

# KIC 006871866

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
006871866-01	OBS	No	1.901579	132.055463	15.0	6.181	7.4	7.6	2.35	7848	1.02	13742.61

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
006871866-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT

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

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

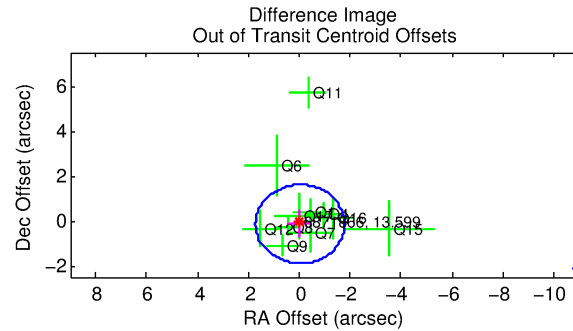
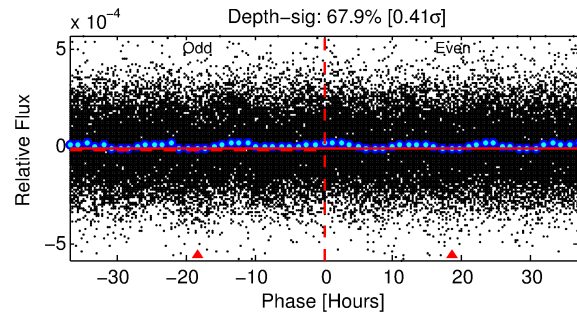
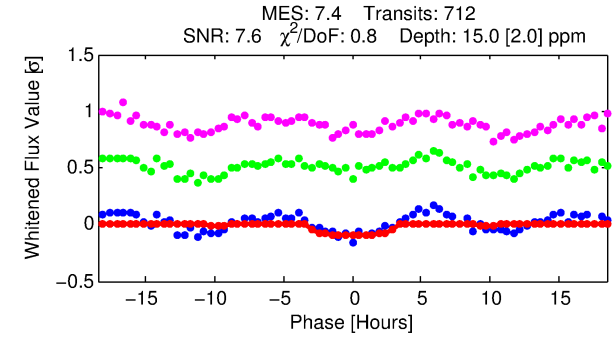
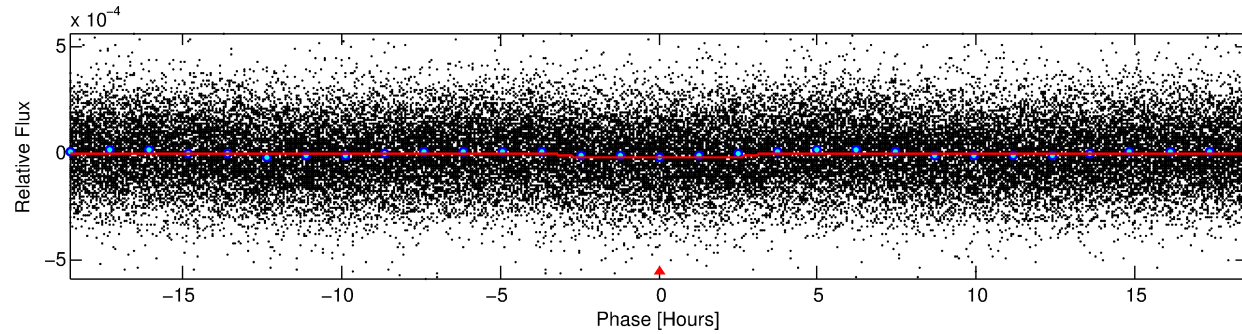
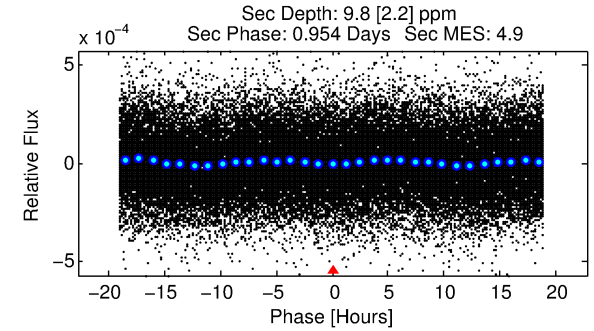
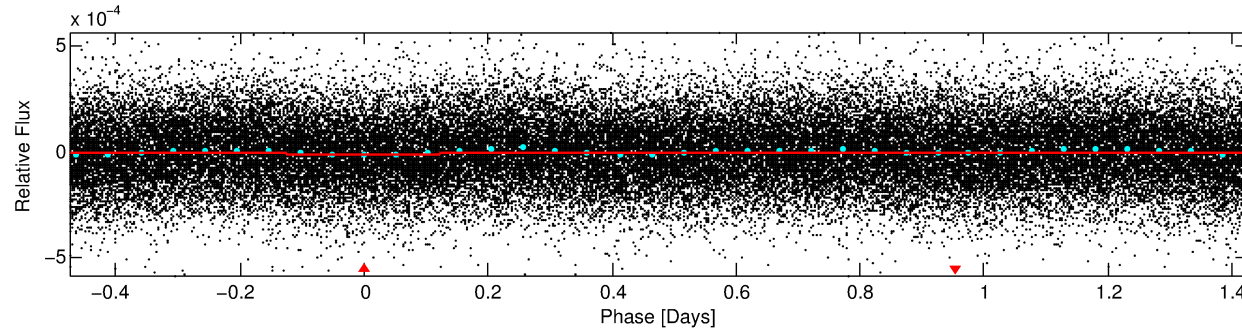
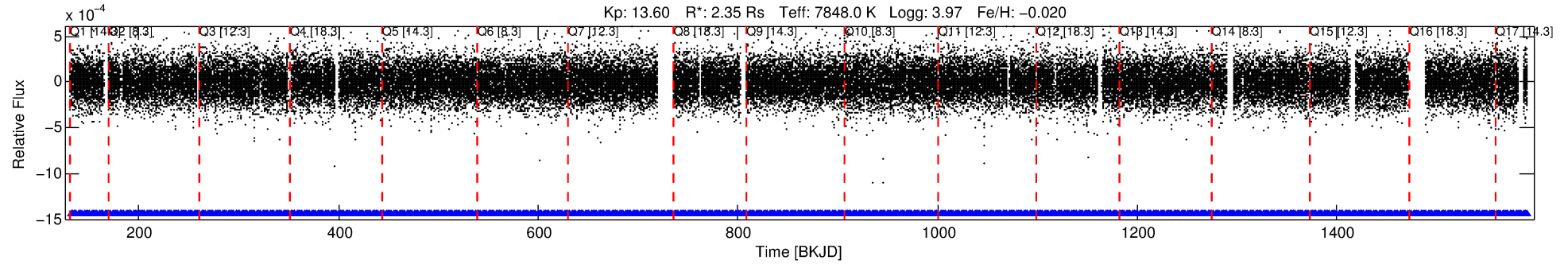
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

Ephemeris Match Information For 006871866-01

No Significant Match Found

# DV One-Page Summary

KIC: 6871866 Candidate: 1 of 1 Period: 1.902 d



## DV Fit Results:

Period = 1.90158 [0.00003] d  
Epoch = 132.0555 [0.0082] BKJD  
Rp/R\* = 0.0040 [0.0011]  
a/R\* = 1.61 [1.61]  
b = 0.83 [0.63]  
Seff = 13742.61 [5669.92]  
Teff = 2761 [285] K  
Rp = 1.02 [0.39] Re  
a = 0.0370 [0.0091] AU  
Ag = 7.13 [4.96] [1.24σ]  
Teffp = 6976 [1058] K [3.85σ]

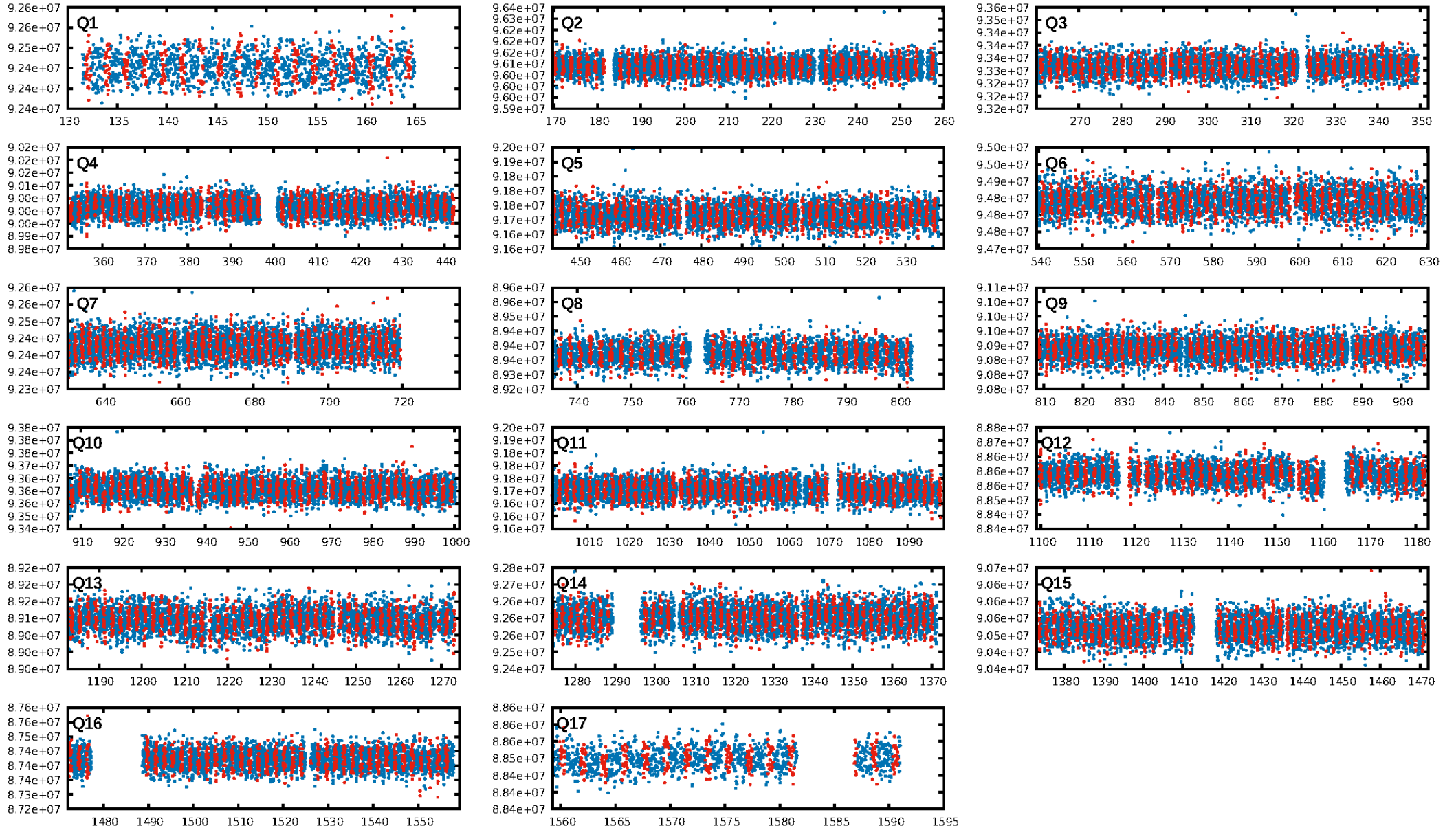
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: N/A  
ModelChiSquareGof-sig: N/A  
**Bootstrap-pfa: 4.51e-12**  
RollingBand-fgt: 1.00 [679/679]  
GhostDiagnostic-chr: 20.82  
Centroid-sig: 36.0%  
Centroid-so: 1.640 arcsec [1.10σ]  
OotOffset-rm: 0.147 arcsec [0.25σ]  
KicOffset-rm: 0.135 arcsec [0.31σ]  
OotOffset-st: 1/3/4/3 [11]  
KicOffset-st: 1/3/4/3 [11]  
DiffImageQuality-fgm: 0.55 [6/11]  
DiffImageOverlap-fno: 1.00 [17/17]

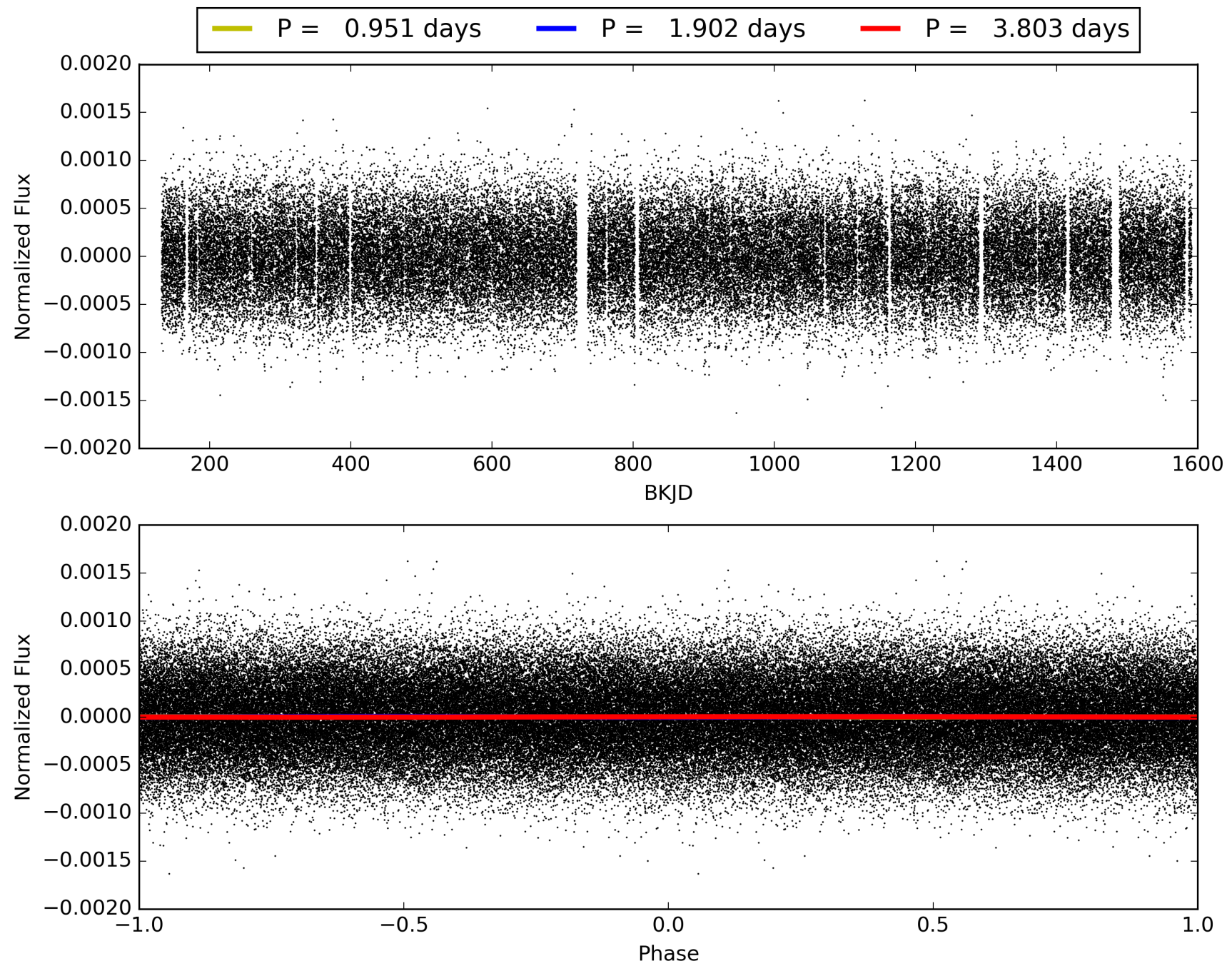
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 16:41:47 Z

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

# TCE 006871866-01, PDC Light Curves



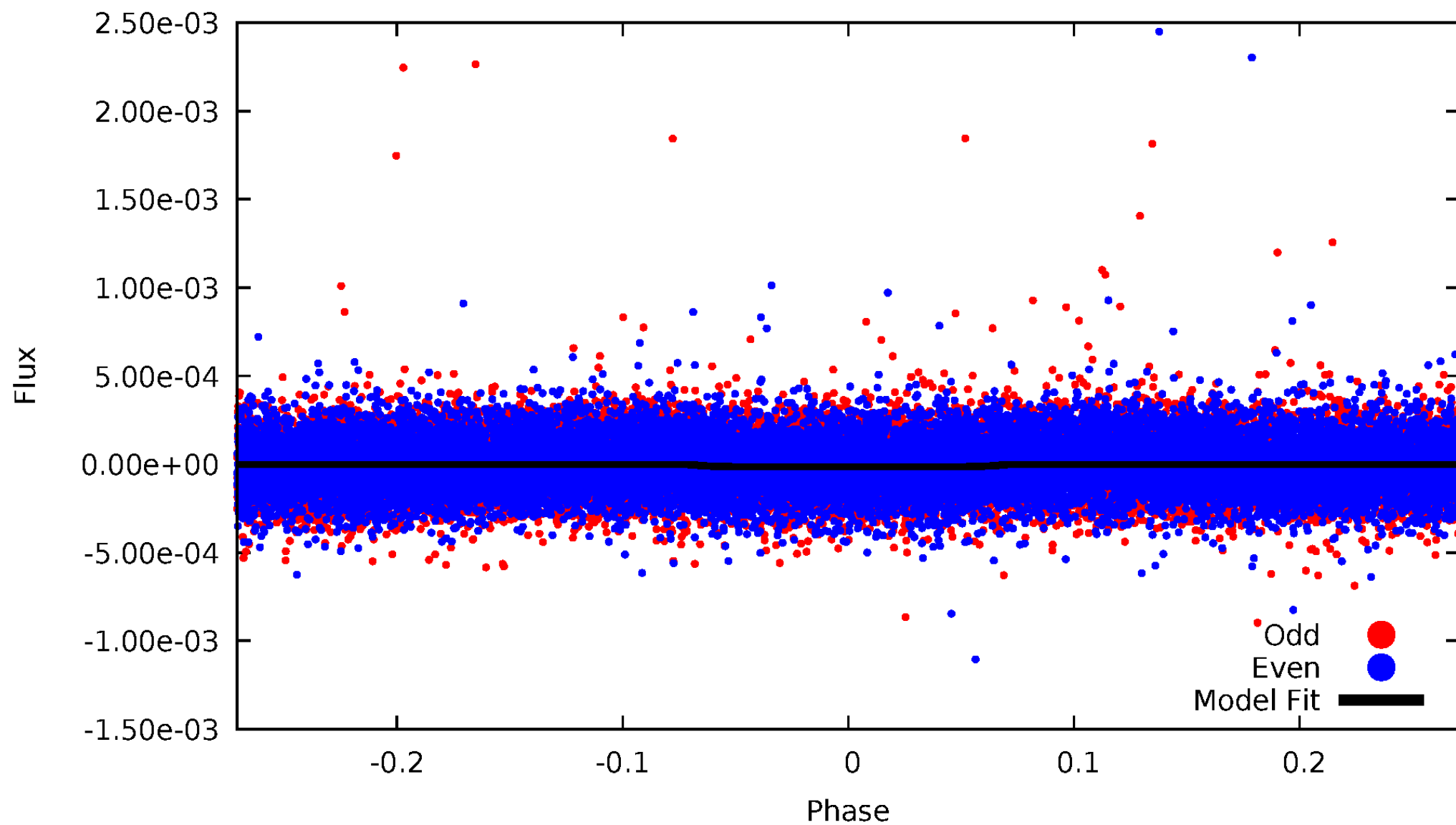
TCE 006871866-01





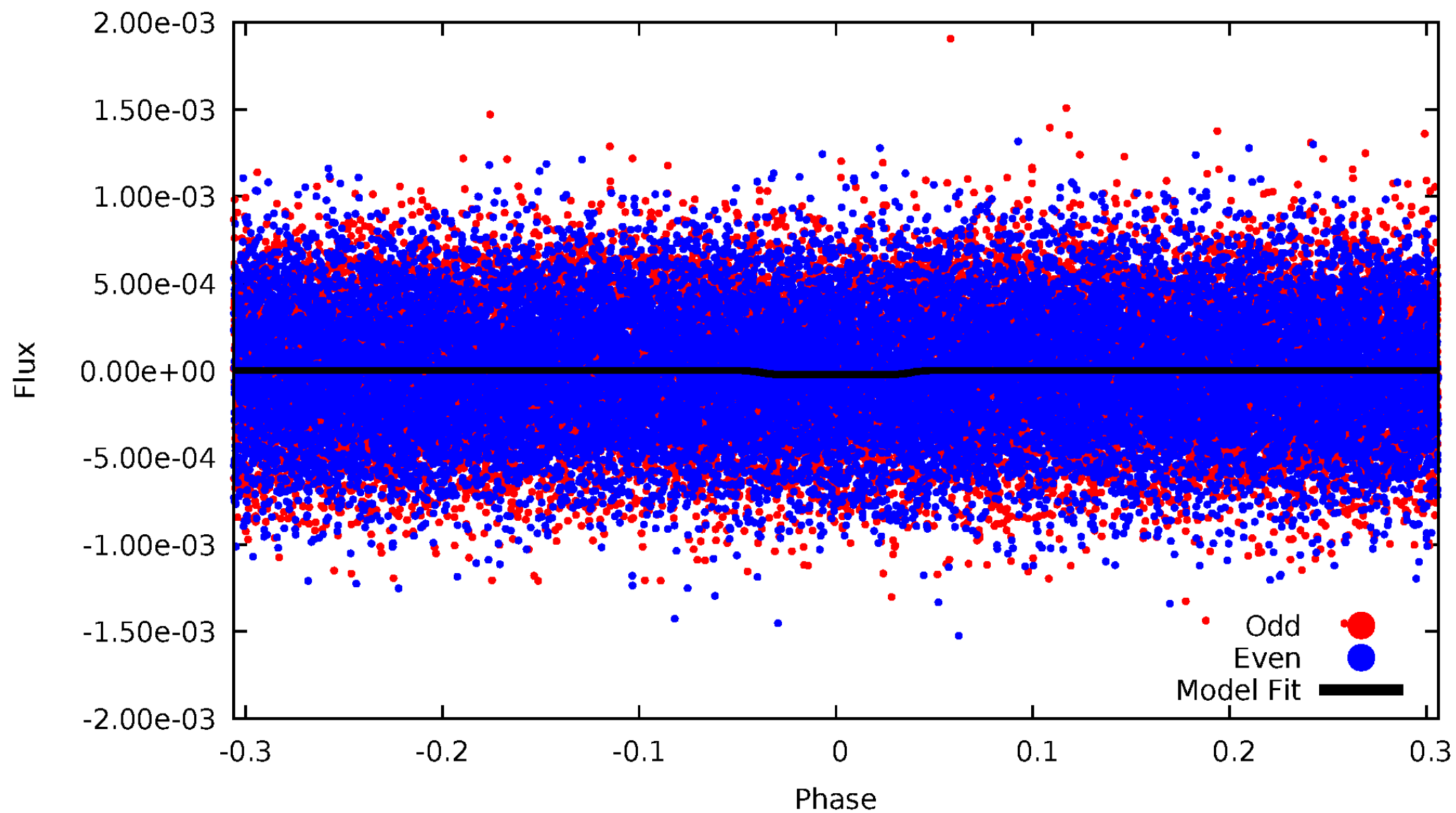
# DV Odd/Even

TCE 006871866-01



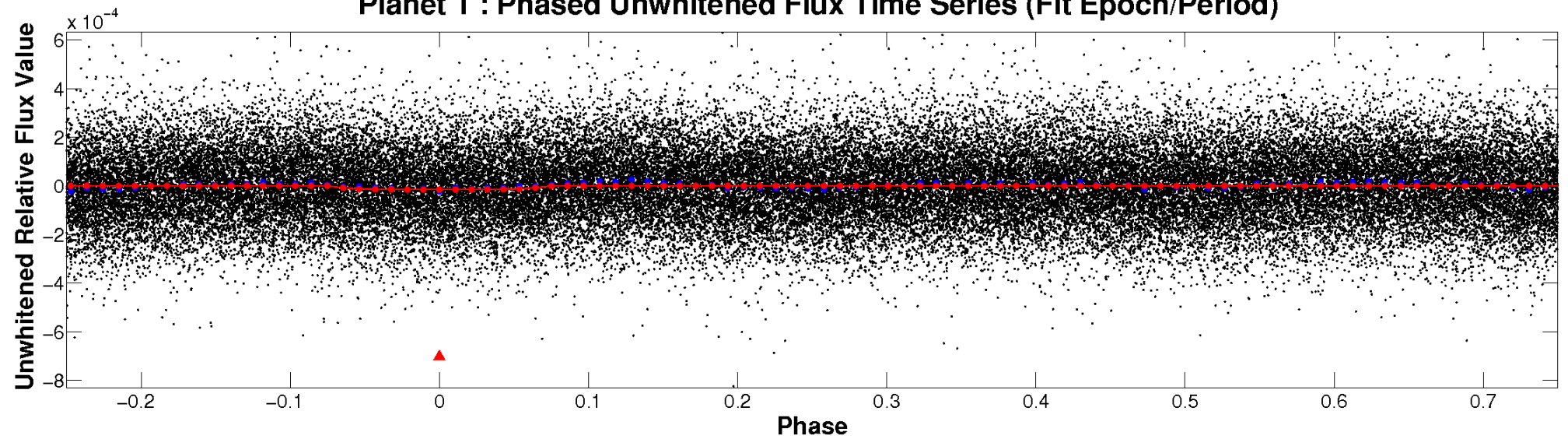
# ALT Odd/Even

TCE 006871866-01

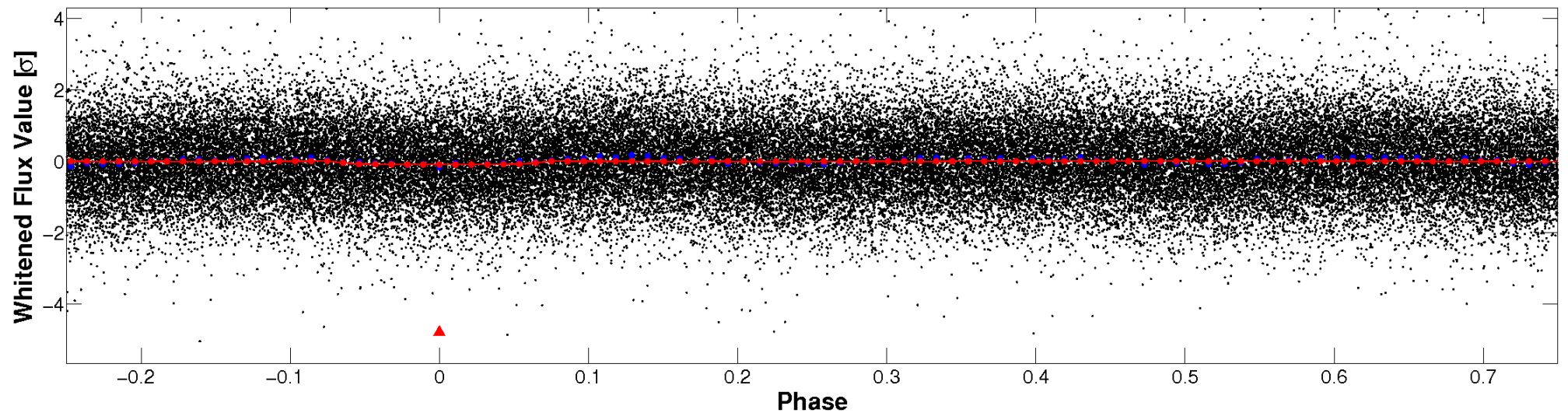


# Non-Whitened Vs. Whitened Light Curve

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

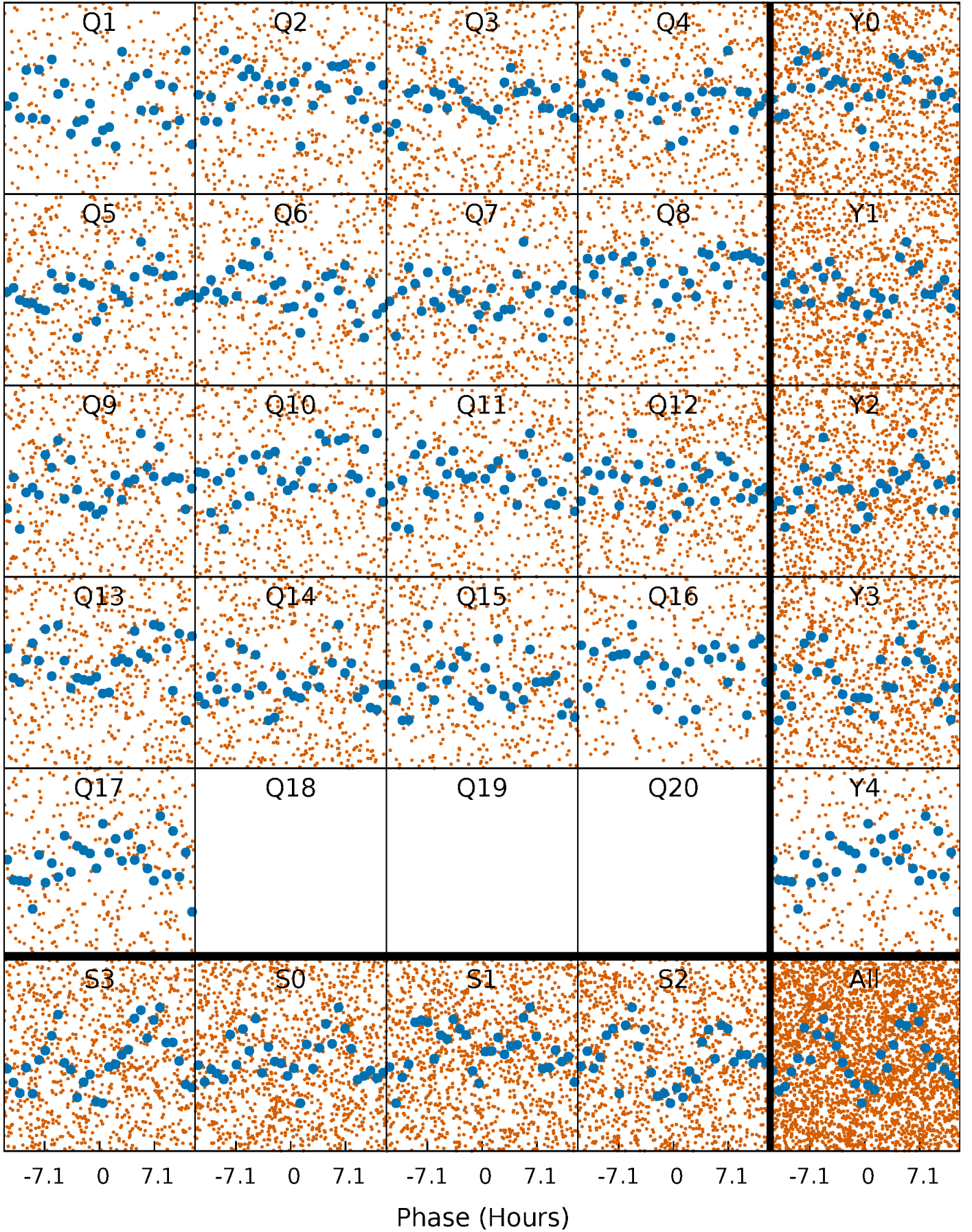


**Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)**



# PDC Quarter-Phased Transit Curves

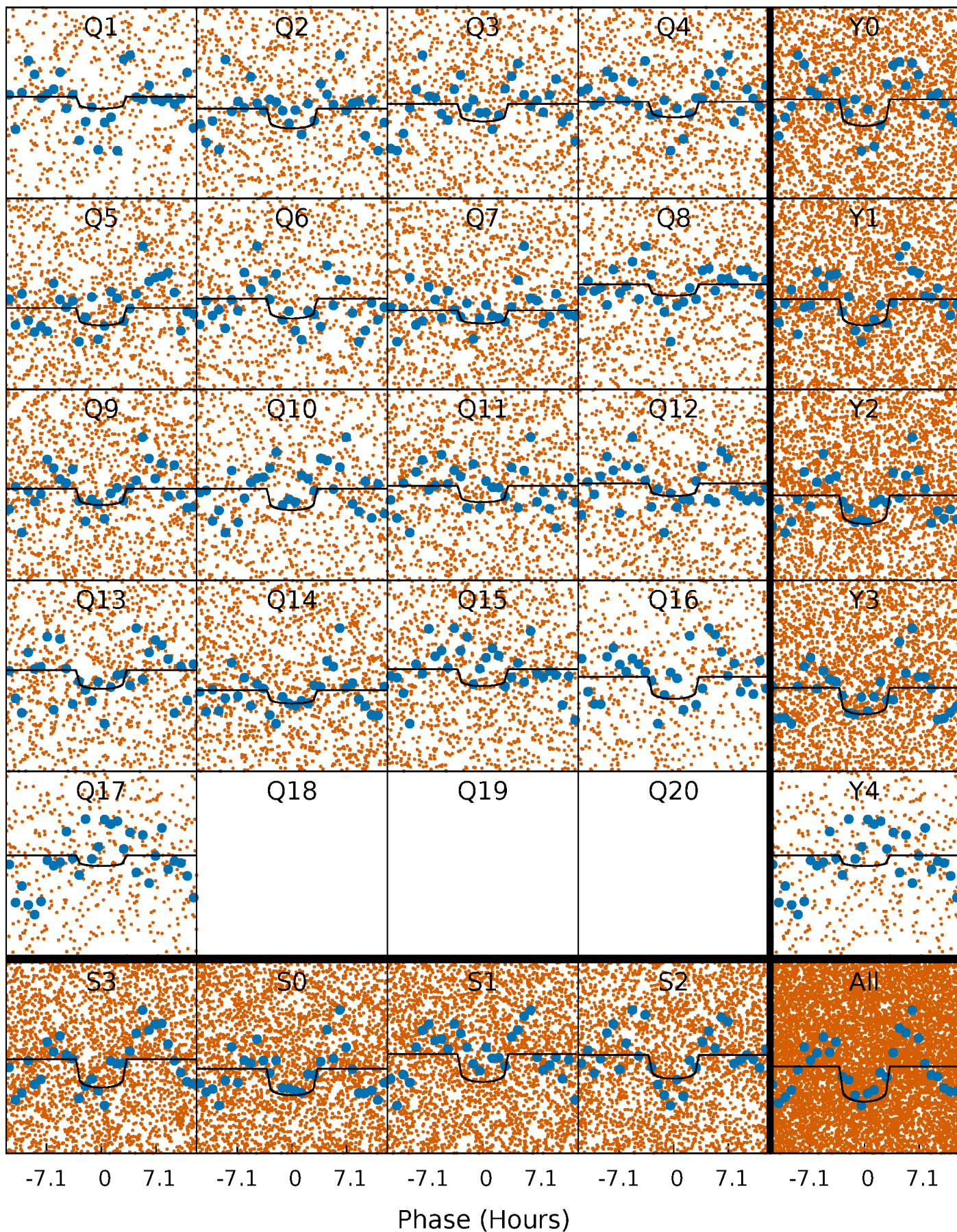
TCE 006871866-01   P= 1.901579 Days    $T_0=132.055463$  (BKJD)





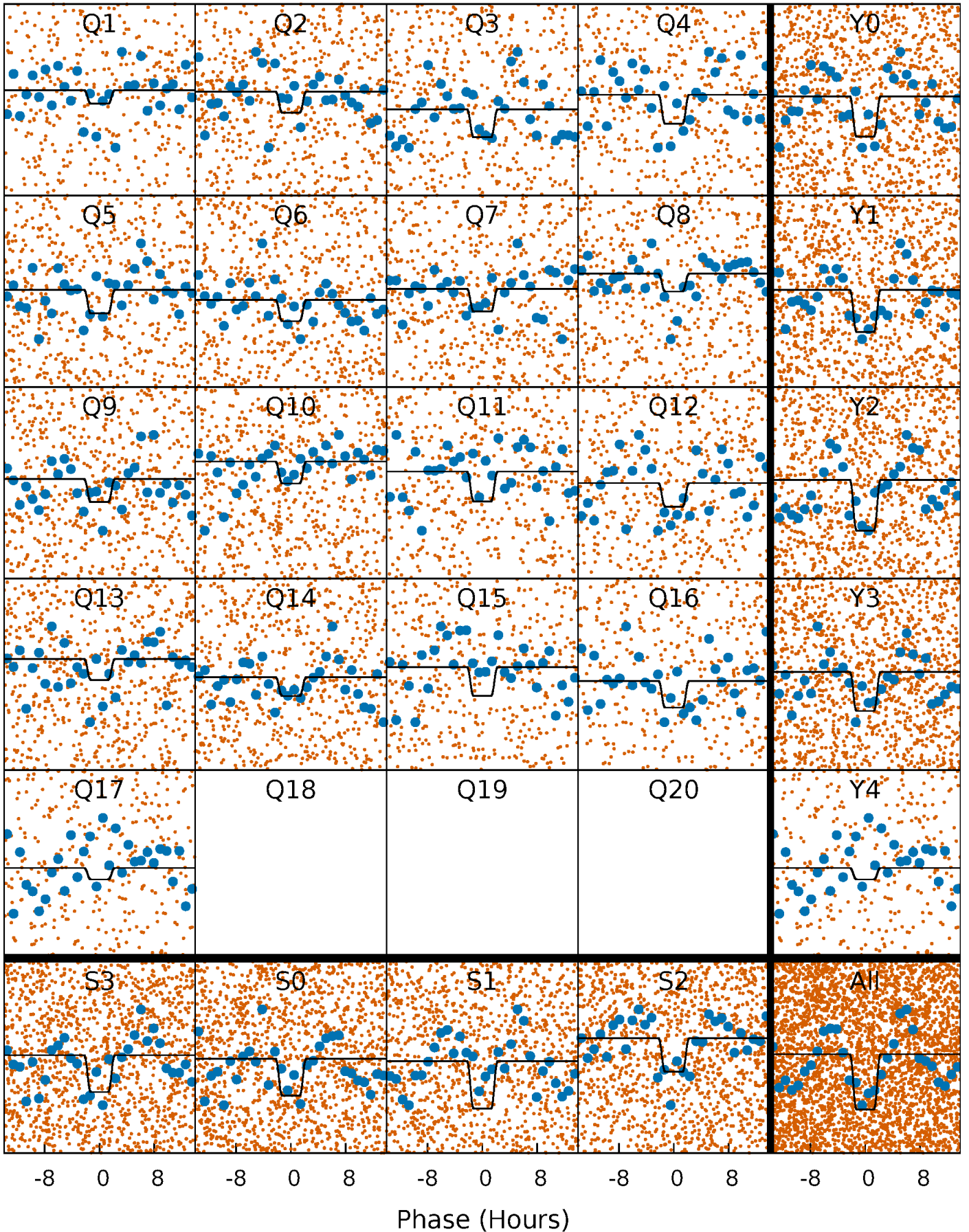
# DV Quarter-Phased Transit Curves

TCE 006871866-01 P= 1.901579 Days  $T_0=132.055463$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

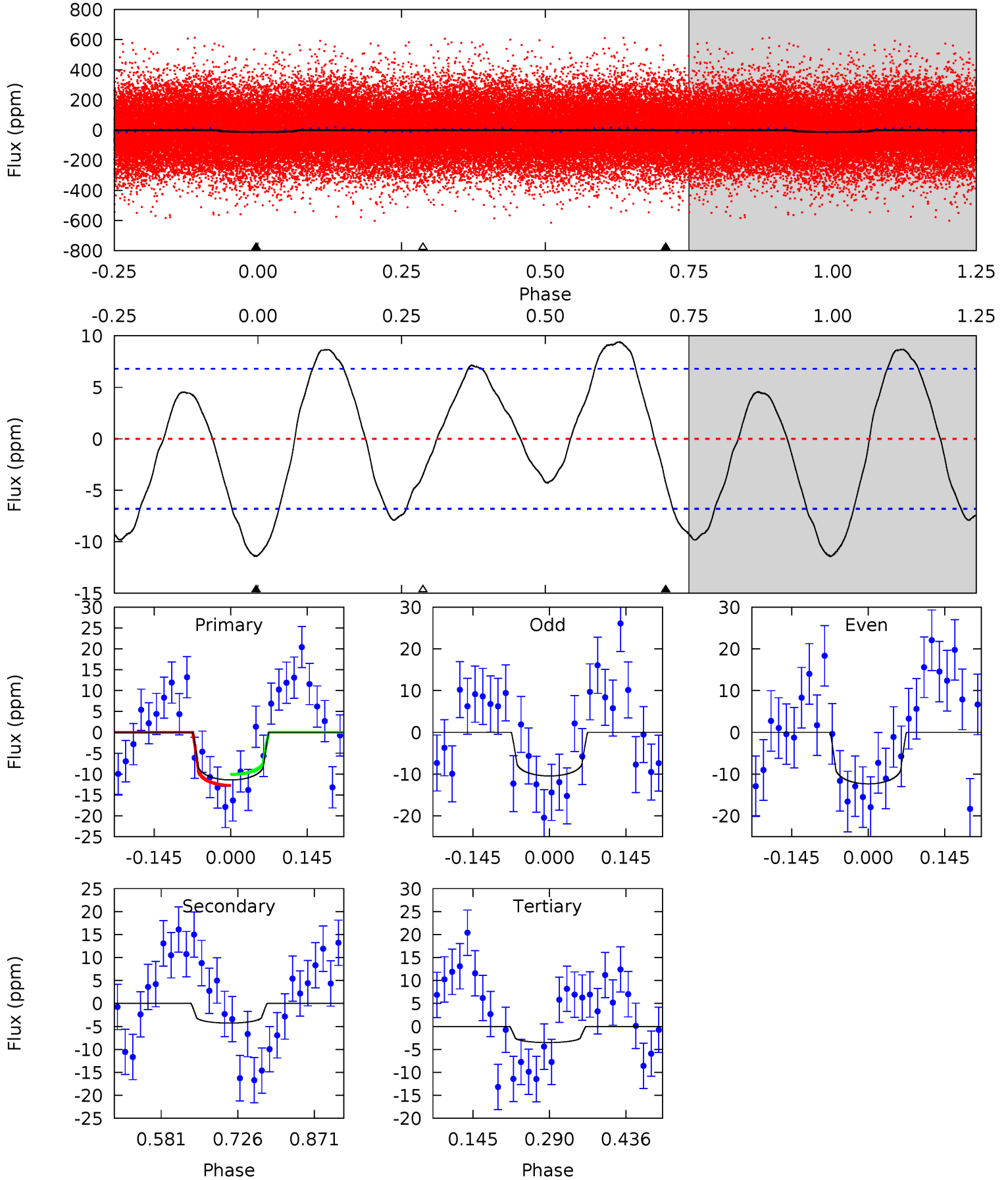
TCE 006871866-01 P= 1.901558 Days  $T_0=132.053319$  (BKJD)



# DV Model-Shift Uniqueness Test

006871866-01, P = 1.901579 Days, E = 130.153884 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
7.53	2.82	2.32	0	4.49	1.46	2.94	5.22	7.53	0.51	2.82	0.63	1.05	0.45	0.87

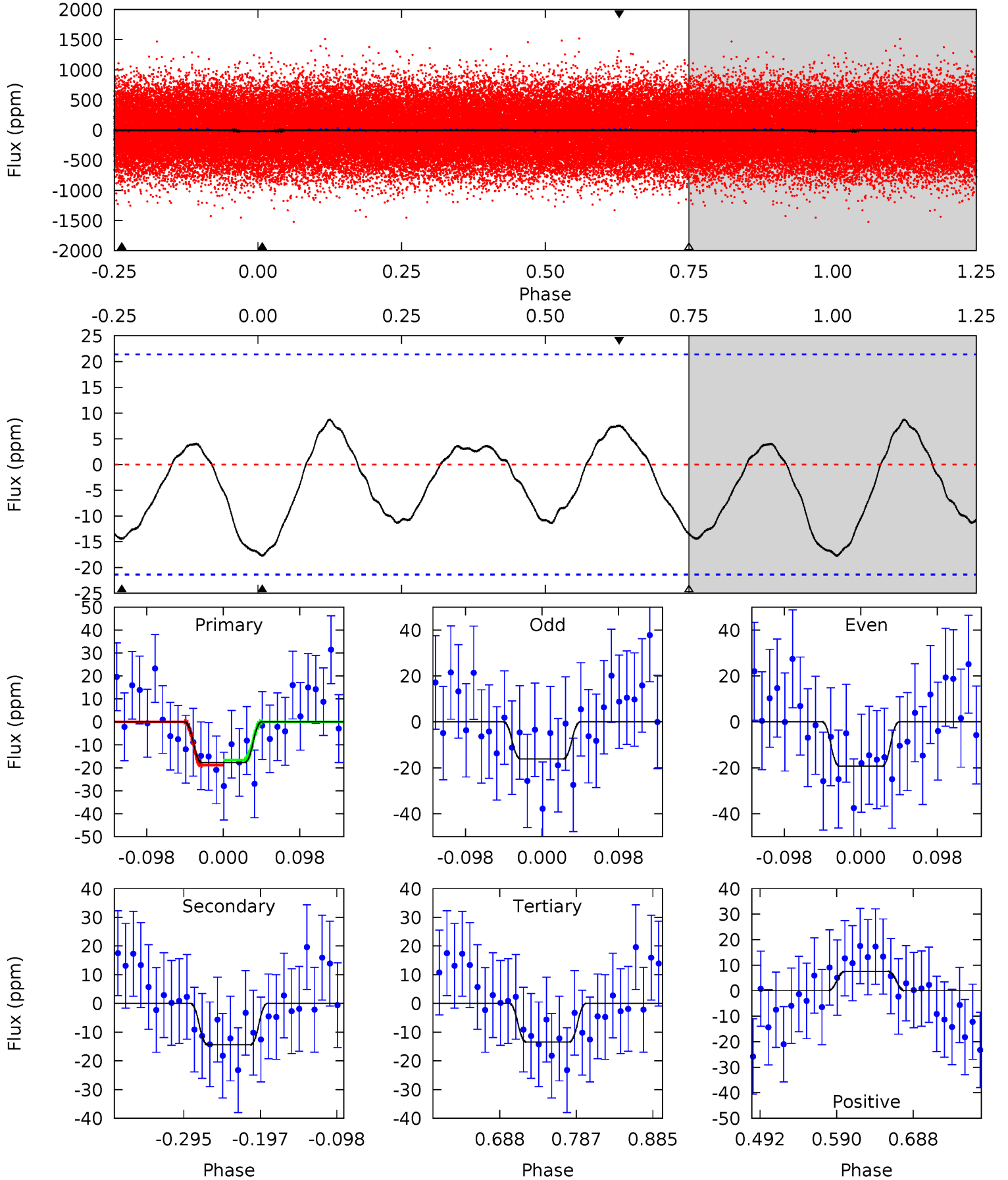




# Alt Model-Shift Uniqueness Test

006871866-01, P = 1.901558 Days, E = 130.151761 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
3.78	3.08	2.88	1.61	4.57	1.65	1.31	0.90	2.17	0.20	1.46	0.34	0.98	0.33	0.23





### Stellar Parameters For KIC 006871866

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R$ ( $R_{\odot}$ )	$M(M_{\odot})$	$p_{\star}$ ( $\text{g}\cdot\text{cm}^{-3}$ )
	$7848^{+216}_{-324}$	$3.966^{+0.216}_{-0.144}$	$-0.020^{+0.200}_{-0.350}$	$2.352^{+0.466}_{-0.641}$	$1.865^{+0.123}_{-0.368}$	$0.202^{+0.253}_{-0.077}$
	+3%/-4%	+5%/-4%	+1000%/-1750%	+20%/-27%	+7%/-20%	+125%/-38%
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 006871866-01 / KOI

Detrend	Depth (ppm)	$R_p$ ( $R_{\oplus}$ )	$T_{max}$ (K)	$T_{obs}$ (K)	$A_{obs}$
DV	$-4 \pm 2$	$0.99^{+0.36}_{-0.29}$	$3834^{+256}_{-293}$	$5315^{+1013}_{-795}$	$3.060^{+3.307}_{-1.616}$
Alt.	$-14 \pm 5$	$1.19^{+0.36}_{-0.32}$	$3832^{+244}_{-298}$	$6669^{+1372}_{-994}$	$7.122^{+7.418}_{-3.454}$

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

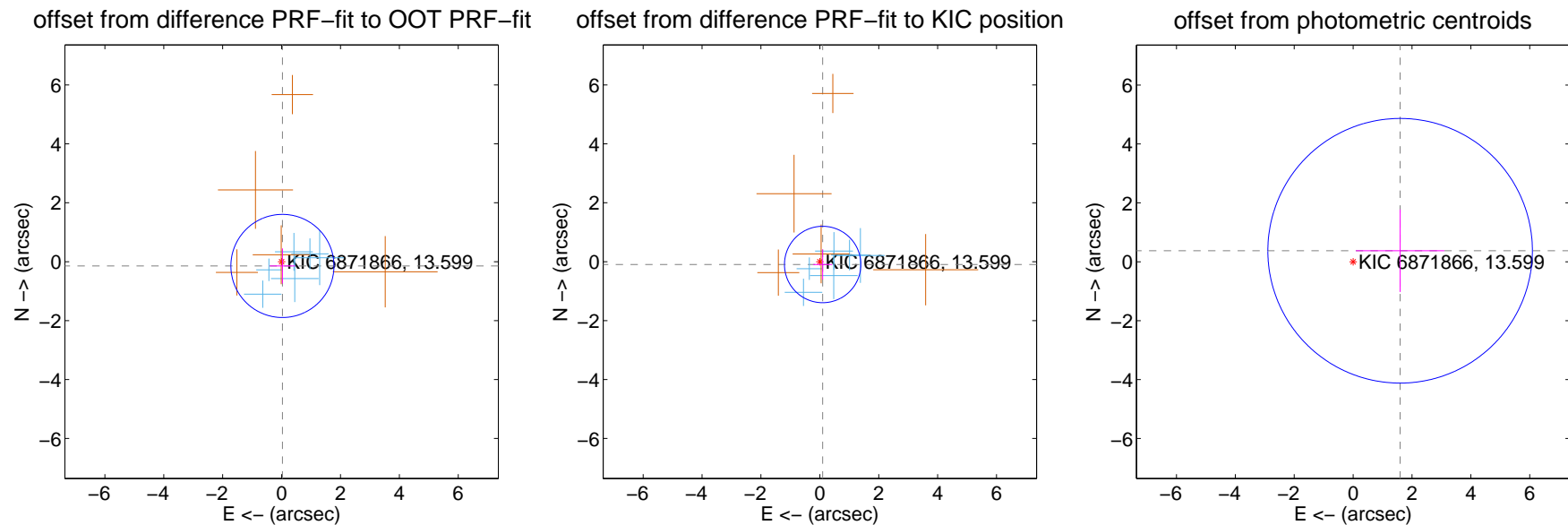
## DV Centroid Data

Supplemental centroid analysis for 006871866-01. Kepler magnitude: 13.60. Transit SNR 7.59

There are 6 quarters with good PRF difference image offsets

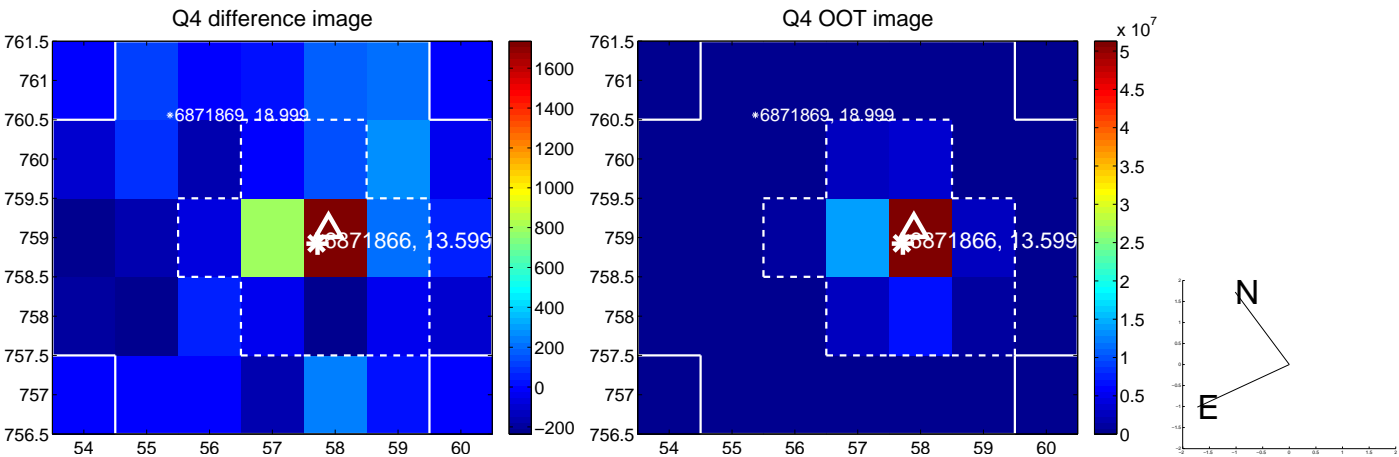
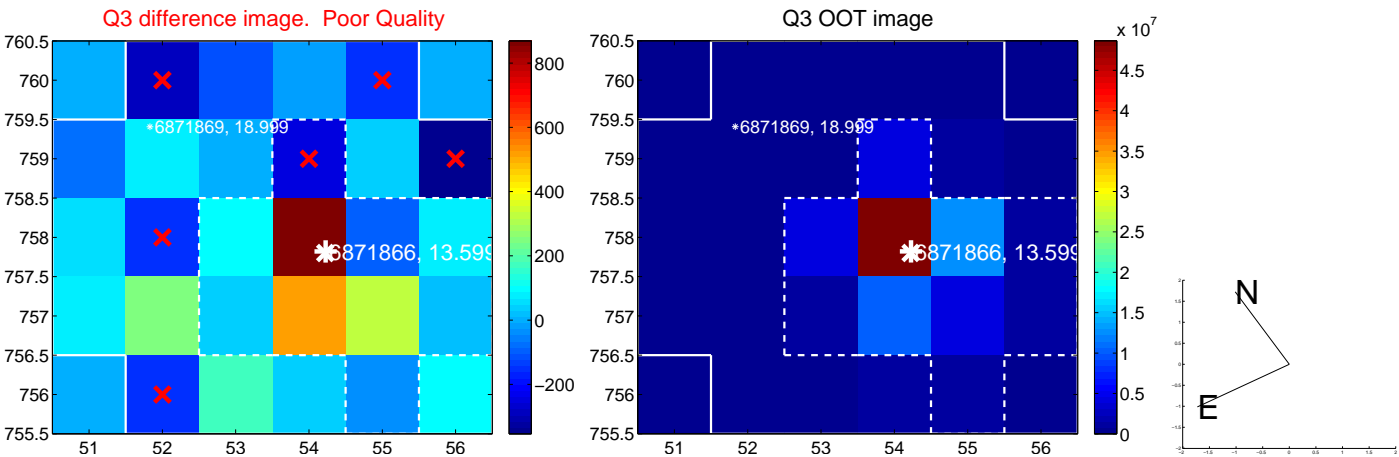
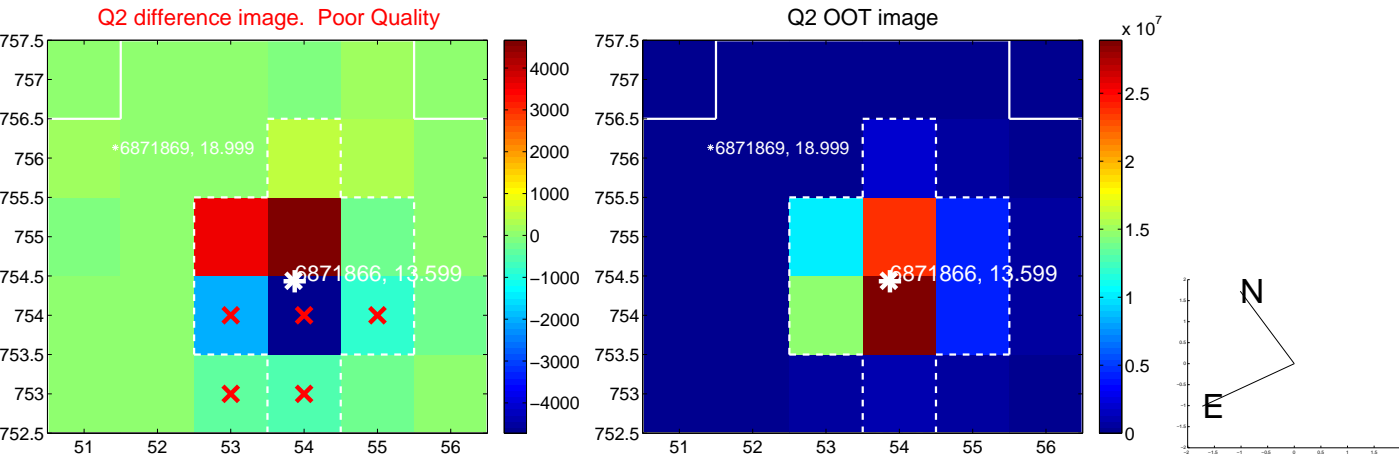
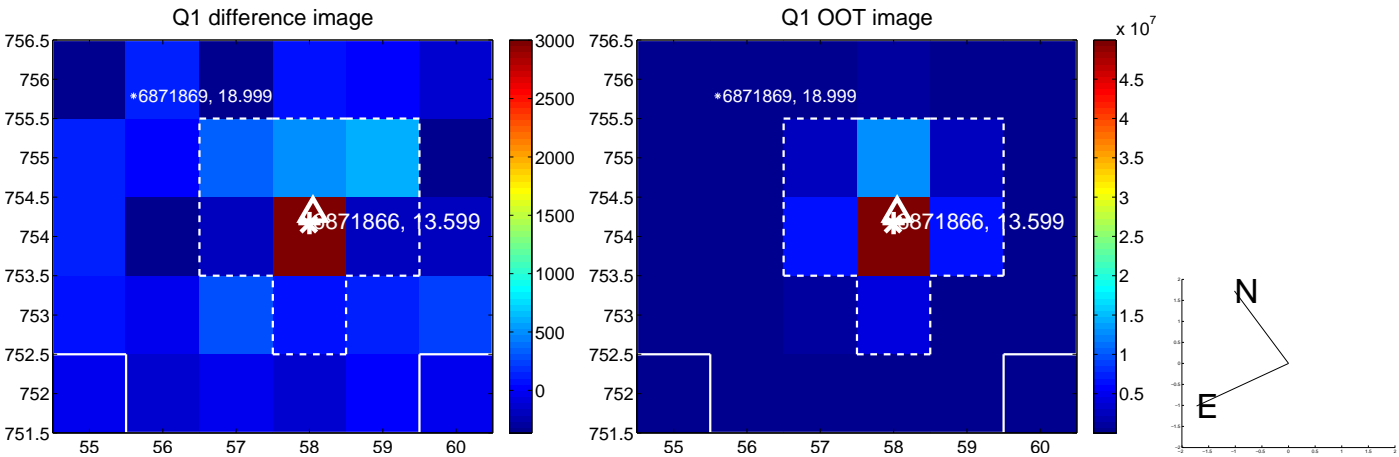
The direct PRF centroid is offset from the target star catalog position by about 0.06 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.147 \pm 0.583$	0.25	$-0.029 \pm 0.428$	$-0.144 \pm 0.596$
PRF-fit source offset from KIC position	$0.135 \pm 0.432$	0.31	$-0.096 \pm 0.322$	$-0.095 \pm 0.511$
photometric centroid source offset	$1.64 \pm 1.50$	1.10	$-1.60 \pm 1.50$	$0.37 \pm 1.40$

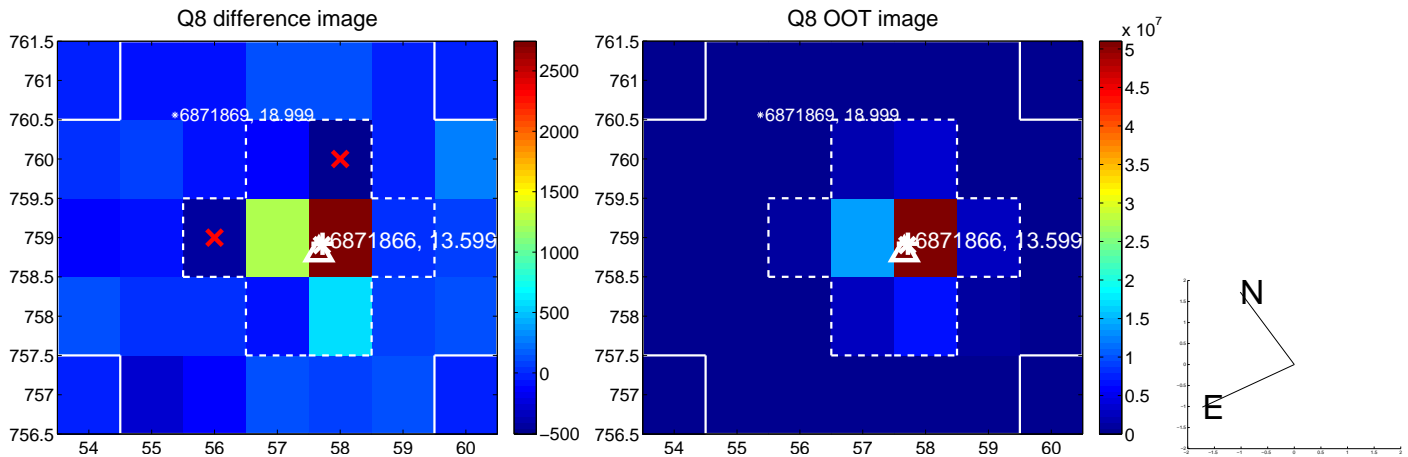
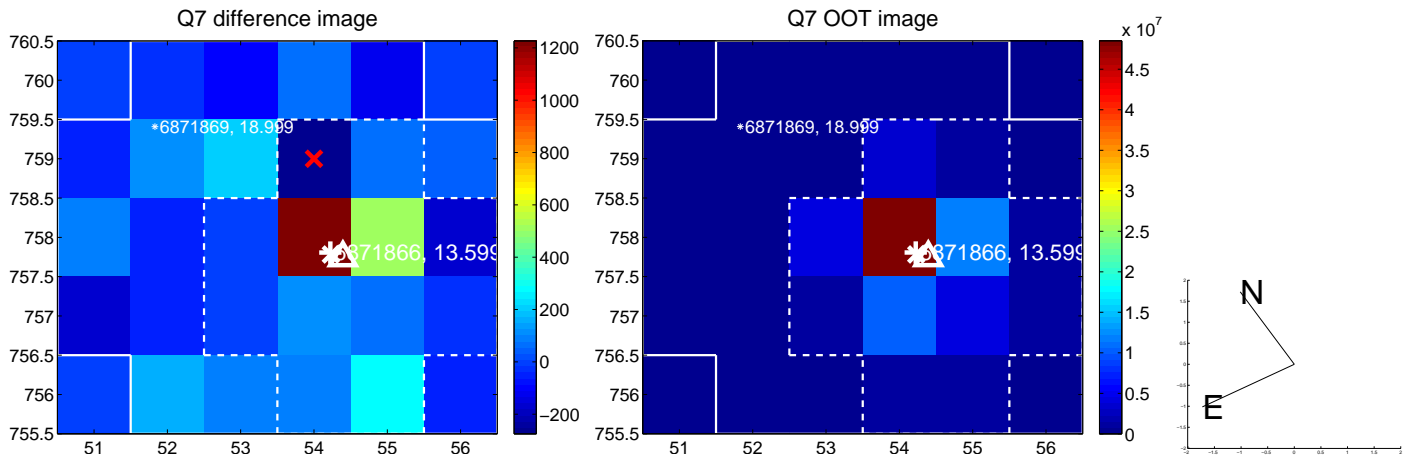
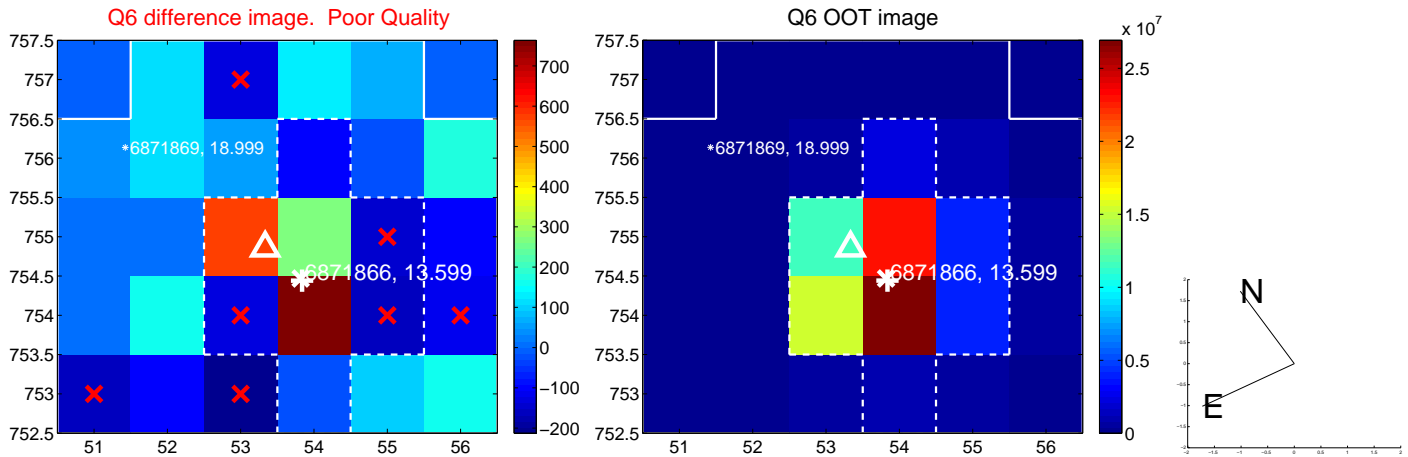
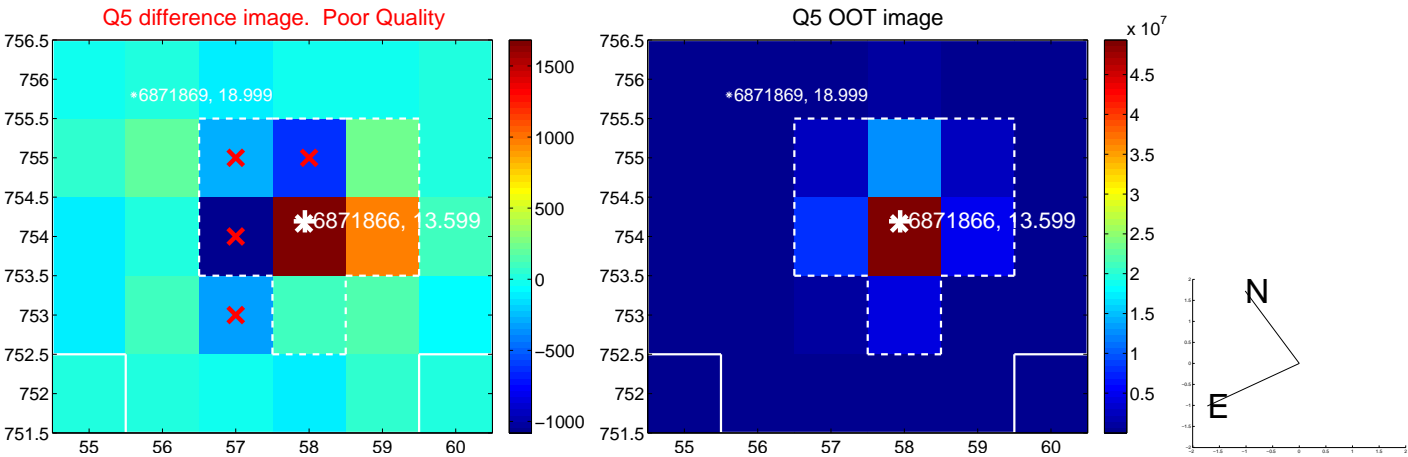


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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

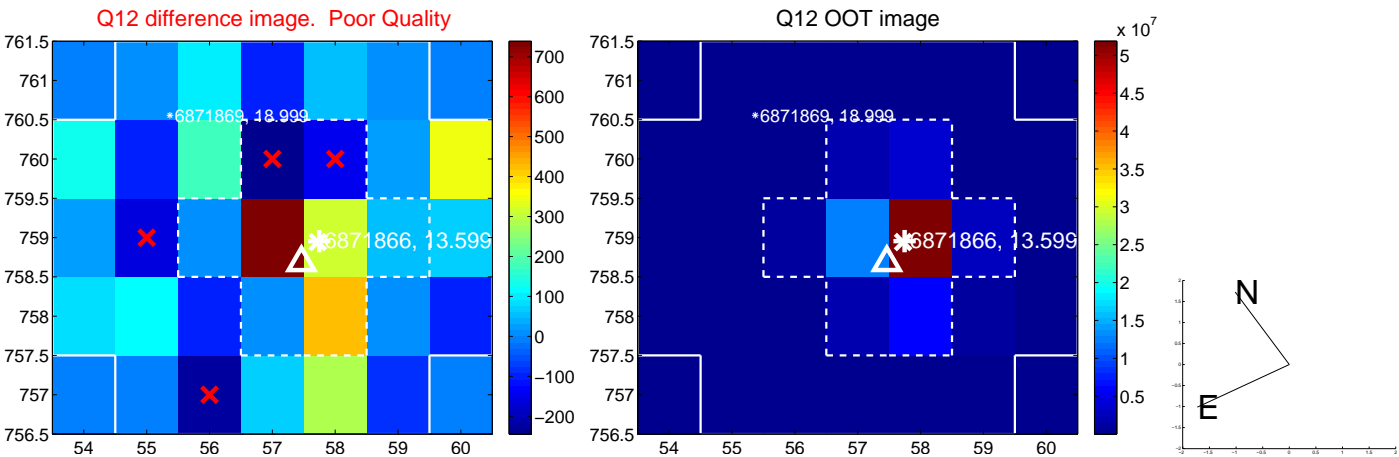
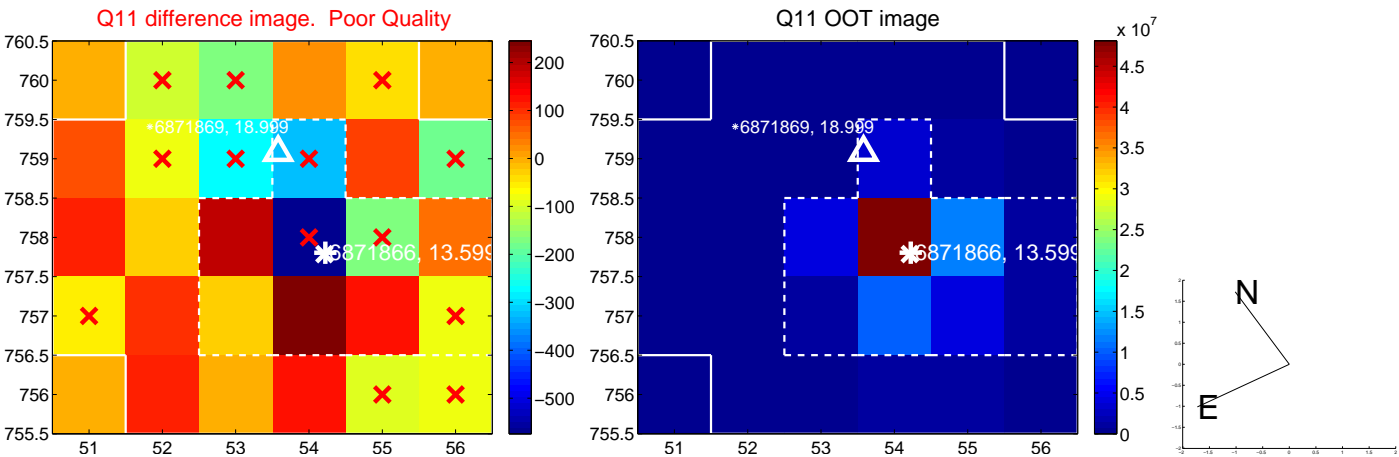
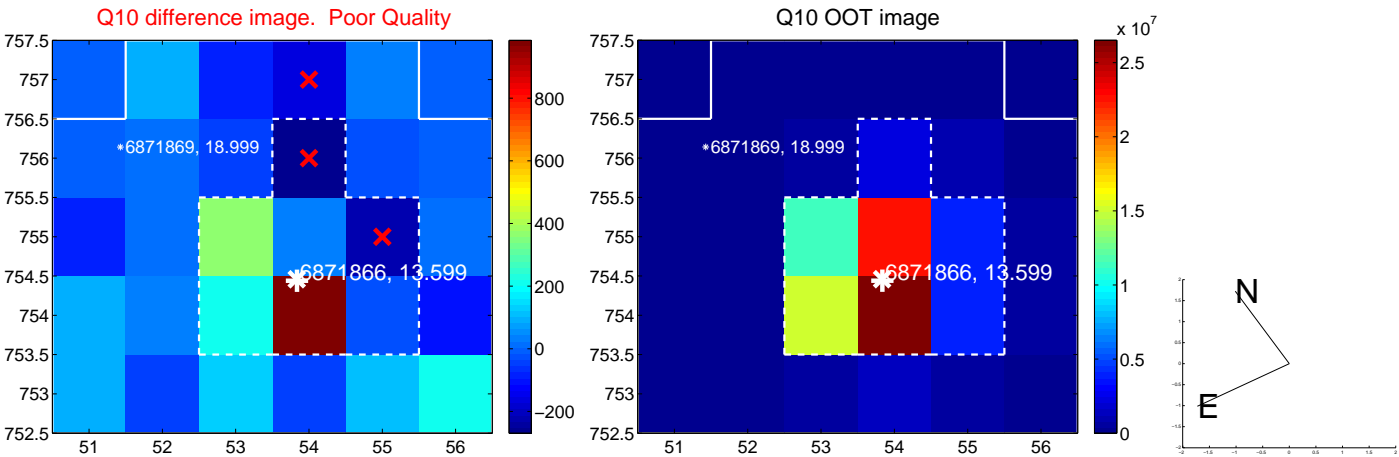
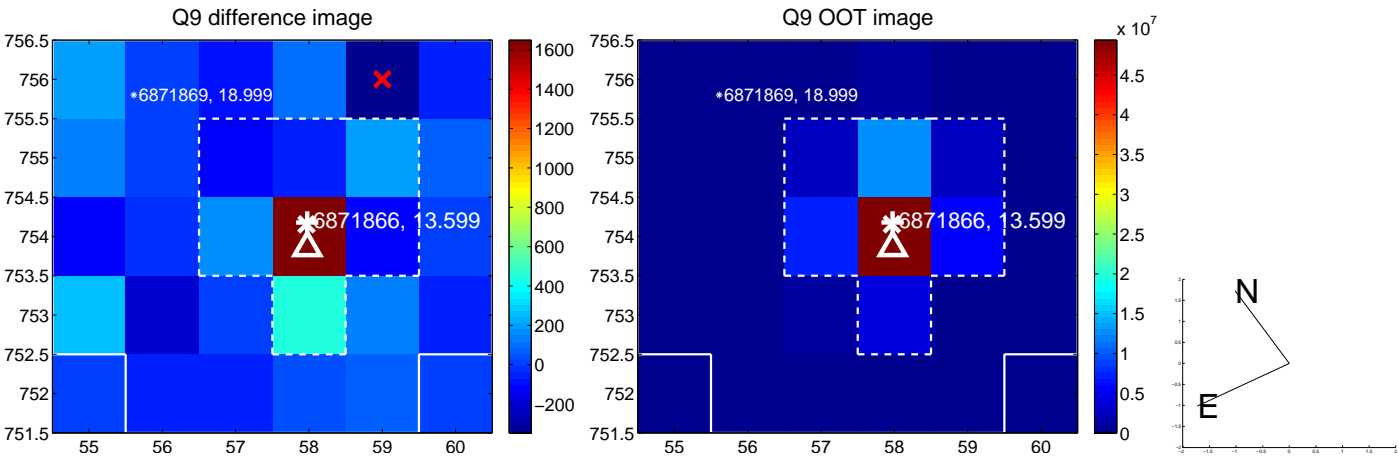


white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

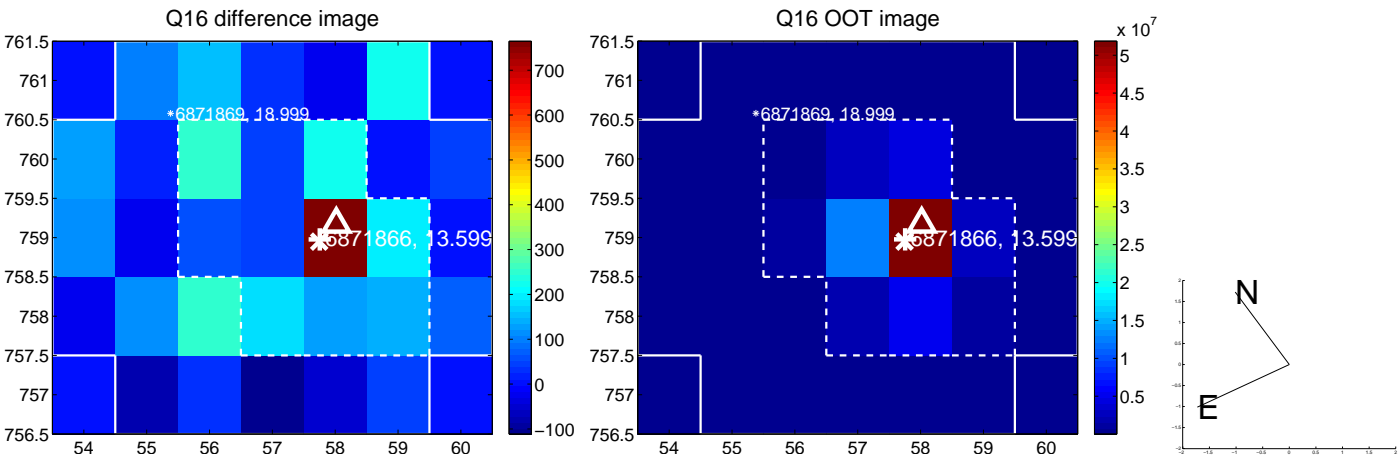
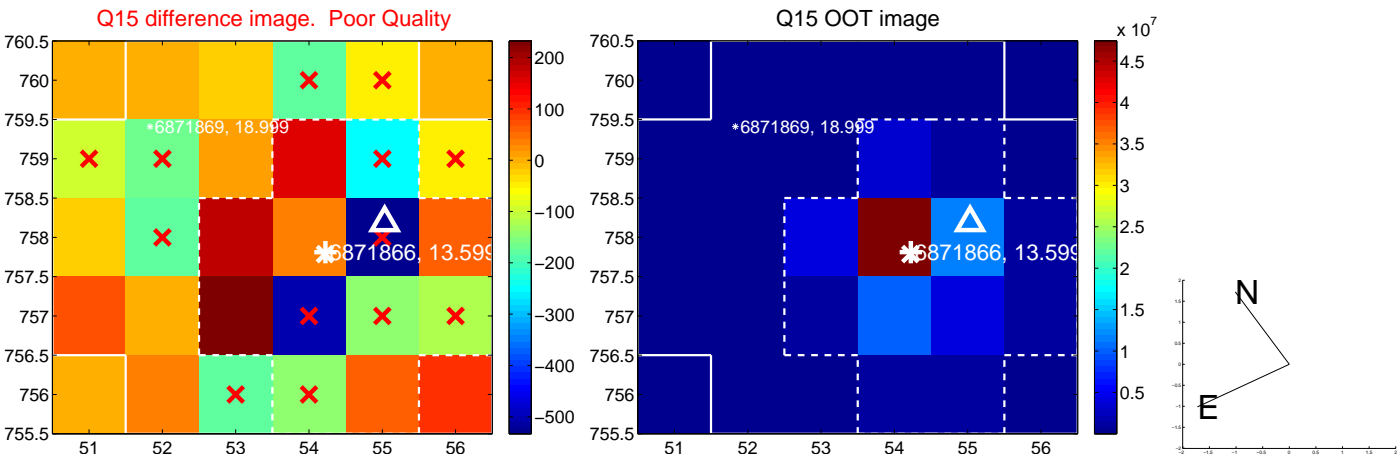
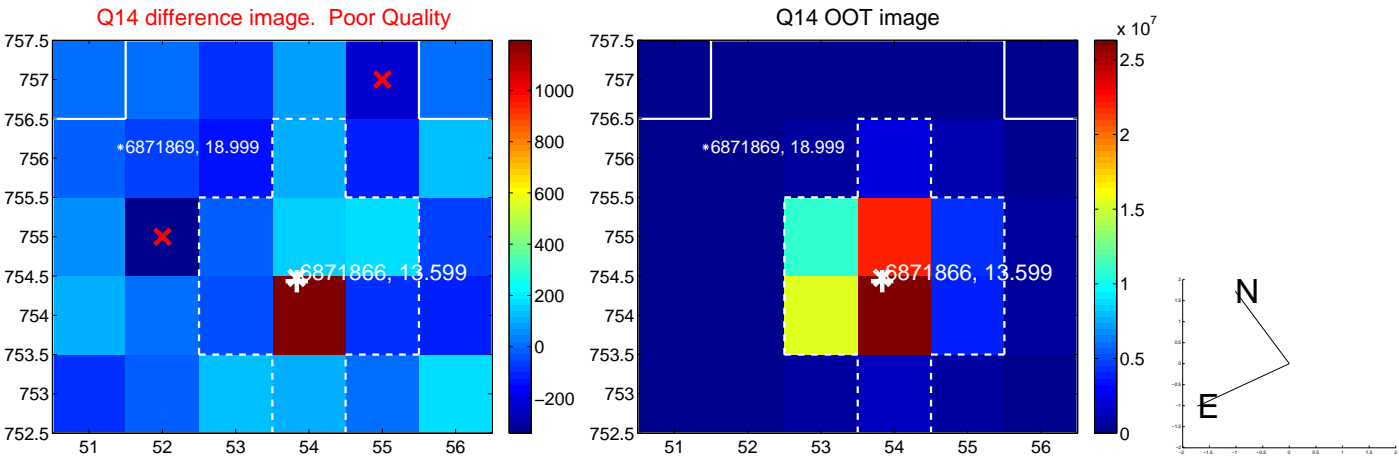
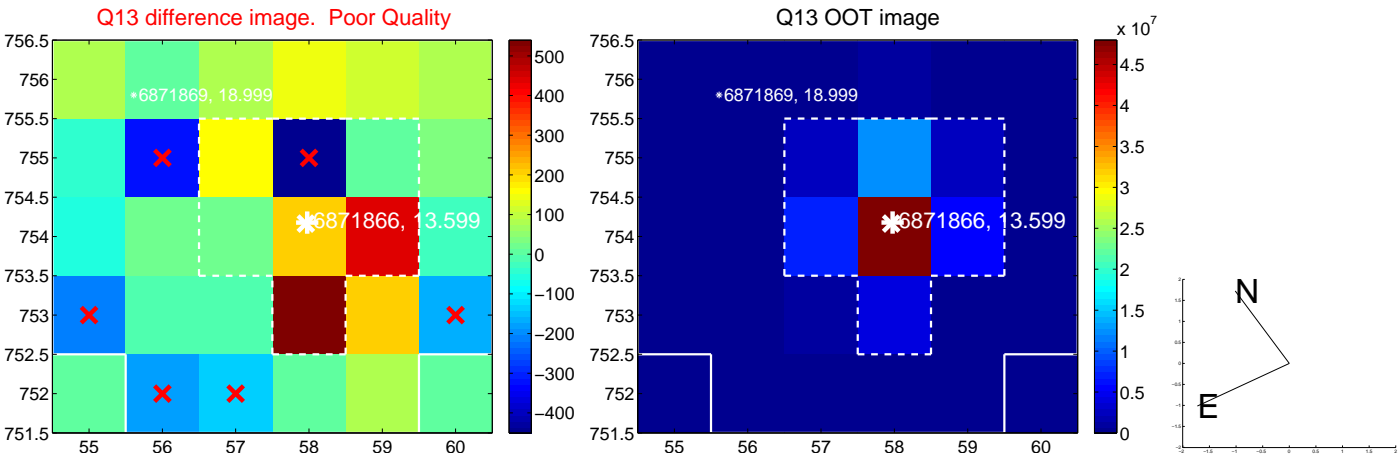




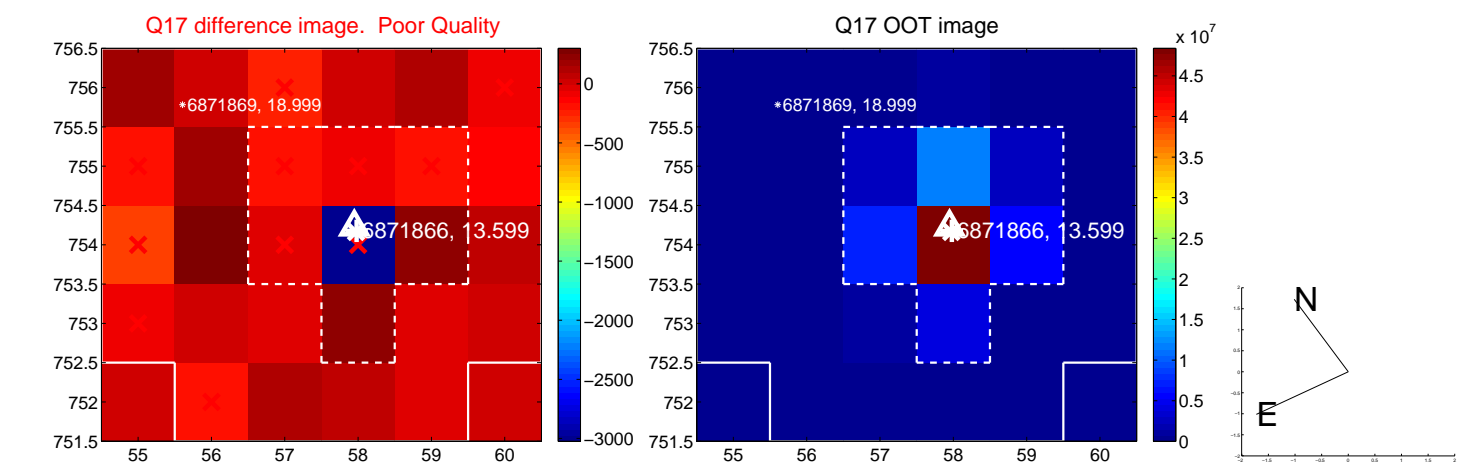
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



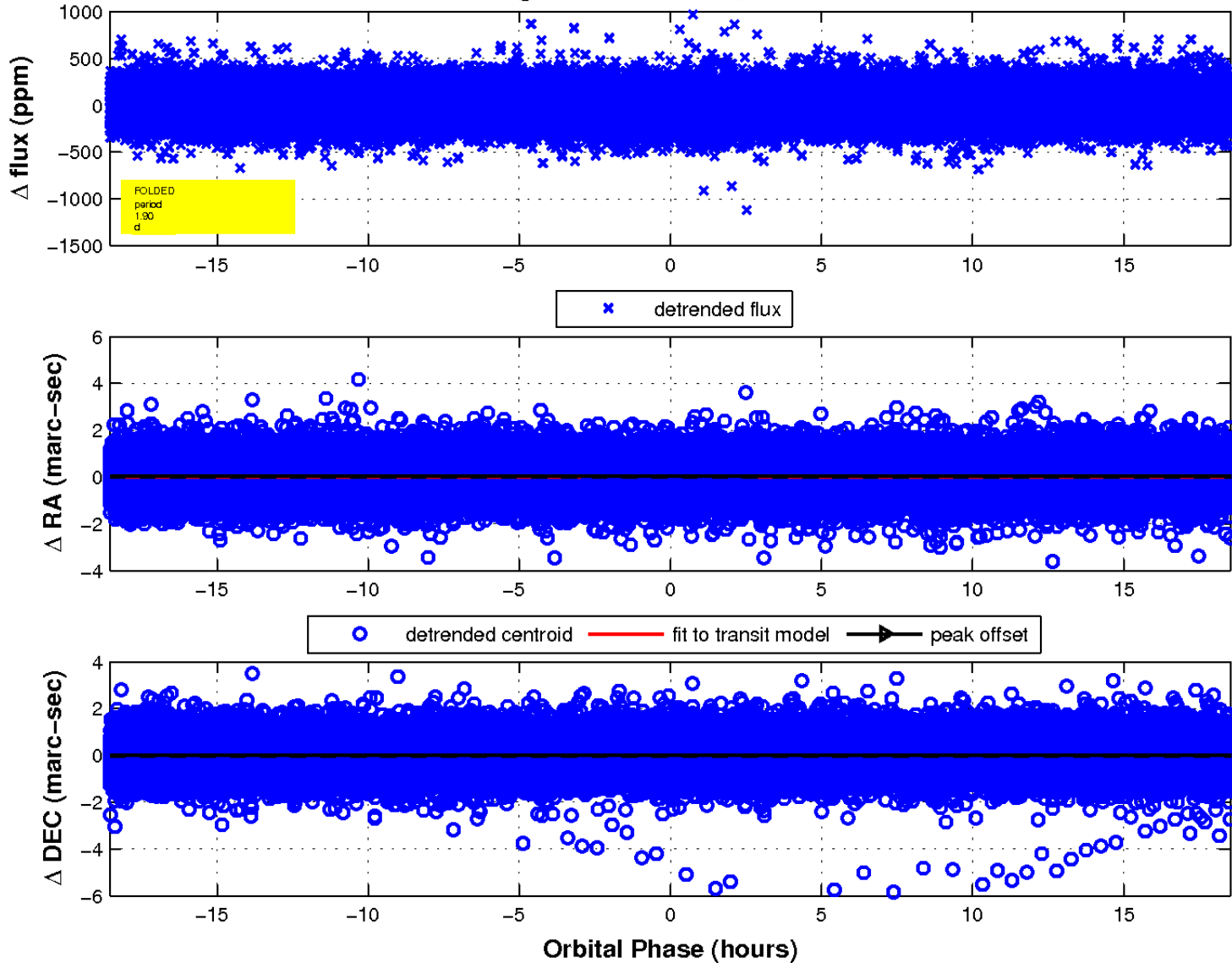
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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



fluxWeightedCentroids, Planet 1 of 1



UKIRT Image

