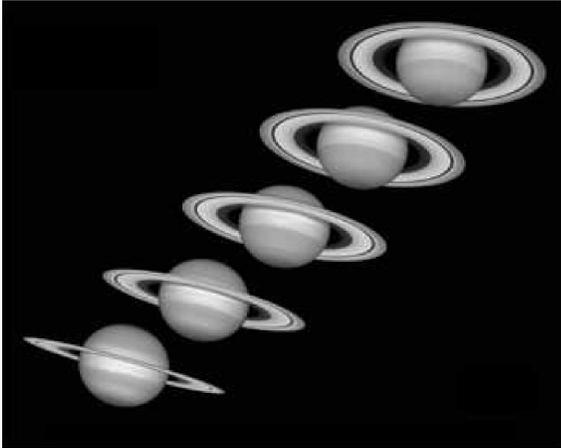


SHENANDOAH ASTRONOMICAL SOCIETY

April 2009

Saturn Perspectives



The most beautiful planet is up for show again this spring. It is now close to opposition which means it is directly south around midnight. It is up about 45 degrees by 9:30 PM.

Saturn was given the name of the Roman god of agriculture. As the planet moves around its orbit, its tilt from our location varies as shown in the collage above. This fall it will appear edge-on and then tilt the other way for a few years. The period is the same as the orbital period of 29.4 years of course.

Saturn's diameter is 75,000 miles which means it is about 9.5 times as wide as Earth. Its volume could contain nearly 900 earths. It is a gas giant but still smaller than Jupiter by about 33%. It probably contains a rocky core surrounded by metallic hydrogen surrounded by liquid hydrogen and helium with an atmosphere of gas.

The number of moons has risen to over 30 as smaller and smaller ones have been

found. The only large Moon, Titan, is the second largest in the solar system.

Saturn is the least dense of all the planets and would float in water. The gravity pull at the apparent surface is slightly less than on Earth due to the large size. So we could lose some weight if we could get weighed on the planet.

Saturn rotates rapidly causing the equatorial diameter to be greater than the polar diameter by about 10%. This is true of other planets, even Earth, but the difference is usually not that great.

Saturn is 9.6 times as far from the Sun as we are so it is very, very cold out there. I suppose one would freeze solid there in a nanosecond.

When Galileo first viewed Saturn in his home-made telescope, he could not discern the ring system. He reported that he saw something like ears on the planet. Later, Christian Huygens was able to see the rings well enough to discern them and to explain why they seemed to disappear sometimes. That being when they appear edge-on in our view.

Program Wednesday April 8

LFCC Room 160 7:00 PM

Alan is bringing the video, "Eyes on the Skies" It is the official movie of the IAU celebrating 400 years of the telescope for the International Year of Astronomy 2009. (60 minutes run time.) You must come see this!!!

(SAS Newsletter Page 2)

DUMBED DOWN???

If you read the letters in the May issue of Sky and Telescope, you see there has been some debate as to whether S&T has been dumbed down in later years as compared to earlier times. I thought that was interesting but I am not qualified to take a side in this debate. You might want to take a look.

I do have a thought on the subject. I think, as do some others, that maybe it has simply changed with the times. Here is why I tend to agree with that view. A few years ago, amateurs were building more of their equipment than they are today with all the companies in the business of producing and selling everything under the Sun that comes under astronomy gear.

So making more equipment such as telescopes and eyepieces and mounts, there was more need for articles on the know-how and do-it-yourself genre. I remember an article by a Japanese amateur about using the mathematical method of matrices to point your Dobsonian telescope to the object of interest. And it would work if implemented. I even worked through the mathematics of the method out of interest in it even though I did not build the angle measuring devices needed to set the system up.

Now just look at the number of go-to systems you can buy without going broke in the venture. And you can get many separate go-to mounts to put your telescope on. So there is much less need to learn to build your own these days compared to yesteryear.

In fact, intertwined between the various articles in S&T, there is a catalog of about

all things you could want or even imagine you might want for amateur astronomy. Of course, we know there are some born tinkerers who might want to build something just because they want to. Well, there are still come articles coming out showing a new design for a Dobsonian reflector or a new way to package a grab-and-go scope for travel.

Here are some new articles on how to do it. Page 34, May issue S&T, about a 12-inch design with a collapsing tube, something new. In the same issue, page 56, "Making a Good Dob Better." In the April issue of S&T, page 74, a way is presented to make a tester for various mirrors. This might interest our friend and telescope builder, Bill Cheng.

I think there are more articles by professional astronomers in S&T now than there used to be. But I hasten to add that that is only my notion since I do not have any very old issues to compare. So as usual, there are two sides to most debates.

Jim Adkins