

# KIC 003969800

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
003969800-01	OBS	No	1.366036	131.681683	148.7	14.102	8.5	8.3	2.68	7596	3.31	23158.37

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
003969800-01	OBS	FP	0.00	1	0	0	0	LPP_DV—CENT_FEW_MEAS

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

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

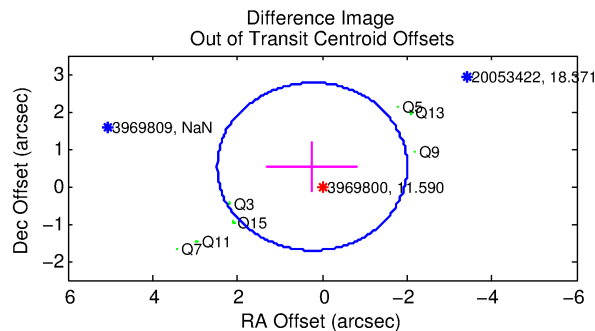
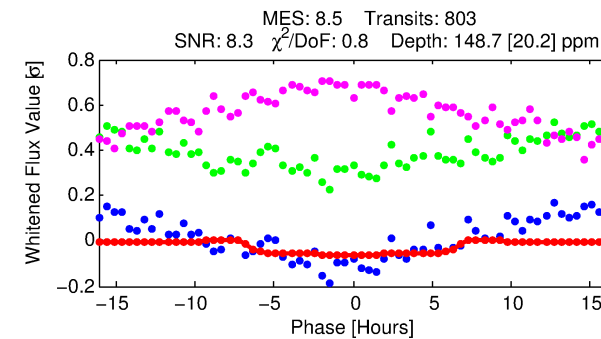
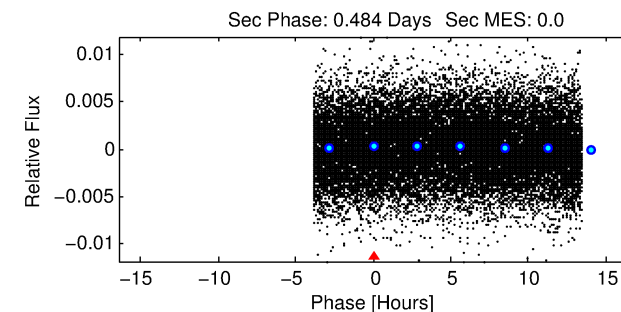
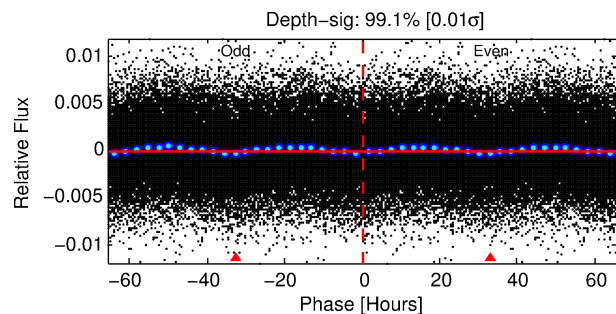
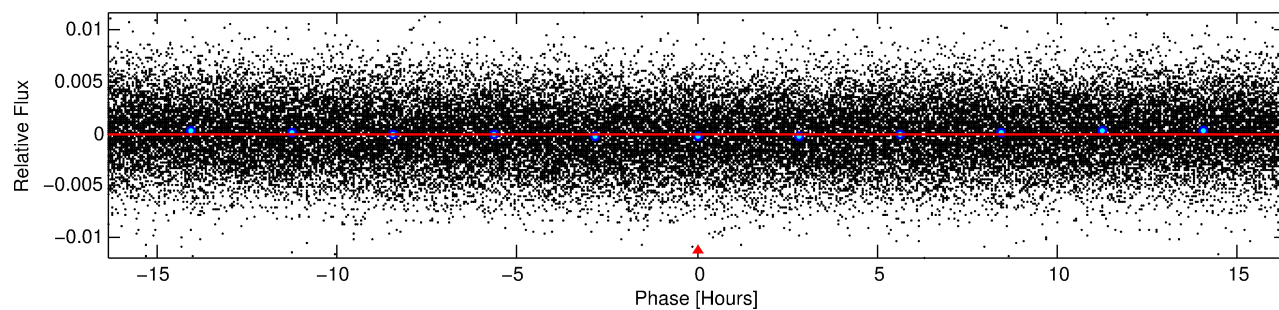
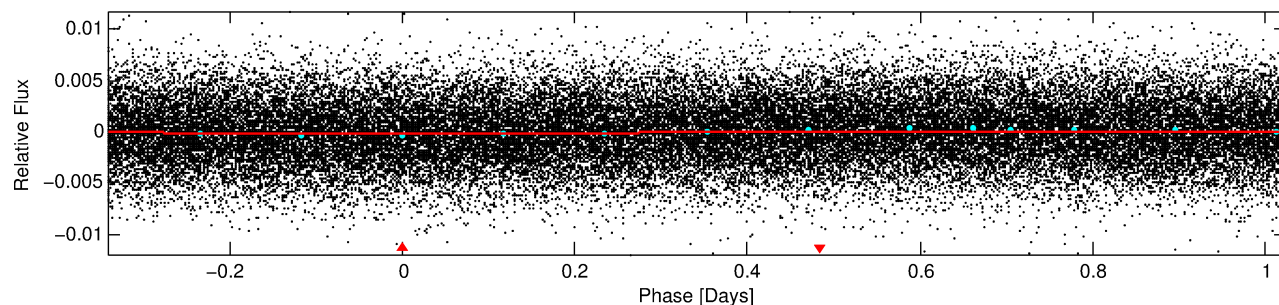
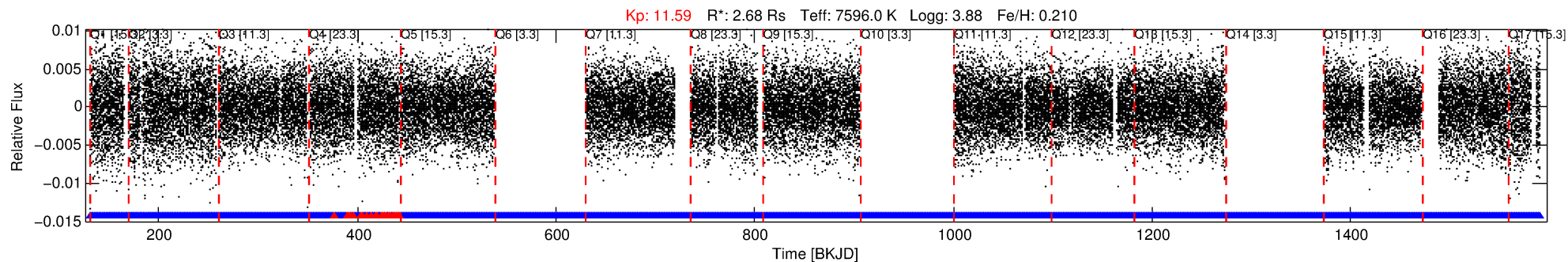
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 003969800-01

No Significant Match Found

# DV One-Page Summary

KIC: 3969800 Candidate: 1 of 1 Period: 1.366 d



## DV Fit Results:

Period = 1.36604 [0.00004] d  
Epoch = 131.6817 [0.0178] BKJD  
Rp/R\* = 0.0113 [0.0096]  
a/R\* = 1.04 [0.34]  
b = 0.07 [77.35]  
Seff = 23158.37 [6488.38]  
Teff = 3146 [220] K  
Rp = 3.31 [2.90] Re  
a = 0.0304 [0.0056] AU  
Ag = N/A  
Teffp = N/A

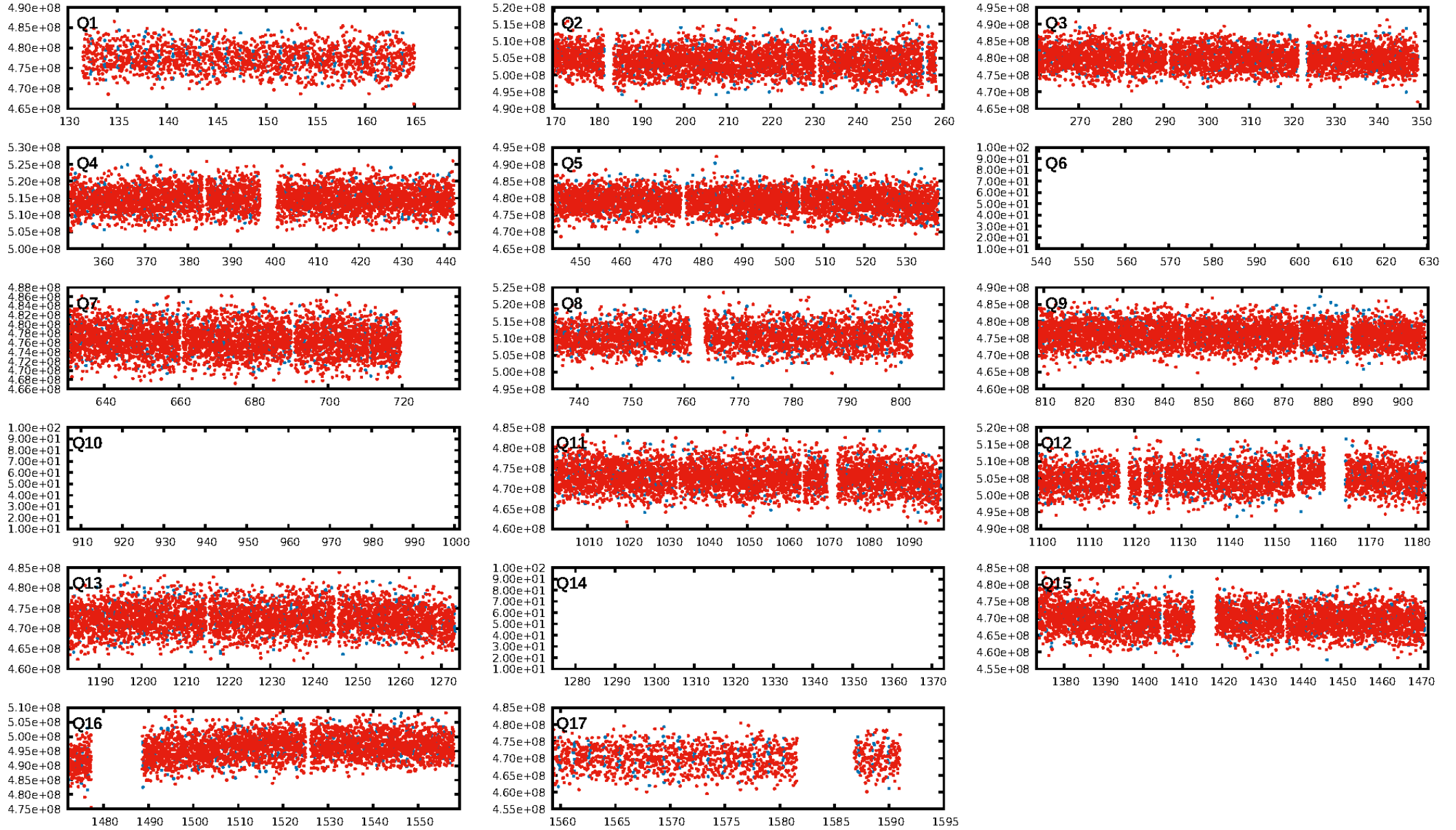
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: N/A  
ModelChiSquareGof-sig: N/A  
Bootstrap-pfa: N/A  
RollingBand-fgt: 0.97 [733/758]  
GhostDiagnostic-chr: 1.131  
Centroid-sig: 0.0%  
Centroid-so: 1.405 arcsec [4.47 $\sigma$ ]  
OotOffset-rm: 0.579 arcsec [0.77 $\sigma$ ]  
KicOffset-rm: 0.529 arcsec [0.75 $\sigma$ ]  
OotOffset-st: 0/4/0/3 [7]  
KicOffset-st: 0/4/0/3 [7]  
DiffImageQuality-fgm: 0.29 [2/7]  
DiffImageOverlap-fno: 1.00 [14/14]

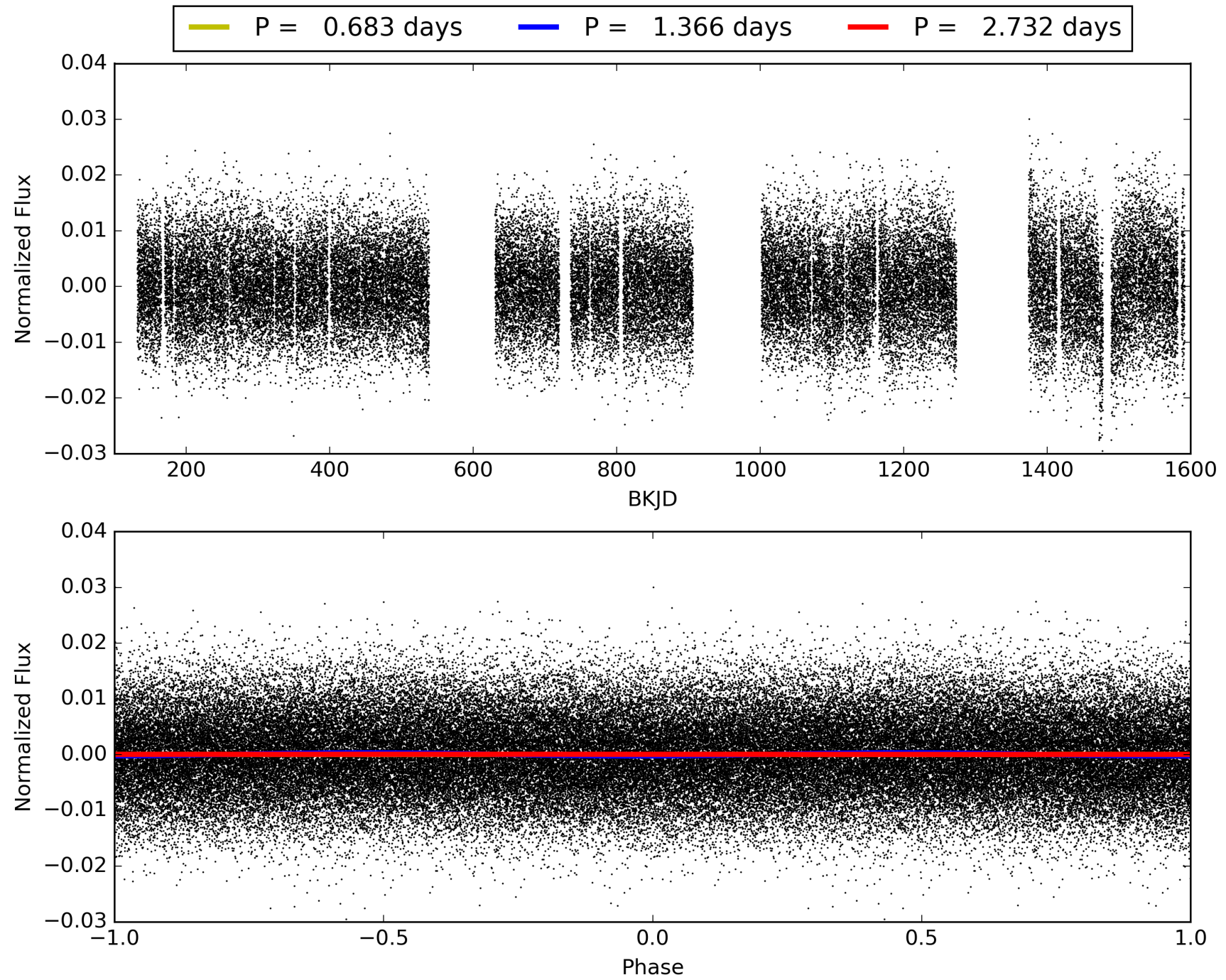
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 08:17:32 Z

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

# TCE 003969800-01, PDC Light Curves



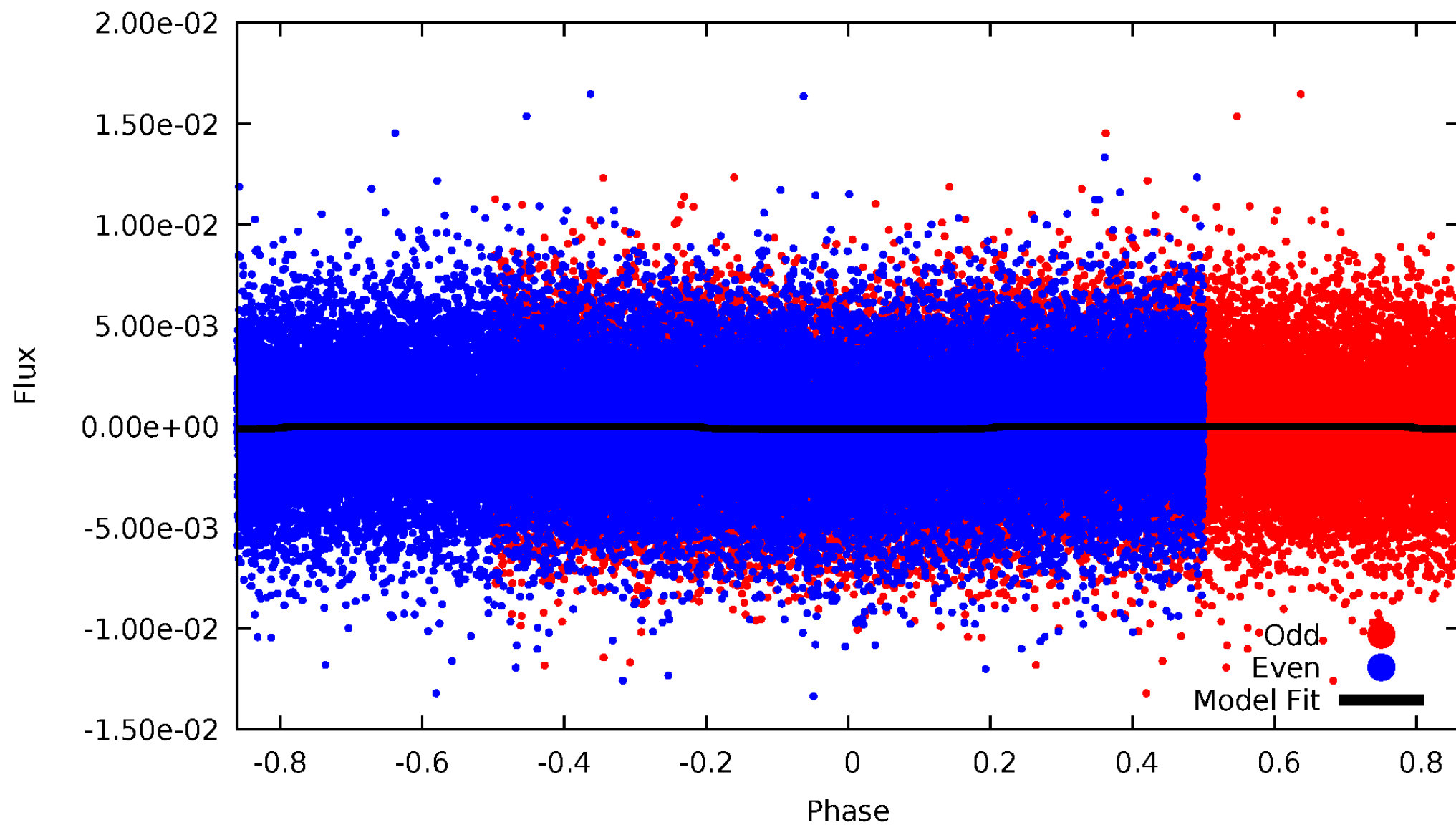
TCE 003969800-01





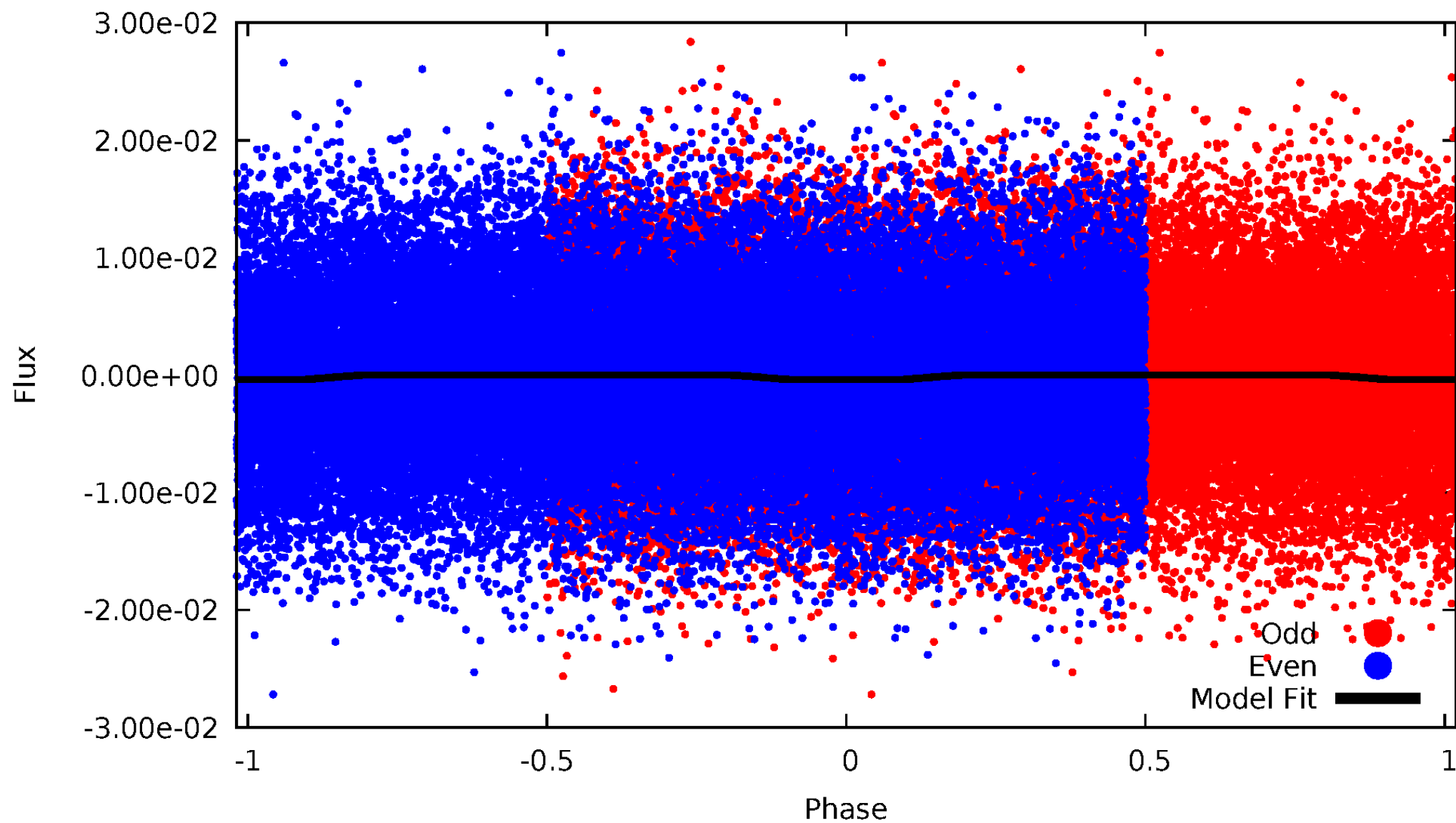
# DV Odd/Even

TCE 003969800-01



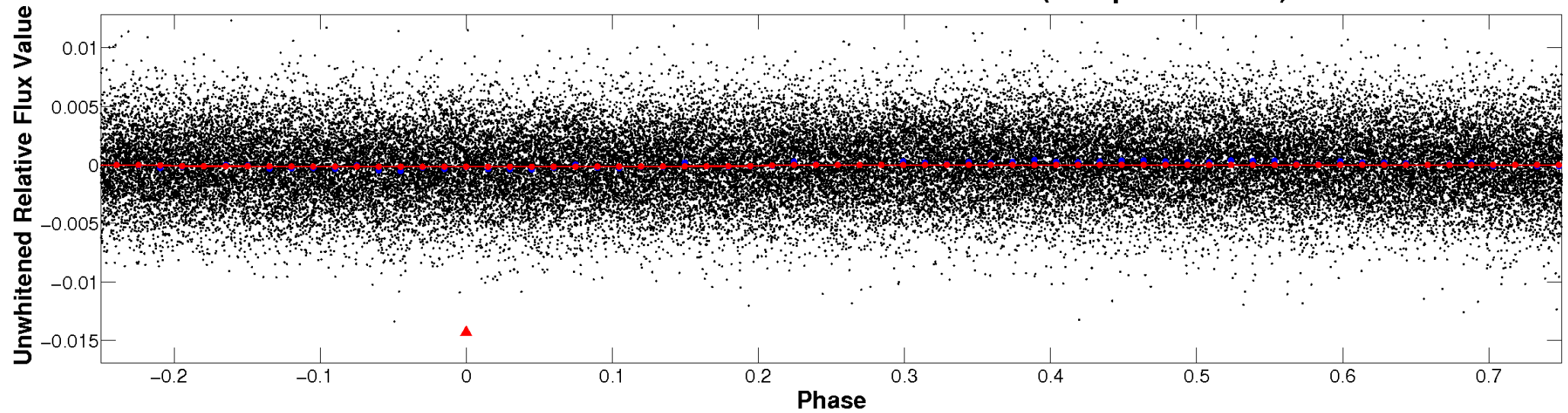
# ALT Odd/Even

TCE 003969800-01

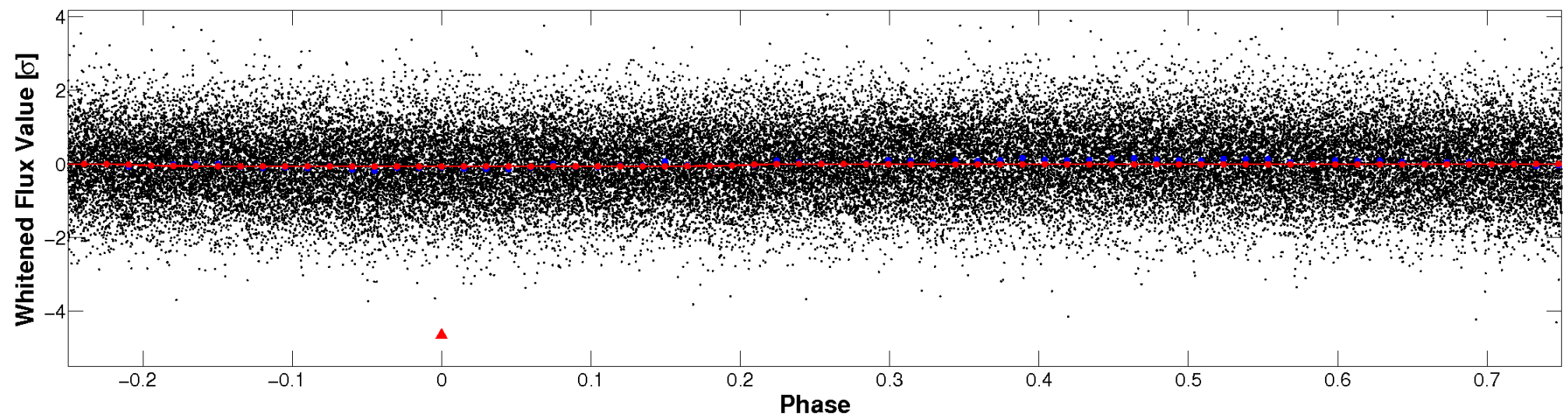


# Non-Whitened Vs. Whitened Light Curve

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

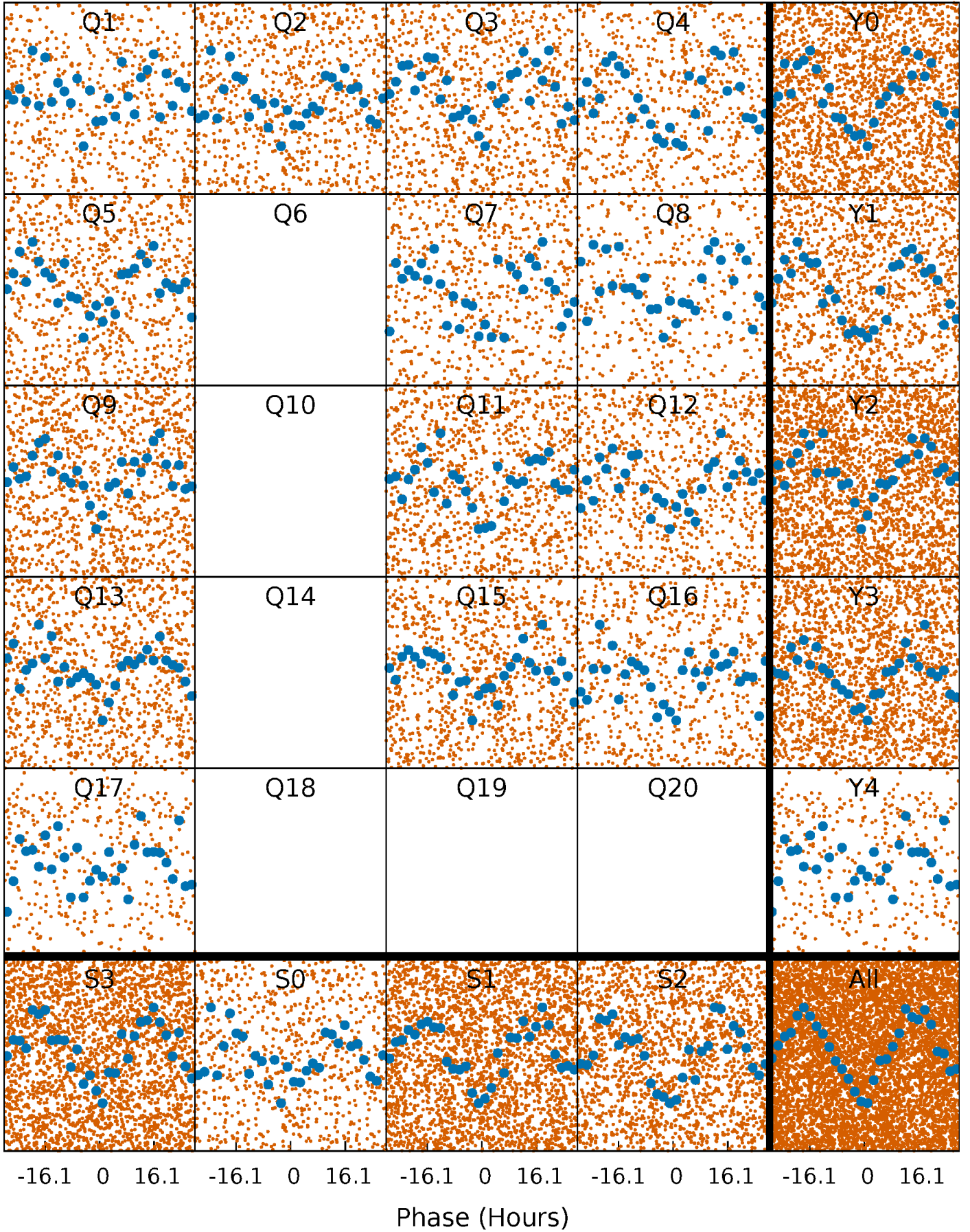


**Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)**



# PDC Quarter-Phased Transit Curves

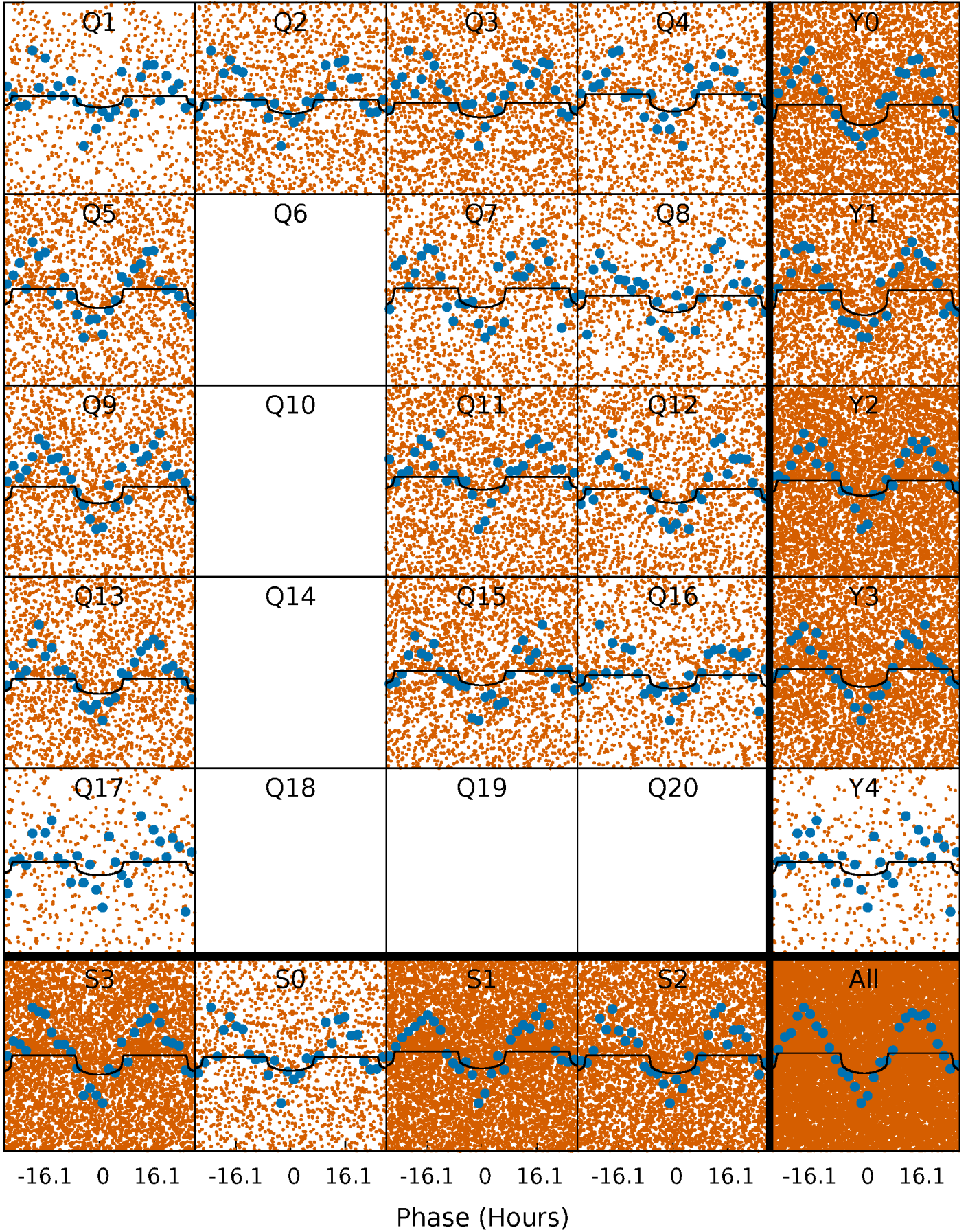
TCE 003969800-01   P= 1.366036 Days    $T_0=131.681683$  (BKJD)





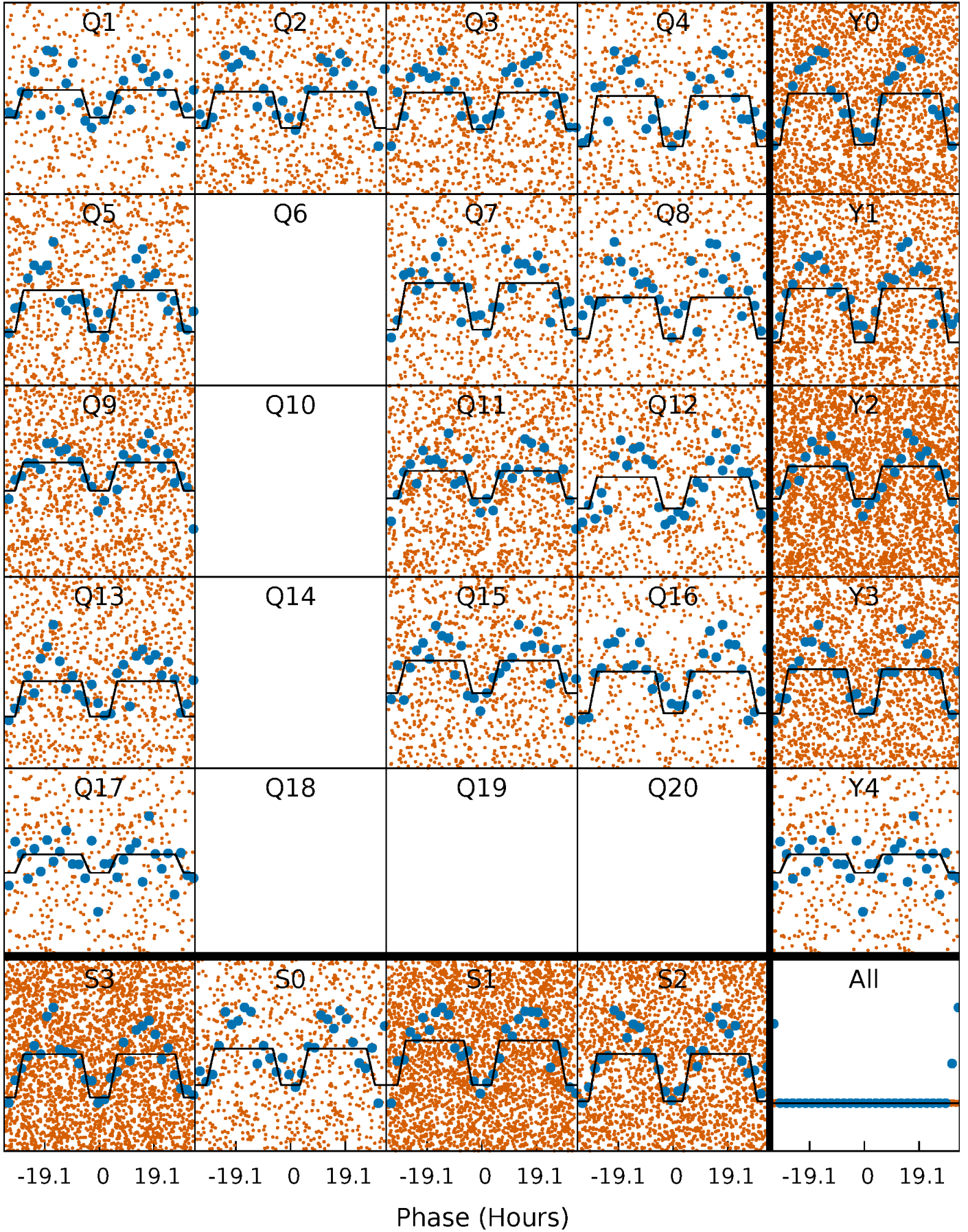
# DV Quarter-Phased Transit Curves

TCE 003969800-01   P= 1.366036 Days    $T_0=131.681683$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

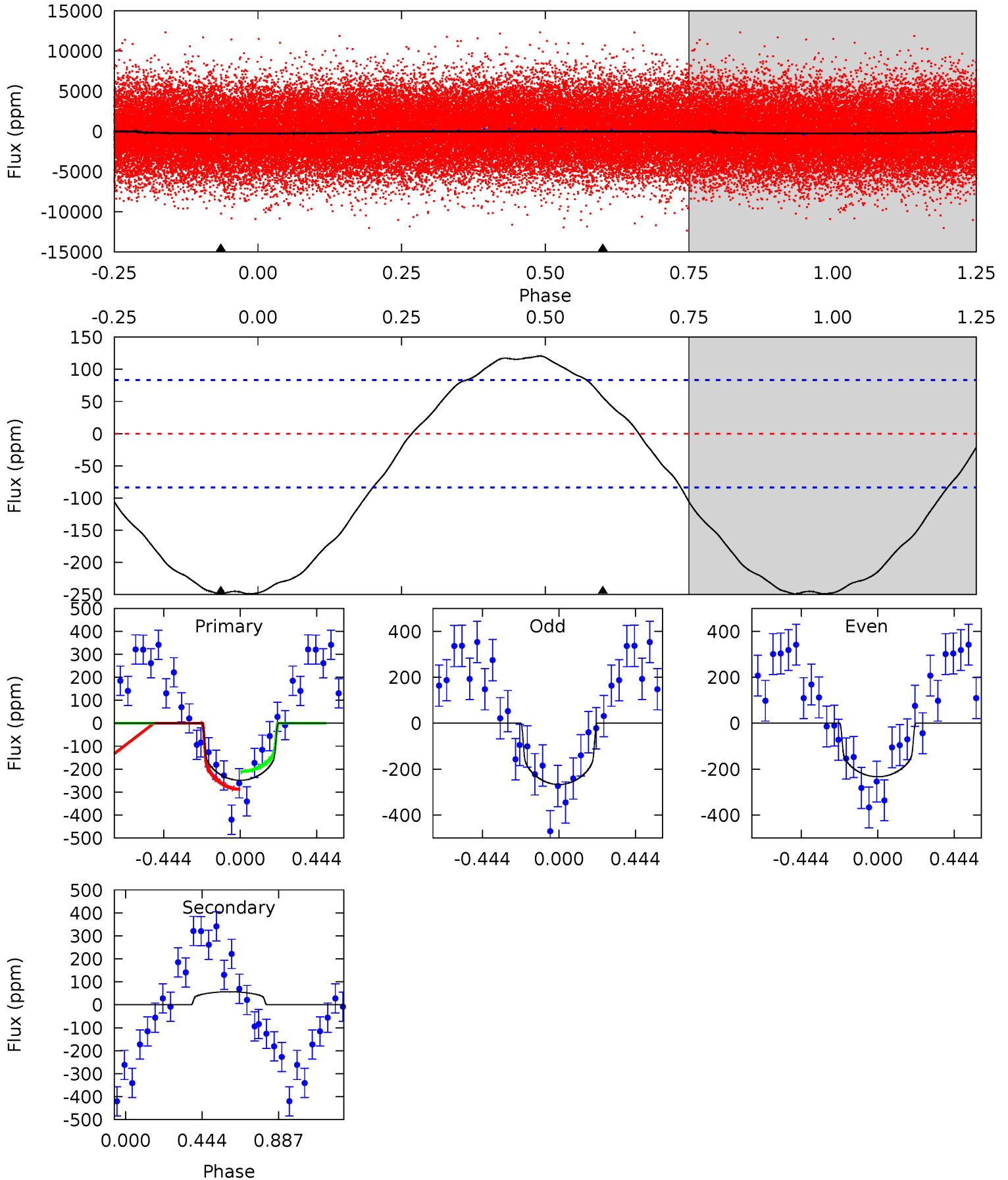
TCE 003969800-01   P= 1.366024 Days    $T_0=131.659768$  (BKJD)



# DV Model-Shift Uniqueness Test

003969800-01, P = 1.366036 Days, E = 130.315647 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
12.6	-2.88	0	0	4.24	0.77	1.66	12.6	12.6	-2.88	-2.88	0.86	0.99	0.33	1.95

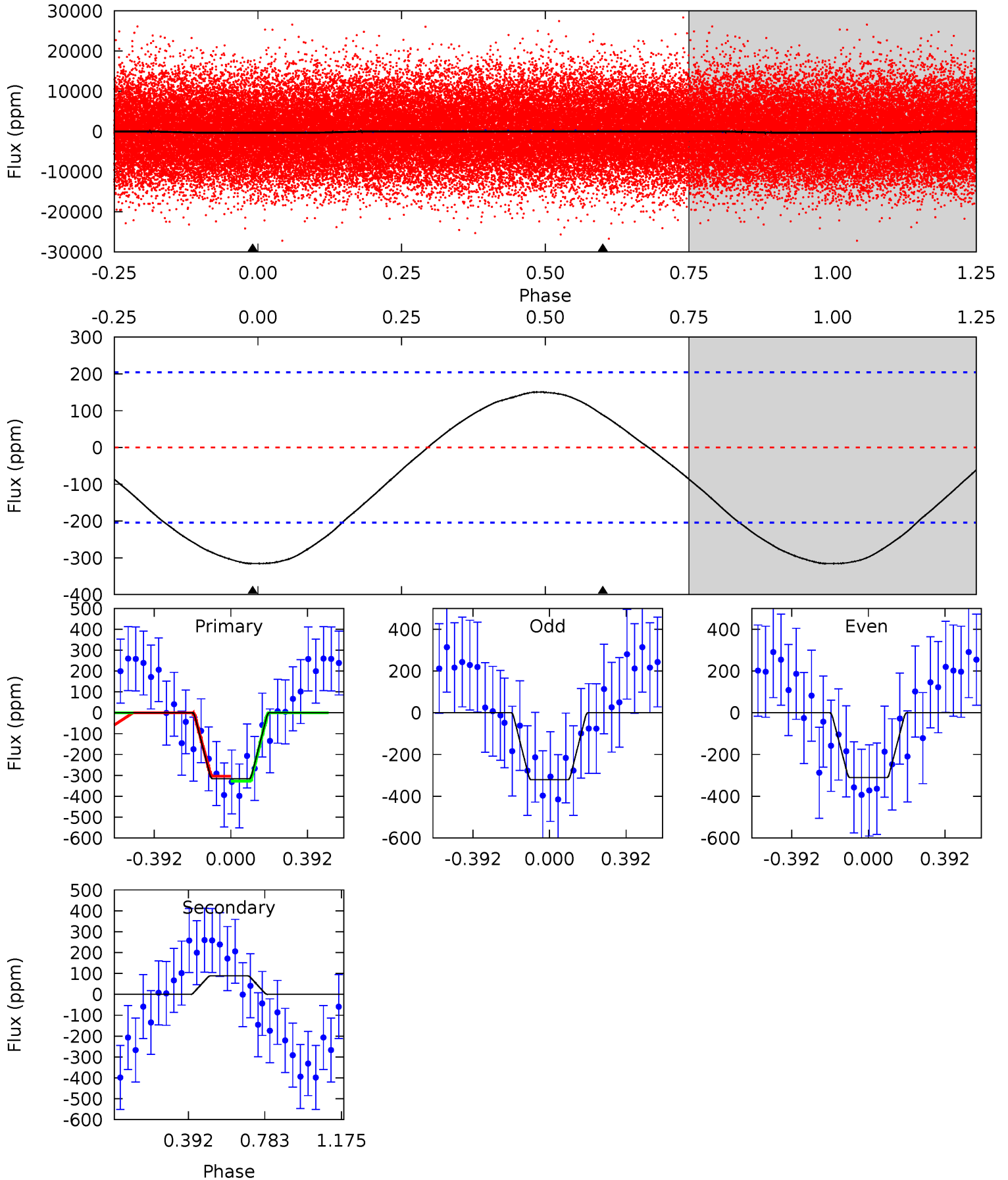




# Alt Model-Shift Uniqueness Test

003969800-01, P = 1.366024 Days, E = 130.293744 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
6.60	-1.85	0	0	4.27	0.86	0.81	6.60	6.60	-1.85	-1.85	0.11	0.90	0.32	0.24





### Stellar Parameters For KIC 003969800

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R$ ( $R_{\odot}$ )	$M$ ( $M_{\odot}$ )	$p_{\star}$ ( $\text{g}\cdot\text{cm}^{-3}$ )
	$7596^{+68}_{-91}$	$3.885^{+0.154}_{-0.077}$	$0.210^{+0.150}_{-0.150}$	$2.680^{+0.287}_{-0.573}$	$2.007^{+0.170}_{-0.207}$	$0.147^{+0.122}_{-0.034}$
	+1%/-1%	+4%/-2%	+71%/-71%	+11%/-21%	+8%/-10%	+83%/-23%
Source	SPE68	SPE68	SPE68	DSEP		

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

### Secondary Eclipse Parameters for KIC 003969800-01 / KOI

Detrend	Depth (ppm)	$R_p$ ( $R_{\oplus}$ )	$T_{\text{max}}$ (K)	$T_{\text{obs}}$ (K)	$A_{\text{obs}}$
DV	$57 \pm 20$	$3.72^{+2.53}_{-2.14}$	$4375^{+153}_{-206}$	$-5817^{+1050}_{-3729}$	$-1.951^{+1.317}_{-10.411}$
Alt.	$89 \pm 48$	$5.48^{+2.88}_{-2.50}$	$4377^{+153}_{-183}$	$-5442^{+836}_{-1849}$	$-1.386^{+0.930}_{-3.748}$

$T_{\text{max}}$  = 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

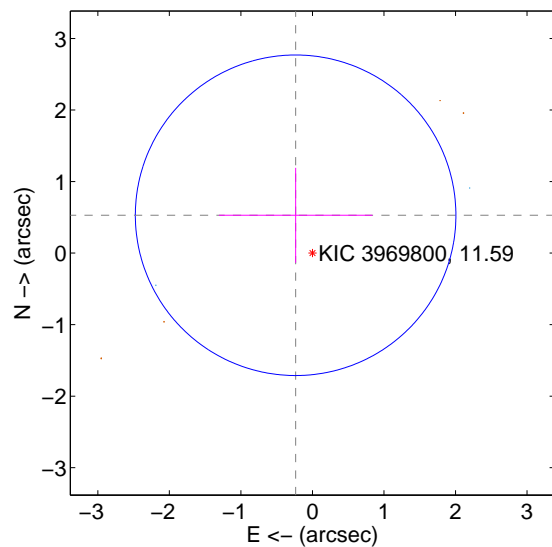
Supplemental centroid analysis for 003969800-01. **Kepler magnitude: 11.59.** Transit SNR 8.34

**There are 2 quarters with good PRF difference image offsets**

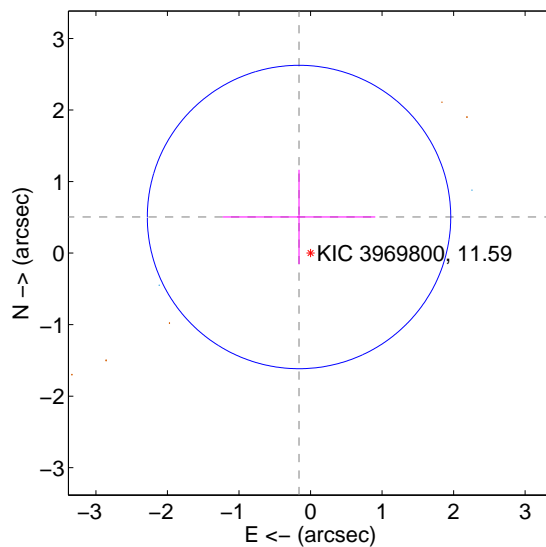
The direct PRF centroid is offset from the target star catalog position by about 0.11 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.579 \pm 0.747$	0.77	$0.235 \pm 1.073$	$0.529 \pm 0.664$
PRF-fit source offset from KIC position	$0.529 \pm 0.707$	0.75	$0.161 \pm 1.066$	$0.504 \pm 0.660$
photometric centroid source offset	$1.40 \pm 0.31$	4.47	$-0.16 \pm 0.07$	$-1.40 \pm 0.32$

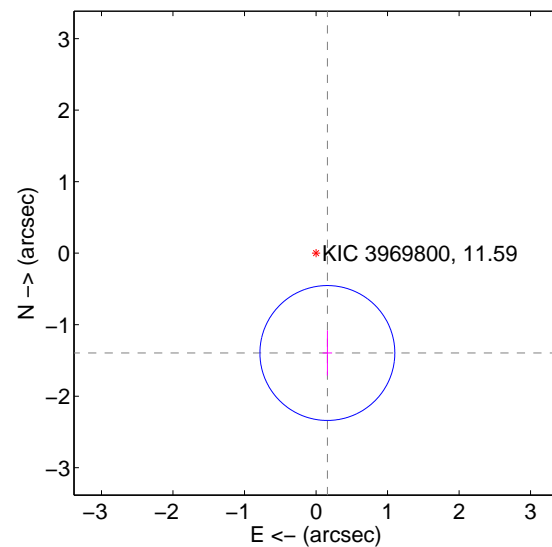
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

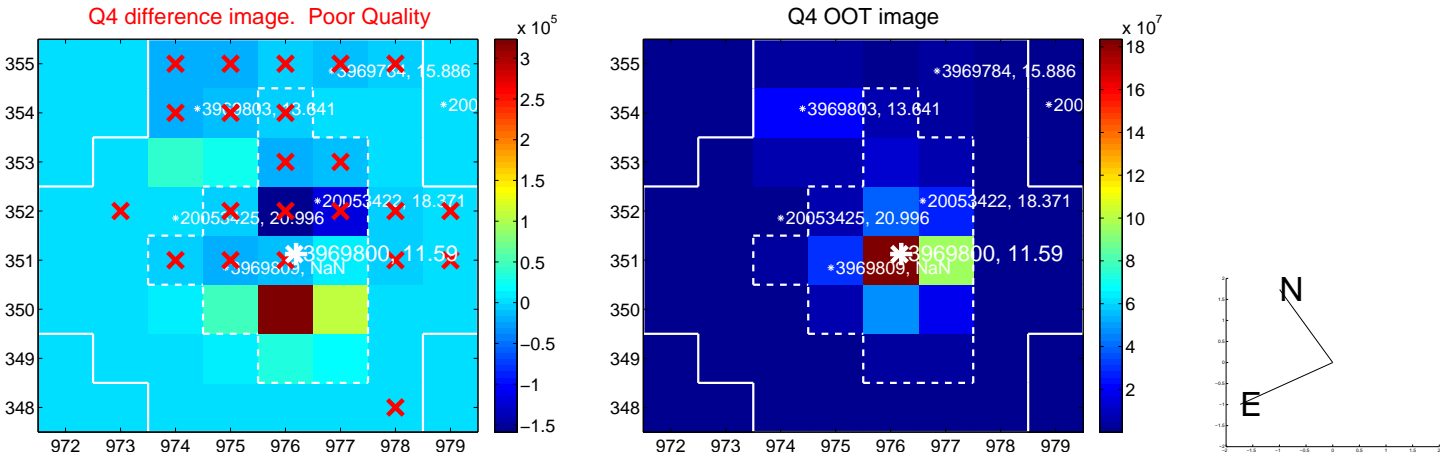
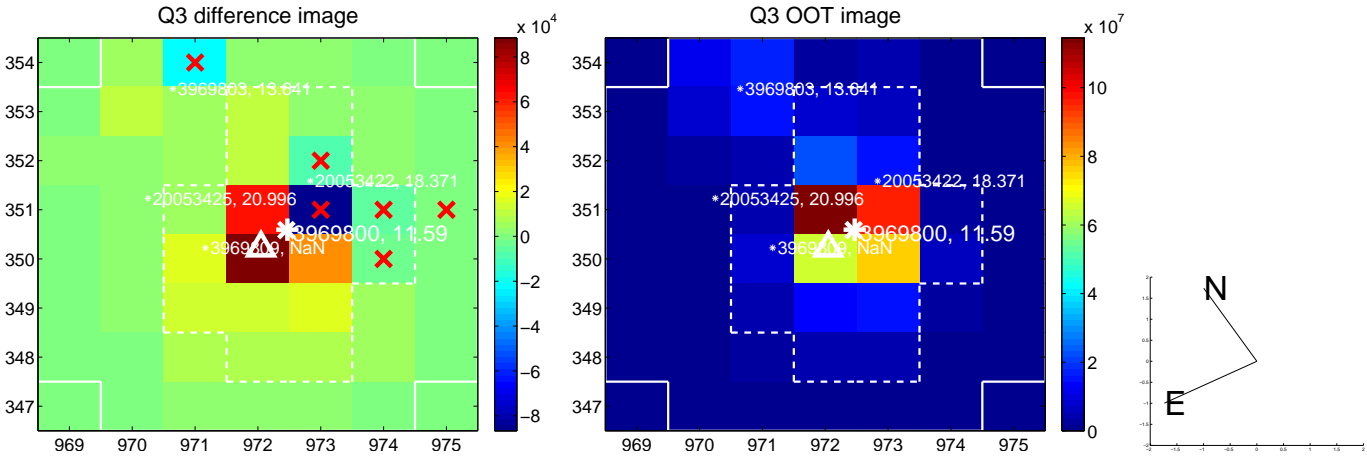
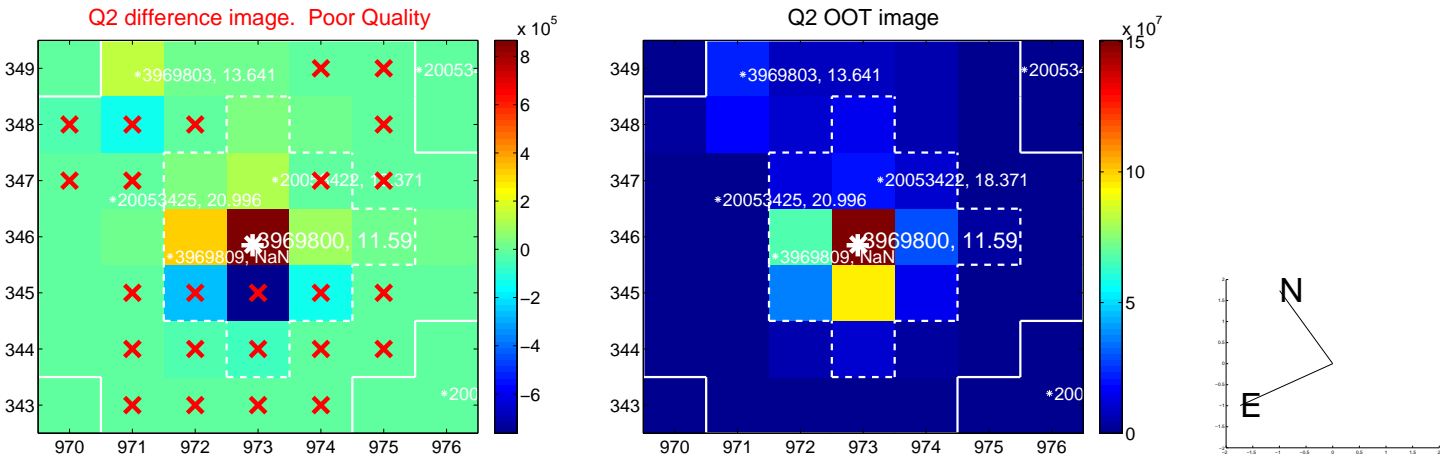
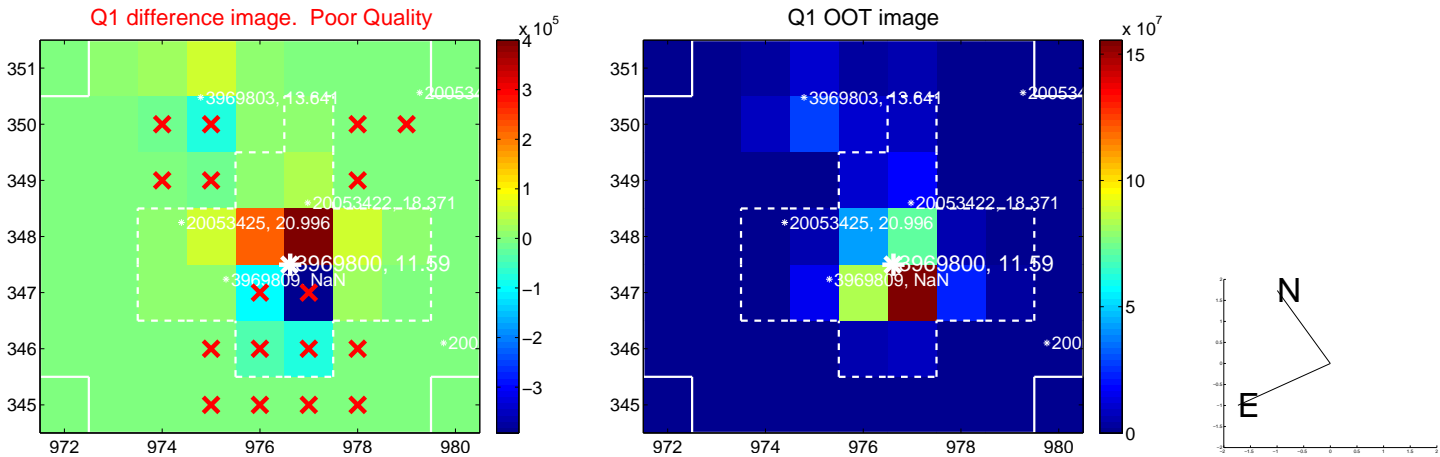


offset from photometric centroids

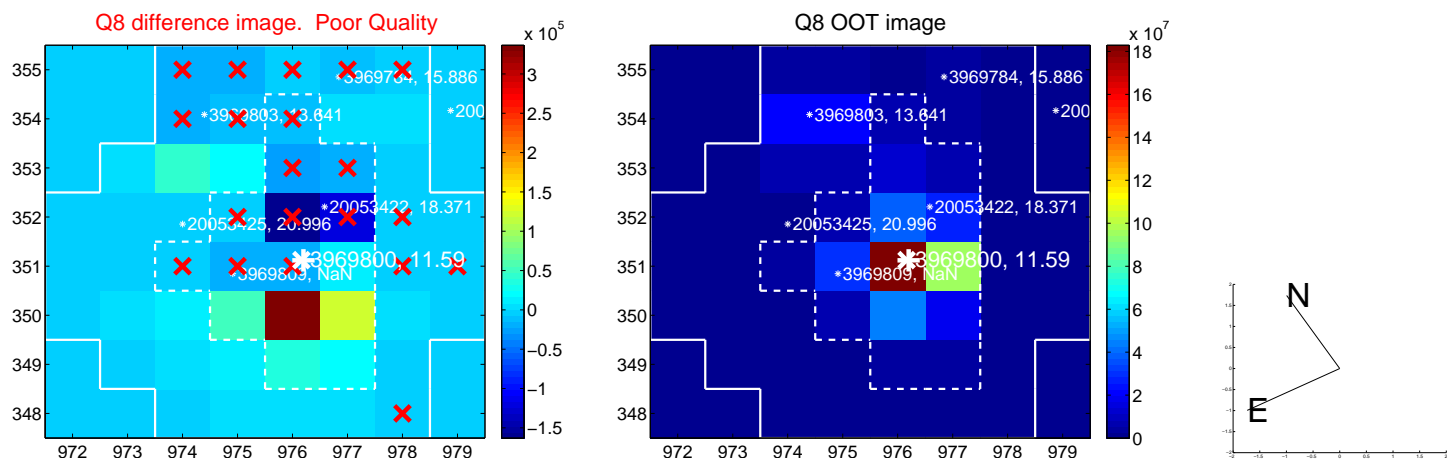
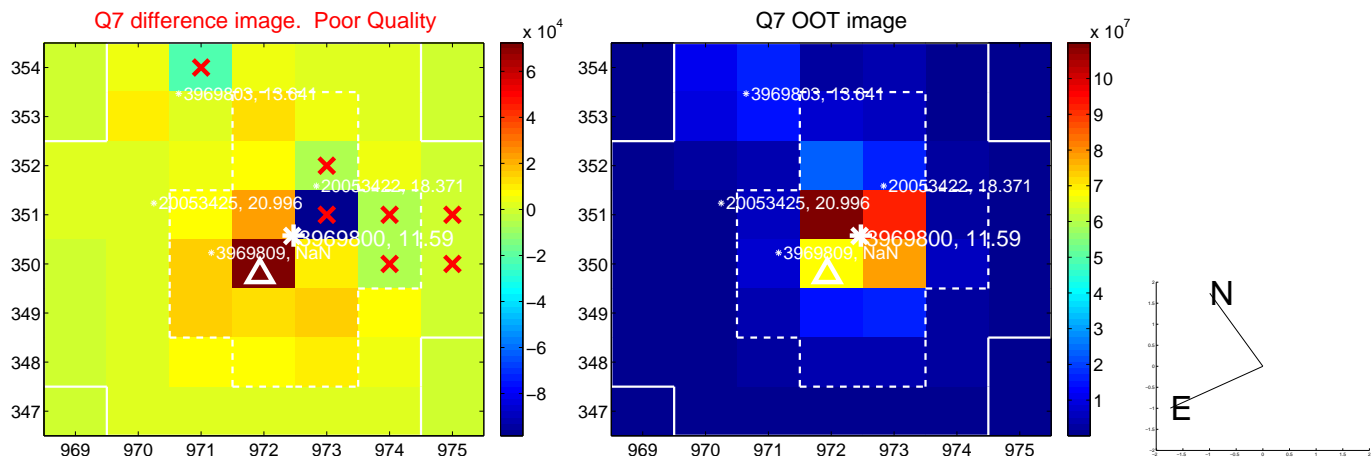
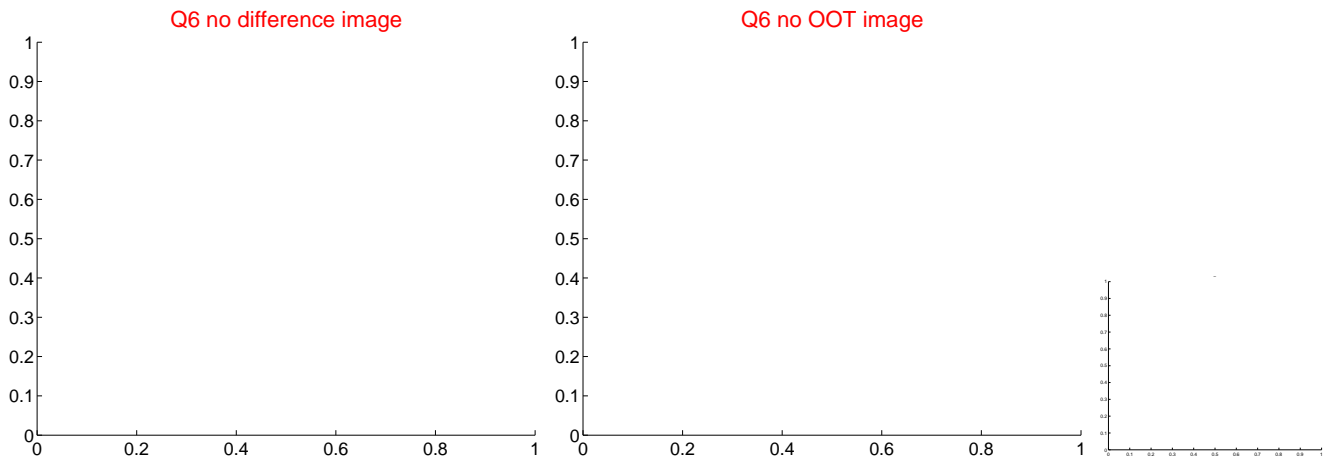
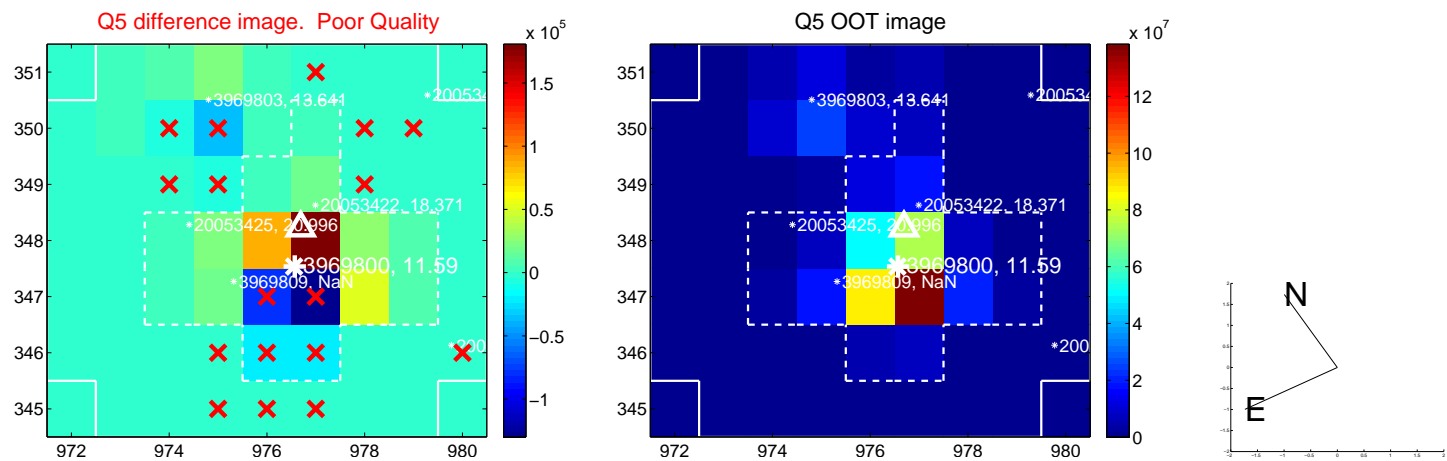


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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

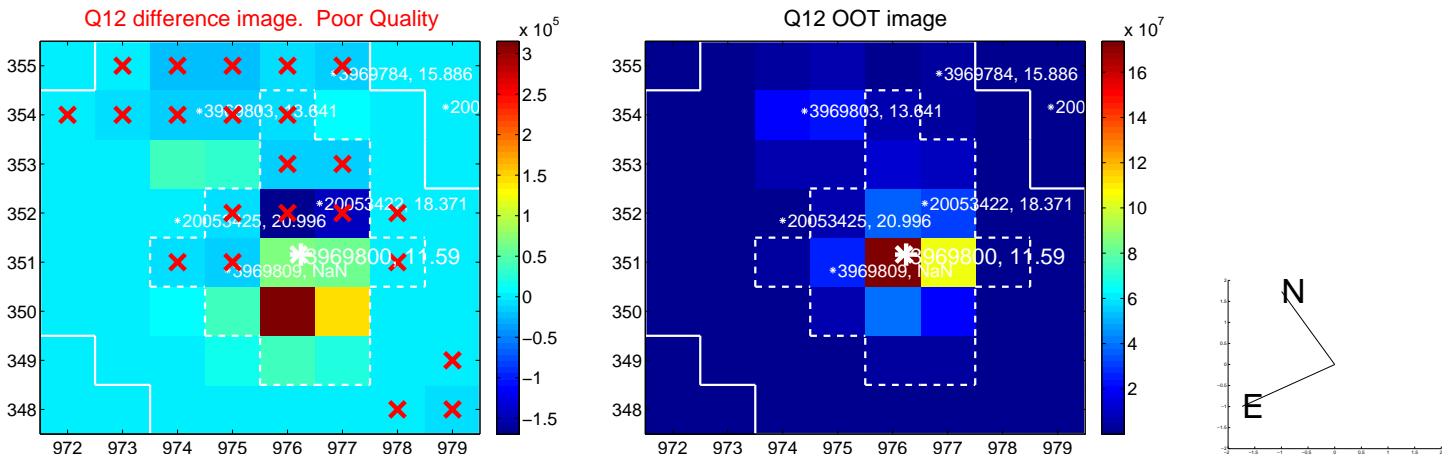
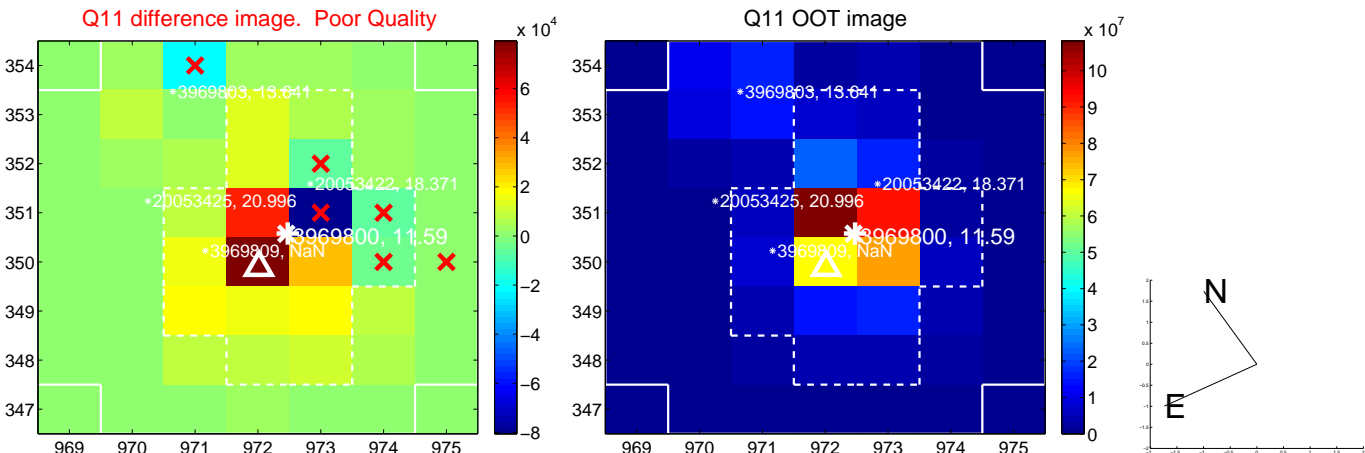
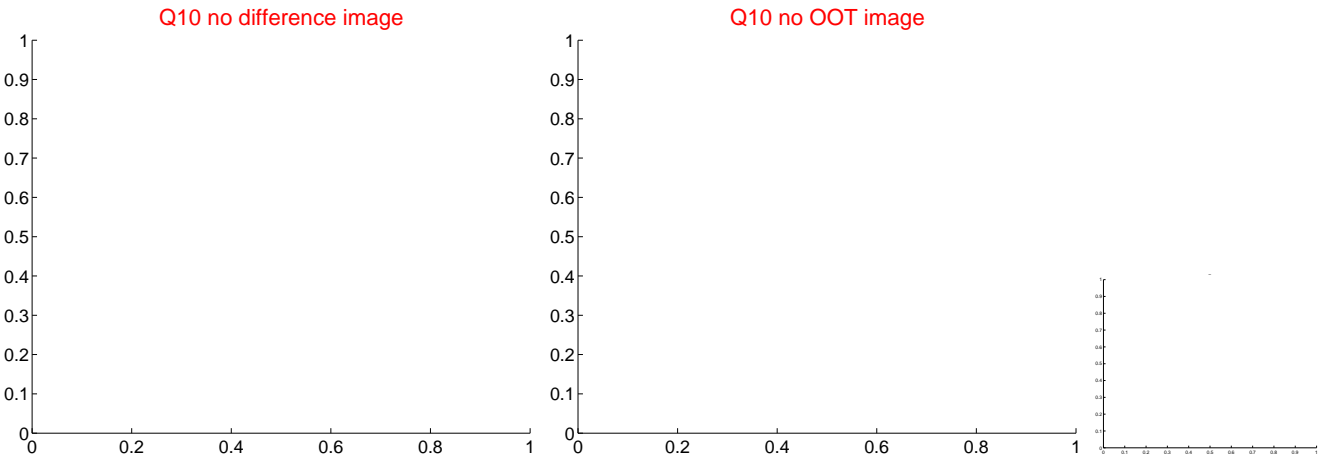
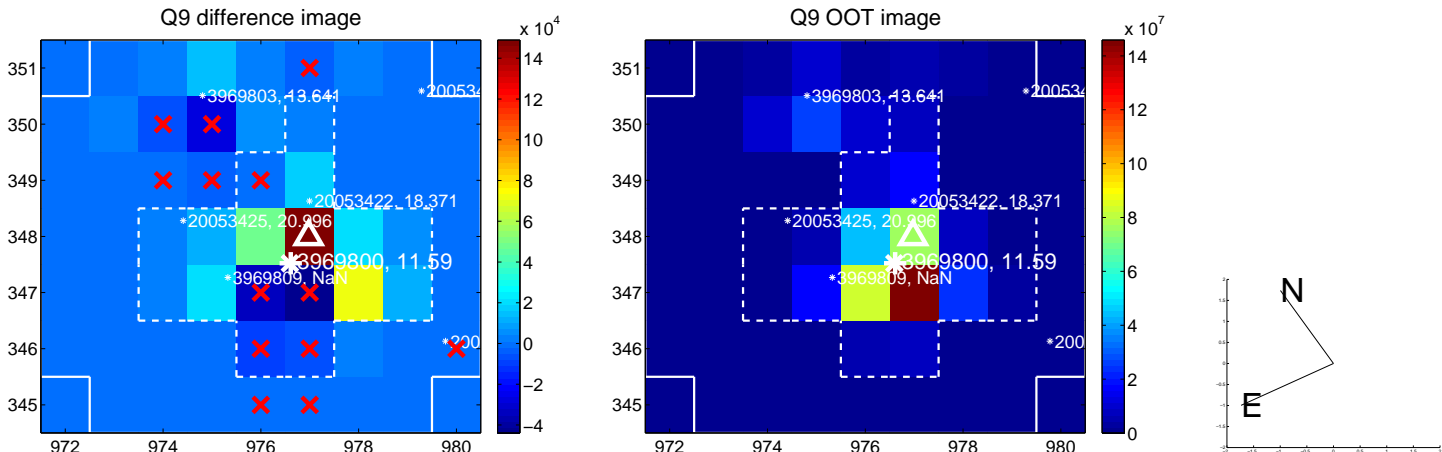


white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

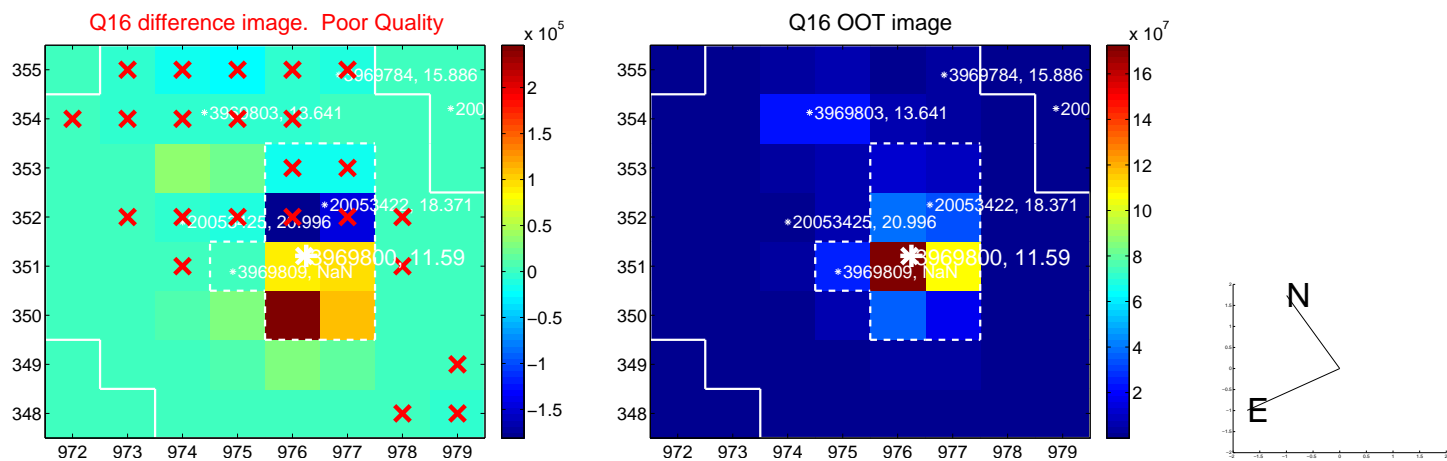
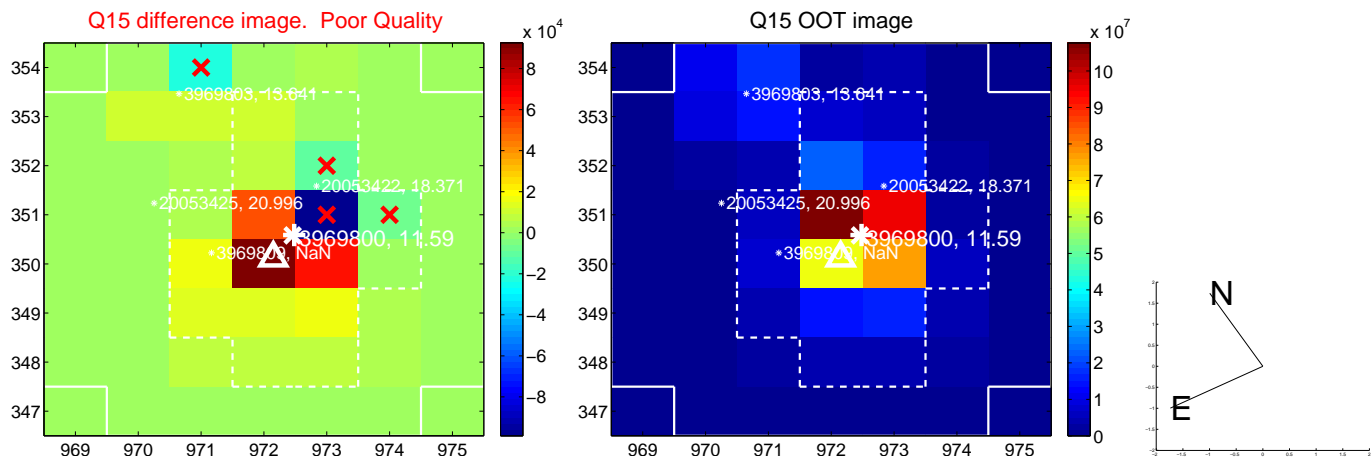
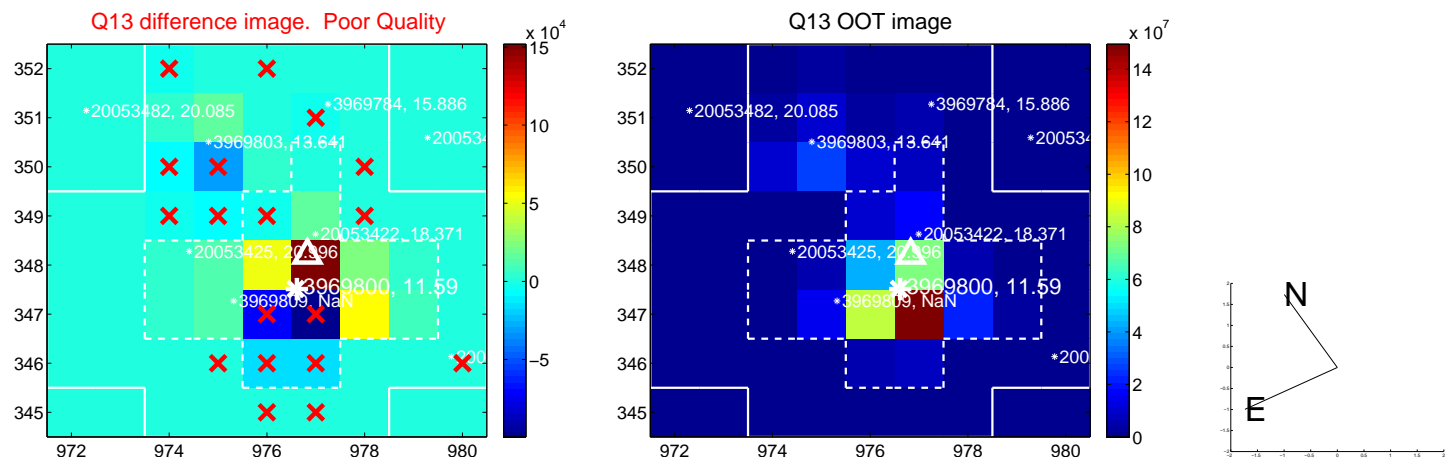




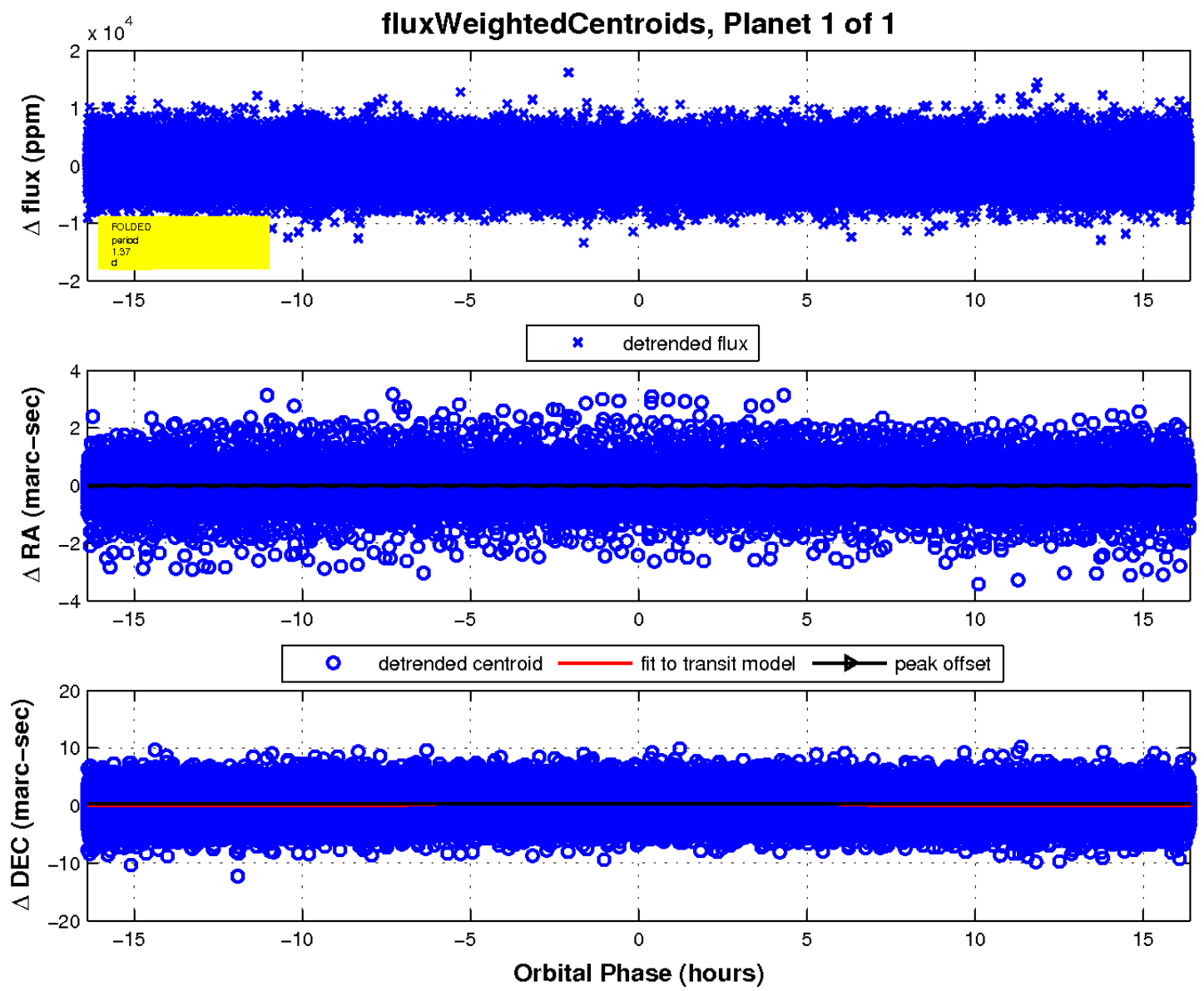
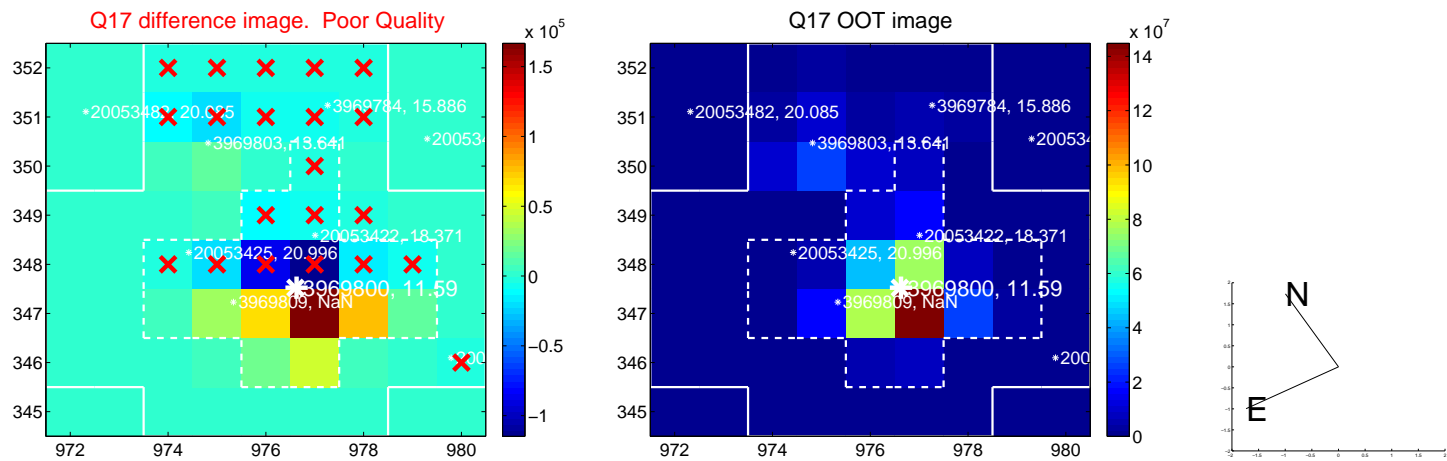
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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



UKIRT Image

