

## THE STARRY SIDE

## Speeds

BY GREELEY WELLS

Imagine this: You're peacefully sitting alone in your chair. You reach out for your cup of coffee and bring it to your lips. Your arm moves carefully so as not to spill, probably at a speed of about a half-mile per hour. Now imagine you're in your car having that same drink while driving at 65 miles per hour. Even though the car is moving fast, your body feels still inside the car—as if “at rest.”

Now consider that our planet is spinning on its axis; at the equator that's about 1,000 miles per hour, yet we still feel “at rest” just as we did in our moving car. Now add this: we're circling around our sun at 67,000 miles per hour! But wait—there's more: the sun is revolving around a path in our galaxy at 490,000 miles per hour, and the galaxy itself is spinning through the universe at 1.3-million miles per hour. And finally, have you heard of the big bang? Well, we all, every atom of us, have been moving away from that central beginning at another amazing cosmic speed. And we've been doing this for some 12 to 15 billion years! So is there really something like being “at rest,” or are you just dizzy by now?

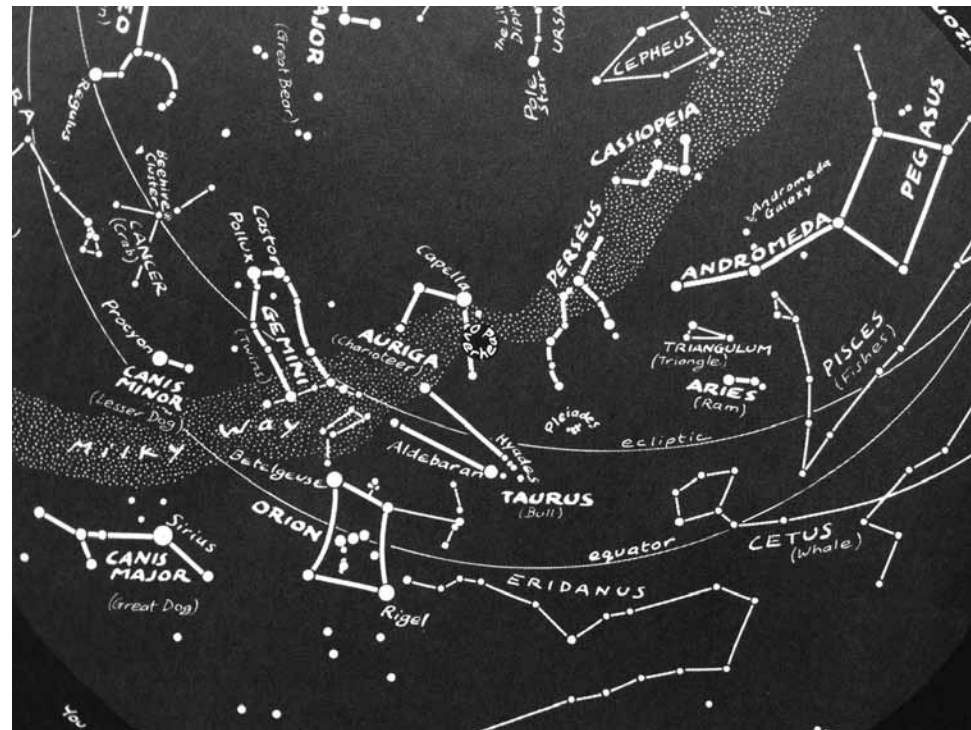
Ahhhh...December and the winter sky. For many of us it's our best and favorite sky, though it's so cold we can't spend a huge amount of time watching it. There's Orion the hunter, probably the clearest and one of the biggest and best-known constellations of all. If a person knows one constellation, it's probably Orion. I've had people ask me in midsummer, “Where's Orion?” They don't realize it's a winter constellation. Actually, it is up in summer in the southern hemisphere, where it's winter for them while it's summer for us. So it is somewhere on the planet each night.

Below and behind Orion, and to the left (east), is Sirius, the dog star, the brightest star in the sky. It's Orion's faithful dog, in the constellation Canis Major. In front of Orion is that beautiful little “V” of Taurus the bull. And still farther ahead of Orion lie the seven sisters, the Pleiades. To make things interesting—and a little confusing—Jupiter is up, bright and centered between Orion and Taurus.

The large square of Pegasus we've watched rising this summer in the east is, in December, passing the zenith (top) of the sky and descending. In January, Pegasus has moved to the western horizon and in February, it's setting farther down each night.

Early one morning in mid-September, I saw several things I had never noticed before. Cassiopeia (it's the “W” or “M” or something in between as it spins around Polaris, the North Star) was hauling the whole Milky Way around with it, from the north/south across the sky we've been seeing to the east/west we will be having for part of the winter. The second thing I

hadn't ever noticed before was that at that moment the Big Dipper, Ursa Major, was standing tiptoe on the end of its handle, totally upright and touching Grizzly Peak! And to its left was the Little Dipper, Ursa Minor, hanging from its tail, the North Star, straight down as if the star were a nail in the wall of the night. Last, I noticed that the two brighter stars next to each other in the Little Dipper's handle looked



This south-facing illustration is from *To Know the Stars* by Guy Ottewill.

a lot like—and were almost perfectly parallel with—the two brighter Big Dipper handle stars; and midway between them was another set of two similarly oriented stars, a little dimmer and a little smaller but completing a sequence: two by two by two. I love these sorts of “design elements” I find in the sky. They help me realize that The Great Creator is also the Master Artist.

## THE PLANETS

Venus is still rising in morning twilight in early December. But she is ending her season of drama in the morning sky. As the season moves on, Venus gets lower, until in January she will be rising steadily at 7 am and so low in the dawn light that she'll be almost gone from view. I've been seeing Venus as a “day-star” when the crescent moon has been close by to help me find her. The way to do this is to determine their relative positions while it's dark and easy to do, and then in the daylight find that same position after you spot the little crescent moon. In other words, when you can see the moon in the daytime sky, you can find Venus—but she's bright enough to see only if you know where to look.

Jupiter dominates the night, rising in early evening and setting just after sunset. Early in December he moves into the evening sky at midnight, setting almost at dawn. On the night of Christmas, he is right next to Aldebaran and the almost-full moon—spectacular! Jupiter has been

next to Aldebaran for months now, and gets closest to the Hyades “V” of Taurus (4 2/3°) on December 11. The rest of the season, he is the beacon of the night: the brightest star or planet to be seen, and up all night long.

Mars is low and hard to see in the sunset; it's a poor season for viewing Mars.

Saturn takes part in an early morning moon show. The waning crescent moon

January 2-4 has the Quadrants. Draco, the constellation low in the northeast, is their “radiant”—the place they seem to originate. The Quadrants could have 40 to 100 meteors an hour at the best of times. (Note: There are no guarantees in this meteor-prediction business.)

Moons in winter when full are low in the sky; crescent moons in winter get higher and higher. This is the opposite of the sun, which is high in the summer and low in the winter. Just as the sun has its yearly change, the moon does a monthly change from low to high and back.

The full moon on December 28 is called the Moon Before Yule or the Long Night Moon. On January 27 the full moon is known as the Old Moon, or Moon After Yule. The full moon on February 25 is called the Wolf Moon, Snow Moon, or Hunger Moon.

The winter solstice is on December 21. Actually, the earliest sunset (4:35 pm) is on December 21 and the latest sunrise is January 5. Because most of us experience sunsets more often than sunrises, December 21 feels like the “shortest” day.

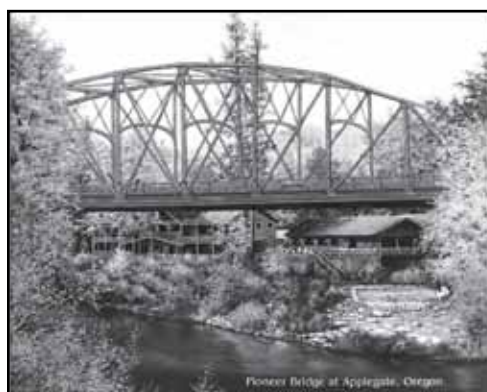
Finally, this just discovered: Comet Ison may become a day “star” in November and December 2013. This comet has been called “a daylight-brilliant immense-tailed Sun-Grazer, to rival the few great ones of the past four centuries.” To find out more from Guy Ottewill (who writes the yearly sky calendar to best all sky calendars, in my opinion), go to: [http://issuu.com/universalworkshop/docs/comet\\_ison?mode=window&viewMode=singlePage](http://issuu.com/universalworkshop/docs/comet_ison?mode=window&viewMode=singlePage).

So very likely, but not a sure thing yet: Comet Ison for next year at this time. Oh boy!

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—Theodore Roosevelt



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