

THE SKY THIS MONTH

FEBRUARY 2009

THE INTERNATIONAL YEAR OF ASTRONOMY (IYA)

The United Nations has designated this year (2009) as the “International Year of Astronomy” (IYA for short). What does this mean for the science of astronomy and for you in particular?

First, let’s talk about astronomy! 400 years ago, Galileo peered through his first telescope to discover a universe that he could never have dreamed of. He saw mountains and craters on the Moon, sunspots on the Sun, the phases of Venus, the moons of Jupiter and the rings of Saturn. He saw that the Milky Way was comprised of millions of stars, most of which could not be seen with the unaided eye.

Today’s new astronomers are also discovering the wonders of the universe for themselves for the first time. They are also discovering the Moon, the planets and our universe with technologies that Galileo would have given his right arm for!

The International Year of Astronomy celebrates Galileo’s monumental achievement and astronomy’s achievements in the past 400 years. As astronomers, the IYA is the perfect opportunity for us to promote and demonstrate astronomy to everyone in our neighbourhoods. Special events will certainly be held in every town to show others the wonders of the night sky.

For you, this means an unparalleled opportunity to discover the universe in your own backyard! Astronomers from all walks of life (including the author of this column) are always enthusiastic about showing others what they do and what they see every night they can! This spirit is especially alive in this special year!

This is also true of Almonte in 2009. The Mississippi Valley Conservation Authority will be holding many Night Sky Conservation (NSC) events to celebrate this monumental year of astronomical discovery.

NSC EVENTS DURING THE 2009 IYA

- **Family Day, February 16th, 2009:** The Mill of Kintail Gatehouse will be hosting family activities, including an introductory workshop for the Night Sky Conservation (NSC) program. There will be a presentation by Michael A. Earl, the coordinator of the NSC, about the amazing objects in the night sky. If weather permits, you will be able to spot the planets Mercury, Venus, Mars and Jupiter in broad daylight through his telescope! You and your family will have plenty of opportunities to ask questions about astronomy and the NSC program.
- **Friday, March 20th:** The NSC Spring Astronomy Course will begin at the Mill of Kintail gatehouse. This weekly 10-week course is geared toward the beginning astronomer of any age! Visit the web site: www.castor2.ca/nsc/05_Courses for more information.
- **8 p.m. Friday, August 21st, 2009:** The first of two free public NSC Sky Tours will be held at the Mill of Kintail Gatehouse. Take a tour of the night sky with some of the most experienced observers in Ottawa area! For more information, visit www.castor2.ca/nsc/04_Tours.
- **Friday, September 11th:** The NSC Autumn Astronomy Course will begin at the Mill of Kintail Gatehouse. This 10-week course will focus on interesting astronomy objects and space science discoveries of the day! Visit the web site: www.castor2.ca/nsc/05_Courses for more information.
- **7 p.m. Friday, September 18th, 2009:** The second of two free public NSC Sky Tours will take place at the Mill of Kintail gatehouse. Visit www.castor2.ca/nsc/04_Tours for more information.

VENUS: BRIGHT AND VERY HOT

Venus is the second planet from the Sun; with an average distance of 108 million kilometres from our parent star; nearly three quarters the distance Earth is. Because Venus is closer to the Sun, it receives more heat per unit area than the Earth does.

Venus' entire surface is perpetually hidden by clouds of sulfuric acid. Venus' atmosphere itself is mainly comprised of carbon dioxide (a greenhouse gas). Because of this, any heat that Venus receives from the Sun cannot quickly escape back into space, therefore heating the surface of the planet to an average temperature of 450^oC. Lead melts at 327^oC. This is global warming on a massive scale!

Venus' clouds also explain its brilliance to our eyes. When we observe Venus we are actually seeing Venus' clouds reflecting the bright sunlight.

Venus can be as far as 258 million kilometres and as close as 41 million kilometres from the Earth. Venus can get the closest of all planets to us (even Mars); however this minimum distance is still over 100 times the distance from the Earth to the Moon!

This month, Venus will be at its brightest for the year. It can't be missed as a blazing bright yellow-white "star" after sunset. If you own a telescope, point it at Venus and have a look at its crescent phase shrink over the month!

On February 1st, Venus will be 83 million kilometres from us. By the end of February, Venus' distance will shrink to 55 million kilometres. This is why Venus will appear extra bright this month! For those with a telescope, you should be able to see the change in Venus' apparent diameter during the month.

Venus' solar day lasts for an astounding 117 Earth solar days, due to the planet's very slow rotation speed. If you could see Earth and Venus rotating at the same time, you would see that Venus rotates in the opposite direction than the Earth does! For those who saw the original Superman movie: No, time does not move backwards on Venus!

As you view Venus this month, think about how hot our Earth could be if its atmosphere were mostly carbon dioxide instead of nitrogen and oxygen. The Earth is truly blessed that it was placed at the right distance from the Sun and had just the right atmospheric composition and density for our survival.

Venus will not simply disappear when February ends! It will hang around in our evening sky until the end of March. It will then re-emerge in our dawn skies in April where it will remain for the rest of 2009.

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