

# KIC 010092003

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
010092003-01	OBS	No	5.706012	136.911760	95.7	28.395	8.4	9.9	0.74	5383	0.73	119.80

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
010092003-01	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.

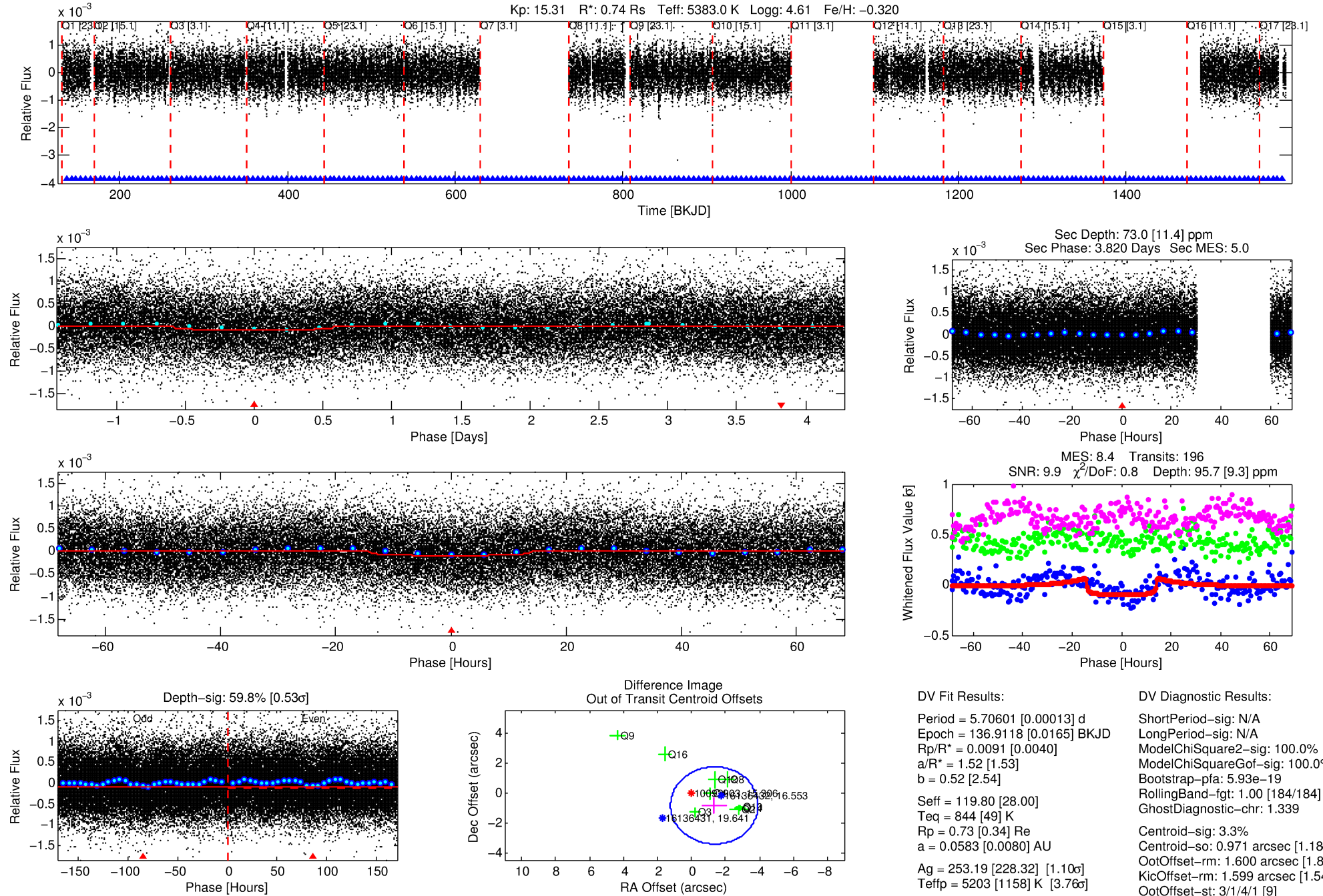
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 010092003-01

No Significant Match Found

# DV One-Page Summary

KIC: 10092003 Candidate: 1 of 1 Period: 5.706 d



## DV Fit Results:

Period = 5.70601 [0.00013] d  
Epoch = 136.9118 [0.0165] BKJD  
Rp/R\* = 0.0091 [0.0040]  
a/R\* = 1.52 [1.53]  
b = 0.52 [2.54]  
Seff = 119.80 [28.00]  
Teq = 844 [49] K  
Rp = 0.73 [0.34] Re  
a = 0.0583 [0.0080] AU  
Ag = 253.19 [228.32] [1.10σ]  
Teffp = 5203 [1158] K [3.76σ]

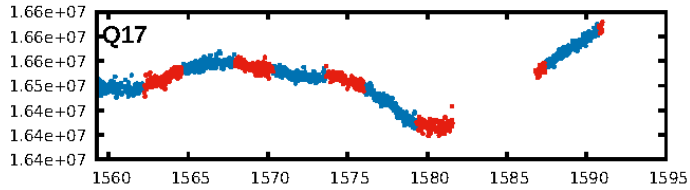
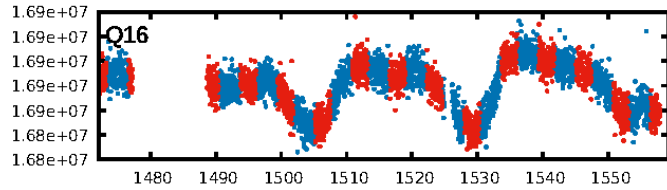
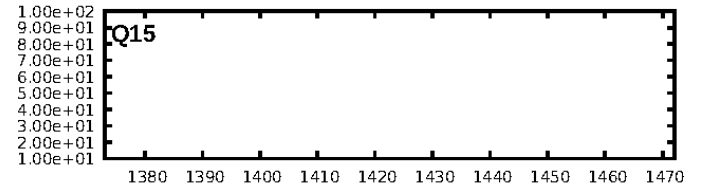
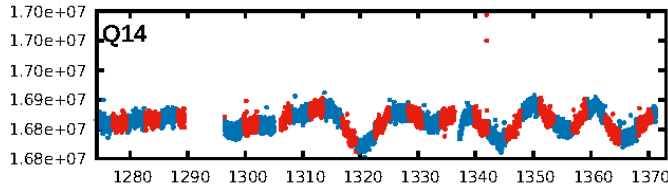
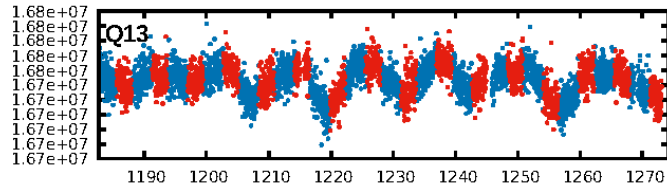
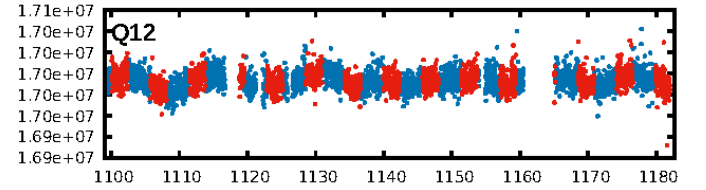
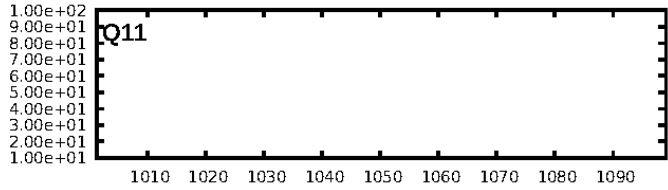
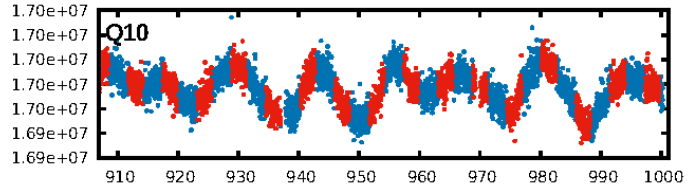
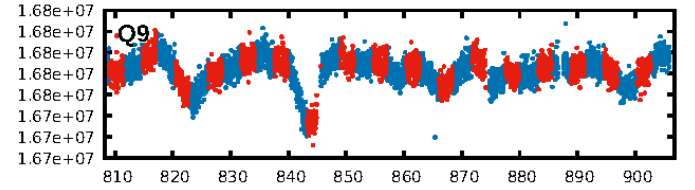
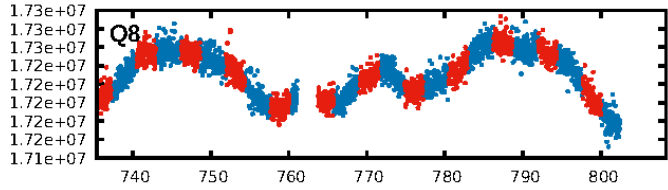
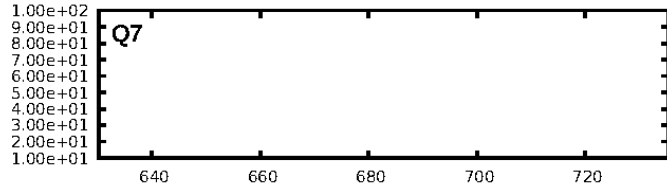
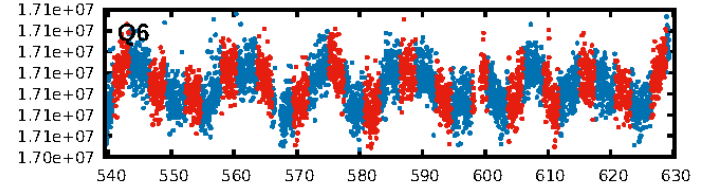
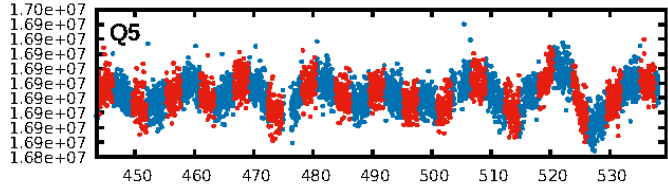
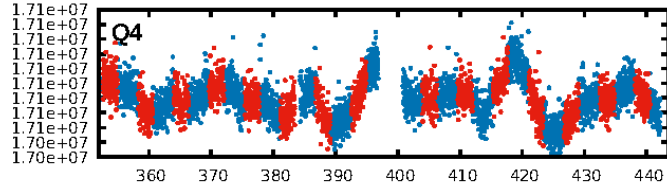
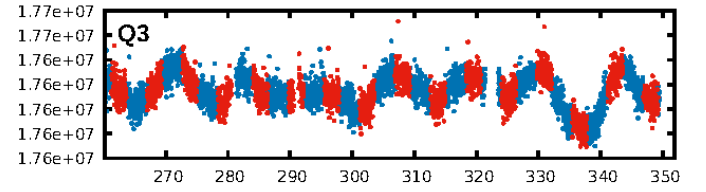
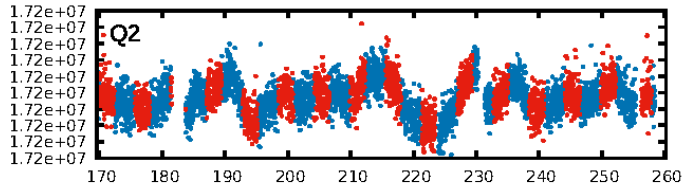
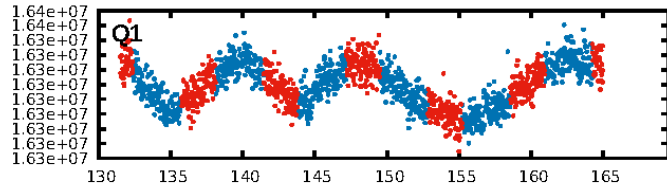
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: 100.0%  
ModelChiSquareGof-sig: 100.0%  
Bootstrap-pfa: 5.93e-19  
RollingBand-fgt: 1.00 [184/184]  
GhostDiagnostic-chr: 1.339  
Centroid-sig: 3.3%  
Centroid-so: 0.971 arcsec [1.18σ]  
OotOffset-rm: 1.600 arcsec [1.86σ]  
KicOffset-rm: 1.599 arcsec [1.54σ]  
OotOffset-st: 3/1/4/1 [9]  
KicOffset-st: 3/1/4/1 [9]  
DiffImageQuality-fgm: 0.78 [7/9]  
DiffImageOverlap-fno: 1.00 [14/14]

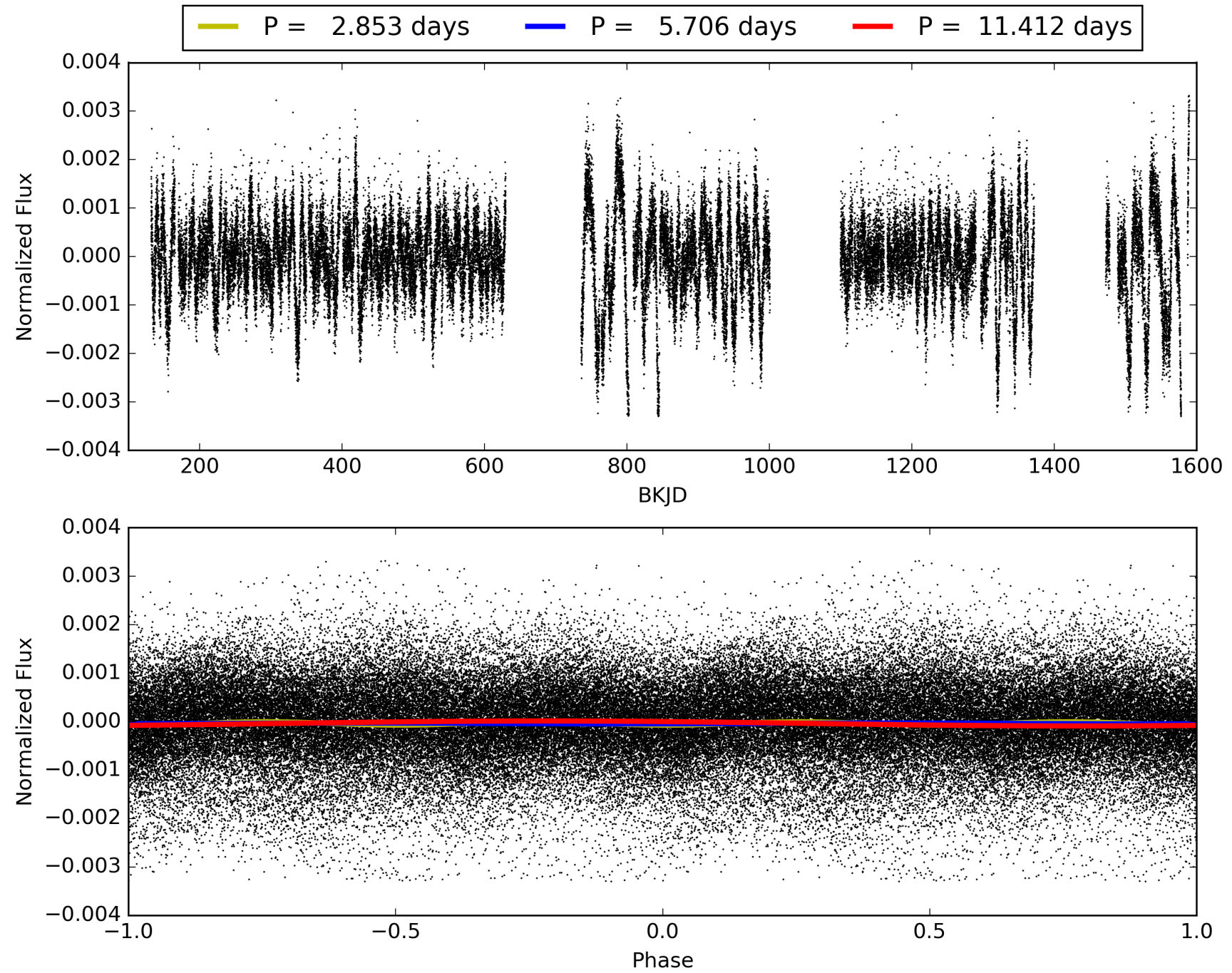
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 10:26:35 Z

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

## TCE 010092003-01, PDC Light Curves

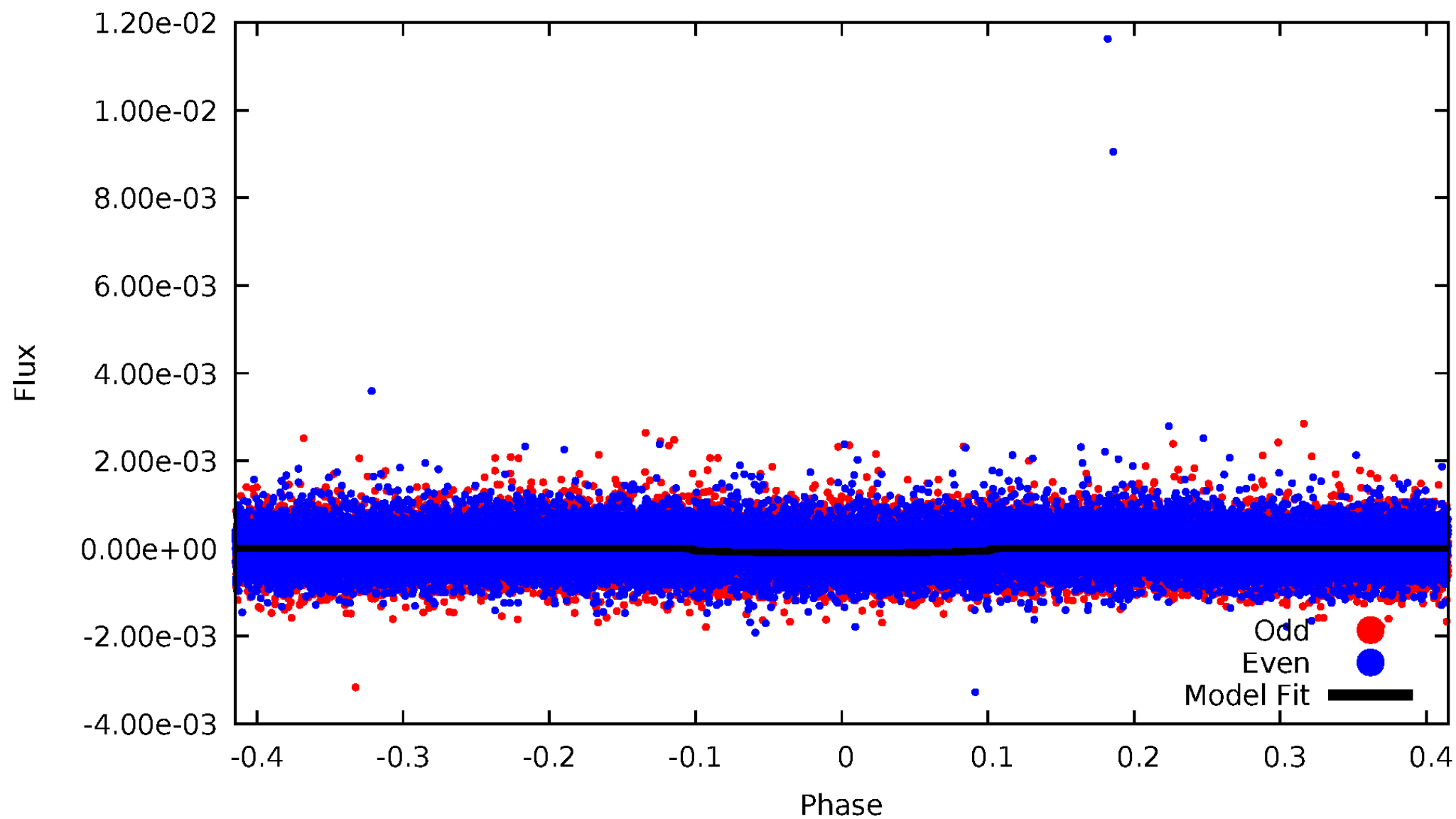


TCE 010092003-01



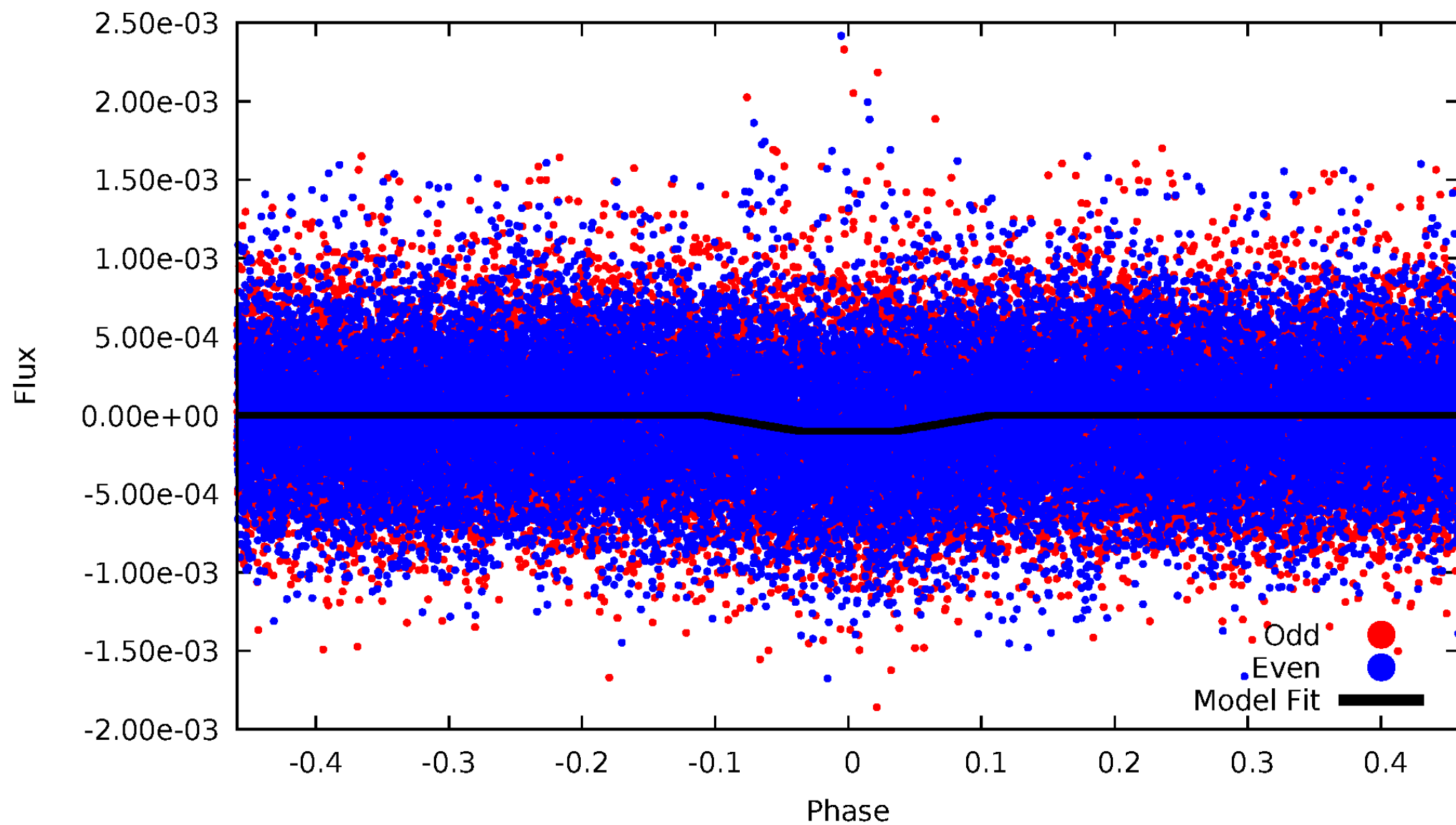
# DV Odd/Even

TCE 010092003-01



# ALT Odd/Even

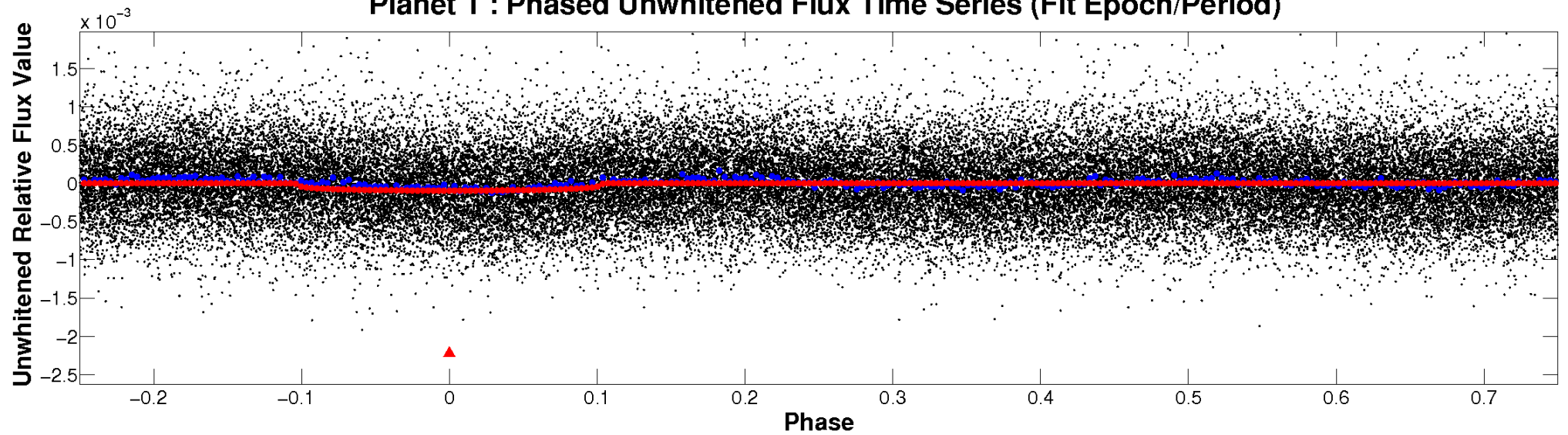
TCE 010092003-01



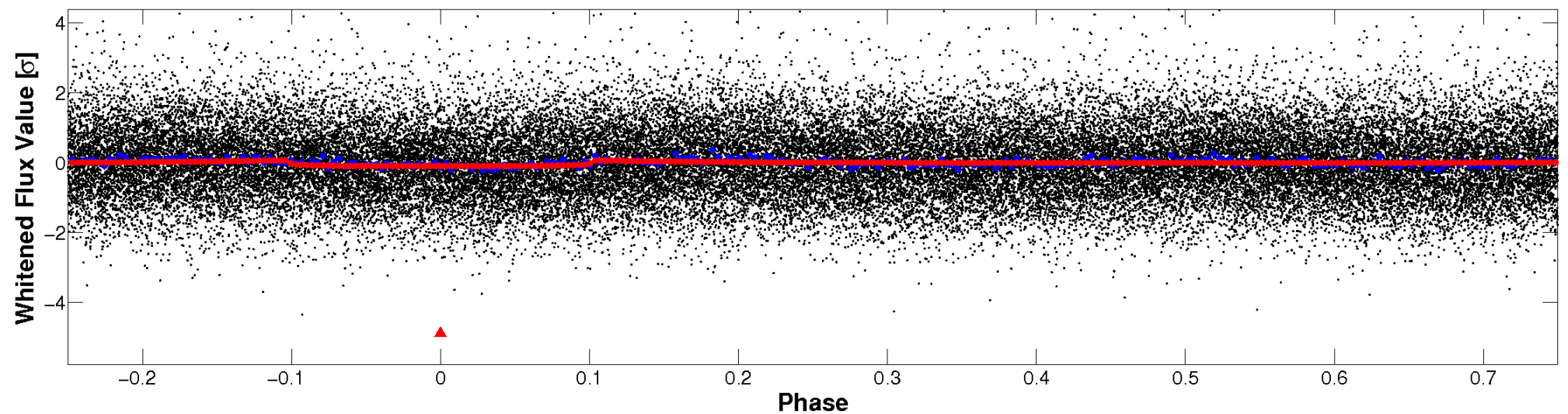


# Non-Whitened Vs. Whitened Light Curve

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

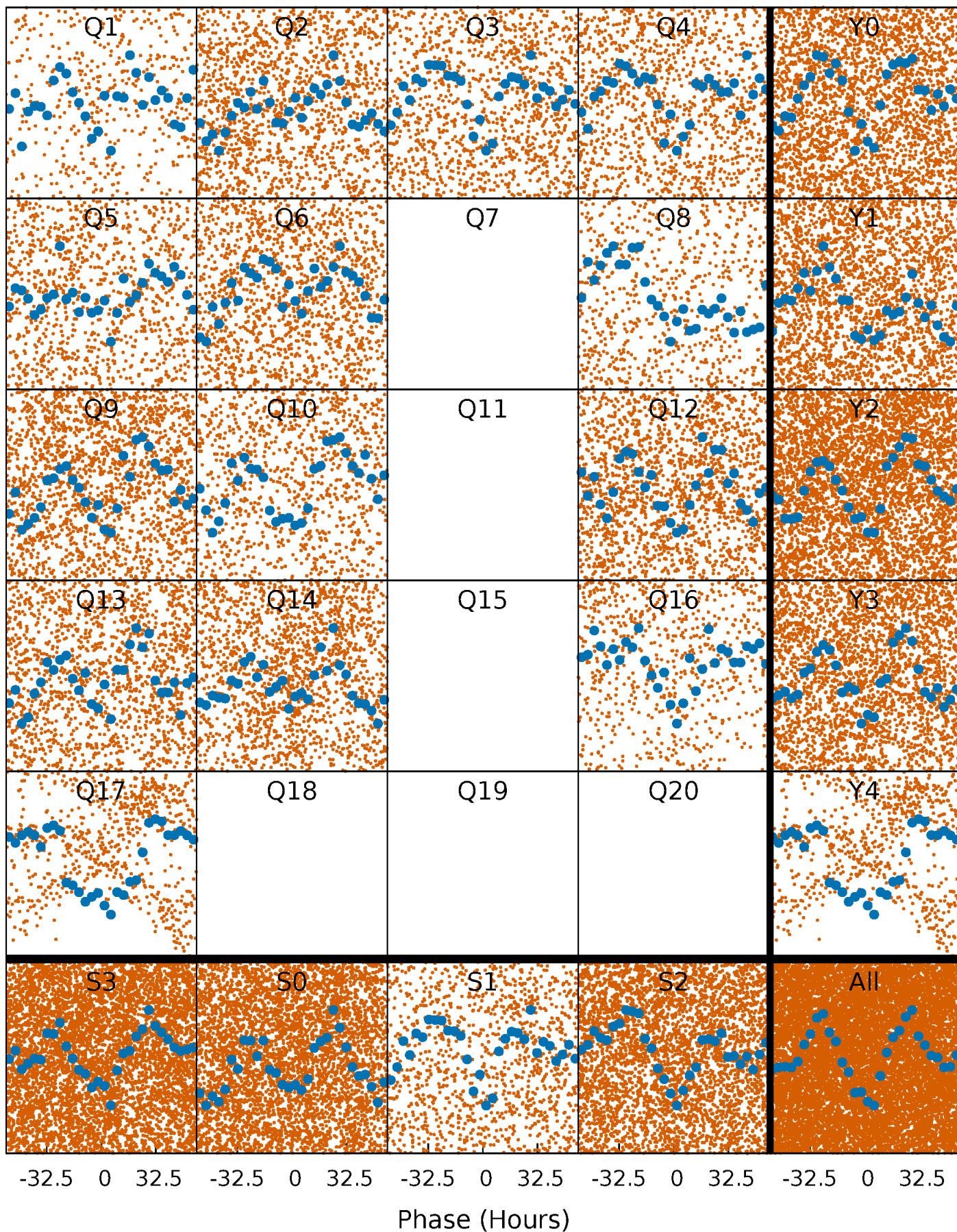


**Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)**



# PDC Quarter-Phased Transit Curves

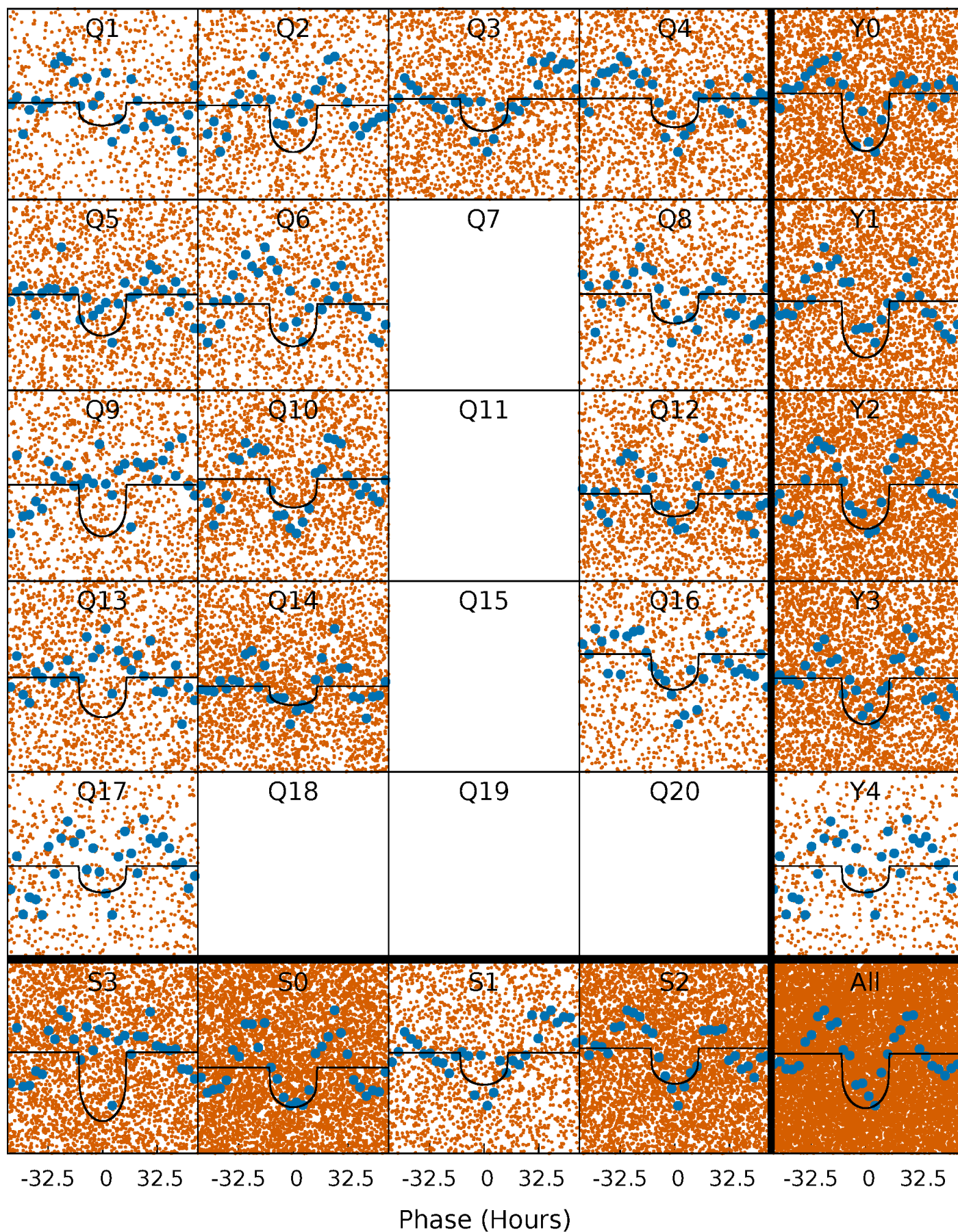
TCE 010092003-01 P= 5.706012 Days  $T_0=136.911760$  (BKJD)





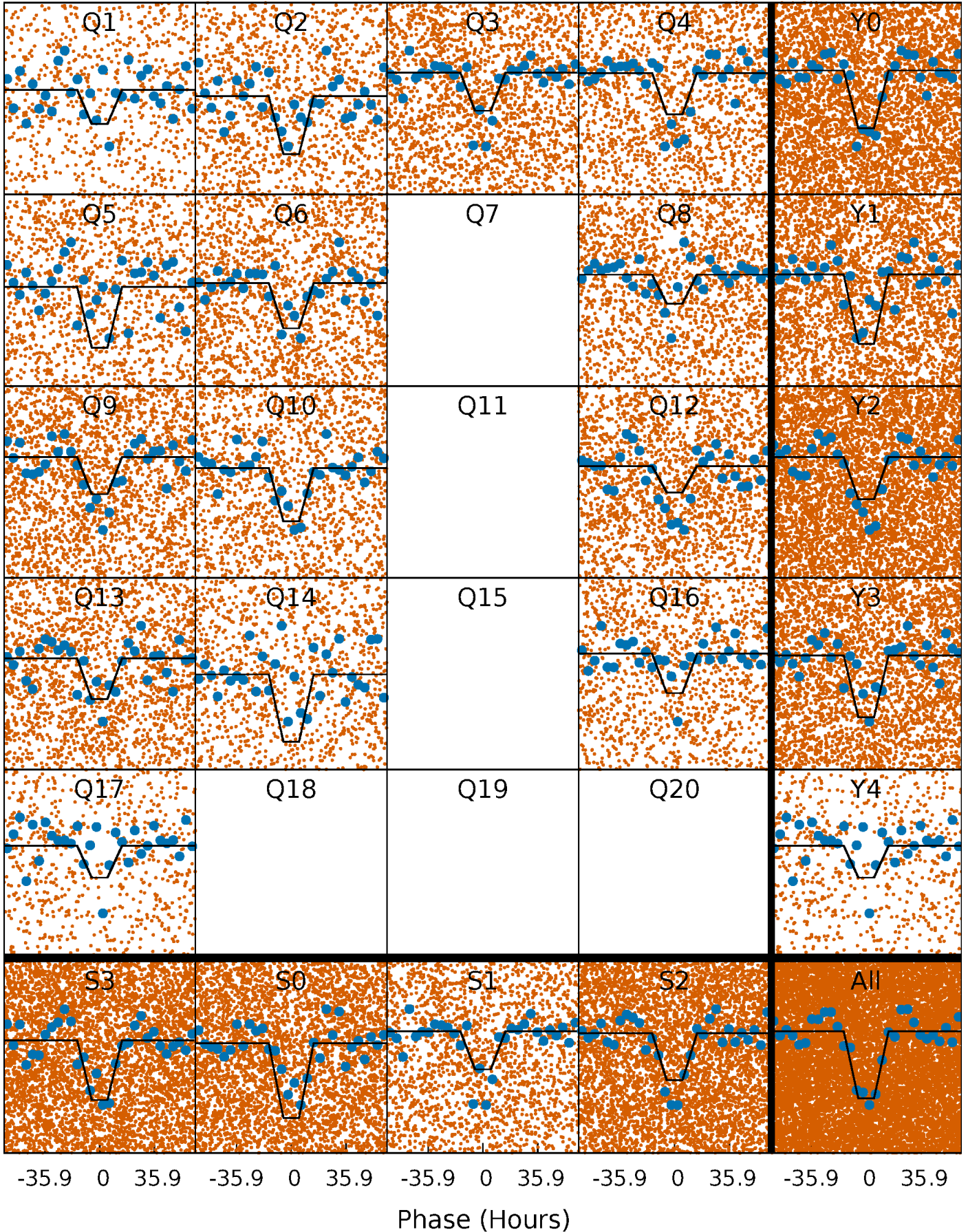
# DV Quarter-Phased Transit Curves

TCE 010092003-01 P= 5.706012 Days  $T_0=136.911760$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

TCE 010092003-01   P= 5.706524 Days    $T_0=136.858729$  (BKJD)

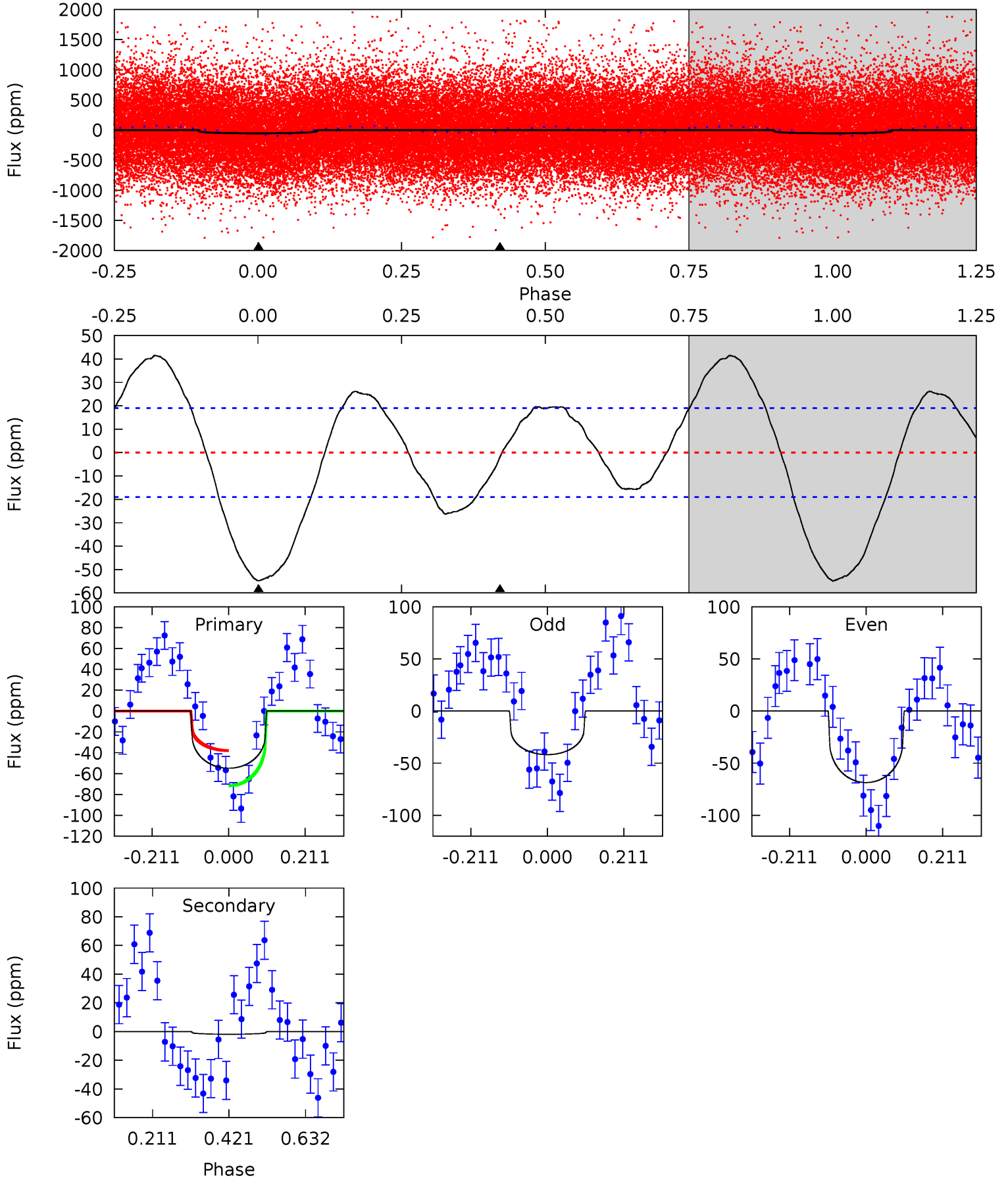




# DV Model-Shift Uniqueness Test

010092003-01, P = 5.706012 Days, E = 131.205748 Days

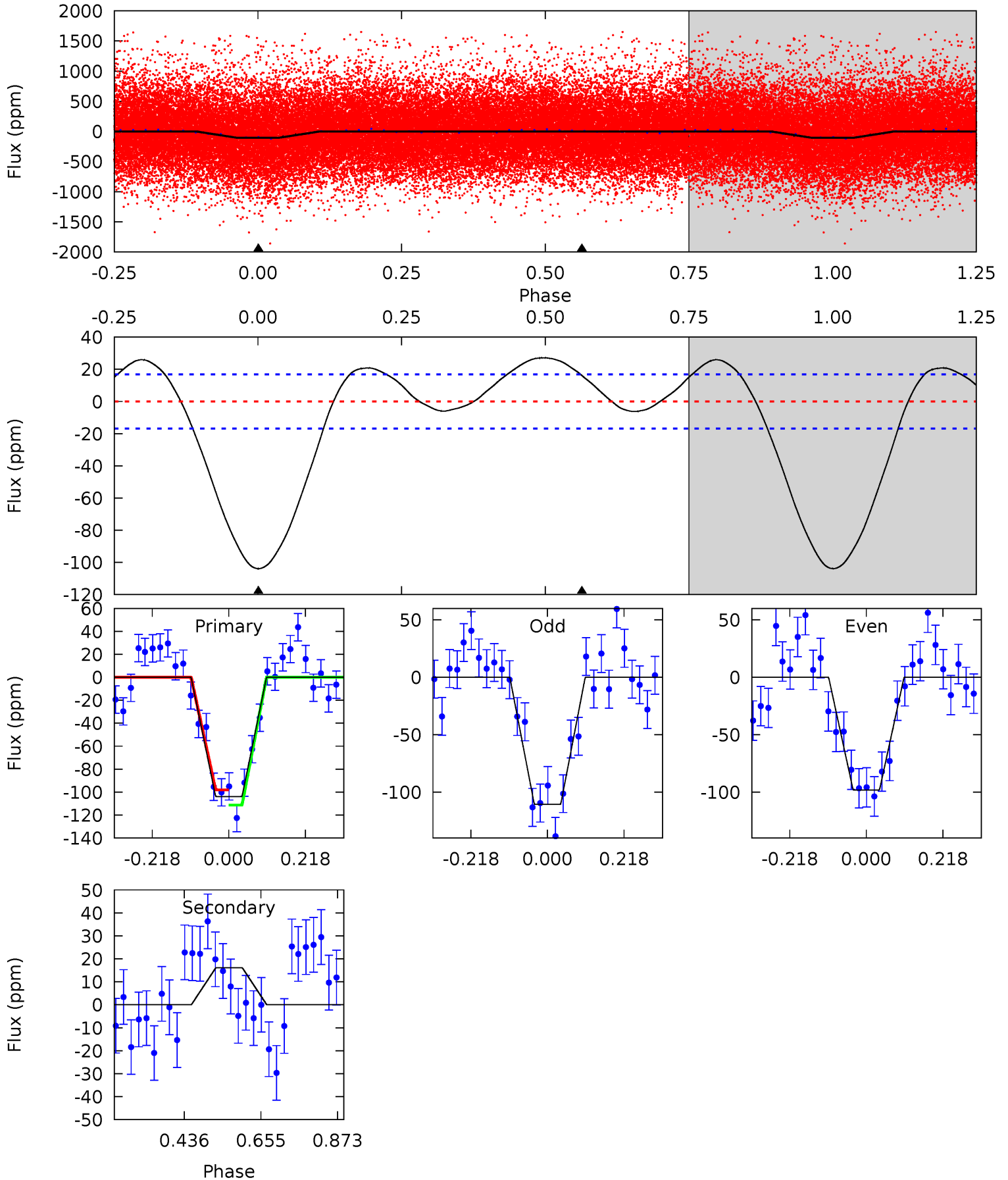
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
12.7	0.43	0	0	4.41	1.25	4.04	12.7	12.7	0.43	0.43	3.12	0.88	0.43	3.94



# Alt Model-Shift Uniqueness Test

010092003-01, P = 5.706524 Days, E = 131.152205 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
27.1	-4.22	0	0	4.40	1.23	2.12	27.1	27.1	-4.22	-4.22	1.63	0.89	0.21	1.71





### Stellar Parameters For KIC 010092003

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R$ ( $R_{\odot}$ )	$M(M_{\odot})$	$p_{\star}$ ( $\text{g}\cdot\text{cm}^{-3}$ )
	$5383^{+159}_{-175}$	$4.614^{+0.032}_{-0.104}$	$-0.320^{+0.300}_{-0.300}$	$0.736^{+0.122}_{-0.057}$	$0.824^{+0.078}_{-0.096}$	$2.906^{+0.521}_{-0.927}$
	+3%/-3%	+1%/-2%	+94%/-94%	+17%/-8%	+9%/-12%	+18%/-32%
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 010092003-01 / KOI

Detrend	Depth (ppm)	$R_p$ ( $R_{\oplus}$ )	$T_{\text{max}}$ (K)	$T_{\text{obs}}$ (K)	$A_{\text{obs}}$
DV	$-2\pm4$	$0.80^{+0.31}_{-0.33}$	$1197^{+51}_{-48}$	$2662^{+818}_{-5573}$	$4.602^{+23.616}_{-12.241}$
Alt.	$16\pm4$	$0.83^{+0.34}_{-0.34}$	$1194^{+52}_{-44}$	$-3754^{+410}_{-816}$	$-43.233^{+22.897}_{-83.794}$

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

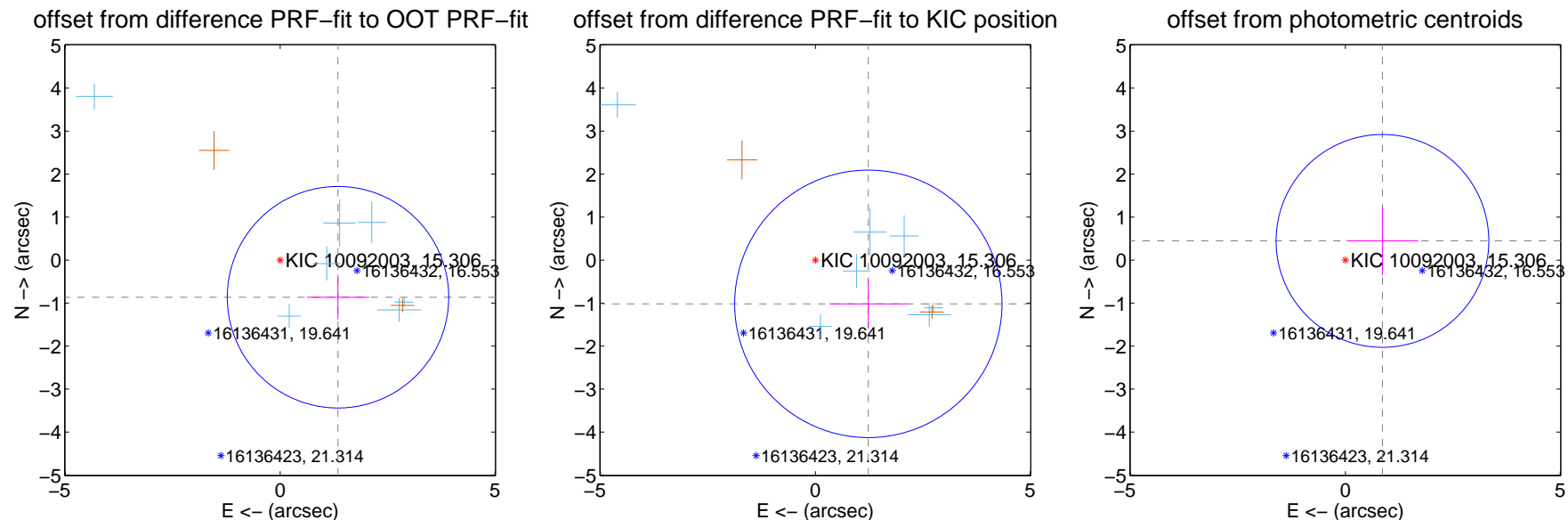
## DV Centroid Data

Supplemental centroid analysis for 010092003-01. Kepler magnitude: 15.31. Transit SNR 9.88

There are 7 quarters with good PRF difference image offsets

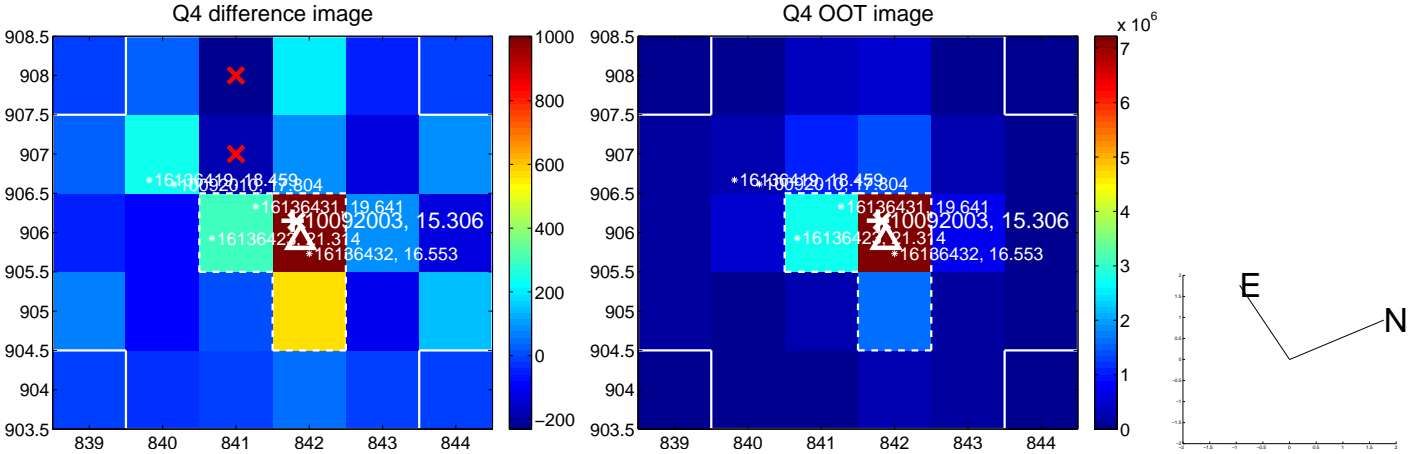
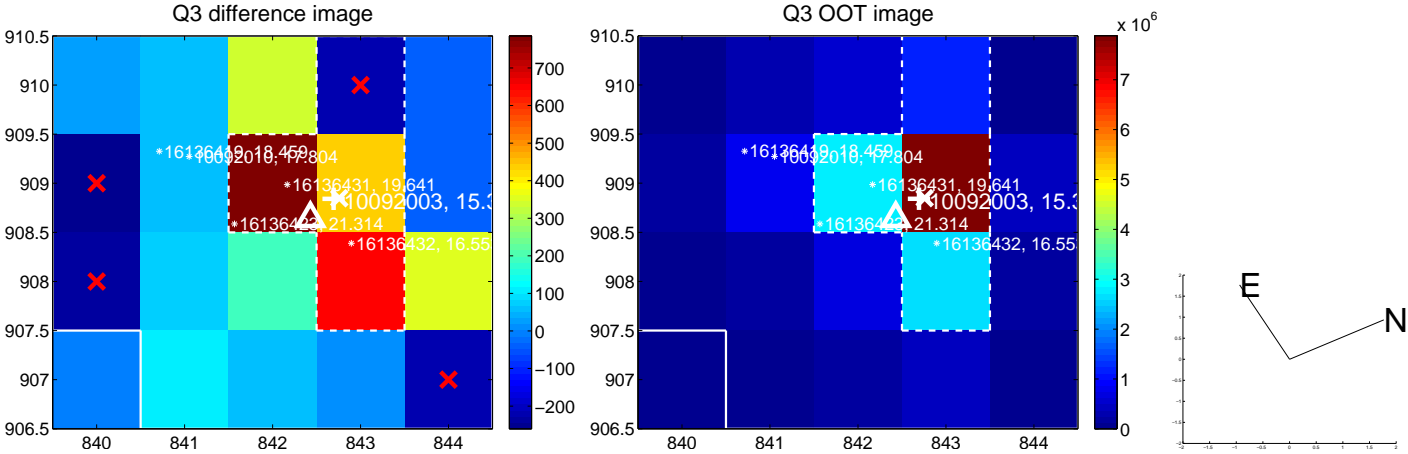
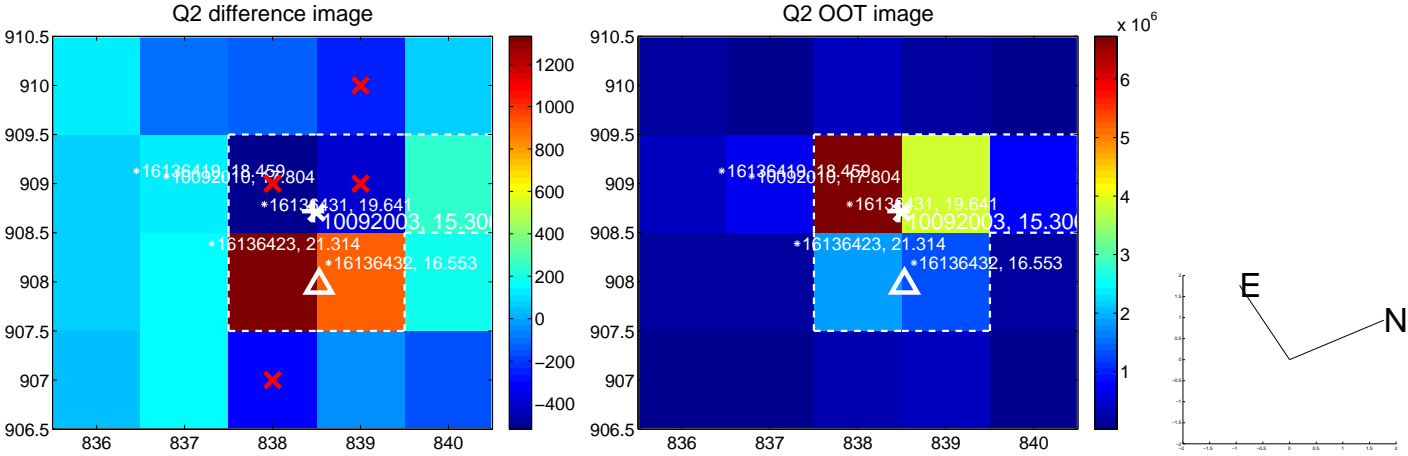
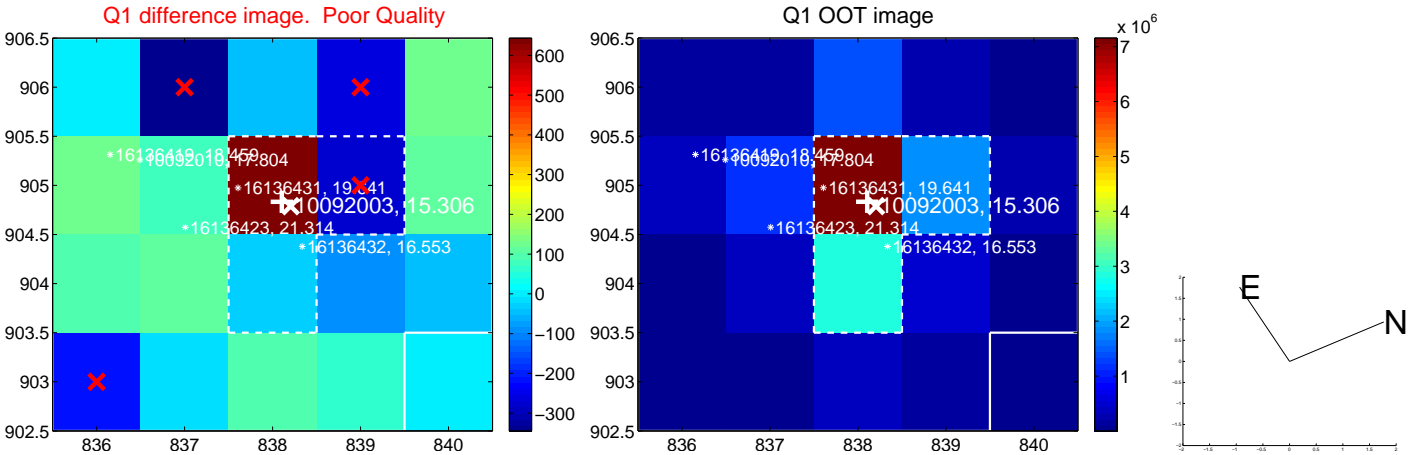
The direct PRF centroid is offset from the target star catalog position by about 0.28 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$1.600 \pm 0.859$	1.86	$-1.347 \pm 0.727$	$-0.864 \pm 0.521$
PRF-fit source offset from KIC position	$1.599 \pm 1.037$	1.54	$-1.233 \pm 0.908$	$-1.018 \pm 0.576$
photometric centroid source offset	$0.97 \pm 0.82$	1.18	$-0.86 \pm 0.83$	$0.45 \pm 0.80$

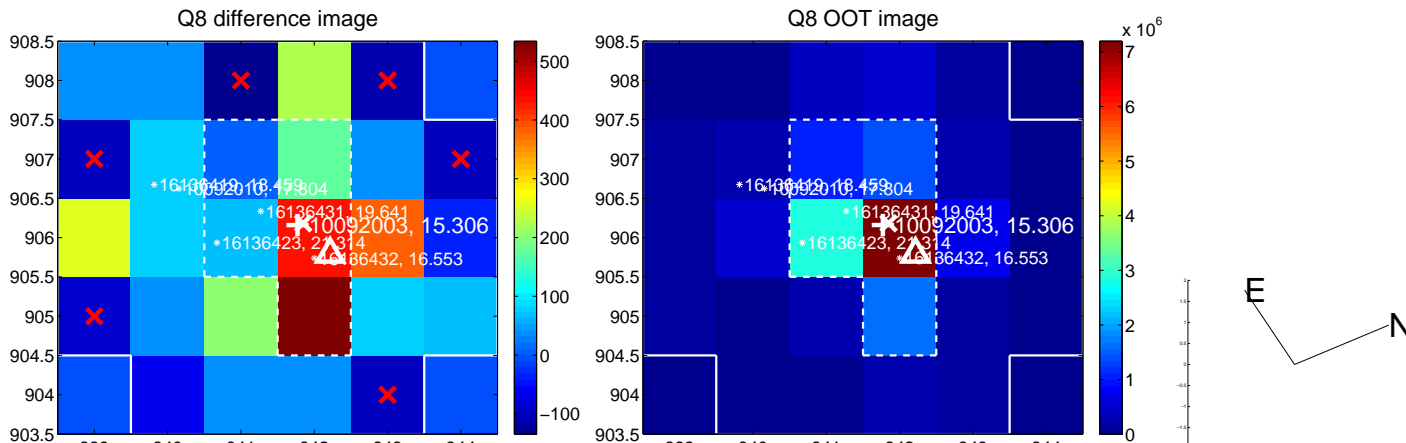
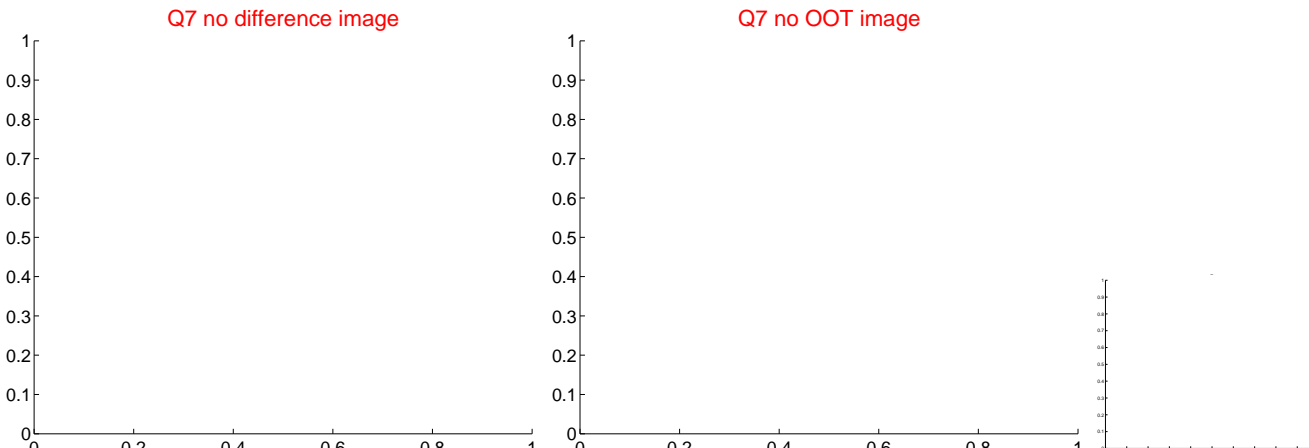
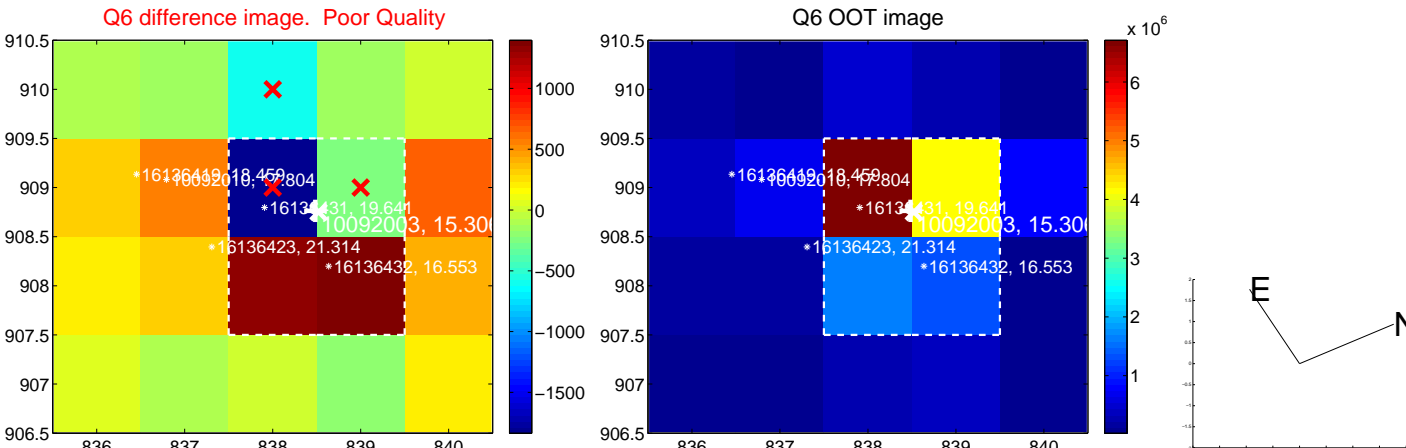
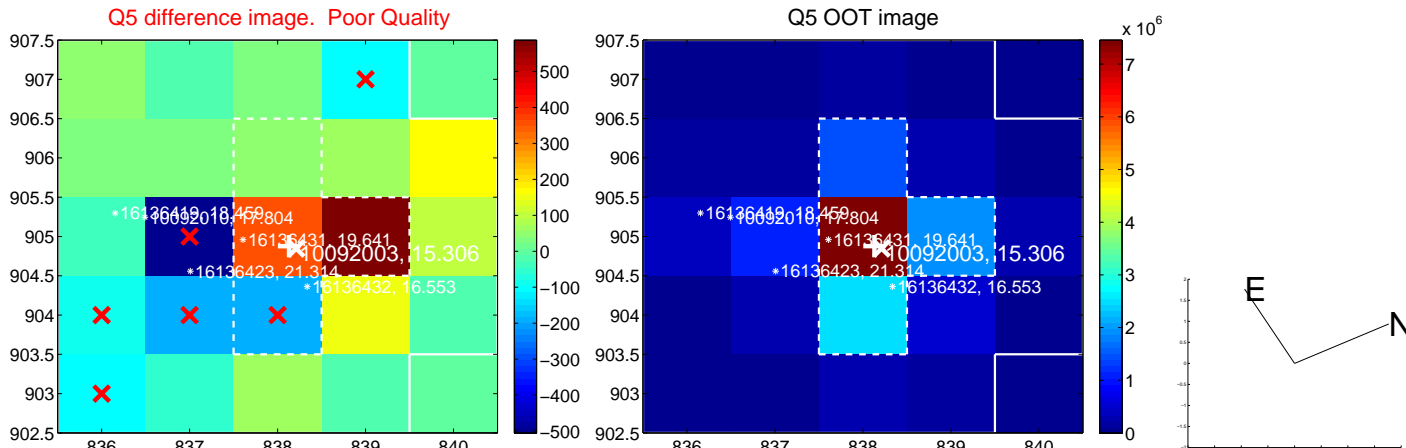


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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

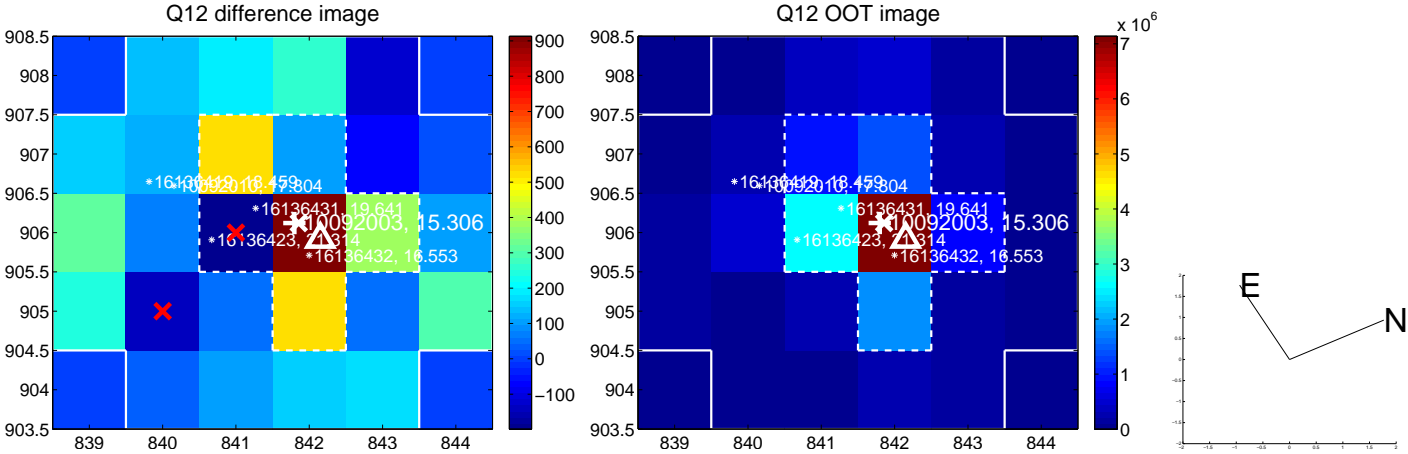
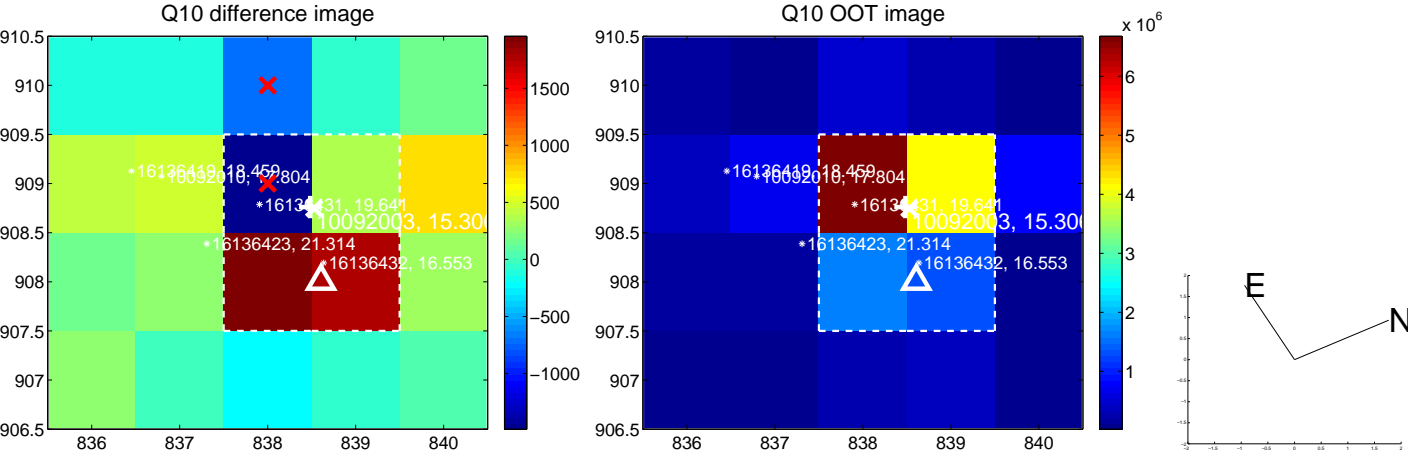
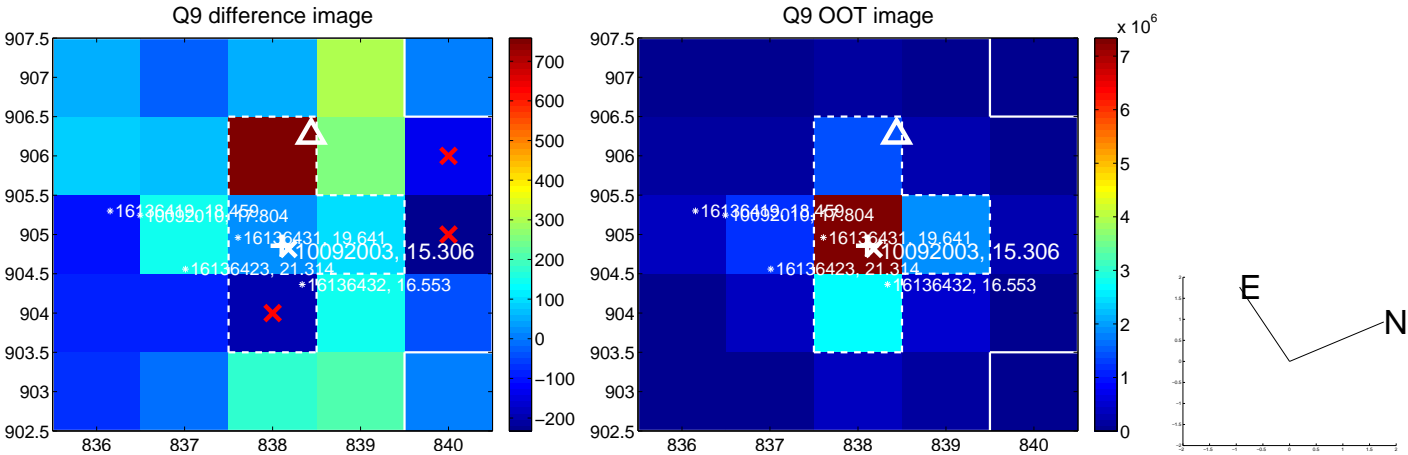


white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

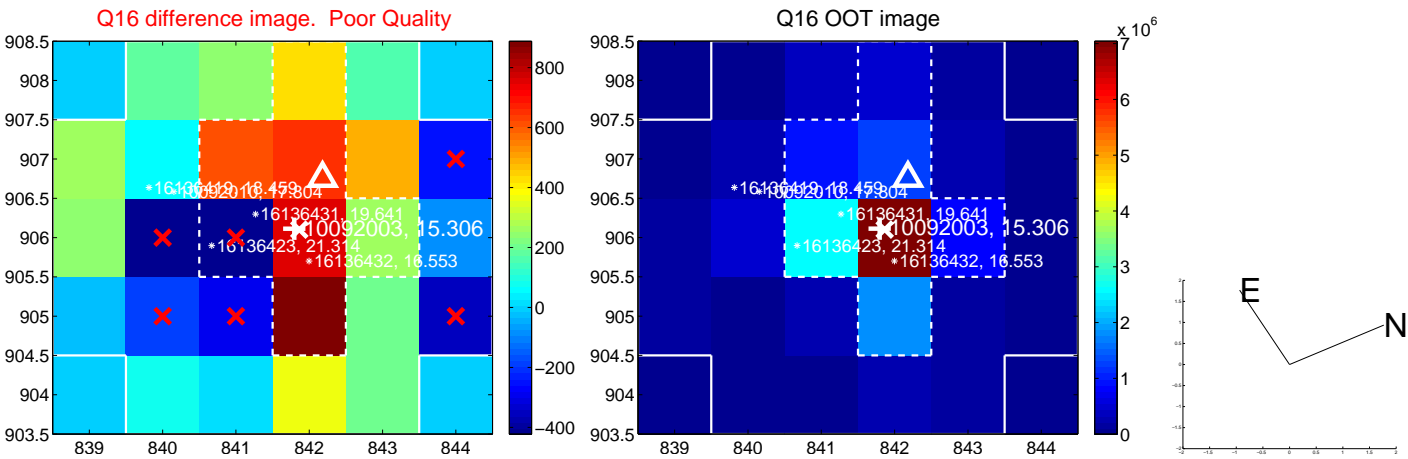
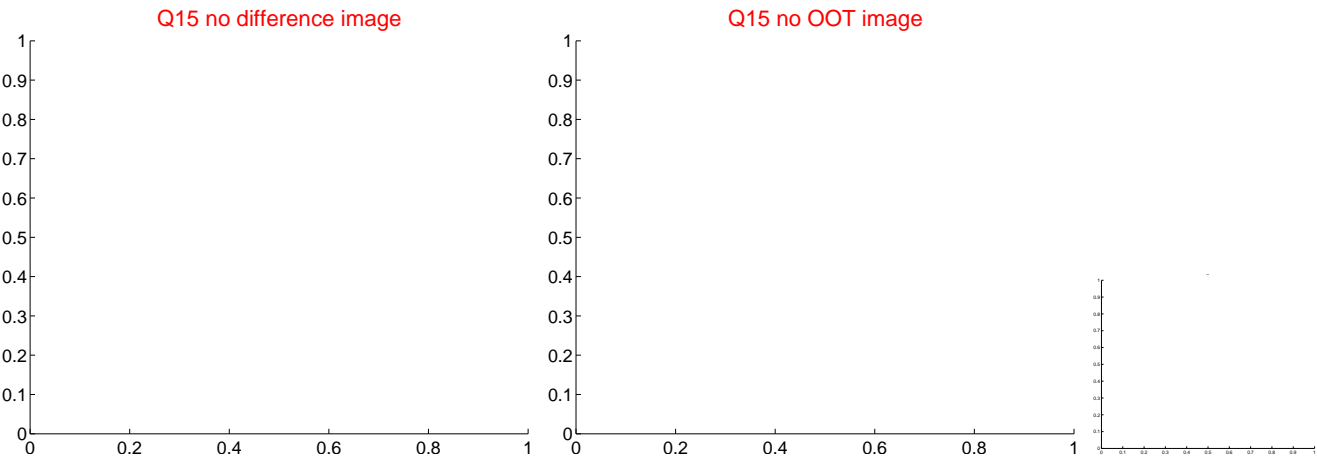
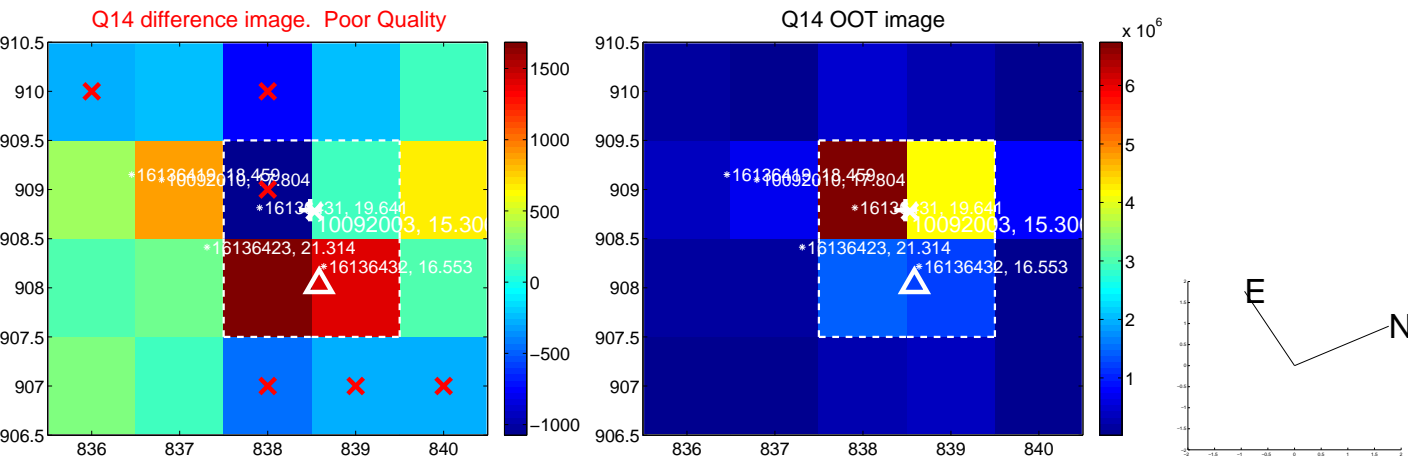
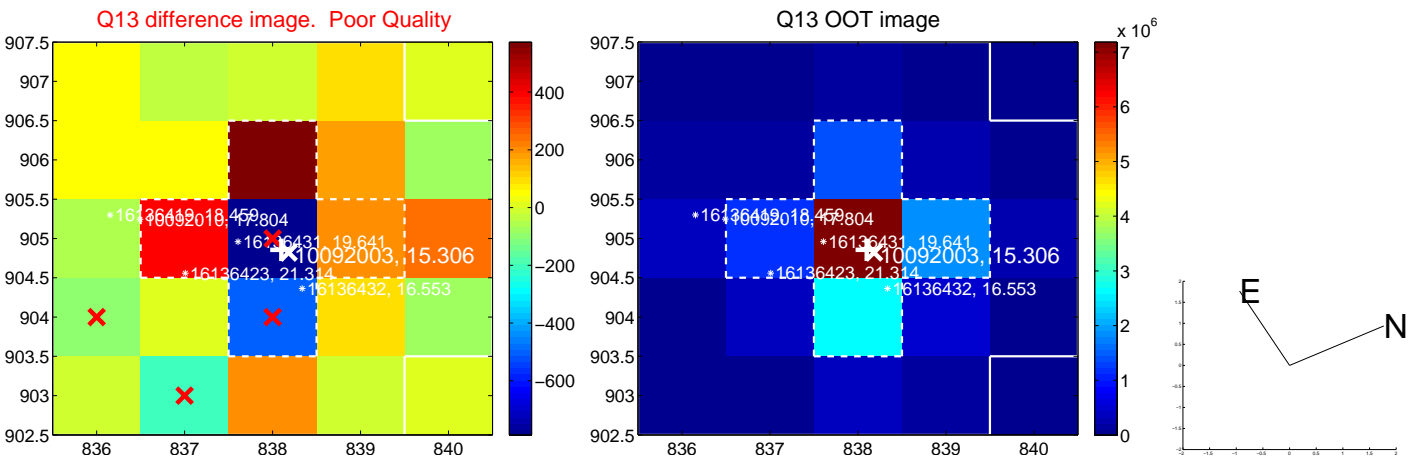




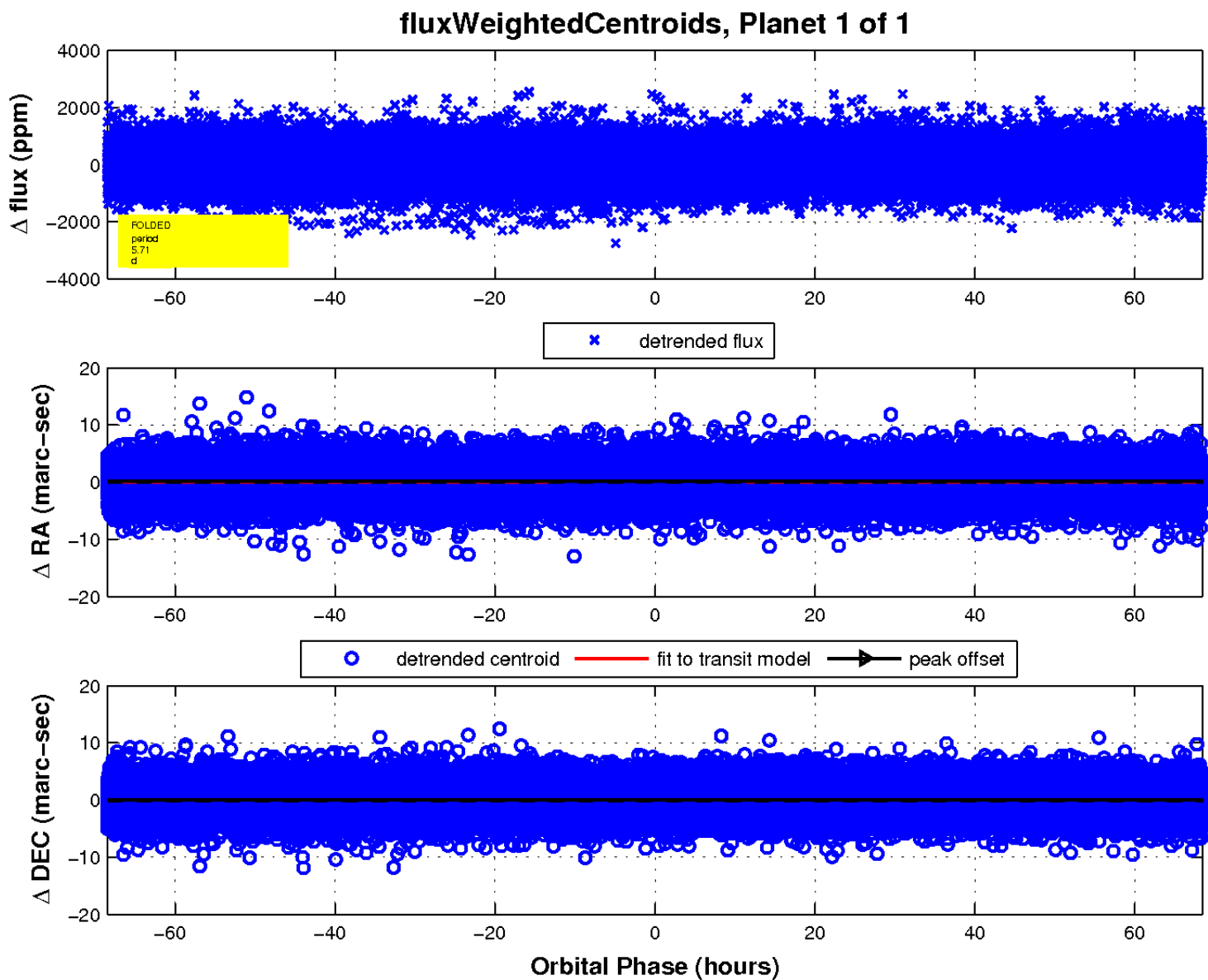
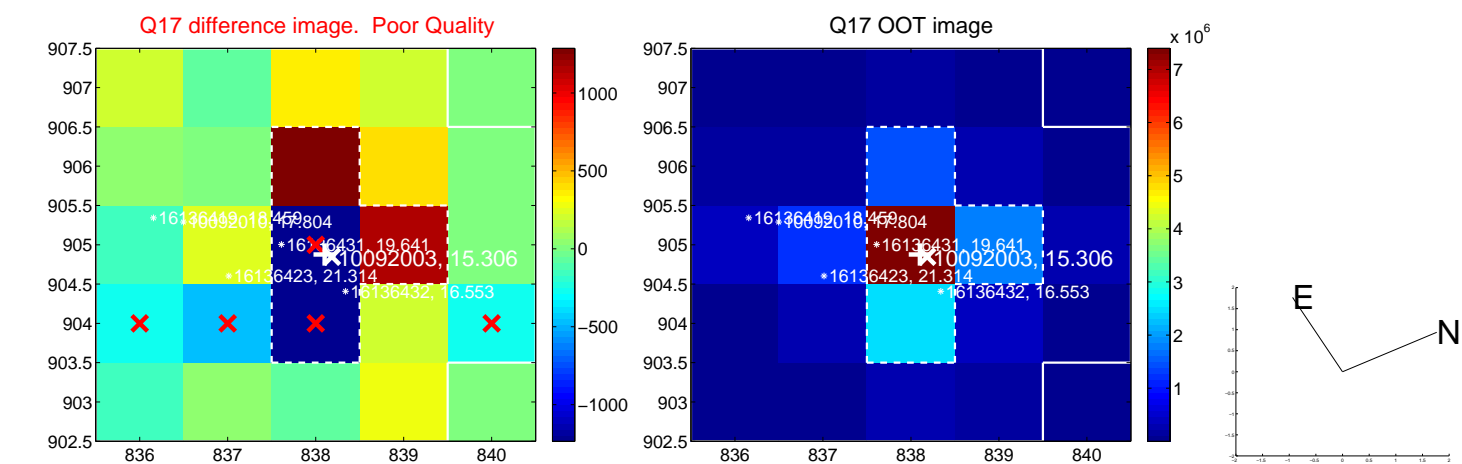
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white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



UKIRT Image

Declination

