

A story about the flat Earth
March 27, 2012

I recently had the honor of manning a booth for the Western Federation of Professional Surveyors (WestFed) at the Annual Conference of the New Mexico Professional Surveyors in Albuquerque, NM. Other than telling those who came by what WestFed is and does, the best interactions I had were my discussions with several groups of high school students who came by as part of a field trip of their CAD and math classes. They were bright, inquisitive, and attentive. Our conversation began with the question – “How many of you believe the Earth is flat?” Several brave souls held up their hands and others snickered. My next statement was, “I am going to offer you proof that the world is flat” – more snickers.

Then I dangled a heavy brass plumb bob from a string and made sure each one knew what it was called and how it was used. I then insisted the that plumb bob was the most incredible tool I’ve ever used because, no matter where you go, the plumb bob always, points down. Comments from the students about Newton and gravity lead me to believe that they were paying attention. Next we agreed that the level surface of water (in the bath tub, in a pond, in the ocean) is always perpendicular to the plumb line. Therefore, the Earth is flat! Their looks of disbelief convinced me that they were thinking. OK, I challenged, “Tell me where I went wrong. Where is the flaw in my logic?”

The next question was, “What physical evidence do you have to prove me wrong?” To the kid who stated that you could travel around the world, I asked, “Yes, but have you done it?” Several students noted that we have pictures from space. Here I asked “Were you there? Did you take the picture?” These were provocative questions and many of those young minds rose to the challenge. Other physical evidence answers included, “You can see the top of a ship approaching the coast before you can see the hull.” You can see the curved shadow of the Earth on the moon during an eclipse,” and, “The Sun comes up every morning as the Earth turns on its axis.”

We were able to resolve our discomfort about a flat Earth when I reminded them that as we move from place to place the direction of the plumb line changes – from one side of the exhibit hall to the other the difference was about 1 second of arc (1,296,000 seconds in a complete circle equates to about 100 feet of arc on the Earth). Not everyone “got it” but I was gratified by those who recognized the importance of understanding why we believe what we do. And, yes, some are still scratching their heads while others couldn’t care less. We each do what we can.

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