

Table 1. Comparison of heart rate variability between the two spaceflights suggests role of brain functional network for faster adaptation to microgravity on second spaceflight ‡

	Unit, or Frequency range (Hz)	Daytime (awake)							Nighttime (asleep)						
		n	Flight 1 (day 18 after launch)		Flight 2 (day 21 after launch)		Paired t-test		n	Flight 1 (day 18 after launch)		Flight 2 (day 21 after launch)		Paired t-test	
			Mean	SE	Mean	SE	t-value	p-value		Mean	SE	Mean	SE	t-value	p-value
HR	bpm	18	75.9	2.7	71.4	1.7	-1.415	0.1752	6	58.3	1.0	56.5	1.1	-3.277	0.0220
NN	msec	18	813.3	21.8	849.9	17.5	1.330	0.2012	6	1032.1	16.5	1065.3	19.7	3.100	0.0269
β	0.0001-0.01	17	-1.2065	0.0875	-0.9793	0.0465	1.799	0.0953	6	-0.7533	0.0732	-0.5400	0.0991	3.719	0.0137
CVRR	msec	18	8.08	0.30	7.40	0.44	-1.178	0.2549	6	5.67	0.30	5.79	0.28	0.521	0.6246
r-MSSD	msec	18	41.8	2.2	32.2	1.9	-4.697	0.0002	6	45.7	1.2	52.0	5.2	1.191	0.2869
pNN50	%	18	17.7	1.4	9.2	1.4	-5.178	0.0001	6	20.4	1.0	15.4	3.4	-1.481	0.1986
Length	msec	18	300.2	12.1	263.6	8.9	-2.252	0.0378	6	302.1	18.6	305.2	11.9	0.151	0.8857
Width	msec	18	138.2	18.8	81.9	5.7	-2.965	0.0087	6	119.3	3.5	159.3	17.6	2.629	0.0466
Len/Wid	---	18	2.62	0.09	3.69	0.25	4.416	0.0004	6	2.55	0.09	2.42	0.31	-0.390	0.7129
TF	0.0001-0.50	17	8857.4	1400.4	5351.3	693.0	-1.871	0.0840	6	4238.2	460.1	4498.2	348.7	0.656	0.5408
ULF	0.0001-0.003	17	6227.8	1479.7	2672.4	583.3	-1.846	0.0878	6	1168.7	223.1	879.4	160.7	-1.961	0.1071
VLF	0.003-0.04	18	1566.0	112.6	1642.1	129.6	0.482	0.6360	6	1724.7	172.8	2083.1	284.0	1.327	0.2419
LF	0.04-0.15	18	920.2	61.1	872.4	48.5	-0.703	0.4919	6	999.7	142.6	978.2	108.8	-0.210	0.8422
HF	0.15-0.40	18	283.1	29.9	227.7	26.4	-2.108	0.0501	6	317.4	20.5	510.7	88.9	2.064	0.0939
LF/HF	---	18	3.63	0.20	4.85	0.29	4.266	0.0005	6	3.44	0.51	2.62	0.30	-1.236	0.2714
LF-component	0.05-0.15	18	783.2	50.9	747.0	42.3	-0.617	0.5451	6	819.3	113.1	809.2	104.1	-0.151	0.8859
HF-component	0.15-0.50	18	321.0	34.1	249.8	29.1	-2.479	0.0240	6	345.1	20.3	557.5	97.1	2.095	0.0903
LF-band	0.01-0.05	18	1035.6	86.7	1052.0	60.6	0.198	0.8453	6	1448.7	152.3	1531.0	187.8	0.402	0.7040
MF1-band	0.05-0.10	18	522.1	34.1	462.0	23.0	-1.623	0.1230	6	643.9	101.3	635.4	86.3	-0.183	0.8619
MF2-band	0.10-0.15	18	261.1	18.7	285.1	21.6	0.938	0.3612	6	175.4	15.5	173.8	26.7	-0.060	0.9548
HF01-band	0.15-0.20	18	111.1	10.9	95.4	9.0	-1.418	0.1743	6	102.5	10.2	138.3	17.5	2.256	0.0737
HF02-band	0.20-0.30	18	113.5	13.1	95.6	14.5	-1.415	0.1750	6	162.2	13.5	270.9	55.1	1.757	0.1392
HF03-band	0.30-0.40	18	58.5	6.9	36.7	5.2	-4.791	0.0002	6	52.7	2.1	101.5	20.8	2.338	0.0665
HF04-band	0.40-0.50	18	37.9	4.5	22.1	3.1	-5.531	0.0003	6	27.7	0.9	46.8	9.0	2.203	0.0788

‡ Tests applied on hourly averages of 5-min intervals in order to eliminate or at least reduce serial correlation

n: number of hourly averages (of 5-min intervals); SE = standard error