

# KIC 005001685

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
005001685-01	OBS	No	4.581784	135.277956	19.4	21.040	8.0	8.0	1.01	5713	0.62	330.51

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005001685-01	OBS	FP	0.00	1	0	0	0	LPP_DV—CENT_FEW_DIFFS

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

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

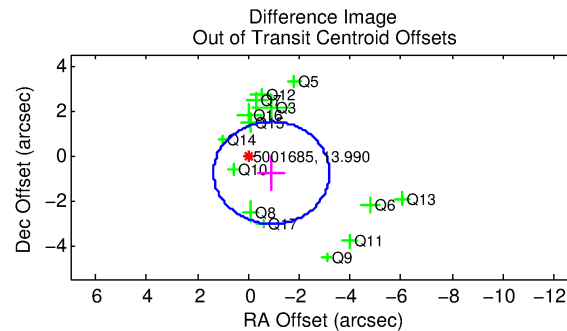
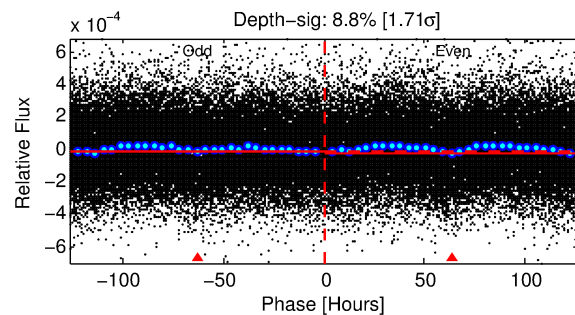
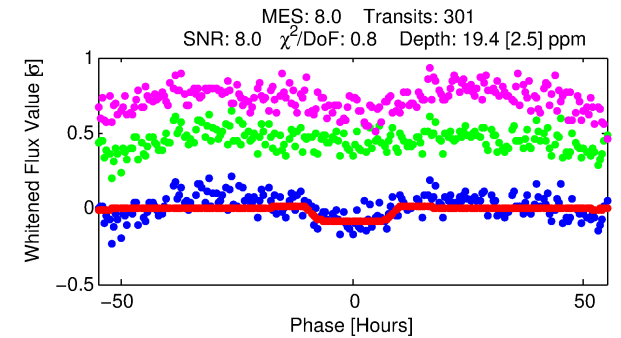
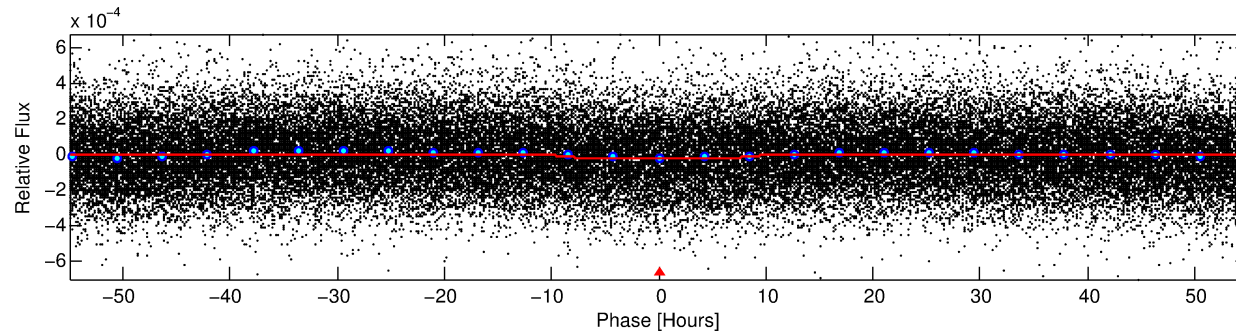
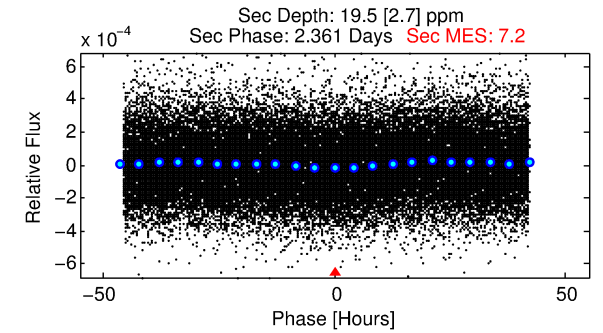
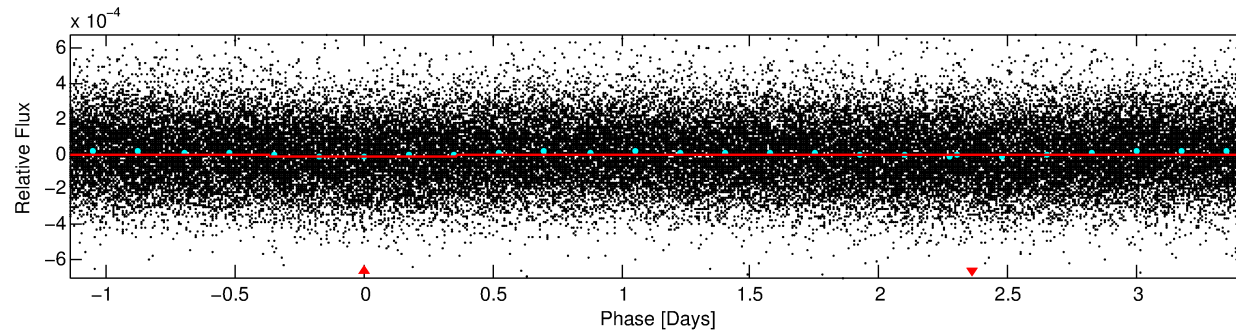
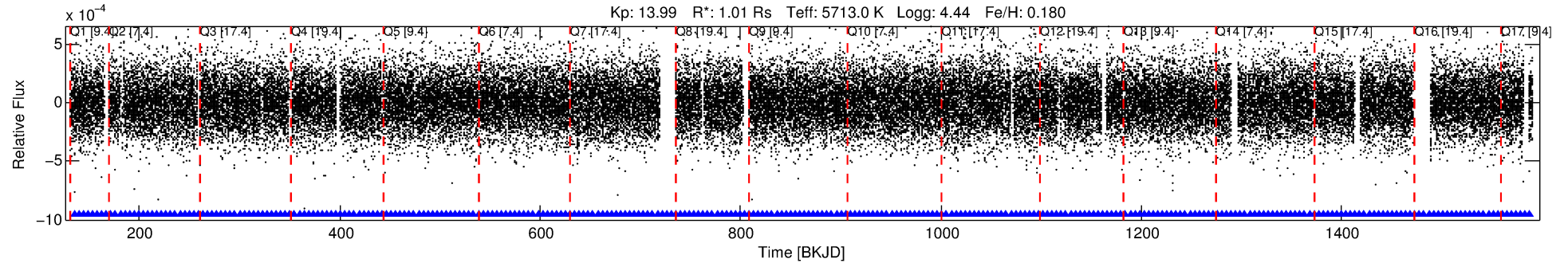
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 005001685-01

No Significant Match Found

# DV One-Page Summary

KIC: 5001685 Candidate: 1 of 1 Period: 4.582 d



## DV Fit Results:

Period = 4.58178 [0.00025] d  
Epoch = 135.2780 [0.0454] BKJD  
Rp/R\* = 0.0056 [0.0006]  
a/R\* = 1.05 [0.04]  
b = 0.98 [0.02]  
Seff = 330.51 [70.38]  
Teq = 1087 [58] K  
Rp = 0.62 [0.11] Re  
a = 0.0543 [0.0072] AU  
Ag = 81.88 [26.21] [3.09σ]  
Teffp = 5057 [320] K [12.19σ]

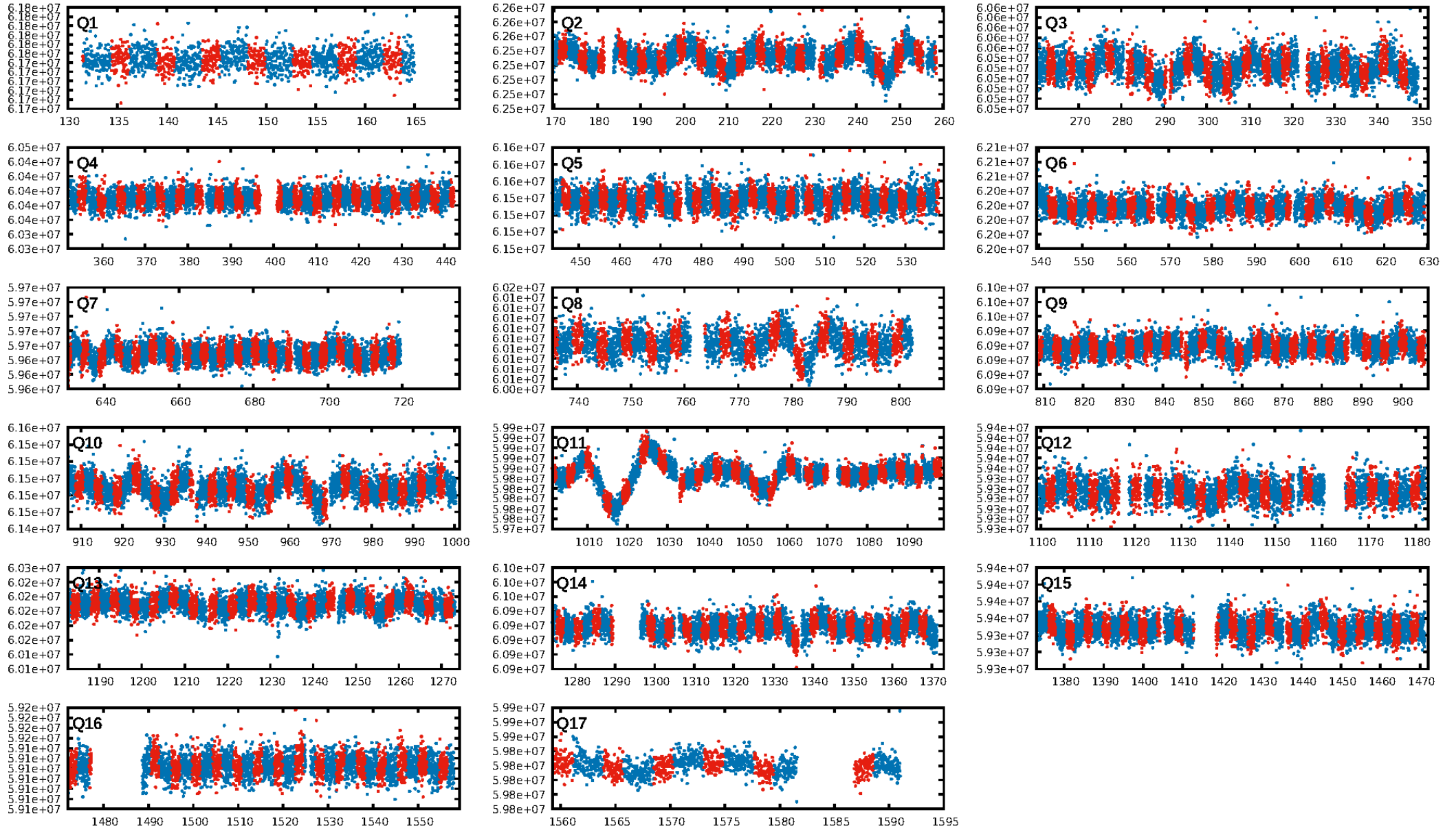
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: N/A  
ModelChiSquareGof-sig: N/A  
Bootstrap-pfa: 1.12e-16  
RollingBand-fgt: 1.00 [288/288]  
GhostDiagnostic-chr: -0.4298  
Centroid-sig: 9.4%  
Centroid-so: 1.559 arcsec [1.12σ]  
OotOffset-rm: 1.198 arcsec [1.58σ]  
KicOffset-rm: 1.097 arcsec [1.45σ]  
OotOffset-st: 3/4/3/4 [14]  
KicOffset-st: 3/4/3/4 [14]  
DiffImageQuality-fgm: 0.43 [6/14]  
DiffImageOverlap-fno: 1.00 [17/17]

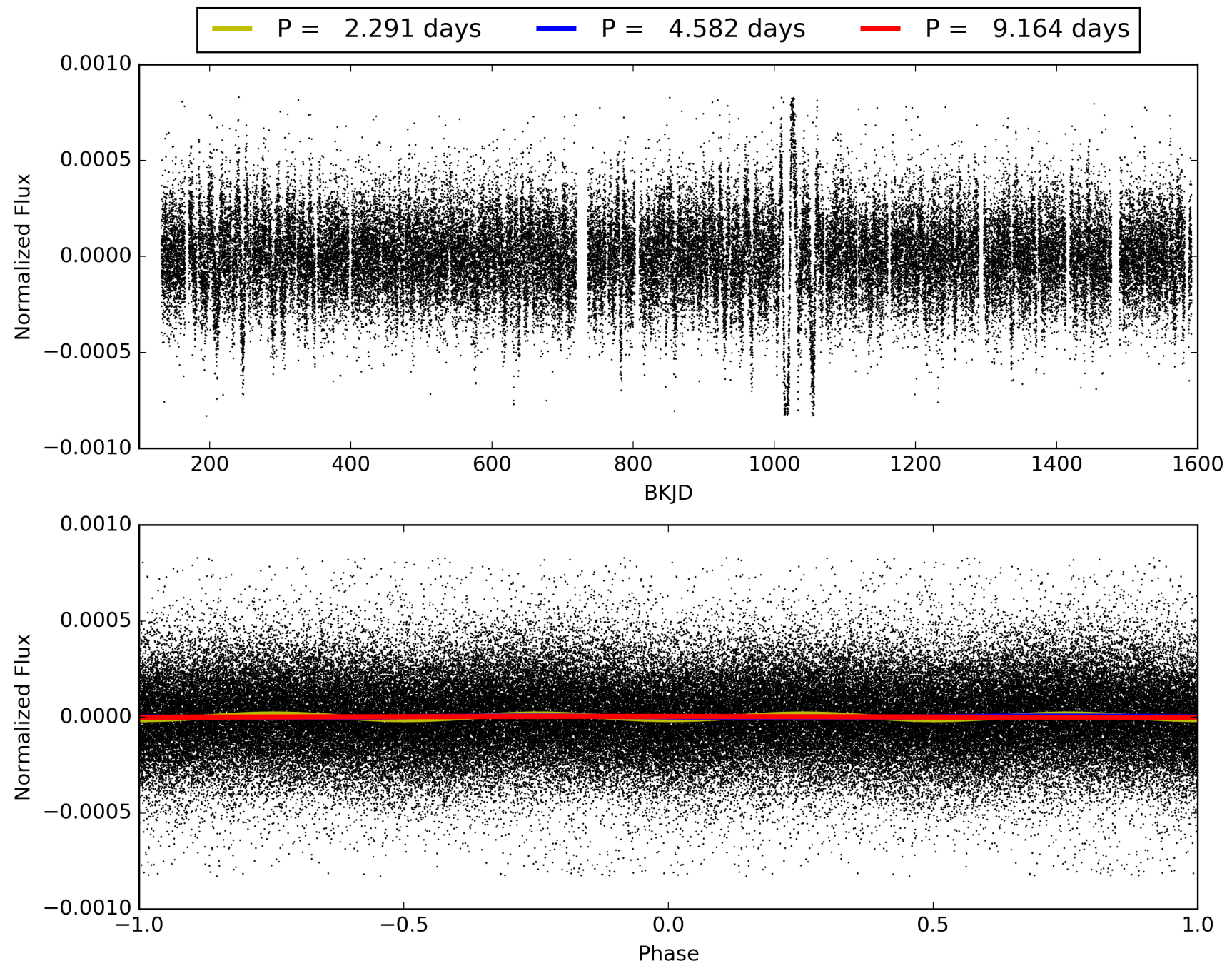
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 15:17:07 Z

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

# TCE 005001685-01, PDC Light Curves



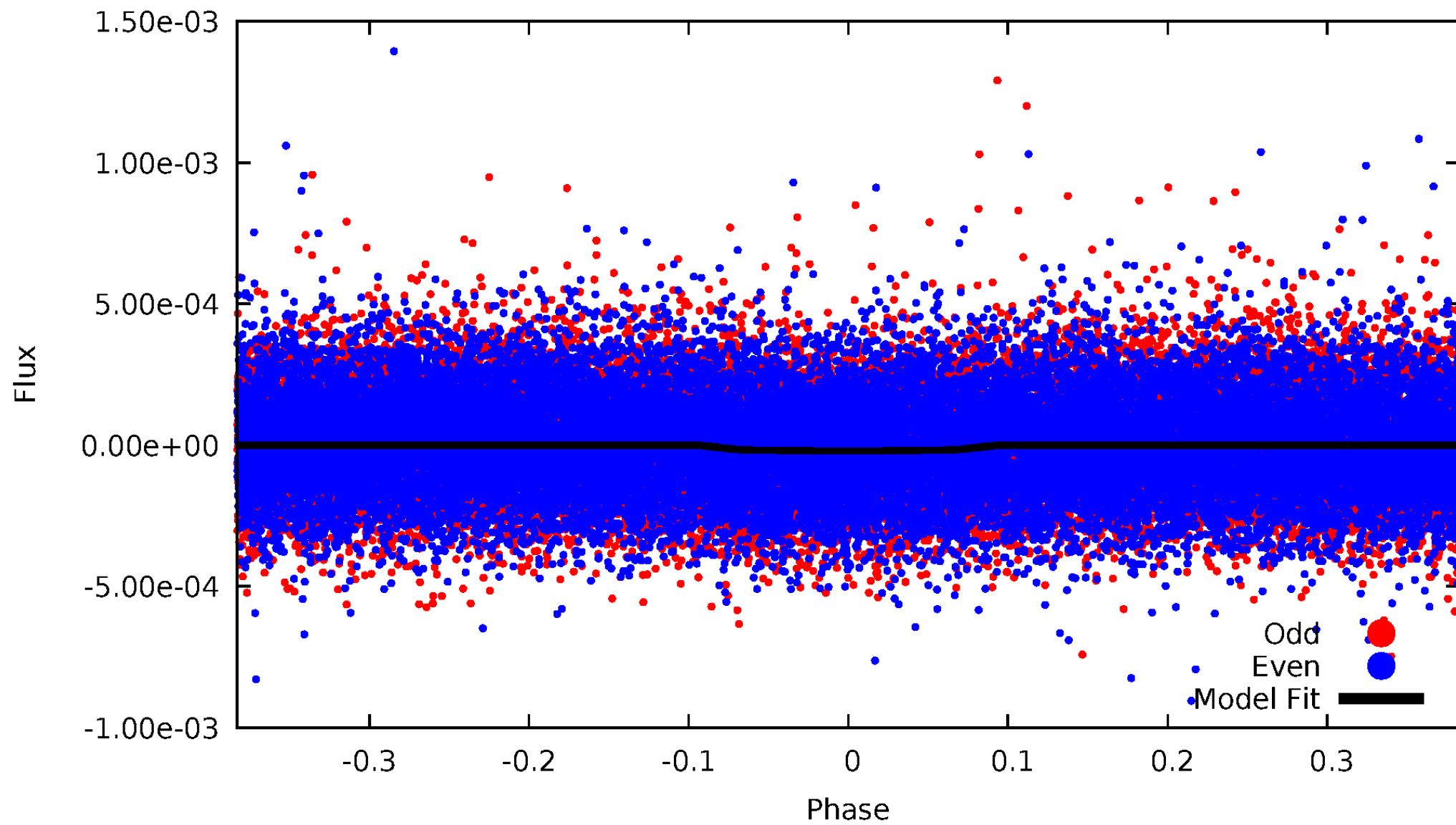
TCE 005001685-01





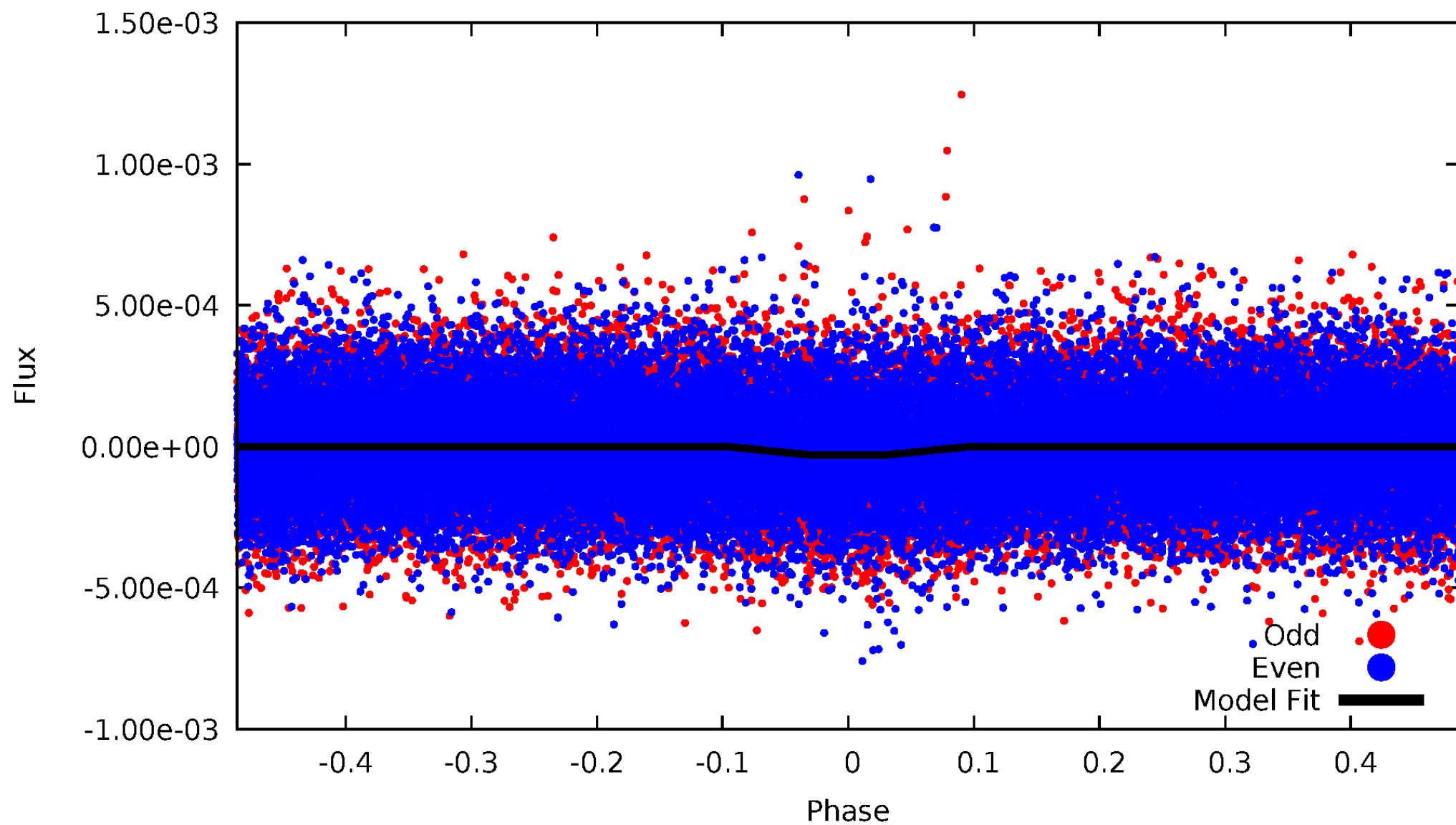
# DV Odd/Even

TCE 005001685-01



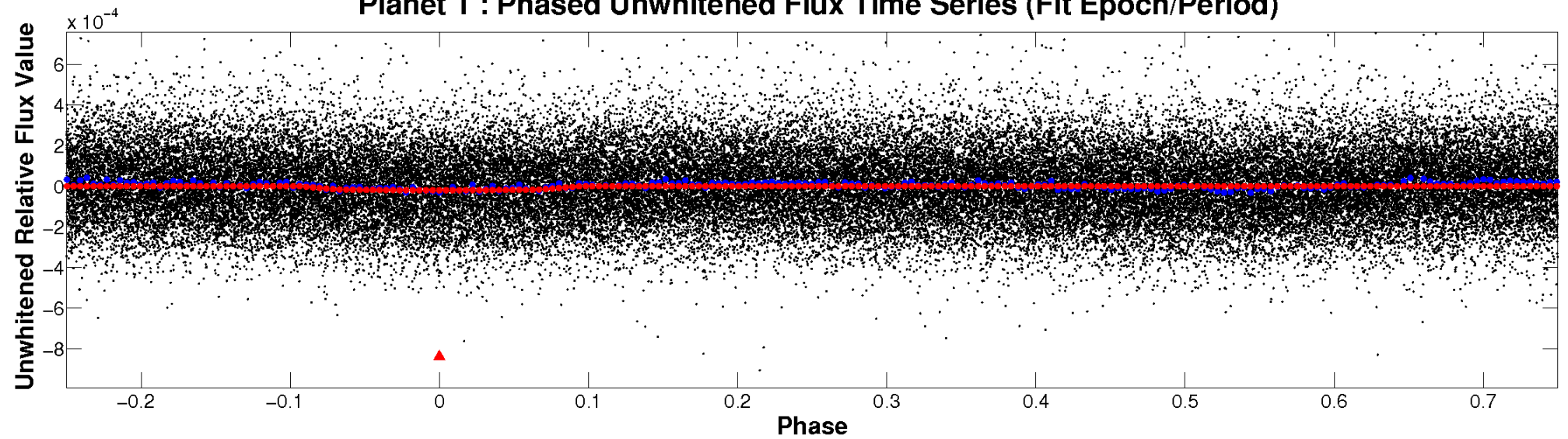
# ALT Odd/Even

TCE 005001685-01

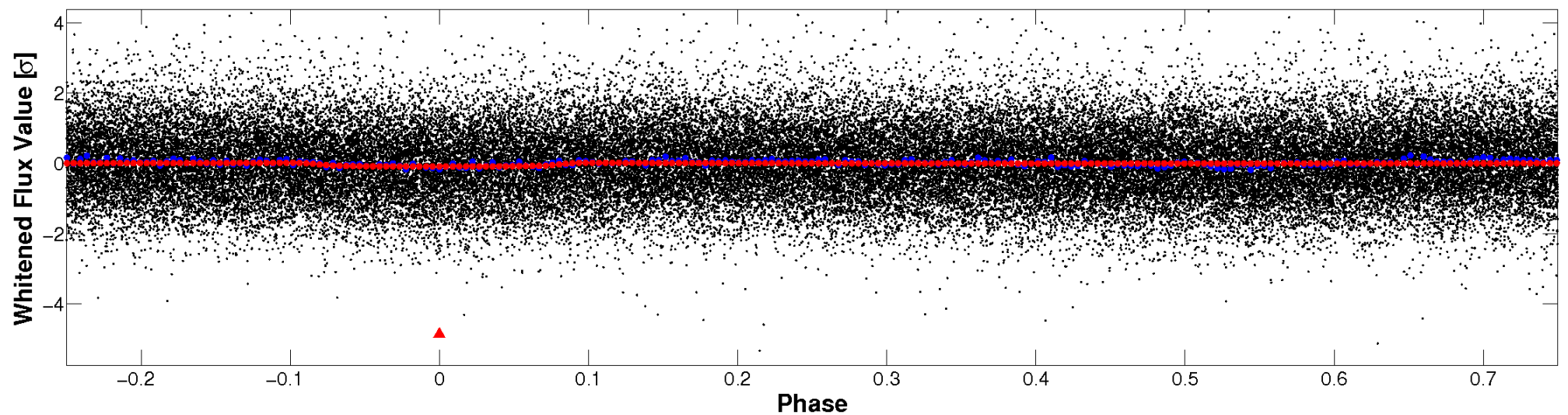


# Non-Whitened Vs. Whitened Light Curve

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

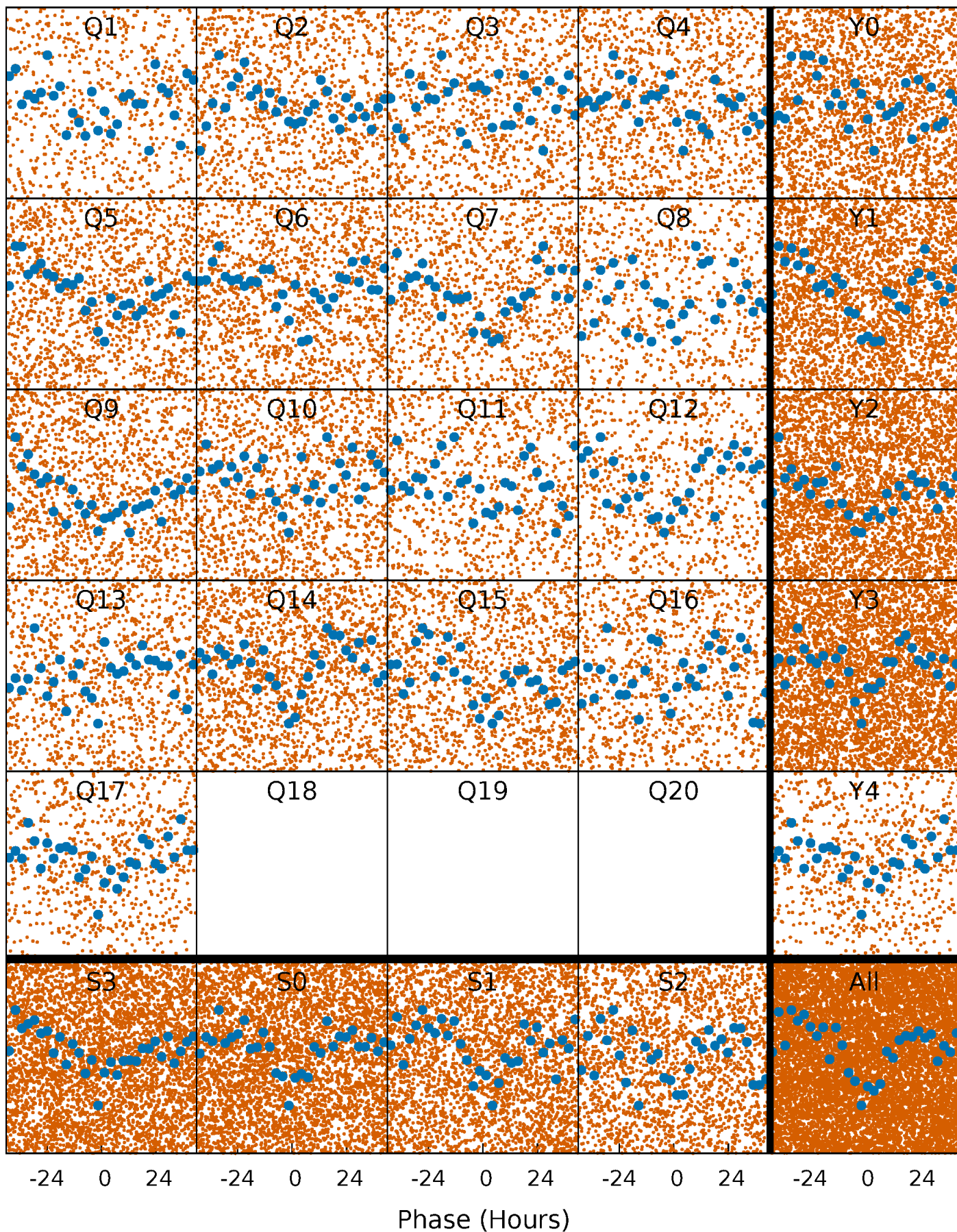


**Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)**



# PDC Quarter-Phased Transit Curves

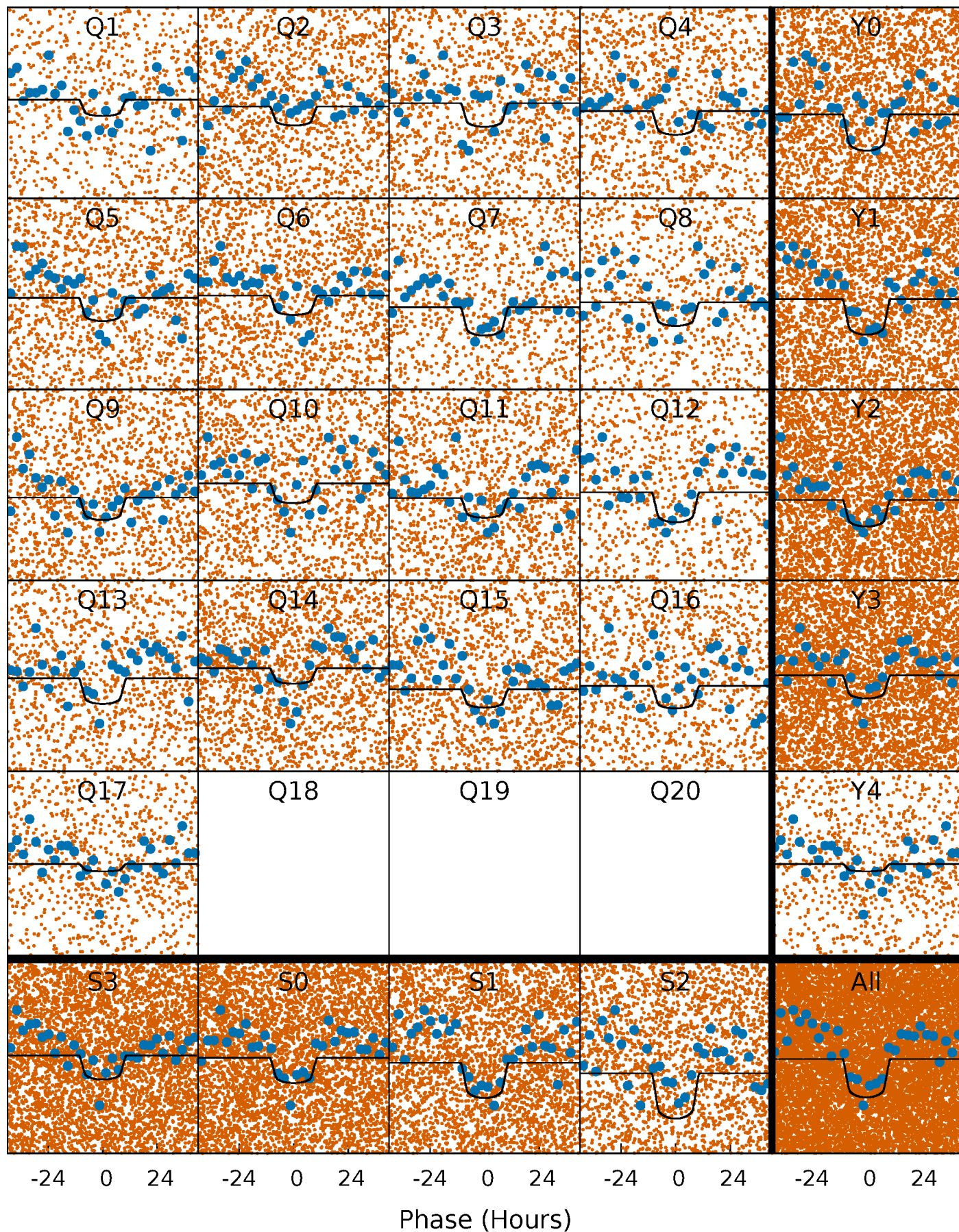
TCE 005001685-01 P= 4.581784 Days  $T_0=135.277955$  (BKJD)





# DV Quarter-Phased Transit Curves

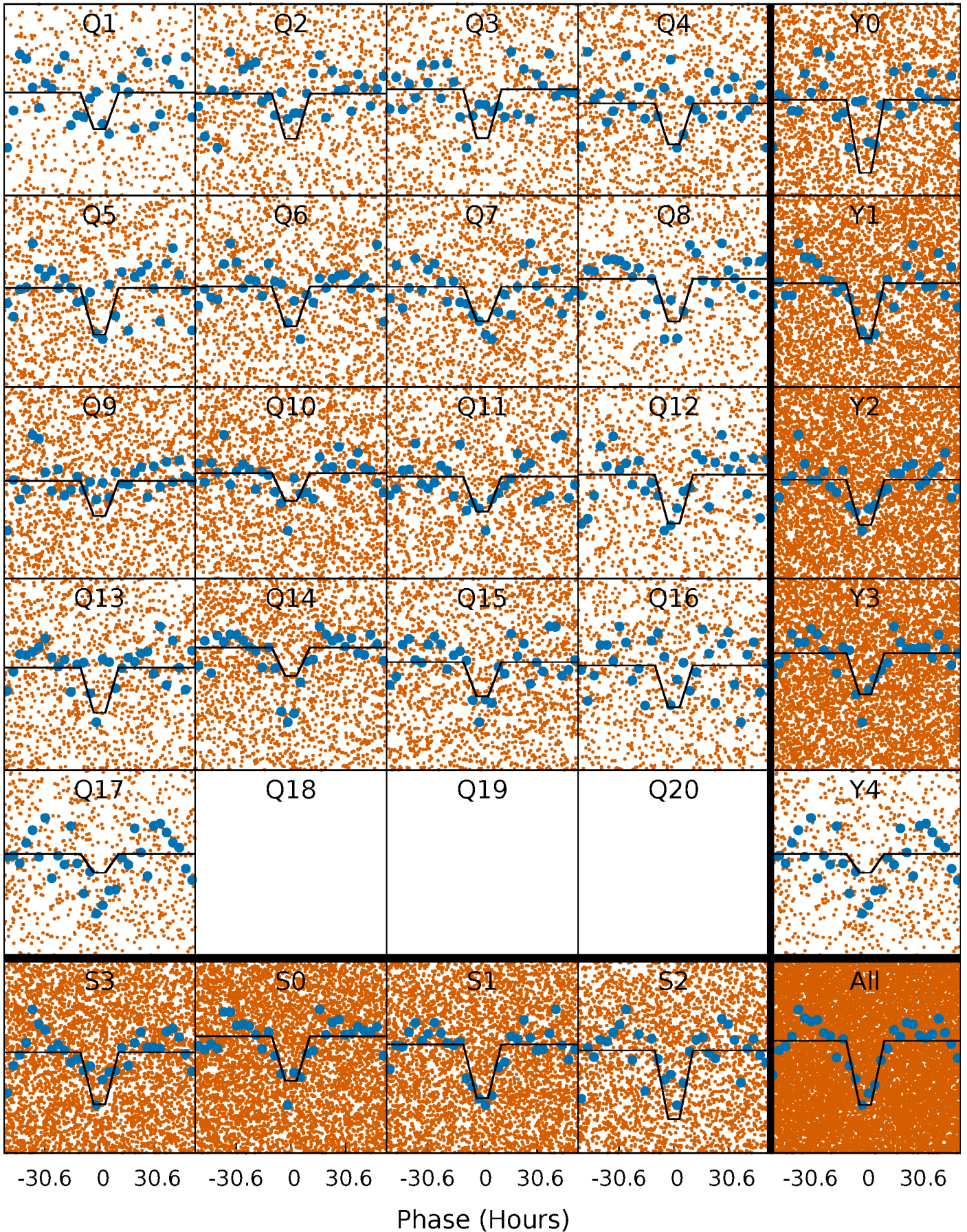
TCE 005001685-01 P= 4.581784 Days  $T_0=135.277955$  (BKJD)





# Alt. Detrend Quarter-Phased Transit Curves

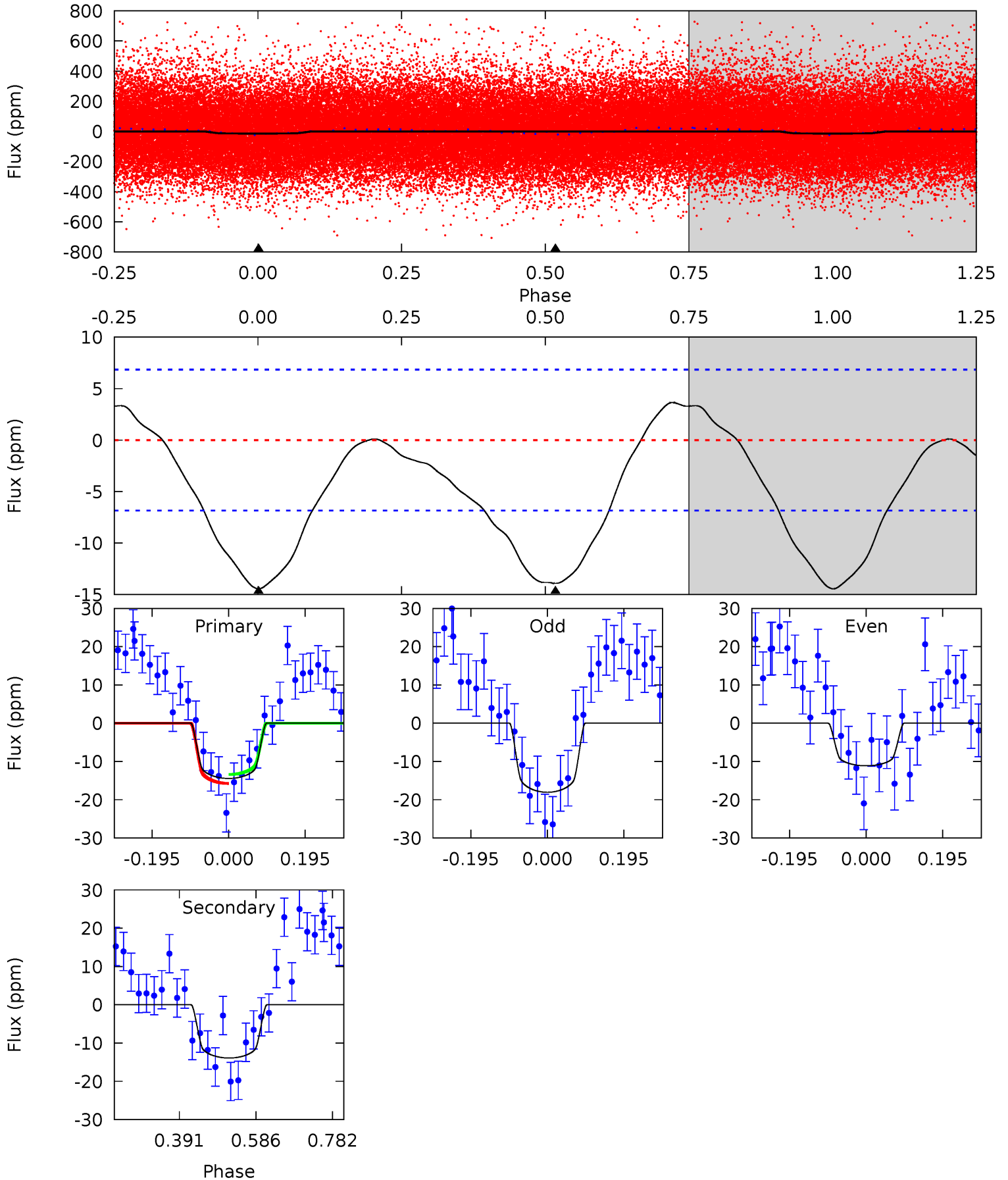
TCE 005001685-01 P= 4.581690 Days  $T_0=135.303372$  (BKJD)



# DV Model-Shift Uniqueness Test

005001685-01, P = 4.581784 Days, E = 130.696171 Days

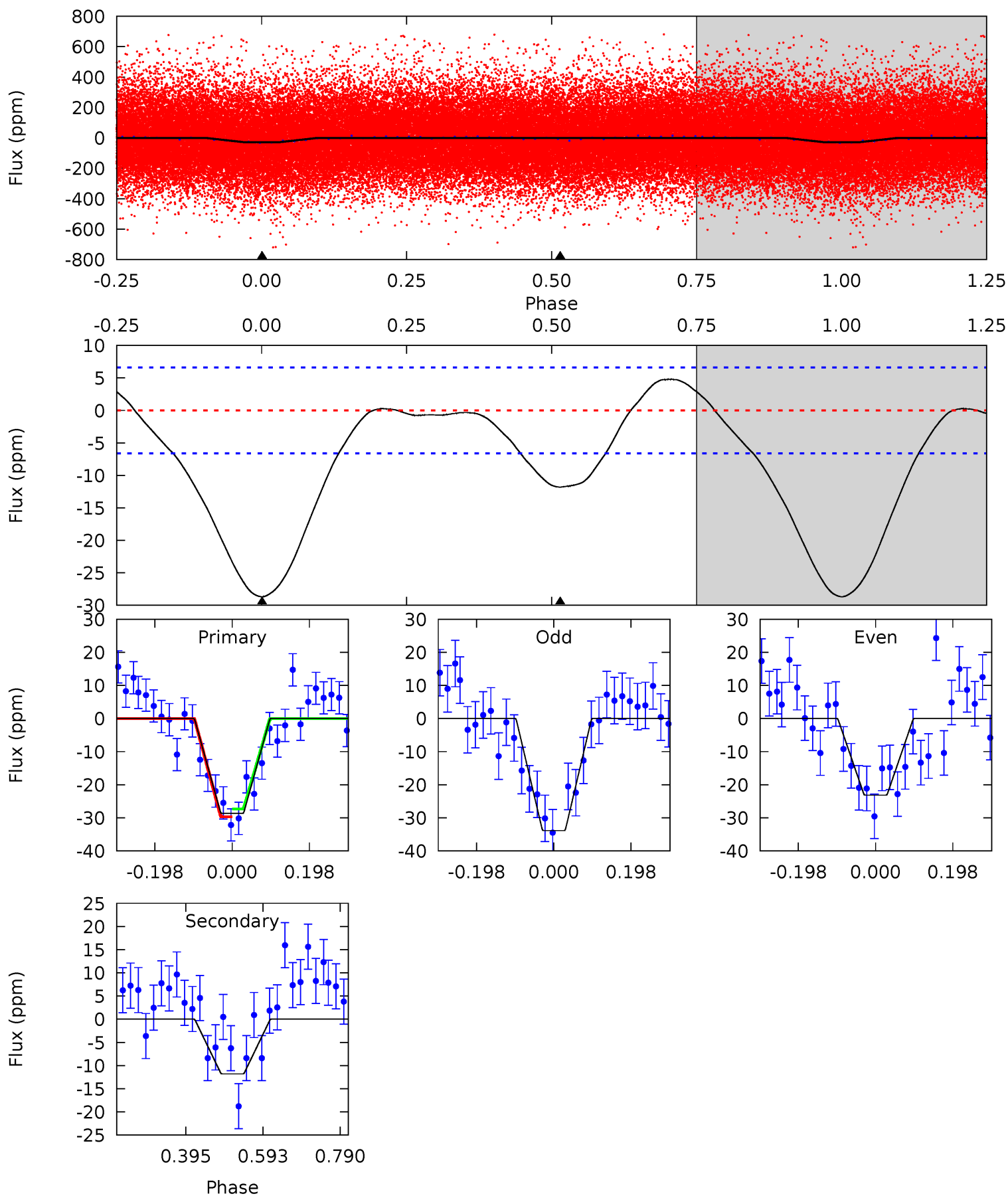
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
9.33	8.99	0	0	4.42	1.29	1.55	9.33	9.33	8.99	8.99	2.23	0.33	0.20	0.76



# Alt Model-Shift Uniqueness Test

005001685-01, P = 4.581690 Days, E = 130.721682 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
19.1	7.87	0	0	4.42	1.29	1.24	19.1	19.1	7.87	7.87	3.58	0.85	0.14	0.77





### Stellar Parameters For KIC 005001685

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R$ ( $R_{\odot}$ )	$M(M_{\odot})$	$p_{\star}$ ( $\text{g}\cdot\text{cm}^{-3}$ )
	$5713^{+77}_{-85}$	$4.436^{+0.054}_{-0.117}$	$0.180^{+0.150}_{-0.150}$	$1.010^{+0.148}_{-0.079}$	$1.015^{+0.056}_{-0.062}$	$1.387^{+0.277}_{-0.481}$
	+1%/-1%	+1%/-3%	+83%/-83%	+15%/-8%	+6%/-6%	+20%/-35%
Source	SPE68	SPE68	SPE68	DSEP		

KIC = Kepler Input Catalog; PHO = Photometry; SPE = Spectroscopy; AST = Asteroseismology  
 TRA = Transits; DESP = Dartmouth Models; MULT = Multiple Models

### Secondary Eclipse Parameters for KIC 005001685-01 / KOI

Detrend	Depth (ppm)	$R_p$ ( $R_{\oplus}$ )	$T_{max}$ (K)	$T_{obs}$ (K)	$A_{obs}$
DV	$-14 \pm 2$	$0.63^{+0.08}_{-0.08}$	$1531^{+56}_{-48}$	$4760^{+282}_{-224}$	$56^{+19}_{-13}$
Alt.	$-12 \pm 1$	$0.61^{+0.08}_{-0.07}$	$1529^{+65}_{-42}$	$4669^{+247}_{-236}$	$51^{+16}_{-13}$

$T_{max}$  = 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

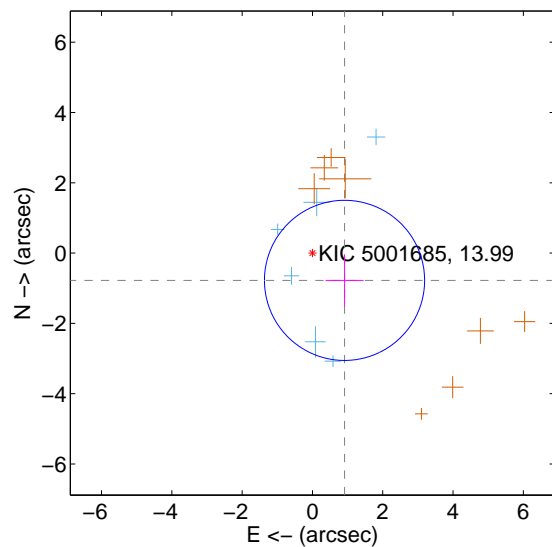
Supplemental centroid analysis for 005001685-01. Kepler magnitude: 13.99. Transit SNR 8.00

There are 6 quarters with good PRF difference image offsets

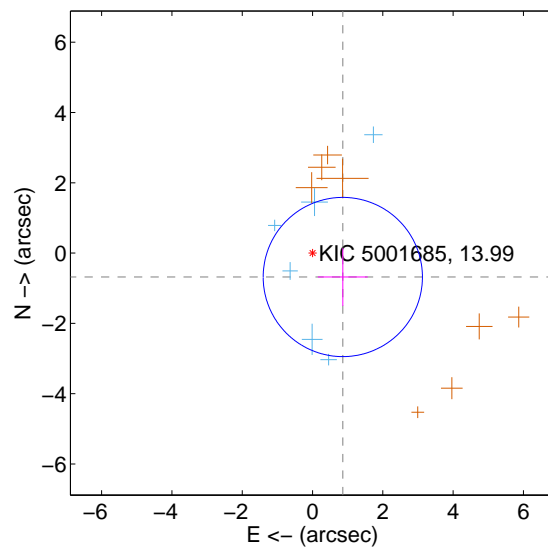
The direct PRF centroid is offset from the target star catalog position by about 0.13 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$1.198 \pm 0.759$	1.58	$-0.913 \pm 0.541$	$-0.776 \pm 0.740$
PRF-fit source offset from KIC position	$1.097 \pm 0.755$	1.45	$-0.861 \pm 0.709$	$-0.680 \pm 0.823$
photometric centroid source offset	$1.56 \pm 1.39$	1.12	$0.27 \pm 1.37$	$-1.53 \pm 1.39$

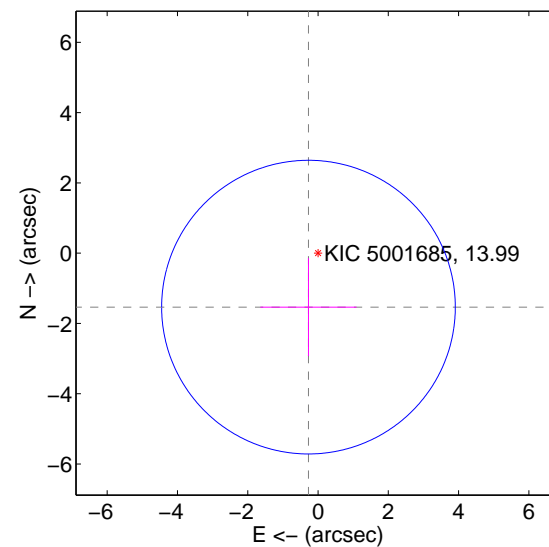
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

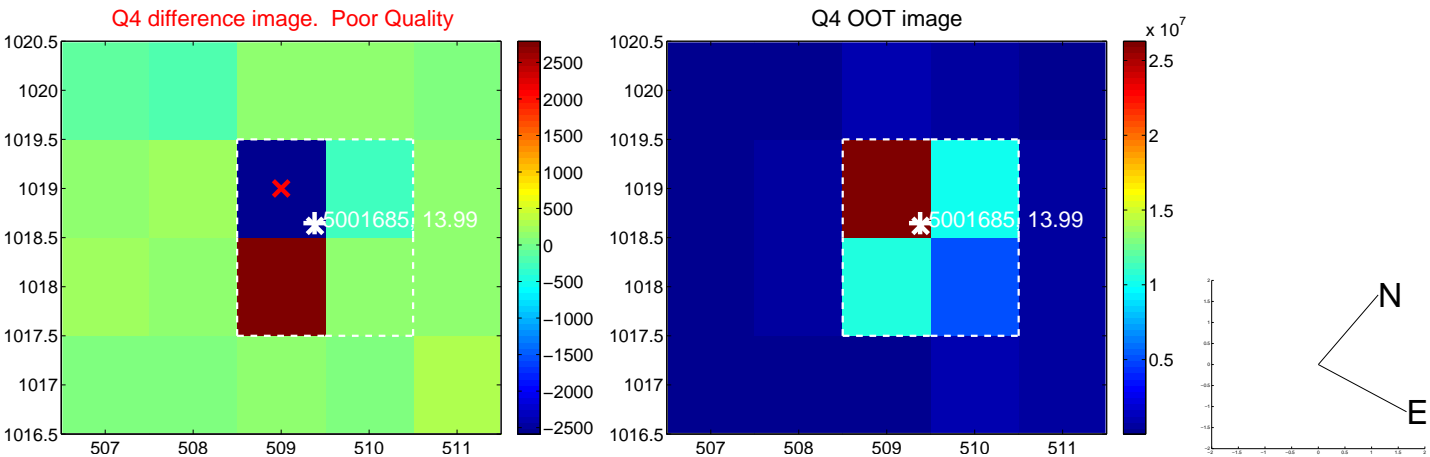
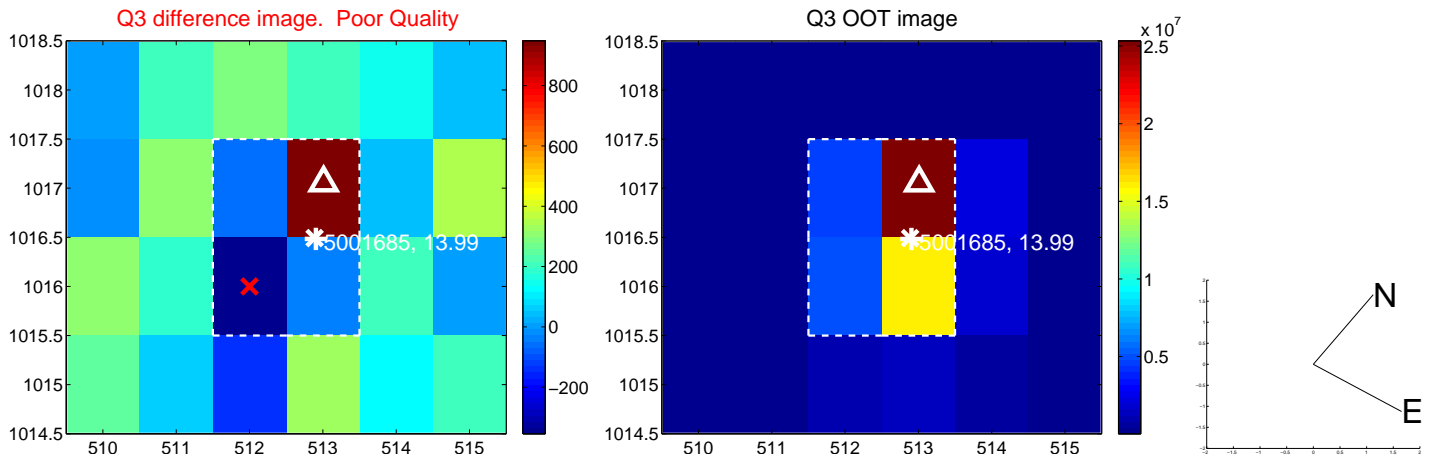
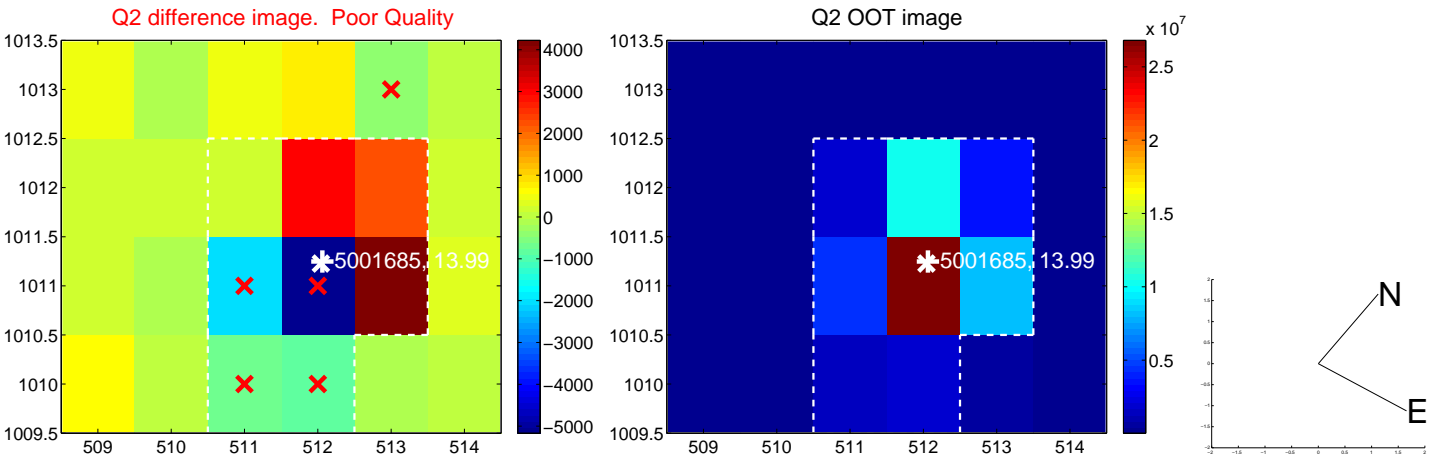
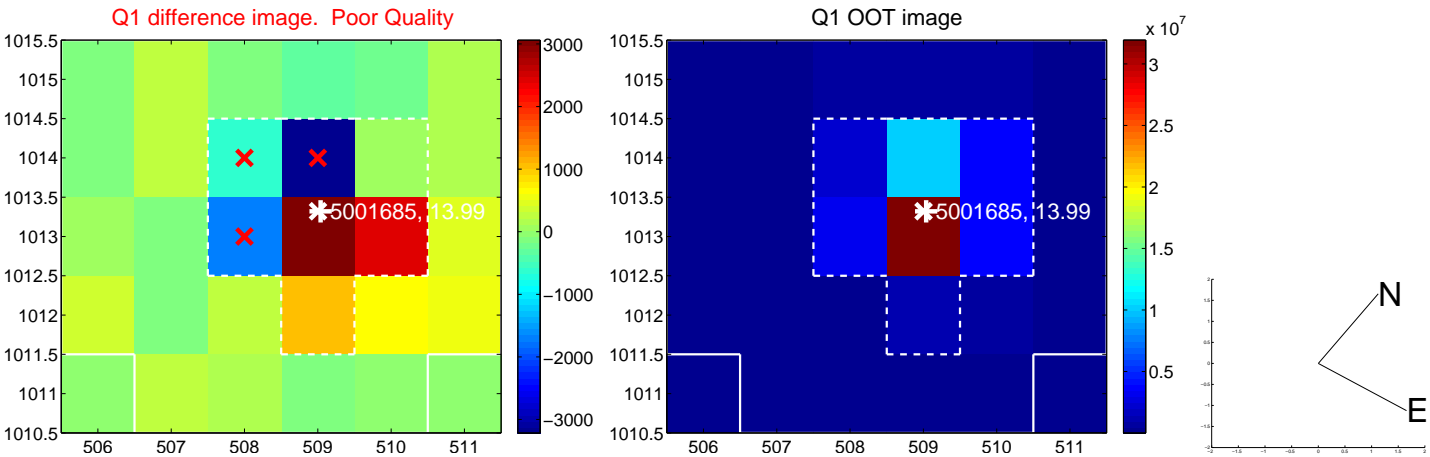


offset from photometric centroids

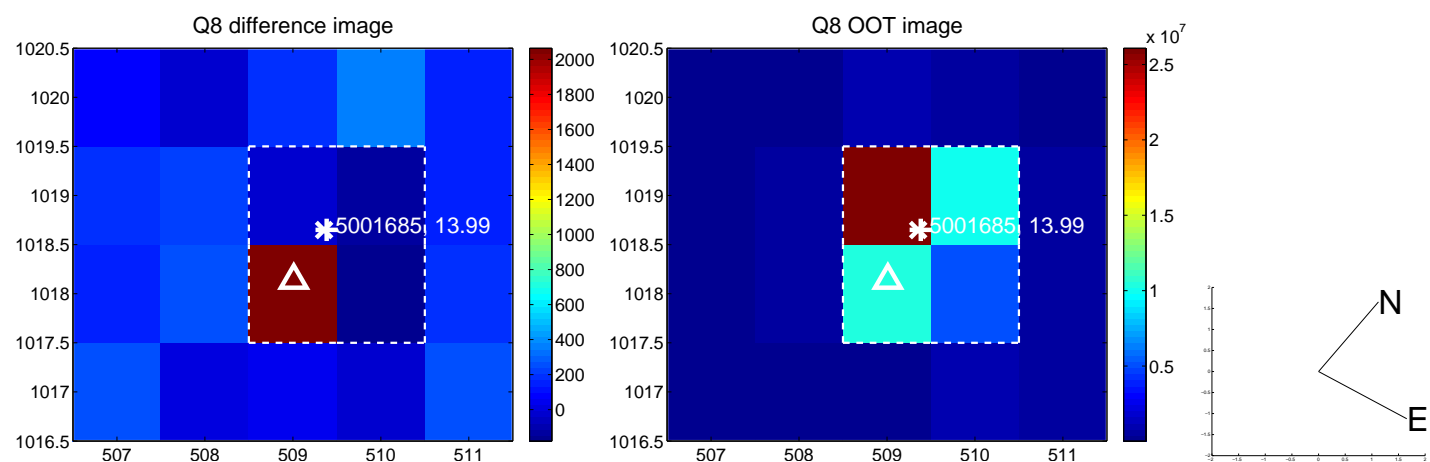
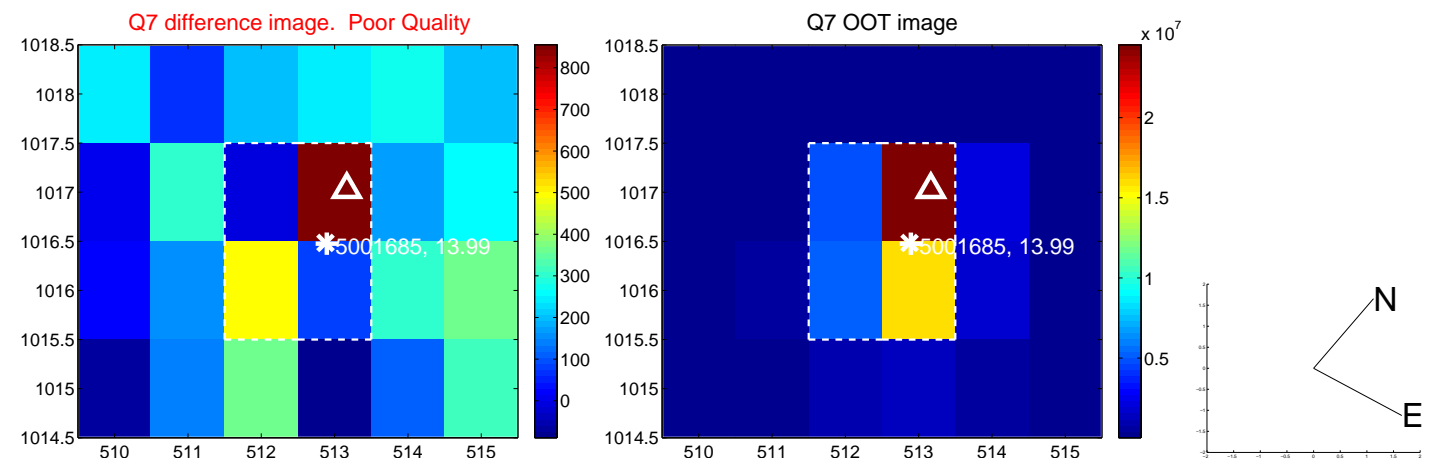
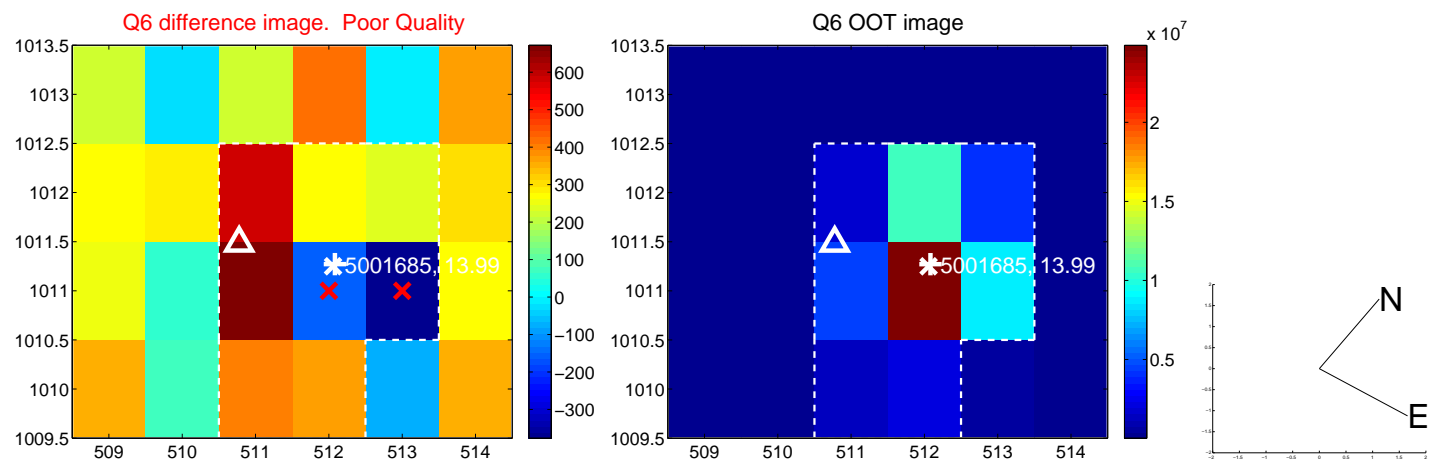
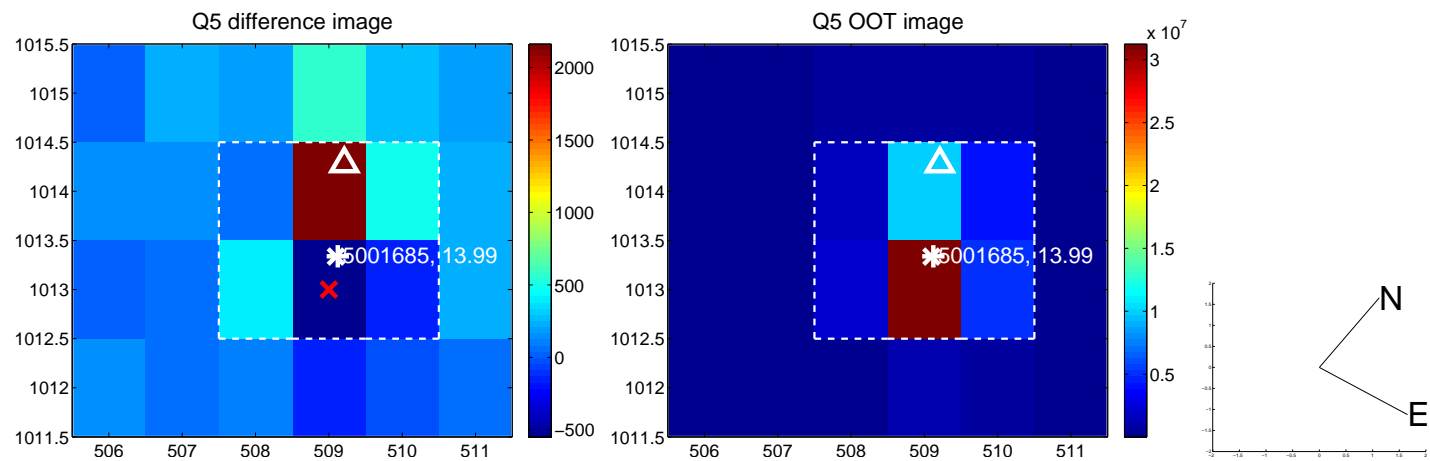


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets**; **Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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

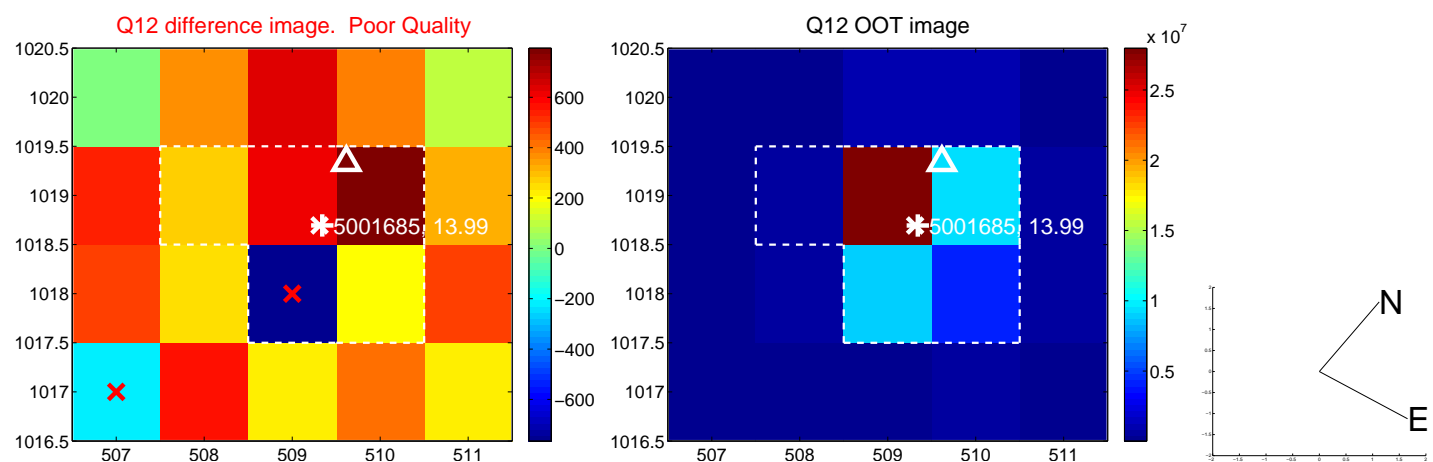
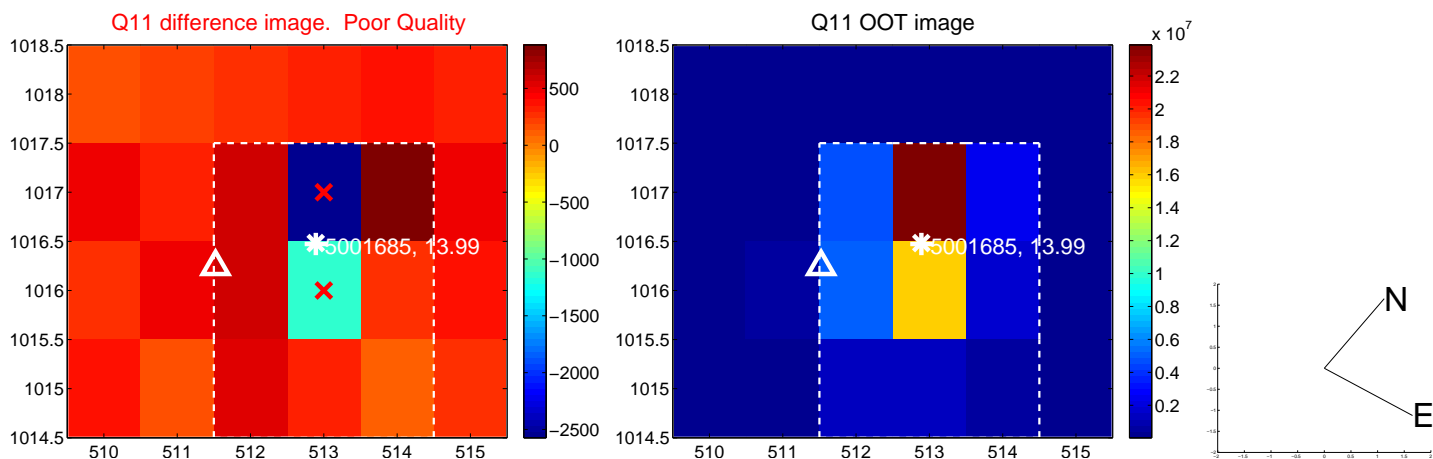
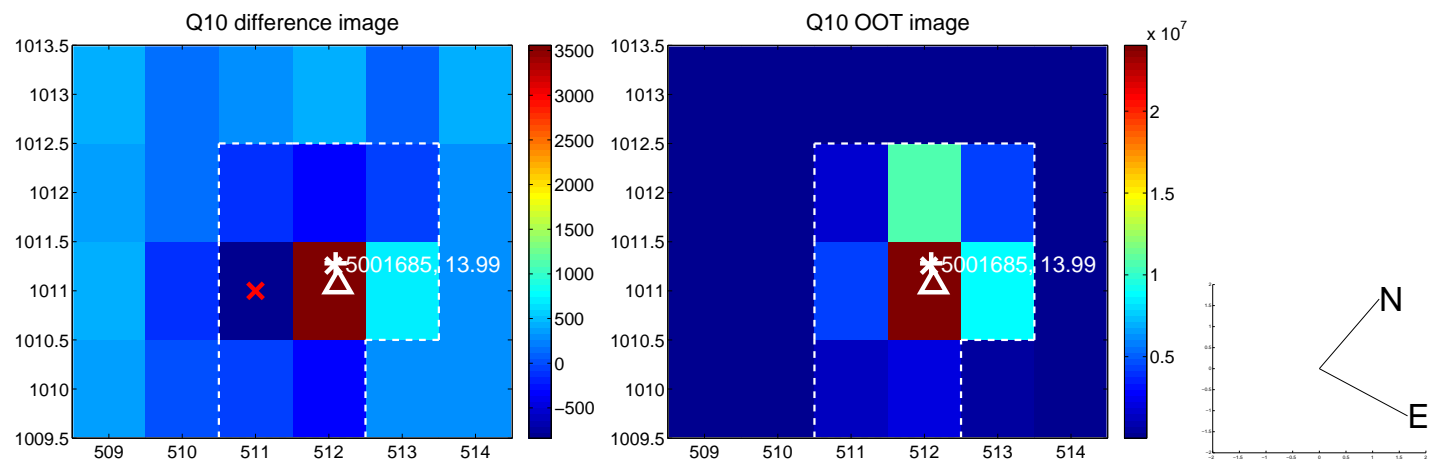
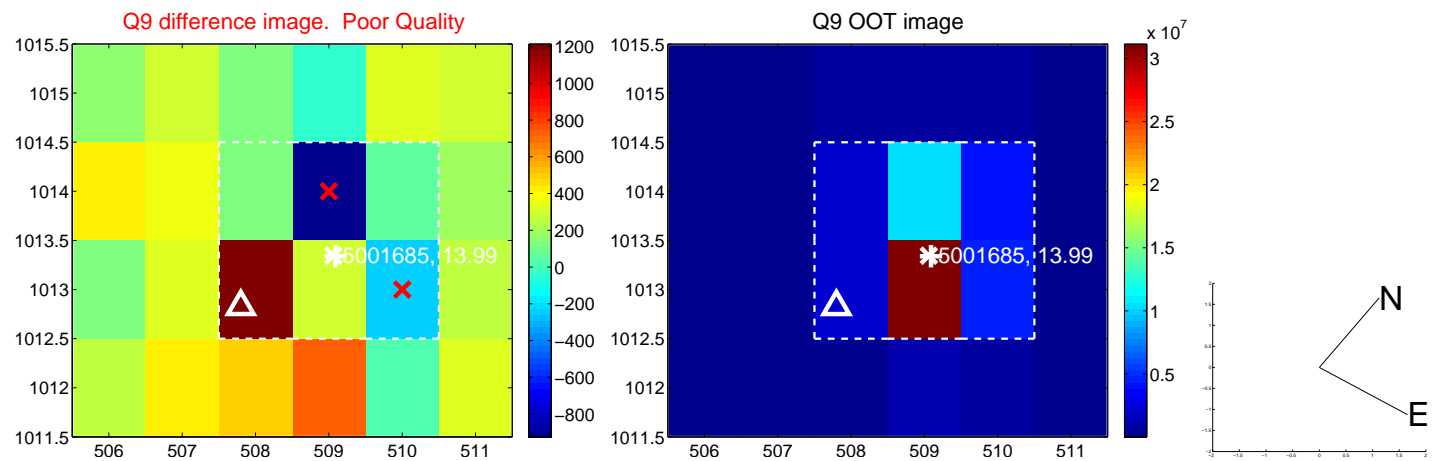


white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

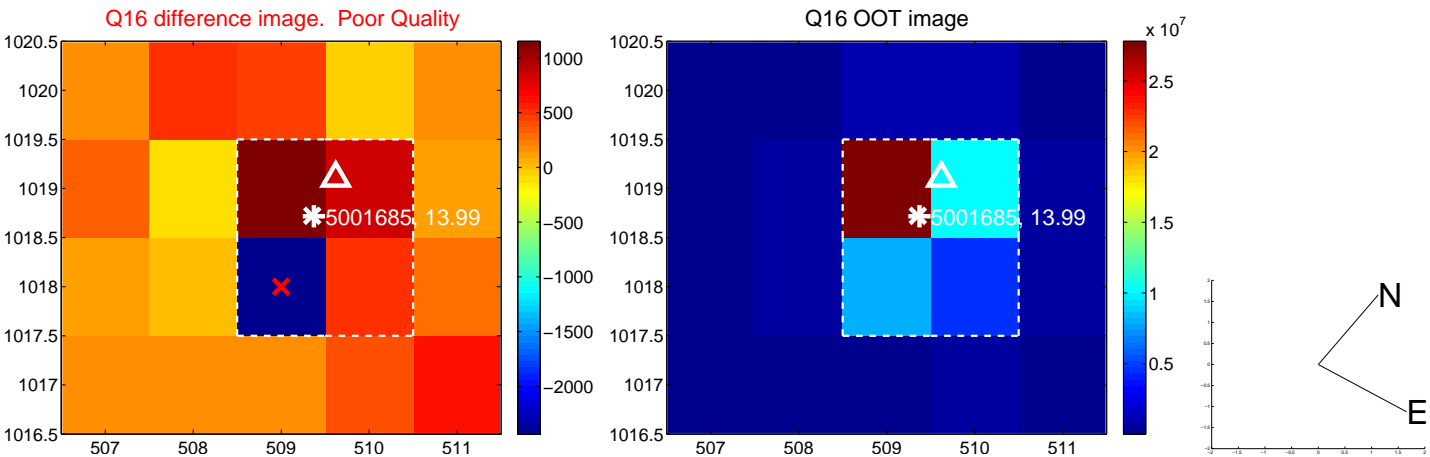
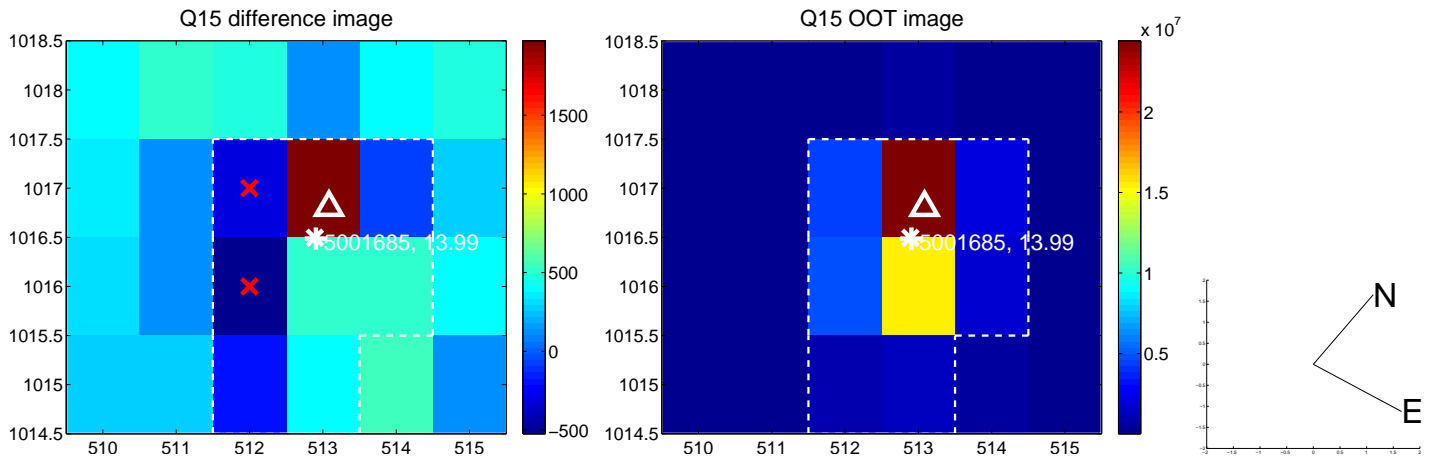
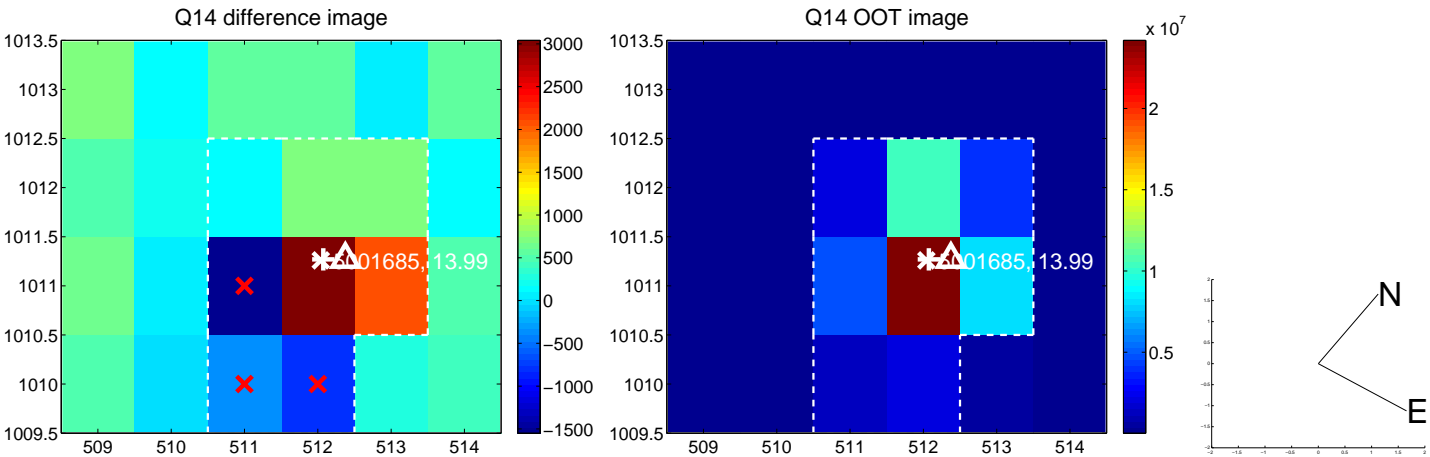
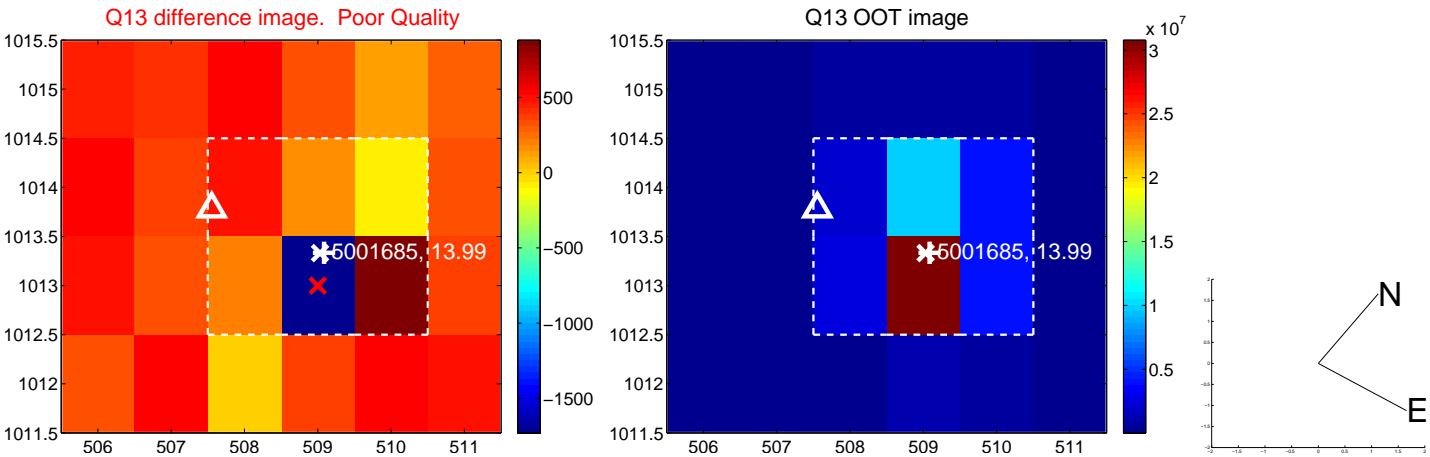




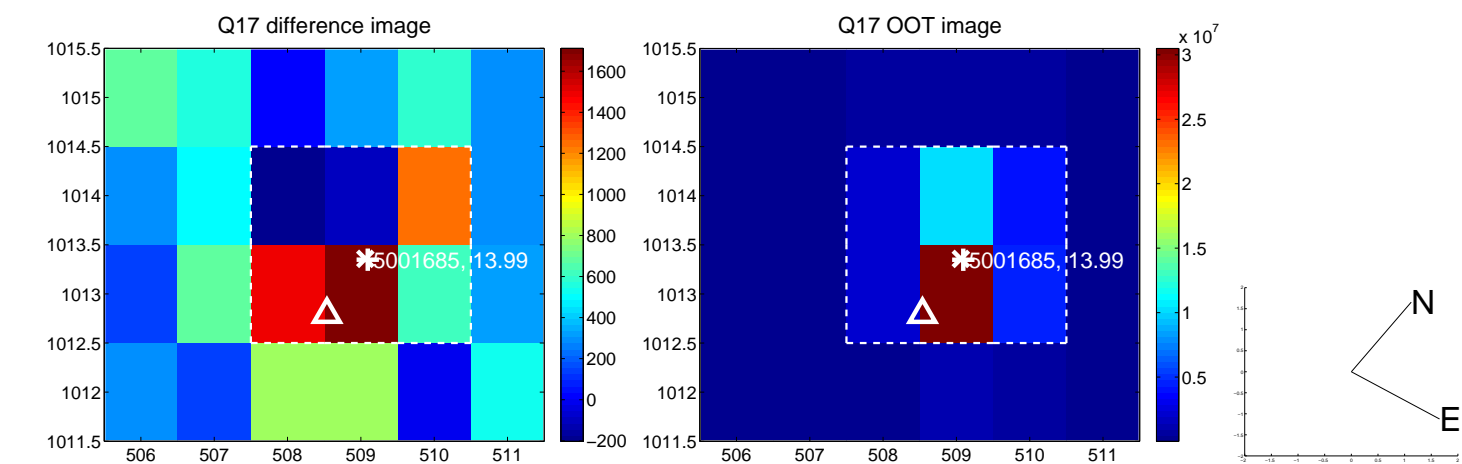
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



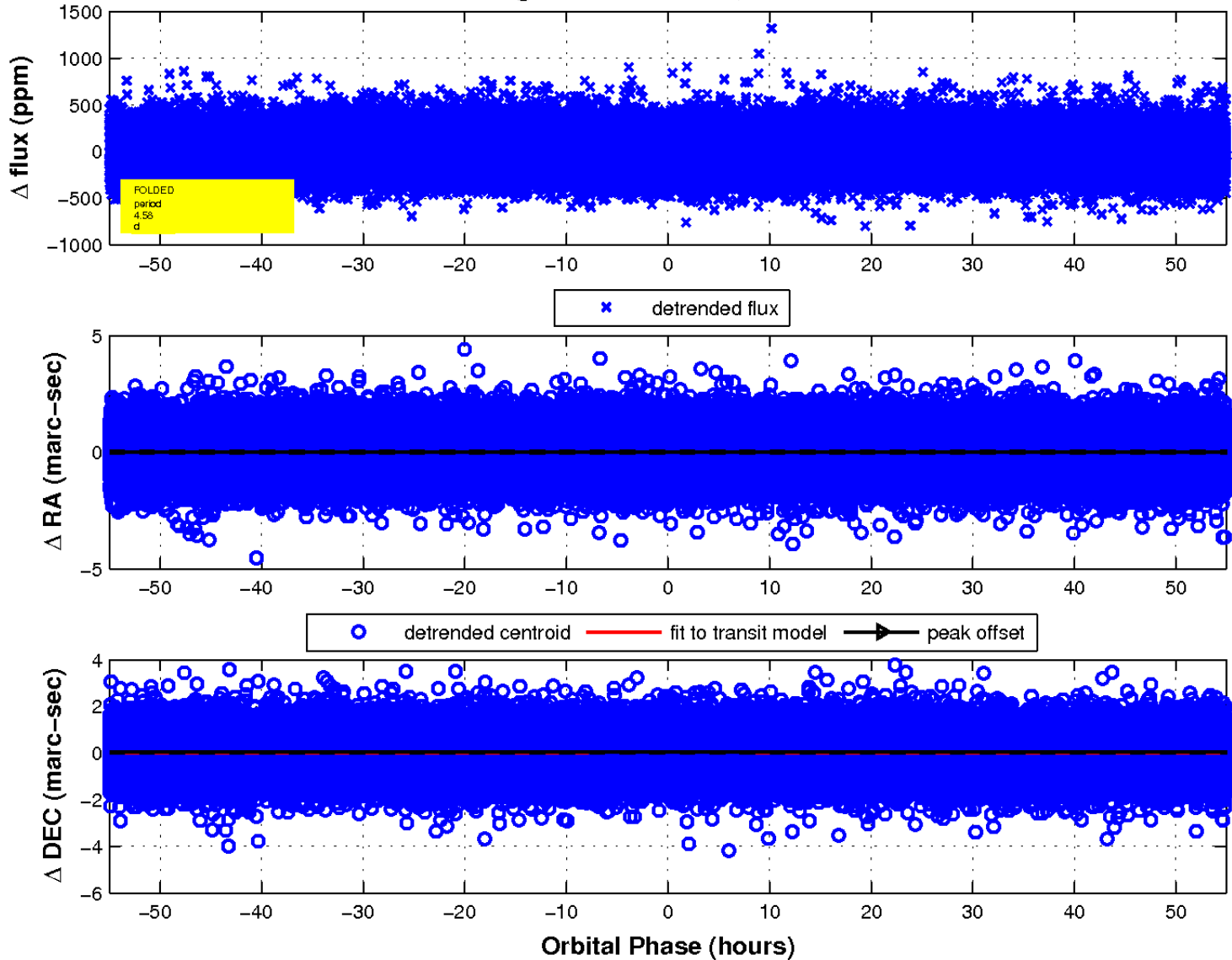
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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



fluxWeightedCentroids, Planet 1 of 1



UKIRT Image

