



The Mason-Dixon Astronomer

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Star Points for January, 2008; by Curtis Roelle Asteroid Bearing Down on Mars

Contrary to the popular belief that nothing ever changes in the sky there are lots of things – like big planets and small asteroids – constantly moving around up there. Most of the time they stay out of each other's way minding their own business. But astronomers' attention has recently been diverted to an asteroid that is predicted to pass so uncomfortably close to Mars on January 30 that odds for an actual collision have been calculated and then revised -- upward.

The asteroid, known as "2007 WD5", is estimated to be 160 feet across and is closing in on Mars at a relative velocity of 28,000 mph – or nearly 8 miles per second. For comparison the Saturn V rocket's 3rd stage launched astronauts moonward at approximately 25,000 mph, a similar velocity.

Initially, predictions were 1 chance in 75 that 2007 WD5 would actually impact the "red planet." That's far from a sure thing but as the asteroid drew closer the predictions were refined and updated.

You may be wondering, "is it possible for an asteroid to strike a planet?" The answer is yes. An asteroid-like body has been blamed for the dinosaur extinction at the end of the Cretaceous period 65 million years ago and possibly other previous extinction events as well. It's not object wasn't definitely an asteroid: It could have been the nucleus of a

Continued on Page 3

In This Issue:

[Page 1](#)
Star Points

[Page 2](#)
Presidents
Message

[Page 4](#)
December Sky
Map

[Page 5 - 6](#)
NASA's Space
Place

January Meeting:

Business Meeting + Timothy Kent, Author of "StarQuest - A Beginner's Guide To Digital Astrophotography" and Baltimore County Public School Starlab Resource Teacher, will talk about his book and his experience with astronomy education. Bear Branch Center – Wednesday January 9 - 7:30 PM

Observing:

Members Observing Saturday, January 5 - Bear Branch Nature Center

Public Events:

Soldiers Delight Stargazing Program - January 12 Soldiers Delight Nature Center, Owings Mills – 8 to 11 PM

Planetarium Star Show and Star Party - January 18 – Bear Branch Nature Center – 7:30 PM

Presidents Message For January

Can you feel it? I can. Heck...I can almost smell it. It is starting to invade our meetings and programs and everything else the club is up to these days. It is the 800 pound gorilla in the room. Since I am all out of clichés, I might as well tell you what it is.

Change.

Change is coming. Some of it will be obvious, like the fact that we have elections coming this month and some of the offices will be populated with new faces. Some of it will be less obvious. It is the less obvious things that I want to focus on this month.

One change will be driven by the observatory. When the building is complete, the clubs primary focus will become the observatory. Our programs, both public and private, will be focused around the new structure and the scopes that are contained within it. We will need to spend much of our efforts funding and running one of the largest public observatories in the region.

Change will also be coming to the programs we do. Once the building is up, we will want to do most, if not all, of our programs at the facility rather than traveling to a group's location. Our fundraising will be focused on infrastructure and operating budgets. We will be looking for equipment rather than dollars, or maybe the dollars to fund the equipment.

Our internal discussions will switch from contractors and permits to programs and advertising. The executive committee meetings will be filled with arguments over scope time and observatory directors. The Board of Directors will actually have an asset to preside over. They will be concerned with managing multiple commitments and insurance and staffing.

Yes...change is coming. The club is changing. The goals and direction are changing. The officers are changing....

But wait a minute.

Don't we have a term limit on the President's office for just this reason...to keep things fresh and infuse the club with new ideas and leadership and occasionally a new direction?

I will answer my own question...Yes.

And while I am sorry that my term as president is at an end, I look forward to seeing where the club will go next.

Hope you have a great month and get out and see some stars!

Star Points Continued

comet. Comets and asteroids are closely related. Some comets may be masquerading as asteroids. We just don't know they're comets because they don't have tails or comas.

We've seen with our own eyes what happens when a comet hits a planet. In 1994 more than twenty fragments from Comet Shoemaker-Levy 9 (SL-9) impacted the gas giant Jupiter. The resulting Jovian impact scars were clearly visible even in the smallest backyard telescopes -- like the one you might have sitting around the house somewhere. The energy released from the larger fragments was estimated as equivalent to 225 million tons of TNT! That's more than a thousand times as powerful as the atom bomb dropped on Hiroshima in World War II.

Keep in mind that 2007 WD5 is smaller than the fragments from SL-9 that rained down on Jupiter. Should it impact Mars its explosive force has been estimated to be in the neighborhood of 10 to 20 million tons of TNT. That's still a very respectable sized blast.

A similarly sized comet or asteroid is believed to have impacted right here on earth less than 100 years ago. The object entered the atmosphere and exploded in the air over a sparsely populated area in Siberia on June 30, 1908. The force of the blast cleared or flattened hundreds of square miles of forest and incinerated everything within 9 miles of the epicenter.

Of course, Mars has no forests to be incinerated. Still, an impact of that size would excavate a crater up to one-half-mile across and hundreds of feet deep. The dust cloud generated by such an impact would be easily visible telescopically.

So what are the chances of it hitting? At the end of December the odds tripled to a one in 25 chance that the asteroid might hit Mars. While this makes a collision far from a foregone conclusion it is significant. As January 30 gets closer new predictions will be made. Will the chances go up or down? Nobody knows yet but so far the chance of a hit is a long shot as the odds favor a miss. How exciting.

Two opportunities to experience the night sky with members of the Westminster Astronomical Society are on Saturday, January 12 at Soldiers Delight Environmental Center in Baltimore County, and Friday, January 18 at Bear Branch Nature Center (BBNC) in Carroll County. For details visit the calendar page at WestminsterAstro.org.

Star Points by Curtis Roelle appears in the Carroll County Times on the first Sunday of each month. Visit the website at:

<http://members.fortunecity.com/starpoints/> or send email to StarPointsUSA@yahoo.com

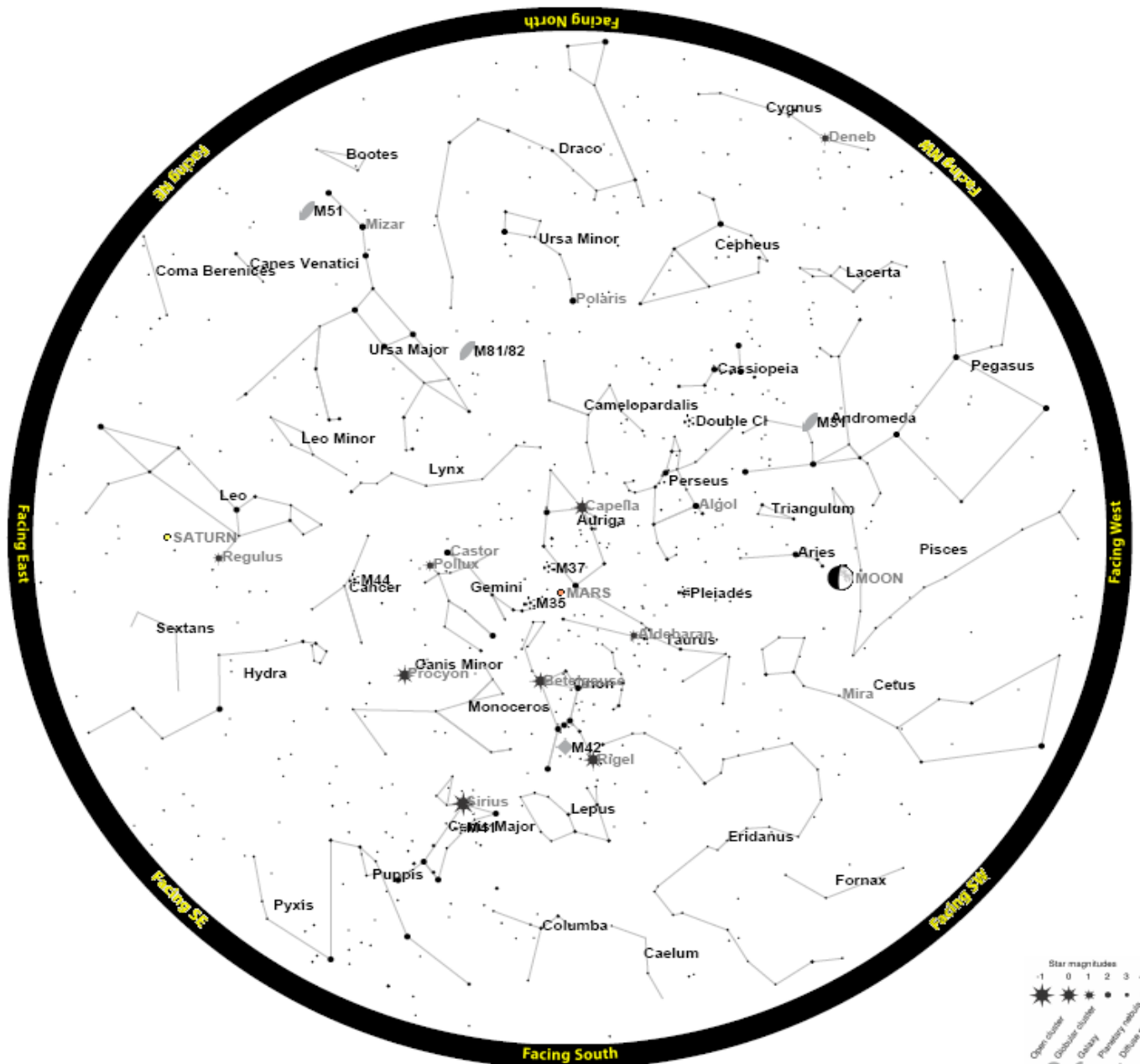
SKY MAP FOR January



How to Use This Chart

Go outside within an hour of the time listed below. Hold the chart out in front of you, and turn it so that the curved edge (the horizon) marked with the direction you're facing is on the bottom, with the lettering right-side up. The stars above this horizon on the chart now match the stars in front of you. The center of the chart is straight overhead (the zenith). So a star shown halfway from the edge to the center can be found in the sky halfway from horizontal to straight up.

Westminster, MD 21157 Jan. 15, 2008, 10:00 pm





Ultraviolet Surprise

by Patrick L. Barry and Tony Phillips

How would you like to visit a universe full of exotic stars and weird galaxies the likes of which astronomers on Earth have never seen before?

Now you can. Just point your web browser to galex.stsci.edu and start exploring.

That's the address of the Galaxy Evolution Explorer image archive, a survey of the whole sky at ultraviolet wavelengths that can't be seen from the ground. Earth's atmosphere blocks far-ultraviolet light, so the only way to see the ultraviolet sky is by using a space telescope such as NASA's Galaxy Evolution Explorer.

About 65% of the images from the all-sky survey haven't been closely examined by astronomers yet, so there are plenty of surprises waiting to be uncovered.

"The Galaxy Evolution Explorer produces so much data that, beyond basic quality control, we just don't have time to look at it all," says Mark Seibert, an astronomy postdoc at the Observatories of the Carnegie Institution of Washington in Pasadena, California.

This fresh view of the sky has already revealed striking and unexpected features of familiar celestial objects. Mira is a good example. Occasionally visible to the naked eye, Mira is a pulsating star monitored carefully by astronomers for more than 400 years. Yet until Galaxy Evolution Explorer recently examined Mira, no one would have guessed its secret: Mira possesses a comet-like tail 13 light-years long.

"Mira shows us that even well-observed stars can surprise us if we look at them in a different way and at different frequencies," Seibert says.

Another example: In April, scientists announced that galaxies such as NGC 1512 have giant ultraviolet spiral arms extending three times farther out into space than the arms that can be seen by visible-light telescopes. It would be like looking at your pet dog through an ultraviolet telescope and discovering his ears are really three times longer than you thought!

The images from the ultraviolet space telescope are ideal for hunting new phenomena. The

NASA's Space Place

telescope's small, 20-inch primary mirror (not much bigger than a typical backyard telescope) offers a wide field of view. Each image covers 1.2 degrees of sky—lots of territory for the unexpected.

If someone combing the archives does find something of interest, Seibert advises that she or he should first search astronomy journals to see whether the phenomenon has been observed before. If it hasn't, email a member of the Galaxy Evolution Explorer science team and let them know, Seibert says.

So what are you waiting for? Fire up your web browser and let the discoveries begin!

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Astronomers looking at new ultraviolet images from the Galaxy Evolution Explorer spacecraft were surprised to discover a 13-light-year long tail on Mira, a star that has been extensively studied for 400 years.