

# KIC 005870686

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
005870686-01	OBS	No	0.749678	131.884996	0.7	6.223	9.2	2.6	2.55	7751	0.25	51809.86

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005870686-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—CENT_SATURATED

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

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

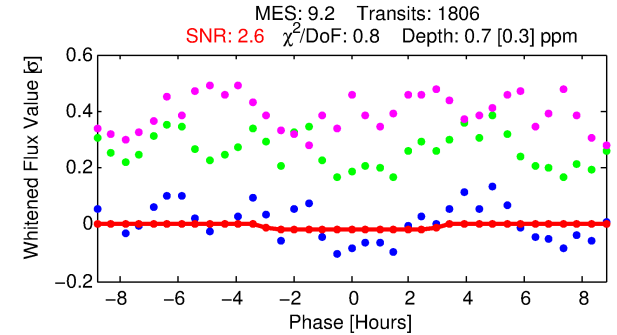
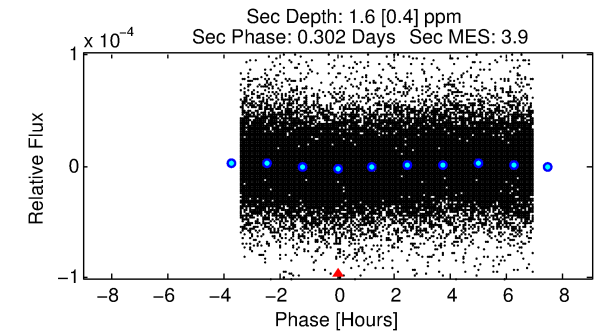
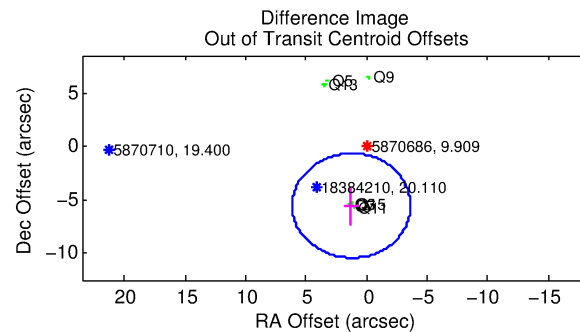
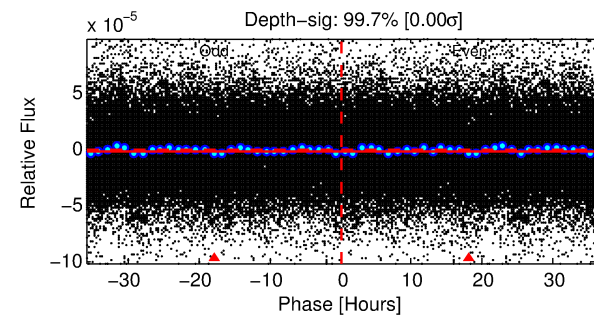
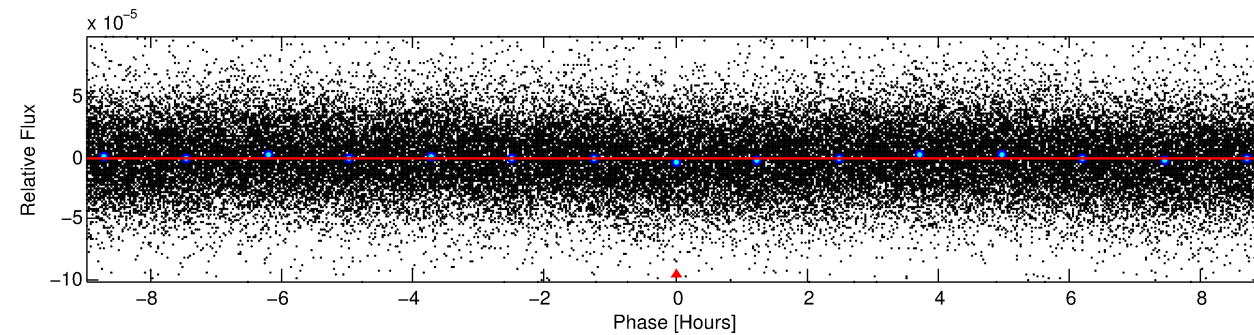
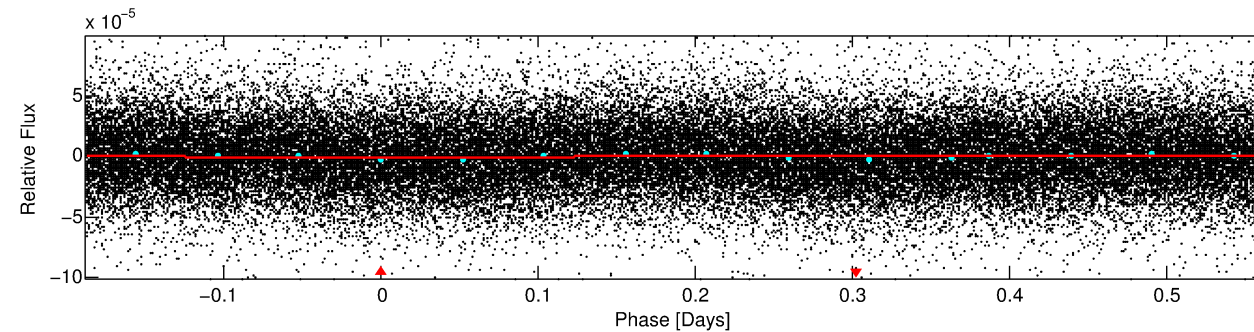
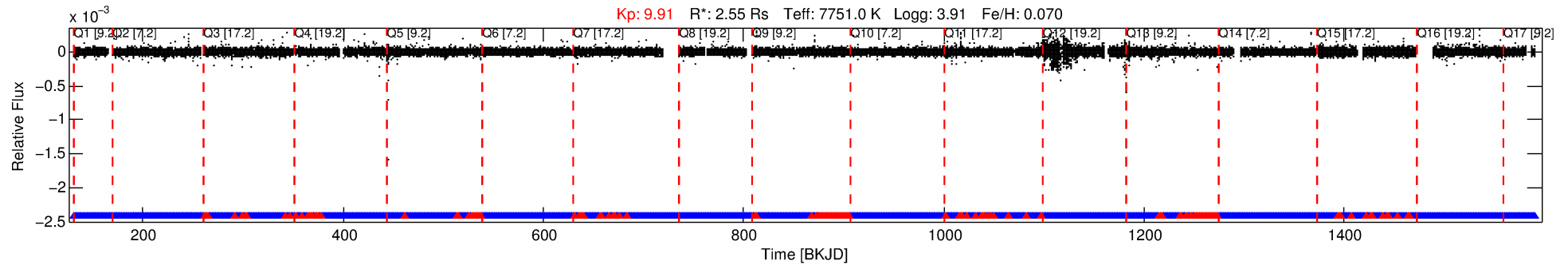
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 005870686-01

No Significant Match Found

# DV One-Page Summary

KIC: 5870686 Candidate: 1 of 1 Period: 0.750 d



## DV Fit Results:

Period = 0.74968 [0.00005] d  
Epoch = 131.8850 [0.0175] BKJD  
Rp/R\* = 0.0009 [0.0010]  
a/R\* = 1.03 [0.36]  
b = 0.90 [1.45]  
Seff = 51809.86 [15045.30]  
Teq = 3847 [279] K  
Rp = 0.25 [0.28] Re  
a = 0.0202 [0.0039] AU  
Ag = 5.59 [12.29] [0.37 $\sigma$ ]  
Teffp = 9147 [4982] K [1.06 $\sigma$ ]

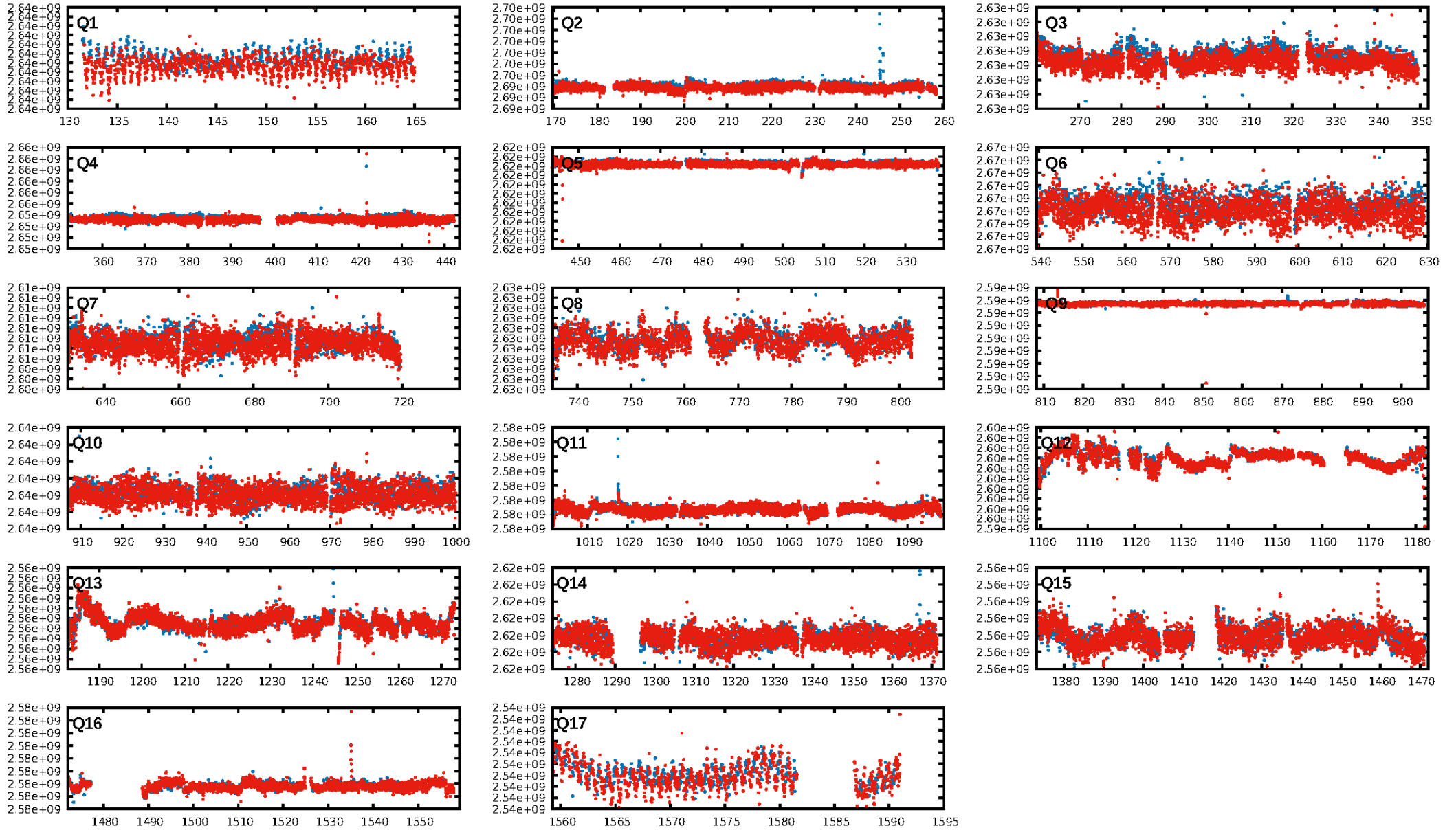
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: N/A  
ModelChiSquareGof-sig: N/A  
Bootstrap-pfa: N/A  
RollingBand-fgt: 0.90 [1557/1725]  
GhostDiagnostic-chr: N/A  
Centroid-sig: N/A  
Centroid-so: N/A  
OotOffset-rm: 5.698 arcsec [3.50 $\sigma$ ]  
KicOffset-rm: 5.296 arcsec [1.98 $\sigma$ ]  
OotOffset-st: 0/4/0/3 [7]  
KicOffset-st: 0/4/0/3 [7]  
DiffImageQuality-fgm: 0.43 [3/7]  
DiffImageOverlap-fno: 1.00 [17/17]

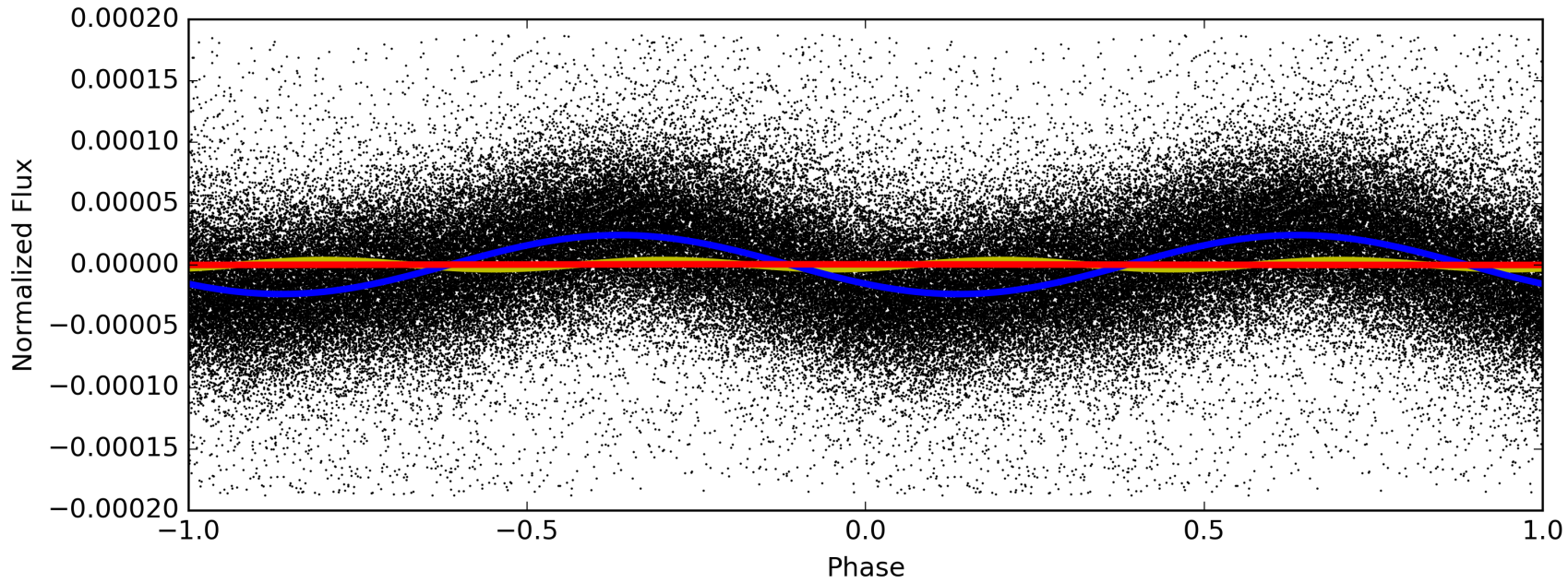
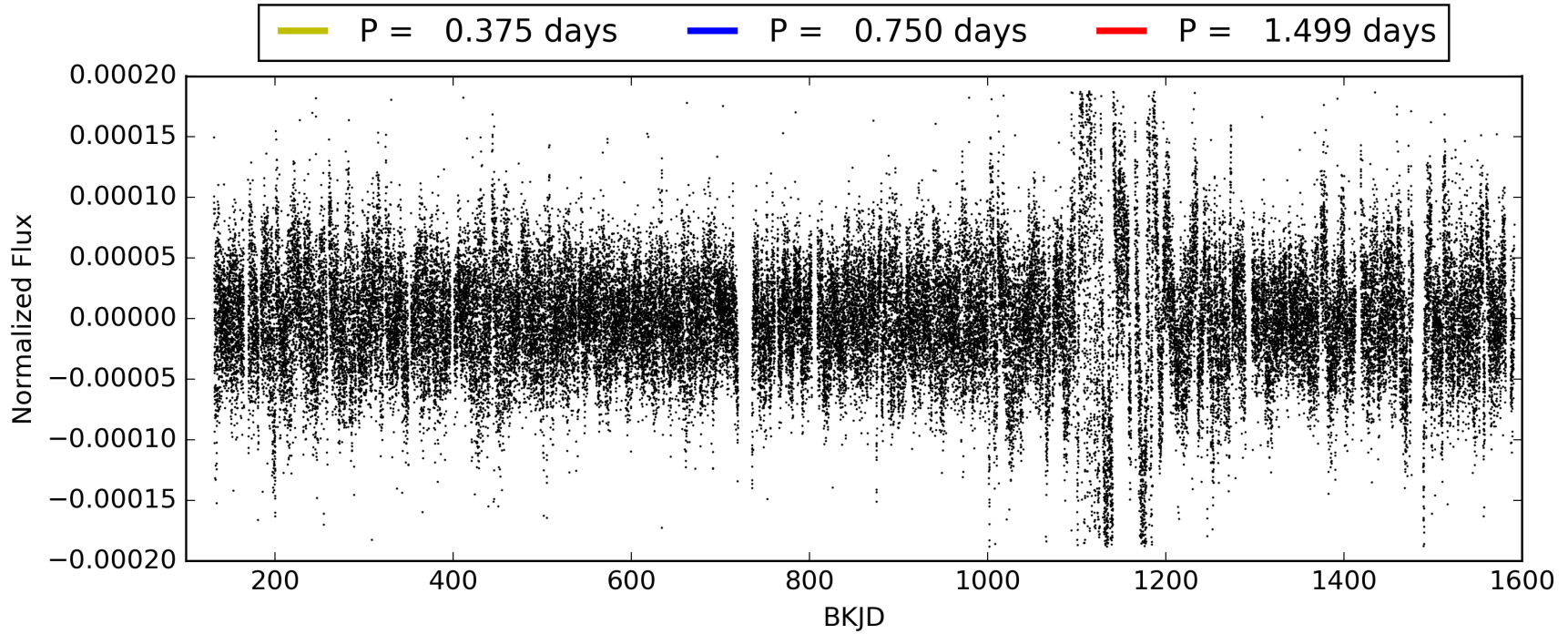
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 20:05:08 Z

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

# TCE 005870686-01, PDC Light Curves

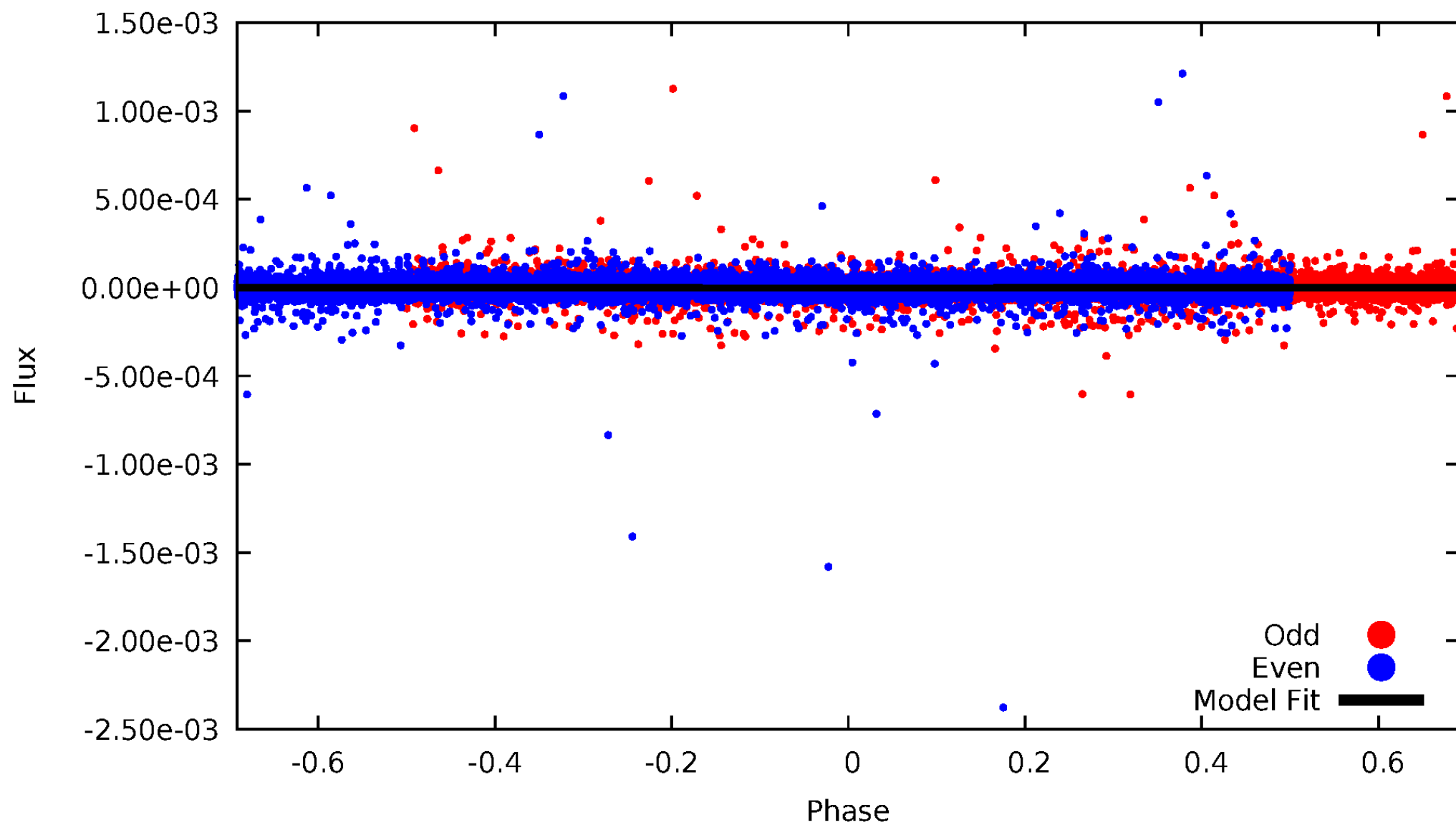


TCE 005870686-01



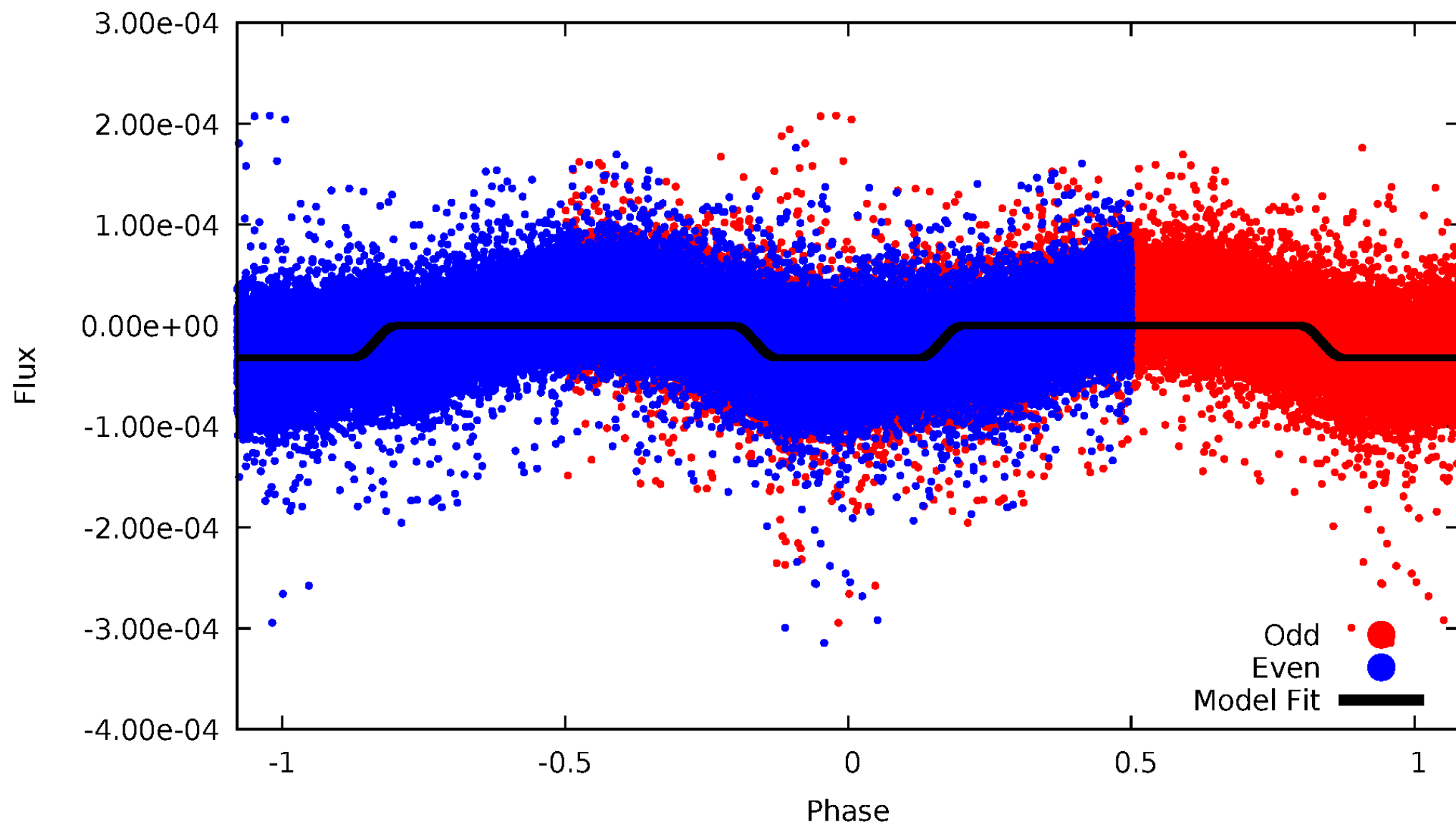
# DV Odd/Even

TCE 005870686-01



# ALT Odd/Even

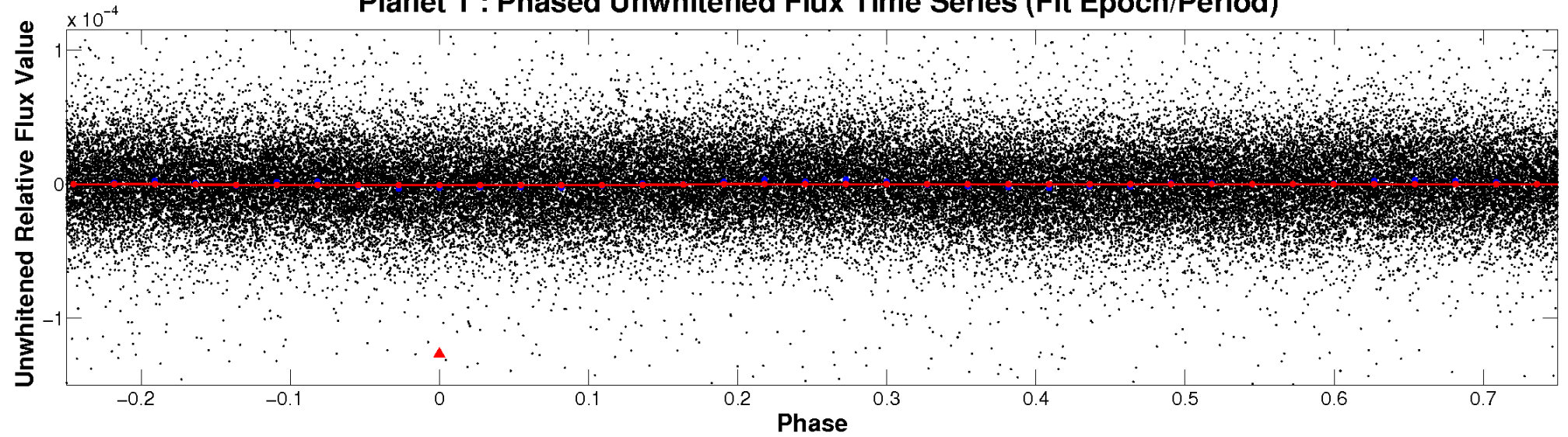
TCE 005870686-01



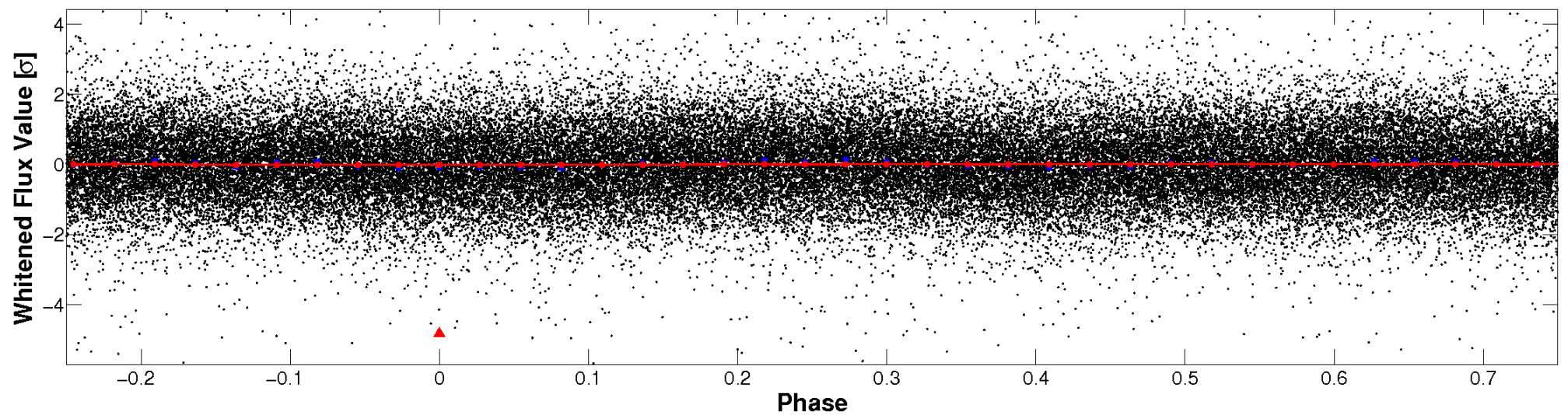


# Non-Whitened Vs. Whitened Light Curve

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

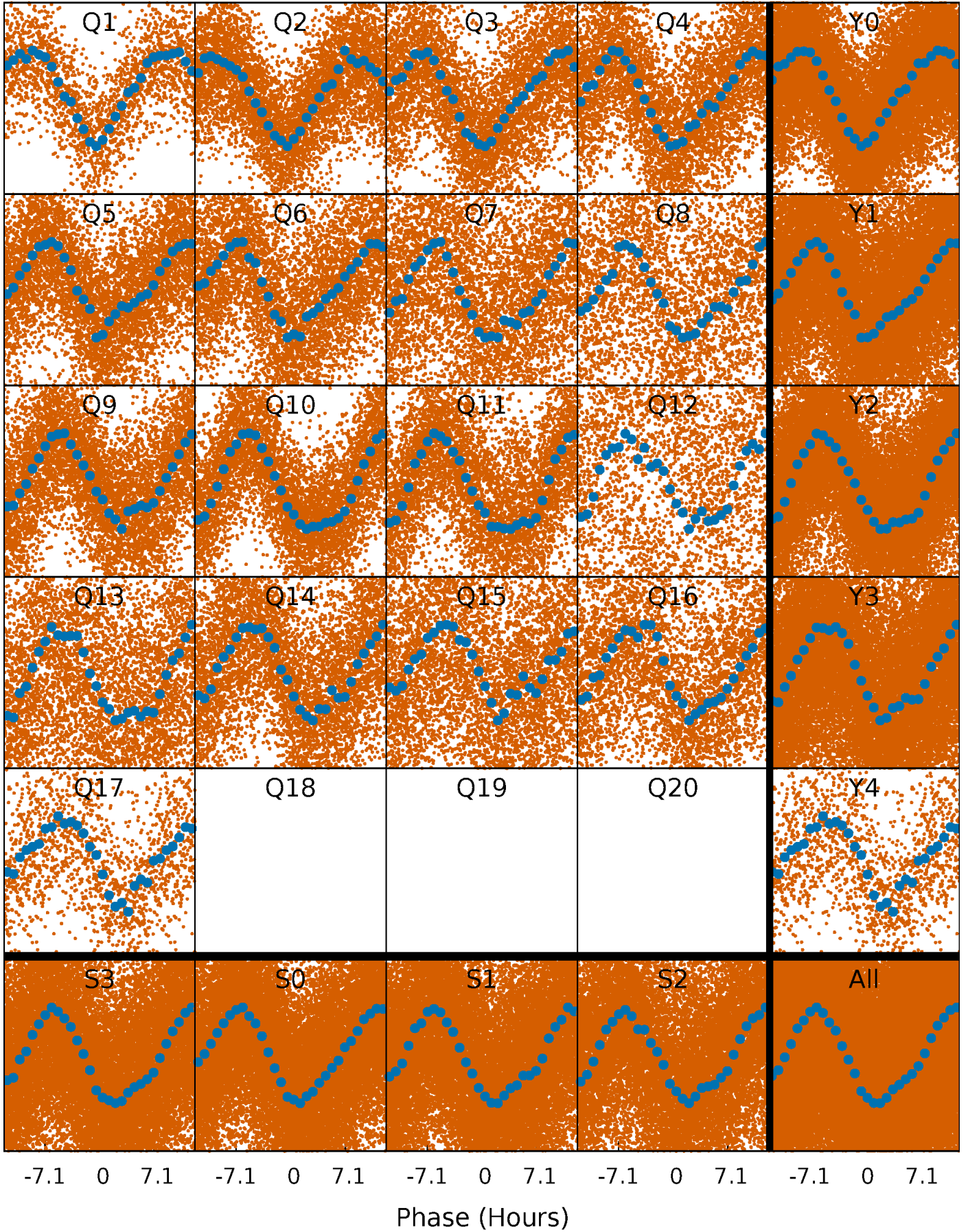


**Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)**



# PDC Quarter-Phased Transit Curves

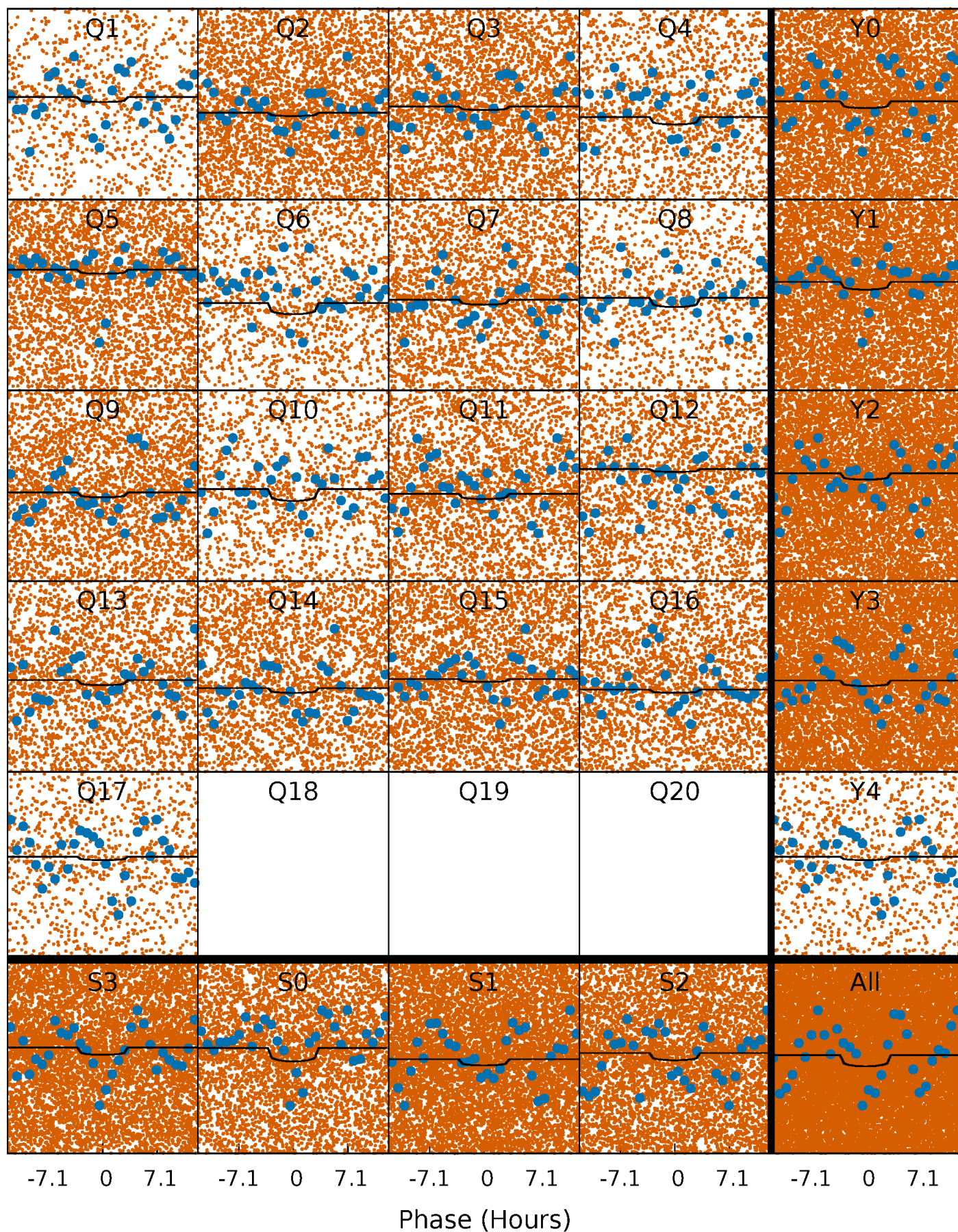
TCE 005870686-01 P= 0.749678 Days  $T_0=131.884996$  (BKJD)





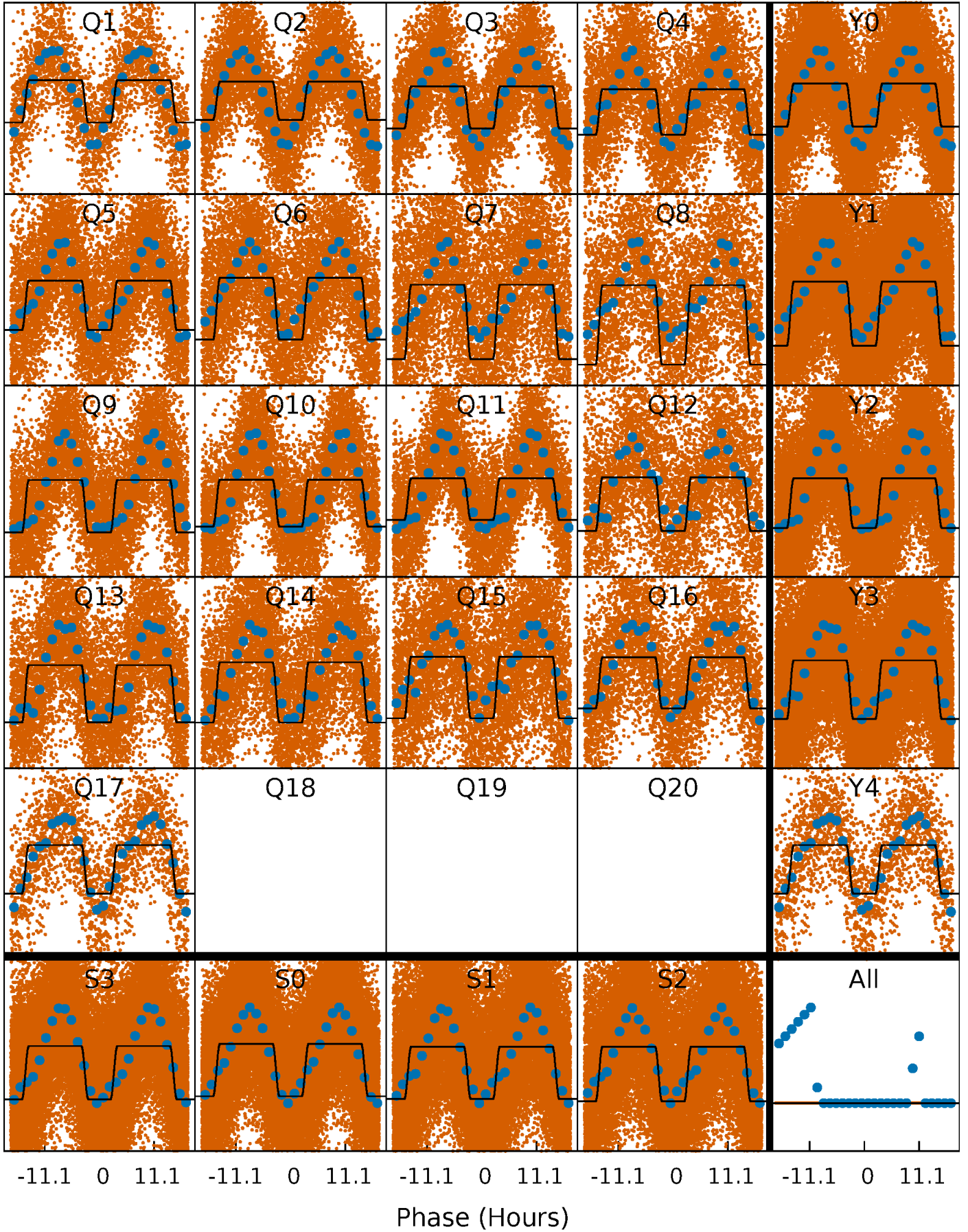
# DV Quarter-Phased Transit Curves

TCE 005870686-01 P= 0.749678 Days  $T_0=131.884996$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

TCE 005870686-01 P= 0.749728 Days  $T_0=131.910440$  (BKJD)

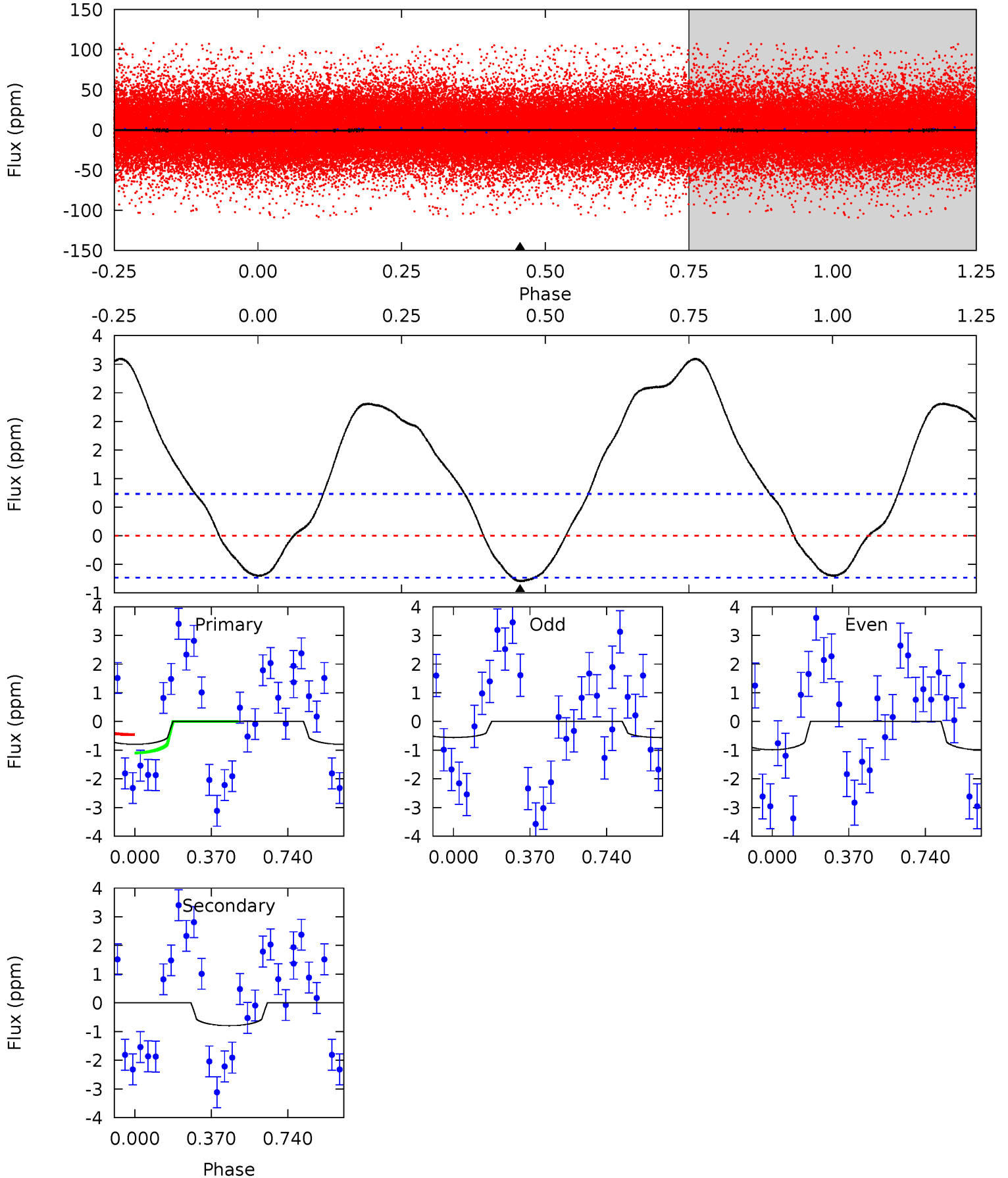




# DV Model-Shift Uniqueness Test

005870686-01, P = 0.749678 Days, E = 131.135318 Days

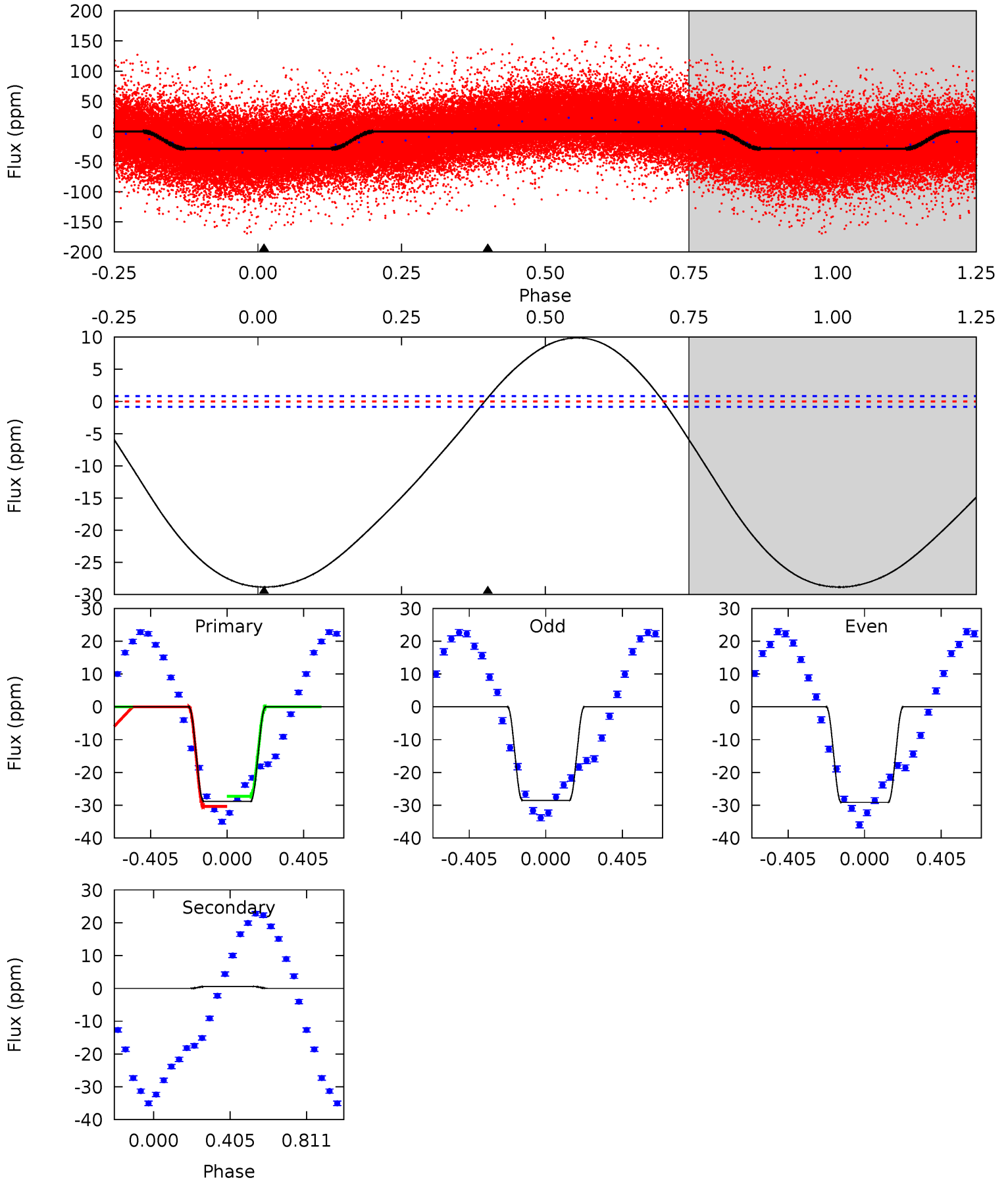
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
4.64	4.64	0	0	4.28	0.90	4.26	4.64	4.64	4.64	4.64	1.26	1.27	0.80	1.85



# Alt Model-Shift Uniqueness Test

005870686-01, P = 0.749728 Days, E = 131.160712 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
146.2	-2.96	0	0	4.26	0.83	18.3	146.2	146.2	-2.96	-2.96	1.54	1.03	0.26	7.77





### Stellar Parameters For KIC 005870686

	$T_{\text{eff}} (K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (g \cdot \text{cm}^{-3})$
	$7751^{+69}_{-85}$	$3.913^{+0.161}_{-0.069}$	$0.070^{+0.050}_{-0.150}$	$2.552^{+0.261}_{-0.559}$	$1.945^{+0.093}_{-0.205}$	$0.165^{+0.133}_{-0.037}$
	+1%/-1%	+4%/-2%	+71%/-214%	+10%/-22%	+5%/-11%	+80%/-22%
Source	SPE68	SPE68	SPE68	DSEP		

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

### Secondary Eclipse Parameters for KIC 005870686-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	$A_{\text{obs}}$
DV	$-1 \pm 0$	$0.30^{+0.24}_{-0.19}$	$5363^{+163}_{-266}$	$6485^{+7527}_{-2065}$	$1.894^{+12.778}_{-1.320}$
Alt.	$1 \pm 0$	$1.54^{+0.29}_{-0.31}$	$5333^{+196}_{-265}$	$-4622^{+163}_{-137}$	$-0.053^{+0.021}_{-0.035}$

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

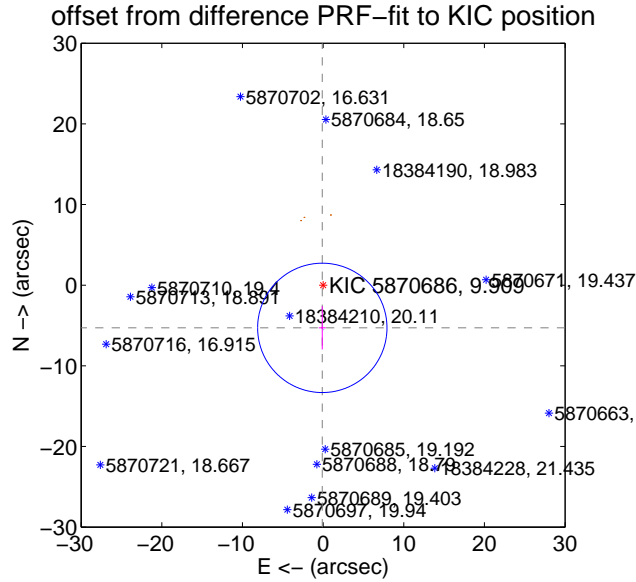
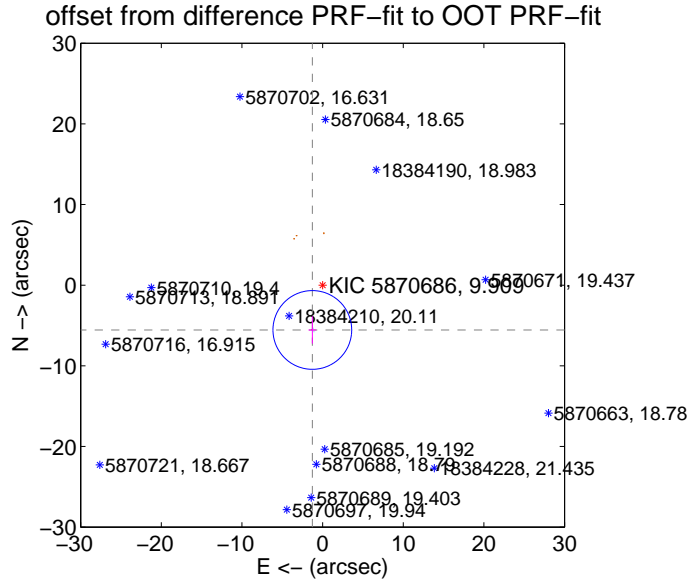
## DV Centroid Data

Supplemental centroid analysis for 005870686-01. **Kepler magnitude: 9.91.** Transit SNR 2.64

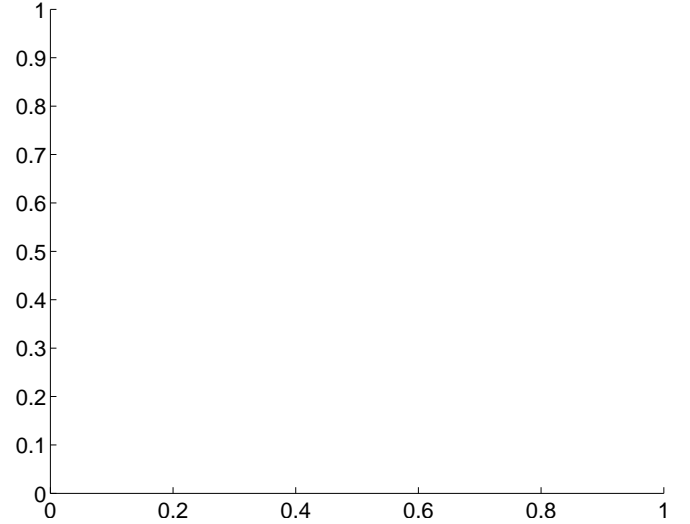
**There are 3 quarters with good PRF difference image offsets**

The direct PRF centroid is offset from the target star catalog position by about 1.17 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	<b>5.698 <math>\pm</math> 1.627</b>	<b>3.50</b>	1.273 $\pm$ 0.475	-5.554 $\pm$ 1.698
PRF-fit source offset from KIC position	5.296 $\pm$ 2.673	1.98	0.101 $\pm$ 0.441	-5.295 $\pm$ 2.676
photometric centroid source offset	—	—	—	—

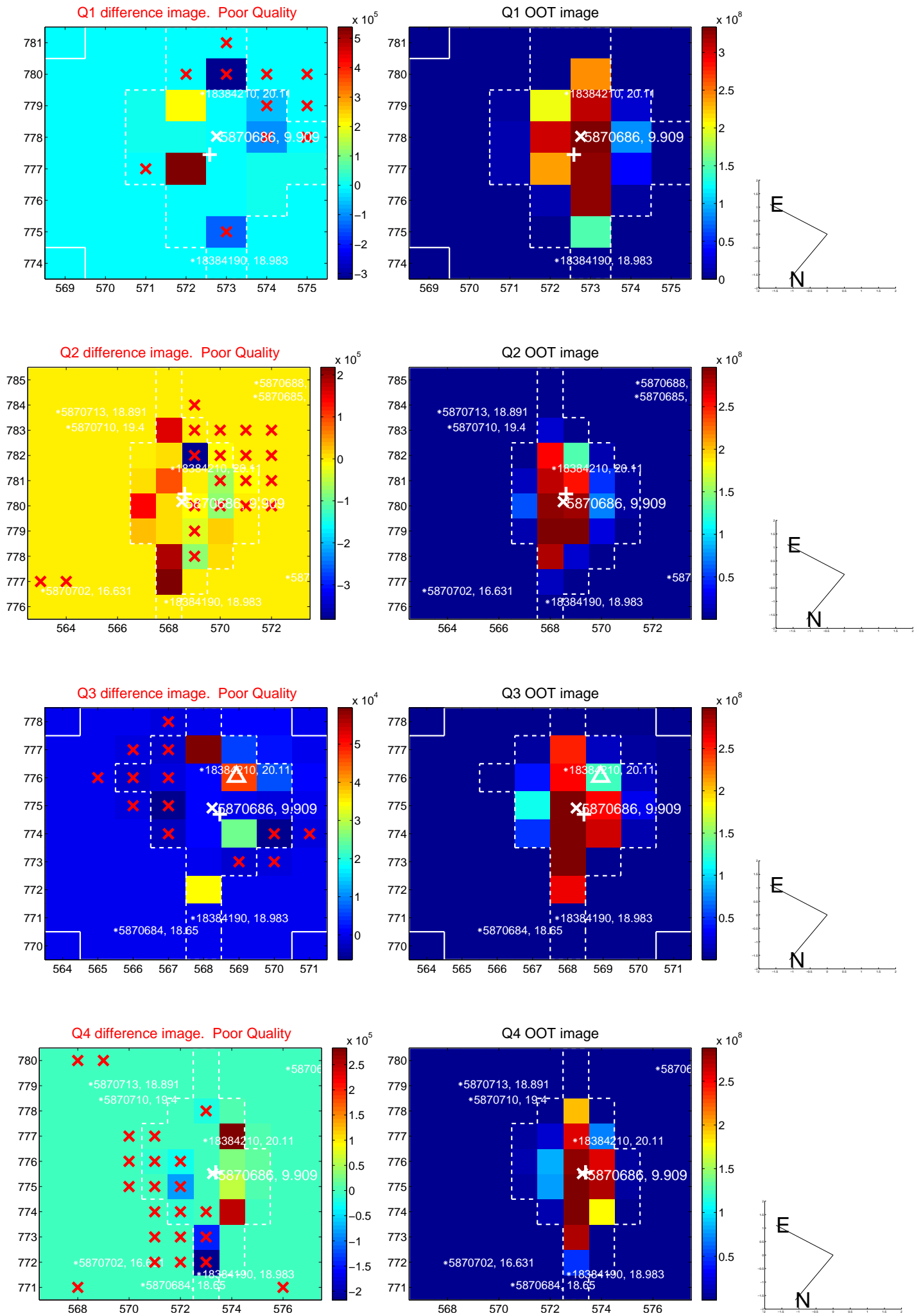


**There are no photometric centroids**

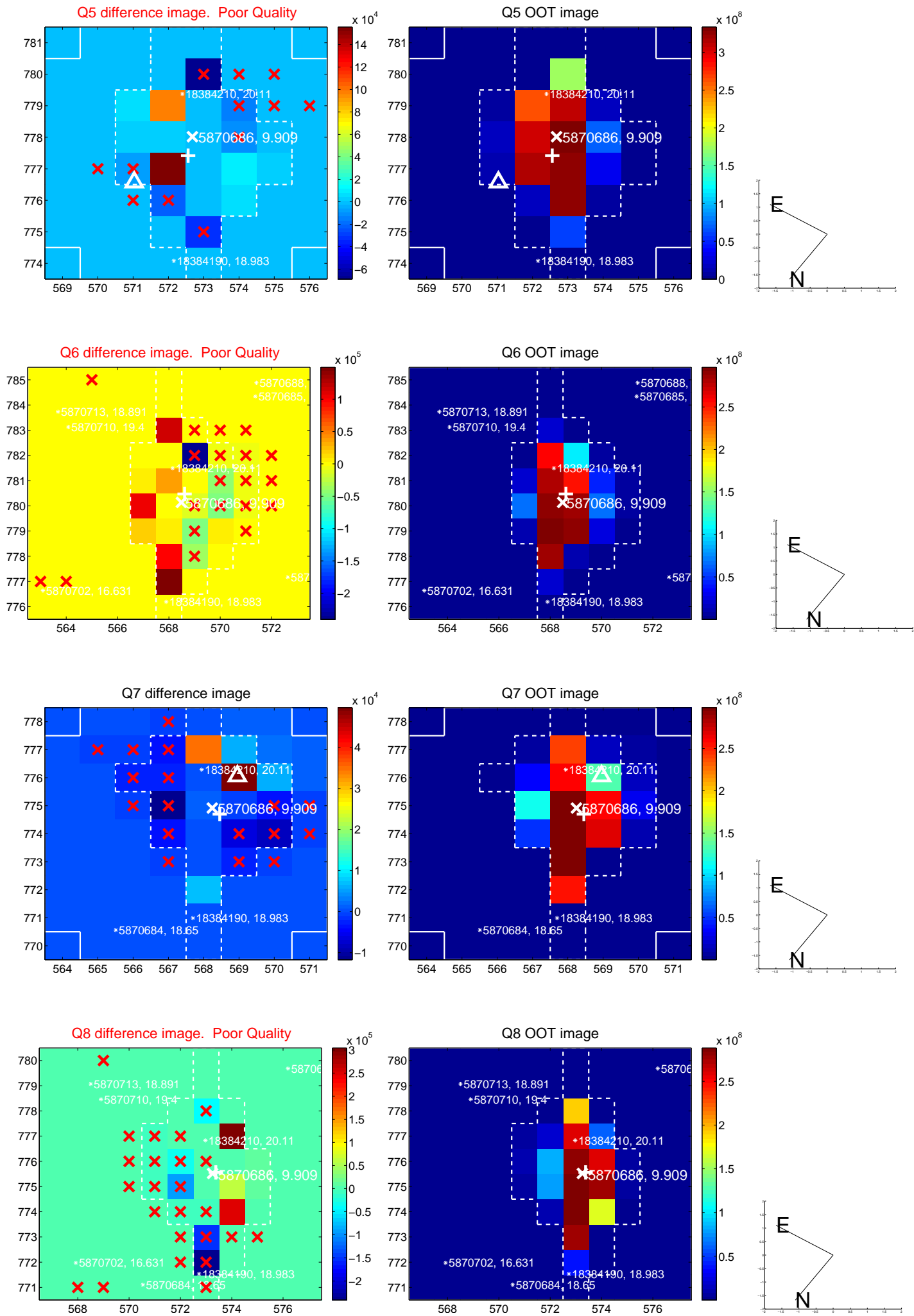


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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

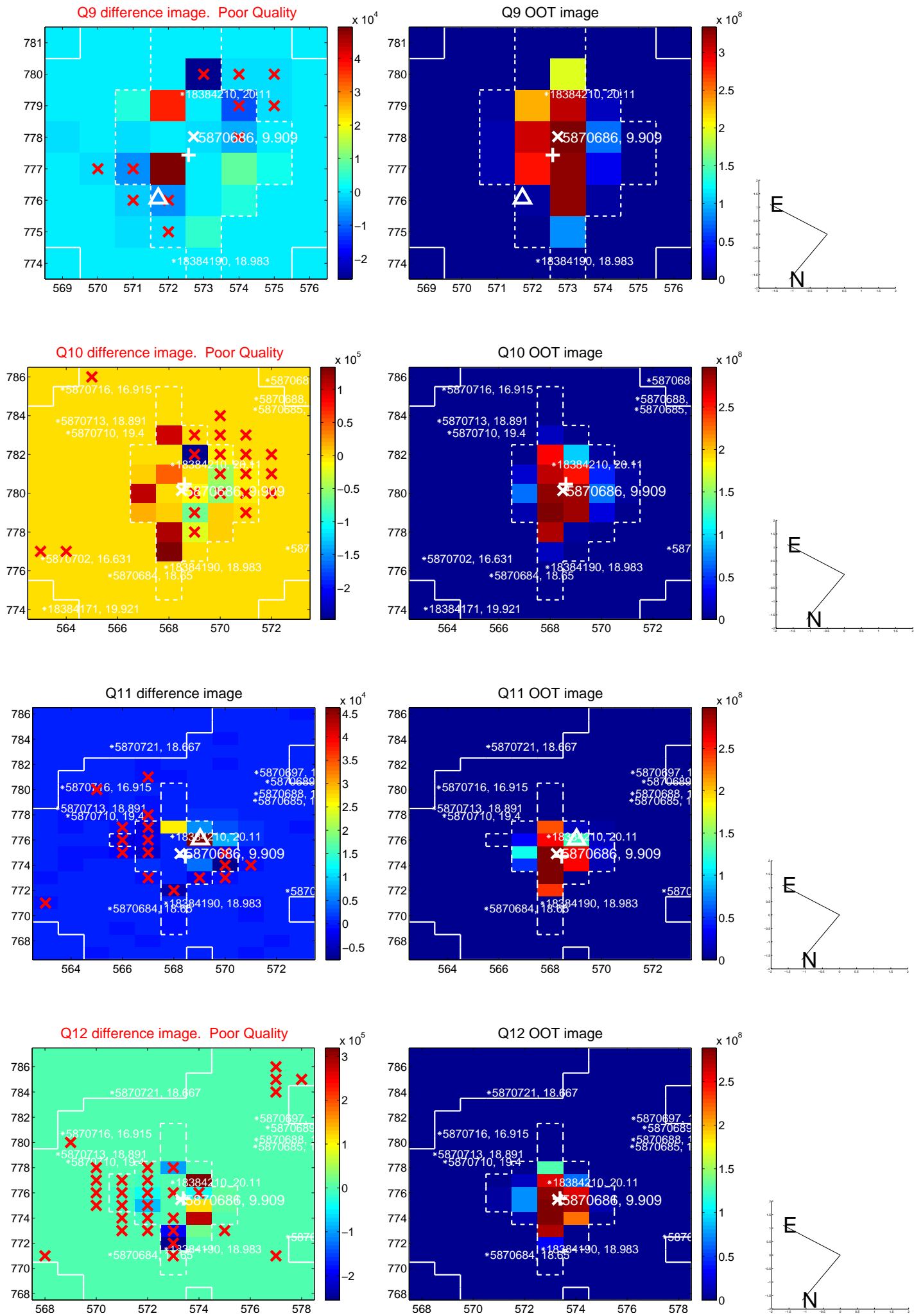


white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

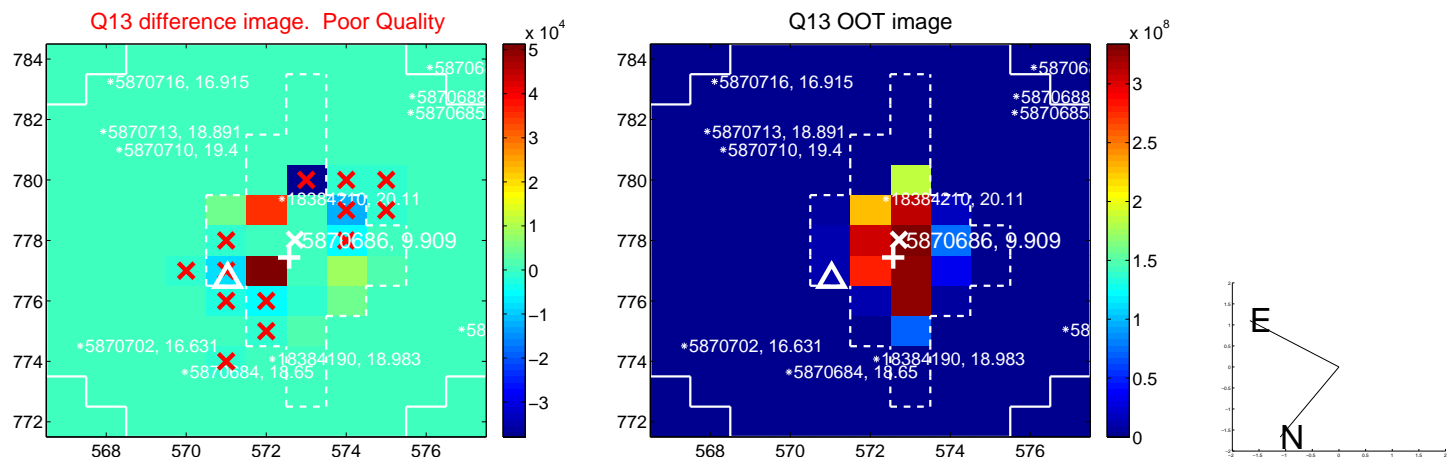




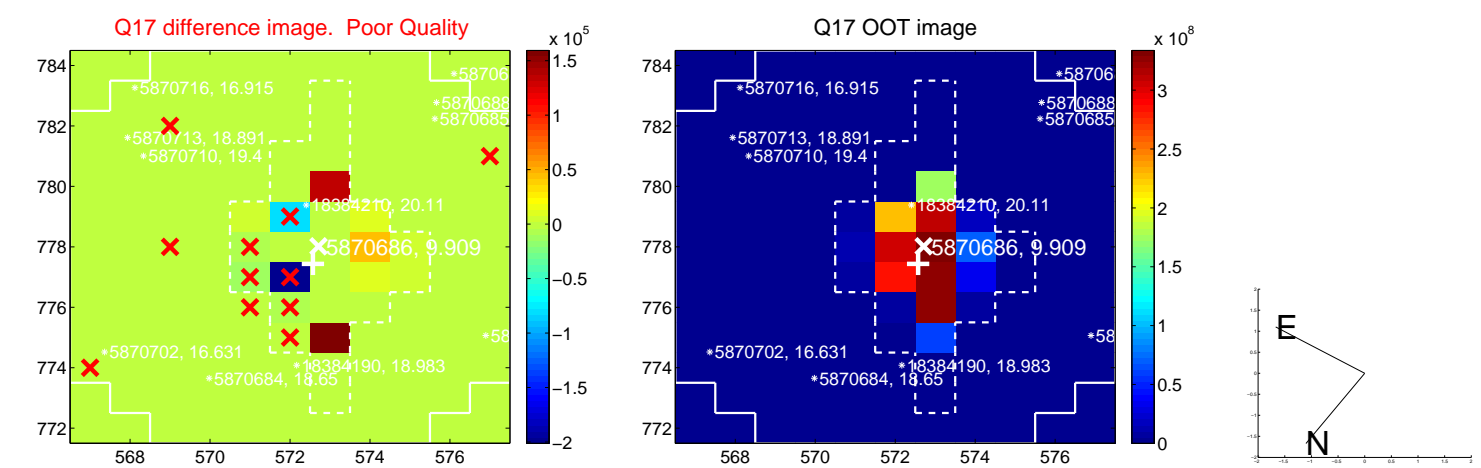
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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.



folded centroid time series figure for this object.

UKIRT Image

Declination

