

# KIC 006465159

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
006465159-01	OBS	No	2.263779	131.662112	204.7	22.381	16.0	23.4	2.08	5952	3.10	4097.37

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
006465159-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—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.

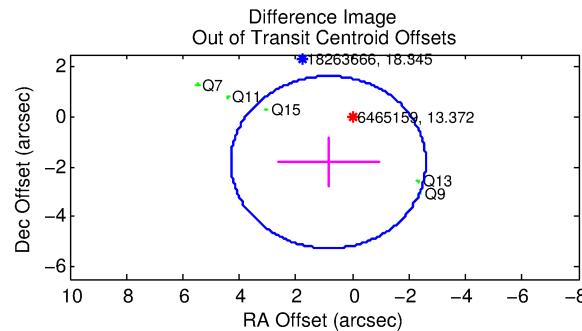
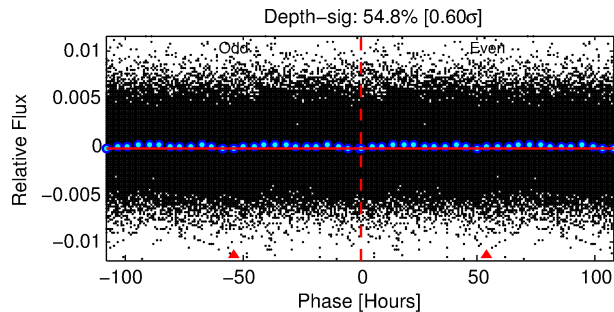
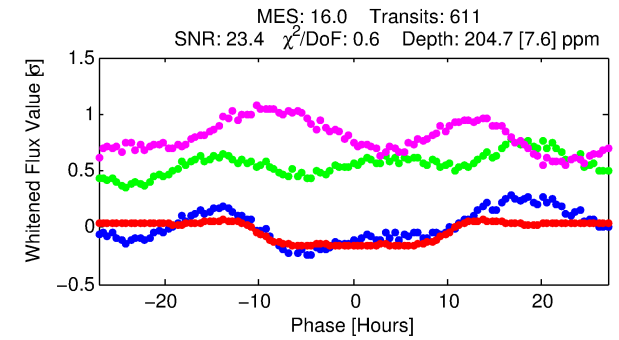
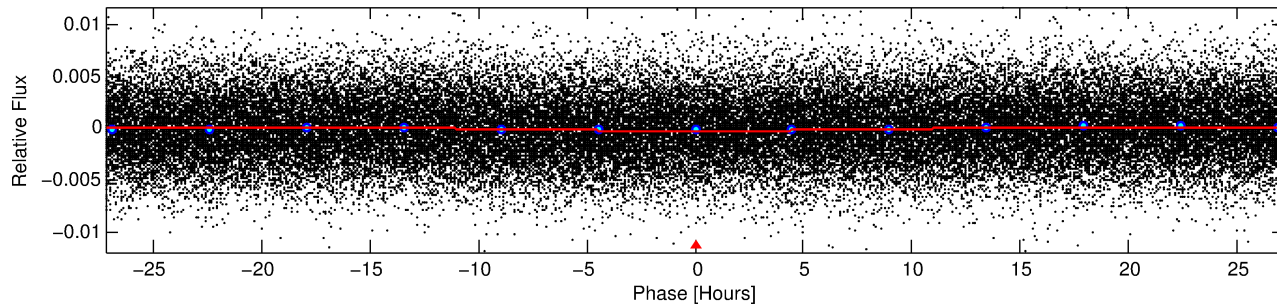
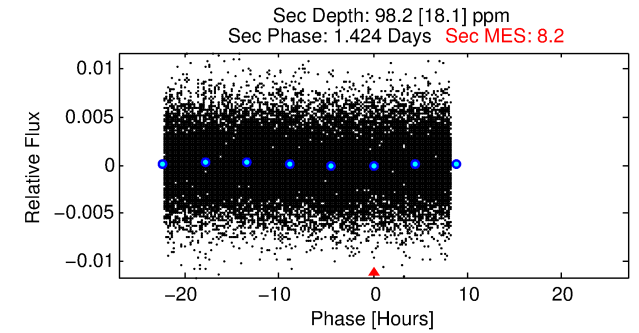
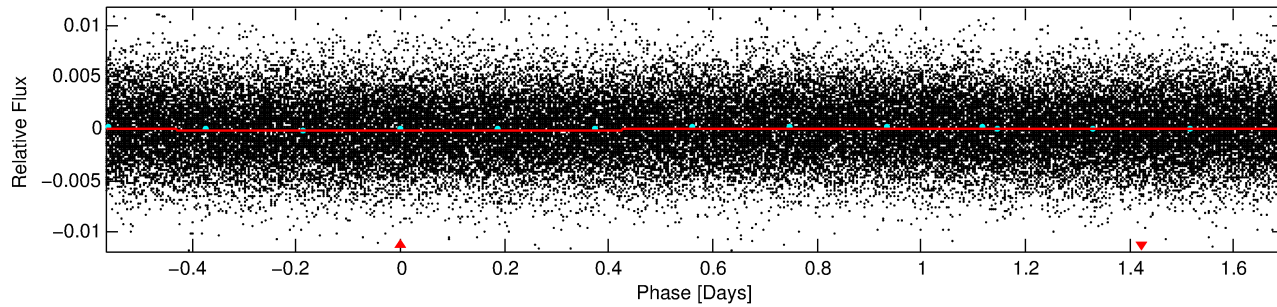
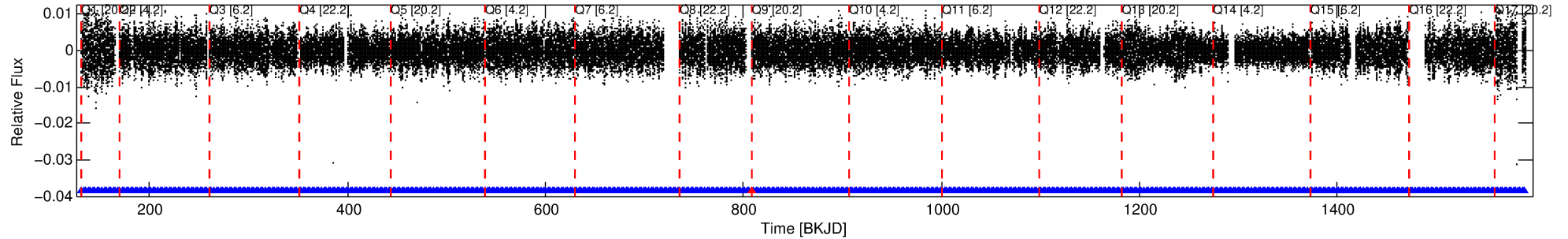
## Ephemeris Match Information For 006465159-01

No Significant Match Found

# DV One-Page Summary

KIC: 6465159 Candidate: 1 of 1 Period: 2.264 d

Kp: 13.37 R\*: 2.08 Rs Teff: 5952.0 K Logg: 3.83 Fe/H: -0.440



## DV Fit Results:

Period = 2.26378 [0.00003] d  
Epoch = 131.6621 [0.0118] BKJD  
Rp/R\* = 0.0136 [0.0016]  
a/R\* = 1.04 [0.05]  
b = 0.56 [0.72]  
Seff = 4097.37 [3968.54]  
Teq = 2040 [494] K  
Rp = 3.10 [1.65] Re  
a = 0.0345 [0.0196] AU  
Ag = 6.73 [6.78] [0.85σ]  
Teffp = 5080 [411] K [4.73σ]

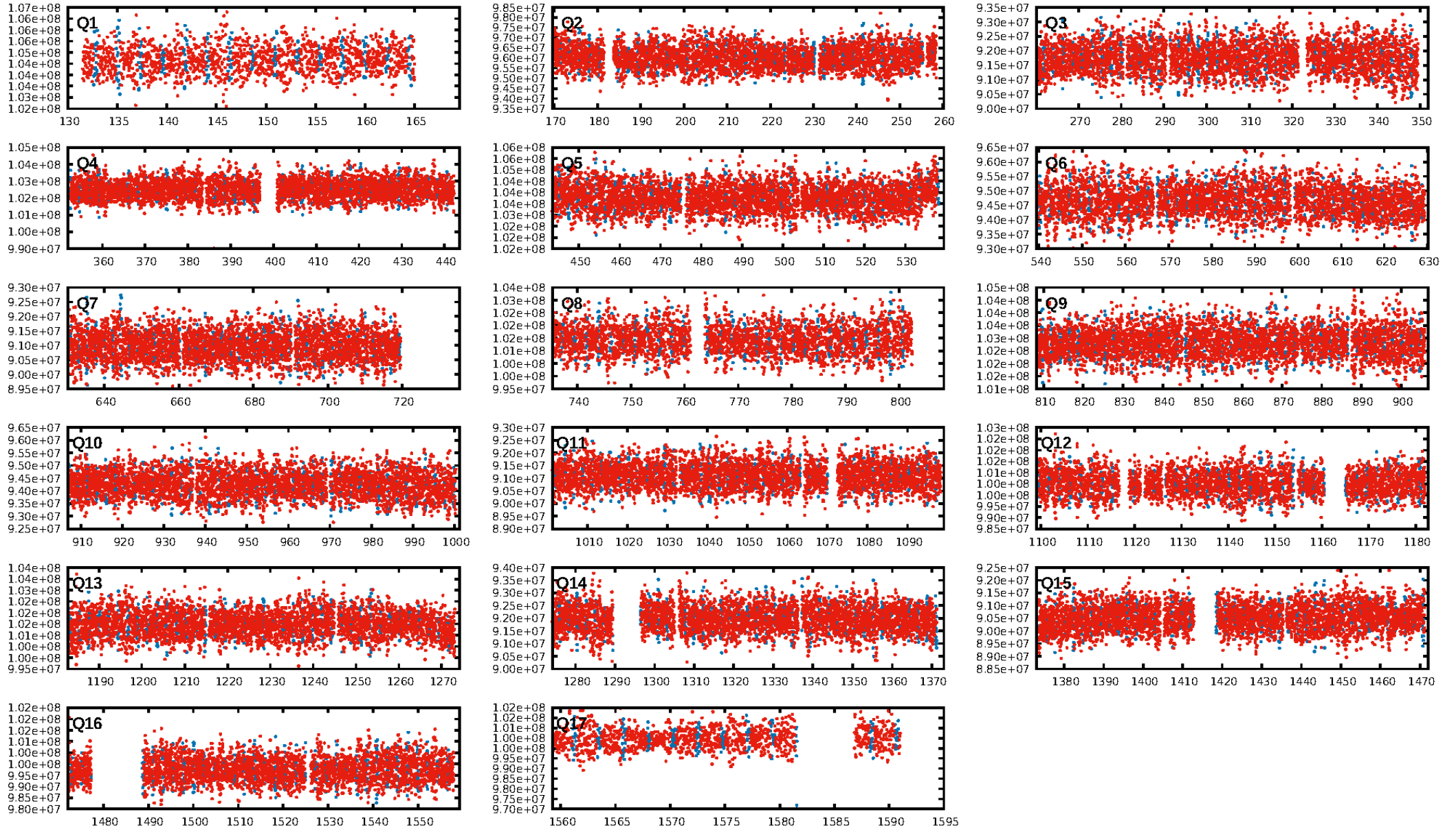
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: N/A  
ModelChiSquareGof-sig: N/A  
Bootstrap-pfa: N/A  
RollingBand-fgt: 1.00 [583/584]  
GhostDiagnostic-chr: 3.026  
Centroid-sig: 16.2%  
Centroid-so: 0.108 arcsec [1.23σ]  
OotOffset-rm: 2.013 arcsec [1.75σ]  
KicOffset-rm: 2.011 arcsec [1.84σ]  
OotOffset-st: 0/3/0/2 [5]  
KicOffset-st: 0/3/0/2 [5]  
DiffImageQuality-fgm: 0.60 [3/5]  
DiffImageOverlap-fno: 1.00 [17/17]

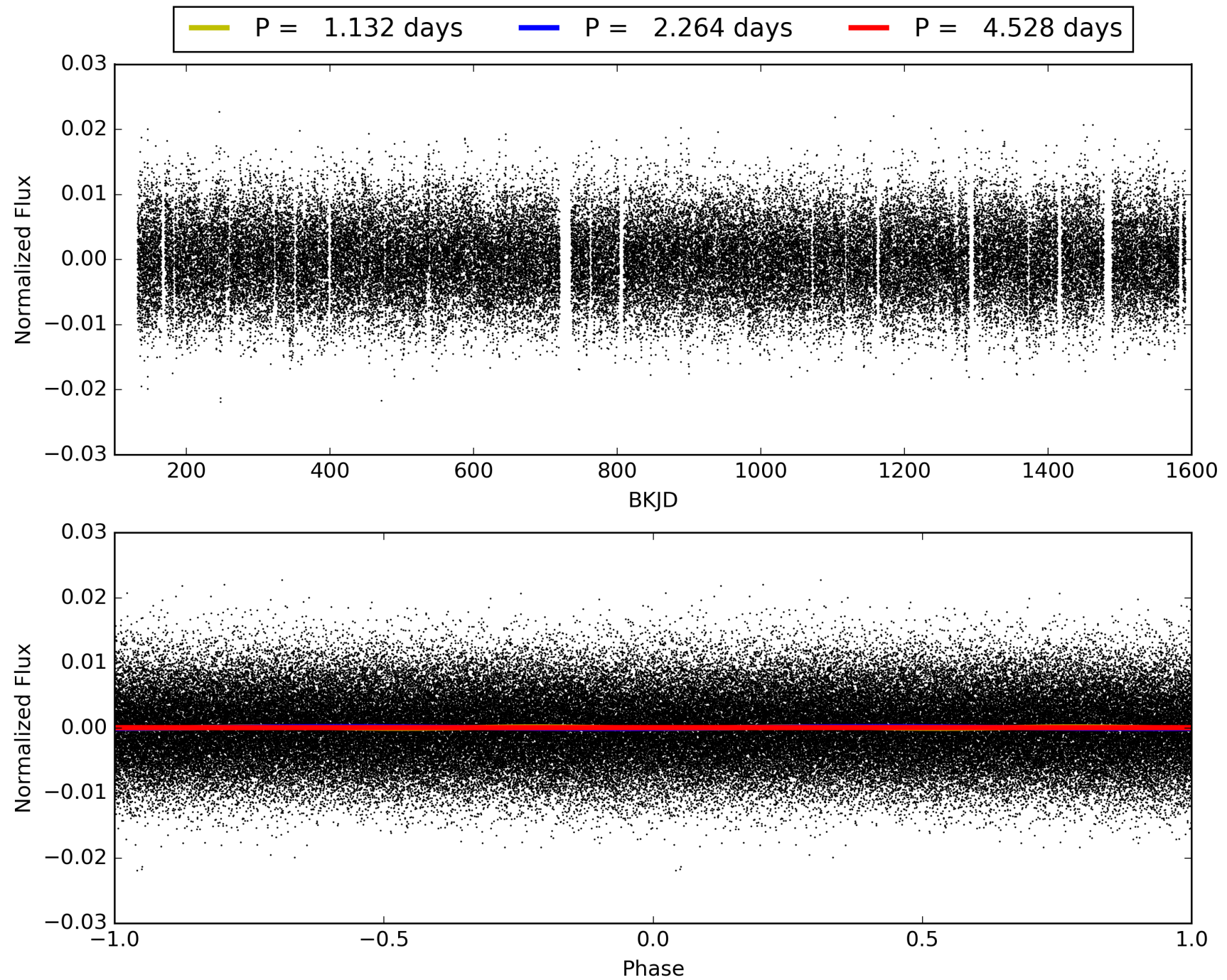
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 02:12:57 Z

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

# TCE 006465159-01, PDC Light Curves



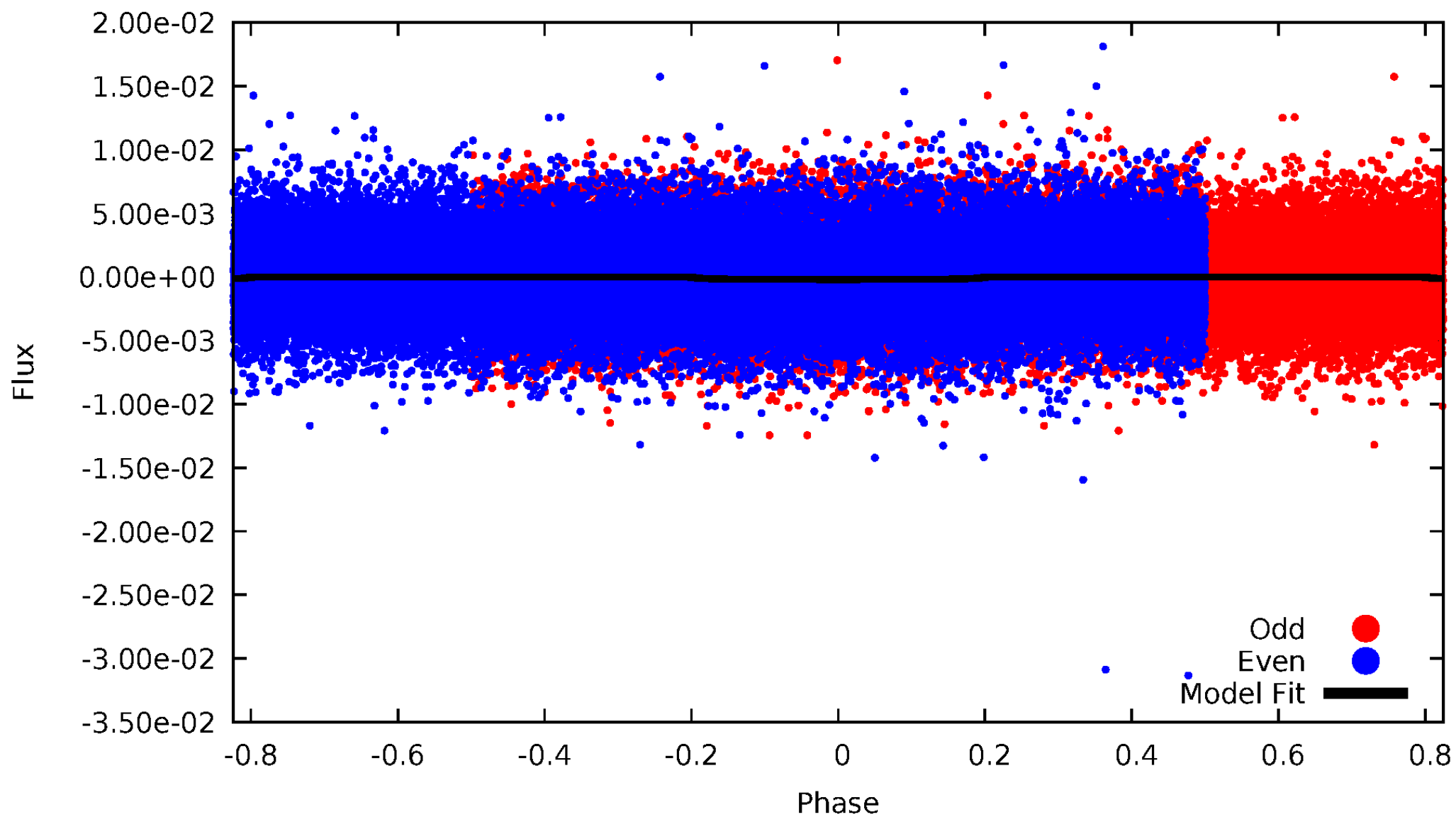
TCE 006465159-01





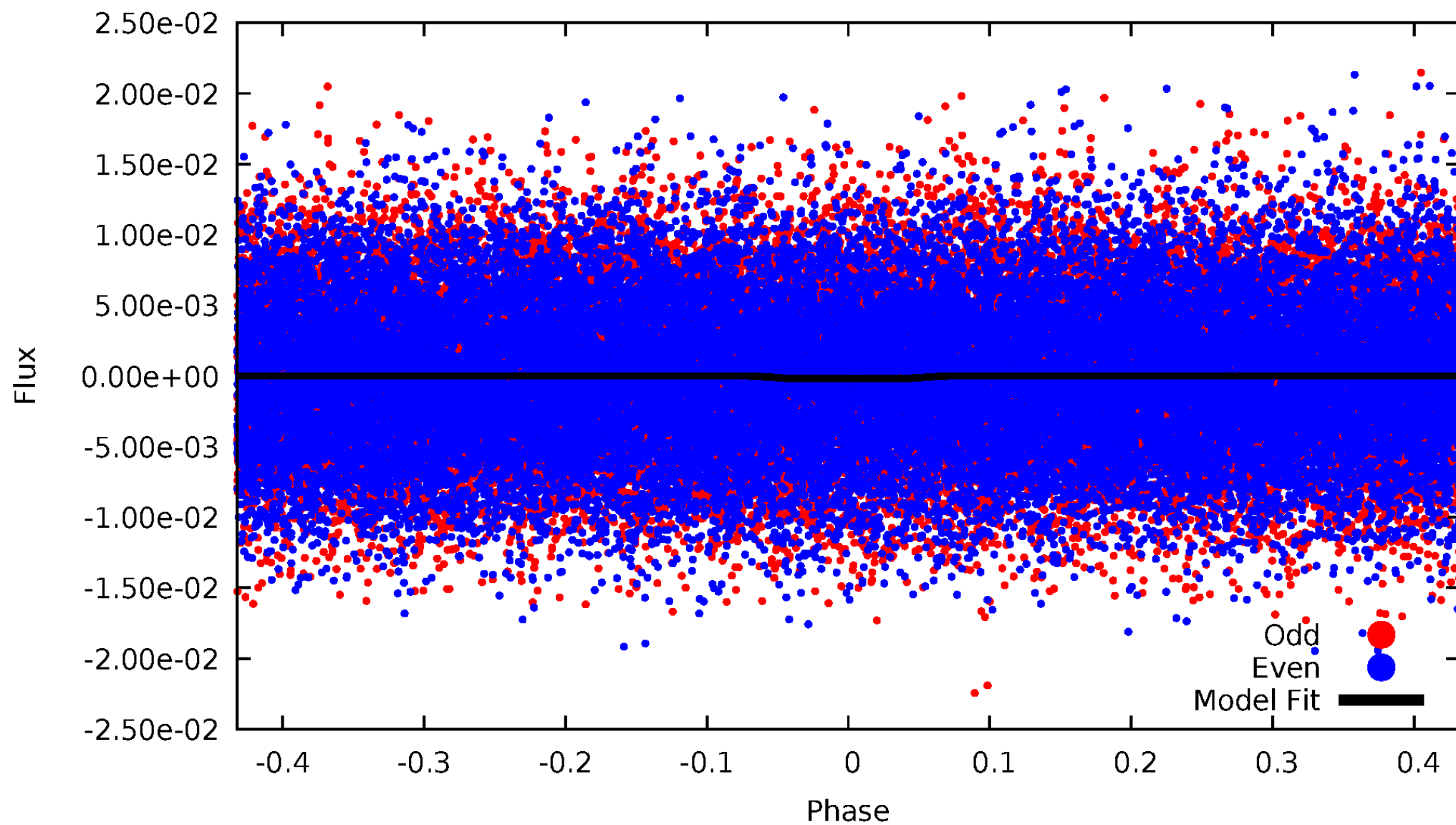
# DV Odd/Even

TCE 006465159-01



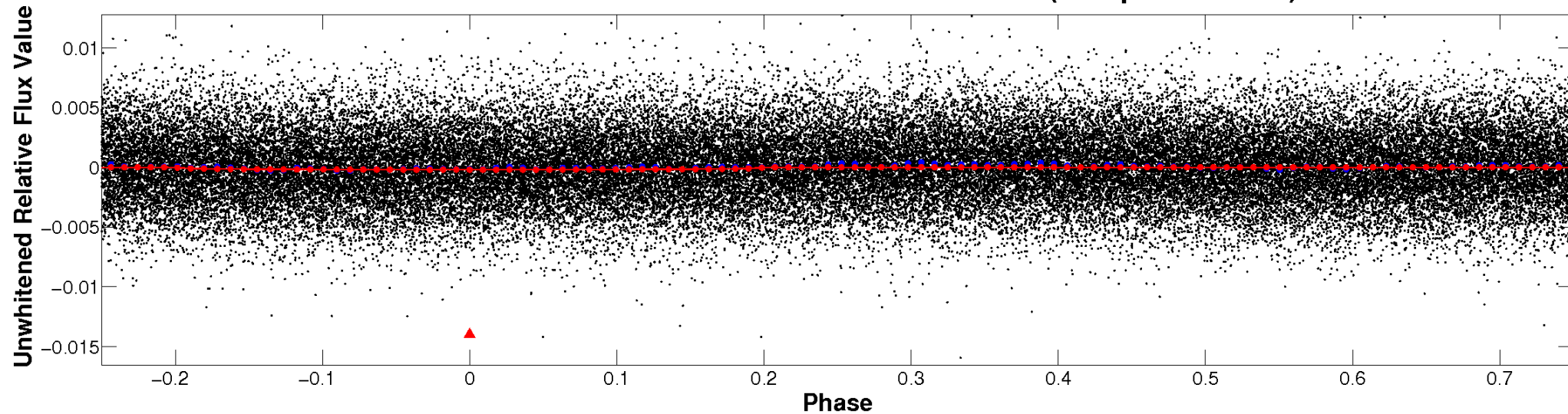
# ALT Odd/Even

TCE 006465159-01

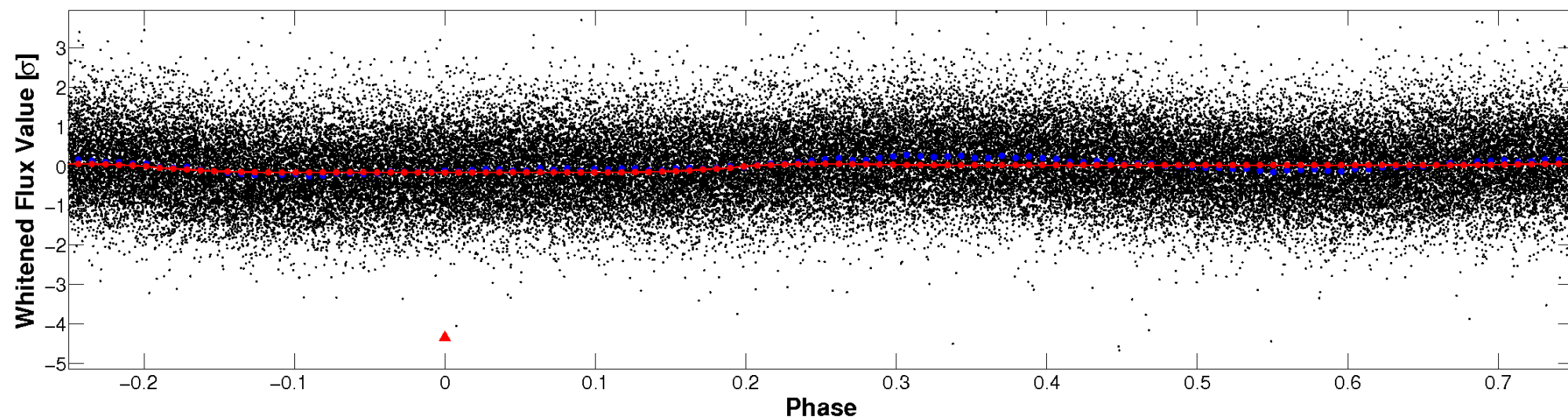


# Non-Whitened Vs. Whitened Light Curve

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

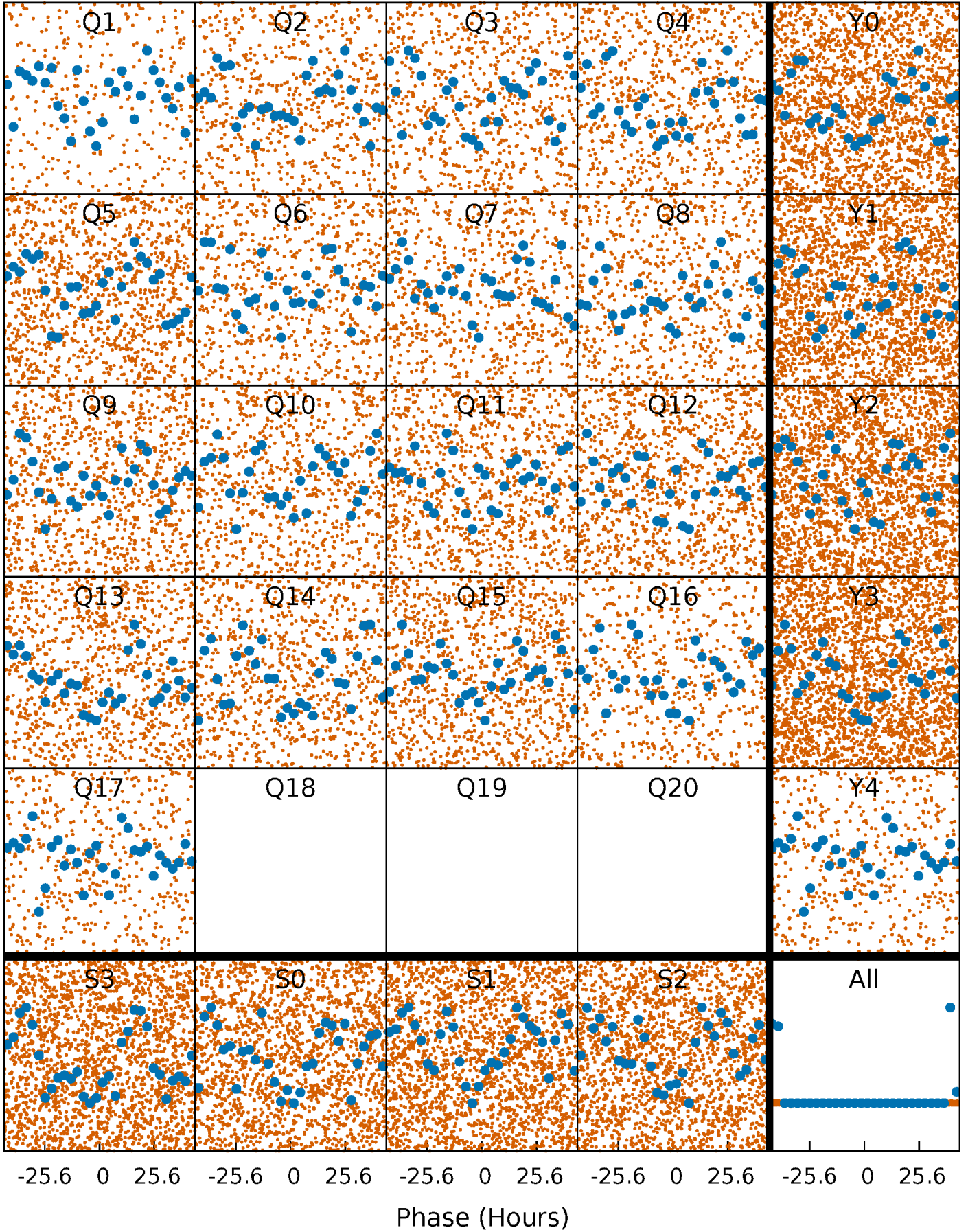


**Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)**



# PDC Quarter-Phased Transit Curves

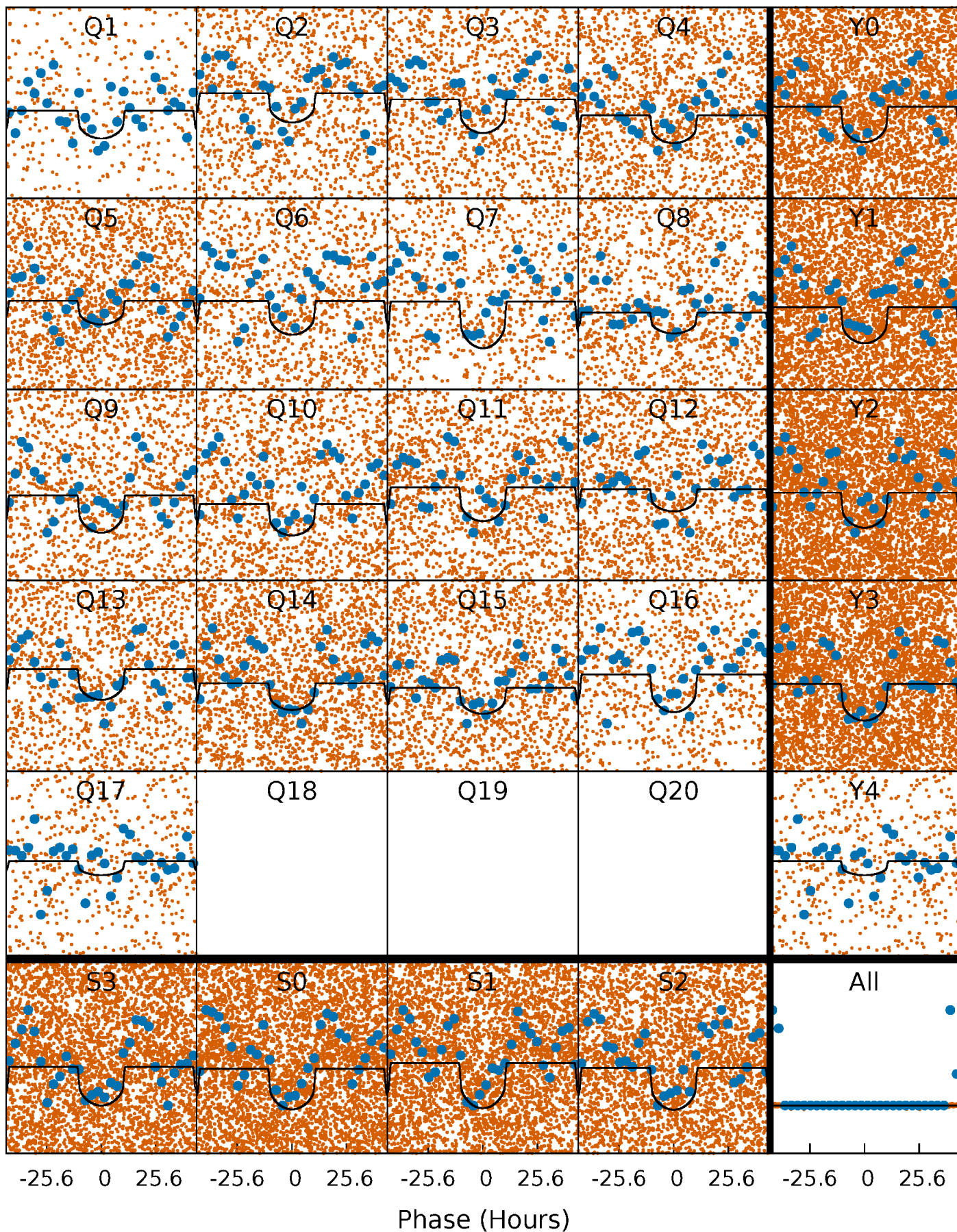
TCE 006465159-01 P= 2.263779 Days  $T_0=131.662112$  (BKJD)





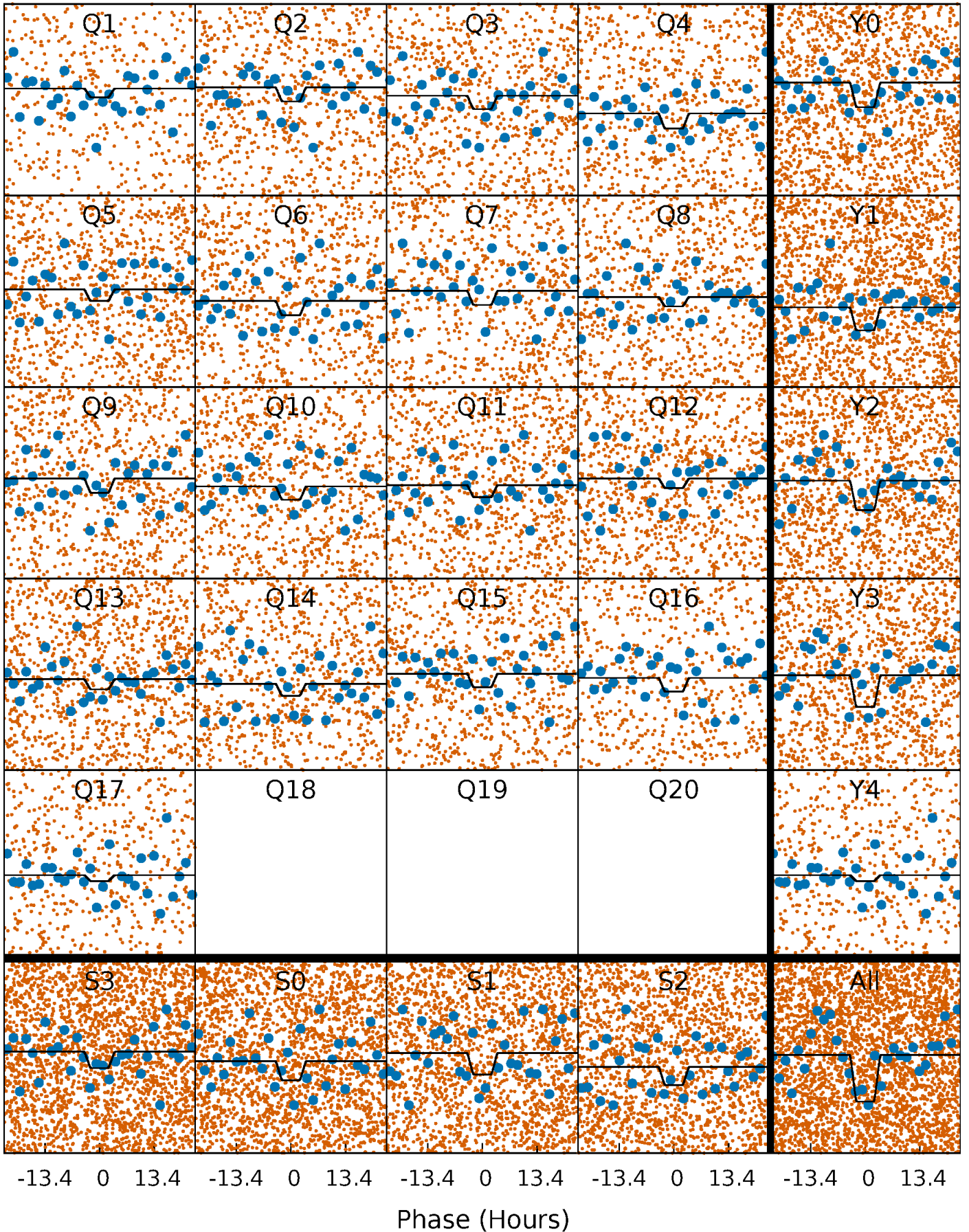
# DV Quarter-Phased Transit Curves

TCE 006465159-01 P= 2.263779 Days  $T_0=131.662112$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

TCE 006465159-01 P= 2.263445 Days  $T_0=131.571403$  (BKJD)

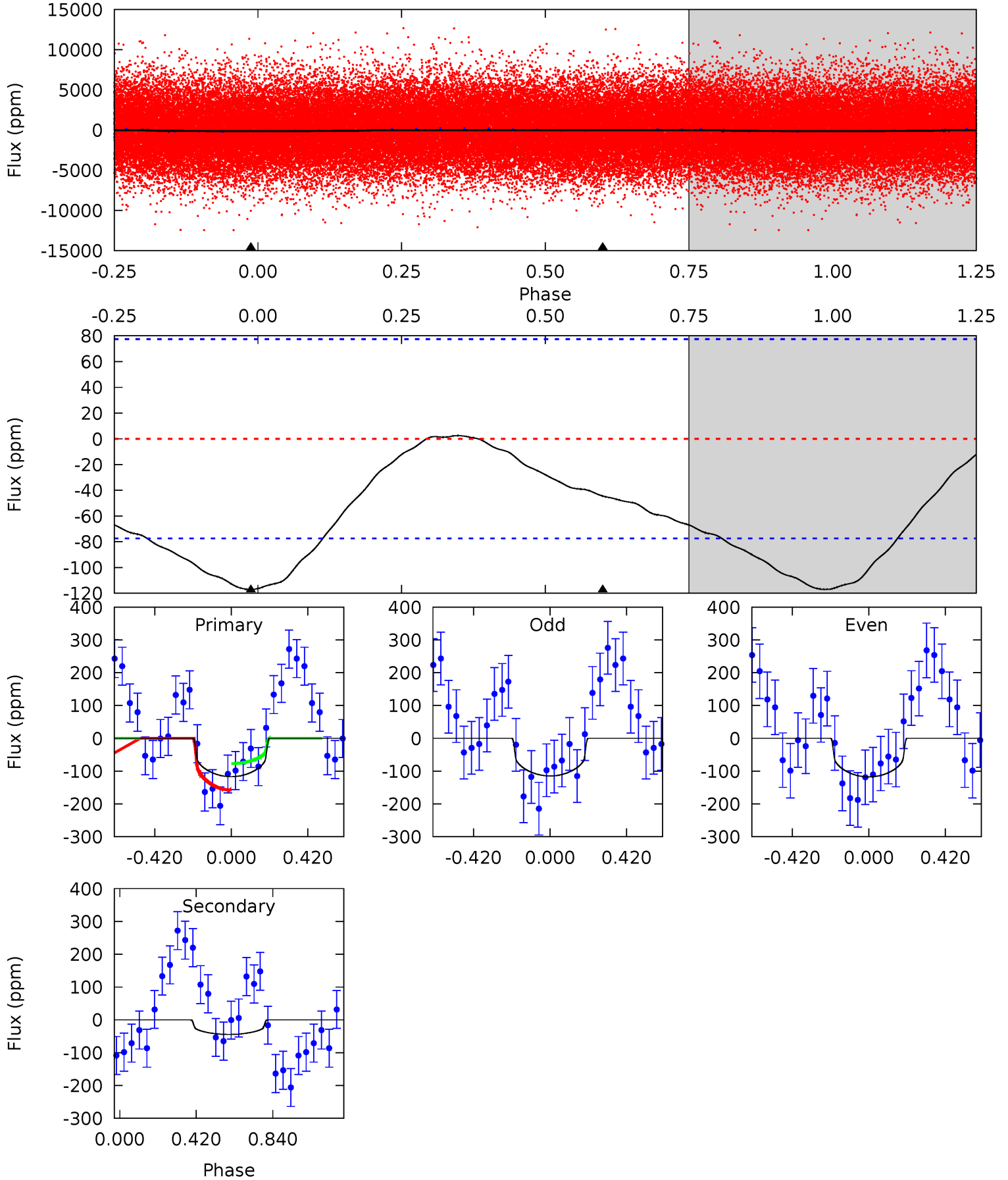




# DV Model-Shift Uniqueness Test

006465159-01, P = 2.263779 Days, E = 129.398333 Days

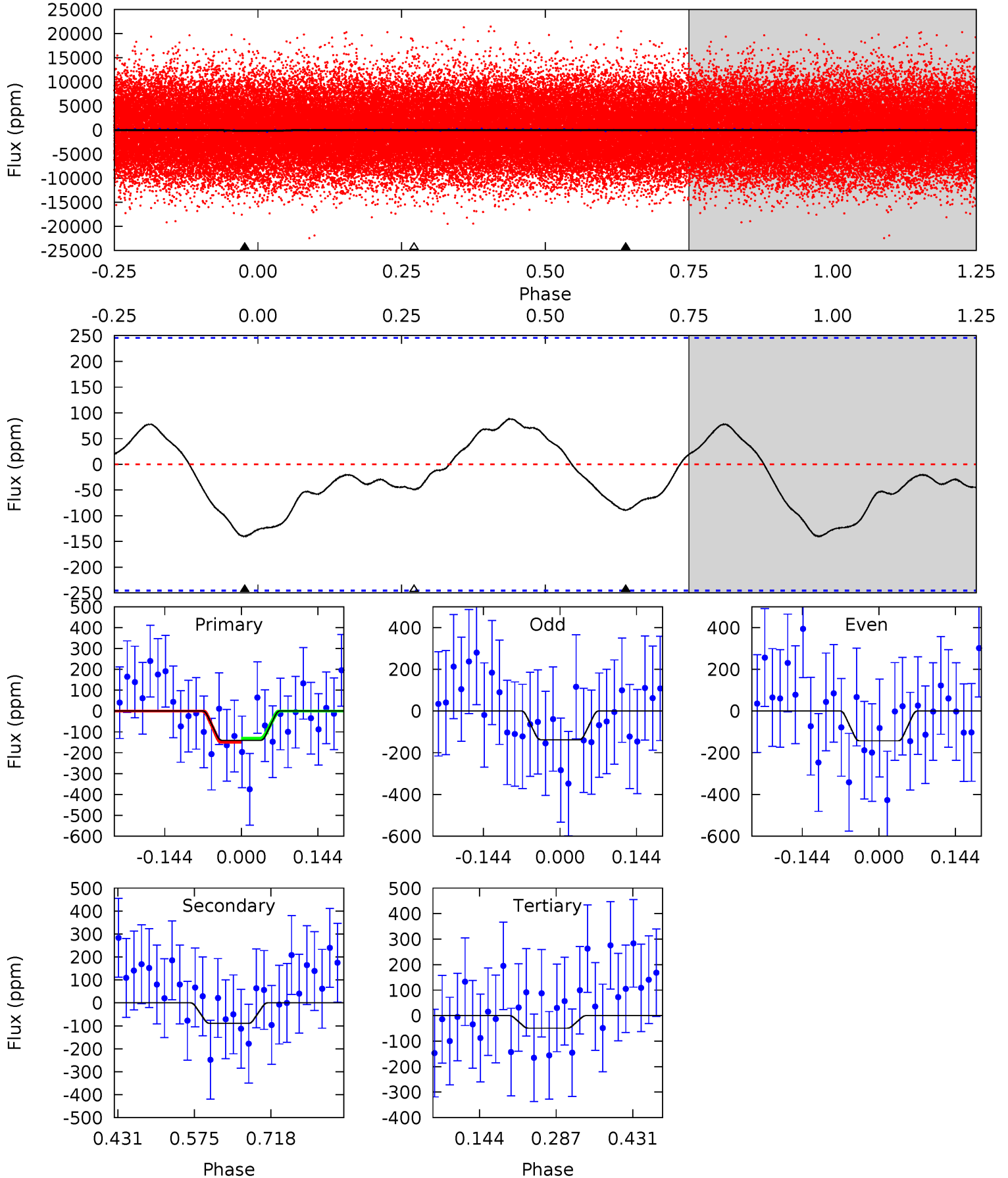
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
6.43	2.44	0	0	4.25	0.81	0.30	6.43	6.43	2.44	2.44	0.08	0.89	0.02	2.23



# Alt Model-Shift Uniqueness Test

006465159-01, P = 2.263445 Days, E = 129.307958 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
2.56	1.64	0.90	0	4.49	1.46	0.91	1.66	2.56	0.74	1.64	0.05	0.91	0.39	0.17





### Stellar Parameters For KIC 006465159

	$T_{\text{eff}} (K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$5952^{+178}_{-178}$	$3.830^{+0.584}_{-0.146}$	$-0.440^{+0.300}_{-0.250}$	$2.085^{+0.500}_{-1.084}$	$1.072^{+0.154}_{-0.212}$	$0.167^{+1.187}_{-0.065}$
	+3%/-3%	+15%/-4%	+68%/-57%	+24%/-52%	+14%/-20%	+712%/-39%
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 006465159-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	$A_{obs}$
DV	$-44 \pm 18$	$2.91^{+0.69}_{-0.82}$	$2789^{+225}_{-386}$	$4280^{+415}_{-449}$	$3.447^{+3.713}_{-1.671}$
Alt.	$-89 \pm 55$	$2.90^{+0.70}_{-0.83}$	$2787^{+231}_{-446}$	$5045^{+633}_{-945}$	$6.841^{+8.408}_{-4.206}$

$T_{max}$  = 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

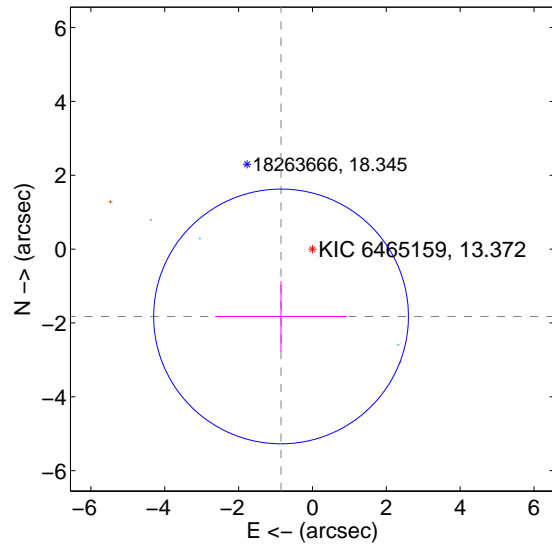
Supplemental centroid analysis for 006465159-01. Kepler magnitude: 13.37. Transit SNR 23.35

There are 3 quarters with good PRF difference image offsets

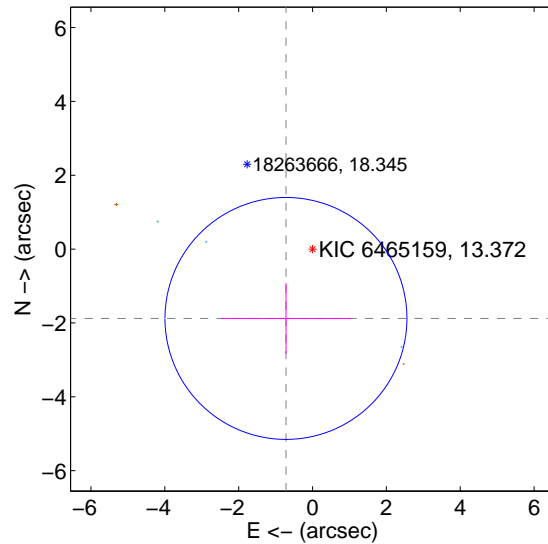
The direct PRF centroid is offset from the target star catalog position by about 0.19 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$2.013 \pm 1.150$	1.75	$0.850 \pm 1.784$	$-1.824 \pm 0.958$
PRF-fit source offset from KIC position	$2.011 \pm 1.092$	1.84	$0.720 \pm 1.758$	$-1.878 \pm 0.956$
photometric centroid source offset	$0.11 \pm 0.09$	1.23	$0.04 \pm 0.11$	$-0.10 \pm 0.08$

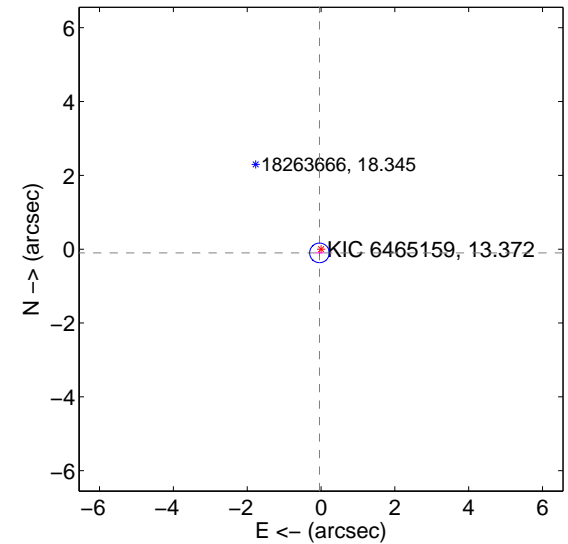
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

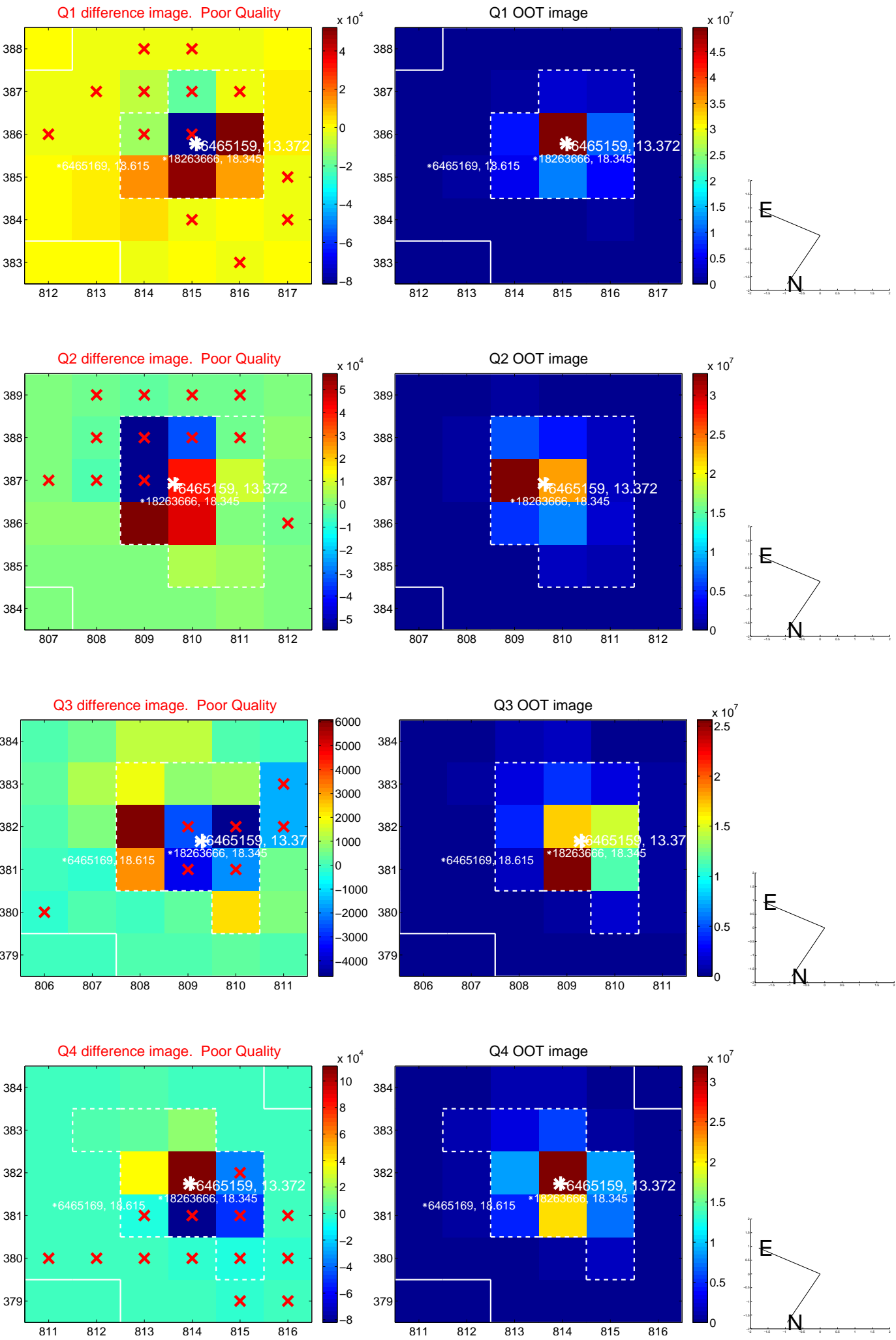


offset from photometric centroids

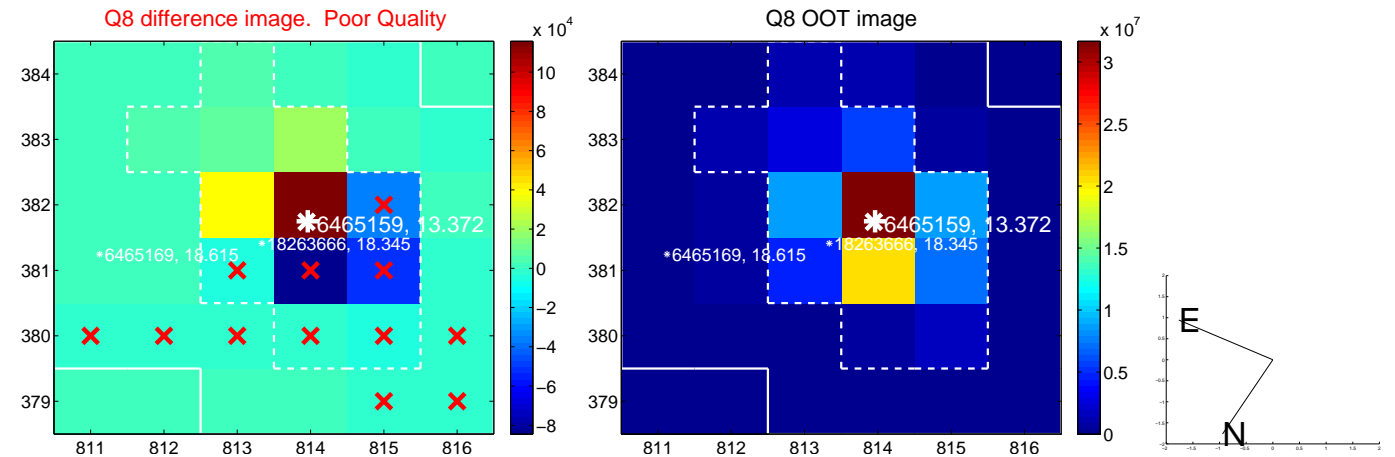
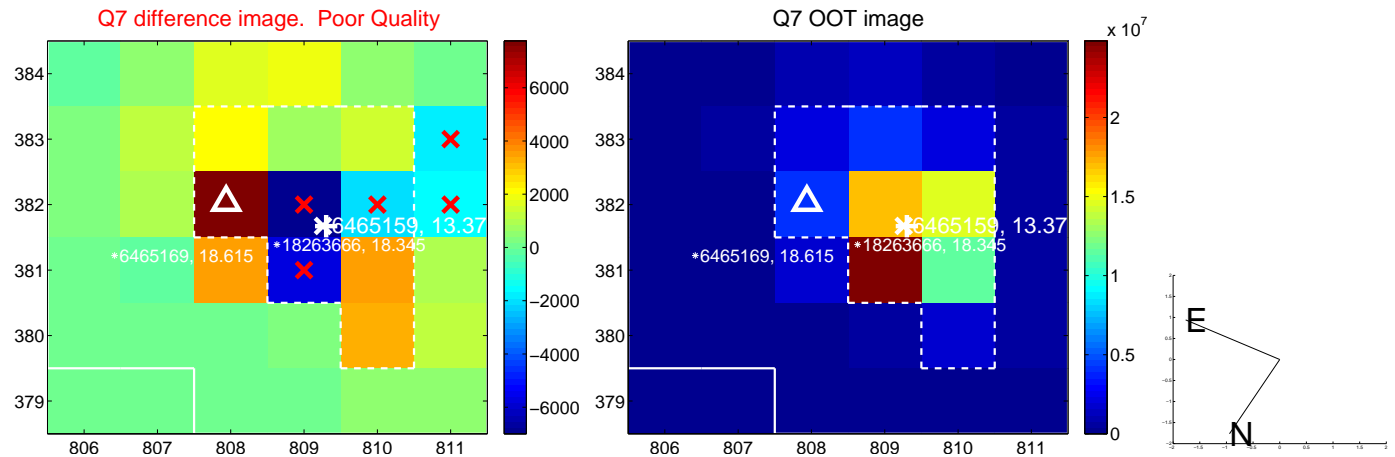
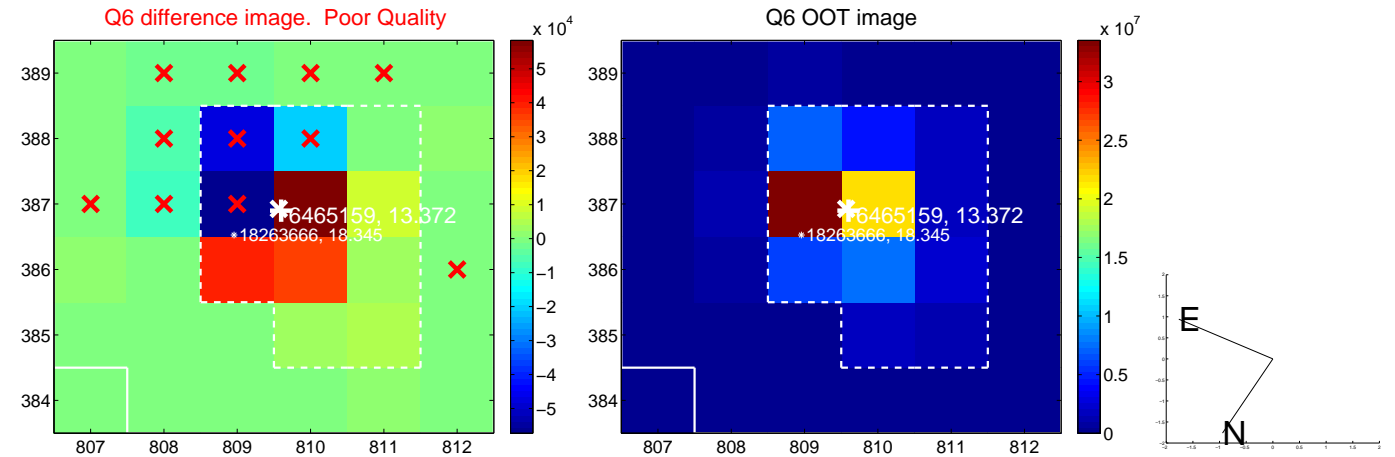
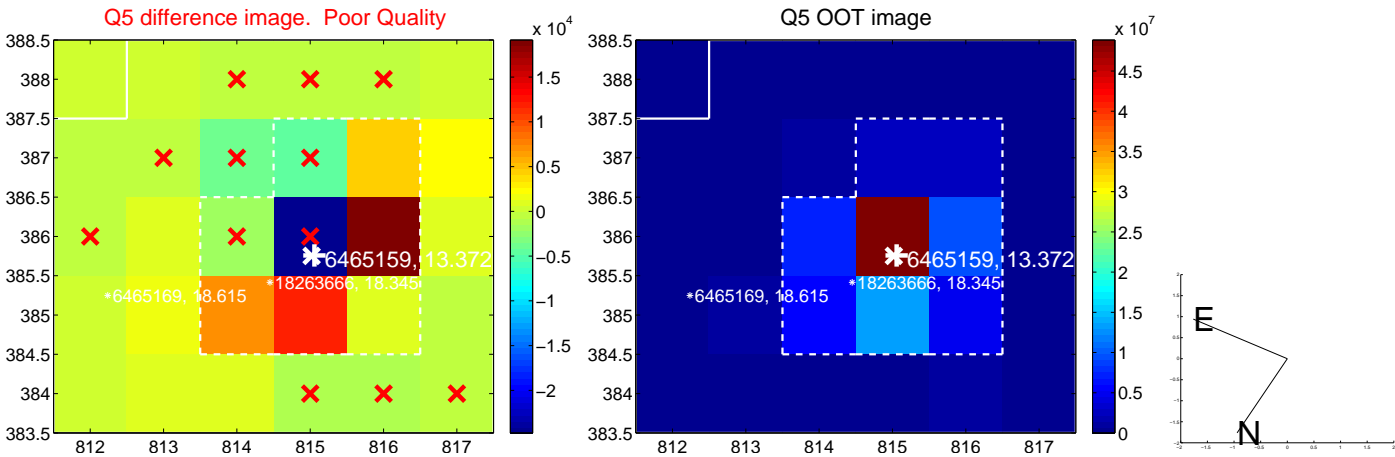


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: three-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

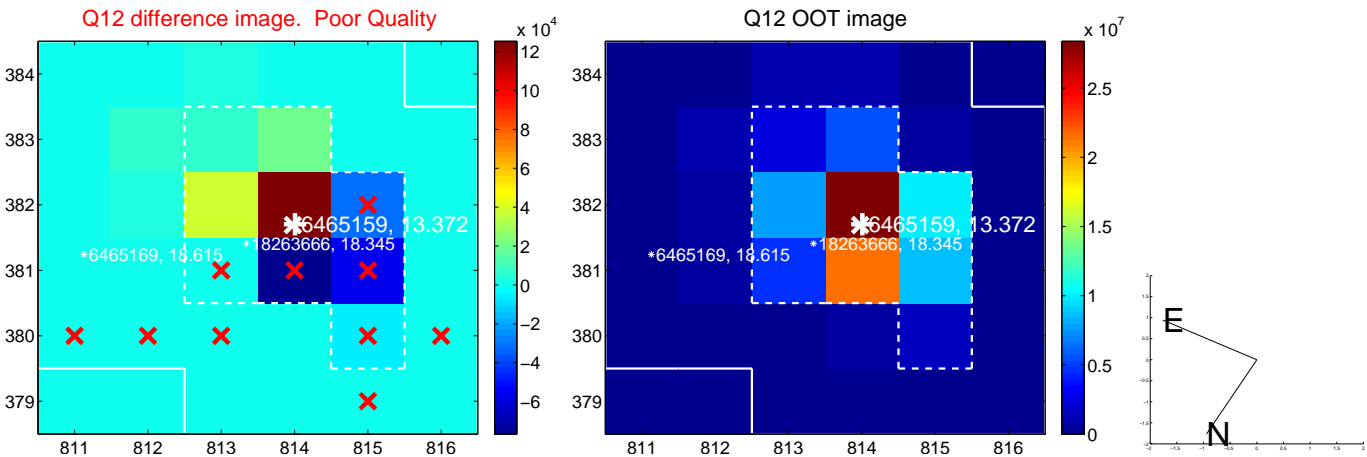
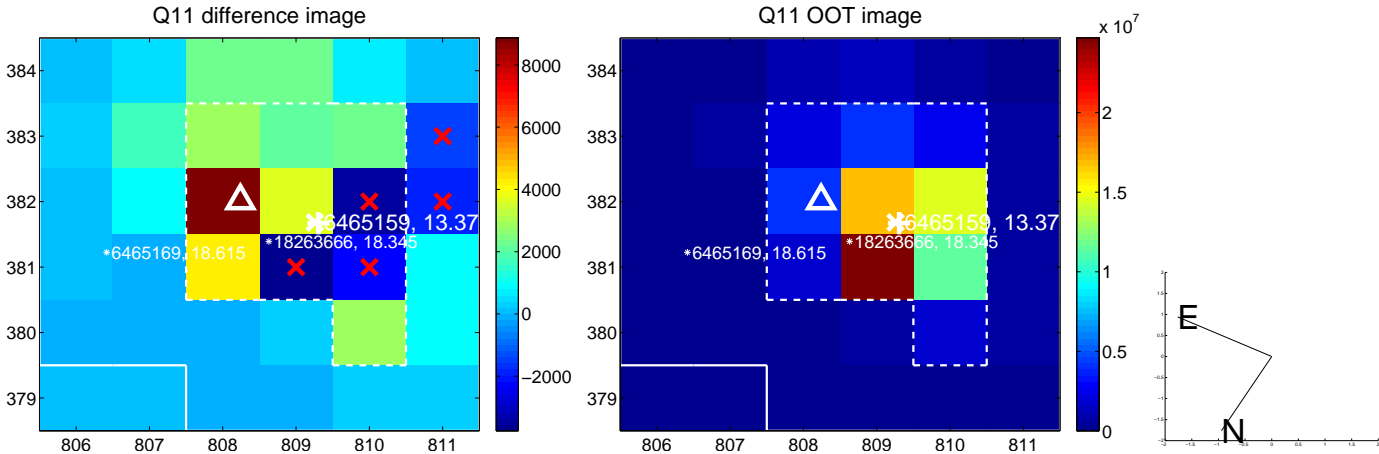
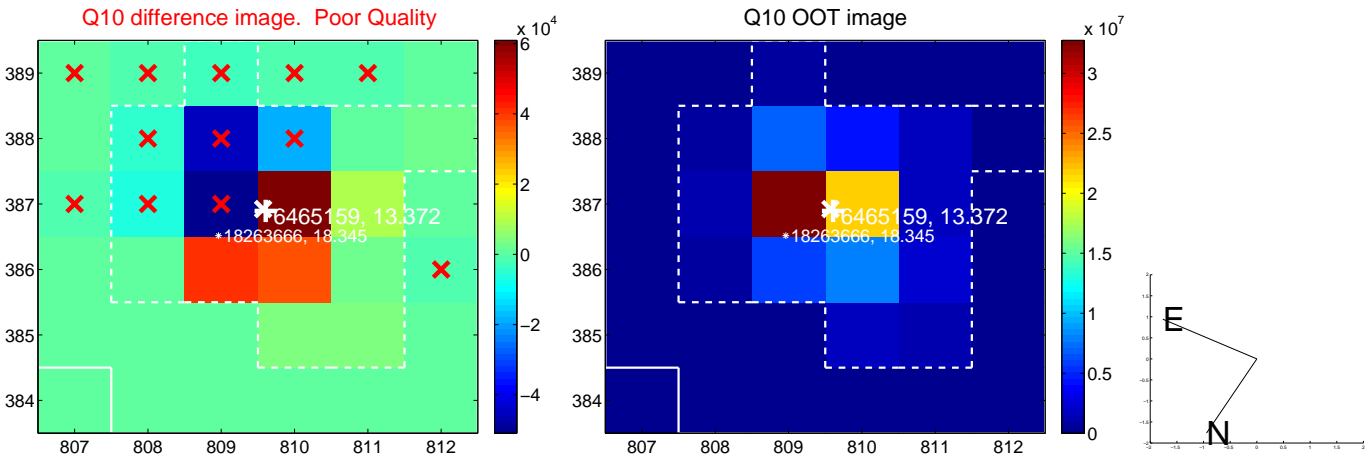
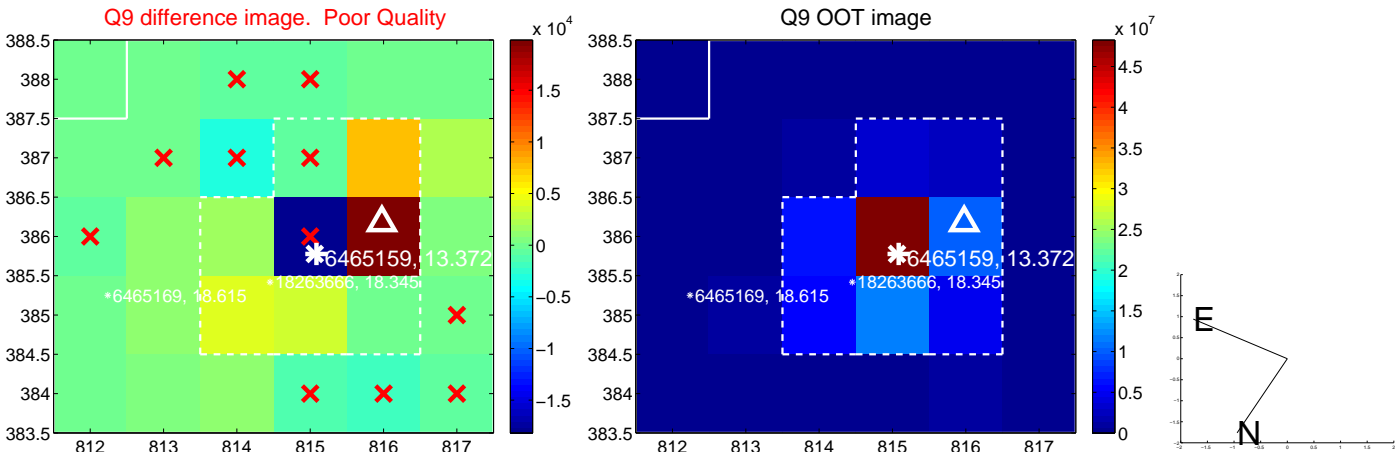


white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

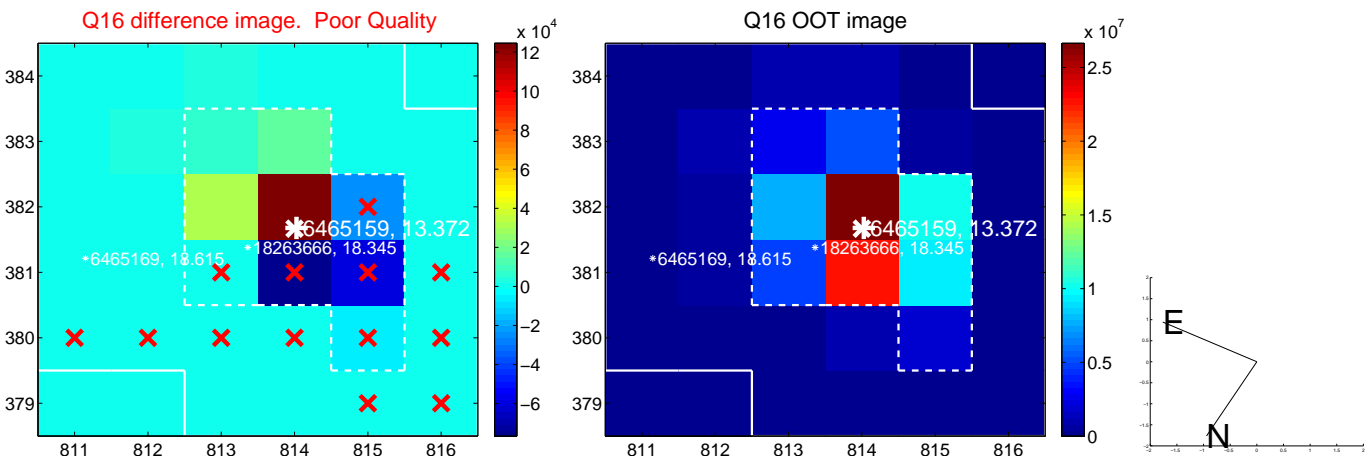
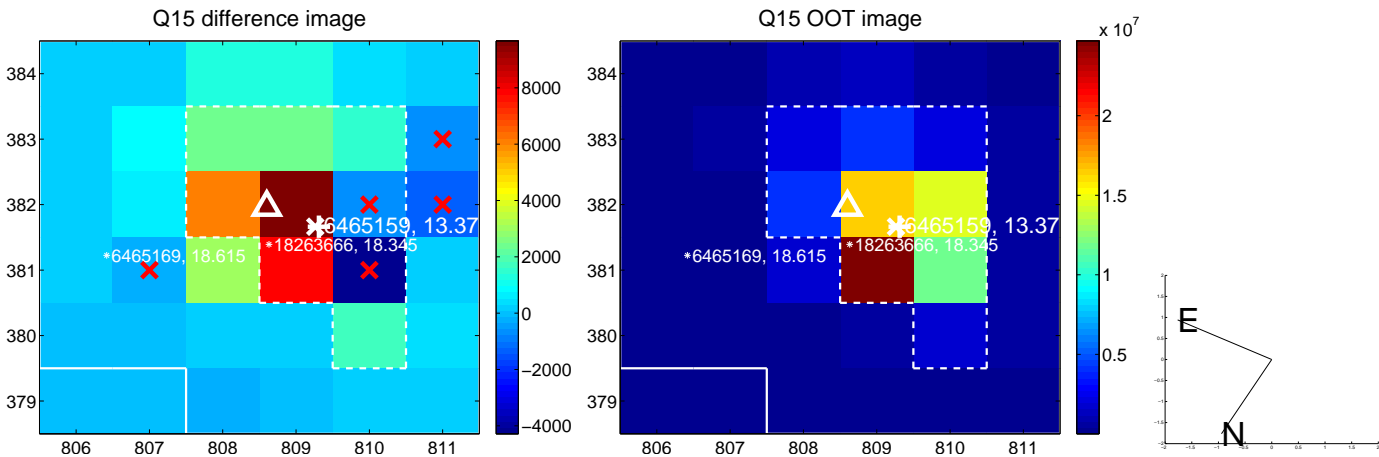
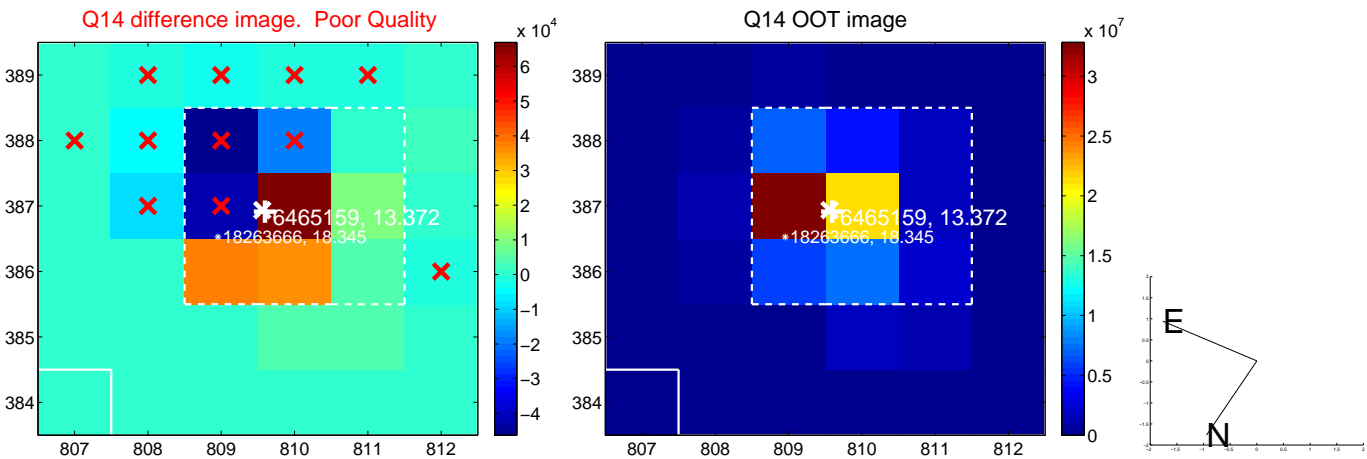
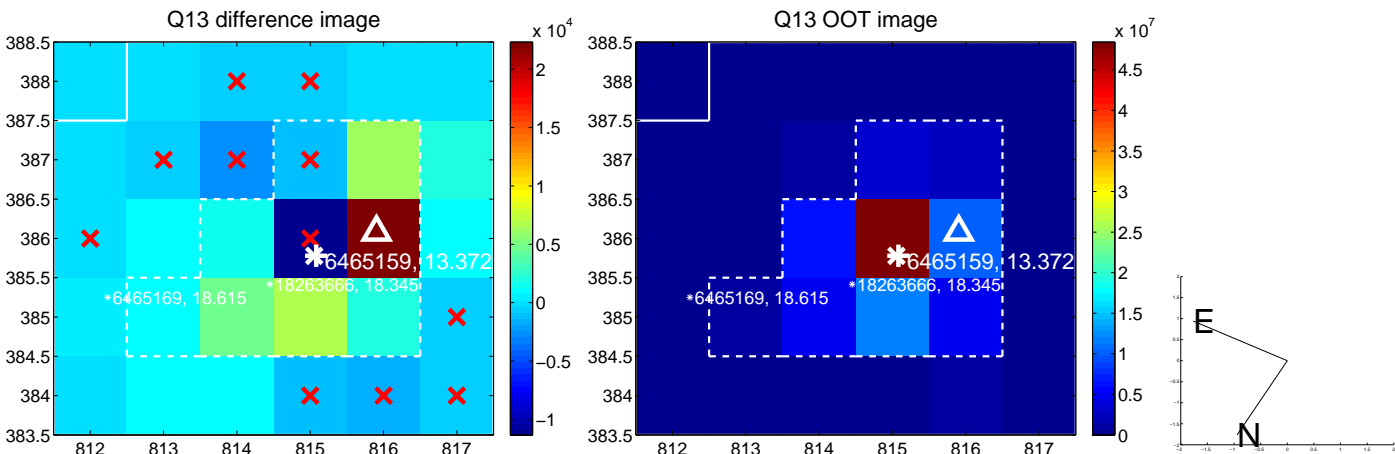




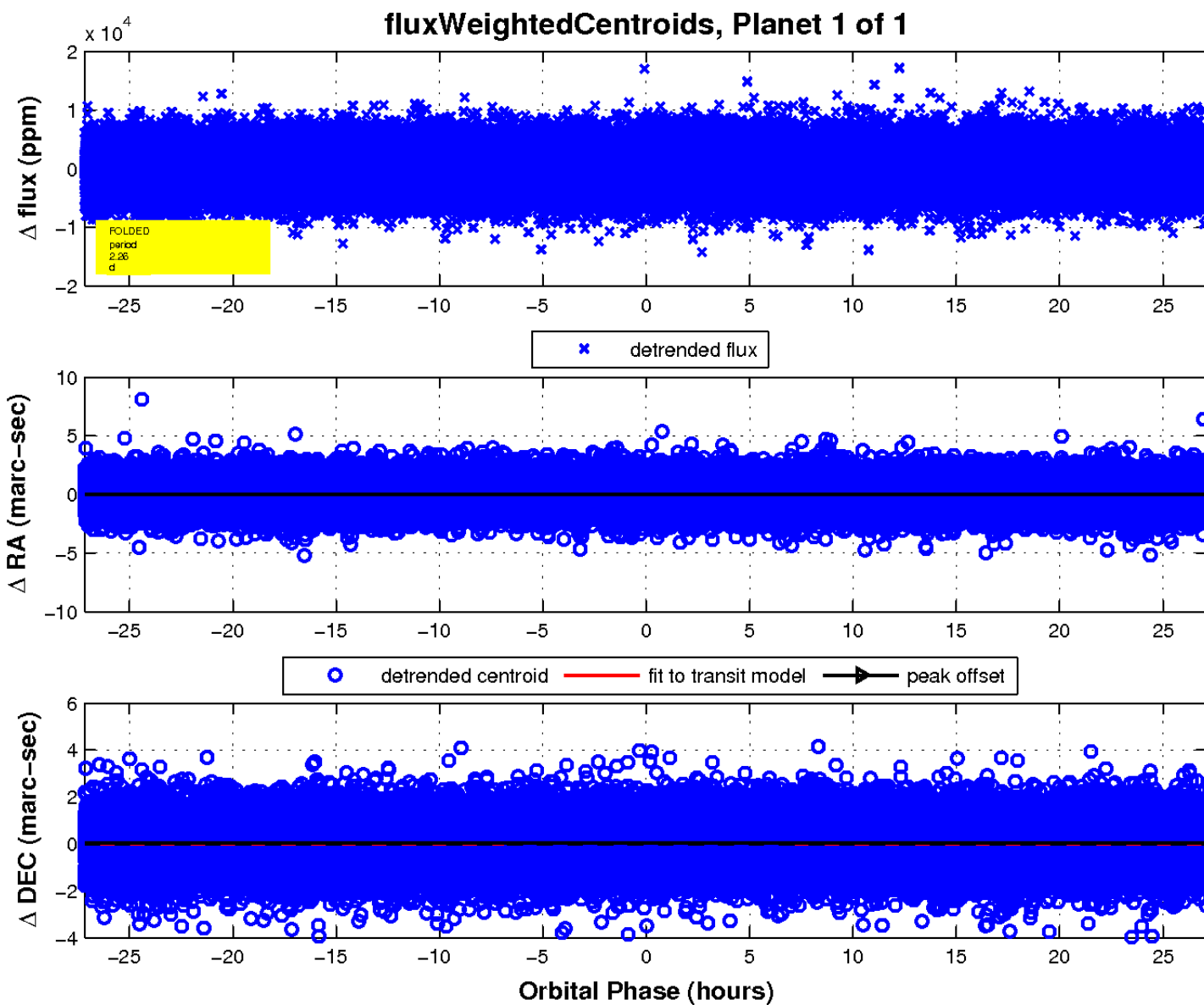
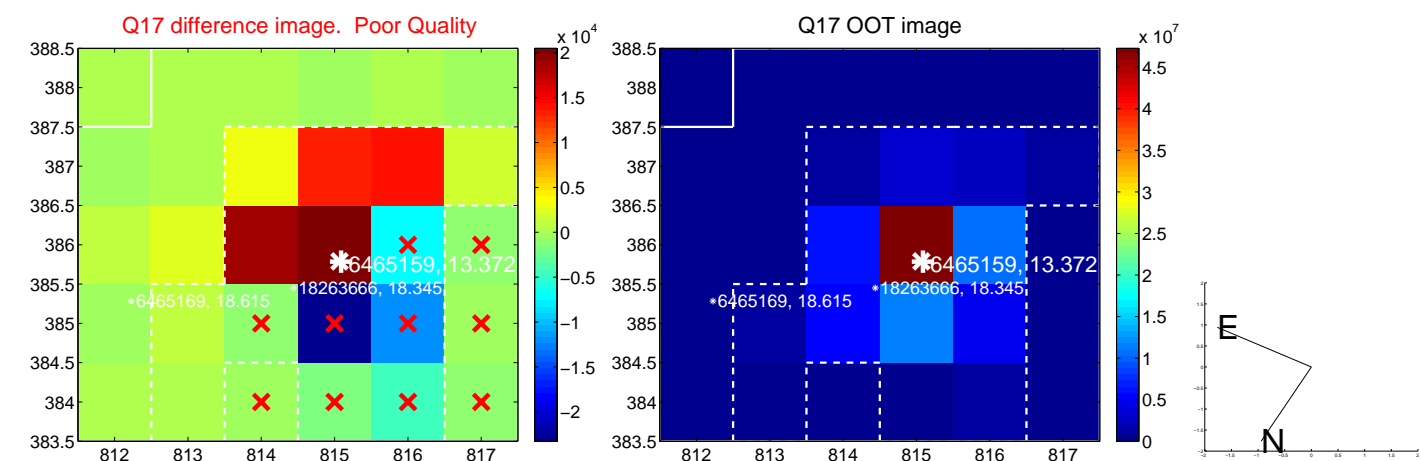
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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.



UKIRT Image

Declination

