

# KIC 005303322

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
005303322-01	OBS	No	14.134577	143.073576	219.6	50.115	8.1	13.1	1.03	6174	2.29	98.53

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005303322-01	OBS	FP	0.00	1	0	0	0	LPP_DV—MOD_NONUNIQ_DV

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

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

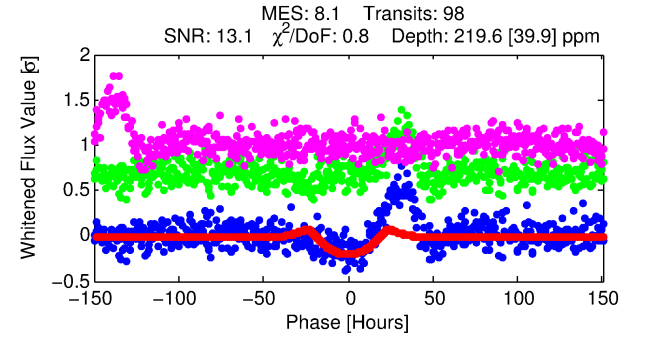
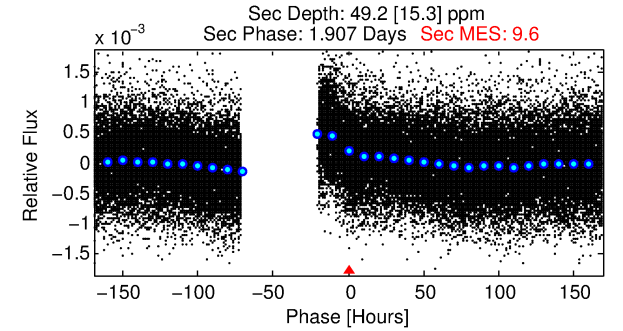
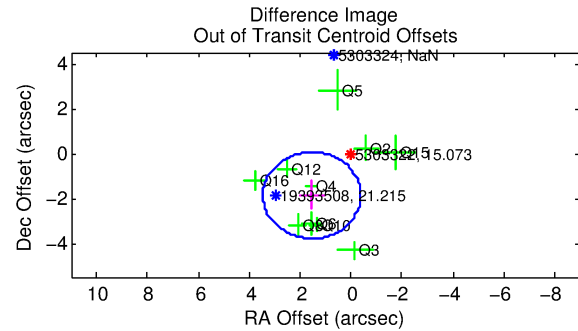
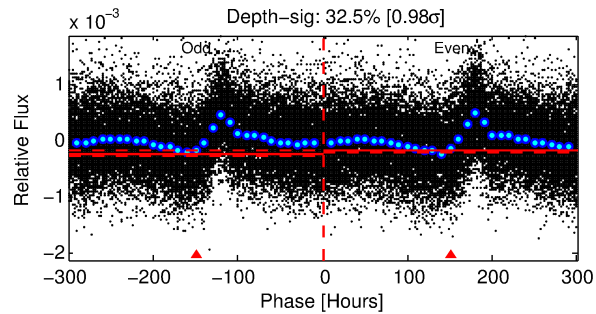
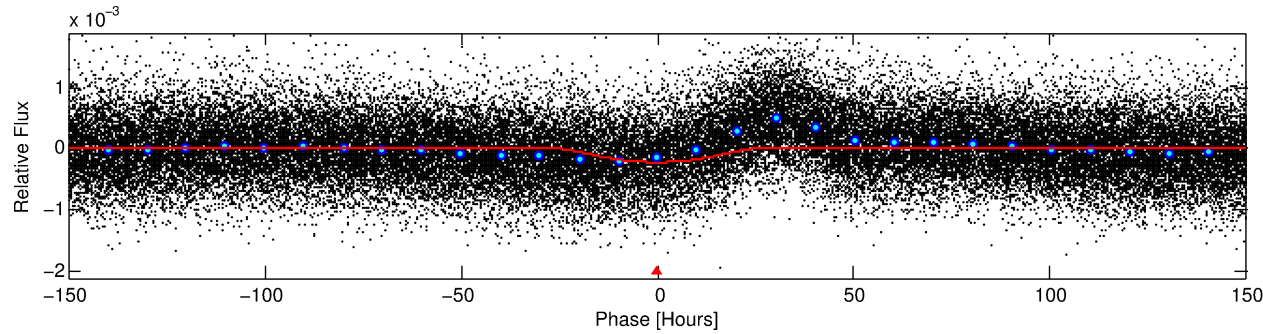
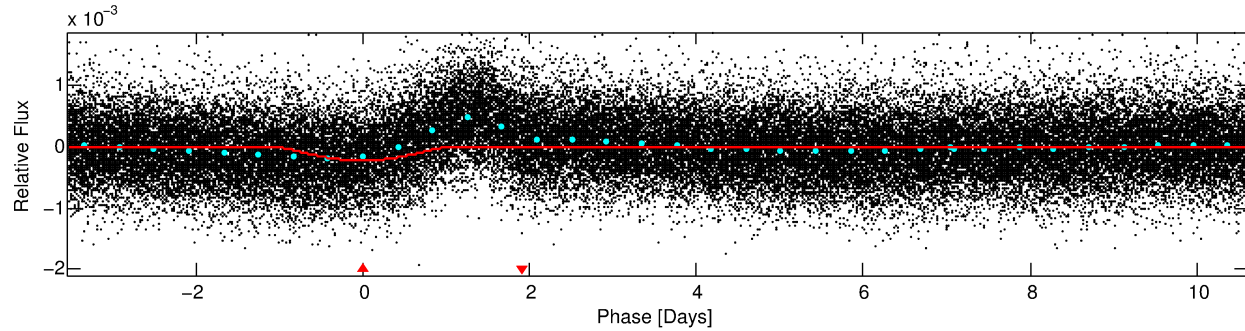
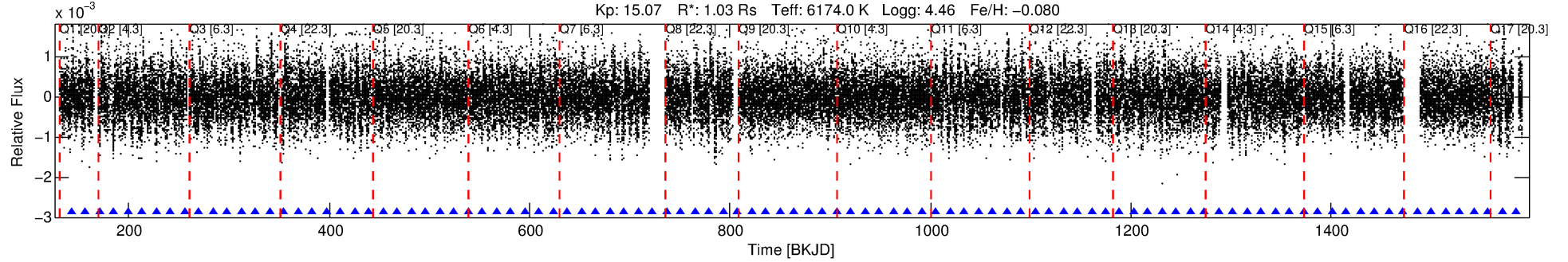
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 005303322-01

No Significant Match Found

# DV One-Page Summary

KIC: 5303322 Candidate: 1 of 1 Period: 14.135 d



## DV Fit Results:

Period = 14.13458 [0.00107] d  
Epoch = 143.0736 [0.0624] BKJD  
Rp/R\* = 0.0204 [0.0064]  
a/R\* = 1.14 [0.03]  
b = 0.99 [0.01]  
Seff = 98.53 [42.03]  
Teq = 803 [86] K  
Rp = 2.29 [1.02] Re  
a = 0.1179 [0.0316] AU  
Ag = 72.05 [57.85] [1.23 $\sigma$ ]  
Teffp = 3619 [651] K [4.29 $\sigma$ ]

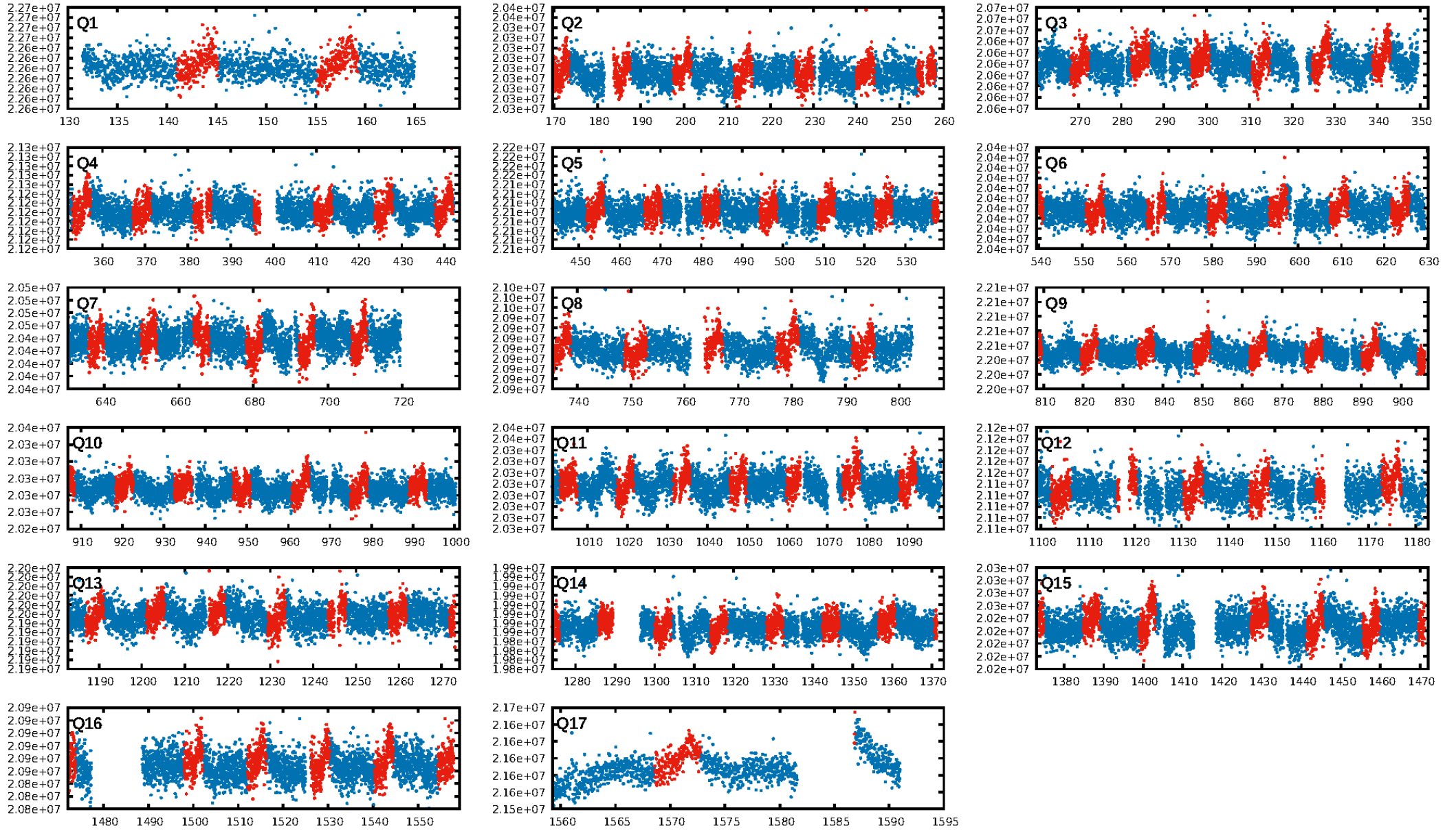
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: 78.5%  
ModelChiSquareGof-sig: 100.0%  
Bootstrap-pfa: 3.04e-15  
RollingBand-fgt: 1.00 [95/95]  
GhostDiagnostic-chr: 2.246  
Centroid-sig: 3.7%  
Centroid-so: 0.792 arcsec [1.51 $\sigma$ ]  
OotOffset-rm: 2.421 arcsec [3.77 $\sigma$ ]  
KicOffset-rm: 2.300 arcsec [3.58 $\sigma$ ]  
OotOffset-st: 3/2/4/1 [10]  
KicOffset-st: 3/2/4/1 [10]  
DiffImageQuality-fgm: 0.40 [4/10]  
DiffImageOverlap-fno: 1.00 [17/17]

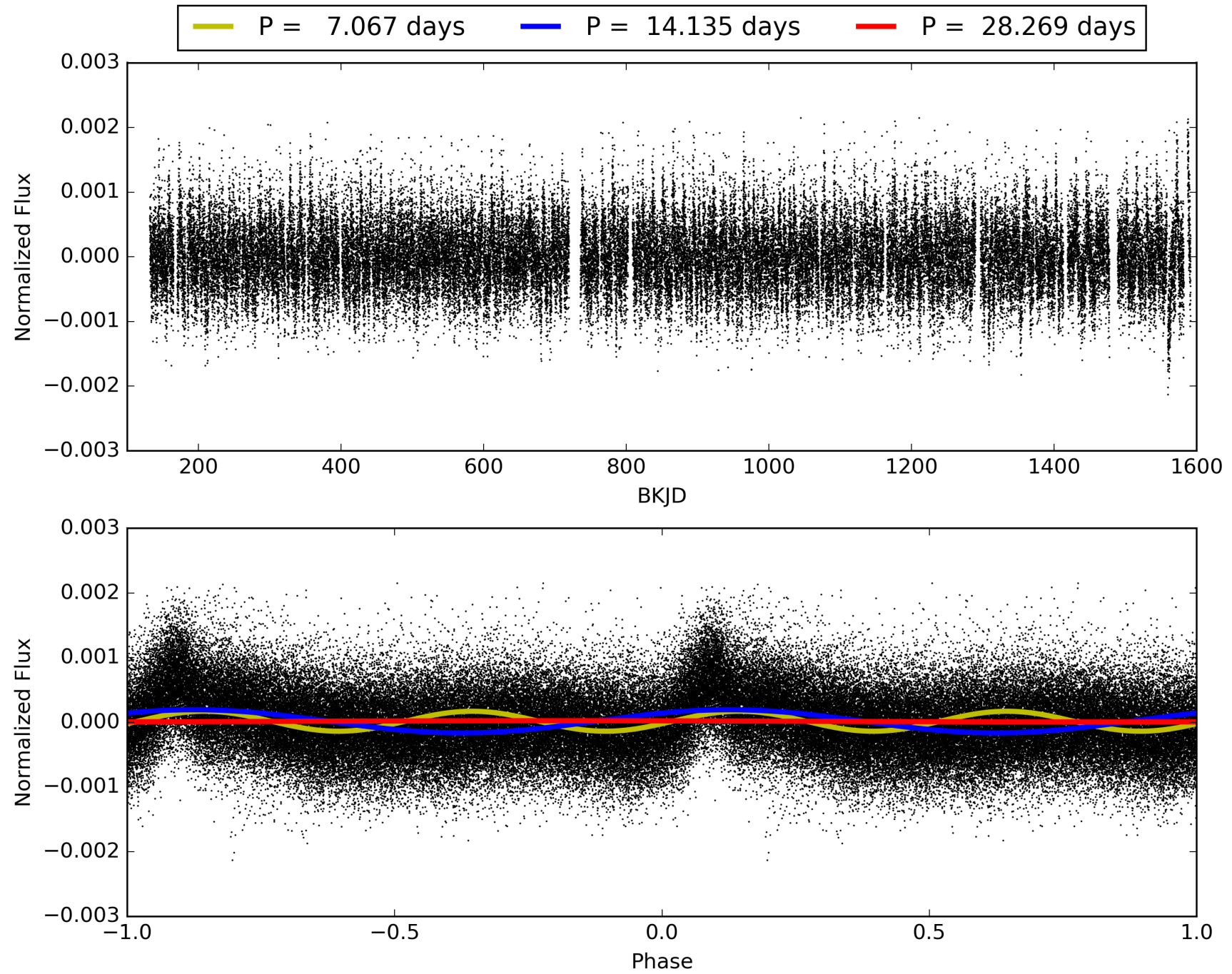
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 12:18:16 Z

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

# TCE 005303322-01, PDC Light Curves

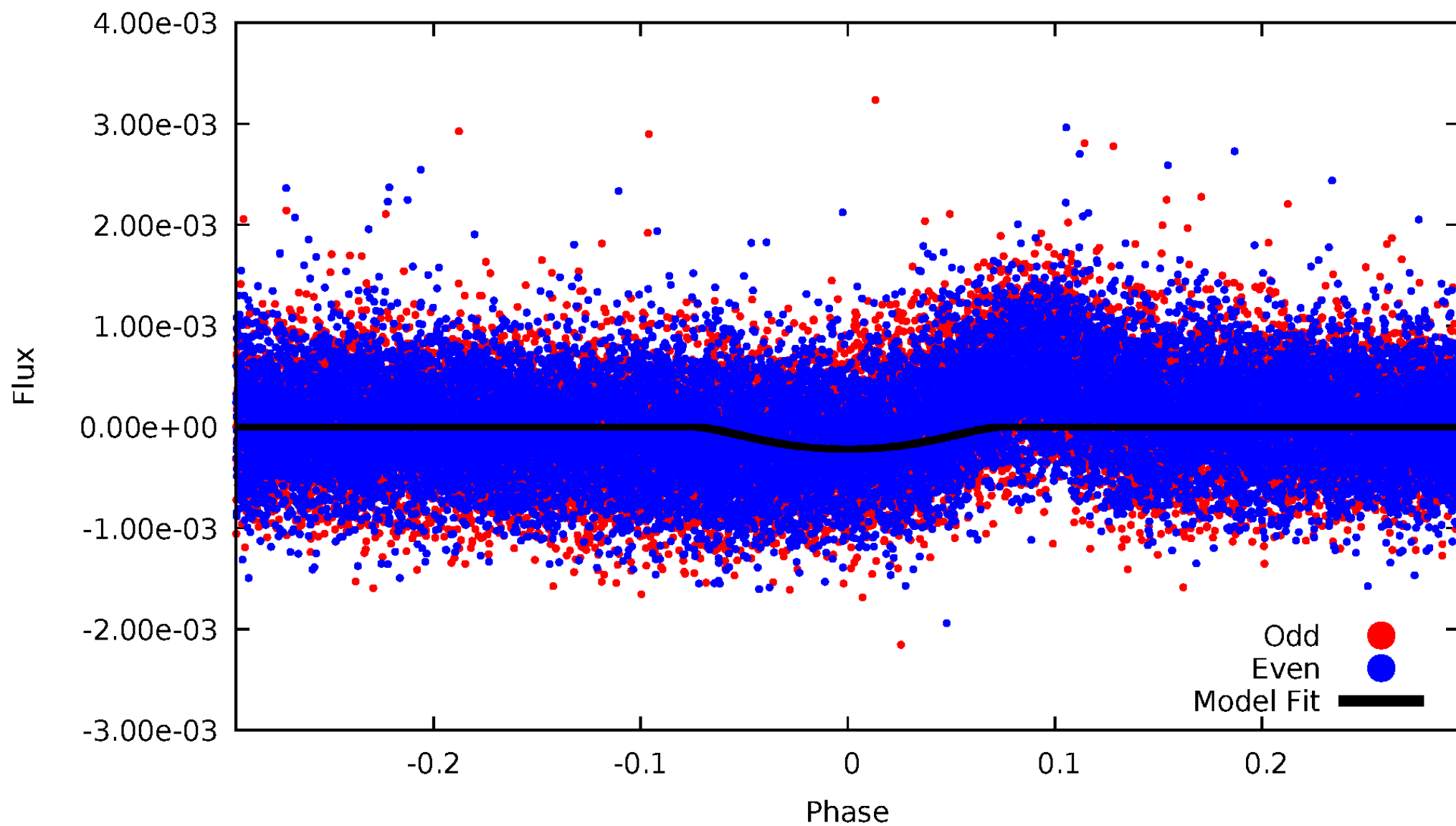


TCE 005303322-01



# DV Odd/Even

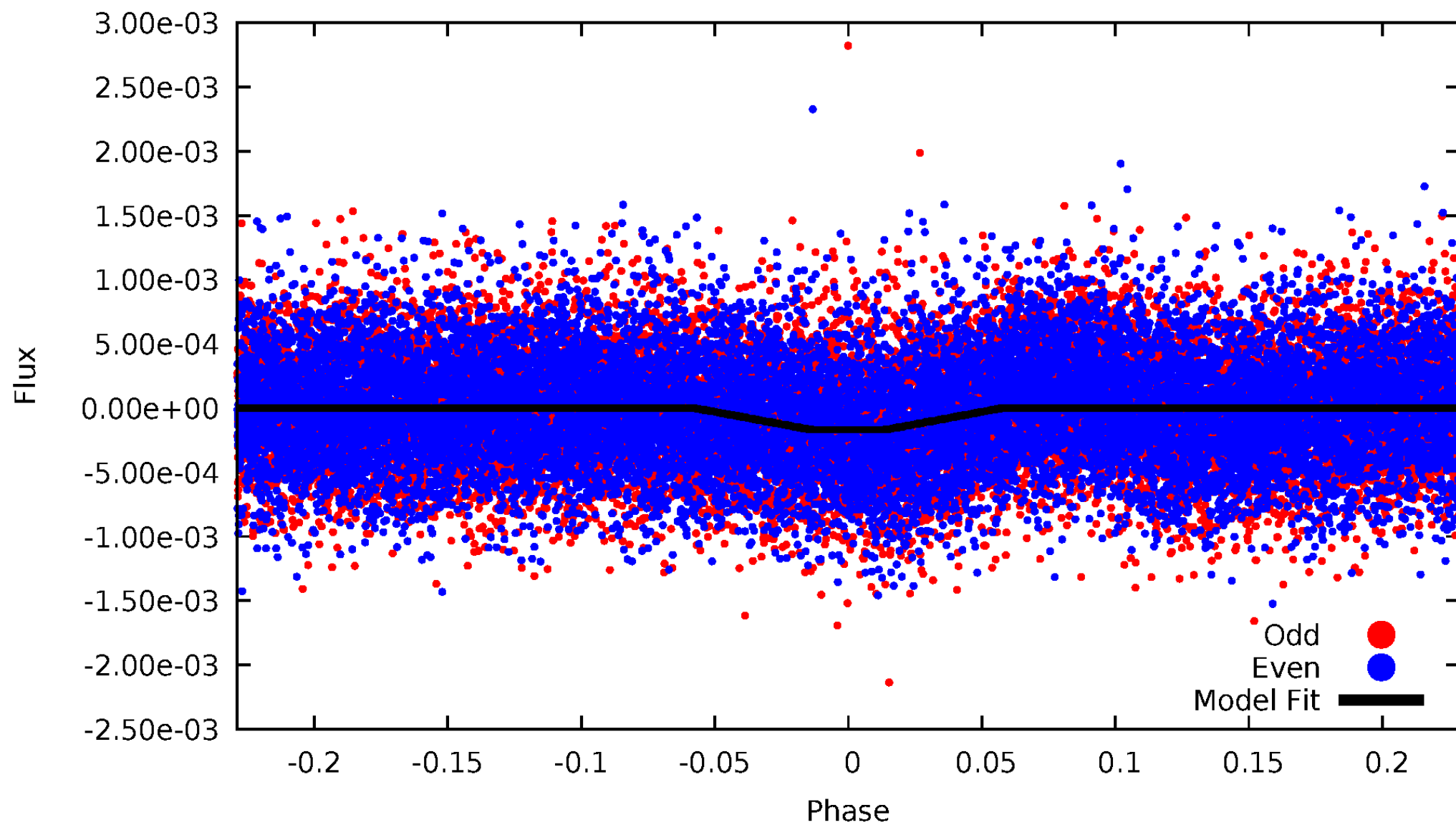
TCE 005303322-01





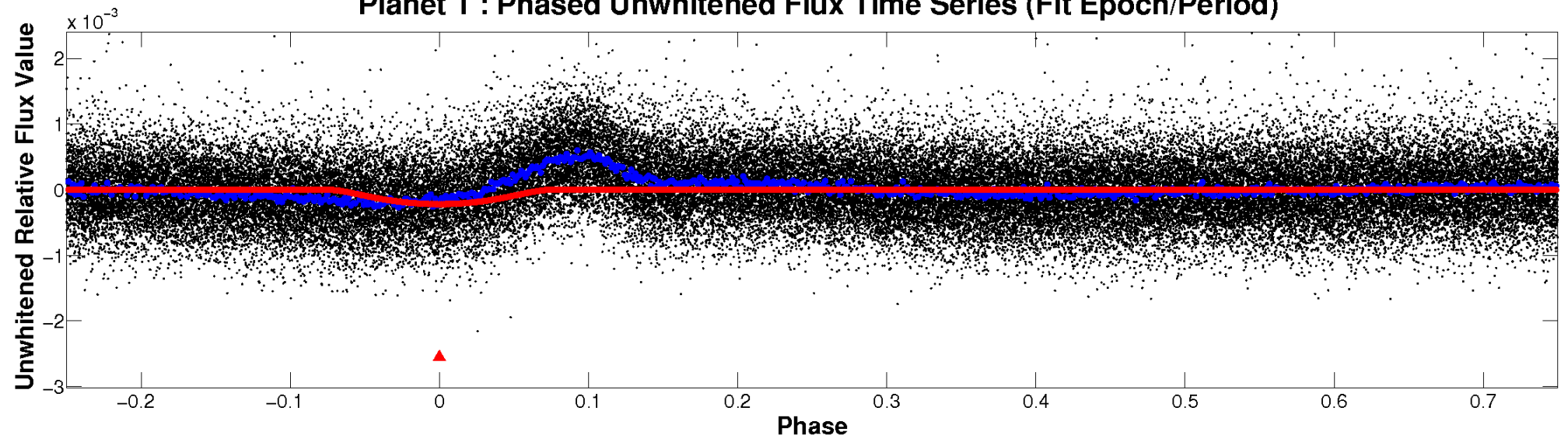
# ALT Odd/Even

TCE 005303322-01

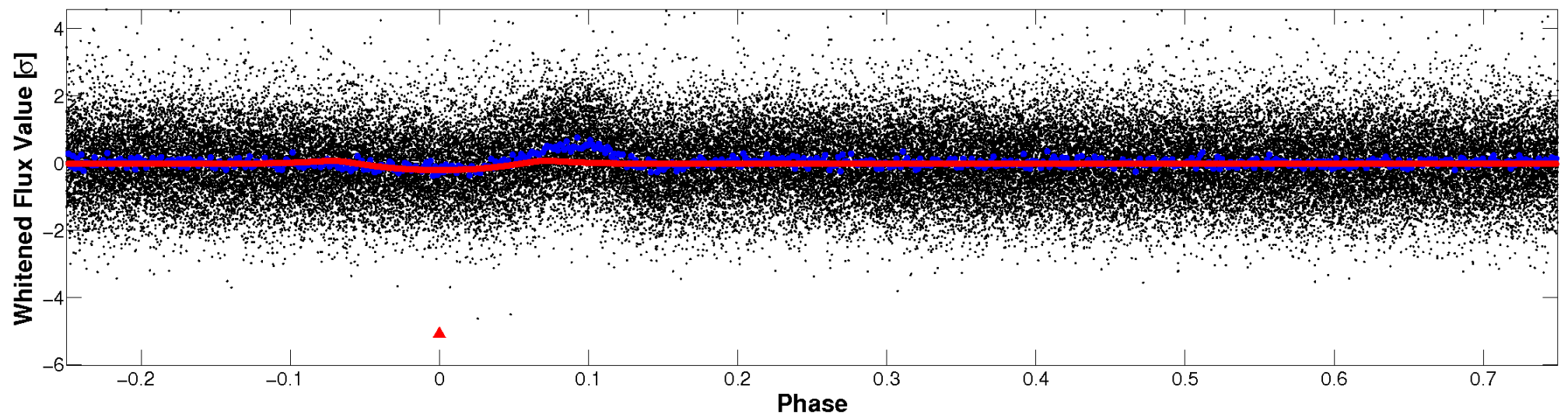


# Non-Whitened Vs. Whitened Light Curve

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

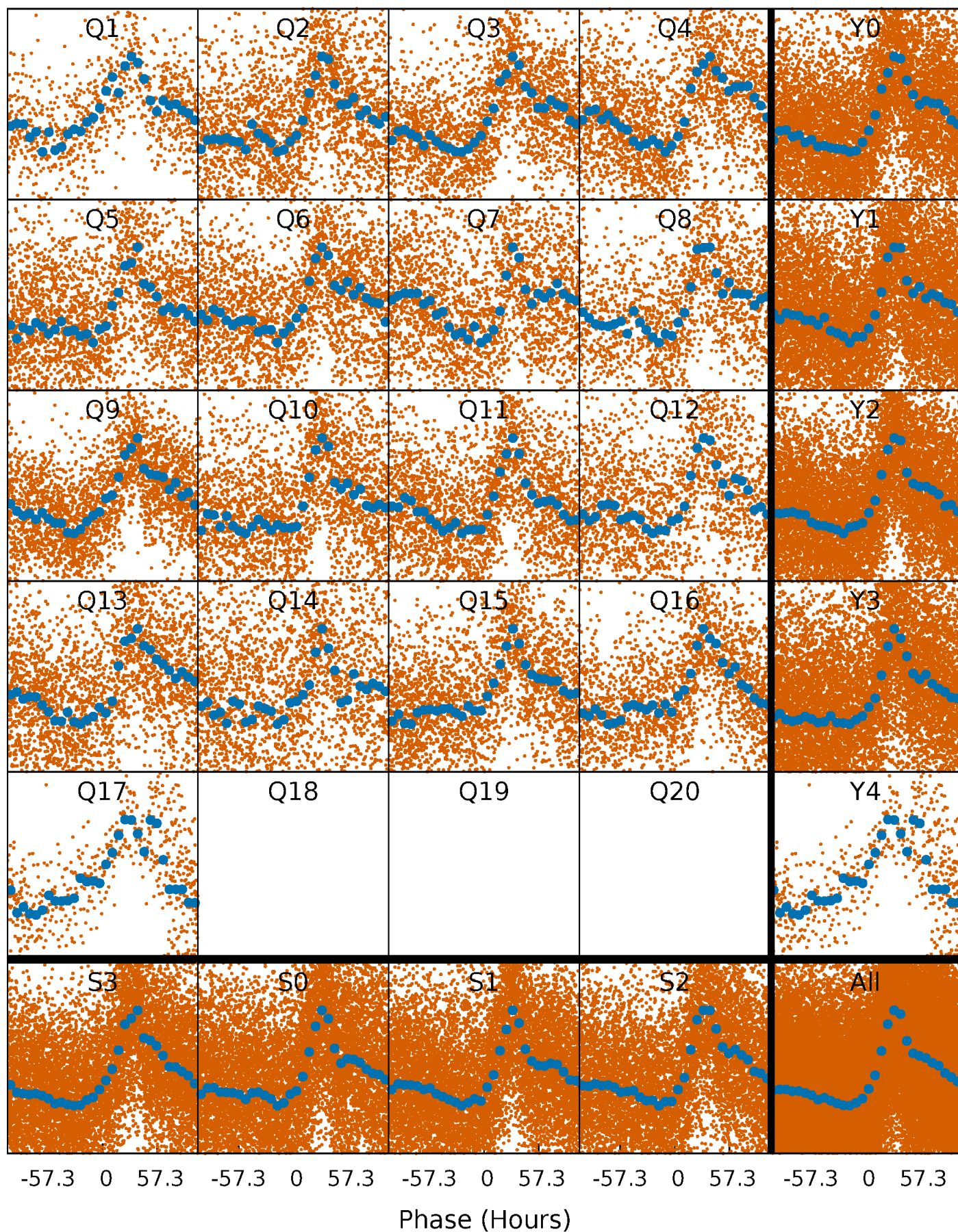


**Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)**



# PDC Quarter-Phased Transit Curves

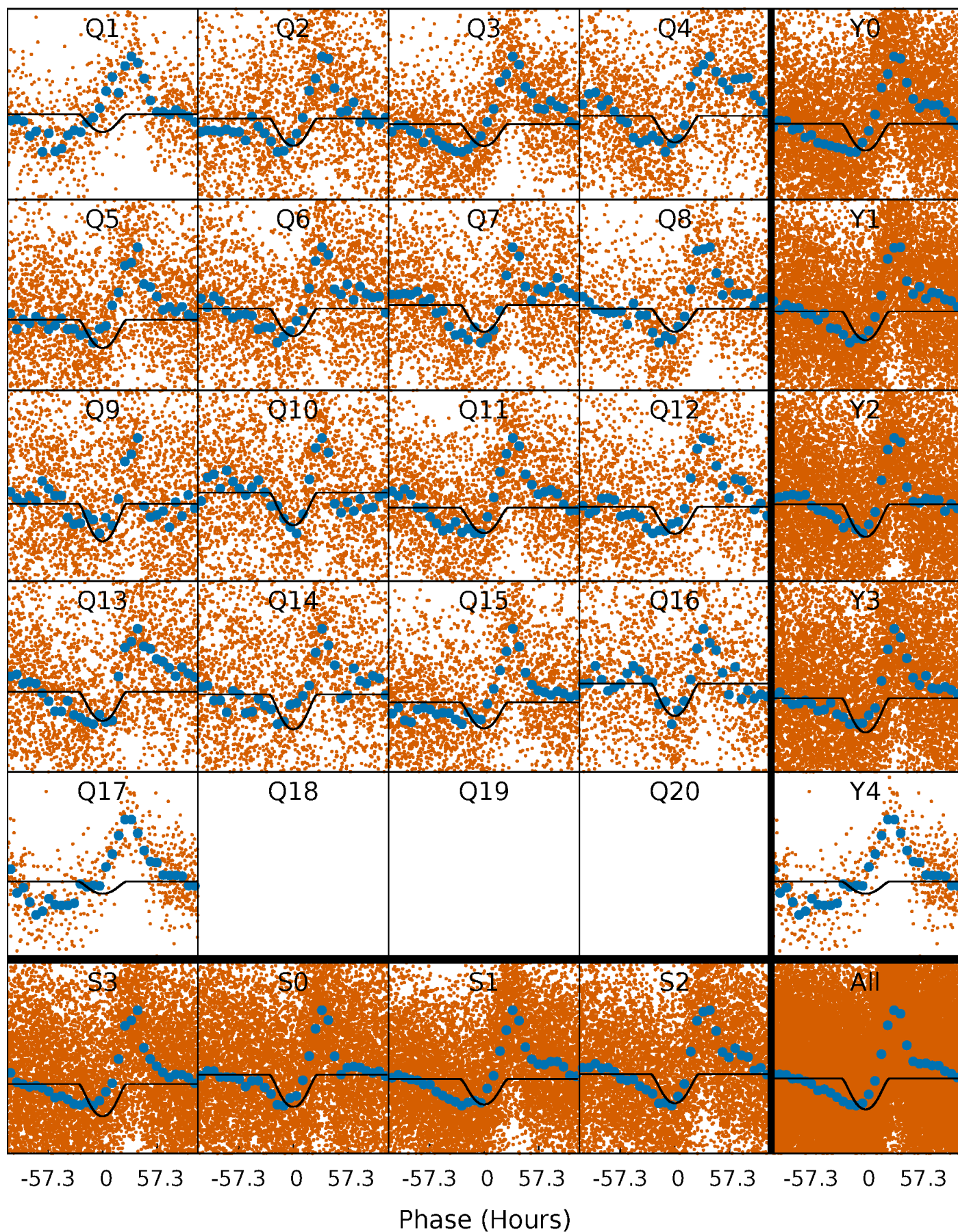
TCE 005303322-01 P= 14.134577 Days  $T_0=143.073576$  (BKJD)





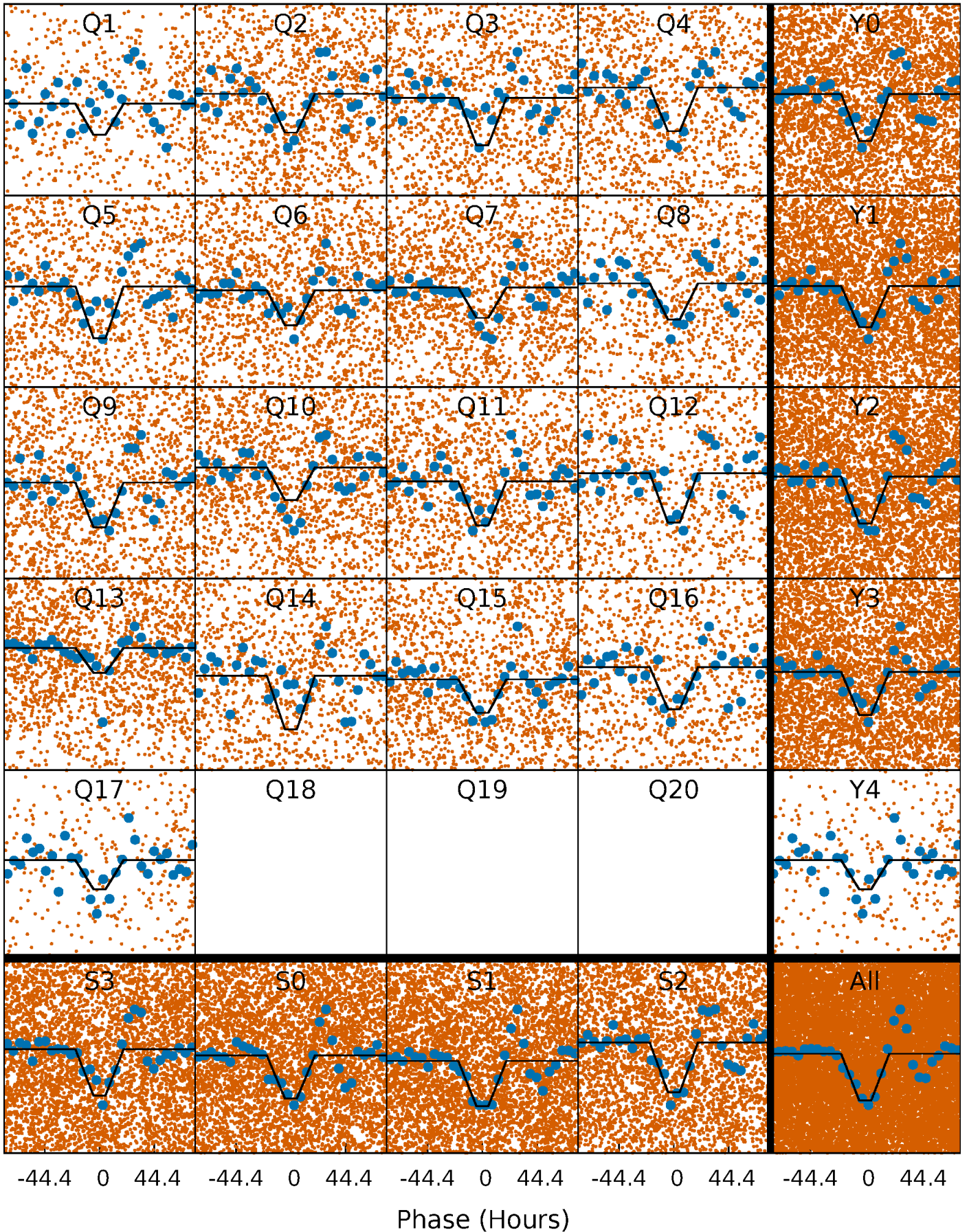
# DV Quarter-Phased Transit Curves

TCE 005303322-01 P= 14.134577 Days  $T_0=143.073576$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

TCE 005303322-01 P= 14.133991 Days  $T_0=143.266131$  (BKJD)

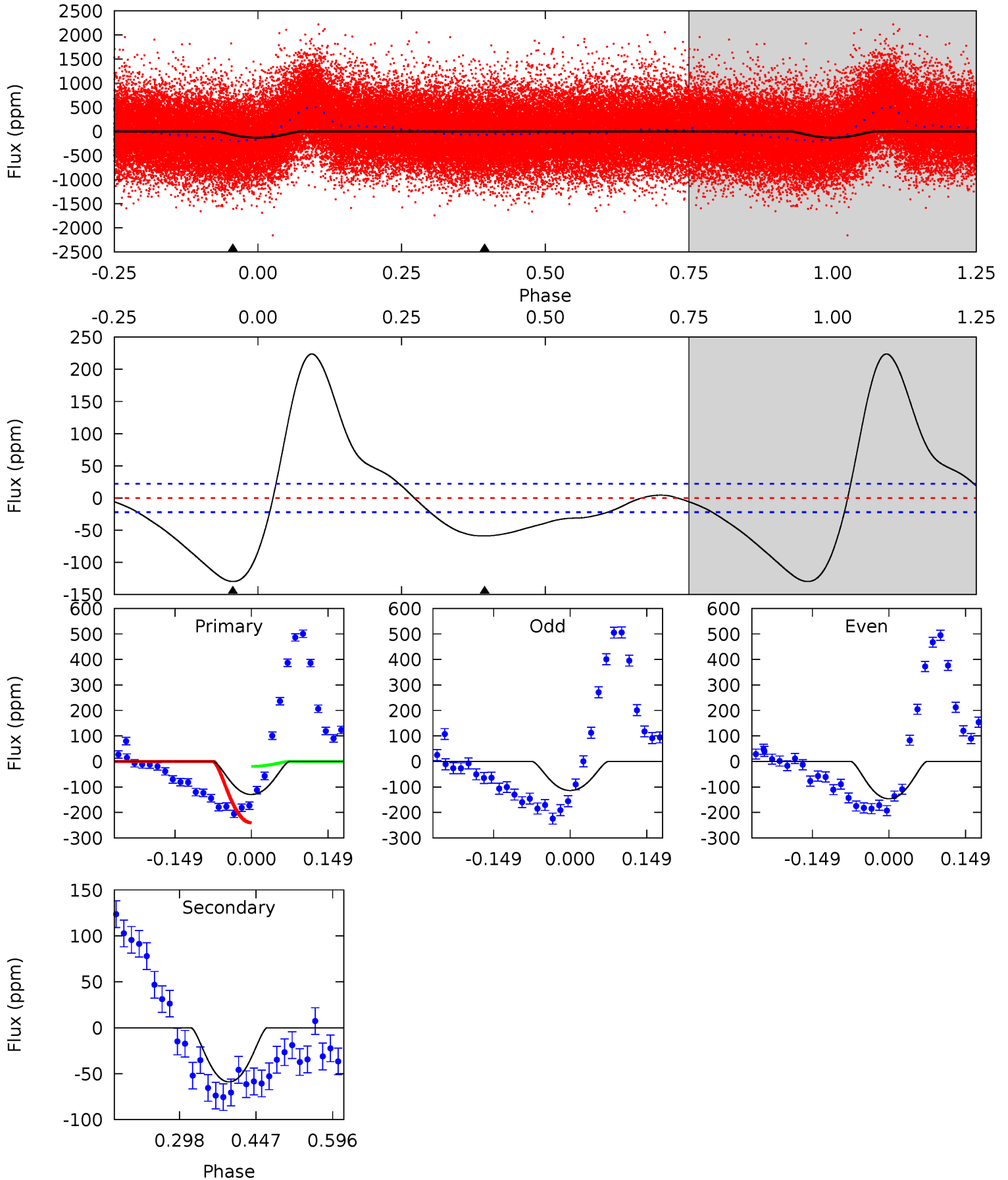




# DV Model-Shift Uniqueness Test

005303322-01, P = 14.134577 Days, E = 128.938999 Days

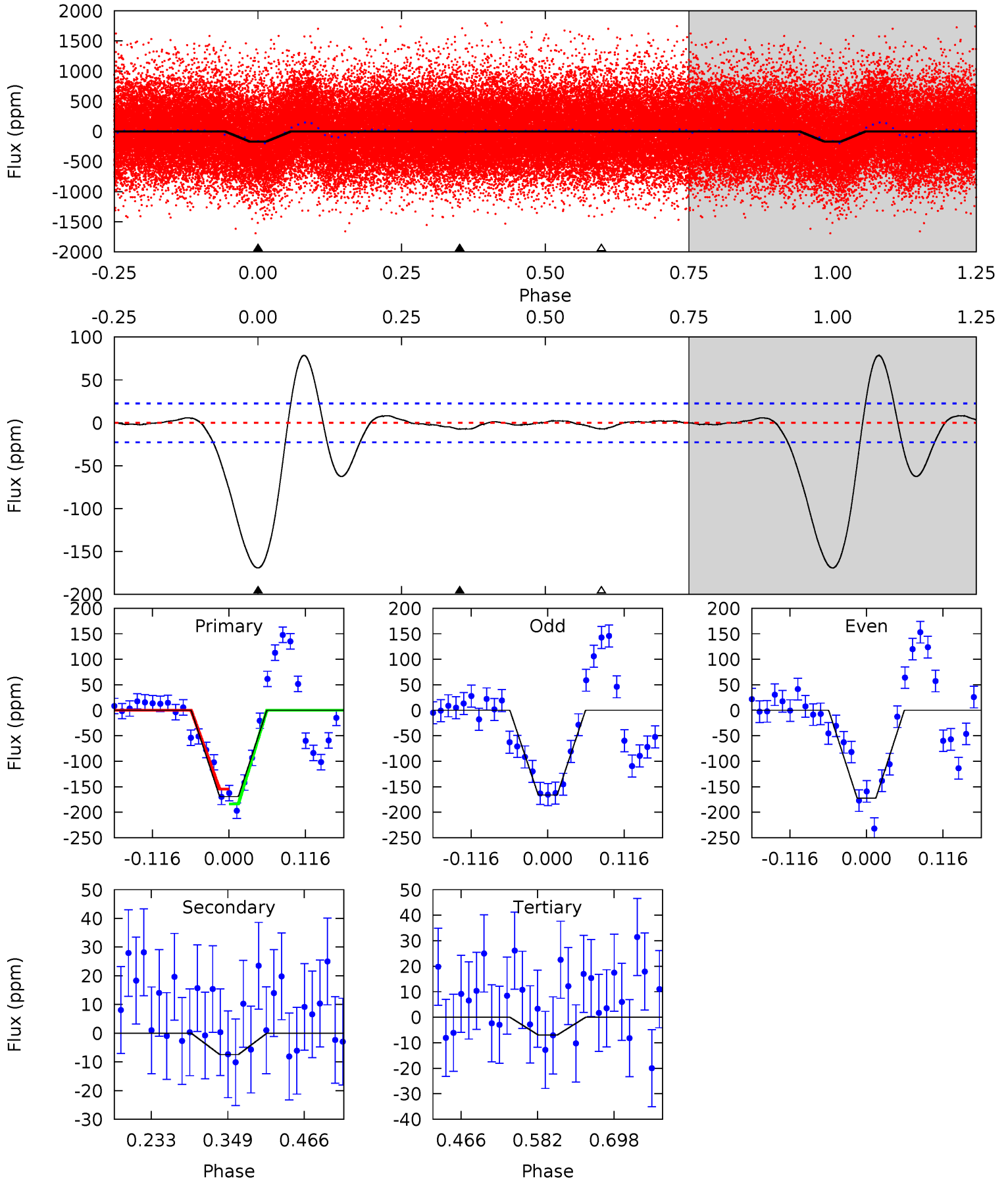
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
26.3	12.0	0	0	4.48	1.44	12.3	26.3	26.3	12.0	12.0	3.29	1.03	0.63	20.7



# Alt Model-Shift Uniqueness Test

005303322-01, P = 14.133991 Days, E = 129.132140 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
33.8	1.48	1.40	0	4.53	1.57	3.15	32.4	33.8	0.09	1.48	0.60	1.23	0.32	2.92





### Stellar Parameters For KIC 005303322

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$6174^{+193}_{-257}$	$4.455^{+0.067}_{-0.216}$	$-0.080^{+0.250}_{-0.350}$	$1.026^{+0.324}_{-0.130}$	$1.090^{+0.151}_{-0.151}$	$1.423^{+0.411}_{-0.718}$
	+3%/-4%	+2%/-5%	+312%/-438%	+32%/-13%	+14%/-14%	+29%/-50%
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 005303322-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	$A_{\text{obs}}$
DV	$-59 \pm 5$	$2.40^{+0.89}_{-0.79}$	$1144^{+86}_{-62}$	$4058^{+657}_{-380}$	$77^{+89}_{-37}$
Alt.	$-7 \pm 5$	$1.55^{+0.81}_{-0.71}$	$1143^{+86}_{-68}$	$3281^{+802}_{-572}$	$20^{+61}_{-15}$

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

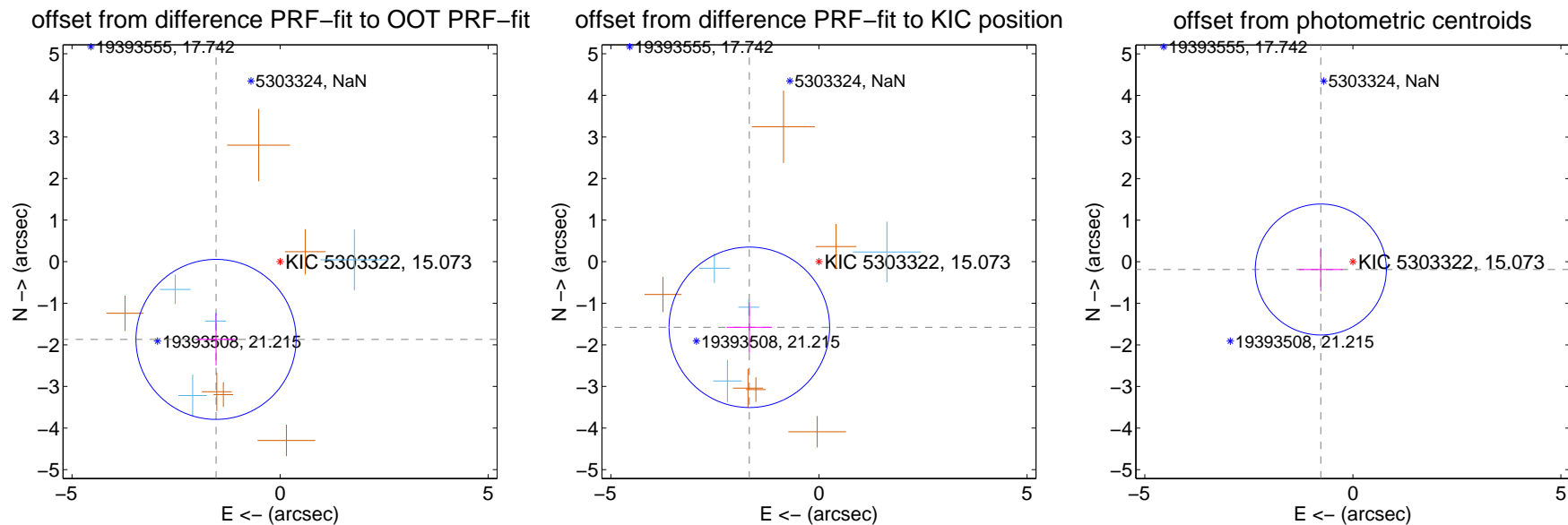
## DV Centroid Data

Supplemental centroid analysis for 005303322-01. Kepler magnitude: 15.07. Transit SNR 13.11

There are 4 quarters with good PRF difference image offsets

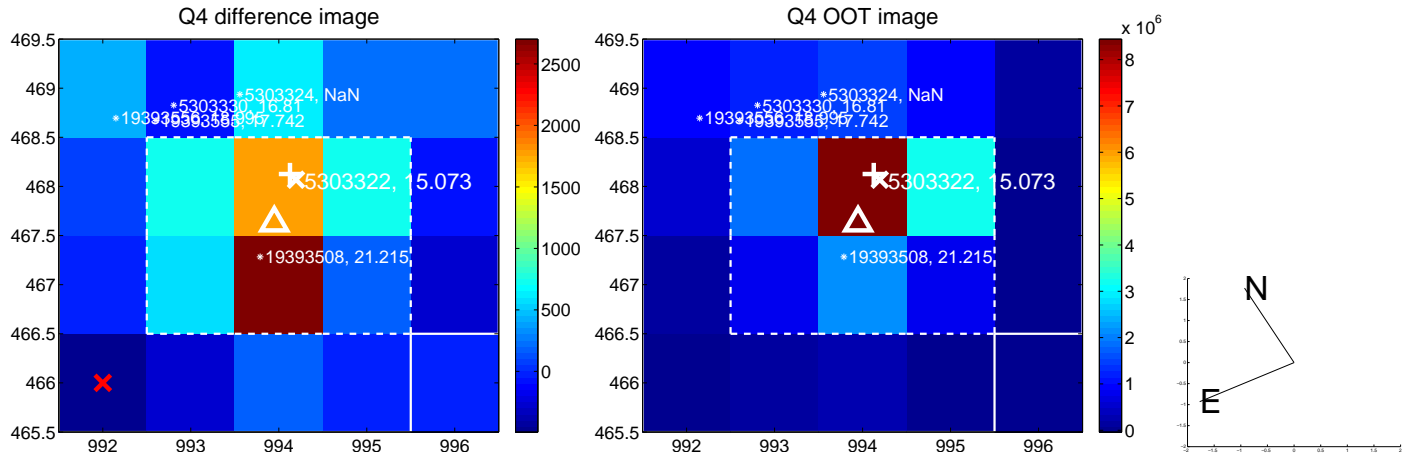
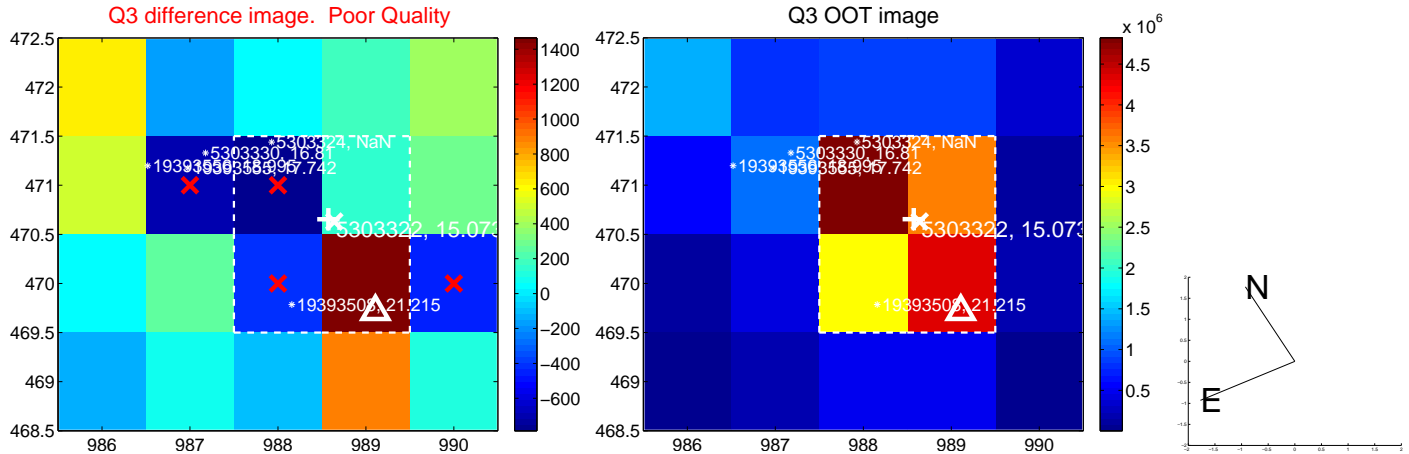
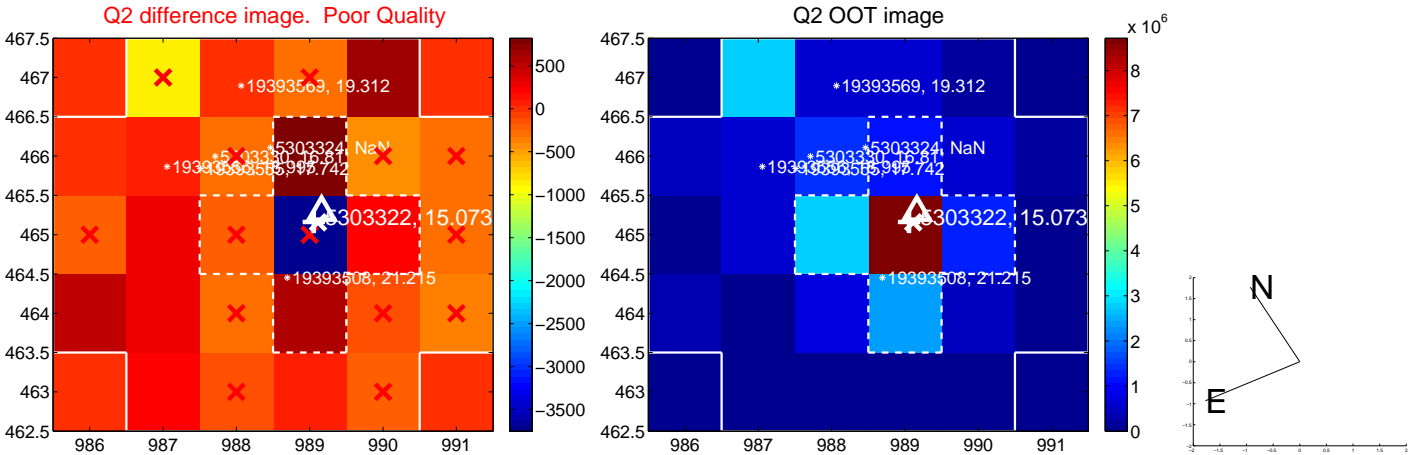
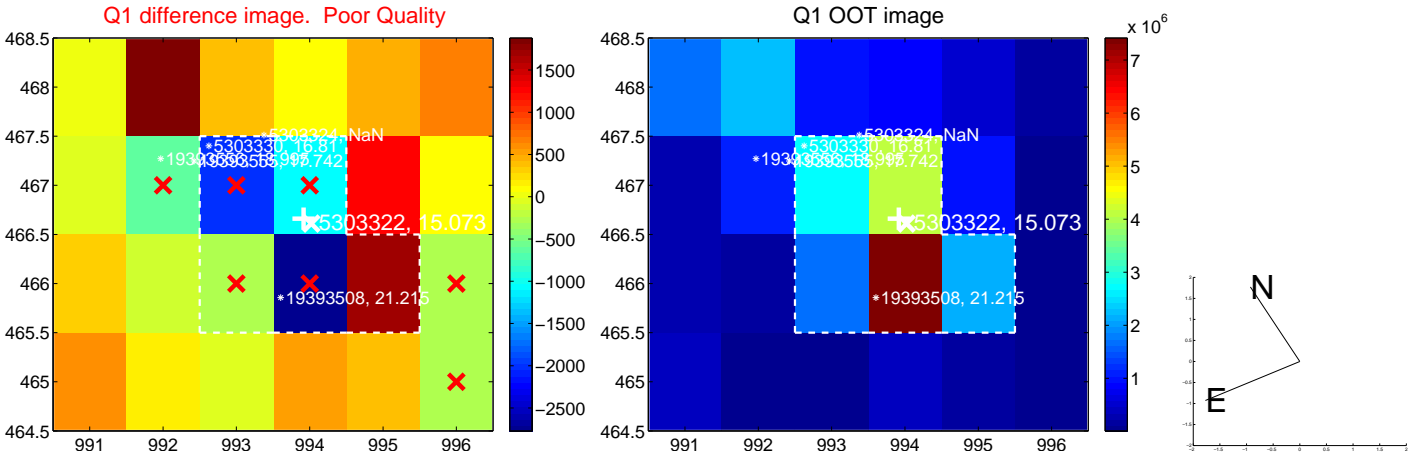
The direct PRF centroid is offset from the target star catalog position by about 0.45 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$2.421 \pm 0.641$	$3.77$	$1.539 \pm 0.471$	$-1.868 \pm 0.625$
PRF-fit source offset from KIC position	$2.300 \pm 0.643$	$3.58$	$1.674 \pm 0.545$	$-1.578 \pm 0.611$
photometric centroid source offset	$0.79 \pm 0.53$	1.51	$0.77 \pm 0.53$	$-0.19 \pm 0.52$

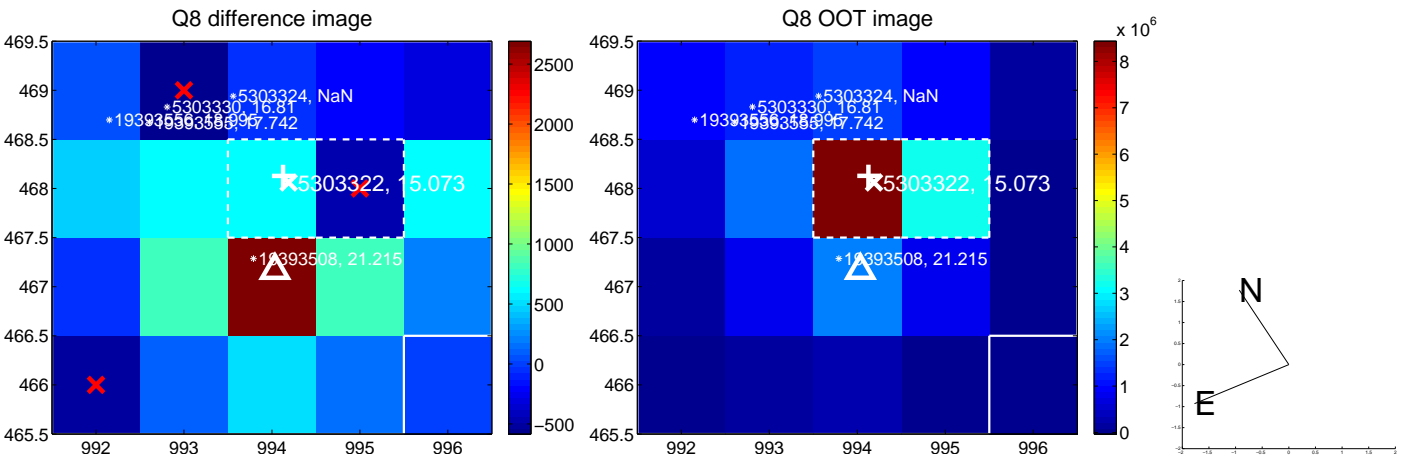
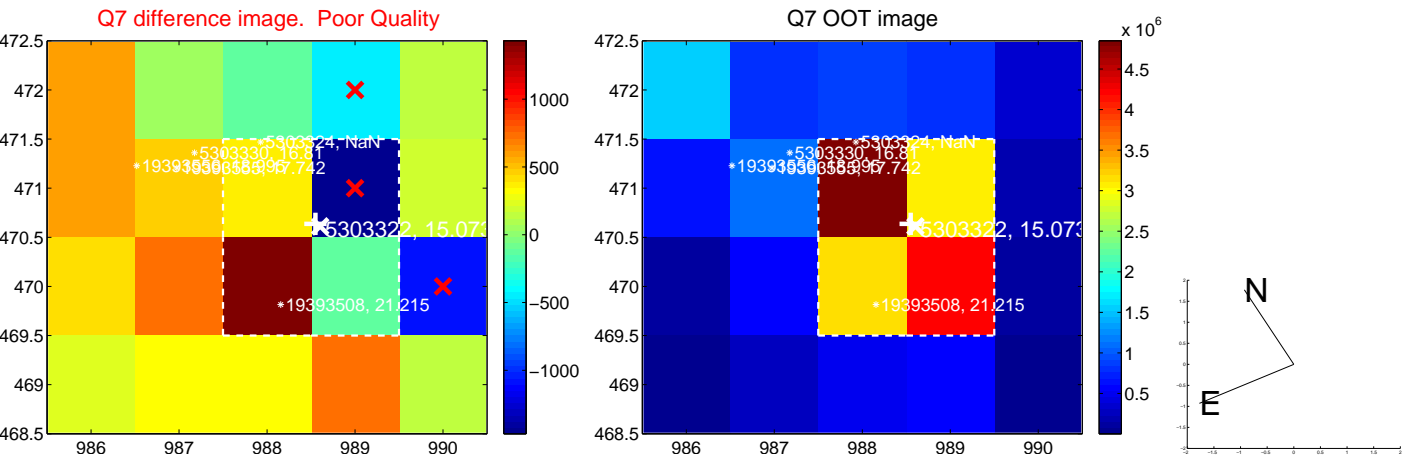
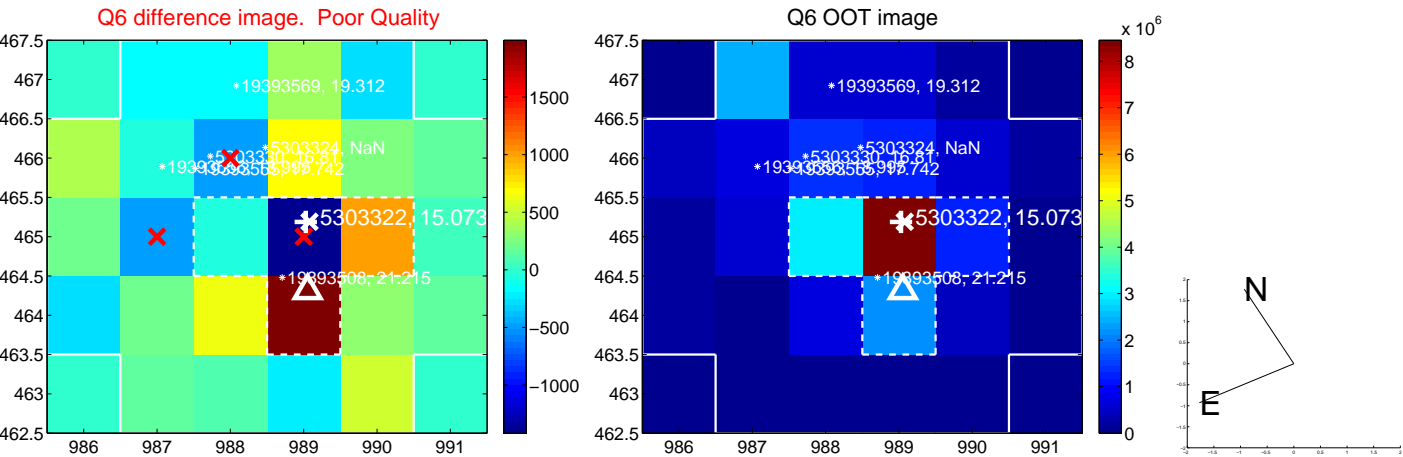
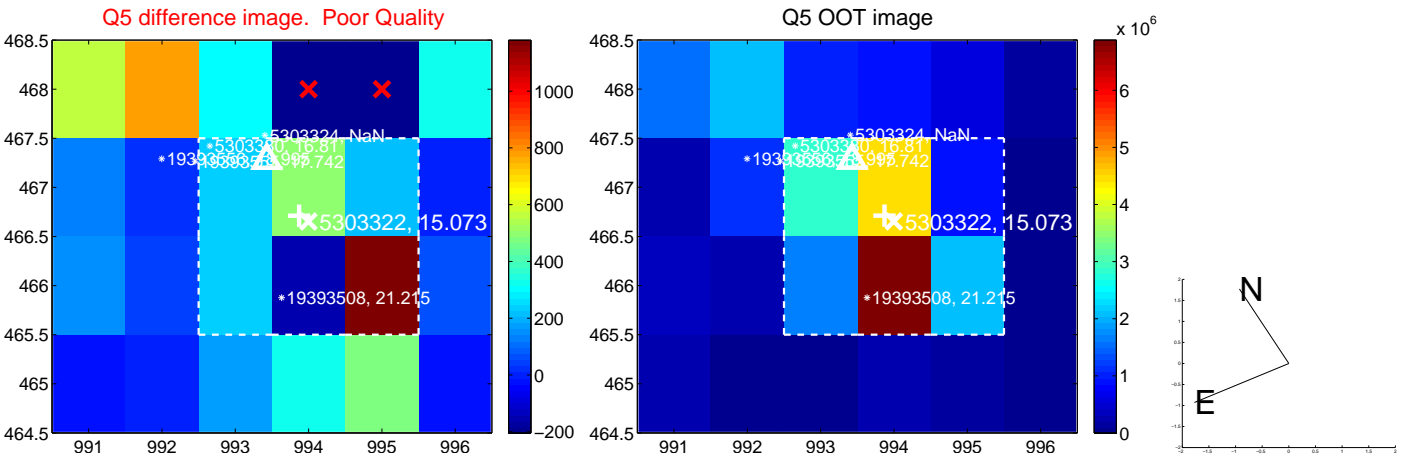


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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

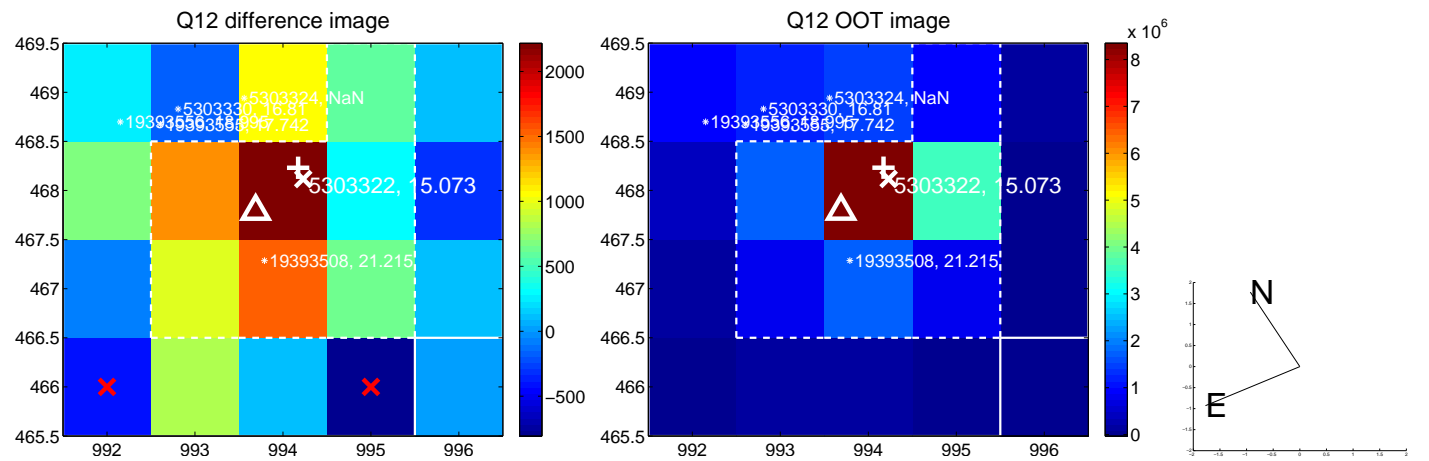
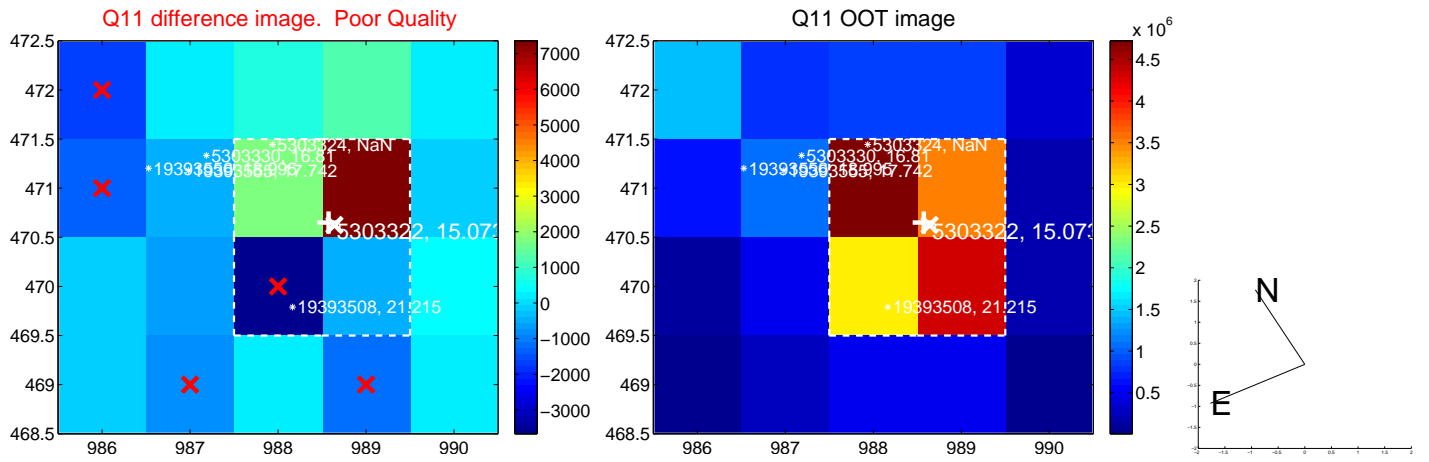
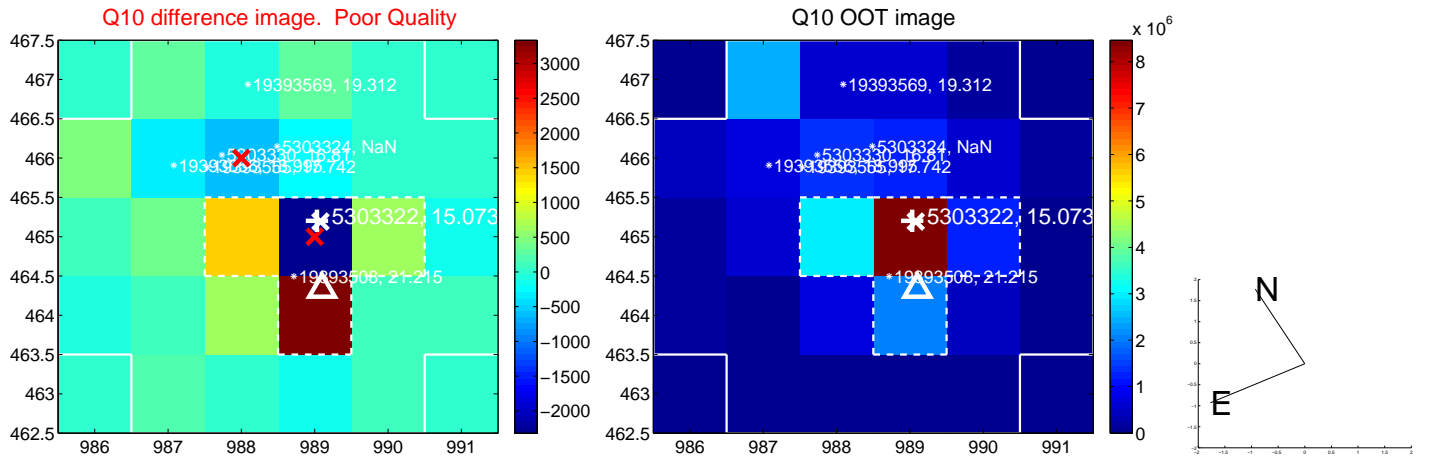
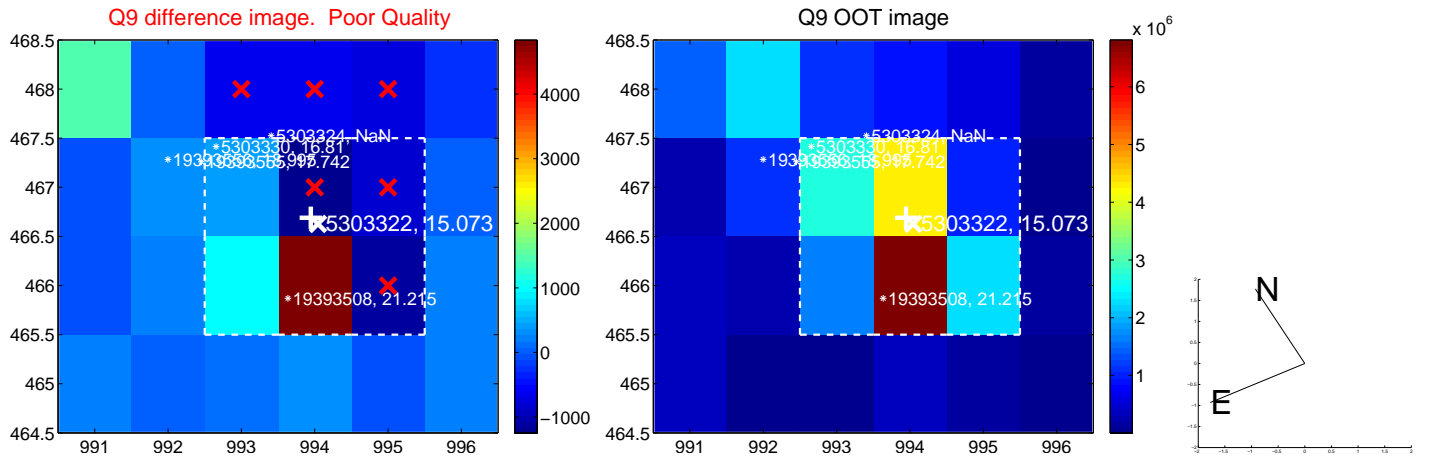


white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

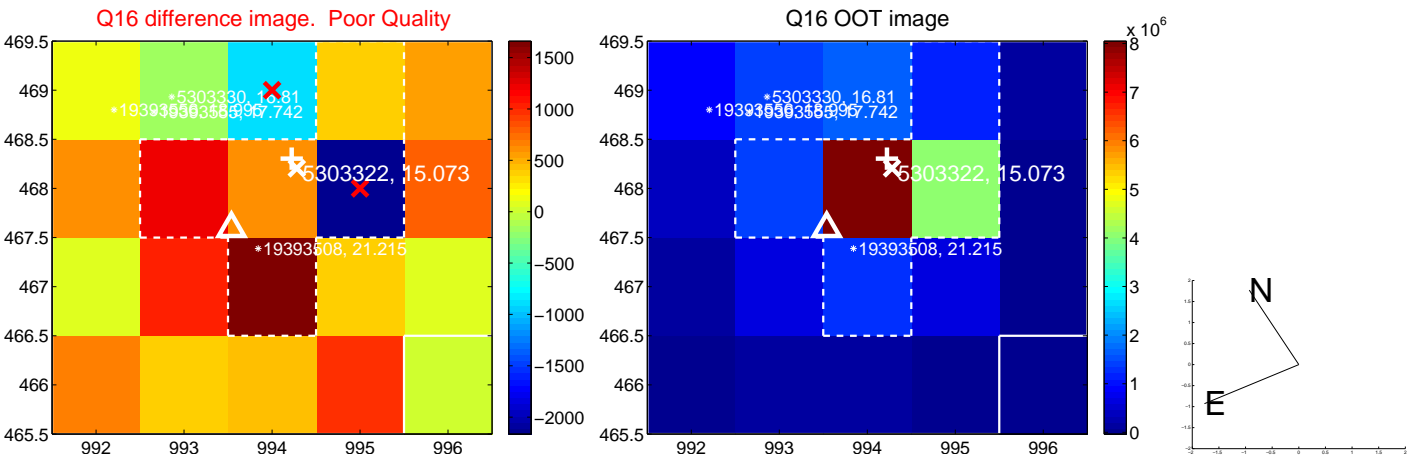
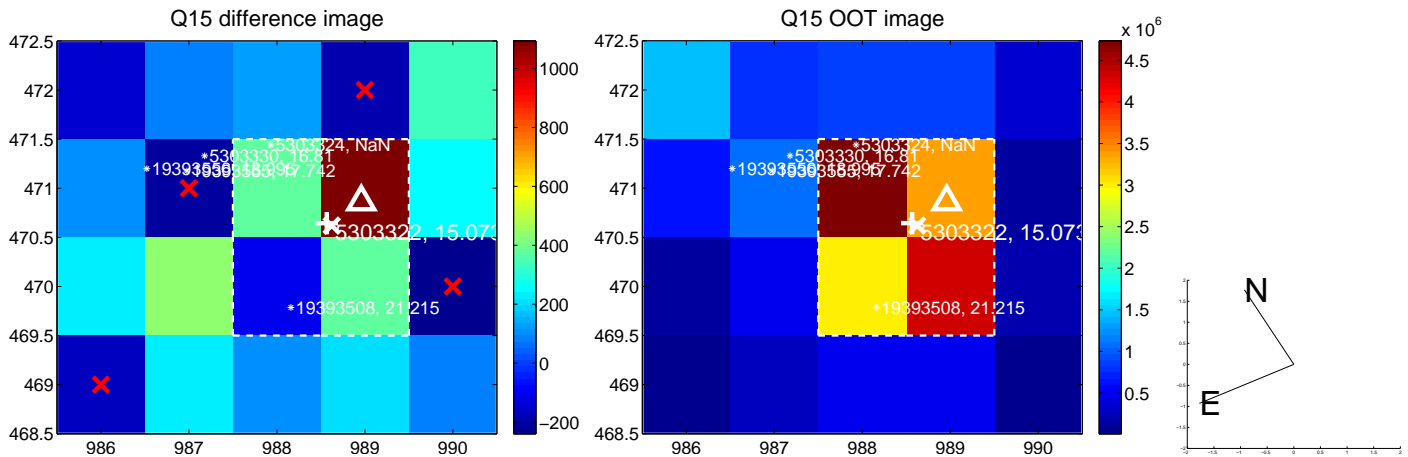
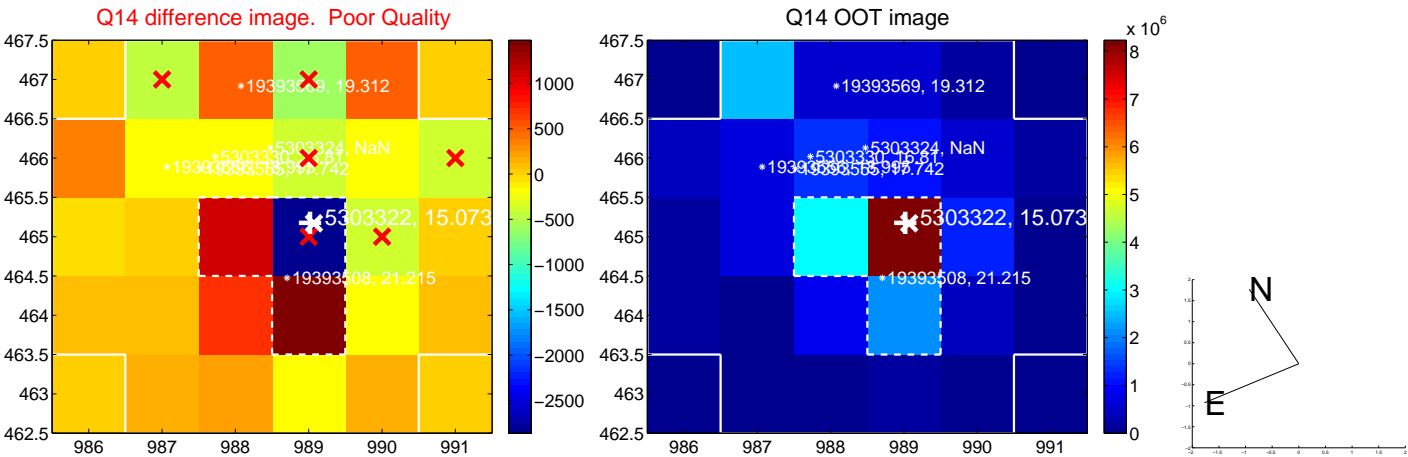
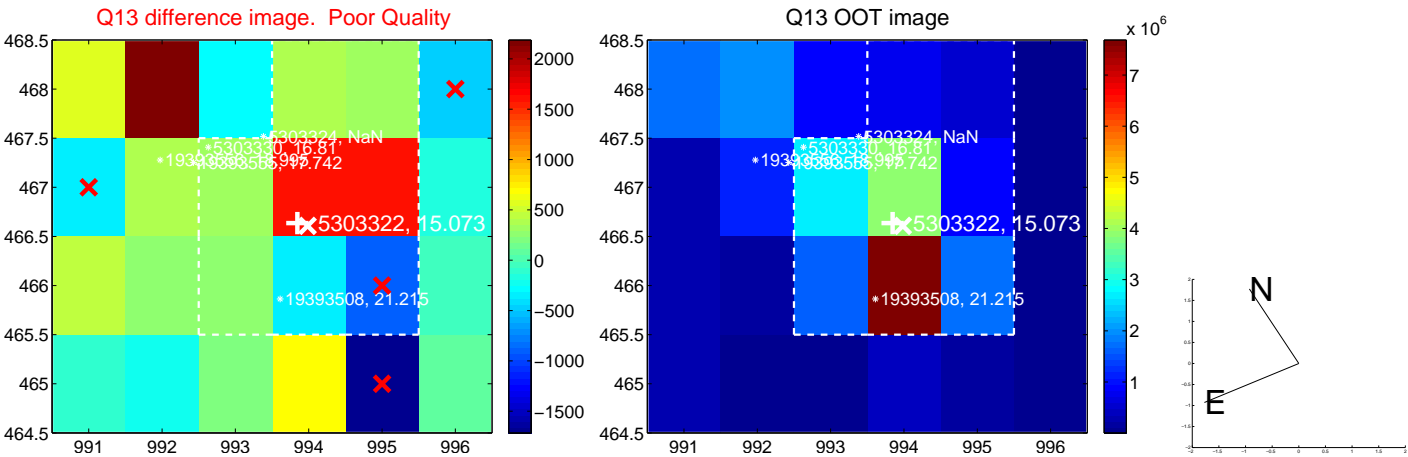




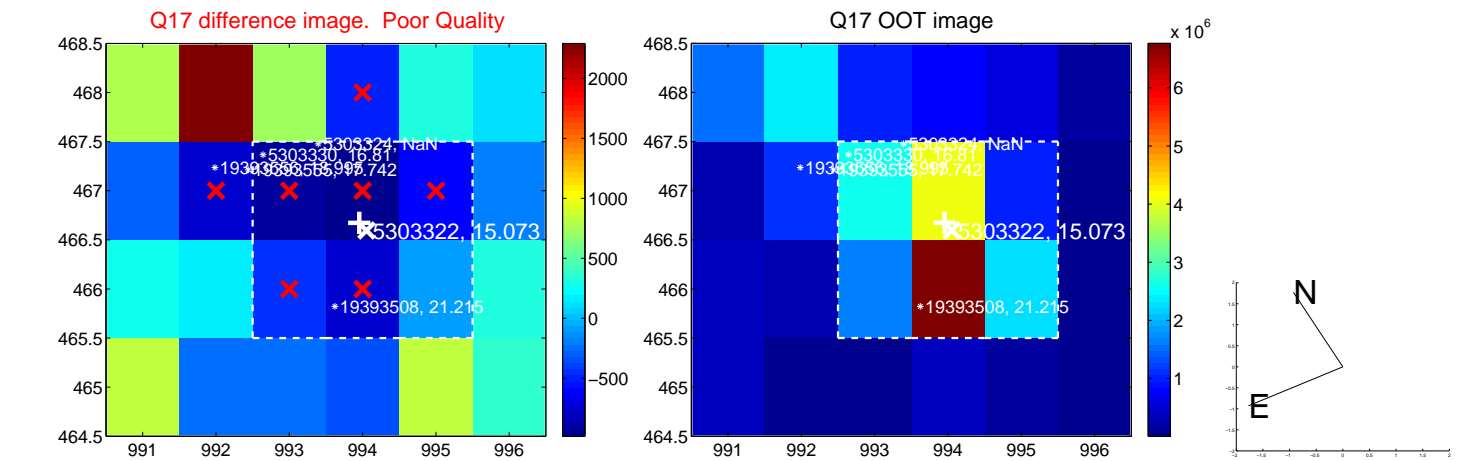
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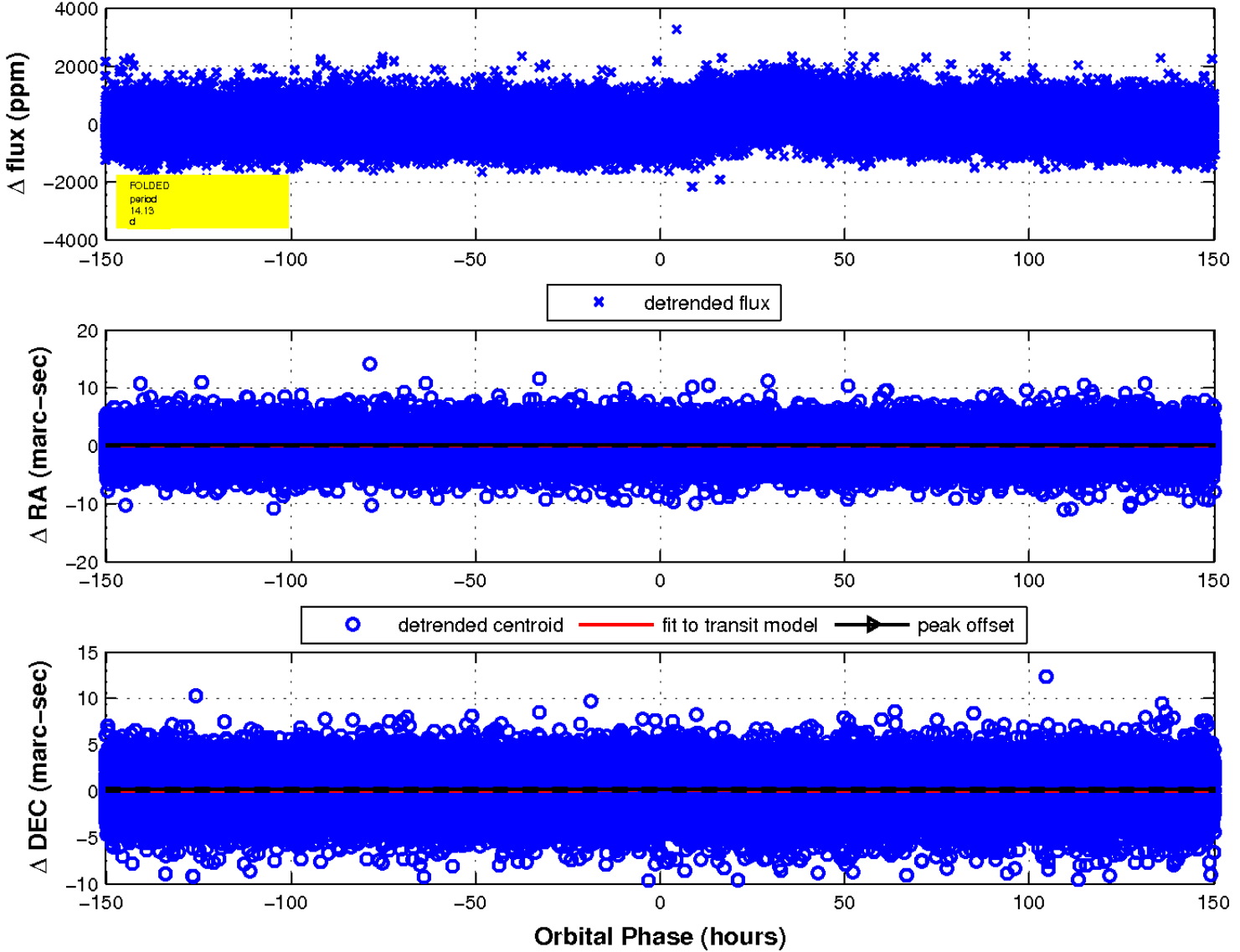
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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



fluxWeightedCentroids, Planet 1 of 1



UKIRT Image

Declination

