

# KIC 010405470

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
010405470-01	OBS	No	0.933640	131.612053	26.6	4.558	8.6	6.1	1.05	6161	0.55	3728.60

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
010405470-01	OBS	FP	0.00	1	0	1	0	LPP_DV—CENT_RESOLVED_OFFSET—HALO_GHOST

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

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

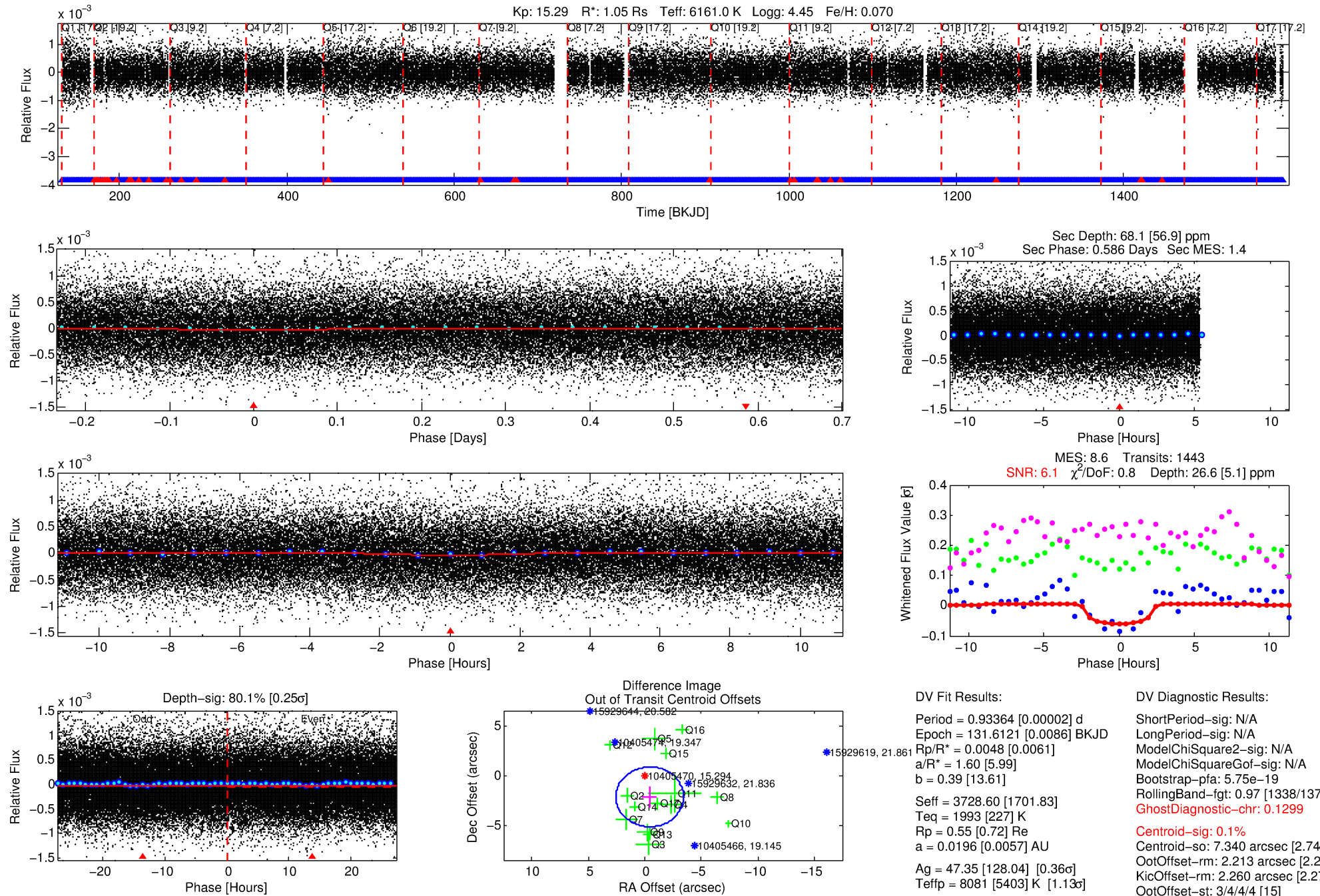
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 010405470-01

No Significant Match Found

# DV One-Page Summary

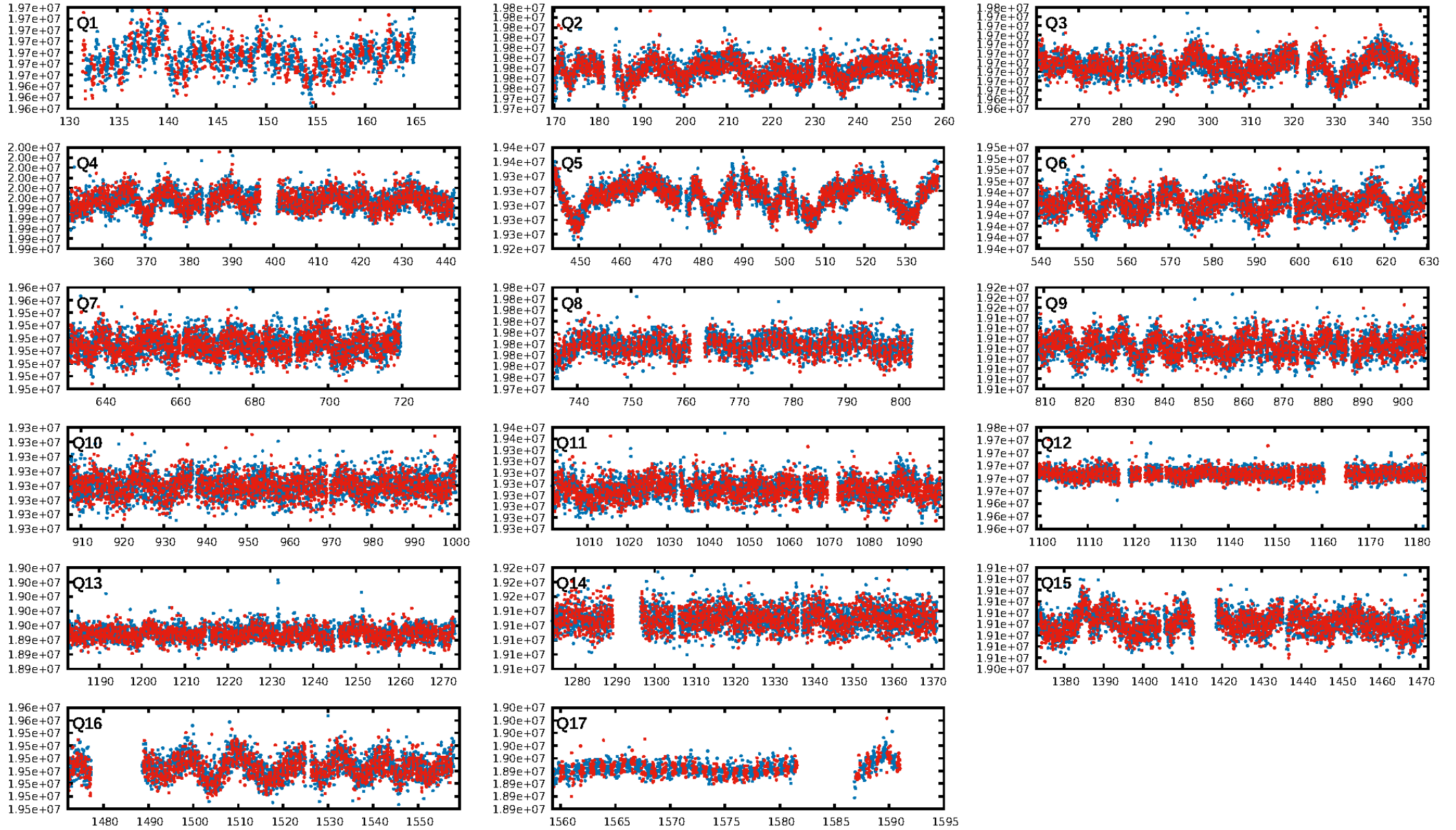
KIC: 10405470 Candidate: 1 of 1 Period: 0.934 d



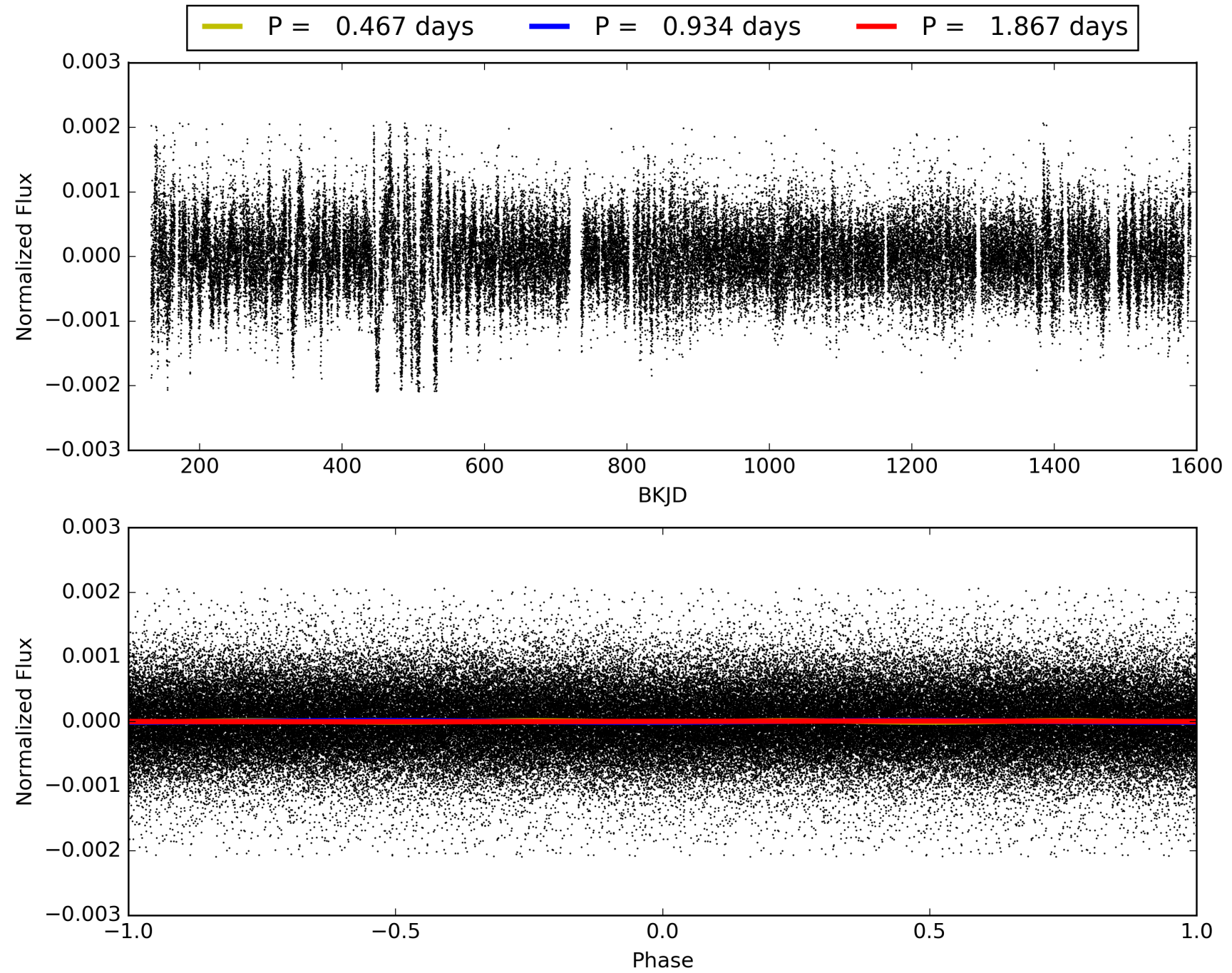
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 00:26:55 Z

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

# TCE 010405470-01, PDC Light Curves

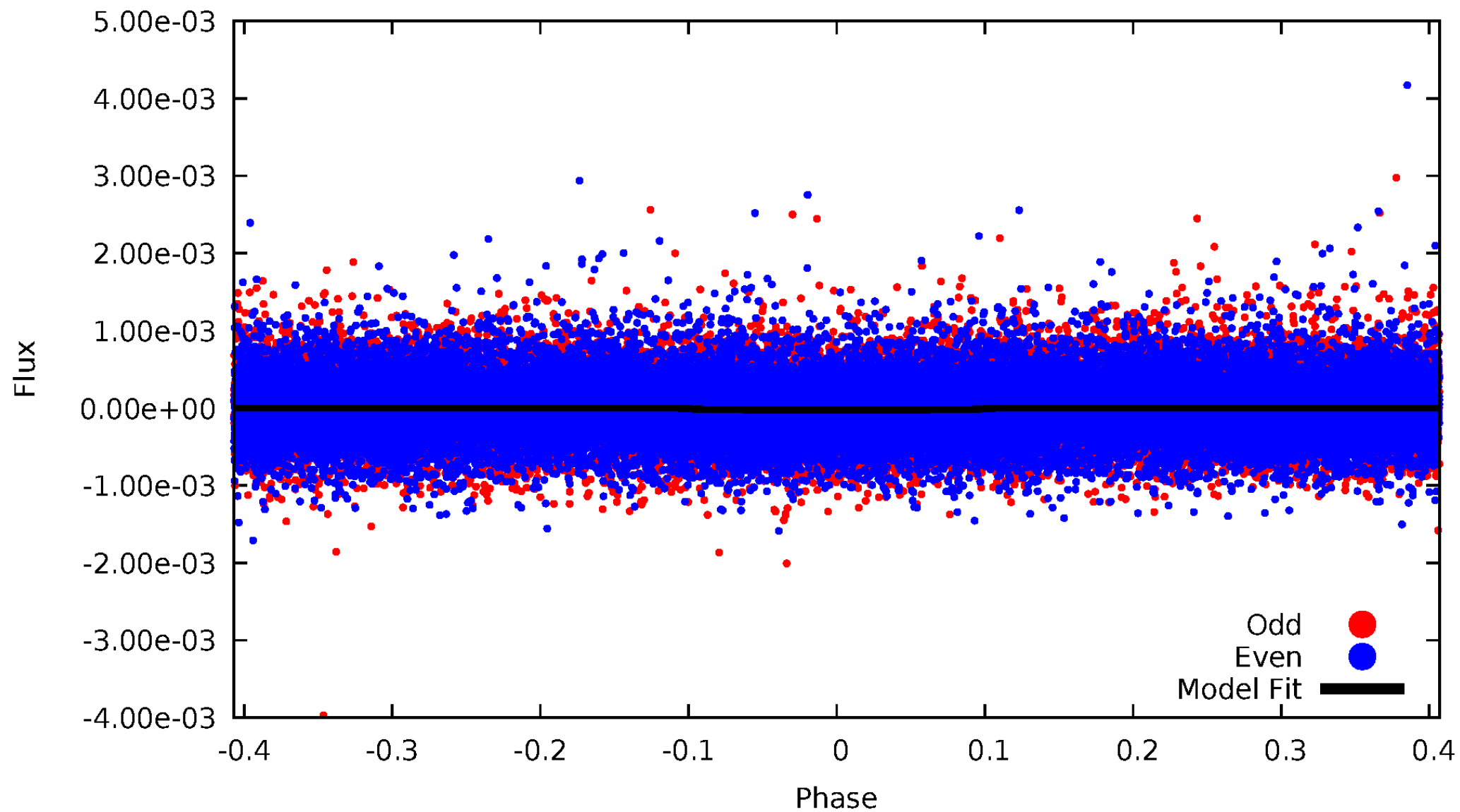


TCE 010405470-01



# DV Odd/Even

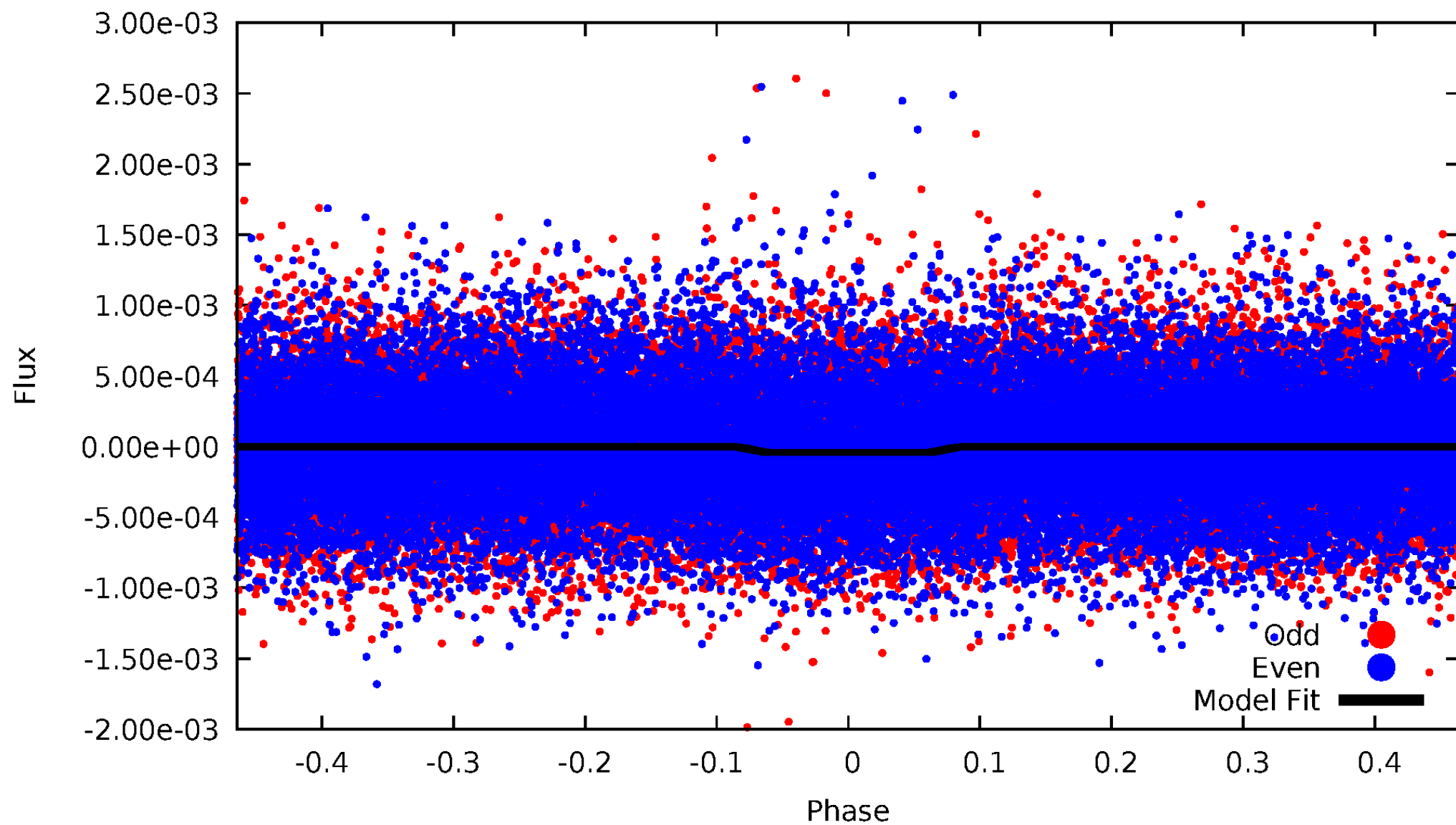
TCE 010405470-01





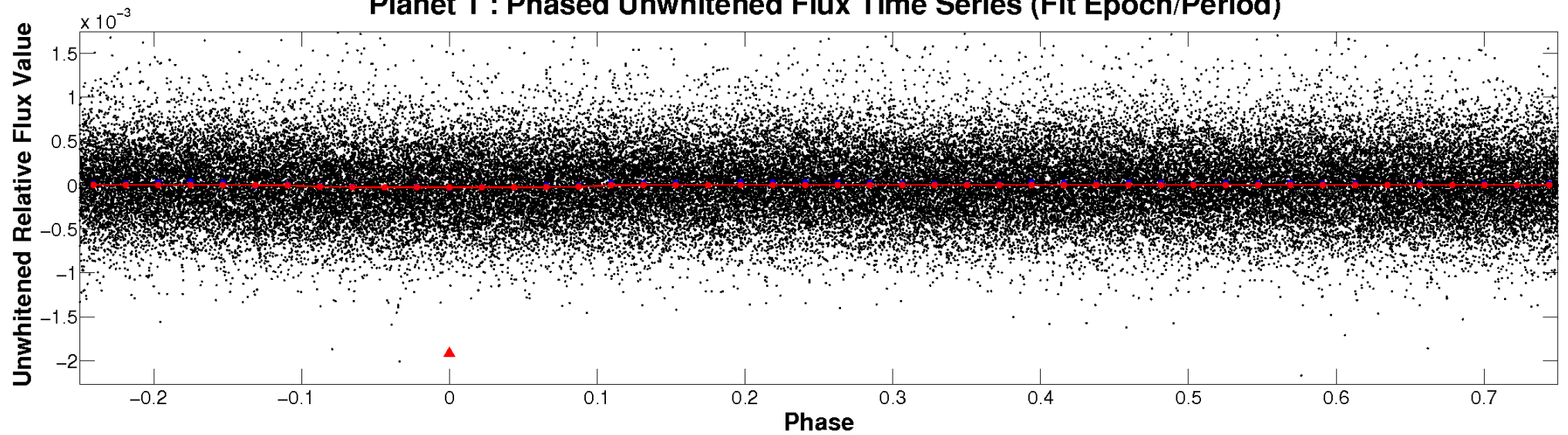
# ALT Odd/Even

TCE 010405470-01

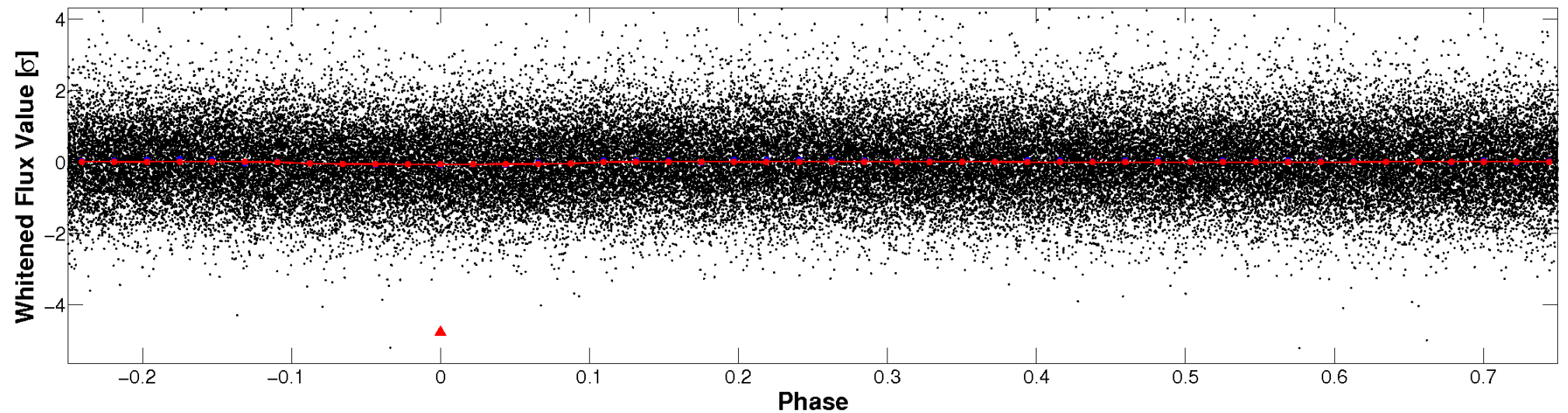


# Non-Whitened Vs. Whitened Light Curve

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

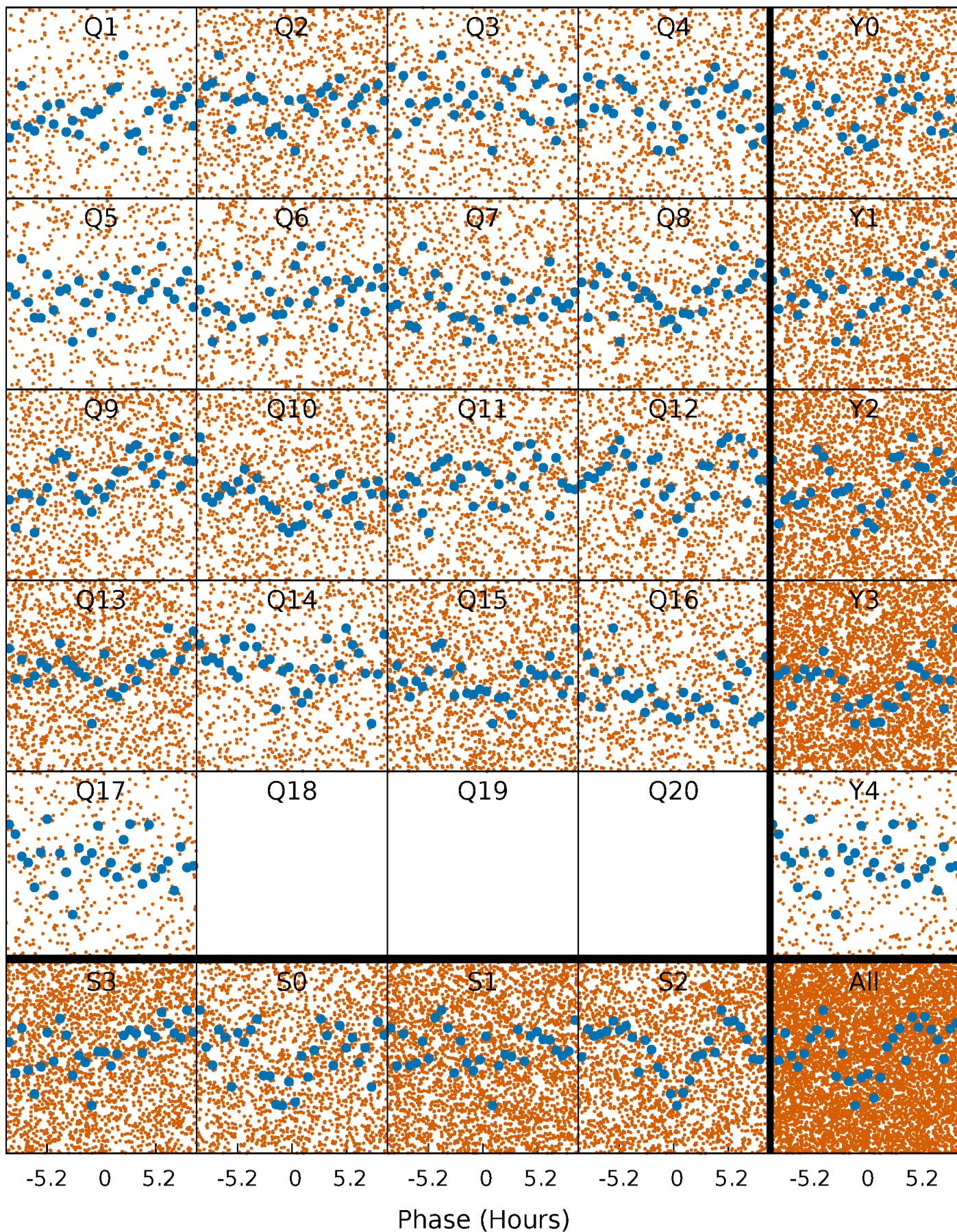


**Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)**



# PDC Quarter-Phased Transit Curves

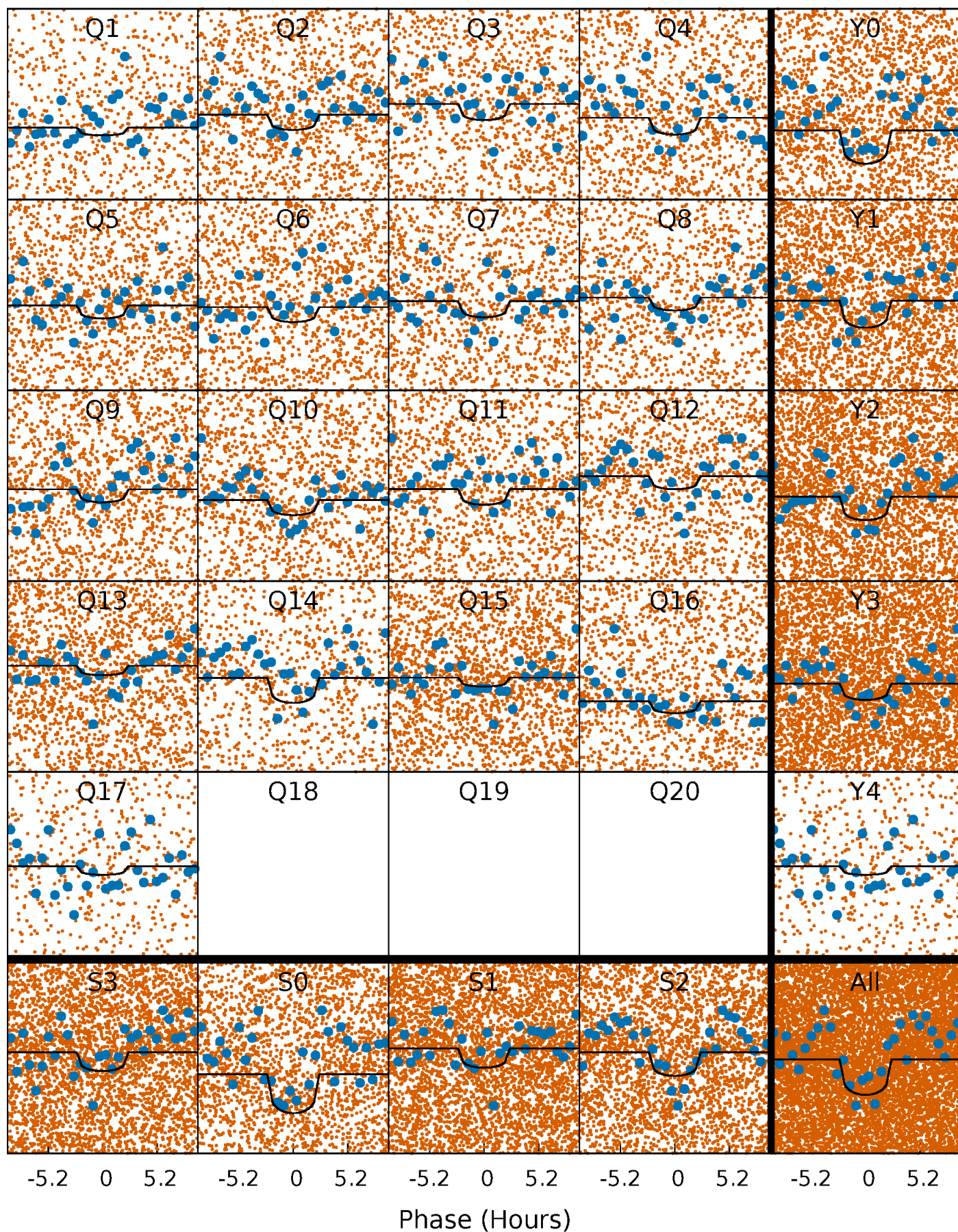
TCE 010405470-01 P= 0.933640 Days  $T_0=131.612053$  (BKJD)





# DV Quarter-Phased Transit Curves

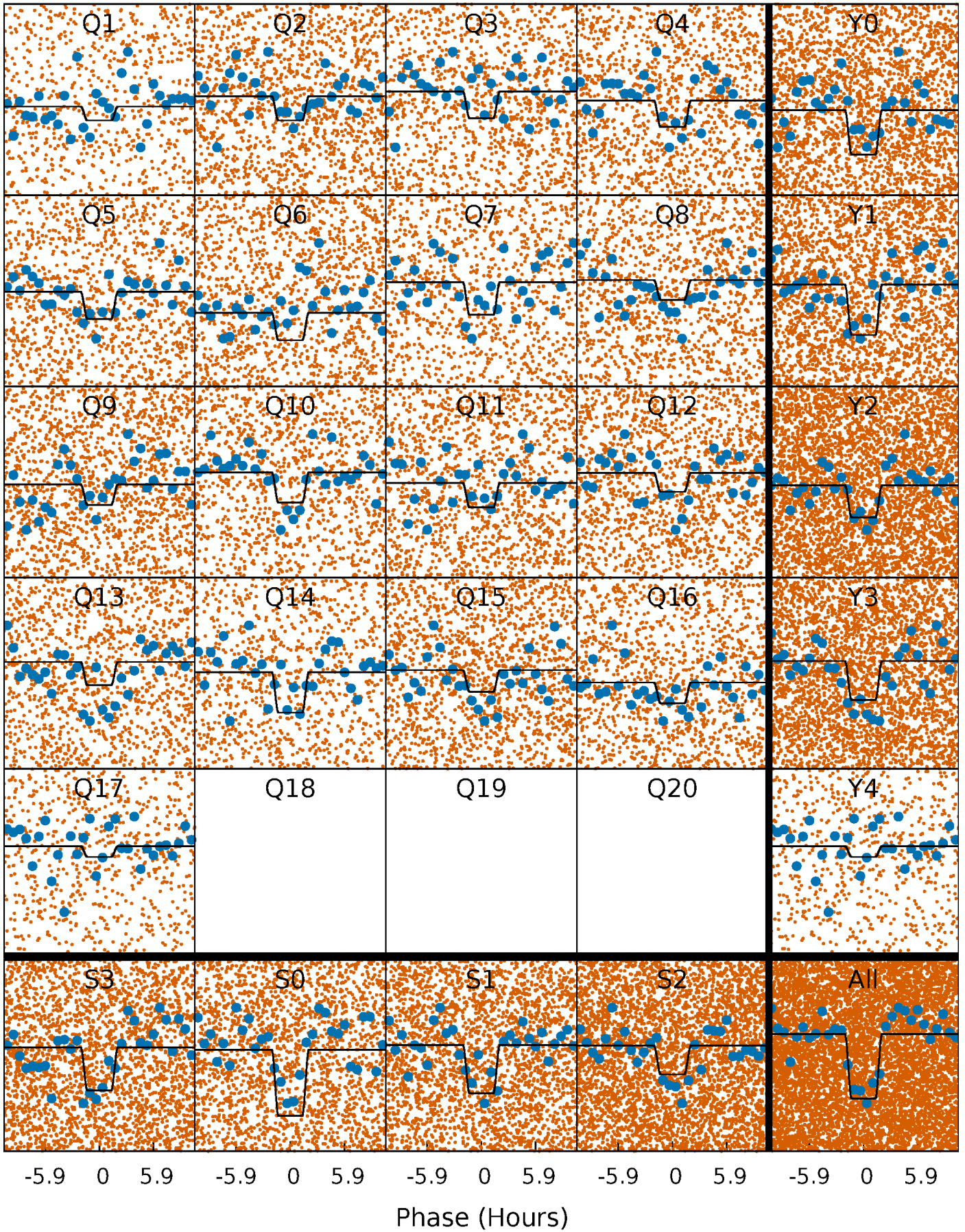
TCE 010405470-01 P= 0.933640 Days  $T_0=131.612053$  (BKJD)





# Alt. Detrend Quarter-Phased Transit Curves

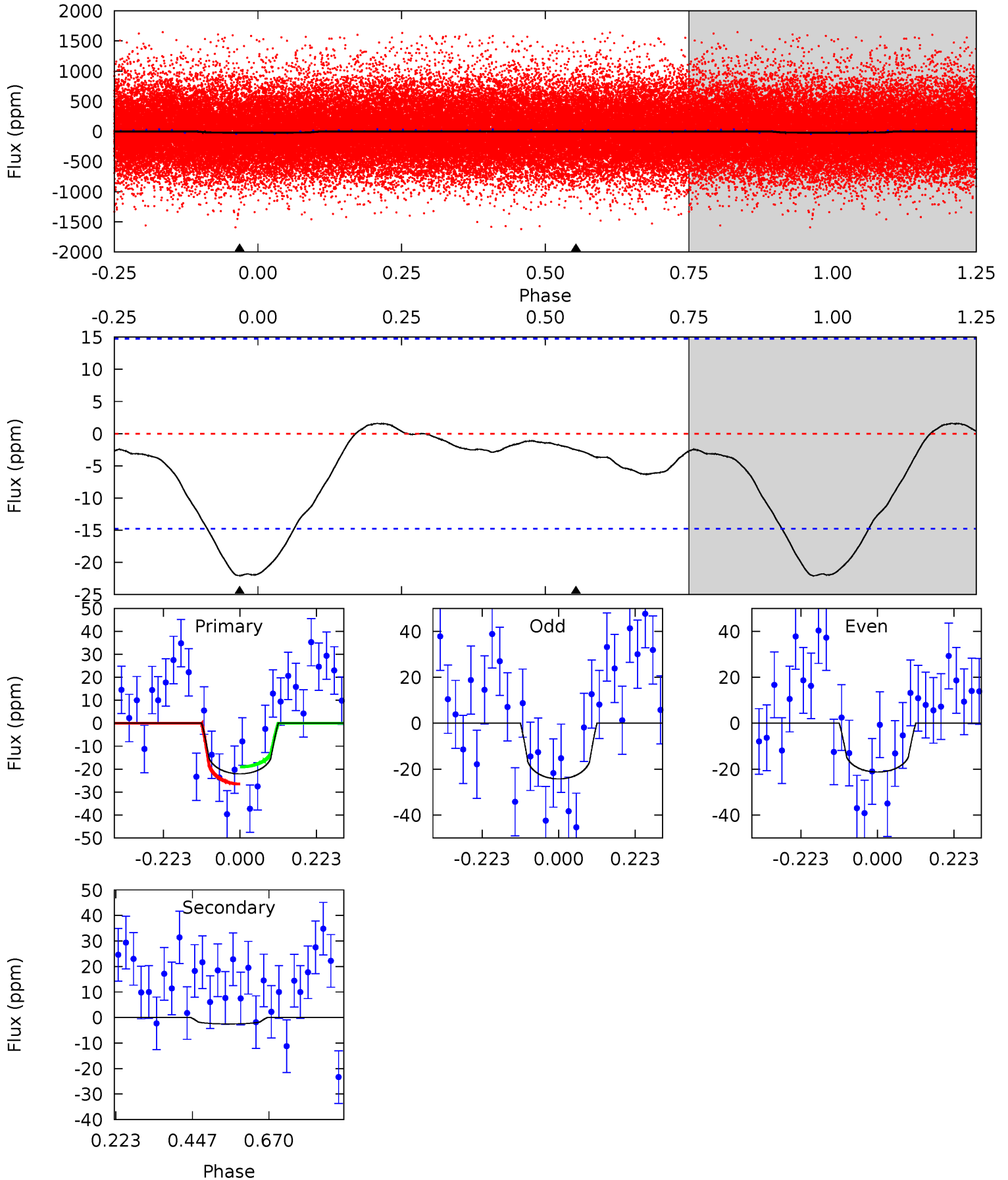
TCE 010405470-01 P= 0.933703 Days  $T_0=131.555509$  (BKJD)



# DV Model-Shift Uniqueness Test

010405470-01, P = 0.933640 Days, E = 130.678413 Days

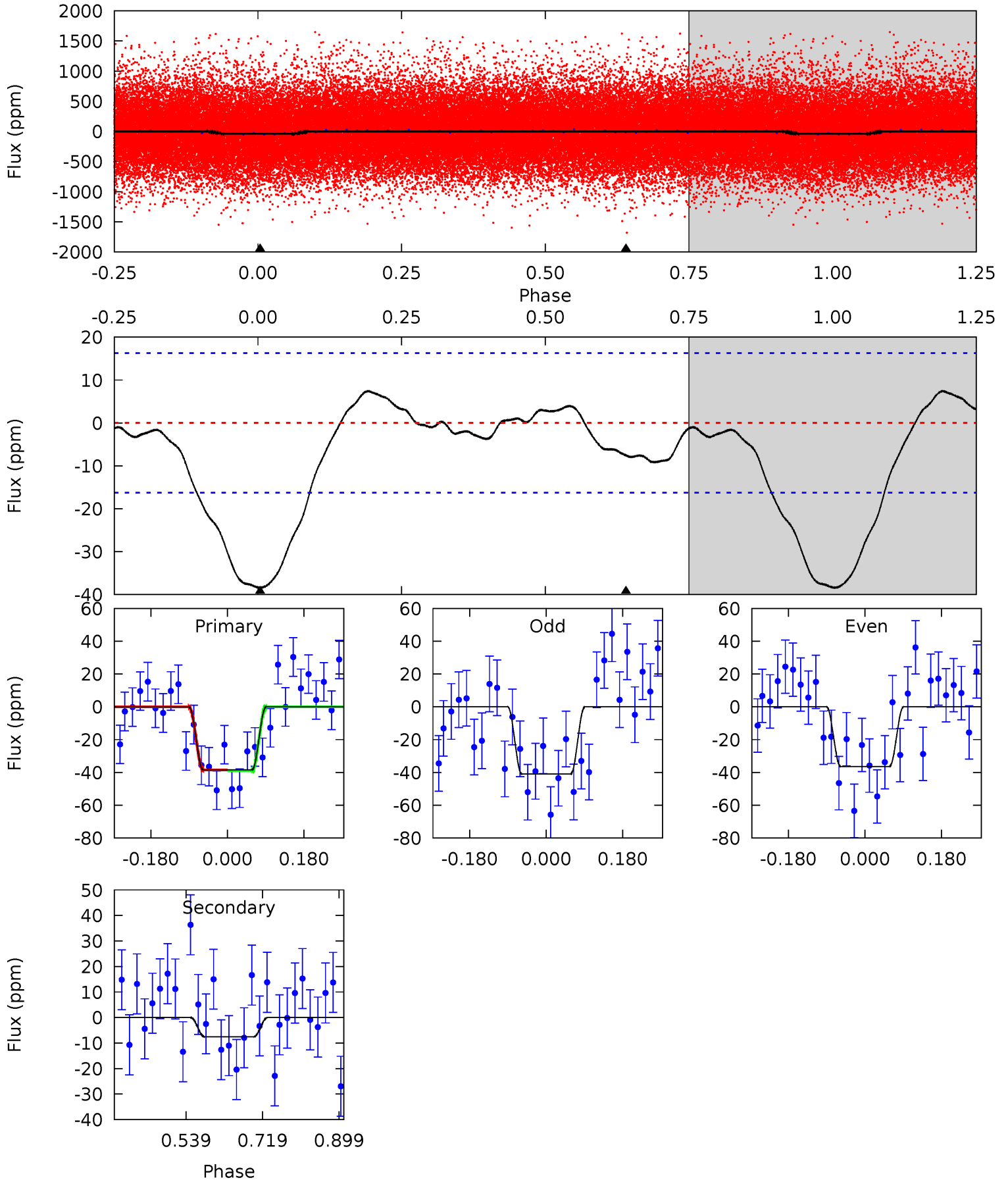
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
6.56	0.75	0	0	4.39	1.22	0.26	6.56	6.56	0.75	0.75	0.45	0.76	0.07	1.11



# Alt Model-Shift Uniqueness Test

010405470-01, P = 0.933703 Days, E = 130.621806 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	2.07	0	0	4.44	1.34	0.89	10.5	10.5	2.07	2.07	0.63	1.01	0.16	0.06





### Stellar Parameters For KIC 010405470

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$6161^{+171}_{-236}$	$4.454^{+0.056}_{-0.238}$	$0.070^{+0.250}_{-0.300}$	$1.053^{+0.358}_{-0.119}$	$1.150^{+0.146}_{-0.162}$	$1.388^{+0.403}_{-0.768}$
	+3%/-4%	+1%/-5%	+357%/-429%	+34%/-11%	+13%/-14%	+29%/-55%
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 010405470-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	$A_{obs}$
DV	$-3 \pm 3$	$0.77^{+0.67}_{-0.50}$	$2848^{+205}_{-153}$	$3079^{+1935}_{-6365}$	$0.632^{+5.646}_{-0.866}$
Alt.	$-8 \pm 4$	$0.92^{+0.71}_{-0.56}$	$2845^{+219}_{-160}$	$3827^{+1989}_{-1136}$	$1.724^{+10.601}_{-1.295}$

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

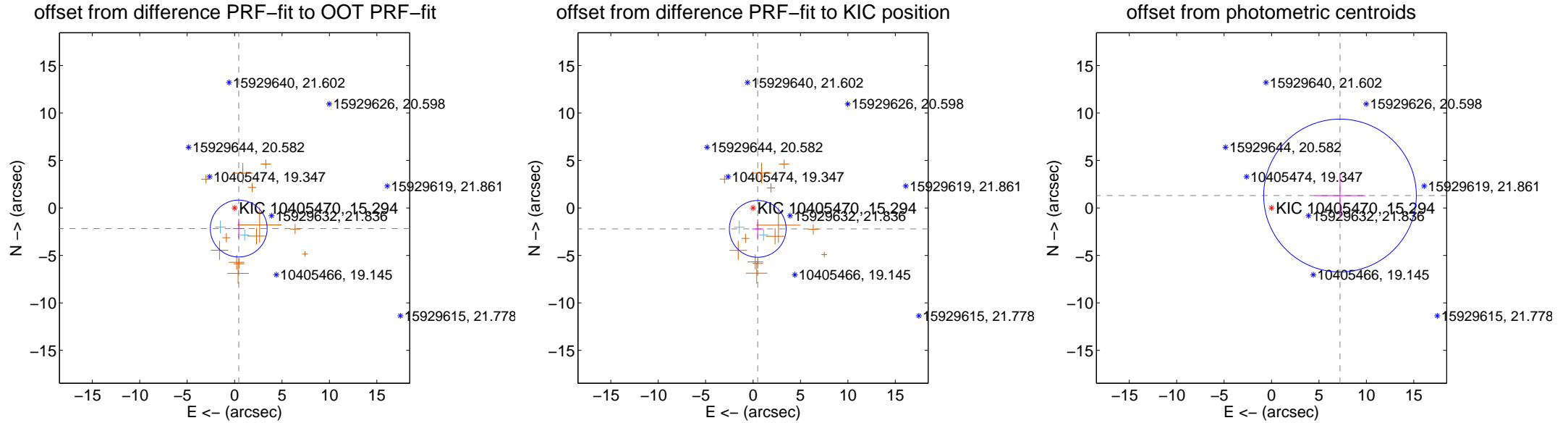
## DV Centroid Data

Supplemental centroid analysis for 010405470-01. Kepler magnitude: 15.29. Transit SNR 6.12

There are 2 quarters with good PRF difference image offsets

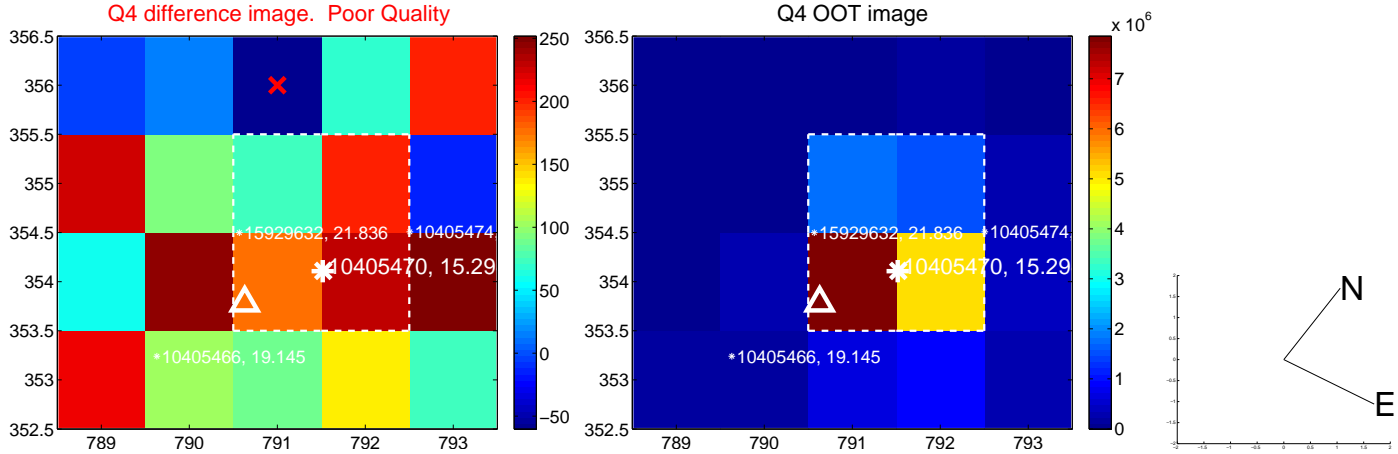
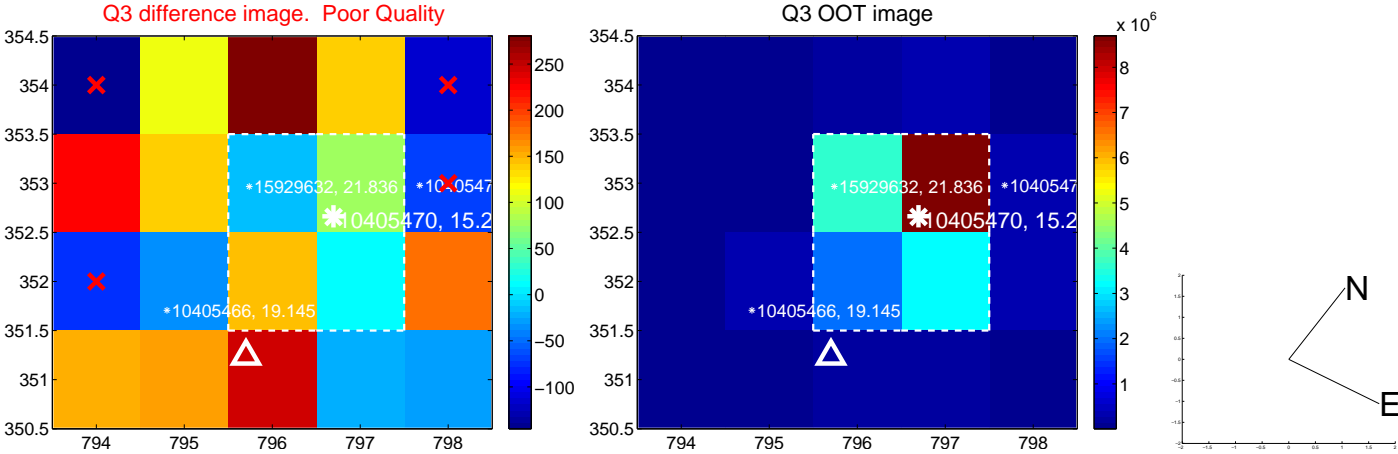
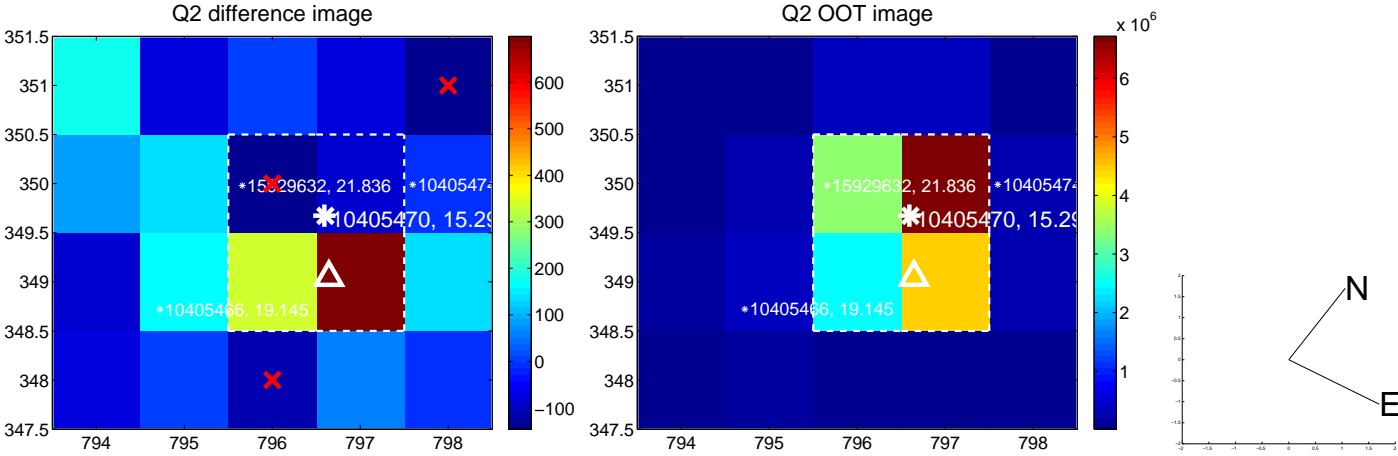
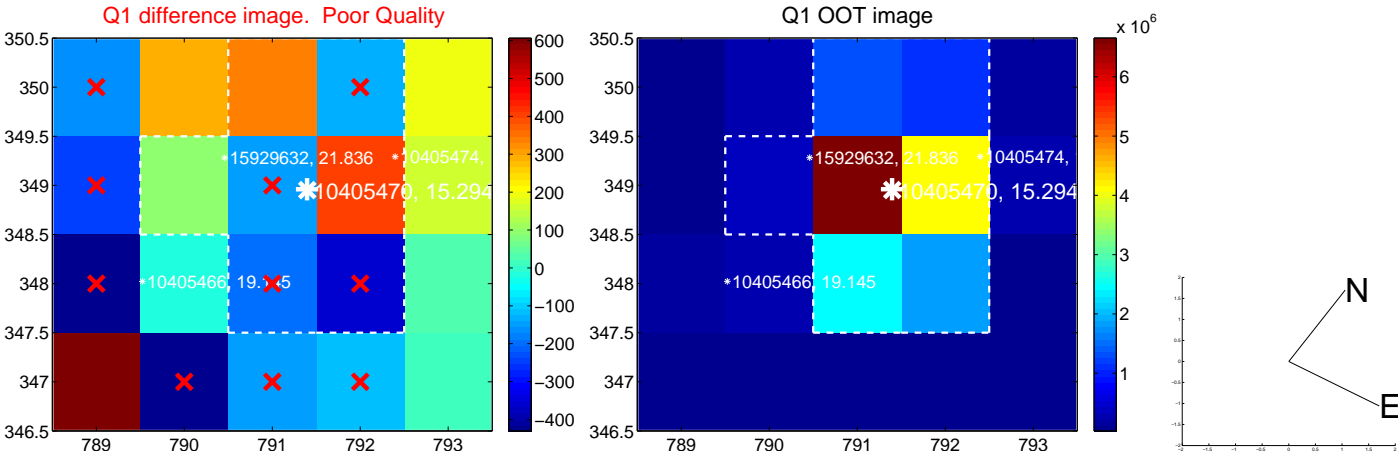
The direct PRF centroid is offset from the target star catalog position by about 0.05 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$2.213 \pm 0.999$	2.22	$-0.437 \pm 0.596$	$-2.169 \pm 1.012$
PRF-fit source offset from KIC position	$2.260 \pm 0.997$	2.27	$-0.493 \pm 0.594$	$-2.206 \pm 1.013$
photometric centroid source offset	$7.34 \pm 2.68$	2.74	$-7.22 \pm 2.69$	$1.31 \pm 2.38$

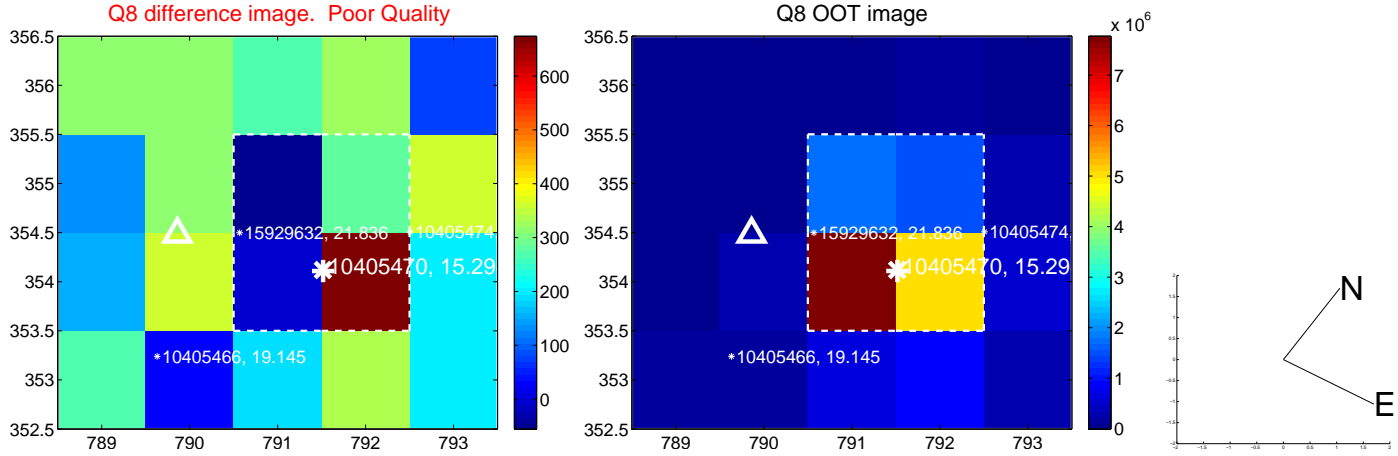
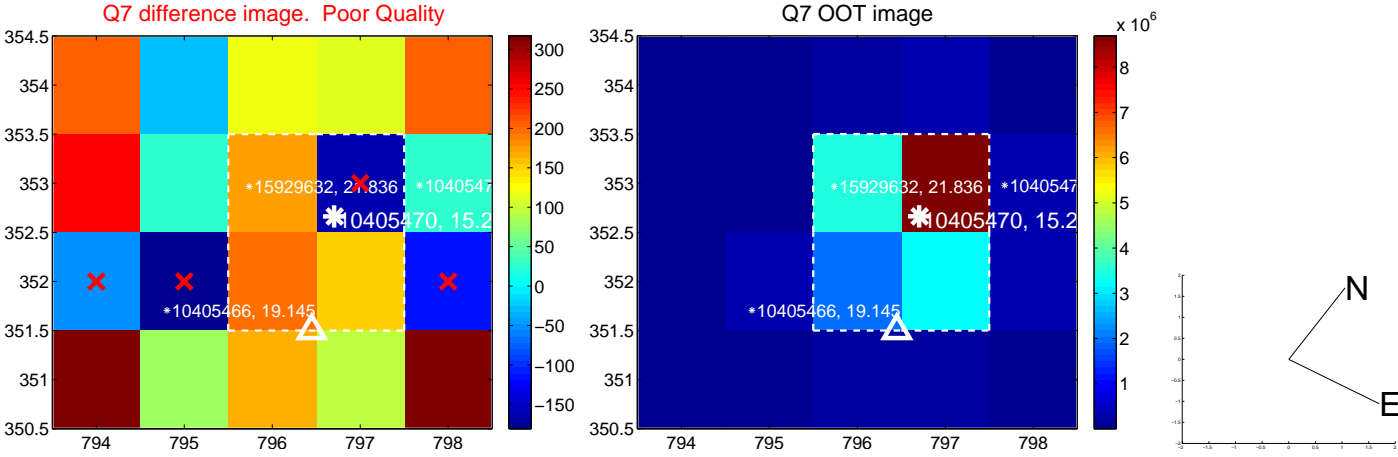
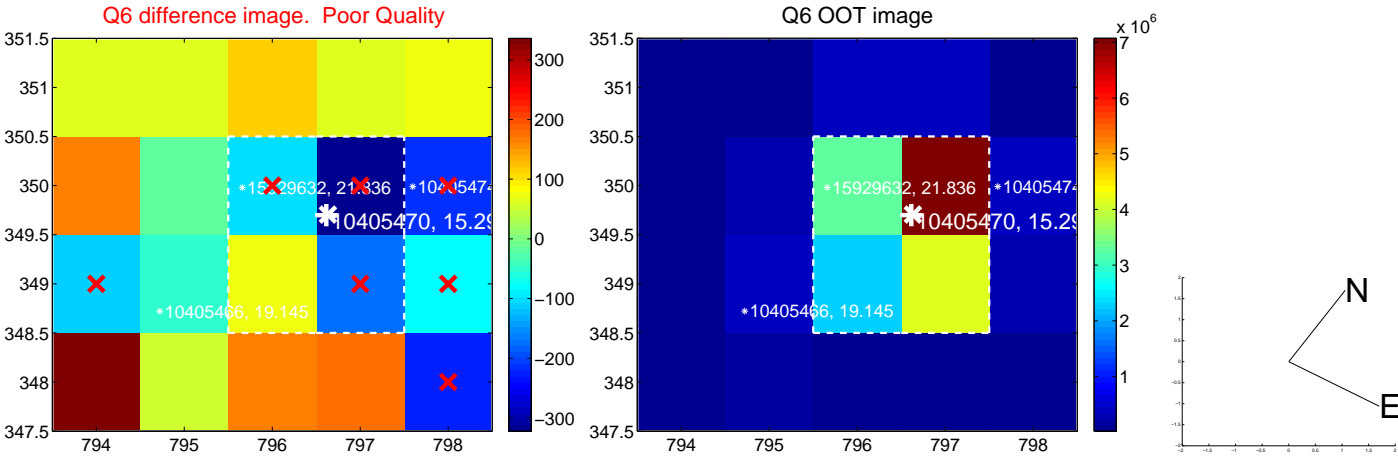
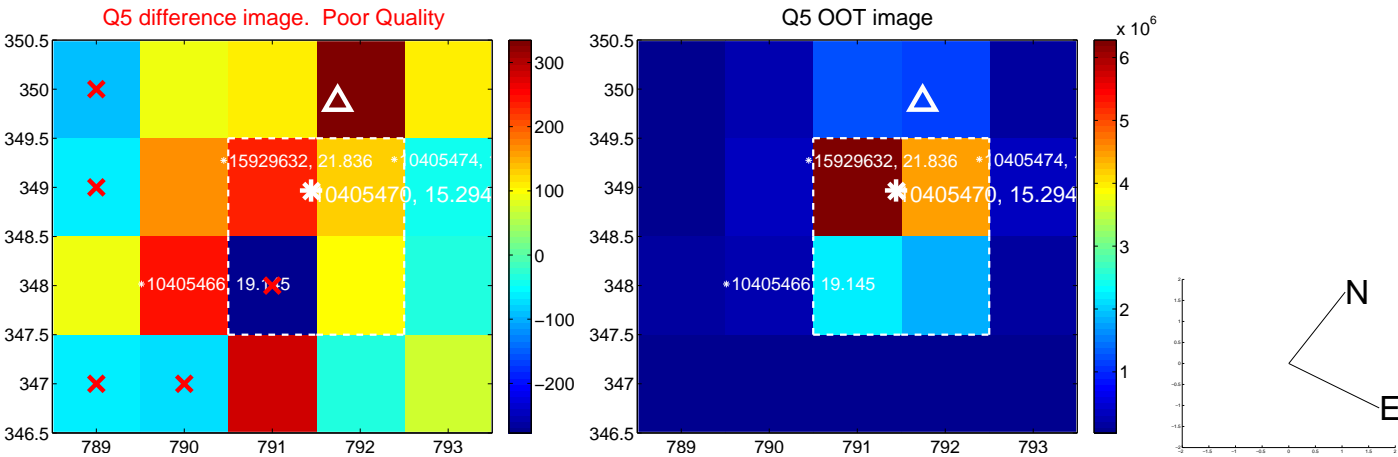


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: three-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

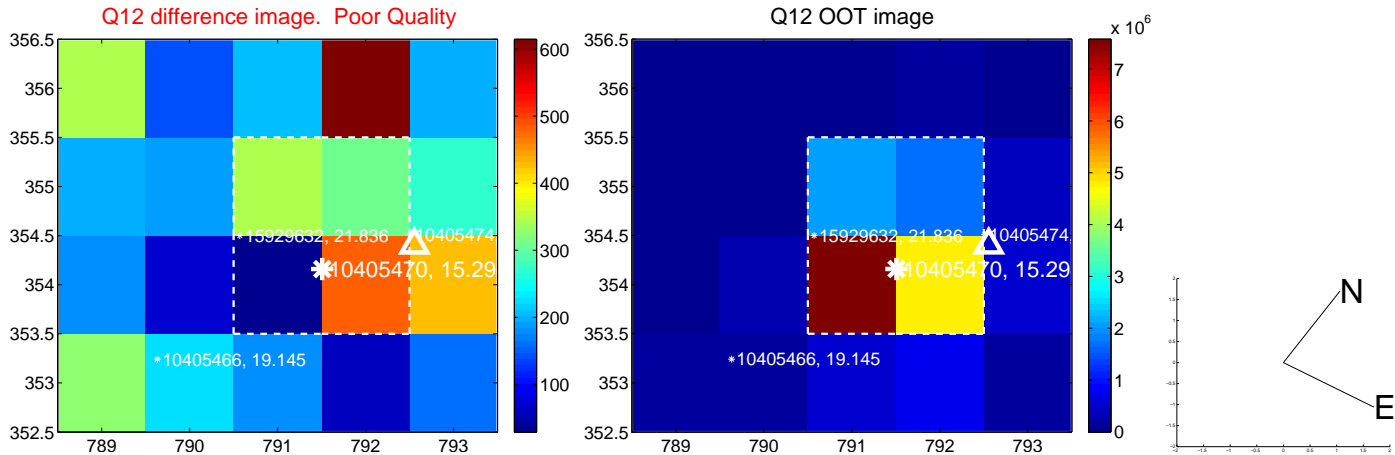
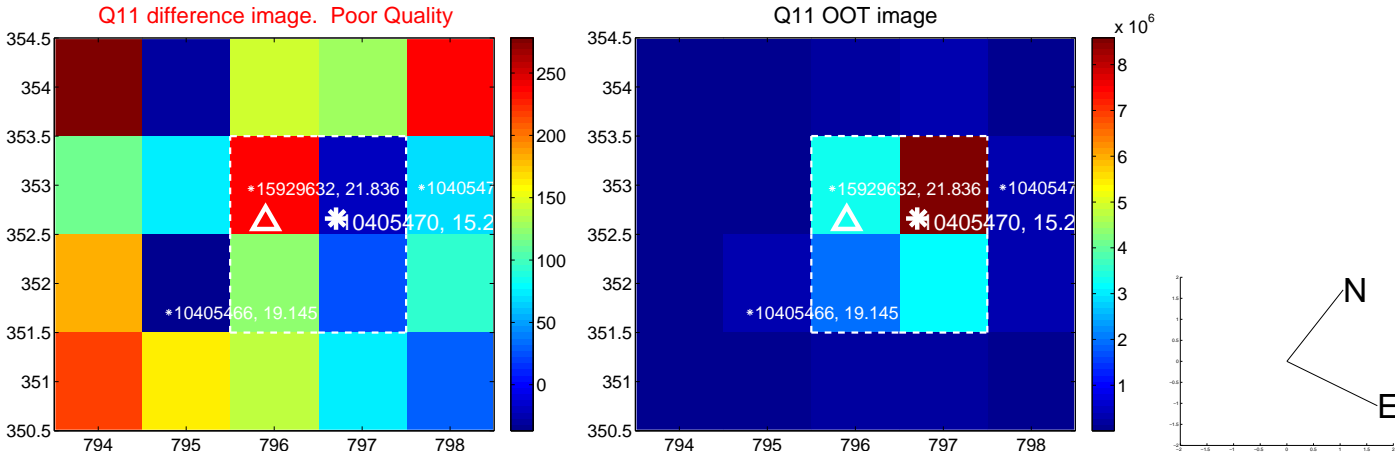
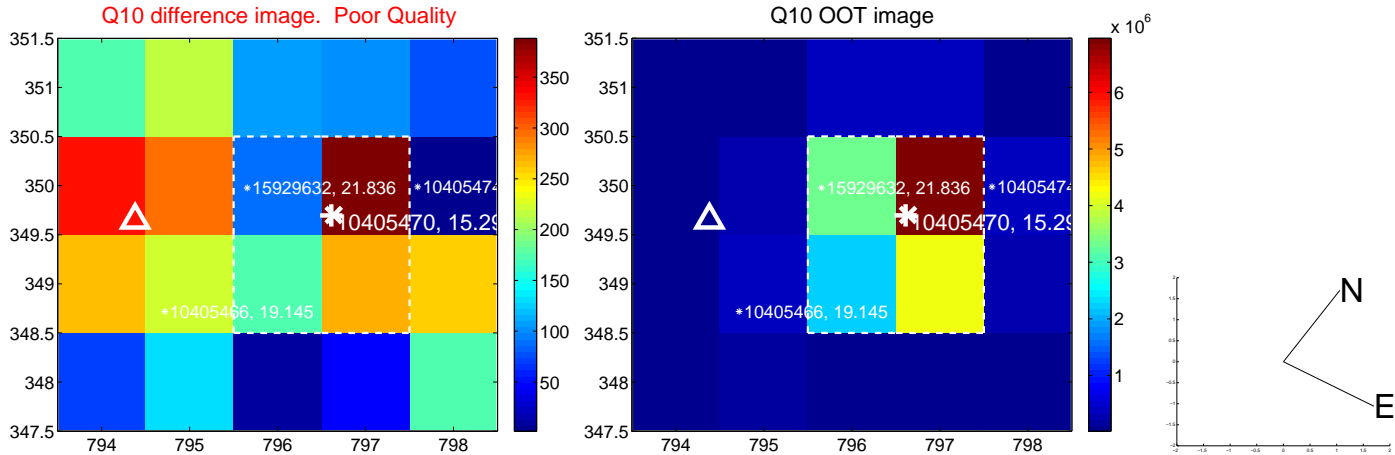
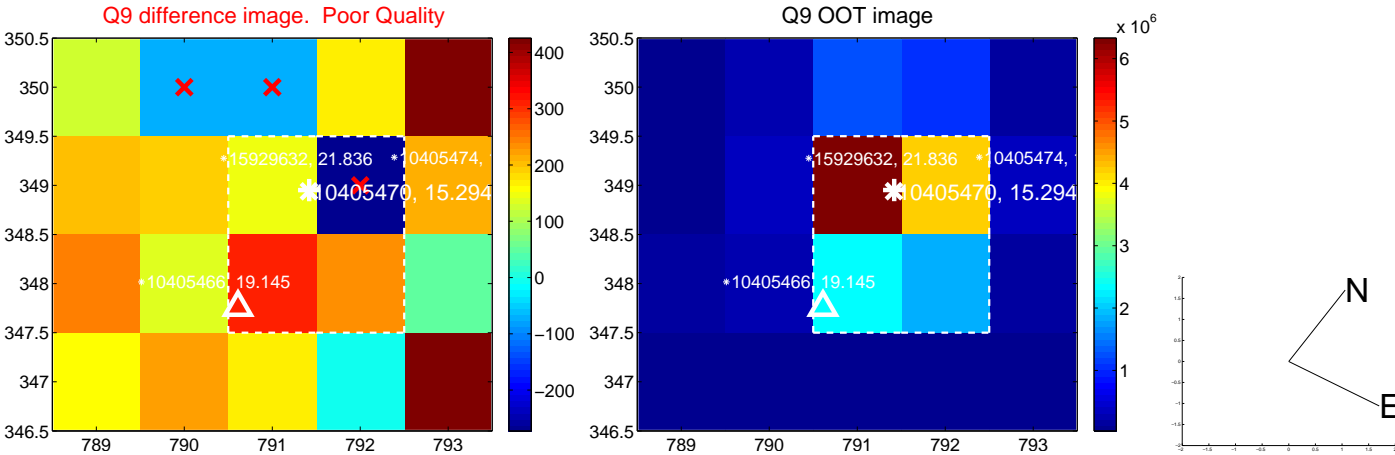


white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

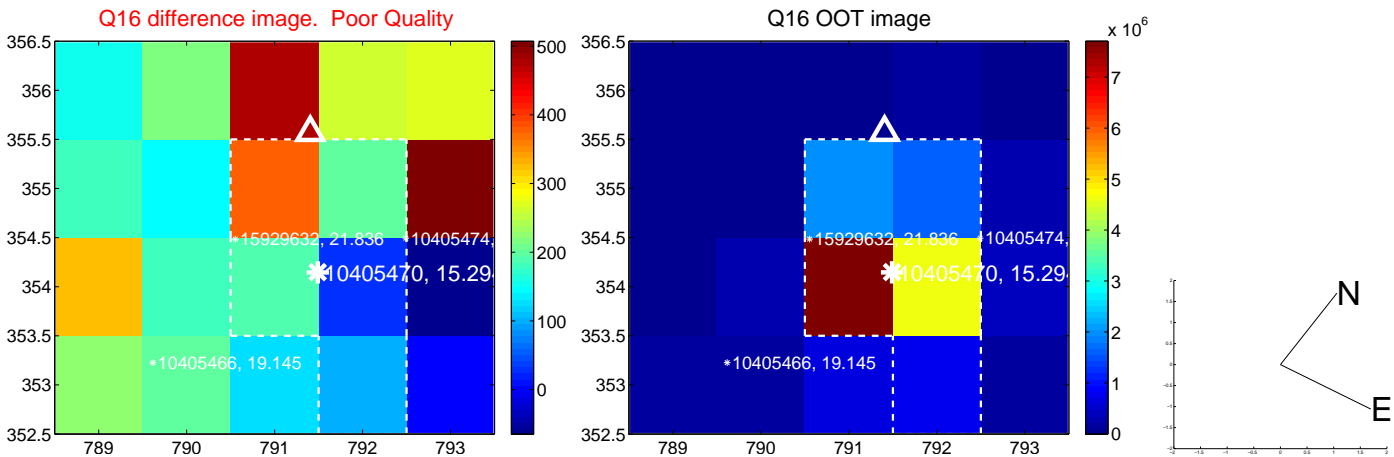
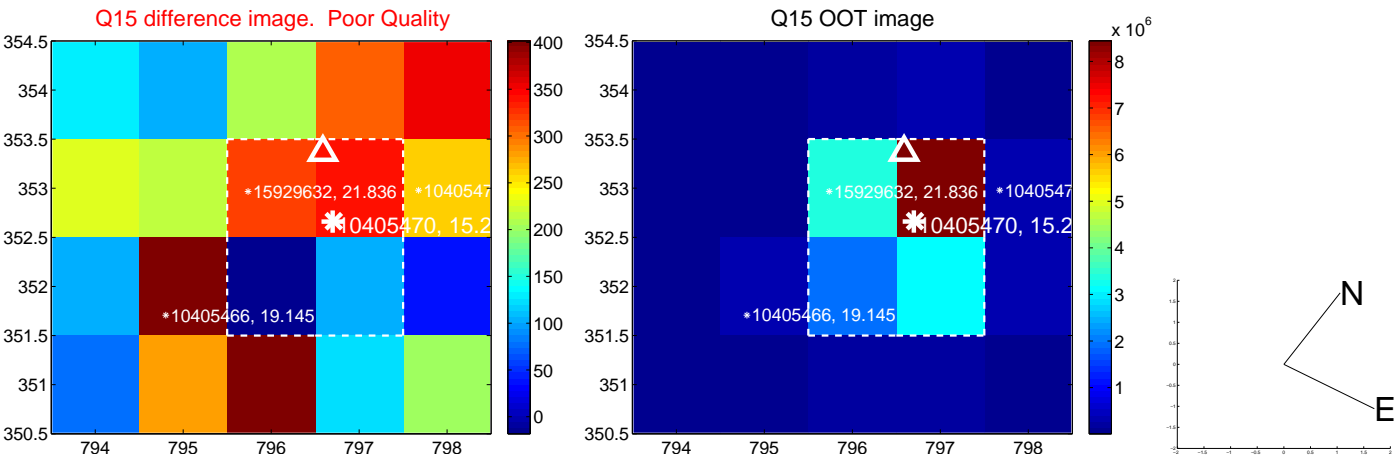
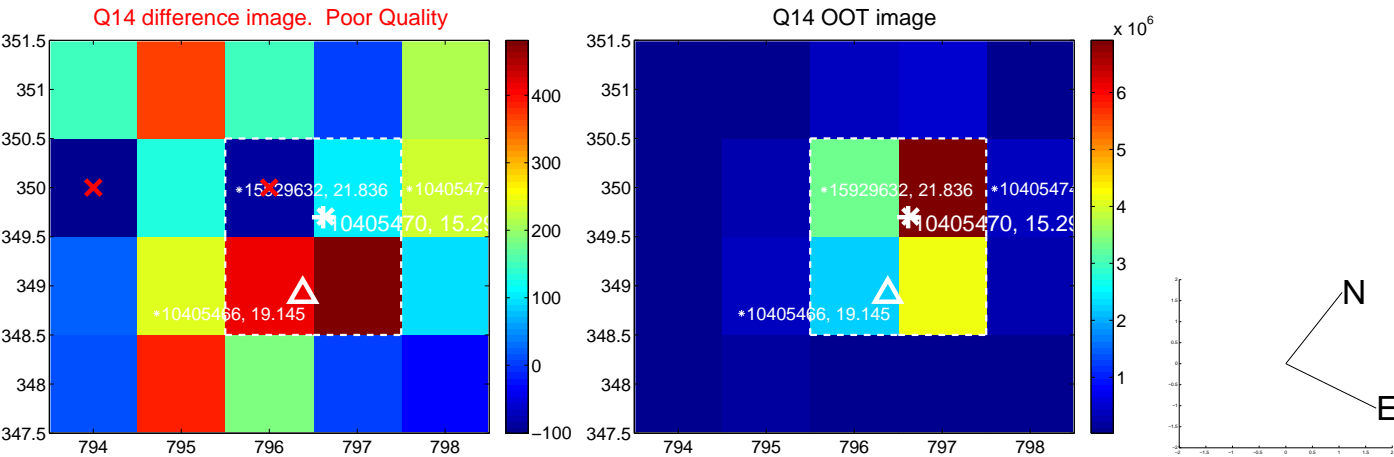
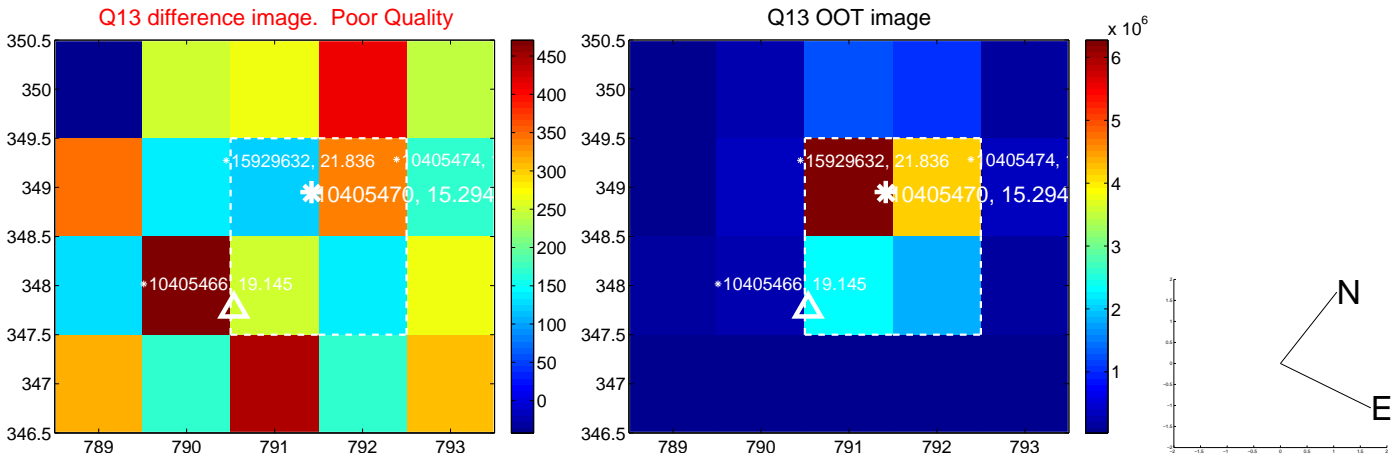




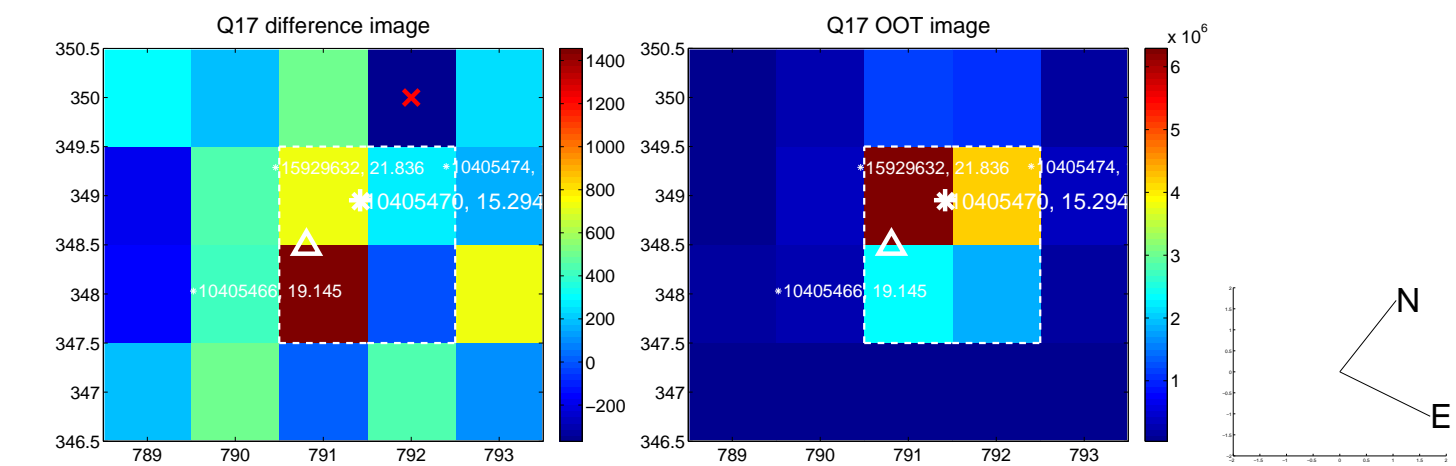
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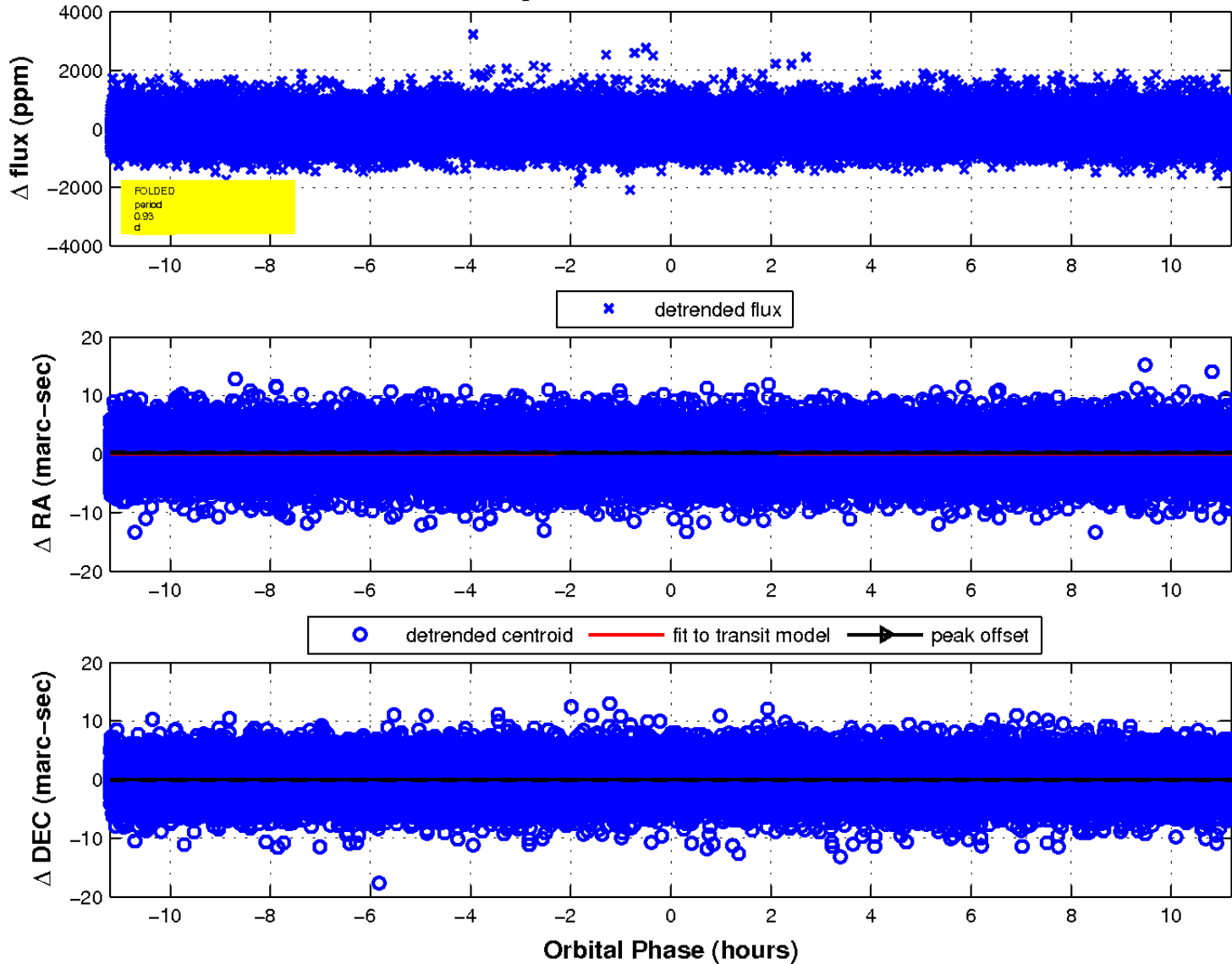
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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



fluxWeightedCentroids, Planet 1 of 1



UKIRT Image

Declination

