

# KIC 009655169

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
009655169-01	OBS	No	1.450677	132.839574	14.9	12.625	8.6	9.3	0.66	5393	0.27	653.98

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
009655169-01	OBS	FP	0.00	1	0	1	0	LPP_DV—LPP_ALT—CENT_RESOLVED_OFFSET

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

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

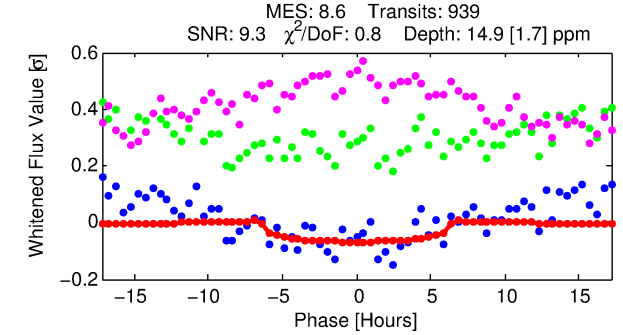
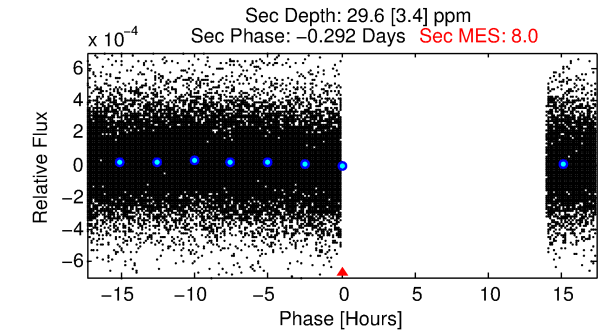
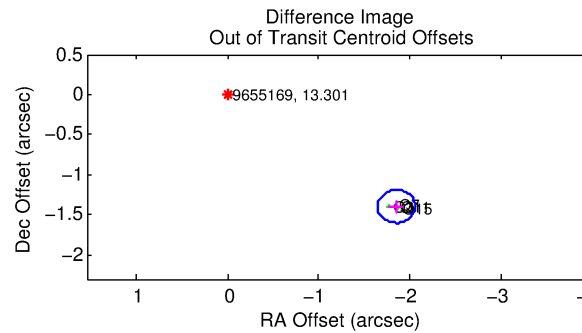
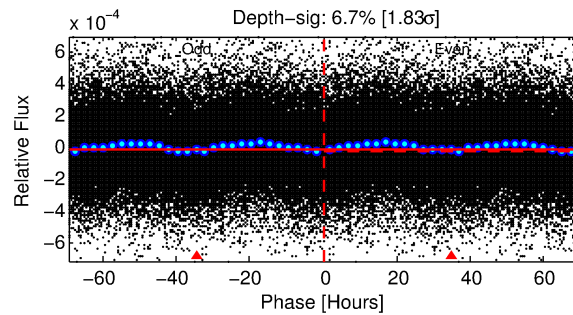
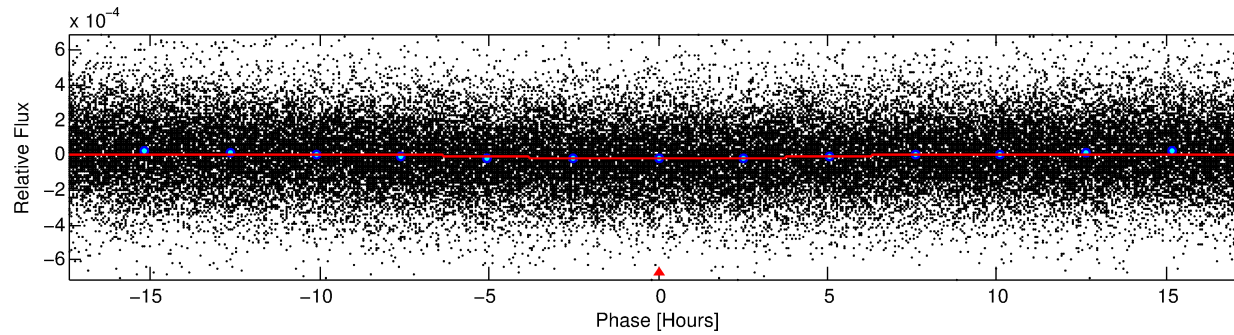
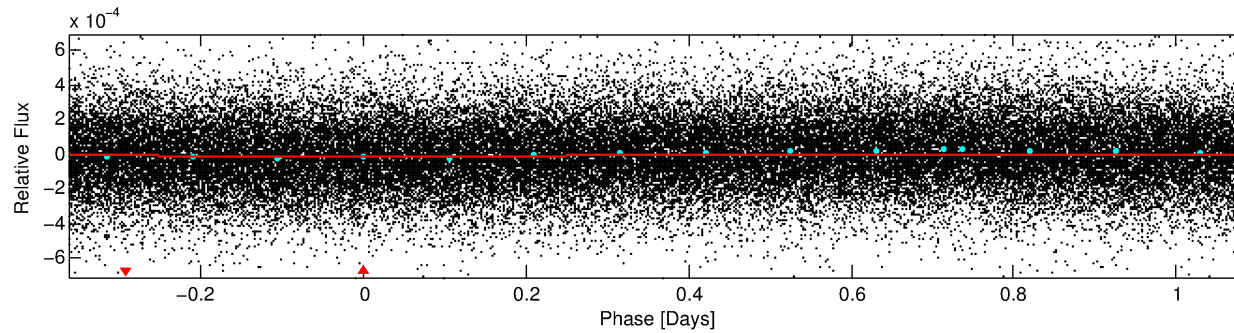
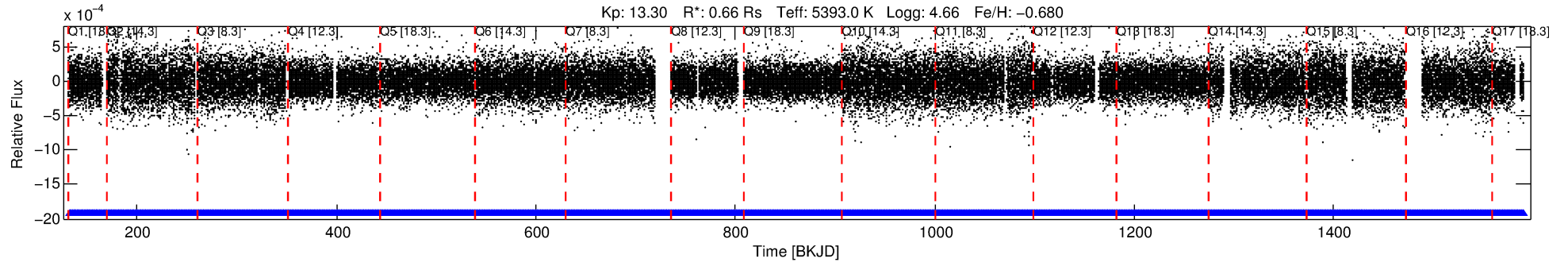
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 009655169-01

No Significant Match Found

# DV One-Page Summary

KIC: 9655169 Candidate: 1 of 1 Period: 1.451 d



## DV Fit Results:

Period = 1.45068 [0.00003] d  
Epoch = 132.8396 [0.0115] BKJD  
Rp/R\* = 0.0037 [0.0037]  
a/R\* = 1.07 [0.63]  
b = 0.56 [5.46]  
Seff = 653.98 [128.25]  
Teq = 1289 [63] K  
Rp = 0.26 [0.27] Re  
a = 0.0226 [0.0025] AU  
Ag = 118.78 [239.34] [0.49 $\sigma$ ]  
Teffp = 6582 [3309] K [1.60 $\sigma$ ]

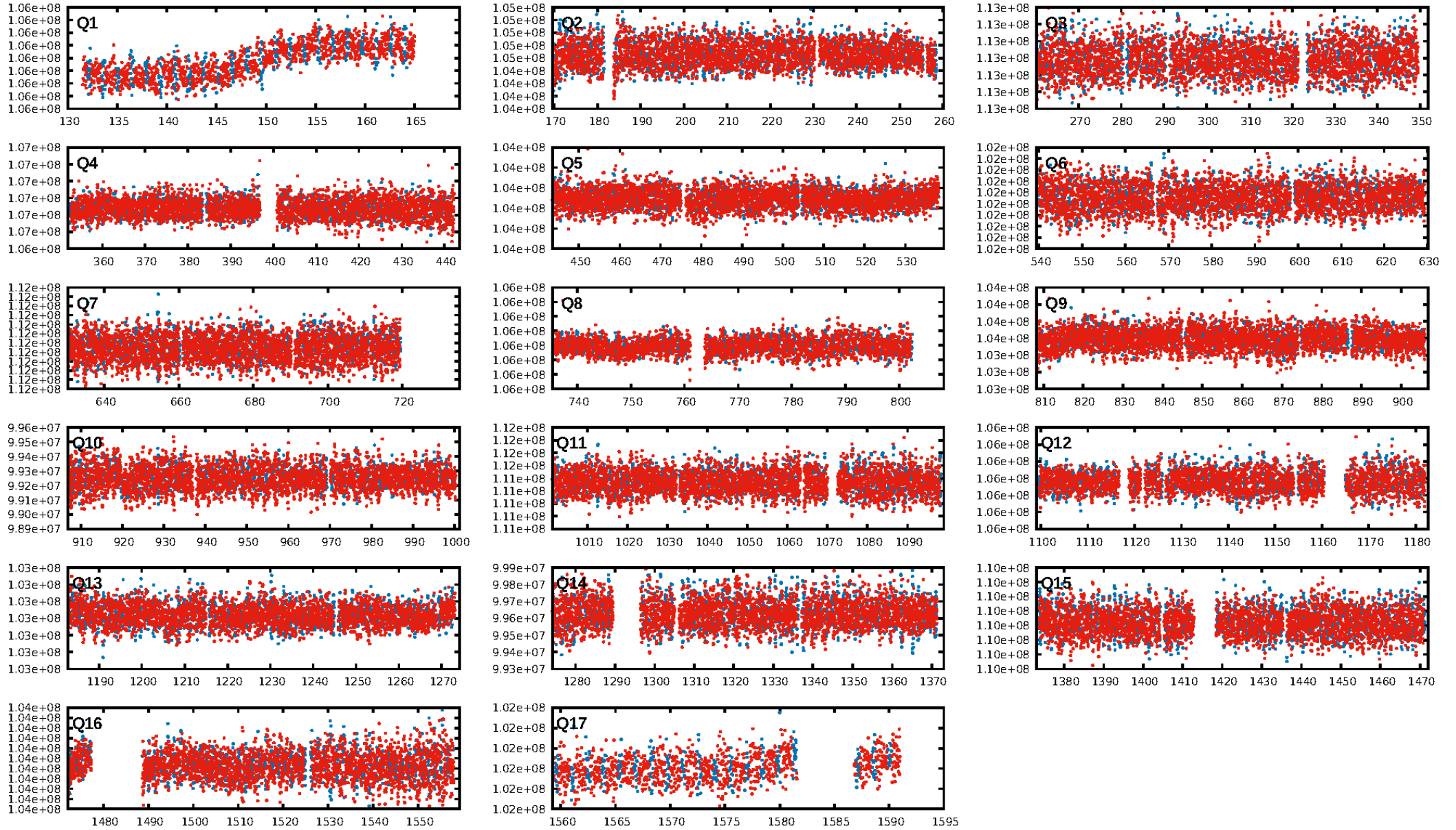
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: N/A  
ModelChiSquareGof-sig: N/A  
Bootstrap-pfa: N/A  
RollingBand-fgt: 1.00 [897/897]  
GhostDiagnostic-chr: -1.537  
Centroid-sig: 0.0%  
Centroid-so: 33.663 arcsec [9.91 $\sigma$ ]  
OotOffset-rm: 2.319 arcsec [33.81 $\sigma$ ]  
KicOffset-rm: 5.858 arcsec [5.39 $\sigma$ ]  
OotOffset-st: 0/4/0/0 [4]  
KicOffset-st: 0/4/1/2 [7]  
DiffImageQuality-fgm: 0.71 [5/7]  
DiffImageOverlap-fno: 1.00 [17/17]

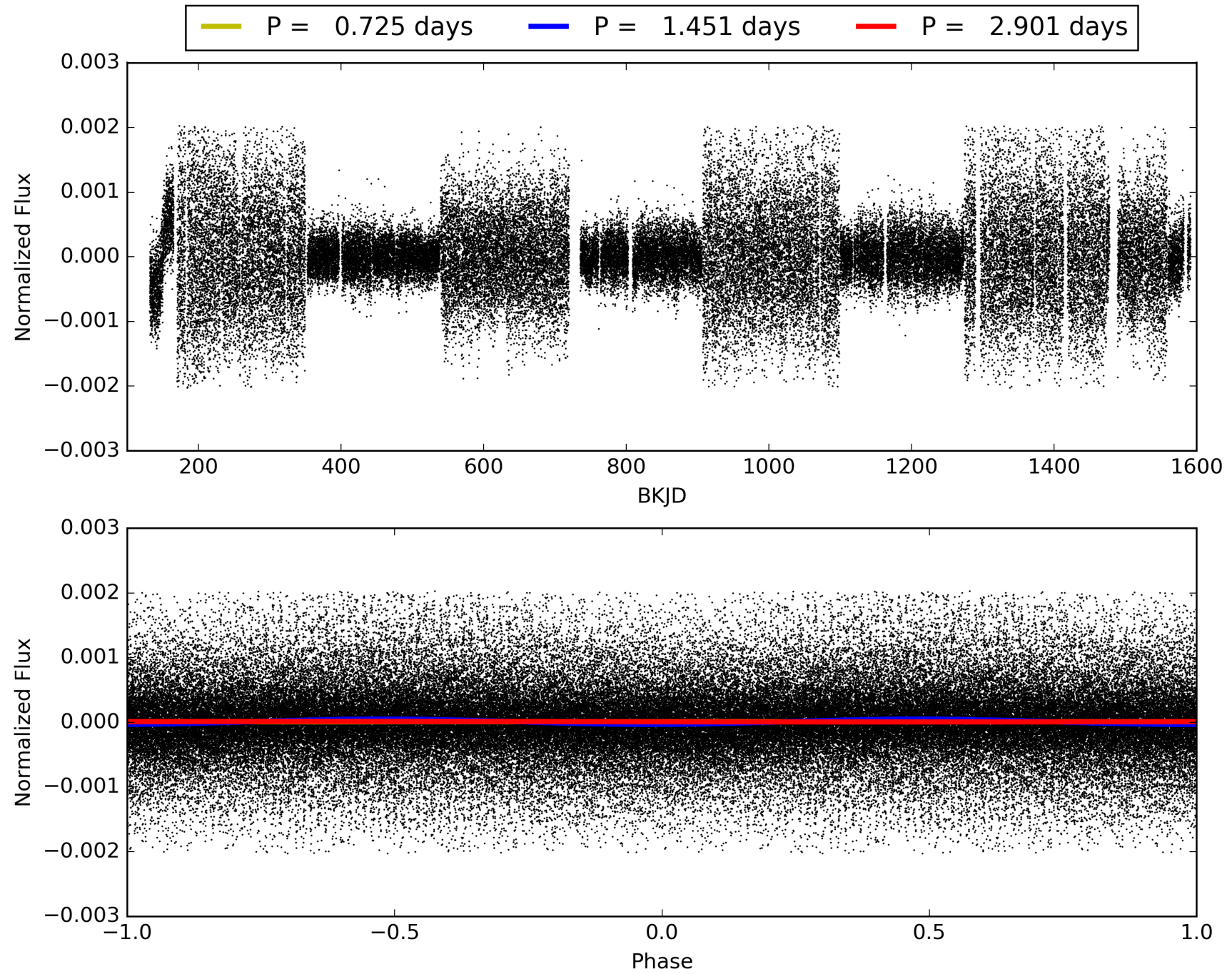
Software Revision: svn-ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 19:05:11 Z

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

# TCE 009655169-01, PDC Light Curves



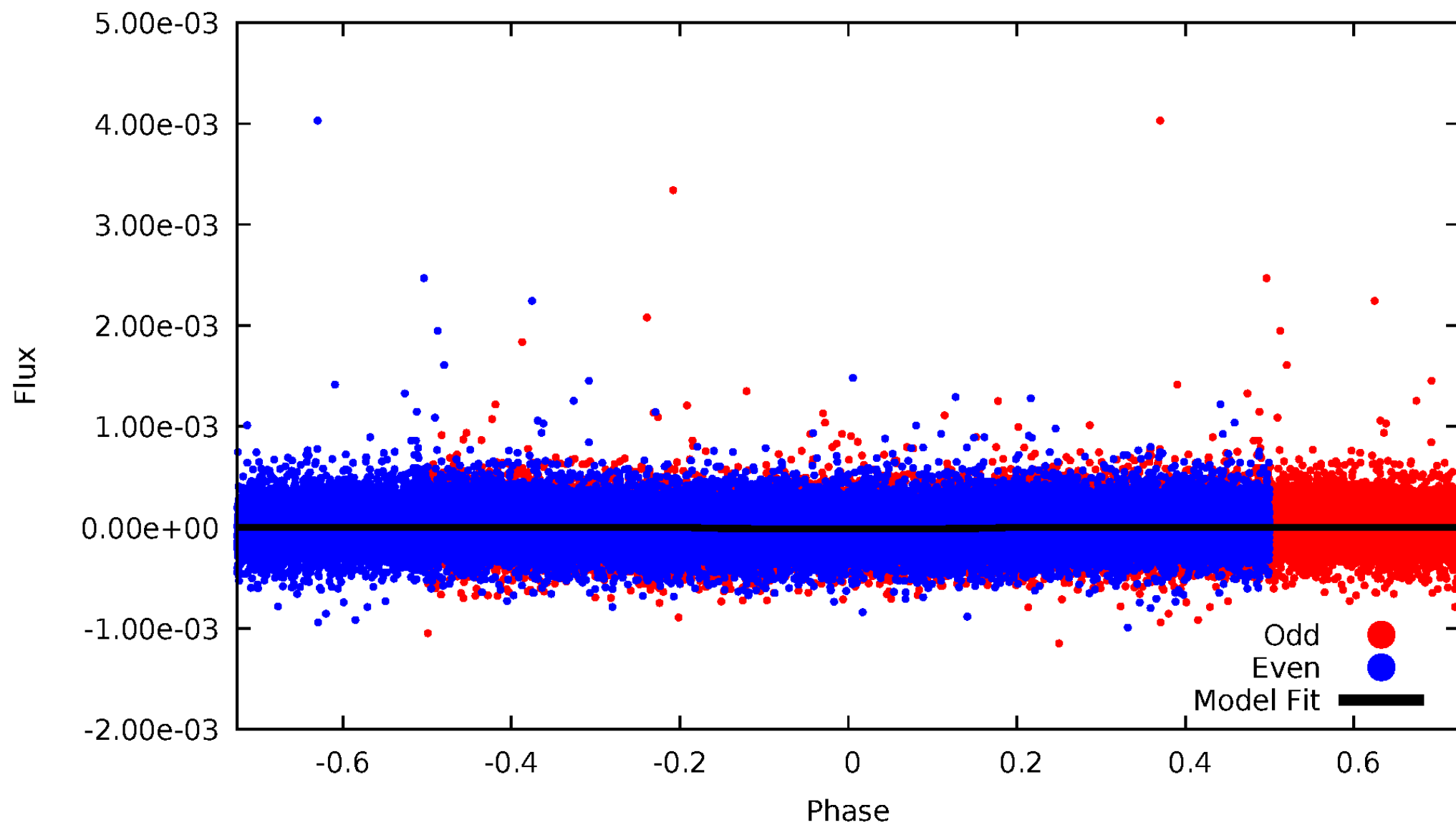
TCE 009655169-01





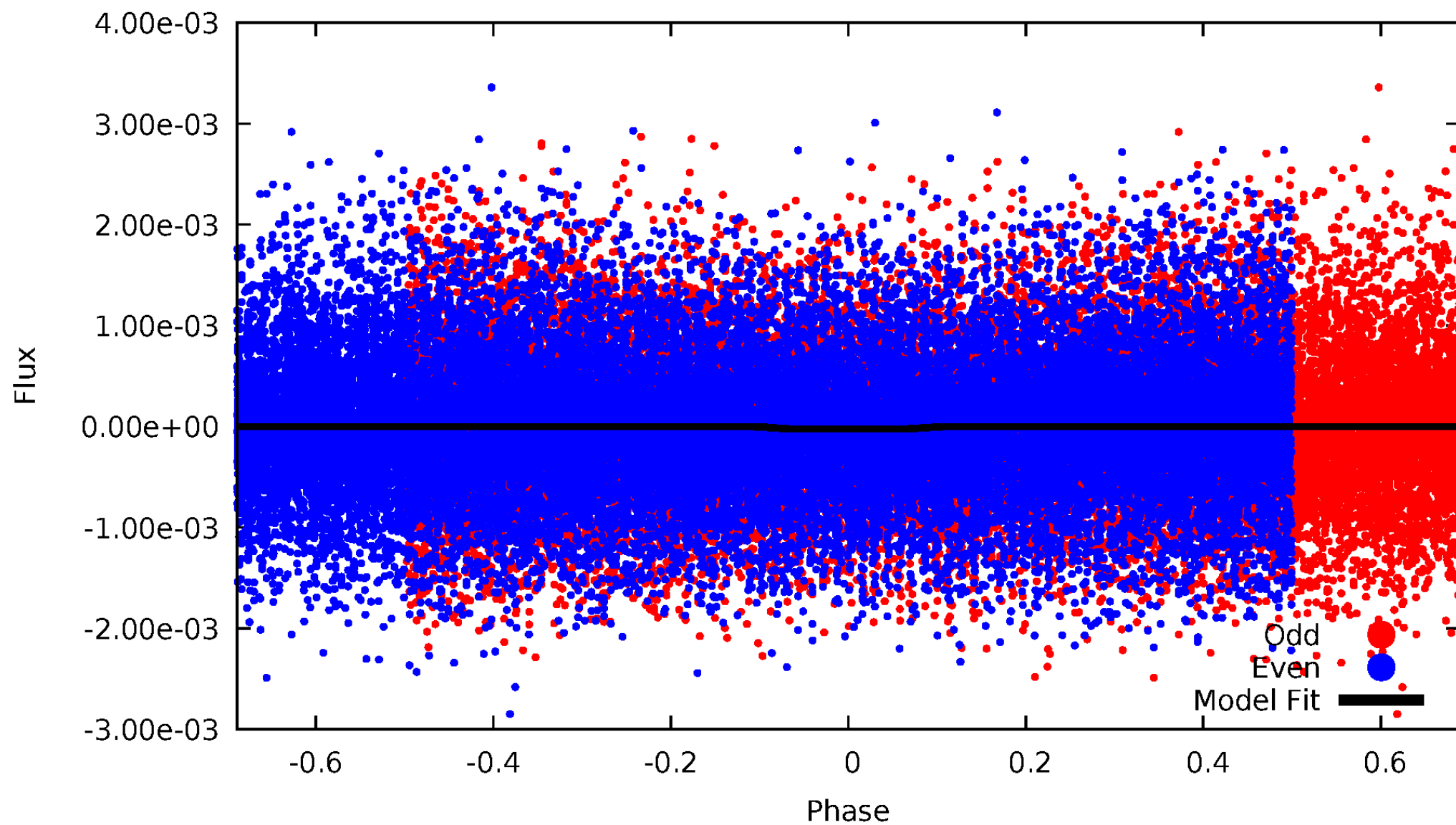
# DV Odd/Even

TCE 009655169-01



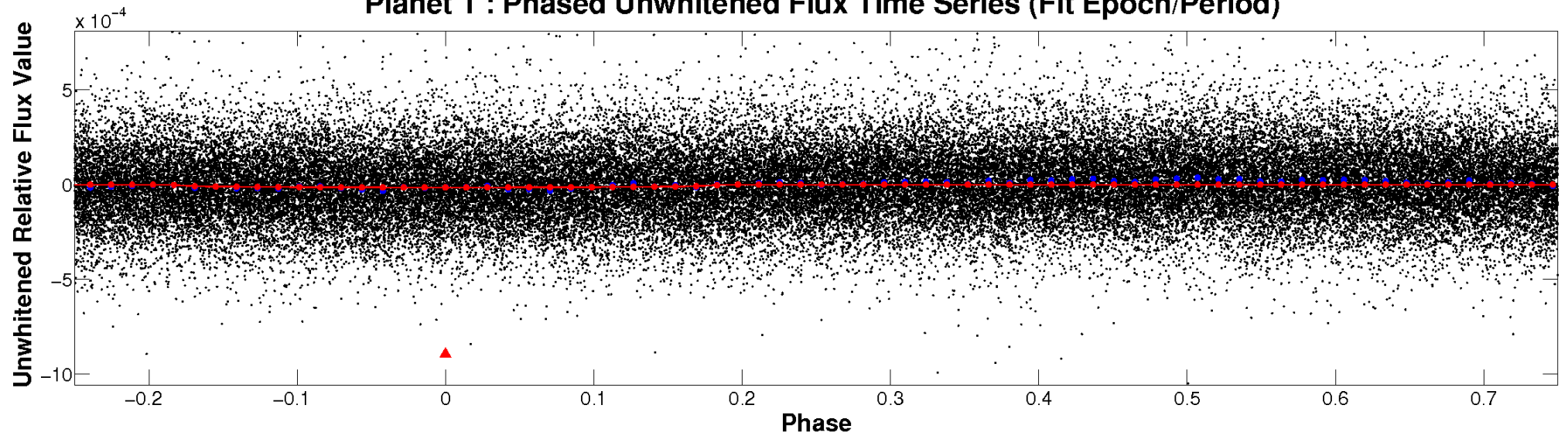
# ALT Odd/Even

TCE 009655169-01

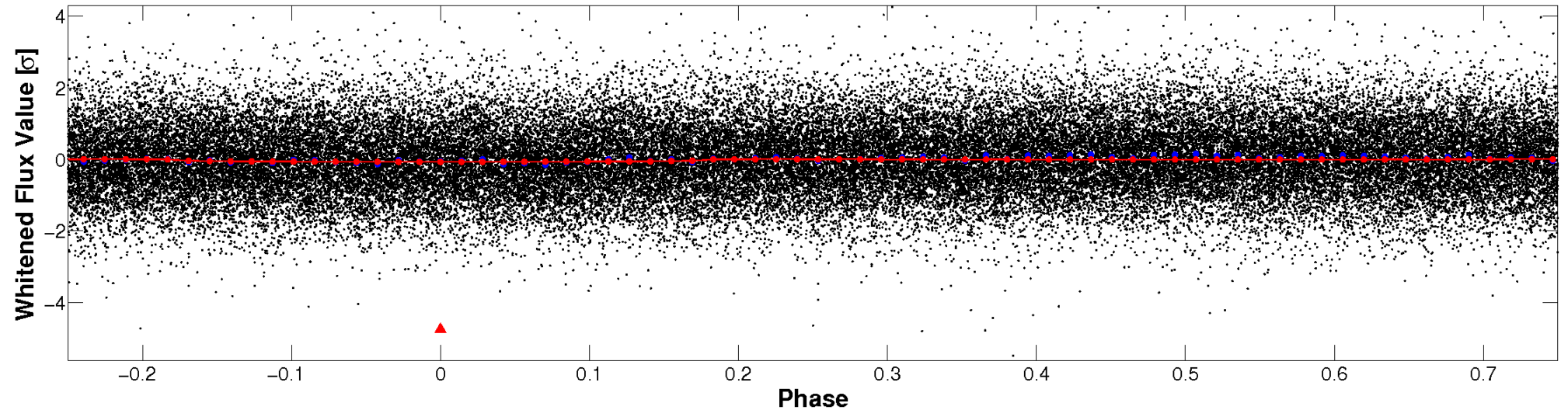


# Non-Whitened Vs. Whitened Light Curve

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

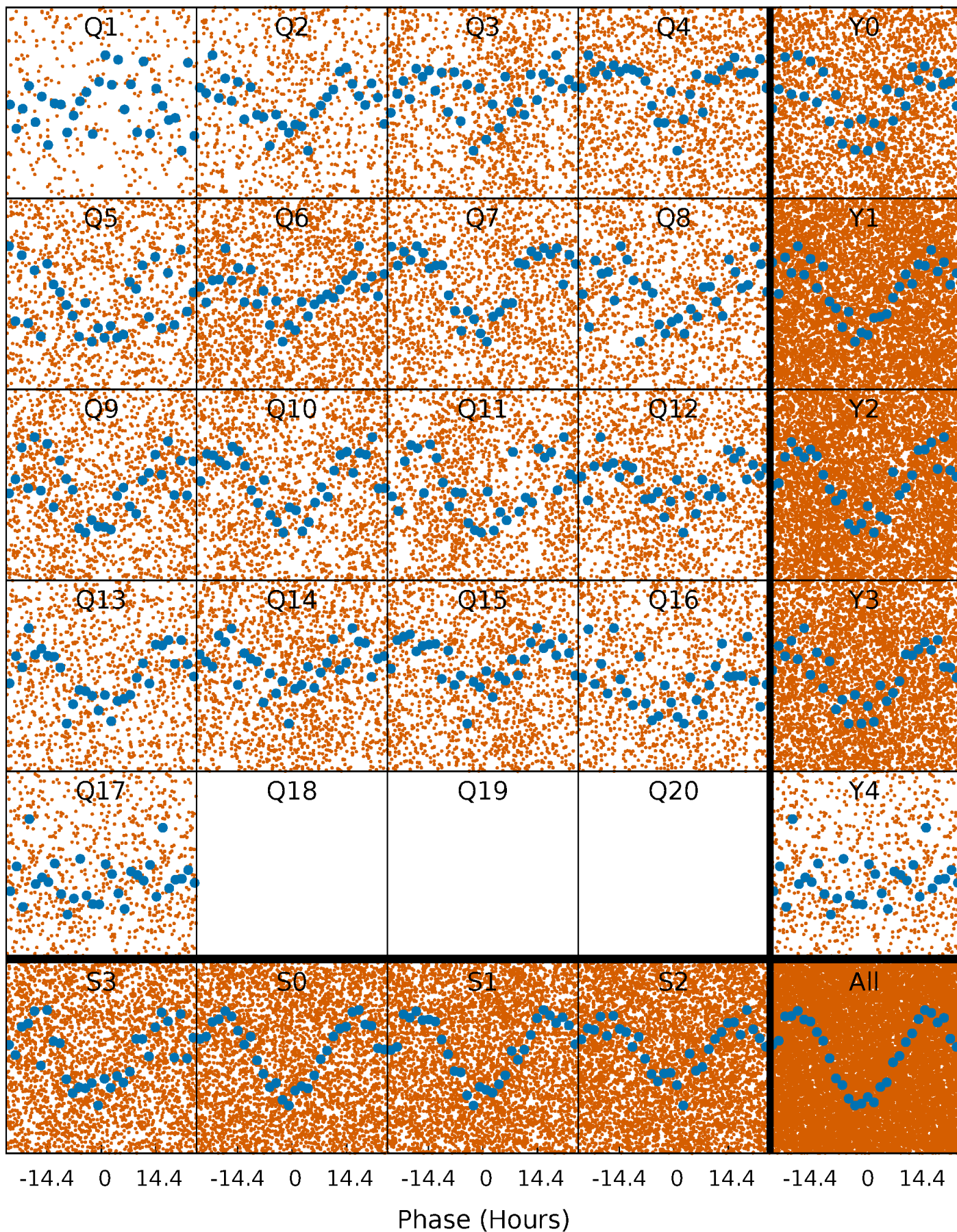


**Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)**



# PDC Quarter-Phased Transit Curves

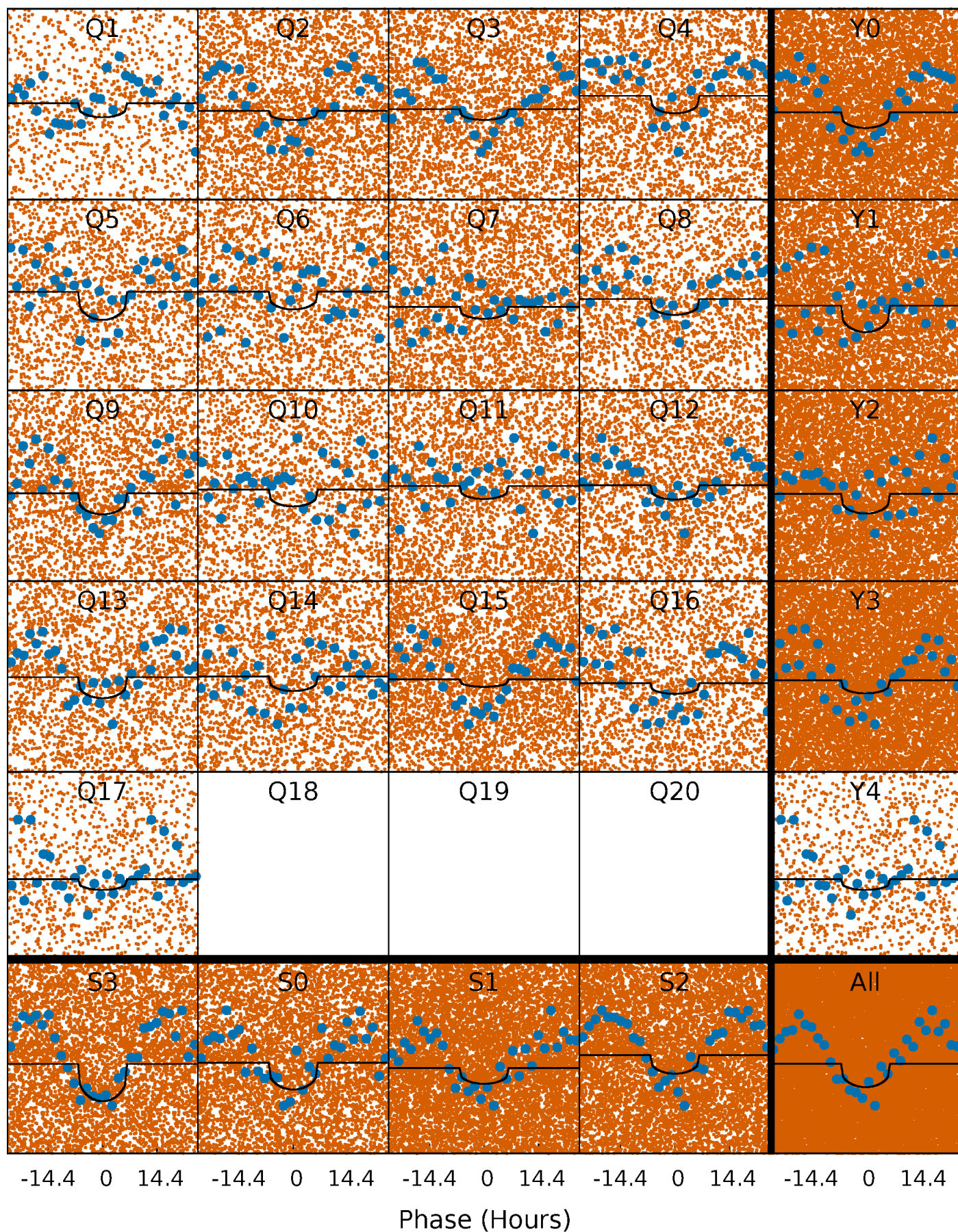
TCE 009655169-01 P= 1.450677 Days  $T_0=132.839574$  (BKJD)





# DV Quarter-Phased Transit Curves

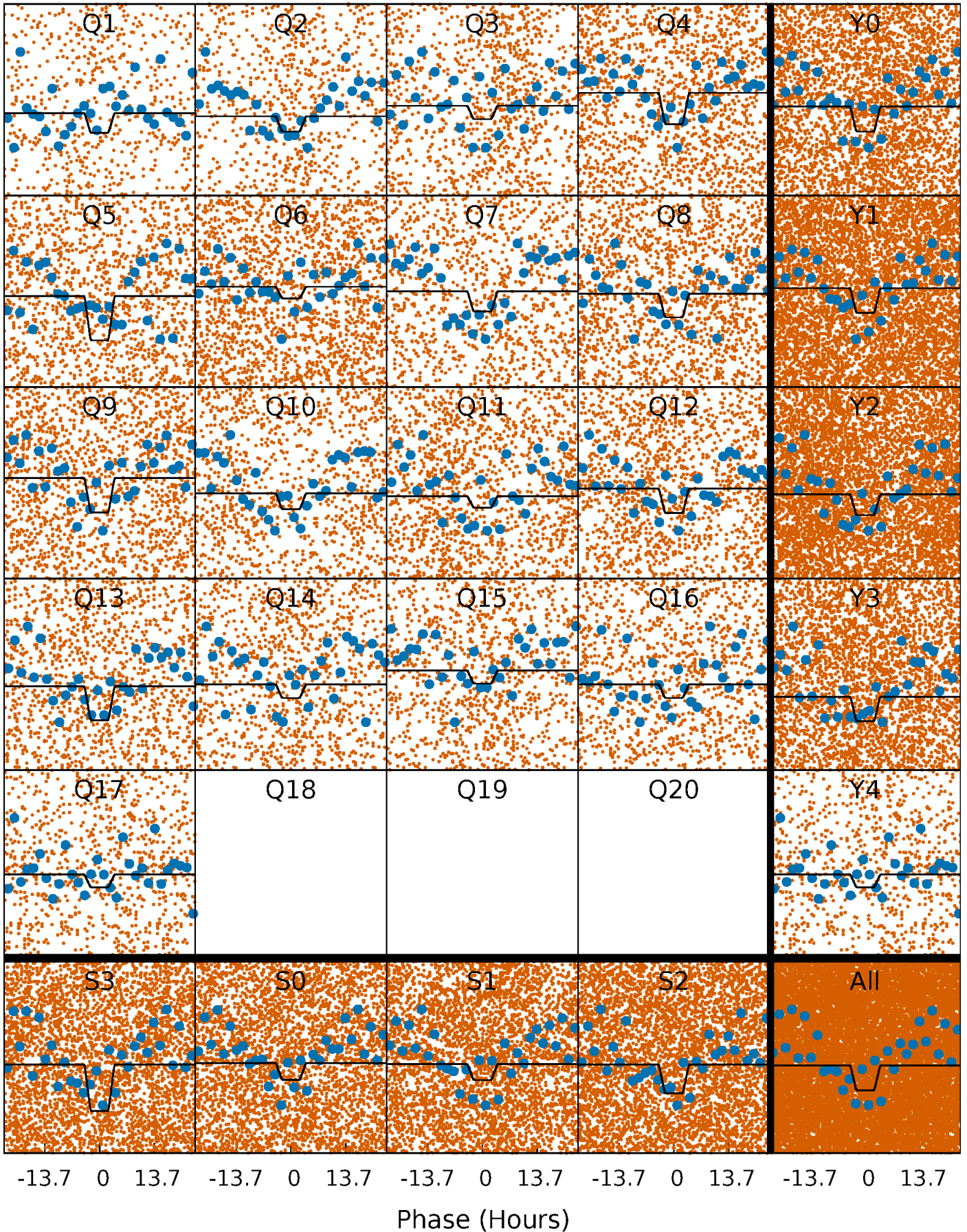
TCE 009655169-01 P= 1.450677 Days  $T_0=132.839574$  (BKJD)





# Alt. Detrend Quarter-Phased Transit Curves

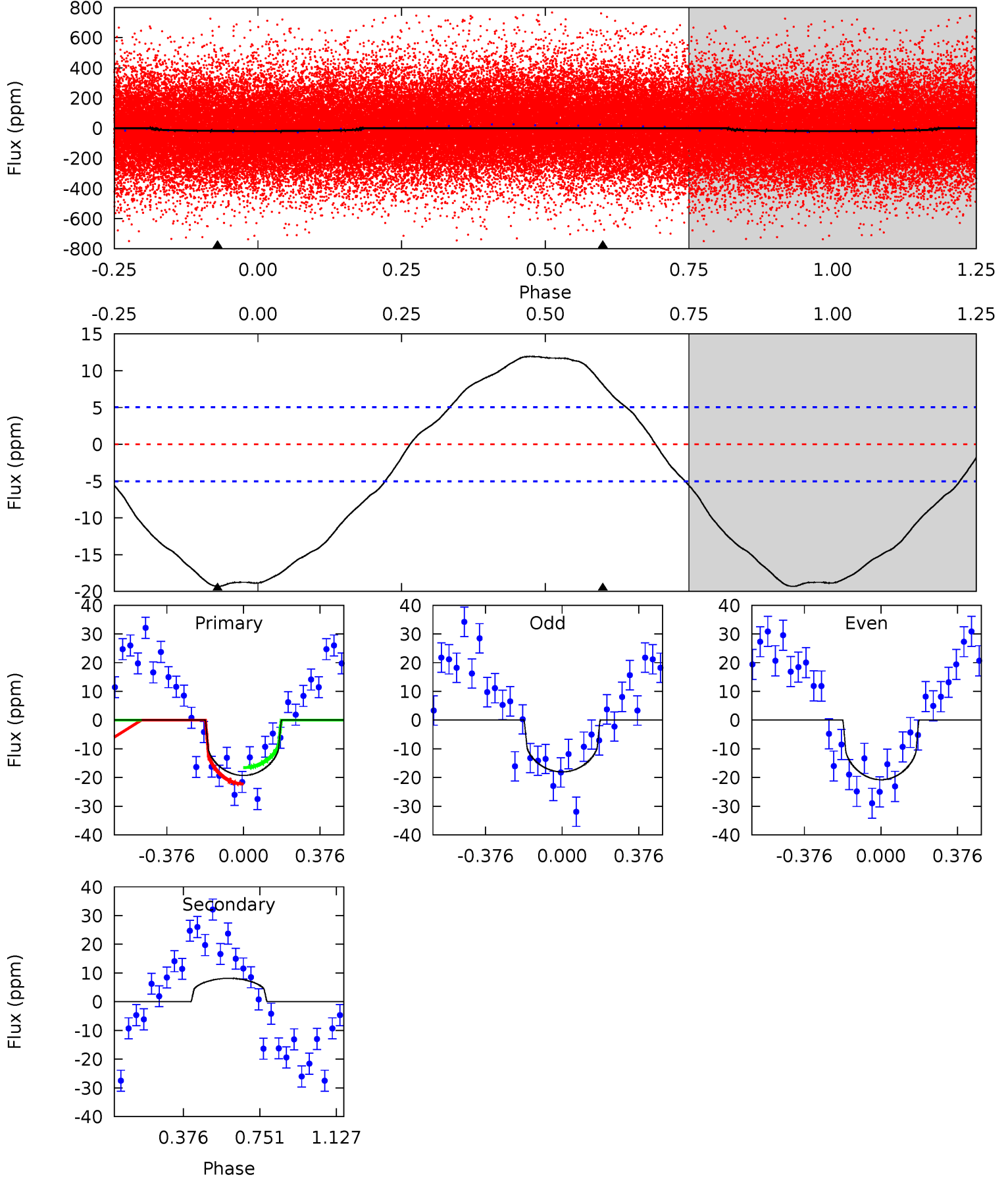
TCE 009655169-01 P= 1.450798 Days  $T_0=132.832373$  (BKJD)



# DV Model-Shift Uniqueness Test

009655169-01, P = 1.450677 Days, E = 131.388897 Days

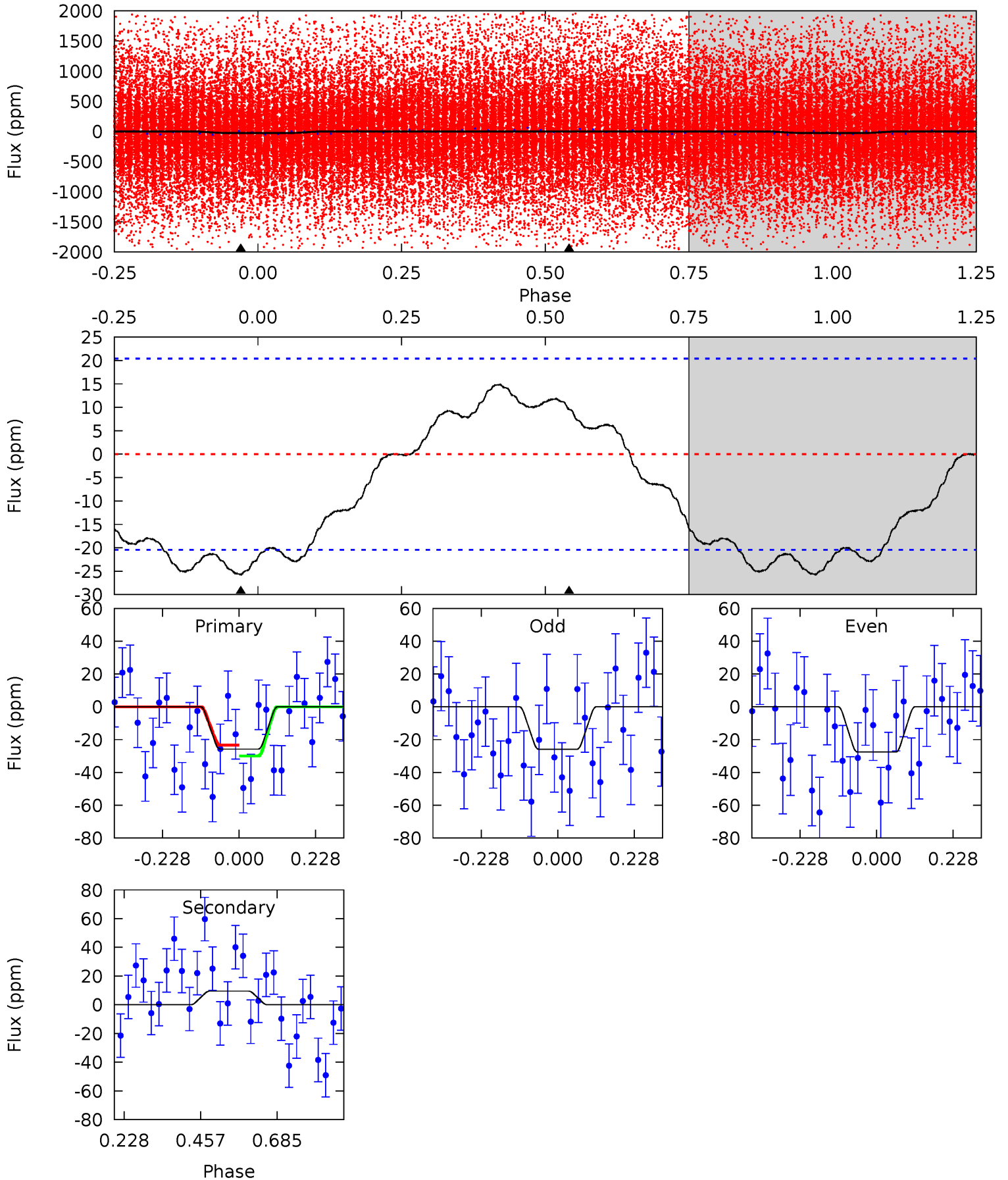
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
16.4	-6.94	0	0	4.28	0.89	2.40	16.4	16.4	-6.94	-6.94	1.16	1.09	0.38	2.40



# Alt Model-Shift Uniqueness Test

009655169-01, P = 1.450798 Days, E = 131.381575 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
5.54	-2.04	0	0	4.39	1.20	0.61	5.54	5.54	-2.04	-2.04	0.19	0.91	0.37	0.71





### Stellar Parameters For KIC 009655169

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R$ ( $R_{\odot}$ )	$M(M_{\odot})$	$p_{\star}$ ( $\text{g}\cdot\text{cm}^{-3}$ )
	$5393^{+145}_{-145}$	$4.658^{+0.030}_{-0.090}$	$-0.680^{+0.300}_{-0.300}$	$0.664^{+0.088}_{-0.041}$	$0.744^{+0.064}_{-0.070}$	$3.582^{+0.499}_{-0.995}$
	+3%/-3%	+1%/-2%	+44%/-44%	+13%/-6%	+9%/-9%	+14%/-28%
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 009655169-01 / KOI

Detrend	Depth (ppm)	$R_p$ ( $R_{\oplus}$ )	$T_{\text{max}}$ (K)	$T_{\text{obs}}$ (K)	$A_{\text{obs}}$
DV	$8 \pm 1$	$0.32^{+0.25}_{-0.19}$	$1821^{+73}_{-61}$	$-4575^{+867}_{-2466}$	$-22.740^{+15.999}_{-127.937}$
Alt.	$10 \pm 5$	$0.40^{+0.26}_{-0.22}$	$1823^{+67}_{-58}$	$-4241^{+760}_{-1984}$	$-15.476^{+10.832}_{-74.819}$

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

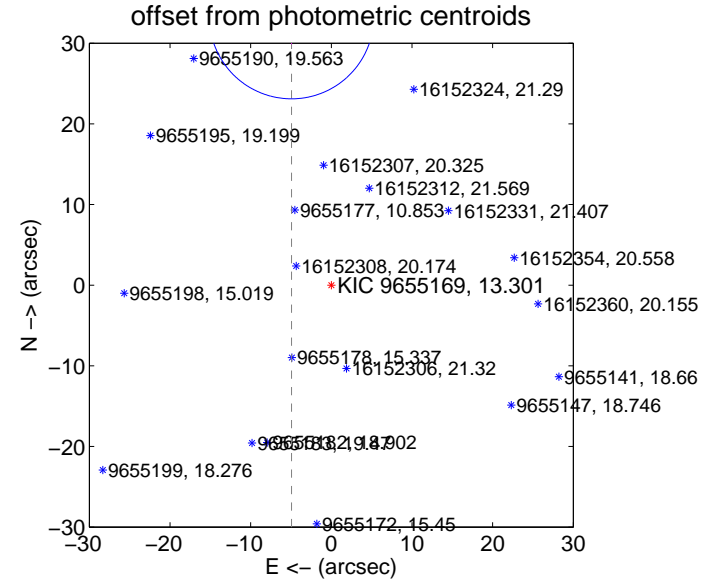
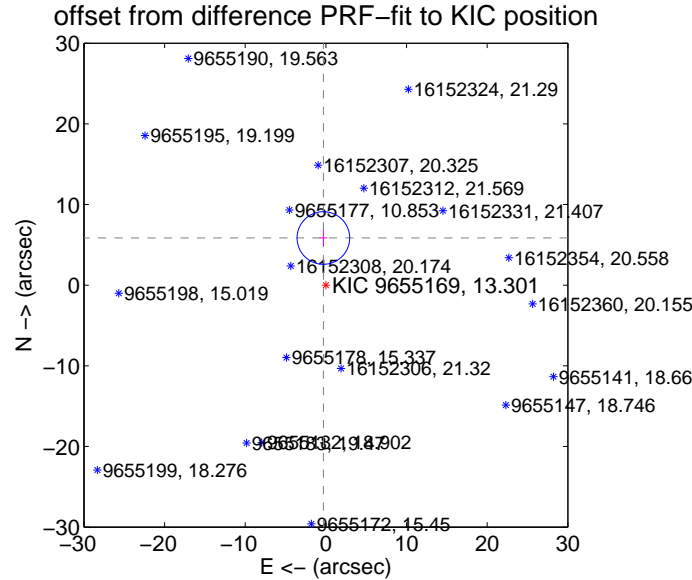
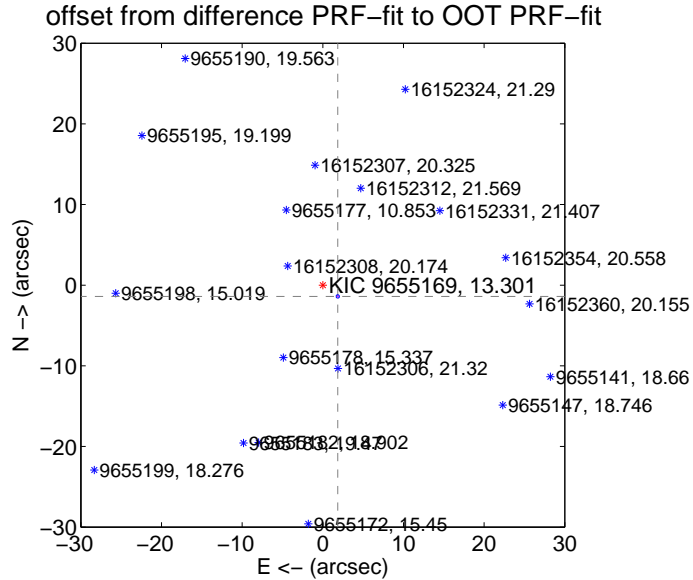
## DV Centroid Data

Supplemental centroid analysis for 009655169-01. Kepler magnitude: 13.30. Transit SNR 9.28

There are 5 quarters with good PRF difference image offsets

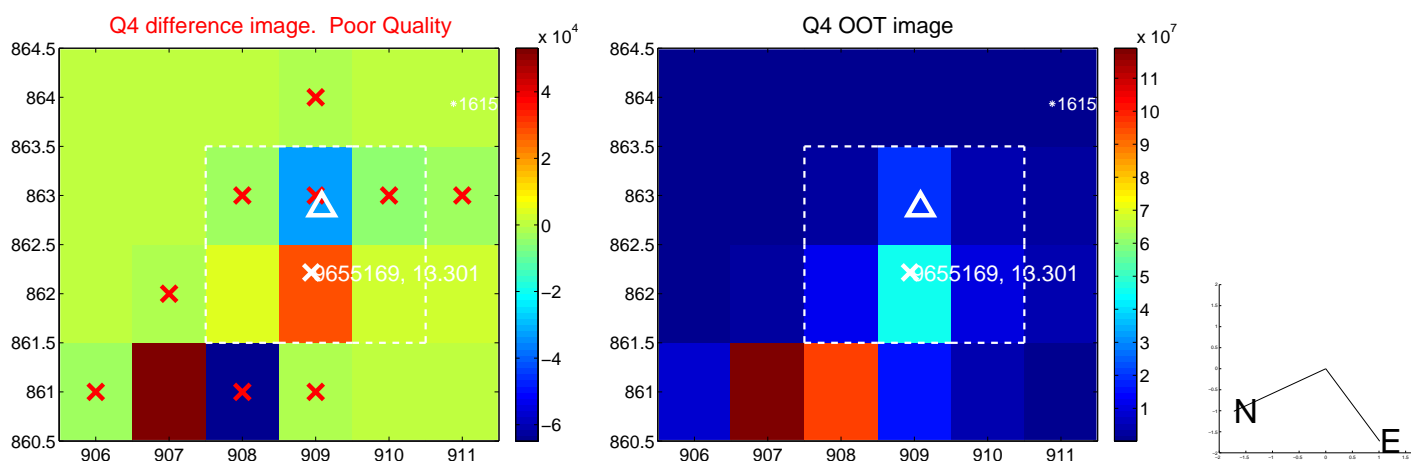
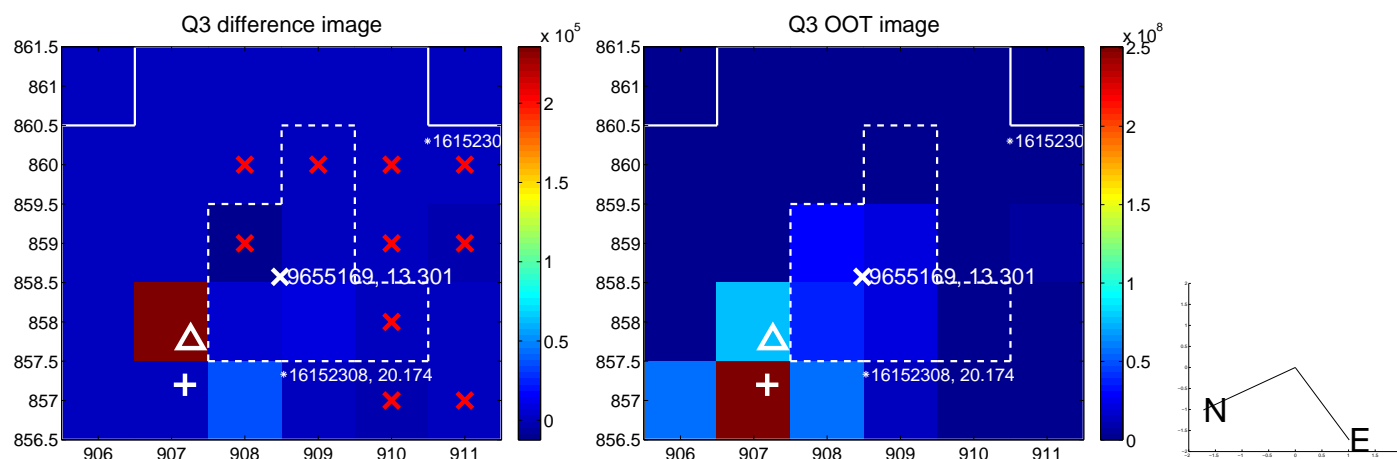
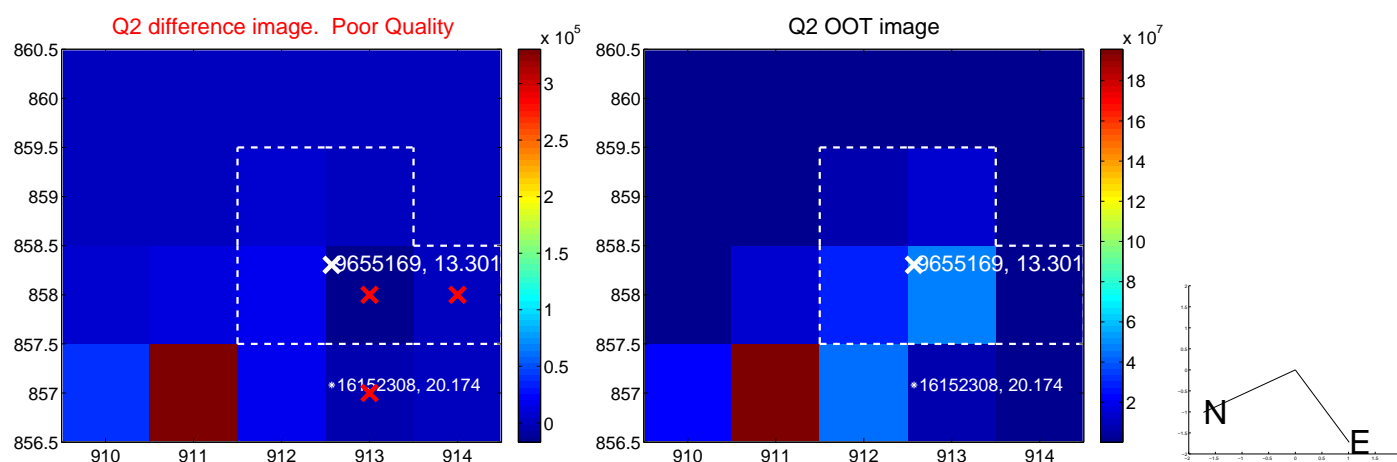
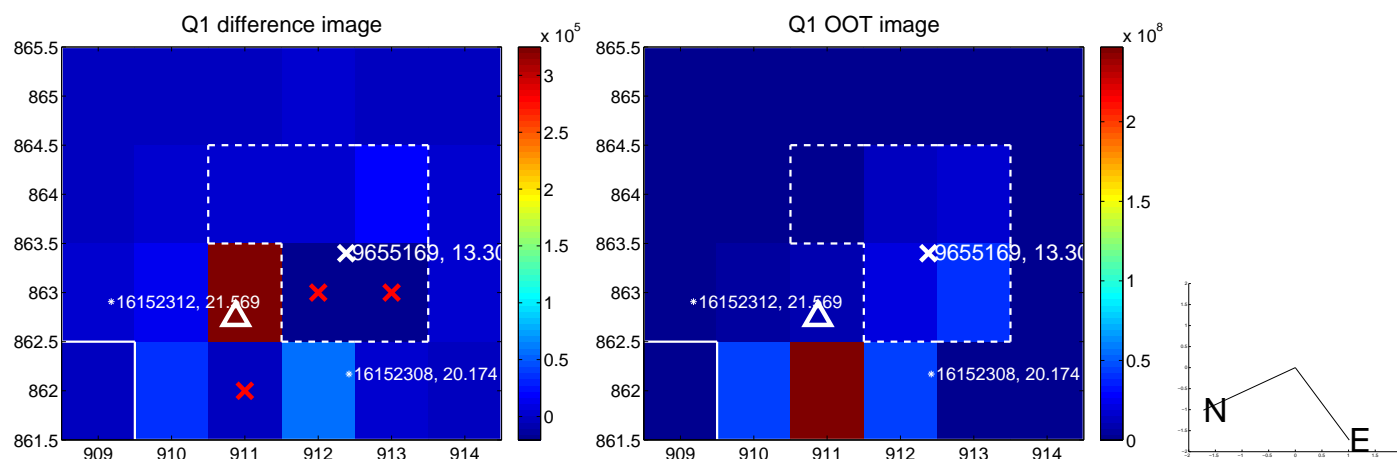
The OOT PRF centroid is offset from the target star catalog position by about 7.58 arcsec so the offset from difference PRF-fit to OOT-fit may be invalid.

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$2.319 \pm 0.069$	33.81	$-1.853 \pm 0.069$	$-1.395 \pm 0.067$
PRF-fit source offset from KIC position	$5.858 \pm 1.087$	5.39	$0.311 \pm 0.513$	$5.850 \pm 1.068$
photometric centroid source offset	$33.66 \pm 3.40$	9.91	$4.93 \pm 0.90$	$33.30 \pm 3.43$

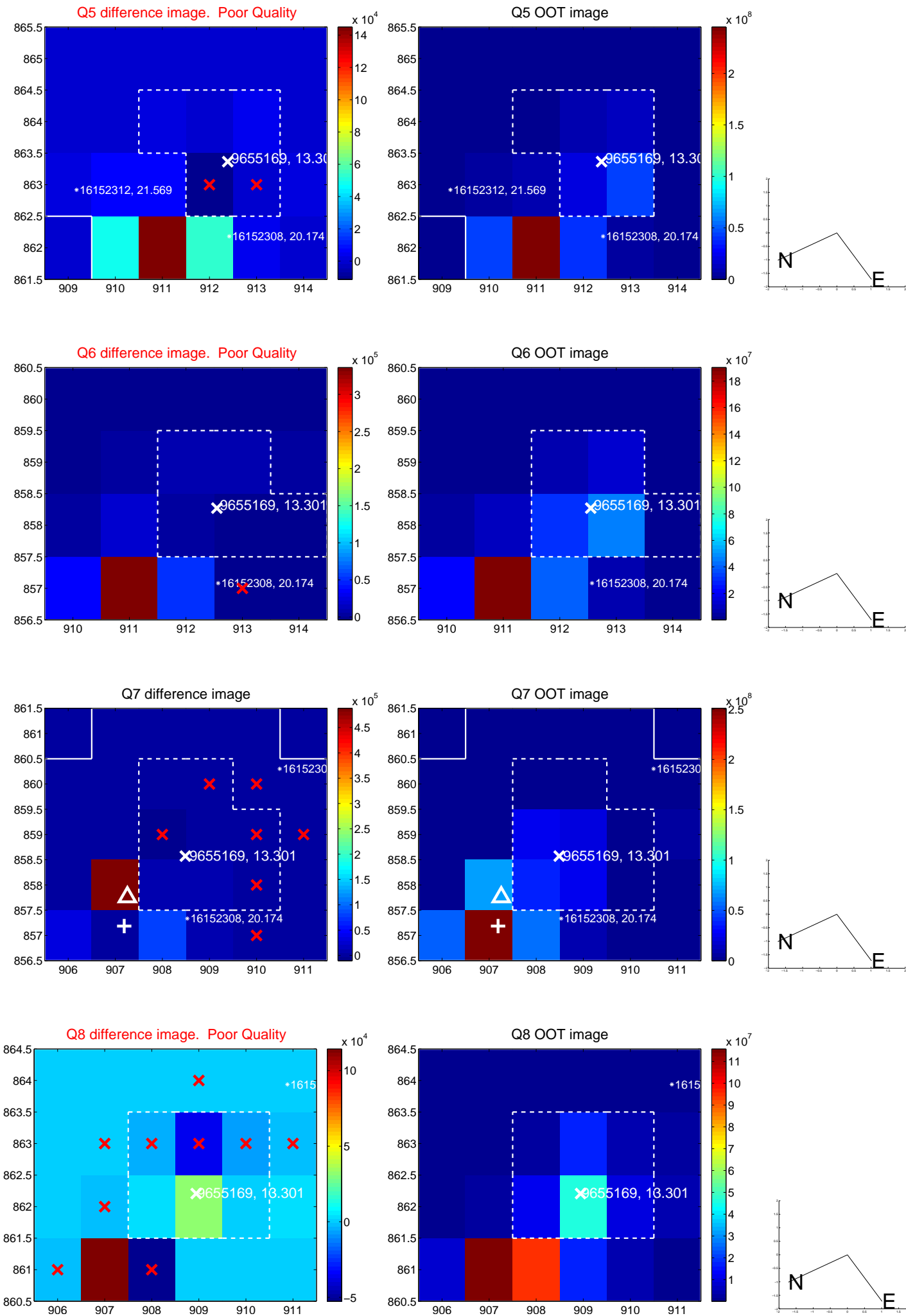


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: three-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

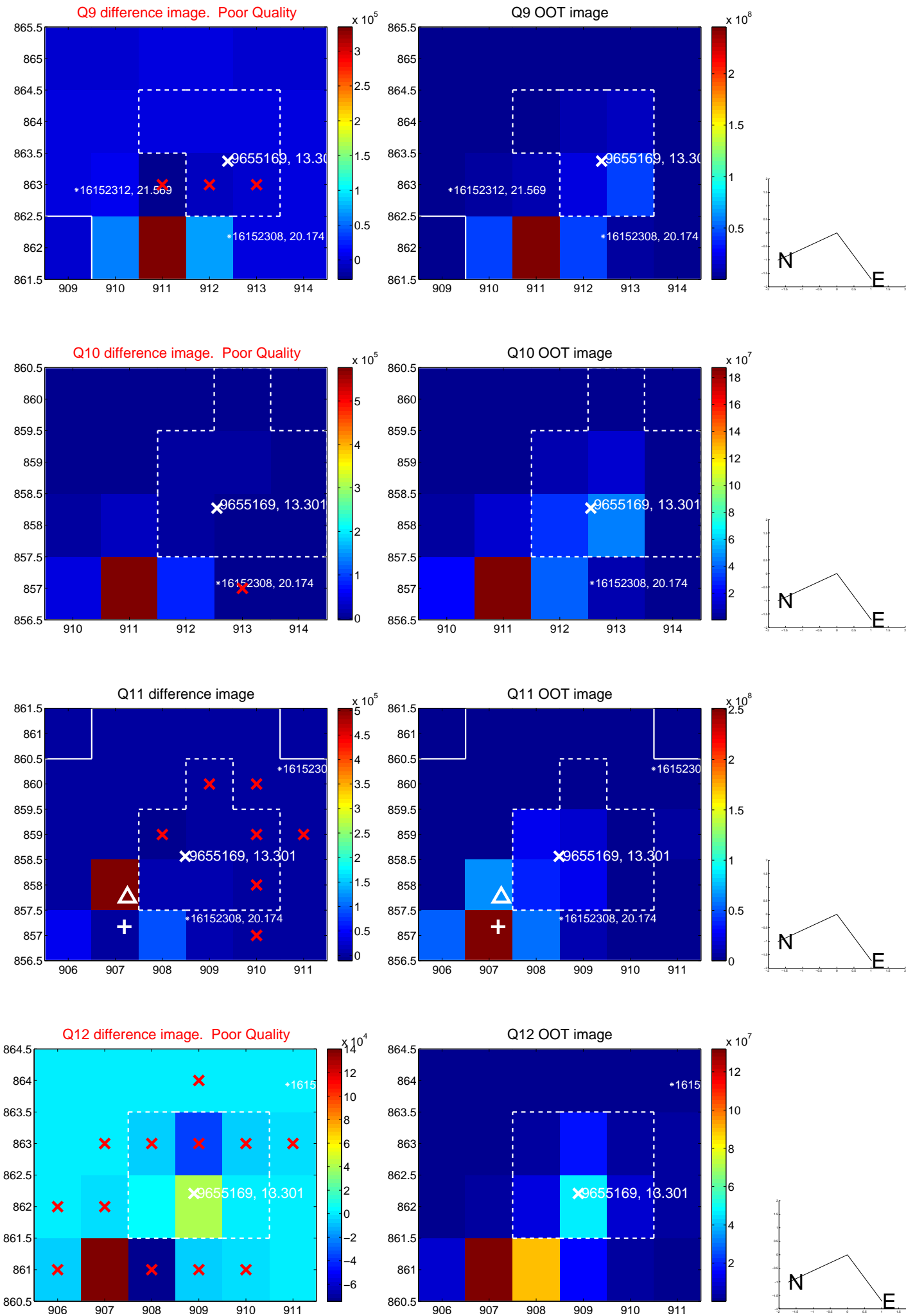


white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

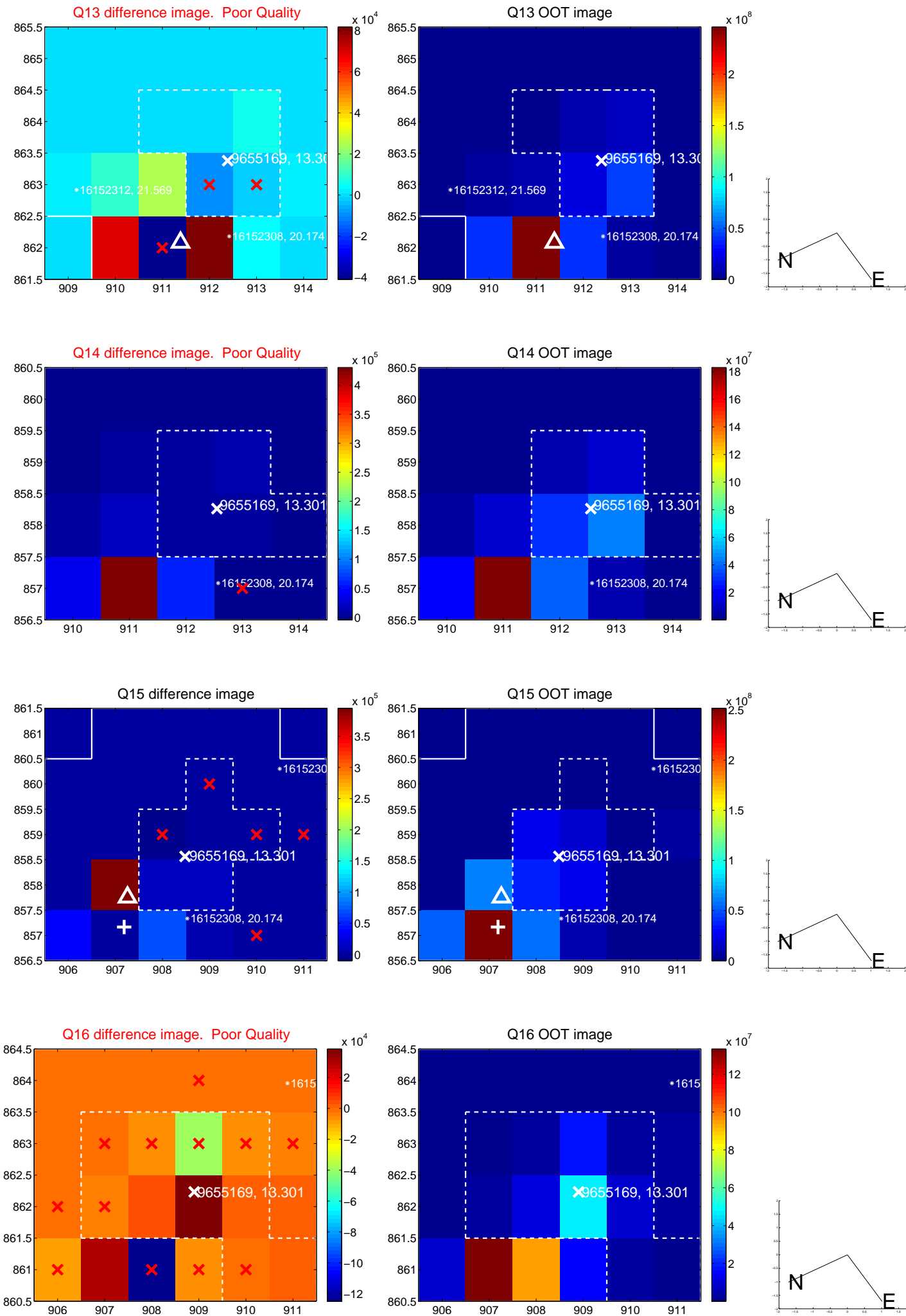




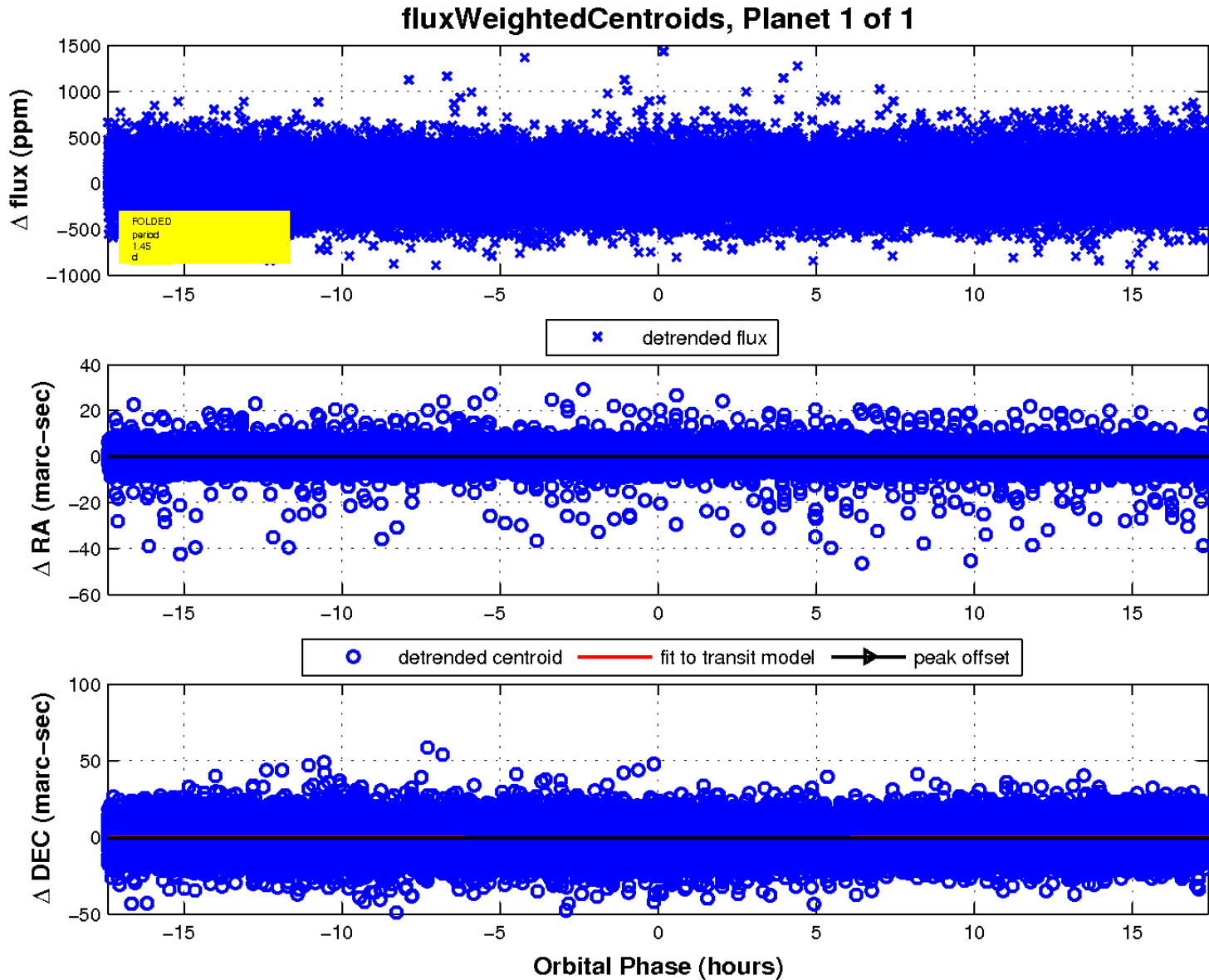
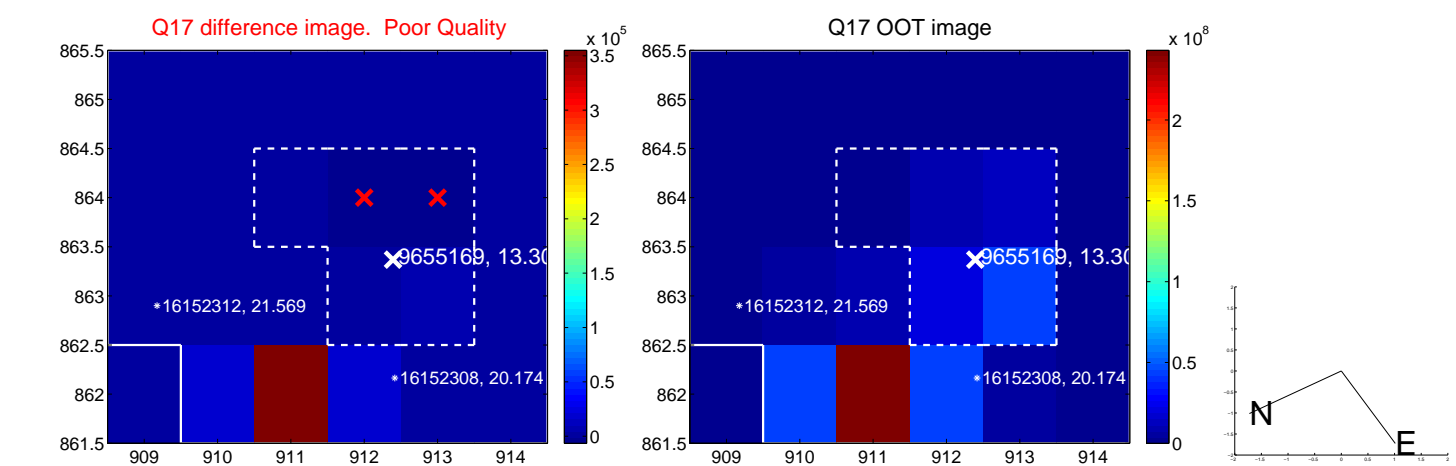
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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



UKIRT Image

Declination

