



Appendix C: Sun Path Charts

A Sun Path Chart graphs the sun's path across the sky at a specific location as it changes over the seasons. These charts are useful for analyzing sites for solar buildings and photovoltaic systems.

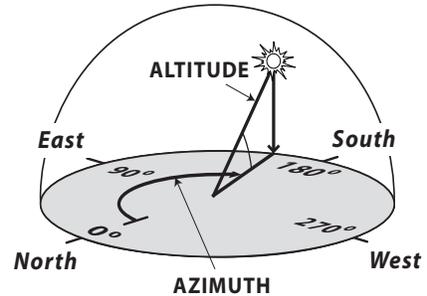
Sun Path Charts for your location are available online from the University of Oregon at: <http://solardat.uoregon.edu/SunChartProgram.html>.

At this website specify your location by zip code and select your time zone in parenthesis. For example: (PST) = Pacific Standard Time, (MST) = Mountain Standard Time, etc. Choose to plot the data between solstices from either December to June or June to December, and plot the hours in Local Standard Time. Accept the rest of the default settings and click the "create chart" button.

How to Read Sun Path Charts

There are two basic measurements used to describe the sun's position: *altitude* and *azimuth*. The sun's altitude is its height above the horizon in degrees from 0° to 90°, measured up from 0° at the horizon.

The sun's *Azimuth* describes the compass direction at which it can be found. At any instant, a vertical line from the sun to the horizon would intersect a degree of a circle measuring clockwise from north at 0°. This degree measures the sun's azimuth angle.



The sun path chart below has two sets of curved lines: the solid lines chart the days of the year; the dotted lines chart the hours of the day. The intersection of the two curved lines shows the position of the sun at a precise time of day on a particular date.

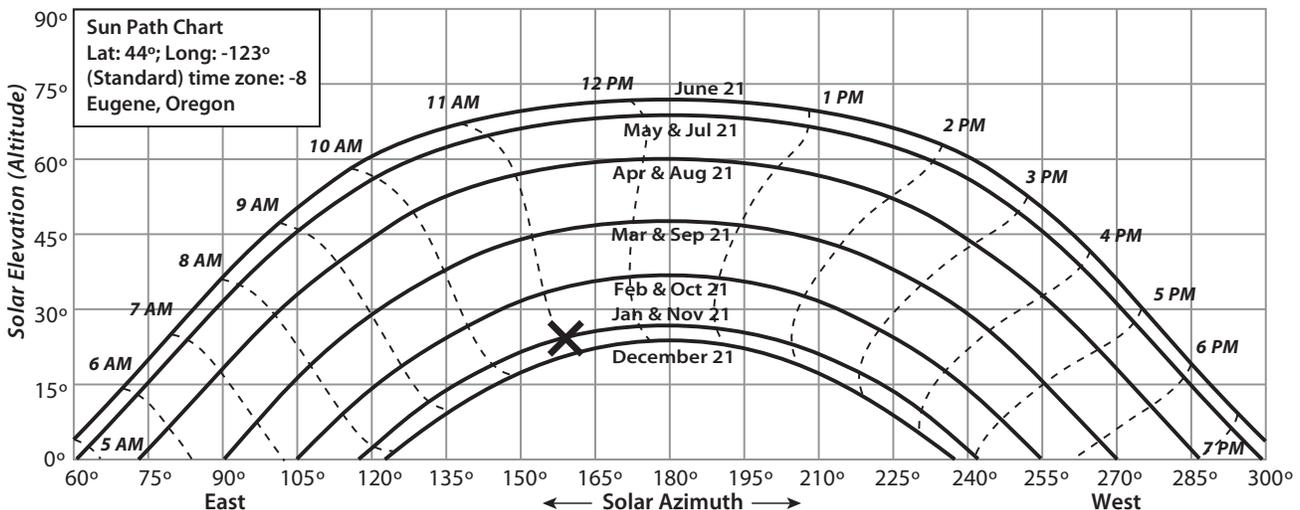
For example: The large 'X' on the chart below marks the sun's position at eleven o'clock in the morning on January 21st (and November 21st). To find the sun's altitude at that moment, follow the nearest grid line to the y-axis on the left. It reads about 25° above the horizon. Follow the nearest grid line down to the x-axis to find the sun's azimuth at that time: about 158°.

Note: During Daylight Savings Time subtract an hour from the time line you read.

For example: At 1pm on June 21st, the sun's position would be found on the 12pm line in the chart below. (Note: Daylight Savings Time is in effect from the 2nd Sunday in March to the 1st Sunday in November).

1. In the chart below what is the sun's altitude & azimuth at 5pm on September 21st?

Solar Altitude: _____ Solar Azimuth: _____



Remember: Subtract an hour for Daylight Time.
Answer: Solar Altitude: ~26; Solar Azimuth: ~245