



A scorpion, a sea-goat, and fish – oh my!

Don't let that imaginary menagerie trouble you; they are all far enough away that we need not worry about them. Where are they? They're in our night sky.

Hello, again. I'm back with some more sky info for you to think about on these beautiful summer nights. I mentioned the Scorpius (the scorpion) in the most recent *What's Up?*, noting that as it gets dark these days, you can find it low in the south and that just to the left of it is Sagittarius (the archer). These two constellations, along with Capricornus (the sea-goat) and Pisces (the fish) are part of a set of constellations that we call the Zodiac. You may know others that are also part of the Zodiac – Leo (the lion) or Gemini (the twins), maybe. But what IS the Zodiac? What makes these constellations (there are 12 of them) so special that we group them together and give that group a name? Well, even though they are in space, the answer begins right here, with the Earth.

As many people know, our planet goes around, orbits, the Sun once each year. As it does so, it marks out a nearly circular path around the Sun. Now, if you draw a circle on a piece of flat paper, the flat paper is the plane that your circle lies in. The Earth does something similar. I've tried to show it below (it's hard to draw three dimensions on a flat piece of paper!).



of the Zodiac. For instance, during these mid-August days, if we could see the stars that appear near the Sun, we'd see the stars of the constellation Cancer (the crab) and Leo (the lion). If we go out into space (in our mind's eye) again and look down from above the Sun, the constellations of the Zodiac would be arranged like this:



The plane of the Earth's orbit containing these constellations is called the *ecliptic*. The Sun, Moon, and planets are all seen on our sky very near to the ecliptic – on it, slightly above it, or slightly below it.

One last note: if you are interested in astronomy and want to learn more about it and about the equipment that us amateurs use to look at objects in the sky, besides going to our local libraries and borrowing books about astronomy, a great way to learn is by going to a meeting of a local astronomy club.

The one that my wife Carolyn and I belong to is the South Shore Astronomical Society (SSAS). We meet on the first Wednesday of each month at the Council on Aging in Norwell. Our website is at <u>www.</u> <u>ssasatros.org</u>. Another club in Massachusetts, the Astronomical Society of Southern New England (ASSNE), meets in Rehoboth, MA. Their website is <u>www.assne.org</u>.



From the side, it would look like this (the plane appears as just a straight line):



Now, out in space, there are stars all around us, everywhere, right? They extend above the Earth, below it, in the direction away from the Sun, and in the direction towards it. So then, as we stand outside and look at the Sun (but NEVER DIRECTLY AT IT because the Sun is too bright and its rays would damage our eyes before we realize it!), if the Sun were not as bright as it is, we would see stars all around it in the sky.

As the Earth goes around the Sun during the year, we would keep seeing different stars near the Sun as we move. It is these stars, and the groups that we form them into, that make up the constellations If you go to one of these meetings, you'll meet friendly people who will be happy to answer questions and help you pursue the hobby.

As always, you can contact me at: <u>astroblog@comcast.net</u>. I'd love to hear what you think and how you make out finding the objects we've talked about!

Keep looking up!

Barry