

# KIC 008229696

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
008229696-01	OBS	1072.01	10.128096	139.112032	476.1	3.616	33.0	35.4	0.82	5676	2.03	81.95

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008229696-01	OBS	PC	1.00	0	0	0	0	NO_COMMENT

**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.

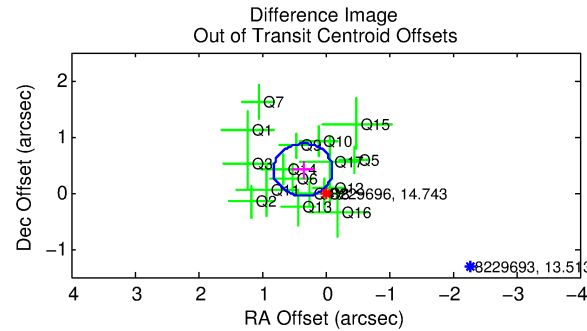
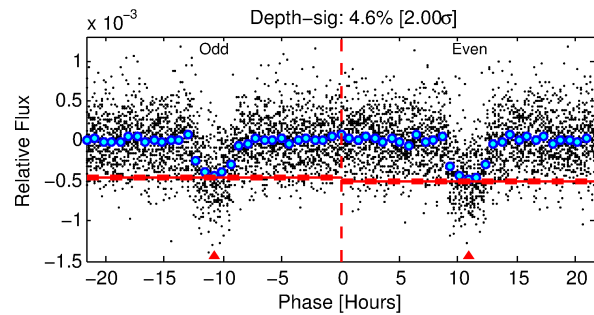
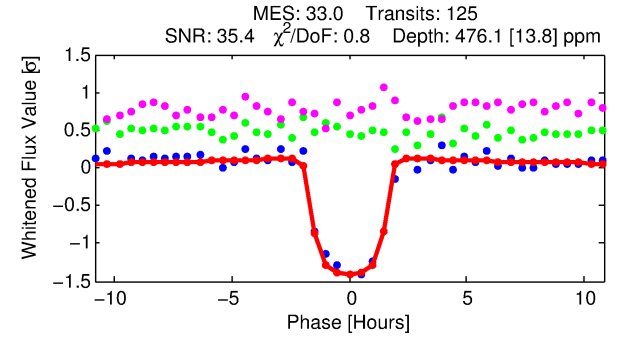
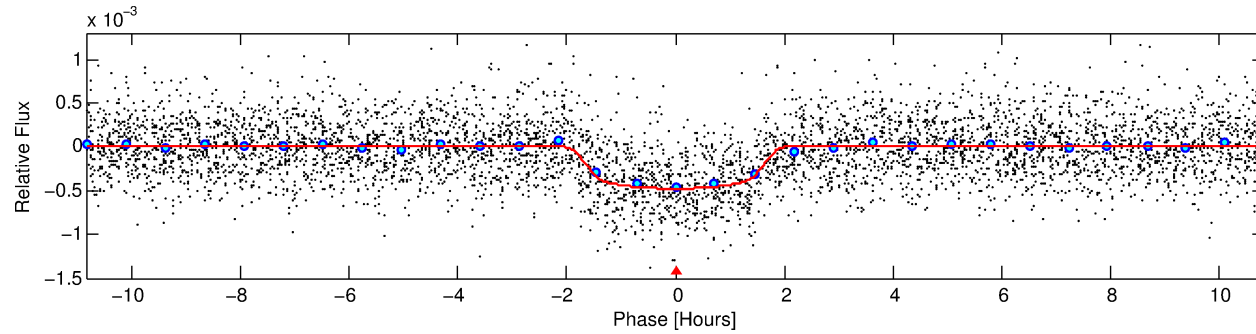
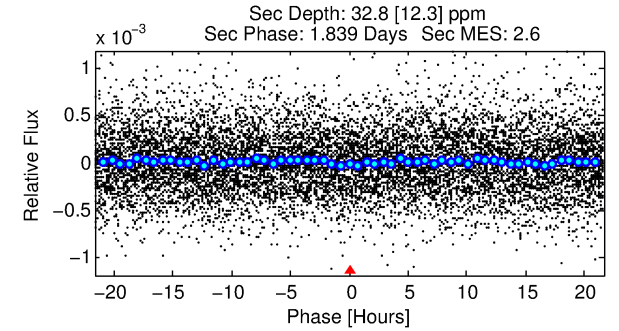
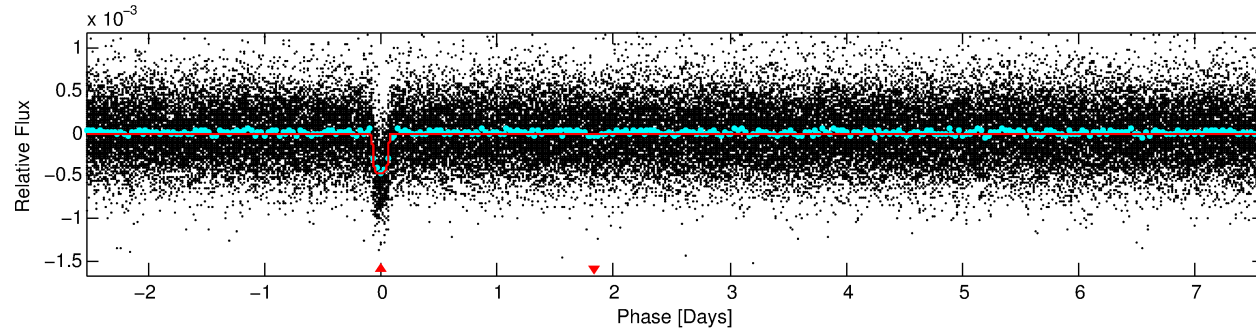
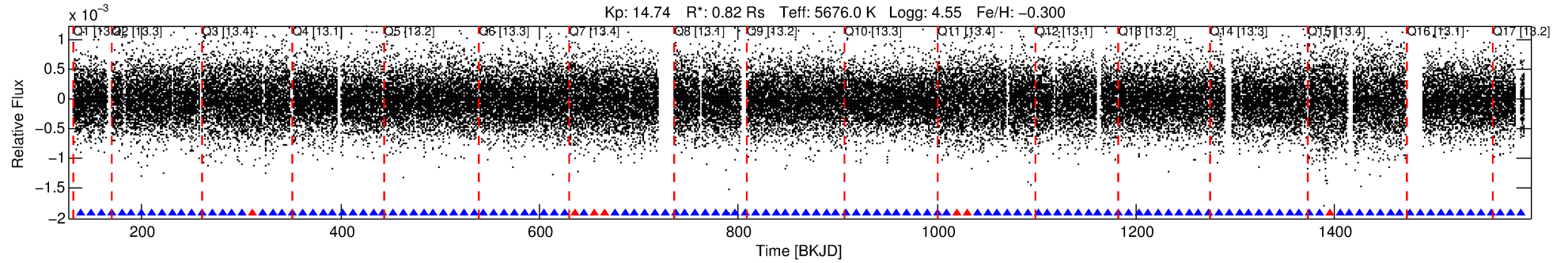
## Ephemeris Match Information For 008229696-01

No Significant Match Found

# DV One-Page Summary

KIC: 8229696 Candidate: 1 of 1 Period: 10.128 d

KOI: K01072.01 Corr: 0.965



## DV Fit Results:

Period = 10.12810 [0.00003] d  
Epoch = 139.1120 [0.0021] BKJD  
Rp/R\* = 0.0226 [0.0038]  
a/R\* = 12.59 [9.60]  
b = 0.84 [0.28]  
Seff = 81.95 [15.52]  
Teff = 767 [36] K  
Rp = 2.03 [0.42] Re  
a = 0.0873 [0.0101] AU  
Ag = 33.50 [17.93] [1.81σ]  
Teffp = 2854 [362] K [5.73σ]

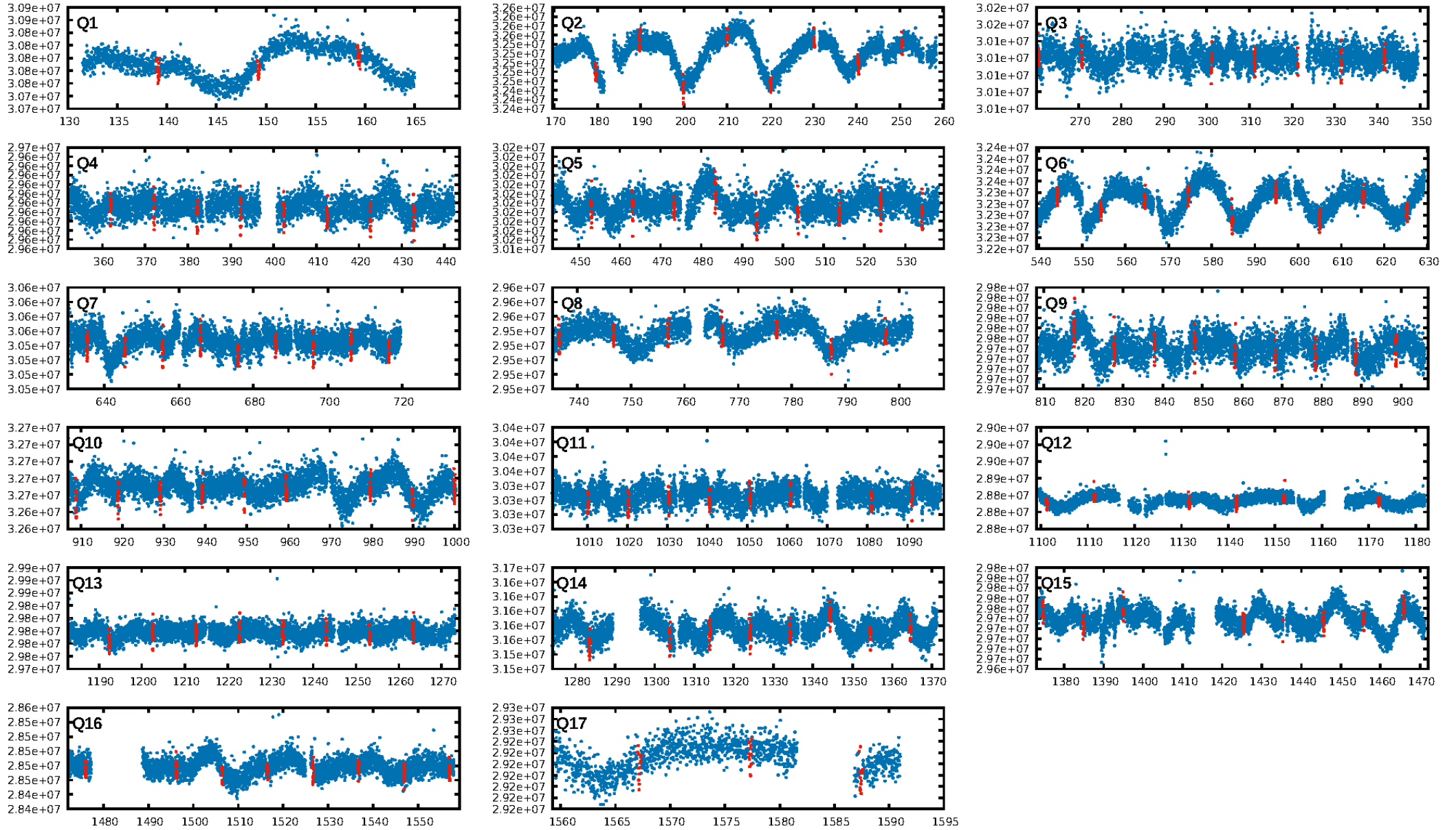
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: 98.6%  
ModelChiSquareGof-sig: 100.0%  
Bootstrap-pfa: 2.99e-228  
RollingBand-fgt: 0.94 [112/119]  
GhostDiagnostic-chr: 4.715  
Centroid-sig: 0.0%  
Centroid-so: 0.359 arcsec [0.97σ]  
OotOffset-rm: 0.538 arcsec [3.46σ]  
KicOffset-rm: 0.305 arcsec [2.09σ]  
OotOffset-st: 4/4/4/5 [17]  
KicOffset-st: 4/4/4/5 [17]  
DiffImageQuality-fgm: 1.00 [17/17]  
DiffImageOverlap-fno: 1.00 [17/17]

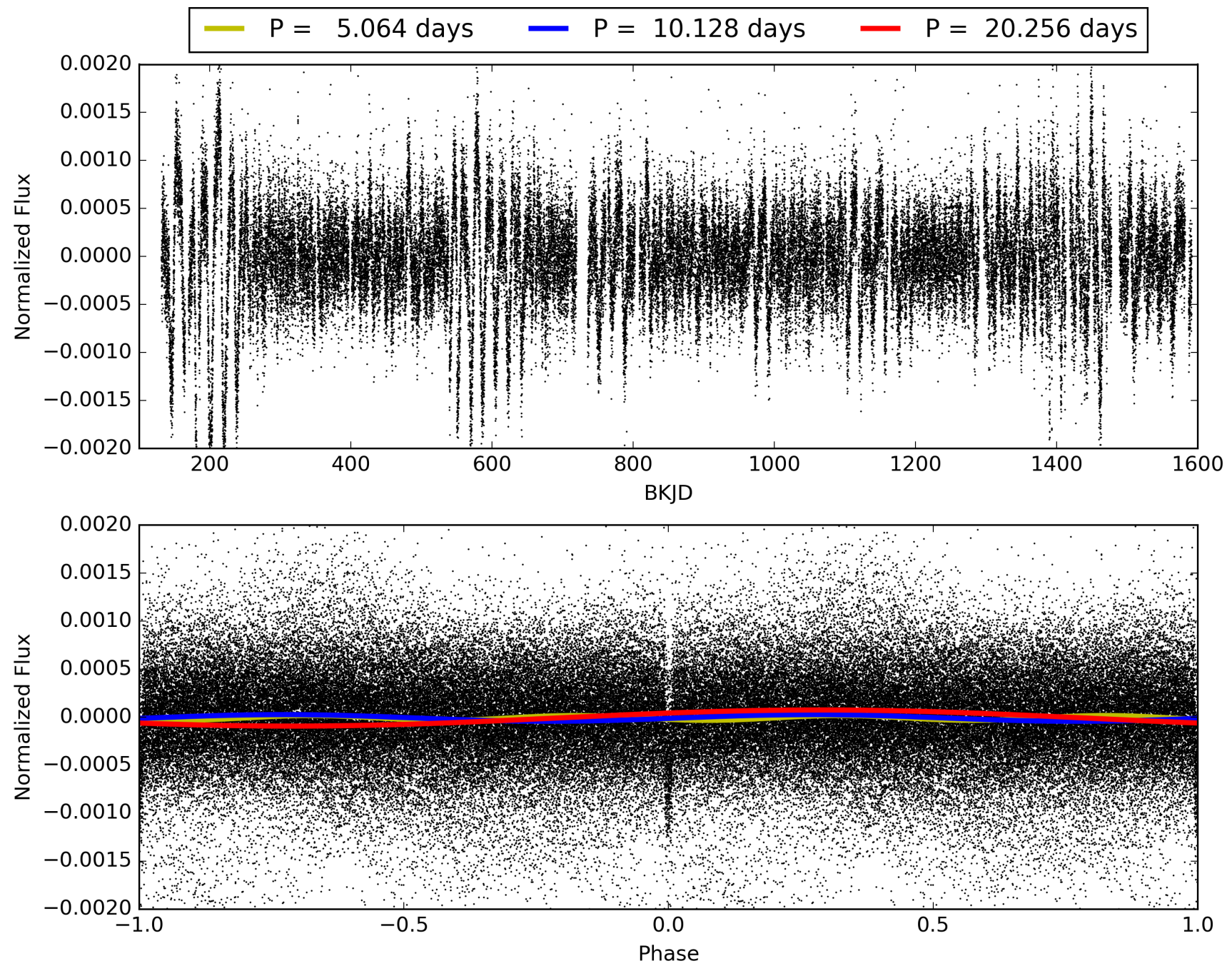
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 15:11:13 Z

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

# TCE 008229696-01, PDC Light Curves



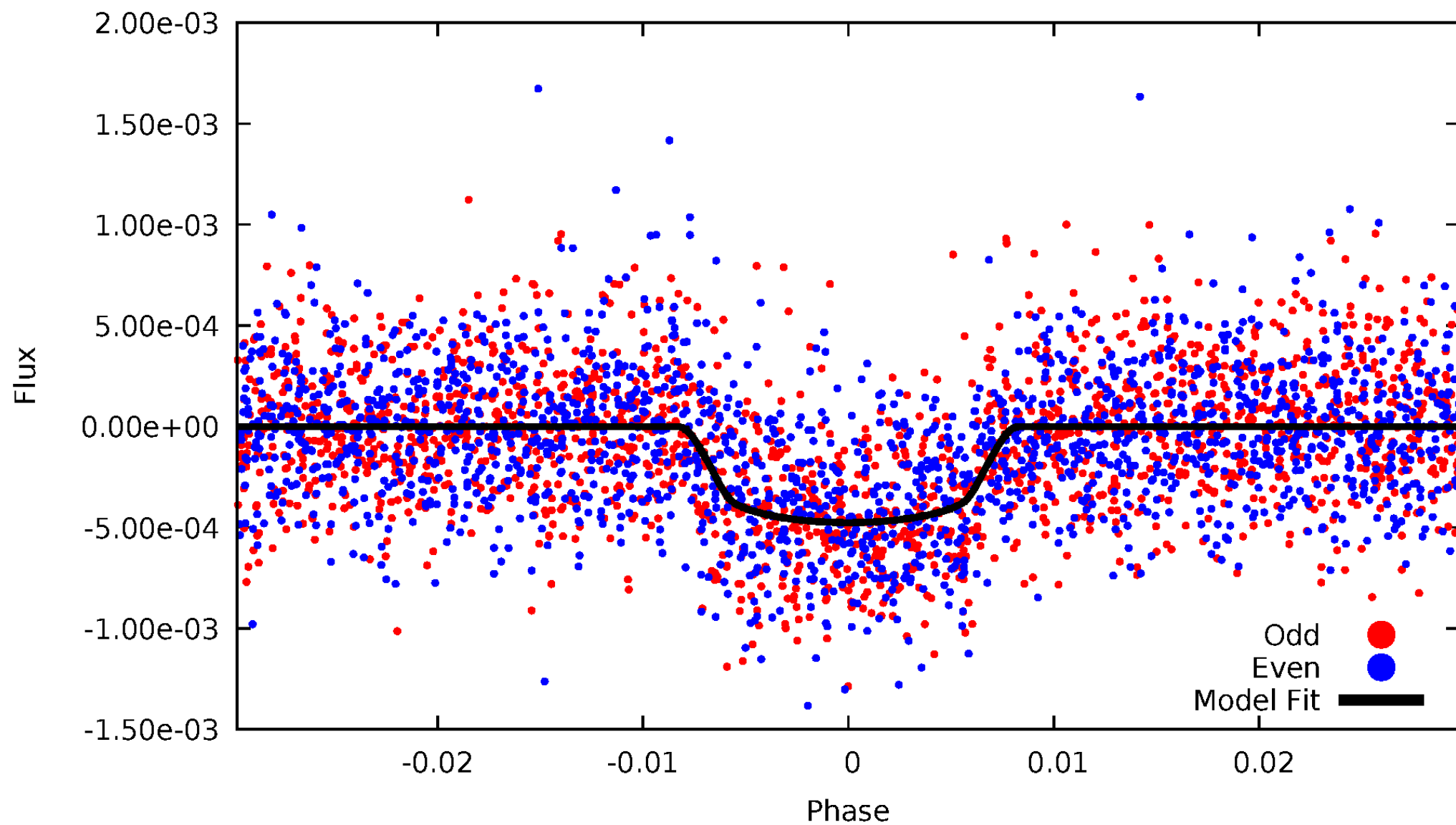
TCE 008229696-01





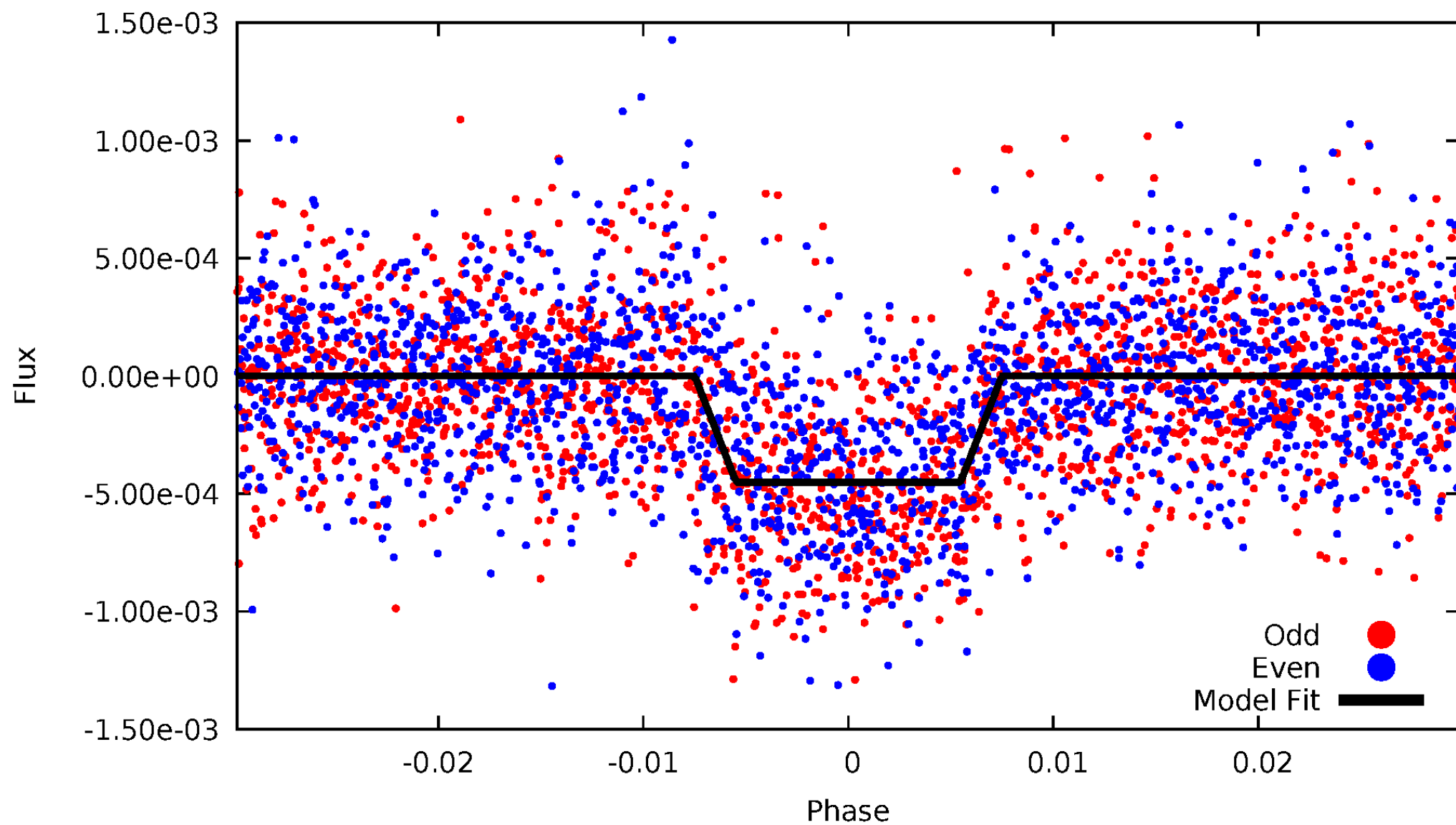
# DV Odd/Even

TCE 008229696-01



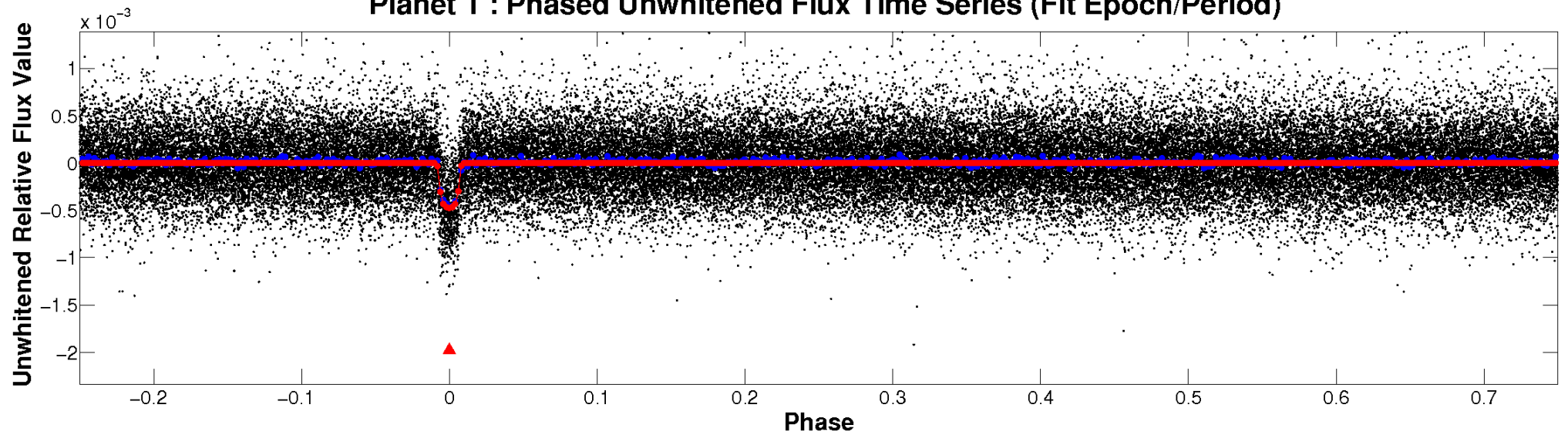
# ALT Odd/Even

TCE 008229696-01

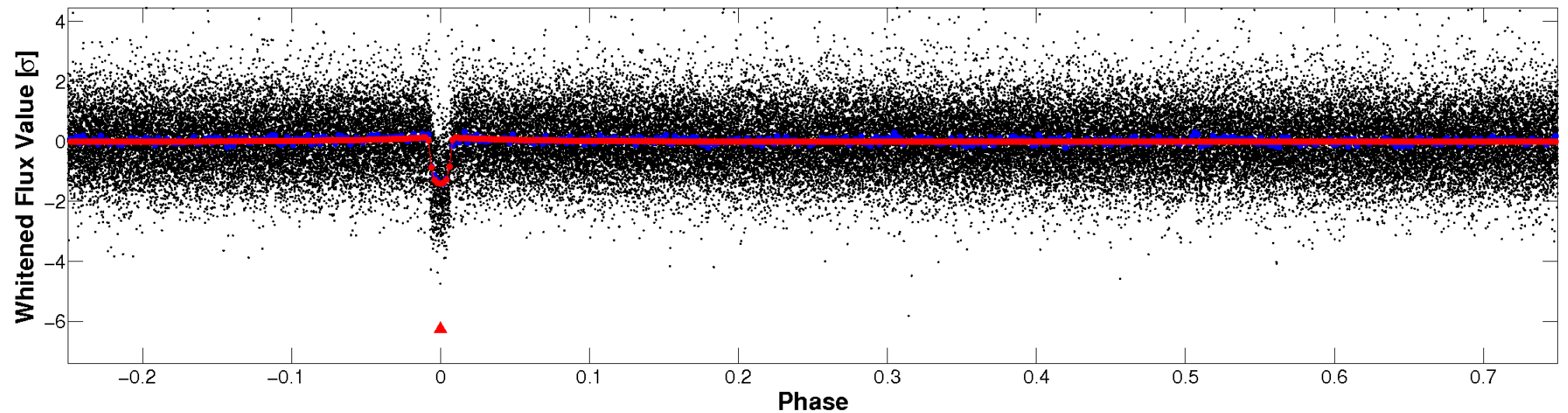


# Non-Whitened Vs. Whitened Light Curve

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

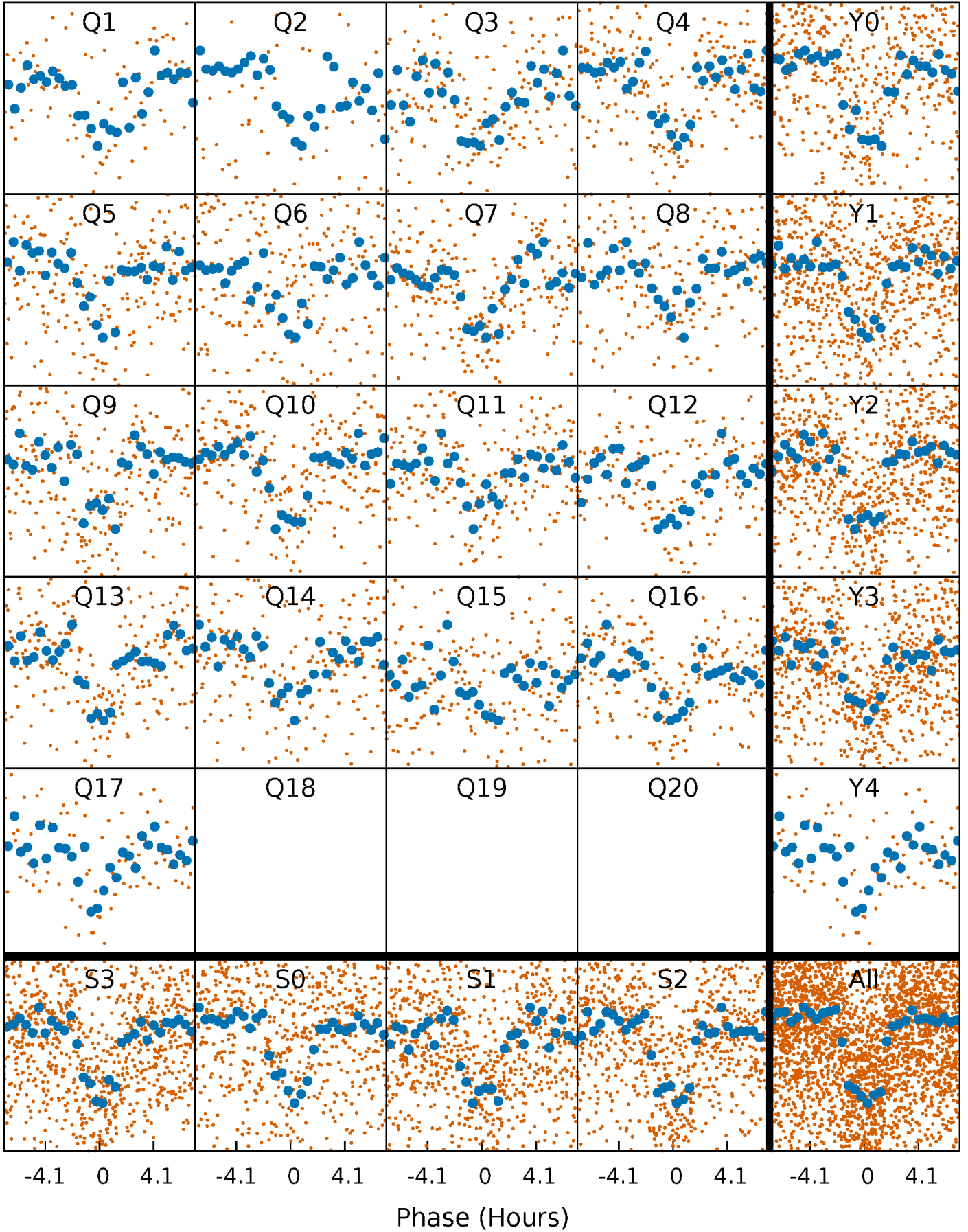


**Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)**



# PDC Quarter-Phased Transit Curves

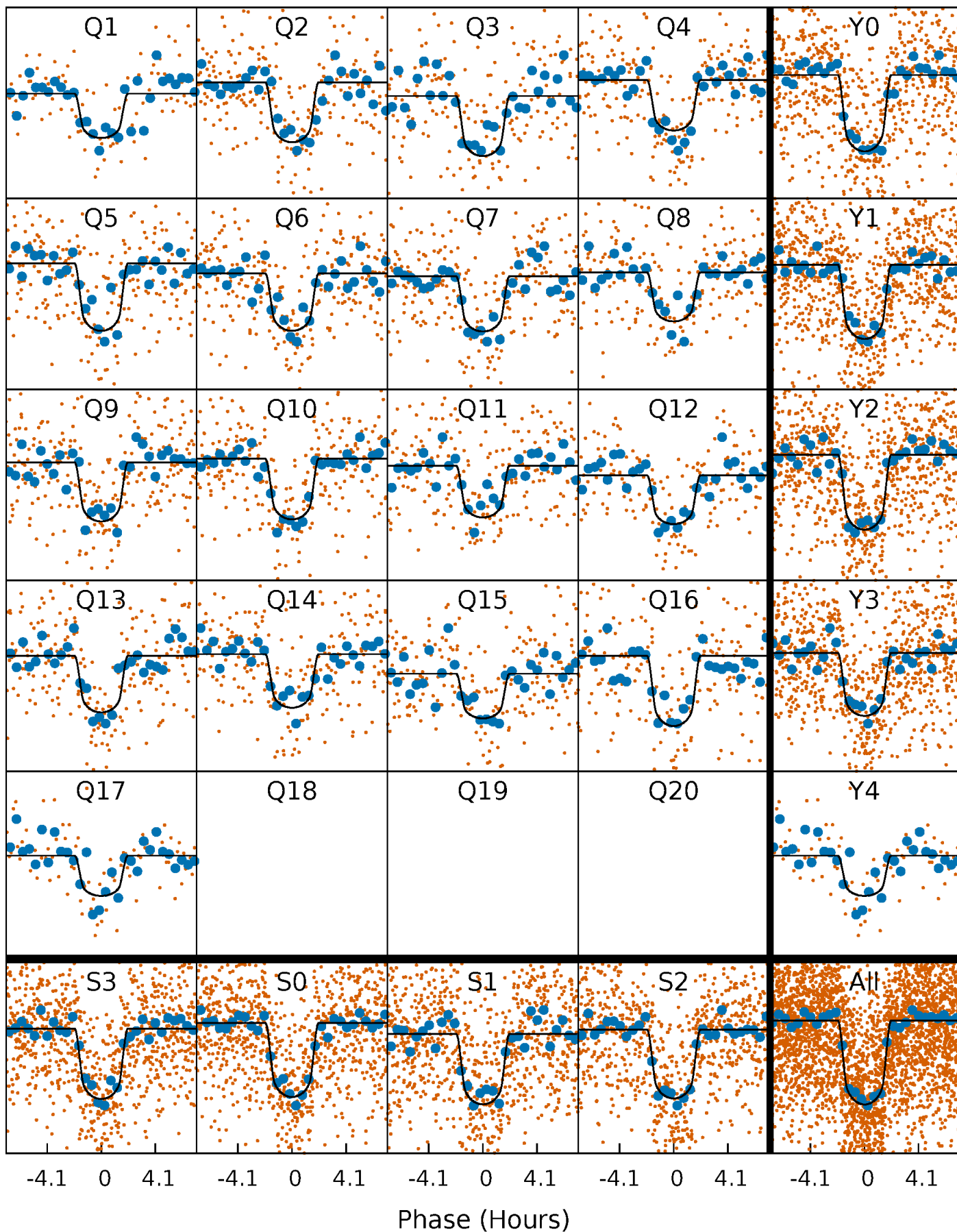
TCE 008229696-01   P= 10.128096 Days    $T_0=139.112032$  (BKJD)





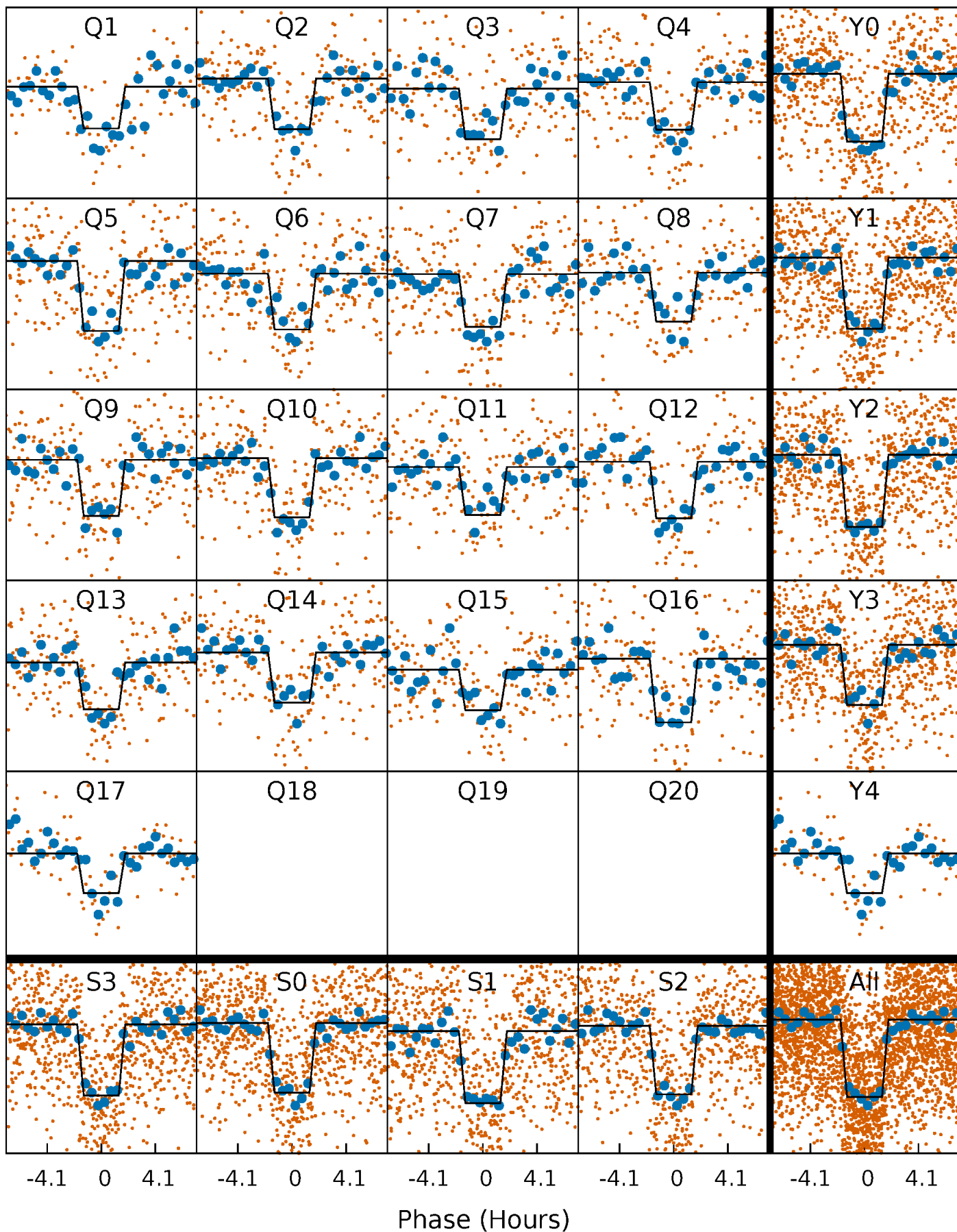
# DV Quarter-Phased Transit Curves

TCE 008229696-01 P= 10.128096 Days  $T_0=139.112032$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

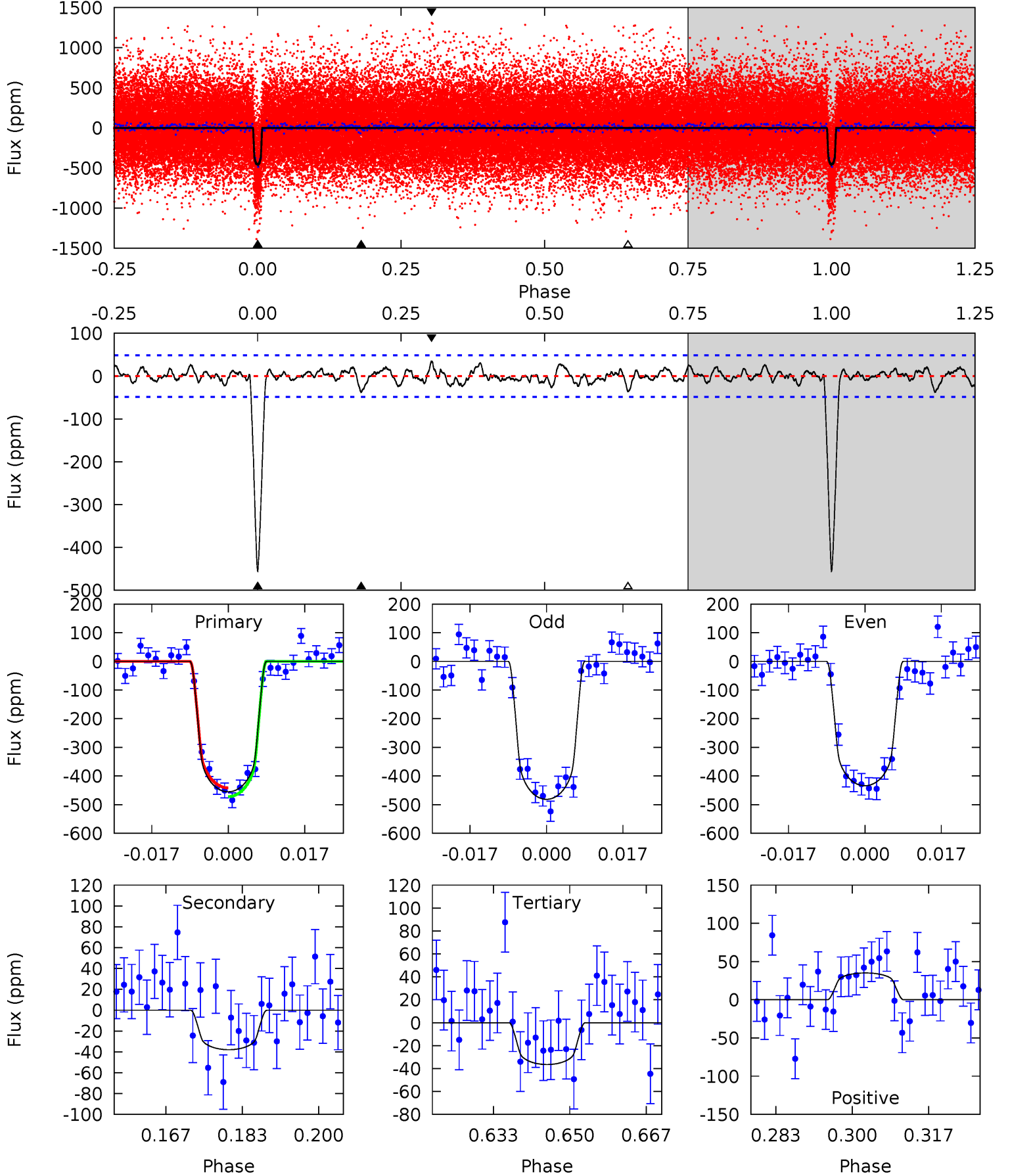
TCE 008229696-01   P= 10.128026 Days    $T_0=139.117621$  (BKJD)



# DV Model-Shift Uniqueness Test

008229696-01,  $P = 10.128096$  Days,  $E = 128.983936$  Days

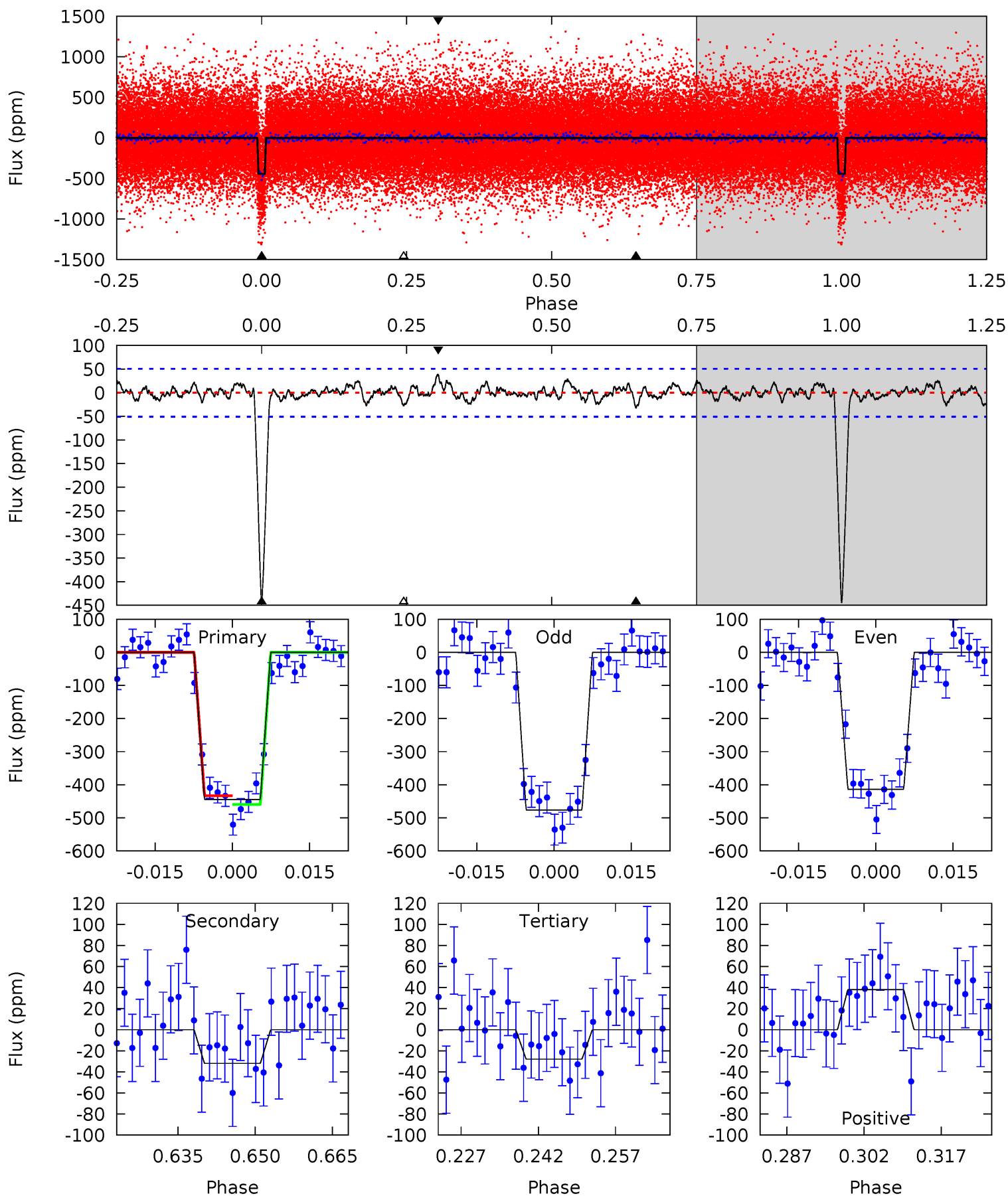
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
46.2	3.85	3.71	3.56	4.93	2.39	1.19	42.5	42.7	0.14	0.29	2.42	0.97	0.07	1.57



# Alt Model-Shift Uniqueness Test

008229696-01, P = 10.128026 Days, E = 128.989595 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
43.5	3.13	2.73	3.73	4.95	2.43	1.07	40.7	39.7	0.39	-0.60	3.08	1.01	0.08	1.31



### Stellar Parameters For KIC 008229696

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R$ ( $R_{\odot}$ )	$M(M_{\odot})$	$p_{\star}$ ( $\text{g}\cdot\text{cm}^{-3}$ )
	$5676^{+76}_{-84}$	$4.548^{+0.033}_{-0.104}$	$-0.300^{+0.150}_{-0.150}$	$0.820^{+0.102}_{-0.044}$	$0.865^{+0.048}_{-0.058}$	$2.214^{+0.283}_{-0.634}$
	+1%/-1%	+1%/-2%	+50%/-50%	+12%/-5%	+6%/-7%	+13%/-29%
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 008229696-01 / KOI 1072.01

Detrend	Depth (ppm)	$R_p$ ( $R_{\oplus}$ )	$T_{max}$ (K)	$T_{obs}$ (K)	$A_{obs}$
DV	$-38 \pm 10$	$2.07^{+0.35}_{-0.35}$	$1081^{+35}_{-26}$	$3439^{+254}_{-218}$	$35^{+21}_{-12}$
Alt.	$-32 \pm 10$	$1.94^{+0.38}_{-0.35}$	$1081^{+40}_{-25}$	$3412^{+301}_{-258}$	$34^{+21}_{-13}$

$T_{max}$  = 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

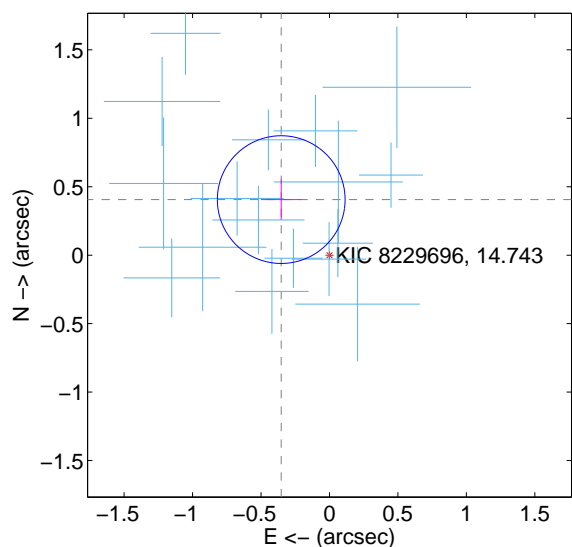
Supplemental centroid analysis for 008229696-01. Kepler magnitude: 14.74. Transit SNR 35.40

There are 17 quarters with good PRF difference image offsets

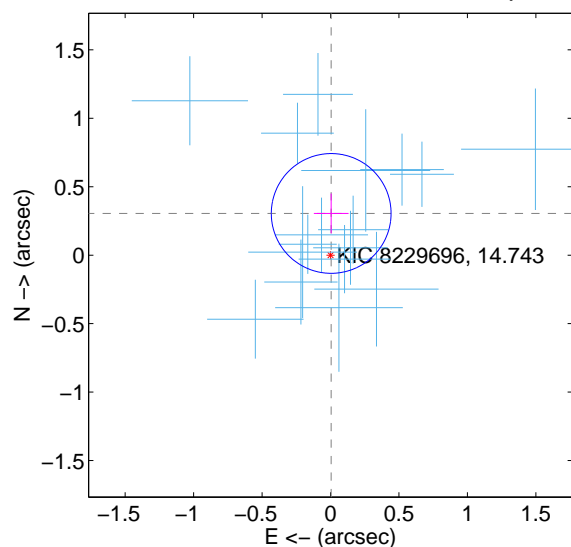
The direct PRF centroid is offset from the target star catalog position by about 0.21 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.538 \pm 0.155$	$3.46$	$0.352 \pm 0.148$	$0.406 \pm 0.147$
PRF-fit source offset from KIC position	$0.305 \pm 0.146$	$2.09$	$-0.005 \pm 0.127$	$0.305 \pm 0.146$
photometric centroid source offset	$0.36 \pm 0.37$	$0.97$	$-0.33 \pm 0.37$	$0.13 \pm 0.35$

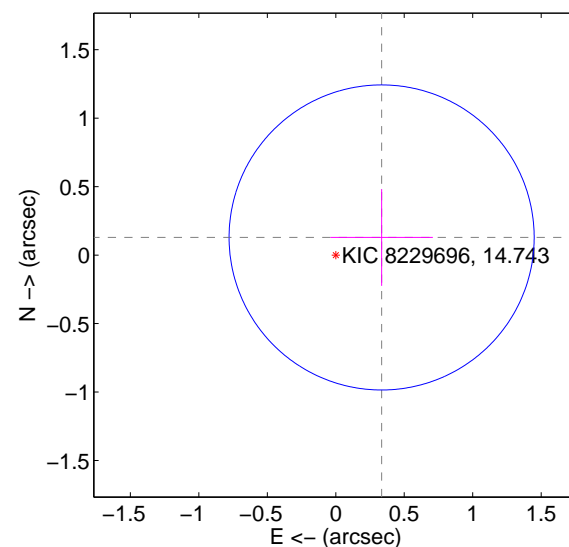
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

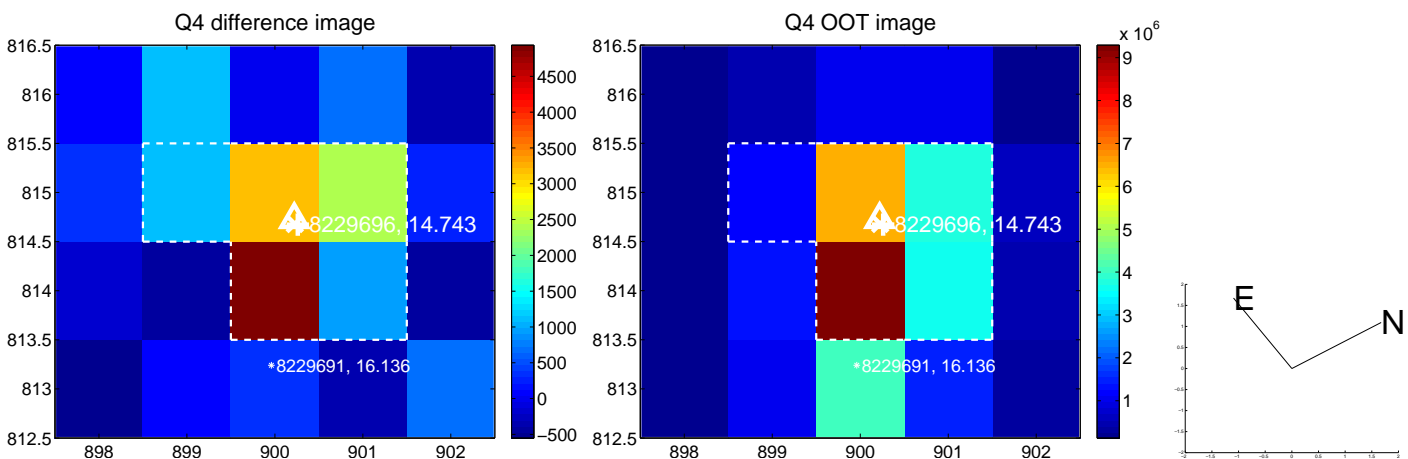
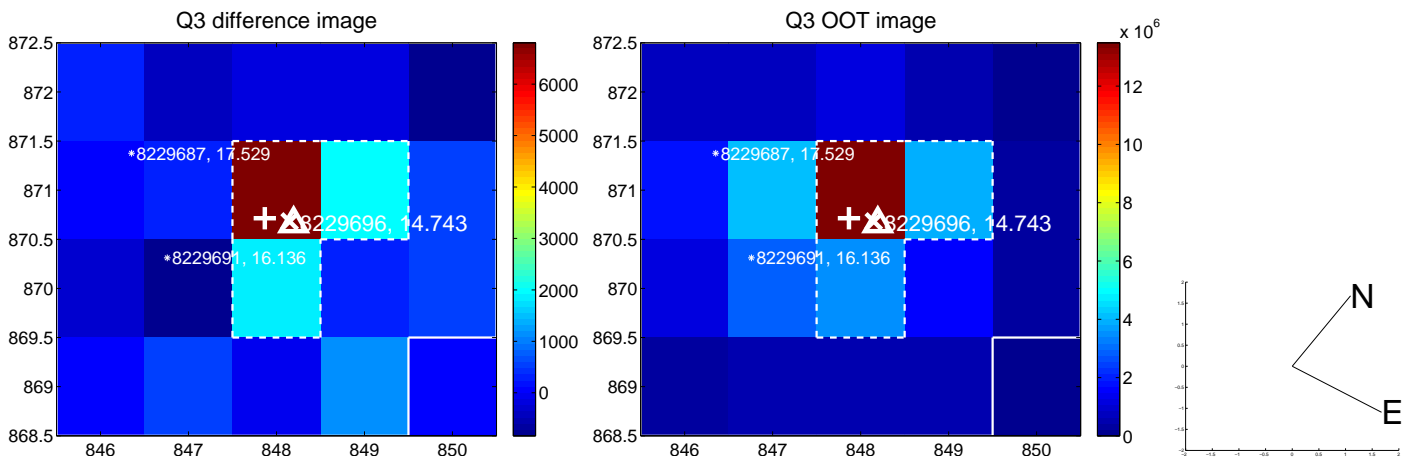
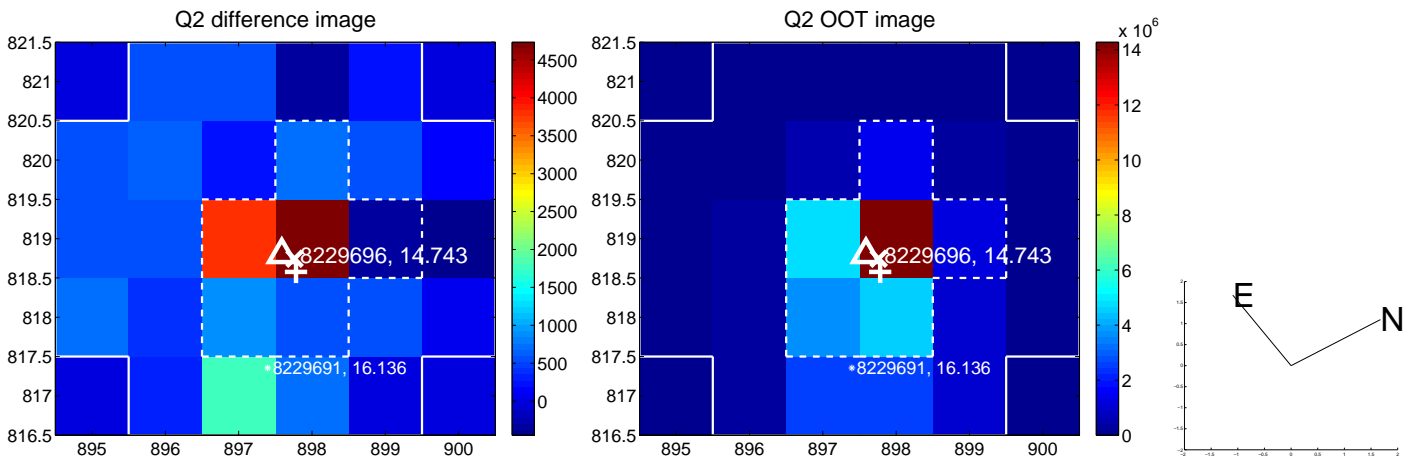
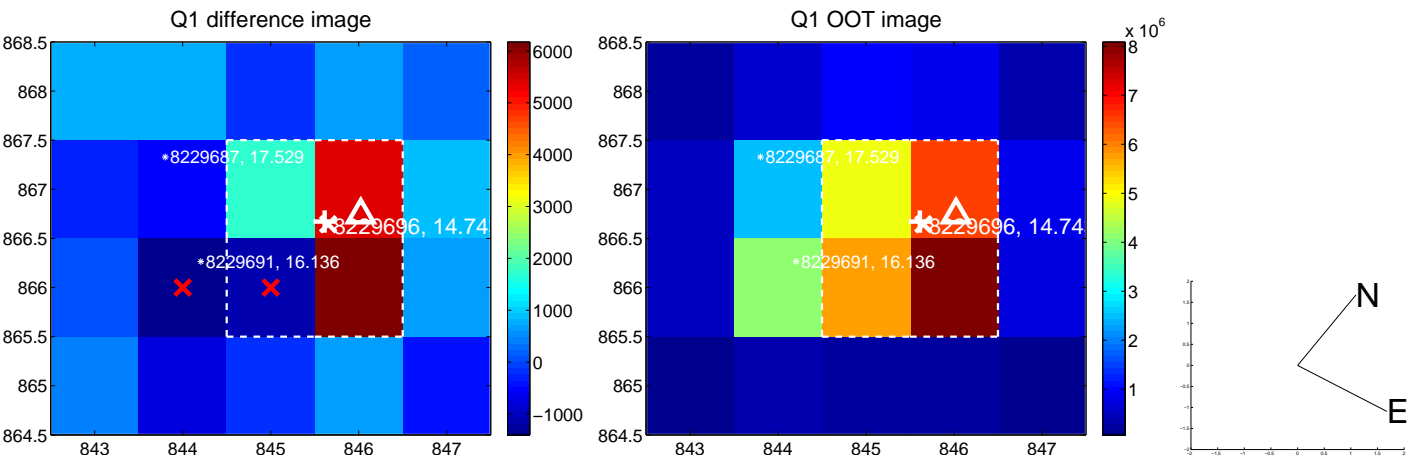


offset from photometric centroids

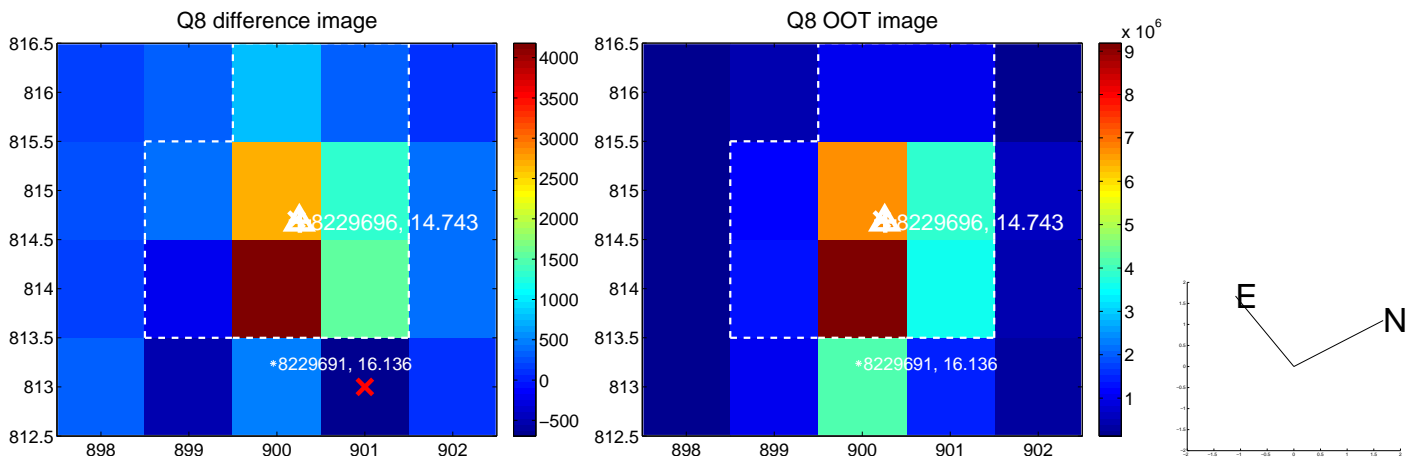
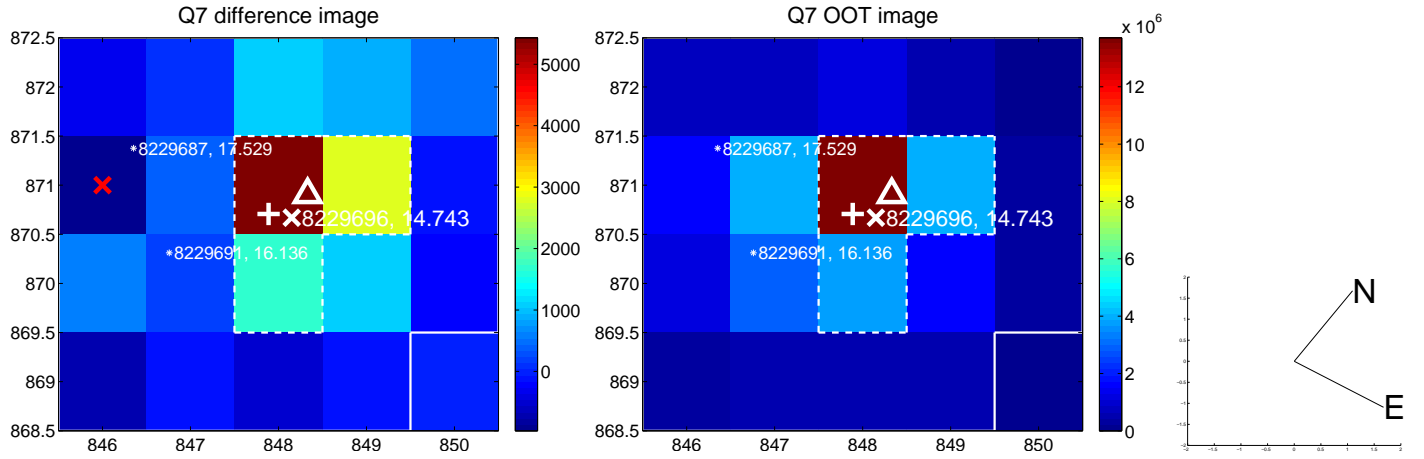
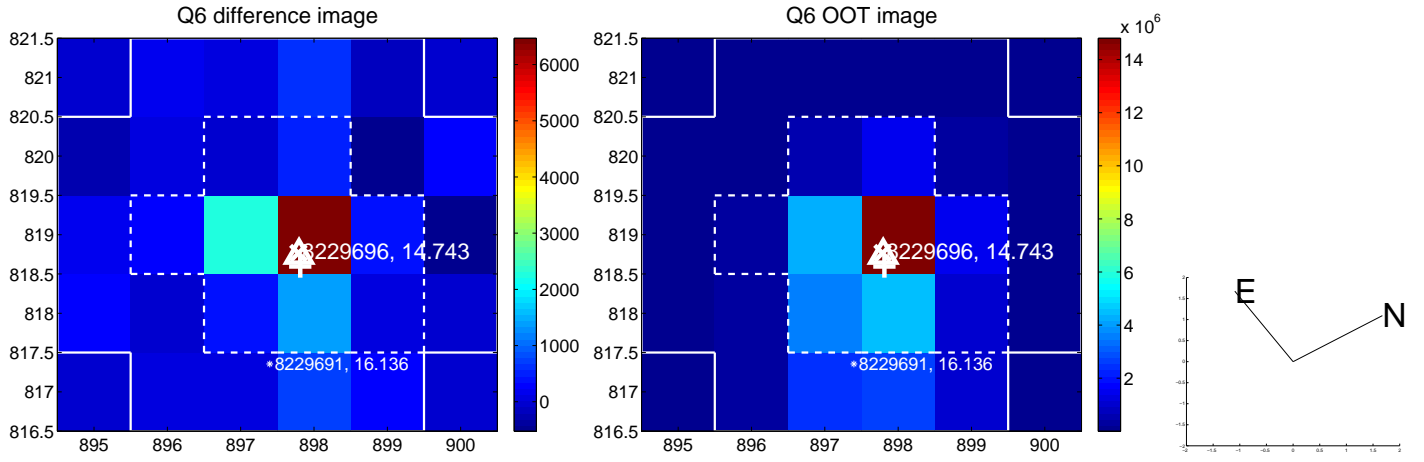
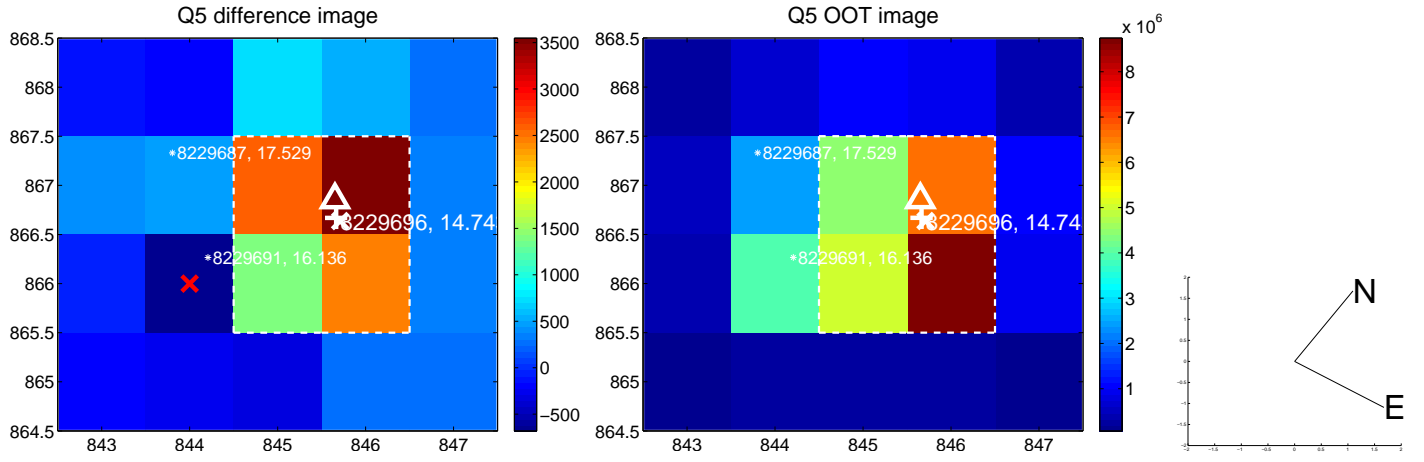


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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

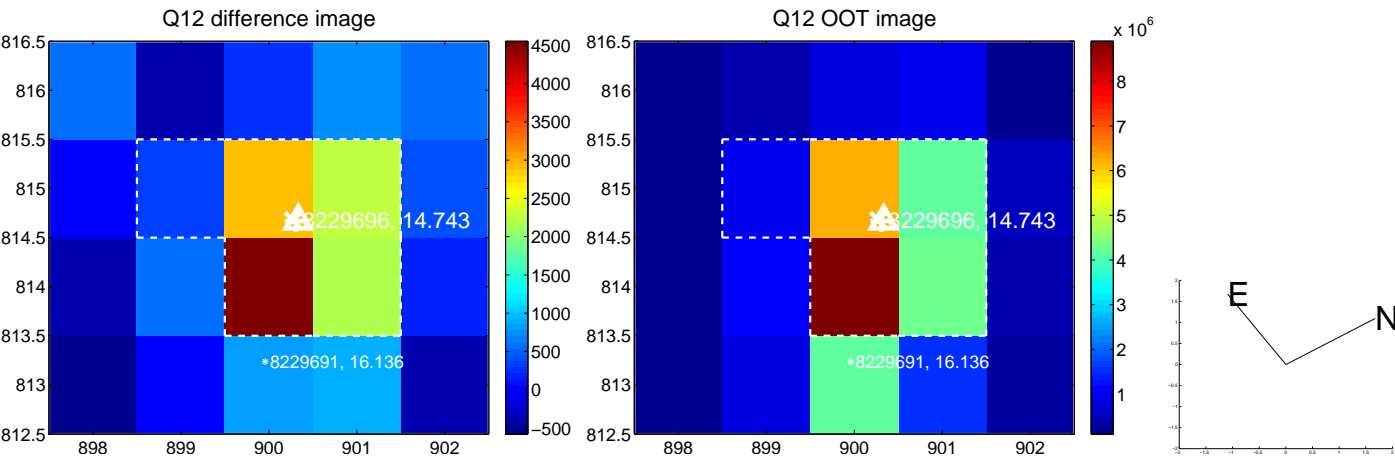
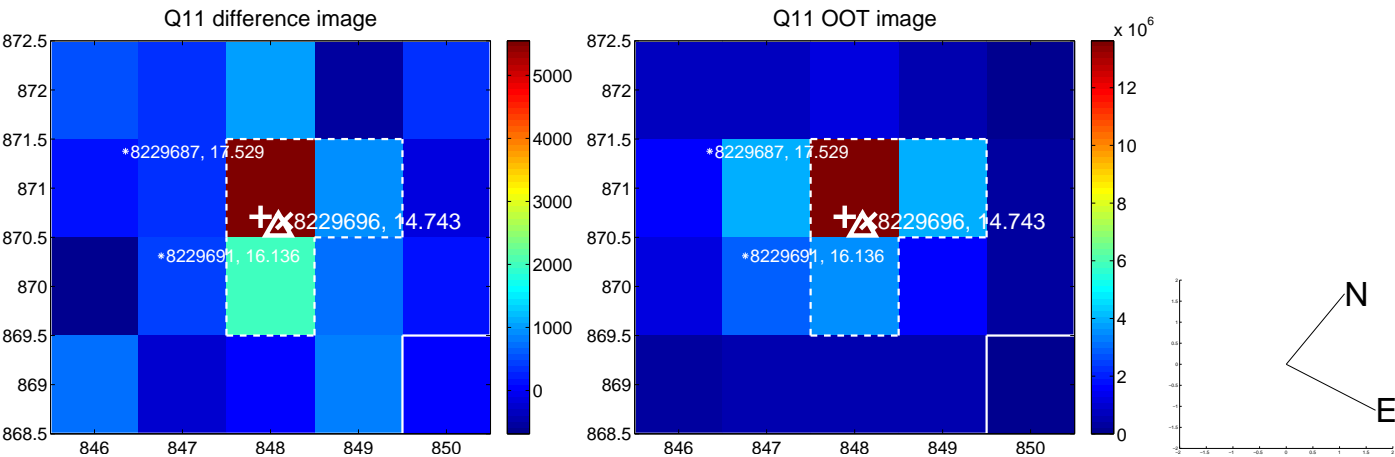
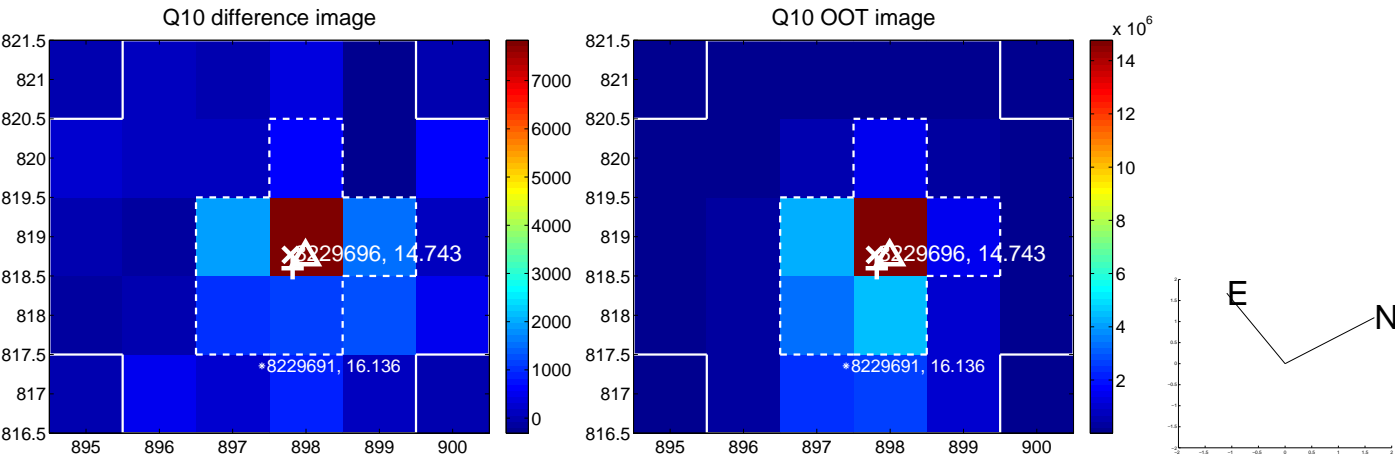
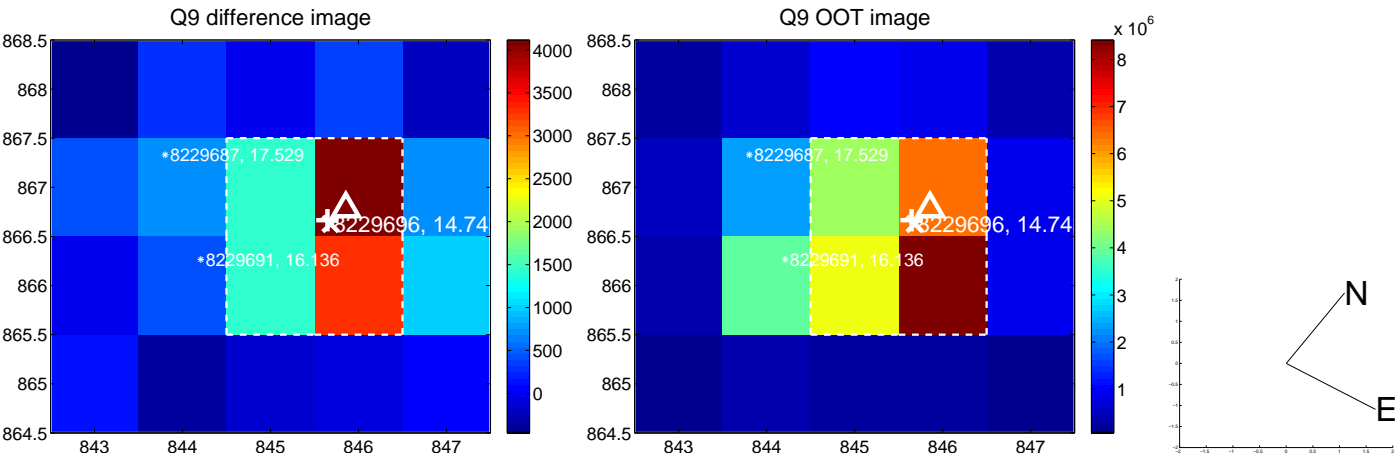
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



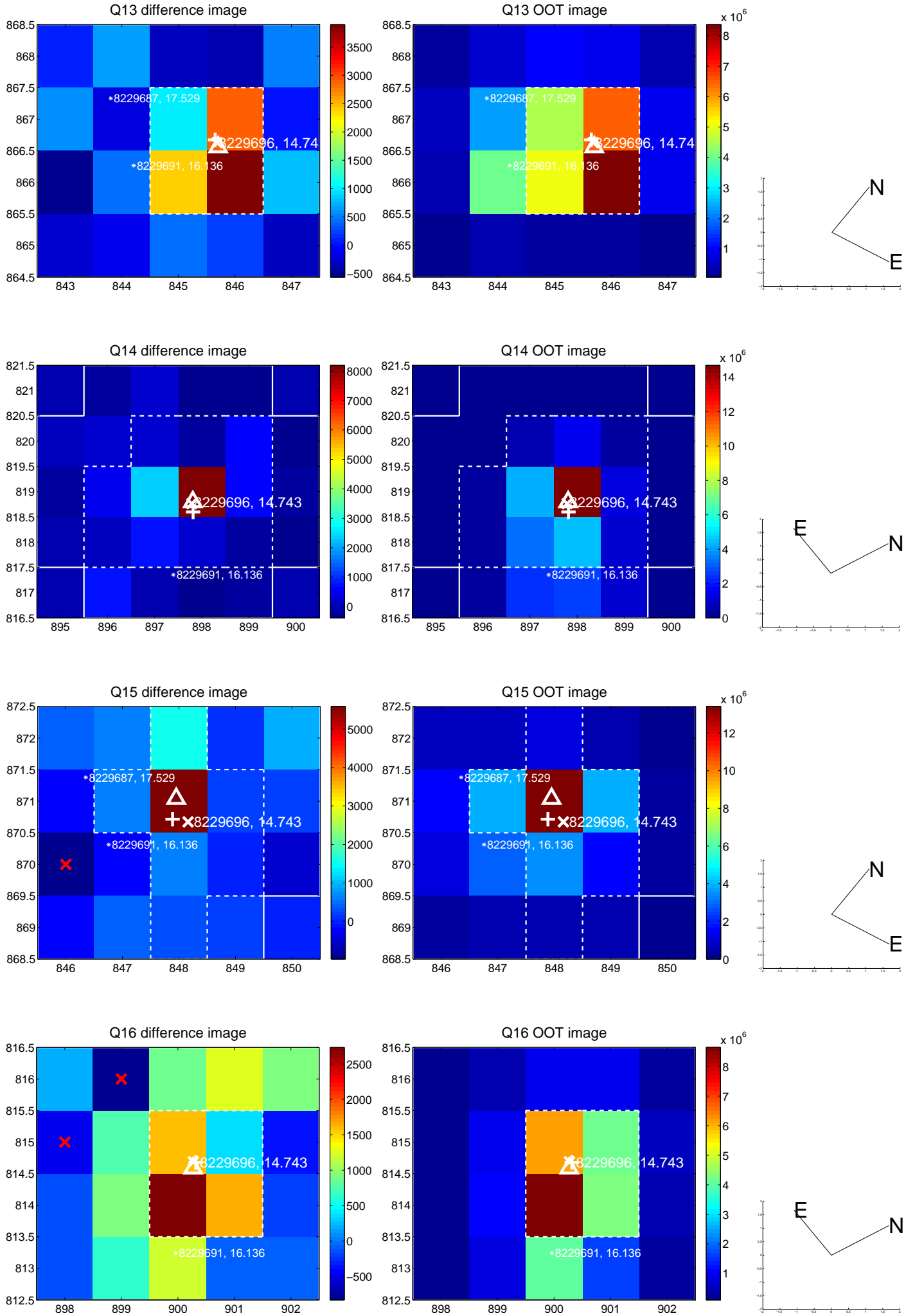
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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



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







UKIRT Image

Declination

