

# KIC 007848826

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
007848826-01	OBS	No	17.326566	144.049939	174.2	22.265	7.3	8.3	0.99	6040	1.80	68.44

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
007848826-01	OBS	FP	0.00	1	0	1	0	LPP_DV—MOD_NONUNIQ_DV—CENT_RESOLVED_OFFSET—HALO_GHOST

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

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

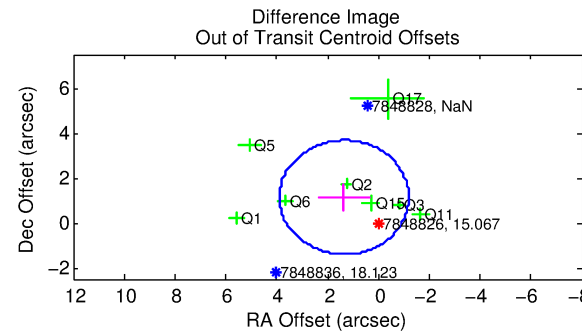
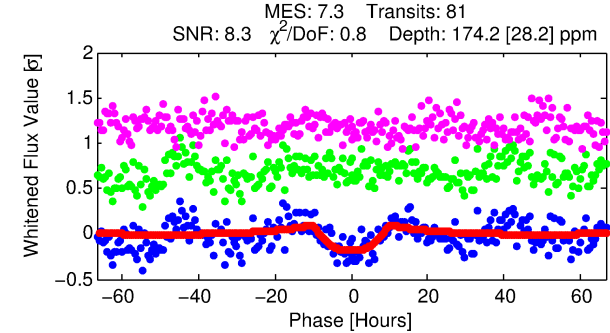
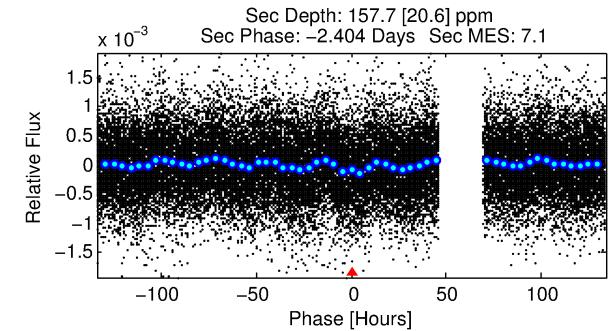
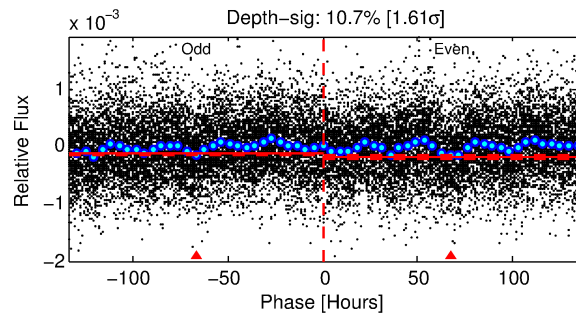
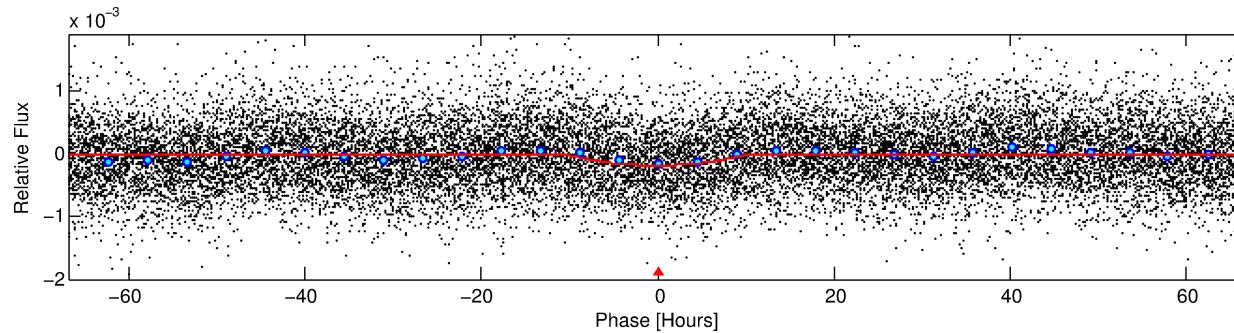
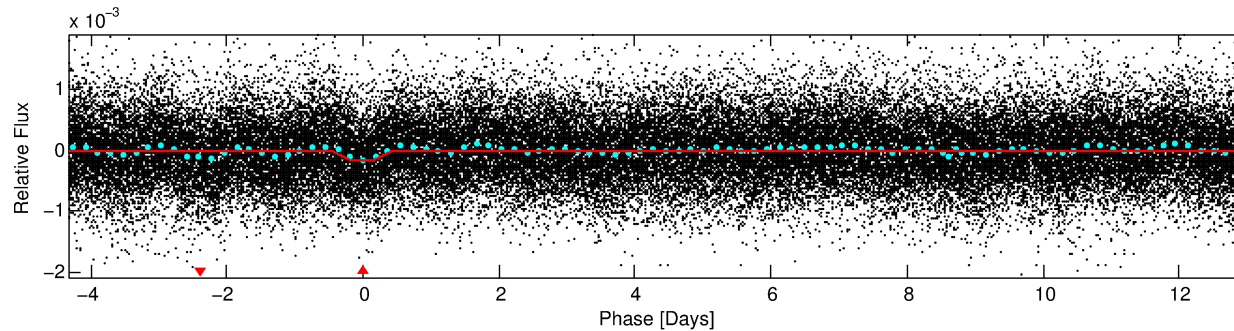
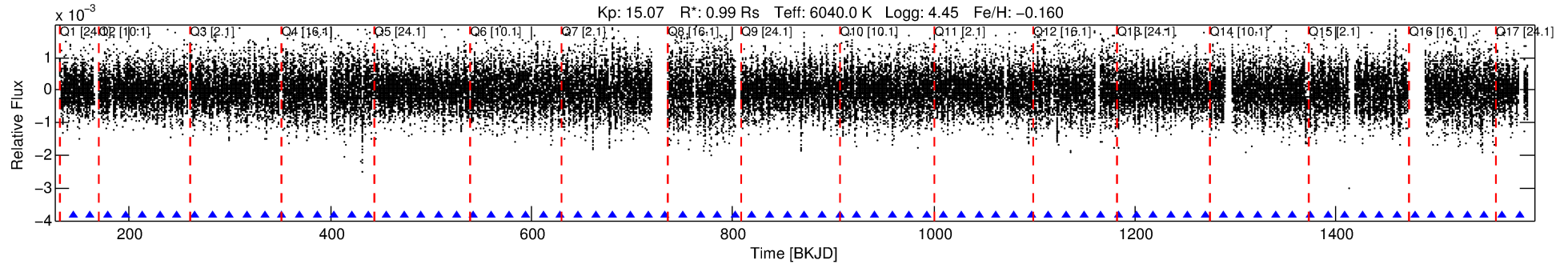
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 007848826-01

No Significant Match Found

# DV One-Page Summary

KIC: 7848826 Candidate: 1 of 1 Period: 17.327 d



## DV Fit Results:

Period = 17.32657 [0.00092] d  
Epoch = 144.0499 [0.0414] BKJD  
Rp/R\* = 0.0166 [0.0017]  
a/R\* = 1.84 [0.18]  
b = 0.98 [0.01]  
Seff = 68.44 [27.94]  
Teq = 733 [75] K  
Rp = 1.80 [0.59] Re  
a = 0.1313 [0.0346] AU  
Ag = 461.46 [209.68] [2.20 $\sigma$ ]  
Teffp = 5256 [368] K [12.04 $\sigma$ ]

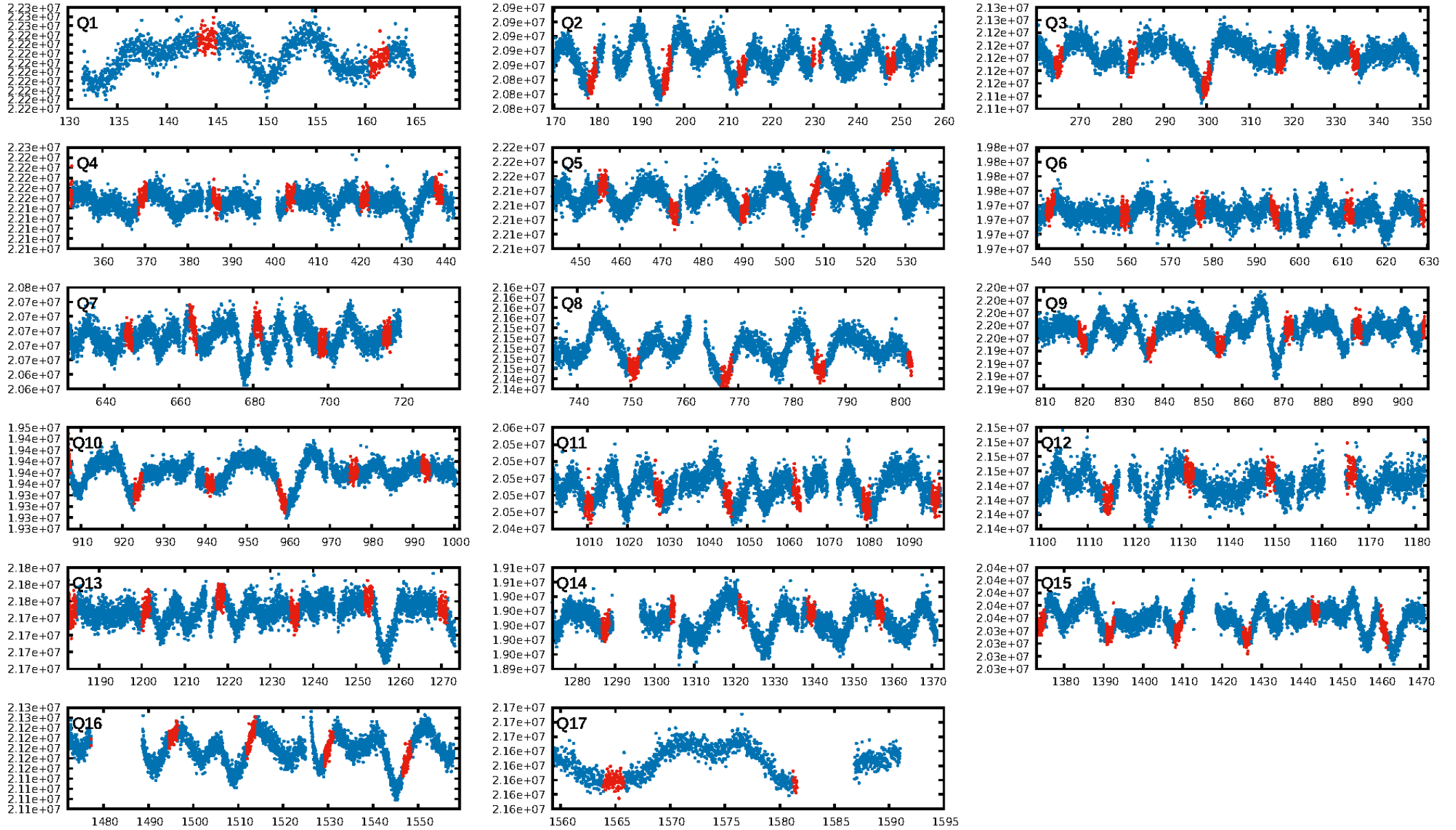
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: 98.1%  
ModelChiSquareGof-sig: 100.0%  
Bootstrap-pfa: 3.36e-14  
RollingBand-fgt: 1.00 [78/78]  
GhostDiagnostic-chr: 0.2053  
Centroid-sig: 0.0%  
Centroid-so: 3.461 arcsec [3.56 $\sigma$ ]  
OotOffset-rm: 1.764 arcsec [2.08 $\sigma$ ]  
KicOffset-rm: 1.849 arcsec [2.28 $\sigma$ ]  
OotOffset-st: 2/3/0/3 [8]  
KicOffset-st: 2/3/0/3 [8]  
DiffImageQuality-fgm: 0.50 [4/8]  
DiffImageOverlap-fno: 1.00 [17/17]

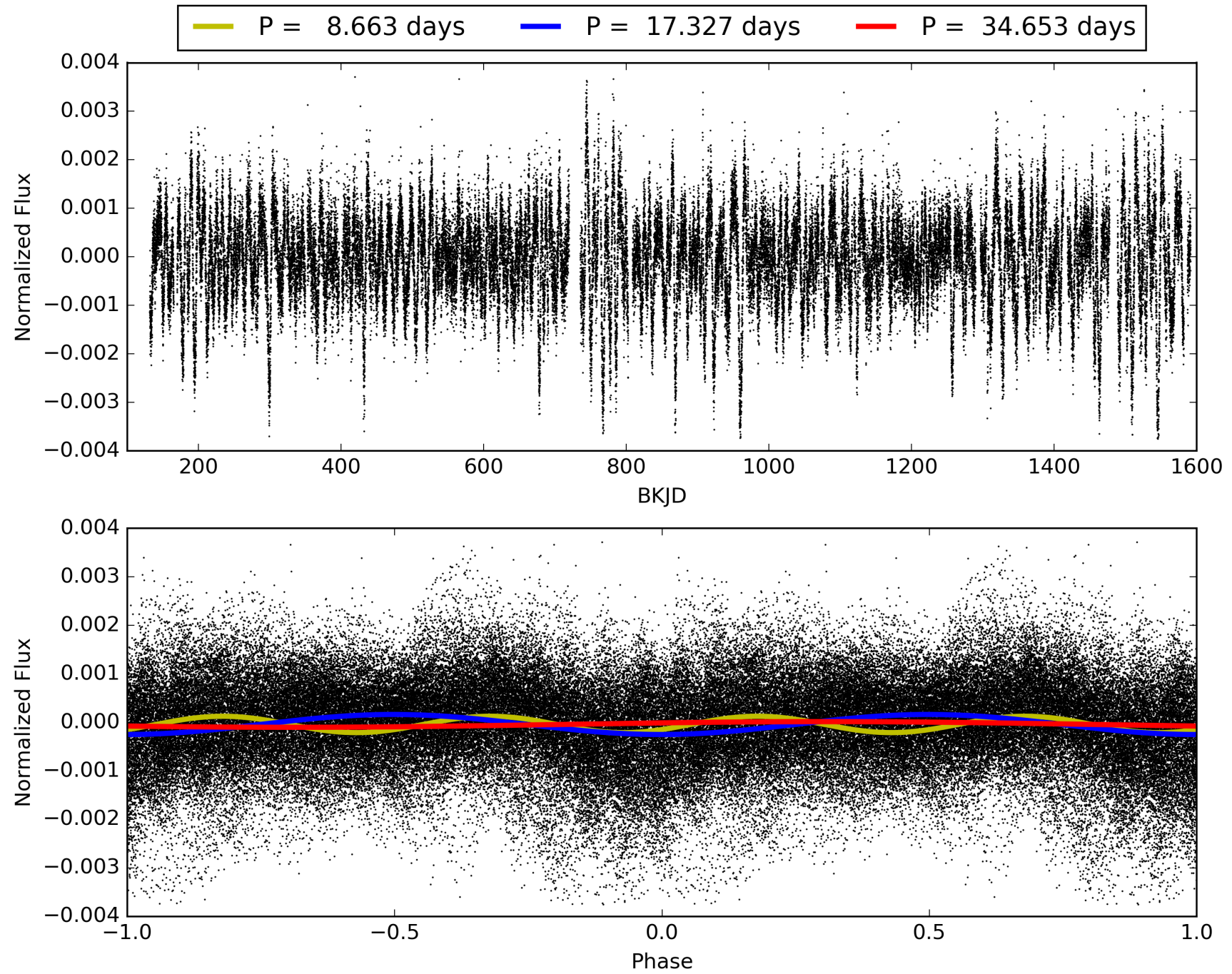
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 15:12:17 Z

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

# TCE 007848826-01, PDC Light Curves



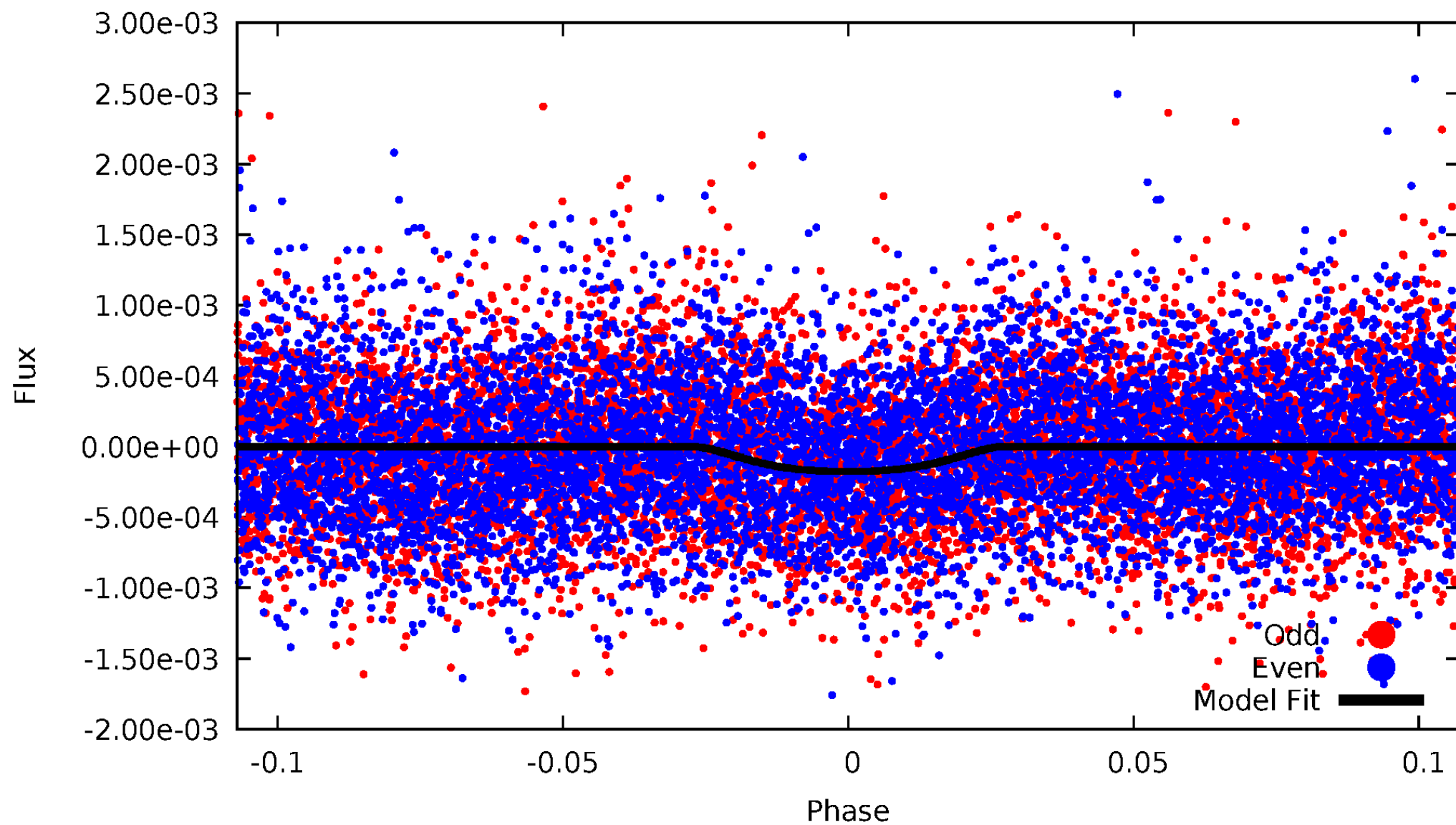
TCE 007848826-01





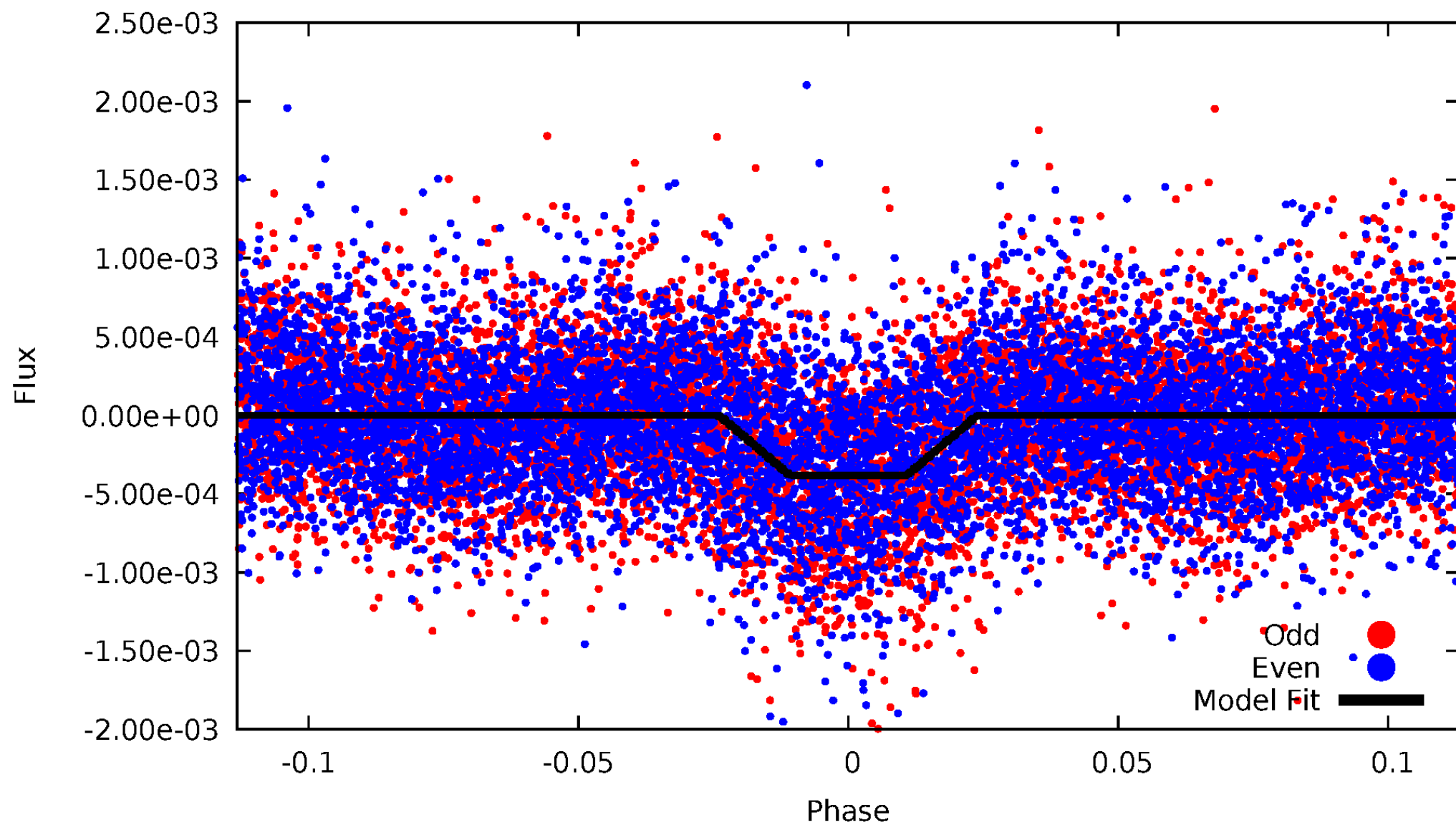
# DV Odd/Even

TCE 007848826-01



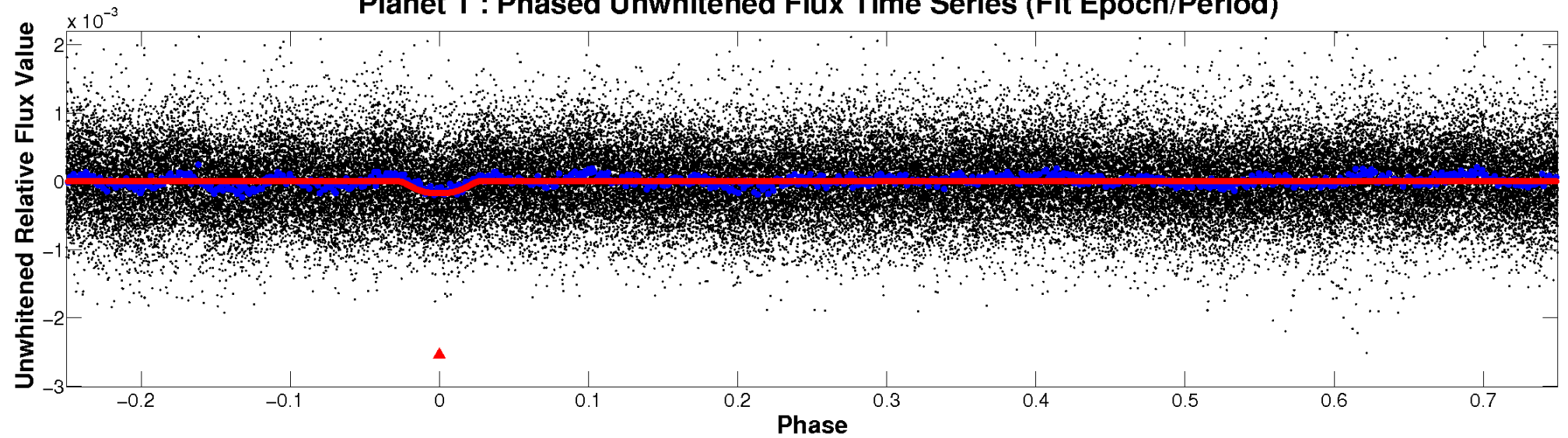
# ALT Odd/Even

TCE 007848826-01

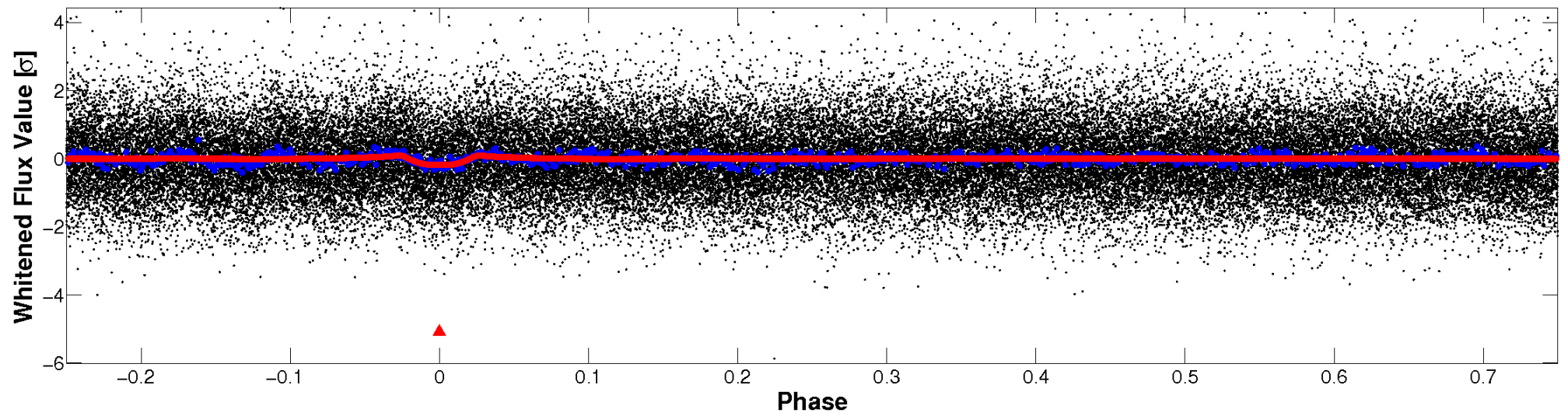


# Non-Whitened Vs. Whitened Light Curve

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

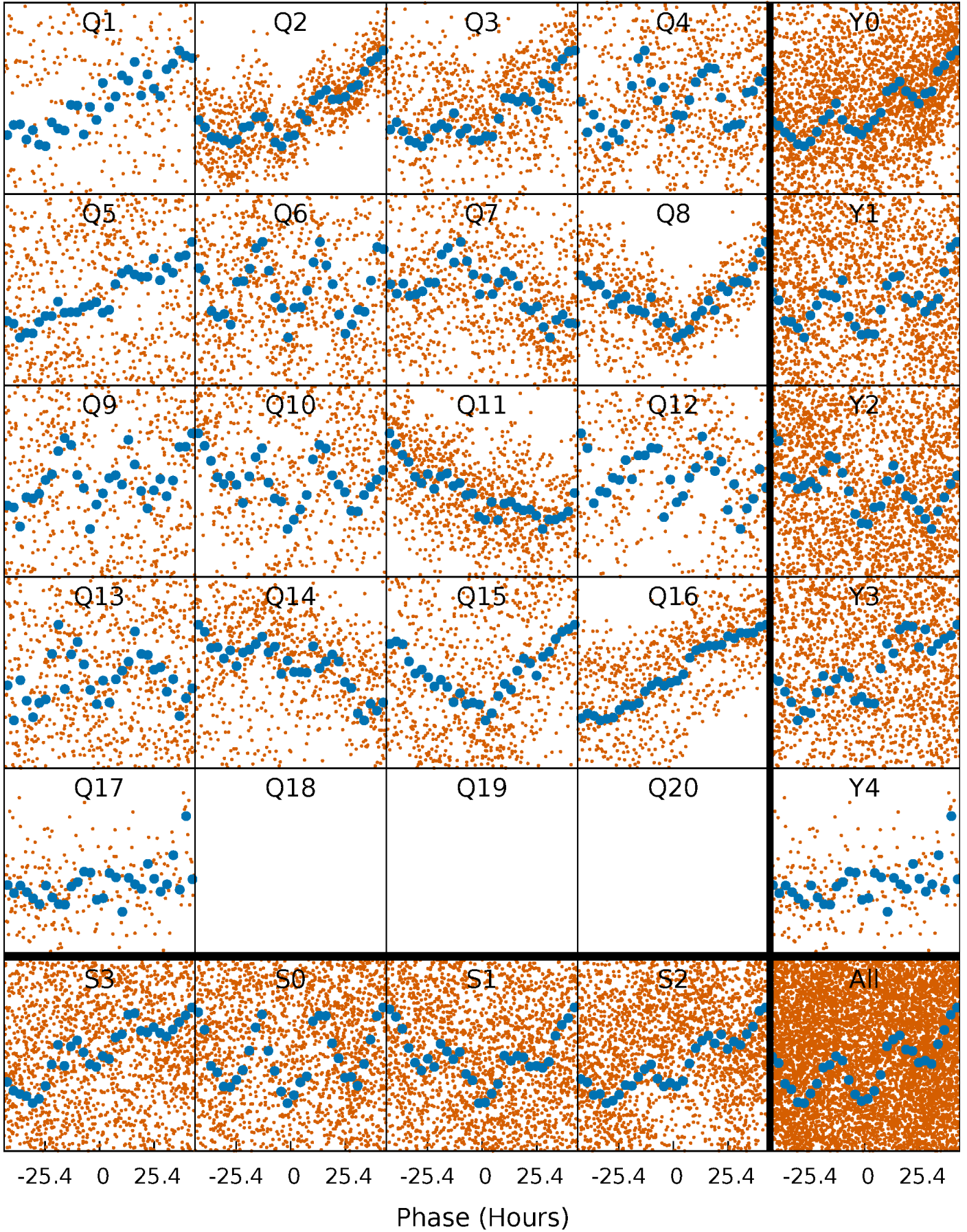


**Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)**



# PDC Quarter-Phased Transit Curves

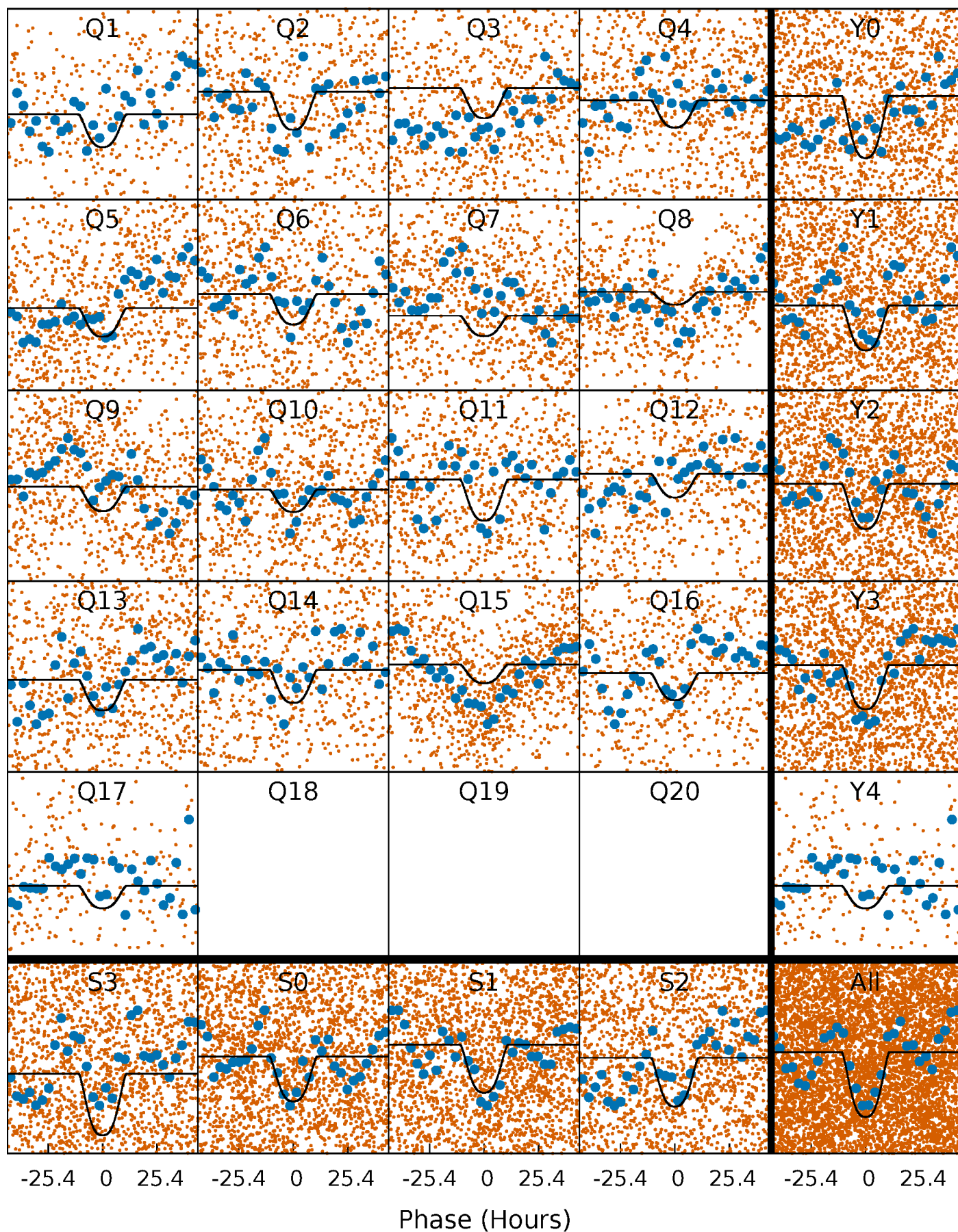
TCE 007848826-01 P= 17.326566 Days  $T_0=144.049938$  (BKJD)





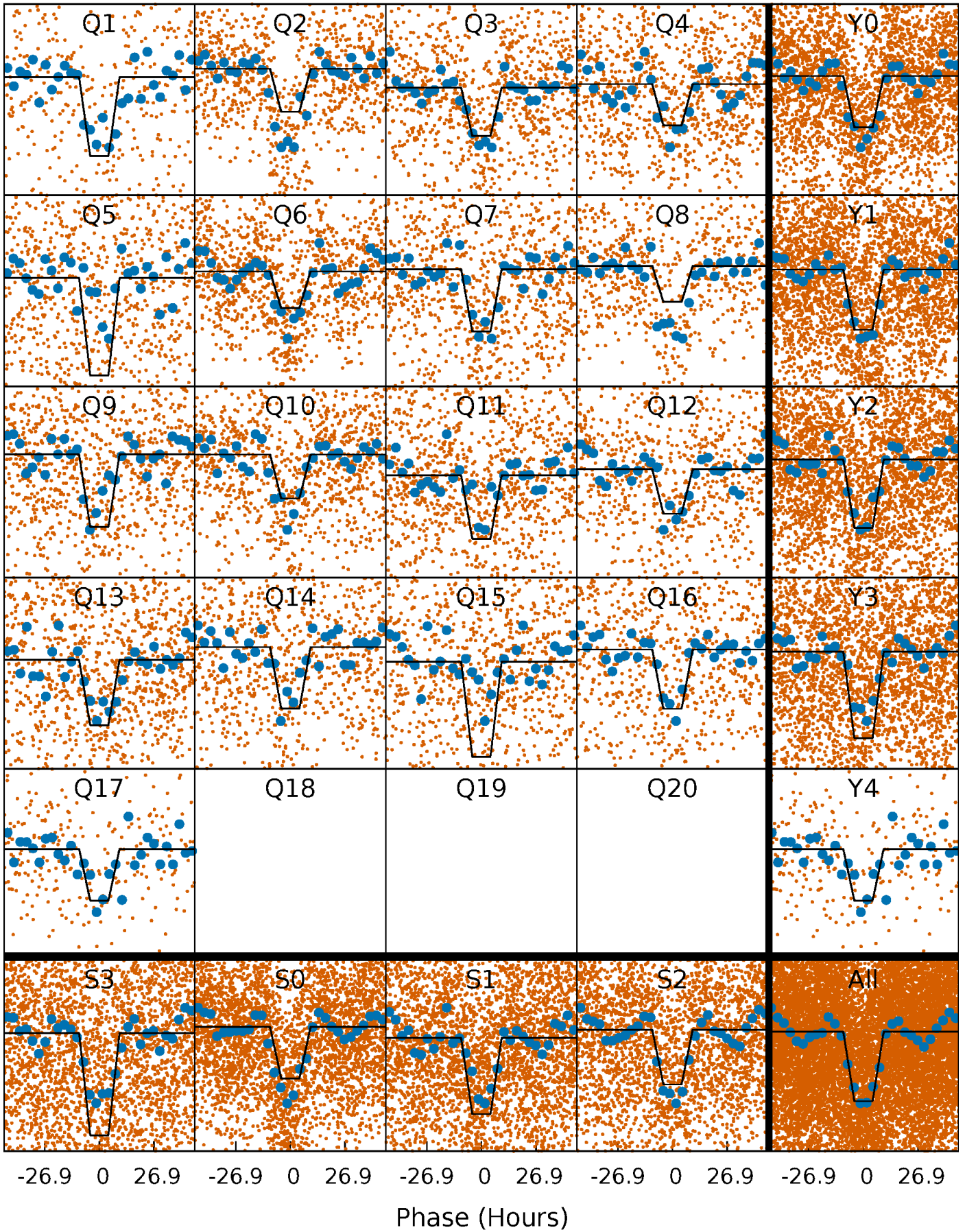
# DV Quarter-Phased Transit Curves

TCE 007848826-01 P= 17.326566 Days  $T_0=144.049938$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

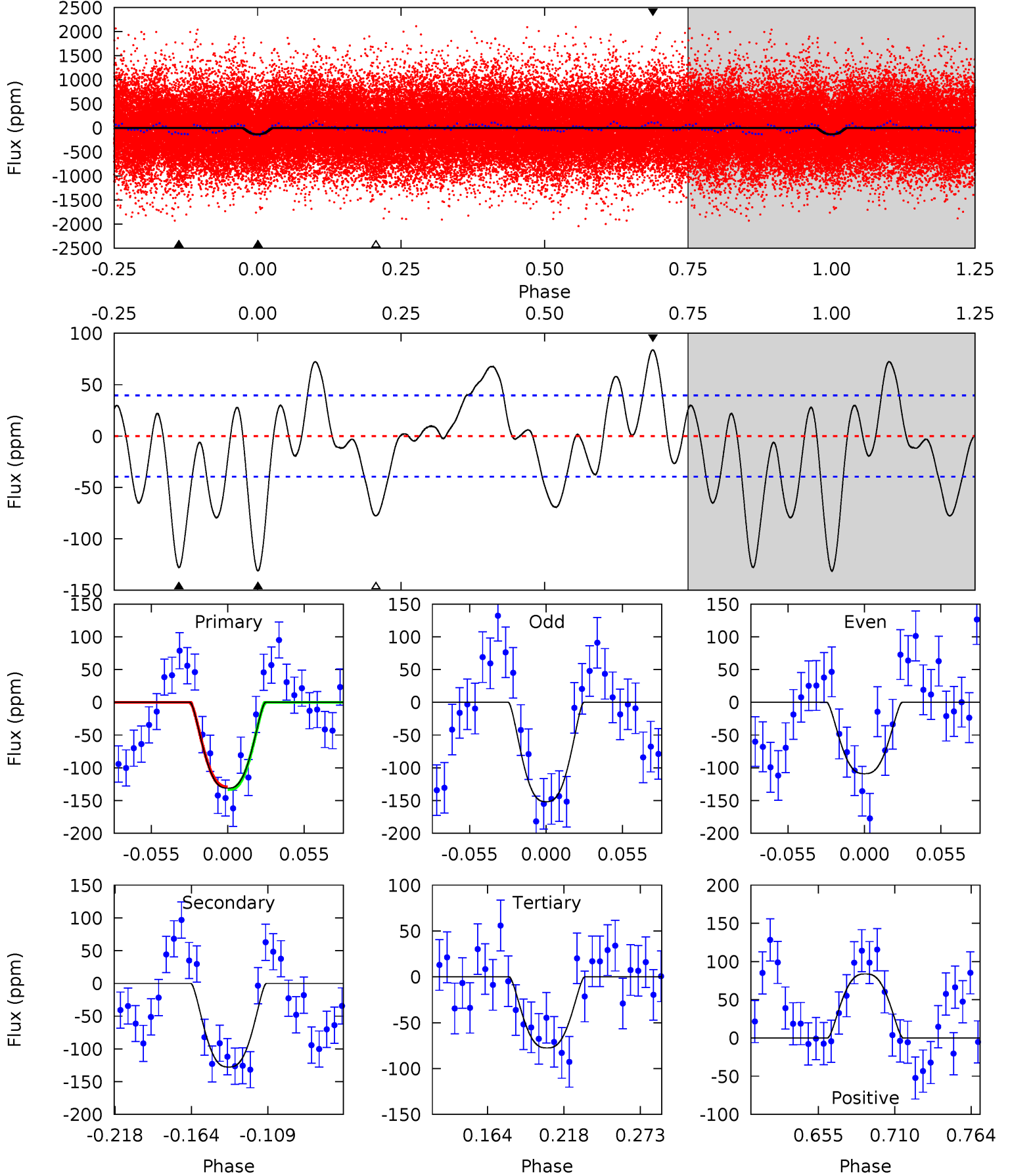
TCE 007848826-01 P= 17.326884 Days  $T_0=144.030135$  (BKJD)



# DV Model-Shift Uniqueness Test

007848826-01, P = 17.326566 Days, E = 126.723372 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
15.6	15.2	9.20	9.95	4.69	1.92	4.72	6.36	5.62	5.95	5.21	2.55	5.32	0.39	0.23

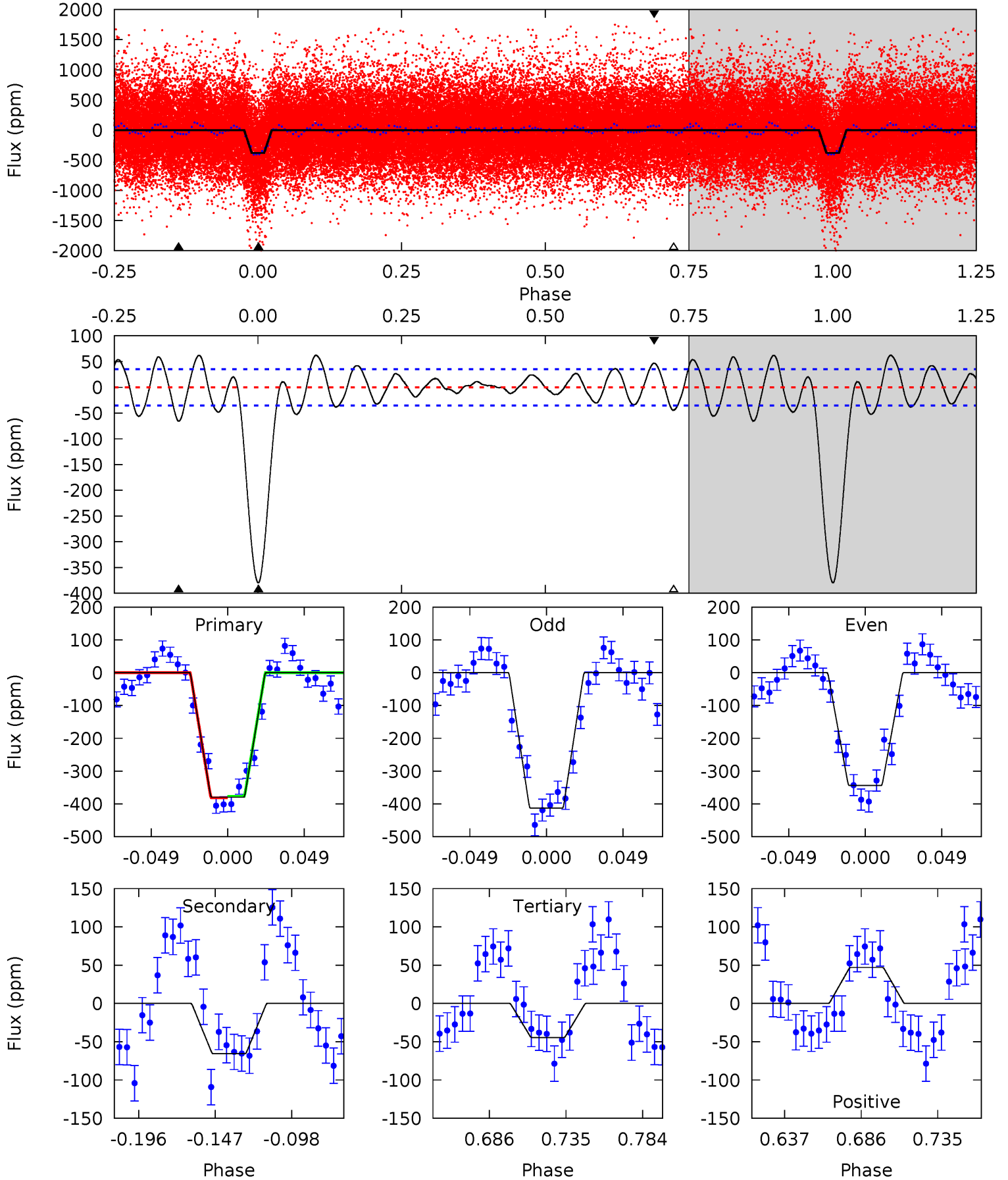




# Alt Model-Shift Uniqueness Test

007848826-01, P = 17.326884 Days, E = 126.703251 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
50.9	8.80	5.97	6.29	4.71	1.97	3.41	44.9	44.6	2.83	2.51	4.65	1.18	0.14	0.34





### Stellar Parameters For KIC 007848826

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$6040^{+189}_{-210}$	$4.445^{+0.070}_{-0.210}$	$-0.160^{+0.300}_{-0.300}$	$0.995^{+0.311}_{-0.111}$	$1.006^{+0.144}_{-0.131}$	$1.437^{+0.531}_{-0.751}$
	+3%/-3%	+2%/-5%	+188%/-188%	+31%/-11%	+14%/-13%	+37%/-52%
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 007848826-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	$A_{obs}$
DV	$-128 \pm 8$	$1.86^{+0.36}_{-0.25}$	$1044^{+75}_{-57}$	$5057^{+293}_{-264}$	$349^{+107}_{-101}$
Alt.	$-66 \pm 7$	$2.19^{+0.41}_{-0.30}$	$1043^{+79}_{-59}$	$4158^{+189}_{-206}$	$126^{+44}_{-36}$

$T_{max}$  = 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

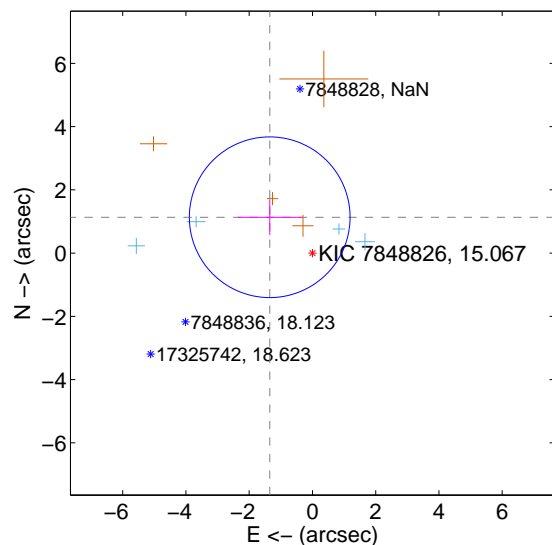
Supplemental centroid analysis for 007848826-01. Kepler magnitude: 15.07. Transit SNR 8.29

There are 4 quarters with good PRF difference image offsets

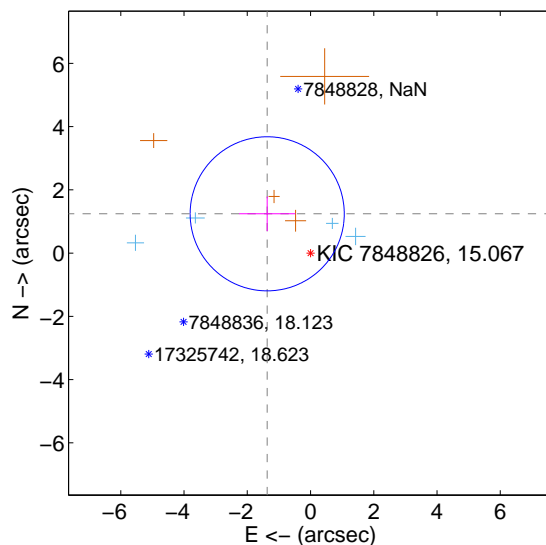
The direct PRF centroid is offset from the target star catalog position by about 0.12 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$1.764 \pm 0.847$	2.08	$1.351 \pm 1.014$	$1.134 \pm 0.564$
PRF-fit source offset from KIC position	$1.849 \pm 0.812$	2.28	$1.370 \pm 0.890$	$1.242 \pm 0.549$
photometric centroid source offset	$3.46 \pm 0.97$	<b>3.56</b>	$1.03 \pm 1.00$	$3.30 \pm 0.97$

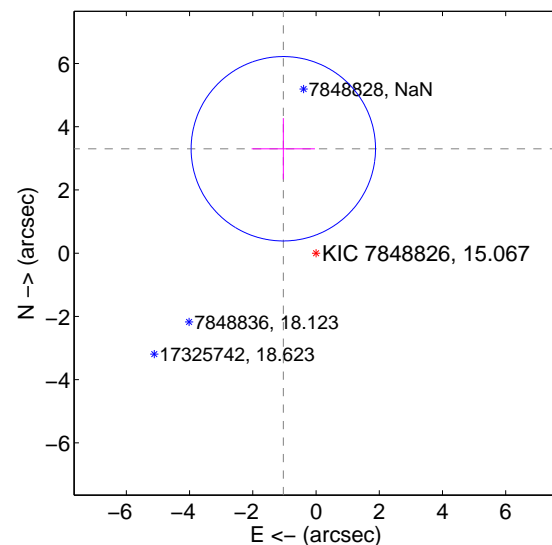
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

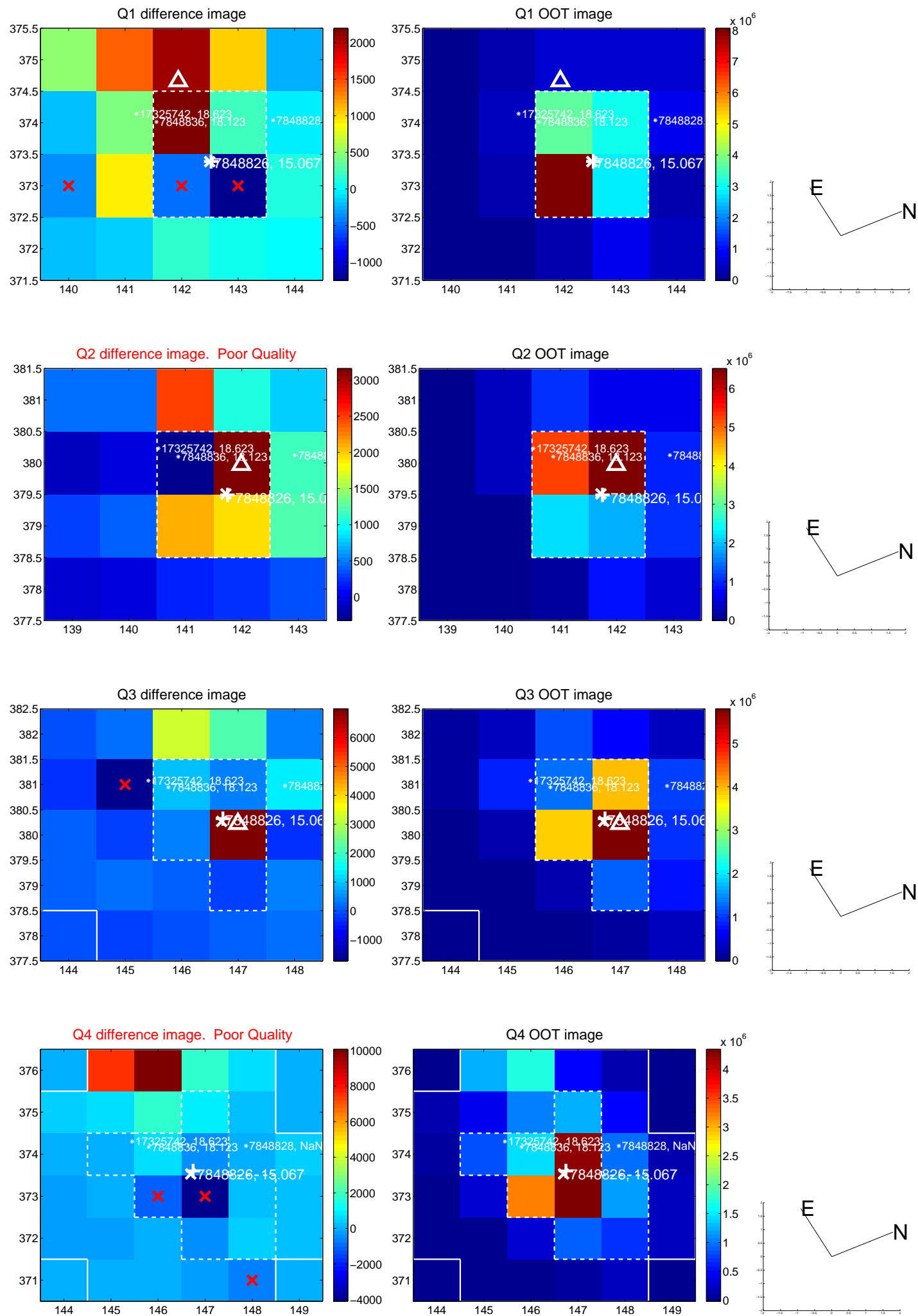


offset from photometric centroids

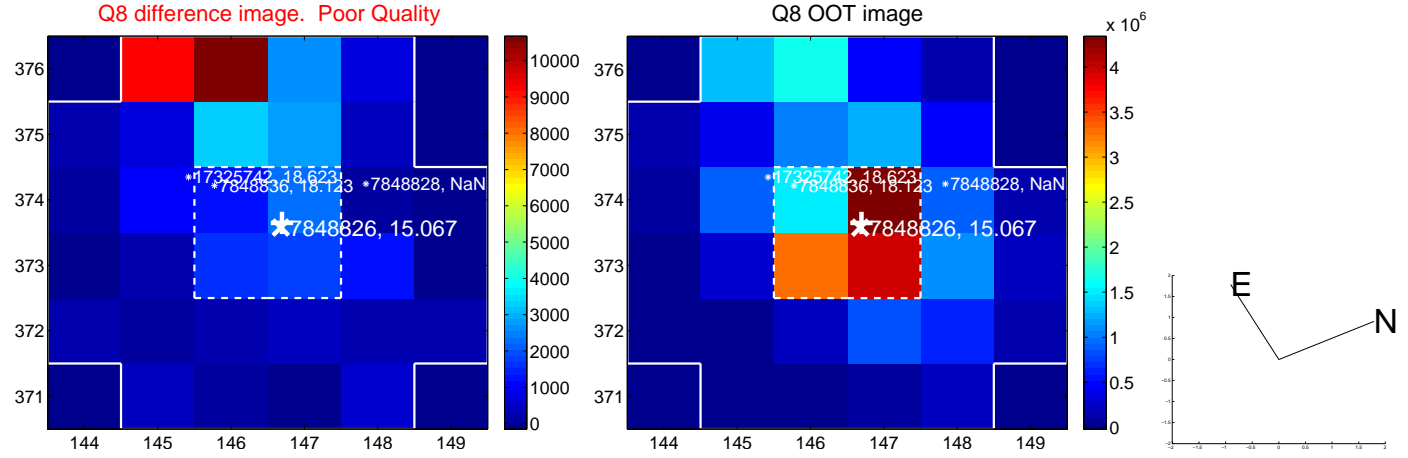
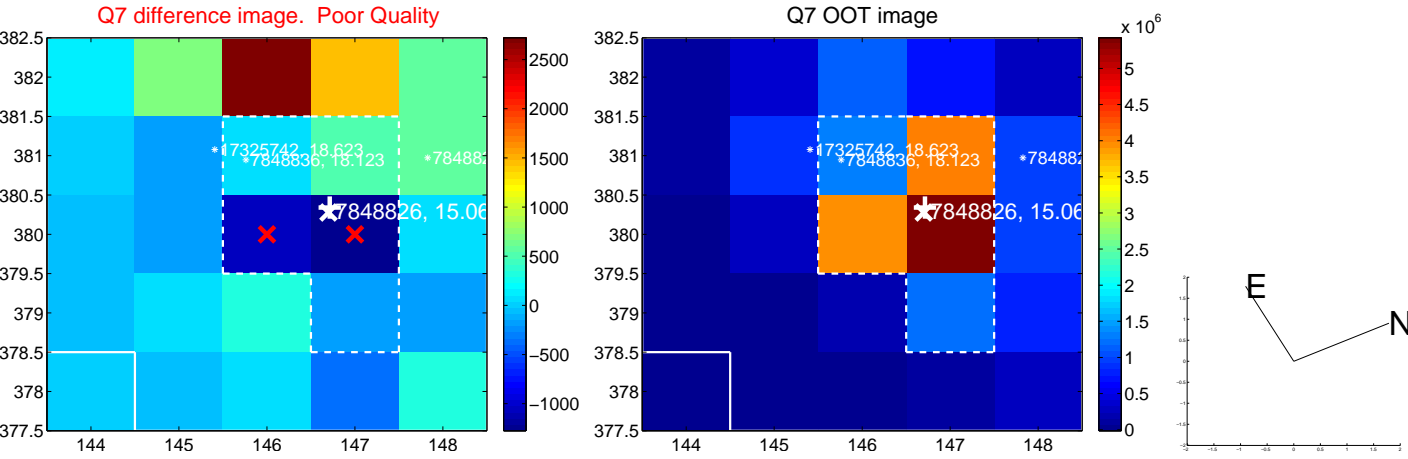
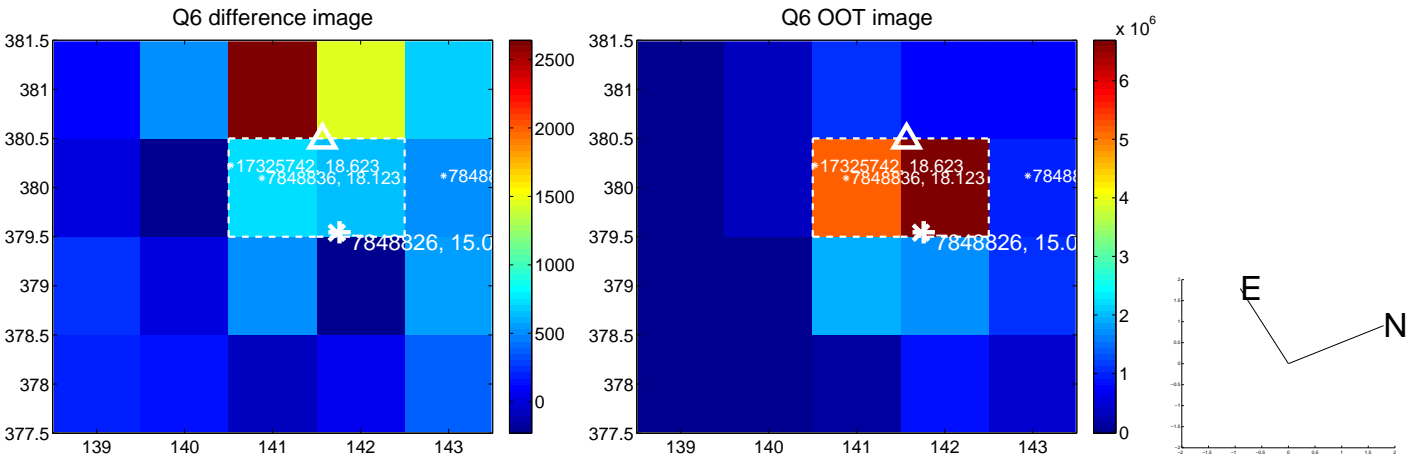
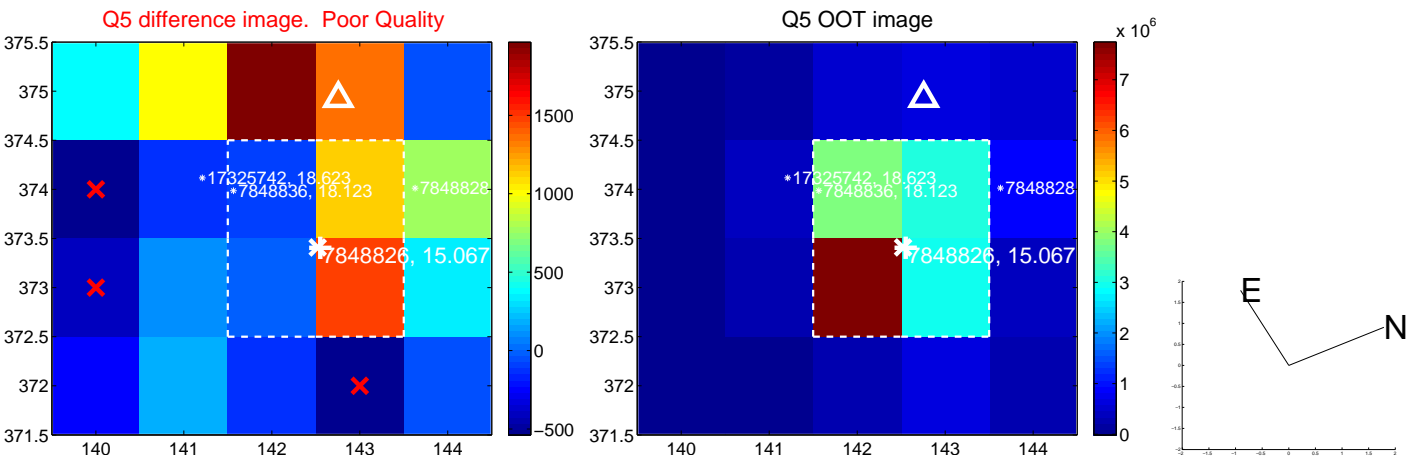


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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

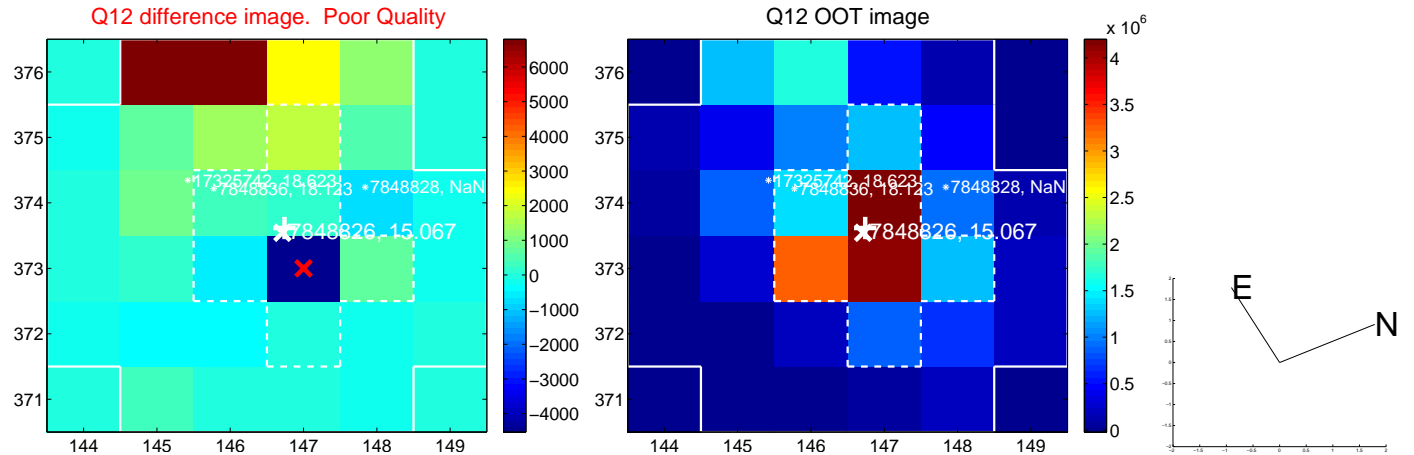
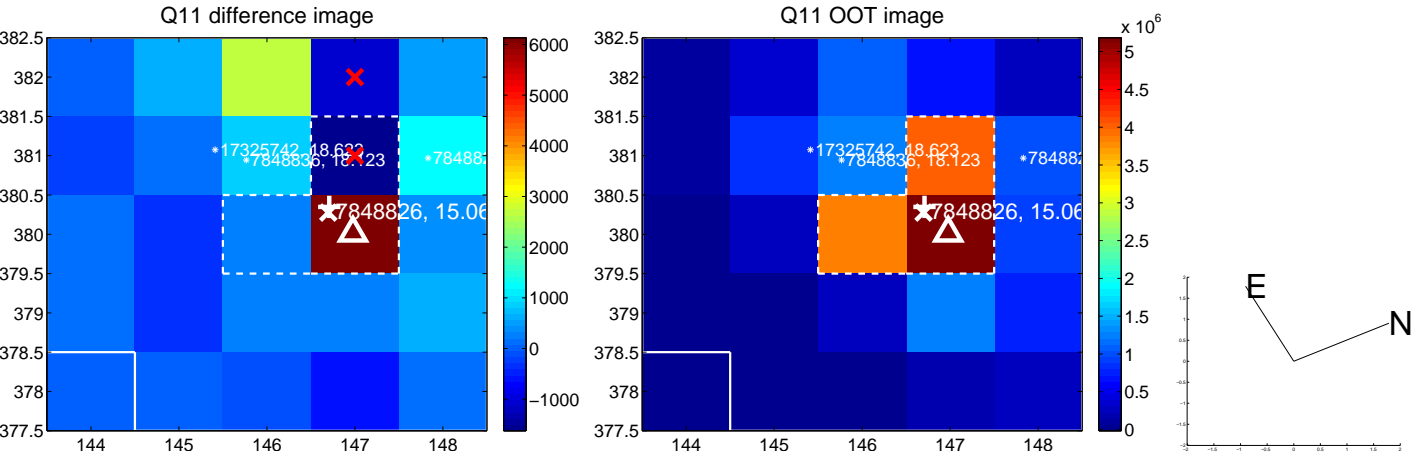
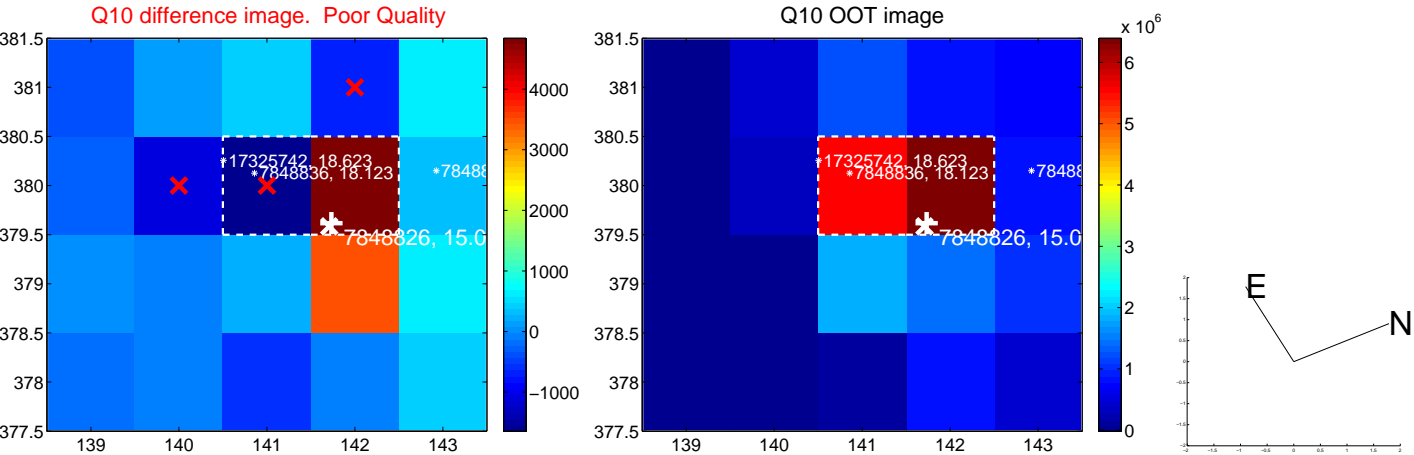
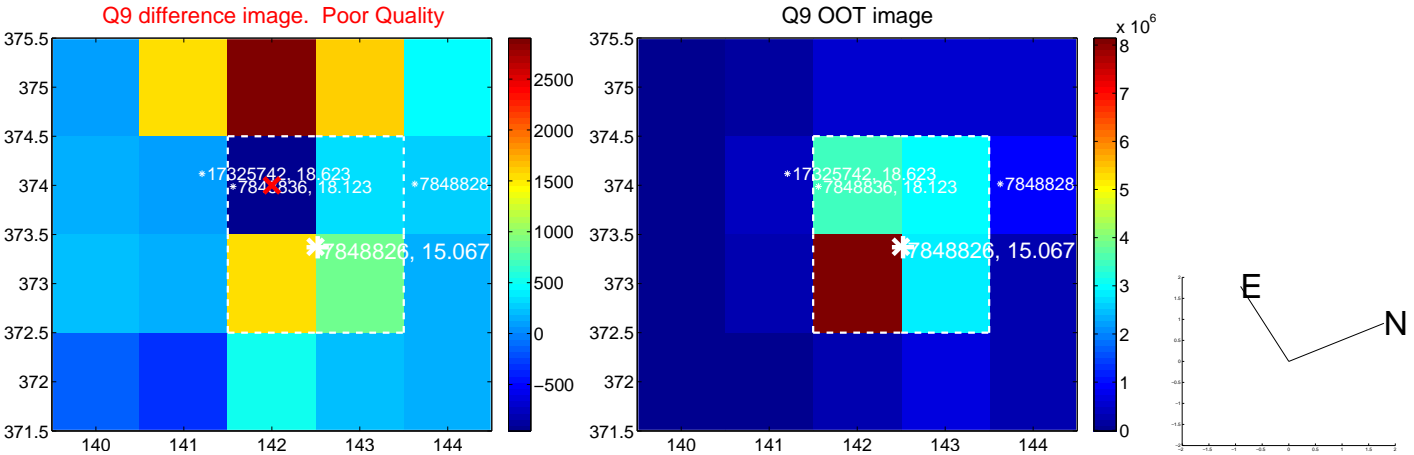


white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

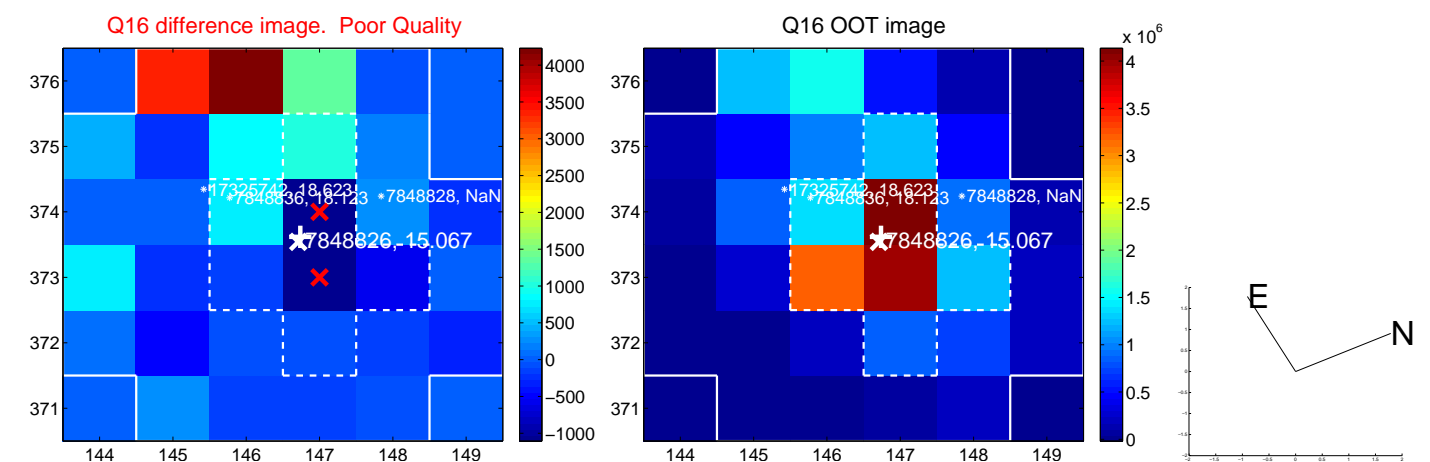
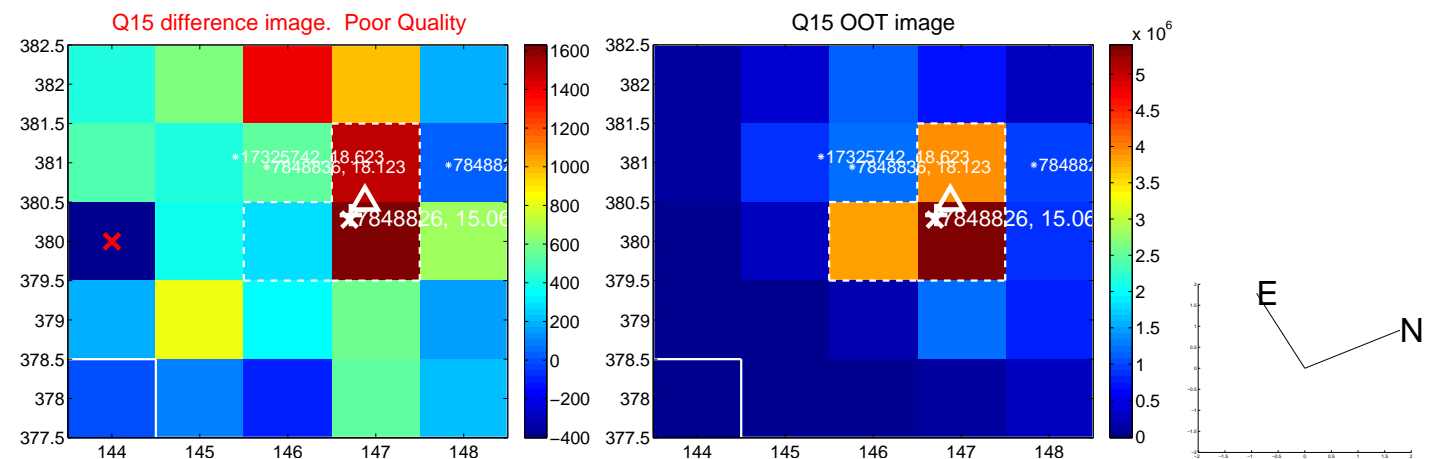
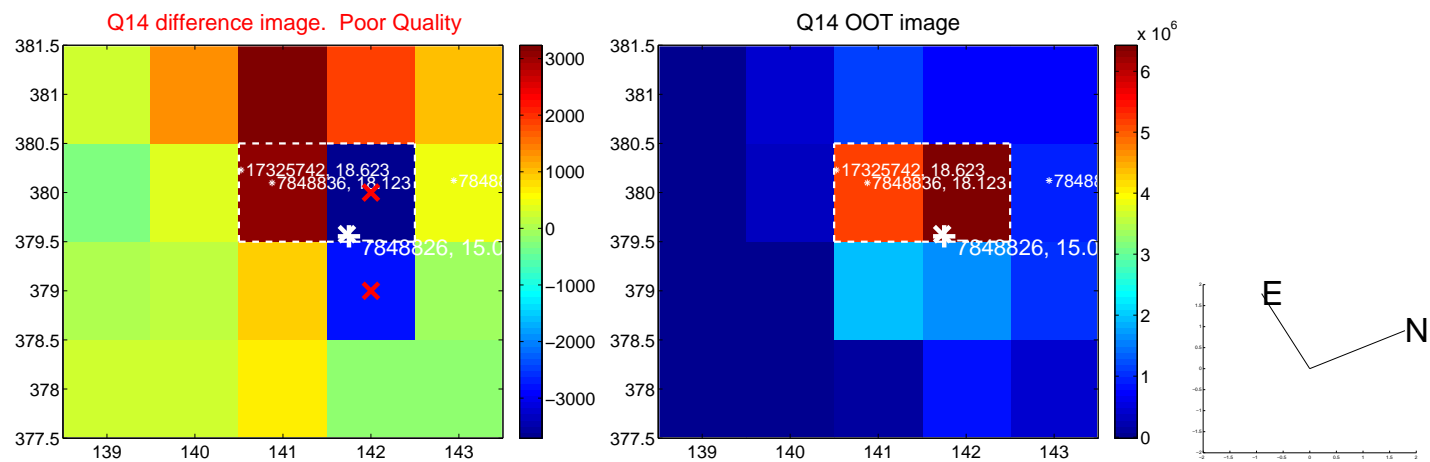
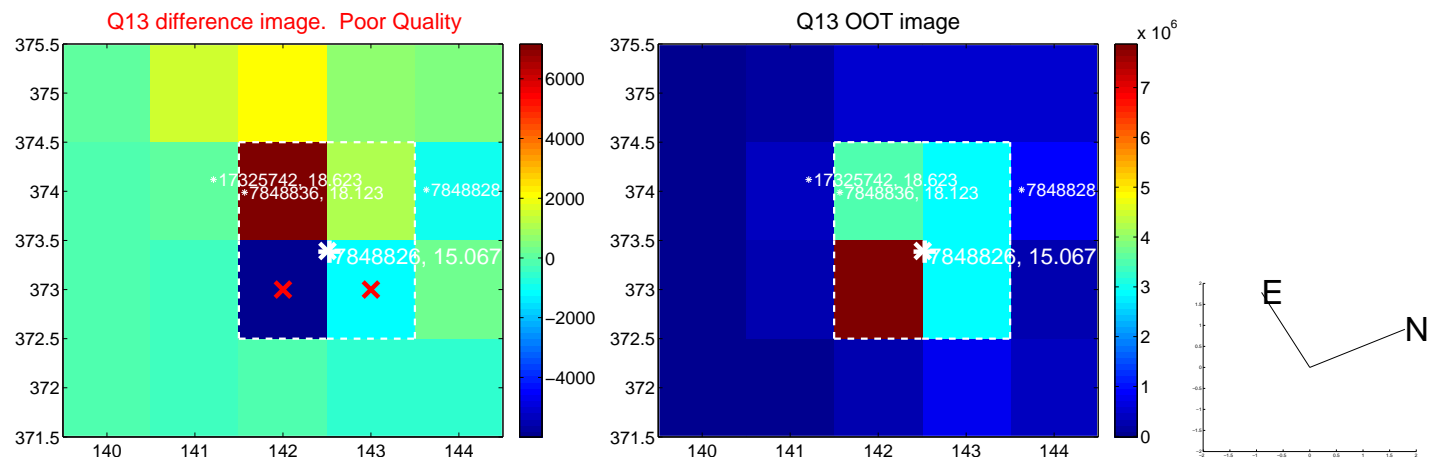




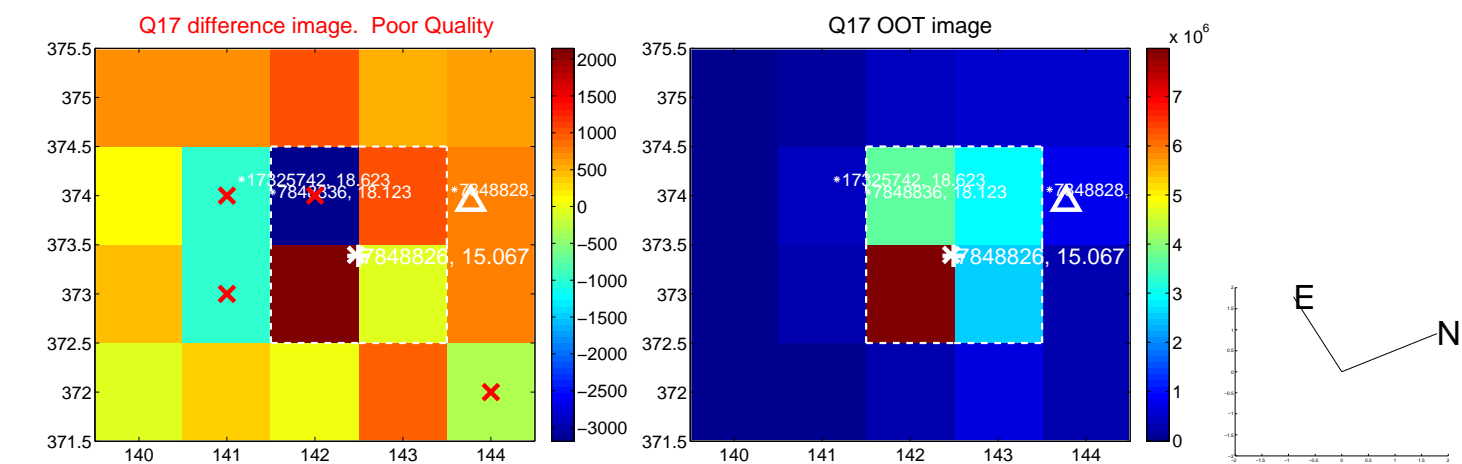
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



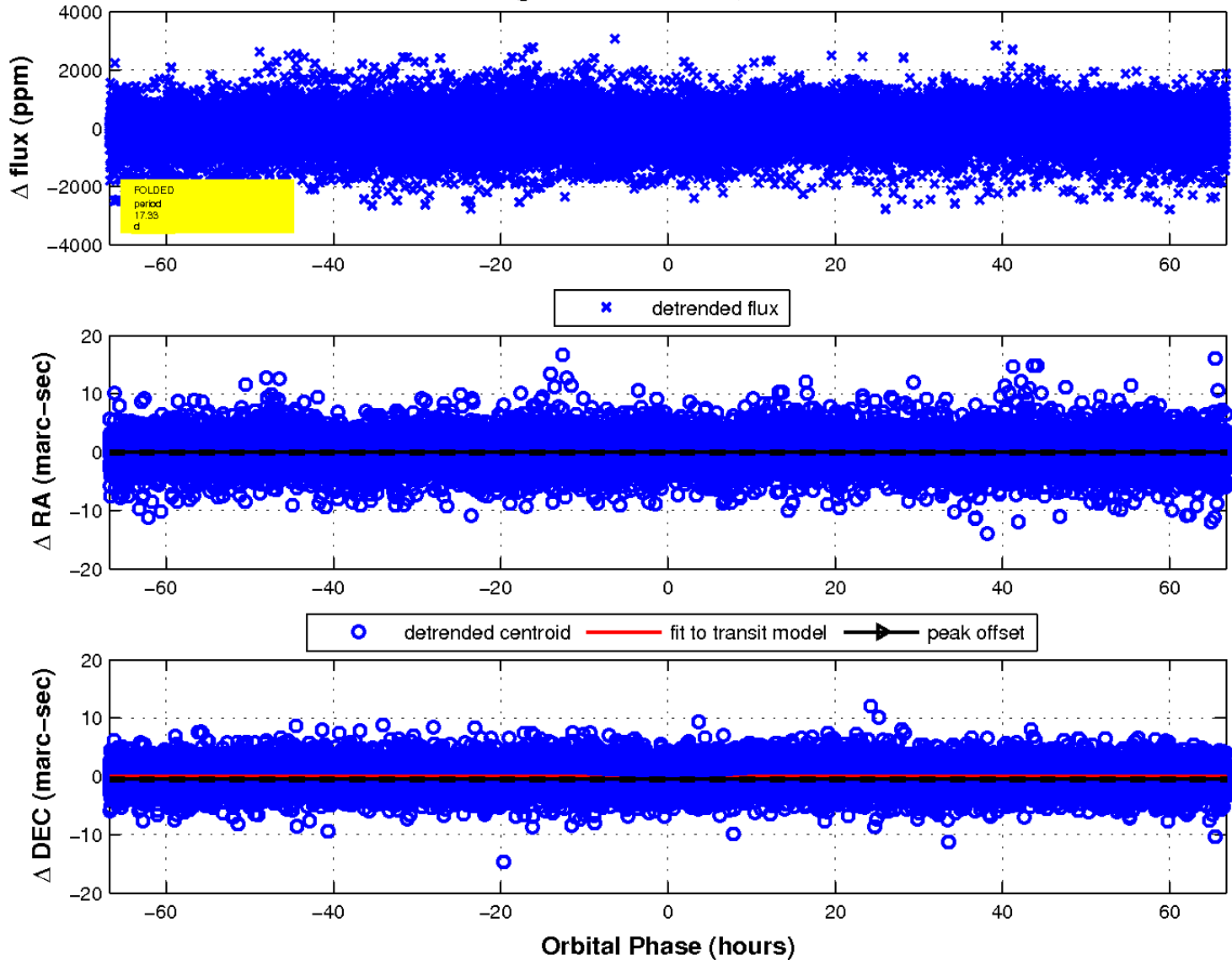
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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



fluxWeightedCentroids, Planet 1 of 1



UKIRT Image

Declination

