

# KIC 006794736

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
006794736-01	OBS	No	422.809227	248.194639	2113.1	8.820	8.9	9.1	11.48	4511	67.27	39.97
006794736-02	OBS	No	239.900247	136.999059	1113.6	9.122	7.5	7.3	11.48	4511	46.94	85.09

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
006794736-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL—MOD_NONUNIQ_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
006794736-02	OBS	FP	0.07	1	0	0	0	INCONSISTENT_TRANS—CENT_FEW_DIFFS

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

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

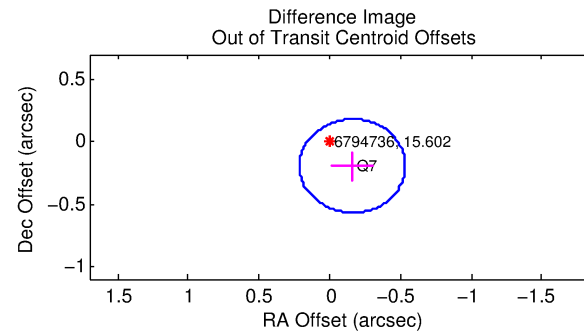
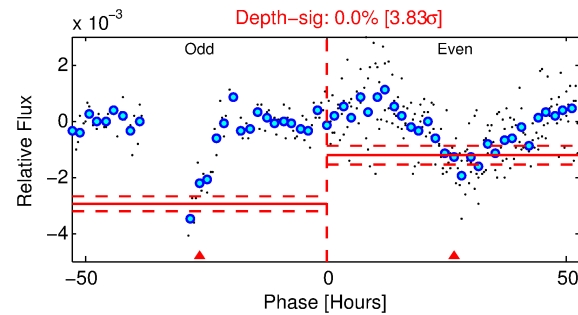
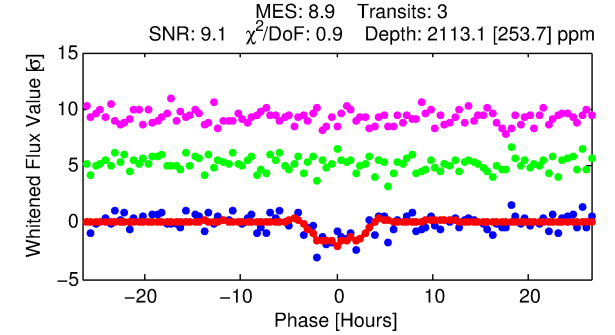
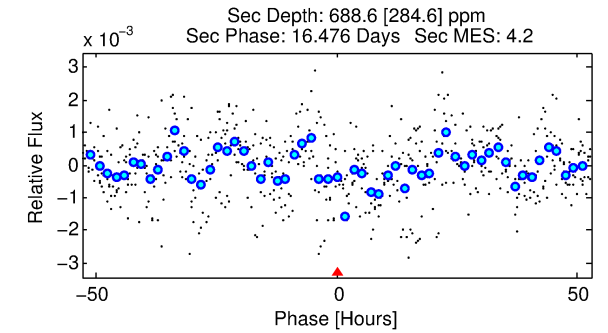
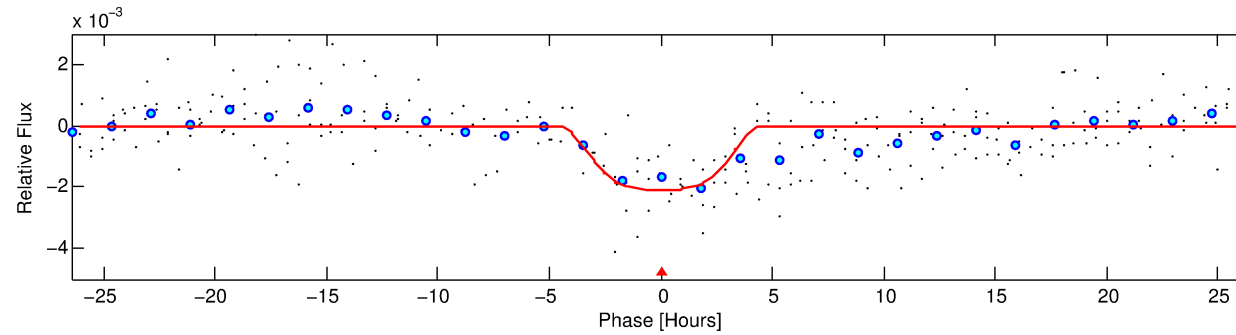
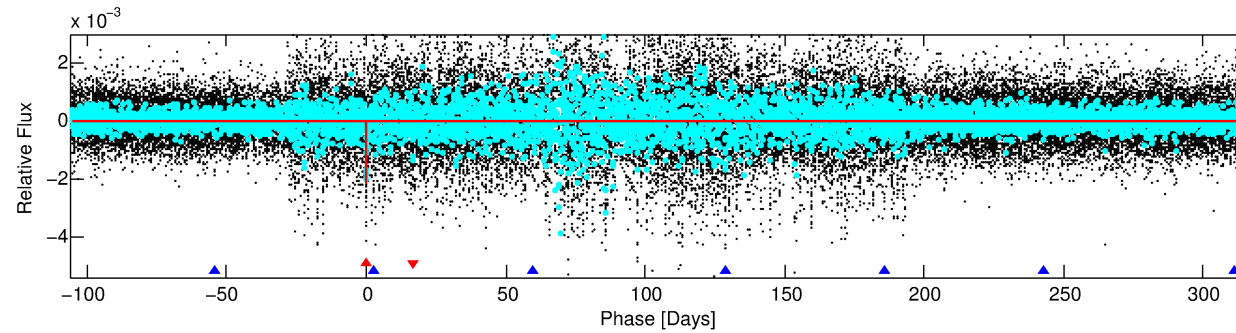
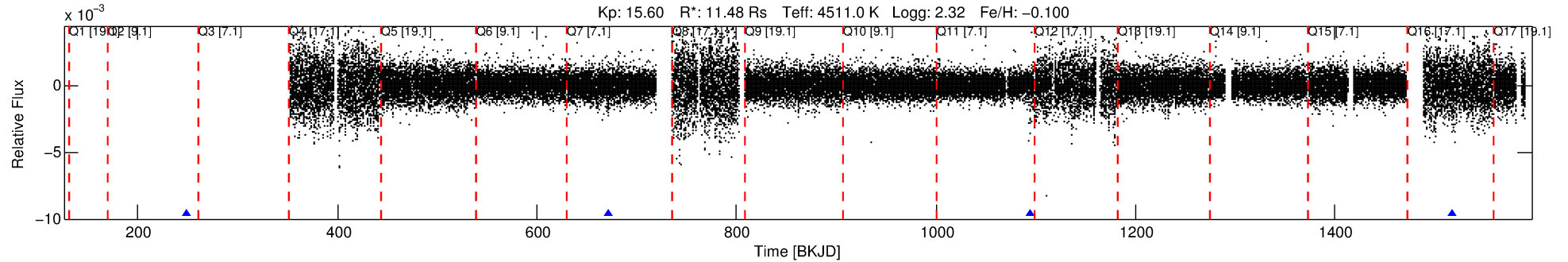
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 006794736-01

No Significant Match Found

# DV One-Page Summary

KIC: 6794736 Candidate: 1 of 2 Period: 422.809 d



## DV Fit Results:

Period = 422.80923 [0.01450] d  
Epoch = 248.1946 [0.0269] BKJD  
Rp/R\* = 0.0537 [0.0053]  
a/R\* = 188.37 [38.71]  
b = 0.92 [0.04]  
Seff = 39.97 [8.68]  
Teq = 641 [35] K  
Rp = 67.27 [18.77] Re  
a = 1.1059 [0.1943] AU  
Ag = 102.40 [50.33] [2.01σ]  
Teffp = 3153 [373] K [6.71σ]

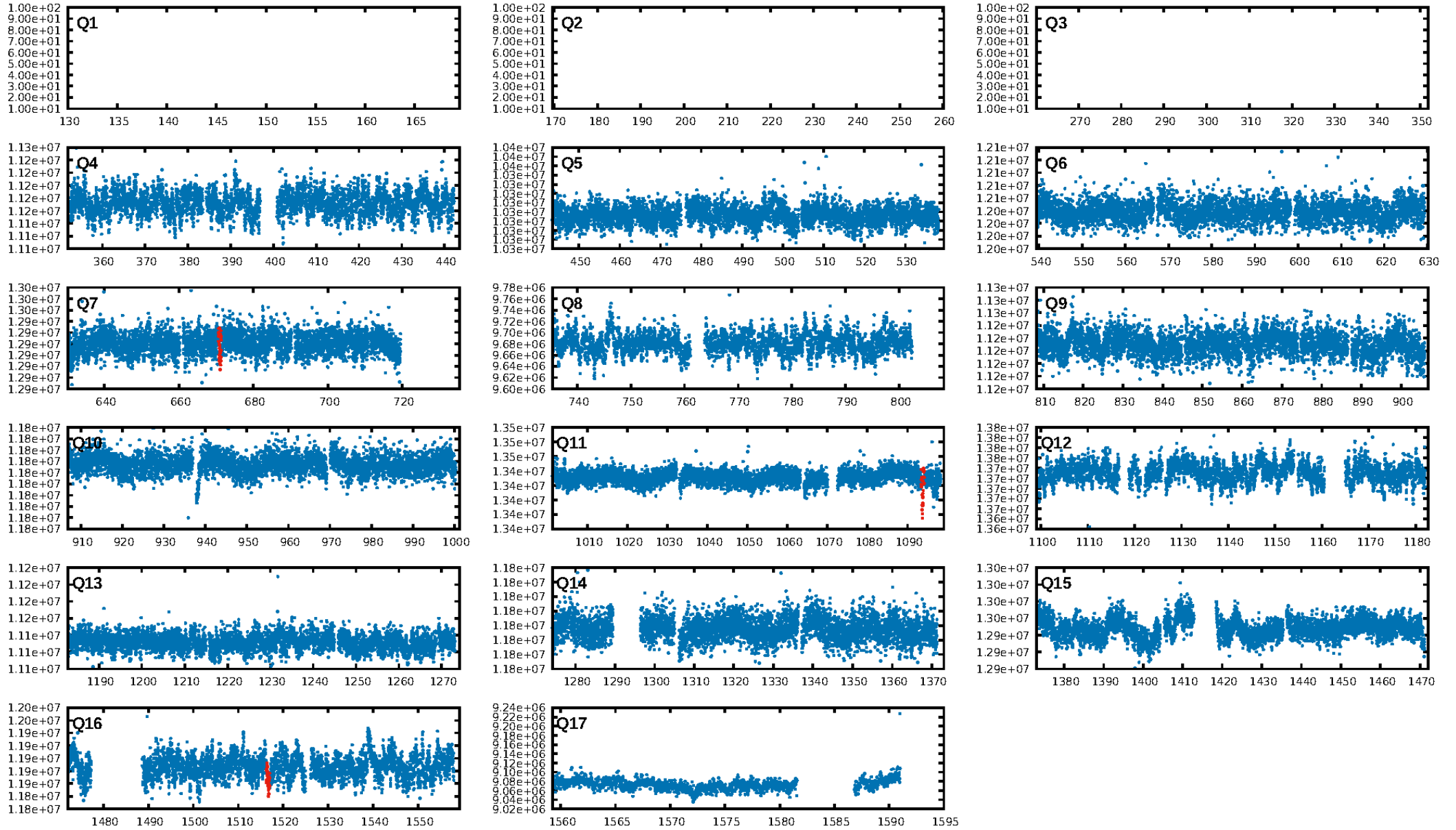
## DV Diagnostic Results:

ShortPeriod-sig: 100.0% [345.96σ]  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: 1.7%  
ModelChiSquareGof-sig: 98.2%  
Bootstrap-pfa: 5.80e-14  
RollingBand-fgt: 1.00 [3/3]  
GhostDiagnostic-chr: 1.677  
Centroid-sig: 74.9%  
Centroid-so: 3.339 arcsec [6.21σ]  
OotOffset-rm: 0.252 arcsec [2.02σ]  
OotOffset-st: 0/1/0/0 [1]  
KicOffset-rm: 4.880 arcsec [40.89σ]  
KicOffset-st: 0/1/0/0 [1]  
DiffImageQuality-fgm: 1.00 [1/1]  
DiffImageOverlap-fno: 1.00 [1/1]

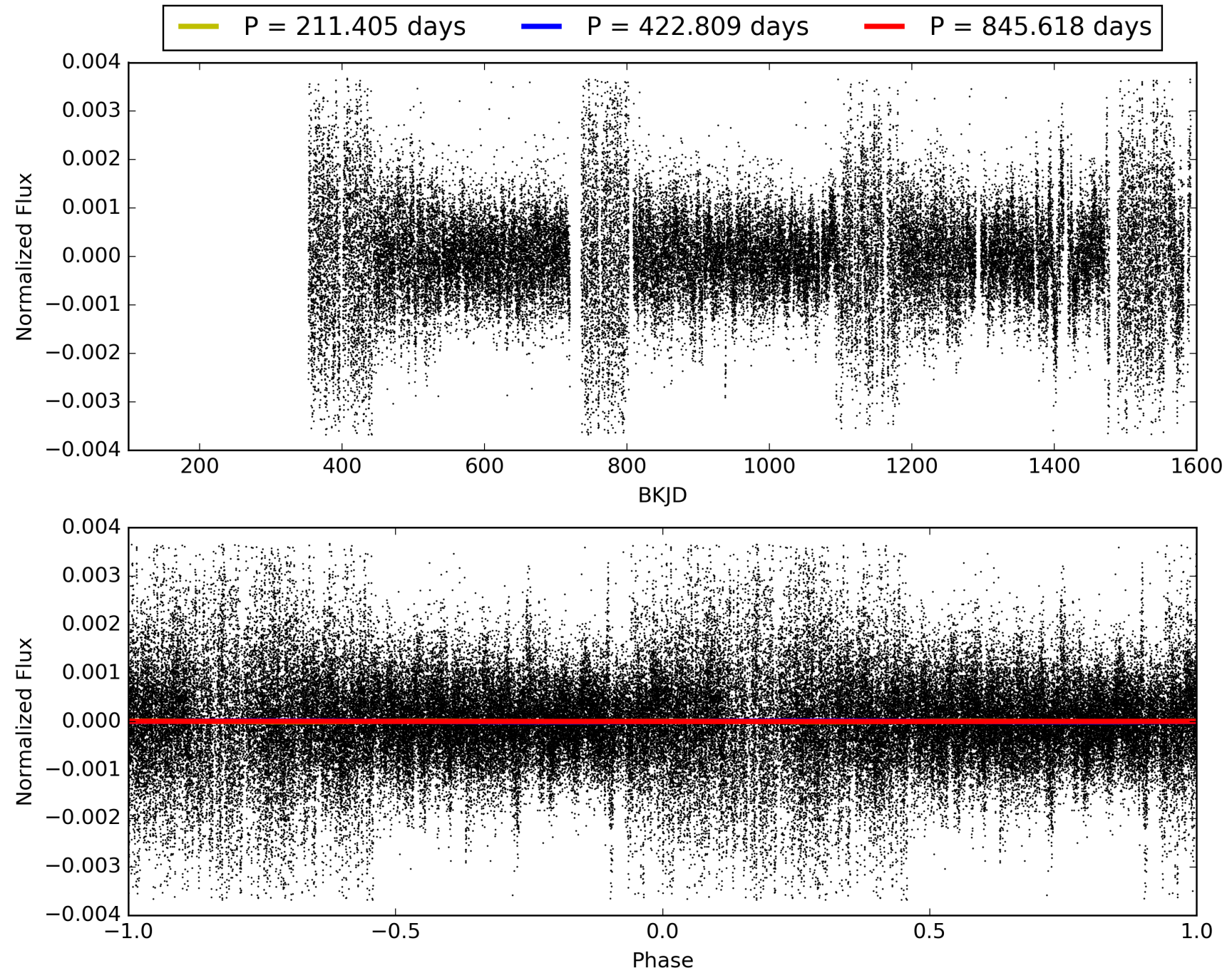
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 16:31:08 Z

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

# TCE 006794736-01, PDC Light Curves

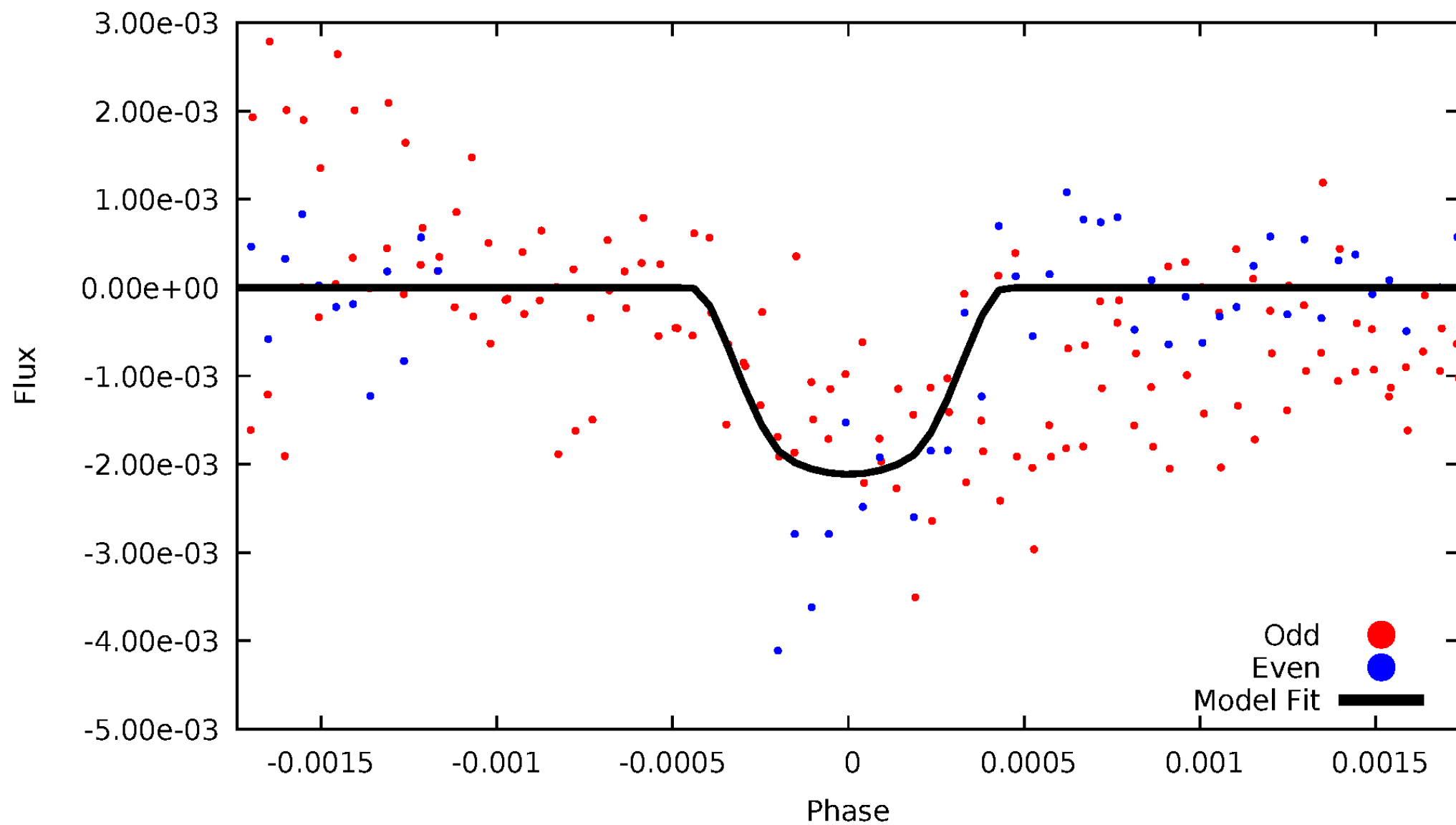


TCE 006794736-01



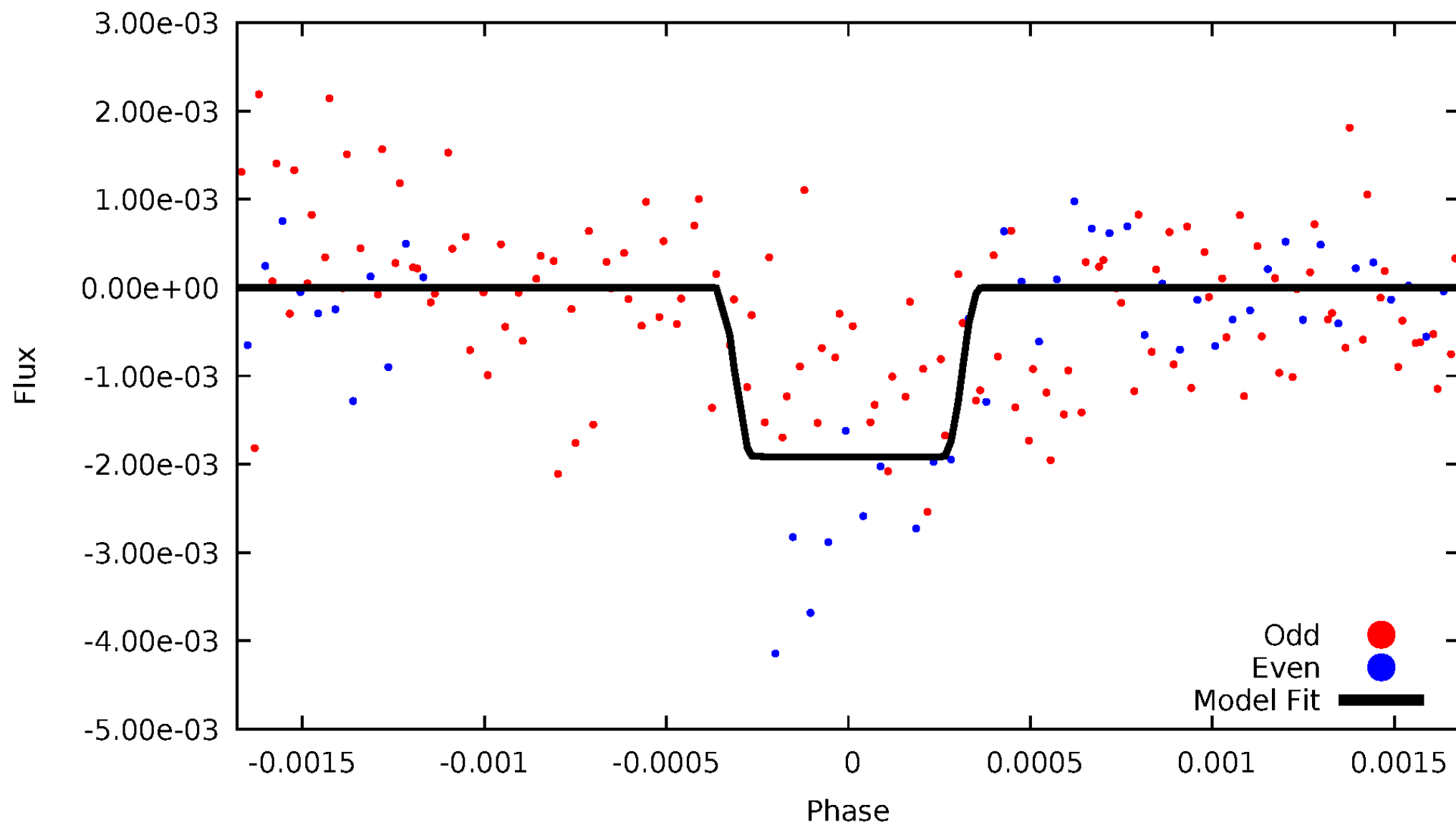
# DV Odd/Even

TCE 006794736-01

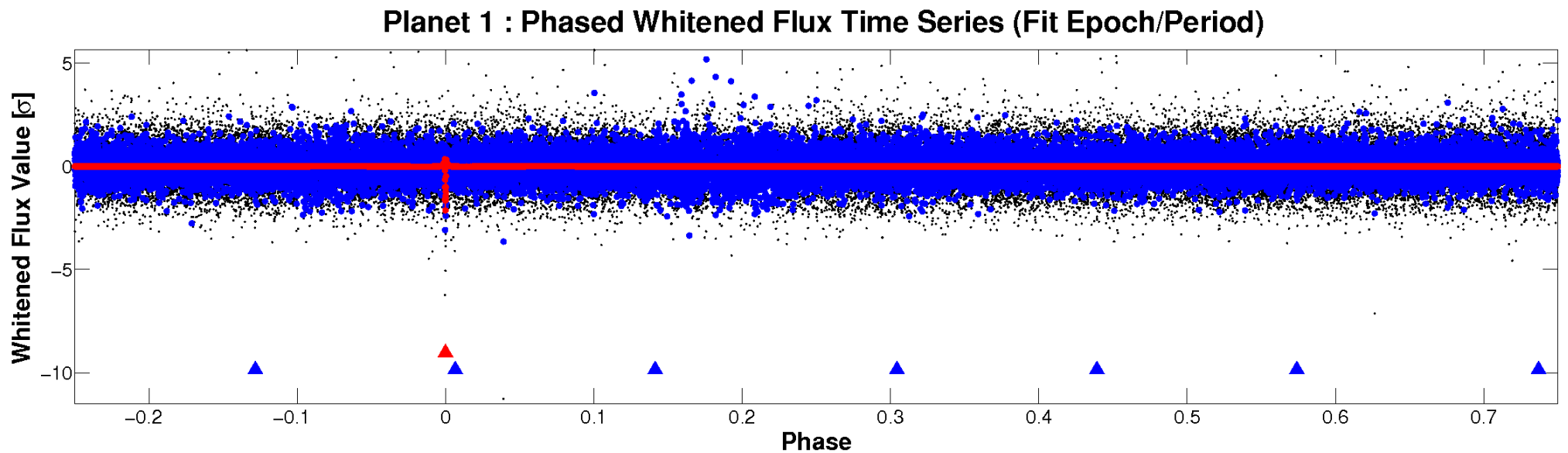
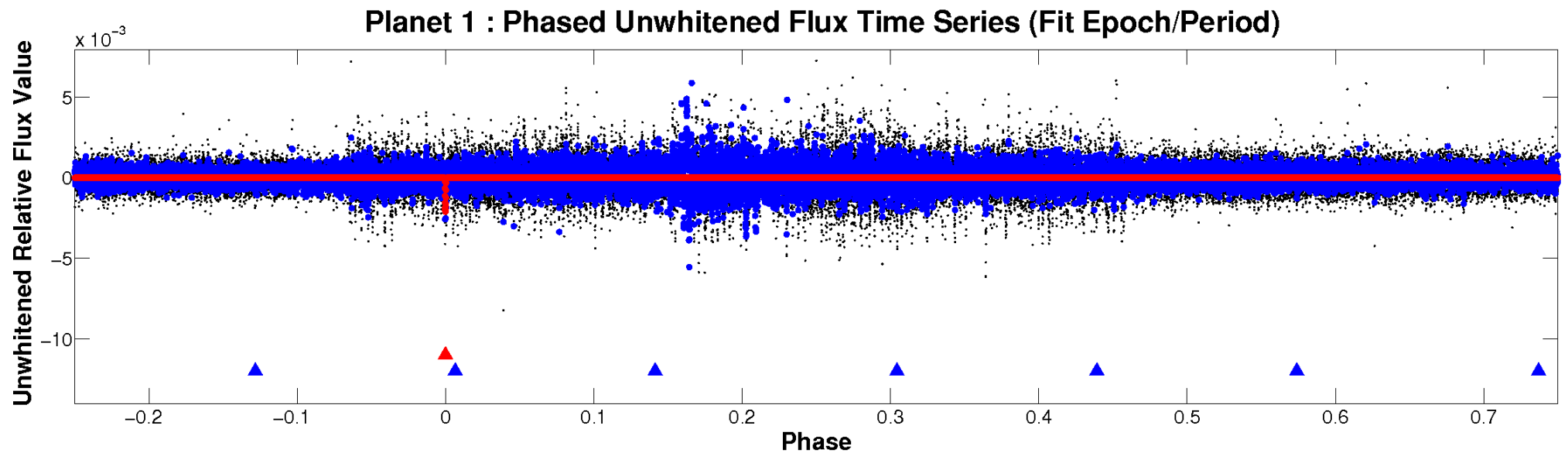


# ALT Odd/Even

TCE 006794736-01



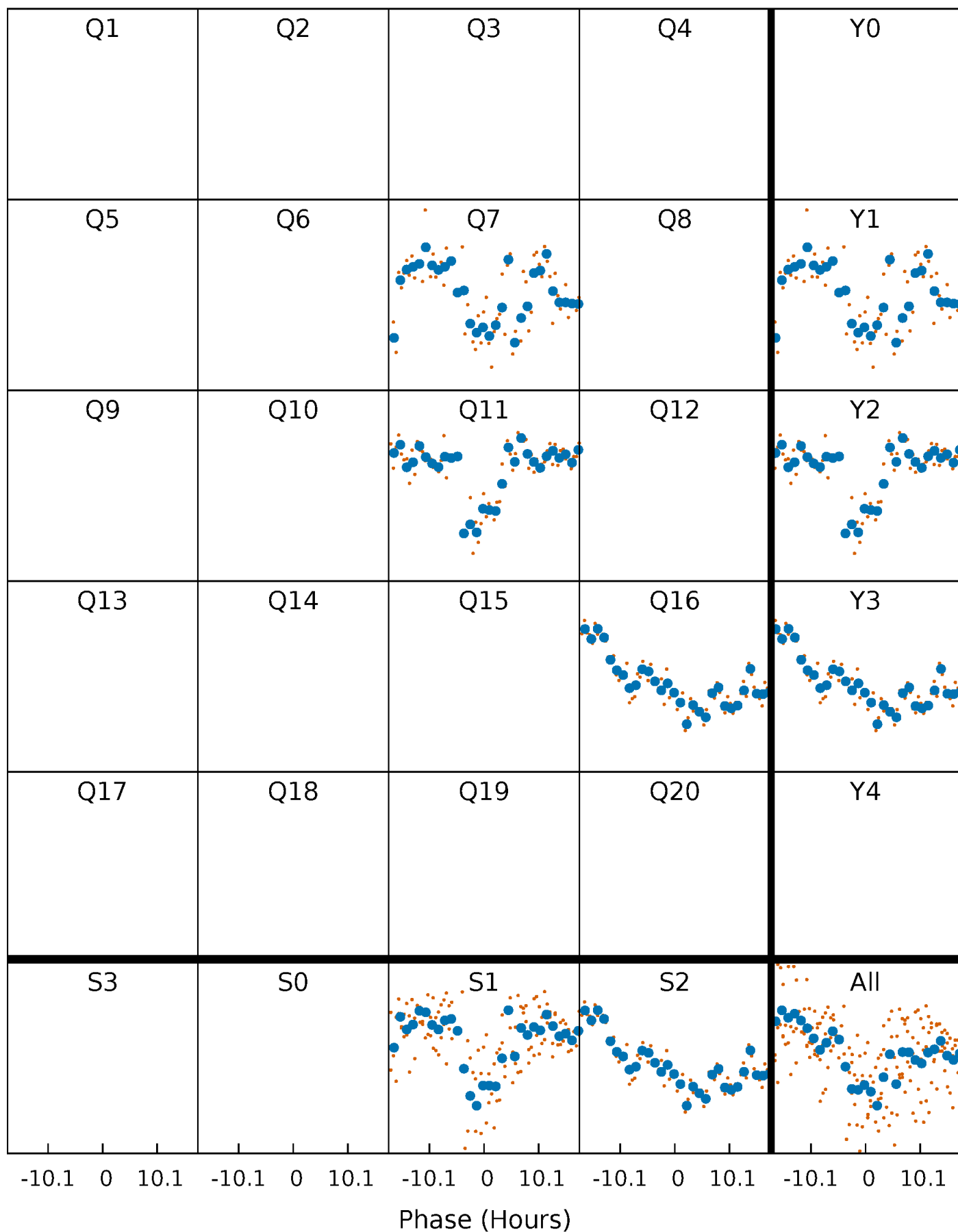
# Non-Whitened Vs. Whitened Light Curve





# PDC Quarter-Phased Transit Curves

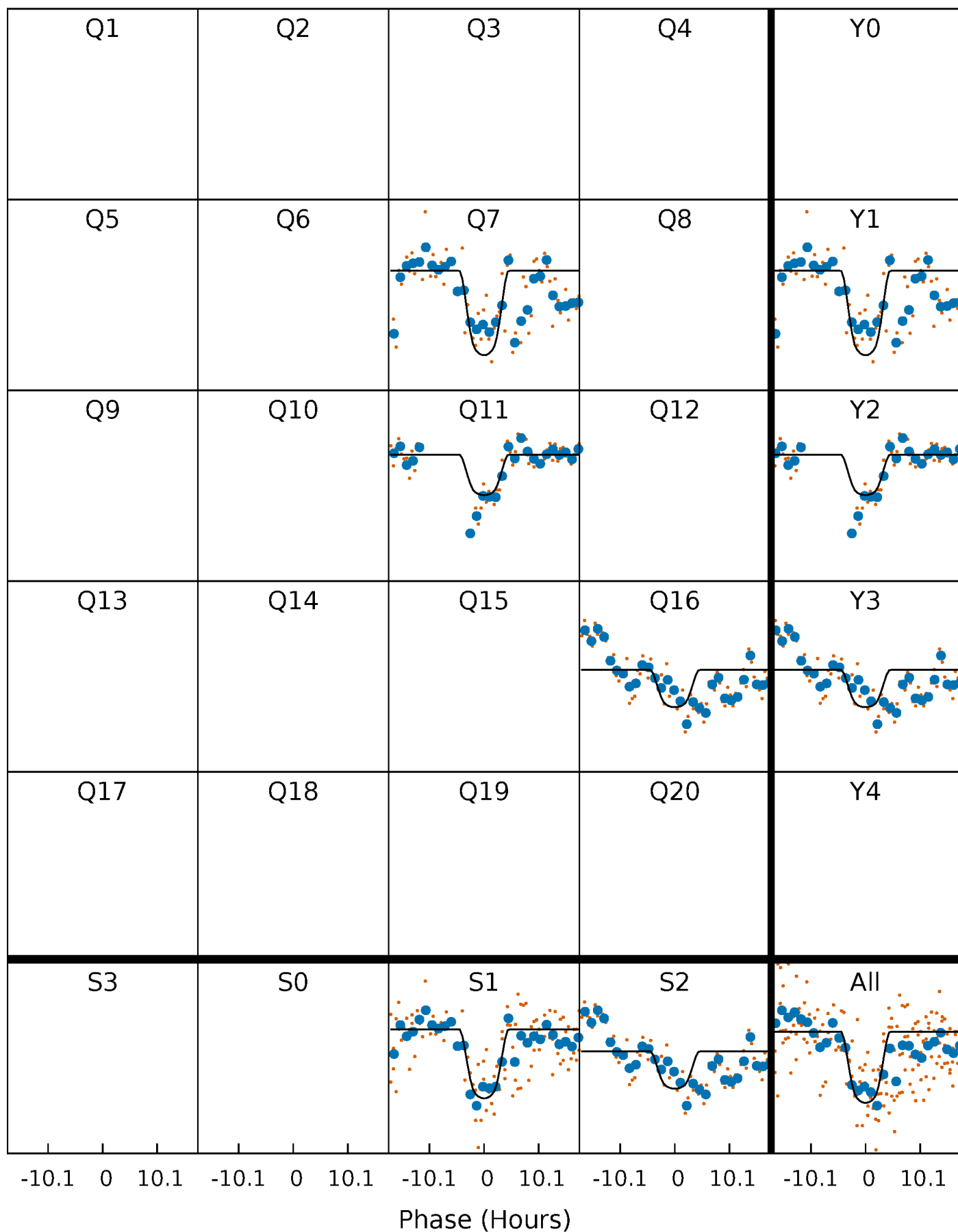
TCE 006794736-01 P=422.809227 Days  $T_0=248.194639$  (BKJD)





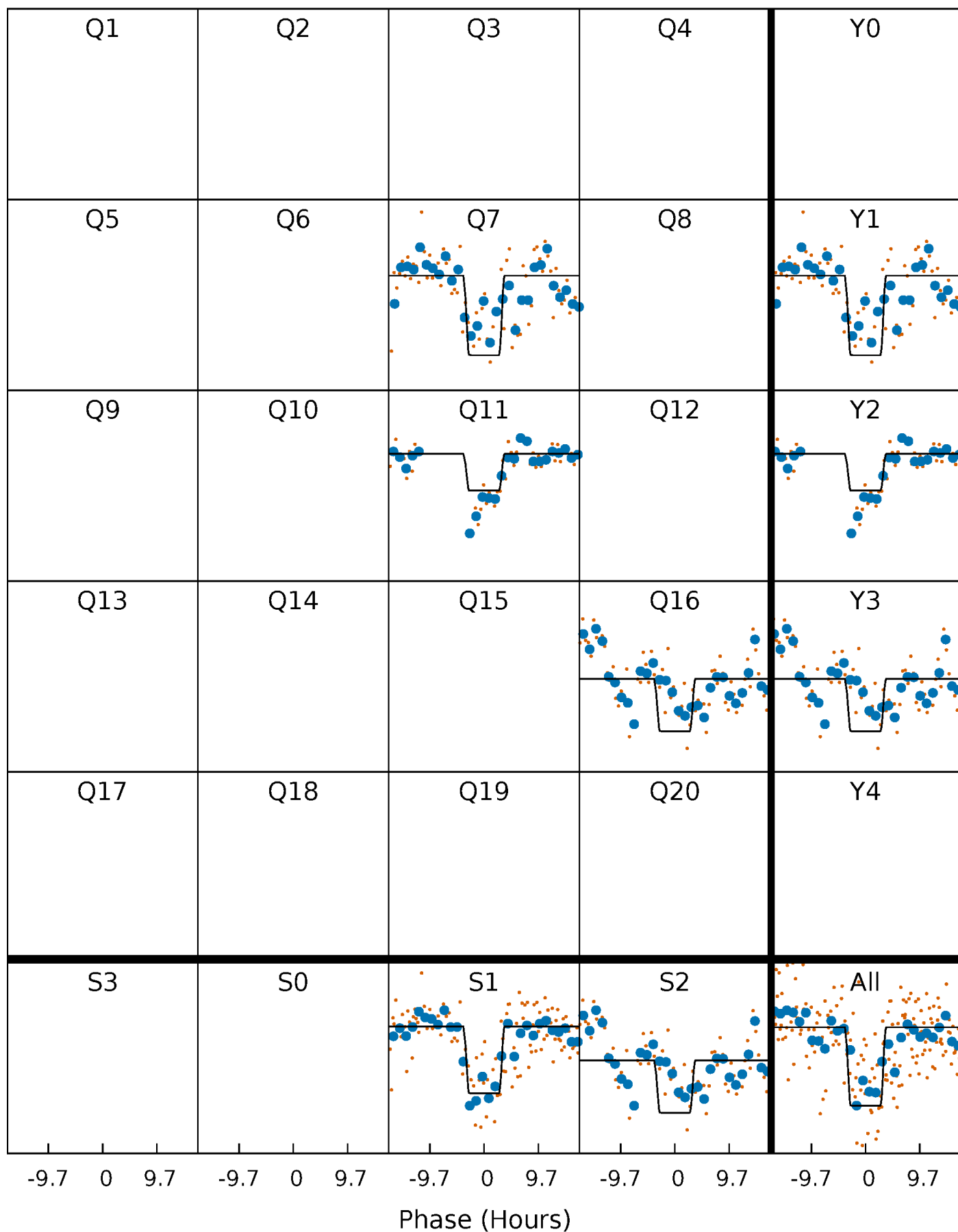
# DV Quarter-Phased Transit Curves

TCE 006794736-01 P=422.809227 Days  $T_0=248.194639$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

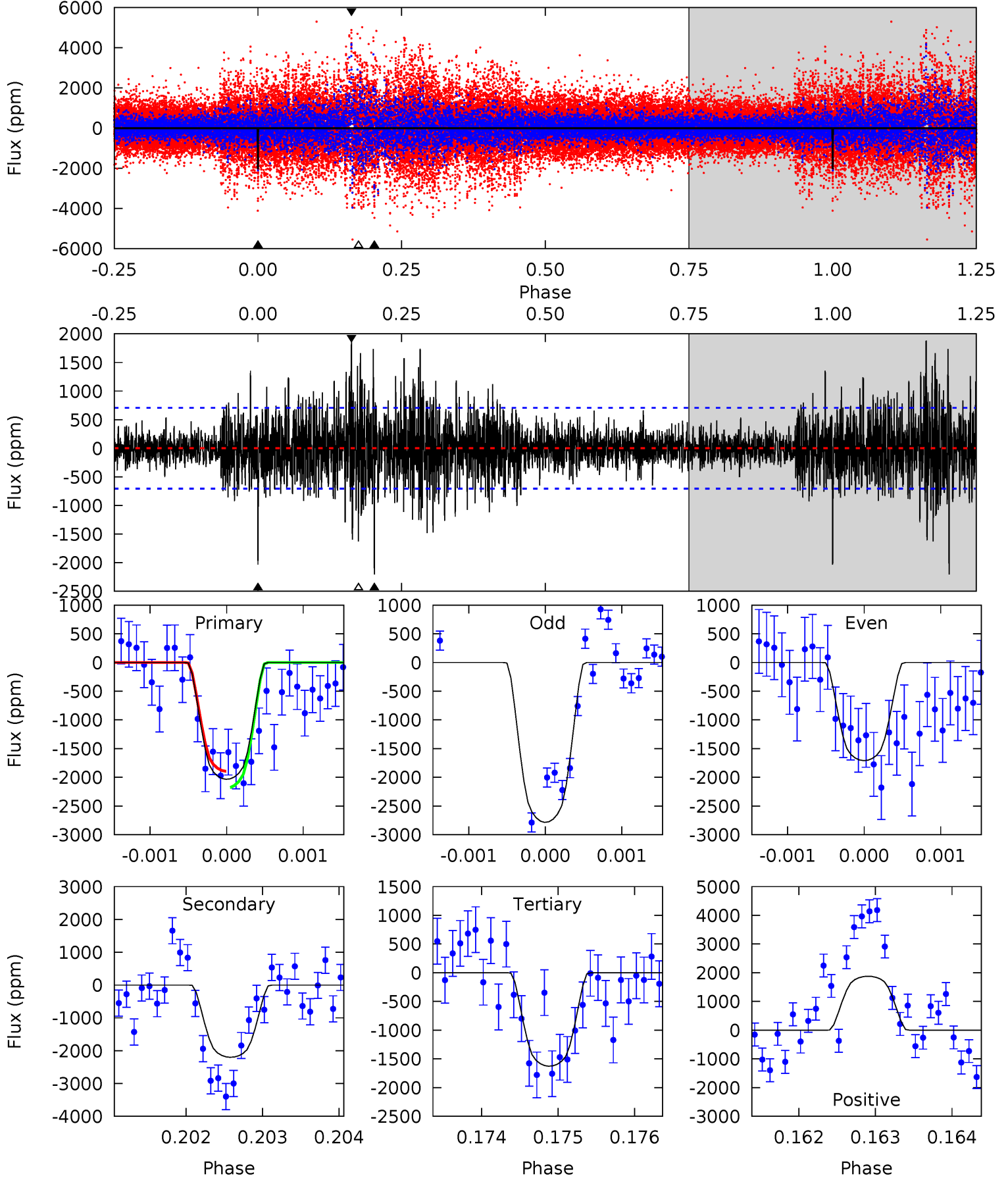
TCE 006794736-01 P=422.797601 Days  $T_0=248.217935$  (BKJD)



# DV Model-Shift Uniqueness Test

006794736-01, P = 422.809227 Days, E = 248.194639 Days

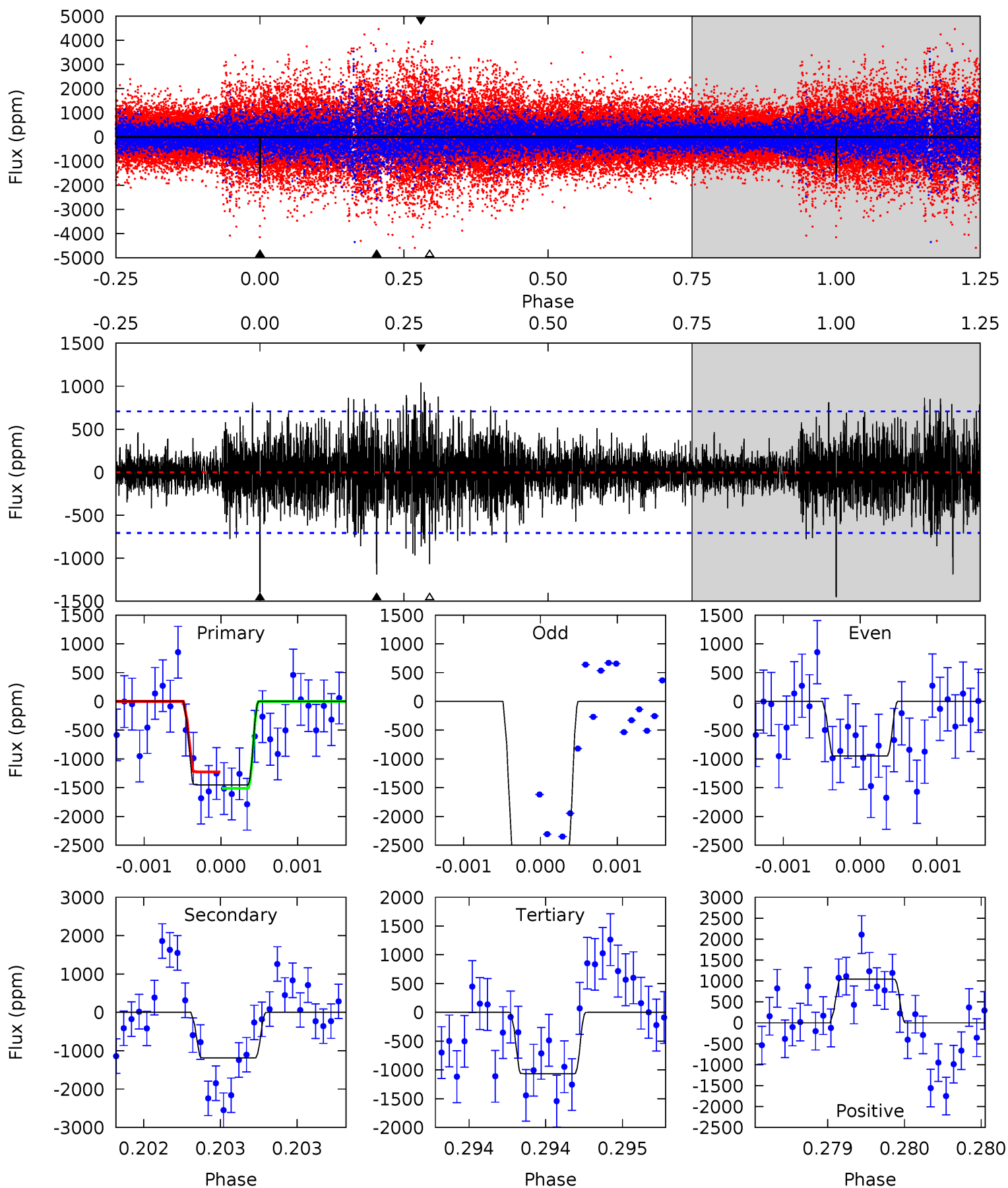
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
15.8	17.0	12.6	14.6	5.48	3.33	2.77	3.15	1.20	4.44	2.50	3.62	1.12	0.46	1.08



# Alt Model-Shift Uniqueness Test

006794736-01, P = 422.797601 Days, E = 248.217935 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
11.3	9.24	8.30	8.11	5.50	3.37	1.75	3.01	3.20	0.95	1.14	5.96	1.29	0.42	1.09



### Stellar Parameters For KIC 006794736

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$4511^{+137}_{-91}$	$2.322^{+0.027}_{-0.030}$	$-0.100^{+0.250}_{-0.200}$	$11.479^{+2.999}_{-0.562}$	$1.010^{+0.592}_{-0.070}$	$0.001^{+0.000}_{-0.000}$
	+3%/-2%	+1%/-1%	+250%/-200%	+26%/-5%	+59%/-7%	+12%/-23%
Source	KIC0	AST71	KIC0	DSEP		

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

### Secondary Eclipse Parameters for KIC 006794736-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	$A_{obs}$
DV	$-2202 \pm 129$	$67.30^{+8.37}_{-7.56}$	$898^{+31}_{-24}$	$4287^{+223}_{-166}$	$326^{+77}_{-59}$
Alt.	$-1188 \pm 129$	$54.86^{+8.21}_{-7.23}$	$896^{+33}_{-25}$	$4152^{+227}_{-218}$	$269^{+86}_{-64}$

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

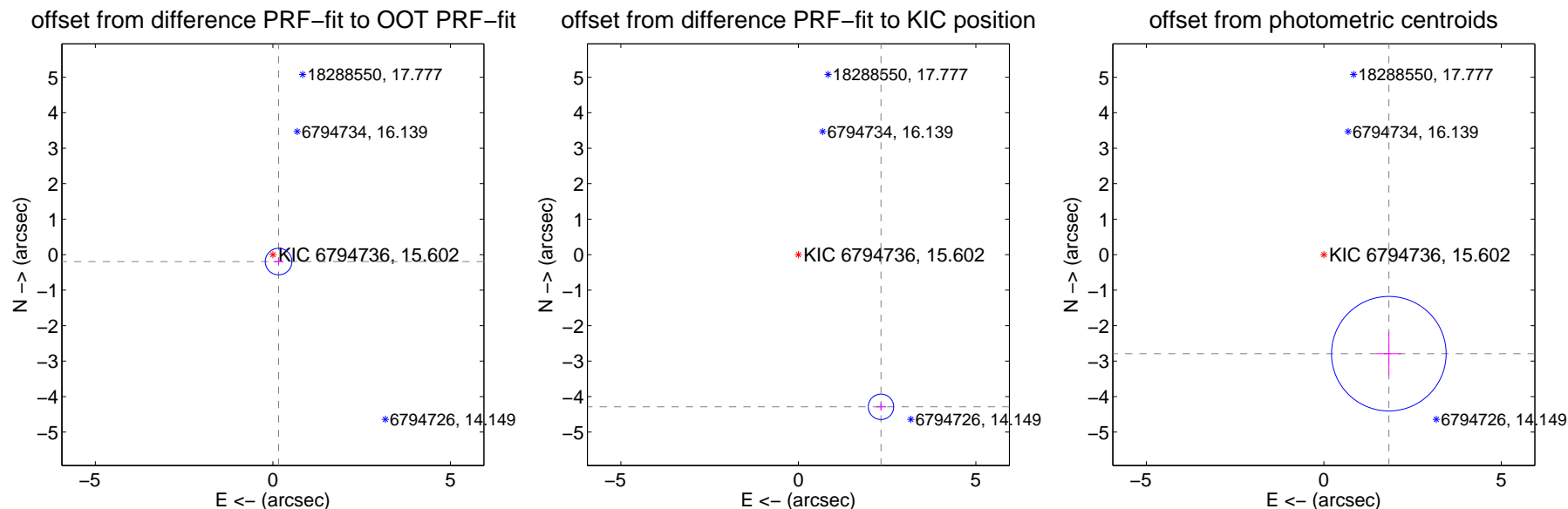
## DV Centroid Data

Supplemental centroid analysis for 006794736-01. Kepler magnitude: 15.60. Transit SNR 9.09

There are 1 quarters with good PRF difference image offsets

The OOT PRF centroid is offset from the target star catalog position by about 4.63 arcsec so the offset from difference PRF-fit to OOT-fit may be invalid.

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.252 \pm 0.125$	2.02	$-0.161 \pm 0.142$	$-0.195 \pm 0.112$
PRF-fit source offset from KIC position	$4.880 \pm 0.119$	40.89	$-2.328 \pm 0.142$	$-4.289 \pm 0.112$
photometric centroid source offset	$3.34 \pm 0.54$	6.21	$-1.83 \pm 0.35$	$-2.79 \pm 0.60$



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



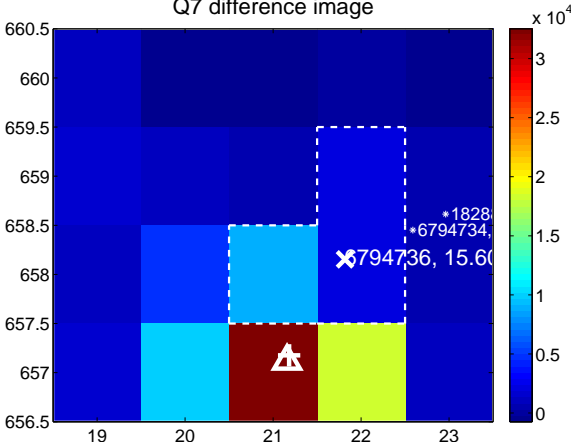
Q6 no difference image



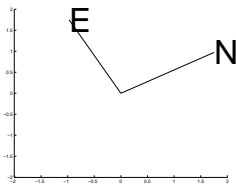
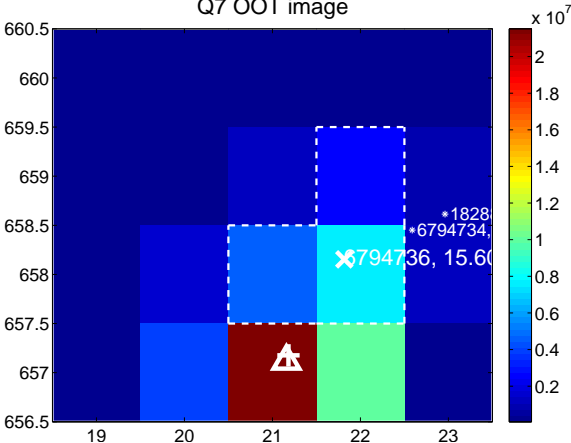
Q6 no OOT image



Q7 difference image



Q7 OOT image



Q8 no difference image



Q8 no OOT image



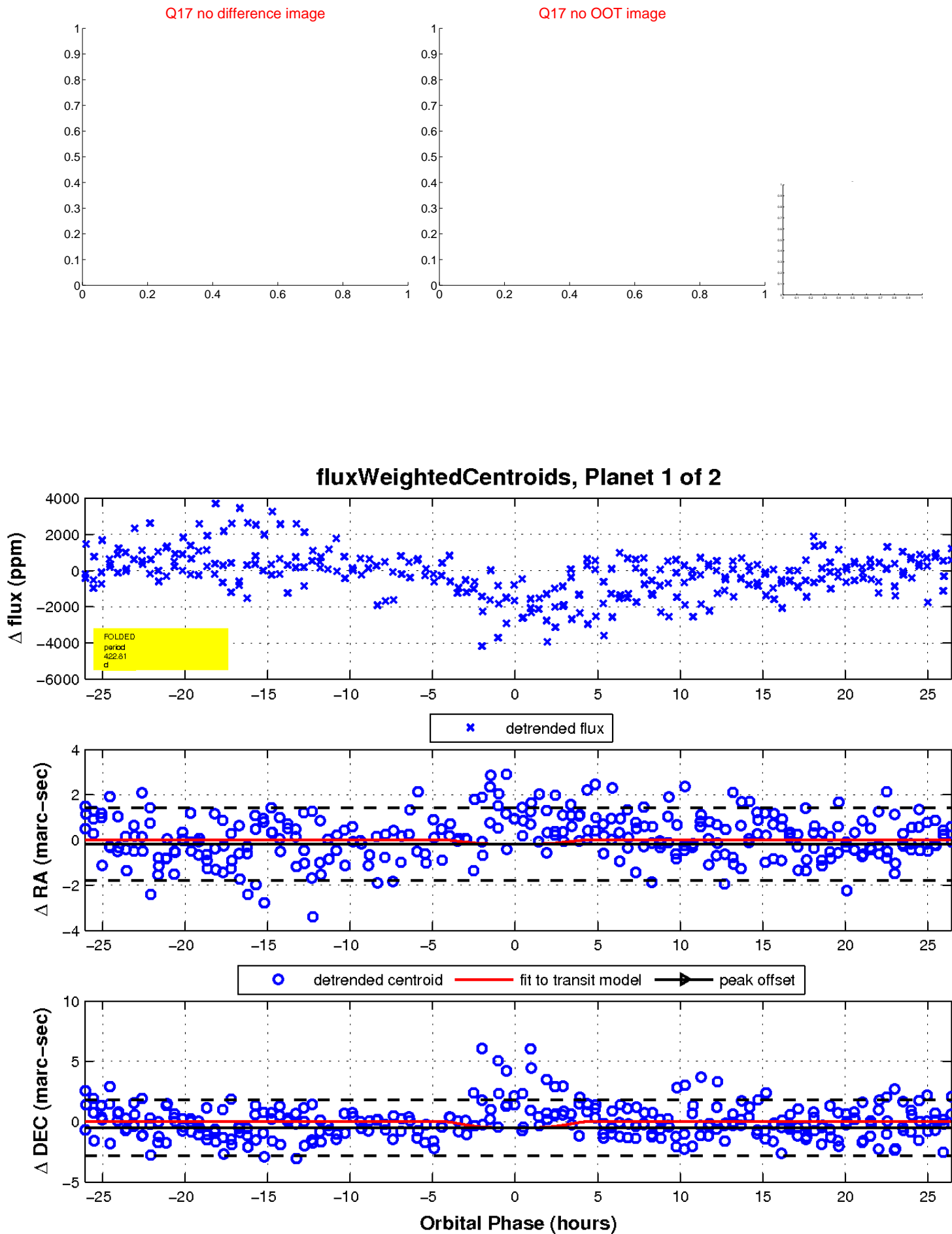
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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

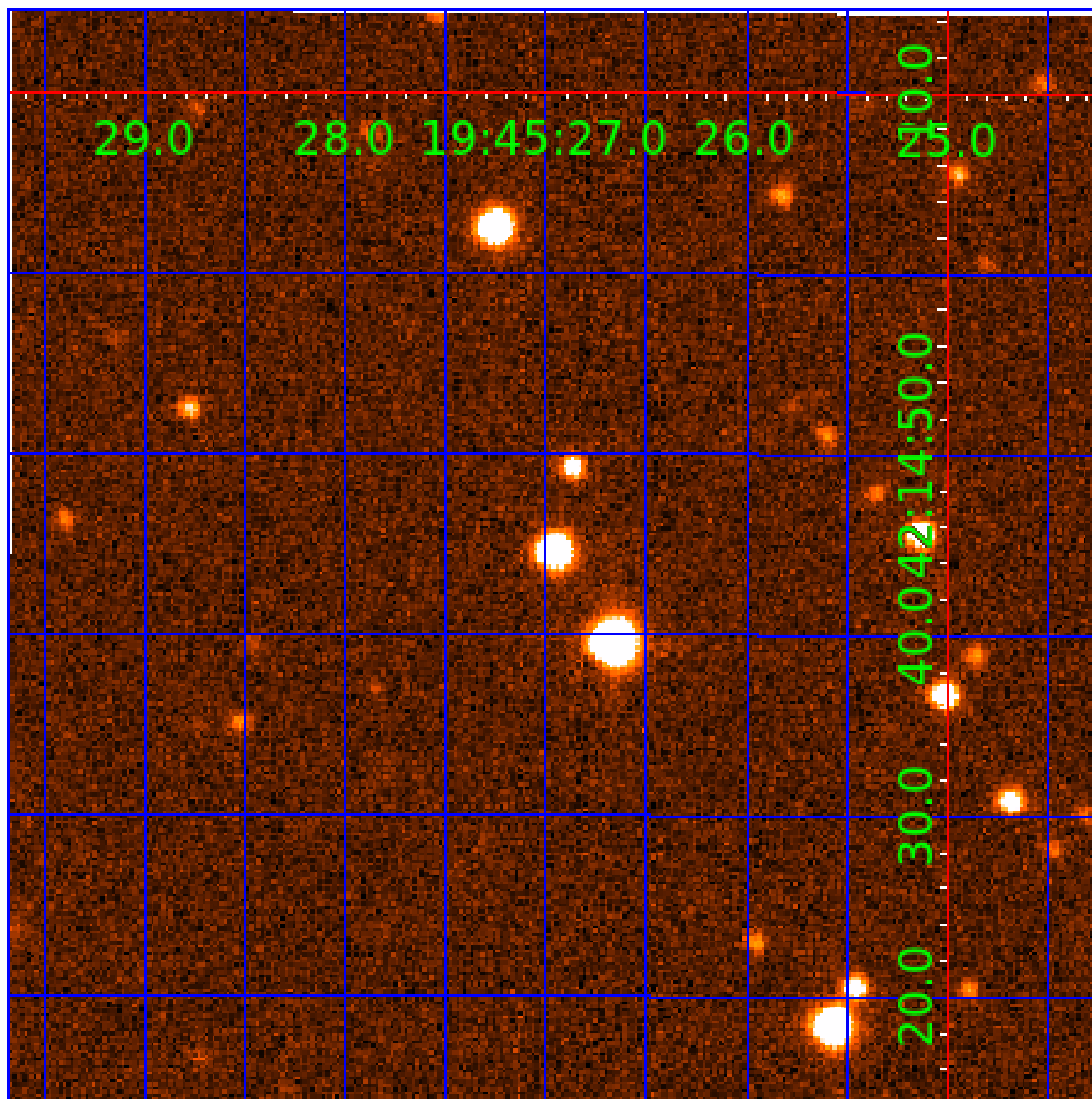


white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



# UKIRT Image

Declination



# KIC 006794736

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
006794736-01	OBS	No	422.809227	248.194639	2113.1	8.820	8.9	9.1	11.48	4511	67.27	39.97
006794736-02	OBS	No	239.900247	136.999059	1113.6	9.122	7.5	7.3	11.48	4511	46.94	85.09

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
006794736-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL—MOD_NONUNIQ_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
006794736-02	OBS	FP	0.07	1	0	0	0	INCONSISTENT_TRANS—CENT_FEW_DIFFS

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

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

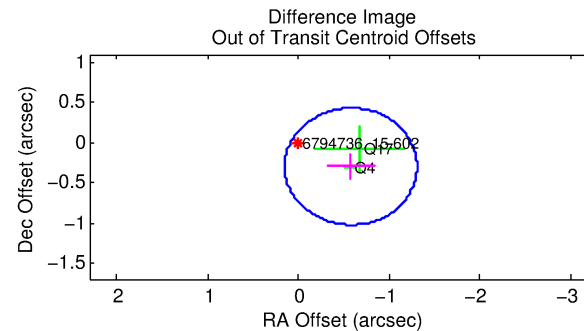
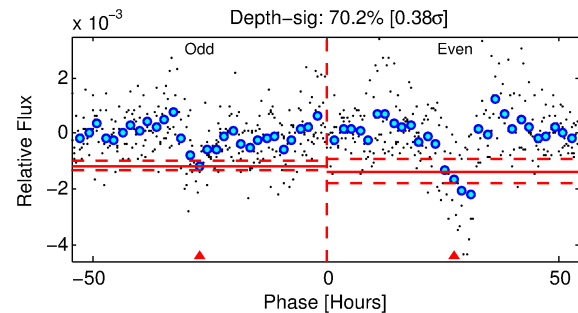
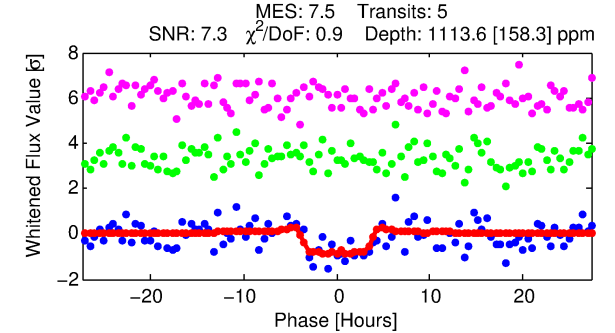
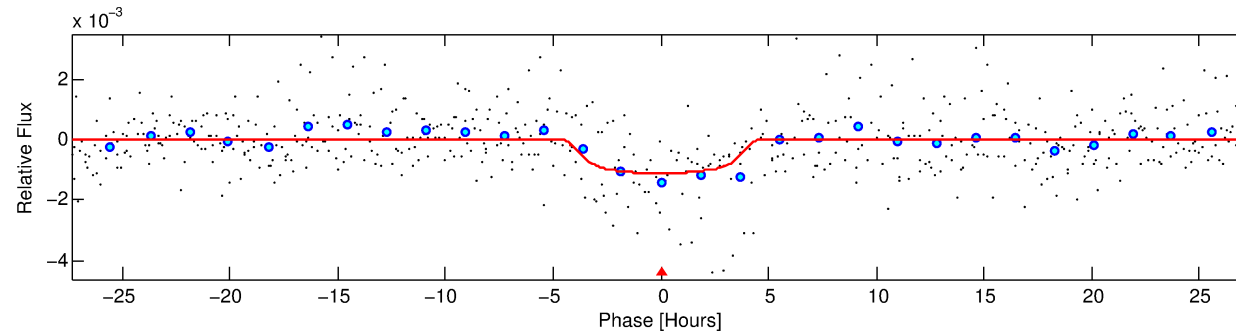
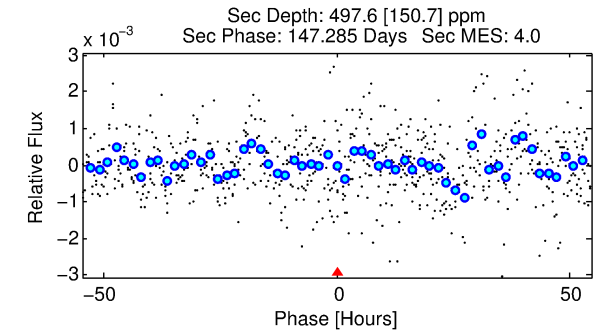
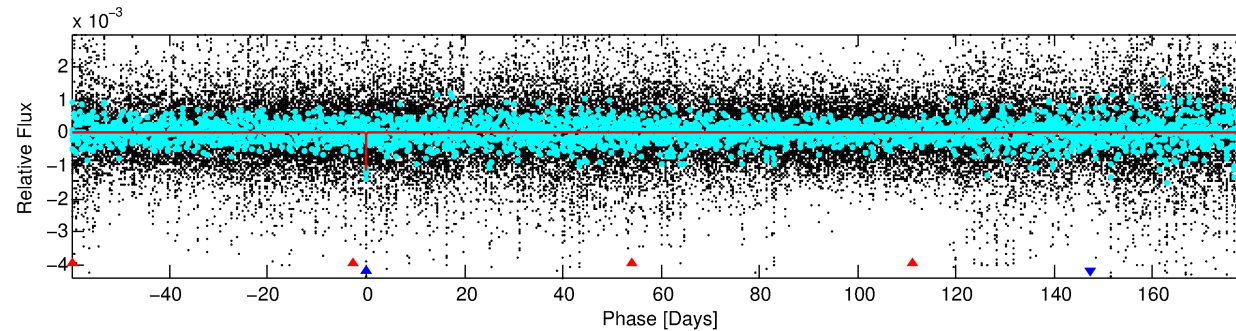
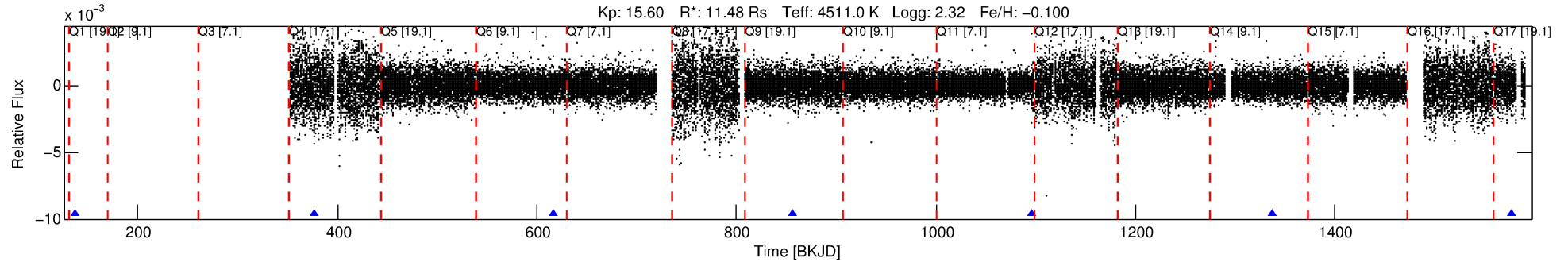
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 006794736-02

No Significant Match Found

# DV One-Page Summary

KIC: 6794736 Candidate: 2 of 2 Period: 239.900 d



## DV Fit Results:

Period = 239.90025 [0.00736] d  
Epoch = 136.9991 [0.0254] BKJD  
Rp/R\* = 0.0375 [0.0056]  
a/R\* = 106.08 [45.41]  
b = 0.89 [0.10]  
Seff = 85.09 [18.49]  
Teq = 774 [42] K  
Rp = 46.93 [14.14] Re  
a = 0.7580 [0.1332] AU  
Ag = 71.40 [33.04] [2.13σ]  
Teffp = 3481 [386] K [6.98σ]

## DV Diagnostic Results:

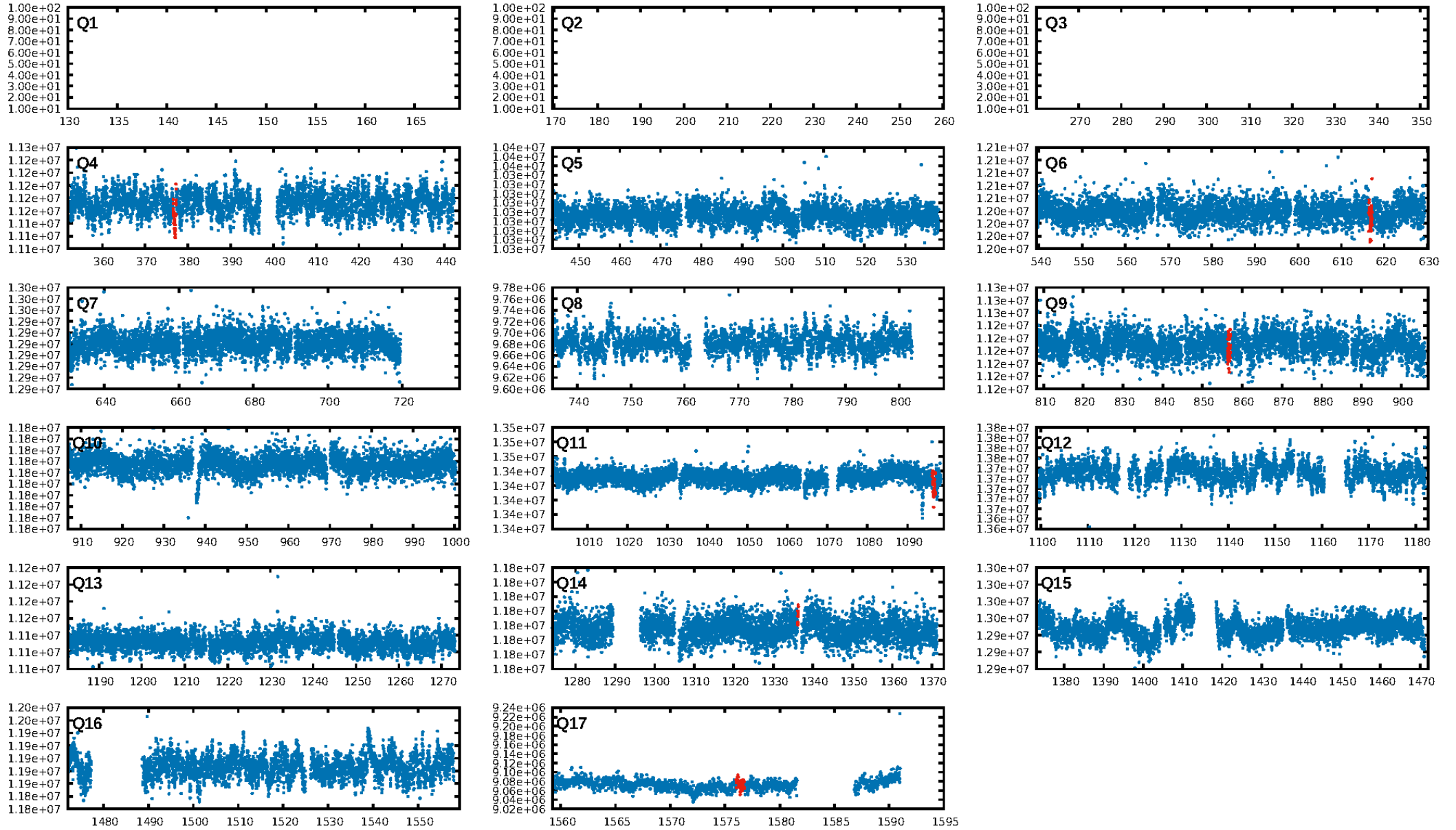
ShortPeriod-sig: N/A  
LongPeriod-sig: 100.0% [345.96σ]  
ModelChiSquare2-sig: 12.6%  
ModelChiSquareGof-sig: 100.0%  
Bootstrap-pfa: 1.02e-10  
RollingBand-fgt: 1.00 [4/4]  
GhostDiagnostic-chr: 18.47  
Centroid-sig: 16.8%  
Centroid-so: 4.133 arcsec [6.91σ]  
OotOffset-rm: 0.650 arcsec [2.68σ]  
OotOffset-st: 0/0/1/1 [2]  
KicOffset-rm: 5.765 arcsec [29.03σ]  
KicOffset-st: 0/0/1/1 [2]  
DiffImageQuality-fgm: 1.00 [2/2]  
DiffImageOverlap-fno: 1.00 [4/4]

Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 16:31:16 Z

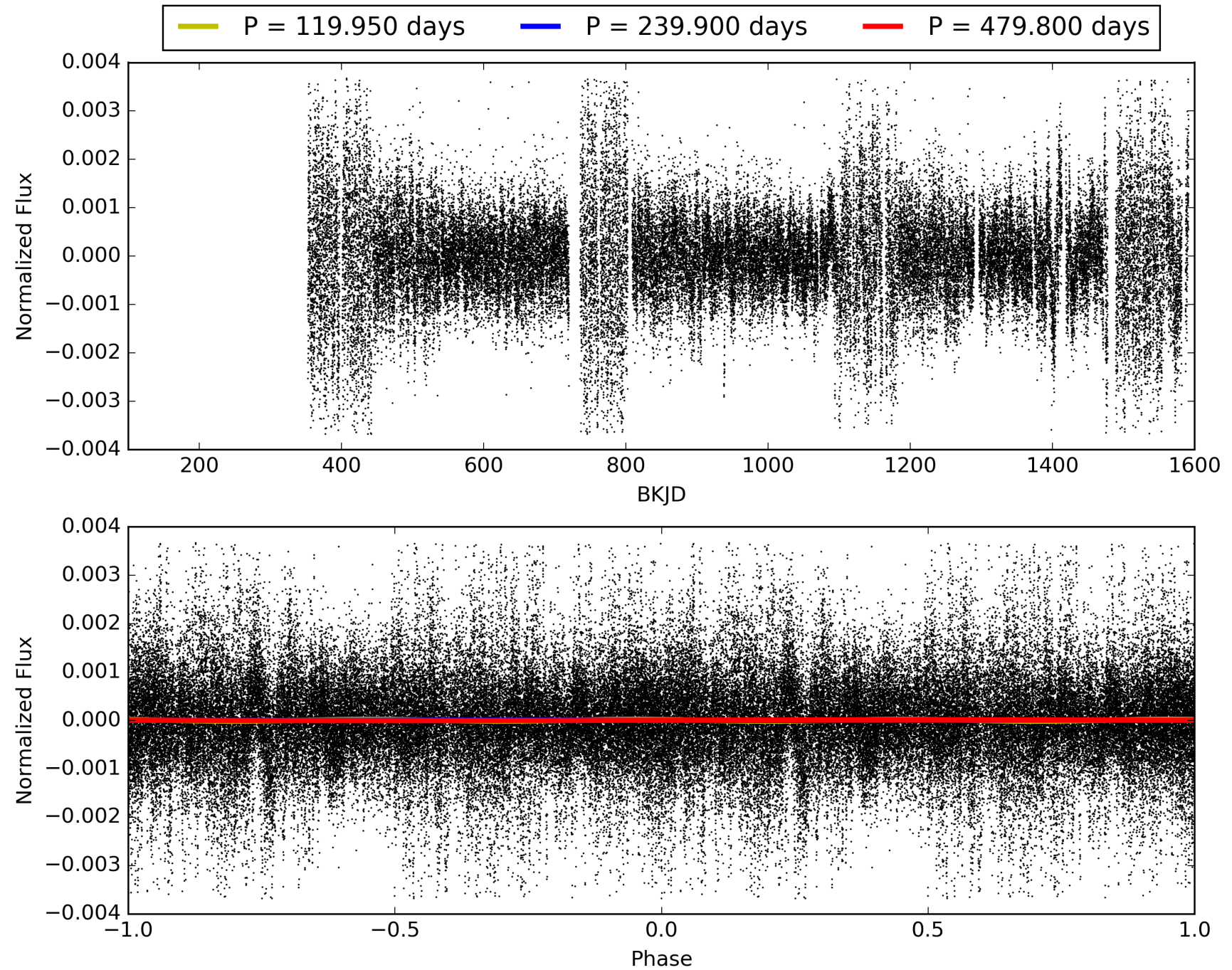
This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center



# TCE 006794736-02, PDC Light Curves

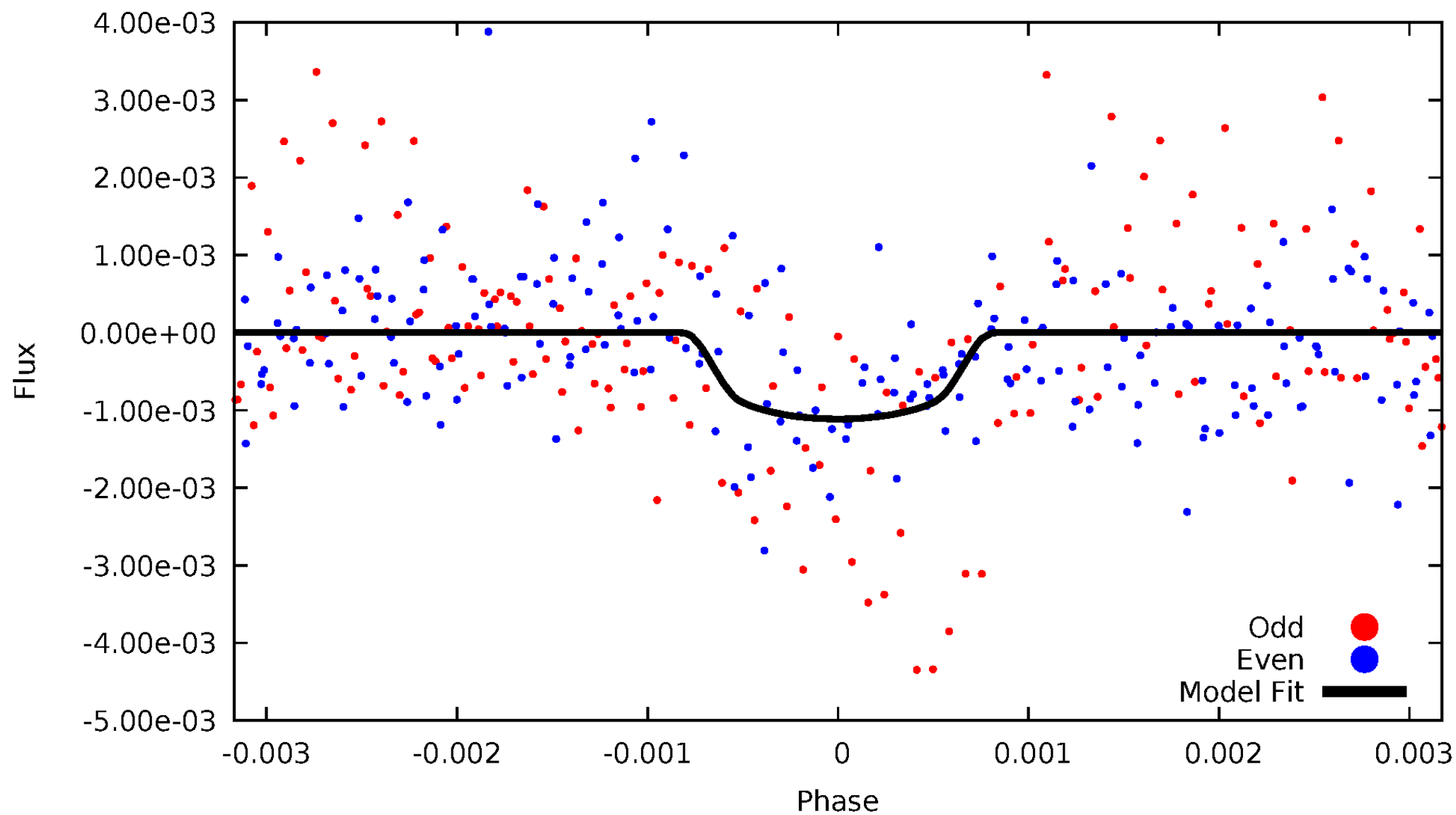


# TCE 006794736-02



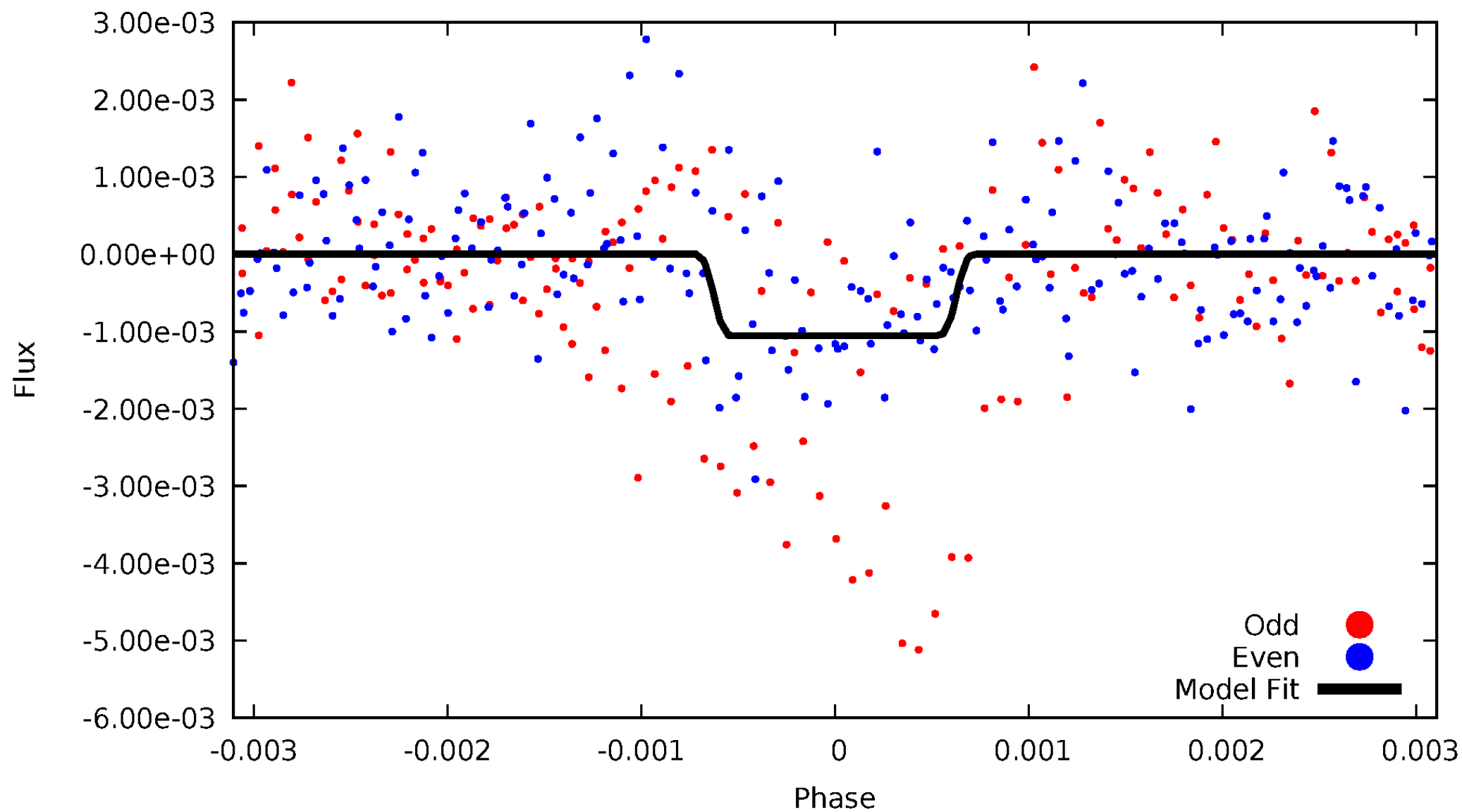
# DV Odd/Even

TCE 006794736-02



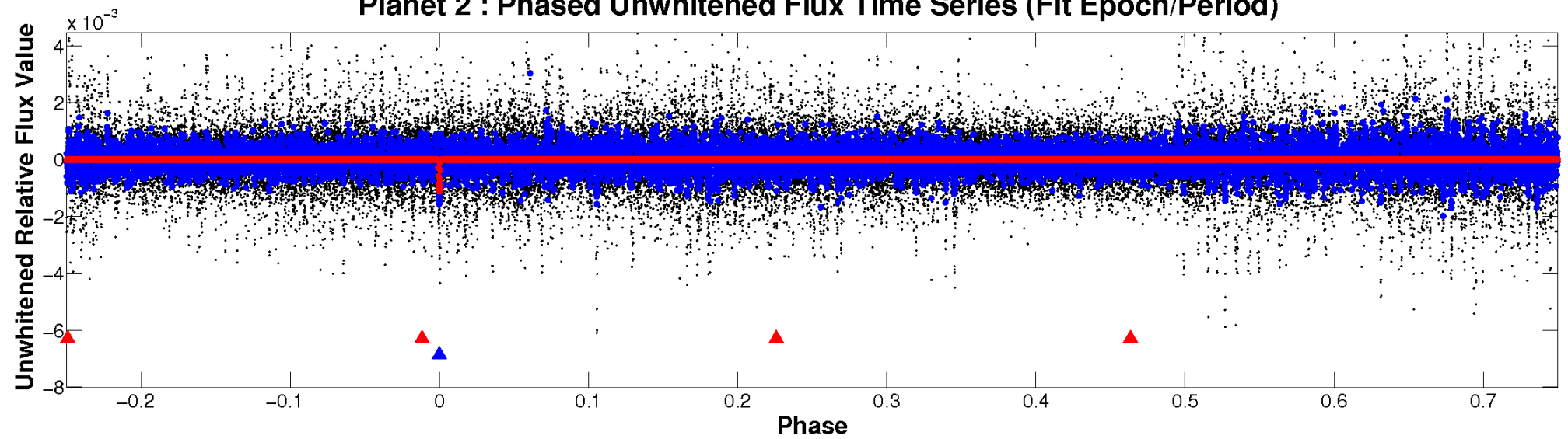
# ALT Odd/Even

TCE 006794736-02

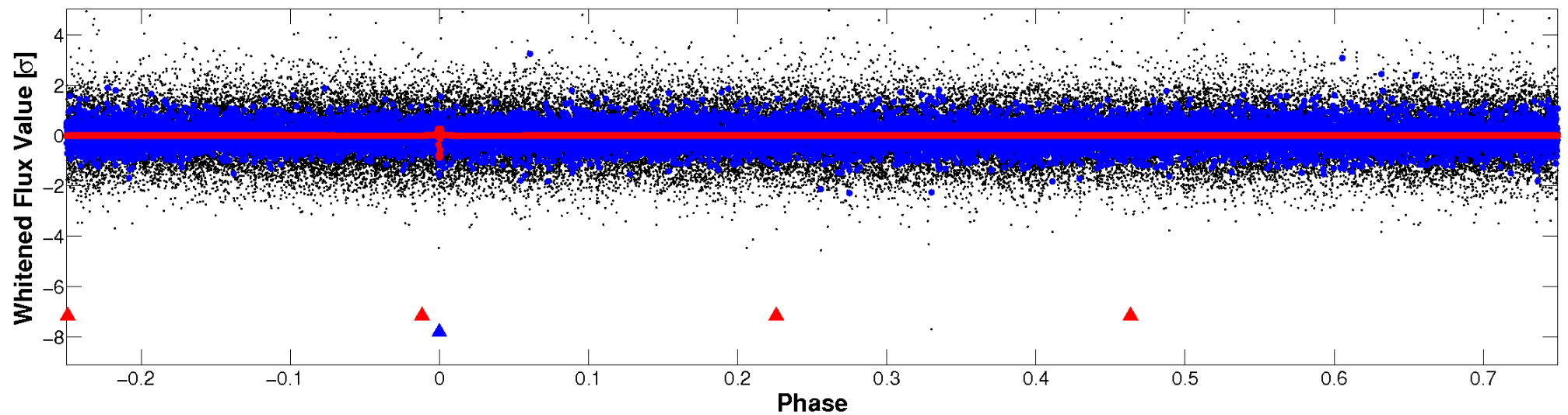


# Non-Whitened Vs. Whitened Light Curve

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

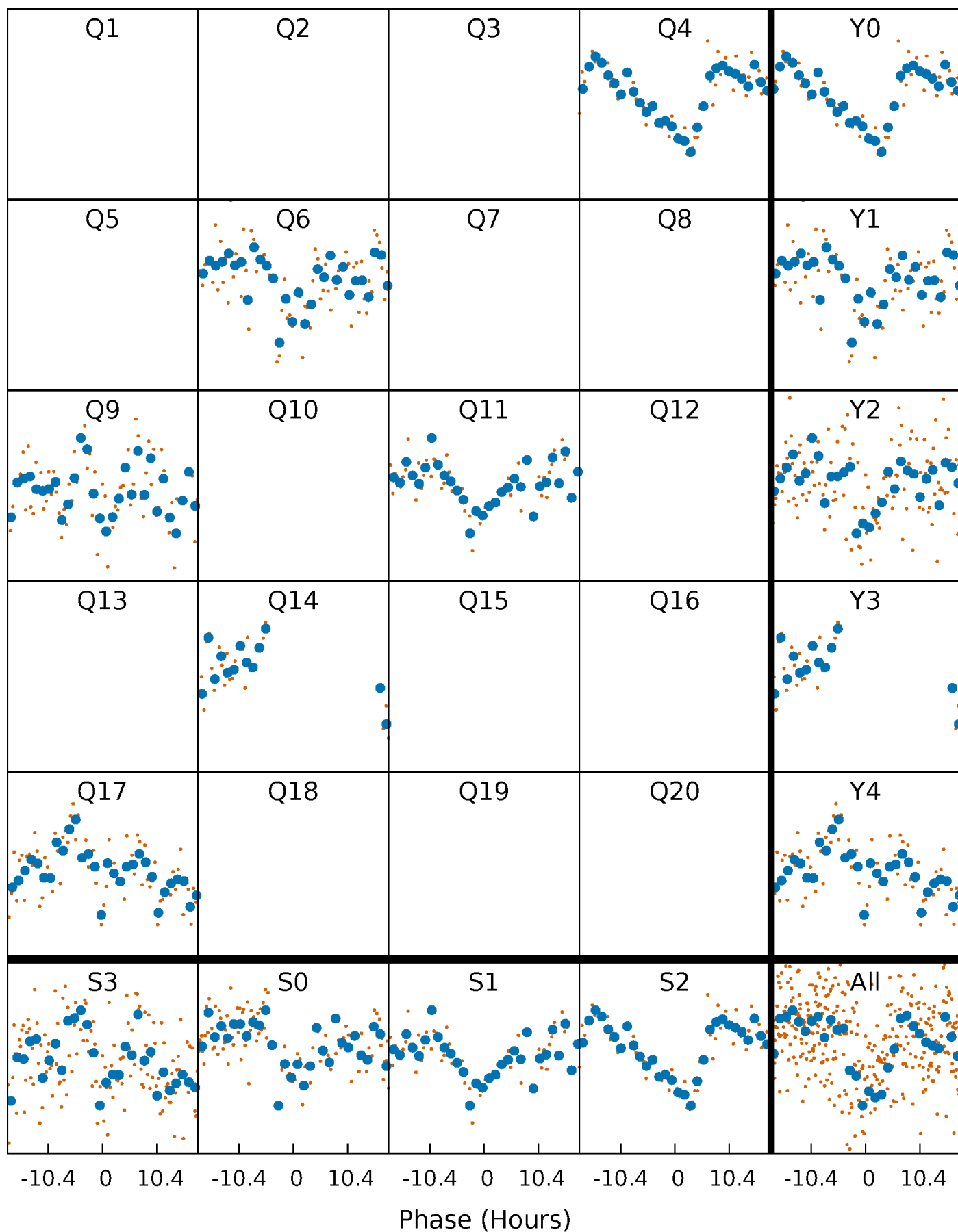


## Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



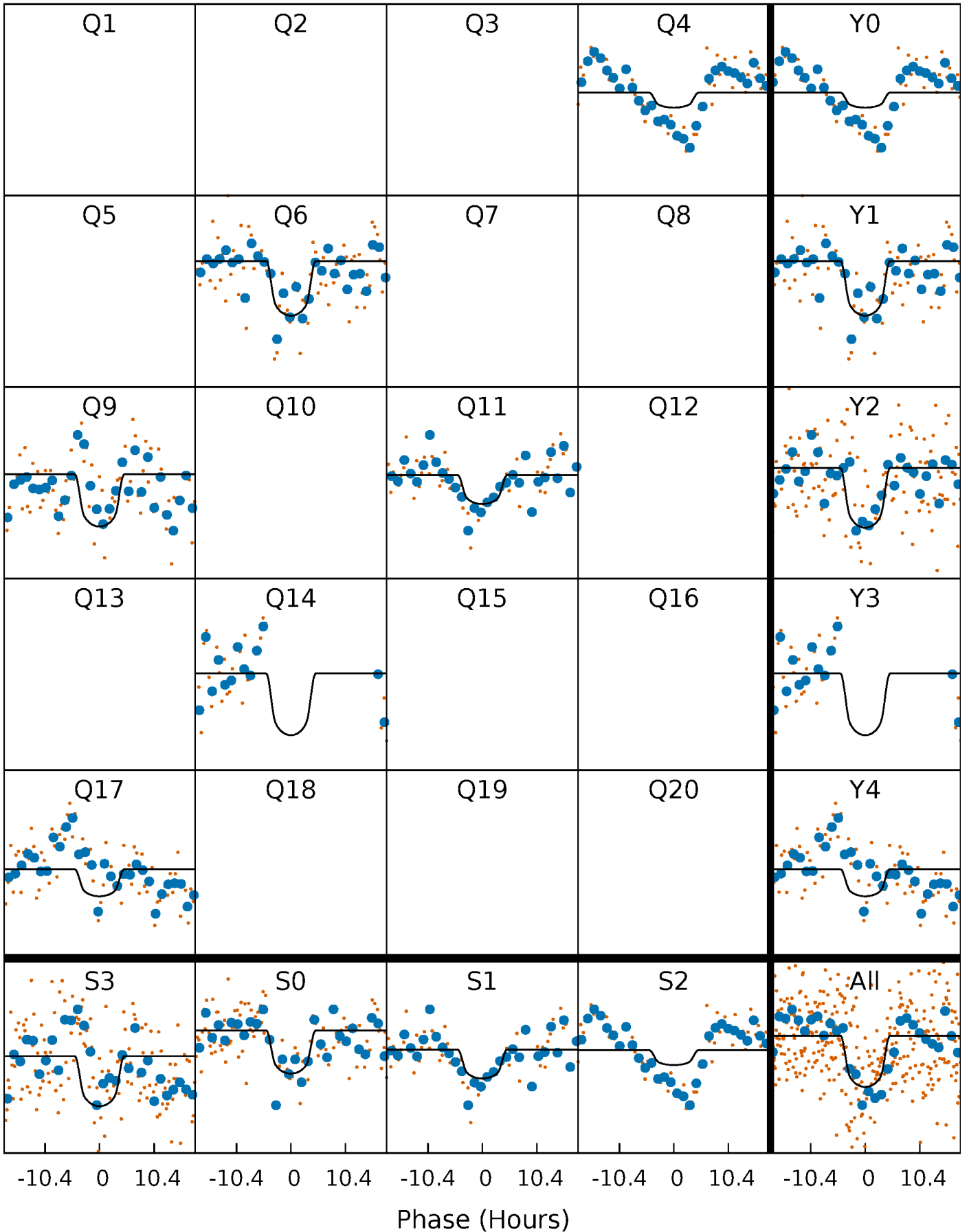
# PDC Quarter-Phased Transit Curves

TCE 006794736-02 P=239.900247 Days  $T_0=136.999059$  (BKJD)



# DV Quarter-Phased Transit Curves

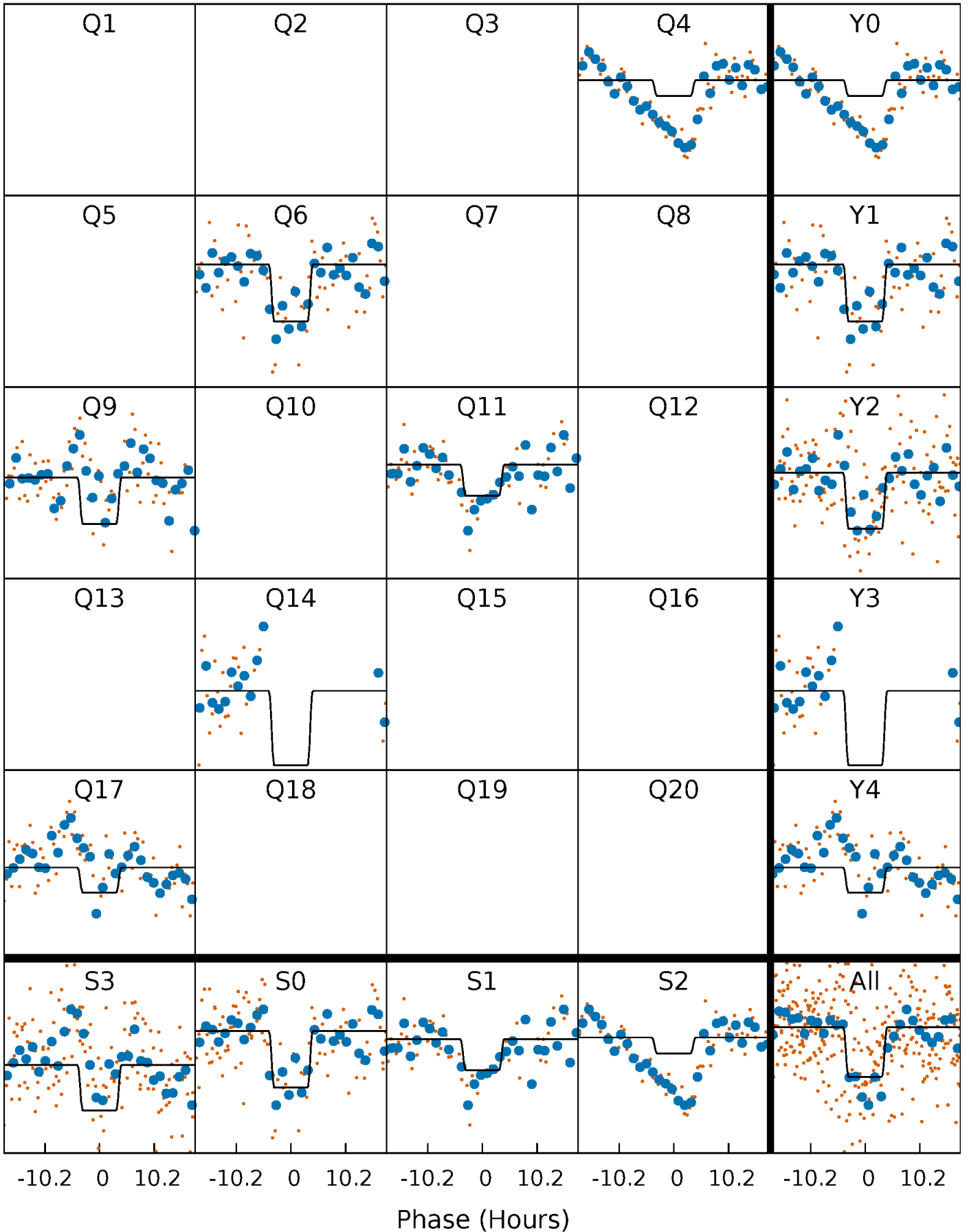
TCE 006794736-02     $P=239.900247$  Days     $T_0=136.999059$  (BKJD)





# Alt. Detrend Quarter-Phased Transit Curves

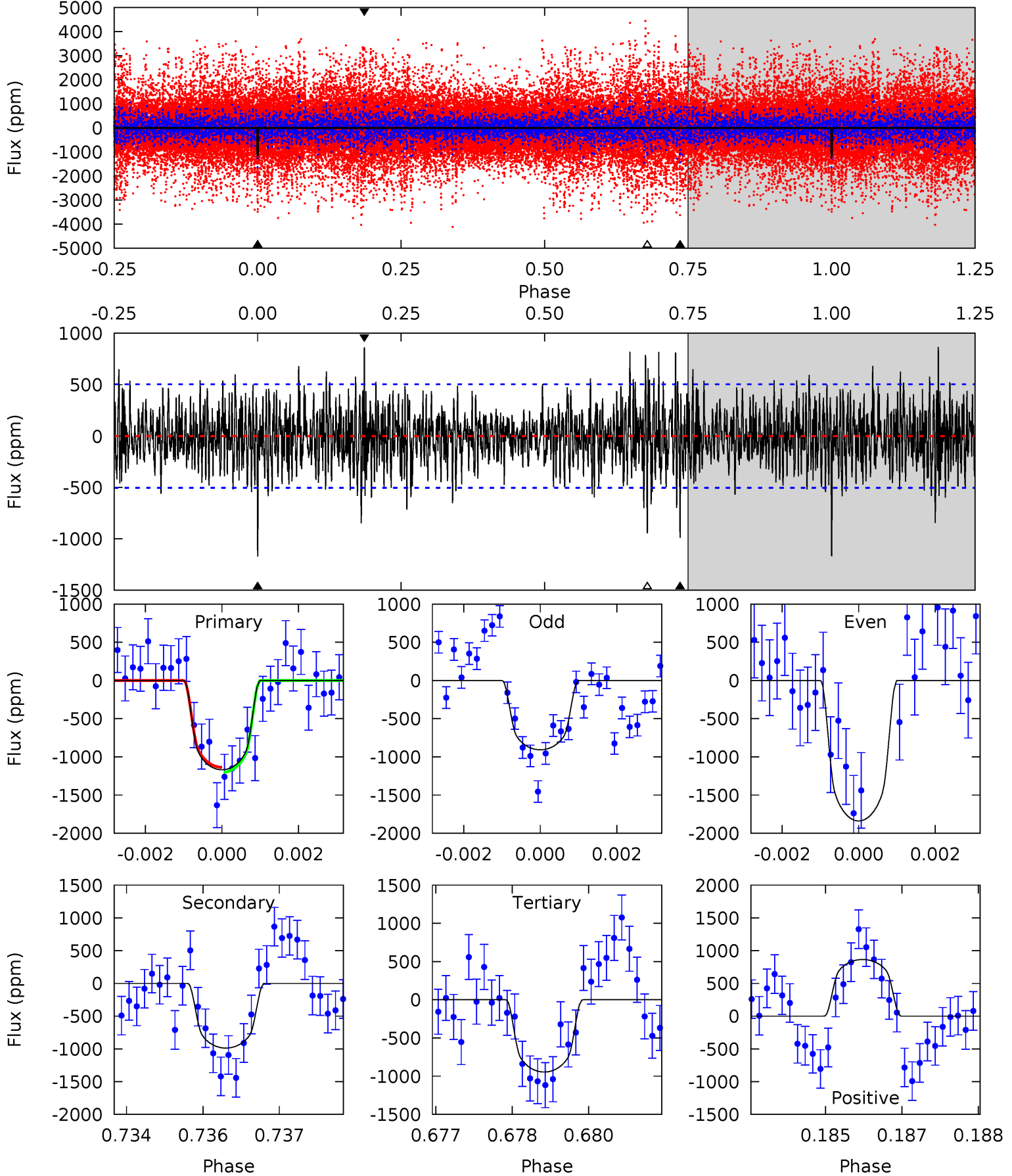
TCE 006794736-02     $P=239.896806$  Days     $T_0=137.018535$  (BKJD)



# DV Model-Shift Uniqueness Test

006794736-02, P = 239.900247 Days, E = 136.999059 Days

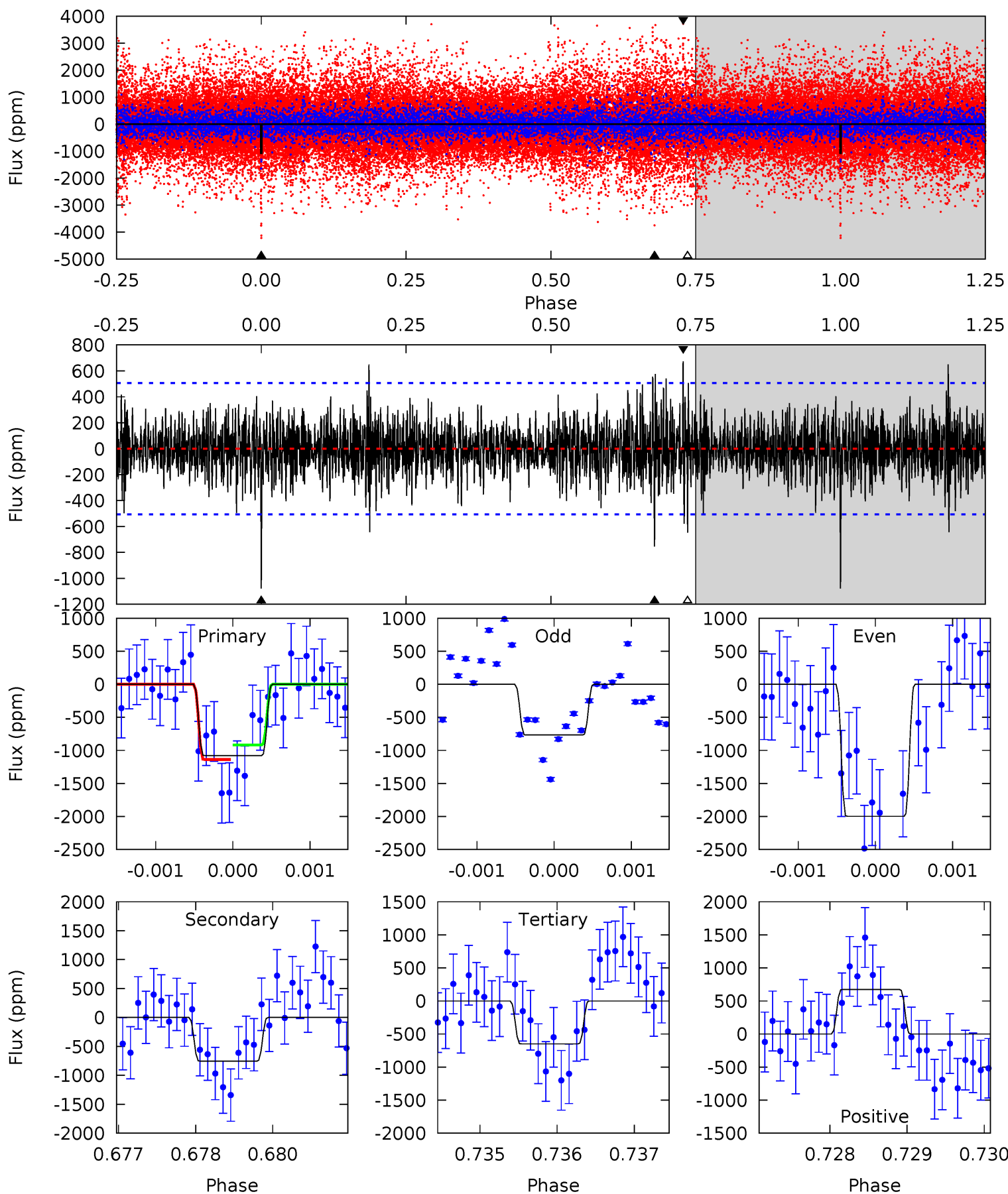
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
12.4	10.5	10.1	9.20	5.36	3.15	2.42	2.38	3.24	0.45	1.31	4.77	1.13	0.43	0.36



# Alt Model-Shift Uniqueness Test

006794736-02, P = 239.896806 Days, E = 137.018535 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
11.5	8.03	6.91	7.17	5.39	3.19	1.64	4.57	4.31	1.12	0.86	6.54	1.22	0.38	1.18



### Stellar Parameters For KIC 006794736

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$4511^{+137}_{-91}$	$2.322^{+0.027}_{-0.030}$	$-0.100^{+0.250}_{-0.200}$	$11.479^{+2.999}_{-0.562}$	$1.010^{+0.592}_{-0.070}$	$0.001^{+0.000}_{-0.000}$
	+3%/-2%	+1%/-1%	+250%/-200%	+26%/-5%	+59%/-7%	+12%/-23%
Source	KIC0	AST71	KIC0	DSEP		

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

### Secondary Eclipse Parameters for KIC 006794736-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	$A_{obs}$
DV	$-988 \pm 94$	$47.40^{+8.67}_{-7.60}$	$1086^{+35}_{-28}$	$4220^{+293}_{-243}$	$138^{+54}_{-37}$
Alt.	$-754 \pm 94$	$40.75^{+8.03}_{-7.37}$	$1083^{+35}_{-28}$	$4239^{+361}_{-269}$	$144^{+69}_{-43}$

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

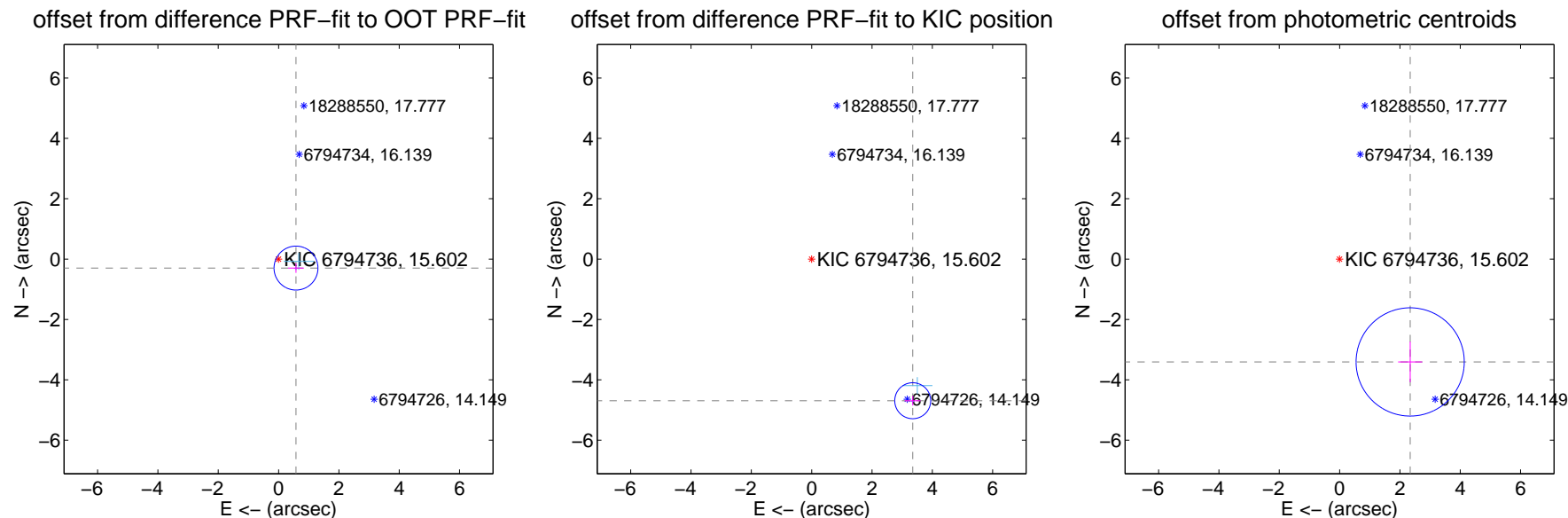
## DV Centroid Data

Supplemental centroid analysis for 006794736-02. Kepler magnitude: 15.60. Transit SNR 7.34

There are 2 quarters with good PRF difference image offsets

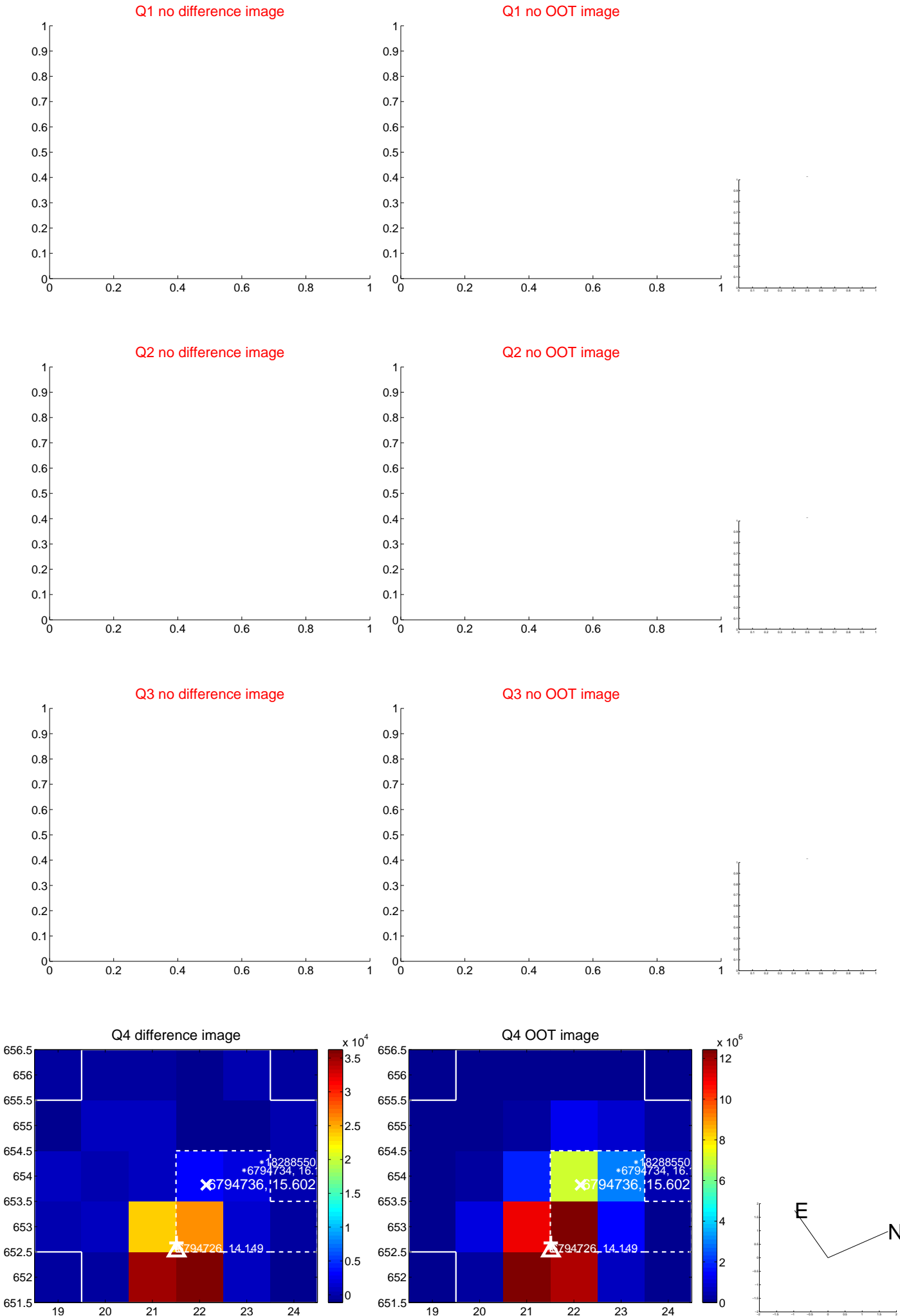
The OOT PRF centroid is offset from the target star catalog position by about 5.00 arcsec so the offset from difference PRF-fit to OOT-fit may be invalid.

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.650 \pm 0.243$	2.68	$-0.578 \pm 0.261$	$-0.298 \pm 0.158$
PRF-fit source offset from KIC position	$5.765 \pm 0.199$	29.03	$-3.349 \pm 0.261$	$-4.692 \pm 0.158$
photometric centroid source offset	$4.13 \pm 0.60$	6.91	$-2.34 \pm 0.40$	$-3.41 \pm 0.67$

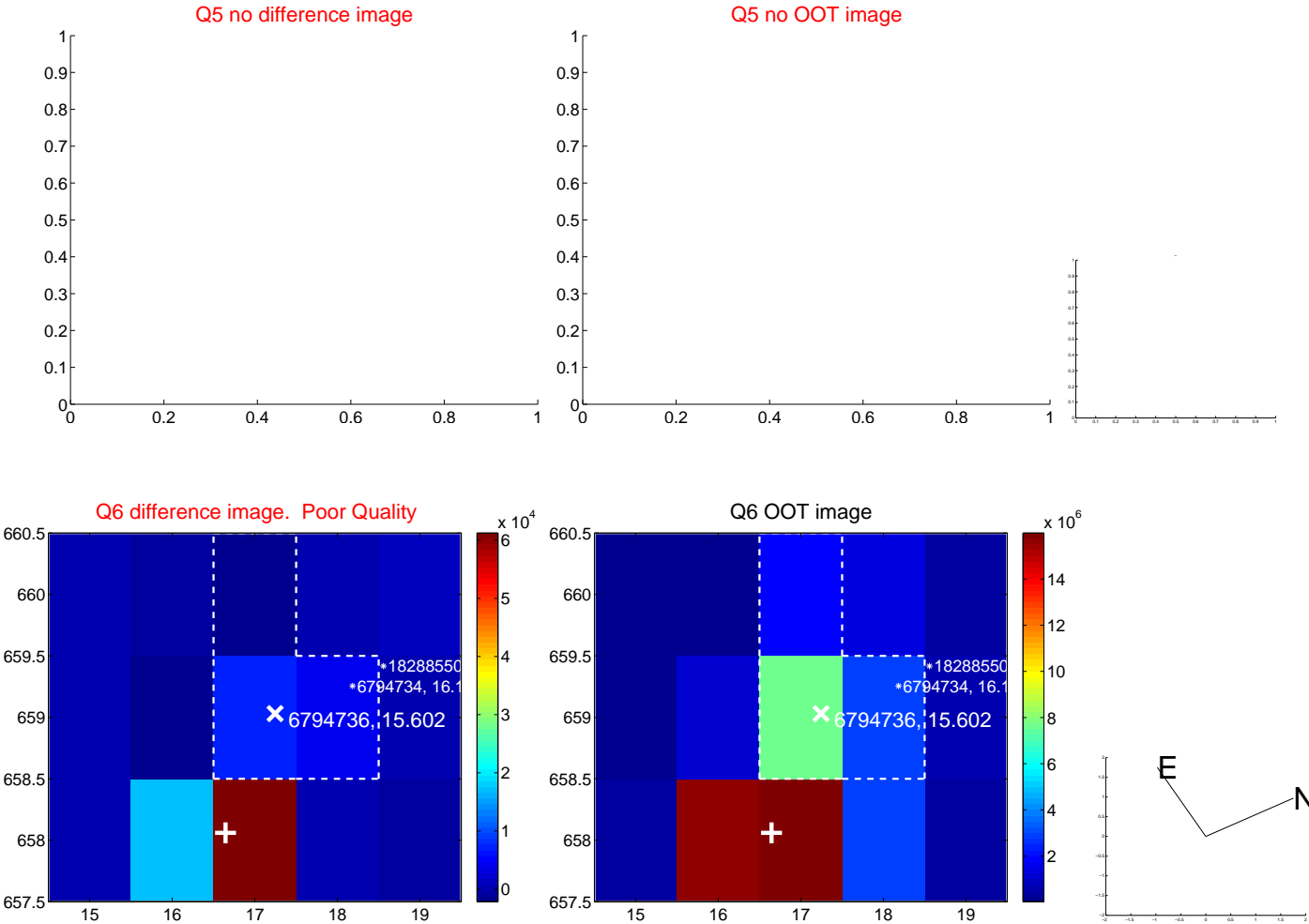


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: three-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

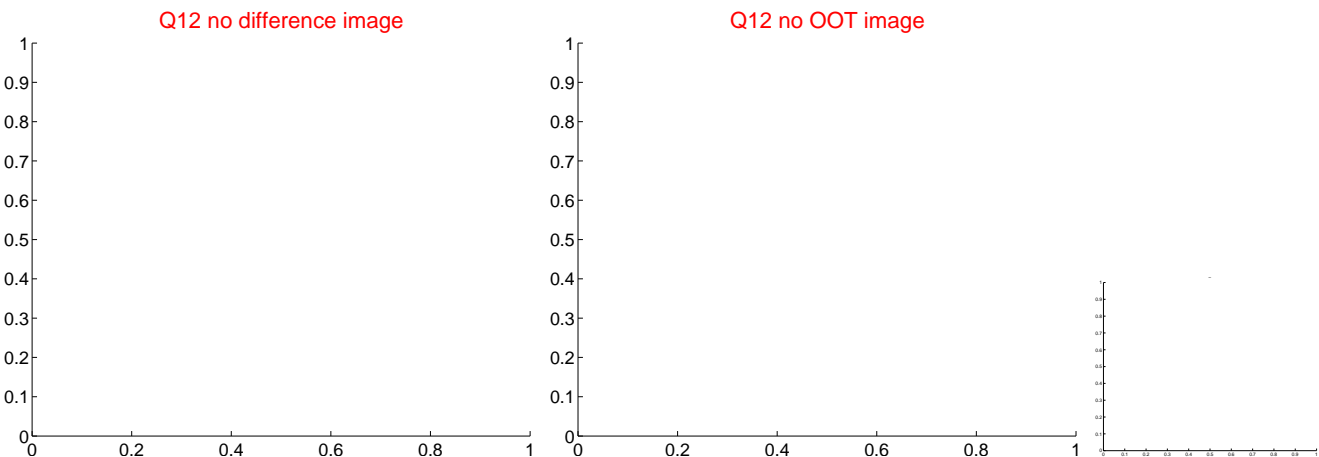
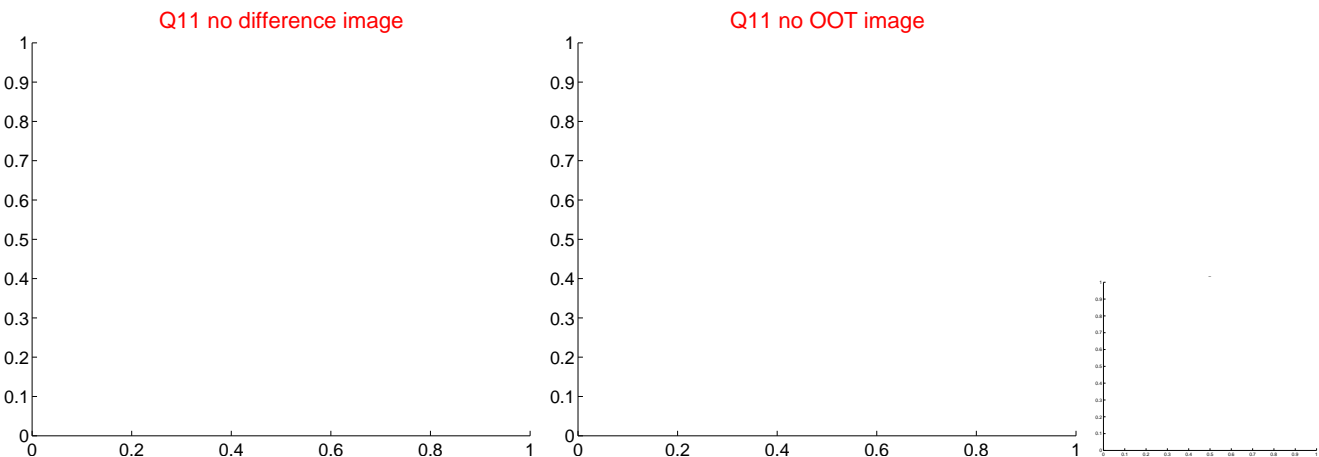
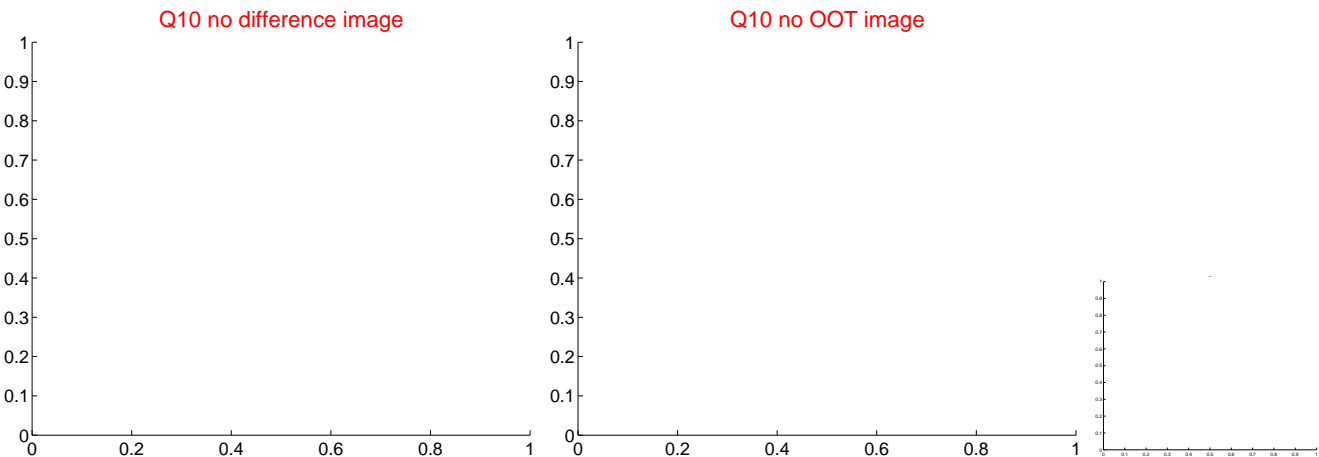
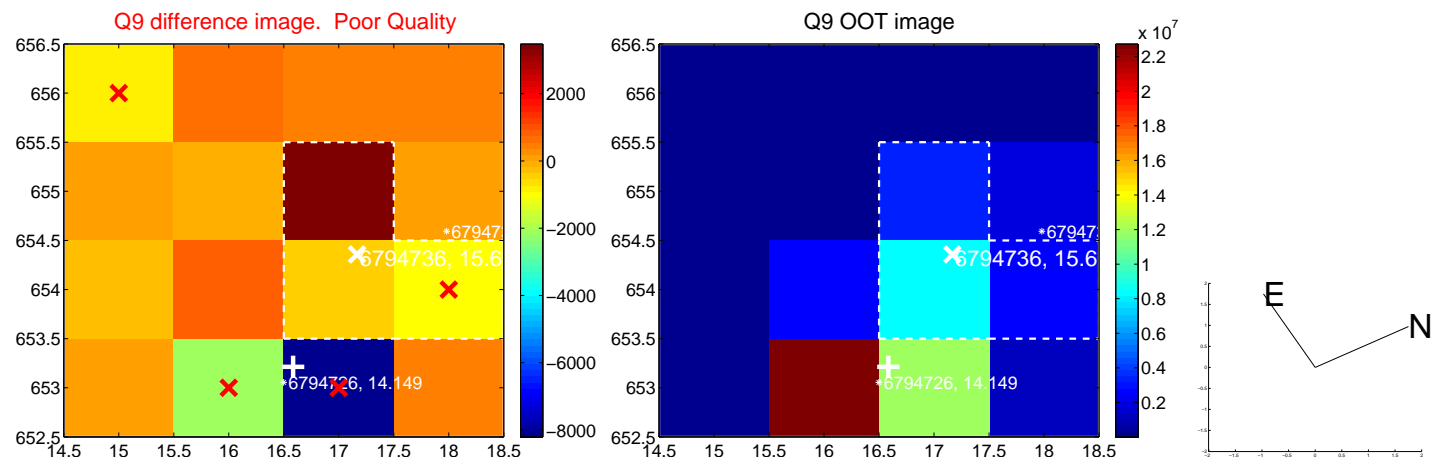


white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.





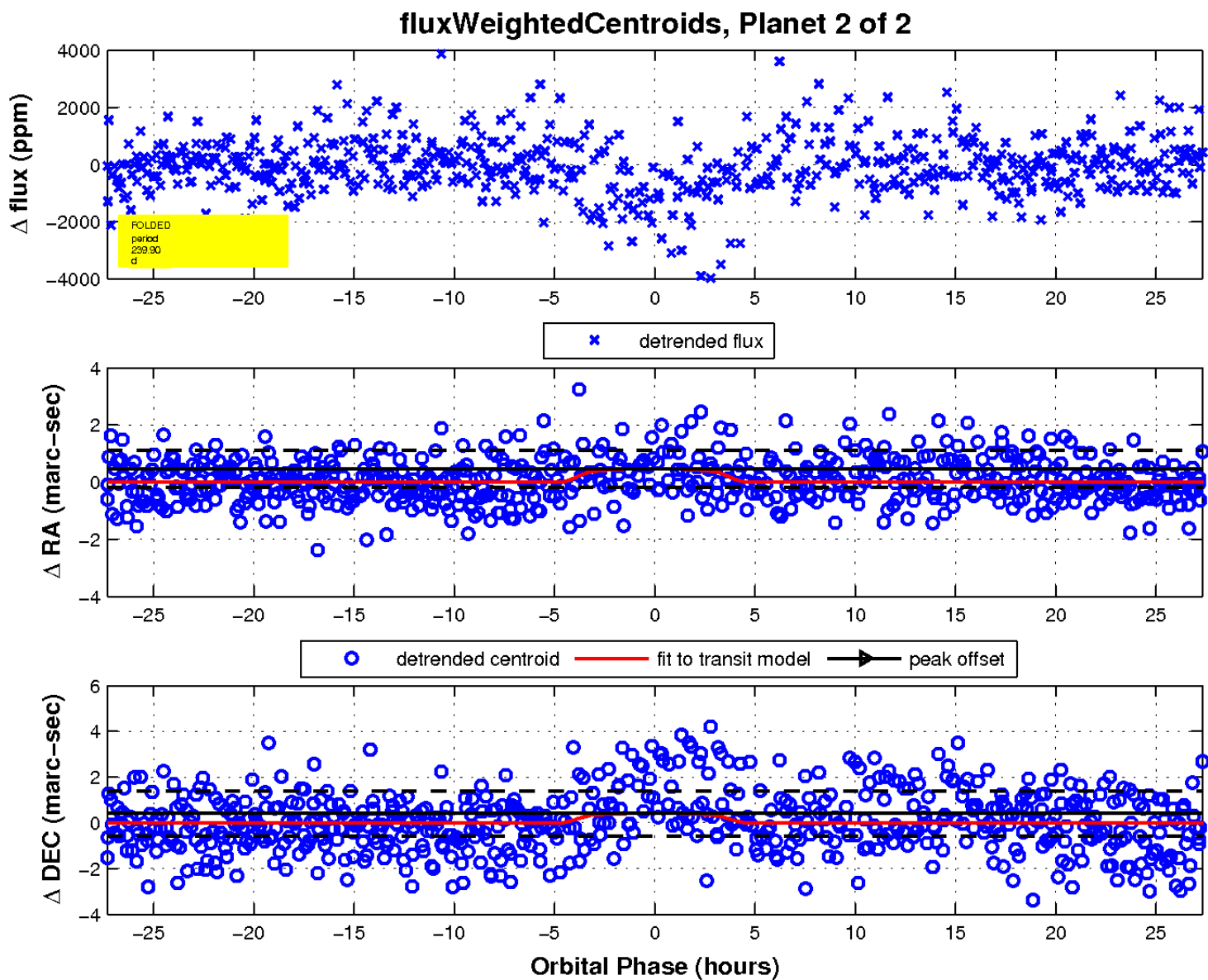
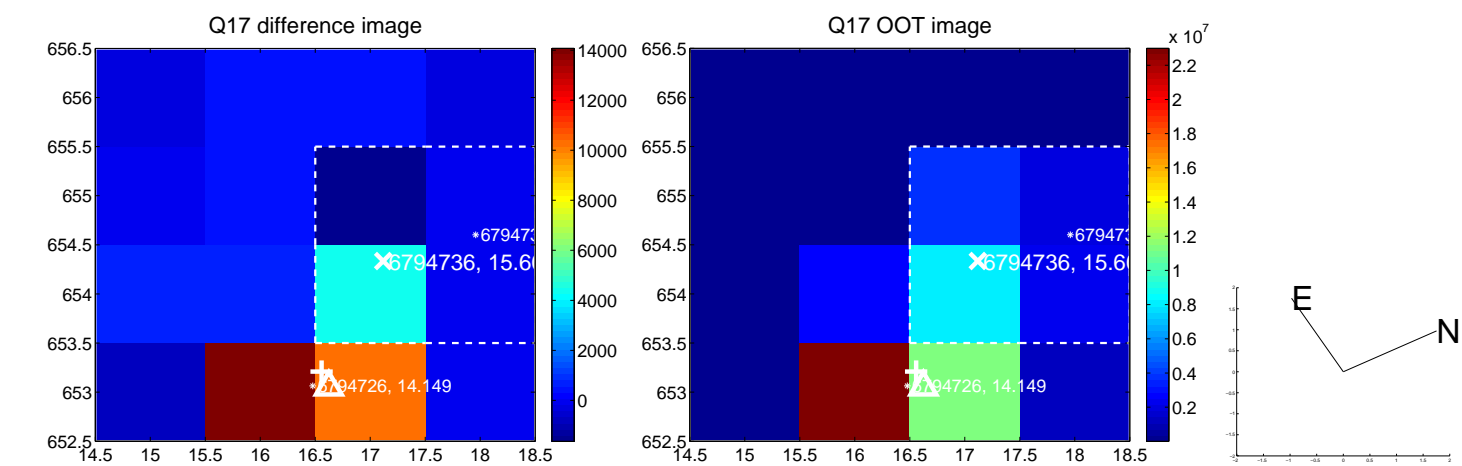
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ✕: large negative pixel value.



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

