

# KIC 005307990

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
005307990-01	OBS	3228.01	0.987621	131.973997	24.2	1.212	9.1	12.9	2.02	9456	1.12	45721.93

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005307990-01	OBS	FP	0.00	0	0	1	0	CENT_RESOLVED_OFFSET

**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.

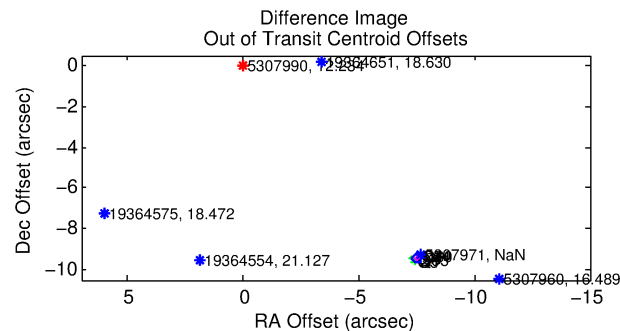
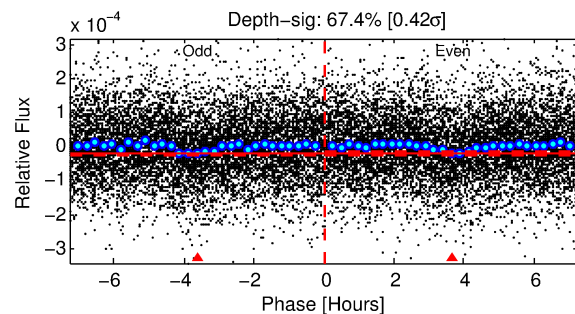
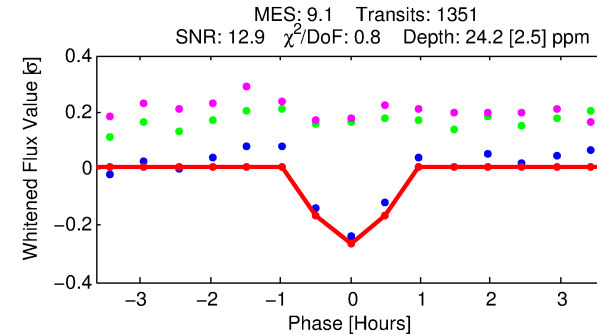
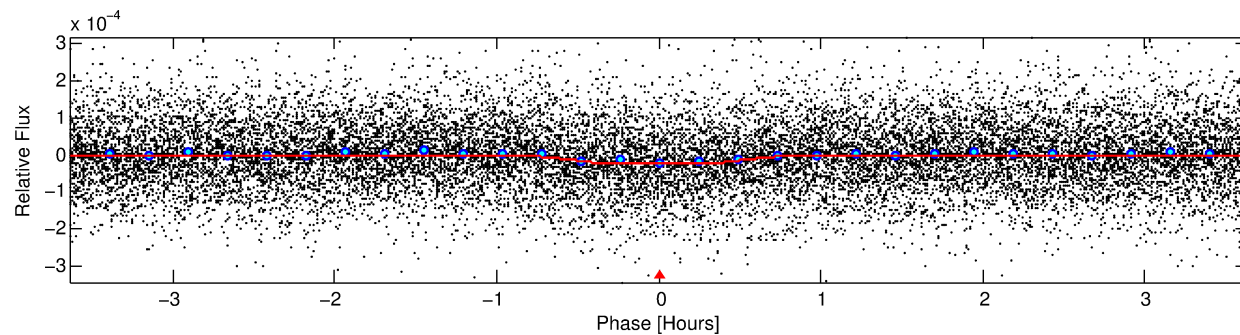
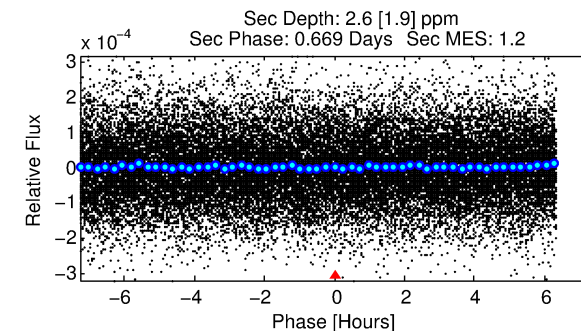
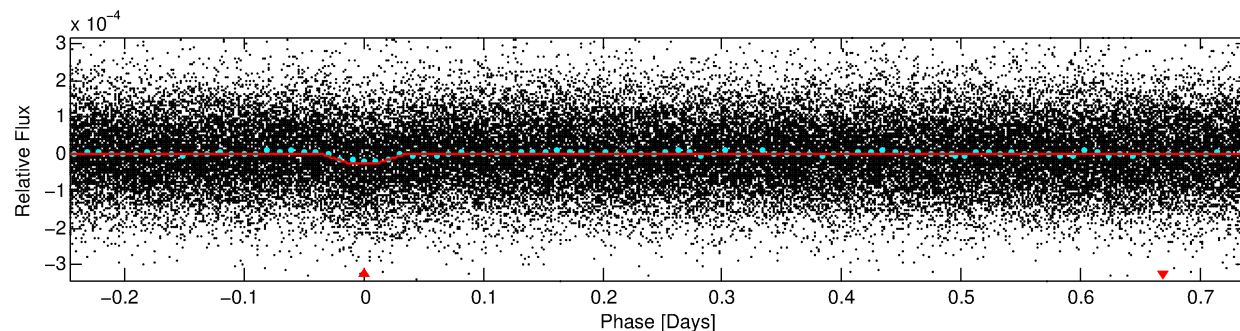
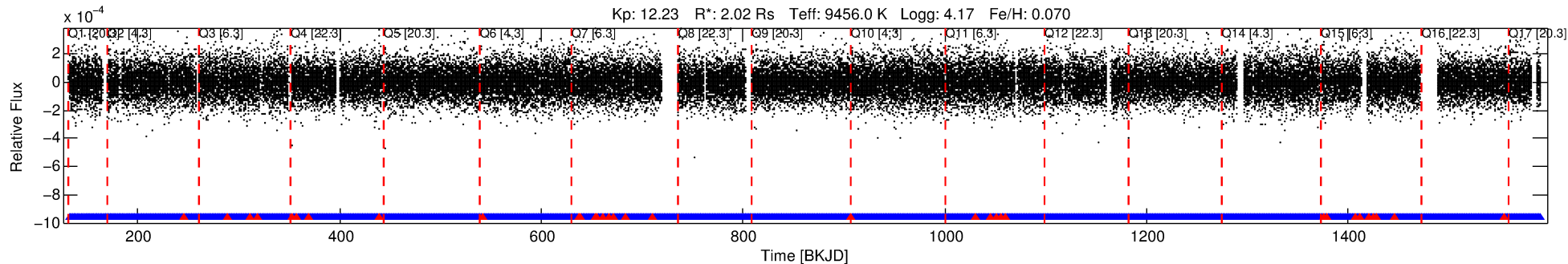
## Ephemeris Match Information For 005307990-01

No Significant Match Found

# DV One-Page Summary

KIC: 5307990 Candidate: 1 of 1 Period: 0.988 d  
KOI: K03228.01 Corr: 0.911

Kp: 12.23 R\*: 2.02 Rs Teff: 9456.0 K Logg: 4.17 Fe/H: 0.070



## DV Fit Results:

Period = 0.98762 [0.00001] d  
Epoch = 131.9740 [0.0016] BKJD  
Rp/R\* = 0.0051 [0.0006]  
a/R\* = 3.36 [2.37]  
b = 0.86 [0.24]  
Seff = 45721.93 [20179.65]  
Teq = 3729 [411] K  
Rp = 1.12 [0.43] Re  
a = 0.0253 [0.0074] AU  
Ag = 0.72 [0.64] [-0.44σ]  
Teff = 5313 [1077] K [1.37σ]

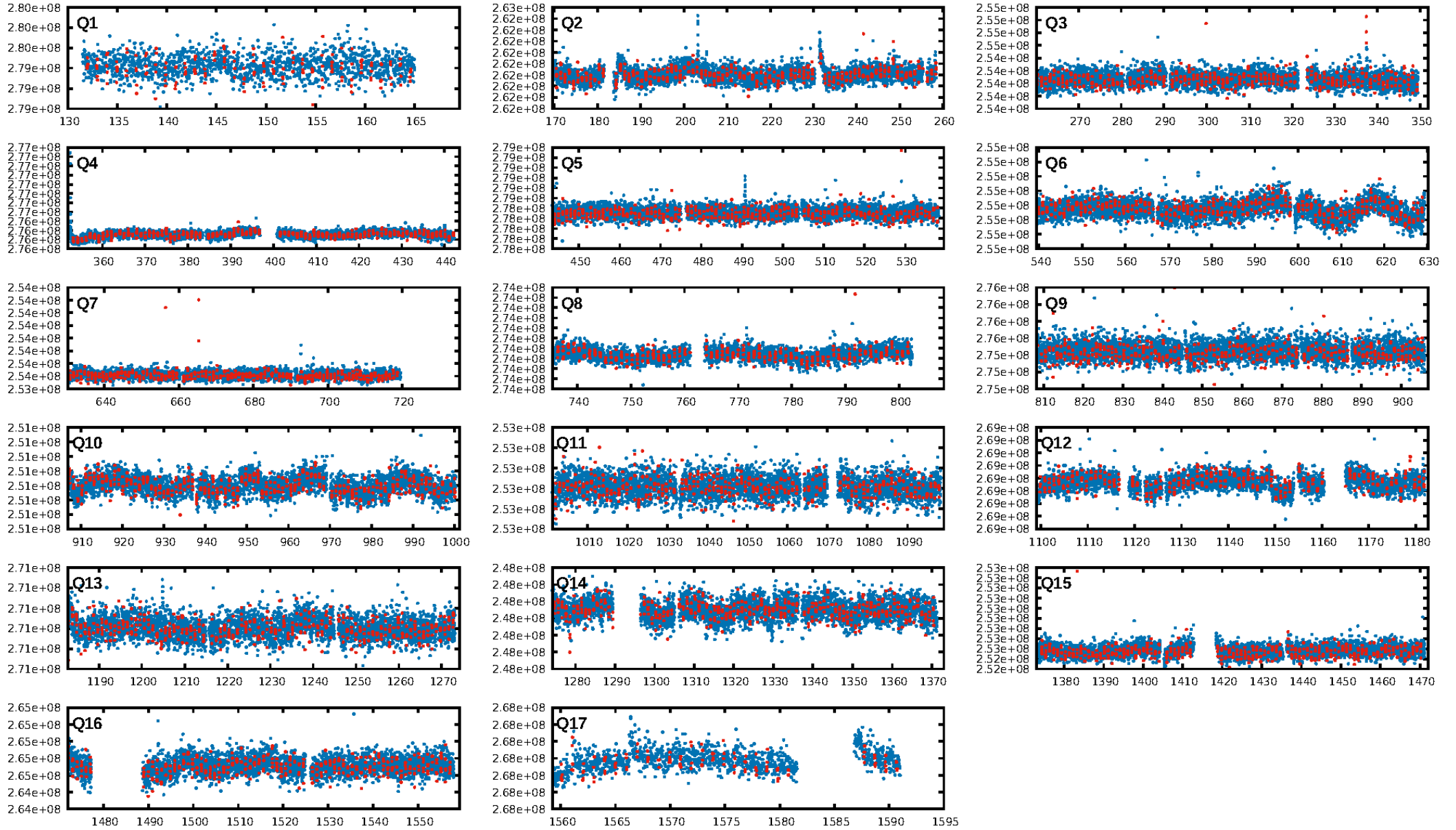
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: N/A  
ModelChiSquareGoF-sig: N/A  
Bootstrap-pfa: 8.09e-20  
RollingBand-fgt: 0.97 [1258/1291]  
GhostDiagnostic-chr: -0.7756  
Centroid-sig: 0.0%  
Centroid-so: 19.303 arcsec [21.54σ]  
OotOffset-rm: 12.055 arcsec [157.47σ]  
KicOffset-rm: 12.068 arcsec [164.10σ]  
OotOffset-st: 4/0/0/5 [9]  
KicOffset-st: 4/0/0/5 [9]  
DiffImageQuality-fgm: 1.00 [9/9]  
DiffImageOverlap-fno: 1.00 [17/17]

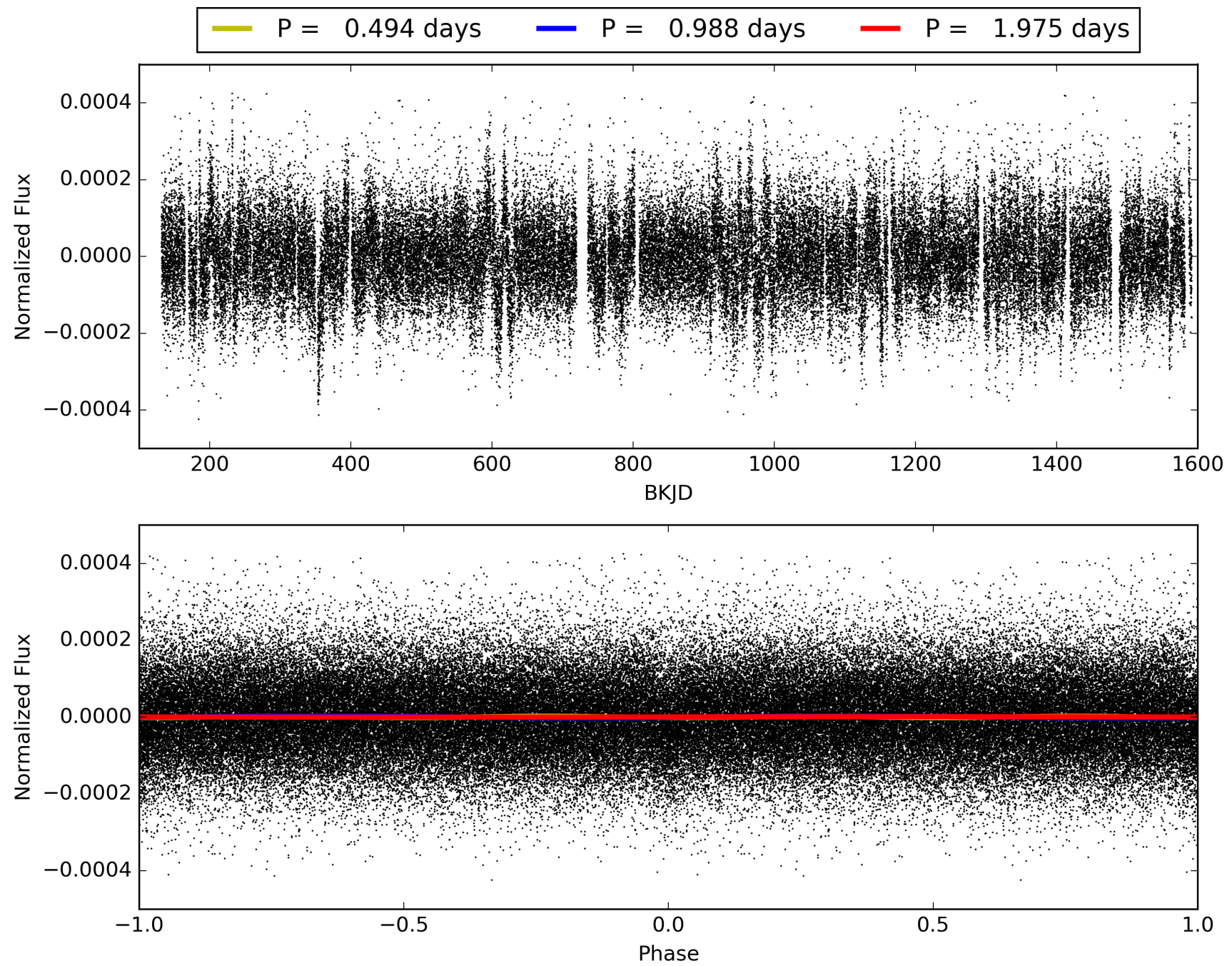
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 11:32:14 Z

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

# TCE 005307990-01, PDC Light Curves

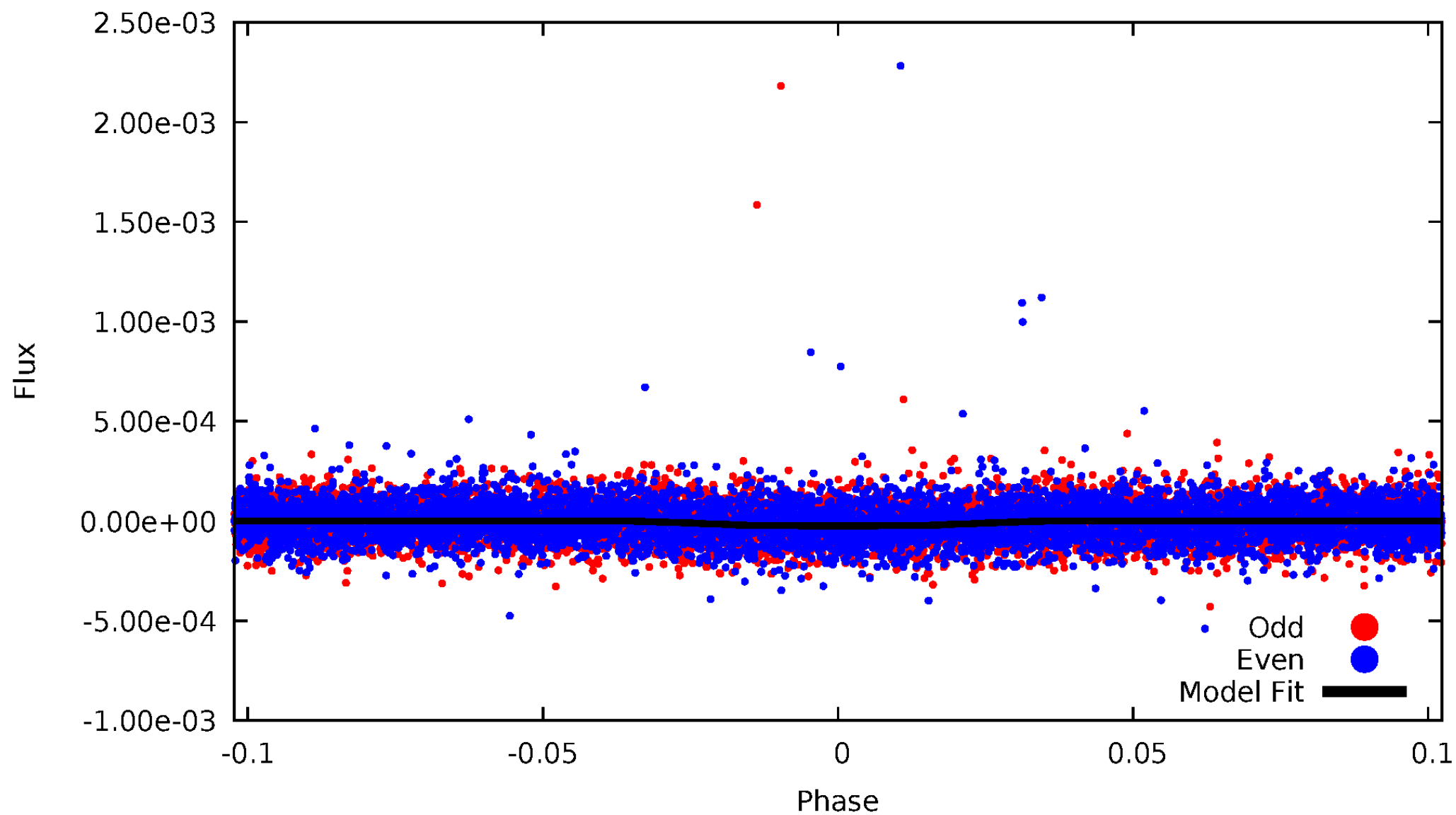


TCE 005307990-01



# DV Odd/Even

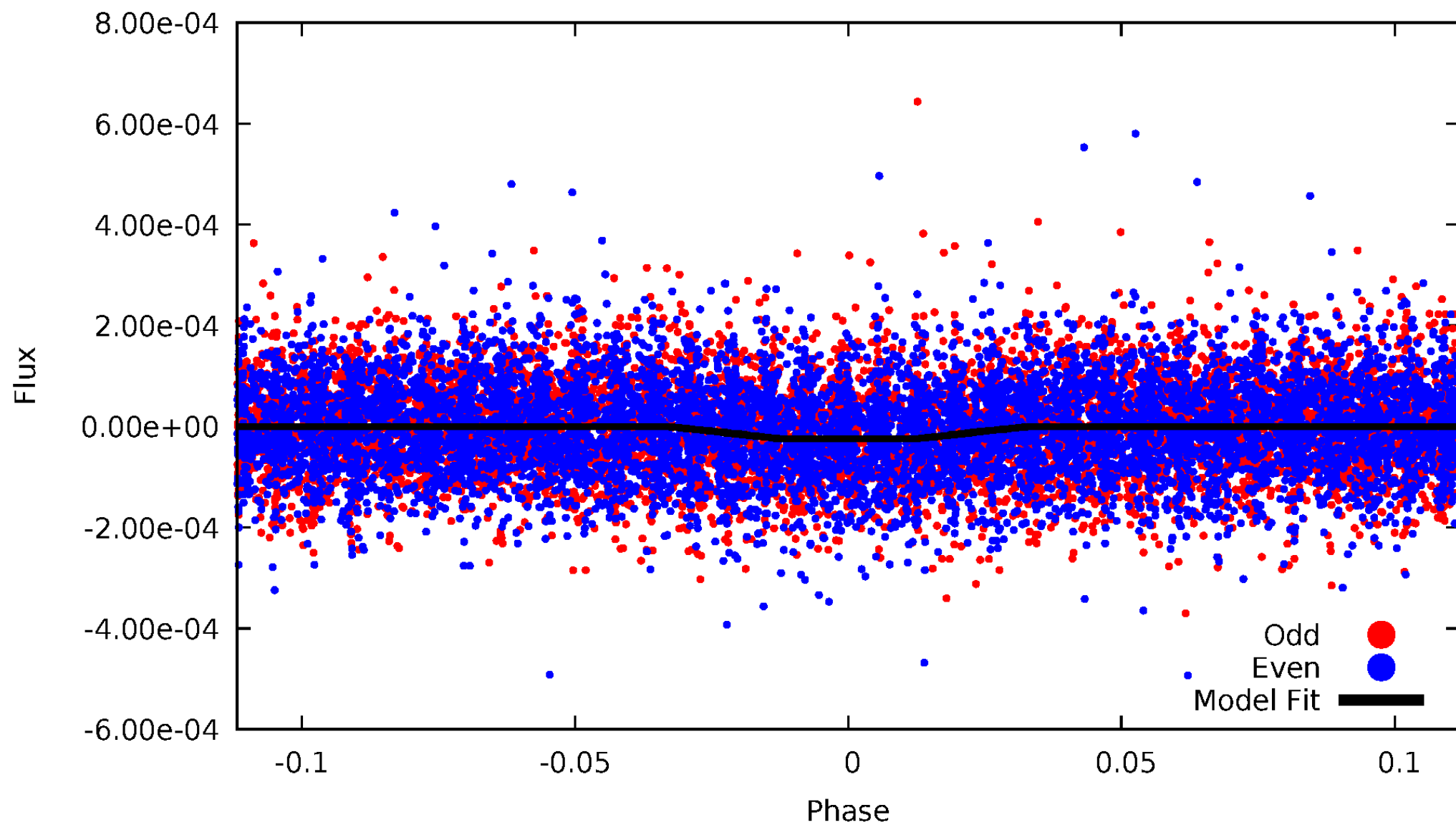
TCE 005307990-01





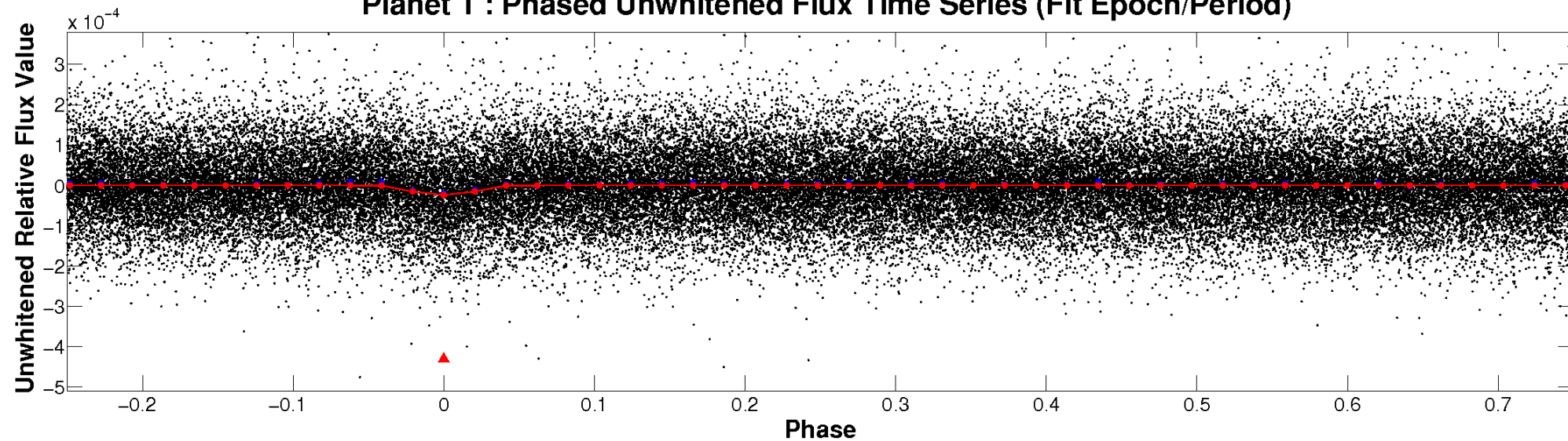
# ALT Odd/Even

TCE 005307990-01

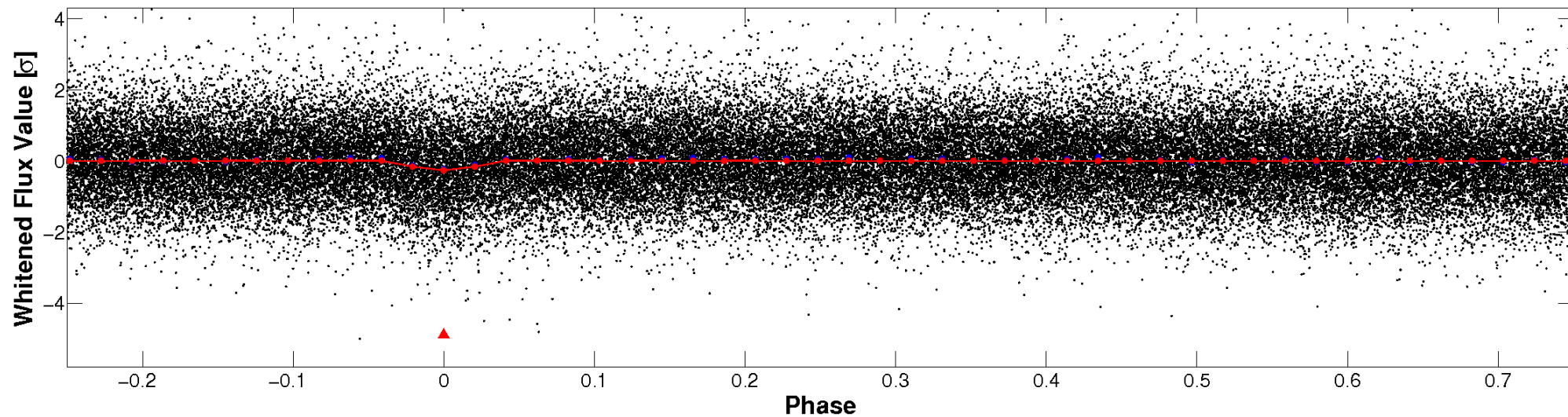


# Non-Whitened Vs. Whitened Light Curve

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

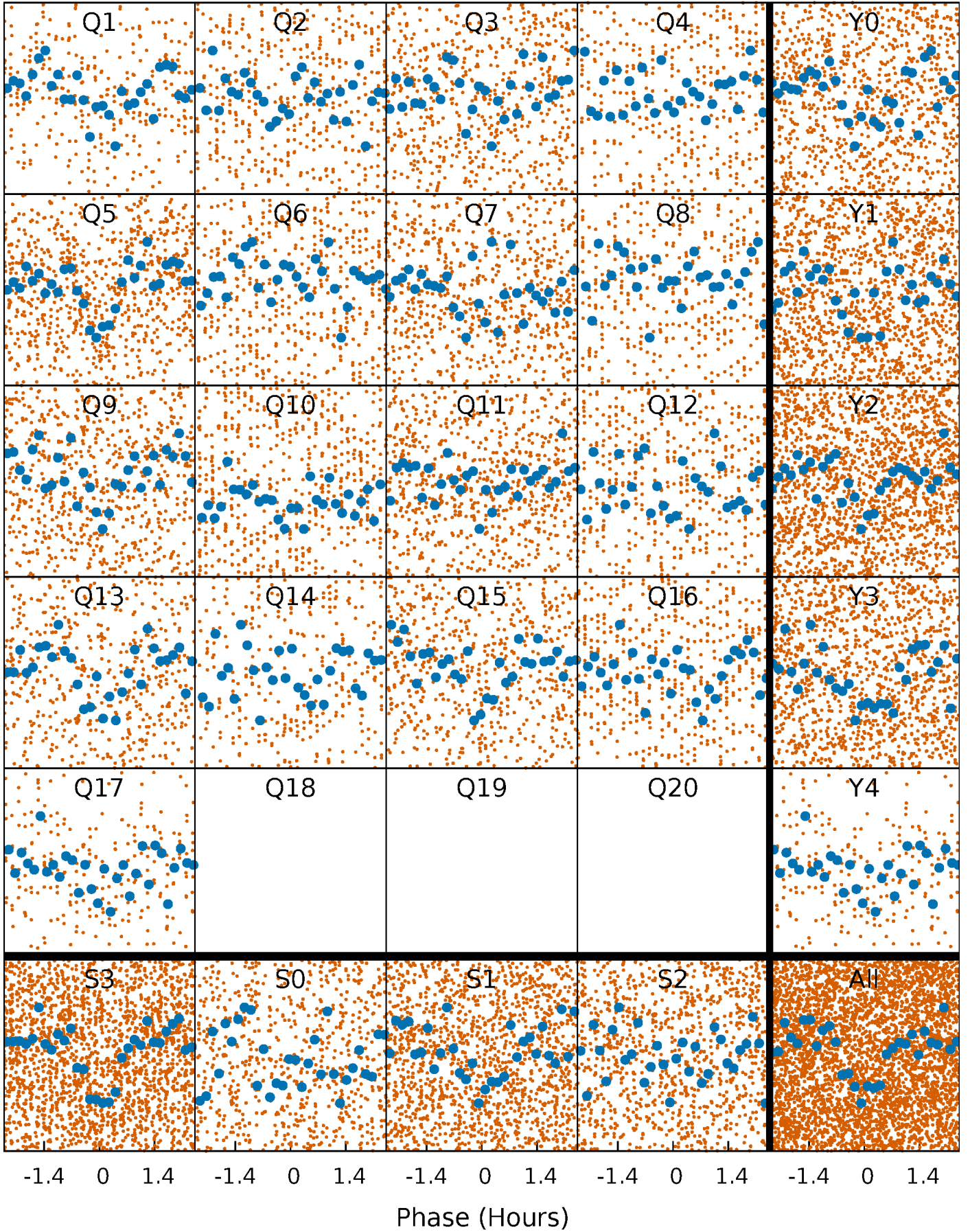


**Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)**



# PDC Quarter-Phased Transit Curves

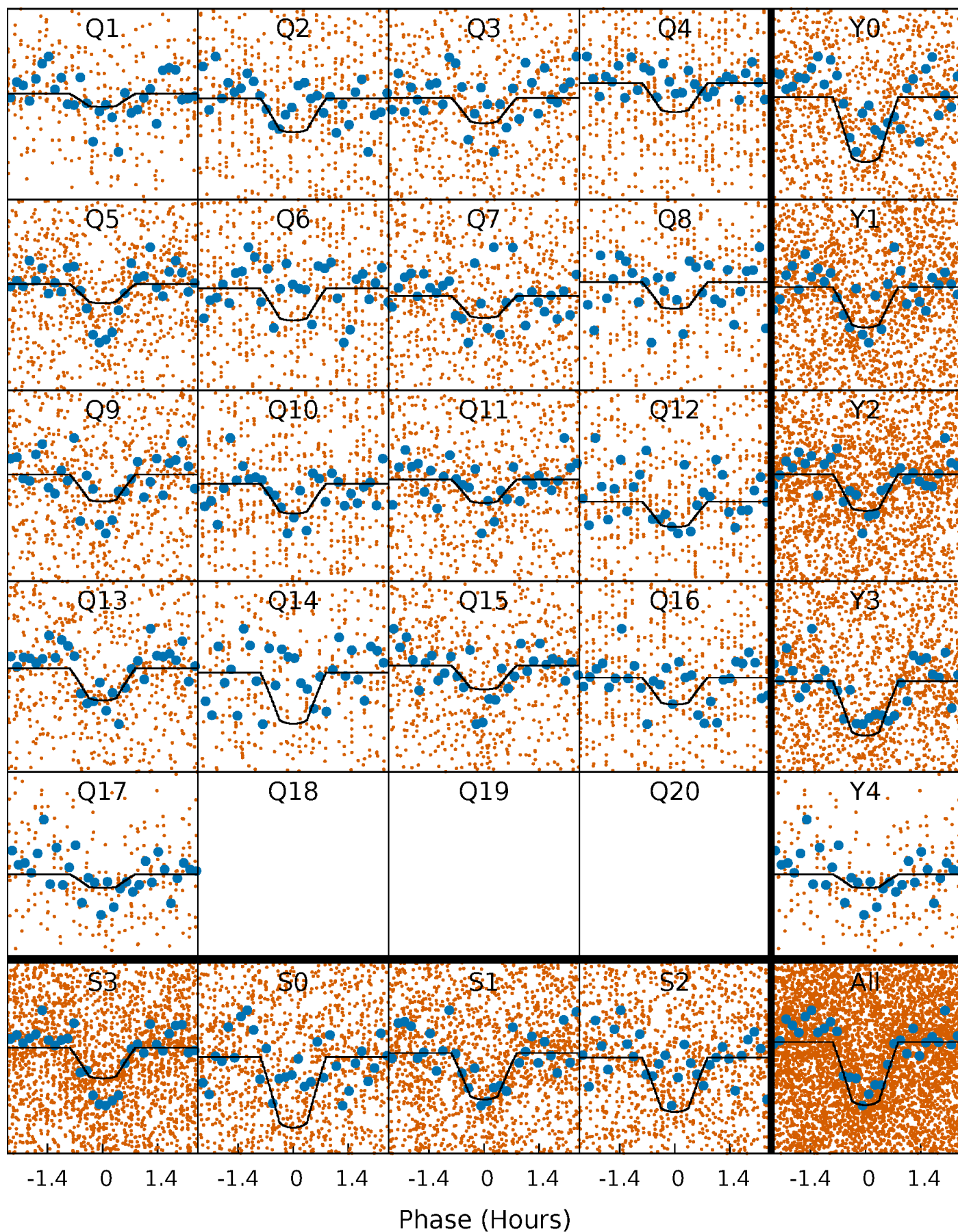
TCE 005307990-01   P= 0.987621 Days    $T_0=131.973997$  (BKJD)





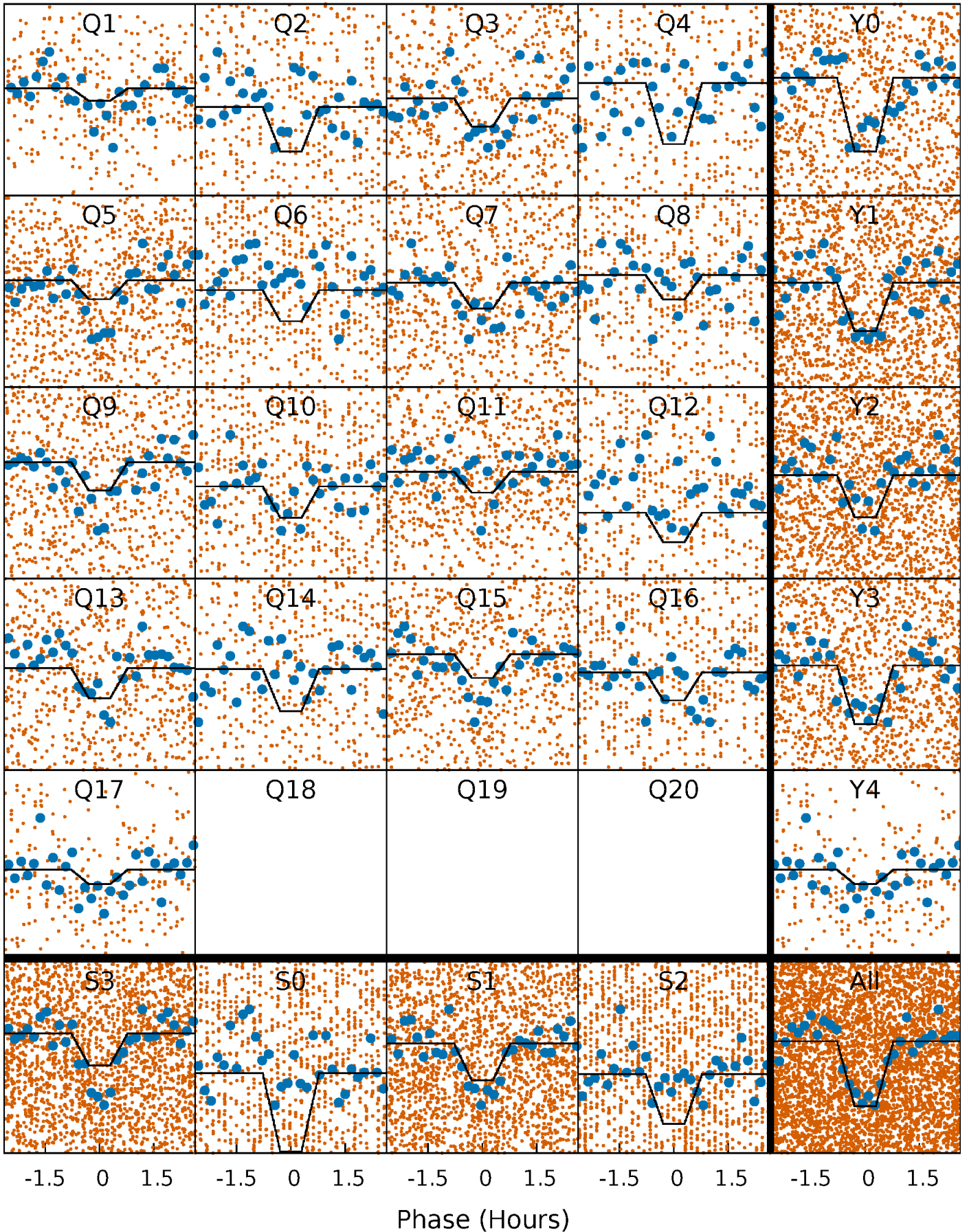
# DV Quarter-Phased Transit Curves

TCE 005307990-01   P= 0.987621 Days    $T_0=131.973997$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

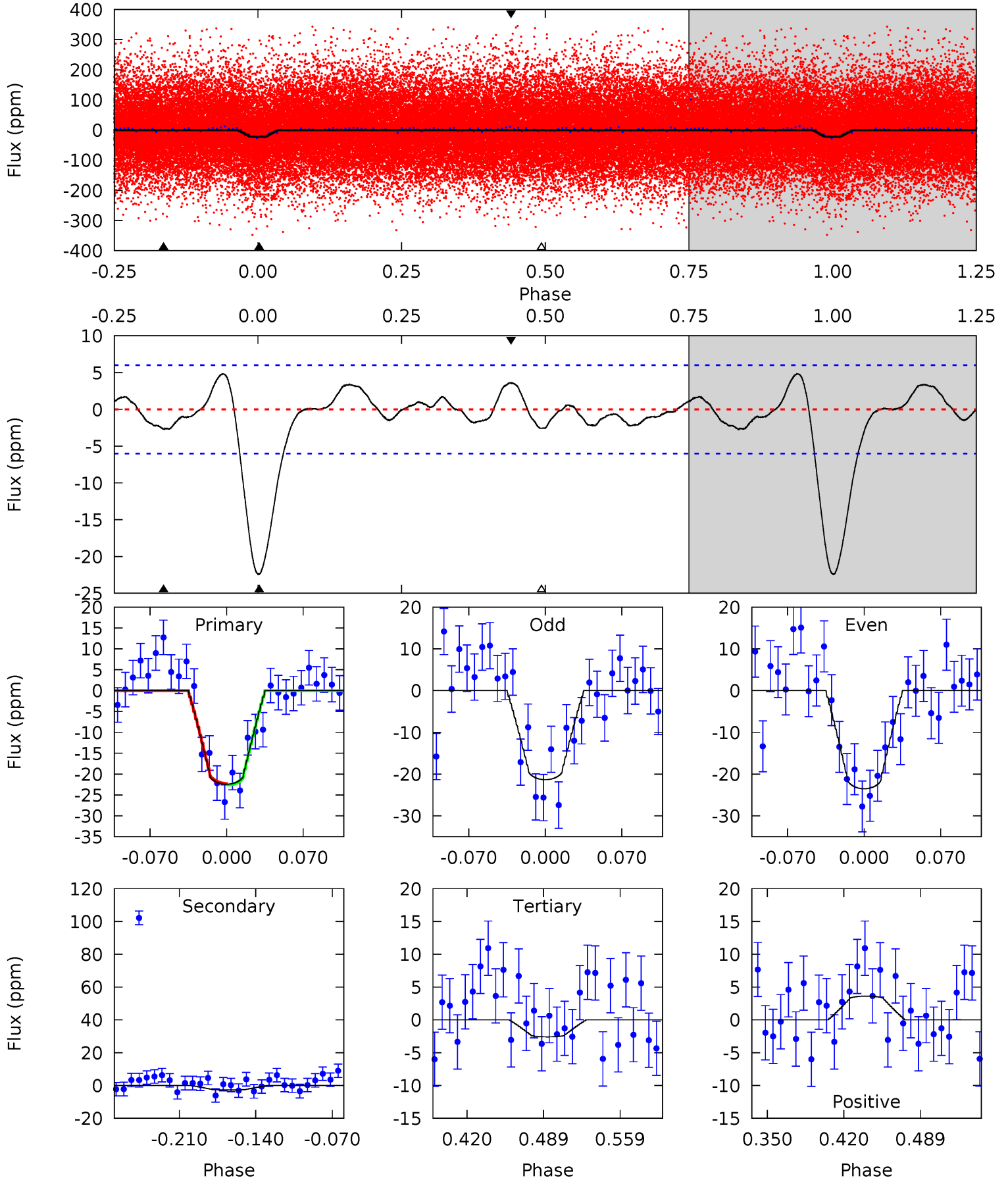
TCE 005307990-01 P= 0.987624 Days  $T_0=131.972068$  (BKJD)



# DV Model-Shift Uniqueness Test

005307990-01, P = 0.987621 Days, E = 130.986376 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
17.3	2.09	2.01	2.79	4.64	1.81	1.24	15.3	14.6	0.09	-0.70	0.84	0.77	0.18	0.14

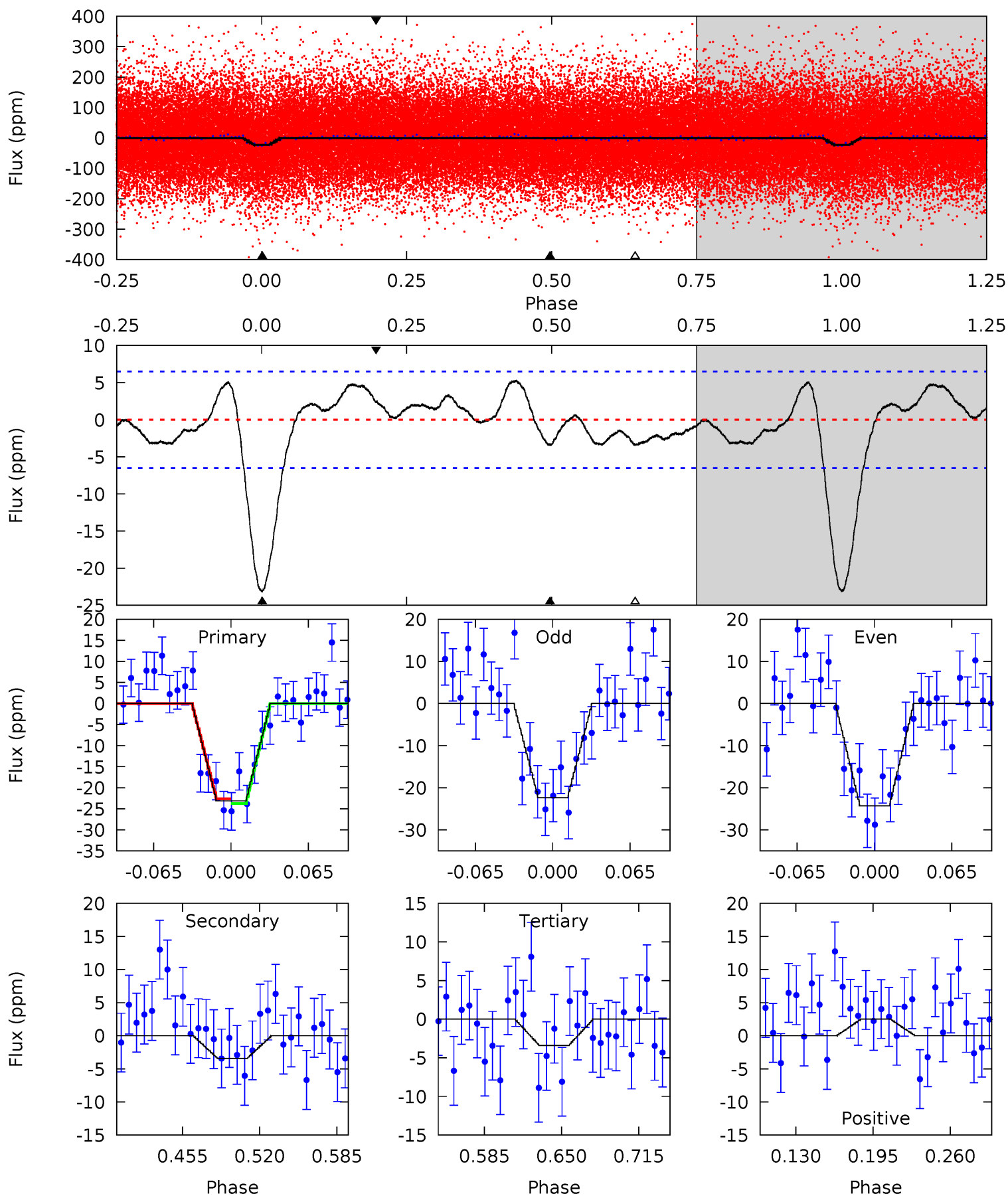




# Alt Model-Shift Uniqueness Test

005307990-01, P = 0.987624 Days, E = 130.984444 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
16.6	2.46	2.44	1.80	4.65	1.85	1.69	14.1	14.8	0.02	0.66	0.70	0.92	0.19	0.41





### Stellar Parameters For KIC 005307990

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$9456^{+301}_{-451}$	$4.172^{+0.136}_{-0.204}$	$0.070^{+0.200}_{-0.750}$	$2.022^{+0.745}_{-0.497}$	$2.213^{+0.424}_{-0.565}$	$0.377^{+0.327}_{-0.204}$
	+3%/-5%	+3%/-5%	+286%/-1071%	+37%/-25%	+19%/-26%	+87%/-54%
Source	KIC0	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 005307990-01 / KOI 3228.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	$A_{\text{obs}}$
DV	$-3 \pm 1$	$1.13^{+0.26}_{-0.21}$	$5238^{+426}_{-384}$	$4492^{+758}_{-1486}$	$0.707^{+0.483}_{-0.376}$
Alt.	$-3 \pm 1$	$1.11^{+0.27}_{-0.21}$	$5259^{+468}_{-392}$	$5013^{+658}_{-888}$	$0.948^{+0.622}_{-0.417}$

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

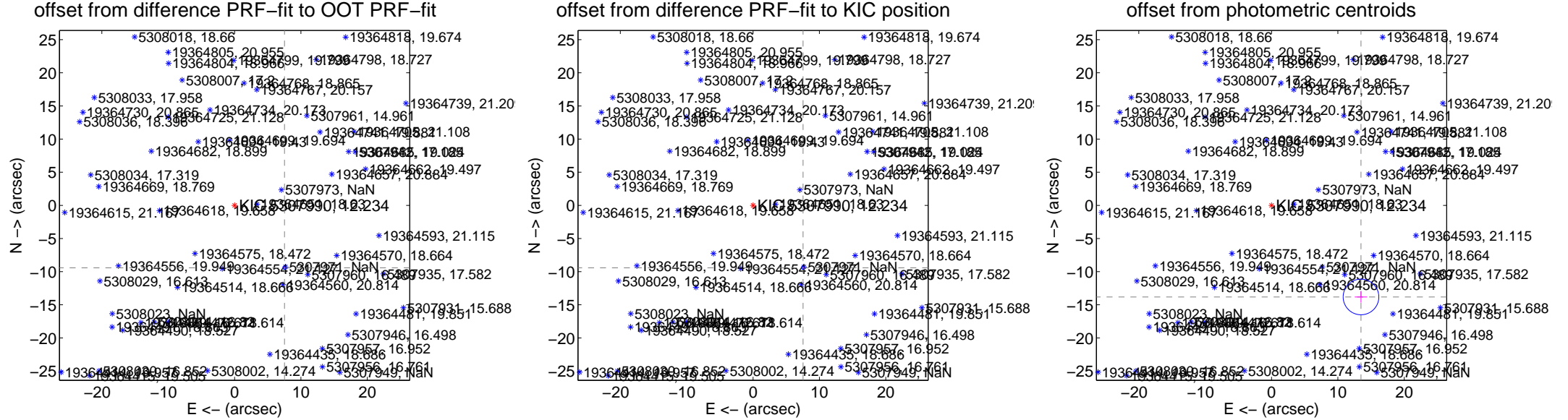
## DV Centroid Data

Supplemental centroid analysis for 005307990-01. Kepler magnitude: 12.23. Transit SNR 12.88

There are 9 quarters with good PRF difference image offsets

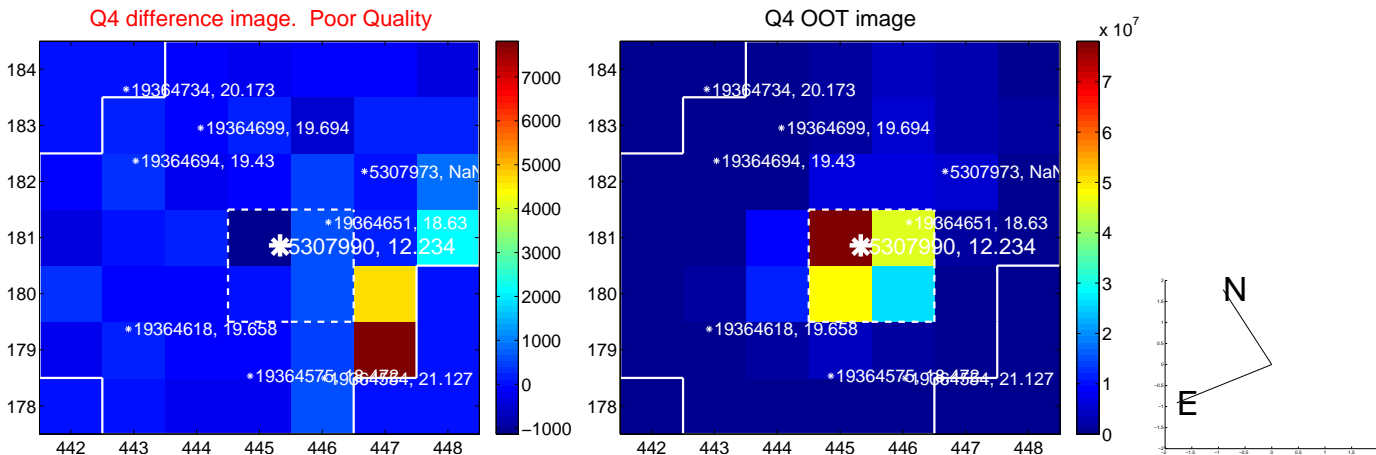
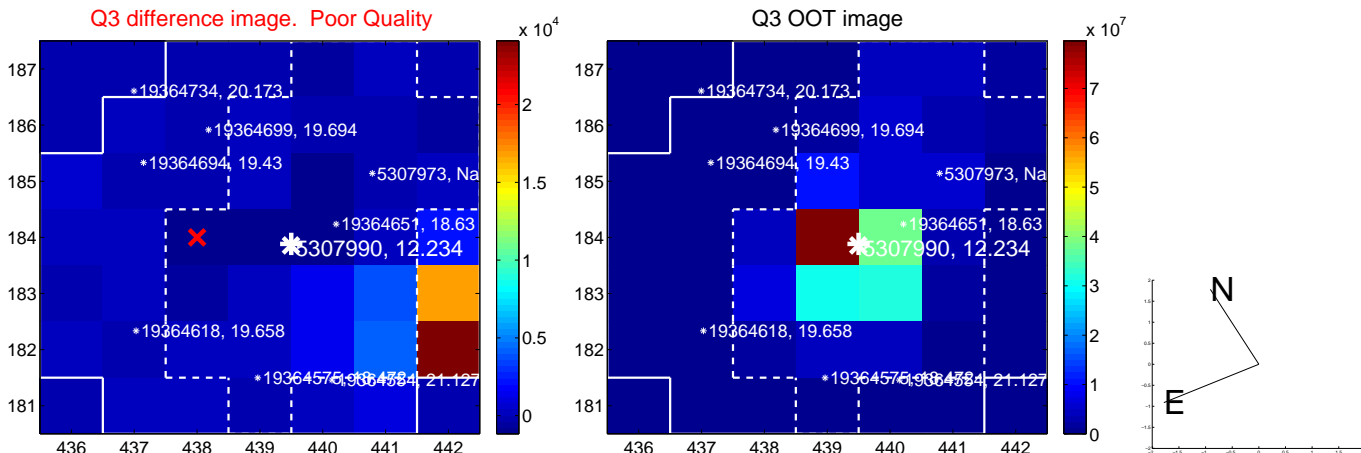
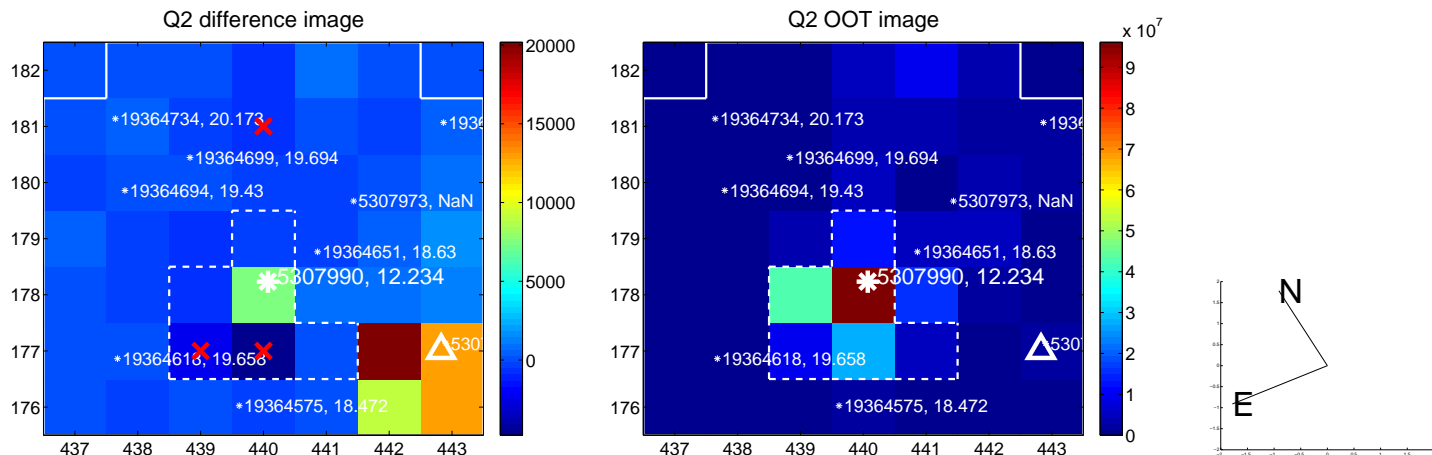
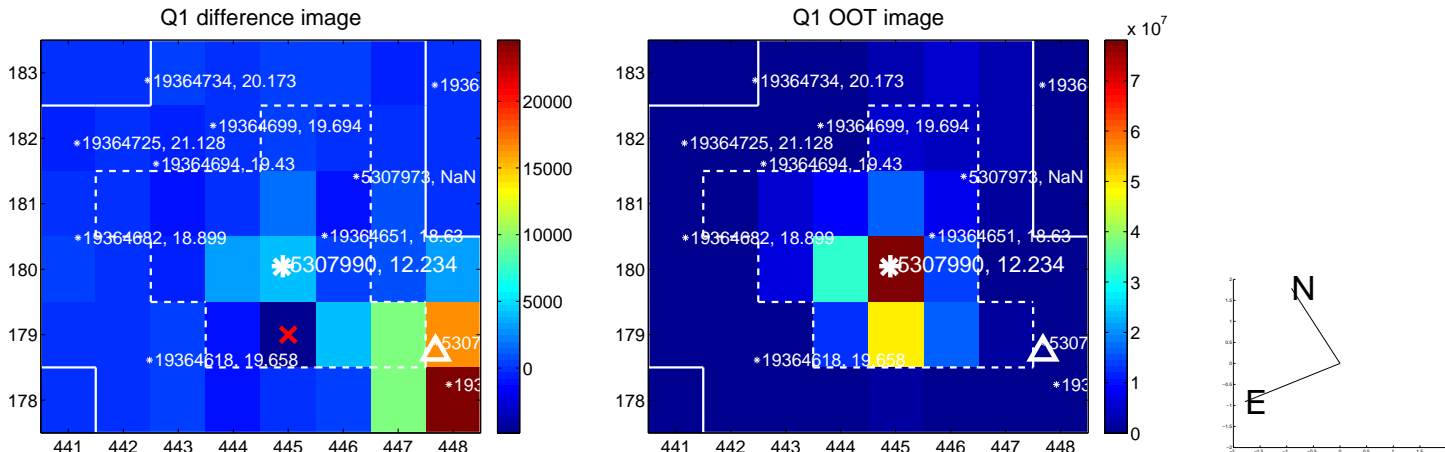
The direct PRF centroid is offset from the target star catalog position by about 0.09 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$12.055 \pm 0.077$	157.47	$-7.524 \pm 0.073$	$-9.418 \pm 0.079$
PRF-fit source offset from KIC position	$12.068 \pm 0.074$	164.10	$-7.536 \pm 0.071$	$-9.425 \pm 0.075$
photometric centroid source offset	$19.30 \pm 0.90$	21.54	$-13.48 \pm 0.93$	$-13.81 \pm 0.86$

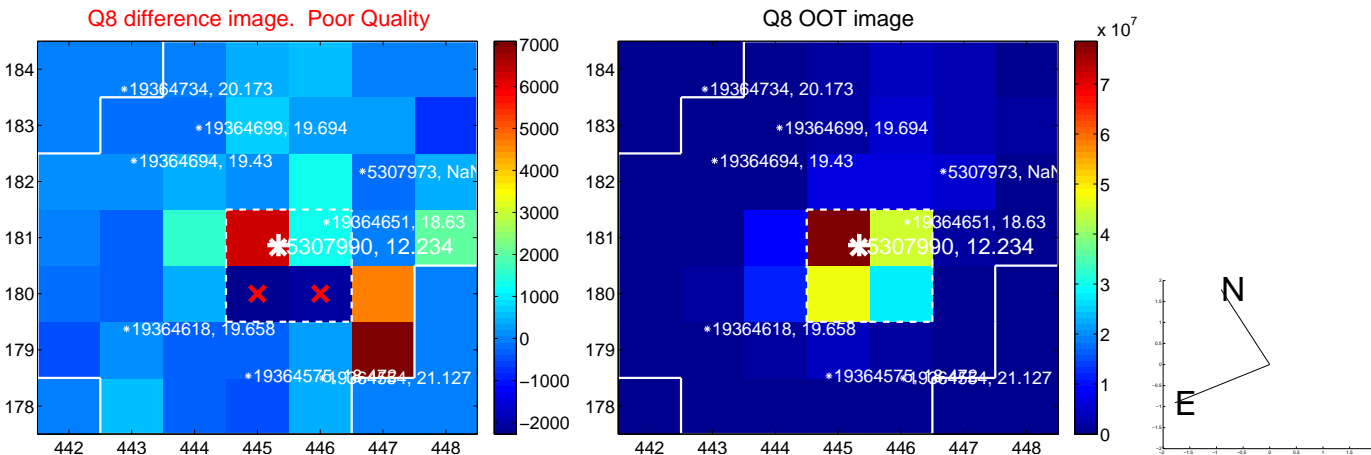
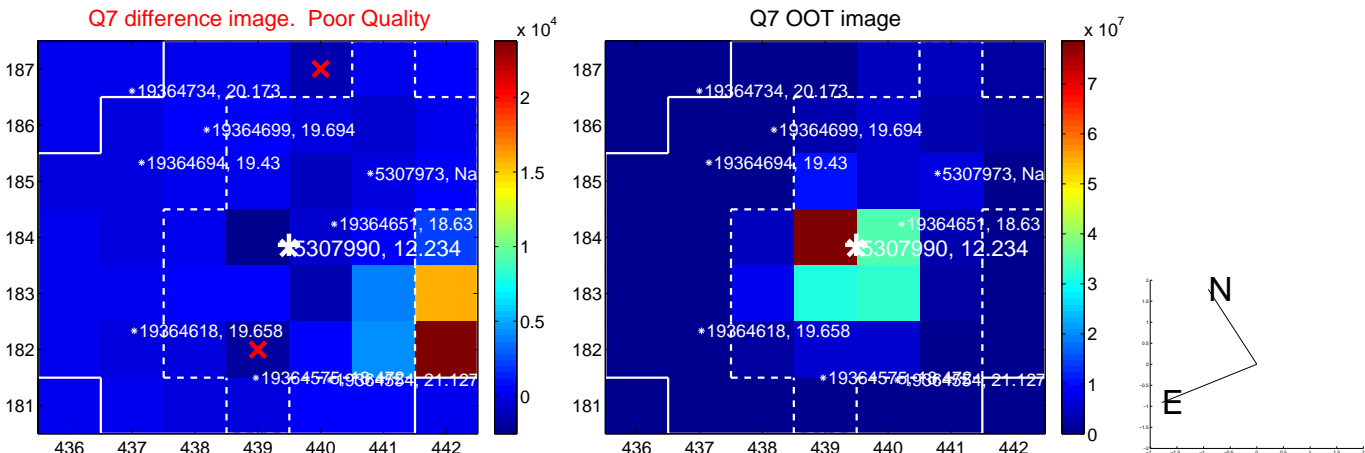
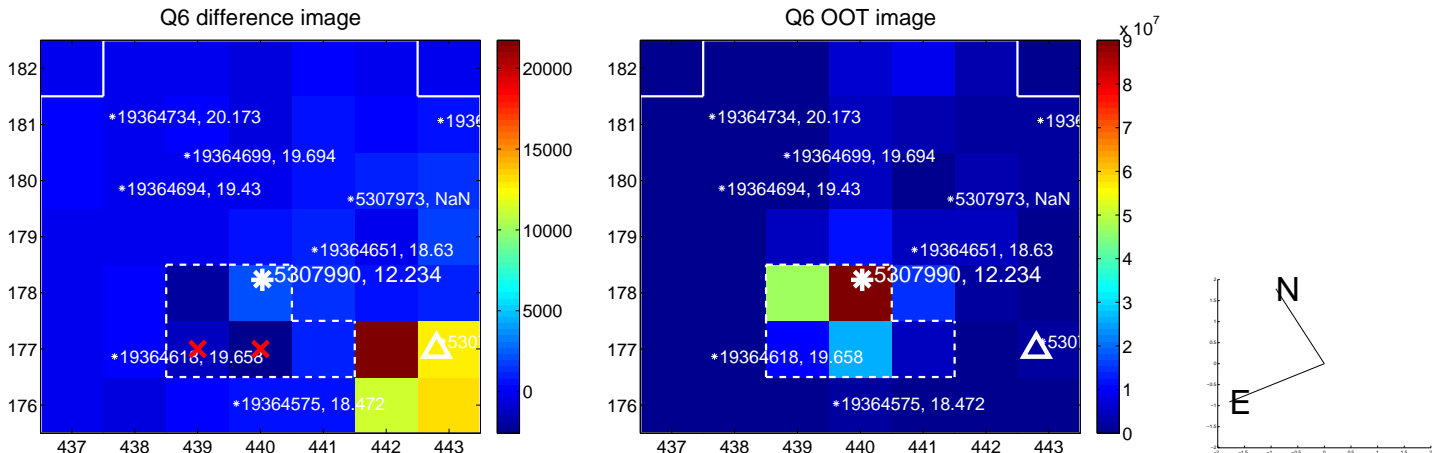
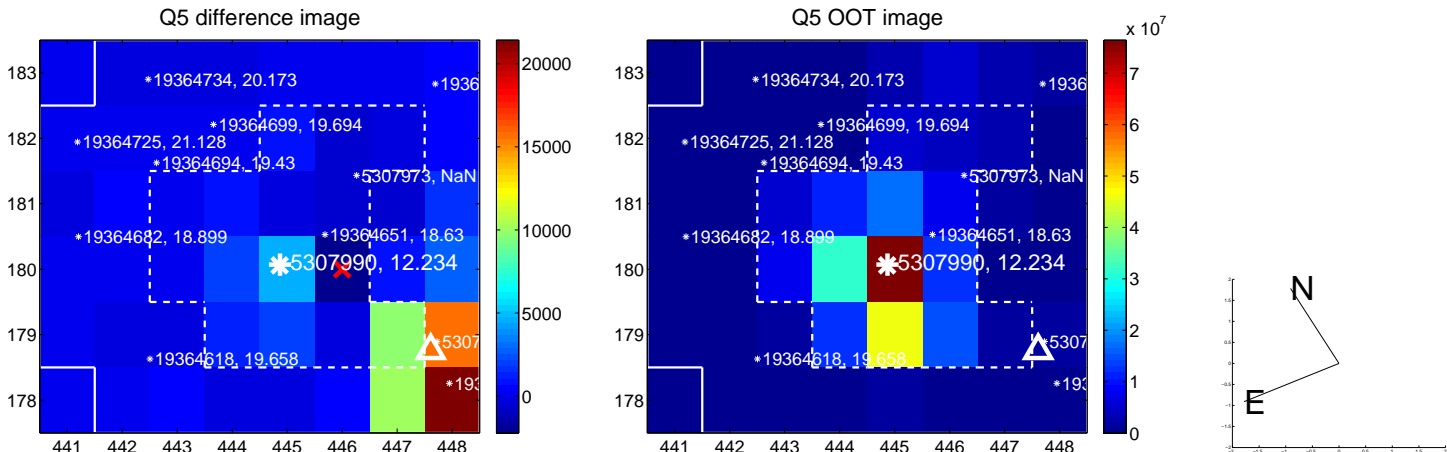


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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

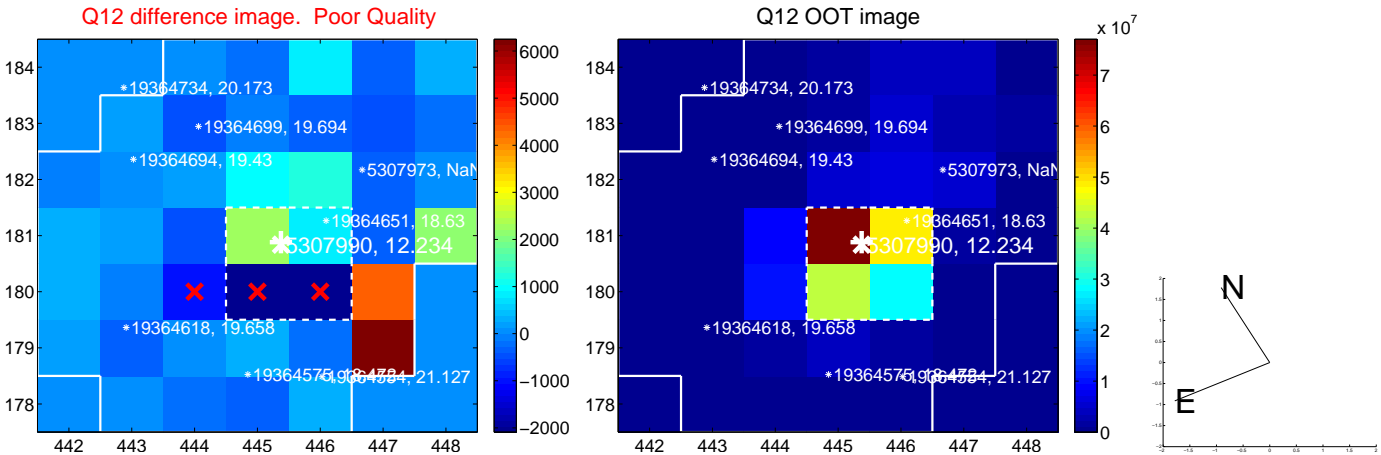
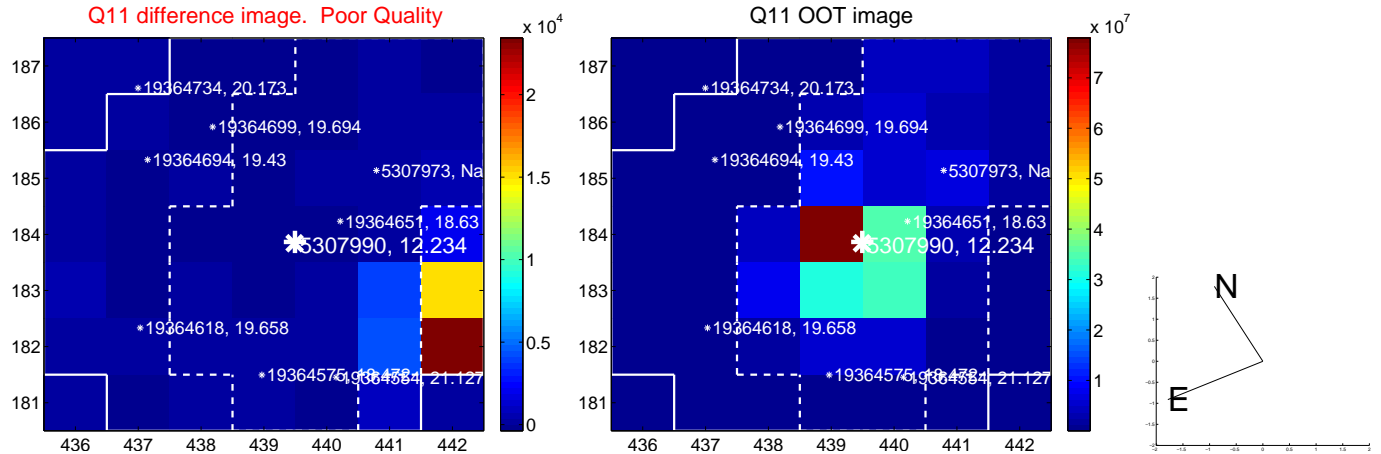
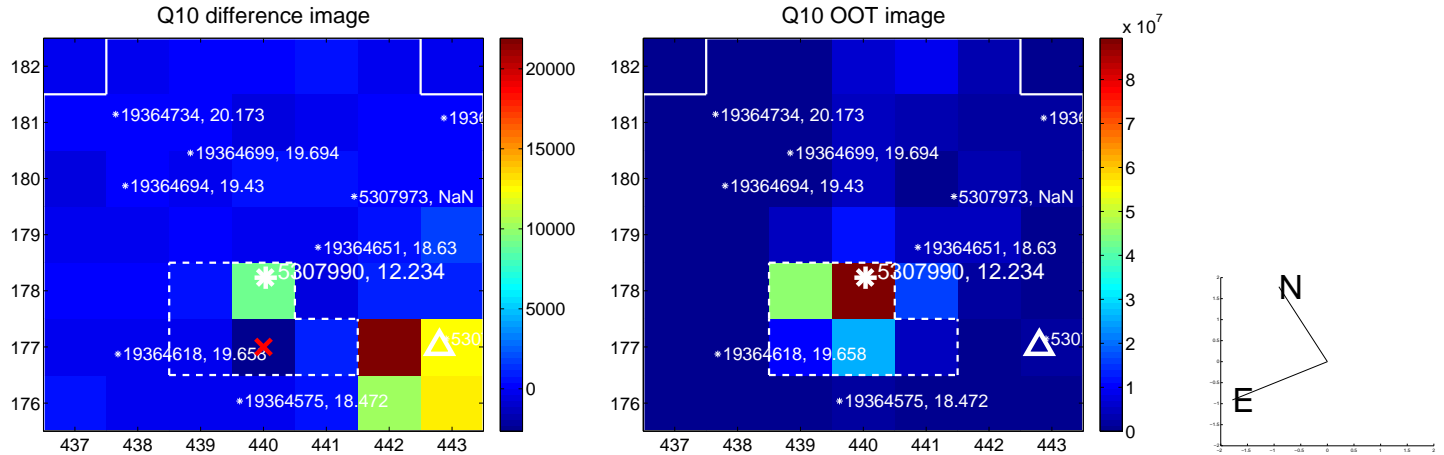
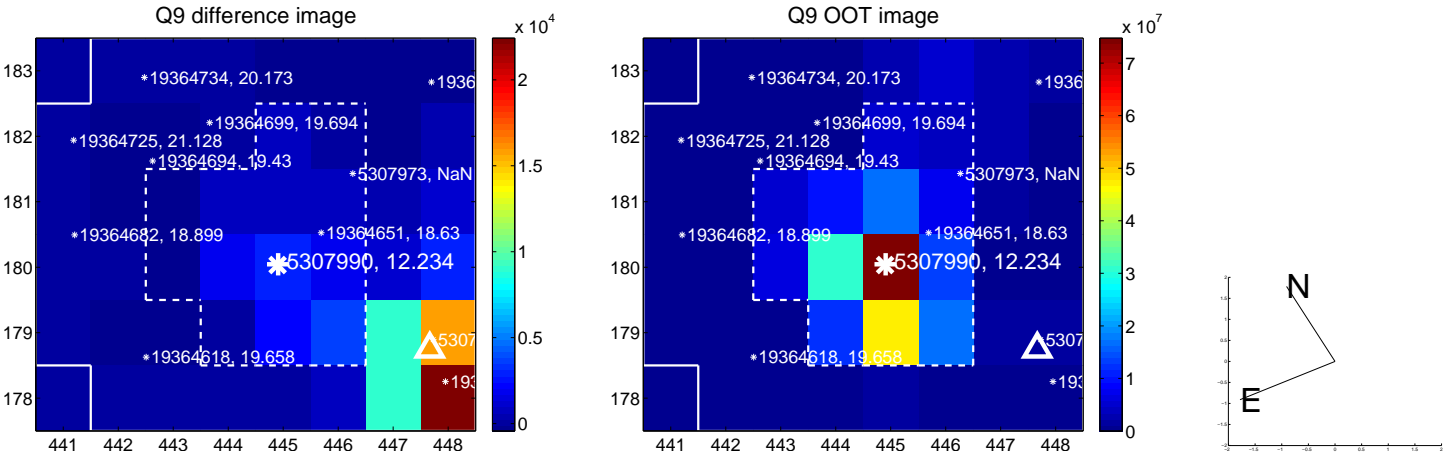


white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

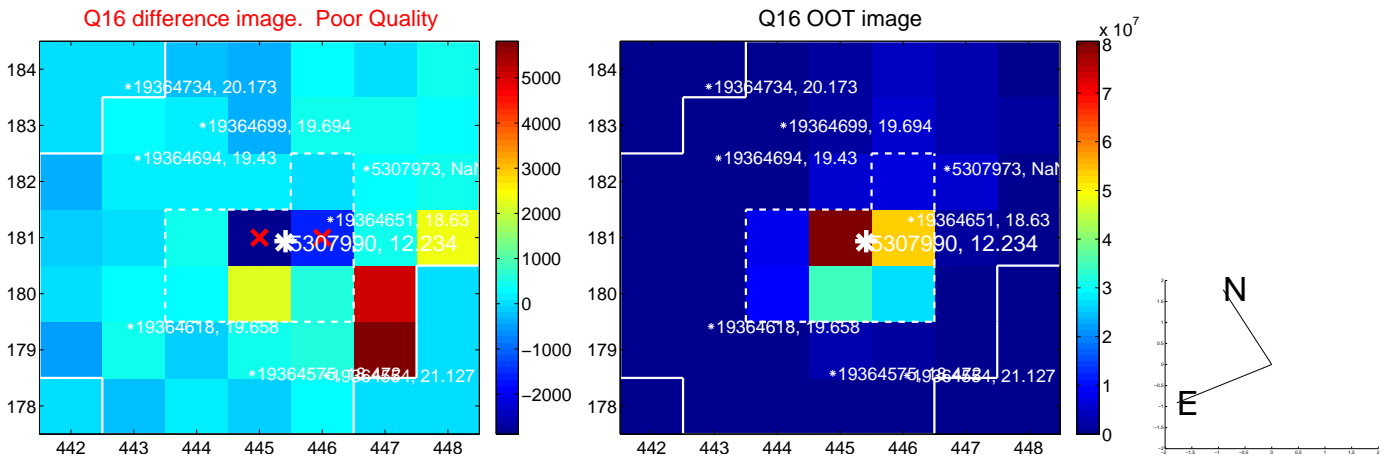
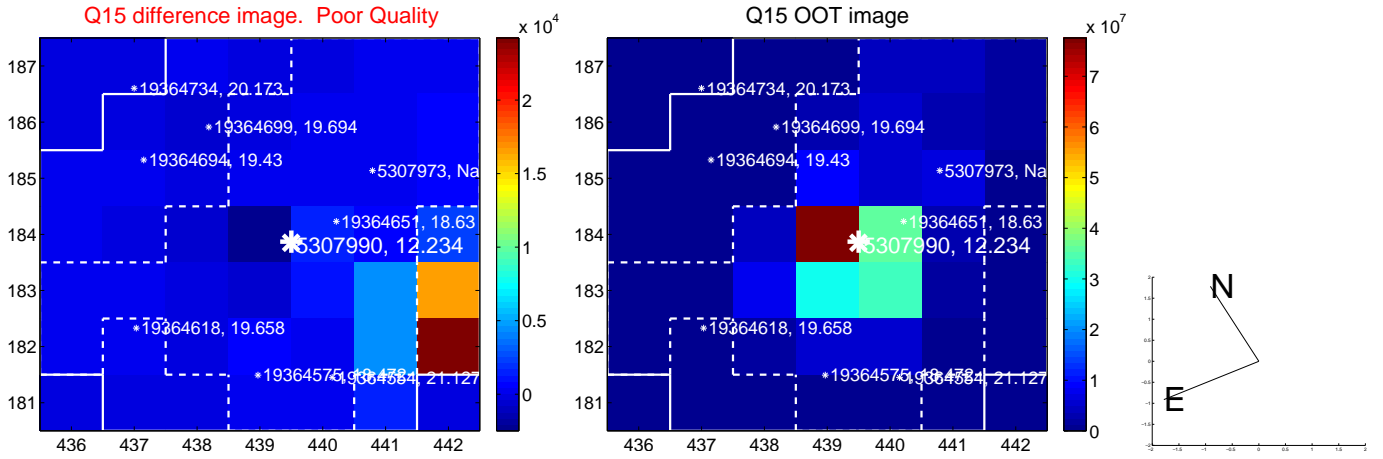
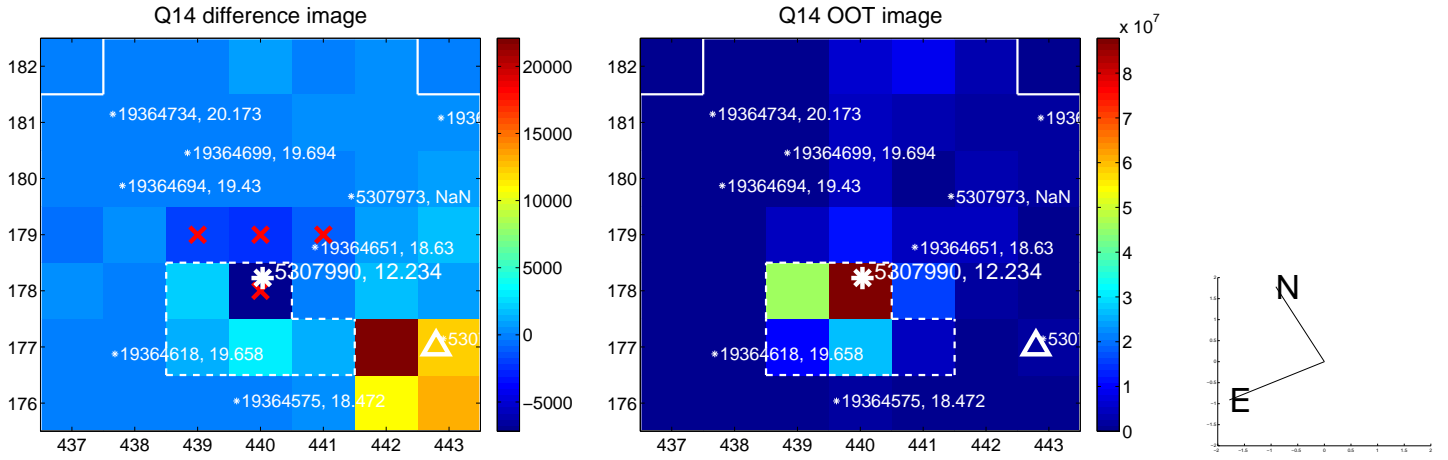
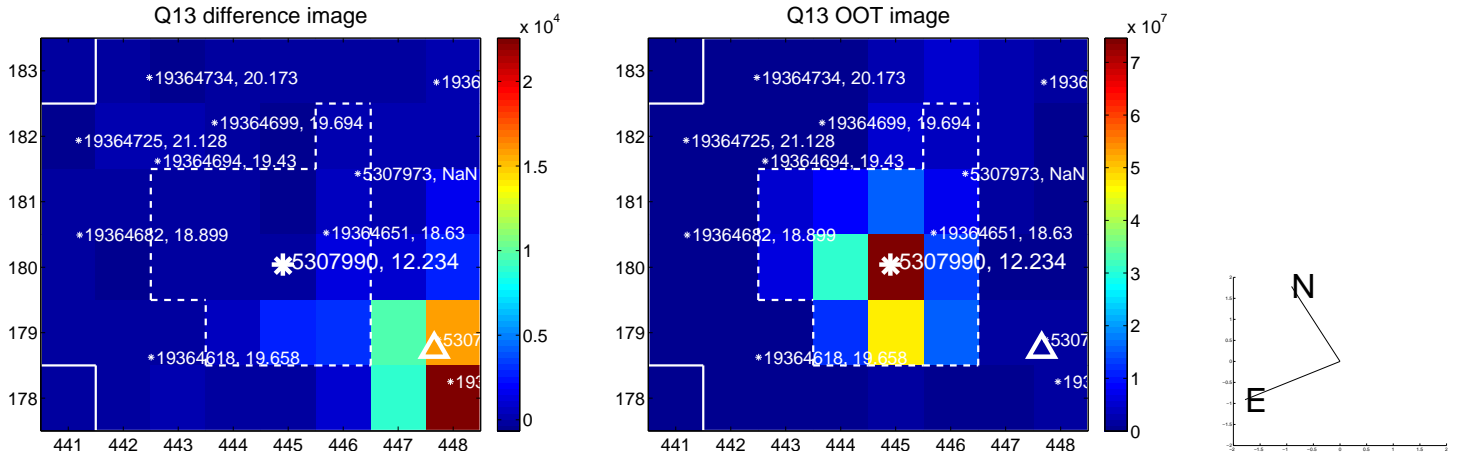




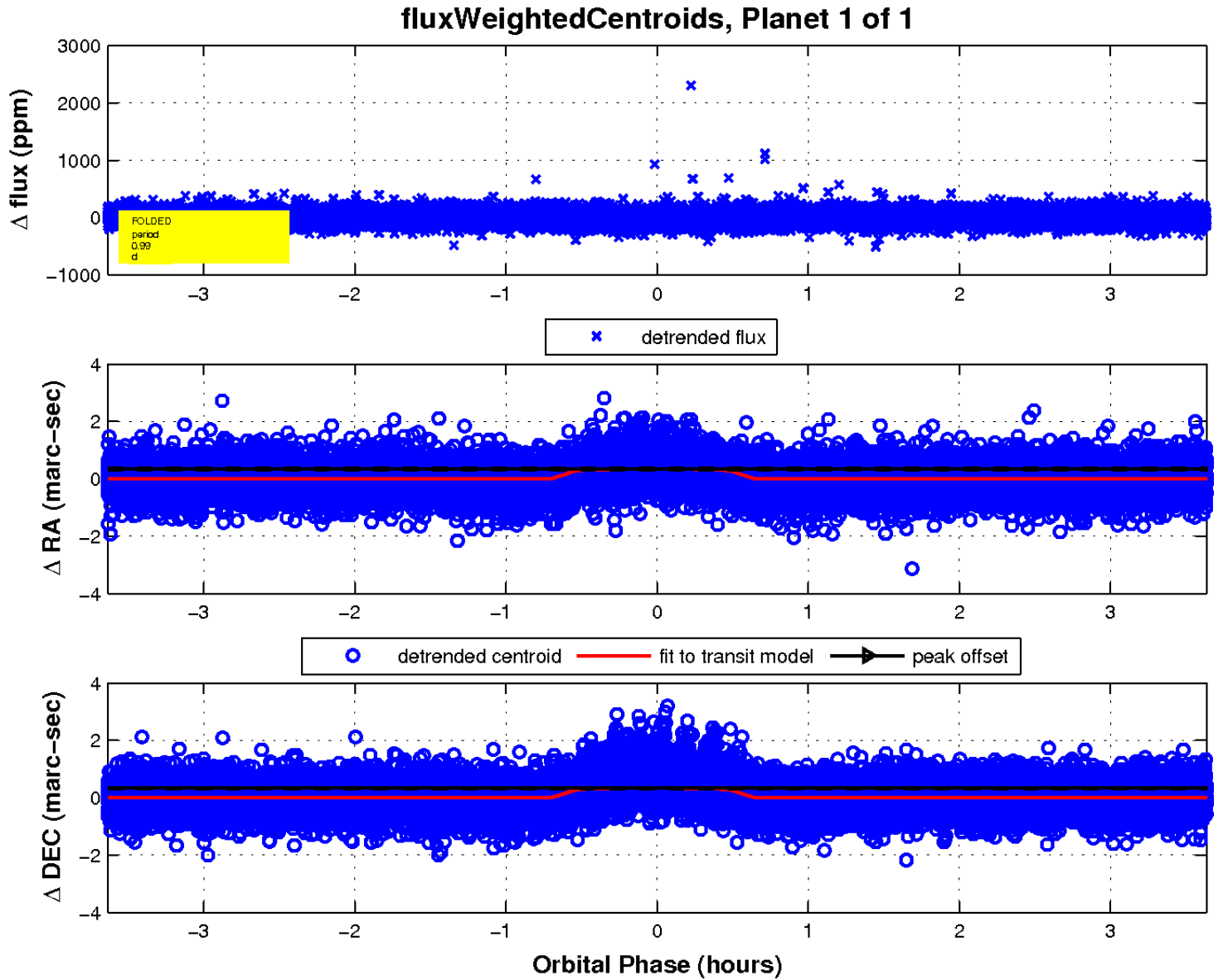
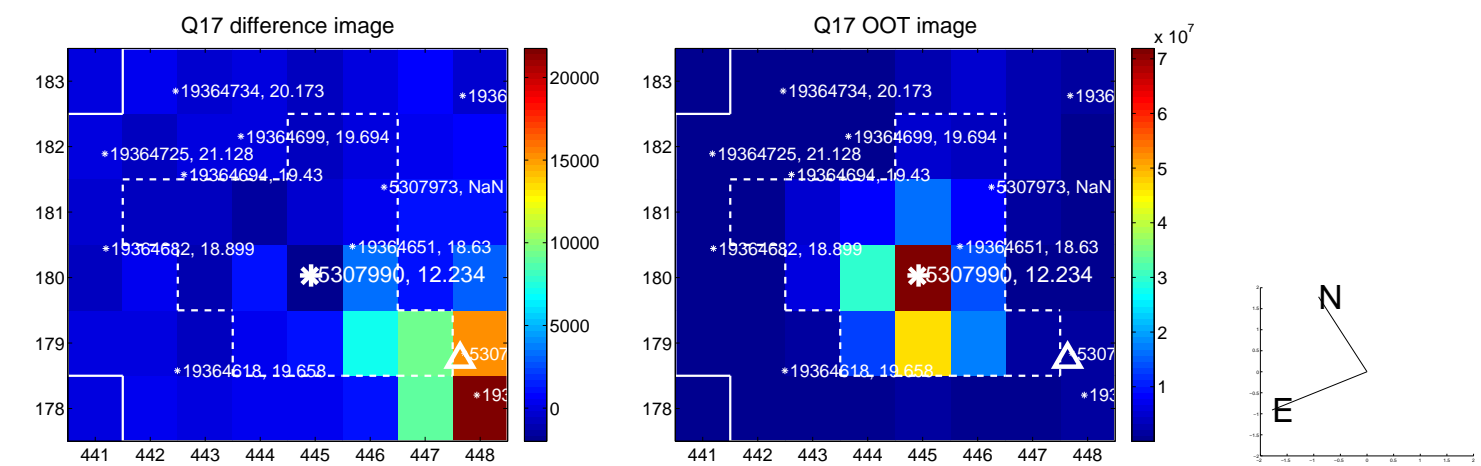
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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

