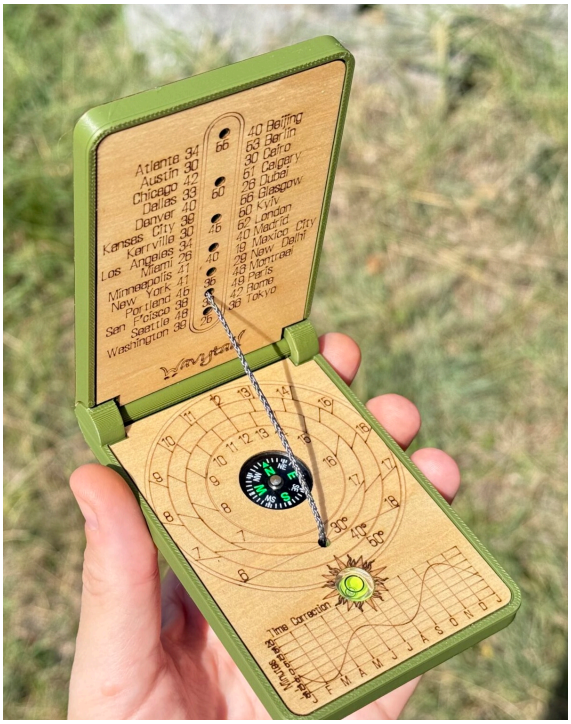
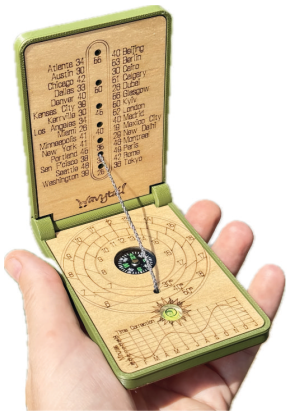




Wavytail

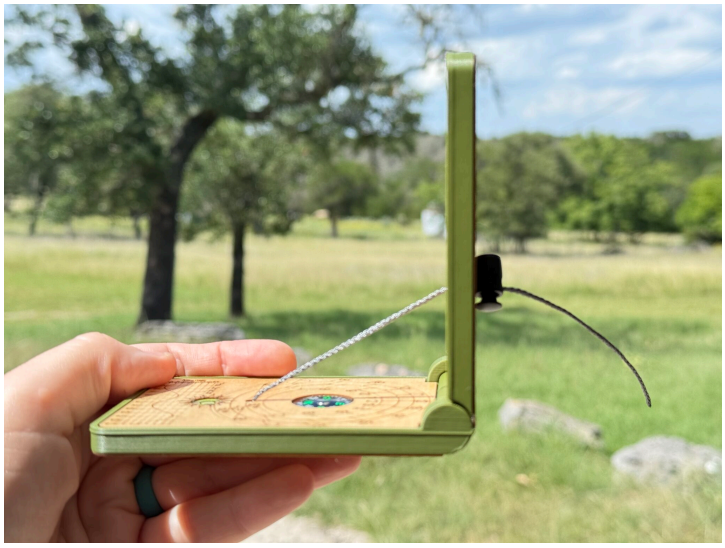
Handheld & Portable Diptych Sundial

Portable Sundial Instructions

The Diptych style Sundial was super popular from the 13th-17th Centuries, during which those of means were able to purchase beautifully crafted portable timepieces, long before watches took over that role. Today, it is possible to craft an accurate solar timepiece which should be less fragile yet equally as useful as its historical cousins. We hope you might use this anywhere the adventure takes you!

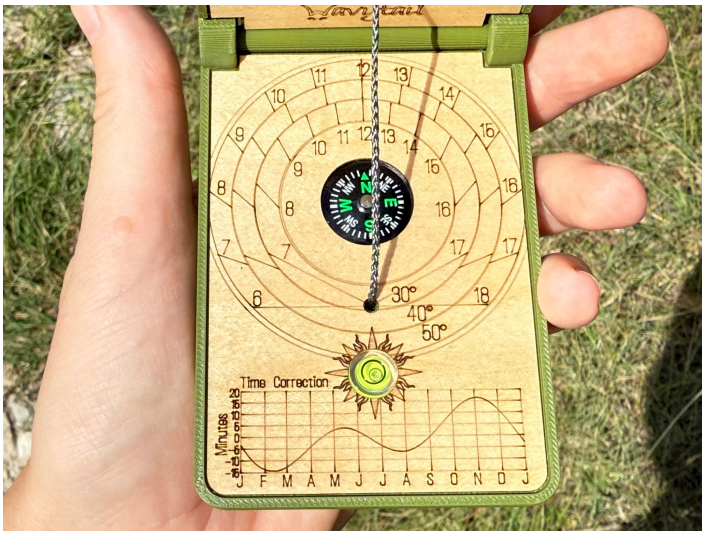
The device is easy to use. Simply open it up, and make sure the cord is running through whichever latitude hole is closest to your location. The back should be at 90° to the base. You can use the cord lock to hold it in place; also it should not open further than that; the wooden outer should engage the tabs on the hinge back to stop it opening too far. The cord should be nicely taut so it makes a straight line, but don't pull it too hard.

Hold the sundial so that it is pointing North*, and the bubble level is in the center of the black ring. Then you can read the shadow of the cord on the time rings drawn on the base. There are three rings for 30°, 40° and 50° latitudes, since the hour divisions are not equal everywhere. Read from the one closest to you; if you're in between then take the average.

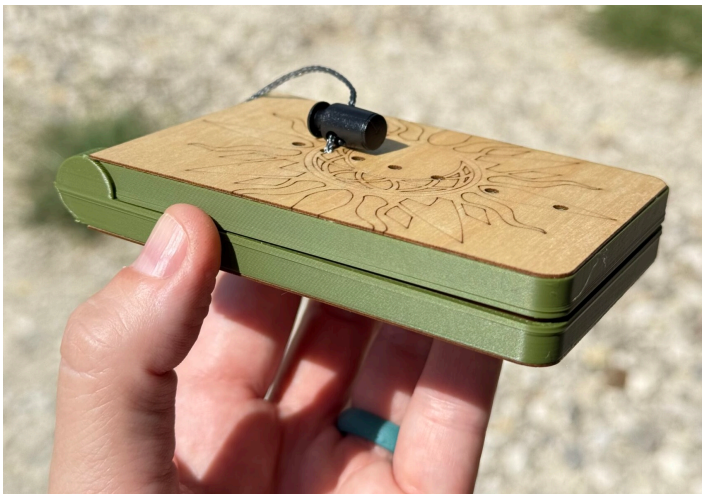


The sundial shows your Solar Time reading. This will be different to the time on your watch, due to three main factors:

1. The Equation of Time. This is where the Sun shifts back and forth by +/- 15 minutes during the year. There is a graph on the lower end of the base so that you can determine the correction for this.
2. Where you are in your time zone makes a difference. A time zone is 15° wide, and the time will change by 4 minutes for each degree. So if you're at the very edge of your time zone, you might be (7.5° x 4) = 30 minutes different from the clock time. See below for a link to a time zone map.
3. Daylight Savings will add an hour if it's that time of year.



Here, it reads 14:00 Solar Time, which is about 15:36 CDT here at 30° latitude (Central Texas) on the 1st August. We're adding six minutes for the time correction (you always subtract the minutes, so here we're subtracting a negative number, hence adding it) and I'm about 30 minutes offset in my time zone. And it's Summer Time. So 6+30+60 = 96 minutes difference to Solar Time.



To store the sundial, simply close it up. You can use the cord lock to keep it closed; just snug it up to the top of the device. If you leave the cord in the hole for your location then it's a 2-second job to open it up and get a time reading. And of course, you also have a compass, so you won't get lost!

We hope you enjoy your Sundial for many years. It's light and small enough to throw into any pocket or bag; we hope it travels with you and is useful wherever you go.

References:

https://sundials.org/index.php/teachers-corner/sundial-construction/61-longitude-correction.html

https://www.timeanddate.com/time/map/ - time zone map

https://www.ngdc.noaa.gov/geomag/declination.shtml - Magnetic deviation explainer/finder

* When pointing North, ideally you'll be pointing True North, not Magnetic North. Look up your magnetic deviation; if you have a deviation of only a couple of degrees you can pretty much ignore it on a sundial this size, but large deviations will need to be corrected for. Each gradation on the compass is 10º.

For an online version of these instructions, please visit: http://wavytail.com/portable-sundial