Vocabulary

Apparent motion: The sun appears to move across the sky from east to west, but actually, it is the earth's motion that makes it seem that the sun moves.

Earth's axis: a line through the center of the earth, from the North Pole to the South Pole. The earth spins around this axis each day.

Latitude: The north – south location on the surface of the earth. The equator is 0 degrees, and the North Pole is 90 degrees north. Janesville is at 42.6 degrees north latitude.

Longitude: The east – measure of location on the surface of the earth. By convention, 0 degrees longitude goes through the Greenwich Observatory in London, which is the center of the GMT time zone. There are 360 degrees of longitude, making a full circle around the globe. Janesville is at about 89 degrees west longitude, about a quarter of the way around the earth from London.

Magnetic North: The earth's core contains magnetic material, so the earth is a giant magnet. The magnetic north pole is in northern Canada, not the same as the North Pole that the earth spins around. A magnetic compass points to magnetic north. For astronomical purposes, we use true north.

Meridian: A line directly north - south. The sun is east of the meridian in the morning, and west of the meridian in the afternoon. (The meridian is also your longitude line.)

Solar noon: When the sun crosses the meridian it is solar noon. This will differ from clock noon, depending where you are in the time zone. Solar noon will occur earlier in the eastern part of the time zone and later in the western part of the time zone.

Vernal Equinox: March 20th (or 21st, depending on leap year), the first day of spring in the northern hemisphere. All places on earth have equal hours of daylight and night on the equinox.

Summer Solstice: June 20th (or 21st) , the day of longest daylight (and shortest night) in the northern hemisphere. The day of the maximum northern tilt of the earth towards the sun.

Autumnal Equinox: September 21st (or 22nd), the first day of autumn in the northern hemisphere. All places on earth have equal hours of daylight and night.

Winter Solstice: December 21st (or 22nd), the day of shortest daylight / longest night in the northern hemisphere. The day of the maximum southern tilt of the earth toward the sun.

Gnomen: The part of the sundial that casts a shadow.