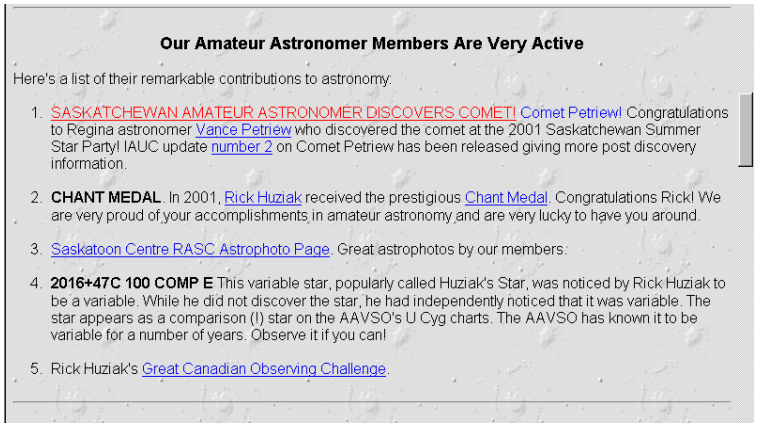
Web Page of the Month

http://prana.usask.ca/~rasc/



Skynews

March 2003 Number 243

http://victoria.tc.ca/~rasc/

This Month

March 12, 2003

The Birth and Evolution of Galaxies: Time Machines, Cannibalism and Chemical Pollution

Galaxies are basic entities in the Universe. The question of how galaxies form and evolve over time is one of the most important open questions in modern cosmology.

I will discuss two complementary approaches to studying galaxy formation and evolution:

- The "direct look-back method" relies on the fact that looking at very distant galaxies also implies that we are looking at them as they were in the distant past. In that sense, telescopes are time machines that take us back into the history of our Universe.
- The "fossil record method" relies on the fact that the present-day properties of galaxies around us bear subtle clues about past processes that have sculpted them into being. The merging and cannibalism of galaxies is an important process in shaping galaxies. A significant observable clue is the degree to which a galaxy has been "polluted" with heavy elements (iron, calcium, carbon, magnesium, etc) formed in previous generations of stars.

This multi-media presentation (computer animation/video/poster) will contain the latest results of observations carried out with the twin 10-meter Keck telescopes, the world's largest optical telescopes, and the Hubble Space Telescope. A technique called "adaptive optics" is revolutionizing optical astronomy, and there will be a brief demonstration of this technique.

Puragra Guhathakurta (Raja) is Professor of Astronomy and Astrophysics and Astronomer, UC Observatories/Lick Observatory. He's in Victoria as a Herzberg Fellow.

http://www.ucolick.org/~raja/home.html

Happy Birthday!

Date: Monday, March 3, 2003

Happy birthday to the "Royal" in the RASC. One hundred years ago today our society received its Royal name.

ROYAL ASTRONOMICAL SOCIETY OF CANADA VICTORIA CENTRE

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Email list: Joe Carr

Members at Large:
Bill Almond, Sandy Barta, Li-Ann Dorrance, Jim Hesser, Ed Maxfield, Frank Ogonoski, Blaire Pellatt, Bruno Quenneville, Colin Scarfe

New Members Liason:
Sandy Barta

This Month

Every ***CLEAR*** Friday

Astronomy Cafe

At Sandy Barta's, 2949 Michelson Road, Sooke, BC
Call 642-0205 for more information or directions.
And you **WILL** need directions!

The Astronomy Café is an astronomical conflab and if it's clear (and we are willing to give up our comfy chairs) we observe under an unbelievably dark sky.

Newcomers are most welcome.

Come and enjoy!

Please:

Call or check our website to find out if it's likely to be clear.

Mar 28

New Observer's Group

At Sid Sidhu's:

1642 Davies Road (off Millstream Lake Road) at 8:00 PM.
Call 391-0540 for more information or directions

Apr 9

April Meeting

University of Victoria, Room 060
Elliott Building

Astronomy Day

Saturday May 10, 2003
at the Royal BC Museum

CVSF Star Party

July 25th - July 28th

Yes, We post important, timely, member-related news to our email list.

Online information about the RASCVic and Skynews email lists:
http://www.rasc.joetourist.net/

For Sale

Celestron C6 6" Newtonian Reflector, F5 with equatorial mount and wooden packing case

$500 OBO

Televue Nagler 13 mm

$300 OBO

389-0057 or 920-6677

Vaughn Palmer

For Sale

Used Olympus OM-1 SLR camera with F/1.8 50mm lens, UV filter, Case, Strap, Manuals, 2 extra focusing screens (1-8 all matte; 1-12 clear cross-hairs). Also included is KITSTAR auto 135mm F/2.8 lens with UV filter and case. Great for astrophoto work.

Camera and lens are in excellent condition so asking $350.00. Contact Chris Spratt

250-592-6079 (Victoria area). Email: cspratt@islandnet.com

Thanks, Chris. Spratt

Island Eyepiece and Telescope is pleased to announce that they are now dealers for TeleVue and ScopeTronix and that their new showroom is now open.

647 Hunter Place, Mill Bay, BC

Please see the following link for location and hours.

http://www.islandeyepiece.com/showroom.htm

sales@islandeyepiece.com

President's Message

In February, the federal government¹s budget for 2003 included spending for space exploration and astronomy, including the work of astronomers here at the Dominion Astrophysical Observatory.

According to one report, the budget includes funds for Canada¹s participation in "leading-edge astronomy projects, including the Extended Very Large Array project in New Mexico and the Atacama Large Millimetre Array project in Chile".

In recent years, the federal government has decided to provide relatively secure funding for astronomy programs, and for our space program. I know that none of this funding was granted without a great deal of hard work by scientists and others who support basic research.

Canada has much to be proud of in terms of the work done by its astronomers, engineers and others involved in space sciences. What is remarkable is that these achievements were supported with funding that is only a fraction—even on a per capita basis—of what American astronomers and space scientists get from their government.

The tiny fraction of the federal budget that goes into space—including the Canadian Space Agency, spending on space is not even a quarter of one per cent of the budget—not only gives our scientists the tools to do their important work, it also creates high-technology jobs in the private sector. For example, a firm in the Lower Mainland fabricates observatory domes for major telescopes, and our space-related exports outstrip the government¹s annual spending on space.

Yet space is forgotten or taken for granted. Last fall, the 40th anniversary of the launch of Canada¹s first satellite was ignored because it fell on the same day as the 30th anniversary of the final game of the first Canada-Russia hockey series.

What this means is that it is up to us to remind politicians and our friends and fellow taxpayers that Canada¹s support for space creates far more than pride—it creates knowledge and new opportunities for talented Canadians.

We get to meet many of those talented people when they come to our meetings and tell us about their research. We can repay them for their great efforts by making sure that the federal government continues to support their work.

Chris Gainor

The deadline for the next issue of Skynews is

March 27, 2003

Get your Skynews early and in colour. Tell Laura, our Treasurer, that you get Skynews on line and we won't mail you a copy.

Future Meetings

April 9

Ernie Pfannenschmidt: Backyard Areopgraphy.

May 14

Chris Willott, Research Associate at the NRC's HIA

June 11

Falk Herwig, Post Doctoral Fellow at the University of Victoria

The Cover

The Good Ol' Days

I remember someone was asking for pictures of the old days of the RASC.

I have a classic of the group after the Mobile telescope was built and presented at UVic. You may notice John Howell at one end of the line as well as a few good ol' friends of "Yesteryear."

Malcolm Scrimger

This Editor wonders who can identify this motley crew. I know your eyesight's failing, but we can still have fun listening to you reminisce—or is your memory failing as well?

Address Change? Information Incorrect?

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Fax: (416) 924-2911

E-Mail: rasc@rasc.ca Website: www.rasc.ca

Postal Mail: RASC, 136 Dupont Street, Toronto, ON, M5R 1V2, Canada

The Night Sky Continued

objects you've found in binoculars. Add little notes to yourself; your very own planetarium show. Just be sure to include the time, the date, and a bit about sky conditions. You're now an observer and an amateur astronomer AND you now have a license to show off.

May 4 to May 10

On May 5th, the Eta Aquarid meteor shower peaks. You'll see about 40 meteors per hour and these zip across the sky at 65 km/h.

I hope you're still following Jupiter and Saturn. Have you learned how to identify which of Jupiter's moons is which? You can ask Sandy to explain how you can do this after the monthly meeting.

Start paying real attention to Mars. It will be a real observational education to notice Mars' changing appearance both sans instrument and through an eyepiece. You'll be able to brag about what you saw this year to your bored descendants in your dotage.

May 11 to May 17

We get to see the last part of a total lunar eclipse on the 16th. Find a vantage point with a clear view of the rising Moon—the Oak Bay waterfront, Island View Beach, the Esquimalt Lagoon, or Mount Tolmie are all examples of good sites. Maybe you're lucky enough to have ideal conditions in your back yard. Here's your chance to try some lunar photography and put David out of work. I'll look forward to publishing your results.

Notice the colour? The Moon takes on a reddish, or coppery, colour for much the same reason that we have red sunsets and sunrises—our atmosphere acts as both a filter and a prism. The atmosphere allows the longer red wavelength to pass and bends the light to bathe the shadowed Lunar surface in dusky tones. The Moon is redder If there are more particles in our atmosphere.

May 15 to May 24

I've always been delighted to trace Corvus' shape on the southern horizon. Don't know why, but neither Corvus nor Lepus make it onto the captured constellation short list of most amateurs. Corvus struts just below Virgo. If you can find Spica, you're nearly there (follow the arc to Arcturus, then speed down to Spica). The stars that sketch Crow's body lie 140, 165 and 305 light years away from us. But Crow holds distant treasures and you can locate your own delicate stepping stones to find them. Crow tosses the Sombrero Galaxy, M104, with her beak and her feet clutch the globular cluster, M68. The cluster lies 46,000 light years away, and the galaxy lies 40 million light years away. You can use the stars in Hydra to bird-hop to a much nearer galaxy, M83 that lies a mere 15 million light years away.

Saturn gets lower and lower in the evening sky. When is the last you see of this giant?

The Night Sky

April 6 to April 12

Mercury should be high enough in the west for you to find this swift inner planet. You've got until the end of April to find Mercury, but your best bet is when he is highest in the sky—between the 10th and the 23rd. How come so little time? Mercury takes only 88 days to orbit the Sun. Mercury spends a good chunk of this time in the daylit sky then, when he appears at dawn or dusk, his tight solar orbit means that he never climbs very high in our sky. On top of all this, our planet's tipsy and, just as our Sun doesn't rise very high in the sky for part of the year, Mercury (and the Moon and everything in our solar system) doesn't rise very high for part of the year.

What time of the year is the Moon the highest in the night time sky? Why? What time of the year will any planets visible in the night sky be at their potential highest? Is it the same time we see the Sun highest in the sky? What's happening?

April 13 to April 19

Mercury is at his highest for this apparition. Don't miss this chance to see this neglected beauty and enjoy his swift flight.

Mars is still too far away to be enjoyable in a telescope. Although, if you've been observing, you'll notice that Mars is getting brighter. Here's one guy who will promise AND deliver—in August Mars will come closer to us than he has for thousands of years. Get your Mars observing tools and material together.

April 20 to April 26

The Lyrid meteor shower peaks on the 22nd. You can expect about 15 ‘shooting stars’ per hour. At 48 km/h, these aren’t the slowest but they aren’t the fastest so you may have time to turn your head when your observing partners go “Oooooh!”

April 27 to May 3

Just before dawn on the 28th, you’ll be treated to a crescent Moon and an atmospheric Venus low on the horizon. Try snapping a few pictures or make a sketch to show your relatives and friends.

Now that the days are warming and you’re out more, you can try some serious observing. Figure out a time when you know you’ll usually be able to pop your head out the door, then find the Big Dipper. Note its position in the sky (you can even make a sketch so others will believe you; heck, you can even take a picture—just ask David how). Now, every couple of weeks until it gets too cold for you, note, sketch or photograph the big dipper—you’ll have your very own ‘movie’ of the sky as we see it on our trip around the Sun. You might want to include some of the other constellations that hang above the horizon all year—these are the circumpolar stars. Maybe you can add the positions of some of the

Continued on page 12

ROYAL ASTRONOMICAL SOCIETY OF CANADA VICTORIA CENTRE

A Crater Honour

Bonnie Bird forwarded the following information sent to her by Yvan Dutil.

The International Astronomical Union has decided to name a crater on the surface of Venus in honour of a famous Canadian astronomer Allie Vibert-Douglas.

Born in Montreal in 1894, she began her studies in mathematics and physics at the McGill University. When the intensity of World War I increased, she interrupted her studies to work in the London War Office as a statistician. In 1918, at the age of 23, she was awarded the Order of the British Empire in recognition of her work. After her return in Montreal, she earned a Bachelor degree (1920) and a Master degree (1921). She went then study at Cambridge University in England under the direction of Arthur Eddington, one of the leading astronomers of that time. In 1925, she was awarded a Ph.D. in astrophysics from McGill—the first one delivered by a university in Quebec and at a time when there were only a handful of women astrophysicists in North America. She remained at McGill as a professor for the next 14 years when she was appointed as Dean Of Women at Queen's University. At McGill she was influential in having women accepted in engineering and medicine. An asteroid was named after her when she died in 1988.

The naming happened because of the efforts of Yvan Dutil, an astrophysicist working for ABB (Analytical and Advanced Solutions) in Quebec City. "When making researches about the history of astronomy in Quebec, I have discovered that it had no feature named after her on Venus", explained Dutil. This was especially shocking since the International Astronomical Union decided to use only female name for Venus. "To correct this situation, I have contacted the Working Group on the Planetary System Nomenclature of the International Astronomical Union to suggest them the name of Vibert-Douglas. Rapidly, it became clear that it will be adopted", remember Yvan Dutil.

It took about six months to have the name approved officially by the working group. On Venus, large craters are named after famous women, small craters (less than 20 km in diameter) after given feminine names, all other types of features are named after the mythological characters. Since there was no longer any large crater available, the name was given to a Patera (an irregular or complex craters with scalloped edges probably of tectonic origin). The Vibert-Douglas Patera is located at 11.6 South latitude, 194.3 East longitude. It is almost circular 45 km diameter depression.

With Working Group on the Planetary System Nomenclature approval, the name became official international nomenclature with provisional status, until full adoption by the forthcoming General Assembly of the International Astronomical Union in 2003.

Yvan Dutil

The Space Place

NASA's Space Place

Seven Strangers?

At the dawn of the space age some 40 years ago, we always knew who was orbiting Earth or flying to the Moon. Neil Armstrong, Yuri Gagarin, John Glenn. They were household names--everywhere.

Lately it's different. Space flight has become more routine. Another flight of the shuttle. Another visit to the space station. Who's onboard this time? Unless you're a NASA employee or a serious space enthusiast, you might not know.

Dave Brown, Rick Husband, Laurel Clark, Kalpana Chawla, Michael Anderson, William McCool, and Ilan Ramon.

Now we know. Those are the names of the seven astronauts who were tragically lost on Saturday, Feb. 1st, when the space shuttle Columbia (STS-107) broke apart over Texas.

Before the accident, perhaps, they were strangers to you. But if that's so, why did you have a knot in your gut when you heard the news? What were those tears all about? Why do you feel so deep-down sad for seven strangers?

Astronauts have an unaccountable hold on us. They are explorers. Curious, humorous, serious, daring, careful. Where they go, they go in peace. Every kid wants to be one. Astronauts are the essence of humanity.

They are not strangers. They are us.

While still in orbit Dave Brown asked, jokingly, "do we really have to come back?"

No. But we wish you had.

Please see the NASA Home Page (http://www.nasa.gov) for more information on the Columbia Investigation.

Continued on page 6

National Dark-Sky Week (U.S.A.)

A grassroots effort to highlight the beauty of the night sky and to draw attention to the ever-increasing levels of light pollution across the United States caused by poorly designed lighting, has the endorsement of the American Astronomical Society (AAS) and the International Dark-Sky Association (IDA).

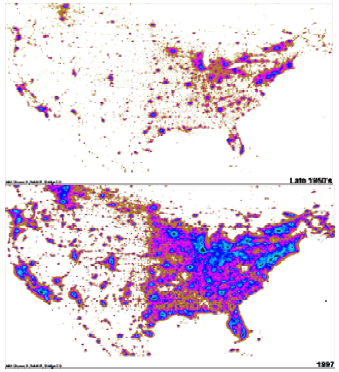
The AAS and the IDA believe that the opportunity to experience the natural night sky should be available to every citizen of our nation. This natural resource, which inspires our attempts to understand the cosmos, should be protected through the use of well-designed lighting systems that put light where it is needed and not waste energy through unnecessary illumination of the sky. Properly designed lighting systems provide safety and convenience without polluting one of our greatest natural assets.

This is the second year that Jennifer Barlow, a high school student from Virginia, has organized this grassroots campaign. "The night sky has been forgotten by many," she says, and she hopes that National Dark-Sky Week will encourage people to "look up" and appreciate its wondrous features. As we reestablish that connection, we hope to raise awareness about how to reduce light pollution and protect our heritage of dark skies.

The American Astronomical Society and the International Dark-Sky Association encourage all Americans to use the evenings of **April 1st to April 8th 2003**, from 10 pm to 12 am (ET & MT) and 9 pm to 11 pm (CT & PT) to attend public star parties, visit their local planetarium or public observatory, or simply go outside to a safe, dark location to enjoy the wonder of the night sky. Learning the constellations, observing the planets, wondering about the stars and the Milky Way are one of the most basic of human experiences and should be enjoyed by all.

National Dark-Sky Week is also endorsed by the Astronomical League, a non-profit federation of 250 astronomical societies and nearly 20,000 members, and by Sky and Telescope magazine.

More information on National Dark-Sky Week is available at:



http://www.nationaldarkskyweek.htmlplanet.com/

www.darksky.org

Today, more than two thirds of the USA's population has lost naked eye visibility of the Milky Way. The images show 1950 (upper) and 1997 (lower)

Shadows in the Night Continued

computer and saved in grey scale format. The spectra scan is a composite carried out by Jiri Borovicka at Ondrejov Observatory.

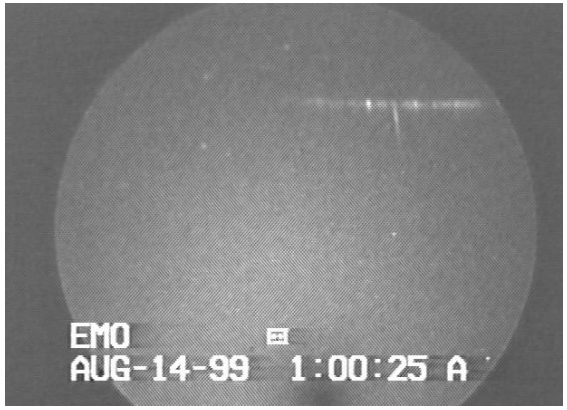


Figure 1. Perseid spectrum. Time stamp is PDT Pacific Daylight Time + 7 hrs U.T.

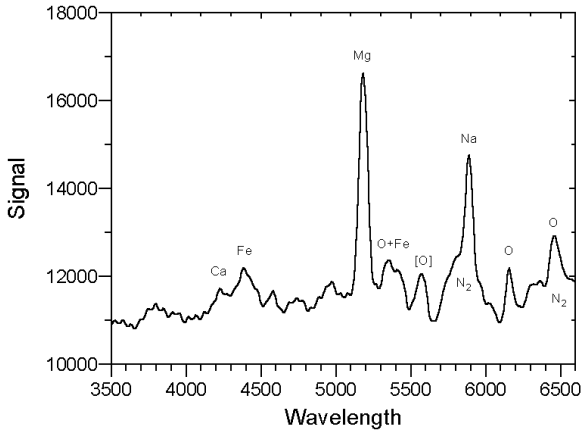


Figure 2.

http://members.shaw.ca/epmajden/index.htm

Ed Majden

The Space Place Continued

Columbia's last crew

By Dr. Tony Phillips

This article was provided by the Jet Propulsion Laboratory, California Institute of Technology, under a contract with the National Aeronautics and Space Administration.

EMO LEONID METEOR SPECTRUM

A typical Leonid meteor spectrum secured with an image intensified video spectrograph at EMO Courtenay, B.C. CANADA is shown below. This spectrum was secured using simple equipment. An experimental grade type MX9944/UV - 2nd generation 25 mm diameter image intensifier purchased on the surplus market was used. A standard Canon F-1.4 - 50 mm lens fitted with a precision 600 g/mm blazed B&L replica transmission diffraction grating imaged the spectrum on the image intensifier input screen. The intensifier output screen was imaged by a Super 8 video camcorder recording on a standard VHS recorder. The field of view is around 25 degrees. The "zero order" image of the meteor is on the extreme left. The "first order" spectrum is recorded with blue on the left with red to the right. The intensifier has rather limited sensitivity at the blue end so recorded lines are weak. Part of the red end of the spectrum was not recorded as it was off the screen to the right. The intensifier is mainly sensitive from around 450.0 nm to around 900.0 nm but as noted features below 450.0 nm are faint. Of special interest in this spectrum is the so called forbidden line of oxygen O I 3F recorded at 557.7 nm which is clearly recorded trailing the main spectrum. This line was first identified by Canadian astronomer, Ian Halliday in 1958. Earlier film spectra were reviewed and this was also found in an early Leonid spectrum designated as Number 29 on Millman's World List of Meteor Spectra. See: R.A.S.C. Journal, Vol. 54, Number 4, p.189-192, August 1960.

This program was conducted on the morning of November 18, 2001.110 video meteor images were recorded during this program, 60 "zero order" images and 50 "1st order" spectra. A similar program was planned for 2002 but was unfortunately clouded out at my location.

I would like to thank Dr, Jiri Borovicka at Ondrejov Observatory in the Czech Republic for doing the scan of this spectrum.

Edward Majden - R.A.S.C. Victoria Centre - A.M.S. Meteor Spectroscopy

EMO Courtenay B.C. CANADA Lat.49° 40' 33.5" N-Long. 125° 00' 37.1 W (GPS)

http://www.amsmeteors.org/spectra/majdenobs.html

Continued on page 8

Spectra Continued

Figure 1. Leonid spectrum. Time stamp is PST Pacific Standard Time +8 hrs for U.T.

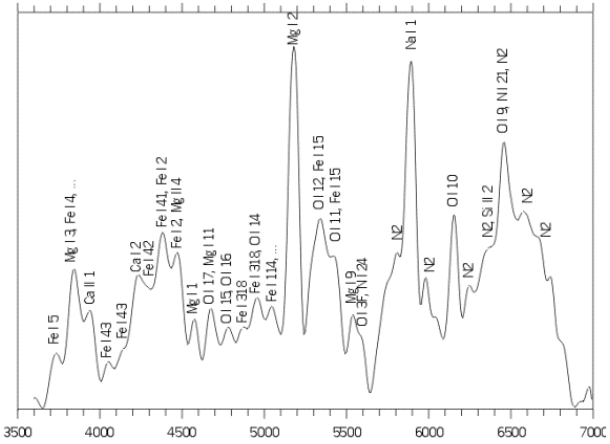


Figure 2.

PERSEID METEOR SPECTRA

For comparison purposes a past Perseid meteor spectrum has been added. It was secured with the same set-up as above. Frame capture was done on a MAC

Continued on page 9