

# KIC 008807777

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
008807777-01	OBS	No	0.568093	131.862551	48.3	1.695	8.3	8.6	9.13	5001	7.72	0.00

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008807777-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT

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

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

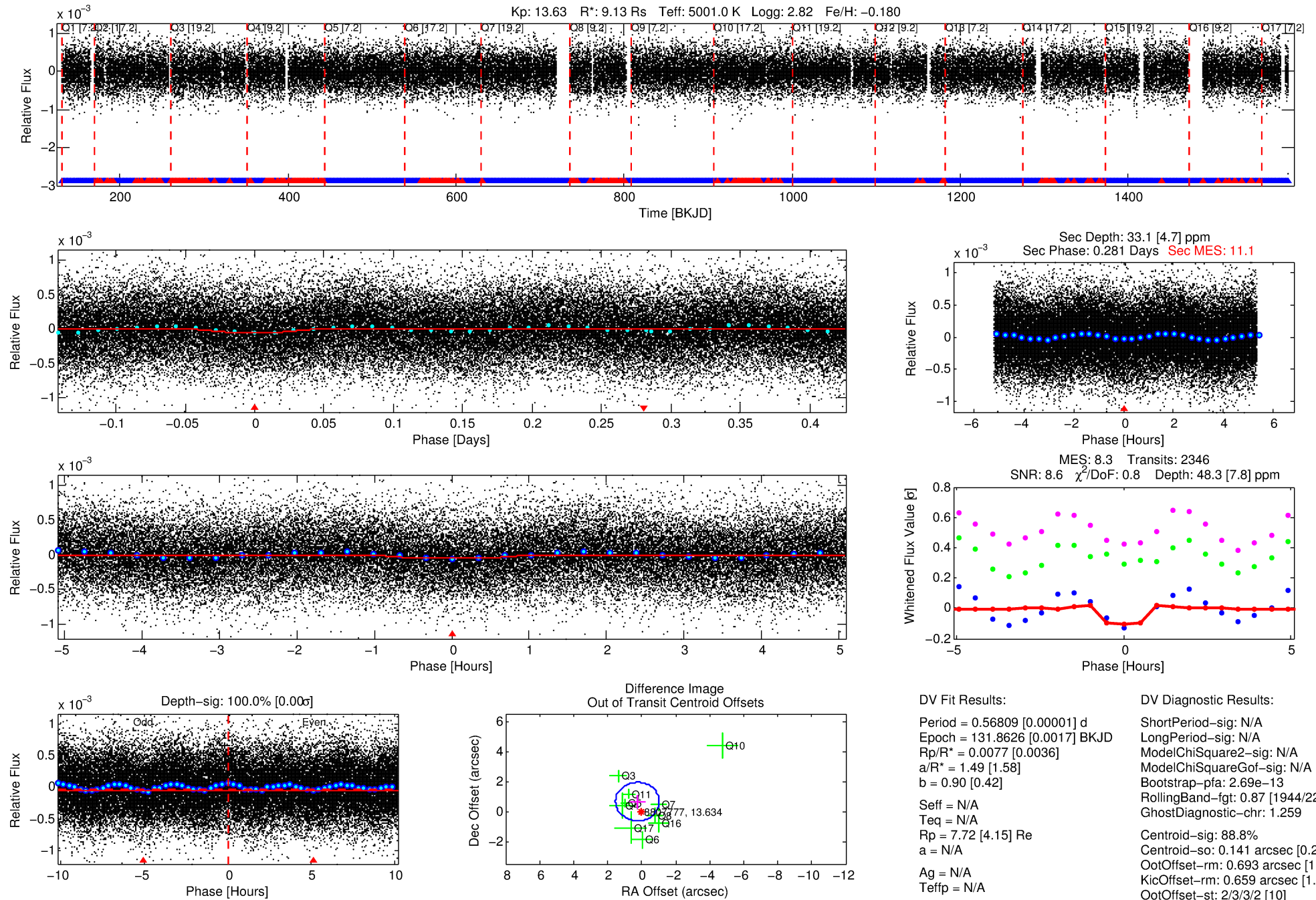
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 008807777-01

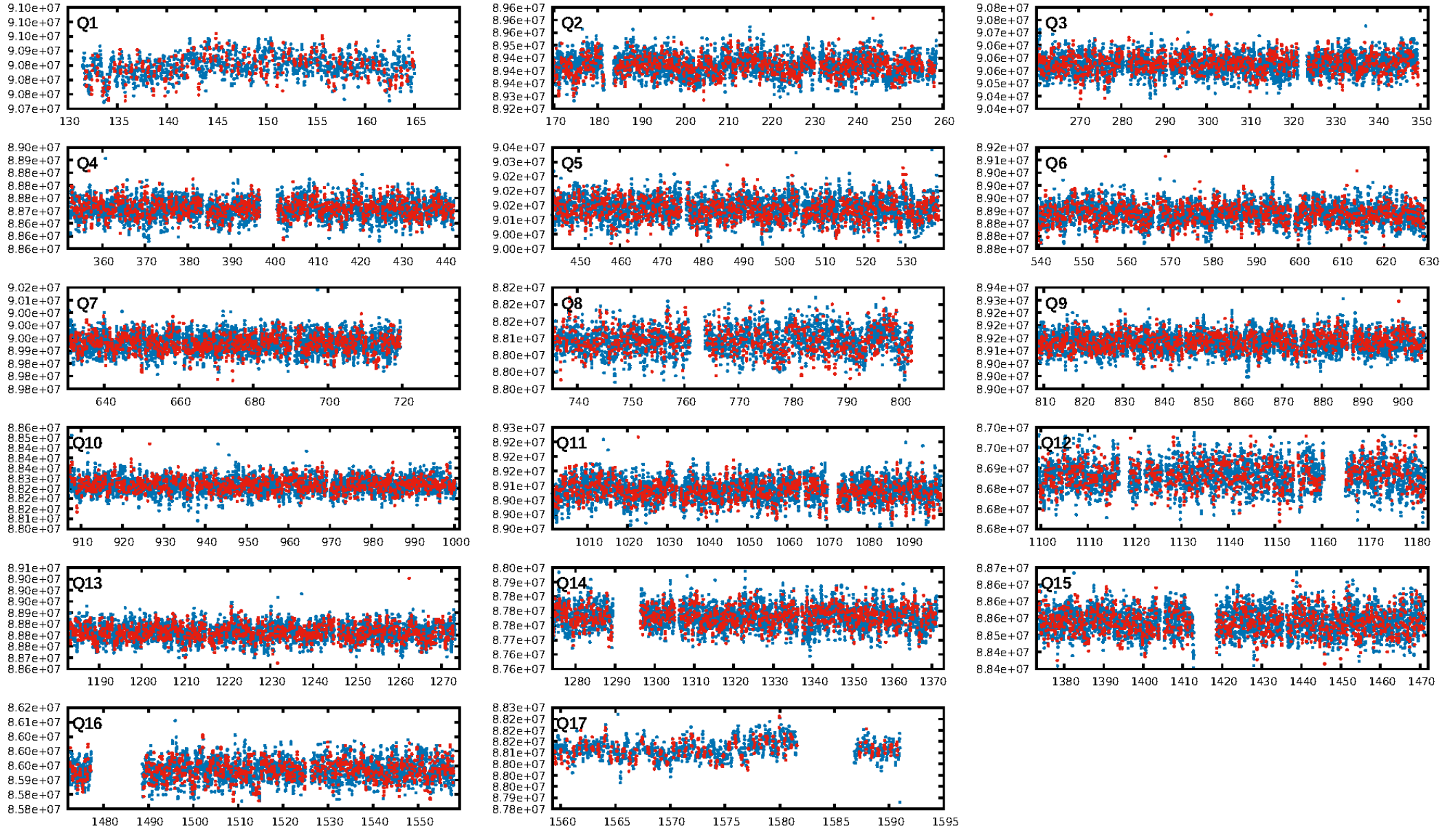
No Significant Match Found

# DV One-Page Summary

KIC: 8807777 Candidate: 1 of 1 Period: 0.568 d

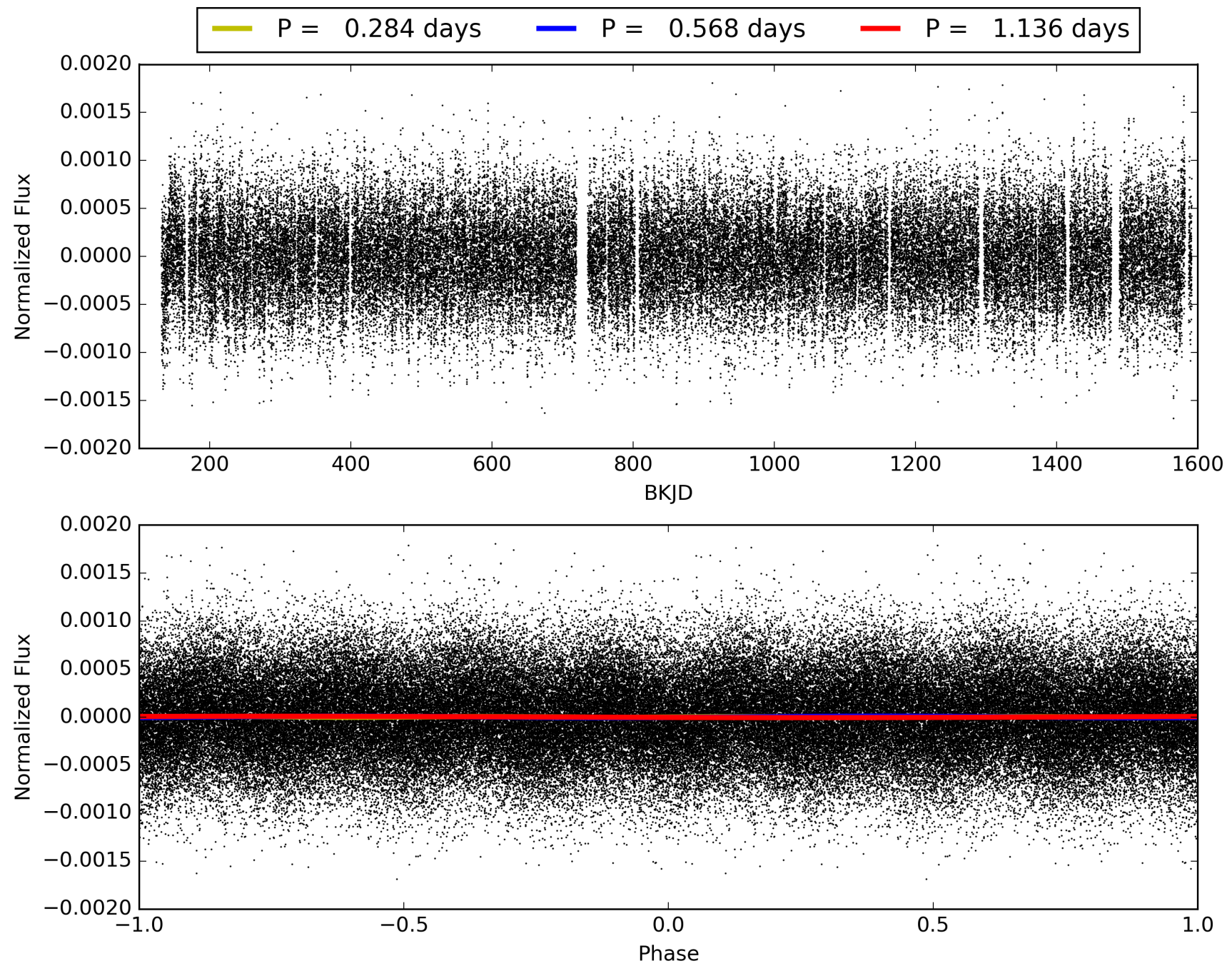


# TCE 008807777-01, PDC Light Curves



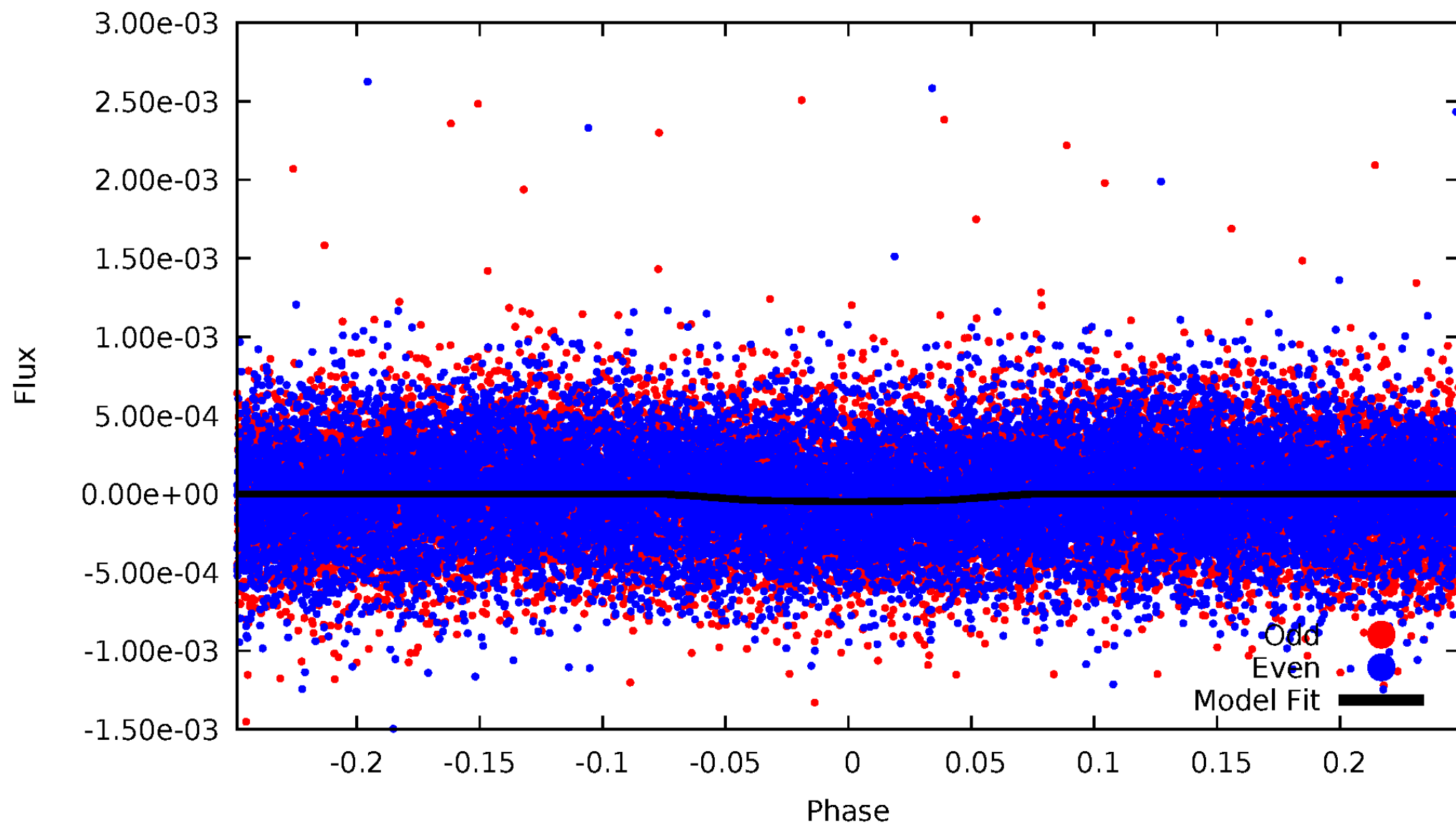


TCE 008807777-01



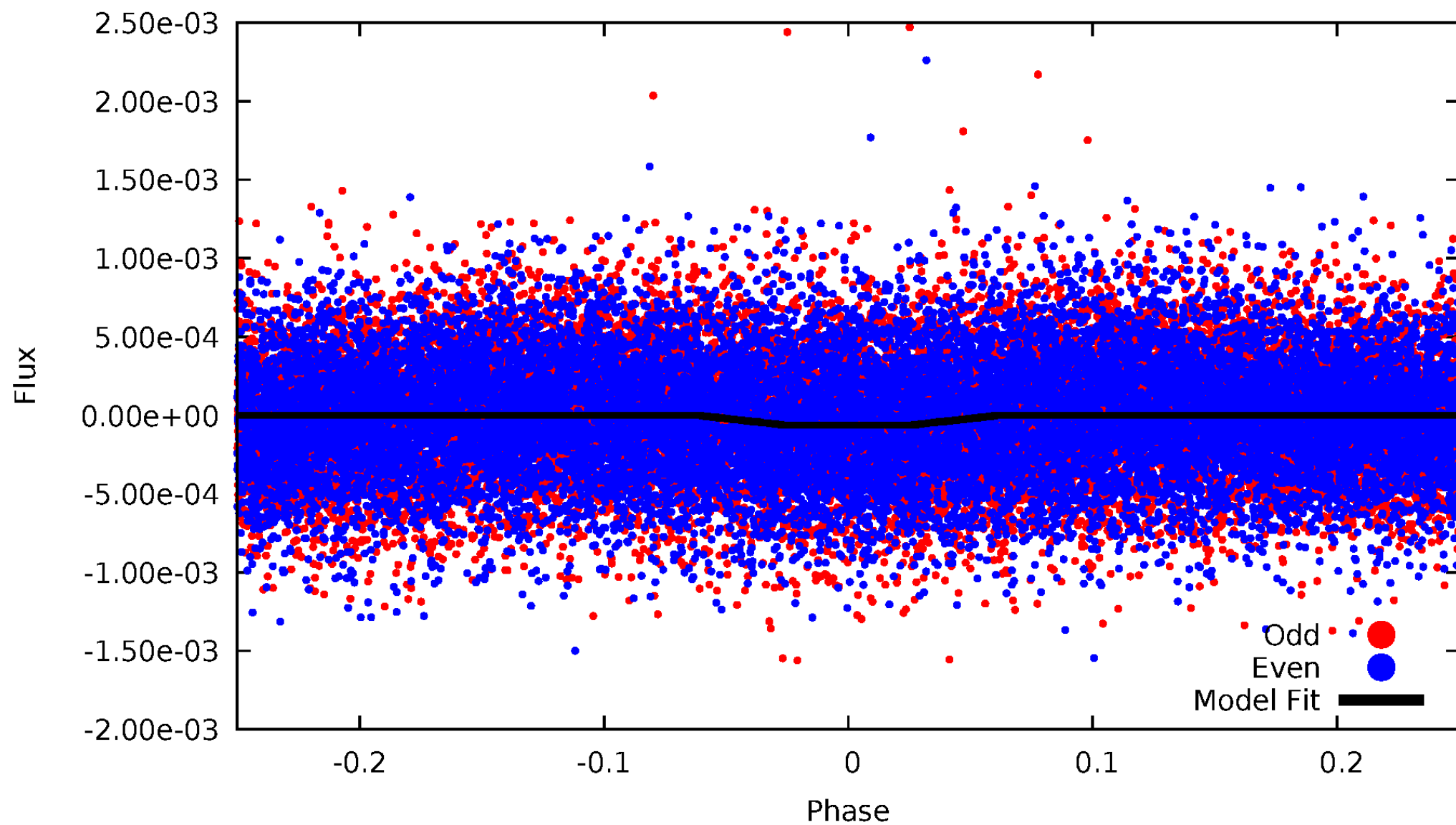
# DV Odd/Even

TCE 008807777-01



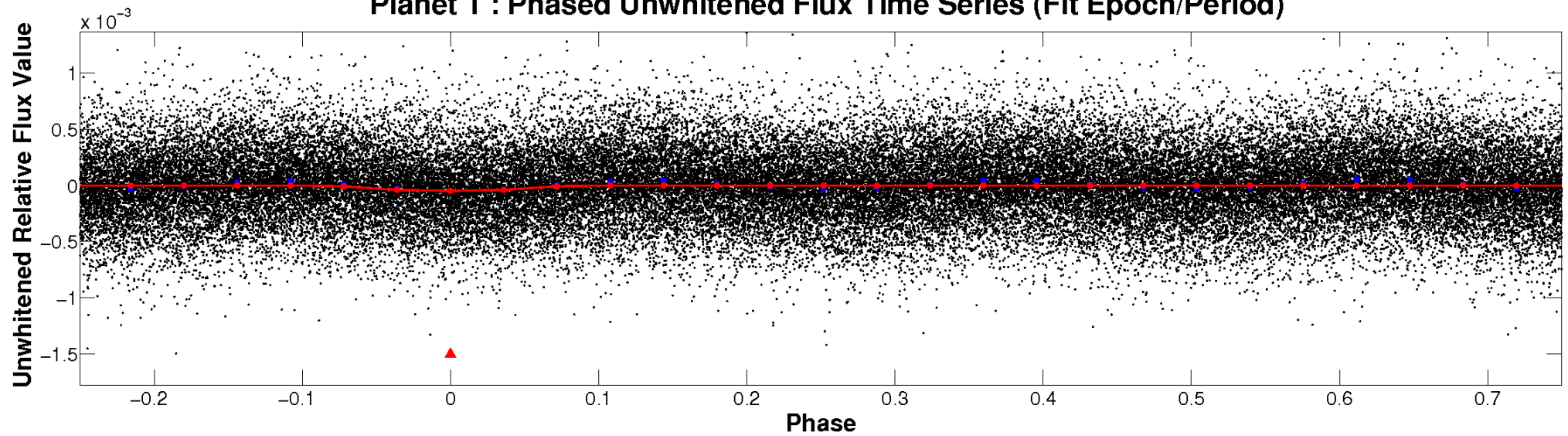
# ALT Odd/Even

TCE 008807777-01

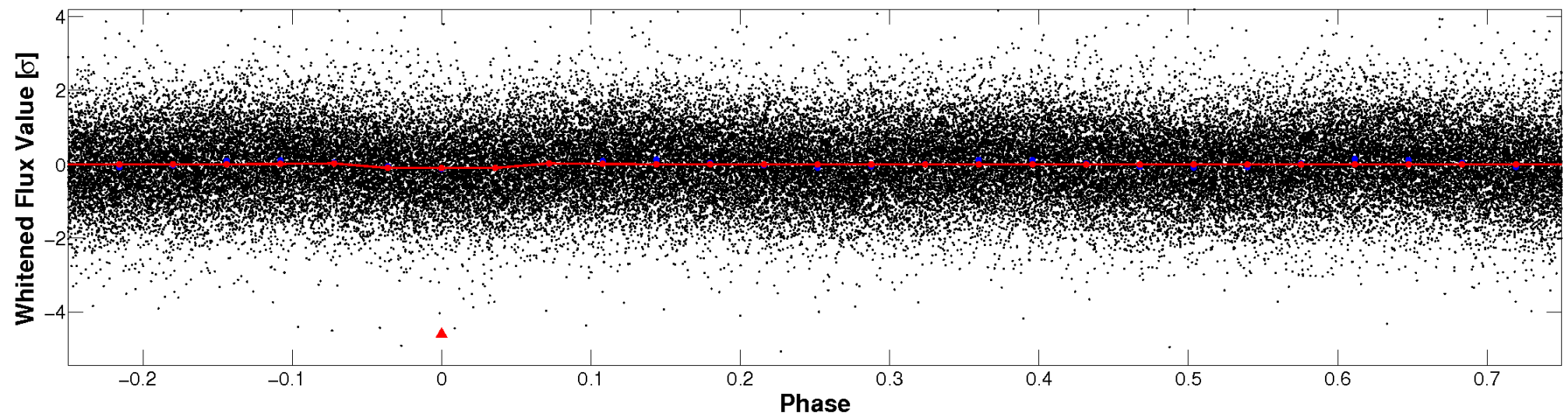


# Non-Whitened Vs. Whitened Light Curve

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



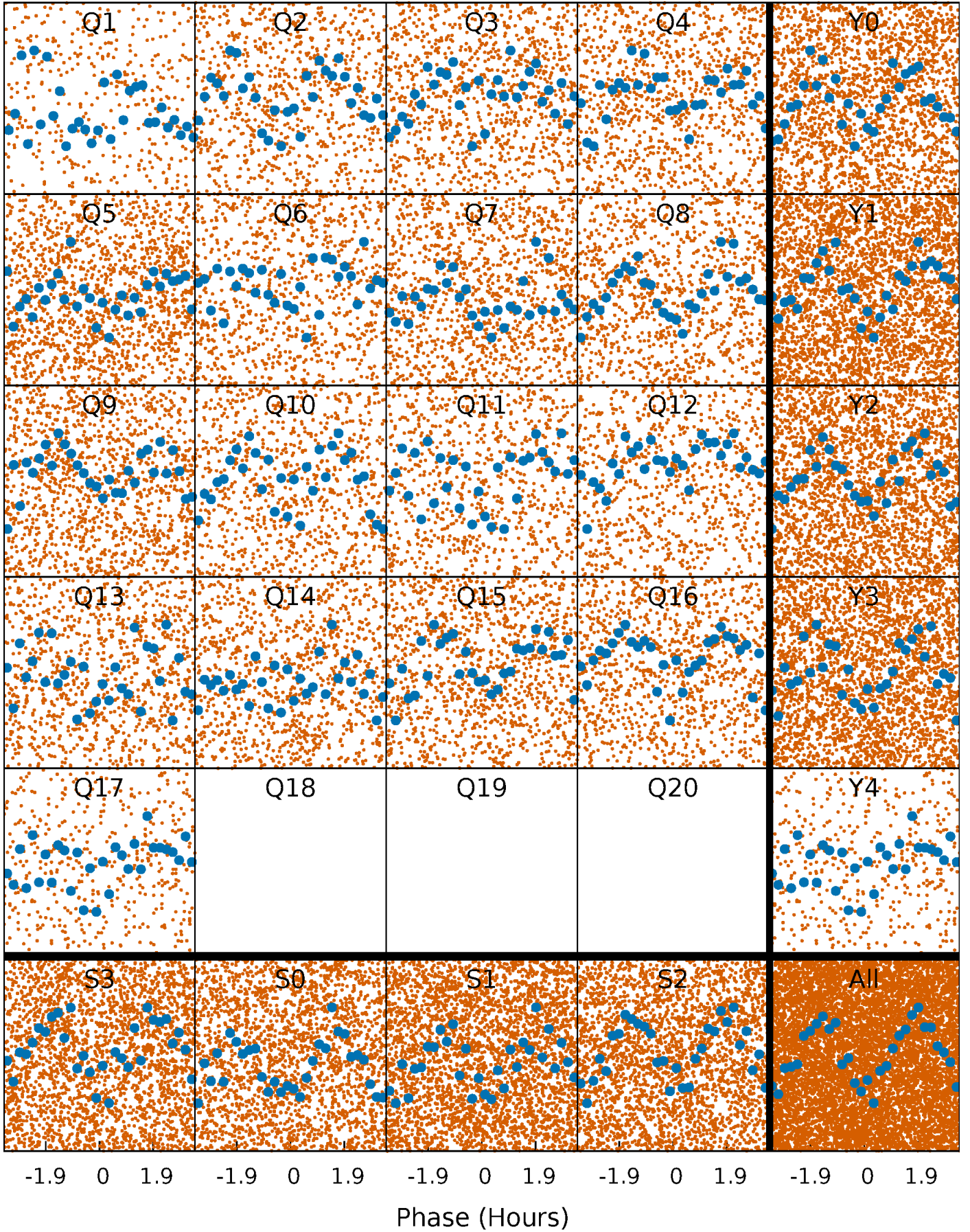
**Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)**





# PDC Quarter-Phased Transit Curves

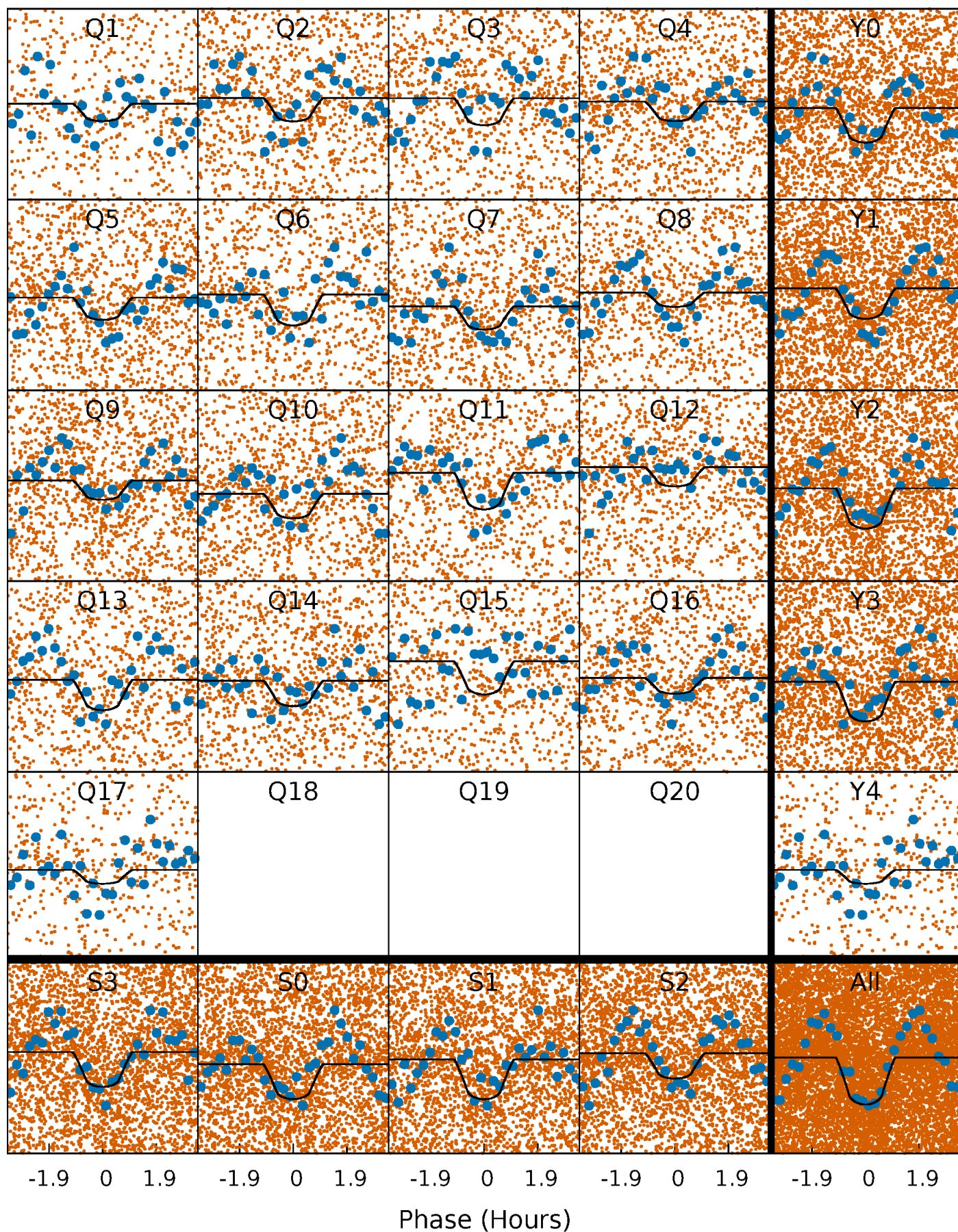
TCE 008807777-01 P= 0.568093 Days  $T_0=131.862551$  (BKJD)





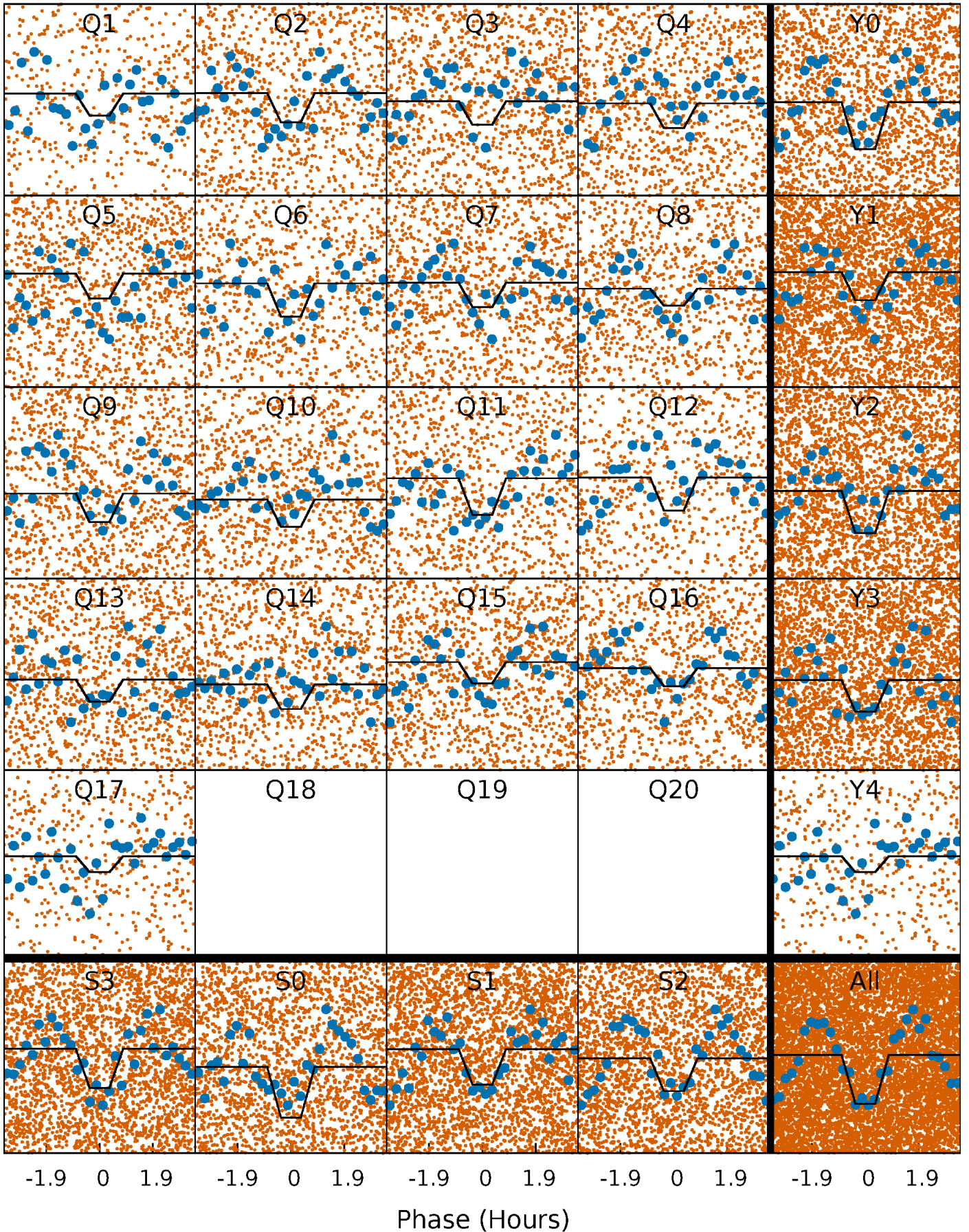
# DV Quarter-Phased Transit Curves

TCE 008807777-01 P= 0.568093 Days  $T_0=131.862551$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

TCE 008807777-01 P= 0.568097 Days  $T_0=131.863064$  (BKJD)

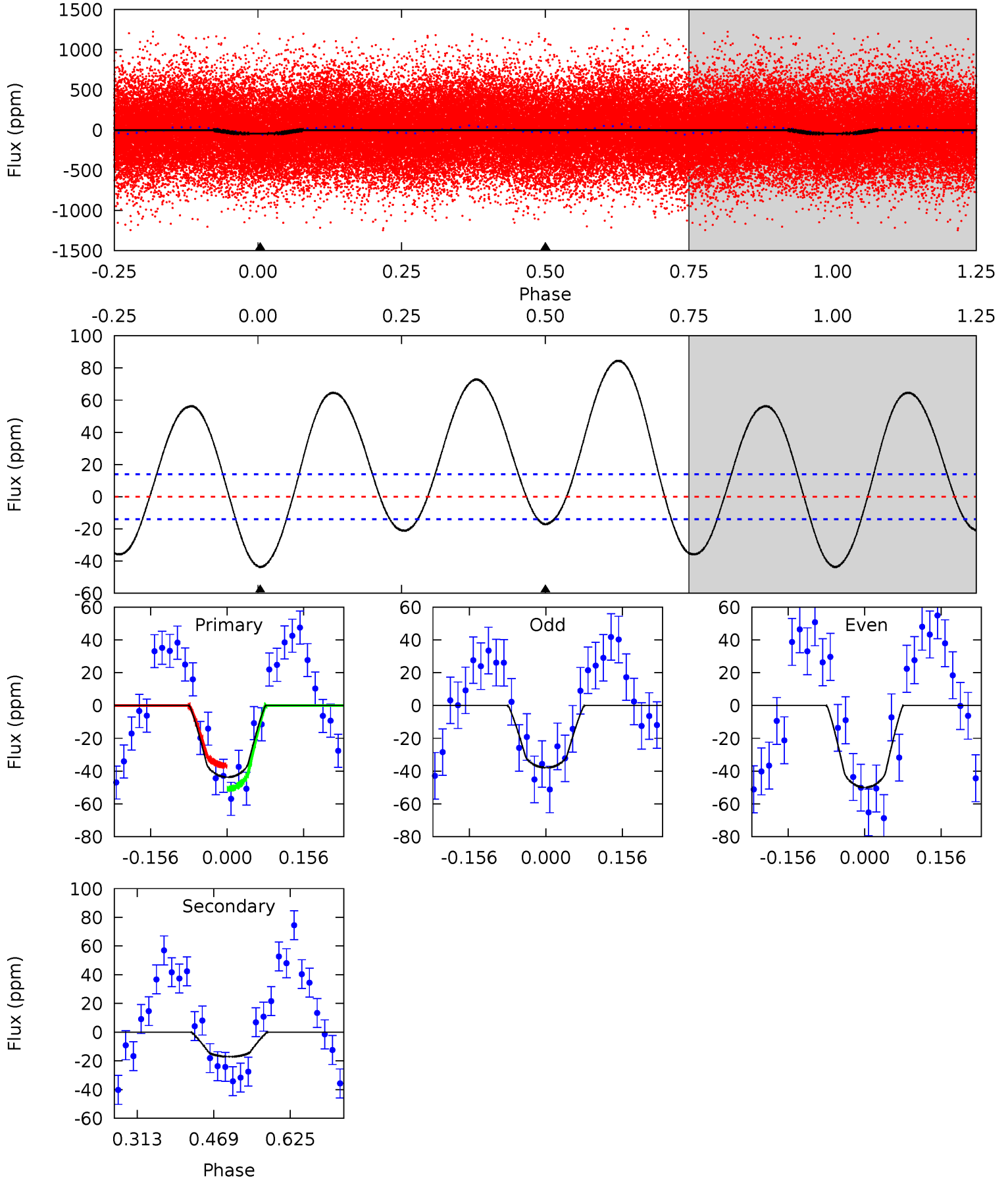




# DV Model-Shift Uniqueness Test

008807777-01, P = 0.568093 Days, E = 131.294458 Days

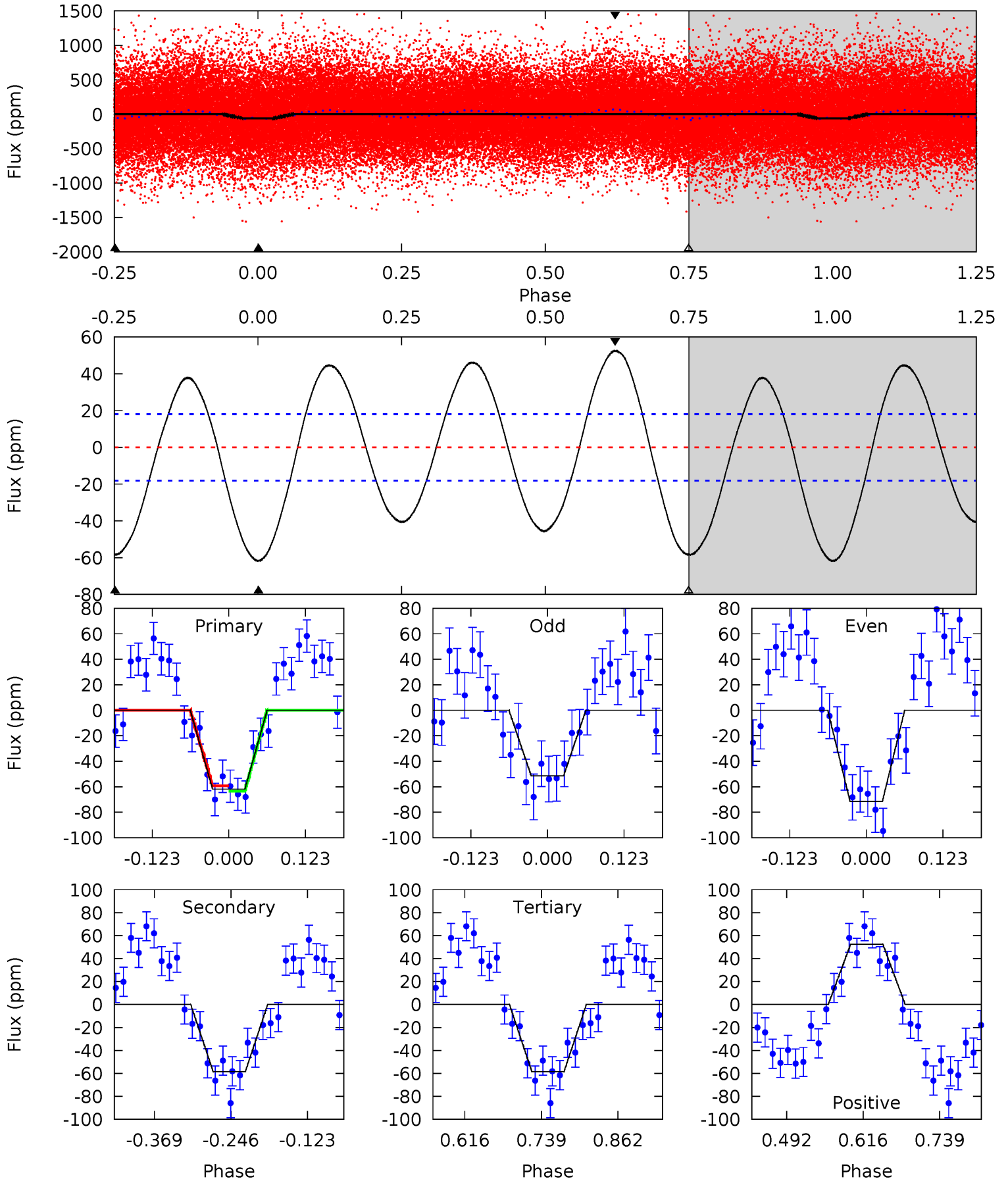
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
14.0	5.47	0	0	4.47	1.42	8.97	14.0	14.0	5.47	5.47	1.93	0.86	0.66	2.28



# Alt Model-Shift Uniqueness Test

008807777-01, P = 0.568097 Days, E = 131.294967 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
15.4	14.6	14.6	13.1	4.52	1.54	8.43	0.85	2.33	0.01	1.48	2.46	1.02	0.46	0.49





### Stellar Parameters For KIC 008807777

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$5001^{+75}_{-150}$	$2.824^{+0.030}_{-0.030}$	$-0.180^{+0.200}_{-0.300}$	$9.129^{+1.482}_{-2.409}$	$2.028^{+0.600}_{-0.899}$	$0.004^{+0.001}_{-0.000}$
	+1%/-3%	+1%/-1%	+111%/-167%	+16%/-26%	+30%/-44%	+38%/-13%
Source	PHO1	AST9	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 008807777-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	$A_{obs}$
DV	$-17 \pm 3$	$8.07^{+3.78}_{-3.49}$	$7166^{+190}_{-240}$	$-5517^{+535}_{-233}$	$0.043^{+0.084}_{-0.022}$
Alt.	$-58 \pm 4$	$7.90^{+4.32}_{-3.58}$	$7153^{+204}_{-283}$	$-4908^{+10019}_{-560}$	$0.149^{+0.337}_{-0.082}$

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

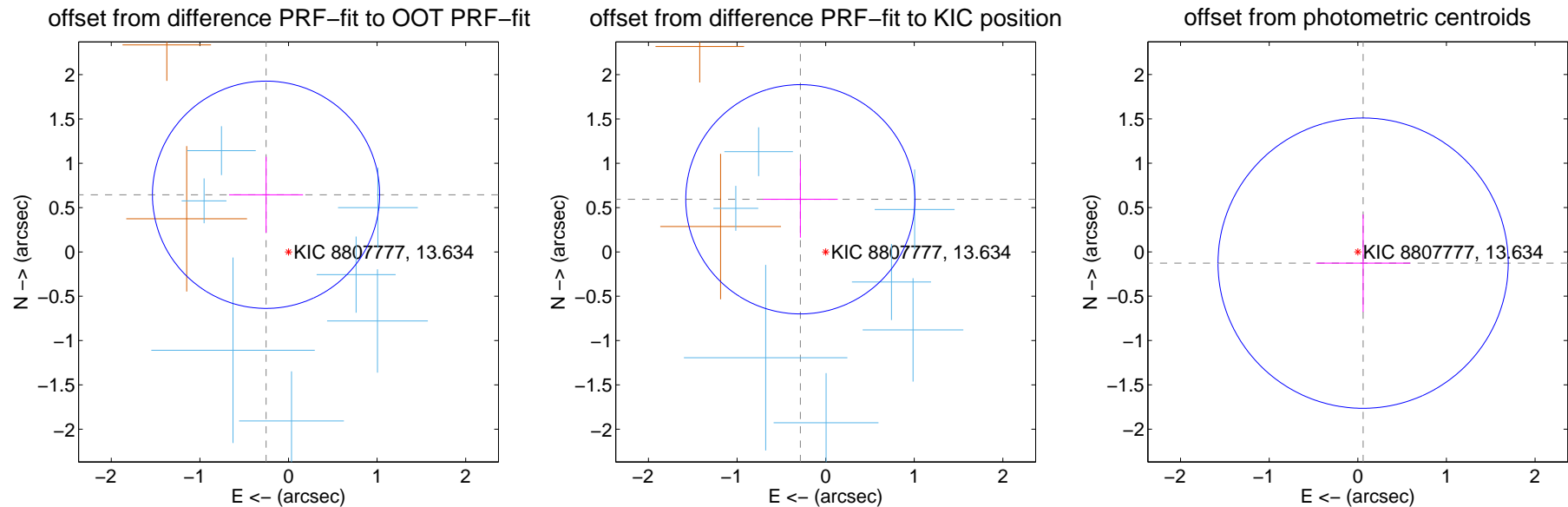
## DV Centroid Data

Supplemental centroid analysis for 008807777-01. Kepler magnitude: 13.63. Transit SNR 8.65

There are 7 quarters with good PRF difference image offsets

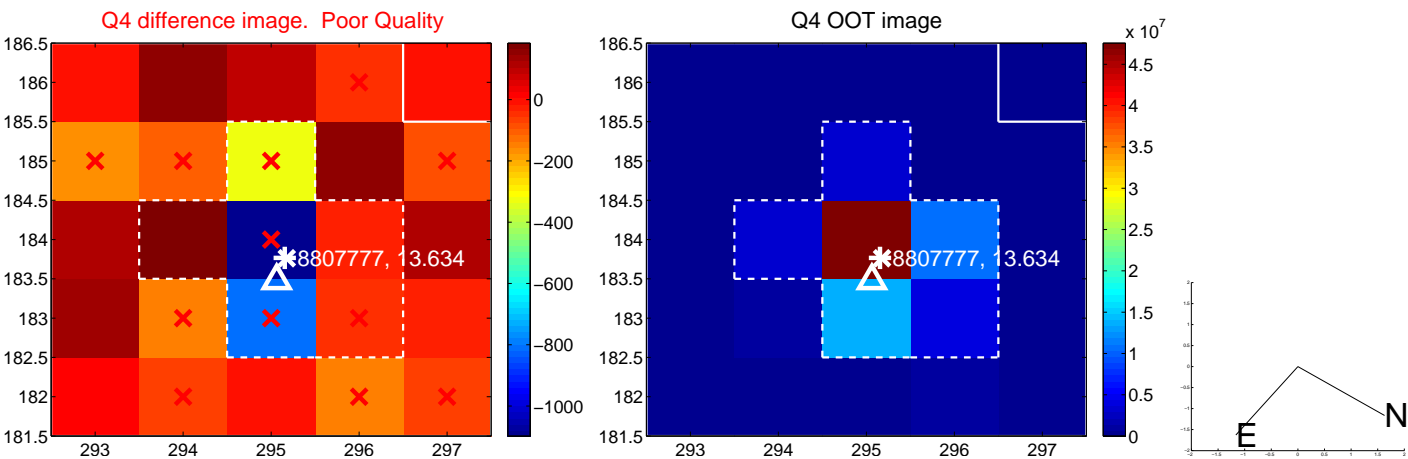
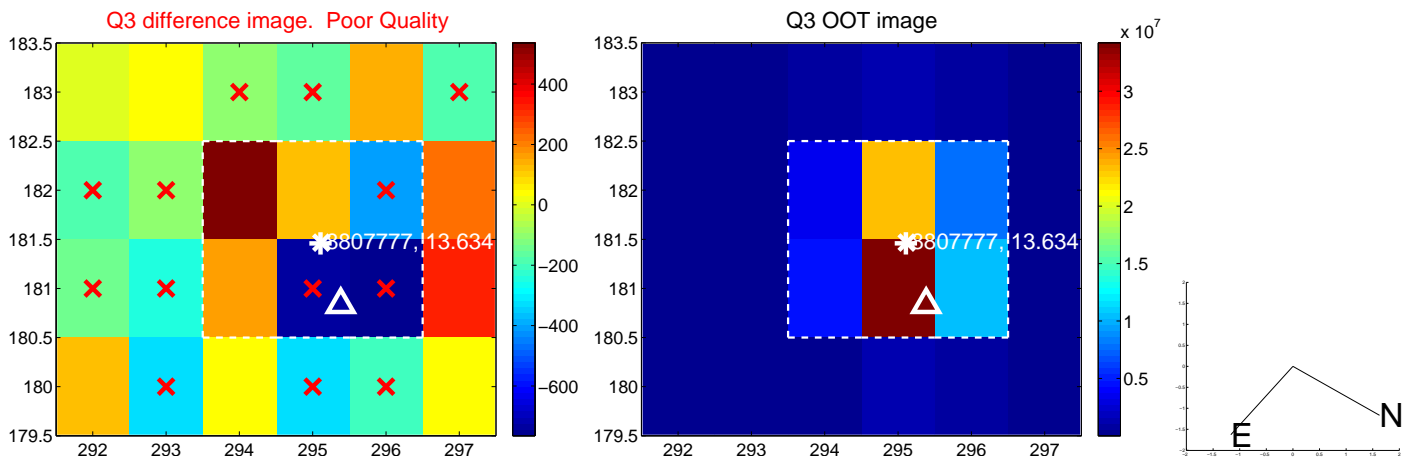
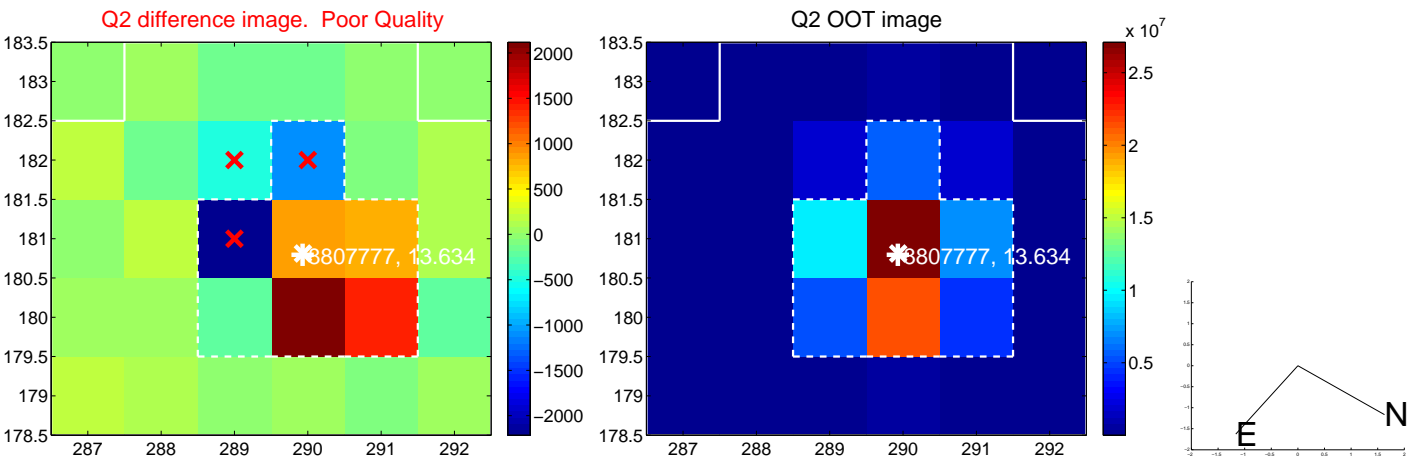
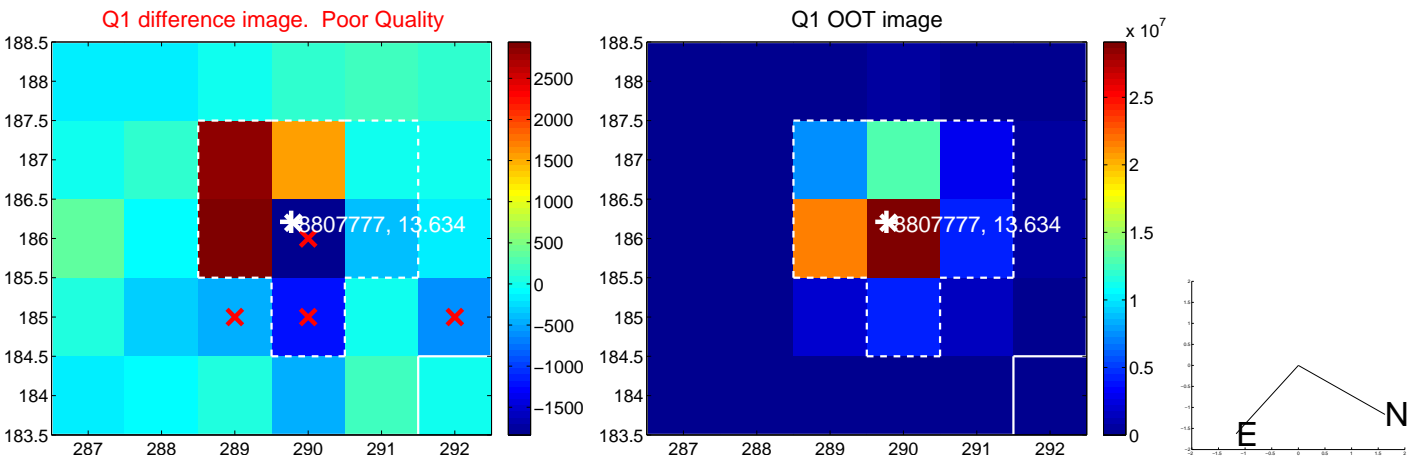
The direct PRF centroid is offset from the target star catalog position by about 0.10 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.693 \pm 0.427$	1.62	$0.253 \pm 0.418$	$0.645 \pm 0.429$
PRF-fit source offset from KIC position	$0.659 \pm 0.431$	1.53	$0.286 \pm 0.422$	$0.594 \pm 0.433$
photometric centroid source offset	$0.14 \pm 0.55$	0.26	$-0.06 \pm 0.53$	$-0.13 \pm 0.55$

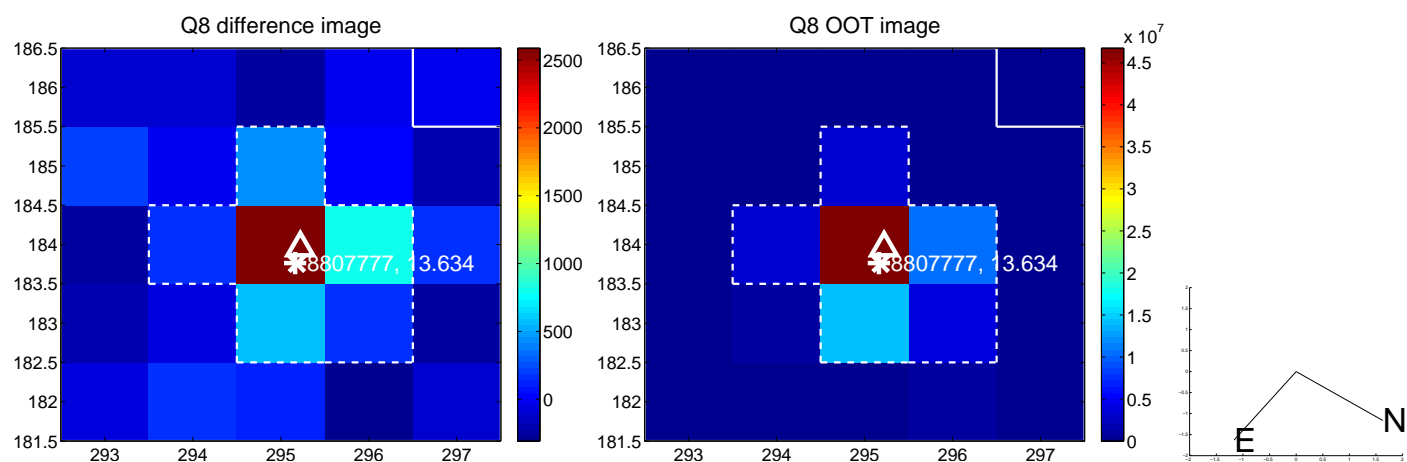
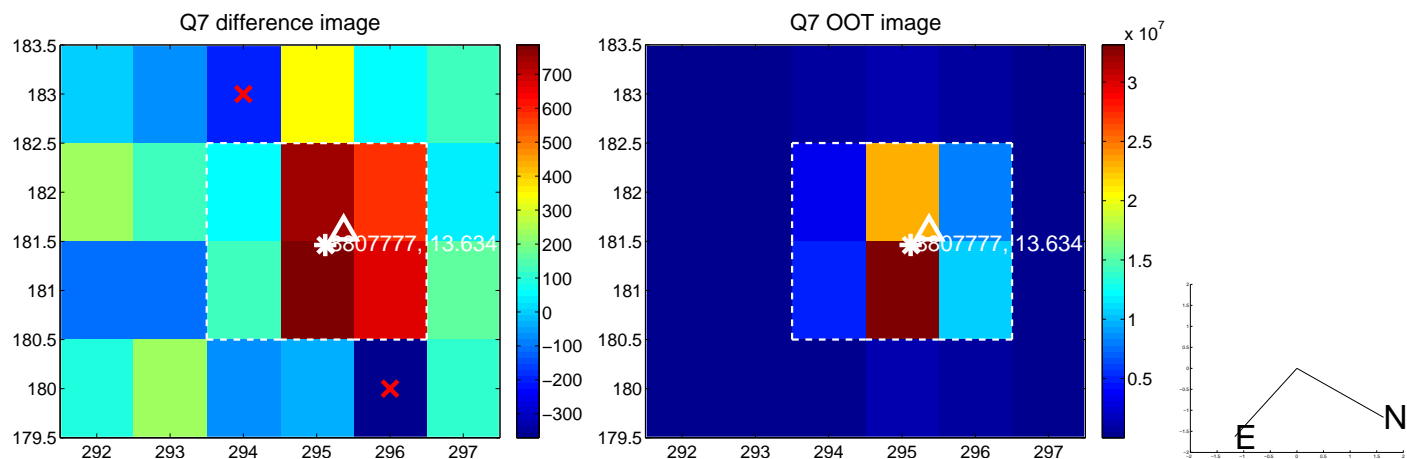
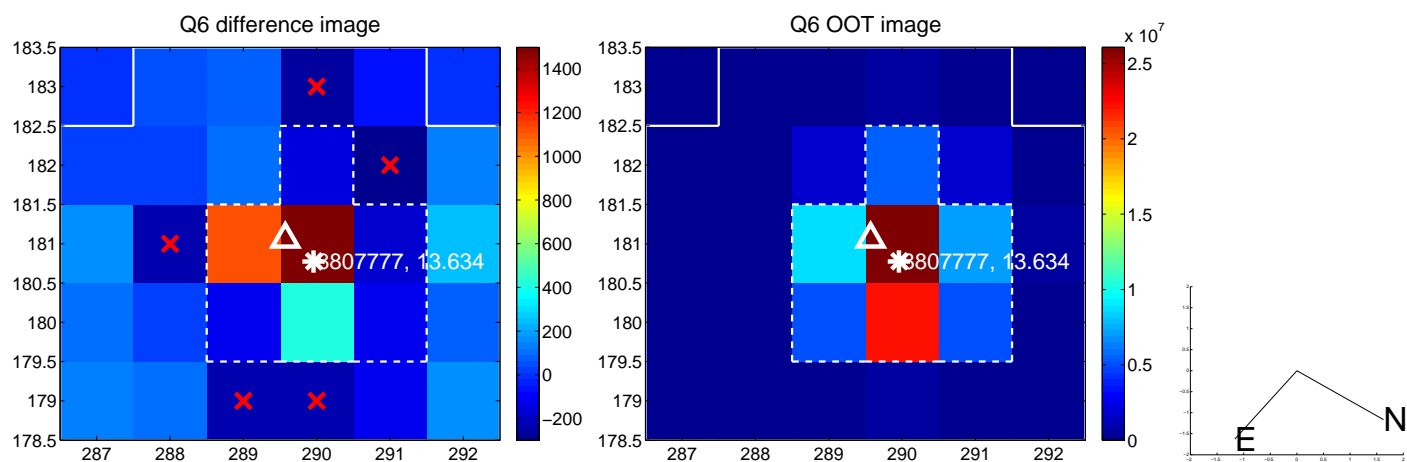
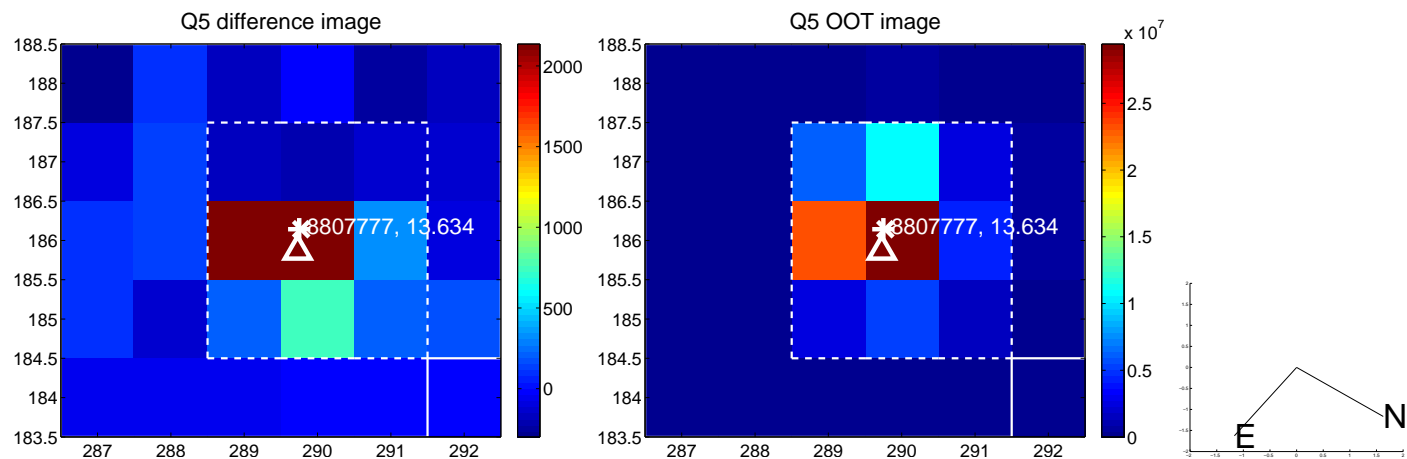


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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

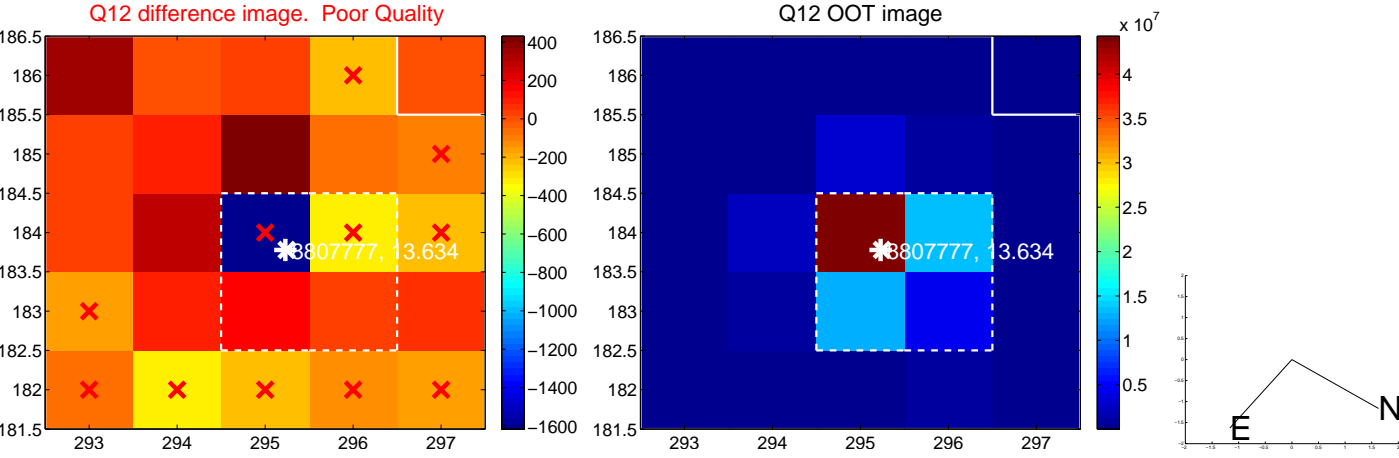
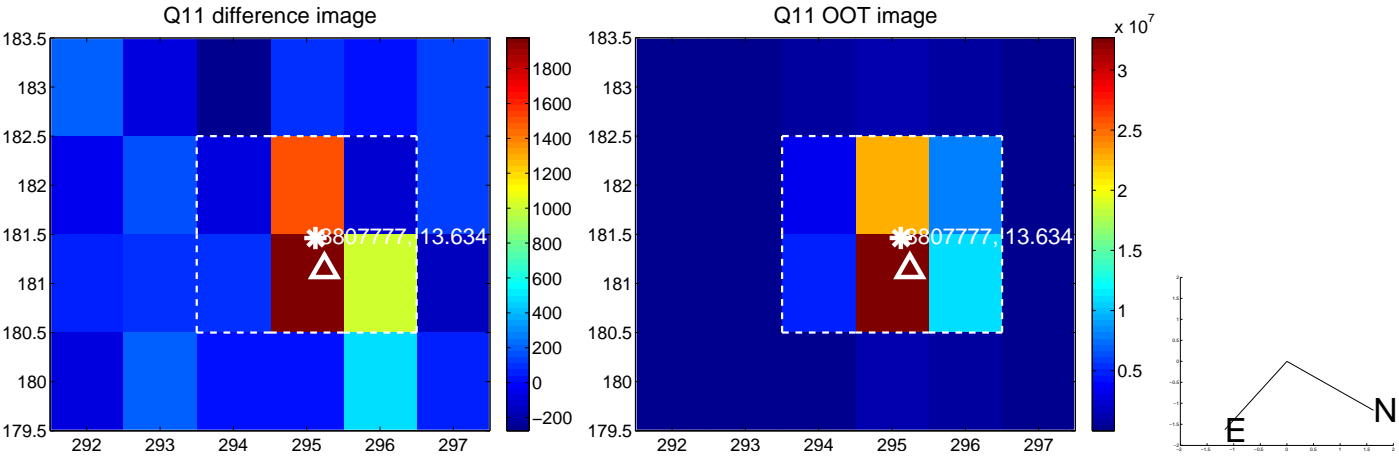
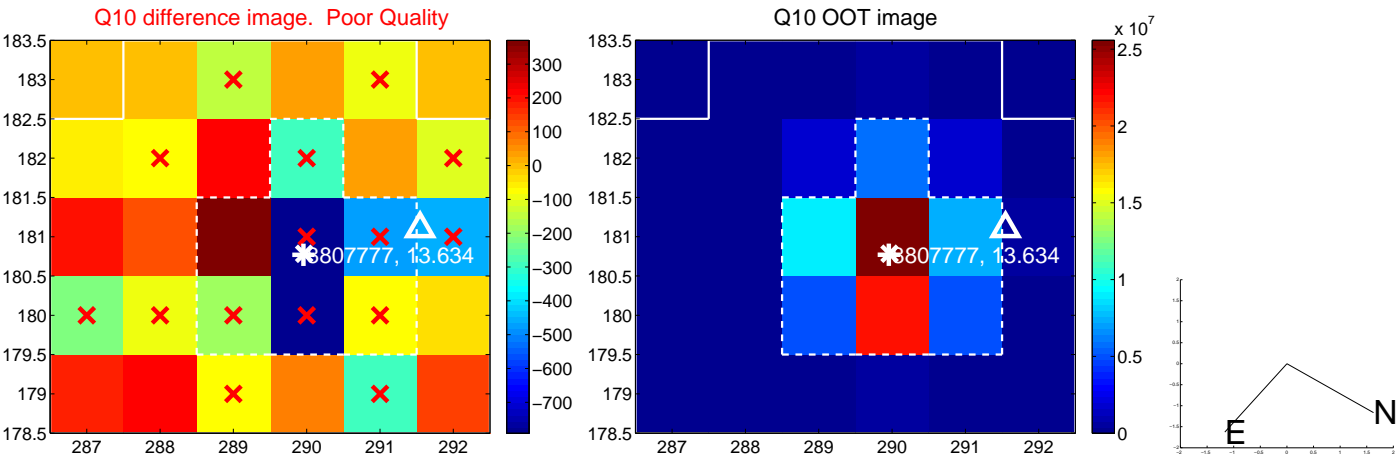
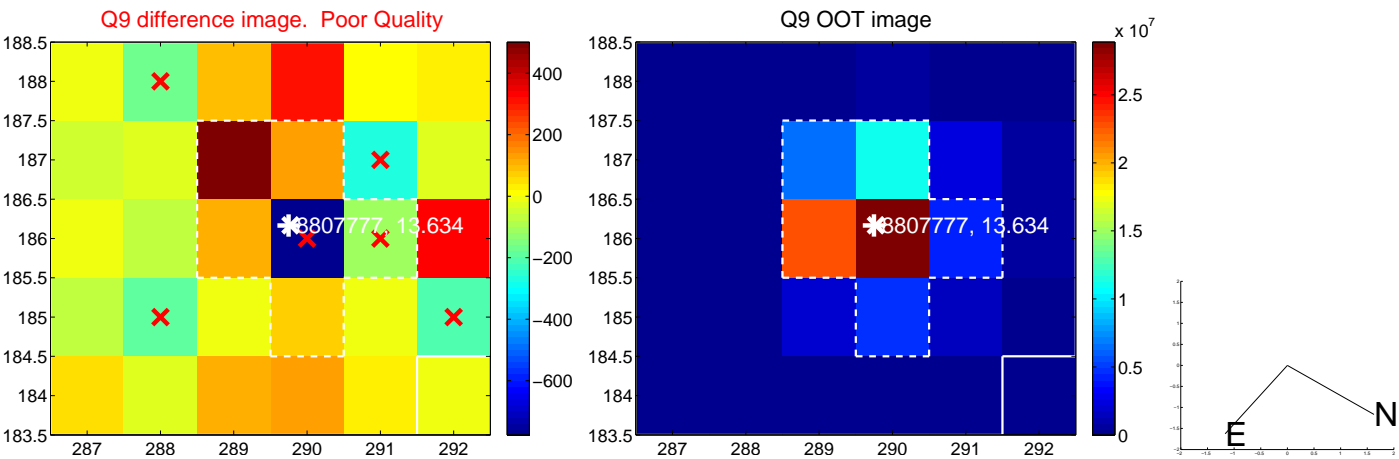


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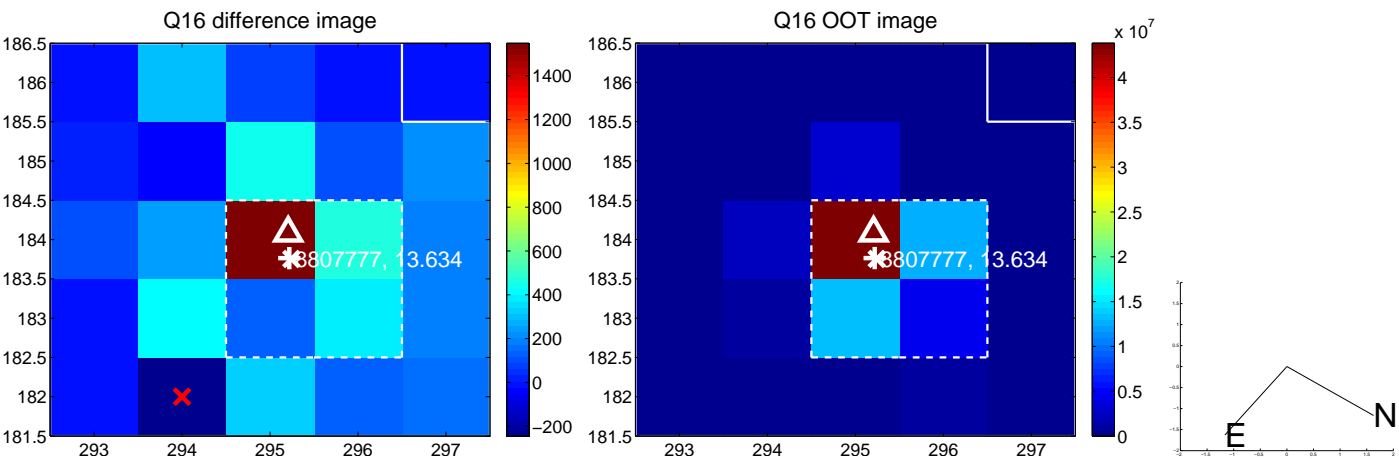
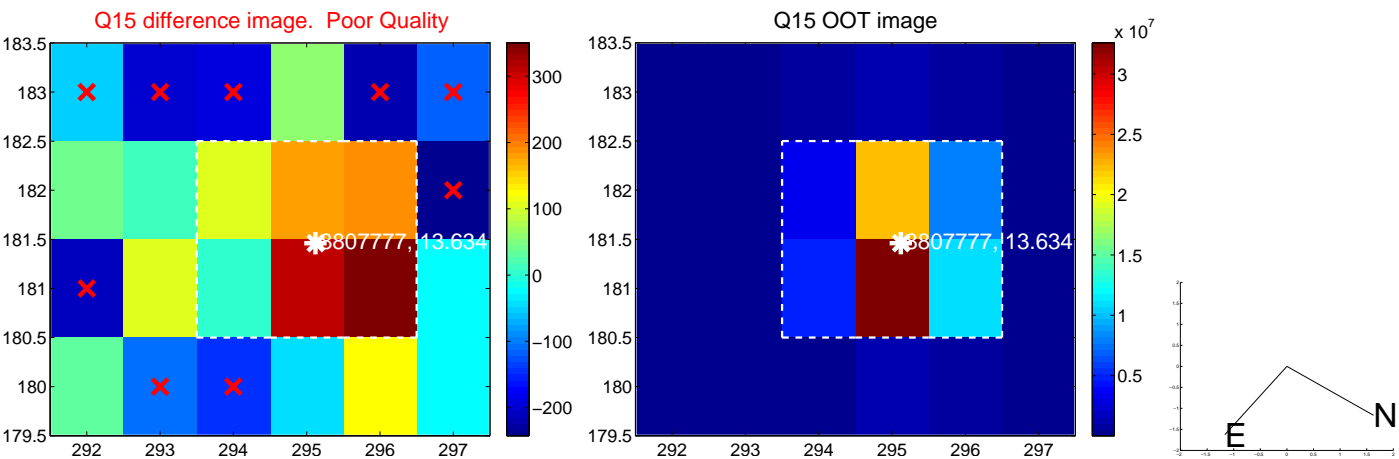
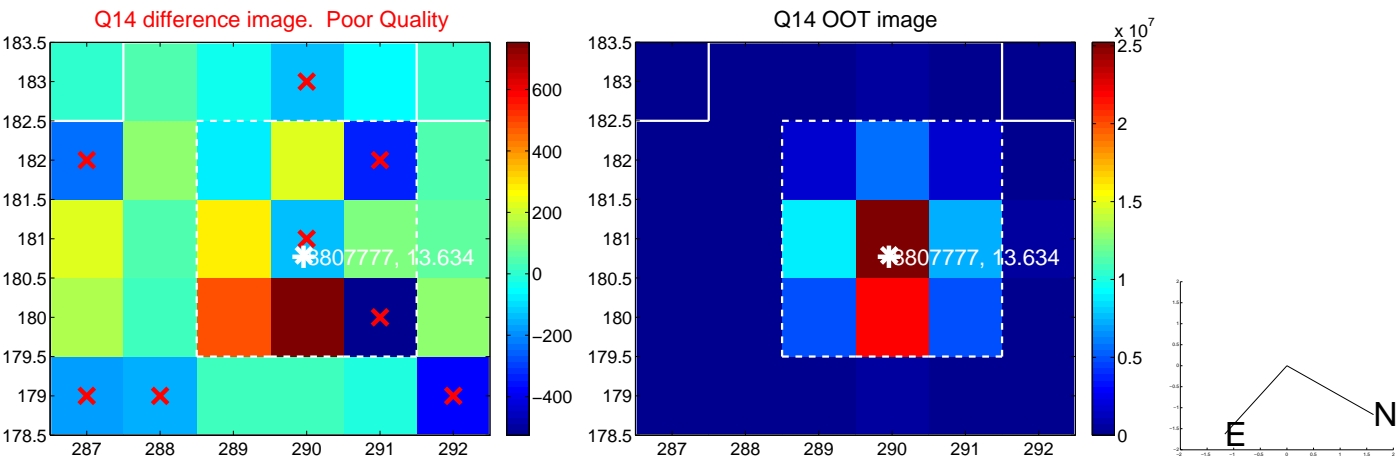
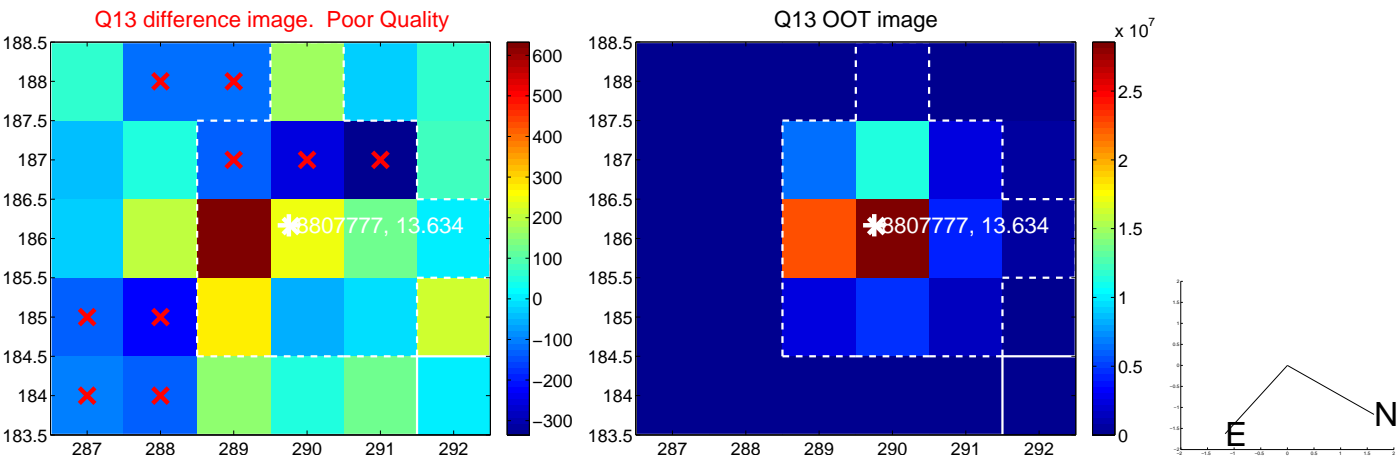




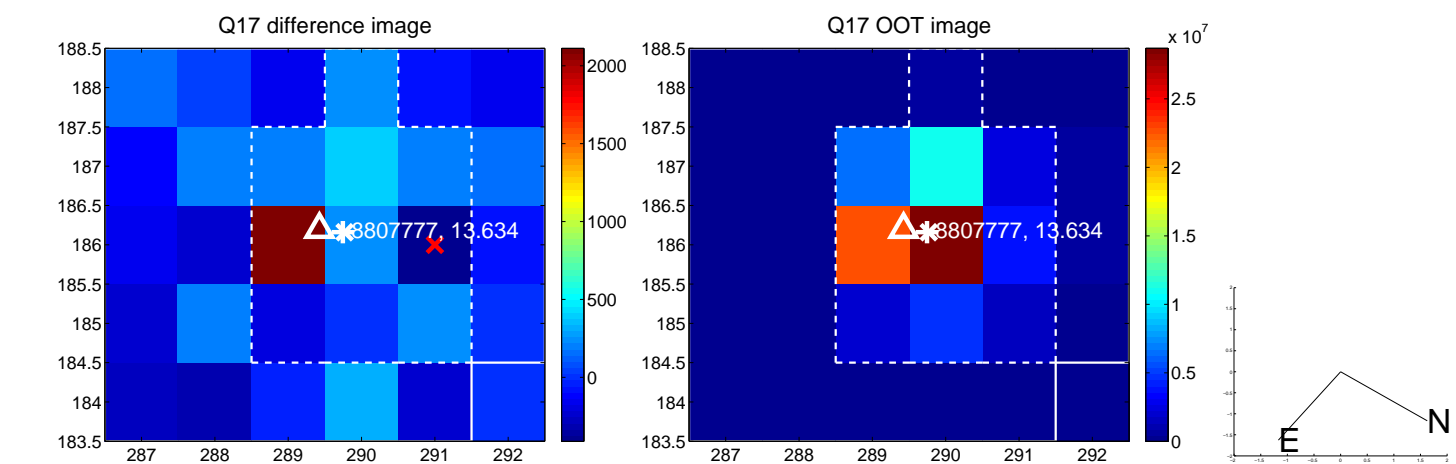
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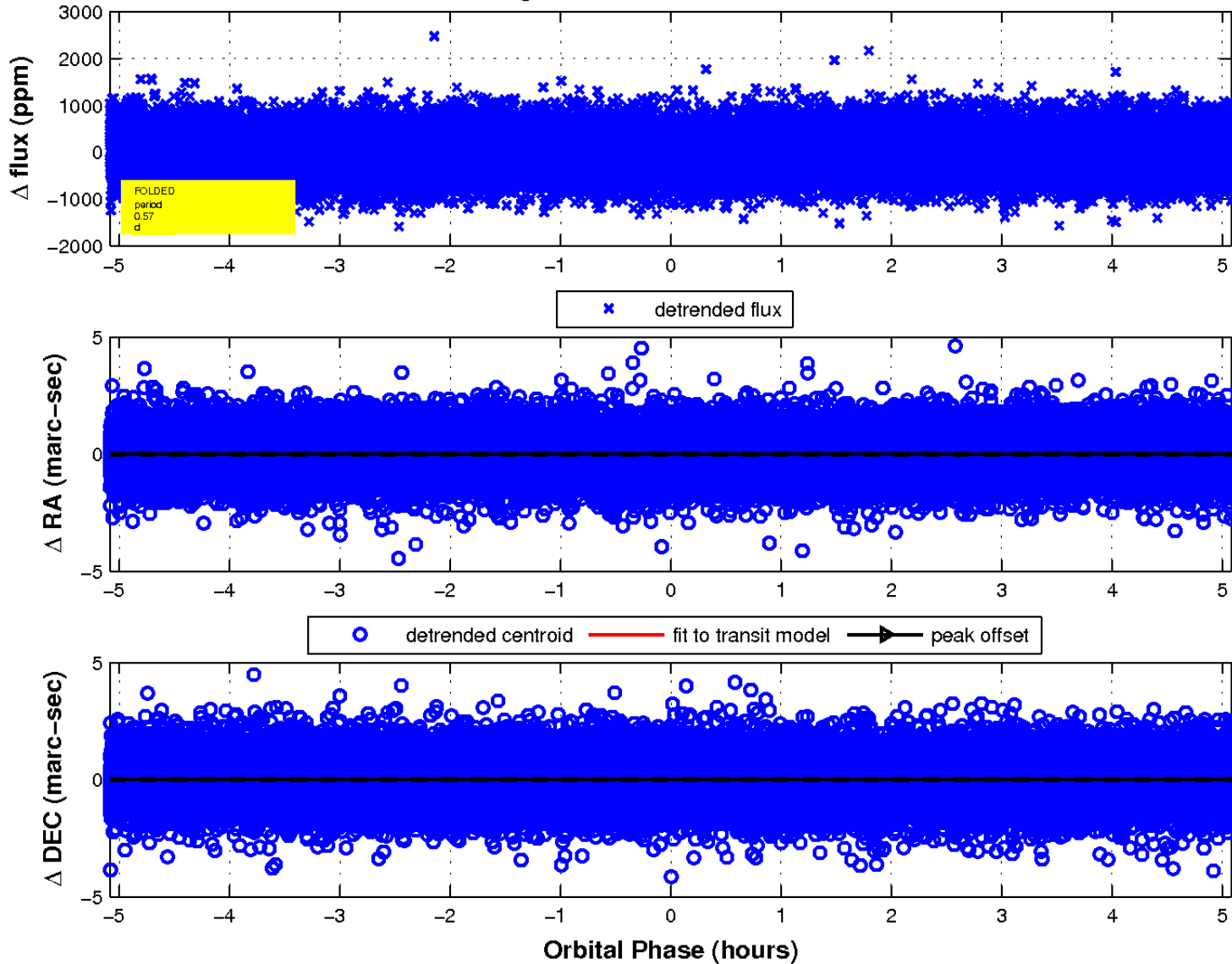
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white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



fluxWeightedCentroids, Planet 1 of 1



# UKIRT Image

Declination

