

# KIC 009052849

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
009052849-01	OBS	No	0.786583	131.725146	68.9	2.269	8.4	9.1	1.39	6467	1.34	9724.98

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
009052849-01	OBS	FP	0.00	1	0	0	0	LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT

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

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

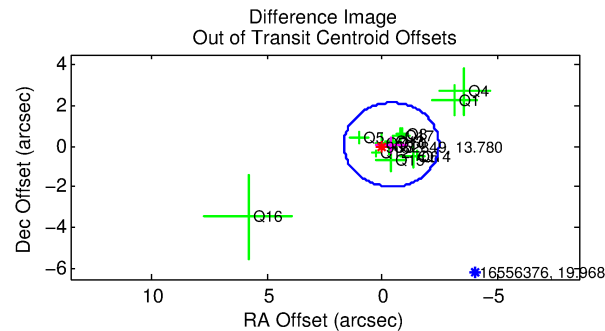
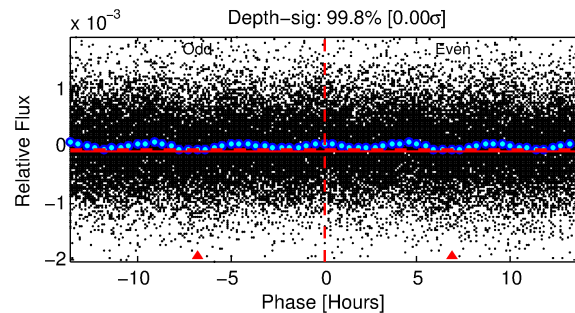
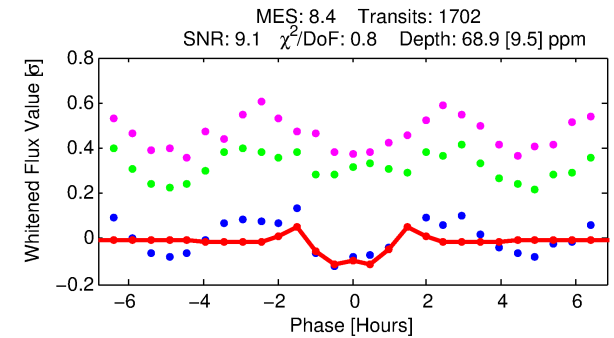
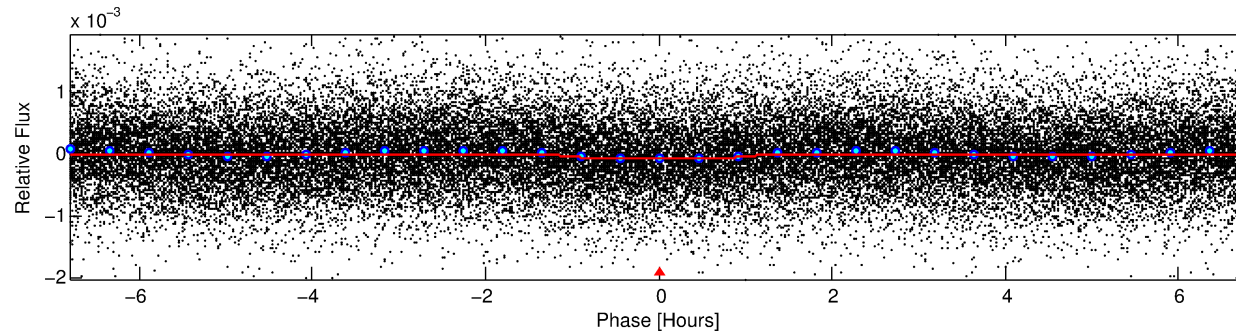
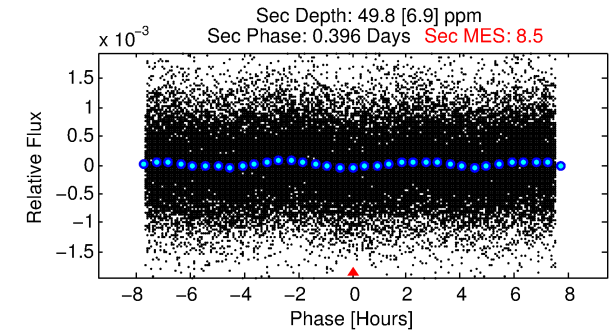
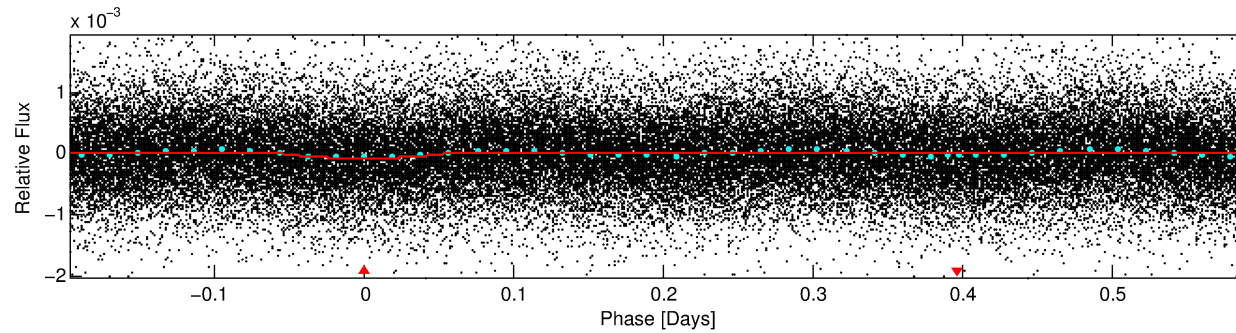
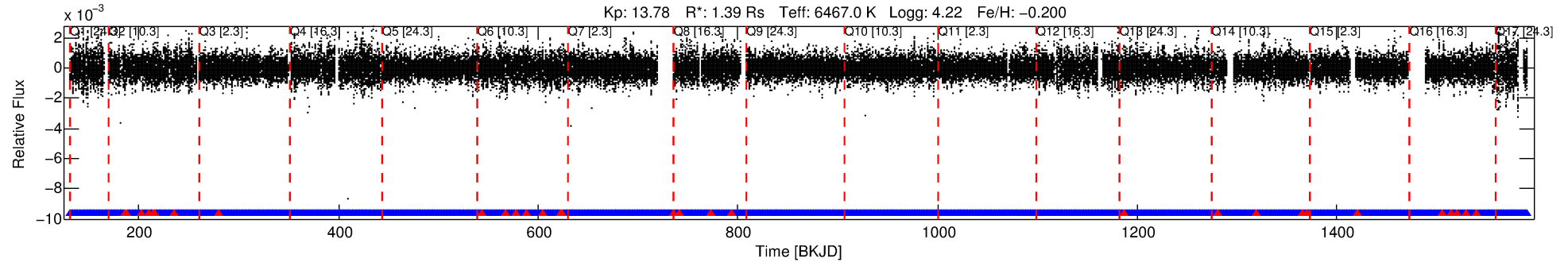
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 009052849-01

No Significant Match Found

# DV One-Page Summary

KIC: 9052849 Candidate: 1 of 1 Period: 0.787 d



## DV Fit Results:

Period = 0.78658 [0.00001] d  
Epoch = 131.7251 [0.0017] BKJD  
Rp/R\* = 0.0089 [0.0030]  
a/R\* = 1.53 [1.65]  
b = 0.90 [0.41]  
Seff = 9724.98 [3640.73]  
Teq = 2532 [237] K  
Rp = 1.35 [0.61] Re  
a = 0.0176 [0.0043] AU  
Ag = 4.68 [3.60] [1.02σ]  
**Teffp = 5760 [1004] K [3.13σ]**

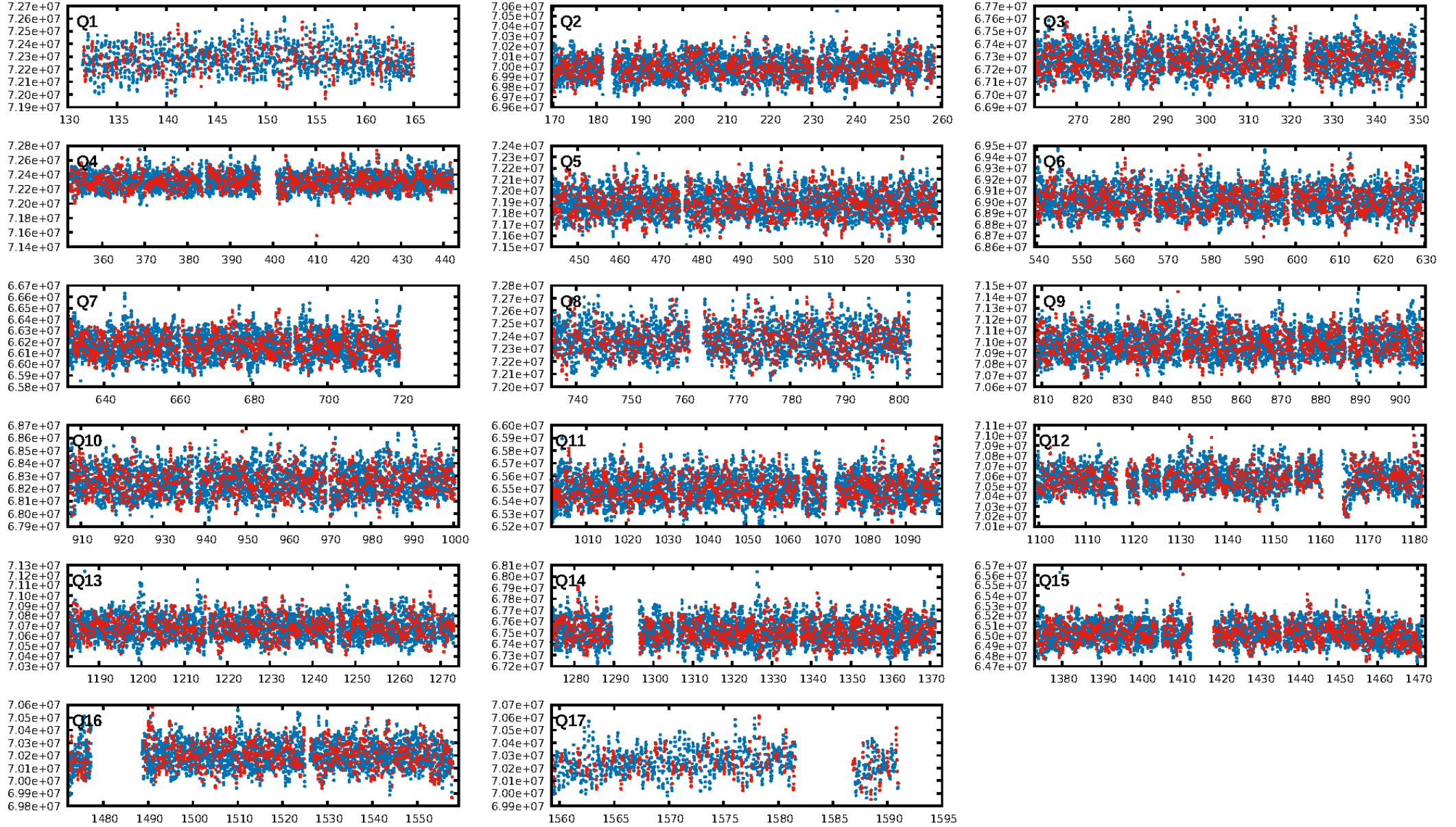
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: N/A  
ModelChiSquareGof-sig: N/A  
Bootstrap-pfa: 8.58e-14  
RollingBand-fgt: 0.98 [1594/1624]  
GhostDiagnostic-chr: 1.193  
**Centroid-sig: 0.0%**  
Centroid-so: 0.856 arcsec [1.43σ]  
OotOffset-rm: 0.391 arcsec [0.57σ]  
KicOffset-rm: 0.456 arcsec [0.91σ]  
OotOffset-st: 3/3/4/4 [14]  
KicOffset-st: 3/3/4/4 [14]  
DiffImageQuality-fgm: 0.50 [7/14]  
DiffImageOverlap-fno: 1.00 [17/17]

Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 09:14:48 Z

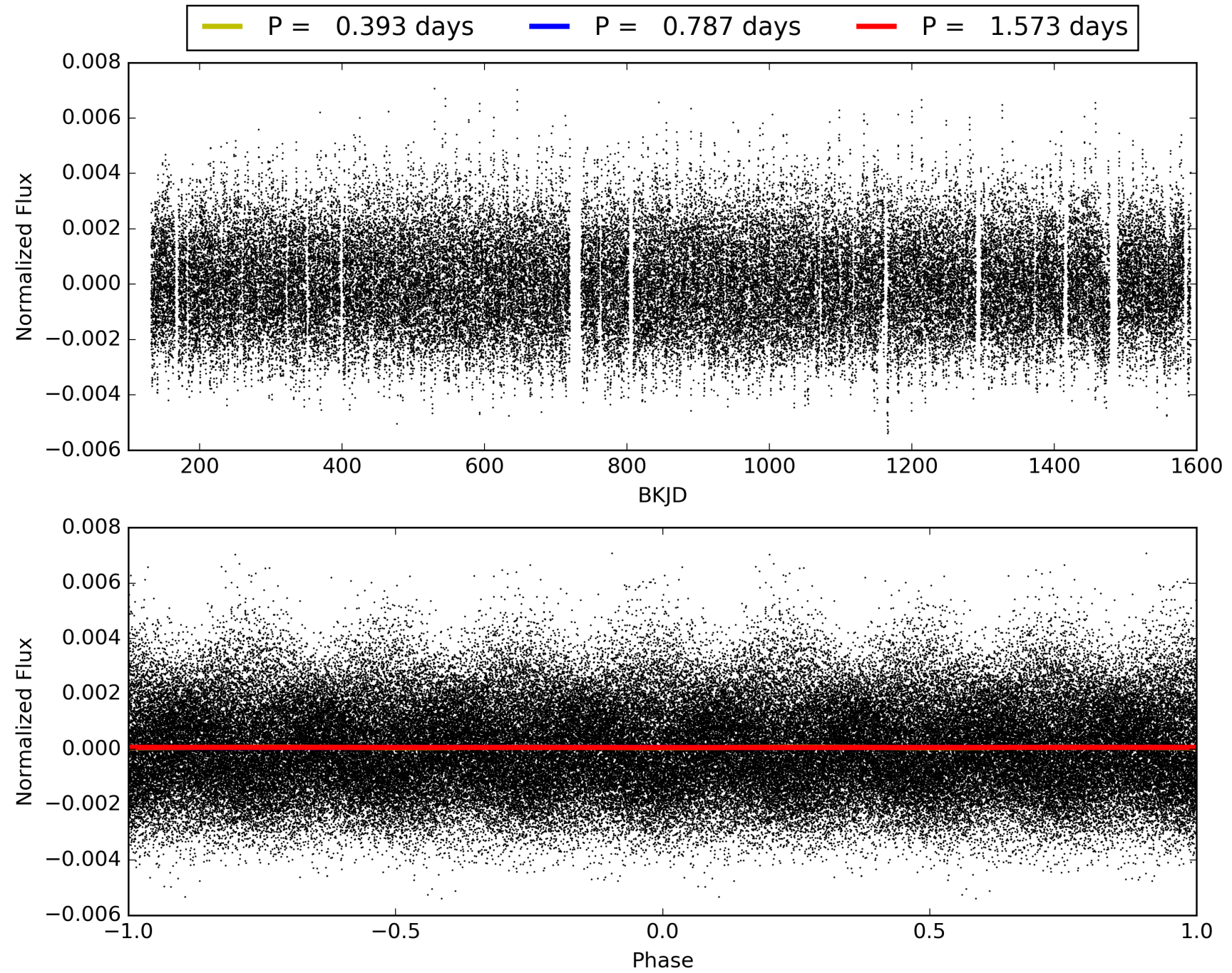
This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

# TCE 009052849-01, PDC Light Curves



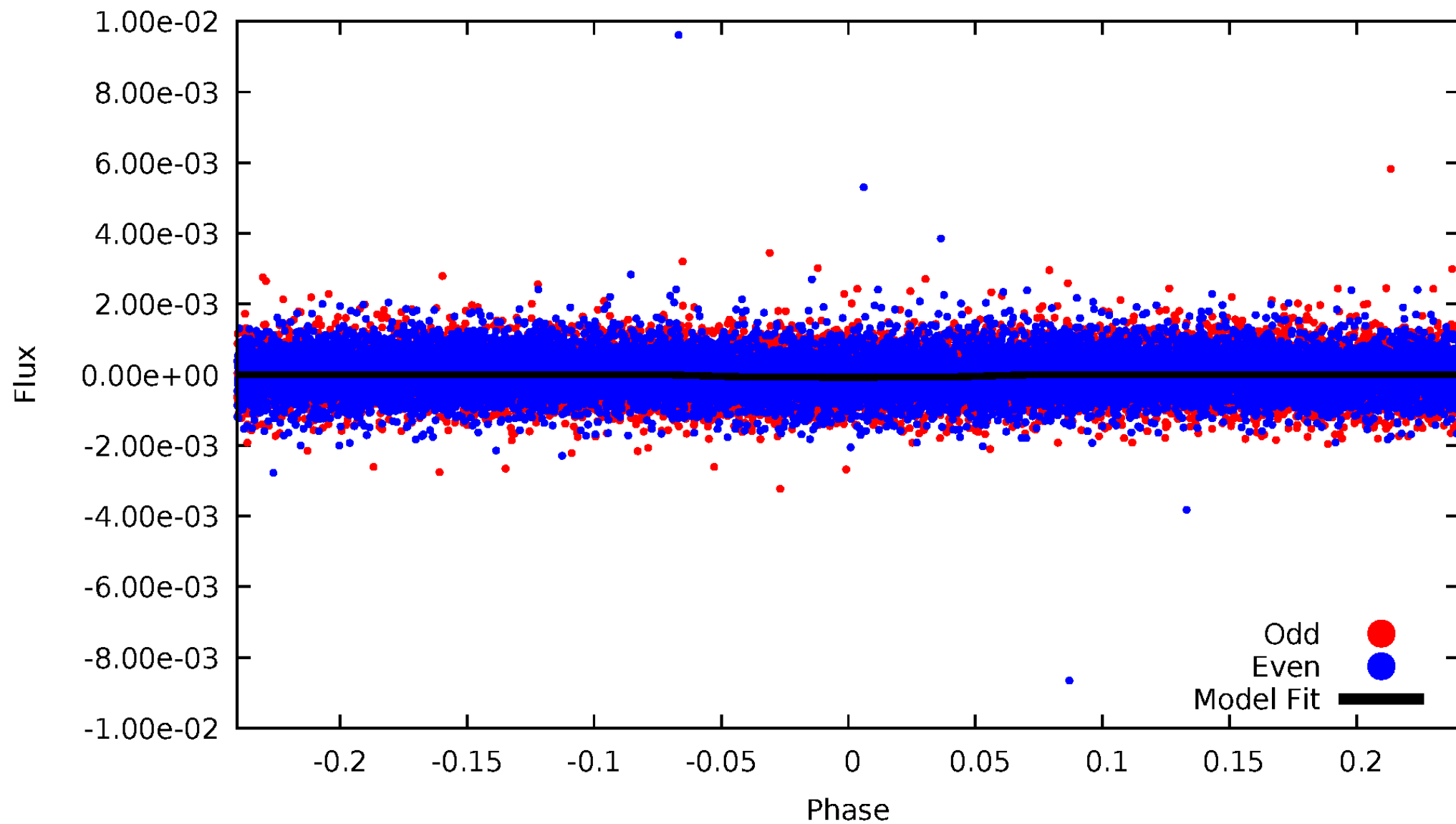


TCE 009052849-01



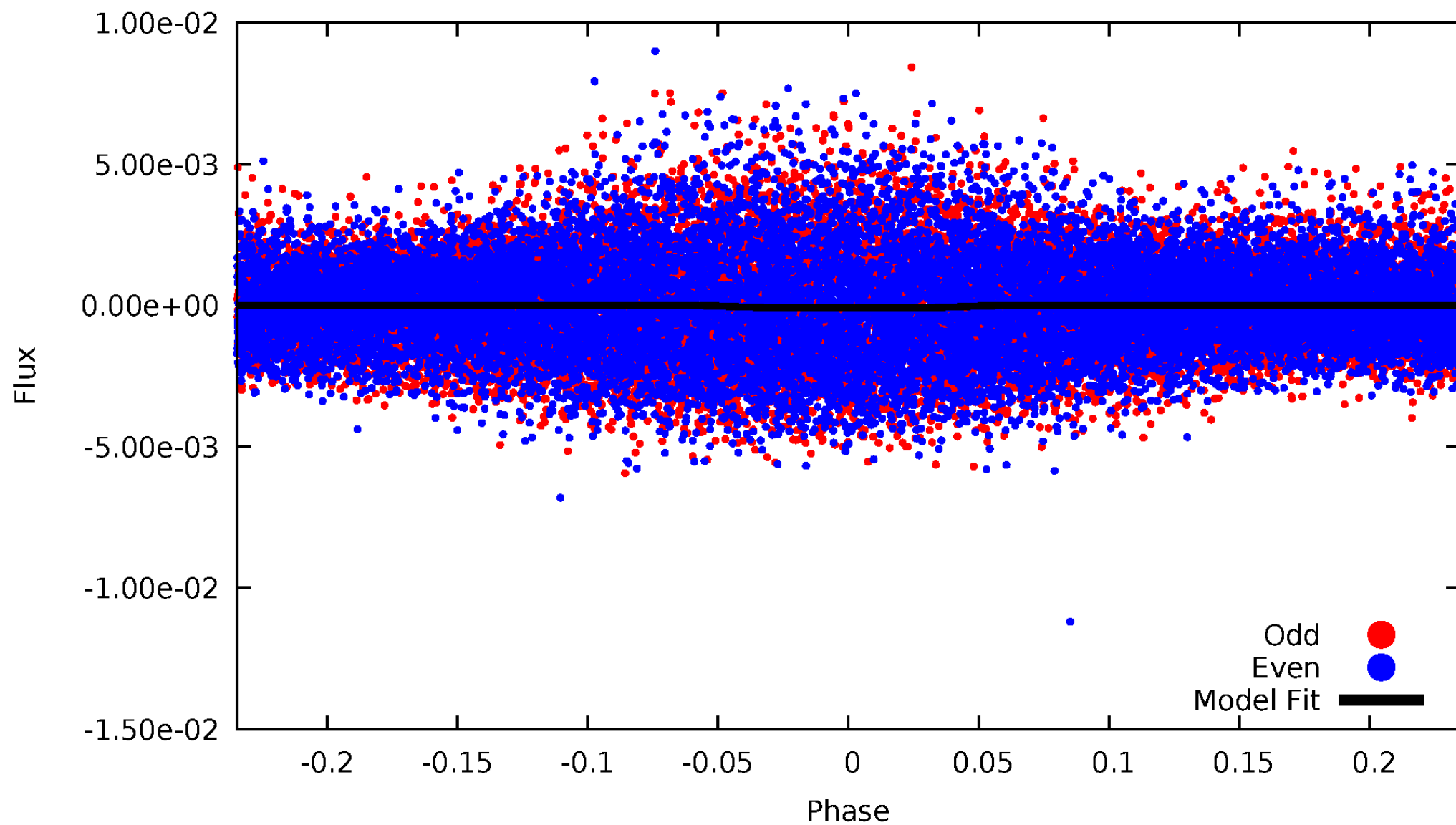
# DV Odd/Even

TCE 009052849-01



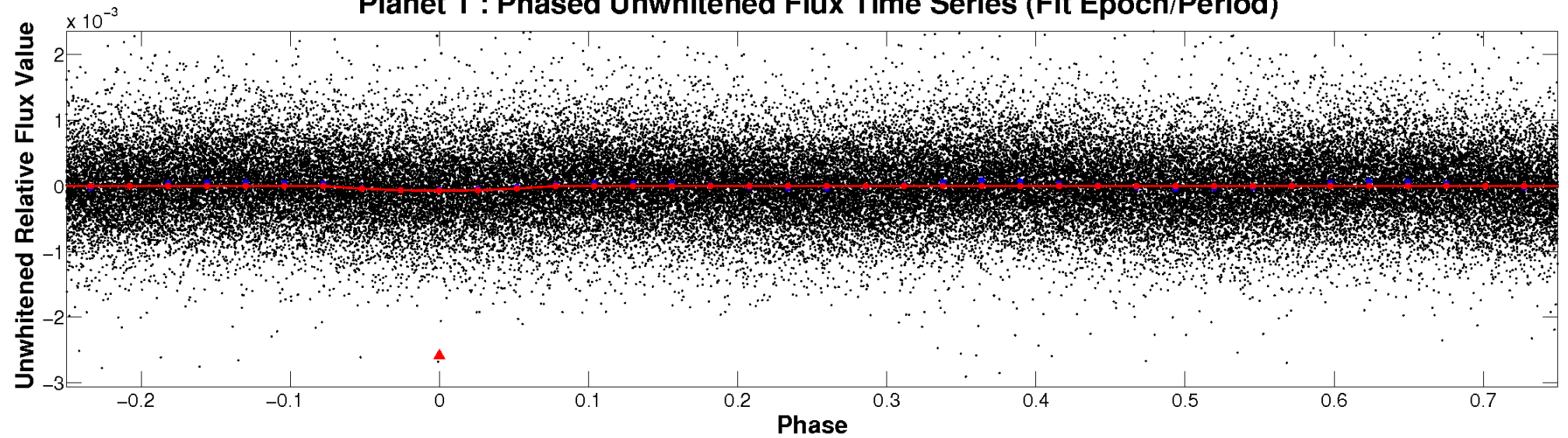
# ALT Odd/Even

TCE 009052849-01

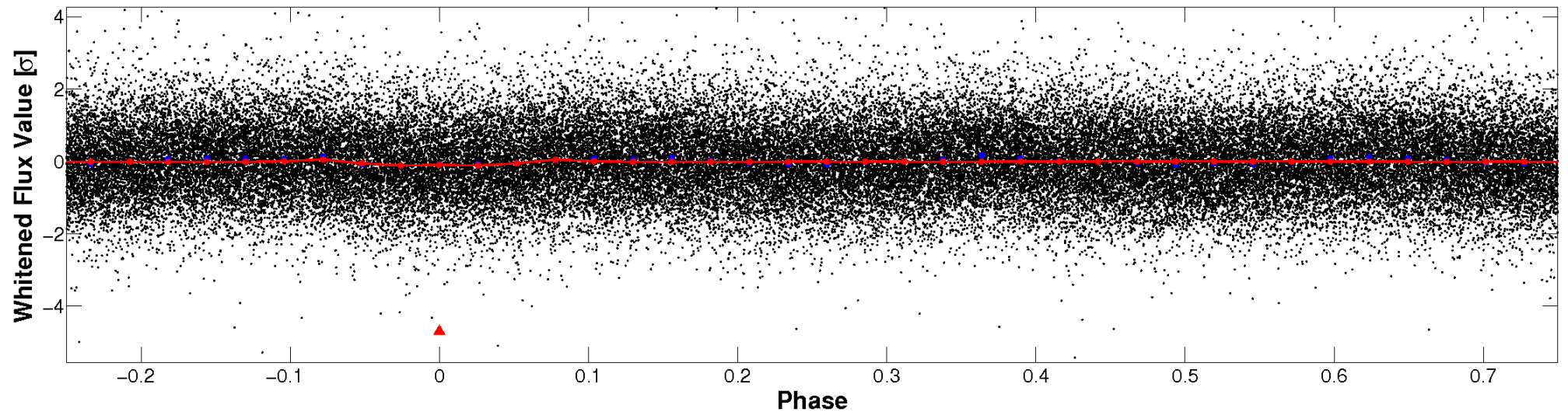


# Non-Whitened Vs. Whitened Light Curve

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



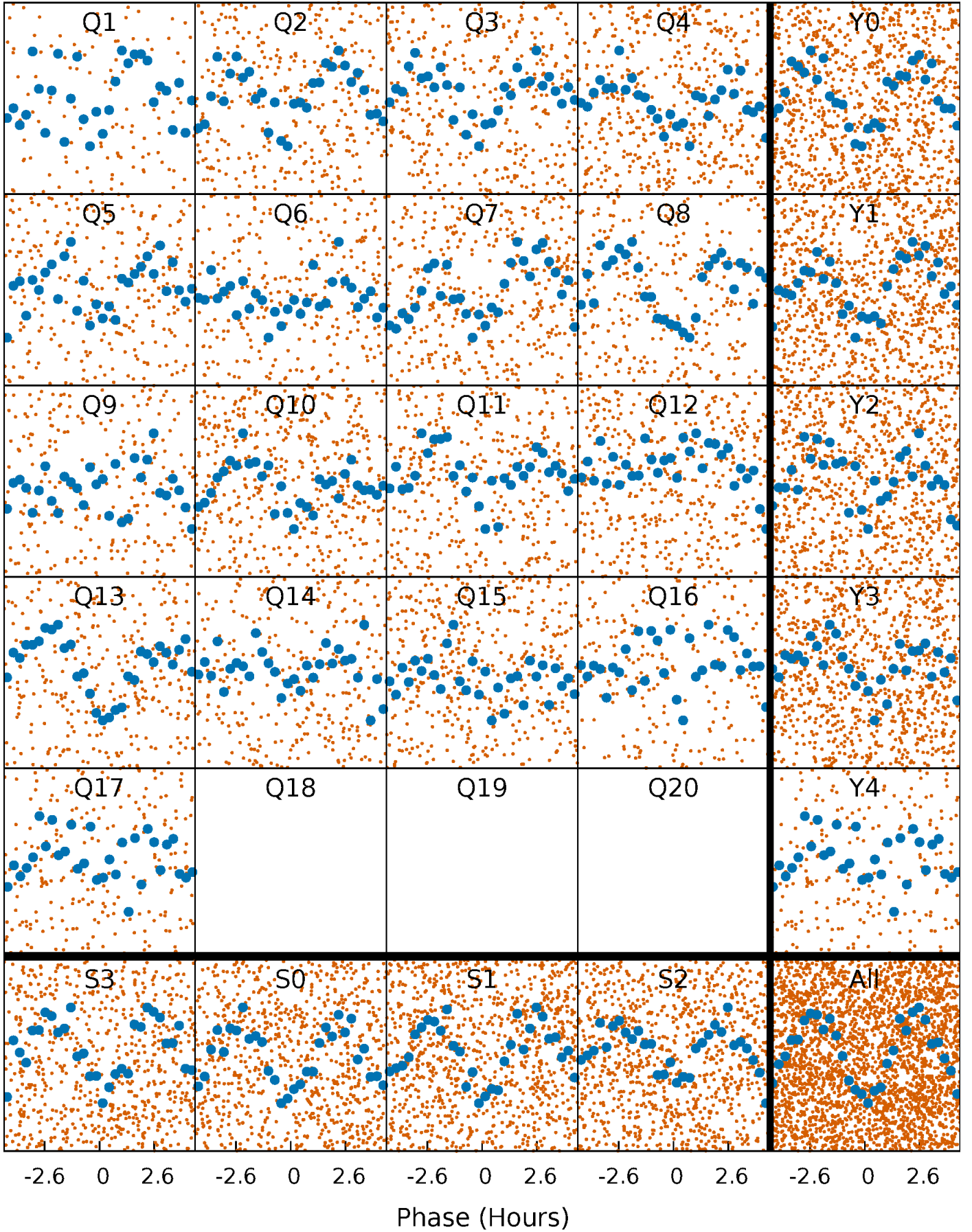
**Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)**





# PDC Quarter-Phased Transit Curves

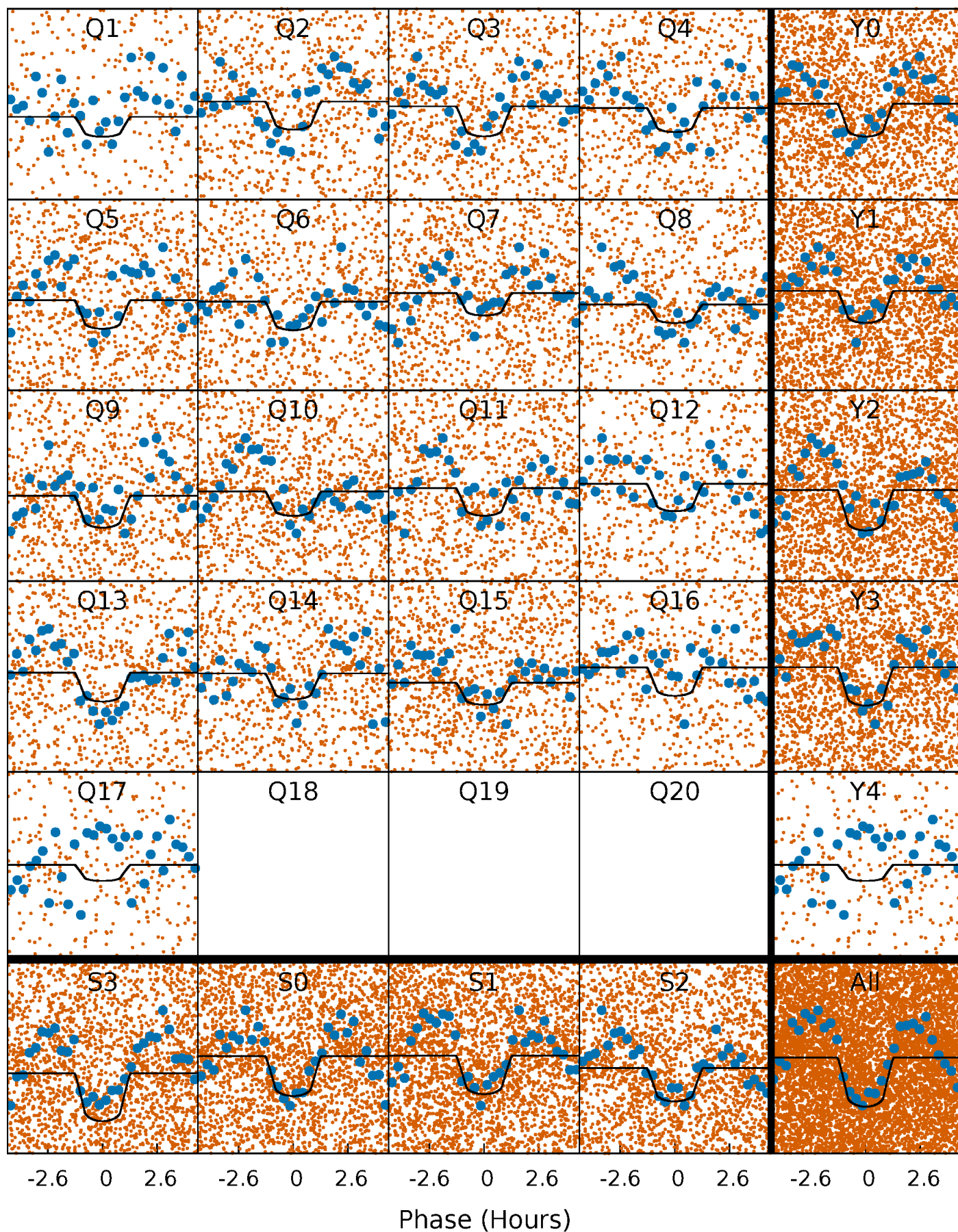
TCE 009052849-01   P= 0.786583 Days    $T_0=131.725146$  (BKJD)





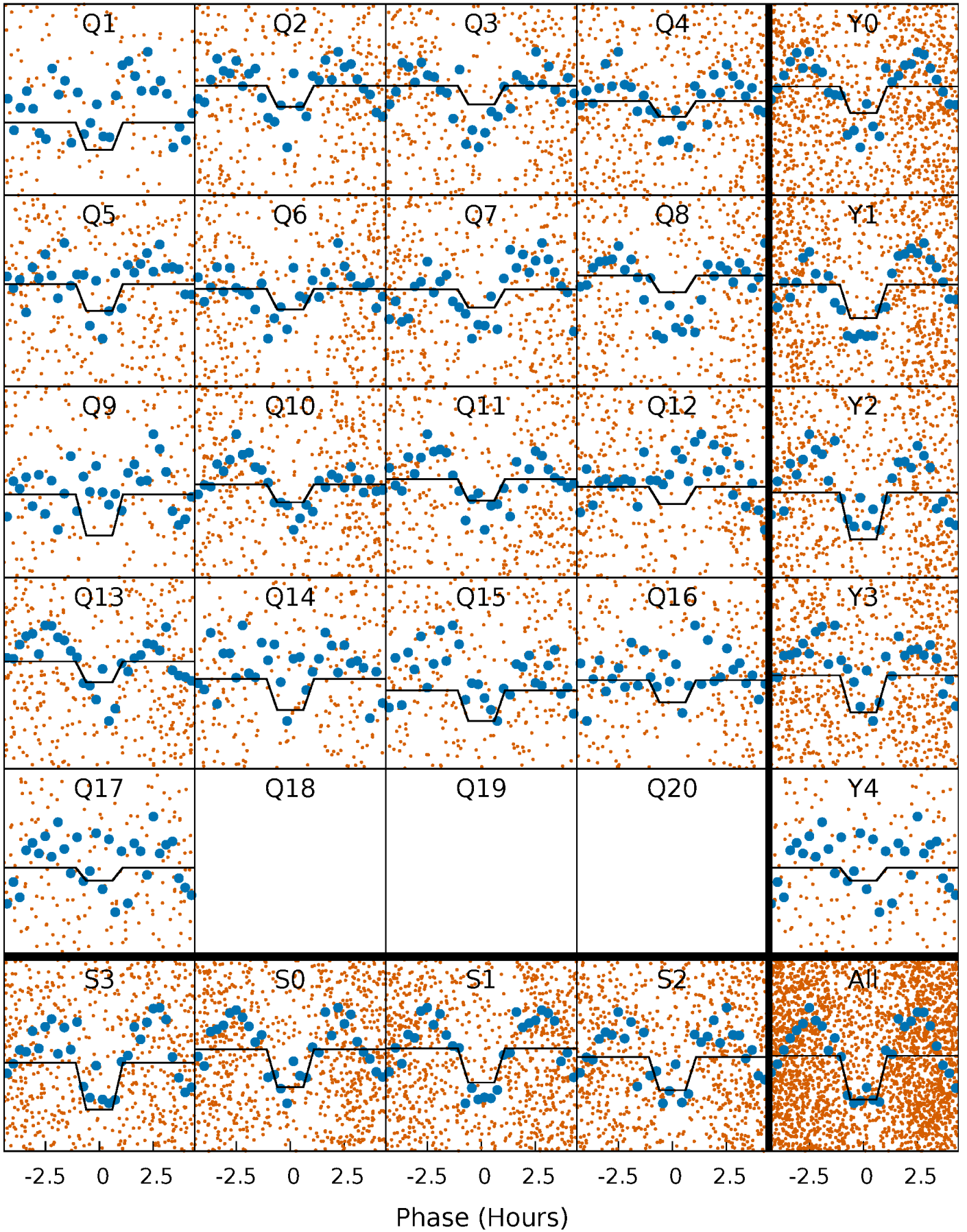
# DV Quarter-Phased Transit Curves

TCE 009052849-01   P= 0.786583 Days    $T_0=131.725146$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

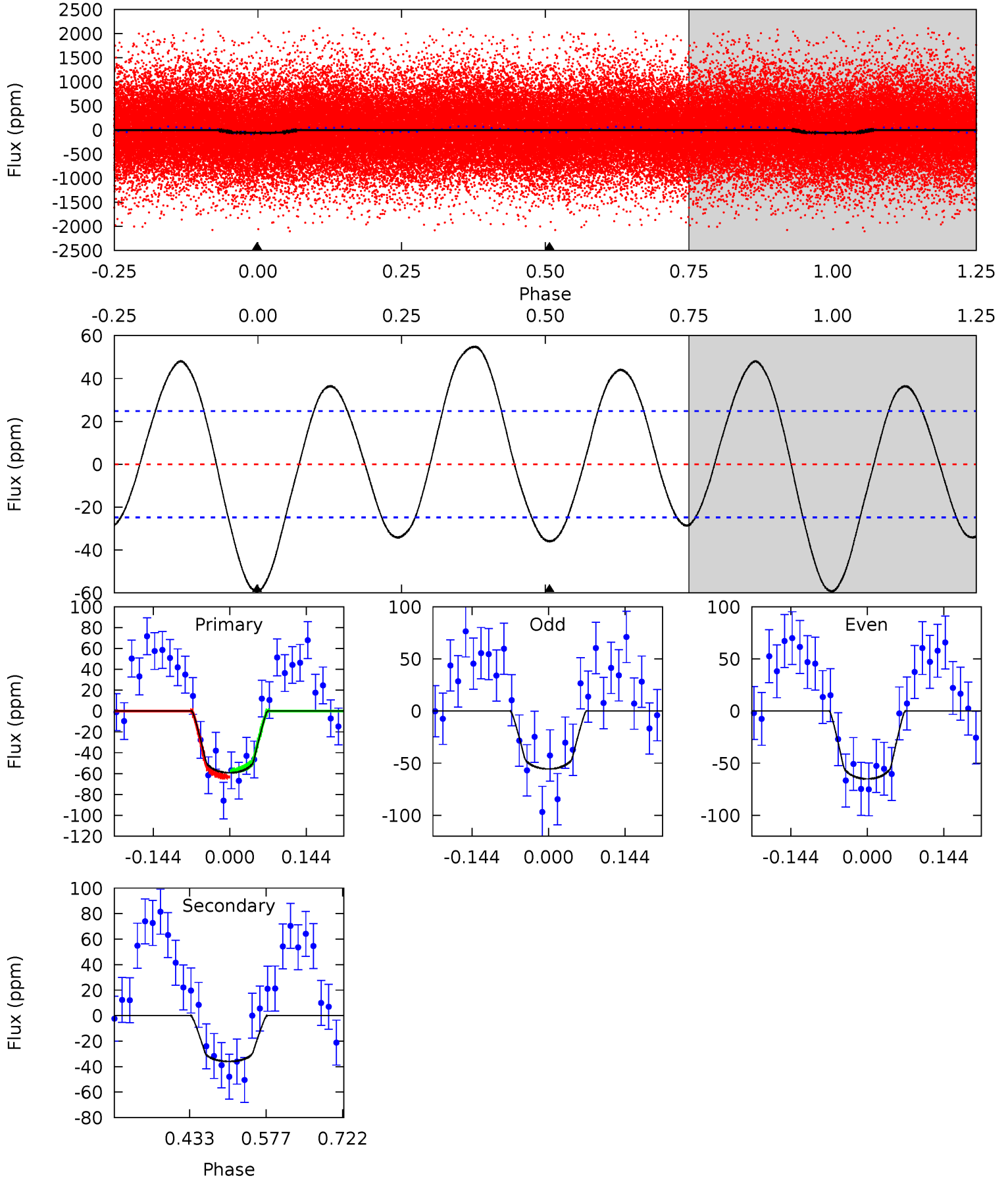
TCE 009052849-01   P= 0.786586 Days    $T_0=131.725444$  (BKJD)



# DV Model-Shift Uniqueness Test

009052849-01, P = 0.786583 Days, E = 130.938563 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
10.7	6.51	0	0	4.49	1.46	4.69	10.7	10.7	6.51	6.51	0.87	0.72	0.48	0.54

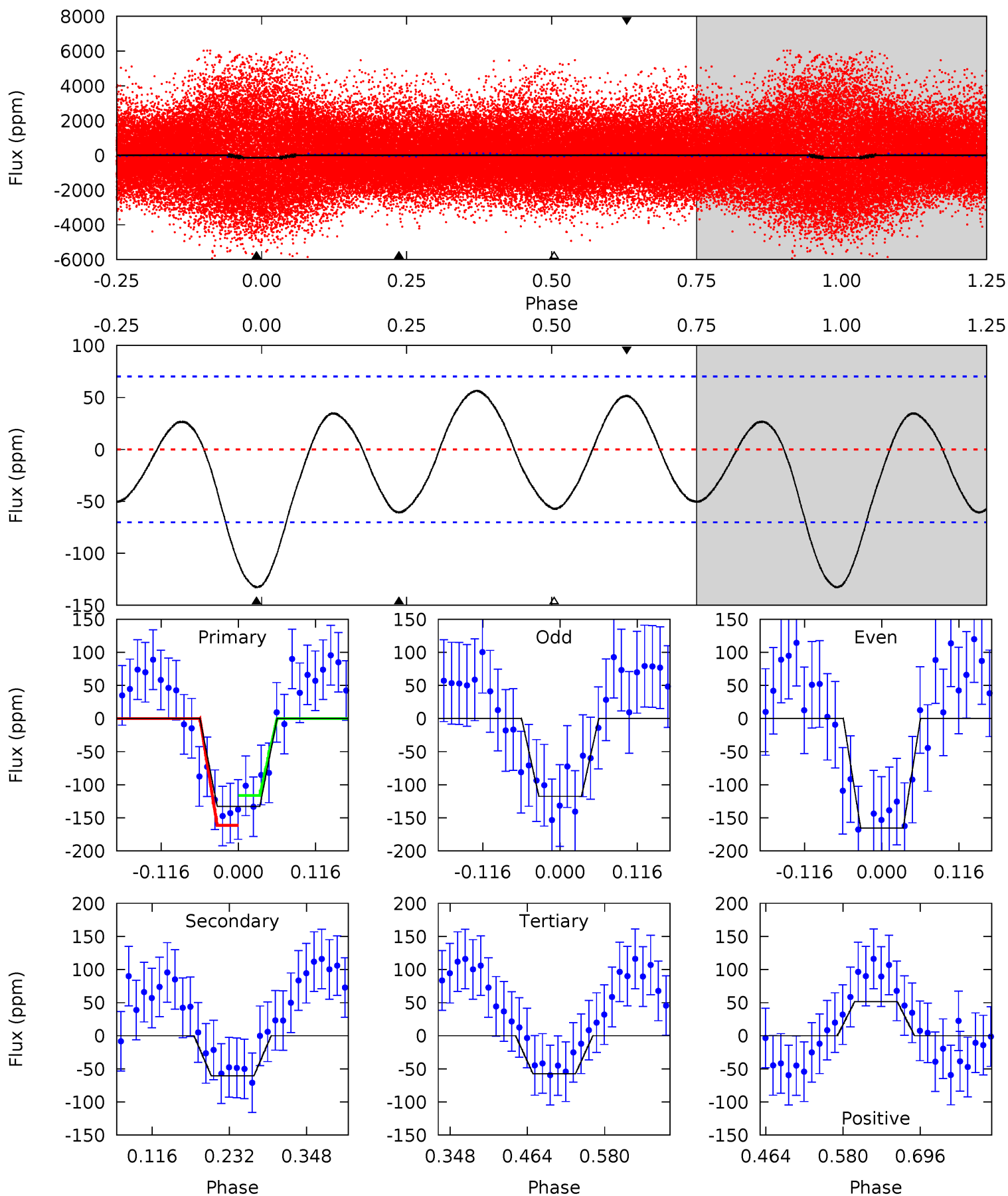




# Alt Model-Shift Uniqueness Test

009052849-01, P = 0.786586 Days, E = 130.938858 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
8.58	3.92	3.70	3.33	4.53	1.57	2.37	4.87	5.24	0.22	0.59	1.56	0.25	0.30	1.50





### Stellar Parameters For KIC 009052849

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$6467^{+155}_{-214}$	$4.224^{+0.153}_{-0.187}$	$-0.200^{+0.250}_{-0.300}$	$1.386^{+0.417}_{-0.313}$	$1.175^{+0.188}_{-0.169}$	$0.622^{+0.498}_{-0.322}$
	+2%/-3%	+4%/-4%	+125%/-150%	+30%/-23%	+16%/-14%	+80%/-52%
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 009052849-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	$A_{obs}$
DV	$-36 \pm 6$	$1.35^{+0.51}_{-0.49}$	$3549^{+306}_{-226}$	$5247^{+1263}_{-739}$	$3.371^{+4.562}_{-1.633}$
Alt.	$-61 \pm 15$	$1.37^{+0.53}_{-0.48}$	$3545^{+290}_{-246}$	$5914^{+1401}_{-909}$	$5.420^{+6.857}_{-2.793}$

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

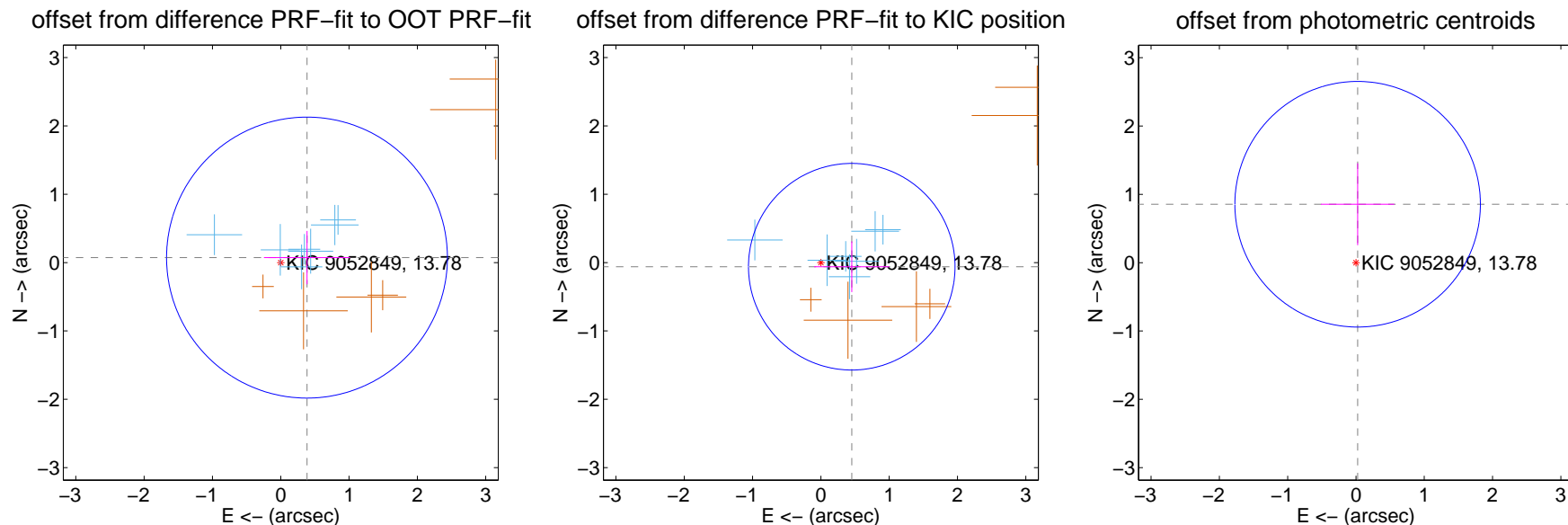
## DV Centroid Data

Supplemental centroid analysis for 009052849-01. Kepler magnitude: 13.78. Transit SNR 9.12

There are 7 quarters with good PRF difference image offsets

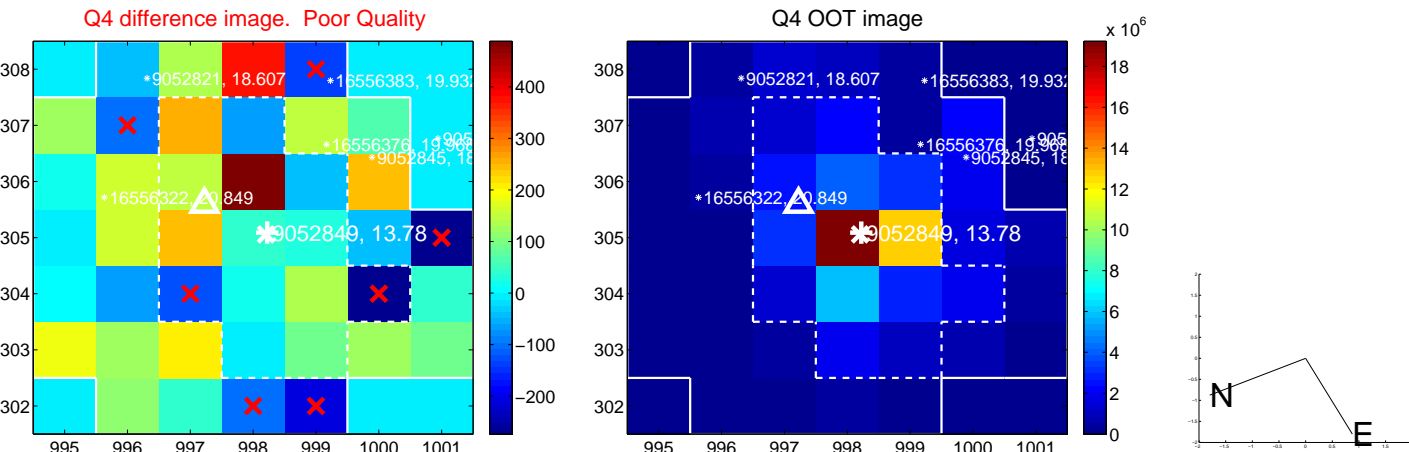
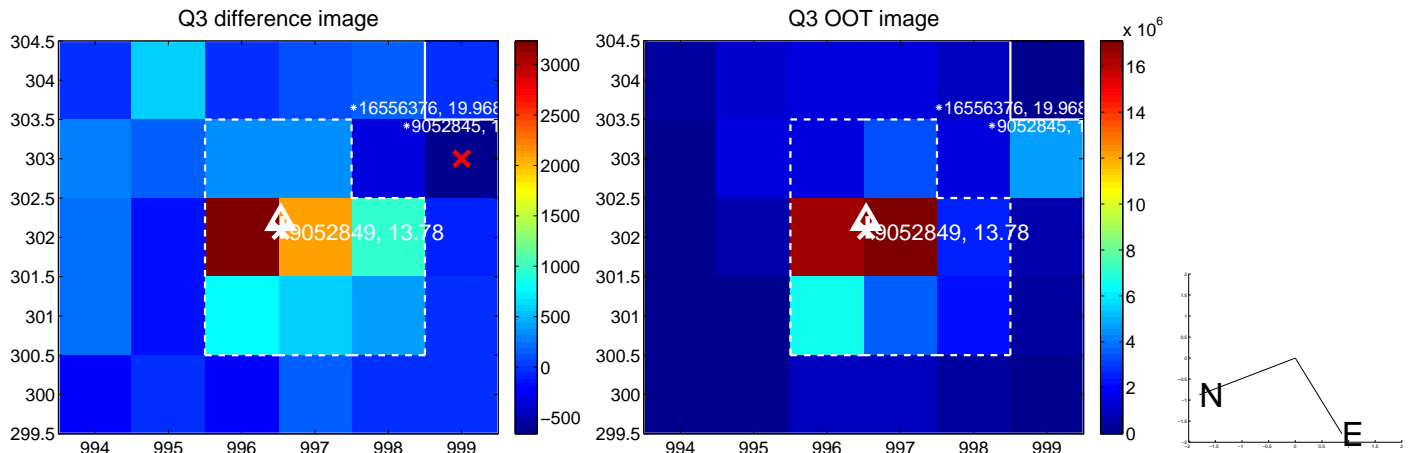
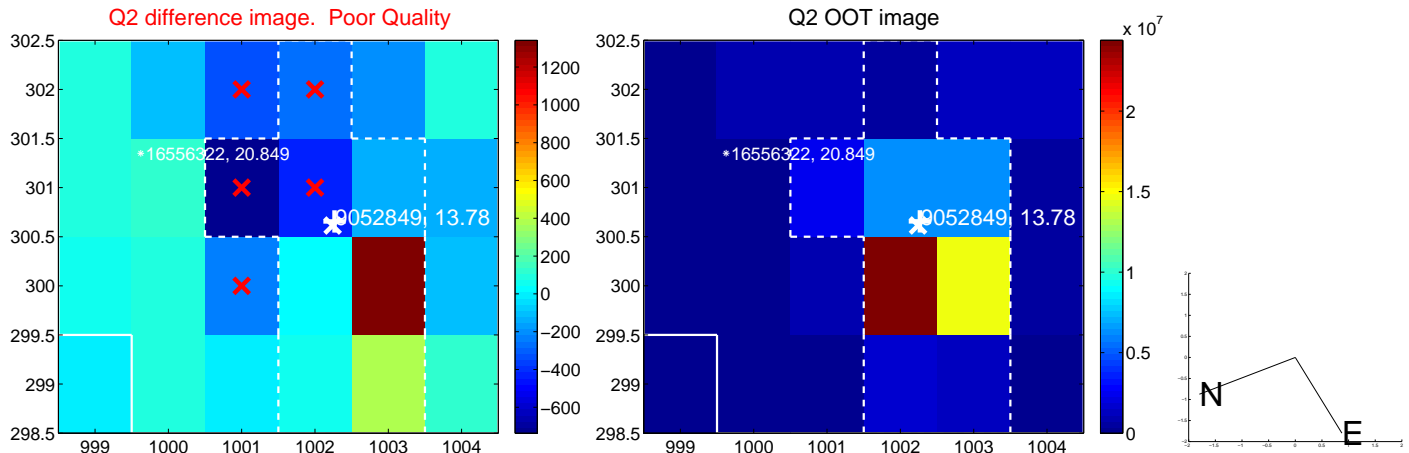
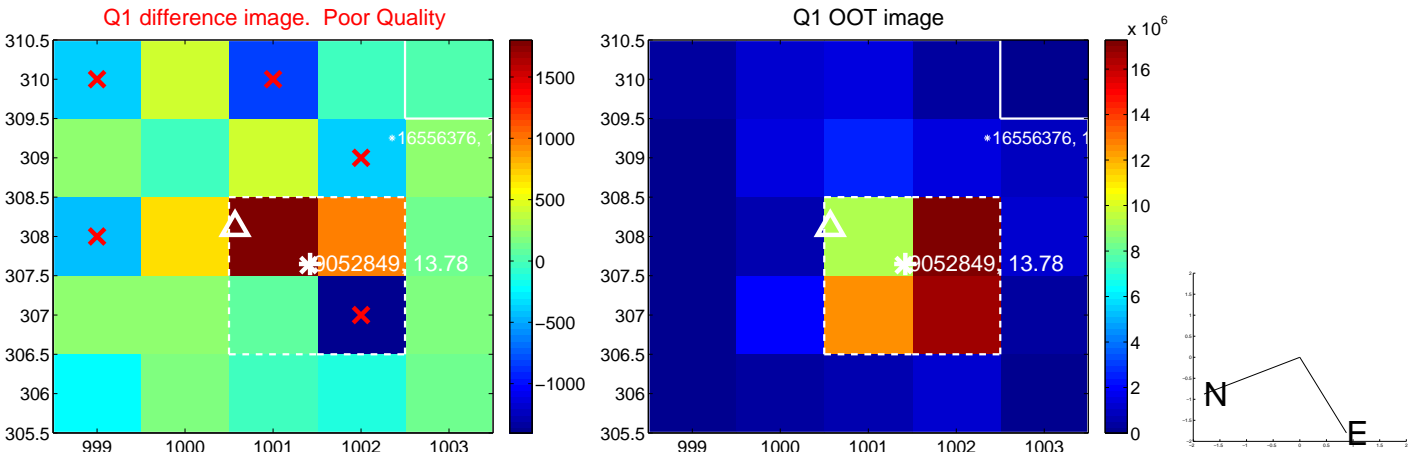
The direct PRF centroid is offset from the target star catalog position by about 0.09 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.391 \pm 0.685$	0.57	$-0.384 \pm 0.630$	$0.073 \pm 0.390$
PRF-fit source offset from KIC position	$0.456 \pm 0.504$	0.91	$-0.452 \pm 0.551$	$-0.061 \pm 0.371$
photometric centroid source offset	$0.86 \pm 0.60$	1.43	$-0.02 \pm 0.54$	$0.86 \pm 0.60$



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.

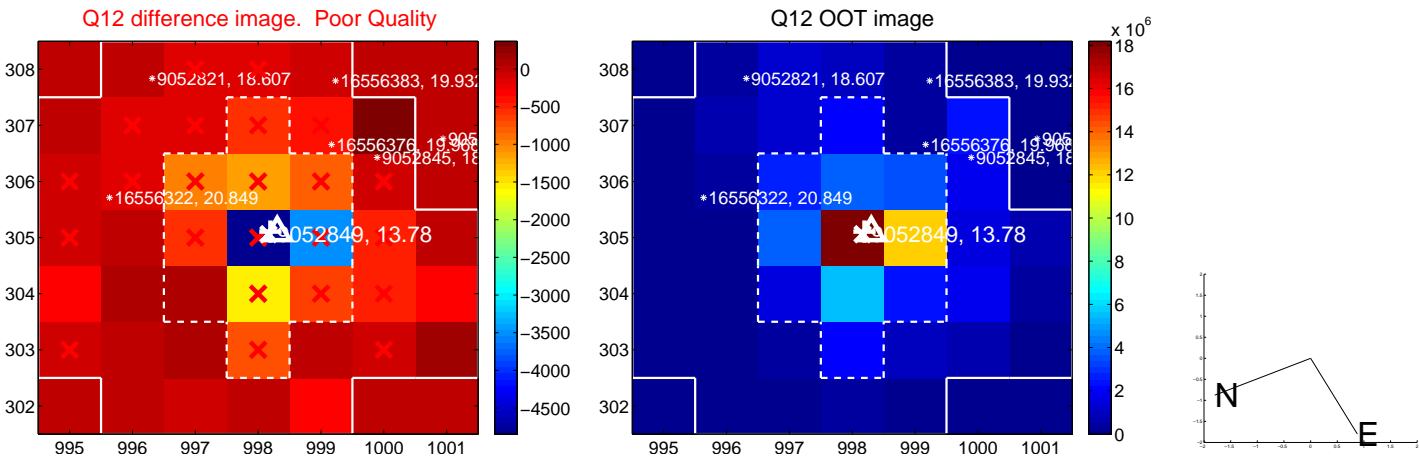
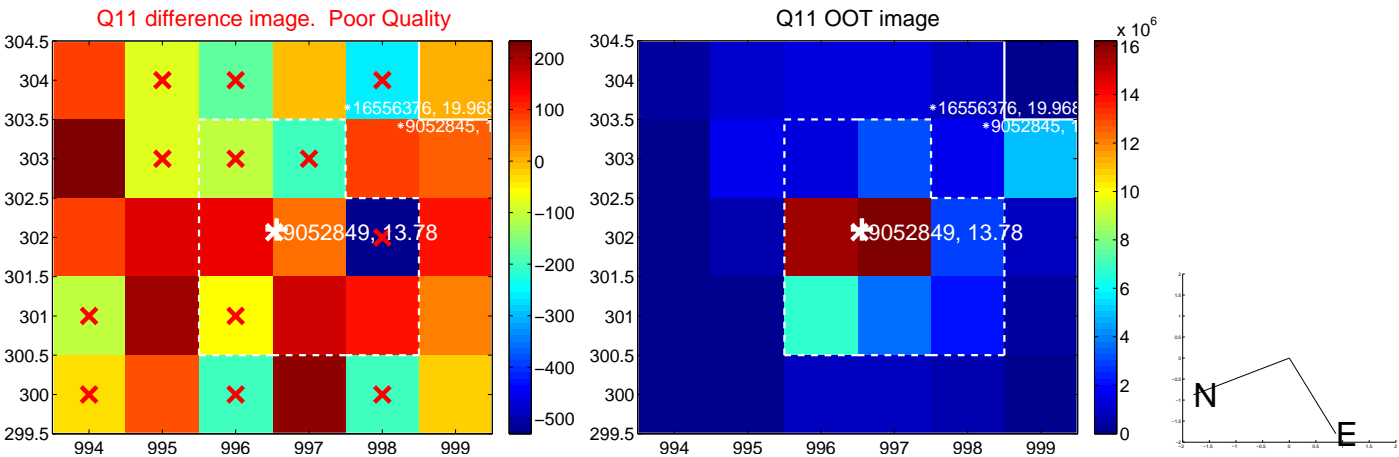
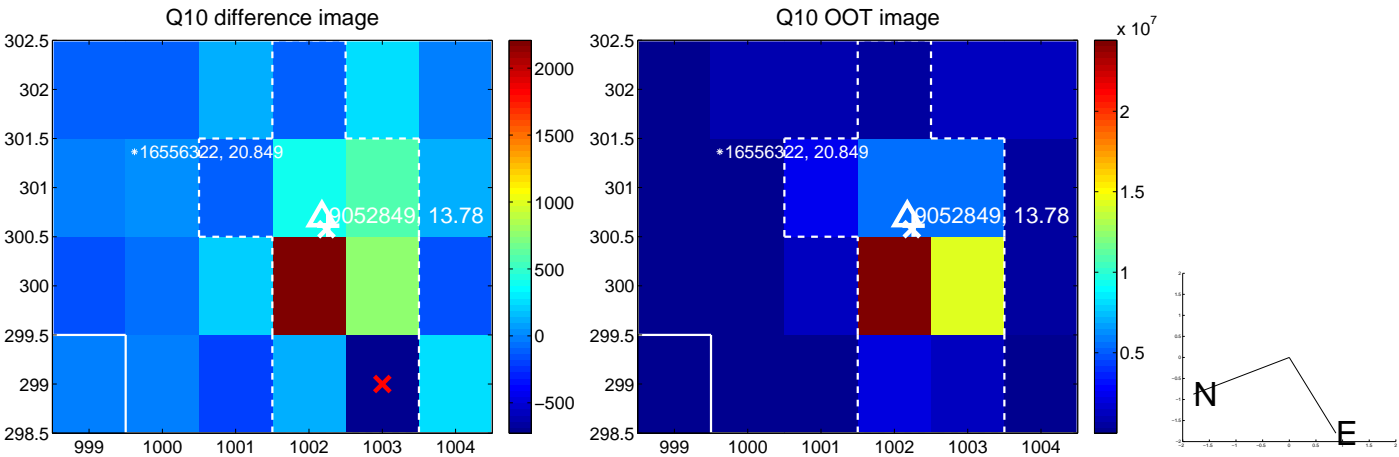
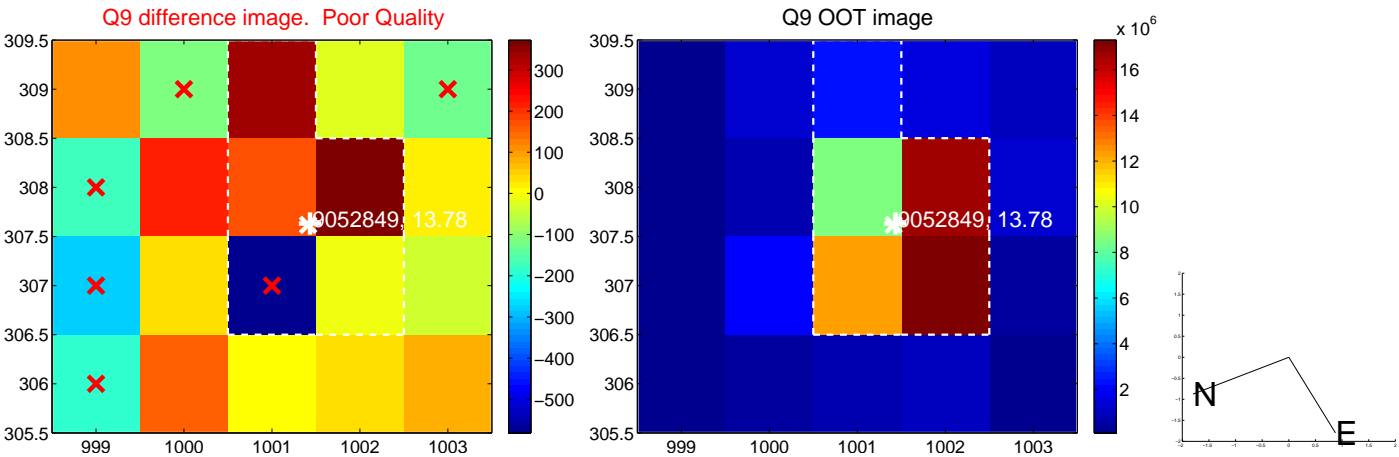
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



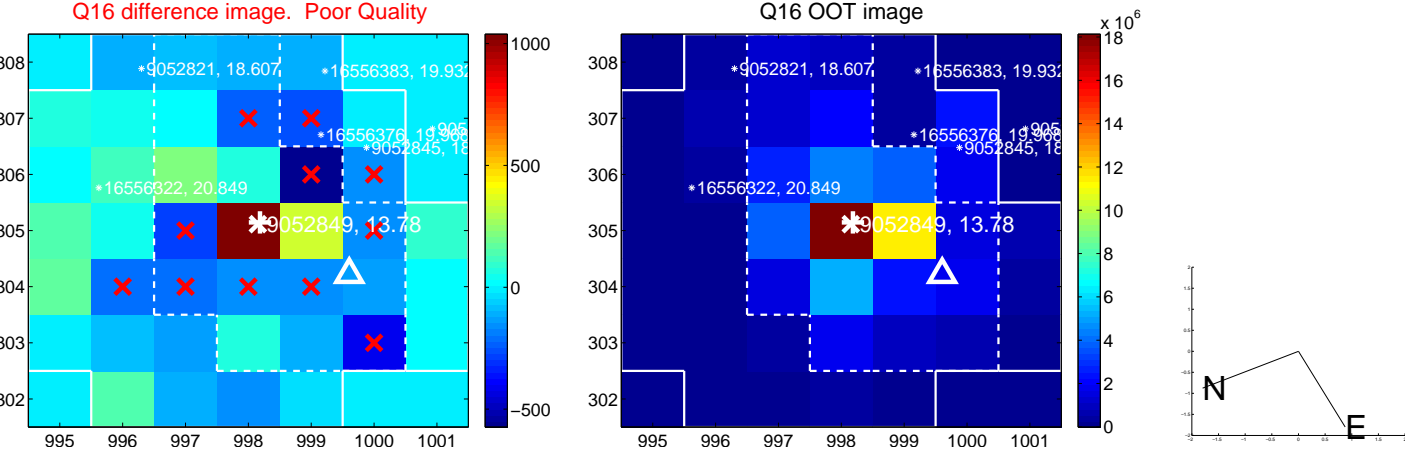
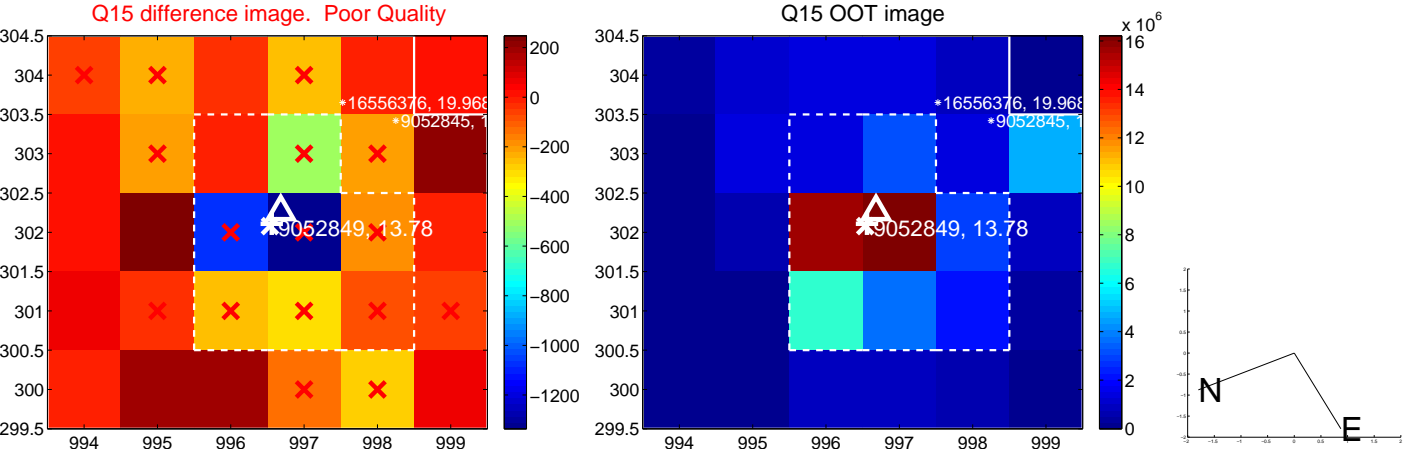
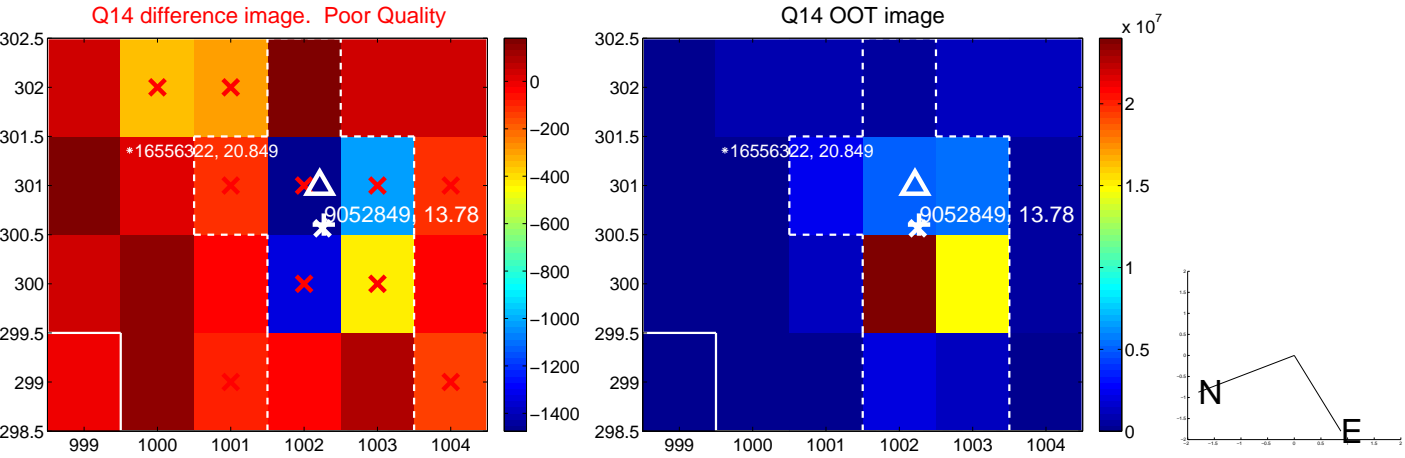
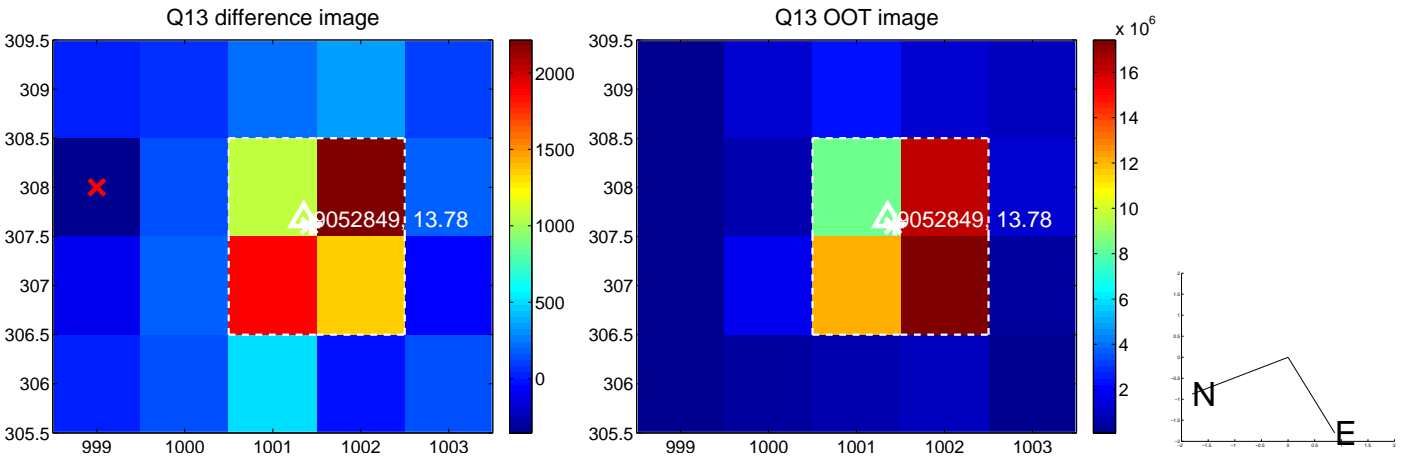




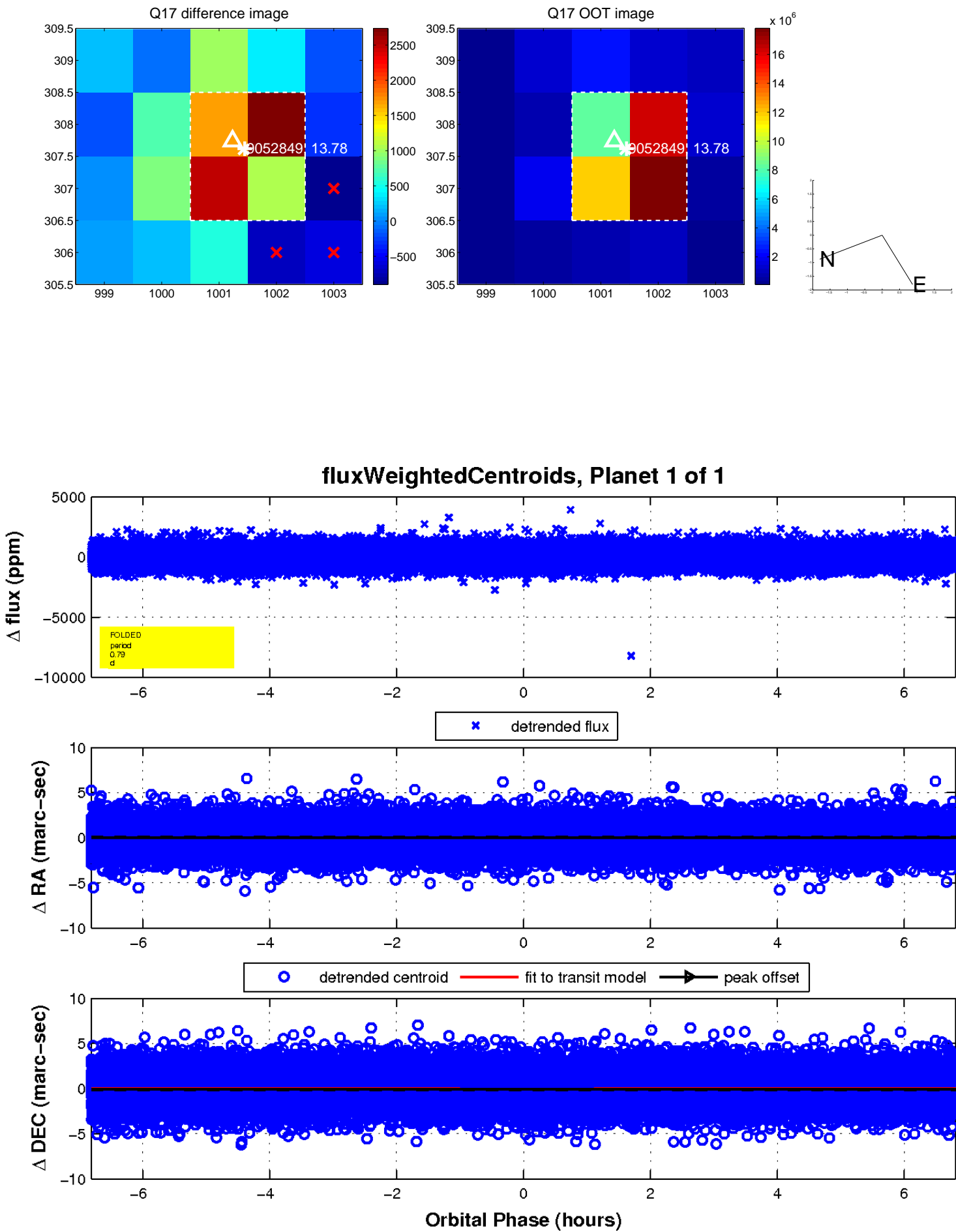
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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.



# UKIRT Image

Declination

