

# KIC 010847732

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
010847732-01	OBS	No	0.762833	131.677573	121.7	2.136	75.0	18.4	0.77	5806	1.04	2540.92

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
010847732-01	OBS	FP	0.00	1	0	0	0	LPP_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.

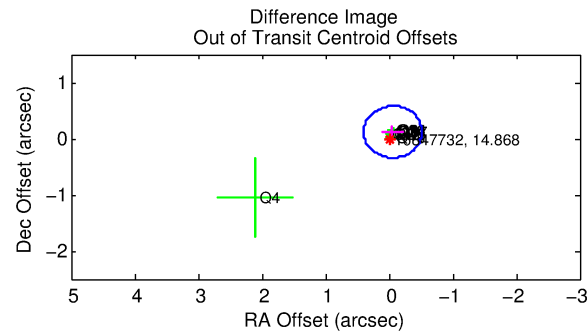
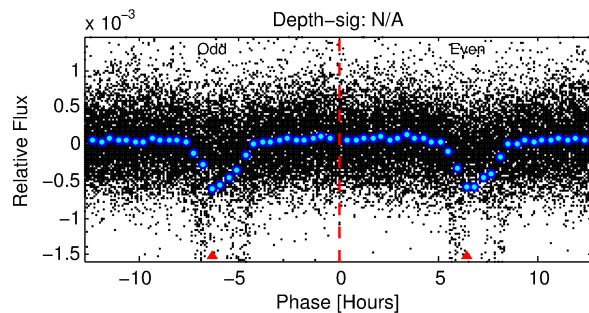
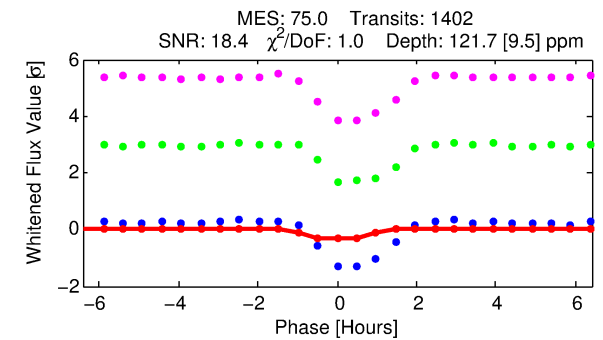
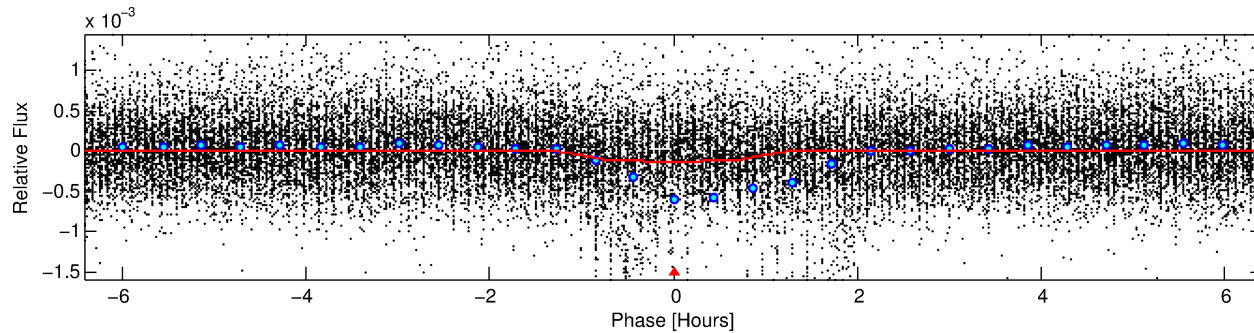
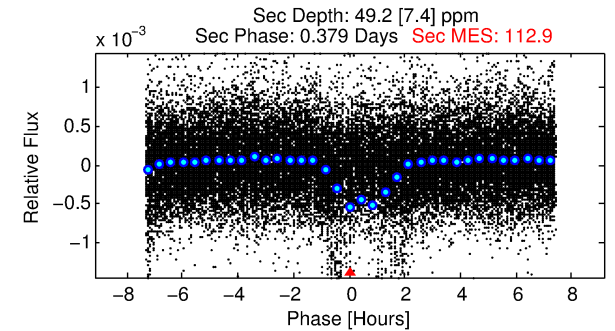
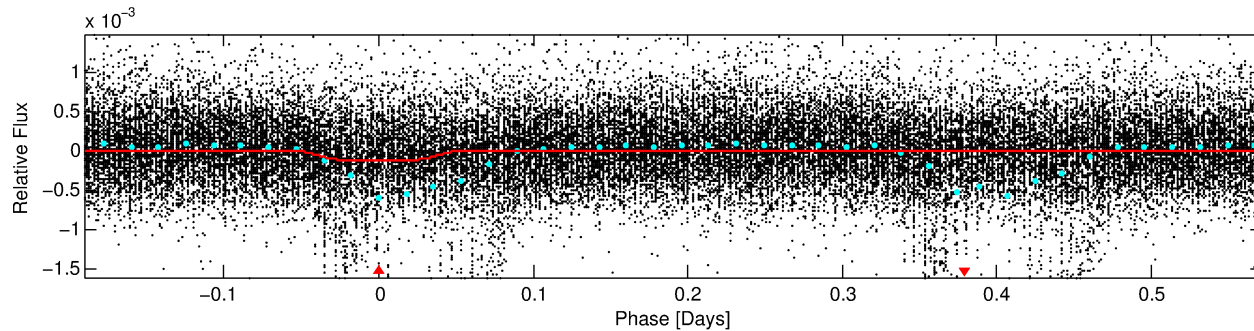
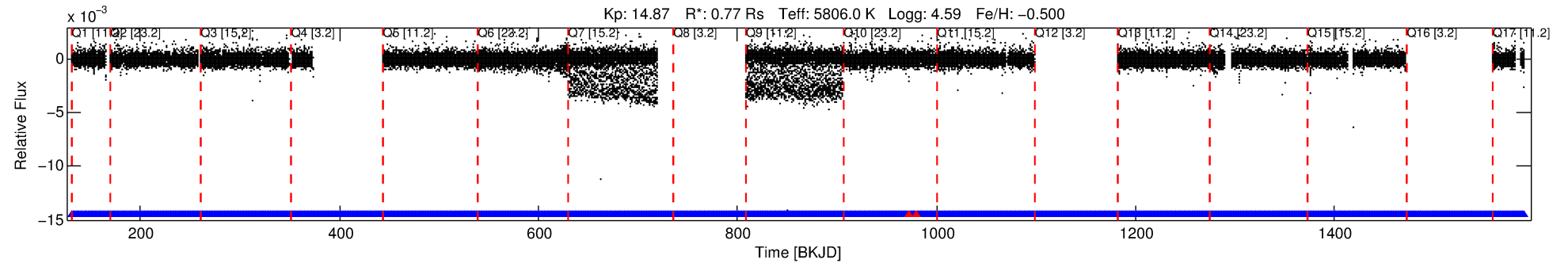
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 010847732-01

No Significant Match Found

# DV One-Page Summary

KIC: 10847732 Candidate: 1 of 1 Period: 0.763 d



## DV Fit Results:

Period = 0.76283 [0.00001] d  
Epoch = 131.6776 [0.0015] BKJD  
Rp/R\* = 0.0123 [0.0034]  
a/R\* = 1.46 [1.09]  
b = 0.93 [0.21]  
Seff = 2540.92 [868.32]  
Teq = 1810 [155] K  
Rp = 1.04 [0.39] Re  
a = 0.0155 [0.0034] AU  
Ag = 6.00 [3.91] [1.28 $\sigma$ ]  
Teffp = 4381 [631] K [3.95 $\sigma$ ]

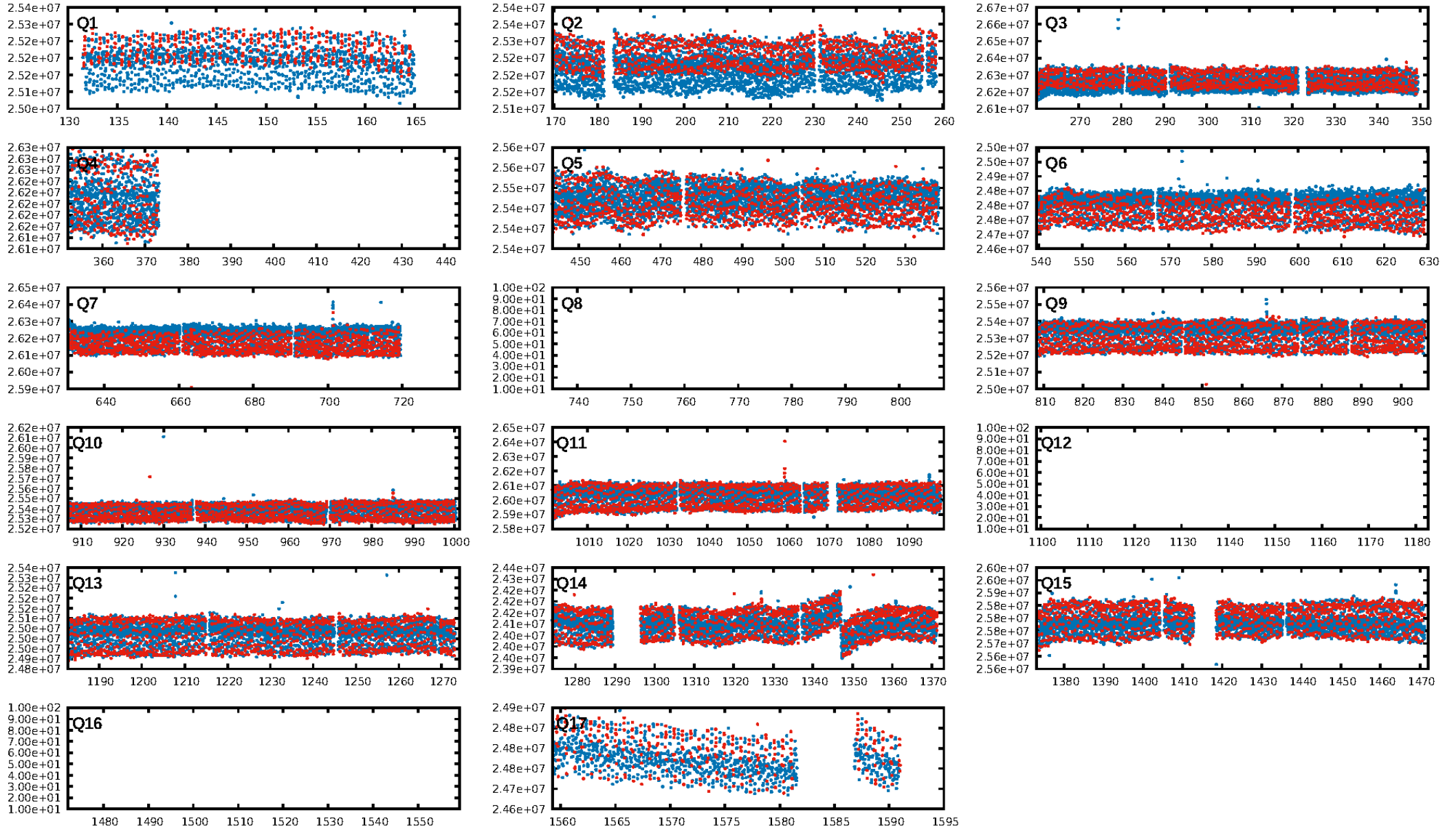
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: N/A  
ModelChiSquareGof-sig: N/A  
Bootstrap-pfa: N/A  
RollingBand-fgt: 1.00 [1294/1296]  
GhostDiagnostic-chr: 2.907  
Centroid-sig: 1.3%  
Centroid-so: 1.115 arcsec [1.89 $\sigma$ ]  
OotOffset-rm: 0.130 arcsec [0.85 $\sigma$ ]  
KicOffset-rm: 0.131 arcsec [1.00 $\sigma$ ]  
OotOffset-st: 4/4/1/5 [14]  
KicOffset-st: 4/4/1/5 [14]  
DiffImageQuality-fgm: 0.50 [7/14]  
DiffImageOverlap-fno: 1.00 [14/14]

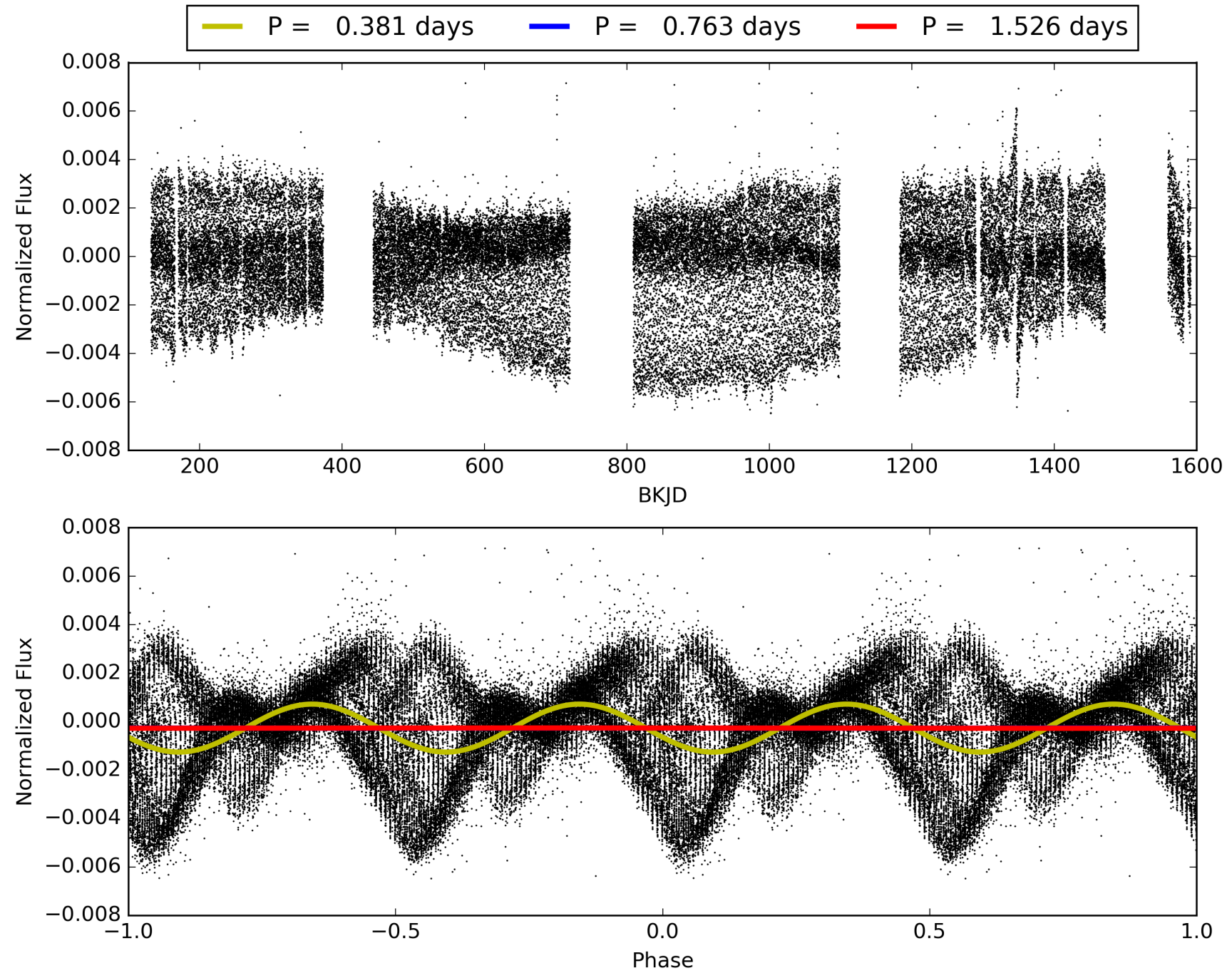
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 04:41:51 Z

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

# TCE 010847732-01, PDC Light Curves

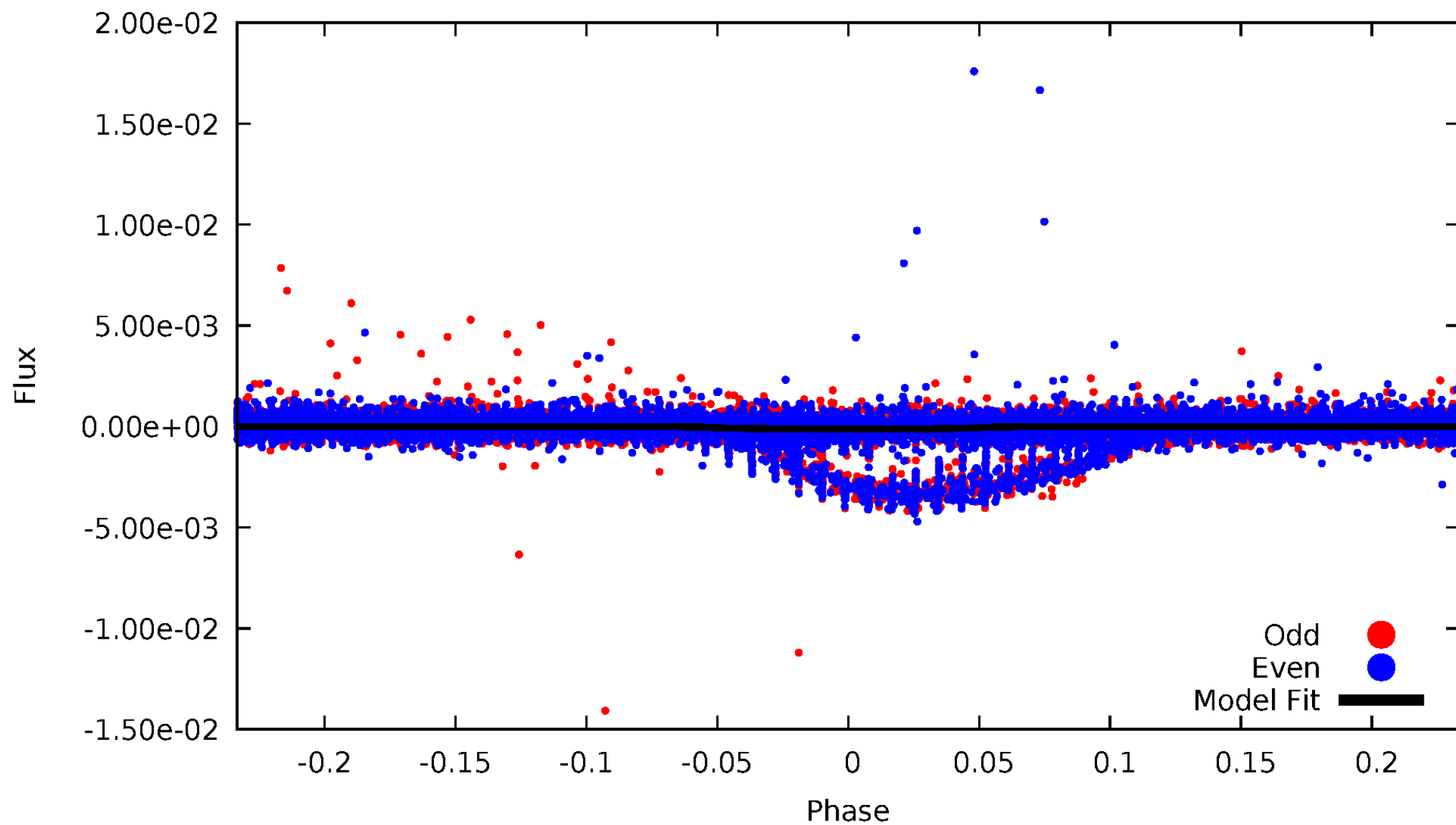


TCE 010847732-01



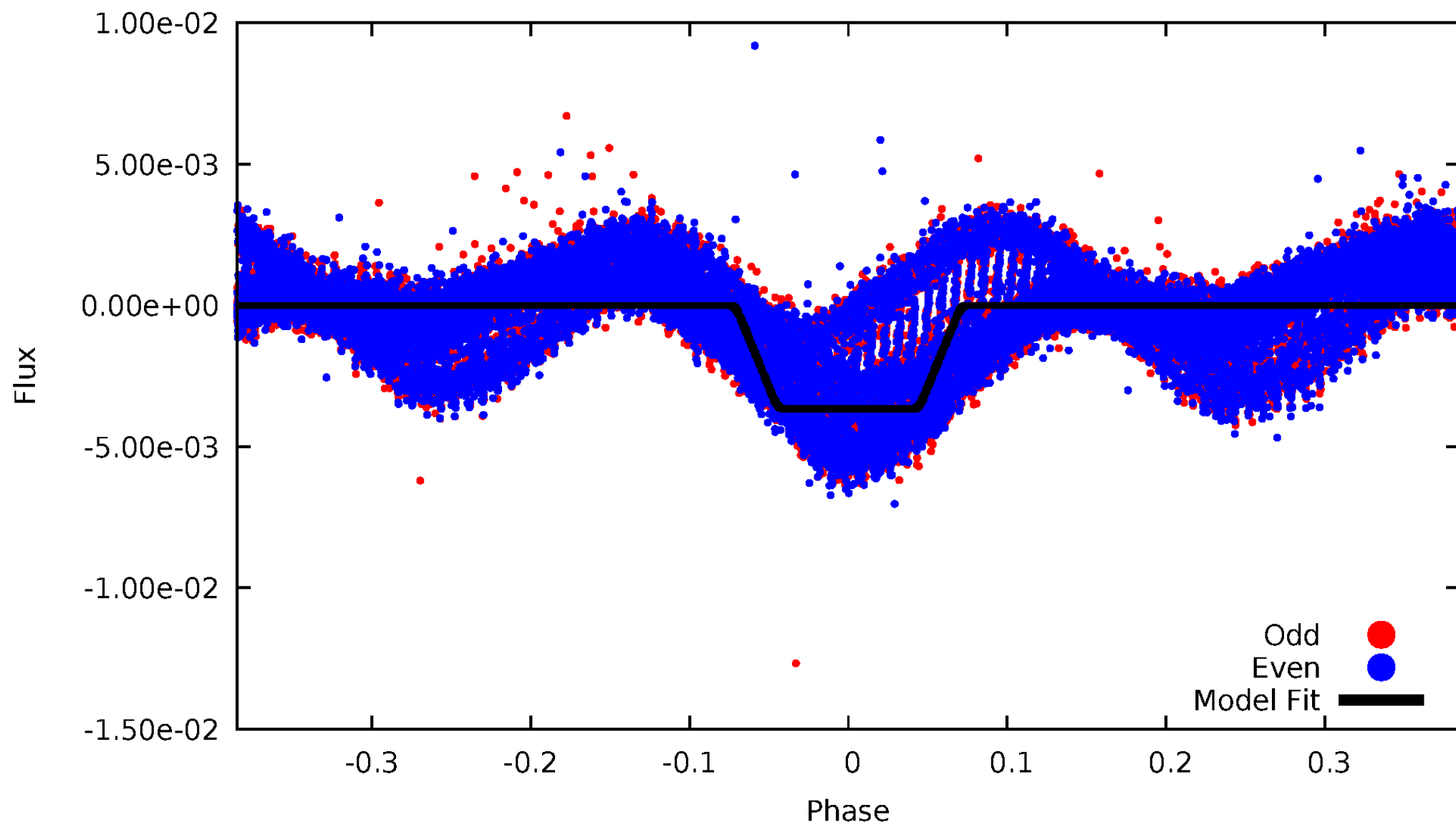
# DV Odd/Even

TCE 010847732-01



# ALT Odd/Even

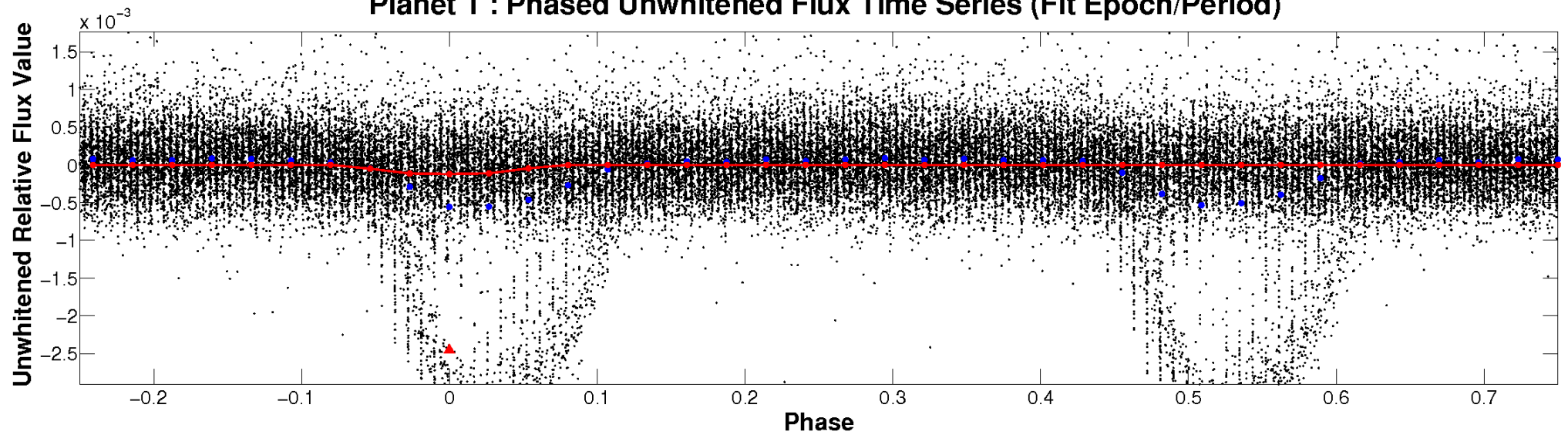
TCE 010847732-01



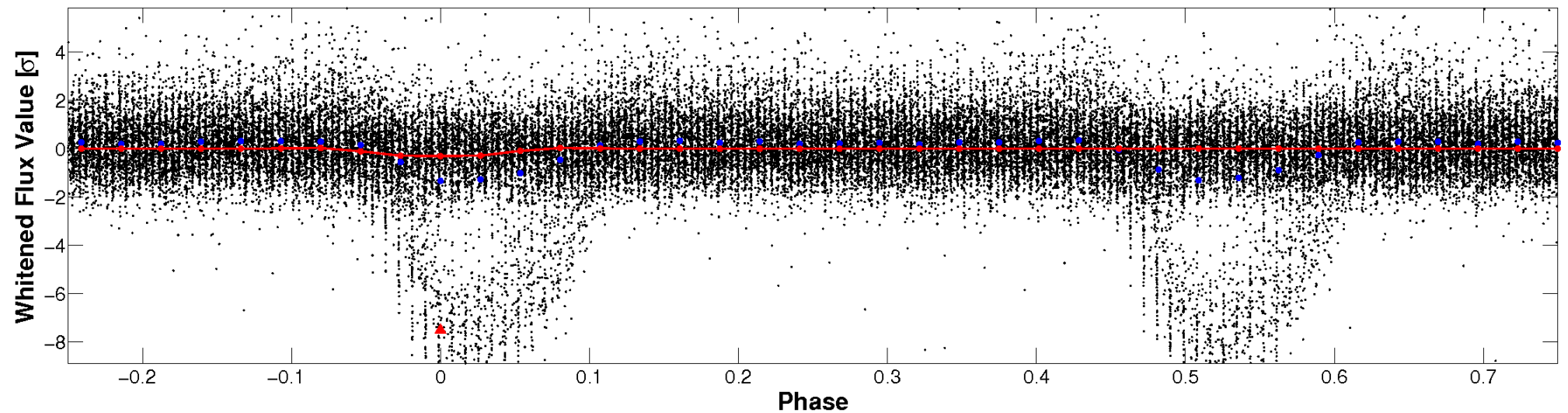


# Non-Whitened Vs. Whitened Light Curve

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

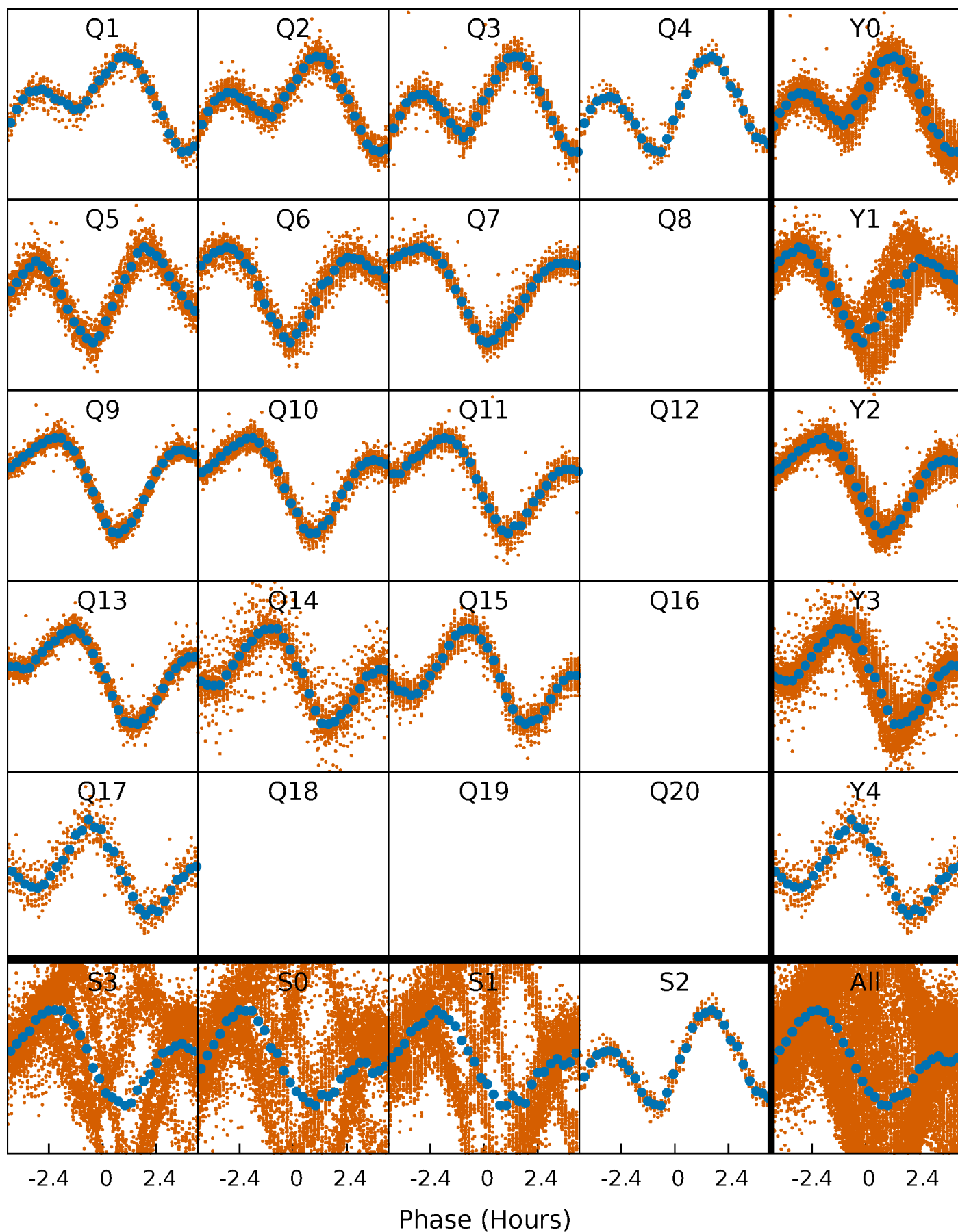


**Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)**



# PDC Quarter-Phased Transit Curves

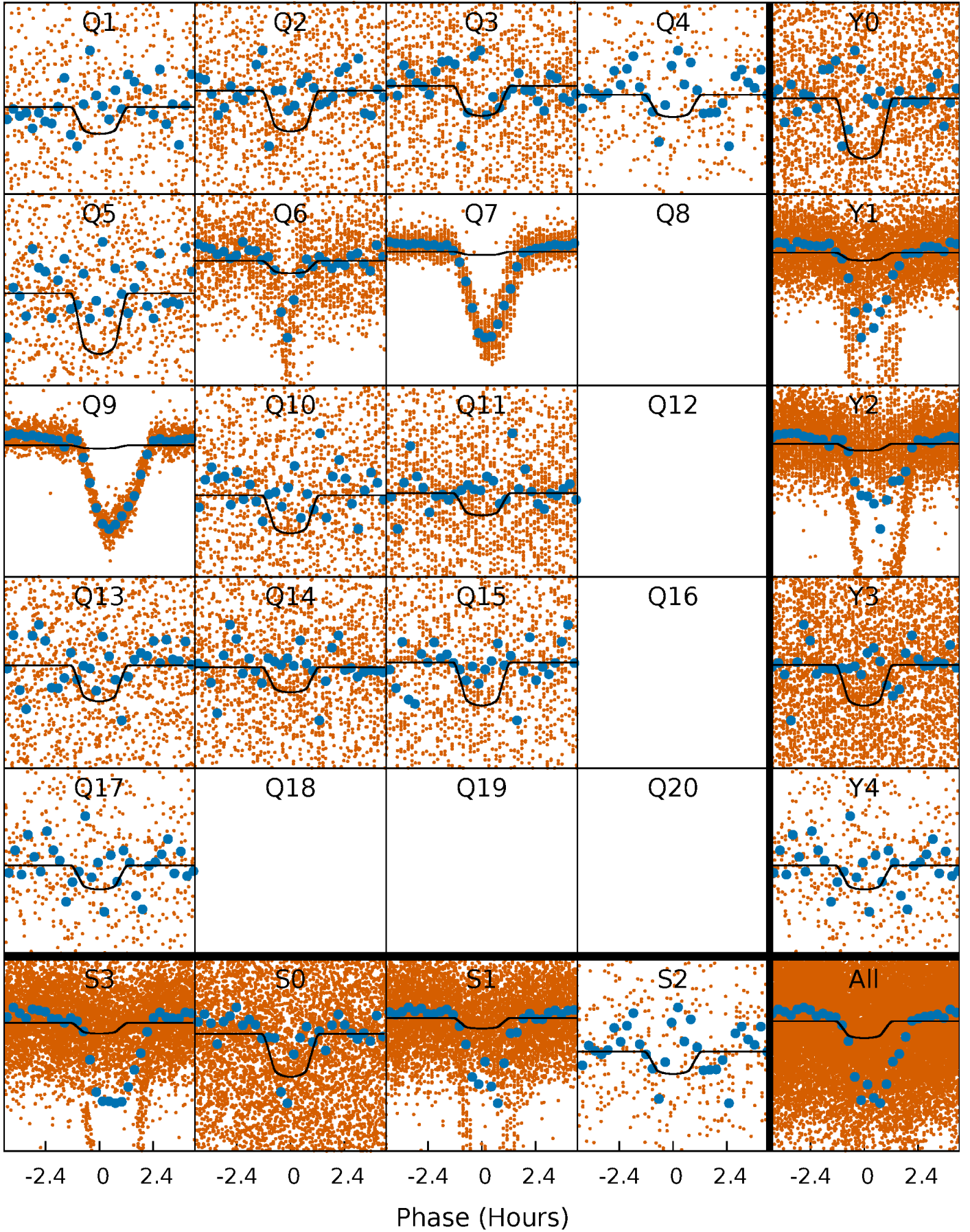
TCE 010847732-01   P= 0.762833 Days    $T_0=131.677573$  (BKJD)





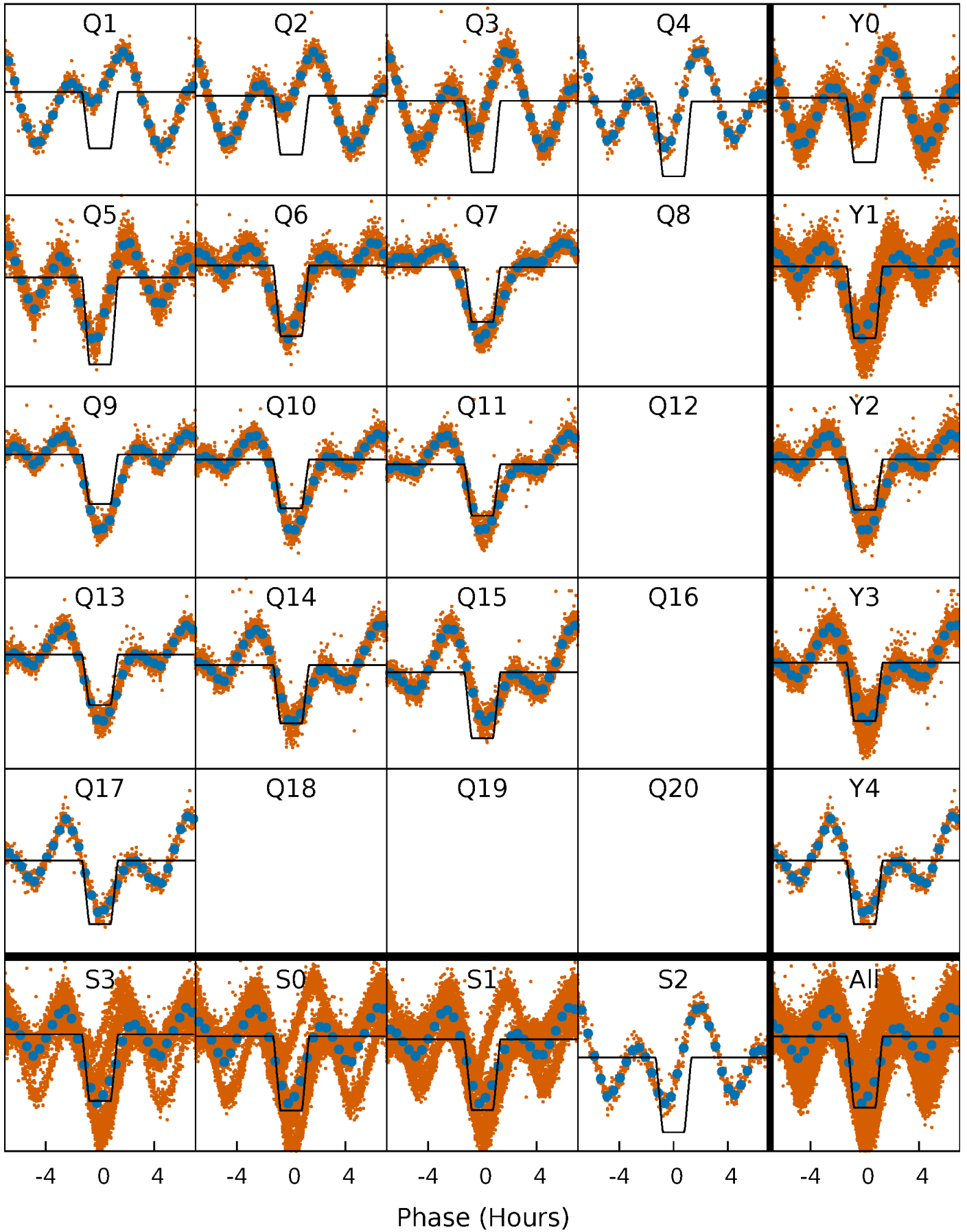
# DV Quarter-Phased Transit Curves

TCE 010847732-01   P= 0.762833 Days    $T_0=131.677573$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

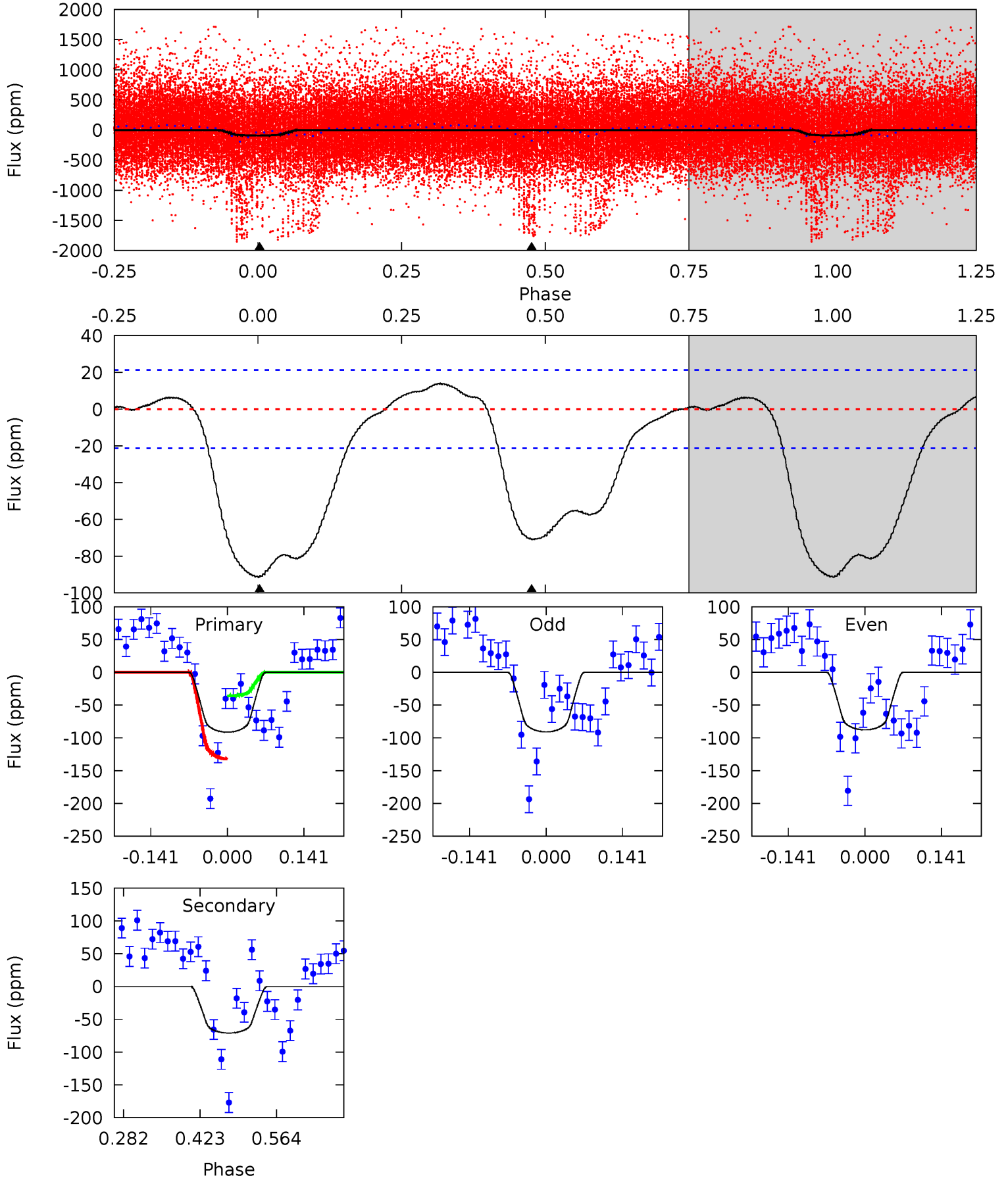
TCE 010847732-01   P= 0.762893 Days    $T_0=131.646527$  (BKJD)



# DV Model-Shift Uniqueness Test

010847732-01, P = 0.762833 Days, E = 130.914740 Days

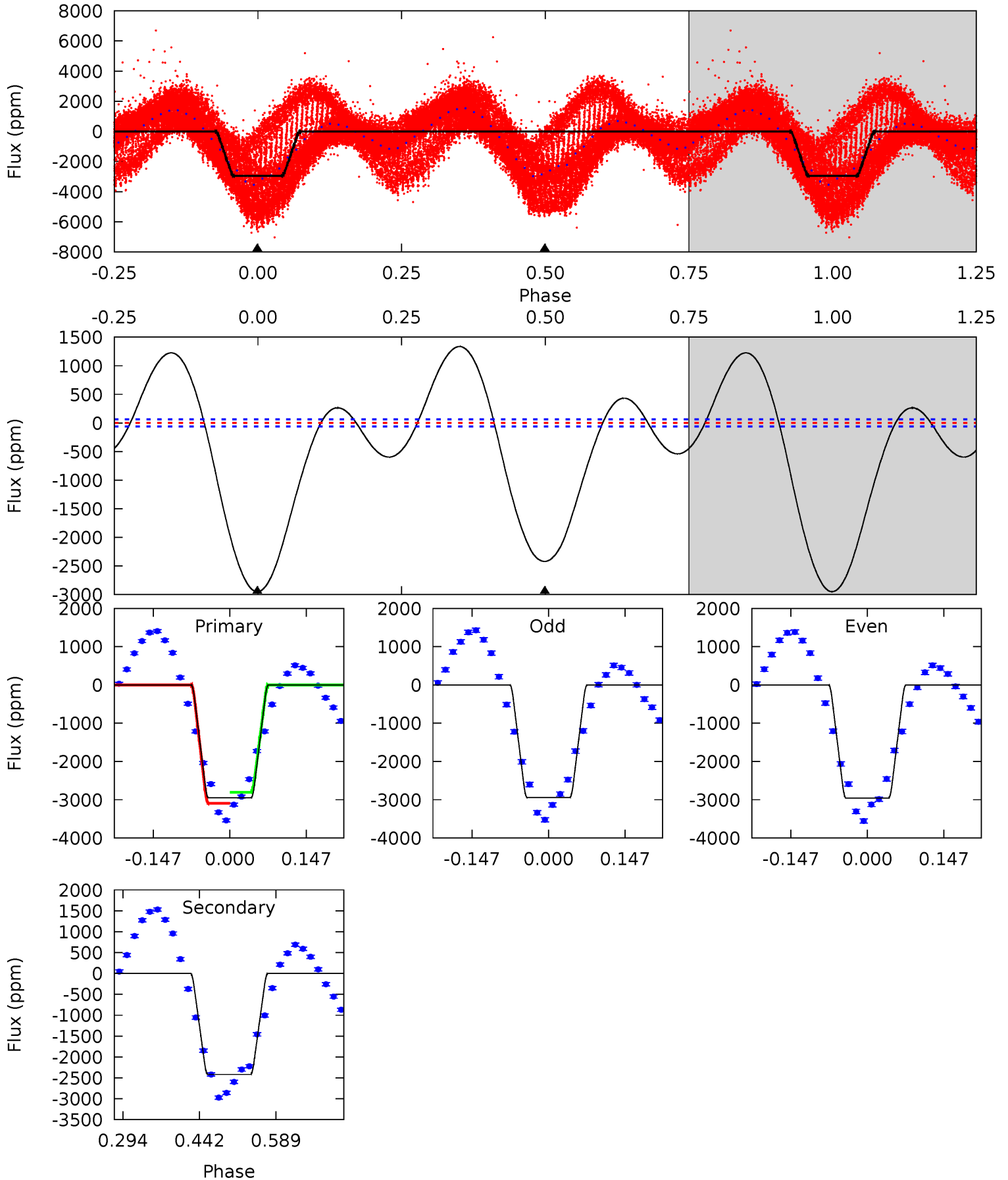
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
19.3	15.0	0	0	4.49	1.47	2.42	19.3	19.3	15.0	15.0	0.33	5.41	0.13	10.1



# Alt Model-Shift Uniqueness Test

010847732-01, P = 0.762893 Days, E = 130.883634 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
210.8	172.9	0	0	4.48	1.45	43.1	210.8	210.8	172.9	172.9	0.50	0.93	0.31	10.5



### Stellar Parameters For KIC 010847732

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R$ ( $R_{\odot}$ )	$M$ ( $M_{\odot}$ )	$p_{\star}$ ( $\text{g}\cdot\text{cm}^{-3}$ )
	$5806^{+160}_{-160}$	$4.591^{+0.031}_{-0.178}$	$-0.500^{+0.300}_{-0.300}$	$0.774^{+0.201}_{-0.054}$	$0.871^{+0.085}_{-0.095}$	$2.644^{+0.428}_{-1.187}$
	+3%/-3%	+1%/-4%	+60%/-60%	+26%/-7%	+10%/-11%	+16%/-45%
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 010847732-01 / KOI

Detrend	Depth (ppm)	$R_p$ ( $R_{\oplus}$ )	$T_{\text{max}}$ (K)	$T_{\text{obs}}$ (K)	$A_{\text{obs}}$
DV	$-71 \pm 5$	$1.10^{+0.31}_{-0.30}$	$2592^{+157}_{-104}$	$4873^{+700}_{-507}$	$7.726^{+6.369}_{-3.133}$
Alt.	$-2419 \pm 14$	$5.33^{+0.78}_{-0.49}$	$2589^{+168}_{-114}$	$5250^{+192}_{-186}$	$11^{+2}_{-2}$

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



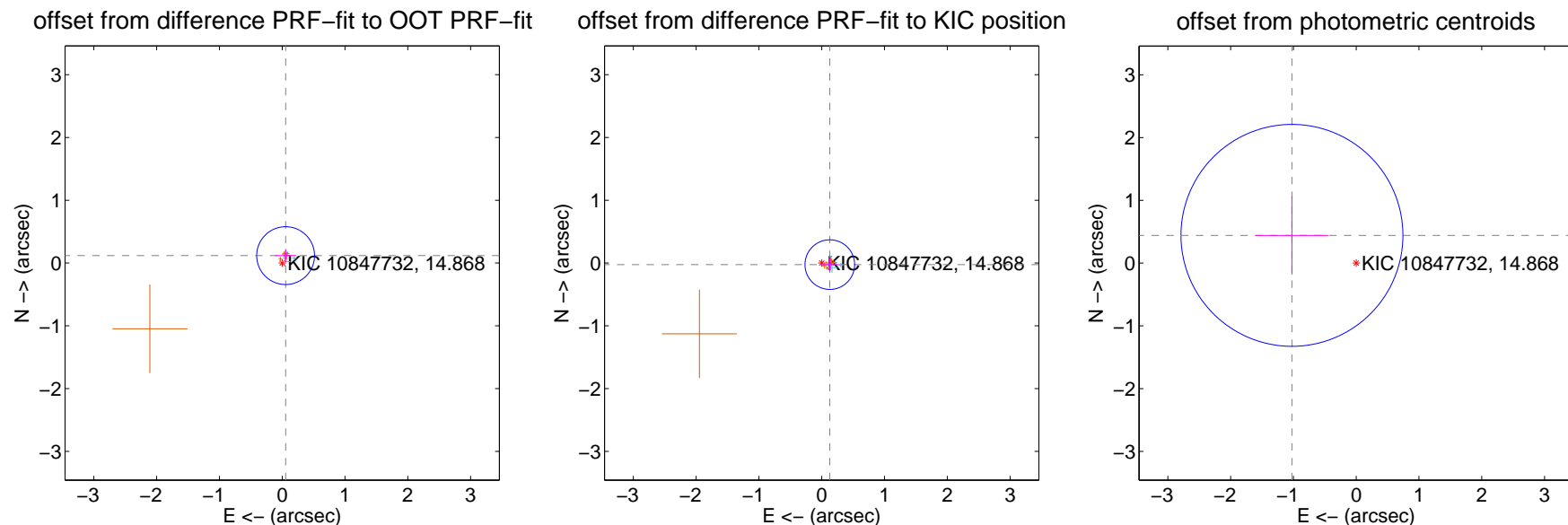
## DV Centroid Data

Supplemental centroid analysis for 010847732-01. Kepler magnitude: 14.87. Transit SNR 18.35

There are 7 quarters with good PRF difference image offsets

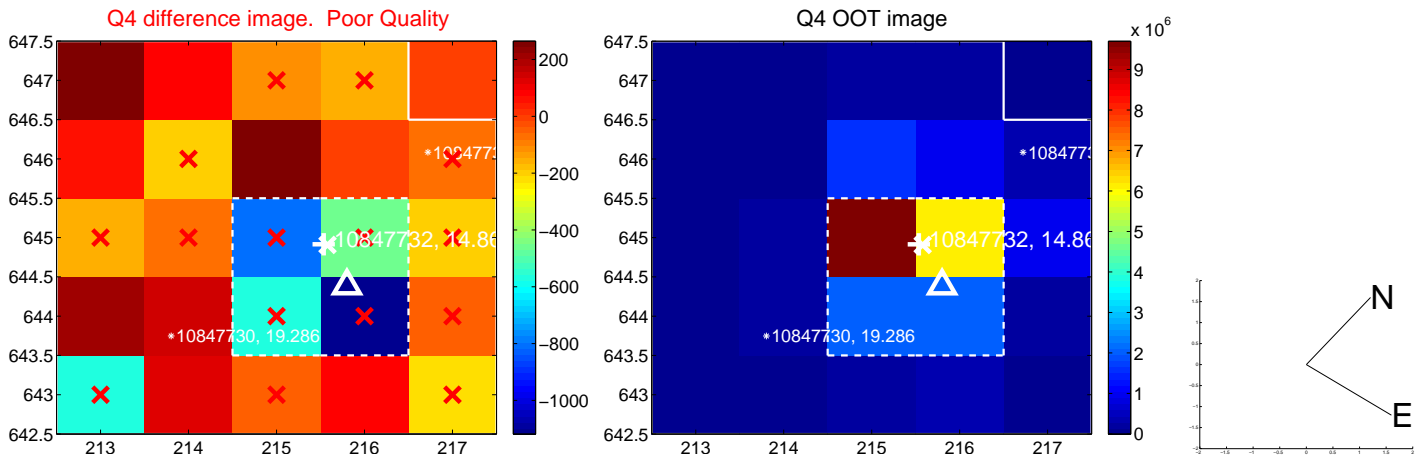
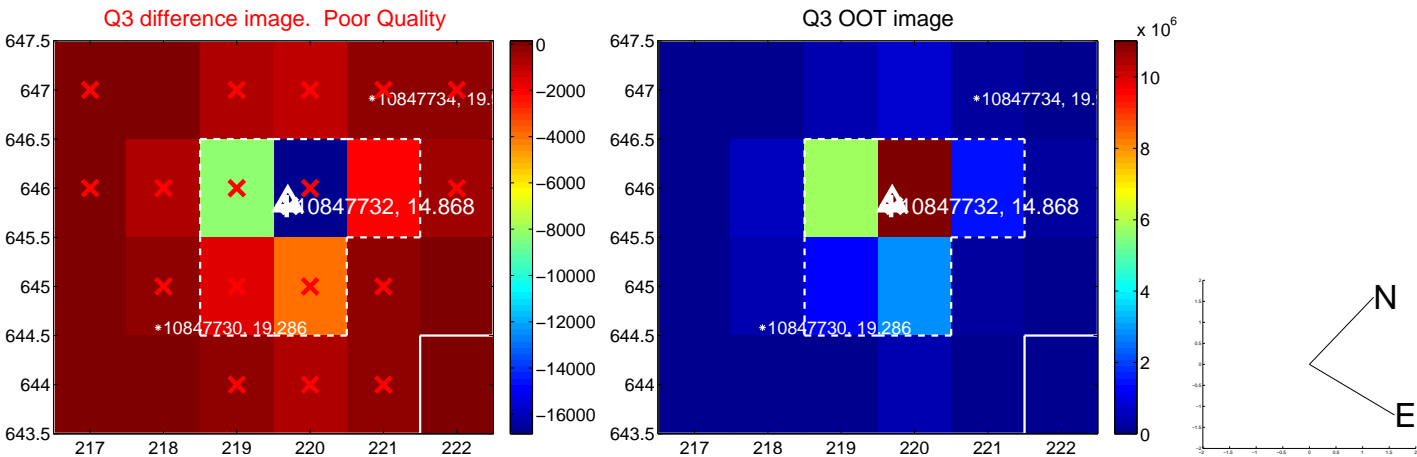
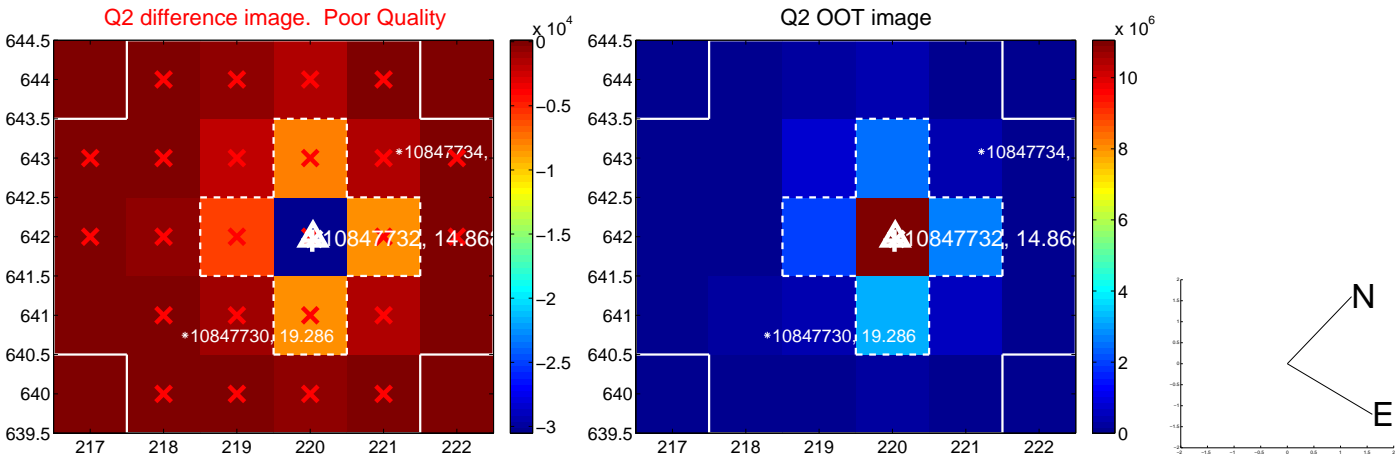
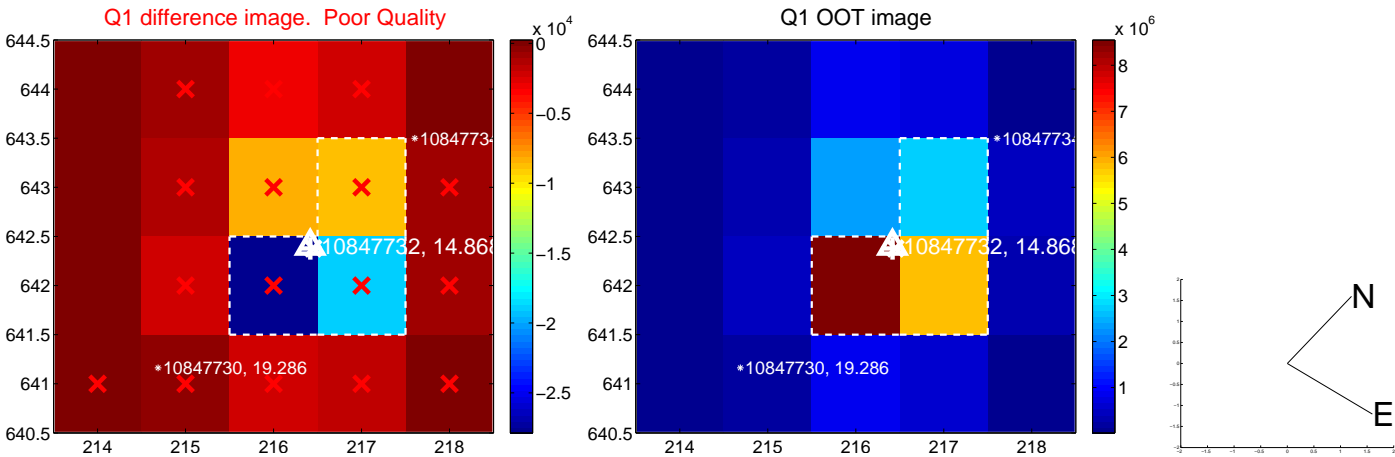
The direct PRF centroid is offset from the target star catalog position by about 0.17 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.130 \pm 0.154$	0.85	$-0.054 \pm 0.167$	$0.118 \pm 0.106$
PRF-fit source offset from KIC position	$0.131 \pm 0.132$	1.00	$-0.129 \pm 0.145$	$-0.025 \pm 0.095$
photometric centroid source offset	$1.12 \pm 0.59$	1.89	$1.02 \pm 0.58$	$0.44 \pm 0.62$

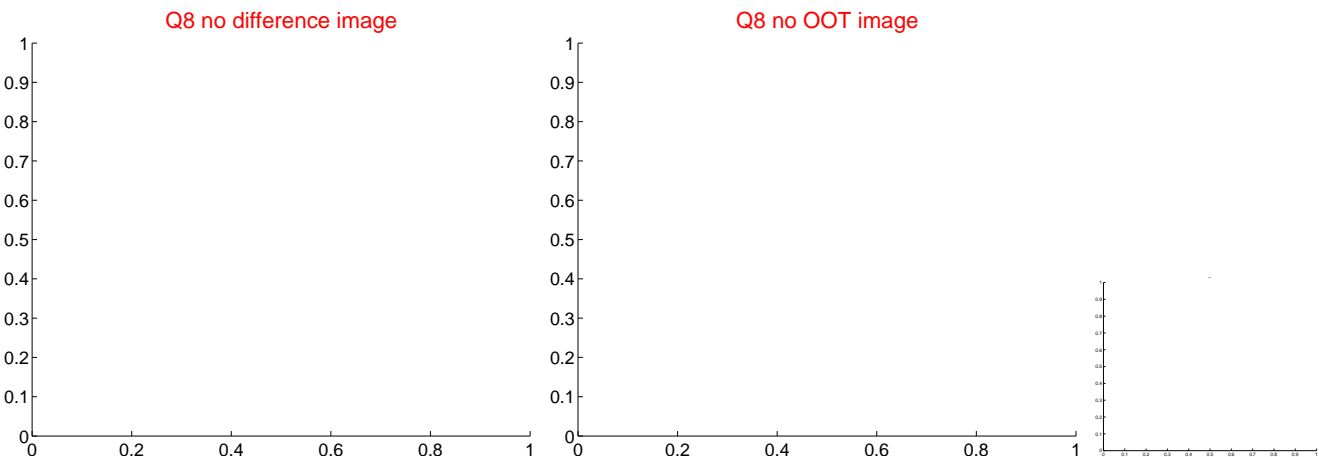
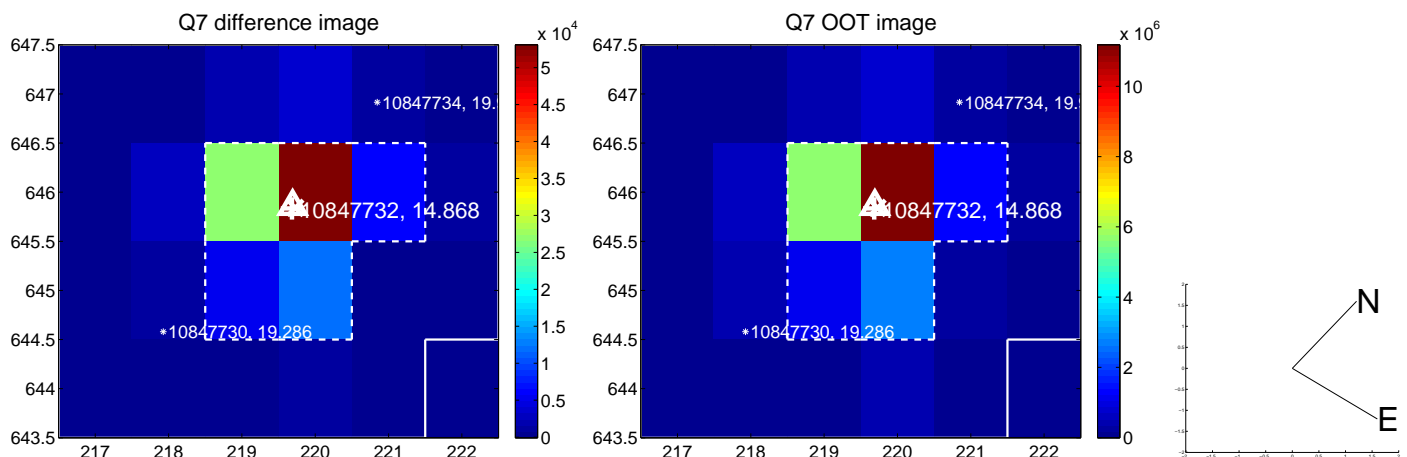
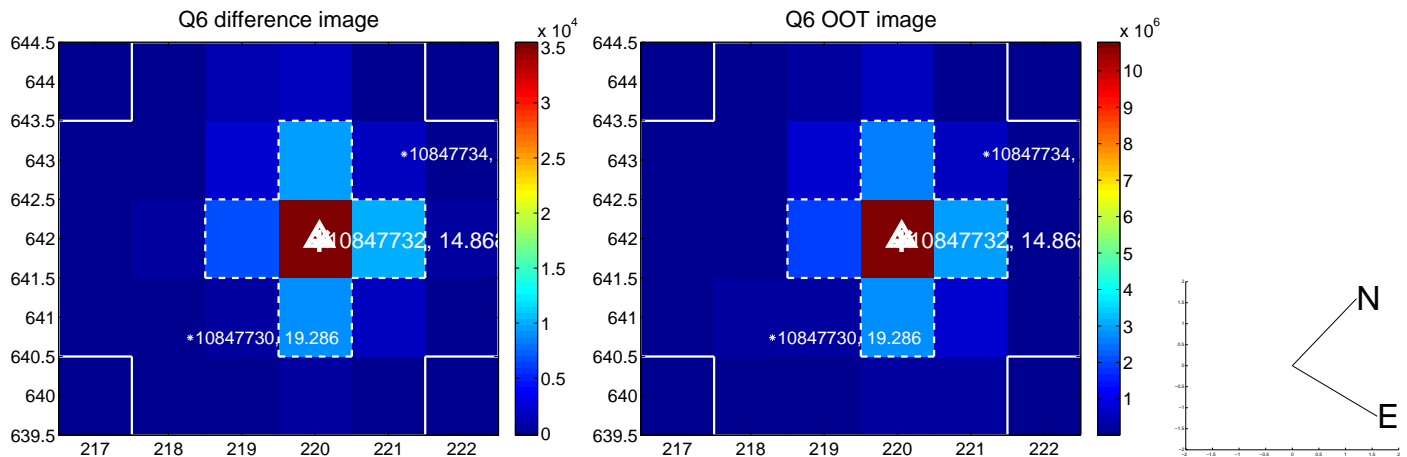
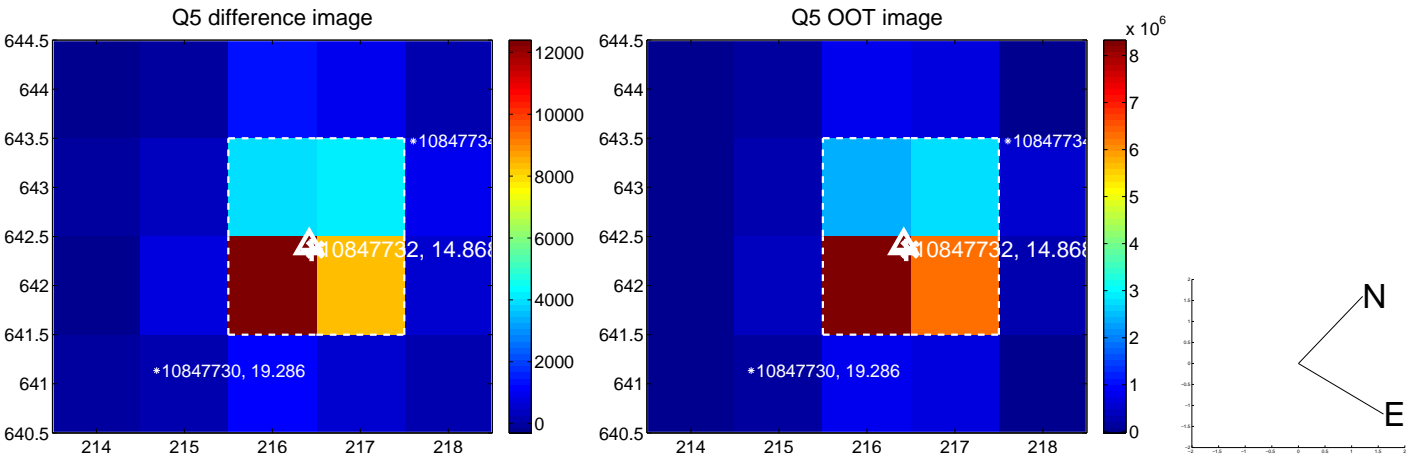


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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

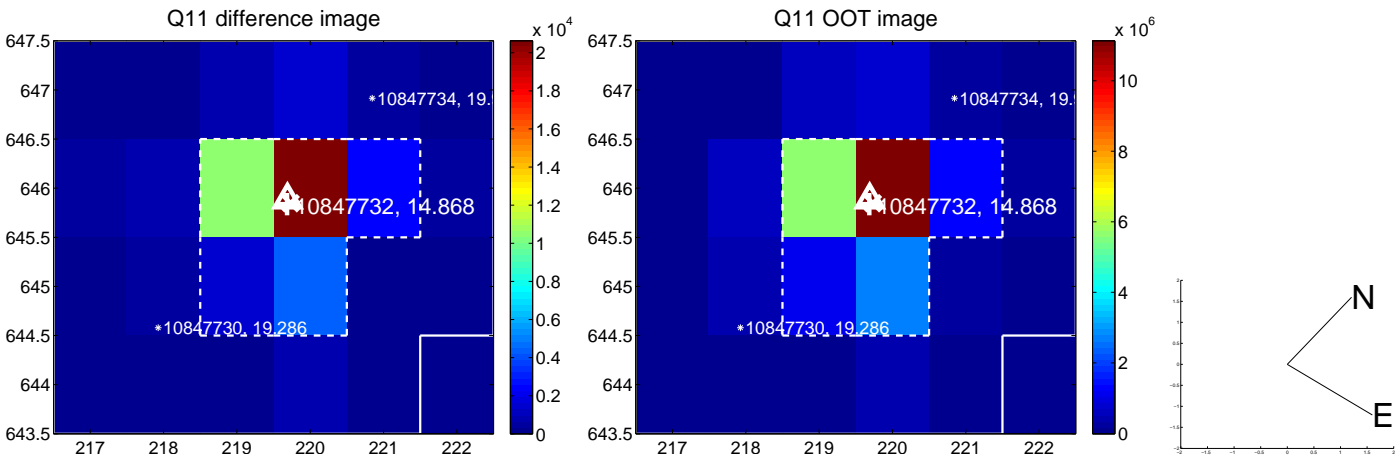
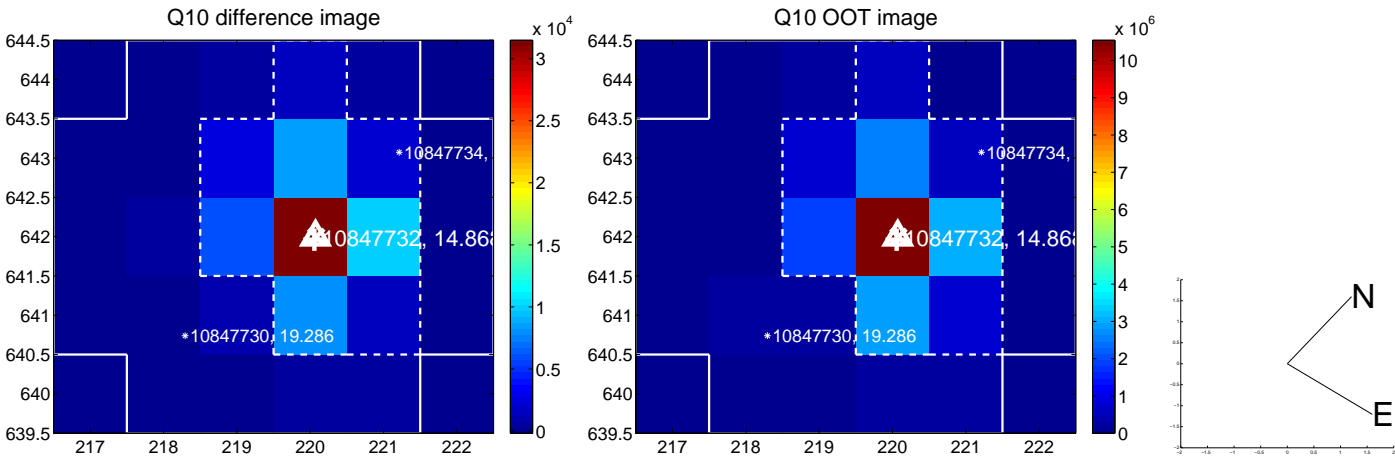
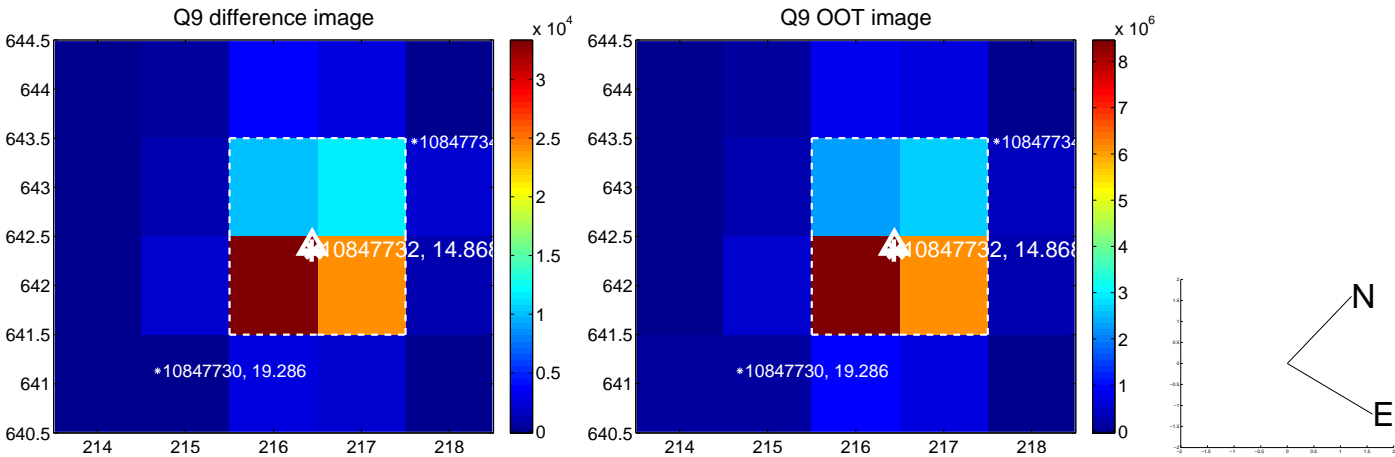
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



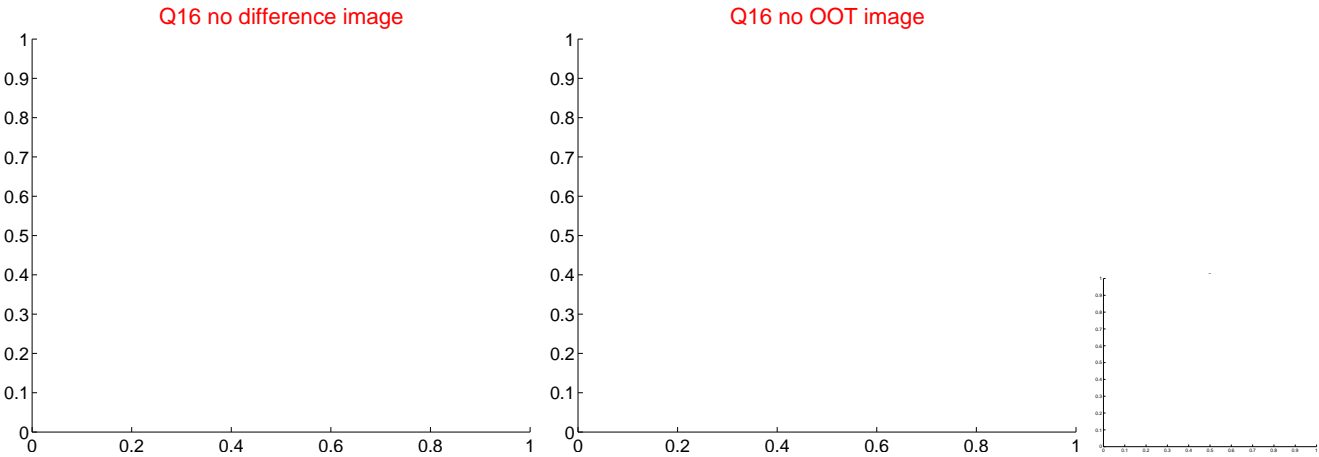
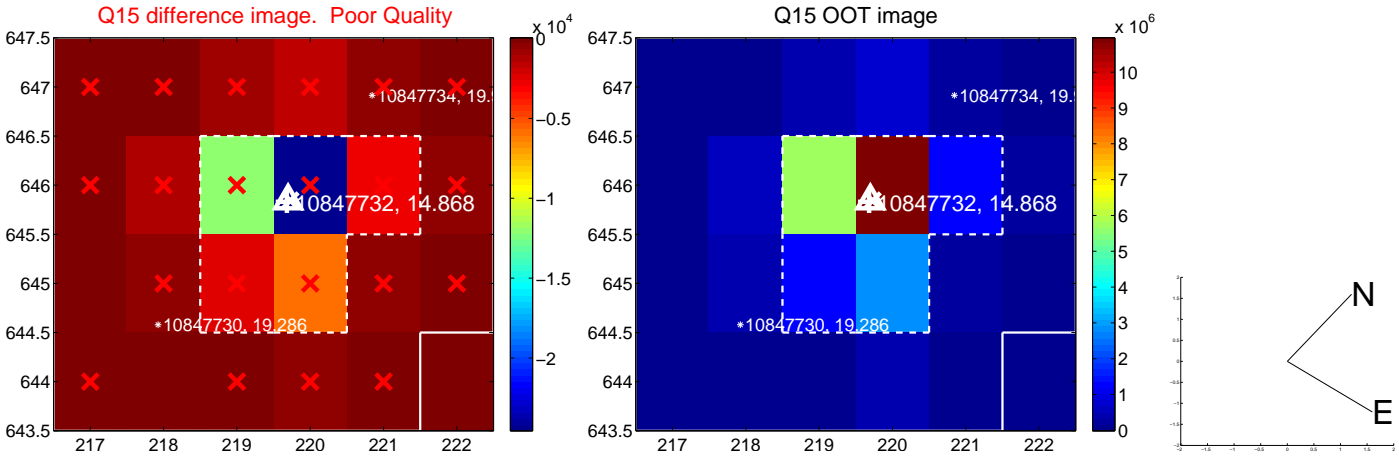
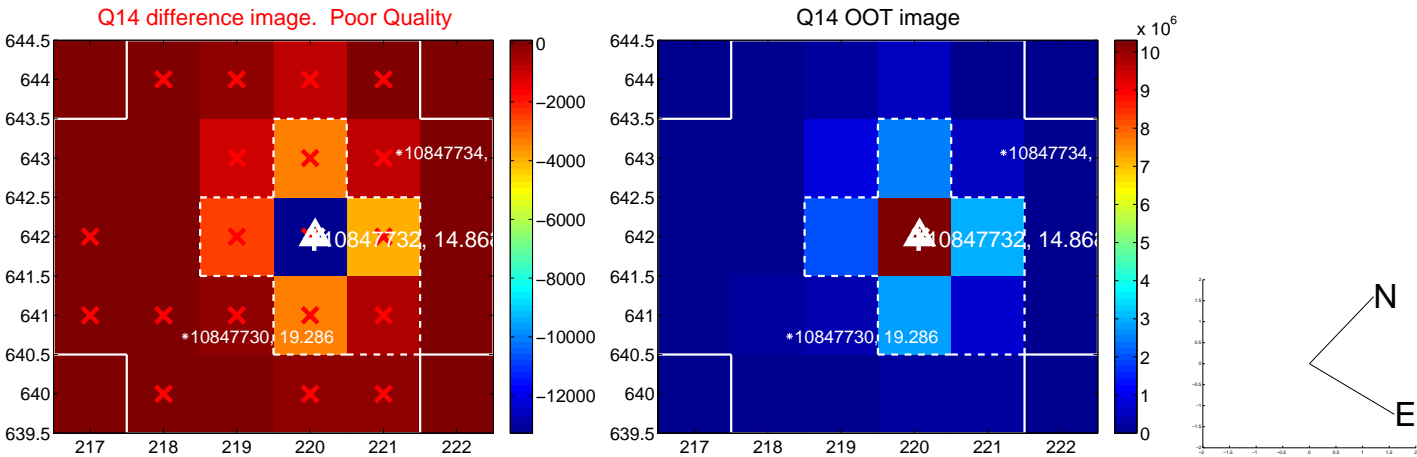
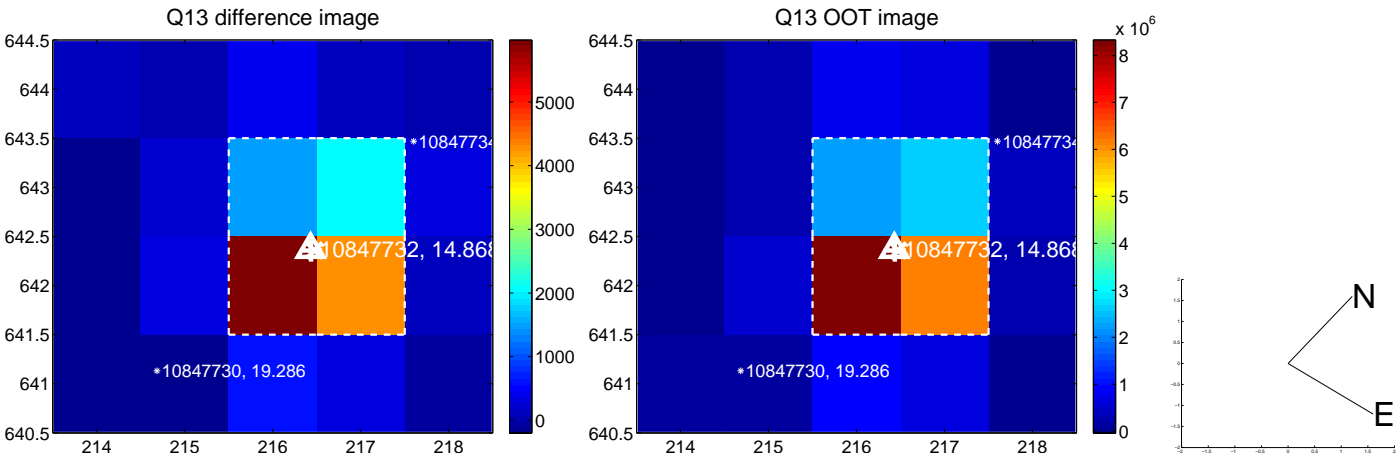
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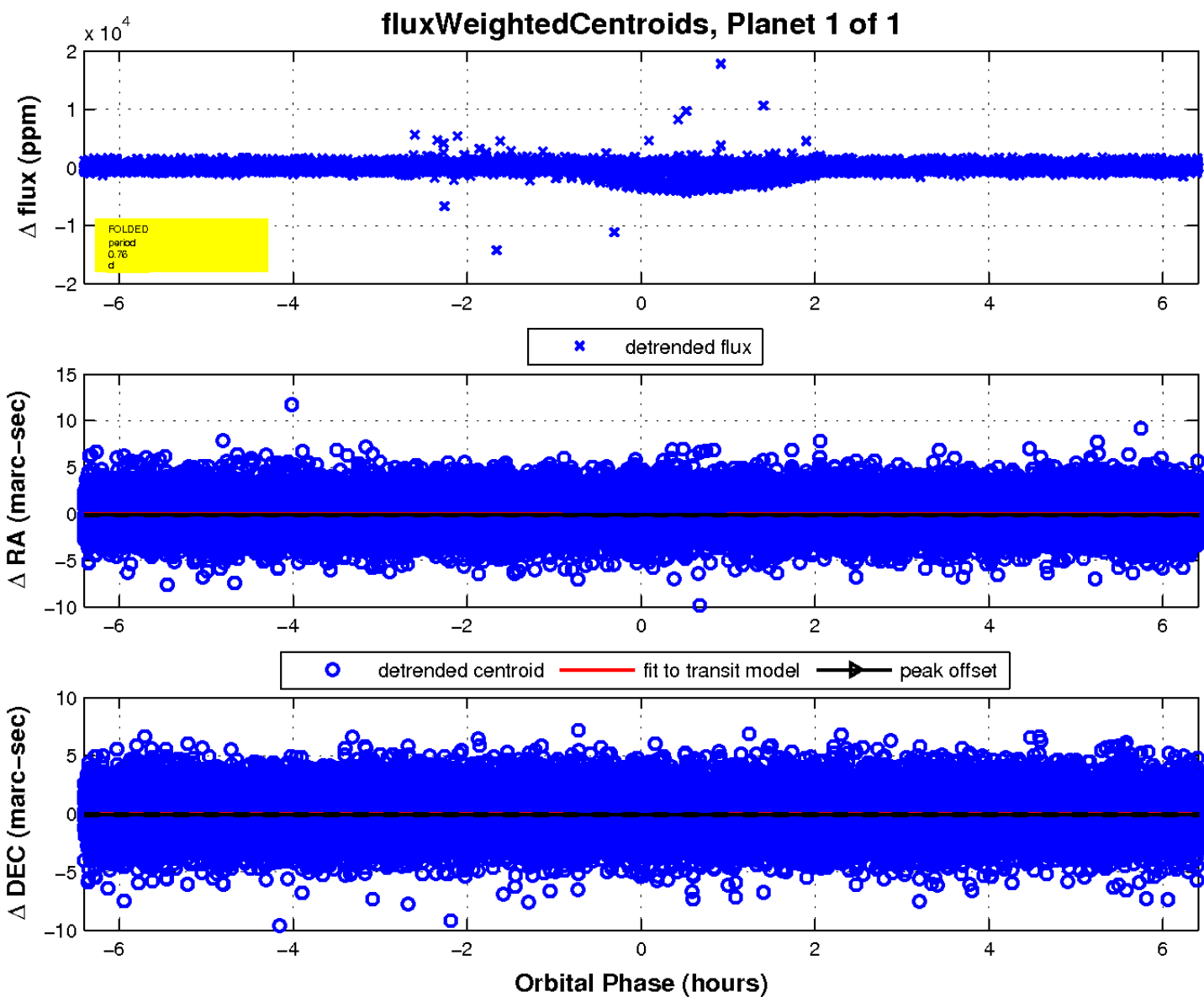
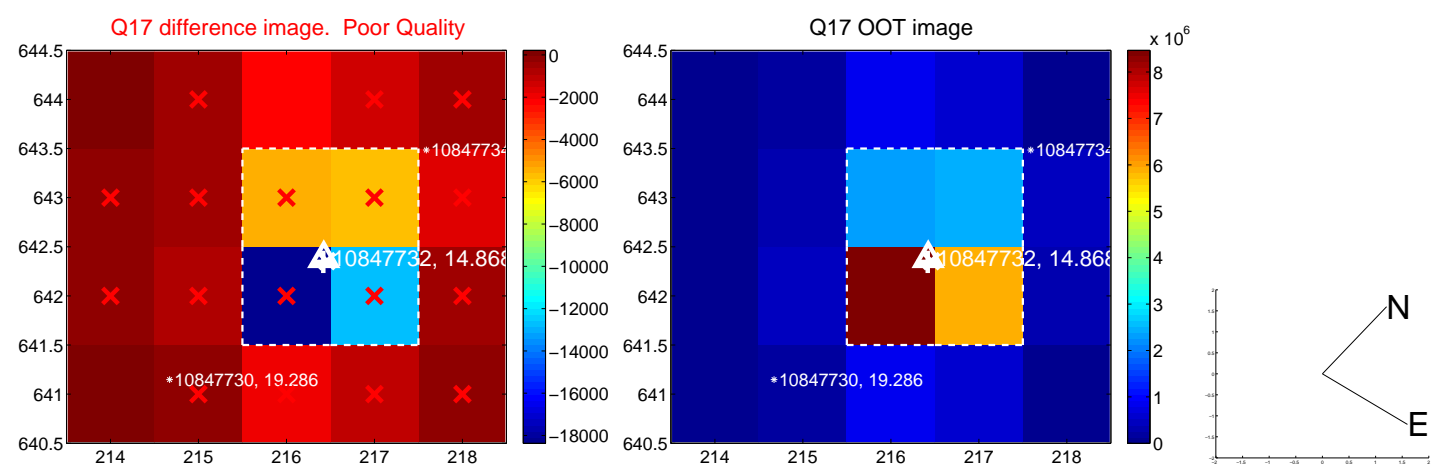


white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.





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



UKIRT Image

Declination

