

# KIC 004928119

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
004928119-01	OBS	1664.01	44.638974	156.451112	36423.4	3.033	545.0	513.3	1.03	6197	30.28	21.91

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
004928119-01	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.

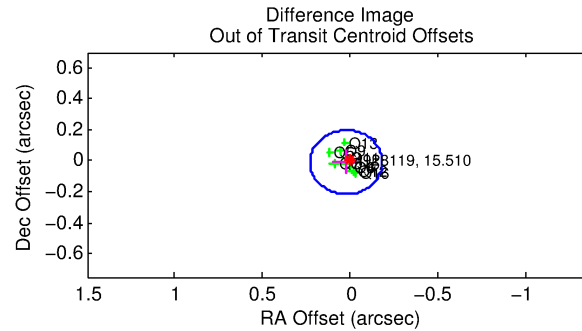
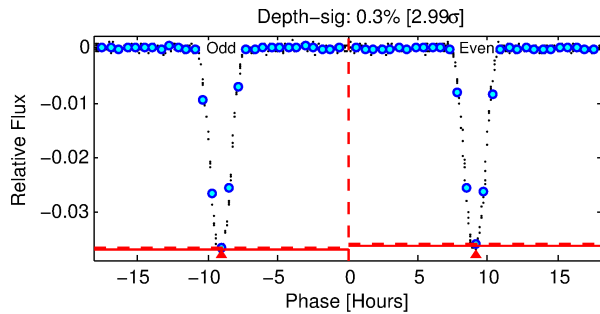
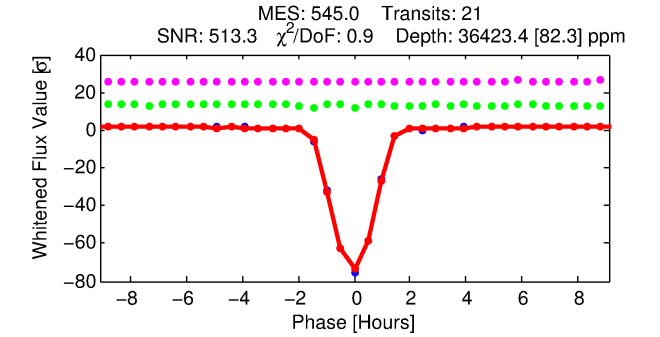
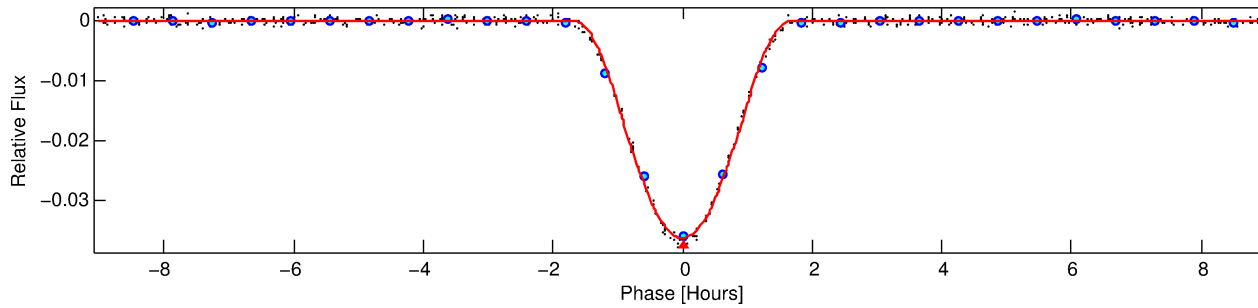
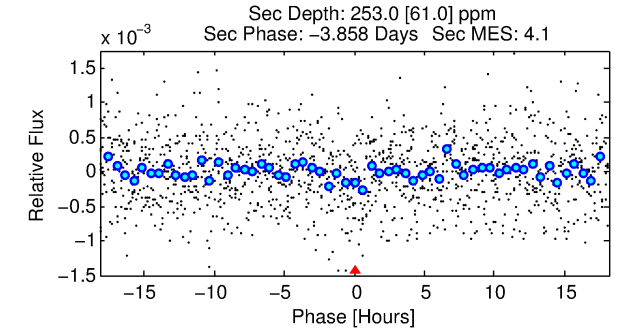
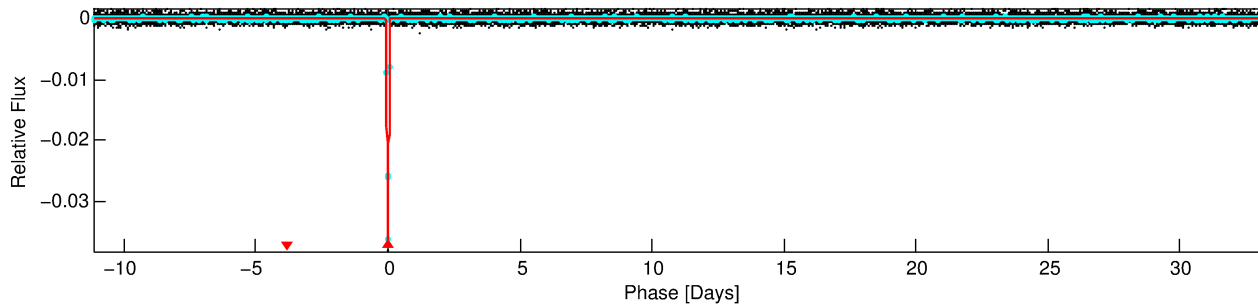
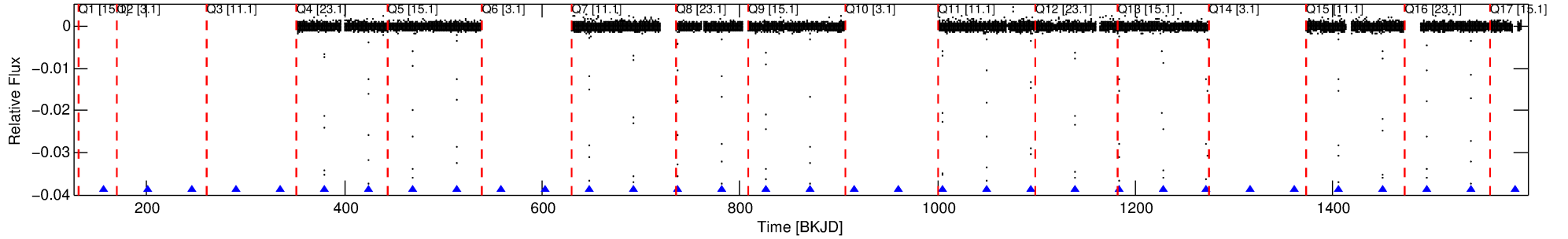
## Ephemeris Match Information For 004928119-01

No Significant Match Found

# DV One-Page Summary

KIC: 4928119 Candidate: 1 of 1 Period: 44.639 d  
KOI: K01664.01 Corr: 0.996

Kp: 15.51 R\*: 1.03 Rs Teff: 6197.0 K Logg: 4.45 Fe/H: -0.080



## DV Fit Results:

Period = 44.63897 [0.00001] d  
Epoch = 156.4511 [0.0002] BKJD  
Rp/R\* = 0.2681 [0.0333]  
a/R\* = 94.49 [1.15]  
b = 0.95 [0.05]  
Seff = 21.91 [9.72]  
Teq = 552 [61] K  
Rp = 30.28 [10.88] Re  
a = 0.2542 [0.0719] AU  
Ag = 9.81 [5.27] [1.67σ]  
Teffp = 1509 [145] K [6.09σ]

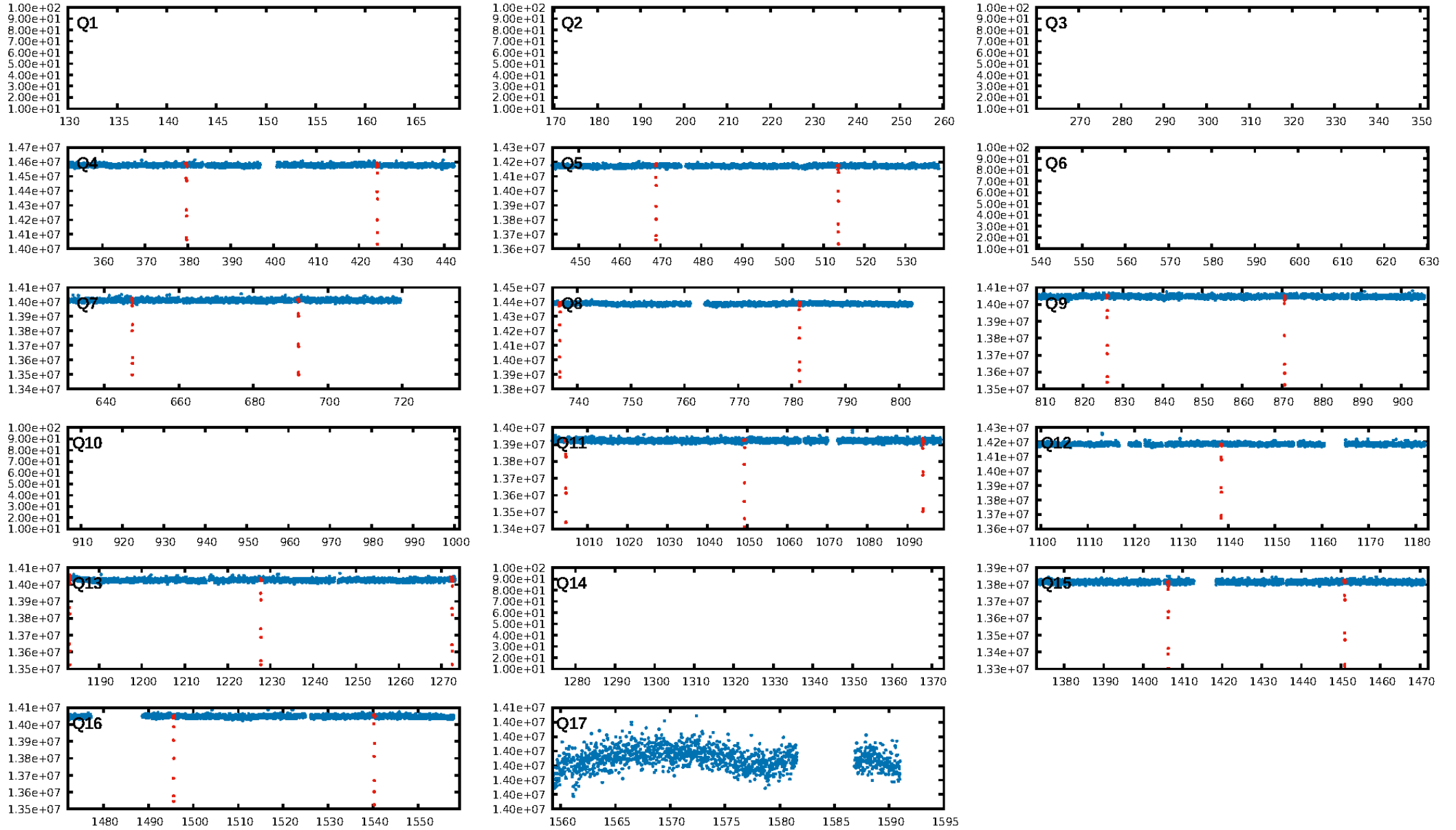
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: 1.1%  
ModelChiSquareGof-sig: 65.7%  
Bootstrap-pfa: 0.00e+00  
RollingBand-fgt: 1.00 [21/21]  
GhostDiagnostic-chr: 13.08  
Centroid-sig: 0.0%  
Centroid-so: 0.507 arcsec [22.85σ]  
OotOffset-rm: 0.026 arcsec [0.39σ]  
OotOffset-st: 0/3/4/3 [10]  
KicOffset-rm: 0.157 arcsec [1.91σ]  
KicOffset-st: 0/3/4/3 [10]  
DiffImageQuality-fgm: 1.00 [10/10]  
DiffImageOverlap-fno: 1.00 [10/10]

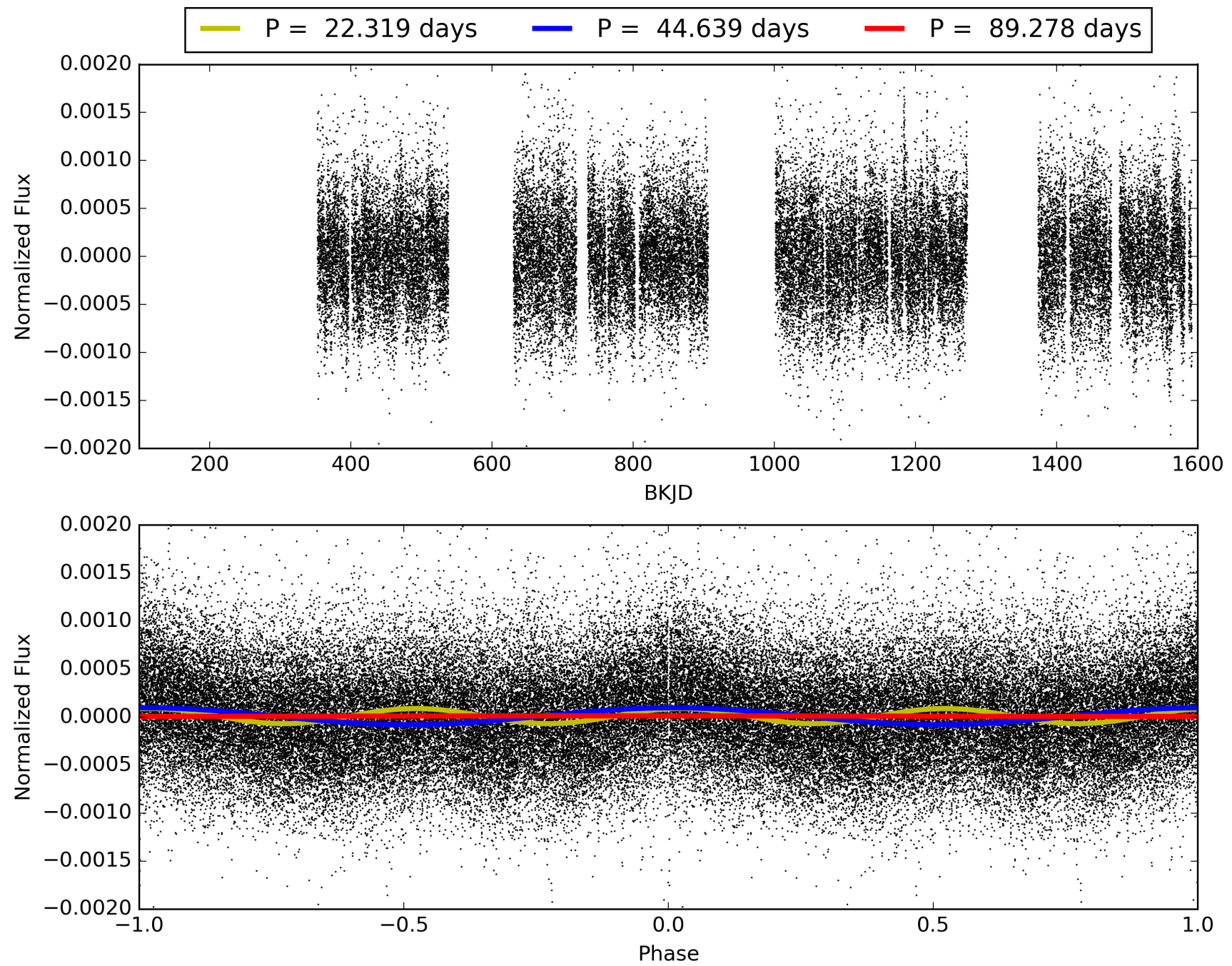
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 02:50:26 Z

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

# TCE 004928119-01, PDC Light Curves

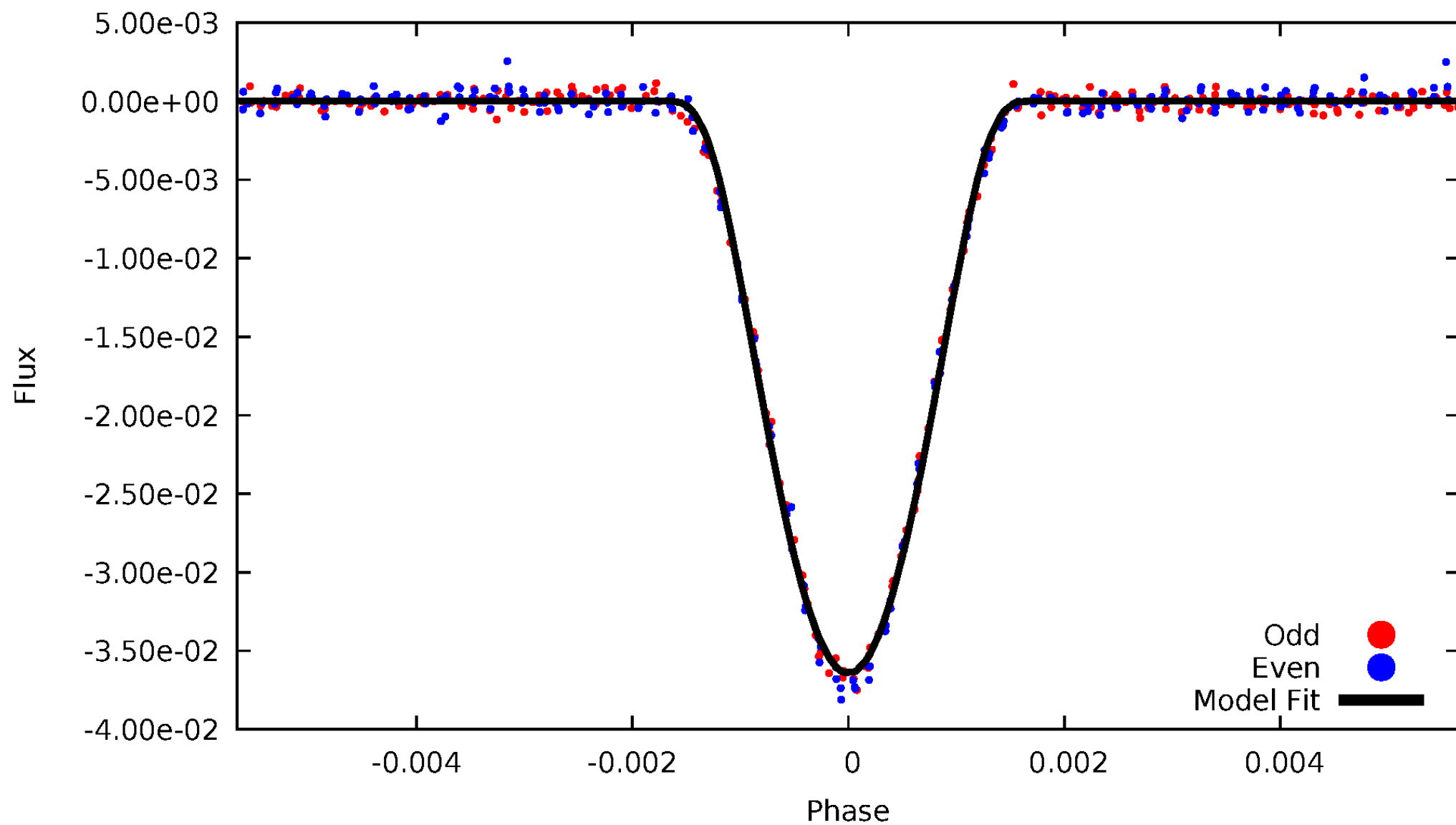


TCE 004928119-01



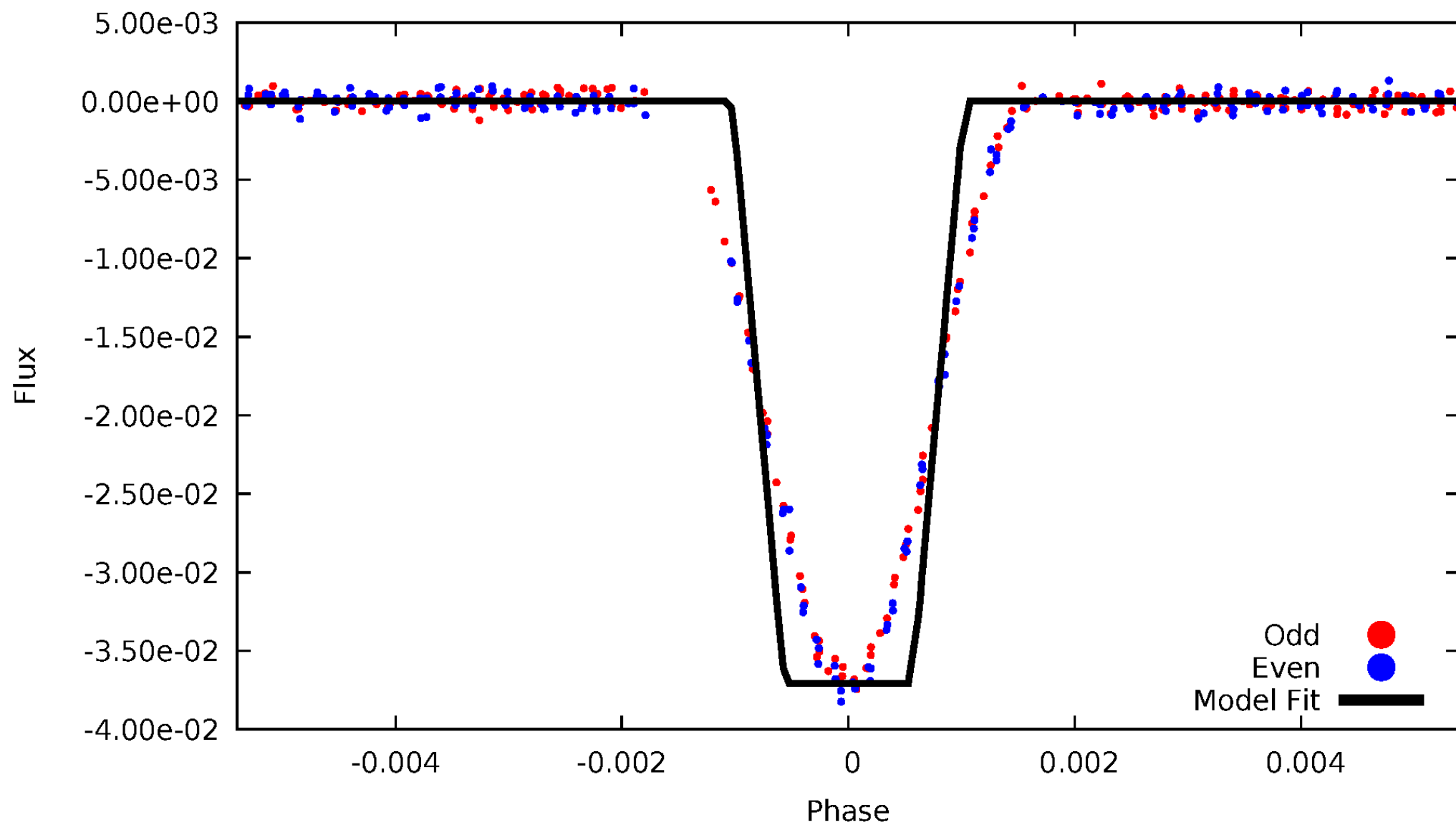
# DV Odd/Even

TCE 004928119-01



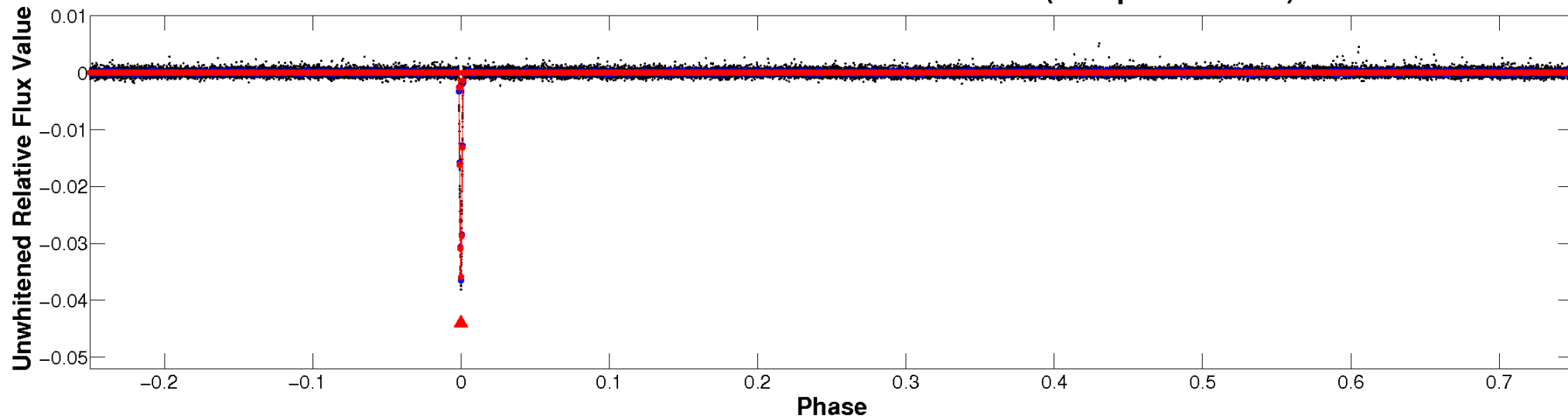
# ALT Odd/Even

TCE 004928119-01

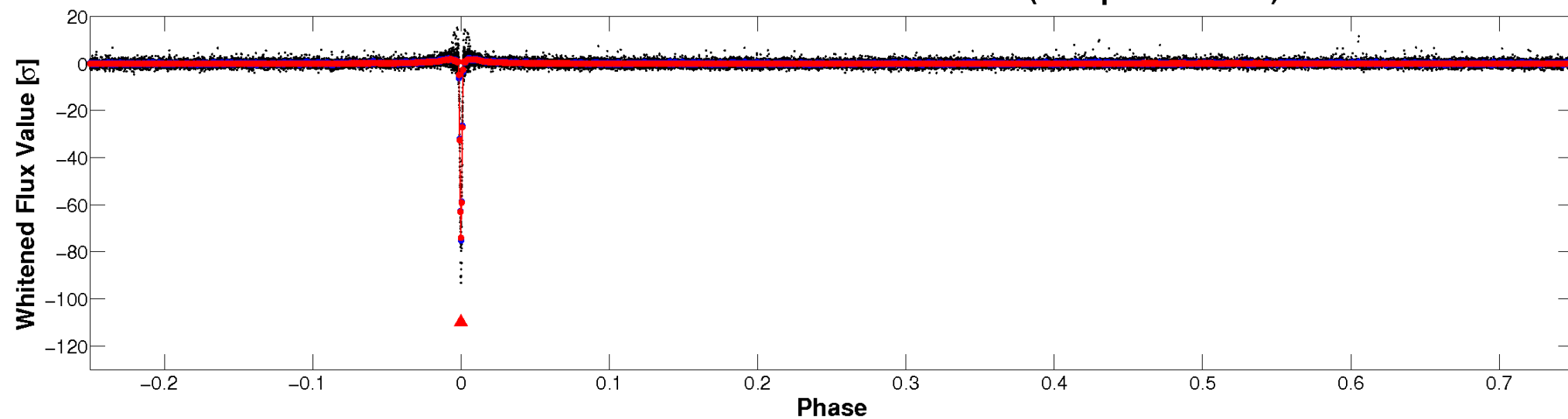


# Non-Whitened Vs. Whitened Light Curve

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

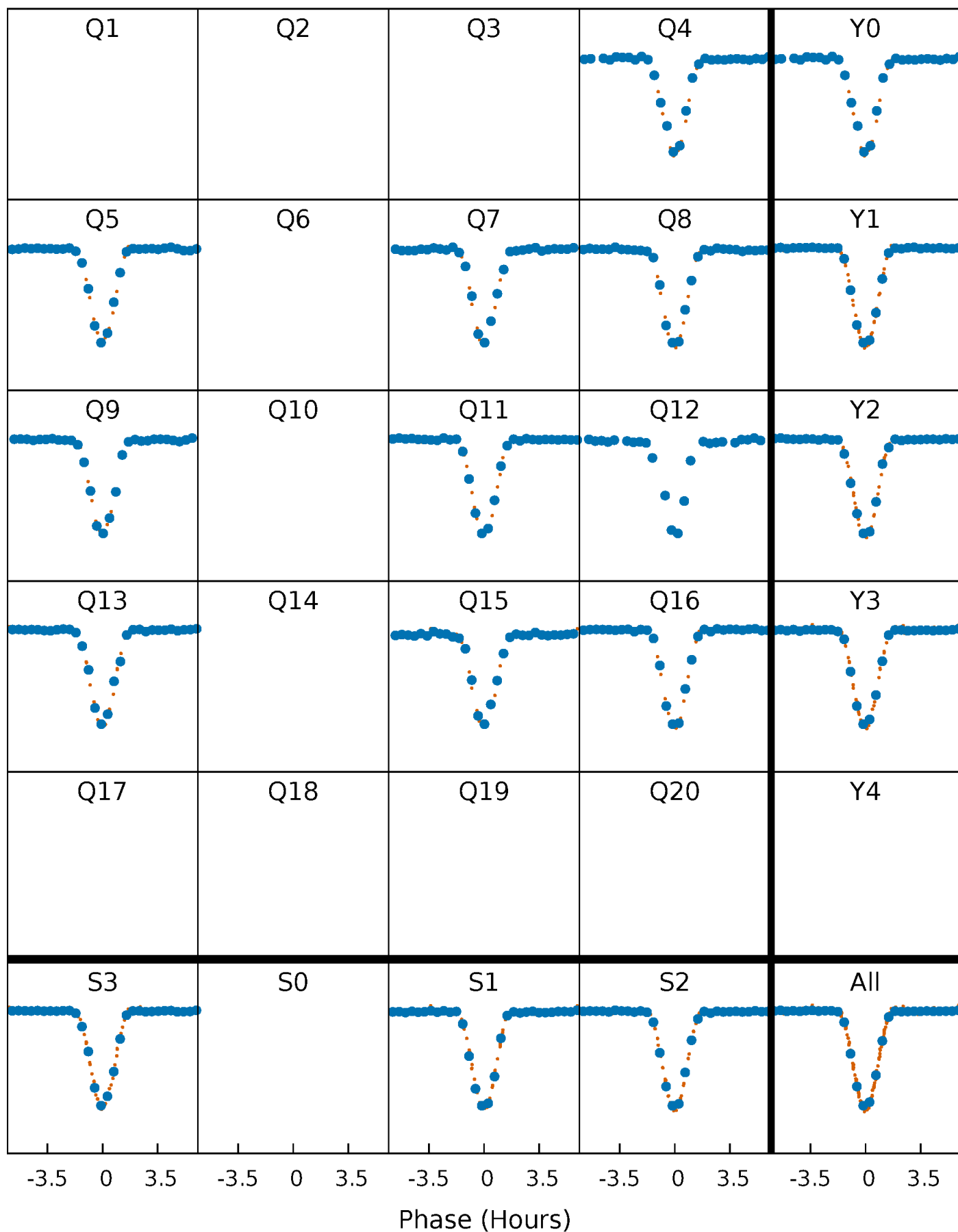


**Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)**



# PDC Quarter-Phased Transit Curves

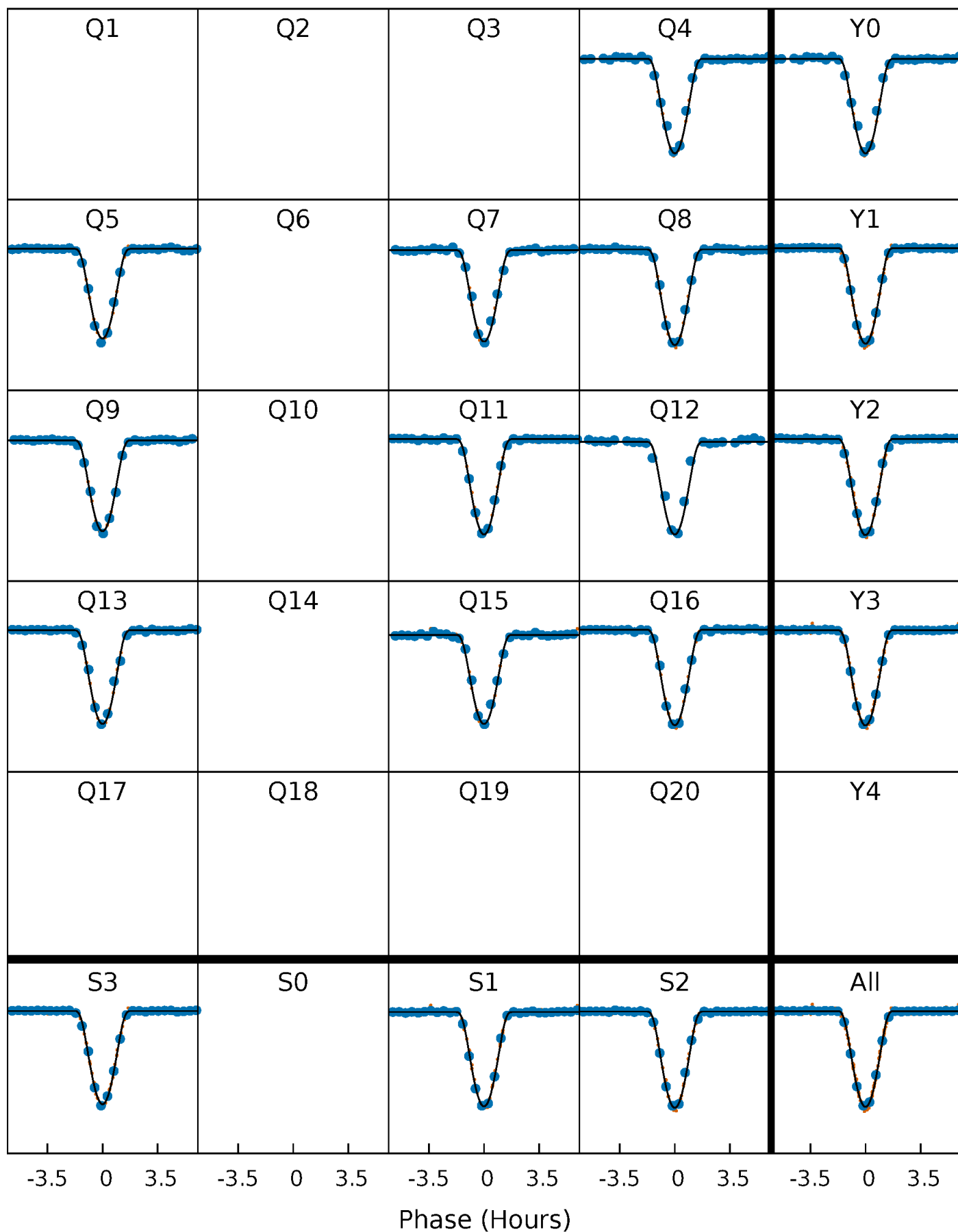
TCE 004928119-01 P= 44.638974 Days  $T_0=156.451112$  (BKJD)





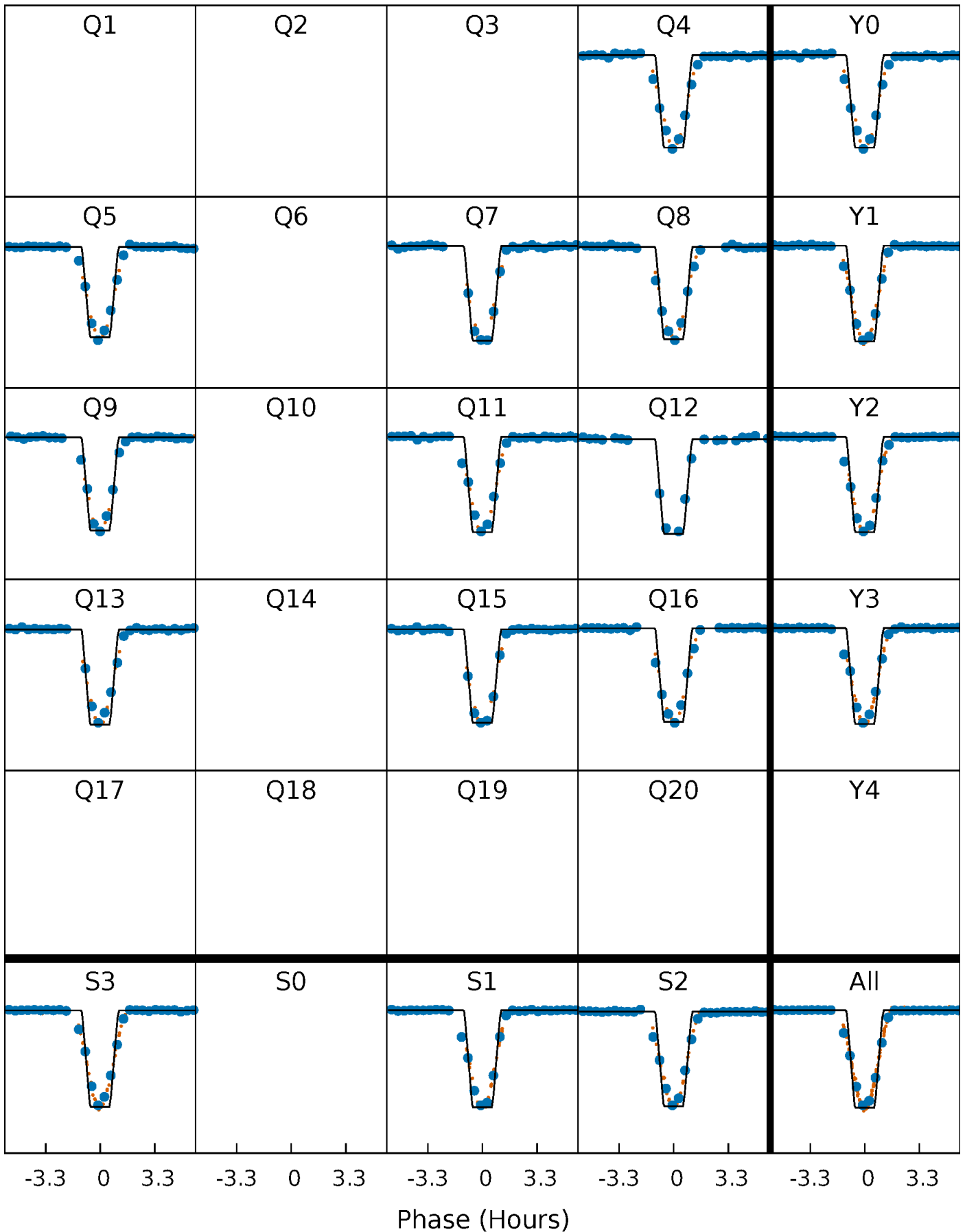
# DV Quarter-Phased Transit Curves

TCE 004928119-01 P= 44.638974 Days  $T_0=156.451112$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

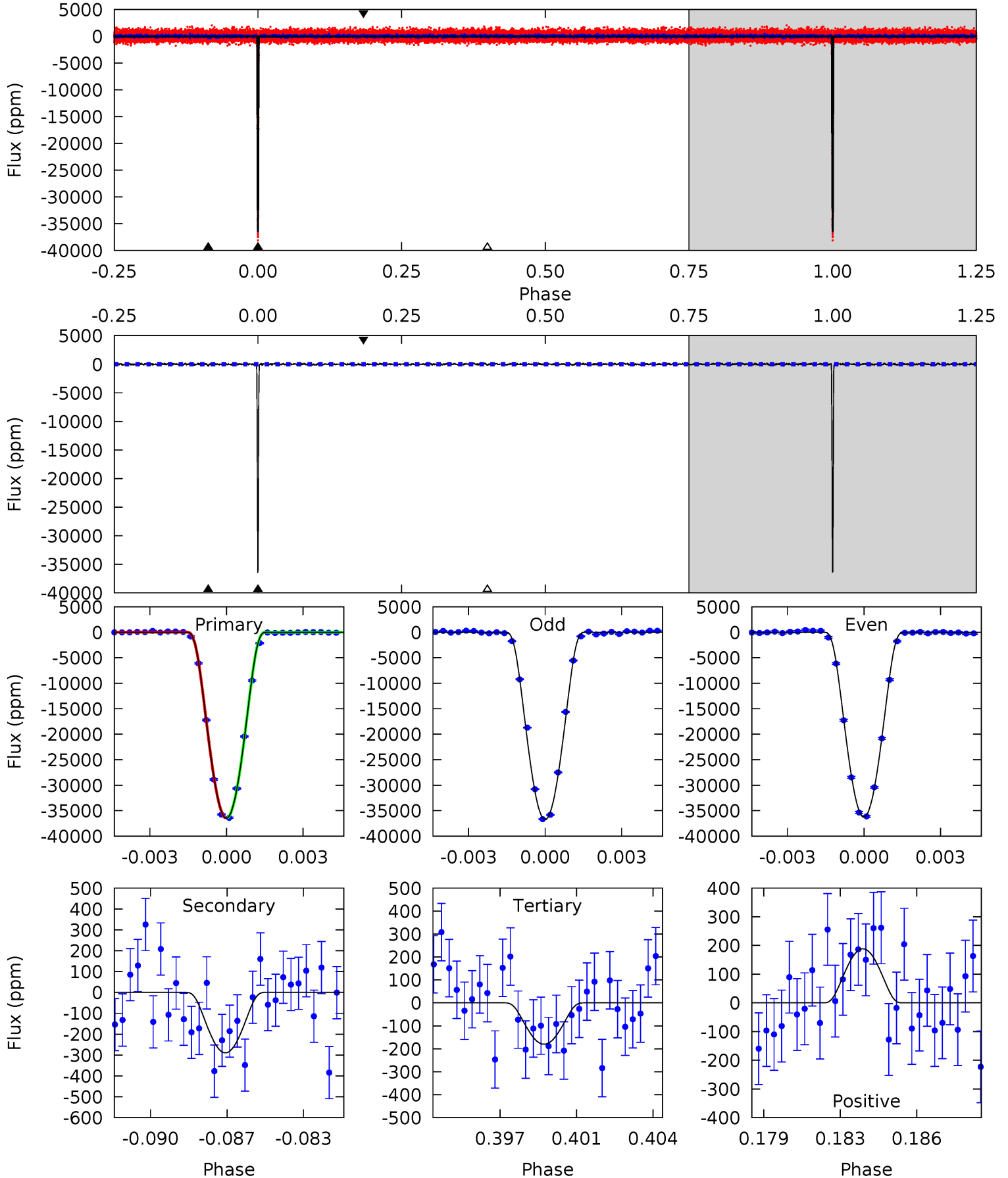
TCE 004928119-01 P= 44.638995 Days  $T_0=156.450780$  (BKJD)



# DV Model-Shift Uniqueness Test

004928119-01, P = 44.638974 Days, E = 156.451112 Days

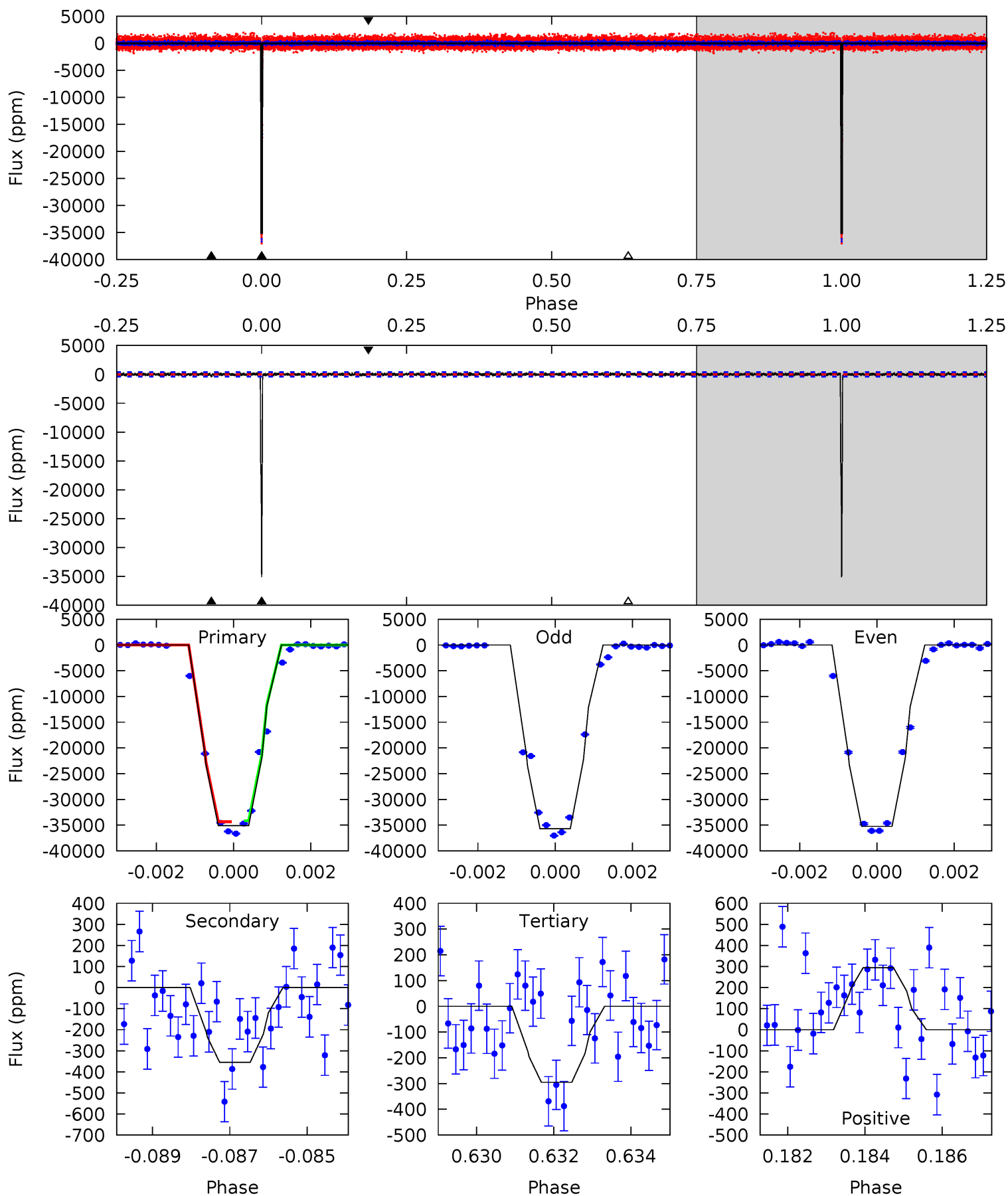
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
958.0	7.60	4.74	4.96	5.24	2.95	1.47	953.3	953.0	2.87	2.65	6.65	1.00	0.01	0.18



# Alt Model-Shift Uniqueness Test

004928119-01, P = 44.638995 Days, E = 156.450780 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
486.8	4.92	4.09	4.08	5.33	3.09	1.39	482.7	482.7	0.83	0.85	3.00	1.00	0.01	1.20



### Stellar Parameters For KIC 004928119

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$6197^{+194}_{-259}$	$4.449^{+0.056}_{-0.224}$	$-0.080^{+0.250}_{-0.300}$	$1.035^{+0.349}_{-0.116}$	$1.096^{+0.153}_{-0.153}$	$1.394^{+0.426}_{-0.770}$
	+3%/-4%	+1%/-5%	+312%/-375%	+34%/-11%	+14%/-14%	+31%/-55%
Source	KIC0	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 004928119-01 / KOI 1664.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	$A_{\text{obs}}$
DV	$-289 \pm 38$	$31.30^{+6.58}_{-4.69}$	$787^{+58}_{-41}$	$2426^{+95}_{-87}$	$10^{+4}_{-3}$
Alt.	$-355 \pm 72$	$22.56^{+5.24}_{-4.31}$	$788^{+66}_{-43}$	$2704^{+171}_{-145}$	$24^{+14}_{-9}$

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

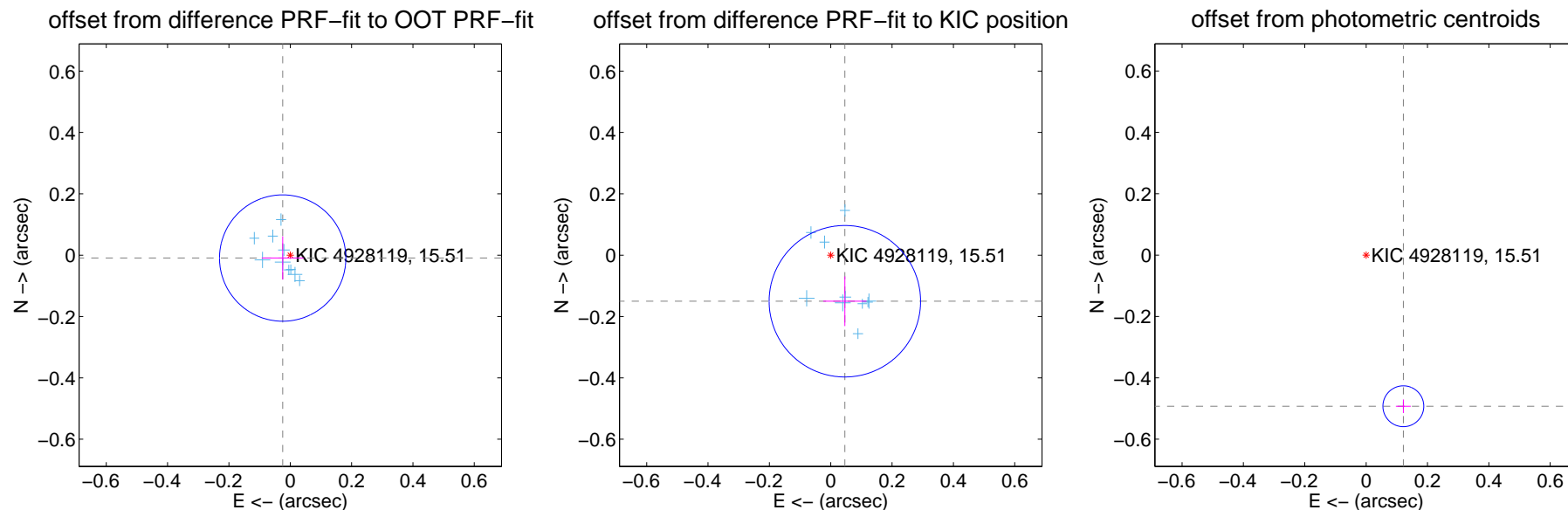
## DV Centroid Data

Supplemental centroid analysis for 004928119-01. Kepler magnitude: 15.51. Transit SNR 513.27

There are 10 quarters with good PRF difference image offsets

The direct PRF centroid is offset from the target star catalog position by about 0.18 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.026 \pm 0.069$	0.39	$0.025 \pm 0.068$	$-0.009 \pm 0.070$
PRF-fit source offset from KIC position	$0.157 \pm 0.082$	1.91	$-0.046 \pm 0.071$	$-0.150 \pm 0.081$
photometric centroid source offset	$0.51 \pm 0.02$	22.85	$-0.12 \pm 0.02$	$-0.49 \pm 0.02$



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.

Q1 no difference image



Q1 no OOT image



Q2 no difference image



Q2 no OOT image



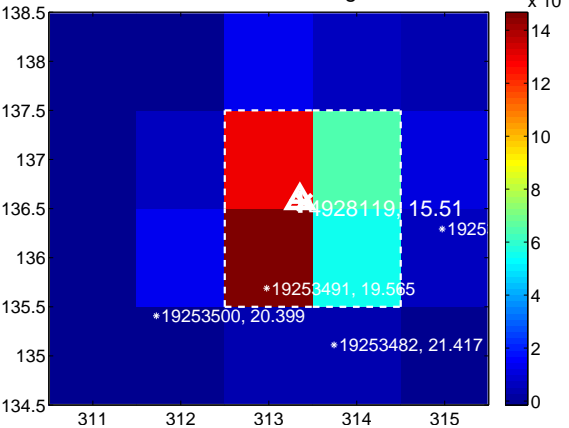
Q3 no difference image



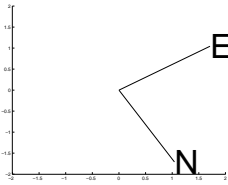
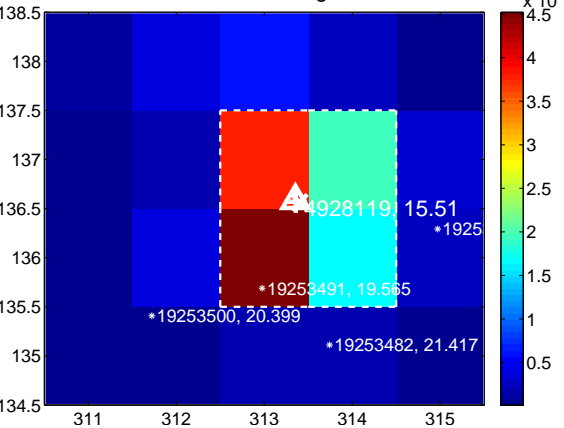
Q3 no OOT image



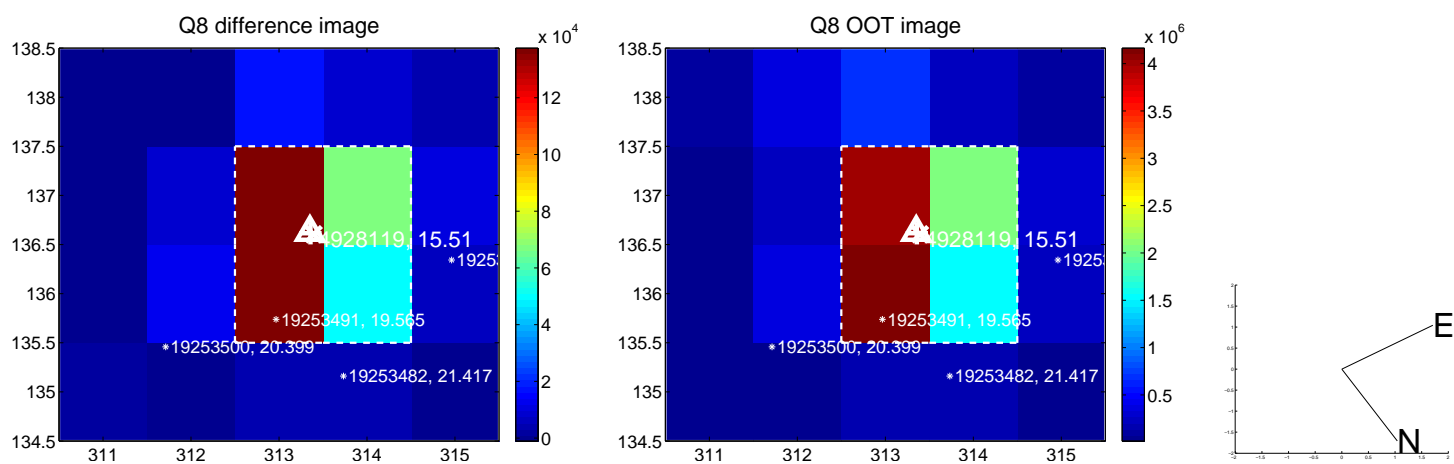
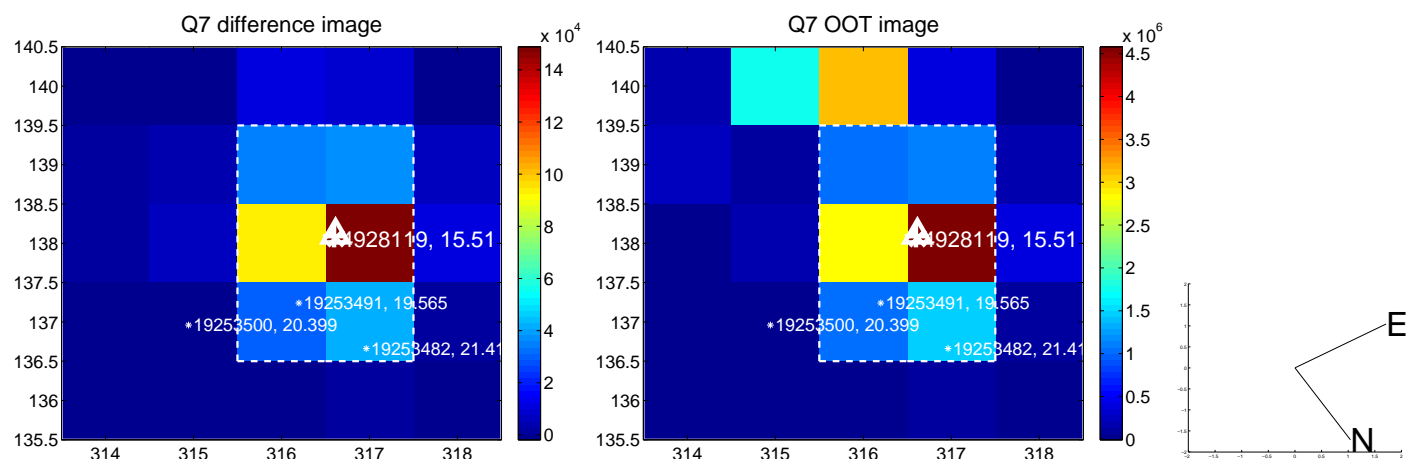
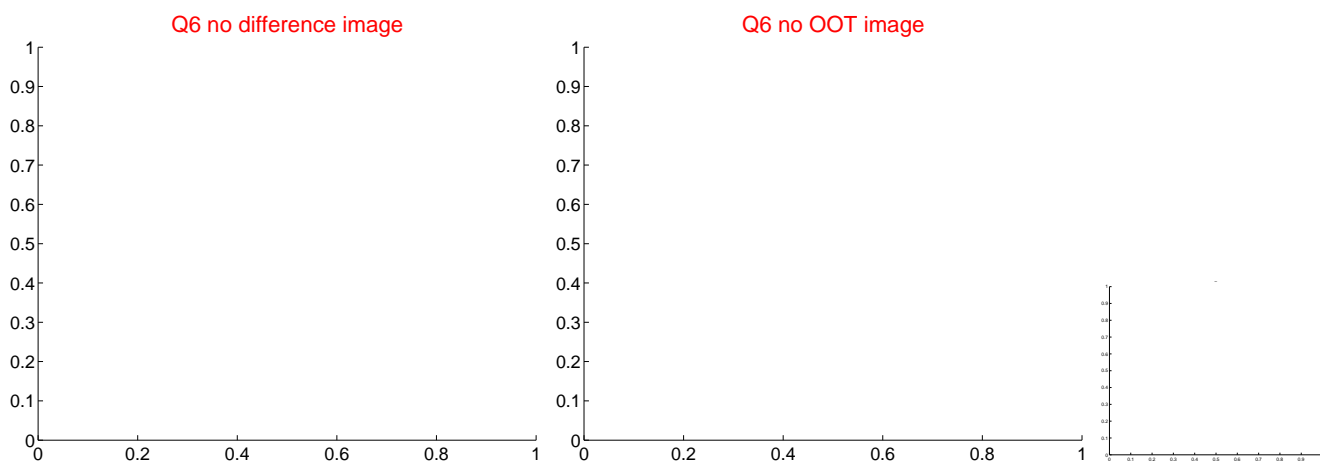
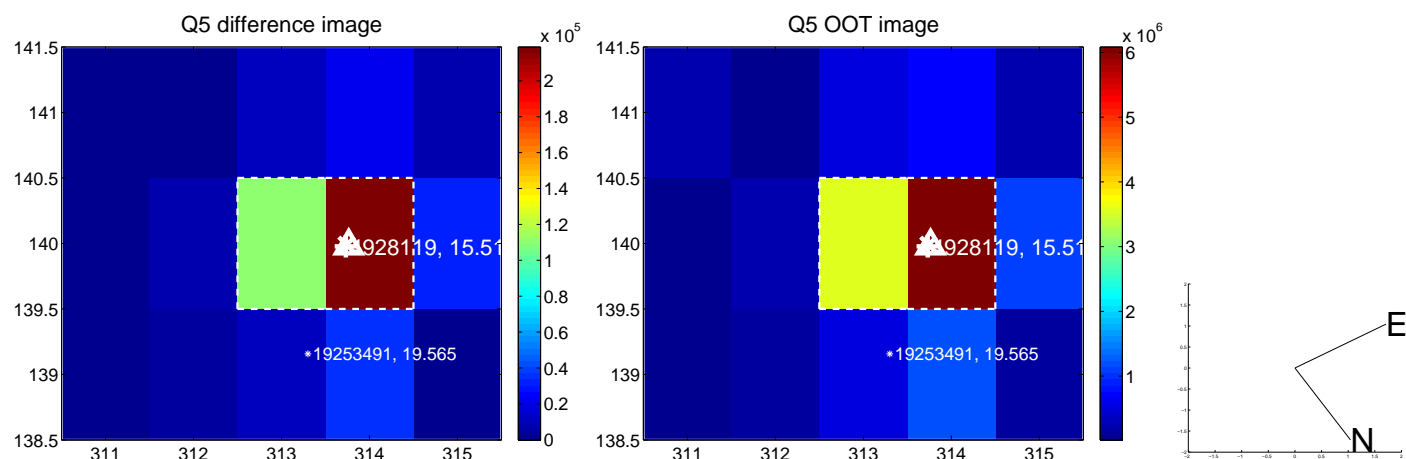
Q4 difference image



Q4 OOT image

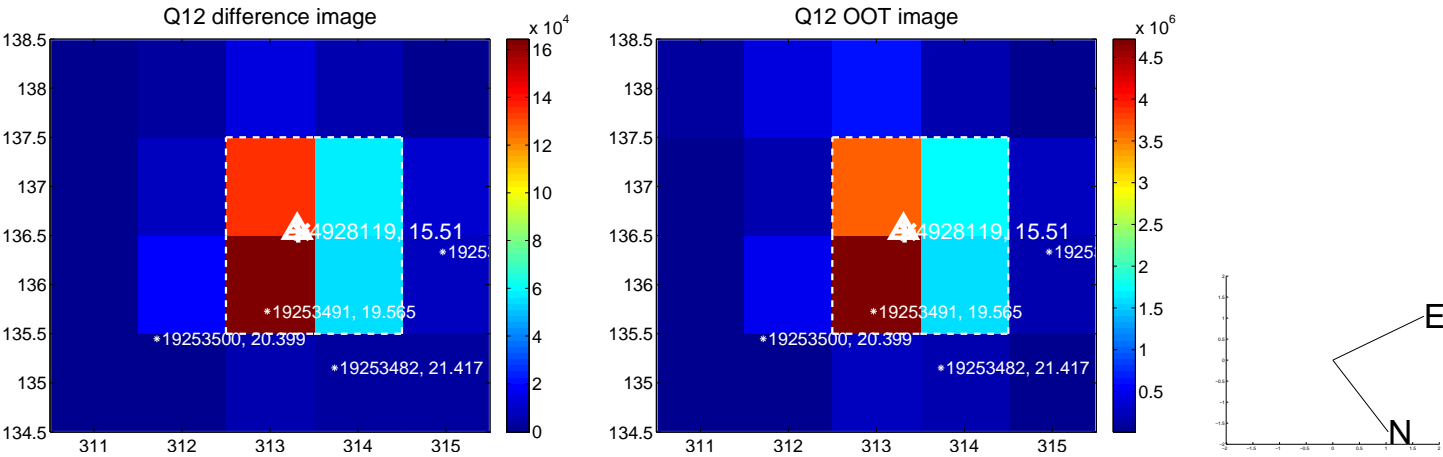
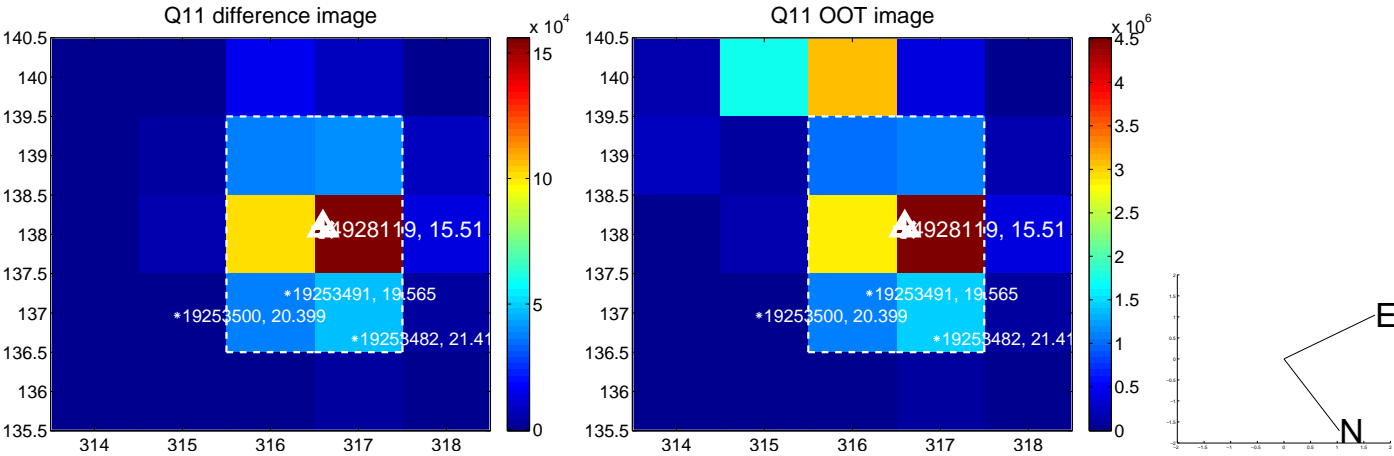
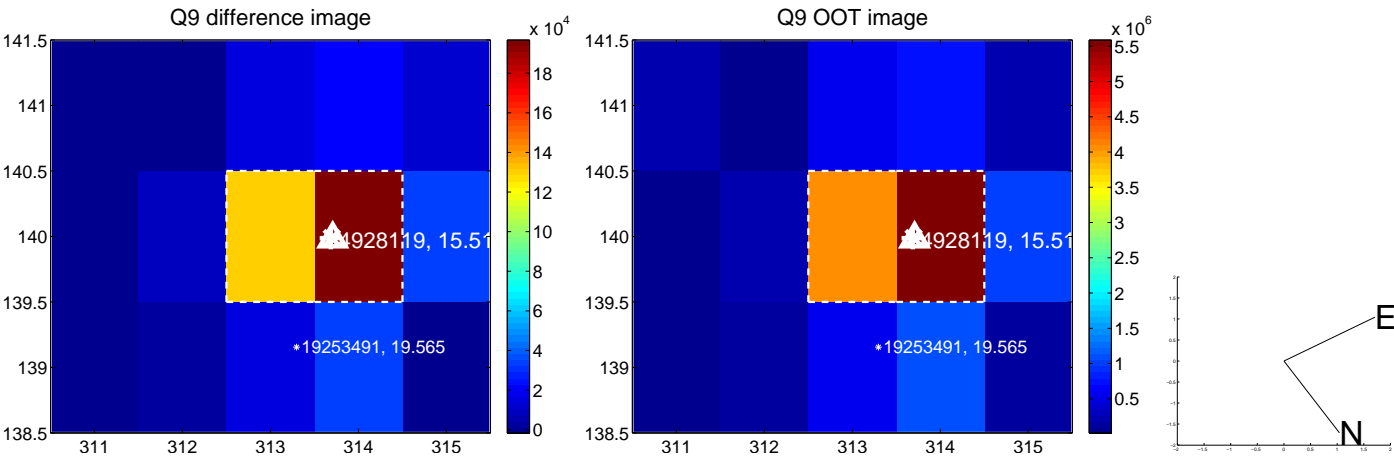


white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value

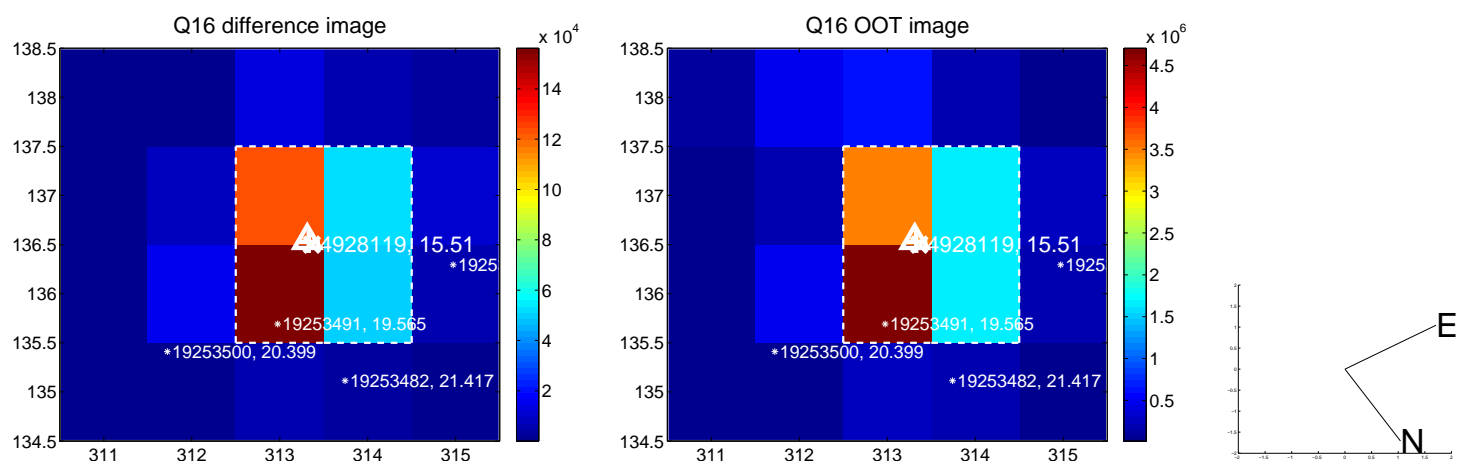
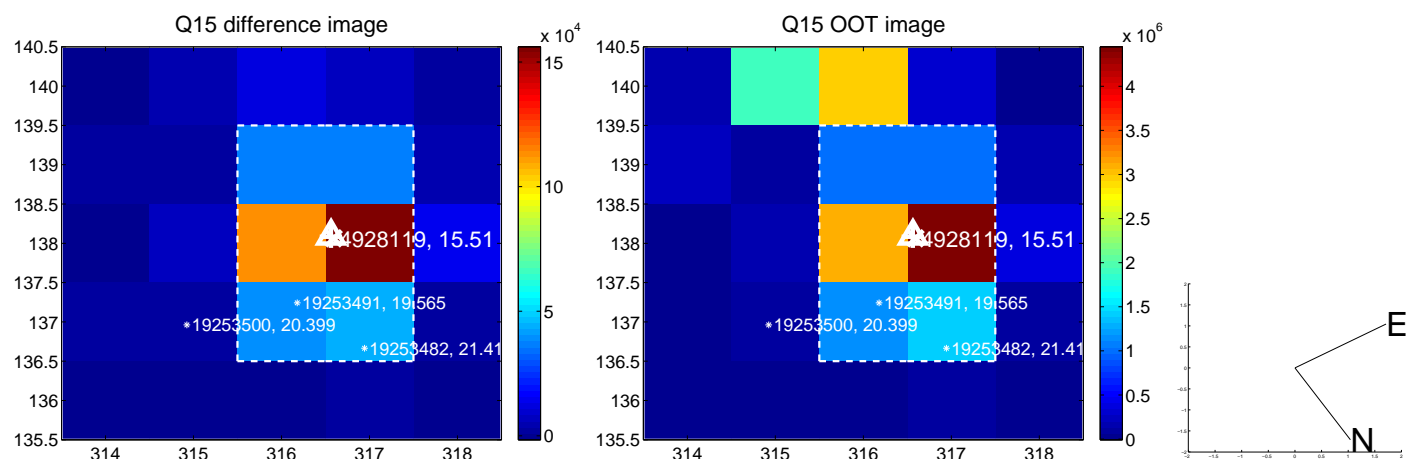
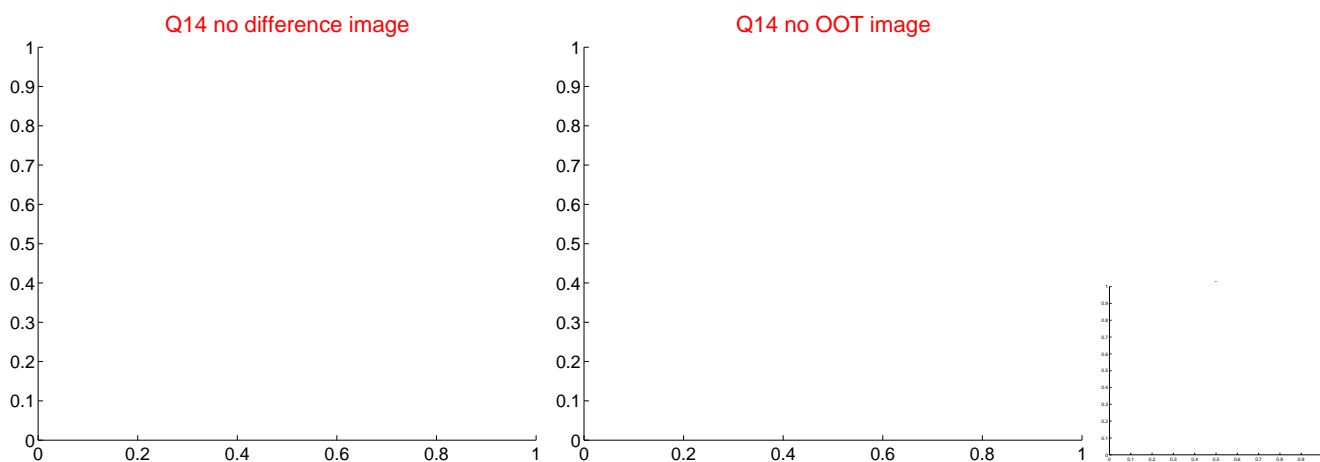
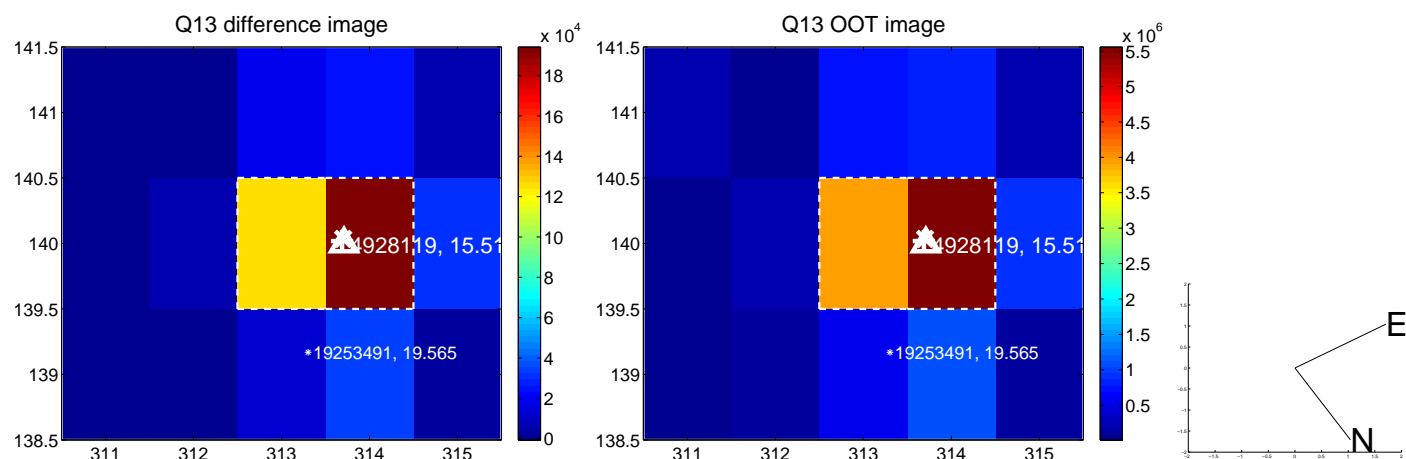




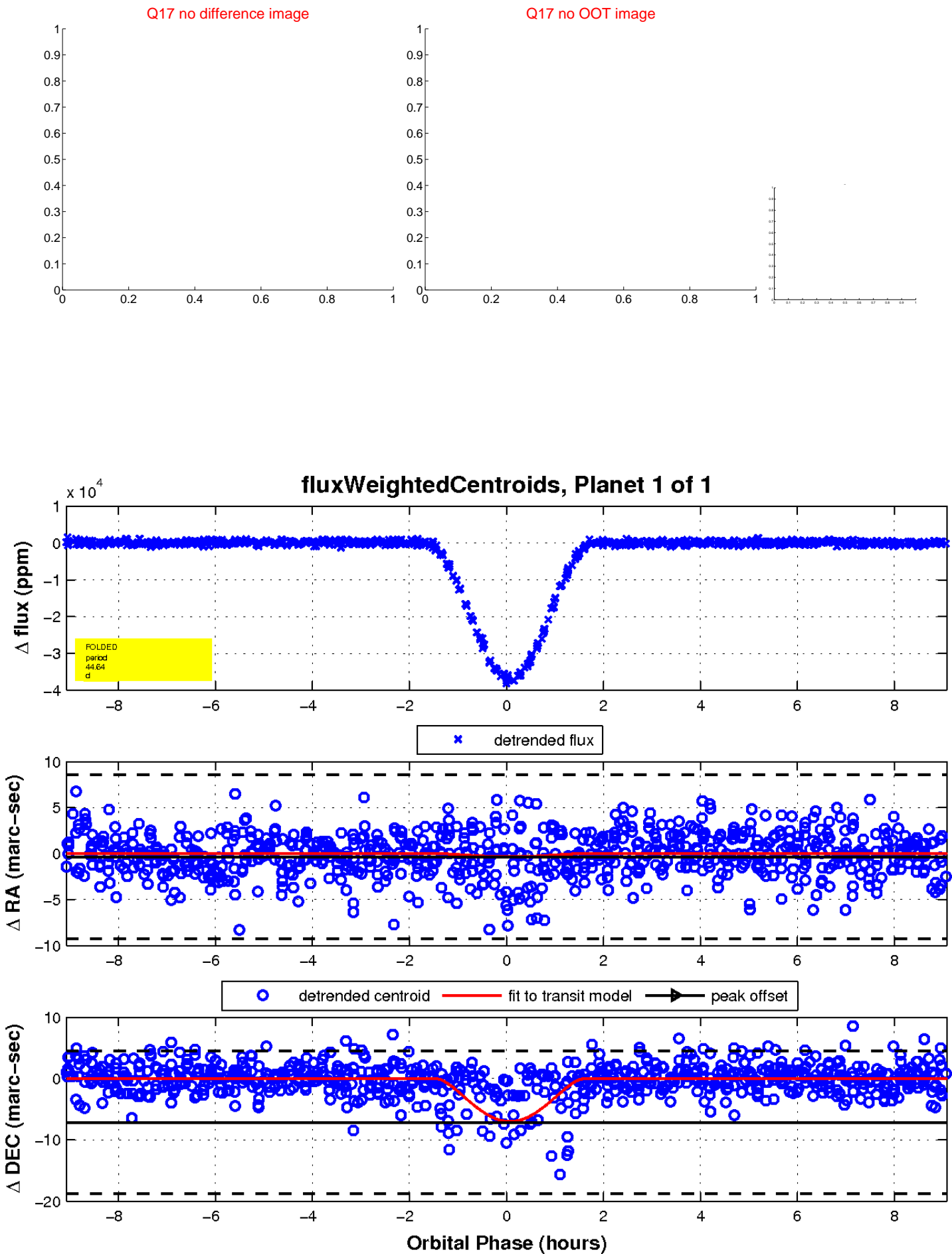
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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



# UKIRT Image

Declination

