## **Test Values for WMM2020**

The computation was carried out with double precision arithmetic. Single precision arithmetic can cause differences of up to 0.1 nT. Heights are with respect to the WGS 84 Ellipsoid. Grid Variation is with respect to the Grid North of the Universal Polar Stereographic Projection

Date	Height (km)	Lat (Deg)	Lon (Deg)	X (nT)	Y (nT)	Z (nT)	H (nT)	F (nT)	I (Deg)	D (Deg)	GV (Deg)
2020	0	80	0	6570.4	-146.3	54606.0	6572.0	55000.1	83.14	-1.28	-1.28
2020	0	0	120	39624.3	109.9	-10932.5	39624.4	41104.9	-15.42	0.16	
2020	0	-80	240	5940.6	15772.1	-52480.8	16853.8	55120.6	-72.20	69.36	-50.64
2020	100	80	0	6261.8	-185.5	52429.1	6264.5	52802.0	83.19	-1.70	-1.70
2020	100	0	120	37636.7	104.9	-10474.8	37636.9	39067.3	-15.55	0.16	
2020	100	-80	240	5744.9	14799.5	-49969.4	15875.4	52430.6	-72.37	68.78	-51.22
2022.5	0	80	0	6529.9	1.1	54713.4	6529.9	55101.7	83.19	0.01	0.01
2022.5	0	0	120	39684.7	-42.2	-10809.5	39684.7	41130.5	-15.24	-0.06	
2022.5	0	-80	240	6016.5	15776.7	-52251.6	16885.0	54912.1	-72.09	69.13	-50.87
2022.5	100	80	0	6224.0	-44.5	52527.0	6224.2	52894.5	83.24	-0.41	-0.41
2022.5	100	0	120	37694.0	-35.3	-10362.0	37694.1	39092.4	-15.37	-0.05	
2022.5	100	-80	240	5815.0	14803.0	-49755.3	15904.1	52235.4	-72.27	68.55	-51.47
Date	Height	Lat	Lon	Xdot	Ydot	Zdot	Hdot	Fdot	Idot	Ddot	
Date	(km)	(Deg)	Lon (Deg)	(nT/yr)	(nT/yr)	(nT/yr)	(nT/yr)	Fdot (nT/yr)	(deg/yr)	(deg/yr)	
2020			<b>(Deg)</b>	(nT/yr) -16.2	(nT/yr) 59.0	(nT/yr) 42.9	(nT/yr) -17.5	Fdot (nT/yr) 40.5	(deg/yr) 0.02	(deg/yr) 0.51	
	(km)	( <b>Deg</b> ) 80 0	(Deg)	(nT/yr) -16.2 24.2	(nT/yr) 59.0 -60.8	(nT/yr) 42.9 49.2	(nT/yr)	Fdot (nT/yr)	(deg/yr) 0.02 0.08	(deg/yr)	
2020	<b>(km)</b>	<b>(Deg)</b> 80	<b>(Deg)</b>	(nT/yr) -16.2	(nT/yr) 59.0	(nT/yr) 42.9 49.2 91.7	(nT/yr) -17.5	Fdot (nT/yr) 40.5 10.1 -83.5	0.02 0.08 0.04	(deg/yr) 0.51	
2020	(km) 0	( <b>Deg</b> ) 80 0	( <b>Deg</b> ) 0 120	(nT/yr) -16.2 24.2	(nT/yr) 59.0 -60.8	(nT/yr) 42.9 49.2	(nT/yr) -17.5 24.0	Fdot (nT/yr) 40.5 10.1	(deg/yr) 0.02 0.08	(deg/yr) 0.51 -0.09	
2020 2020 2020	(km) 0 0	(Deg) 80 0 -80 80	(Deg) 0 120 240	(nT/yr) -16.2 24.2 30.4 -15.1 22.9	(nT/yr) 59.0 -60.8 1.8	(nT/yr) 42.9 49.2 91.7 39.2 45.1	(nT/yr) -17.5 24.0 12.4	Fdot (nT/yr) 40.5 10.1 -83.5	0.02 0.08 0.04 0.02 0.07	0.51 -0.09 -0.10	
2020 2020 2020 2020 2020	(km) 0 0 0 100	(Deg) 80 0 -80	(Deg) 0 120 240 0	(nT/yr) -16.2 24.2 30.4 -15.1	(nT/yr) 59.0 -60.8 1.8 56.4	(nT/yr) 42.9 49.2 91.7 39.2	(nT/yr) -17.5 24.0 12.4 -16.8	Fdot (nT/yr) 40.5 10.1 -83.5 36.9	0.02 0.08 0.04 0.02	0.51 -0.09 -0.10 0.51	
2020 2020 2020 2020 2020 2020	(km) 0 0 0 100 100	(Deg) 80 0 -80 80	(Deg) 0 120 240 0 120	(nT/yr) -16.2 24.2 30.4 -15.1 22.9	(nT/yr) 59.0 -60.8 1.8 56.4 -56.1	(nT/yr) 42.9 49.2 91.7 39.2 45.1	(nT/yr) -17.5 24.0 12.4 -16.8 22.8	Fdot (nT/yr) 40.5 10.1 -83.5 36.9 9.8	0.02 0.08 0.04 0.02 0.07	0.51 -0.09 -0.10 0.51 -0.09	
2020 2020 2020 2020 2020 2020 2020	(km) 0 0 0 100 100	(Deg) 80 0 -80 80 0 -80	(Deg) 0 120 240 0 120 240 240	(nT/yr) -16.2 24.2 30.4 -15.1 22.9 28.0	(nT/yr) 59.0 -60.8 1.8 56.4 -56.1 1.4	(nT/yr) 42.9 49.2 91.7 39.2 45.1 85.6	(nT/yr) -17.5 24.0 12.4 -16.8 22.8 11.4	Fdot (nT/yr) 40.5 10.1 -83.5 36.9 9.8 -78.1	0.02 0.08 0.04 0.02 0.07 0.04	0.51 -0.09 -0.10 0.51 -0.09 -0.09	
2020 2020 2020 2020 2020 2020 2022.5	(km) 0 0 0 100 100 100 0	(Deg) 80 0 -80 80 0 -80	(Deg)  0 120 240 0 120 240 240 0	(nT/yr) -16.2 24.2 30.4 -15.1 22.9 28.0 -16.2	(nT/yr) 59.0 -60.8 1.8 56.4 -56.1 1.4 59.0	(nT/yr) 42.9 49.2 91.7 39.2 45.1 85.6 42.9	(nT/yr) -17.5 24.0 12.4 -16.8 22.8 11.4 -16.2	Fdot (nT/yr) 40.5 10.1 -83.5 36.9 9.8 -78.1 40.7	0.02 0.08 0.04 0.02 0.07 0.04 0.04	0.51 -0.09 -0.10 0.51 -0.09 -0.09 0.52	
2020 2020 2020 2020 2020 2020 2022.5 2022.5	(km) 0 0 0 100 100 100 0	(Deg)  80  -80  80  0  -80  -80  80  0	(Deg)  0 120 240 0 120 240 0 120 240 0 120	(nT/yr) -16.2 24.2 30.4 -15.1 22.9 28.0 -16.2 24.2	(nT/yr) 59.0 -60.8 1.8 56.4 -56.1 1.4 59.0 -60.8	(nT/yr) 42.9 49.2 91.7 39.2 45.1 85.6 42.9 49.2	(nT/yr) -17.5 24.0 12.4 -16.8 22.8 11.4 -16.2 24.2	Fdot (nT/yr) 40.5 10.1 -83.5 36.9 9.8 -78.1 40.7 10.5	0.02 0.08 0.04 0.02 0.07 0.04 0.02	0.51 -0.09 -0.10 0.51 -0.09 -0.09 0.52 -0.09	
2020 2020 2020 2020 2020 2020 2022.5 2022.5 2022.5	(km)  0  0  100  100  100  0  0  0	(Deg) 80 -80 80 0 -80 80 -80 -80 80 0 -80	(Deg)  0 120 240 0 120 240 0 120 240 0 120 240	(nT/yr) -16.2 24.2 30.4 -15.1 22.9 28.0 -16.2 24.2 30.4	(nT/yr) 59.0 -60.8 1.8 56.4 -56.1 1.4 59.0 -60.8 1.8	(nT/yr) 42.9 49.2 91.7 39.2 45.1 85.6 42.9 49.2 91.7	(nT/yr) -17.5 24.0 12.4 -16.8 22.8 11.4 -16.2 24.2 12.6	Fdot (nT/yr) 40.5 10.1 -83.5 36.9 9.8 -78.1 40.7 10.5 -83.4	0.02 0.04 0.07 0.04 0.02 0.04 0.02 0.08	0.51 -0.09 -0.10 0.51 -0.09 -0.09 -0.09 -0.09 -0.09	