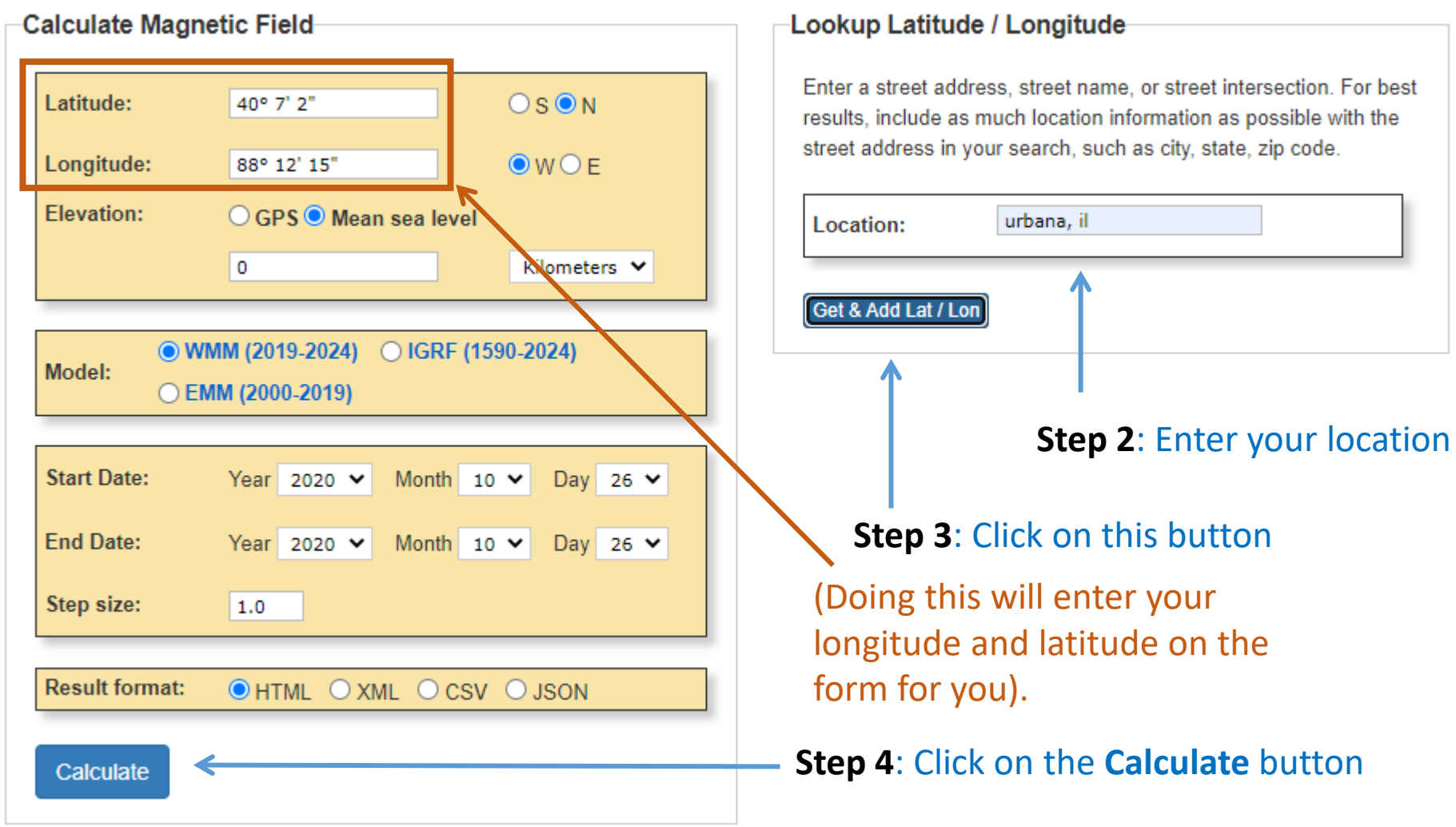
Step 1: Go to https://www.ngdc.noaa.gov/geomag/calculators/magcalc.shtml#igrfwmm



Step 2: Enter your location

Step 3: Click on this button

(Doing this will enter your longitude and latitude on the form for you).

Step 4: Click on the **Calculate** button

Magnetic Field

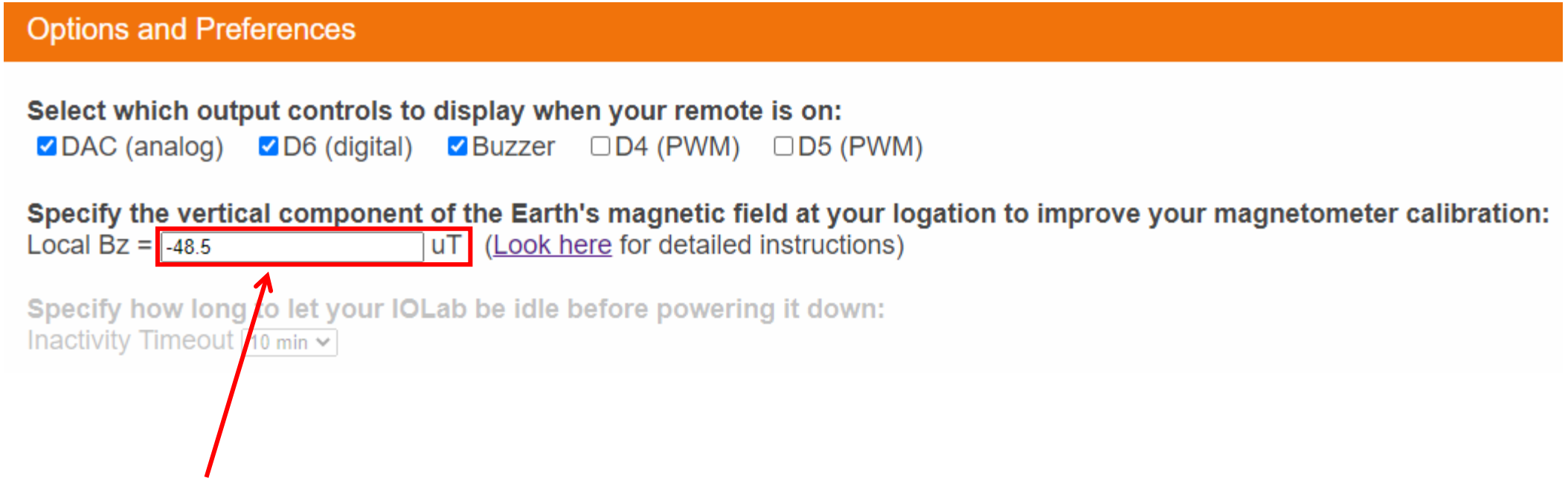
Model Used:	WMM-2020
Latitude:	40° 7' 2" N
Longitude:	88° 12' 15" W
Elevation:	0.0 km Mean Sea Level

Date	Declination (+ E | - W)	Inclination (+ D | - U)	Horizontal Intensity	North Comp (+ N | - S)	East Comp (+ E | - W)	Vertical Comp (+ D | - U)	Total Field
2020-10-26	-3° 19' 49"	67° 32' 11"	20,075.6 nT	20,041.7 nT	-1,166.2 nT	48,553.8 nT	52,540.5 nT
Change/year	-0° 3' 23"/yr	-0° 4' 52"/yr	27.6 nT/yr	26.4 nT/yr	-21.3 nT/yr	-128.2 nT/yr	-107.9 nT/yr
Uncertainty	0° 23'	0° 13'	128 nT	131 nT	94 nT	157 nT	145 nT

Step 5: This calculated number tells you the downward component of the Earth's magnetic field at your location in units of nano-Tesla (nT). Since you want the upward component in units of micro-Tesla (μT), you need to divide by -1000 to get B_{Ez}.

In this example B_{Ez} = 48553.8/(-1000) = -48.55 μT.

Your B_{Ez} value will probably be negative if you are in the northern hemisphere, and it will probably have a magnitude similar to the number shown. If you get something ten times bigger or smaller then you should make sure you didn't make a mistake.



Step 6: Put the B_{Ez} value that you found as described on the previous few pages into the Local Bz box on the Options and Preference panel.

Step 7: Restart your IOLab application and calibrate the magnetometer. Your new value of B_{Ez} will be used in the calibration.