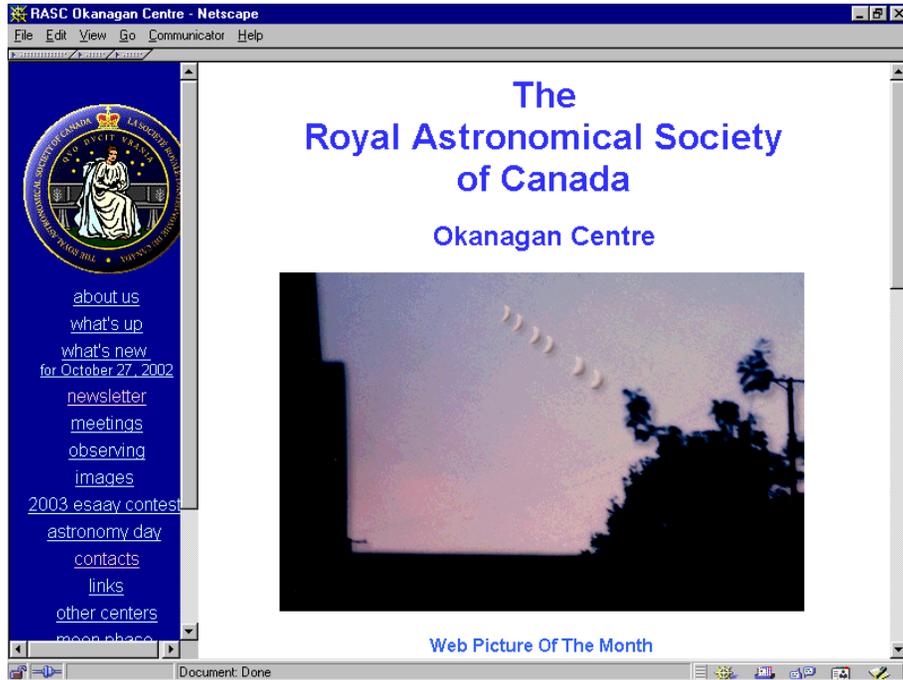


WEB PAGE OF THE Month



<http://www.m51.ca/>

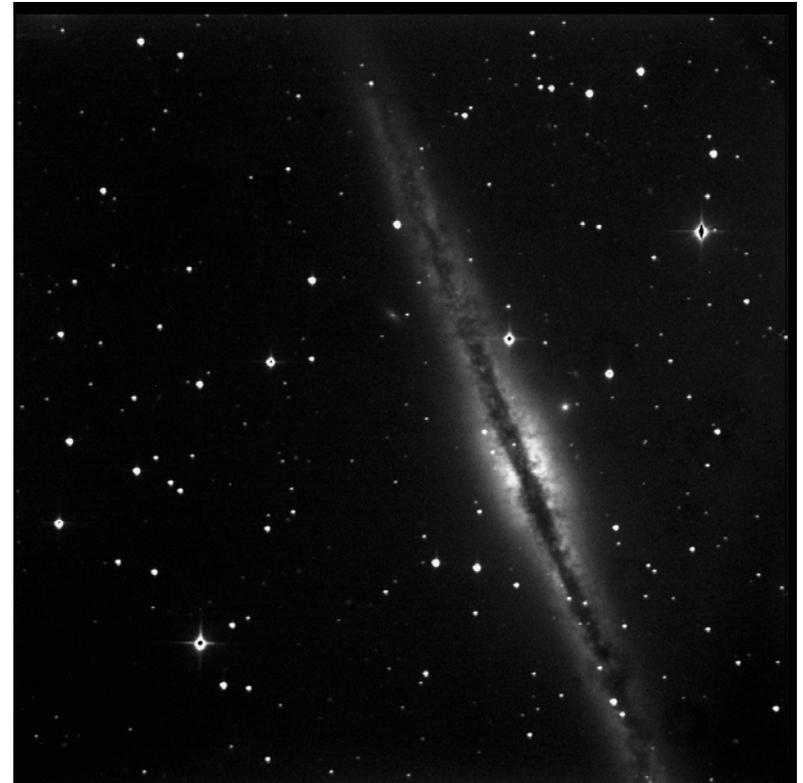
About the Okanagan Centre

The Okanagan Centre of the R.A.S.C. was formerly known as the Okanagan Astronomical Society (Kelowna and Vernon chapters), with members deciding to join with the R.A.S.C. in 1995. Members meet in Kelowna at the Okanagan University College North Campus (2nd Tuesday of each month), and in Vernon at the Interior Space and Science Centre (last Wednesday of each month). Centre meetings are monthly, excluding July and August. Members hold scheduled observing sessions on a monthly (or more frequent) basis, weather permitting. There are currently two main observing sites, Emeny Field and Goudie Rd, both of which are off of Hwy 33 east of Kelowna. Contact us for more information on how to get to these sites.

Okanagan Centre membership also includes:

- Access to rental telescopes
- Access to our extensive Astronomy related library

Skynews



November 2002

Number 239

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

This Month

November 16, 2002

Dr JJ Kavelaars

Dr JJ Kavelaars received his PhD from McMaster University in 1998 and is now a Research Officer at the Dominion Astrophysical Observatory. While training as an extra-galactic astronomer who was mostly concerned with the size and scale of the Universe, Dr Kavelaars became interested in the structure of the outer solar system.

Since 1997 Dr Kavelaars has discovered 20 odd satellites of the planets Saturn, Uranus and Neptune and 100s of minor planets (Kuiper Belt Objects) in the far reaches of the outer solar system.

JJ will describe the current models of the end stage of the formation of the outer solar system and detail Canadian plans to solve some of the remaining riddles. JJ presents his talk at an introductory level with lots of pictures to guide the way.



Address Change? Information Incorrect?

Telephone: (416) 924-7973 (toll-free at (888) 924-RASC in Canada)

Fax: (416) 924-2911

E-Mail: rasc@rasc.ca [Website: www.rasc.ca](http://www.rasc.ca)

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

Future Meetings

December

We have tentatively booked Dr. Dr. Richard K. Herd, Curator, National Collections, Geological Survey of Canada. His will talk about meteorites.

RASC Victoria Council

This Month

President: David Lee
764 Mapleton Place
Victoria, BC V8Z 6W2
479-5187
David_Lee@telus.net

Vice President: Chris Gainor
380-6358
cgainor@islandnet.com

Treasurer: Laura Roche
8581 Sentinel Place
Sidney, BC V8L 4Z8
656-2396
lroche@shaw.ca

Secretary: Robert Walker

rwalker@shaw.ca

Recorder: **Your name here**

Librarian & Telescopes:
Sid Sidhu
J.S._Sidhu@telus.net
Past President:
National Representative:
Sandy Barta
642-0205
sbarta@pinc.com

Honourary President:
George Ball

Members at Large:
Bill Almond, Don Dundee,
Dr. James Hesser, Betty
Hesser, John Howell, Ed
Maxfield,
Frank Ogonoski,

Skynews Editor: Sandy Barta
Website Editor: David Lee

New Members Liason:
Ron Bell (477-7063
bellstartelescopes@yahoo.ca
Sandy Barta

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.**

Nov
22

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

Watch for:

The new Council members in the next
issue.

Our Banquet Speaker at Work! Continued

The discovery of the moon was a collaboration of 11 astronomers, led by Holman; Kavelaars; Dr. Brett Gladman, University of British Columbia, Vancouver, Canada; and Dr. Jean-Marc Petit, Observatoire de Besançon, Besançon, France.

JPL is a division of the California Institute of Technology in Pasadena.

Chris Gainor

News from the Dark

A dark, clear night brought them out of the city ... hordes of them. Some crept in from the nearby Sooke metropolis, some came from the bright Victoria lights, one even came from outer Duncan. Brave souls.

Wandering Frank was the first to arrive—even before the hosts. Steve and Ann were next. These less than hardy souls huddled around the wood stove and feasted on chocolate. They DID need to fortify themselves for the upcoming winter skies. Joe (much too politely) arrived at the back door and begged permission to set up his scope. We forced him to sit and visit, but the dark sky called and he left our jolly company for the cold lawn. Clever Guy avoided the chocolate trap by sneaking onto the lawn and, under cover of darkness, set up his Dobby-baby.

After a bit, the indoor types waddled out into the cold, clear skies. The night feast quickly replaced the chocolate feast. The sky was a bit mushy and the lower objects twinkled and swam in the heavy atmosphere. Saturn was so bright that we had little Saturn after-images floating in our vision.

Guy got right down to observing. Joe struggled a bit with his truculent Schmidt. Sandy's little Dob was off and running with little effort.

The Andromeda Galaxy spilled out of Guy's eyepiece and onto the lawn. I'll bet if we had taken our time to identify the bright regions, we could have knocked off a few NGC objects in the Galaxy. But we were too ravenous to stop and pay attention.

We quickly turned our attention to M1. Sandy checked in Guy's Telrad book and, in seconds, found the Crab. Very faint, but definitely there! It's not surprising that she couldn't find this object from a city site. Joe and Guy played around with some filters to see if they could improve the plain-Jane visual view of the Crab. Don't forget to watch as Saturn encroaches on this object. The editerrorist expects images!!!!

A few more objects floated through the eyepieces, then everybody but Joe decided to warm up. Joe snapped a few pix and had some to show off by the time we returned.

Last stop - the Orion Nebula. ANYBODY who thinks aperture doesn't matter should look at this object in Guy's scope. Talk quickly turned to making even bigger scopes.

The satiated crowd dispersed into the night.

Do come back y'all, The Racoons

President's Message

This is my last message as president of the Victoria Centre. The last two years have been filled with the discovery and sharing of astronomy, the development of friendships, sprinkled liberally with photographic images of our universe. These are my memories but I'm sure many of you will have similar ones.

During my term I have been impressed and amazed by the team effort that has made such things as Astronomy Day and our local RASCals Star Party such a success. This is only possible because of the astronomical community on the Island, the Hertzburg Institute / NRC / DAO - Centre of the Universe group, Pearson College, Cowichan Valley Starfinders, the University of Victoria, Camosun College and Malaspina College who continue to support each other in all aspects of public outreach and sharing our love of astronomy. In spite of the involvement of so many organizations we still need help in keeping this spirit alive. Remember this next time we ask for volunteers.

As a tourist in this universe I've really enjoyed trying to image celestial events. The operative word is definitely trying! As Sandy will tell you I haven't always come back with the goods. There are no guarantees in the world of astrophotography but the chase is exciting and often the results are too. What's important is being out there and you don't have to photograph ... you can simply draw and diary with pencil and paper.

I will always remember the friendships that I have developed since my involvement with the Victoria Centre. I have many happy memories of sharing celestial views; an aurora before dawn, a planetary alignment on a hilltop, an almost missed comet, falling asleep (did I say that?) during a Leonid meteor shower, a partial solar eclipse complete with local media to name a few.

I wish the new executive the best in the coming years.

David Lee



The deadline for the next issue of *Skynews* is

November 25 2002

ATTENTION READERS!

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.

October 9, 2002 Minutes

Welcome: The president, David Lee, opened the meeting at 7:30 p.m. and noted that someone was needed to take the minutes. Colin Scarfe volunteered. The president then asked Sandy Barta to speak about the forthcoming elections.

Election: Sandy stated that we need a new vice-president, treasurer, recorder and several members at large. She encouraged people to nominate others or to offer to serve themselves, in her usual charming way, indicating the rewards (lots of work) that would accrue to those who were elected. She kept her club well hidden this evening, and said that nominations would be accepted right up until the annual meeting.

Astronomy: There was then a brief discussion of the recent Nova in Sagittarius.

Annual Dinner: Sandy also discussed the annual dinner, which will be at the Gorge Vale Golf Club on November 16. The doors will open at 6:30 p.m., dinner will be served at 7:30, and the after-dinner speaker will start around 8:30. The cost will be \$28. Those wishing to attend should let the treasurer, Laura Roche, know before November 9.

Victoria RASC email list: Joe Carr then spoke about the new email service he has prepared. It can be found at www.JoeTourist.net/RASCVictoria where two separate listings can be found. One is a one-way notification list, to which members can subscribe to be informed about when such things as Skynews are ready on the RASC website, and the second is a two-way chat line. He reassured potential subscribers that spam is not likely to be a problem for them.

Library/Telescopes/Schools: Sid Sidhu then took the floor, and announced that there were still some books available for borrowing, but in his usual kindly way admonished those who had had books out for a long time to bring them back or face the consequences. He noted that there were telescopes available for new members and then went on to discuss details of forthcoming school visits. He showed a poster sent in thanks by children at a school recently visited, and thanked all those who had helped with this valuable outreach program. David announced that there would be a council meeting next week.

Treasurer: At this point, the treasurer, Laura Roche arrived, late due to carrying out the important family duty of being a volleyball mom, and announced that our finances are in good shape, with just over \$3065 in the account, not including recent remittances from head office of our share of recently paid up dues from members. She also noted that stickers were ready for use, that there were still three calendars in hand, and that more could be ordered. She pointed out that subscriptions to Sky and Telescope could be obtained by certified paid-

Continued on page 4

ASP Contest Continued

the Classroom teachers' newsletter, and others. In furtherance of its mission in astronomy education, the ASP developed the NSF-funded Project ASTRO, a nationwide program that partners amateur and professional astronomers with teachers and classrooms. The Society also produces an extensive catalog of astronomy-related products for educators, amateur astronomers, and the public. Images courtesy of Geoff Marcy.

<http://www.astrosociety.org/auction/prphotos.html>

*Best Regards, Michael Bennett
Executive Director, Astronomical Society of the Pacific*

Our Banquet Speaker at Work!

Scientists boost tally of moons around Uranus

NASA/JPL NEWS RELEASE: Posted: October 25, 2002

A new moon of the planet Uranus has been discovered and confirmed by a team of astronomers including Dr. Christophe Dumas of NASA's Jet Propulsion Laboratory, Pasadena, Calif.

This most-recently discovered natural satellite, named S/2001 U 1, brings the total number of confirmed Uranian moons to 21. S/2001 U 1 and five others like it have very irregular, eccentric orbits that do not share the same orbital plane as the larger moons of Uranus. Ranging in size from 10 to 20 kilometers (about 6 to 12 miles), these moons are thought to be remnants of ancient collisions that occurred at the early stage of planetary formation.

"The irregular satellites like S/2001 U 1 are very difficult to find because they are faint and tend to be very distant from the planet," Dumas said. "It is hard to distinguish them from the background stars, and this requires special observing techniques. Because these objects formed far from the Sun, they are probably similar in composition to the most primitive objects of the solar system."

Identifying S/2001 U1 as a moon and mapping its orbit required intense effort and observation from several telescopes located in North and South America. It was first spotted by Drs. Matthew Holman of the Harvard-Smithsonian Center for Astrophysics, Cambridge, Mass., and J.J. Kavelaars, now at Dominion Astrophysical Observatory, Victoria, British Columbia, Canada, in August 2001 in images obtained at Cerro Tololo Observatory in Chile. Dumas and Dr. Phil Nicholson from Cornell University, Ithaca, N.Y., re-observed it from Palomar Observatory, near San Diego, Calif., a month later. The object was then followed from Chile again, using the 8-meter (26-foot) European Southern Observatory telescopes.

Continued on page 13

ASP Contest Continued

embarking on an epic voyage of discovery. You feel a kinship with Galileo, Dr. Marcy, of the University of California, Berkeley, and his research team are the world's premier planet hunters, having uncovered more than seventy of the approximately 100 extrasolar planets found to date. The team monitors the spectra of over 1,200 stars and recently found a planetary system that bears some resemblance to our own, with a planet in an orbit similar to Jupiter's orbiting a Sun-like star.

"I'm looking forward to observing with the auction winner as we continue our search for extra-solar planets," said Dr. Marcy. "Every time you have the privilege to point one of the giant Keck telescopes skyward it feels like you're Tycho Brahe, Kepler, Newton, Hubble and so many others driven to explore the boundaries of the universe. And, on a practical level, the auction is a wonderful way to contribute to the ASP's programs that build science literacy, inspire kids, and nurture the next generation of scientists and astronomers."

The auction is a fundraising event for the ASP's nationwide education programs. These include The Universe in the Classroom, a free, Web-based newsletter for teachers, the Society's Web site with extensive resources for educators, Project ASTRO astronomer/teacher partnerships in cities around the country, and the Society's public information program, which responds to thousands of information requests every year from students of all ages.

"The ASP wishes to express its gratitude to Dr. Marcy and to the staff of the W.M. Keck Observatory for making this unique fundraising event possible. We simply can't thank them enough," said Michael Bennett, ASP Executive Director.

"Furthermore, the ASP is pleased to donate five percent of the winning bid to the amateur astronomy club of the winner's choice," added Bennett. "We want to demonstrate our support for the amateur astronomy community and their important outreach and educational efforts." Founded in 1889, the non-profit Astronomical Society of the Pacific (ASP) has grown far beyond the regional institution implied in its name to become the world's largest general astronomy organization, with members in all 50 states and over 70 countries. Bringing together professional astronomers, amateur astronomers and science educators over the last 114 years, the ASP has become an acknowledged leader in astronomy education at all levels and a respected source of astronomical information for the general public. The ASP produces several important general, technical, and educational publications, including the bimonthly Mercury magazine for all ASP members, the technical journal Publications of the Astronomical Society of the Pacific, the ASP Conference Series, The Universe in

Continued on page 12

October Minutes Continued

up members for as little as \$37.95 (U.S.), a substantial reduction from the regular subscription price.

November Speaker: Chris Gainor, the vice-president, then took the floor and noted that a recent issue of the Smithsonian magazine included a picture of Vancouver Island stargazers in action. He announced that the banquet speaker will be J.J. Kavelaars, who with his colleagues has in recent years discovered many small satellites of the outer giant planets.

This Evening's Speaker: Chris then introduced the evening's main speaker, Ernie Pfannenschmidt, a former long-time DAO employee, who spent many years in site testing, and developed techniques for that purpose that were among the best in the world. Ernie spoke at some length about his experiences, concentrating on the major contract that he, Elmar Brosterhus and Frank Younger had held to seek suitable telescope sites in Saudi Arabia, mainly in the Azir Mountains along that country's Red Sea coast. His talk was liberally illustrated with excellent slides and equally liberally sprinkled with characteristic Pfannenschmidt wit, much to the delight of the audience. The testing team had done a great deal of hard work, but had enjoyed many fascinating experiences along the way. They had found sites as good as any in Europe, but not quite as good as the best in Chile or Hawaii. It is regrettable that in the end no telescopes have been built and used on those sites.

After Ernie had handled several questions with undiminished energy and wit, the meeting adjourned for coffee at about 9:40 p.m.

Colin Scarfe for the recorder.

Comets

Will you see them?

Linear and Neat have found two more comets (P/2002 T6 and C/2002 T7). Of interest is the second one which will reach perihelion around April 23, 2004 and could come within naked eye limit. The southern hemisphere will likely get the best view but it should still be a good one. T7's Closest approach to the sun is estimated at .61 AU.

<http://cfa-www.harvard.edu/mpec/K02/K02U43.html>

Vance Petriew, Regina Centre

The Kid's Place



Black Holes: Feeling the Ripples

Astronomers have finally confirmed something they had long suspected: there is a super-massive black hole in the center of our Milky Way galaxy. The evidence? A star near the galactic center orbits something unseen at a top speed of 5000 km/s. Only a black hole 2 million times more massive than our Sun could cause the star to move so fast. (See the Oct. 17, 2002, issue of Nature for more information.)

Still, a key mystery remains. Where did the black hole come from? For that matter, where do any super-massive black holes come from? There is mounting evidence that such "monsters" lurk in the middles of most galaxies, yet their origin is unknown. Do they start out as tiny black holes that grow slowly, attracting material piecemeal from passing stars and clouds? Or are they born big, their mass increasing in large gulps when their host galaxy collides with another galaxy?

A new space telescope called LISA (short for "Laser Interferometer Space Antenna") aims to find out.

Designed by scientists at NASA and the European Space Agency, LISA doesn't detect ordinary forms of electromagnetic radiation such as light or radio waves. It senses ripples in the fabric of space-time itself--gravitational waves.

Albert Einstein first realized in 1916 that gravitational waves might exist. His equations of general relativity, which describe gravity, had solutions that reminded him of ripples on a pond. These "gravity ripples" travel at the speed of light and, ironically, do not interact much with matter. As a result, they can cross the cosmos quickly and intact.

Gravitational waves are created any time big masses spin, collide or explode. Matter crashing into a black hole, for example, would do it. So would two black holes colliding. If astronomers could monitor gravitational waves coming from a super-massive black hole, they could learn how it grows and evolves.

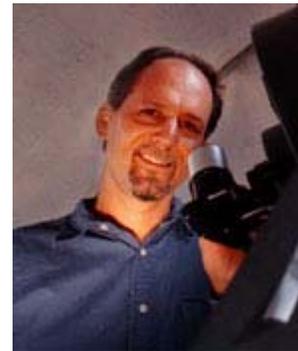
Unfortunately, these waves are hard to measure. If a gravitational wave traveled from the black hole at the center of our galaxy and passed through your body, it

Continued on page 6

The Auction of Your Dreams!



The Astronomical Society of the Pacific (ASP) announces a unique fundraising auction—an observing night at the W.M. Keck Observatory in Hawai'i with internationally renowned astronomer Dr. Geoff Marcy.

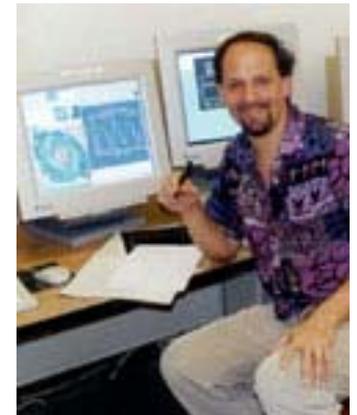


The ASP has pledged to donate 5% of the auction proceeds to the amateur astronomy club of the winner's choice.

The highlight of the five day/four night trip for two is a once-in-a-lifetime opportunity to spend a night in the Keck I control room with Dr. Marcy and his team during one of his scheduled observing runs. Dr. Marcy will host dinner that evening, and the winner will be able to sleep overnight at the VSQ (Visiting Scientists' Quarters), which is open only to astronomers. The auction package includes round trip airfare for two, resort accommodations, car rental, meals, and a behind-the-scenes VIP

tour of the W.M. Keck Observatory conducted by a Keck staff member.

Potential bidders may visit the ASP Web site at <http://www.astrosociety.org/> immediately to get full information and to be notified exactly when the auction will begin. The auction will be held in January 2003 on a popular auction Web site. The winner can schedule the trip to coincide with any of Dr. Marcy's scheduled observing nights in 2003. The Keck I and II twin 10-meter telescopes are the world's largest optical telescopes, located at the summit of Mauna Kea on the Big Island of Hawai'i, at an altitude of 13,796 feet. The Observatory headquarters, Visiting Scientists' Quarters, and control rooms are located in Waimea, at about 2,500 feet.



Continued on page 11

For Sale

I have a Meade ETX 90mm with the regular and computer controller, two lenses and the matching case for sale. The asking price is \$950.00

Please don't hesitate to ask me any questions.

Bobby St.Cyr

Email: st.cyr@telus.net

Phone: 250-708-0198

For Sale

George Ball wants to lessen the weight on his shelves by offering his Sky & Tel magazines to the best bidder.

The Sky and Telescope back issues are in mint condition; complete from 1955 to 2001. A great chance to fill in your empty library shelves. A reasonable offer will not be refused.

Phone: 250-384-1770

Wanted

The Victoria Centre library needs the 2001-May issue of Sky & Tel and the 2001-March issue of Astronomy. Let me know if you wish to donate these magazines to complete these sets.

Thanks, Sid

New National Web site Feature

We now have a working web search engine for the RASC national web site. There are actually TWO search engines, one for the PUBLIC pages ONLY and one for the entire web site, including minutes, reports, etc.

To access the entire site search engine, you must first enter the private members only section of the site. Clicking on the SEARCH button or link will take you to the correct place. Please note that this is a *free* search/index engine and only does .htm and .txt files but NOT .pdf files. Where possible I am putting online both .htm and .pdf versions of files (like minutes) until such time as I can find a better search engine. If *you* know of a better one, please let me know.

The index(es) is(are) updated daily.

Kevin Kell, RASC National Webmaster

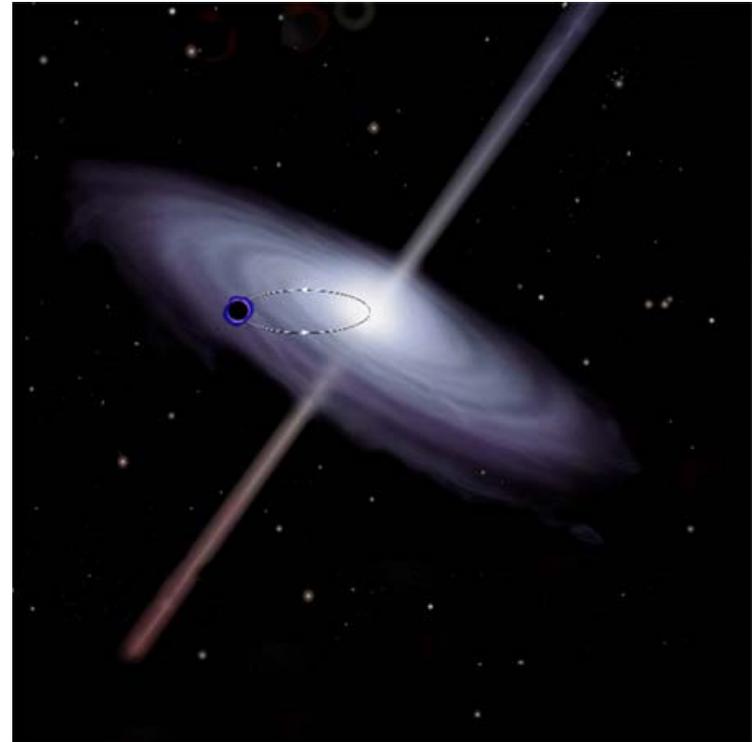
webmaster@rasc.ca

The Kid's Place Continued

would stretch and compress you by an amount far less than the width of an atom. LISA, however, will be able to detect such tiny compressions.

LISA consists of three spacecraft flying in formation-a giant triangle 5 million km on each side. One of the spacecraft will shoot laser beams at the other two. Those two will echo the laser signal right back. By comparing the echoes to the original signal, onboard instruments can sense changes in the size of the triangle as small as 0.0000000002 meters (20 picometers).

With such sensitivity, astronomers might detect gravitational waves from all kinds of cosmic sources. The first, however, will probably be the weightiest: super-massive black holes. Will "feeling" the ripples from such objects finally solve their mystery, or lead to more questions? Only time will tell!. Scientists hope to launch the LISA mission in 2011.



Artist's rendering of a black hole

The Cover

Adventures on the 1.8 m Plaskett telescope

Photo caption: NGC 891, an edge-on spiral galaxy in Draco. 60-second exposure with the red filter. Photographed by Chris Gainor on the 1.8 m Plaskett telescope, in the early hours of Sept. 12, 2002.

This issue of SkyNews contains something that even a few weeks ago I believed was still years away—an astrophoto I took of a galaxy.

What is even more incredible to me is that this photo was taken through the 1.8 metre Plaskett telescope at the Dominion Astrophysical Observatory.

Last year, I bought an ETX and returned to the ranks of telescope observers after too many years away. I thought that maybe one day I'll start fiddling with astrophotography, but I've been content to reacquaint myself with the observing ropes and to join the group of RASCals who show off the sky to the public on Saturday nights at the DAO.

Unbeknownst to me, the Centre of the Universe, the DAO's excellent visitor's centre, obtained some observing time on the Plaskett telescope and decided to let some of us RASCals try our hands at big time astronomy.

When Scott Mair of the centre invited me to join an observing session on the Plaskett, I was dubious. What could a guy like me who noodles around with a 'go to' telescope do on the biggest telescope in western Canada?

Scott finally brought me to my senses, and so on a spectacularly clear September evening, I found myself taking my seat at the console of the Plaskett telescope. Of course I had company in the form of RASCals Chuck Filtness, Joel Orton and Mike Byrne, and most importantly, the Centre's Julie Bolduc-Duval.

Julie showed us how to run the telescope, from moving and opening the big dome to operating the CCD equipment. I had long assumed that the telescope was used almost exclusively for spectroscopy, but Julie told us that nearly half its work involves CCD photography. A prominent example of that use is David Balam's search for asteroids that pose a danger to the Earth.

Armed with Julie's advice, we each took photos in blue, green and red filters of our selected objects: Chuck photographed two spirals, NGCs 5985 and 6643, Joel shot the Ring Nebula and Neptune, Mike captured Stephan's Quintet and M33, and I chose NGC 6946, a spiral galaxy in Draco, and NGC 891, an edge-on spiral in Andromeda.

Taking our sets of exposures and the inevitable computer crashes took time, and before we knew it, the time had arrived to end our observing for the night. For all of us, it was an observing session we'll all long remember. Chuck, in particular,

Continued on page 8

The Cover Continued

had to pinch himself regularly to prove to his own satisfaction that he wasn't dreaming.

Other RASCals have also had their turn at the controls of the Plaskett telescope, and hopefully more will be able to join us in the future.

Chris Gainor

Joe's Pictures



2002.11.01 11:48pm
M42—Great Orion Nebula
Location: Sandy Barta's place, Astronomy Cafe
Camera: 59 sec, f/3.2, 31mm, ISO 200, Noise Reduction ON
Scope: LX-90, f/10, a-focal, 26mm eyepiece, Lumicon Deep Sky filters
Image: retouched, cropped image of original 2272x1704 jpg

2002.11.01 11:50pm
M42—Great Orion Nebula
Location: Sandy Barta's place, Astronomy Cafe
Camera: 58 sec, f/3.2, 14mm, ISO 400, Noise Reduction ON
Scope: LX-90, f/10, a-focal, 26mm eyepiece, Lumicon Deep Sky filter
Image: retouched, cropped image of original 2272x1704 jpg

<http://joecarr.ca/astro/astrophoto.htm>