

# KIC 010118816

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
010118816-01	OBS	1085.01	7.717930	139.155558	351.6	2.250	12.7	14.5	0.51	3975	1.12	15.04

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
010118816-01	OBS	PC	0.99	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 010118816-01

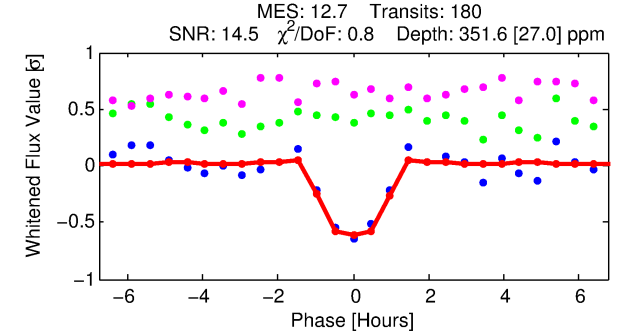
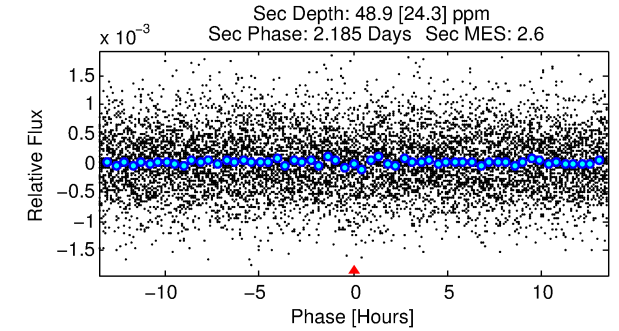
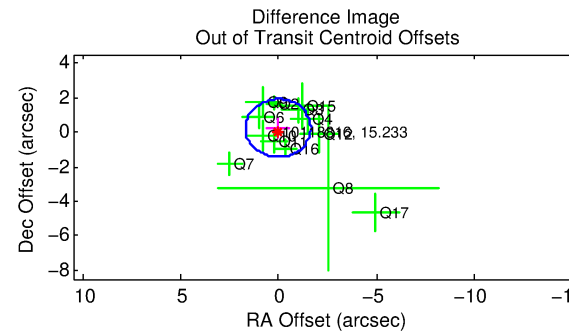
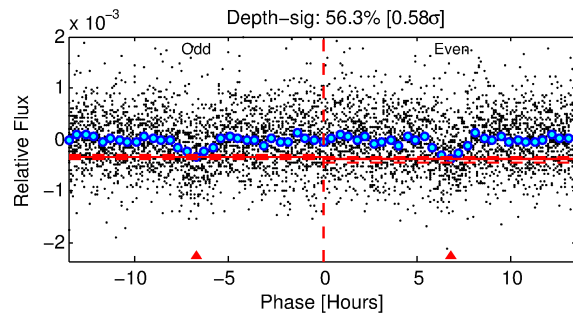
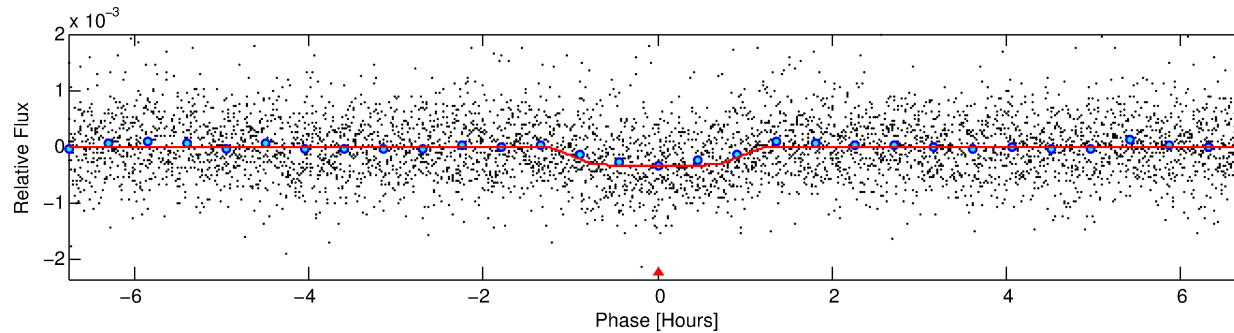
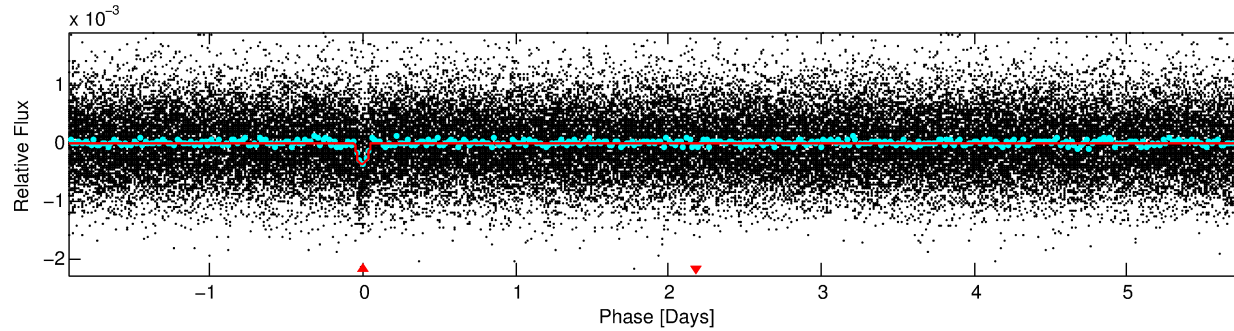
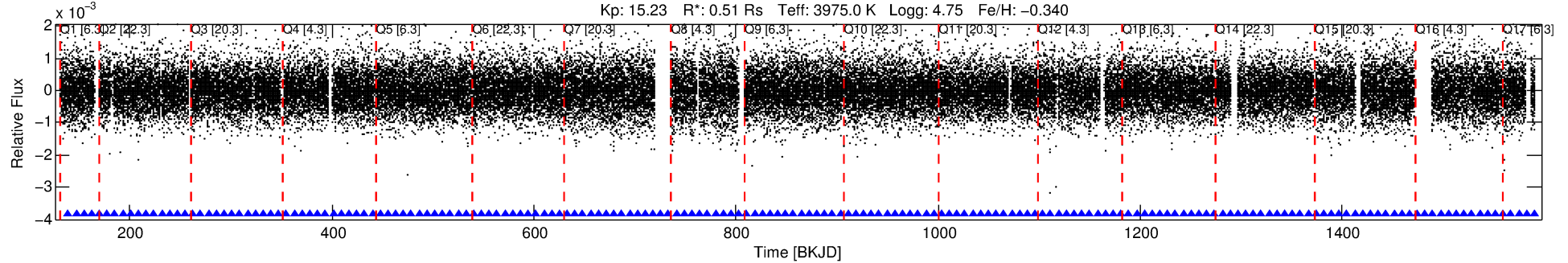
No Significant Match Found

# DV One-Page Summary

KIC: 10118816 Candidate: 1 of 1 Period: 7.718 d

KOI: K01085.01 Corr: 0.934

Kp: 15.23 R\*: 0.51 Rs Teff: 3975.0 K Logg: 4.75 Fe/H: -0.340



## DV Fit Results:

Period = 7.71793 [0.00003] d  
Epoch = 139.1556 [0.0032] BKJD  
Rp/R\* = 0.0201 [0.0072]  
a/R\* = 13.22 [22.73]  
b = 0.89 [0.42]  
Seff = 15.04 [1.74]  
Teq = 502 [15] K  
Rp = 1.12 [0.41] Re  
a = 0.0621 [0.0035] AU  
Ag = 83.09 [72.80] [1.13σ]  
Teffp = 2344 [514] K [3.58σ]

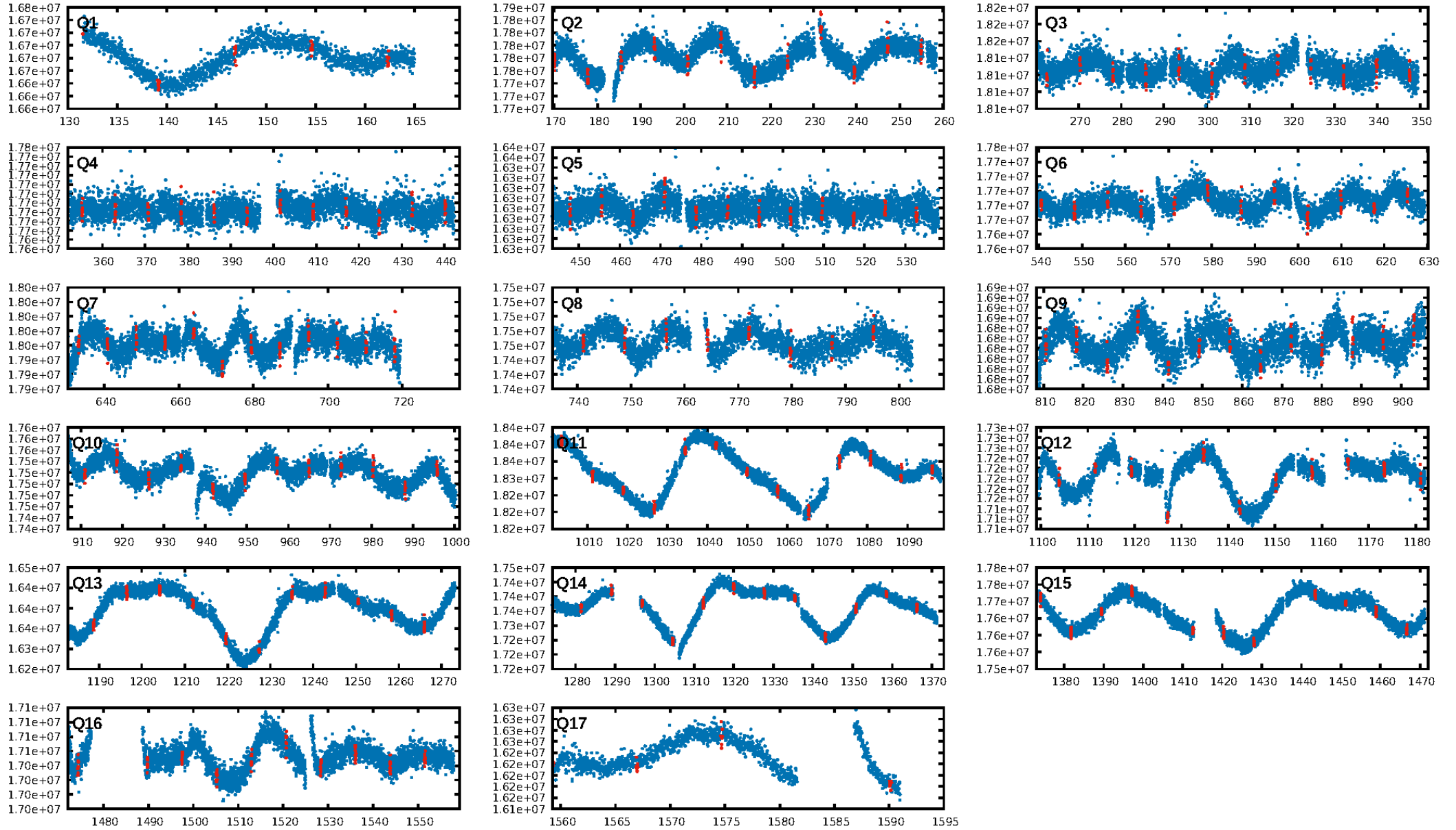
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: 99.2%  
ModelChiSquareGof-sig: 100.0%  
Bootstrap-pfa: 9.32e-36  
RollingBand-fgt: 1.00 [172/172]  
GhostDiagnostic-chr: 3.504  
Centroid-sig: 0.0%  
Centroid-so: 1.460 arcsec [1.59σ]  
OotOffset-rm: 0.236 arcsec [0.42σ]  
KicOffset-rm: 0.516 arcsec [0.80σ]  
OotOffset-st: 3/4/4/2 [13]  
KicOffset-st: 3/4/4/2 [13]  
DiffImageQuality-fgm: 0.54 [7/13]  
DiffImageOverlap-fno: 1.00 [17/17]

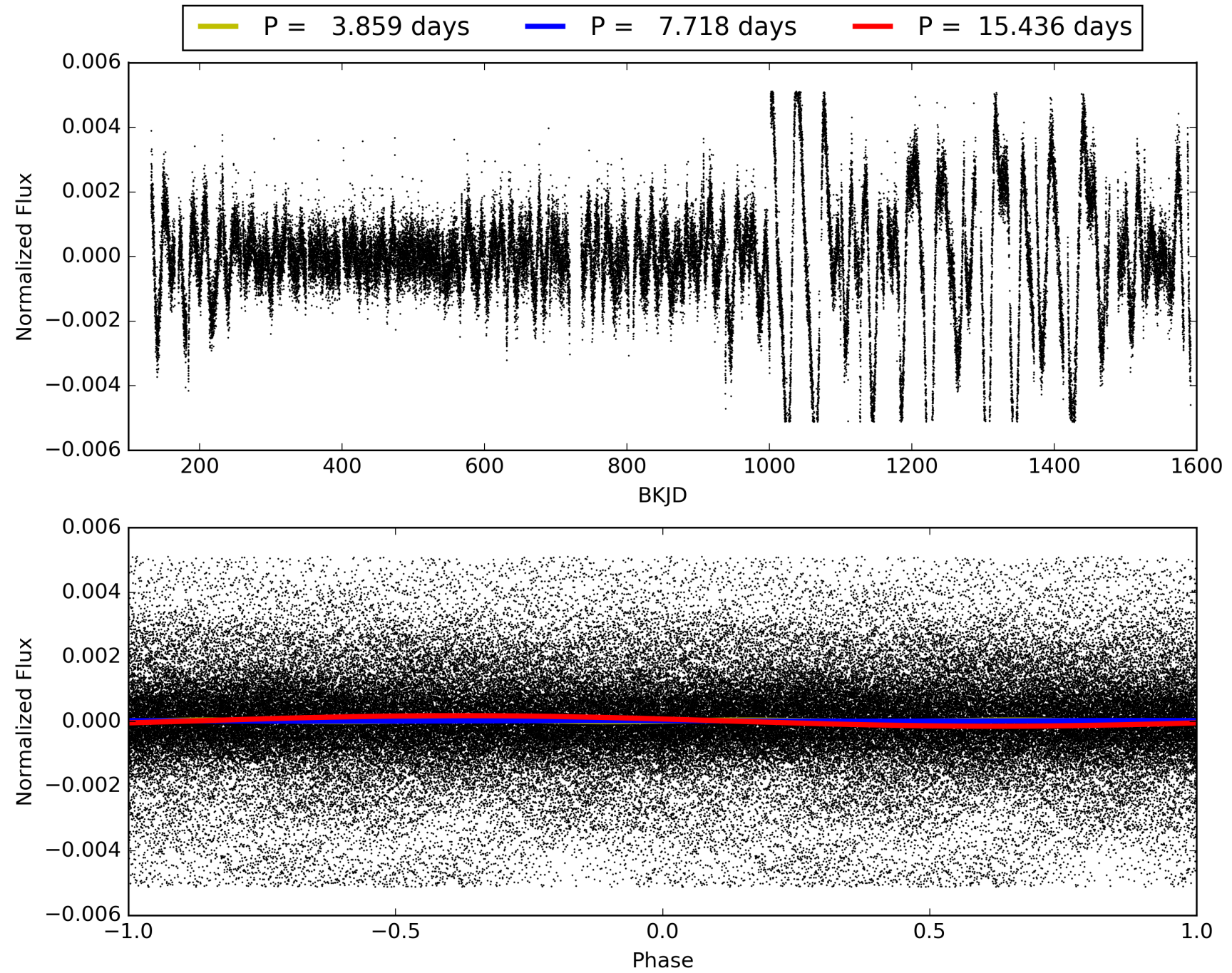
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 15:28:31 Z

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

# TCE 010118816-01, PDC Light Curves

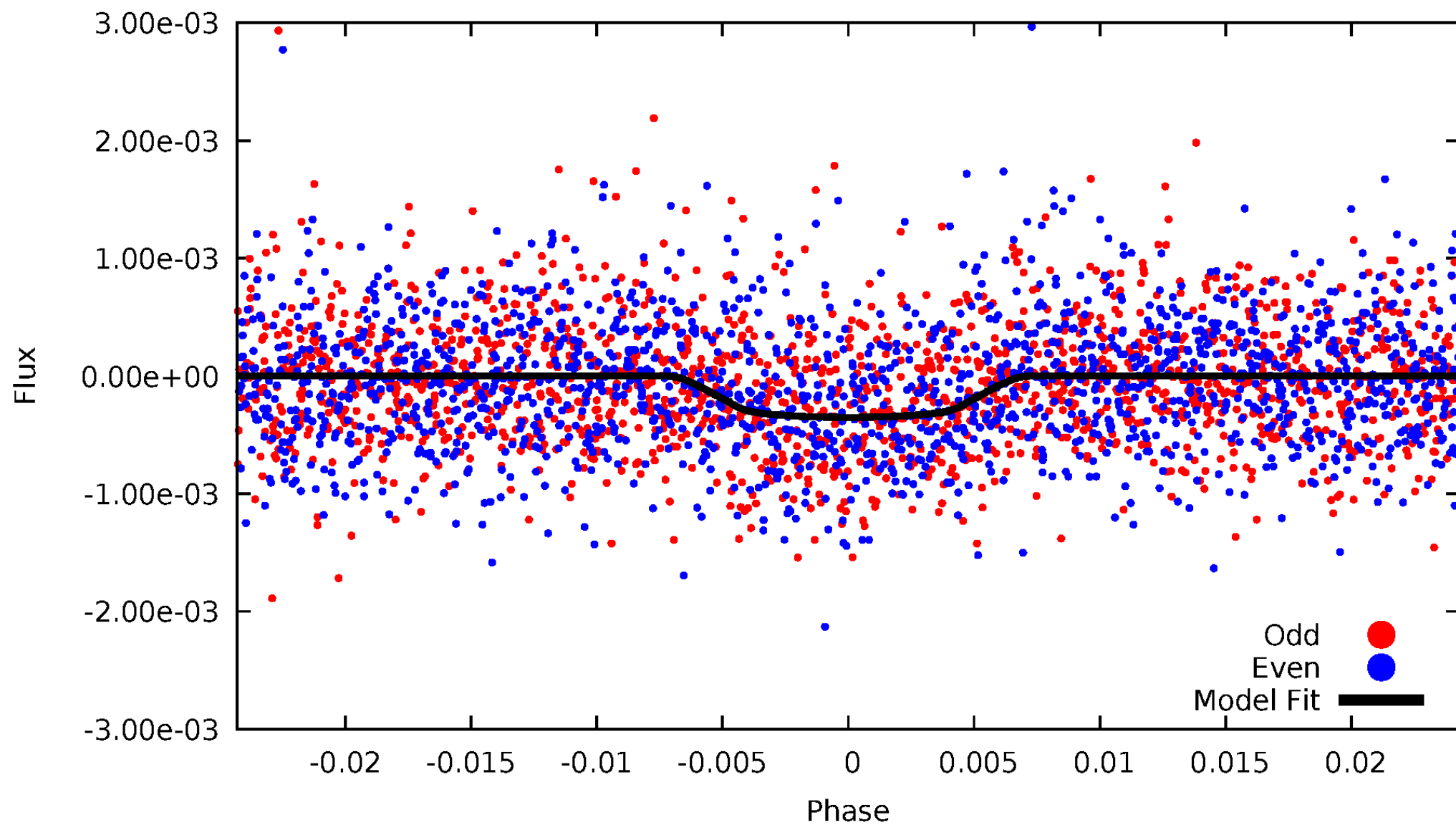


# TCE 010118816-01



# DV Odd/Even

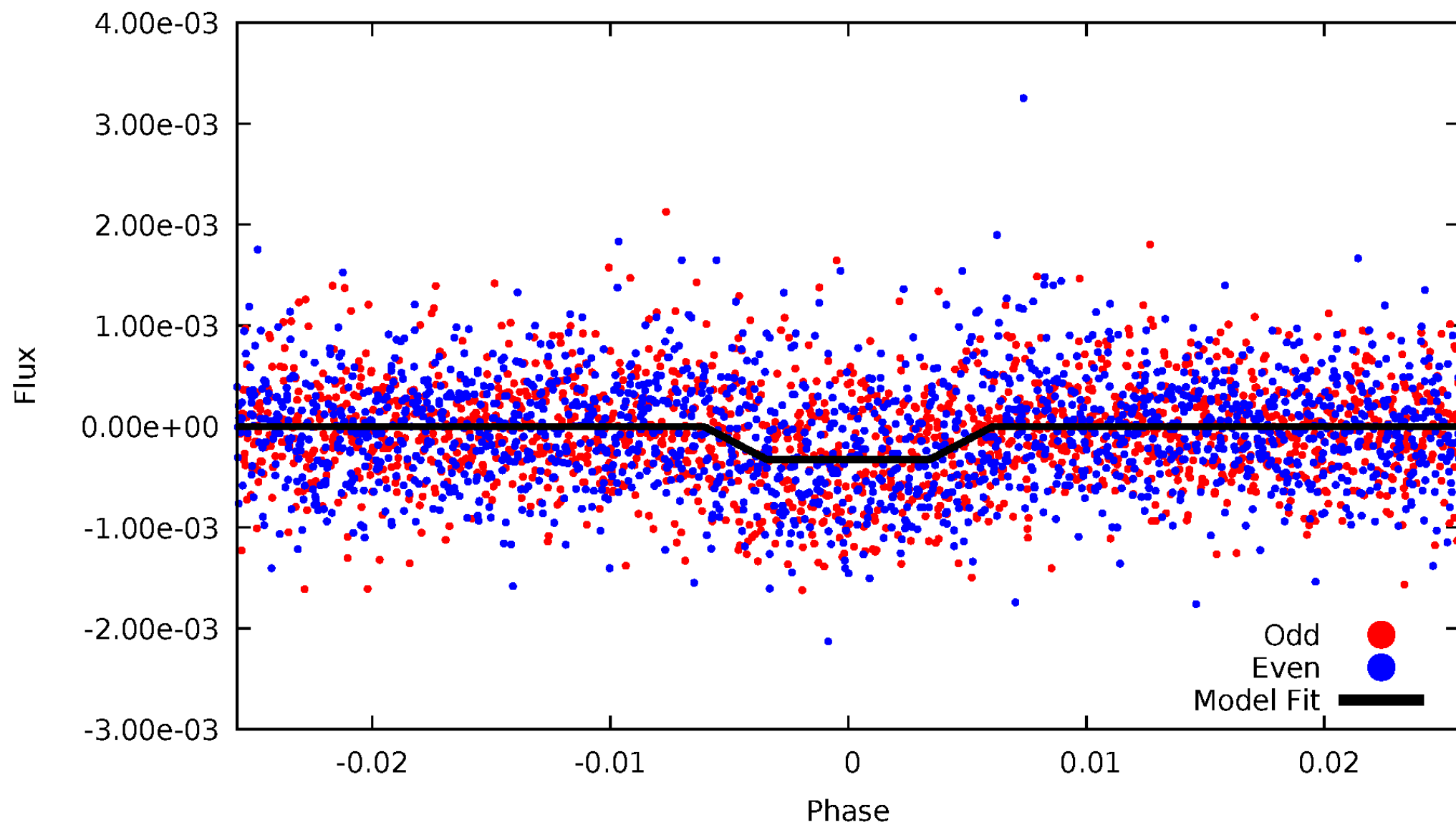
TCE 010118816-01



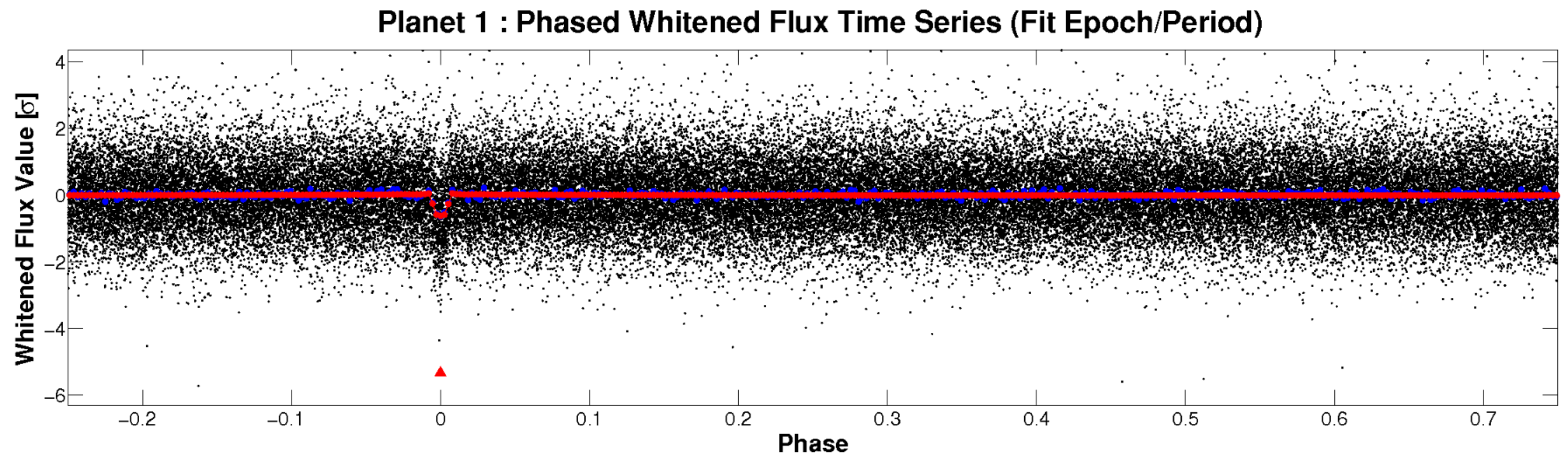
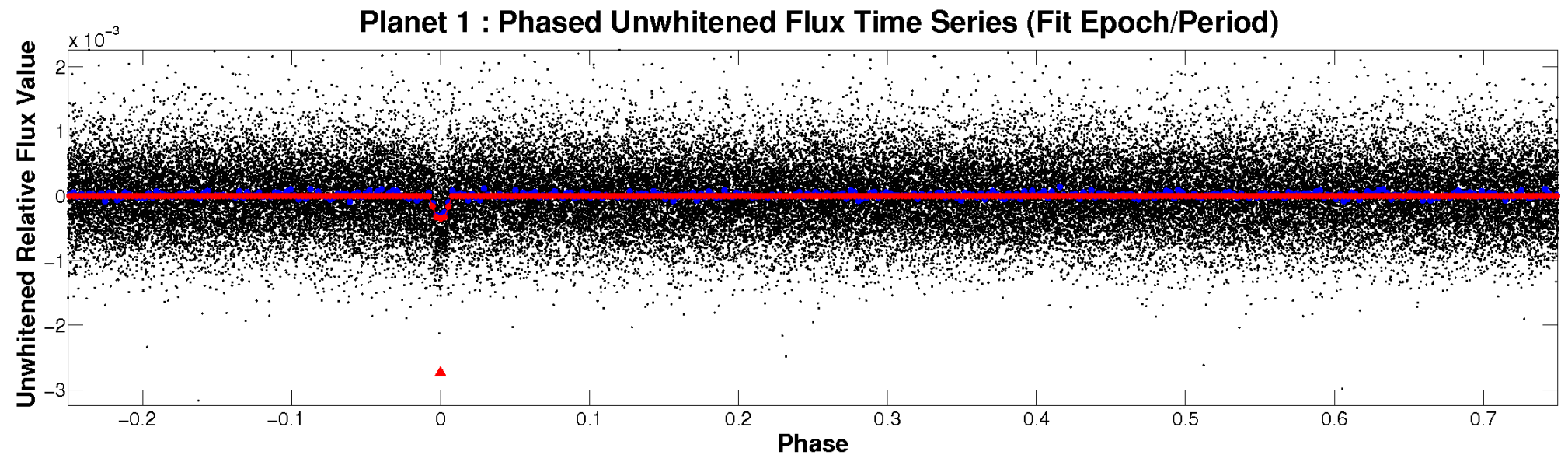


# ALT Odd/Even

TCE 010118816-01

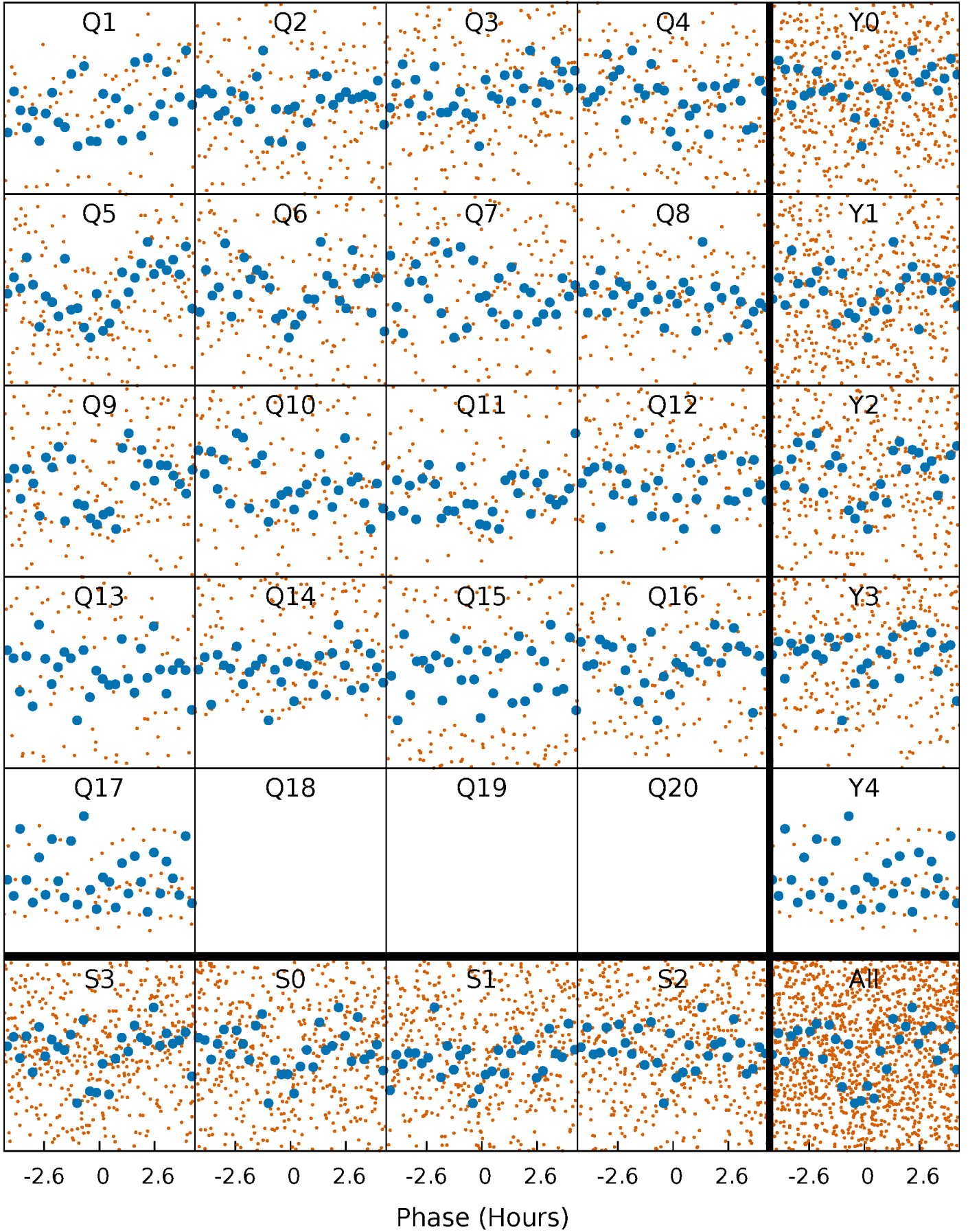


# Non-Whitened Vs. Whitened Light Curve



# PDC Quarter-Phased Transit Curves

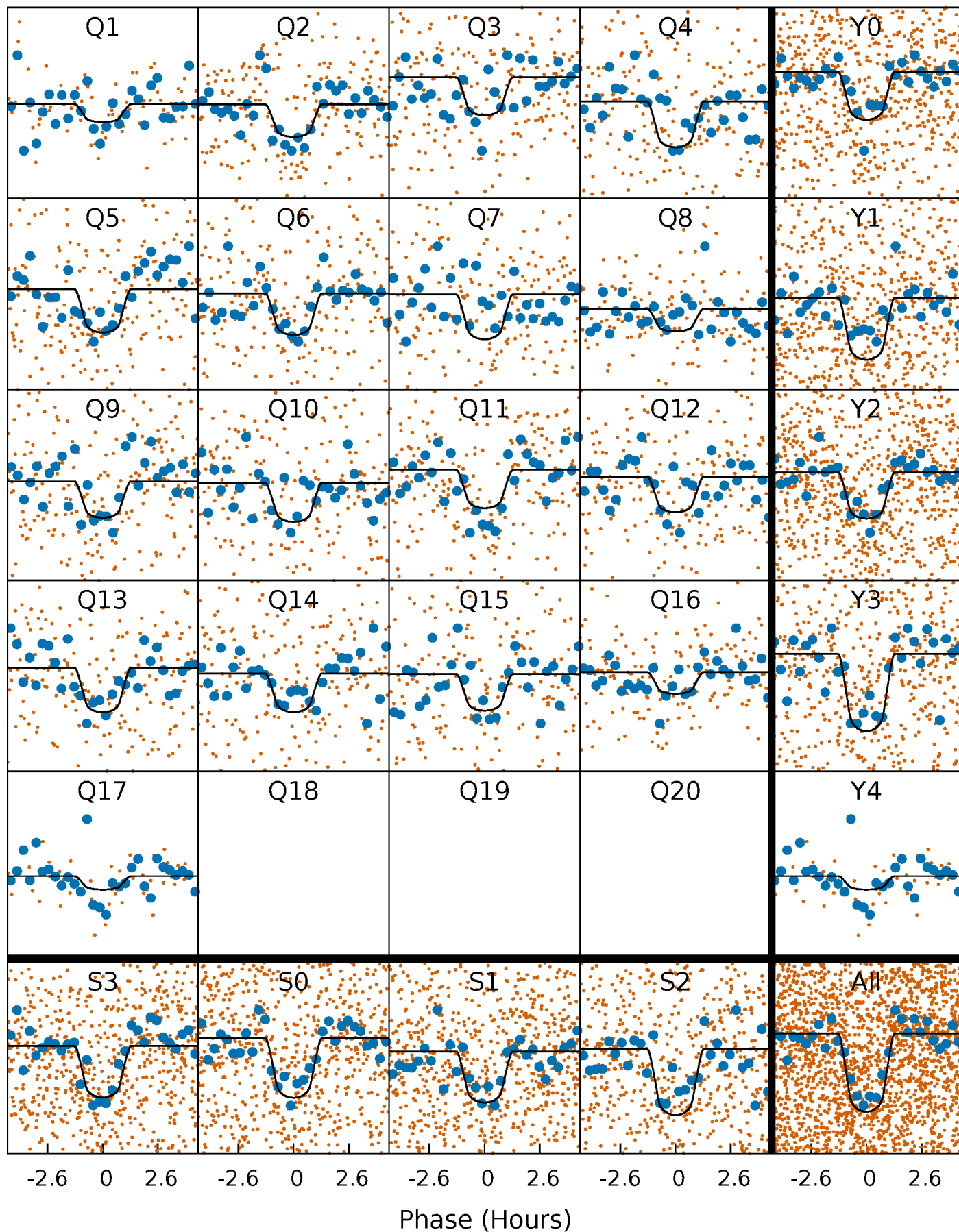
TCE 010118816-01 P= 7.717930 Days  $T_0=139.155558$  (BKJD)





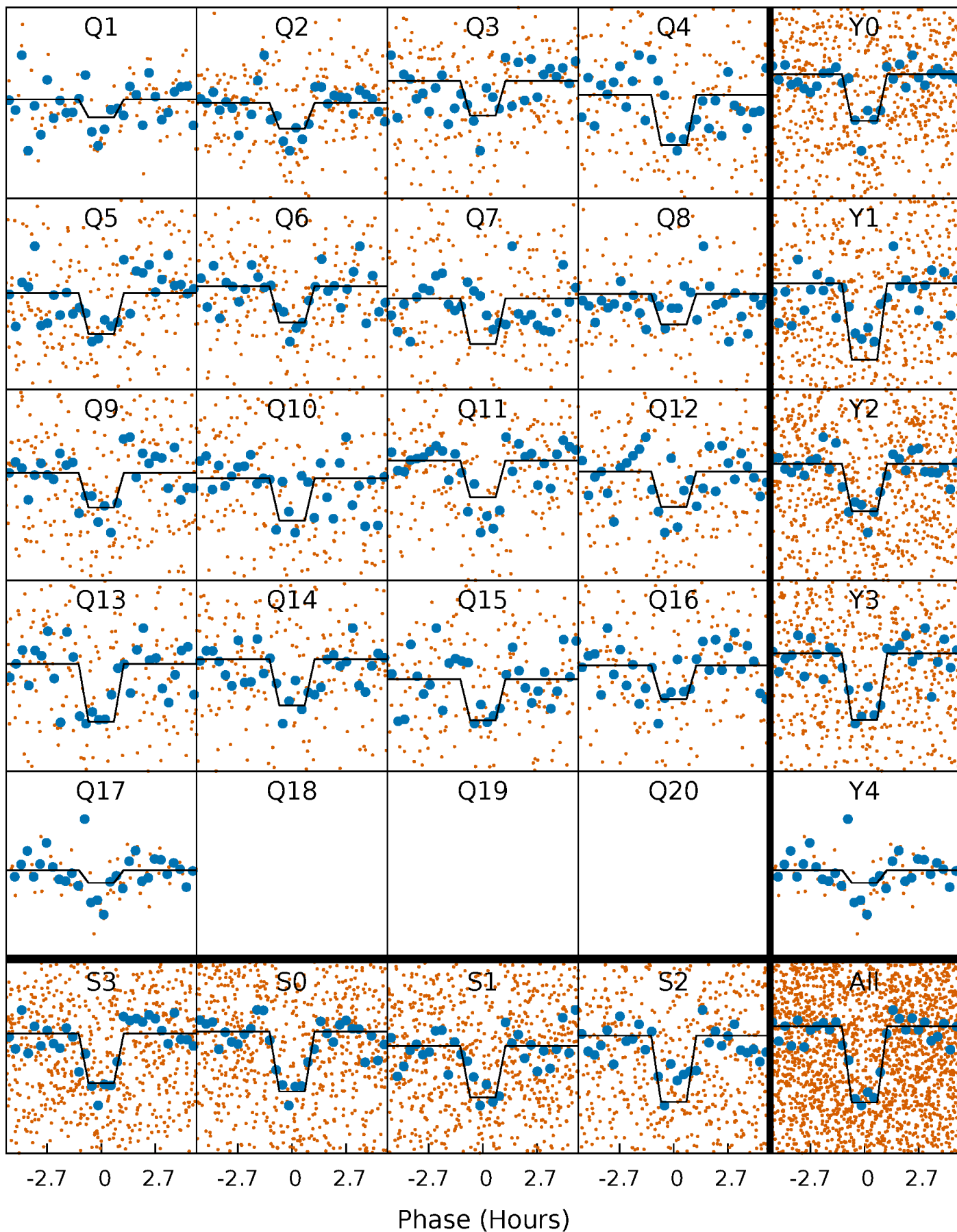
# DV Quarter-Phased Transit Curves

TCE 010118816-01 P= 7.717930 Days  $T_0=139.155558$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

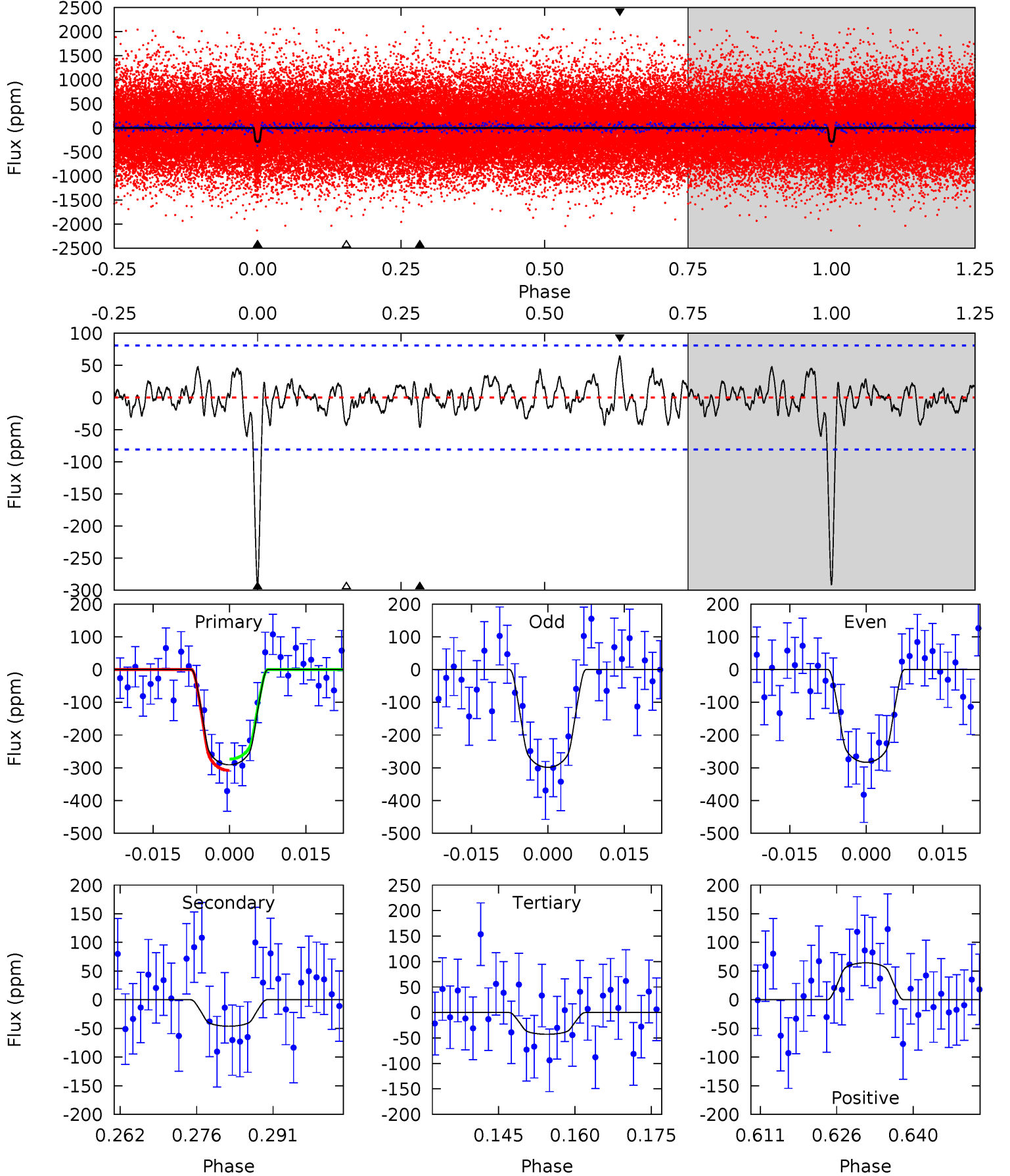
TCE 010118816-01 P= 7.717930 Days  $T_0=139.154963$  (BKJD)



# DV Model-Shift Uniqueness Test

010118816-01, P = 7.717930 Days, E = 131.437628 Days

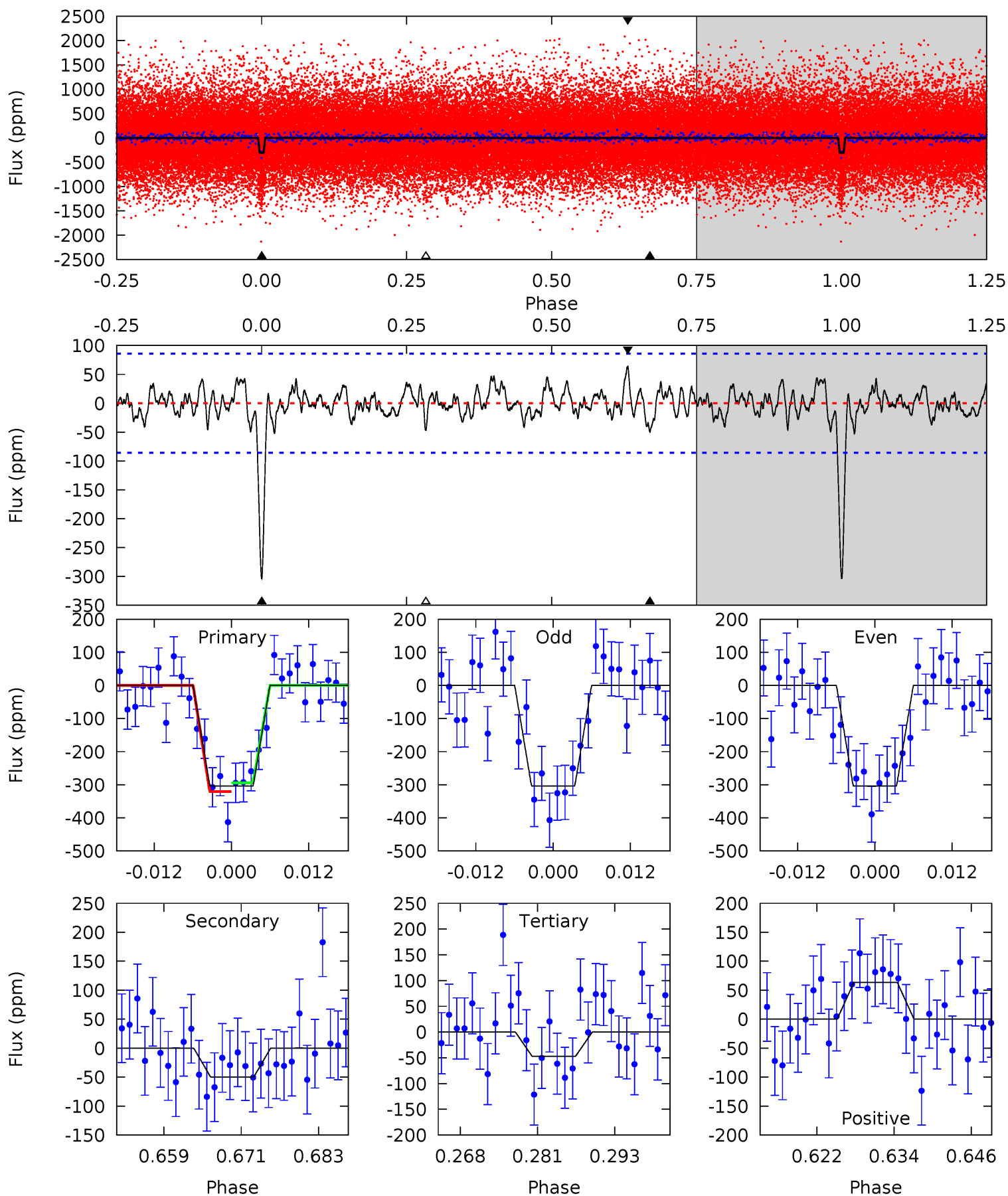
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
17.8	2.82	2.62	3.94	4.95	2.44	1.18	15.2	13.9	0.21	-1.12	0.47	0.85	0.18	1.06



# Alt Model-Shift Uniqueness Test

010118816-01, P = 7.717930 Days, E = 131.437033 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
17.7	2.88	2.74	3.70	4.99	2.51	1.11	14.9	14.0	0.14	-0.82	0.02	0.88	0.17	0.77



### Stellar Parameters For KIC 010118816

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R$ ( $R_{\odot}$ )	$M(M_{\odot})$	$p_{\star}$ ( $\text{g}\cdot\text{cm}^{-3}$ )
	$3975^{+71}_{-87}$	$4.753^{+0.031}_{-0.038}$	$-0.340^{+0.150}_{-0.150}$	$0.509^{+0.037}_{-0.037}$	$0.535^{+0.030}_{-0.041}$	$5.705^{+0.919}_{-0.865}$
	+2%/-2%	+1%/-1%	+44%/-44%	+7%/-7%	+6%/-8%	+16%/-15%
Source	SPE70	SPE60	SPE70	DSEP		

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

### Secondary Eclipse Parameters for KIC 010118816-01 / KOI 1085.01

Detrend	Depth (ppm)	$R_p$ ( $R_{\oplus}$ )	$T_{max}$ (K)	$T_{obs}$ (K)	$A_{obs}$
DV	$-46 \pm 16$	$1.12^{+0.42}_{-0.41}$	$703^{+15}_{-18}$	$2840^{+403}_{-261}$	$77^{+128}_{-41}$
Alt.	$-50 \pm 17$	$1.02^{+0.42}_{-0.40}$	$701^{+18}_{-16}$	$2928^{+467}_{-289}$	$96^{+170}_{-52}$

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



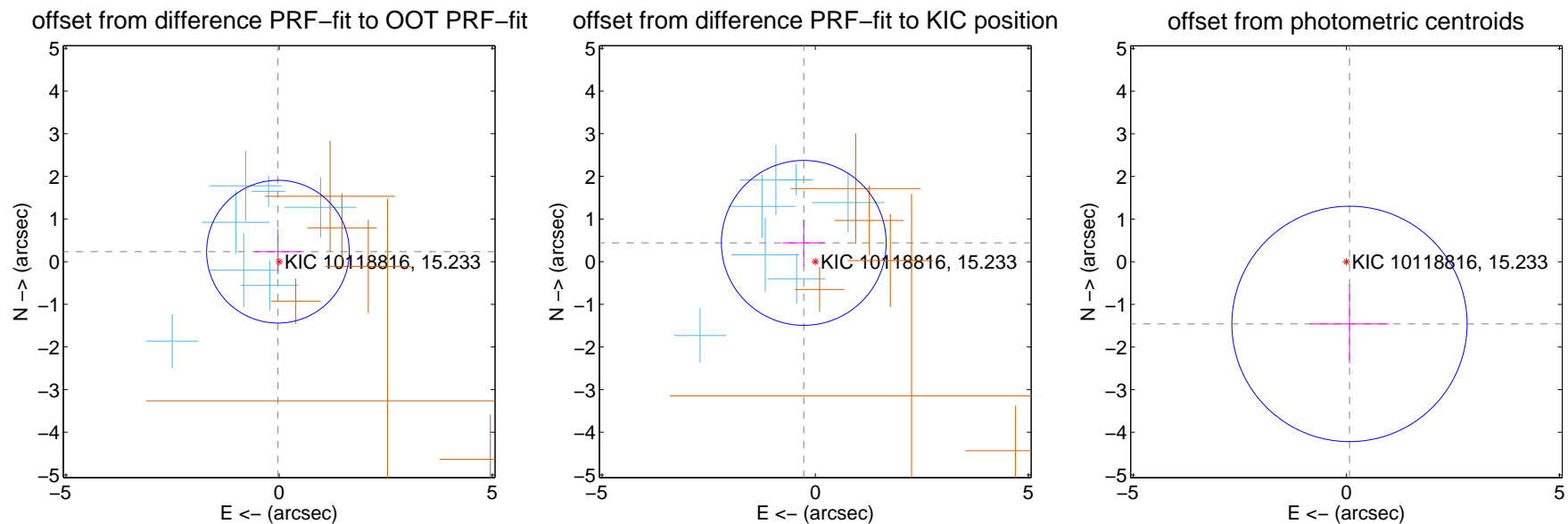
## DV Centroid Data

Supplemental centroid analysis for 010118816-01. Kepler magnitude: 15.23. Transit SNR 14.50

There are 7 quarters with good PRF difference image offsets

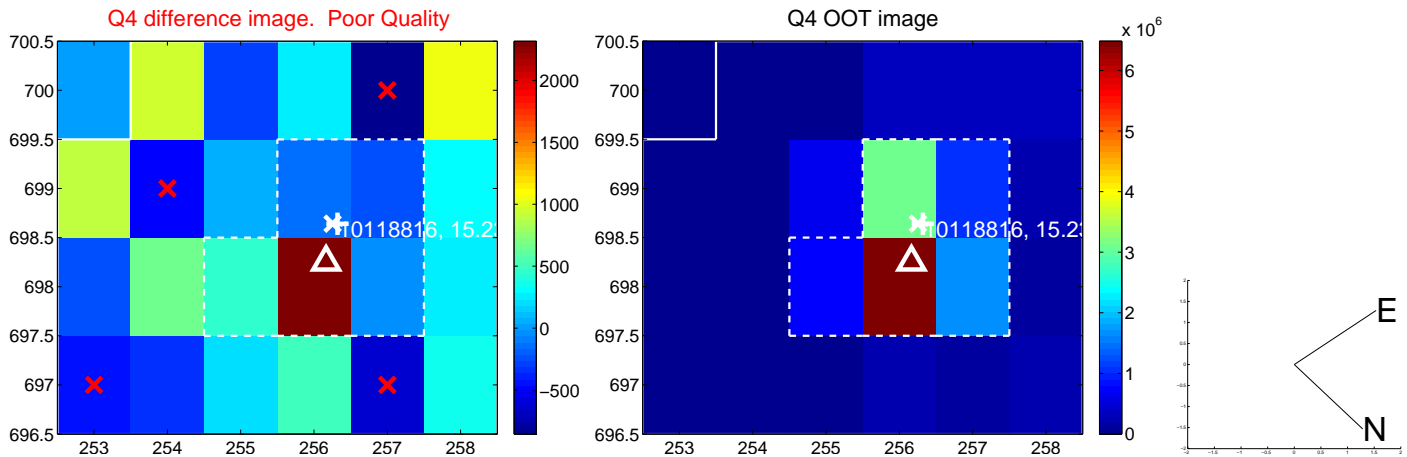
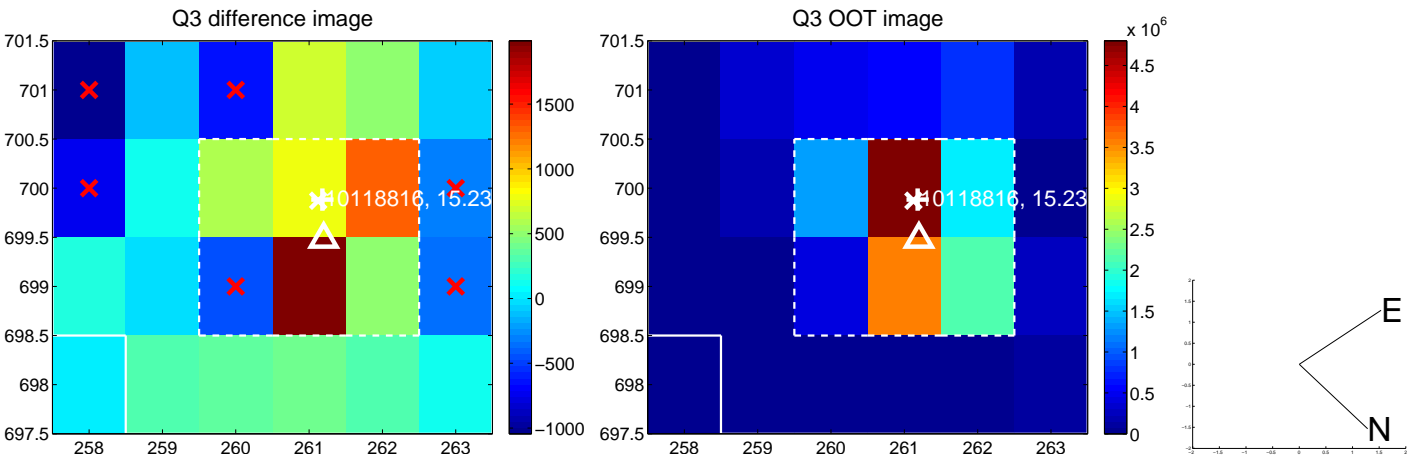
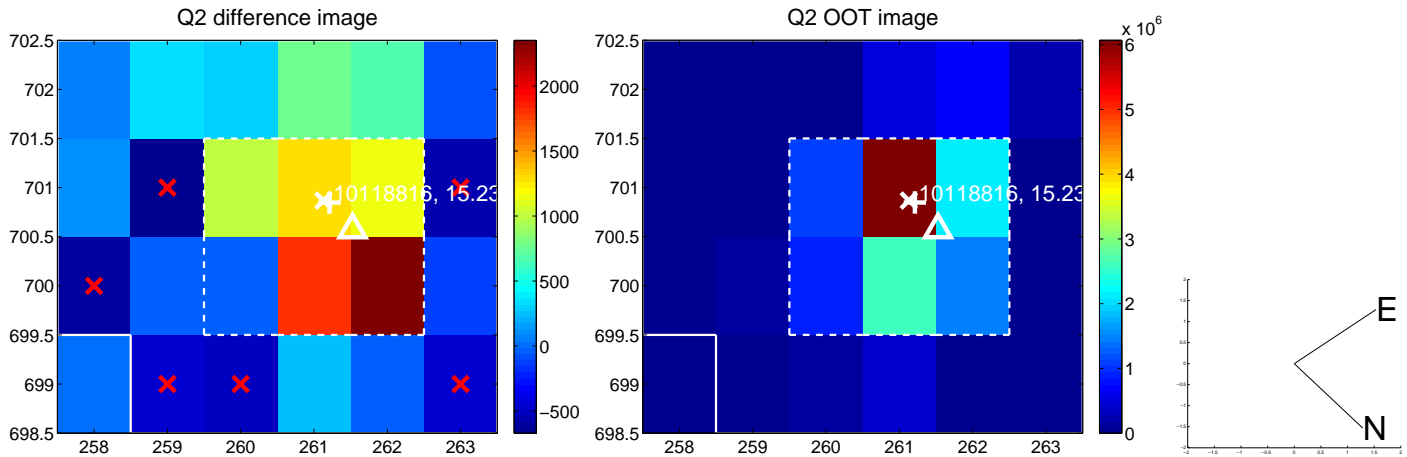
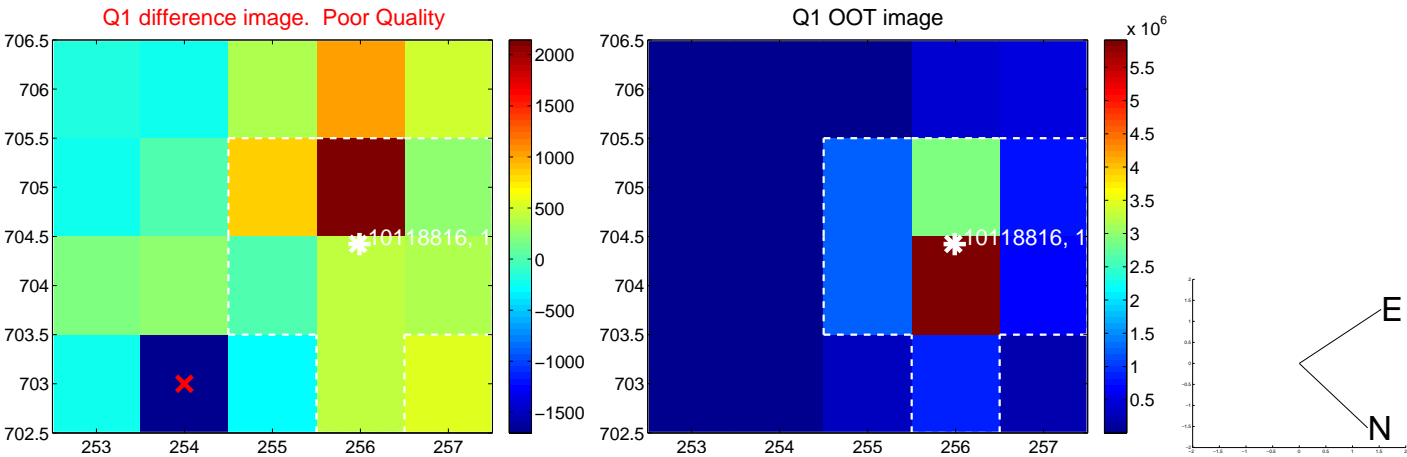
The direct PRF centroid is offset from the target star catalog position by about 0.33 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.236 \pm 0.558$	0.42	$0.029 \pm 0.545$	$0.234 \pm 0.525$
PRF-fit source offset from KIC position	$0.516 \pm 0.644$	0.80	$0.270 \pm 0.500$	$0.440 \pm 0.547$
photometric centroid source offset	$1.46 \pm 0.92$	1.59	$-0.07 \pm 0.93$	$-1.46 \pm 0.92$

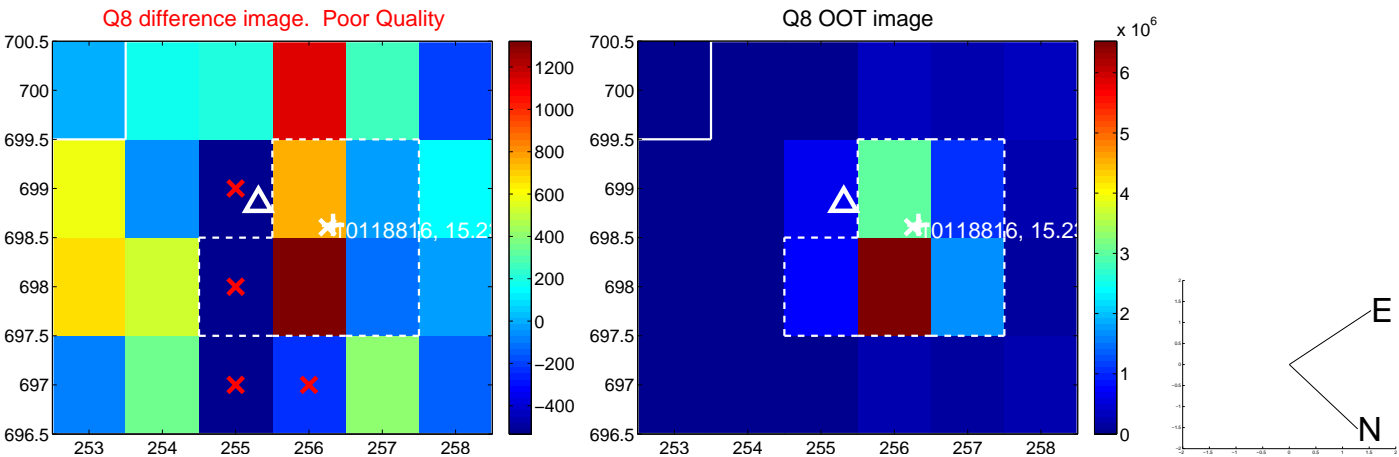
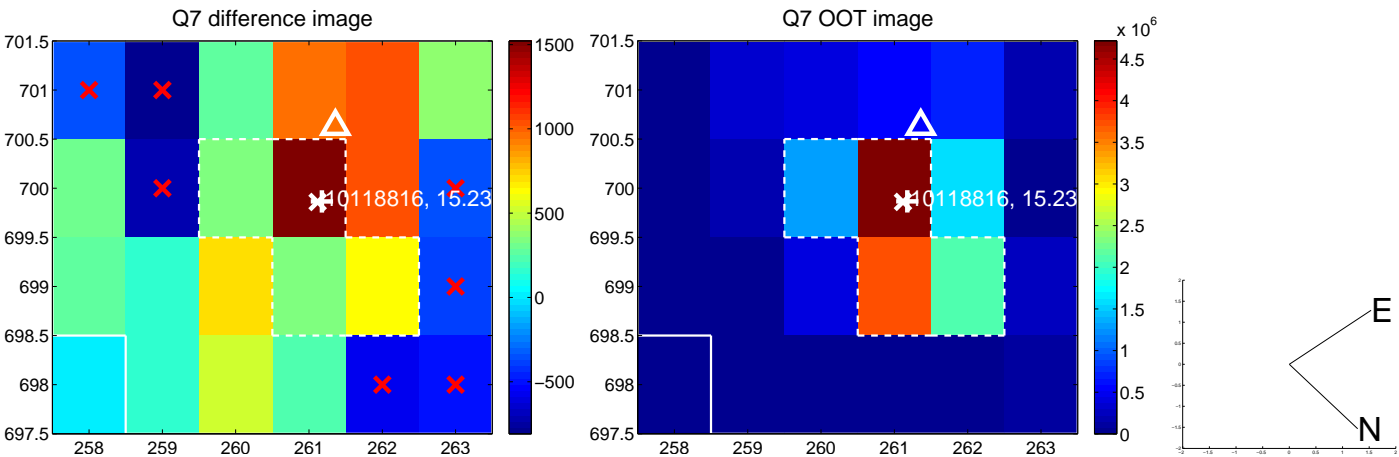
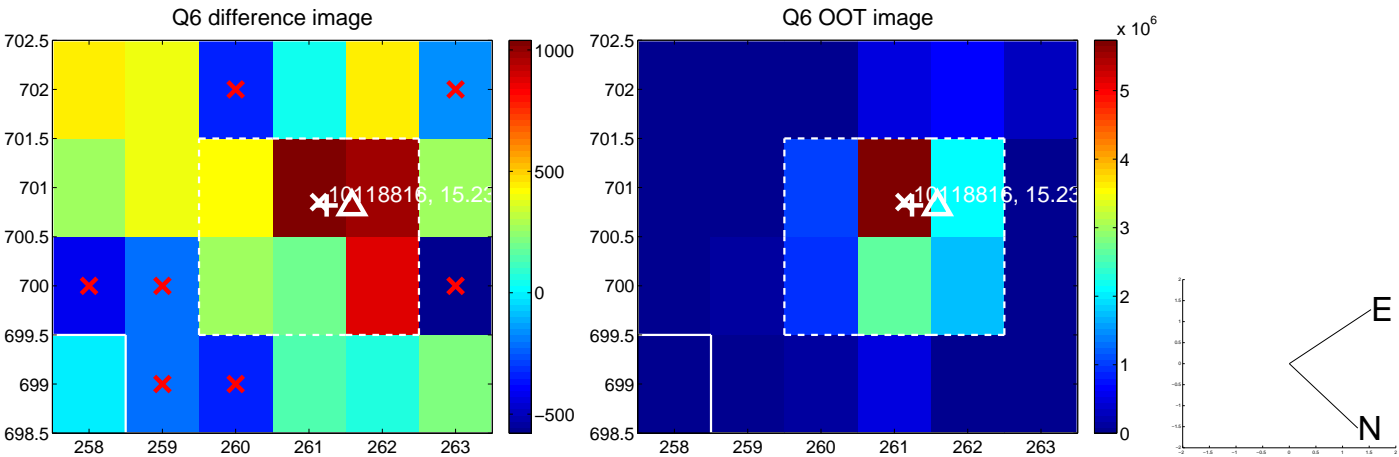
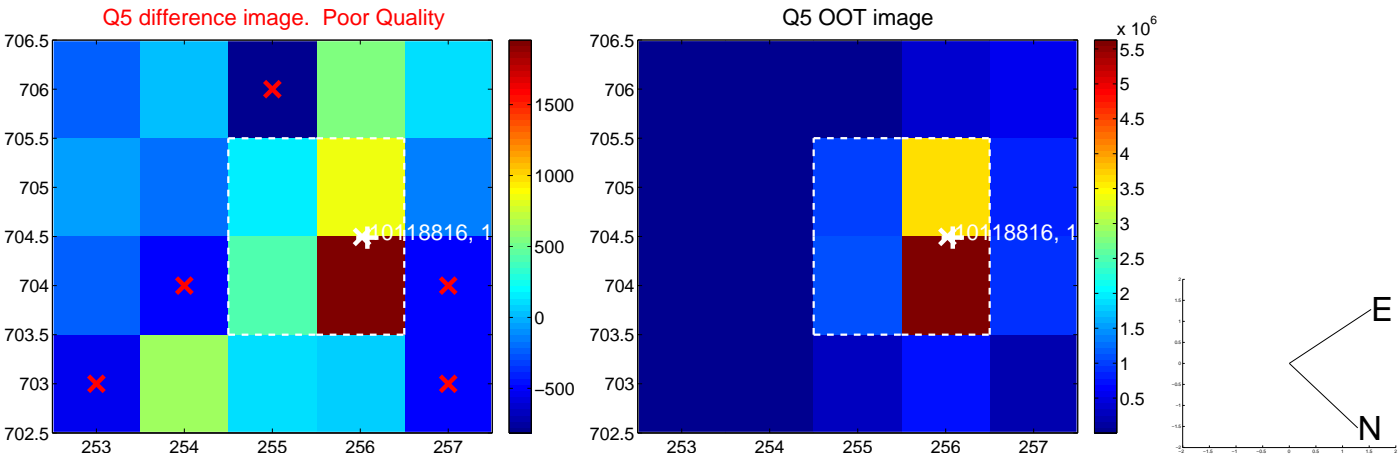


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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

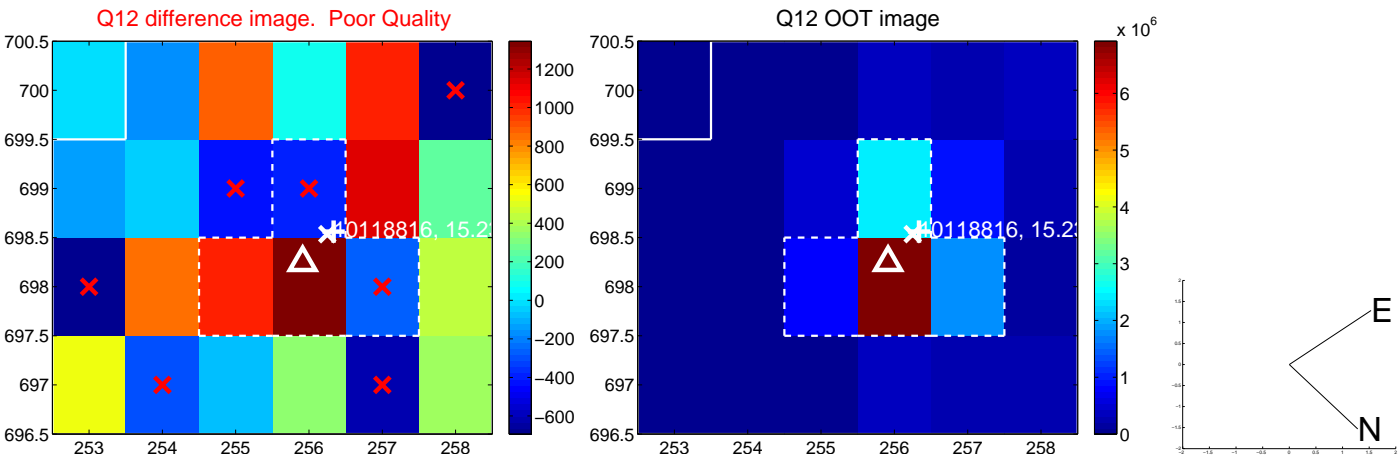
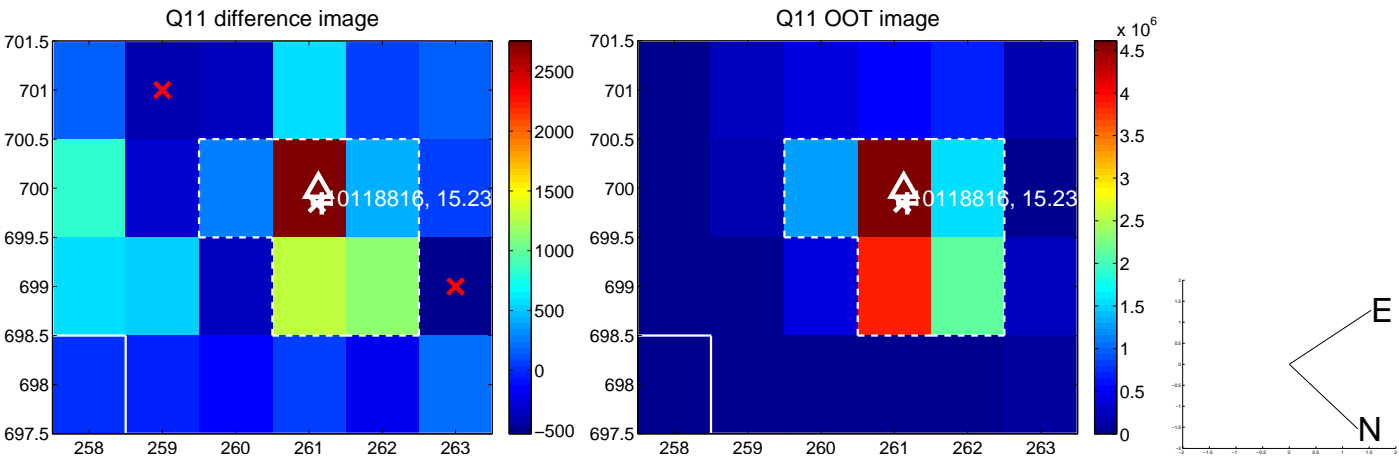
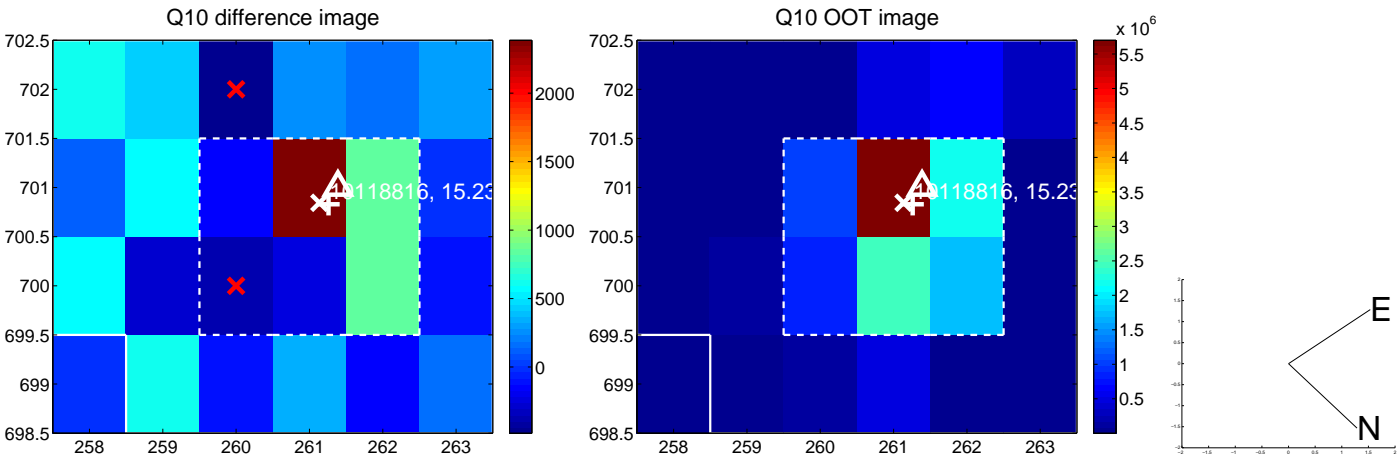
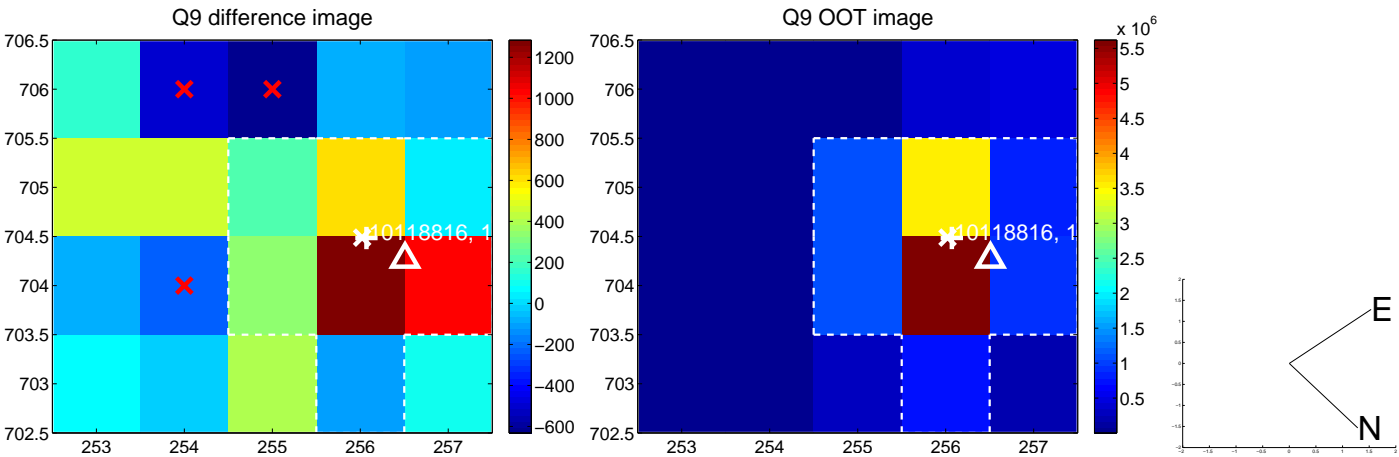
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



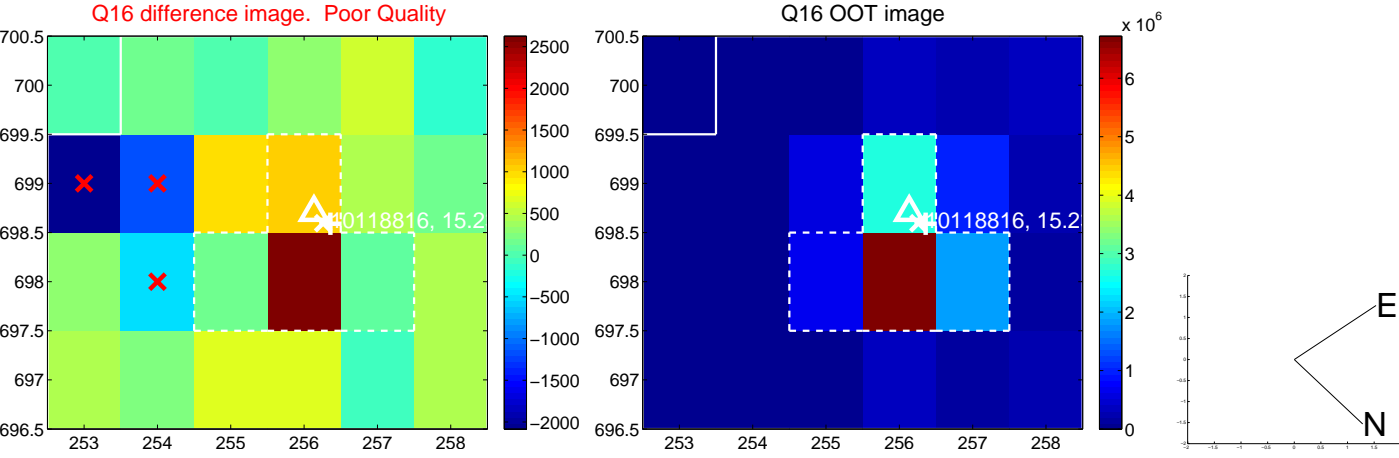
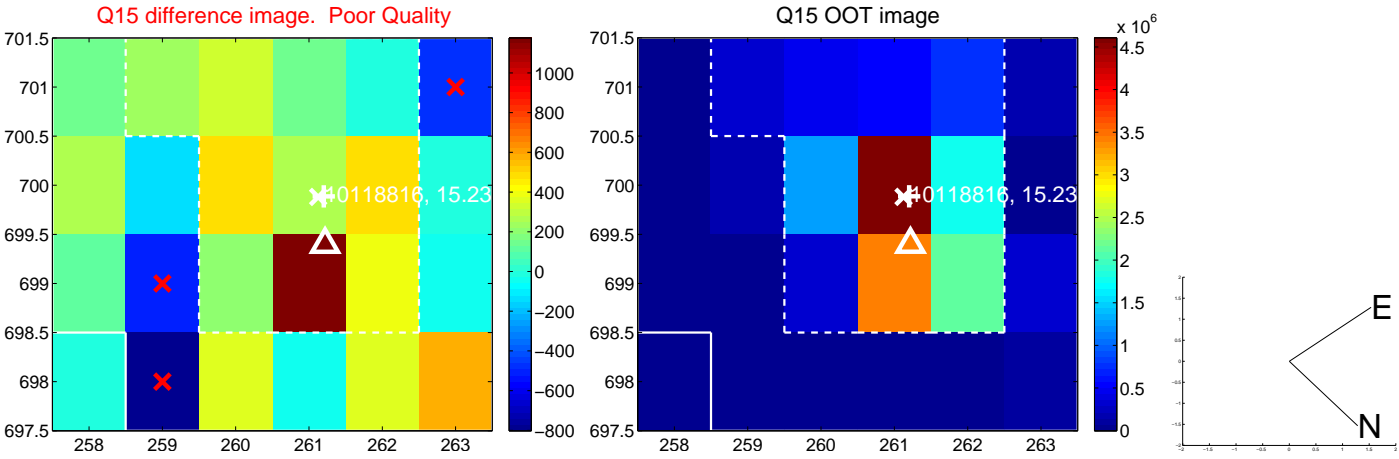
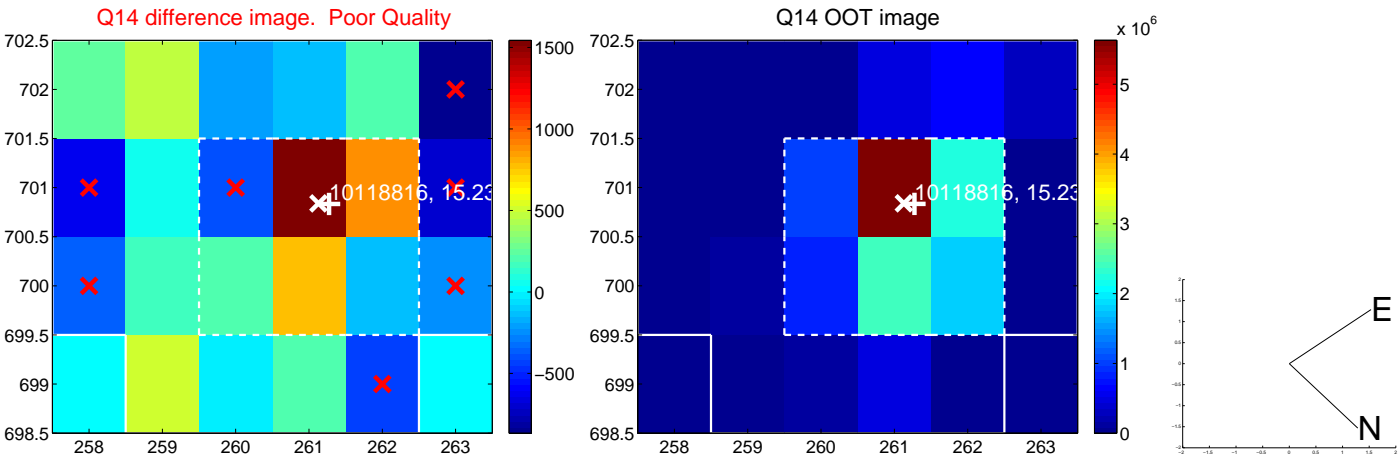
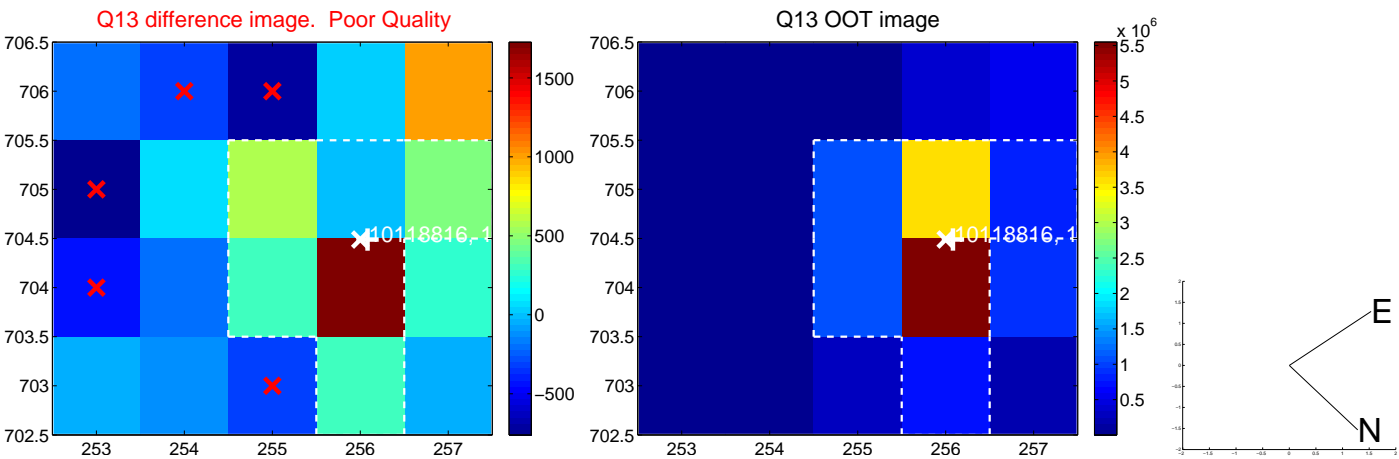
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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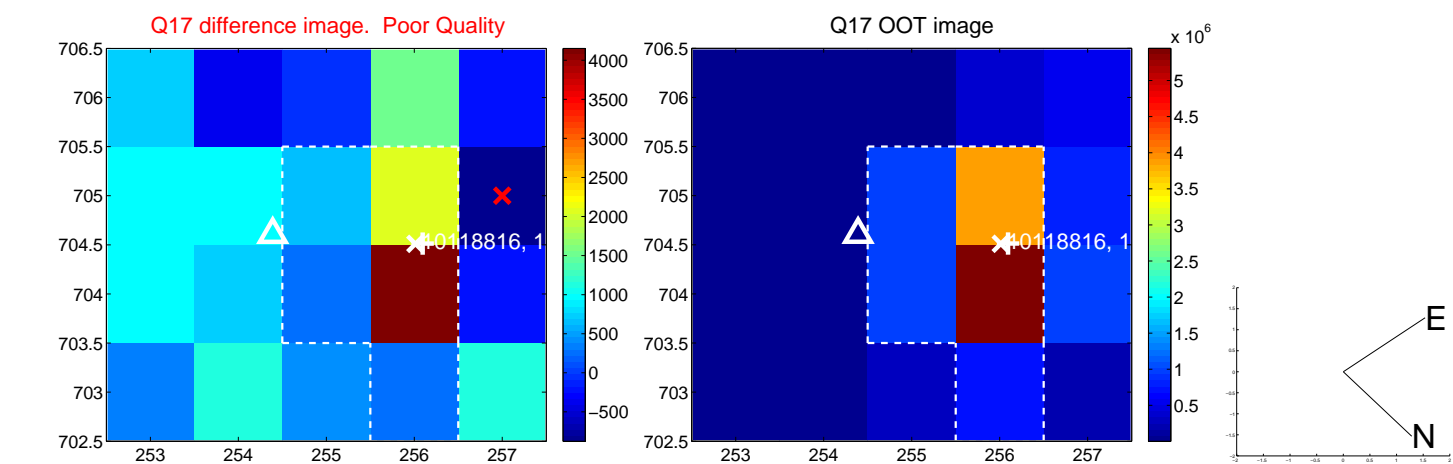


white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

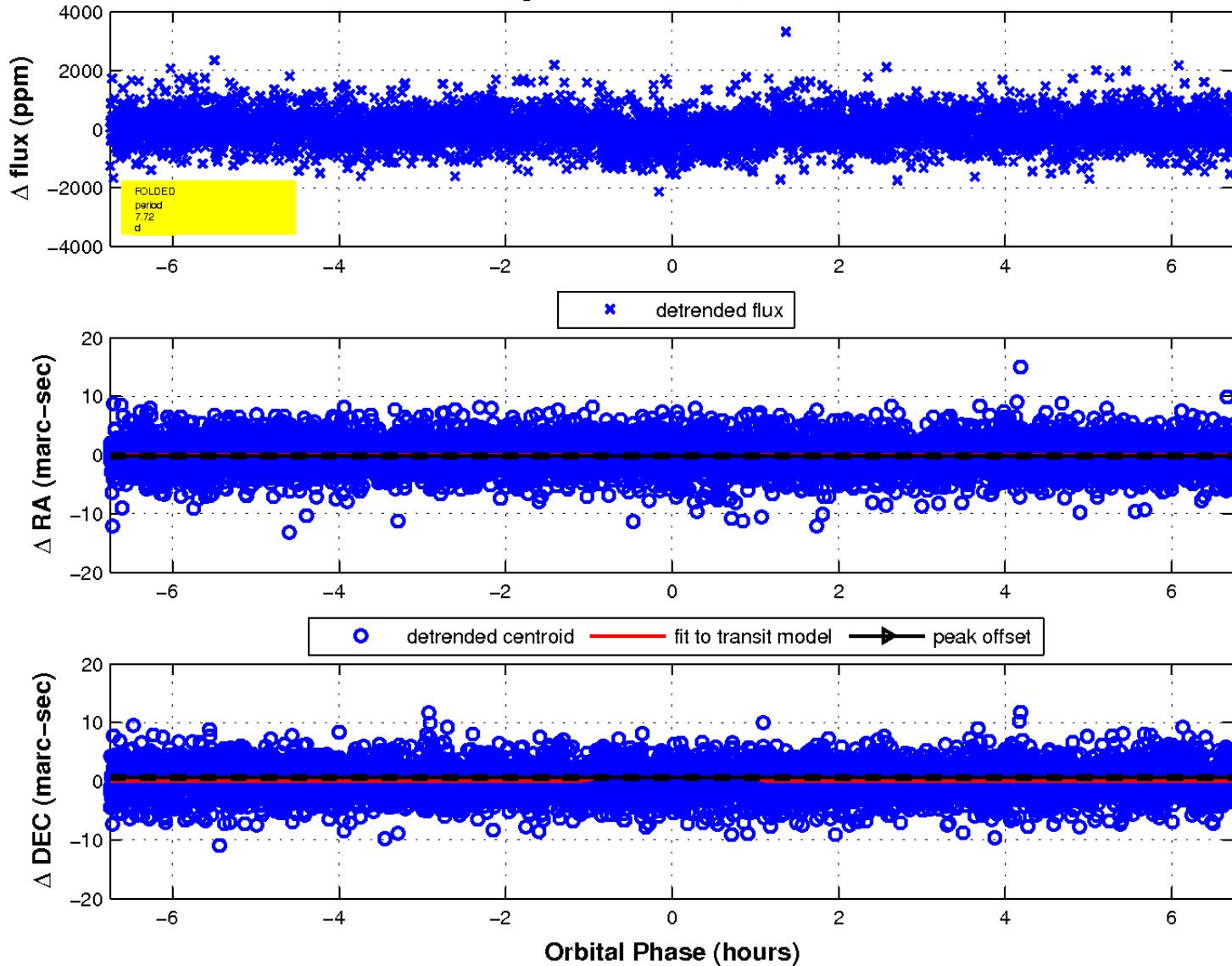




white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



fluxWeightedCentroids, Planet 1 of 1



UKIRT Image

Declination

