

# KIC 003219643

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
003219643-01	OBS	3072.01	24.336416	154.395481	542.6	4.646	12.2	13.9	0.81	5141	3.85	18.10

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
003219643-01	OBS	FP	0.00	0	1	0	0	DEEP_V_SHAPED

**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 003219643-01

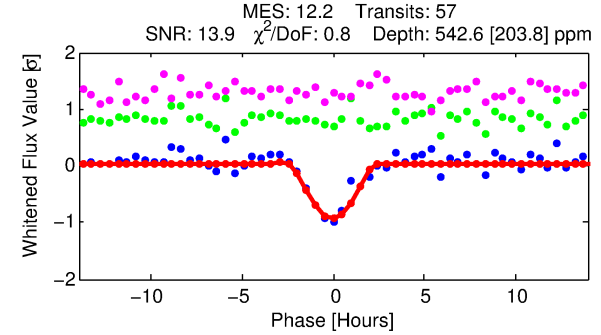
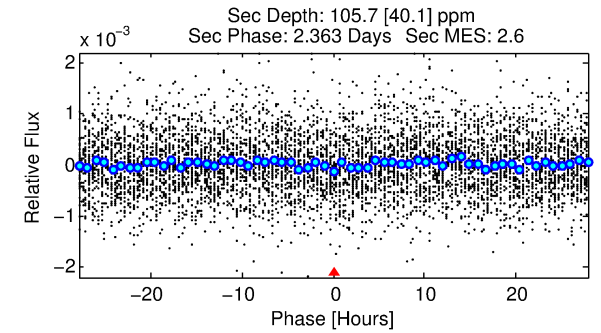
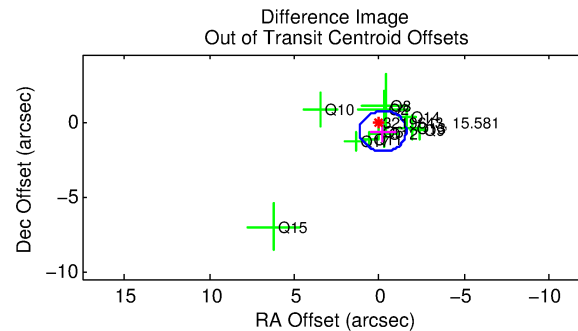
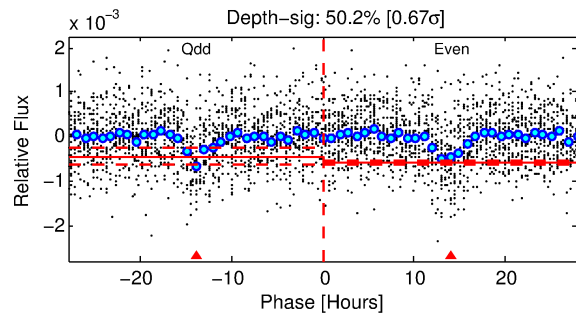
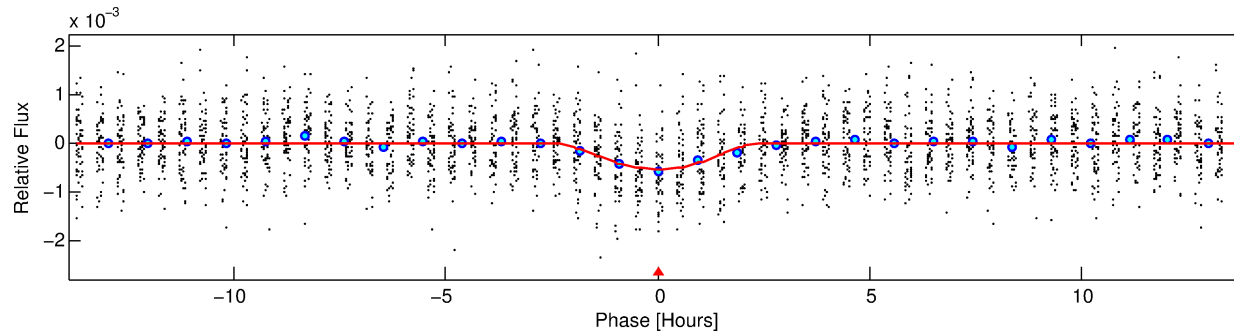
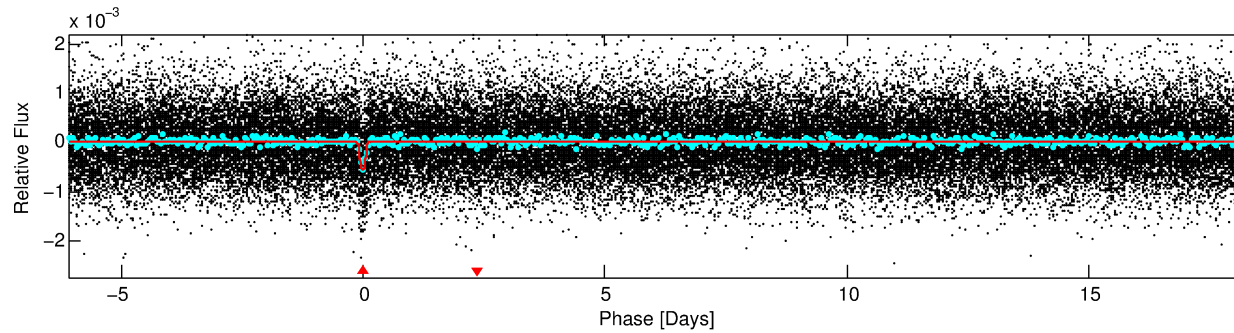
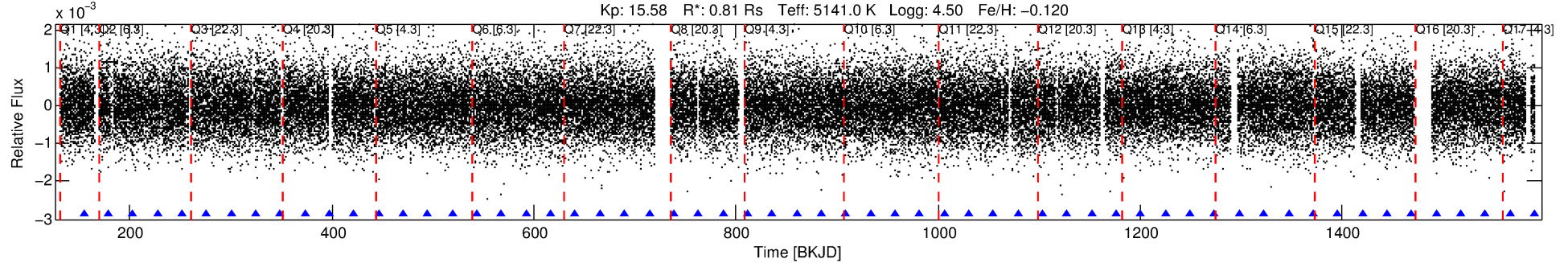
No Significant Match Found

# DV One-Page Summary

KIC: 3219643 Candidate: 1 of 1 Period: 24.336 d

KOI: K03072.01 Corr: 0.797

Kp: 15.58 R\*: 0.81 Rs Teff: 5141.0 K Logg: 4.50 Fe/H: -0.120



## DV Fit Results:

Period = 24.33642 [0.00023] d  
Epoch = 154.3955 [0.0079] BKJD  
Rp/R\* = 0.0438 [0.1418]  
a/R\* = 12.06 [9.48]  
b = 1.00 [0.21]  
Seff = 18.10 [3.51]  
Teq = 526 [26] K  
Rp = 3.85 [12.48] Re  
a = 0.1499 [0.0149] AU  
Ag = 88.00 [570.98] [0.15σ]  
Teffp = 2491 [4039] K [0.49σ]

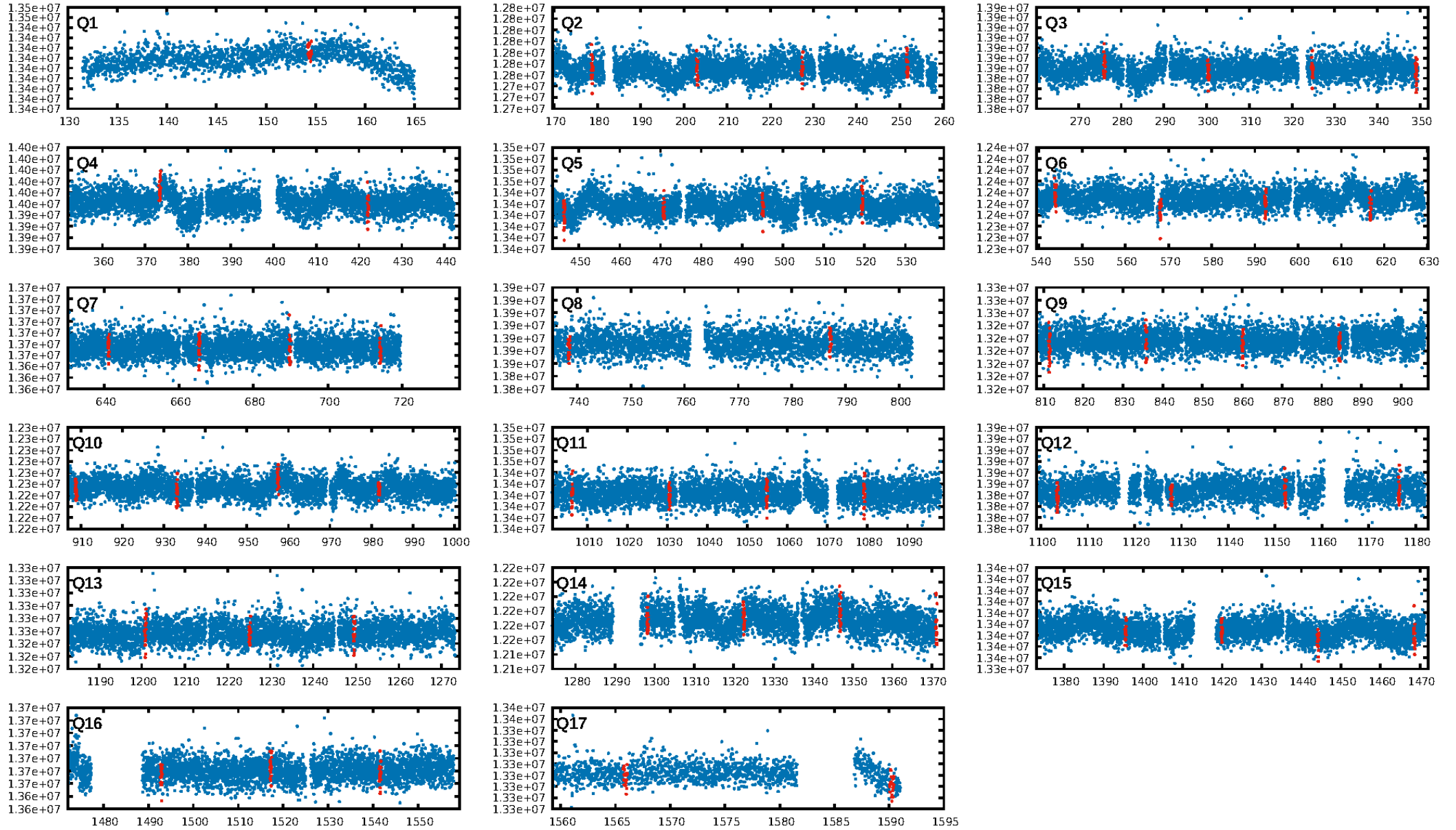
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: 82.2%  
ModelChiSquareGof-sig: 100.0%  
Bootstrap-pfa: 3.50e-34  
RollingBand-fgt: 1.00 [54/54]  
GhostDiagnostic-chr: 3.415  
Centroid-sig: 59.5%  
Centroid-so: 0.322 arcsec [0.28σ]  
OotOffset-rm: 0.675 arcsec [1.49σ]  
KicOffset-rm: 0.478 arcsec [0.87σ]  
OotOffset-st: 4/2/2/3 [11]  
KicOffset-st: 4/2/2/3 [11]  
DiffImageQuality-fgm: 0.36 [4/11]  
DiffImageOverlap-fno: 1.00 [17/17]

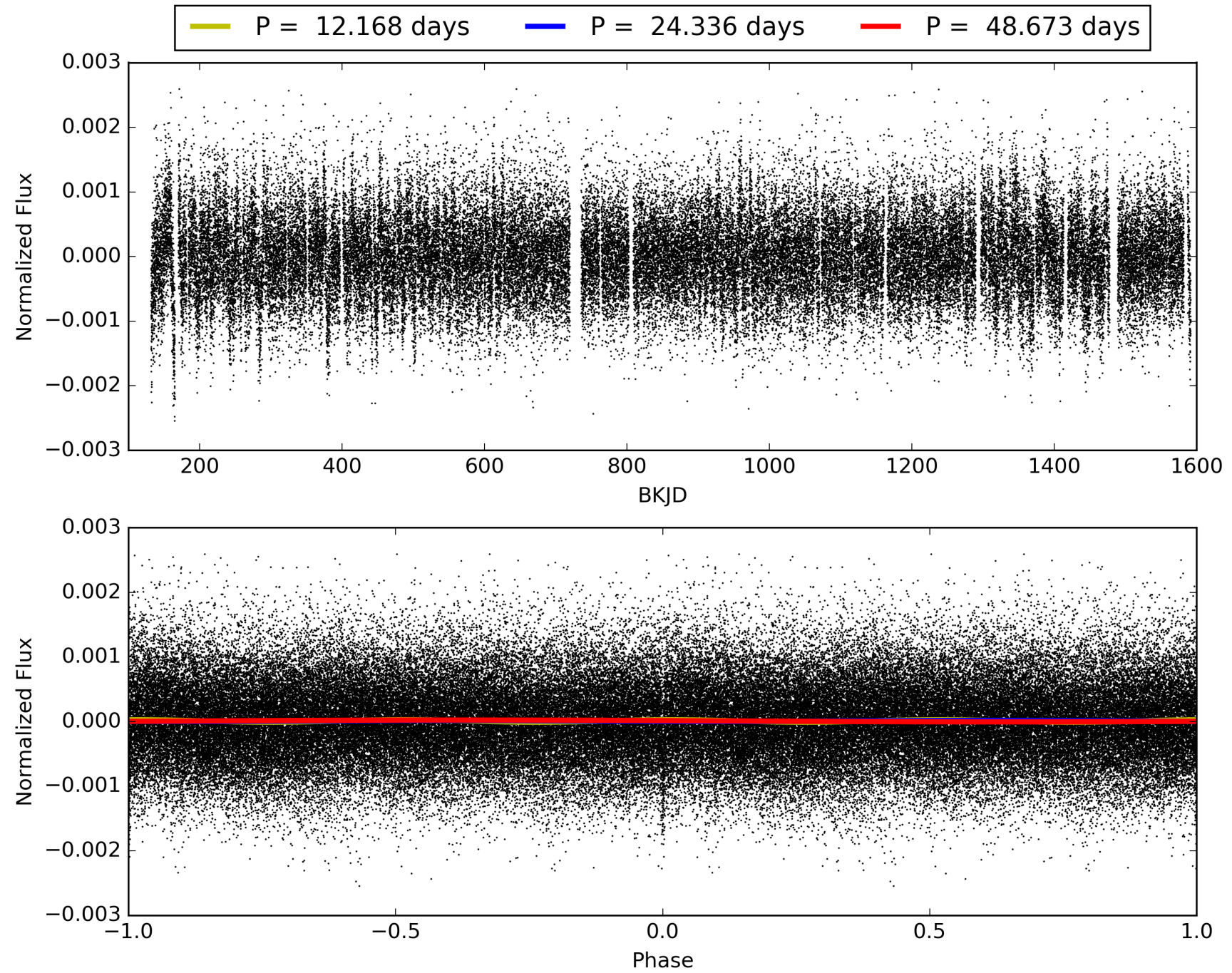
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 15:10:58 Z

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

# TCE 003219643-01, PDC Light Curves

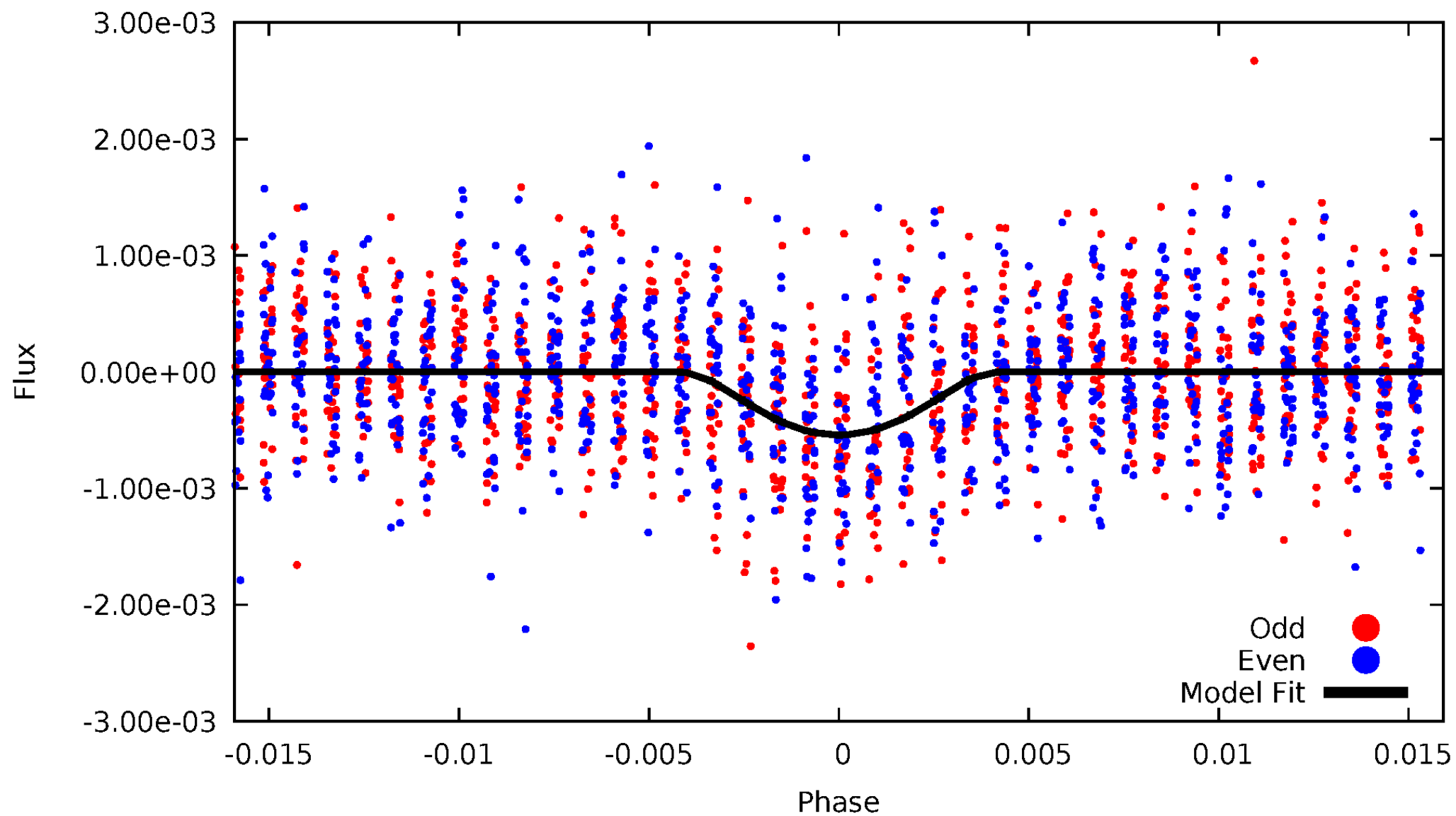


TCE 003219643-01



# DV Odd/Even

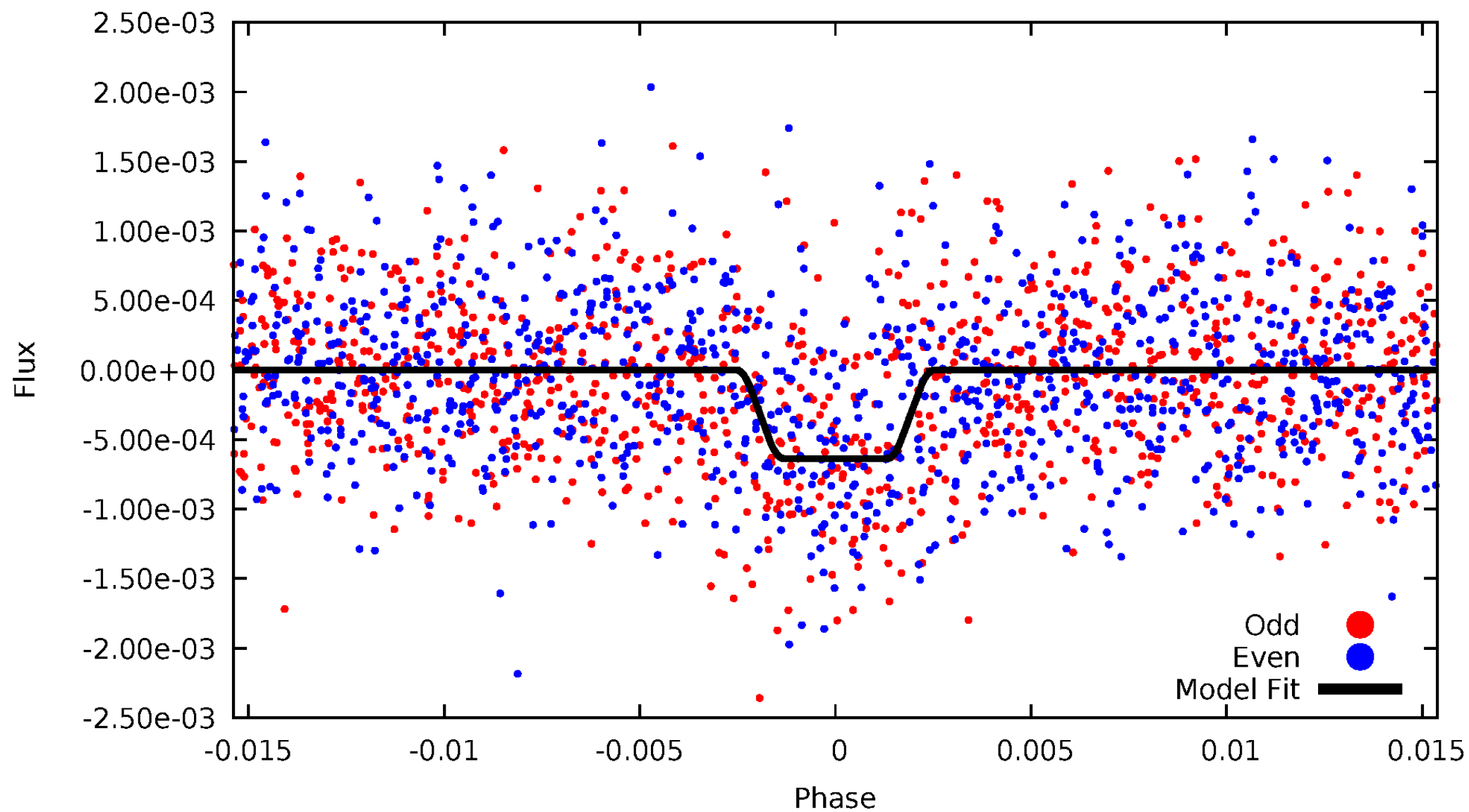
TCE 003219643-01





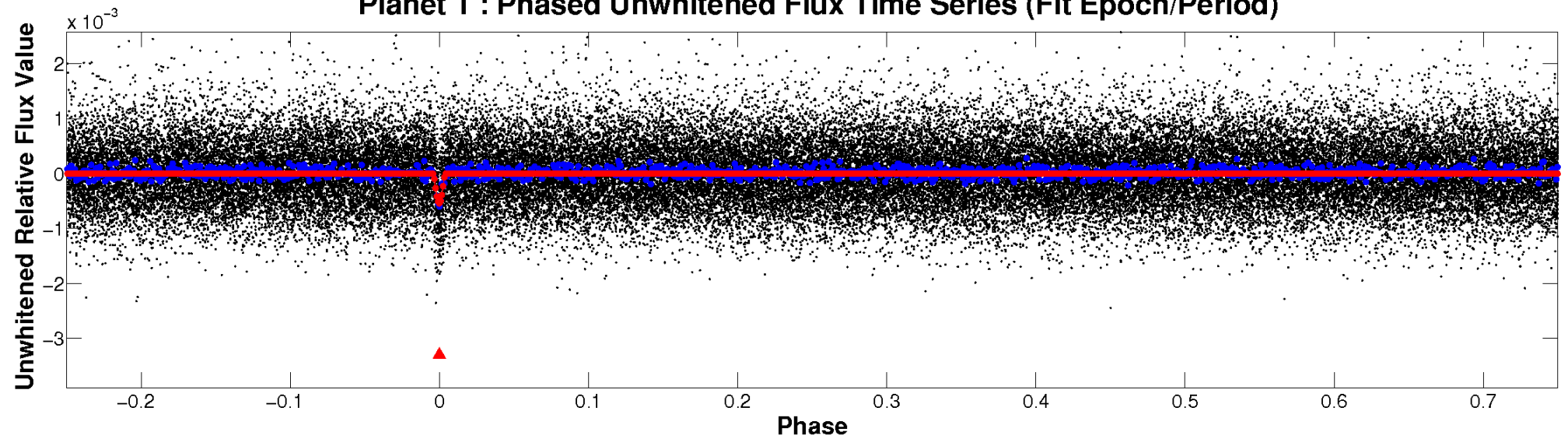
# ALT Odd/Even

TCE 003219643-01

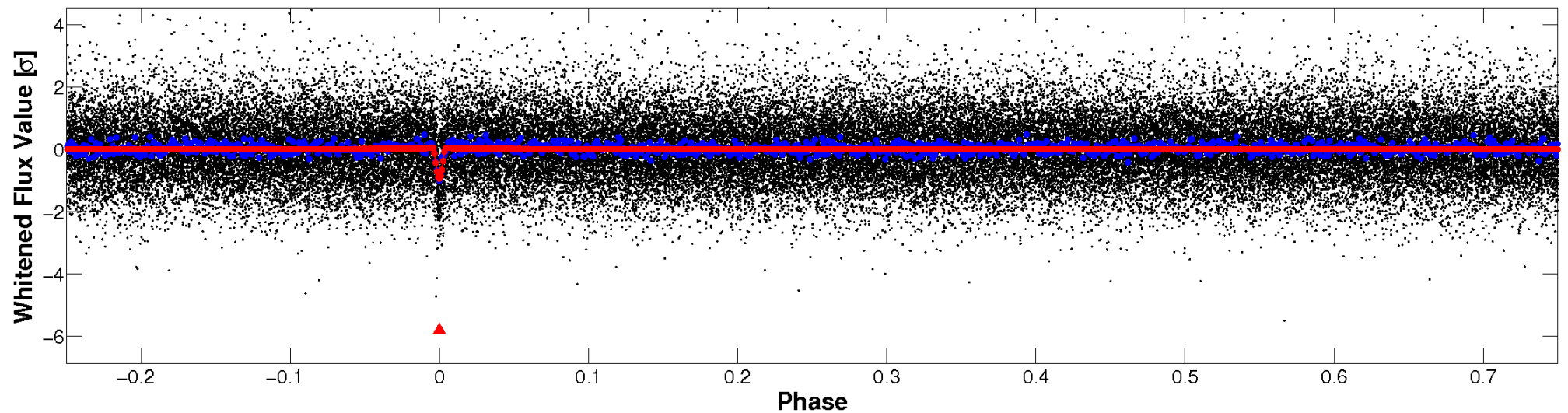


# Non-Whitened Vs. Whitened Light Curve

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

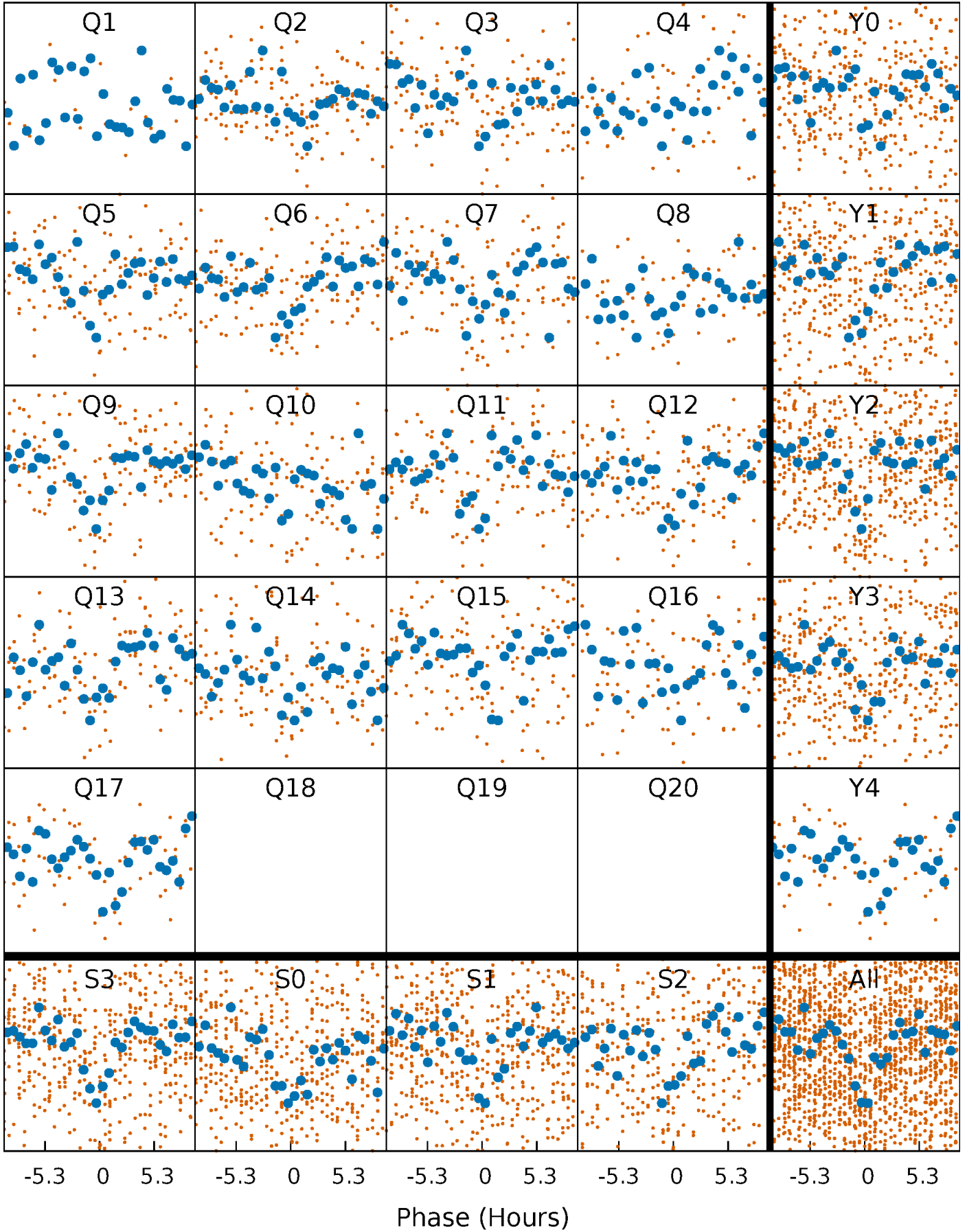


**Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)**



# PDC Quarter-Phased Transit Curves

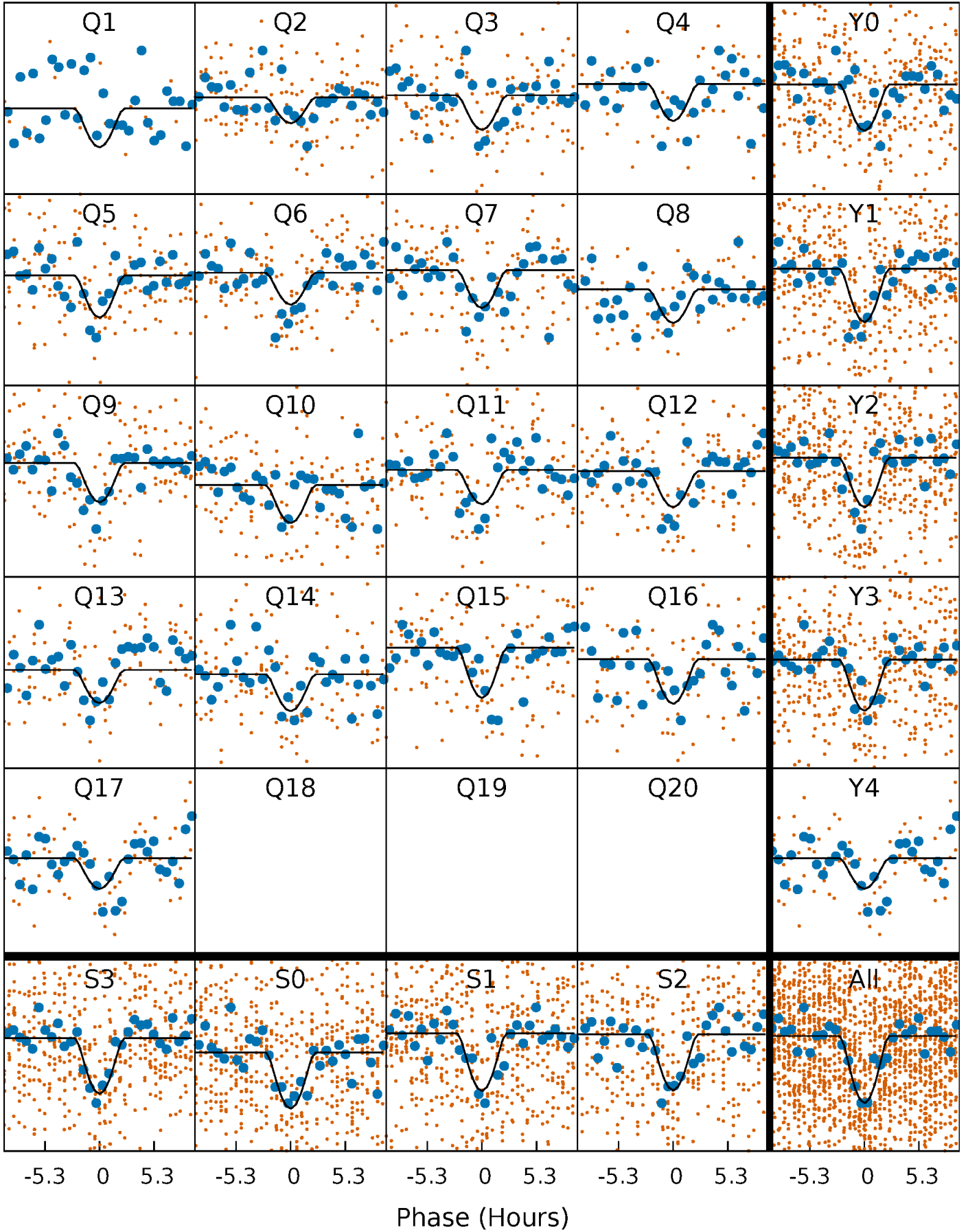
TCE 003219643-01 P= 24.336416 Days  $T_0=154.395481$  (BKJD)





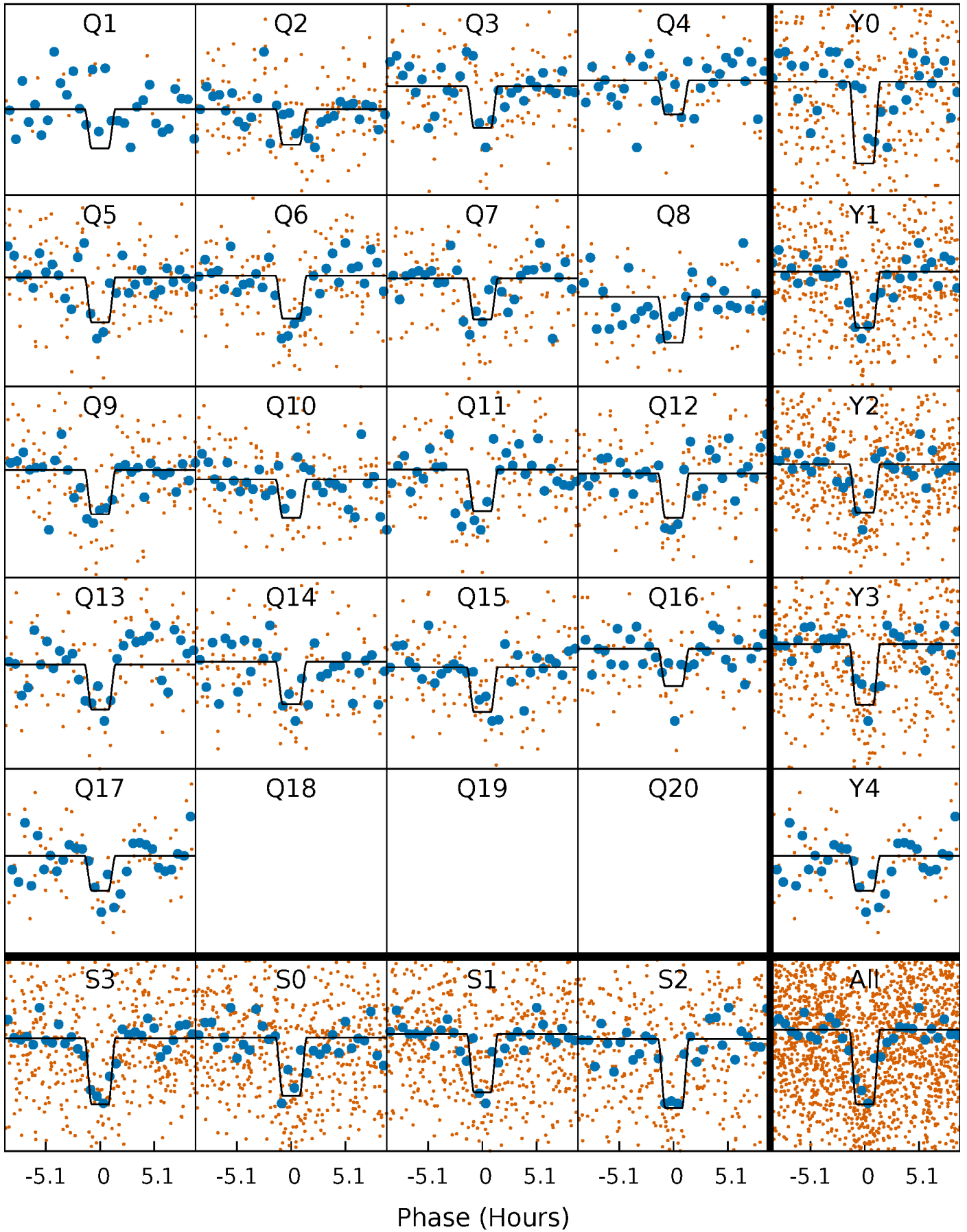
# DV Quarter-Phased Transit Curves

TCE 003219643-01 P= 24.336416 Days  $T_0=154.395481$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

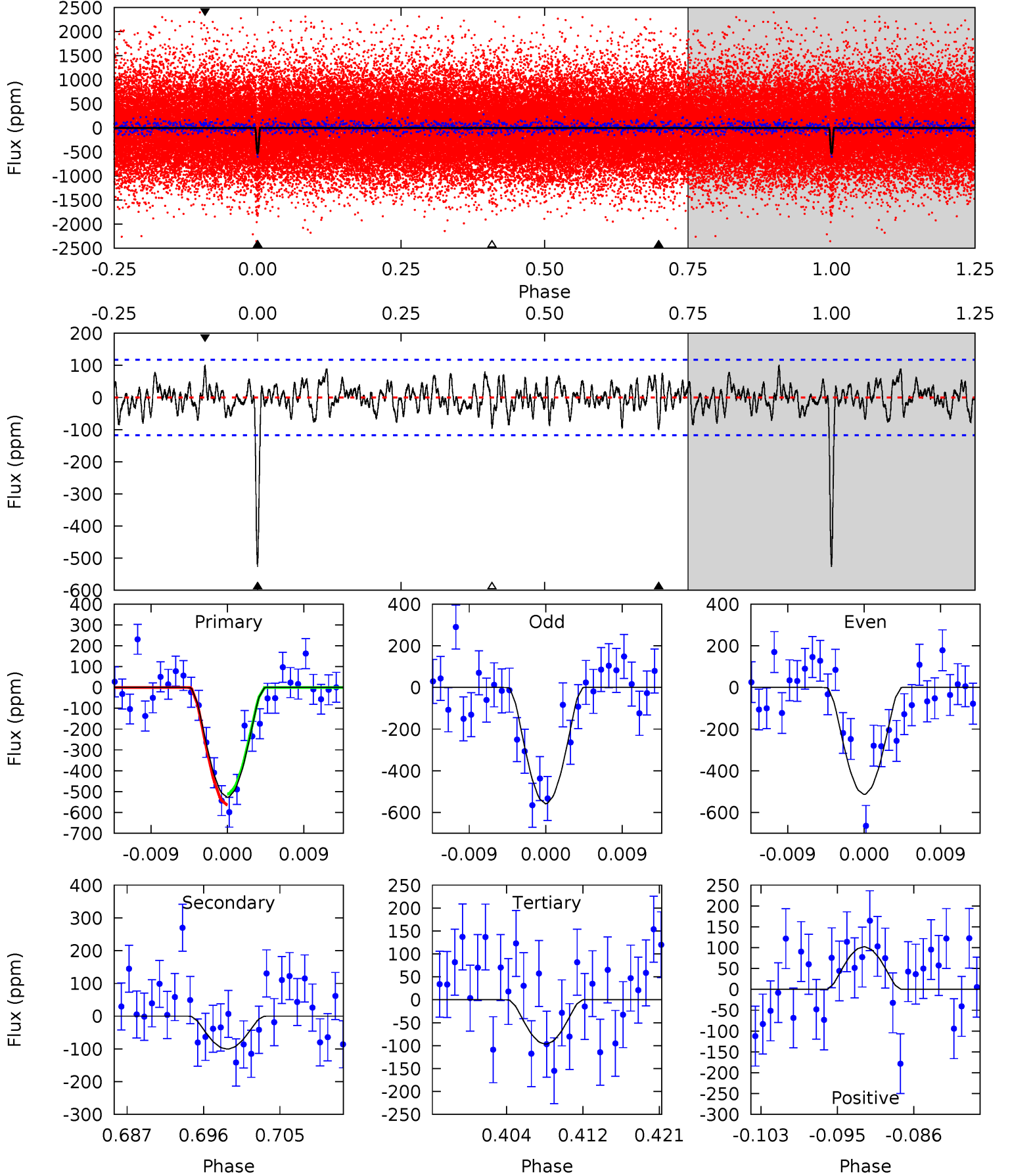
TCE 003219643-01 P= 24.336886 Days  $T_0=154.378204$  (BKJD)



# DV Model-Shift Uniqueness Test

003219643-01, P = 24.336416 Days, E = 130.059065 Days

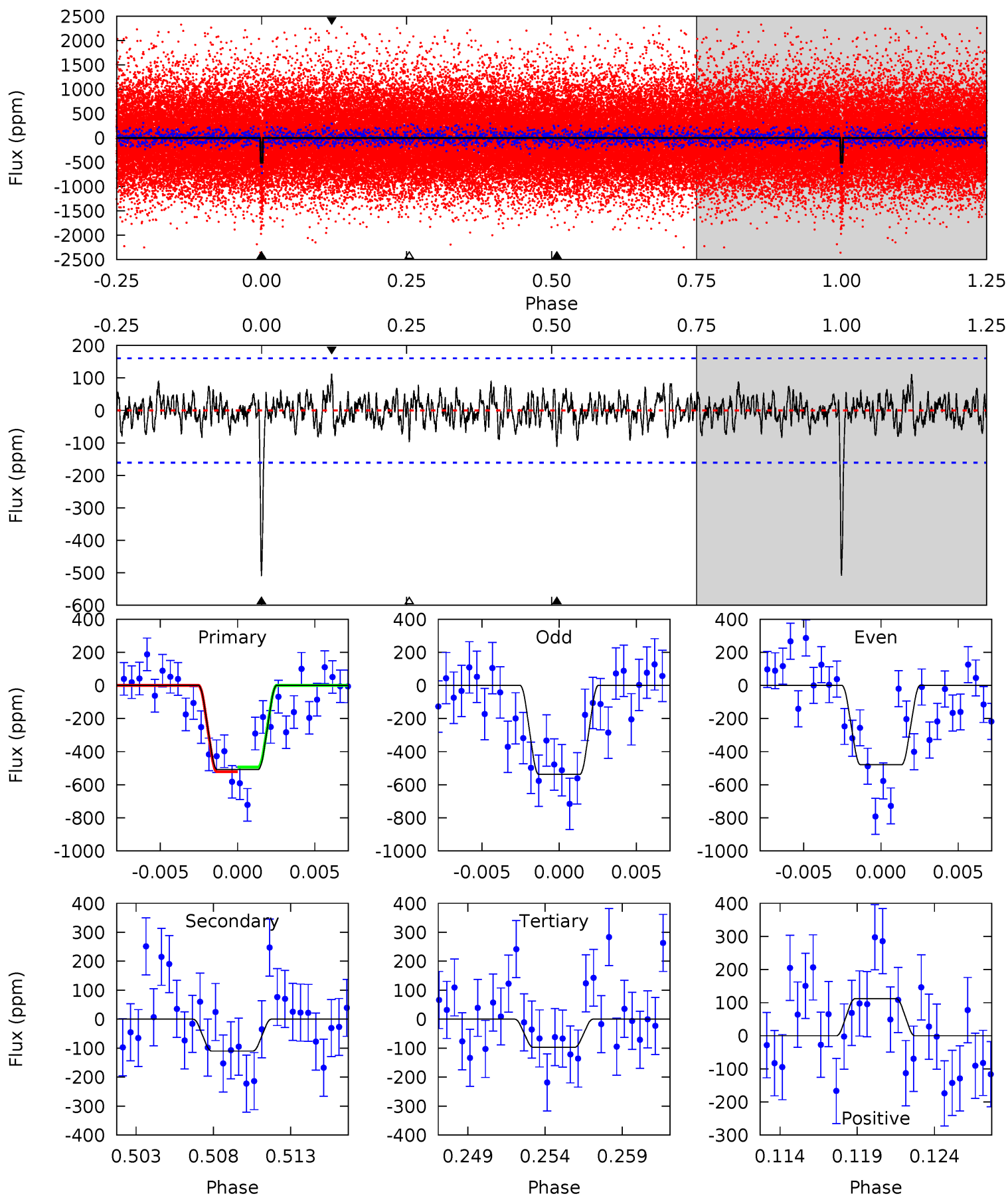
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
22.7	4.32	4.16	4.39	5.06	2.63	1.40	18.5	18.3	0.16	-0.06	0.96	0.94	0.16	1.13



# Alt Model-Shift Uniqueness Test

003219643-01, P = 24.336886 Days, E = 130.041318 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
16.3	3.53	3.12	3.59	5.16	2.81	1.07	13.2	12.7	0.41	-0.05	0.94	0.96	0.18	0.45



### Stellar Parameters For KIC 003219643

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$5141^{+153}_{-153}$	$4.505^{+0.088}_{-0.072}$	$-0.120^{+0.300}_{-0.300}$	$0.806^{+0.080}_{-0.088}$	$0.758^{+0.098}_{-0.057}$	$2.042^{+0.768}_{-0.470}$
	+3%/-3%	+2%/-2%	+250%/-250%	+10%/-11%	+13%/-8%	+38%/-23%
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 003219643-01 / KOI 3072.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	$A_{obs}$
DV	$-100 \pm 23$	$9.66^{+10.67}_{-6.60}$	$732^{+29}_{-28}$	$2409^{+857}_{-381}$	$13^{+119}_{-10}$
Alt.	$-110 \pm 31$	$9.52^{+9.54}_{-6.28}$	$734^{+32}_{-30}$	$2441^{+845}_{-374}$	$15^{+116}_{-11}$

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



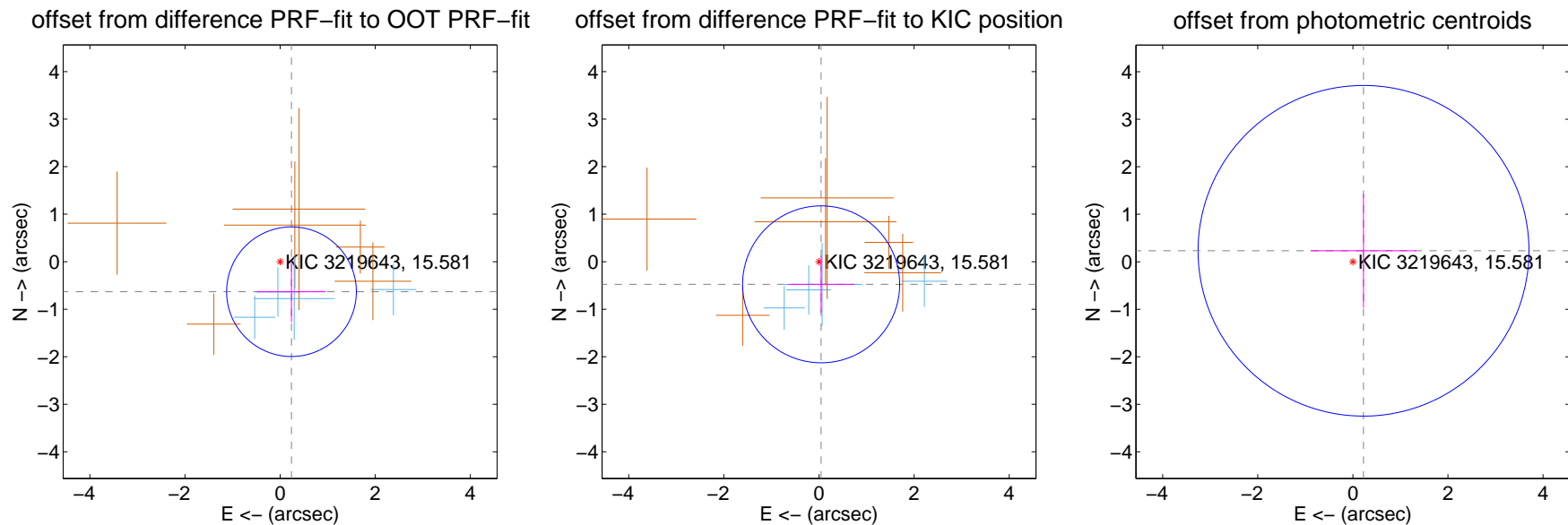
## DV Centroid Data

Supplemental centroid analysis for 003219643-01. Kepler magnitude: 15.58. Transit SNR 13.85

There are 4 quarters with good PRF difference image offsets

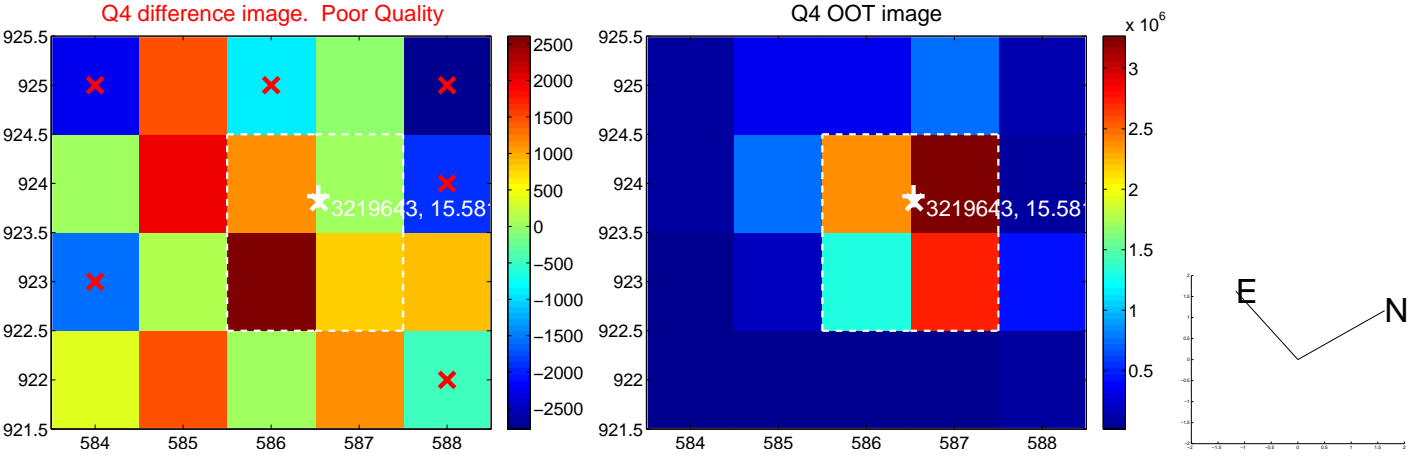
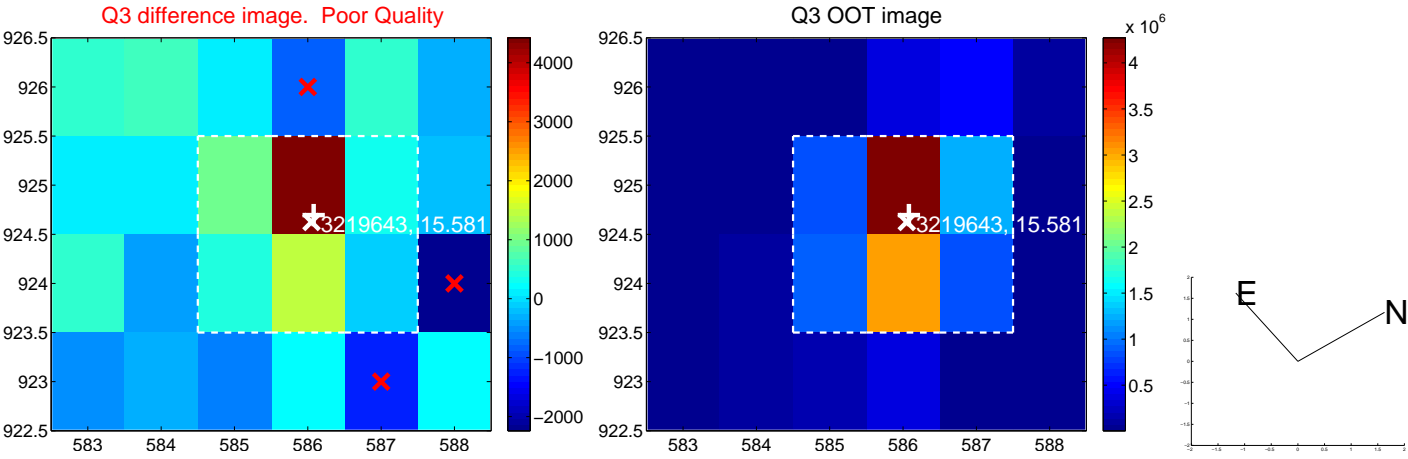
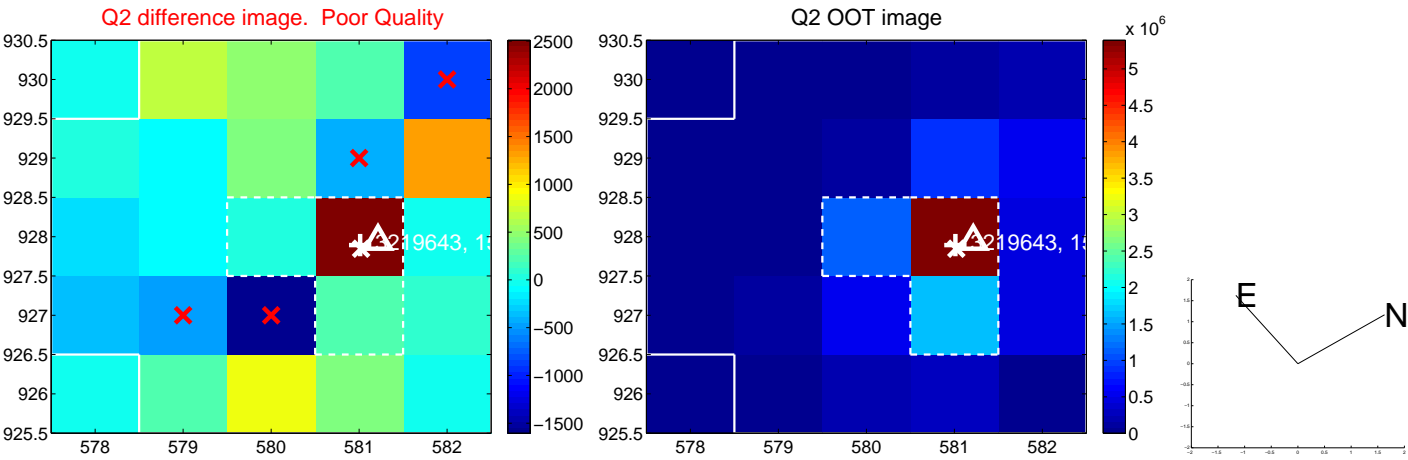
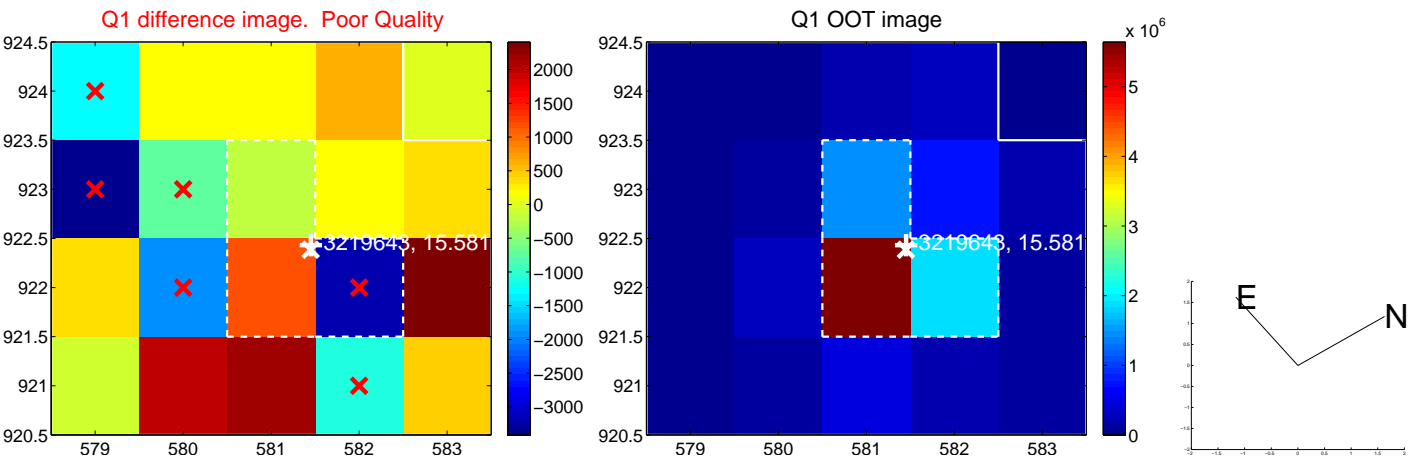
The direct PRF centroid is offset from the target star catalog position by about 0.28 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.675 \pm 0.454$	1.49	$-0.239 \pm 0.719$	$-0.631 \pm 0.640$
PRF-fit source offset from KIC position	$0.478 \pm 0.550$	0.87	$-0.045 \pm 0.693$	$-0.476 \pm 0.597$
photometric centroid source offset	$0.32 \pm 1.16$	0.28	$-0.22 \pm 1.12$	$0.23 \pm 1.20$

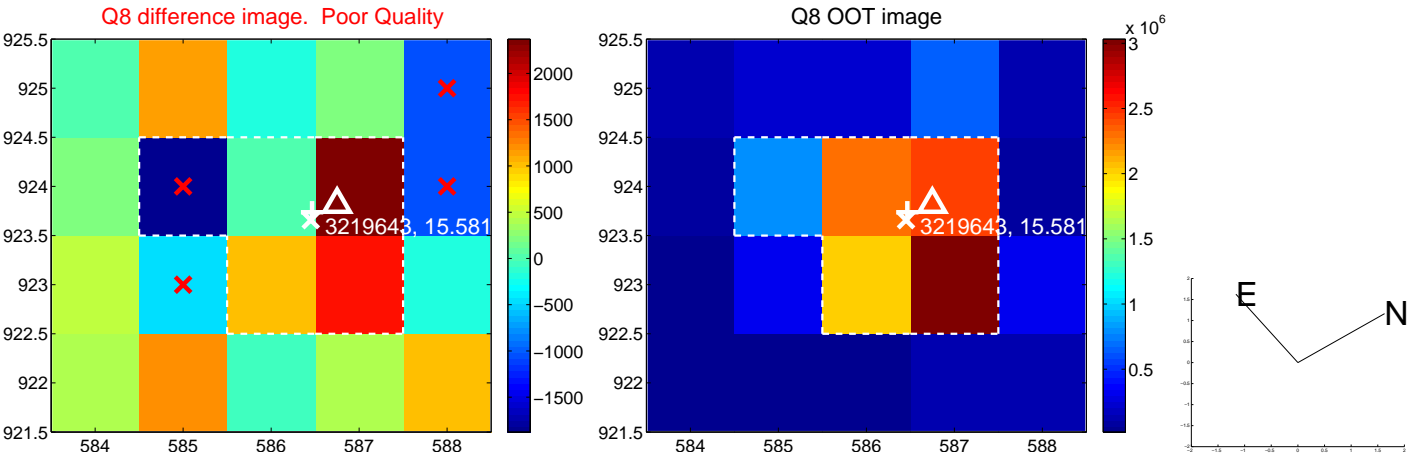
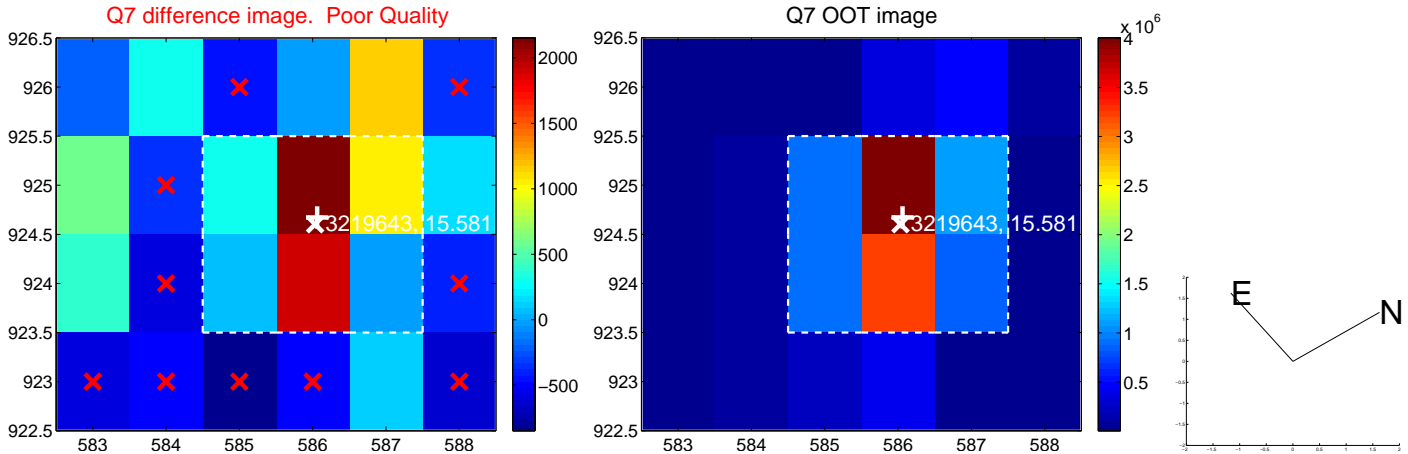
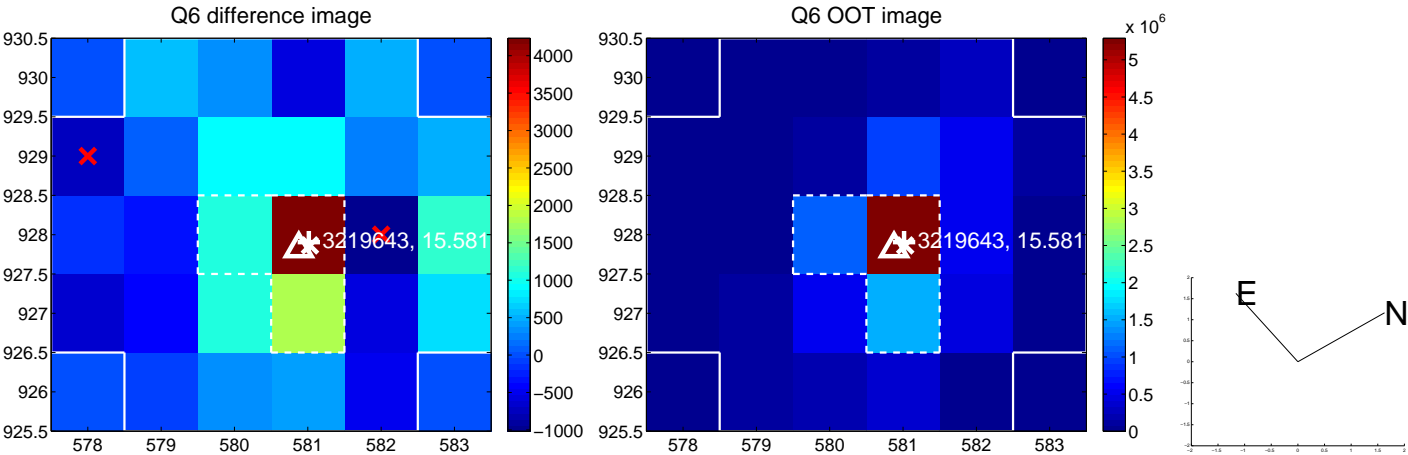
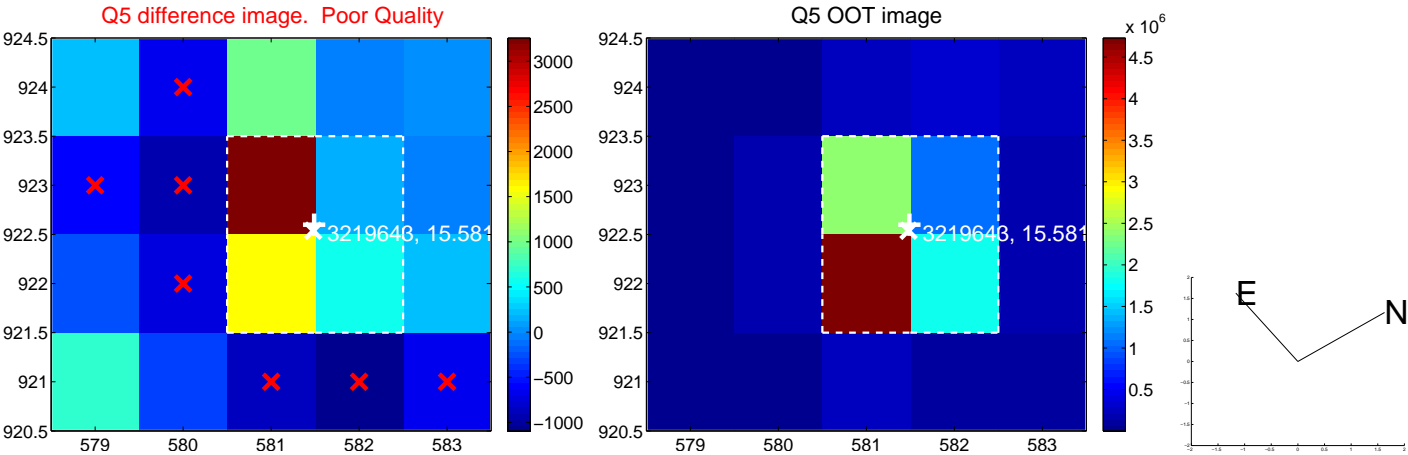


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets**; **Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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

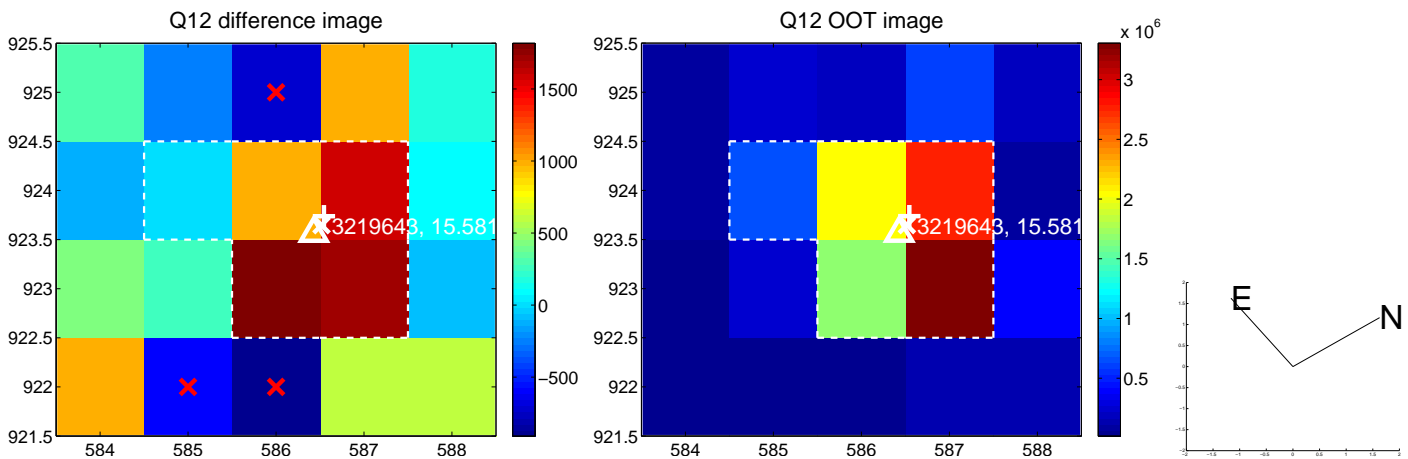
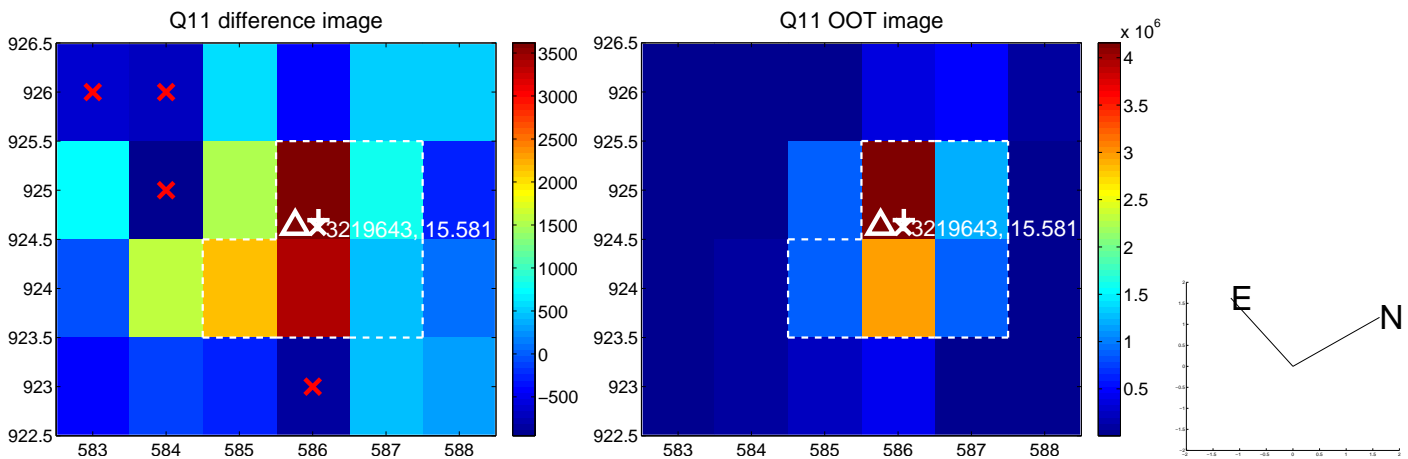
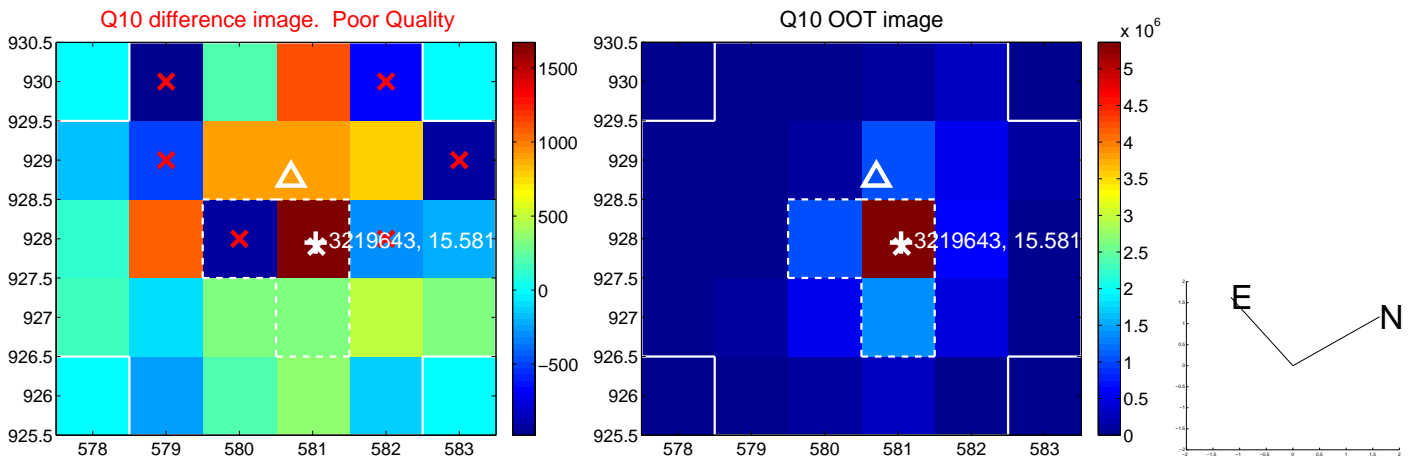
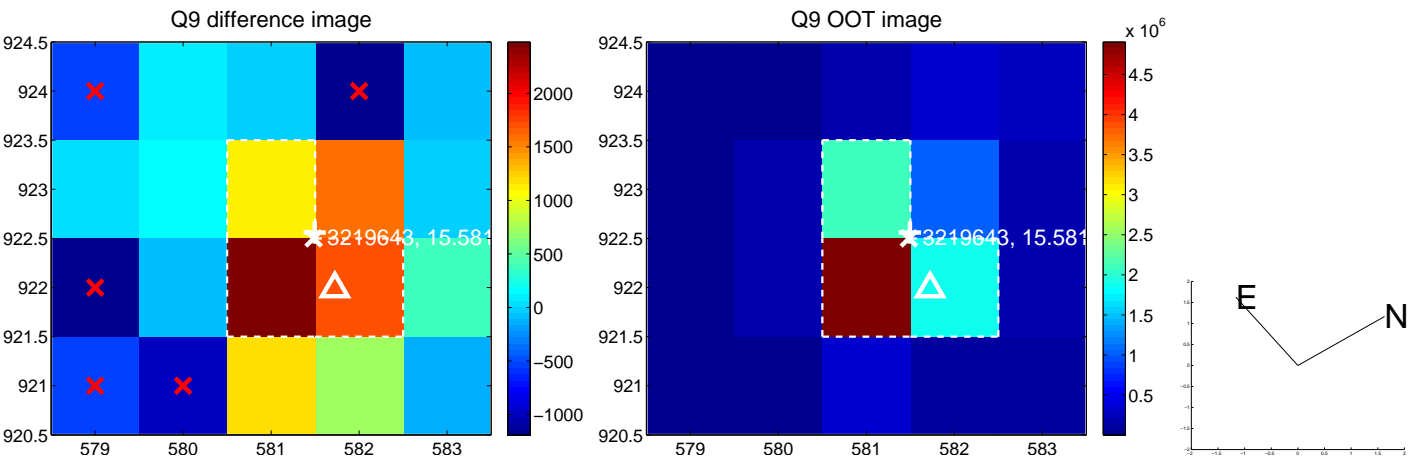
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



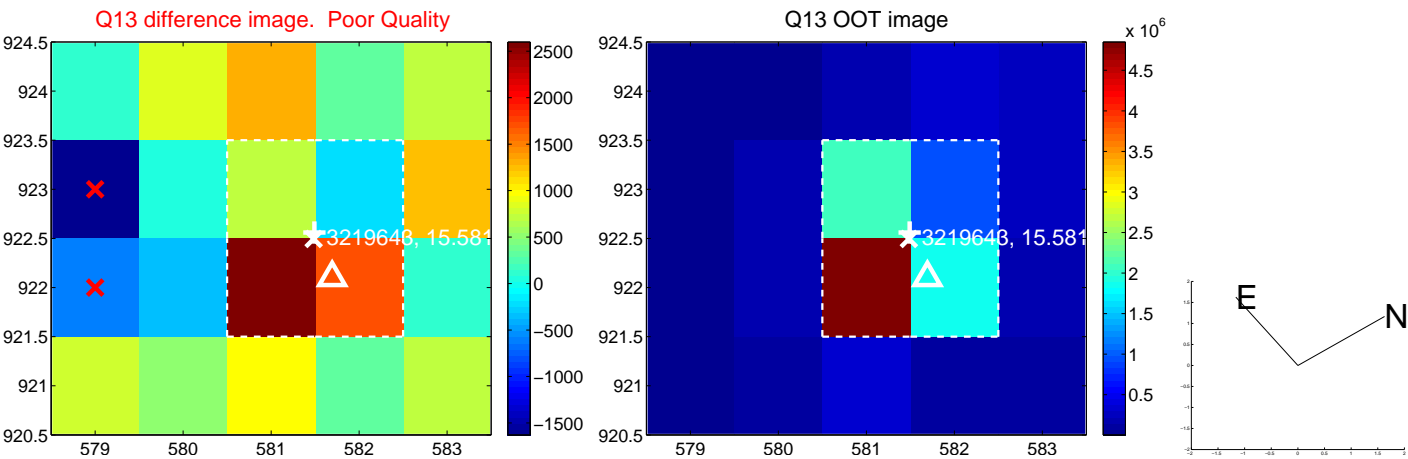
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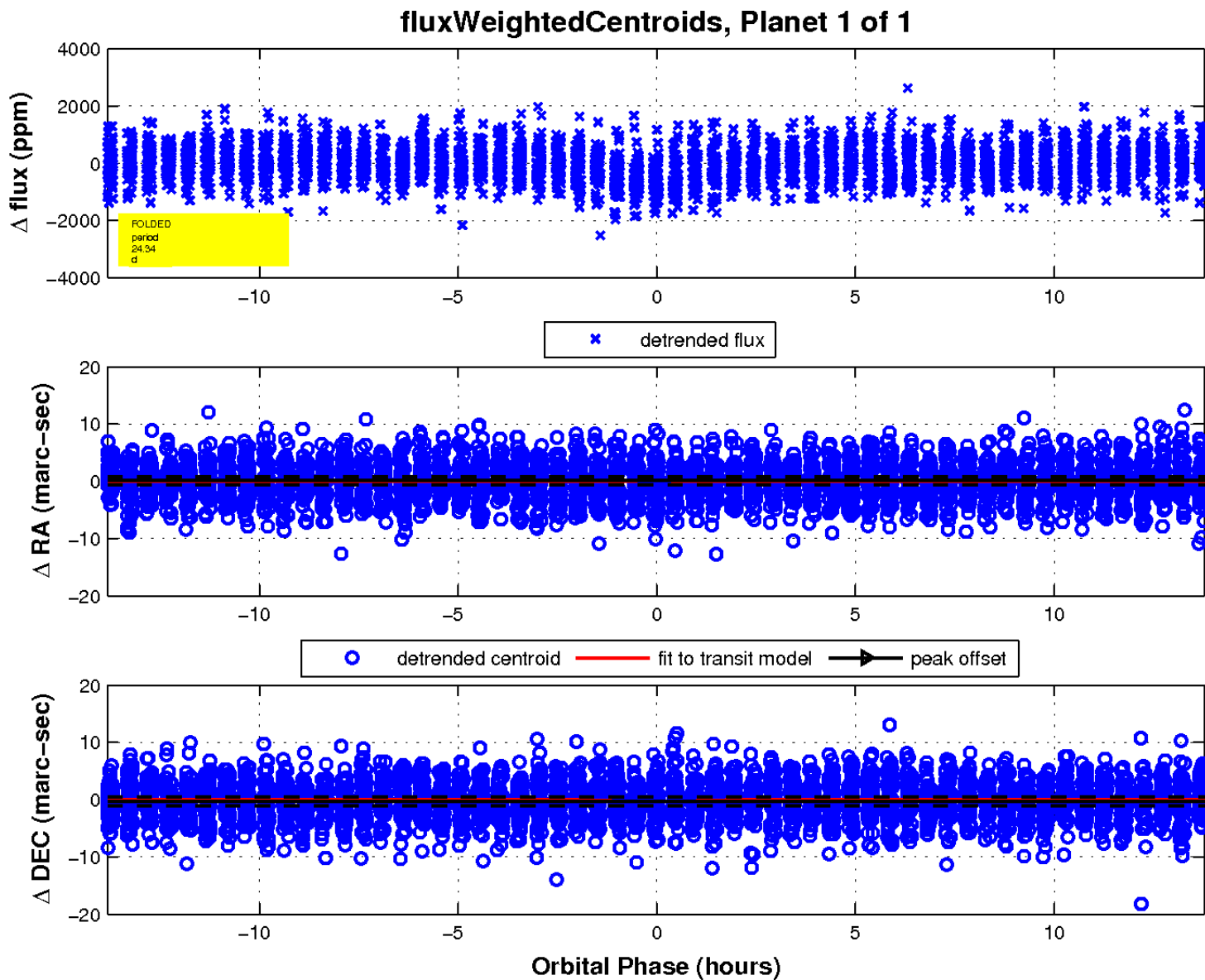
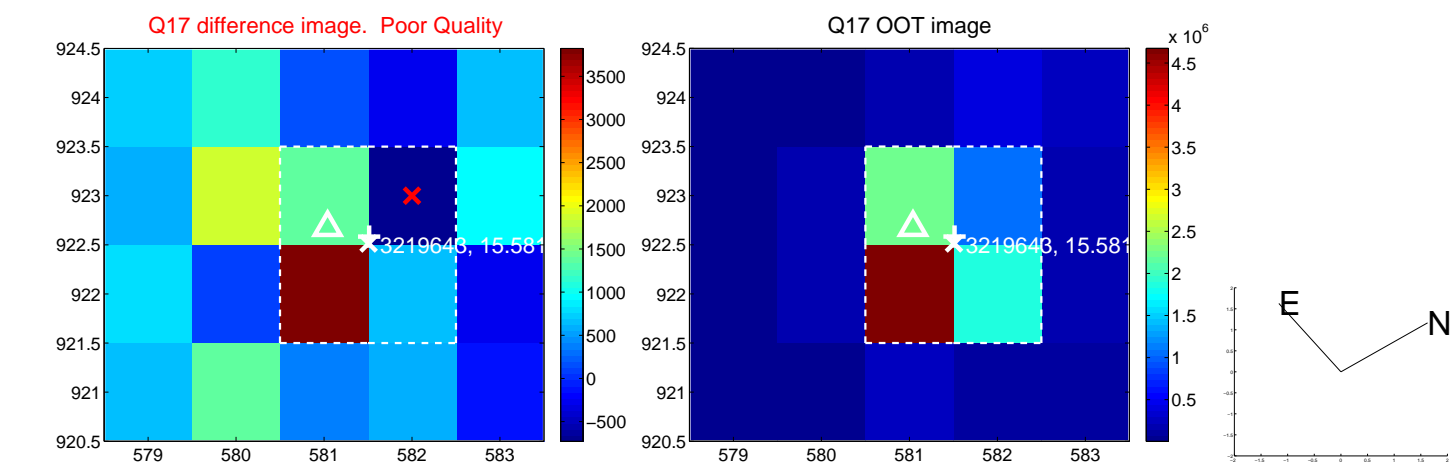


white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.





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



UKIRT Image

Declination

