

# KIC 010591855

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
010591855-01	OBS	2845.01	1.574077	131.865551	188.7	1.687	14.9	15.0	0.65	4313	1.11	235.10

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
010591855-01	OBS	PC	1.00	0	0	0	0	NO_COMMENT

**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 010591855-01

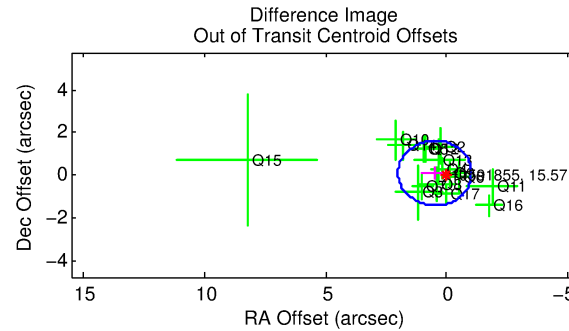
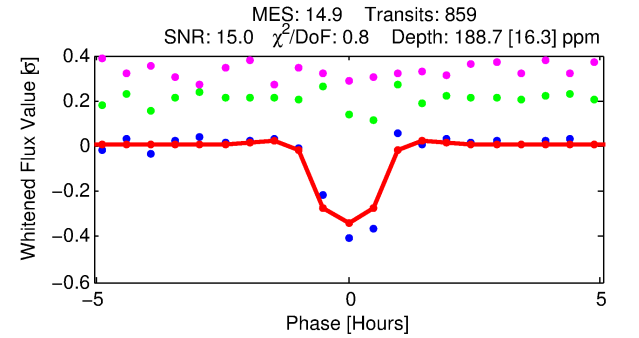
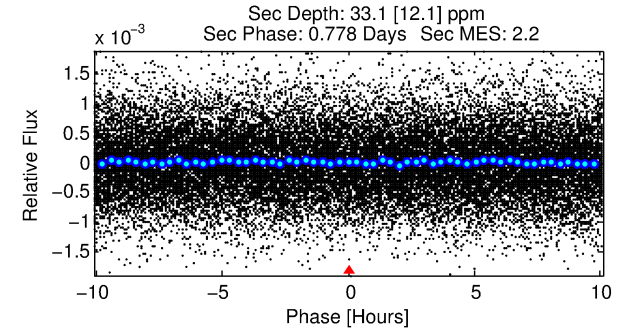
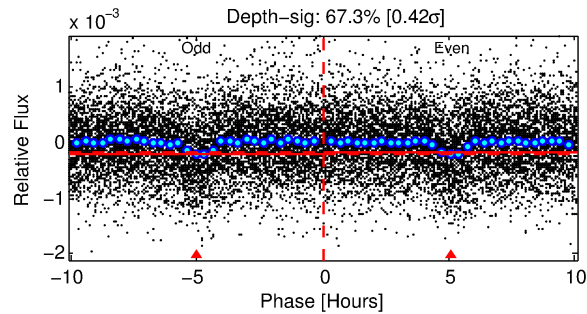
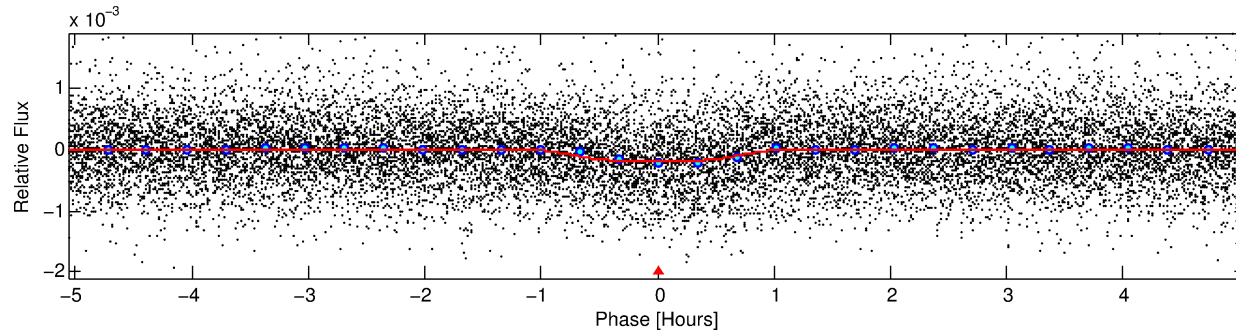
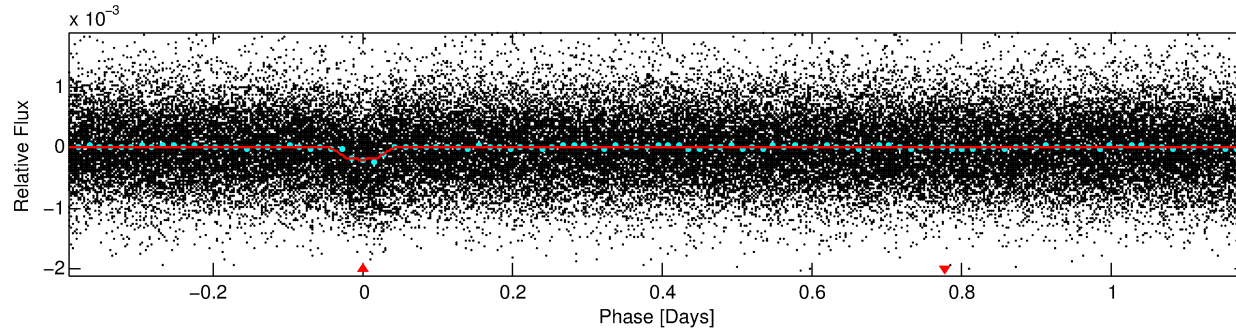
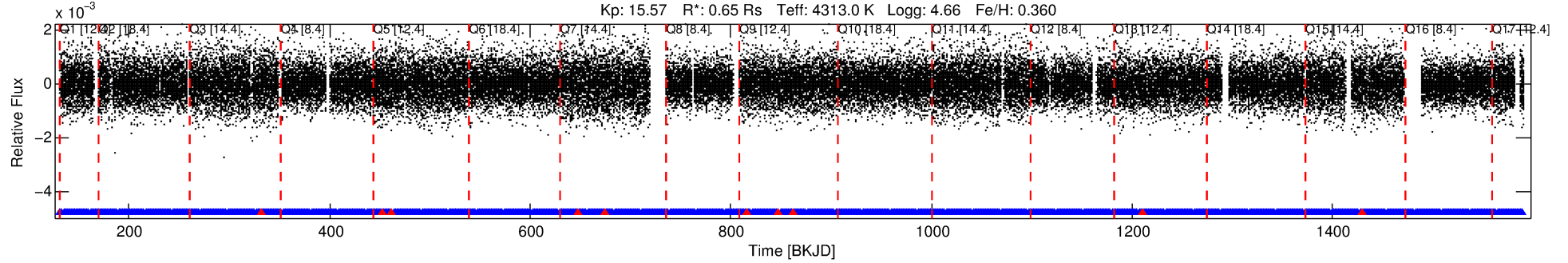
No Significant Match Found

# DV One-Page Summary

KIC: 10591855 Candidate: 1 of 1 Period: 1.574 d

KOI: K02845.01 Corr: 0.941

Kp: 15.57 R\*: 0.65 Rs Teff: 4313.0 K Logg: 4.66 Fe/H: 0.360



## DV Fit Results:

Period = 1.57408 [0.00001] d  
Epoch = 131.8656 [0.0016] BKJD  
Rp/R\* = 0.0156 [0.0110]  
a/R\* = 3.53 [8.09]  
b = 0.90 [0.57]  
Seff = 235.10 [25.79]  
Teff = 998 [27] K  
Rp = 1.11 [0.78] Re  
a = 0.0236 [0.0012] AU  
Ag = 8.25 [12.03] [0.60σ]  
Teffp = 2616 [954] K [1.70σ]

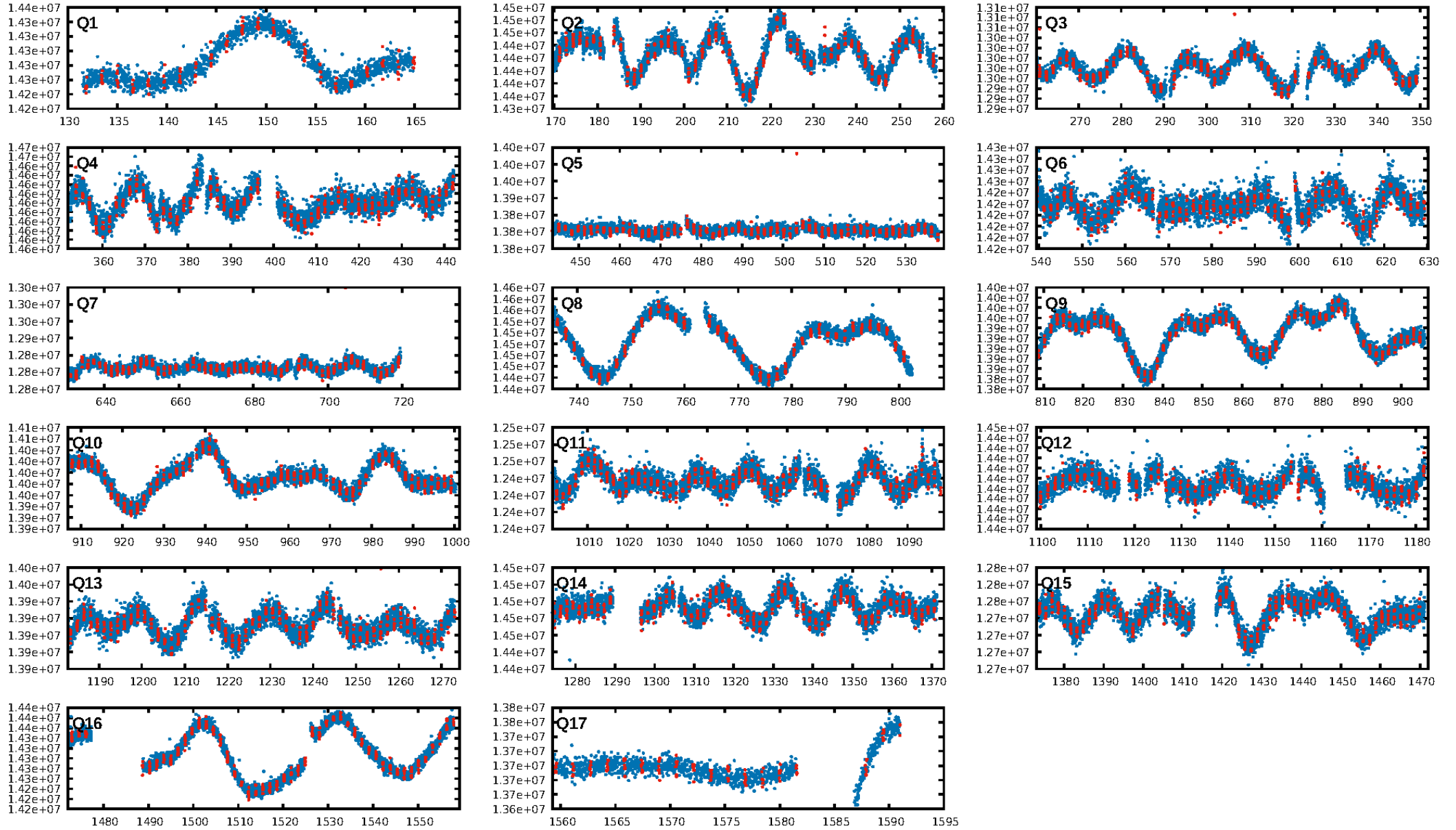
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: N/A  
ModelChiSquareGof-sig: N/A  
Bootstrap-pfa: 2.26e-48  
RollingBand-fgt: 0.99 [809/819]  
GhostDiagnostic-chr: 7.262  
Centroid-sig: 0.7%  
Centroid-so: 2.827 arcsec [2.84σ]  
OotOffset-rm: 0.502 arcsec [1.00σ]  
KicOffset-rm: 0.790 arcsec [1.42σ]  
OotOffset-st: 4/4/4/4 [16]  
KicOffset-st: 4/4/4/4 [16]  
DiffImageQuality-fgm: 0.88 [14/16]  
DiffImageOverlap-fno: 1.00 [17/17]

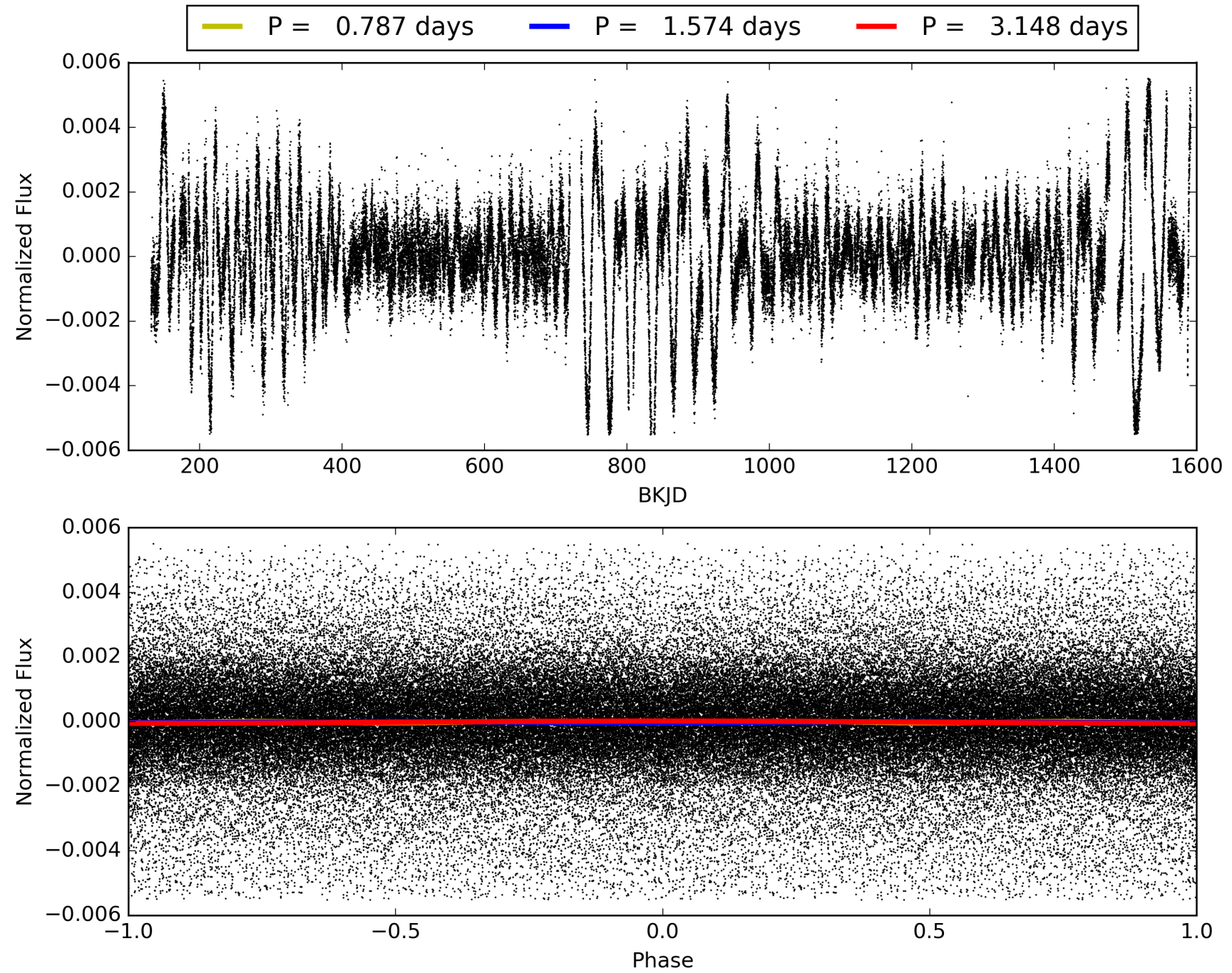
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 00:23:13 Z

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

# TCE 010591855-01, PDC Light Curves

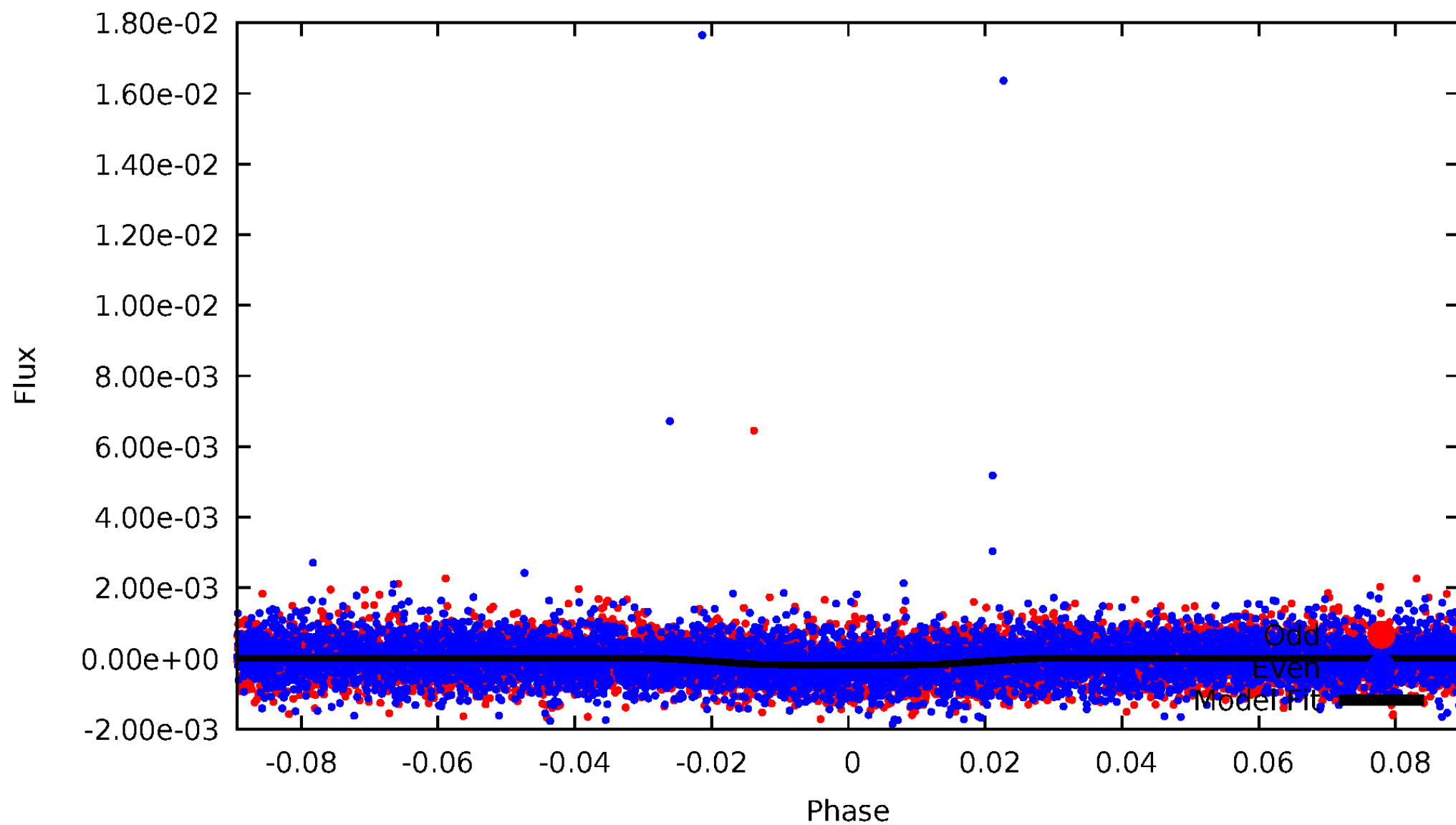


# TCE 010591855-01



# DV Odd/Even

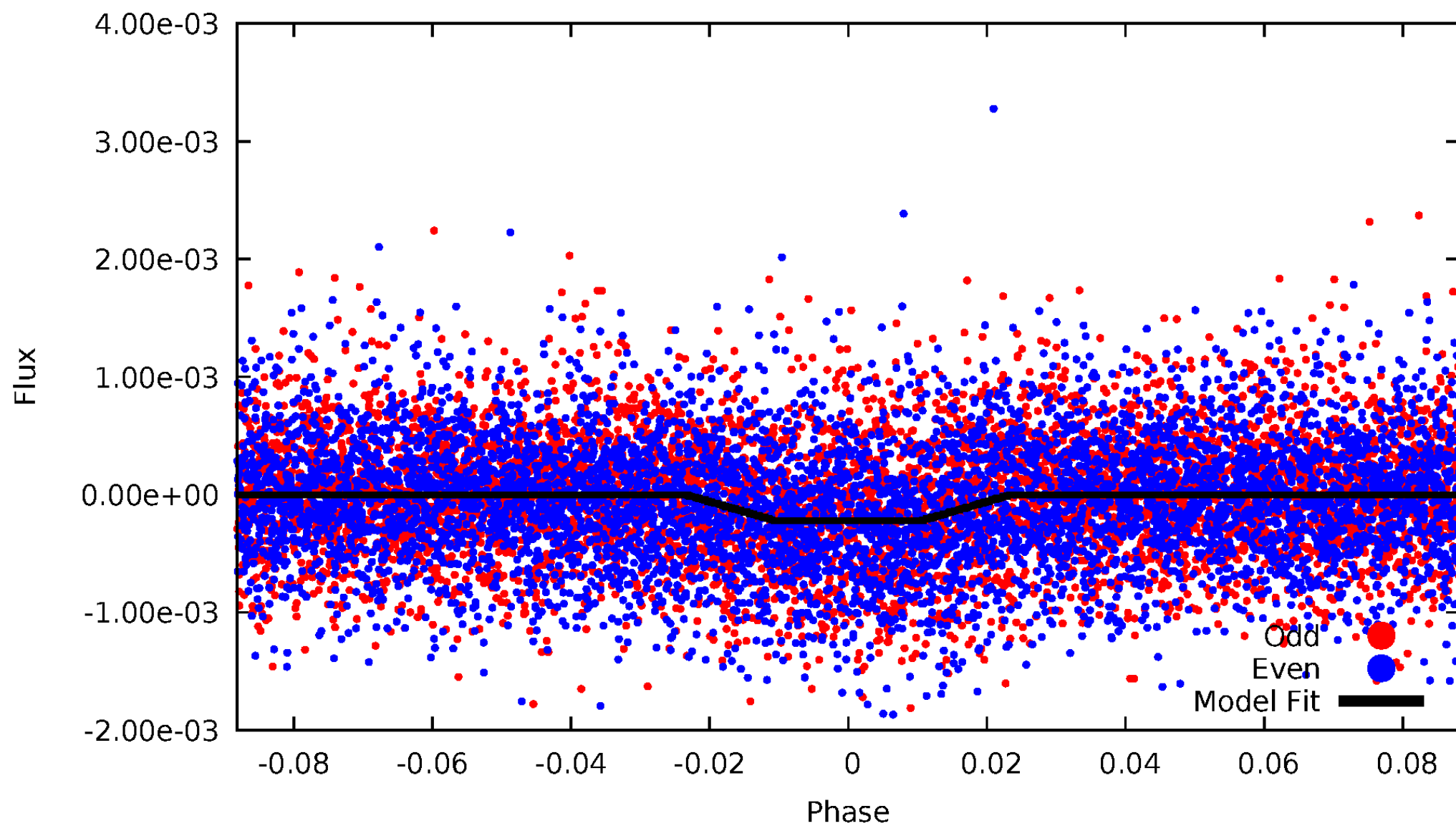
TCE 010591855-01



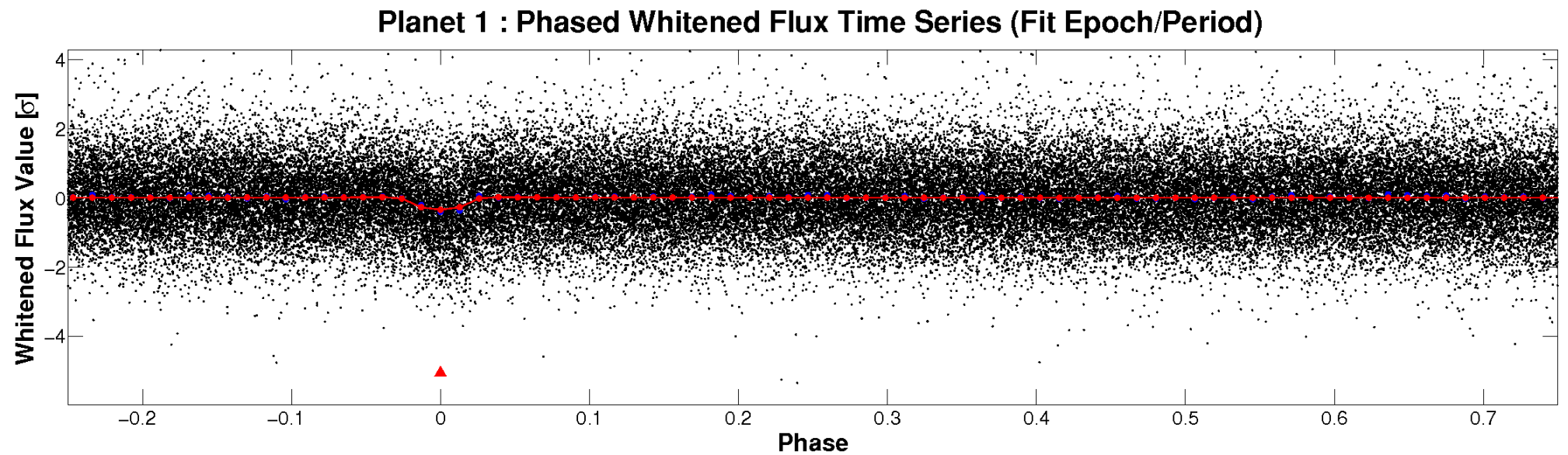
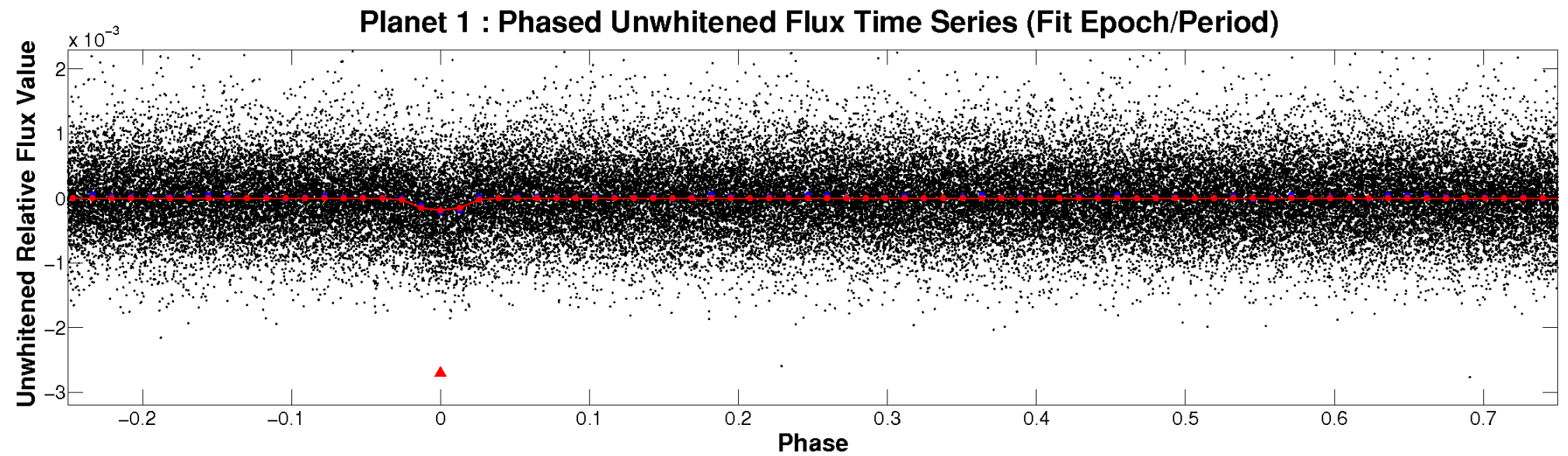


# ALT Odd/Even

TCE 010591855-01

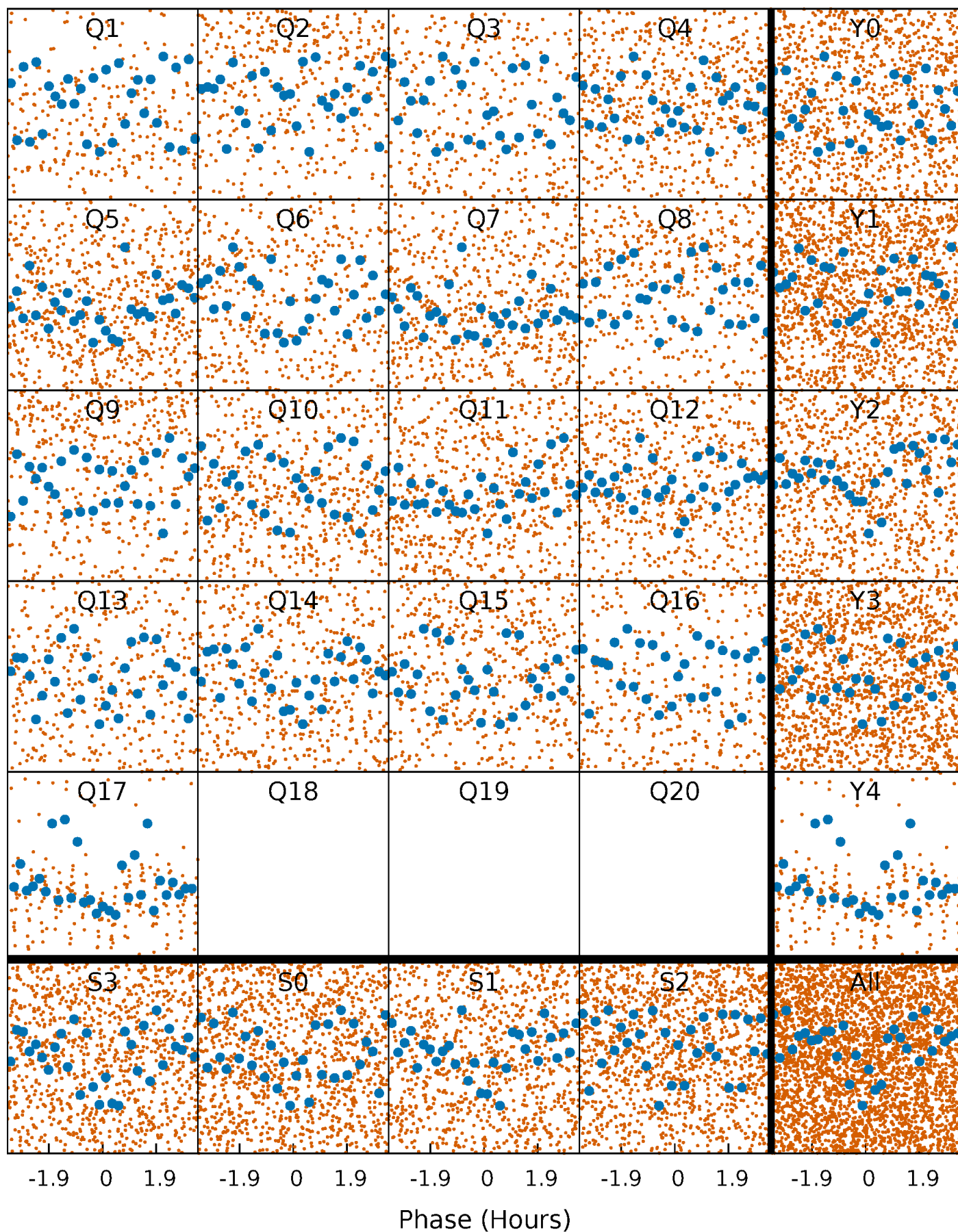


# Non-Whitened Vs. Whitened Light Curve



# PDC Quarter-Phased Transit Curves

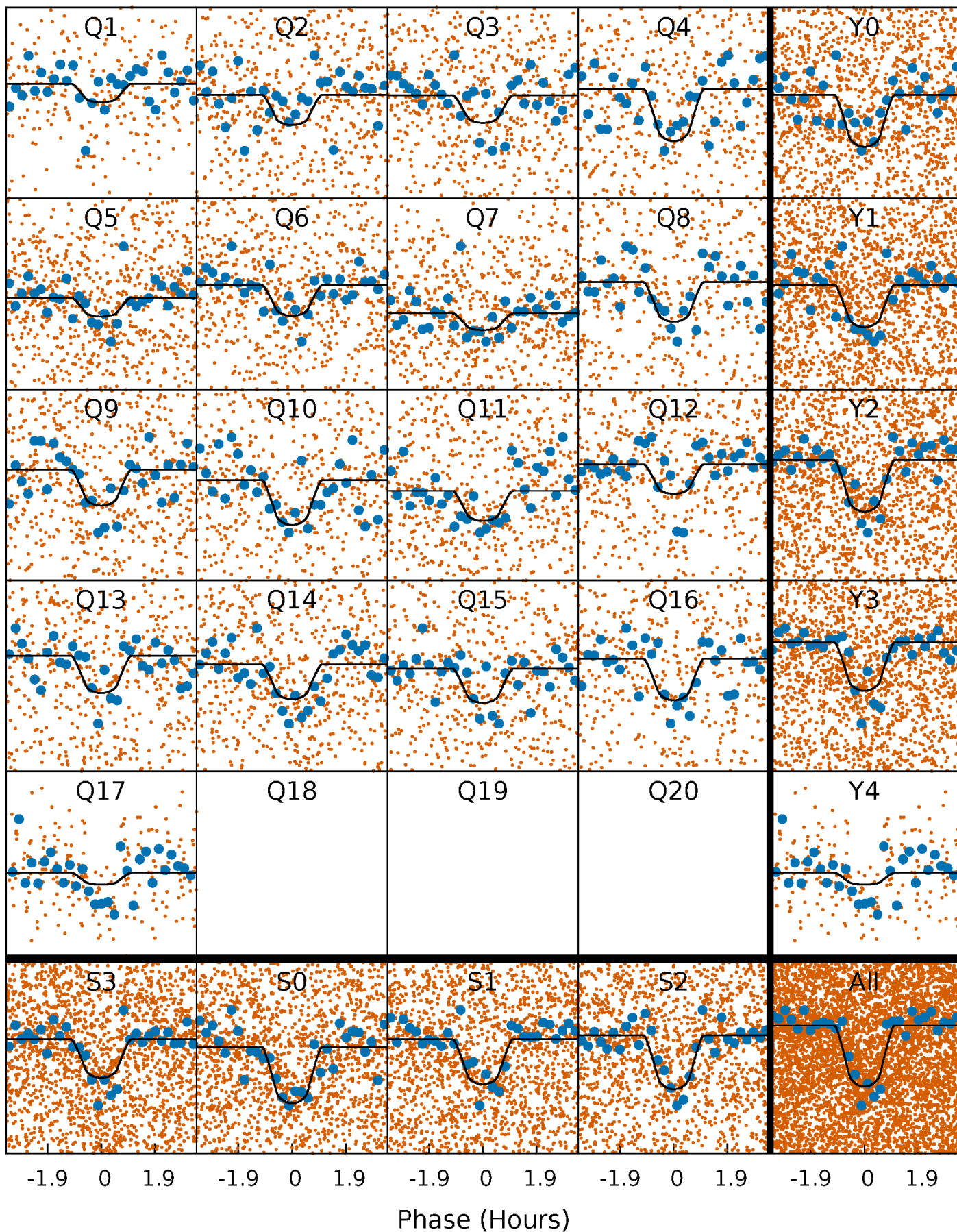
TCE 010591855-01 P= 1.574077 Days  $T_0=131.865551$  (BKJD)





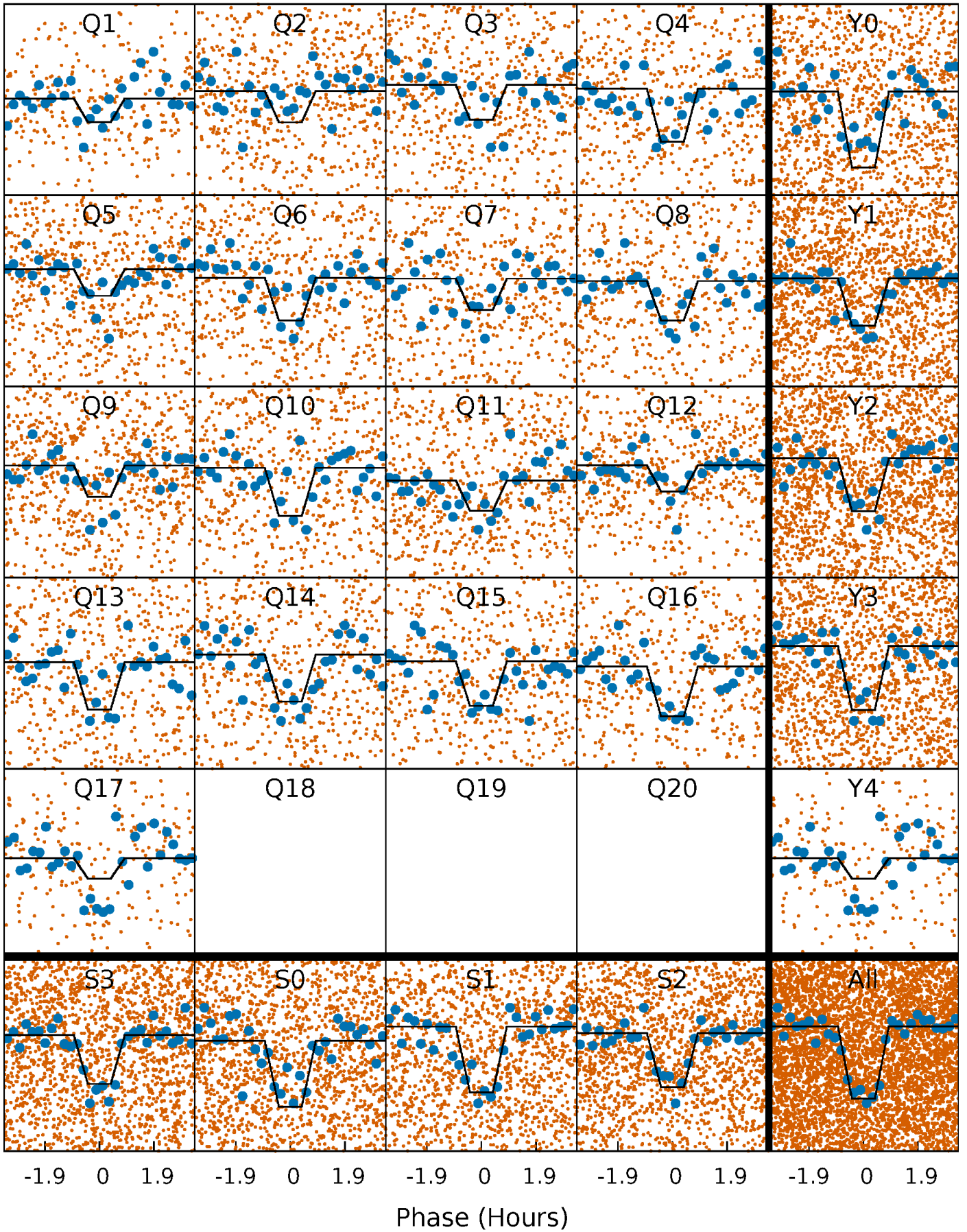
# DV Quarter-Phased Transit Curves

TCE 010591855-01 P= 1.574077 Days  $T_0=131.865551$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

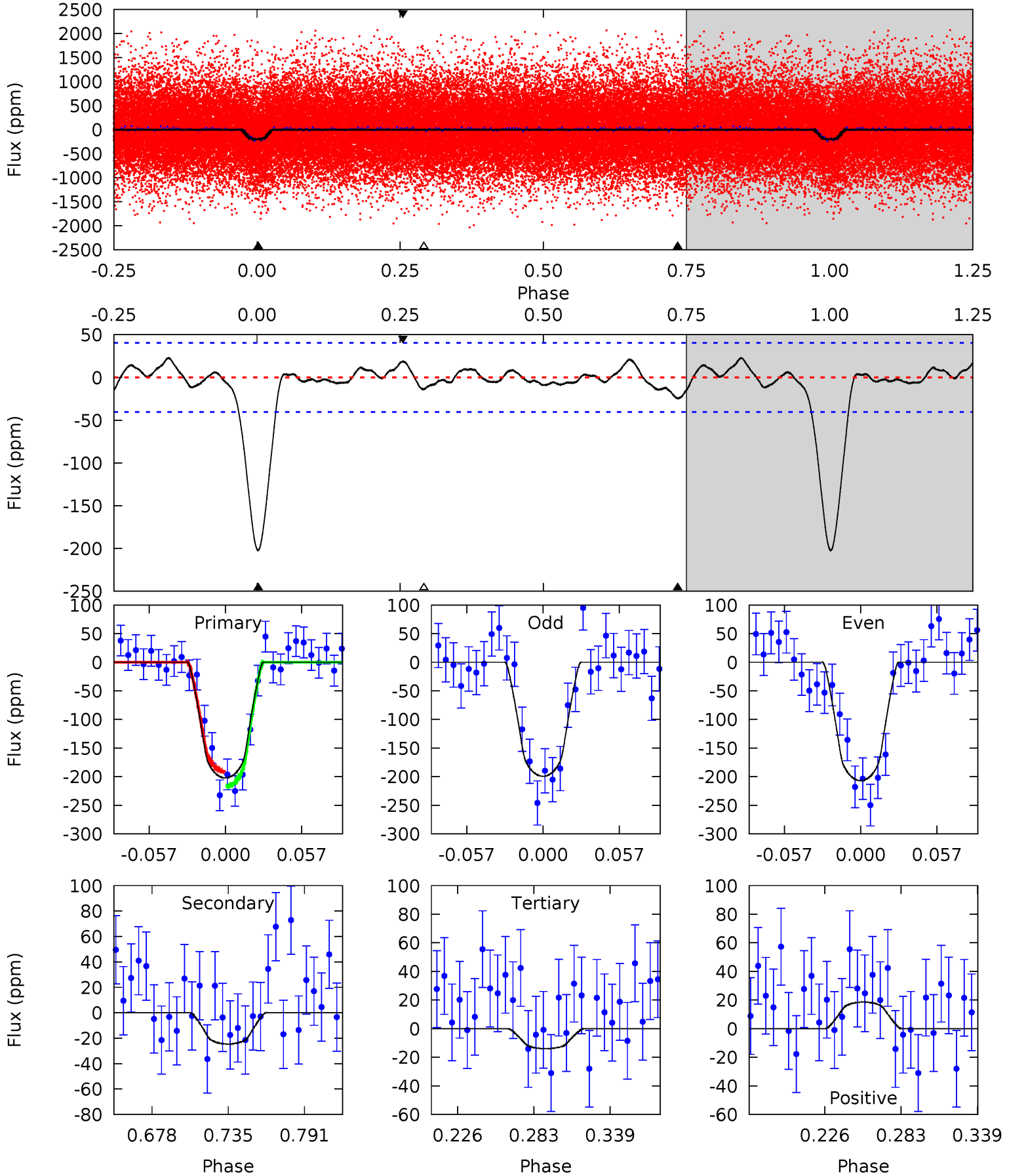
TCE 010591855-01 P= 1.574084 Days  $T_0=131.865268$  (BKJD)



# DV Model-Shift Uniqueness Test

010591855-01, P = 1.574077 Days, E = 130.291474 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
23.4	2.85	1.62	2.15	4.68	1.91	0.91	21.8	21.3	1.23	0.70	0.44	0.80	0.10	1.53

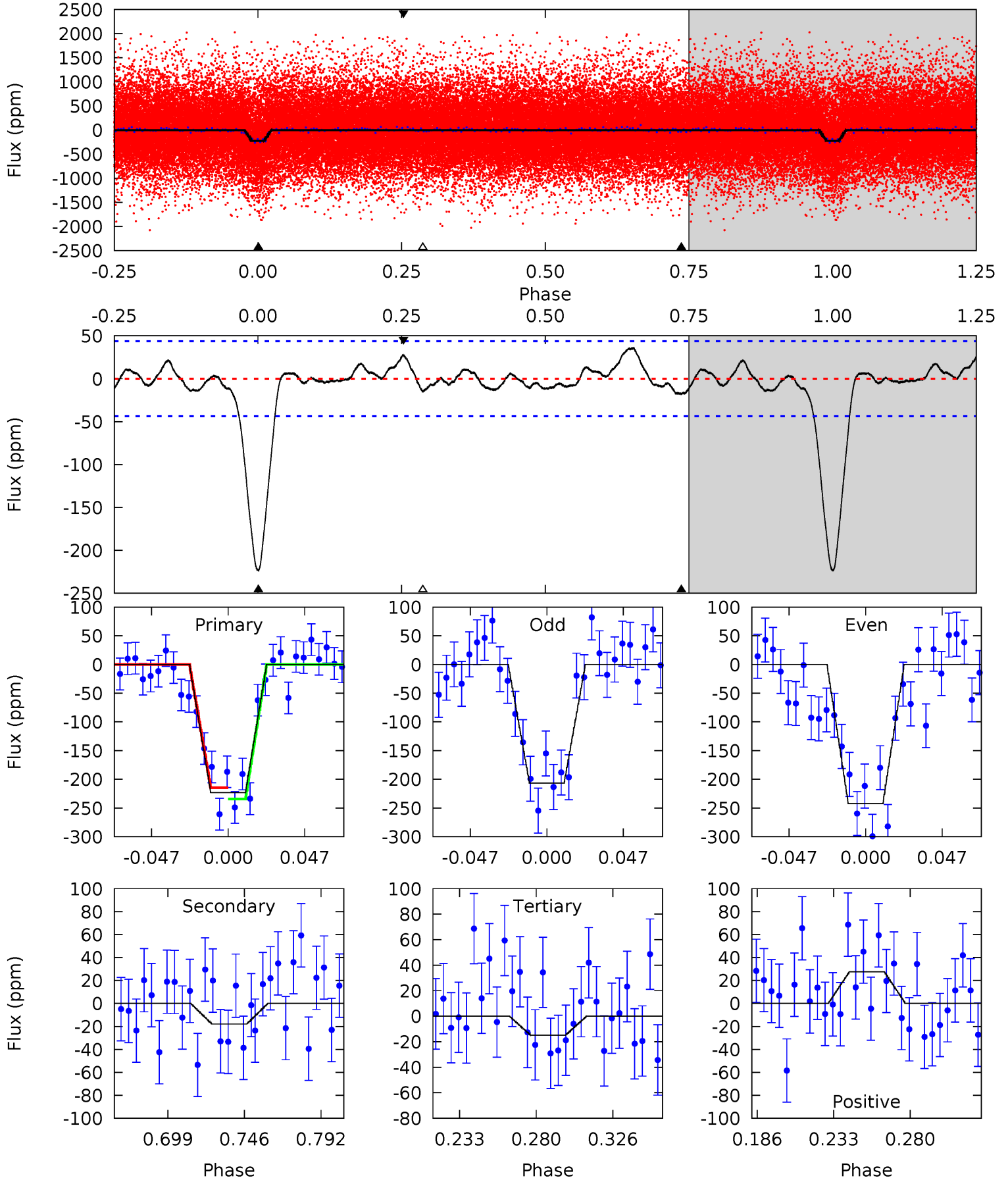




# Alt Model-Shift Uniqueness Test

010591855-01, P = 1.574084 Days, E = 130.291184 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
24.2	1.94	1.62	2.99	4.72	1.99	1.17	22.5	21.2	0.32	-1.05	1.94	0.95	0.14	1.06





### Stellar Parameters For KIC 010591855

	$T_{\text{eff}}(K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$4313^{+86}_{-77}$	$4.662^{+0.006}_{-0.042}$	$0.360^{+0.100}_{-0.200}$	$0.650^{+0.038}_{-0.014}$	$0.731^{+0.018}_{-0.038}$	$3.744^{+0.118}_{-0.602}$
	+2%/-2%	+0%/-1%	+28%/-56%	+6%/-2%	+2%/-5%	+3%/-16%
Source	SPE70	PHO2	SPE70	DSEP		

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

### Secondary Eclipse Parameters for KIC 010591855-01 / KOI 2845.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	$A_{\text{obs}}$
DV	$-25 \pm 9$	$1.20^{+0.77}_{-0.70}$	$1411^{+32}_{-29}$	$2911^{+933}_{-425}$	$5.377^{+25.813}_{-3.621}$
Alt.	$-18 \pm 9$	$1.20^{+0.65}_{-0.70}$	$1410^{+31}_{-28}$	$2788^{+817}_{-441}$	$3.872^{+17.706}_{-2.697}$

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

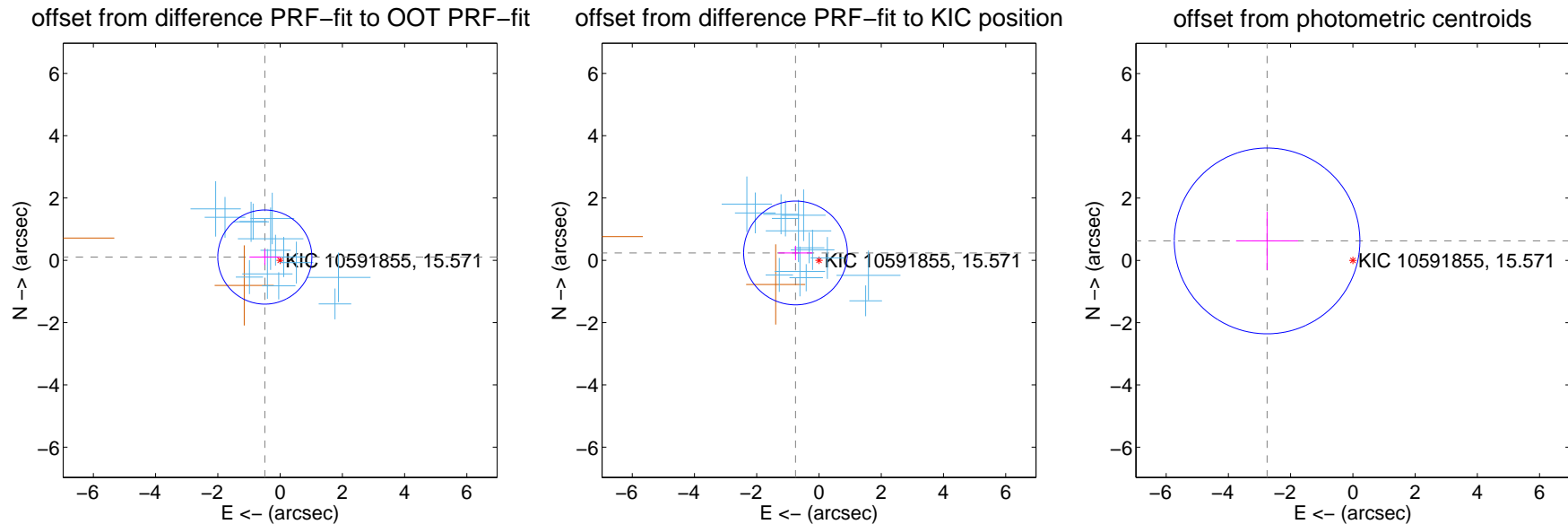
## DV Centroid Data

Supplemental centroid analysis for 010591855-01. Kepler magnitude: 15.57. Transit SNR 14.99

There are 14 quarters with good PRF difference image offsets

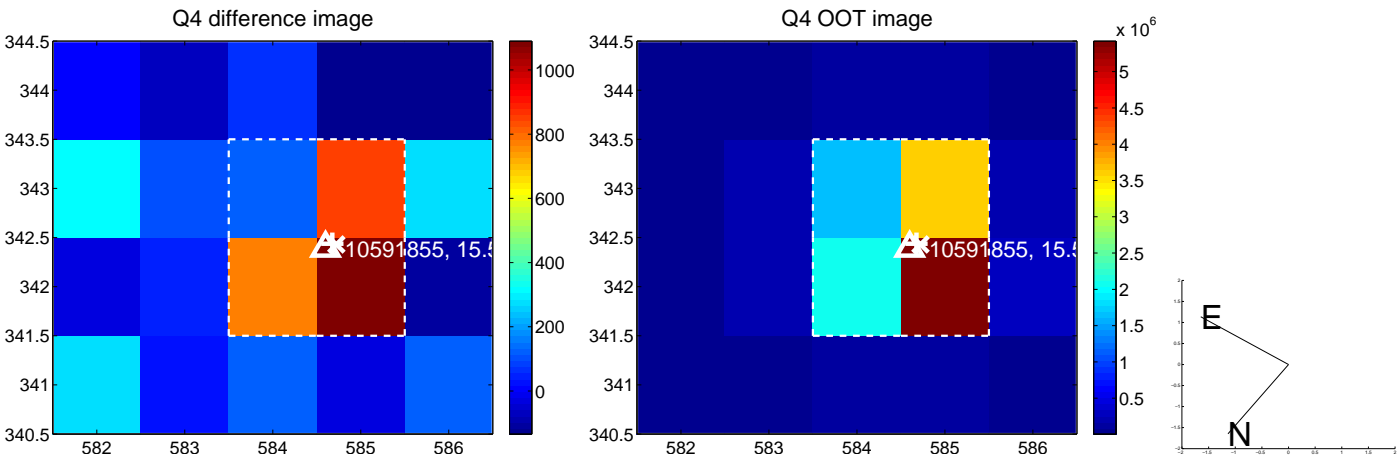
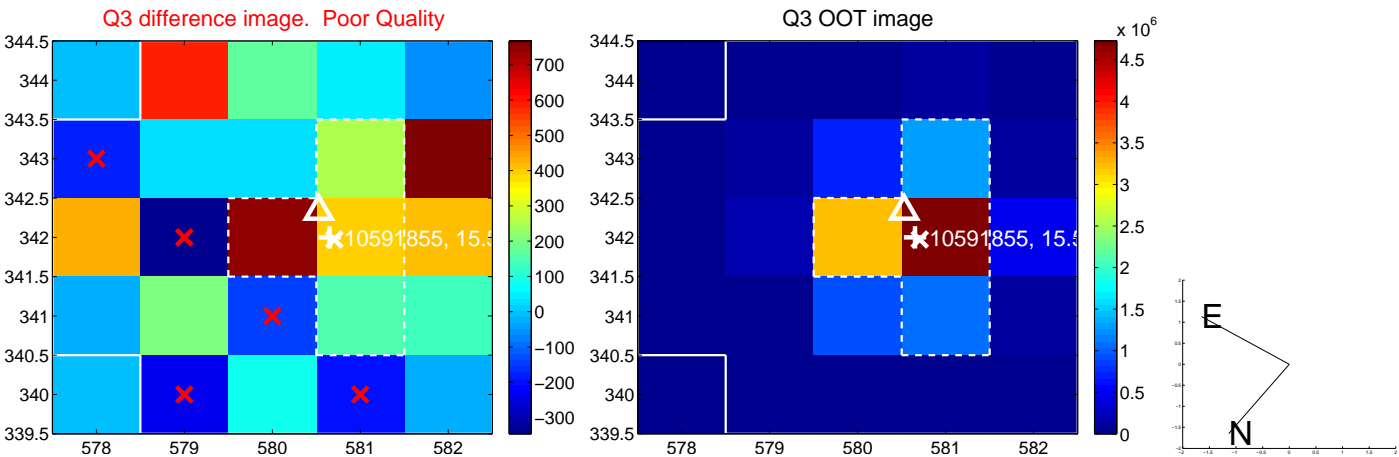
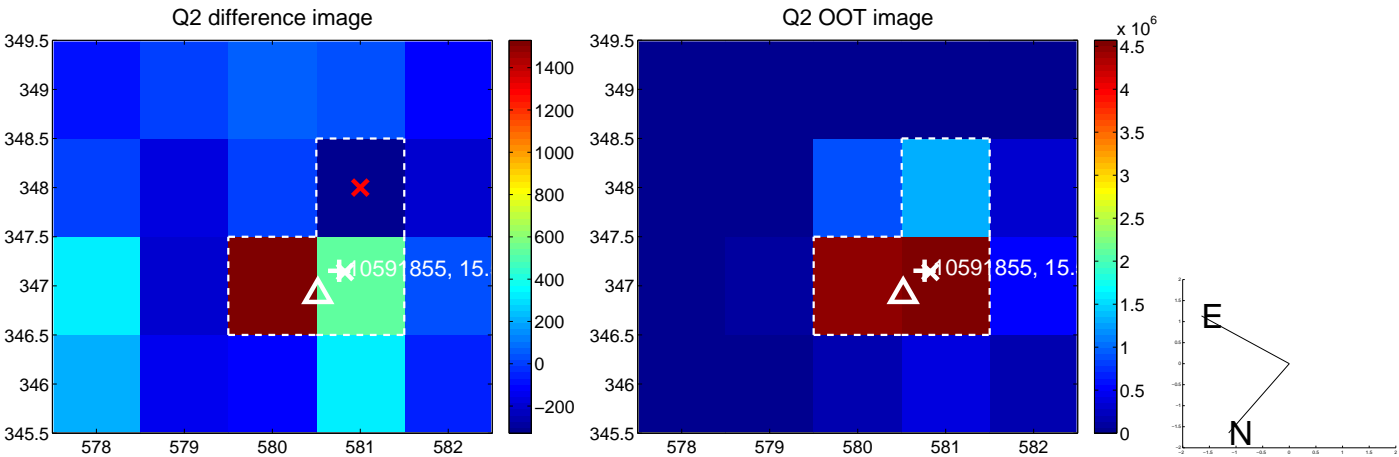
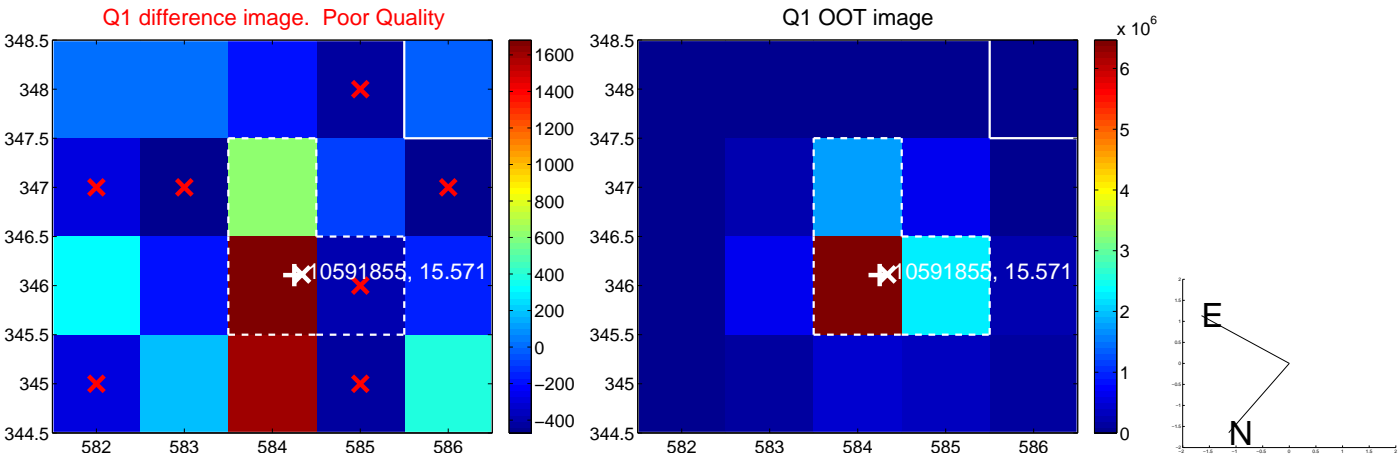
The direct PRF centroid is offset from the target star catalog position by about 0.45 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.502 \pm 0.504$	1.00	$0.491 \pm 0.495$	$0.104 \pm 0.250$
PRF-fit source offset from KIC position	$0.790 \pm 0.556$	1.42	$0.754 \pm 0.552$	$0.237 \pm 0.230$
photometric centroid source offset	$2.83 \pm 0.99$	2.84	$2.76 \pm 1.00$	$0.62 \pm 0.93$

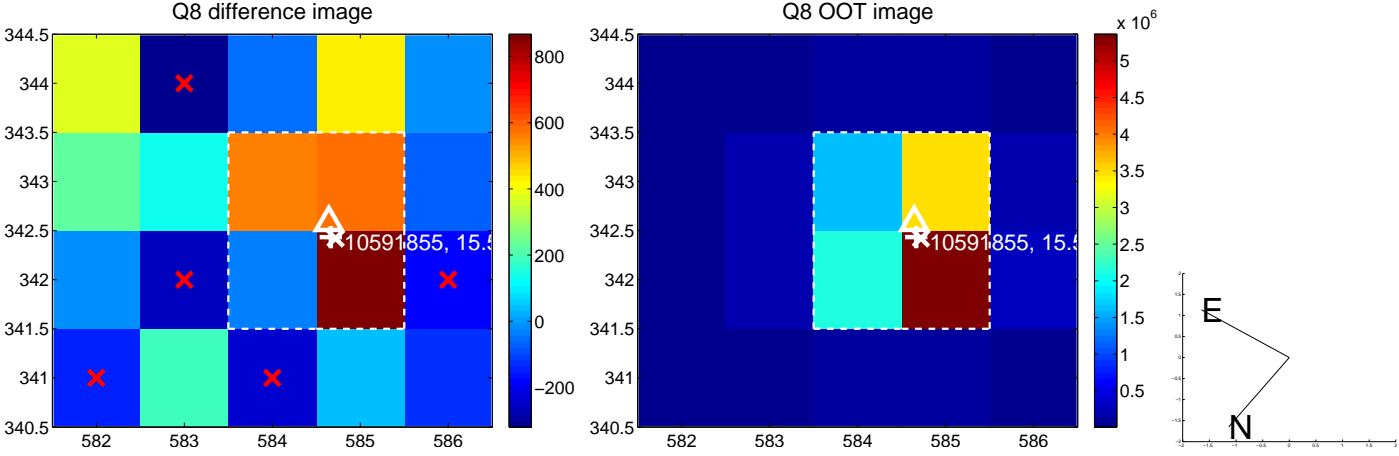
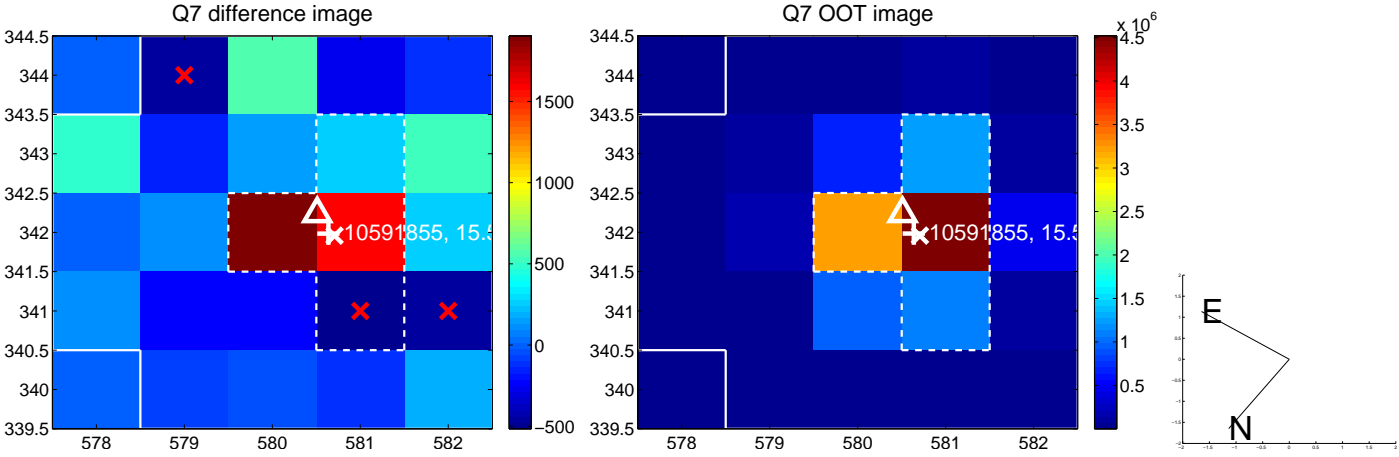
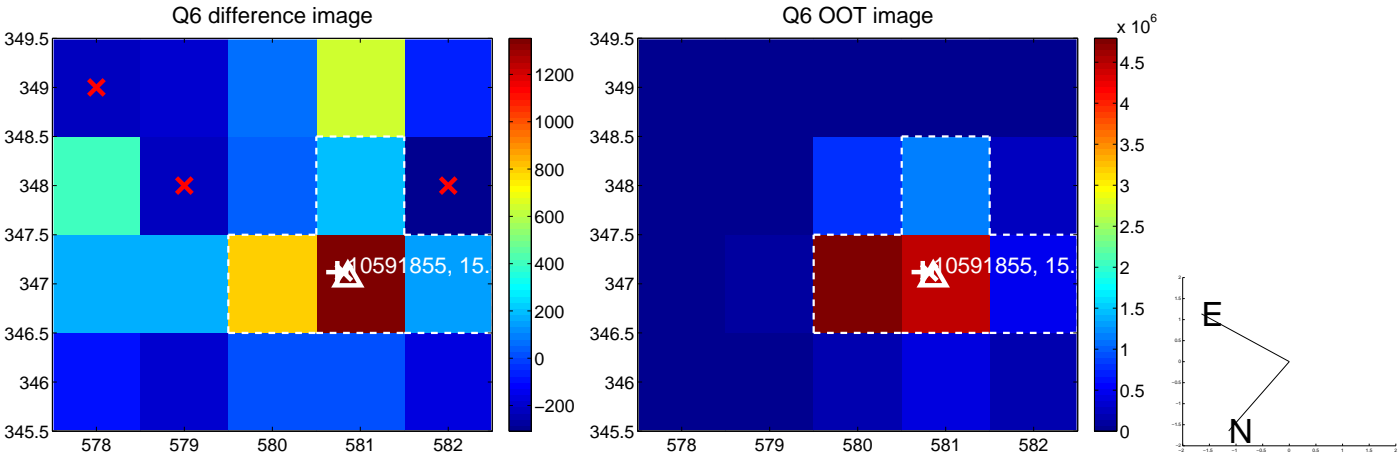
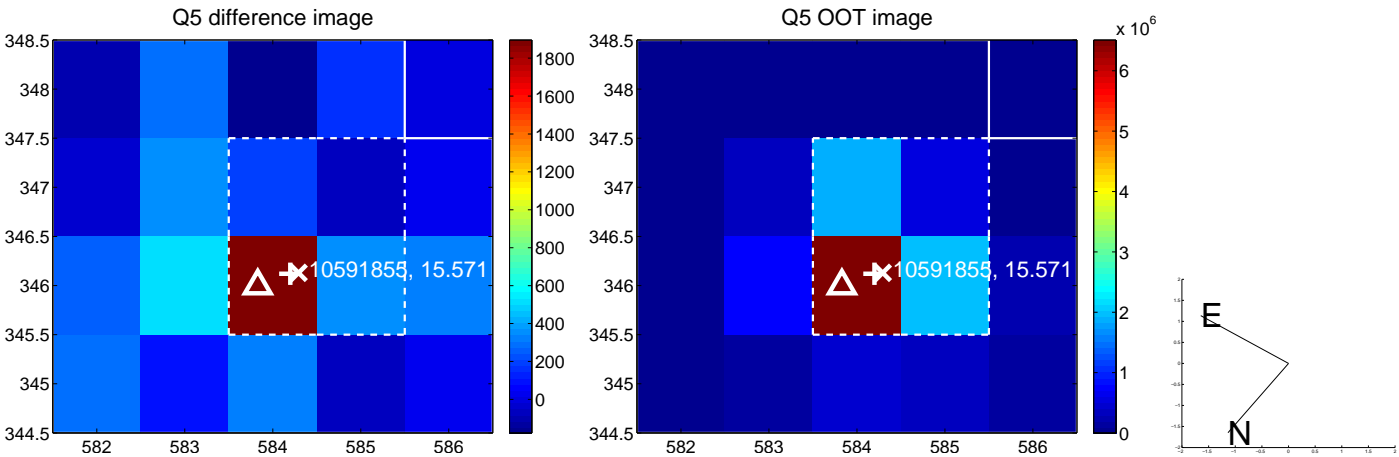


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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

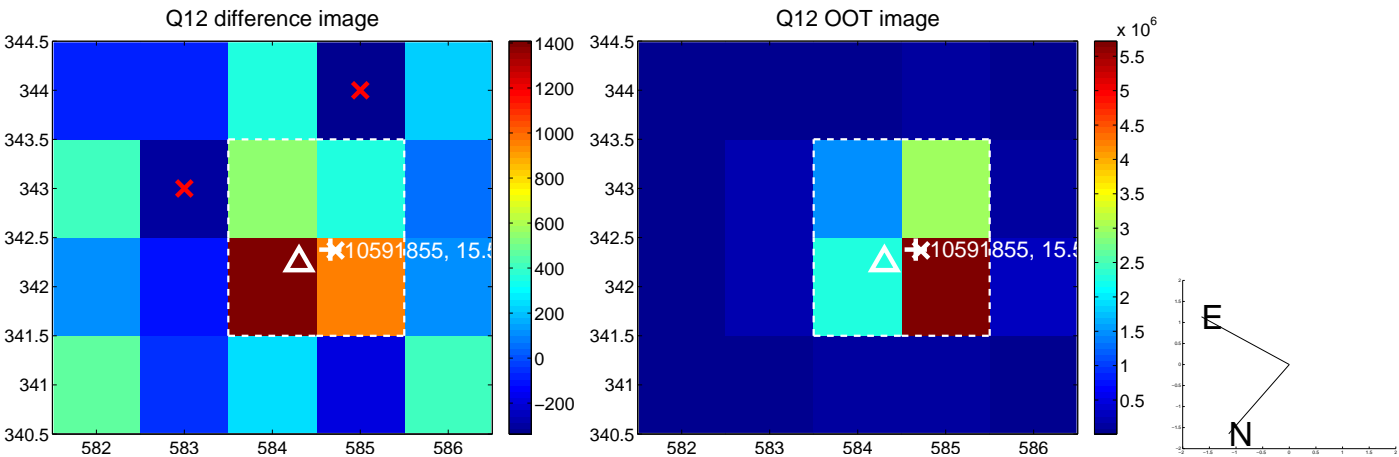
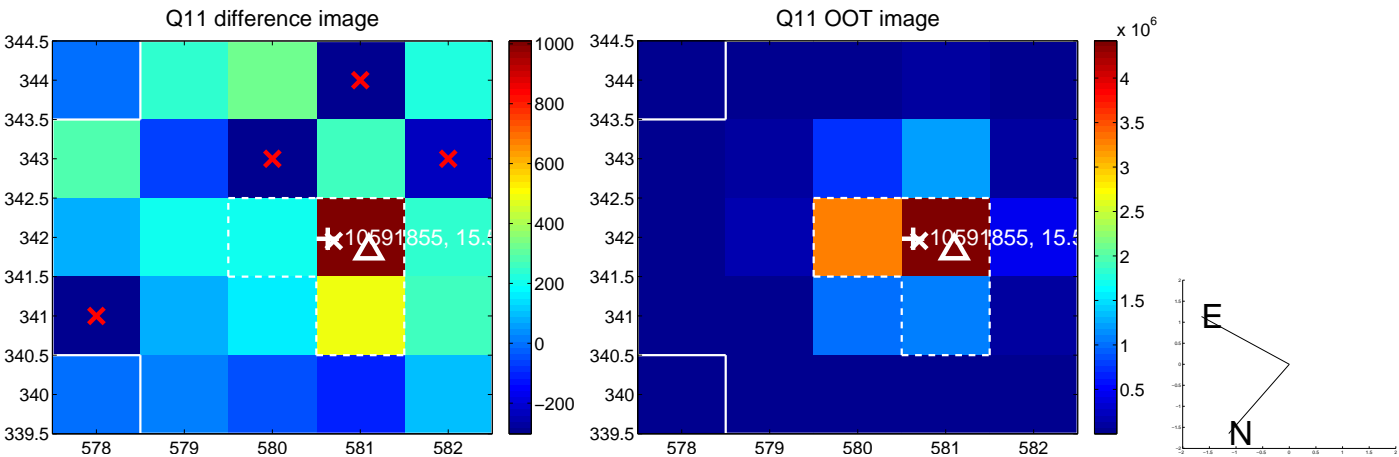
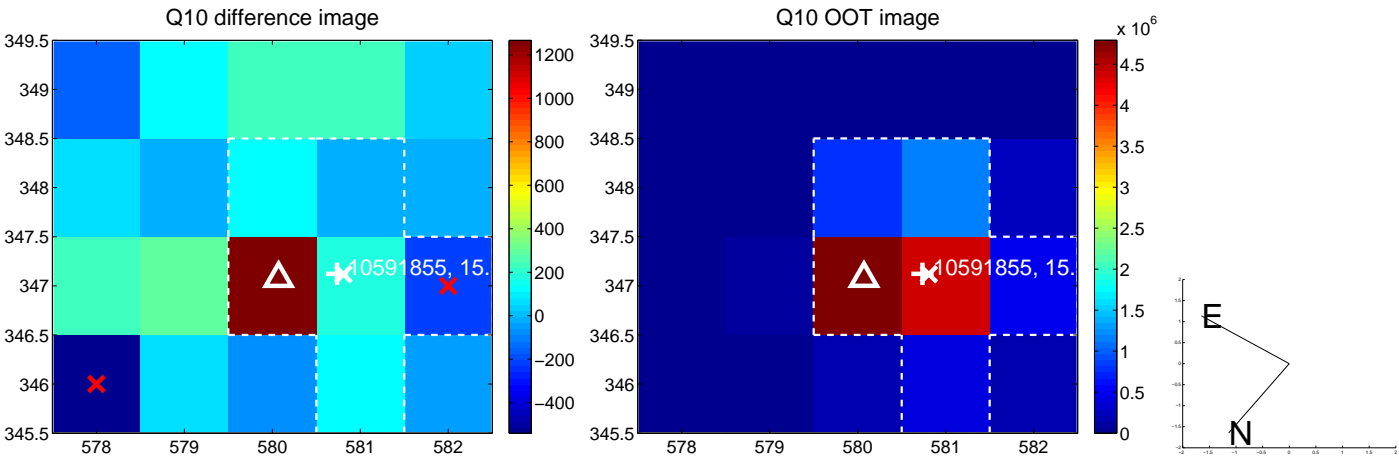
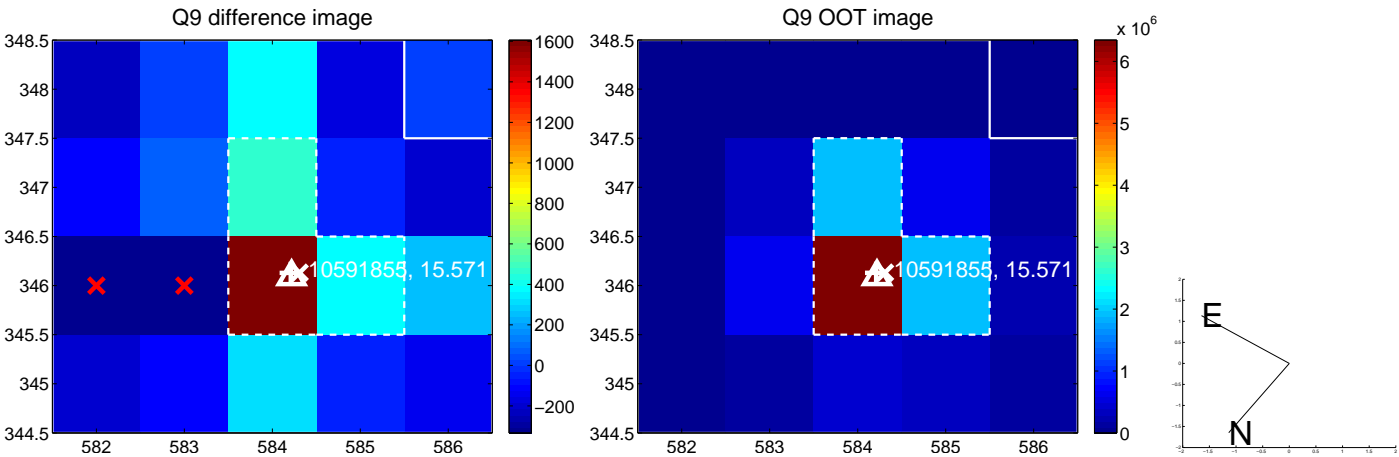


white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

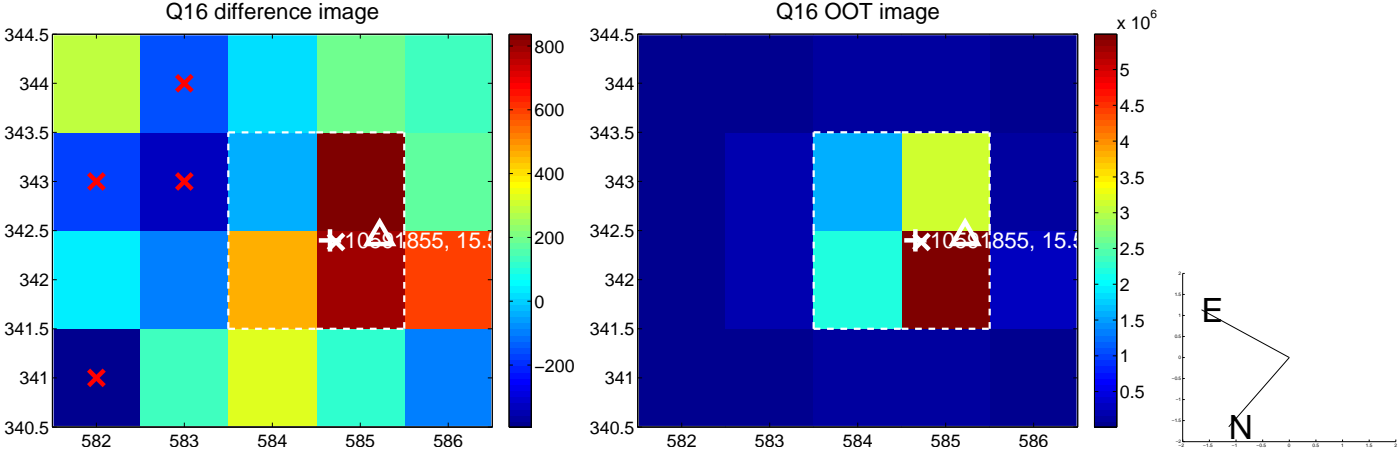
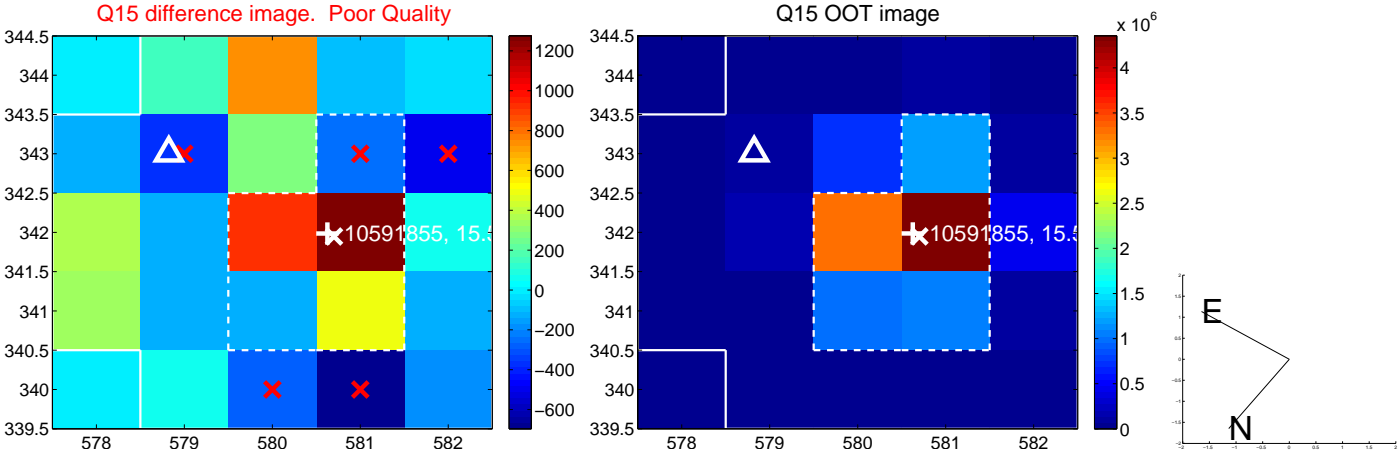
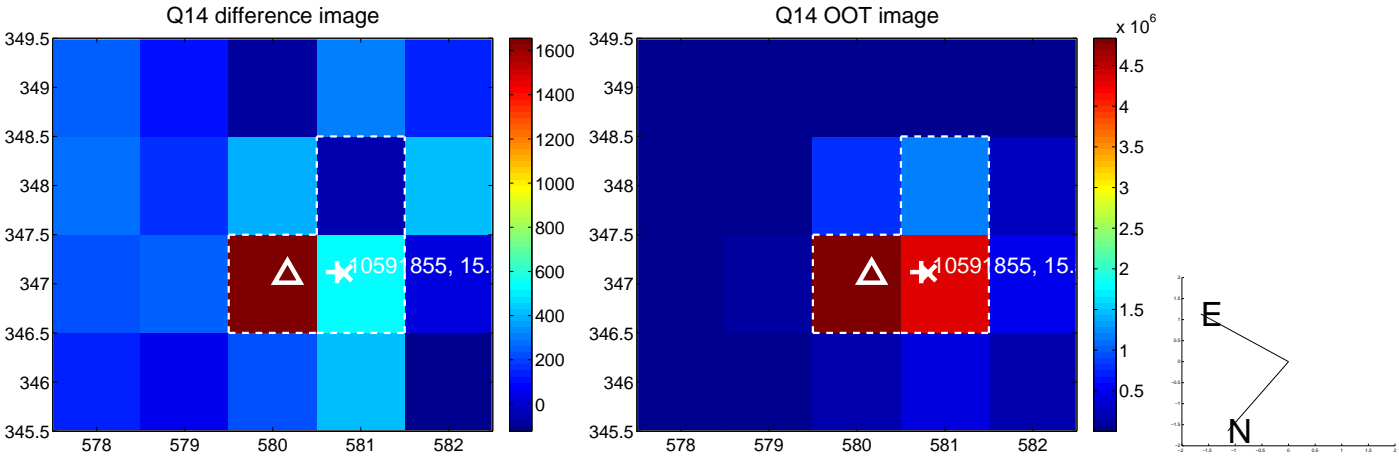
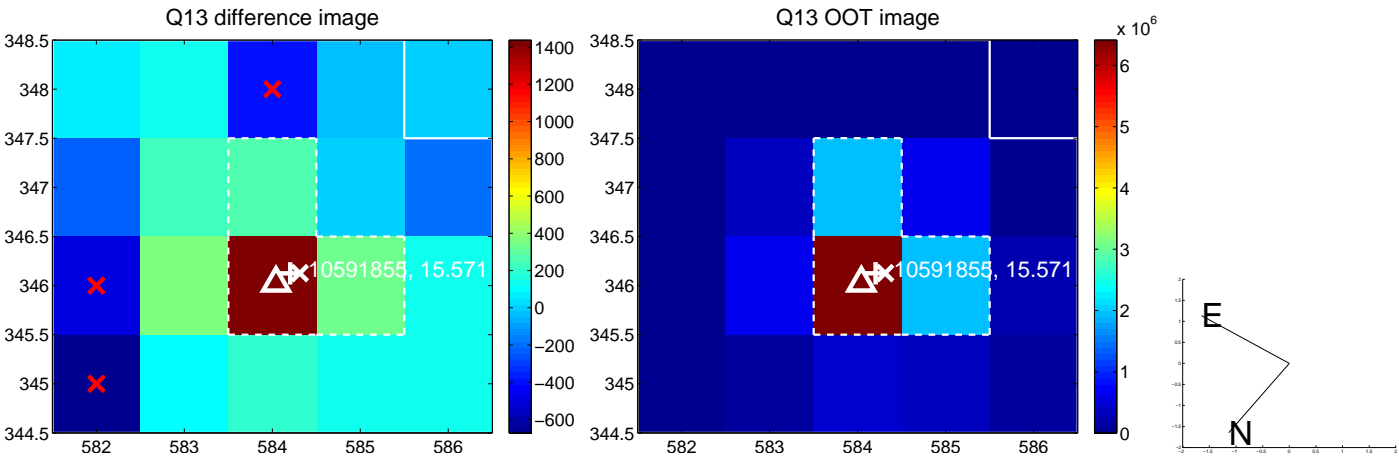




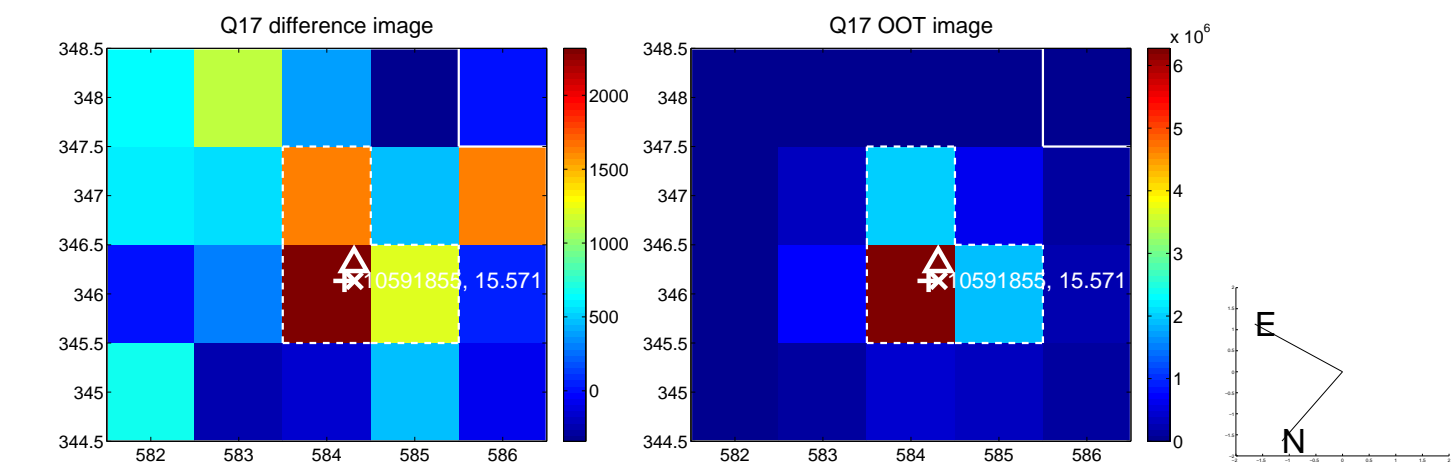
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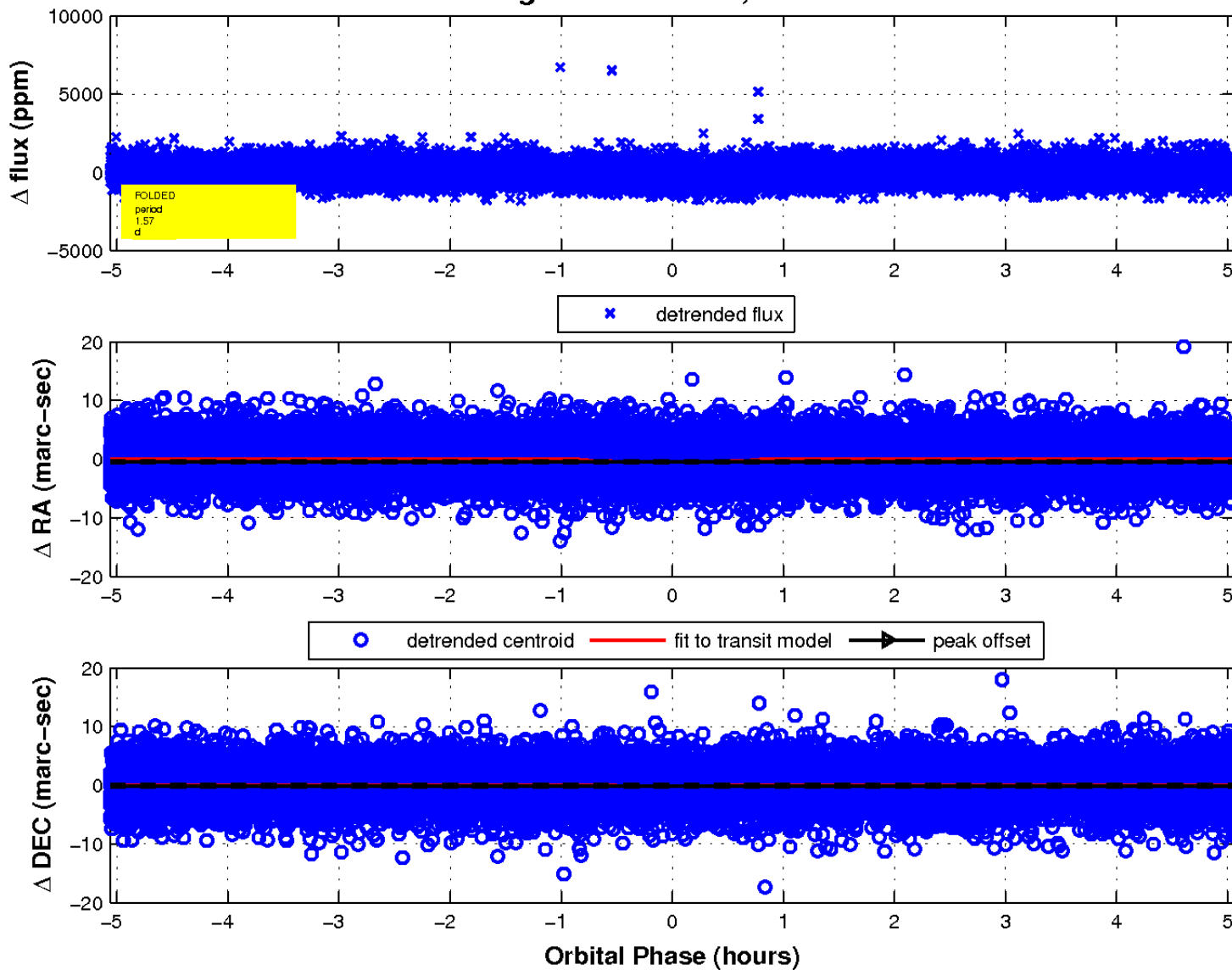
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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



fluxWeightedCentroids, Planet 1 of 1



UKIRT Image

Declination

