

# KIC 008377201

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
008377201-01	OBS	No	4.139386	135.174926	34.7	11.998	12.8	11.3	1.77	6253	1.24	1438.20

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008377201-01	OBS	FP	0.00	1	0	0	0	LPP_DV

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

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

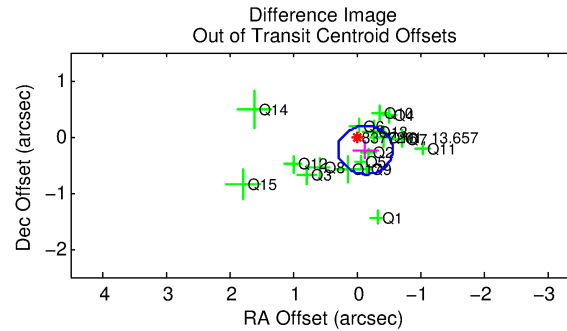
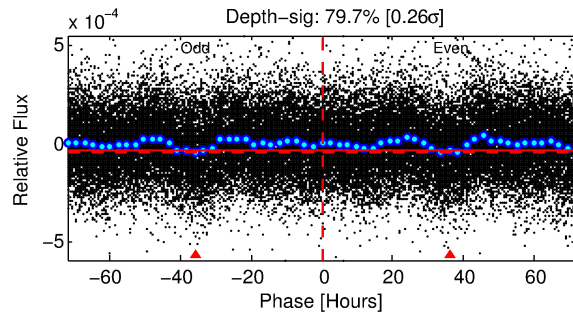
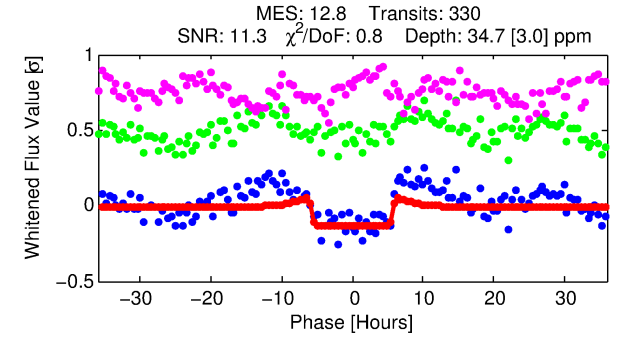
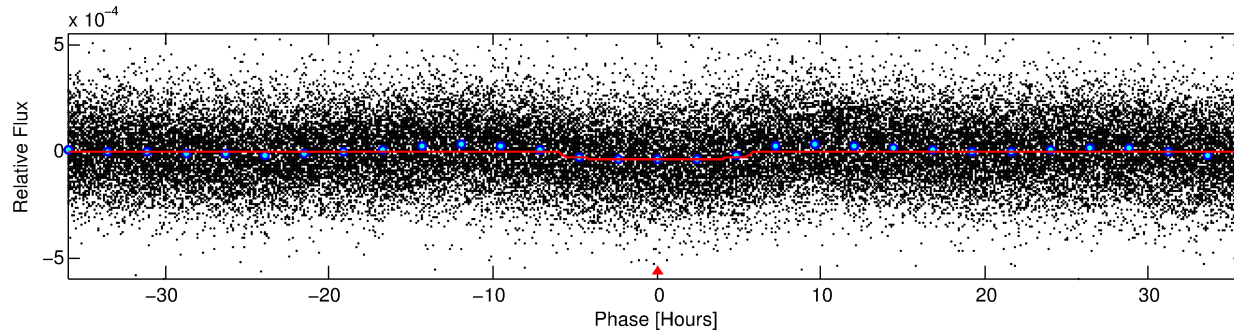
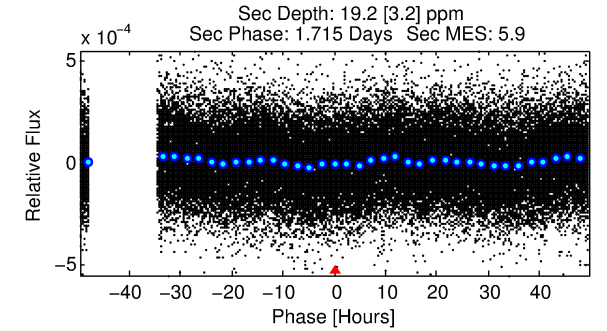
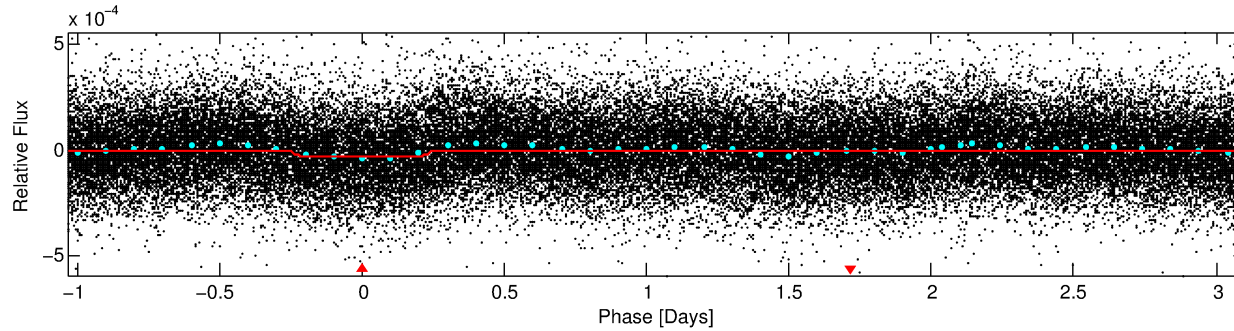
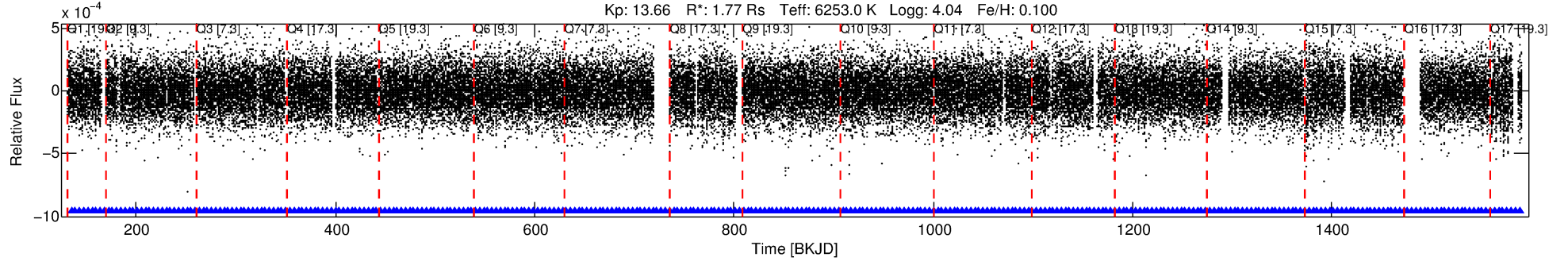
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 008377201-01

No Significant Match Found

# DV One-Page Summary

KIC: 8377201 Candidate: 1 of 1 Period: 4.139 d



## DV Fit Results:

Period = 4.13939 [0.00005] d  
Epoch = 135.1749 [0.0076] BKJD  
Rp/R\* = 0.0064 [0.0008]  
a/R\* = 1.46 [0.51]  
b = 0.91 [0.12]  
Seff = 1438.20 [746.29]  
Teff = 1570 [204] K  
Rp = 1.24 [0.42] Re  
a = 0.0546 [0.0167] AU  
Ag = 20.53 [11.92] [1.64σ]  
Teffp = 5168 [441] K [7.41σ]

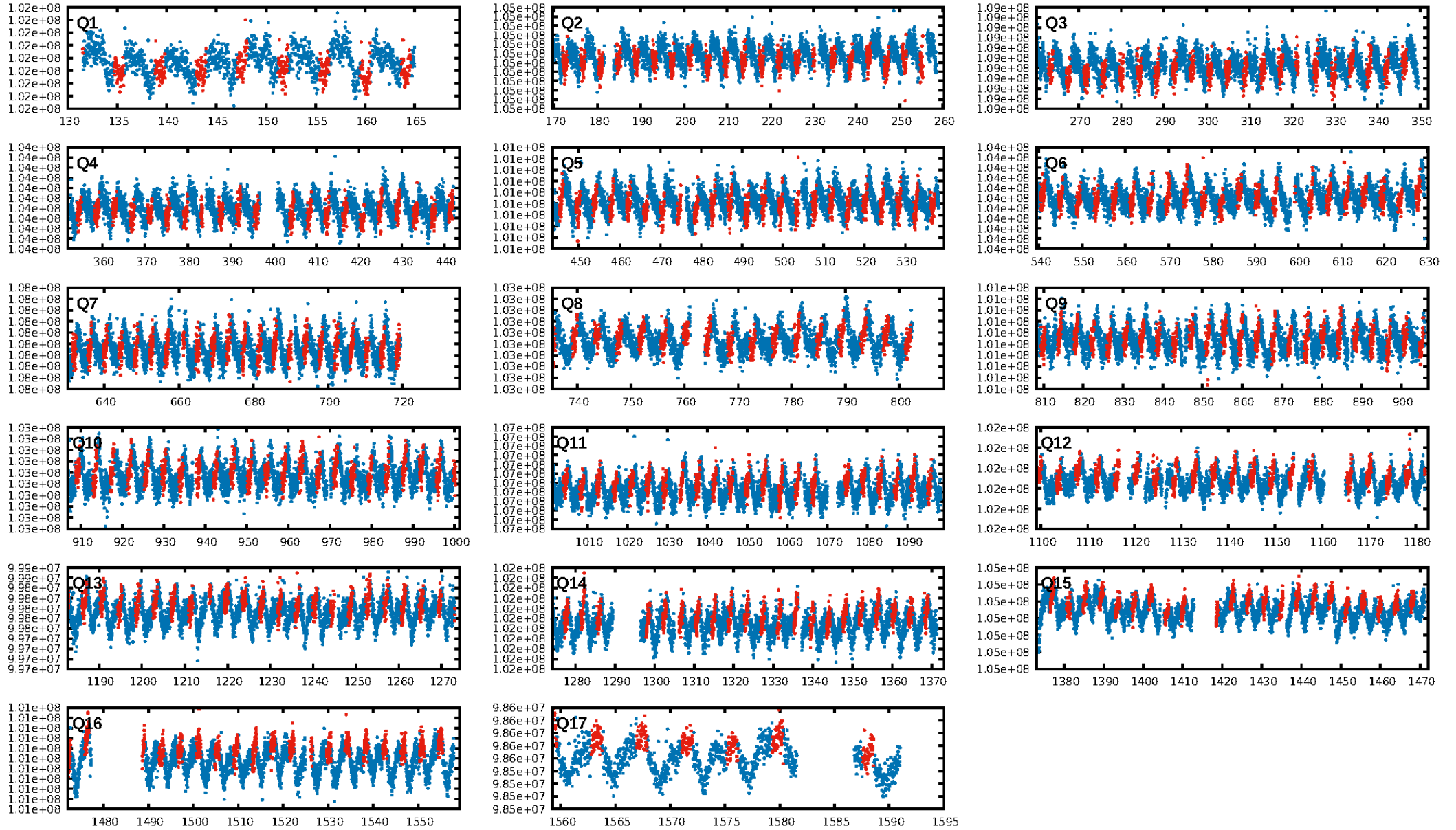
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: N/A  
ModelChiSquareGof-sig: N/A  
Bootstrap-pfa: 3.79e-29  
RollingBand-fgt: 1.00 [315/315]  
GhostDiagnostic-chr: 1.535  
Centroid-sig: 43.7%  
Centroid-so: 0.475 arcsec [0.74σ]  
OotOffset-rm: 0.277 arcsec [1.94σ]  
OotOffset-st: 4/4/4/5 [17]  
KicOffset-rm: 0.266 arcsec [1.81σ]  
KicOffset-st: 4/4/4/5 [17]  
DiffImageQuality-fgm: 0.82 [14/17]  
DiffImageOverlap-fno: 1.00 [17/17]

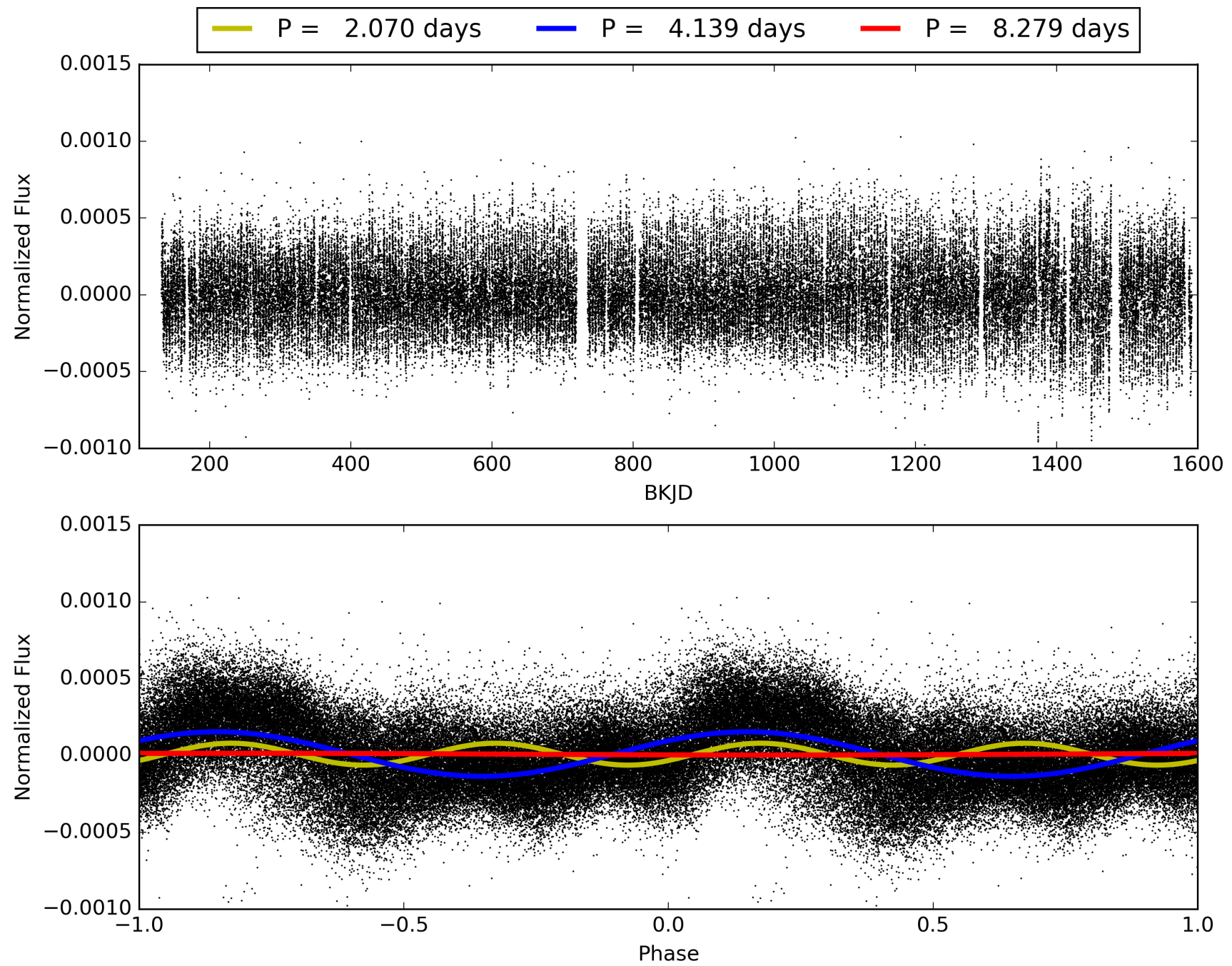
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 15:26:05 Z

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

# TCE 008377201-01, PDC Light Curves



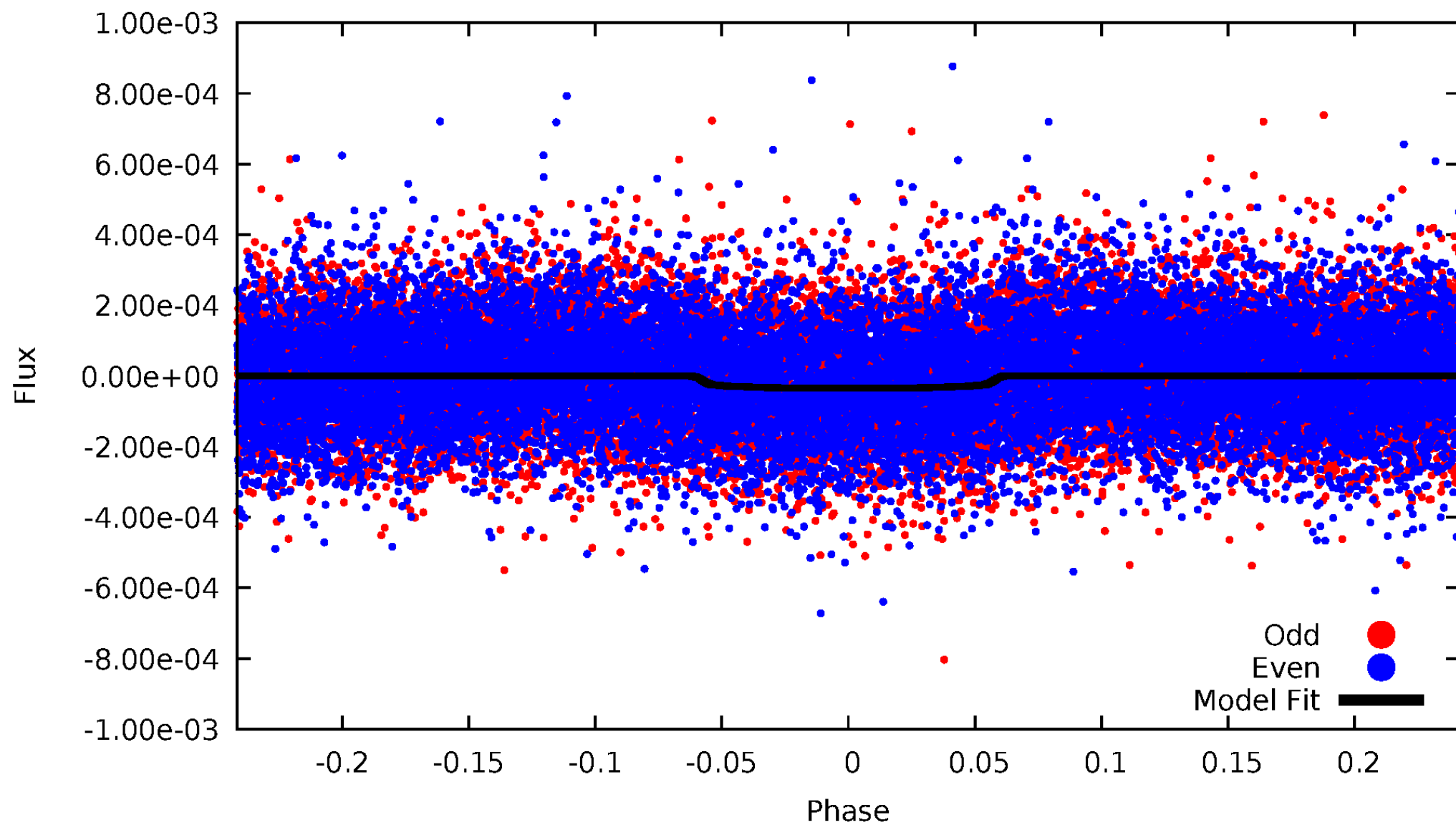
TCE 008377201-01





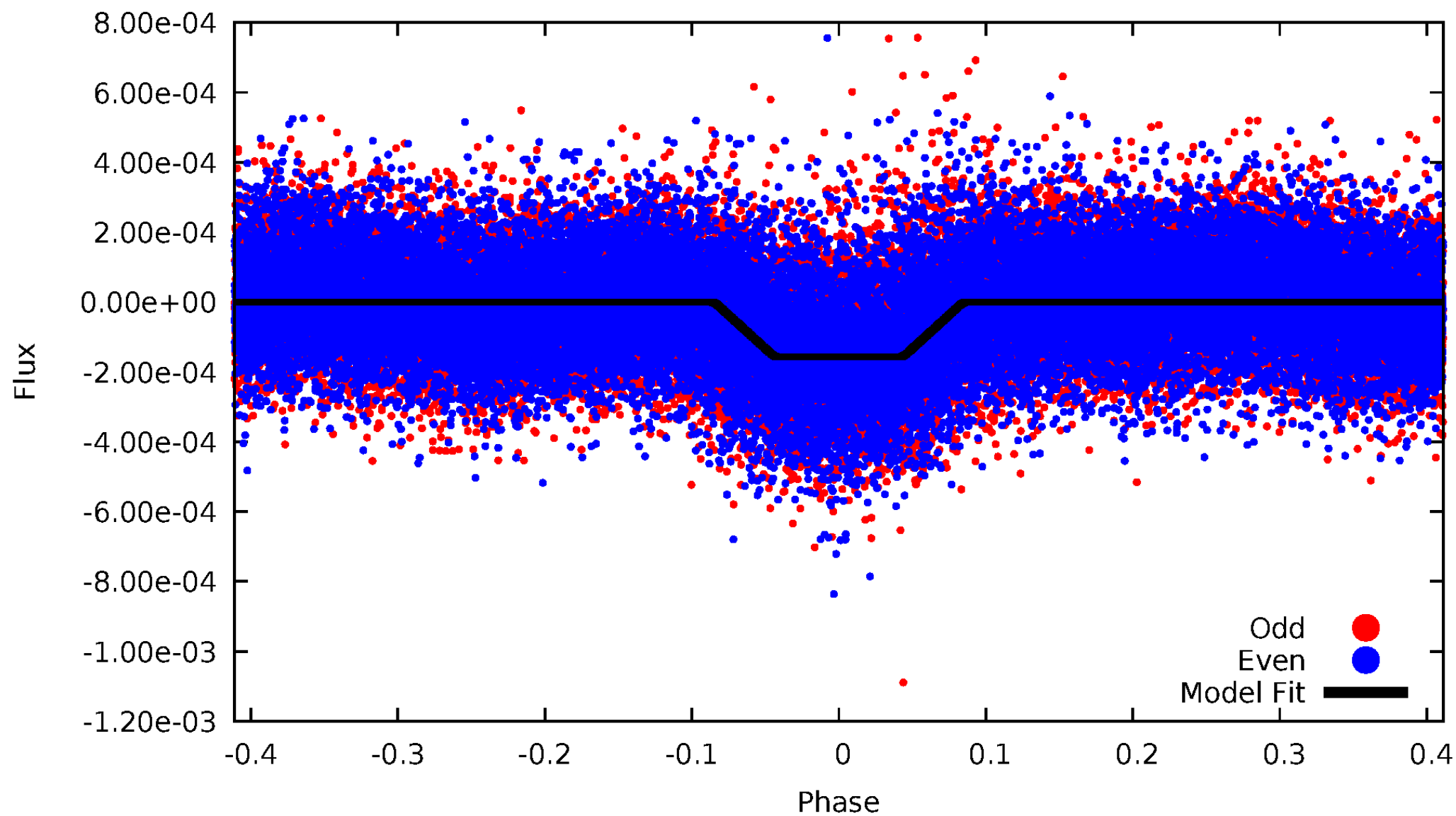
# DV Odd/Even

TCE 008377201-01



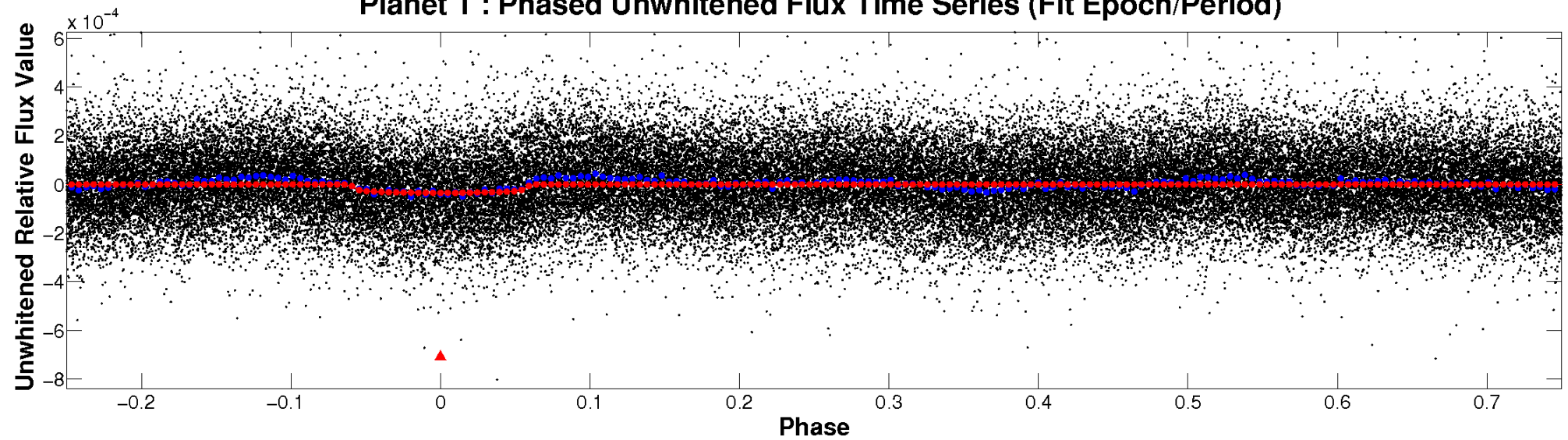
# ALT Odd/Even

TCE 008377201-01

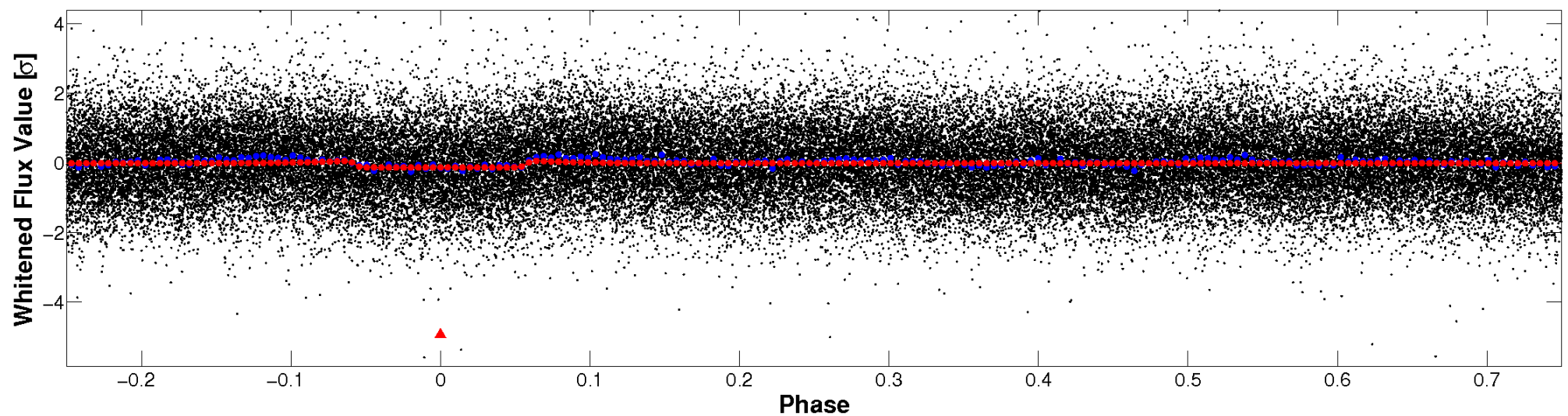


# Non-Whitened Vs. Whitened Light Curve

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

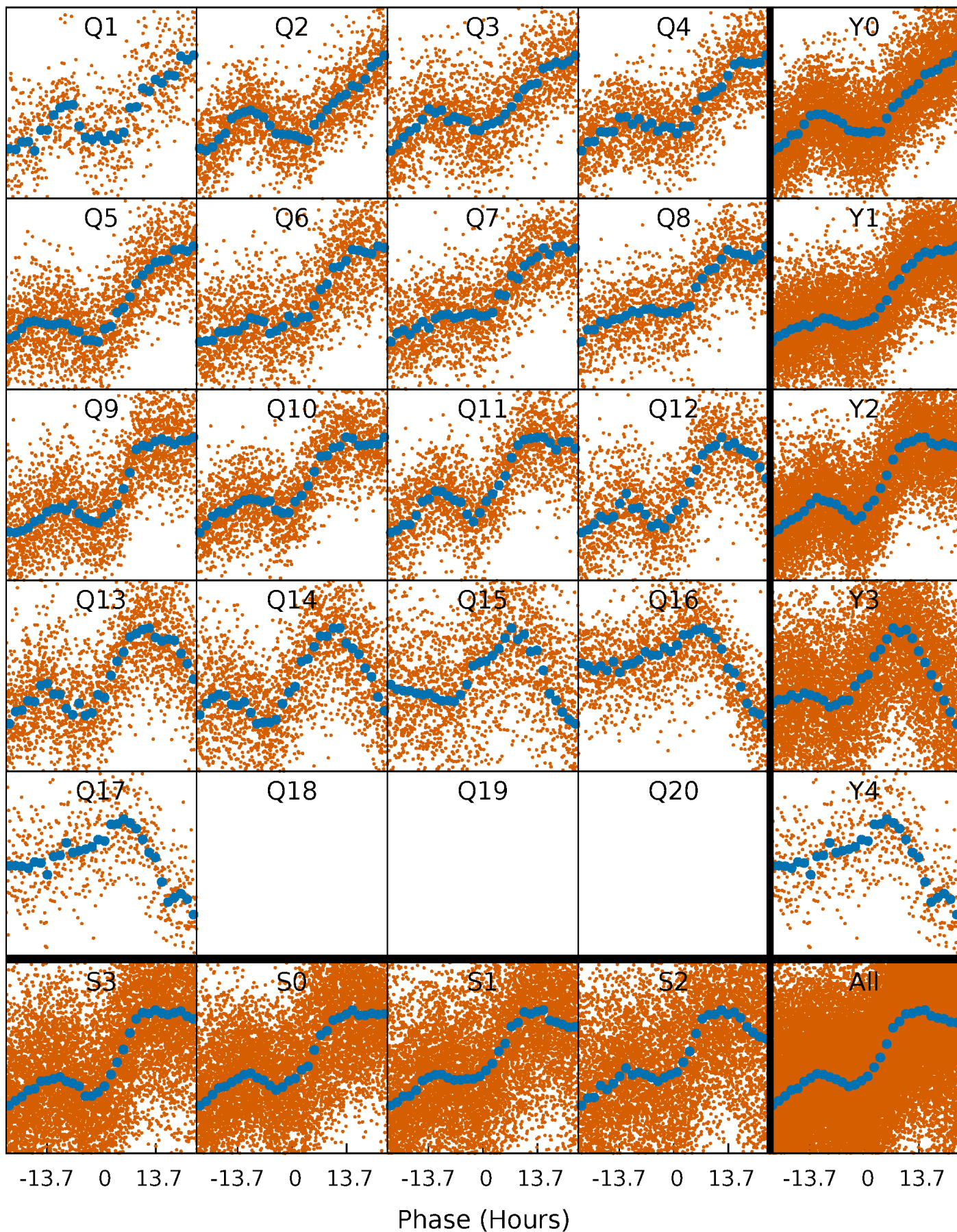


**Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)**



# PDC Quarter-Phased Transit Curves

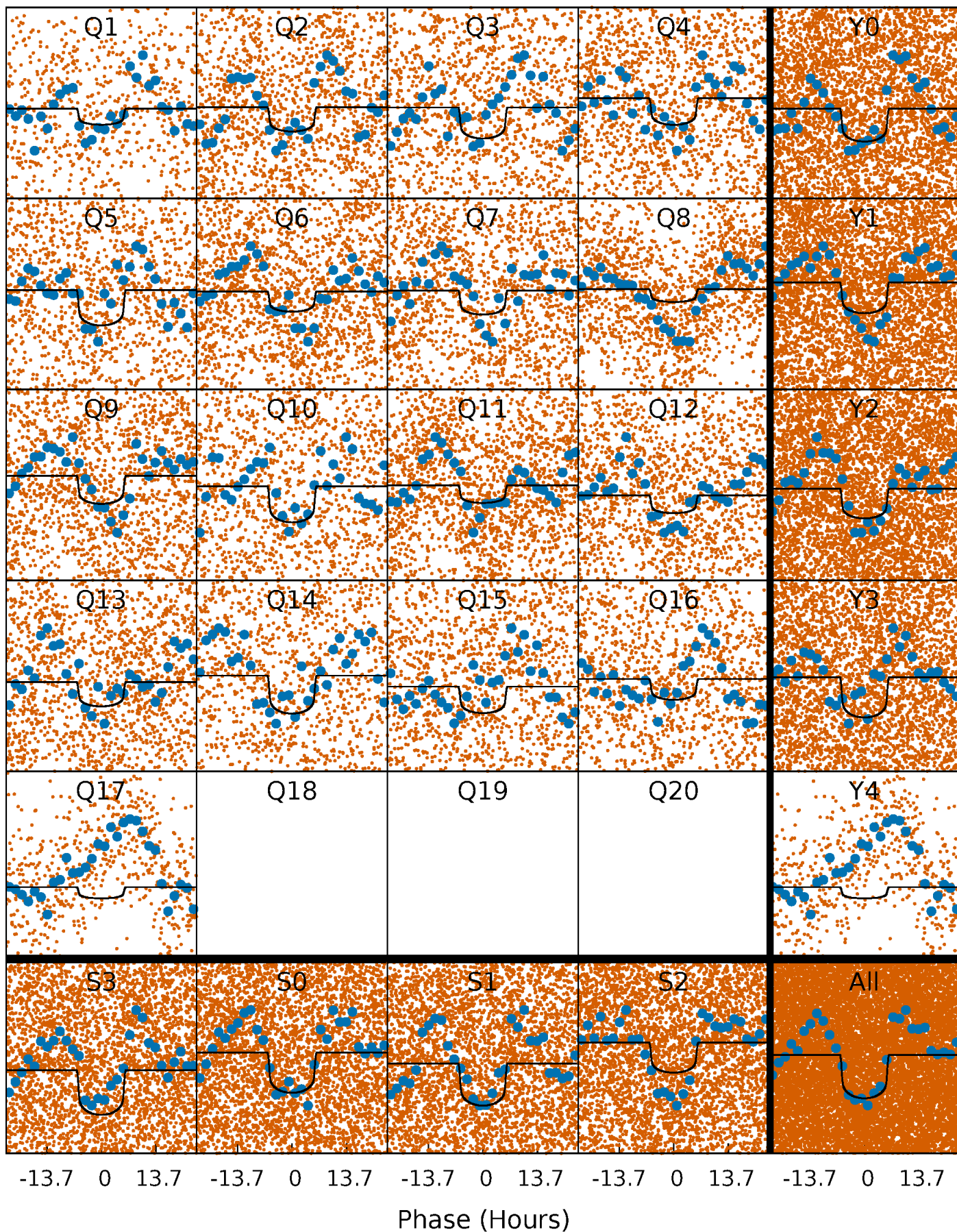
TCE 008377201-01 P= 4.139386 Days  $T_0=135.174926$  (BKJD)





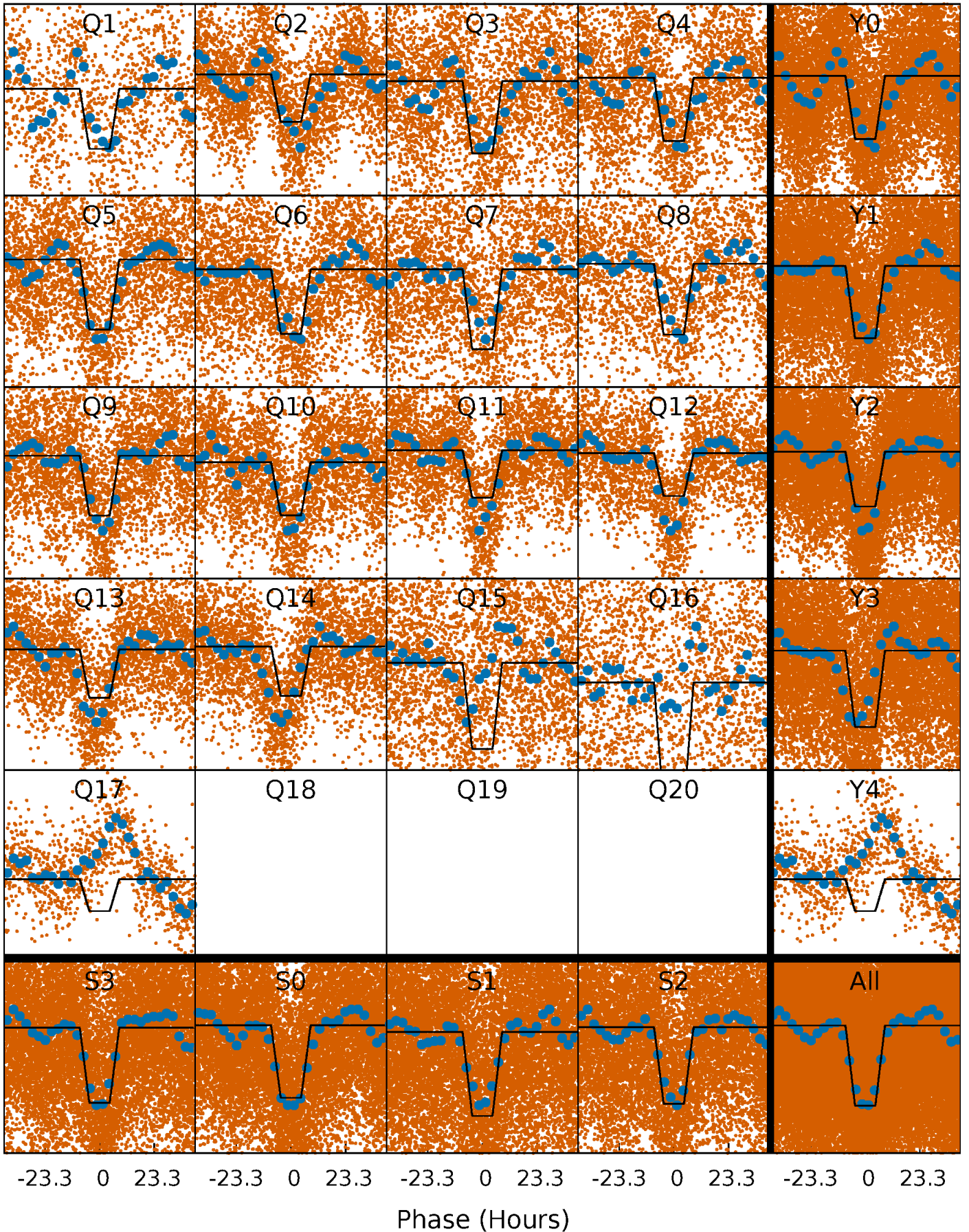
# DV Quarter-Phased Transit Curves

TCE 008377201-01 P= 4.139386 Days  $T_0=135.174926$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

TCE 008377201-01 P= 4.139343 Days  $T_0=135.151656$  (BKJD)

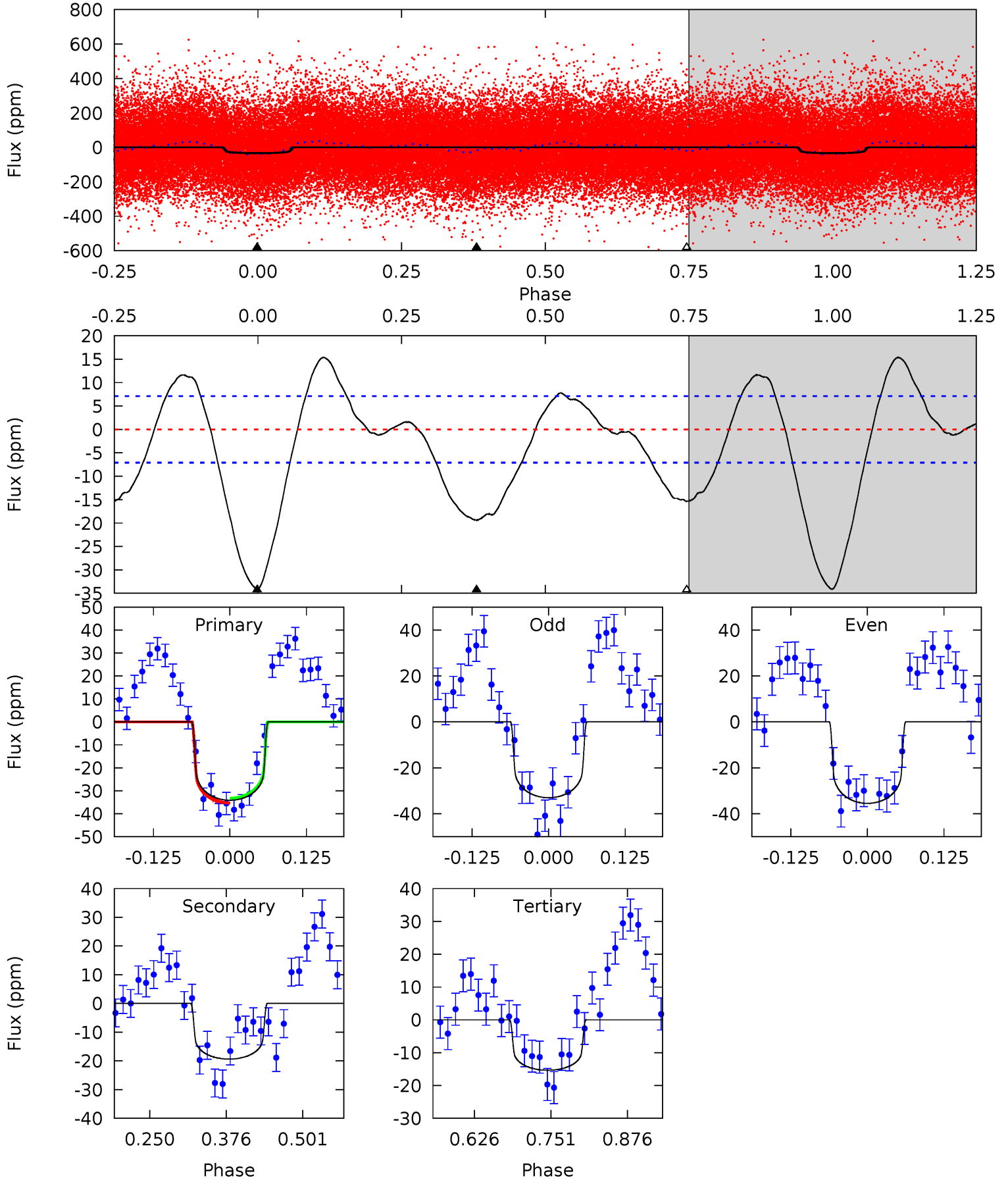




# DV Model-Shift Uniqueness Test

008377201-01, P = 4.139386 Days, E = 131.035540 Days

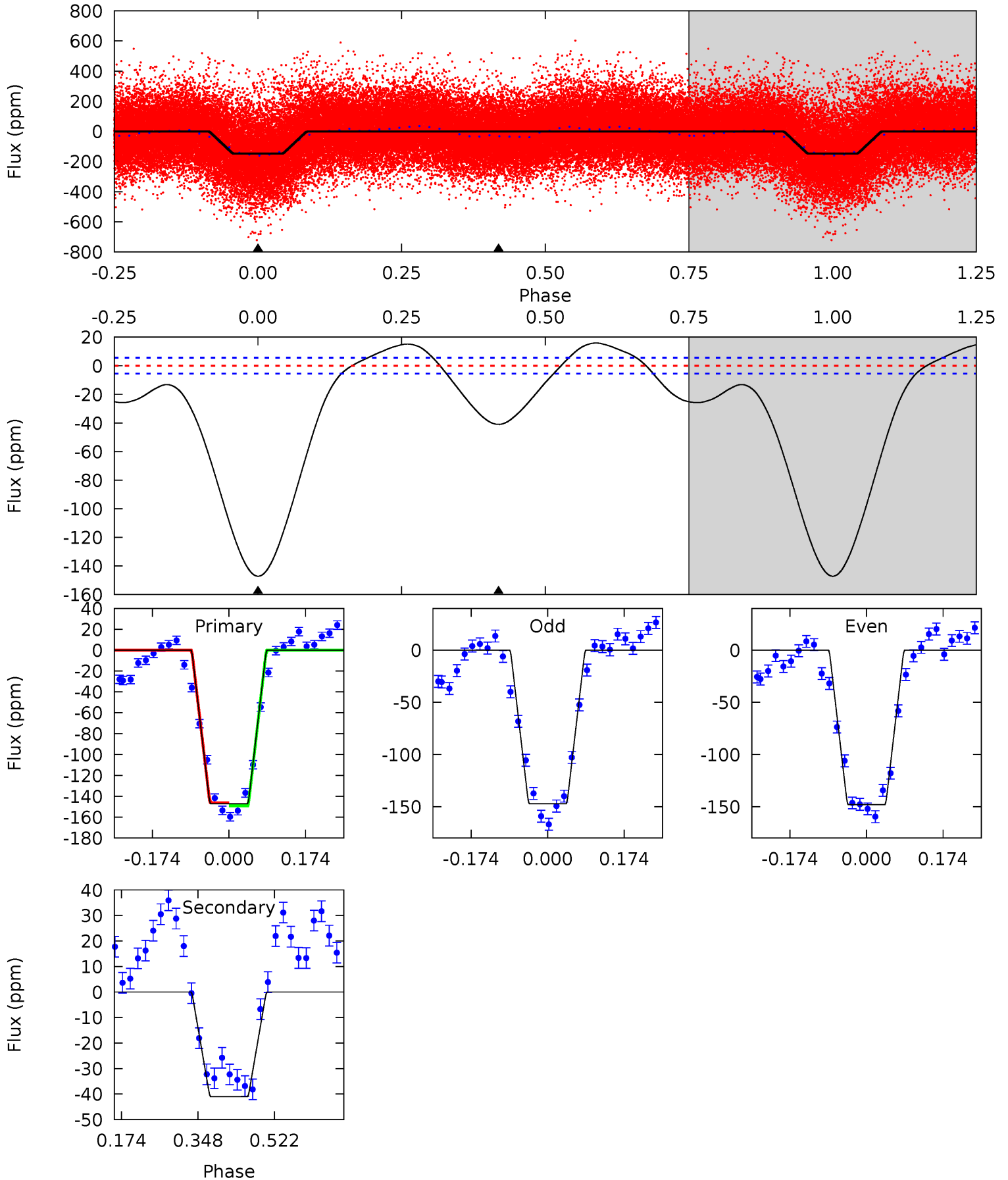
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
21.7	12.3	9.77	0	4.52	1.53	5.01	12.0	21.7	2.57	12.3	0.78	0.99	0.31	0.65



# Alt Model-Shift Uniqueness Test

008377201-01, P = 4.139343 Days, E = 131.012313 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
117.4	32.7	0	0	4.45	1.36	12.1	117.4	117.4	32.7	32.7	0.29	0.90	0.10	1.24





### Stellar Parameters For KIC 008377201

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$6253^{+199}_{-243}$	$4.045^{+0.293}_{-0.158}$	$0.100^{+0.250}_{-0.300}$	$1.769^{+0.549}_{-0.549}$	$1.265^{+0.196}_{-0.196}$	$0.322^{+0.585}_{-0.162}$
	+3%/-4%	+7%/-4%	+250%/-300%	+31%/-31%	+15%/-15%	+182%/-50%
Source	PHO54	PHO54	PHO54	DSEP		

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

### Secondary Eclipse Parameters for KIC 008377201-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	$A_{\text{obs}}$
DV	$-19 \pm 2$	$1.20^{+0.26}_{-0.26}$	$2153^{+183}_{-194}$	$5220^{+381}_{-328}$	$22^{+14}_{-7}$
Alt.	$-41 \pm 1$	$2.30^{+0.46}_{-0.38}$	$2151^{+191}_{-200}$	$4603^{+194}_{-177}$	$13^{+6}_{-3}$

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

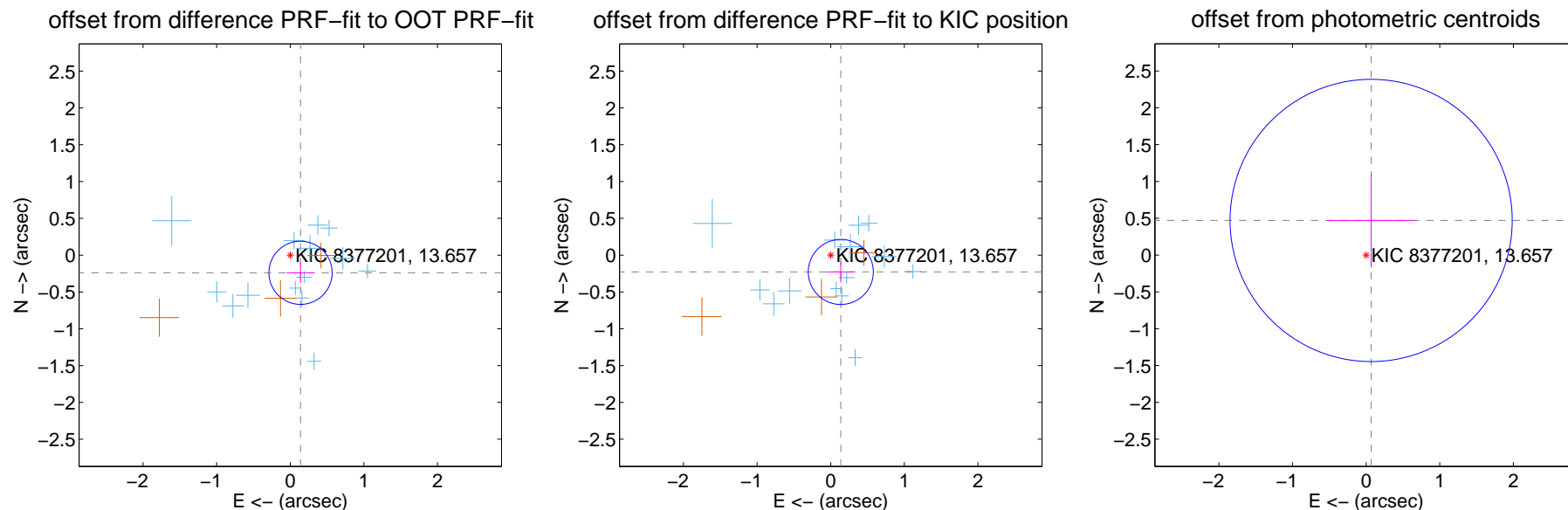
## DV Centroid Data

Supplemental centroid analysis for 008377201-01. Kepler magnitude: 13.66. Transit SNR 11.25

There are 14 quarters with good PRF difference image offsets

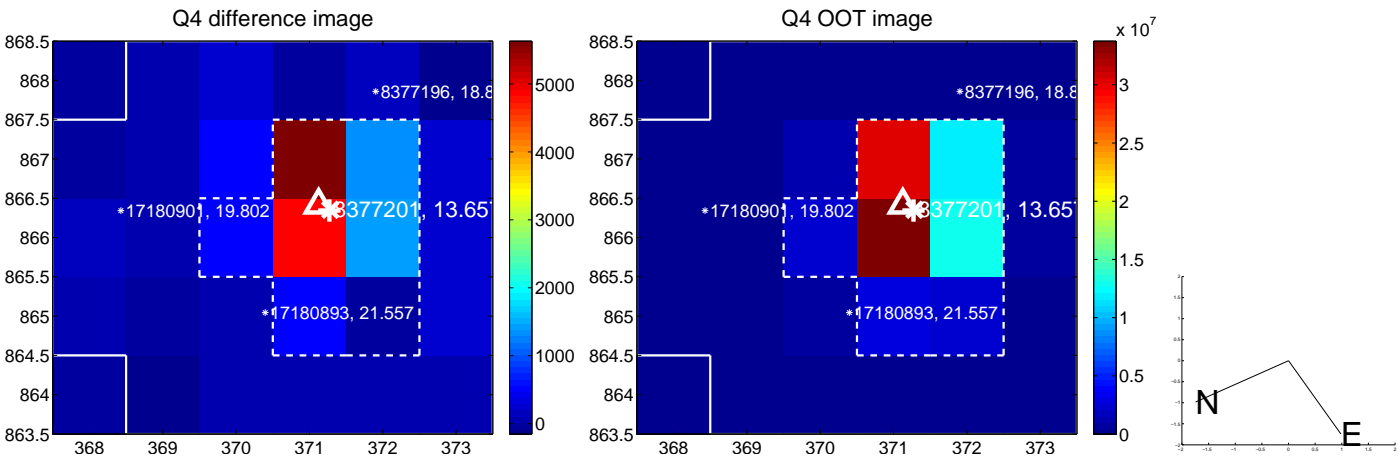
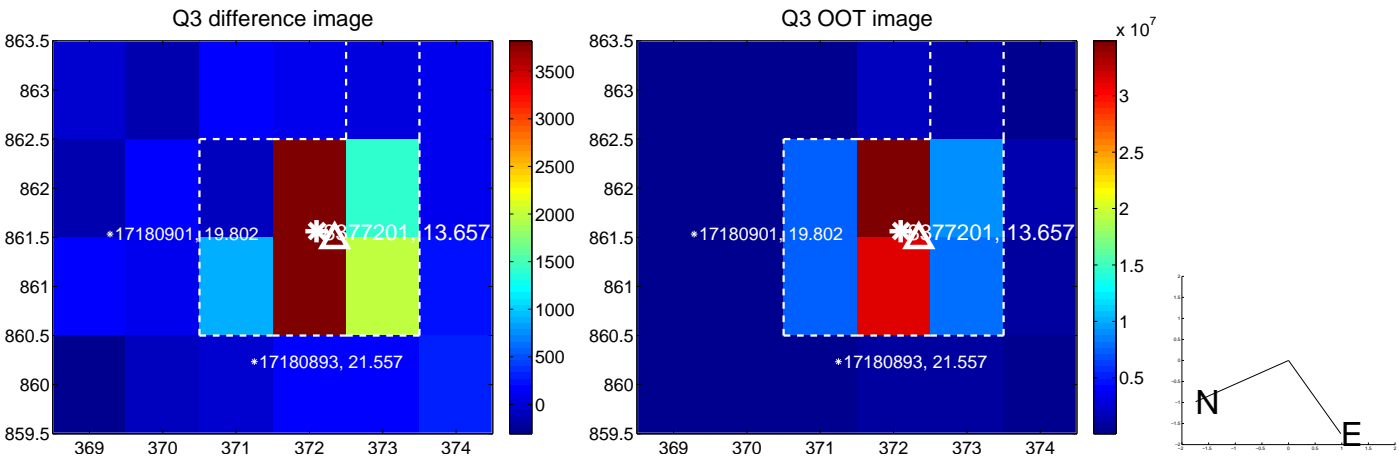
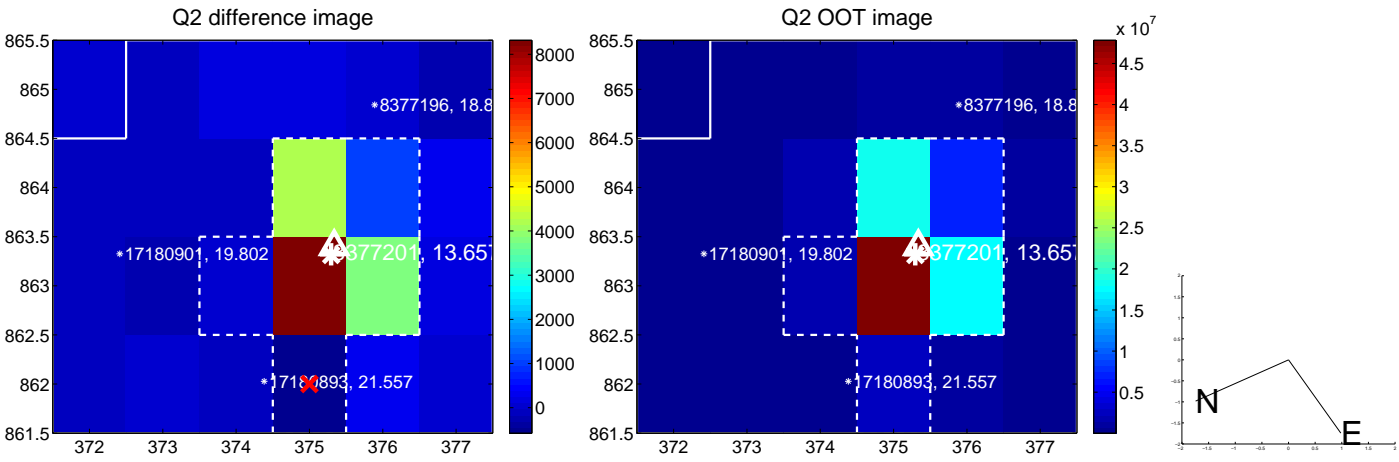
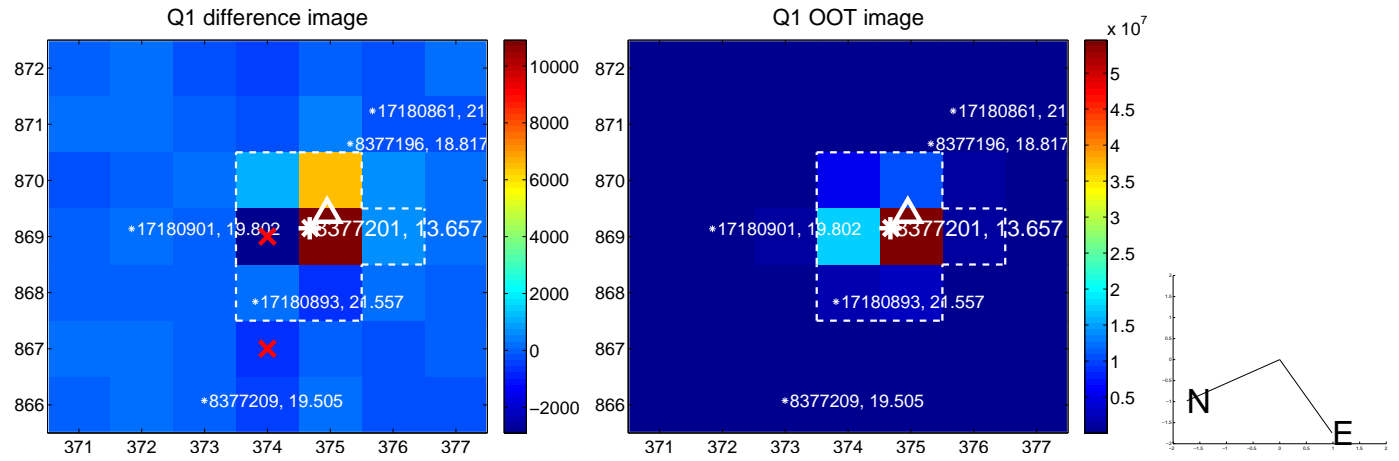
The direct PRF centroid is offset from the target star catalog position by about 0.02 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.277 \pm 0.143$	1.94	$-0.139 \pm 0.192$	$-0.239 \pm 0.142$
PRF-fit source offset from KIC position	$0.266 \pm 0.147$	1.81	$-0.137 \pm 0.195$	$-0.228 \pm 0.142$
photometric centroid source offset	$0.48 \pm 0.64$	0.74	$-0.07 \pm 0.60$	$0.47 \pm 0.64$

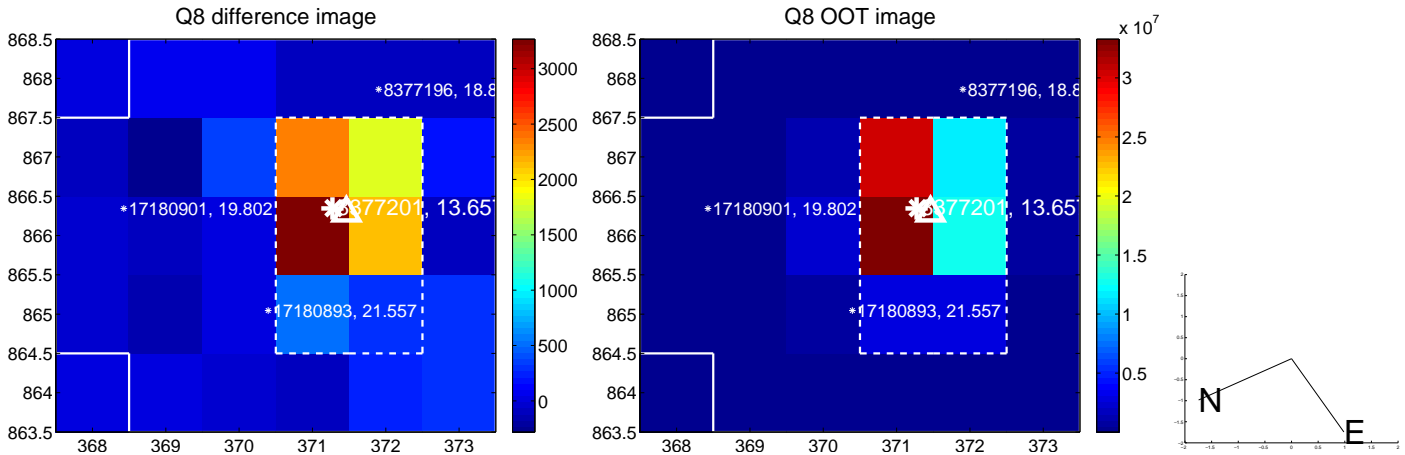
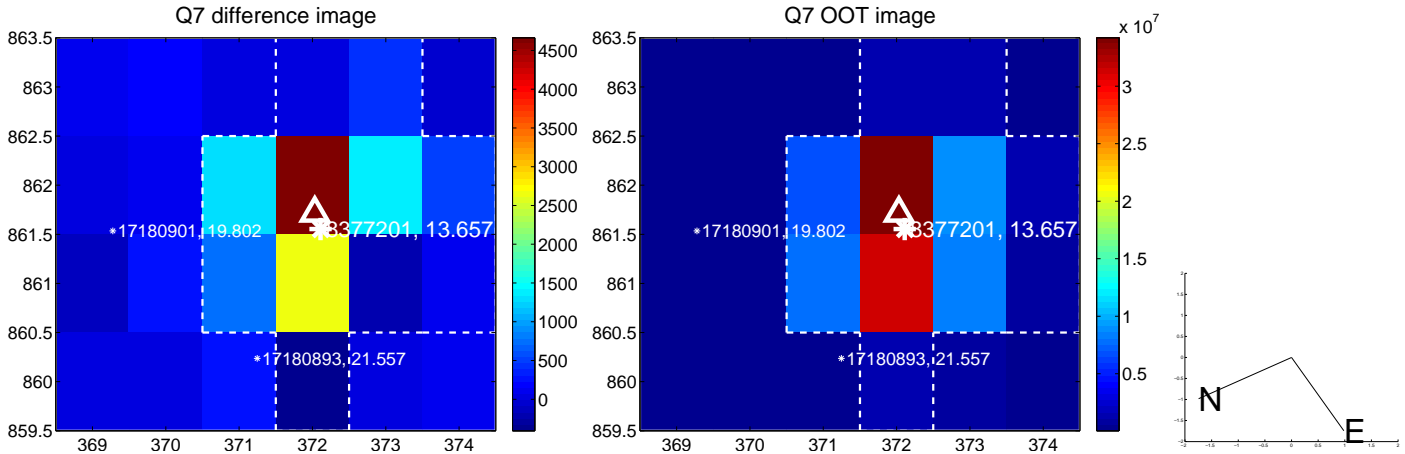
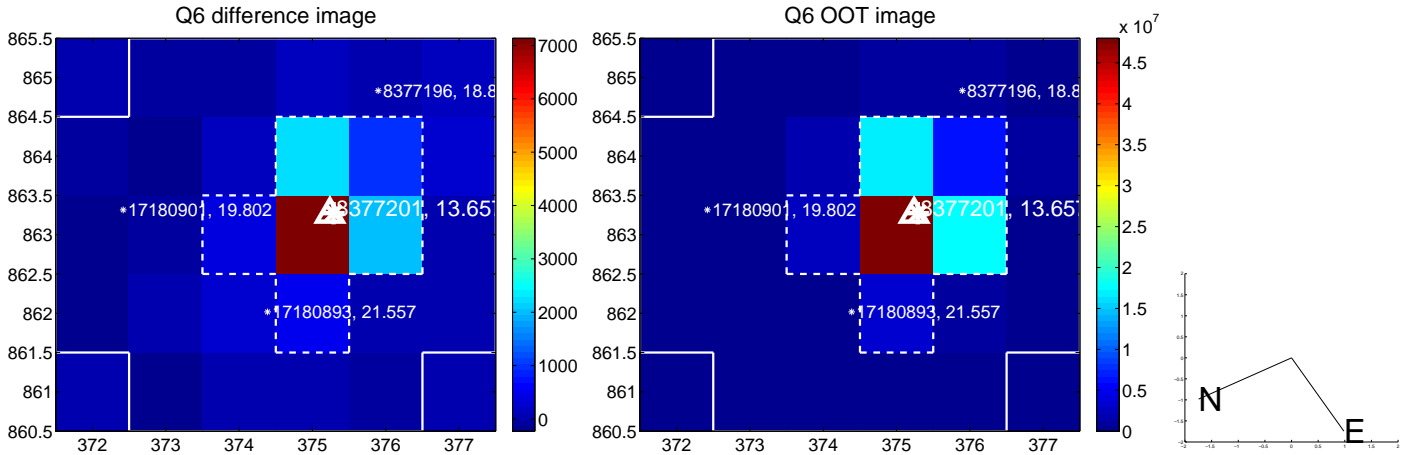
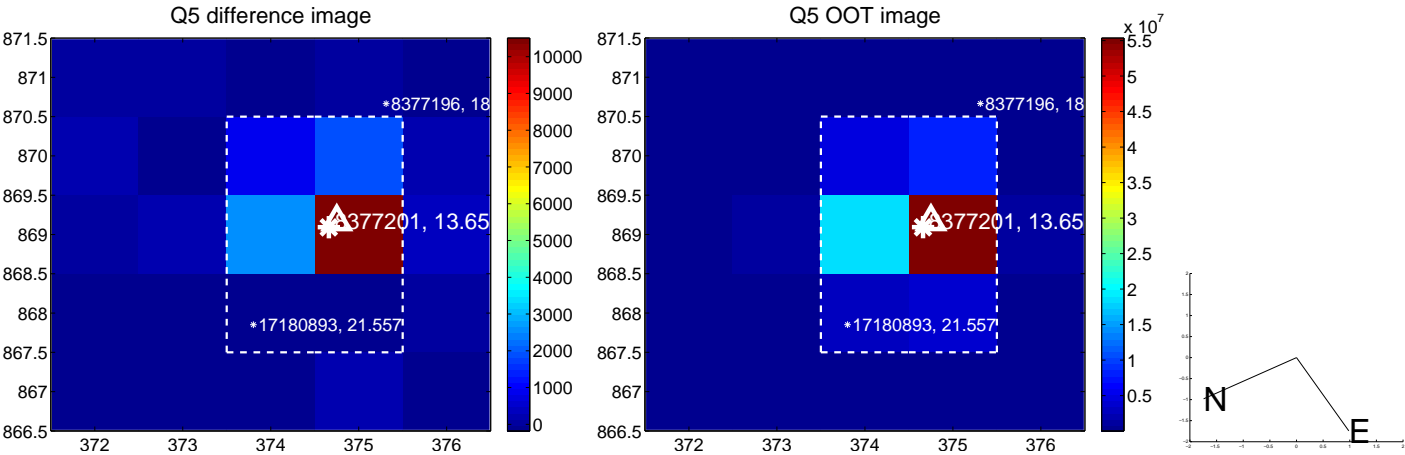


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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

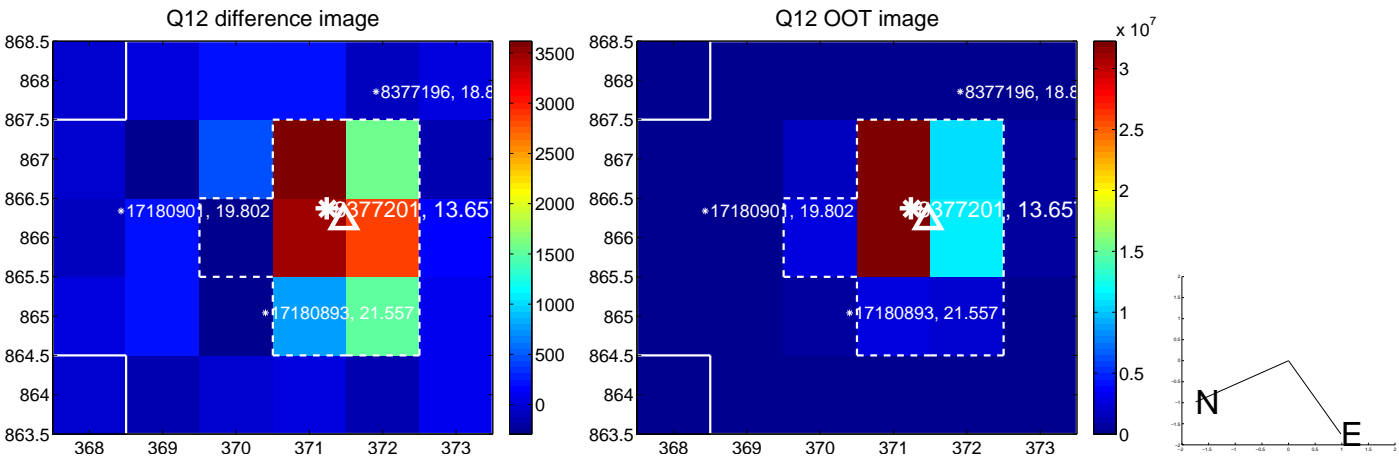
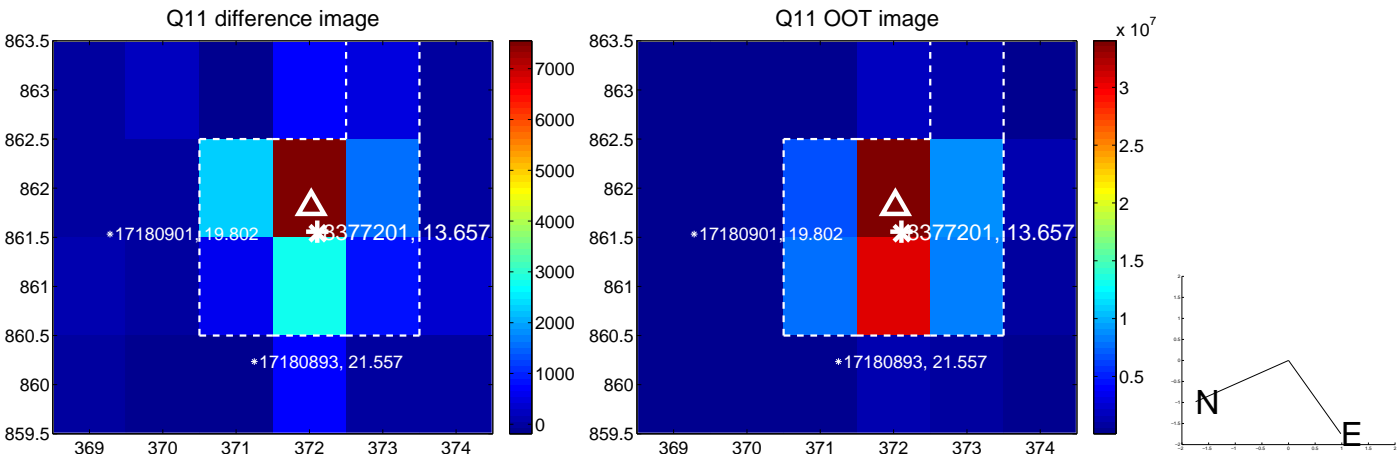
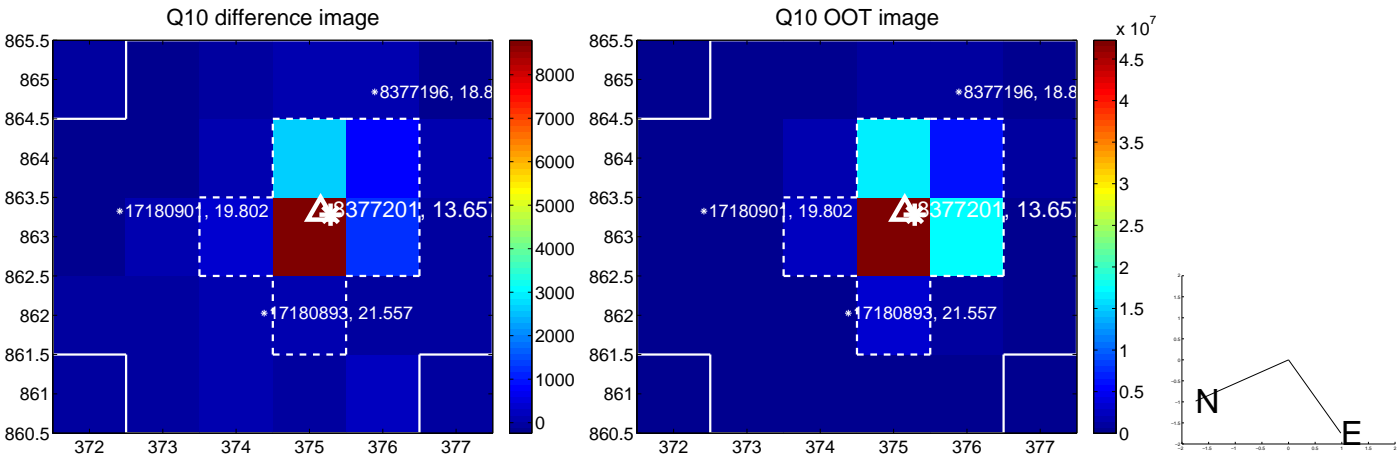
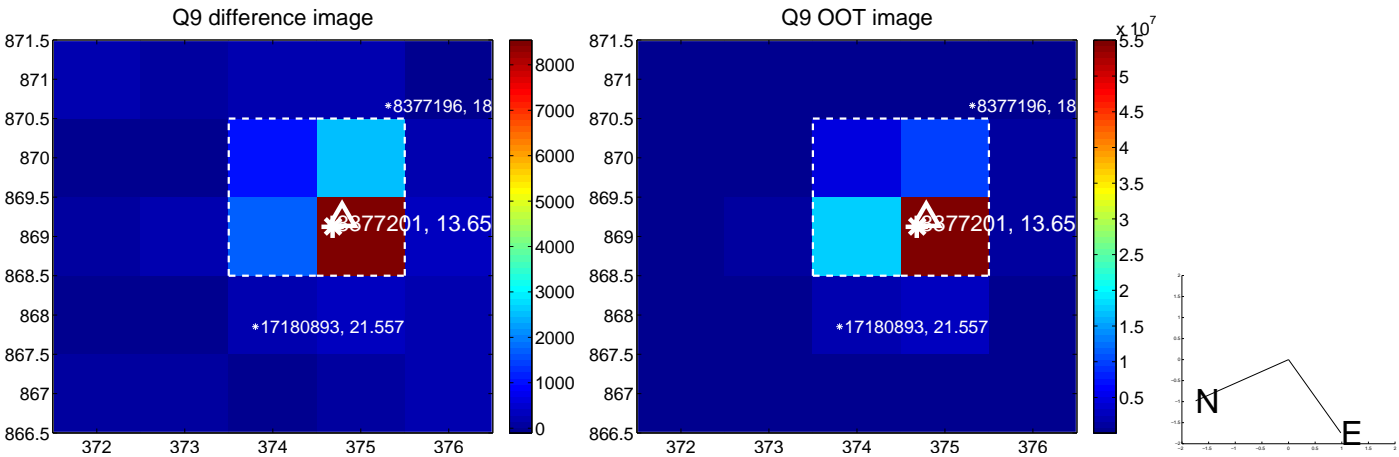


white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

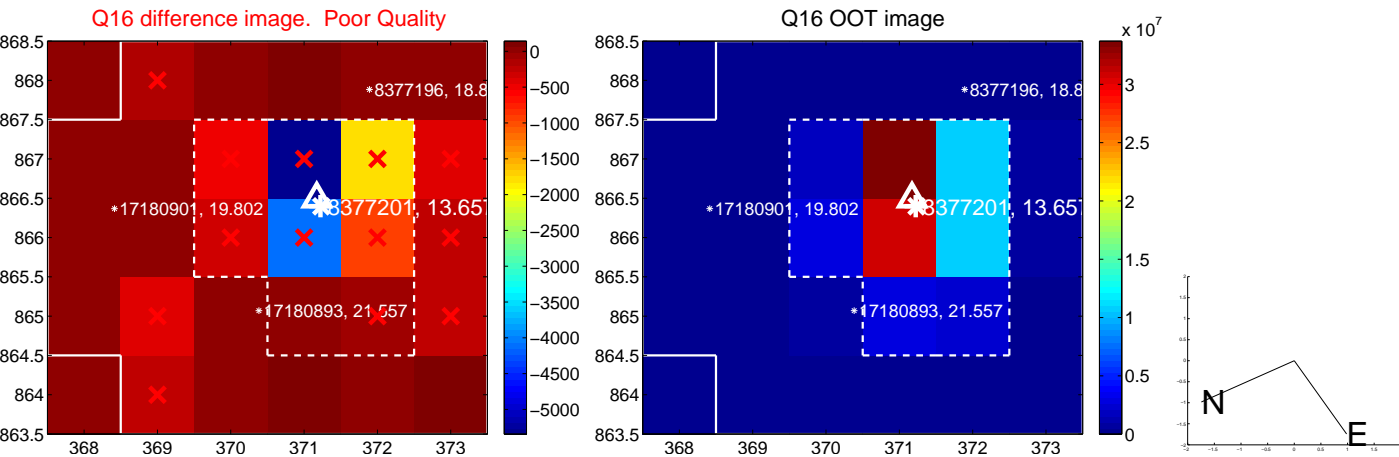
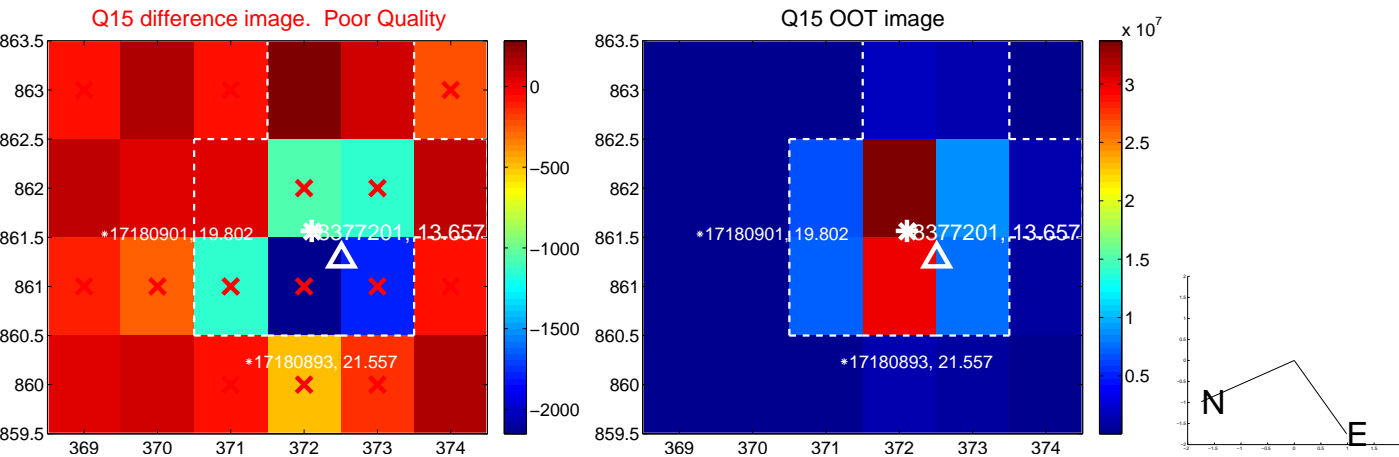
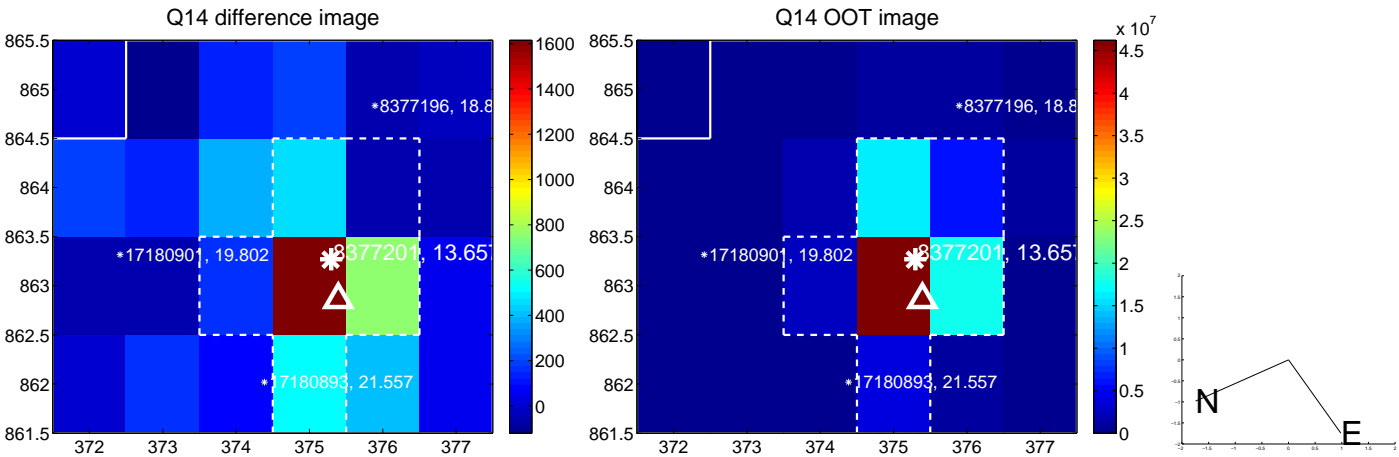
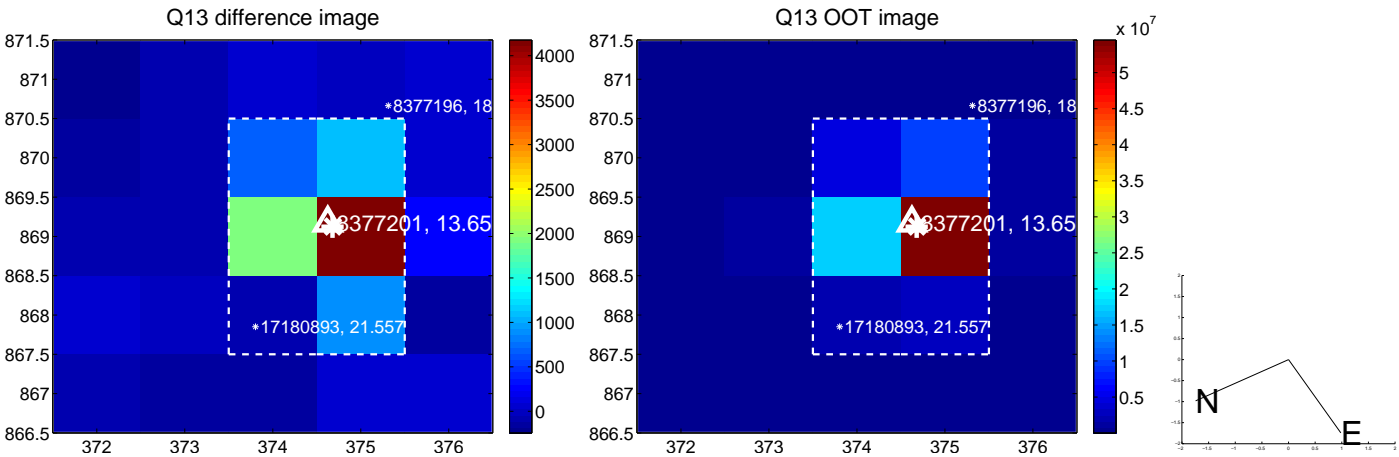




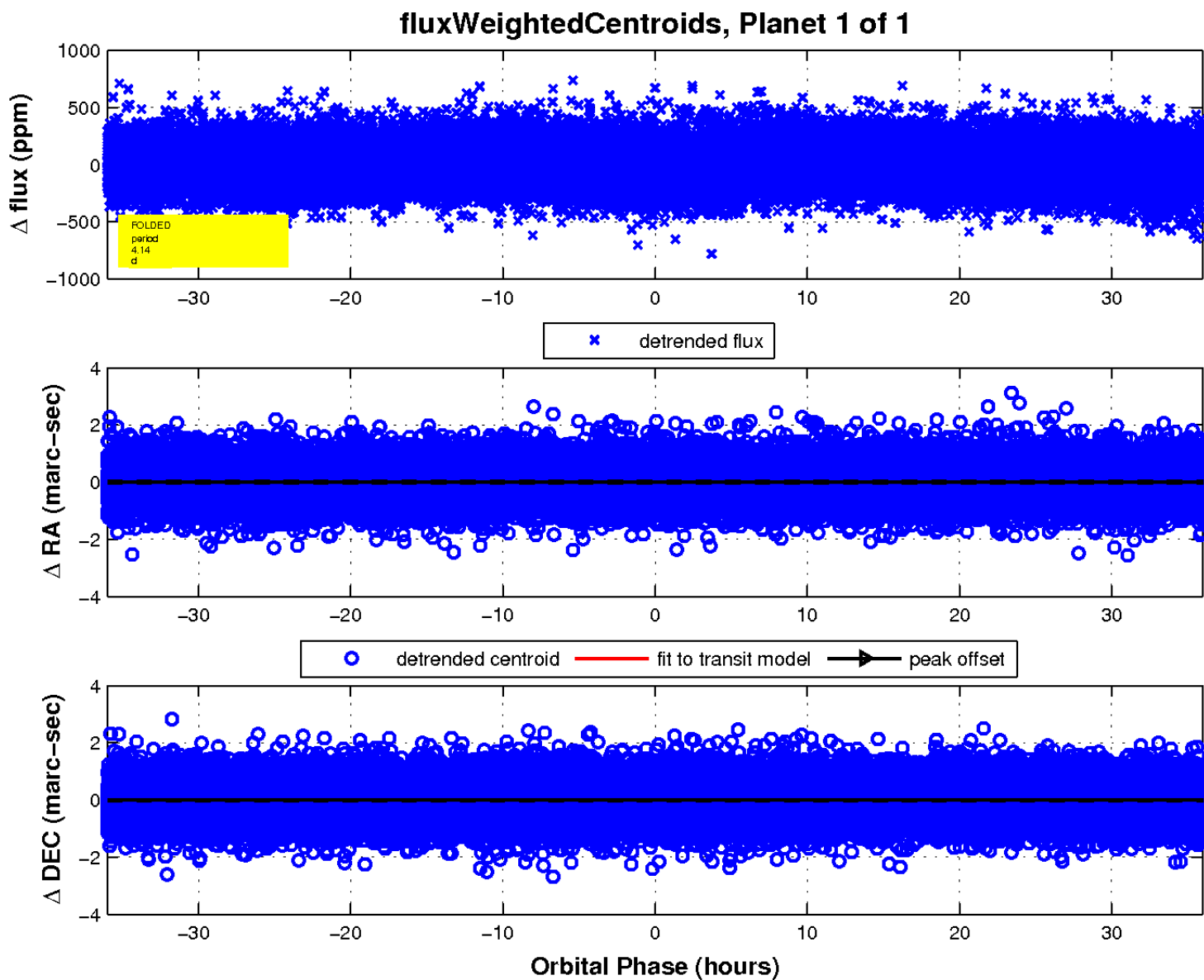
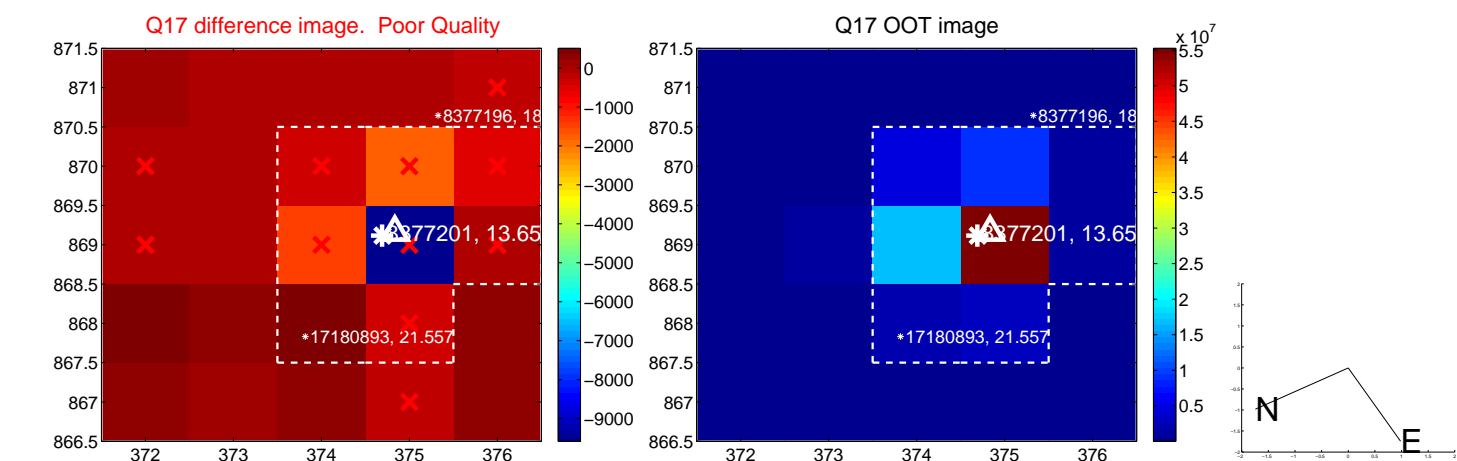
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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



UKIRT Image

Declination

