

# KIC 005878307

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
005878307-01	OBS	No	4.093476	134.885050	17.6	28.898	7.5	8.2	1.42	6856	0.60	1353.48

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005878307-01	OBS	FP	0.00	1	0	0	0	LPP_DV

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

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

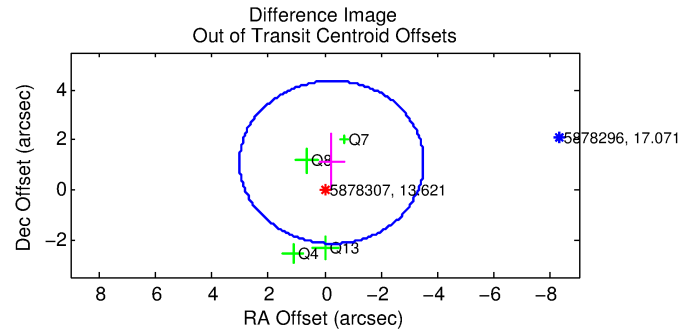
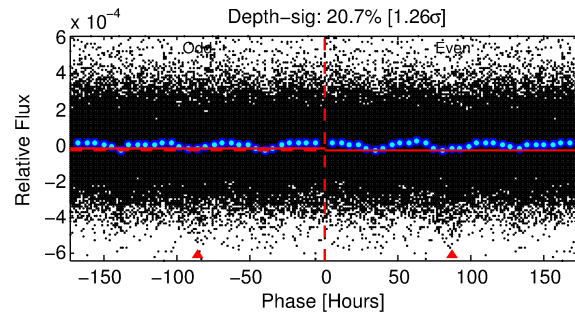
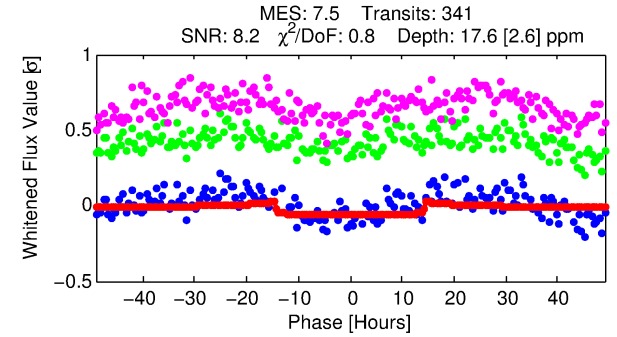
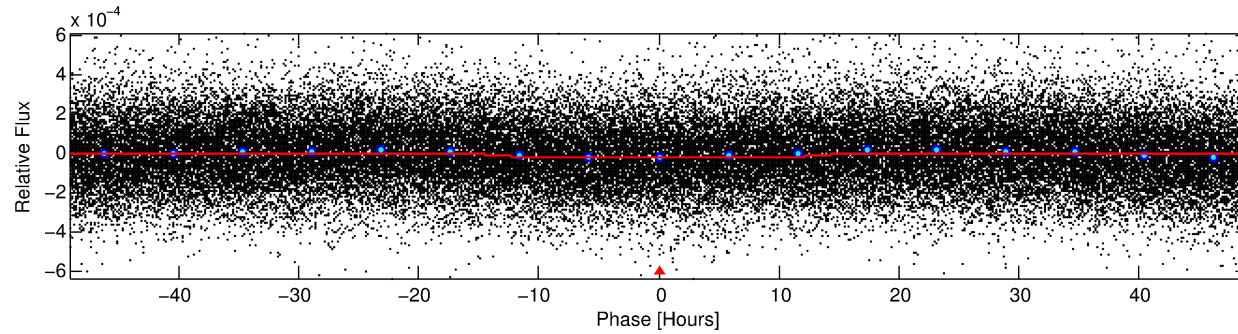
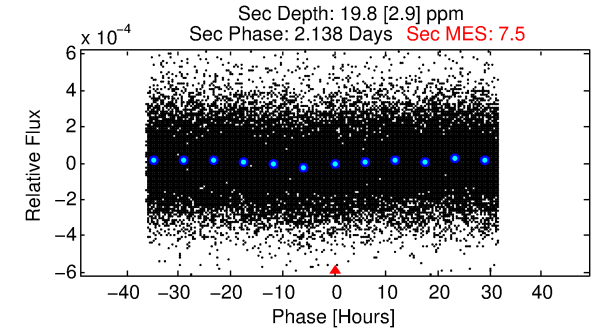
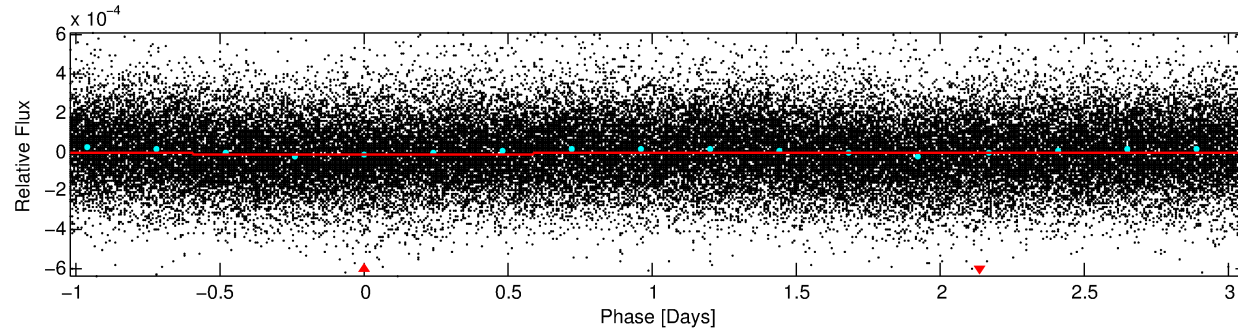
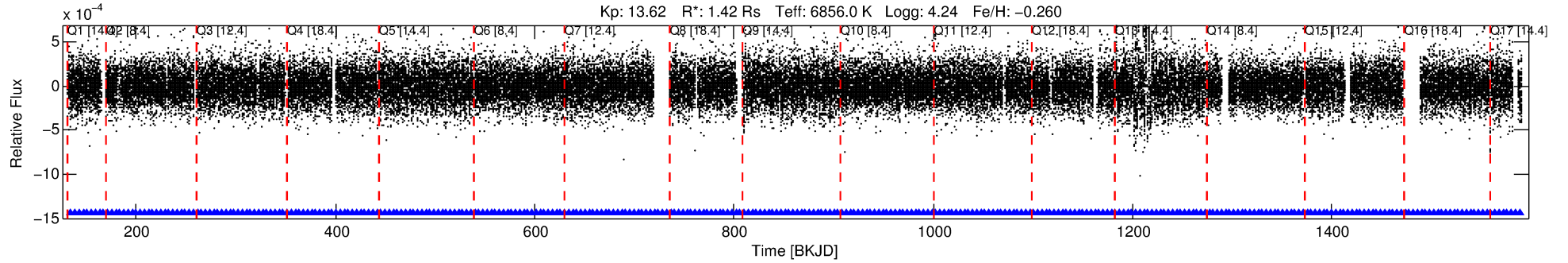
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 005878307-01

No Significant Match Found

# DV One-Page Summary

KIC: 5878307 Candidate: 1 of 1 Period: 4.093 d



## DV Fit Results:

Period = 4.09348 [0.00011] d  
Epoch = 134.8851 [0.0179] BKJD  
Rp/R\* = 0.0039 [0.0034]  
a/R\* = 1.26 [2.27]  
b = 0.01 [638.83]  
Seff = 1353.48 [519.42]  
Teq = 1547 [148] K  
Rp = 0.60 [0.55] Re  
a = 0.0543 [0.0136] AU  
Ag = 88.58 [156.89] [0.56σ]  
Teffp = 7336 [3196] K [1.81σ]

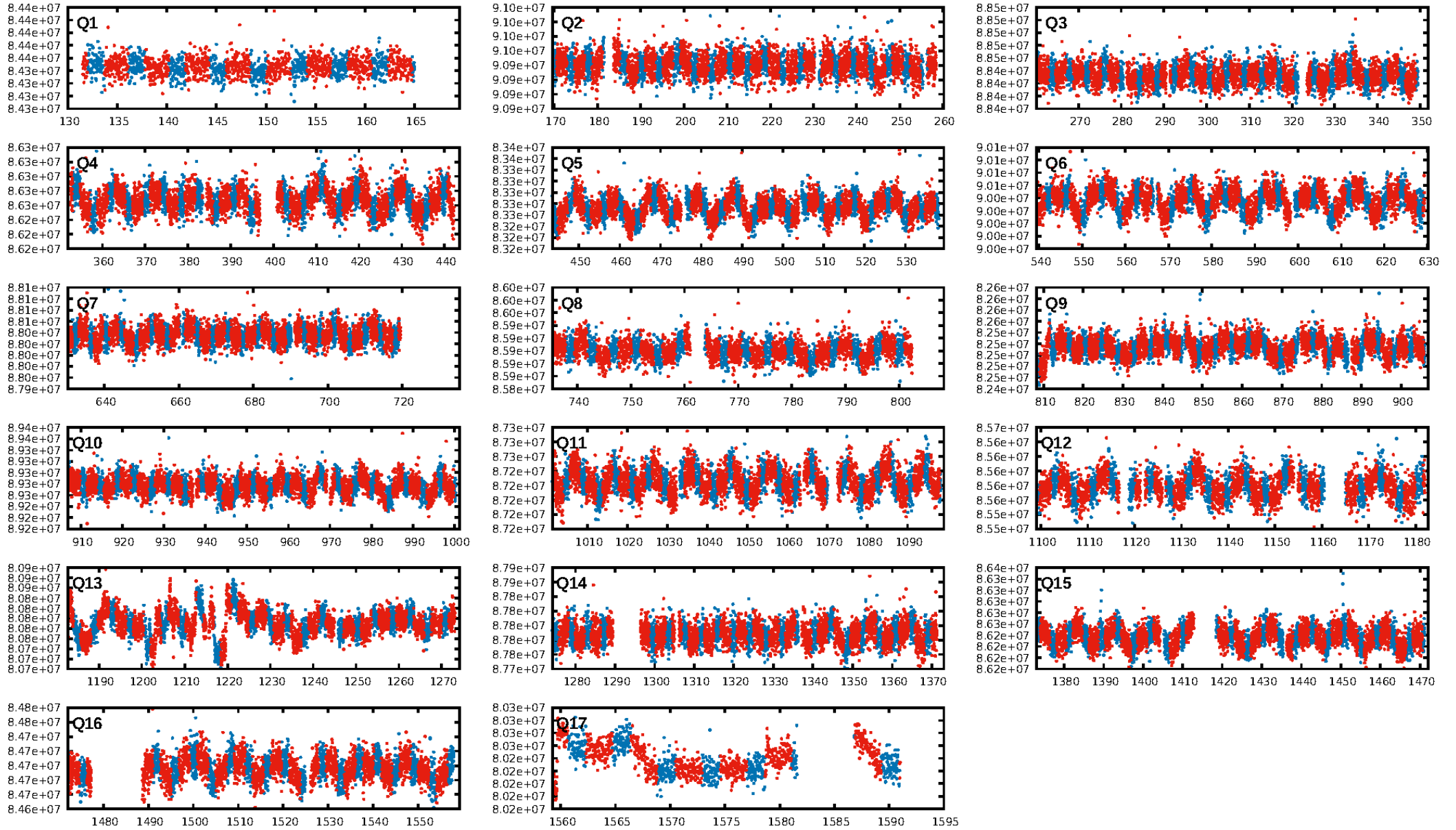
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: N/A  
ModelChiSquareGof-sig: N/A  
Bootstrap-pfa: 6.05e-36  
RollingBand-fgt: 1.00 [326/326]  
GhostDiagnostic-chr: 3.713  
Centroid-sig: 4.7%  
Centroid-so: 1.929 arcsec [1.87σ]  
OotOffset-rm: 1.123 arcsec [1.03σ]  
KicOffset-rm: 1.158 arcsec [1.10σ]  
OotOffset-st: 0/1/2/1 [4]  
KicOffset-st: 0/1/2/1 [4]  
DiffImageQuality-fgm: 1.00 [4/4]  
DiffImageOverlap-fno: 1.00 [17/17]

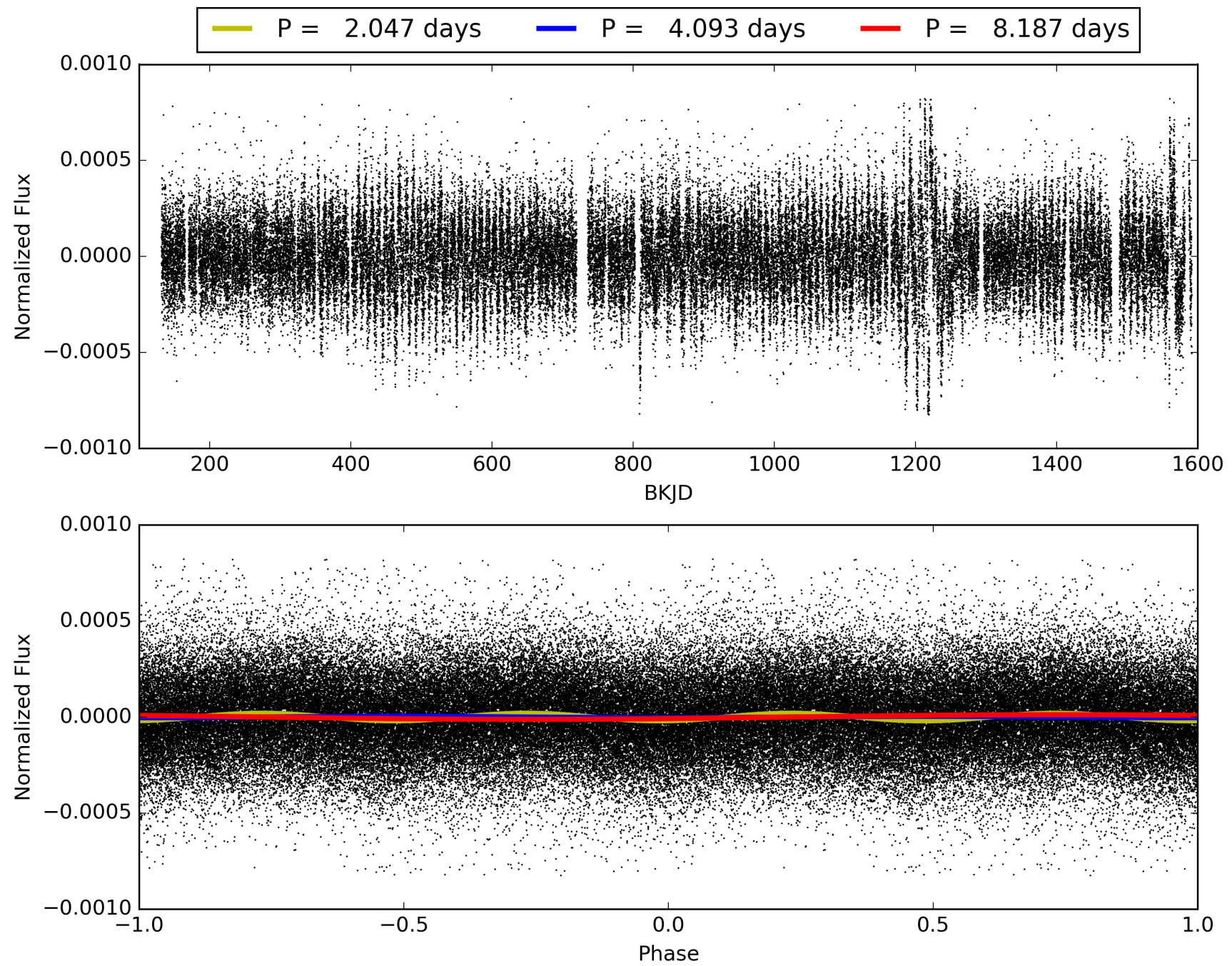
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 13:59:15 Z

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

# TCE 005878307-01, PDC Light Curves



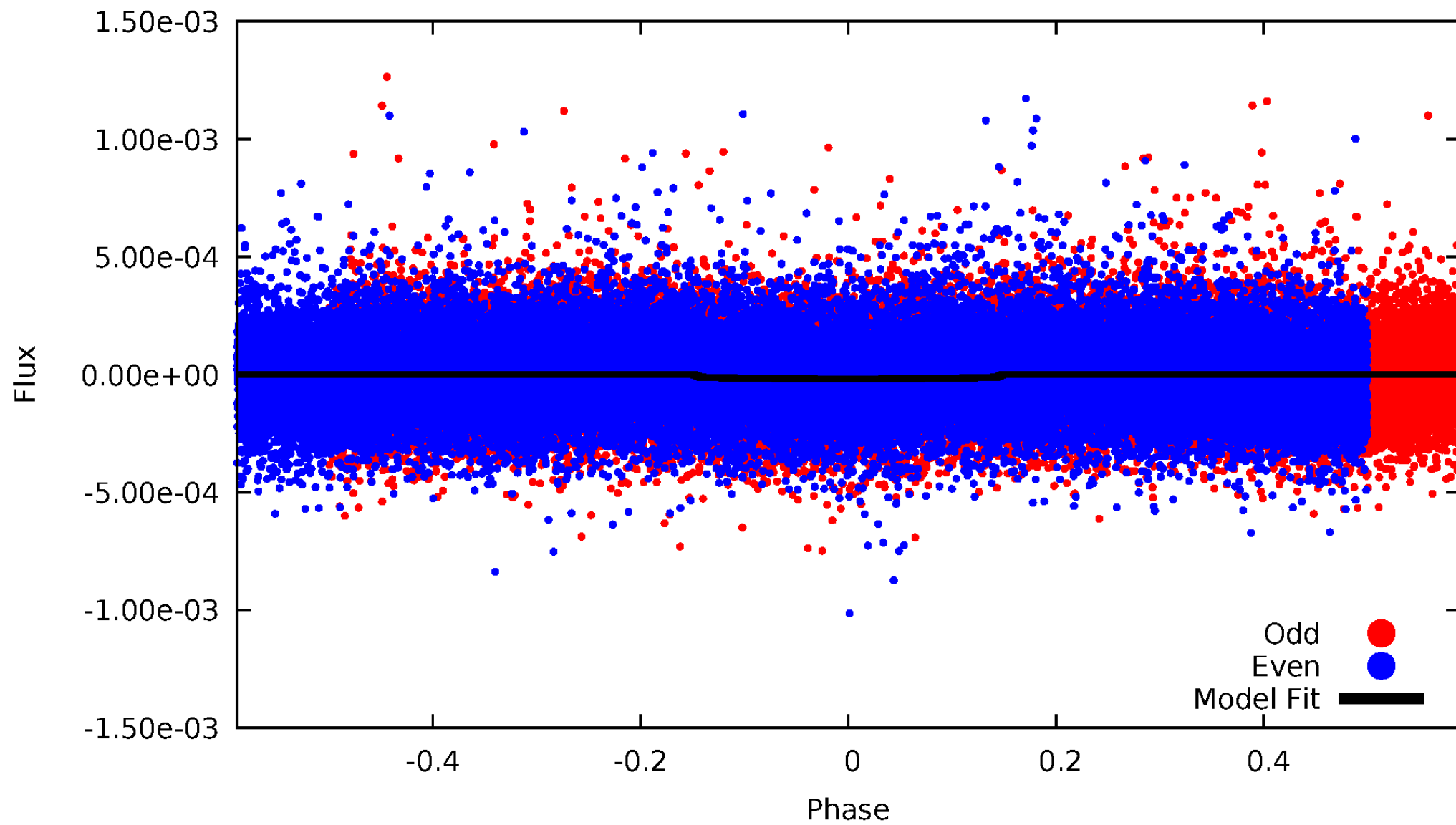
TCE 005878307-01





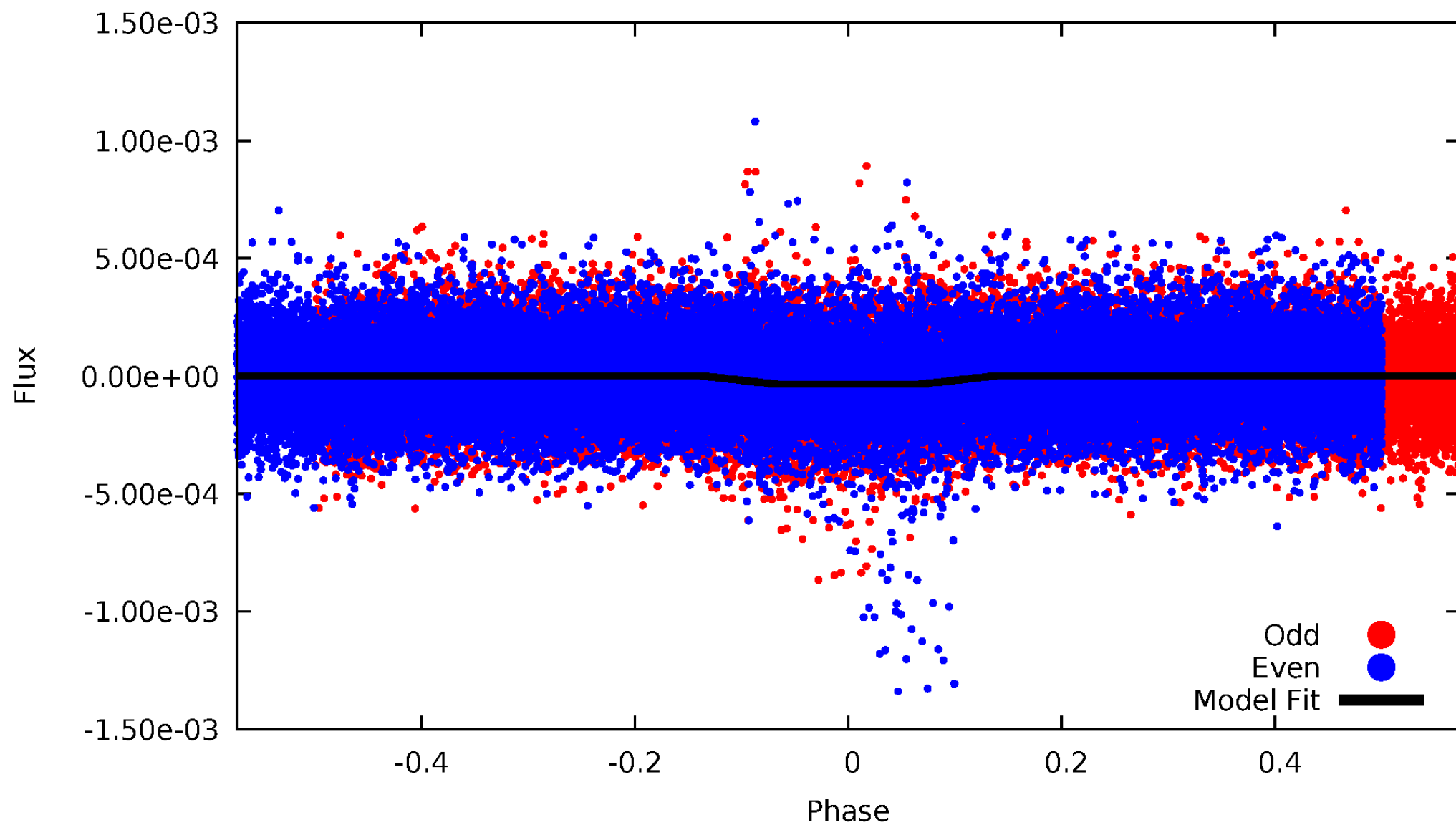
DV Odd/Even

TCE 005878307-01



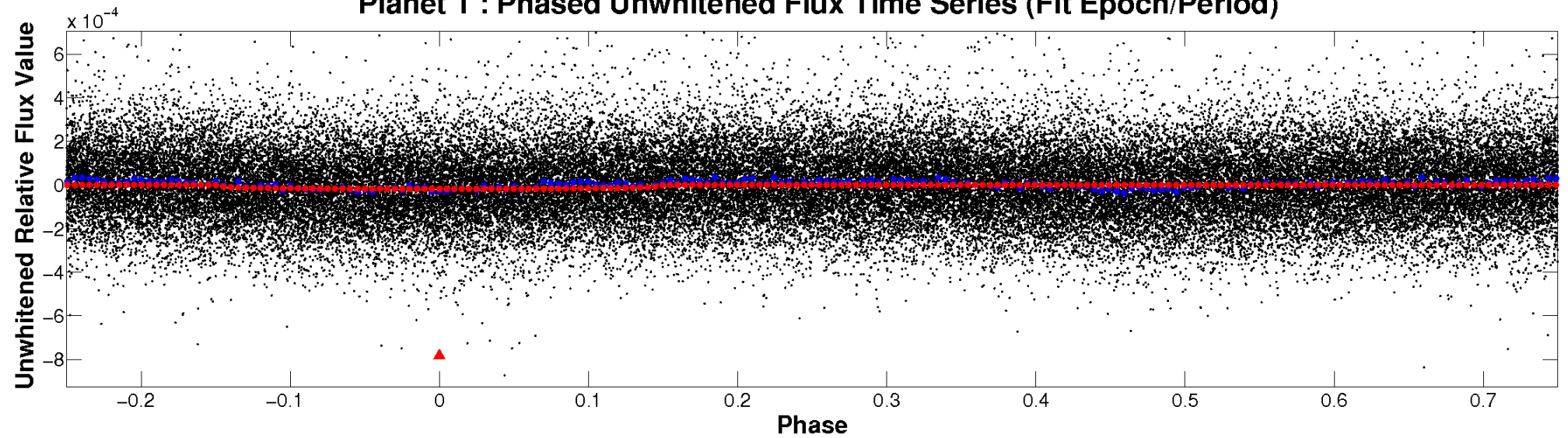
# ALT Odd/Even

TCE 005878307-01

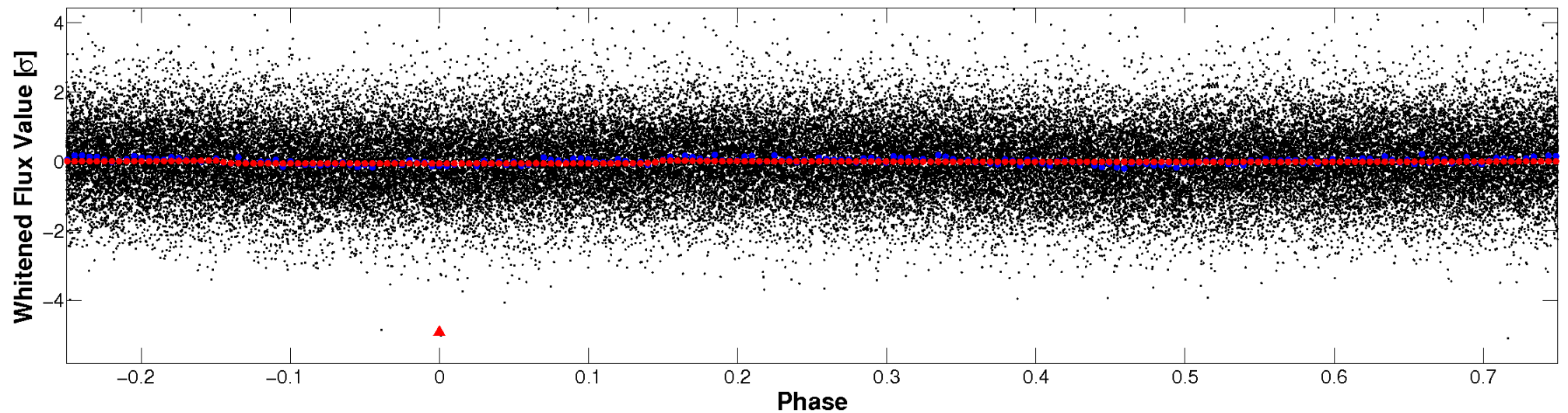


# Non-Whitened Vs. Whitened Light Curve

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

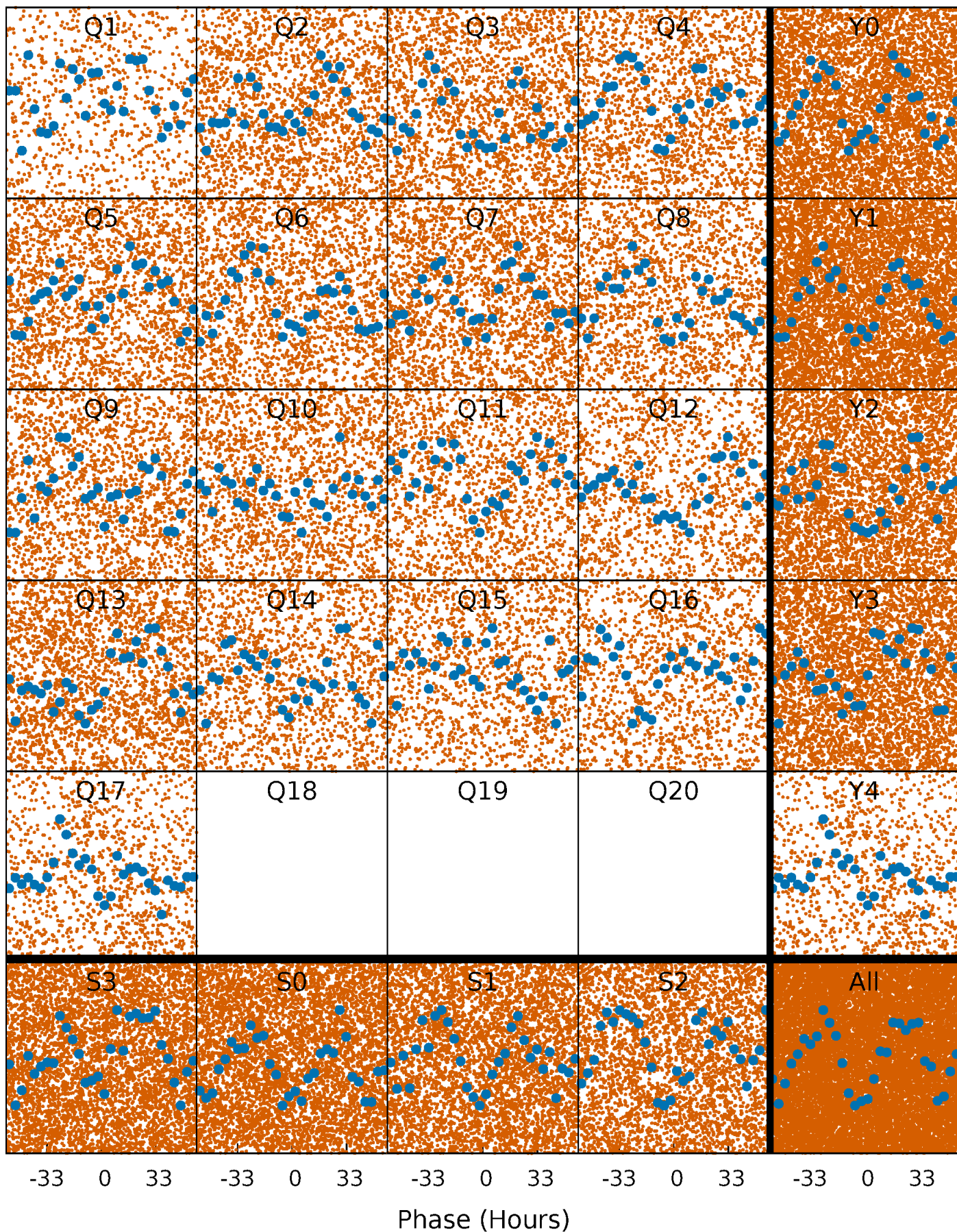


**Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)**



# PDC Quarter-Phased Transit Curves

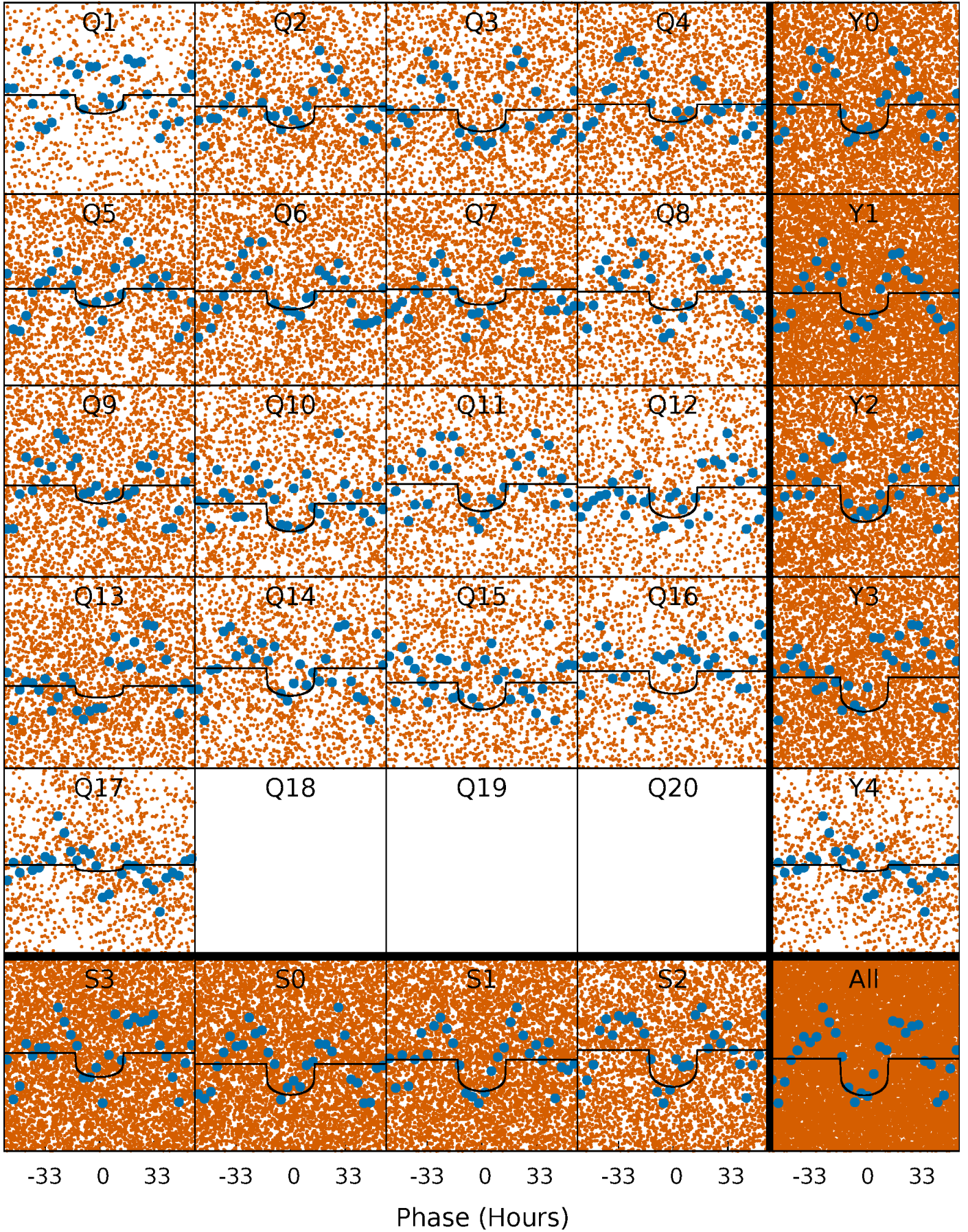
TCE 005878307-01 P= 4.093476 Days  $T_0=134.885050$  (BKJD)





# DV Quarter-Phased Transit Curves

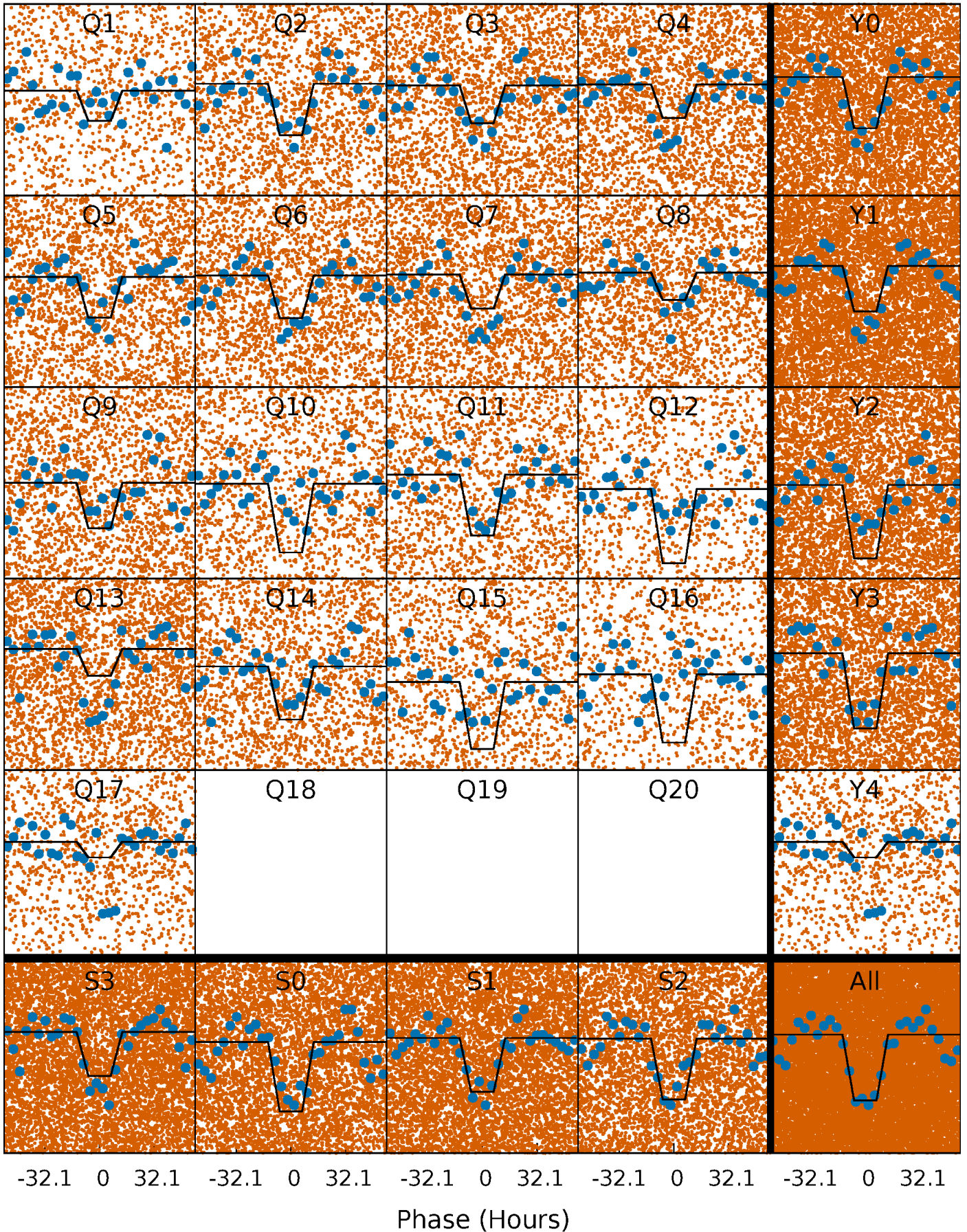
TCE 005878307-01   P= 4.093476 Days    $T_0=134.885050$  (BKJD)





# Alt. Detrend Quarter-Phased Transit Curves

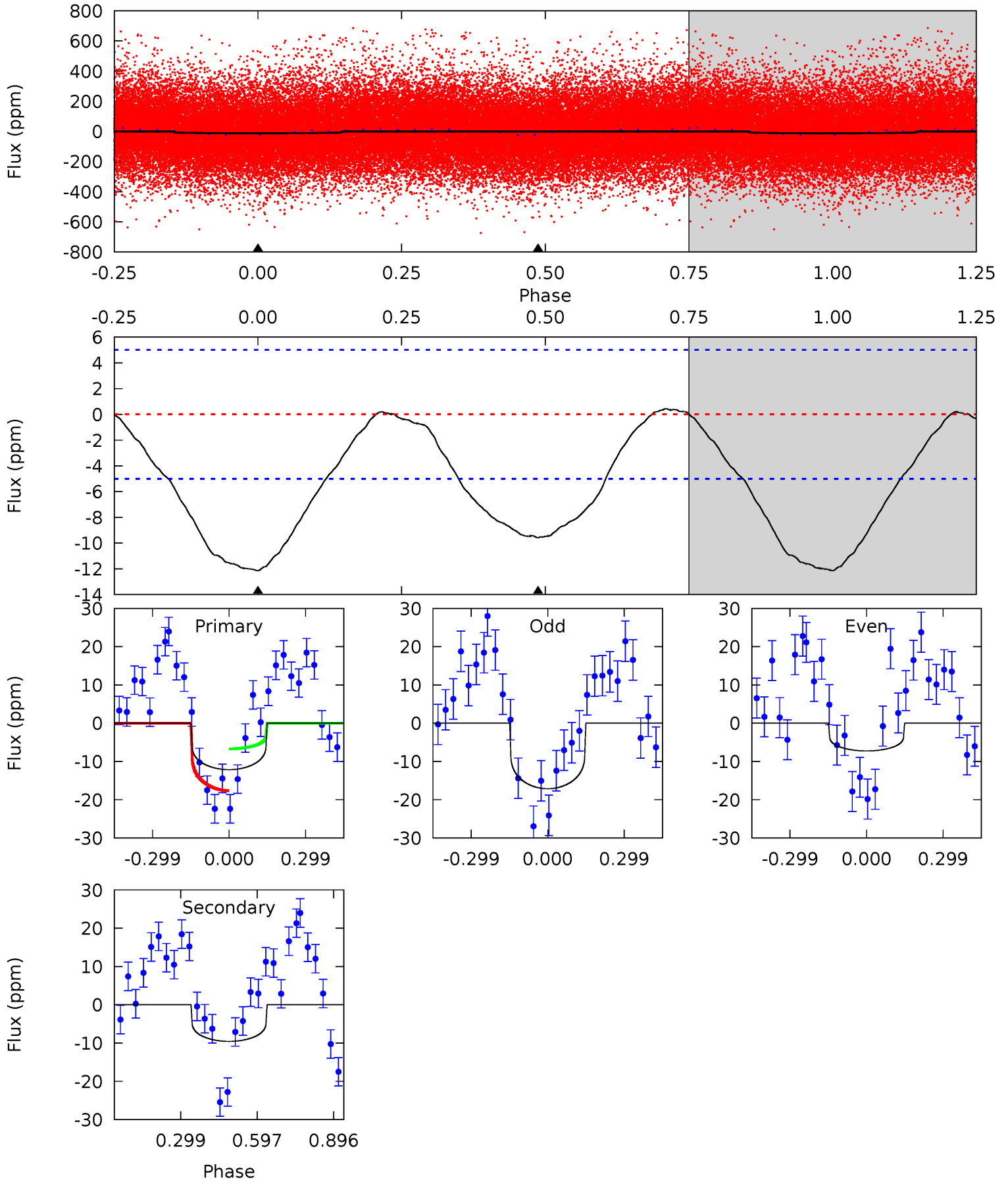
TCE 005878307-01   P= 4.092985 Days    $T_0=134.828489$  (BKJD)



# DV Model-Shift Uniqueness Test

005878307-01, P = 4.093476 Days, E = 130.791574 Days

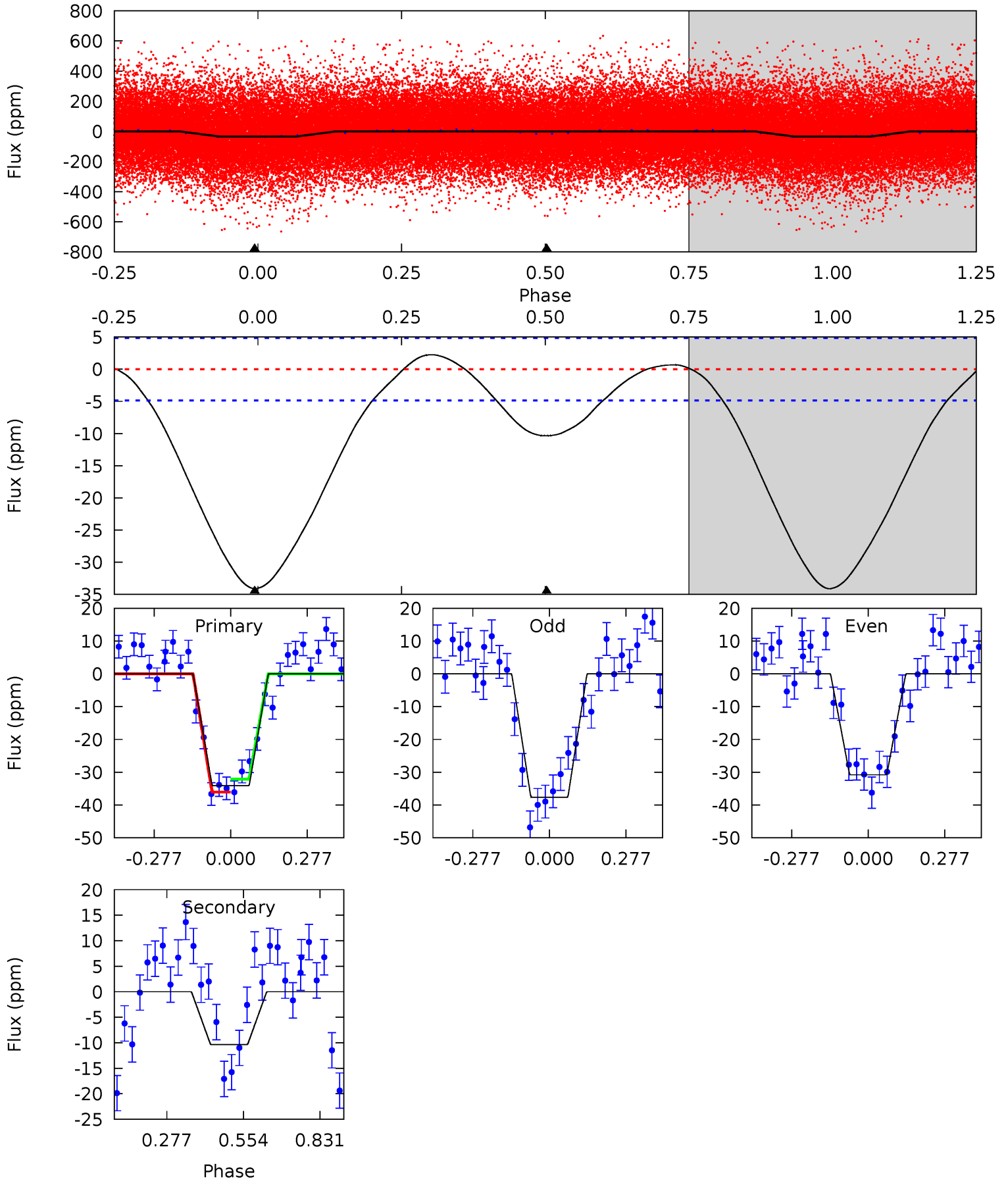
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
10.5	8.28	0	0	4.33	1.04	0.35	10.5	10.5	8.28	8.28	4.27	1.09	0.04	4.75



# Alt Model-Shift Uniqueness Test

005878307-01, P = 4.092985 Days, E = 130.735504 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
30.5	9.26	0	0	4.35	1.09	1.03	30.5	30.5	9.26	9.26	3.05	1.14	0.06	1.73





### Stellar Parameters For KIC 005878307

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$6856^{+192}_{-264}$	$4.239^{+0.124}_{-0.186}$	$-0.260^{+0.250}_{-0.300}$	$1.421^{+0.437}_{-0.269}$	$1.285^{+0.185}_{-0.203}$	$0.631^{+0.382}_{-0.322}$
	+3%/-4%	+3%/-4%	+96%/-115%	+31%/-19%	+14%/-16%	+61%/-51%
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 005878307-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	$A_{\text{obs}}$
DV	$-10 \pm 1$	$0.70^{+0.55}_{-0.45}$	$2167^{+164}_{-133}$	$5619^{+4168}_{-1179}$	$31^{+191}_{-21}$
Alt.	$-10 \pm 1$	$0.96^{+0.57}_{-0.50}$	$2170^{+157}_{-126}$	$4970^{+2145}_{-789}$	$18^{+57}_{-11}$

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

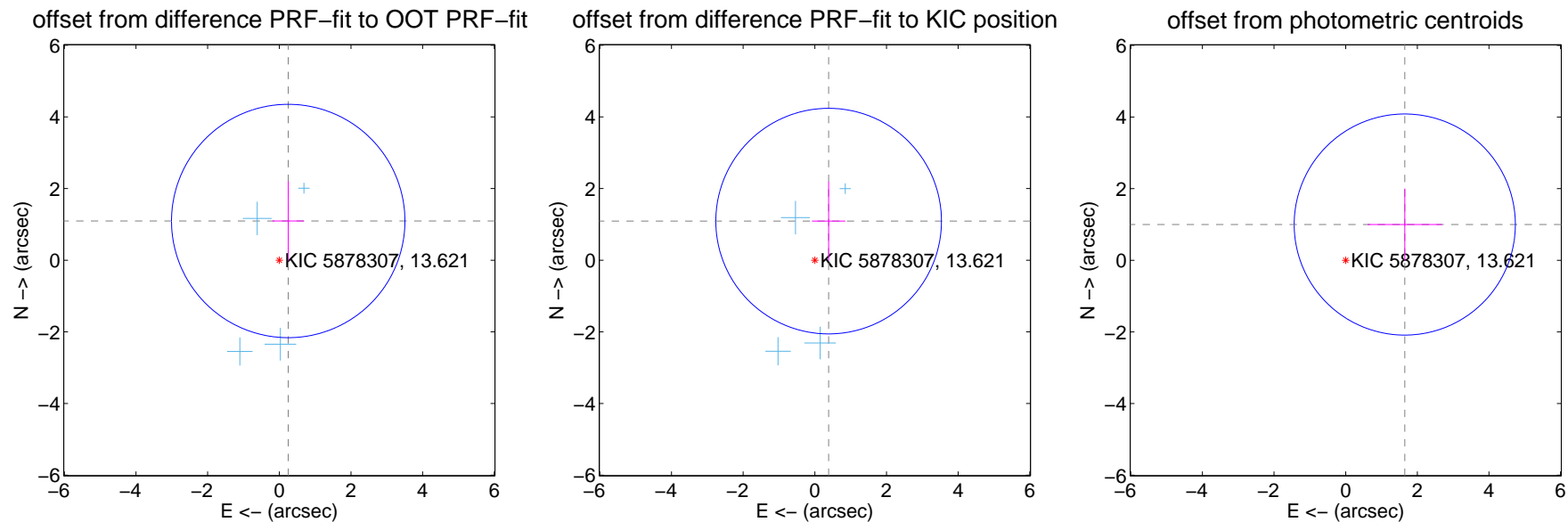
## DV Centroid Data

Supplemental centroid analysis for 005878307-01. Kepler magnitude: 13.62. Transit SNR 8.19

There are 4 quarters with good PRF difference image offsets

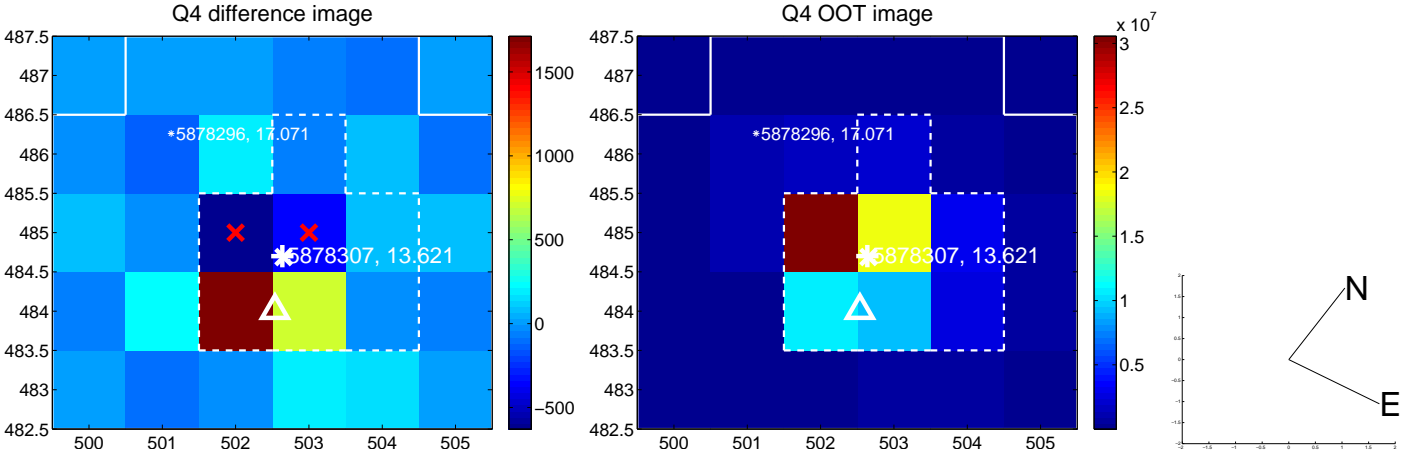
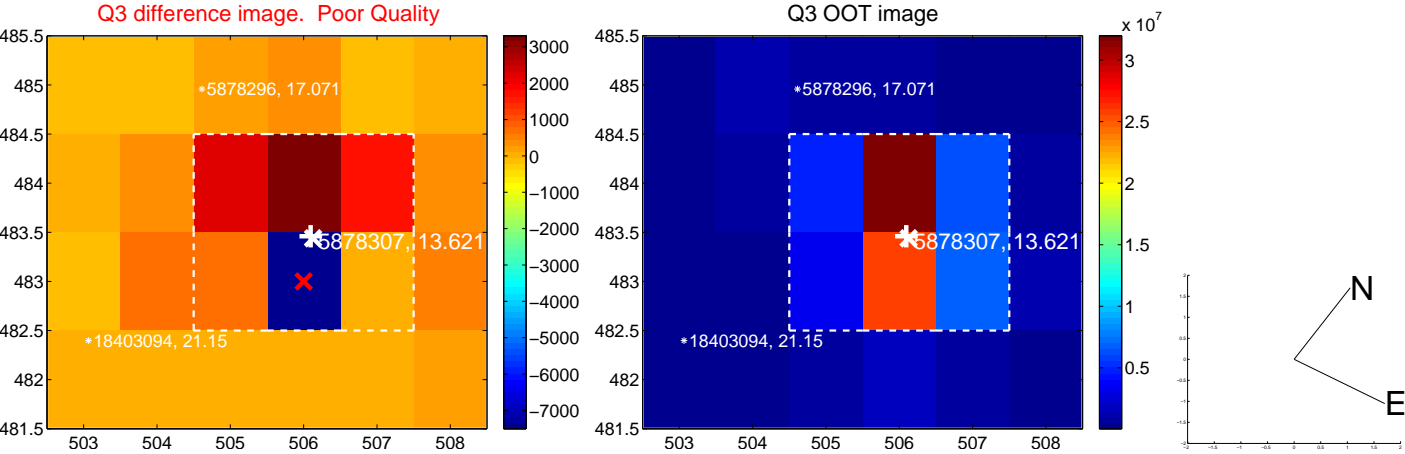
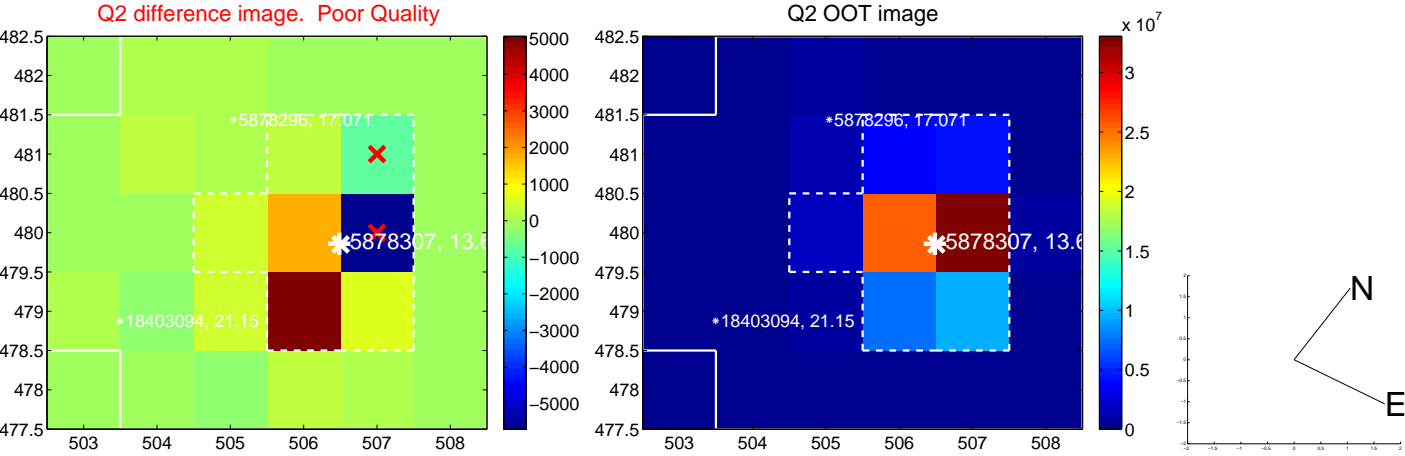
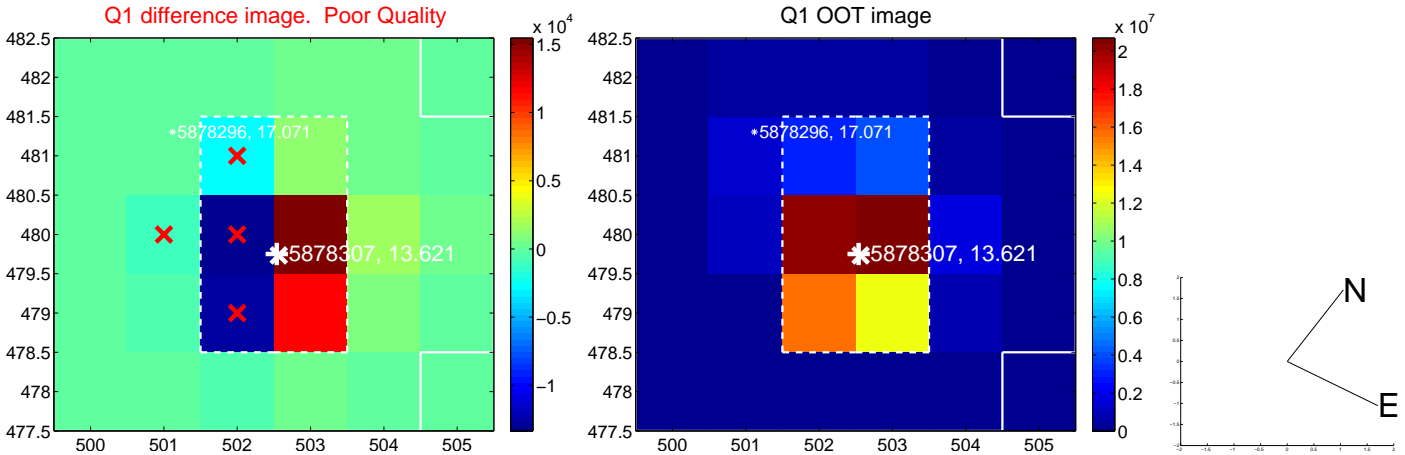
The direct PRF centroid is offset from the target star catalog position by about 0.12 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$1.123 \pm 1.086$	1.03	$-0.249 \pm 0.443$	$1.095 \pm 1.109$
PRF-fit source offset from KIC position	$1.158 \pm 1.050$	1.10	$-0.386 \pm 0.466$	$1.091 \pm 1.101$
photometric centroid source offset	$1.93 \pm 1.03$	1.87	$-1.65 \pm 1.04$	$1.00 \pm 1.00$

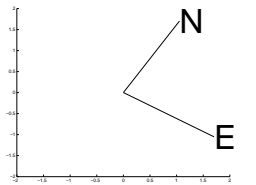
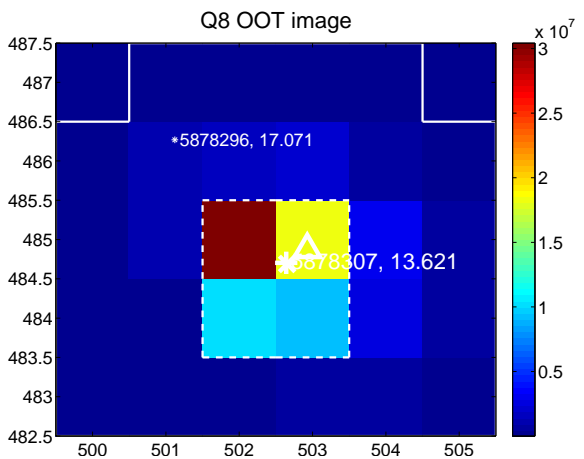
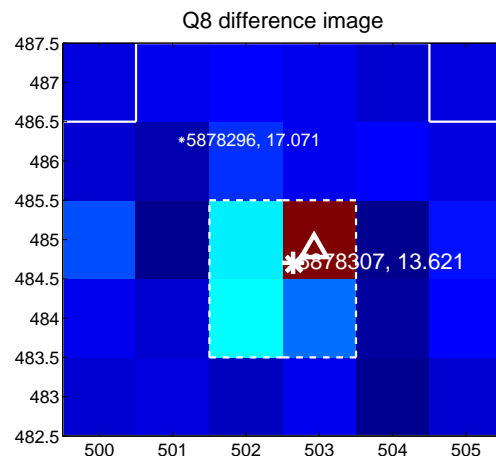
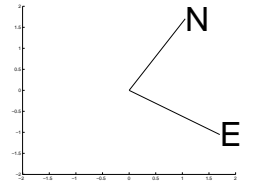
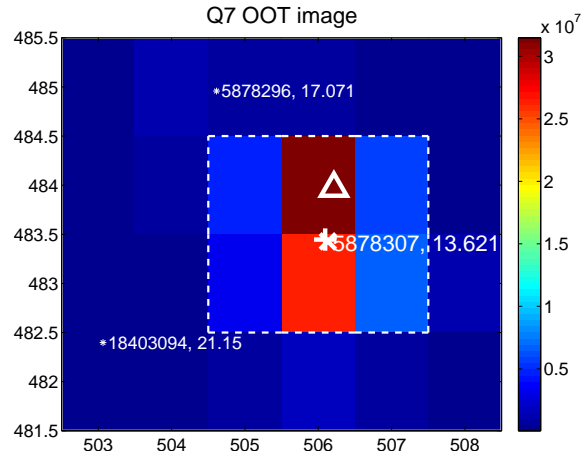
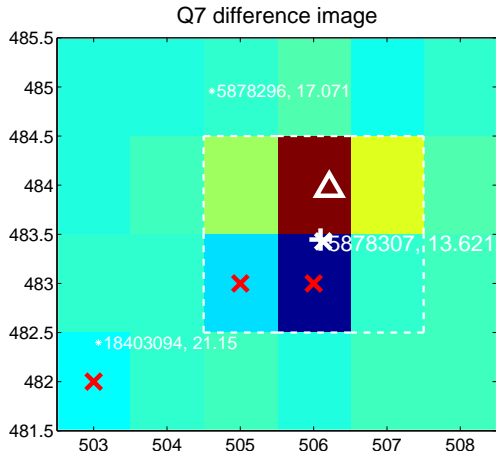
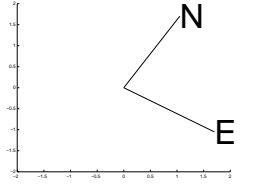
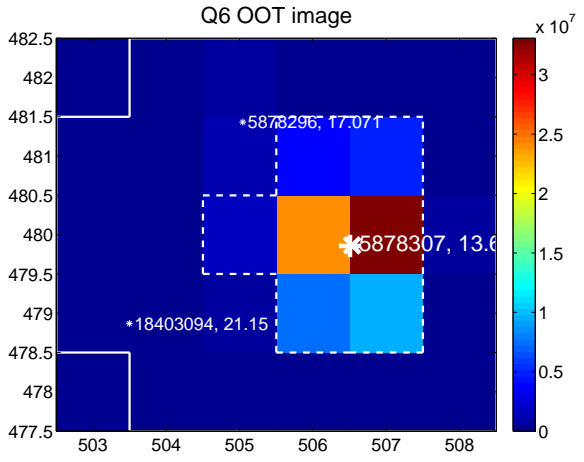
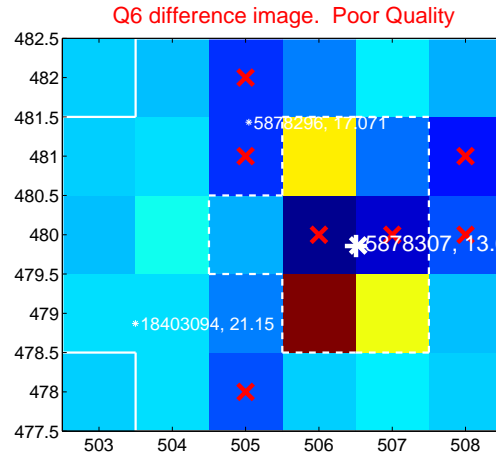
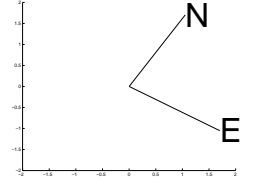
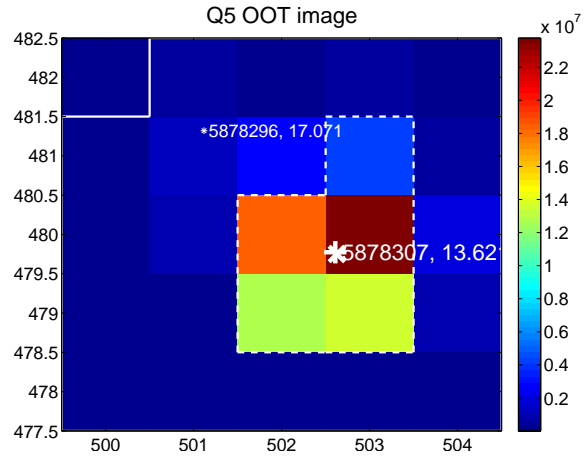
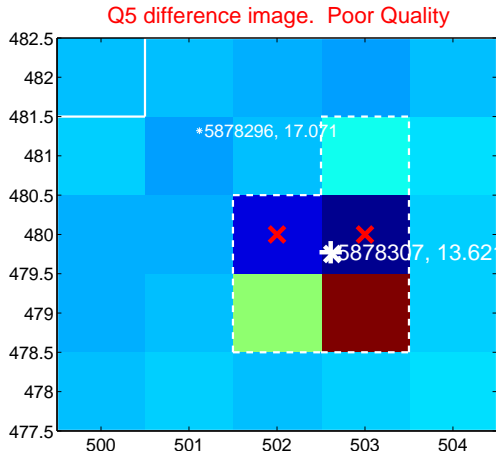


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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

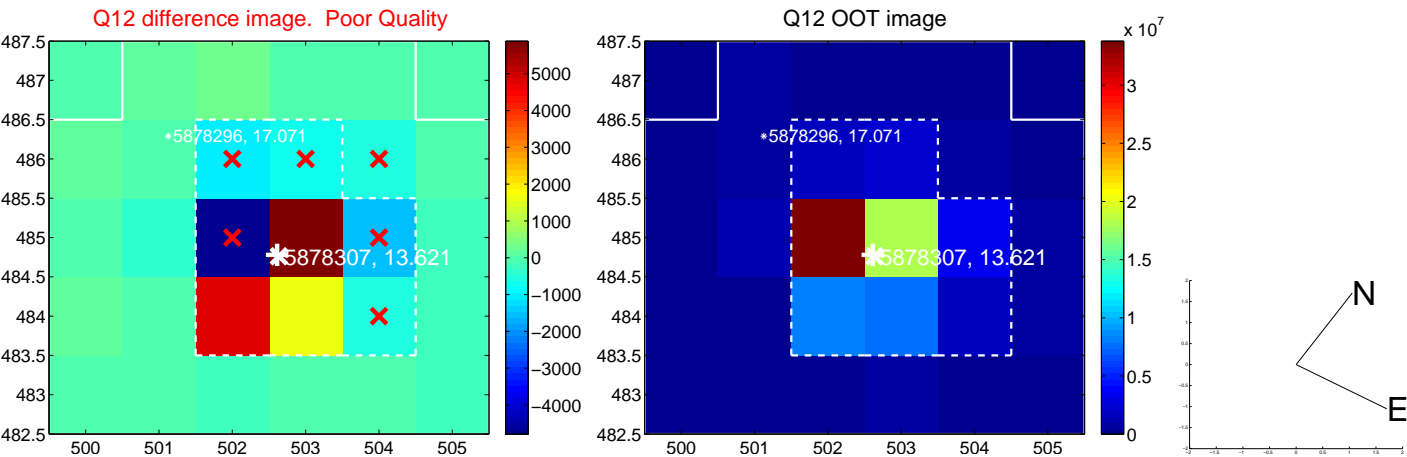
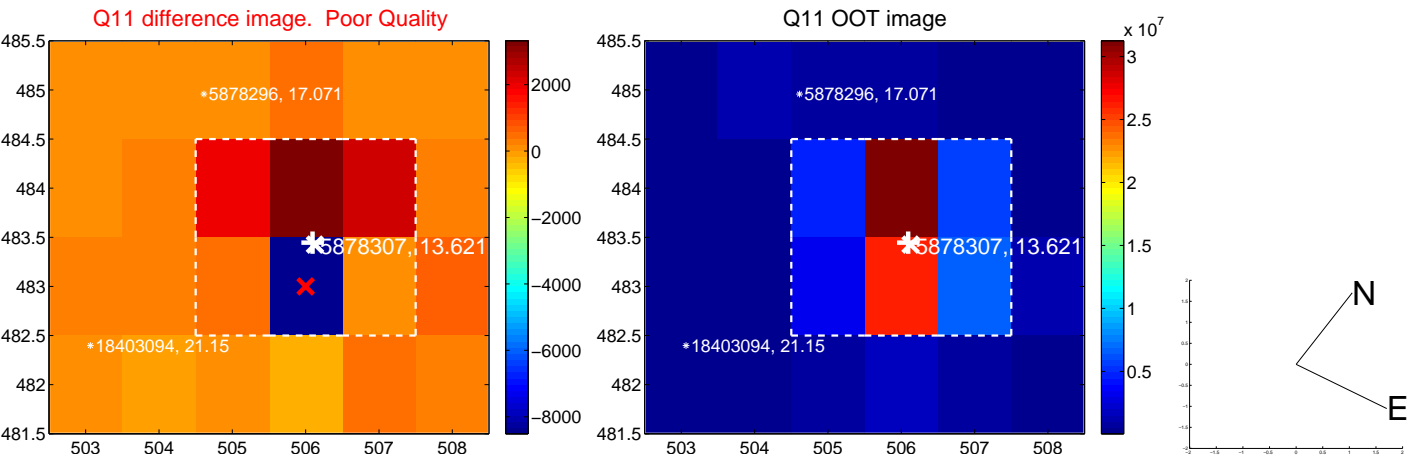
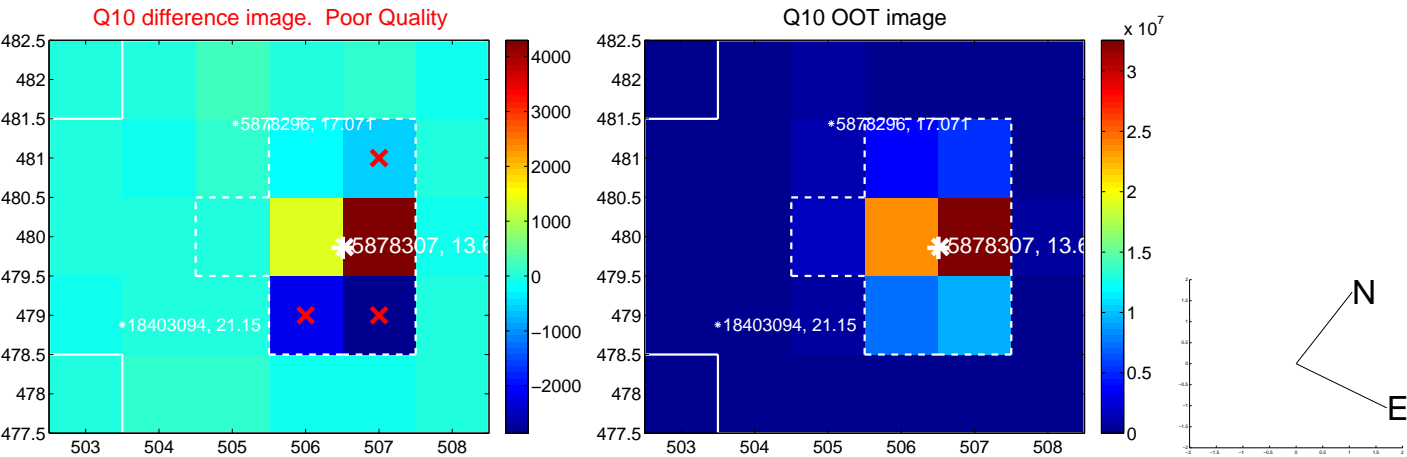
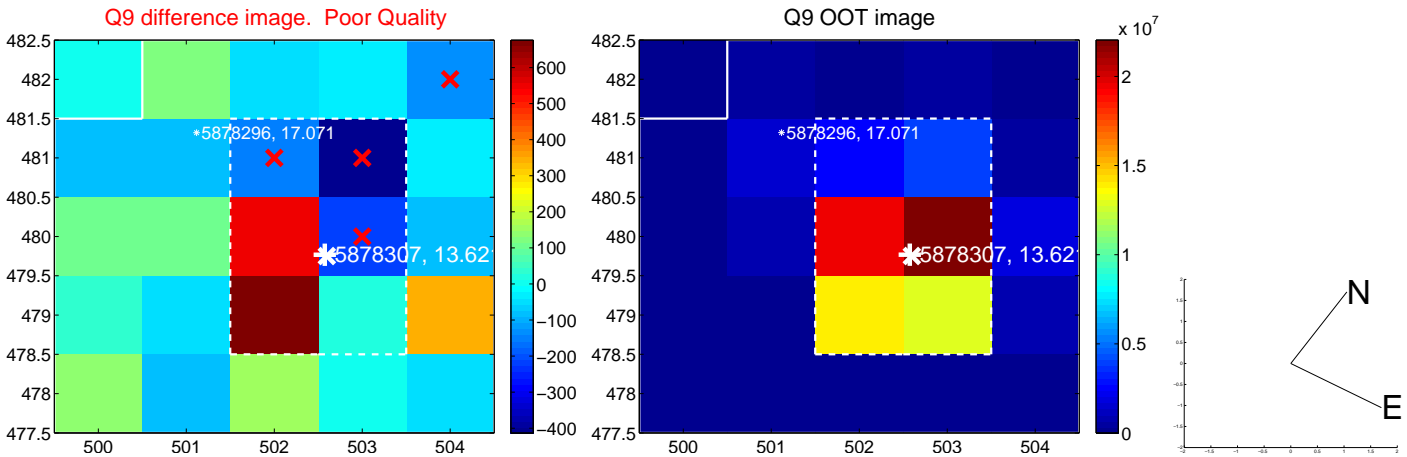


white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

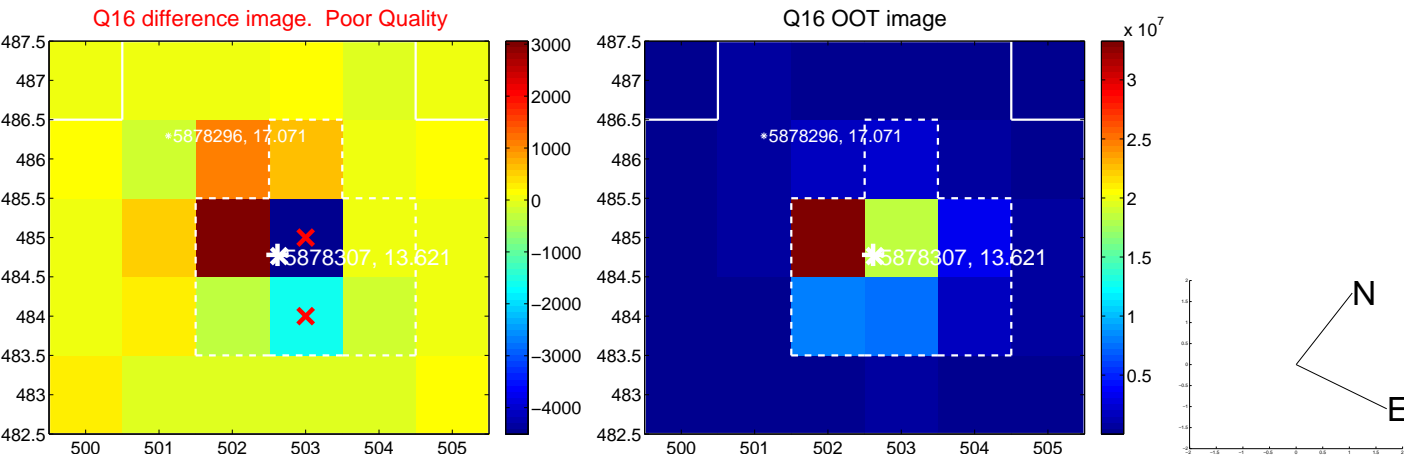
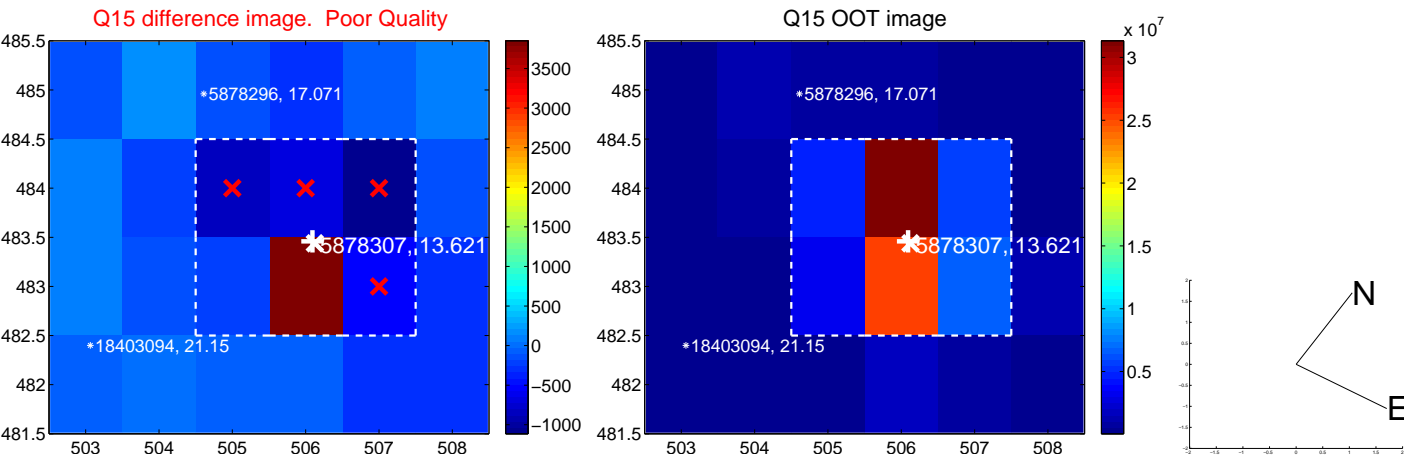
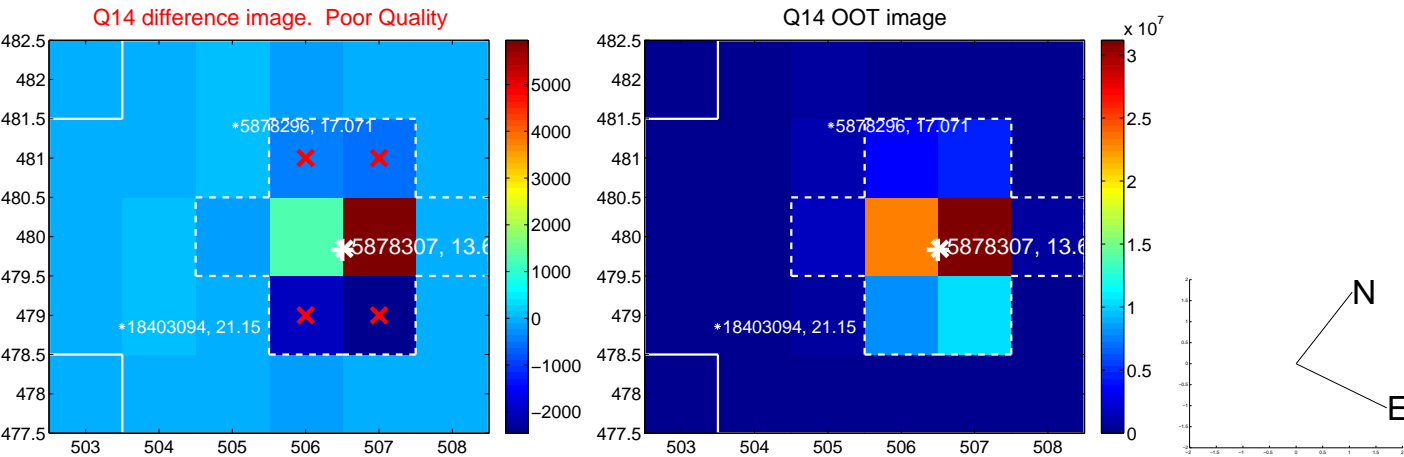
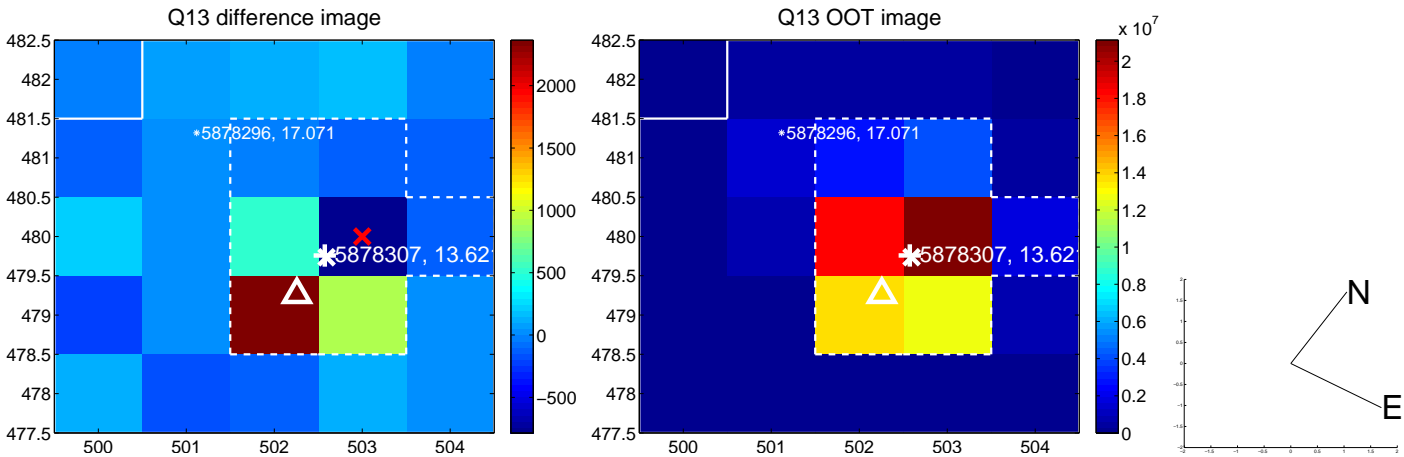




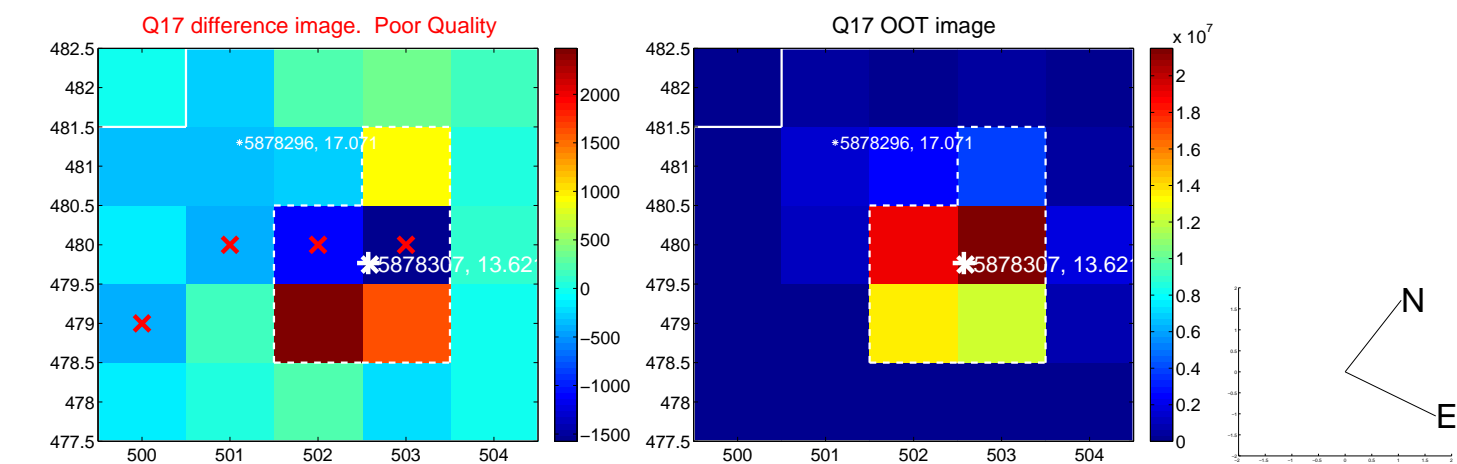
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



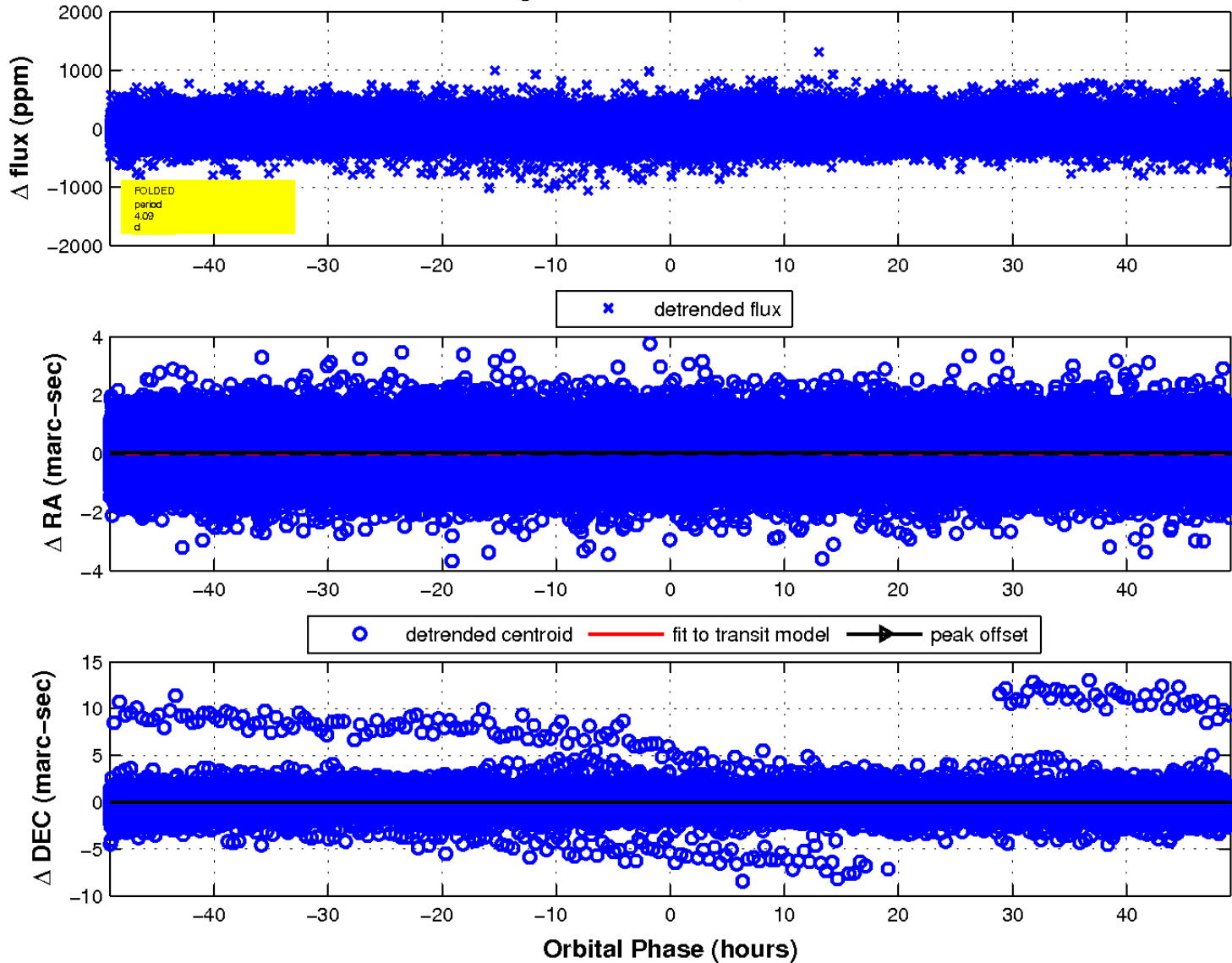
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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



fluxWeightedCentroids, Planet 1 of 1



UKIRT Image

Declination

