

# KIC 008308347

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
008308347-01	OBS	No	164.953319	278.905073	7980.5	15.000	134.5	-1.0	0.66	5001	5.79	0.95
008308347-02	OBS	3761.01	164.939202	280.375008	56955.8	66.156	119.7	149.3	0.66	5001	15.49	0.95
008308347-03	OBS	No	164.948459	215.311566	33572.5	40.294	106.7	248.3	0.66	5001	11.92	0.95

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008308347-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—CENT_NOFITS
008308347-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL_SKYE—SAME_NTL_PERIOD—CENT_FEW_DIFFS
008308347-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL—SAME_NTL_PERIOD—CENT_FEW_DIFFS

**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.

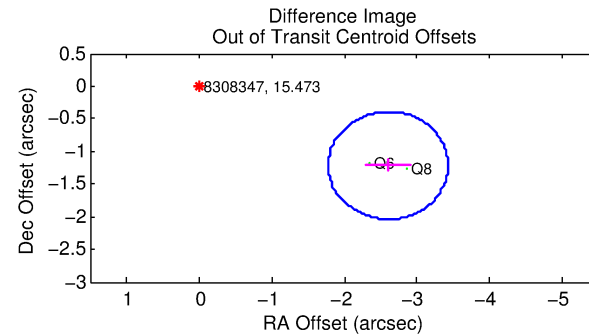
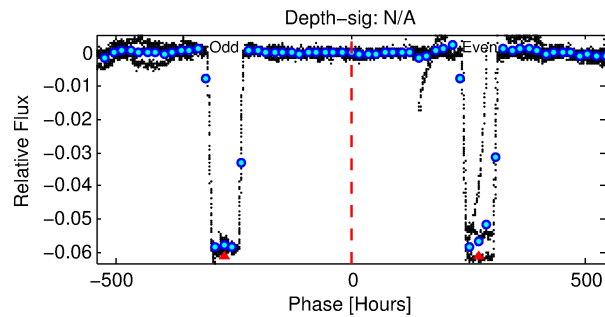
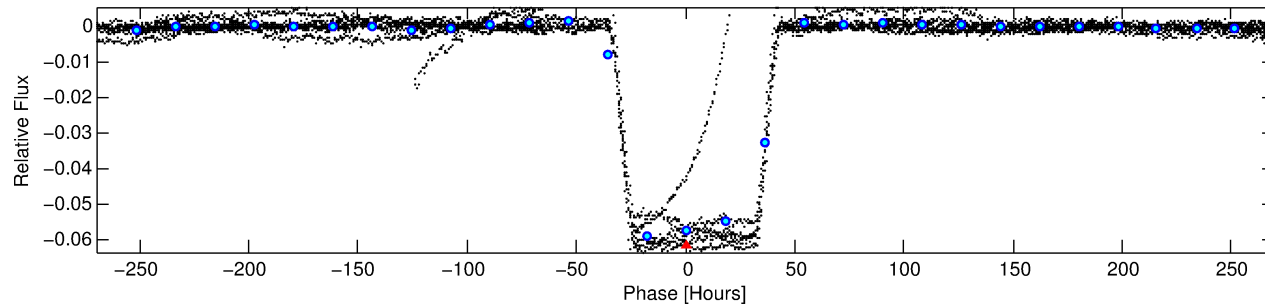
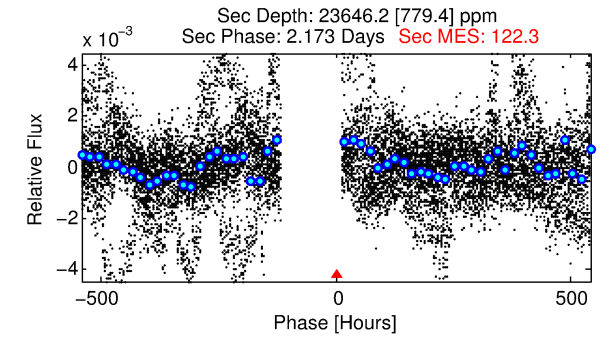
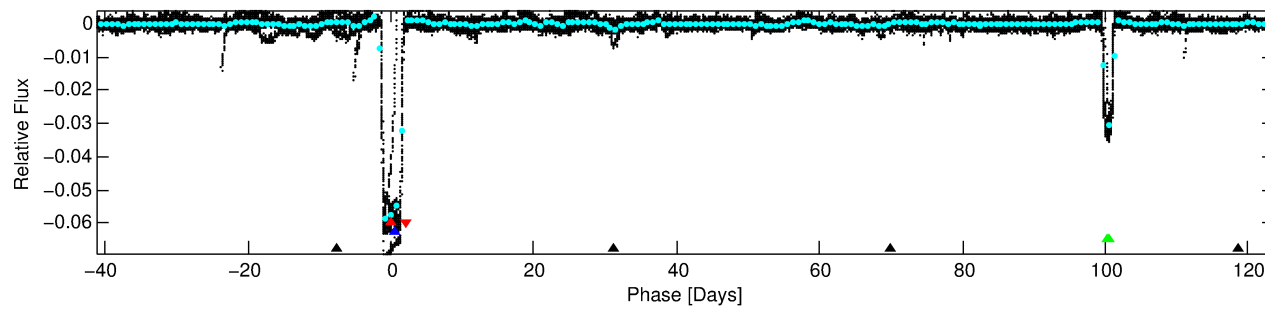
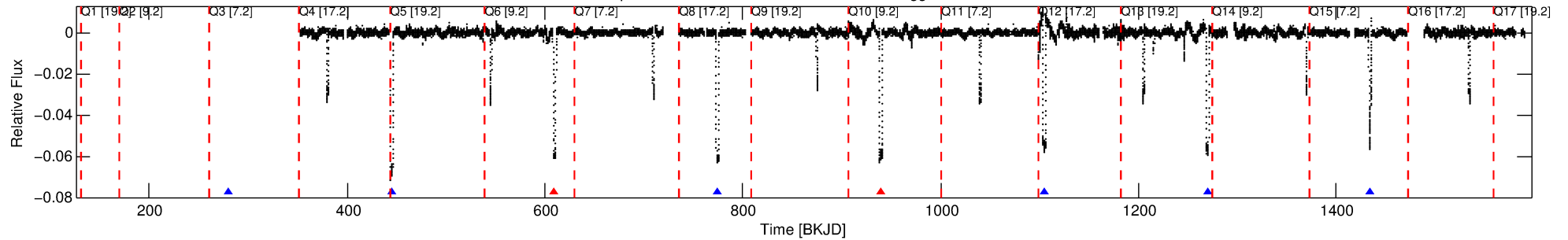
Ephemeris Match Information For 008308347-01

No Significant Match Found

# DV One-Page Summary

KIC: 8308347 Candidate: 1 of 4 Period: 164.953 d  
KOI: K03761 Corr: No Ephemeris Match

Kp: 15.47 R\*: 0.66 Rs Teff: 5001.0 K Logg: 4.60 Fe/H: -0.580



## TPS TCE Results:

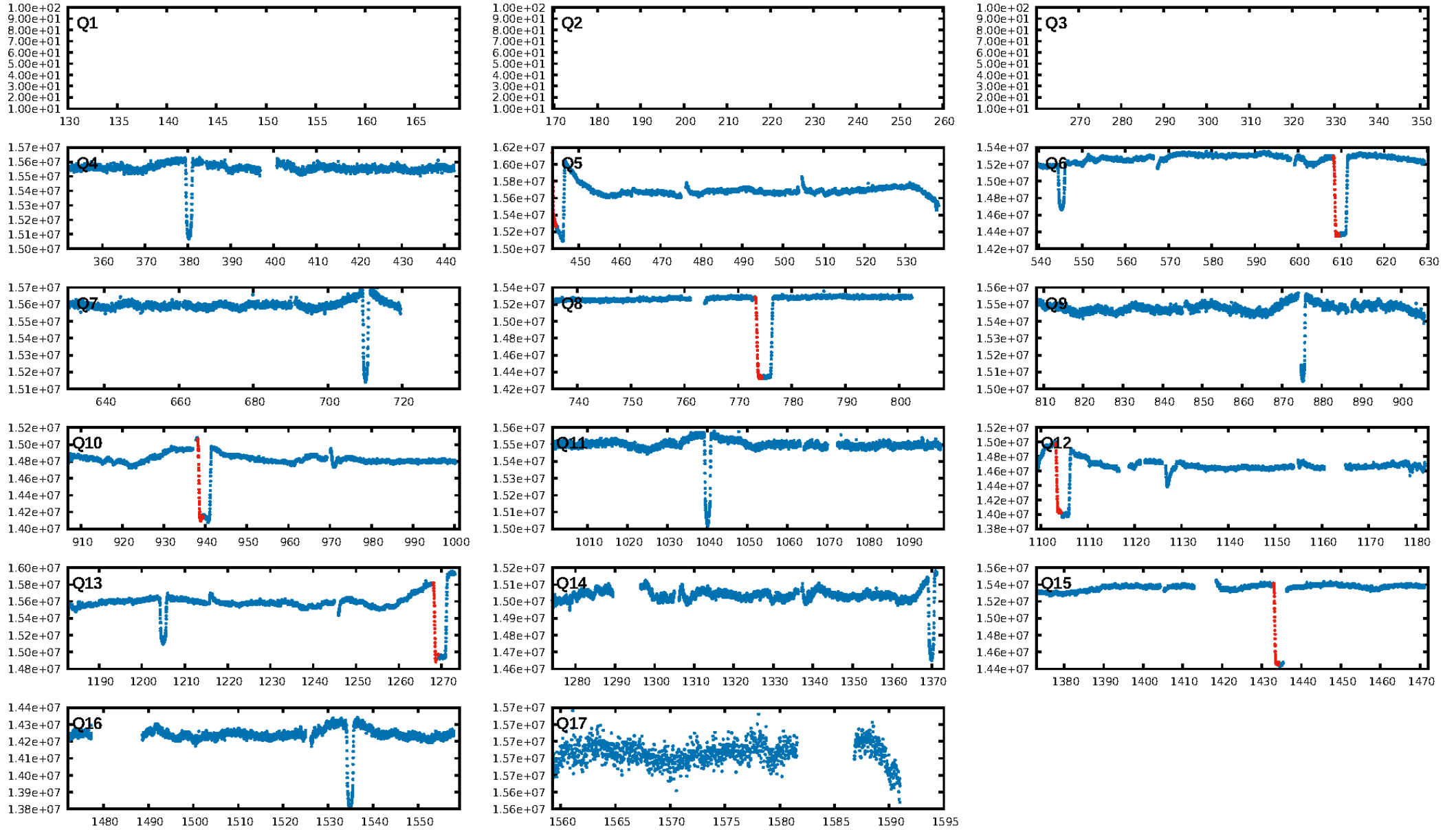
Period = 164.95332 d  
Epoch = 278.9051 BKJD

DV fit results are unavailable

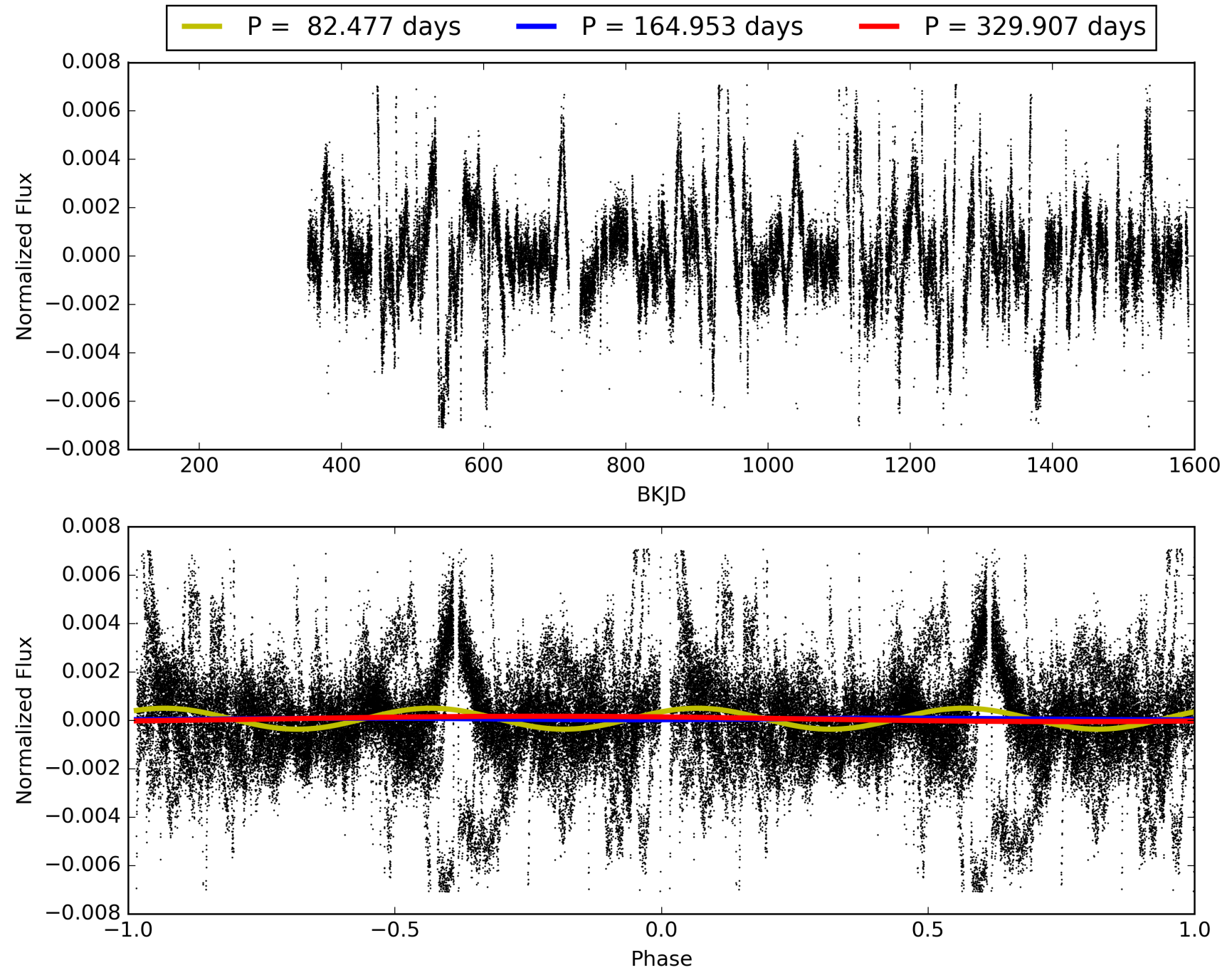
## DV Diagnostic Results:

ShortPeriod-sig: 0.2% [0.00 $\sigma$ ]  
LongPeriod-sig: 100.0% [178.21 $\sigma$ ]  
ModelChiSquare2-sig: N/A  
ModelChiSquareGof-sig: N/A  
Bootstrap-pfa: 0.00e+00  
RollingBand-fgt: 0.71 [5/7]  
GhostDiagnostic-chr: -0.3713  
Centroid-sig: 0.0%  
Centroid-so: 2.153 arcsec [26.15 $\sigma$ ]  
OotOffset-rm: 2.873 arcsec [10.45 $\sigma$ ]  
KicOffset-rm: 0.195 arcsec [1.30 $\sigma$ ]  
OotOffset-st: 1/0/1/0 [2]  
KicOffset-st: 1/0/1/0 [2]  
DiffImageQuality-fgm: 1.00 [2/2]  
DiffImageOverlap-fno: 0.00 [0/2]

# TCE 008308347-01, PDC Light Curves

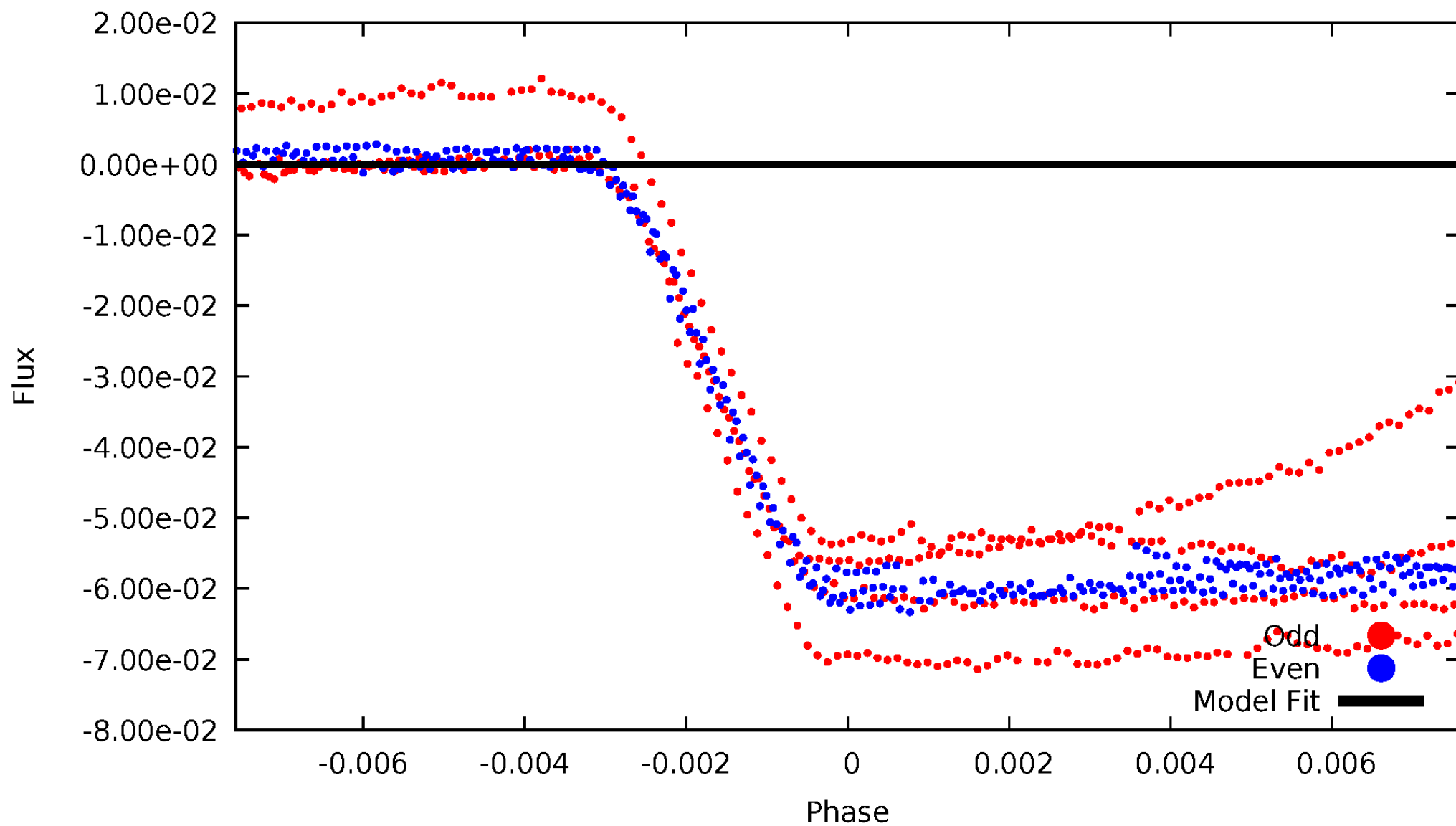


# TCE 008308347-01



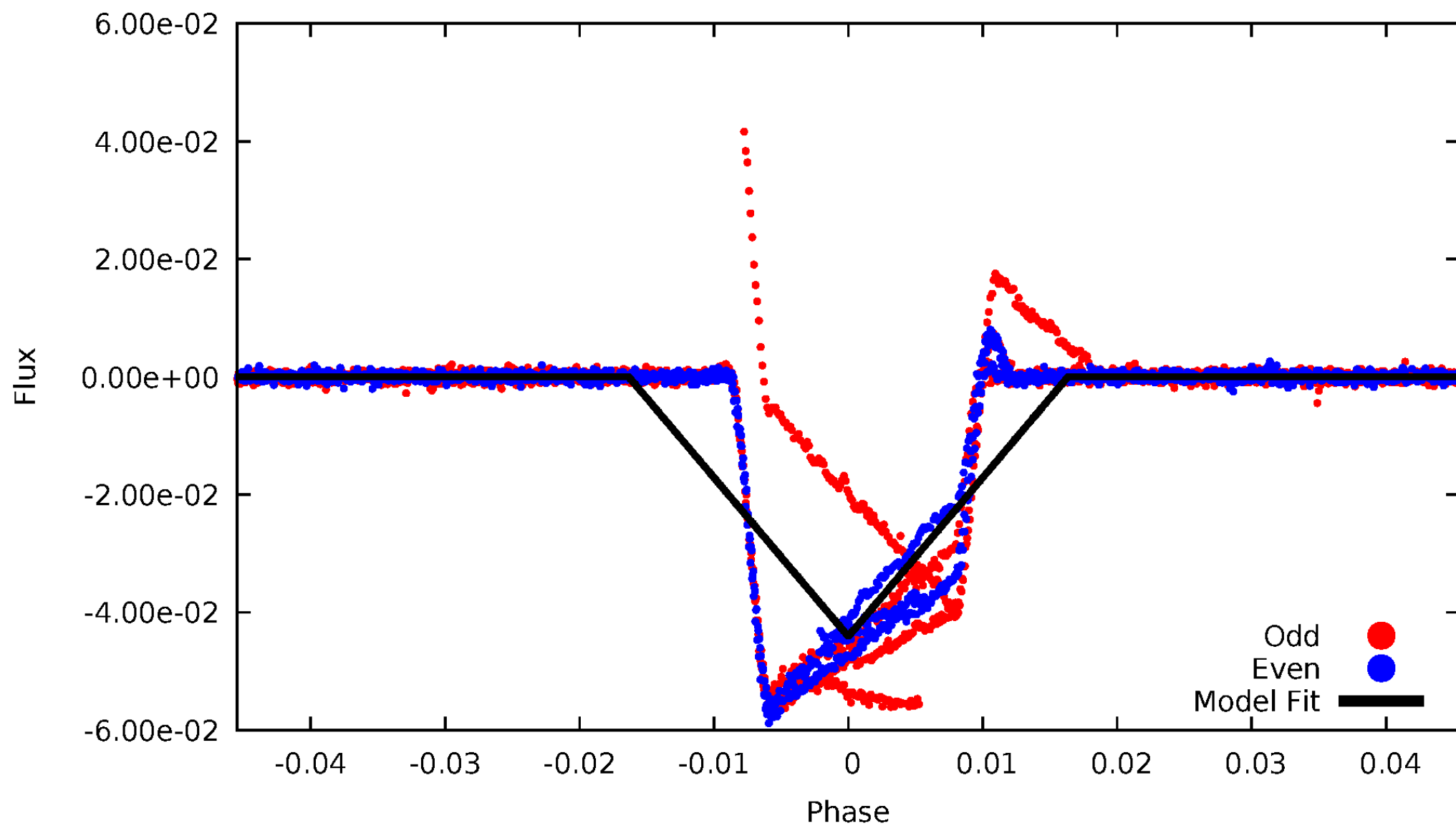
# DV Odd/Even

TCE 008308347-01



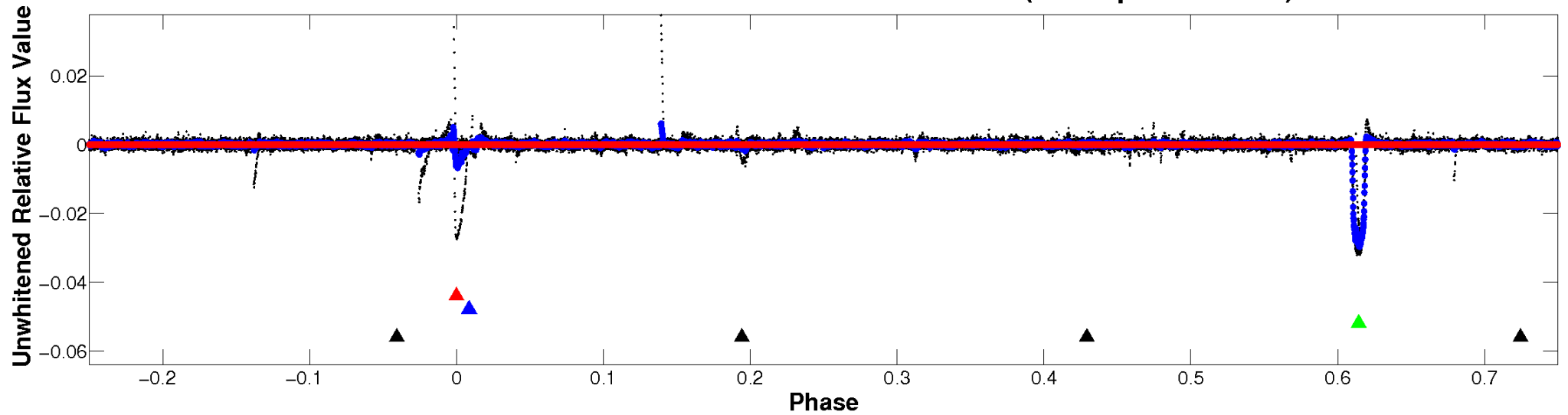
# ALT Odd/Even

TCE 008308347-01

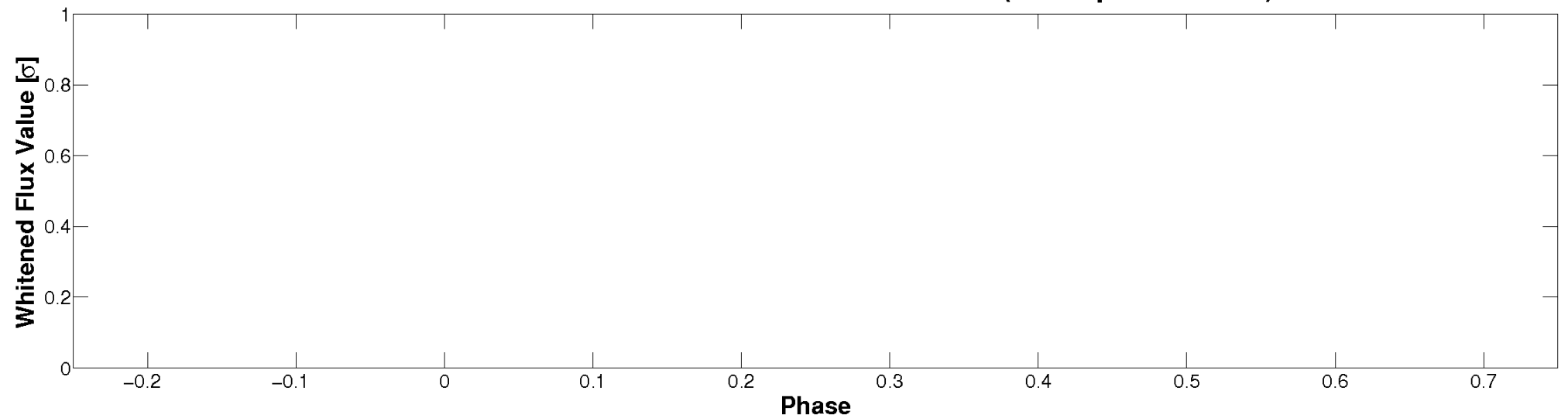


# Non-Whitened Vs. Whitened Light Curve

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

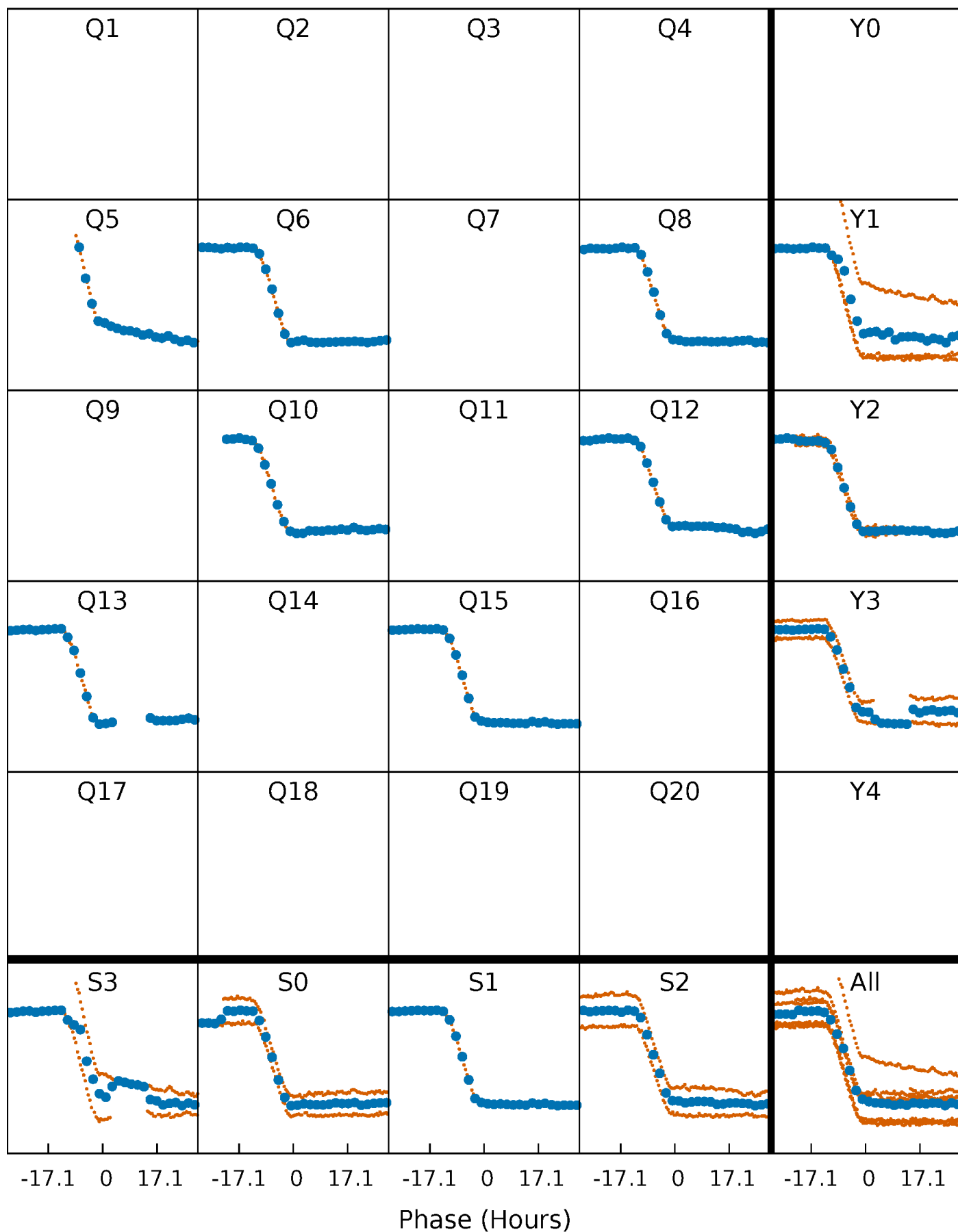


Planet 1 : Phased Whitened Flux Time Series (TPS Epoch/Period)



# PDC Quarter-Phased Transit Curves

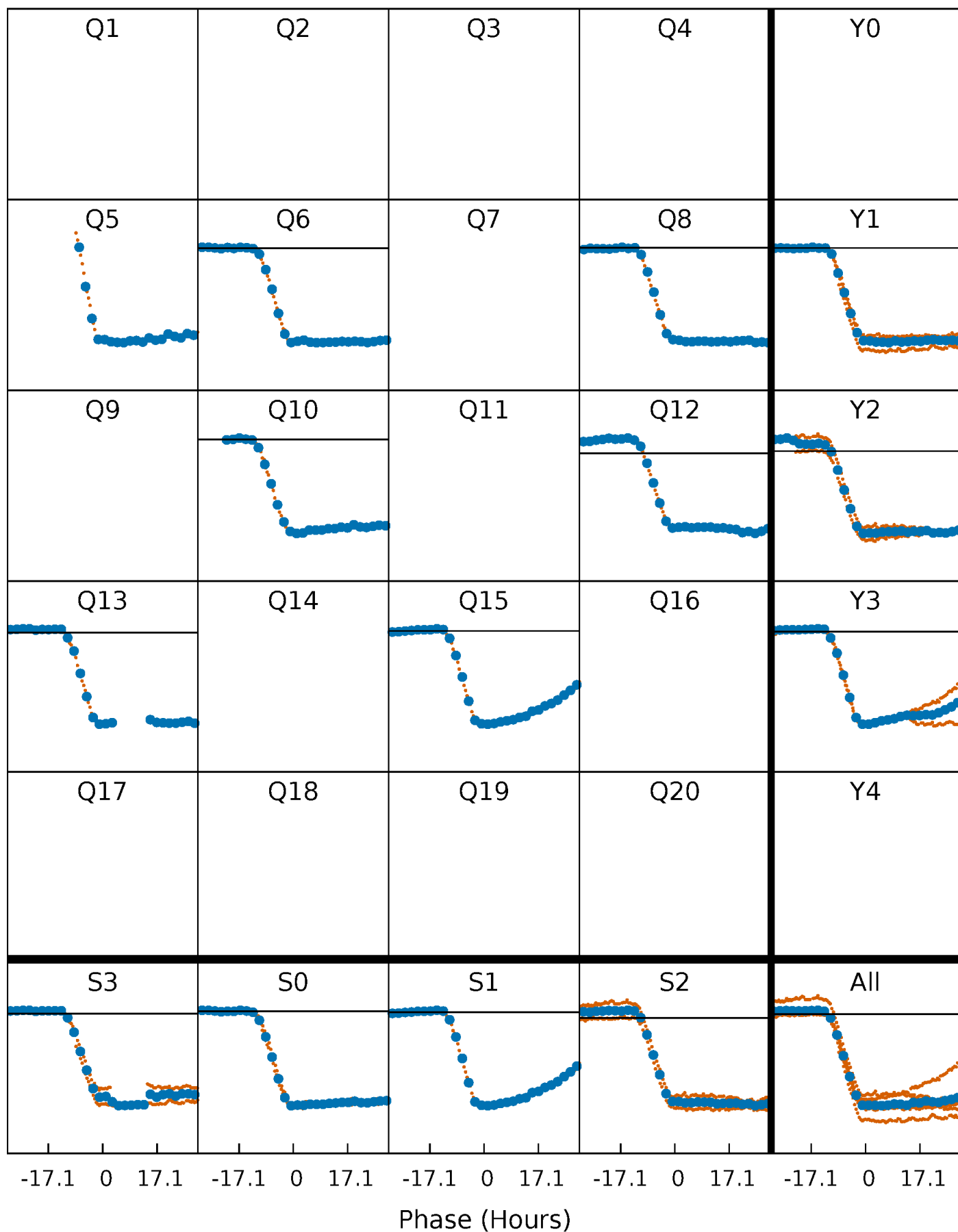
TCE 008308347-01 P=164.953319 Days  $T_0=278.905073$  (BKJD)





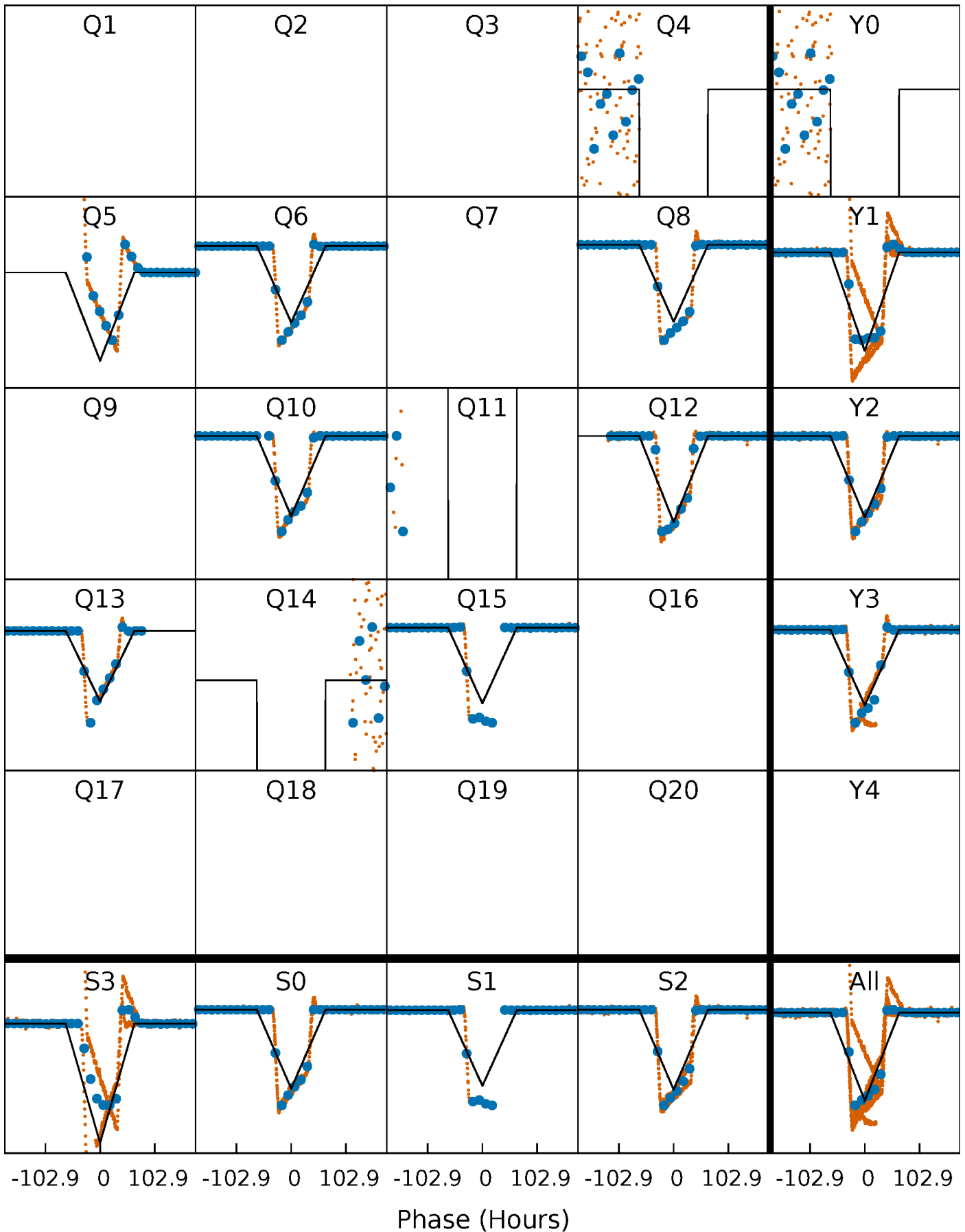
# DV Quarter-Phased Transit Curves

TCE 008308347-01 P=164.953319 Days  $T_0=278.905073$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

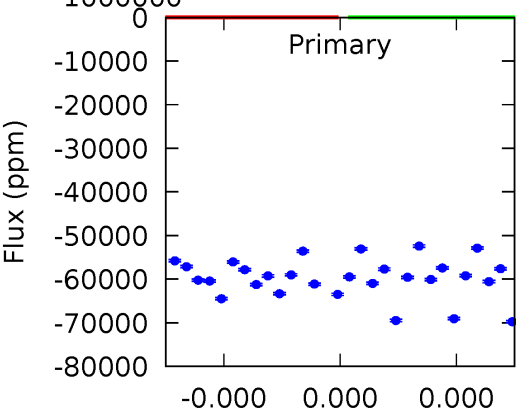
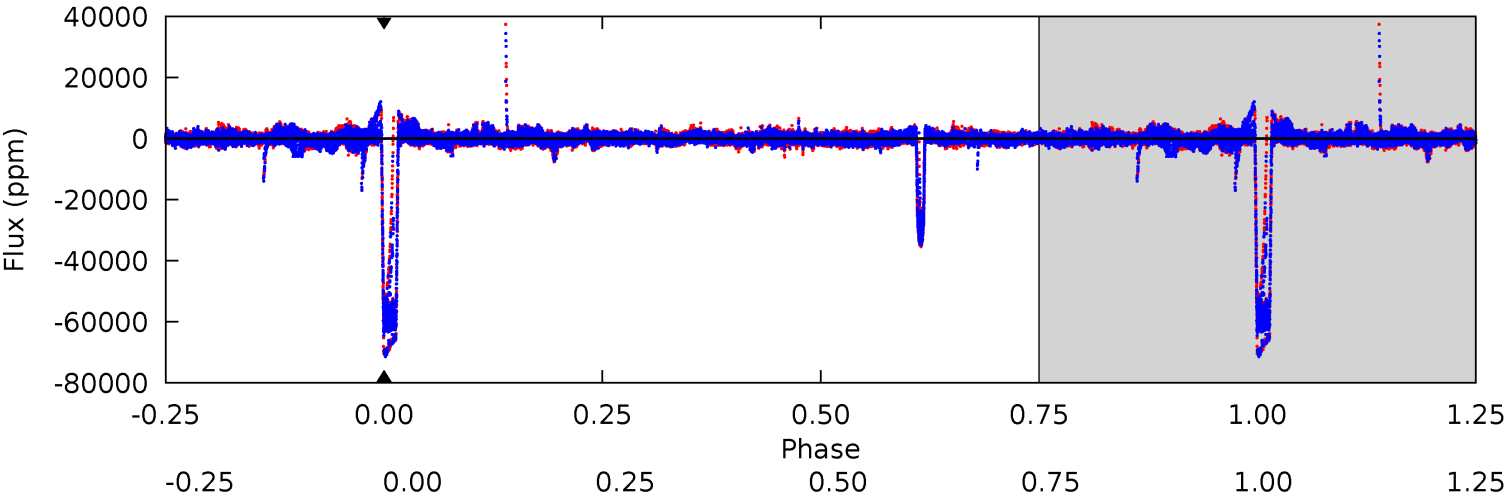
TCE 008308347-01 P=164.953319 Days  $T_0=279.837764$  (BKJD)



# DV Model-Shift Uniqueness Test

008308347-01, P = 164.953319 Days, E = 278.905073 Days

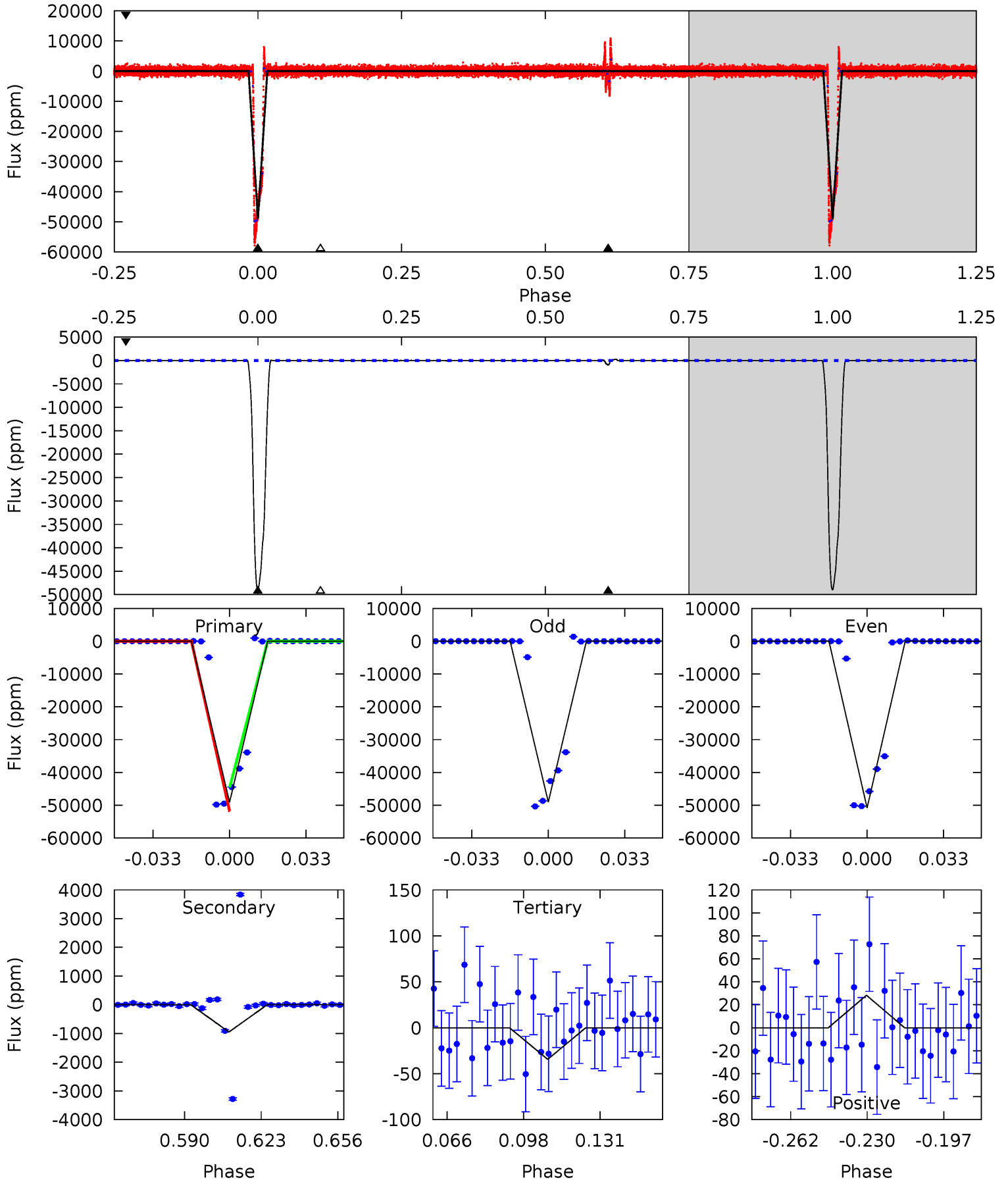
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
0	0	0	0	1.00	1.00	1.00	0	0	0	0	0	0	0	0



# Alt Model-Shift Uniqueness Test

008308347-01, P = 164.953319 Days, E = 279.837764 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
2796	54.1	1.96	1.61	4.79	2.13	0.61	2794	2794	52.1	52.5	45.1	0.93	0.01	164.4



### Stellar Parameters For KIC 008308347

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$5001^{+191}_{-174}$	$4.603^{+0.066}_{-0.048}$	$-0.580^{+0.350}_{-0.300}$	$0.664^{+0.070}_{-0.064}$	$0.645^{+0.083}_{-0.036}$	$3.100^{+0.850}_{-0.558}$
	+4%/-3%	+1%/-1%	+60%/-52%	+11%/-10%	+13%/-6%	+27%/-18%
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 008308347-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	$A_{obs}$
DV	$0 \pm 1000000$	$7.94^{+6.57}_{-5.35}$	$350^{+17}_{-14}$	$-3759^{+14555}_{-6491}$	$-6246.633^{+421904.874}_{-331214.640}$
Alt.	$-948 \pm 18$	$17.29^{+7.71}_{-6.71}$	$352^{+16}_{-14}$	$2602^{+368}_{-229}$	$463^{+750}_{-244}$

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

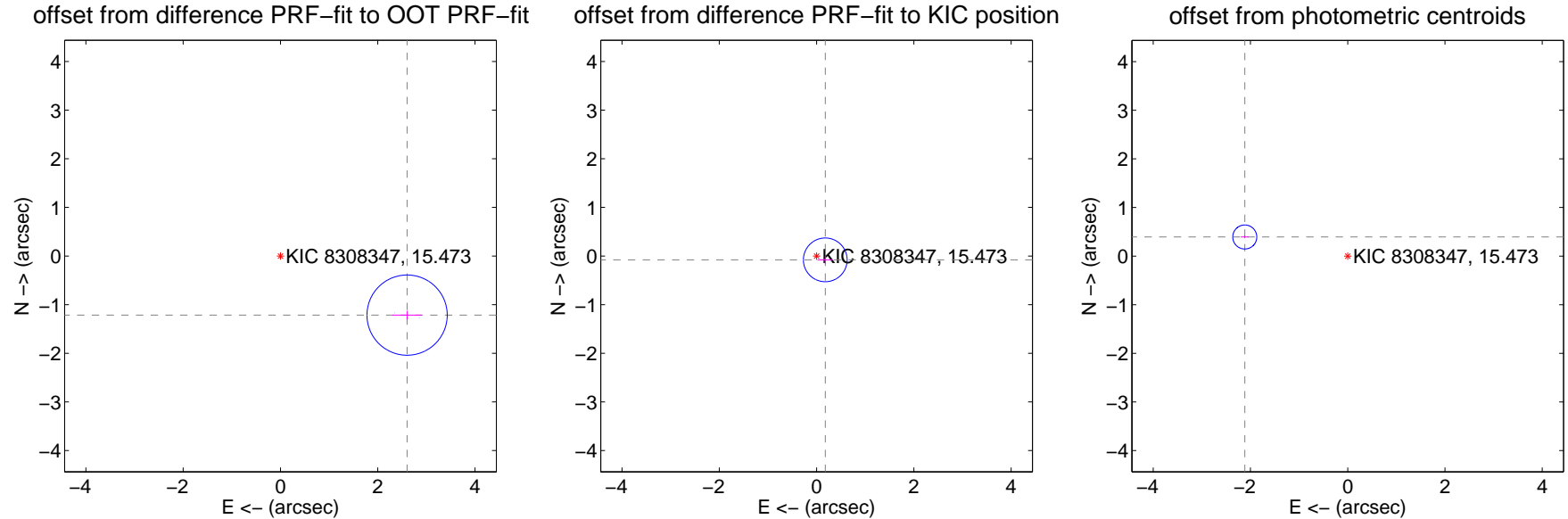
## DV Centroid Data

Supplemental centroid analysis for 008308347-01. Kepler magnitude: 15.47. Transit SNR -1.00

There are 2 quarters with good PRF difference image offsets

The OOT PRF centroid is offset from the target star catalog position by about 3.06 arcsec so the offset from difference PRF-fit to OOT-fit may be invalid.

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$2.873 \pm 0.275$	10.45	$-2.603 \pm 0.301$	$-1.215 \pm 0.088$
PRF-fit source offset from KIC position	$0.195 \pm 0.150$	1.30	$-0.179 \pm 0.160$	$-0.079 \pm 0.080$
photometric centroid source offset	$2.15 \pm 0.08$	26.15	$2.12 \pm 0.08$	$0.39 \pm 0.03$

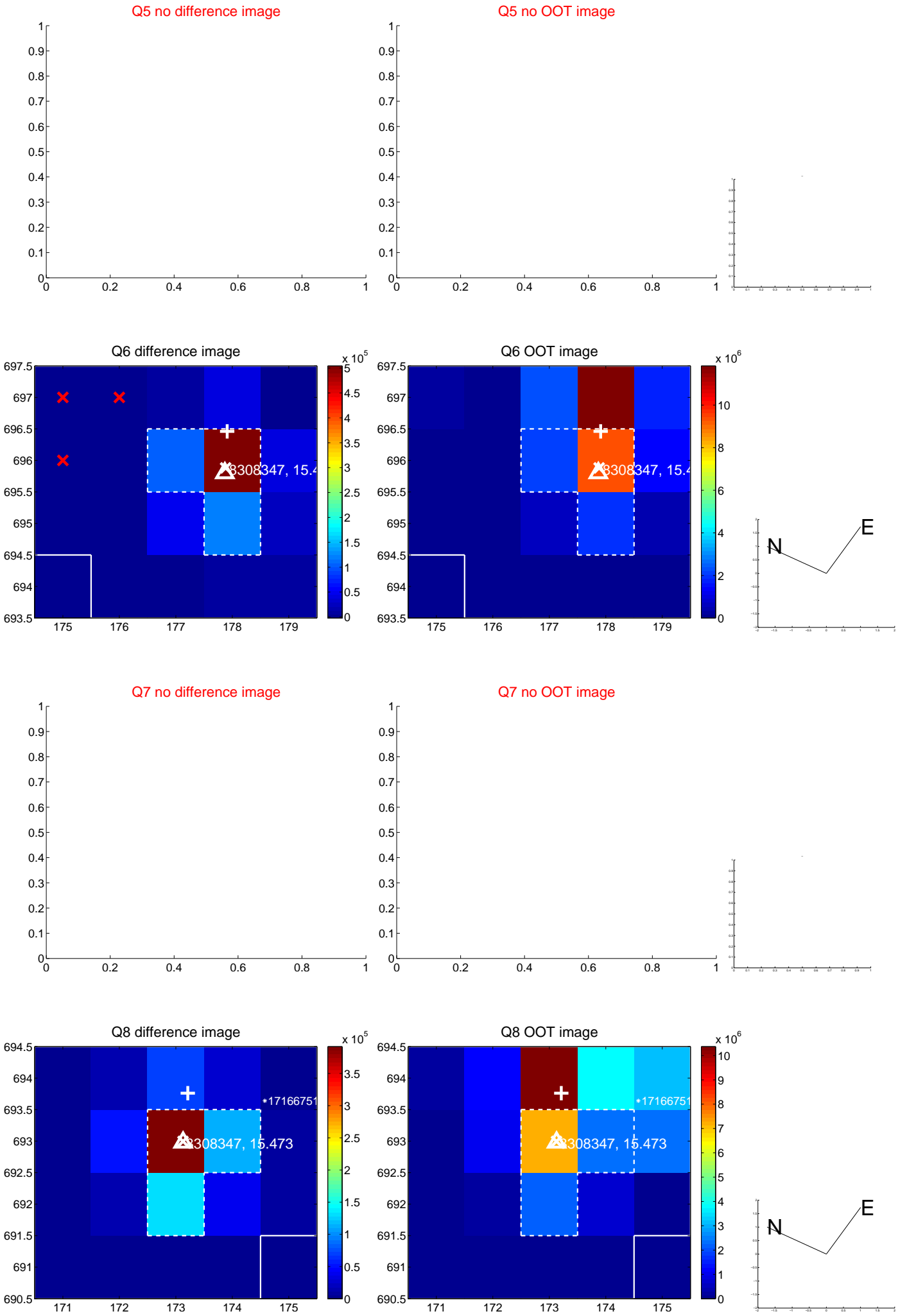


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: three-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





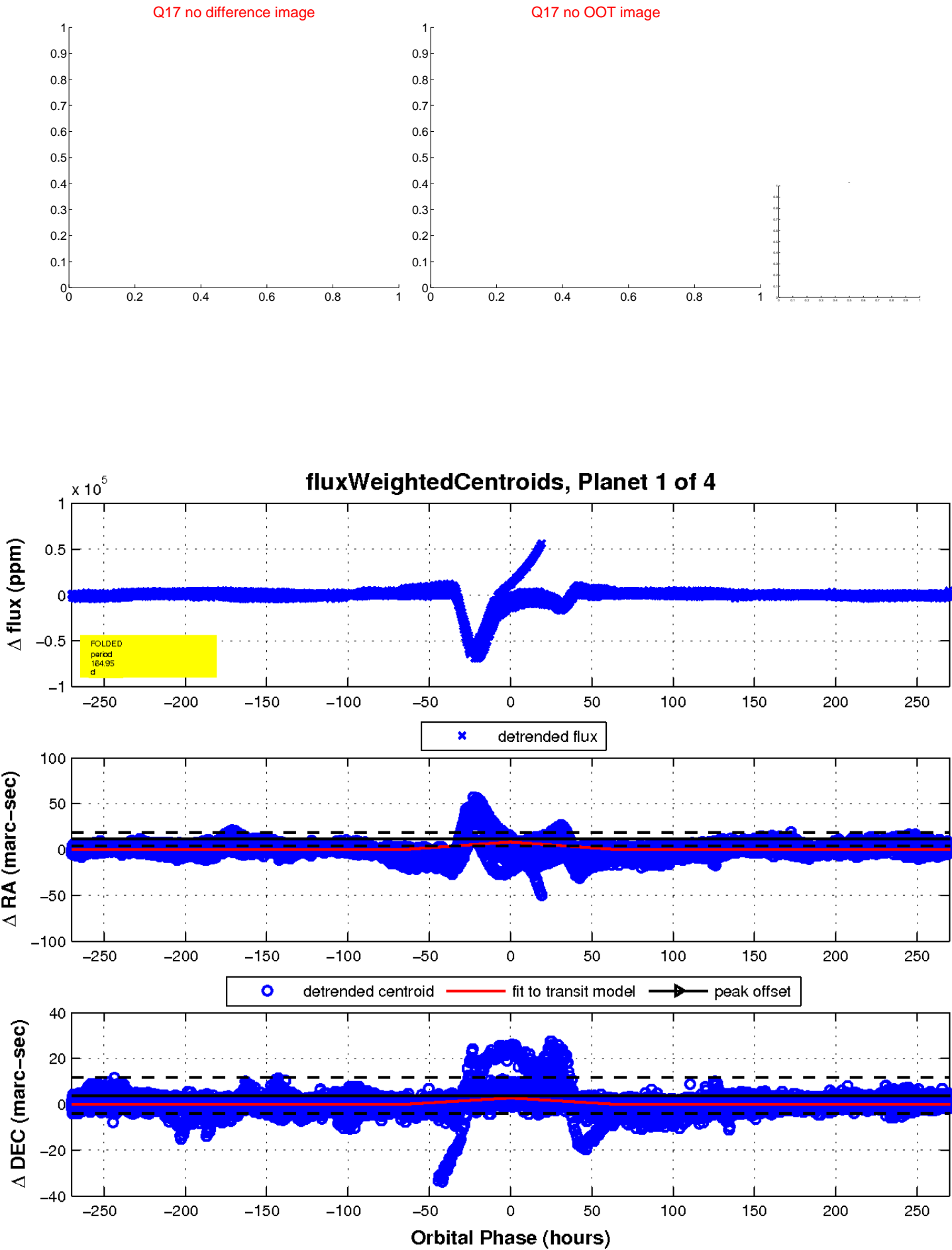
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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

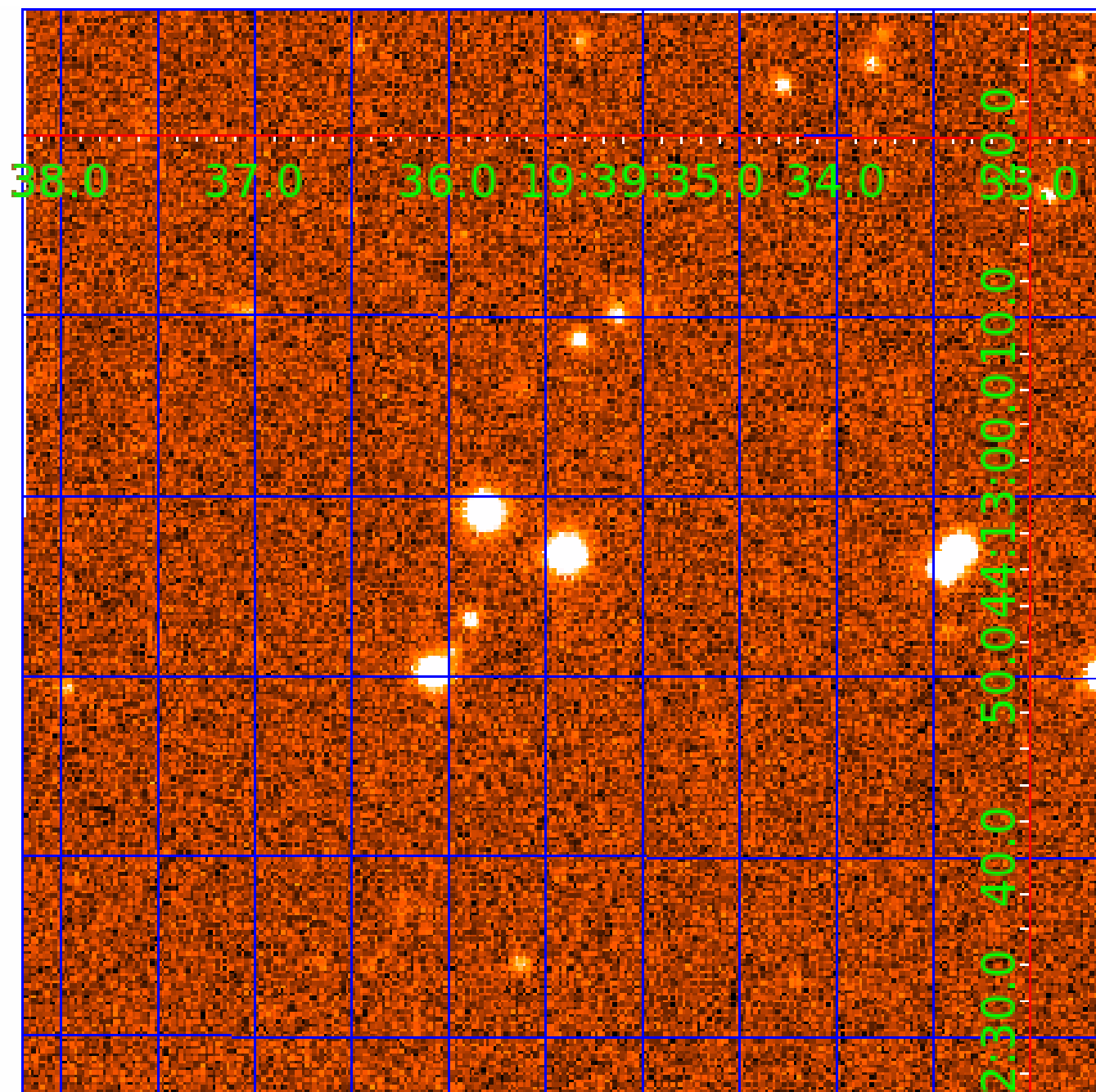


white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



# UKIRT Image

Declination



# KIC 008308347

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
008308347-01	OBS	No	164.953319	278.905073	7980.5	15.000	134.5	-1.0	0.66	5001	5.79	0.95
008308347-02	OBS	3761.01	164.939202	280.375008	56955.8	66.156	119.7	149.3	0.66	5001	15.49	0.95
008308347-03	OBS	No	164.948459	215.311566	33572.5	40.294	106.7	248.3	0.66	5001	11.92	0.95

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008308347-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—CENT_NOFITS
008308347-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL_SKYE—SAME_NTL_PERIOD—CENT_FEW_DIFFS
008308347-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL—SAME_NTL_PERIOD—CENT_FEW_DIFFS

**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.

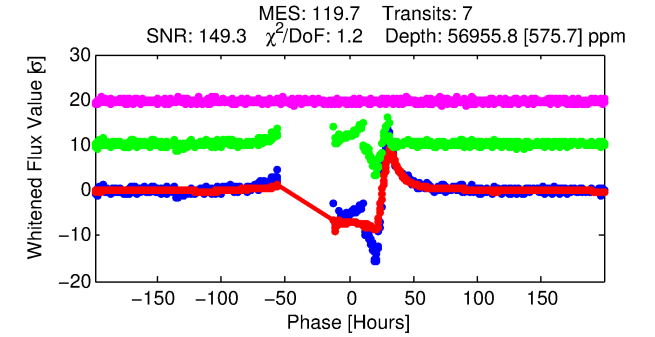
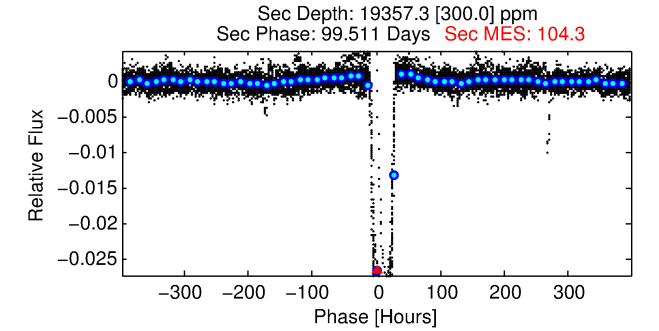
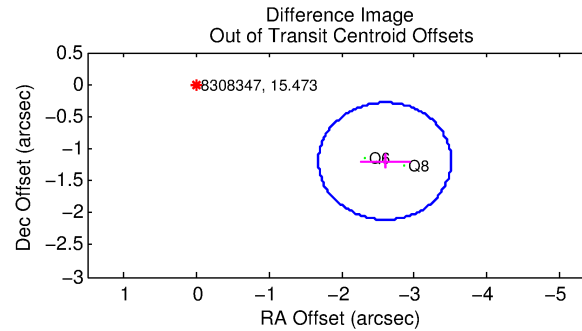
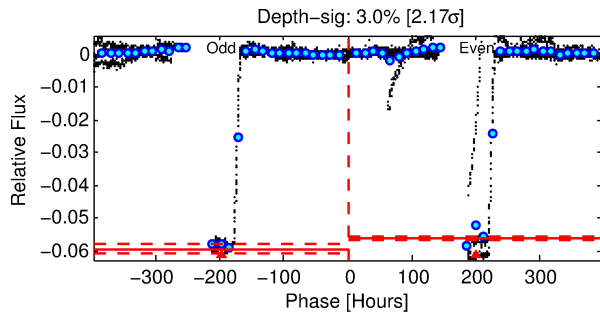
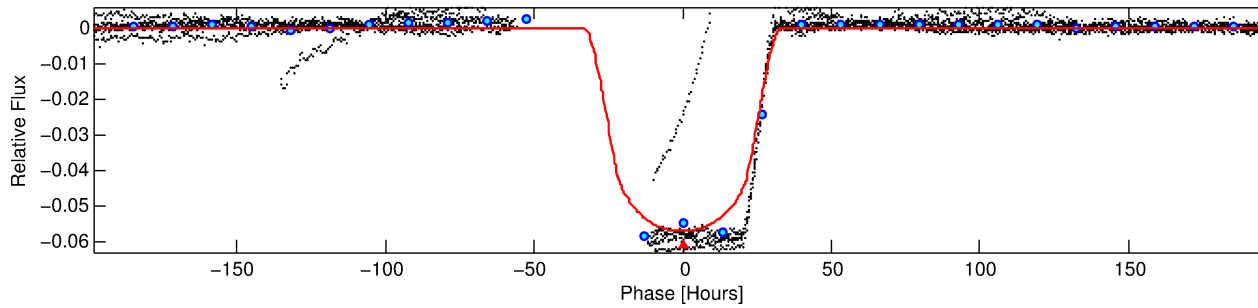
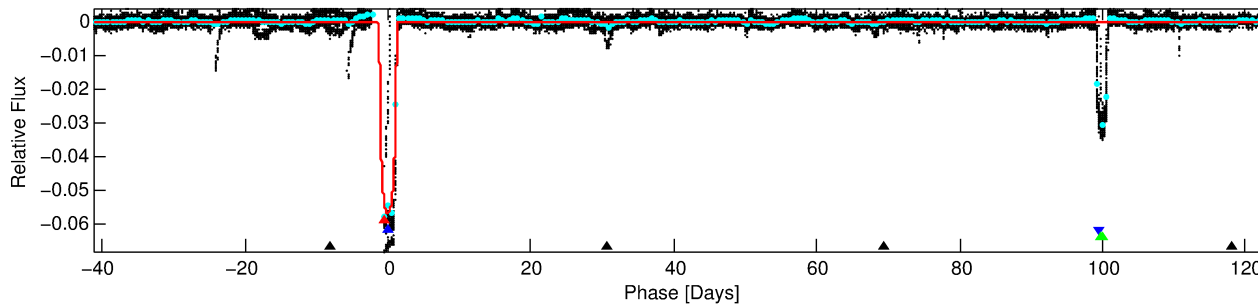
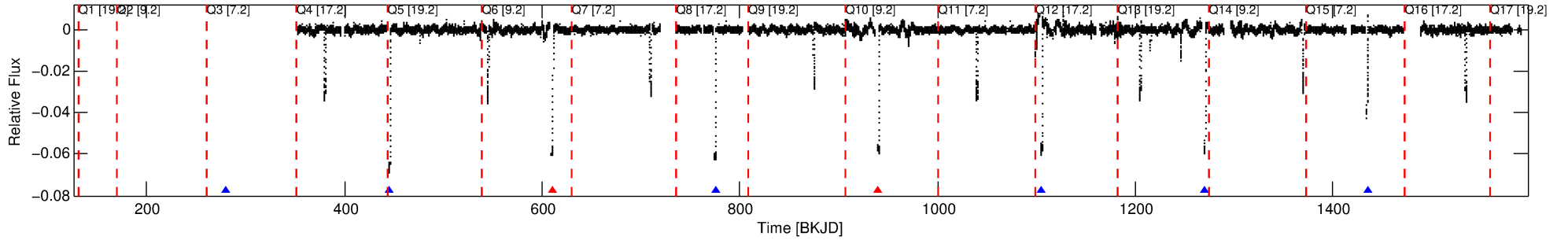
## Ephemeris Match Information For 008308347-02

No Significant Match Found

# DV One-Page Summary

KIC: 8308347 Candidate: 2 of 4 Period: 164.939 d  
KOI: K03761 Corr: No Ephemeris Match

Kp: 15.47 R\*: 0.66 Rs Teff: 5001.0 K Logg: 4.60 Fe/H: -0.580



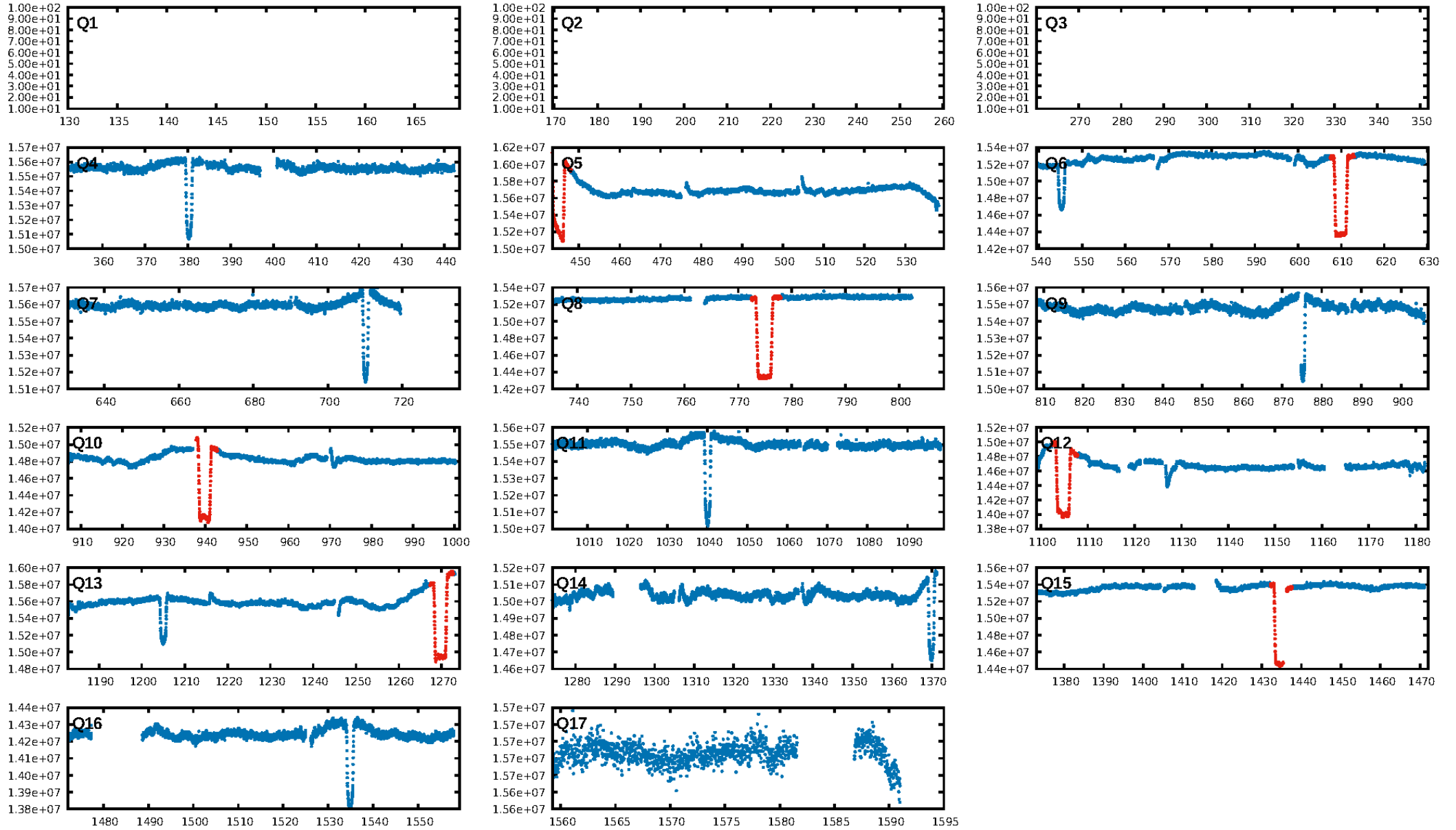
## DV Fit Results:

Period = 164.93920 [0.00151] d  
Epoch = 280.3750 [0.0119] BKJD  
Rp/R\* = 0.2137 [0.0011]  
a/R\* = 23.13 [0.22]  
b = 0.01 [0.86]  
Seff = 0.96 [0.19]  
Teq = 252 [12] K  
Rp = 15.49 [1.63] Re  
a = 0.5086 [0.0441] AU  
Ag = 11484.57 [1431.81] [8.02σ]  
Teffp = 4035 [155] K [24.29σ]

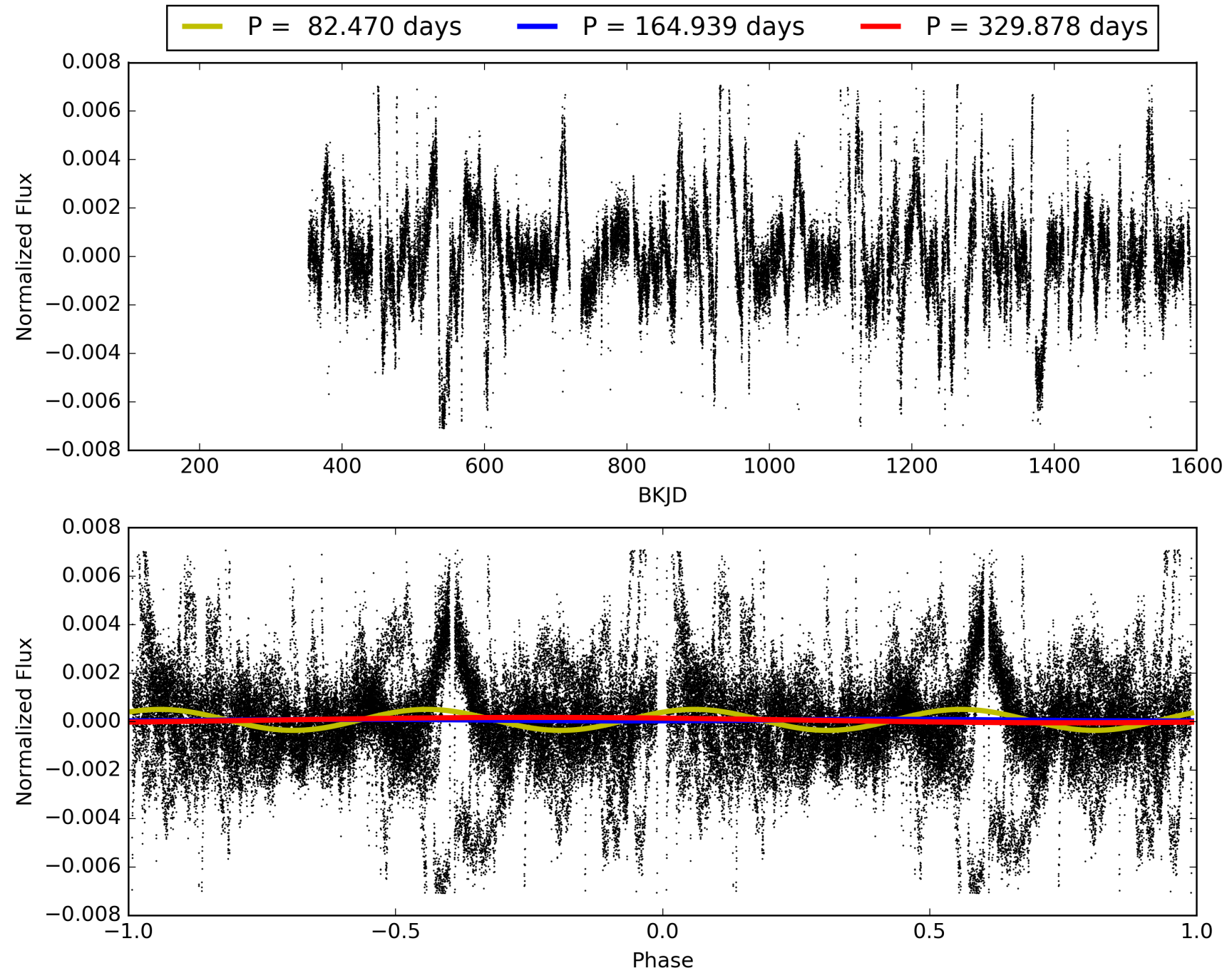
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: 0.2% [0.00σ]  
ModelChiSquare2-sig: 0.0%  
ModelChiSquareGof-sig: 100.0%  
Bootstrap-pfa: 0.00e+00  
RollingBand-fgt: 0.71 [5/7]  
GhostDiagnostic-chr: 0.3384  
Centroid-sig: 0.0%  
Centroid-so: 1.775 arcsec [30.21σ]  
OotOffset-rm: 2.857 arcsec [9.39σ]  
KicOffset-rm: 0.175 arcsec [1.34σ]  
OotOffset-st: 1/0/1/0 [2]  
KicOffset-st: 1/0/1/0 [2]  
DiffImageQuality-fgm: 1.00 [2/2]  
DiffImageOverlap-fno: 0.00 [0/2]

# TCE 008308347-02, PDC Light Curves



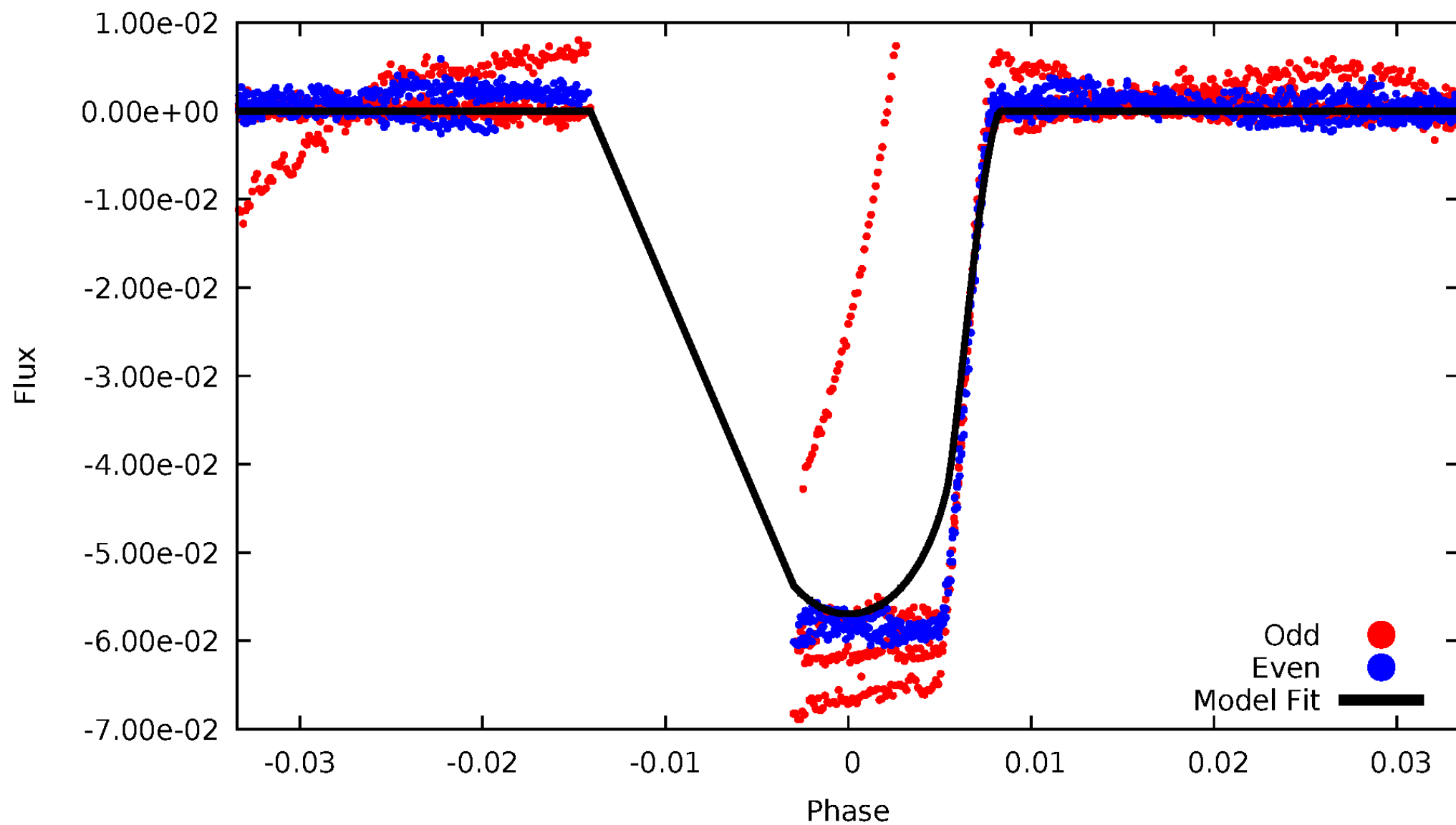
TCE 008308347-02





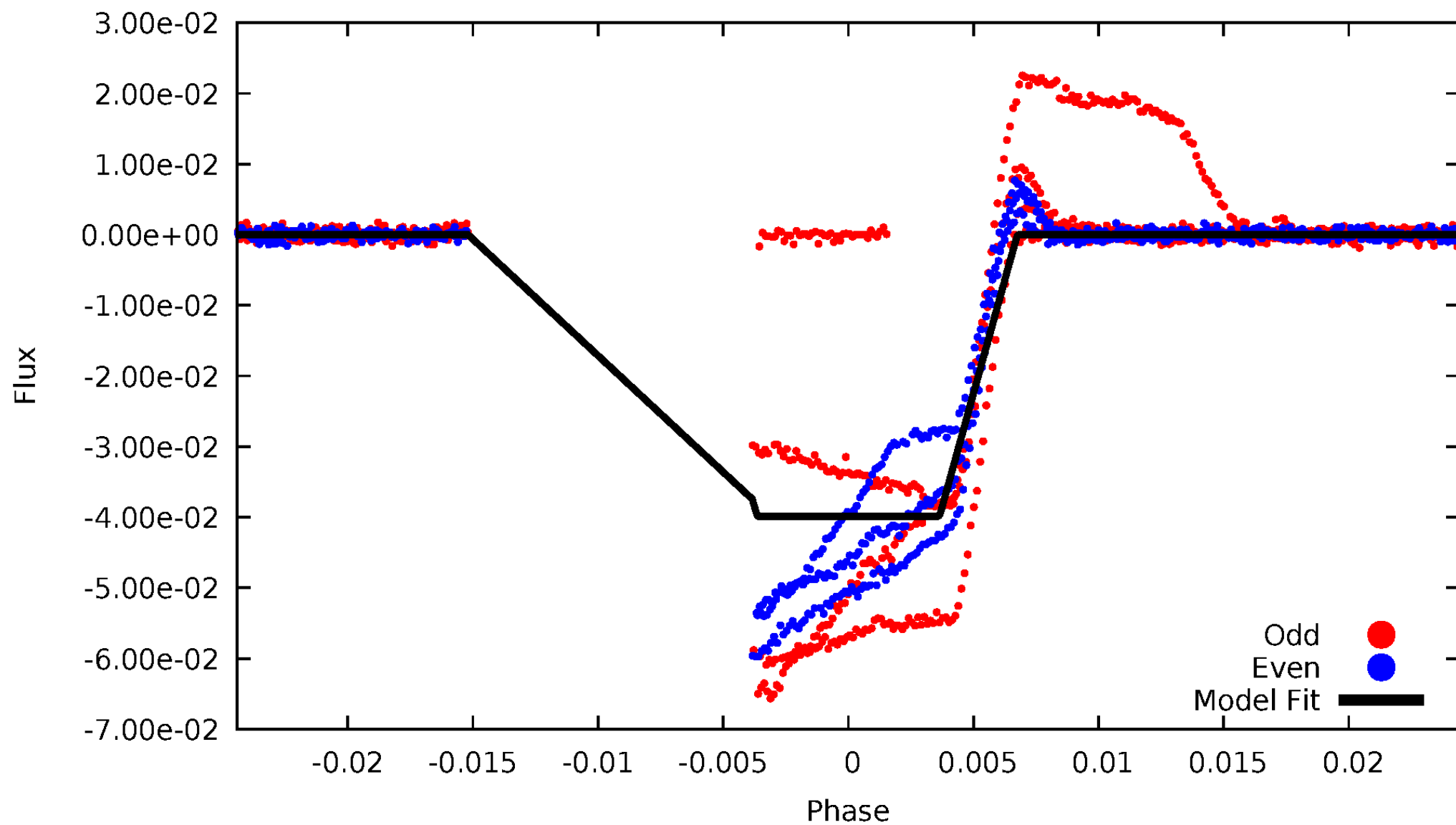
DV Odd/Even

TCE 008308347-02



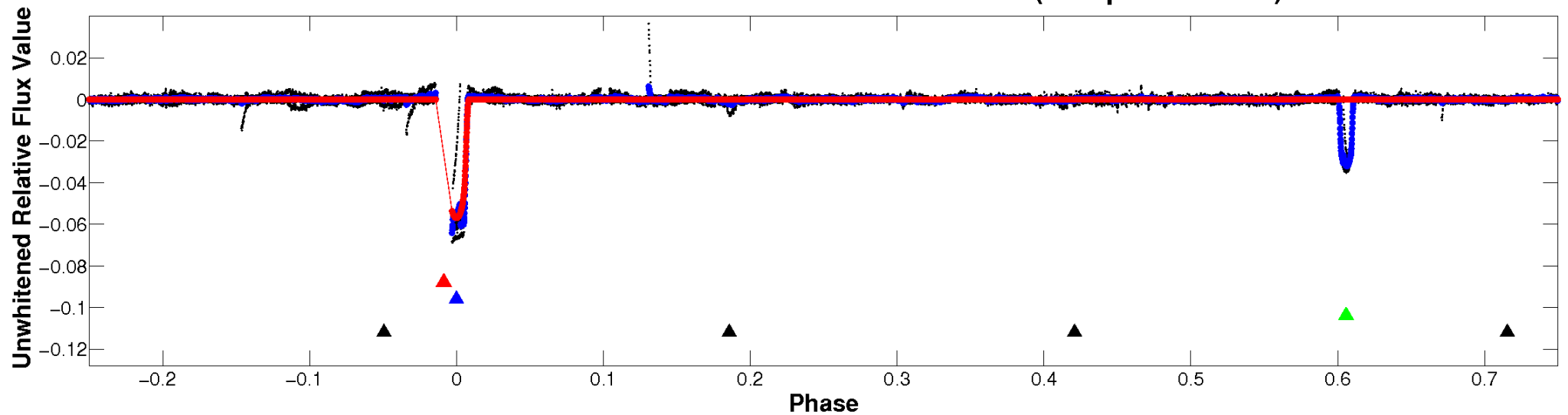
# ALT Odd/Even

TCE 008308347-02

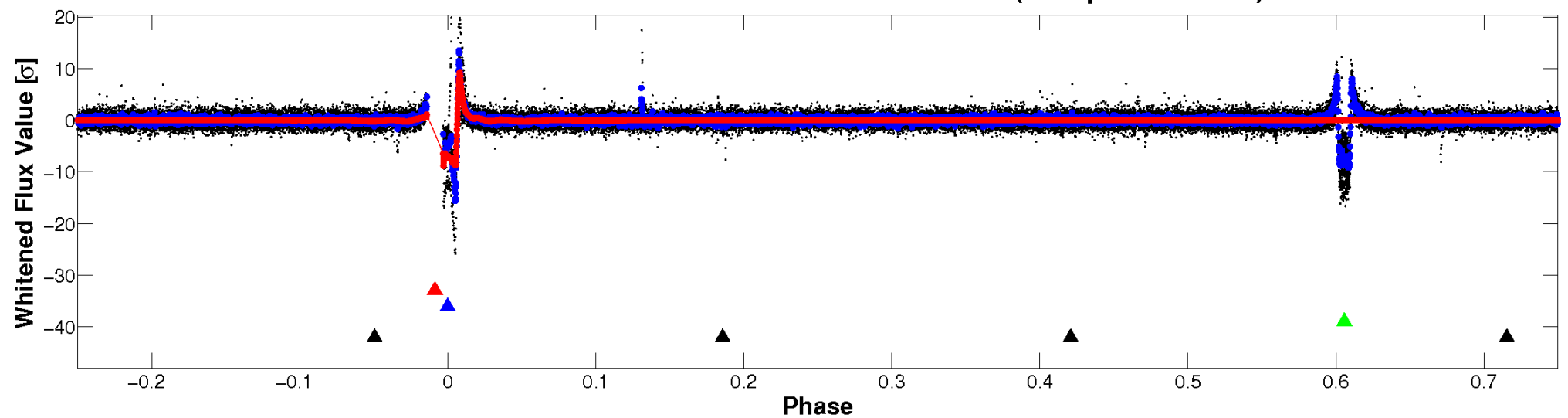


# Non-Whitened Vs. Whitened Light Curve

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

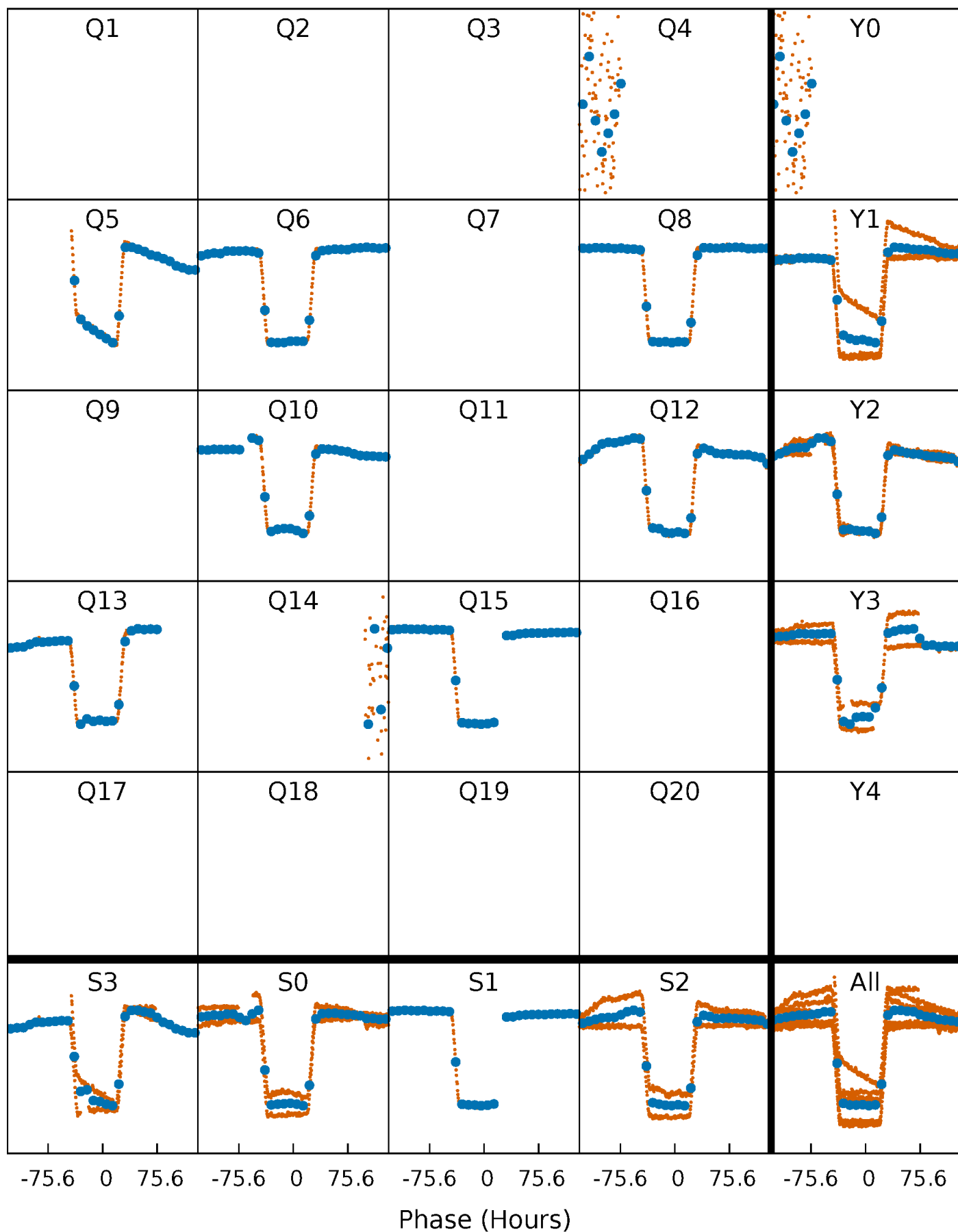


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



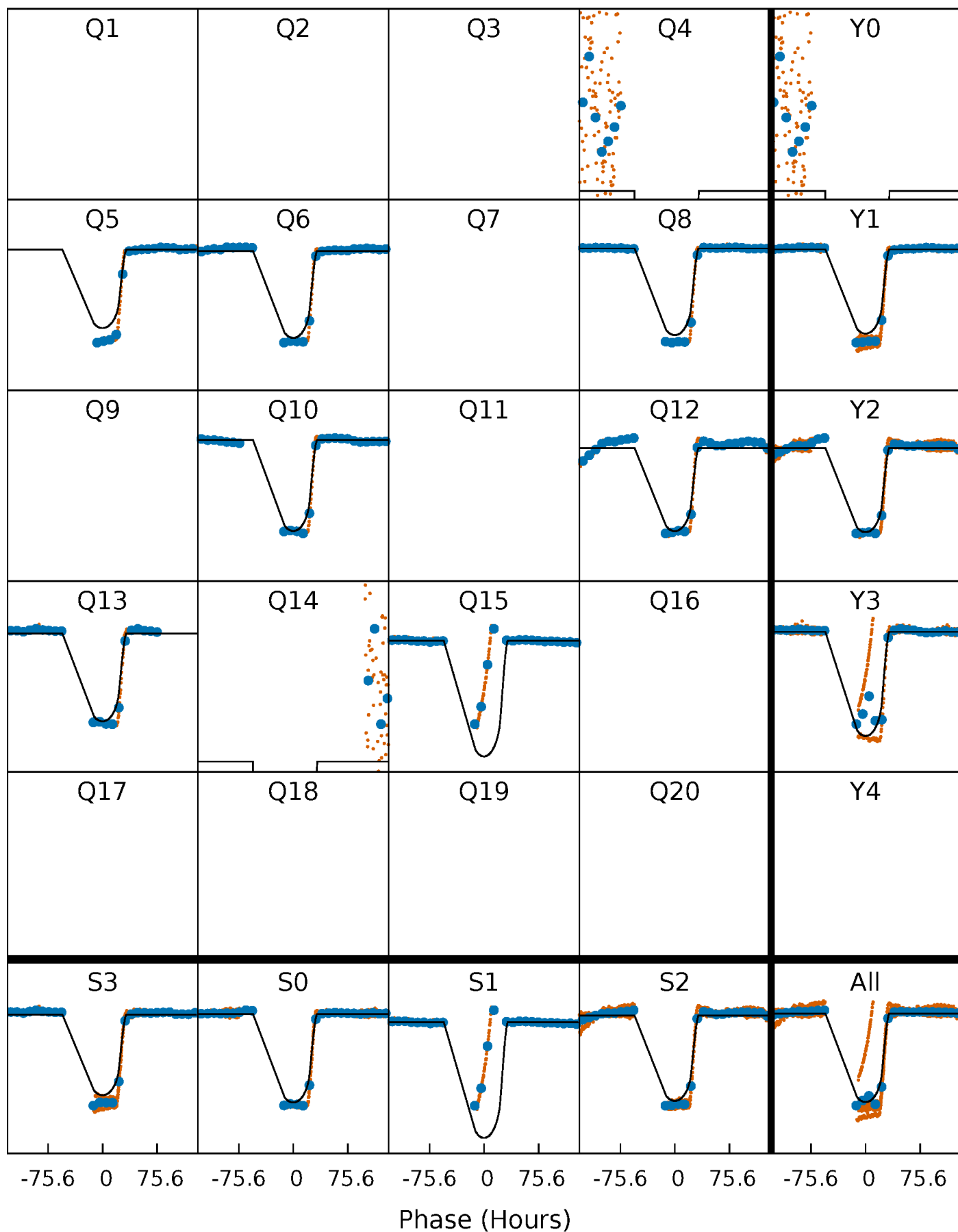
# PDC Quarter-Phased Transit Curves

TCE 008308347-02 P=164.939202 Days  $T_0=280.375008$  (BKJD)



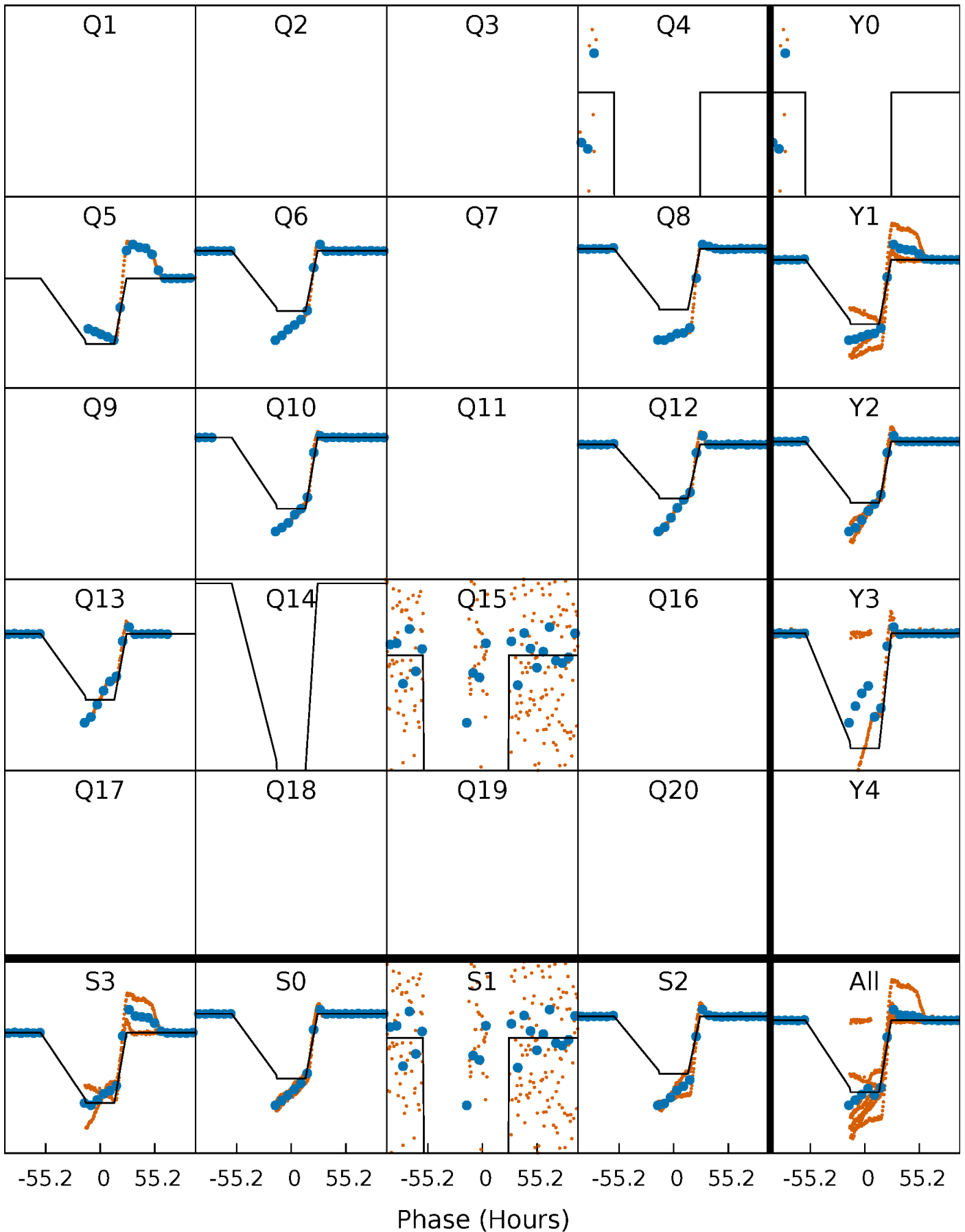
# DV Quarter-Phased Transit Curves

TCE 008308347-02 P=164.939202 Days  $T_0=280.375008$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

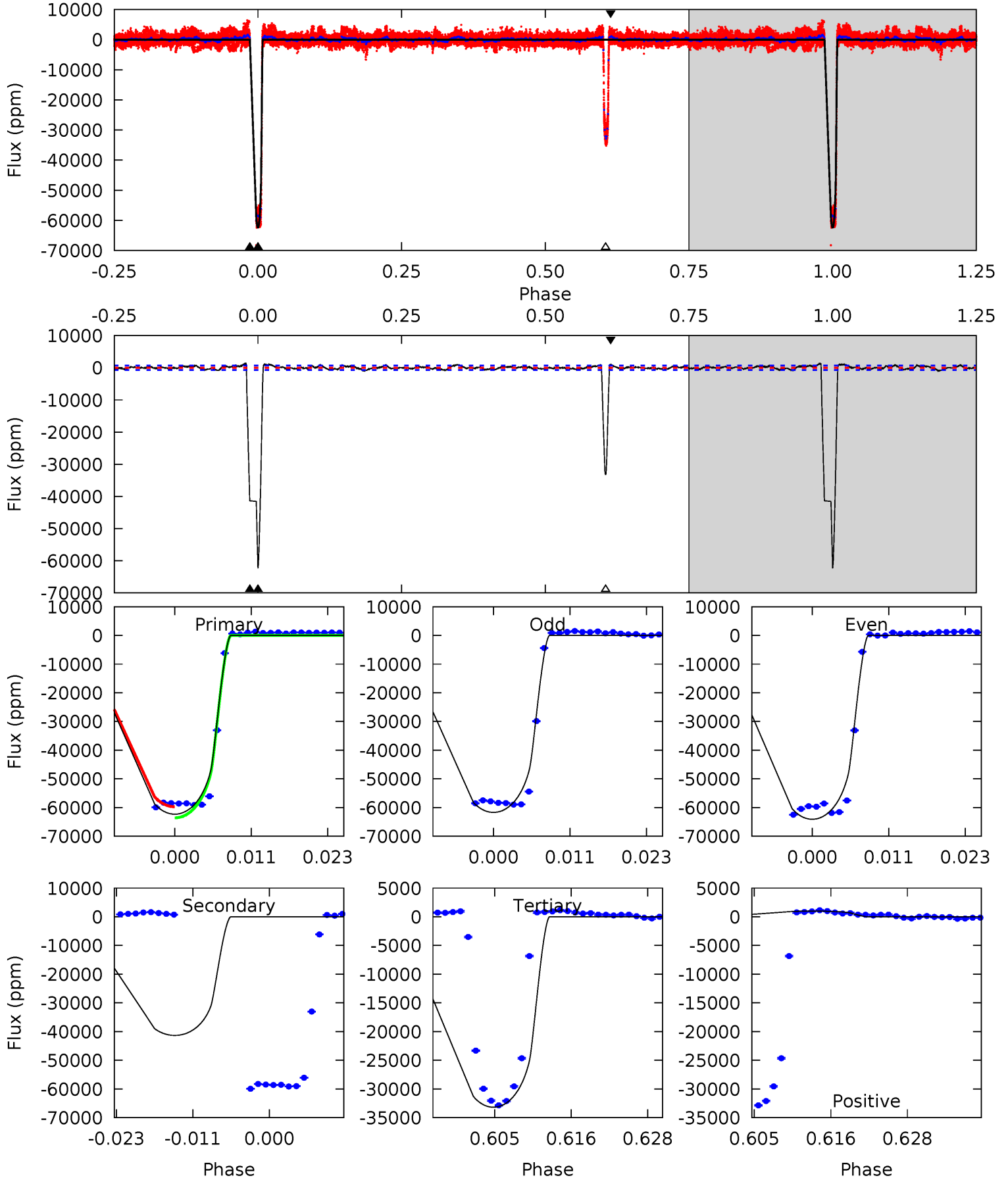
TCE 008308347-02 P=164.946507 Days  $T_0=280.501798$  (BKJD)



# DV Model-Shift Uniqueness Test

008308347-02, P = 164.939202 Days, E = 280.375008 Days

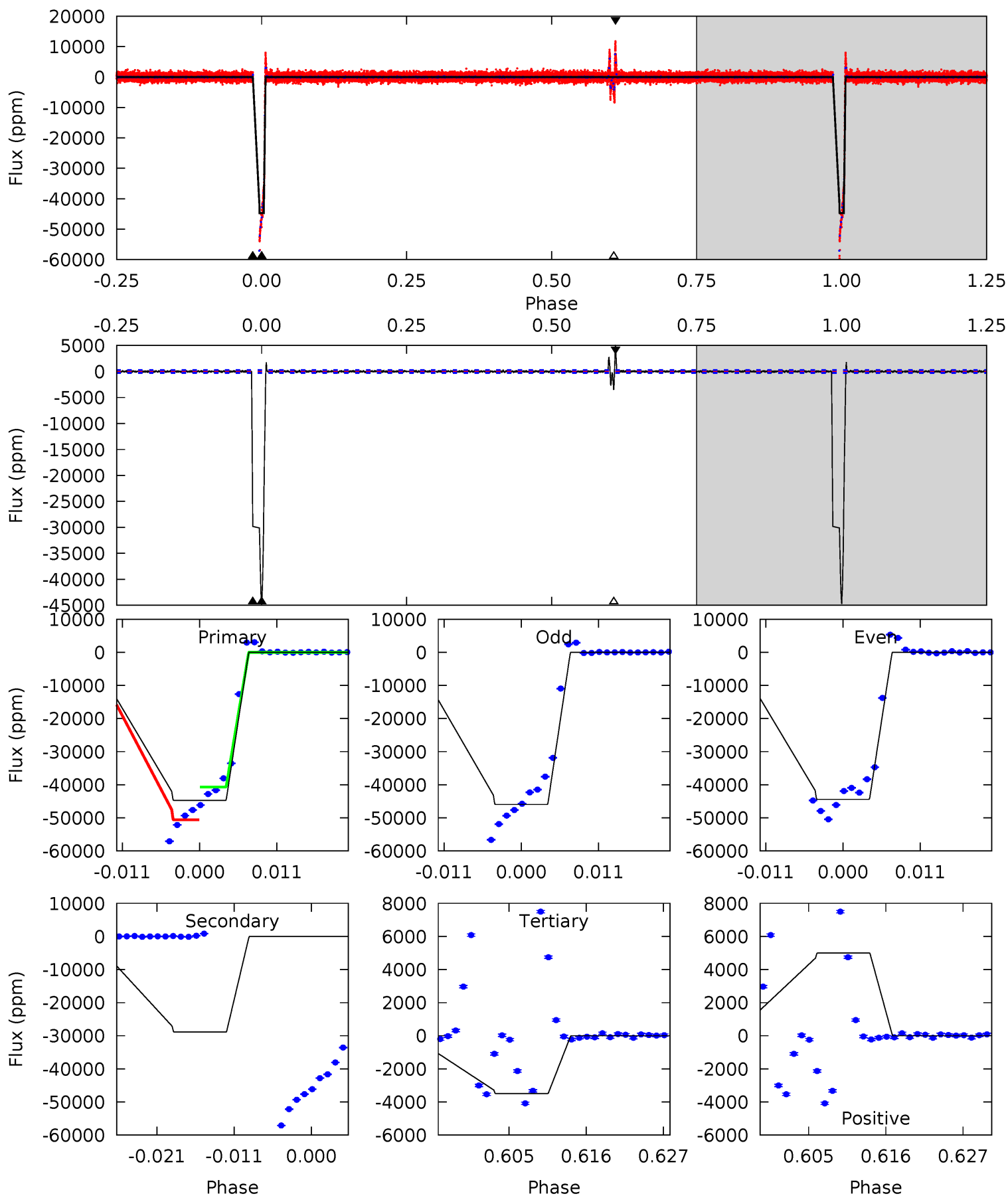
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
455.5	302.2	242.5	7.22	5.00	2.53	19.1	212.9	448.2	59.6	294.9	8.70	0.93	0.02	9.96



# Alt Model-Shift Uniqueness Test

008308347-02, P = 164.946507 Days, E = 280.501798 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
803.7	518.6	62.7	89.7	5.01	2.55	4.77	740.9	714.0	455.8	428.9	15.3	0.89	0.10	0





### Stellar Parameters For KIC 008308347

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$5001^{+191}_{-174}$	$4.603^{+0.066}_{-0.048}$	$-0.580^{+0.350}_{-0.300}$	$0.664^{+0.070}_{-0.064}$	$0.645^{+0.083}_{-0.036}$	$3.100^{+0.850}_{-0.558}$
	+4%/-3%	+1%/-1%	+60%/-52%	+11%/-10%	+13%/-6%	+27%/-18%
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 008308347-02 / KOI 3761.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	$A_{obs}$
DV	$-41343 \pm 137$	$15.48^{+0.90}_{-0.78}$	$351^{+15}_{-15}$	$4948^{+176}_{-172}$	$25848^{+2427}_{-2001}$
Alt.	$-28873 \pm 56$	$14.47^{+0.84}_{-0.76}$	$351^{+15}_{-15}$	$4710^{+168}_{-164}$	$20500^{+1908}_{-1830}$

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

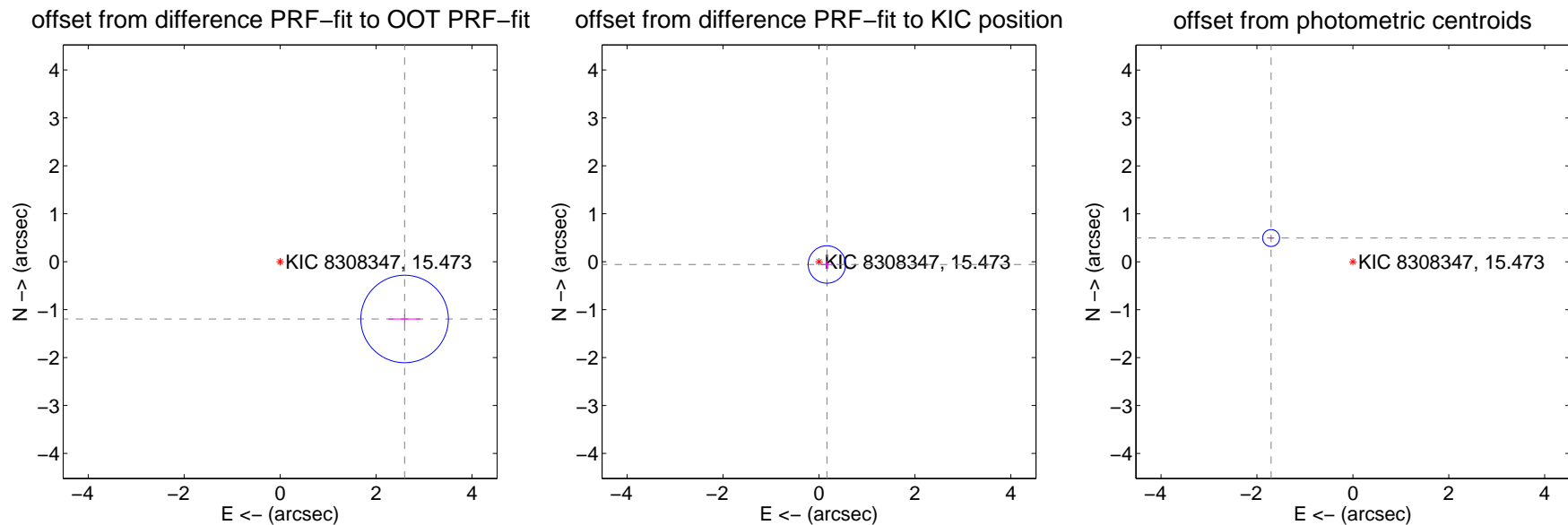
## DV Centroid Data

Supplemental centroid analysis for 008308347-02. Kepler magnitude: 15.47. Transit SNR 149.25

There are 2 quarters with good PRF difference image offsets

The OOT PRF centroid is offset from the target star catalog position by about 3.06 arcsec so the offset from difference PRF-fit to OOT-fit may be invalid.

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$2.857 \pm 0.304$	9.39	$-2.595 \pm 0.332$	$-1.195 \pm 0.094$
PRF-fit source offset from KIC position	$0.175 \pm 0.130$	1.34	$-0.165 \pm 0.135$	$-0.058 \pm 0.076$
photometric centroid source offset	$1.78 \pm 0.06$	30.21	$1.70 \pm 0.06$	$0.50 \pm 0.02$

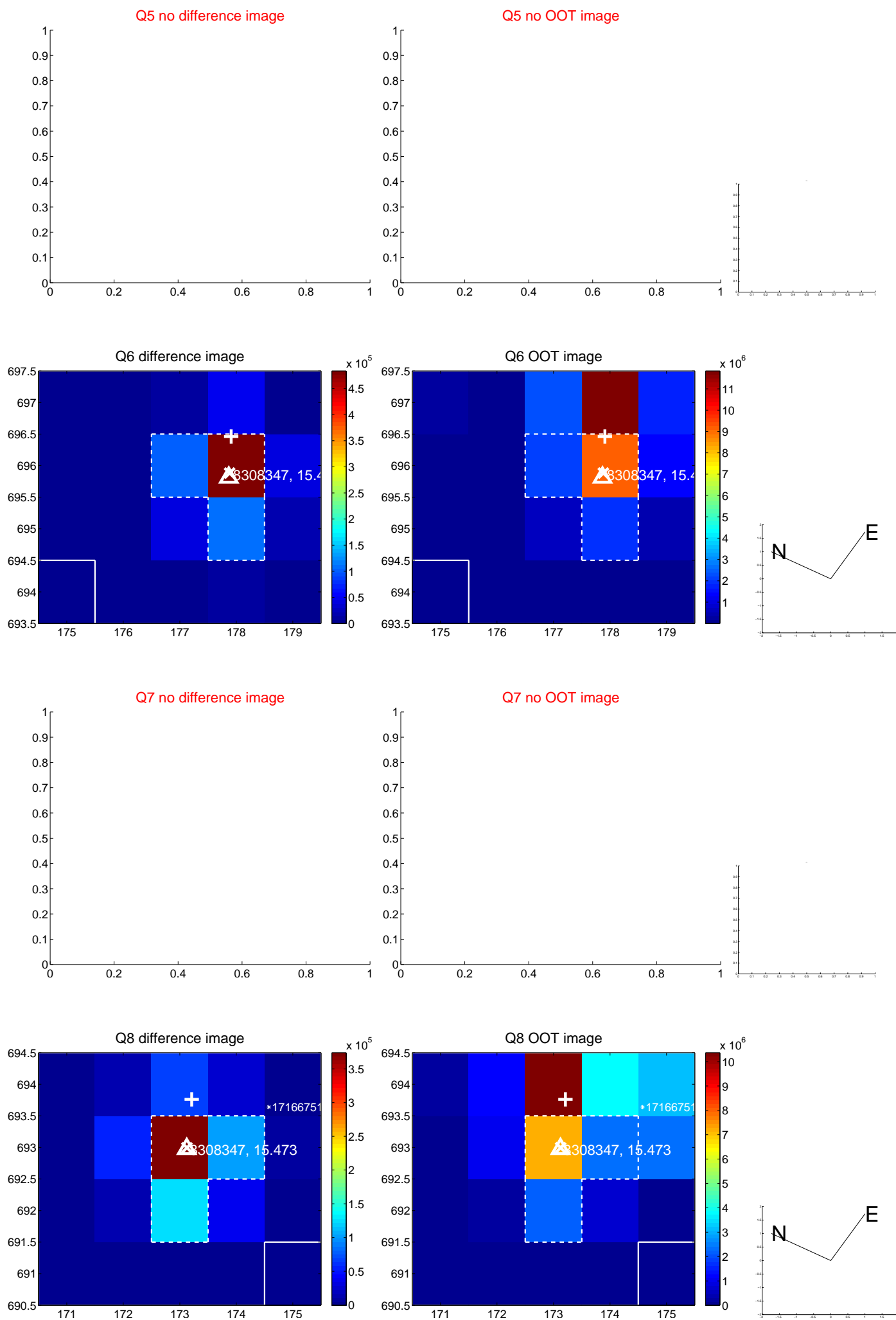


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: three-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



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



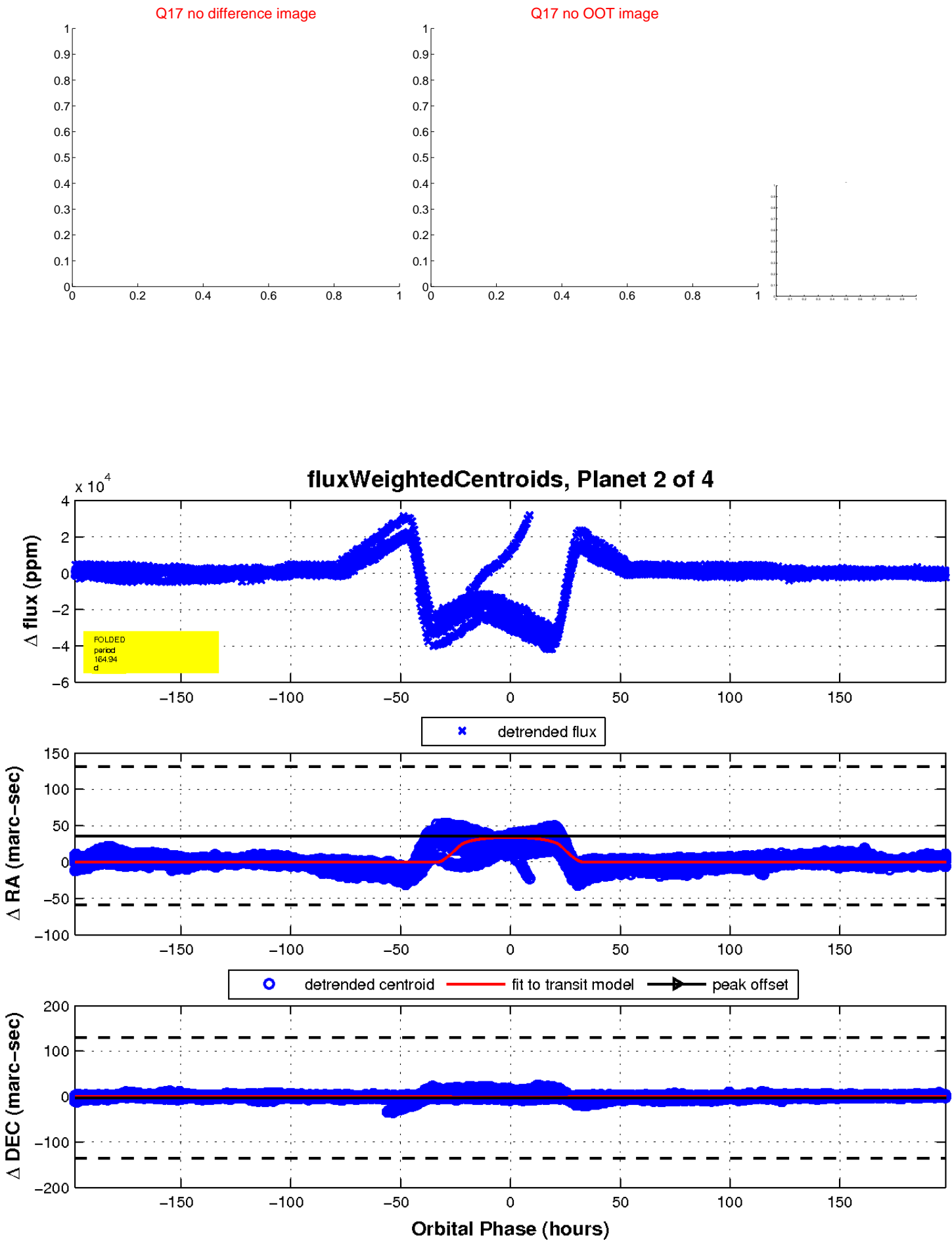
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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

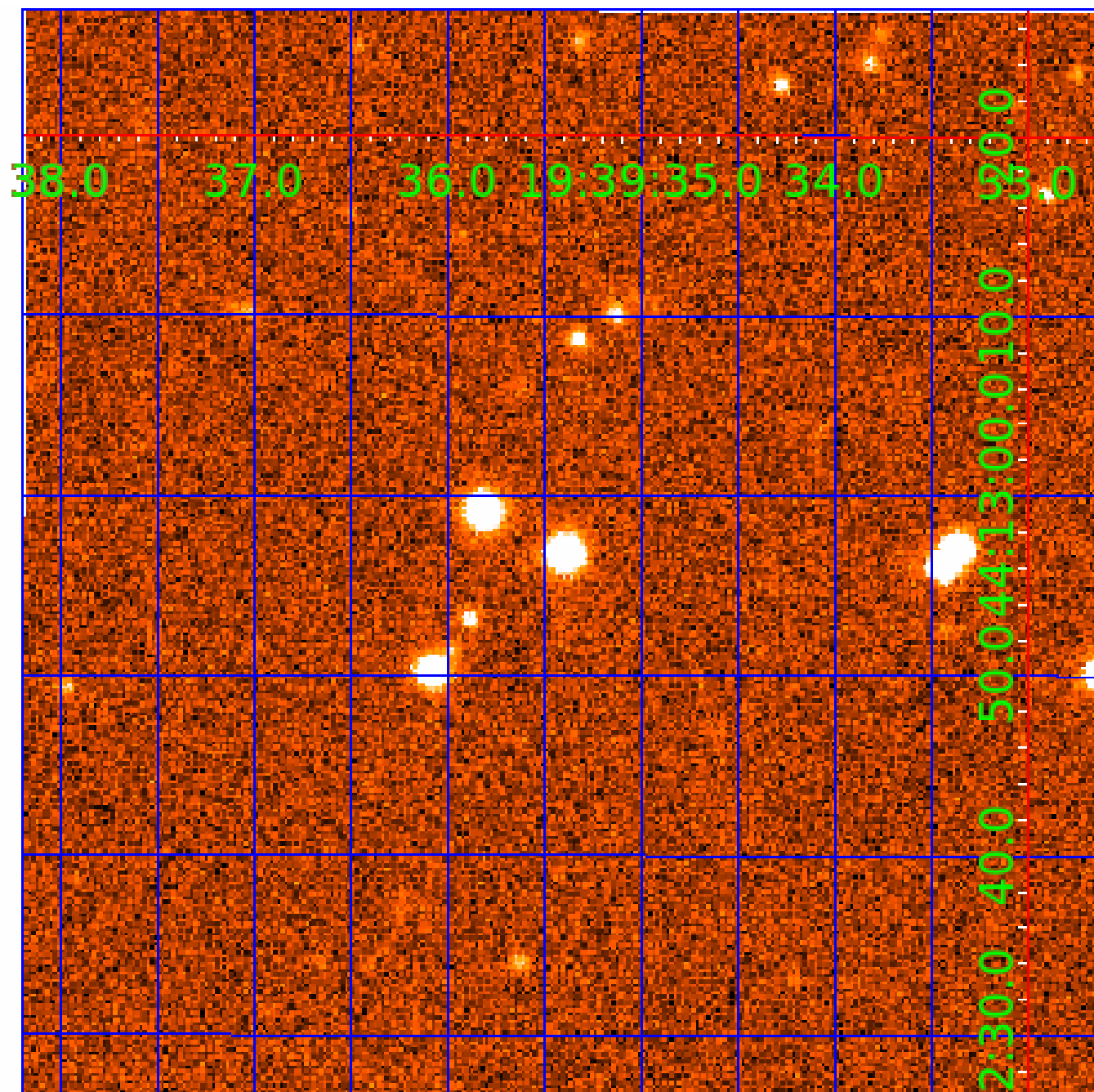


white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



# UKIRT Image

Declination





# KIC 008308347

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
008308347-01	OBS	No	164.953319	278.905073	7980.5	15.000	134.5	-1.0	0.66	5001	5.79	0.95
008308347-02	OBS	3761.01	164.939202	280.375008	56955.8	66.156	119.7	149.3	0.66	5001	15.49	0.95
008308347-03	OBS	No	164.948459	215.311566	33572.5	40.294	106.7	248.3	0.66	5001	11.92	0.95

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008308347-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—CENT_NOFITS
008308347-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL_SKYE—SAME_NTL_PERIOD—CENT_FEW_DIFFS
008308347-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL—SAME_NTL_PERIOD—CENT_FEW_DIFFS

**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 008308347-03

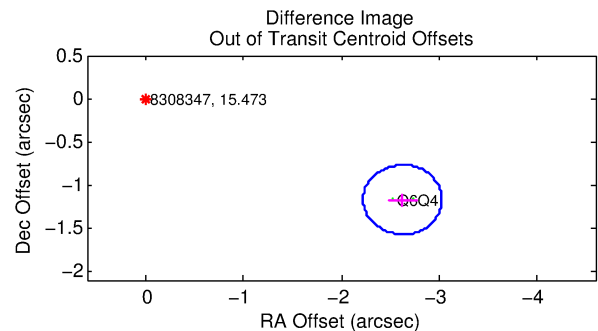
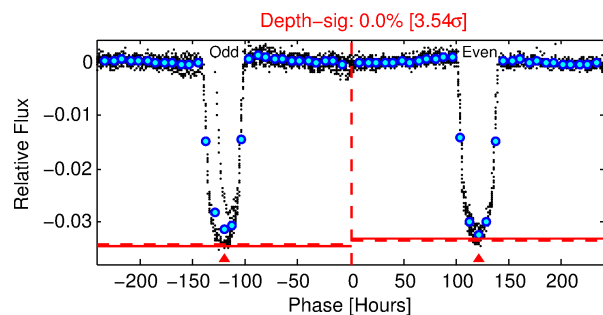
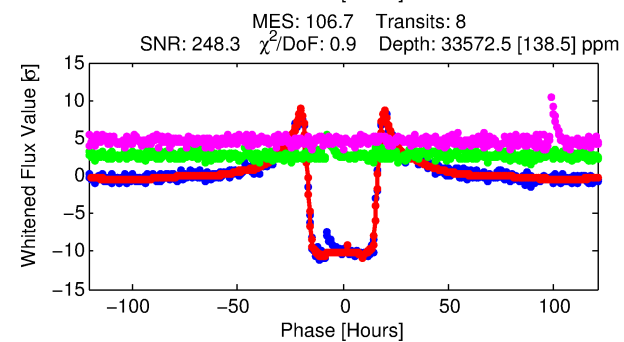
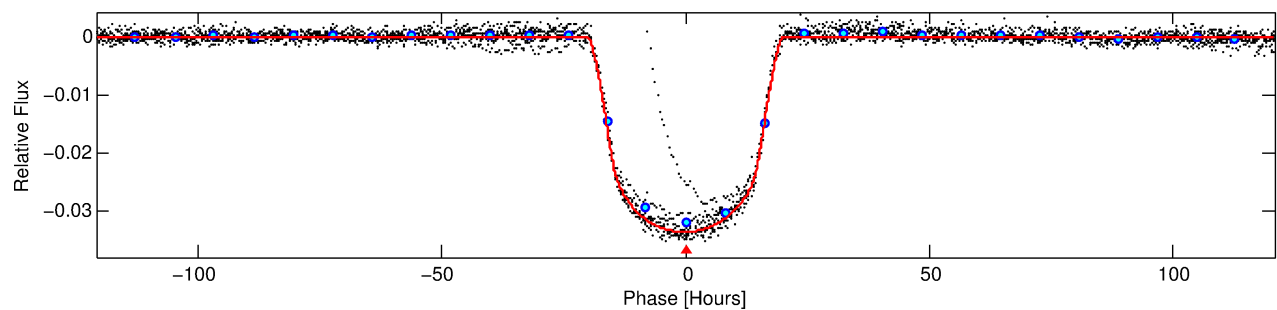
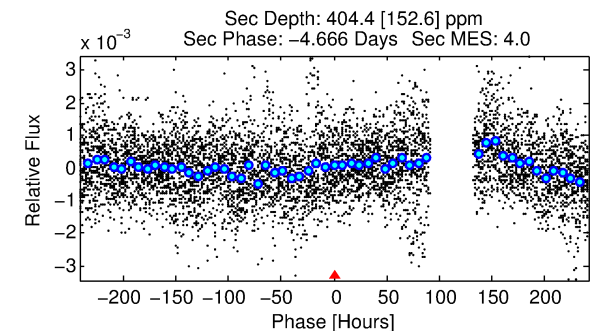
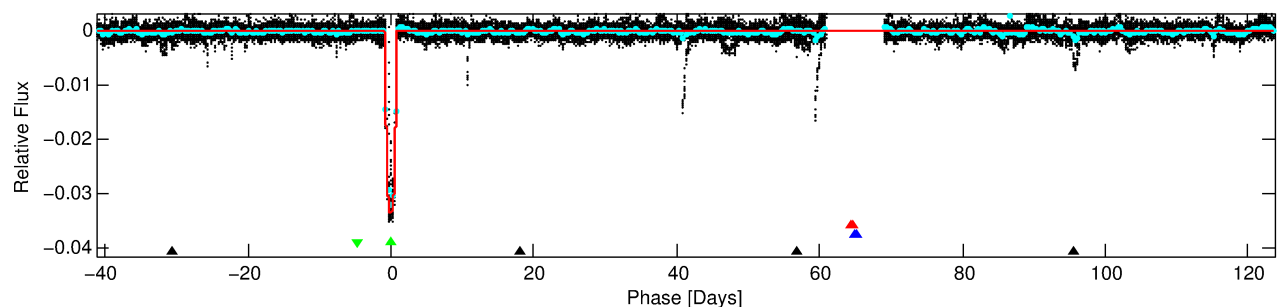
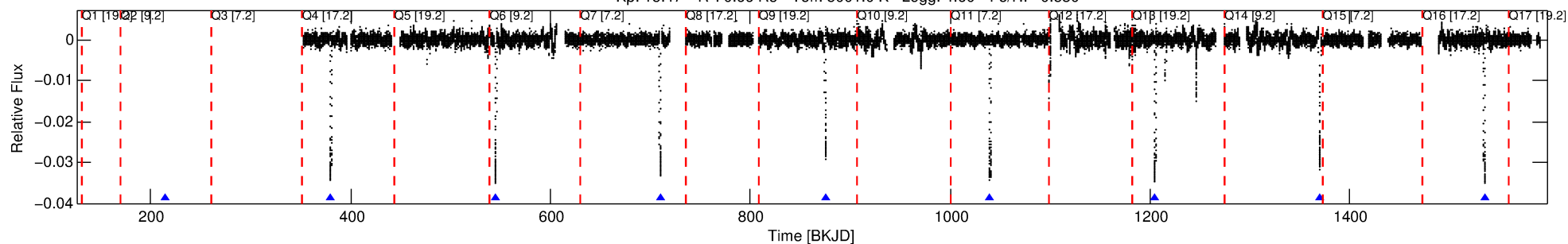
No Significant Match Found

# DV One-Page Summary

KIC: 8308347 Candidate: 3 of 4 Period: 164.948 d

KOI: K03761 Corr: No Ephemeris Match

Kp: 15.47 R\*: 0.66 Rs Teff: 5001.0 K Logg: 4.60 Fe/H: -0.580



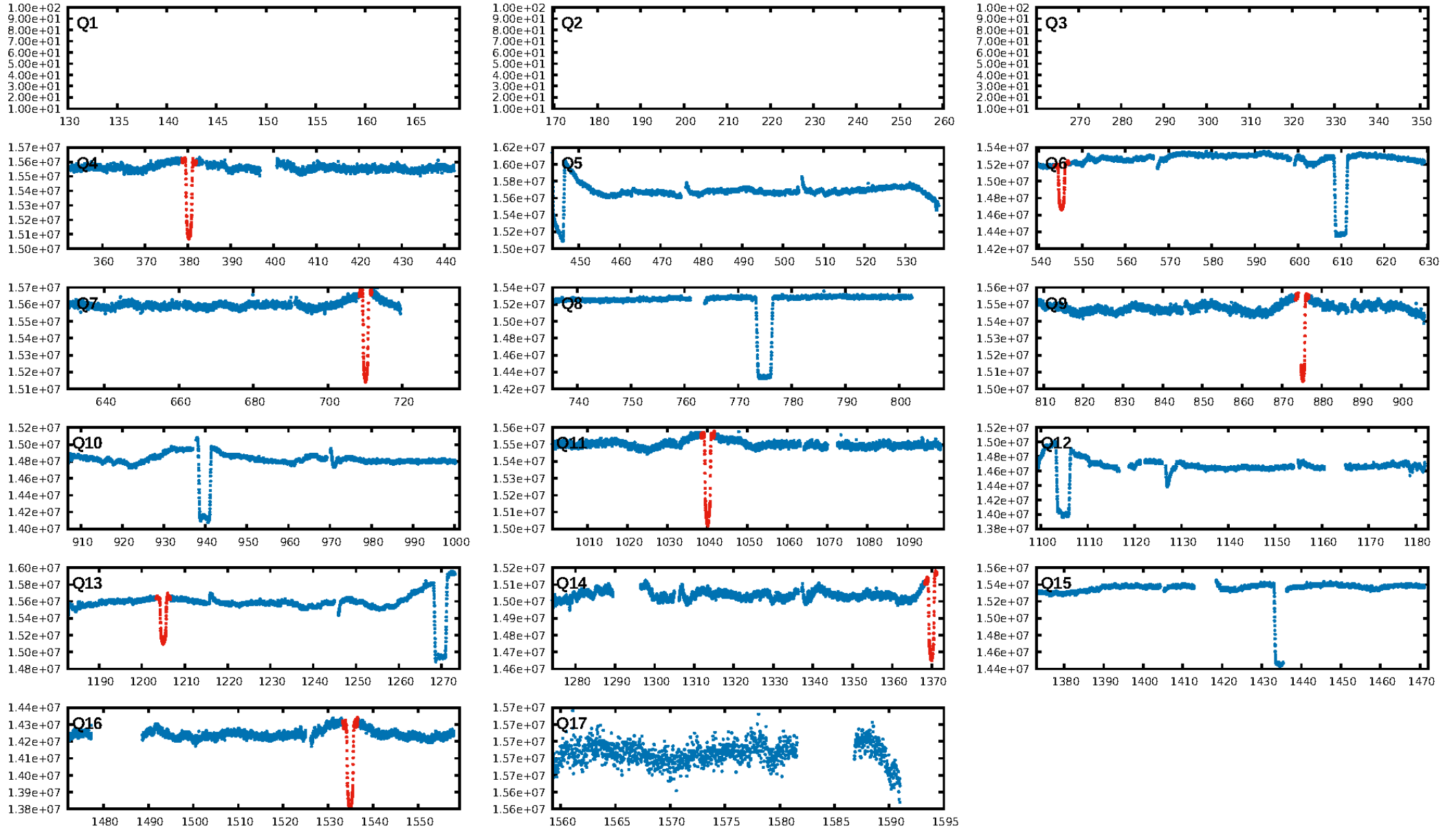
## DV Fit Results:

Period = 164.94846 [0.00041] d  
Epoch = 215.3116 [0.0020] BKJD  
Rp/R\* = 0.1645 [0.0005]  
a/R\* = 36.04 [0.26]  
b = 0.17 [0.04]  
Seff = 0.96 [0.19]  
Teq = 252 [12] K  
Rp = 11.92 [1.26] Re  
a = 0.5086 [0.0441] AU  
Ag = 404.91 [160.73] [2.51σ]  
Teffp = 1748 [178] K [8.39σ]

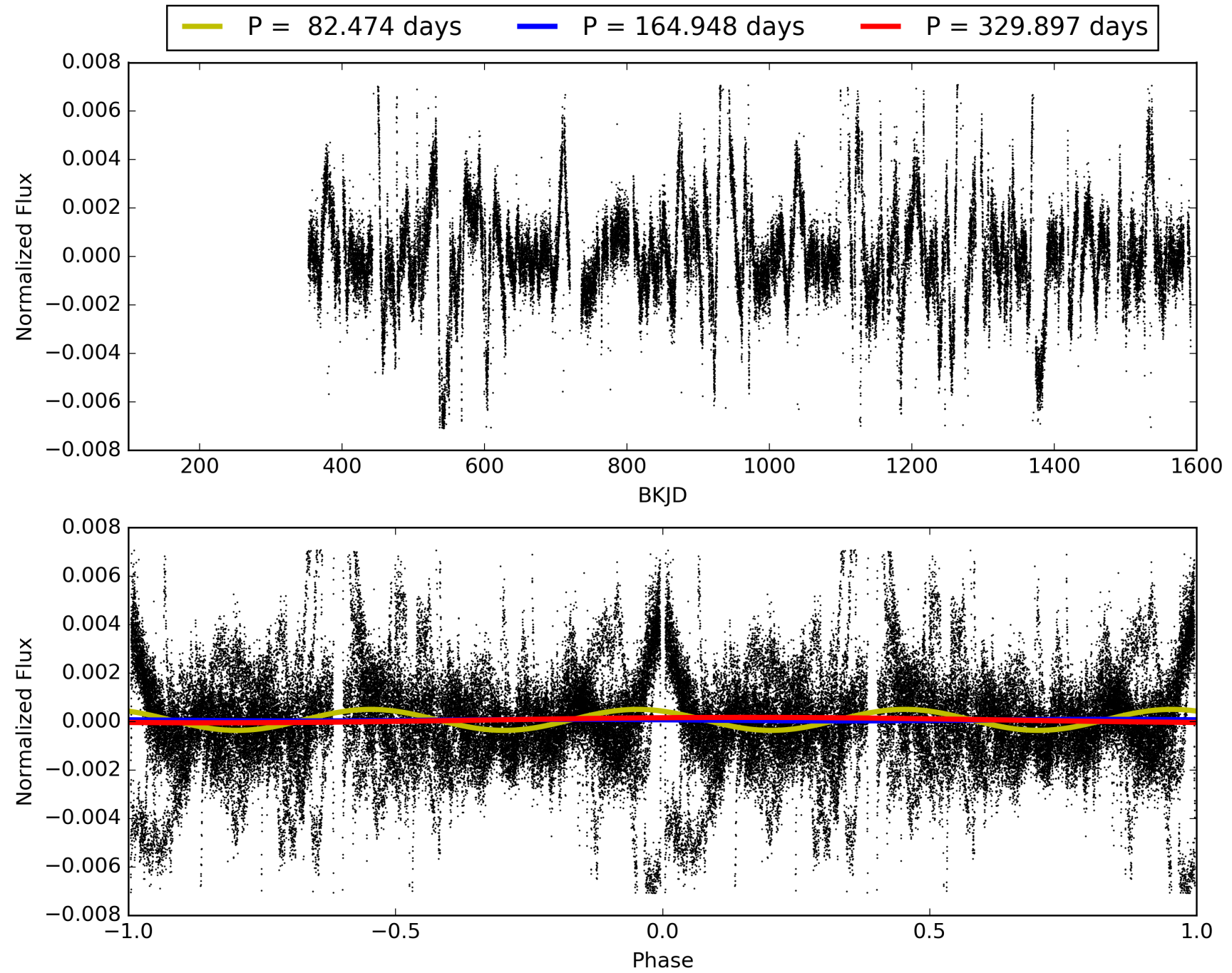
## DV Diagnostic Results:

ShortPeriod-sig: 0.2% [0.00σ]  
LongPeriod-sig: 0.2% [0.00σ]  
ModelChiSquare2-sig: 0.0%  
ModelChiSquareGof-sig: 100.0%  
Bootstrap-pfa: 0.00e+00  
RollingBand-fgt: 1.00 [8/8]  
GhostDiagnostic-chr: 3.333  
Centroid-sig: 0.0%  
Centroid-so: 1.365 arcsec [59.18σ]  
OotOffset-rm: 2.874 arcsec [21.46σ]  
KicOffset-rm: 0.092 arcsec [1.37σ]  
OotOffset-st: 1/0/1/0 [2]  
KicOffset-st: 1/0/1/0 [2]  
DiffImageQuality-fgm: 1.00 [2/2]  
DiffImageOverlap-fno: 1.00 [2/2]

# TCE 008308347-03, PDC Light Curves

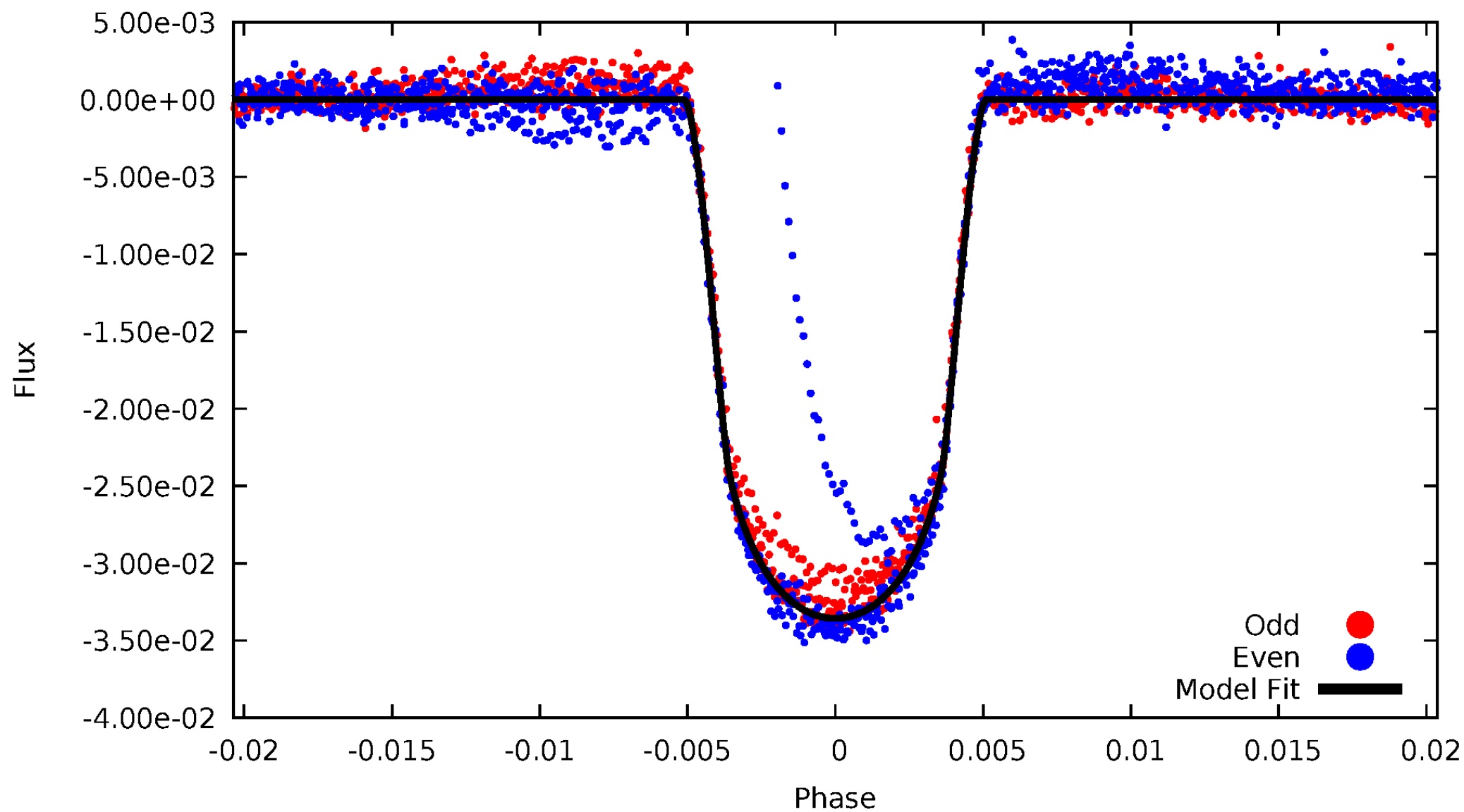


TCE 008308347-03



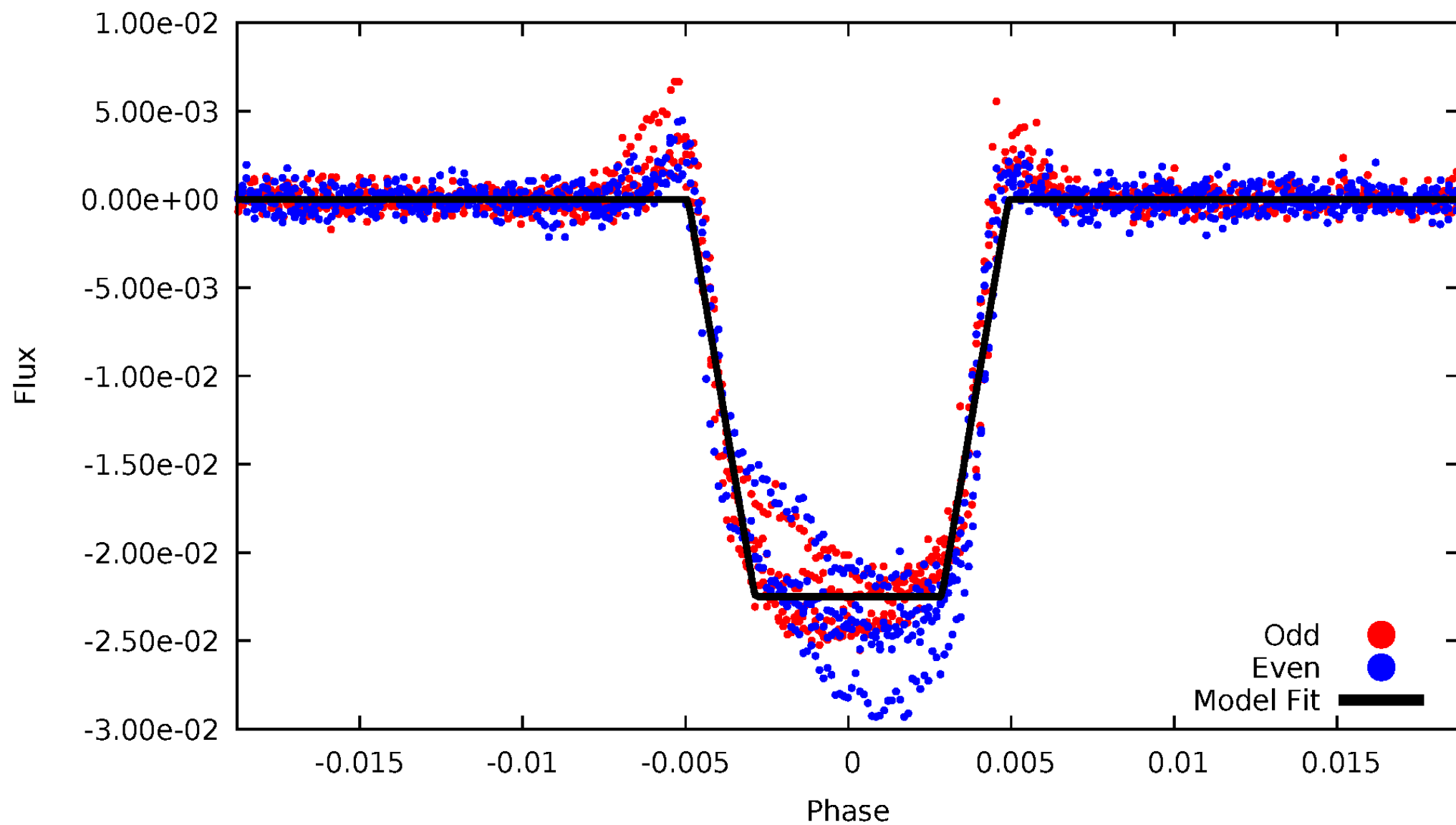
# DV Odd/Even

TCE 008308347-03



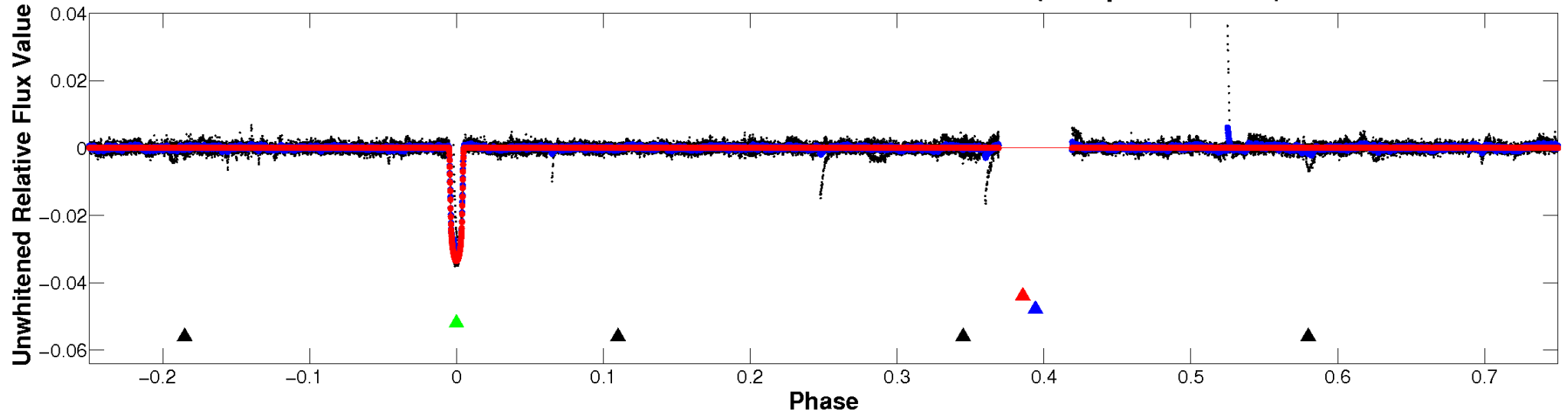
# ALT Odd/Even

TCE 008308347-03

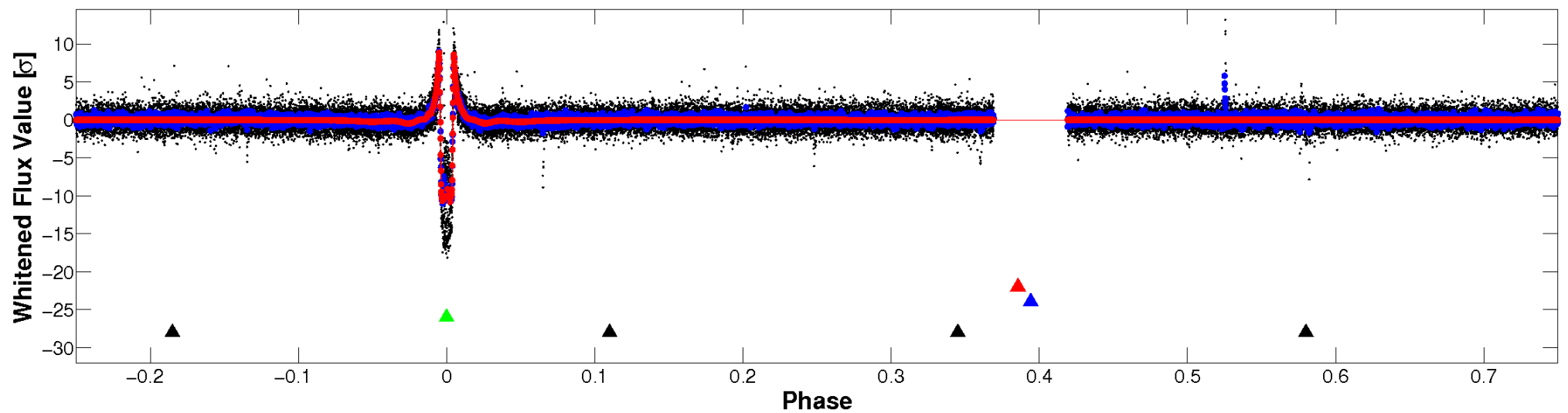


### Non-Whitened Vs. Whitened Light Curve

### Planet 3 : Phased Unwhitened Flux Time Series (Fit Epoch/Period)

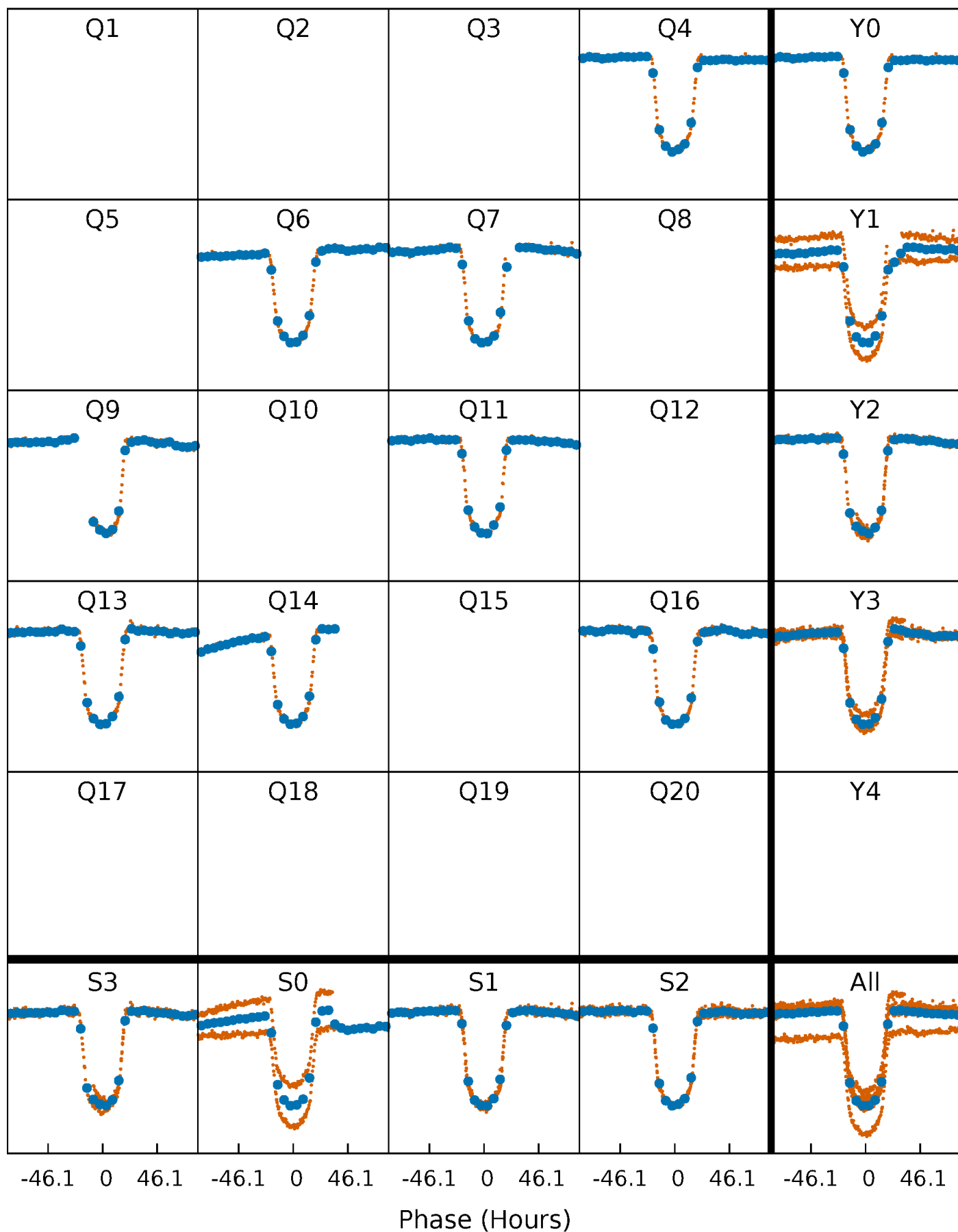


### Planet 3 : Phased Whitened Flux Time Series (Fit Epoch/Period)



# PDC Quarter-Phased Transit Curves

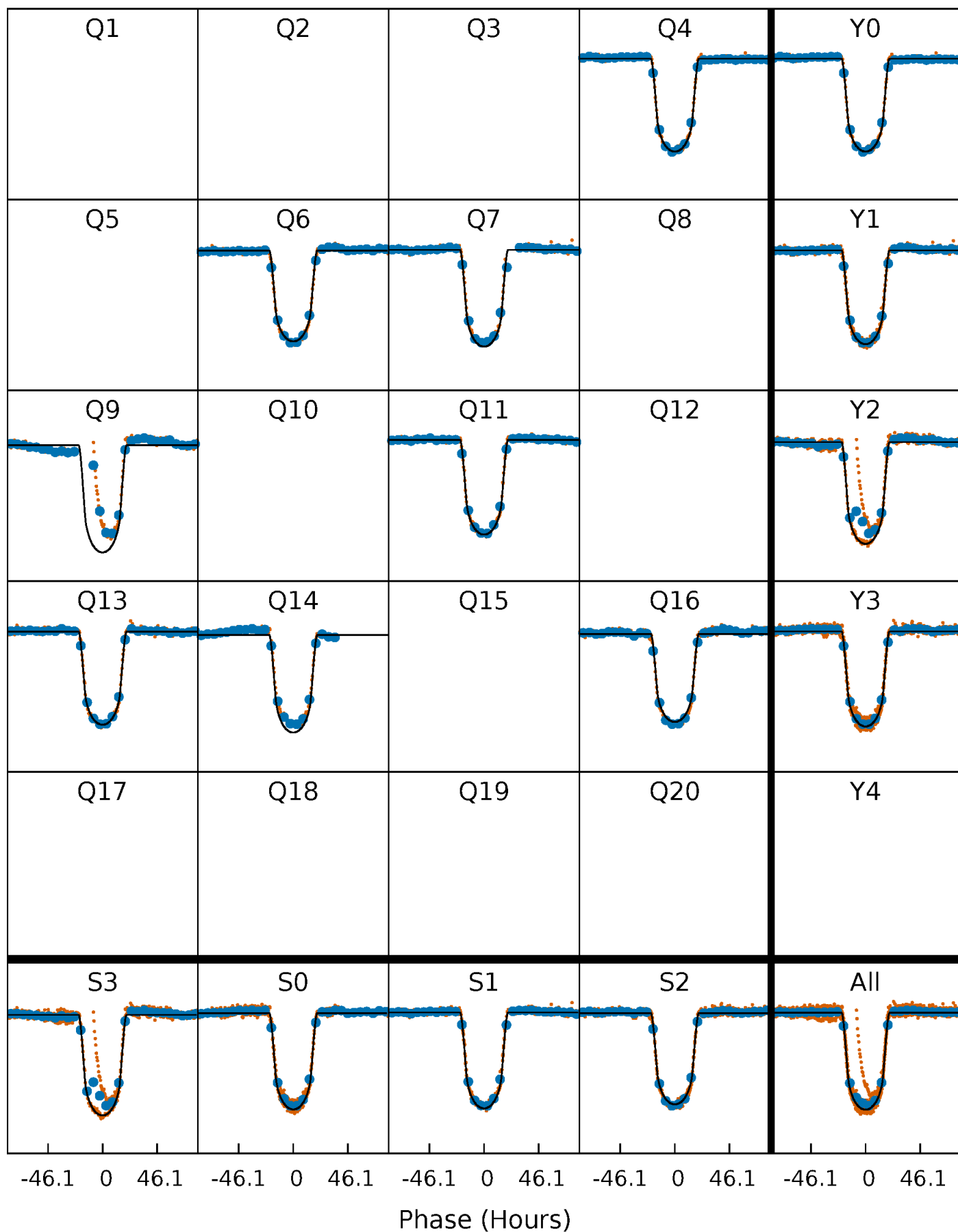
TCE 008308347-03 P=164.948459 Days  $T_0=215.311566$  (BKJD)





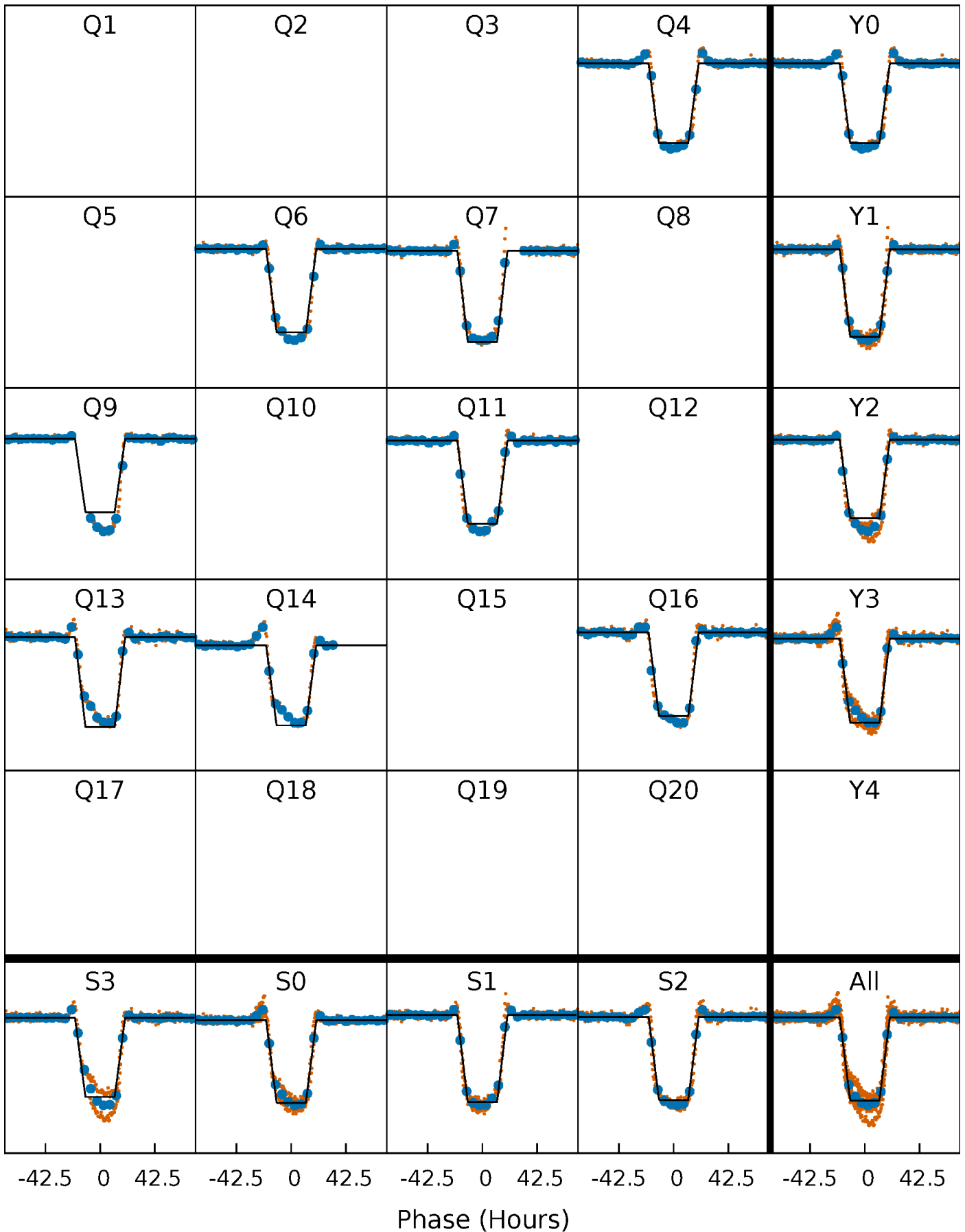
# DV Quarter-Phased Transit Curves

TCE 008308347-03 P=164.948459 Days  $T_0=215.311566$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

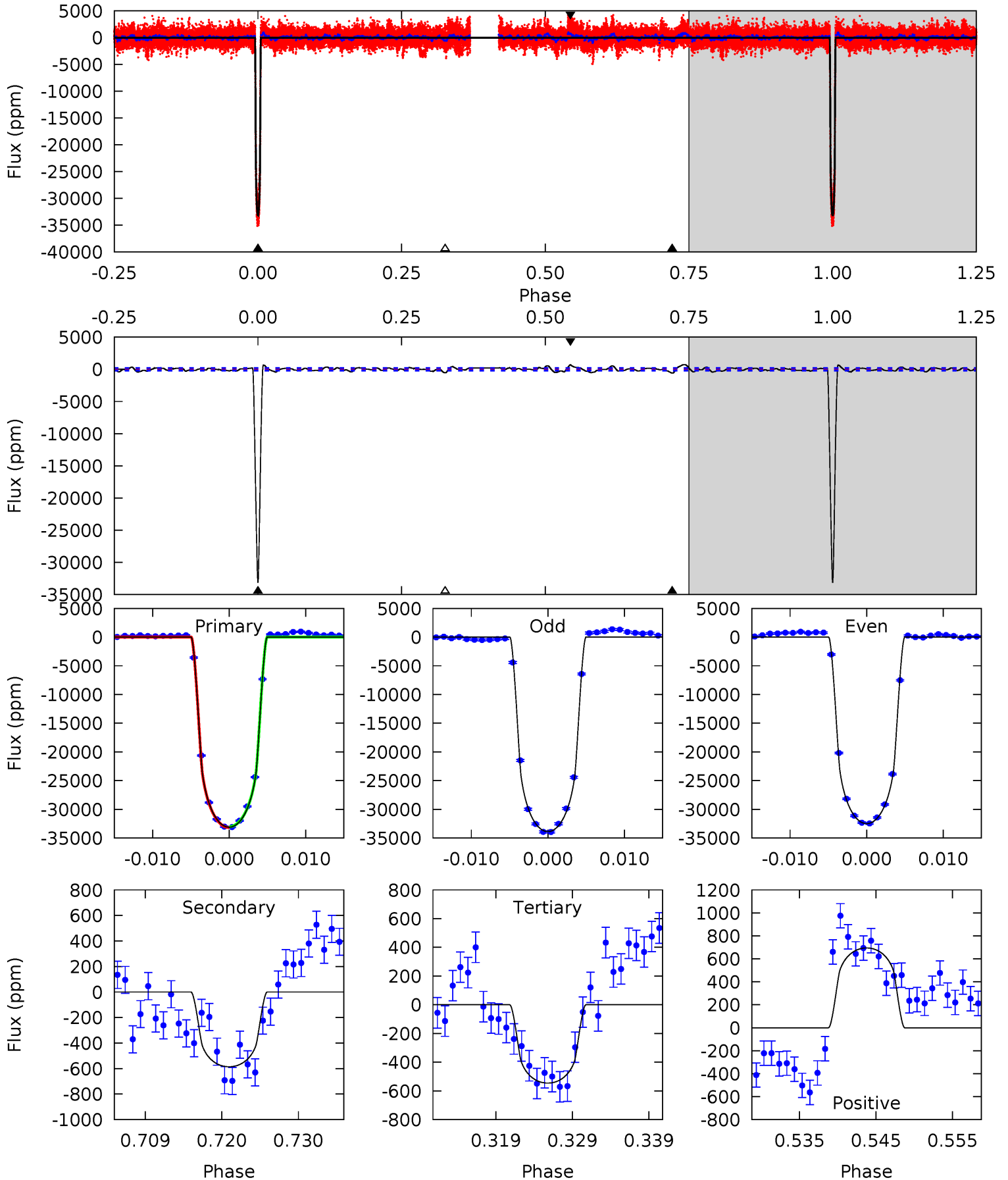
TCE 008308347-03 P=164.960130 Days  $T_0=215.273887$  (BKJD)



# DV Model-Shift Uniqueness Test

008308347-03, P = 164.948459 Days, E = 215.311566 Days

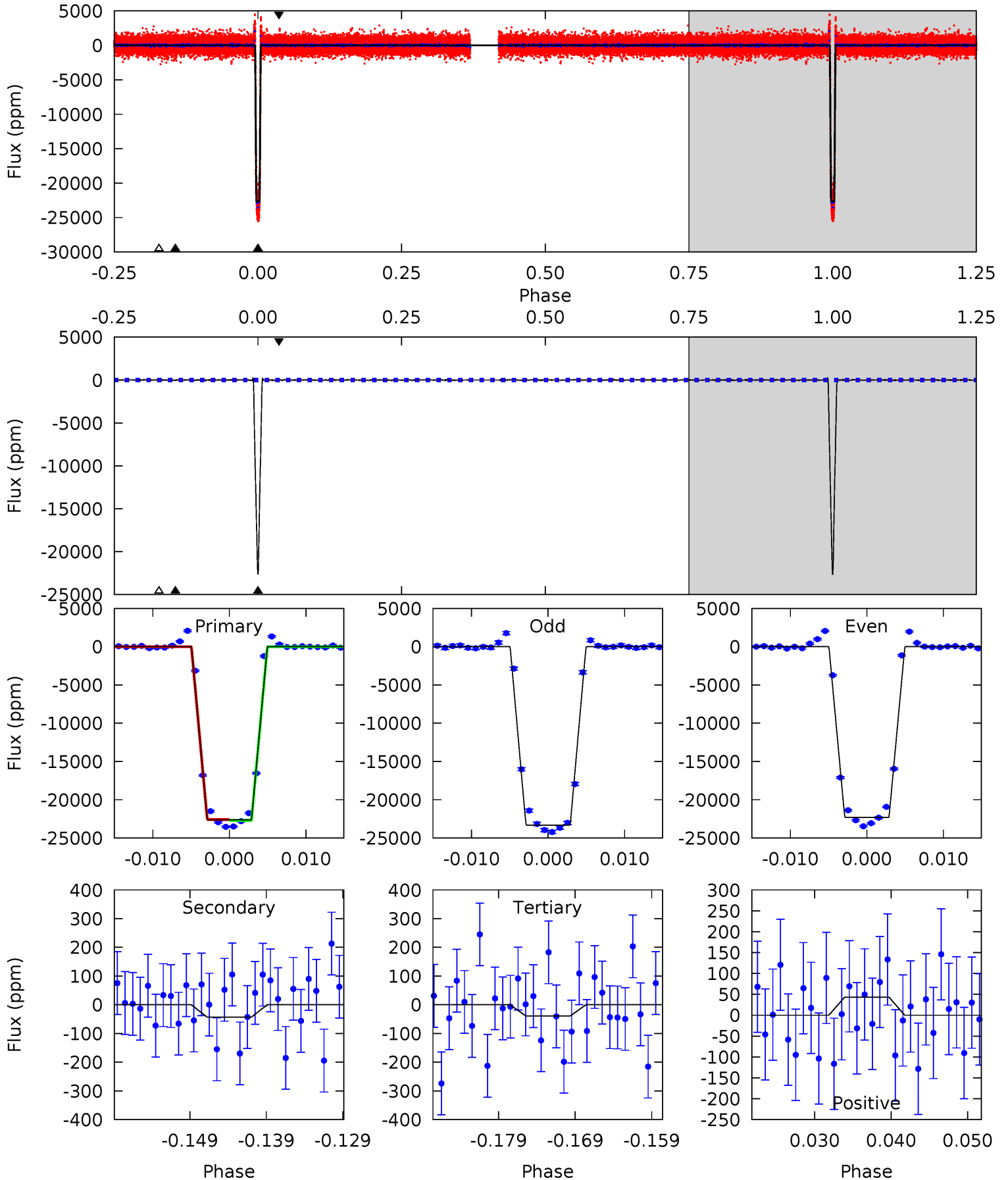
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
872.3	15.4	14.4	18.3	5.02	2.57	5.72	857.9	854.0	1.06	-2.88	18.3	0.96	0.02	2.02



# Alt Model-Shift Uniqueness Test

008308347-03, P = 164.960130 Days, E = 215.273887 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
808.3	1.54	1.40	1.55	5.03	2.58	0.49	806.9	806.8	0.14	-0.01	17.9	0.98	0.01	0



### Stellar Parameters For KIC 008308347

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$5001^{+191}_{-174}$	$4.603^{+0.066}_{-0.048}$	$-0.580^{+0.350}_{-0.300}$	$0.664^{+0.070}_{-0.064}$	$0.645^{+0.083}_{-0.036}$	$3.100^{+0.850}_{-0.558}$
	+4%/-3%	+1%/-1%	+60%/-52%	+11%/-10%	+13%/-6%	+27%/-18%
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 008308347-03 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	$A_{obs}$
DV	$-586 \pm 38$	$11.89^{+0.78}_{-0.61}$	$350^{+16}_{-15}$	$2677^{+64}_{-64}$	$593^{+70}_{-65}$
Alt.	$-43 \pm 28$	$10.84^{+0.68}_{-0.54}$	$351^{+16}_{-16}$	$2016^{+125}_{-226}$	$51^{+35}_{-35}$

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

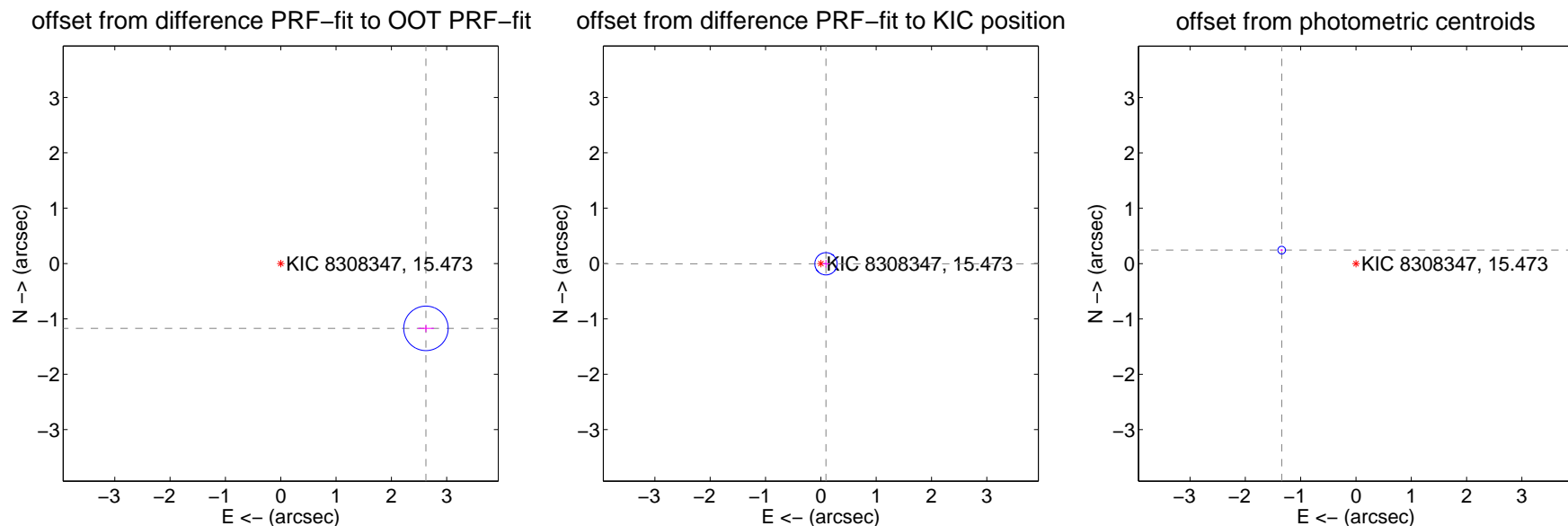
## DV Centroid Data

Supplemental centroid analysis for 008308347-03. Kepler magnitude: 15.47. Transit SNR 248.33

There are 2 quarters with good PRF difference image offsets

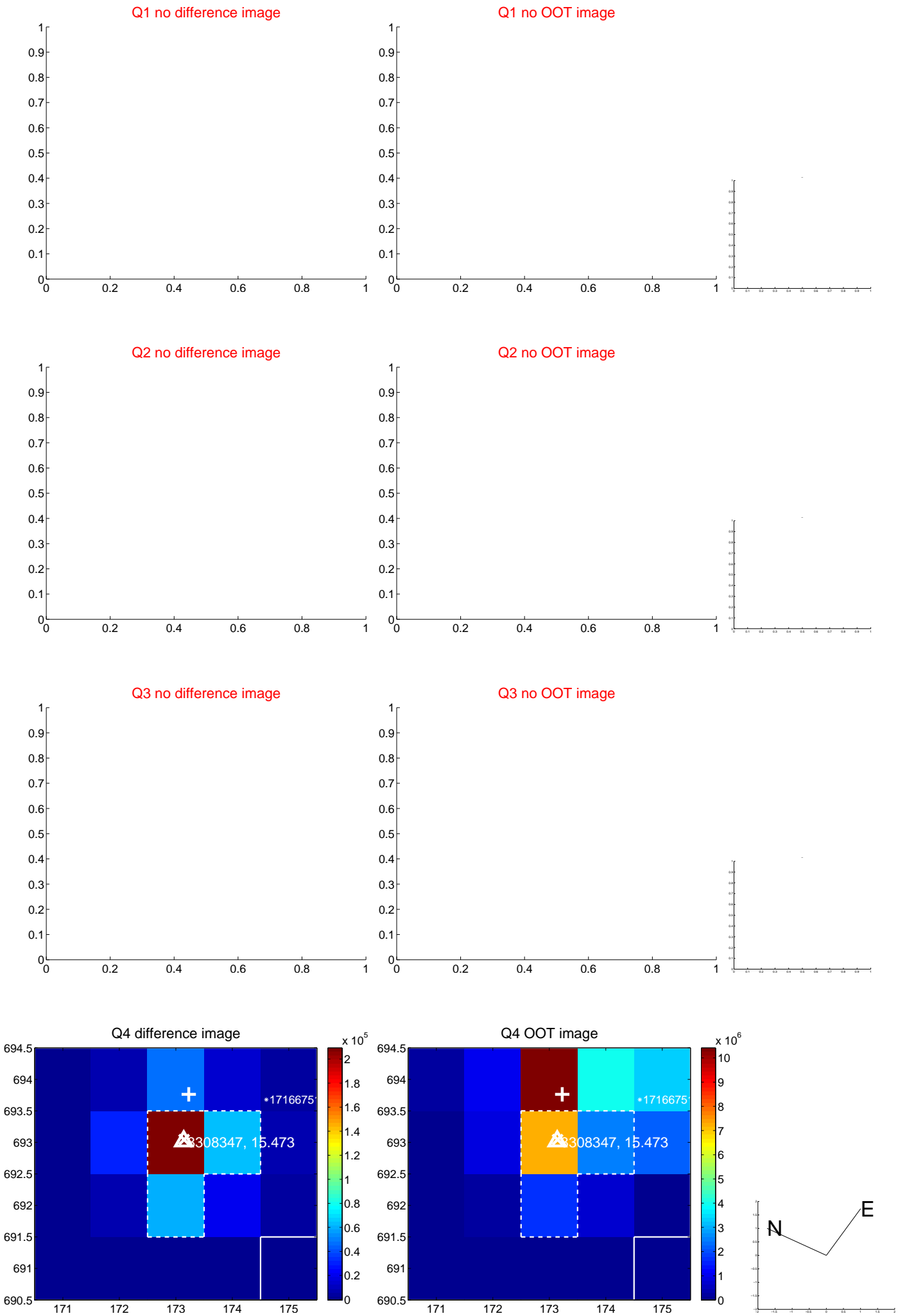
The OOT PRF centroid is offset from the target star catalog position by about 2.70 arcsec so the offset from difference PRF-fit to OOT-fit may be invalid.

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$2.874 \pm 0.134$	21.46	$-2.624 \pm 0.144$	$-1.171 \pm 0.067$
PRF-fit source offset from KIC position	$0.092 \pm 0.067$	1.37	$-0.092 \pm 0.067$	$-0.004 \pm 0.070$
photometric centroid source offset	$1.36 \pm 0.02$	59.18	$1.34 \pm 0.02$	$0.24 \pm 0.02$



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.



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

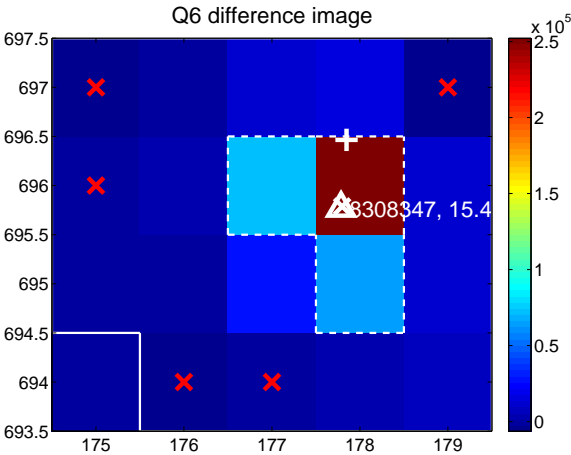
Q5 no difference image



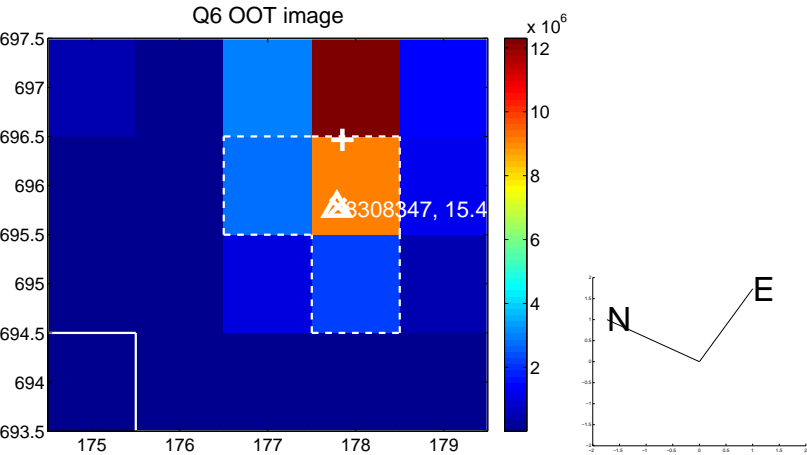
Q5 no OOT image



Q6 difference image



Q6 OOT image



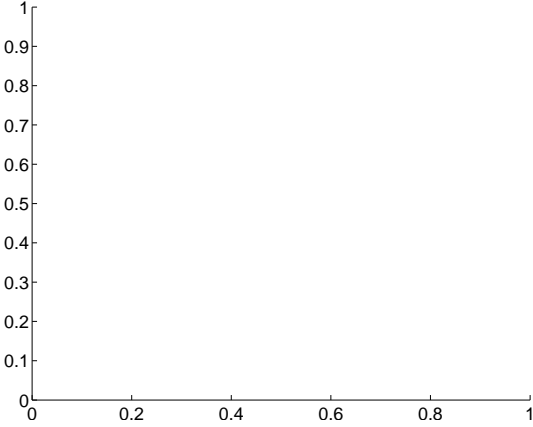
Q7 no difference image



Q7 no OOT image



Q8 no difference image



Q8 no OOT image





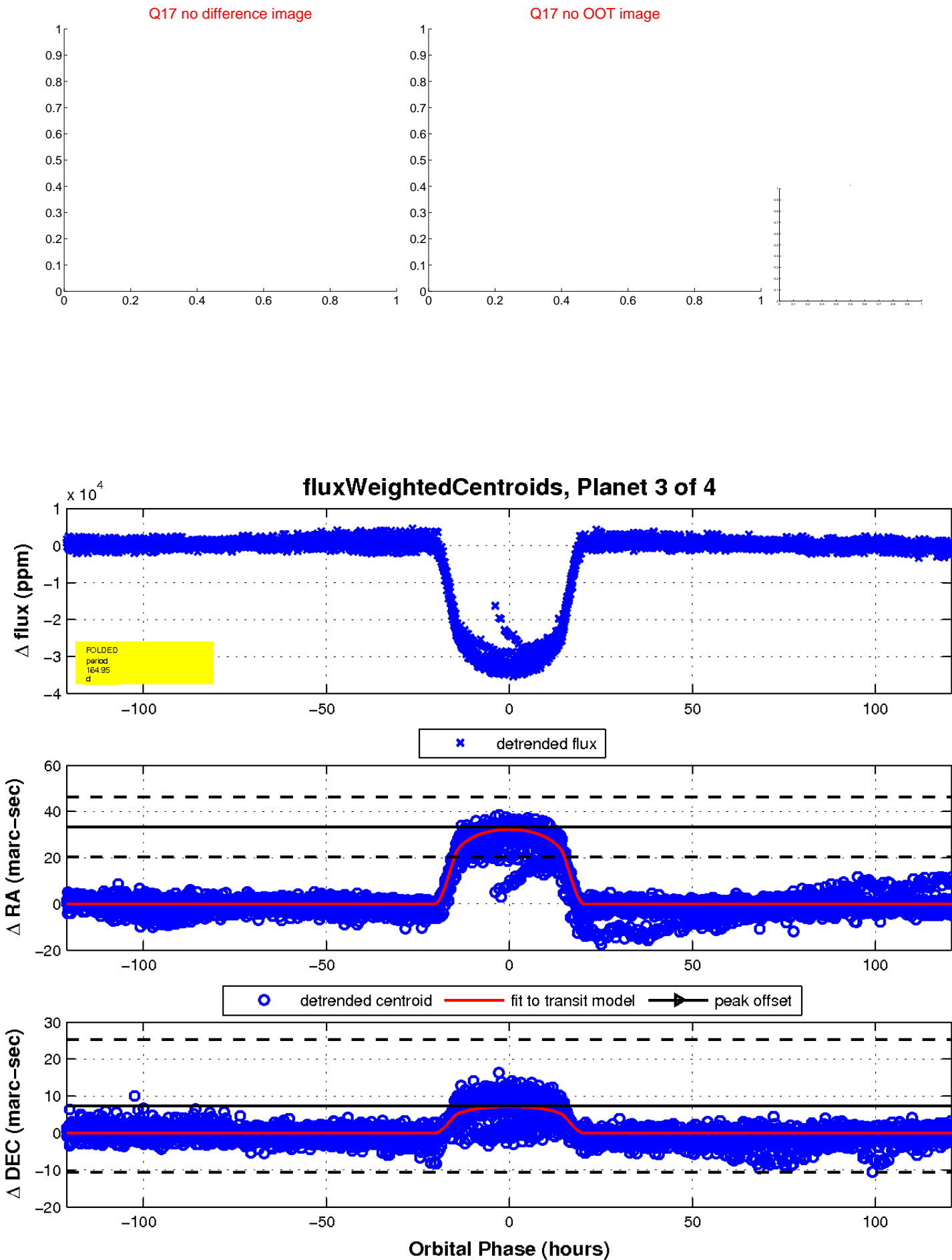
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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



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



# UKIRT Image

Declination

