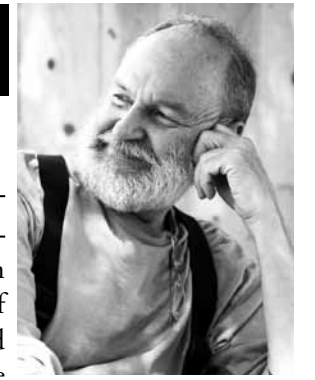


THE STARRY SIDE

# Three hundred sextillion stars

BY GREELEY WELLS



Greeley Wells

What is a sextillion? Have I gone crazy, or sexy? A sextillion is a number followed by 21 zeros!!! For instance, take the number 300 and add 21 zeros onto it (300,000,000,000,000,000,000). That's how many stars may be in our universe. A few years back Carl Sagan's "billions upon billions" was science's answer to the question of how many stars there are, but newer studies published in the journal *Nature* suggest there may be three times as many stars out there as we used to think. So is the sky getting more crowded? No, we're just learning and seeing more and correcting our previous knowledge. Each leap in understanding opens up more for us to find. That goes for the macrocosm, e.g., telescope, as well as the microcosm, e.g., microscope. Science is a wonderful but moving target; tomorrow tends to trump today.

**THE NIGHT SKY**

Spring is upon us even though the current temperature would hardly suggest that. Nor would our drought, which is now record-breaking for 2013—and what of 2014?

A major characteristic of spring is a fairly starless night sky. That's because we are looking *out* from our galaxy instead of *into* it. The Milky Way is close to the horizon, but the mountains get in our way, so you may not find it at all. In March the Milky Way is westerly and sinking with the winter constellations that live in and around it. In April it is very low, disappearing in our western mountains. By the end of May, it has disappeared in the west and begun to rise in the east with our summer constellations.

Meanwhile, arching overhead all this time, the Big Dipper and Leo the Lion have been paralleling each other. The dipper is trailing the bright Arcturus (follow the arch of the Dipper's handle to it). If you continue that arch, you come to Spica and Mars (noticeably red). The moon still plies

the stars, with the fullest brightest moons appearing high overhead early in the season. Spring is sort of a transitory period for the moon: it's high early in the season closer to winter, and lower as we approach summer, when the full moon drops to a very low position in the sky.

That distinctive trapezoid in the south is Corvus, the Crow. It's there moving west all spring. Predawn risers will see the summer constellations coming up from the east and going overhead with the Milky Way as spring moves toward summer.

**THE PLANETS**

**Jupiter** comes to a halt in its slow movement on March 6 and then turns back to a more northerly route. Throughout the season it moves westward with Gemini, rising and setting earlier. Jupiter spends about a year in each of the constellations in the zodiac, on average. It takes Jupiter 12 years to go around the sun once!

**Saturn** becomes stationary on March 2 and then begins again in the opposite direction. This shift is hardly noticeable, though, because Saturn spends an average of two and a half years in each zodiacal constellation and takes 30 years to go around the sun once! In March it's rising

before midnight. By April it's rising at 9 pm, and by the end of the month its rising time is 7:30 pm. Saturn recently spent about three years in Virgo. It's now in Libra, where it will stay throughout 2014.

**Venus** rises in the dawn two hours before the sun. She holds her morning-star position through May. It takes Venus just 225 days to circle the sun.

**Mars** stops its motion on March 1 as it reverses direction. Look for bright Mars near the April 15 eclipse with Spica, the other bright "star" to the right, near the darkened moon. Mars' trajectory around the sun takes 685 days.

**Mercury** leaps up into the dawn for the first time this year on March 14. He's below the lovely Venus, looking up no doubt. And his year (or trip around the sun) is only 88 days long because he's the closest planet to the sun, moving around the dawn and dusk sky so fast and seemingly erratic.

**Pluto** (recently demoted), just for perspective, is so far out there that it takes 248 earth years to go around the sun! Once.

**OF NOTE**

A full moon and a full eclipse happen

on the night of April 15. For about an hour and a half, the show will unfold. Be sure to look for Spica and Mars nearby to the right; they will brighten as the moon dims. That's Arcturus to the upper left farther away. Do a

little research beforehand if you're interested in losing some sleep for a good cause. Binoculars will add to your enjoyment of the show. I'll be filming it, I hope.

Remember the time change in March: we "spring forward" an hour on Sunday, March 9. So officially there is no time between 2 and 3 am (what did they do with it?), and the sun is highest at 1 pm instead of noon (does that make sense to you?). You've no doubt heard me rail against this before.

April is Global Astronomy Month. See [www.gam-awb.org](http://www.gam-awb.org). Astronomy Day is on May 10, so get out and look at the sky this spring!

Equinox is on March 20, when the sun will be exactly overhead at the equator. All is even-stein and symmetrical in the world of light and heat, from the equator to each pole.

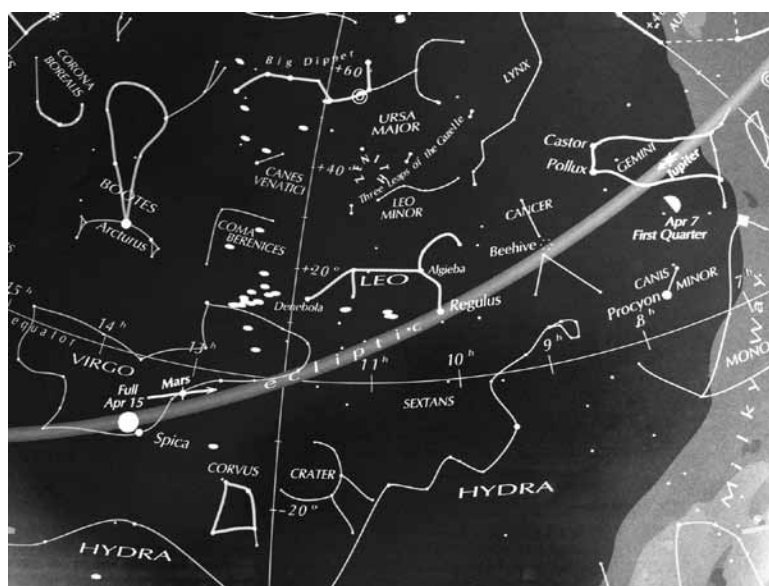
On May 14 the full moon will be right next to Saturn.

The Lyrid meteors show up the evening of April 23. A half-sided moon rises at midnight, so the best time, for once, to observe the Lyrid meteors may be in the evening before the moon comes up.

The Eta Aquid meteor shower peaks May 6. The moon sets at midnight, so this is definitely a wake-up-early meteor shower. Then the Eta Lyrids peak on May 8. The two radiants are not too far apart, in the vicinity of Vega in Lyra (the first rising star of the summer triangle). Because these two showers happen so close together in time, we will probably see some meteors from each shower during those nights. Two for one, good viewing! So let's hope for that much-needed rain all spring, except during May 6 to 8.

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Illustration: Guy Ottewell's *Astronomical Calendar 2012*.



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