

Measuring The Earth's Circumference



How To Participate In SunShIP 2007

Welcome to SunShIP 2007, a global project for measuring the Earth's circumference at mid-day on the day of the September equinox. In this project you will be sharing your measurements and calculations with students from around the Earth.

This year the March equinox occurs on the 21st at 0009 UT (Universal Time). To adjust this to your time zone or local time see the FAQ on the project web site.

Prior to the equinox day:

- Visit the SunShIP website (<http://sunship.currentsky.com>) and read about Eratosthenes and his measurements, as well as about the project.
- Click on the Guest Map link on the FAQ page and add yourself to the Guest Map.
- Select a location for making your measurement on the equinox day.
- Determine your distance from the equator.
- Determine compass directions from the observing site.
- Have materials for measuring the Sun's altitude prepared.
- Enter Information on the SunShIP Data Sheet.
- See the Links page for resources.

Never Look Directly At The Sun

On the equinox day:

- Measure the mid-day altitude of the Sun and complete the SunShIP Data Sheet.
- Take a picture showing the measurement being made. Be sure that the shadow is shown in the picture.
- Use a graphics program and add an information box containing your local information to the picture, as shown to the right.
- Resize the combined image/information box to 800x600 and save as a single image file (*use the JPG file format please*).
- E-mail the image to: starwalk@kc.rr.com



El Dorado Springs, MO, USA
 37°52' N ; 94° 1' W
 Mid-day: 22 September 1311 CDT
 Altitude: 50° 55'
 Circumference: 39 700 km

Measuring The Earth's Circumference



SunSHIP Data Sheet

Use this as a data sheet for recording your measurements and calculations of the Earth's circumference.

Home City: _____

Participants: _____

Latitude and Longitude: Home City: _____

Latitude of the equator: _____°

On the Equinox:

Time of local mid-day: _____

Altitude of Mid-day Sun at Home City: _____°

Altitude of Mid-day Sun at the equator: _____°
(Since the Sun is directly overhead on the equinox at the equator it has an altitude of 90°.)

Difference Between Two Mid-day Altitudes: _____

360° / mid-day altitude angle difference: _____

Distance in Kilometers from the Equator: _____

Use this formula to calculate the Earth's Circumference:

$$\text{Earth's Circumference} = \text{distance from equator} * (360/\text{angle difference})$$

Earth's Circumference = _____

**Never Look
Directly At
The Sun**