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Back Half of the Year

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Back Half of the Year

Abstract

Here we are in the back half of 2016, and the days are getting shorter. We have, as of today, lost 18 minutes since the solstice on June 20, and the speed of that change is quickening. You may wonder why it is that we have our hottest weather after our longest day is behind us. The simple answer is that it takes time for land and water masses to warm up. That's the reason that Sept. 21 is likely to be a lot warmer than March 21, even though they have the same amount of daylight. [*excerpt*]

Keywords

Astronomy, Solstice, The Milky Way, Solar System

Disciplines

Astrophysics and Astronomy | Stars, Interstellar Medium and the Galaxy | The Sun and the Solar System

Comments

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Living

Back Half of the Year

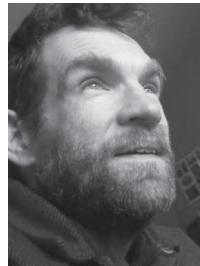
Here we are in the back half of 2016, and the days are getting shorter. We have, as of today, lost 18 minutes since the solstice on June 20, and the speed of that change is quickening. You may wonder why it is that we have our hottest weather after our longest day is behind us. The simple answer is that it takes time for land and water masses to warm up. That's the reason that Sept. 21 is likely to be a lot warmer than March 21, even though they have the same amount of daylight.

In September, the land and sea are holding lots of solar energy from the previous several months; in March that energy has yet to be absorbed. Don't get too down about the shorter days, though. The sun will continue to set after 8 p.m. local time for another month and more. When it does get dark enough for star-gazing, you'll see the star Vega near the top of the sky, with the rest of the Summer Triangle, Deneb and Altair, to its east and south, respectively. The Big Dipper is in the northwest, and the star Arcturus is in the west. Find it by extending the curve of the dipper's handle; remember "follow the arc to Arcturus." The Milky Way, which was a focus of last month's column, stretches from the south to the northeast.

Closer to home, the solar system is getting interesting. Jupiter is now low in

LOOKING UP

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the west, far below Arcturus, as darkness falls. On Aug. 5 about 8:45 p.m. you can see it near a 10 percent illuminated waxing crescent moon. In the south there's a lovely triangle of Mars (right), Saturn (left top), and the star Antares (left bottom). They all appear near each other in the sky, but Mars is about 100 million kilometers away, Saturn 1.3 billion, and Antares 5×10^{15} , or 5 and 15 zeroes. As the closest to us, Mars moves fastest across the sky, causing the shape of triangle to change dramatically over the next few weeks. Essentially the triangle will get squashed as Mars moves toward the other two objects. In late August the three will briefly be in line, but more on that next month. The moon, then a waxing gibbous 63 percent lit, will be near the group on the night of Aug. 11. The following night (Aug. 12-13) the earth plows

into the trail of particles left behind along the orbit of Comet Swift-Tuttle. The little grains burn up in the earth's atmosphere, and sky-gazers see a meteor shower. Some people still call them "shooting stars," and while this term is a misunderstanding of what they are, it's not a bad description of what they look like. The stream of comet dust is denser at some parts of the comet's 130-year orbit than others, and some meteor experts believe this will be a plentiful year.

Here's what to do. First, wait until after moonset (1:50 a.m. local). You don't need moonlight washing out the fainter meteors. Find an unobstructed location as far from lights as possible, allow your eyes to dark-adapt, and just stare up. The meteors can appear anywhere in the sky, though all shower members will be traveling away from their namesake constellation, Perseus. Don't expect Hollywood, and you'll be happier. The average observer under average skies might see one every few minutes, but you might do better.

Next month's column will feature the Mars-Saturn-Antares conjunction mentioned above, as well as a very close one of Jupiter and Venus.

Ian Clarke is the director of the Hatter Planetarium at Gettysburg College.