

# KIC 010394332

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
010394332-01	OBS	No	473.404718	281.411590	1521.9	3.500	26.2	-1.0	0.60	5068	2.33	0.21
010394332-02	OBS	No	453.006532	450.248070	2316.8	5.527	13.2	3.5	0.60	5068	4.83	0.23
010394332-03	OBS	No	1.251143	132.432924	433.9	9.123	9.2	10.5	0.60	5068	2.56	587.49

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
010394332-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_SKYE—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_NOFITS
010394332-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_TRACKER—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
010394332-03	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT

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

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

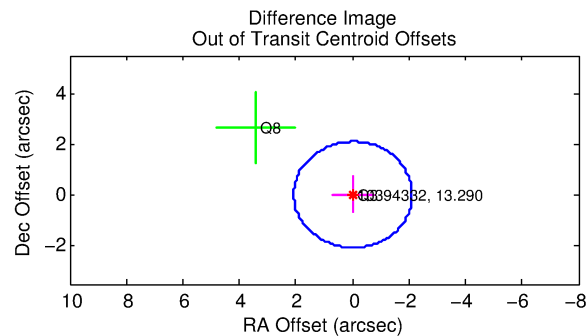
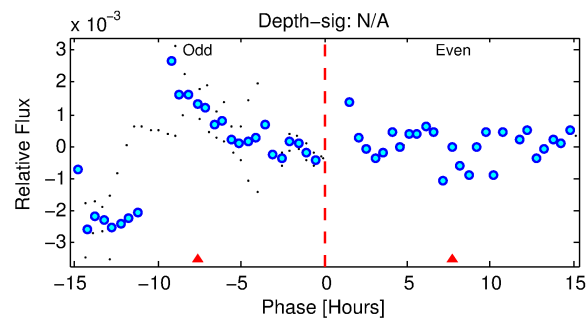
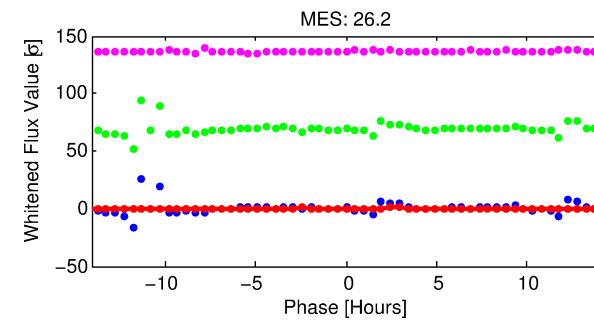
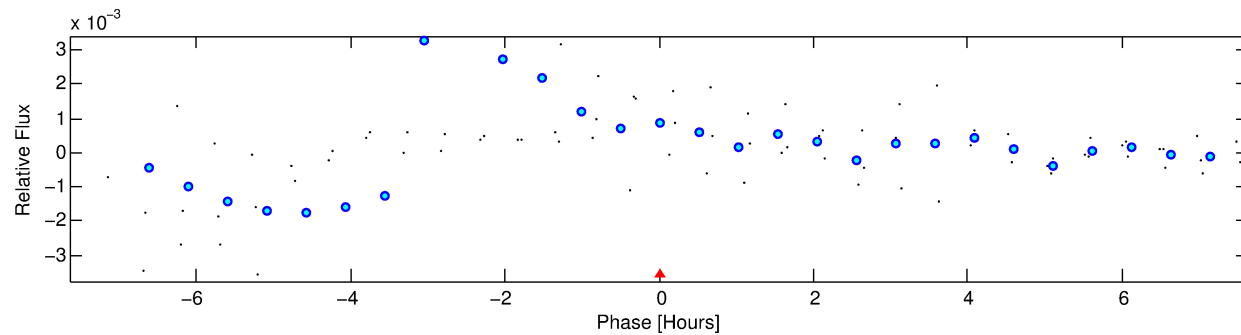
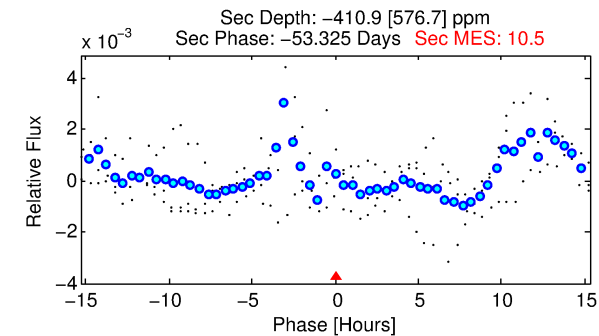
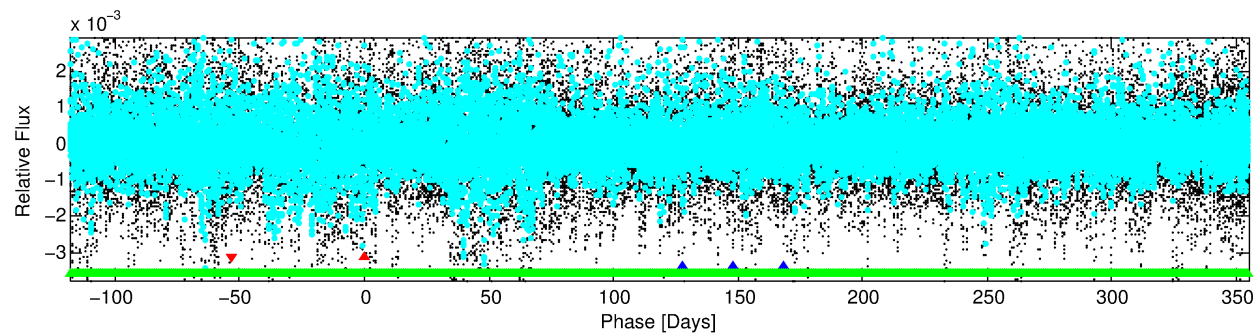
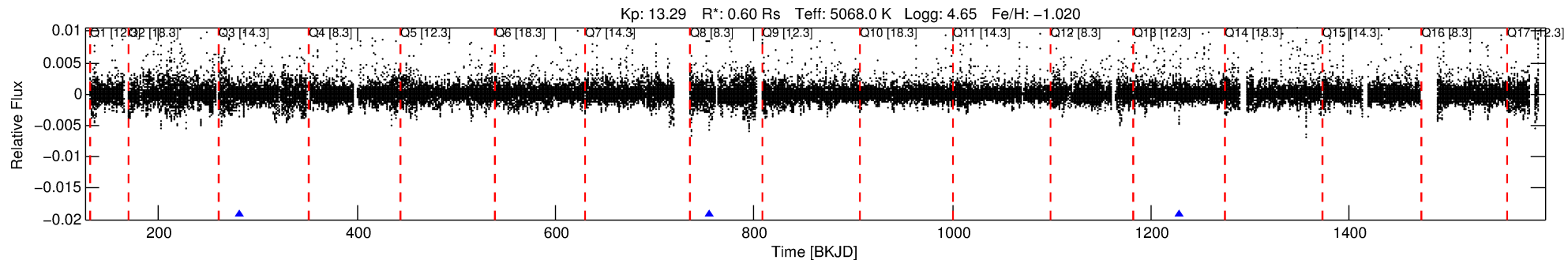
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 010394332-01

No Significant Match Found

# DV One-Page Summary

KIC: 10394332 Candidate: 1 of 3 Period: 473.405 d



## TPS TCE Results:

Period = 473.40472 d  
Epoch = 281.4116 BKJD

DV fit results are unavailable

## DV Diagnostic Results:

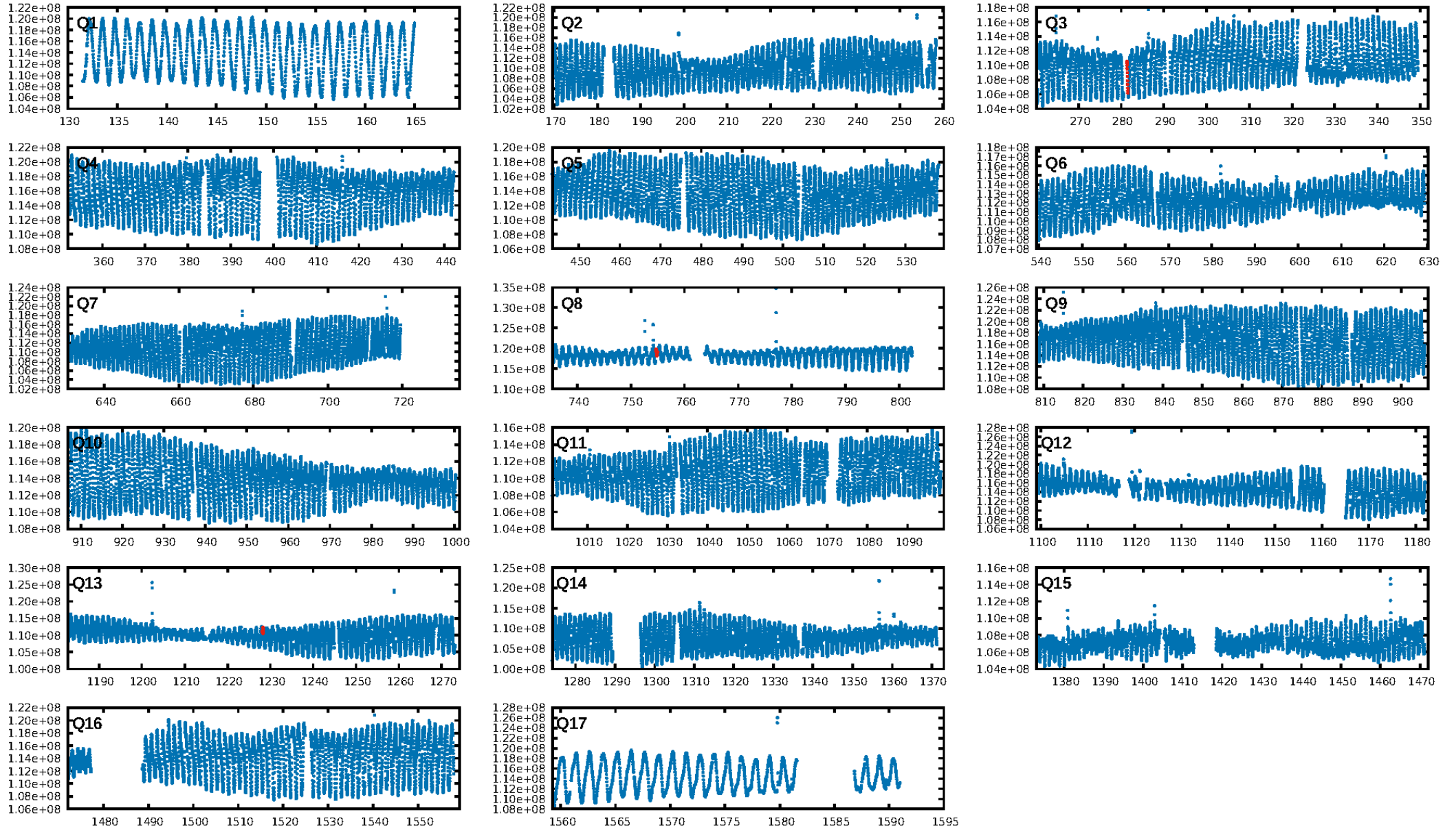
ShortPeriod-sig: 100.0% [74.84σ]  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: N/A  
ModelChiSquareGof-sig: N/A  
Bootstrap-pfa: N/A  
RollingBand-fgt: 1.00 [3/3]  
GhostDiagnostic-chr: 6.726

Centroid-sig: 37.3%  
Centroid-so: 1.582 arcsec [1.24σ]  
OotOffset-rm: 0.027 arcsec [0.04σ]  
KicOffset-rm: 0.171 arcsec [0.25σ]  
OotOffset-st: 0/1/1/0 [2]  
KicOffset-st: 0/1/1/0 [2]  
DiffImageQuality-fgm: 0.50 [1/2]  
DiffImageOverlap-fno: 0.00 [0/2]

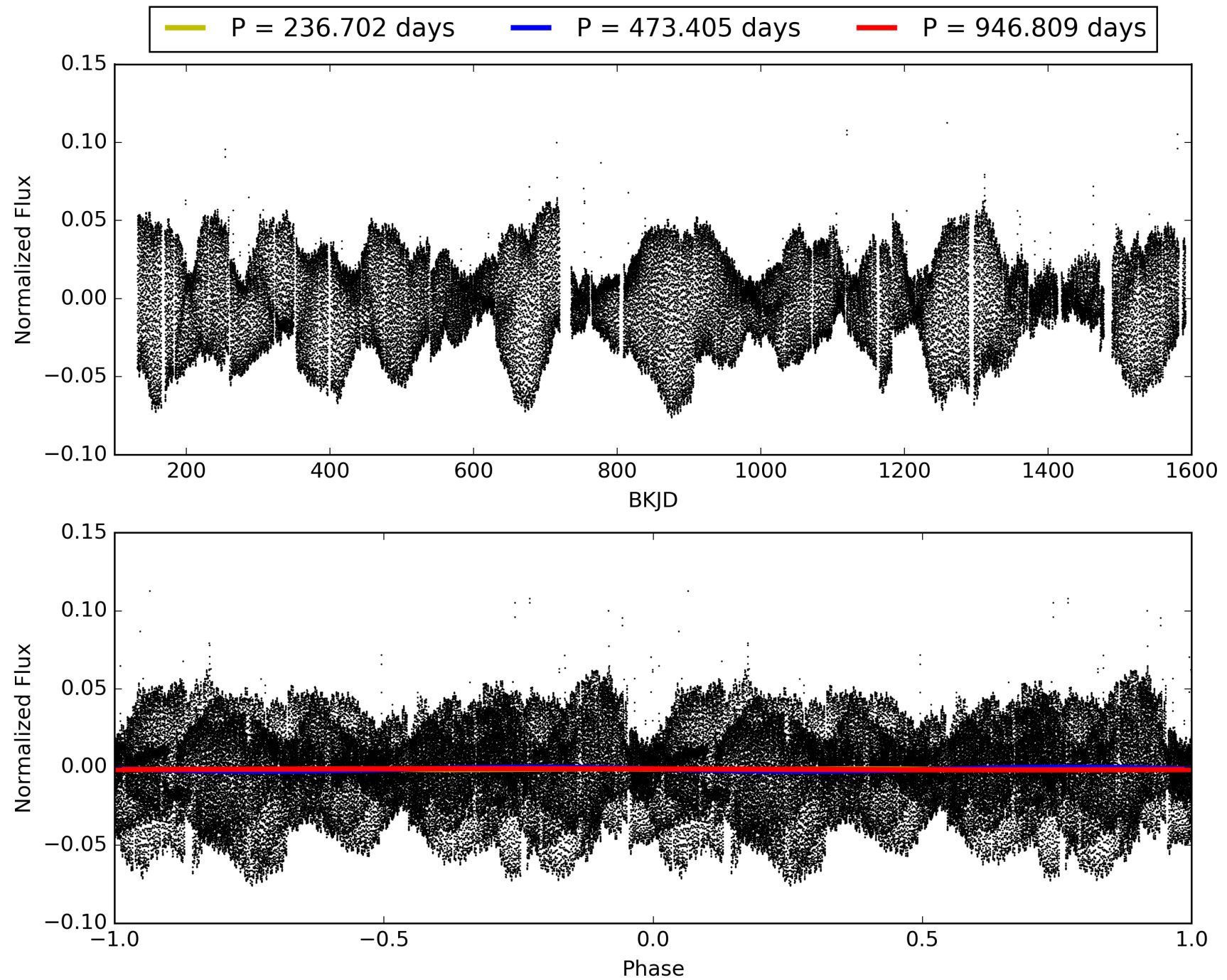
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 07:15:51 Z

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

# TCE 010394332-01, PDC Light Curves

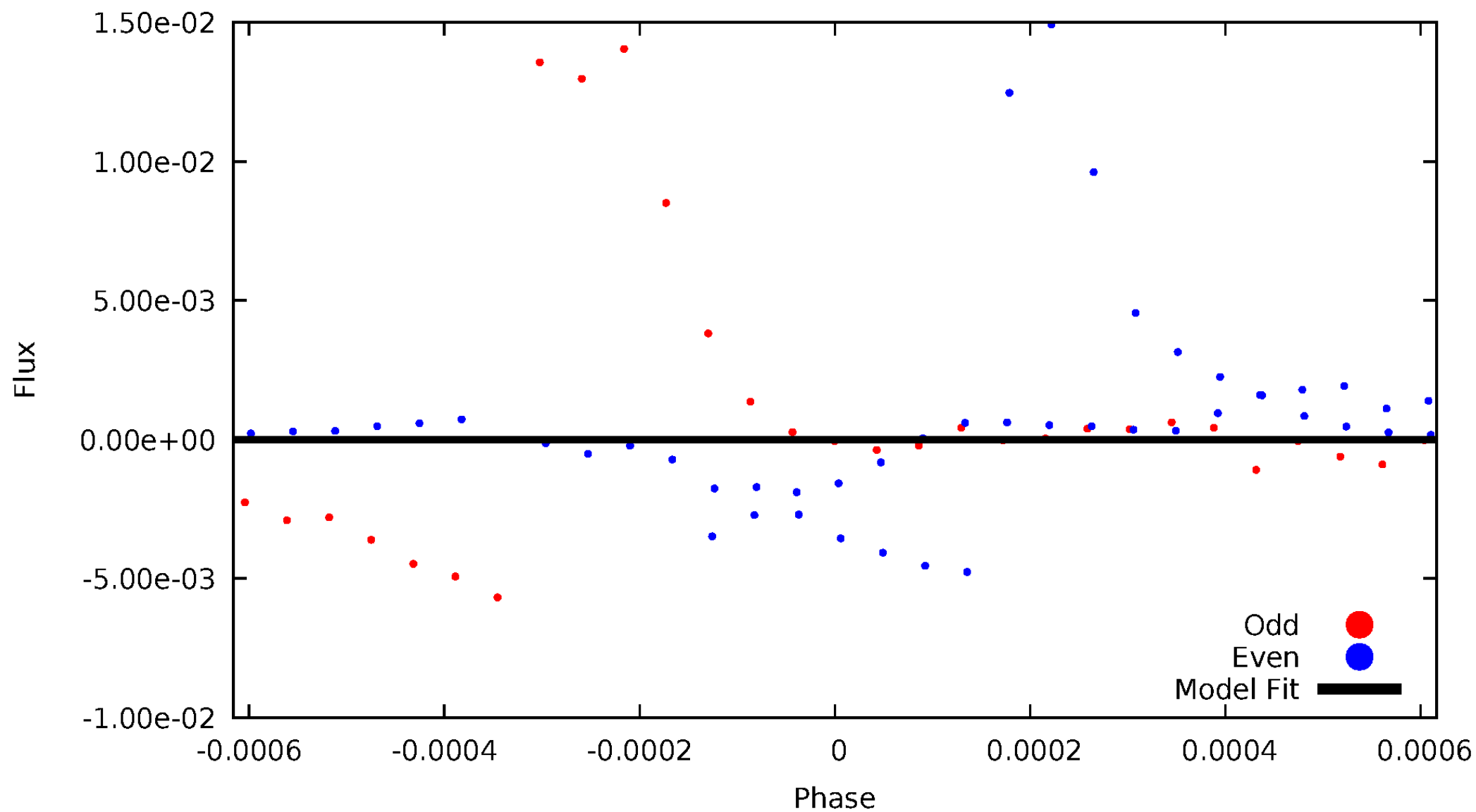


TCE 010394332-01



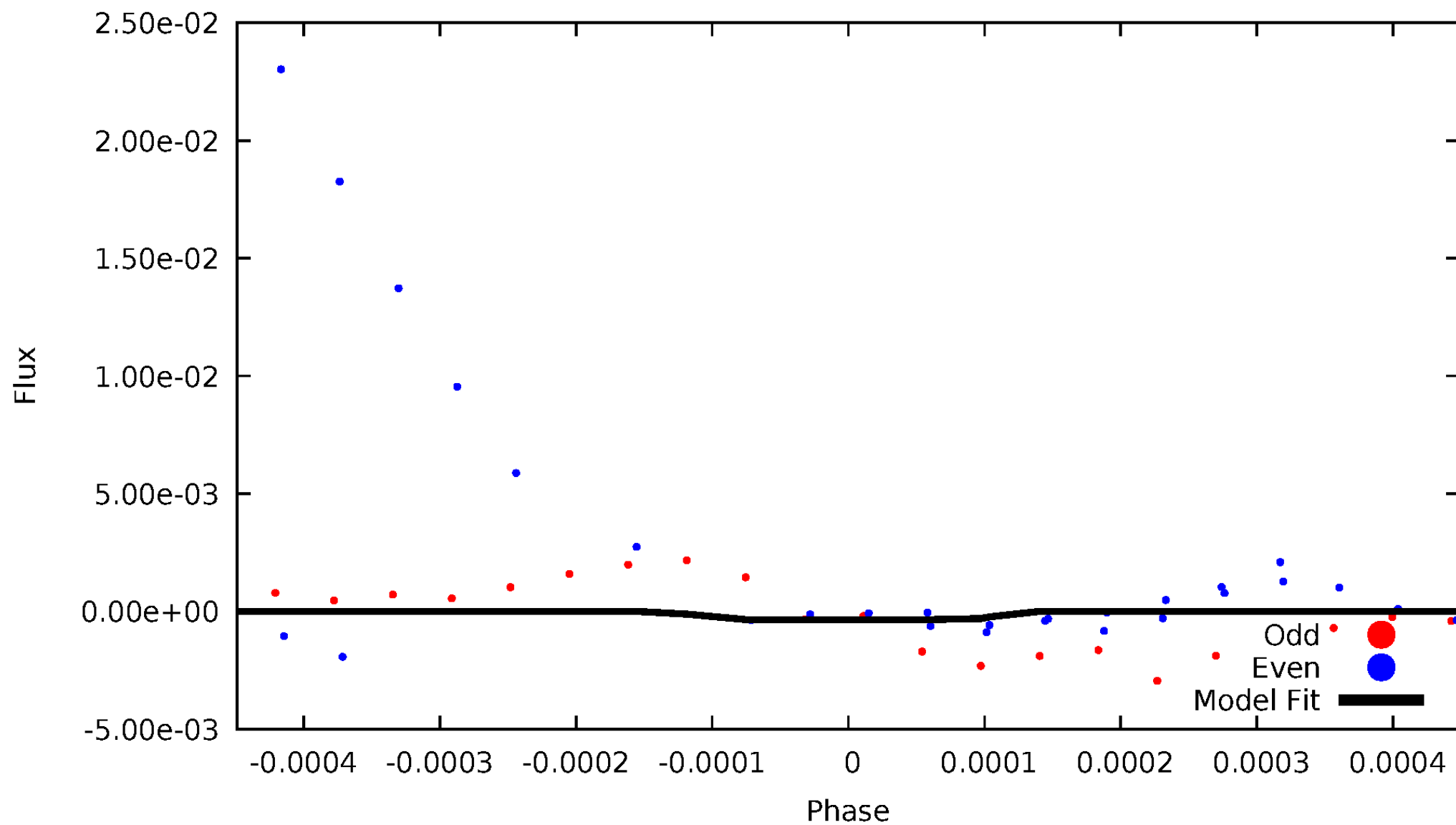
# DV Odd/Even

TCE 010394332-01

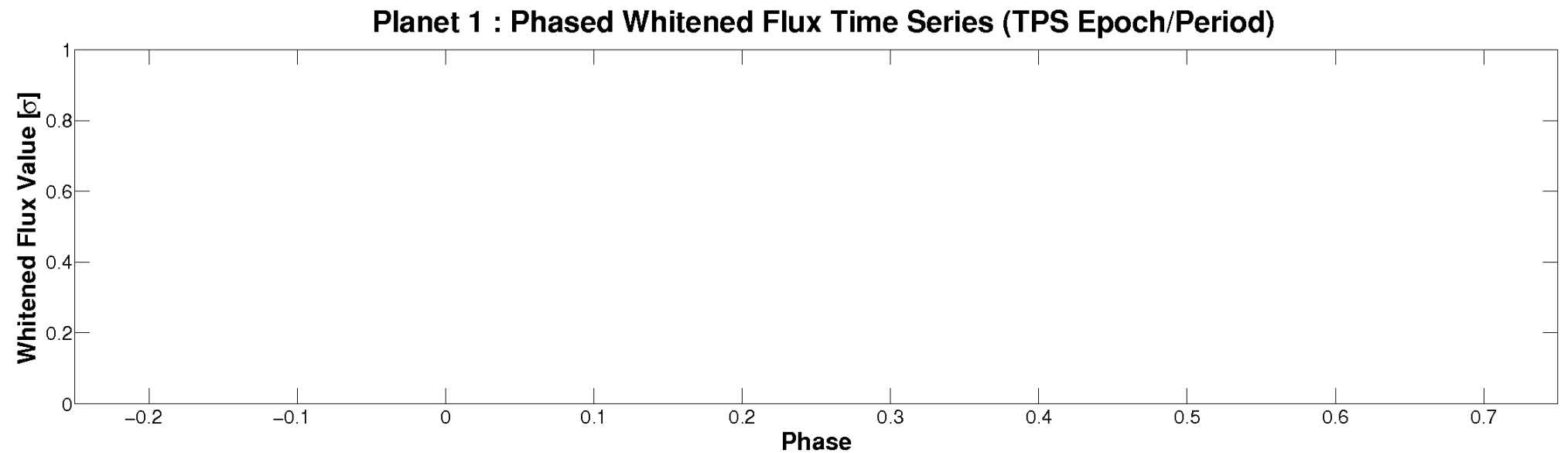
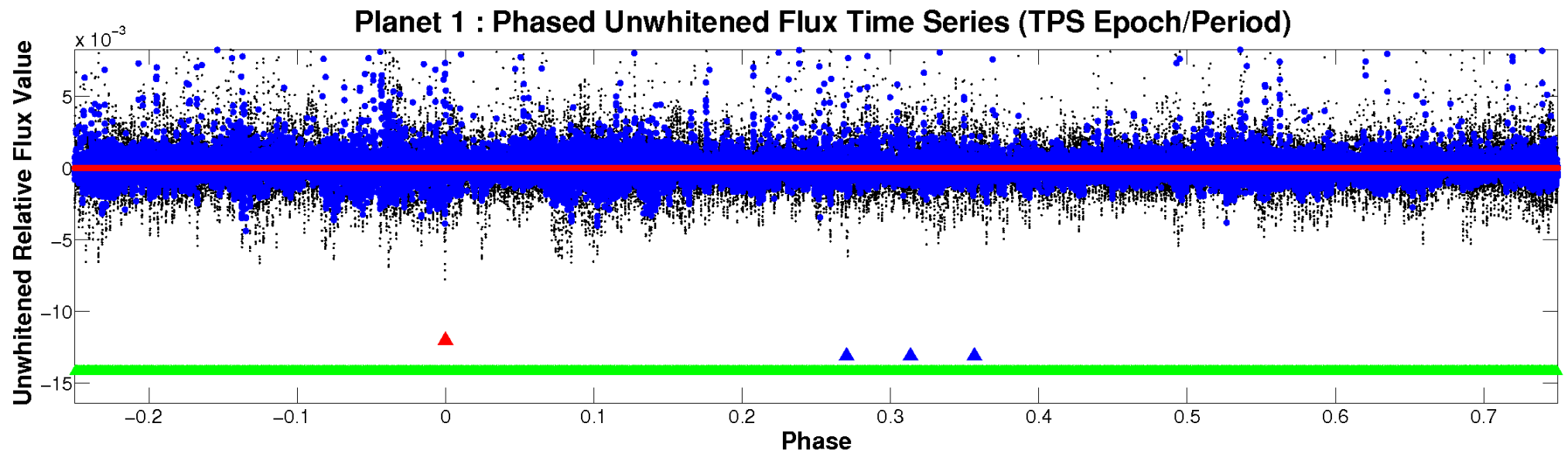


# ALT Odd/Even

TCE 010394332-01

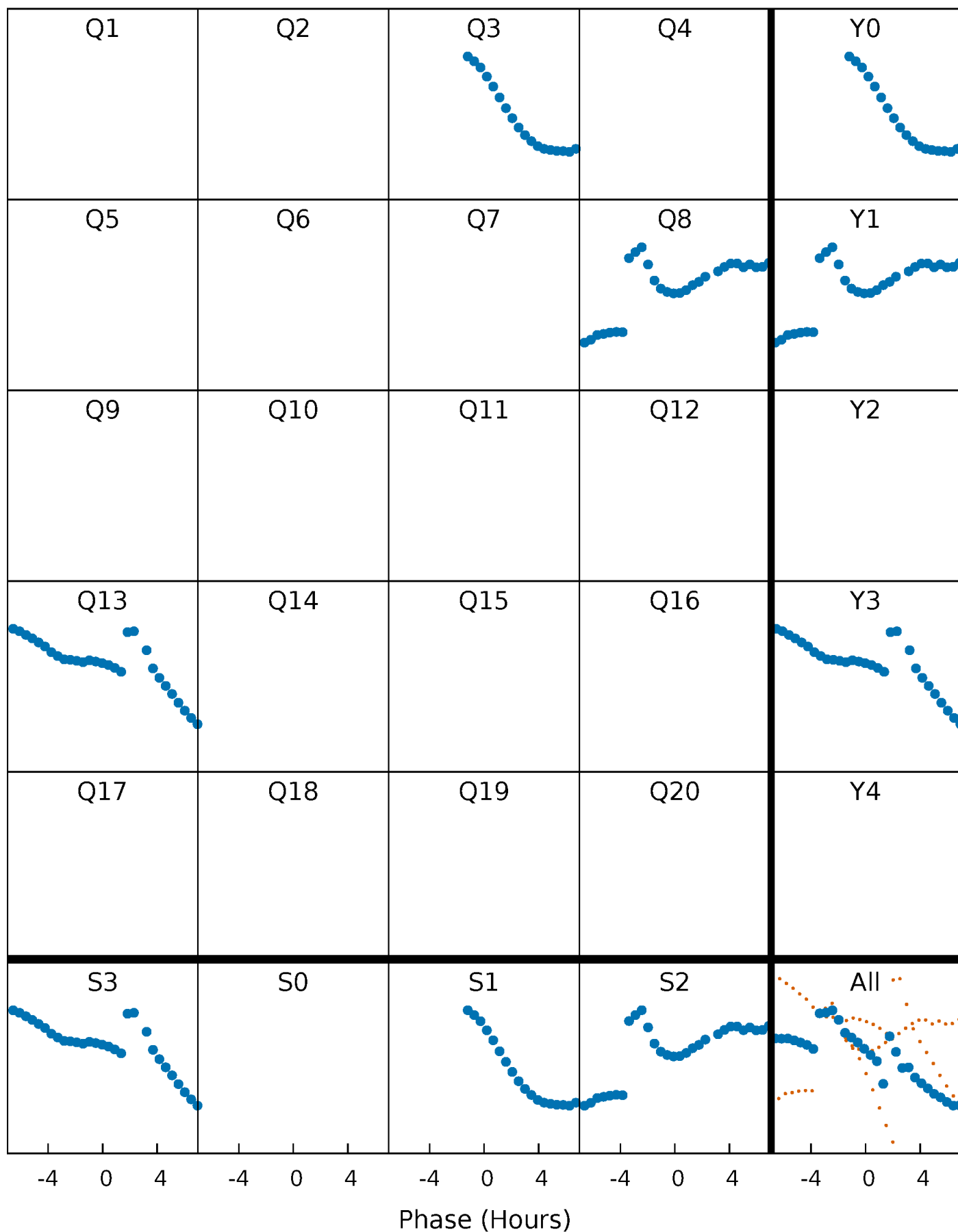


# Non-Whitened Vs. Whitened Light Curve



# PDC Quarter-Phased Transit Curves

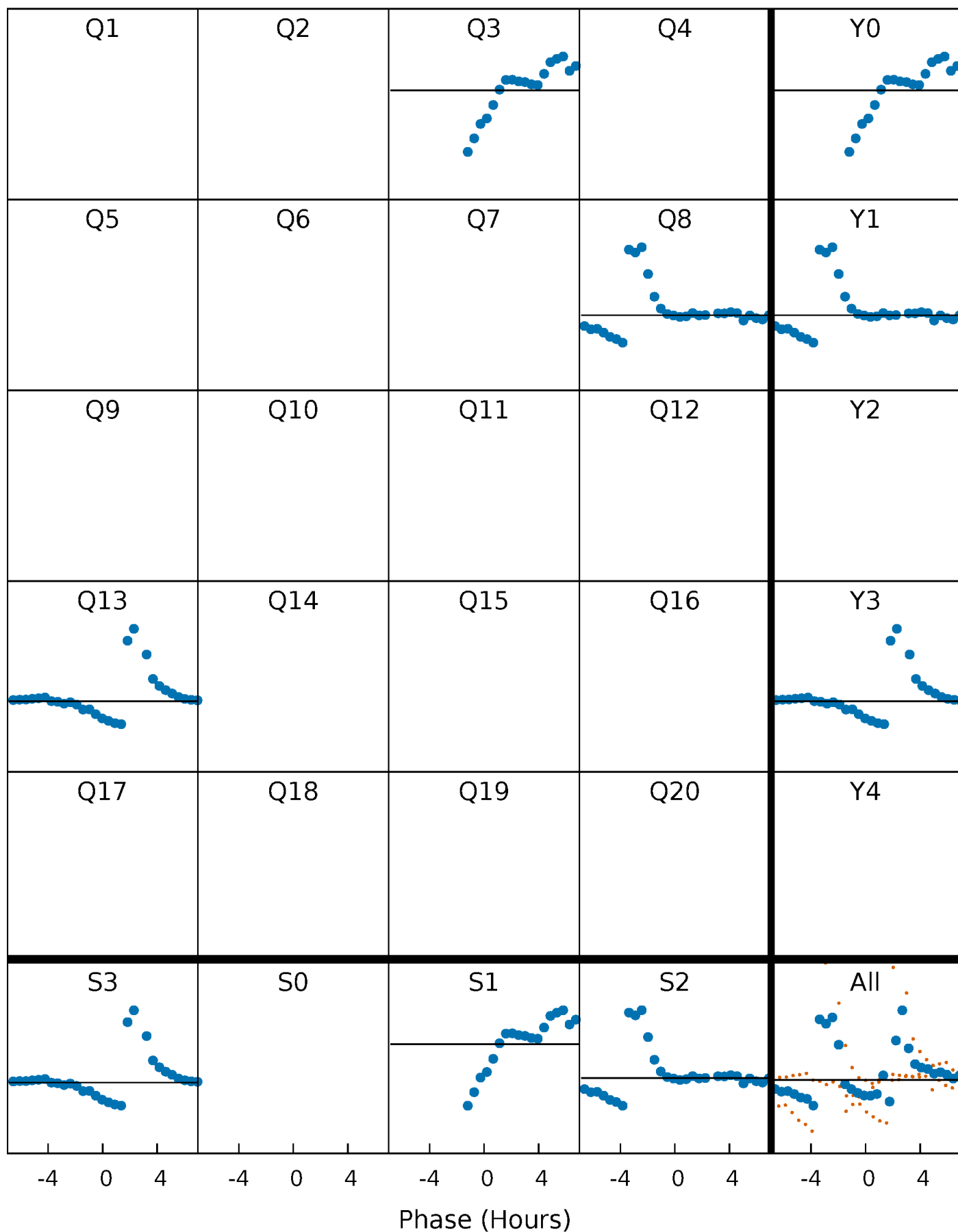
TCE 010394332-01 P=473.404718 Days  $T_0=281.411590$  (BKJD)





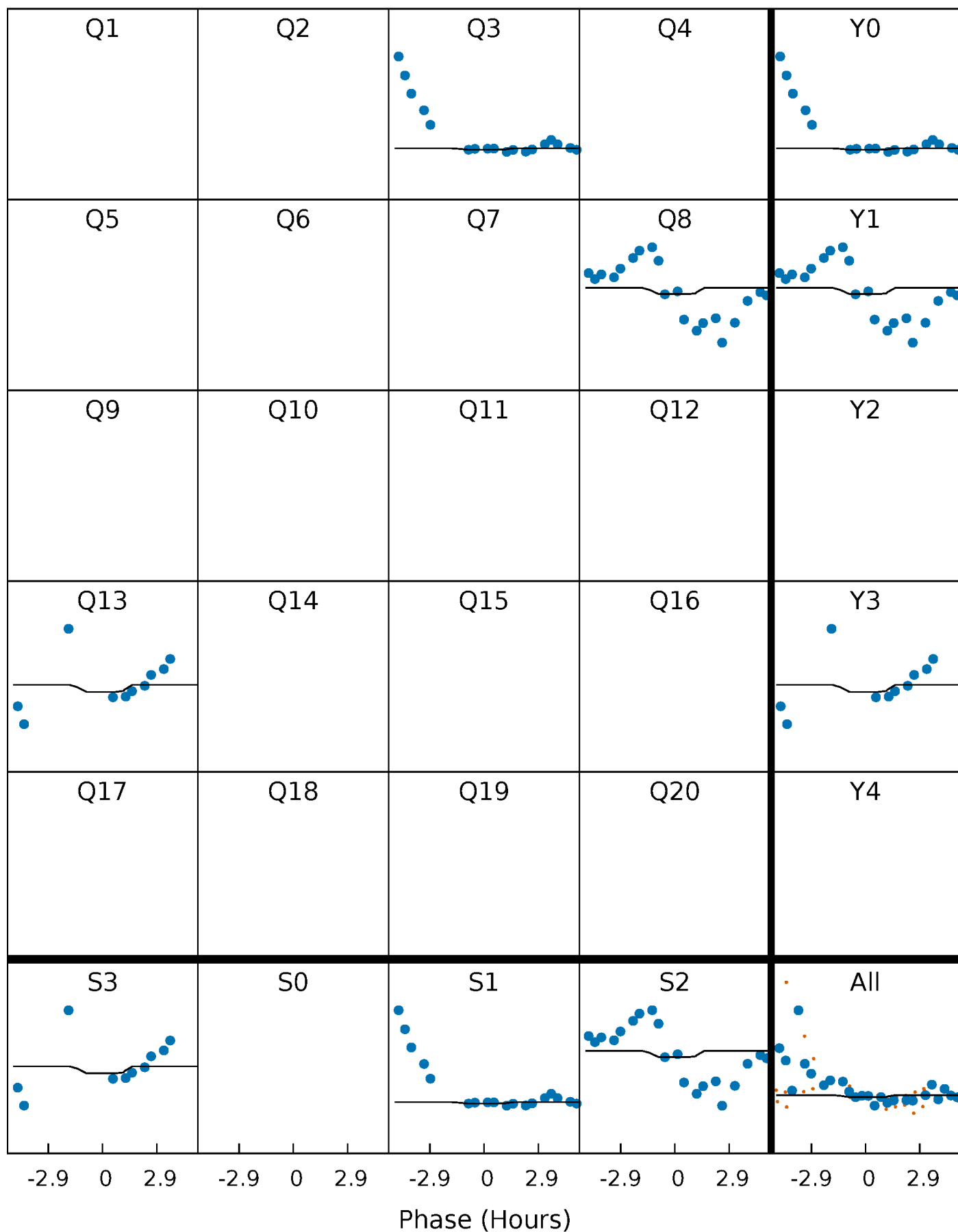
# DV Quarter-Phased Transit Curves

TCE 010394332-01 P=473.404718 Days  $T_0=281.411590$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

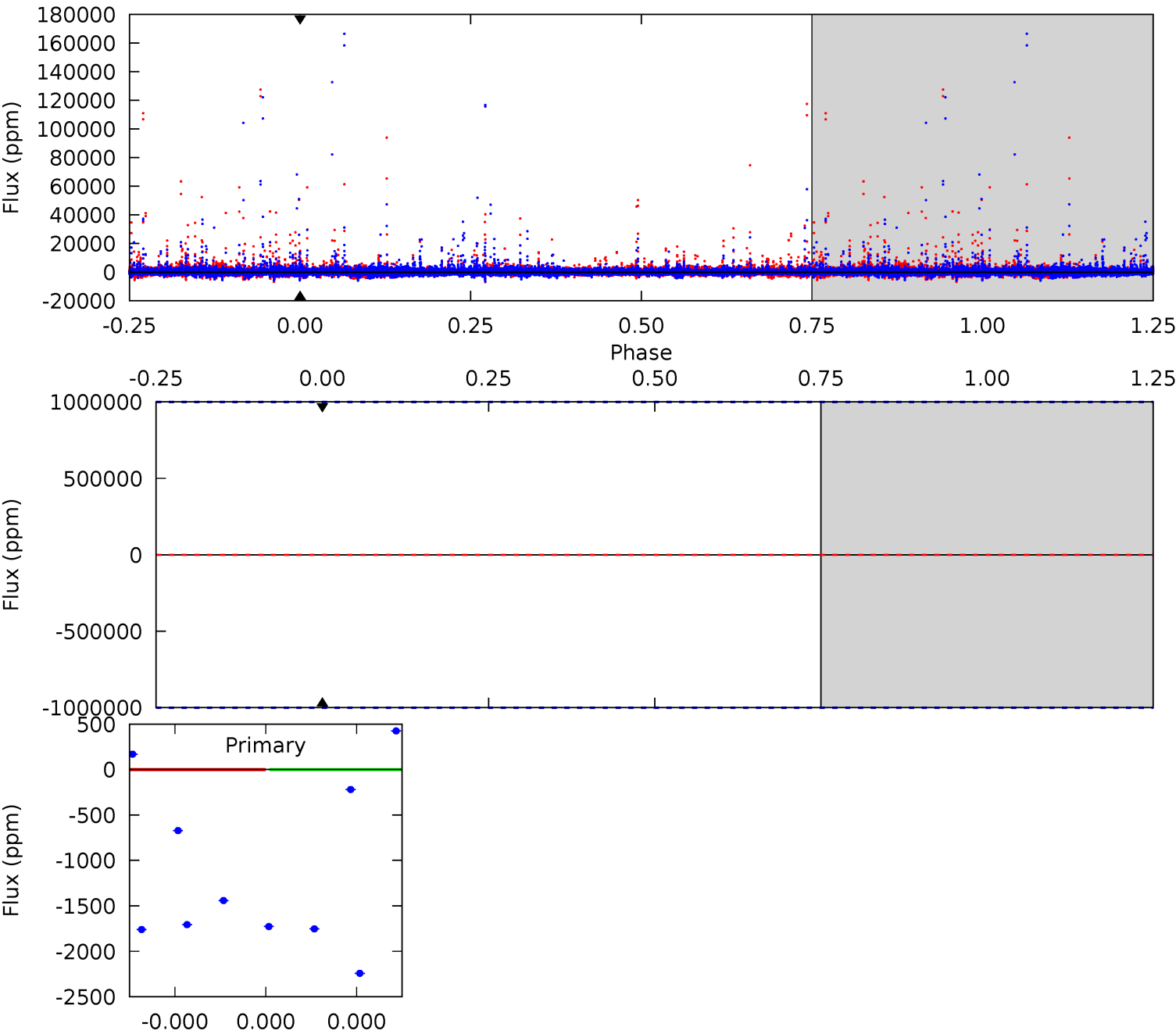
TCE 010394332-01 P=473.404718 Days  $T_0=281.631048$  (BKJD)



DV Model-Shift Uniqueness Test

010394332-01, P = 473.404718 Days, E = 281.411590 Days

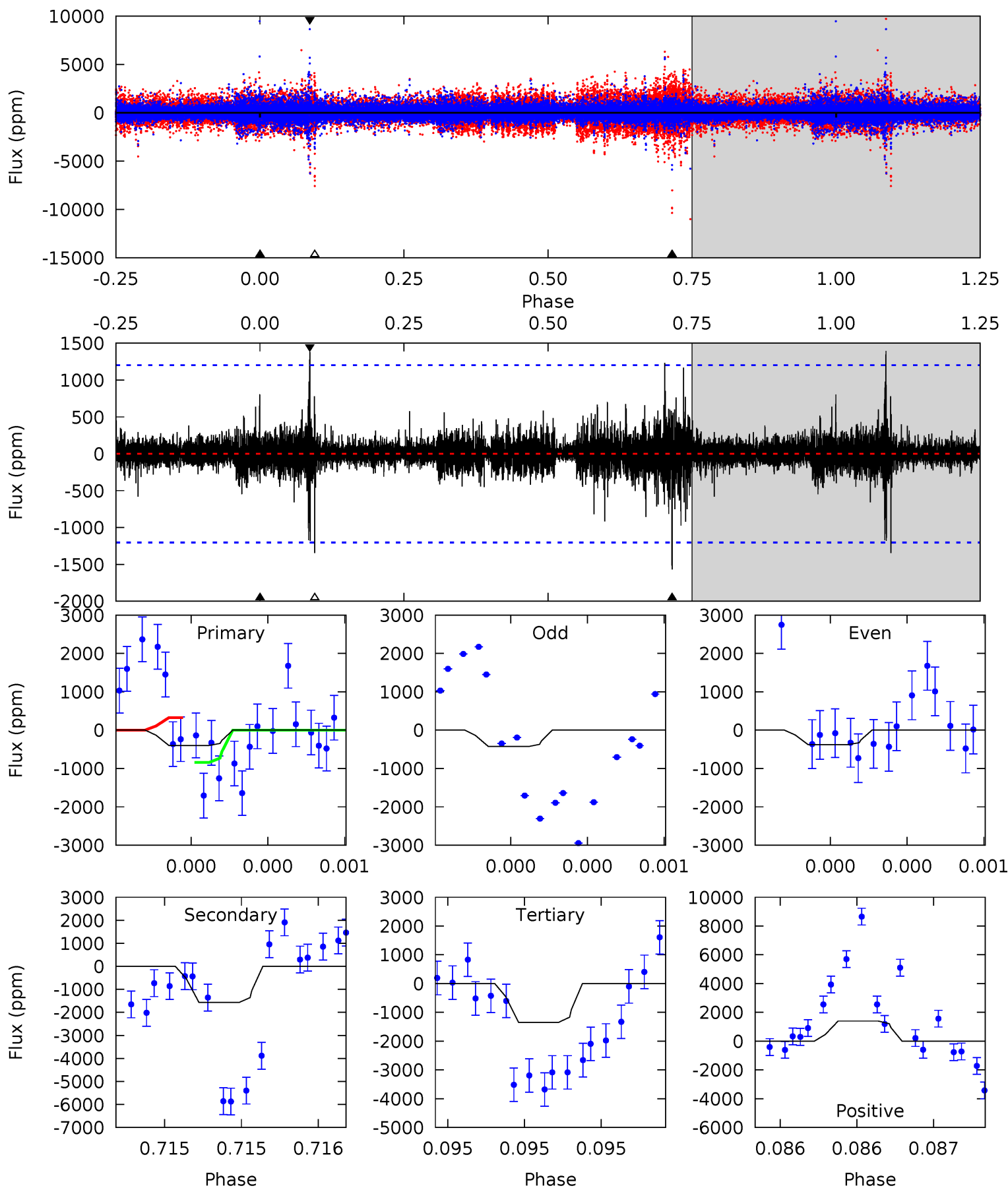
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
0	0	0	0	1.00	1.00	1.00	0	0	0	0	0	0	0	0



# Alt Model-Shift Uniqueness Test

010394332-01, P = 473.404718 Days, E = 281.631048 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
1.89	7.41	6.37	6.59	5.69	3.65	0.73	-4.48	-4.70	1.04	0.81	0.08	1.09	0.47	1.11



### Stellar Parameters For KIC 010394332

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R$ ( $R_{\odot}$ )	$M(M_{\odot})$	$p_{\star}$ ( $\text{g}\cdot\text{cm}^{-3}$ )
	$5068^{+151}_{-151}$	$4.654^{+0.060}_{-0.035}$	$-1.020^{+0.300}_{-0.300}$	$0.605^{+0.047}_{-0.047}$	$0.601^{+0.052}_{-0.022}$	$3.832^{+0.864}_{-0.527}$
	+3%/-3%	+1%/-1%	+29%/-29%	+8%/-8%	+9%/-4%	+23%/-14%
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 010394332-01 / KOI

Detrend	Depth (ppm)	$R_p$ ( $R_{\oplus}$ )	$T_{max}$ (K)	$T_{obs}$ (K)	$A_{obs}$
DV	$0 \pm 1000000$	$5.59^{+4.69}_{-3.61}$	$242^{+8}_{-9}$	$2680^{+11700}_{-14598}$	$2978^{+3545054}_{-2414464}$
Alt.	$-1566 \pm 211$	$5.15^{+5.03}_{-3.78}$	$241^{+9}_{-8}$	$3887^{+2888}_{-769}$	$33729^{+443331}_{-25348}$

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

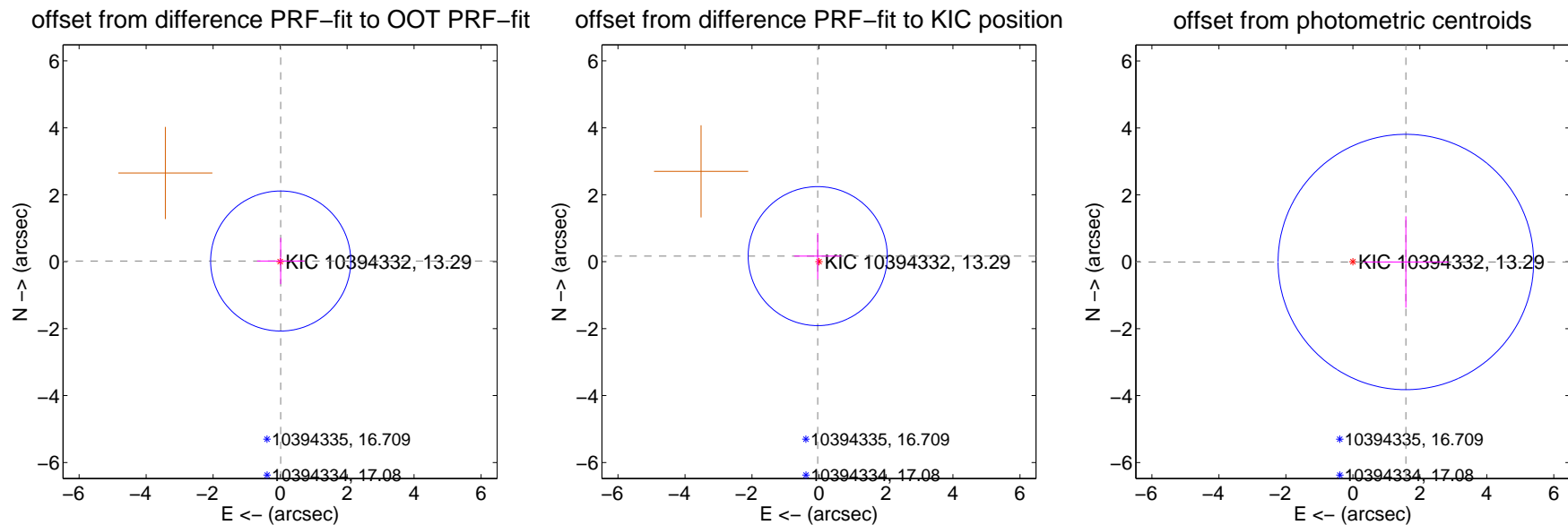
## DV Centroid Data

Supplemental centroid analysis for 010394332-01. Kepler magnitude: 13.29. Transit SNR -1.00

There are 1 quarters with good PRF difference image offsets

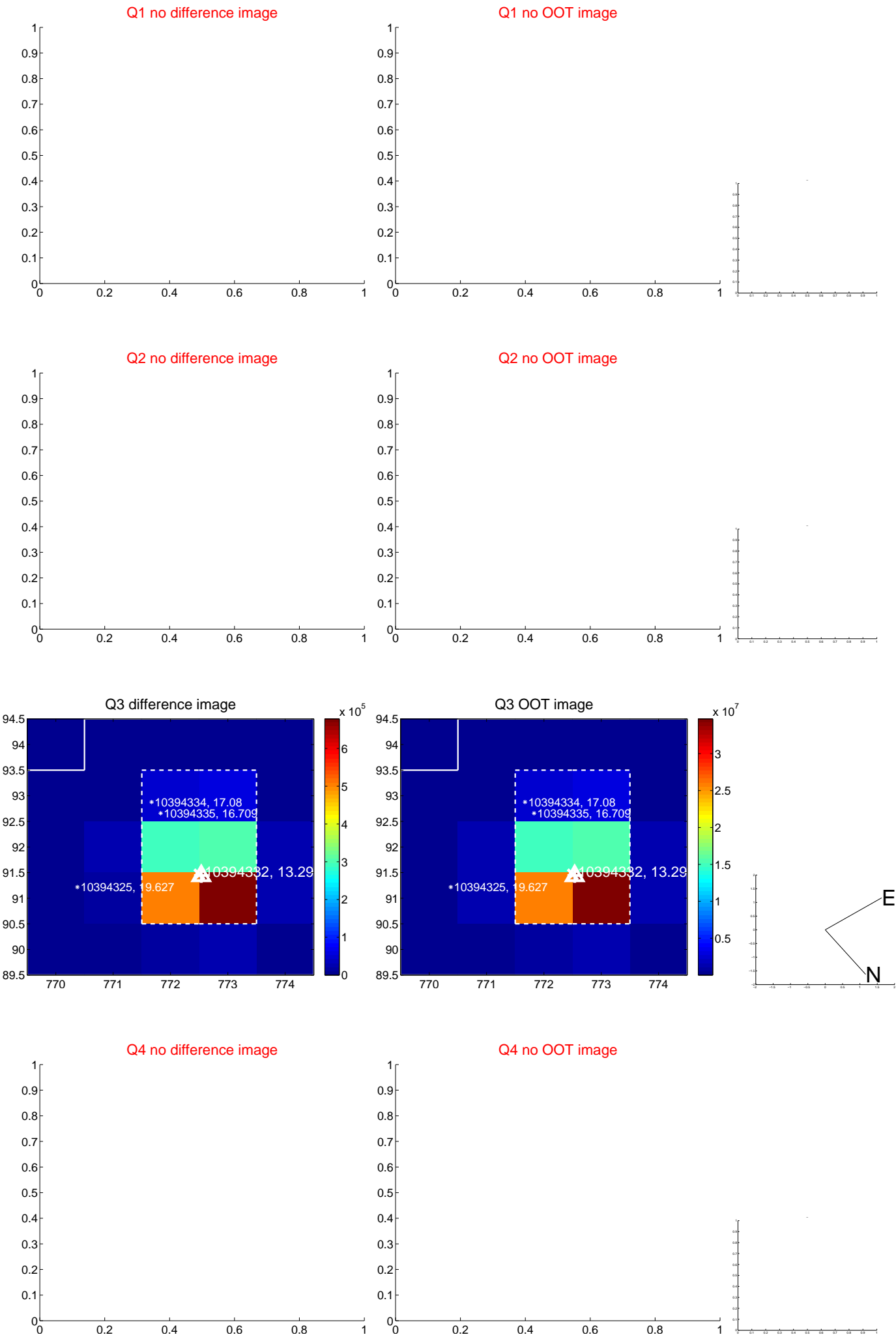
The direct PRF centroid is offset from the target star catalog position by about 0.11 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.027 \pm 0.697$	0.04	$-0.017 \pm 0.705$	$0.021 \pm 0.691$
PRF-fit source offset from KIC position	$0.171 \pm 0.692$	0.25	$0.038 \pm 0.705$	$0.166 \pm 0.691$
photometric centroid source offset	$1.58 \pm 1.27$	1.24	$-1.58 \pm 1.27$	$-0.01 \pm 1.37$

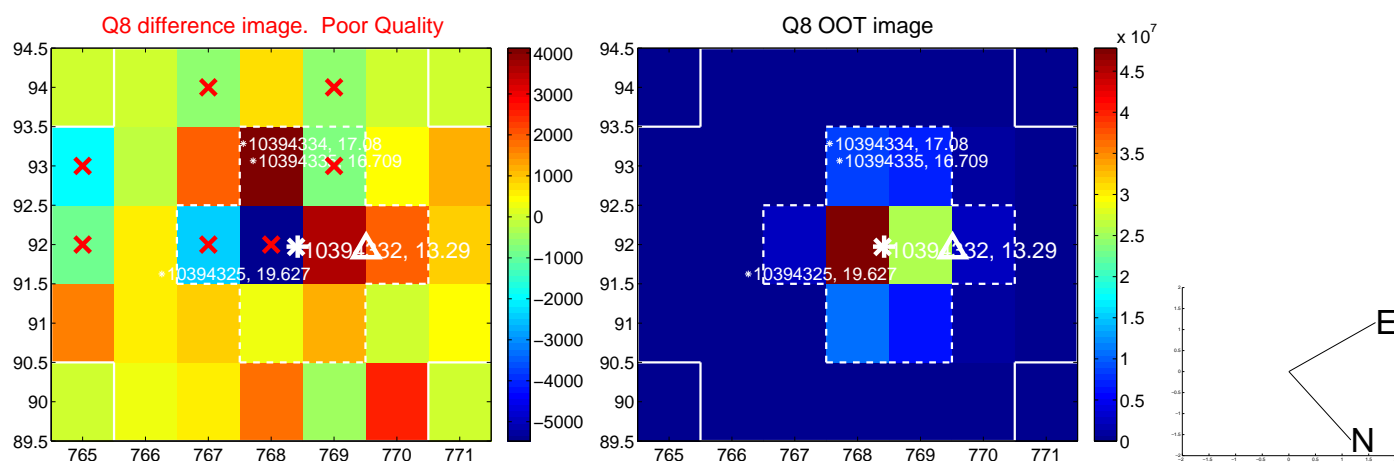
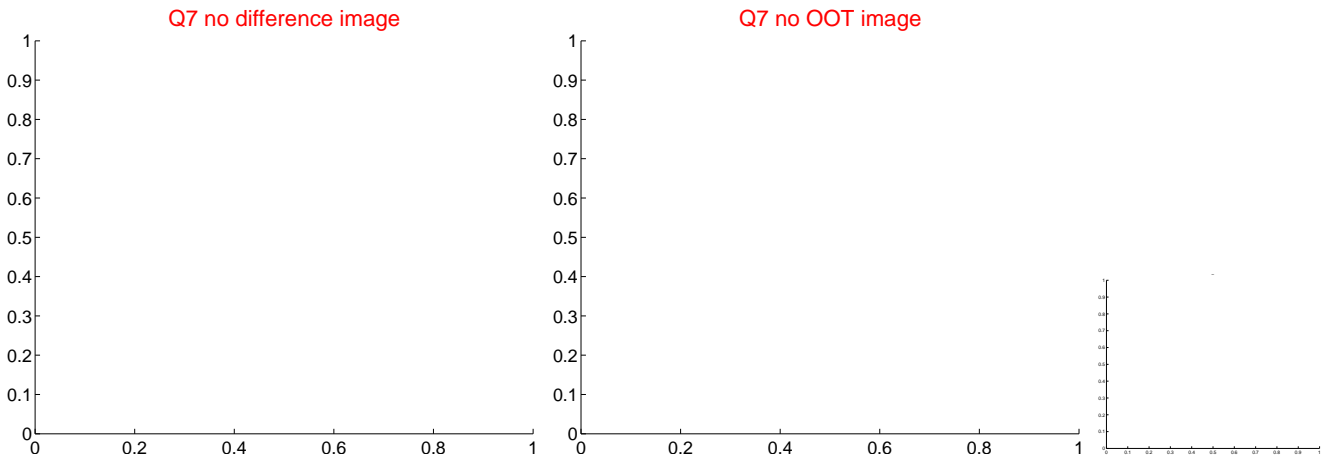
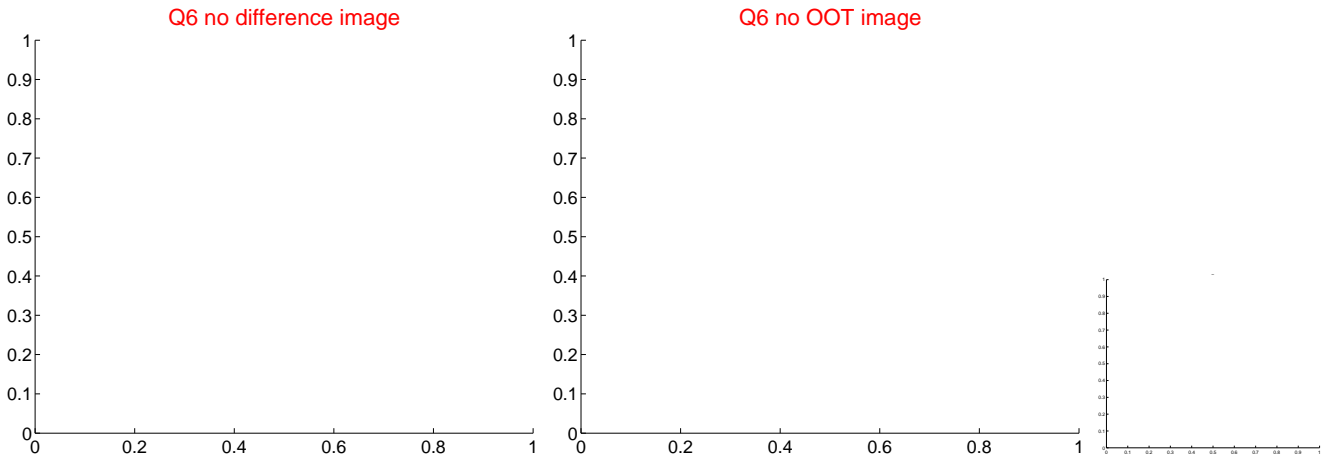
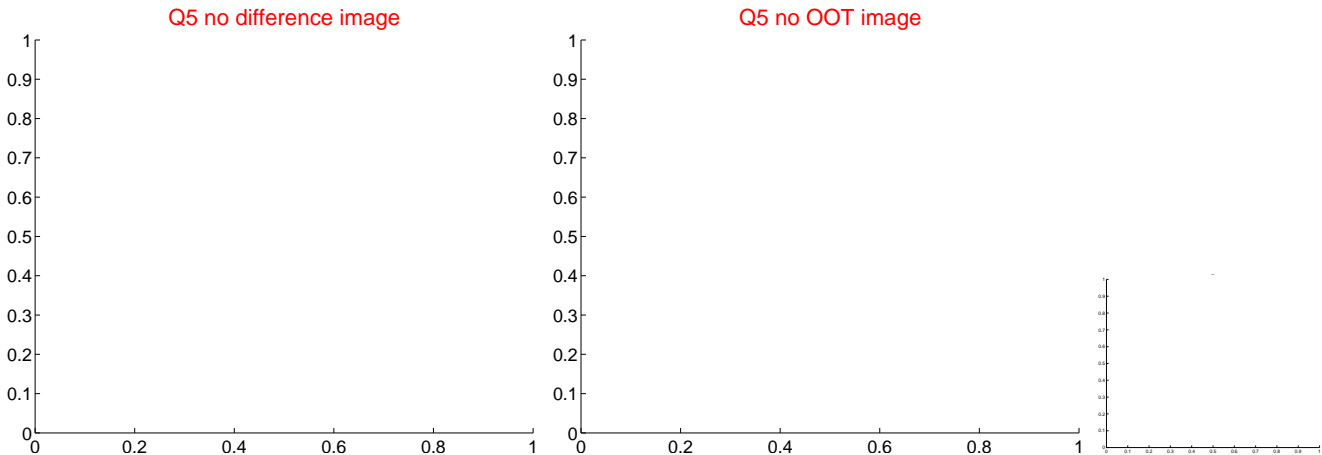


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: three-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





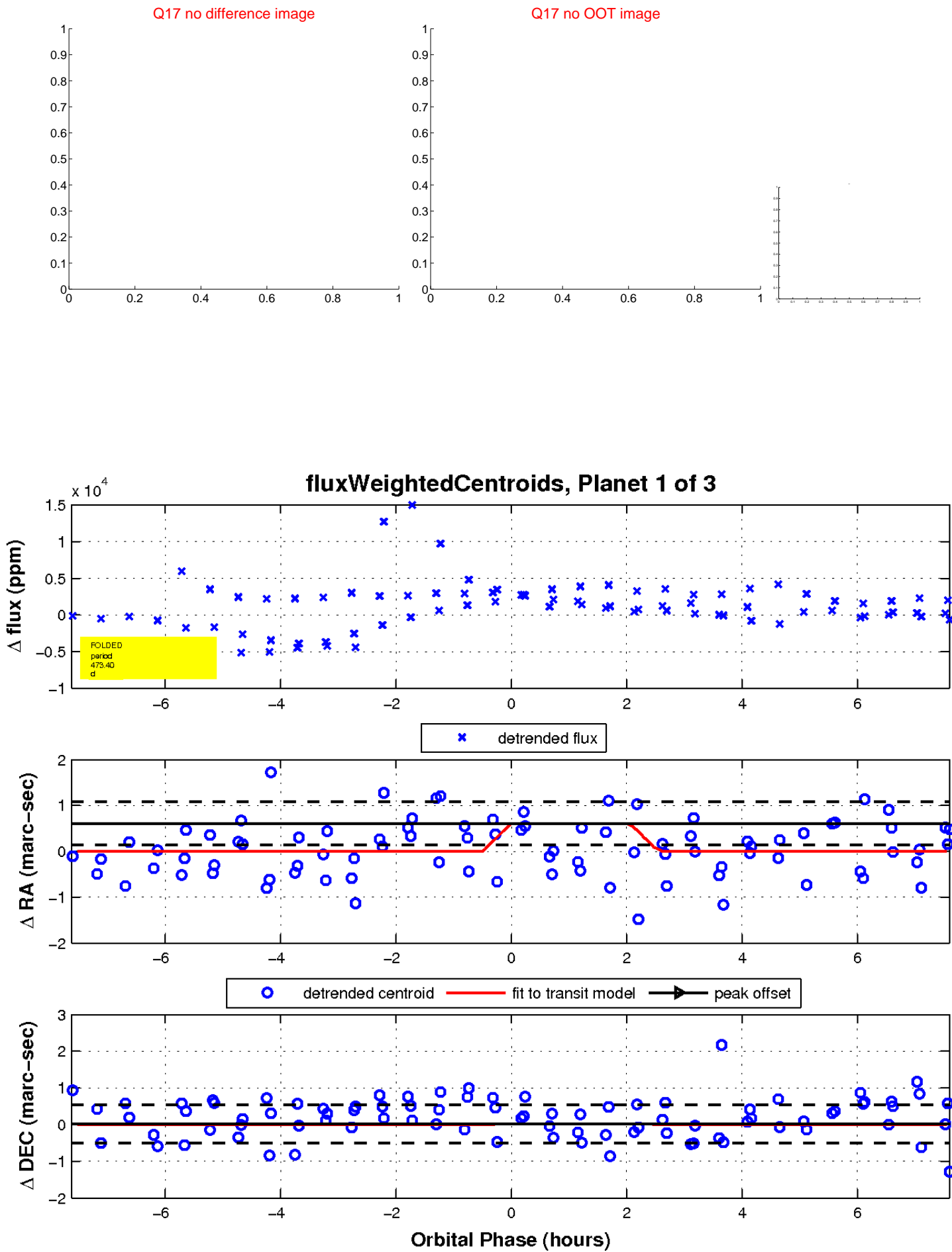
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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.



This plot does not exist for this TCE.

# KIC 010394332

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
010394332-01	OBS	No	473.404718	281.411590	1521.9	3.500	26.2	-1.0	0.60	5068	2.33	0.21
010394332-02	OBS	No	453.006532	450.248070	2316.8	5.527	13.2	3.5	0.60	5068	4.83	0.23
010394332-03	OBS	No	1.251143	132.432924	433.9	9.123	9.2	10.5	0.60	5068	2.56	587.49

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
010394332-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_SKYE—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_NOFITS
010394332-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_TRACKER—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
010394332-03	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT

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

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

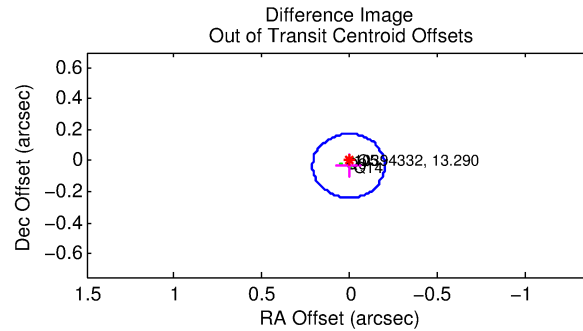
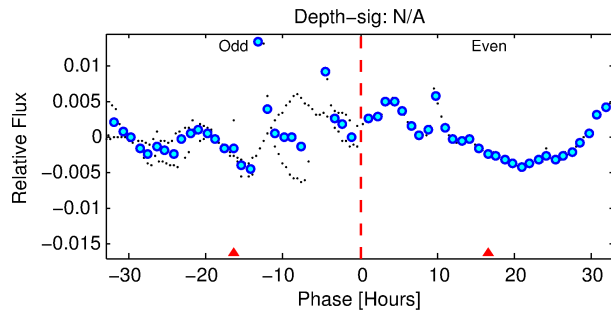
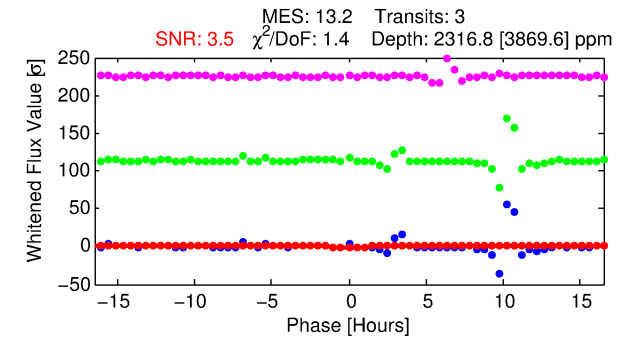
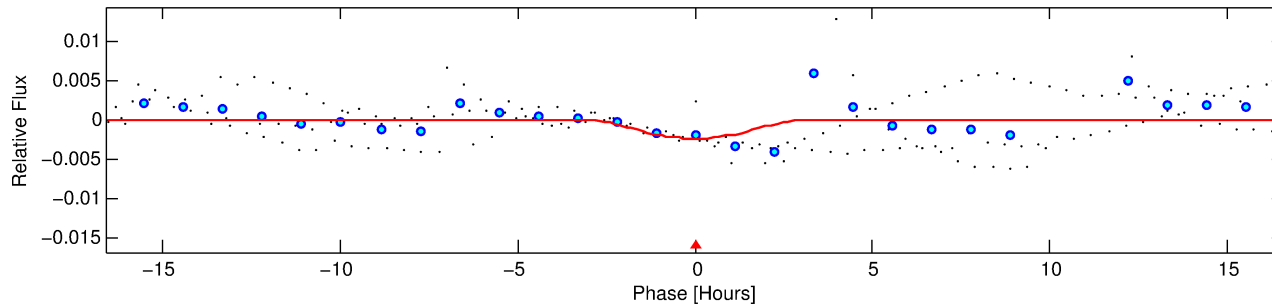
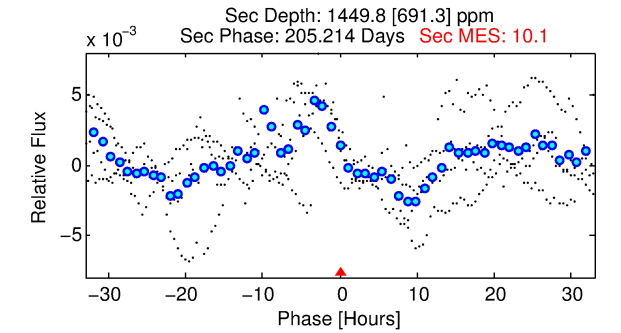
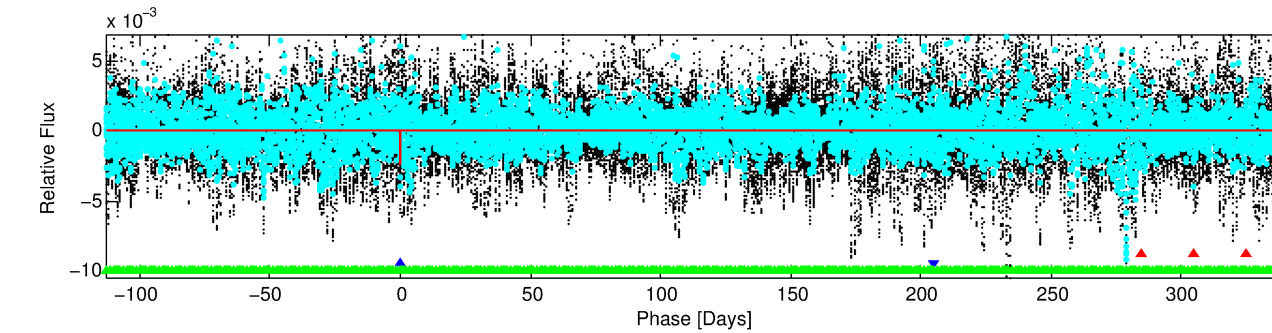
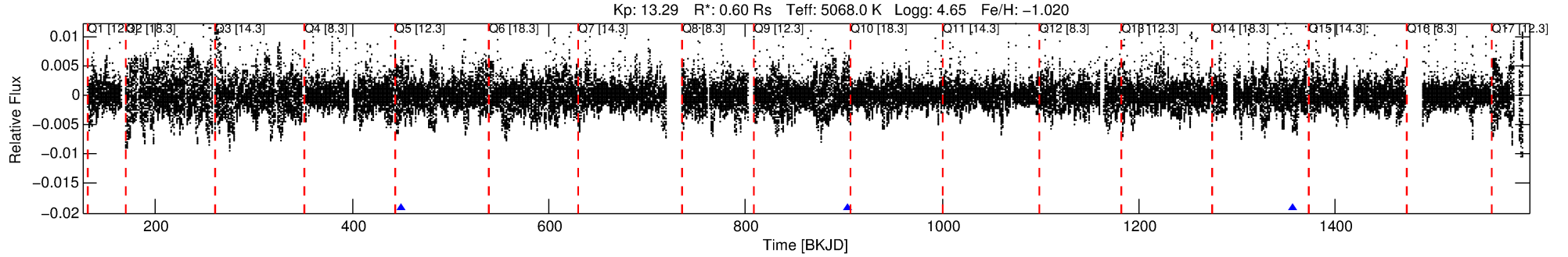
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 010394332-02

No Significant Match Found

# DV One-Page Summary

KIC: 10394332 Candidate: 2 of 3 Period: 453.007 d



## DV Fit Results:

Period = 453.00653 [0.06413] d  
Epoch = 450.2481 [0.0774] BKJD  
Rp/R\* = 0.0732 [0.6168]  
a/R\* = 271.20 [593.89]  
b = 0.98 [1.00]  
Seff = 0.23 [0.04]  
Teq = 176 [7] K  
Rp = 4.83 [40.72] Re  
a = 0.9748 [0.0676] AU  
Ag = 32465.41 [547468.86] [0.06σ]  
Teffp = 3655 [15411] K [0.23σ]

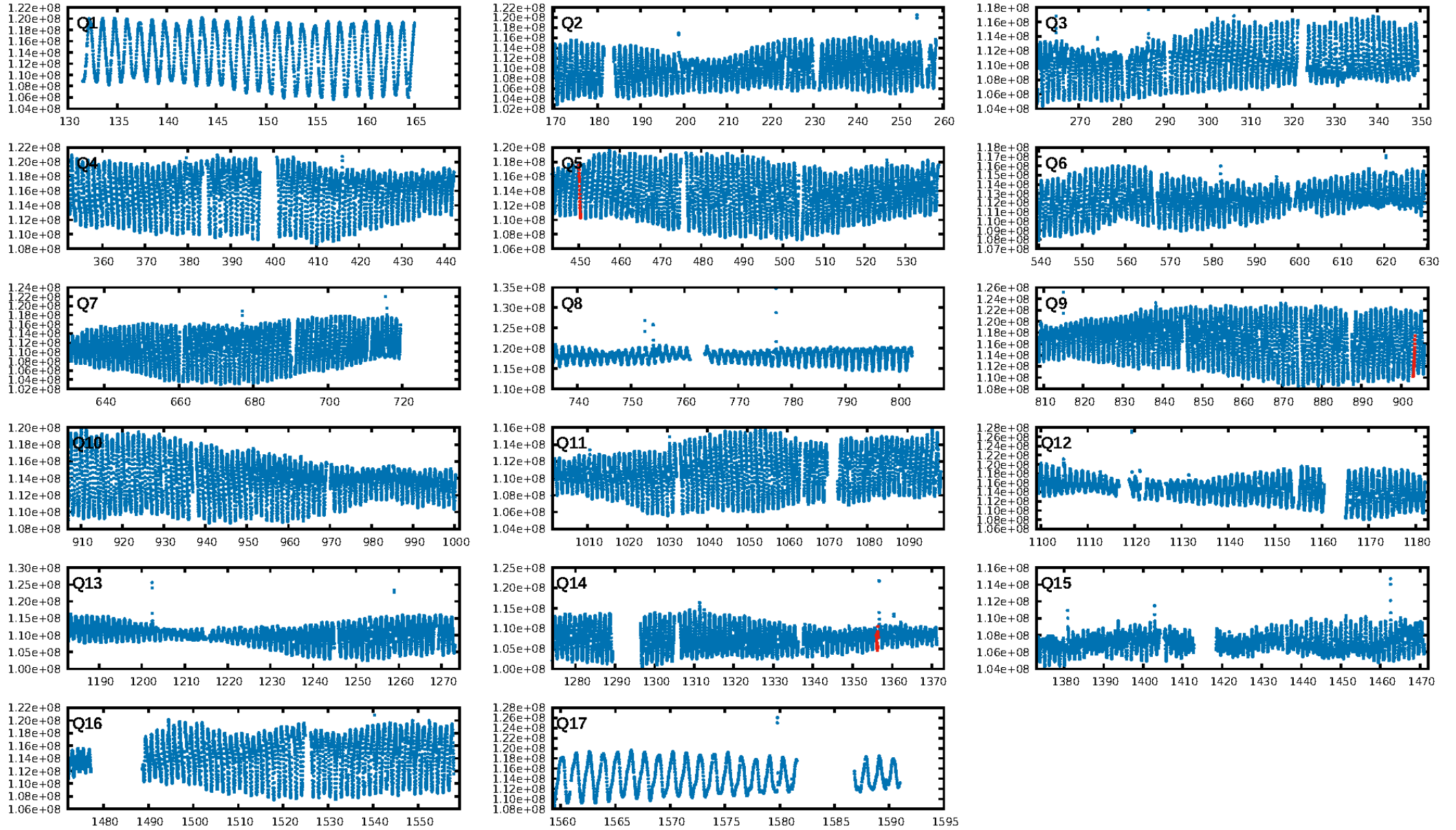
## DV Diagnostic Results:

ShortPeriod-sig: 100.0% [1016.51σ]  
LongPeriod-sig: 100.0% [74.84σ]  
ModelChiSquare2-sig: 0.6%  
ModelChiSquareGof-sig: 96.8%  
Bootstrap-pfa: N/A  
RollingBand-fgt: 1.00 [3/3]  
GhostDiagnostic-chr: 2.95  
Centroid-sig: 45.4%  
Centroid-so: 0.128 arcsec [0.56σ]  
OotOffset-rm: 0.033 arcsec [0.48σ]  
OotOffset-st: 1/0/0/2 [3]  
KicOffset-rm: 0.088 arcsec [1.17σ]  
KicOffset-st: 1/0/0/2 [3]  
DiffImageQuality-fgm: 1.00 [3/3]  
DiffImageOverlap-fno: 0.00 [0/3]

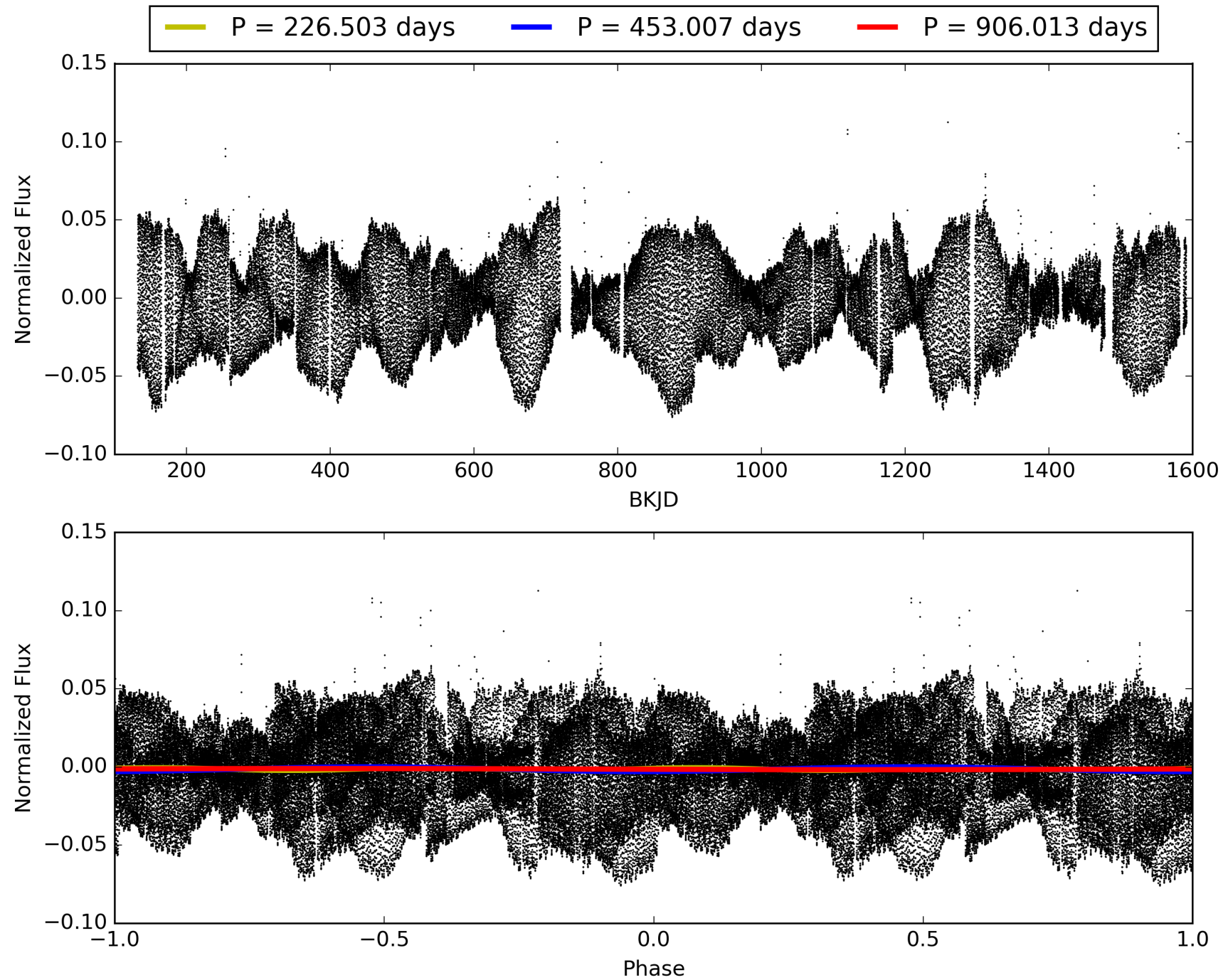
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 07:16:05 Z

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

# TCE 010394332-02, PDC Light Curves



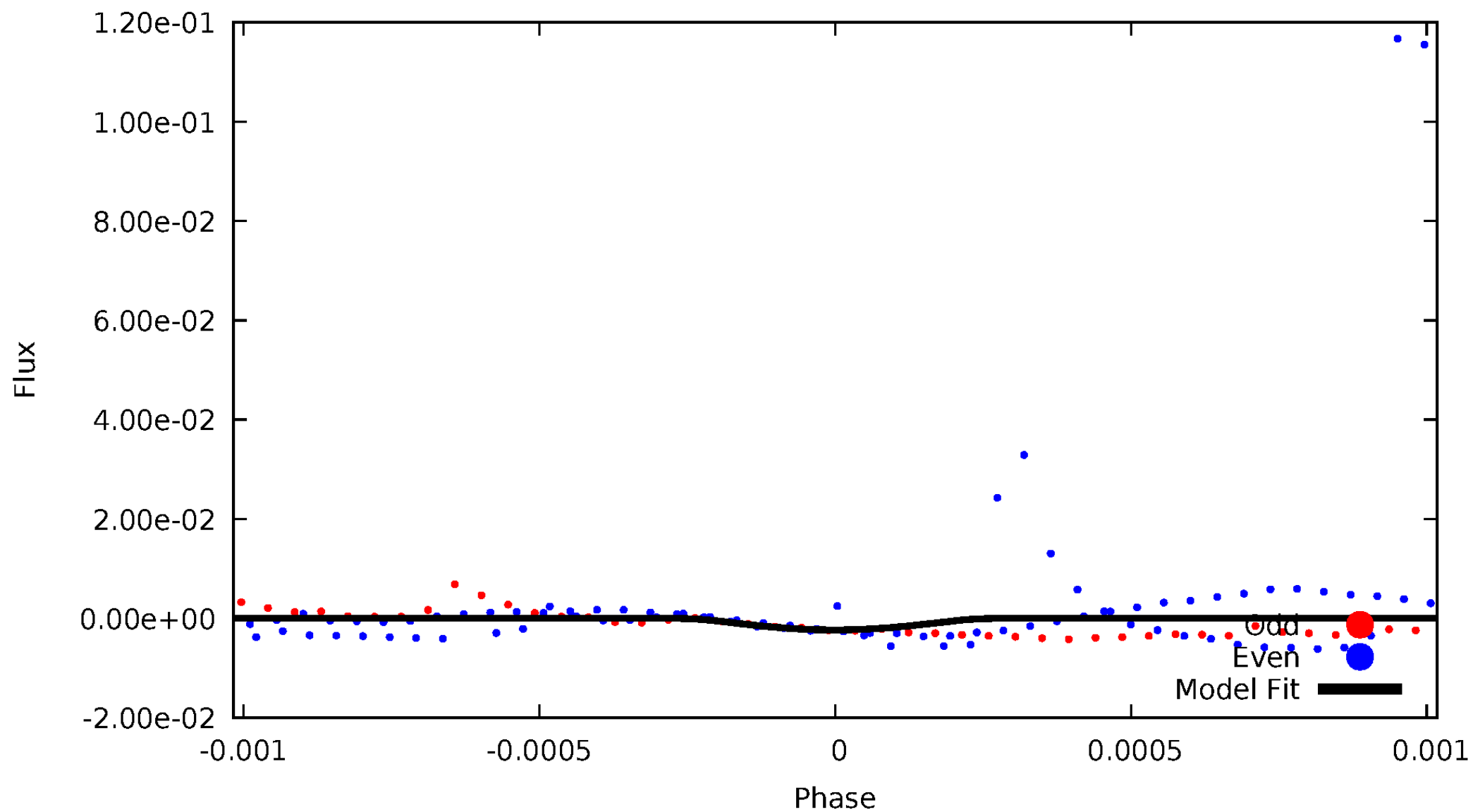
TCE 010394332-02





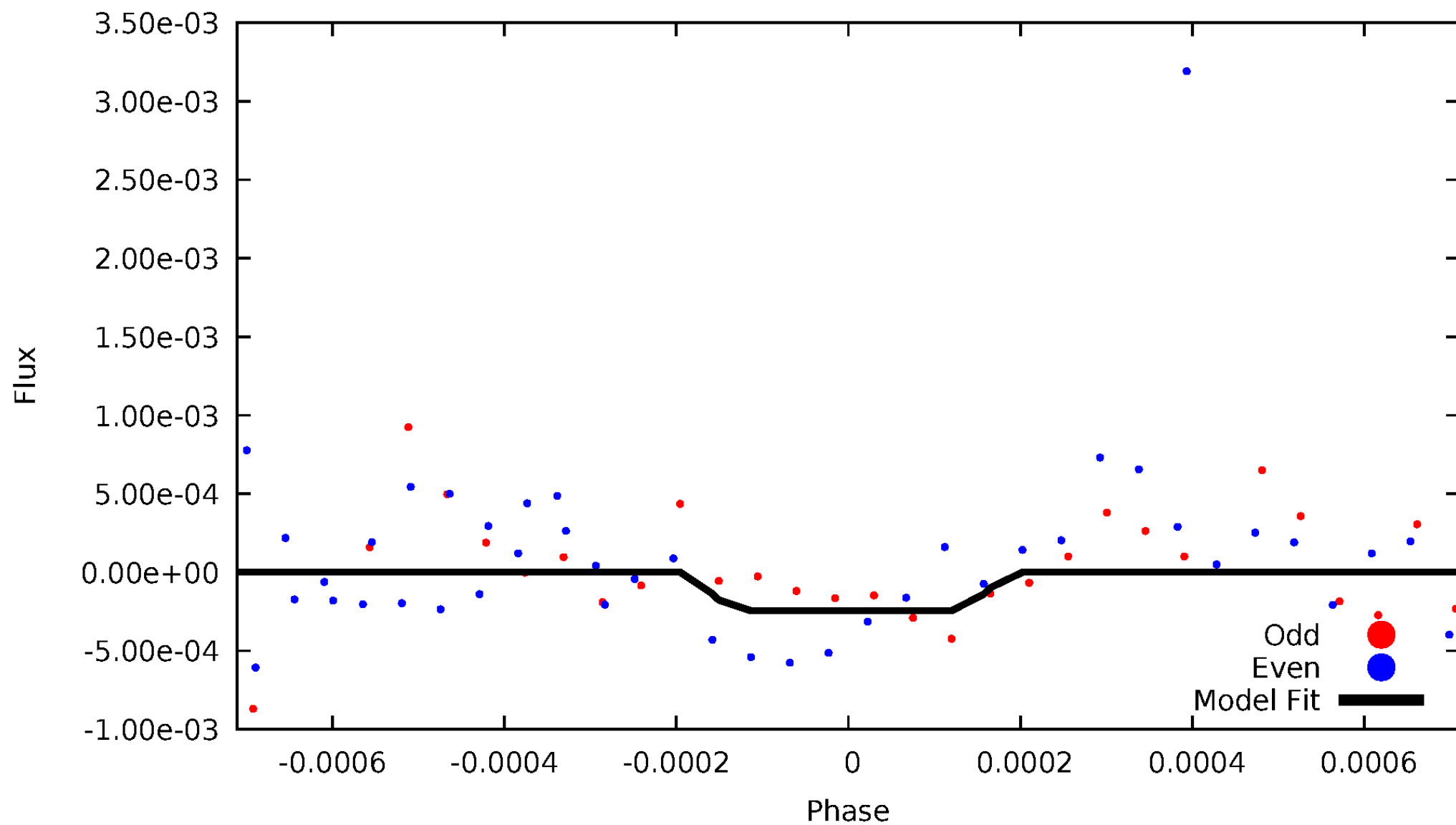
# DV Odd/Even

TCE 010394332-02



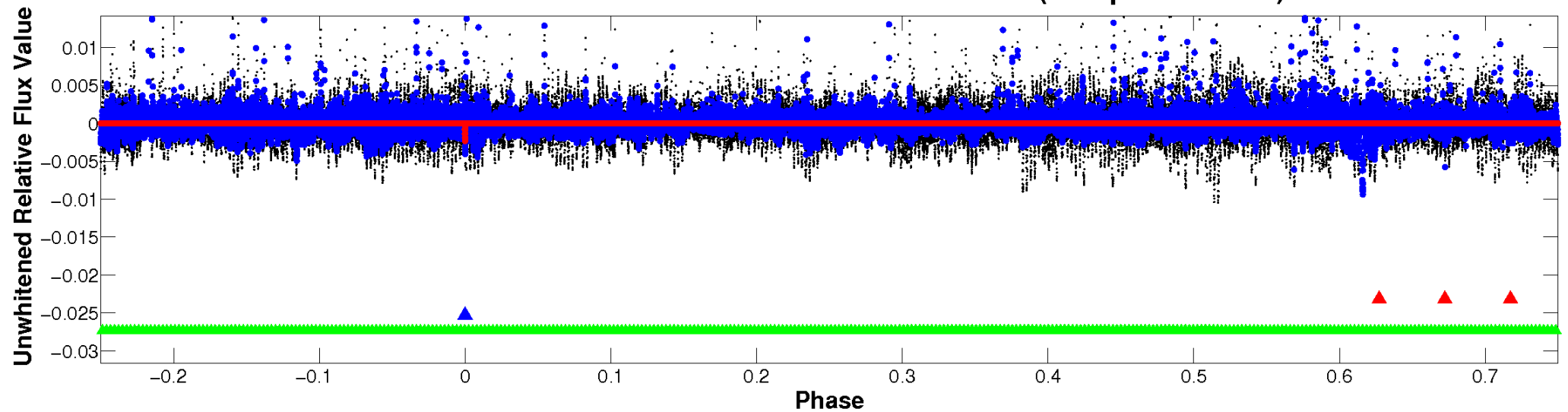
# ALT Odd/Even

TCE 010394332-02

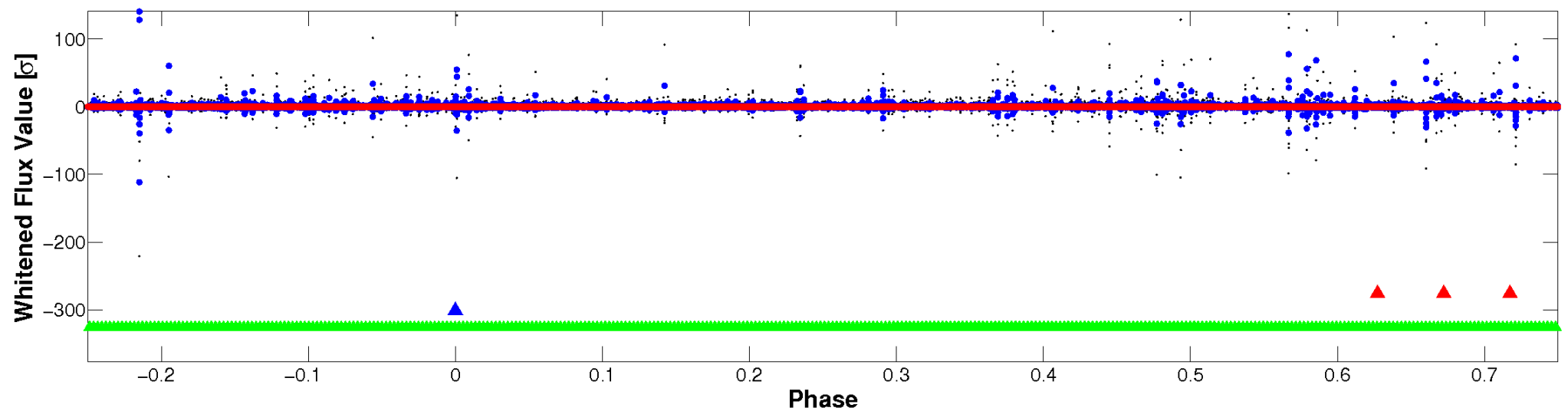


# Non-Whitened Vs. Whitened Light Curve

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

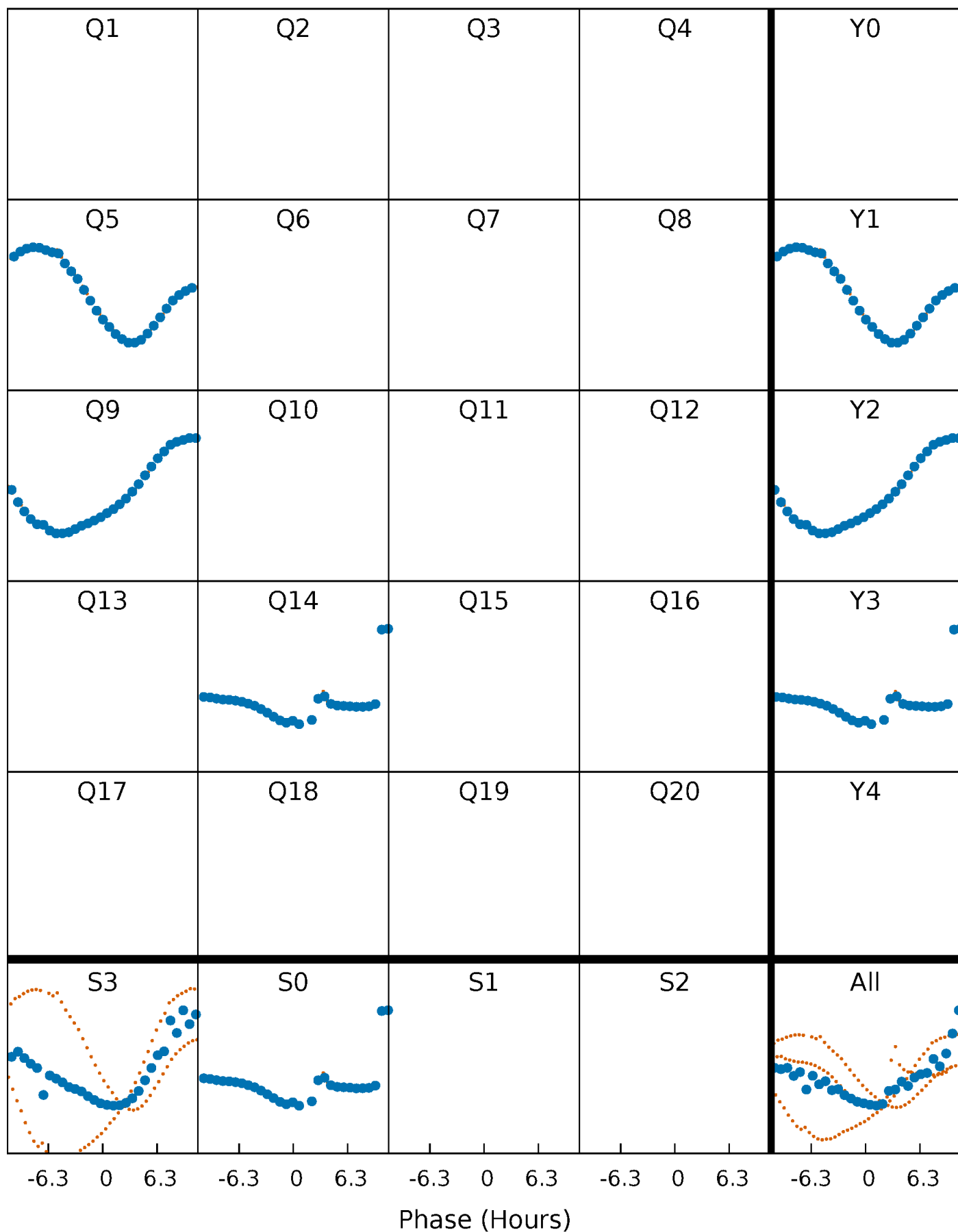


**Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)**



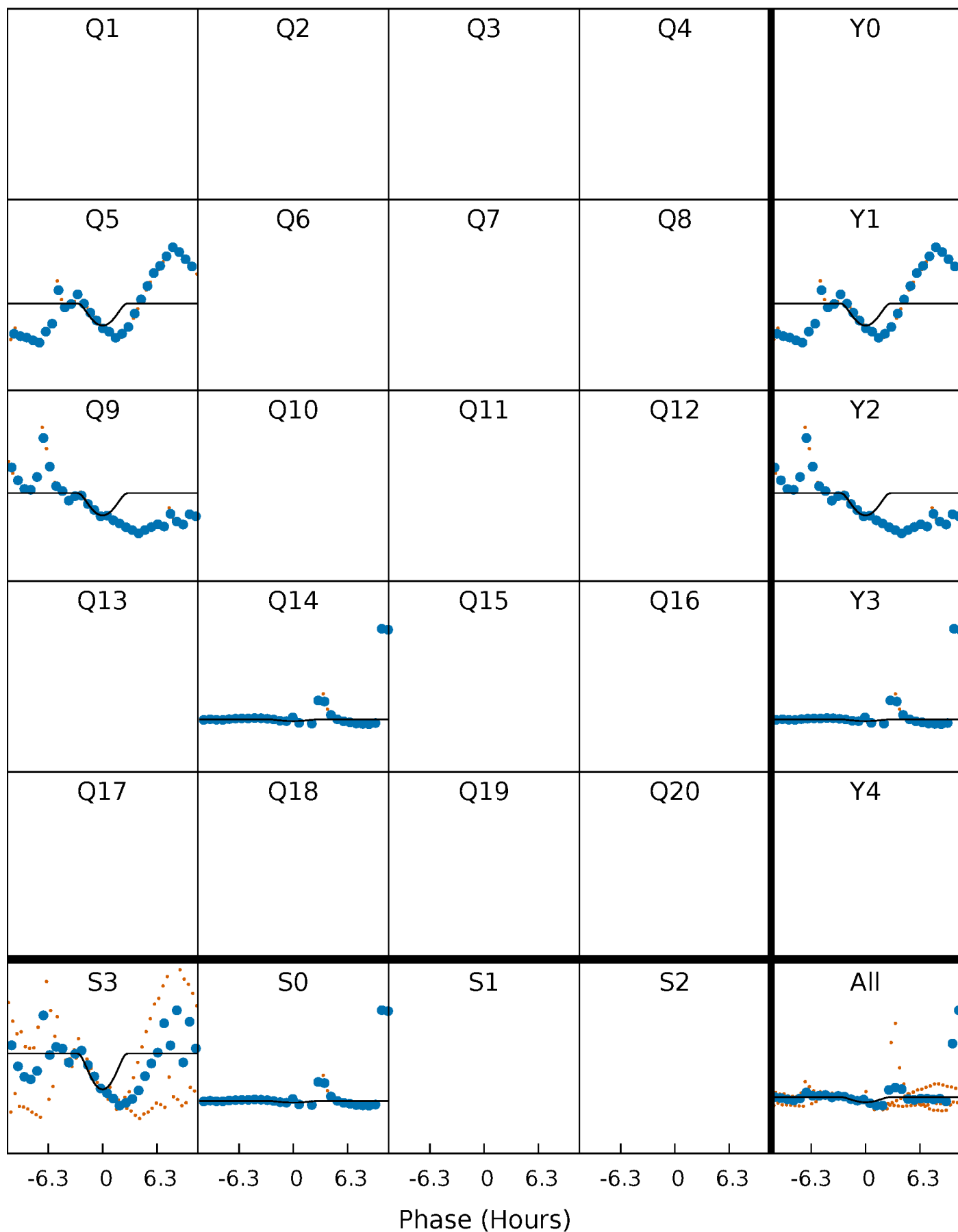
# PDC Quarter-Phased Transit Curves

TCE 010394332-02     $P=453.006532$  Days     $T_0=450.248070$  (BKJD)



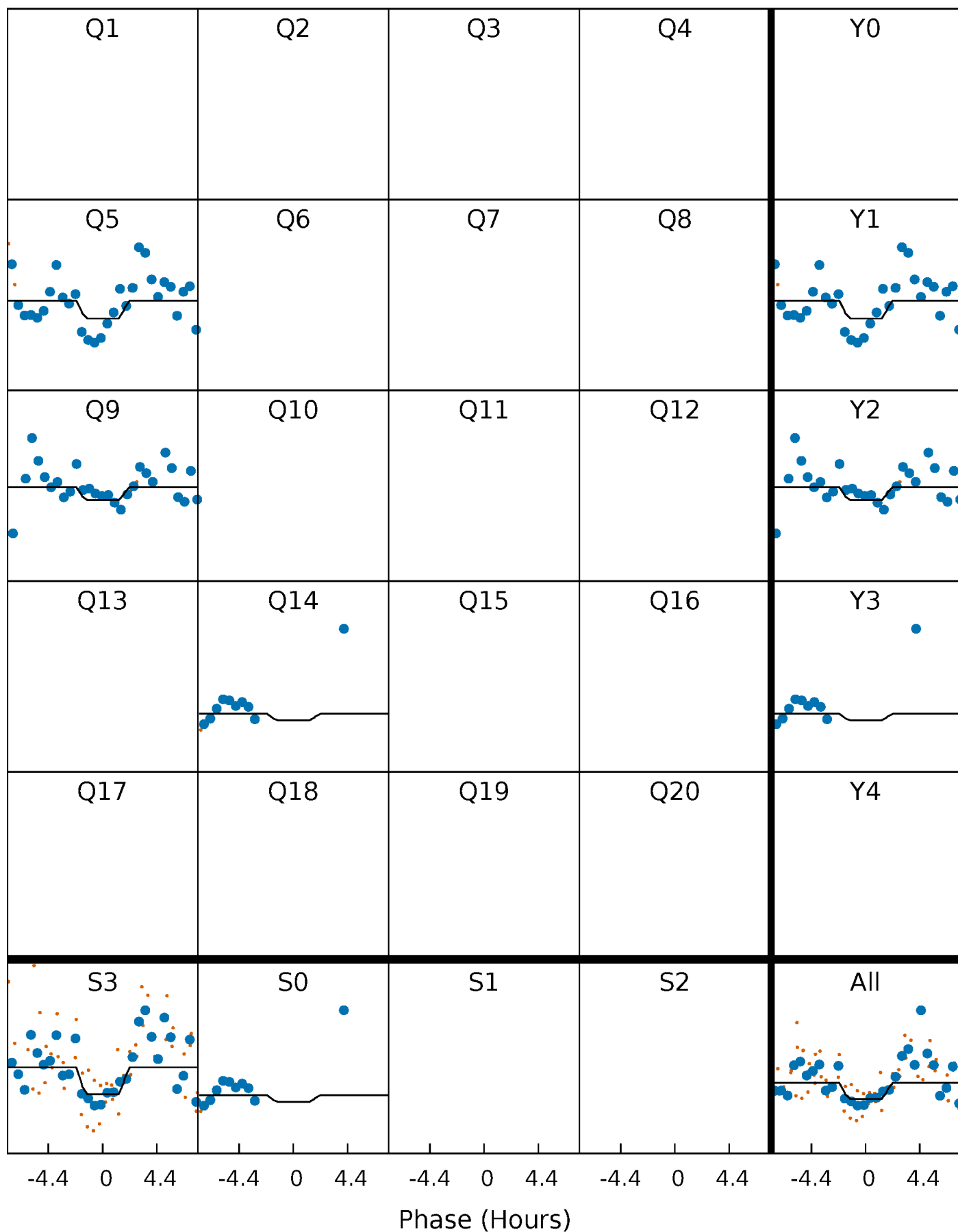
# DV Quarter-Phased Transit Curves

TCE 010394332-02     $P=453.006532$  Days     $T_0=450.248070$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

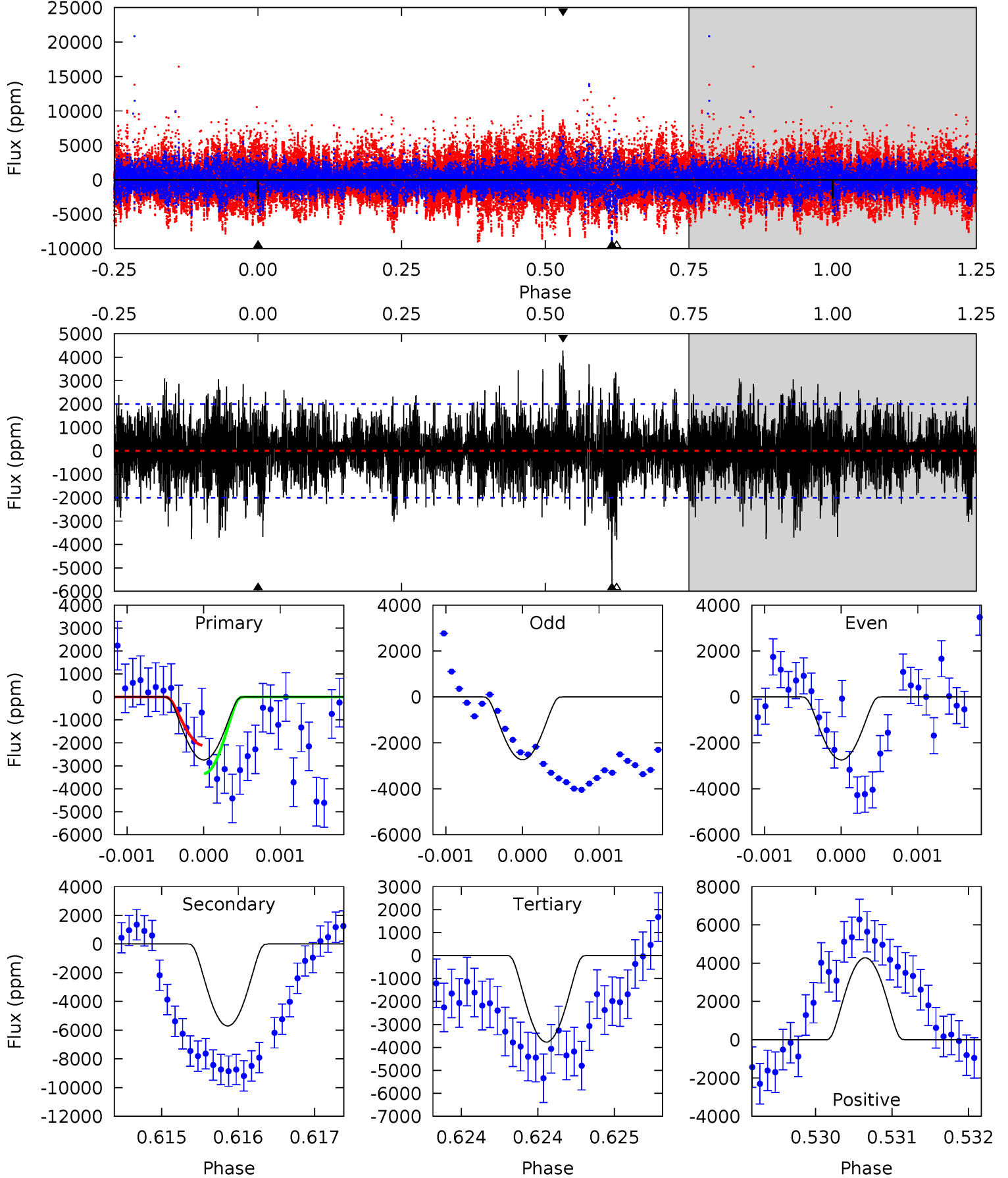
TCE 010394332-02 P=452.930291 Days  $T_0=450.448642$  (BKJD)



# DV Model-Shift Uniqueness Test

010394332-02, P = 453.006532 Days, E = 450.248070 Days

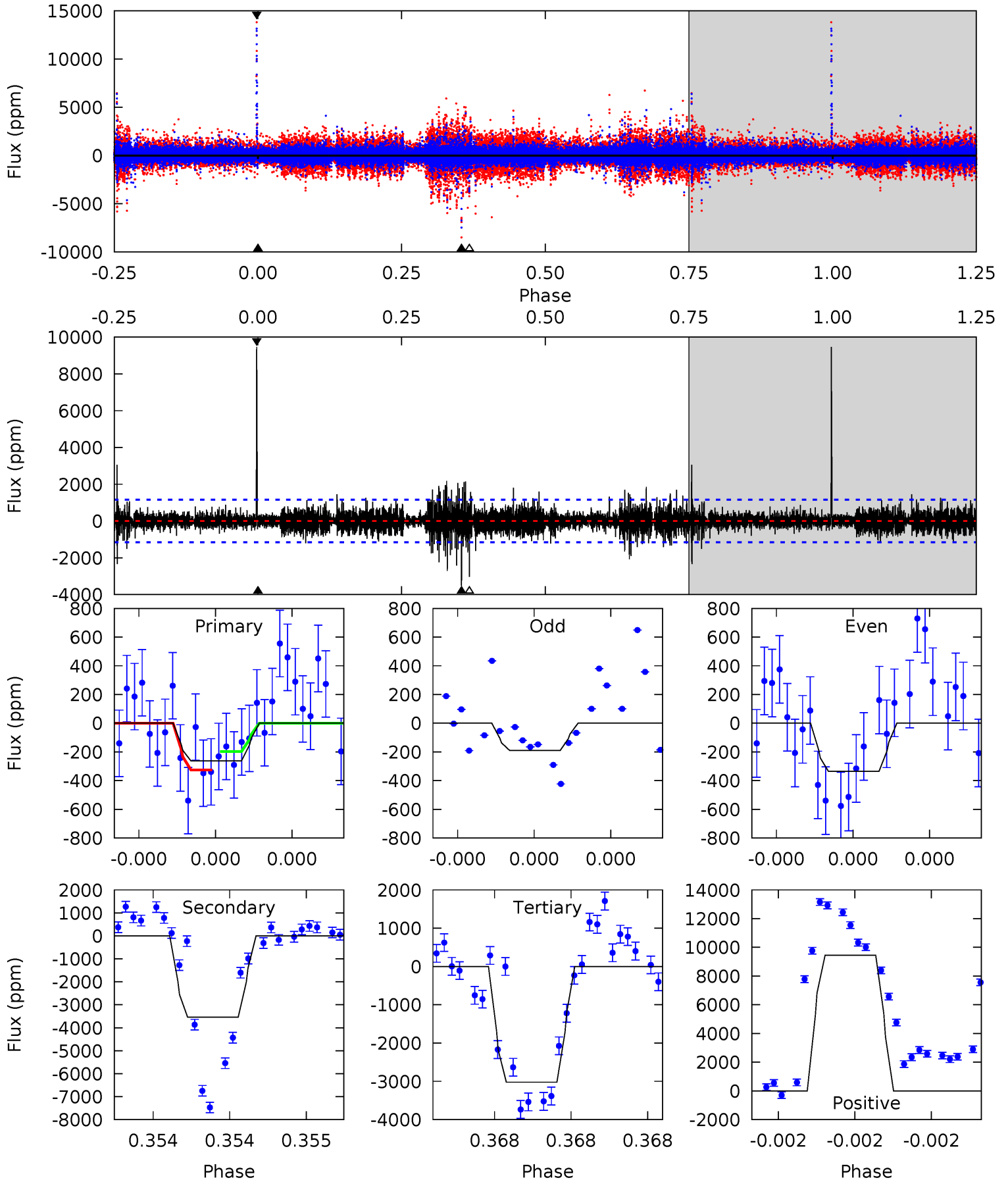
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
7.62	15.8	10.5	11.9	5.56	3.46	2.80	-2.85	-4.27	5.37	3.95	0.01	1.00	0.43	1.70



# Alt Model-Shift Uniqueness Test

010394332-02, P = 452.930291 Days, E = 450.448642 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
1.28	17.3	14.7	46.1	5.63	3.57	2.06	-13.5	-44.9	2.53	-28.9	0.21	1.00	0.73	0.32





### Stellar Parameters For KIC 010394332

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$5068^{+151}_{-151}$	$4.654^{+0.060}_{-0.035}$	$-1.020^{+0.300}_{-0.300}$	$0.605^{+0.047}_{-0.047}$	$0.601^{+0.052}_{-0.022}$	$3.832^{+0.864}_{-0.527}$
	+3%/-3%	+1%/-1%	+29%/-29%	+8%/-8%	+9%/-4%	+23%/-14%
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 010394332-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	$A_{\text{obs}}$
DV	$-5709 \pm 361$	$28.39^{+32.94}_{-19.52}$	$245^{+9}_{-8}$	$2819^{+1273}_{-478}$	$3739^{+35350}_{-2934}$
Alt.	$-3542 \pm 205$	$28.57^{+31.44}_{-20.49}$	$245^{+8}_{-9}$	$2629^{+1204}_{-407}$	$2262^{+26112}_{-1731}$

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

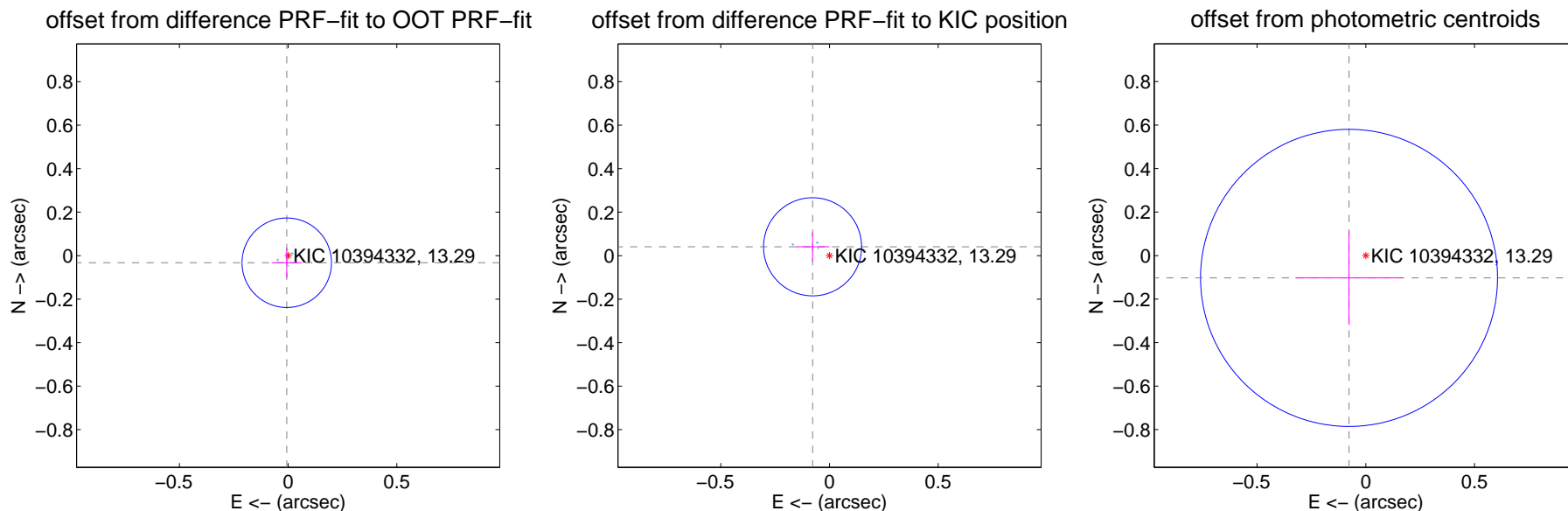
## DV Centroid Data

Supplemental centroid analysis for 010394332-02. Kepler magnitude: 13.29. Transit SNR 3.52

There are 3 quarters with good PRF difference image offsets

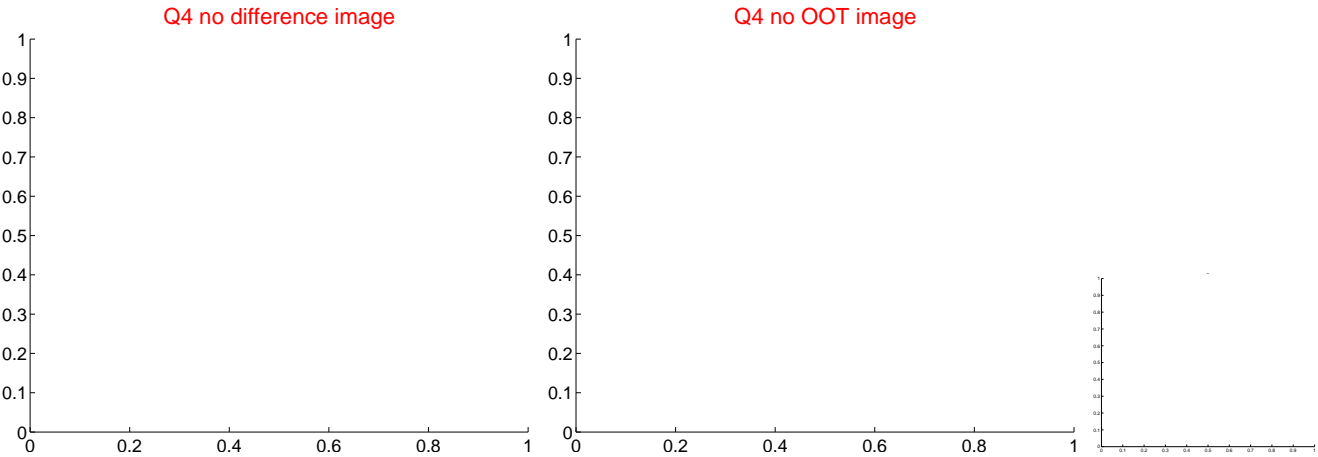
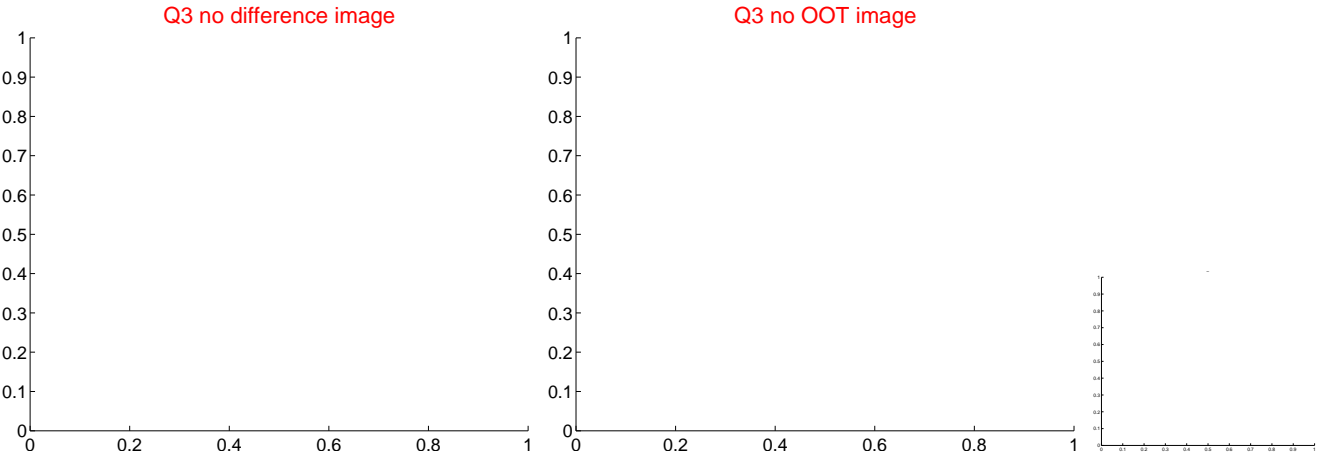
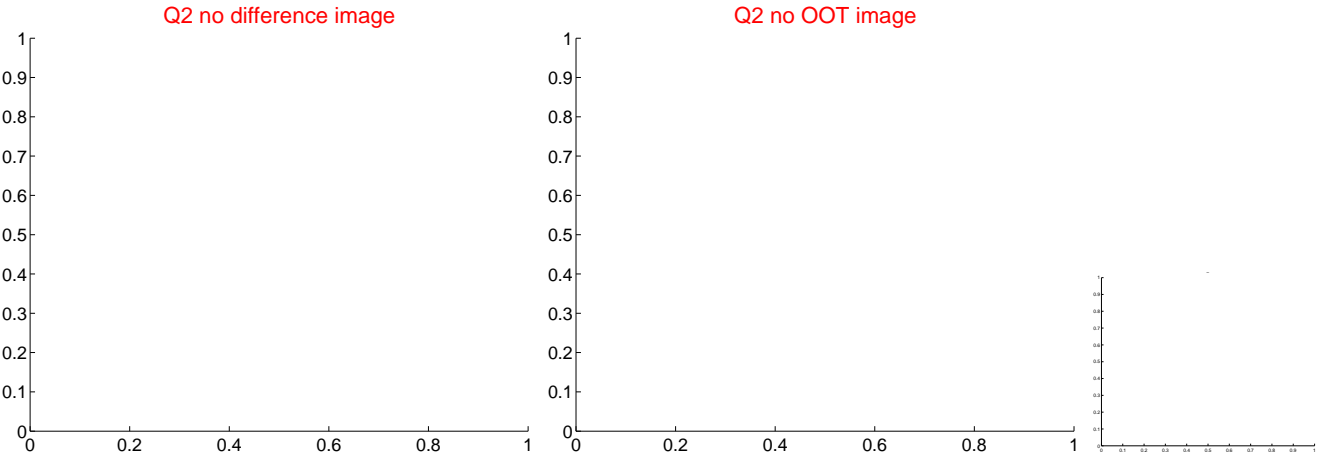
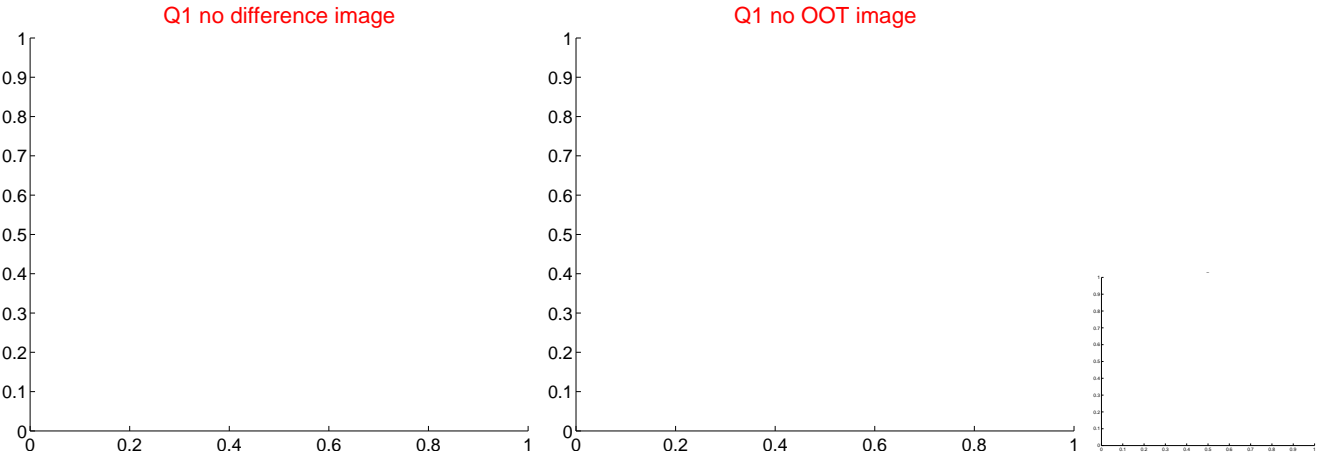
The direct PRF centroid is offset from the target star catalog position by about 0.09 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.033 \pm 0.069$	0.48	$0.006 \pm 0.069$	$-0.033 \pm 0.069$
PRF-fit source offset from KIC position	$0.088 \pm 0.075$	1.17	$0.078 \pm 0.077$	$0.041 \pm 0.067$
photometric centroid source offset	$0.13 \pm 0.23$	0.56	$0.08 \pm 0.25$	$-0.10 \pm 0.22$

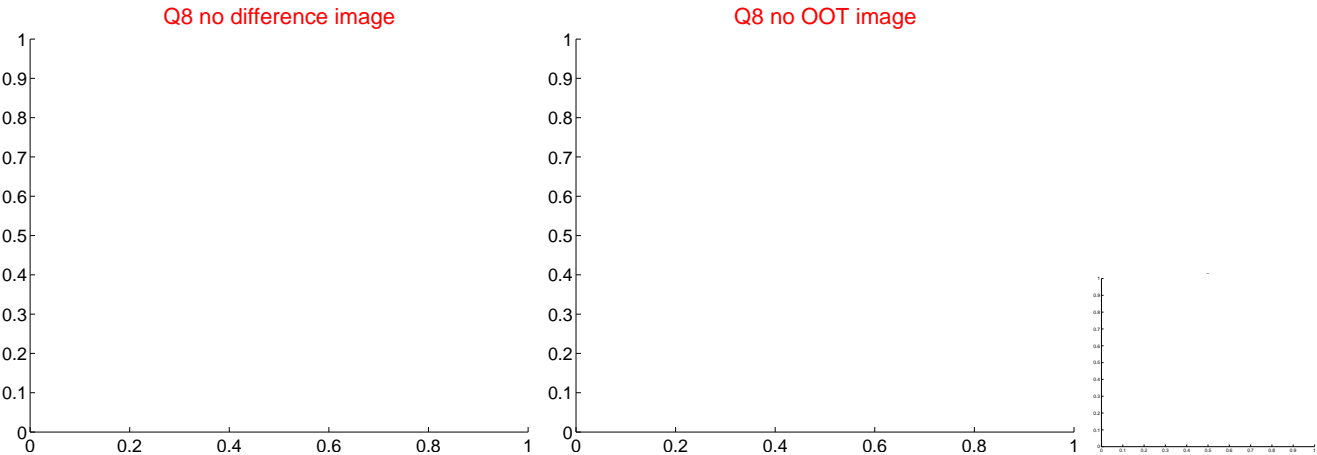
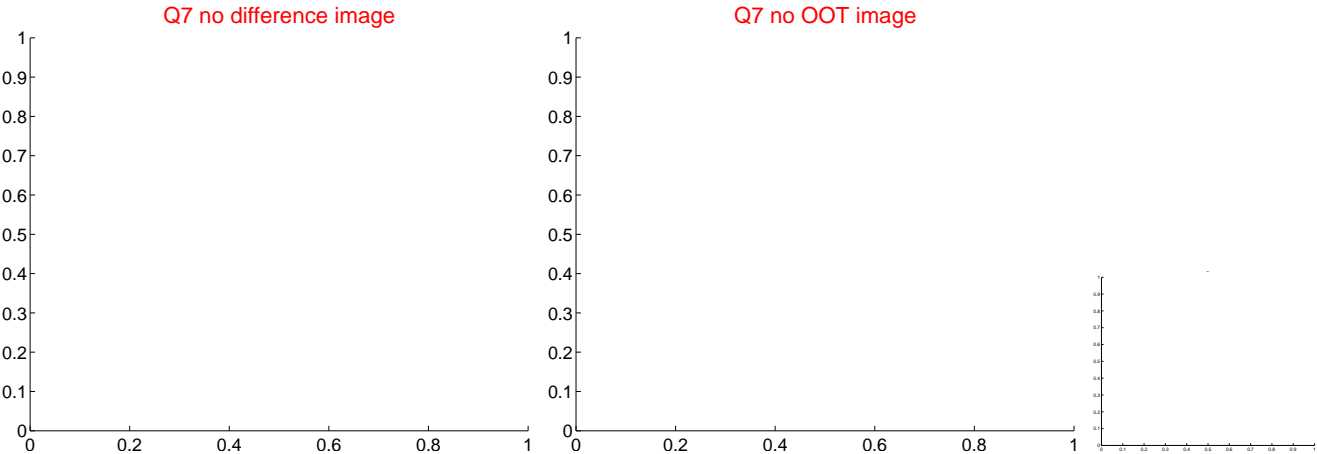
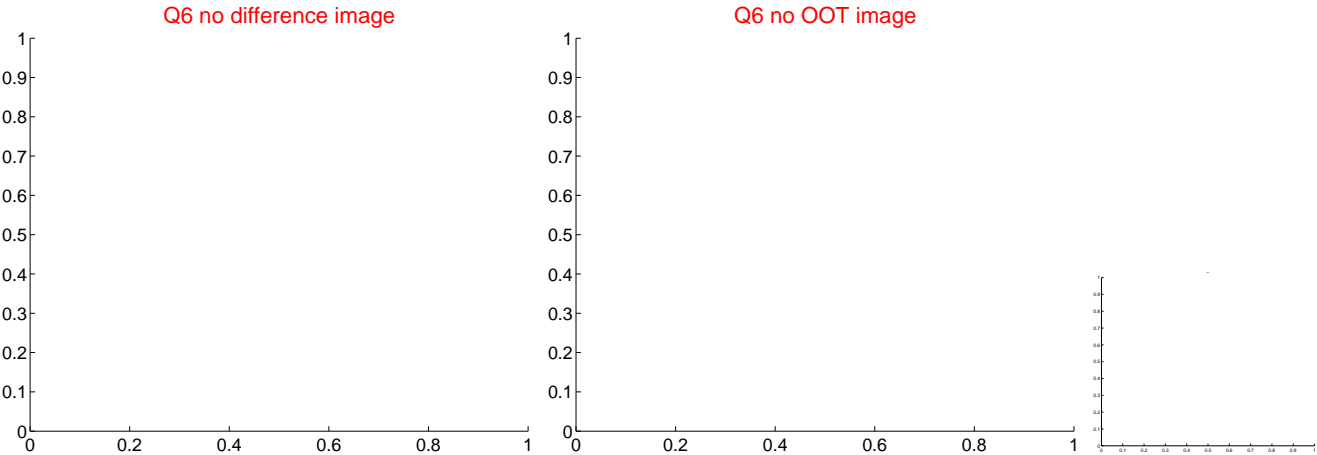
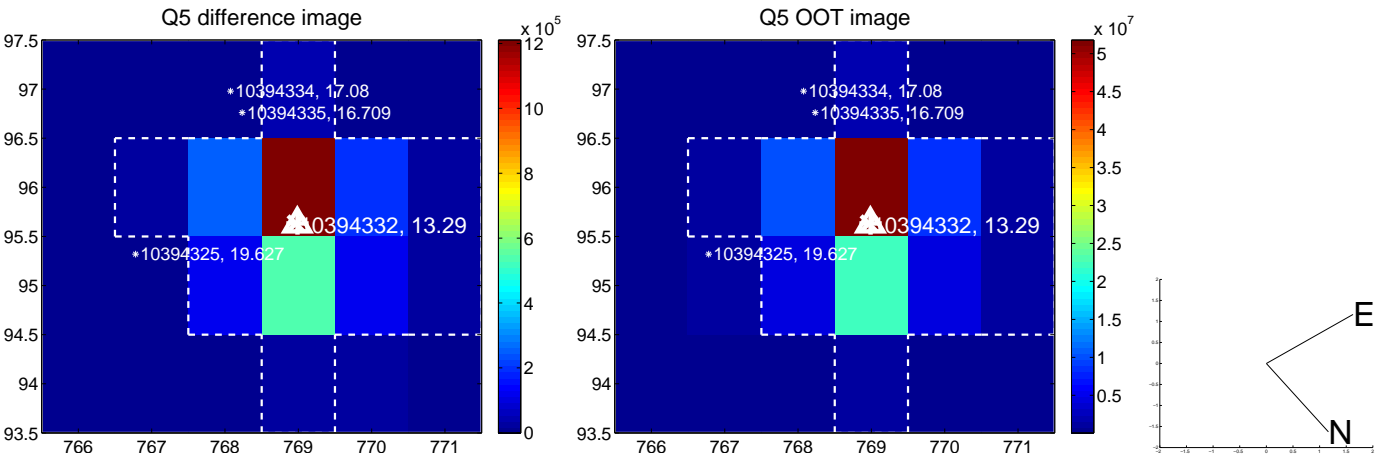


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: three-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

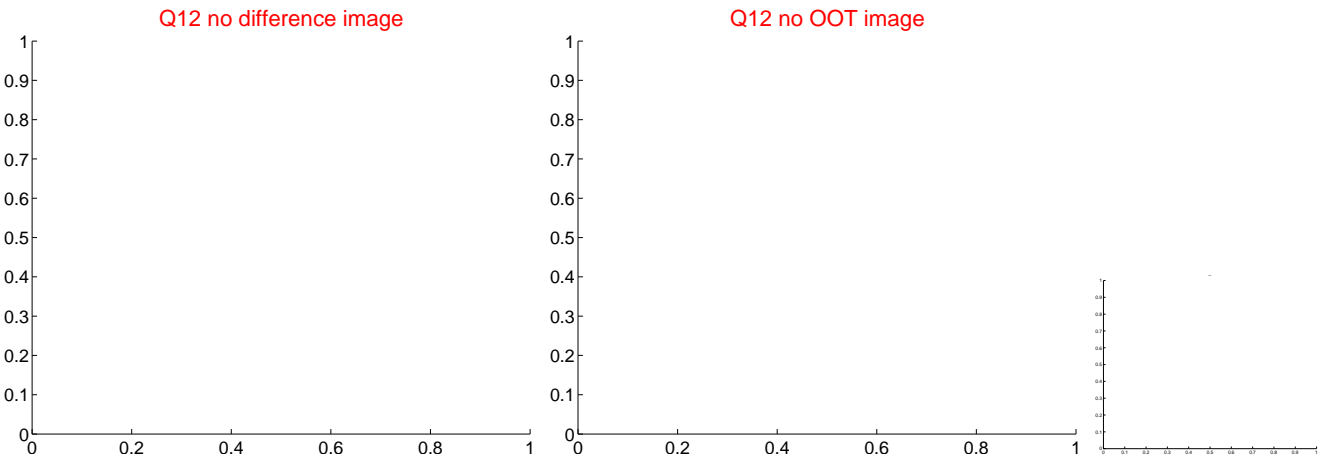
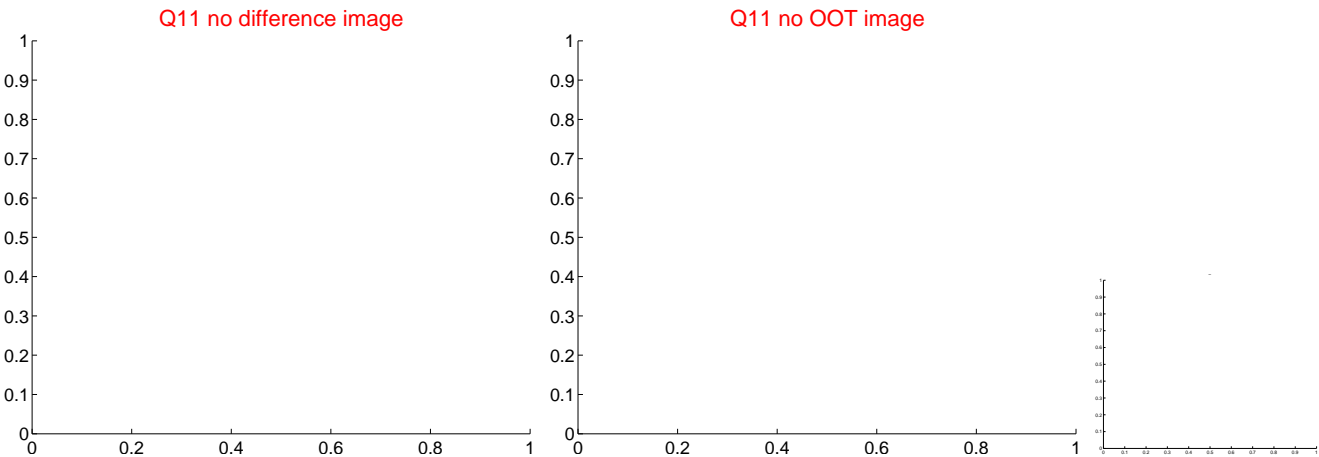
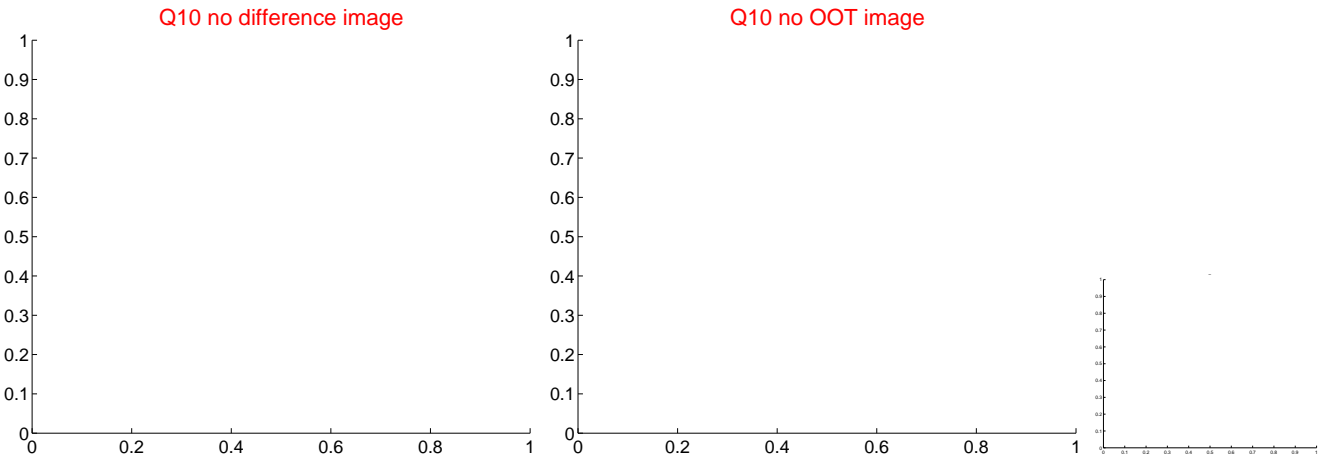
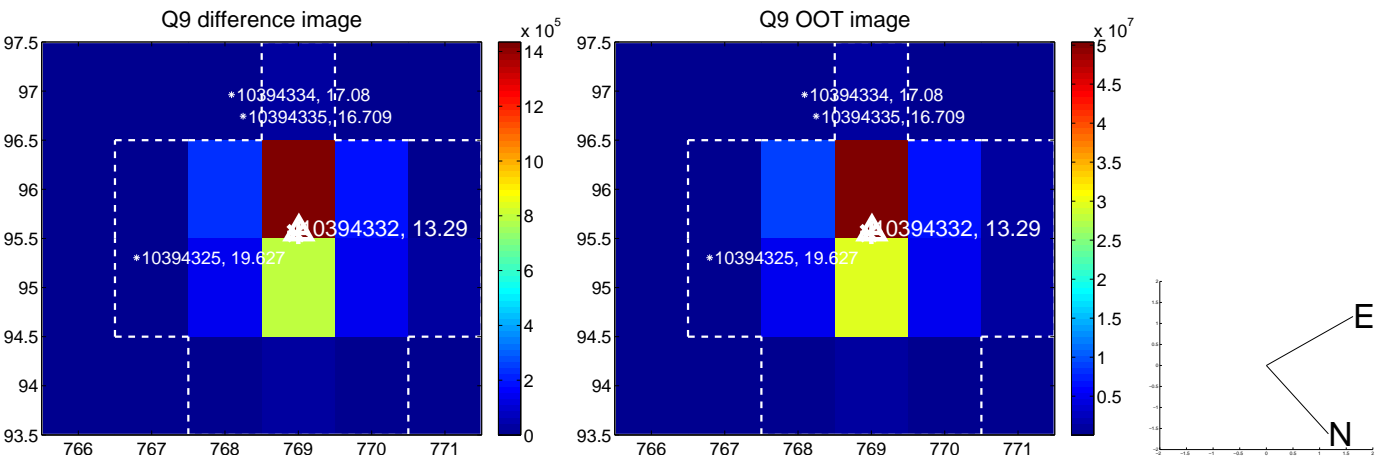
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



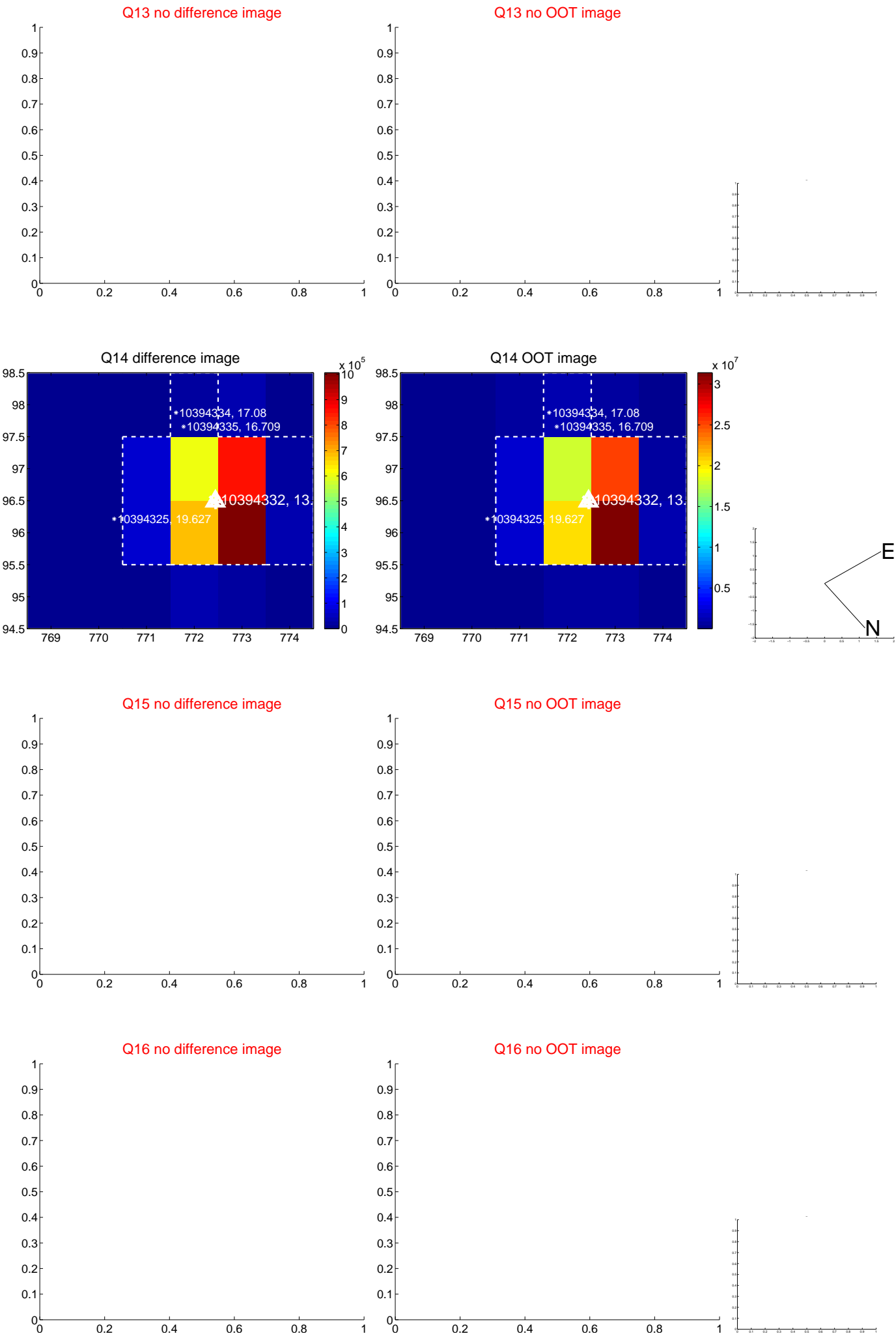
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



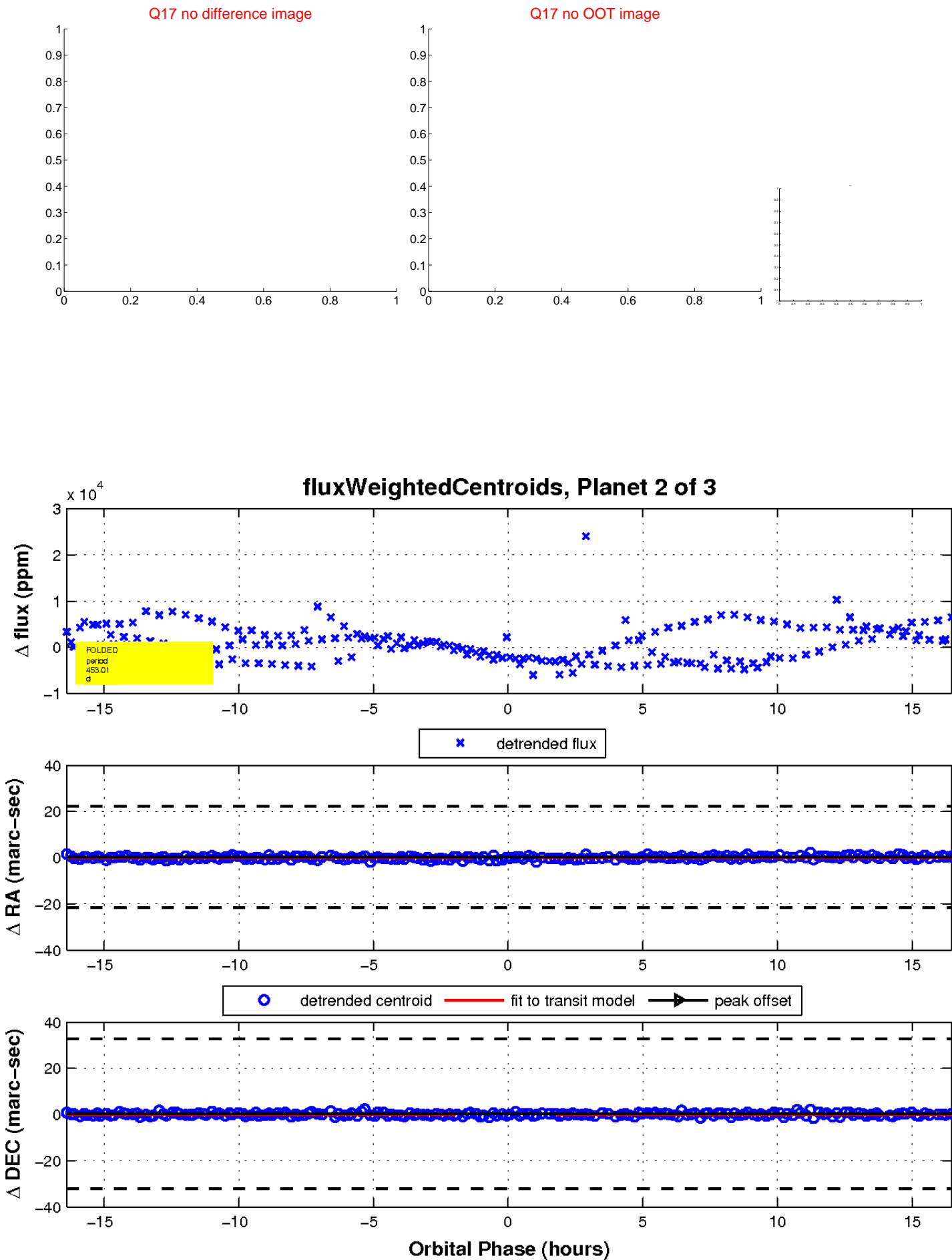
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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.



This plot does not exist for this TCE.



# KIC 010394332

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
010394332-01	OBS	No	473.404718	281.411590	1521.9	3.500	26.2	-1.0	0.60	5068	2.33	0.21
010394332-02	OBS	No	453.006532	450.248070	2316.8	5.527	13.2	3.5	0.60	5068	4.83	0.23
010394332-03	OBS	No	1.251143	132.432924	433.9	9.123	9.2	10.5	0.60	5068	2.56	587.49

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
010394332-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_SKYE—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_NOFITS
010394332-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_TRACKER—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
010394332-03	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT

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

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

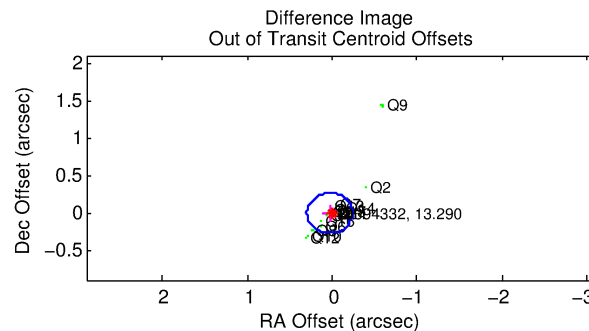
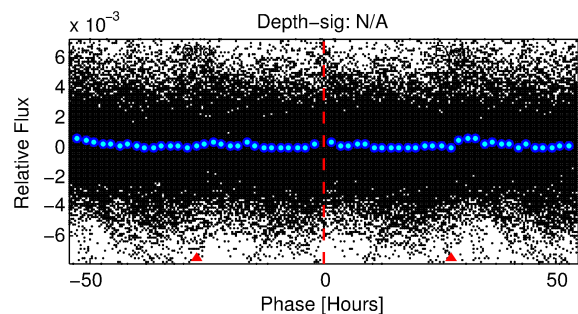
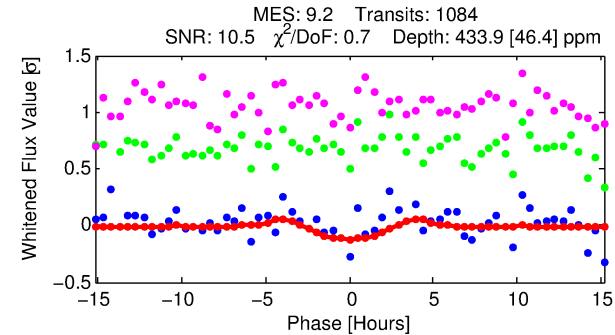
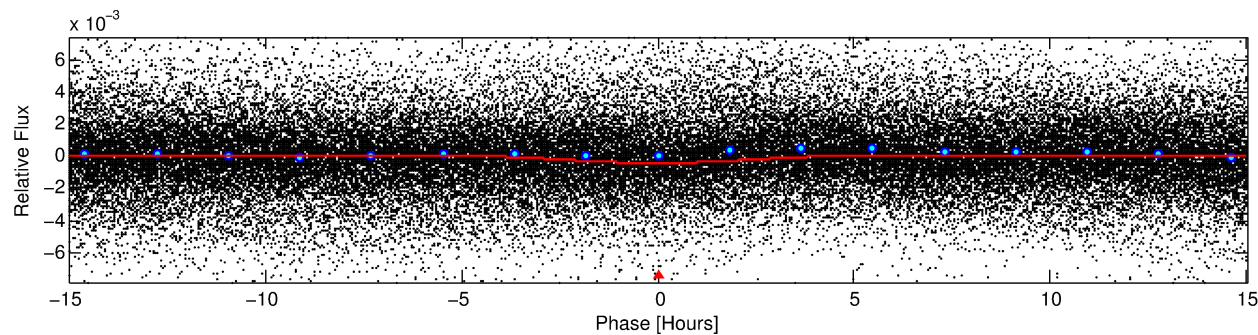
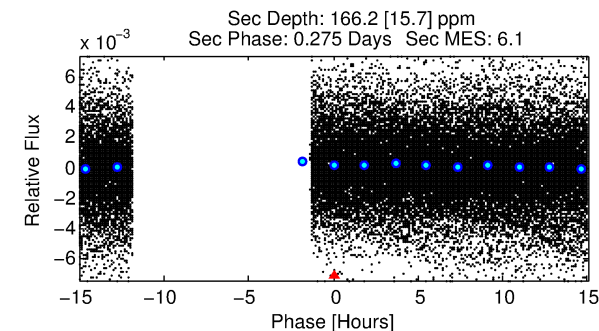
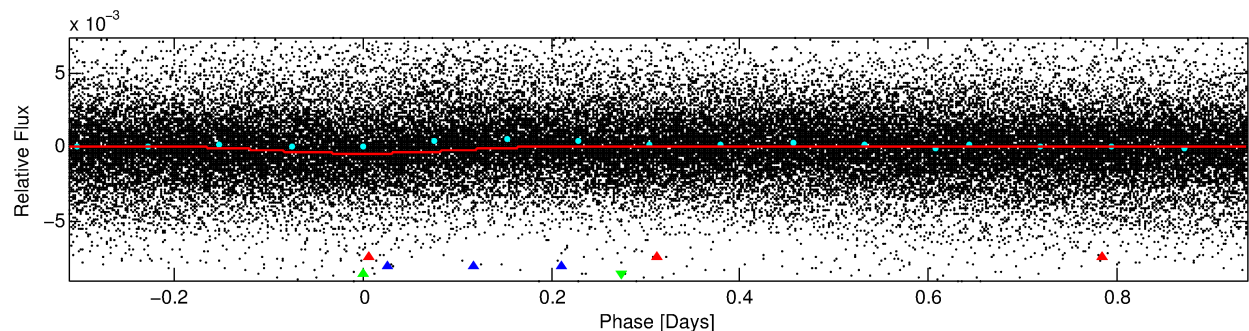
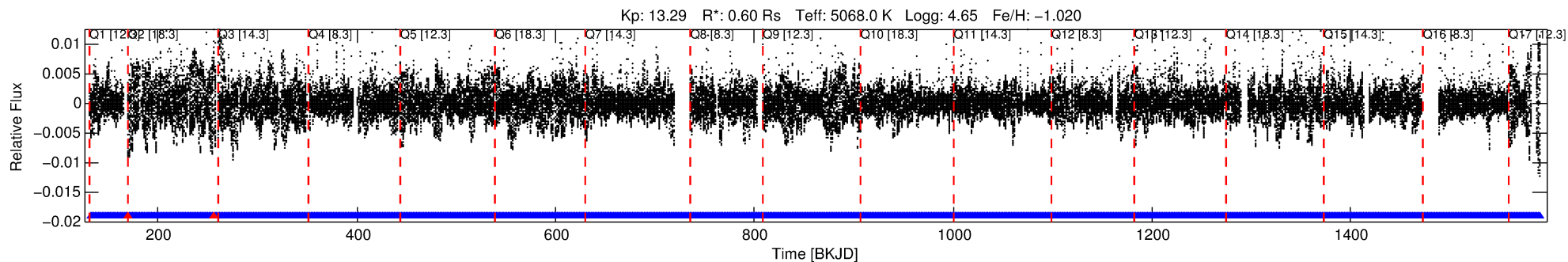
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

Ephemeris Match Information For 010394332-03

No Significant Match Found

# DV One-Page Summary

KIC: 10394332 Candidate: 3 of 3 Period: 1.251 d



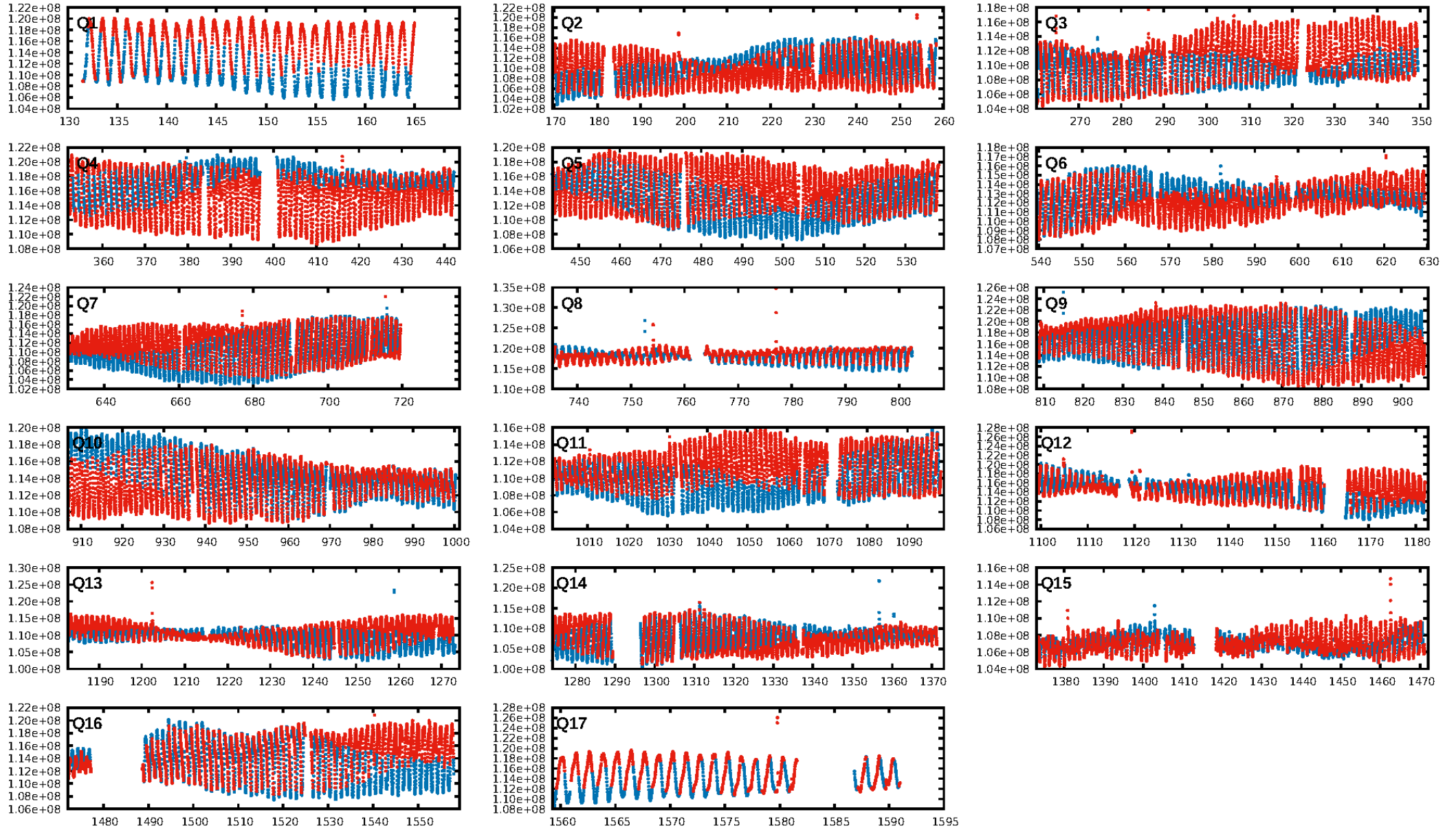
## DV Fit Results:

Period = 1.25114 [0.00001] d  
Epoch = 132.4329 [0.0069] BKJD  
Rp/R\* = 0.0387 [0.0251]  
a/R\* = 1.06 [0.02]  
b = 1.00 [0.04]  
Seff = 587.49 [93.57]  
Teq = 1255 [50] K  
Rp = 2.55 [1.67] Re  
a = 0.0192 [0.0013] AU  
Ag = 5.16 [6.74] [0.62σ]  
Teffp = 2925 [957] K [1.74σ]

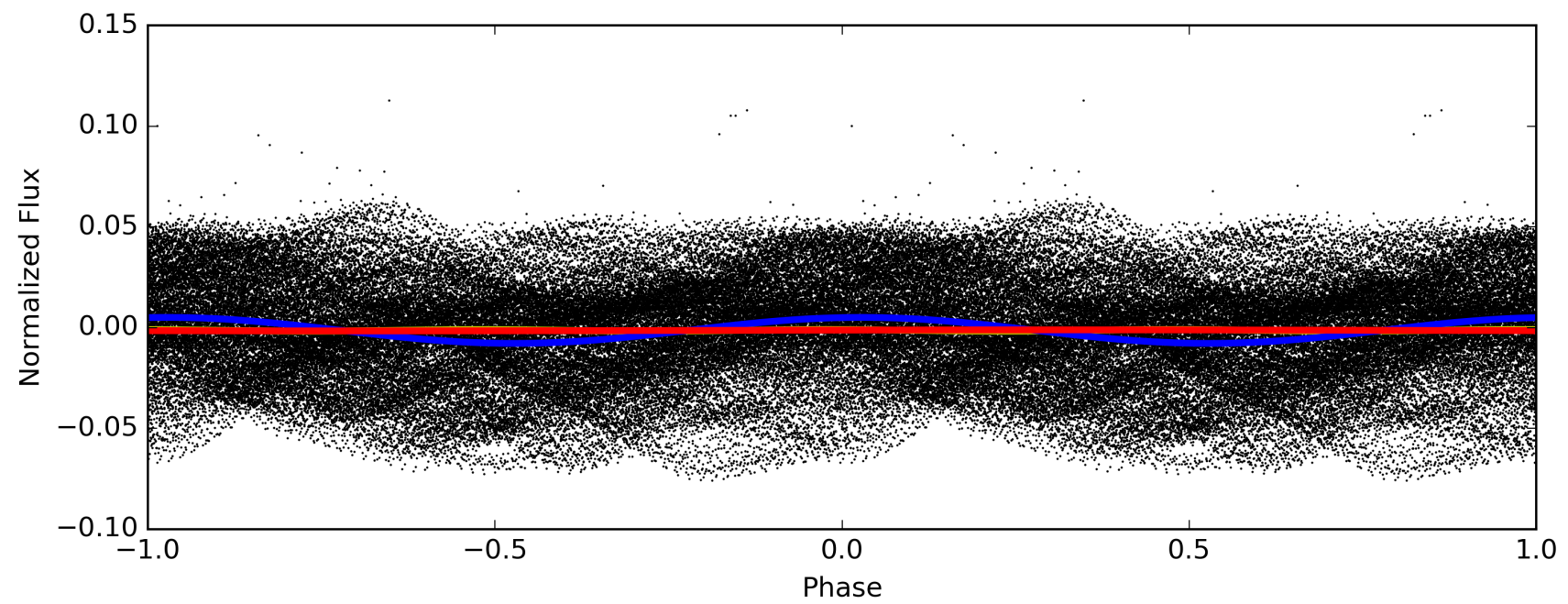
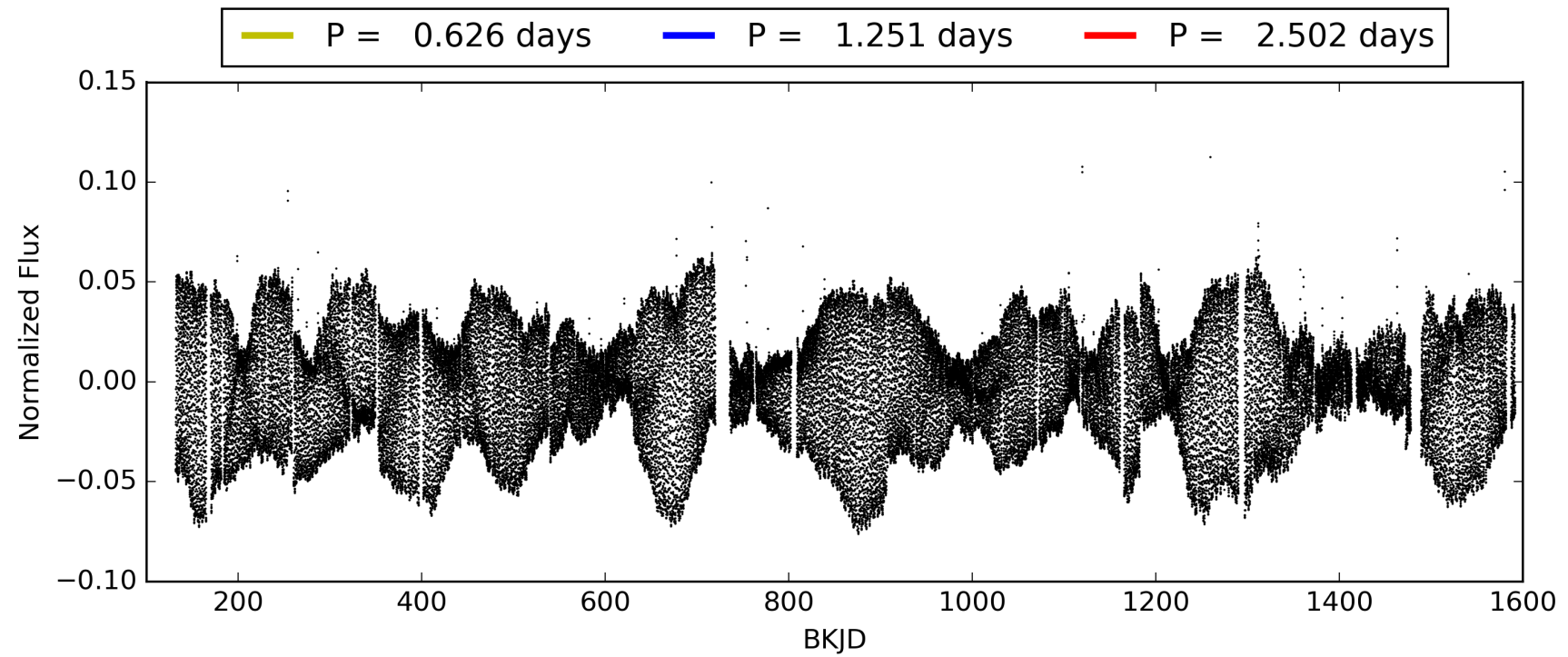
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: 100.0% [1016.51σ]  
ModelChiSquare2-sig: N/A  
ModelChiSquareGof-sig: N/A  
Bootstrap-pfa: N/A  
RollingBand-fgt: 1.00 [1034/1036]  
**GhostDiagnostic-chr: -1.28**  
Centroid-sig: 30.2%  
Centroid-so: 0.137 arcsec [2.76σ]  
OotOffset-rm: 0.032 arcsec [0.35σ]  
KicOffset-rm: 0.126 arcsec [1.73σ]  
OotOffset-st: 4/4/4/5 [17]  
KicOffset-st: 4/4/4/5 [17]  
DiffImageQuality-fgm: 0.35 [6/17]  
DiffImageOverlap-fno: 1.00 [17/17]

# TCE 010394332-03, PDC Light Curves



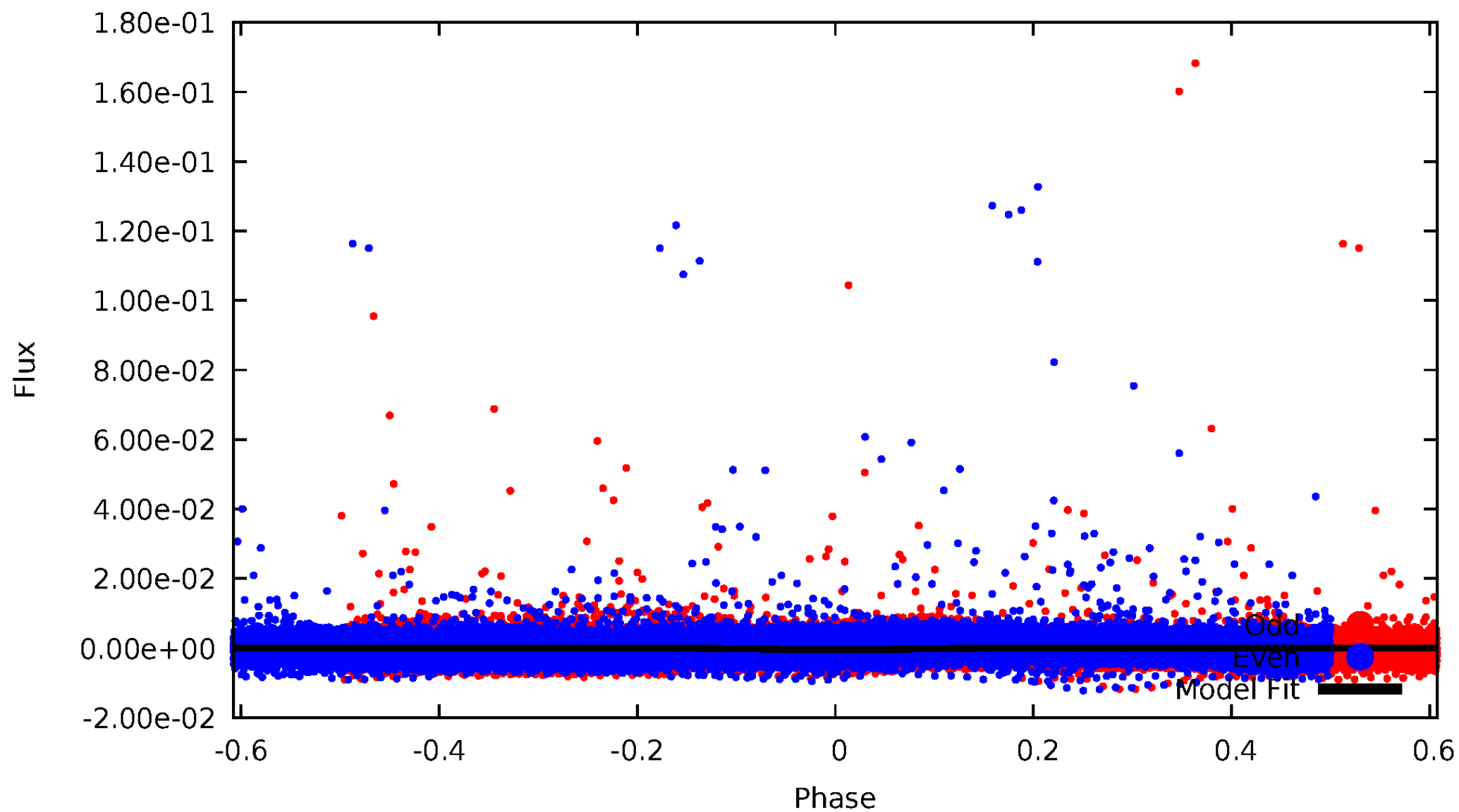
TCE 010394332-03





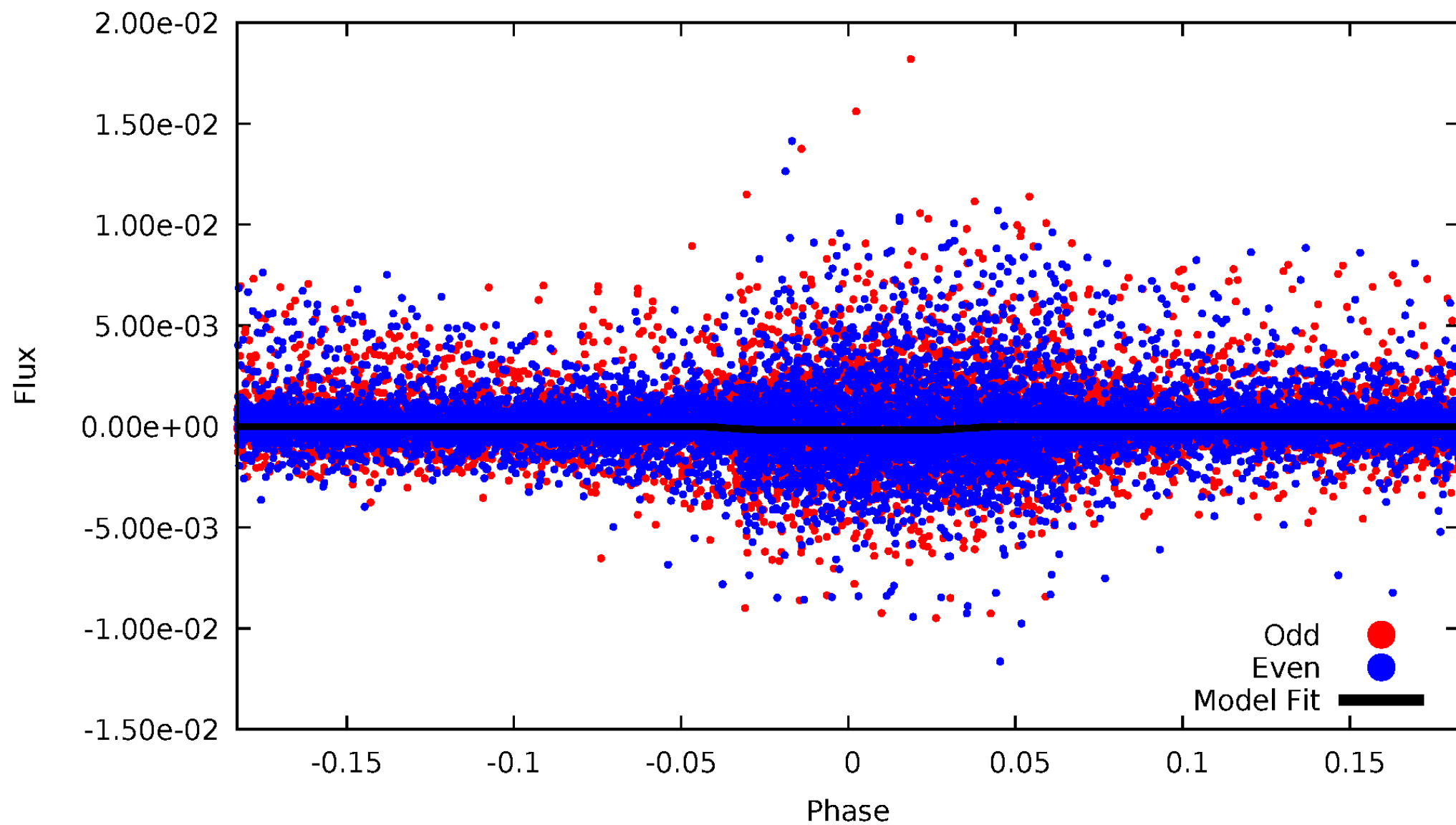
# DV Odd/Even

TCE 010394332-03



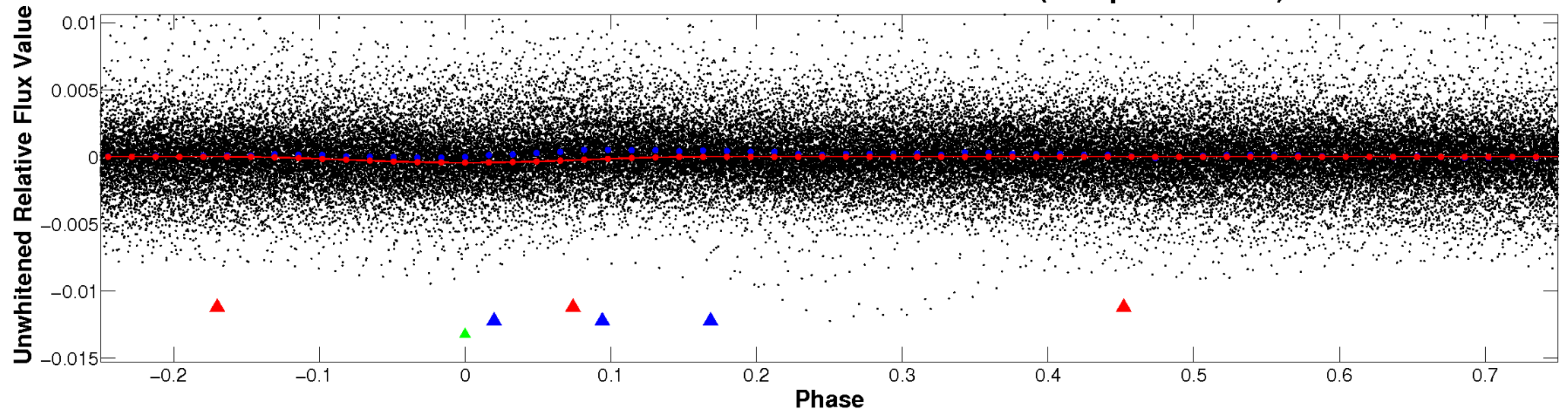
# ALT Odd/Even

TCE 010394332-03

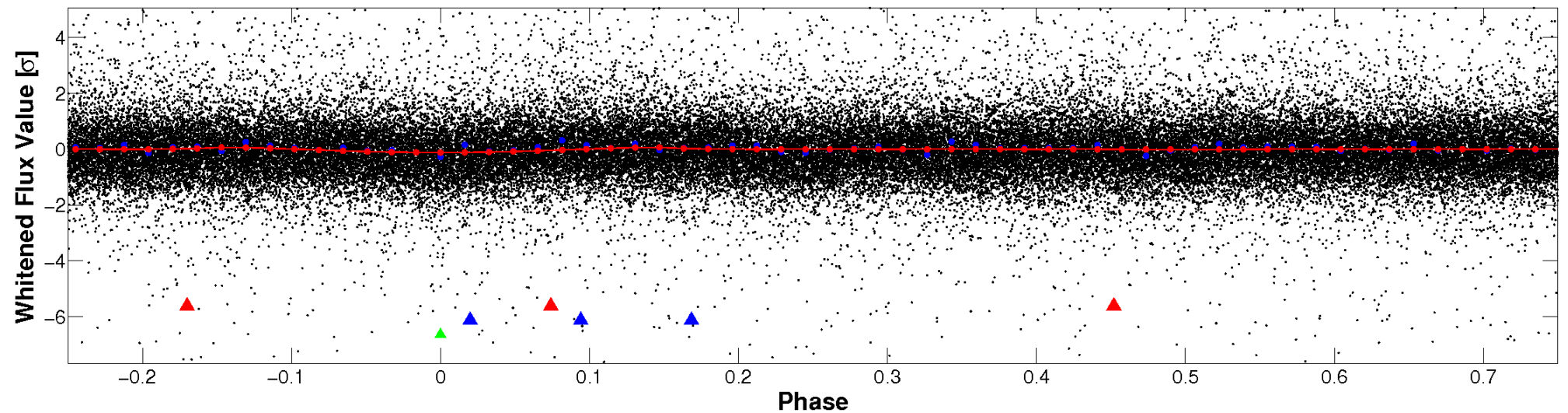


# Non-Whitened Vs. Whitened Light Curve

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

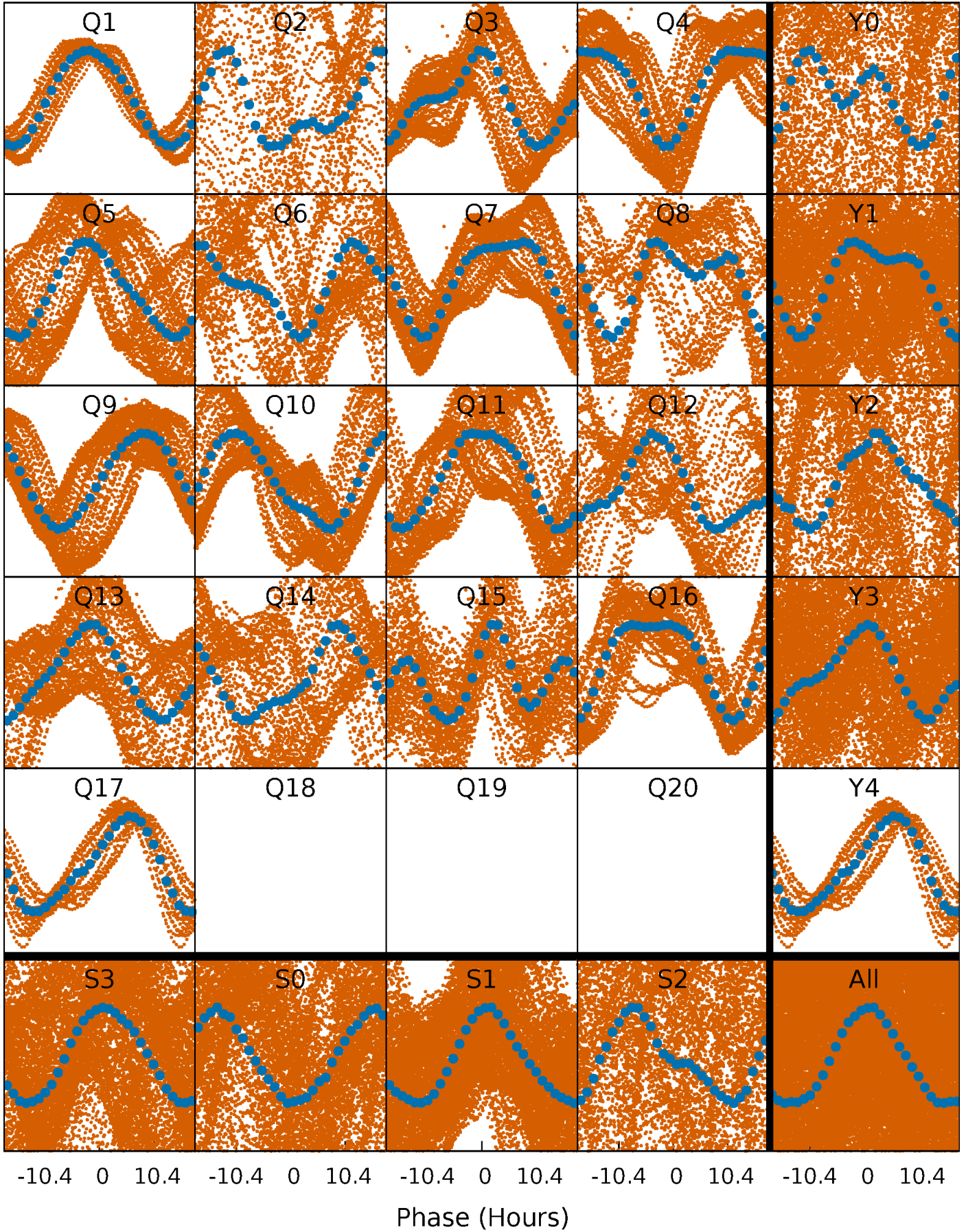


**Planet 3 : Phased Whitened Flux Time Series (Fit Epoch/Period)**



# PDC Quarter-Phased Transit Curves

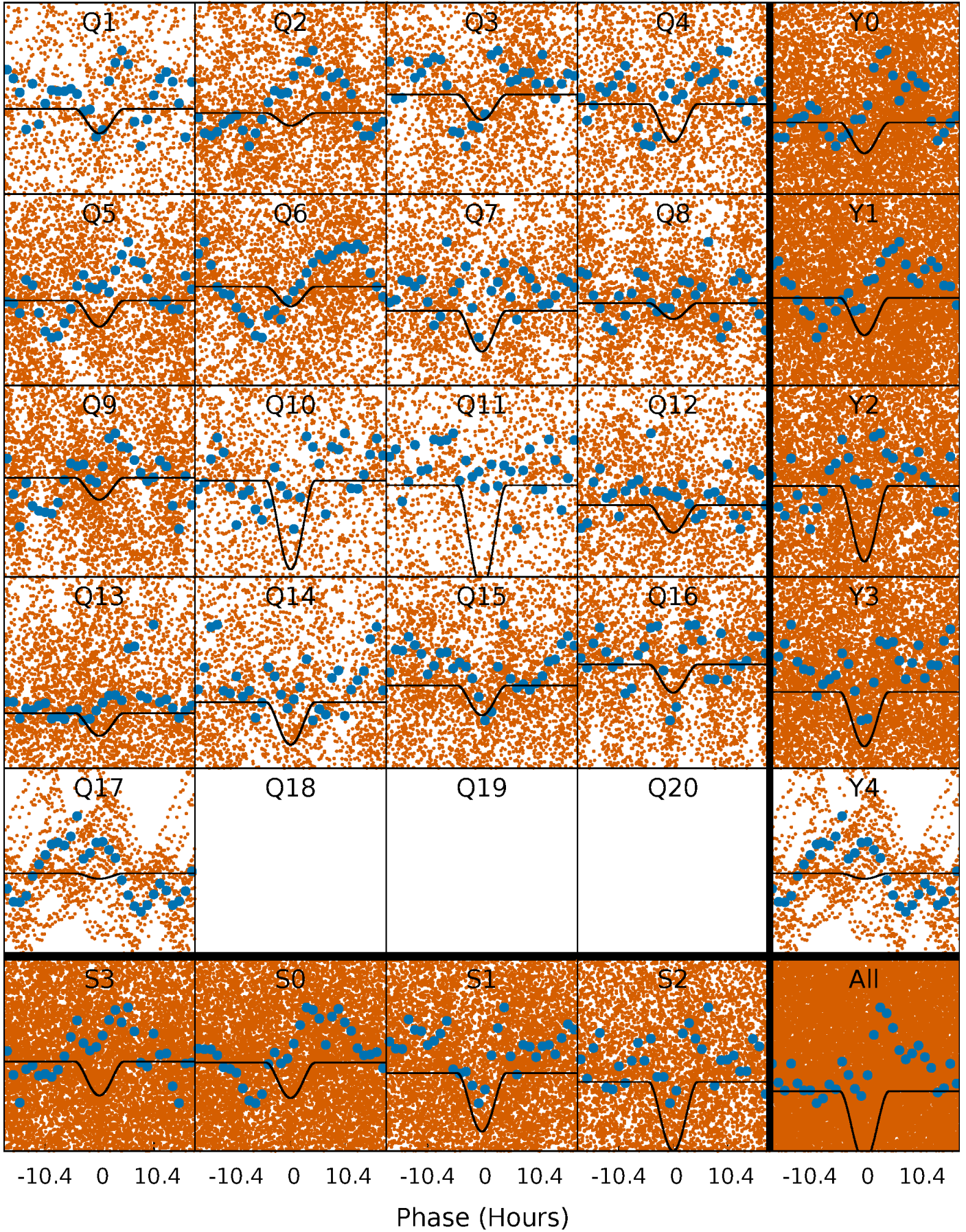
TCE 010394332-03   P= 1.251143 Days    $T_0=132.432925$  (BKJD)





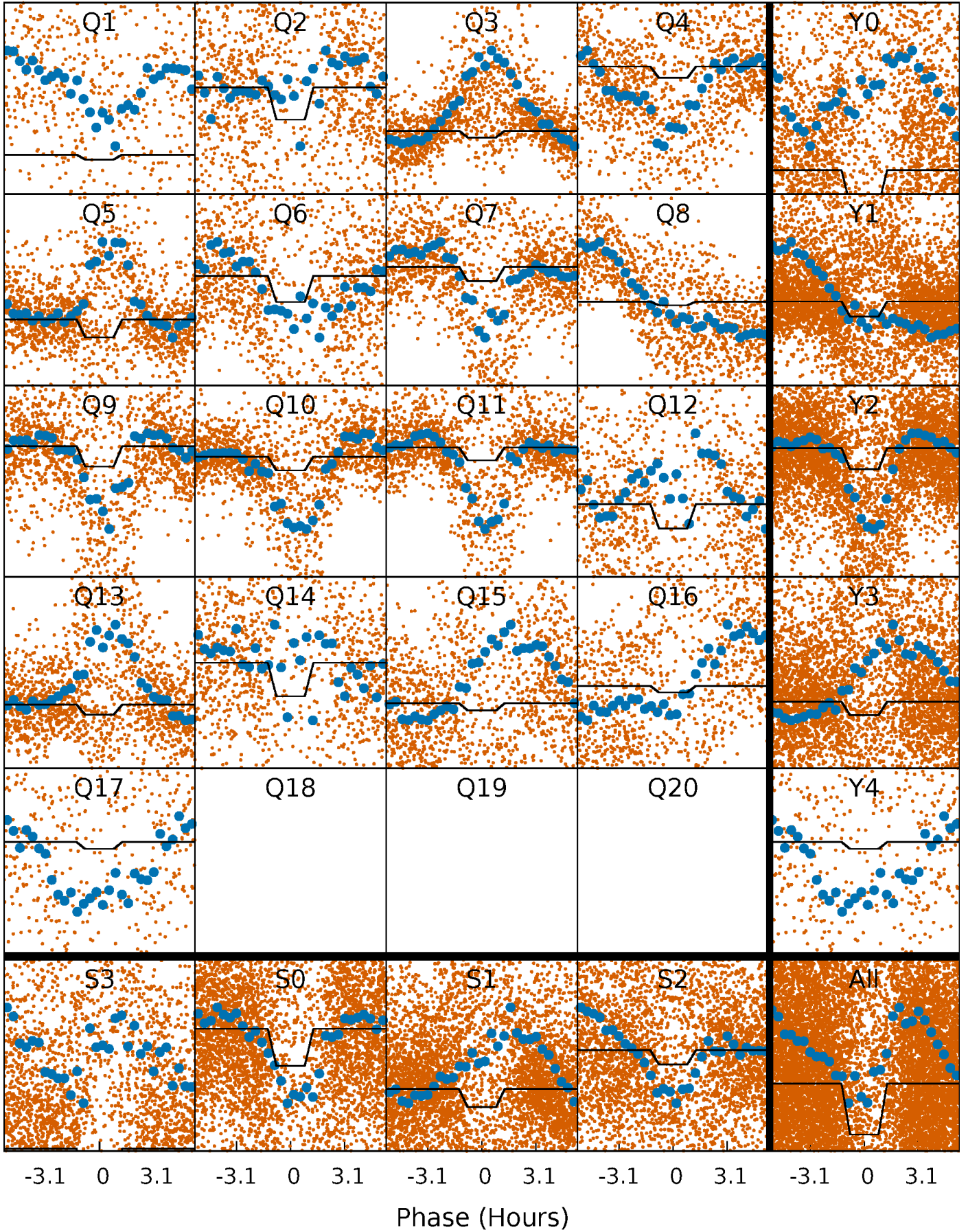
# DV Quarter-Phased Transit Curves

TCE 010394332-03   P= 1.251143 Days    $T_0=132.432925$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

TCE 010394332-03 P= 1.251135 Days  $T_0=132.430745$  (BKJD)

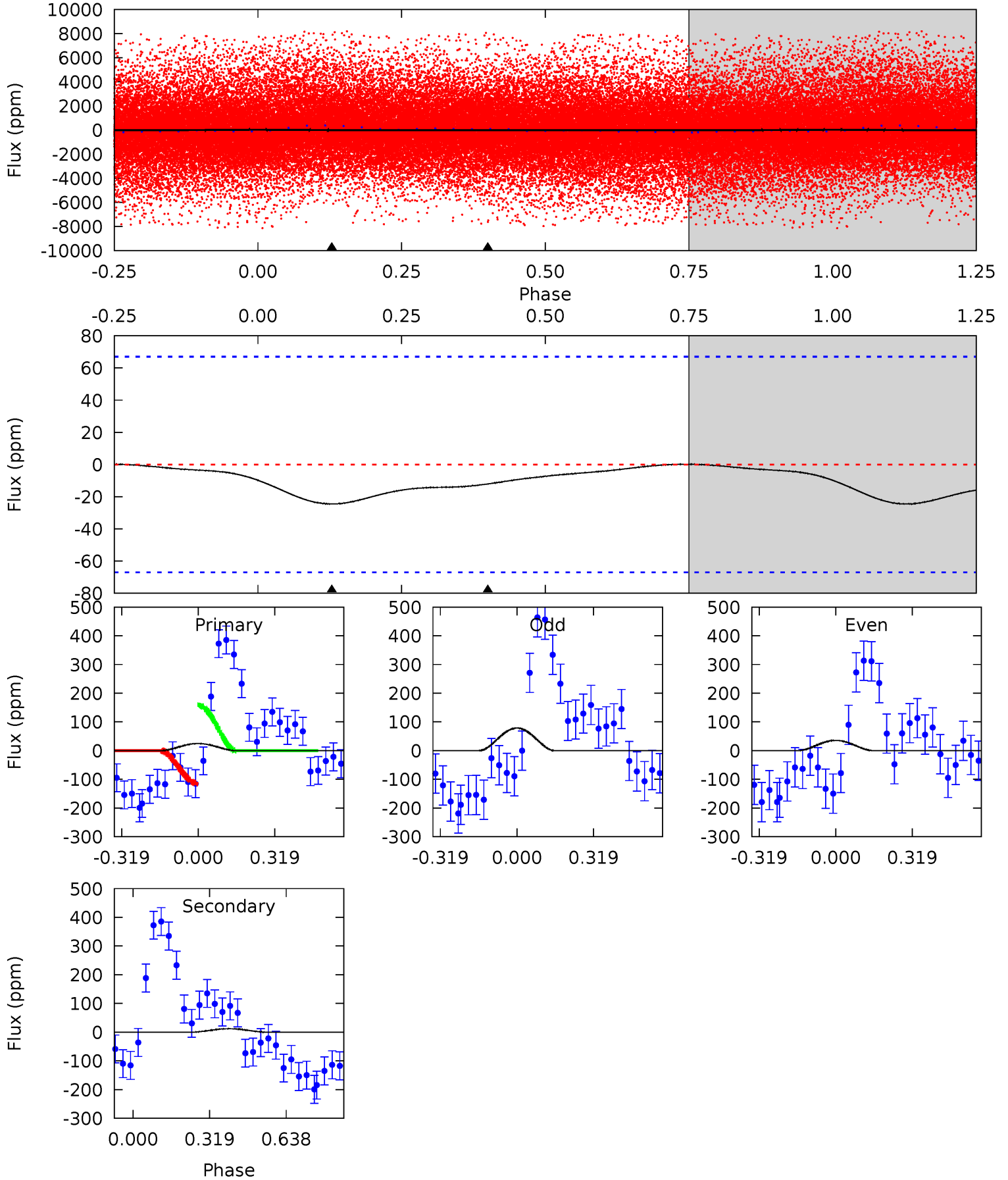




# DV Model-Shift Uniqueness Test

010394332-03, P = 1.251143 Days, E = 131.181782 Days

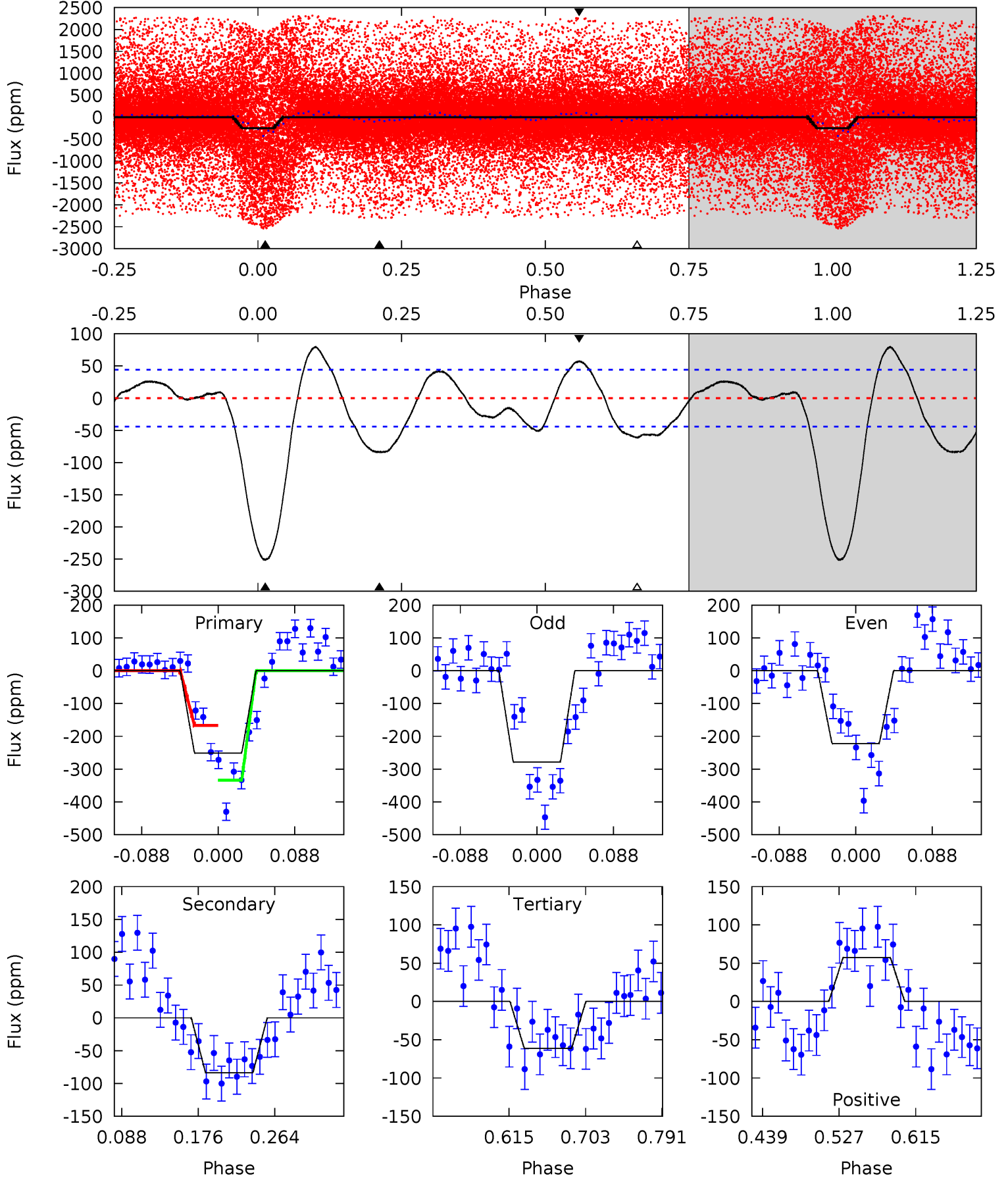
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
1.58	0.78	0	0	4.32	1.00	0.03	1.58	1.58	0.78	0.78	1.41	-2.55	0.01	1.40



# Alt Model-Shift Uniqueness Test

010394332-03, P = 1.251135 Days, E = 131.179610 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
26.1	8.72	6.37	5.98	4.59	1.71	3.64	19.8	20.2	2.35	2.75	2.97	-0.07	0.24	8.63



### Stellar Parameters For KIC 010394332

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$5068^{+151}_{-151}$	$4.654^{+0.060}_{-0.035}$	$-1.020^{+0.300}_{-0.300}$	$0.605^{+0.047}_{-0.047}$	$0.601^{+0.052}_{-0.022}$	$3.832^{+0.864}_{-0.527}$
	+3%/-3%	+1%/-1%	+29%/-29%	+8%/-8%	+9%/-4%	+23%/-14%
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 010394332-03 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	$A_{\text{obs}}$
DV	$-12 \pm 16$	$2.73^{+1.74}_{-1.51}$	$1751^{+59}_{-63}$	$-1855^{+4674}_{-534}$	$0.263^{+1.460}_{-0.333}$
Alt.	$-84 \pm 10$	$1.54^{+1.41}_{-1.03}$	$1745^{+60}_{-55}$	$3553^{+1839}_{-668}$	$7.417^{+55.351}_{-5.431}$

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

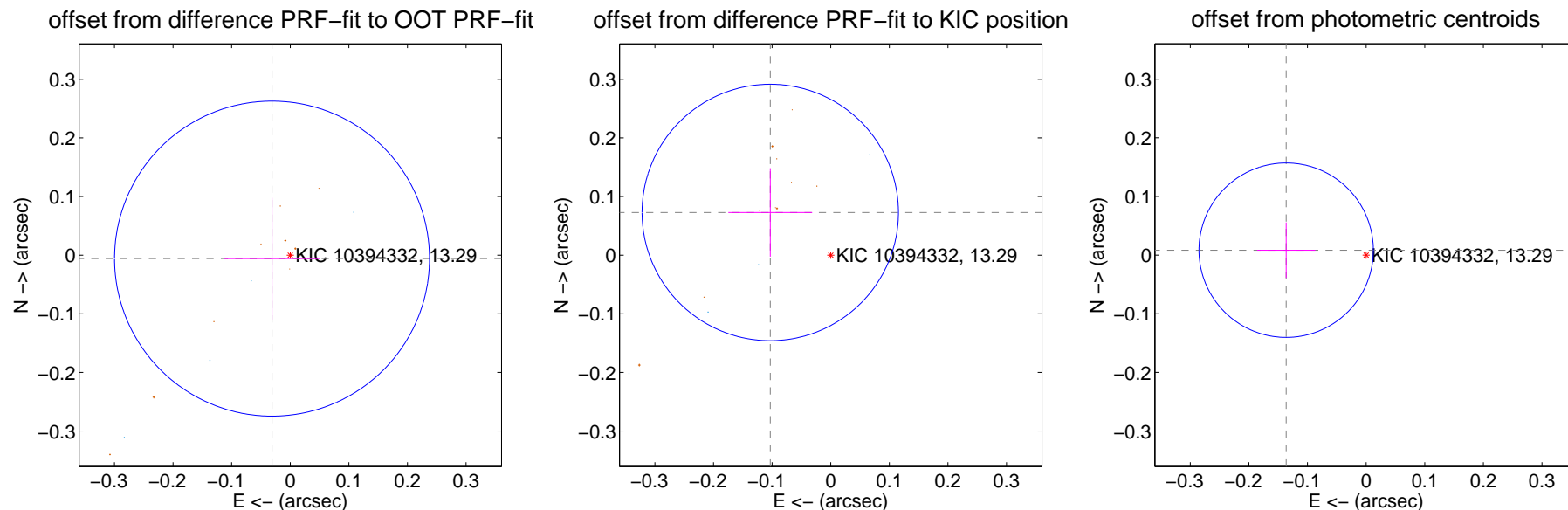
## DV Centroid Data

Supplemental centroid analysis for 010394332-03. Kepler magnitude: 13.29. Transit SNR 10.49

There are 6 quarters with good PRF difference image offsets

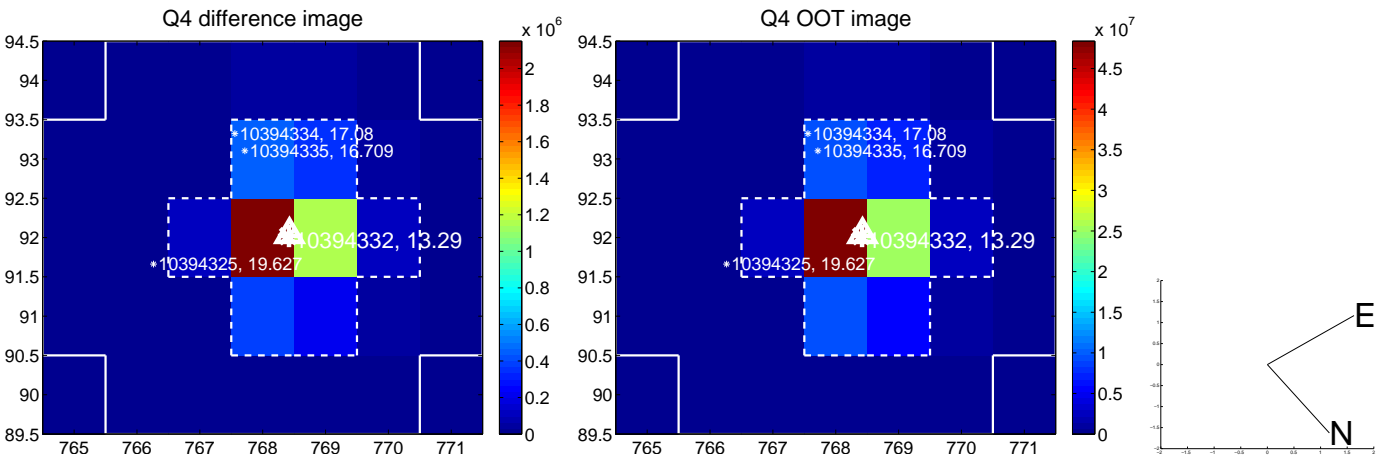
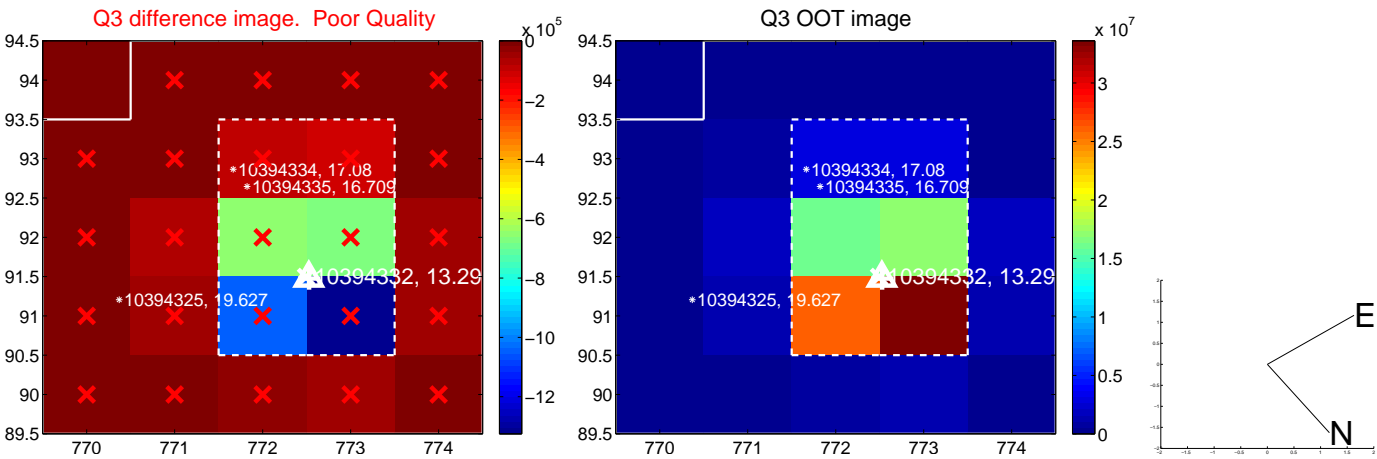
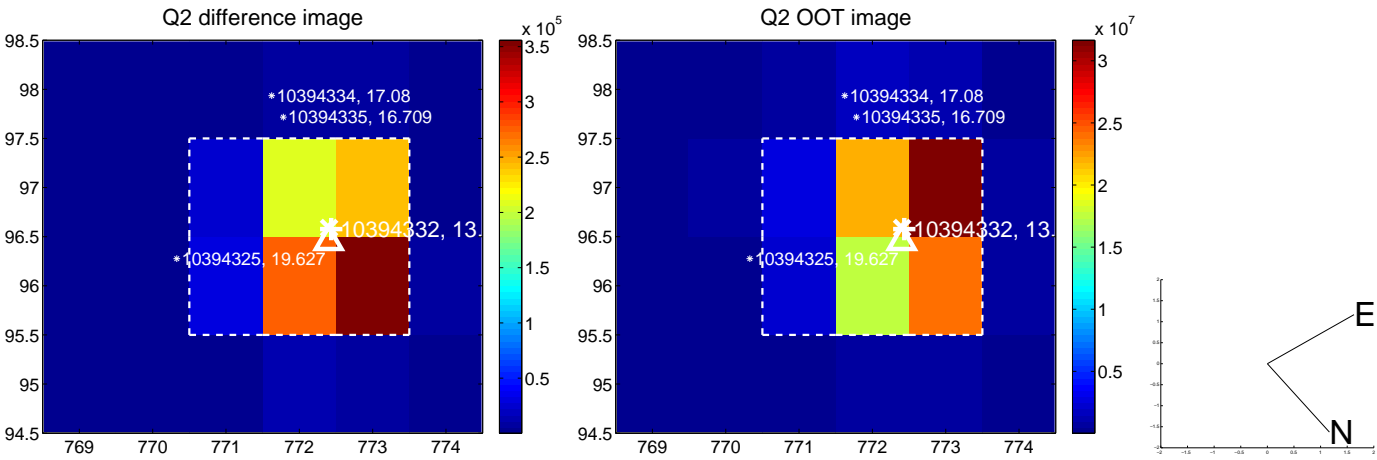
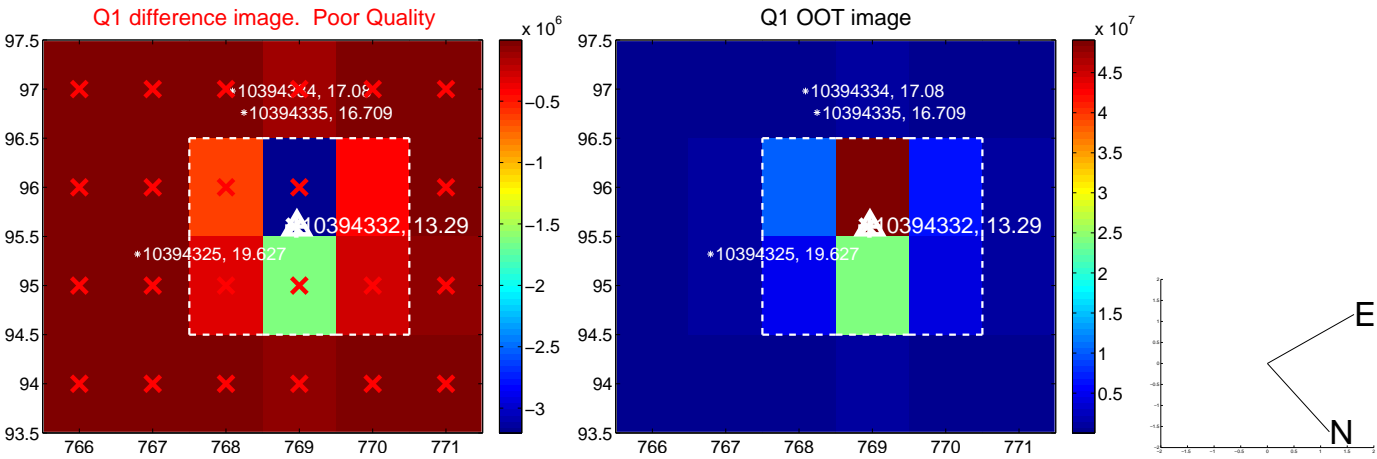
The direct PRF centroid is offset from the target star catalog position by about 0.10 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.032 \pm 0.090$	0.35	$0.031 \pm 0.082$	$-0.006 \pm 0.104$
PRF-fit source offset from KIC position	$0.126 \pm 0.073$	1.73	$0.103 \pm 0.072$	$0.073 \pm 0.075$
photometric centroid source offset	$0.14 \pm 0.05$	2.76	$0.14 \pm 0.05$	$0.01 \pm 0.05$

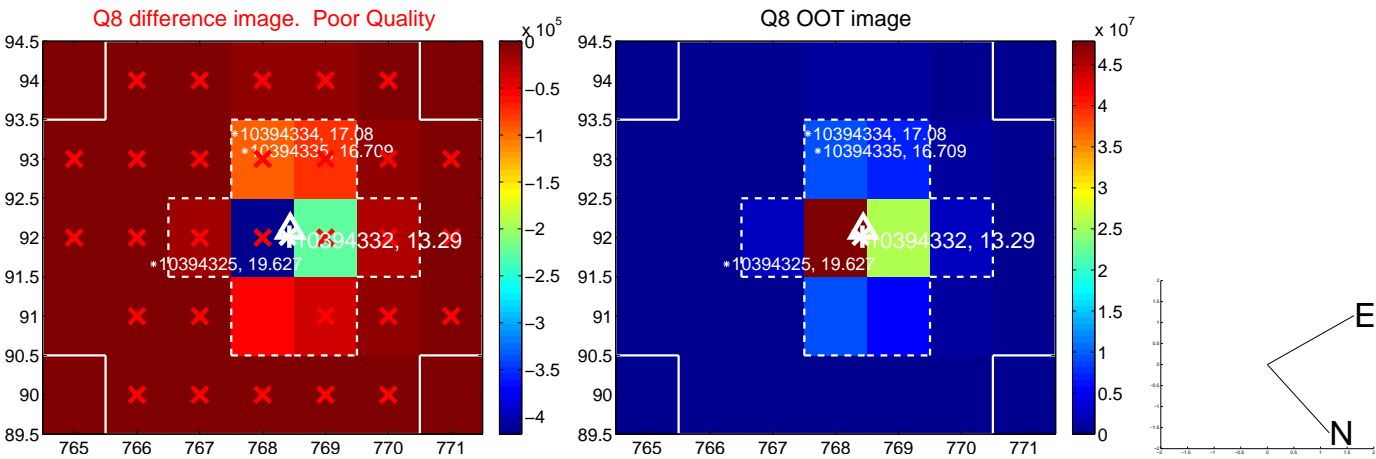
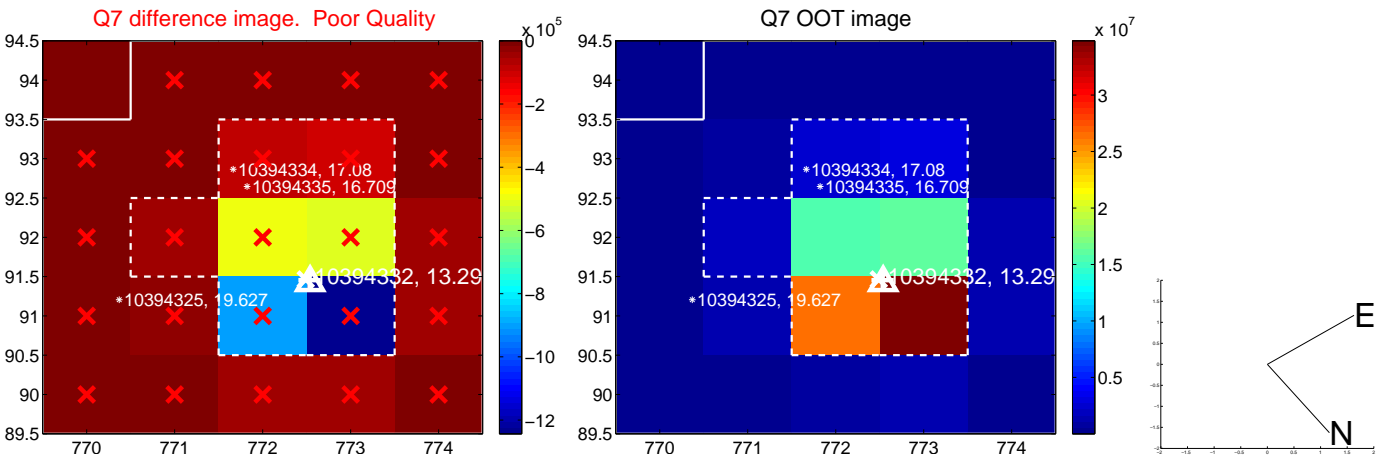
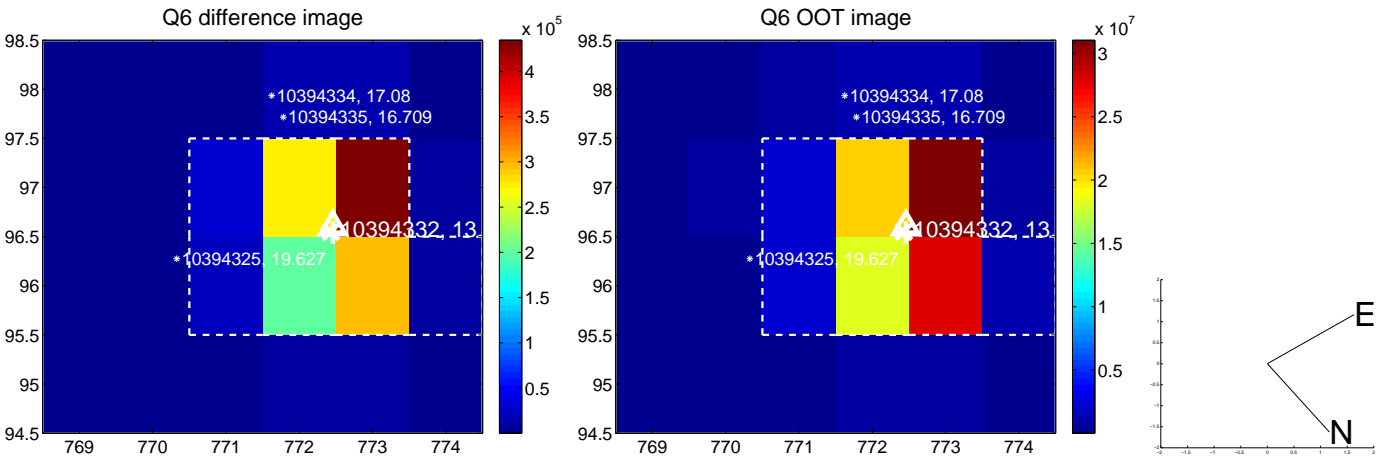
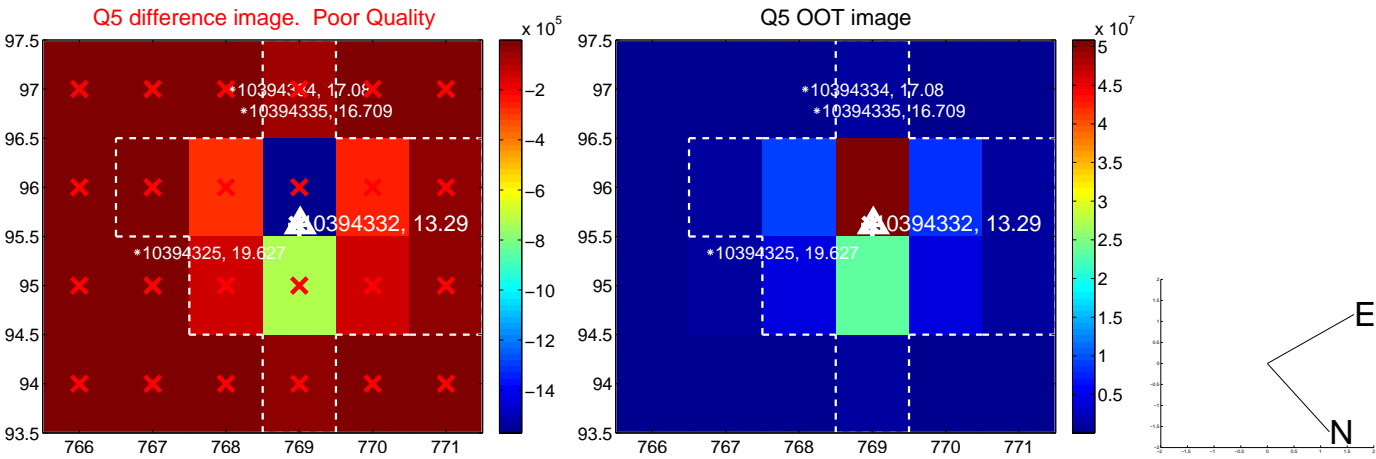


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets**; **Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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

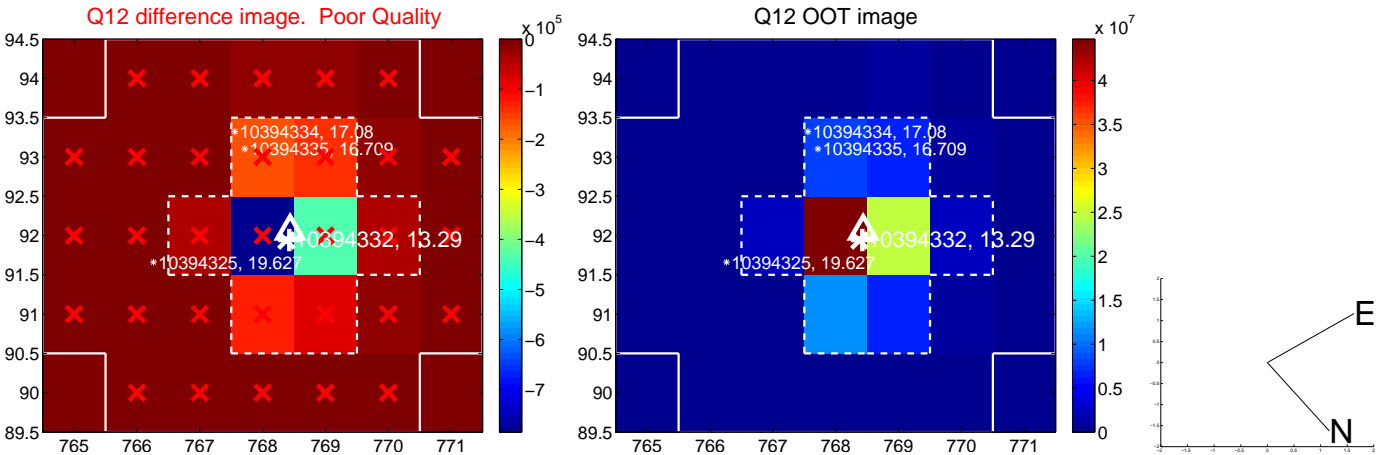
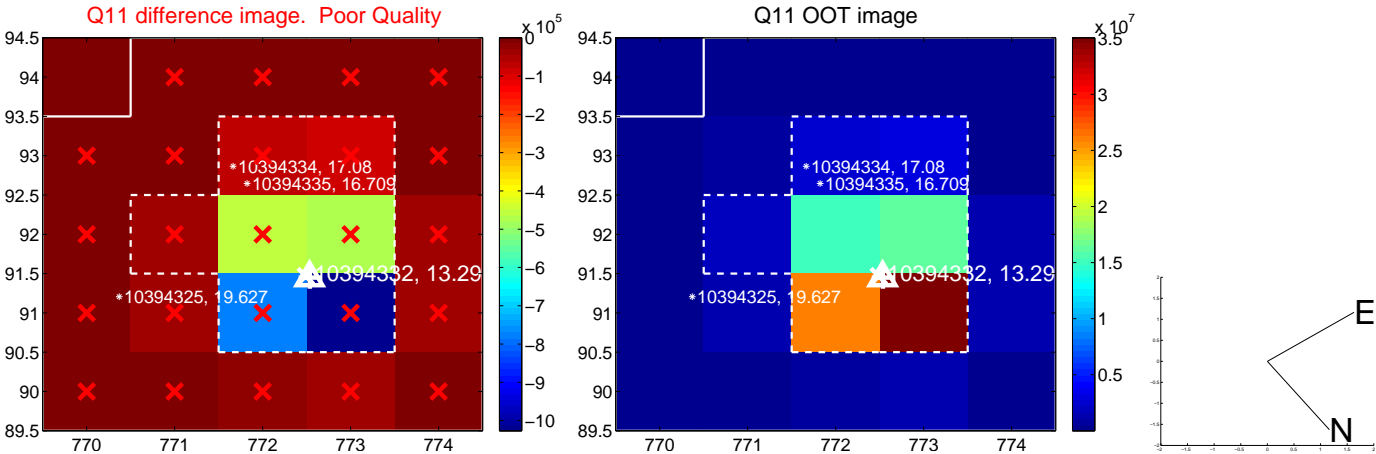
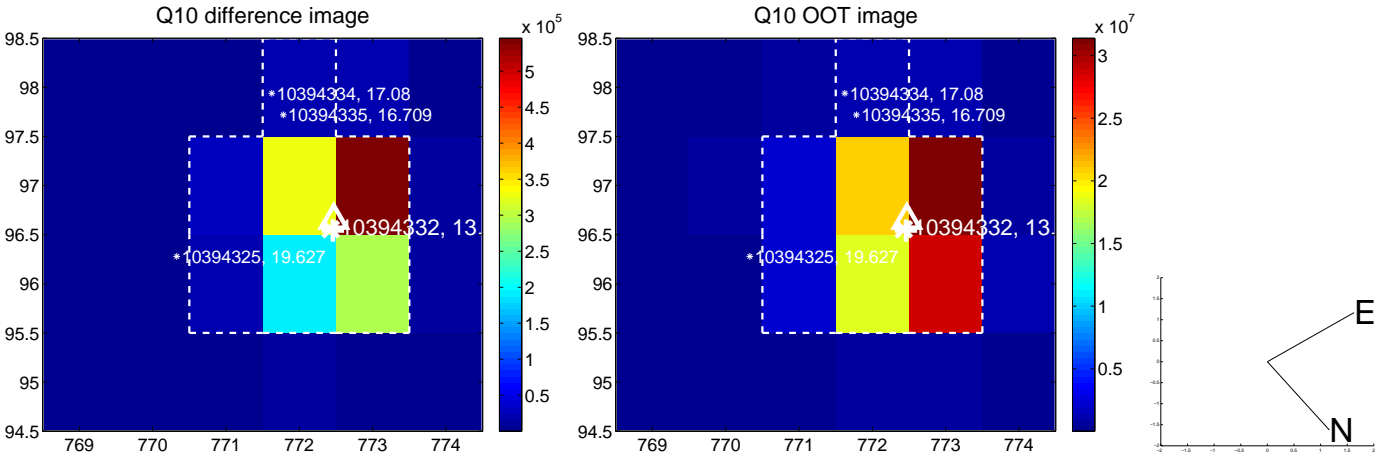
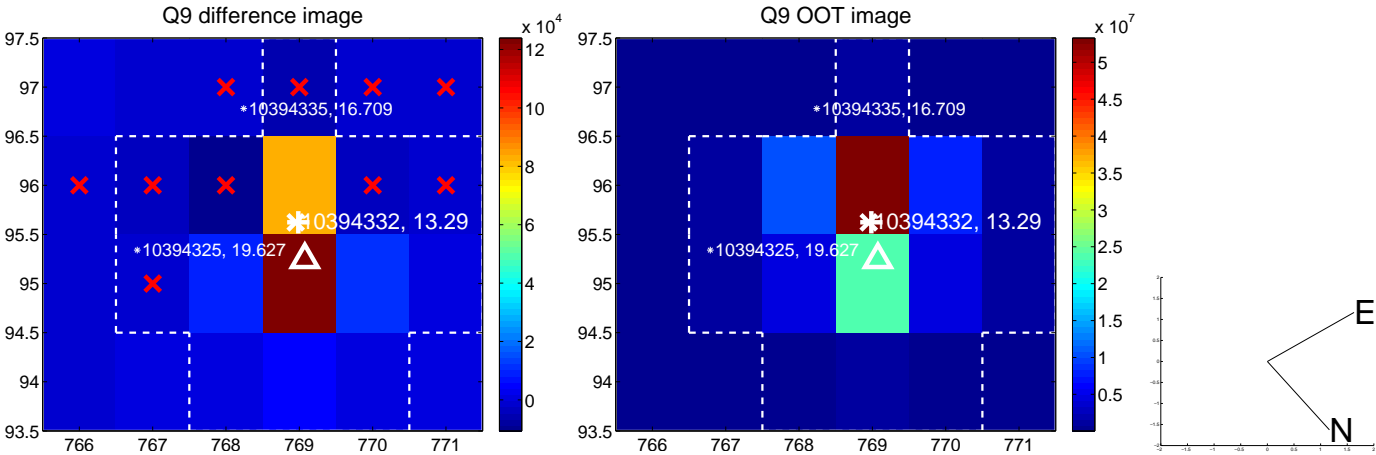


white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

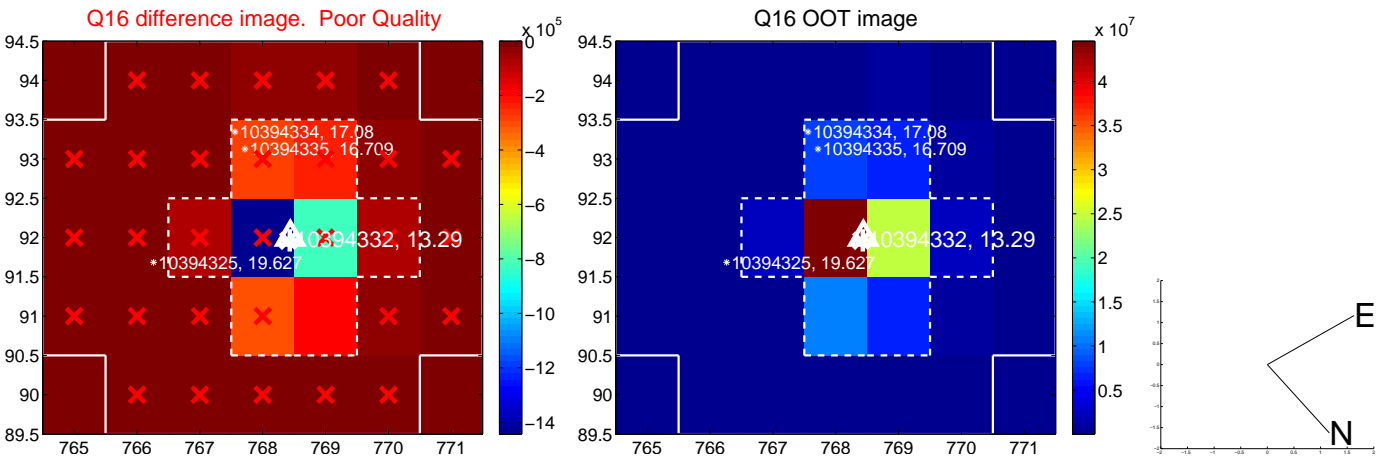
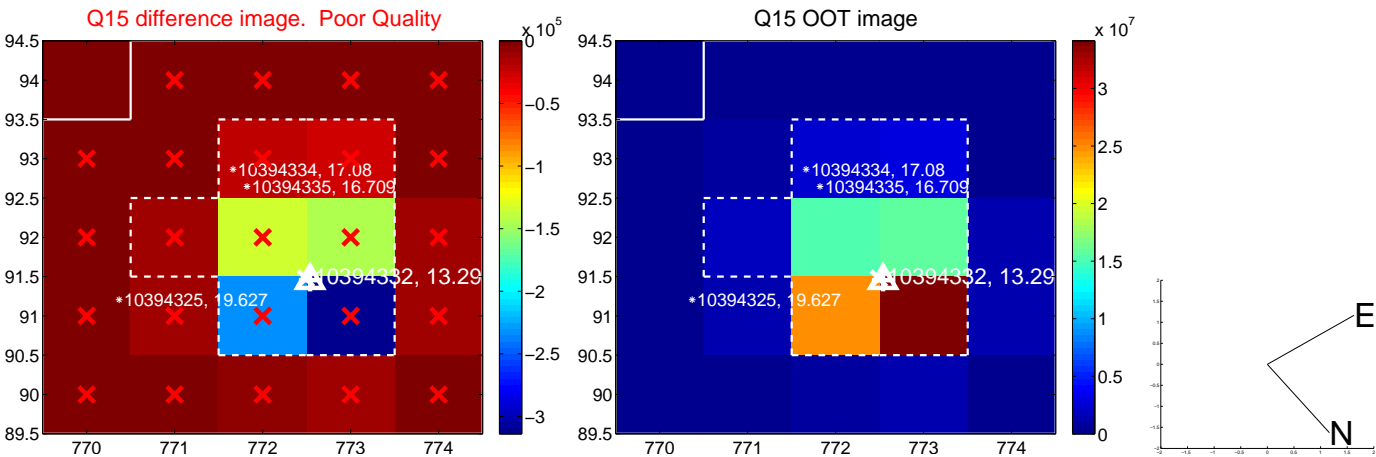
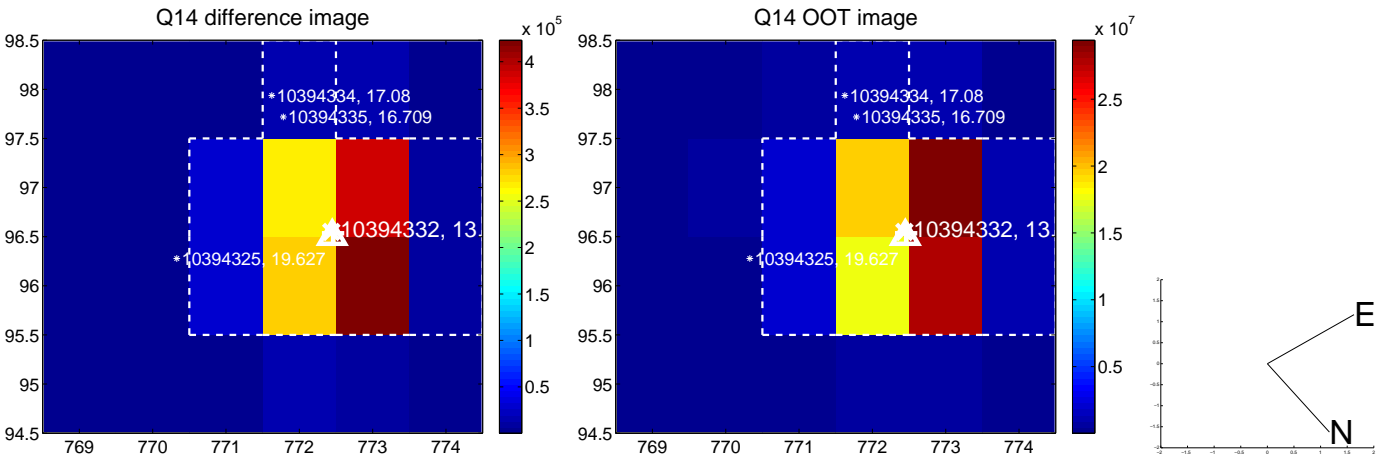
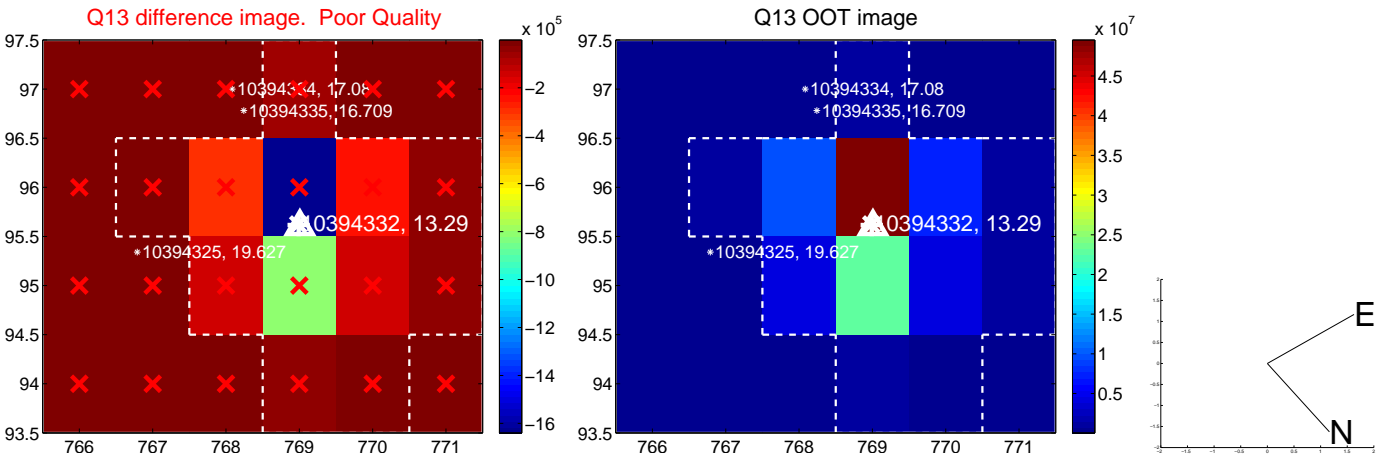




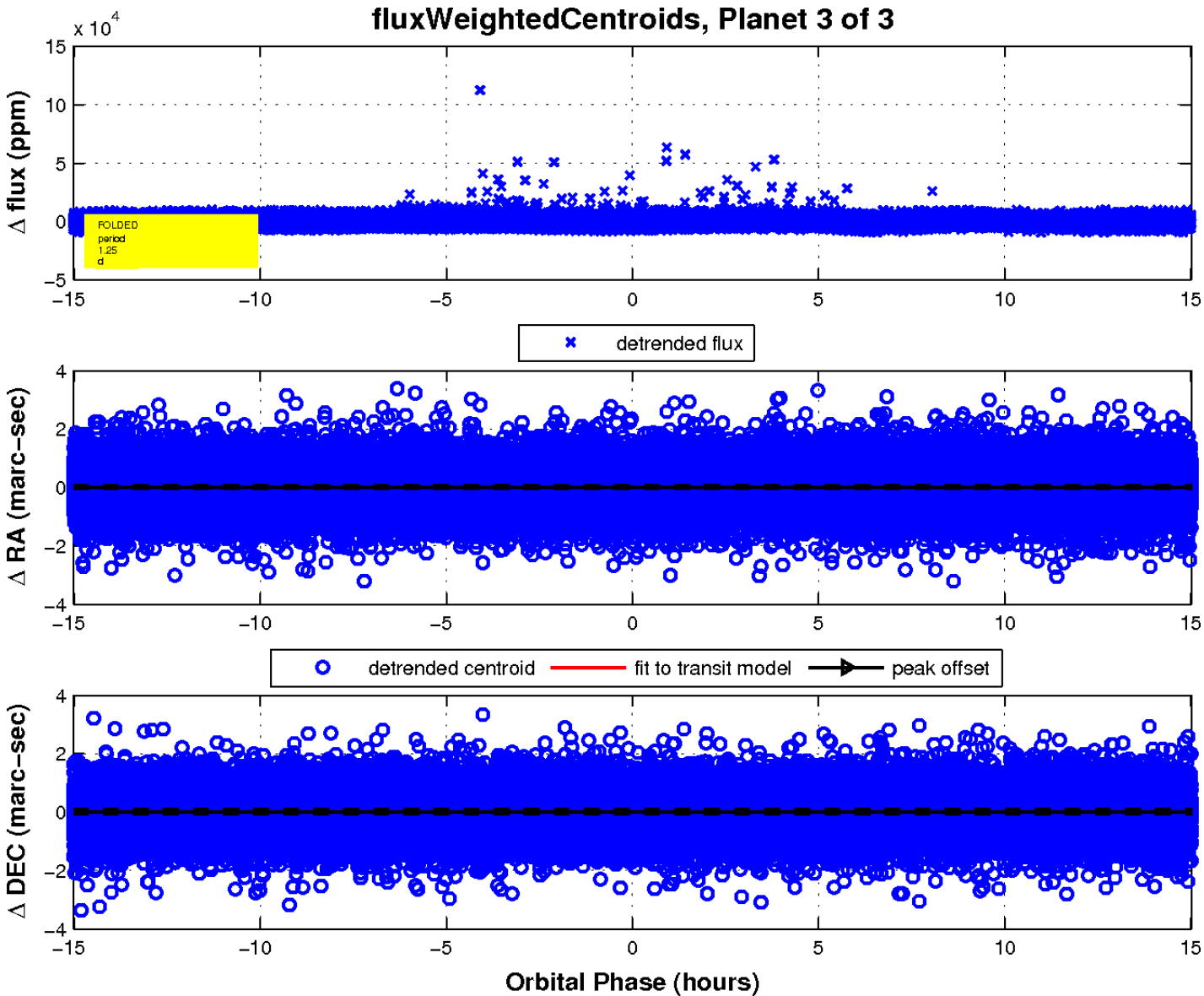
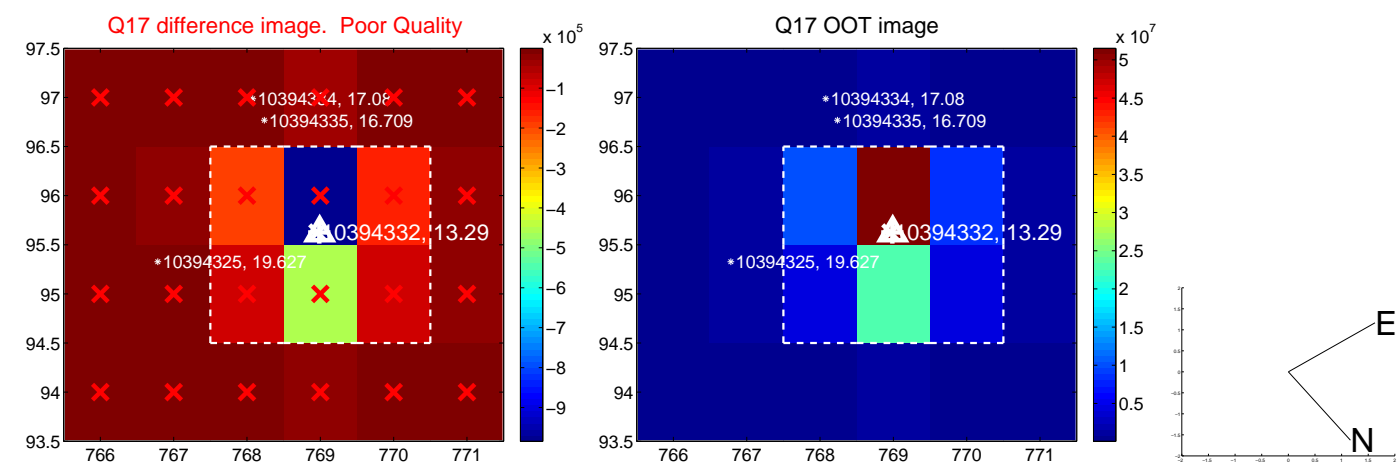
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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.



This plot does not exist for this TCE.