

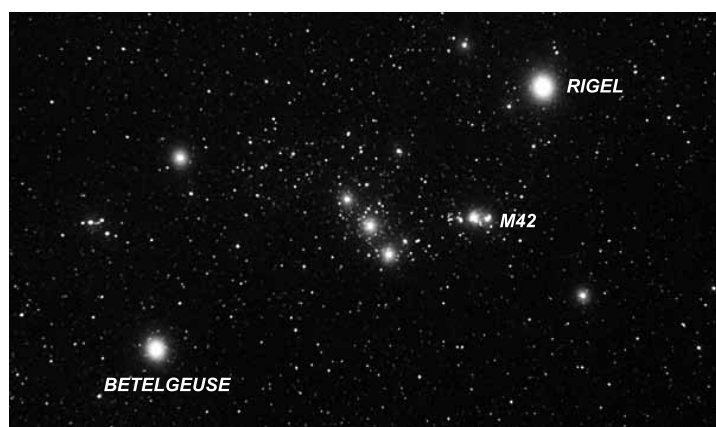
THE STARRY SIDE

Orion the hunter

BY GREELEY WELLS

I'm going to assume that if you know any winter constellation, it's Orion the hunter, with his famous belt of three stars in a row. He's a constellation who really looks like what he is: head, shoulders, belt, sword and legs. Who could ask for more?

And as to finding him, let me walk you outside your house into the night around 10 pm on the 15th of November. Now we have to orient to the east. Where does the sun set at your house? That's west. Where does the sun rise? That's east. When you to look at the eastern horizon the next important question is do you have an eastern horizon or just some trees, houses or mountains? If you don't have an opening you're a lot like me. I'm in a valley and everything rises late over my easterly mountain. If that's the case, there are at least three things you can do: 1) Go to another location where you know where east is (use a compass if you don't). 2) Wait until later in the night where everything rises higher in the easterly sky. 3) One final solution: wait to look for Orion in December because he will appear higher up the easterly night sky. Assuming you've got no problem looking east, look a bit to the right, for Orion actually rises east southeast. You'll see three stars on top of each other (see photo right). That's his belt. (Note that in this orientation Orion appears to be lying down but actually he is just turned sideways with his head to the left of the belt) The bright star to the left of the belt is the famous Betelgeuse, which is Orion's right shoulder. Above and to the right



are two dimmer stars which make a triangle with Betelgeuse and form Orion's two shoulders with his head above. Turn your head to the left to see the three-in-a-row belt with the triangle above it. The head is actually a small triangle itself. Now look at the shoulder to your left (Orion's right shoulder). A row of stars makes an arm, and a club at the end of them is held high. Next, do you see another set of stars that you could imagine as a shield, held by his left arm (the one to your right)? You've got the upper torso!

Now for the legs: the bright star to the right of the belt is Rigel. That's his left leg. There's another star above which is his knee. I like to see the legs as bent, as if he were running. That would make Rigel a foot. There's a good star making the lower leg too. Between these two, as if hanging from Orion's belt, is a set of at least three close stars (the top one dim), one of them is a warm-colored, fuzzy and the bright one. This is M42, the famous Orion Nebula. It's a big star factory, really. With optical aids, it's wonderful—the stronger the magnification, the more impressive. It's one of the few nebulae that can be seen with the naked eye. It's 1,500 light years away, a light year being the distance that light travels in a whole year. By the way, light takes only seven seconds or so to reach earth from the sun, which is 93 million miles away! Wanna do some math and get bogged?

I'm going no further, KISS: (keep it simple stupid!) So that's your one challenge: find Orion. He will get higher and higher all winter and still be visible in the west in April, when he will appear to be standing up on the western horizon. What fun! I sure hope you got this one and will keep it with you. To all my friends who have been urging simplicity and clarity, I hope I've succeeded. Don't hesitate to tell me, one way or the other. Please!

THE PLANETS

Jupiter continues to be our only planetary show of the evening. All of the other planets, including Venus, grace the dawn. We've been watching the large bright Jupiter making it's way up from the east, each night getting higher and higher. In October in early evening (around 9 pm) it's almost due south and quite beautiful. November finds it in the southwest, setting before midnight. Look for Jupiter November 22 and 23 accompanied by a "halfish" moon. December's Jupiter, a sunset planet, is definitely in

the west and sets around 10 pm.

Mars rises as Jupiter sets about 1 am in October. In November, it rises about midnight, and by mid-December it's rising about 9 pm. Mars is getting brighter and will be up and prominent for New Year's celebrants.

Saturn's visible in the dawn for you early risers, near the other planets in the eastern sky. It appears very low in October, and very near Mercury. On October 8 at dawn, Saturn, Venus and Mercury are all so close together they can be seen together through binoculars. By December, Saturn's rising around midnight.

Mercury is ever-elusive, as usual. But October is a good time to try to see it. On October 5 and 6 it's up about 1-1/2 hours before sunrise.

Venus is above and the brightest of the morning planets in the east. And they all share the neighborhood of dawn. Venus is sinking towards the sun in November, and is not easily visible in December as it plunges into the sun's early light.

OF SPECIAL NOTE

The Orionid meteor shower is very favorable this year, partially because it's a moonless sky. This meteor shower radiates from the shoulder of Orion, at the star

Betelgeuse, early in the morning before dawn (about 5 am). You might be able to count 15 or more meteors per hour in good dark conditions on the night of October 21, and maybe on October 17 and 18. These meteors result from the earth passing through Halley's comet's dust trail. (Halley's comet orbits the sun just as we do). Each year in our orbit we pass through the dust the comet has left in its wake. (Each time we pass through the path of a comet, the bigger the better, we get a shower and a show!)

The Leonid meteor shower is most visible on the night of November 17 and 18 in the early morning, but active from November 10-23. Leo rises around midnight, and the radiance comes from the Sickle (mane) of the lion; the moon is not a factor. This meteor shower is dust from comet Tempel-Tuttle, named after the two men who first saw the comet at about the same time. These are fast and often bright meteors, and half or more leave a trail. There could be a storm of them. (No guarantees though.)

The Geminid meteors peak during the pre-dawn of December 14 radiating from the slightly dimmer Caster brother of the Gemini. Caster is the higher star rising in the east before dawn. There is no moon again, and a good chance for a dozen or more meteors per hour on both December 13 and 14 about 2 am.

All three months have many secondary meteor showers, so pretty much any time in late evening or dawn you may find some meteors to thrill you. Try finding the Ursid shower on December 22.

The winter solstice is on December 21. (December 7 is strangely the earliest sunset.) Halloween is on October 31 (All Saints' Day November 1 and All Souls' Day November 2). There's a Friday the 13 in November: watch out if you're superstitious. And if you are superstitious, go to other countries where they don't care about 13s but have other cultural bad luck numbers (like 17 in Italy). Tuesday is the unlucky day in South America! It's all cultural.

On December 1 the full moon is very close to the Pleiades and on the 29 it is almost centered in them. The moons of this fall quarter all land at the beginning of each month: October 3, the Harvest Moon; November 2, the Hunter's, Frosty or Beaver Moon and December 1 and 31 are both full moons. The latter may also be called the Moon Before Yule or the Long Night Moon. This means that second full moon of December is a blue moon! So this year we have 13 full moons. Last year we had 12 full moons with one being a blue moon. Our next blue moon will be in 2012, a very auspicious year: the last year of the Mayan calendar!

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