Division Of Geological Survey
HANDS ON EARTH SCIENCE
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LOCATING THE POSITION OF THE SETTING SUN

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An excellent project for anyone interested in the Earth sciences is to record the position of the setting Sun over a period of several months. Of course, if you are a morning person, the rising Sun works just as well. You will be pleasantly surprised at your discoveries and will be challenged to offer suitable explanations. This project has the added benefit of being aesthetically pleasing, for what better way to end a hectic day than to watch a beautiful sunset. You say such times interfere with the evening news. So be it. The revolutions in Spain will have no end, but tonight's sunset happens only once.

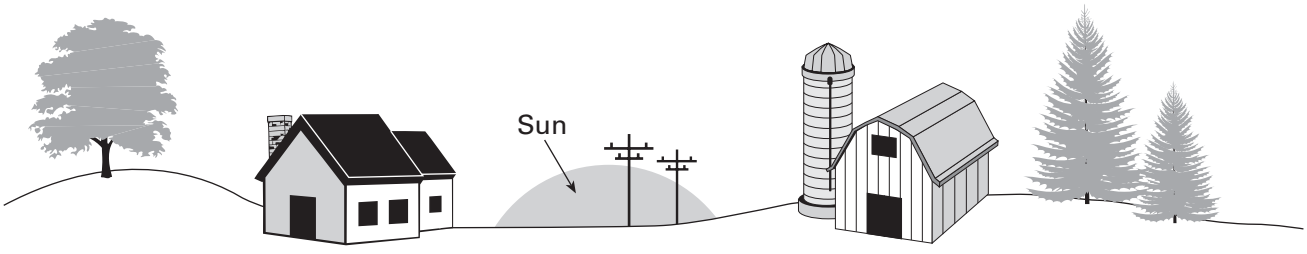
It is best to choose an observing spot where you have an unobstructed view of the horizon. If you live in a rural setting, you should have no problem finding such a site. If you live in town, then a park or a nearby ball field should suffice. However, if you want to remain near your house and do not have an unobstructed view, simply note where the Sun disappears behind the nearby buildings or trees. It is quite possible that your observations could be made by looking out one of the windows of your house. What is essential is that you observe the Sun just as it is disappearing from view and that you make each observation at precisely the same location. Clouds near the horizon are a bad omen for this project!

Looking directly at the Sun is harmful to your eyes, so only glance at the Sun when it is very near the horizon (or low and partially behind the trees) and even then only fleetingly. At that time, the light is coming through enough of our atmosphere that the rays should not be dangerous if your look is brief.

Check the local newspaper or television station for sunset (or sunrise) times. Arrive at your chosen site at least 15 minutes before the time for sunset. You will need a clipboard, sharp pencil, and paper. Make a sketch of the horizon in the vicinity of where the Sun seems to be heading. Include houses, trees, telephone poles, and any other obstacles. Now wait until the Sun is just ready to disappear on or near the horizon and indicate its position on your sketch (see example below). Also record the date and time.

Each clear evening, indicate the position of the setting sun on your original sketch. Or, if you prefer, make photocopies of your original sketch and record the Sun's position on a "clean" copy of your sketch each clear evening. You will find that you will have to extend your sketch of the horizon, including new features (such as houses and trees), as the weeks go by. If you are a photographer, simply shoot a picture of the setting Sun each evening. In either case, make sure you record the time and date of each observation. Maintain these observations for at least three months.

Having observed the Sun's changing position as it sets, you should now be able to answer these questions. Does the position of the setting Sun change from day to day? From week to week? Does the Sun appear to be moving north or south? Does the time of sunset change from day to day? From week to week? What would your observations indicate following a solstice? Following an equinox? And, now, for the most challenging question: how can you account for your observations?



Sketch of a horizon showing the position of the setting sun (modified from a drawing by Joy Gamble).