

Table 2. Changes in circadian and circasemidian amplitude of heart rate and heart rate variability in response to long-duration spaceflight missions.

		Before		ISS01		ISS02	
		Flight 1	Flight 2	Flight 1	Flight 2	Flight 1	Flight 2
HR (b/min)	MESOR	72.86	66.61	71.65	68.18	79.42	70.03
	A24h	4.40	9.71	11.22 (255%)	8.38	11.93 (271%)	12.11 (125%)
	A12h	13.2	5.3	6.8	5.5	8.2	7.4
NN-interval (msec)	MESOR	853.15	930.80	866.30	897.60	778.60	882.90
	A24h	48.14	129.80	128.70 (267%)	114.20	119.40 (248%)	148.50 (114%)
	A12h	138.3	82.1	83.3	75.9	81.2	89.5
r-MSSD (msec)	MESOR	43.45	58.94	42.45	34.68	27.16	43.92
	A24h	4.21	29.70	4.17	7.90	1.14	14.37
	A12h	17.32	24.01	1.41	4.24	0.73	11.60
pNN50 (%)	MESOR	16.86	21.19	18.34	9.52	6.25	12.92
	A24h	5.40	8.25	3.36	2.99	0.26	2.50
	A12h	8.27	7.17	1.01	2.92	0.39	4.05
LF/HF (-)	MESOR	4.42	3.31	3.60	4.36	5.61	4.01
	A24h	0.58	1.12	0.39	0.85	0.36	0.52
	A12h	1.26	0.76	0.16	0.85	0.86	1.23
TF (msec ²) (0.0001-0.50 Hz)	MESOR	8012.5	9851.4	8563.9	5578.0	4717.9	6756.6
	A24h	3927.2	3408.7	6385.6 (163%)	2827.0	2152.4	2721.3
	A12h	311.3	3434.1	1785.5 (574%)	1710.7	1473.0 (473%)	1167.1
ULF (msec ²) (0.0001-0.003 Hz)	MESOR	4059.4	5071.0	5874.3	2924.9	2717.5	3449.9
	A24h	2721.4	3021.9	6757.7 (248%)	3060.2	2255.6	3422.8
	A12h	1712.6	1776.2	1692.6	1683.5	1449.8	2469.7
VLF (msec ²) (0.003-0.04 Hz)	MESOR	2606.3	3455.9	1582.1	1538.2	1140.9	1856.1
	A24h	1112.3	954.2	304.4	87.7	351.5	756.2
	A12h	1520.8	1207.1	114.3	327.7	335.2	929.7
LF (msec ²) (0.04-0.15 Hz)	MESOR	1395.8	1487.1	937.0	874.7	772.1	982.7
	A24h	483.1	382.0	25.2	52.9	122.1	162.1
	A12h	392.2	390.8	125.5	15.1	84.7	220.3
HF (msec ²) (0.15-0.40 Hz)	MESOR	408.89	909.60	285.70	262.40	152.75	443.30
	A24h	56.82	988.70	40.46	104.60	19.29	286.70
	A12h	265.3	821.4	23.9	55.6	12.3	260.5

		Before		ISS01		ISS02	
		Flight 1	Flight 2	Flight 1	Flight 2	Flight 1	Flight 2
β (0.0001-0.01 Hz)	MESOR	-1.173	1.072	-1.147	0.942	-1.070	0.867
	A24h	0.172	0.287	0.521 (303%)	0.356	0.401 (233%)	0.253
	A12h	0.194	0.127	0.094	0.144	0.329	0.294
LF-component (msec ²) (0.05-0.15 Hz)	MESOR	1205.8	1097.6	791.6	740.4	655.9	801.0
	A24h	441.8	375.6	20.1	33.7	102.9	254.2
	A12h	352.7	295.0	104.6	36.2	61.1	139.4
HF-component (msec ²) (0.15-0.50 Hz)	MESOR	443.5	728.8	319.9	284.5	168.0	485.1
	A24h	56.0	715.1	37.6	115.4	18.1	402.5
	A12h	287.8	607.0	26.1	63.4	12.6	307.4
LF-band (msec ²) (0.01-0.05 Hz)	MESOR	1612.5	2156.2	1117.0	1087.6	827.5	1331.9
	A24h	612.2	785.3	295.2	217.0	230.0	605.4
	A12h	930.1	605.9	107.1	216.1	234.6	640.1
MF1-band (msec ²) (0.05-0.10 Hz)	MESOR	763.2	803.1	549.2	498.4	434.1	550.5
	A24h	207.4	228.4	56.1	88.4	123.4	171.5
	A12h	217.2	232.0	94.8	39.1	54.9	167.9
MF2-band (msec ²) (0.10-0.15 Hz)	MESOR	442.6	437.9	242.4	245.1	221.8	290.9
	A24h	234.9	88.9	49.9	66.1	76.1	73.7
	A12h	140.2	110.4	29.5	42.5	52.8	42.7
HF-band (msec ²) (0.15-0.20 Hz)	MESOR	181.9	444.2	107.6	102.0	63.8	154.5
	A24h	33.4	529.3	6.1	16.3	9.7	90.6
	A12h	123.2	460.1	1.9	5.5	5.8	101.8
HF02-band (msec ²) (0.20-0.30 Hz)	MESOR	157.4	300.2	122.6	116.4	63.6	187.0
	A24h	16.8	271.7	37.1 (221%)	69.1	17.8	169.8
	A12h	99.0	271.7	19.4	40.4	5.7	117.8
HF03-band (msec ²) (0.30-0.40 Hz)	MESOR	69.6	140.6	55.6	43.6	25.4	92.8
	A24h	10.5	142.6	2.6	21.9	1.8	68.4
	A12h	43.5	112.3	6.7	12.5	3.8	54.4
HF04-band (msec ²) (0.40-0.50 Hz)	MESOR	34.6	60.7	34.2	23.0	15.2	47.3
	A24h	1.0	60.8	3.1 (317%)	9.8	1.6	30.1
	A12h	24.2	46.6	5.7	6.4	1.8	19.9

A24h: Circadian Amplitude; A12h: Circasemidian Amplitude