

# KIC 007030715

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
007030715-01	OBS	No	52.638726	165.867654	28507.2	4.382	1790.2	126.8	1.11	5876	32.91	17.46
007030715-02	OBS	No	0.683614	131.829944	84369.9	2.000	4394.6	-1.0	1.11	5876	32.37	5720.01

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
007030715-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_ZUMA_TRACKER—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_TER_DV—MOD_NONUNIQ_ALT—MOD_POS_ALT
007030715-02	OBS	FP	0.00	1	0	0	0	SWEET_NTL—LPP_DV—NO_FITS—CENT_NOFITS

**Notes:** OBS = Observed. INJ = Injected. INV = Inverted. SCR = Scrambled.

N = Not Transit-Like. S = Stellar Eclipse. C = Centroid Offset. E = Ephemeris Match.

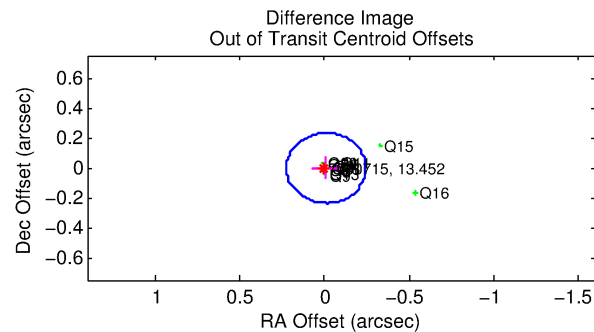
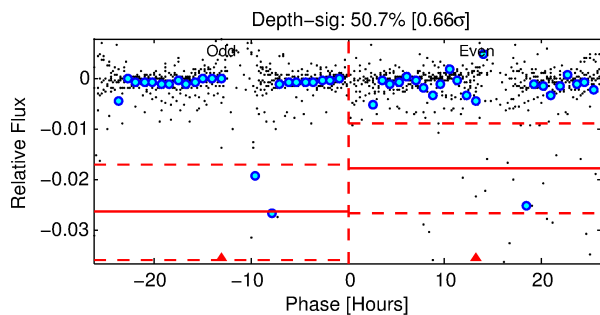
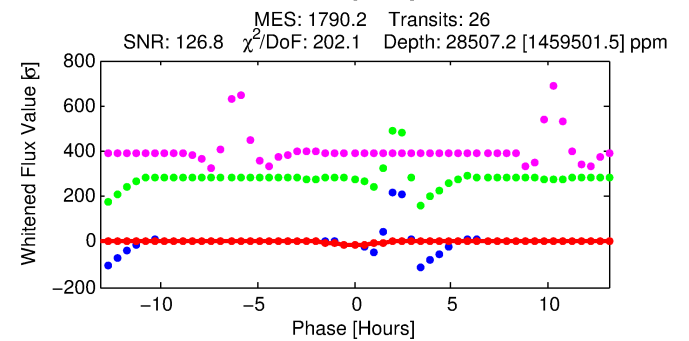
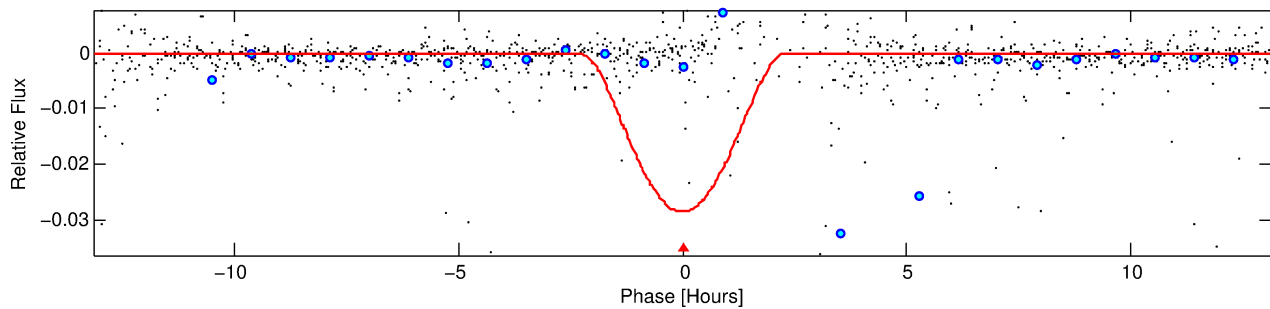
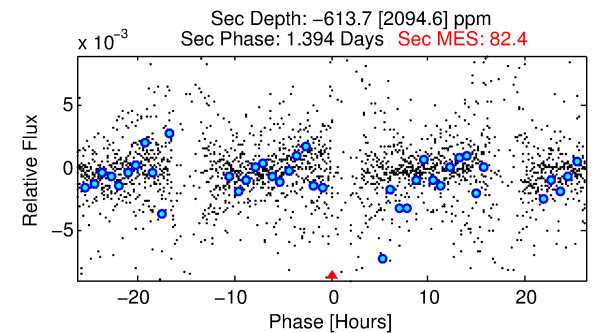
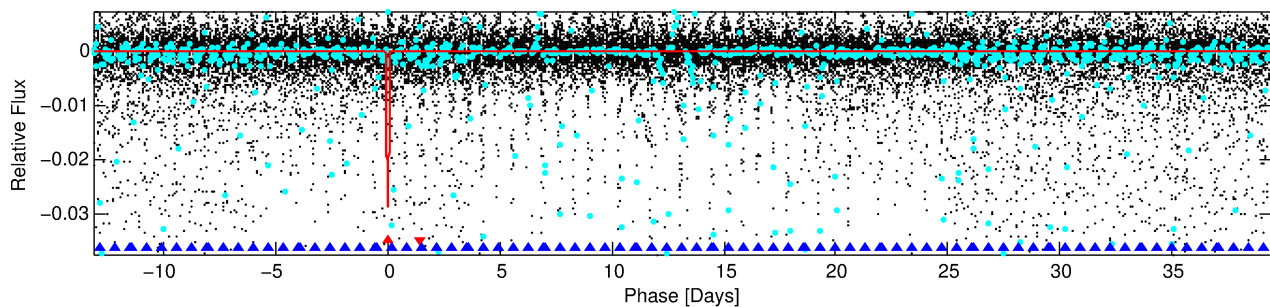
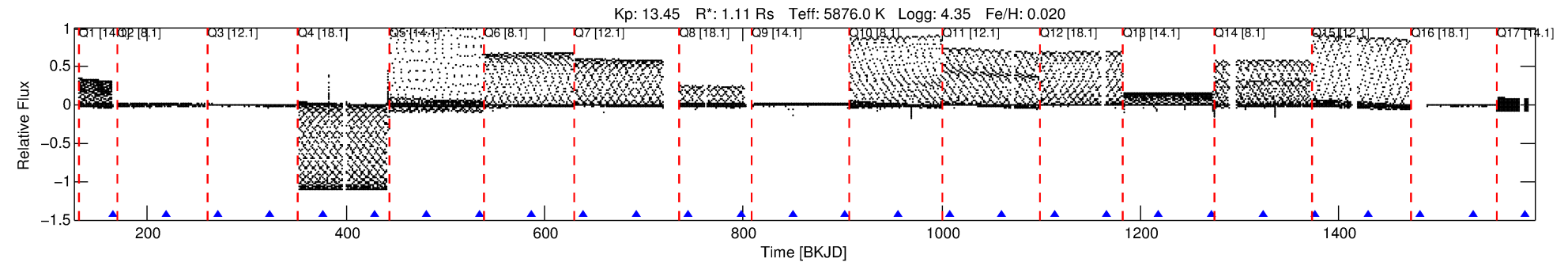
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 007030715-01

No Significant Match Found

# DV One-Page Summary

KIC: 7030715 Candidate: 1 of 2 Period: 52.639 d



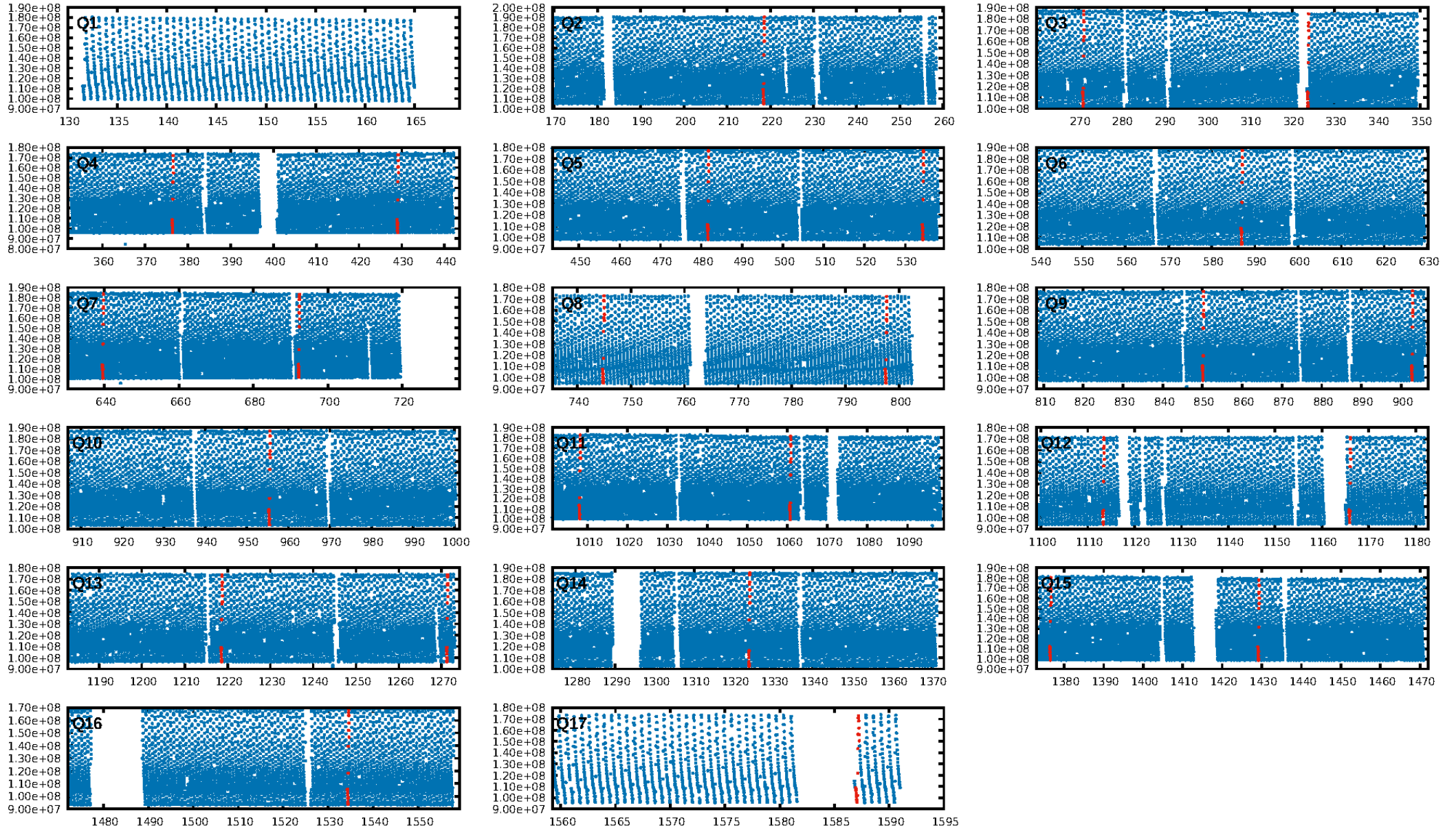
## DV Fit Results:

Period = 52.63873 [0.00087] d  
Epoch = 165.8677 [0.0141] BKJD  
Rp/R\* = 0.2707 [1.4734]  
a/R\* = 71.95 [26.34]  
b = 1.00 [6.92]  
Seff = 17.46 [6.81]  
Teq = 521 [51] K  
Rp = 32.91 [179.38] Re  
a = 0.2755 [0.0693] AU  
Ag = N/A  
Teffp = N/A

## DV Diagnostic Results:

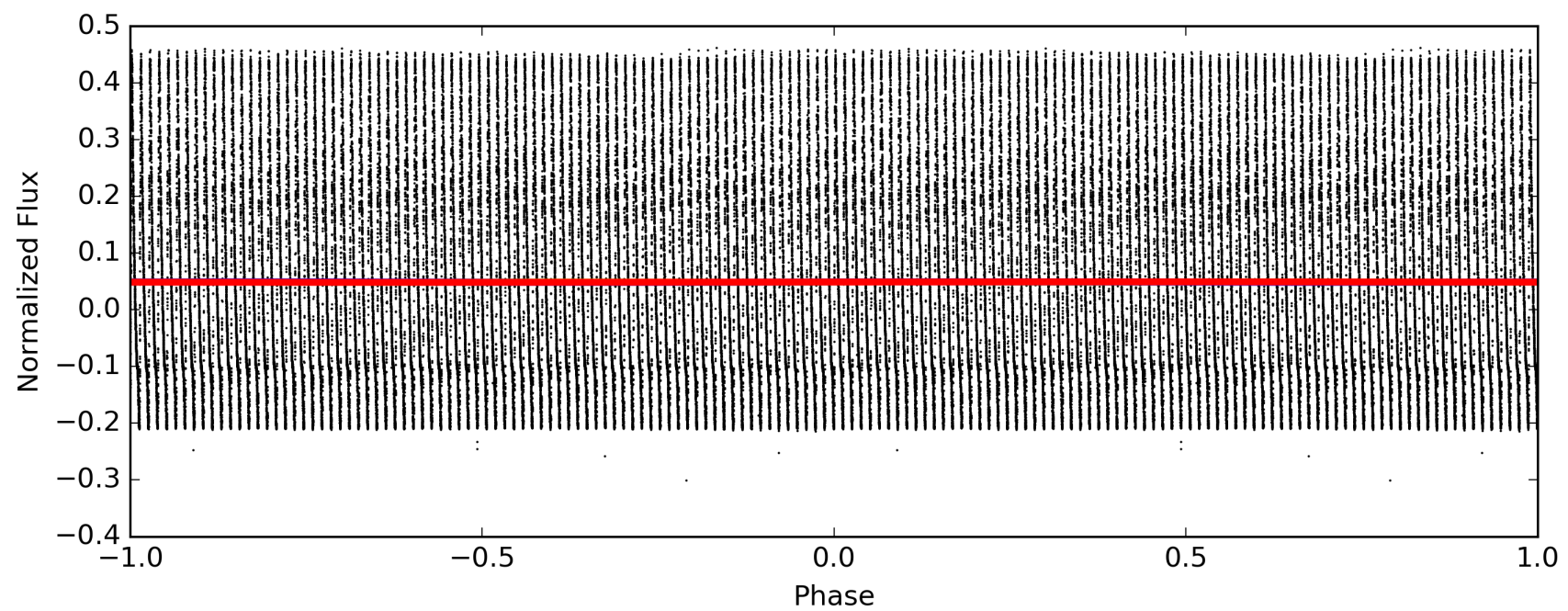
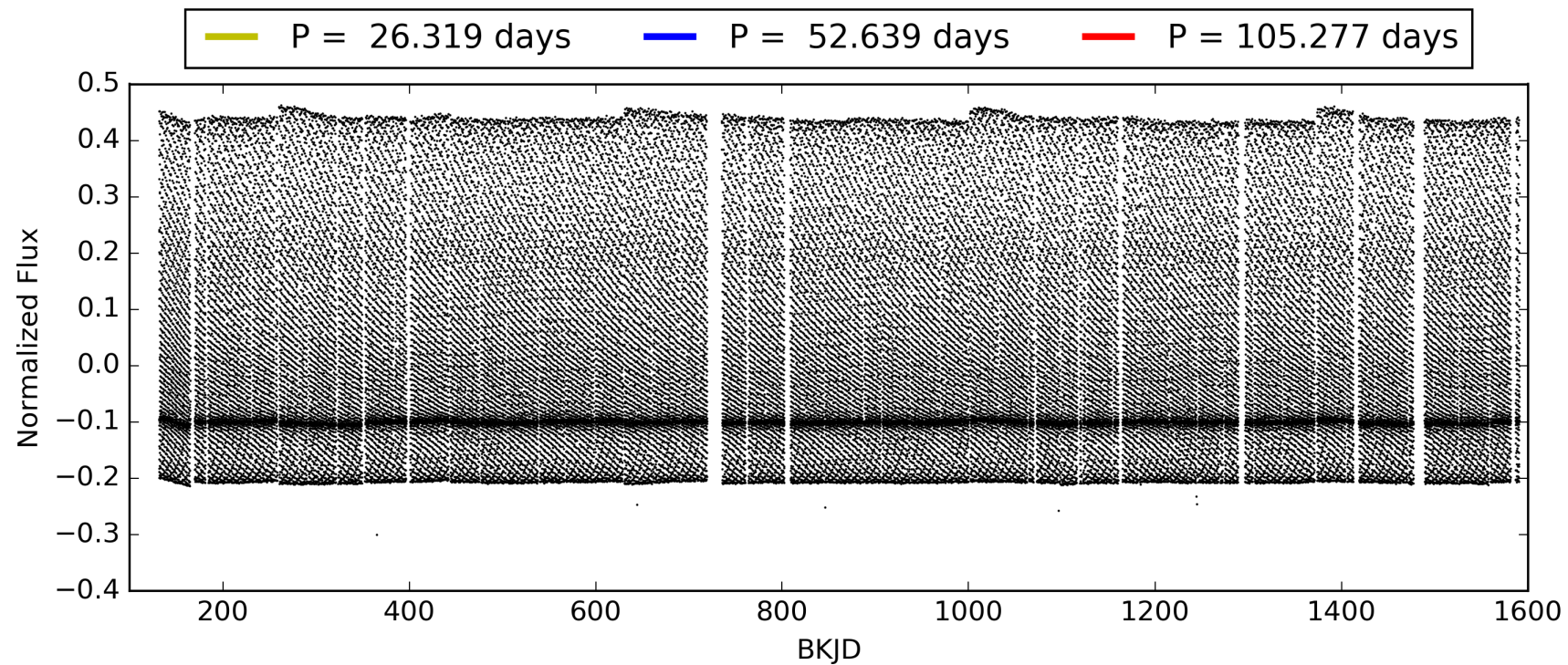
ShortPeriod-sig: 100.0% [258.85 $\sigma$ ]  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: 0.0%  
ModelChiSquareGof-sig: 0.0%  
Bootstrap-pfa: N/A  
RollingBand-fgt: 1.00 [25/25]  
GhostDiagnostic-chr: 2.098  
Centroid-sig: N/A  
Centroid-so: 0.133 arcsec [9.52 $\sigma$ ]  
OotOffset-rm: 0.009 arcsec [0.12 $\sigma$ ]  
KicOffset-rm: 0.171 arcsec [2.00 $\sigma$ ]  
OotOffset-st: 4/4/3/3 [14]  
KicOffset-st: 4/4/3/3 [14]  
DiffImageQuality-fgm: 1.00 [14/14]  
DiffImageOverlap-fno: 1.00 [14/14]

# TCE 007030715-01, PDC Light Curves



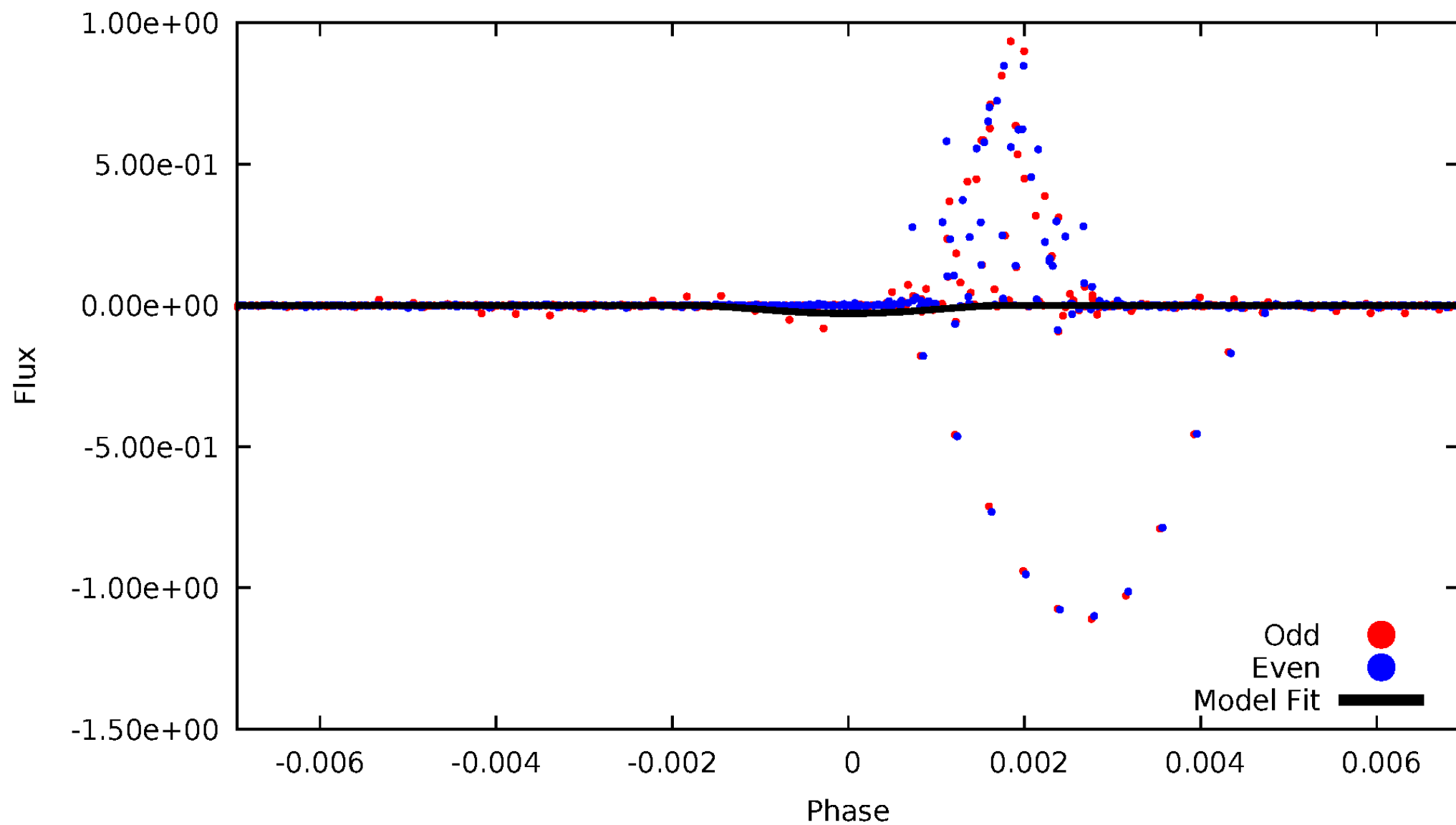


TCE 007030715-01



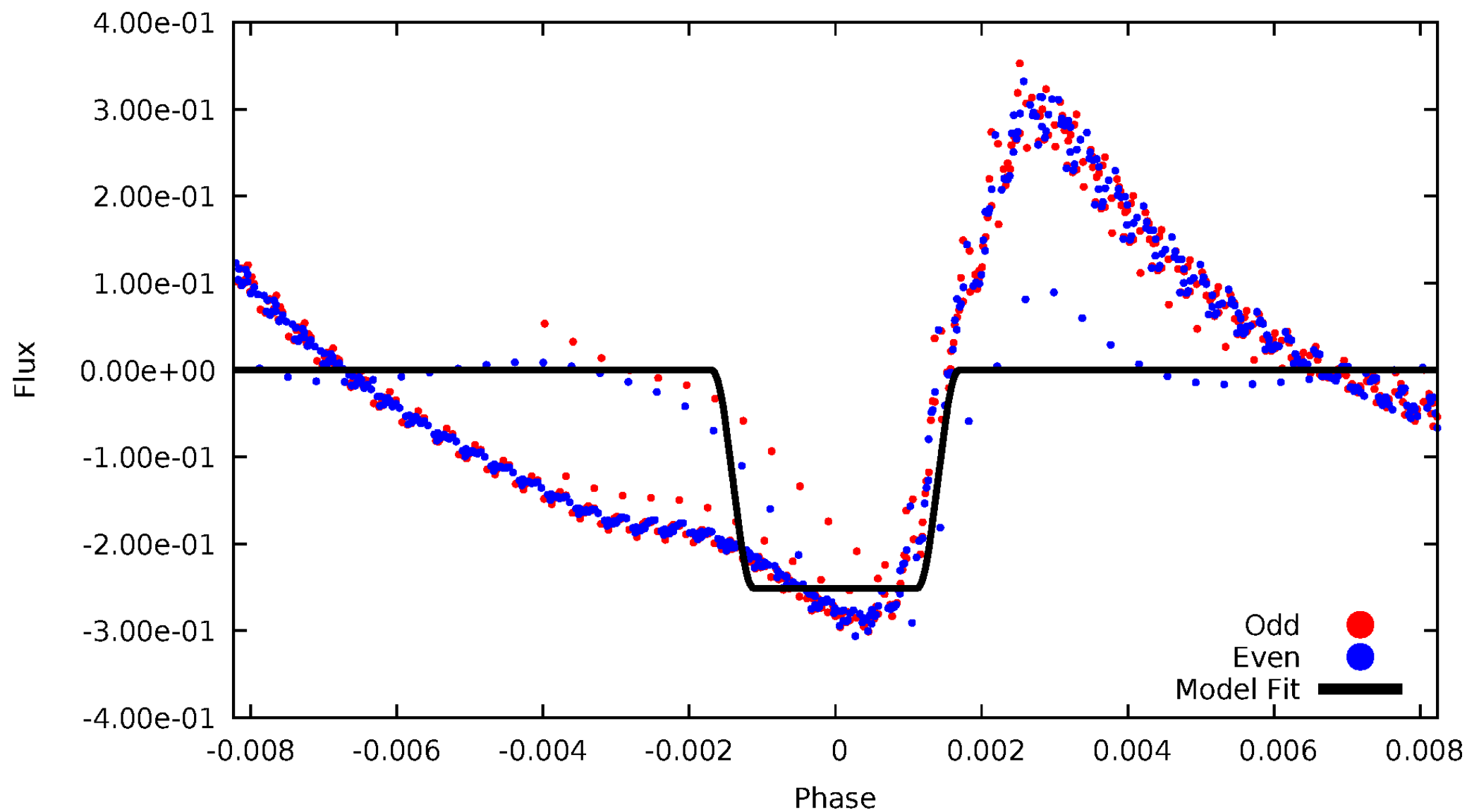
# DV Odd/Even

TCE 007030715-01



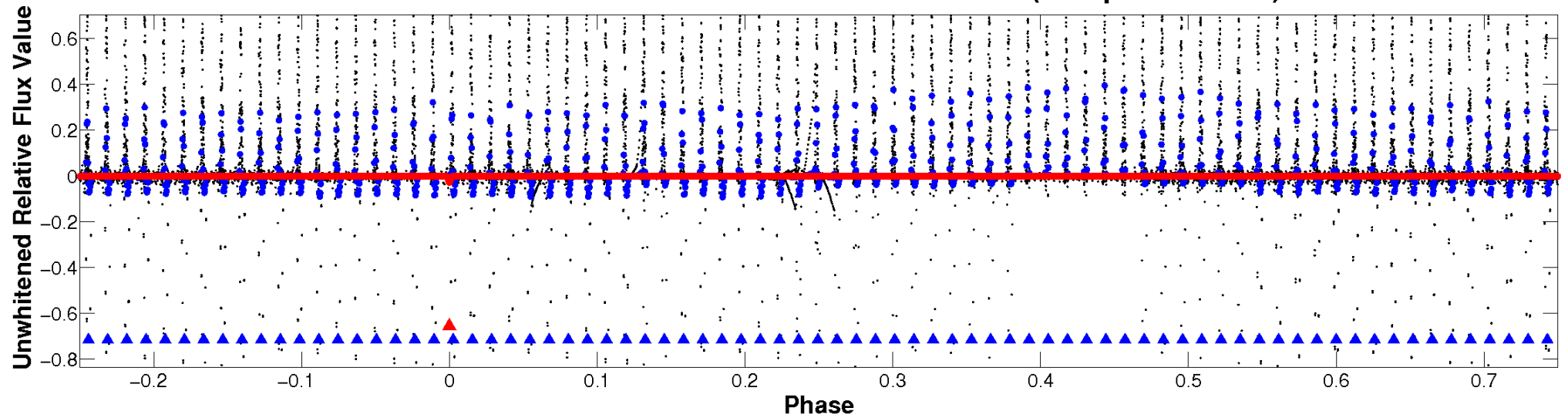
# ALT Odd/Even

TCE 007030715-01

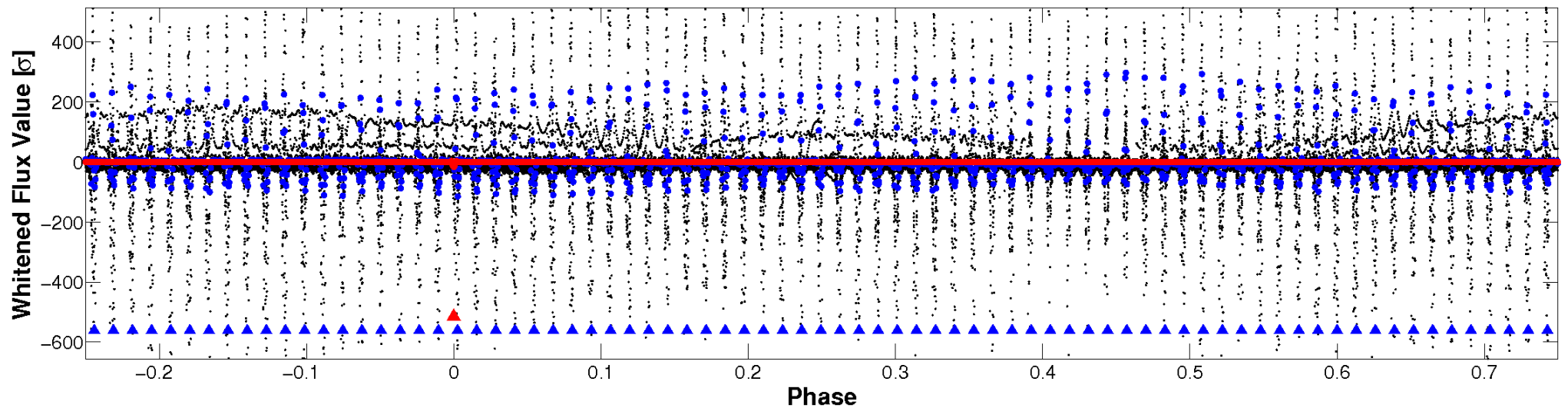


# Non-Whitened Vs. Whitened Light Curve

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

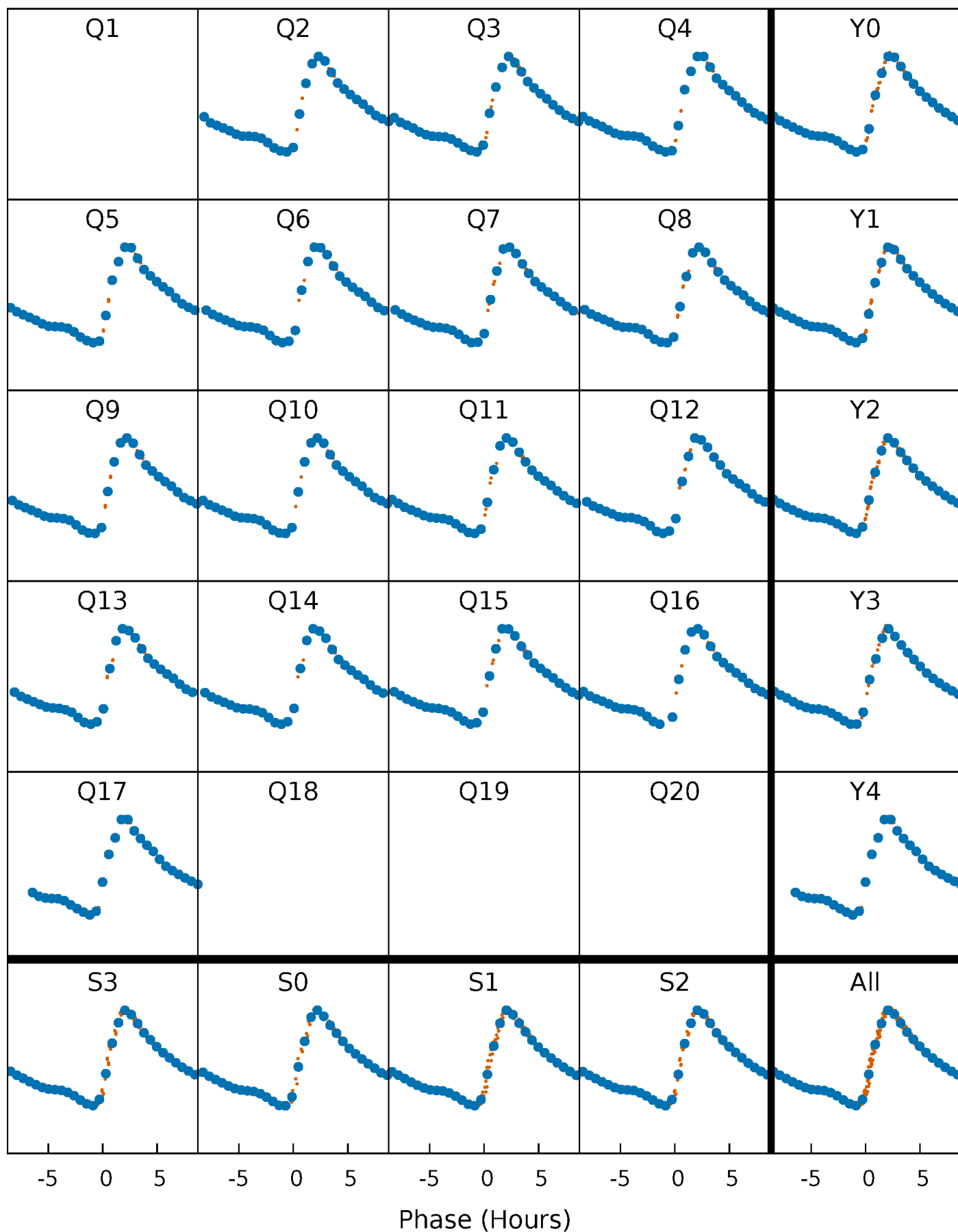


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



# PDC Quarter-Phased Transit Curves

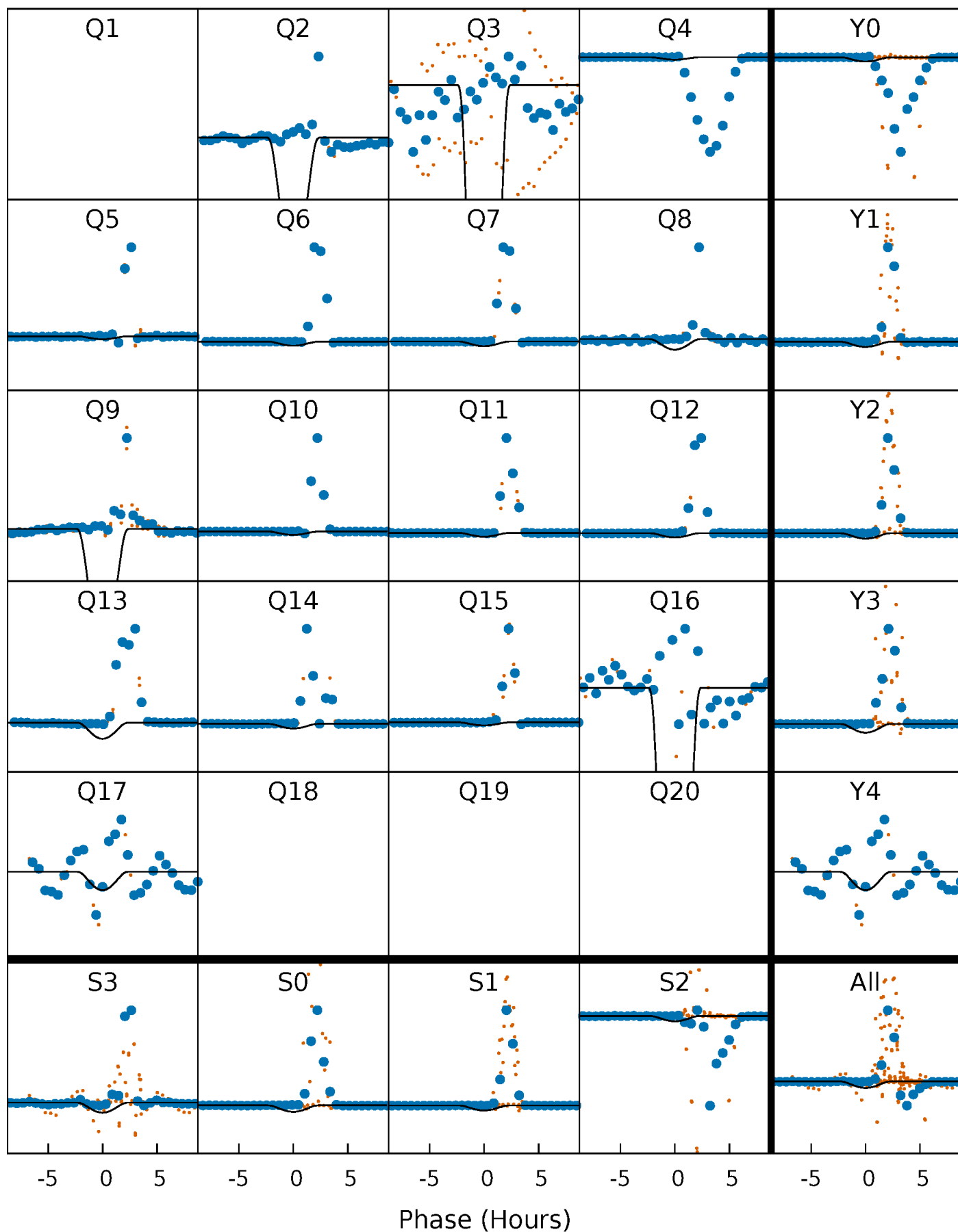
TCE 007030715-01 P= 52.638726 Days  $T_0=165.867654$  (BKJD)





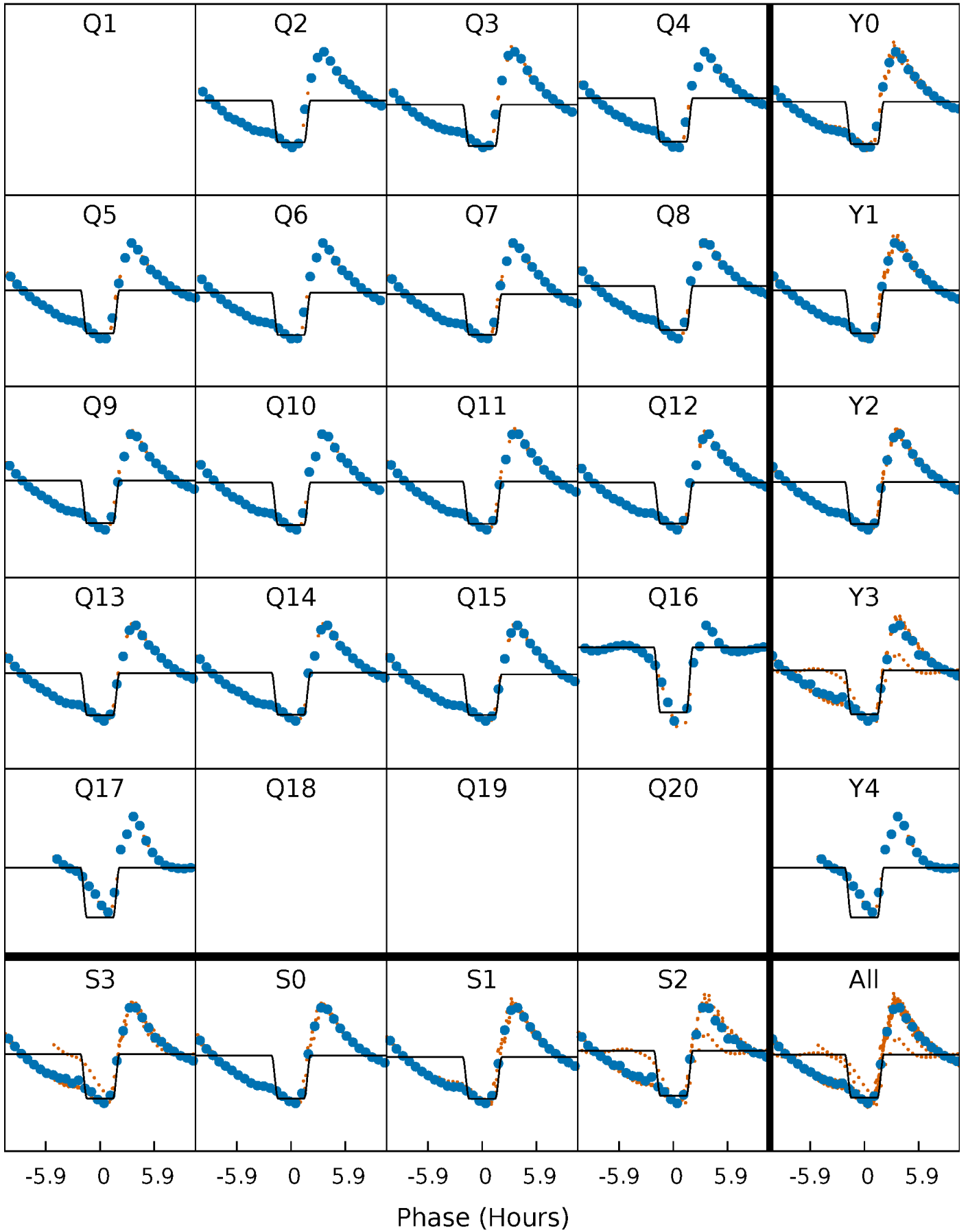
# DV Quarter-Phased Transit Curves

TCE 007030715-01 P= 52.638726 Days  $T_0=165.867654$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

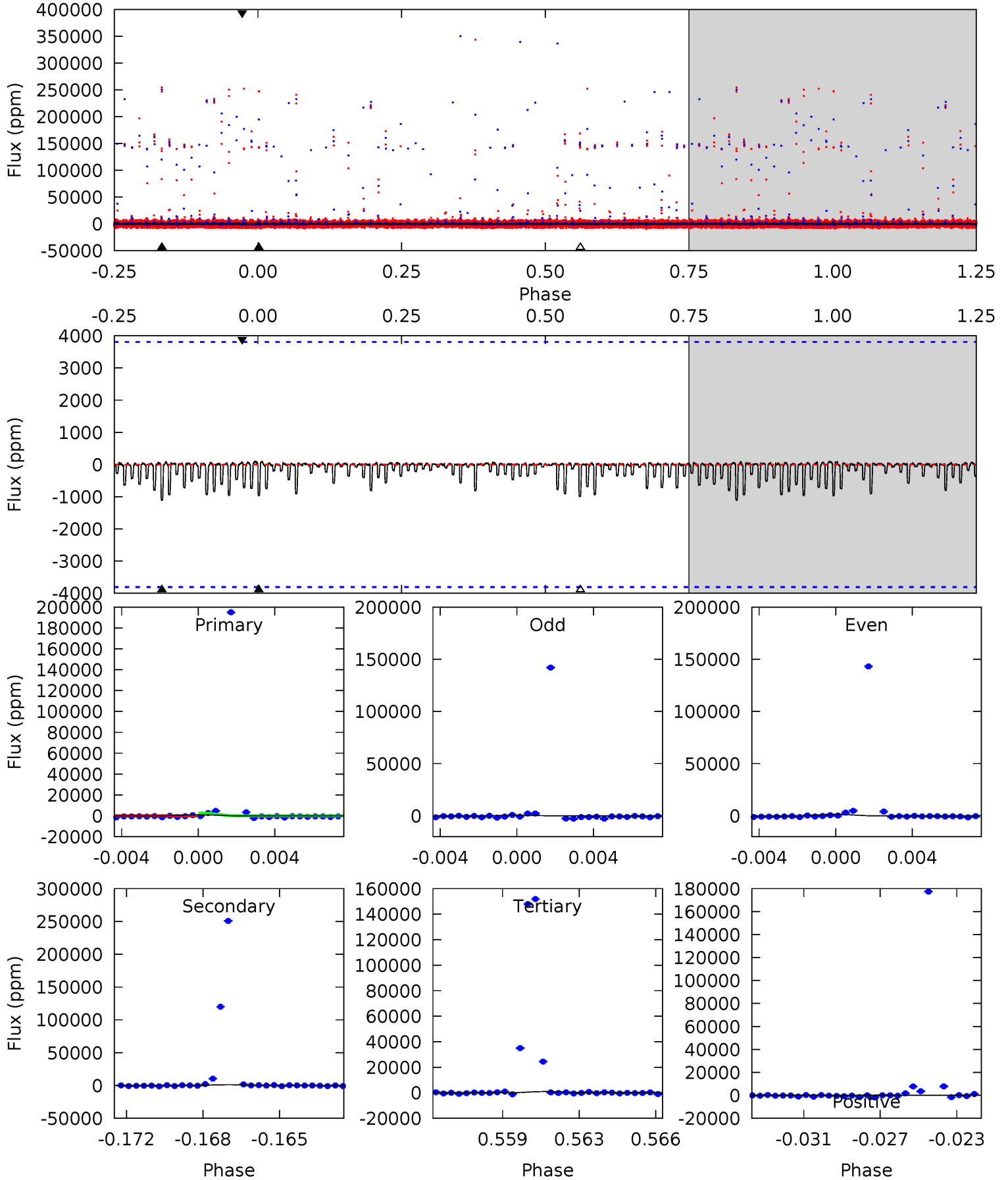
TCE 007030715-01 P= 52.637589 Days  $T_0=165.827340$  (BKJD)



# DV Model-Shift Uniqueness Test

007030715-01, P = 52.638726 Days, E = 113.228928 Days

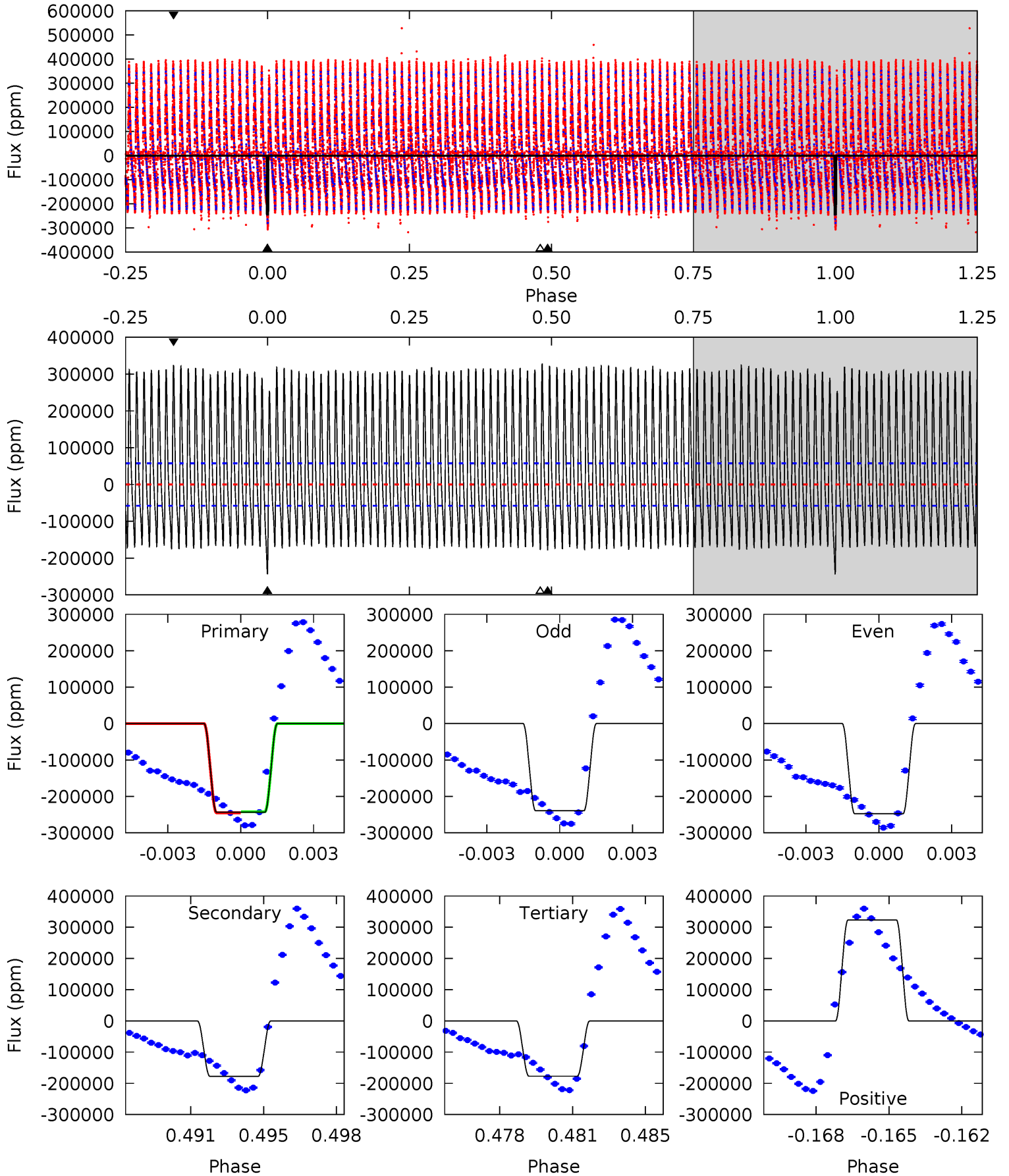
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
1.32	1.52	1.36	0.11	5.21	2.89	0.23	-0.04	1.20	0.16	1.41	0.65	1.19	0.09	1.77



# Alt Model-Shift Uniqueness Test

007030715-01, P = 52.637589 Days, E = 113.189751 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
22.1	16.1	16.1	29.4	5.23	2.93	13.5	6.03	-7.26	0.03	-13.3	0.37	0.98	0.57	0.14



### Stellar Parameters For KIC 007030715

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R$ ( $R_{\odot}$ )	$M(M_{\odot})$	$p_{\star}$ ( $\text{g}\cdot\text{cm}^{-3}$ )
	$5876^{+184}_{-205}$	$4.347^{+0.132}_{-0.198}$	$0.020^{+0.250}_{-0.300}$	$1.114^{+0.335}_{-0.206}$	$1.007^{+0.138}_{-0.110}$	$1.025^{+0.609}_{-0.513}$
	+3%/-3%	+3%/-5%	+1250%/-1500%	+30%/-18%	+14%/-11%	+59%/-50%
Source	PHO54	PHO54	PHO54	DSEP		

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

### Secondary Eclipse Parameters for KIC 007030715-01 / KOI

Detrend	Depth (ppm)	$R_p$ ( $R_{\oplus}$ )	$T_{max}$ (K)	$T_{obs}$ (K)	$A_{obs}$
DV	$-1112 \pm 731$	$139.57^{+139.70}_{-99.92}$	$731^{+59}_{-43}$	$1944^{+691}_{-500}$	$2.054^{+23.263}_{-1.698}$
Alt.	$-177487 \pm 11017$	$140.86^{+144.22}_{-95.30}$	$731^{+59}_{-43}$	$4035^{+2555}_{-811}$	$443^{+4032}_{-334}$

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



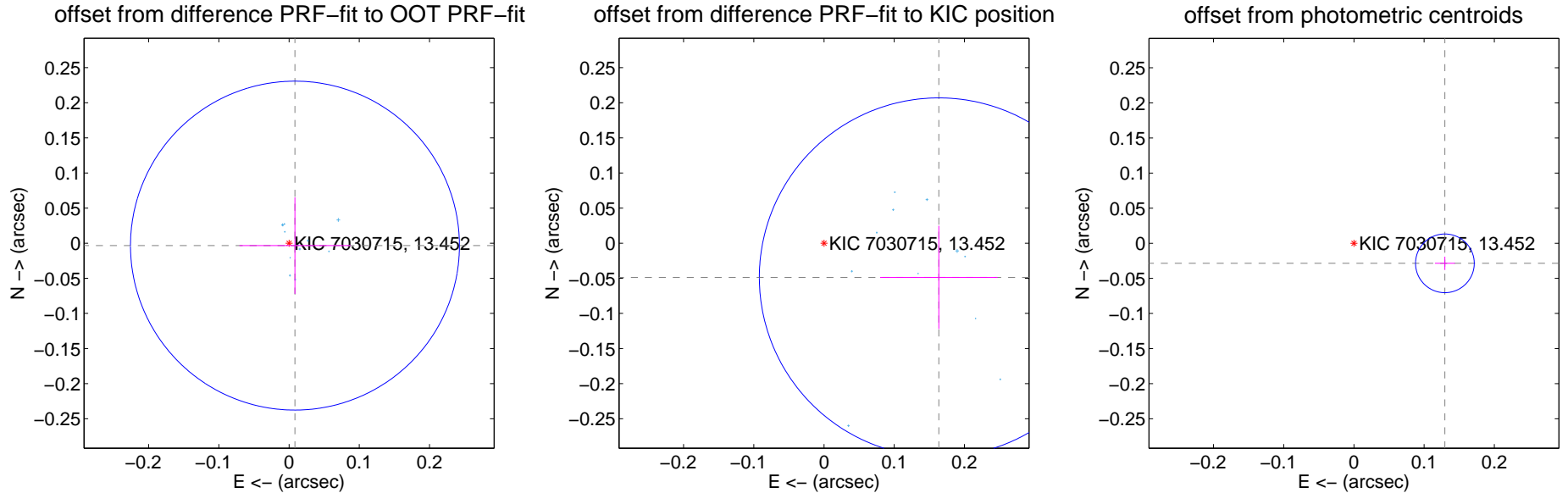
## DV Centroid Data

Supplemental centroid analysis for 007030715-01. Kepler magnitude: 13.45. Transit SNR 126.82

There are 14 quarters with good PRF difference image offsets

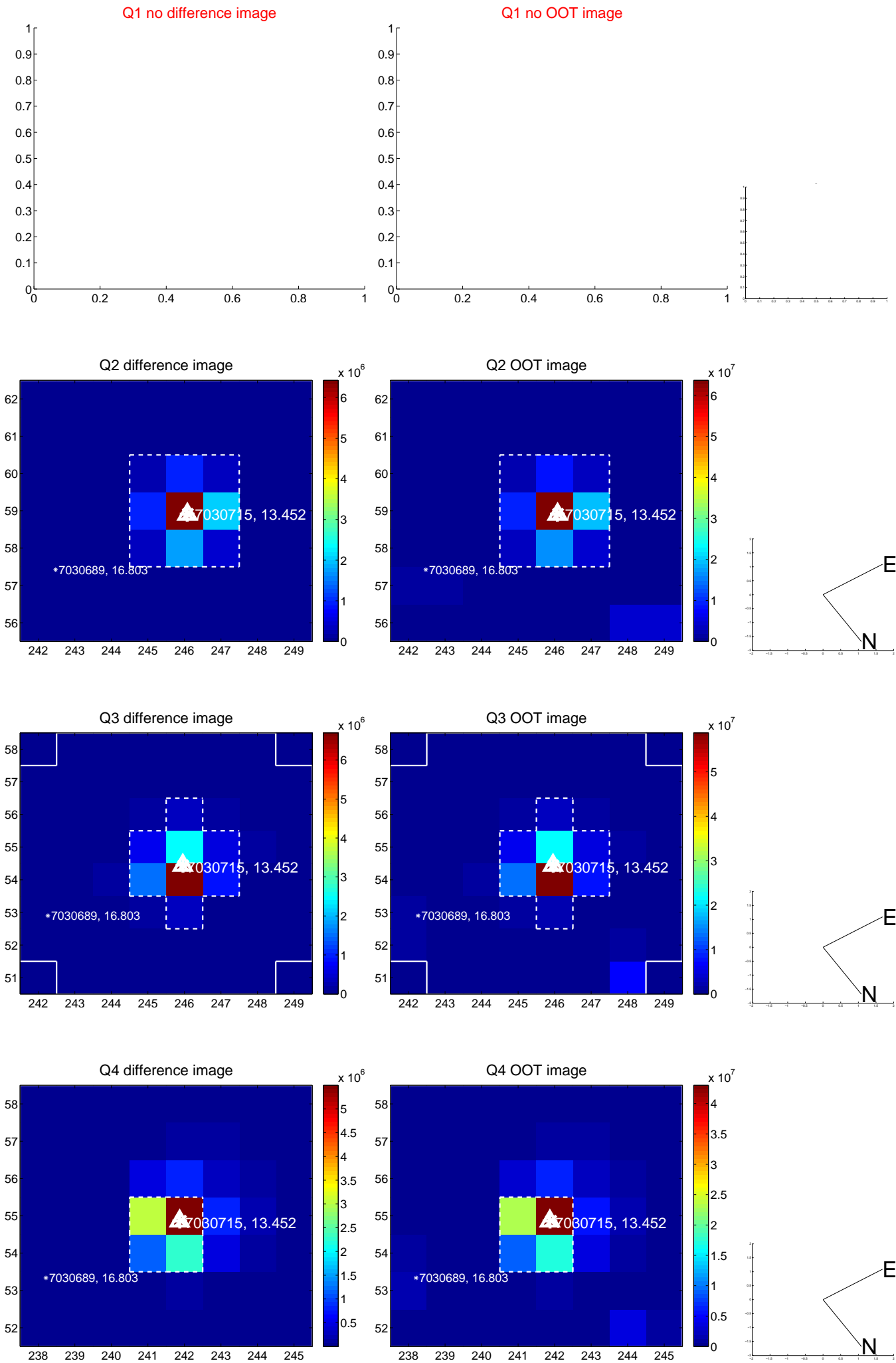
The direct PRF centroid is offset from the target star catalog position by about 0.25 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.009 \pm 0.078$	0.12	$-0.008 \pm 0.079$	$-0.003 \pm 0.069$
PRF-fit source offset from KIC position	$0.171 \pm 0.085$	2.00	$-0.163 \pm 0.084$	$-0.049 \pm 0.074$
photometric centroid source offset	$0.13 \pm 0.01$	9.52	$-0.13 \pm 0.01$	$-0.03 \pm 0.01$

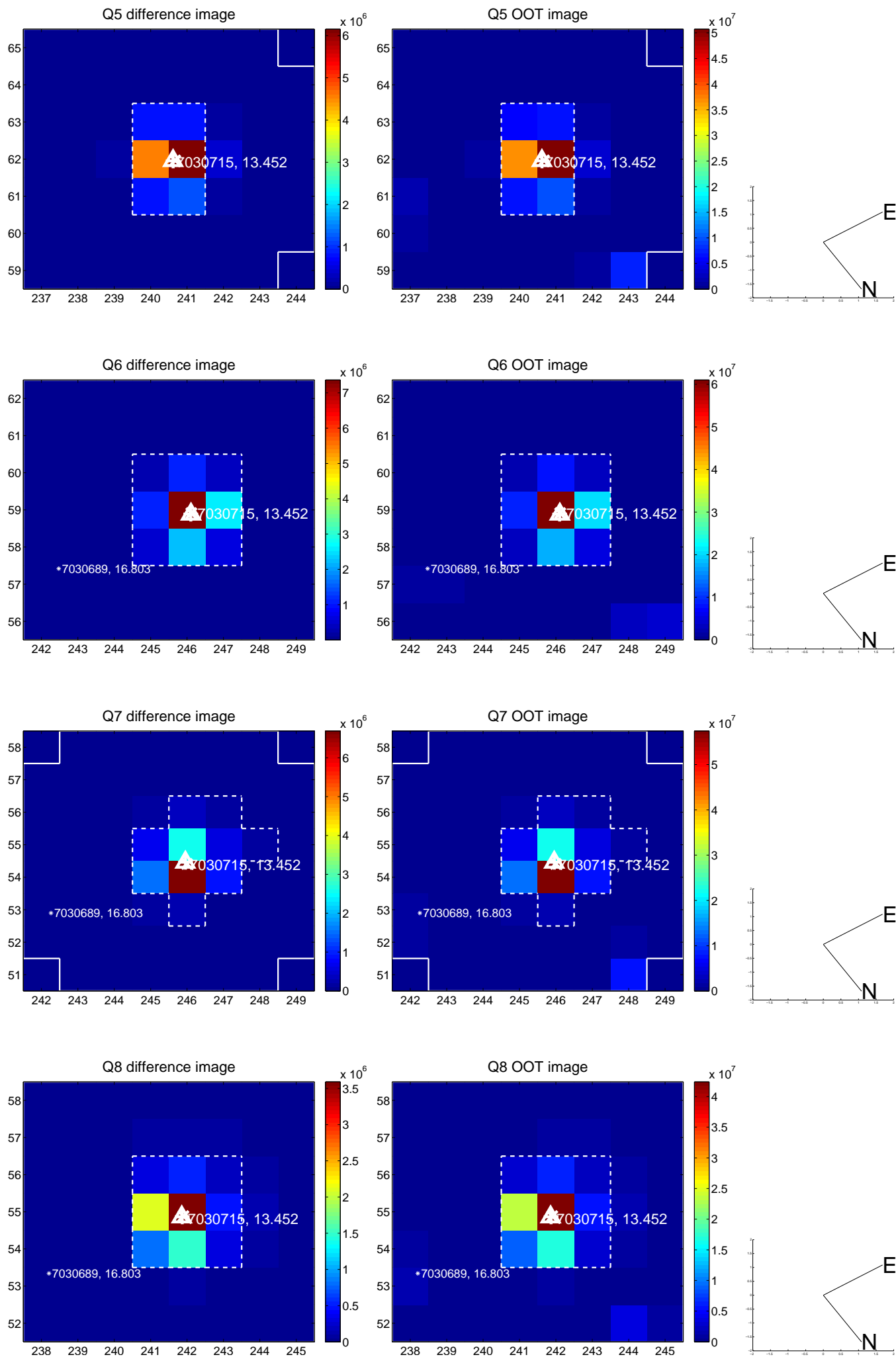


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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

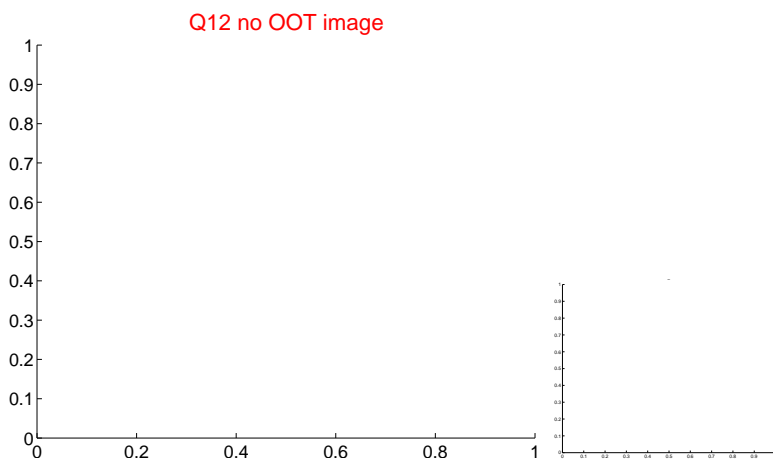
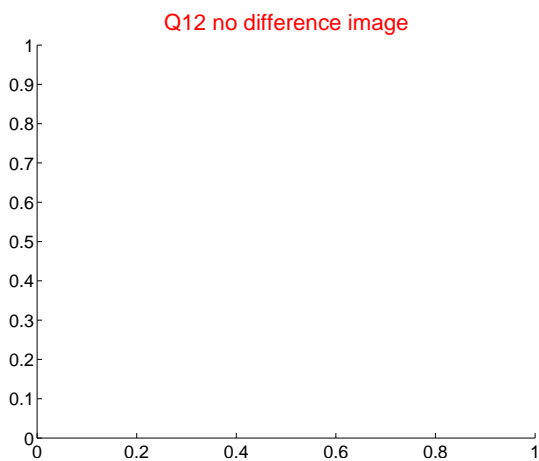
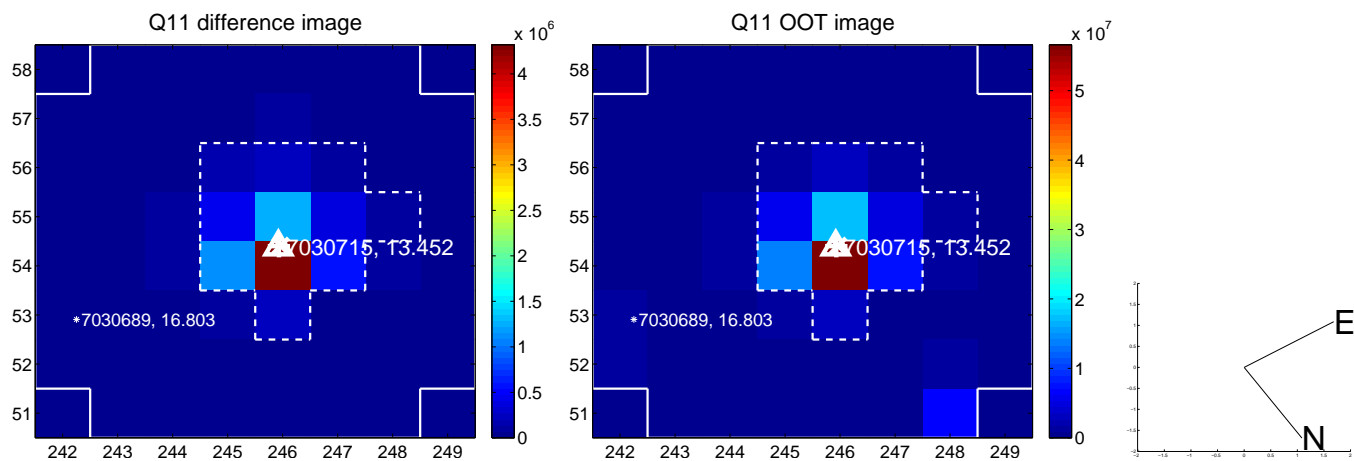
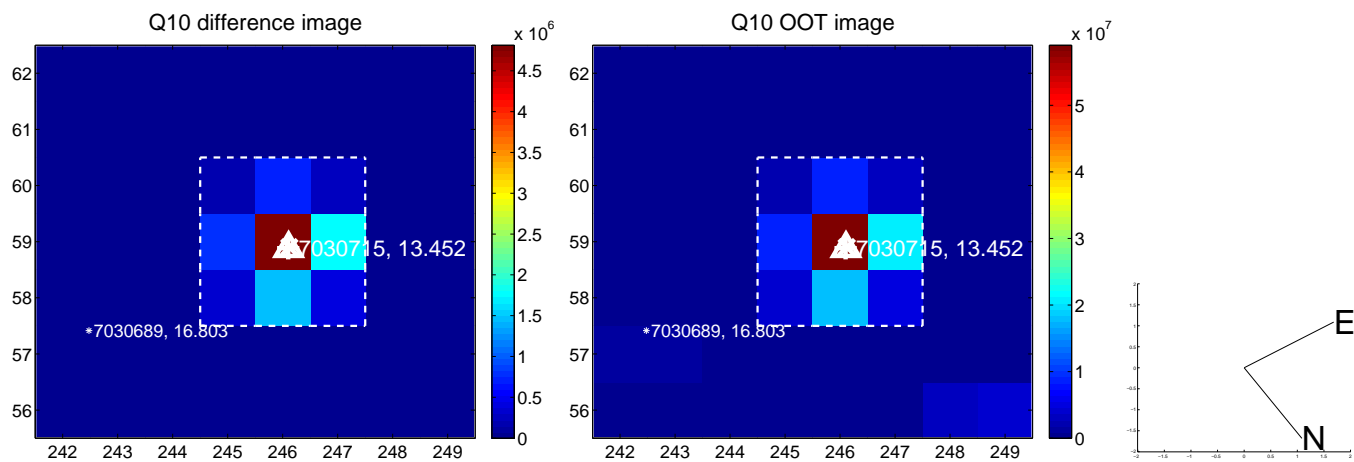
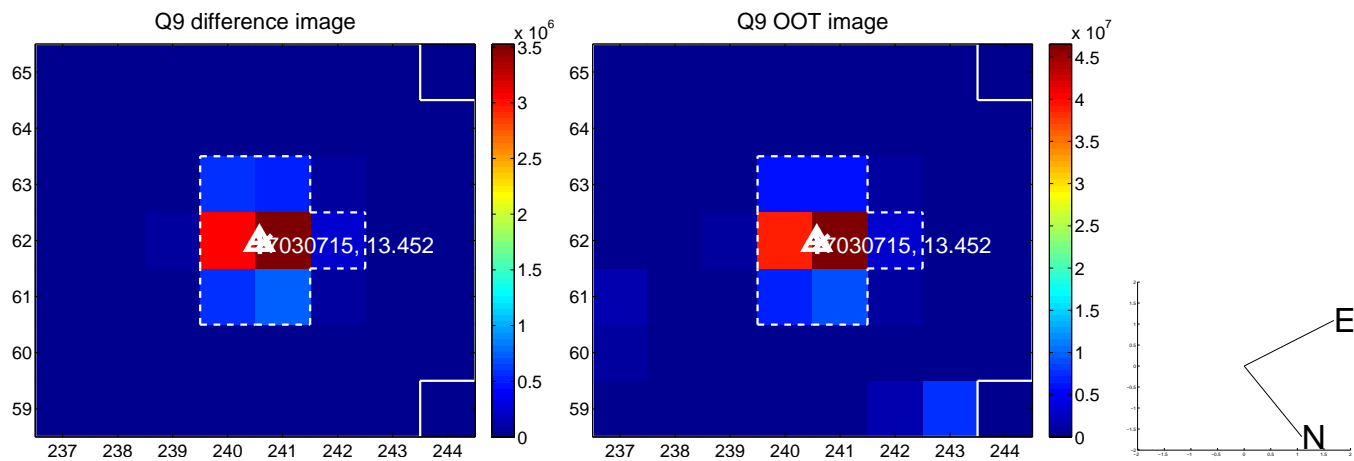
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



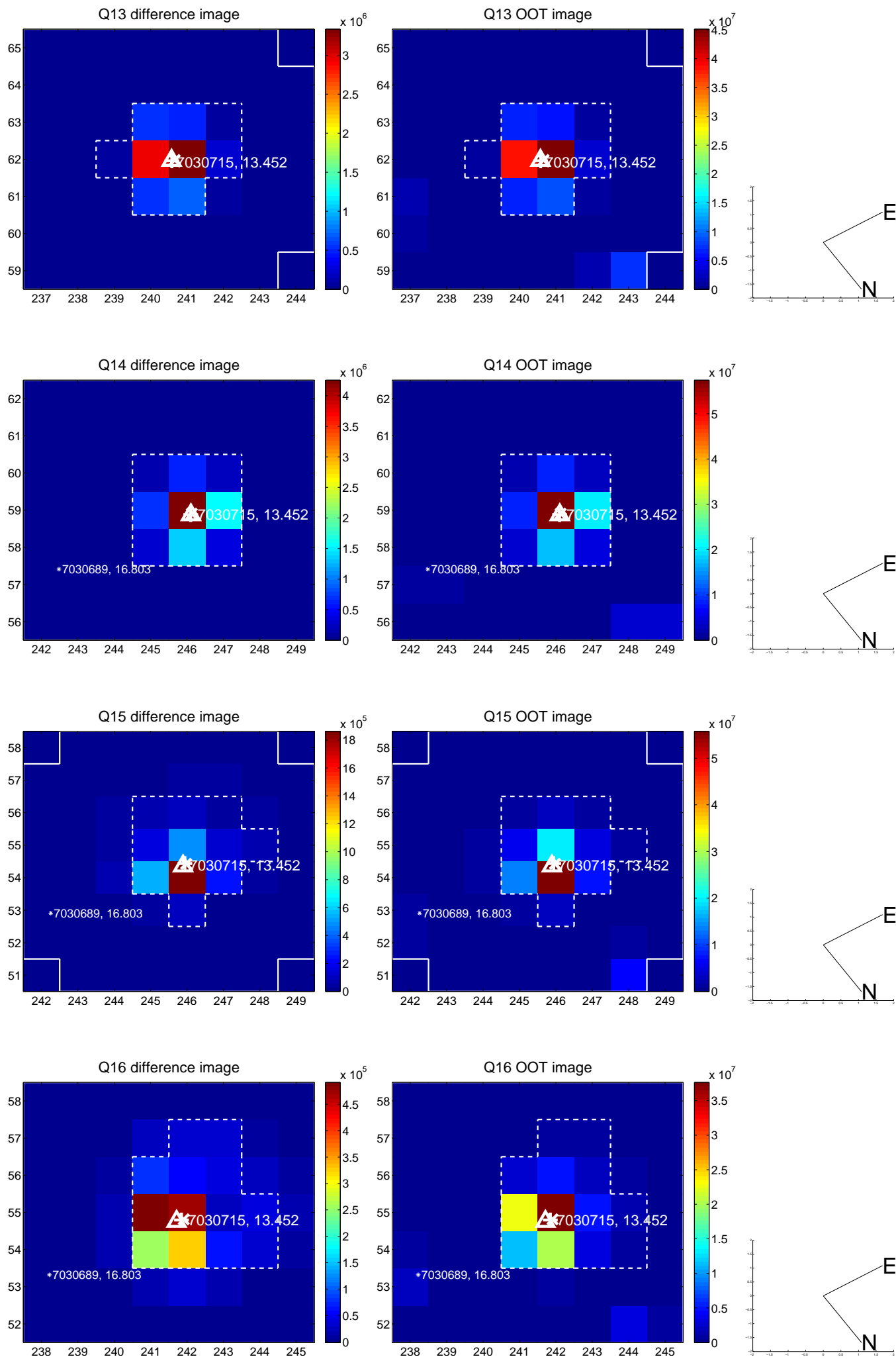
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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

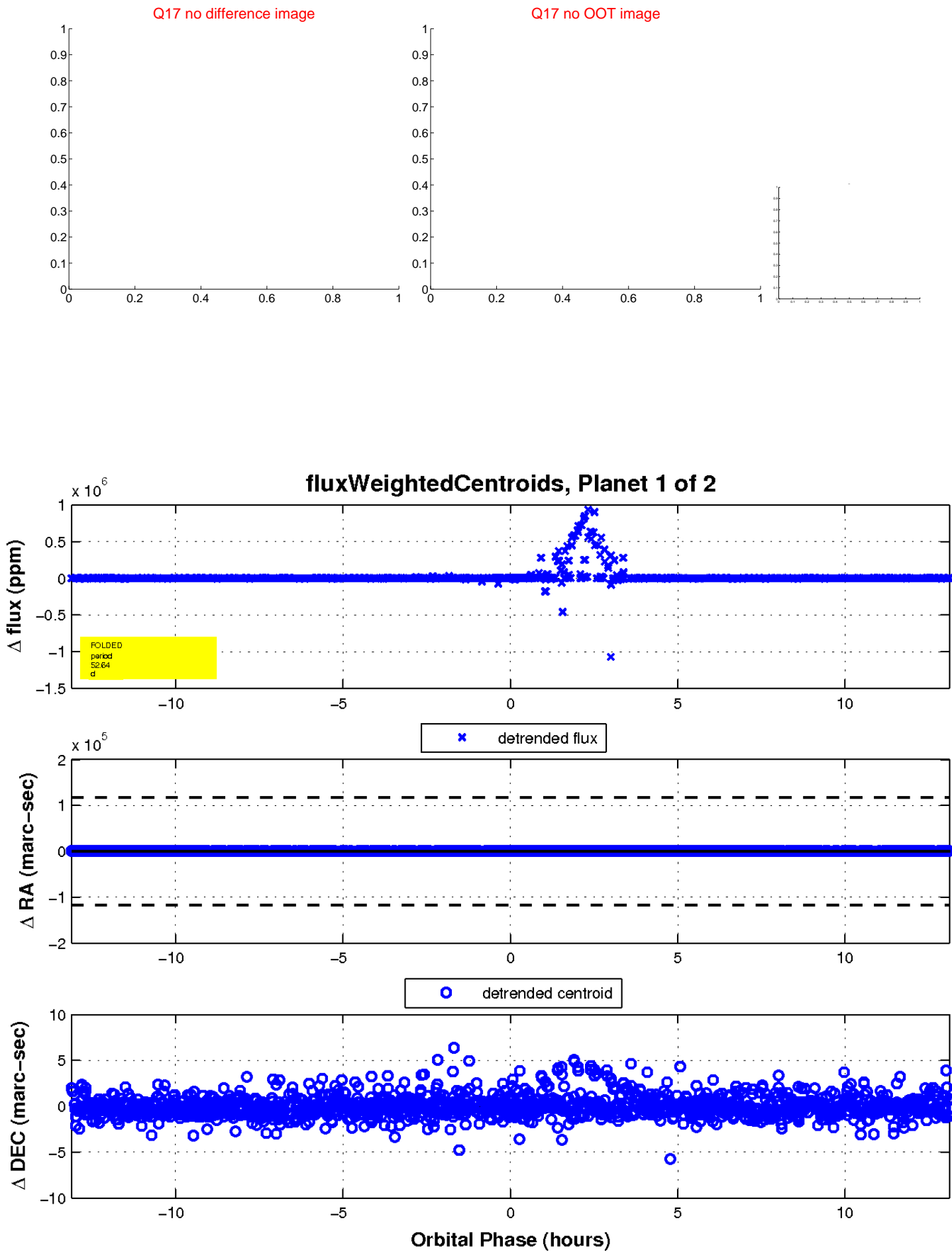


white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

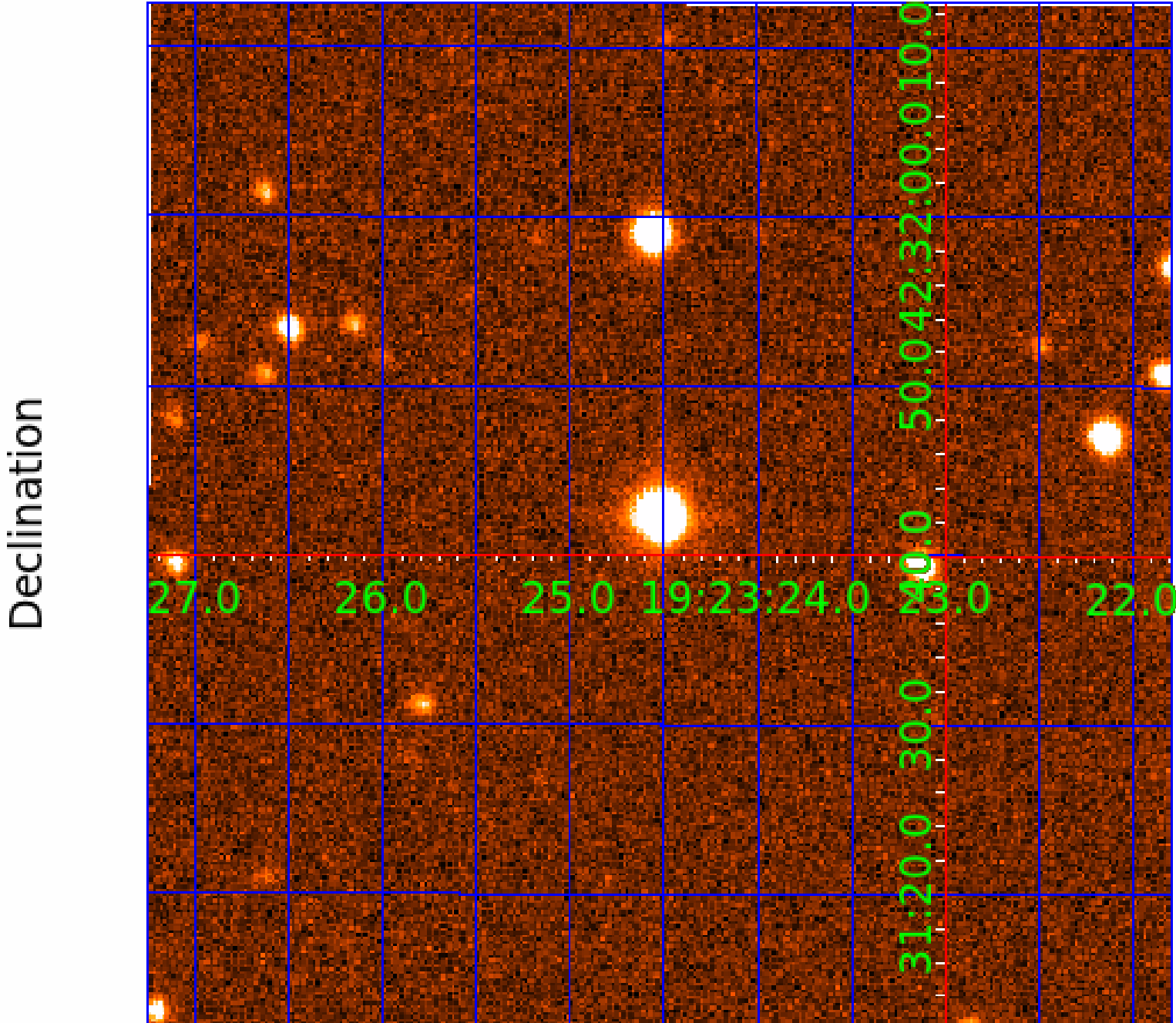




white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



UKIRT Image



# KIC 007030715

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
007030715-01	OBS	No	52.638726	165.867654	28507.2	4.382	1790.2	126.8	1.11	5876	32.91	17.46
007030715-02	OBS	No	0.683614	131.829944	84369.9	2.000	4394.6	-1.0	1.11	5876	32.37	5720.01

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
007030715-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_ZUMA_TRACKER—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_TER_DV—MOD_NONUNIQ_ALT—MOD_POS_ALT
007030715-02	OBS	FP	0.00	1	0	0	0	SWEET_NTL—LPP_DV—NO_FITS—CENT_NOFITS

**Notes:** OBS = Observed. INJ = Injected. INV = Inverted. SCR = Scrambled.

N = Not Transit-Like. S = Stellar Eclipse. C = Centroid Offset. E = Ephemeris Match.

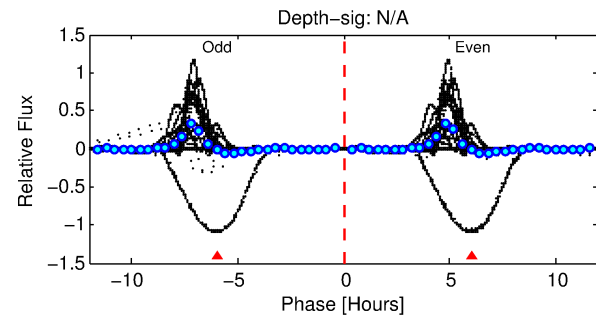
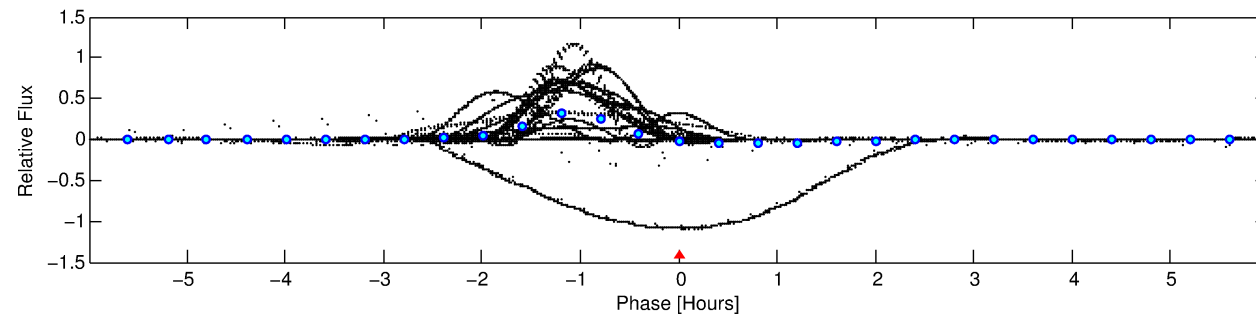
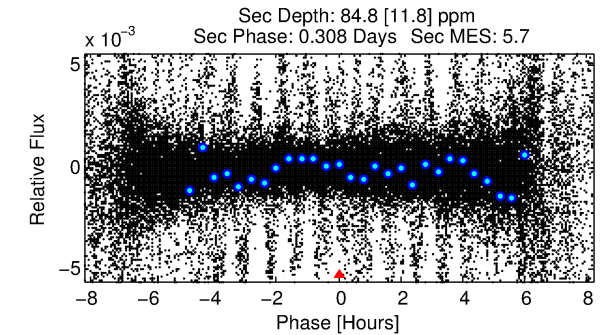
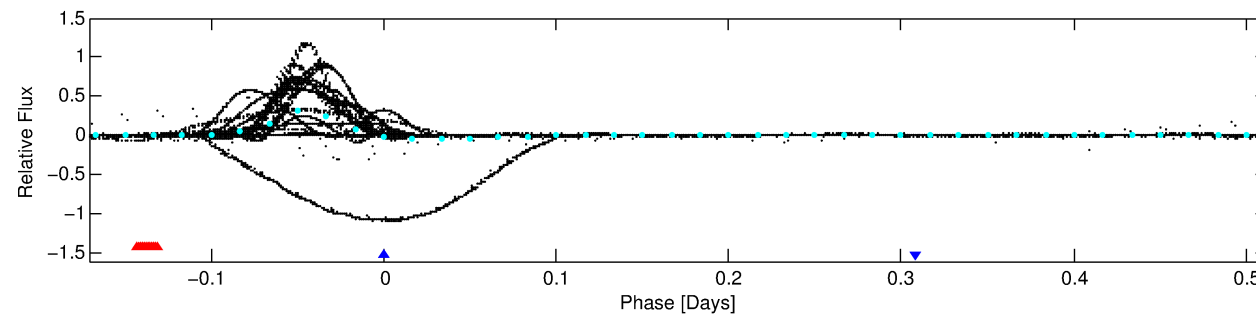
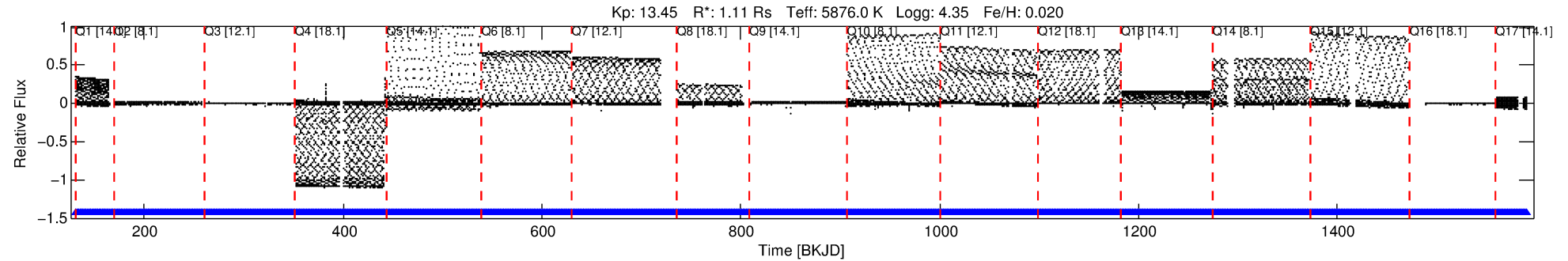
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 007030715-02

No Significant Match Found

# DV One-Page Summary

KIC: 7030715 Candidate: 2 of 2 Period: 0.684 d



## TPS TCE Results:

Period = 0.68361 d  
Epoch = 131.8299 BKJD

DV fit results are unavailable

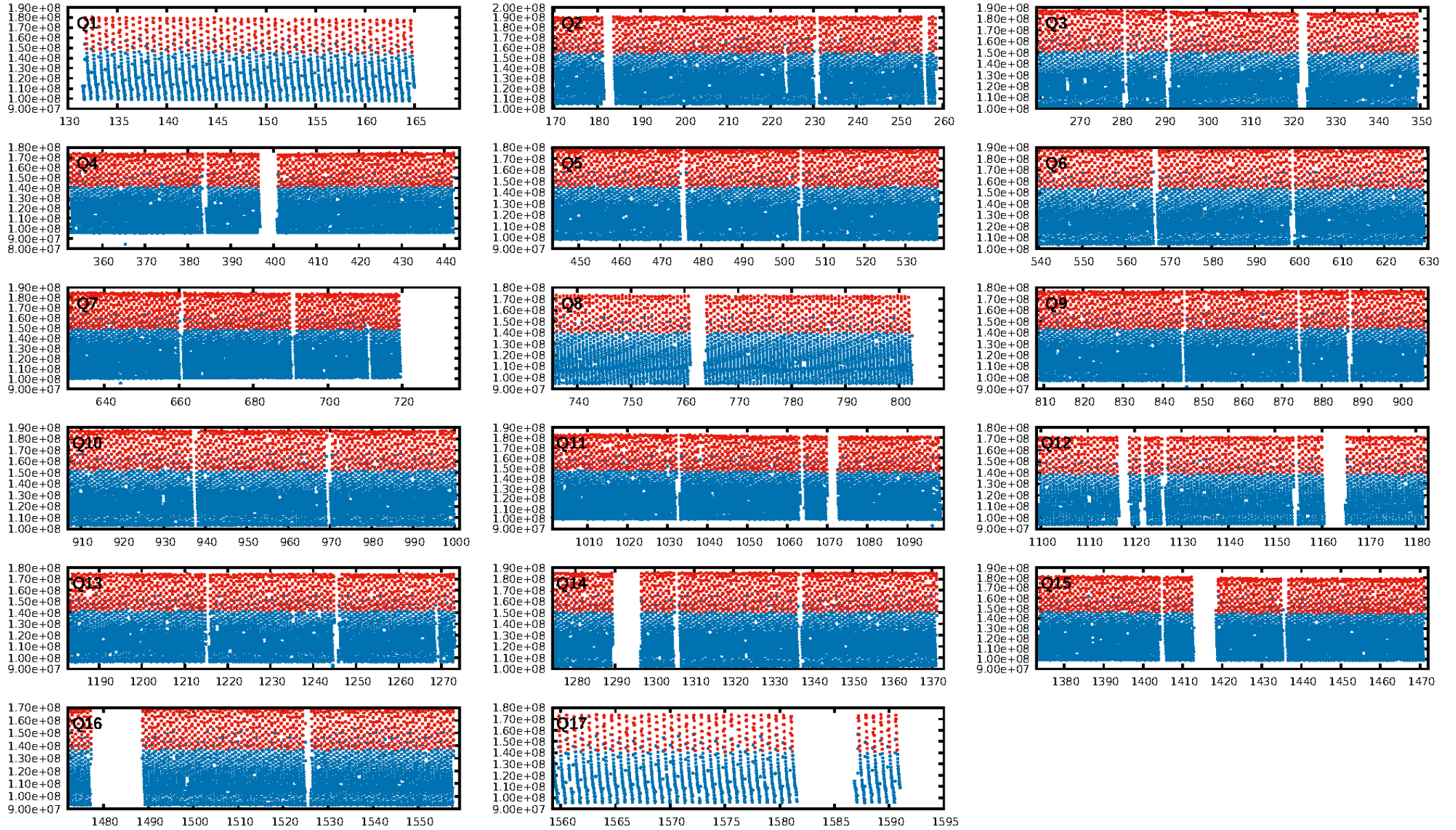
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: 100.0% [258.85σ]  
ModelChiSquare2-sig: N/A  
ModelChiSquareGof-sig: N/A  
Bootstrap-pfa: N/A  
RollingBand-fgt: N/A  
GhostDiagnostic-chr: N/A  
Centroid-sig: N/A  
Centroid-so: N/A  
OotOffset-rm: N/A  
KicOffset-rm: N/A  
OotOffset-st: 0/0/0/0 [0]  
KicOffset-st: 0/0/0/0 [0]  
DiffImageQuality-fgm: N/A  
DiffImageOverlap-fno: N/A

Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 14:34:27 Z

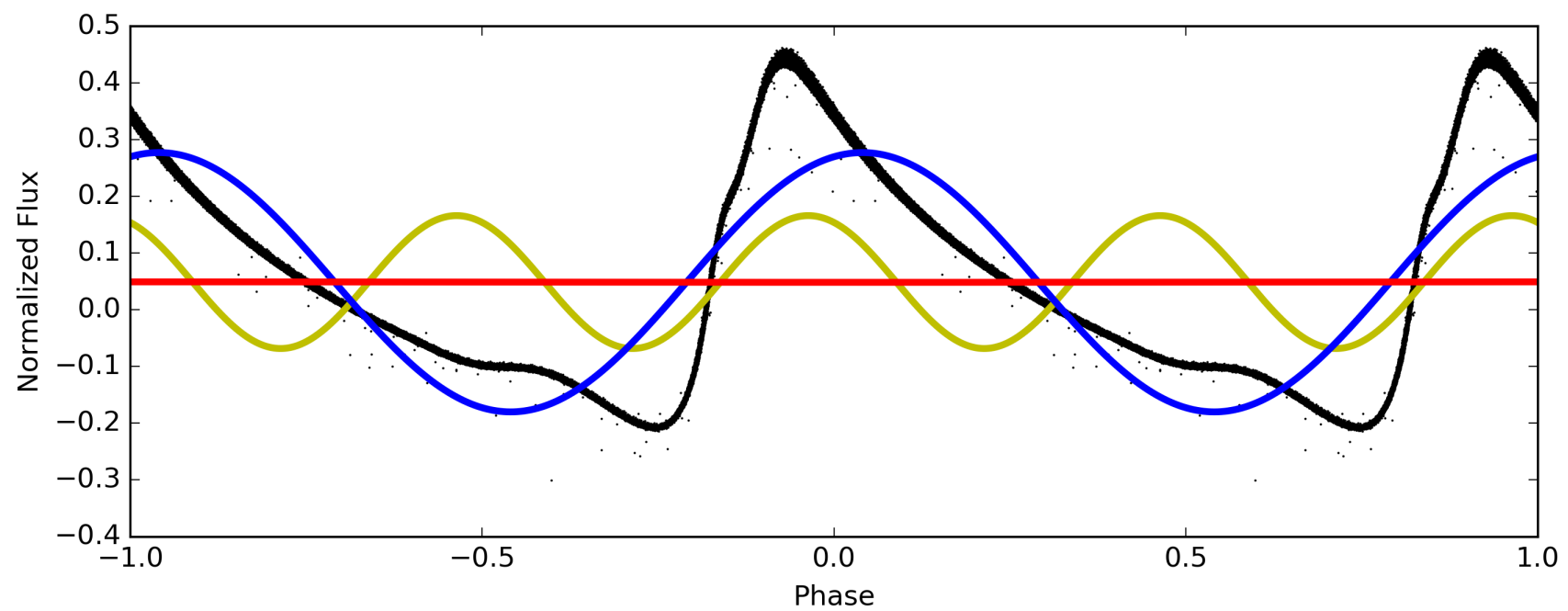
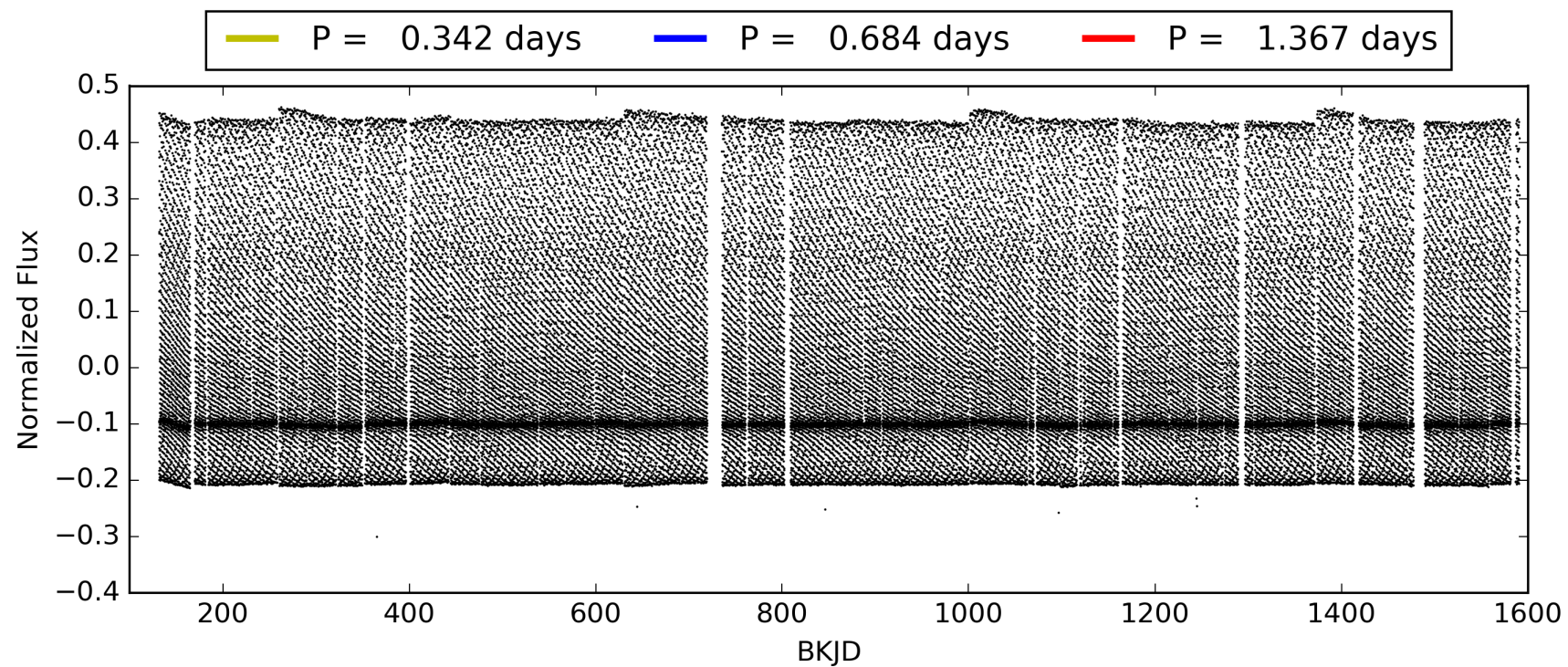
This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

# TCE 007030715-02, PDC Light Curves



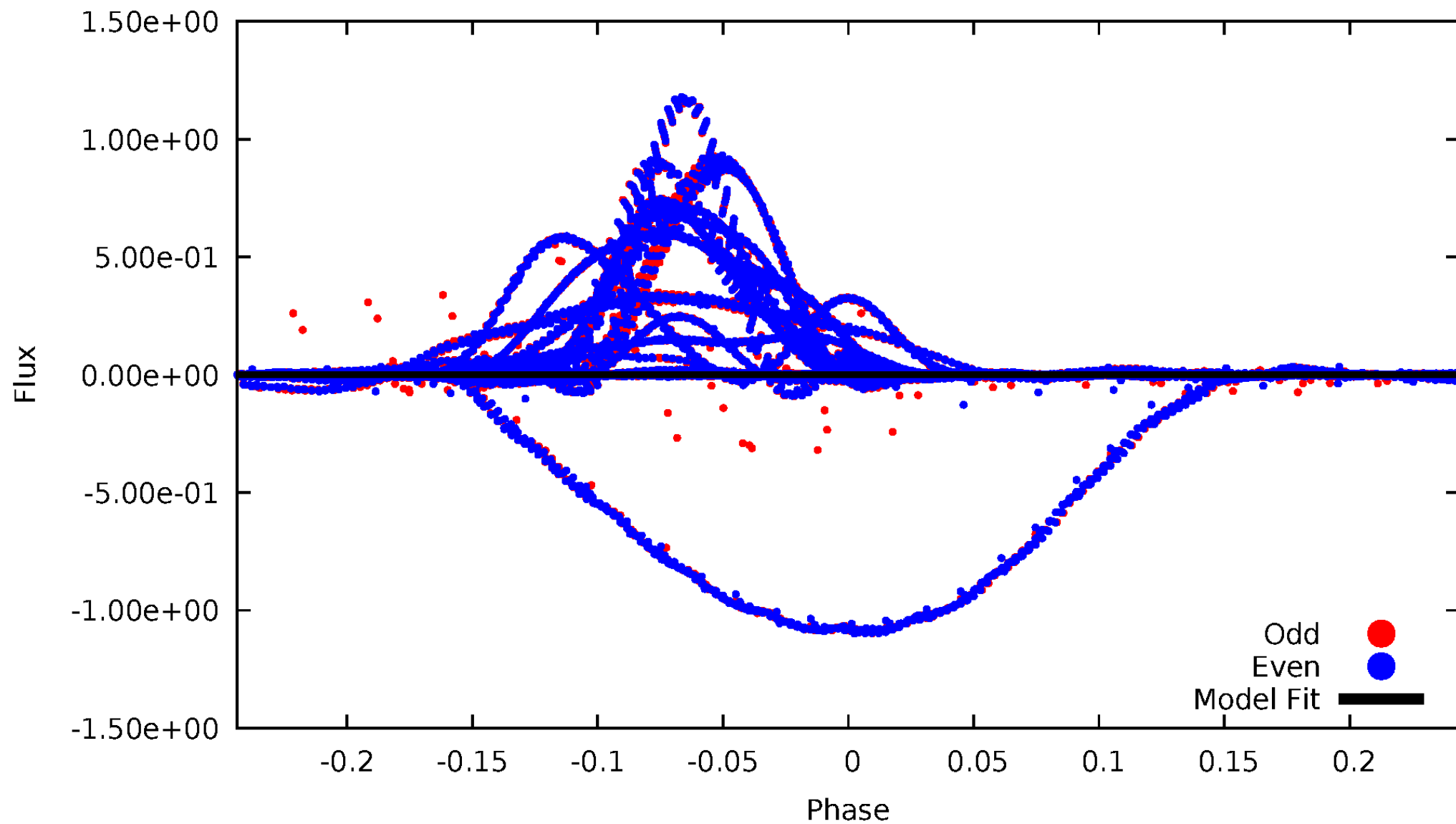


TCE 007030715-02



# DV Odd/Even

TCE 007030715-02



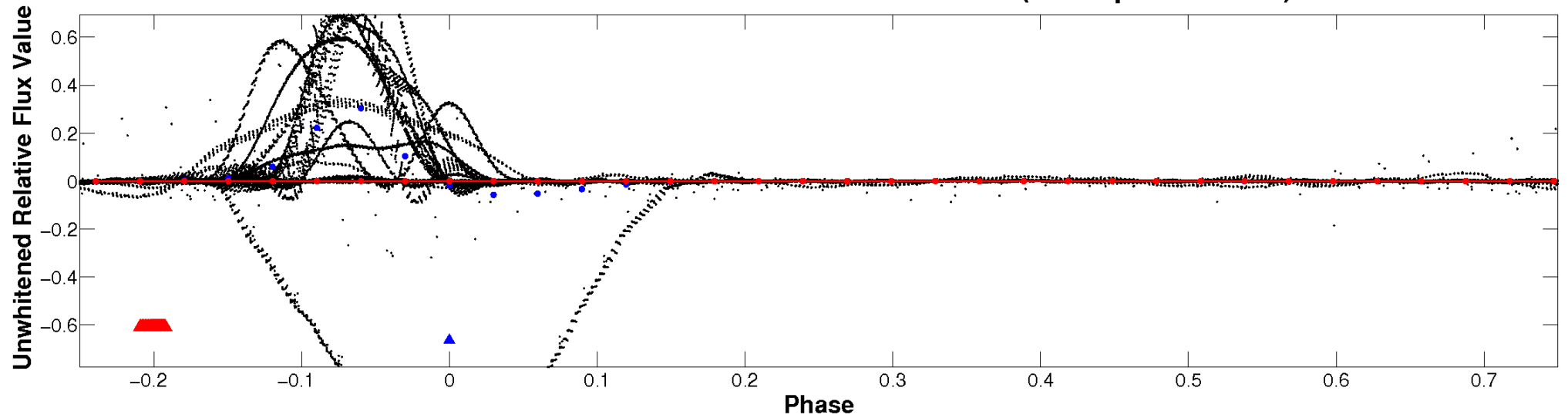


ALT Odd/Even

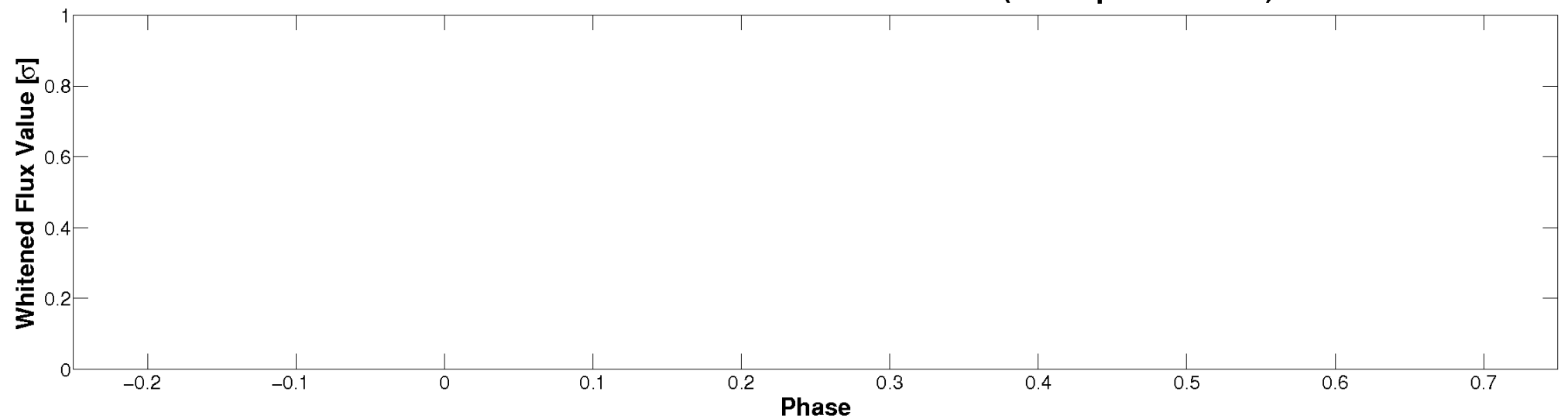
This plot does not exist for this TCE.

# Non-Whitened Vs. Whitened Light Curve

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



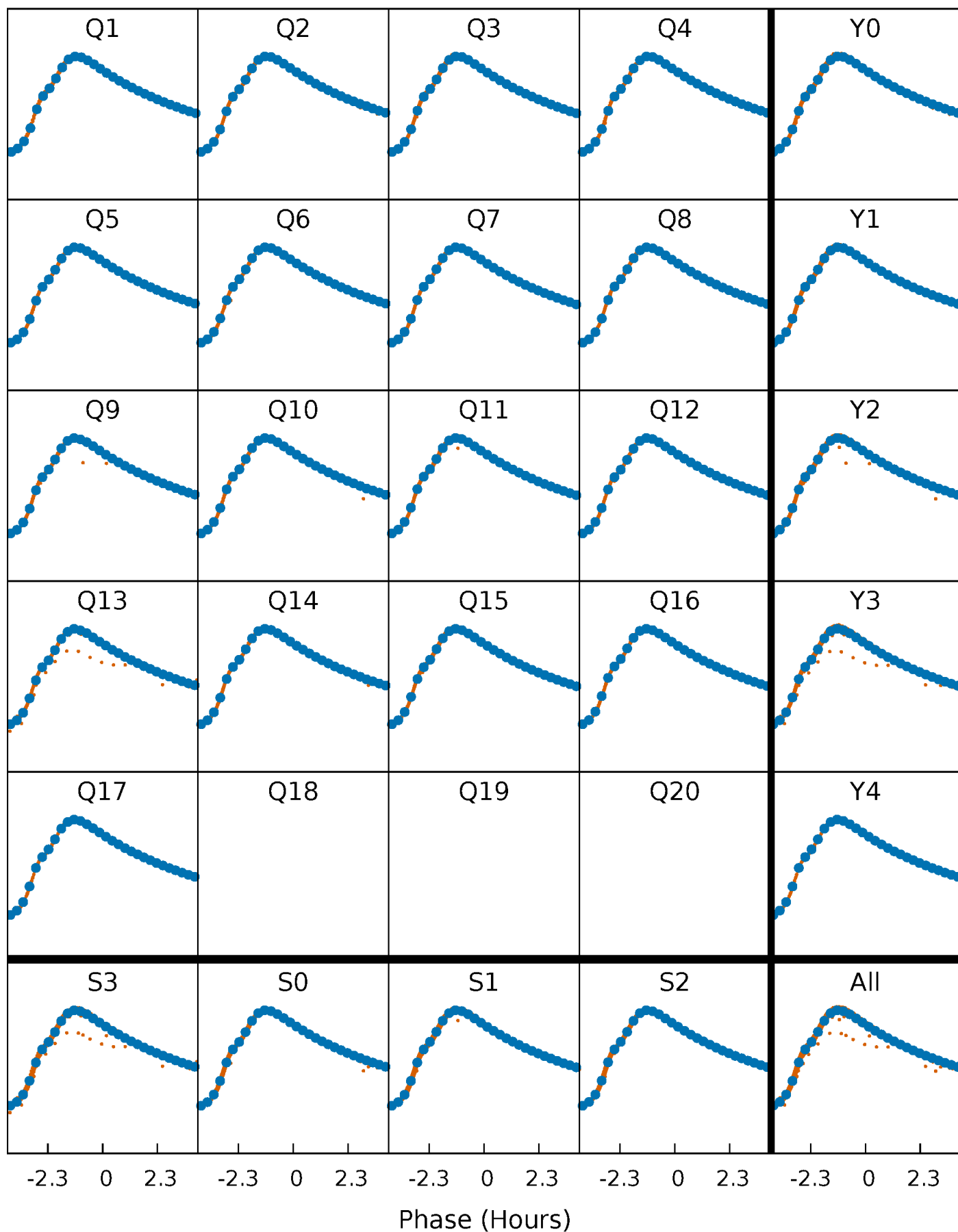
**Planet 2 : Phased Whitened Flux Time Series (TPS Epoch/Period)**





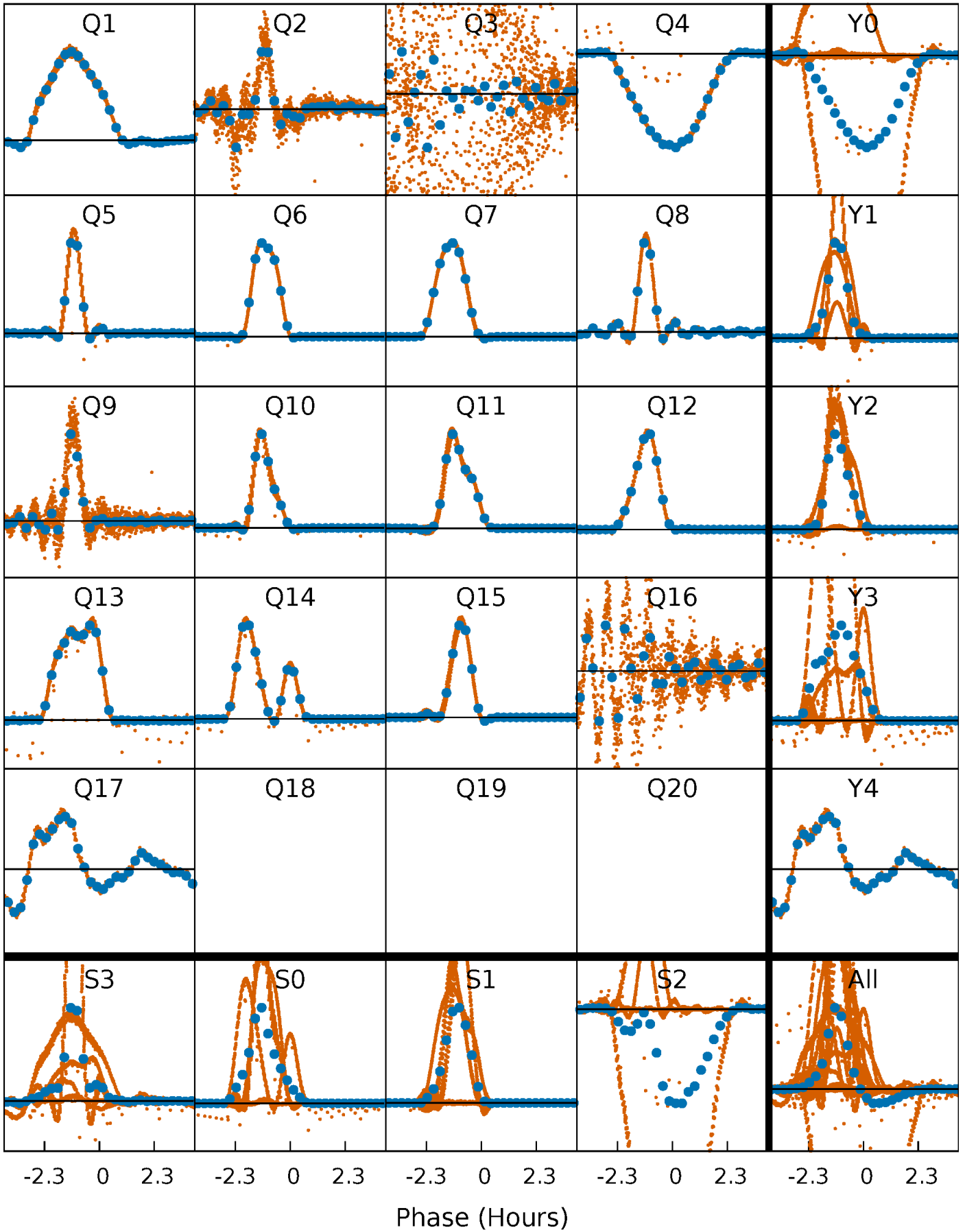
# PDC Quarter-Phased Transit Curves

TCE 007030715-02   P= 0.683614 Days    $T_0=131.829944$  (BKJD)



# DV Quarter-Phased Transit Curves

TCE 007030715-02     $P = 0.683614$  Days     $T_0 = 131.829944$  (BKJD)

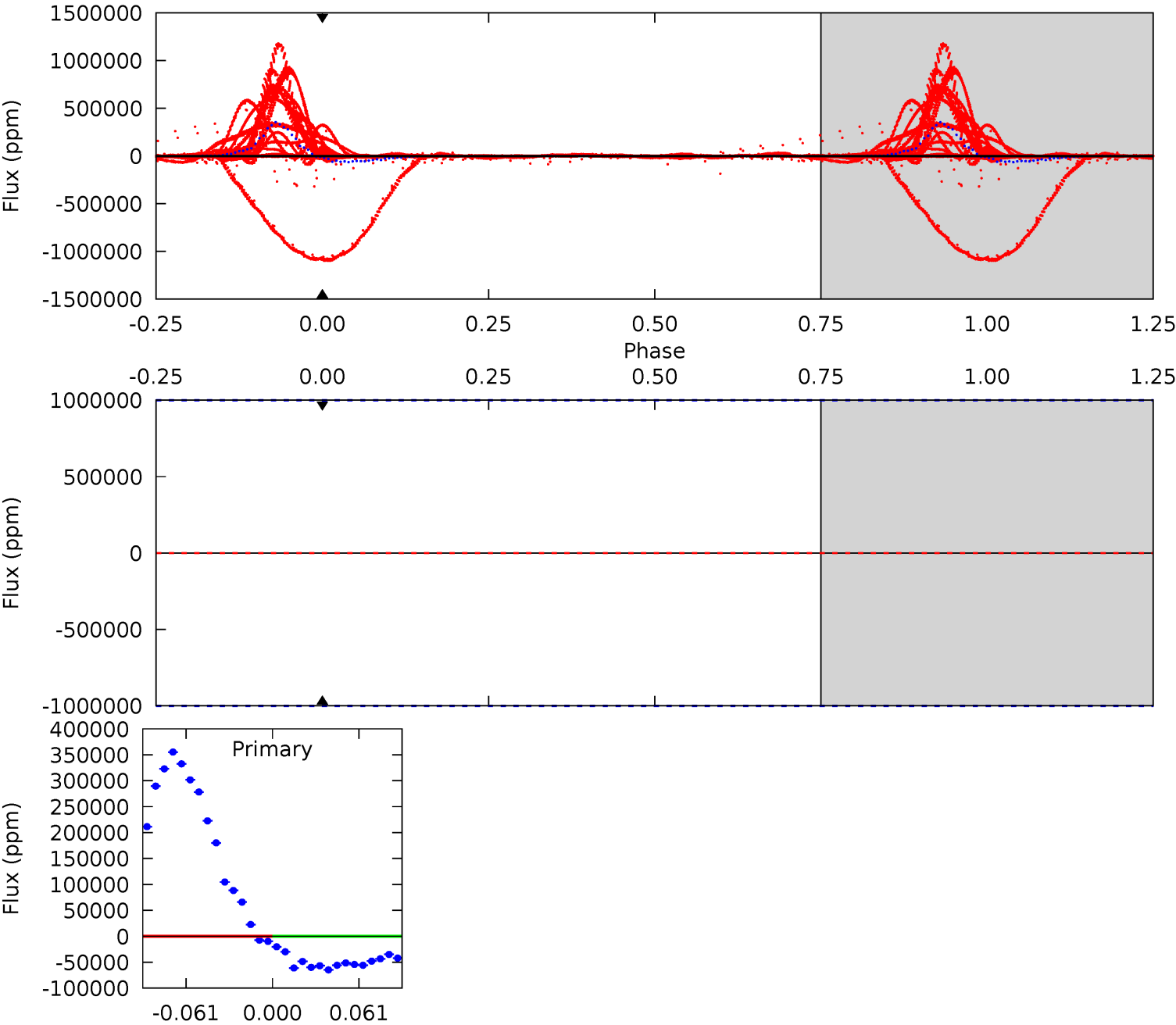


This plot does not exist for this TCE.

DV Model-Shift Uniqueness Test

007030715-02, P = 0.683614 Days, E = 131.146330 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

This plot does not exist for this TCE.

### Stellar Parameters For KIC 007030715

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$5876^{+184}_{-205}$	$4.347^{+0.132}_{-0.198}$	$0.020^{+0.250}_{-0.300}$	$1.114^{+0.335}_{-0.206}$	$1.007^{+0.138}_{-0.110}$	$1.025^{+0.609}_{-0.513}$
	+3%/-3%	+3%/-5%	+1250%/-1500%	+30%/-18%	+14%/-11%	+59%/-50%
Source	PHO54	PHO54	PHO54	DSEP		

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

### Secondary Eclipse Parameters for KIC 007030715-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	$A_{obs}$
DV	$0 \pm 1000000$	$33.70^{+14.23}_{-12.39}$	$3121^{+234}_{-193}$	$-3947^{+10523}_{-2734}$	$-0.901^{+14.273}_{-12.480}$
Alt.	N/A	N/A	N/A	N/A	N/A

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

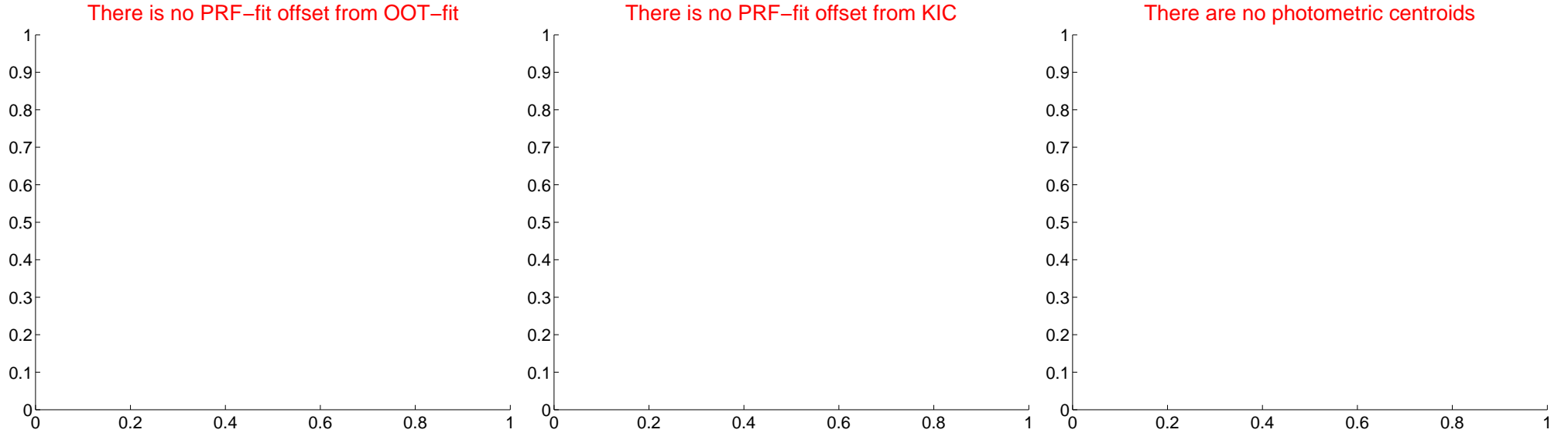
## DV Centroid Data

Supplemental centroid analysis for 007030715-02. Kepler magnitude: 13.45. Transit SNR -1.00

There are 0 quarters with good PRF difference image offsets

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

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	—	—	—	—
PRF-fit source offset from KIC position	—	—	—	—
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.



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folded centroid time series figure for this object.

UKIRT Image

Declination

