

KIC 009205993

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})
009205993-01	OBS	7145.01	1.219690	132.175777	596308.8	2.000	1867.5	-1.0	1.64	7358	43.31	11006.10
009205993-02	OBS	No	3.659363	132.677853	91207.8	4.391	205.0	98.8	1.64	7358	78.18	2543.46

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
009205993-01	OBS	FP	0.00	1	0	1	0	LPP_DV—CENT_NOFITS—HALO_GHOST
009205993-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_TRACKER—LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—MOD_TER_ALT—SAME_NTL_PERIOD—CENT_FEW_DIFFS

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

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

See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

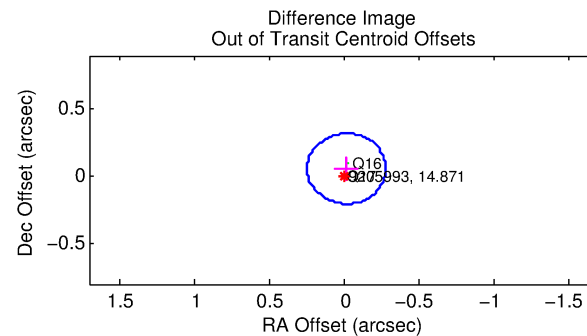
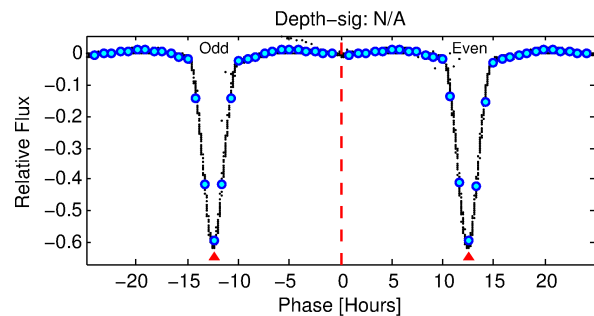
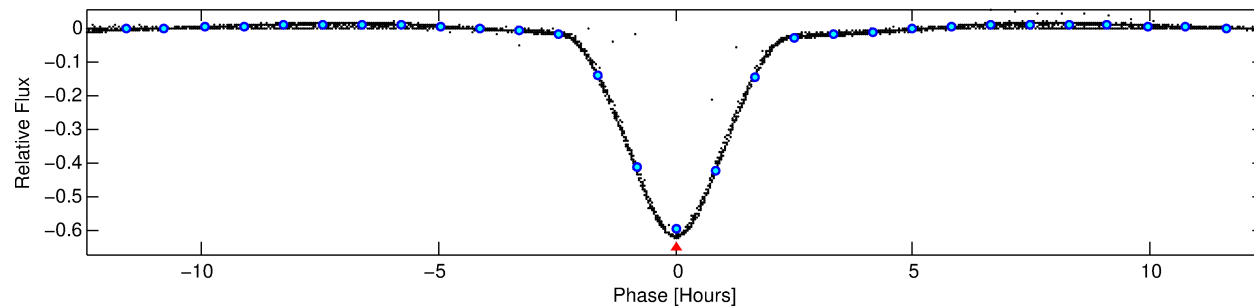
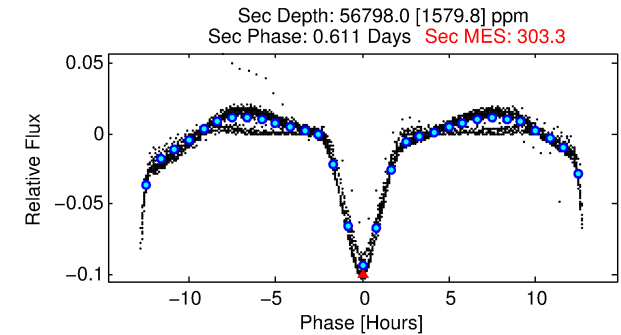
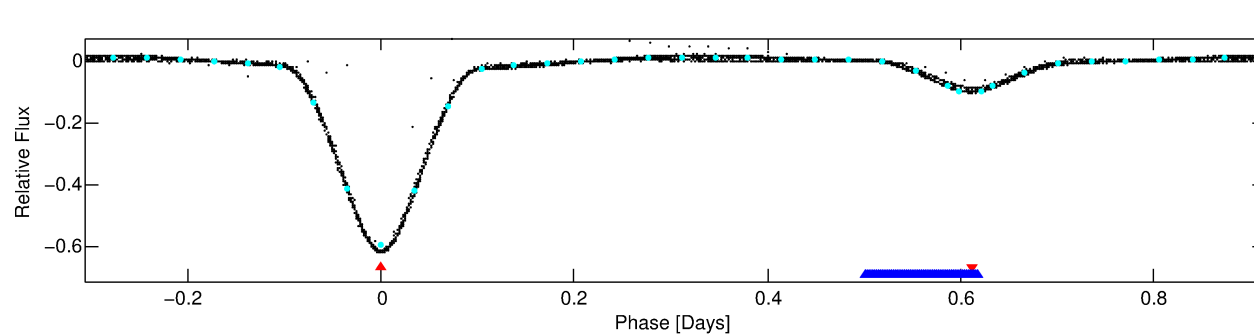
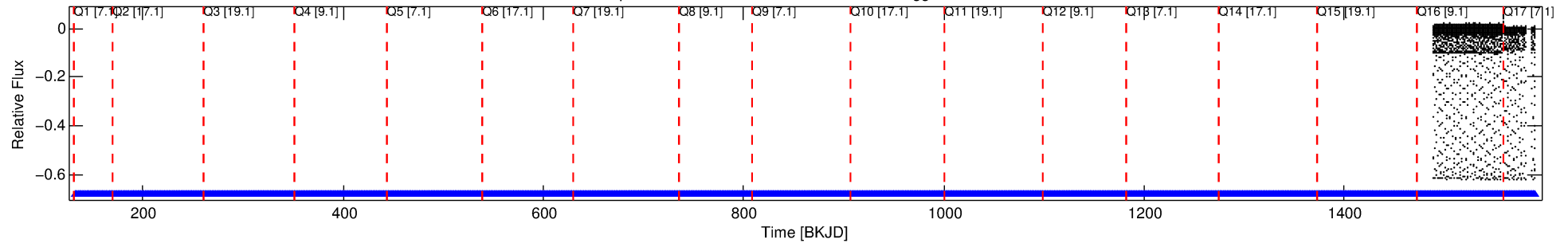
Ephemeris Match Information For 009205993-01

No Significant Match Found

DV One-Page Summary

KIC: 9205993 Candidate: 1 of 2 Period: 1.220 d
KOI: K07145 Corr: No Ephemeris Match

Kp: 14.87 R*: 1.64 Rs Teff: 7358.0 K Logg: 4.17 Fe/H: -0.200



TPS TCE Results:

Period = 1.21969 d
Epoch = 132.1758 BKJD

DV fit results are unavailable

DV Diagnostic Results:

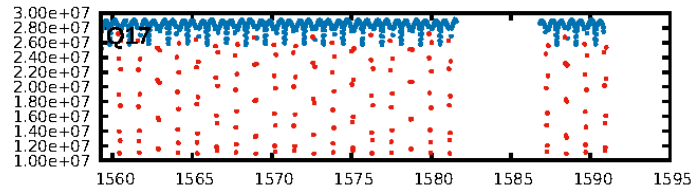
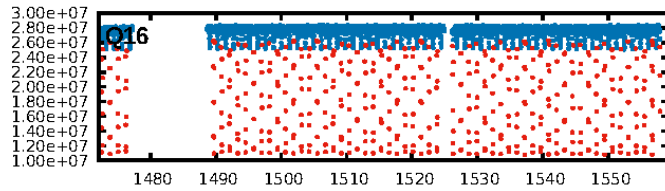
ShortPeriod-sig: N/A
LongPeriod-sig: 100.0% [12.13σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [56/56]
GhostDiagnostic-chr: 0.1134

Centroid-sig: N/A
Centroid-so: 0.105 arcsec [76.74σ]
OotOffset-rm: 0.061 arcsec [0.70σ]
KicOffset-rm: 0.079 arcsec [1.01σ]
OotOffset-st: 0/0/1/1 [2]
KicOffset-st: 0/0/1/1 [2]
DiffImageQuality-fgm: 1.00 [2/2]
DiffImageOverlap-fno: 1.00 [2/2]

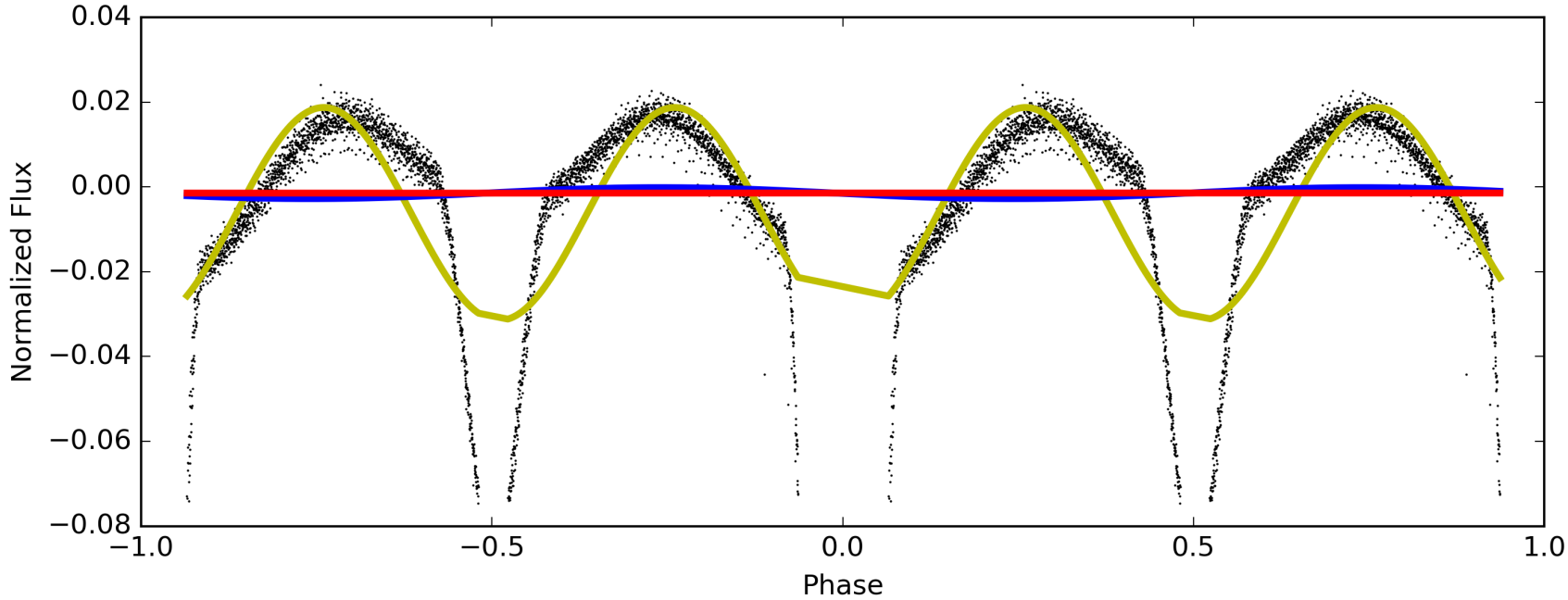
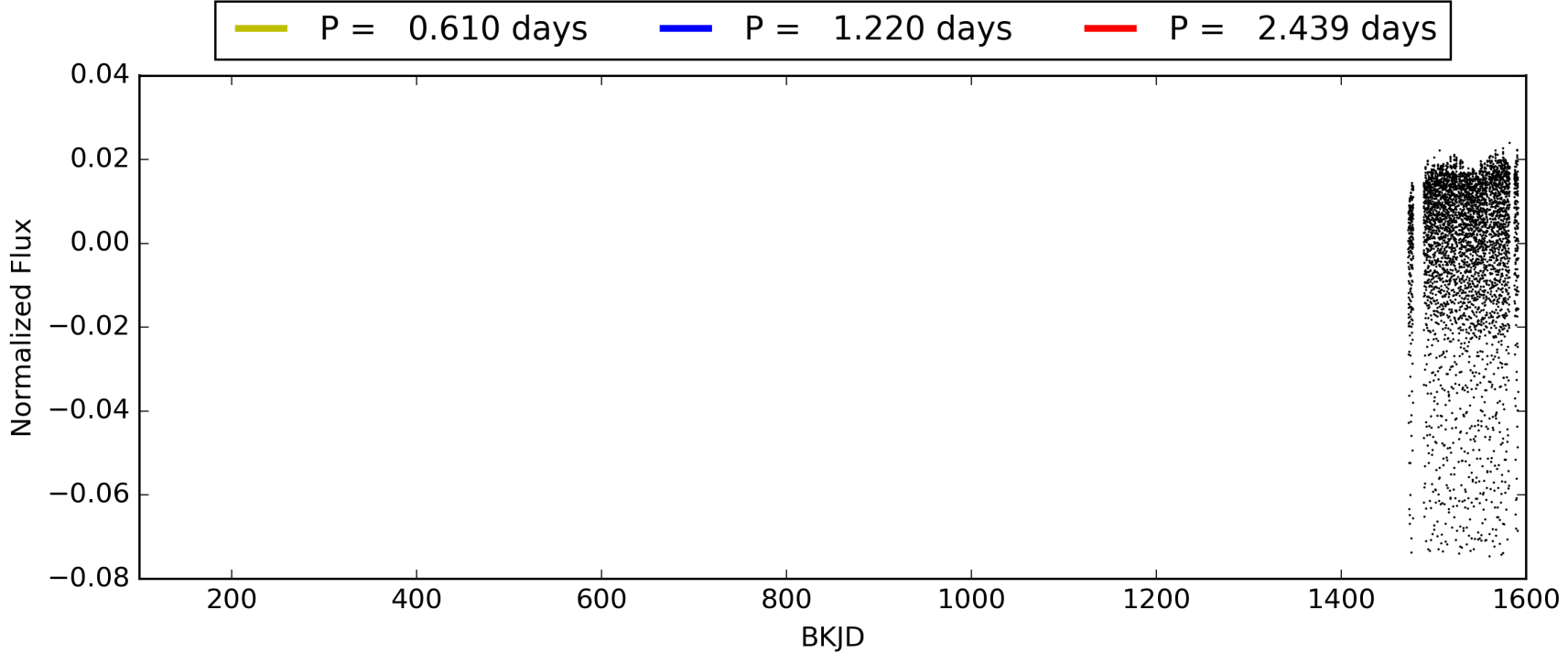
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 05:10:00 Z

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

TCE 009205993-01, PDC Light Curves

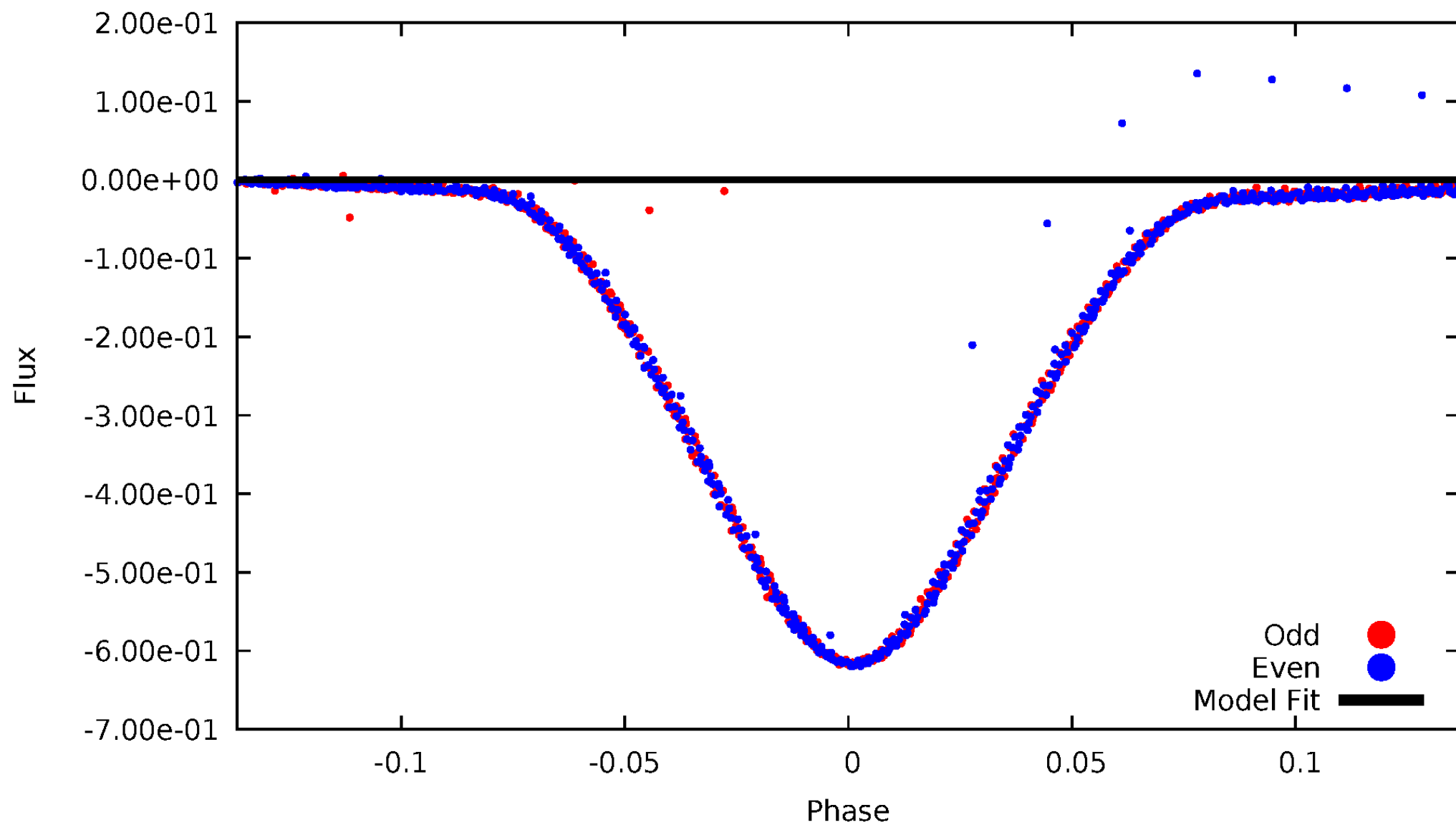


TCE 009205993-01



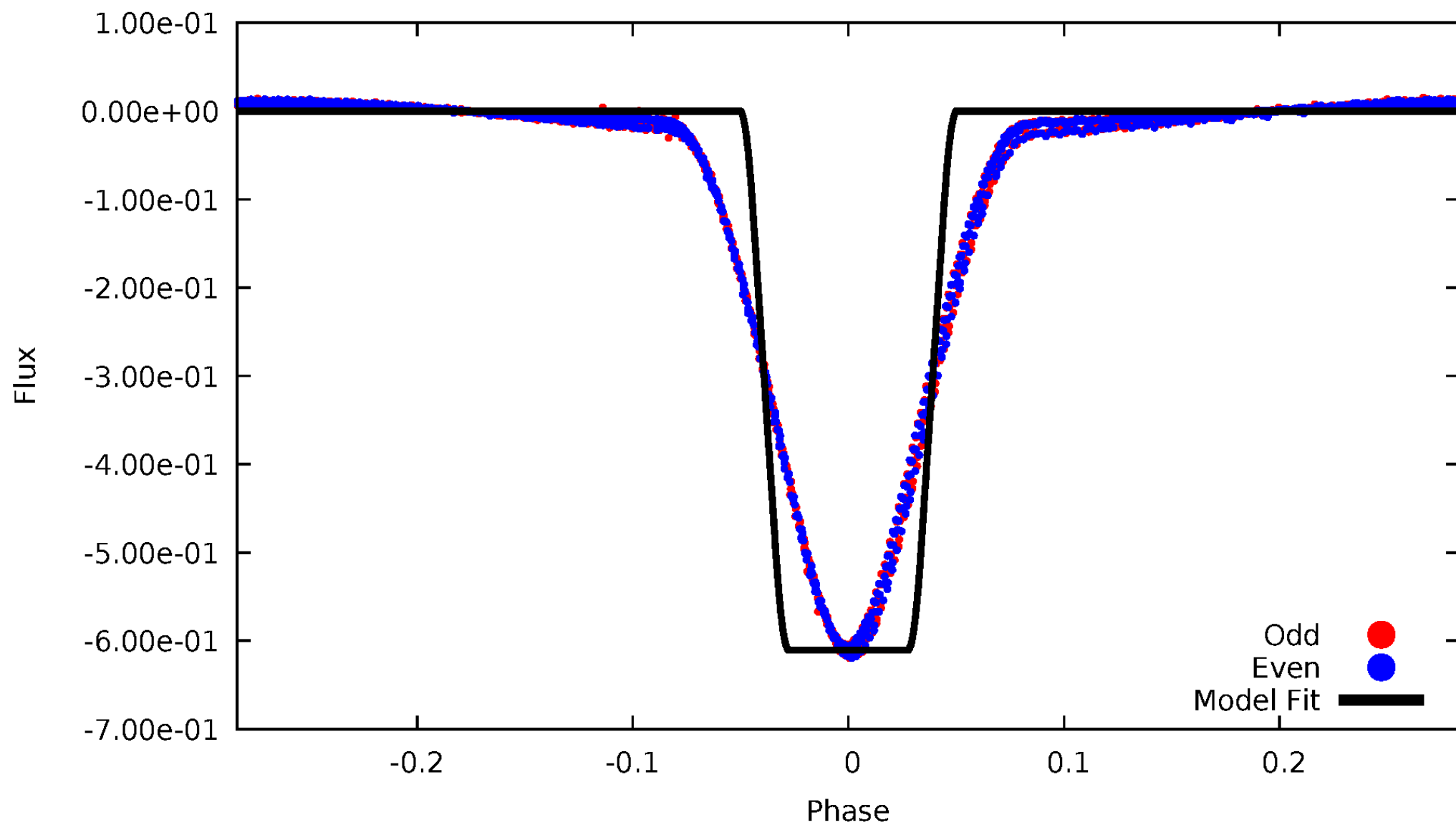
DV Odd/Even

TCE 009205993-01



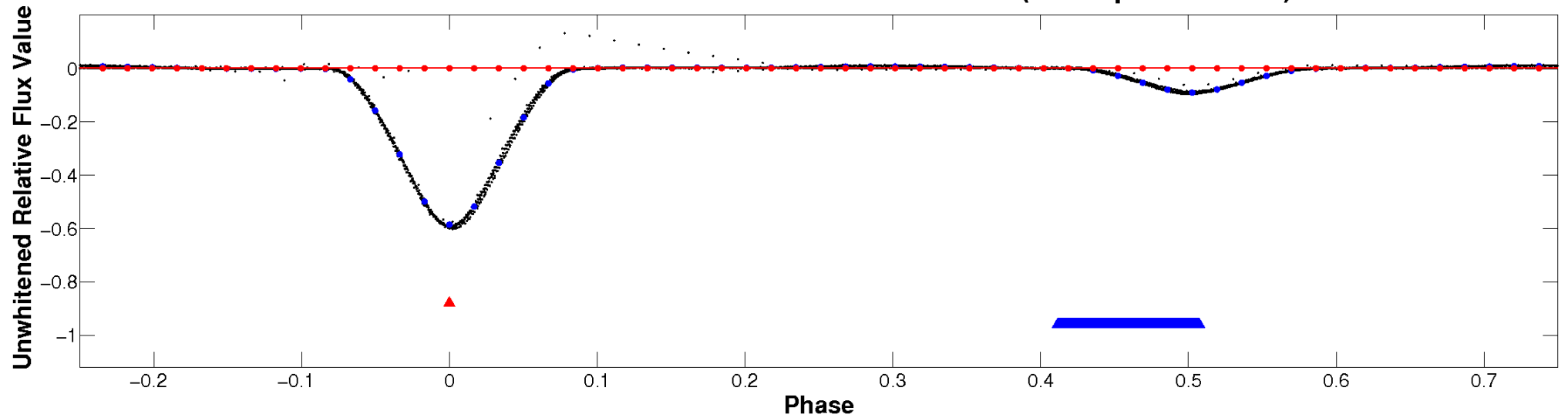
ALT Odd/Even

TCE 009205993-01



Non-Whitened Vs. Whitened Light Curve

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

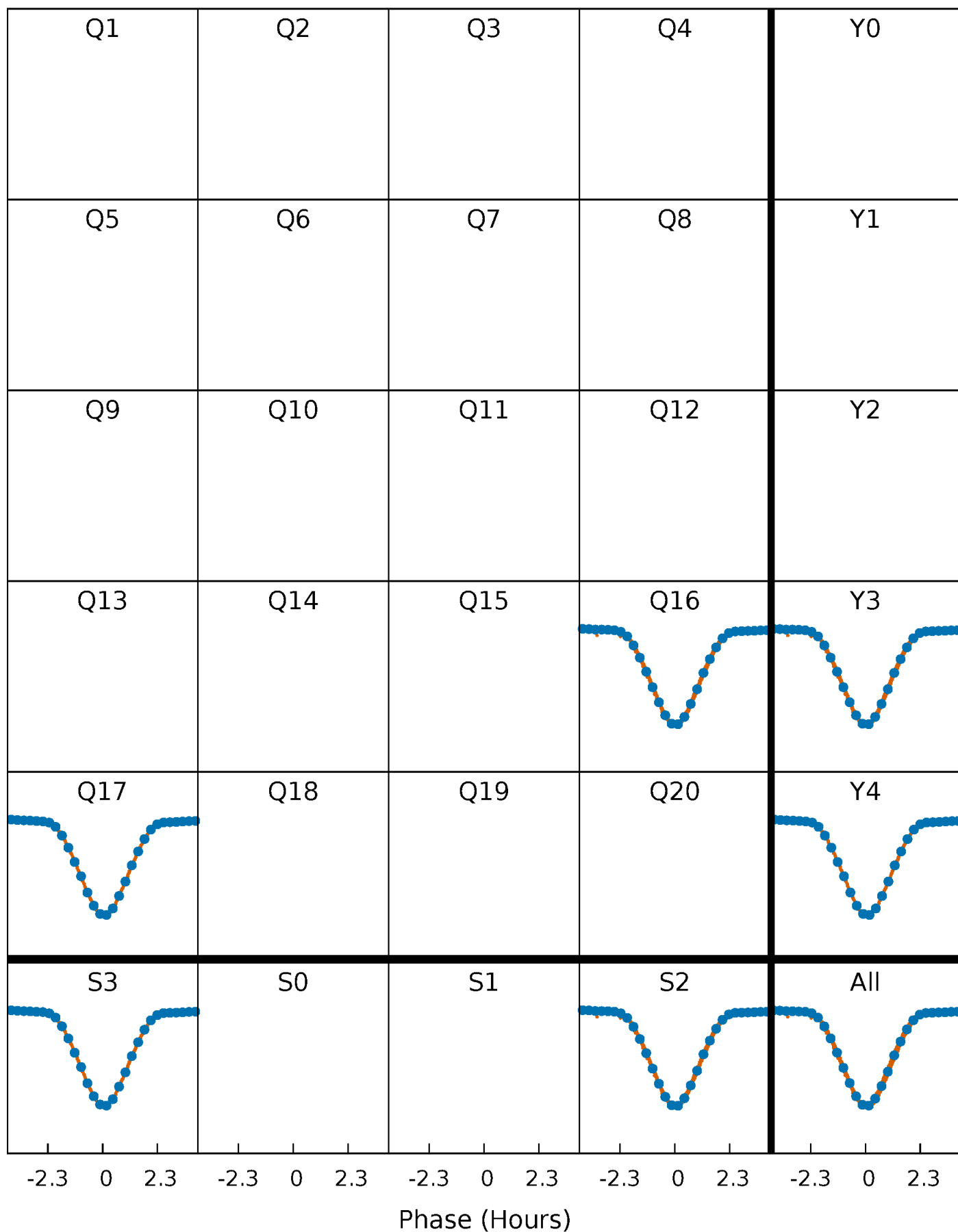


Planet 1 : Phased Whitened Flux Time Series (TPS Epoch/Period)



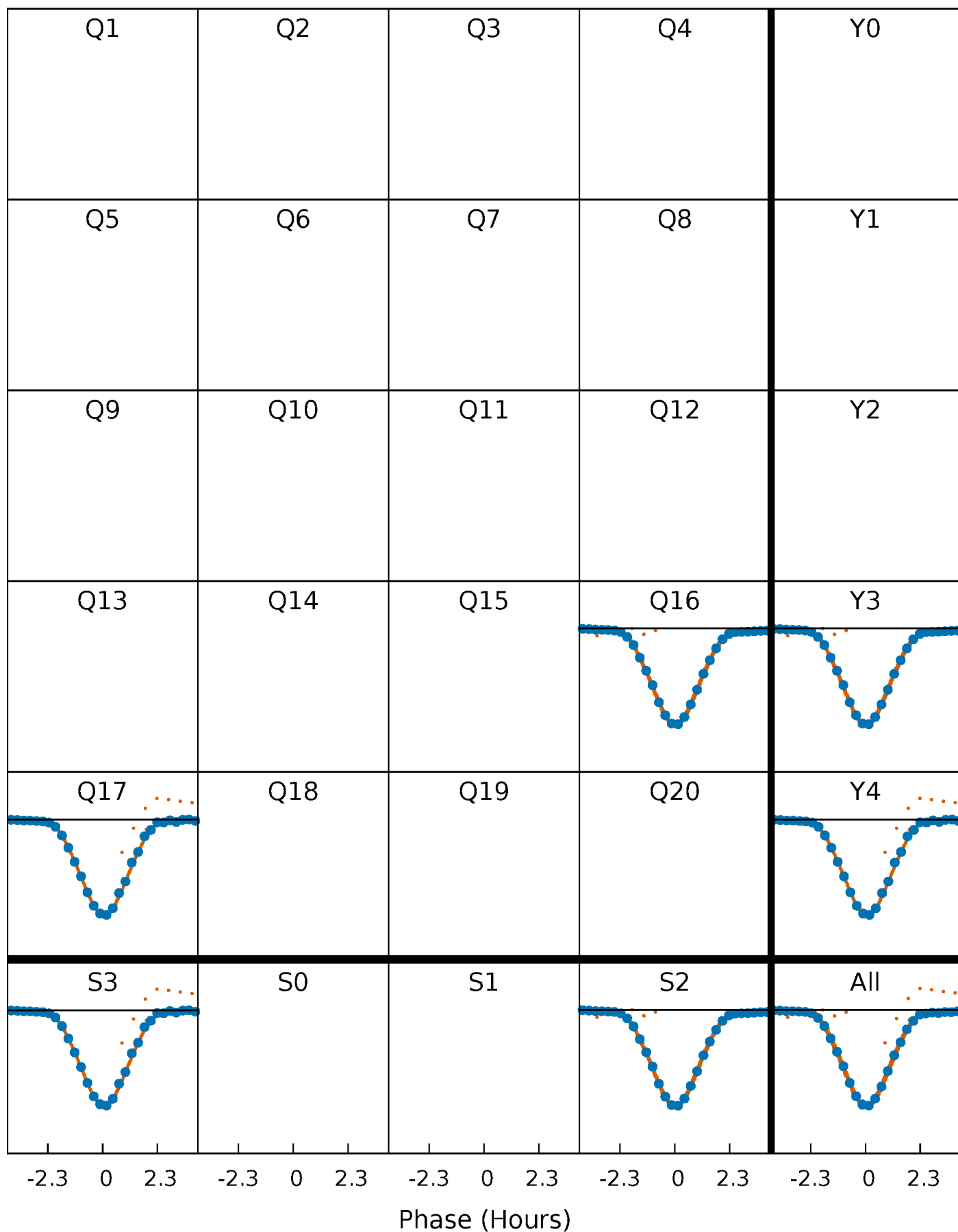
PDC Quarter-Phased Transit Curves

TCE 009205993-01 P= 1.219690 Days $T_0=132.175777$ (BKJD)



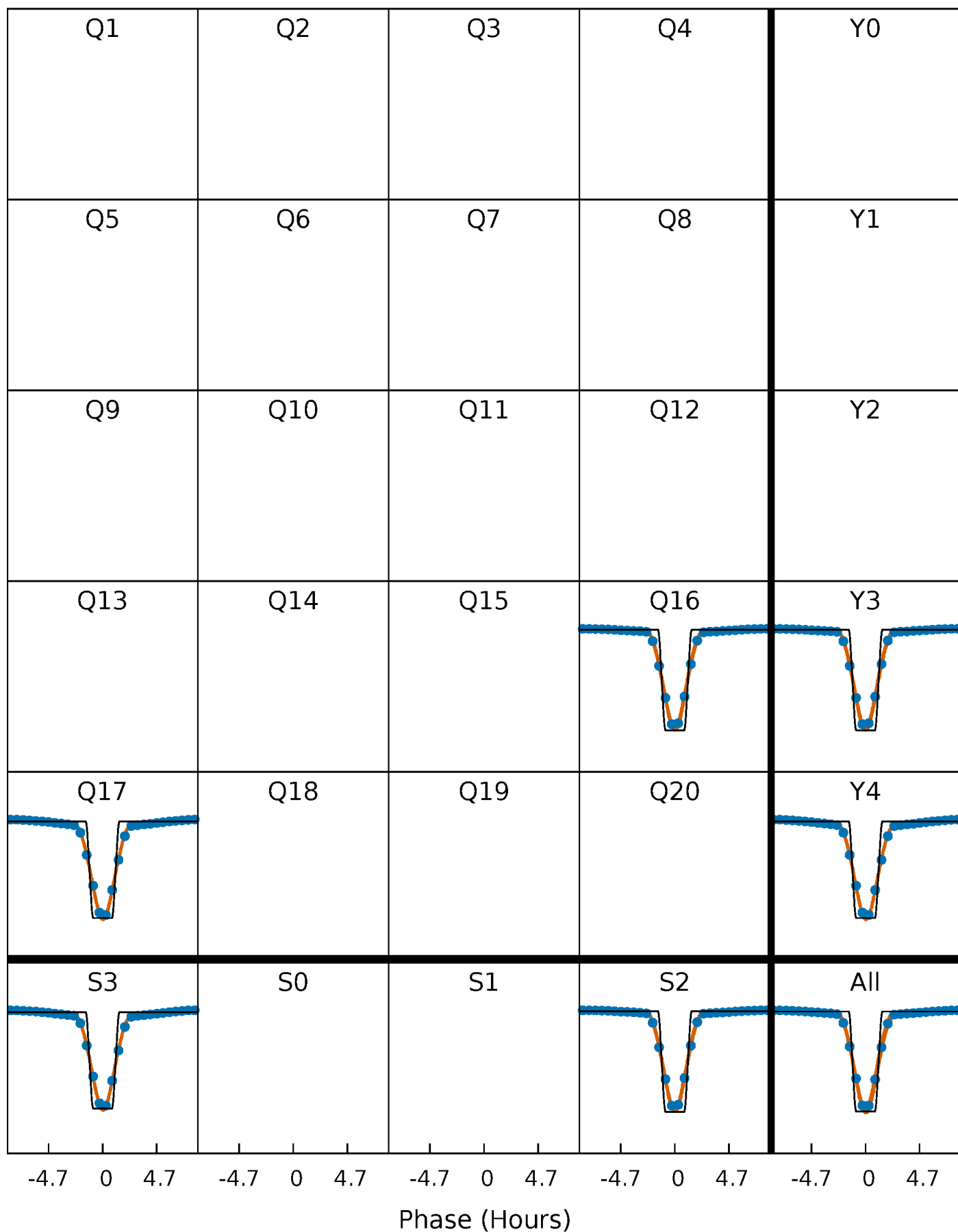
DV Quarter-Phased Transit Curves

TCE 009205993-01 P= 1.219690 Days $T_0=132.175777$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

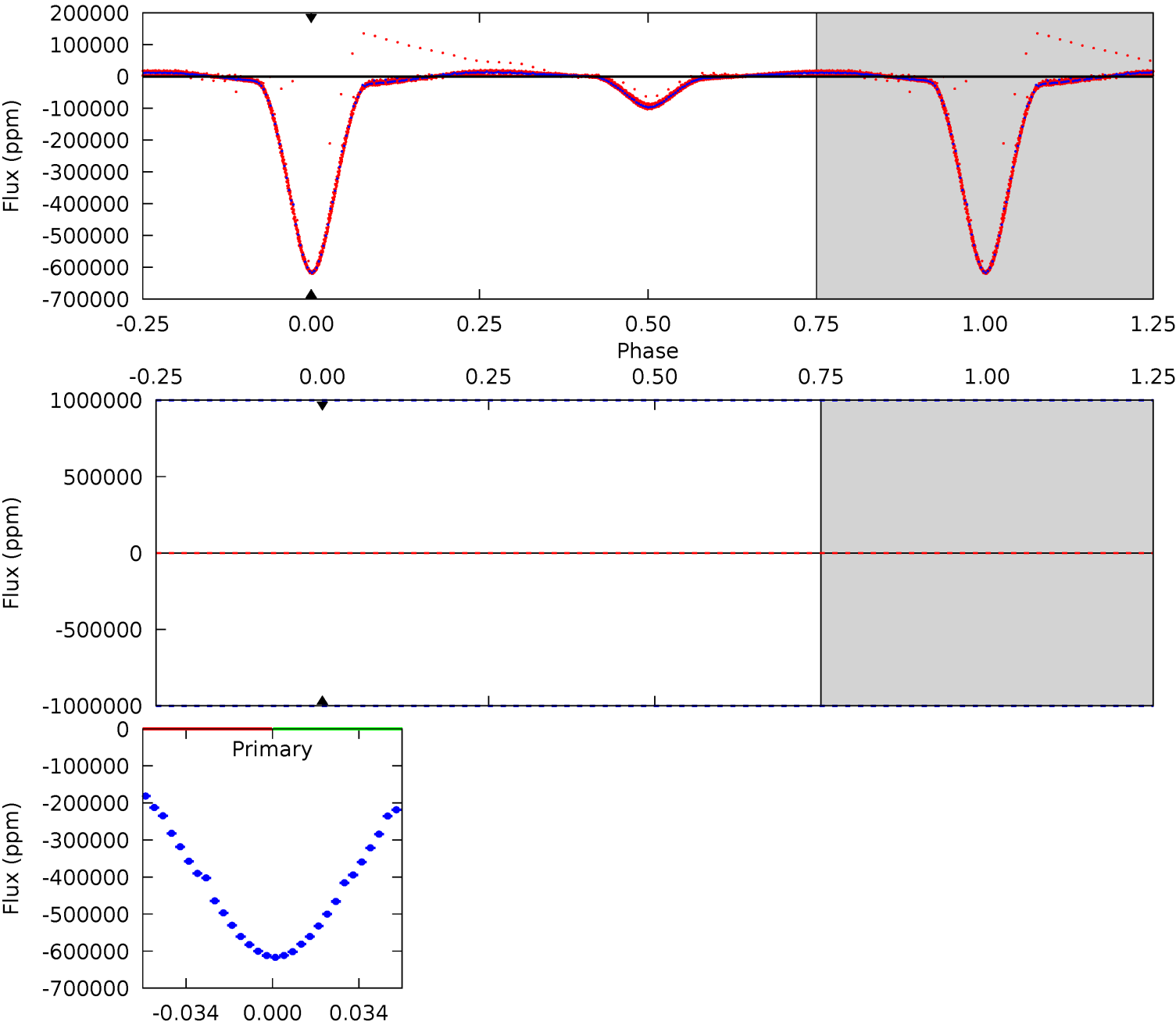
TCE 009205993-01 P= 1.219690 Days $T_0=132.176821$ (BKJD)



DV Model-Shift Uniqueness Test

009205993-01, P = 1.219690 Days, E = 132.175777 Days

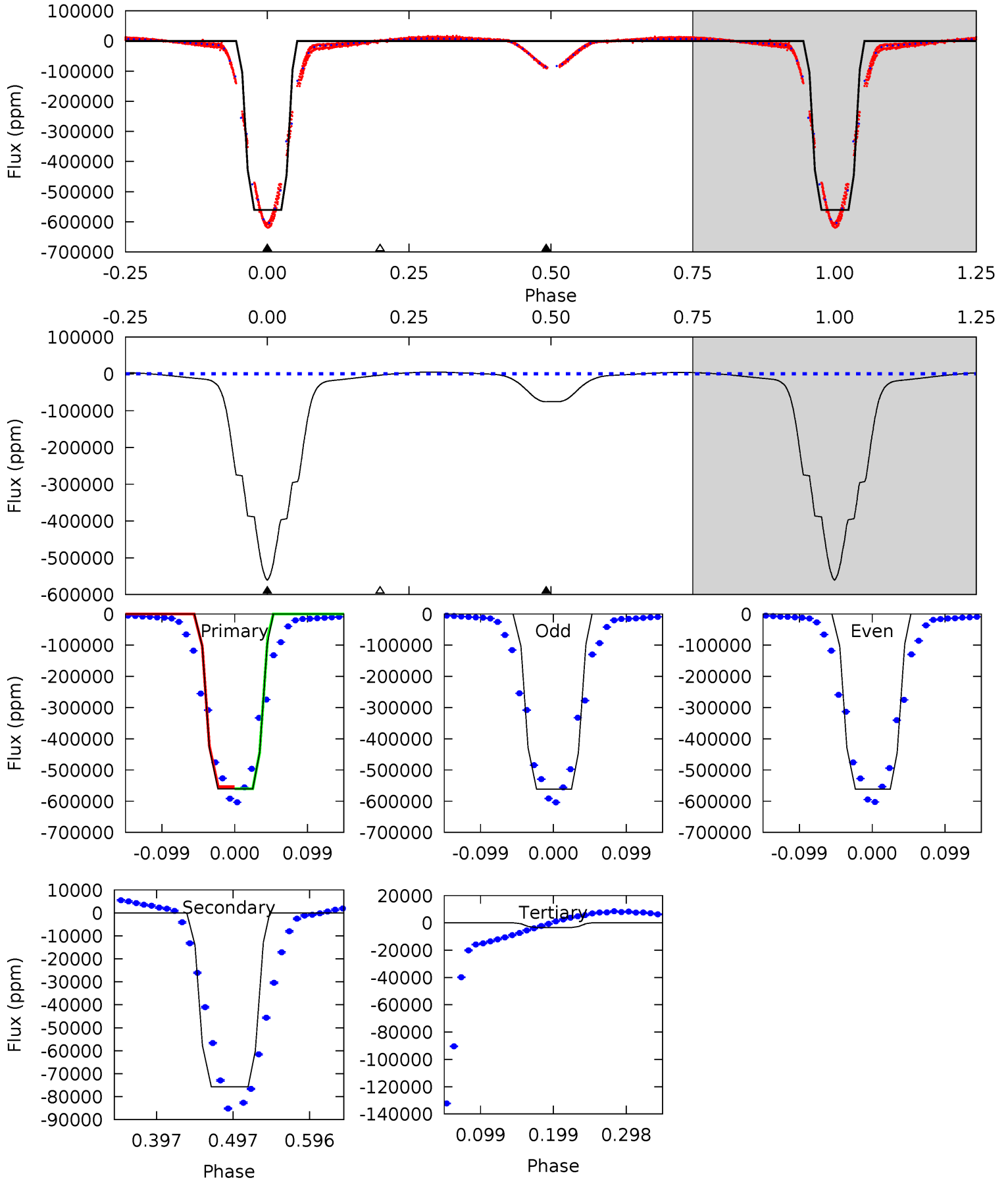
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
0	0	0	0	1.00	1.00	1.00	0	0	0	0	0	0	0	0



Alt Model-Shift Uniqueness Test

009205993-01, P = 1.219690 Days, E = 132.176821 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
1396	188.7	8.55	0	4.57	1.65	16.7	1387	1396	180.1	188.7	0.38	1.00	0.01	6.93



Stellar Parameters For KIC 009205993

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	7358^{+205}_{-333}	$4.171^{+0.128}_{-0.192}$	$-0.200^{+0.250}_{-0.350}$	$1.637^{+0.546}_{-0.294}$	$1.449^{+0.232}_{-0.232}$	$0.466^{+0.333}_{-0.236}$
	+3%/-5%	+3%/-5%	+125%/-175%	+33%/-18%	+16%/-16%	+71%/-51%
Source	KIC0	KIC0	KIC0	DSEP		

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

Secondary Eclipse Parameters for KIC 009205993-01 / KOI 7145.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	0 ± 1000000	$43.10^{+18.84}_{-17.14}$	3642^{+286}_{-229}	3859^{+5629}_{-12636}	$0.858^{+24.019}_{-19.515}$
Alt.	-75743 ± 401	$141.06^{+29.79}_{-23.77}$	3654^{+269}_{-234}	4330^{+326}_{-278}	$1.420^{+0.595}_{-0.409}$

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

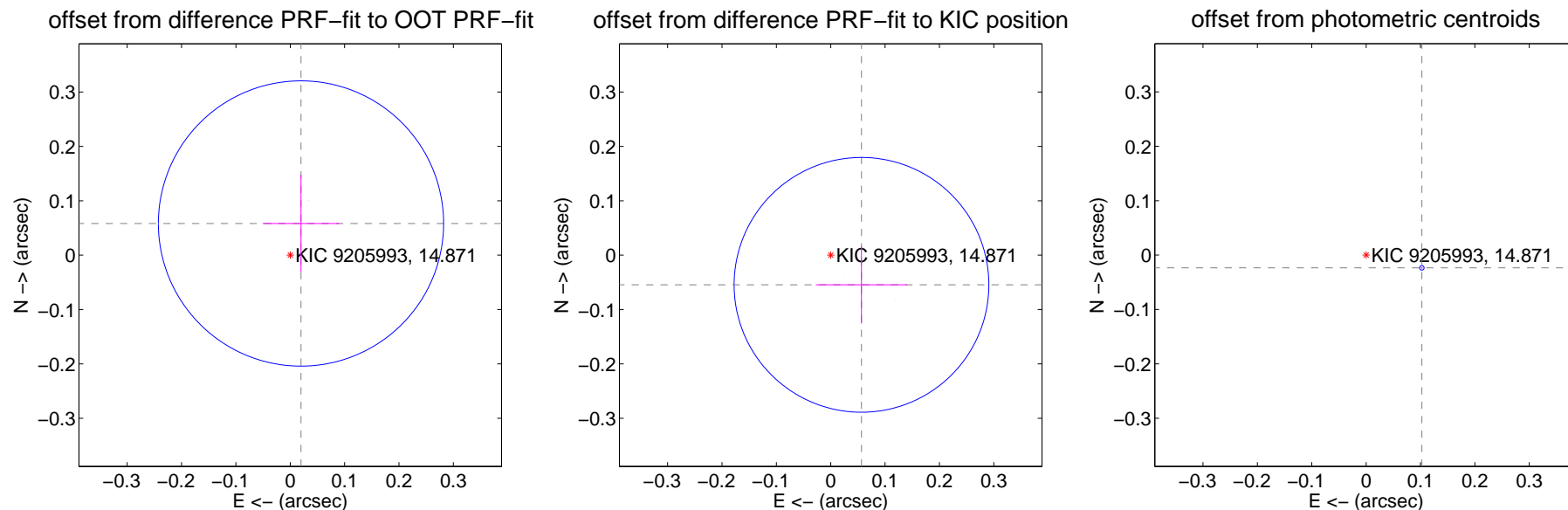
DV Centroid Data

Supplemental centroid analysis for 009205993-01. Kepler magnitude: 14.87. Transit SNR -1.00

There are 2 quarters with good PRF difference image offsets

The direct PRF centroid is offset from the target star catalog position by about 0.15 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.061 ± 0.087	0.70	-0.020 ± 0.070	0.058 ± 0.089
PRF-fit source offset from KIC position	0.079 ± 0.078	1.01	-0.057 ± 0.084	-0.055 ± 0.071
photometric centroid source offset	0.11 ± 0.00	76.74	-0.10 ± 0.00	-0.02 ± 0.00



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- σ uncertainty. Blue circle: three- σ . Red *: target star. Blue *: Other stars. Text next to a star gives its KIC ID and kepmag. KIC IDs > 15,000,000 are from the UKIRT catalog.

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



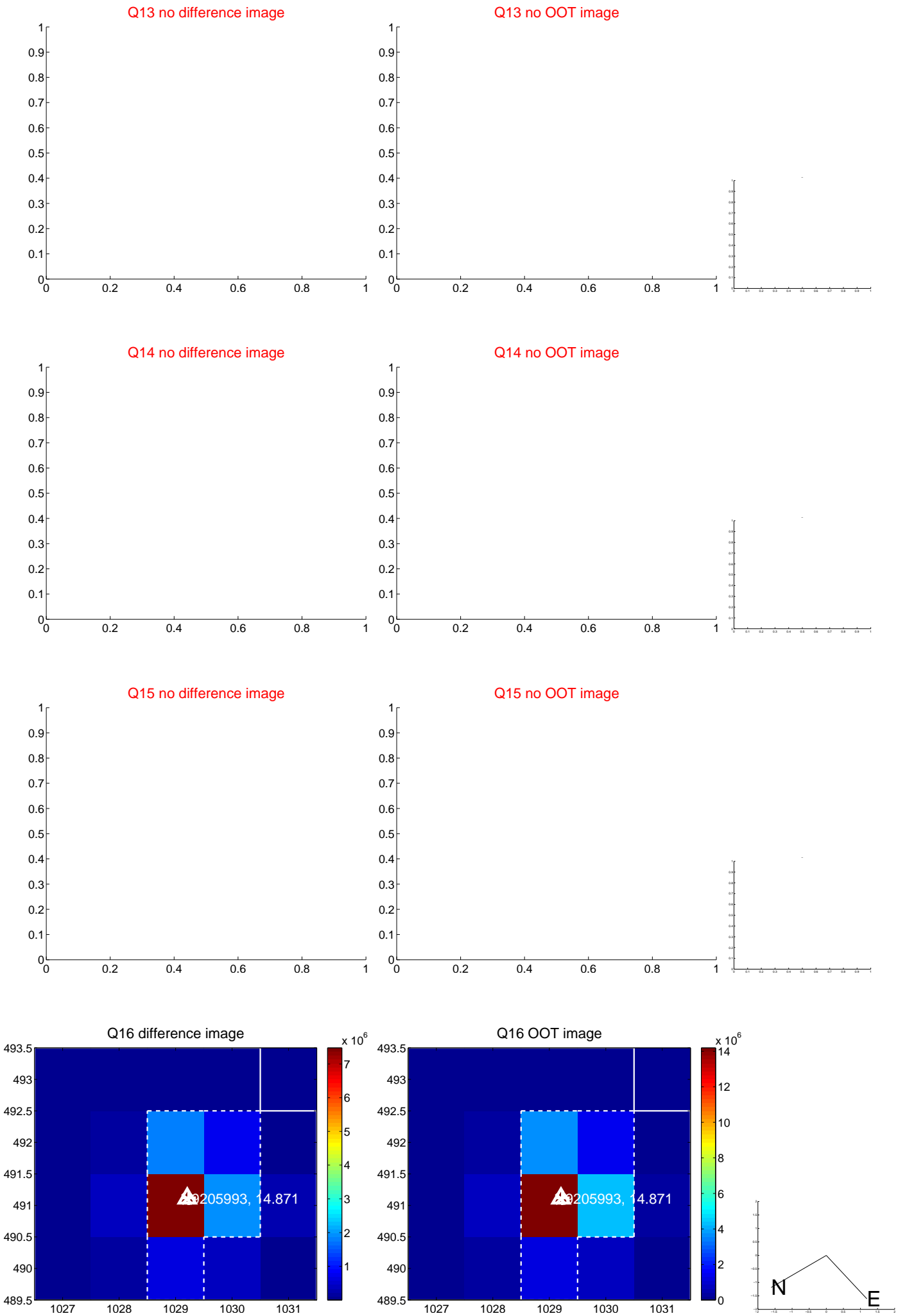
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



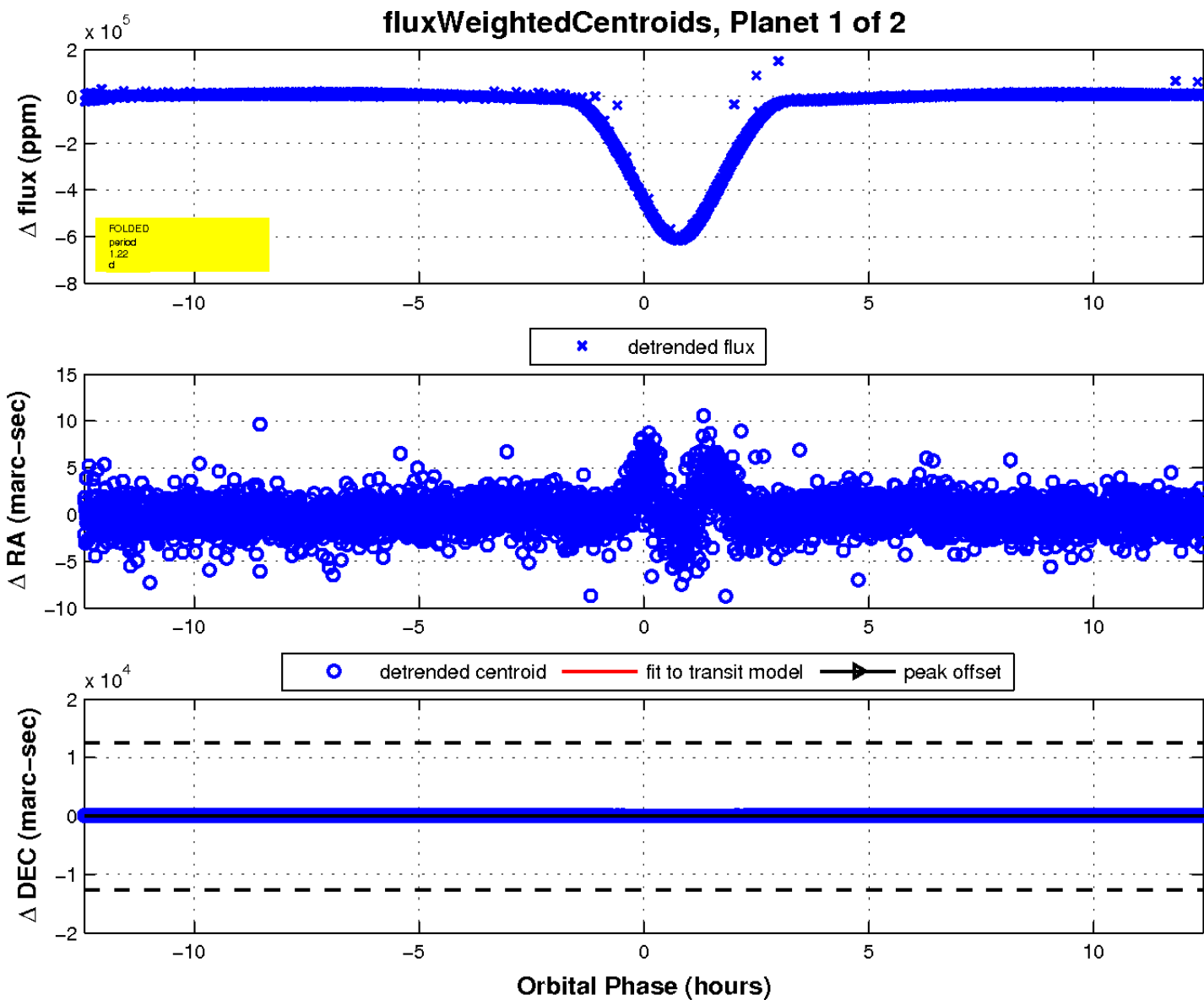
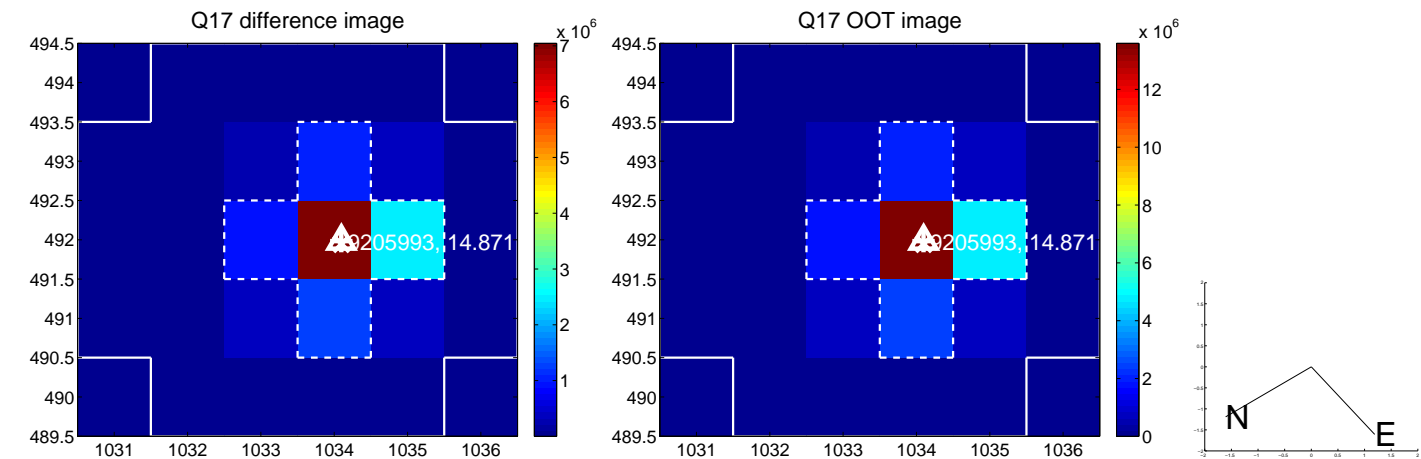
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

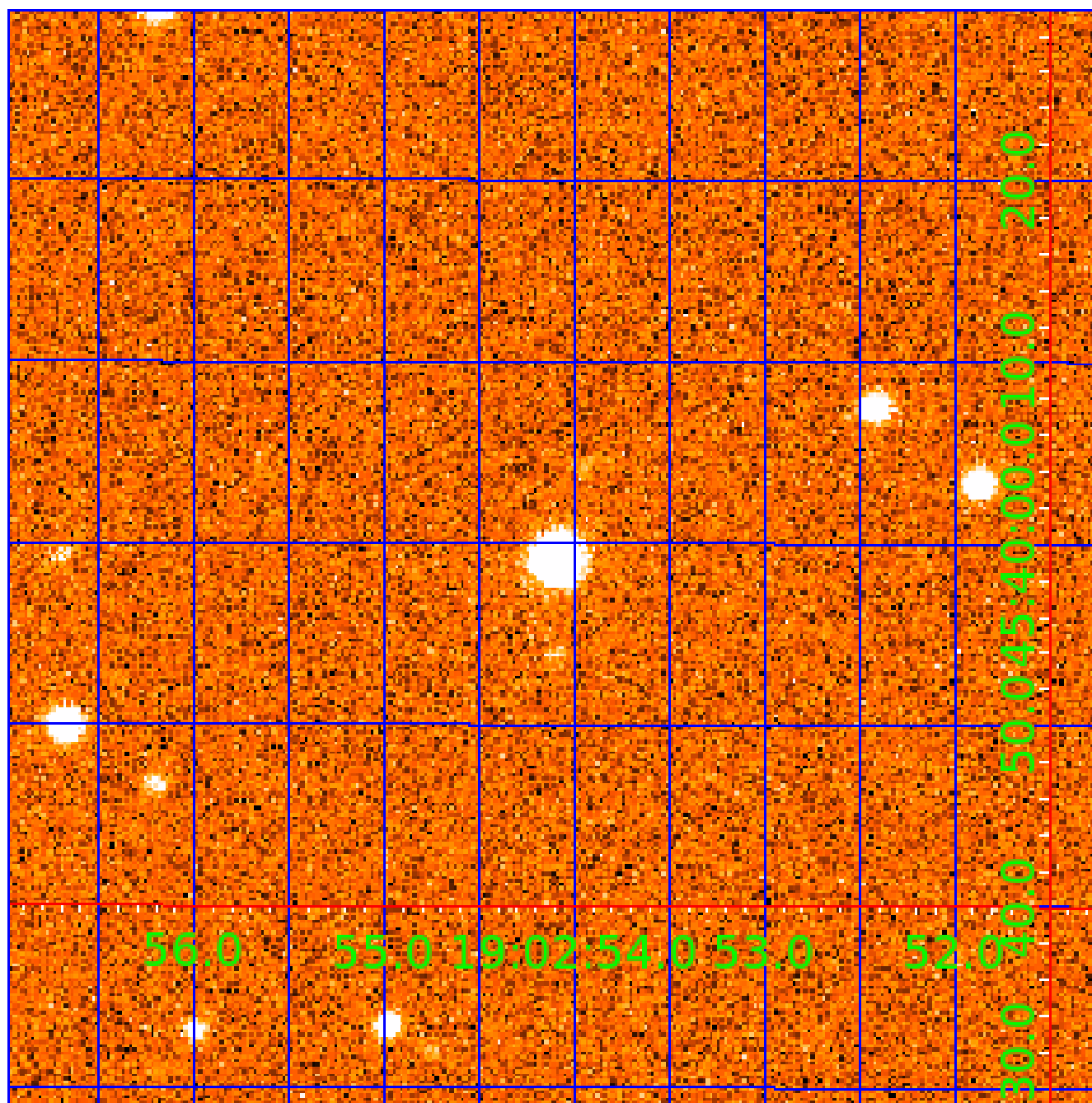


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 009205993

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})
009205993-01	OBS	7145.01	1.219690	132.175777	596308.8	2.000	1867.5	-1.0	1.64	7358	43.31	11006.10
009205993-02	OBS	No	3.659363	132.677853	91207.8	4.391	205.0	98.8	1.64	7358	78.18	2543.46

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
009205993-01	OBS	FP	0.00	1	0	1	0	LPP_DV—CENT_NOFITS—HALO_GHOST
009205993-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_TRACKER—LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—MOD_TER_ALT—SAME_NTL_PERIOD—CENT_FEW_DIFFS

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

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

See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

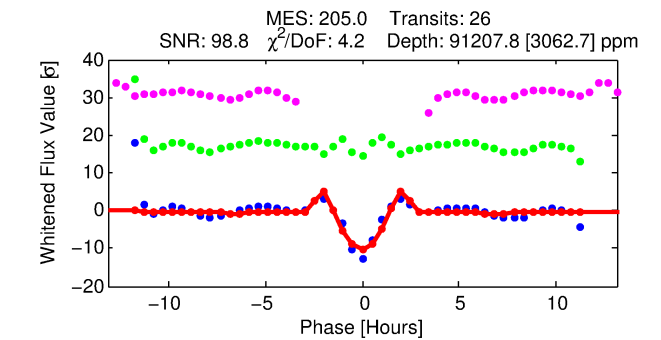
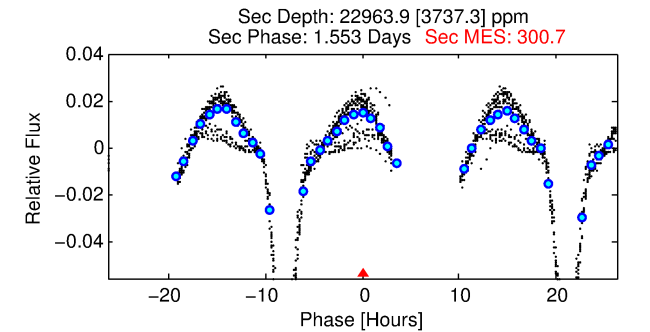
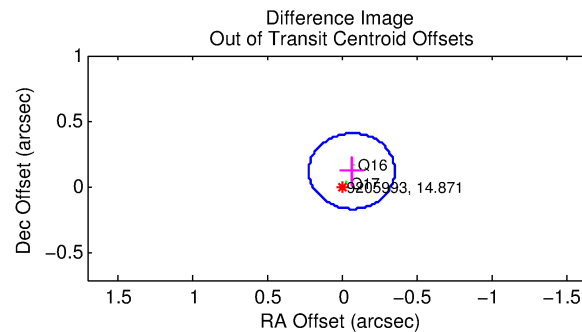
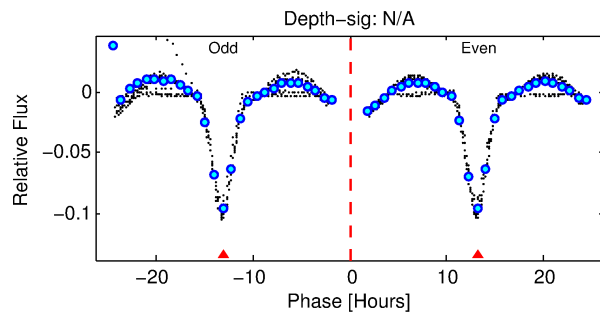
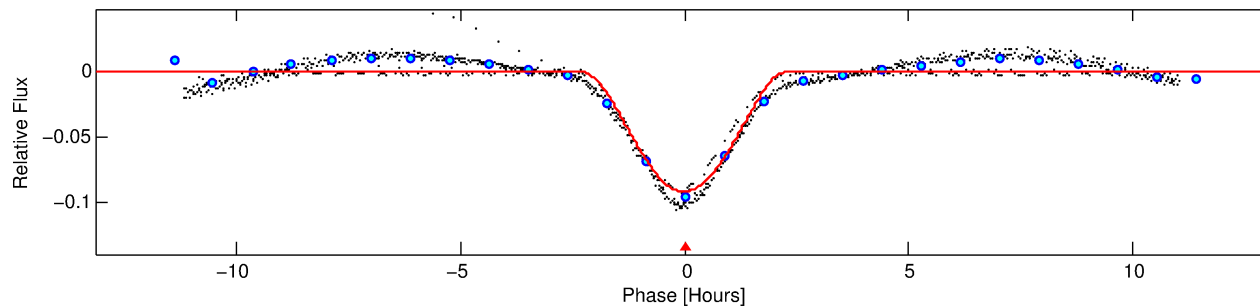
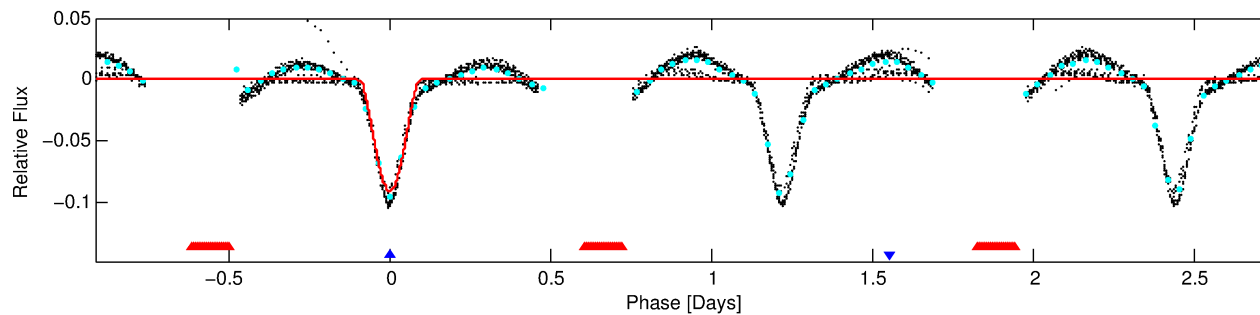
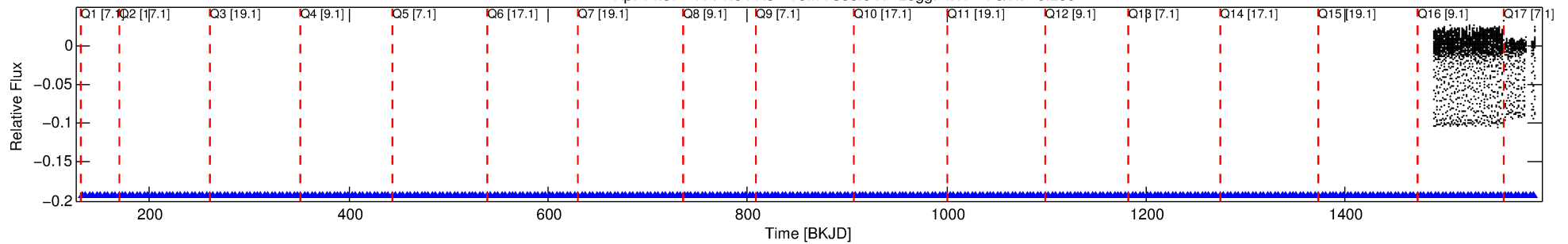
Ephemeris Match Information For 009205993-02

No Significant Match Found

DV One-Page Summary

KIC: 9205993 Candidate: 2 of 2 Period: 3.659 d
KOI: K07145 Corr: No Ephemeris Match

Kp: 14.87 R*: 1.64 Rs Teff: 7358.0 K Logg: 4.17 Fe/H: -0.200



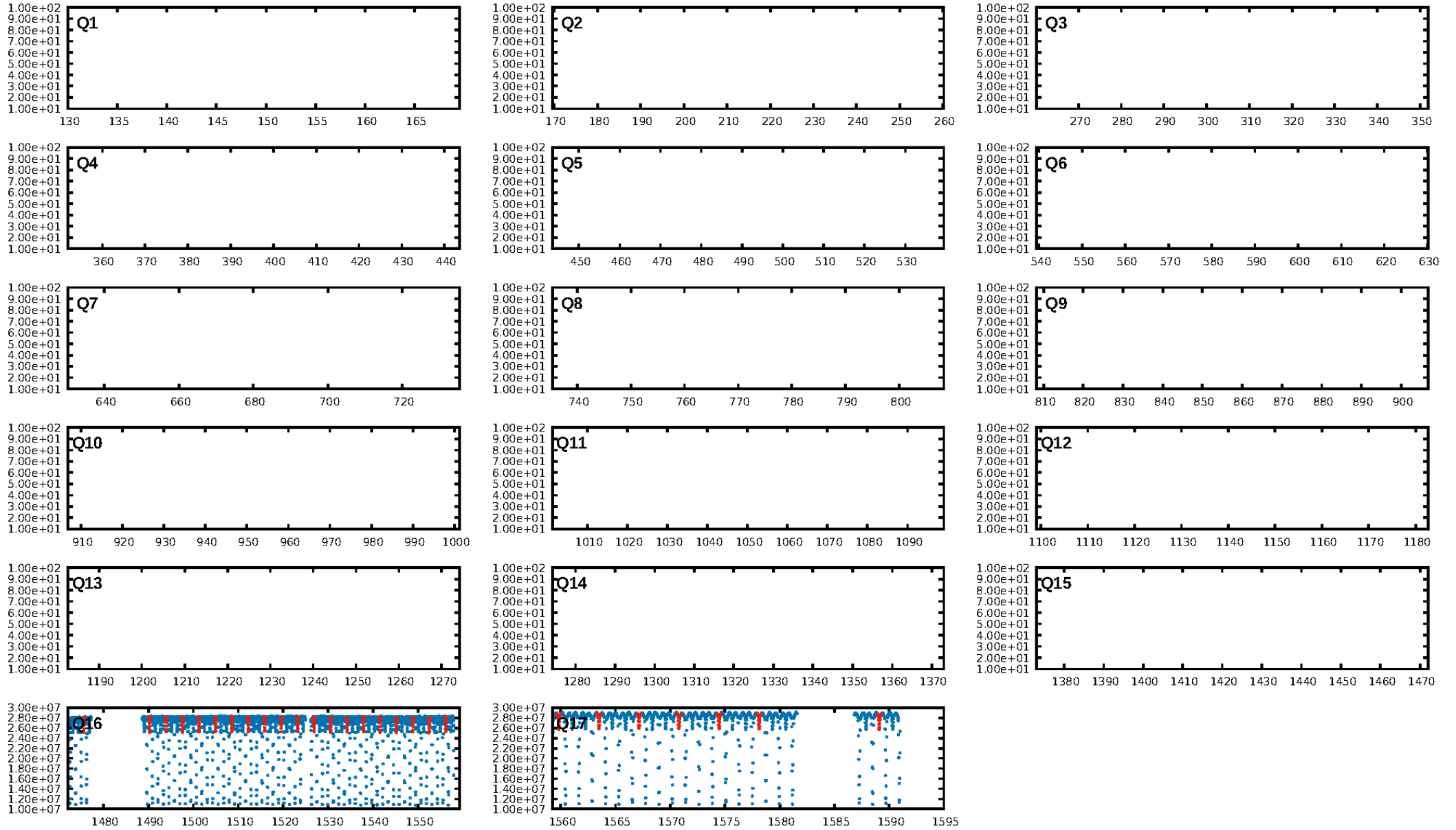
DV Fit Results:

Period = 3.65936 [0.00000] d
Epoch = 132.6779 [0.0010] BKJD
Rp/R* = 0.4376 [0.3482]
a/R* = 6.91 [0.26]
b = 0.96 [0.49]
Seff = 2543.46 [1045.86]
Teq = 1811 [186] K
Rp = 78.18 [67.45] Re
a = 0.0526 [0.0140] AU
Ag = 5.72 [9.39] [0.50σ]
Teffp = 4330 [1743] K [1.44σ]

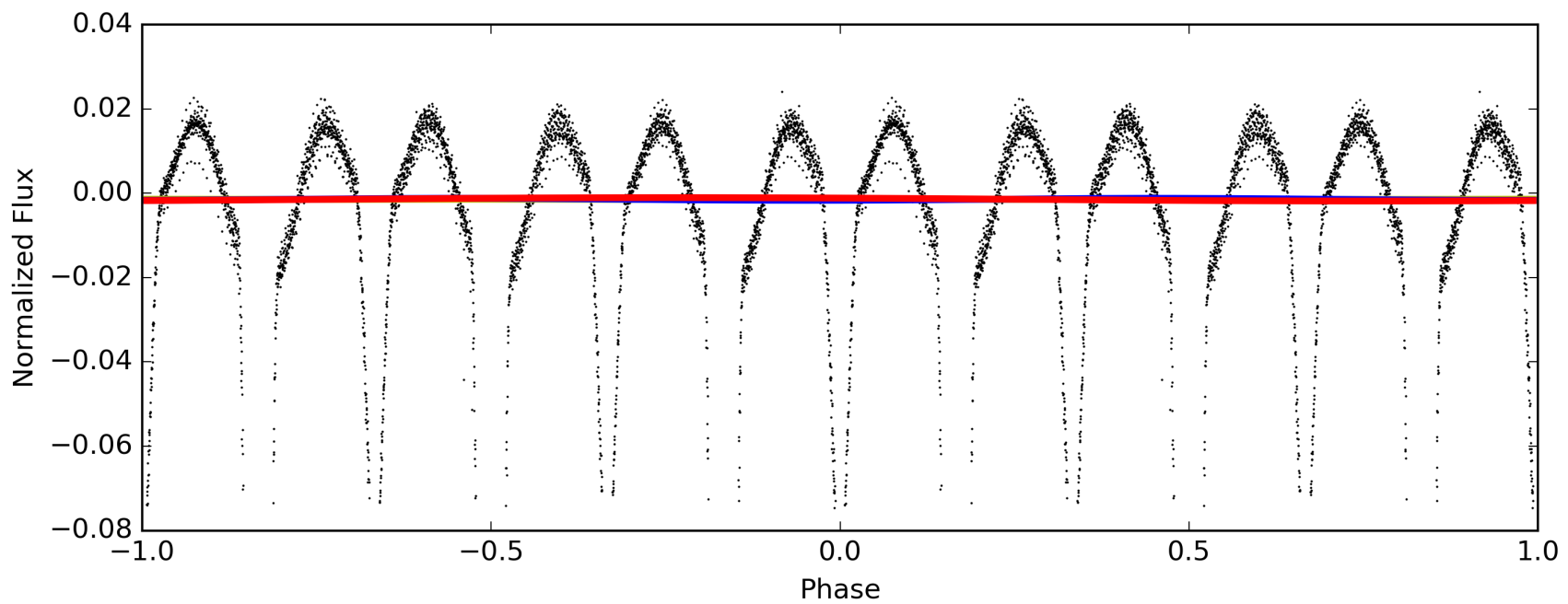
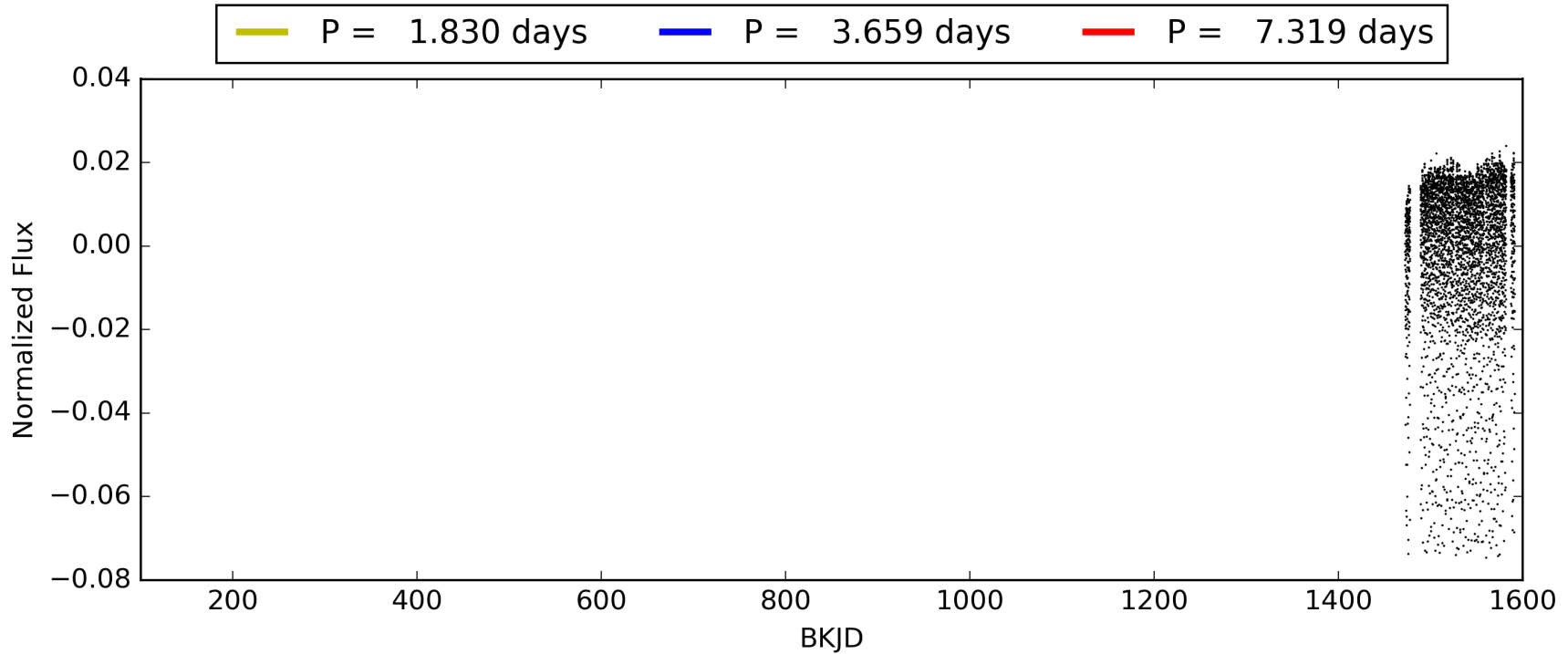
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [12.13σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 3.9%
ModelChiSquareGof-sig: 0.0%
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [19/19]
GhostDiagnostic-chr: 0.7879
Centroid-sig: N/A
Centroid-so: 0.113 arcsec [23.17σ]
OotOffset-rm: 0.141 arcsec [1.48σ]
KicOffset-rm: 0.094 arcsec [1.20σ]
OotOffset-st: 0/0/1/1 [2]
KicOffset-st: 0/0/1/1 [2]
DiffImageQuality-fgm: 1.00 [2/2]
DiffImageOverlap-fno: 1.00 [2/2]

TCE 009205993-02, PDC Light Curves

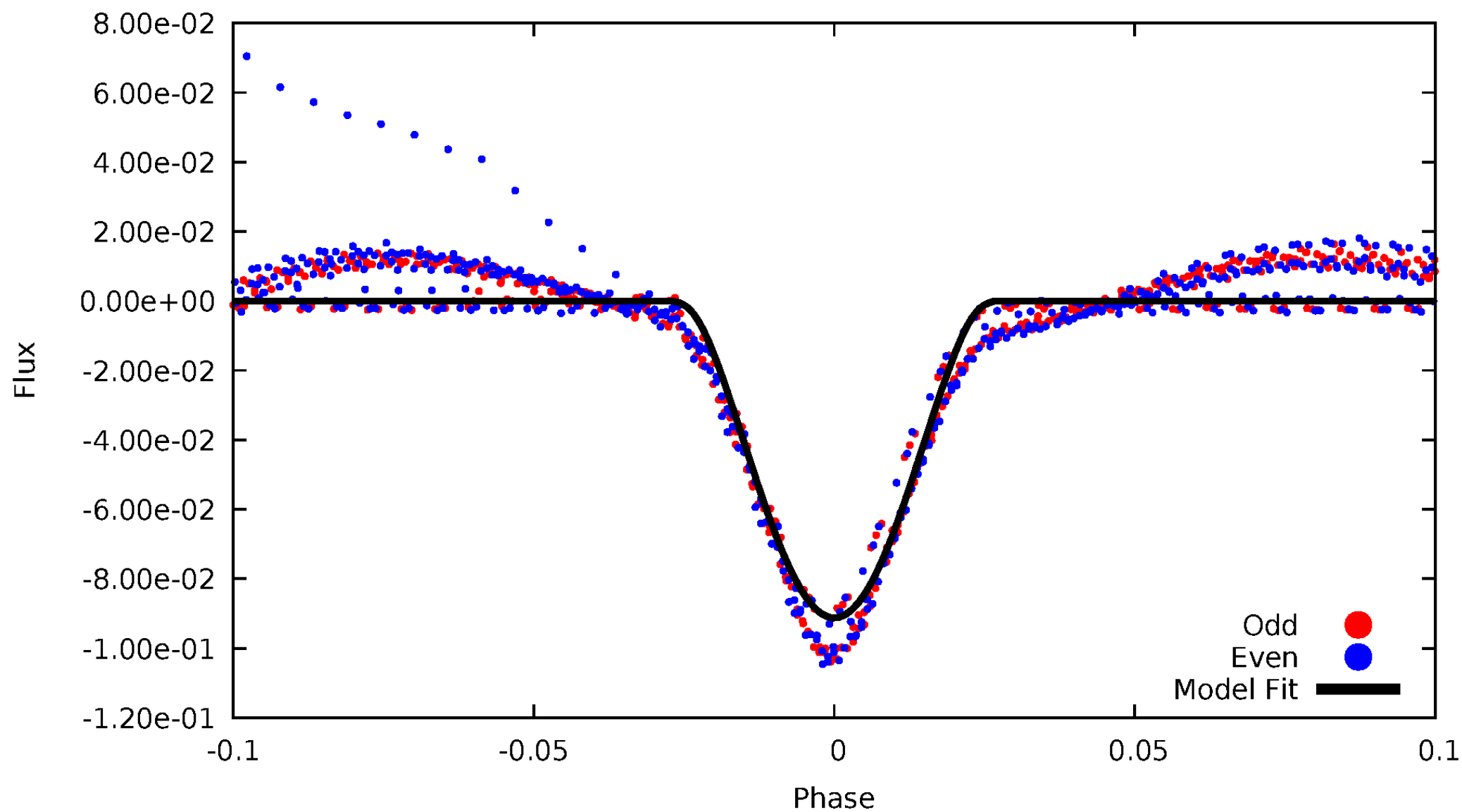


TCE 009205993-02



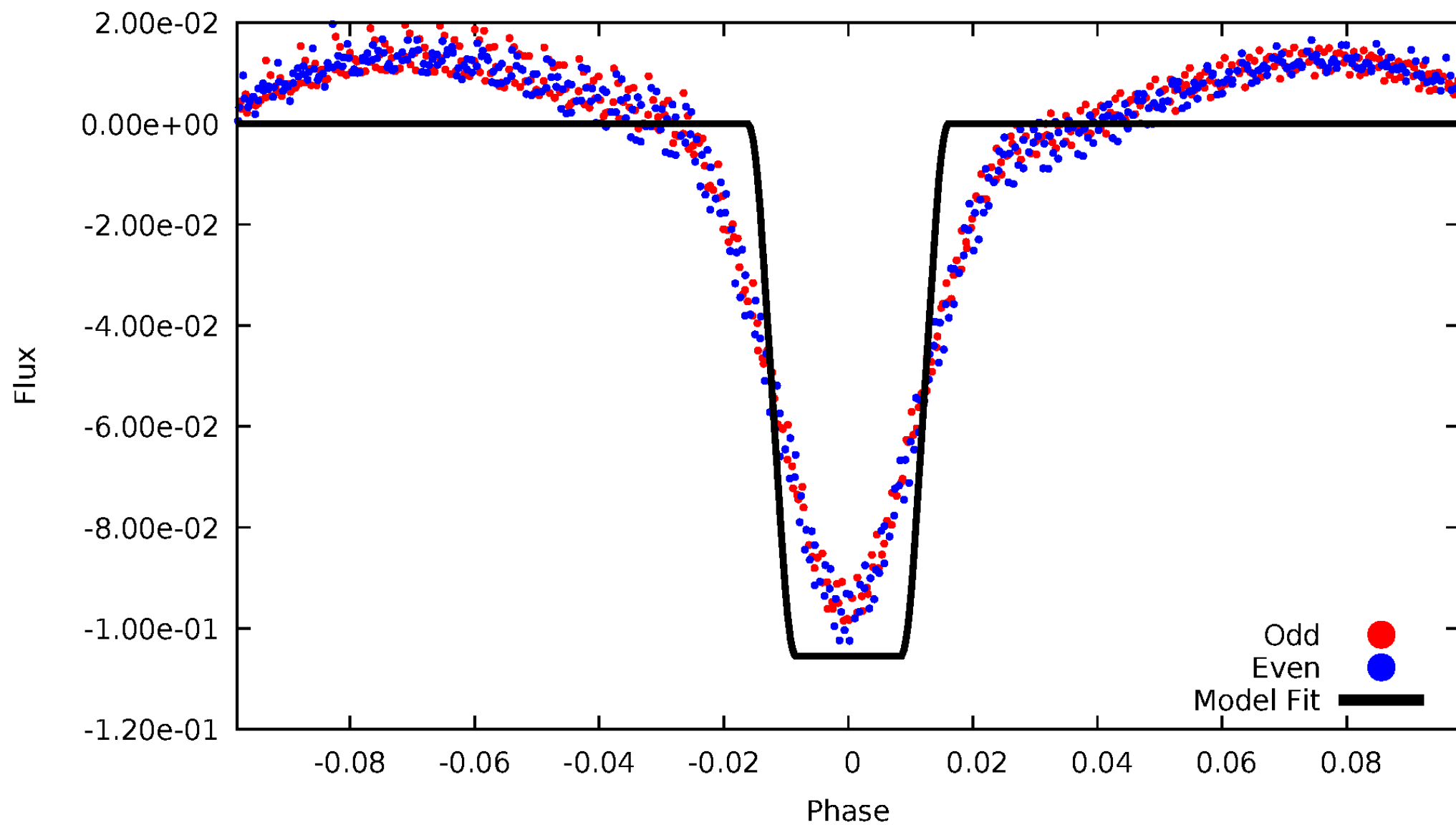
DV Odd/Even

TCE 009205993-02



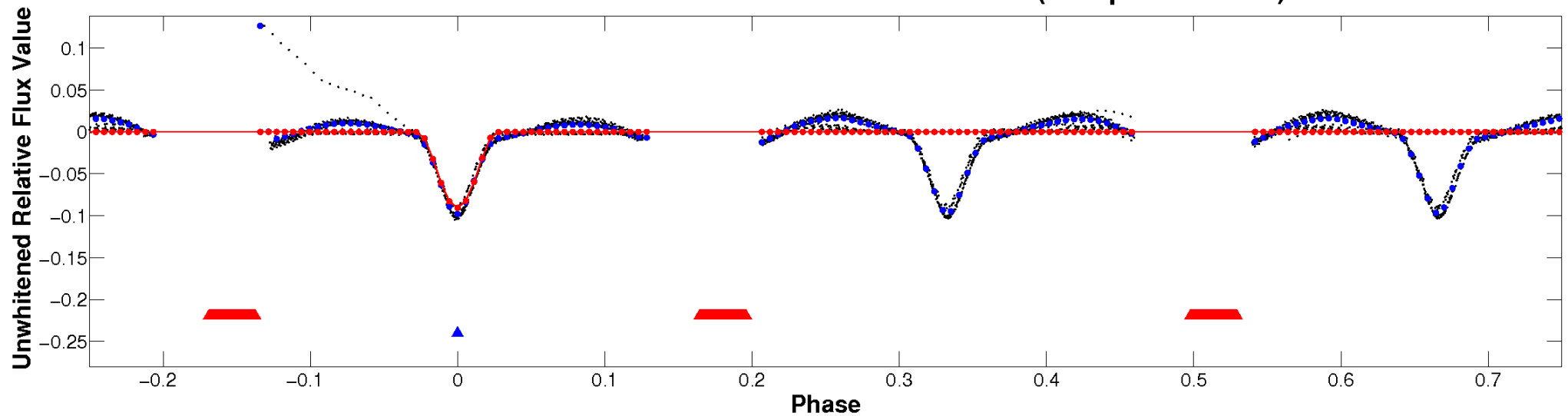
ALT Odd/Even

TCE 009205993-02

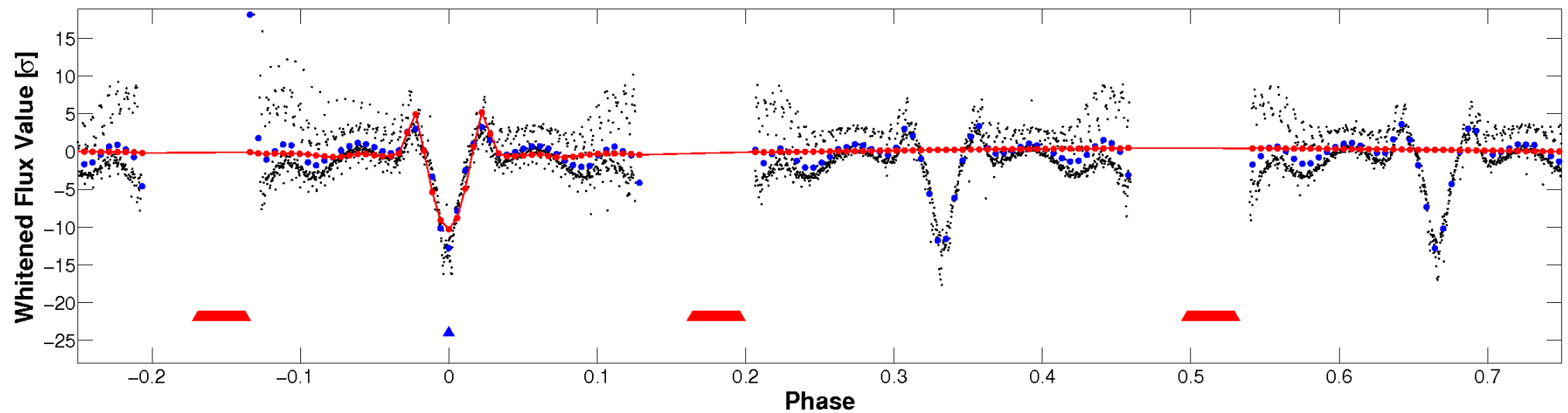


Non-Whitened Vs. Whitened Light Curve

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

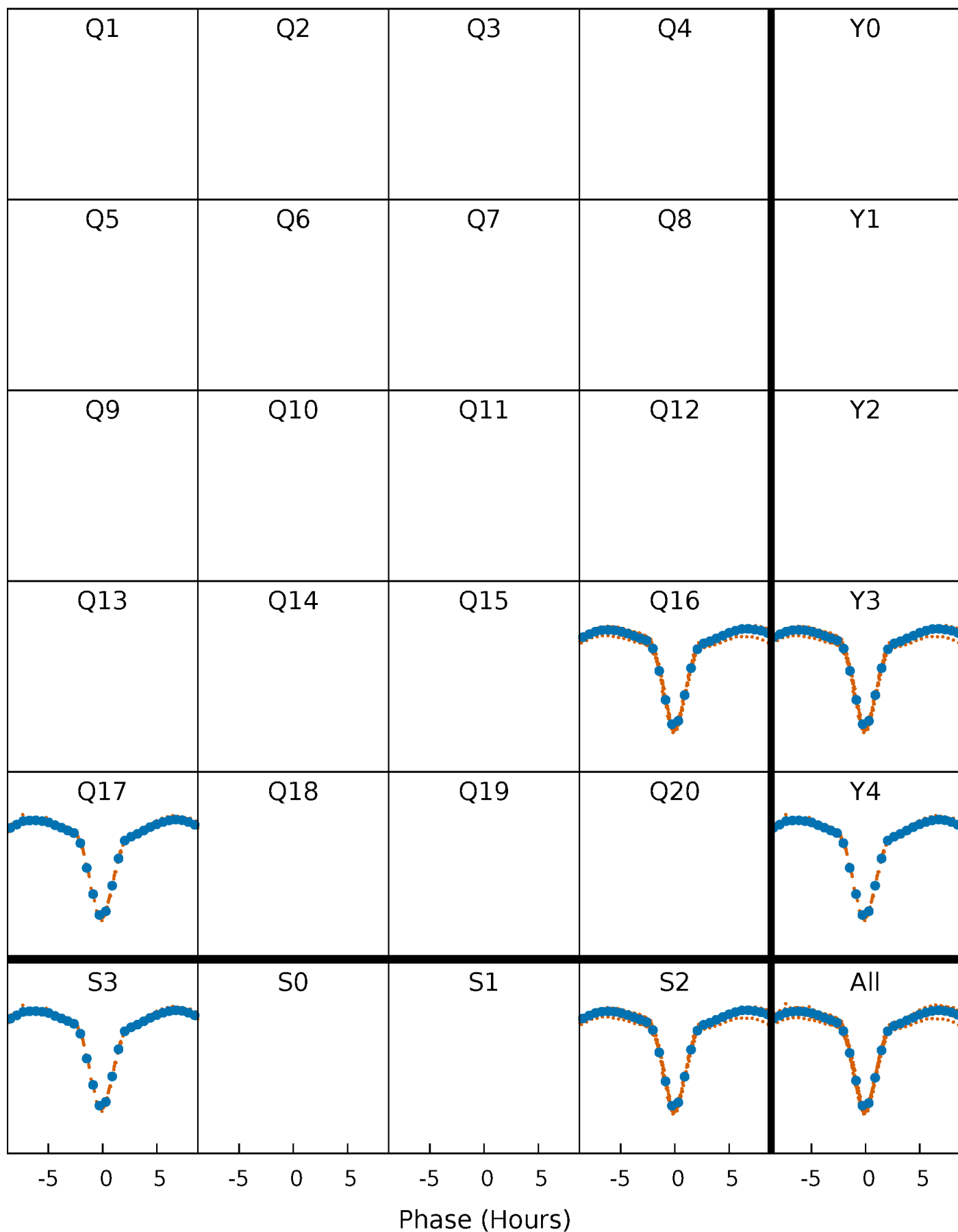


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



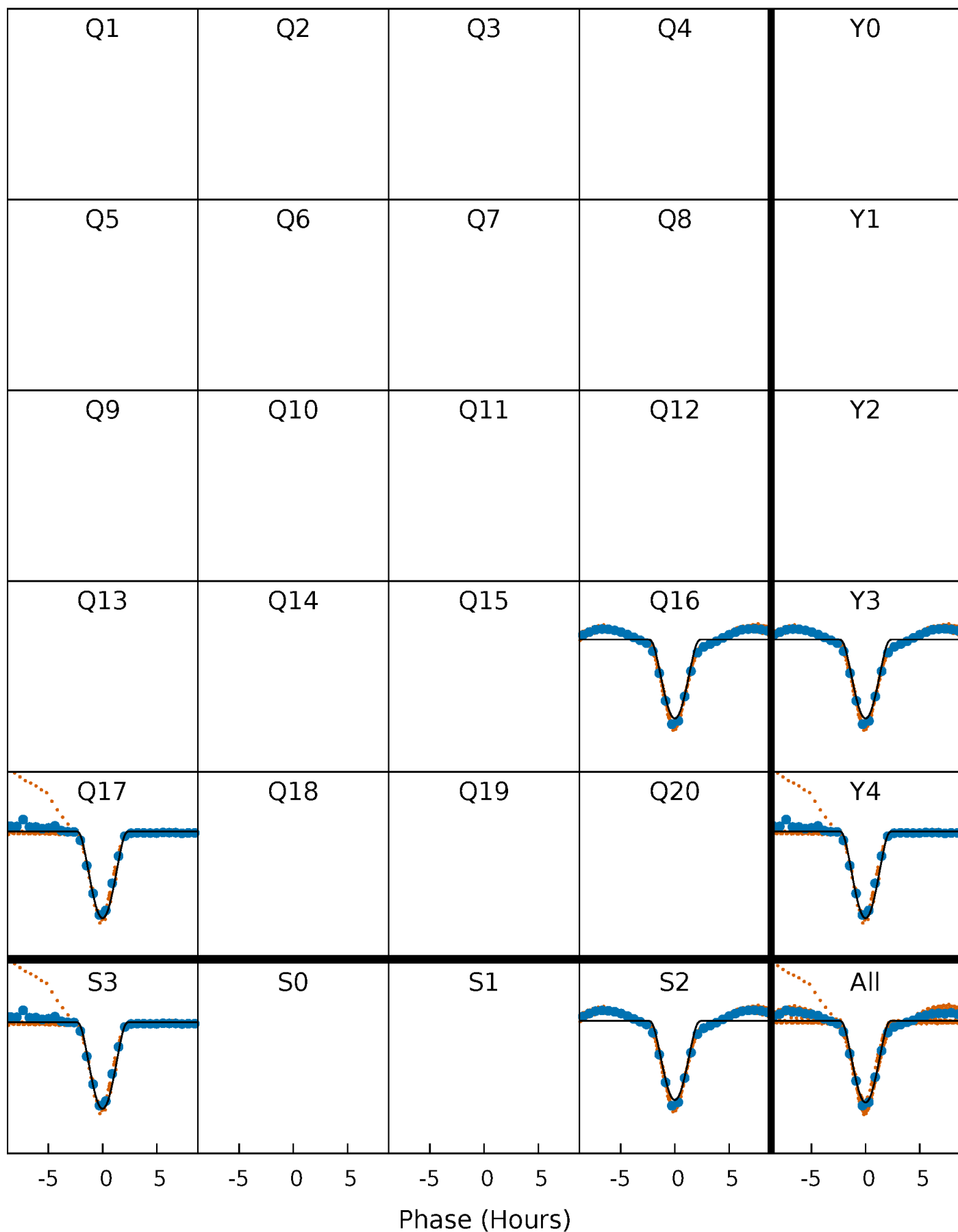
PDC Quarter-Phased Transit Curves

TCE 009205993-02 P= 3.659363 Days $T_0=132.677853$ (BKJD)



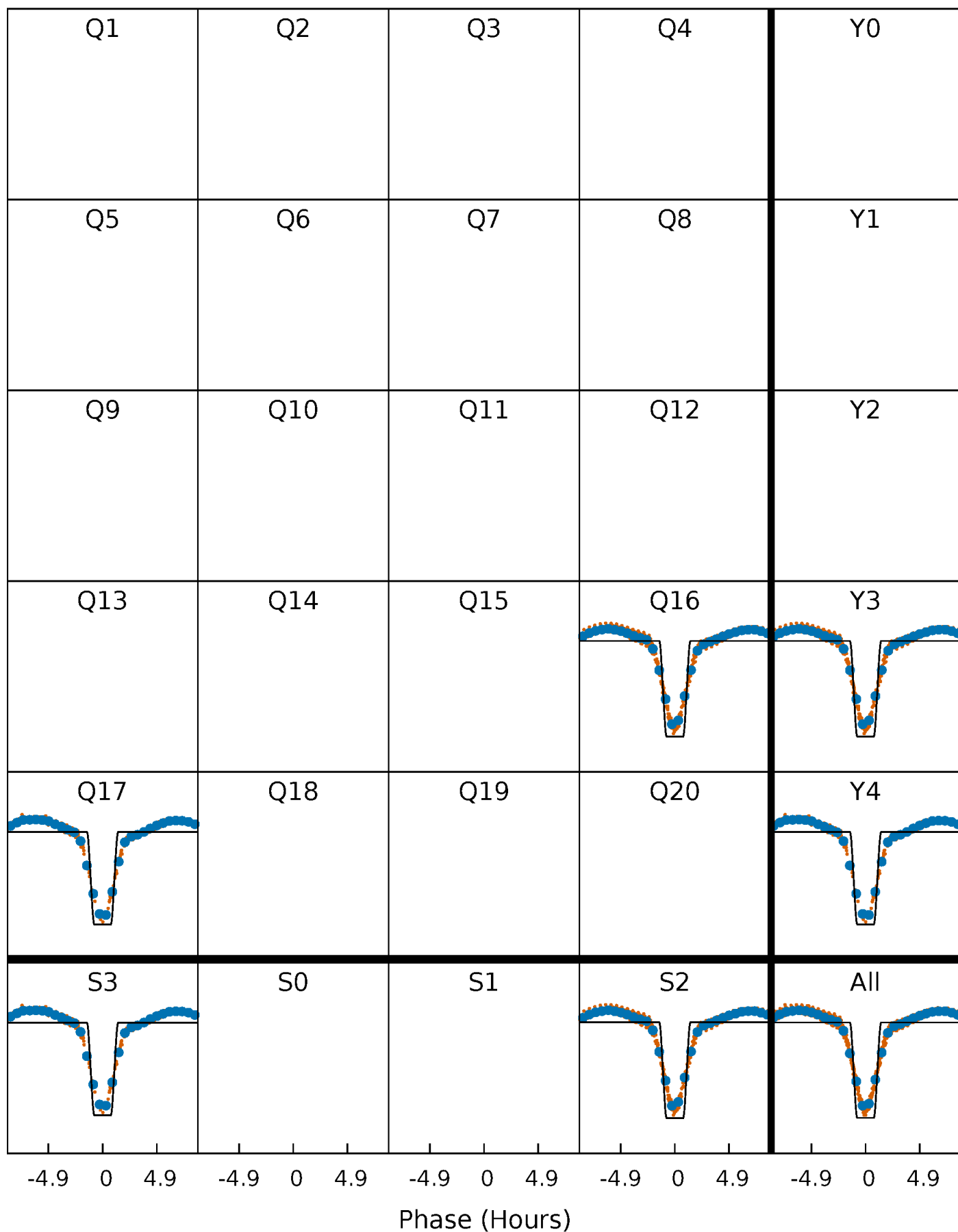
DV Quarter-Phased Transit Curves

TCE 009205993-02 P= 3.659363 Days $T_0=132.677853$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

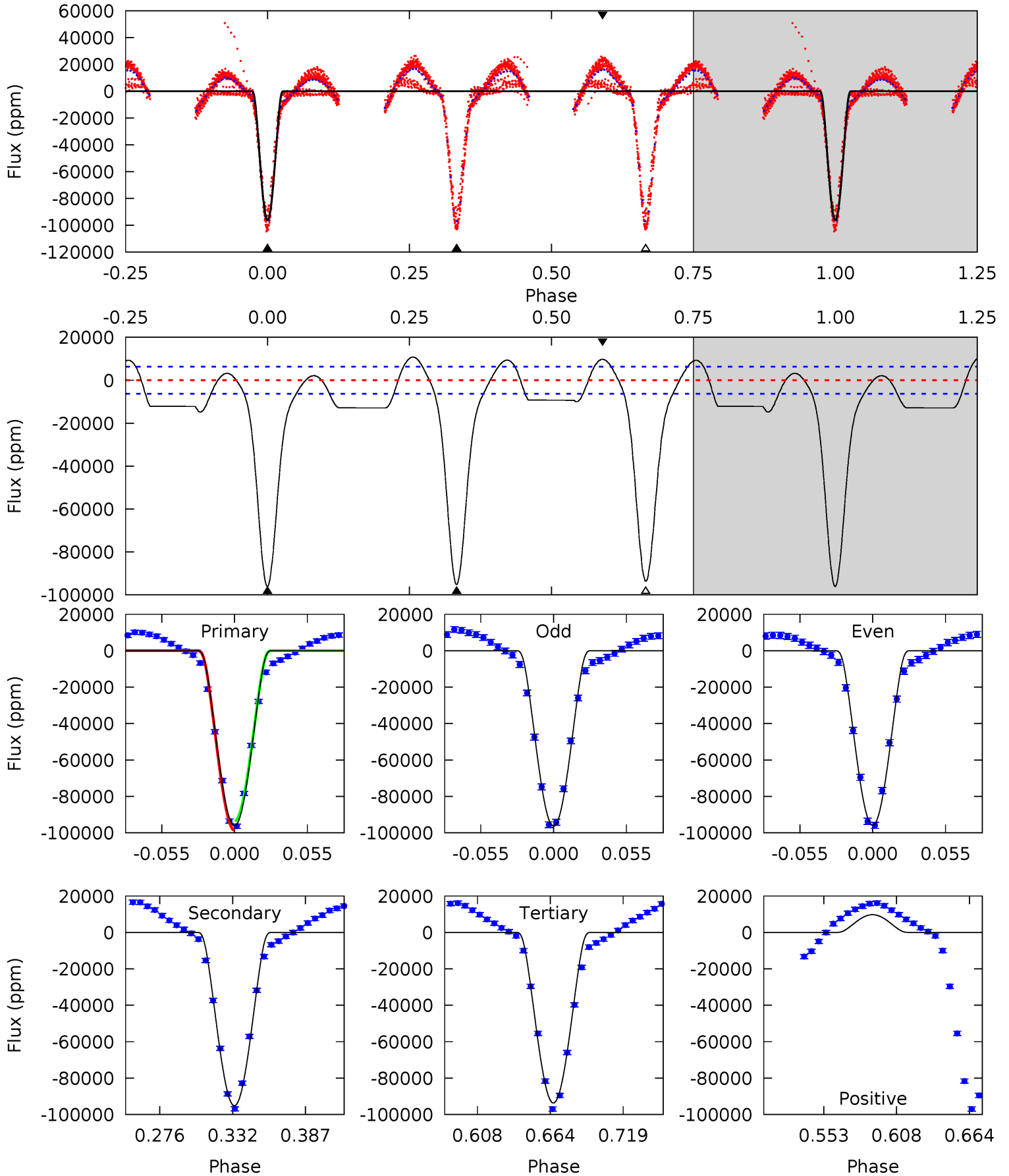
TCE 009205993-02 P= 3.659193 Days $T_0=132.742047$ (BKJD)



DV Model-Shift Uniqueness Test

009205993-02, P = 3.659363 Days, E = 132.677853 Days

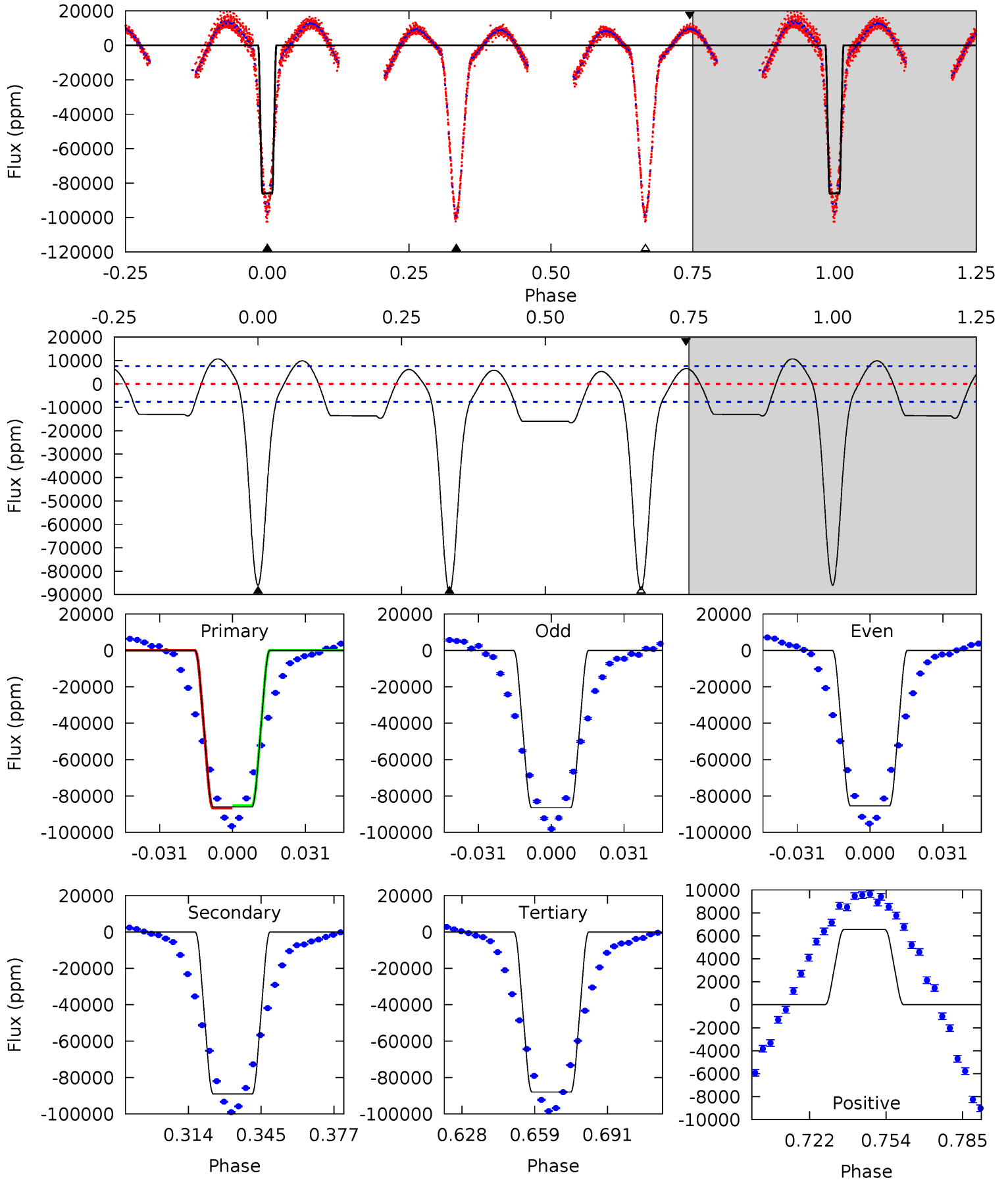
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
71.3	70.6	69.4	7.23	4.69	1.92	16.2	1.83	64.0	1.12	63.3	0.18	0.98	0.10	3.48



Alt Model-Shift Uniqueness Test

009205993-02, P = 3.659193 Days, E = 132.742047 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
54.3	56.2	55.6	4.14	4.80	2.15	11.4	-1.23	50.2	0.67	52.1	0.32	1.00	0.11	0.98



Stellar Parameters For KIC 009205993

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	7358^{+205}_{-333}	$4.171^{+0.128}_{-0.192}$	$-0.200^{+0.250}_{-0.350}$	$1.637^{+0.546}_{-0.294}$	$1.449^{+0.232}_{-0.232}$	$0.466^{+0.333}_{-0.236}$
	+3%/-5%	+3%/-5%	+125%/-175%	+33%/-18%	+16%/-16%	+71%/-51%
Source	KIC0	KIC0	KIC0	DSEP		

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

Secondary Eclipse Parameters for KIC 009205993-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-95162 ± 1349	$88.75^{+61.43}_{-54.27}$	2541^{+193}_{-177}	5865^{+4540}_{-1217}	20^{+110}_{-13}
Alt.	-88989 ± 1582	$72.45^{+56.24}_{-46.64}$	2535^{+201}_{-167}	6346^{+6041}_{-1494}	28^{+204}_{-19}

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

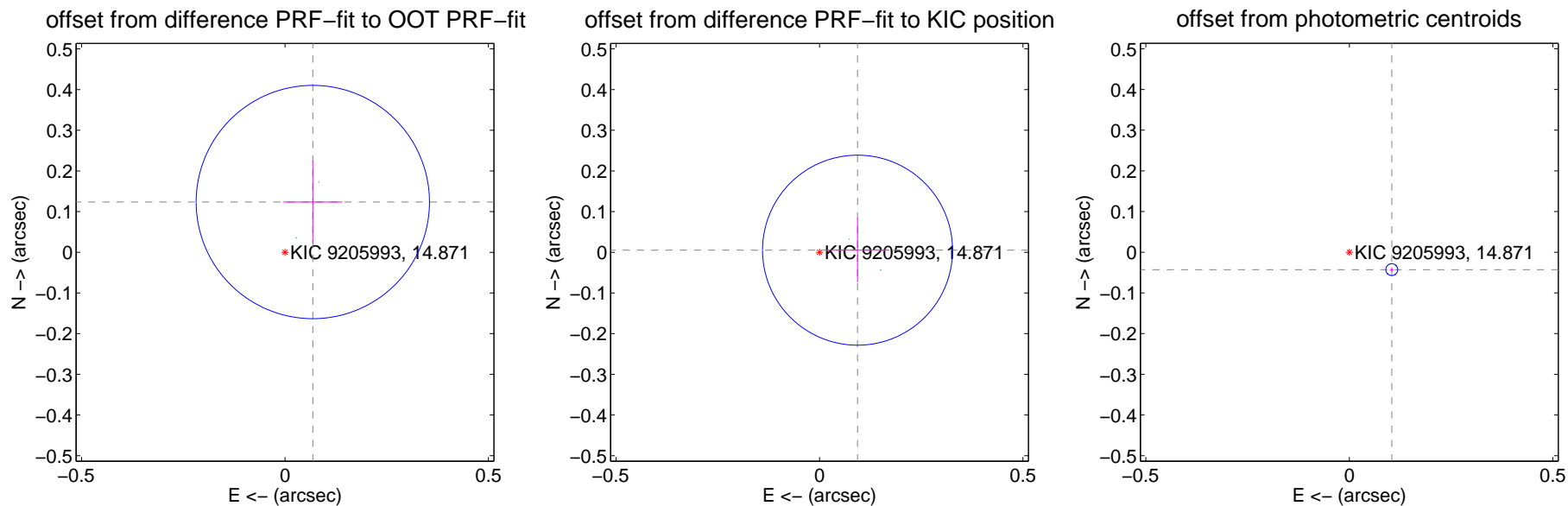
DV Centroid Data

Supplemental centroid analysis for 009205993-02. Kepler magnitude: 14.87. Transit SNR 98.83

There are 2 quarters with good PRF difference image offsets

The direct PRF centroid is offset from the target star catalog position by about 0.15 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.141 ± 0.096	1.48	-0.068 ± 0.073	0.124 ± 0.102
PRF-fit source offset from KIC position	0.094 ± 0.078	1.20	-0.094 ± 0.078	0.005 ± 0.079
photometric centroid source offset	0.11 ± 0.00	23.17	-0.10 ± 0.00	-0.04 ± 0.01



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



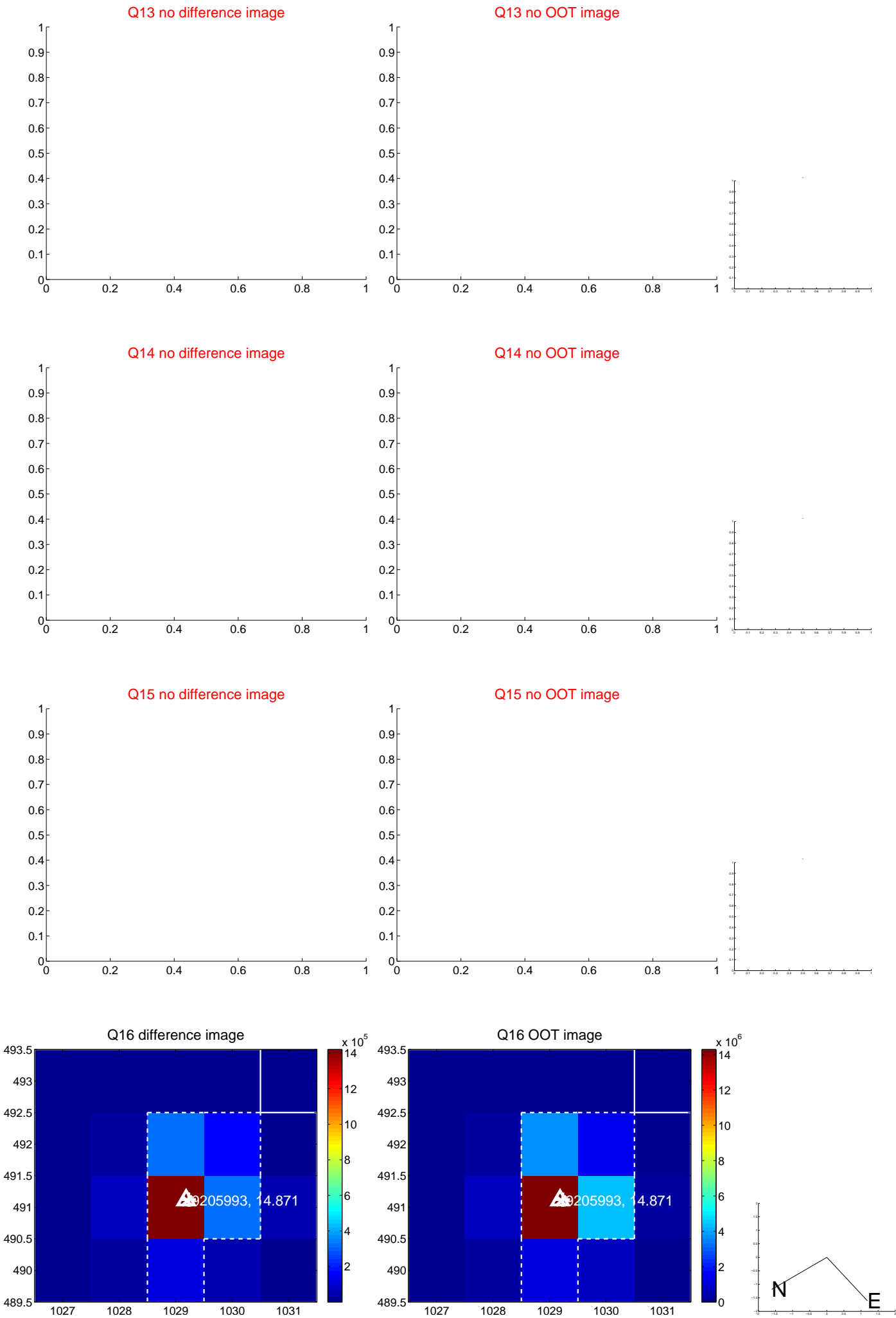
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



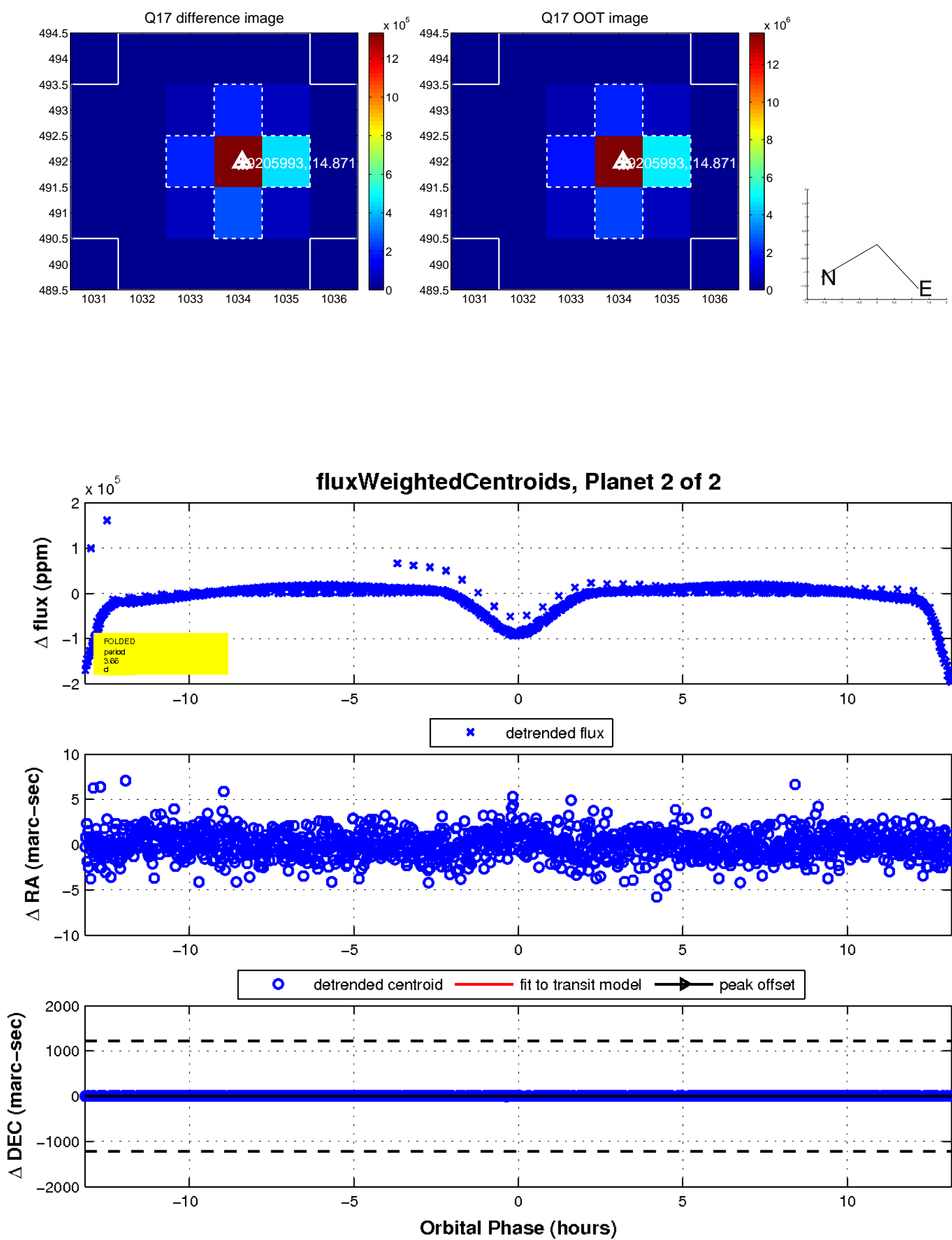
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



UKIRT Image

Declination

