

I'm on top of the world

Remember the 80s song by Men at Work that asked the musical question "Do you come from a land down under?" That lyric gained new meaning for me this past July when I attended an Astronomical Conference in New Zealand. I was politely corrected when I said that I came down to New Zealand. "No, no," my hosts said, "You came up to New Zealand." Have you ever wondered why we refer to folks from Australia and New Zealand as being from *down under*? How did their neck of the woods become down under and ours, conversely, up top? How is it that north is assumed to be at the top of the Earth and south at the bottom of the Earth? For that matter, is there really a top or bottom to the Earth?

Hold a ball in one hand. Touch the top of the ball with your other hand. Directly opposite this point is the bottom of the ball. Turn the ball around in random directions a few times and again touch the top of the ball. Turn the ball around in random directions a second time and again touch

the top of it. Did you touch the same spot on the ball each time? Was the bottom the same each time? So where would the top or the bottom of the ball be? Think of the ball as the Earth and each of the spots that were the 'tops' as different places on the surface of the Earth.

Take either a reticulated Earth globe or a globe that can be taken off of its mounting and set it in a large cup or bowl that will serve as the base. Adjust the globe so that your location on Earth is at the top. Mark this location on the globe with a straight pin or matchstick held with putty. Next, rotate the base so that globe's north pole is aligned with true north and it's south pole with true south. The Earth globe is now positioned with respect to the Sun exactly as the Earth is positioned in space with respect to the Sun. (Note that the shadow of your marker will mirror the shadows of all other objects cast on Earth with regards to compass direction.) From this 'space' perspective, you are clearly at the top of the Earth.

Notice what point on the surface of the Earth is directly opposite your location, or at the bottom of the globe. If there is land at that location, imagine



your counterpart doing this same activity. Who do you think your counterpart would consider to be at the bottom? Imagine doing this for other locations around the Earth. What does this tell you about where the top and bottom of the Earth is?

Your answer would have to be based on your frame of reference (you are on top wherever you are). This, unfortunately, is not the traditional way of looking at things around the globe. It has been a common and accepted convention to think of north as being at the top and south at the bottom. This thinking has established our perceived understanding of our place on the Earth and the vocabulary associated with this line of thinking. This Northern Hemisphere-bias has even

influenced how many astronomy books depict the Moon and constellation patterns. To someone from south of the equator, constellations and Moon phases are upside down according to the Northern Hemisphere-based star maps.

So, is there actually a top or a bottom to the Earth? It's up (or down) for you to decide.

Internet resources

Pipehenge: www.pipehenge.com

Mars Odyssey 2001: mars.jpl.nasa.gov/odyssey

Fall Back: aa.usno.navy.mil/faq/docs/daylight_time.html

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October skies

Fall back

On Sunday, October 28, remember to fall back by setting your clocks back one hour as we go from Daylight Saving Time to Standard Time.

We're back

The *Mars Odyssey 2001* spacecraft is scheduled to arrive at the planet Mars for orbital insertion on October 24.

Visible Planets

Mercury offers its best viewing opportunity for morning skies this year as it appears over the eastern horizon late this month.

Venus rises about 2 hours before the Sun and is visible over the eastern horizon. It will be very close to Mercury on the 30th.

Mars sets in the west about two hours after sunset.

Jupiter rises in the east several hours after sunset and is visible the rest of the night.

Saturn rises in the east several hours after sunset and is visible the rest of the night.

Moon phases

	October	November
Full Moon	10/02	11/02
Last quarter	10/10	11/10
New Moon	10/16	11/16
First quarter	10/24	11/24



Can you recognize this famous inverted hunter?