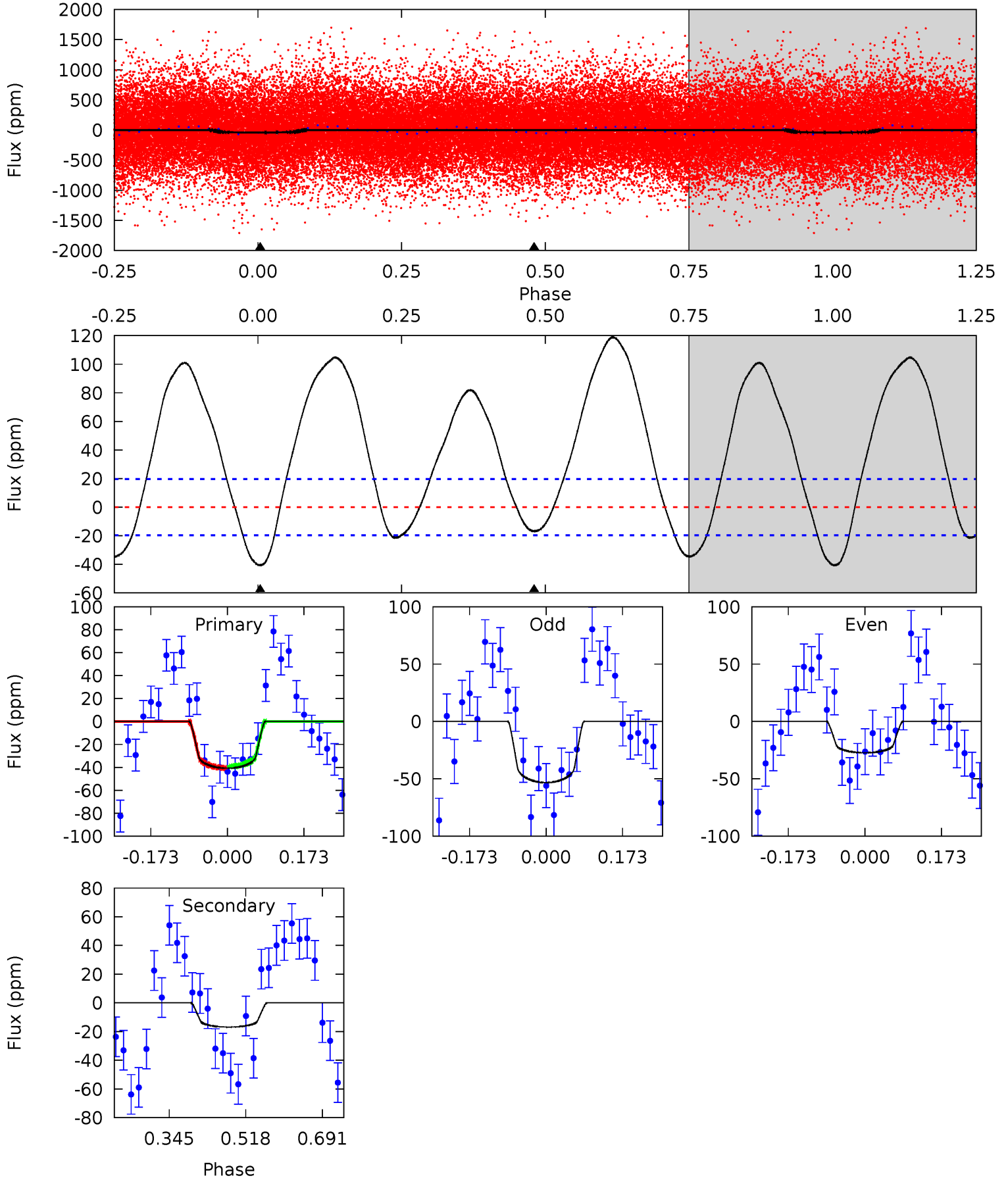
TCE 004902475-01 P= 1.019347 Days  $T_0=131.807946$  (BKJD)



# DV Model-Shift Uniqueness Test

004902475-01, P = 1.019341 Days, E = 130.786679 Days

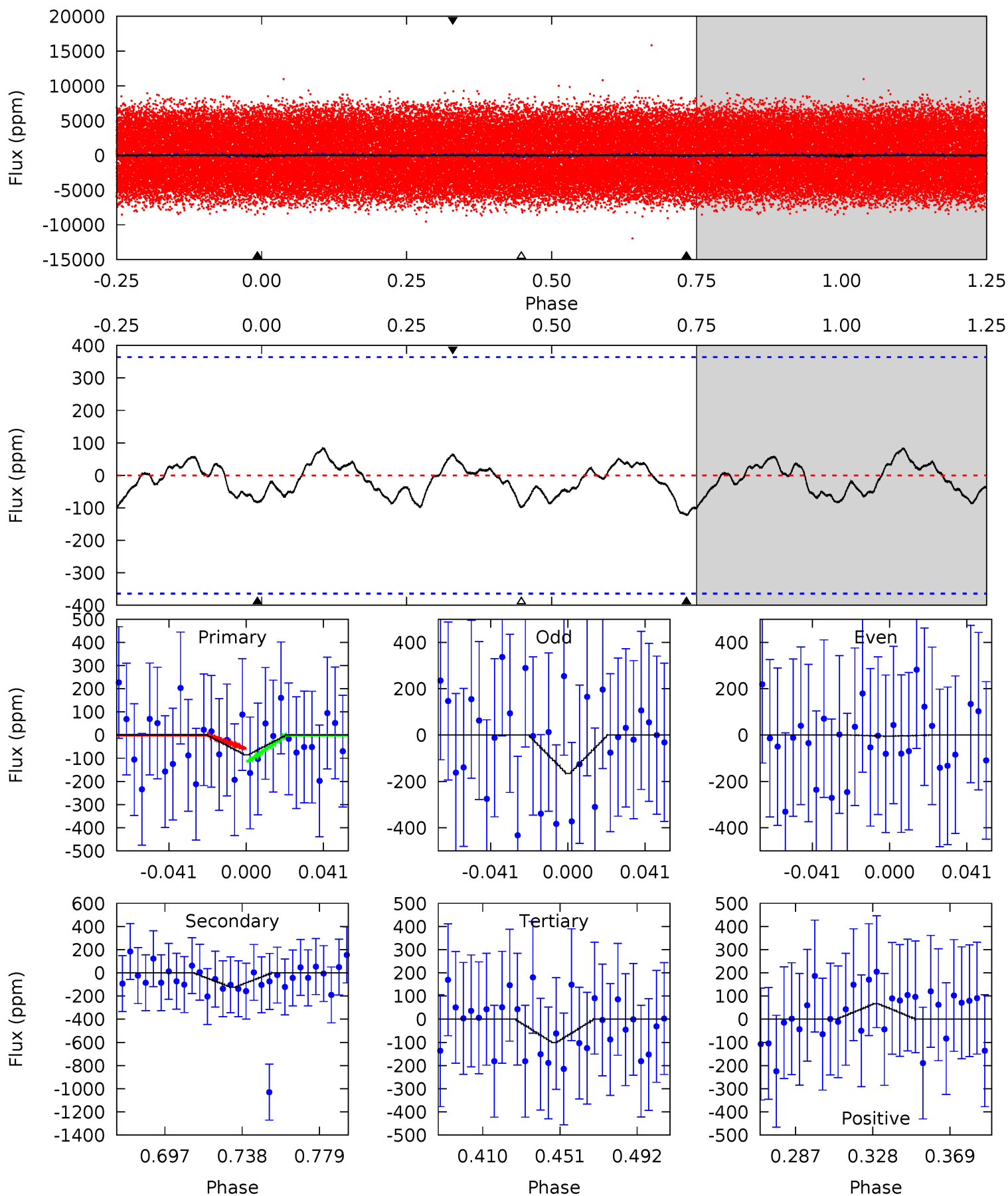
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
9.18	3.80	0	0	4.45	1.36	7.27	9.18	9.18	3.80	3.80	2.94	0.79	0.74	0.15



# Alt Model-Shift Uniqueness Test

004902475-01, P = 1.019347 Days, E = 130.788599 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
1.11	1.62	1.32	0.87	4.75	2.04	0.55	-0.21	0.24	0.31	0.76	1.04	0.33	0.41	0.36





### Stellar Parameters For KIC 004902475

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$7390^{+230}_{-307}$	$4.037^{+0.198}_{-0.162}$	$-0.140^{+0.250}_{-0.350}$	$1.999^{+0.542}_{-0.542}$	$1.585^{+0.209}_{-0.279}$	$0.279^{+0.318}_{-0.130}$
	+3%/-4%	+5%/-4%	+179%/-250%	+27%/-27%	+13%/-18%	+114%/-46%
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 004902475-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	$A_{\text{obs}}$
DV	$-17 \pm 4$	$1.64^{+0.98}_{-0.79}$	$4215^{+338}_{-356}$	$5128^{+2195}_{-1150}$	$1.768^{+5.393}_{-1.069}$
Alt.	$-125 \pm 77$	$2.24^{+1.06}_{-0.89}$	$4207^{+315}_{-318}$	$7261^{+3453}_{-2095}$	$6.427^{+14.663}_{-4.607}$

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

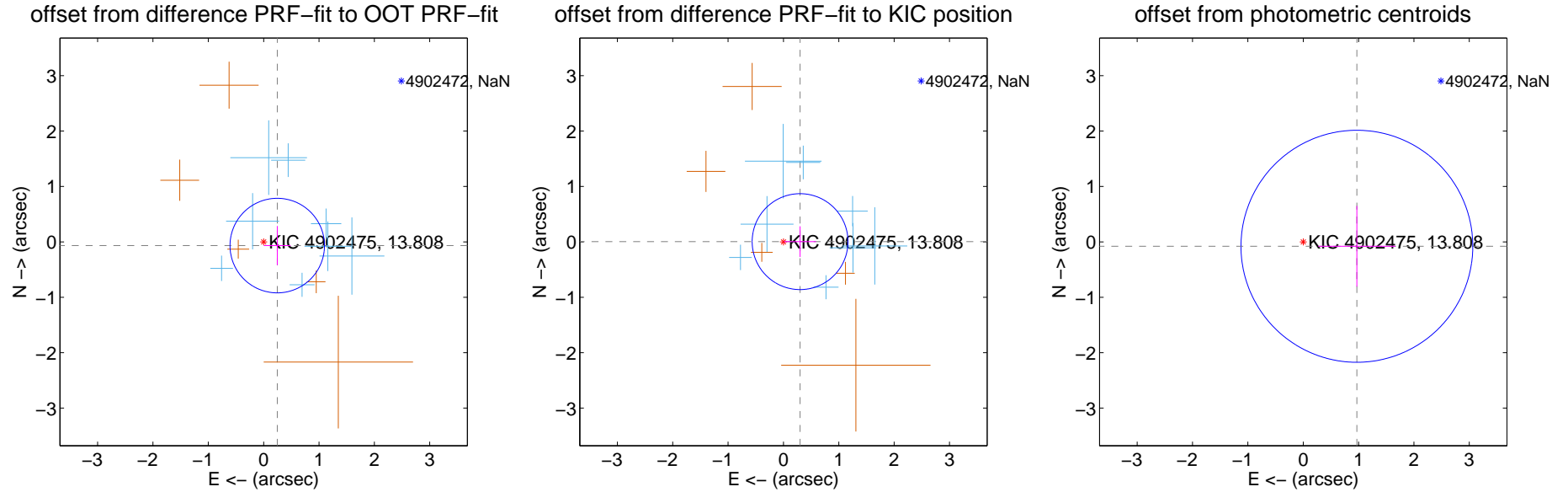
## DV Centroid Data

Supplemental centroid analysis for 004902475-01. Kepler magnitude: 13.81. Transit SNR 7.18

There are 8 quarters with good PRF difference image offsets

The direct PRF centroid is offset from the target star catalog position by about 0.26 arcsec

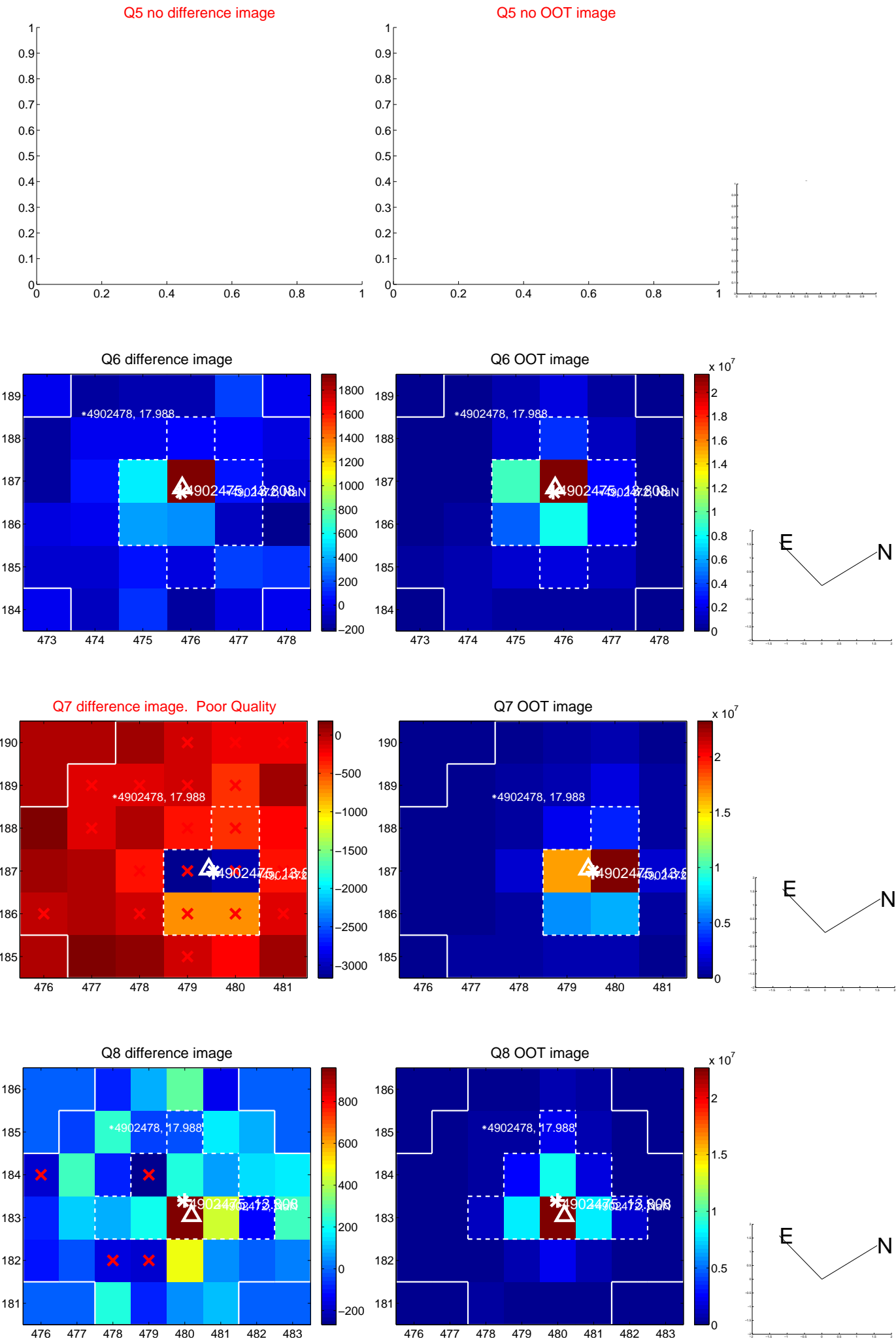
	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.255 \pm 0.285$	0.89	$-0.246 \pm 0.242$	$-0.067 \pm 0.354$
PRF-fit source offset from KIC position	$0.301 \pm 0.289$	1.04	$-0.301 \pm 0.289$	$0.004 \pm 0.277$
photometric centroid source offset	$0.97 \pm 0.70$	1.39	$-0.97 \pm 0.70$	$-0.08 \pm 0.73$



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.

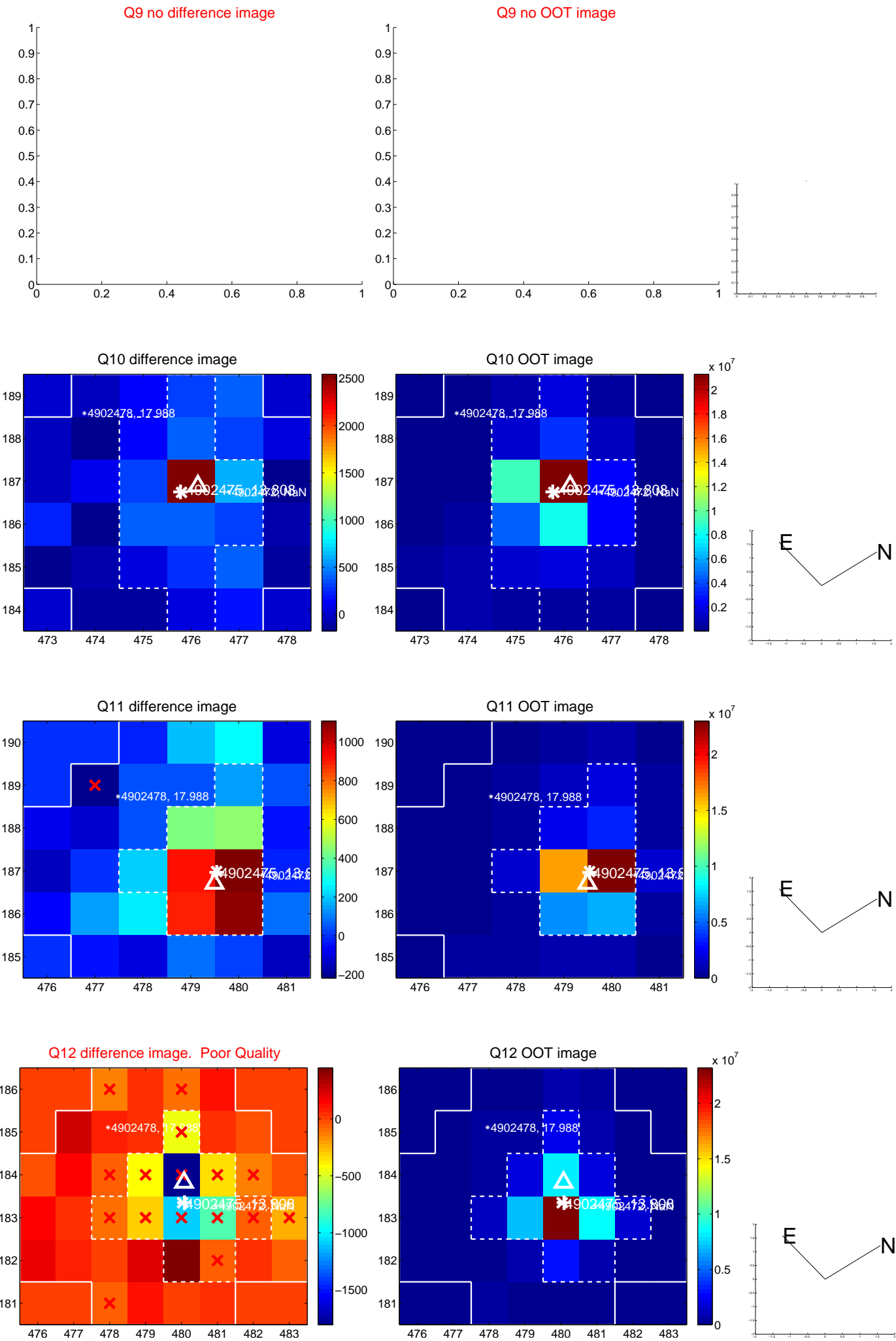


white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

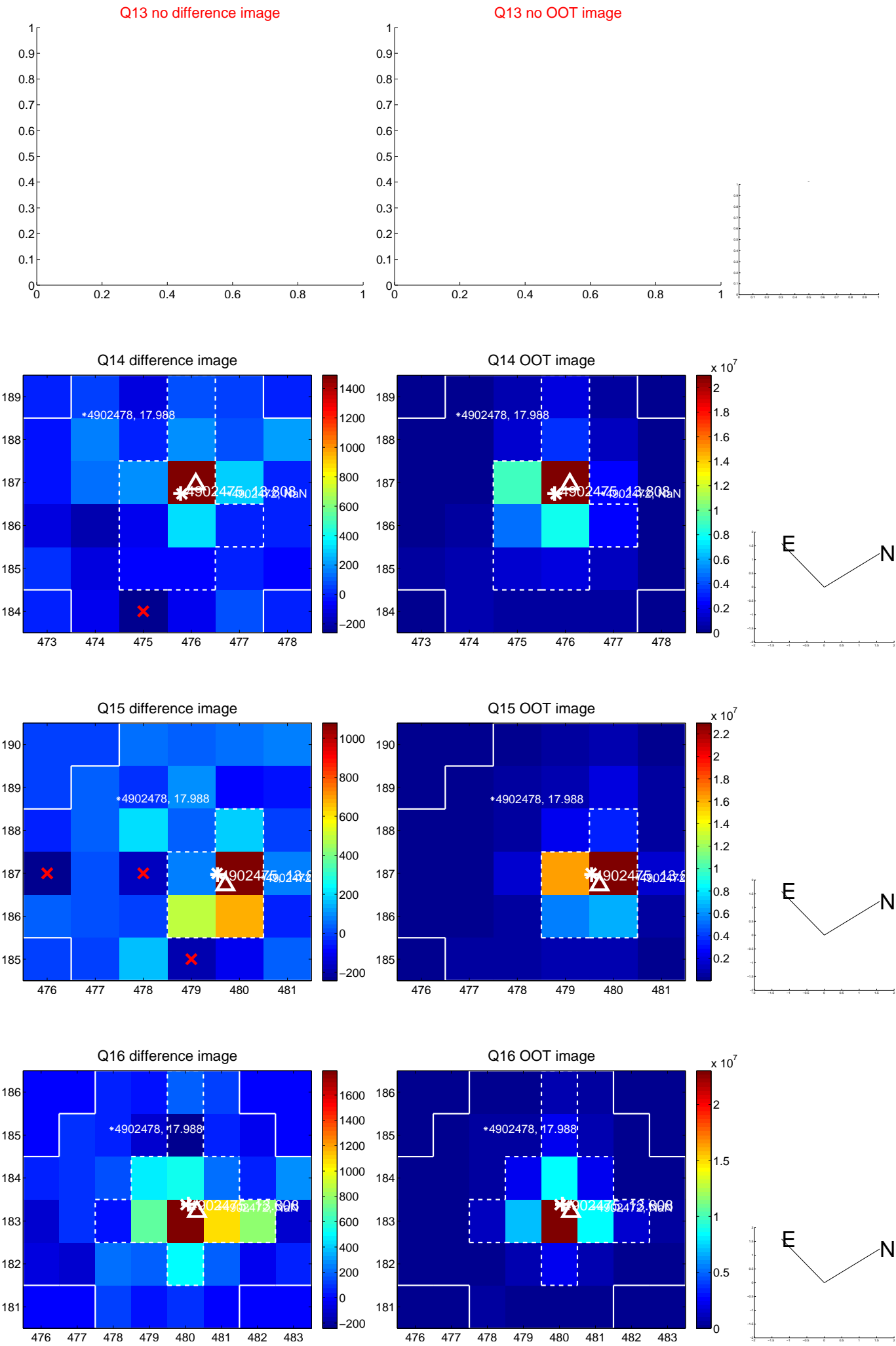




white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

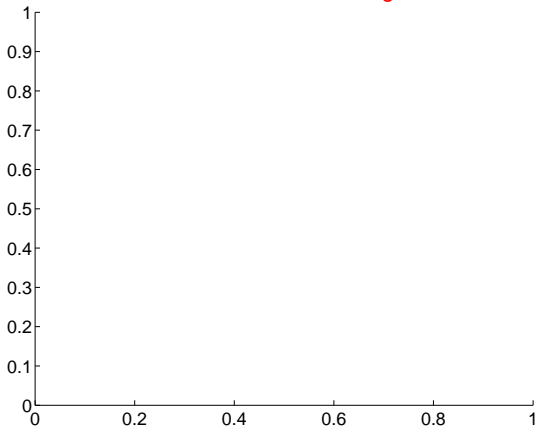


white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

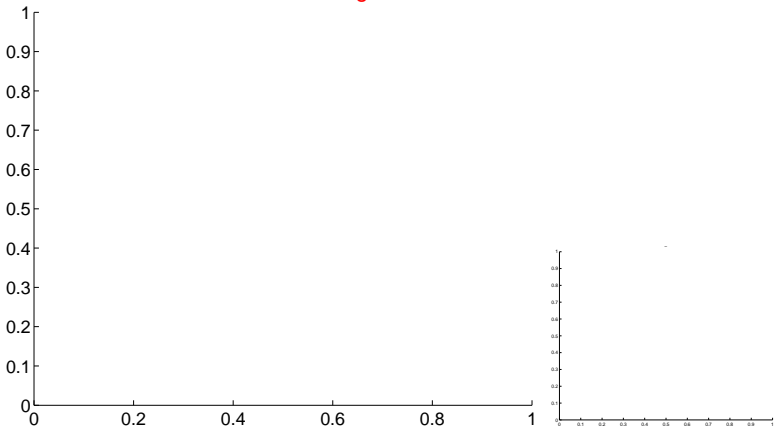


white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

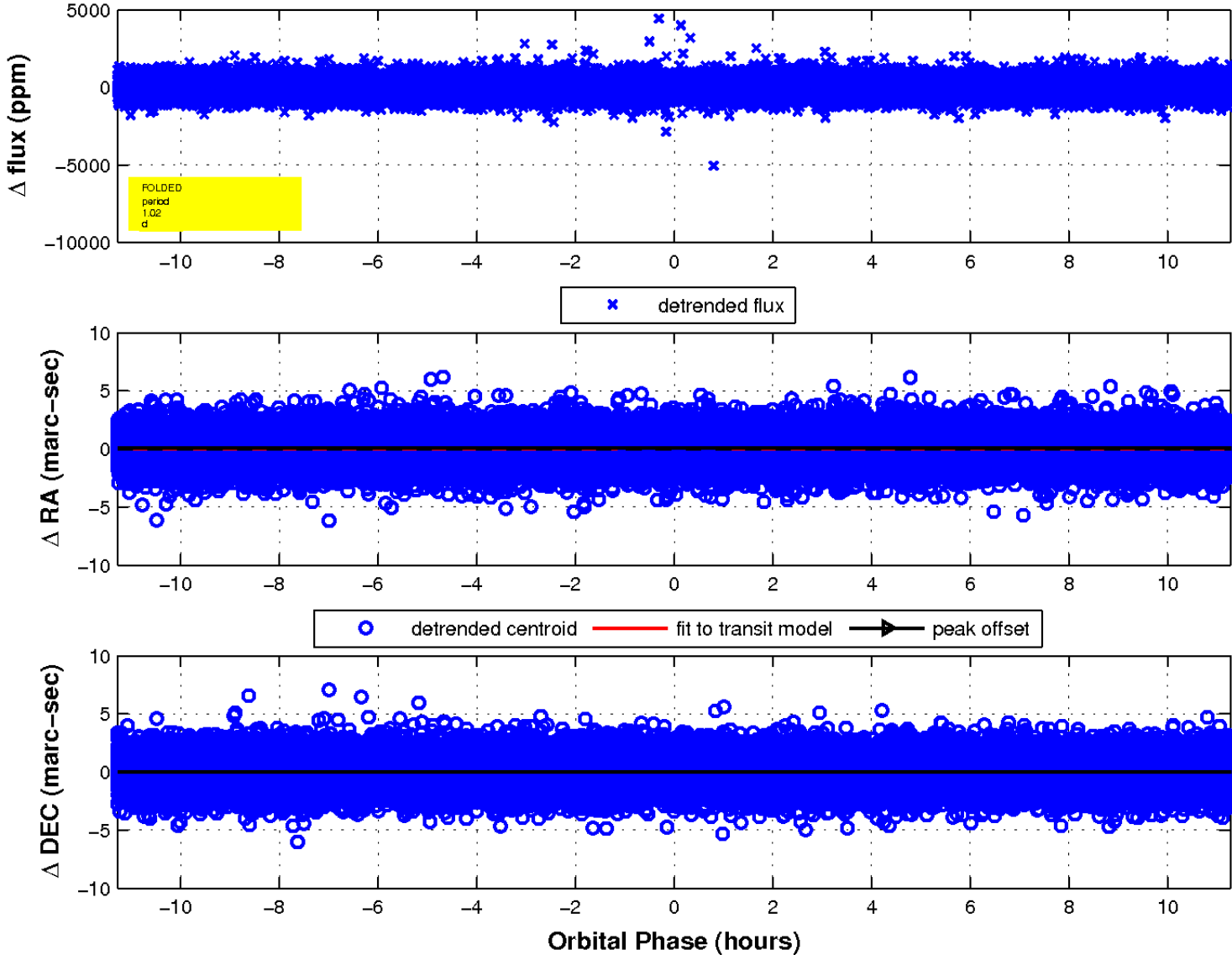
Q17 no difference image



Q17 no OOT image



fluxWeightedCentroids, Planet 1 of 1



# UKIRT Image

Declination

