

# KIC 008695402

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
008695402-01	OBS	No	617.778020	331.818659	252.1	13.287	16.3	1.5	1.76	5889	2.90	1.57
008695402-02	OBS	No	675.375518	217.618516	888.0	6.155	16.7	5.4	1.76	5889	5.22	1.39
008695402-03	OBS	No	217.859802	328.021052	264.3	2.293	18.8	3.0	1.76	5889	3.18	6.30
008695402-04	OBS	No	450.527722	541.199730	273.2	3.560	16.6	2.5	1.76	5889	3.36	2.39
008695402-05	OBS	No	406.521544	336.702035	1416.6	28.626	13.0	5.1	1.76	5889	7.79	2.74
008695402-06	OBS	No	263.848148	277.730590	849.3	3.025	15.4	6.6	1.76	5889	5.32	4.88
008695402-07	OBS	No	391.554688	471.559488	462.2	3.500	12.7	-1.0	1.76	5889	3.77	2.88

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008695402-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_TRACKER—LPP_DV—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
008695402-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_SKYE—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
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008695402-05	OBS	FP	0.00	1	0	0	0	LPP_DV—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—CENT_FEW_DIFFS
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**Notes:** OBS = Observed. INJ = Injected. INV = Inverted. SCR = Scrambled.

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

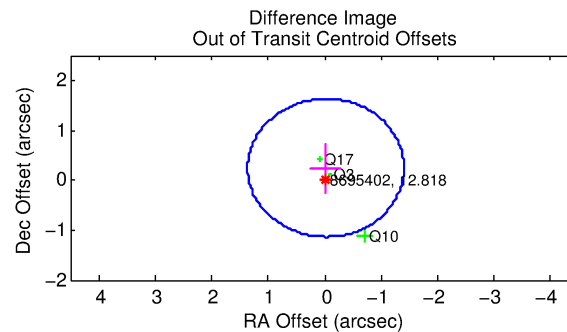
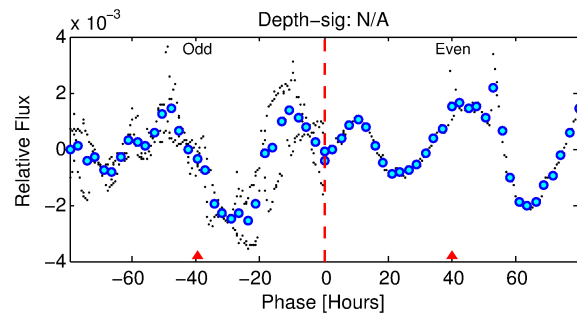
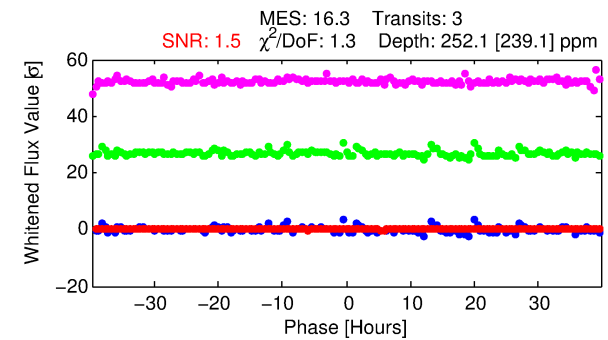
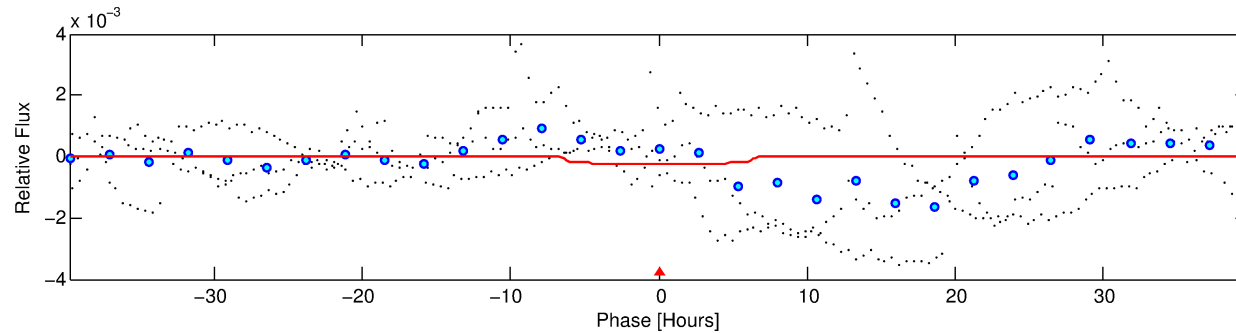
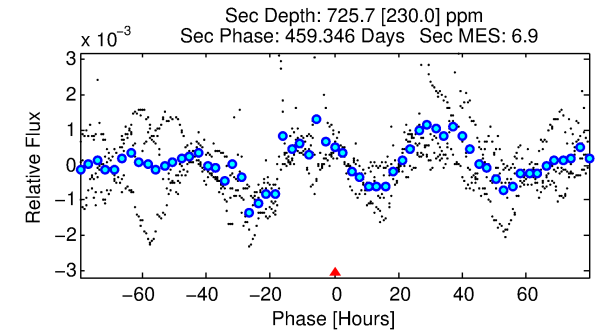
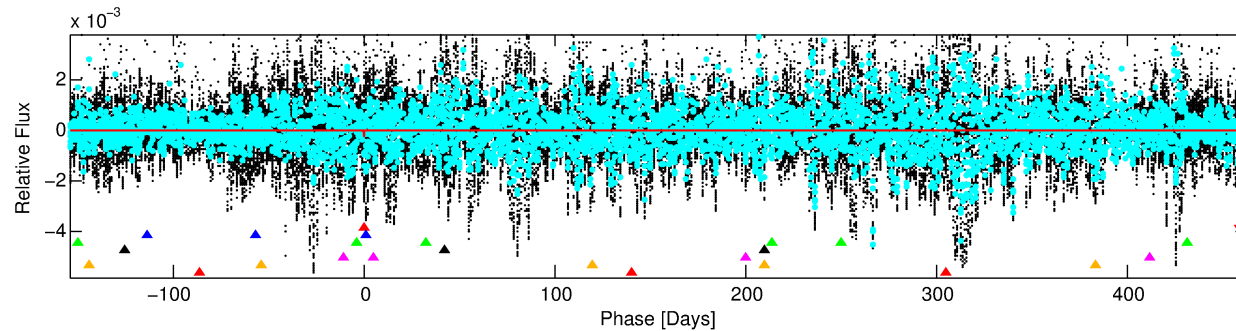
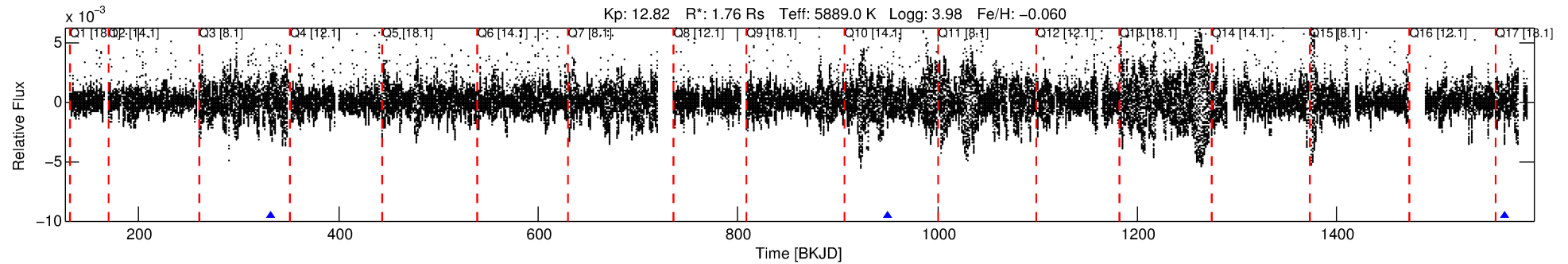
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

Ephemeris Match Information For 008695402-01

No Significant Match Found

# DV One-Page Summary

KIC: 8695402 Candidate: 1 of 7 Period: 617.778 d



## DV Fit Results:

Period = 617.77802 [0.02198] d  
Epoch = 331.8187 [0.0298] BKJD  
Rp/R\* = 0.0151 [0.0155]  
a/R\* = 297.82 [1144.26]  
b = 0.57 [4.51]  
Seff = 1.57 [1.09]  
Teq = 285 [50] K  
Rp = 2.91 [3.23] Re  
a = 1.4625 [0.6139] AU  
Ag = 101172.43 [221750.78] [0.46] $\sigma$   
Teffp = 7870 [4106] K [1.85] $\sigma$

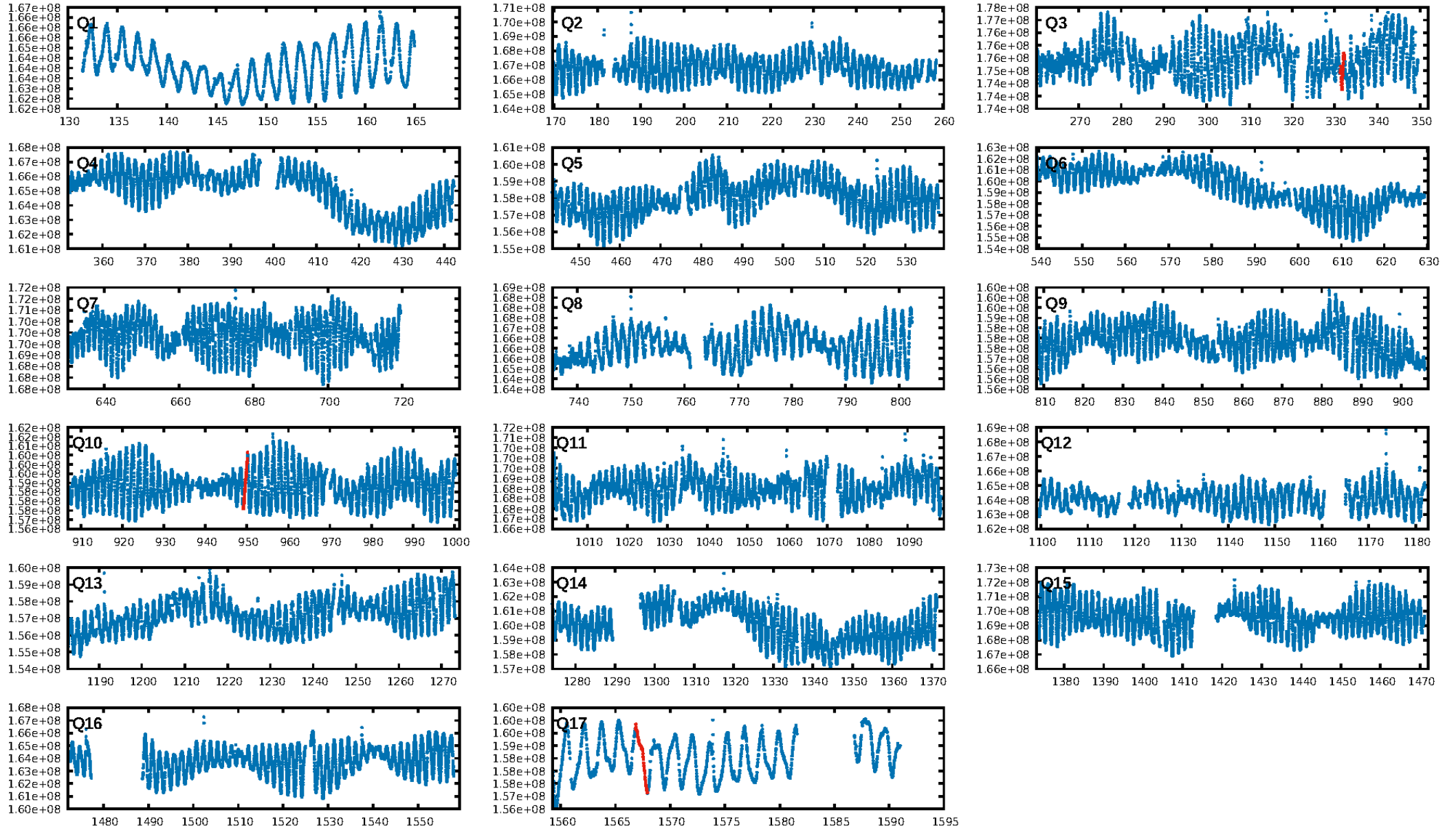
## DV Diagnostic Results:

ShortPeriod-sig: 100.0% [291.80 $\sigma$ ]  
LongPeriod-sig: 100.0% [94.40 $\sigma$ ]  
ModelChiSquare2-sig: 39.7%  
ModelChiSquareGof-sig: 95.9%  
Bootstrap-pfa: N/A  
RollingBand-fgt: 1.00 [2/2]  
**GhostDiagnostic-chr: 0.7122**  
Centroid-sig: 35.2%  
Centroid-so: 1.101 arcsec [0.94 $\sigma$ ]  
OotOffset-rm: 0.246 arcsec [0.53 $\sigma$ ]  
OotOffset-st: 1/1/0/1 [3]  
KicOffset-rm: 0.274 arcsec [0.72 $\sigma$ ]  
KicOffset-st: 1/1/0/1 [3]  
DiffImageQuality-fgm: 0.67 [2/3]  
DiffImageOverlap-fno: 0.67 [2/3]

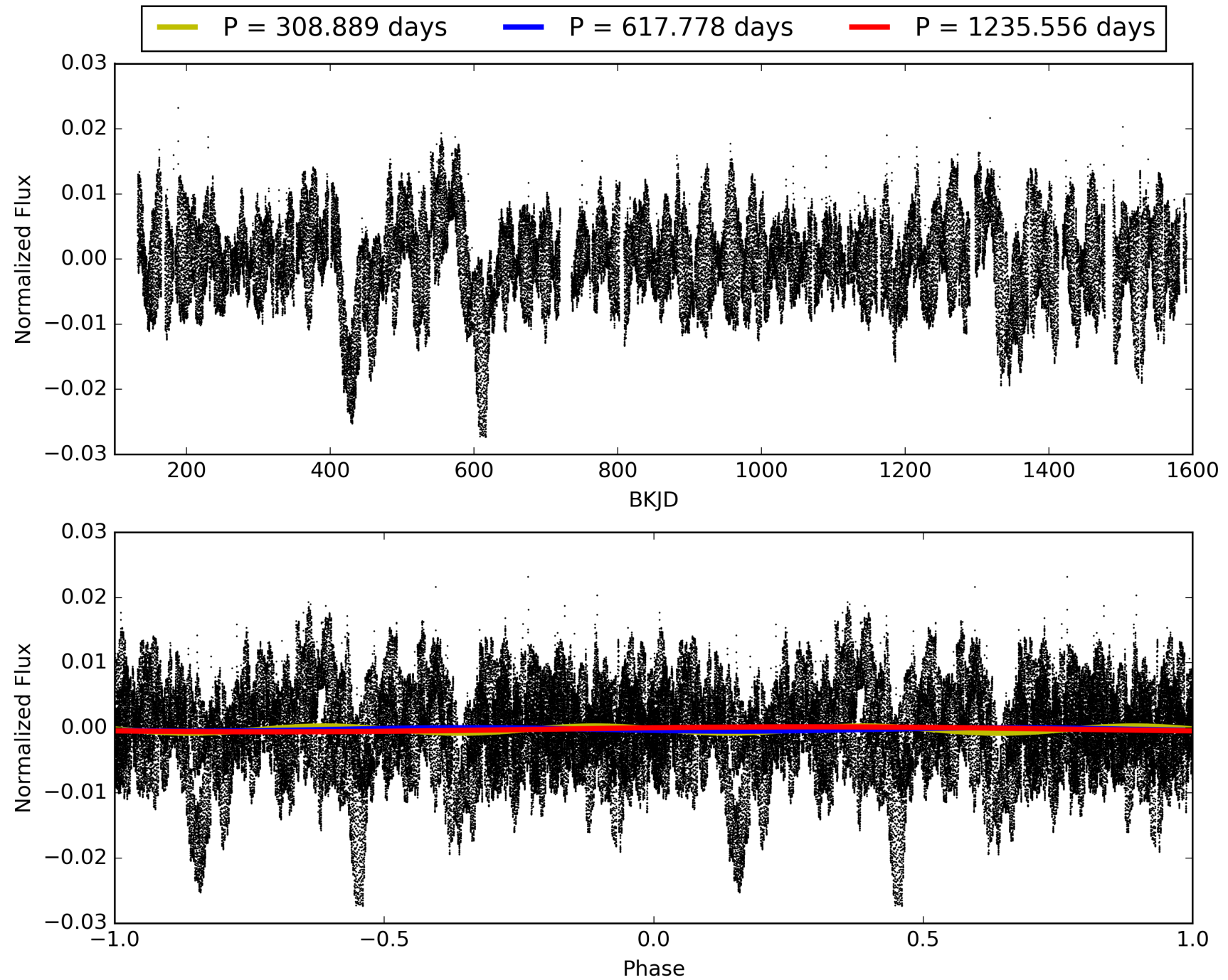
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 23:45:54 Z

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

# TCE 008695402-01, PDC Light Curves



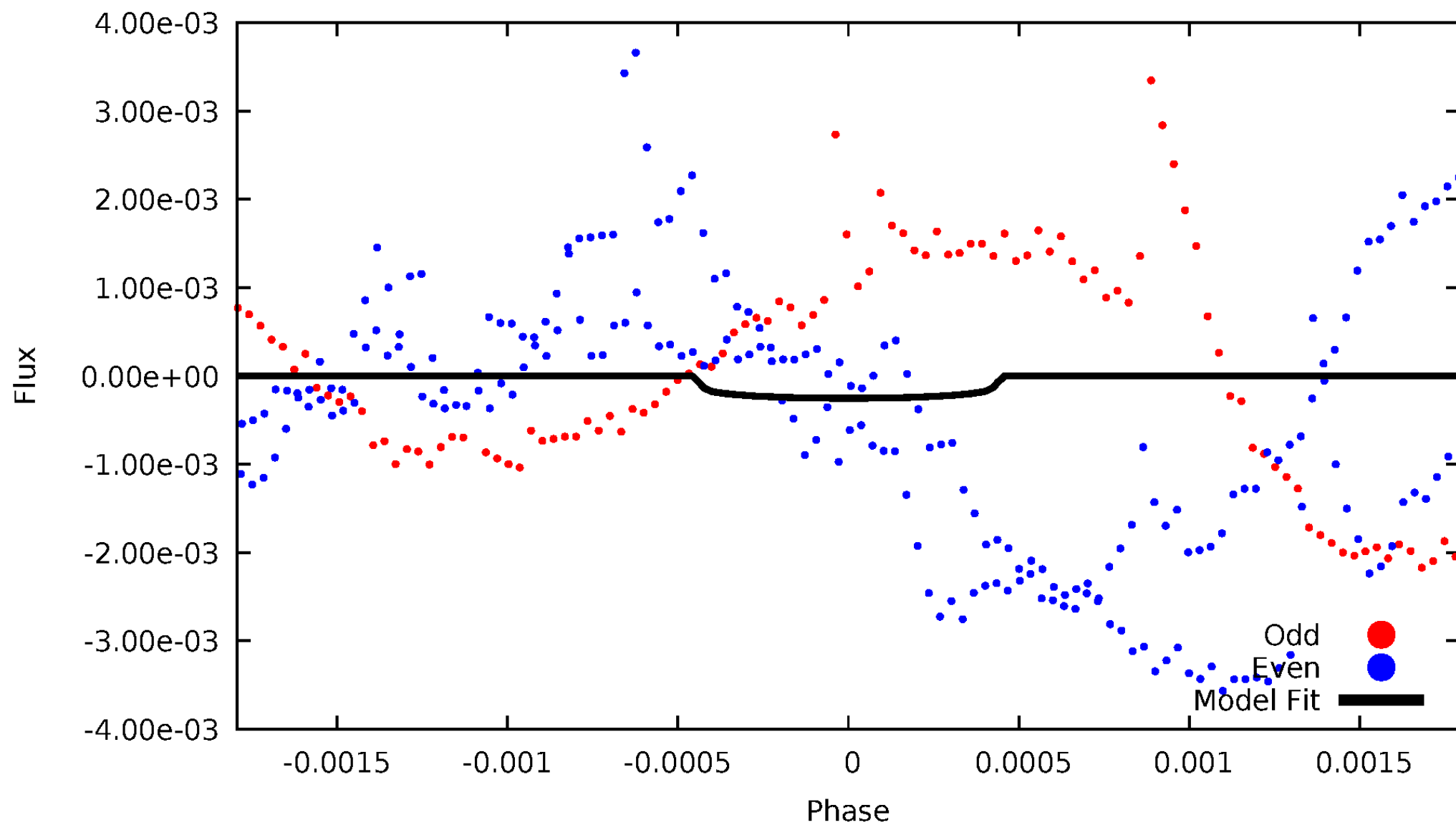
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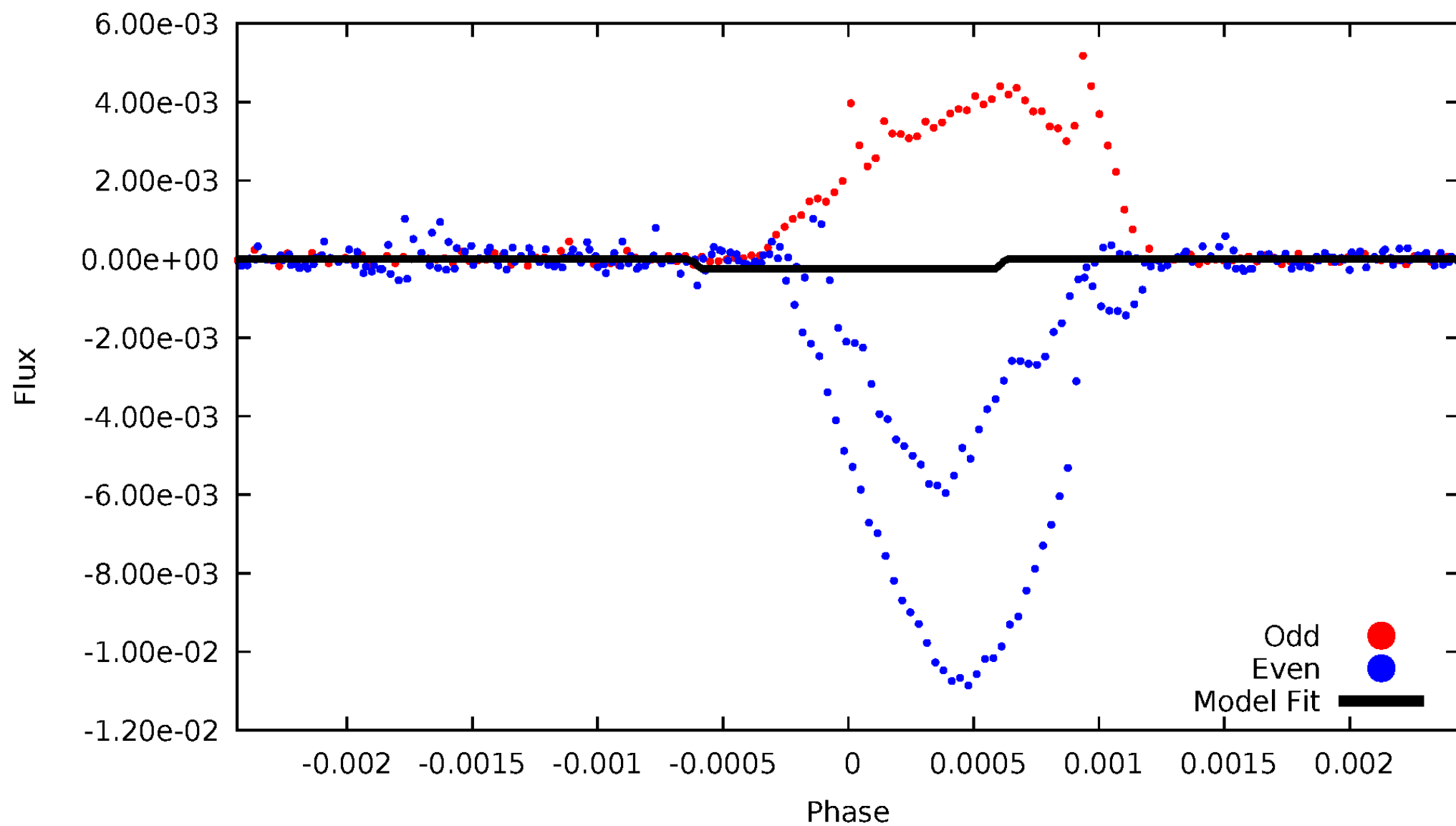
# DV Odd/Even

TCE 008695402-01



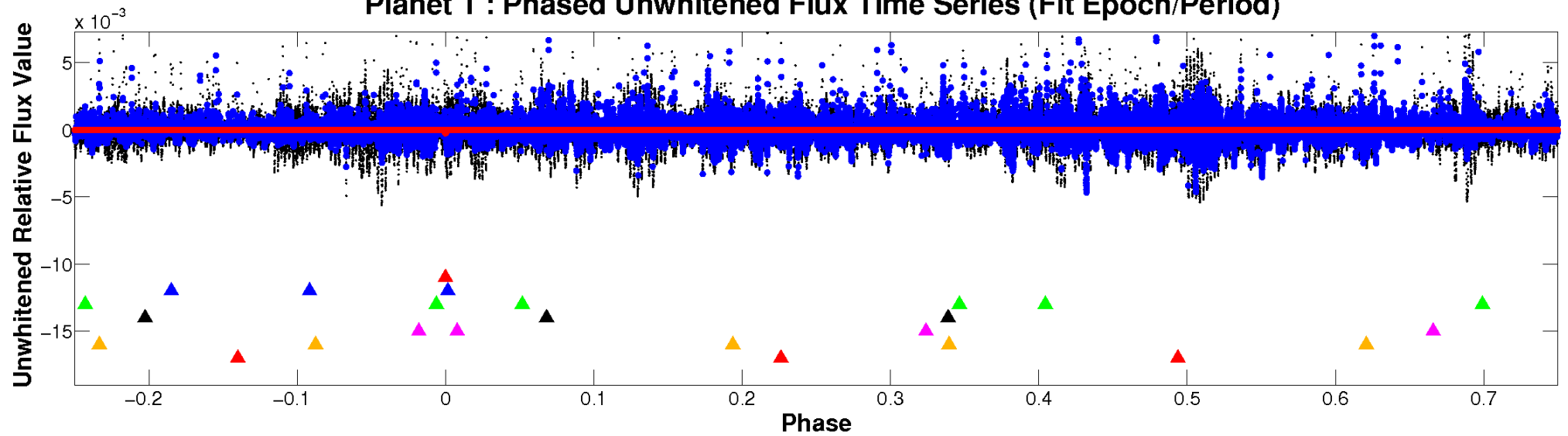
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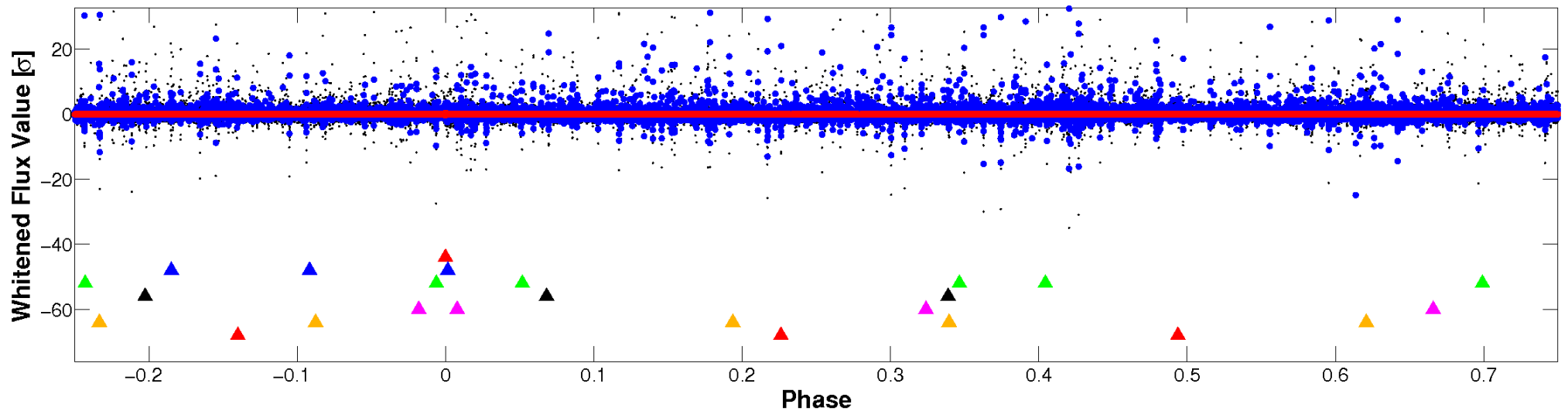


# Non-Whitened Vs. Whitened Light Curve

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

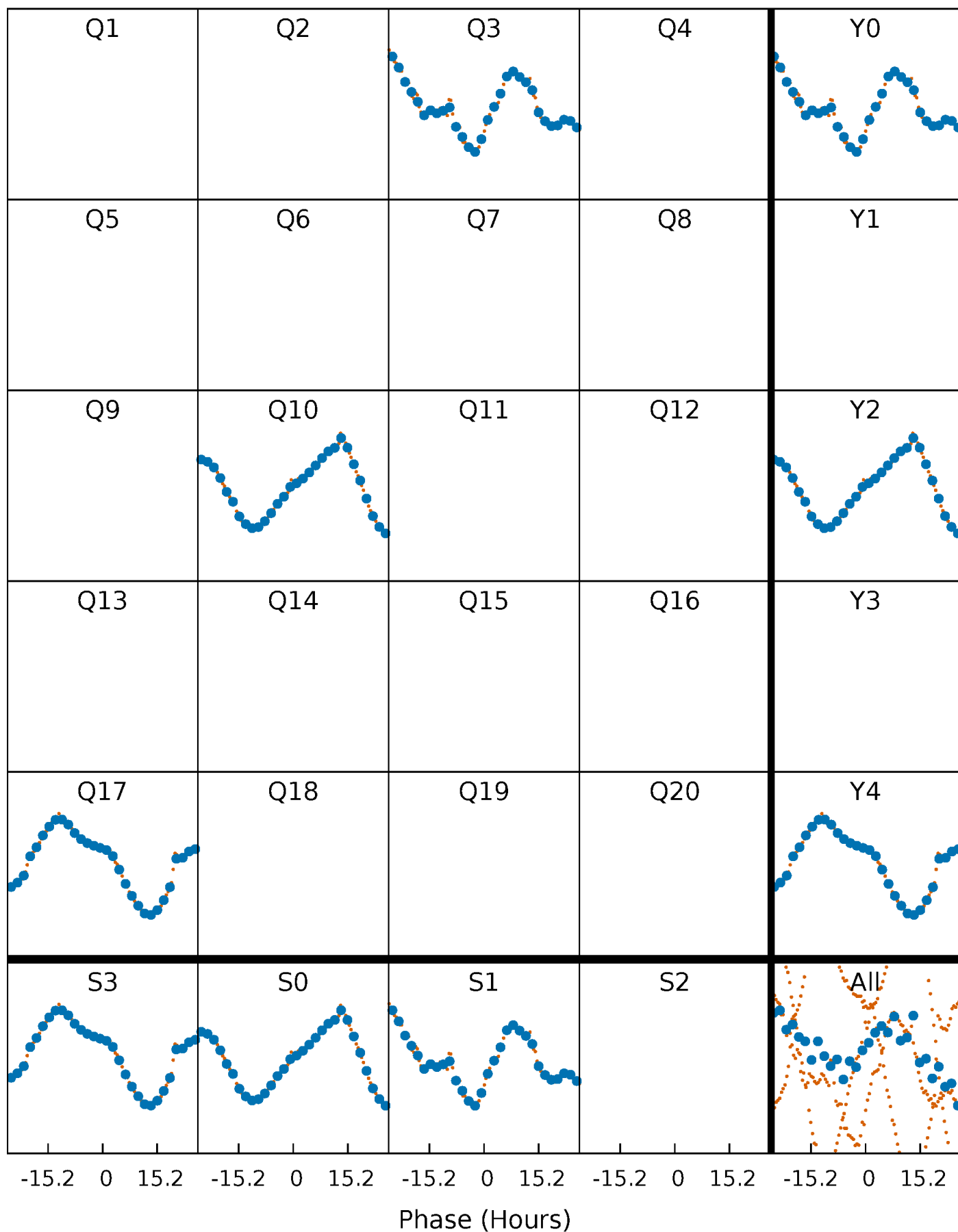


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



# PDC Quarter-Phased Transit Curves

TCE 008695402-01 P=617.778020 Days  $T_0=331.818659$  (BKJD)



# DV Quarter-Phased Transit Curves

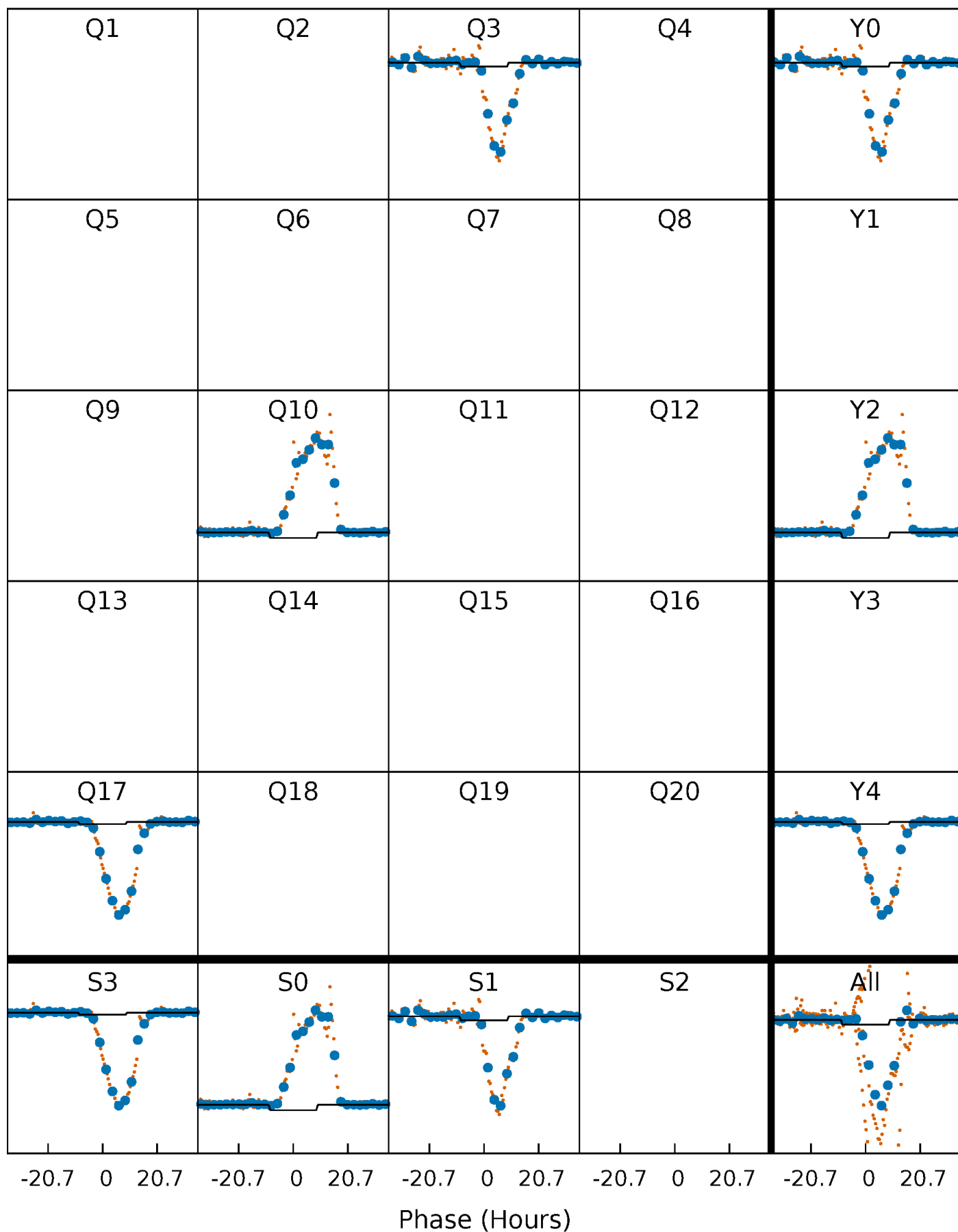
TCE 008695402-01 P=617.778020 Days  $T_0=331.818659$  (BKJD)





# Alt. Detrend Quarter-Phased Transit Curves

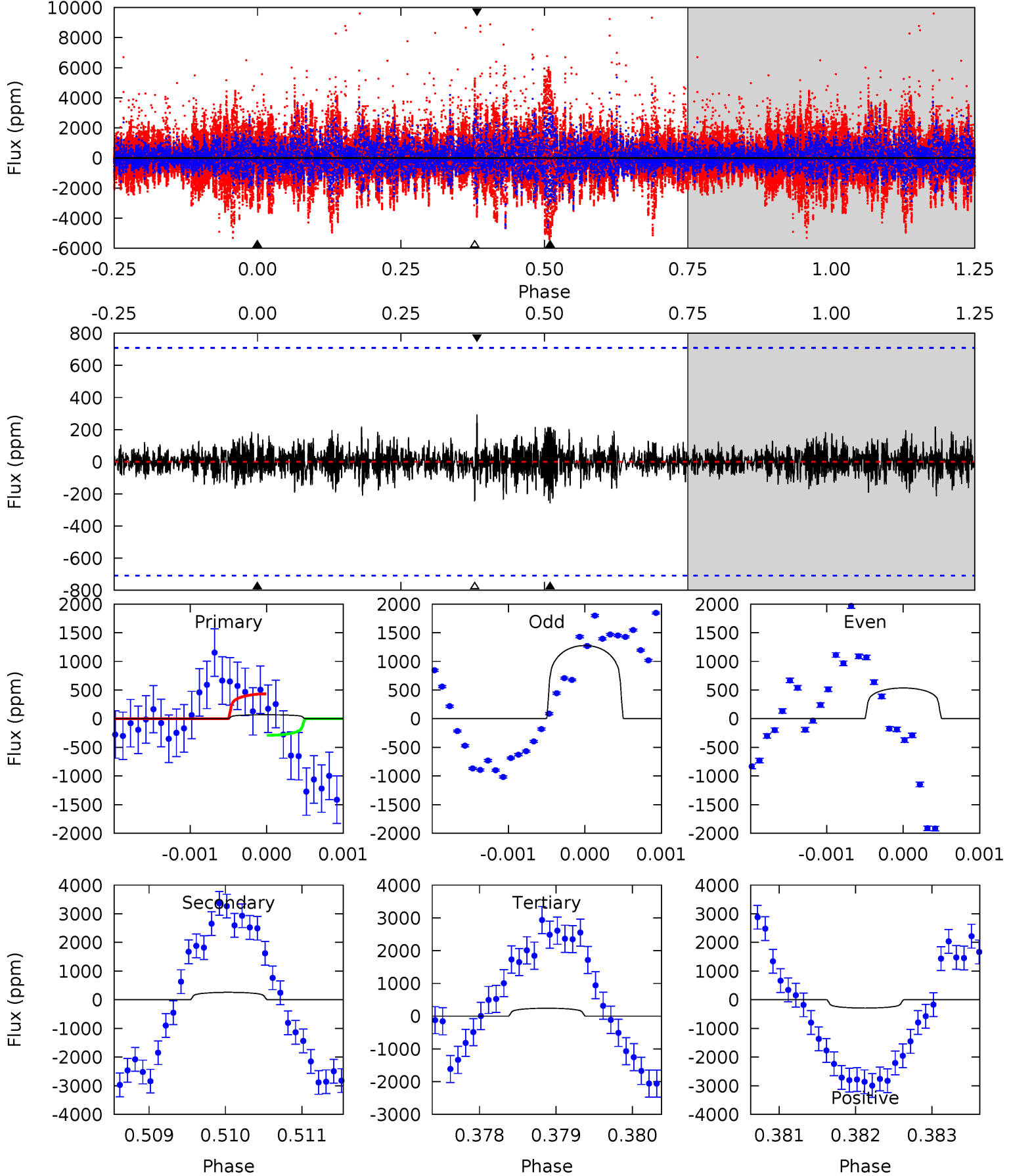
TCE 008695402-01 P=618.067512 Days  $T_0=331.499583$  (BKJD)



# DV Model-Shift Uniqueness Test

008695402-01, P = 617.778020 Days, E = 331.818659 Days

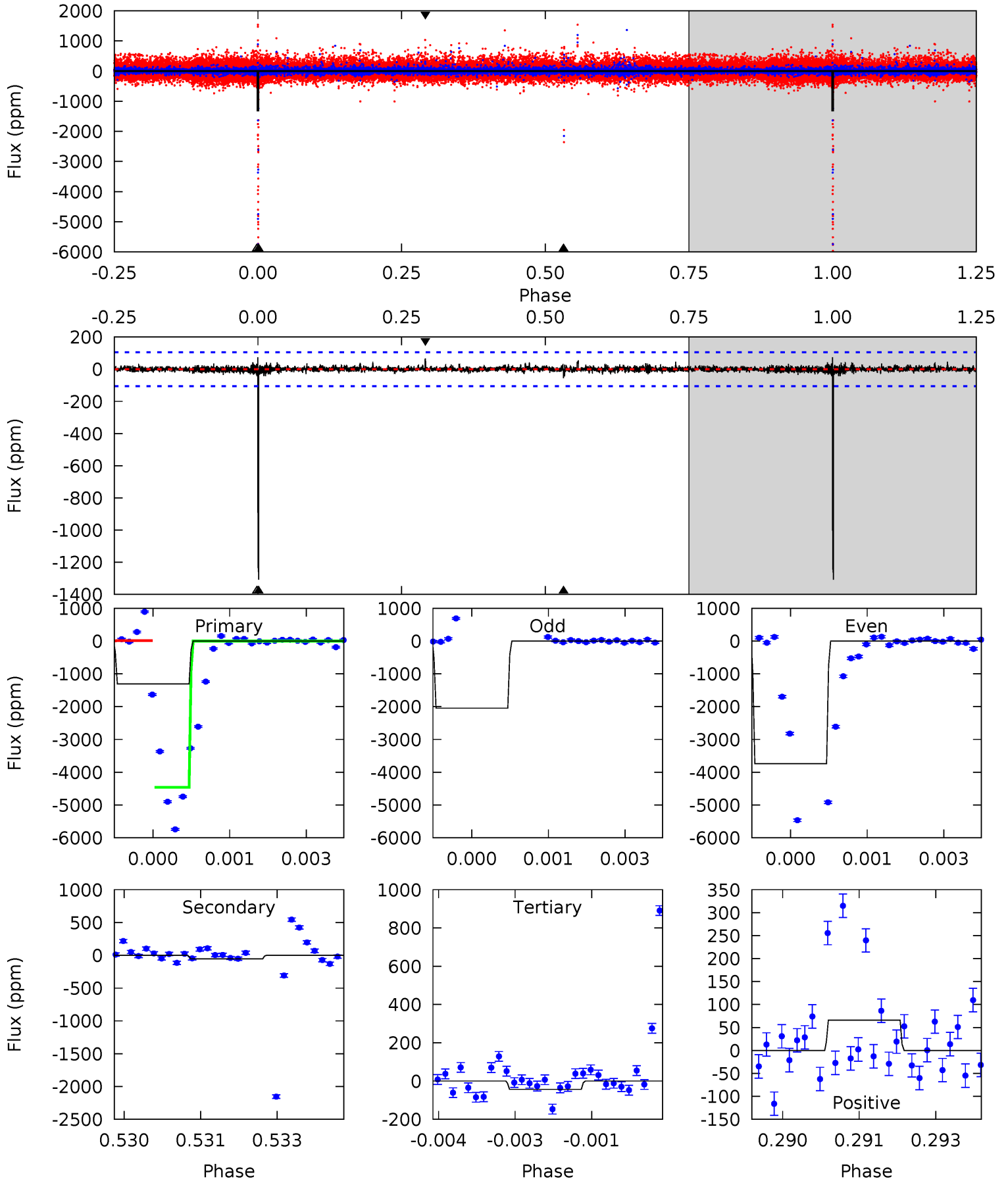
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
0.53	2.00	1.85	2.23	5.47	3.31	0.49	-1.33	-1.71	0.14	-0.24	2.45	-0.41	0.53	0.55



# Alt Model-Shift Uniqueness Test

008695402-01, P = 618.067512 Days, E = 331.499583 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
67.3	2.90	2.23	3.40	5.41	3.23	0.66	65.1	63.9	0.67	-0.50	50.0	0.78	0.05	109.5



### Stellar Parameters For KIC 008695402

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R$ ( $R_{\odot}$ )	$M(M_{\odot})$	$p_{\star}$ ( $\text{g}\cdot\text{cm}^{-3}$ )
	$5889^{+193}_{-193}$	$3.983^{+0.405}_{-0.135}$	$-0.060^{+0.300}_{-0.300}$	$1.765^{+0.402}_{-0.747}$	$1.095^{+0.153}_{-0.187}$	$0.280^{+0.998}_{-0.114}$
	+3%/-3%	+10%/-3%	+500%/-500%	+23%/-42%	+14%/-17%	+356%/-41%
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 008695402-01 / KOI

Detrend	Depth (ppm)	$R_p$ ( $R_{\oplus}$ )	$T_{\text{max}}$ (K)	$T_{\text{obs}}$ (K)	$A_{\text{obs}}$
DV	$-259 \pm 130$	$3.24^{+2.49}_{-2.00}$	$394^{+28}_{-42}$	$5537^{+3593}_{-1350}$	$26859^{+167872}_{-20707}$
Alt.	$-56 \pm 19$	$3.30^{+2.71}_{-2.09}$	$391^{+31}_{-43}$	$4059^{+2292}_{-742}$	$6061^{+43045}_{-4428}$

$T_{\text{max}}$  = 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

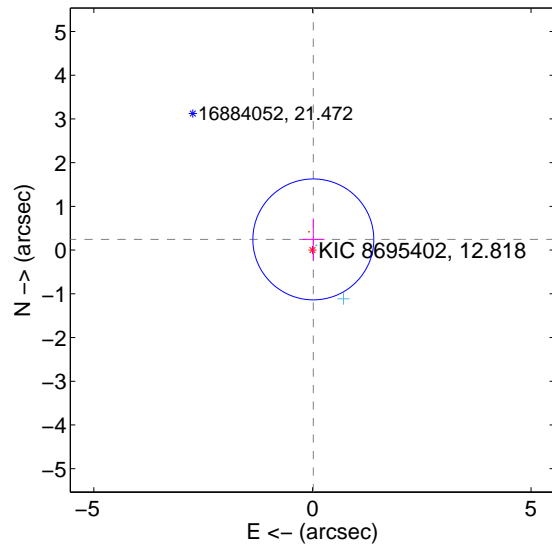
Supplemental centroid analysis for 008695402-01. Kepler magnitude: 12.82. Transit SNR 1.49

There are 2 quarters with good PRF difference image offsets

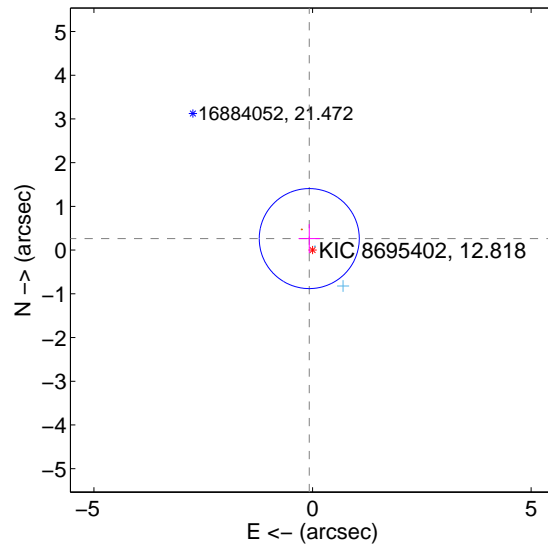
The direct PRF centroid is offset from the target star catalog position by about 0.17 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.246 \pm 0.461$	0.53	$-0.020 \pm 0.253$	$0.245 \pm 0.483$
PRF-fit source offset from KIC position	$0.274 \pm 0.381$	0.72	$0.075 \pm 0.245$	$0.263 \pm 0.330$
photometric centroid source offset	$1.10 \pm 1.17$	0.94	$1.09 \pm 1.17$	$-0.12 \pm 1.00$

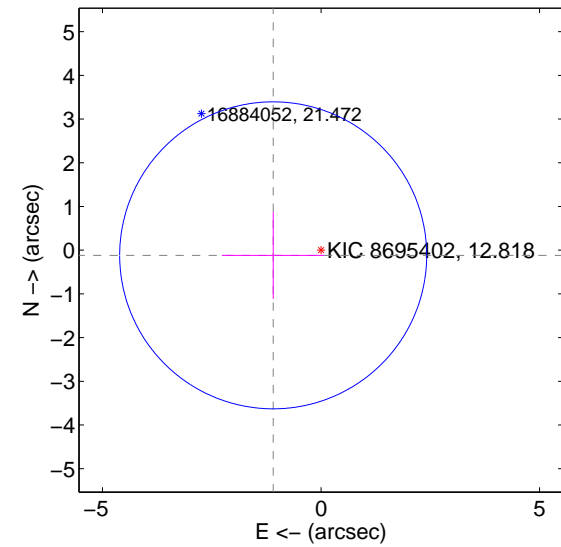
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position



offset from photometric centroids



Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: three- $\sigma$ . Red \*: target star. Blue \*: Other stars. Text next to a star gives its KIC ID and kepmag. KIC IDs > 15,000,000 are from the UKIRT catalog.



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

Q1 no difference image



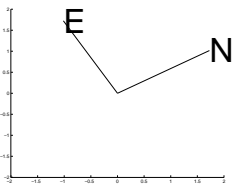
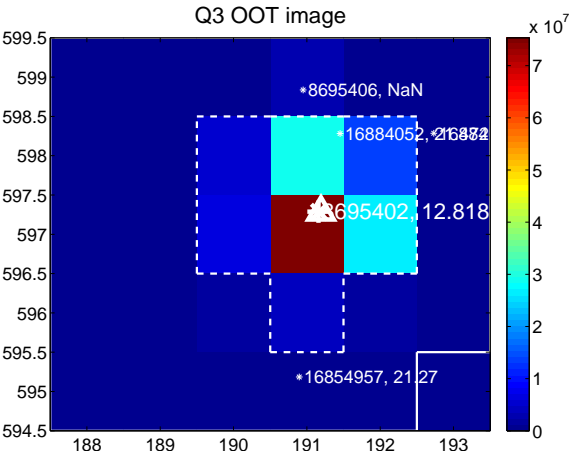
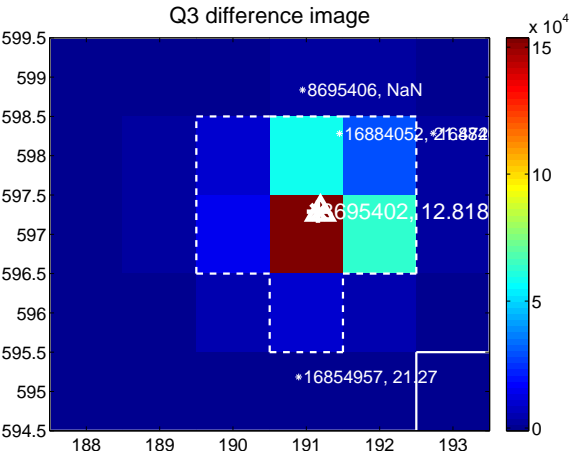
Q1 no OOT image



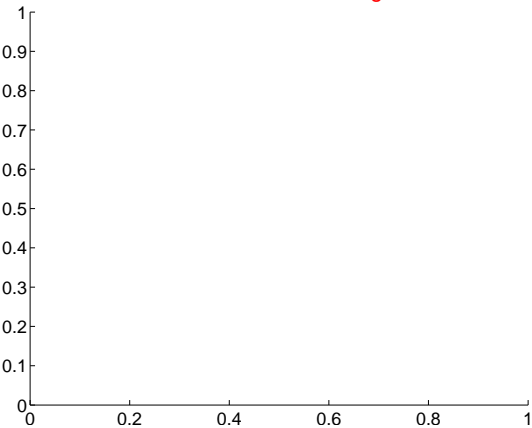
Q2 no difference image



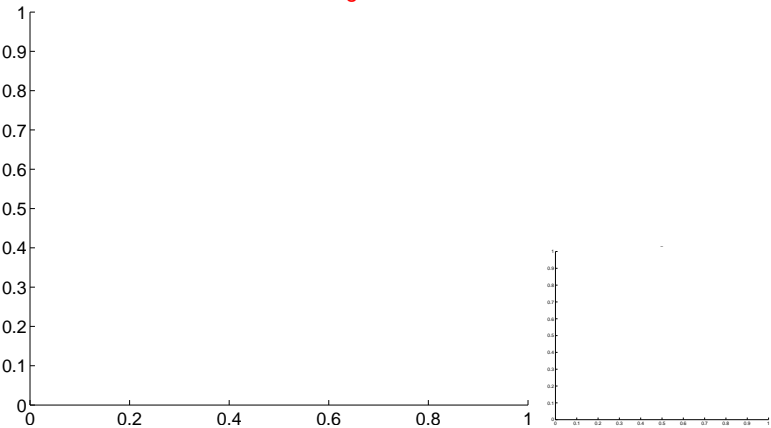
Q2 no OOT image



Q4 no difference image



Q4 no OOT image



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

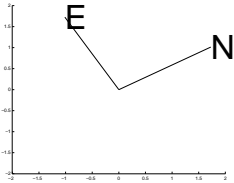
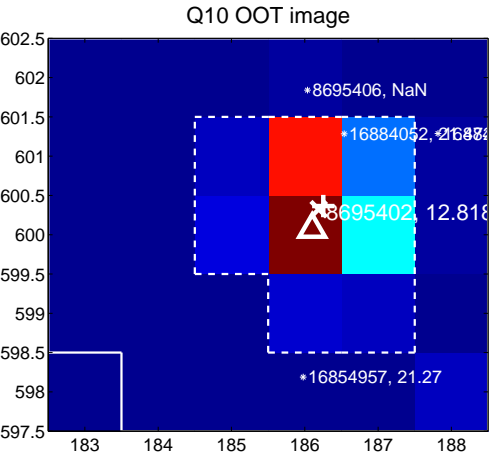
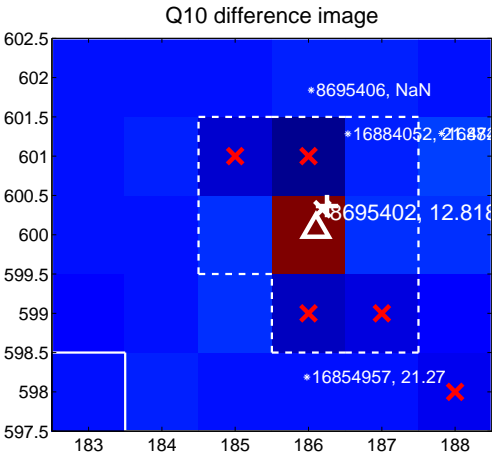
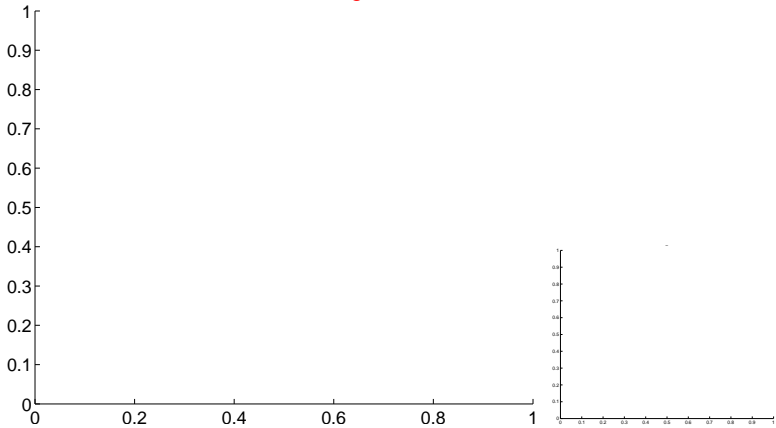


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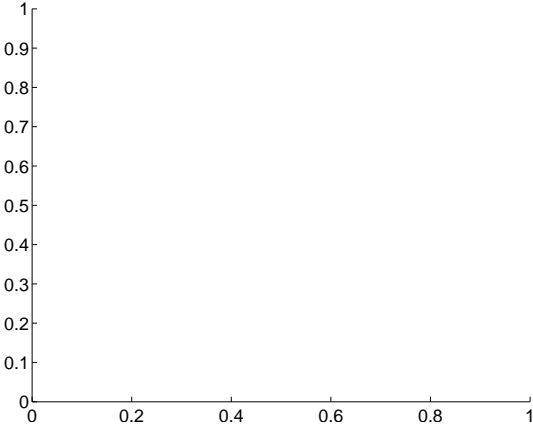
Q9 no difference image



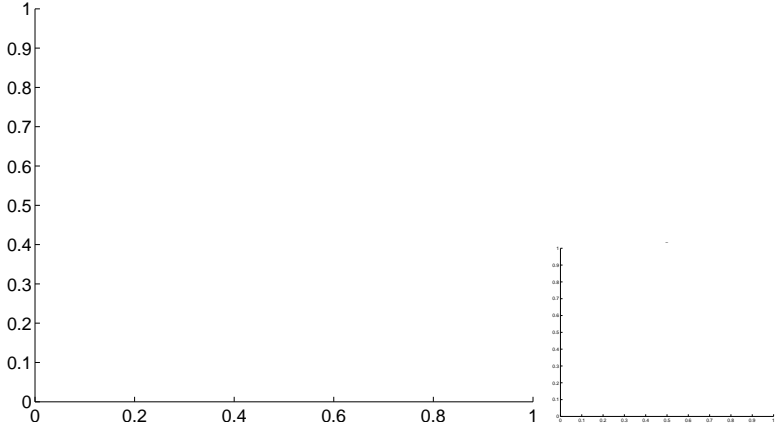
Q9 no OOT image



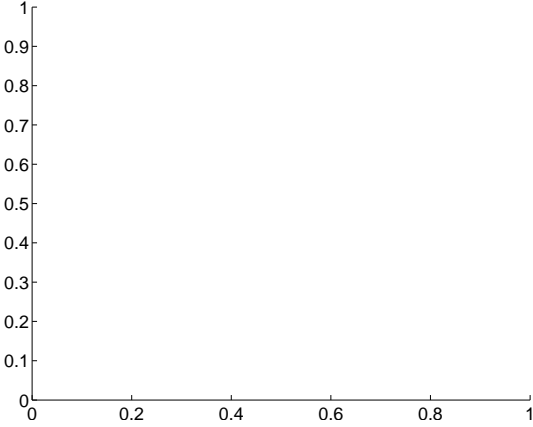
Q11 no difference image



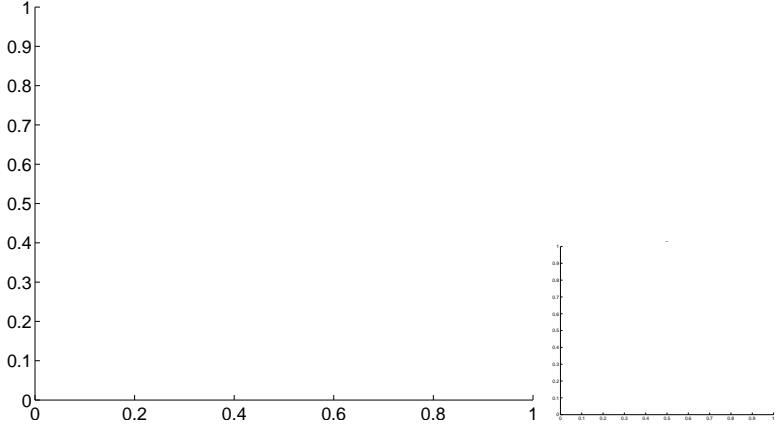
Q11 no OOT image



Q12 no difference image



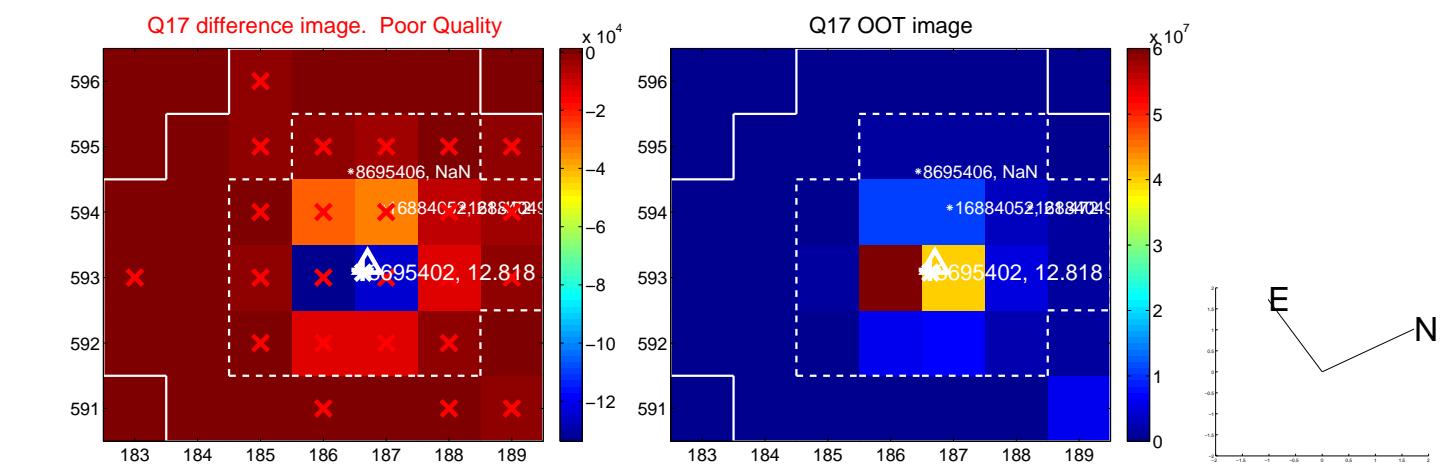
Q12 no OOT image



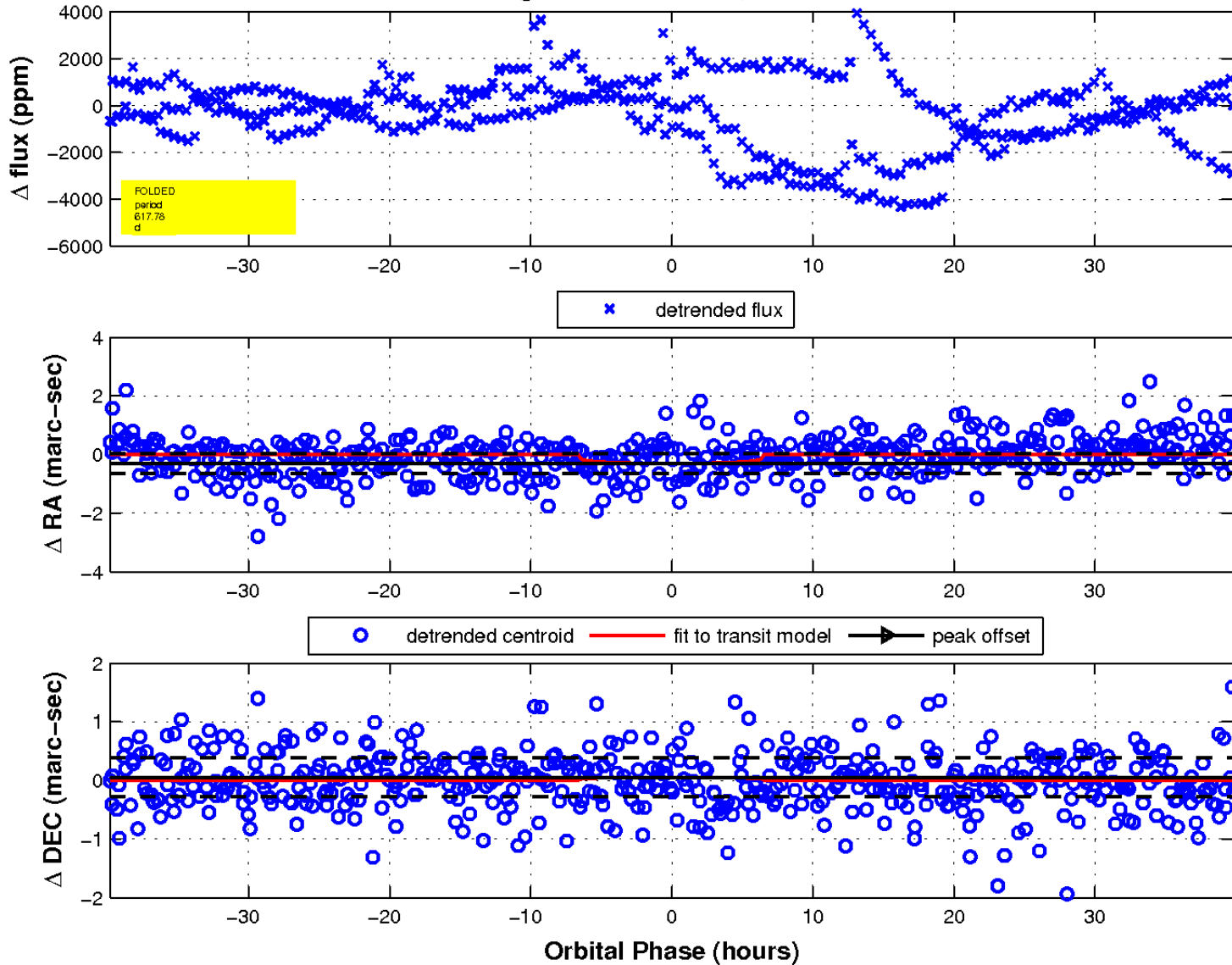
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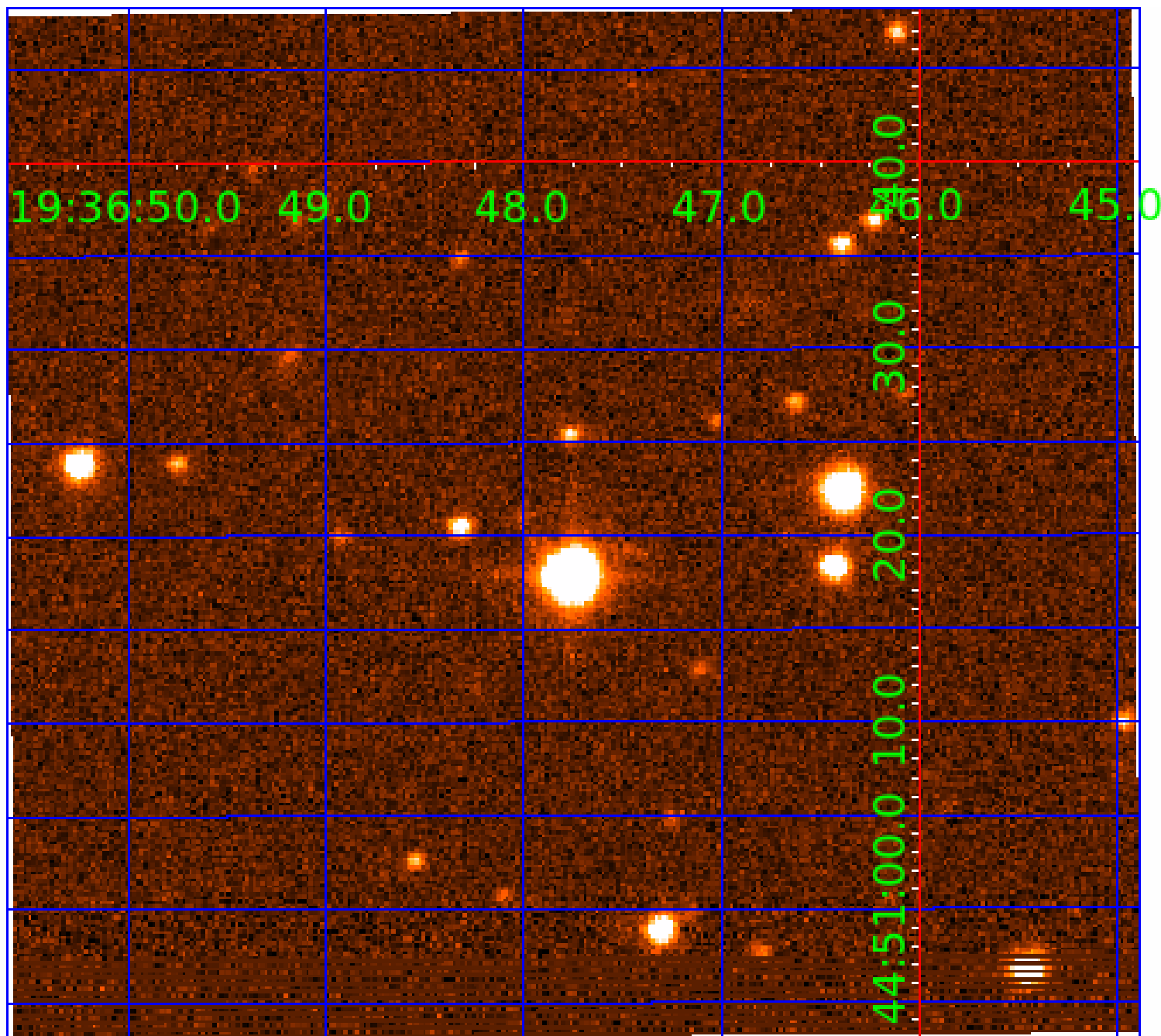
fluxWeightedCentroids, Planet 1 of 7





UKIRT Image

Declination



# KIC 008695402

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008695402-05	OBS	FP	0.00	1	0	0	0	LPP_DV—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—CENT_FEW_DIFFS
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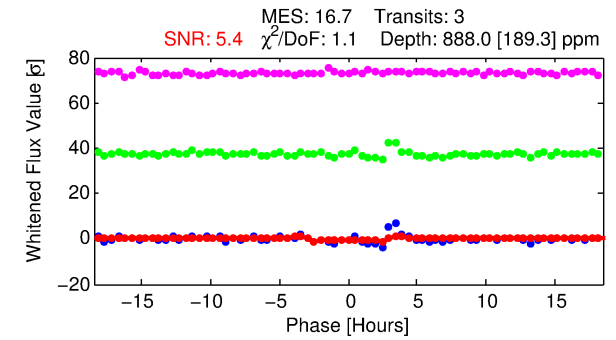
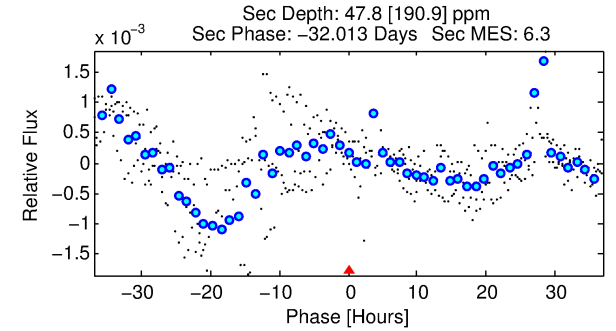
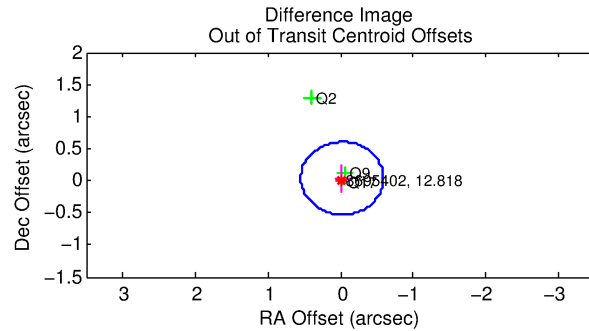
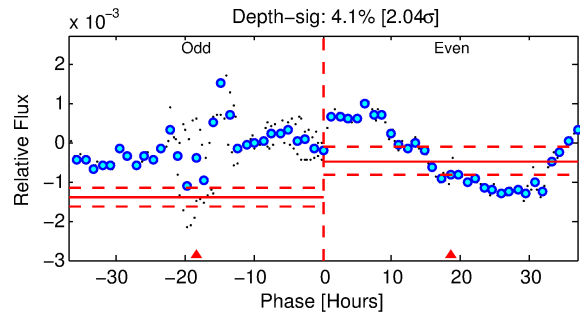
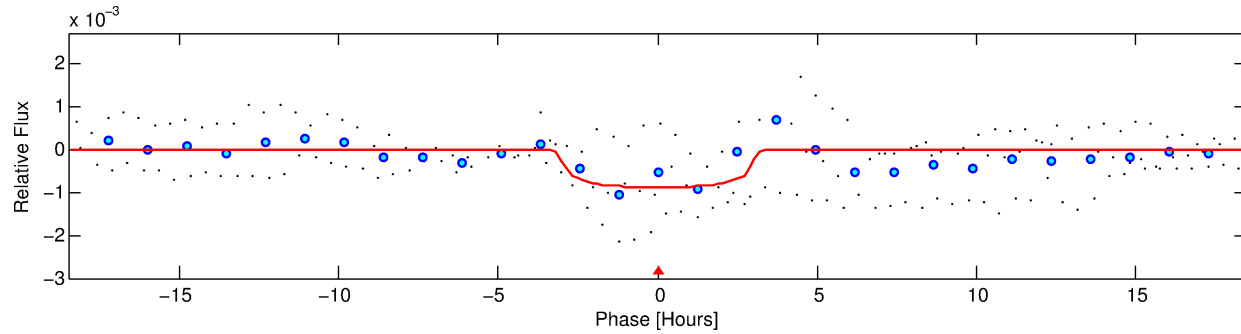
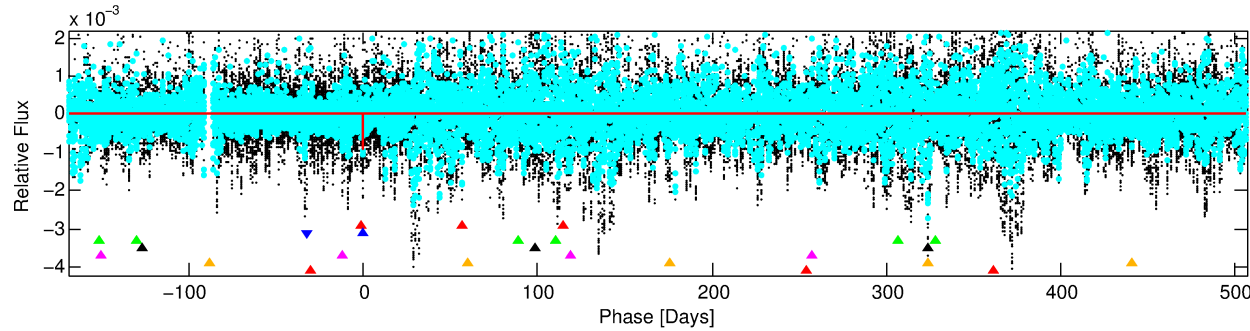
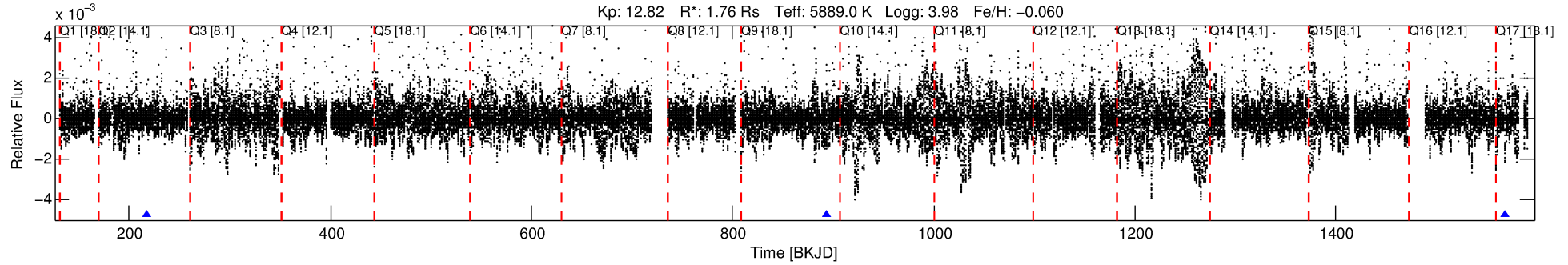
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 008695402-02

No Significant Match Found

# DV One-Page Summary

KIC: 8695402 Candidate: 2 of 7 Period: 675.376 d



## DV Fit Results:

Period = 675.37552 [0.00506] d  
Epoch = 217.6185 [0.0045] BKJD  
Rp/R\* = 0.0271 [0.0411]  
a/R\* = 861.05 [5961.65]  
b = 0.00 [1453.41]  
Seff = 1.39 [0.97]  
Teq = 277 [48] K  
Rp = 5.22 [8.21] Re  
a = 1.5520 [0.6515] AU  
Ag = 2319.00 [11738.39] [0.20 $\sigma$ ]  
Teffp = 2973 [3729] K [0.72 $\sigma$ ]

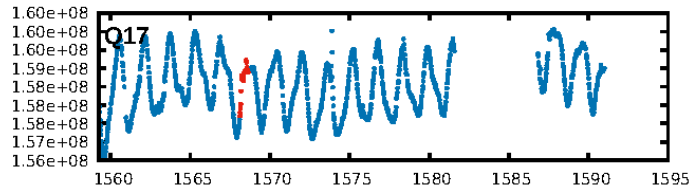
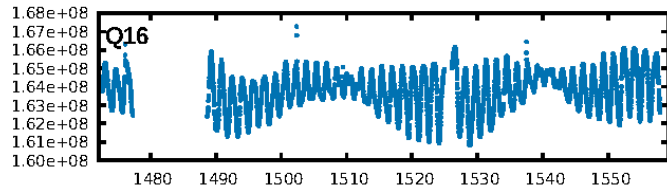
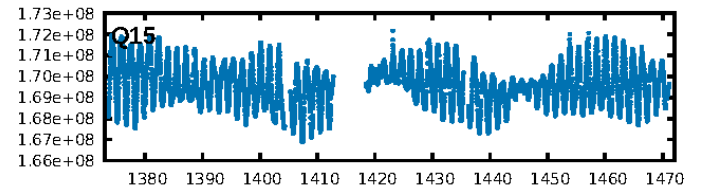
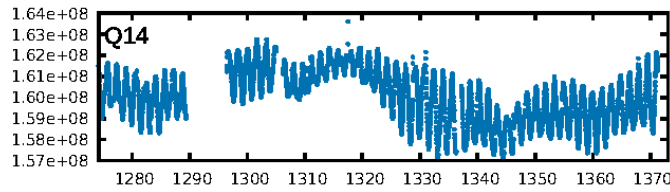
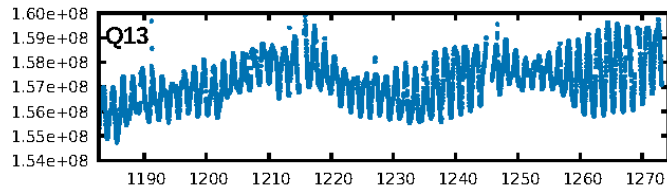
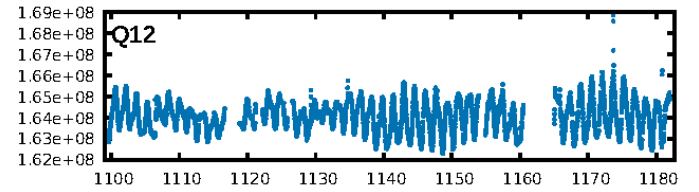
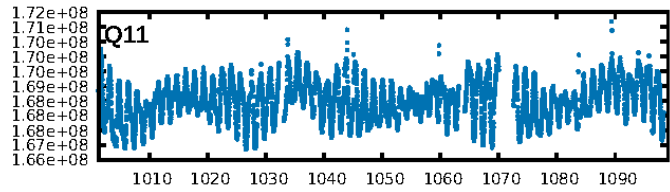
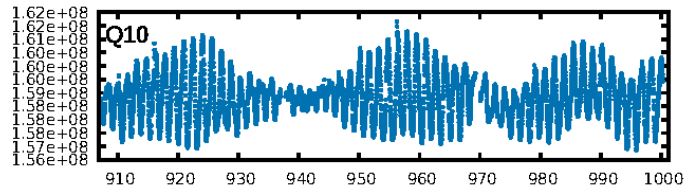
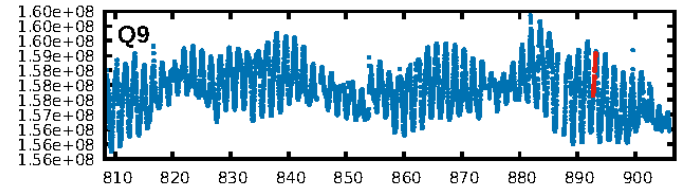
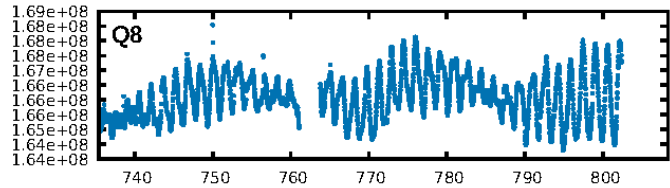
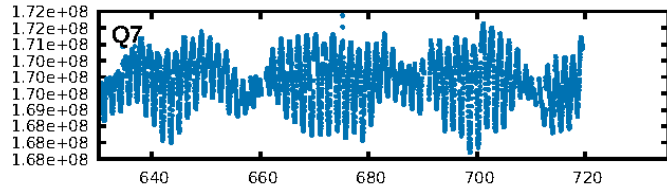
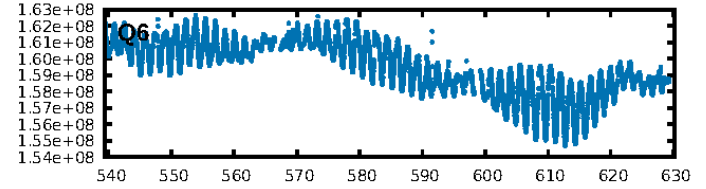
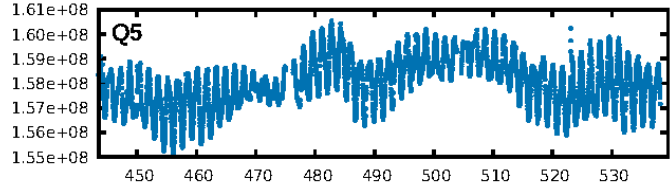
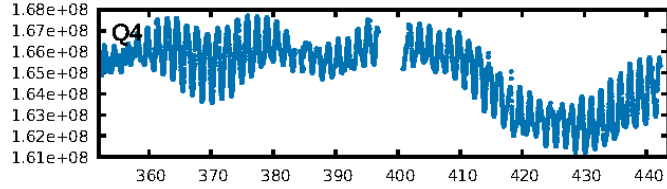
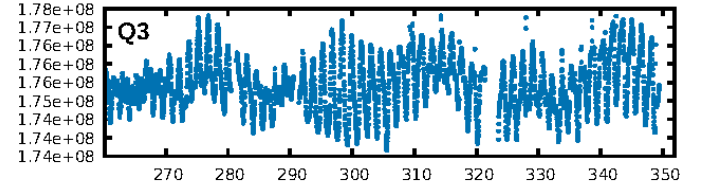
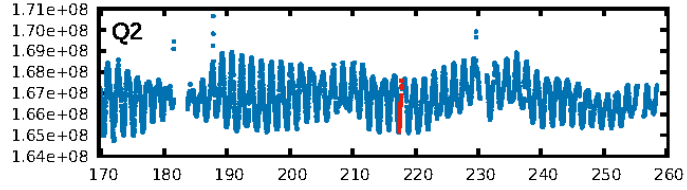
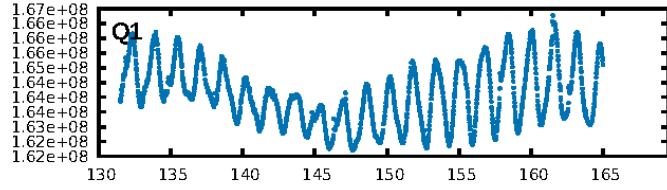
## DV Diagnostic Results:

ShortPeriod-sig: 100.0% [94.40 $\sigma$ ]  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: 1.3%  
ModelChiSquareGof-sig: 74.8%  
Bootstrap-pfa: N/A  
RollingBand-fgt: 1.00 [2/2]  
GhostDiagnostic-chr: -1.108  
Centroid-sig: 3.7%  
Centroid-so: 0.697 arcsec [1.39 $\sigma$ ]  
OotOffset-rm: 0.042 arcsec [0.22 $\sigma$ ]  
KicOffset-rm: 0.164 arcsec [0.72 $\sigma$ ]  
OotOffset-st: 1/0/0/2 [3]  
KicOffset-st: 1/0/0/2 [3]  
DiffImageQuality-fgm: 0.00 [0/3]  
DiffImageOverlap-fno: 1.00 [3/3]

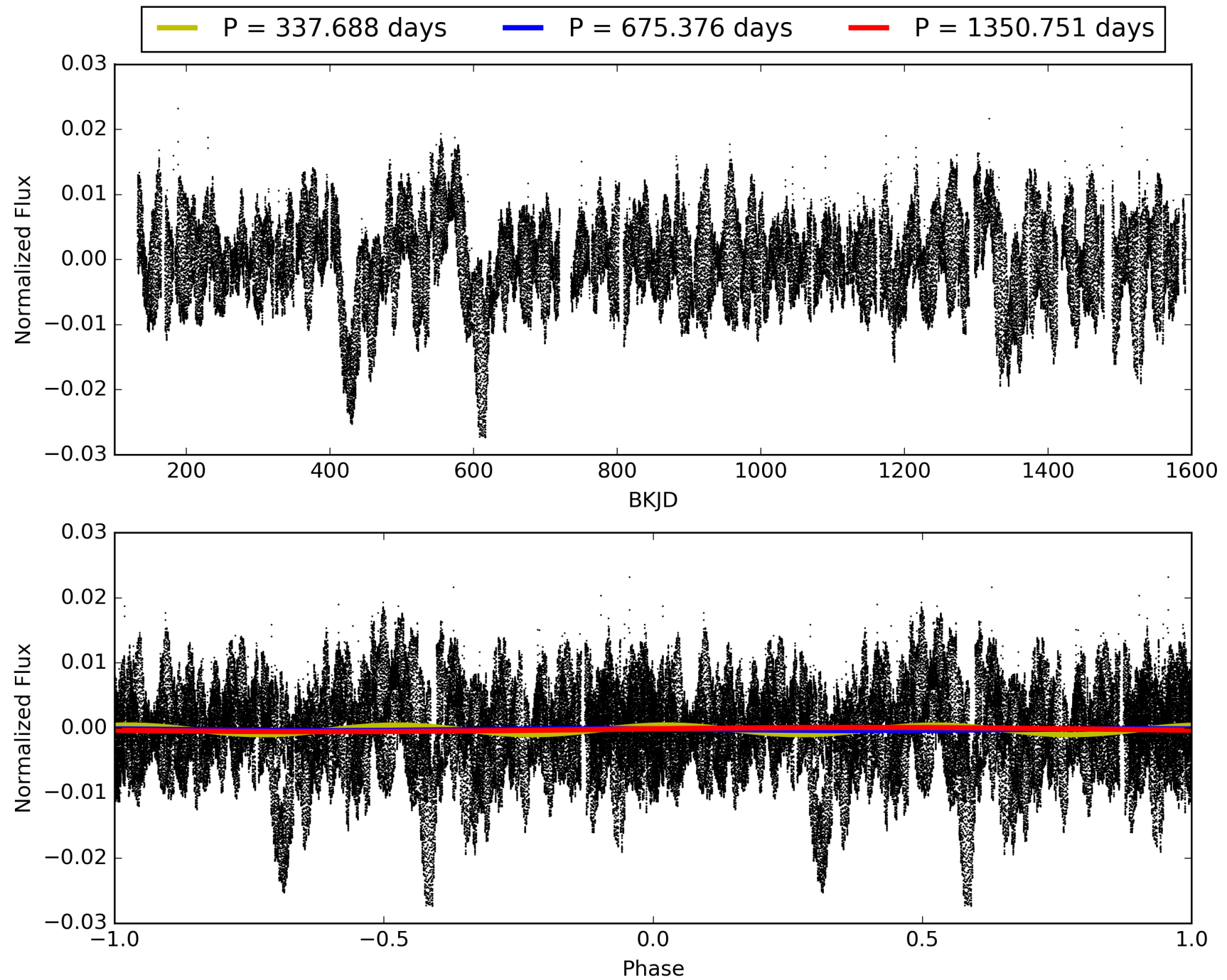
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 23:46:10 Z

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

## TCE 008695402-02, PDC Light Curves



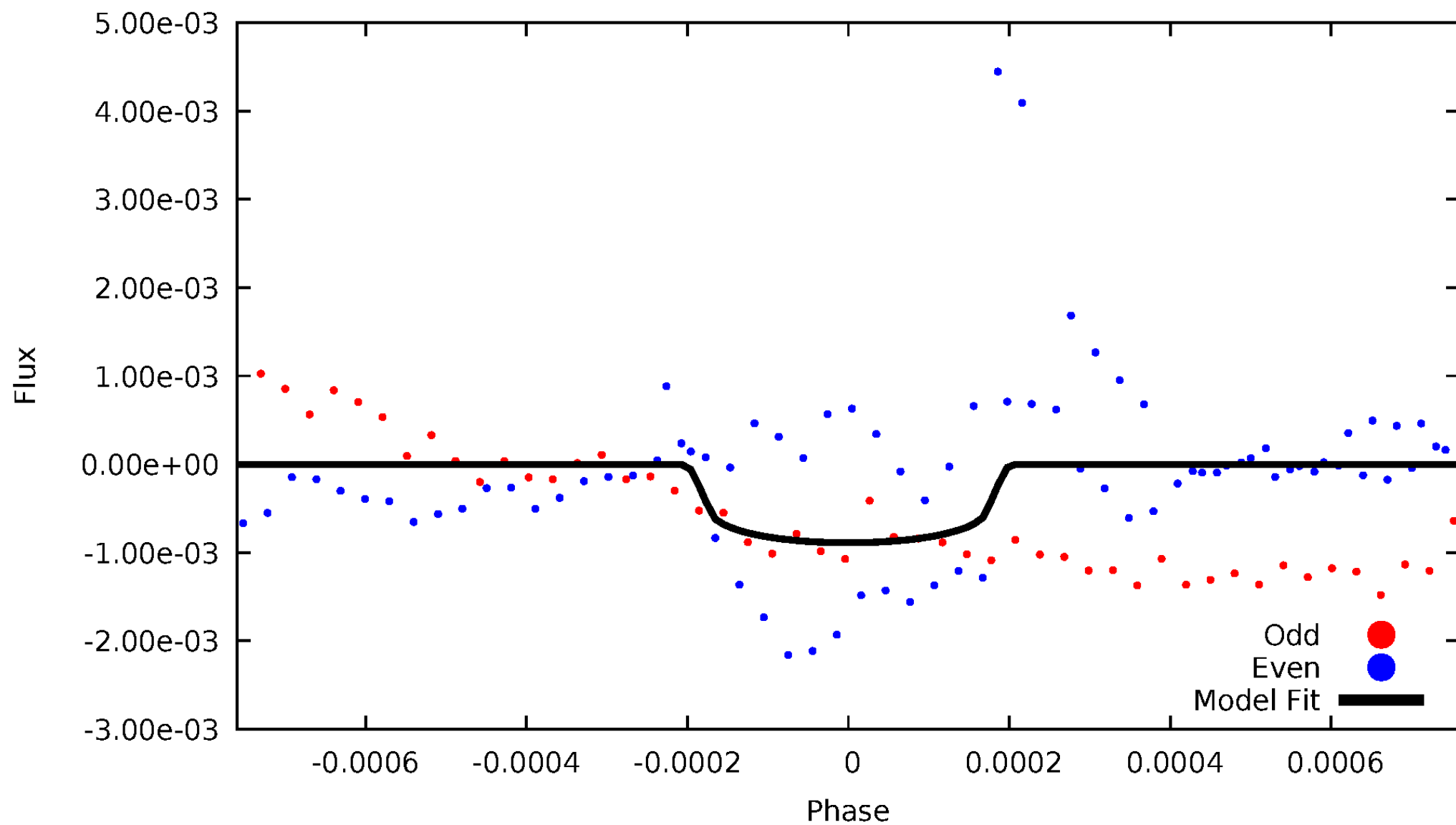
TCE 008695402-02





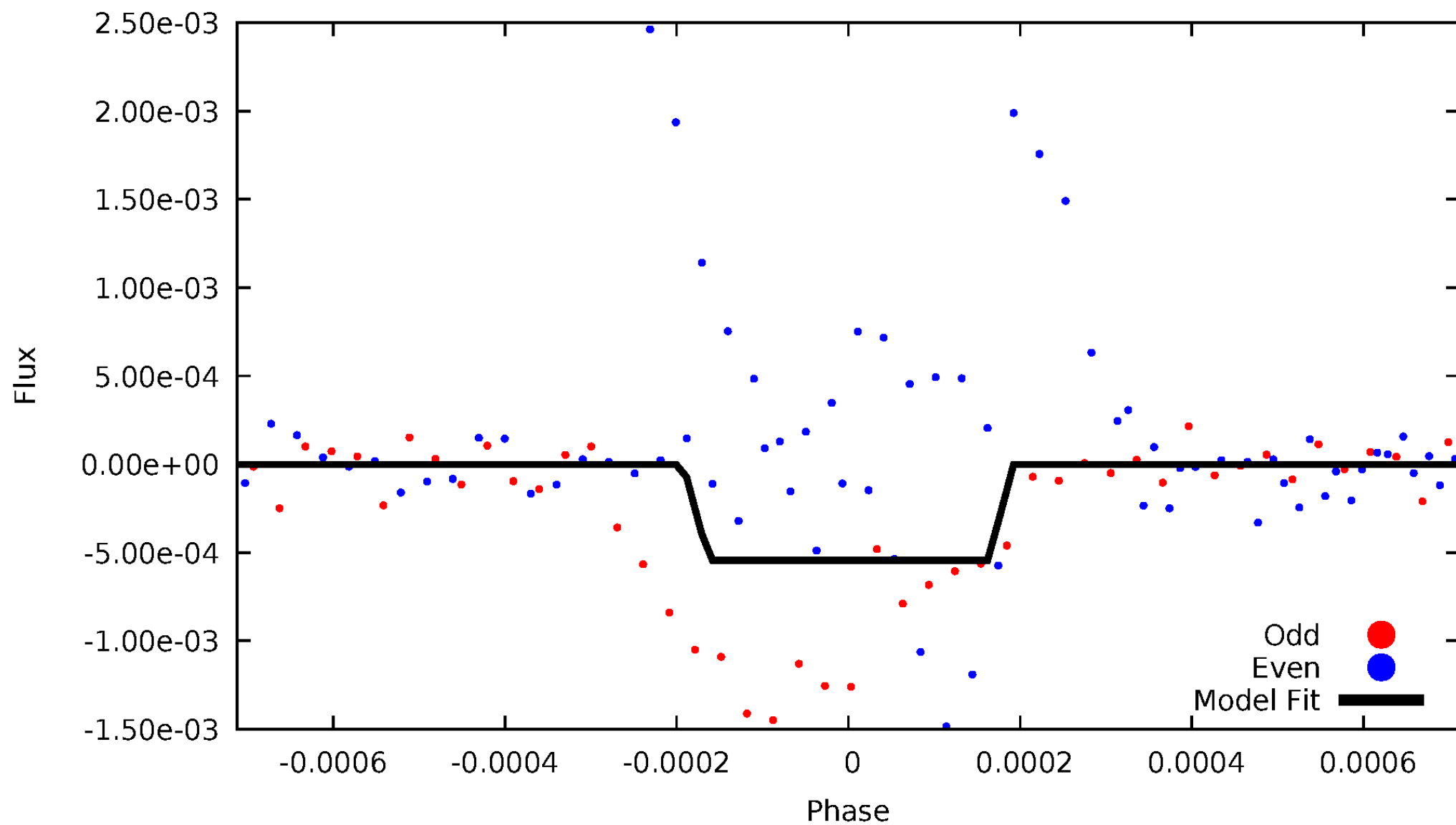
# DV Odd/Even

TCE 008695402-02



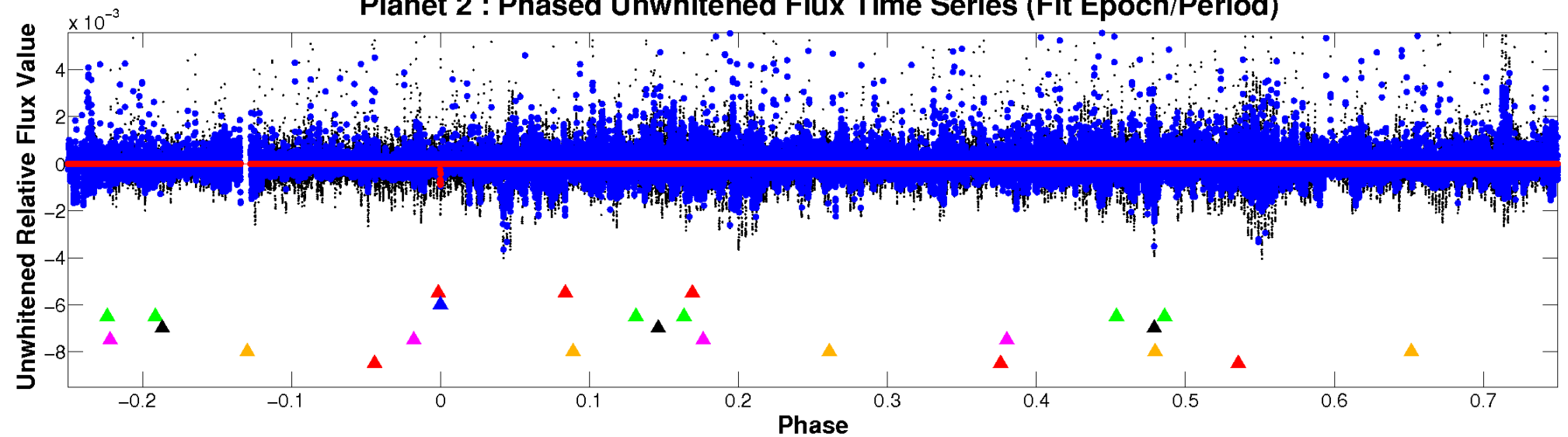
# ALT Odd/Even

TCE 008695402-02

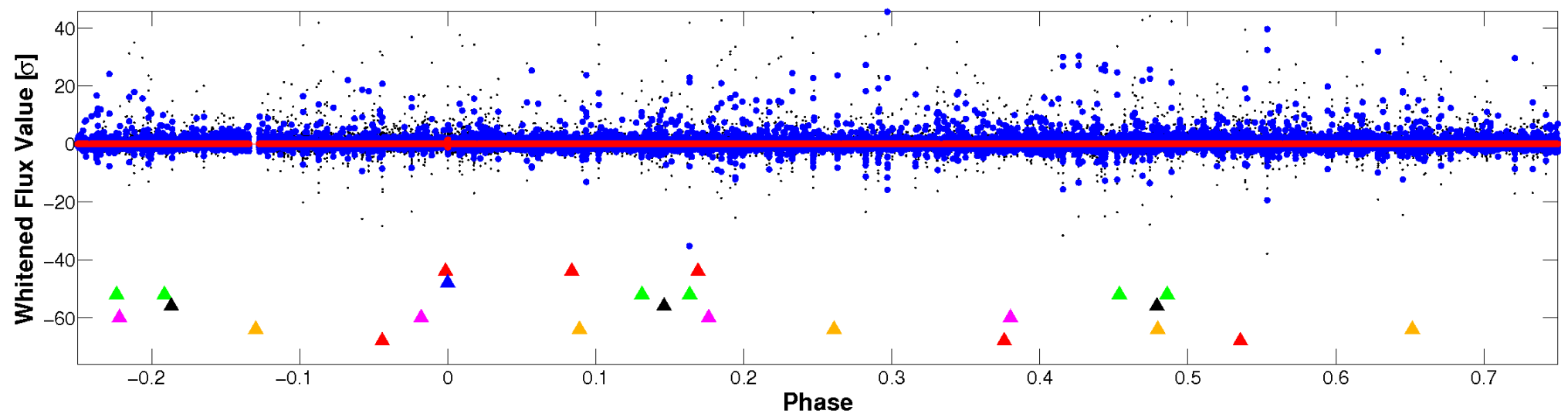


# Non-Whitened Vs. Whitened Light Curve

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

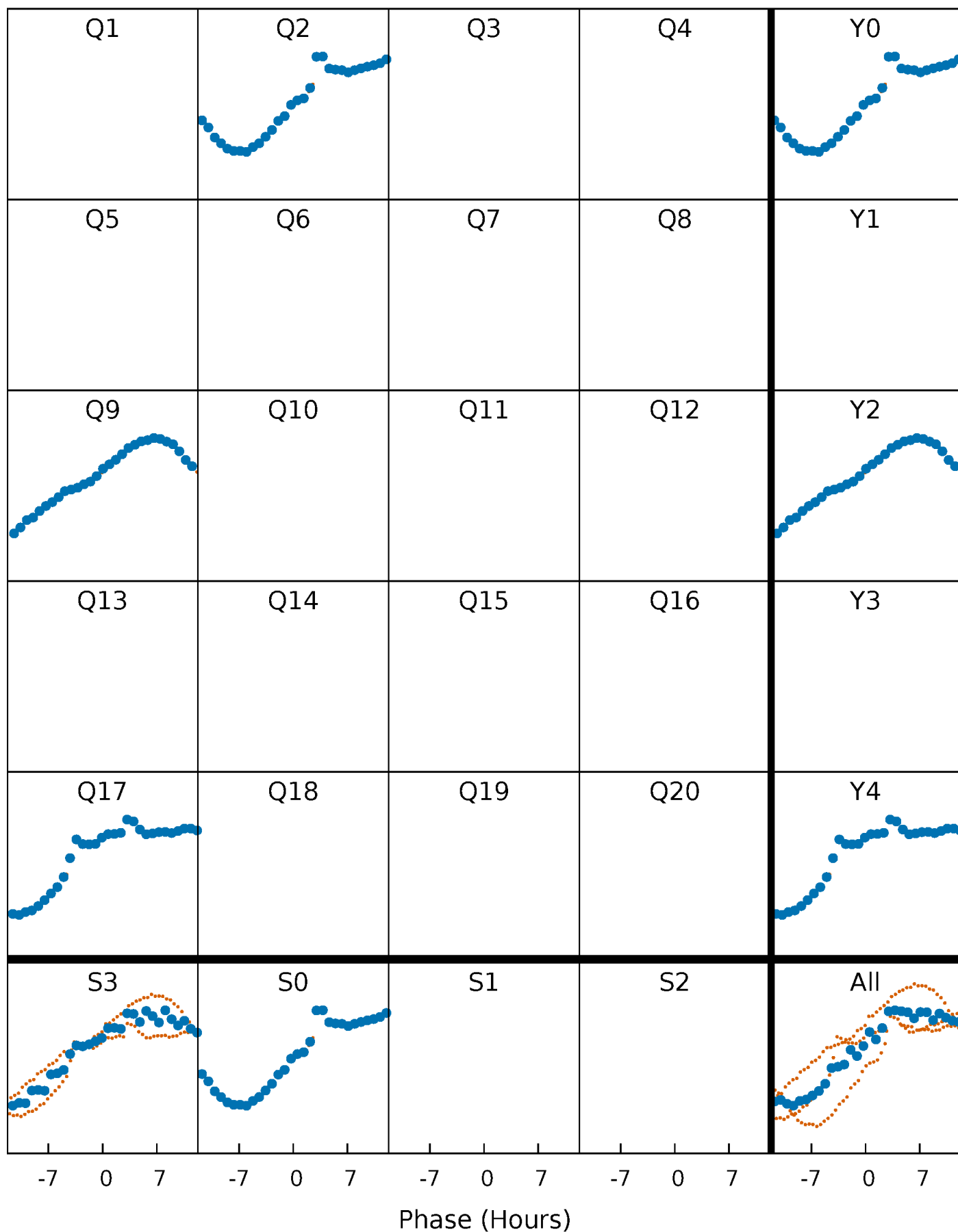


## Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



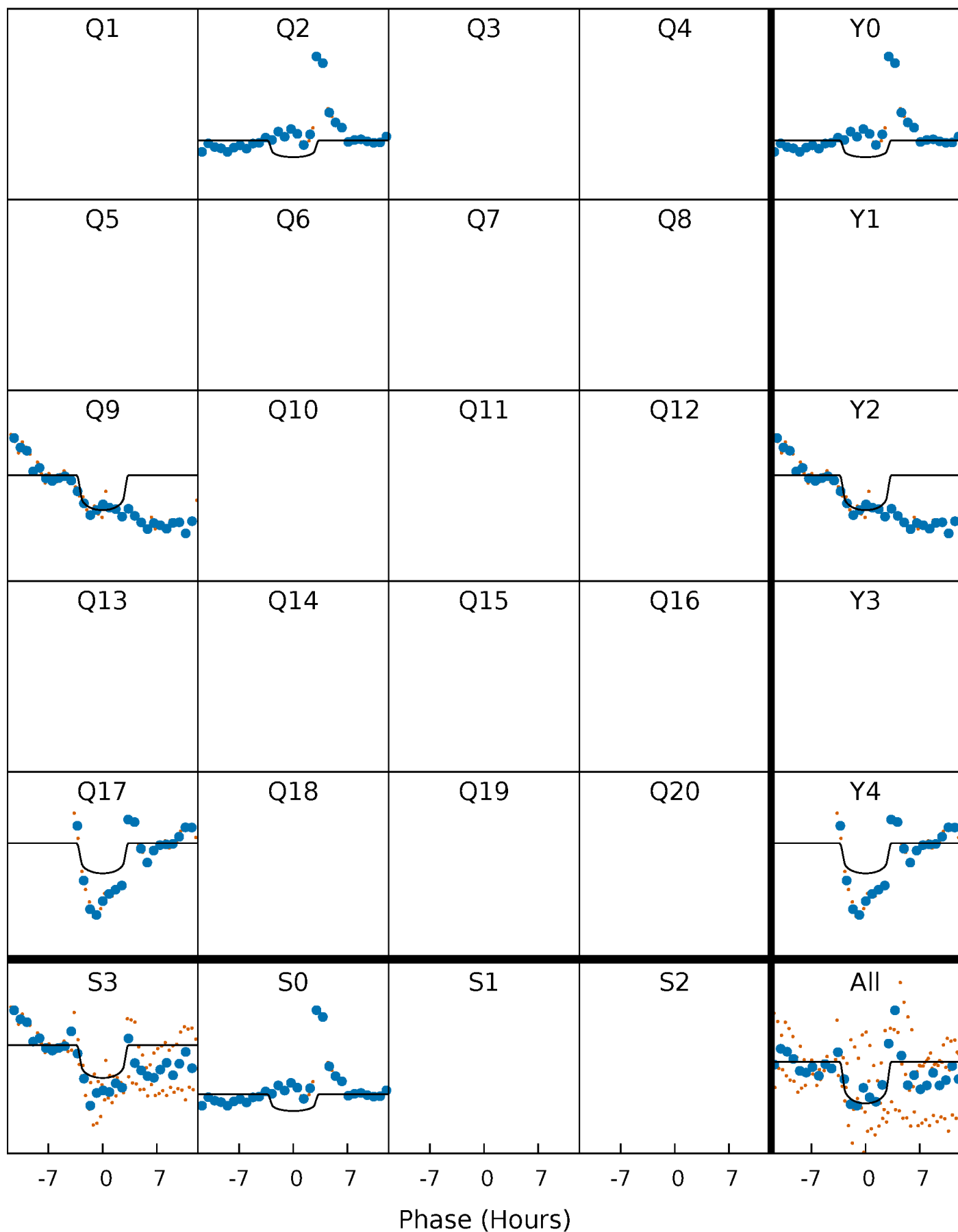
# PDC Quarter-Phased Transit Curves

TCE 008695402-02 P=675.375518 Days  $T_0=217.618516$  (BKJD)



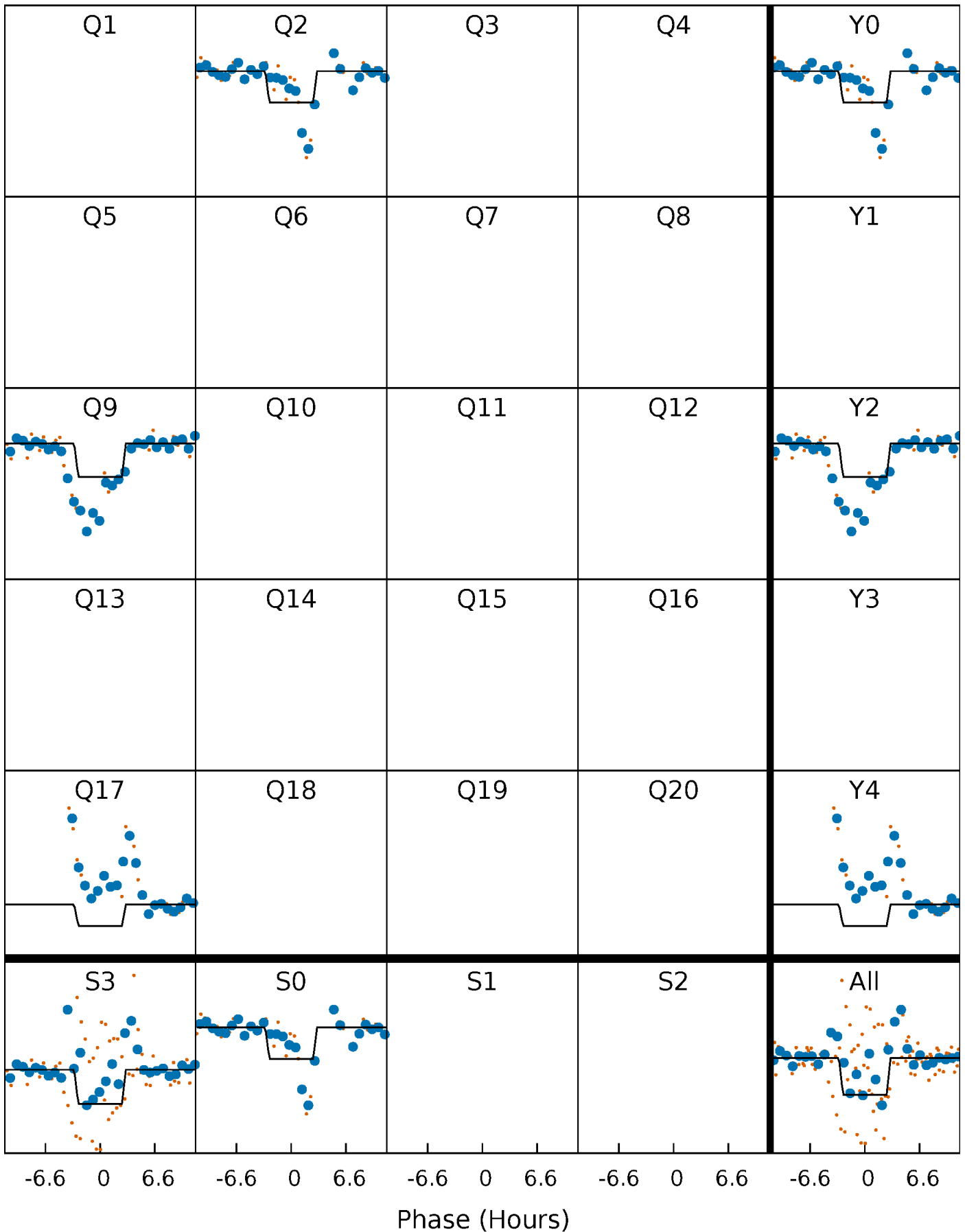
# DV Quarter-Phased Transit Curves

TCE 008695402-02     $P=675.375518$  Days     $T_0=217.618516$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

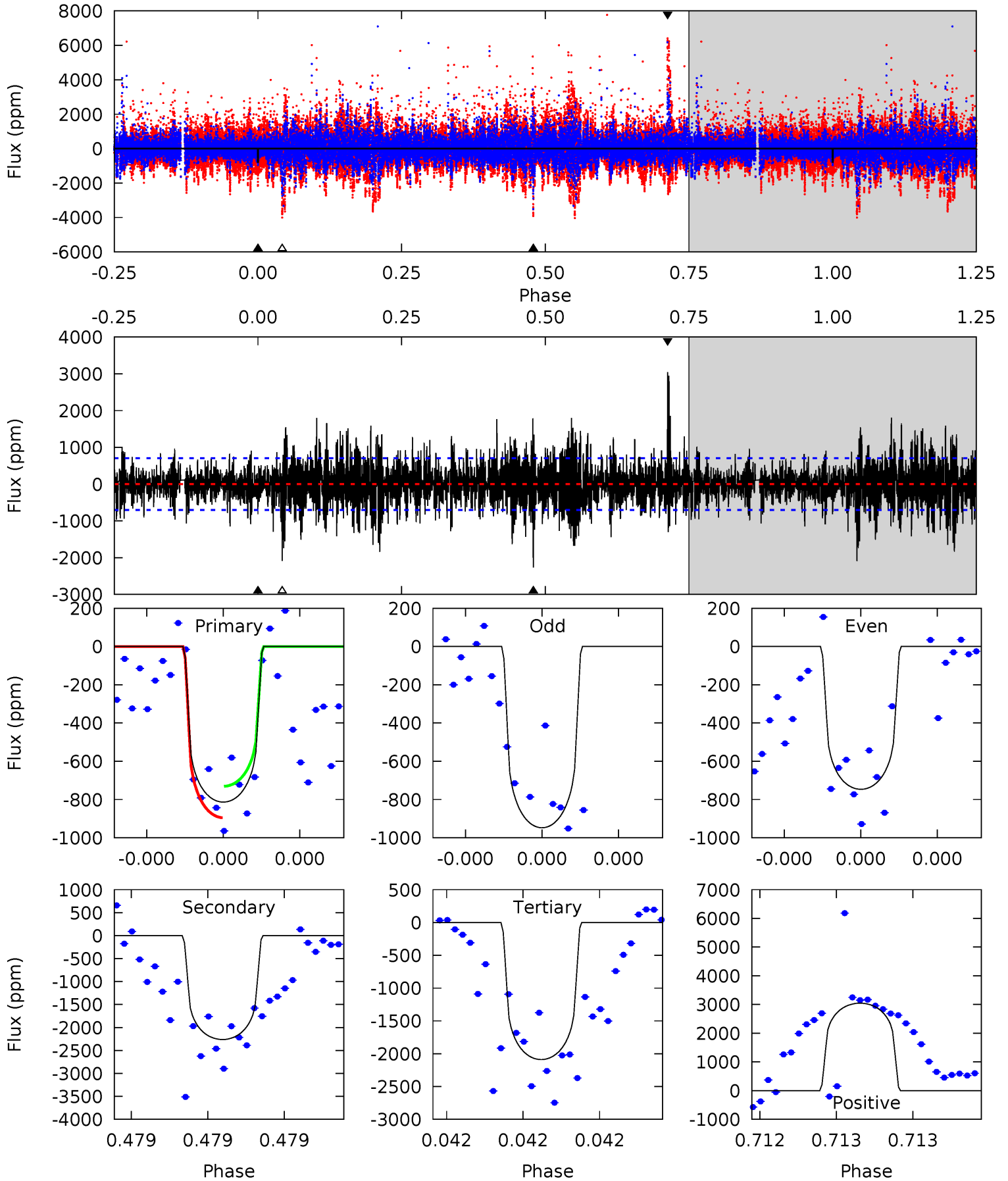
TCE 008695402-02     $P=675.383648$  Days     $T_0=217.605662$  (BKJD)



# DV Model-Shift Uniqueness Test

008695402-02, P = 675.375518 Days, E = 217.618516 Days

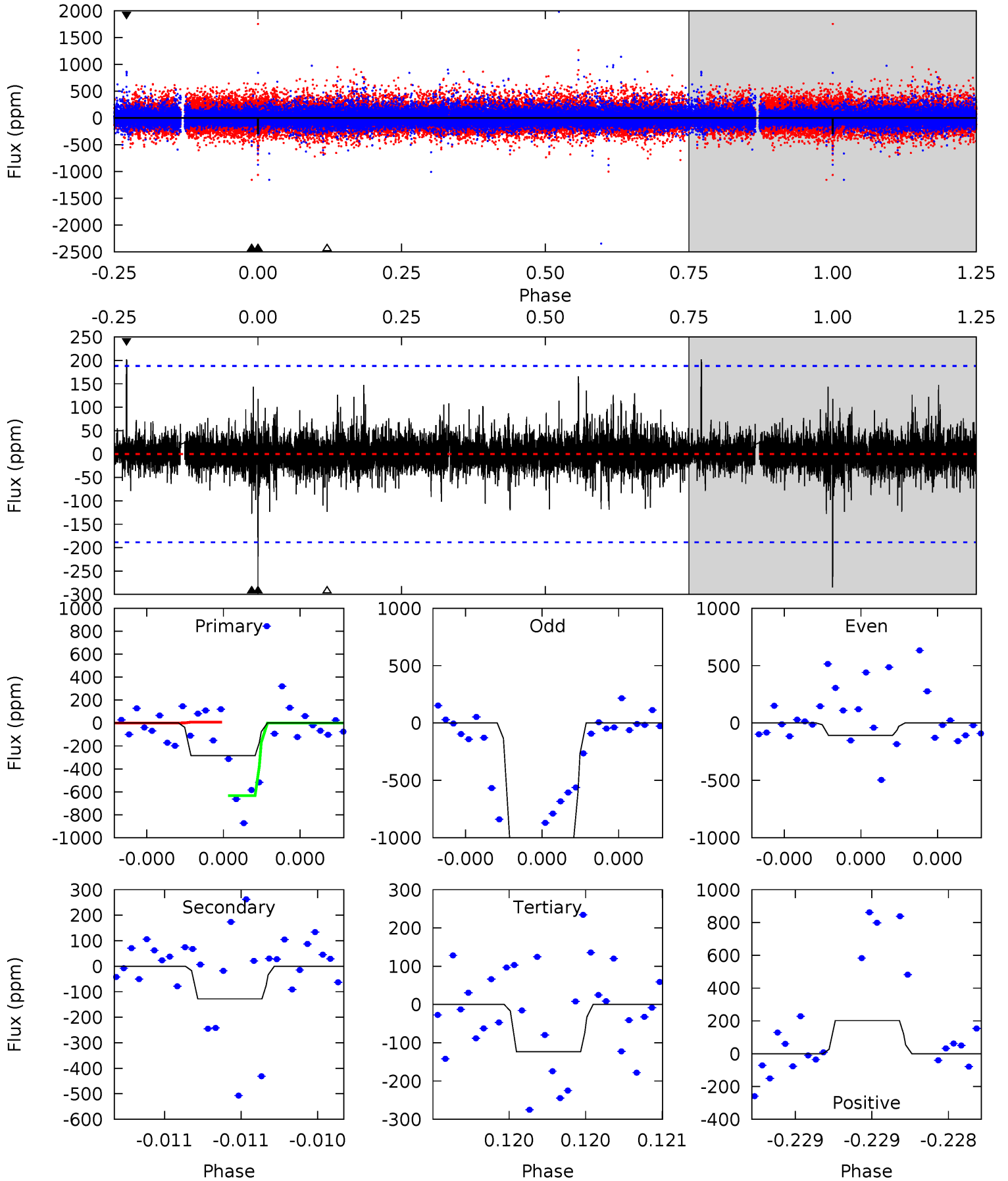
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
6.49	18.0	16.7	24.3	5.61	3.54	3.75	-10.2	-17.8	1.38	-6.25	0.66	0.81	0.57	0.65



# Alt Model-Shift Uniqueness Test

008695402-02, P = 675.383648 Days, E = 217.605662 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
8.51	3.82	3.69	6.03	5.62	3.56	0.69	4.82	2.48	0.13	-2.21	16.0	0.66	0.41	9.35





### Stellar Parameters For KIC 008695402

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R$ ( $R_{\odot}$ )	$M(M_{\odot})$	$p_{\star}$ ( $\text{g}\cdot\text{cm}^{-3}$ )
	$5889^{+193}_{-193}$	$3.983^{+0.405}_{-0.135}$	$-0.060^{+0.300}_{-0.300}$	$1.765^{+0.402}_{-0.747}$	$1.095^{+0.153}_{-0.187}$	$0.280^{+0.998}_{-0.114}$
	+3%/-3%	+10%/-3%	+500%/-500%	+23%/-42%	+14%/-17%	+356%/-41%
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 008695402-02 / KOI

Detrend	Depth (ppm)	$R_p$ ( $R_{\oplus}$ )	$T_{max}$ (K)	$T_{obs}$ (K)	$A_{obs}$
DV	$-2262 \pm 125$	$7.22^{+6.67}_{-4.78}$	$379^{+27}_{-44}$	$6418^{+6692}_{-1672}$	$60023^{+448747}_{-44687}$
Alt.	$-128 \pm 33$	$6.53^{+6.82}_{-4.56}$	$382^{+29}_{-40}$	$3708^{+2182}_{-737}$	$3817^{+38836}_{-2927}$

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

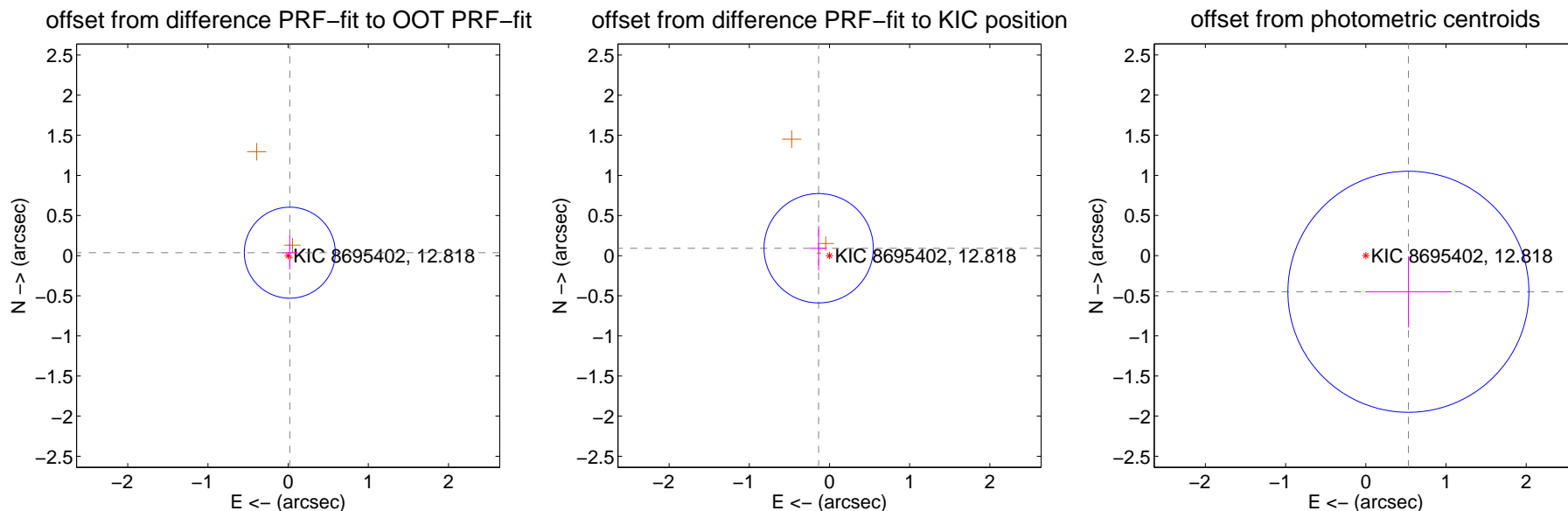
## DV Centroid Data

Supplemental centroid analysis for 008695402-02. Kepler magnitude: 12.82. Transit SNR 5.42

There are 0 quarters with good PRF difference image offsets

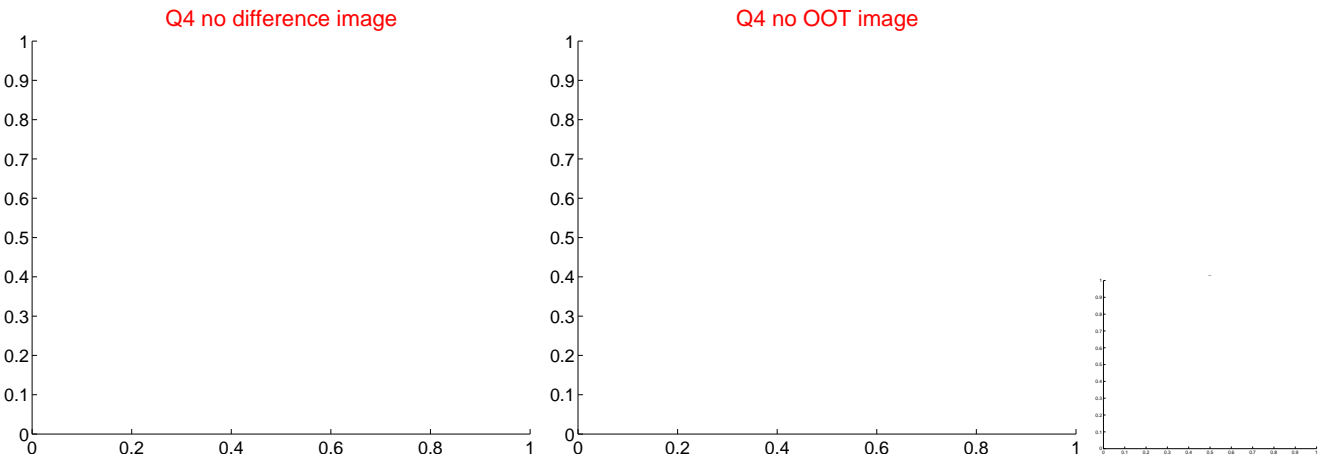
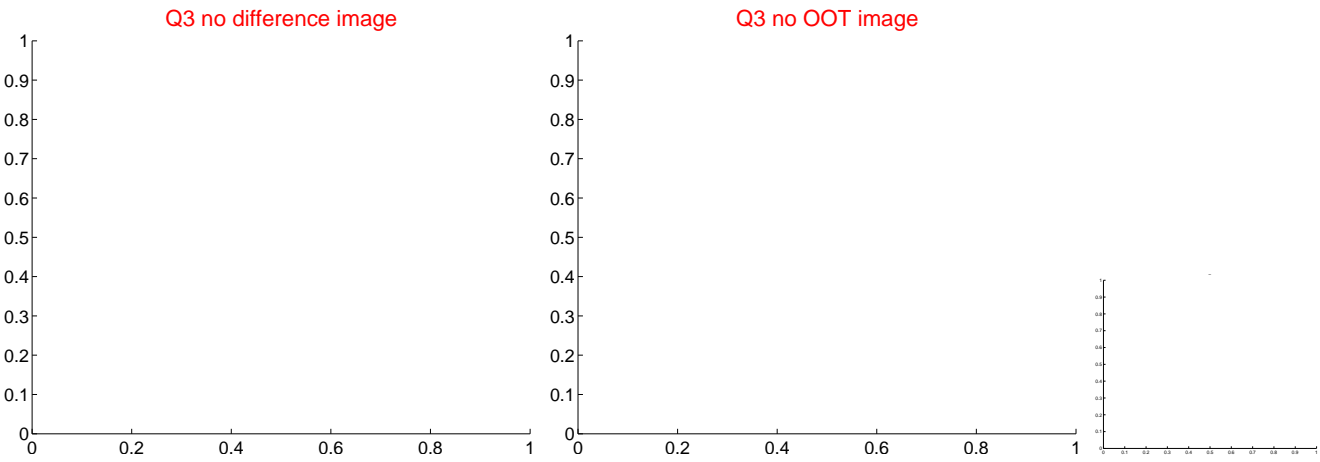
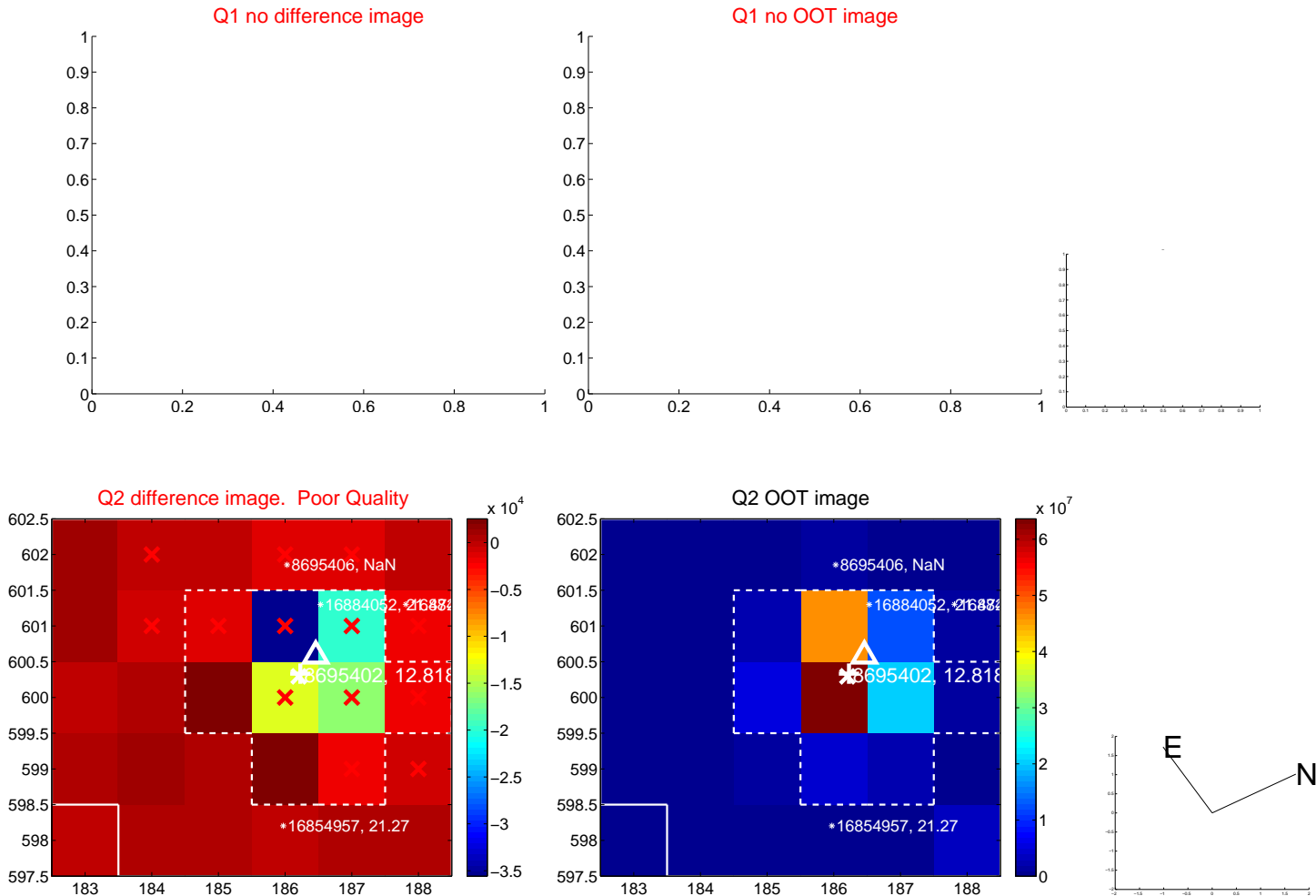
The direct PRF centroid is offset from the target star catalog position by about 0.17 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.042 \pm 0.189$	0.22	$-0.021 \pm 0.095$	$0.037 \pm 0.211$
PRF-fit source offset from KIC position	$0.164 \pm 0.227$	0.72	$0.135 \pm 0.105$	$0.092 \pm 0.278$
photometric centroid source offset	$0.70 \pm 0.50$	1.39	$-0.53 \pm 0.54$	$-0.45 \pm 0.44$



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.

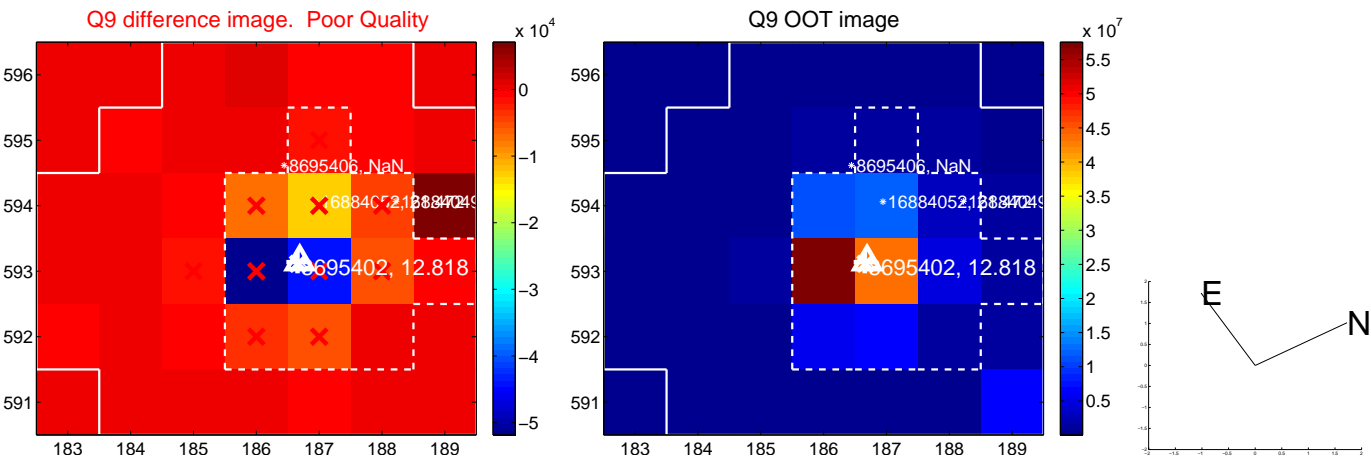
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value



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



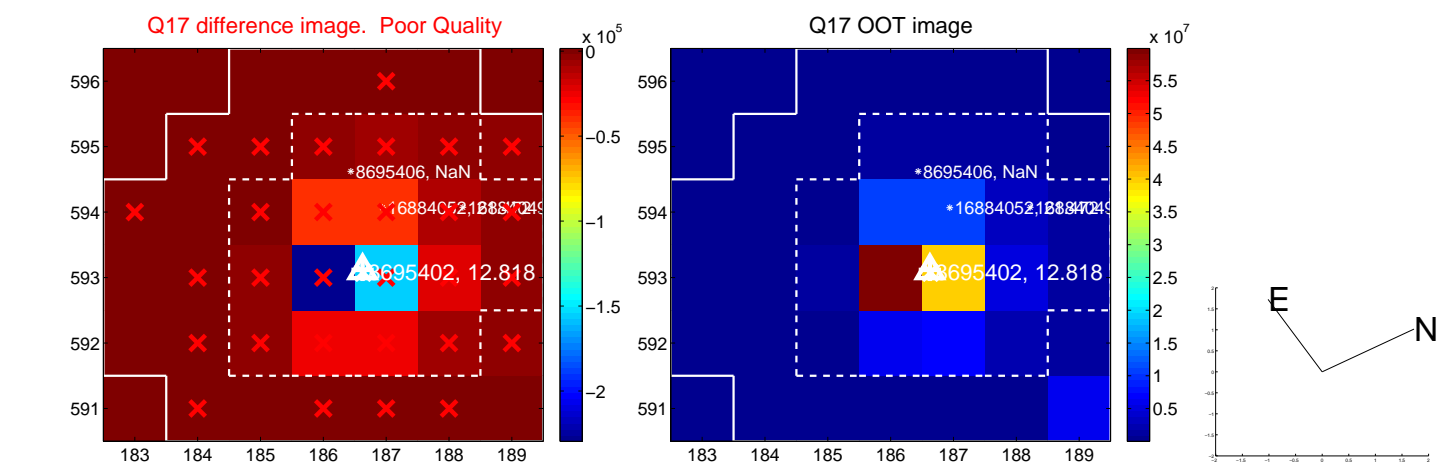
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



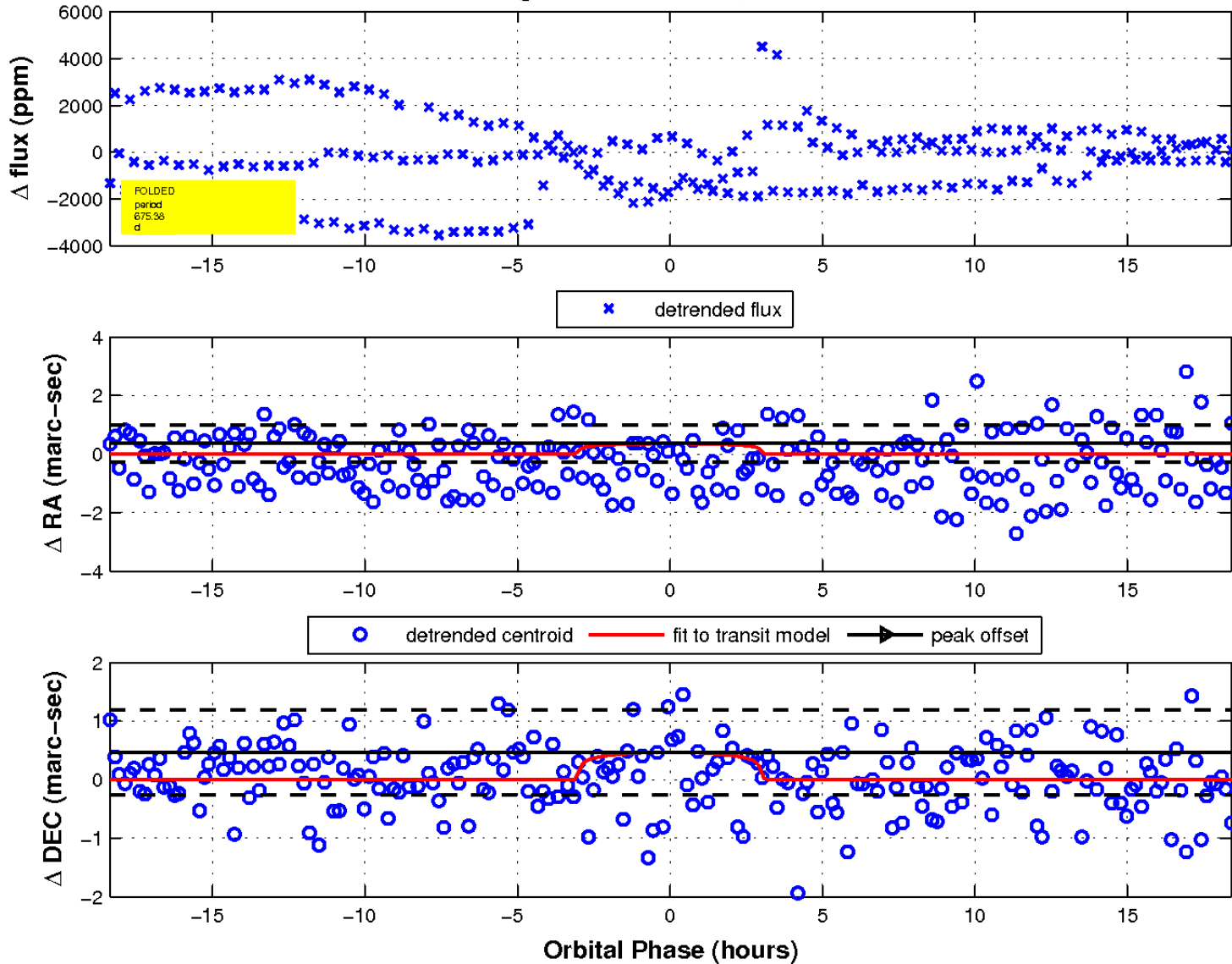
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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

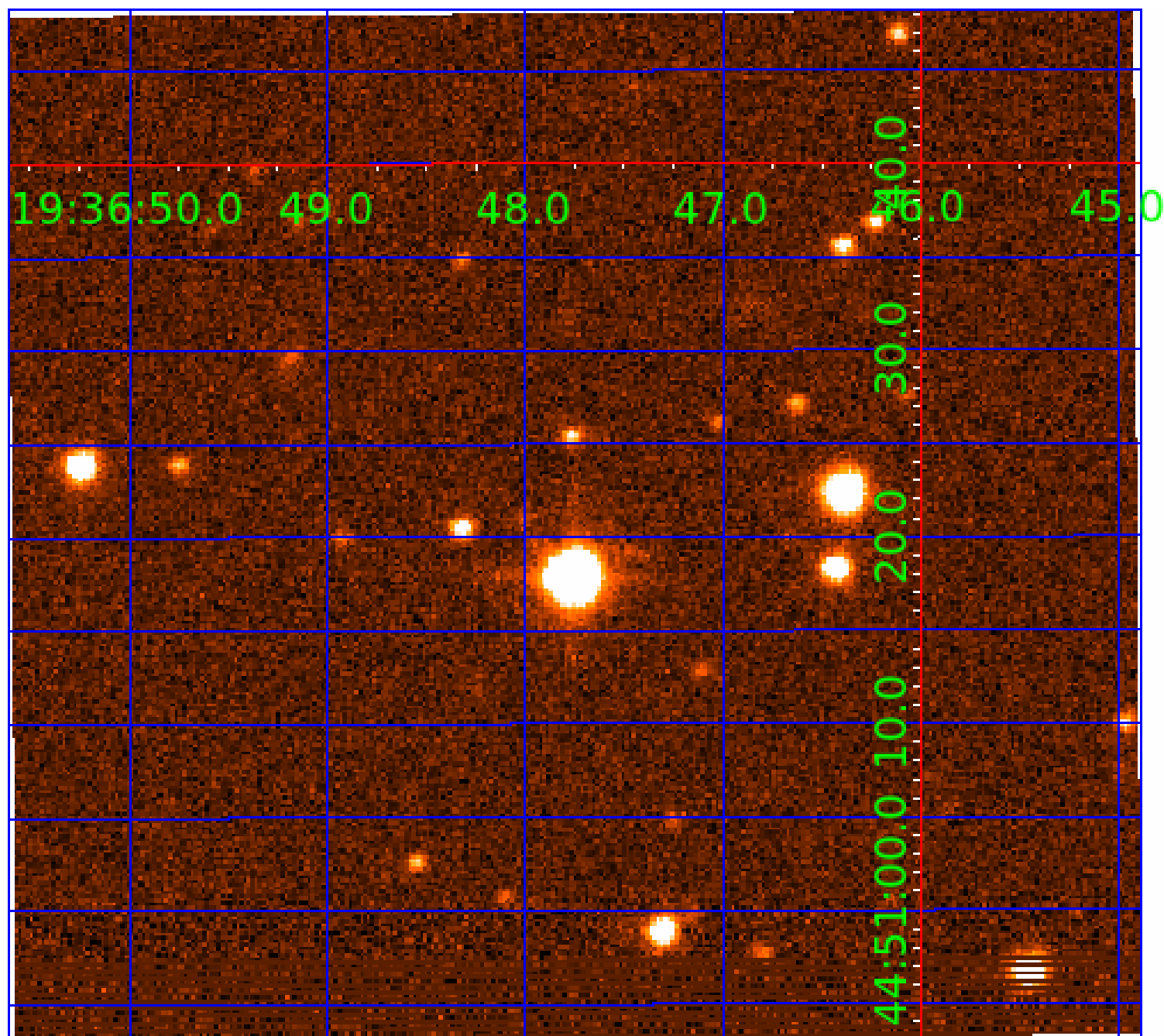


fluxWeightedCentroids, Planet 2 of 7



UKIRT Image

Declination





# KIC 008695402

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
008695402-01	OBS	No	617.778020	331.818659	252.1	13.287	16.3	1.5	1.76	5889	2.90	1.57
008695402-02	OBS	No	675.375518	217.618516	888.0	6.155	16.7	5.4	1.76	5889	5.22	1.39
008695402-03	OBS	No	217.859802	328.021052	264.3	2.293	18.8	3.0	1.76	5889	3.18	6.30
008695402-04	OBS	No	450.527722	541.199730	273.2	3.560	16.6	2.5	1.76	5889	3.36	2.39
008695402-05	OBS	No	406.521544	336.702035	1416.6	28.626	13.0	5.1	1.76	5889	7.79	2.74
008695402-06	OBS	No	263.848148	277.730590	849.3	3.025	15.4	6.6	1.76	5889	5.32	4.88
008695402-07	OBS	No	391.554688	471.559488	462.2	3.500	12.7	-1.0	1.76	5889	3.77	2.88

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008695402-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_TRACKER—LPP_DV—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
008695402-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_SKYE—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
008695402-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS
008695402-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_TRACKER—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_TER_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
008695402-05	OBS	FP	0.00	1	0	0	0	LPP_DV—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—CENT_FEW_DIFFS
008695402-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—INCONSISTENT_TRANS
008695402-07	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES—LPP_DV—ALL_TRANS_CHASES—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_NOFITS

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

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

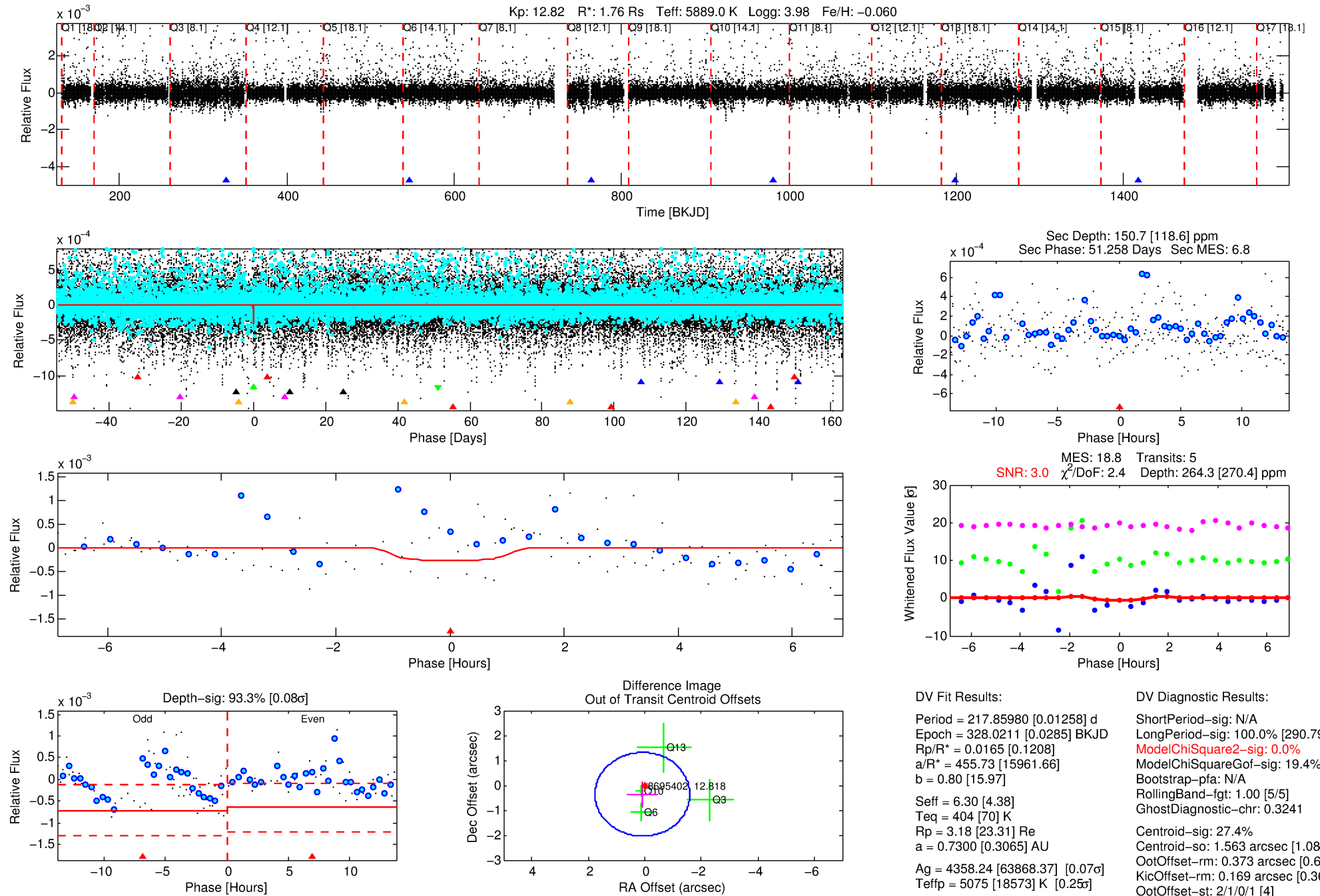
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 008695402-03

No Significant Match Found

# DV One-Page Summary

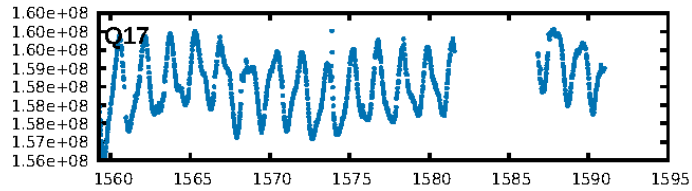
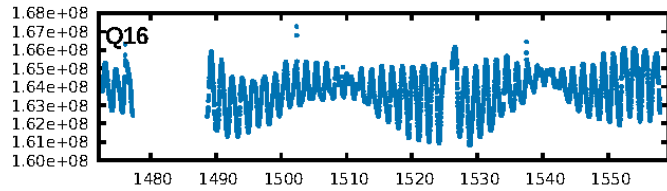
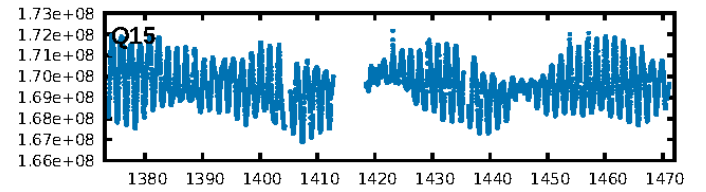
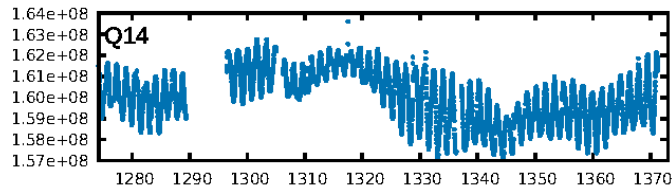
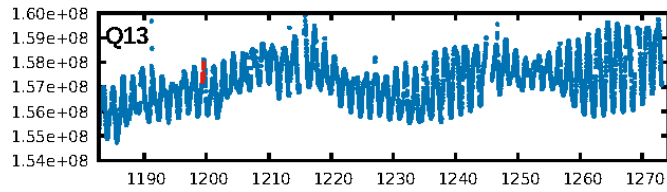
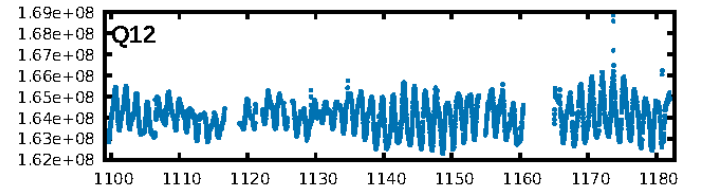
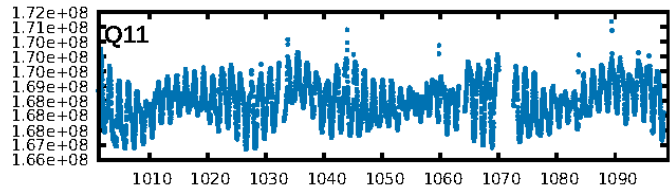
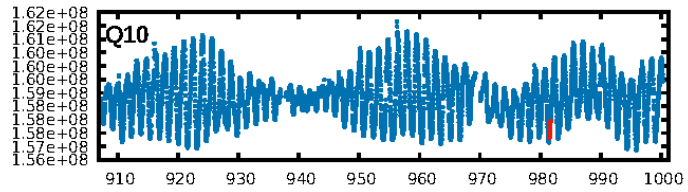
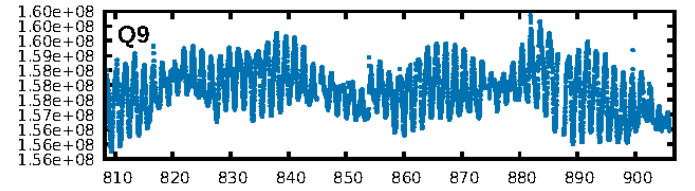
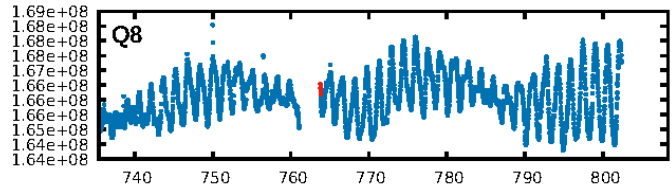
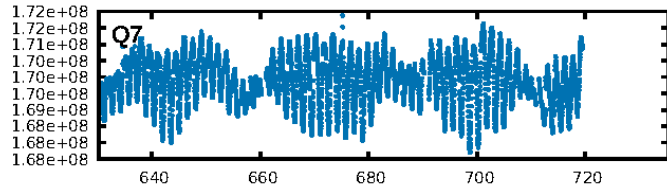
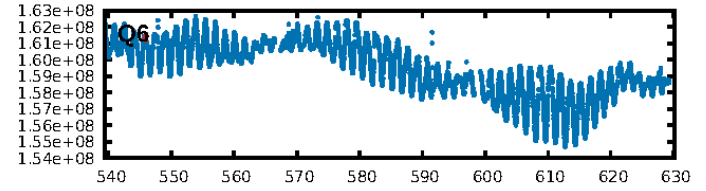
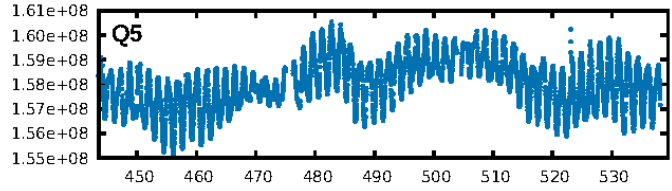
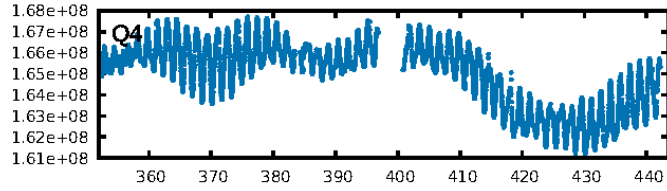
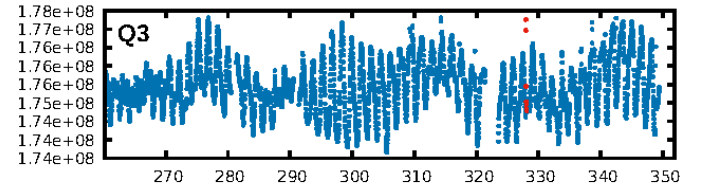
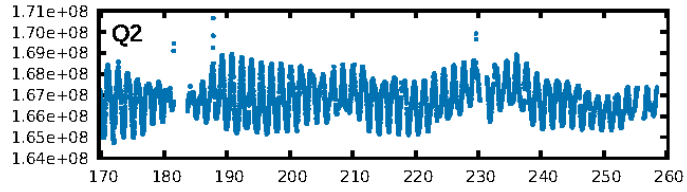
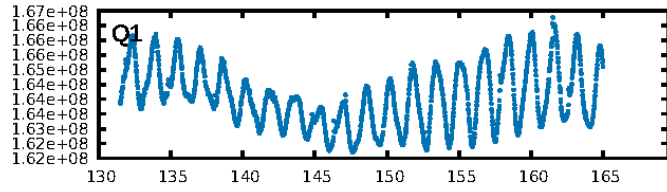
KIC: 8695402 Candidate: 3 of 7 Period: 217.860 d



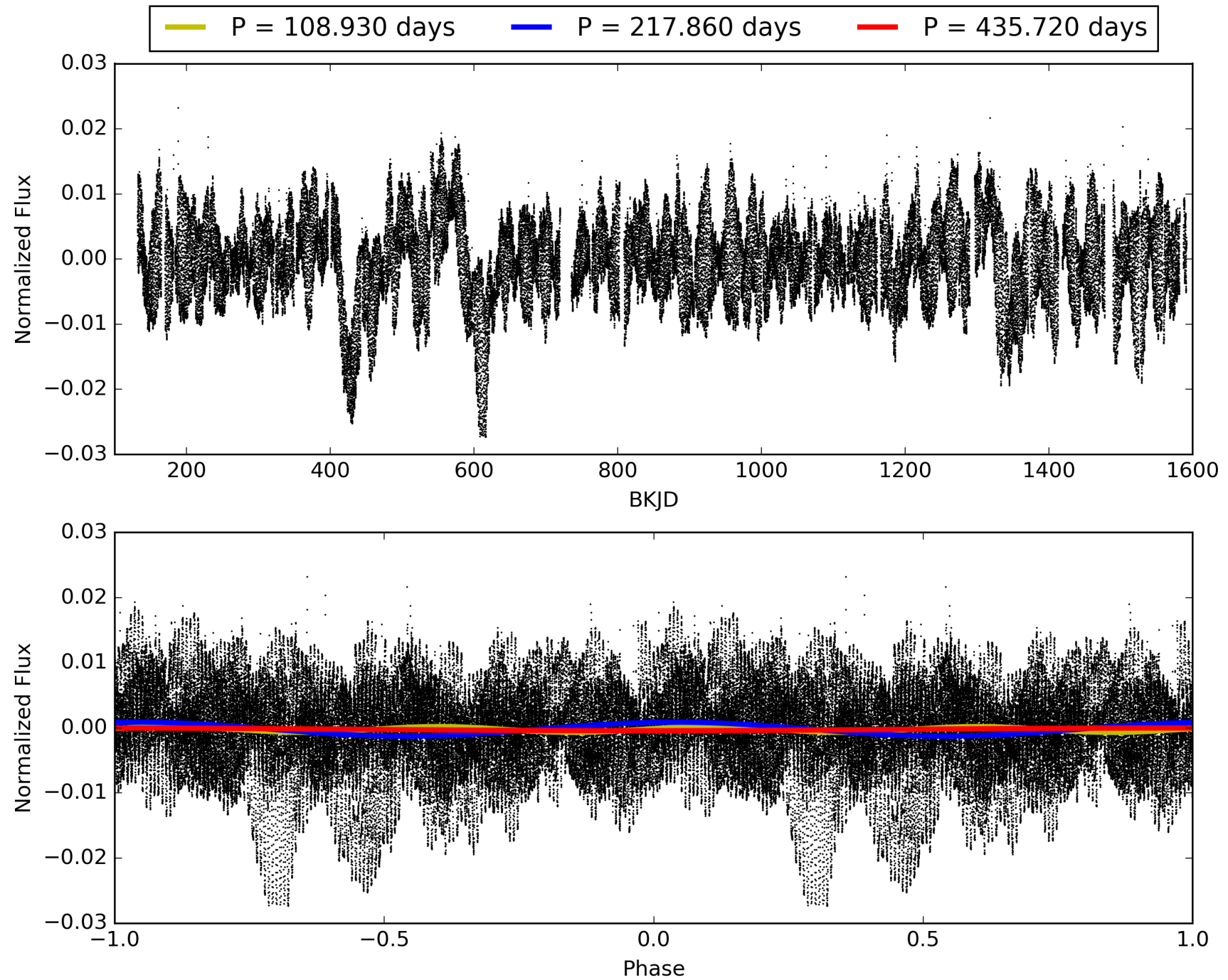
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 23:46:26 Z

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

## TCE 008695402-03, PDC Light Curves

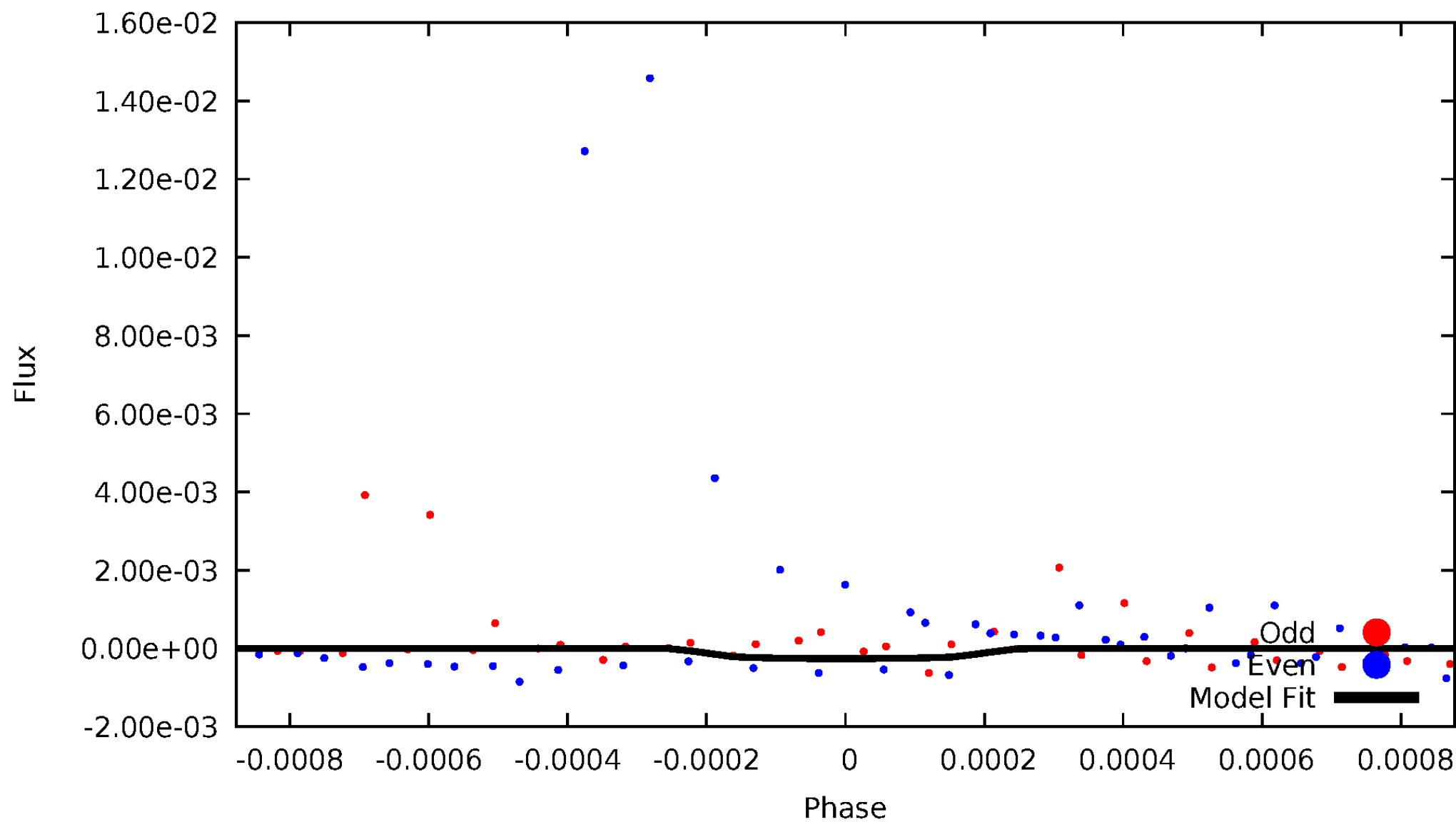


TCE 008695402-03



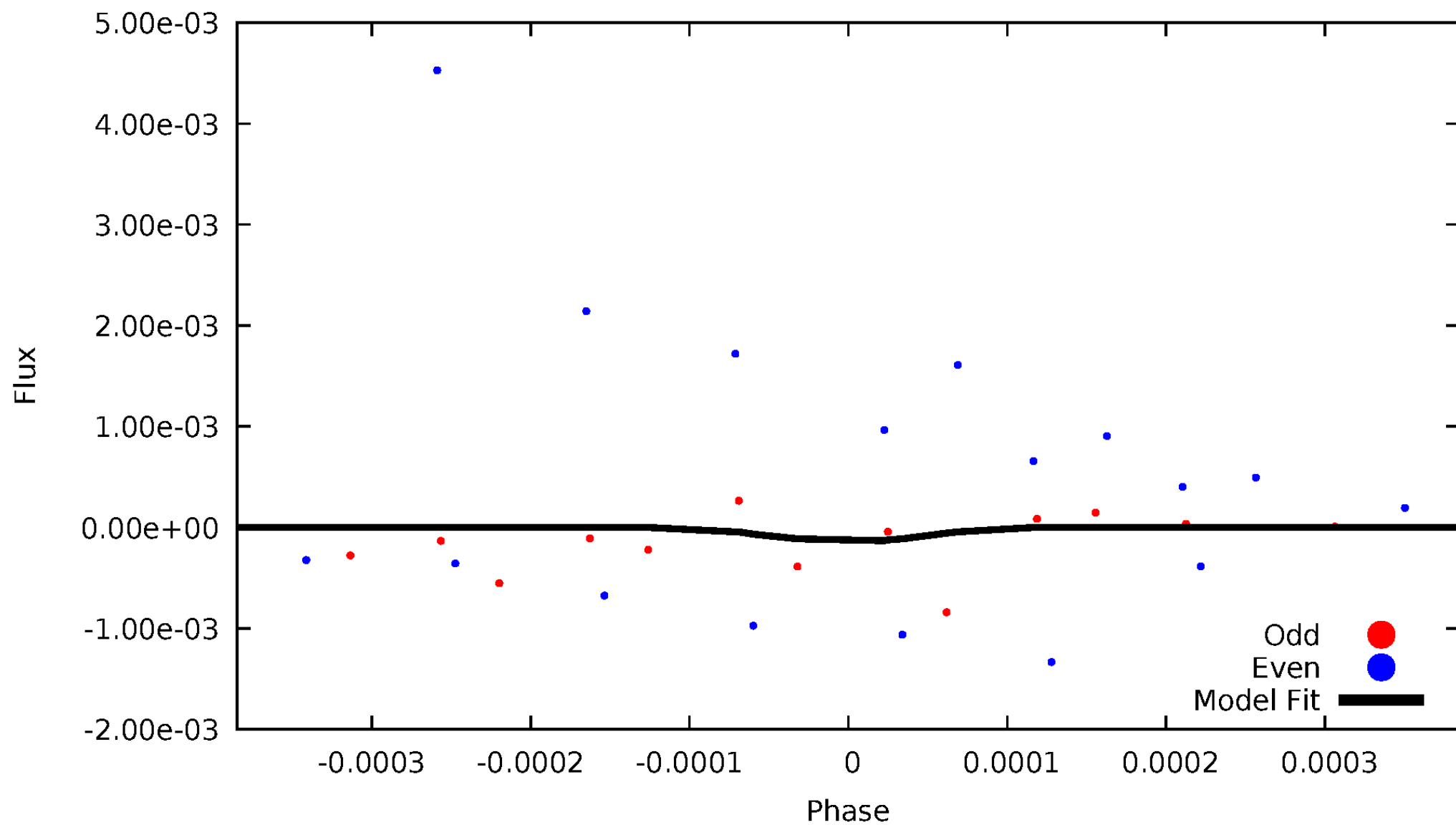
# DV Odd/Even

TCE 008695402-03



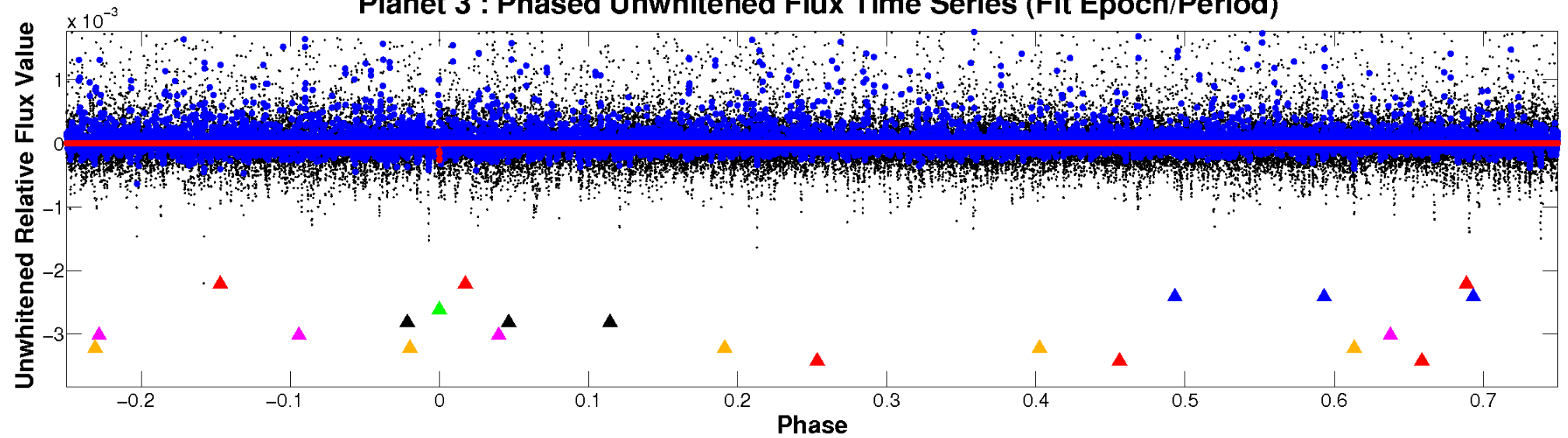
# ALT Odd/Even

TCE 008695402-03

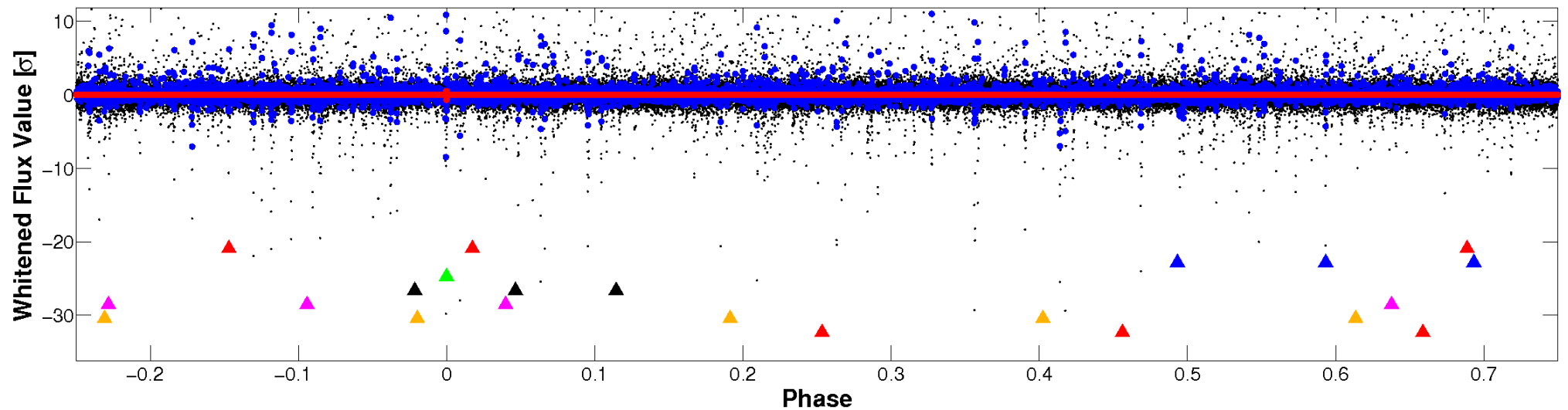


# Non-Whitened Vs. Whitened Light Curve

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



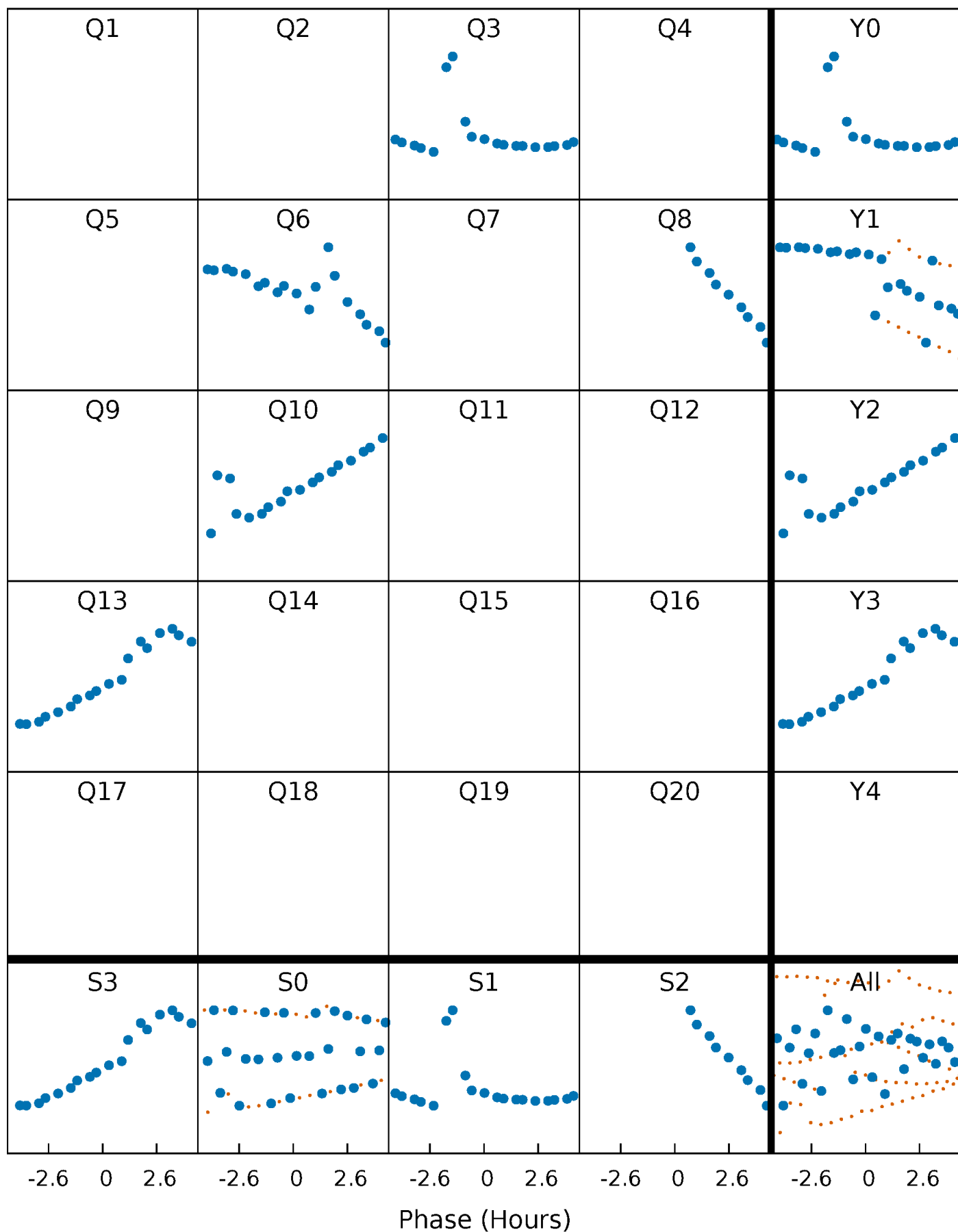
**Planet 3 : Phased Whitened Flux Time Series (Fit Epoch/Period)**





# PDC Quarter-Phased Transit Curves

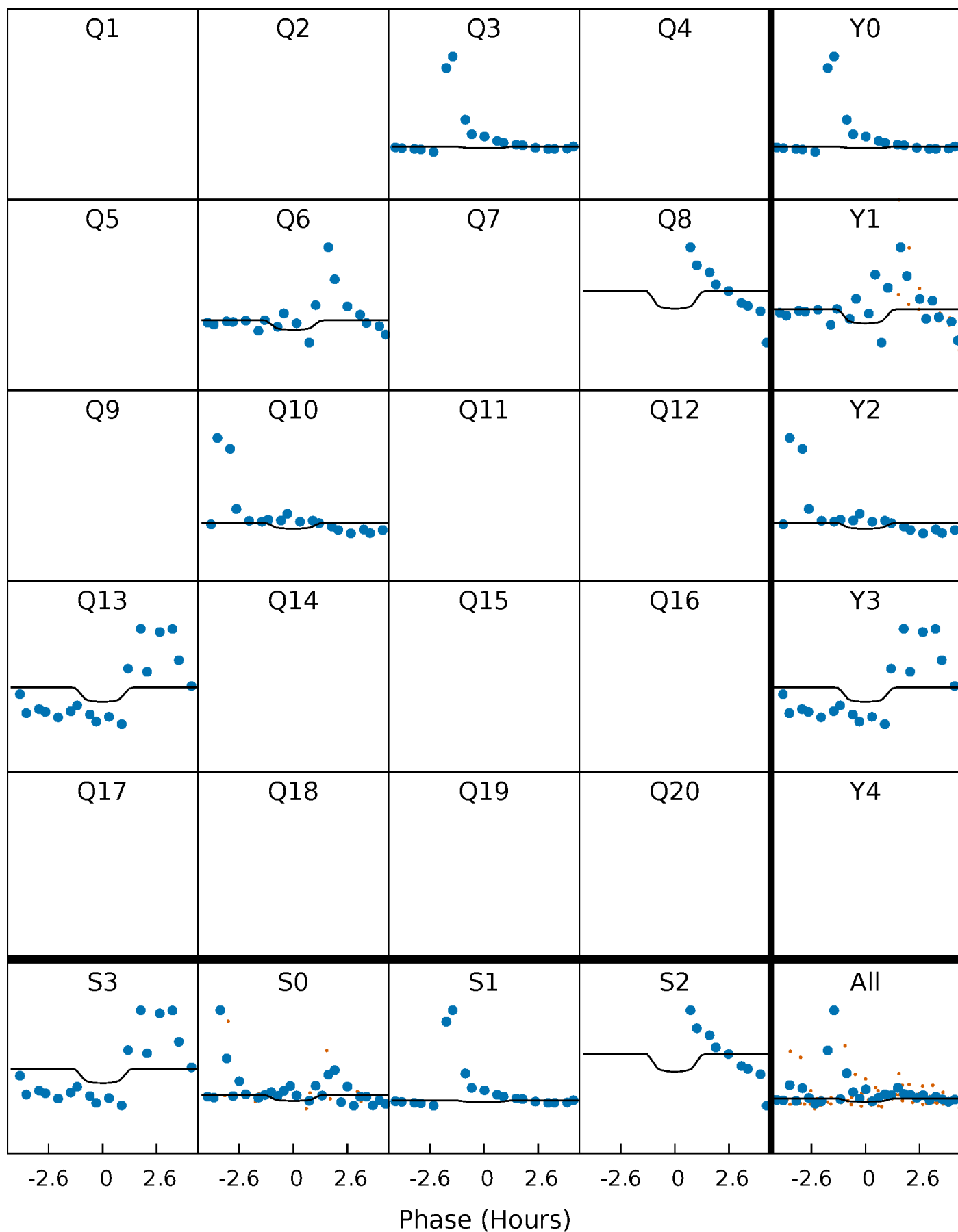
TCE 008695402-03 P=217.859802 Days  $T_0=328.021052$  (BKJD)





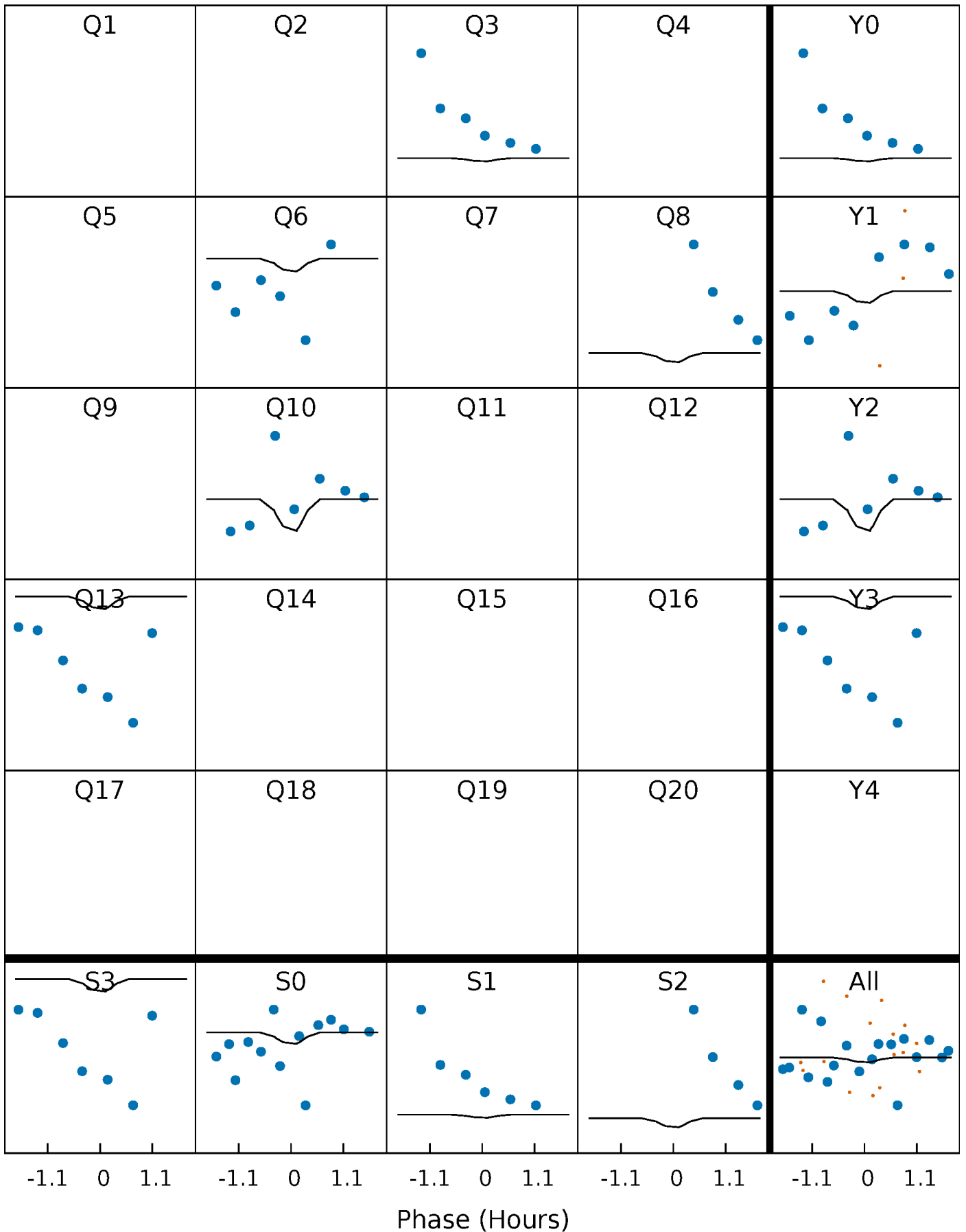
# DV Quarter-Phased Transit Curves

TCE 008695402-03     $P=217.859802$  Days     $T_0=328.021052$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

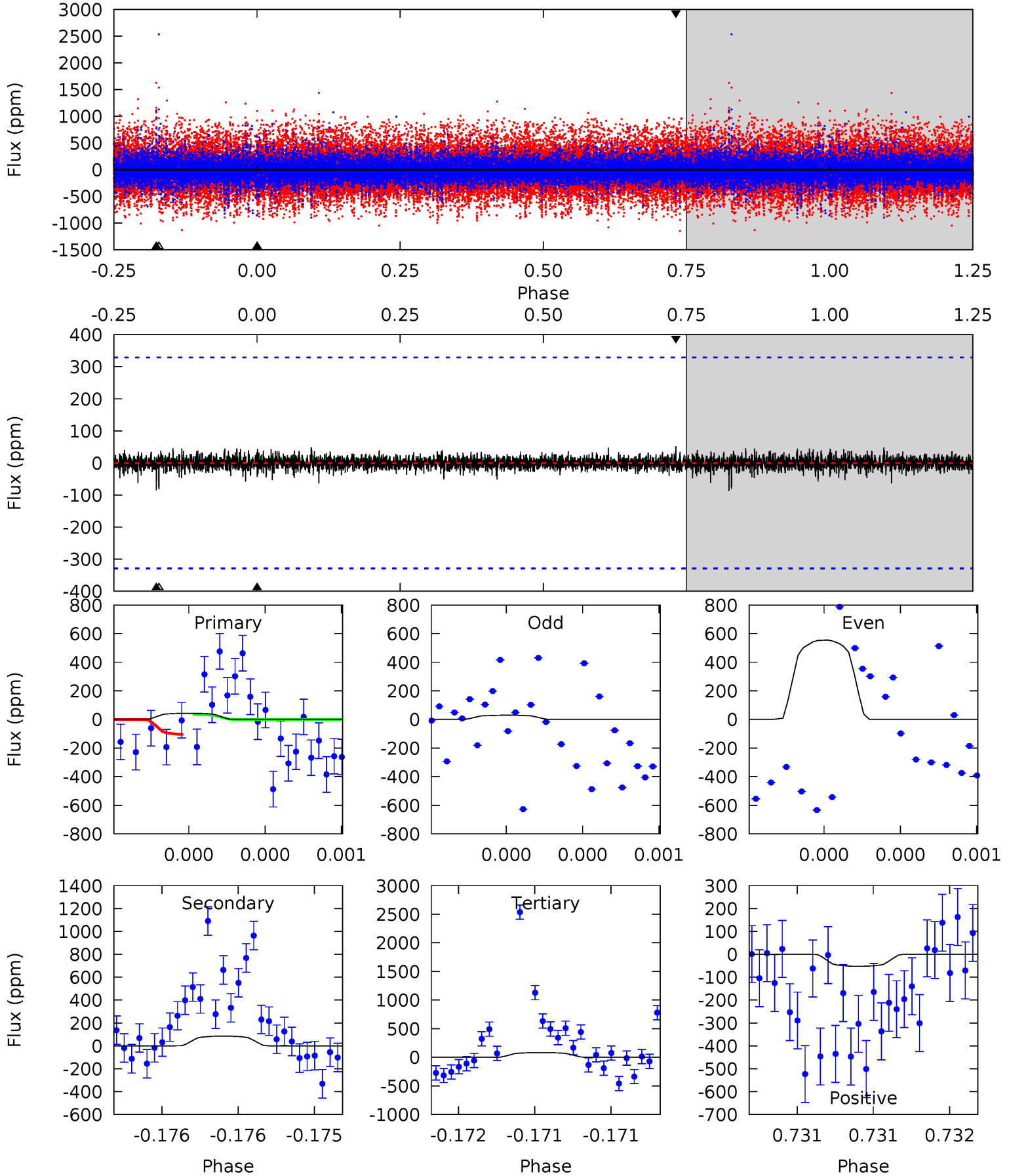
TCE 008695402-03 P=217.857100 Days  $T_0=328.036481$  (BKJD)



# DV Model-Shift Uniqueness Test

008695402-03, P = 217.859802 Days, E = 110.161250 Days

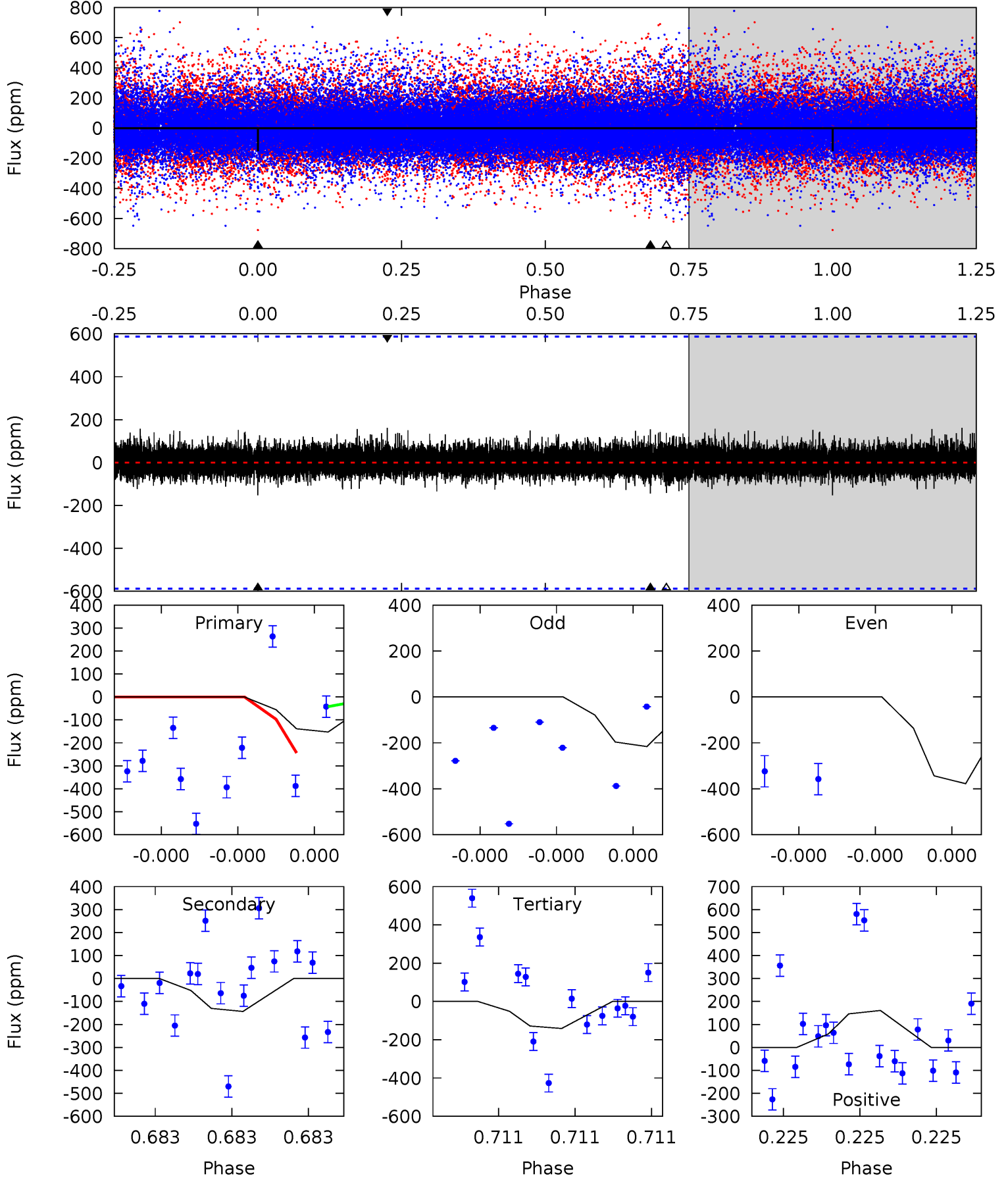
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
0.73	1.44	1.38	0.89	5.58	3.50	0.21	-0.65	-0.16	0.06	0.55	4.50	2.37	0.38	0



# Alt Model-Shift Uniqueness Test

008695402-03, P = 217.857100 Days, E = 110.179381 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
1.50	1.41	1.39	1.58	5.79	3.81	0.31	0.11	-0.08	0.02	-0.17	1.08	0.52	0.51	1.00



### Stellar Parameters For KIC 008695402

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R$ ( $R_{\odot}$ )	$M(M_{\odot})$	$p_{\star}$ ( $\text{g}\cdot\text{cm}^{-3}$ )
	$5889^{+193}_{-193}$	$3.983^{+0.405}_{-0.135}$	$-0.060^{+0.300}_{-0.300}$	$1.765^{+0.402}_{-0.747}$	$1.095^{+0.153}_{-0.187}$	$0.280^{+0.998}_{-0.114}$
	+3%/-3%	+10%/-3%	+500%/-500%	+23%/-42%	+14%/-17%	+356%/-41%
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 008695402-03 / KOI

Detrend	Depth (ppm)	$R_p$ ( $R_{\oplus}$ )	$T_{\text{max}}$ (K)	$T_{\text{obs}}$ (K)	$A_{\text{obs}}$
DV	$-85 \pm 59$	$15.44^{+17.55}_{-10.69}$	$553^{+49}_{-57}$	$2607^{+1150}_{-515}$	$78^{+857}_{-68}$
Alt.	$-143 \pm 101$	$15.27^{+19.14}_{-10.60}$	$555^{+42}_{-58}$	$2805^{+1315}_{-610}$	$141^{+1537}_{-126}$

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

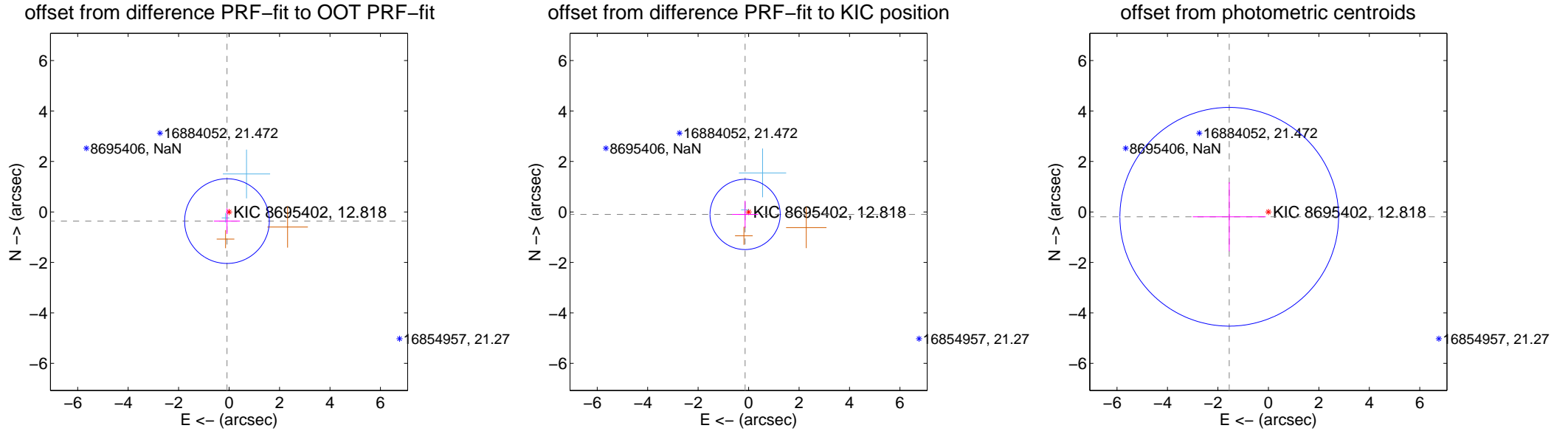
## DV Centroid Data

Supplemental centroid analysis for 008695402-03. Kepler magnitude: 12.82. Transit SNR 2.99

There are 2 quarters with good PRF difference image offsets

The direct PRF centroid is offset from the target star catalog position by about 0.14 arcsec

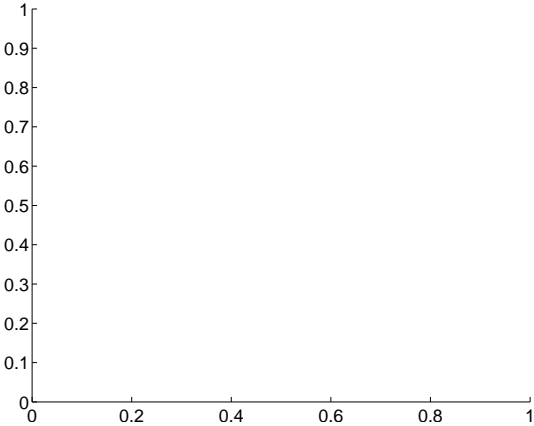
	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.373 \pm 0.560$	0.67	$0.084 \pm 0.514$	$-0.363 \pm 0.508$
PRF-fit source offset from KIC position	$0.169 \pm 0.464$	0.36	$0.138 \pm 0.516$	$-0.098 \pm 0.541$
photometric centroid source offset	$1.56 \pm 1.44$	1.08	$1.55 \pm 1.45$	$-0.19 \pm 1.37$



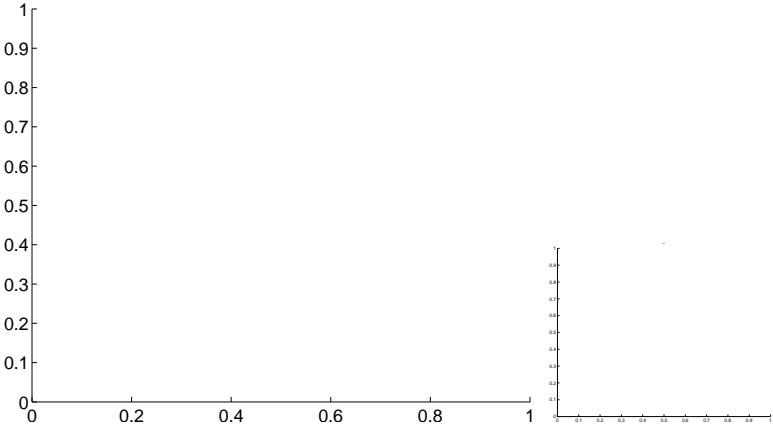
Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: 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 ×: KIC target position; +: OOT centroid; △: difference centroid. red ✕: large negative pixel value.

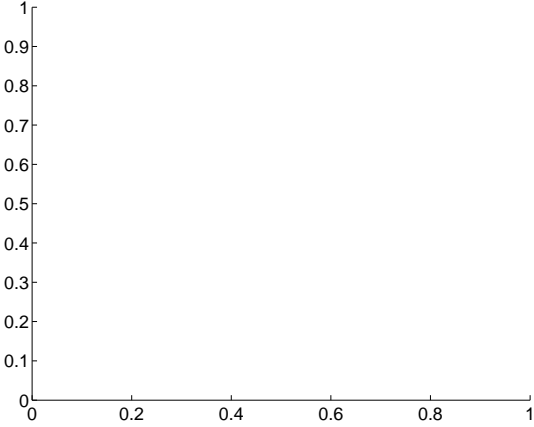
Q1 no difference image



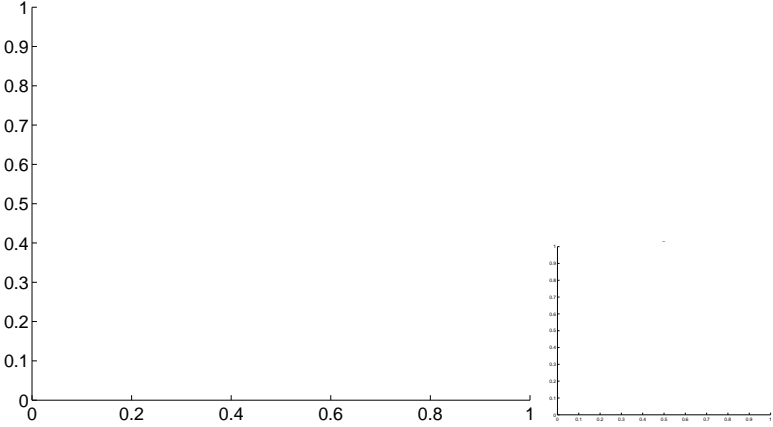
Q1 no OOT image



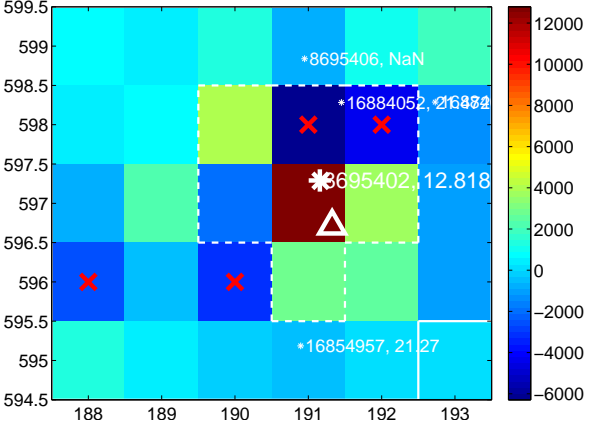
Q2 no difference image



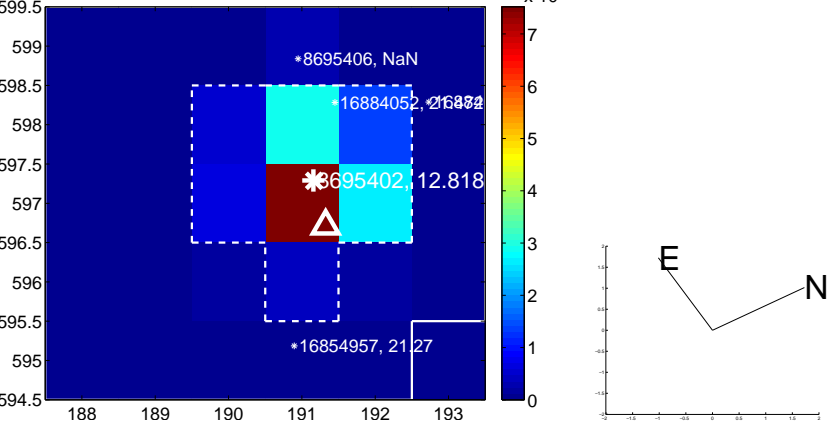
Q2 no OOT image



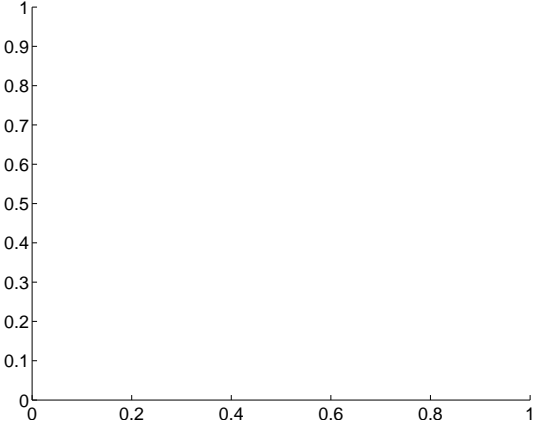
Q3 difference image. Poor Quality



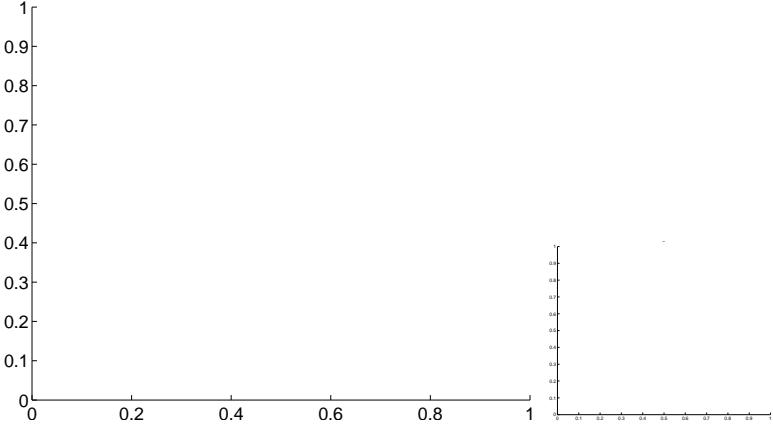
Q3 OOT image



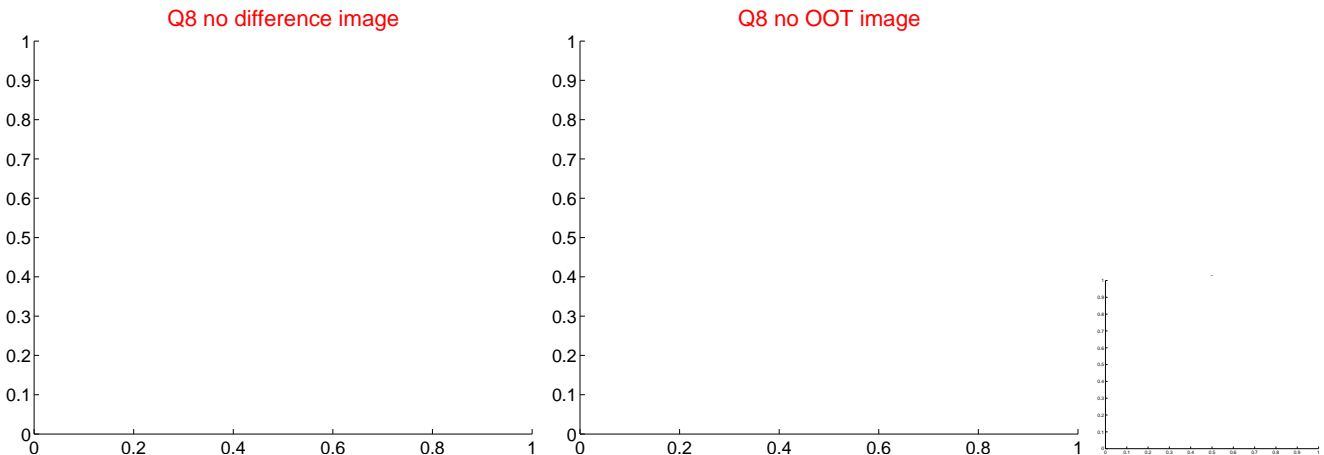
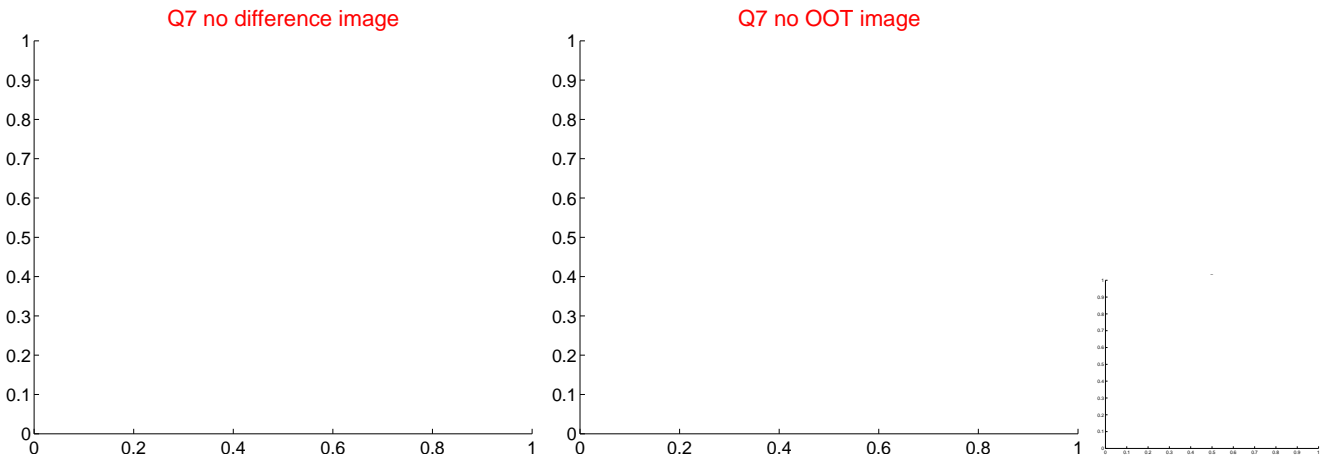
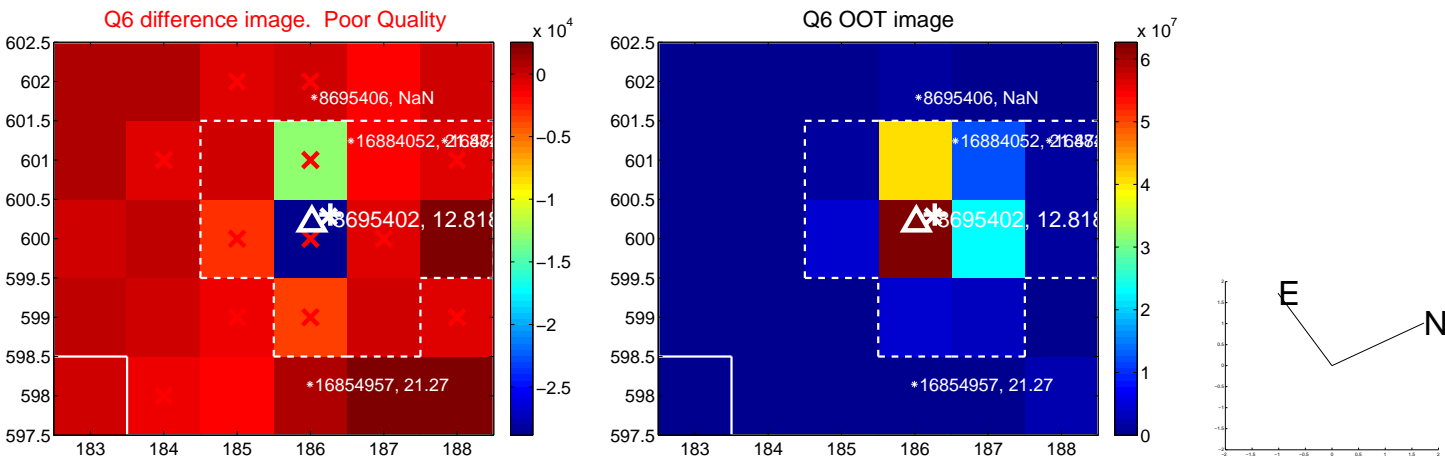
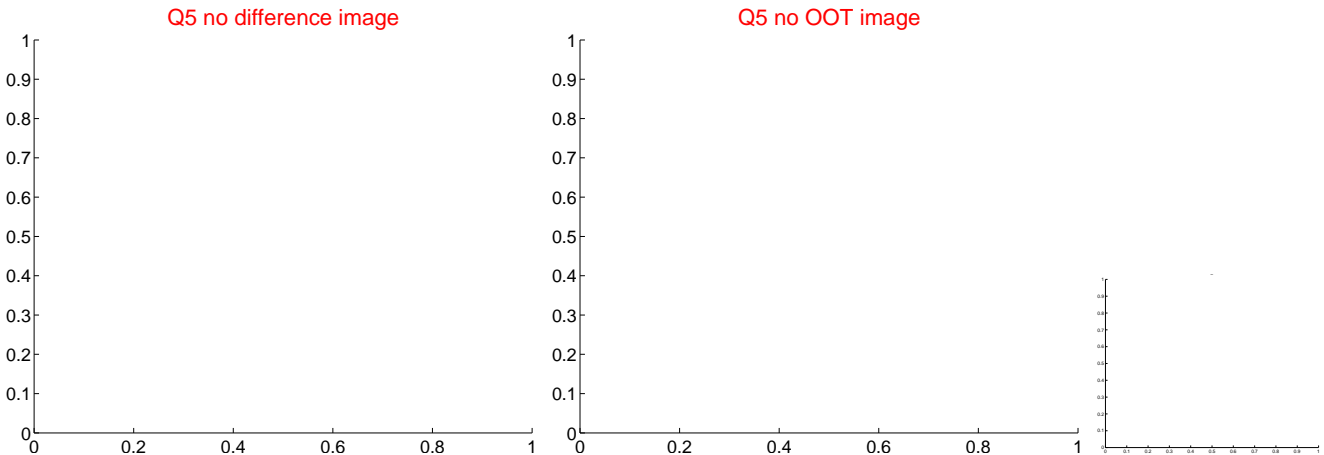
Q4 no difference image



Q4 no OOT image



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



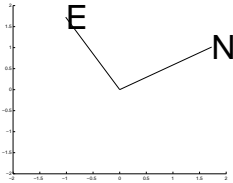
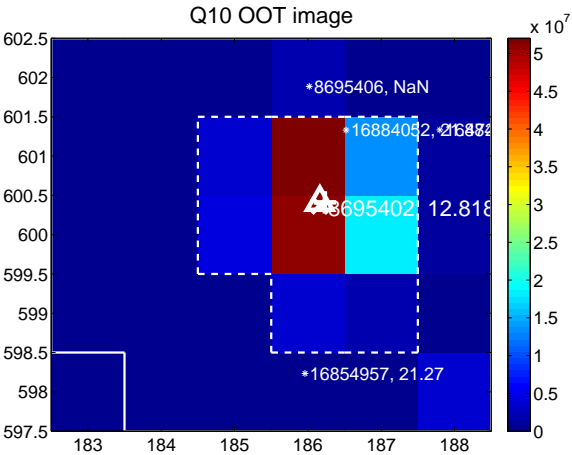
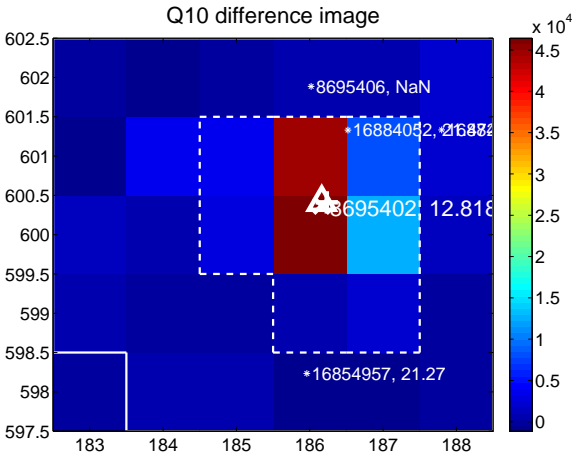


white ×: KIC target position; +: OOT centroid; △: difference centroid. red ✕: large negative pixel value.

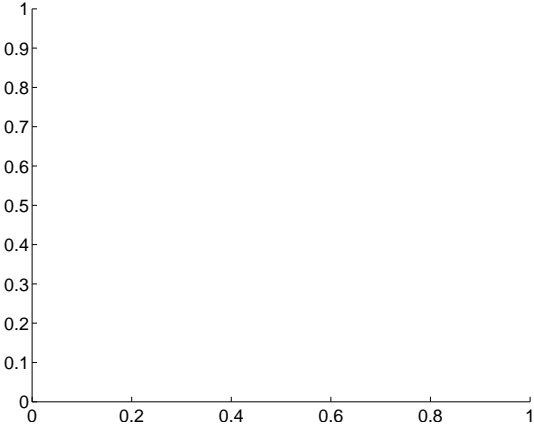
Q9 no difference image



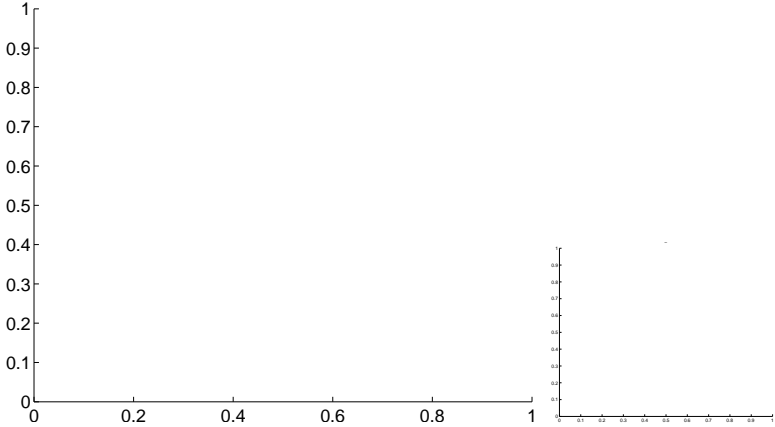
Q9 no OOT image



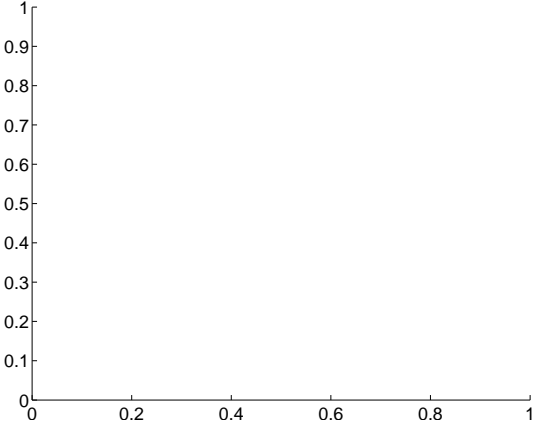
Q11 no difference image



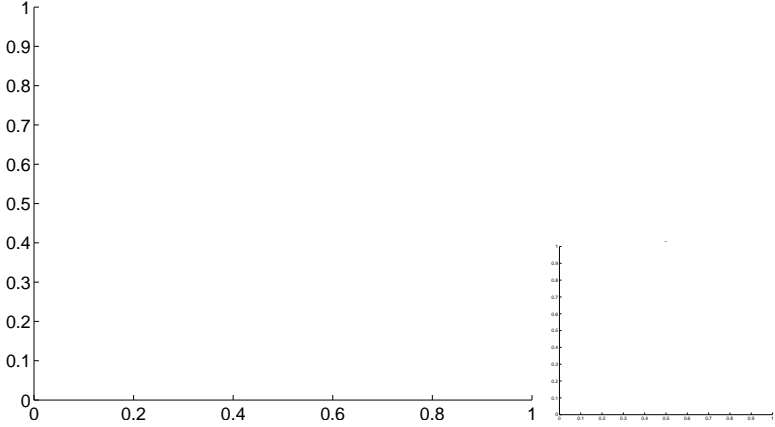
Q11 no OOT image



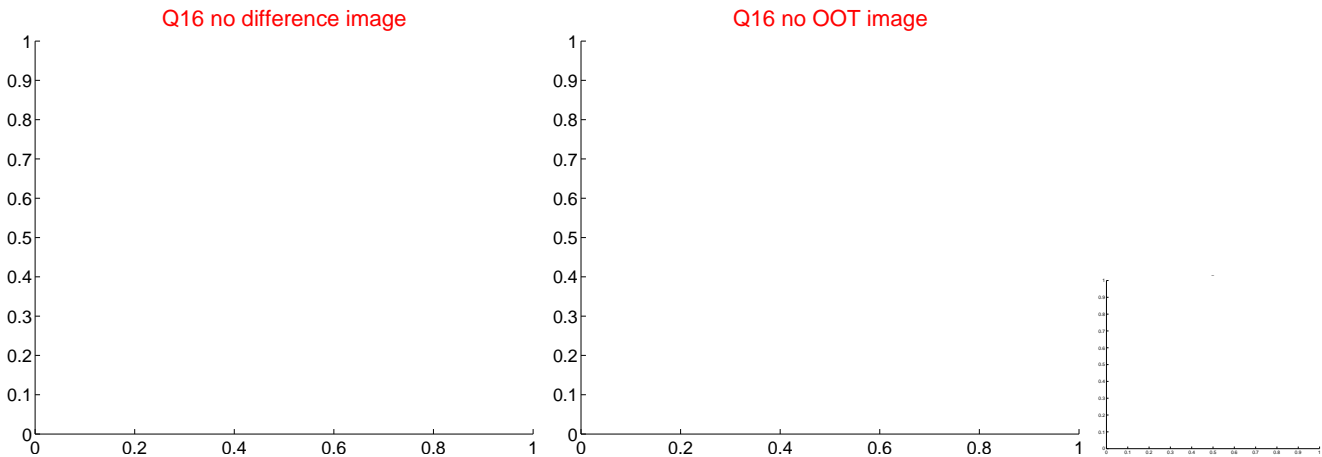
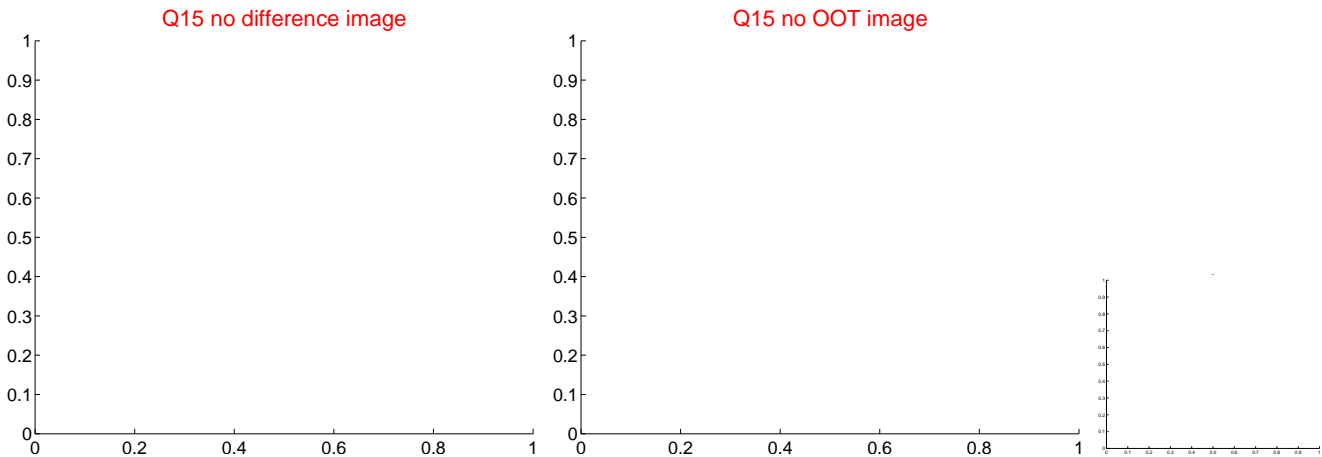
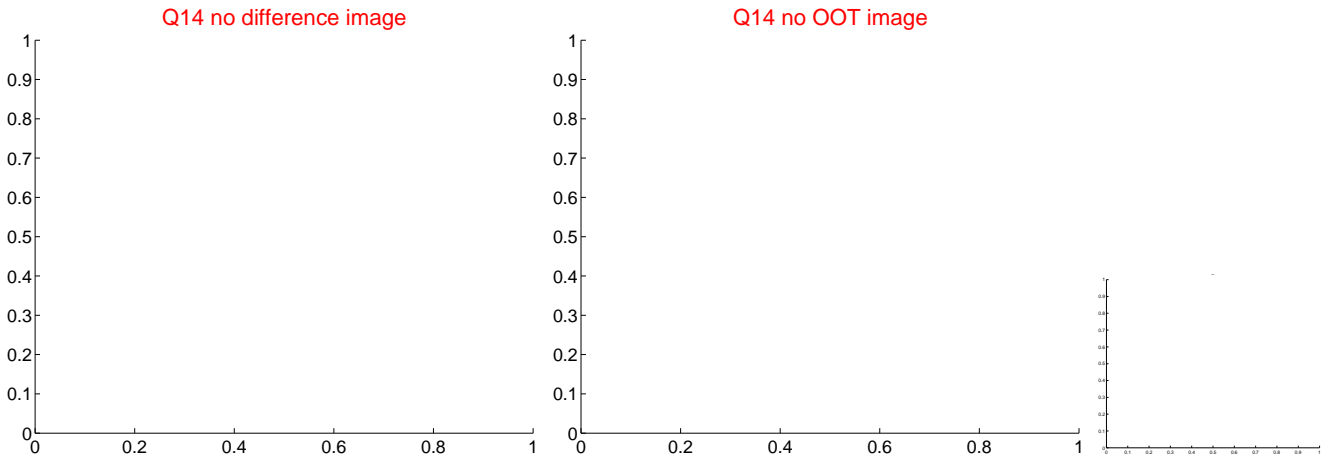
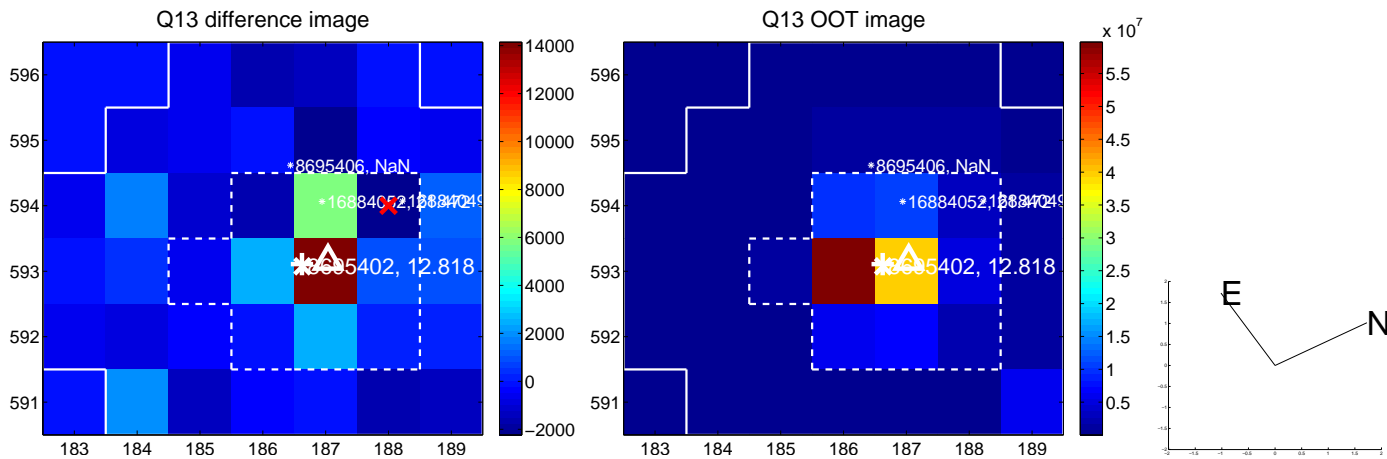
Q12 no difference image



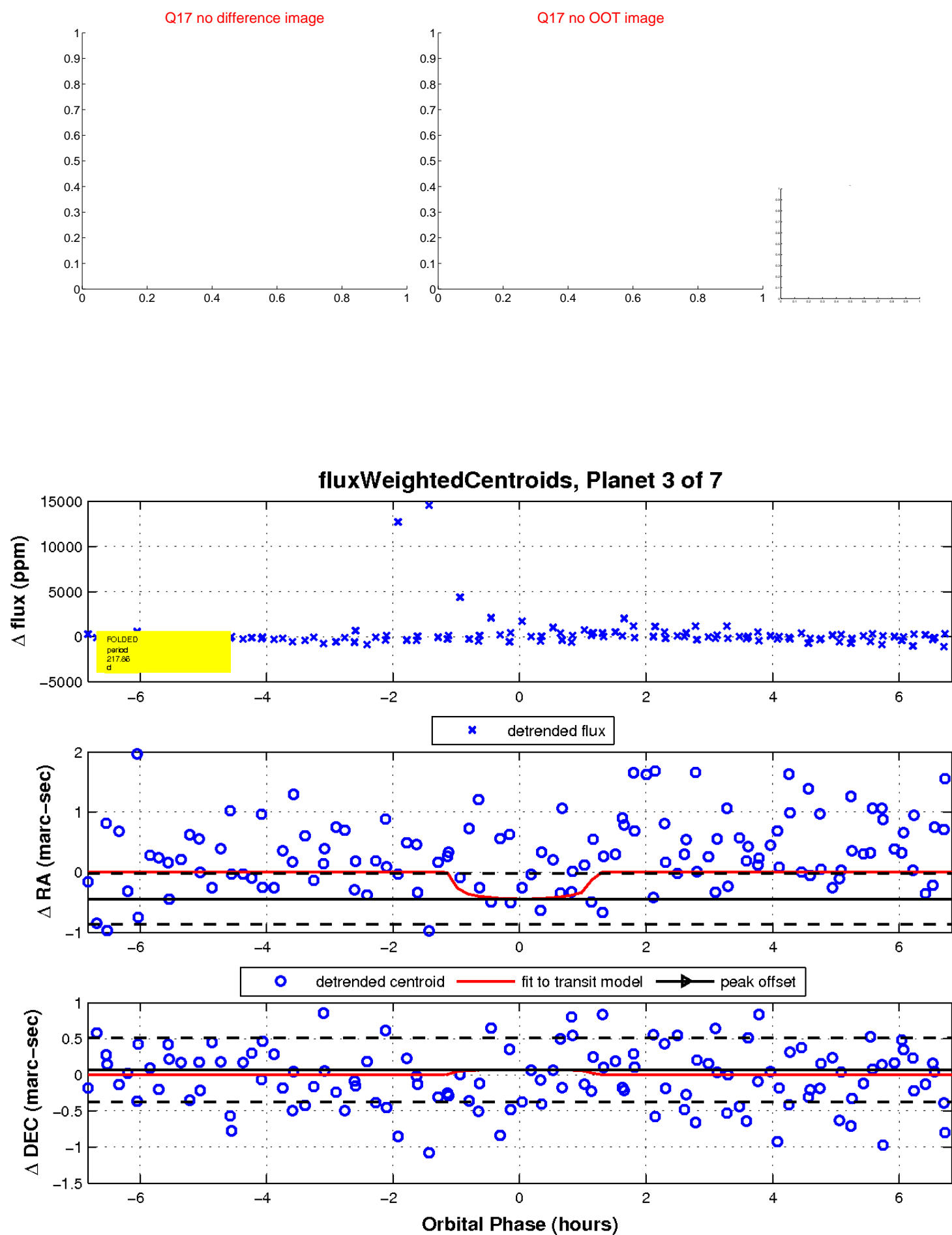
Q12 no OOT image



white ×: KIC target position; +: OOT centroid; △: difference centroid. red ✕: large negative pixel value.

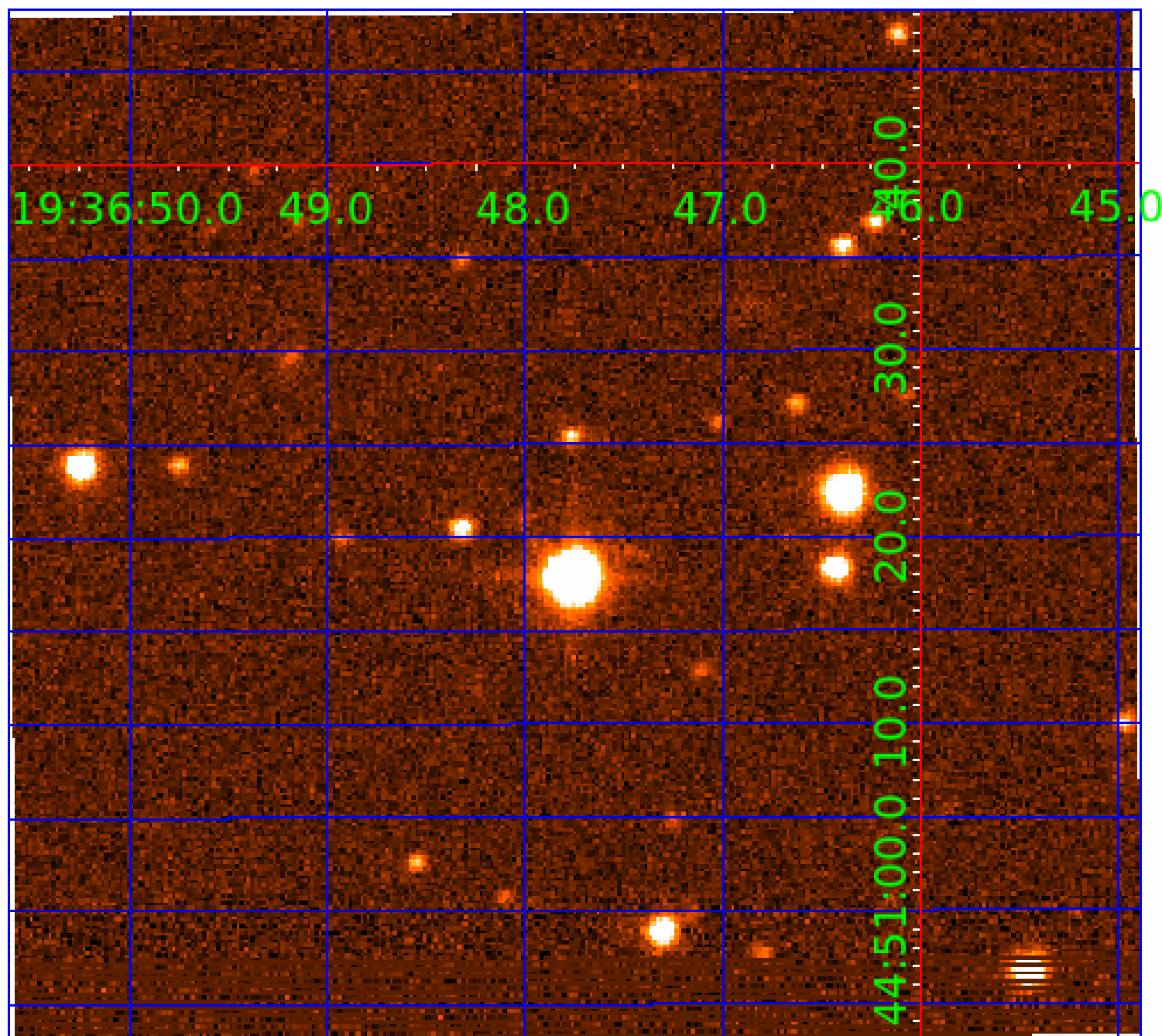


white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



UKIRT Image

Declination



# KIC 008695402

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
008695402-01	OBS	No	617.778020	331.818659	252.1	13.287	16.3	1.5	1.76	5889	2.90	1.57
008695402-02	OBS	No	675.375518	217.618516	888.0	6.155	16.7	5.4	1.76	5889	5.22	1.39
008695402-03	OBS	No	217.859802	328.021052	264.3	2.293	18.8	3.0	1.76	5889	3.18	6.30
008695402-04	OBS	No	450.527722	541.199730	273.2	3.560	16.6	2.5	1.76	5889	3.36	2.39
008695402-05	OBS	No	406.521544	336.702035	1416.6	28.626	13.0	5.1	1.76	5889	7.79	2.74
008695402-06	OBS	No	263.848148	277.730590	849.3	3.025	15.4	6.6	1.76	5889	5.32	4.88
008695402-07	OBS	No	391.554688	471.559488	462.2	3.500	12.7	-1.0	1.76	5889	3.77	2.88

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008695402-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_TRACKER—LPP_DV—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
008695402-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_SKYE—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
008695402-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS
008695402-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_TRACKER—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_TER_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
008695402-05	OBS	FP	0.00	1	0	0	0	LPP_DV—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—CENT_FEW_DIFFS
008695402-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—INCONSISTENT_TRANS
008695402-07	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES—LPP_DV—ALL_TRANS_CHASES—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_NOFITS

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

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

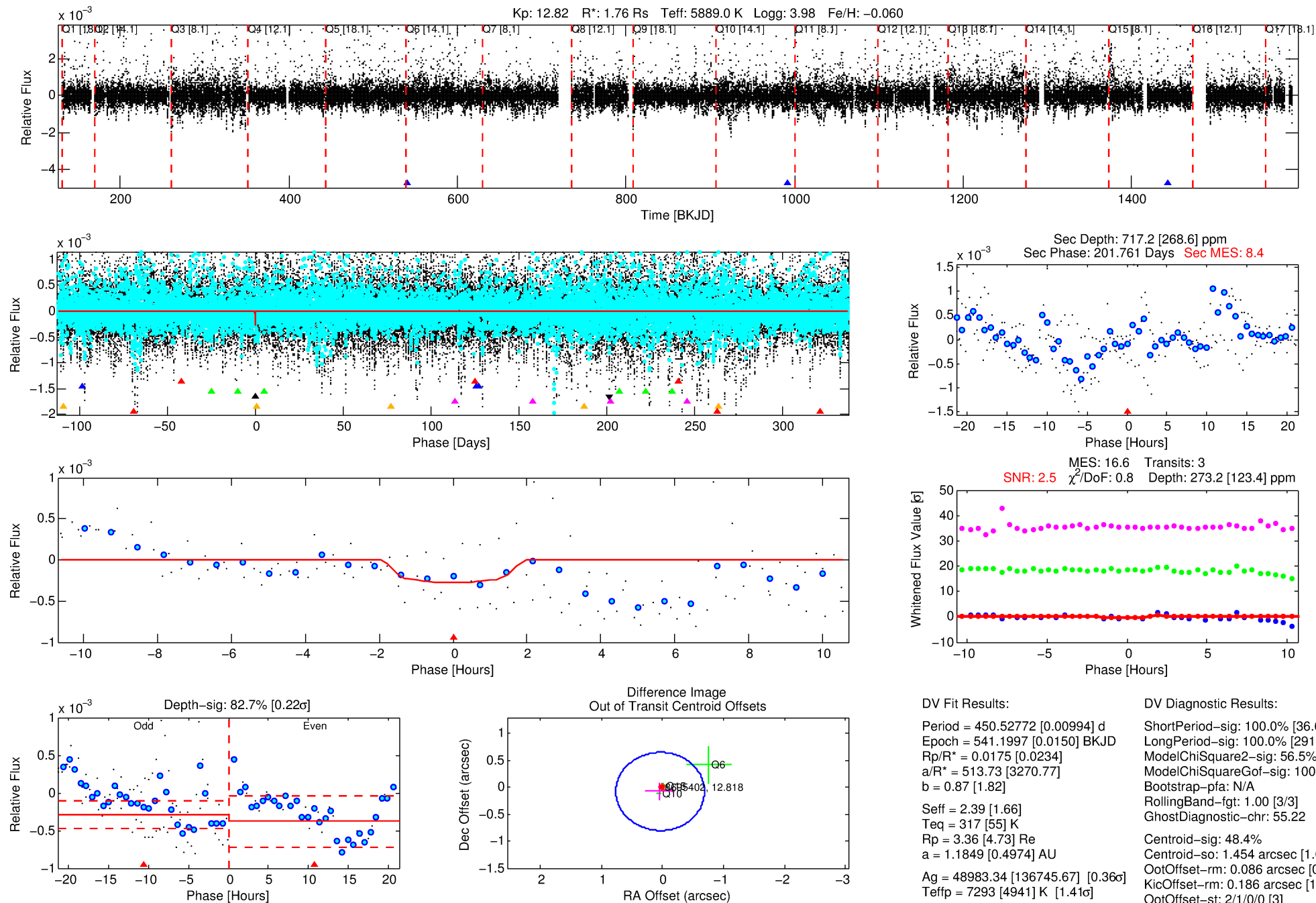
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

Ephemeris Match Information For 008695402-04

No Significant Match Found

# DV One-Page Summary

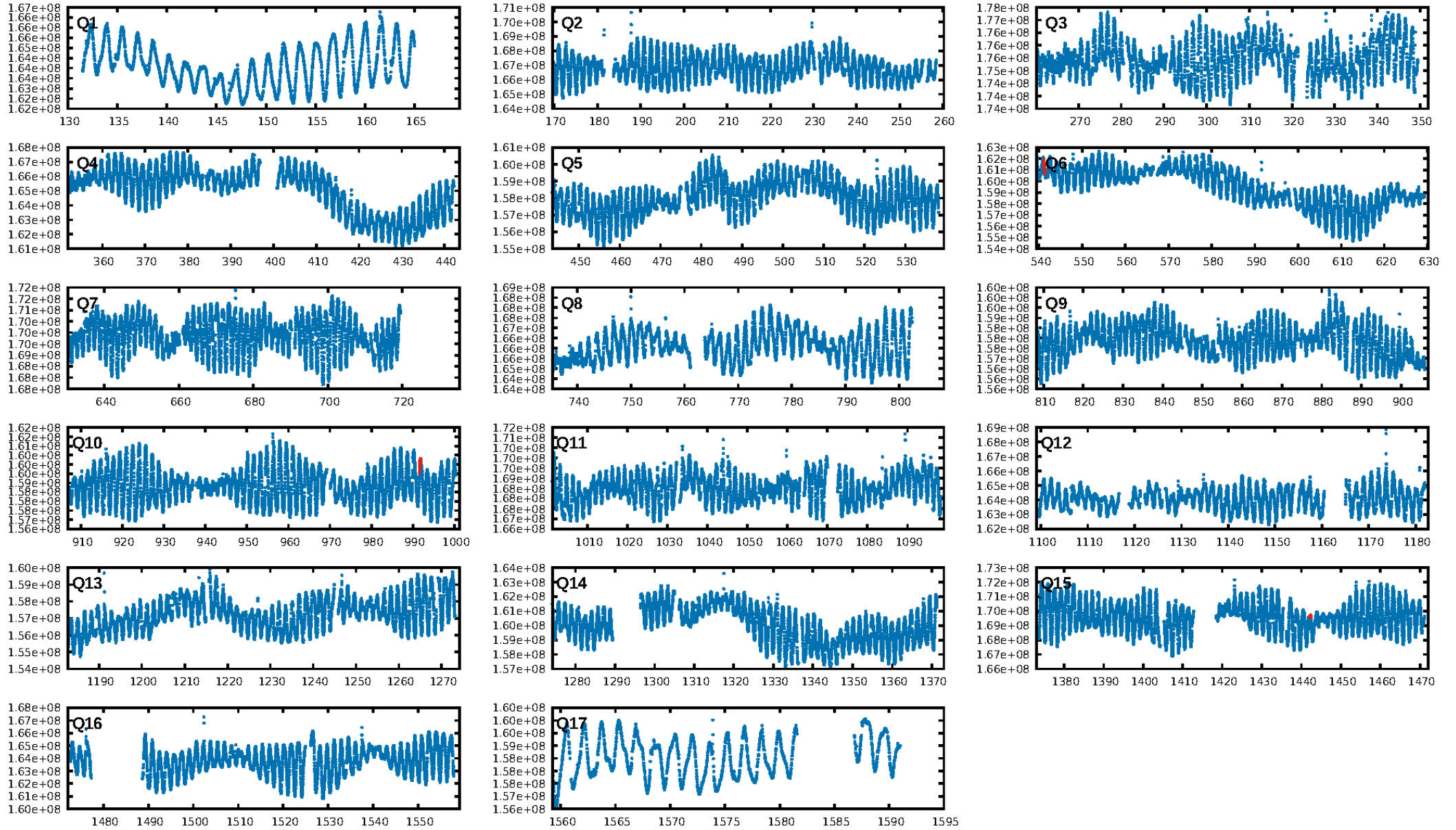
KIC: 8695402 Candidate: 4 of 7 Period: 450.528 d



Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 23:46:44 Z

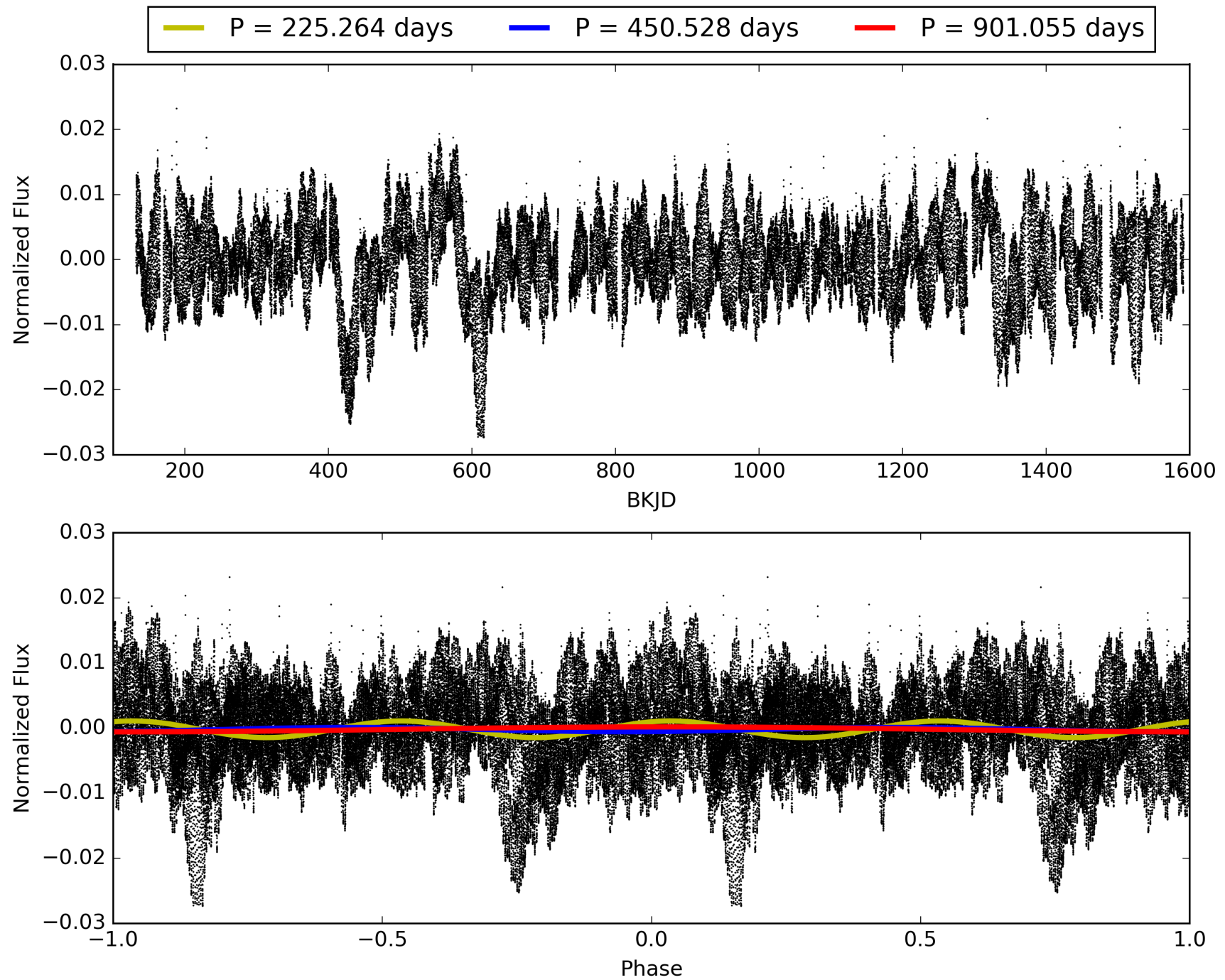
This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

# TCE 008695402-04, PDC Light Curves





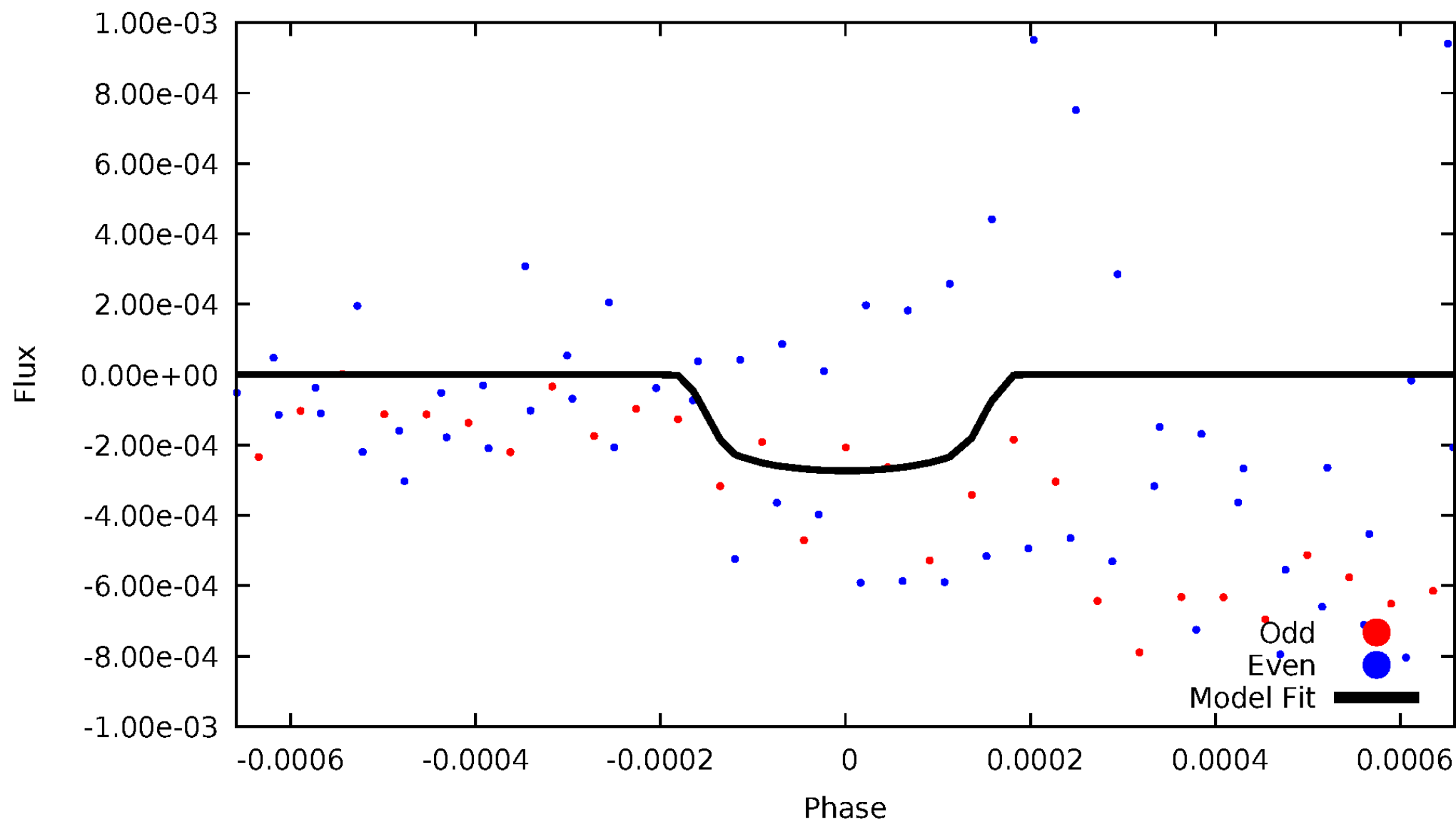
TCE 008695402-04





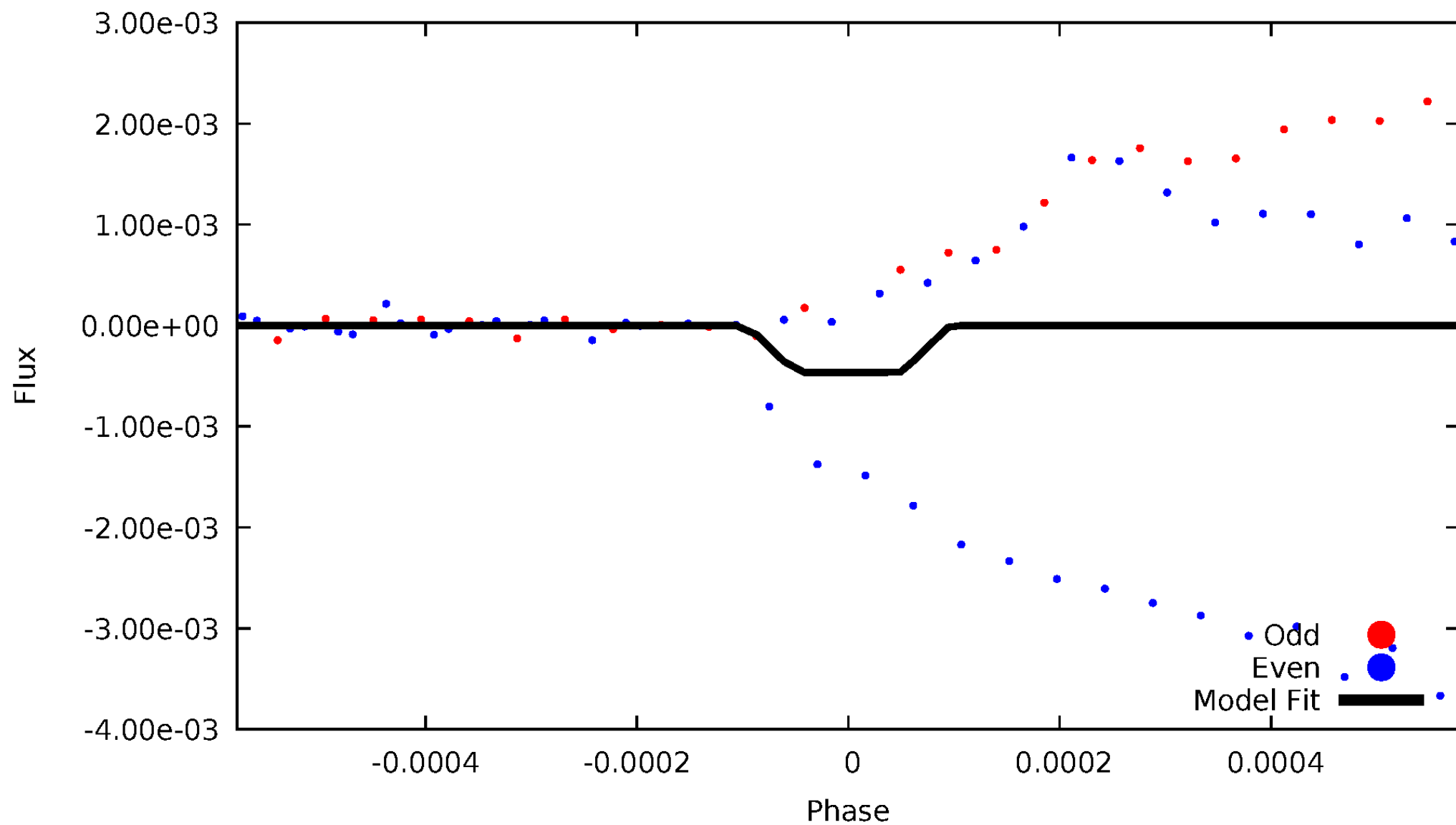
# DV Odd/Even

TCE 008695402-04



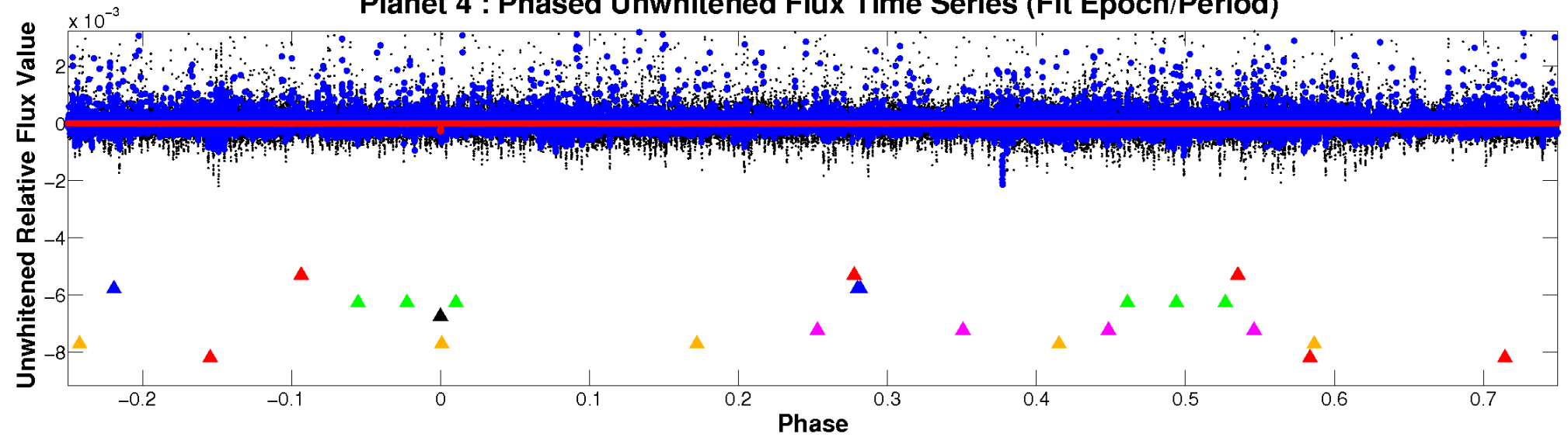
# ALT Odd/Even

TCE 008695402-04

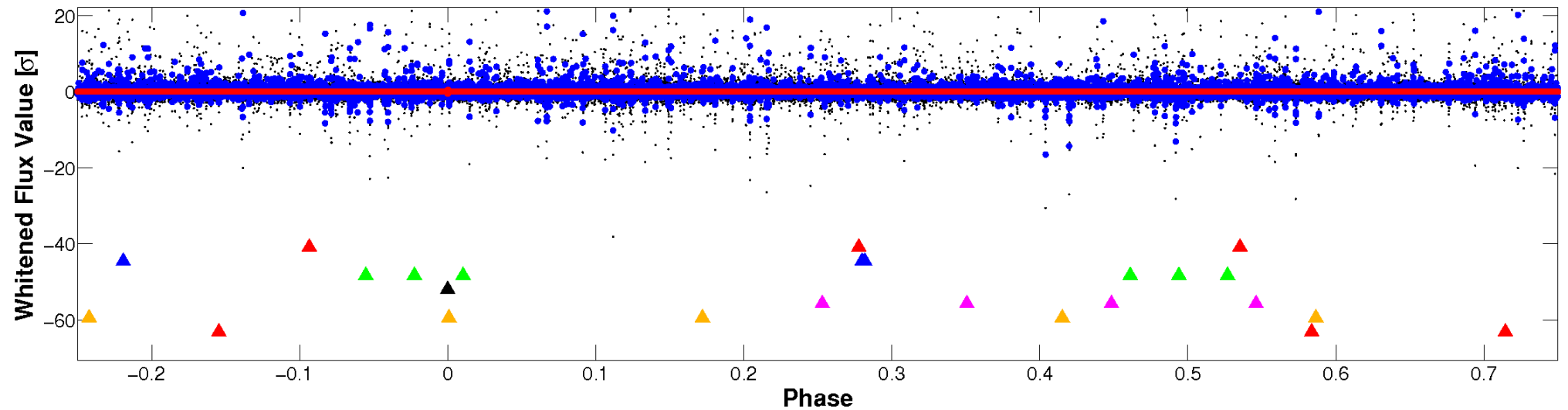


# Non-Whitened Vs. Whitened Light Curve

## Planet 4 : Phased Unwhitened Flux Time Series (Fit Epoch/Period)

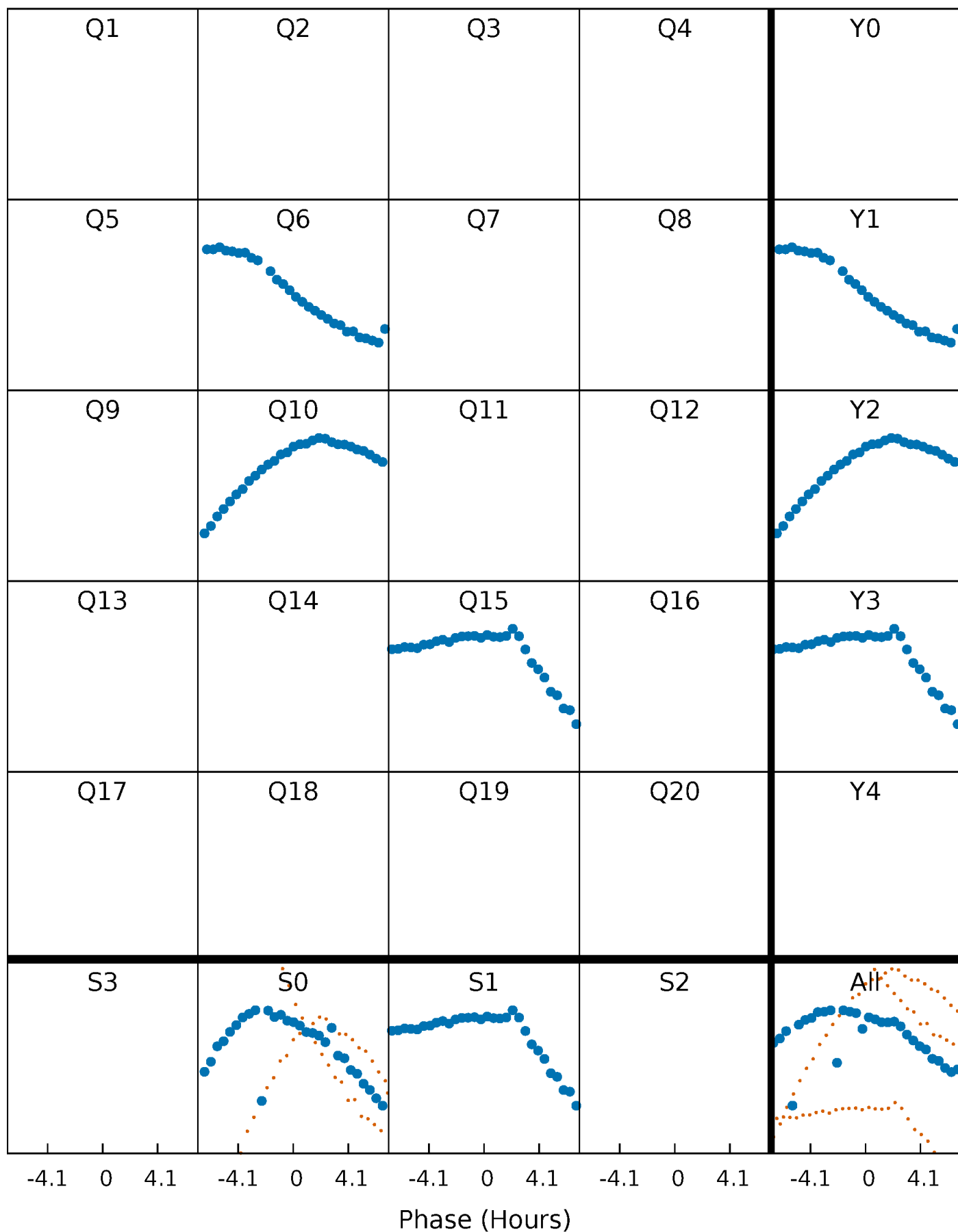


## Planet 4 : Phased Whitened Flux Time Series (Fit Epoch/Period)



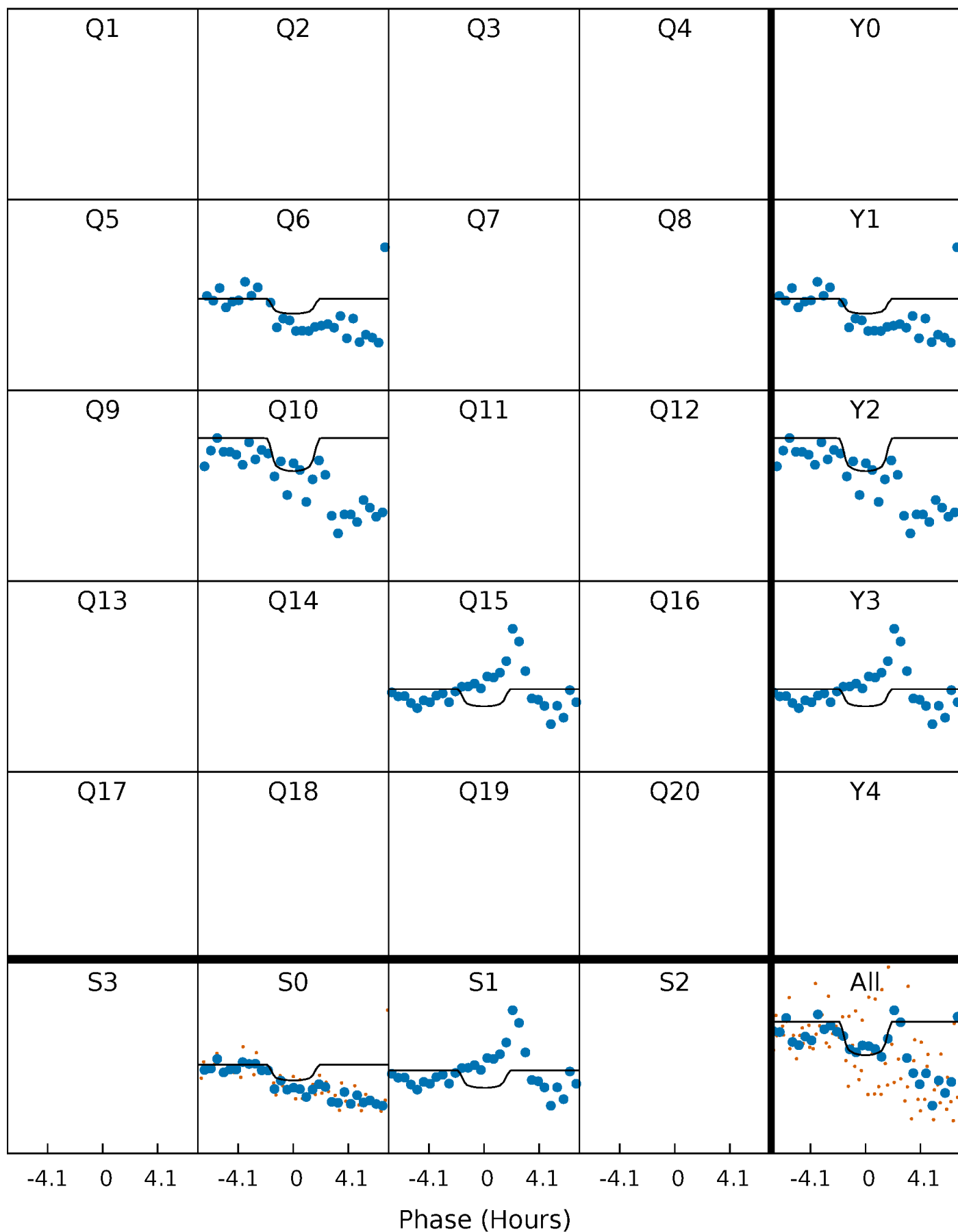
# PDC Quarter-Phased Transit Curves

TCE 008695402-04 P=450.527722 Days  $T_0=541.199730$  (BKJD)



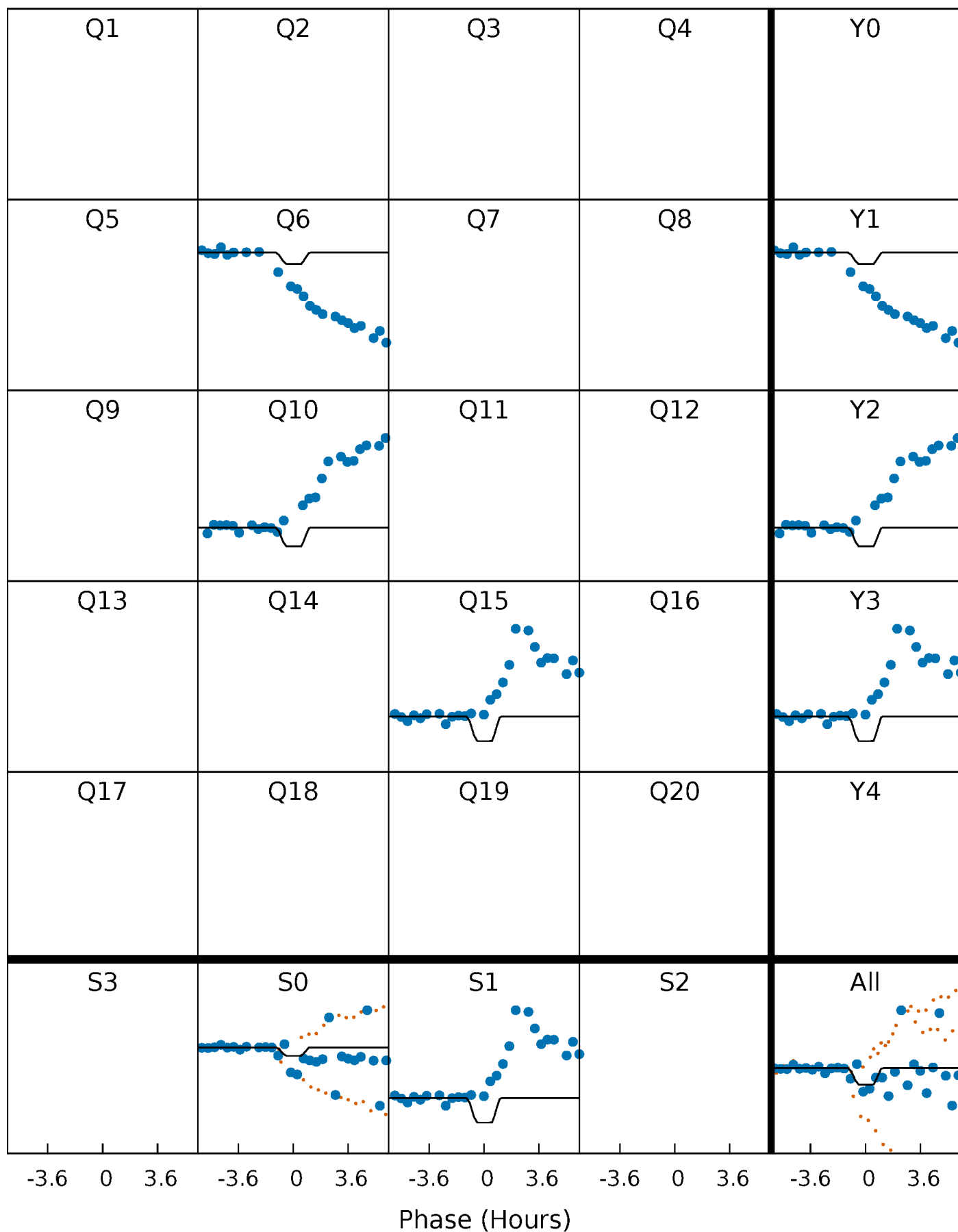
# DV Quarter-Phased Transit Curves

TCE 008695402-04     $P=450.527722$  Days     $T_0=541.199730$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

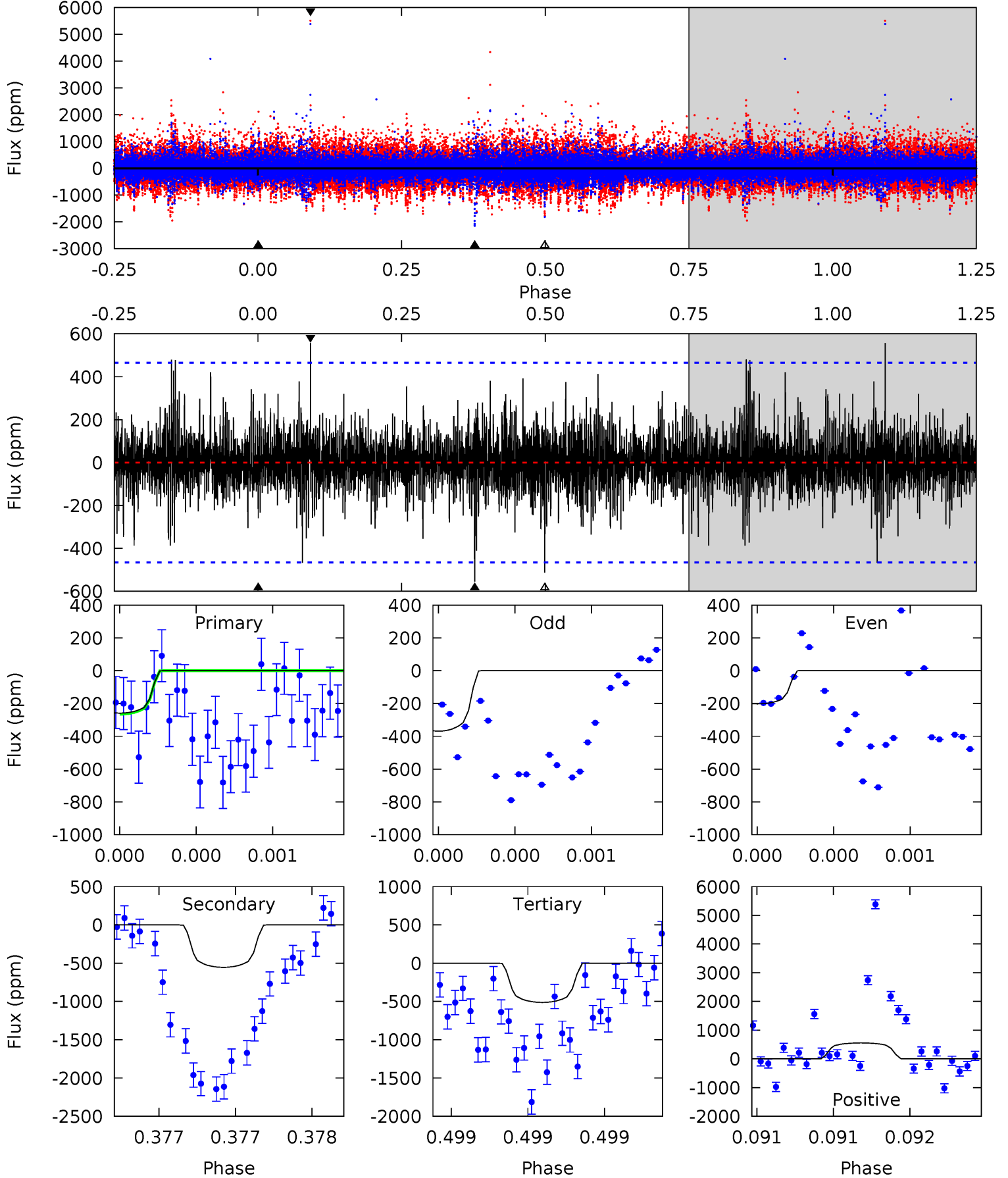
TCE 008695402-04 P=450.546376 Days  $T_0=541.159054$  (BKJD)



# DV Model-Shift Uniqueness Test

008695402-04, P = 450.527722 Days, E = 90.672008 Days

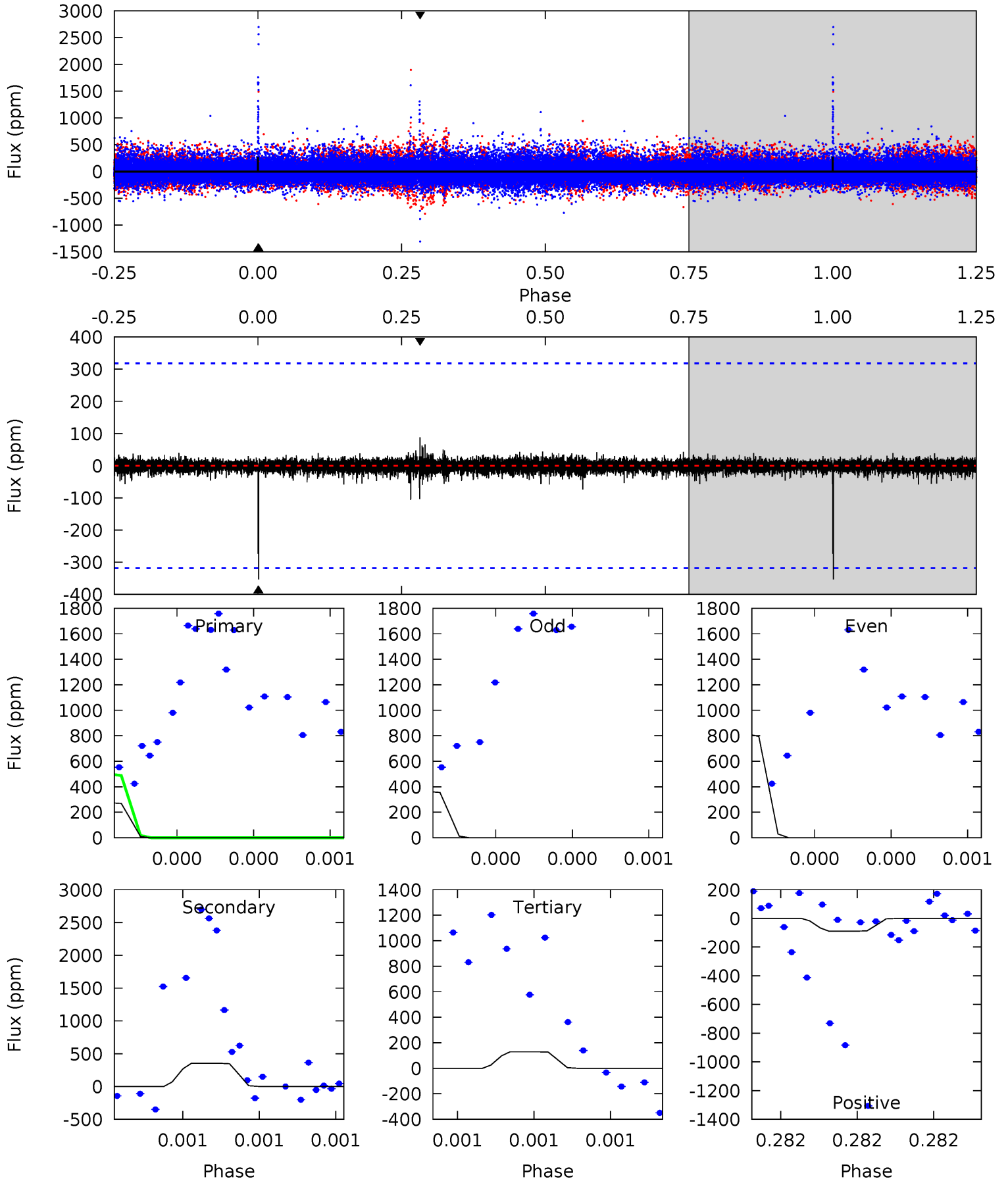
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
3.13	6.71	6.20	6.74	5.64	3.58	1.17	-3.07	-3.61	0.51	-0.03	0.81	0.70	0.50	0.09



# Alt Model-Shift Uniqueness Test

008695402-04, P = 450.546376 Days, E = 90.612678 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
4.94	6.37	2.33	1.59	5.75	3.74	0.20	2.62	3.35	4.05	4.78	3.43	-1.70	0.20	3.70





### Stellar Parameters For KIC 008695402

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R$ ( $R_{\odot}$ )	$M(M_{\odot})$	$p_{\star}$ ( $\text{g}\cdot\text{cm}^{-3}$ )
	$5889^{+193}_{-193}$	$3.983^{+0.405}_{-0.135}$	$-0.060^{+0.300}_{-0.300}$	$1.765^{+0.402}_{-0.747}$	$1.095^{+0.153}_{-0.187}$	$0.280^{+0.998}_{-0.114}$
	+3%/-3%	+10%/-3%	+500%/-500%	+23%/-42%	+14%/-17%	+356%/-41%
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 008695402-04 / KOI

Detrend	Depth (ppm)	$R_p$ ( $R_{\oplus}$ )	$T_{max}$ (K)	$T_{obs}$ (K)	$A_{obs}$
DV	$-555 \pm 83$	$4.20^{+3.98}_{-2.65}$	$434^{+35}_{-51}$	$5831^{+4712}_{-1400}$	$24392^{+152879}_{-18207}$
Alt.	$-353 \pm 55$	$4.75^{+4.25}_{-3.14}$	$434^{+35}_{-49}$	$5020^{+3824}_{-1067}$	$11559^{+86315}_{-8242}$

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

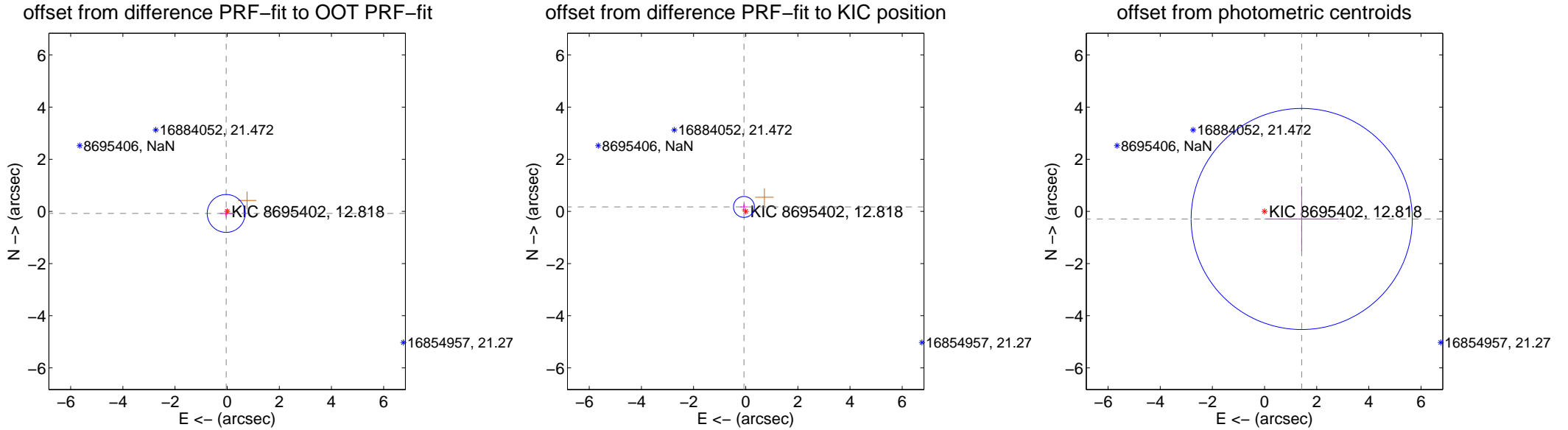
## DV Centroid Data

Supplemental centroid analysis for 008695402-04. Kepler magnitude: 12.82. Transit SNR 2.45

There are 0 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	$0.086 \pm 0.242$	0.35	$0.039 \pm 0.240$	$-0.077 \pm 0.160$
PRF-fit source offset from KIC position	$0.186 \pm 0.134$	1.39	$0.067 \pm 0.137$	$0.173 \pm 0.133$
photometric centroid source offset	$1.45 \pm 1.41$	1.03	$-1.43 \pm 1.42$	$-0.29 \pm 1.24$



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.

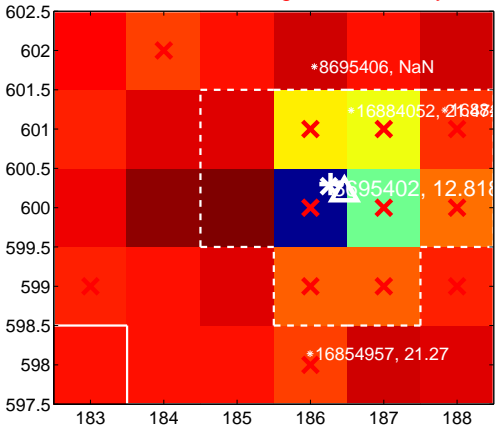
Q5 no difference image



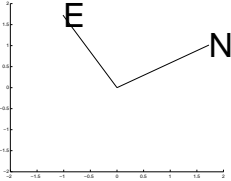
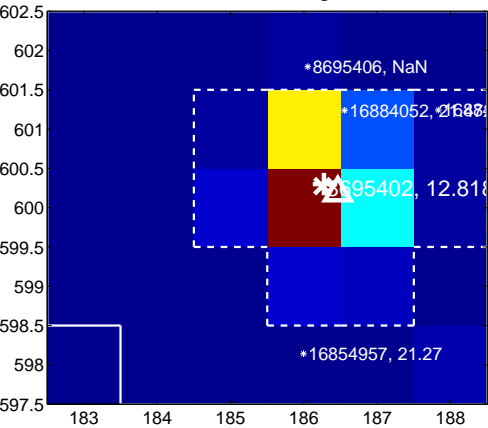
Q5 no OOT image



Q6 difference image. Poor Quality



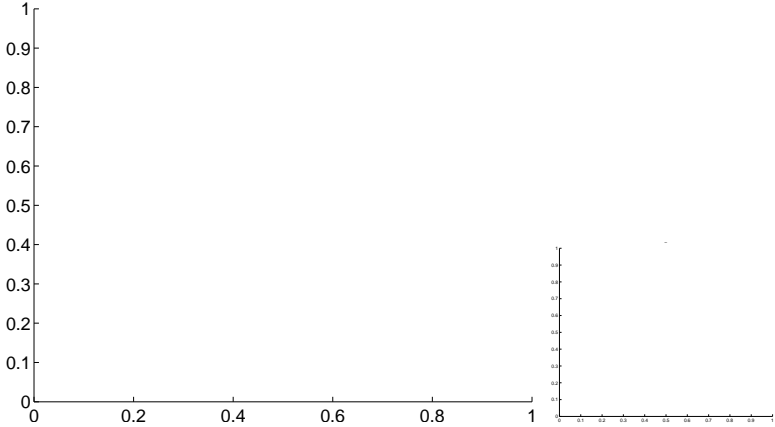
Q6 OOT image



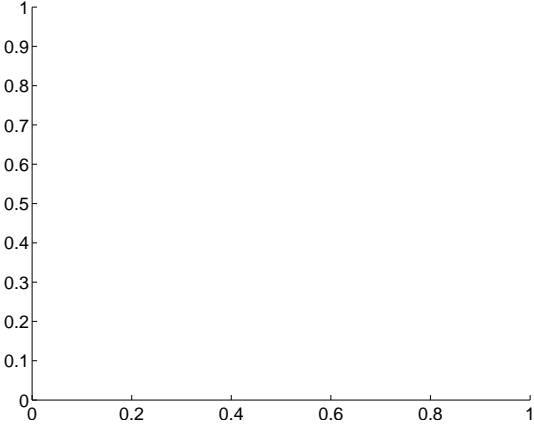
Q7 no difference image



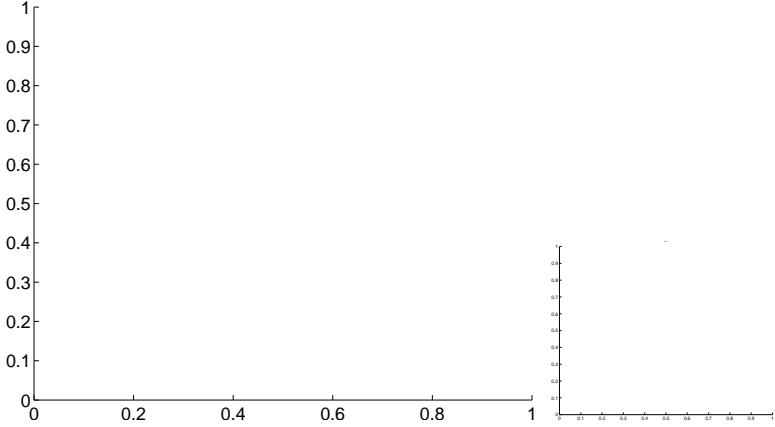
Q7 no OOT image



Q8 no difference image



Q8 no OOT image

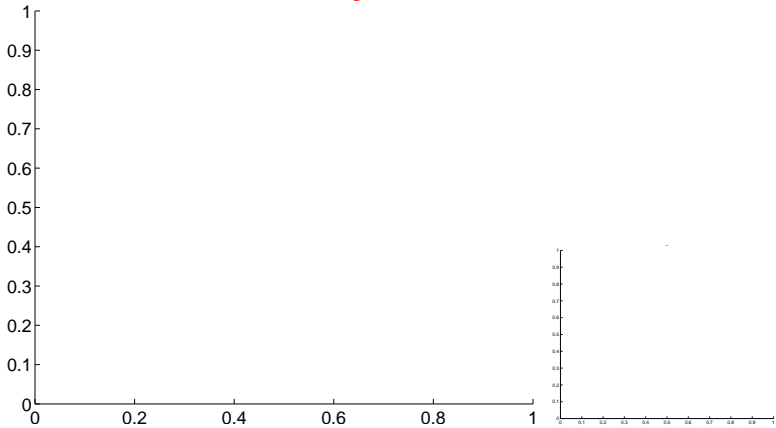


white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

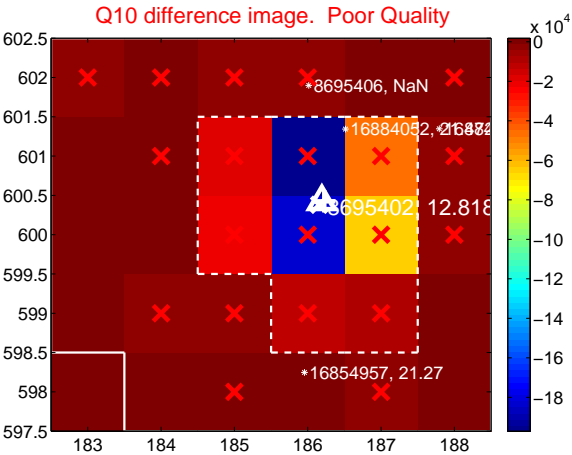
Q9 no difference image



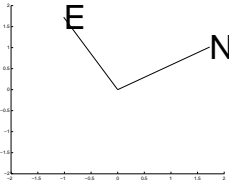
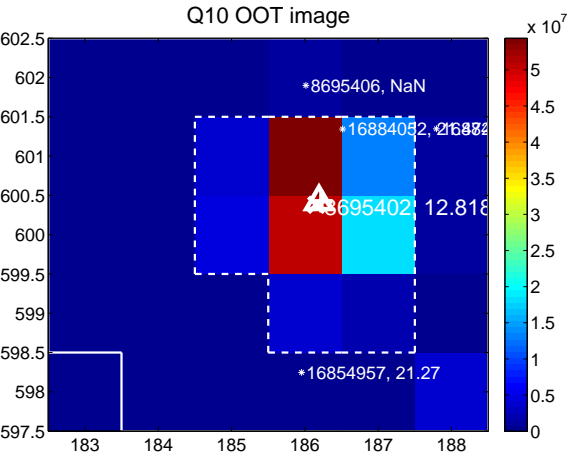
Q9 no OOT image



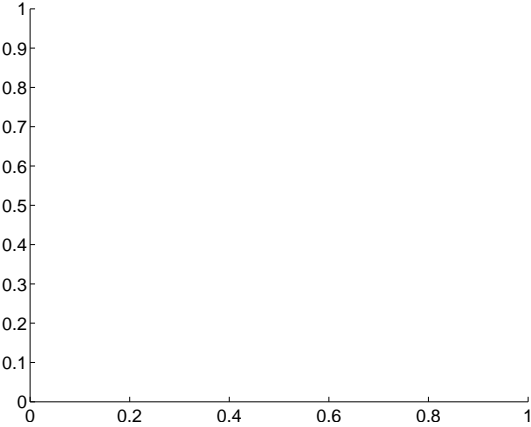
Q10 difference image. Poor Quality



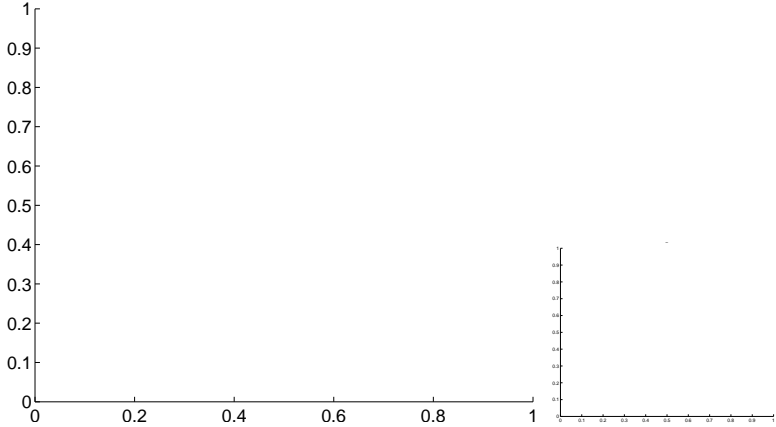
Q10 OOT image



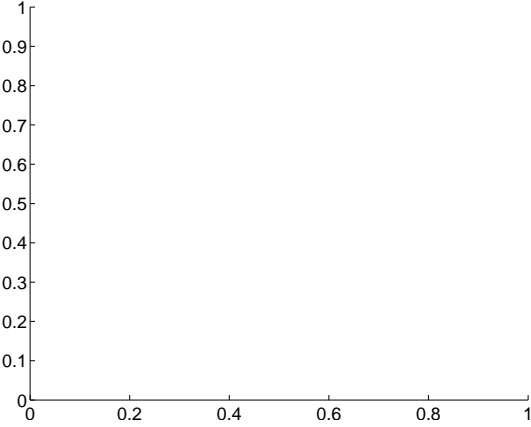
Q11 no difference image



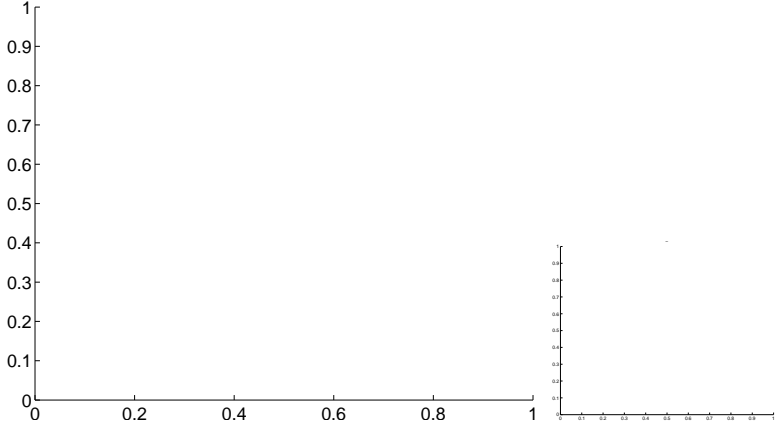
Q11 no OOT image



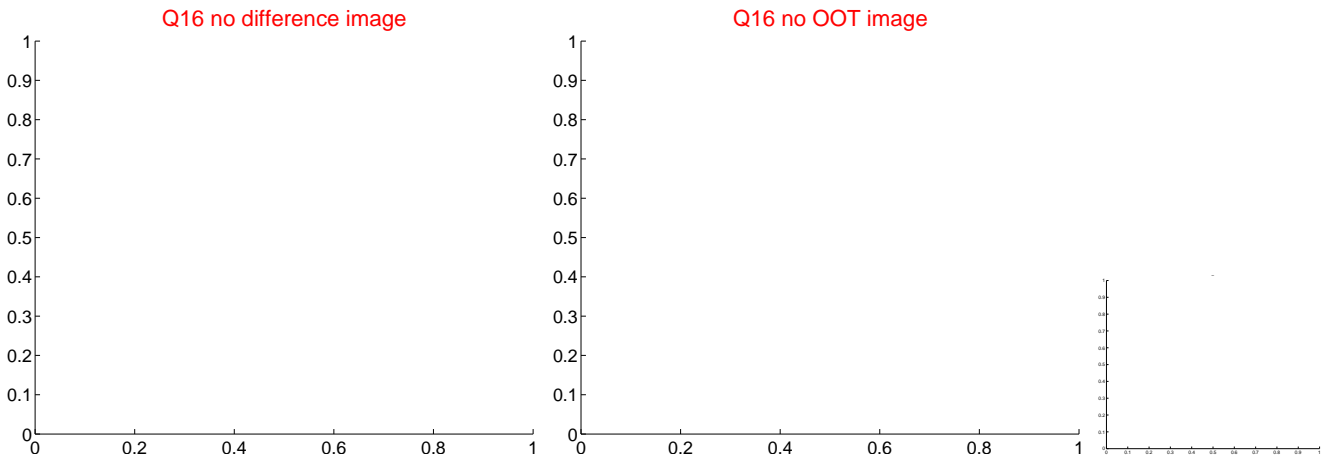
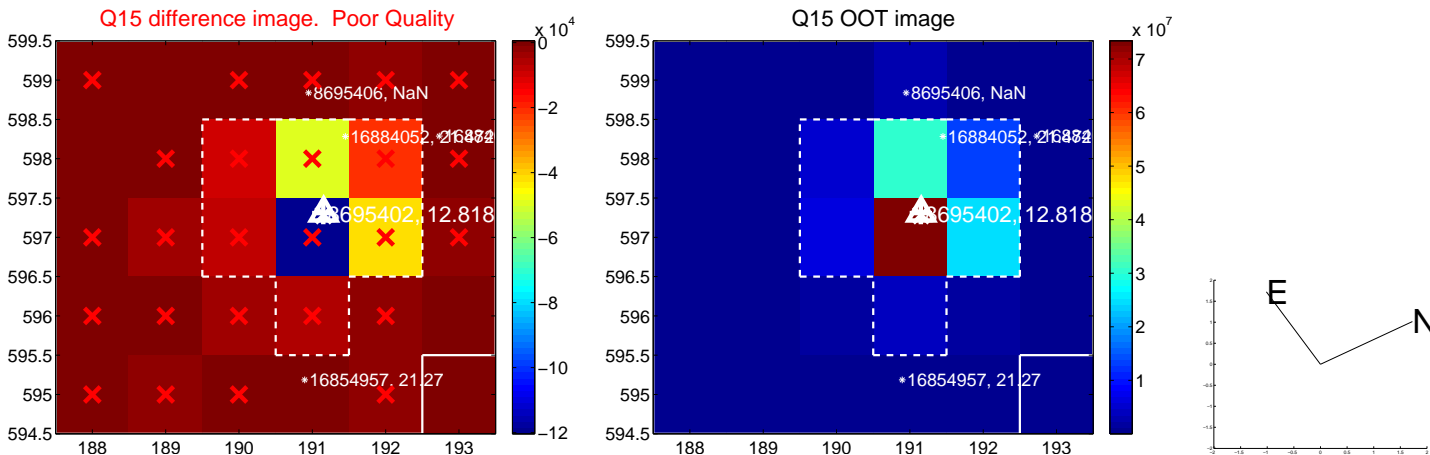
Q12 no difference image



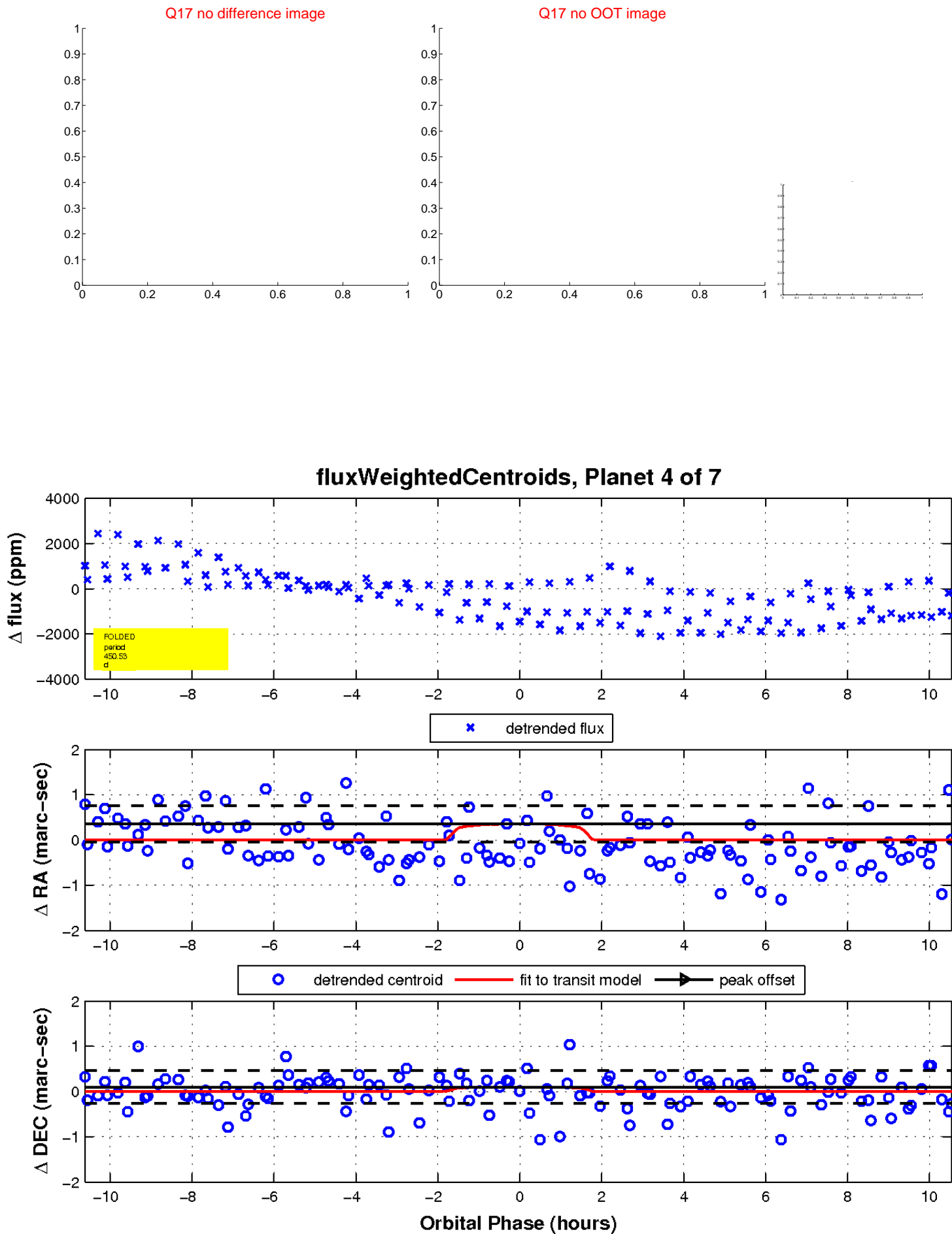
Q12 no OOT image



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

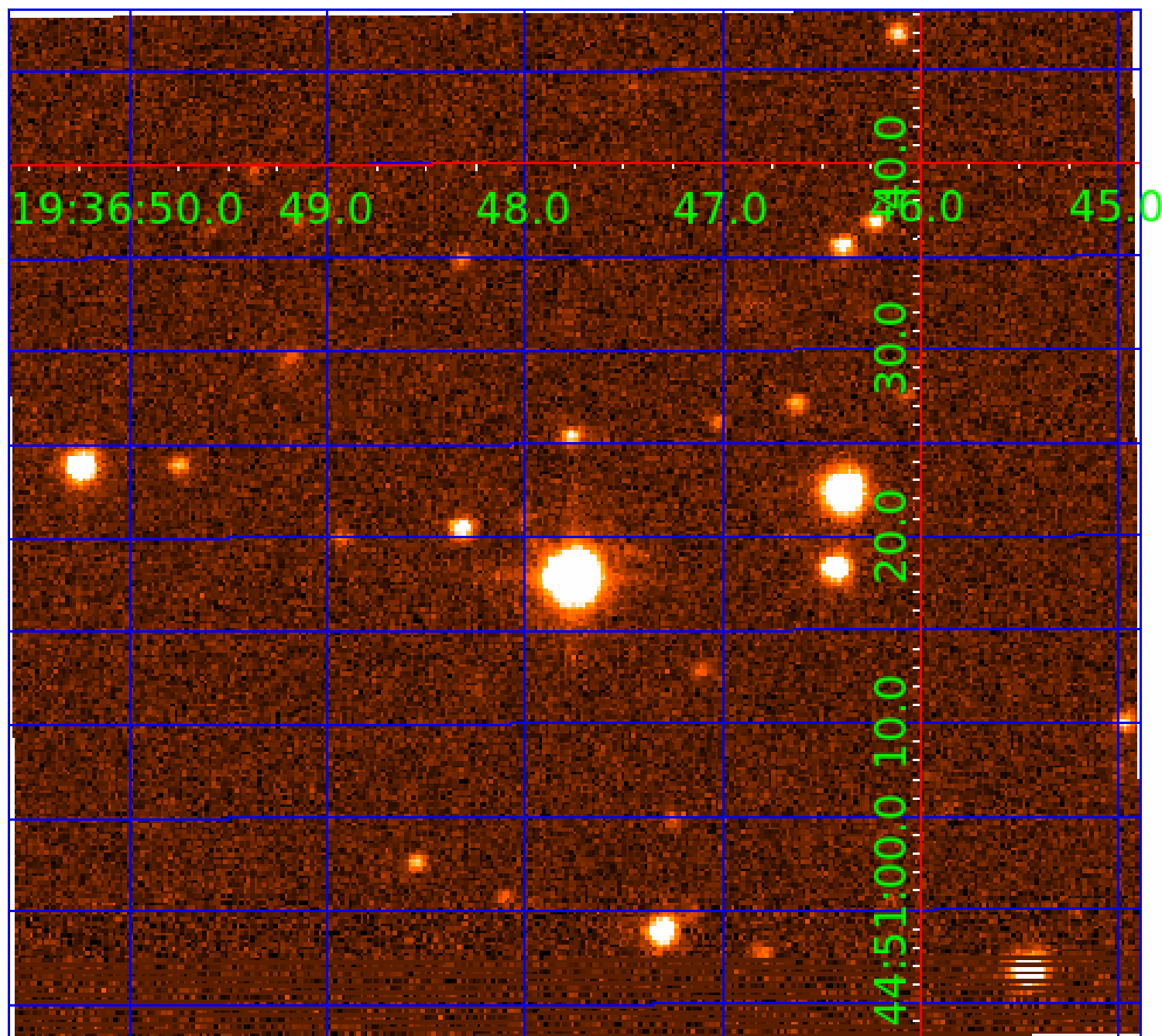


white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



UKIRT Image

Declination





# KIC 008695402

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
008695402-01	OBS	No	617.778020	331.818659	252.1	13.287	16.3	1.5	1.76	5889	2.90	1.57
008695402-02	OBS	No	675.375518	217.618516	888.0	6.155	16.7	5.4	1.76	5889	5.22	1.39
008695402-03	OBS	No	217.859802	328.021052	264.3	2.293	18.8	3.0	1.76	5889	3.18	6.30
008695402-04	OBS	No	450.527722	541.199730	273.2	3.560	16.6	2.5	1.76	5889	3.36	2.39
008695402-05	OBS	No	406.521544	336.702035	1416.6	28.626	13.0	5.1	1.76	5889	7.79	2.74
008695402-06	OBS	No	263.848148	277.730590	849.3	3.025	15.4	6.6	1.76	5889	5.32	4.88
008695402-07	OBS	No	391.554688	471.559488	462.2	3.500	12.7	-1.0	1.76	5889	3.77	2.88

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008695402-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_TRACKER—LPP_DV—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
008695402-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_SKYE—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
008695402-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS
008695402-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_TRACKER—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_TER_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
008695402-05	OBS	FP	0.00	1	0	0	0	LPP_DV—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—CENT_FEW_DIFFS
008695402-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—INCONSISTENT_TRANS
008695402-07	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES—LPP_DV—ALL_TRANS_CHASES—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_NOFITS

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

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

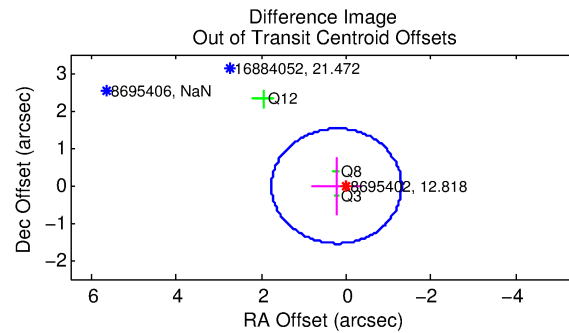
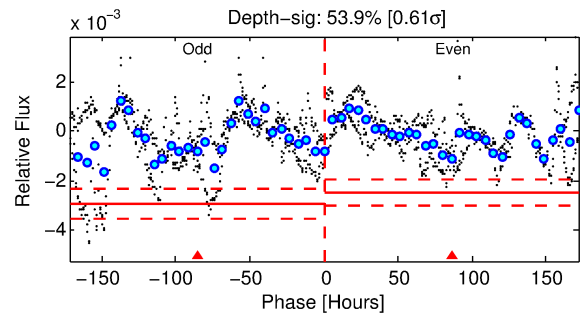
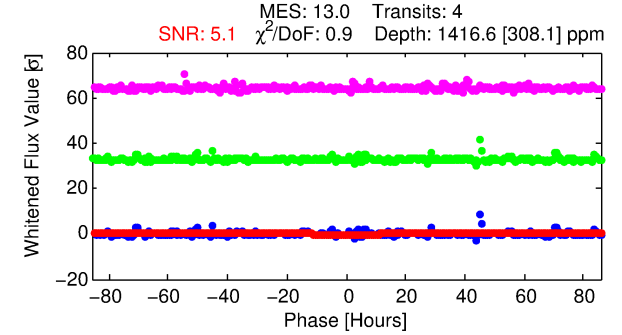
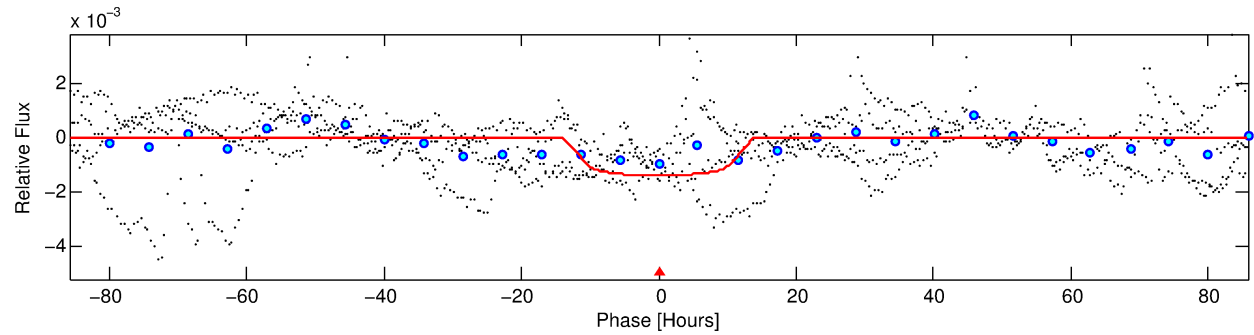
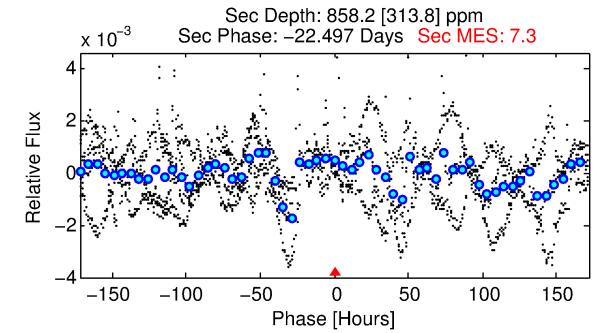
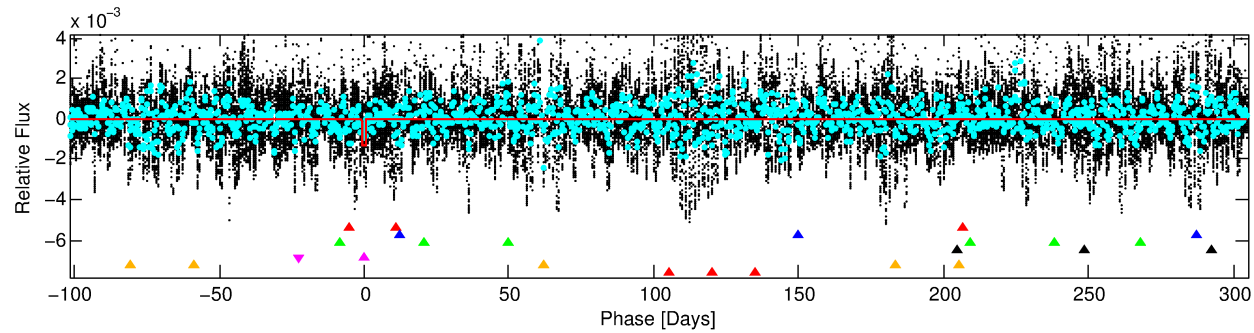
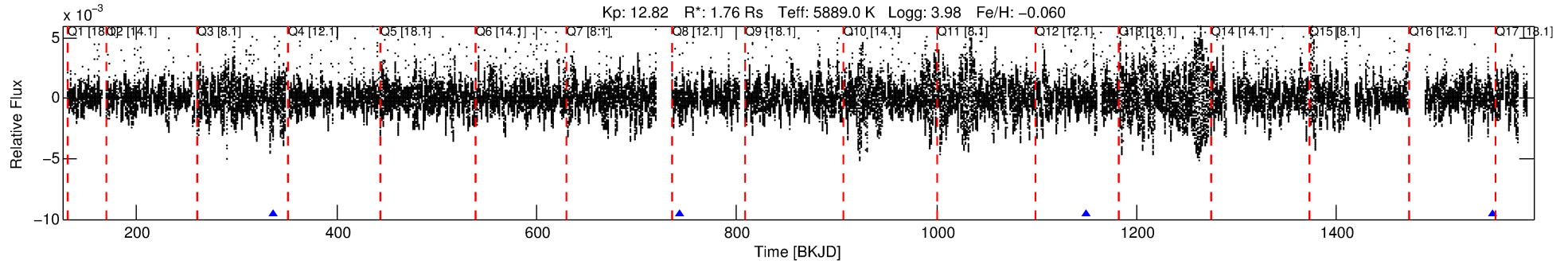
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

Ephemeris Match Information For 008695402-05

No Significant Match Found

# DV One-Page Summary

KIC: 8695402 Candidate: 5 of 7 Period: 406.522 d



## DV Fit Results:

Period = 406.52154 [0.01486] d  
Epoch = 336.7020 [0.0334] BKJD  
Rp/R\* = 0.0404 [0.0044]  
a/R\* = 58.71 [5.14]  
b = 0.89 [0.02]  
Seff = 2.74 [1.91]  
Teq = 328 [57] K  
Rp = 7.79 [3.40] Re  
a = 1.1064 [0.4645] AU  
Ag = 9532.72 [7672.20] [1.24 $\sigma$ ]  
Teffp = 5013 [559] K [8.34 $\sigma$ ]

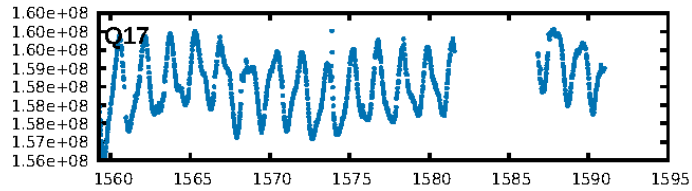
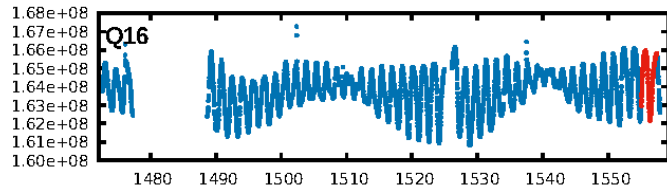
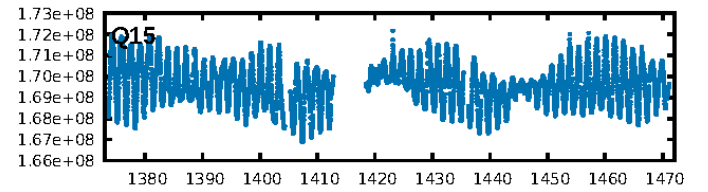
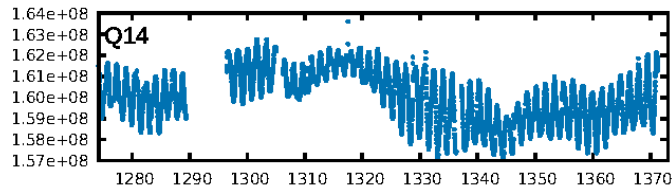
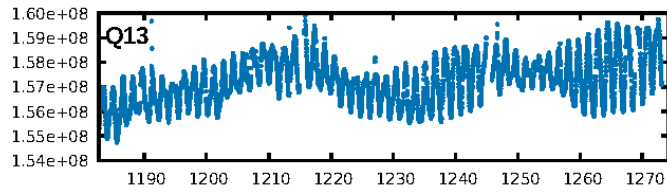
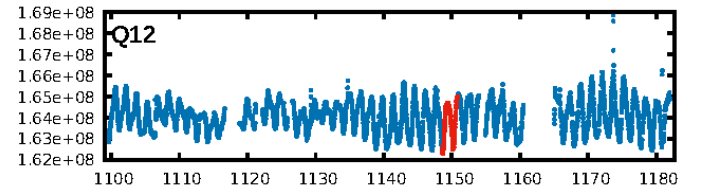
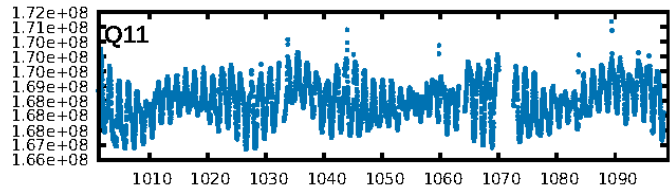
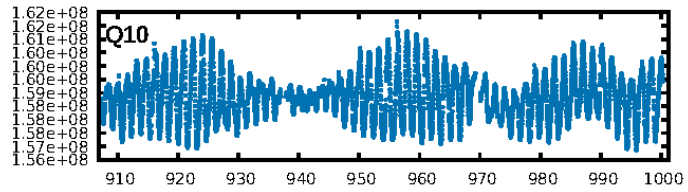
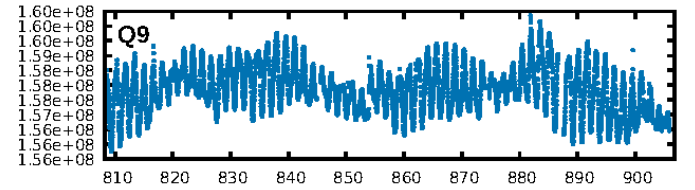
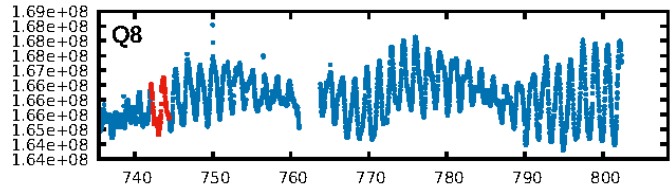
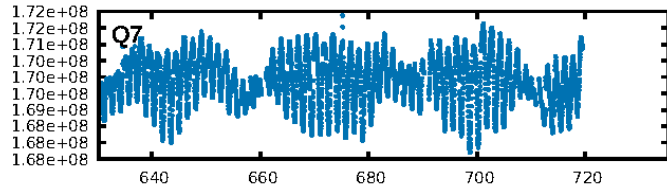
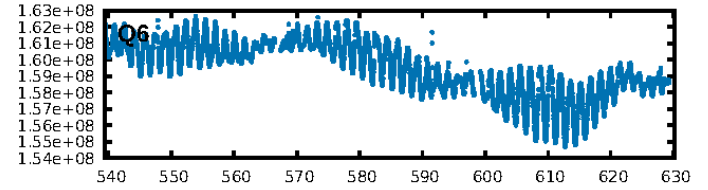
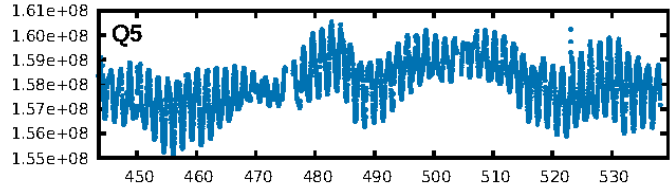
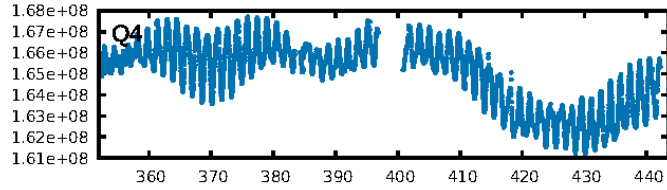
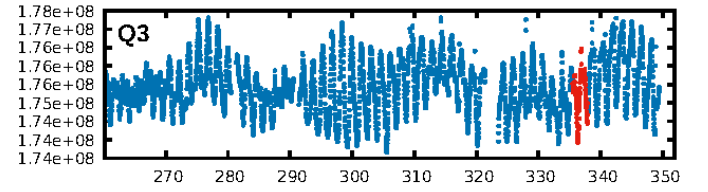
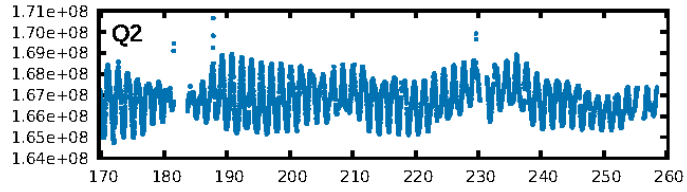
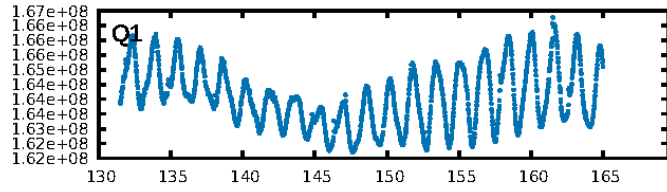
## DV Diagnostic Results:

ShortPeriod-sig: 100.0% [12.46 $\sigma$ ]  
LongPeriod-sig: 100.0% [36.61 $\sigma$ ]  
ModelChiSquare2-sig: 36.9%  
ModelChiSquareGof-sig: 100.0%  
Bootstrap-pfa: N/A  
RollingBand-fgt: 1.00 [4/4]  
GhostDiagnostic-chr: 0.38  
Centroid-sig: 32.3%  
Centroid-so: 0.117 arcsec [0.92 $\sigma$ ]  
OotOffset-rm: 0.221 arcsec [0.43 $\sigma$ ]  
KicOffset-rm: 0.295 arcsec [1.08 $\sigma$ ]  
OotOffset-st: 0/1/2/0 [3]  
KicOffset-st: 0/1/2/0 [3]  
DiffImageQuality-fgm: 0.67 [2/3]  
DiffImageOverlap-fno: 1.00 [3/3]

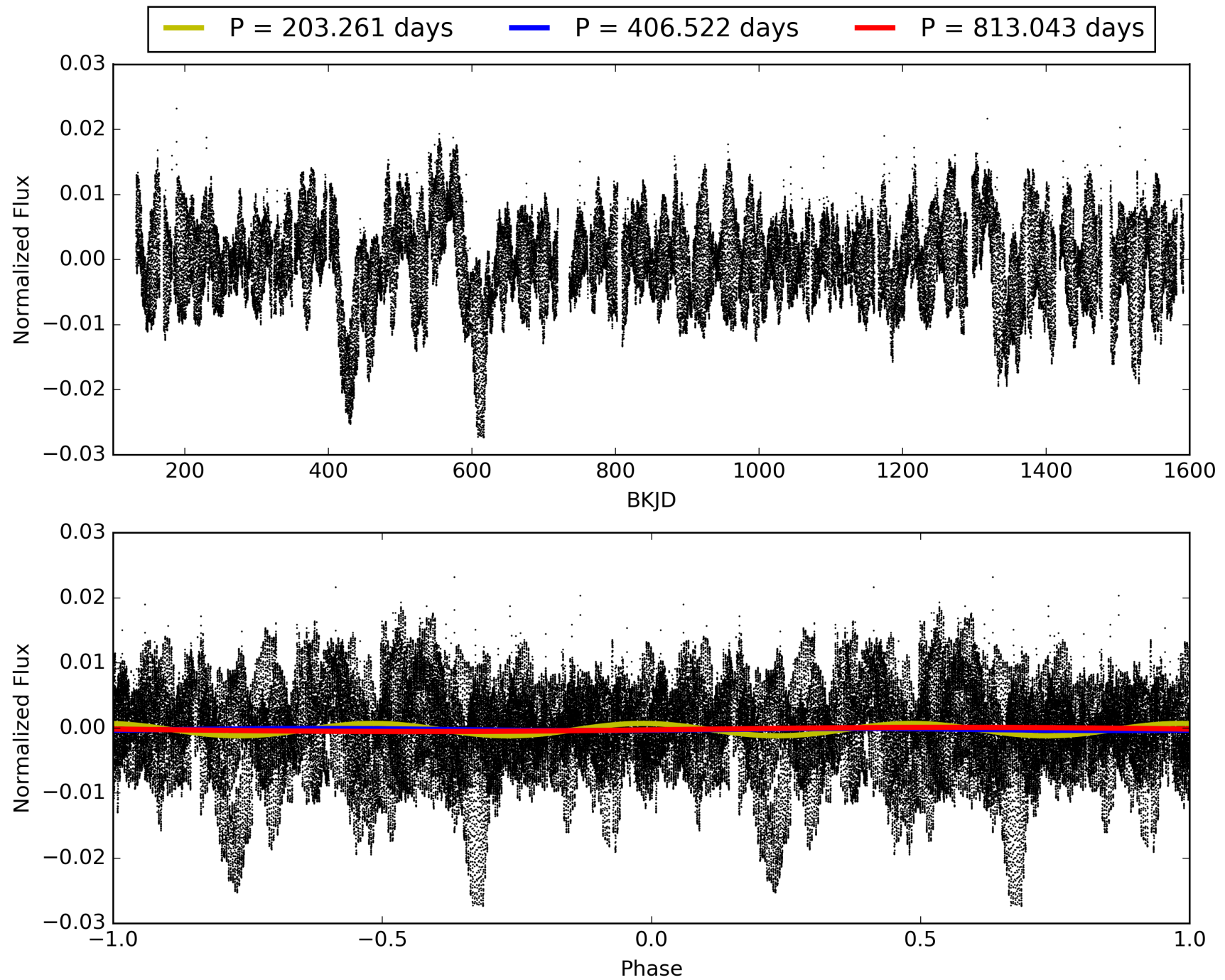
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 23:46:52 Z

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

## TCE 008695402-05, PDC Light Curves

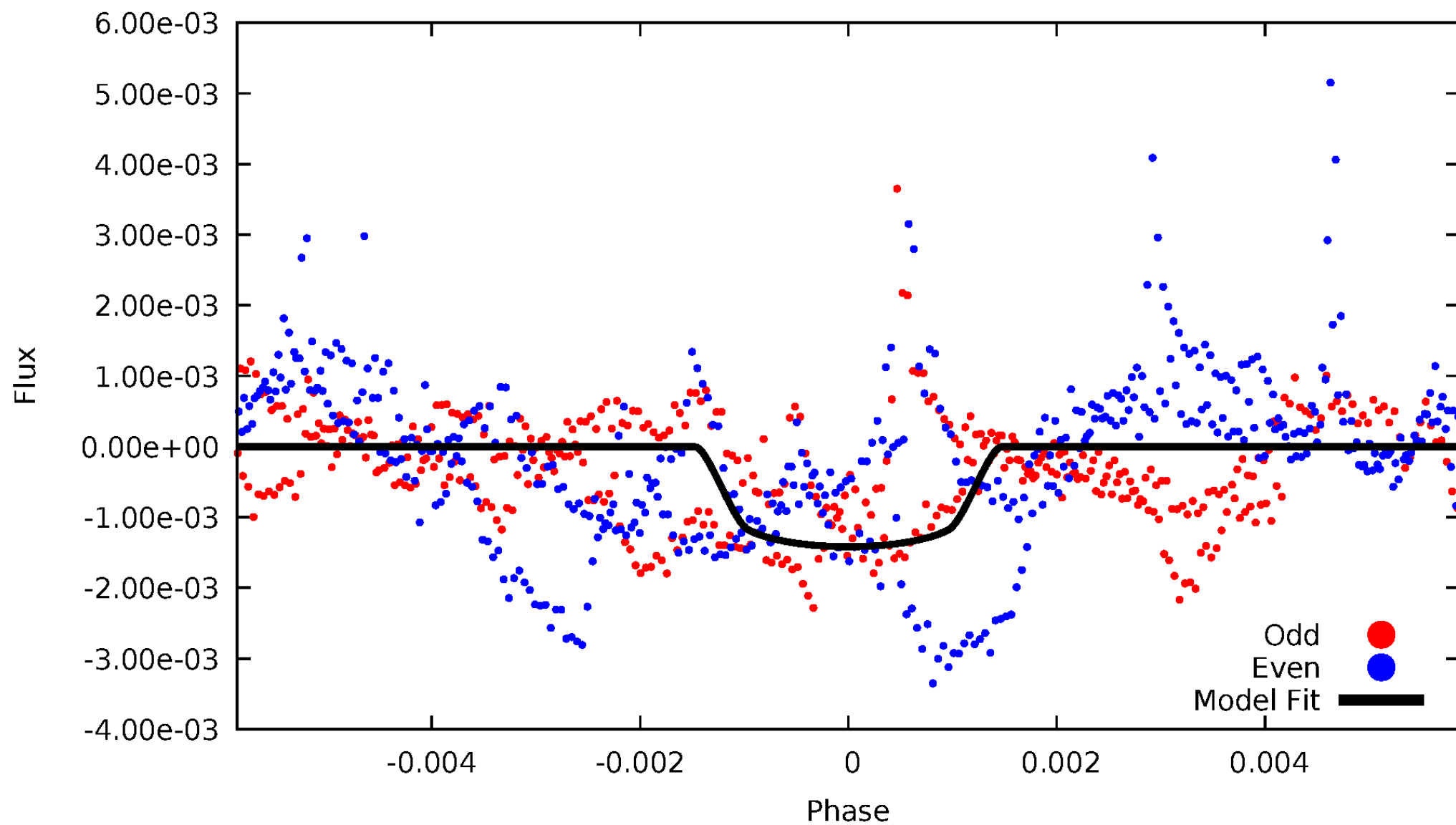


TCE 008695402-05



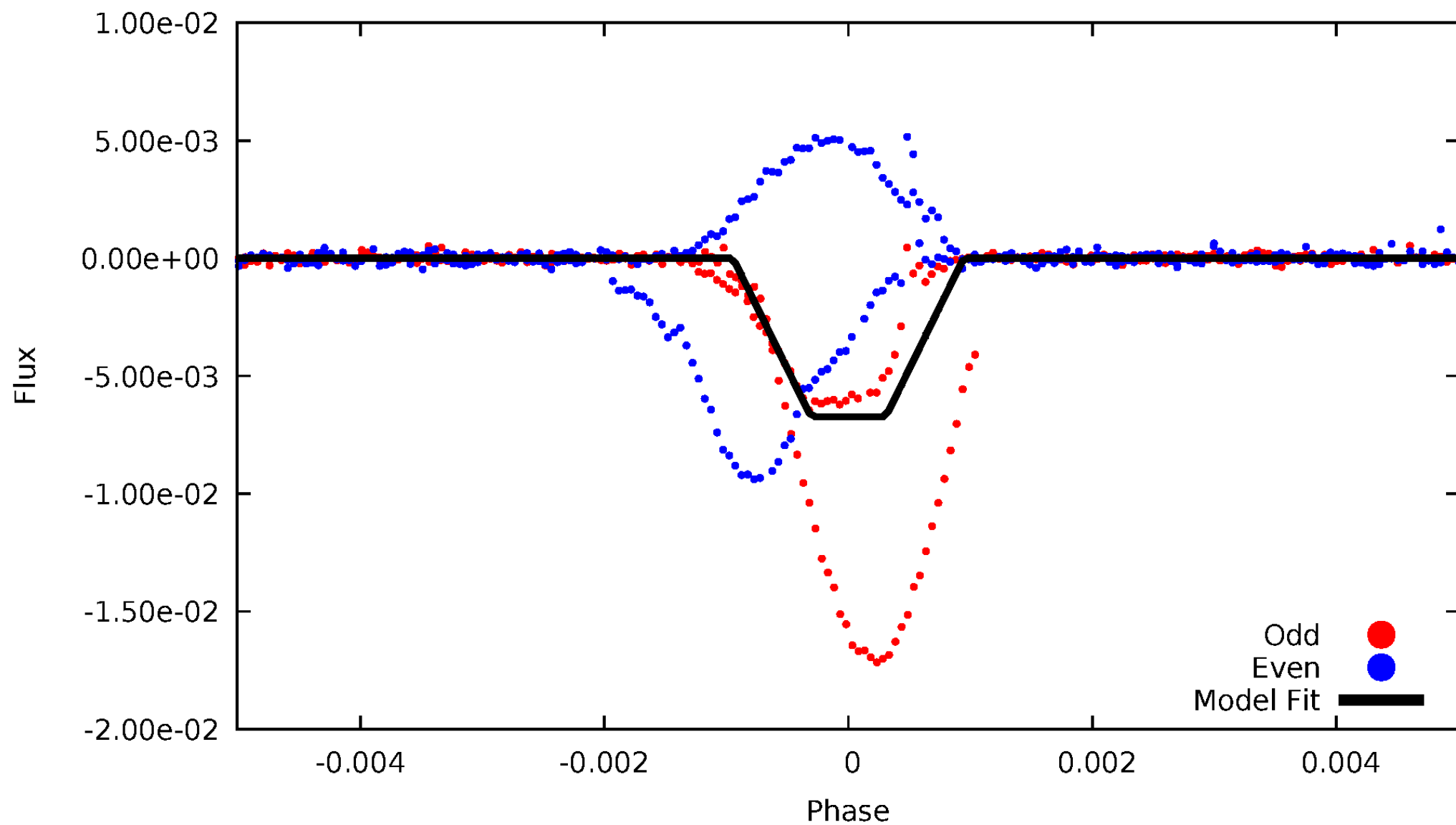
# DV Odd/Even

TCE 008695402-05



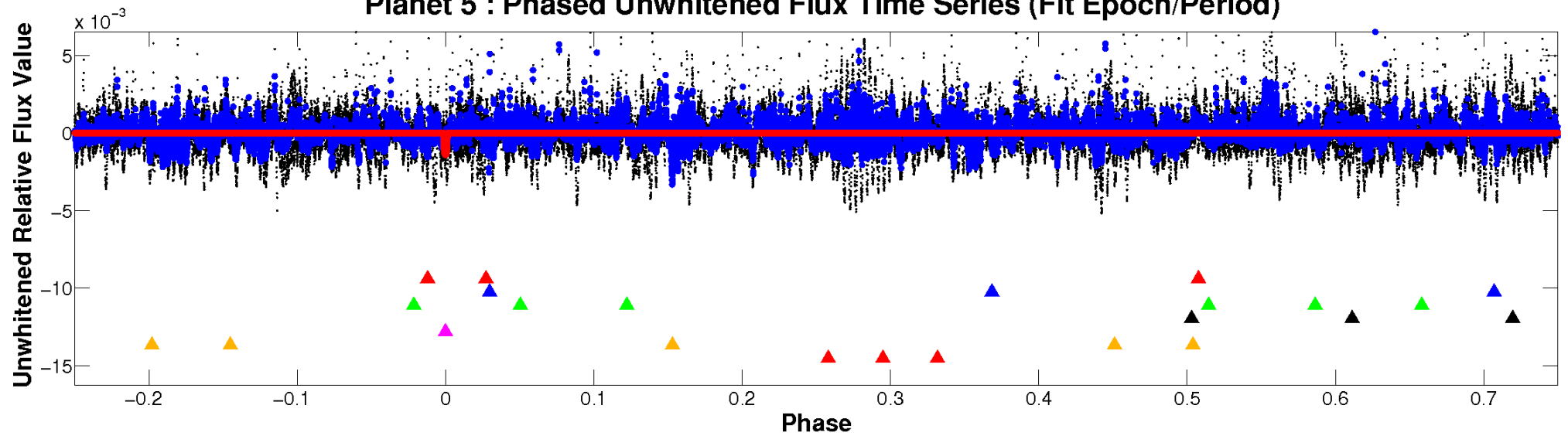
# ALT Odd/Even

TCE 008695402-05

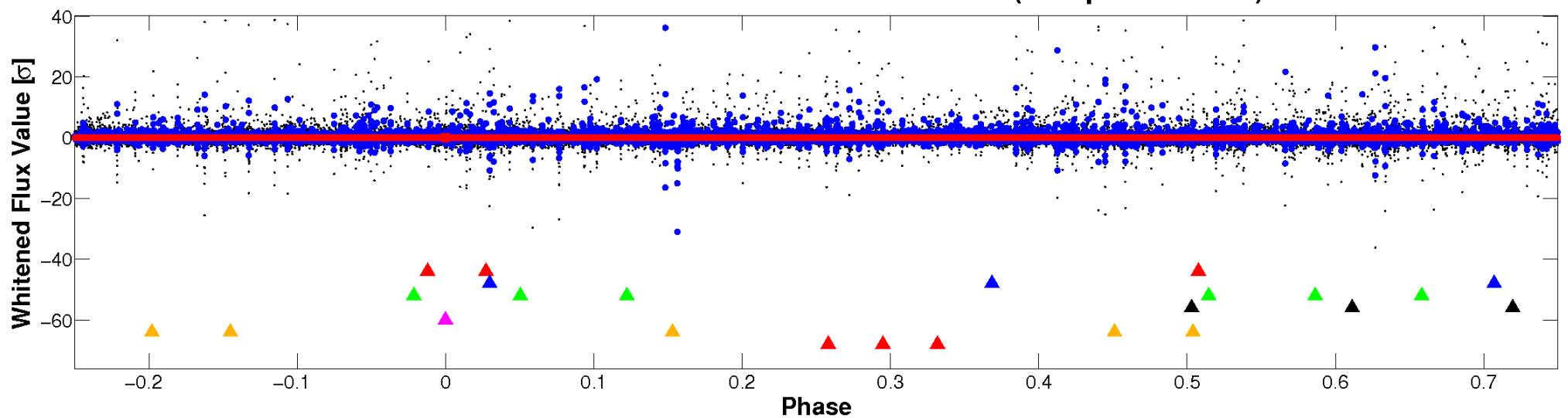


# Non-Whitened Vs. Whitened Light Curve

## Planet 5 : Phased Unwhitened Flux Time Series (Fit Epoch/Period)



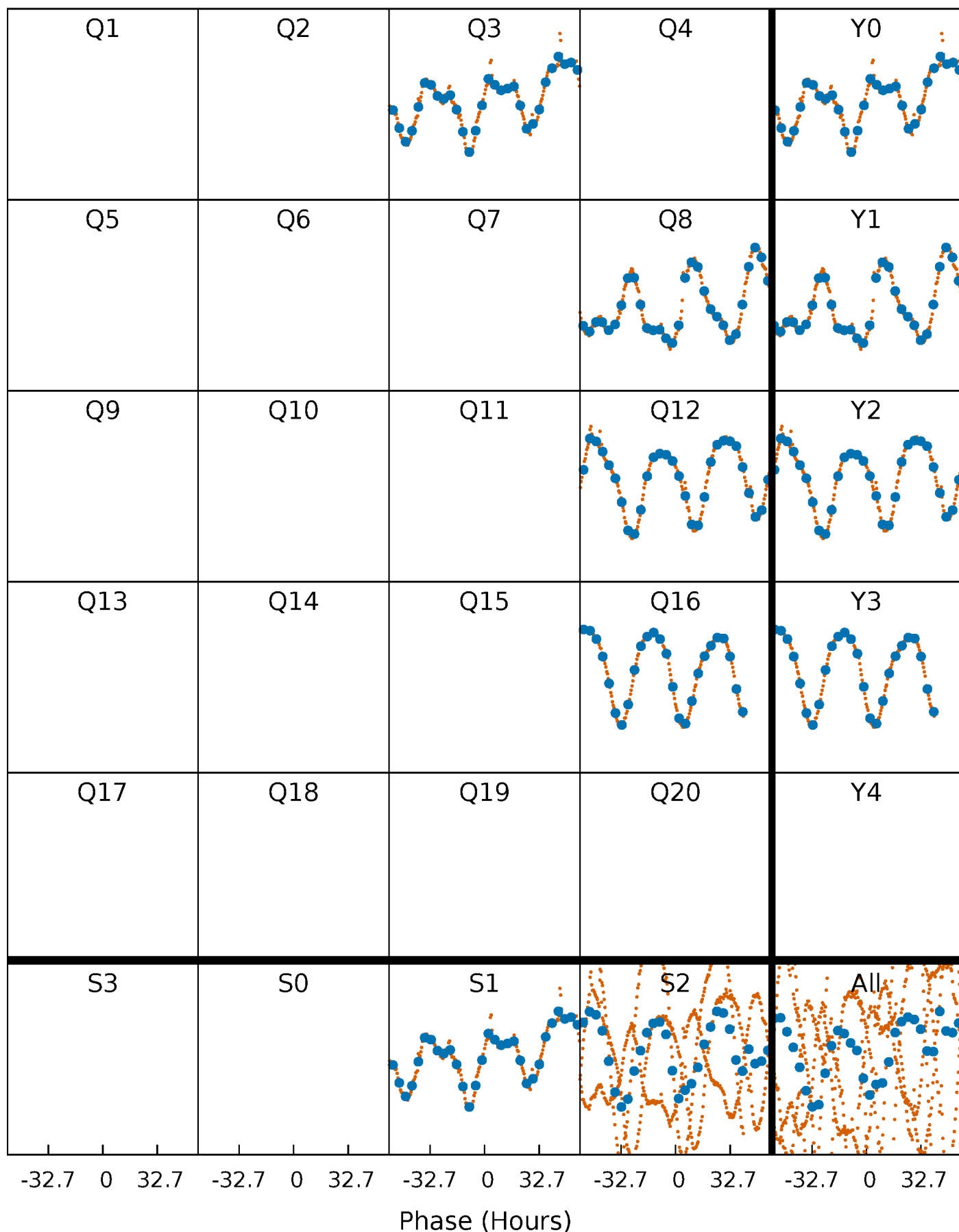
## Planet 5 : Phased Whitened Flux Time Series (Fit Epoch/Period)





# PDC Quarter-Phased Transit Curves

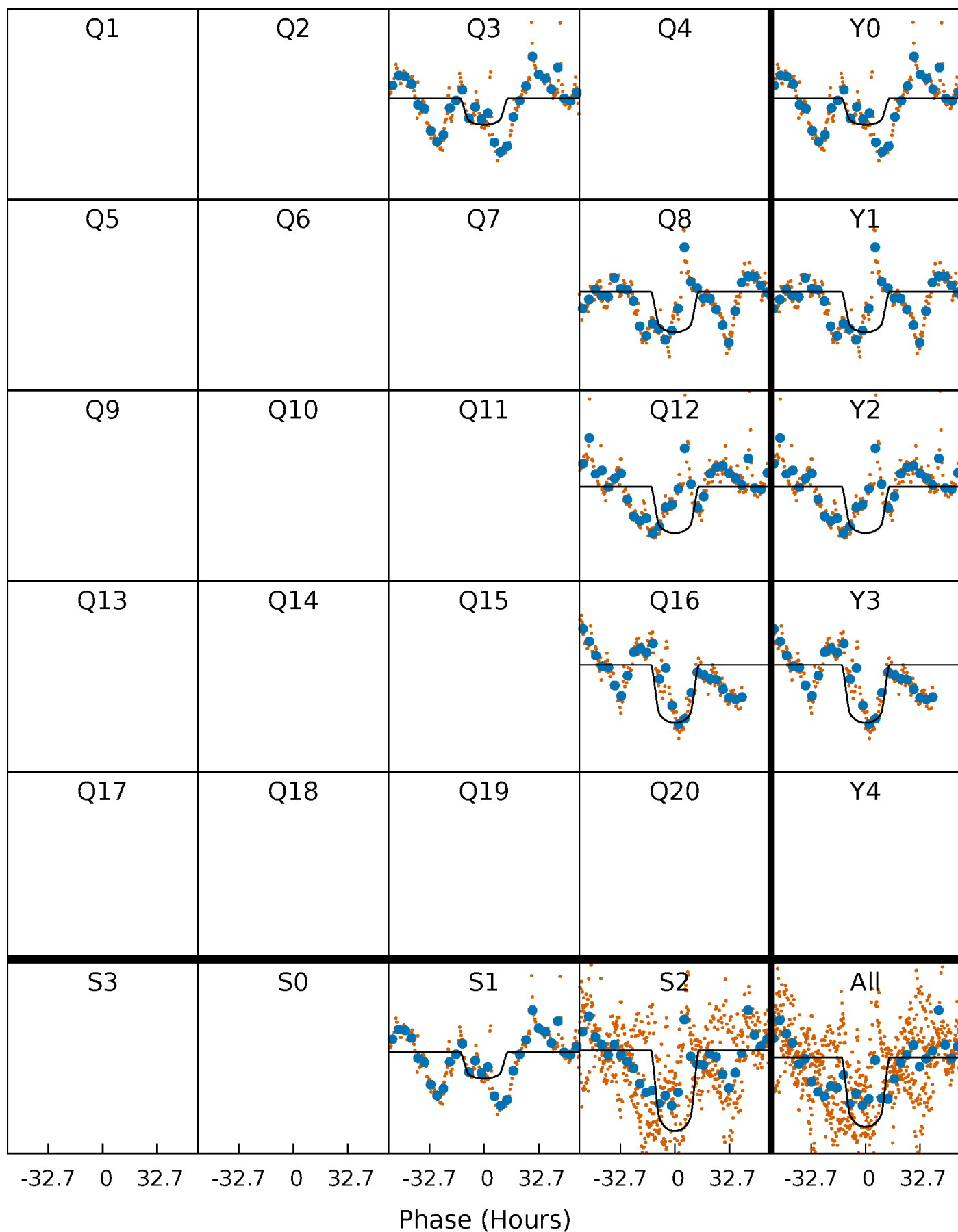
TCE 008695402-05     $P=406.521544$  Days     $T_0=336.702035$  (BKJD)





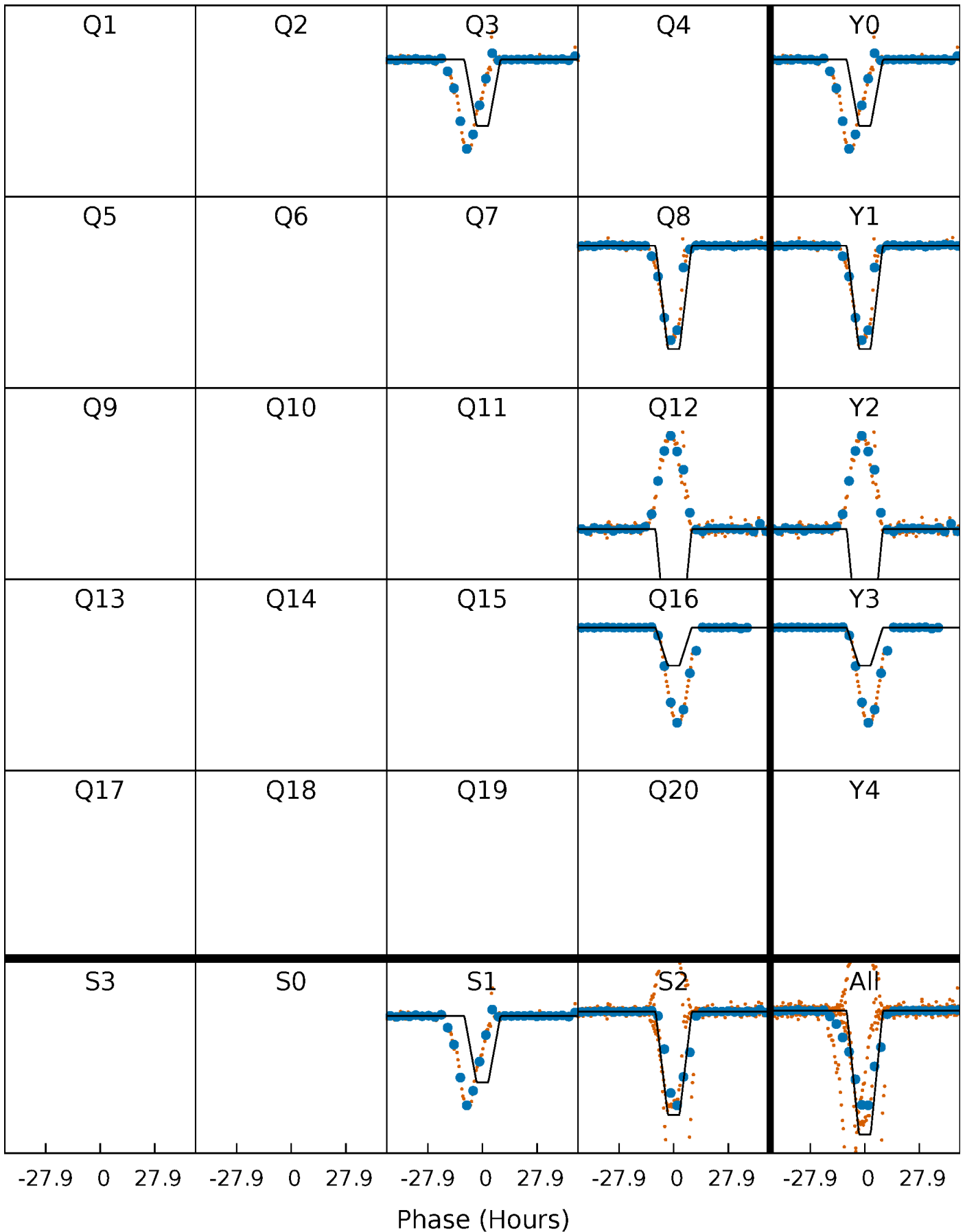
# DV Quarter-Phased Transit Curves

TCE 008695402-05     $P=406.521544$  Days     $T_0=336.702035$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

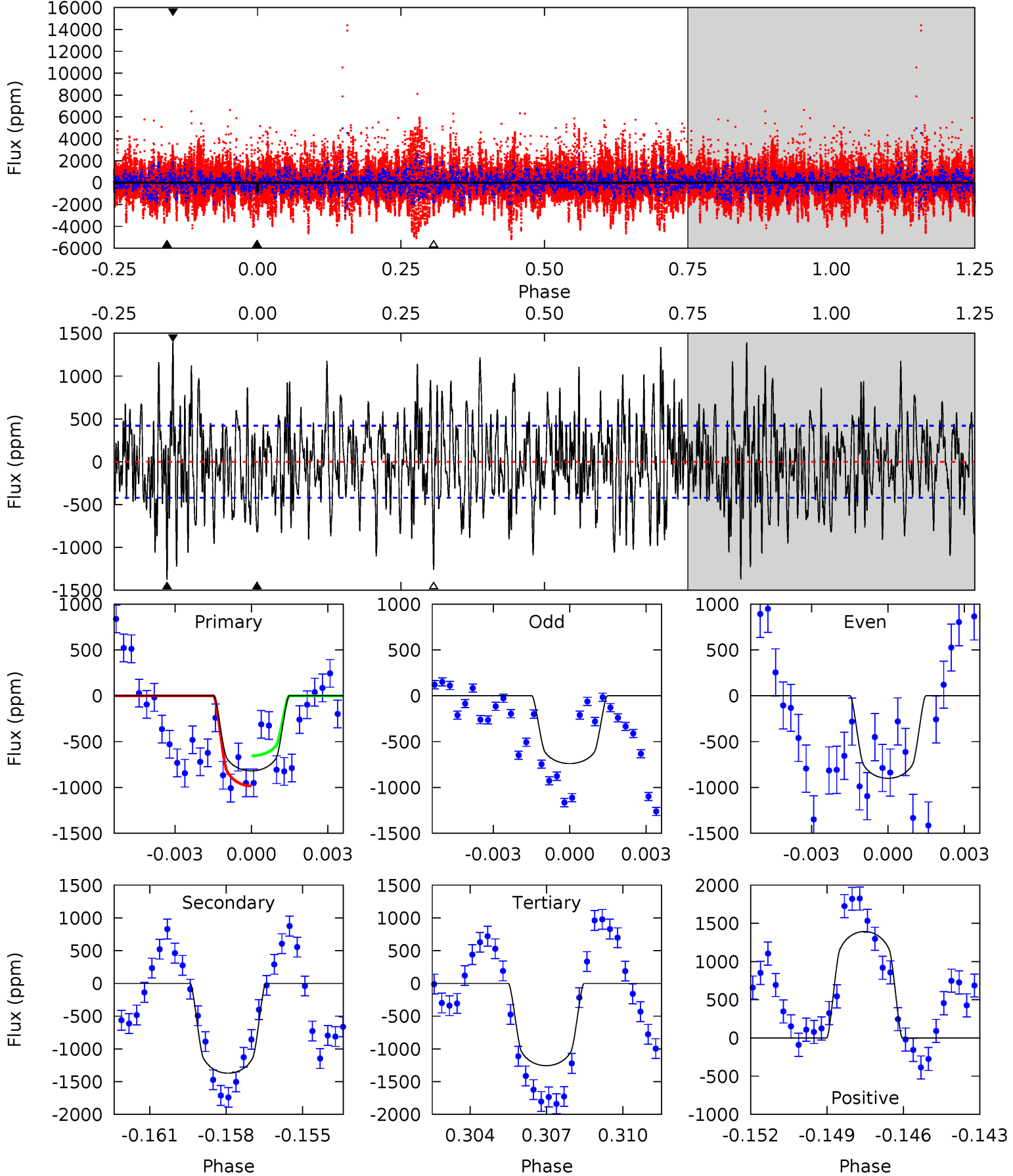
TCE 008695402-05     $P=406.566543$  Days     $T_0=336.651805$  (BKJD)



# DV Model-Shift Uniqueness Test

008695402-05, P = 406.521544 Days, E = 336.702035 Days

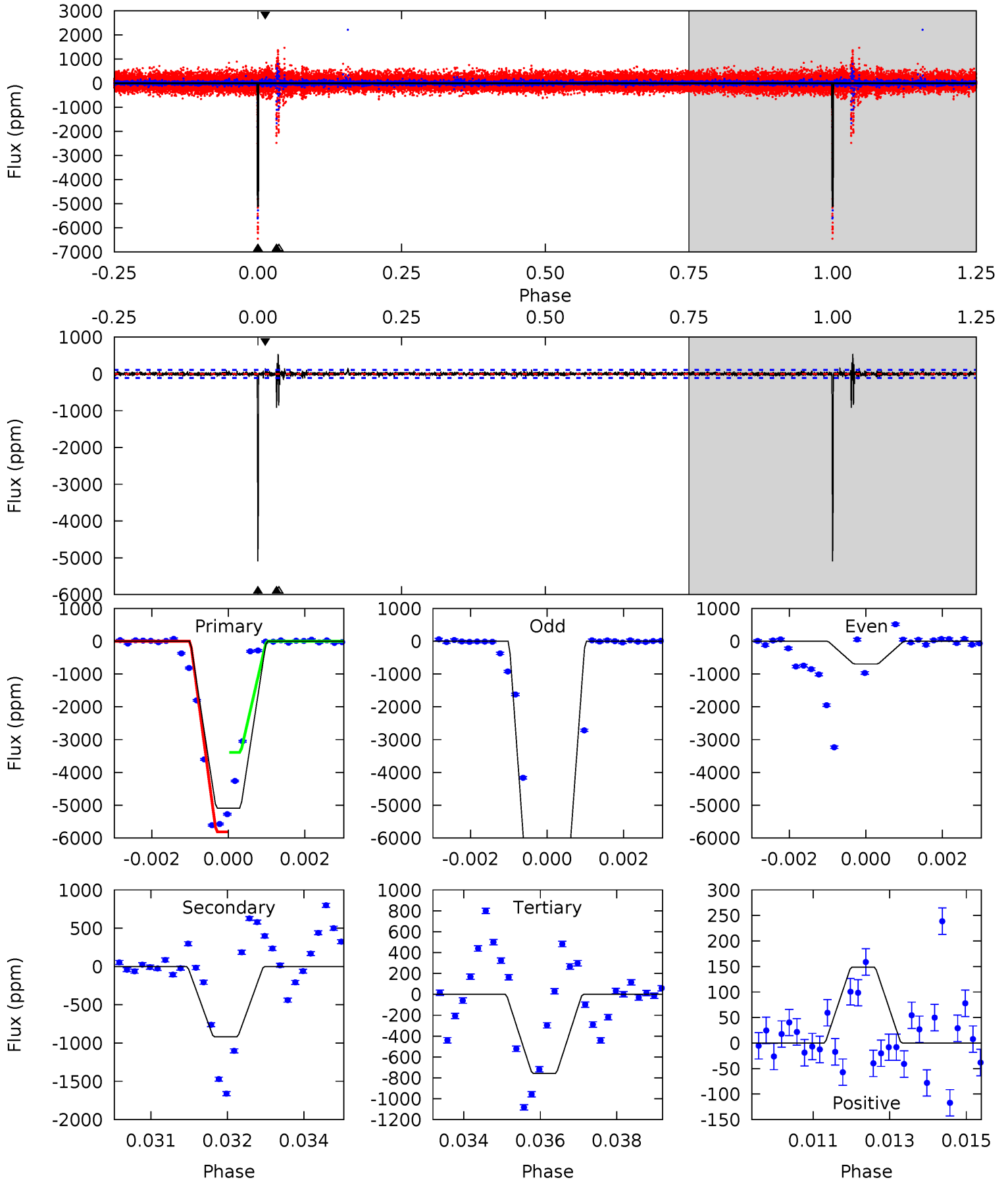
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
10.2	17.1	15.7	17.4	5.25	2.97	5.38	-5.45	-7.16	1.43	-0.27	0.97	1.12	0.50	2.05



# Alt Model-Shift Uniqueness Test

008695402-05, P = 406.566543 Days, E = 336.651805 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
249.3	45.0	37.0	7.28	5.34	3.10	1.37	212.3	242.1	7.97	37.7	261.2	1.04	0.10	0



### Stellar Parameters For KIC 008695402

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R$ ( $R_{\odot}$ )	$M(M_{\odot})$	$p_{\star}$ ( $\text{g}\cdot\text{cm}^{-3}$ )
	$5889^{+193}_{-193}$	$3.983^{+0.405}_{-0.135}$	$-0.060^{+0.300}_{-0.300}$	$1.765^{+0.402}_{-0.747}$	$1.095^{+0.153}_{-0.187}$	$0.280^{+0.998}_{-0.114}$
	+3%/-3%	+10%/-3%	+500%/-500%	+23%/-42%	+14%/-17%	+356%/-41%
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 008695402-05 / KOI

Detrend	Depth (ppm)	$R_p$ ( $R_{\oplus}$ )	$T_{\text{max}}$ (K)	$T_{\text{obs}}$ (K)	$A_{\text{obs}}$
DV	$-1371 \pm 80$	$7.52^{+1.55}_{-1.74}$	$452^{+34}_{-51}$	$5641^{+420}_{-338}$	$16412^{+11144}_{-4769}$
Alt.	$-919 \pm 20$	$15.35^{+2.45}_{-3.11}$	$451^{+35}_{-45}$	$3921^{+119}_{-112}$	$2658^{+1355}_{-668}$

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

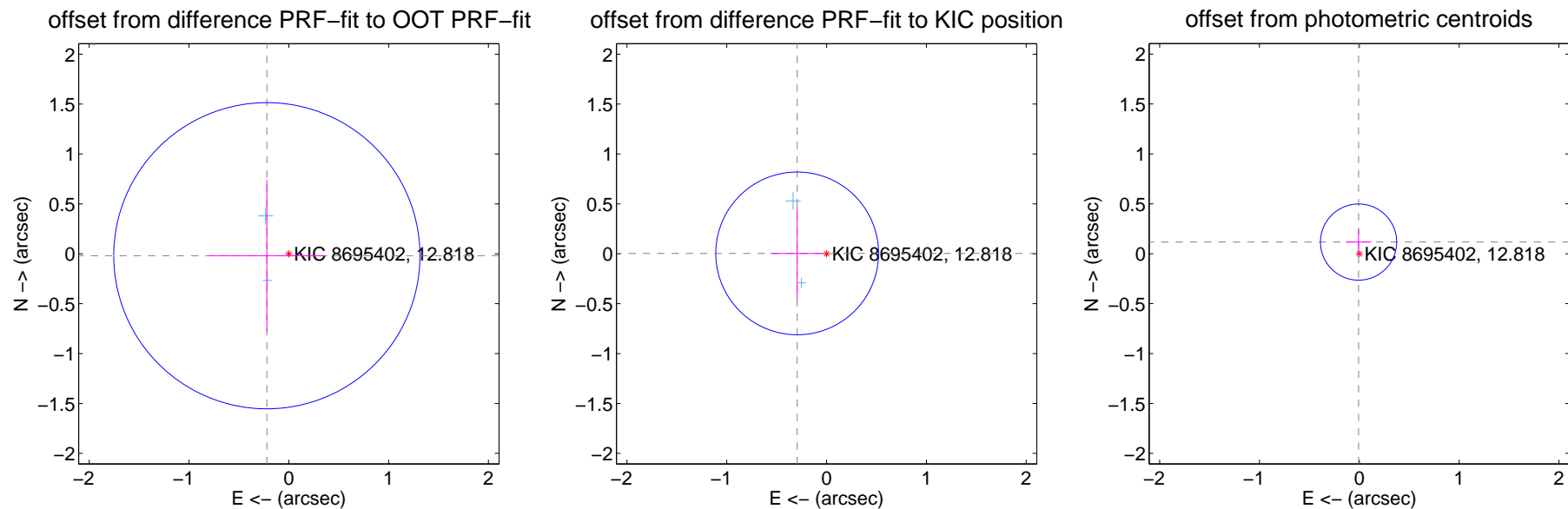
## DV Centroid Data

Supplemental centroid analysis for 008695402-05. Kepler magnitude: 12.82. Transit SNR 5.14

There are 2 quarters with good PRF difference image offsets

The direct PRF centroid is offset from the target star catalog position by about 0.13 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.221 \pm 0.511$	0.43	$0.220 \pm 0.579$	$-0.019 \pm 0.760$
PRF-fit source offset from KIC position	$0.295 \pm 0.272$	1.08	$0.295 \pm 0.266$	$0.004 \pm 0.469$
photometric centroid source offset	$0.12 \pm 0.13$	0.92	$0.01 \pm 0.13$	$0.12 \pm 0.13$



Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: three- $\sigma$ . Red \*: target star. Blue \*: Other stars. Text next to a star gives its KIC ID and kepmag. KIC IDs > 15,000,000 are from the UKIRT catalog.

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

Q1 no difference image



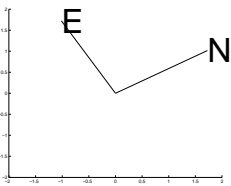
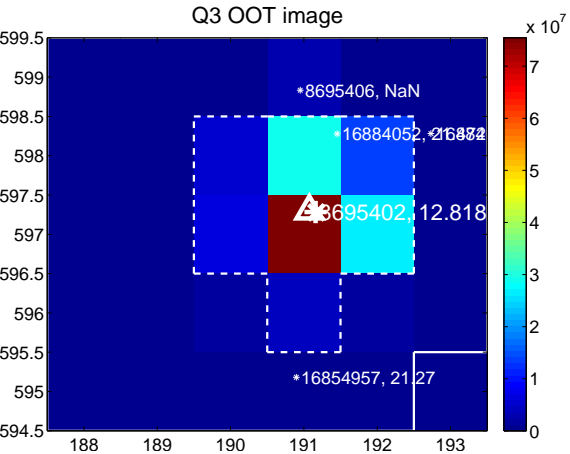
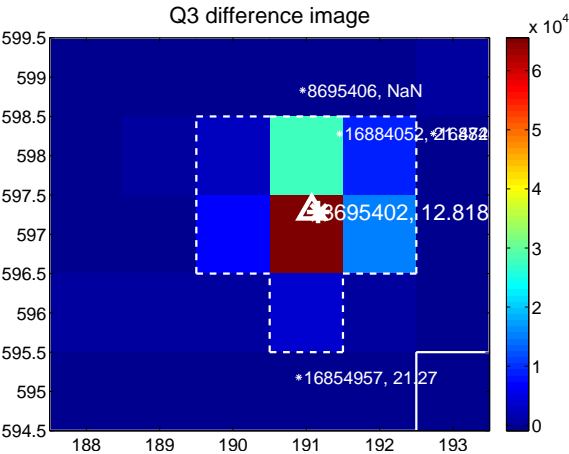
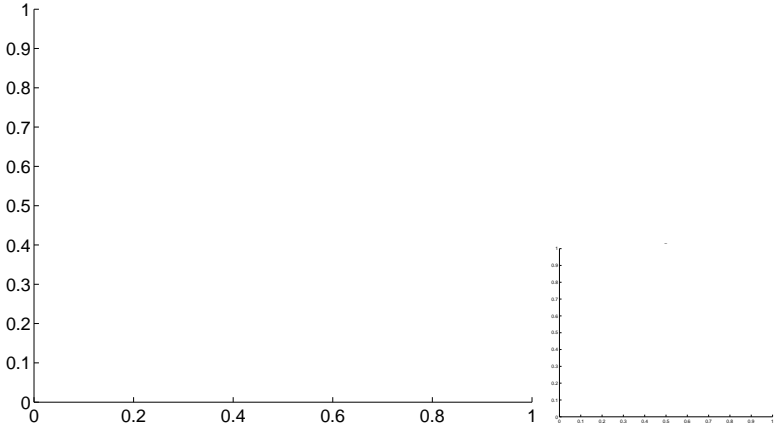
Q1 no OOT image



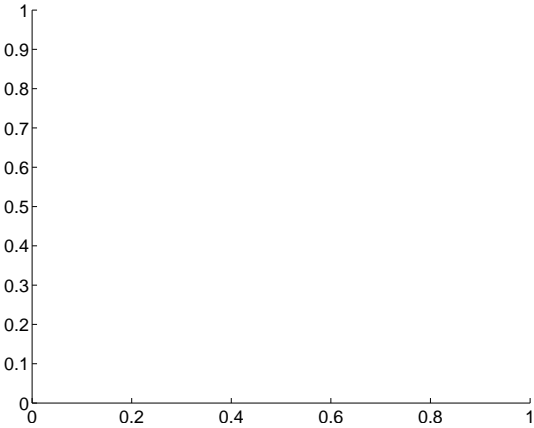
Q2 no difference image



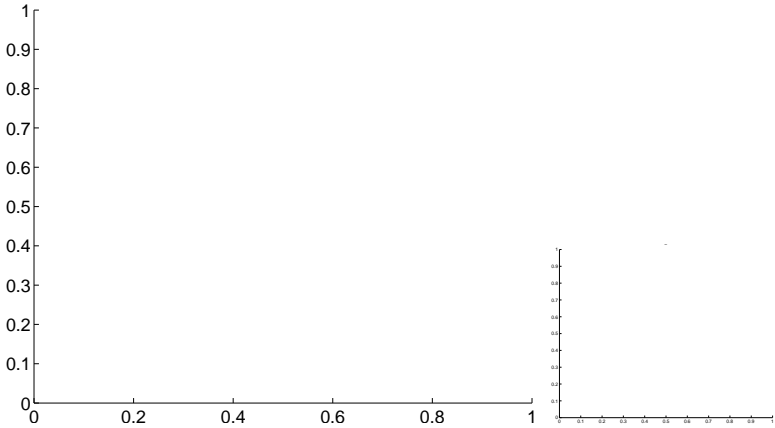
Q2 no OOT image



Q4 no difference image



Q4 no OOT image



white ×: KIC target position; +: OOT centroid; △: difference centroid. red ✕: large negative pixel value.

Q5 no difference image



Q5 no OOT image



Q6 no difference image



Q6 no OOT image



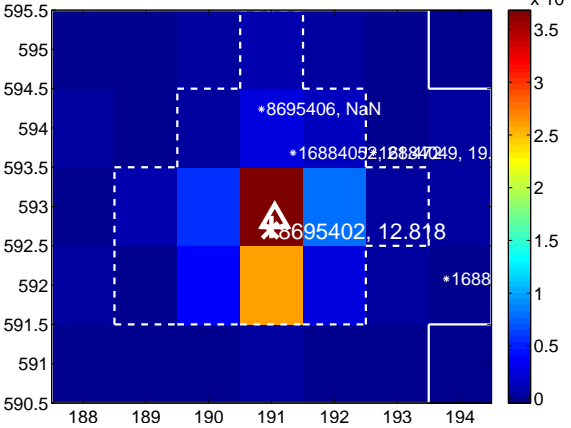
Q7 no difference image



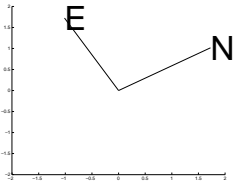
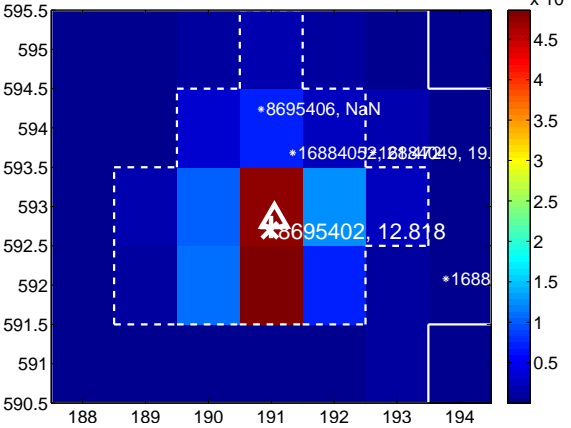
Q7 no OOT image



Q8 difference image



Q8 OOT image





white ×: KIC target position; +: OOT centroid; △: difference centroid. red ✕: large negative pixel value.

Q9 no difference image



Q9 no OOT image



Q10 no difference image



Q10 no OOT image



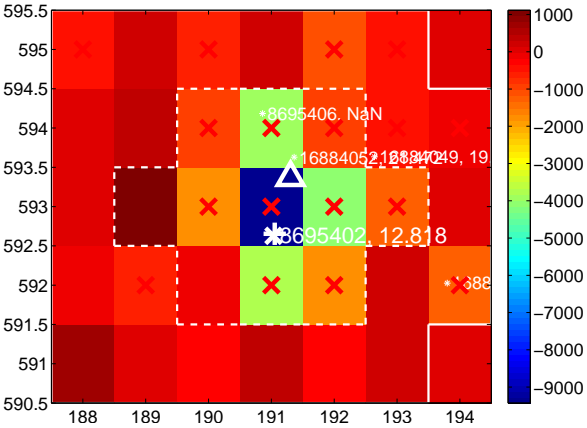
Q11 no difference image



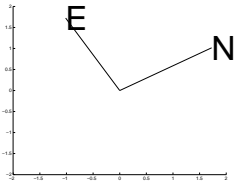
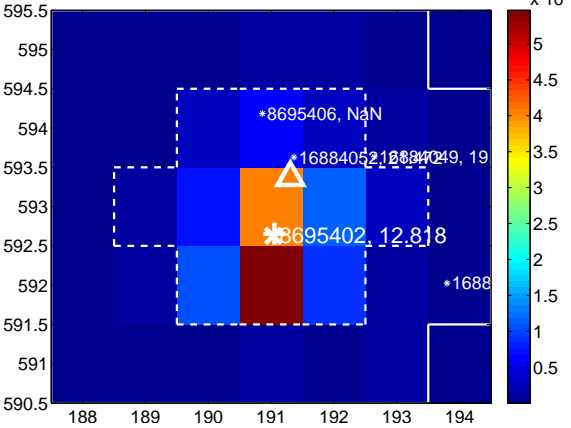
Q11 no OOT image



Q12 difference image. Poor Quality



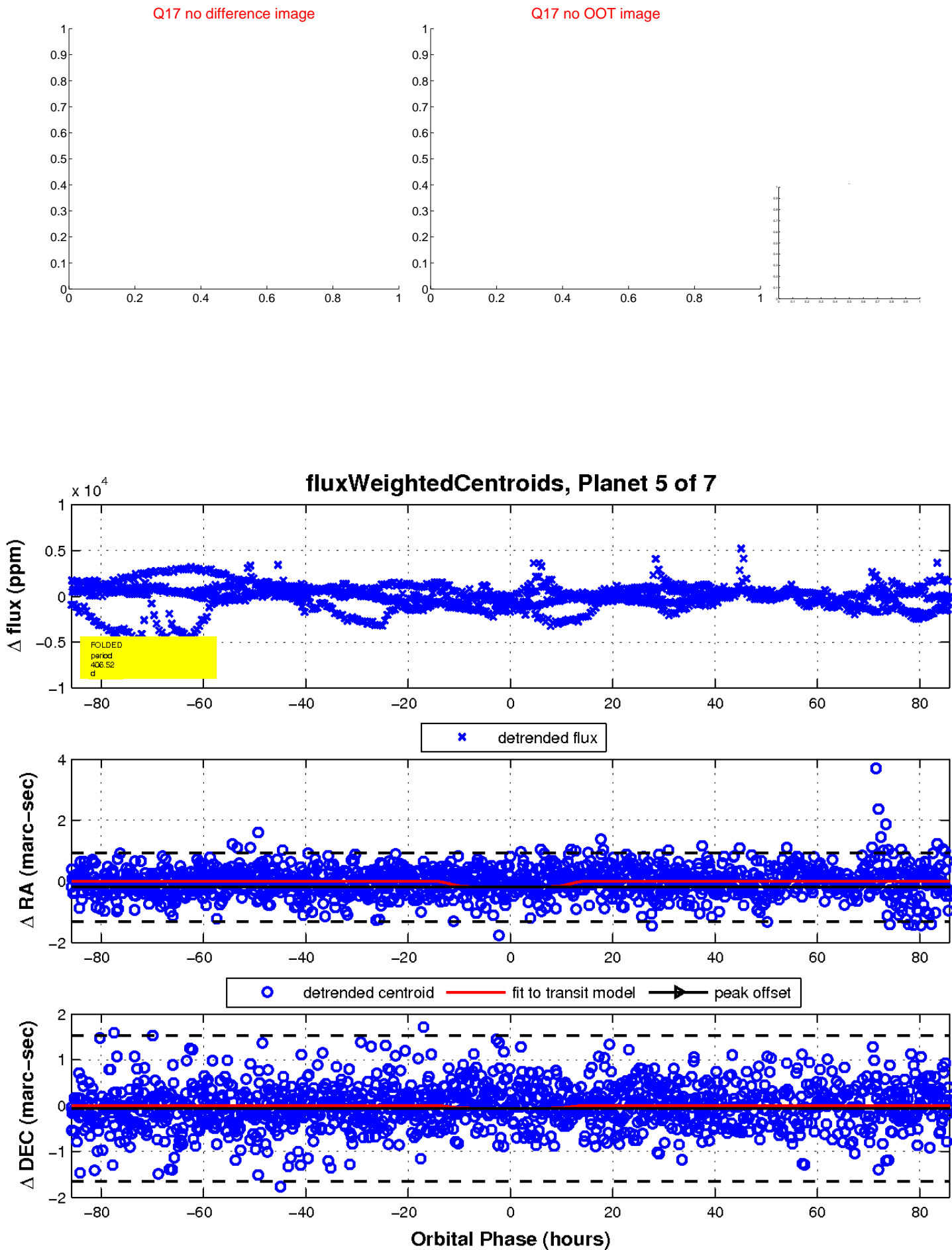
Q12 OOT image



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

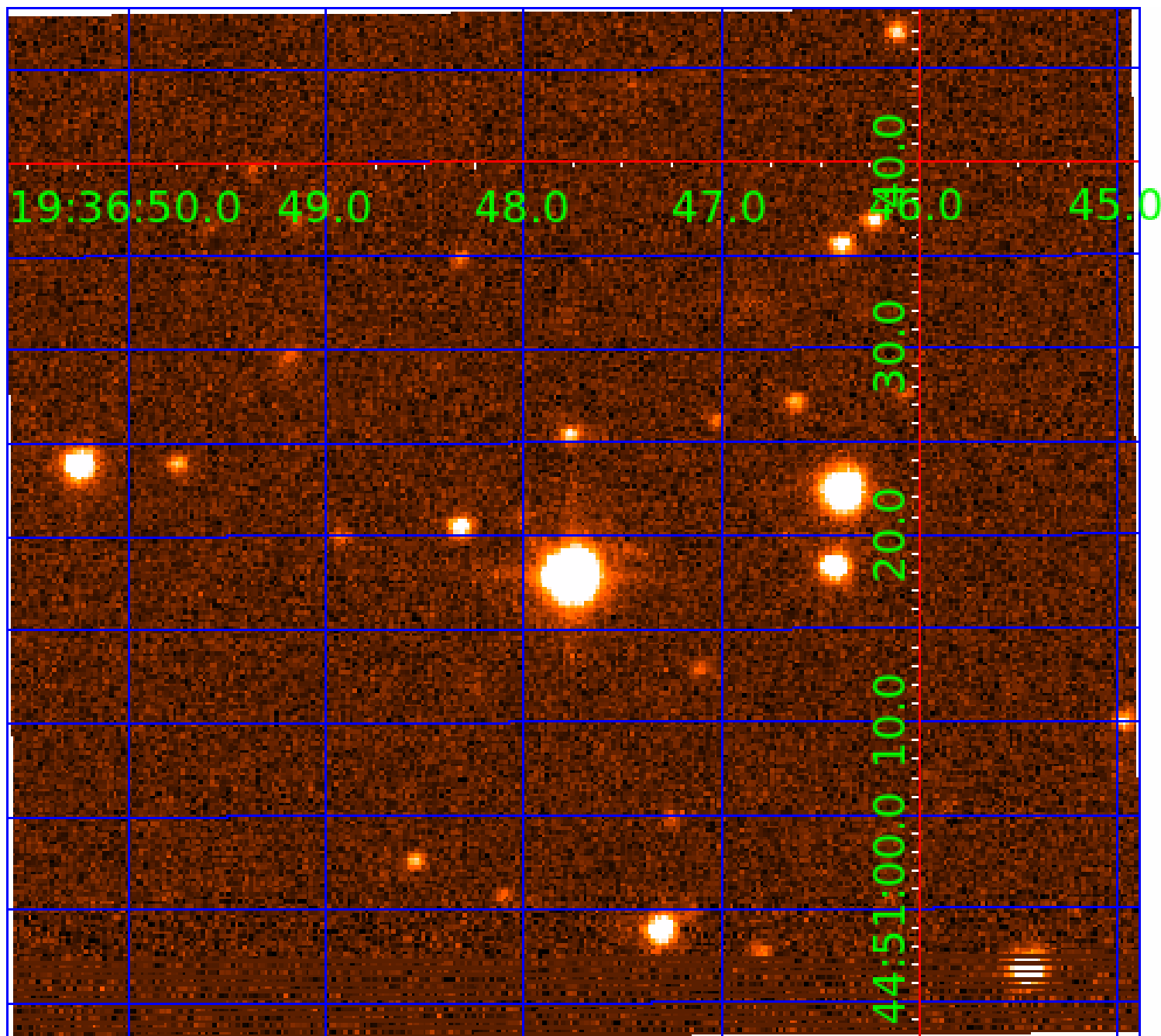


white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



UKIRT Image

Declination



# KIC 008695402

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
008695402-01	OBS	No	617.778020	331.818659	252.1	13.287	16.3	1.5	1.76	5889	2.90	1.57
008695402-02	OBS	No	675.375518	217.618516	888.0	6.155	16.7	5.4	1.76	5889	5.22	1.39
008695402-03	OBS	No	217.859802	328.021052	264.3	2.293	18.8	3.0	1.76	5889	3.18	6.30
008695402-04	OBS	No	450.527722	541.199730	273.2	3.560	16.6	2.5	1.76	5889	3.36	2.39
008695402-05	OBS	No	406.521544	336.702035	1416.6	28.626	13.0	5.1	1.76	5889	7.79	2.74
008695402-06	OBS	No	263.848148	277.730590	849.3	3.025	15.4	6.6	1.76	5889	5.32	4.88
008695402-07	OBS	No	391.554688	471.559488	462.2	3.500	12.7	-1.0	1.76	5889	3.77	2.88

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008695402-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_TRACKER—LPP_DV—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
008695402-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_SKYE—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
008695402-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS
008695402-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_TRACKER—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_TER_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
008695402-05	OBS	FP	0.00	1	0	0	0	LPP_DV—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—CENT_FEW_DIFFS
008695402-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—INCONSISTENT_TRANS
008695402-07	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES—LPP_DV—ALL_TRANS_CHASES—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_NOFITS

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

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

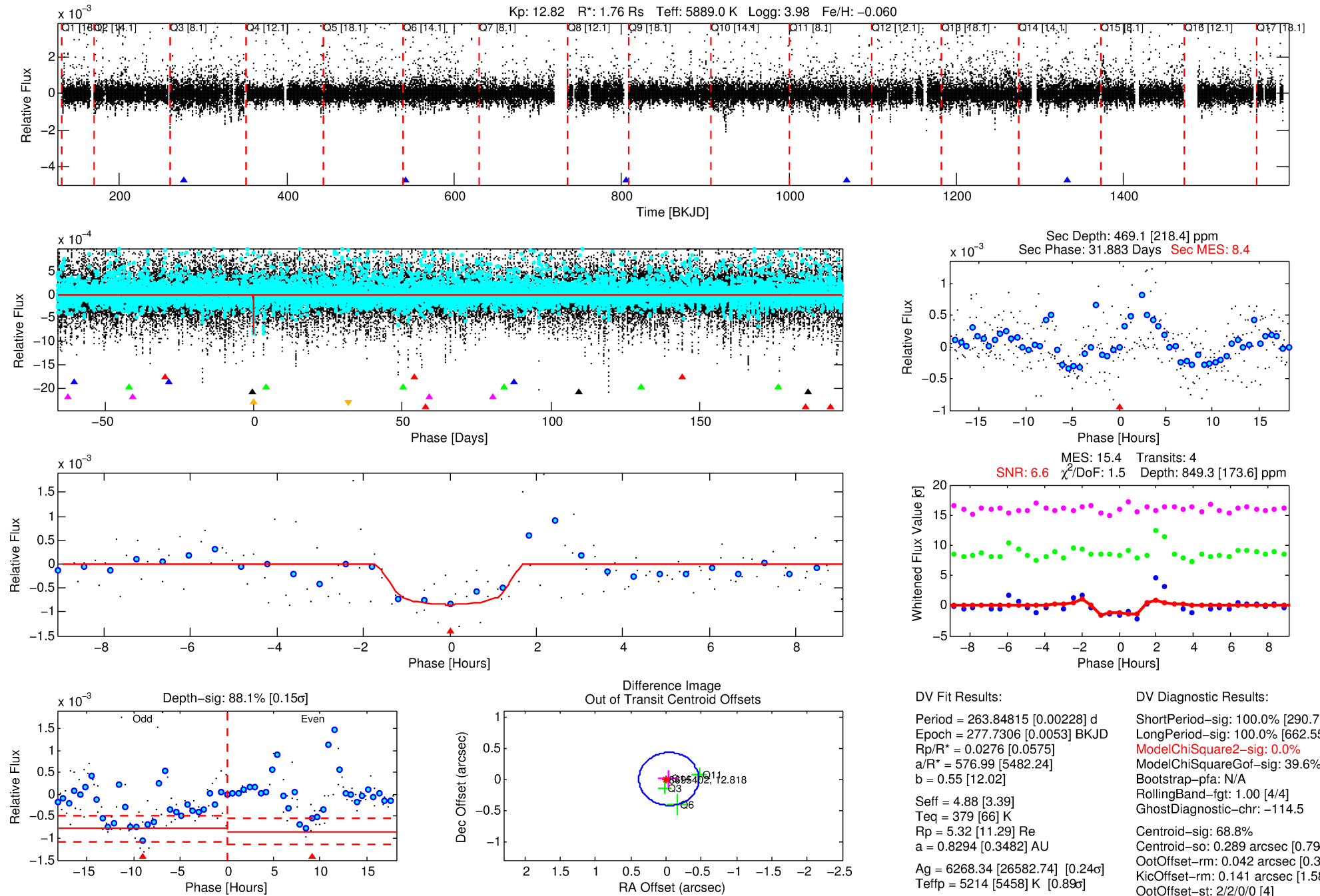
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

Ephemeris Match Information For 008695402-06

No Significant Match Found

# DV One-Page Summary

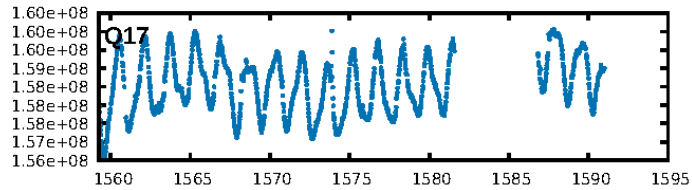
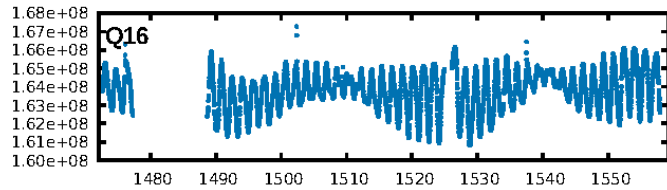
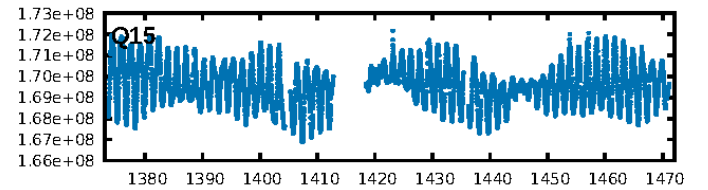
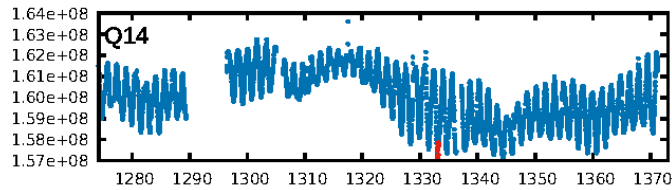
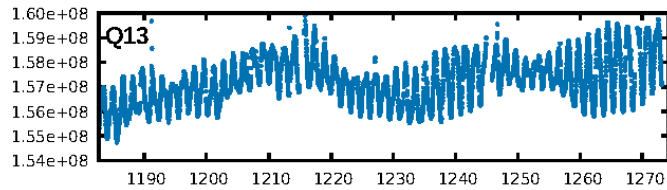
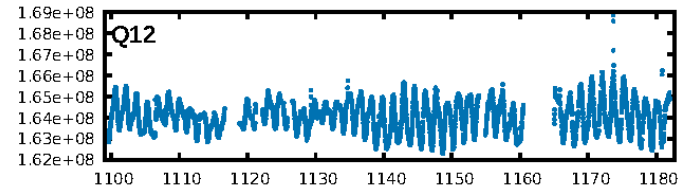
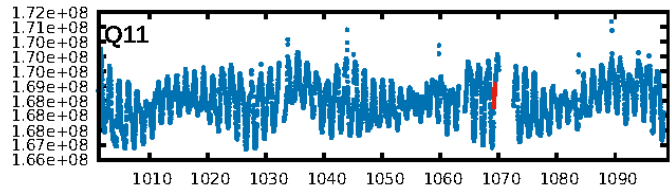
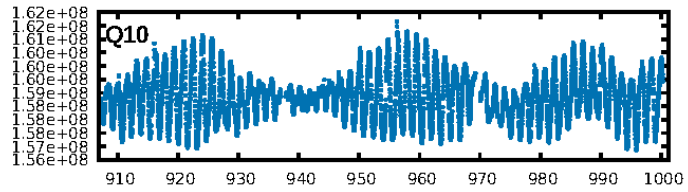
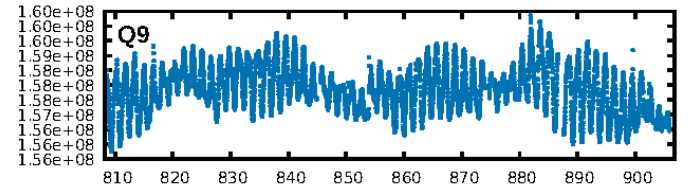
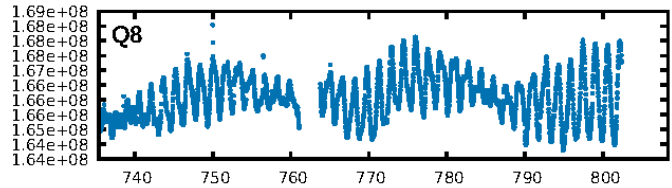
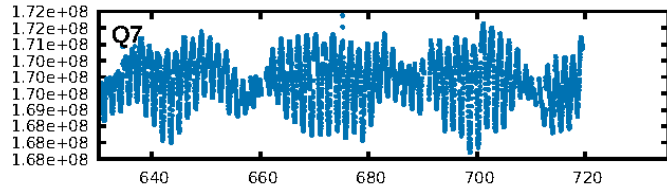
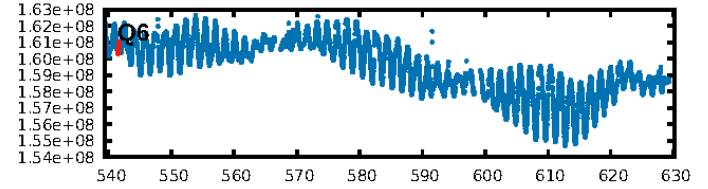
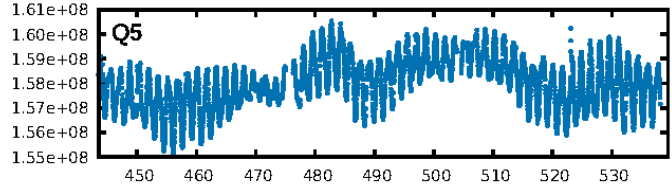
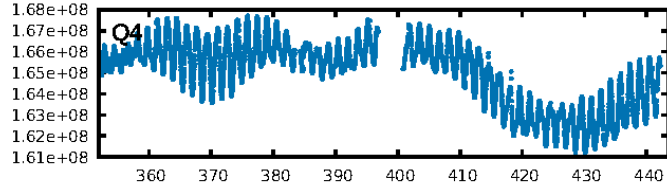
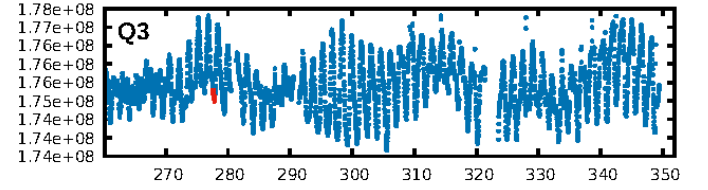
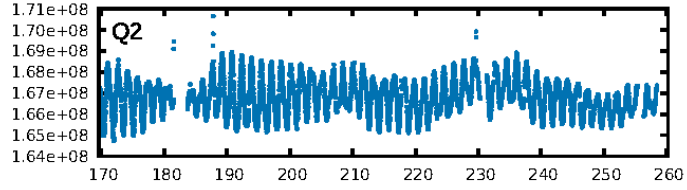
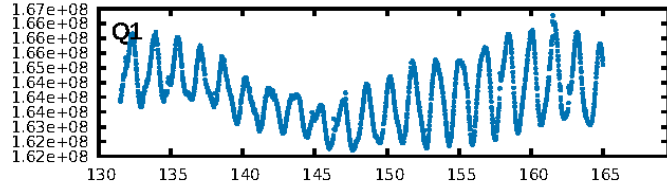
KIC: 8695402 Candidate: 6 of 7 Period: 263.848 d



Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 23:47:06 Z

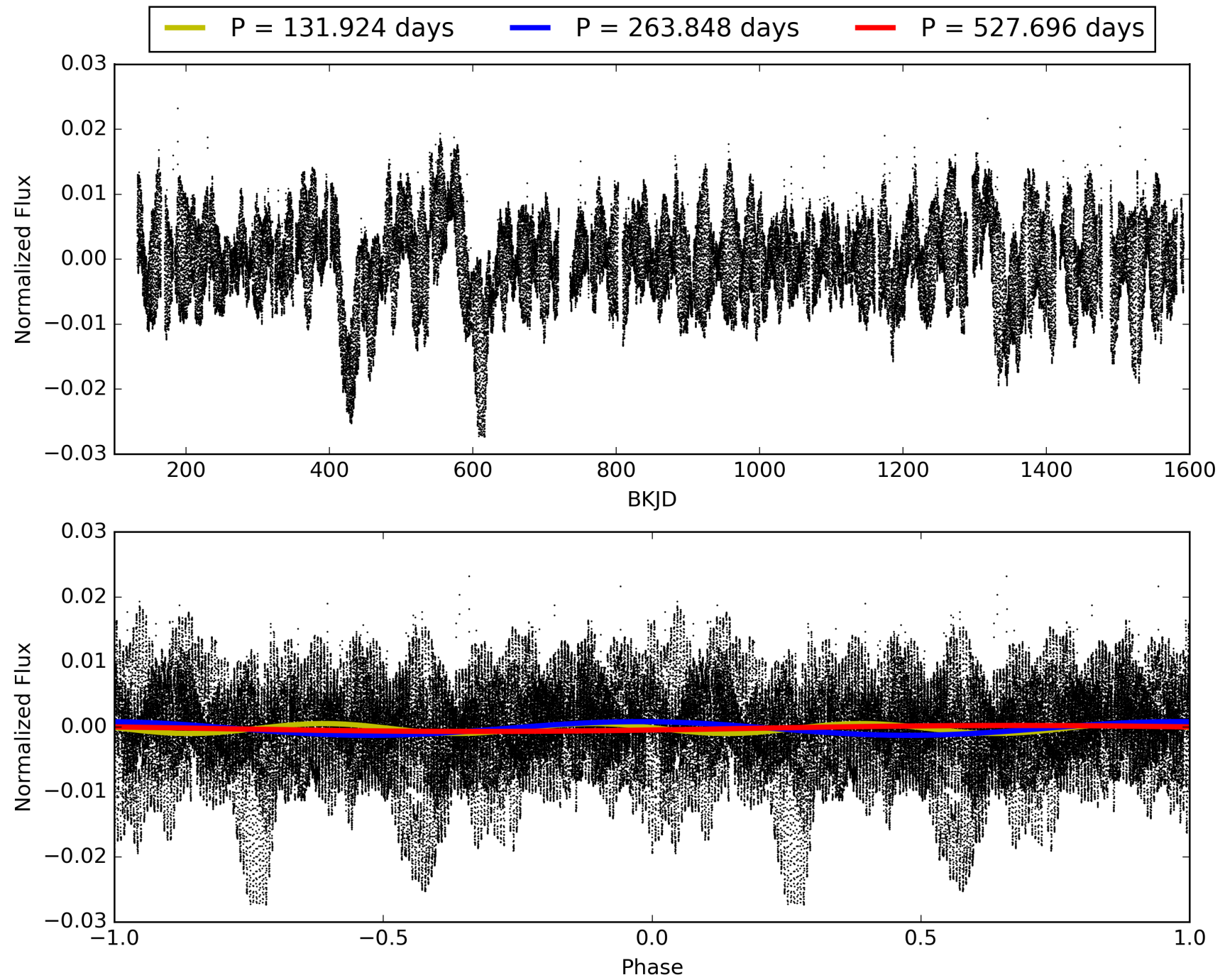
This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

## TCE 008695402-06, PDC Light Curves





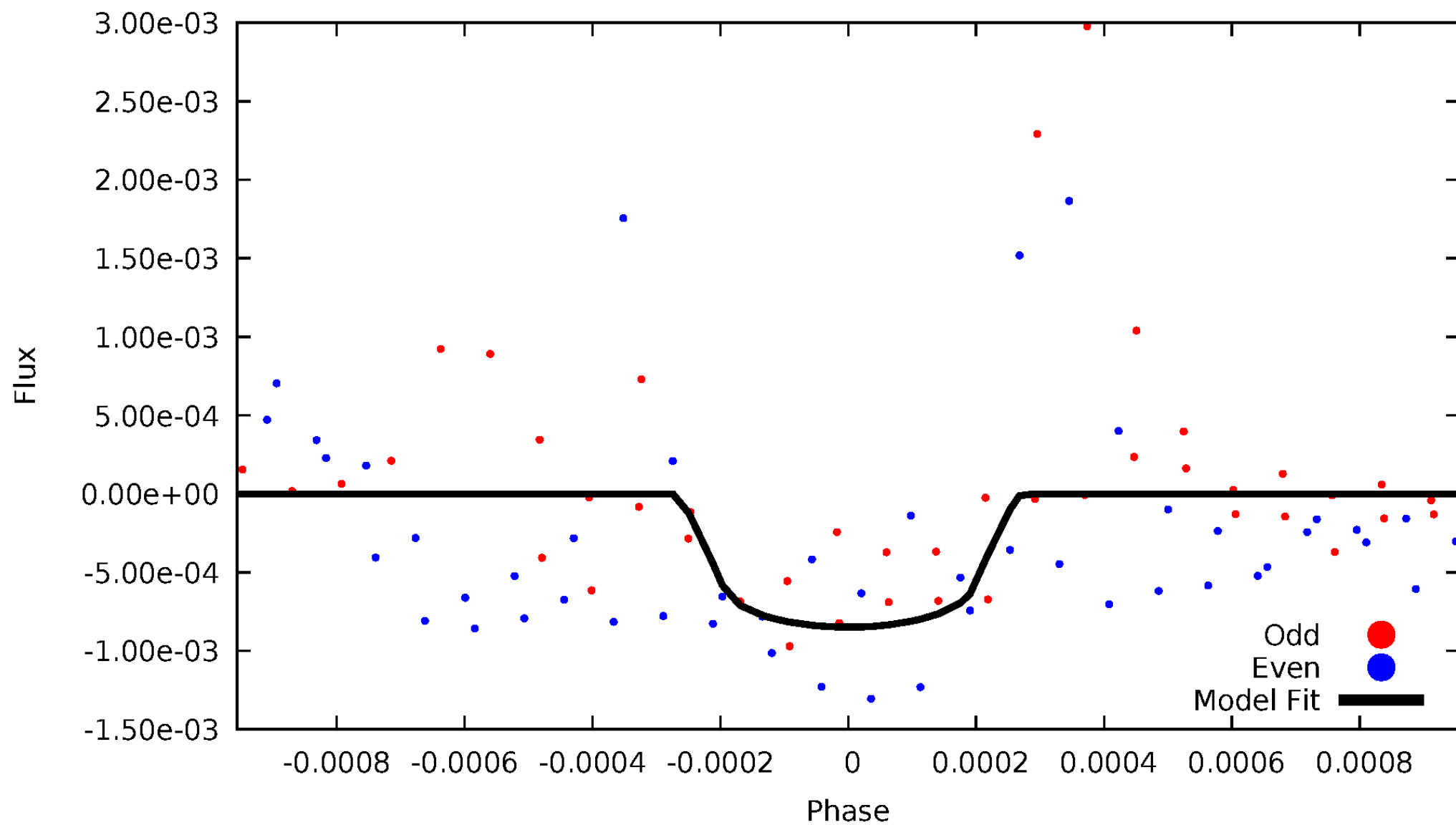
TCE 008695402-06





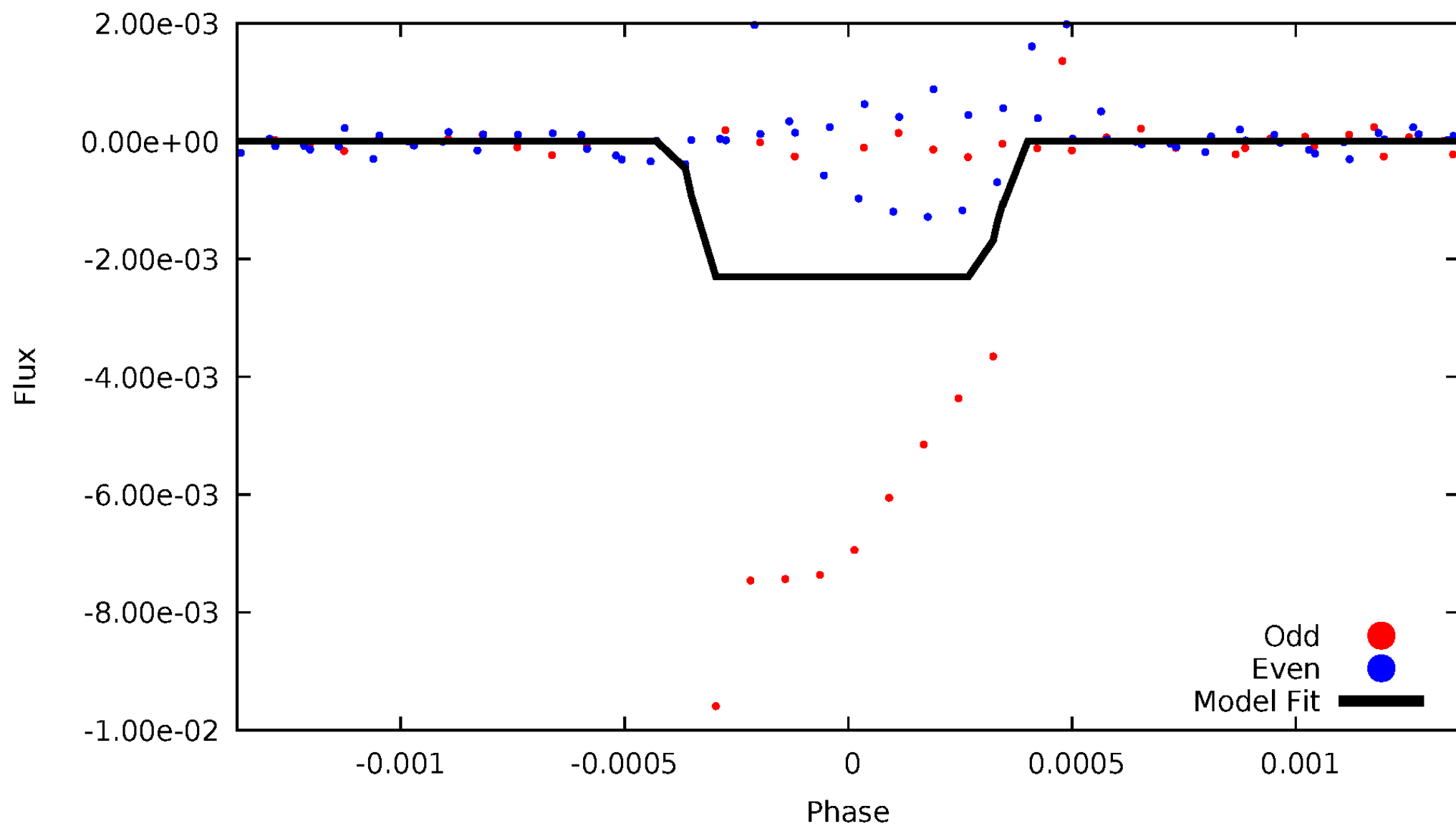
# DV Odd/Even

TCE 008695402-06



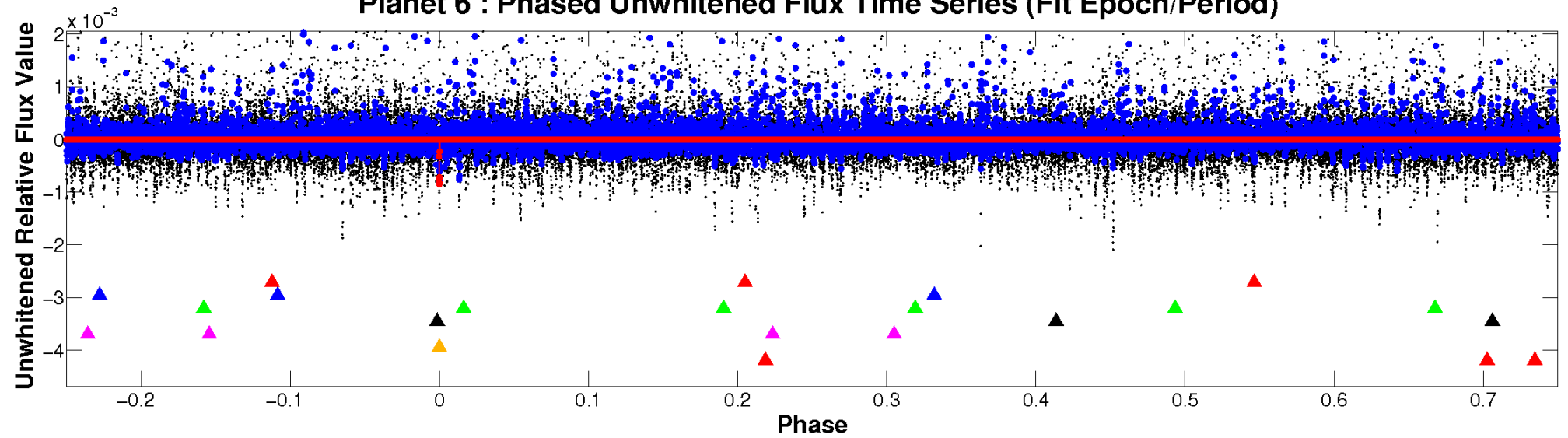
# ALT Odd/Even

TCE 008695402-06

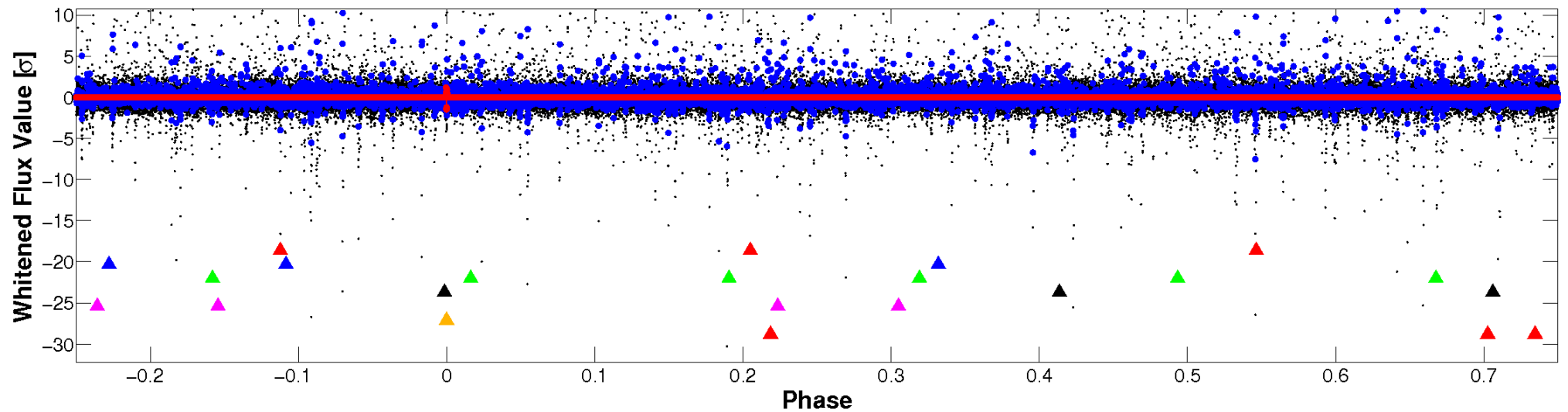


# Non-Whitened Vs. Whitened Light Curve

## Planet 6 : Phased Unwhitened Flux Time Series (Fit Epoch/Period)

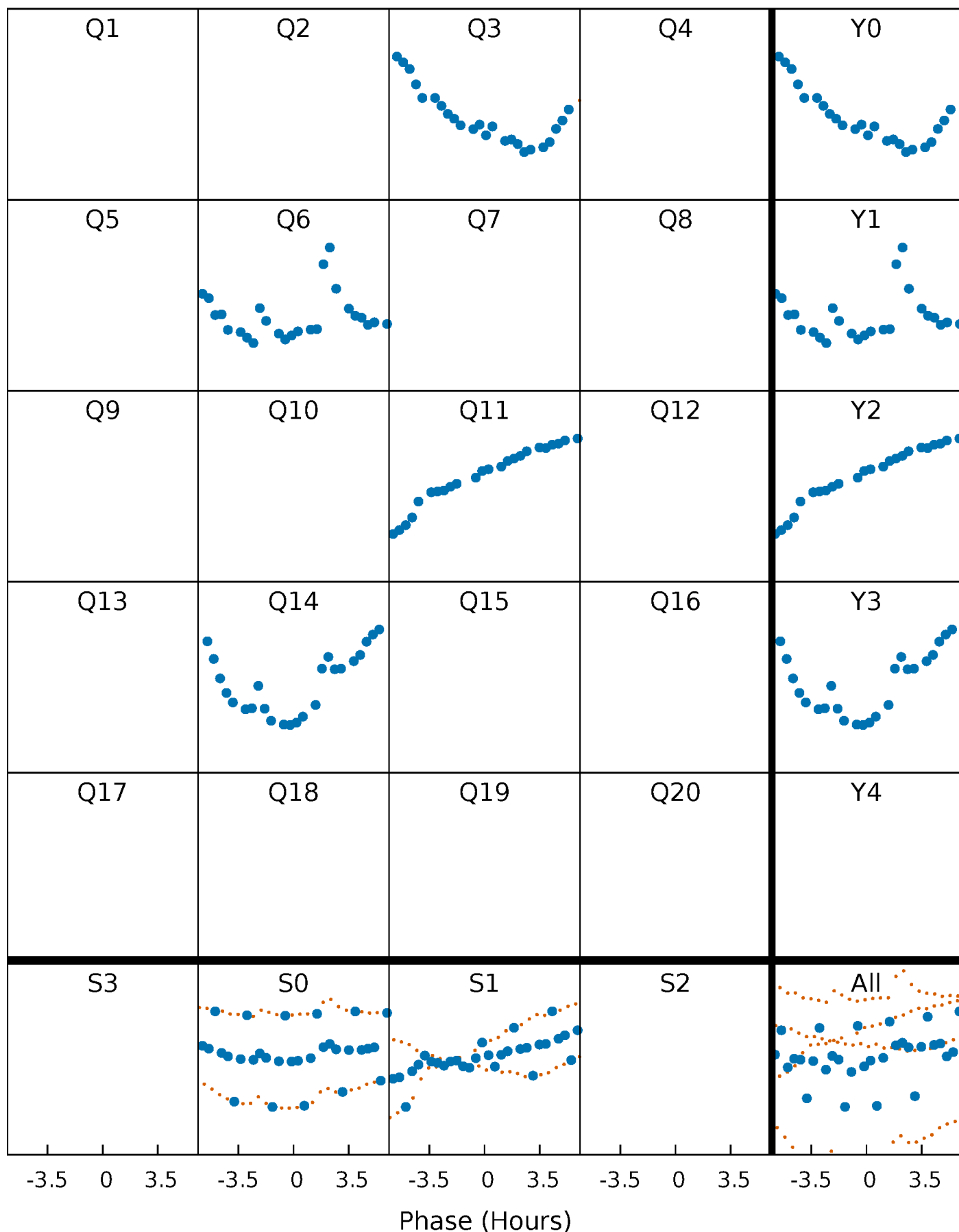


## Planet 6 : Phased Whitened Flux Time Series (Fit Epoch/Period)



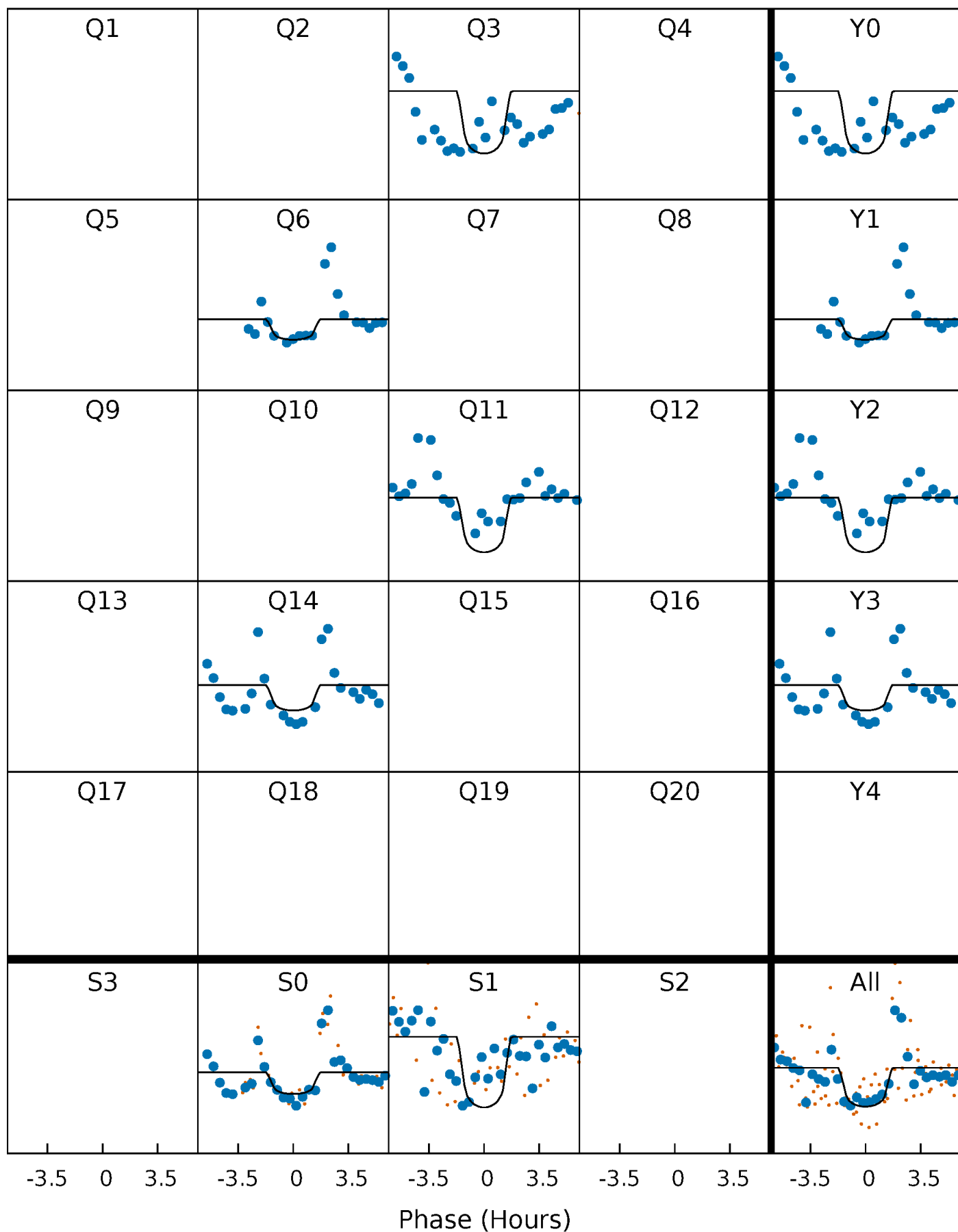
# PDC Quarter-Phased Transit Curves

TCE 008695402-06 P=263.848148 Days  $T_0=277.730590$  (BKJD)



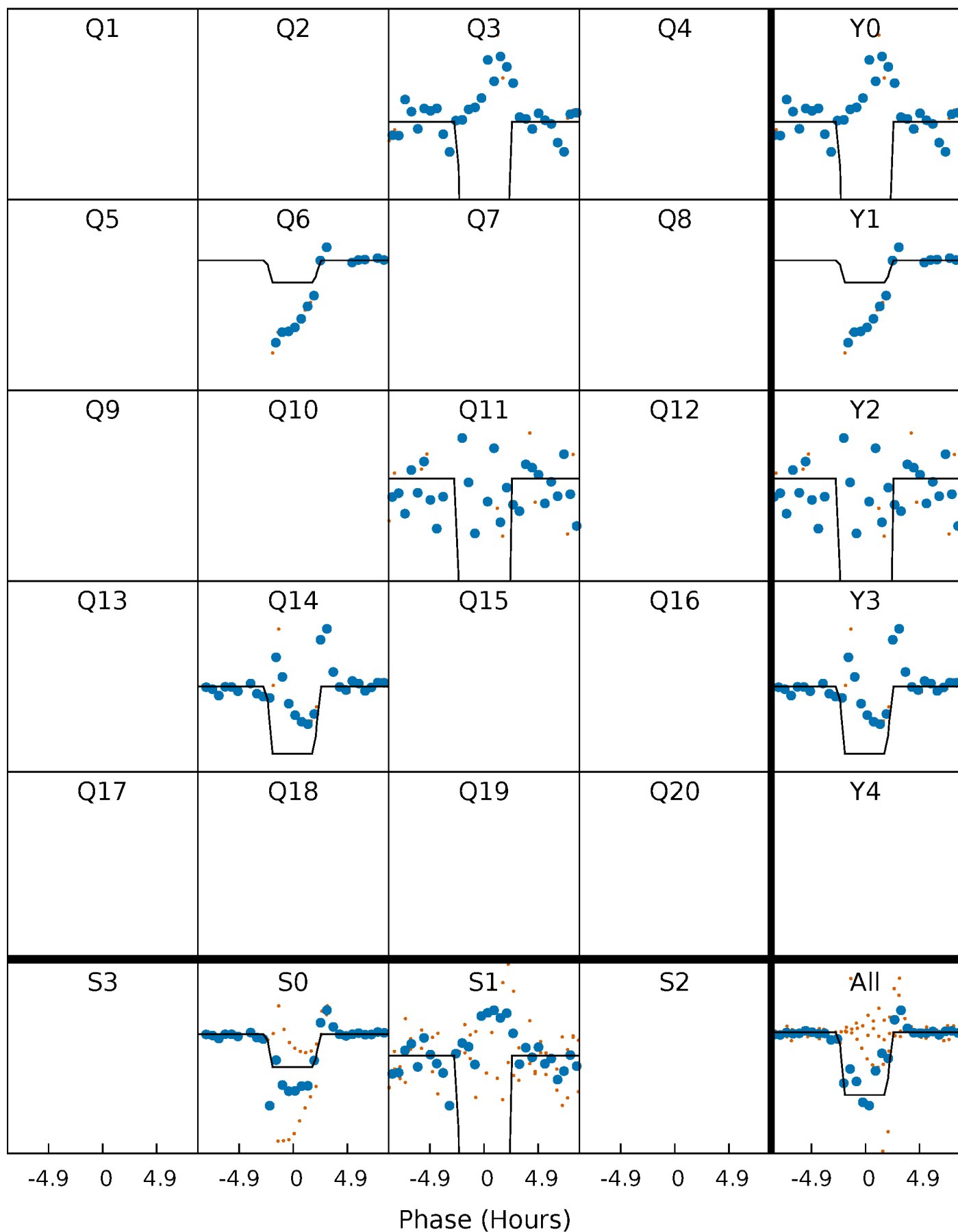
# DV Quarter-Phased Transit Curves

TCE 008695402-06     $P=263.848148$  Days     $T_0=277.730590$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

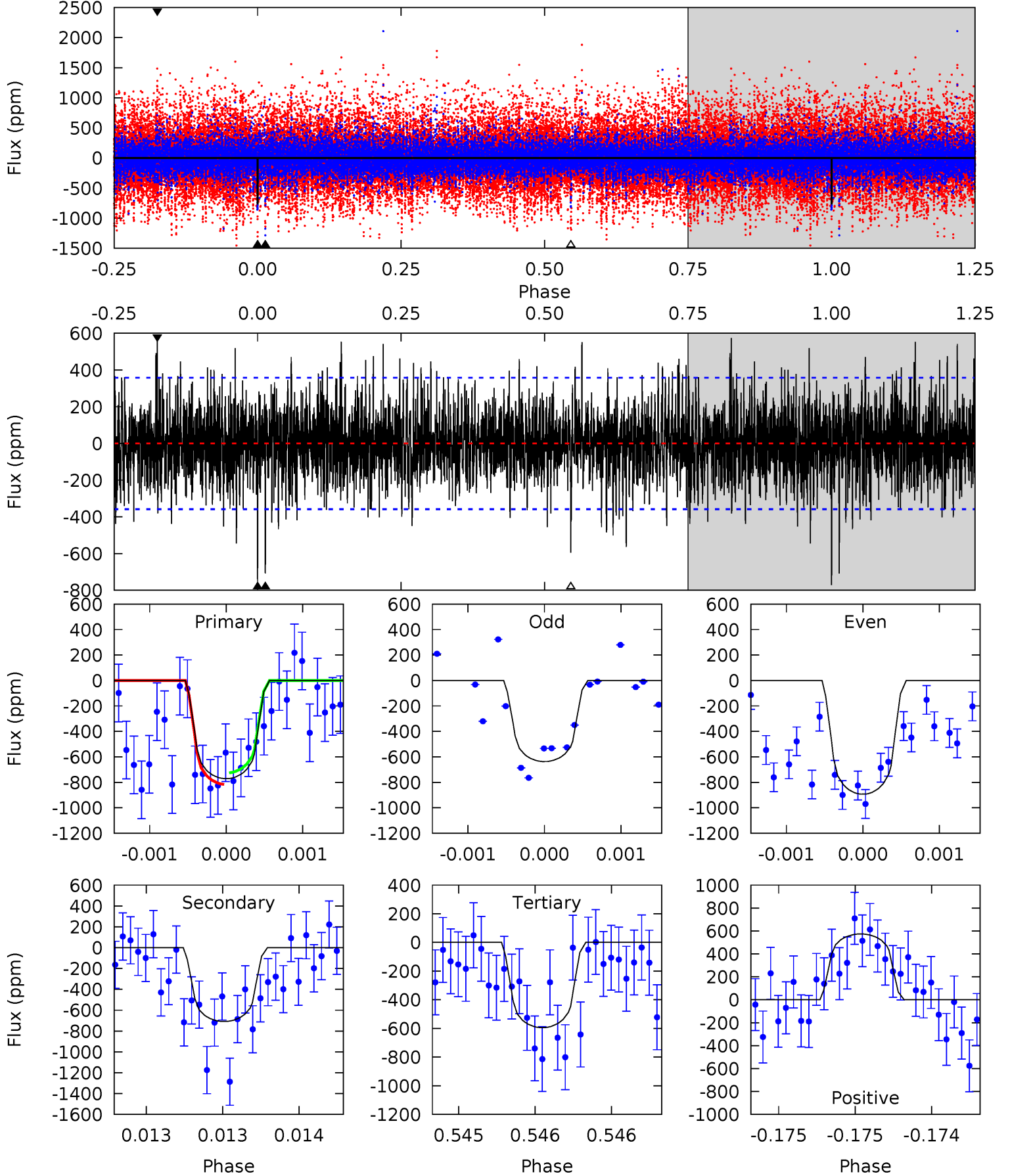
TCE 008695402-06 P=263.844889 Days  $T_0=277.706032$  (BKJD)



# DV Model-Shift Uniqueness Test

008695402-06, P = 263.848148 Days, E = 13.882442 Days

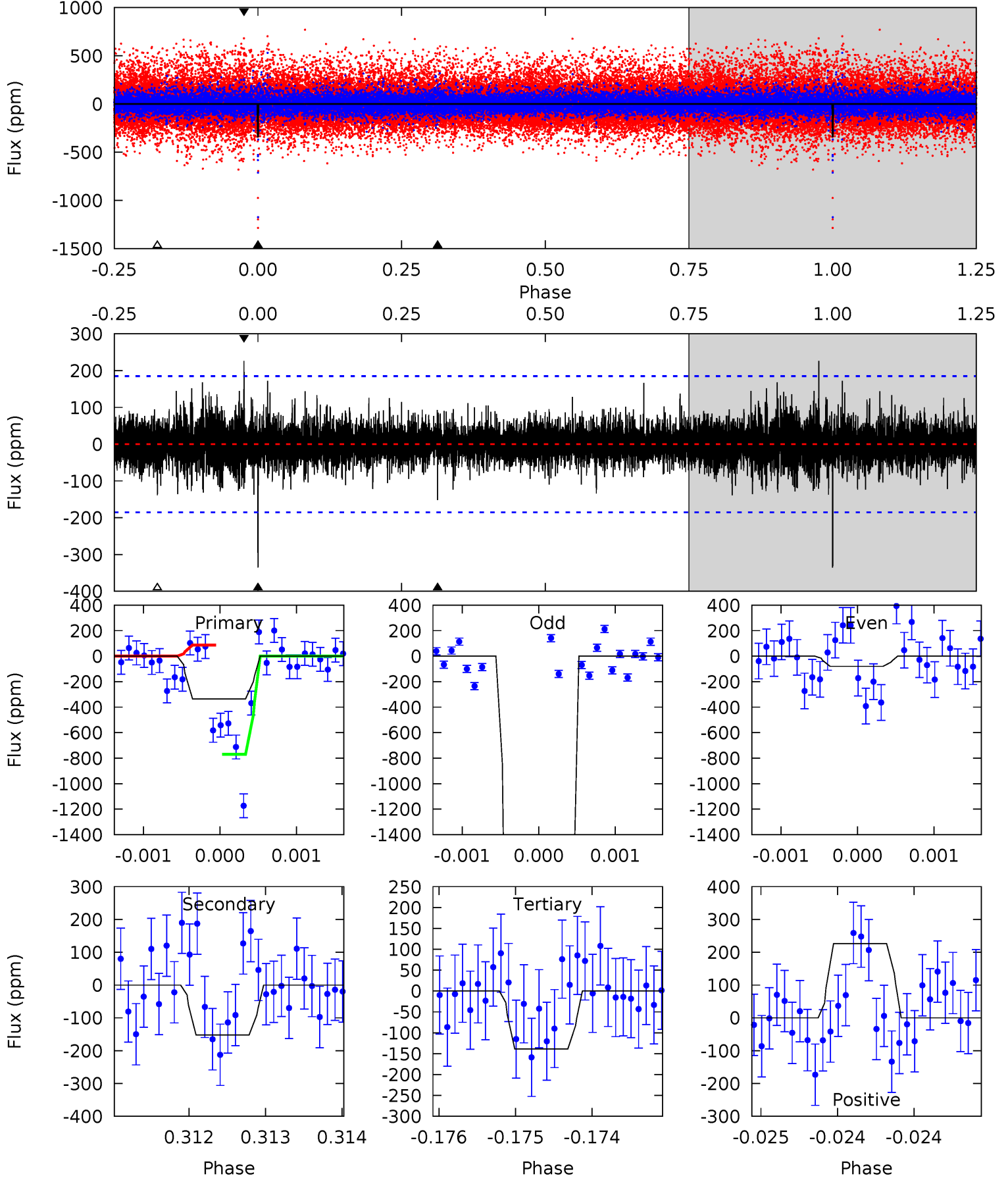
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
12.0	11.0	9.24	8.92	5.57	3.47	2.24	2.74	3.06	1.76	2.08	1.88	1.04	0.43	0.71



# Alt Model-Shift Uniqueness Test

008695402-06, P = 263.844889 Days, E = 13.861143 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
9.95	4.51	4.12	6.72	5.50	3.37	1.01	5.83	3.23	0.40	-2.20	59.7	7.26	0.40	9.95





### Stellar Parameters For KIC 008695402

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R$ ( $R_{\odot}$ )	$M(M_{\odot})$	$p_{\star}$ ( $\text{g}\cdot\text{cm}^{-3}$ )
	$5889^{+193}_{-193}$	$3.983^{+0.405}_{-0.135}$	$-0.060^{+0.300}_{-0.300}$	$1.765^{+0.402}_{-0.747}$	$1.095^{+0.153}_{-0.187}$	$0.280^{+0.998}_{-0.114}$
	+3%/-3%	+10%/-3%	+500%/-500%	+23%/-42%	+14%/-17%	+356%/-41%
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 008695402-06 / KOI

Detrend	Depth (ppm)	$R_p$ ( $R_{\oplus}$ )	$T_{\text{max}}$ (K)	$T_{\text{obs}}$ (K)	$A_{\text{obs}}$
DV	$-708 \pm 64$	$8.43^{+8.94}_{-5.92}$	$522^{+39}_{-64}$	$4587^{+3744}_{-1022}$	$3813^{+36495}_{-2932}$
Alt.	$-152 \pm 34$	$10.98^{+9.40}_{-7.11}$	$520^{+43}_{-57}$	$3176^{+1390}_{-436}$	$459^{+3247}_{-329}$

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

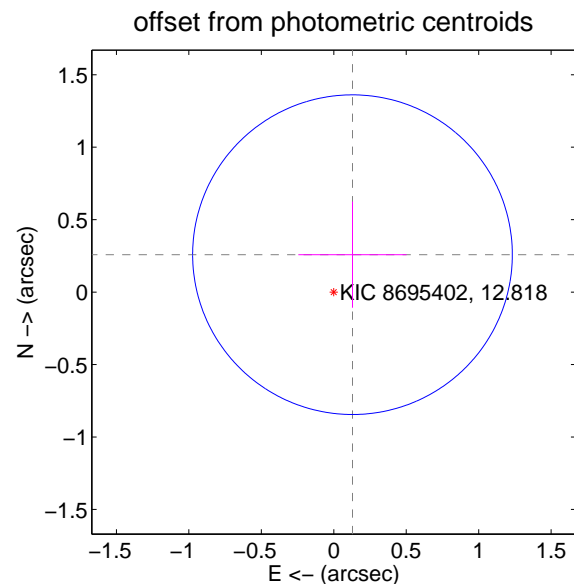
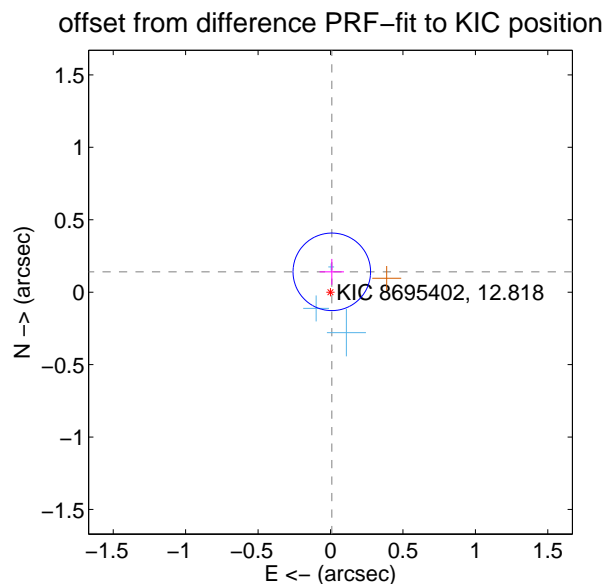
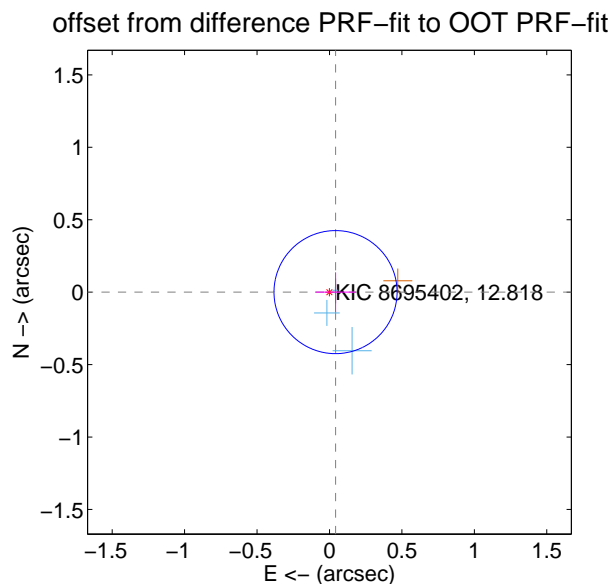
## DV Centroid Data

Supplemental centroid analysis for 008695402-06. Kepler magnitude: 12.82. Transit SNR 6.64

There are 3 quarters with good PRF difference image offsets

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

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.042 \pm 0.142$	0.30	$-0.042 \pm 0.141$	$0.000 \pm 0.136$
PRF-fit source offset from KIC position	$0.141 \pm 0.089$	1.58	$-0.009 \pm 0.084$	$0.140 \pm 0.089$
photometric centroid source offset	$0.29 \pm 0.37$	0.79	$-0.13 \pm 0.37$	$0.26 \pm 0.37$



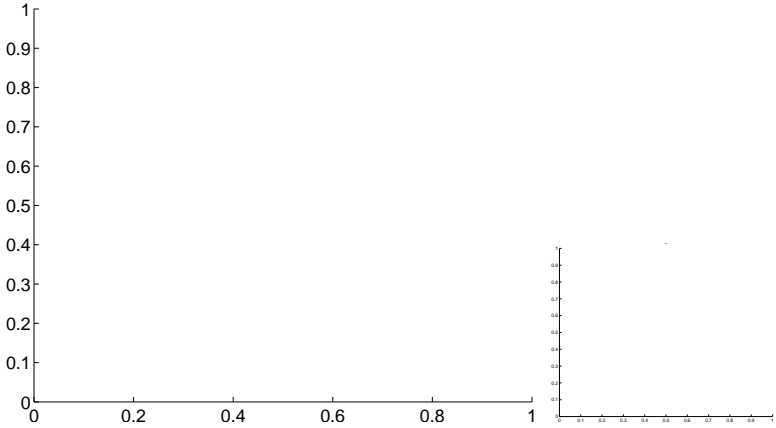
Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: three-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

Q1 no difference image



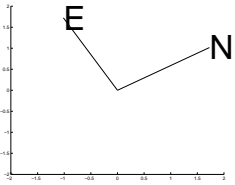
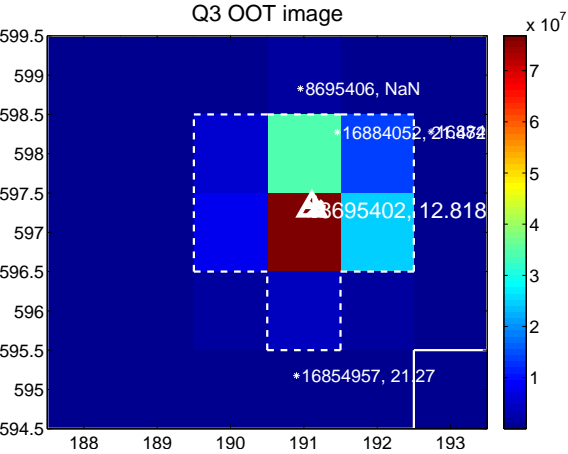
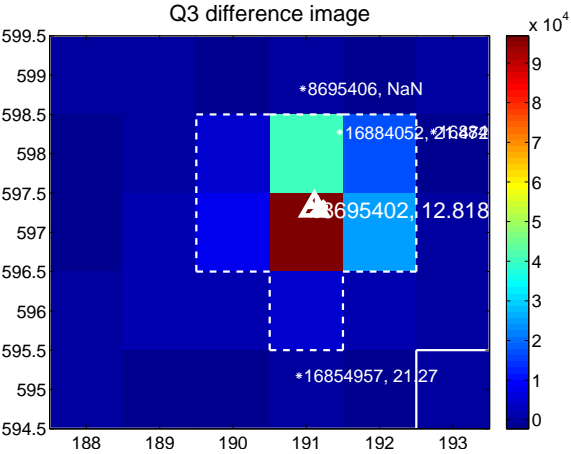
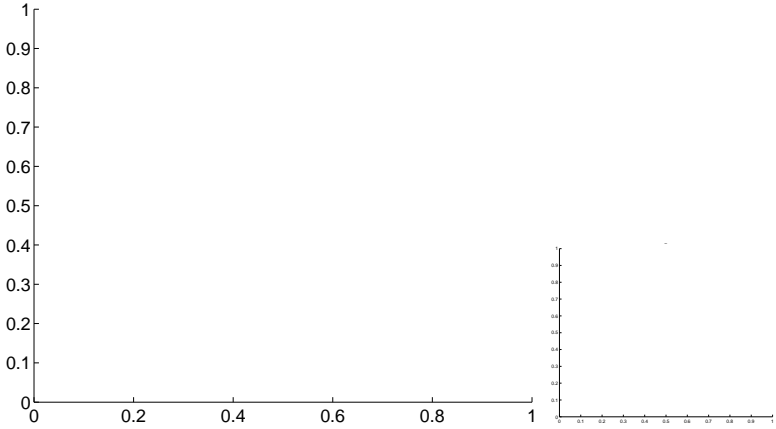
Q1 no OOT image



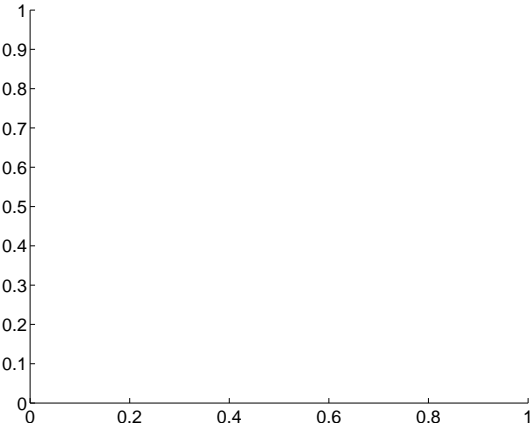
Q2 no difference image



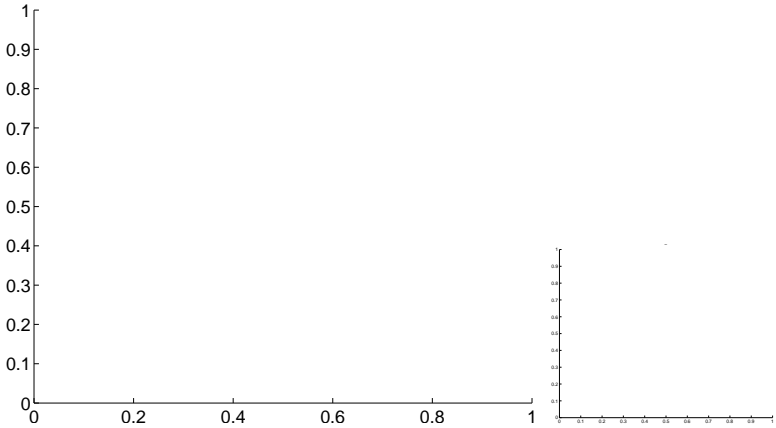
Q2 no OOT image



Q4 no difference image



Q4 no OOT image



white ×: KIC target position; +: OOT centroid; △: difference centroid. red ✕: large negative pixel value.

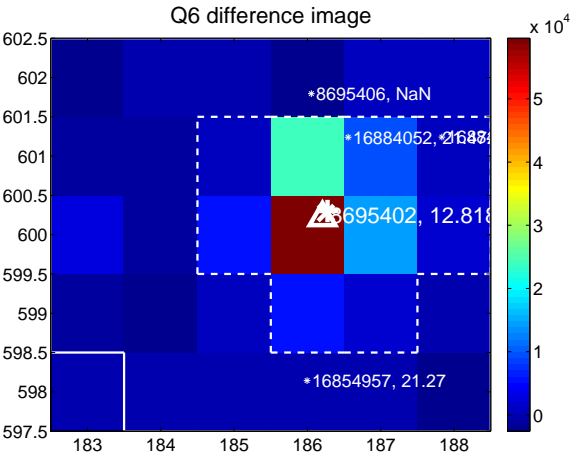
Q5 no difference image



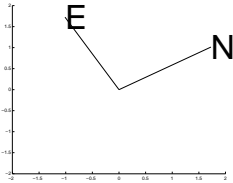
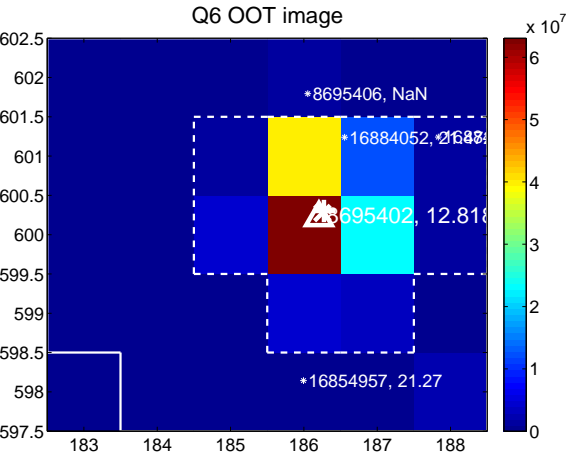
Q5 no OOT image



Q6 difference image



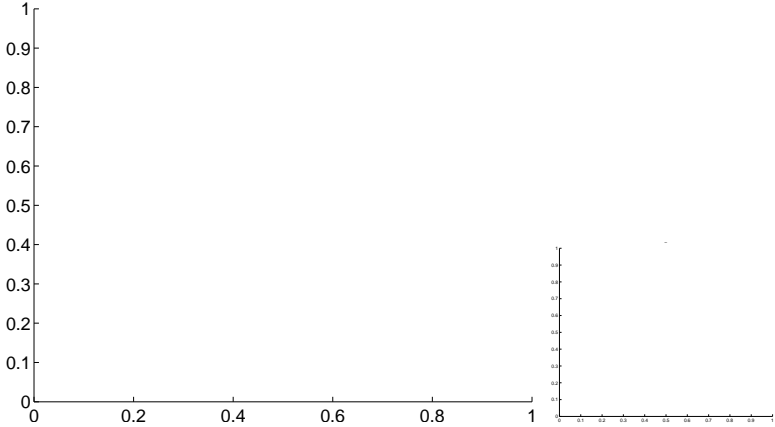
Q6 OOT image



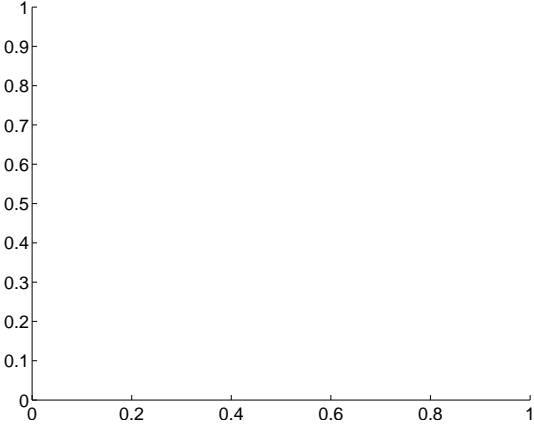
Q7 no difference image



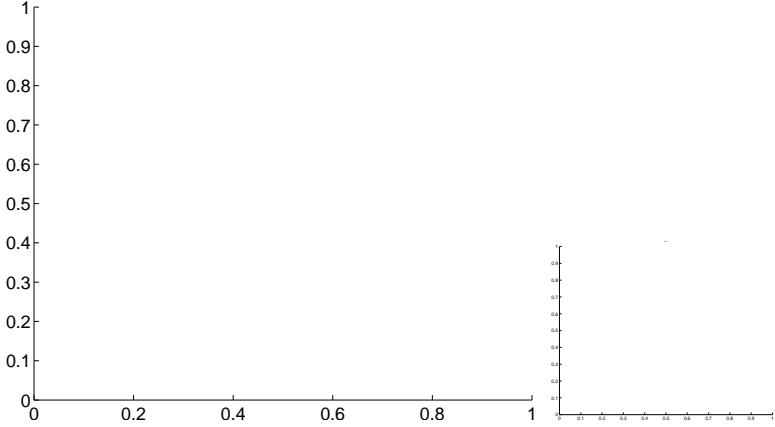
Q7 no OOT image



Q8 no difference image



Q8 no OOT image



white ×: KIC target position; +: OOT centroid; △: difference centroid. red ✕: large negative pixel value.

Q9 no difference image



Q9 no OOT image



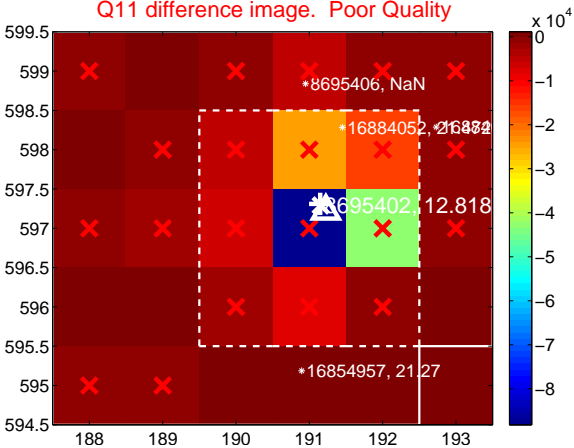
Q10 no difference image



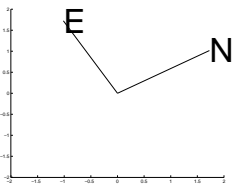
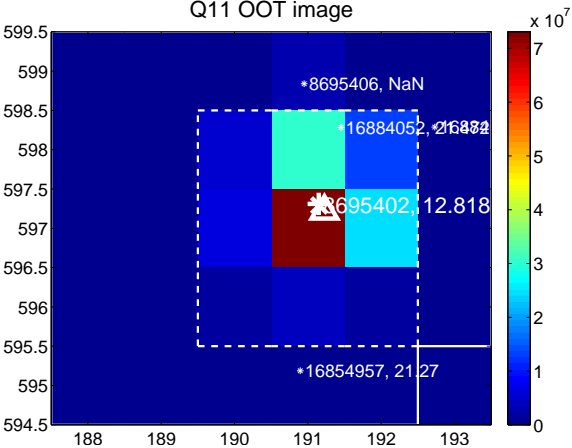
Q10 no OOT image



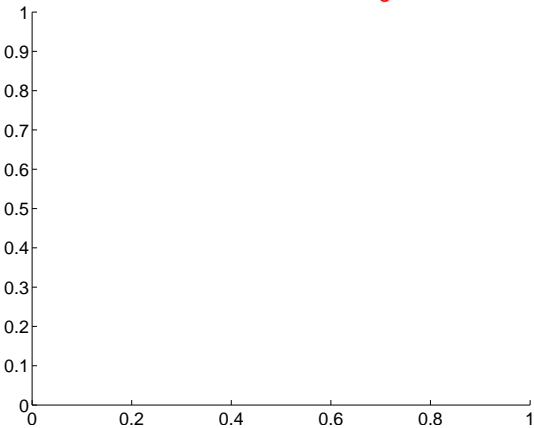
Q11 difference image. Poor Quality



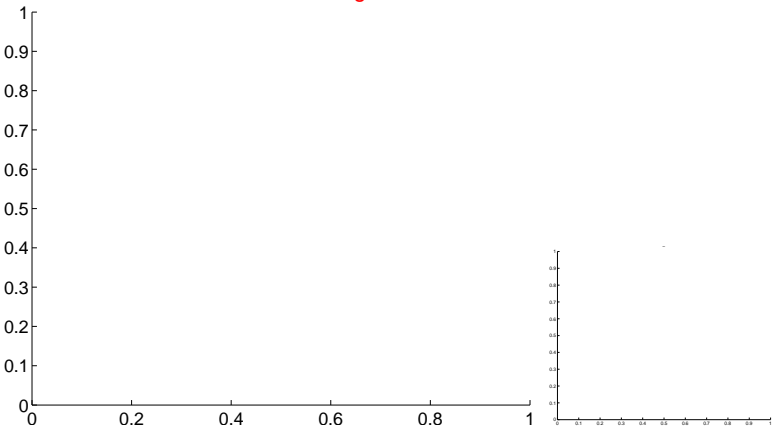
Q11 OOT image



Q12 no difference image



Q12 no OOT image

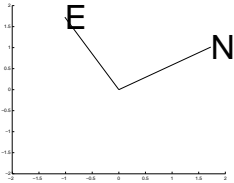
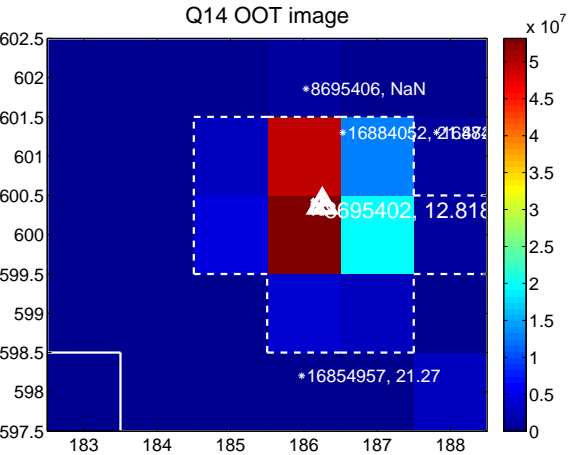
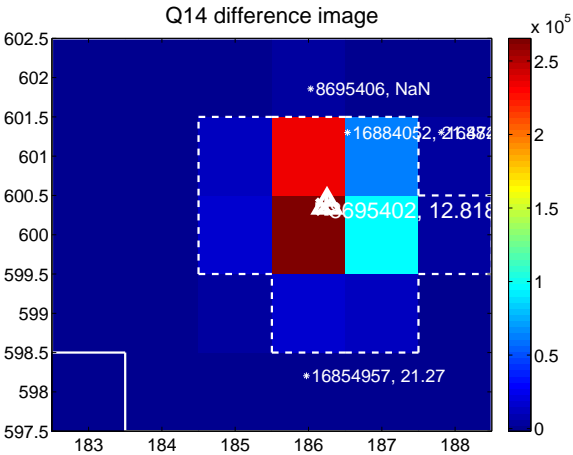


white ×: KIC target position; +: OOT centroid; △: difference centroid. red ✕: large negative pixel value.

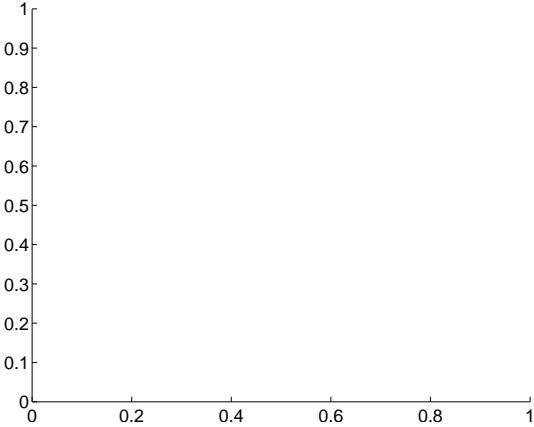
Q13 no difference image



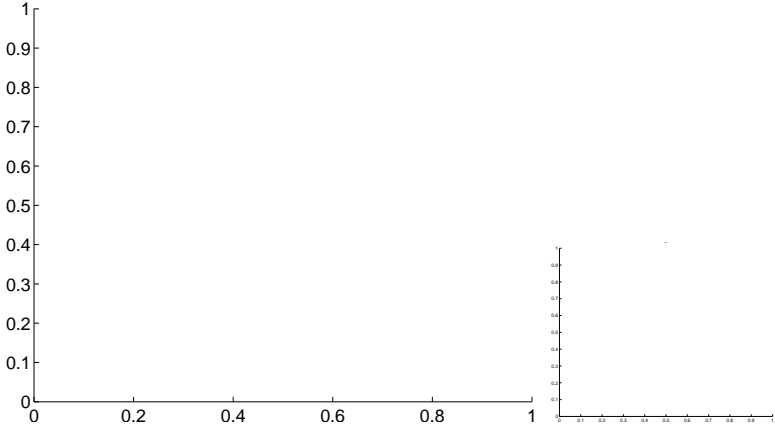
Q13 no OOT image



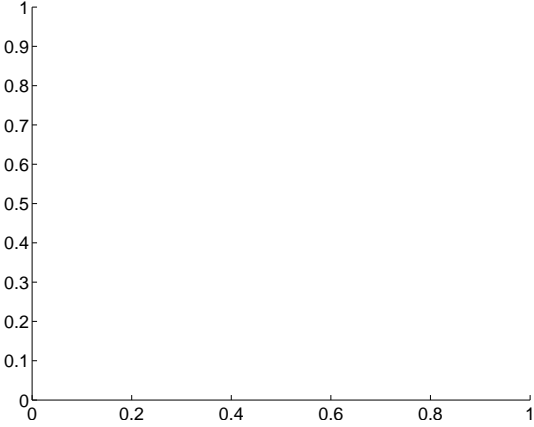
Q15 no difference image



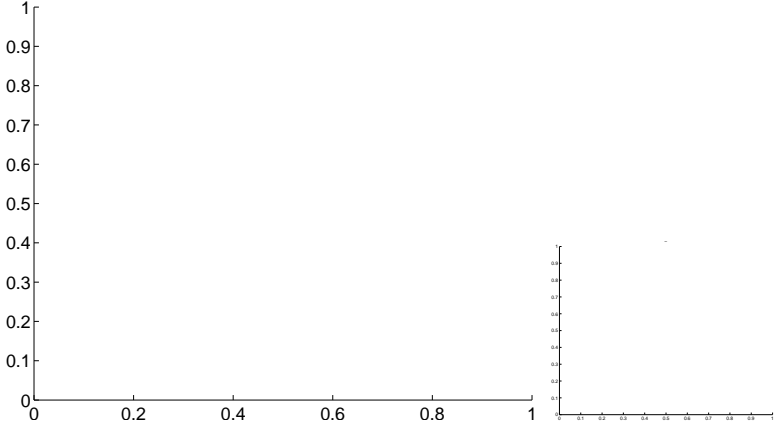
Q15 no OOT image



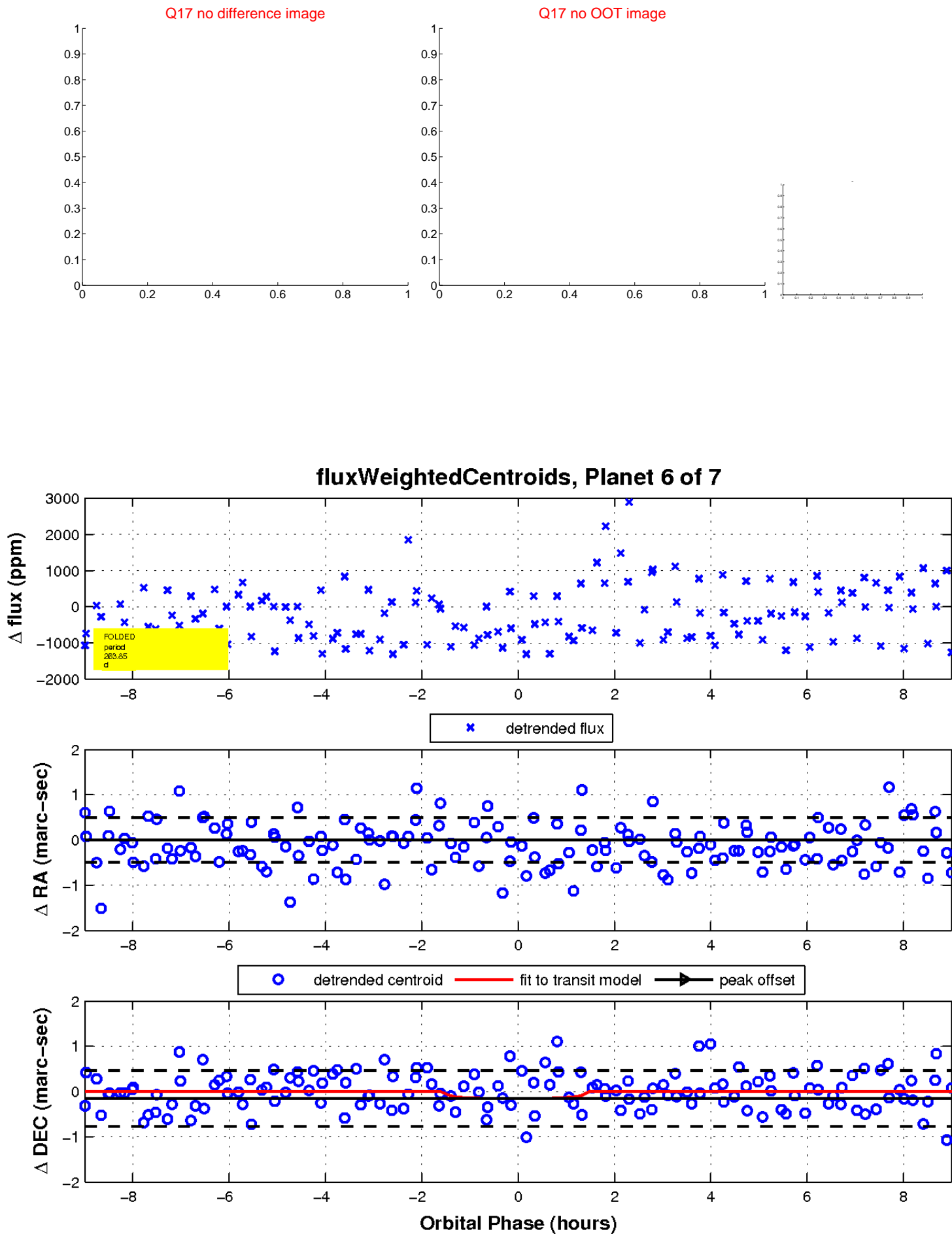
Q16 no difference image



Q16 no OOT image

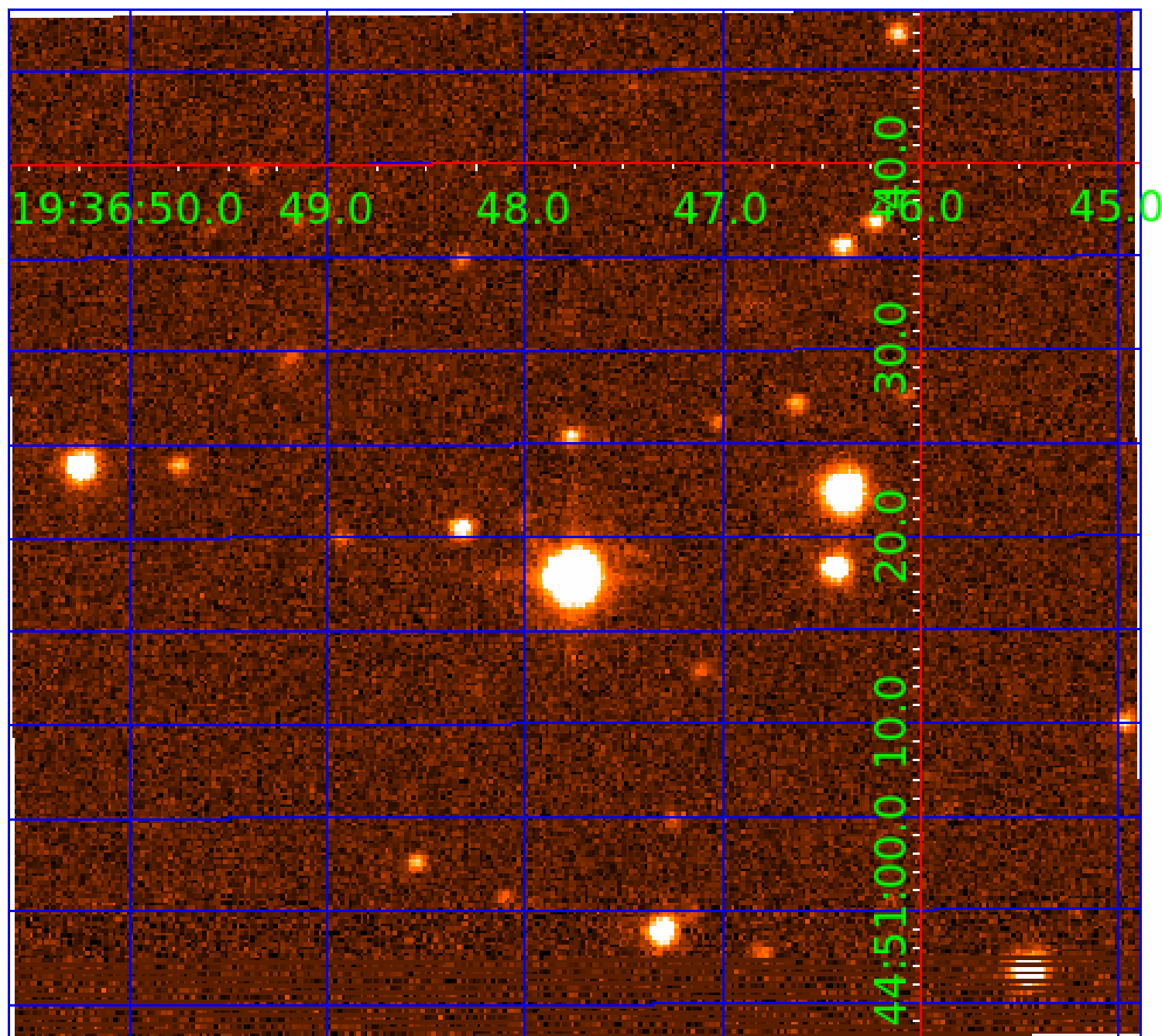


white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



UKIRT Image

Declination





# KIC 008695402

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
008695402-01	OBS	No	617.778020	331.818659	252.1	13.287	16.3	1.5	1.76	5889	2.90	1.57
008695402-02	OBS	No	675.375518	217.618516	888.0	6.155	16.7	5.4	1.76	5889	5.22	1.39
008695402-03	OBS	No	217.859802	328.021052	264.3	2.293	18.8	3.0	1.76	5889	3.18	6.30
008695402-04	OBS	No	450.527722	541.199730	273.2	3.560	16.6	2.5	1.76	5889	3.36	2.39
008695402-05	OBS	No	406.521544	336.702035	1416.6	28.626	13.0	5.1	1.76	5889	7.79	2.74
008695402-06	OBS	No	263.848148	277.730590	849.3	3.025	15.4	6.6	1.76	5889	5.32	4.88
008695402-07	OBS	No	391.554688	471.559488	462.2	3.500	12.7	-1.0	1.76	5889	3.77	2.88

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008695402-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_TRACKER—LPP_DV—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
008695402-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_SKYE—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
008695402-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS
008695402-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_TRACKER—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_TER_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
008695402-05	OBS	FP	0.00	1	0	0	0	LPP_DV—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—CENT_FEW_DIFFS
008695402-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—INCONSISTENT_TRANS
008695402-07	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES—LPP_DV—ALL_TRANS_CHASES—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_NOFITS

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

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

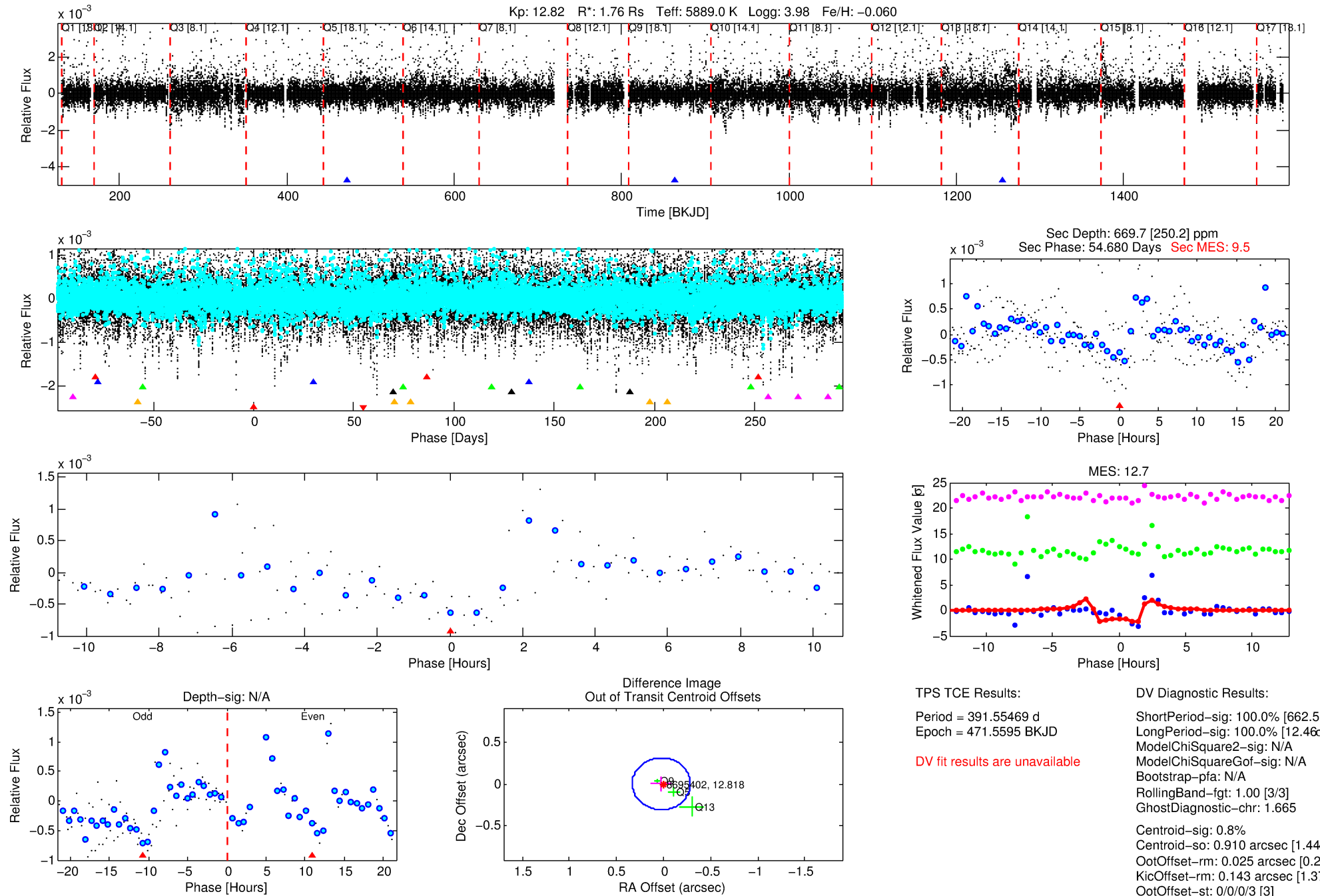
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

Ephemeris Match Information For 008695402-07

No Significant Match Found

# DV One-Page Summary

KIC: 8695402 Candidate: 7 of 7 Period: 391.555 d



## TPS TCE Results:

Period = 391.55469 d  
Epoch = 471.5595 BKJD

DV fit results are unavailable

## DV Diagnostic Results:

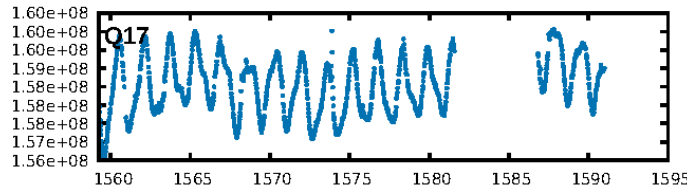
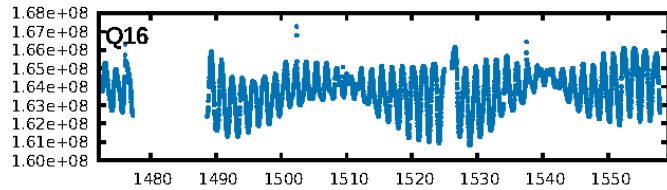
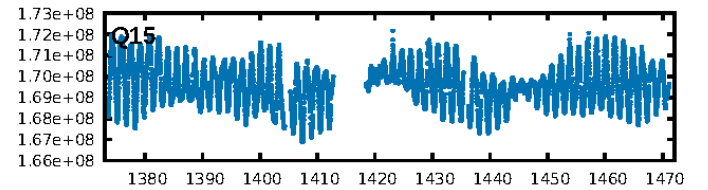
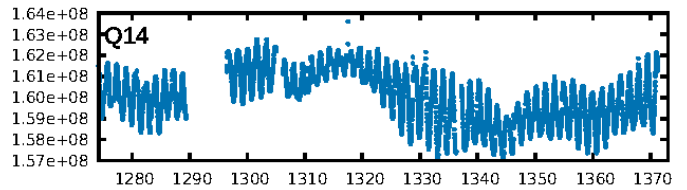
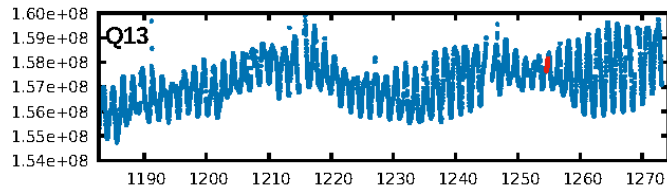
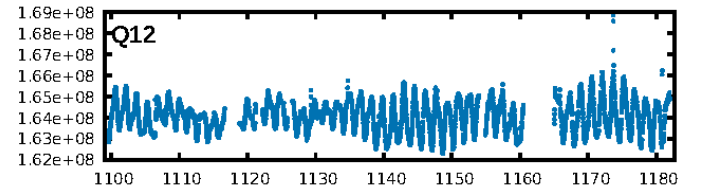
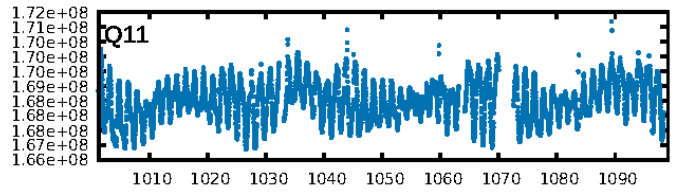
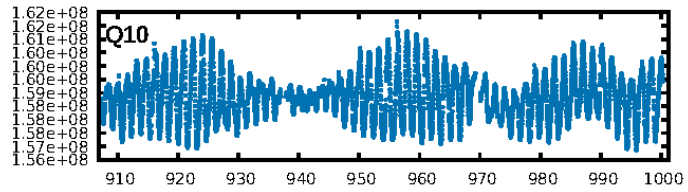
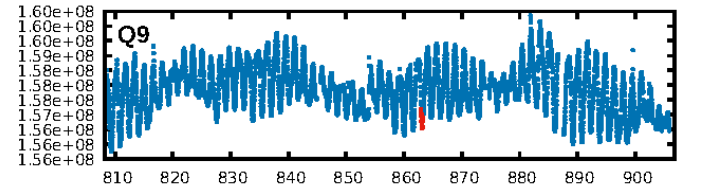
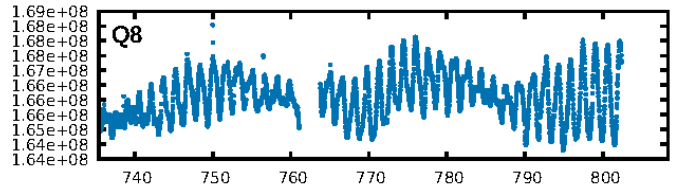
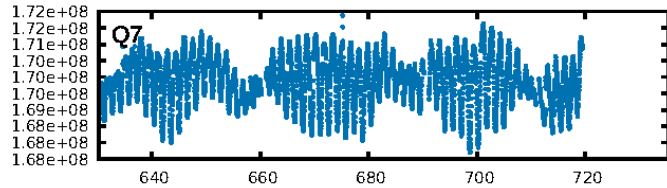
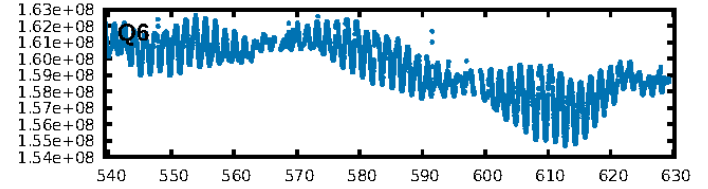
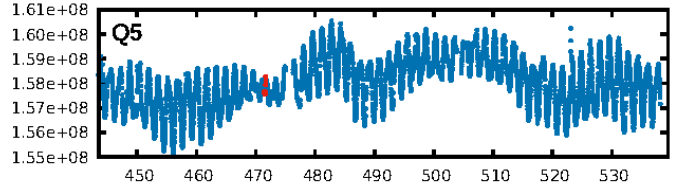
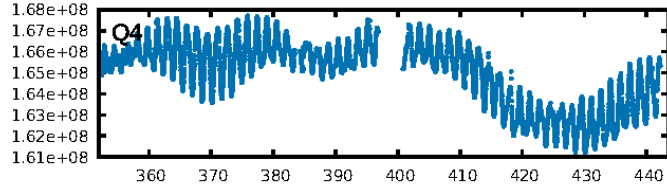
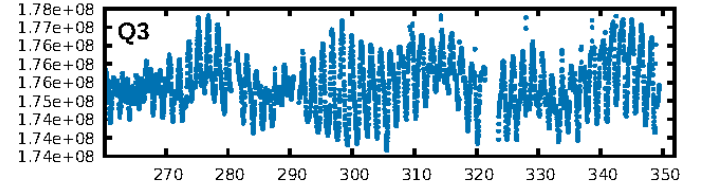
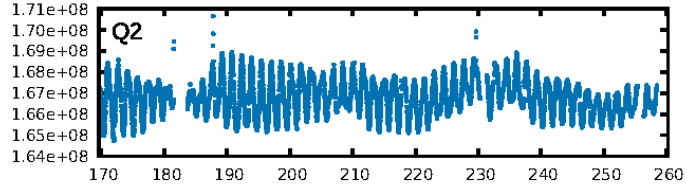
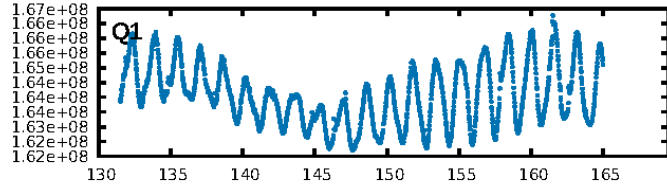
ShortPeriod-sig: 100.0% [662.55σ]  
LongPeriod-sig: 100.0% [12.46σ]  
ModelChiSquare2-sig: N/A  
ModelChiSquareGof-sig: N/A  
Bootstrap-pfa: N/A  
RollingBand-fgt: 1.00 [3/3]  
GhostDiagnostic-chr: 1.665

Centroid-sig: 0.8%  
Centroid-so: 0.910 arcsec [1.44σ]  
OotOffset-rm: 0.025 arcsec [0.24σ]  
KicOffset-rm: 0.143 arcsec [1.37σ]  
OotOffset-st: 0/0/0/3 [3]  
KicOffset-st: 0/0/0/3 [3]  
DiffImageQuality-fgm: 1.00 [3/3]  
DiffImageOverlap-fno: 1.00 [3/3]

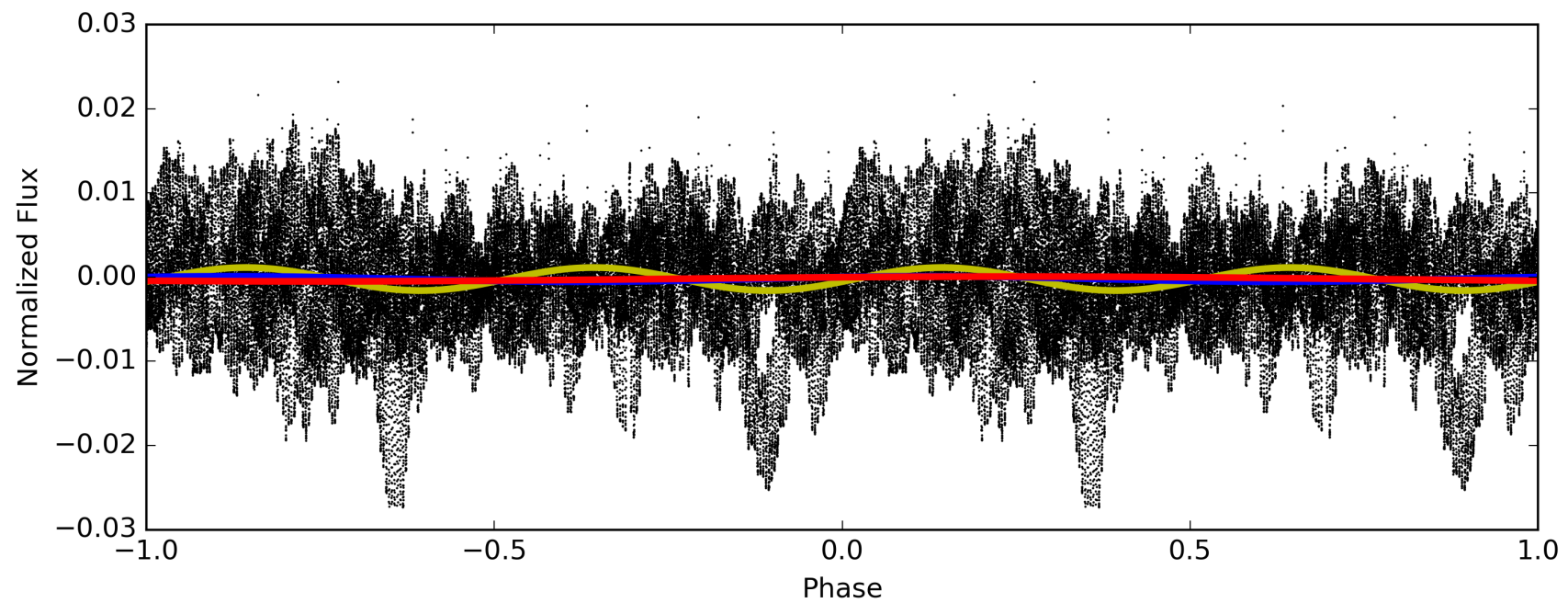
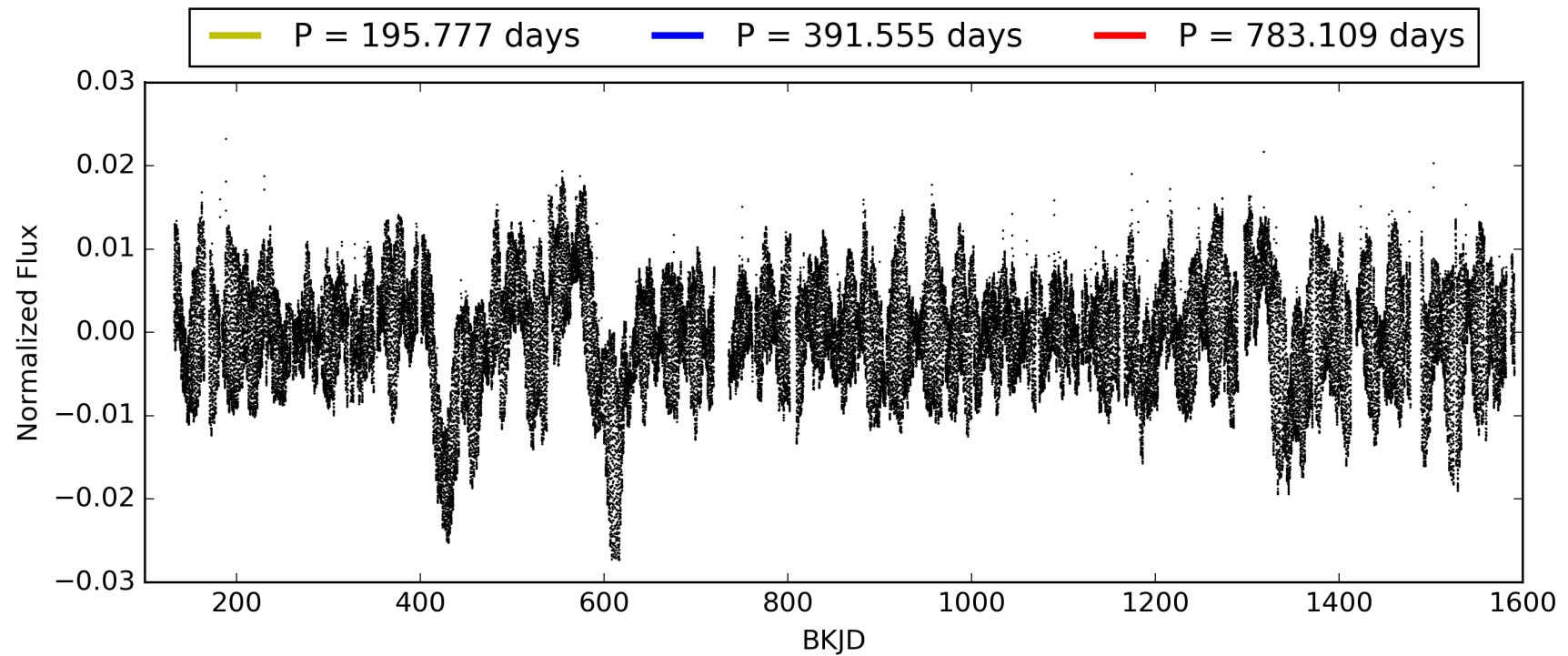
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 23:47:22 Z

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

## TCE 008695402-07, PDC Light Curves

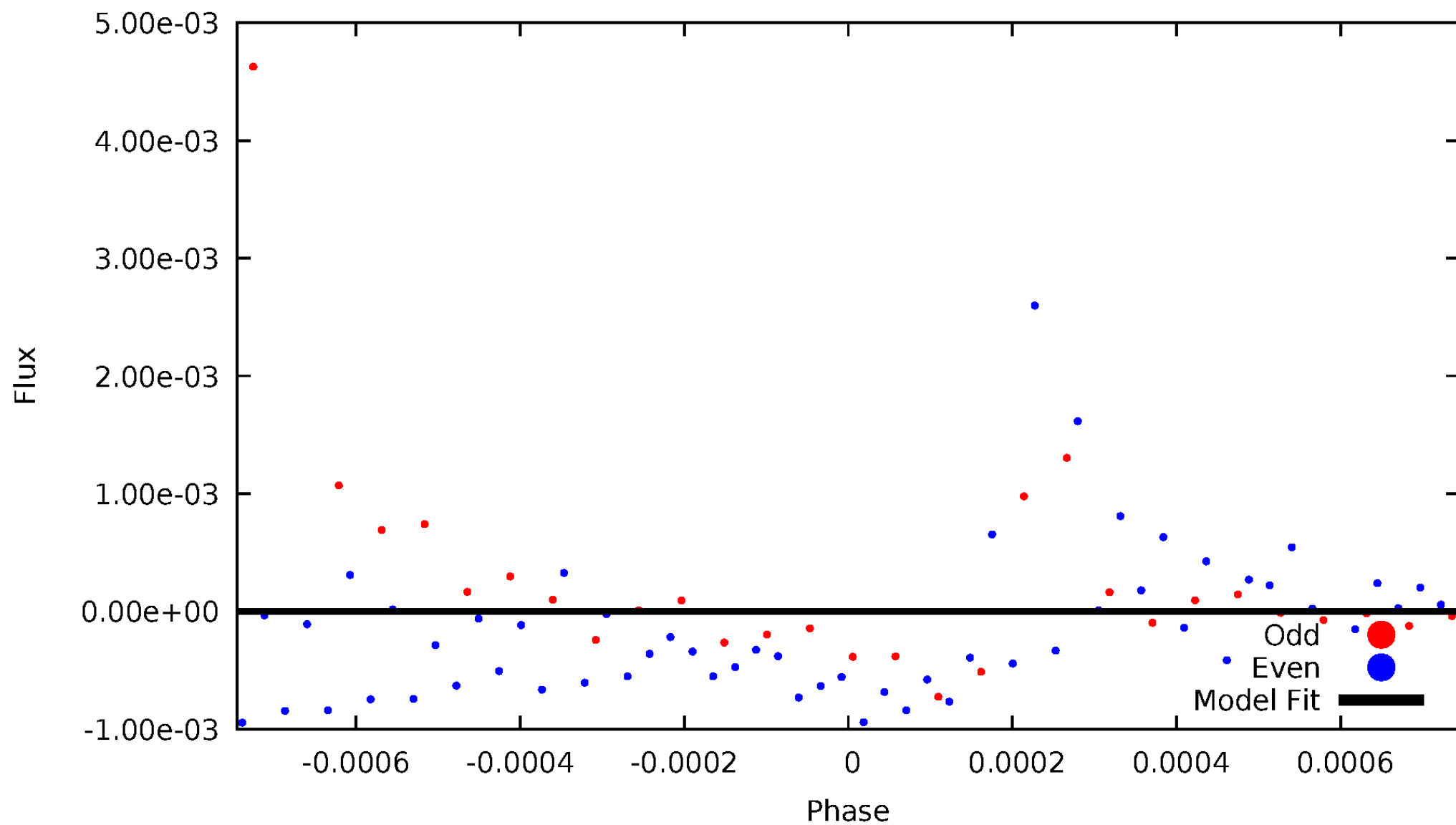


TCE 008695402-07



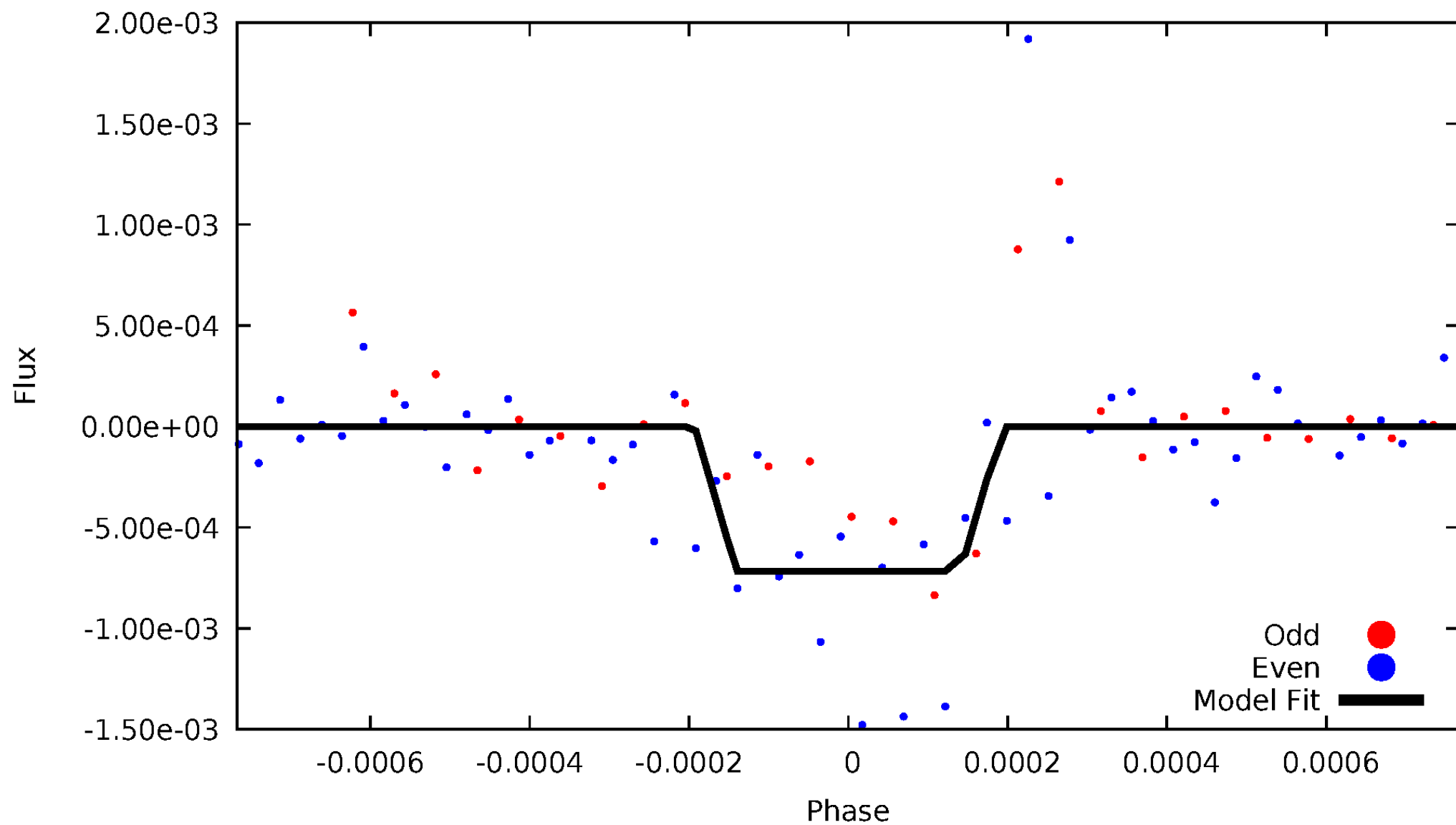
# DV Odd/Even

TCE 008695402-07

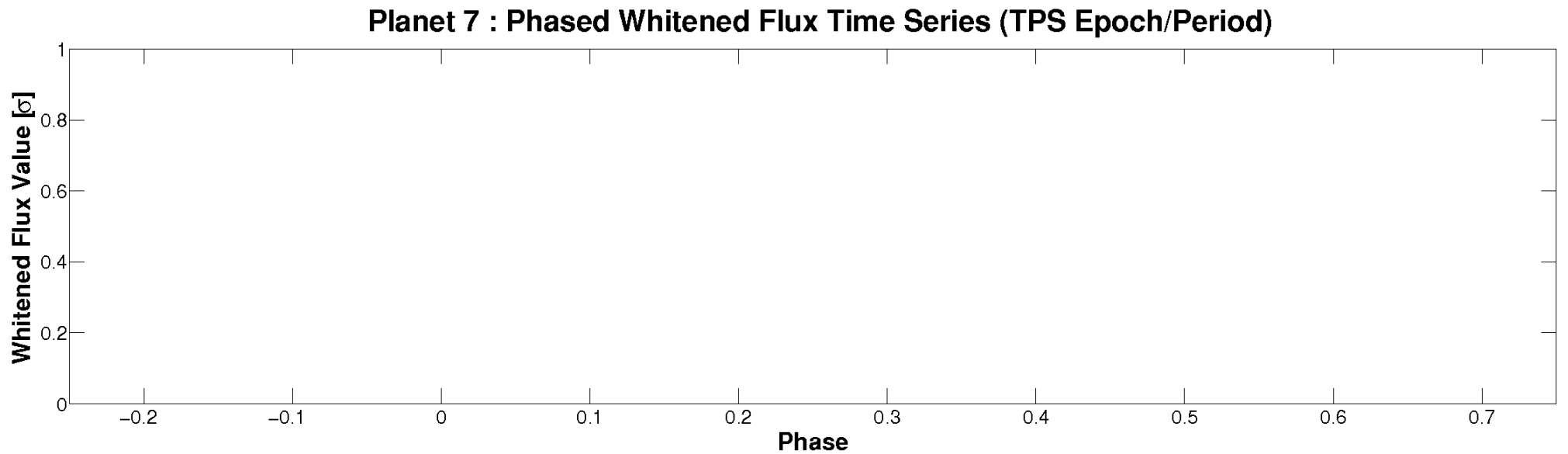
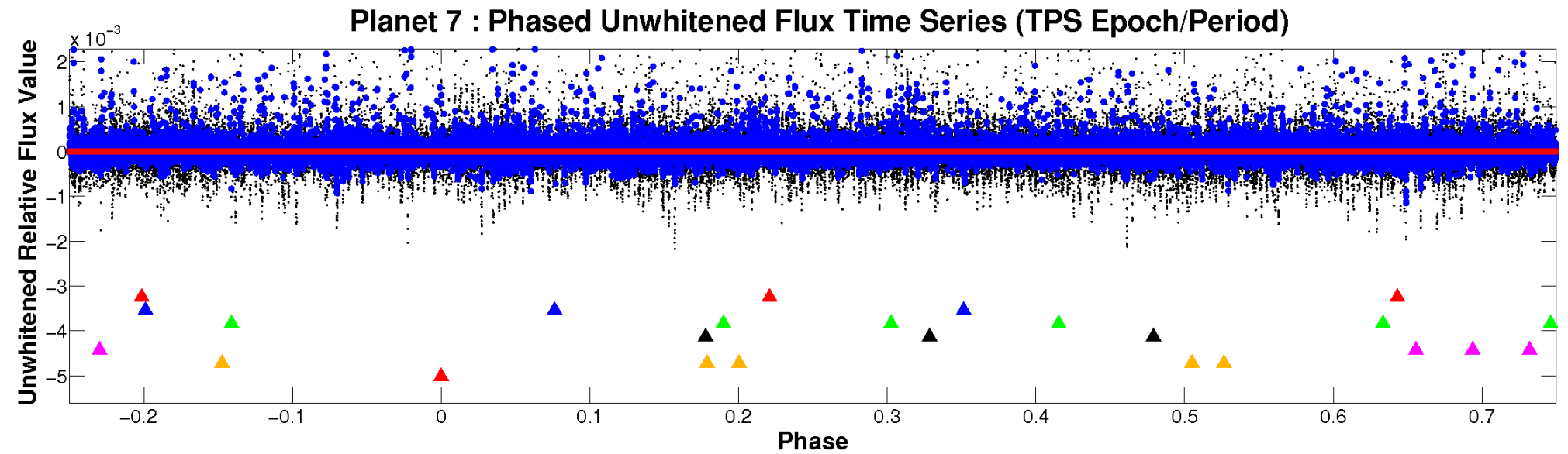


# ALT Odd/Even

TCE 008695402-07

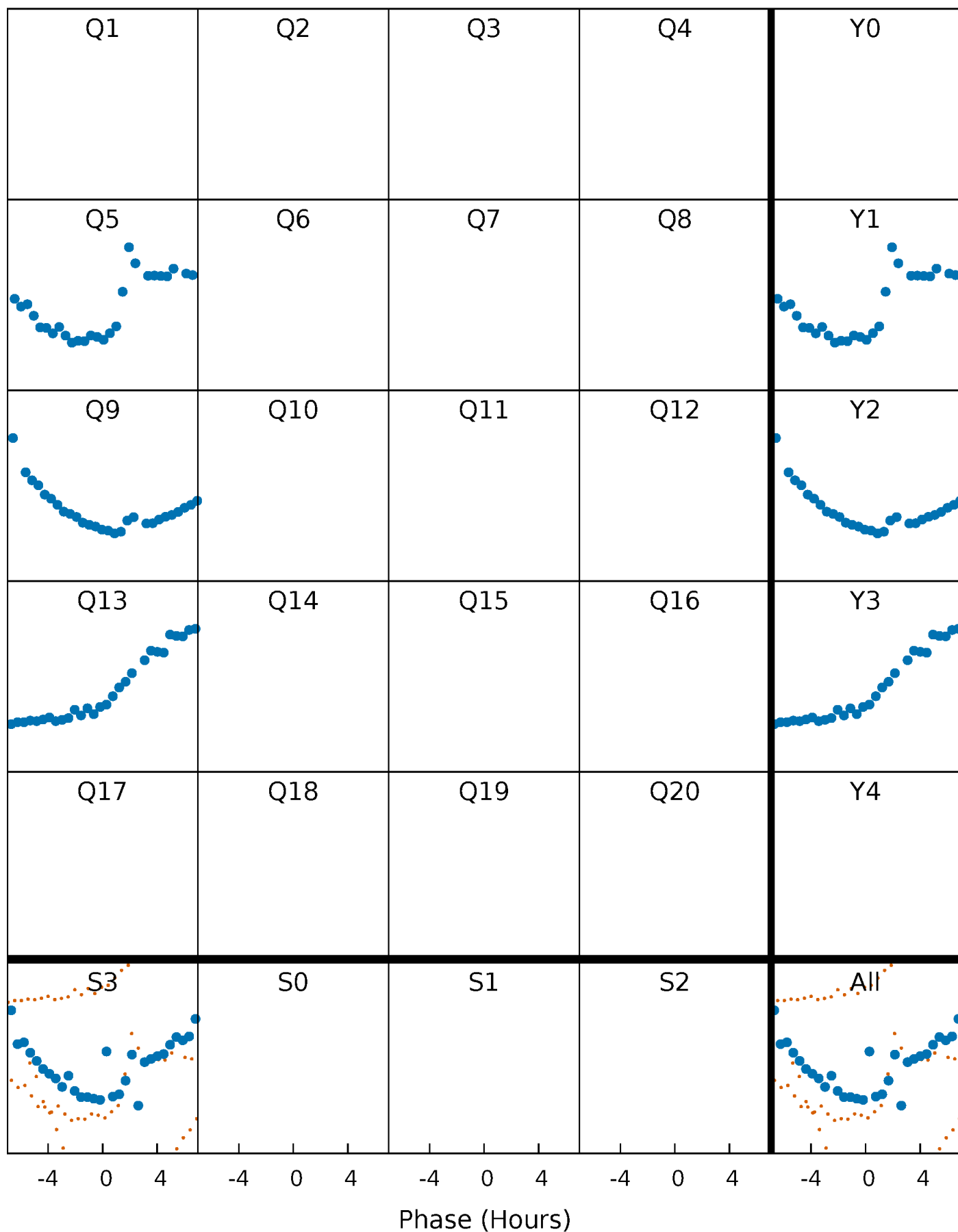


# Non-Whitened Vs. Whitened Light Curve



# PDC Quarter-Phased Transit Curves

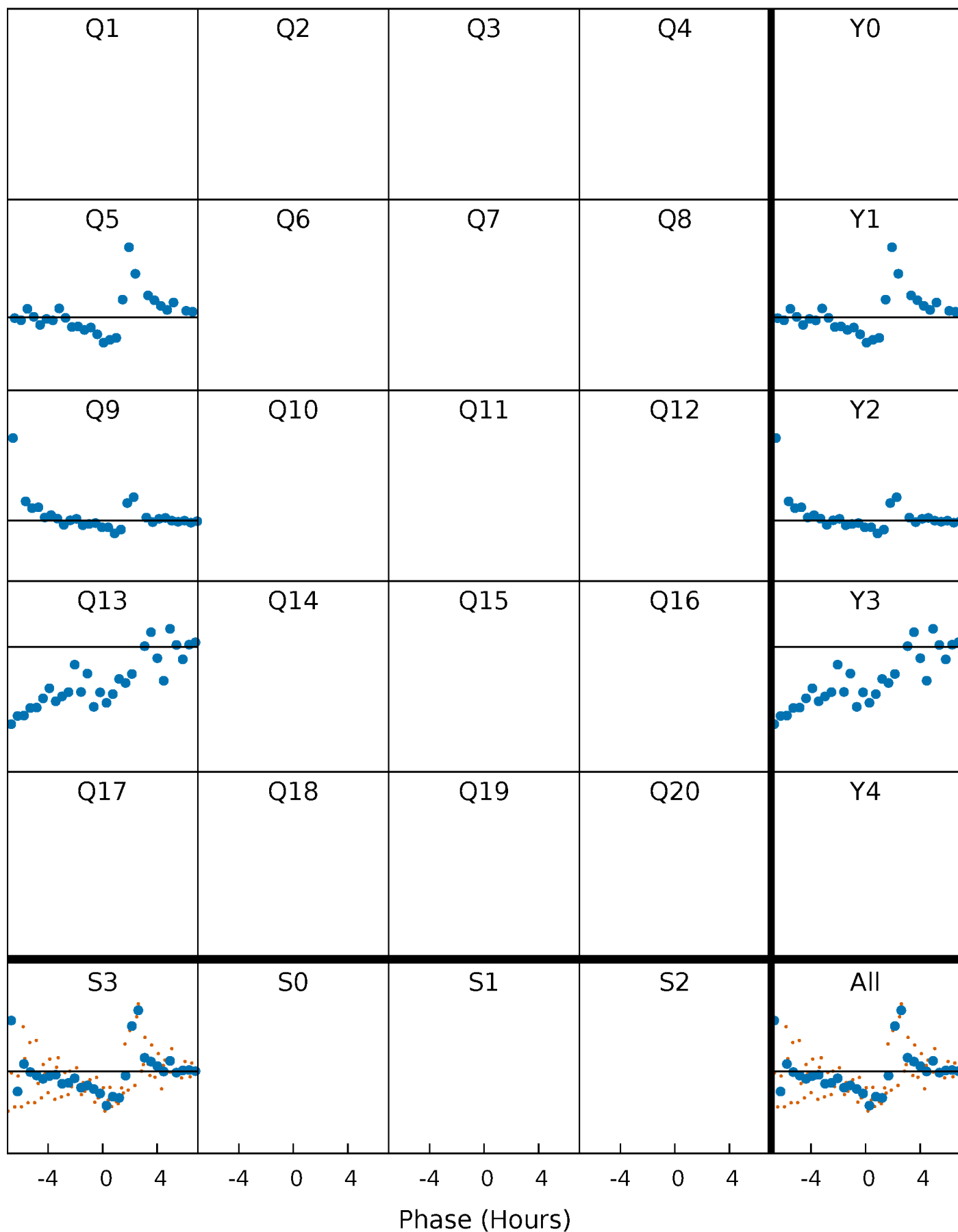
TCE 008695402-07     $P=391.554688$  Days     $T_0=471.559488$  (BKJD)





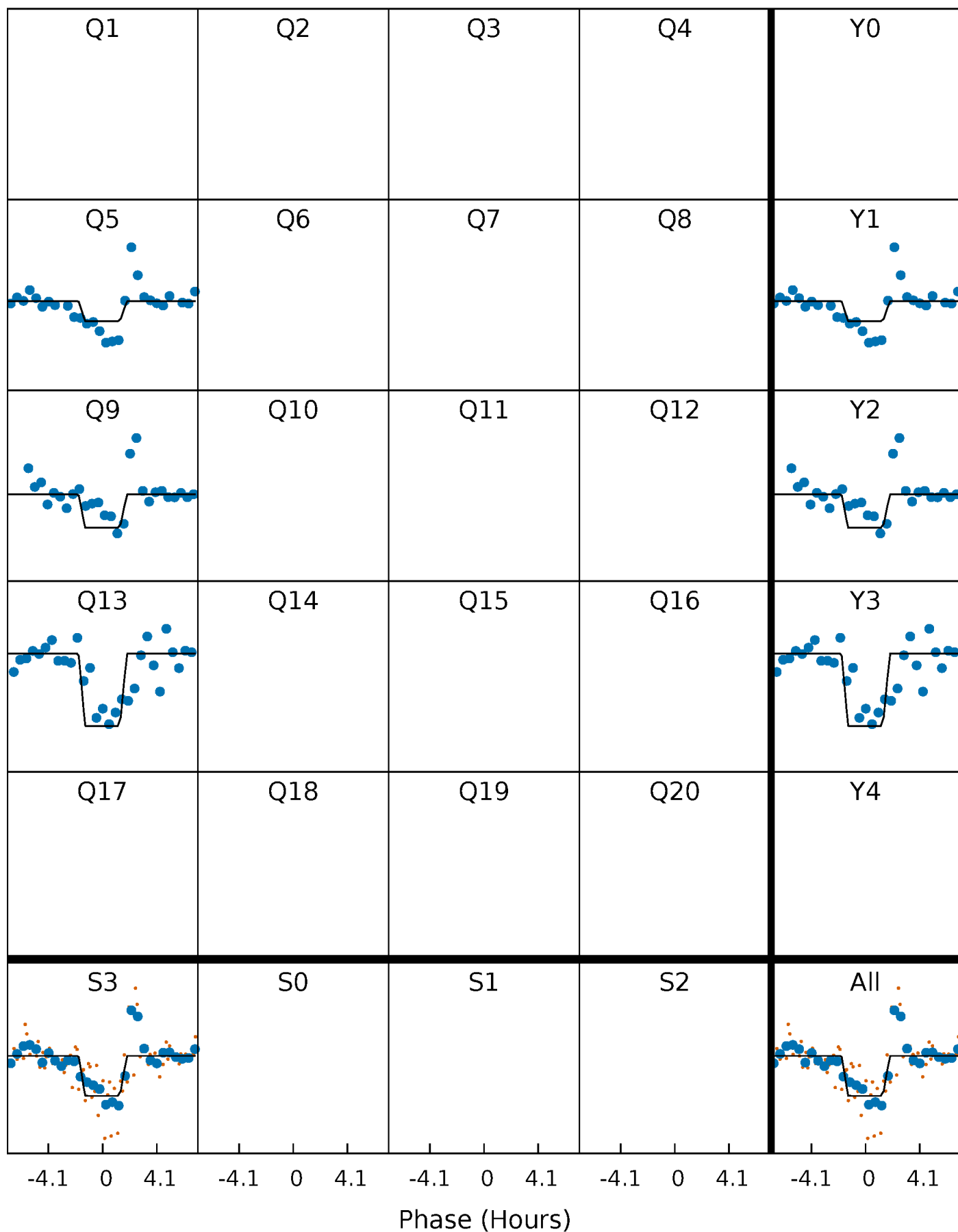
# DV Quarter-Phased Transit Curves

TCE 008695402-07     $P=391.554688$  Days     $T_0=471.559488$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

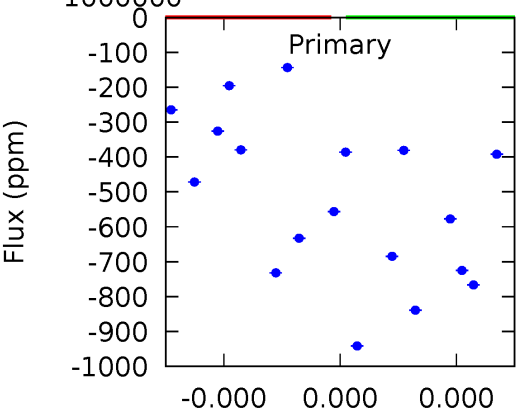
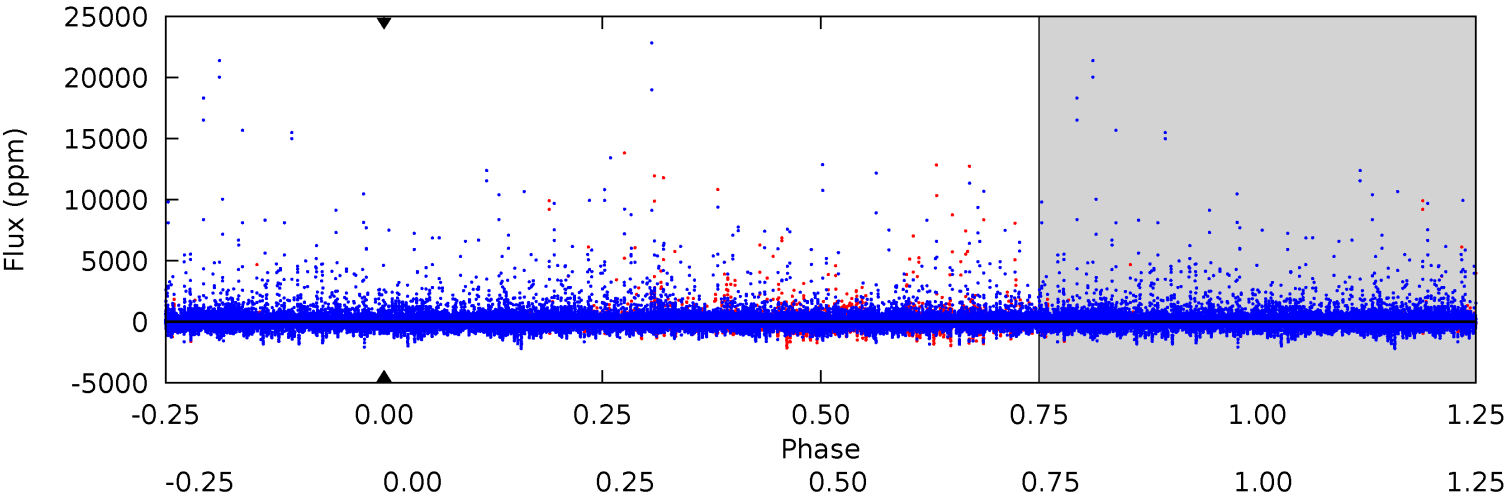
TCE 008695402-07     $P=391.554688$  Days     $T_0=471.560011$  (BKJD)



# DV Model-Shift Uniqueness Test

008695402-07, P = 391.554688 Days, E = 80.004800 Days

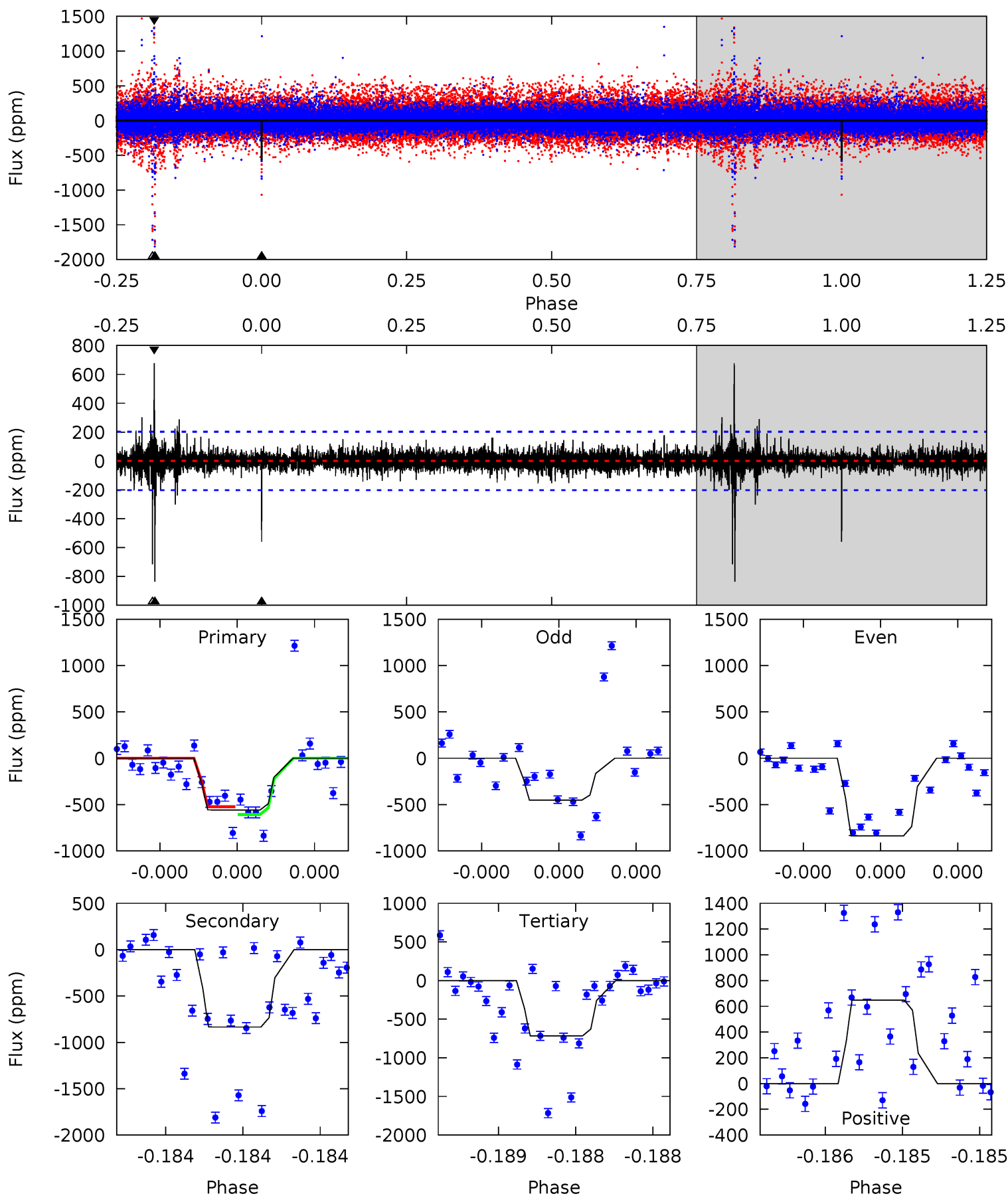
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
0	0	0	0	1.00	1.00	1.00	0	0	0	0	0	0	0	0



# Alt Model-Shift Uniqueness Test

008695402-07, P = 391.554688 Days, E = 80.005323 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
15.5	23.2	19.9	18.0	5.63	3.56	1.19	-4.37	-2.49	3.32	5.21	3.71	1.35	0.45	1.16



### Stellar Parameters For KIC 008695402

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R$ ( $R_{\odot}$ )	$M(M_{\odot})$	$p_{\star}$ ( $\text{g}\cdot\text{cm}^{-3}$ )
	$5889^{+193}_{-193}$	$3.983^{+0.405}_{-0.135}$	$-0.060^{+0.300}_{-0.300}$	$1.765^{+0.402}_{-0.747}$	$1.095^{+0.153}_{-0.187}$	$0.280^{+0.998}_{-0.114}$
	+3%/-3%	+10%/-3%	+500%/-500%	+23%/-42%	+14%/-17%	+356%/-41%
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 008695402-07 / KOI

Detrend	Depth (ppm)	$R_p$ ( $R_{\oplus}$ )	$T_{\text{max}}$ (K)	$T_{\text{obs}}$ (K)	$A_{\text{obs}}$
DV	$0 \pm 1000000$	$13.38^{+14.16}_{-9.36}$	$457^{+37}_{-50}$	$3934^{+17066}_{-26298}$	$1835^{+679259}_{-619670}$
Alt.	$-835 \pm 36$	$13.86^{+14.01}_{-9.54}$	$455^{+35}_{-50}$	$3942^{+2334}_{-775}$	$2846^{+26672}_{-2145}$

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

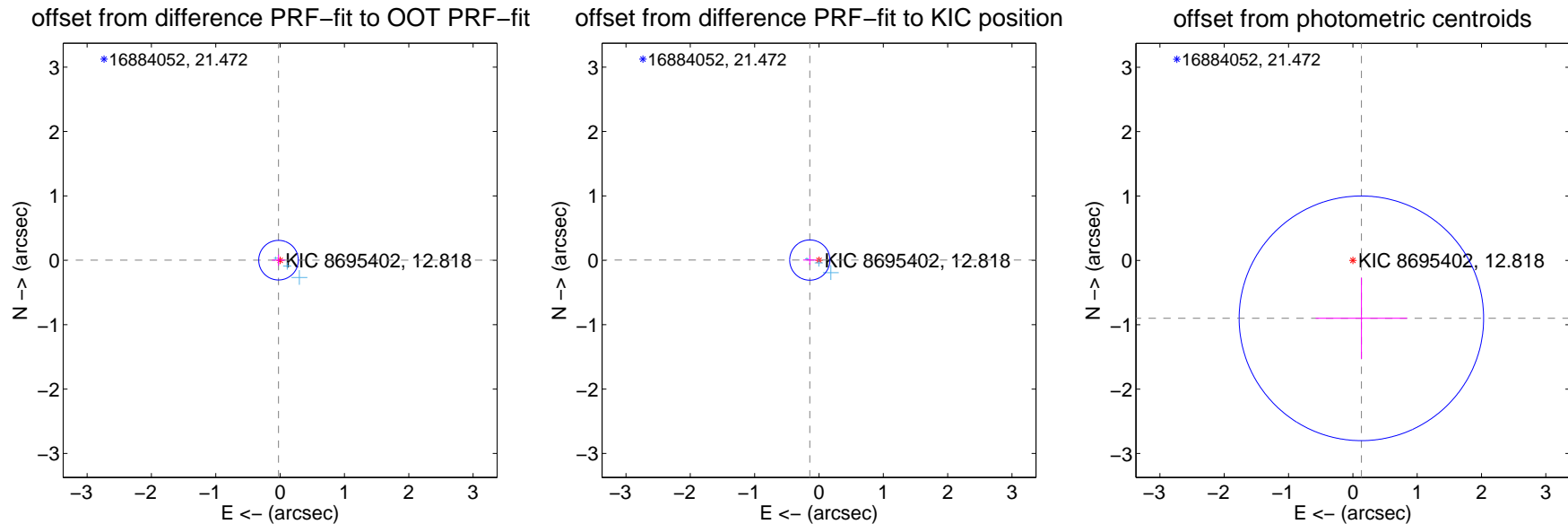
## DV Centroid Data

Supplemental centroid analysis for 008695402-07. Kepler magnitude: 12.82. Transit SNR -1.00

There are 3 quarters with good PRF difference image offsets

The direct PRF centroid is offset from the target star catalog position by about 0.14 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.025 \pm 0.103$	0.24	$0.025 \pm 0.103$	$0.002 \pm 0.086$
PRF-fit source offset from KIC position	$0.143 \pm 0.104$	1.37	$0.143 \pm 0.104$	$0.004 \pm 0.075$
photometric centroid source offset	$0.91 \pm 0.63$	1.44	$-0.13 \pm 0.71$	$-0.90 \pm 0.63$

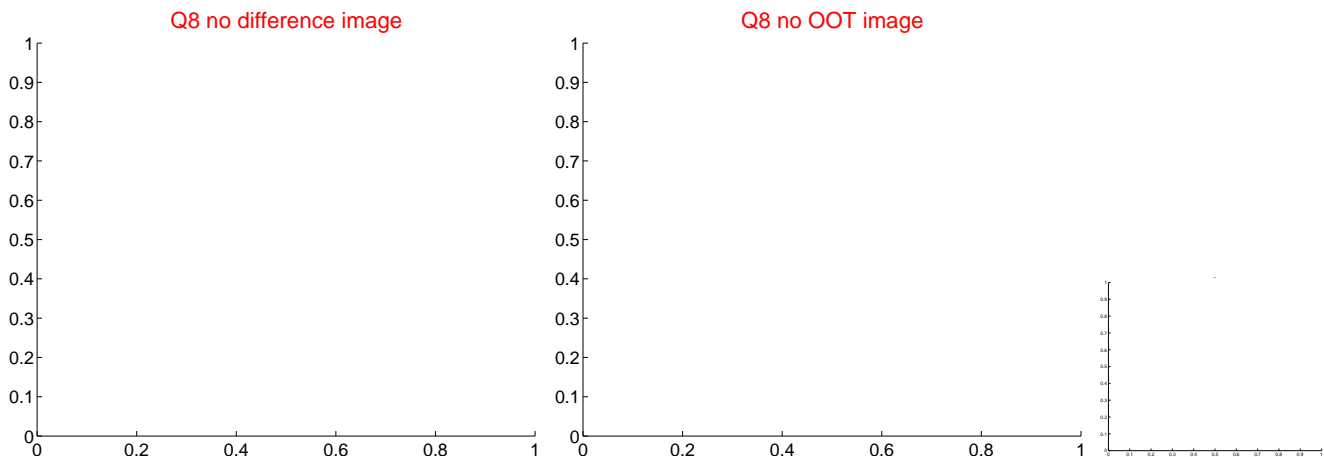
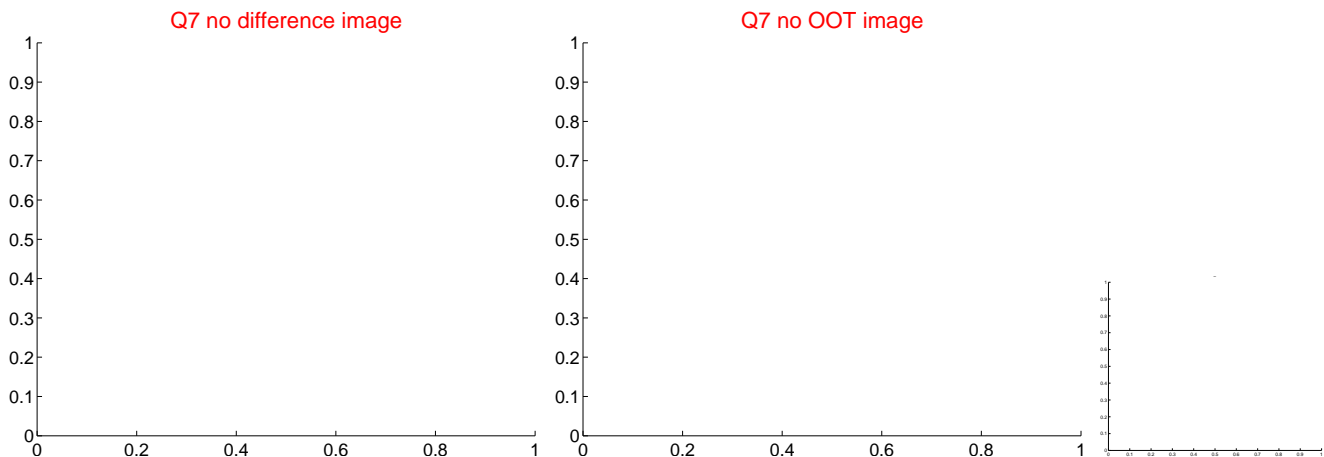
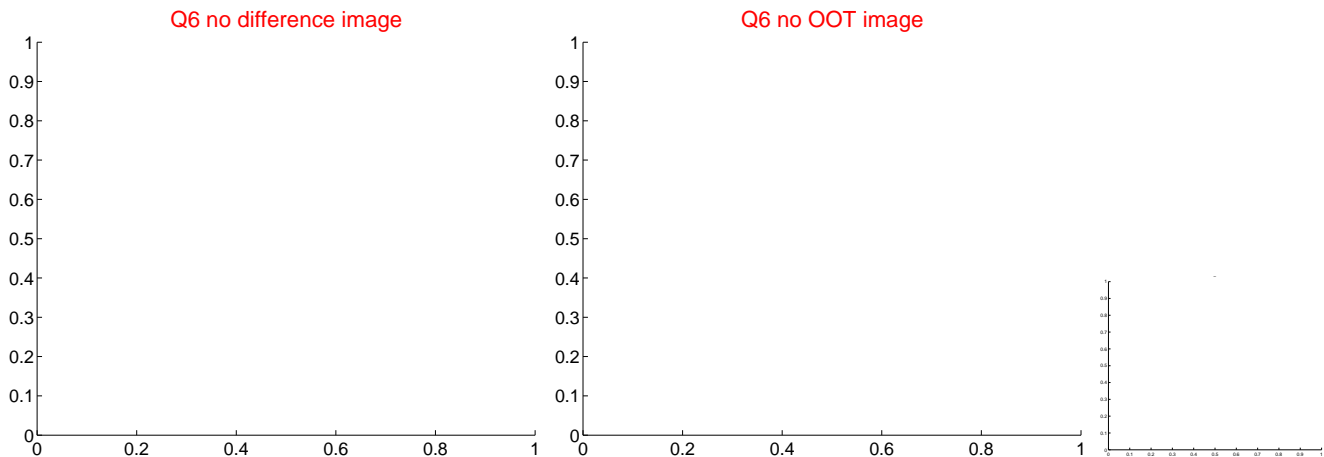
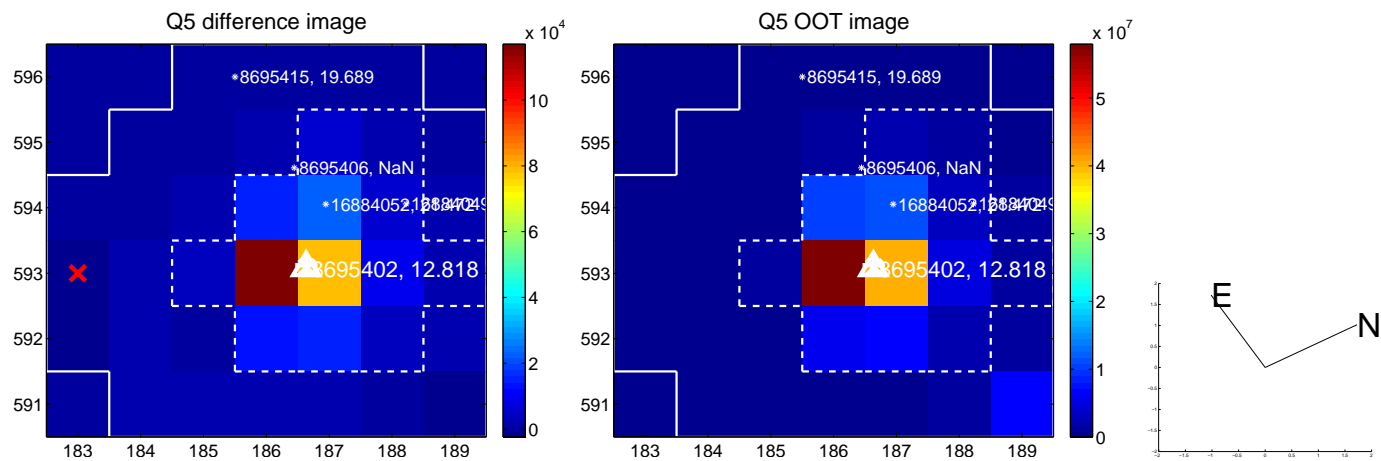


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: three-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

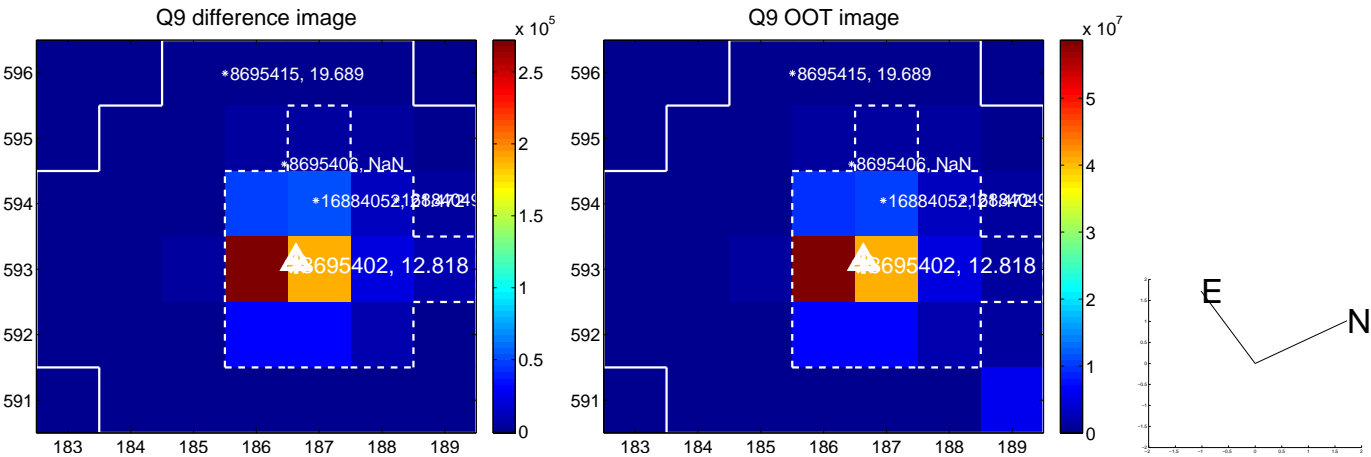


white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

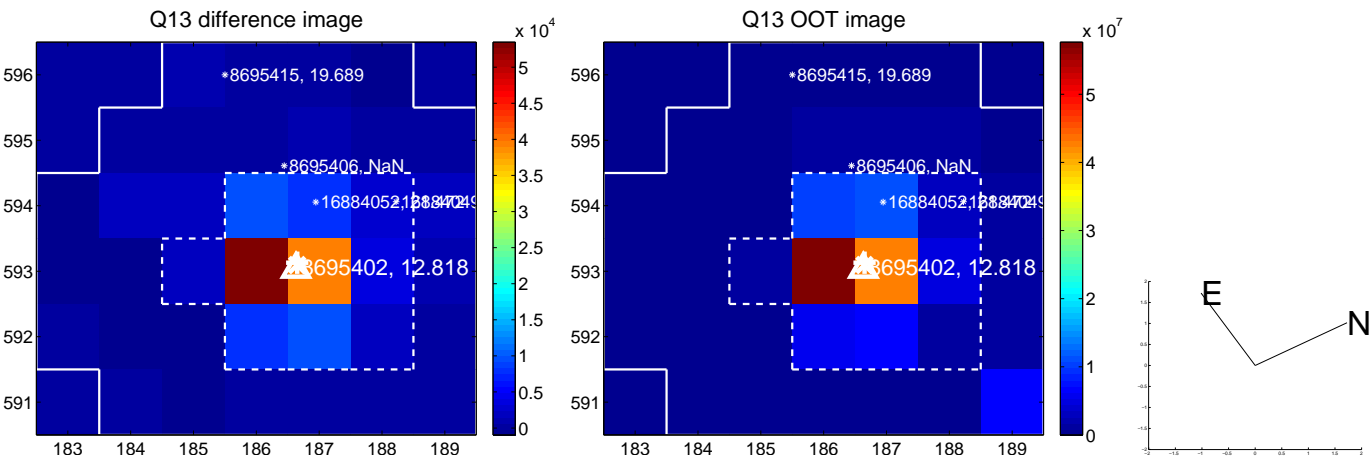




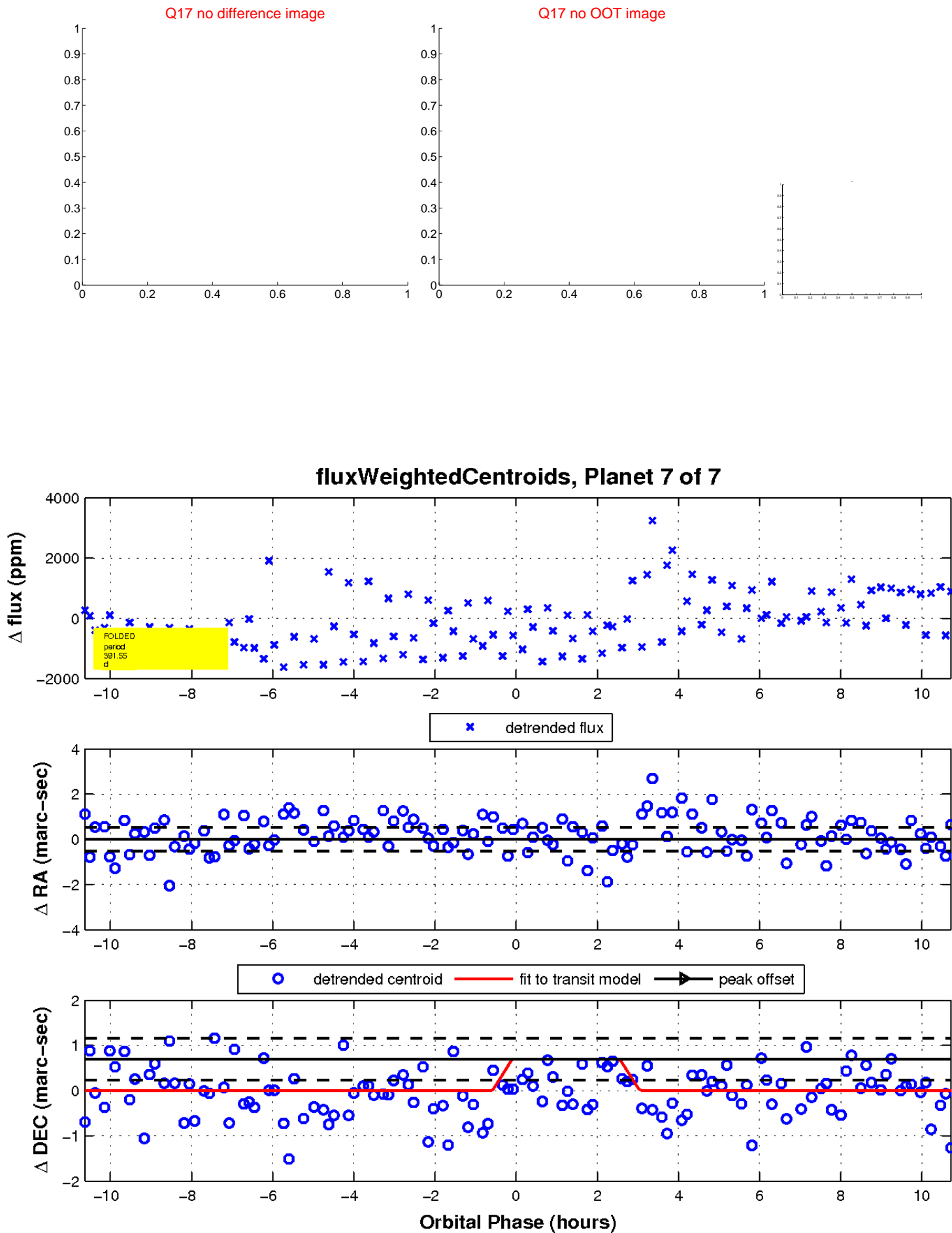
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ×: large negative pixel value.



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

