

# KIC 003241619

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
003241619-01	OBS	6312.01	1.703336	132.472161	507513.9	3.334	18911.5	8271.1	0.65	5325	48.40	494.49
003241619-02	OBS	No	1.703348	131.613277	37659.9	2.000	6830.6	-1.0	0.65	5325	12.50	494.48

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
003241619-01	OBS	FP	0.00	0	1	0	0	SWEET_EB—MOD_SEC_DV—MOD_SEC_ALT—MOD_ODDEVEN_DV—HAS_SEC_TCE
003241619-02	OBS	FP	0.00	1	1	0	0	IS_SEC_TCE—CENT_NOFITS

**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 003241619-01

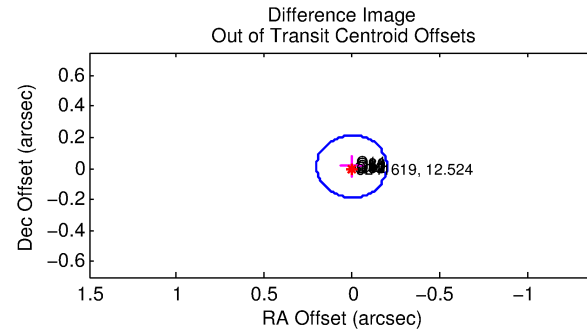
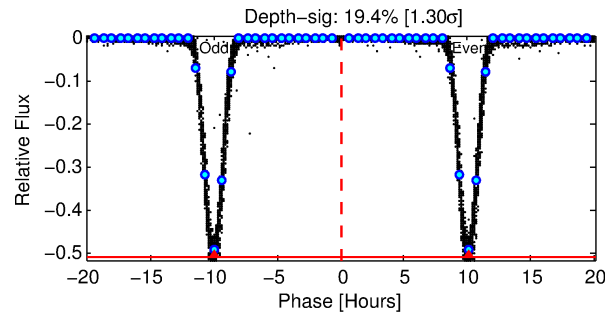
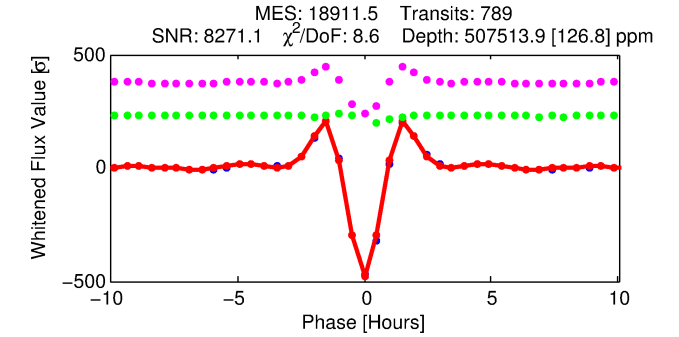
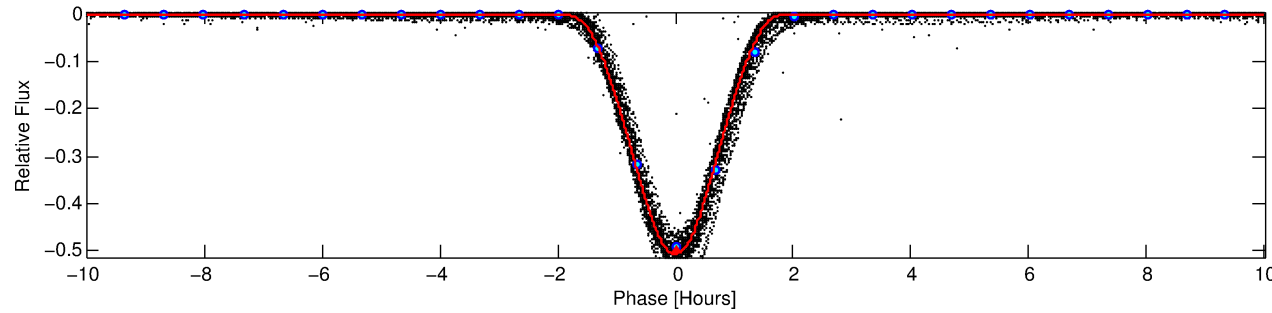
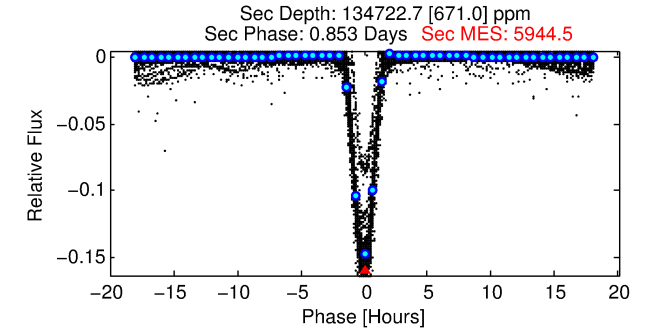
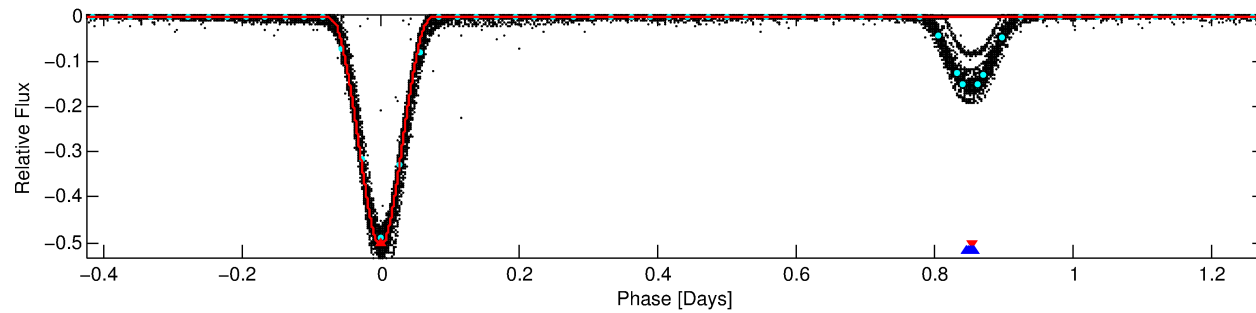
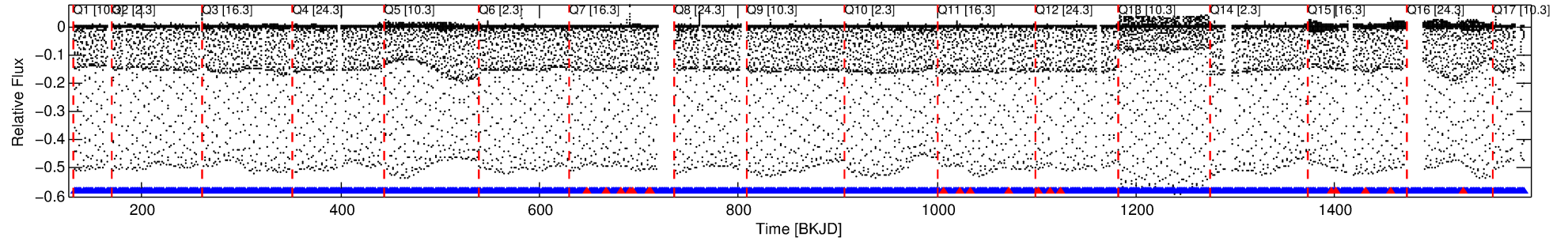
No Significant Match Found

# DV One-Page Summary

KIC: 3241619 Candidate: 1 of 2 Period: 1.703 d

KOI: K06312.01 Corr: 0.981

Kp: 12.52 R\*: 0.65 Rs Teff: 5325.0 K Logg: 4.66 Fe/H: -0.780



## DV Fit Results:

Period = 1.70334 [0.00000] d  
Epoch = 132.4722 [0.0000] BKJD  
Rp/R\* = 0.6844 [0.0002]  
a/R\* = 6.55 [0.00]  
b = 0.29 [0.00]  
Seff = 494.49 [86.56]  
Teff = 1202 [53] K  
Rp = 48.39 [5.68] Re  
a = 0.0247 [0.0023] AU  
Ag = 19.36 [2.48] [7.40σ]  
Teffp = 3900 [117] K [21.09σ]

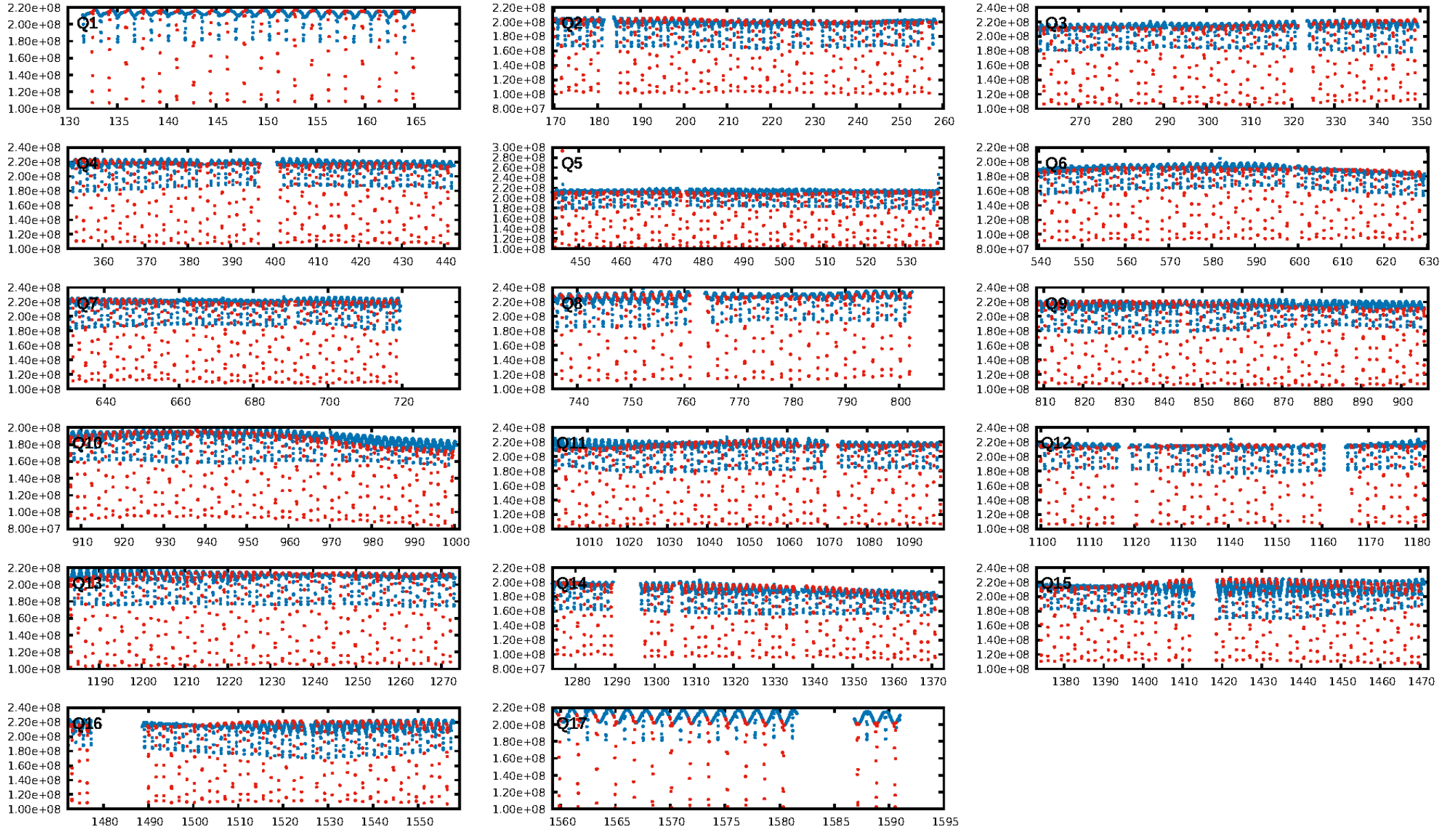
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: 0.0% [0.00σ]  
ModelChiSquare2-sig: N/A  
ModelChiSquareGof-sig: N/A  
Bootstrap-pfa: N/A  
RollingBand-fgt: 0.97 [734/753]  
GhostDiagnostic-chr: 1.149  
Centroid-sig: N/A  
Centroid-so: N/A  
OotOffset-rm: 0.014 arcsec [0.20σ]  
KicOffset-rm: 0.147 arcsec [2.07σ]  
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]

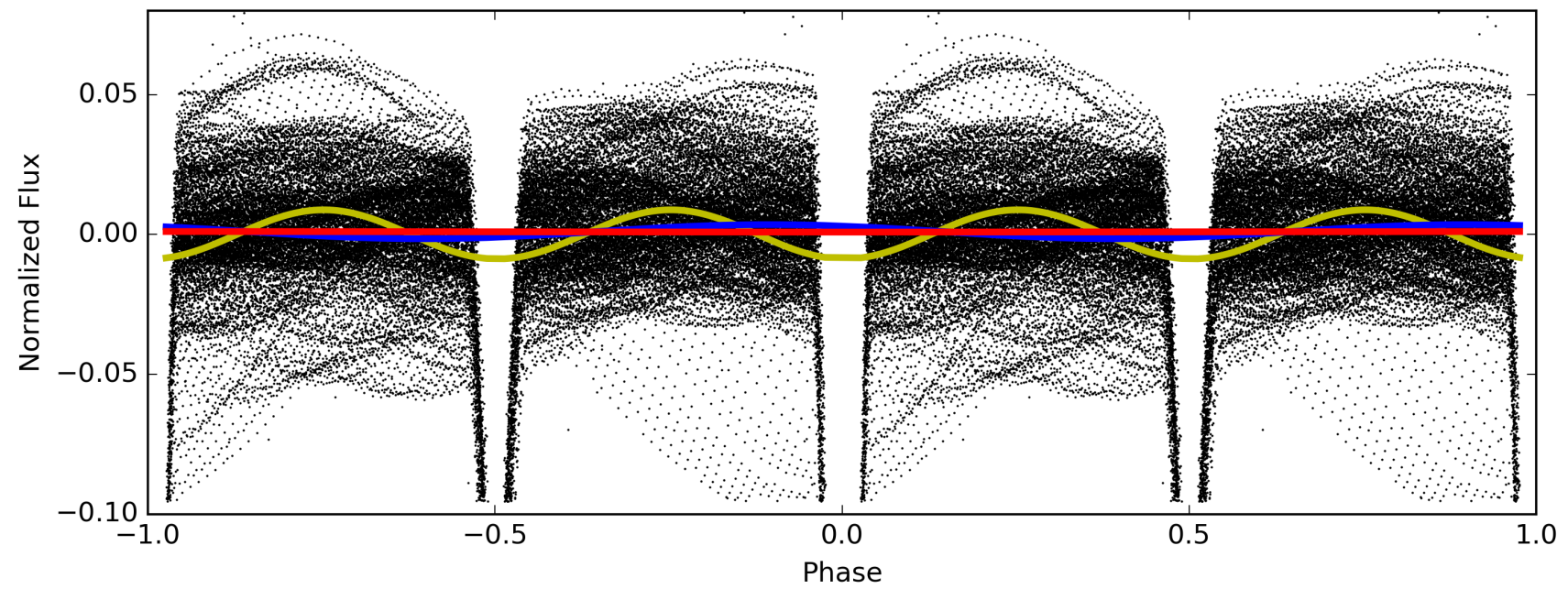
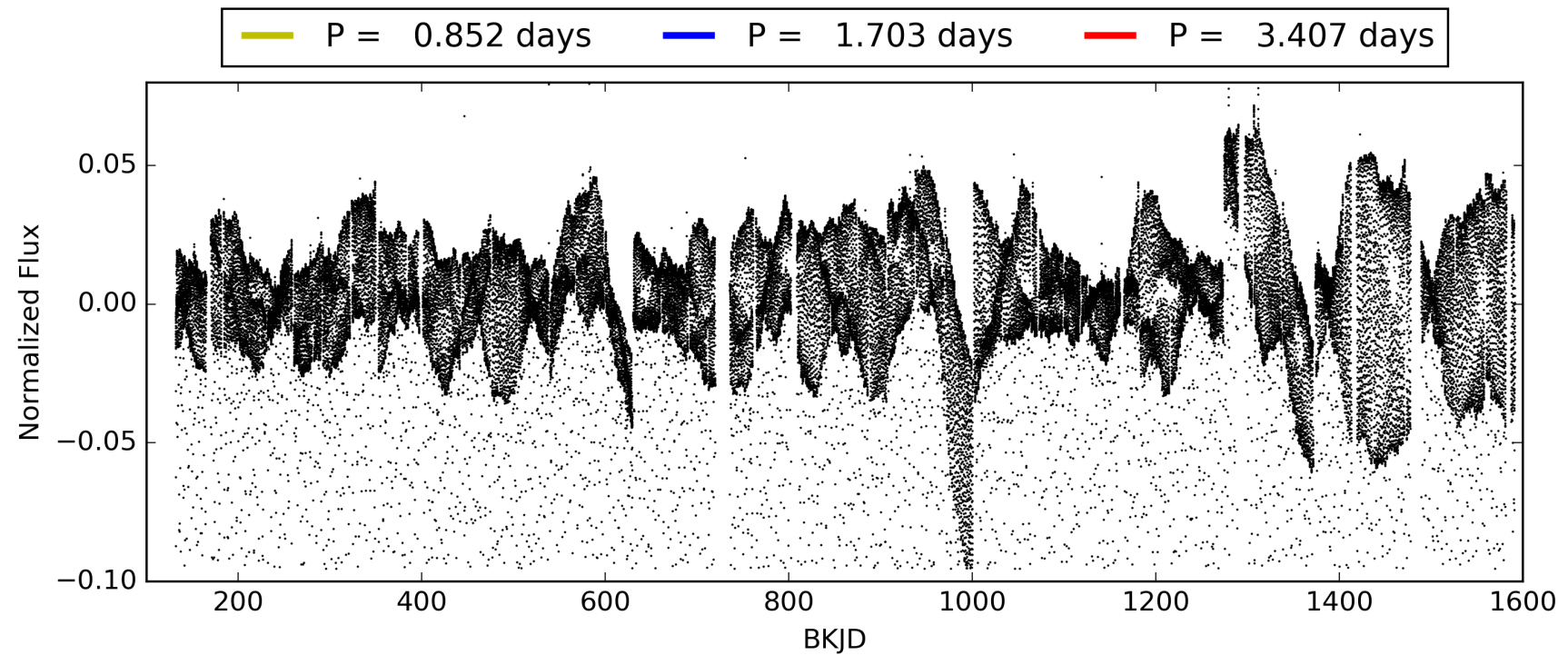
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 08:08:43 Z

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

# TCE 003241619-01, PDC Light Curves

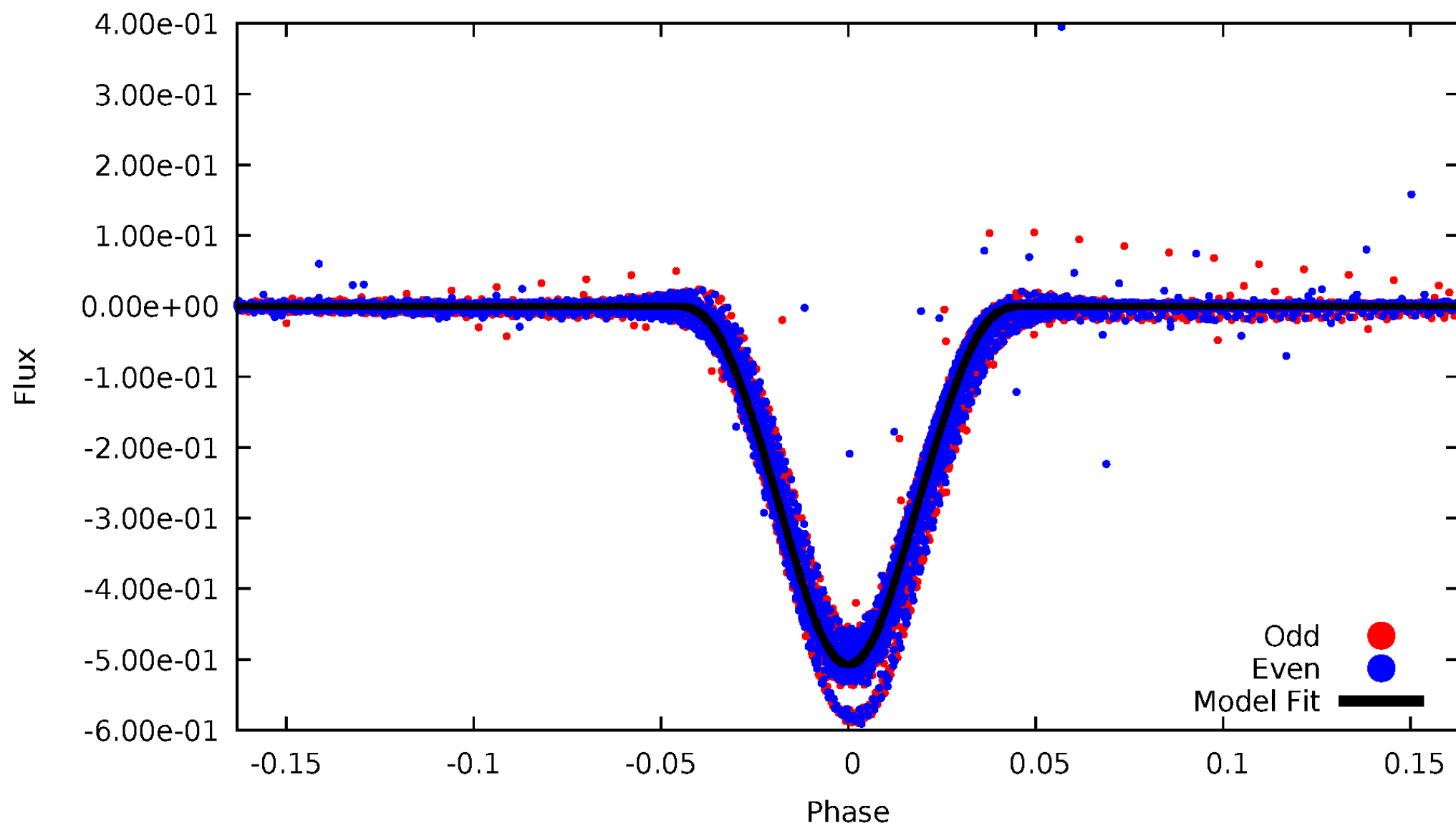


TCE 003241619-01



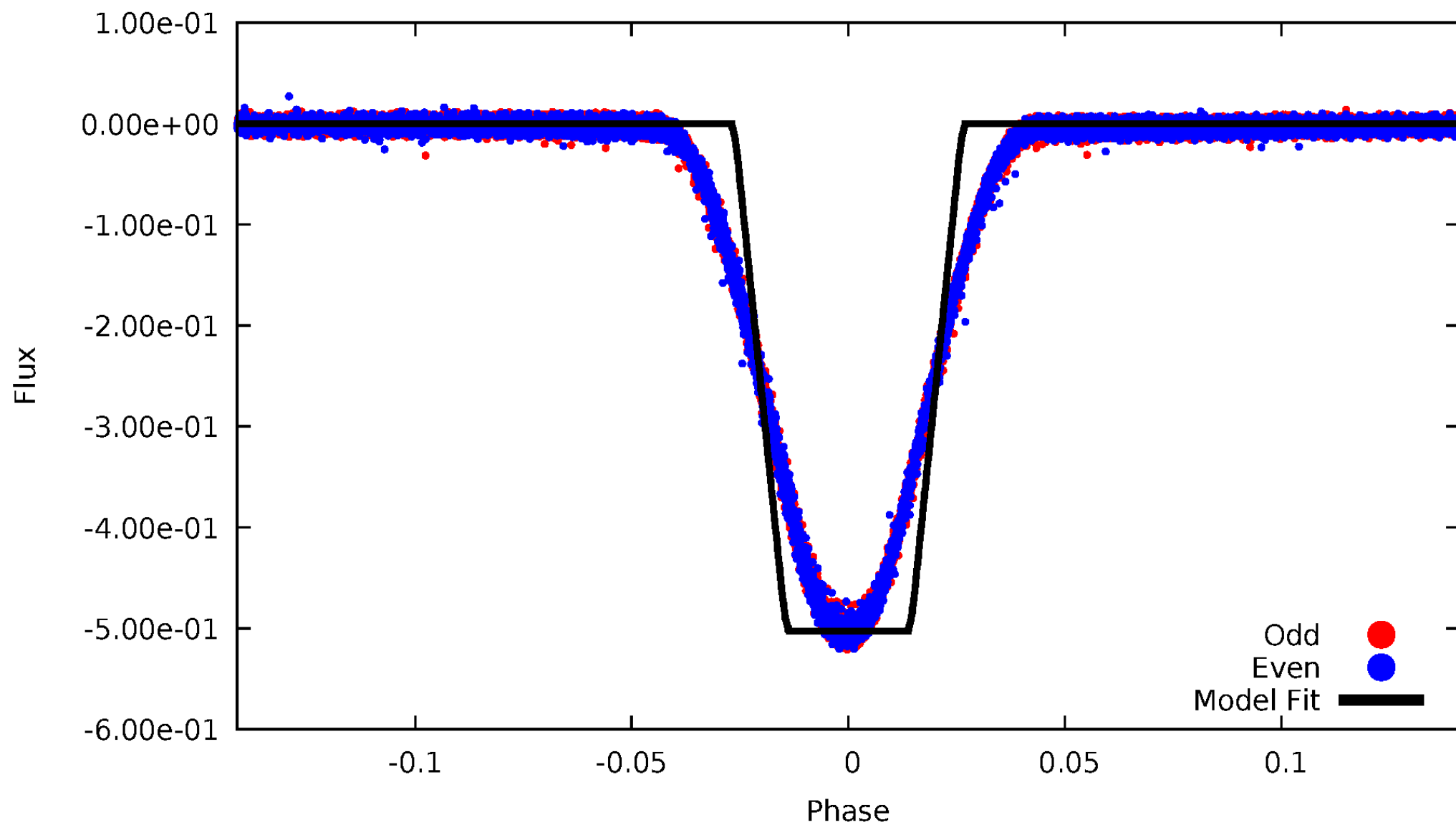
# DV Odd/Even

TCE 003241619-01



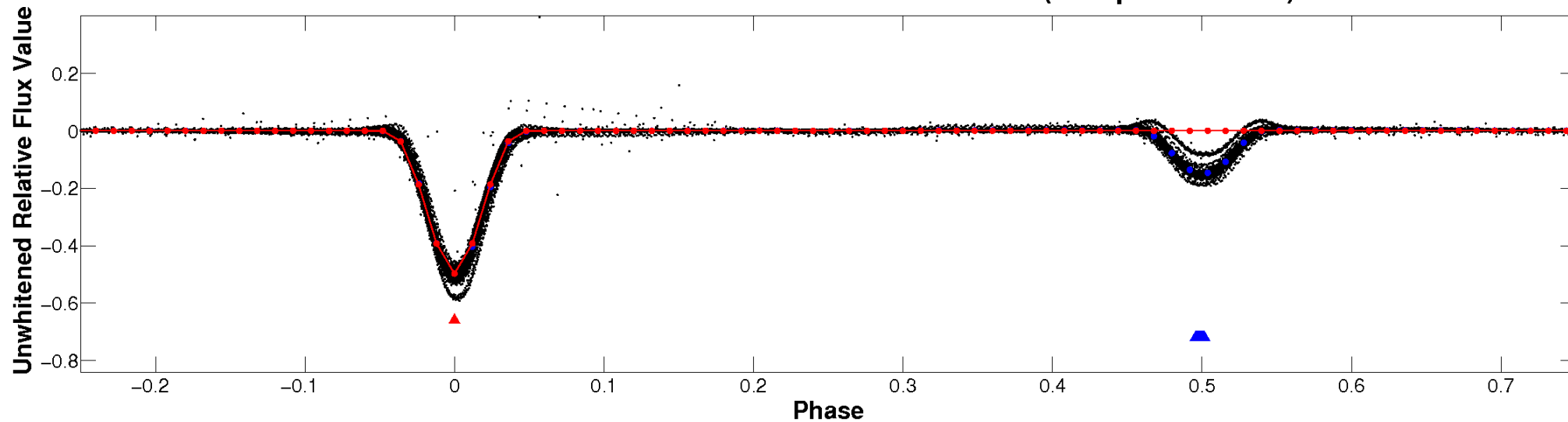
# ALT Odd/Even

TCE 003241619-01

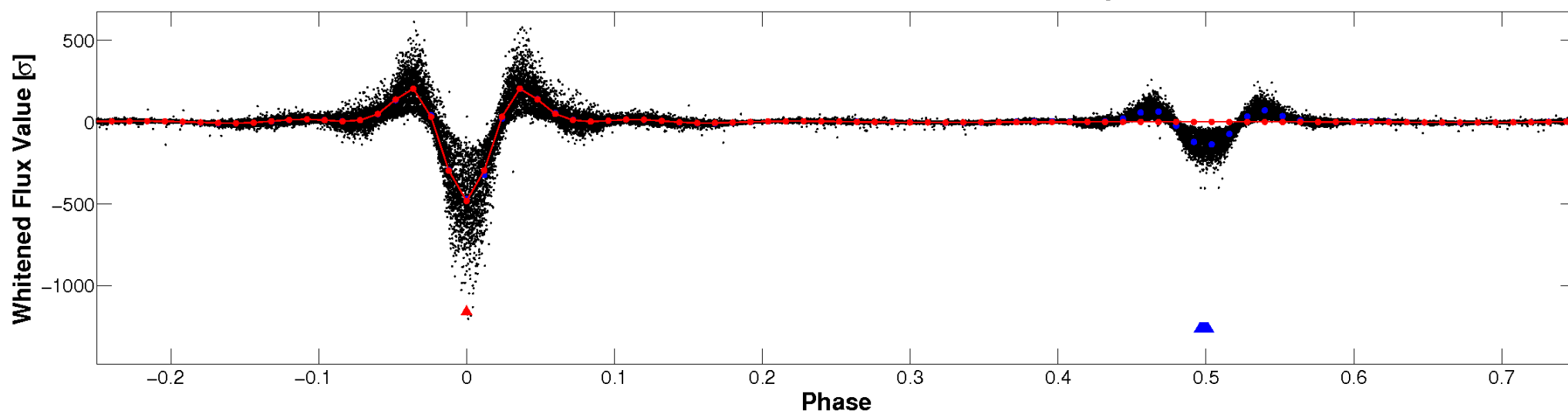


# Non-Whitened Vs. Whitened Light Curve

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



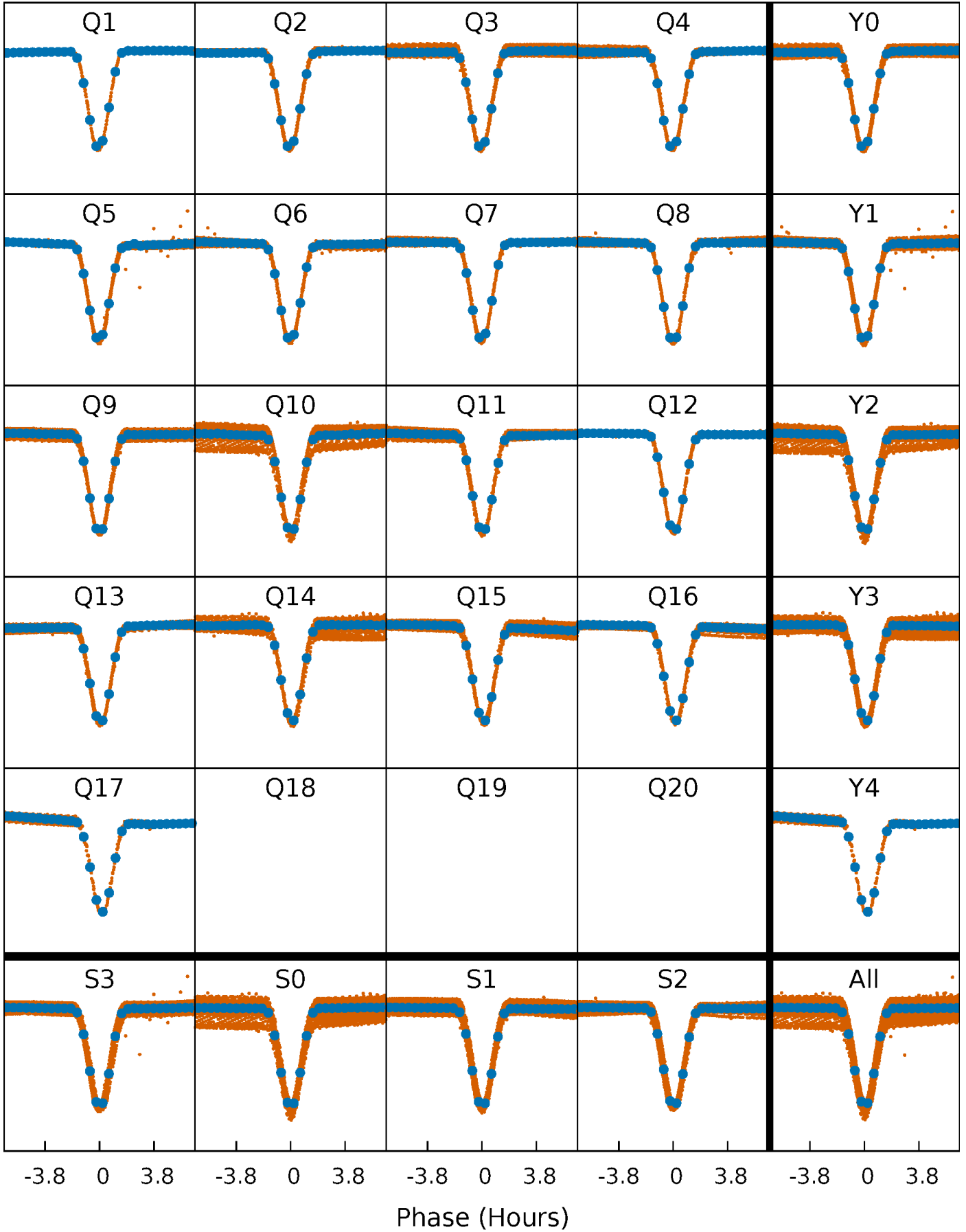
**Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)**





# PDC Quarter-Phased Transit Curves

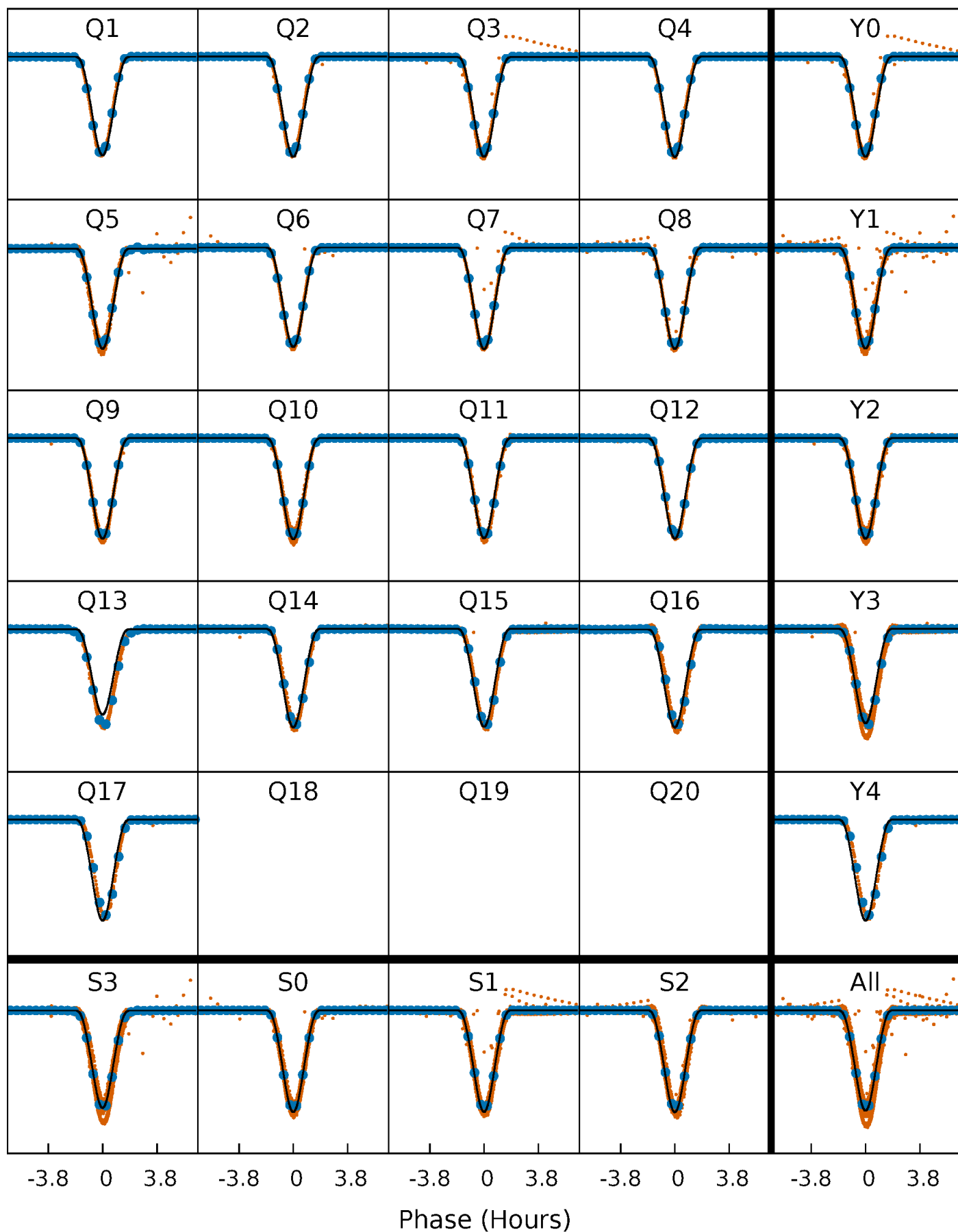
TCE 003241619-01 P= 1.703336 Days  $T_0=132.472161$  (BKJD)





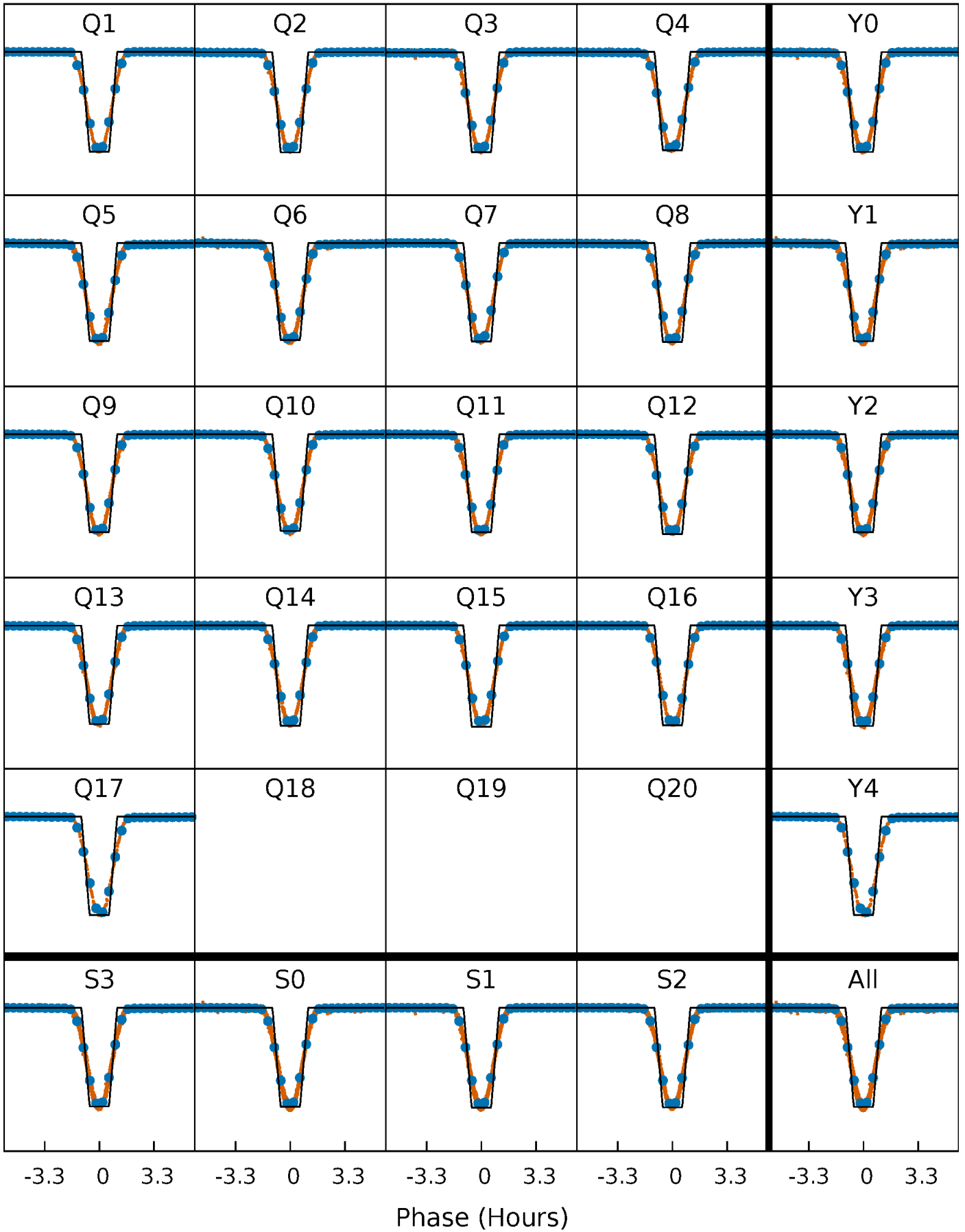
# DV Quarter-Phased Transit Curves

TCE 003241619-01 P= 1.703336 Days  $T_0=132.472161$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

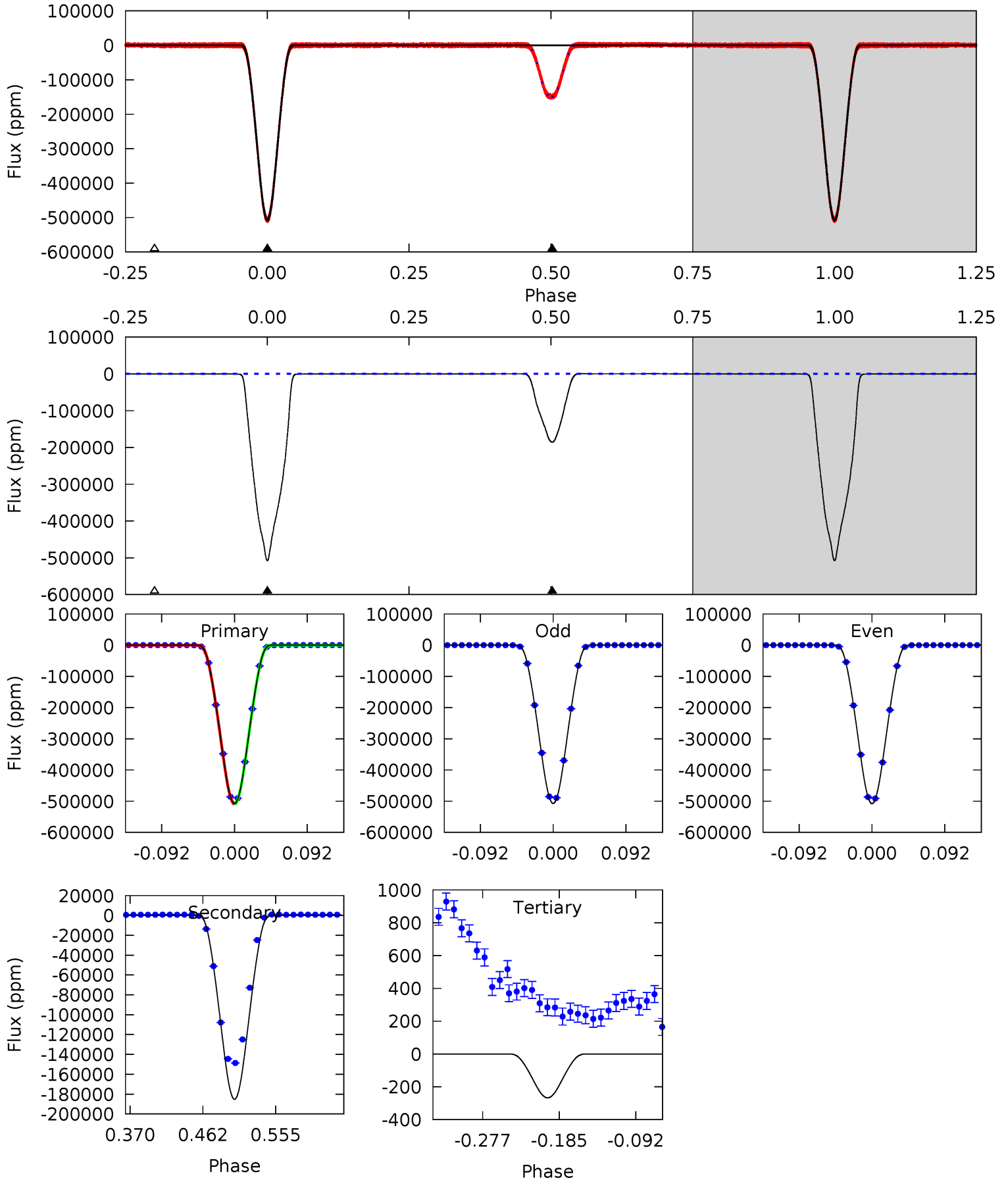
TCE 003241619-01 P= 1.703346 Days  $T_0=132.469409$  (BKJD)



# DV Model-Shift Uniqueness Test

003241619-01, P = 1.703336 Days, E = 130.768825 Days

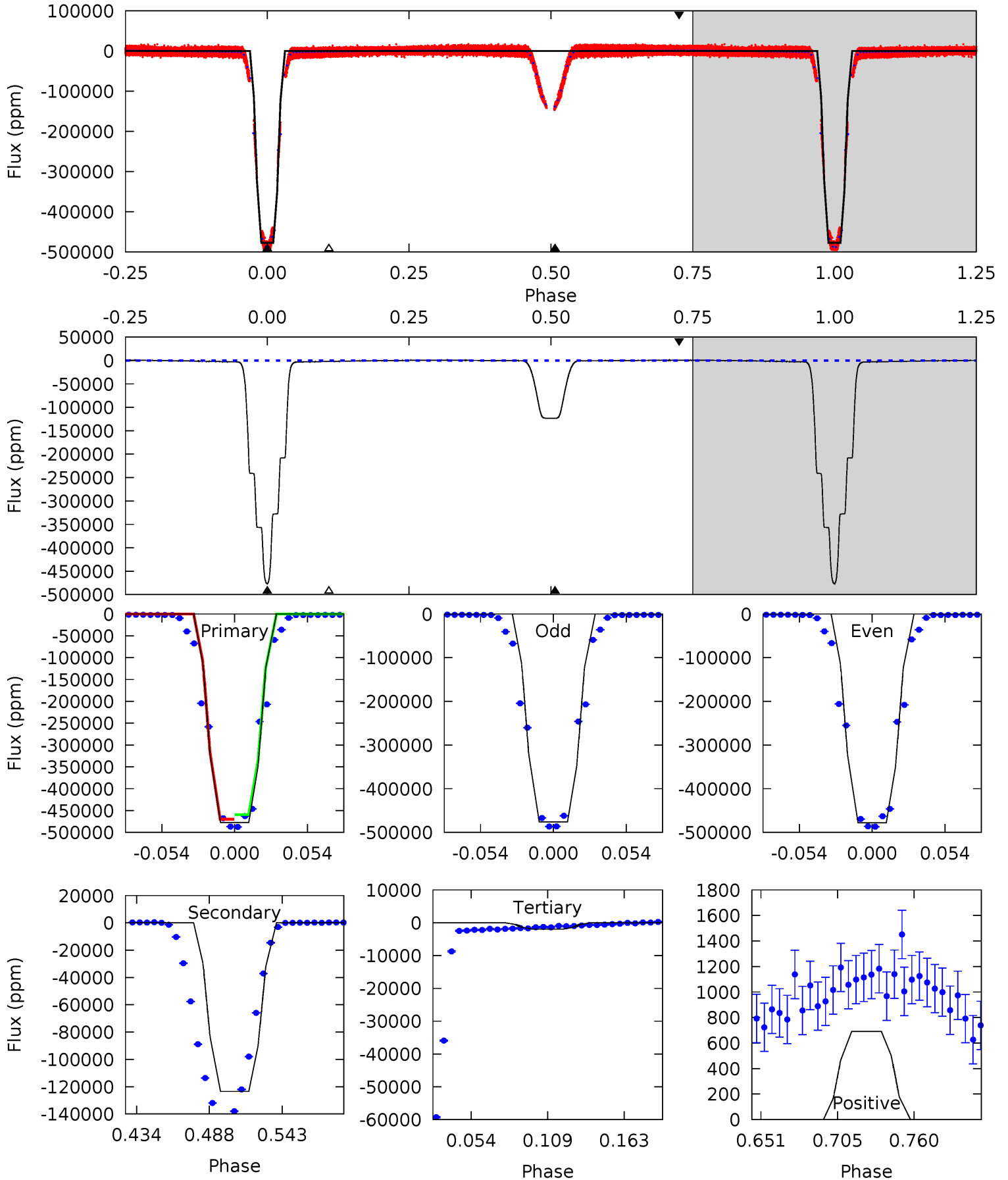
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
14387	5251	7.58	0	4.58	1.68	6.86	14379	14387	5243	5251	12.6	1.01	0.00	0



# Alt Model-Shift Uniqueness Test

003241619-01, P = 1.703346 Days, E = 130.766063 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
4086	1057	17.0	5.91	4.69	1.92	8.90	4069	4080	1040	1051	9.00	1.00	0.00	0



### Stellar Parameters For KIC 003241619

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R$ ( $R_{\odot}$ )	$M$ ( $M_{\odot}$ )	$p_{\star}$ ( $\text{g}\cdot\text{cm}^{-3}$ )
	$5325^{+159}_{-143}$	$4.657^{+0.039}_{-0.066}$	$-0.780^{+0.300}_{-0.300}$	$0.648^{+0.076}_{-0.041}$	$0.695^{+0.058}_{-0.048}$	$3.600^{+0.563}_{-0.852}$
	+3%/-3%	+1%/-1%	+38%/-38%	+12%/-6%	+8%/-7%	+16%/-24%
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 003241619-01 / KOI 6312.01

Detrend	Depth (ppm)	$R_p$ ( $R_{\oplus}$ )	$T_{\text{max}}$ (K)	$T_{\text{obs}}$ (K)	$A_{\text{obs}}$
DV	$-185239 \pm 35$	$48.47^{+3.00}_{-1.81}$	$1687^{+65}_{-54}$	$4570^{+116}_{-112}$	$32^{+2}_{-3}$
Alt.	$-123467 \pm 117$	$50.11^{+3.15}_{-1.85}$	$1691^{+66}_{-58}$	$4115^{+104}_{-92}$	$19^{+1}_{-2}$

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

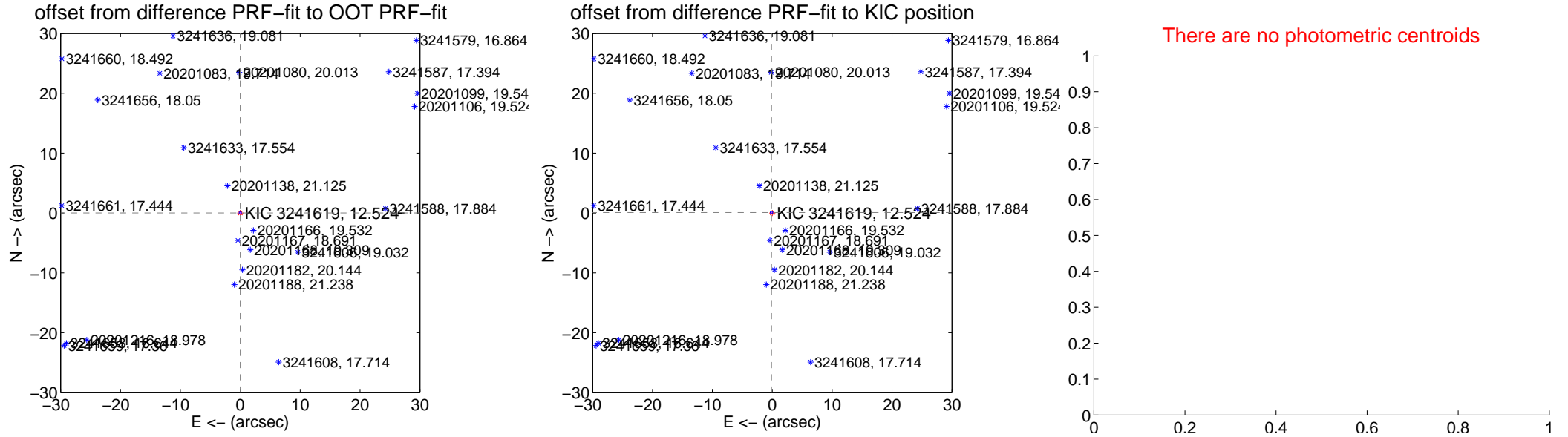
## DV Centroid Data

Supplemental centroid analysis for 003241619-01. Kepler magnitude: 12.52. Transit SNR 8271.14

There are 17 quarters with good PRF difference image offsets

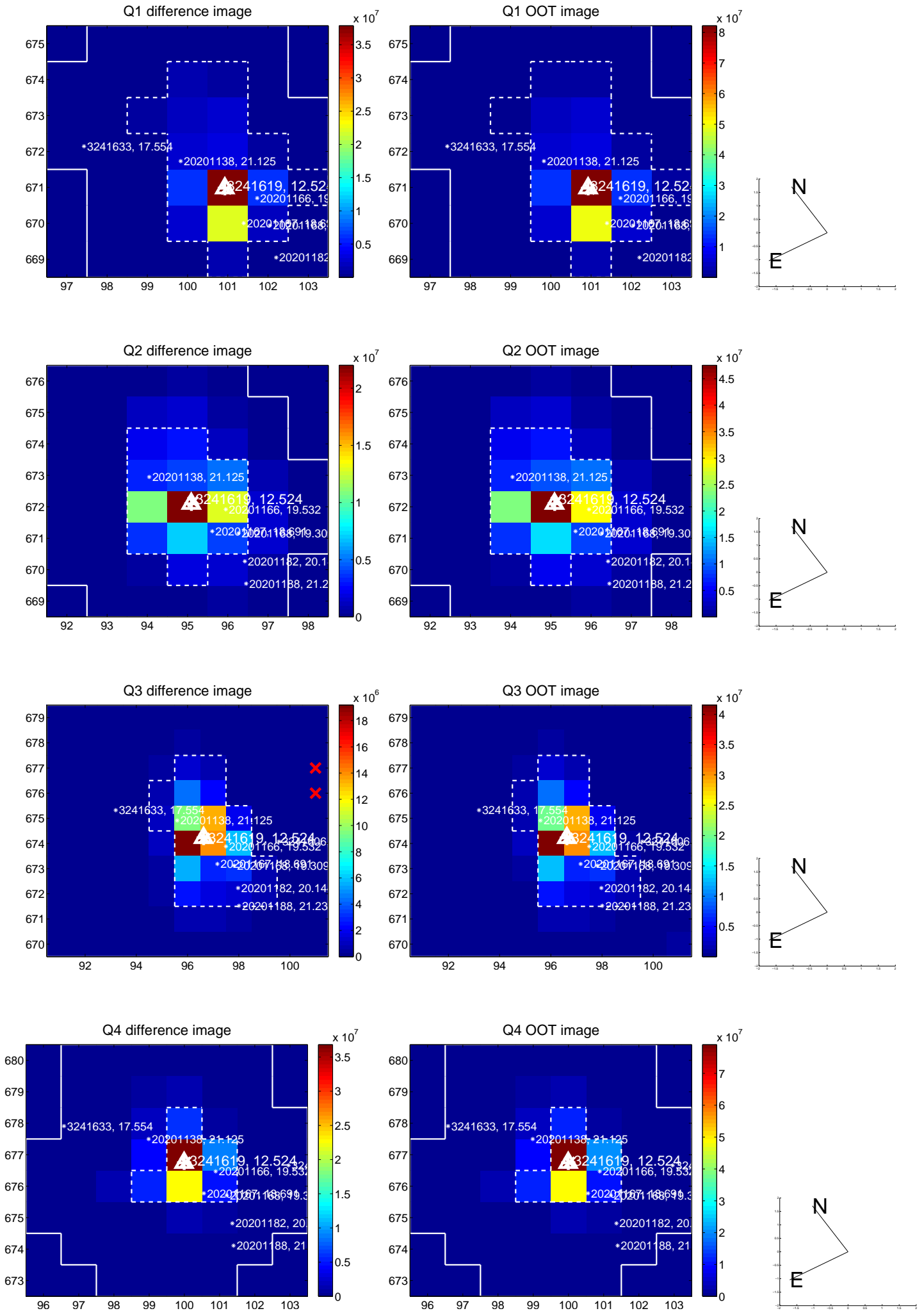
The direct PRF centroid is offset from the target star catalog position by about 0.17 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.014 \pm 0.067$	0.20	$0.002 \pm 0.067$	$0.013 \pm 0.067$
PRF-fit source offset from KIC position	$0.147 \pm 0.071$	2.07	$0.122 \pm 0.070$	$0.082 \pm 0.074$
photometric centroid source offset	—	—	—	—



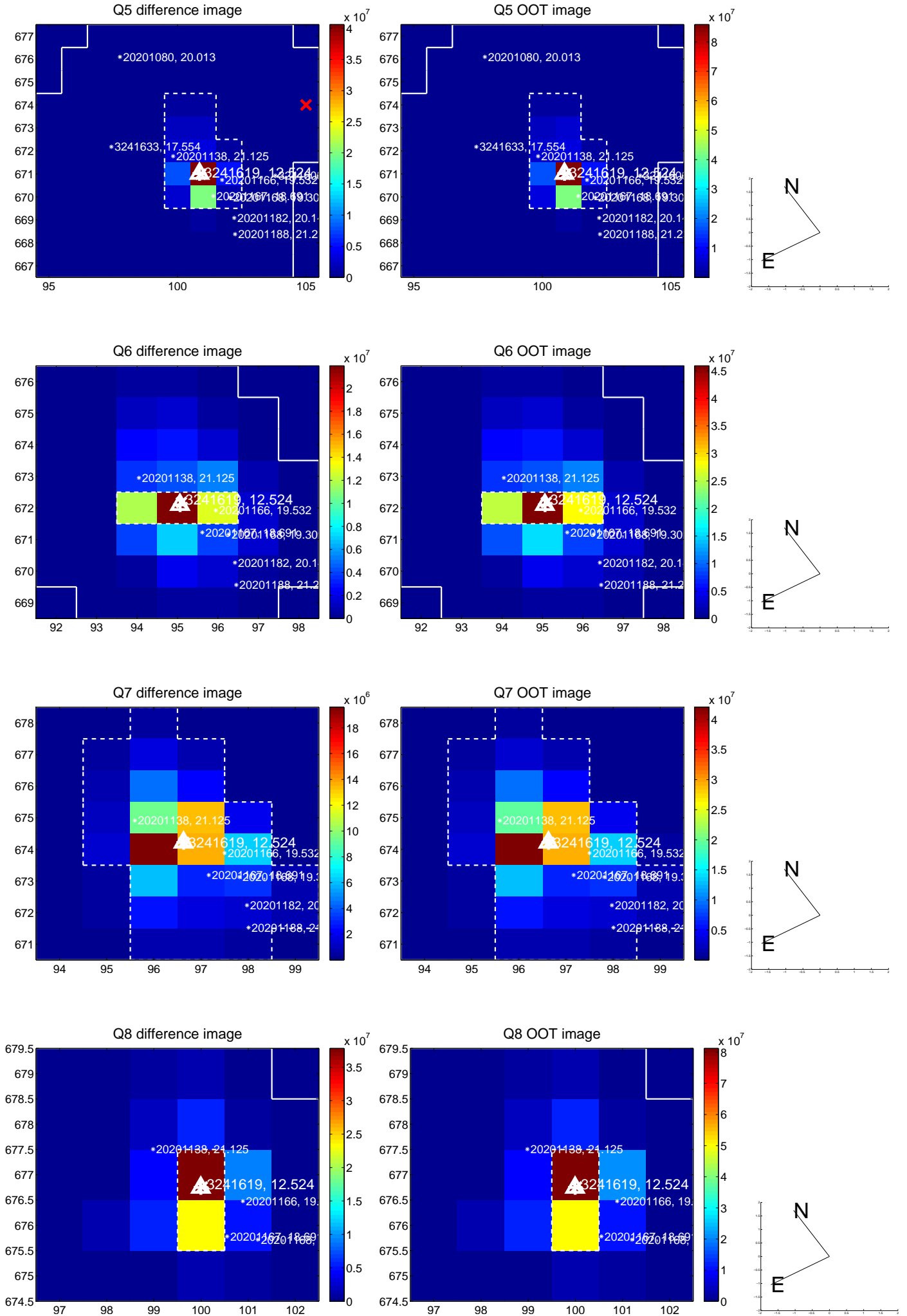
Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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

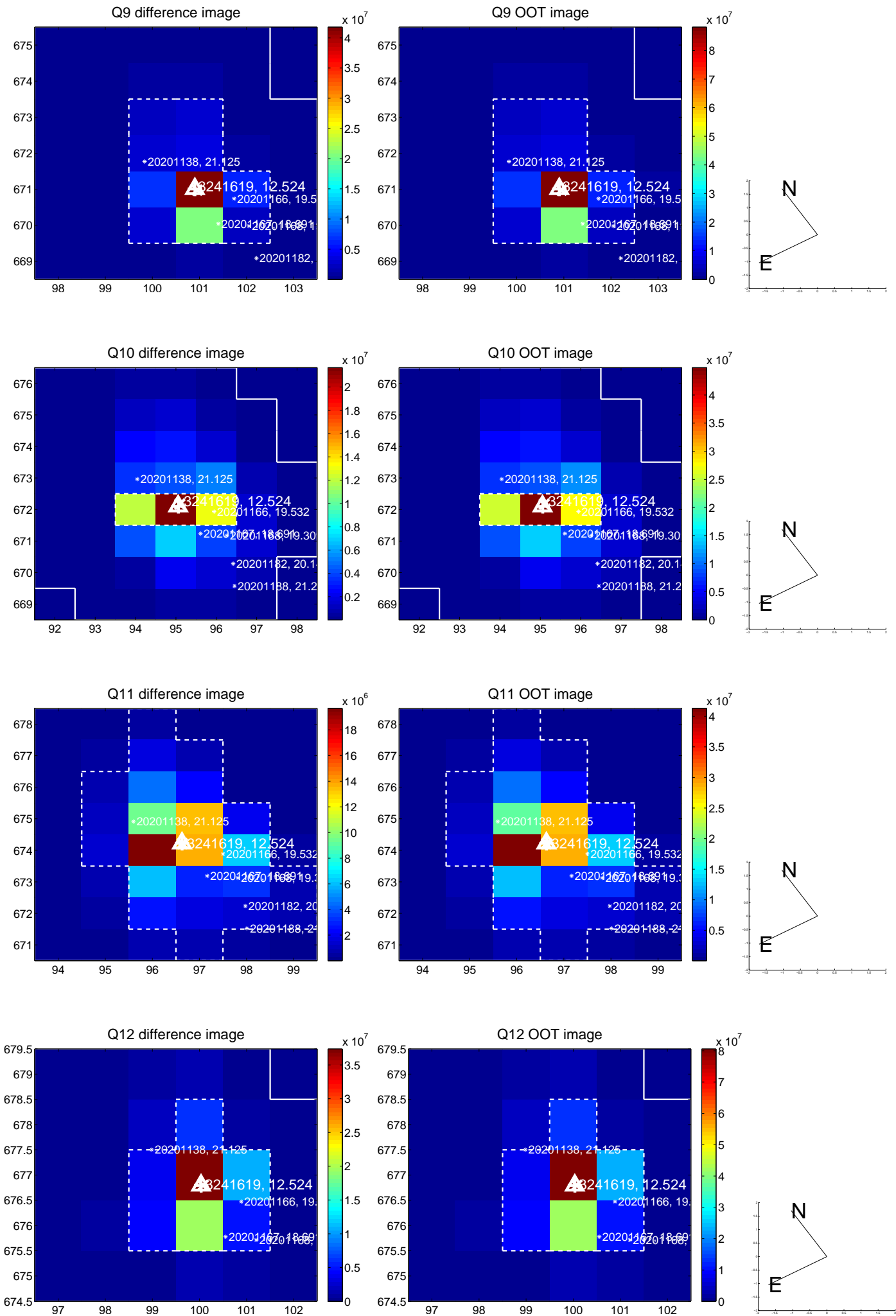




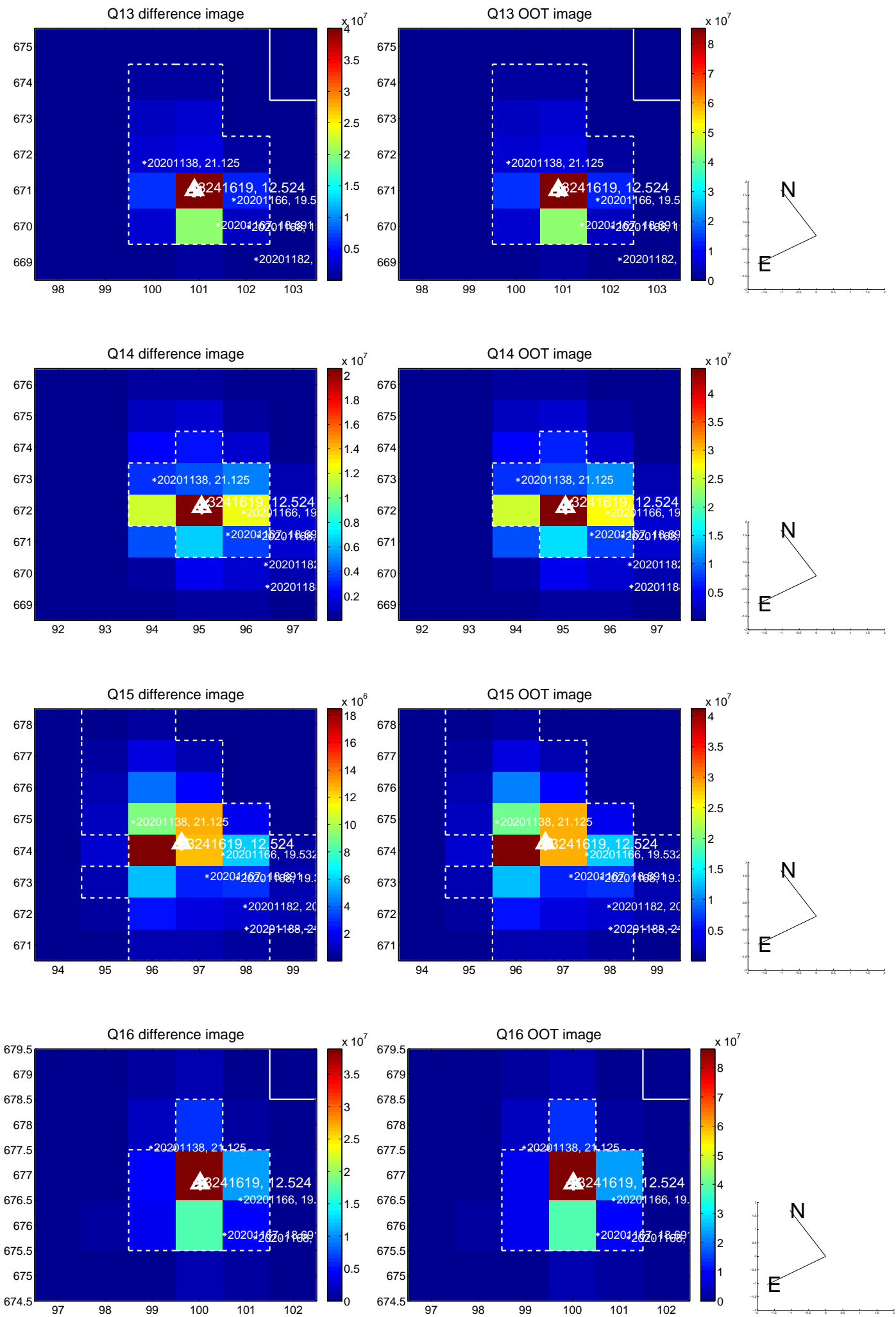
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



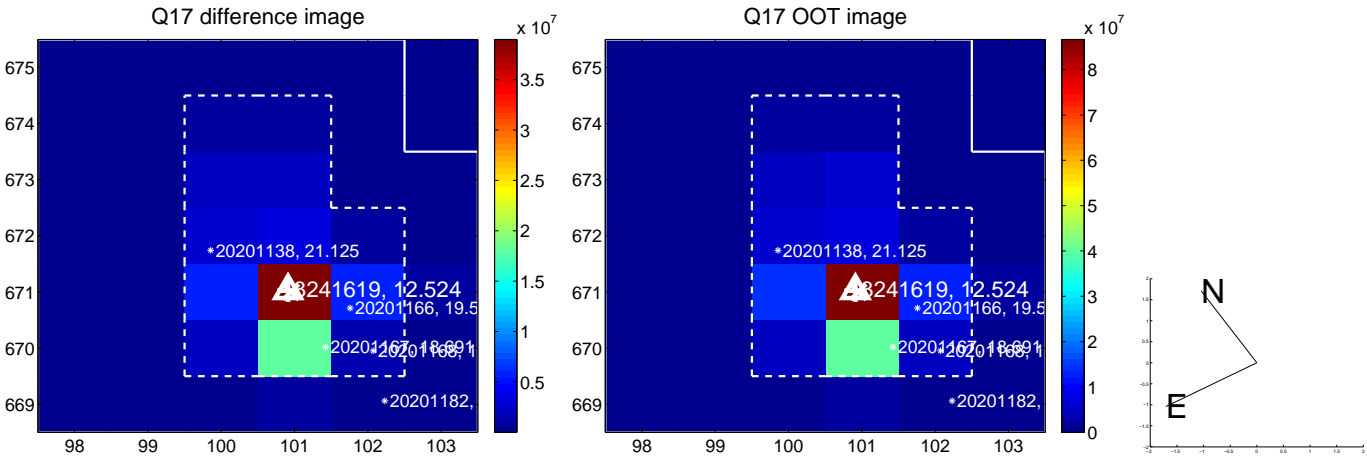
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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



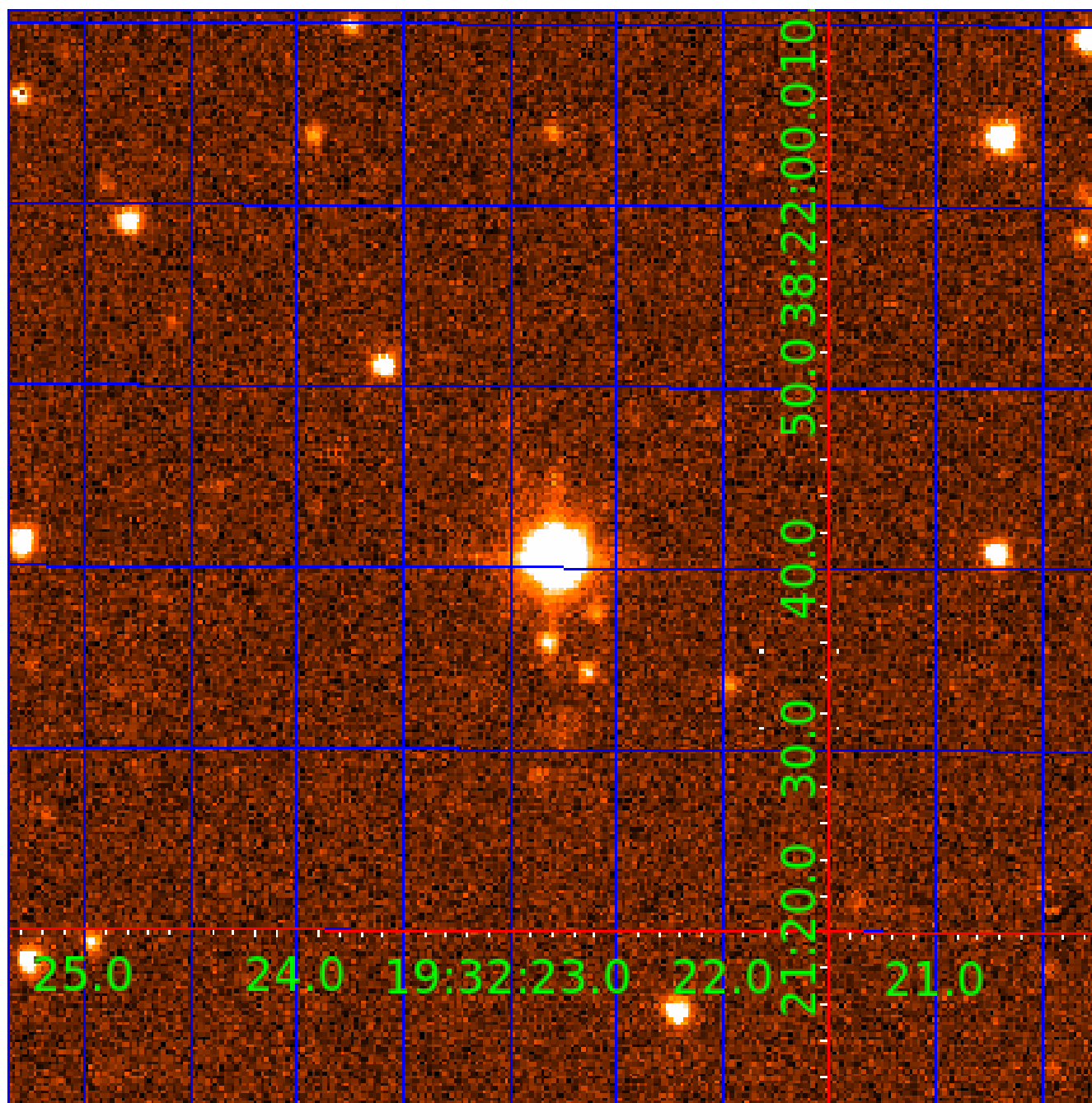
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



folded centroid time series figure for this object.

# UKIRT Image

Declination



# KIC 003241619

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
003241619-01	OBS	6312.01	1.703336	132.472161	507513.9	3.334	18911.5	8271.1	0.65	5325	48.40	494.49
003241619-02	OBS	No	1.703348	131.613277	37659.9	2.000	6830.6	-1.0	0.65	5325	12.50	494.48

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
003241619-01	OBS	FP	0.00	0	1	0	0	SWEET_EB—MOD_SEC_DV—MOD_SEC_ALT—MOD_ODDEVEN_DV—HAS_SEC_TCE
003241619-02	OBS	FP	0.00	1	1	0	0	IS_SEC_TCE—CENT_NOFITS

**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.

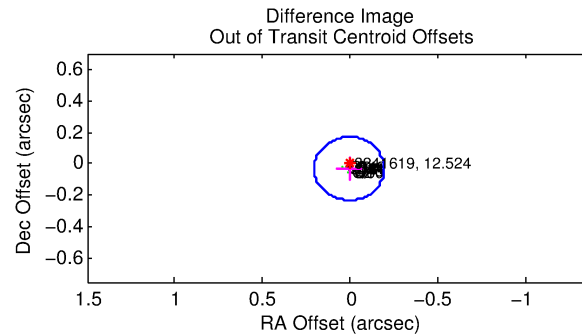
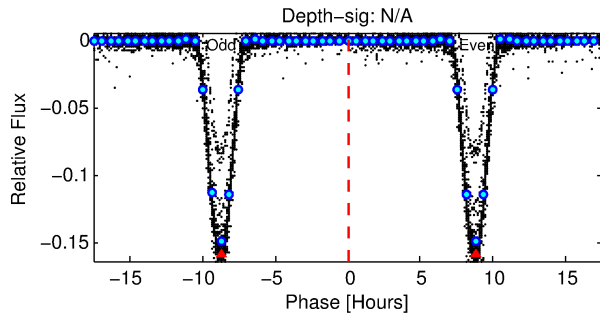
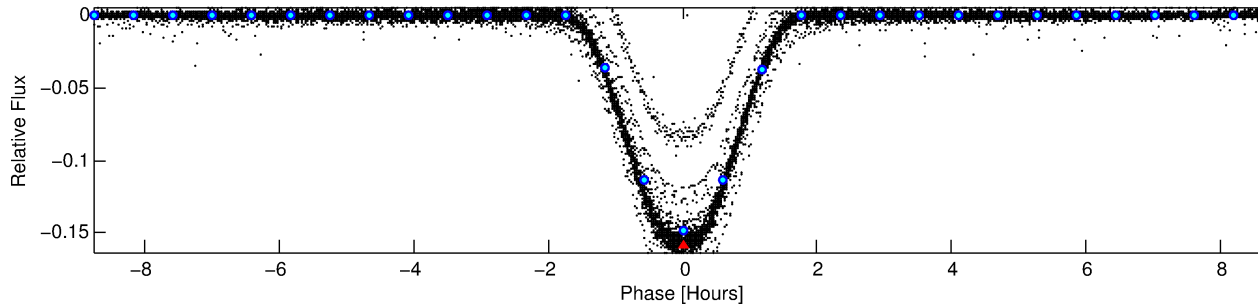
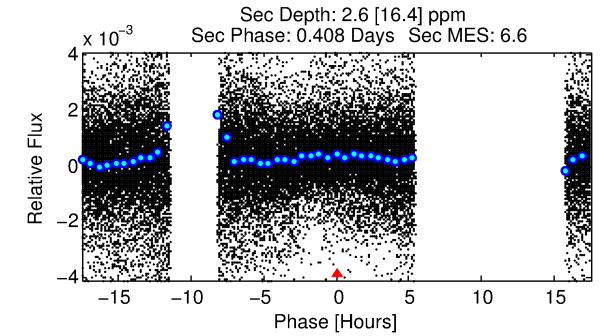
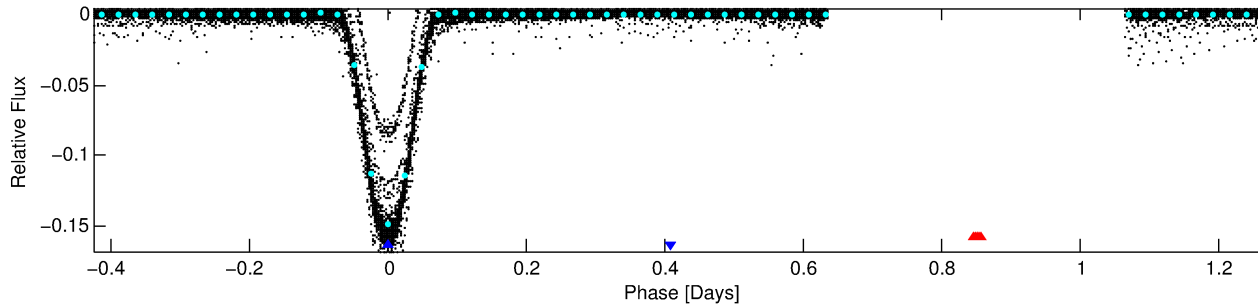
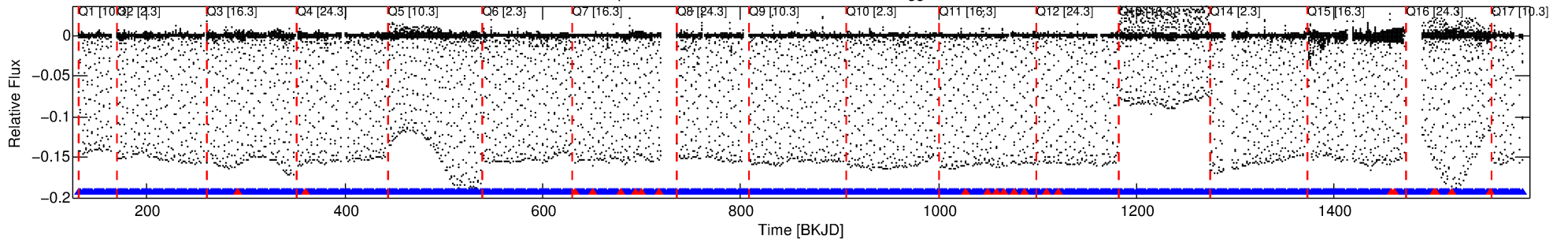
## Ephemeris Match Information For 003241619-02

No Significant Match Found

# DV One-Page Summary

KIC: 3241619 Candidate: 2 of 2 Period: 1.703 d  
KOI: K06312 Corr: No Ephemeris Match

Kp: 12.52 R\*: 0.65 Rs Teff: 5325.0 K Logg: 4.66 Fe/H: -0.780



## TPS TCE Results:

Period = 1.70335 d  
Epoch = 131.6133 BKJD

DV fit results are unavailable

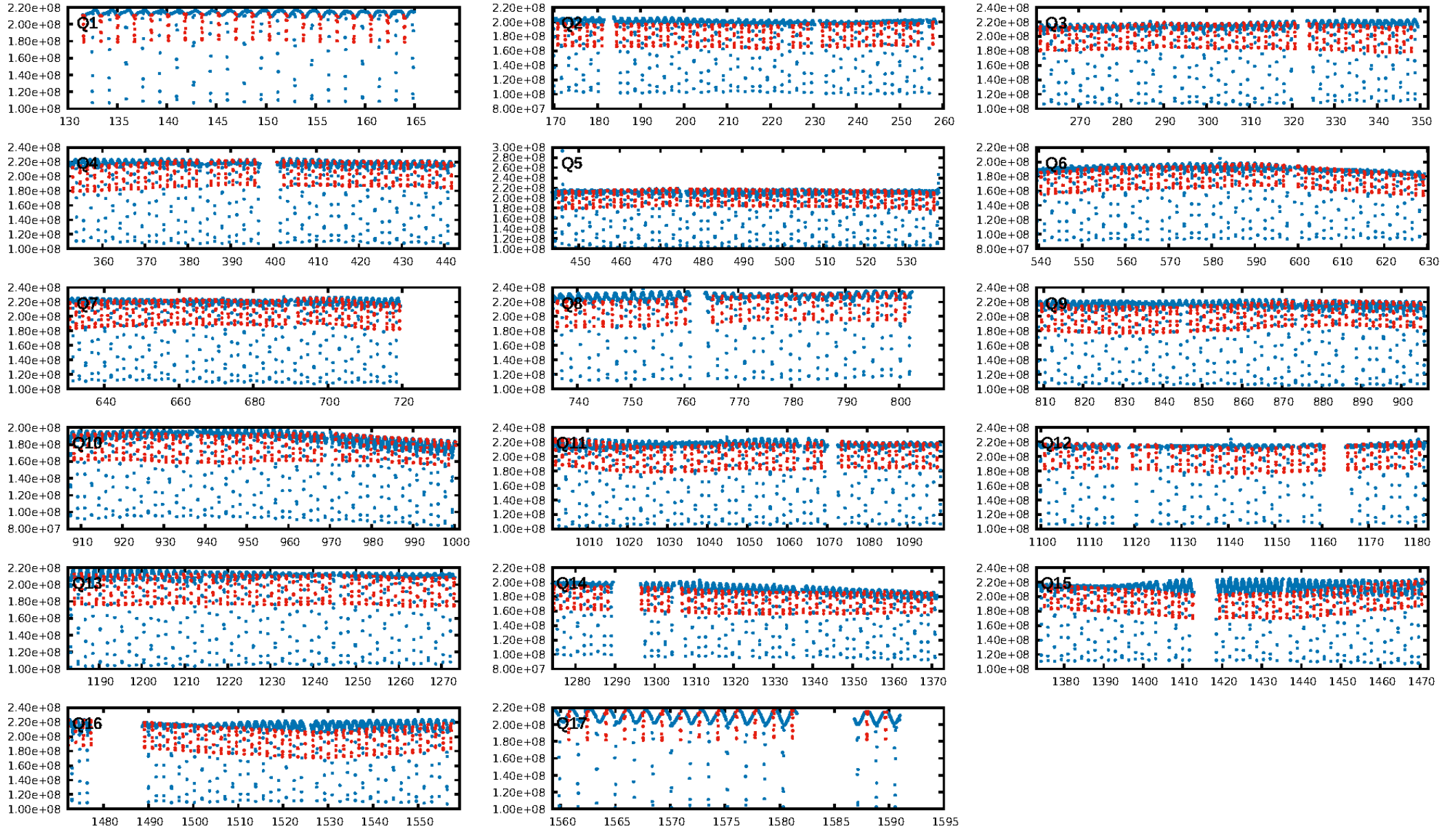
## DV Diagnostic Results:

ShortPeriod-sig: 0.0% [0.00σ]  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: N/A  
ModelChiSquareGof-sig: N/A  
Bootstrap-pfa: N/A  
RollingBand-fgt: 0.97 [725/747]  
GhostDiagnostic-chr: 1.262

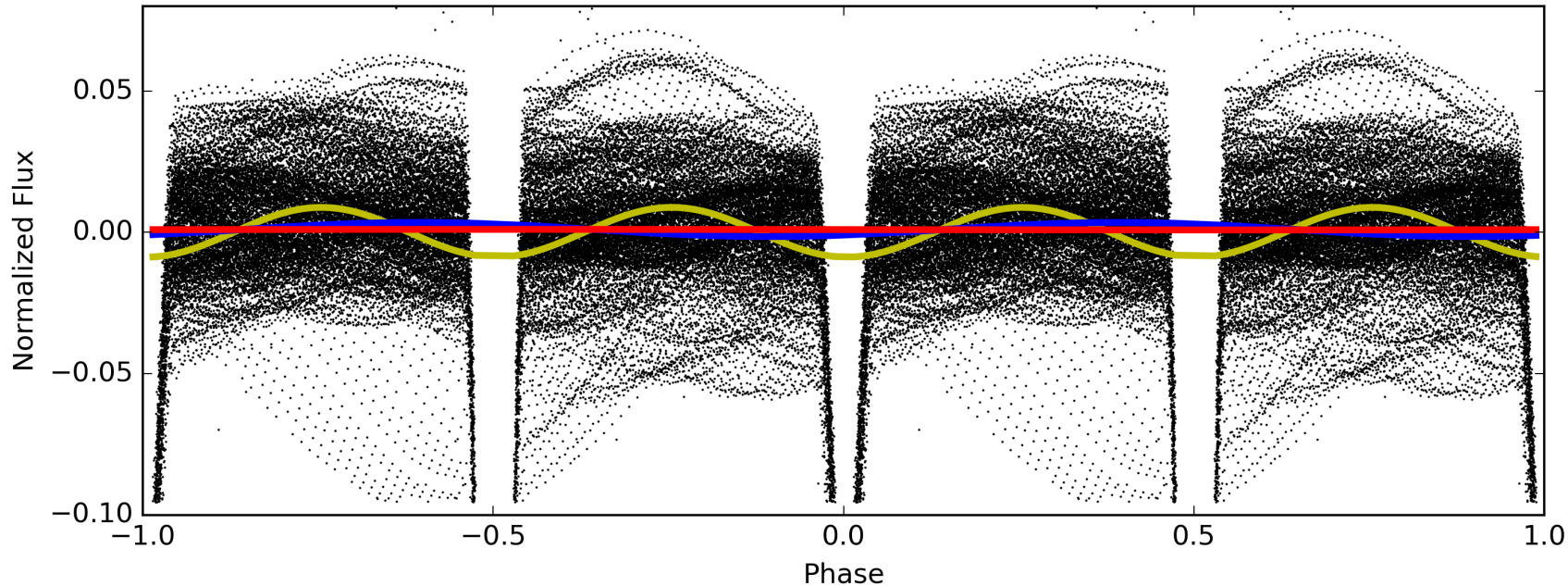
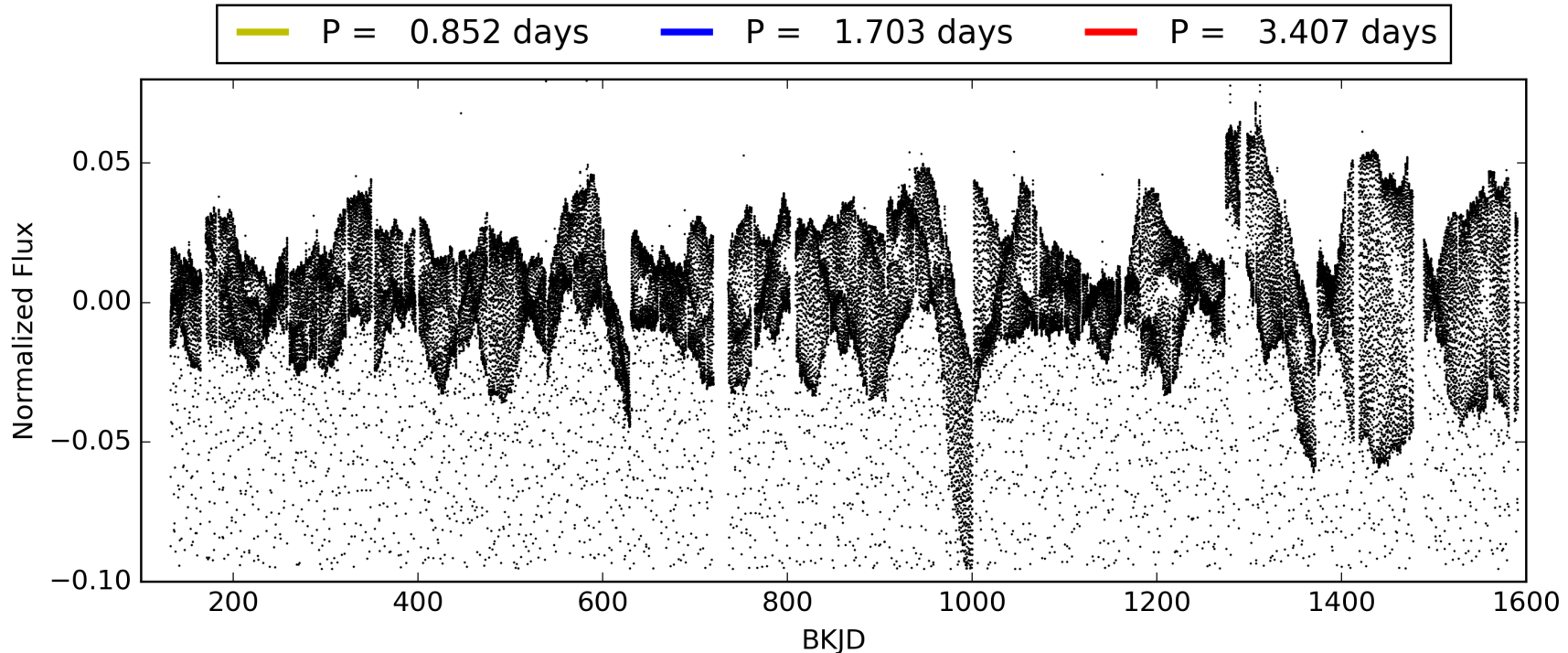
Centroid-sig: N/A  
Centroid-so: N/A  
OotOffset-rm: 0.031 arcsec [0.47σ]  
KicOffset-rm: 0.129 arcsec [1.83σ]  
OotOffset-st: 4/4/4/5 [17]  
KicOffset-st: 4/4/4/5 [17]  
DiffImageQuality-fgm: 1.00 [17/17]  
DiffImageOverlap-fno: 1.00 [17/17]



# TCE 003241619-02, PDC Light Curves

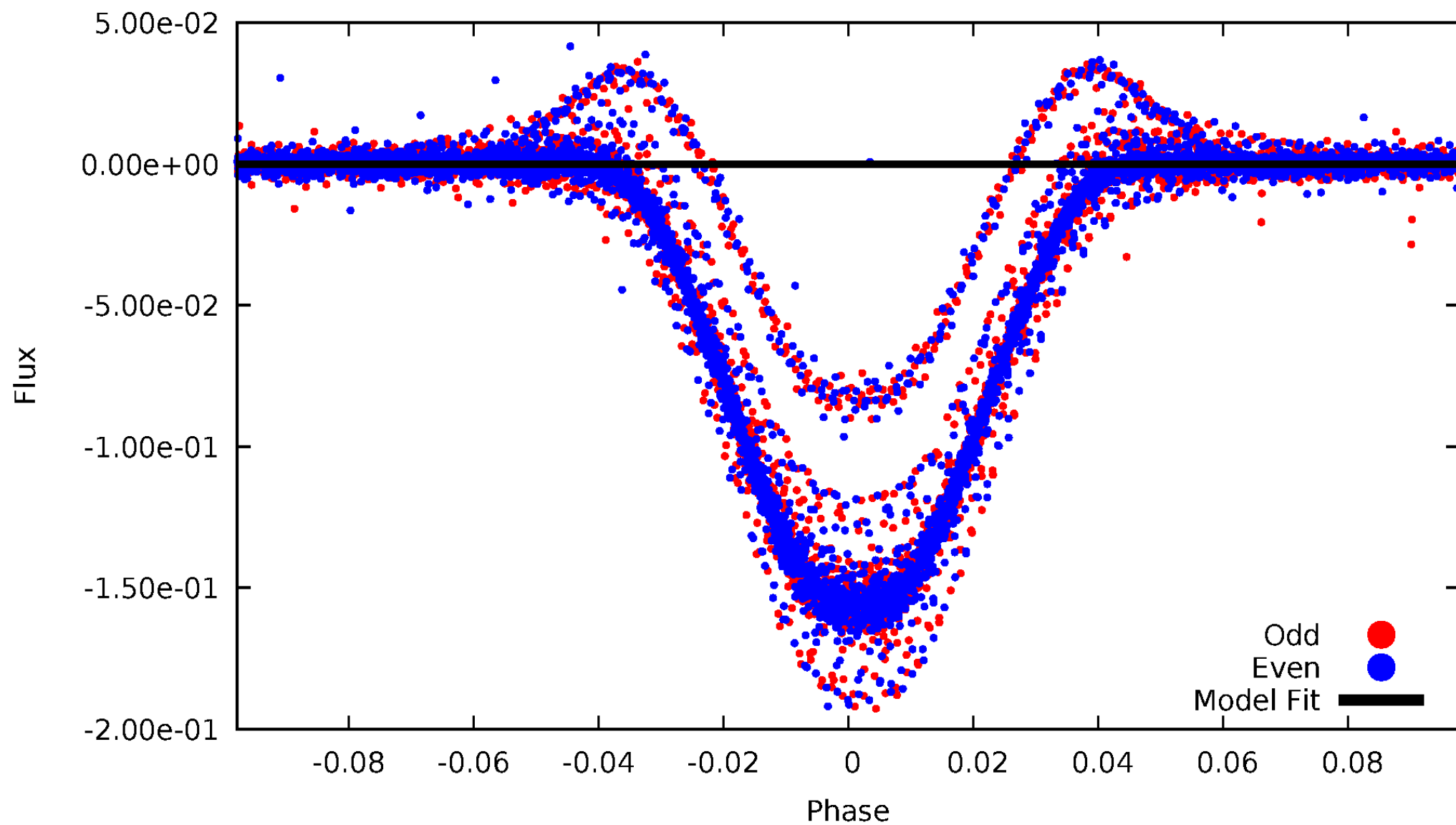


TCE 003241619-02



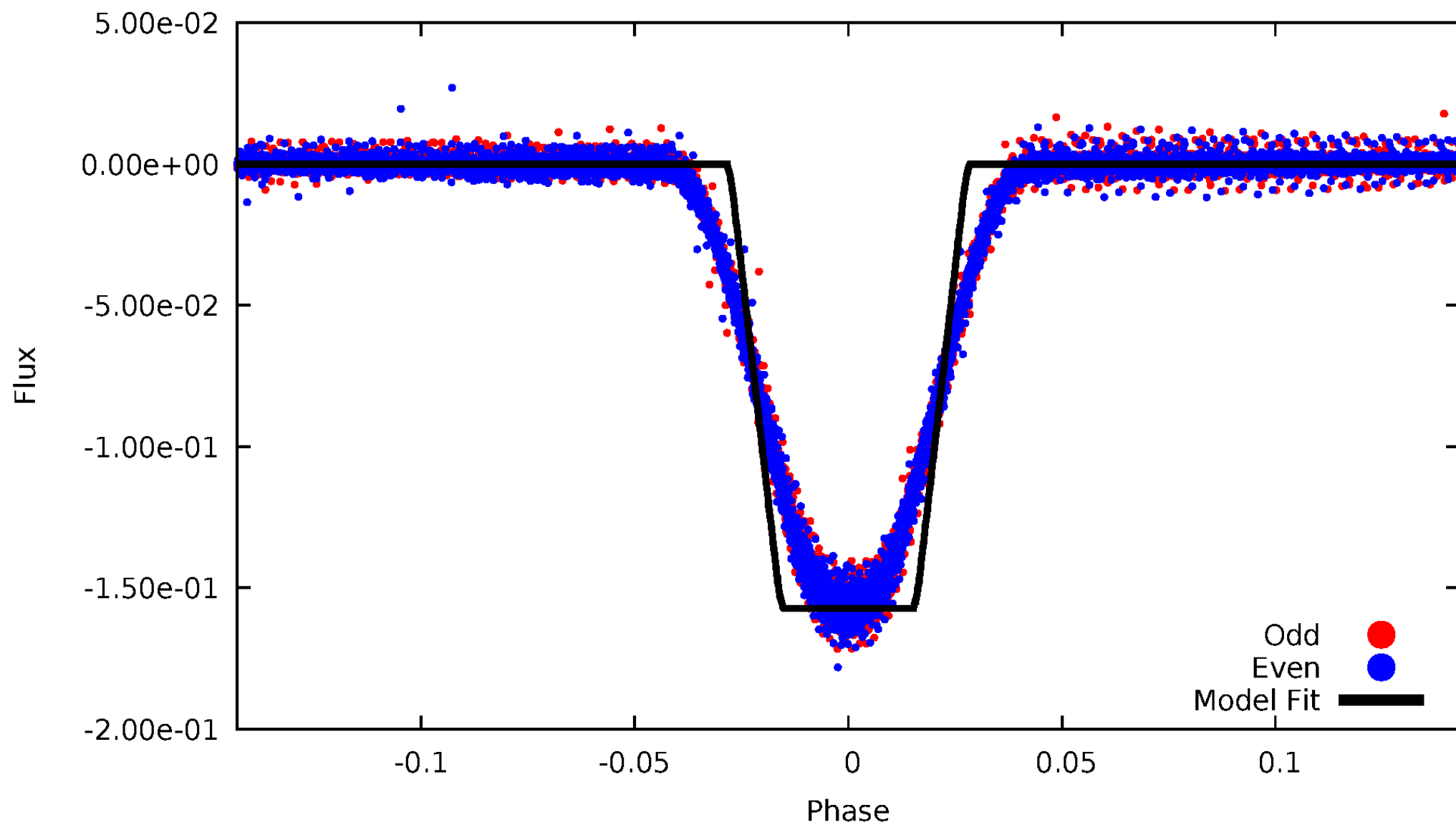
DV Odd/Even

TCE 003241619-02



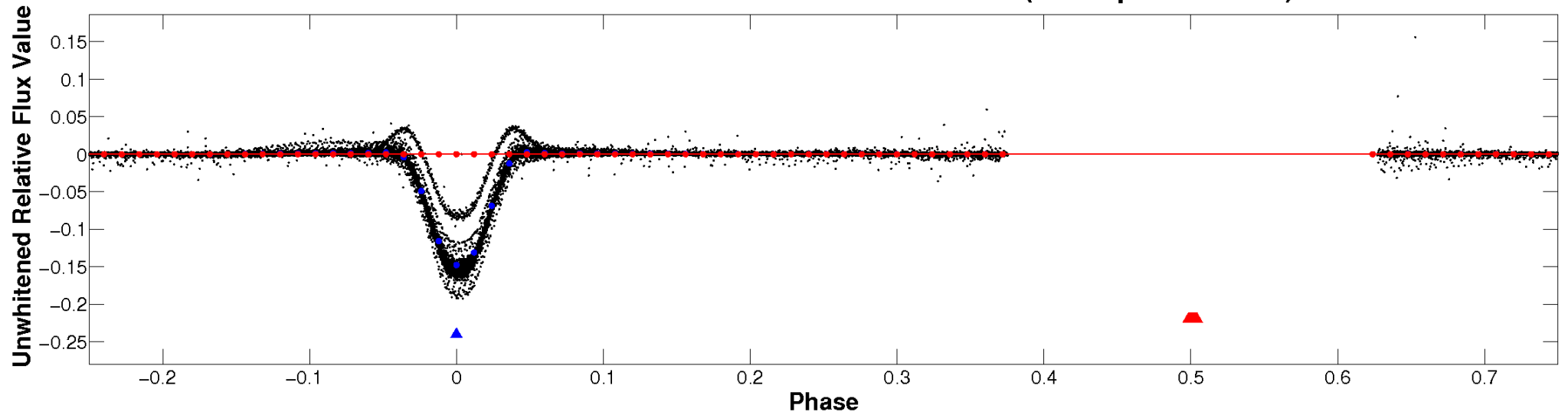
# ALT Odd/Even

TCE 003241619-02

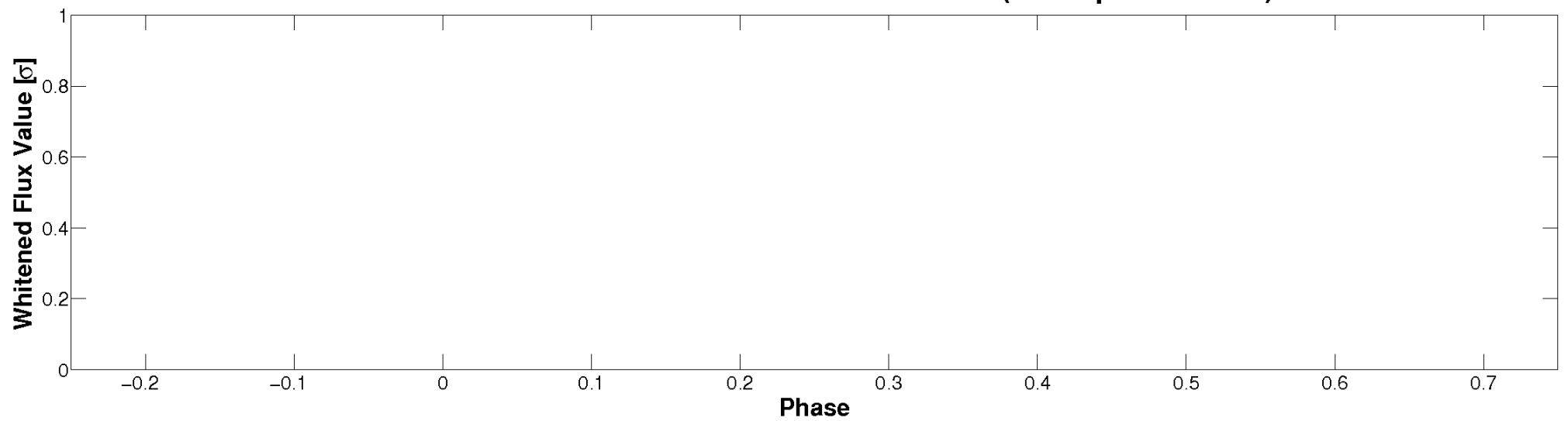


# Non-Whitened Vs. Whitened Light Curve

**Planet 2 : Phased Unwhitened Flux Time Series (TPS Epoch/Period)**

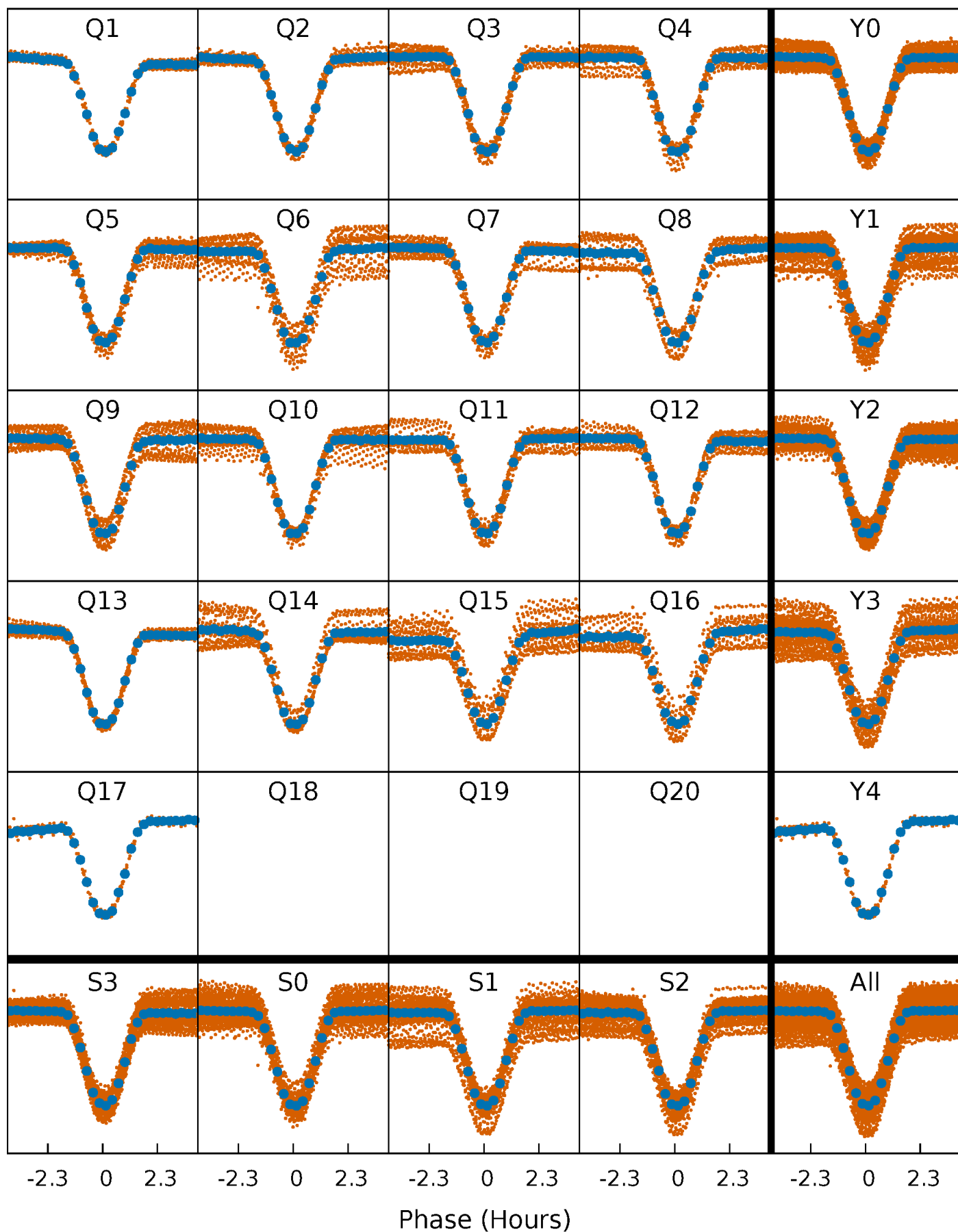


**Planet 2 : Phased Whitened Flux Time Series (TPS Epoch/Period)**



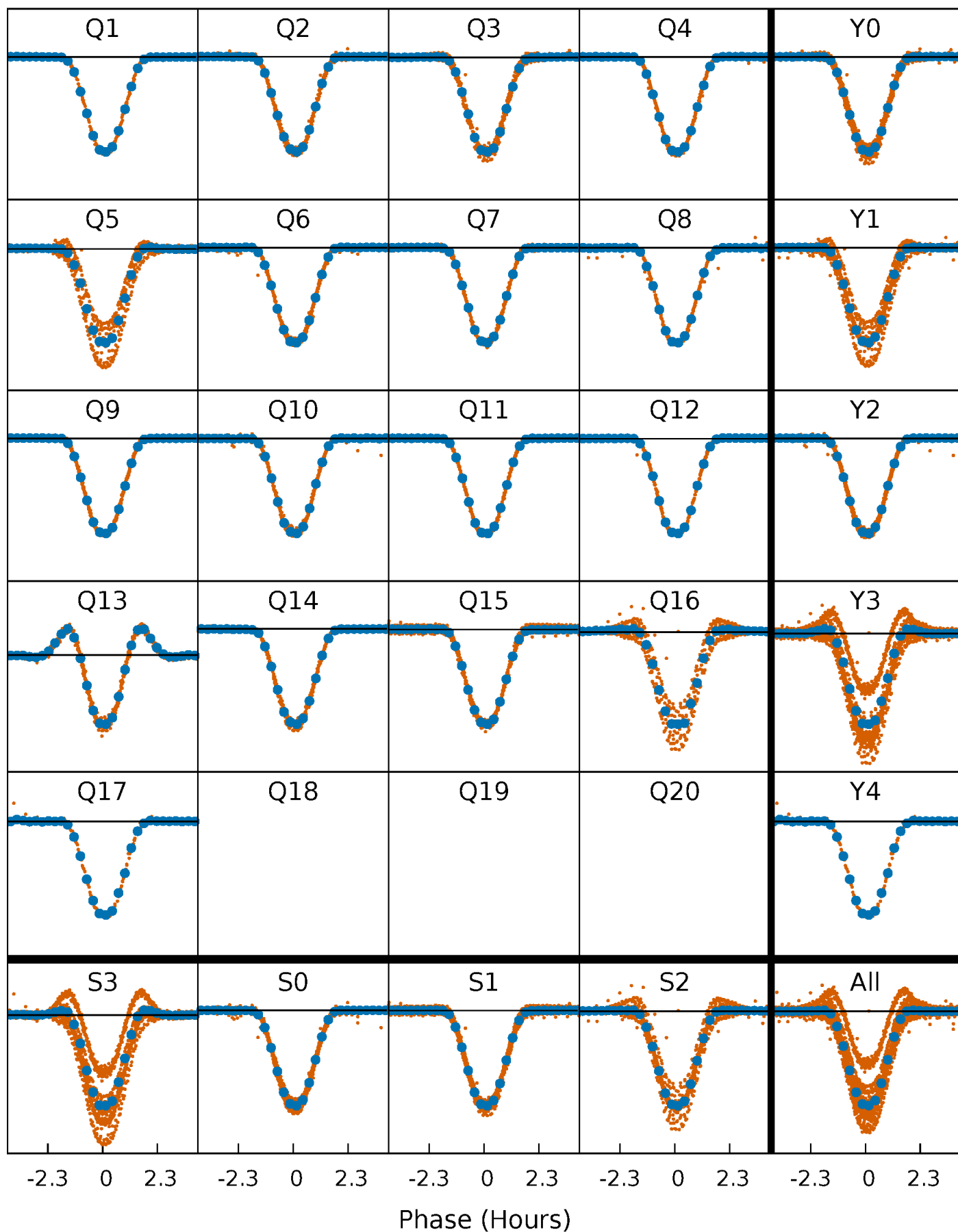
# PDC Quarter-Phased Transit Curves

TCE 003241619-02 P= 1.703348 Days  $T_0=131.613277$  (BKJD)



# DV Quarter-Phased Transit Curves

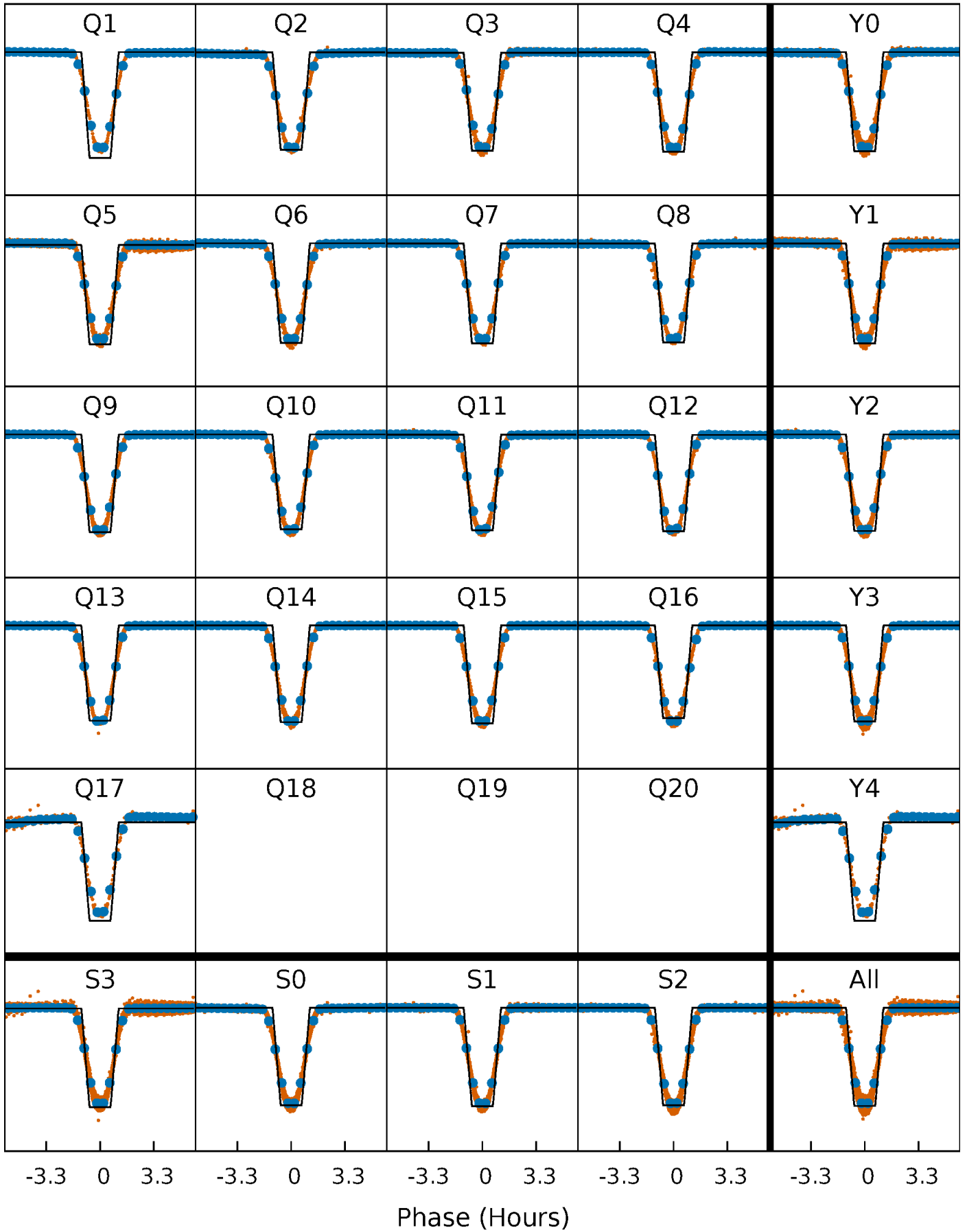
TCE 003241619-02 P= 1.703348 Days  $T_0=131.613277$  (BKJD)





# Alt. Detrend Quarter-Phased Transit Curves

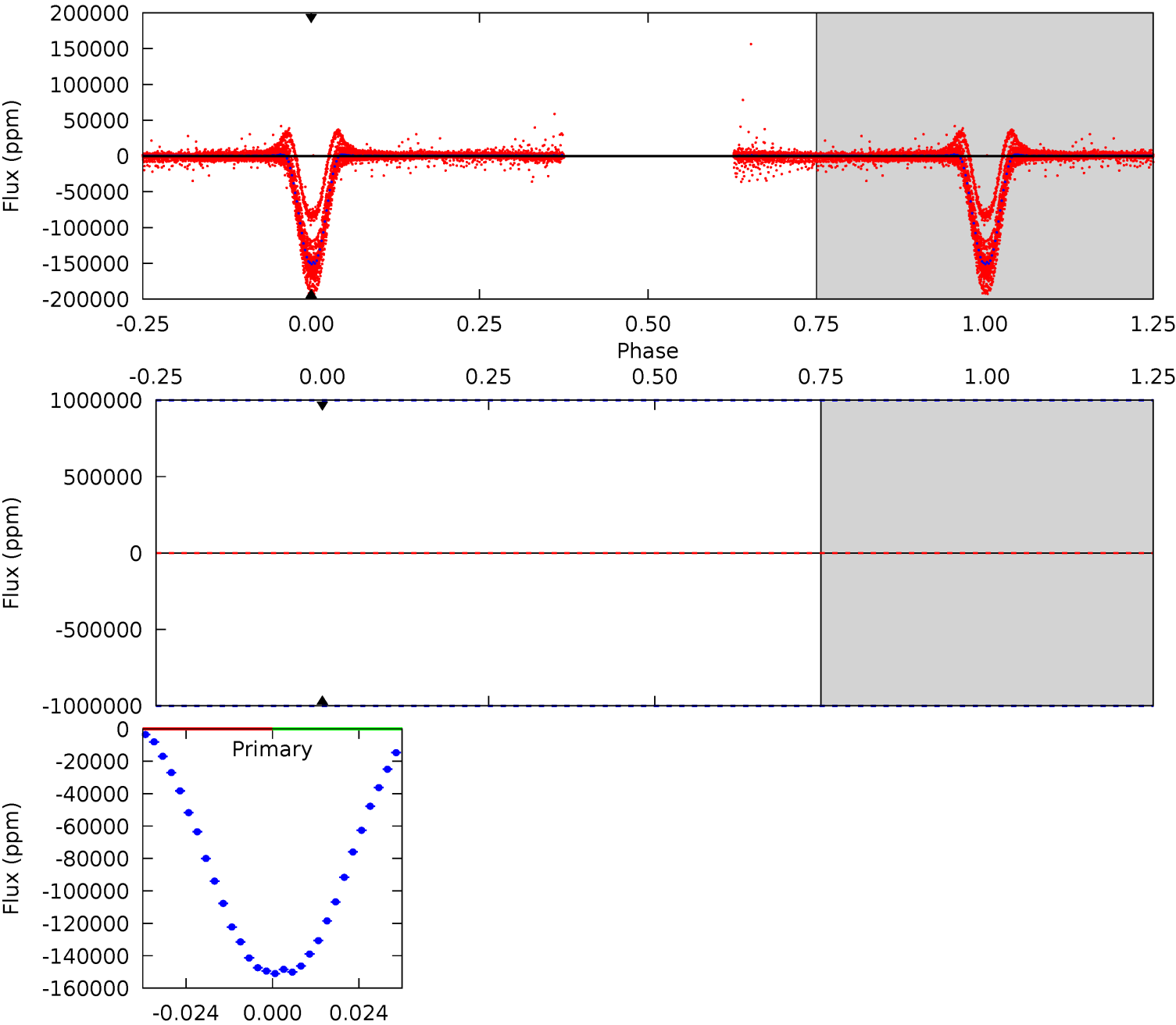
TCE 003241619-02 P= 1.703348 Days  $T_0=131.616271$  (BKJD)



# DV Model-Shift Uniqueness Test

003241619-02, P = 1.703348 Days, E = 129.909929 Days

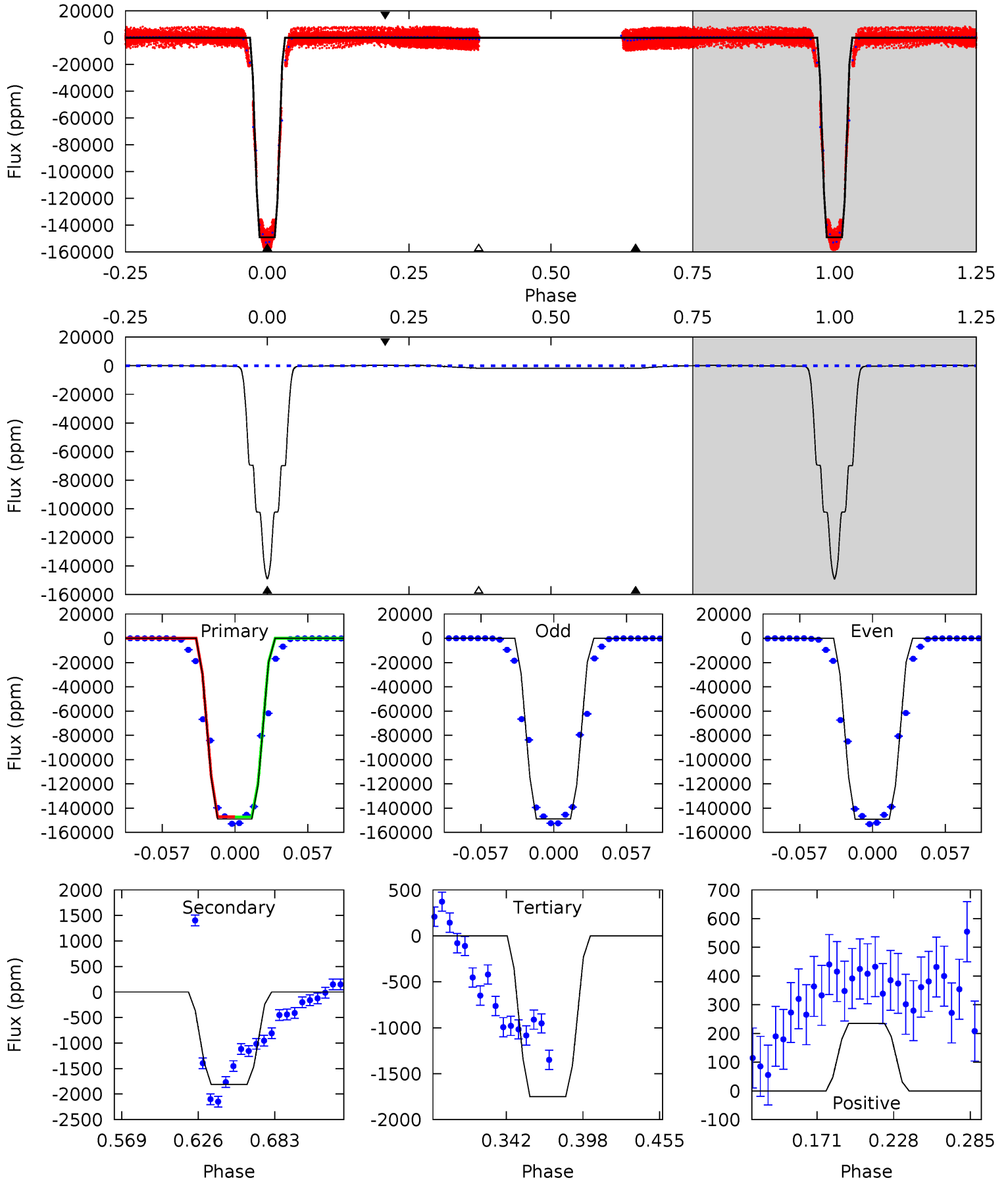
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
0	0	0	0	1.00	1.00	1.00	0	0	0	0	0	0	0	0



# Alt Model-Shift Uniqueness Test

003241619-02, P = 1.703348 Days, E = 129.912923 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
2845	34.6	33.4	4.49	4.68	1.90	6.32	2811	2840	1.20	30.1	0.88	1.00	0.00	0.23



### Stellar Parameters For KIC 003241619

	$T_{\text{eff}}(K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R$ ( $R_{\odot}$ )	$M(M_{\odot})$	$p_{\star}$ ( $\text{g}\cdot\text{cm}^{-3}$ )
	$5325^{+159}_{-143}$	$4.657^{+0.039}_{-0.066}$	$-0.780^{+0.300}_{-0.300}$	$0.648^{+0.076}_{-0.041}$	$0.695^{+0.058}_{-0.048}$	$3.600^{+0.563}_{-0.852}$
	+3%/-3%	+1%/-1%	+38%/-38%	+12%/-6%	+8%/-7%	+16%/-24%
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 003241619-02 / KOI

Detrend	Depth (ppm)	$R_p$ ( $R_{\oplus}$ )	$T_{\text{max}}$ (K)	$T_{\text{obs}}$ (K)	$A_{\text{obs}}$
DV	$0 \pm 1000000$	$12.54^{+7.24}_{-6.30}$	$1690^{+64}_{-57}$	$2790^{+5244}_{-10151}$	$1.760^{+324.359}_{-242.813}$
Alt.	$-1812 \pm 52$	$28.04^{+6.96}_{-6.96}$	$1690^{+61}_{-57}$	$2423^{+255}_{-230}$	$0.769^{+0.618}_{-0.275}$

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

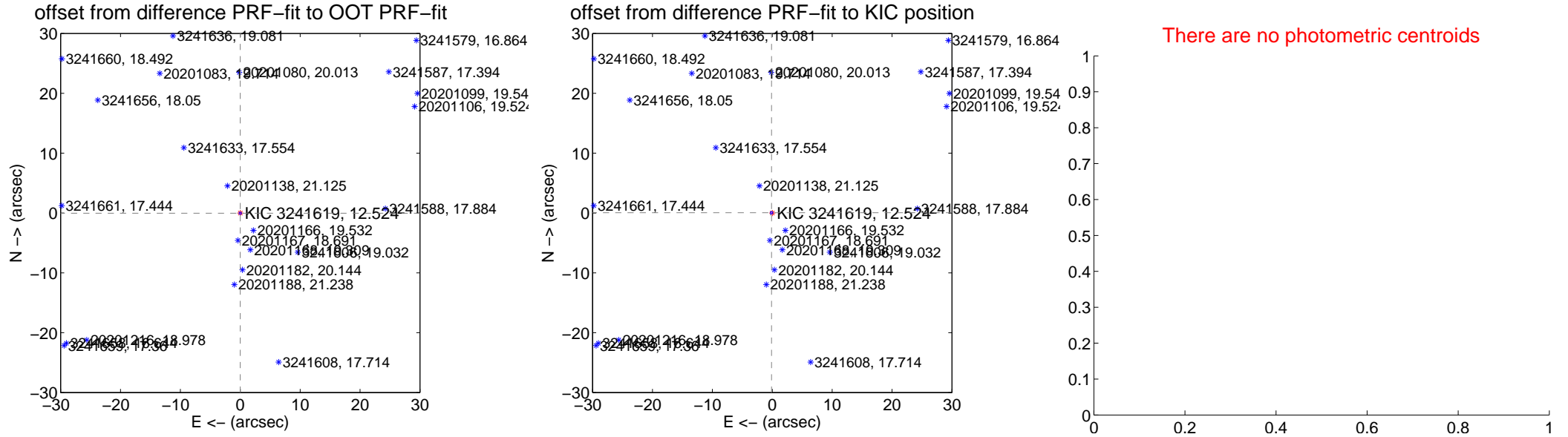
## DV Centroid Data

Supplemental centroid analysis for 003241619-02. Kepler magnitude: 12.52. Transit SNR -1.00

There are 17 quarters with good PRF difference image offsets

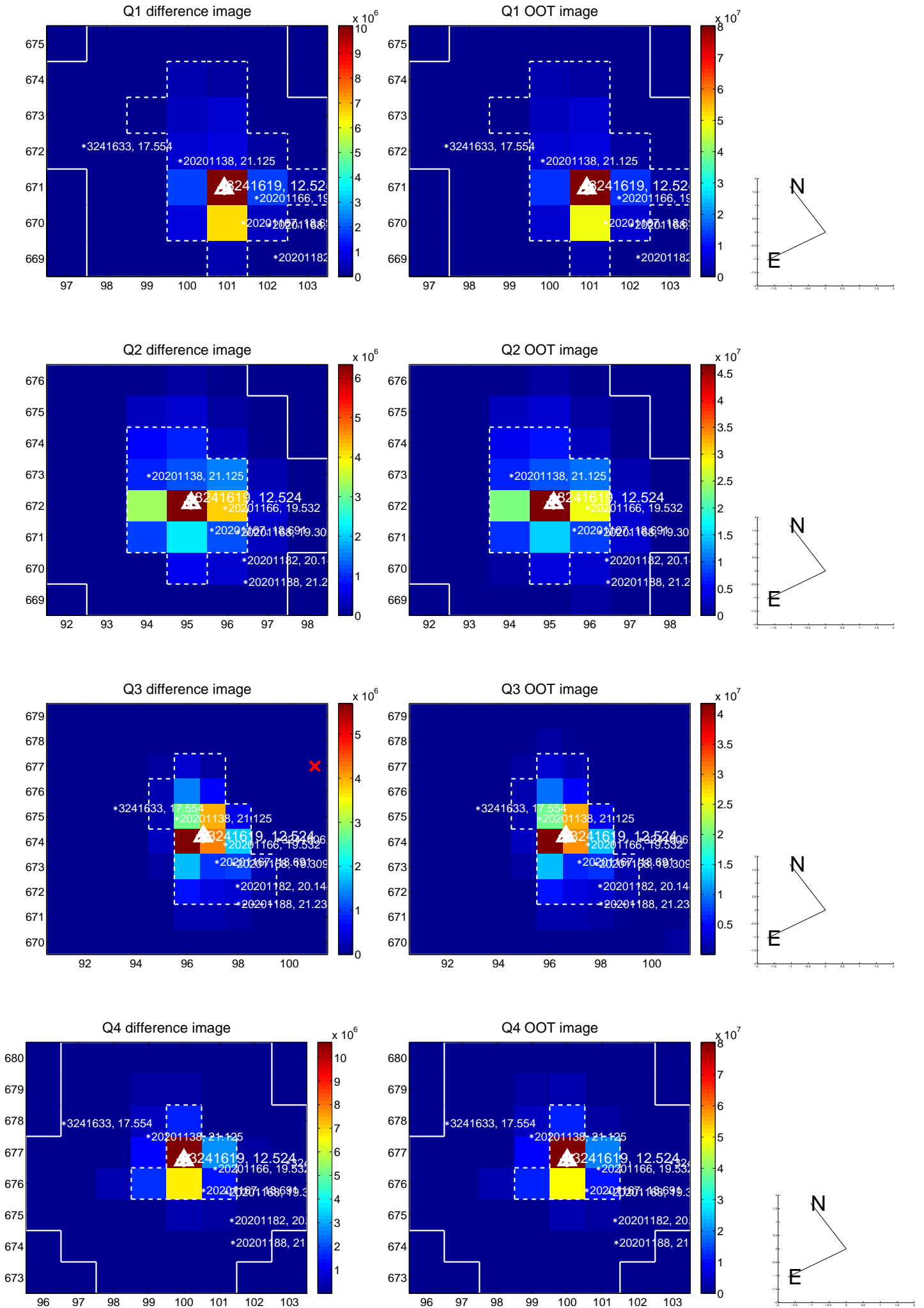
The direct PRF centroid is offset from the target star catalog position by about 0.18 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.031 \pm 0.067$	0.47	$0.007 \pm 0.067$	$-0.030 \pm 0.067$
PRF-fit source offset from KIC position	$0.129 \pm 0.071$	1.83	$0.120 \pm 0.069$	$0.047 \pm 0.077$
photometric centroid source offset	—	—	—	—

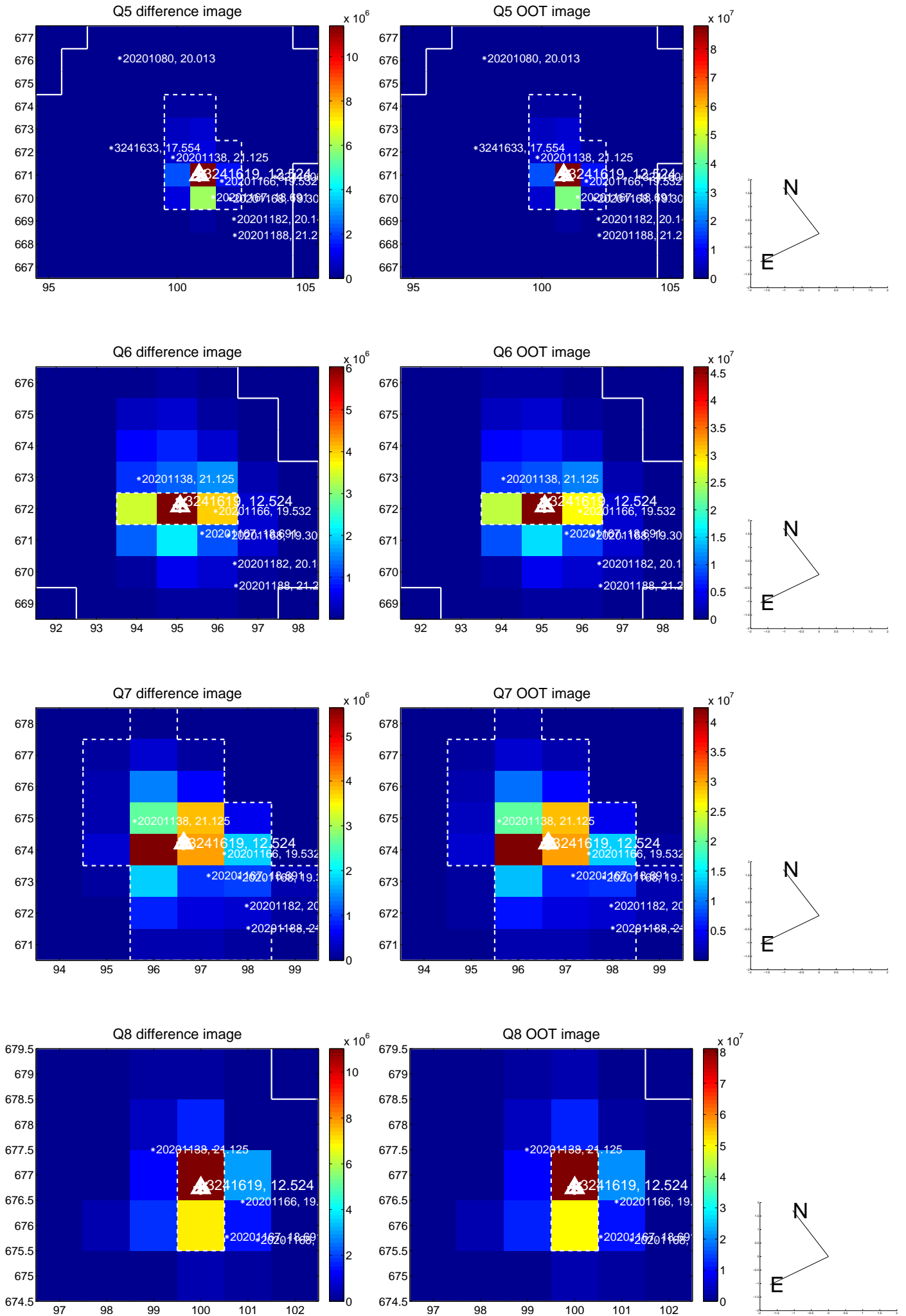


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets**; **Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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

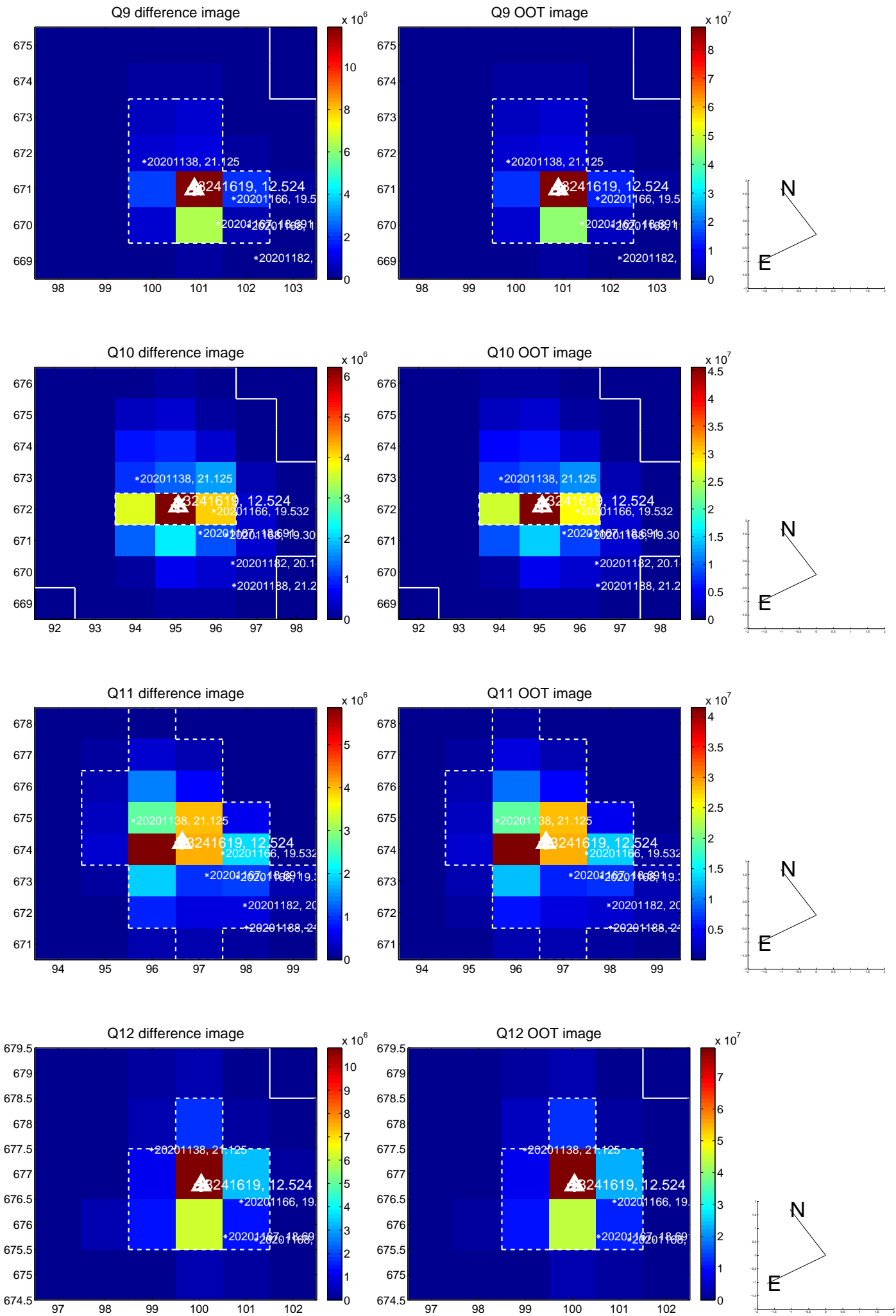


white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

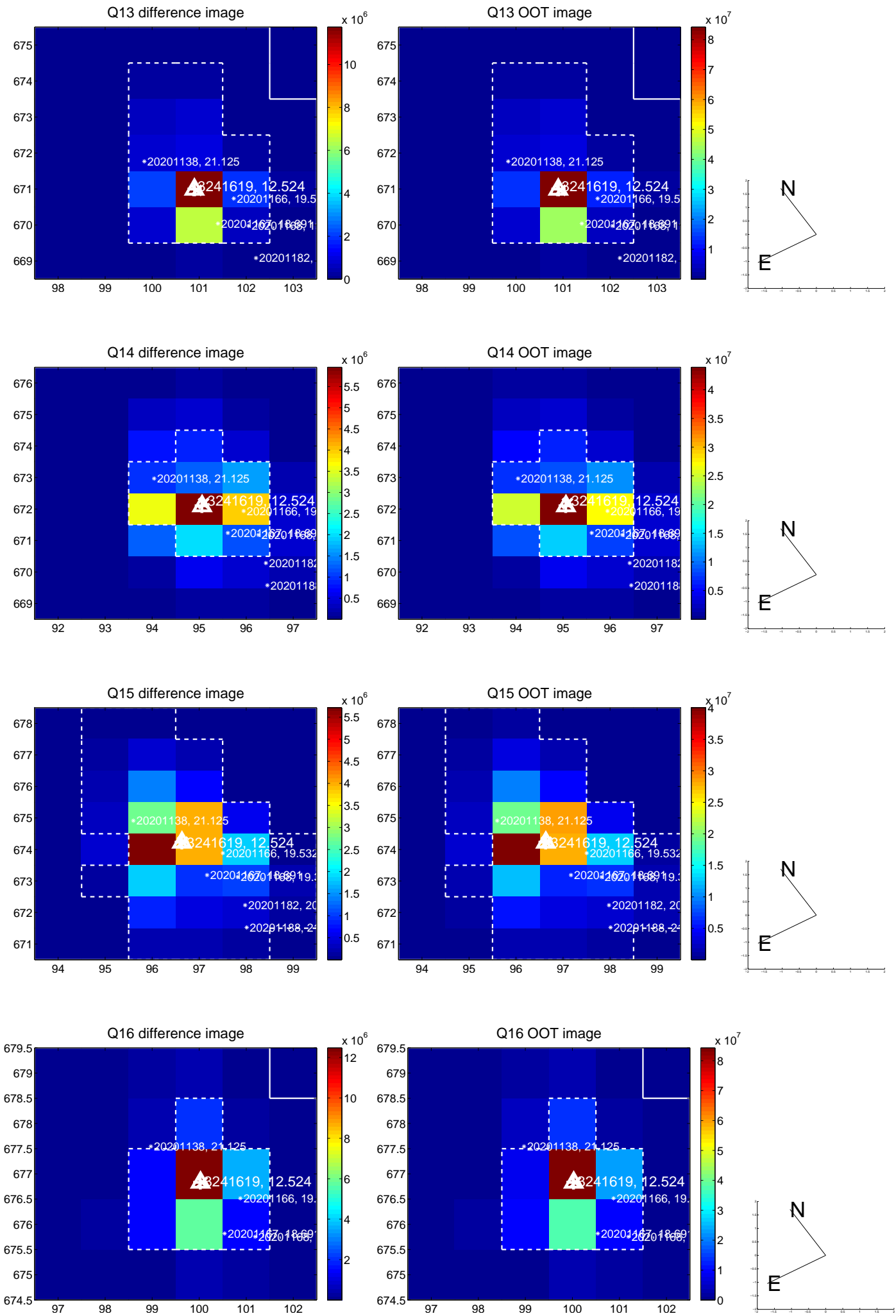




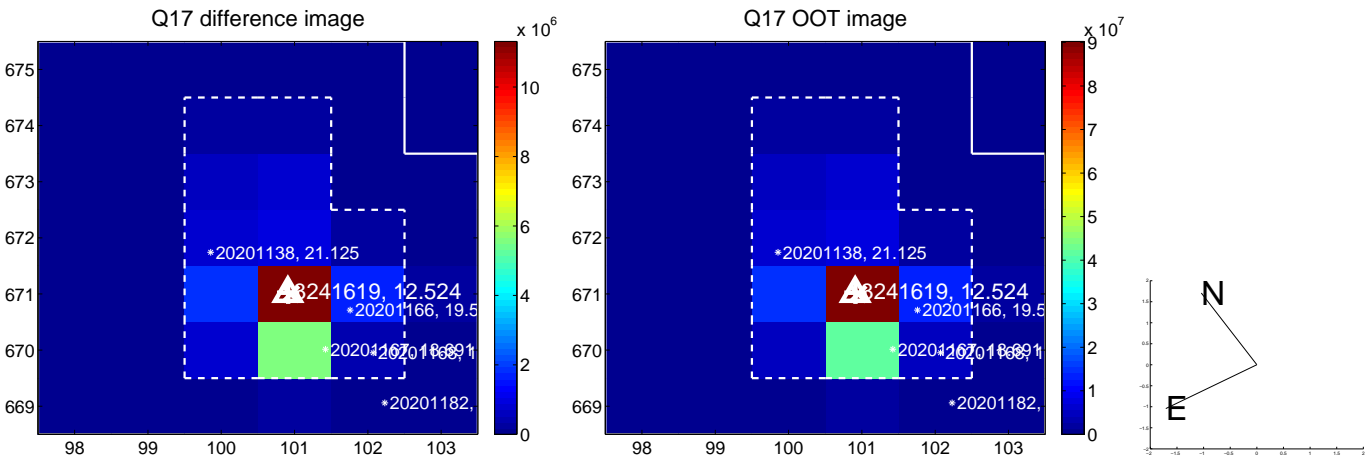
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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



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



folded centroid time series figure for this object.

UKIRT Image

Declination

