



Clear Skies

Volume 12, Issue 6

Oct 2007

Web: www.starfinders.ca
President: president@starfinders.ca
Editor: newsletter@starfinders.ca

Categories

1. [GREETINGS](#)
2. [MEETING HIGHLIGHTS](#)
3. [UPCOMING EVENTS](#)
4. [WEB NEWS](#)
5. [COOL PICS](#)
6. [FEATURED ARTICLES](#)
7. [BUY AND SELL](#)
8. [ASK AN EXPERT](#)
9. [KIDS KORNER](#)
10. [RASC NEWS](#)
11. [THE SKY THIS MONTH](#)

Quick Links

[ABOUT THE CLUB](#)

[NEWSLETTER ARCHIVES](#)

[MONTHLY MEETINGS](#)

[BECOME A MEMBER](#)

[NEWSLETTER
SUBMISSIONS AND
SUGGESTIONS](#)

Greetings!

Welcome to the Cowichan Valley Starfinders Astronomy club's "Clear Skies" monthly newsletter.

What a summer for adventure, as I mentioned in last month's newsletter; Bryon and I travelled to Alberta and then spent some time in Sorrento, B.C. playing at a Bluegrass festival and attending a week long musical workshop where we studied music all day and played our fingers off each night. We made a bunch of new friends and gathered some wonderful memories. One in particular happened on August 28th during the Lunar eclipse. It rained on and off all day but as night approached the clouds began to part. I turned in at 1:00am just plain "played out"; Bryon was optimistic and set his watch to wake up at 2:30am to the heavenly event. The next thing I remember is waking to a crowd of ooooooh's and ahhhhh's as Bryon led a group of sleep deprived musician's through the eclipse and topped it off with a tour of the night sky with his trusty laser pointer. The next day the camp was buzzing with gossip of this rogue astronomer who put on this incredible show!

But somehow September always comes as a surprise, our holidays are over, schools is back in full swing and my garden plants are almost "bloomed out". However, it is a time to reap the assortment of fruits that we have nurtured all summer. September 26th is the Harvest Moon (first full moon nearest to the autumnal equinox) and October 26th is the Hunters Moon (is the first full moon after the Harvest Moon). In times past, this feature of these autumn moons was said to help hunters tracking their prey (or, in the case of the Harvest Moon, farmers working in the fields). They could continue tracking their prey (or bringing in their crops) by moonlight even when the sun had gone down. Hence the name Hunter's (or Harvest) Moon. For more information on these special moons see the "Sky This Month" article by Bryon Thompson.

Many thanks to this month's contributors: Gail Robertson, Moe Raven, Norm Willey, Bryon Thompson and Frank Ogonoski.

Freda Eckstein

"Shoot for the moon. Even if you miss, you'll land among the stars". ~Les Brown

[back](#)

Meeting Highlights

Our monthly meetings are held the **first Tuesday** of every month at the CMHA Office, 371 Festubert St in Duncan. Start time is 7:30pm.

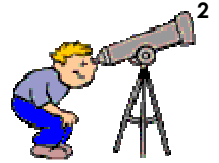
The next meeting will be on Tuesday, Oct. 2, at 7:30 hope to see you all there.

[back](#)

Upcoming Events

Observers Night

We would like to reinstate the observing sessions and are looking for a good location where club members can gather to view and socialize on a regular basis. If anyone has suggestions for a good location, please email the president at president@starfinders.ca.



IN TRODUCTION TO THE NIGHT SKIES - Fee \$80

At Shoreline Community School - 2750 Shoreline Drive

Tuesdays, Sep 25 – Oct 30 - 6 sessions 7 - 8:30 pm

To Register Call 386-8367 Or Visit WWW.SCSSD61.BC.CA for more info.

[back](#)

Web News

Imagine cruising the heavens from your desktop and seeing all the spectacular images from NASA's Hubble Space Telescope. Exploding stars and faraway galaxies are just a mouse click away through [Sky in Google](#)

Next Space Shuttle Mission STS-120

Discovery is scheduled to lift-off on October 23rd, carrying Node 2 to the International Space Station. For more information on this and other missions click on the link [Nasa Mission Highlights](#)

The Great World Wide Star Count begins October 1st and continues through the 15th. It's free, and anyone can participate. This grand science experiment aims to collect world wide data on light pollution and promote learning in astronomy. More about it at their website. The Great World Wide Star Count is organized by the Windows to the Universe project at the University Corporation for Atmospheric Research (UCAR), in conjunction with planetariums and scientific societies across the country and abroad. Funding is provided by the National Science Foundation. For more information see [Great Worldwide Star Count](#)

[back](#)

Cool Pics

Want to show off your latest pics? Well here's your chance; email the editor at [My Cool Pics](#) and we will try to post them in the next edition of "Clear Skies"

I GOT MOONED! credit Gail Robertson

It had been a tough six months, since my husband, Pete, was diagnosed with multiple myeloma cancer. We spent 33 days in Vancouver during November and December, during which his stem cells were harvested and stored, his bone marrow was killed off, and he was given back his stem cells with which to regrow his bone marrow and blood cells.

When we got back to the Island, we treated ourselves to a digital SLR camera and Pete to an 8" Celestron telescope.

Fast-forward to the full moon in February . . . clear skies, no wind. Pete set up the telescope on the back porch, attached the camera to the eye-piece, did a rough focusing, then turned it over to me to fine-tune the focus. Knowing how long Pete had dreamed of having such a telescope and being able to get photographs of celestial bodies, I was grinning like a Cheshire cat to see him so excited. The moon in sharp focus took my breath away. I snapped the photos and suddenly realized there was a deep pain growing in the centre of my chest. It didn't feel like anything I'd ever experienced before, but I unscrewed the camera from the telescope and hurried in to download the photos. About a minute later, the photos were on the computer, and I no longer had any doubts.

"Oh Pete," I said as casually as I could. "Can you drive me to the hospital? I think I'm having a heart attack." At which point, my omnipresent atrocious sense of

humour kicked in, and I added. "I've been mooned!"

3

Turned out – yes, I had had a heart attack, and the angiogram I had the next day showed a small amount of damage at the bottom of the left ventricle. The specialist said it was a typical classic case of keeping a lid on excessive stress for a long time, then something delightful comes along and the person releases it all at once, all the while experiencing excitement. Result: Heart attack. On the plus side, he said the heart fully repairs that type of damage within six weeks, and it's as though it never happened.

Now, for the part you've been waiting for ... the photos we took that night. The moon was actually too close for the 8" telescope to get it all in view at the same time, so we took a few different shots. Here (reduced, of course) are the heart attack culprits:



[back](#)

Featured Articles

Articles

[RETURN TO CATEGORIES](#)

1. [Whispers From Across the Great Divide](#)
2. [Scientists Find Elusive Waves in Solar Corona](#)
3. [Clearest Images Taken of Space](#)
4. [Voyager at 30: Looking Beyond and Within](#)
5. [Dark Matter Clues in Oldest Stars](#)
6. [Japan's KAGUYA Spacecraft Blasts Off To Explore The Moon](#)
7. [50 Years in Space](#)

*Nasa Fact:
Saturn is the only planet in our solar system that is less dense than water. It could float in a bathtub if such a huge thing could be built*

Whispers From Across the Great Divide– Aug 30/07 credit Frank Ogonoski

I attended the Saskatchewan Summer Star Party again this August (9th – 12) in Cypress Hills Dark Sky Preserve and had a good visit with John and Wendy McDonald, Bruno Quenneville, David Griffiths and Luc Simard. We were the "Victoria Six" contingent.

It was warm when I arrived and I anticipated a good weekend of observing. The weather, unfortunately, was uncooperative. While we did get some decent viewing in, mostly it was cloudy, raining and windy with a wind chill factor of about 0 degrees

C. Still we persevered. I got some much appreciated instruction from John and Bruno in proper alignment of the EQ-6 mount which I wrote down so as to remember it all. The skies are fabulous when they're clear. Everything just jumps out at you.

On Saturday night, while waiting for darkness to descend, we heard a yell "MOOSE!"



We turned around and much to our surprise a bull moose was jogging down the road about ten feet behind us. It veered into the camping area about one hundred feet down from us and headed for parts unknown. We didn't hear any wailing or cries of lament so we assume the no one's equipment fell victim to the "moosecapade". Thank goodness!

The lectures were top notch, Dr. Luc Simard being the featured speaker. The Saturday banquet was excellent and of the Victoria Six, two of us won minor door prizes. I look forward to next year when I hope the weather cooperates with us.

After the SSSP Bruno and David Griffiths stopped at Casa Frankco for a visit which was quite enjoyable. They enjoyed the movie presentation in my theater and the roast beef dinner I threw together. Then they resumed their journeys and I left for Edmonton. But that's another story.

[back](#)

Scientists Find Elusive Waves in Solar Corona – Aug 30/07 credit National Science Foundation (NSF)

Scientists for the first time have observed elusive oscillations in the sun's corona, known as Alfvén waves that transport energy outward from the surface of the sun. The discovery may give researchers more insight into solar magnetic fields, eventually leading to a better understanding of how the sun affects Earth's atmosphere and the entire solar system.

The research funded by the National Science Foundation (NSF) and led by Steve Tomczyk of the National Center for Atmospheric Research (NCAR) in Boulder, Colo., is being published this week in the journal Science.

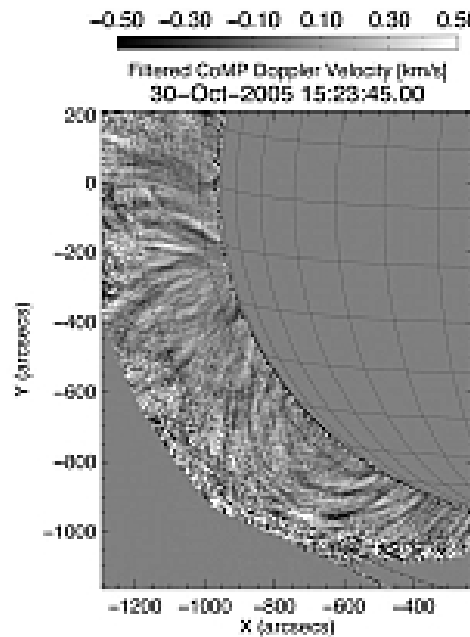
By tracking the speed and direction of the waves, researchers will be able to infer basic properties of the solar atmosphere, such as the density and direction of magnetic fields. The waves may provide answers to questions that have puzzled physicists for generations, such as why the sun's corona is hundreds of times hotter than the surface.

"Alfvén waves may provide us with a window into processes that are fundamental to the workings of the sun and its impacts on Earth," Tomczyk says.

"What makes the solar corona so hot is still a mystery, but these views of Alfvén

waves provide important new clues," says Paul Bellaire, program director in NSF's **5** Division of Atmospheric Sciences, which funded the research. "This discovery may lead to new ways of detecting the onset of solar storms."

Solar storms that spew thousands of tons of charged particles into space are linked with Alfvén waves. They sometimes cause geomagnetic storms on Earth that disrupt sensitive telecommunications and power systems,



"Our observations allowed us to identify these as Alfvén waves," says co-author Scott McIntosh of the Southwest Research Institute in Boulder. "The waves are visible all the time and they occur all over the corona, which was surprising."

Alfvén waves are fast-moving perturbations that emanate outward from the sun along the pathways of magnetic fields, transporting electrodynamic energy. Although they had been detected beyond the sun, they had never before been viewed within the corona, the outermost layer of the sun's atmosphere.

To observe the waves, Tomczyk and his co-authors used an instrument developed at NCAR. The coronal

multichannel polarimeter, or CoMP, uses a telescope with a lens roughly eight inches in diameter to gather and analyze light from the corona, which is much dimmer than the Sun itself. It tracks magnetic activity around the entire edge of the Sun and collects data with unusual speed, making a measurement as frequently as every 15 seconds.

By learning more about such magnetic activity and resulting solar disruptions, scientists may be able to better protect astronauts from potentially dangerous levels of radiation in space. "If we want to go to the moon and Mars, people need to know what's going to happen on the sun," Tomczyk said.

In addition to Tomczyk and McIntosh, the research team included scientists from the National Solar Observatory, University of Notre Dame, Framingham High School in Massachusetts, and University of Michigan.

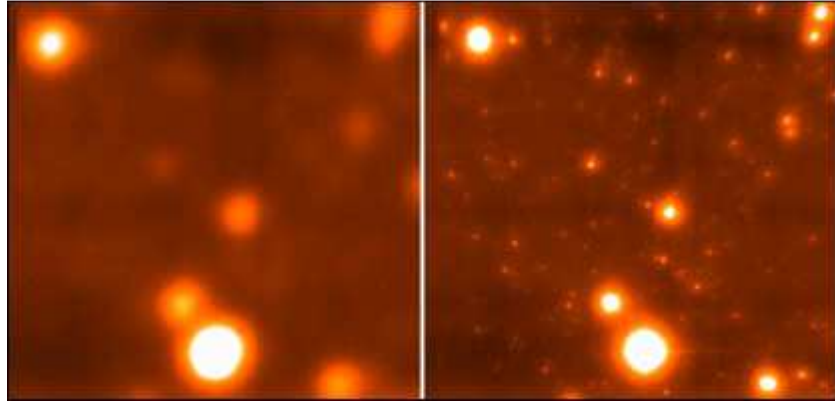
[back](#)

"Clearest" Images Taken of Space—Sept 3, 2007 credit BBC News

A team of astronomers from the US and the UK has obtained some of the clearest pictures of space ever taken. They were acquired using a new "adaptive optics" system which sharpens pictures taken from the Mount Palomar Observatory in California. The images are twice as sharp as those from Hubble Space Telescope.

The new system, dubbed "Lucky", is the result of work by a team from Cambridge University and the California Institute of Technology (Caltech).

Pictures taken by Hubble are normally much better than images from ground-based telescopes because the Earth's atmosphere has a distorting effect. The Lucky camera overcomes this problem in two ways. First, it uses one of the most sensitive light-detection systems developed to date. This comprises a chip that has very low electrical noise and so can see much greater detail. Secondly, the software system is able to distinguish when the atmospheric distortion starts and stops.



The Globular cluster M13 as imaged conventionally by the Palomar 200in telescope (l) and with the Lucky camera (r)

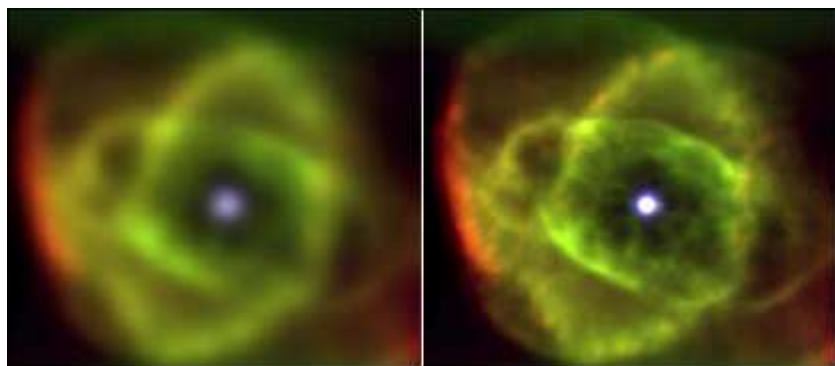
The inventor of the system, Dr Craig Mackay of the Institute of Astronomy in Cambridge, says it is rather like looking at an object through a heat haze. "The object is distorted by the haze most of the time," he explained, "but every now and again there are moments when the haze drops and you can see it very clearly."

The Lucky system gathers together all the clear pictures and throws out the distortions to produce images that Dr Mackay believes are the clearest ever images from the ground.

"The images space telescopes produce are of extremely high quality but they are limited to the size of the telescope," Dr Mackay added. "Our techniques can do very well when the telescope is bigger than Hubble and has intrinsically better resolution."

Two images have been published to date. One is of the globular star cluster M13 which is at a distance of 25,000 light-years. Stars that are as little as one light-day apart can be differentiated in the picture.

The other shows very fine detail in the Cat's Eye Nebula (NGC6543). The Cat's Eye Nebula as imaged conventionally by the Palomar 200in telescope (l) and with the Lucky Camera (r)



[back](#)

Voyager at 30: Looking Beyond and Within– Sept 5, 2007 credit NASA

A mission that was supposed to last just five years is celebrating its 30th anniversary this fall. Scientists continue to receive data from the Voyager 1 and 2 spacecraft as they approach interstellar space.

The twin craft have become a fixture of pop culture, inspiring novels and playing a central role in television shows, music videos, songs and movies from the 1980s and 1990s. Many of these fictional works focus on what would happen if an alien

race were able to locate Earth via Voyager's famous golden records, which include sounds and images of Earth. The selections portray people young and old, male and female -- not to mention examples of many other species -- and include information about every continent on the planet, as well as Earth's location in space.

Image right: The golden record. Image credit: NASA/JPL

Earlier NASA missions included plaques with information about Earth, in case an intelligent alien race intercepted the probes. This spurred, John Casani, Voyager's first project manager, to appoint astronomer and author Carl Sagan to head a committee to come up with a message for Voyager.



In his book "Murmurs of Earth," Sagan later described how the committee created the record and chose its contents. Physicist Frank Drake suggested the idea of a record that would have pictures on one side and sounds on the other side. The group had less than six weeks to come up with a record that would represent the entire population of Earth -- in addition to the planet itself -- if it were ever discovered by an intelligent alien race.

Although the chances of extraterrestrials finding the message are extremely slim, the Voyager golden record has become an icon. "It's the classic message in a bottle. The likelihood of finding it is small, but the payoff is huge if it is found," said Ann Druyan, a science media producer and author. Druyan was appointed creative director of the record project and later married Sagan.

Ed Stone, Voyager's project scientist and former JPL director, explained that although there is almost no chance of the record being found, the record is important as a message to ourselves.

"In a sense it's a unifying message," Stone said. "It's a message from Earth. It contains greetings in many languages, music from many cultures and images that portray our home planet. It's our attempt to say what is Earth, and it's a record of who we think we are." Druyan also explained that the coupling of music and science was an especially compelling reason to devote so much energy to the record.

"The record represented the idea that science and technology could come together with art," said Druyan, who also designed the sound essay. "It's one of the few totally great stories that we have about humans. It cost the taxpayers virtually nothing, nobody got killed. It was a way to celebrate the glory of being alive on this tiny blue dot in 1977.

"This was the most romantic and beautiful project ever attempted by NASA. It had the sounds of a kiss, a mother saying hello to her newborn baby for the first time, all that glorious music. Remember, this was during the Cold War. Everyone was living with the knowledge that 50,000 nuclear weapons could go off at any time, and there was a lot of angst about the future. This was something positive -- a way to represent Earth and put our best foot forward. That was irresistible."

Carl Sagan's son Nick was six years old in 1977 when the Voyager records were being assembled. The records feature a recording of him as a child saying, "Hello from the children of planet Earth."

"I had no sense of the magnitude of it at the time," said Nick Sagan, who partially followed in his late father's footsteps by pursuing a career as a science fiction writer. "Literally it was my parents putting me in front of a microphone and saying, 'What would you say to extraterrestrials?'"

Sagan said he began to realize what the record meant as he got older, and as a teen he started to realize what a "strange but wonderful honor" it was.

"It's been a challenge for the rest of my life to live up to that honor. It's always there in my subconscious," he said. "My dad inspired so many people to do so many great things -- to not take things at face value and to look at evidence to search for the truth. It's something that I look to as a beacon."

Sagan said that he and his father discussed the Voyager discoveries in the context of their search for life. They got excited when the spacecraft photographed Titan and Europa, and Sagan noted a change in his father as the years went by.

"One of the things that surprised him was that we didn't find life during his lifetime," he said. "He started to realize that if there's no other life out there, and life is so rare, we need to protect ours. I saw a shift in him. That's when he started to become more socially and politically conscious."

In the end, Sagan believes that Voyager and other extraterrestrial missions are important because of their process rather than their discoveries.

"The question is: What's it all about?" he said. "If we do find life it will change us, but if not it will change things also. The act of looking will tell us so much, and we will learn so much about ourselves."

For more Voyager news see the Video: [Voyager Approaching Interstellar Space](#) [back](#)

Dark Matter Clues in Oldest Stars – Sept 14, 2007 credit BBC News

A computer model of the early Universe indicates the first stars could have formed in spectacular, long filaments. These structures, which may have been thousands of light-years across, would have been shaped by "dark matter". Scientists know very little about this type of matter, even though it accounts for most of the mass in the cosmos.

The researchers told the British Association (BA) Festival of Science that their work could reveal the true nature of dark matter. Liang Gao and Tom Theuns from Durham University, UK, also reported their findings in the journal *Science*.

Quick or slow

Astronomers believe that more than three-quarters of the matter in our Universe may be "dark". It does not reflect or emit detectable light, and so cannot be seen directly - but it does gravitationally pull on normal matter (the gas, stars, and planets we see in space).

It is this interaction that allows scientists to predict its existence - even if they cannot say what it is. Various types of exotic particle seem to be the favoured theory, with equally exotic names such as neutralinos, axions and gravitinos.

The new research, though, may give some clues as to dark matter's properties. Computer modelling suggests there is a link between the structures assumed by early stars and the temperature of the dark matter amongst them.

Tom Theuns, from Durham's Institute for Computational Cosmology, told the festival: "What we found for the first time is that the nature of the dark matter is crucial to the nature of the first stars. "In cold dark matter the particles move very slowly; in warm dark matter they move very quickly," he explained.

"We found that if the dark matter consists of these fast moving particles, then the first stars form in very long, thin filaments. "The filaments have a length about a quarter the size of the Milky Way and contain an amount of matter and gas about 10 million times the mass of the Sun, so that provides a lot of fuel for many stars."

Exotic collection

Some of the stars that formed within the filaments would have had a relatively low mass, which is of interest to astronomers as they have a long lifespan and could still survive today. Dr Theuns added: "In stark contrast, what happens in (the simulation with) cold dark matter is very, very different.

"Here, the first stars formed in little lumps of dark matter, and just one star per dark matter lump. And these stars are probably very massive as well: 100 solar masses. "Because these stars are so massive, they die very quickly; so you wouldn't find such stars in the Milky Way today," he said.

Scientists believe that the temperature of the dark matter indicates what kind of particles it is made of.

Observational pointers

The research team hopes answers could come from astronomers who are now scouring the skies to find signs of very old stars. If dark matter is warm, then some of these very first stars may be in the Milky Way today.

However, detecting the massive stars formed in cold dark matter would require very powerful telescopes capable of "peering into the very distant Universe," Dr Theuns added. "We don't know what the dark matter is, we don't know what the first stars are. If we bring these two problems together, when we know more about one, then we can say something about the other."

[back](#)

Japan's KAGUYA Spacecraft Blasts Off To Explore The Moon–

Sept 14, 2007 credit ScienceDaily

Japan has successfully launched a new unmanned spacecraft to explore the Moon -- the largest lunar mission since the Apollo program.

Mitsubishi Heavy Industries, Ltd. and the Japan Aerospace Exploration Agency (JAXA) announced the launch of the Lunar Orbit Explorer "KAGUYA" (SELENE) by the H-IIA Launch Vehicle No. 13 (H-IIA F13) at 10:31:01 a.m. on September 14, 2007 (Japan Standard Time, JST) from the Tanegashima Space Center. The launch vehicle flew smoothly, and, at about 45 minutes and 34 seconds after liftoff, the separation of the KAGUYA was confirmed. The mission of the SELENE and ENgineering Explorer "KAGUYA" (SELENE), Japan's first large lunar explorer, is being keenly anticipated by many countries.

The major objectives of the mission are to understand the Moon's origin and evolution, and to observe the moon in various ways in order to utilize it in the future. The lunar missions that have been conducted so far have gathered a large amount of information on the Moon, but the mysteries of its origin and evolution have been left unsolved.

KAGUYA will investigate the entire moon in order to obtain information on its elemental and mineralogical composition, its geography, its surface and sub-surface structure, the remnant of its magnetic field, and its gravity field. The results are expected to lead to a better overall understanding of the Moon's evolution.

At the same time, the observation equipment installed on the orbiting satellite will observe plasma, the electromagnetic field and high-energy particles. The data obtained in this way will be of great scientific importance for exploring the possibility of using the moon for human endeavors.

KAGUYA's configuration and mission

KAGUYA consists of the Main Orbiter and two small satellites (Relay Satellite and VRAD Satellite). The Main Orbiter will reach the vicinity of the Moon. Once it has

reached the Moon, it will be placed into a peripolar orbit at an altitude of 100 km. **10** The Relay Satellite will be placed in an elliptic orbit at an apogee of 2400 km, and will relay communications between the Main Orbiter and the ground station. The VRAD Satellite will play a significant role in measuring the gravitational field around the Moon. The Main Orbiter will be employed for about one year and will observe the entire Moon.

Note: This story has been adapted from a news release issued by Japan Aerospace Exploration Agency.

[back](#)

50 Years in Space– Oct 4, 2007 credit Astronomy and Space

October 4 marks the anniversary of the launch of the first satellite, Sputnik, which marks the beginning of man's journey into space.

Sputnik 1 was the first artificial satellite in space and was about the size of a basketball, weighed only 183 pounds, and took about 98 minutes to orbit the Earth on its elliptical path. It functioned for 21 days. Its on-board radio transmitter sent out a beep beep signal that was heard all around the world. It was launched by the R-7 Rocket aka Vostok Rocket at Baikonour, Soviet Union.

It stunned the world and as a result the space age began. It was the first victory for the Space Race by the Soviet Union. The launch ushered in new political, military, technological, and scientific developments. While the Sputnik launch was a single event, it marked the start of the space age and the U.S.-U.S.S.R space race.

Sputnik means satellite in Russian. It was shaped like a sphere and had four radiating radio antennae. It was launched on October 4th, 1957. The world did not expect the Soviet Union to beat the technologically advanced USA with this [Space First](#).

The story begins in 1952, when the International Council of Scientific Unions decided to establish July 1, 1957, to December 31, 1958, as the International Geophysical Year (IGY) because the scientists knew that the cycles of solar activity would be at a high point then. In October 1954, the council adopted a resolution calling for artificial satellites to be launched during the IGY to map the Earth's surface.

In July 1955, the White House announced plans to launch an Earth-orbiting satellite for the IGY and solicited proposals from various Government research agencies to undertake development. In September 1955, the Naval Research Laboratory's Vanguard proposal was chosen to represent the U.S. during the IGY.

The Sputnik launch changed everything. As a technical achievement, Sputnik caught the world's attention and the American public off-guard. Its size was more impressive than Vanguard's intended 3.5-pound payload. In addition, the public feared that the Soviets' ability to launch satellites also translated into the capability to launch ballistic missiles that could carry nuclear weapons from Europe to the U.S. Then the Soviets struck again; on November 3, Sputnik II was launched, carrying a much heavier payload, including a dog named Laika.

Immediately after the Sputnik I launch in October, the U.S. Defense Department responded to the political furor by approving funding for another U.S. satellite project. As a result of this launch, the US air force suggested Intercontinental Ballistic Missiles could be used to launch a satellite. As a simultaneous alternative to Vanguard, Wernher von Braun and his Army Redstone Arsenal team began work on the Explorer project.

On January 31, 1958, the tide changed, when the United States successfully launched Explorer I. This satellite carried a small scientific payload that eventually discovered the magnetic radiation belts around the Earth, named after principal investigator James Van Allen. The Explorer program continued as a successful ongoing series of lightweight, scientifically useful spacecraft.

The Sputnik launch also led directly to the creation of National Aeronautics and Space Administration (NASA). In July 1958, Congress passed the National Aeronautics and Space Act (commonly called the "Space Act"), which created NASA as of October 1, 1958 from the National Advisory Committee for Aeronautics (NACA) and other government agencies.

[back](#)

Buy and Sell

Here's your chance to clean out the closet and find a home for your slightly used treasures. Post your buy and sell items by emailing the [Editor](#) with your details.

Observatory Free To a Good Home

The owners of Frank's home in the Properties have asked that we post Frank's old observatory in the buy and sell as "free to a good home" the only catch is you have to move it. For more information you can call Carrie at 748-8525.

Newtonian for Sale

Good permanent Newtonian scope (not portable) with 13 1/2 inch mirror, 4" Steel Alt Azimuth mount with concrete counter balance. Includes various eyepieces. More info contact John MacArthur at jandlmac@shaw.ca

Single 8" Meade Looking for an Astronomer

Lonely 8" Meade Newtonian with motorized German equatorial steel post mount is looking for a pair of lovely eyes to spend long nights gazing at the stars together. Includes homemade Dobsonian mount, one 40 mm eyepiece and telescope carrying bag. Asking \$750.00 OBO contact Bryon Thompson at bryonjt@shaw.ca.

[back](#)

Ask an Expert

Have you been thumbing through the Astronomy or Sky and Telescope magazine and have some questions on the latest and greatest in astronomy gear? Or maybe you're narrowing down your search for just the right telescope and want to know the difference between Dobsonians, Schmidt-Cassegrains, Reflector and Reflectors. Well wonder no more, email [Brian Robilliard](#) our resident expert to get the "inside scoop" on what's hot or not in astronomy gear.

Are you seeing double or unable to focus? Chances are you need to collimate your scope. Are you looking for a good eyepiece? Why do you need to know the focal length of your telescope's mirror and how do you determine the focal length? For answers to these and other telescope questions email [Ed Maxfield](#) our expert on telescope tips, hints and suggestions.

Are you new to astronomy? Want to know the how to find objects in the sky? Or just wondering what that bright object in the evening sky is? Well wonder no more; email [Byron Thompson](#) our Public Outreach Officer and master of Astronomy 101 basics.

[back](#)

Kids Korner

For the younger astronomers. We want your input on what you would like to see happening at the club. Tell us a bit about yourself and why you love astronomy. Email the [Editor](#) with your submissions.

For the older folks, if you have any ideas that might spark the interest of a young

This month I stumbled across an astronomy crossword that I thought would be fun for you to do. Answers to the crossword will be in the November issue, see how many you can get right and most of all have fun.

Crossword Puzzle—credit Kids Astronomy.com

Down

1. A small object that orbits the Sun.
2. One of Jupiter's moons.
3. When the Moon passes in front of the Sun.

Across

1. Greek word for Zeus. One of the planets.
2. A small object orbiting the Sun. Often glows with a long tail.
3. The name of the Earth's moon.
4. When using a telescope, you should have a good eye _____.
5. The Asteroid _____ can be found between the planets Mars and Jupiter.

ANSWERS PROVIDED IN THE NOV ISSUE

[back](#)

RASC News

By Ed Maxfield

[back](#)

The Sky This Month

By Bryon Thompson

Observing Site

Duncan, 48.783°N, 123.700°W

Jupiter continues to set earlier and earlier each night moving lower as it chases the sunset. Unless you have an unrestricted view of the western horizon Jupiter becomes lost to you very early in the month.

Early October is the time to hunt for Neptune. This gas giant is the most distant of our "planets" now that Pluto and Eris are classed as dwarf planets. Neptune can be seen in Capricornus 'the goat' with binoculars if you know where to look and can steady the binoculars with a mount. Start your search early however as Neptune will set by midnight local time. Neptune lies about 2.3 degrees or four full moon widths North East of the star Iota Capricornus. Iota is a faint star just to the right of Gamma Capricorni in the North East of the constellation. Clear skies are a must in order to find your way to the big blue/green giant.

Uranus, at magnitude 5.7 is brighter than Neptune's magnitude 7.8 and is found half way between the square of Pegasus and the bright star Fomalhaut in Picis Austrinus. Look about three moon widths west of Phi Aquarii for this Gas Giant.

Venus at magnitude -4.7 and Saturn at magnitude 0.8 are best seen in the early morning hours just before sunrise. Look low to the east at about 4:30am on October 7th to see a grouping of Venus, Saturn, Mars and the moon occupy the same small patch of sky.

The Orionid meteor shower may not show us large numbers of shooting streaks, up to 20 per hour during the peak periods, but they will be very fast. The shower begins October 2nd and finishes near the end of the first week in November but the peak is expected on October 21st. These meteors blast into our atmosphere at speeds up to 41 miles per second making them some of the fastest we can see. They often leave glowing trails of ionized dust in their wake. It is interesting to note that the earth encounters the debris trail from comet 1P/Halley twice in its orbit around the sun. The first encounter produces the Orionids and the second time we will hit the comet's debris is in May giving us the Eta Aquarid meteor shower.

October is the month that Mars starts getting brighter, up to magnitude -0.6. Mars rises before midnight and although it won't reach maximum brightness until near the end of December it is still a sight to behold. With your telescope on a clear night however you will be able to see one of the first permanent features ever discovered on another planet. The dark spot 'Syrtis Major' will present itself to us in the early part of the month and again in the later part of October. Formerly thought to be a plain, the dark area is actually a large low relief shield volcano composed of dark basaltic rock; hence its original name Syrtis Major Planitia was changed to Syrtis Major Planum.

Our red neighbor will appear about 12" in diameter to telescope viewers; an often misunderstood piece of information in a lot of circles. A quote I have heard many times since Mars' best opposition back in the summer of 2003; "Did you know that Mars is going to be as big as the full moon this month?" I shake my head in astonishment, eyes bulging wide, "really as big as the moon you say!" For this astonishing feat to actually occur some grotesque tragedy would have to befall our "little red neighbor" in order to push their planet out of its orbit and send it hurtling towards us just so that we could get a better view. The simple piece of information that seems to get left out of the media hype of such a story is that you need to be looking through the eyepiece of a telescope at a magnification of at least 80X to see the "apparent" size of Mars even come close to what the full moon appears like to our naked eyes. Still, if Mars ever were to appear that big it would cause quite a stir indeed!

How big is the full moon anyway? Is it as big as a dinner plate, a saucer, a bottle cap? Step outside on the 26th of October to see the Hunters Moon. Try looking at the full moon with only one eye open. Hold your index finger up to it at arms length and you'll be surprised that the apparent size of the moon is only half the width of your finger or half a degree.

This full moon however is often reported to appear larger than all the others. Neither the Harvest moon nor the Hunters moon are any bigger than other full moons throughout the year. There are a number of theories about why we perceive the moon to be bigger when near the horizon. One such theory is built on the discovery by Cleomedes in 200 AD that suggests we seem to perceive things near the horizon as being farther away than things overhead. A soaring bird overhead will appear to shrink as it flies to the horizon. If we see something like the moon that does not change in size our brains may interpret this as an apparent increase in dimension. Wikipedia describes this illusion as follows:

"If we perceive the Moon to be like other objects we see in the sky, we would expect it to behave in the same way and get farther away as it approaches the horizon, which should result in a smaller visual angle and Retinal image. But since its retinal image is the same size whether it is near the horizon or not, the low moon appears a larger physical size (linear size). This effect is known as Emmert's Law.

That is, if two objects have the same angular size (visual angle) at the eye but appear to lie at different distances from the viewer, the object which seems further away will appear a larger linear size."

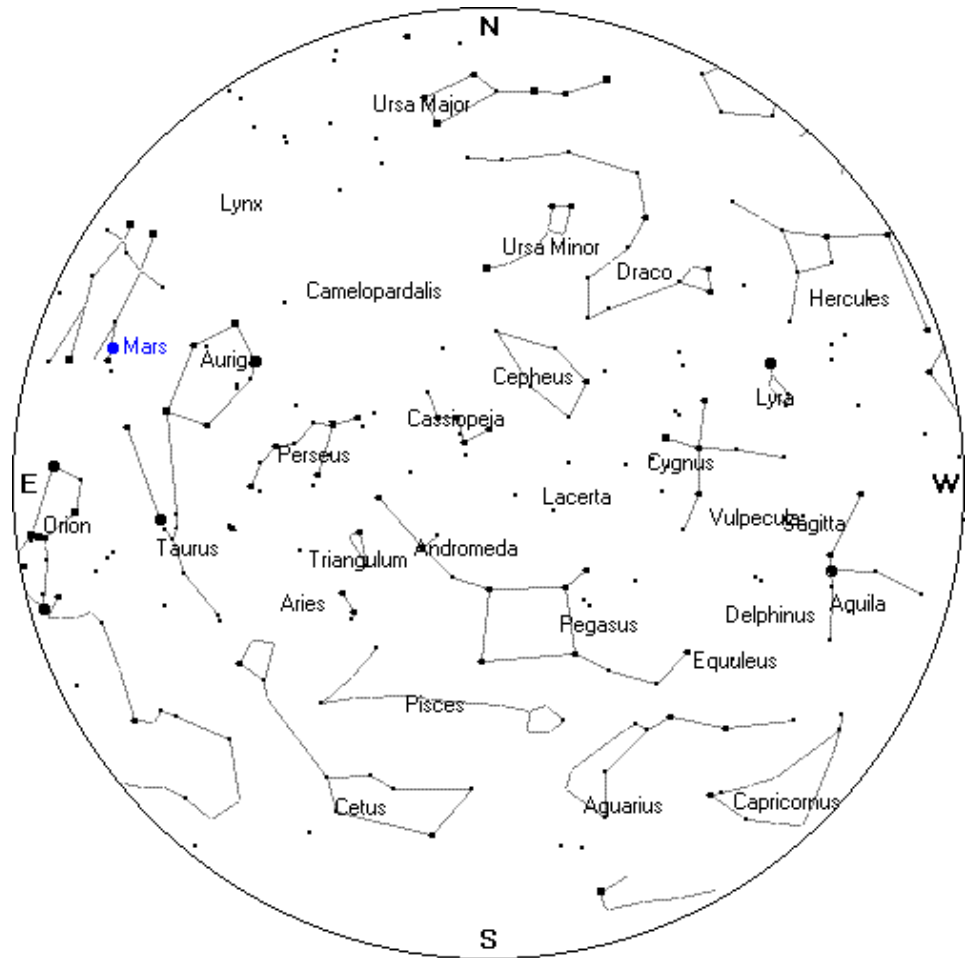
The Hunter's Moon is also known as Blood Moon or Sanguine Moon and is the first full moon after the Harvest Moon which happened on September 26th. The yellow/golden or orangish/reddish color of the moon shortly after it rises is a physical effect, which stems from the fact that, when you see the moon low in the sky, you are looking at it through a greater amount of atmosphere than when the moon is overhead. The atmosphere scatters the bluish component of white moonlight (which is really reflected sunlight) but allows the reddish component of the light to travel a straighter path to your eyes. Here's hoping you'll experience some good dark clear skies, fill next time, keep looking up.

October 2007

(all times are in Pacific Daylight Time).

07	04:30am	Venus, Saturn, Mars and the moon within 6° of each other
11	10:01pm	New Moon
13	02:51am	Moon is at apogee (furthest from the earth – 252,582 miles)
21		Orionid meteor shower peaks
26	09:52pm	Full Moon (Hunter's Moon)
28	08:00am	Mercury's greatest western elongation 46°

Sky Chart –Here's your mid-October midnight sky chart. In order to use the sky chart properly remember the centre of the chart is the sky directly above your head (or the Zenith). Turn the chart so that the direction you are facing is at the bottom of the chart (or pointed toward your toes). The star field directly in front of you will be between the bottom of the chart and the centre.



Sky Chart Courtesy of Heavens-Above