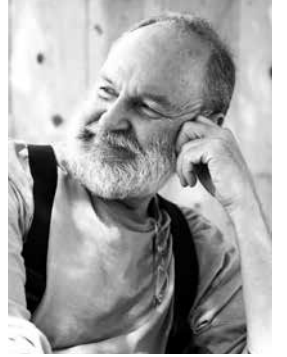


THE STARRY SIDE

How fast are you moving?

BY GREELEY WELLS



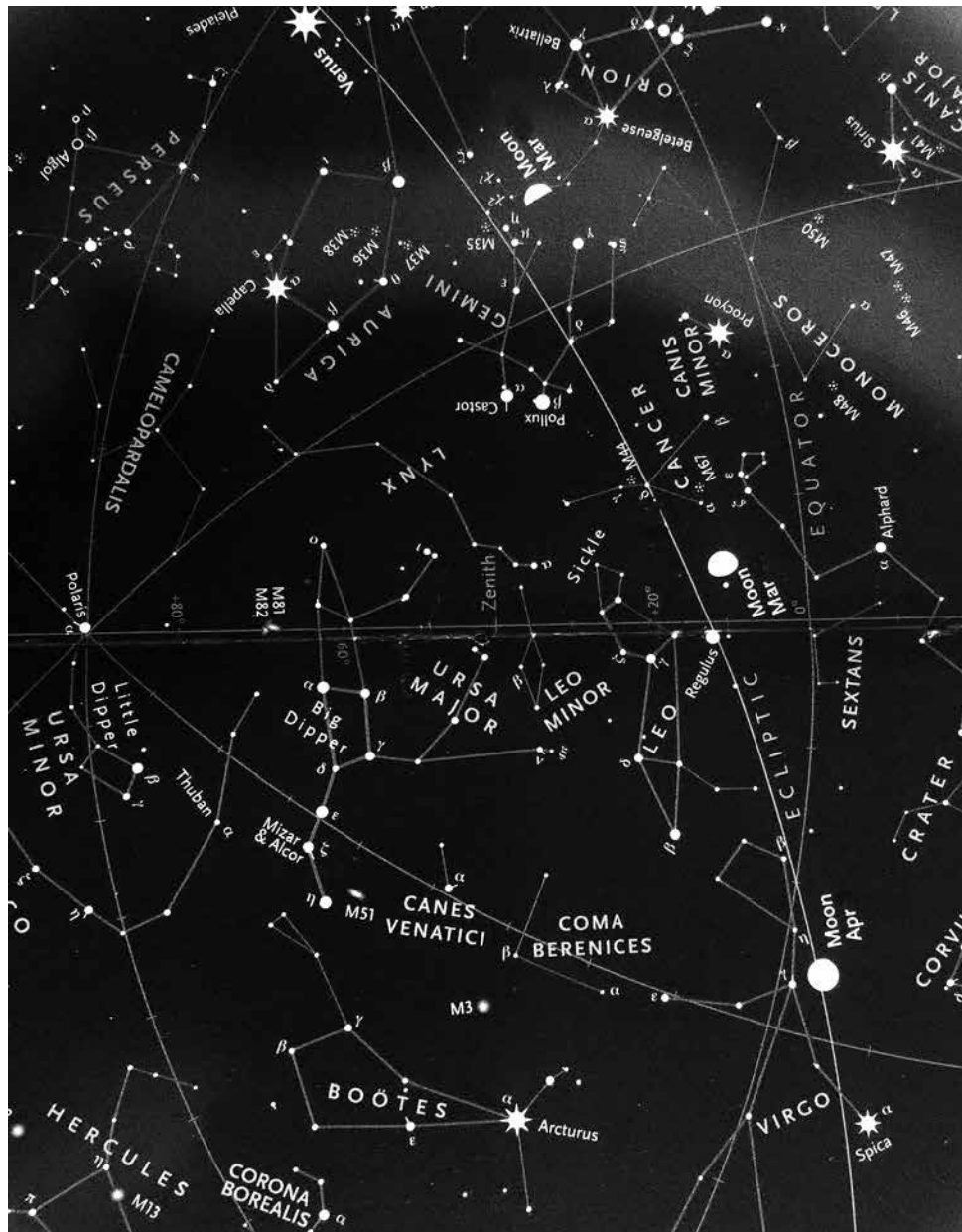
Greeley Wells

You probably have no idea how fast you are moving. Even though we can't feel it and it doesn't seem like we're moving, and even though we talk about the sun rising and stars moving overhead, what's really happening is the earth is moving. Fast. Our planet spins at about 1,000 miles per hour and travels through space around the sun at about 67,000 miles per hour! This orbit around the sun (sometimes called a solar year) creates one year on earth.

And here's something else we don't usually think about: Our sun is in orbit too, through the Milky Way. The sun travels at about 500,000 miles per hour as it circles the Galactic Center. One of these orbits is called a galactic year. Of course, we—planets, moons, meteors, asteroids, and comets—are all pulled along with the sun in this bigger orbit.

Now for some perspective on distance: Just how big is our galaxy? Let's start with the distance between the sun and the earth. This distance, a mere 93 million miles, is known as an astronomical unit. Astronomers use the astronomical unit as a way of measuring incredibly big distances in the solar system. This rather average-sized galaxy of ours is 100,000 light-years across. (A light-year is the distance sunlight travels in a year.) Each light-year is about 63,241 astronomical units. So how wide is our galaxy? About 586,941,600,000,000,000 (or 600 quadrillion) miles! No wonder it takes us 240 million years to make just one circuit around the galaxy.

But wait, there's more. Our galaxy is also moving through the universe. Our closest galactic neighbor, and the only galaxy we can see with our naked eyes, is the Andromeda galaxy. Our Milky Way galaxy is traveling around 270,000 miles per hour right



This new image style comes from stellarium.org, a great free website that's like putting a planetarium on your computer. I can't recommend it enough! Just plug in your coordinates, and you can see the day or night sky in 3-D. (My previous love, the *Astronomical Calendar* by Guy Ottewill, is no longer being published, but Guy still has many other wonderful things to experience at universalworkshop.com.)

toward it! In the distant future, the two will collide, but that's another story.

Why don't we feel all this movement? Because we are all moving at the same speed. We are speed demons many times over and don't feel it or even know it!

As winter sets, spring rises. While writing this in early January, I notice Orion way in the west at 3 am, when I usually rise to meditate, and by dawn he's setting. That early morning view is a glimpse into the next season.

The Big Dipper has been low in winter and is now rising high in the northeast over the North Star, carrying Leo the Lion with it even higher in the center of the sky. The curve of the Big Dipper's handle is pointing to bright Arcturus (in Bootes) and on to Spica (in Virgo, with bright Jupiter nearby). To the right of Spica is Corvus, a crow that is a parallelogram. Next rising in the east is the curved crown of Corona Borealis; following that, the hourglass of Hercules. All rise in the east and move across the spring sky. Or rather, they appear to rise across our sky! We are so self-centered it seems it's the other things that are moving. But remember, it's we who are moving, not the sky.

Other events of note

- March 20 is the equinox, when day and night are equal. An interesting thing about the equinox is that the whole world experiences it in the same way because the sun rises due east and sets due west relative to every place on earth.
- By May, bright Vega has risen, foretelling summer—Vega marks the first third of the Summer Triangle.
- A couple of spring meteor showers are worth mentioning. The early morning of April 2 could potentially yield 100 Lyrid meteors per hour! With Vega near Venus (and a crescent moon, which won't affect viewing), this will be a glorious morning. Hope for a clear sky. Then May 5 through 7 in the pre-dawn darkness, face east and look up for the Eta Aquariids—up to 10 to 20 meteors an hour. The moon will set just before the prime time.

Here's to clear, dark night skies and bright stars for you.

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