

Can You Find The Missing Day?

For 25 extra points in Homework, explain where the missing day went in the following true story using your existing knowledge of the Earth's rotational motion.

Include a diagram to illustrate the direction of Magellan's ship, the direction to the Sun, and the direction of Earth's rotation. For full credit, use good English grammar with complete sentences. Due in class on October 5.

HINTS:

1. The International Date Line and Time Zones had not yet been invented.
2. Think about what a "day" means with respect to the Sun.
3. You do not need to "Google" for the answer. Use your existing knowledge.

THE PROBLEM:

Something was wrong. Could it be that after three years and thousands of miles, Antonio Pigafetta had miscalculated? Where was the missing day?

On Sunday, September 7, 1522 the Victoria, the last ship remaining of the tiny armada that set sail under Ferdinand Magellan slightly less than three years before, limped into the harbor of San Lucar de Barrameda, near Seville, Spain. Its crew was emaciated, barefoot, in rags, and exhausted from weeks of pumping their ship to keep it afloat, but they were home at last.

As thrilled as he was to have completed so long a voyage, the first to circumnavigate the globe, one of the passengers was troubled. He was Antonio Pigafetta, an Italian from Vicenza, who had accompanied the captain general, saw his triumph in finding the passage through the tip of South America, endured with him the terrible hardships of the three month Pacific crossing, and witnessed Magellan's death in the Philippines. All during the voyage Pigafetta had kept a journal. Each day he would record those events that occurred. The record began on Tuesday, September 20, 1519 and continued, Wednesday, Thursday, and so forth for the rest of the journey, but for some strange reason, his journal was off by a day.

Two months before on Wednesday, July 9th, when they stopped for supplies in the Cape Verde Islands, sailors returning to the ship reported that the Portuguese said it was Thursday, July 10th. Pigafetta checked his journal and the ship's log. Both said it was Wednesday. Surely, the Portuguese were wrong, but when they arrived in San Lucar Pigafetta's journal marked the day as September 6th, the Spanish said it was, in fact, September 7th. Pigafetta could not find the missing day.