



NOVA

NEWSLETTER OF THE VANCOUVER CENTRE RASC

VOLUME 2006 ISSUE 2

MARCH/APRIL 2006

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Looking Ahead

Remember, you are always welcome to attend meetings of Council, held on the first Tuesday of every month at 7:30pm in the G.M.S.O.

Mar. 14: Dr. Paul Hickson of UBC's Astronomy Dept.: Liquid Mirror Telescopes on the Moon.

Apr. 11: Dr. Chris Pritchett of UVic's Astronomy Dept.: How Supernovae Measure the Universe's Expansion.

May. 9: Brett Gladman of UBC's Astronomy Dept. discusses his team's recent discovery of "Buffy," an unusual Kuiper Belt Object.

Next Issue Deadline

Material for the May Nova should be submitted by Monday, May 1, 2006. Please send submissions to:

Gordon Farrell
(gfarrell@shaw.ca)

The Chris Graham Robotic Scope

by Craig Breckenridge

We successfully had first light for the CGRT imaging system on Feb 28/06. This first object imaged was appropriately M1 and was captured by Mike Rice at New Mexico Skies. Mike had used the remote interface at NMS to connect to the telescope to ensure it was all running properly.

On March 3rd Chris was able to successfully connect to the telescope from his home here in the lower mainland and we followed that up with a meeting on March 4th at the GMSO. Attempts to connect to the scope from the Control room were not successful due to networking issues on this end. We quickly moved the meeting to Brian Morse's house and within minutes of going on line we were successfully operating the scope from Vancouver. We had a short imaging session with us choosing several objects in and around Orion. Initial images will be shown at the March members meeting.

We are quite pleased with the pointing of the telescope. Mike Rice has performed an excellent polar alignment and mapped a T-Point model of over 80 stars.

Every object we went to was directly in the center of the image even though some of them were not even visible until after processing. It was a relief to see that the scope's mount has already been configured for meridian avoidance as any time we issued a goto command that required crossing it the scope would take the long way around. Slewing is quite quick but we detected no damping problems or tracking issues in our first sessions. We will continue to check things out over the next few weeks.

The issue with the network at the GMSO should be resolved fairly quickly and we should be able to control the scope from the Control Room in very short order. We are looking at methods to control access so right now there are only a few of us who can operate the scope. Time is being booked in advance using the CGRT Calendar until a proper schedule is set up. We are also looking at several programs that we could use to script the entire evening's imaging session. If we implement this it would greatly reduce the amount

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In Memoriam: Marc Verschueren

[Editor's Note: RASC Vancouver Centre Treasurer and long-time Nova contributor Marc Verschueren passed away last

month of a heart attack. Since Marc was probably the most reliable contributor to Nova during both my and the previous editor's

tenure, I am leaving this page, the page where Marc's articles usually appeared, blank in his honour. We'll miss you, Marc.]



President's Message

In January, Anne and I fled the rain soaked suburbs of Vancouver for the promise of warm days and clear nights in Costa Rica. My telescope also made the trip and received nary a glance from any customs official. The east coast of the country provided a challenge, as we experienced pounding rainstorms and flooding over several days. The central valley and west coast were more accommodating, but clouds dogged the viewing, often proving more than a match for Orion and his companion Sirius. As it turned out, the nights with the best skies were the ones when I did not set up my 'telescopio.' Still, the people, the food and the countryside beckon us for a return visit.

This month will see some of our members anxiously awaiting the wondrous sight of a solar eclipse from rooftop vantage points in Turkey, ships on the Mediterranean and the sun-baked desert in Libya. There should be more than one great PowerPoint presentation for the rest of us to enjoy later this year.

Part 1 of the Messier Marathon will take place at Boundary Bay and Campbell Valley the night of March 25th. We are looking for recommendations for other sites to accommodate members on the North Shore and in the Pitt Meadows area. This is a good event for members wanting to familiarize themselves with the various tel-

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About RASC

The Vancouver Centre, RASC meets at 7:30 PM in the auditorium of the H.R. MacMillan Space Centre at 1100 Chestnut St., Vancouver, on the second Tuesday of every month. Guests are always welcome. In addition, the Centre has an observing site where star parties are regularly scheduled.

Membership is currently \$58.00 per year (\$34.25 for persons under 21 years of age) and can be obtained by writing to the Treasurer at the address below. Annual membership includes the invaluable Observer's Handbook, six issues of the RASC Journal, and, of course, access to all of the club events and projects.

For more information regarding the Centre and its activities, please contact our P.R. Director.

NOVA, the newsletter of the Vancouver Centre, RASC, is published on odd numbered months. Opinions expressed herein are not necessarily those of the Vancouver Centre.

Material on any aspect of astronomy should be e-mailed to the editor or mailed to the address on page 5.

Advertising

Nova encourages free use of its classified ads for members with items for sale or swap. Notify the editor if you wish your ad to run in more than one issue.

Commerical Rates

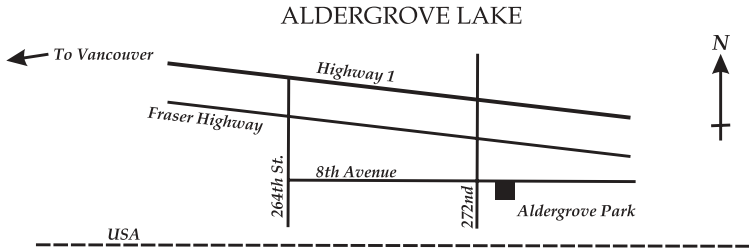
1/4 Page: \$15.00 per issue

1/2 Page: \$25.00 per issue

Full Page: \$40.00 per issue

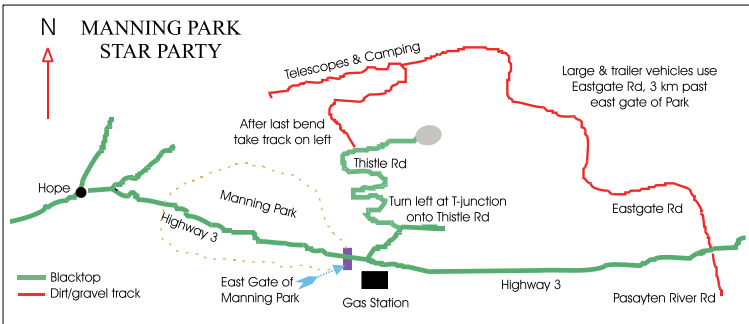
Rates are for camera-ready, or electronic files. Payment, by cheque, must accompany ad material. Make cheque payable to: RASC Vancouver Centre.

Observing Sites

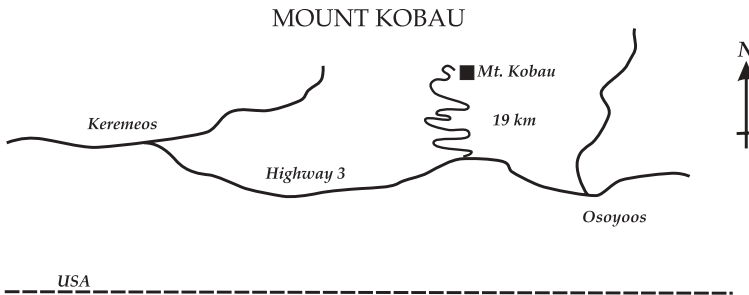


Dale McNabb Observatory in Aldergrove Lake Park (RASC Vancouver Centre's regular viewing site)

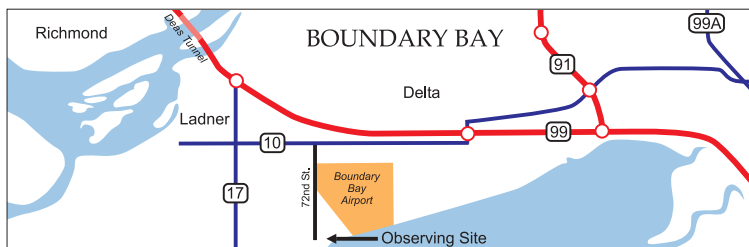
Contact Mike Penndelton (604-888-1505) or Howard Morgan (604-856-9186)



Site of the annual star party organized by the RASC Vancouver Centre



Site of the annual Mt. Kobau Star Party organized by the Mount Kobau Astronomical Society



Site of the regular Saturday night star party. On the dike at the foot of 72nd St.

FOR SALE

RASC MERCHANDISE

Available for purchase after meetings:

Calendars	\$14.00
Golf Shirts	\$30.00
Sweat Shirts	\$30.00
Centenary Mugs	\$ 7.00
Beginners' Guides	\$15.00
Observers' Guides	\$20.00
Cloth Crests	\$11.00
Lapel Pins	\$ 6.00
L.E.D. Flashlights	\$22.00

ASTROCOMPUTING

SpaceBase™ (604-473-9358,59). Affiliated since 1992 with RASC Vancouver, our link to RASC Net, RASC Members only chat area. Future data distribution hub for CARO Project. Features include latest HST images, current world space news and astronomy programs.

LIBRARY

The centre has a large library of books, magazines and old Nova's for your enjoyment at the GSO. Please take advantage of this club service and visit often to check out the new purchases. Suggestions for future library acquisitions are appreciated.

RASC-VC on the Internet

<http://www.pcis.com/rascvan/> or
<http://www.rasc.ca/vancouver>

H.R. MACMILLAN SPACE CENTRE

The Pacific Space Centre Society is a non-profit organization which operates the H.R. MacMillan Space Centre and Gordon M. Southam Observatory. Annual Membership (\$30 Individual, \$80 Family) includes a newsletter, Discounts on Space Camps, special programs and lectures, Vancouver Museum Discounts, and free admission to the Space Centre. Admission to the Space Centre includes: Astronomy shows, Motion Simulator rides, multimedia shows in GroundStation Canada, and access to the Cosmic Courtyard Exhibit Gallery. For Membership information, call Mahi Jordao at 604-738-7827, local 237 for information. You can also reach them on the Internet at <http://www.hrmacmillanspacecentre.com/>

MEMBERSHIP HAS ITS PRIVILEGES!

New members, did you know? The Vancouver Centre has 8 telescopes available for loan free of charge! We have telescopes ranging from 60mm to 10" diameter. For more information see Wayne Lyons, Director of Telescopes in the meeting room of the GSO *after* the members meeting. All telescopes are to be picked up and returned at the GSO. The loaner period is for one month, to be returned after the next meeting. Telescopes are not allowed to circulate outside of these meetings. You can now reserve 2 different telescopes per year and use what is left at the end of the meeting anytime. Wayne can be reached at 604-467-2956.

Your greatest opportunity as a member of the R.A.S.C. is to take advantage of the company of other enthusiasts to increase your knowledge, enjoyment and skill in astronomy.

The best thing you can do to gain the most from your membership is to get active! Take in the club meetings; engage other members with questions; come out to observing sessions (also known as "star parties"), and, by all means, volunteer to take part in our many public events.

Observing takes place at Boundary Bay on the dike at the south end of 72nd St. in Delta (see map on p. 4). We are there most clear Thursday/Friday nights. Contact Jason Rickerby at 604-502-8158.

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1100 Chestnut Street
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604-738-2855

Upcoming Events

March

25 – Messier Marathon I

April

28-30 – Merritt Star Quest

29 – Messier Marathon II

May

1-7 – International Astronomy Week

6 – Astronomy Day

18-22 – GA 2006 in Ottawa

26 – Sidewalk Astronomy at Vanier Park (rain day May 27)

June

29 – CARO tour

August

11-12 – Perseid meteor shower

19-27 – Mt. Kobau Star Party

September

22-24 – Merritt Star Quest

October

13 – Sidewalk Astronomy at Vanier Park (rain day Oct. 14)

November

14 – 75th Anniversary of Vancouver Centre

December

12 – AGM

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scope options and for those astronomers among us who need a stimulating break from their armchairs.

March is also the first anniversary of the initial conversation between our centre and Chris Graham to explore the possibility of a robotic scope joint venture. As you will discover elsewhere in this NOVA issue, the Chris Graham Robotic Telescope saw first light on February 28th and is now being given a thorough testing. Our operations centre has been established and we expect to

commence a number of exciting astronomical projects within the next two months. Volunteers are still welcome.

We have scheduled a New Members' Night on March 11th at the GMSO. The objective is to provide an introduction to our centre, to basic astronomy and to help better understand how we can attract new members and keep them interested. We intend to do more of these.

While the promise of a new year of viewing activities fills us with excitement and anticipation, I ask you all to take a moment to

remember one of our members who is no longer here to share our special joys. Marc Verschueren, Treasurer, contributor to Nova, keen observer, colleague and friend, died last month. He had just begun treatment for lung cancer when a fatal heart attack interrupted that program. Marc's niece, who had been helping him maintain his routine and appointments, commented on what a cheerful attitude he displayed in the face of such discouraging prospects. We will miss you Marc. We wish you "Clear Skies".

– Ron Jerome ★

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of time required to perform an evening's imaging run. Further updates on this aspect will be forthcoming.

Since things are starting to get underway, we will soon be training scope operators (most likely

starting in April). We will also need to start choosing our initial programs and data collections. A couple of our committee members are designing a web interface so that members can have access to the data collected. We will be storing data at the CADC in Victoria

and will be working with them to develop the web interface.

Now that things are underway, if you would like to be involved with the project please contact Jenn Loong or one of the Executive in order to get on board. ★

From the Library

by William Fearon

In this report I will review a new book in the library: *Atlas of the Night Sky* by Storm Dunlop and illustrated by Wil Tirion and Antonín Růkl.

The book opens with a short introduction to the night sky. There is basic information on sky directions, relative positions, star distances, magnitudes of stars and other objects and then a short description of objects in the night sky such as planets, double stars and clusters, for example.

The next section provides 20 colour charts that cover the entire night sky from pole to pole. These charts are quite detailed and almost look like a smaller version of Wil Tirion's *Sky Atlas 2000* (Colour edition). They should prove useful for someone looking to move beyond binoculars and naked-eye observing.

The next section is a constellation-by-constellation listing that shows each con-

stellation on its own chart as well as a description of objects in the constellation worth looking at. For example, the entry for Orion mentions Betelgeuse (a red giant variable), Iota Orionis (a double star), M42 (the Orion Nebula) as well as the Orionid Meteor shower and other items of note.

Next comes a guide to observing the Moon. This section provides descriptions of the various types of Lunar terrain and features. Also described is Libration—what it is and how to use it to see limb features. Then come some incredible charts and maps of the Moon that will provide a lot of objects to whet the appetite of any who wish to observe the Moon.

The next section covers observing the other planets in the Solar System. The only planet not covered is Pluto. This is due to the difficulty in seeing Pluto. Pluto is a magnitude 13 to 14 object, and thus hard to find with small telescopes. A series of

finder charts for the Outer Planets for the years 2006 to 2009 are included as well as information on what the observer is likely to see when looking at the planets. The Inner Planets are, however, simply represented by a pair of charts showing the Eastern and Western Elongations for both. Also included is a brief list of Lunar and Solar Eclipses until 2010 and where to see them. Also in this section is a list of Meteor Showers that can be seen when the weather and the Moon cooperate.

The final section is a pair of star maps each showing a hemisphere. One shows the Northern Hemisphere night sky and the other shows the Southern Hemisphere night sky.

Overall, I would rate this book as 4 out of 5 stars for use by amateur astronomers looking to move past beginner status (I have one in my own personal library). ★

First Life in Space

by Blair Yochim

Do you know what the first life-form into space was?

I grew up in awe of witnessing the steps in space travel and exploration and continue to be an active follower. In most/all of the historical reports on space travel, statistics usually indicate either the Russian Sputnik 2 with Laika the dog, or the US monkeys/chimpanzees (Albert, Gordo, Able, Baker, Sam, Ham, etc.) as being the first life forms either into space or into orbit. I in NO WAY want to diminish these flight experiments and animal sacrifices! However, experiments were conducted which were actually first at sending a life-form into space well before all these dog/primate flights. Surprisingly, this information has not been widely publicized and is actually difficult to determine. It seems to me that the first known life-form into space is an important first, but is not treated as so! So out of interest I decided to try to research this information and hope the resulting information is ultimately widely publicized.

What is considered the boundary between the Earth's atmosphere and space? The US has considered the boundary to space to be 50 miles (264,000 feet = ~80 kilometres) above sea level. However, internationally it is considered that 100 kilometres (~62 miles = ~330,000 feet) above sea level is the boundary to space (the Karman Line).

One cannot determine

whether any life-forms were inadvertently blown into space by an asteroid/comet hitting the Earth's surface, such as supposedly occurred 65 million years ago; although it seems such would be feasible, perhaps only by frying the life-form in the process! Also, one cannot determine whether any micro-organisms or insects or mouse in search of food managed to make it on-board some man-made technology which first entered space. So we must focus upon known life-forms which were sent to space by mankind.

Airplanes haven't reached such altitudes (in the 1960's, the X-15 was a manned rocket). Either a missile/rocket, a high altitude balloon, or potentially a large cannon would be the first human-designed technologies to reach space of either 50 miles or 100 kilometres height.

Historically it is known that high altitude balloons had only gone to a maximum height of about 142,000 feet by 1965 (less than halfway to space), following a German sounding balloon which reached 117,750 feet in 1930.

During World War II, Germany was working on the first of many "super-gun" cannons (with 450-foot long barrels) near Calais France to bombard London England at 85 miles distance. Such a cannon could potentially have sent its shell into space, however the cannon was bombed before its completion. It seems Germany ended such plans with massive

cannons and instead focused on rockets and other technologies.

Rockets never made it anywhere near the height of space until the 1940's, even with Goddard's research in the US. In 1942, Germany, with the assistance of Wernher Von Braun, started test firings of its A-4 rocket, otherwise known by the Allies as the infamous V-2 rocket. The third A-4 test launch on October 3, 1942 reached about 50 miles altitude, the first known man-made technology to reach/approach space. The Germans worked on generations of rockets, however—thankfully—many never became reality before the war's end. The A-9/10 multi-stage rocket would have been capable of crossing the Atlantic Ocean against the US mainland, but this rocket never made it into existence before the end of WWII. The A-12 rocket was to become a satellite! Since Germany's interest was in using rockets as a weapon (perhaps not Von Braun's ultimate goal), there seems to be no recorded history of Germany using rockets to experiment with life-forms into space.

After WWII, the US absorbed the A-4 technology with many of Von Braun's team (Operation Paperclip). Russia at the time also absorbed A-4 technology and technical personnel. Both countries continued to develop rockets based upon the A-4 technology, leading to the Cold War and the Space Race to the Moon.

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Star Charts and Planetary Programmes

by Wayne Lyons

Probably the best source of any program on astronomy is the Internet. Due to high costs, different versions and frequent upgrades most retail stores shy away from having an inventory of programs. Nearby sources might be Chapters, London Drugs or your local book store, although you may have to order the program in.

Many of the programs will have different versions to suit your budget and viewing goals. The more information required, the more computer power and are more expensive.

Surfing the Internet may be a

source for Sky Chart programs and will give you many hours of time to find a program to suit your needs. It would be very helpful to talk to other members of the Society to find out the pros and cons of each program. The Professional Editions contain many more useful features if you are going to be using computer-controlled telescopes.

The programs that I have used are Starry Night Enthusiast and Starry Night Pro (V 3.0) and I have found them to be of great help learning the night sky, especially when bad weather prevents observing outdoors.

A few places to start are:

Free Chart Programs:

- Sky & Telescope – Resources / Astro Software: <http://skyandtelescope.com/resources/software/>
- Skymaps.com: <http://www.skymaps.com/>
- Sky View Cafe: <http://www.skyviewcafe.com/>

Computer-based Planetary Programs: from RASC Observers Handbook 2006; pp11

- Desktop Universe: no longer produced

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In 1951, the Russians initiated animal research (dogs, rabbits, rats, hamsters, mice) using their next generation rockets, the V-2A and V-5V to heights of up to 450 km. I could not find record of Russian space research with animals or plants conducted before 1951.

Starting in 1946 and continuing until 1952 at the White Sands Proving Ground in New Mexico, the V-2 rocket technology obtained from Germany were tested by the US with many experiments (about 60 launches). In the V-2 launch #7 on July 9, 1946 at 12:30pm, the V-2 reached a height of 83.5 miles (134 km) with the first recorded life-form into space (higher than both 50 miles and 100 km so thankfully no debate is needed). The life-form was a “specially developed strains of seeds”

in an experiment conducted by both the Naval Research Lab (NRL) and Harvard University. Apparently these seed samples were not recovered for analysis.

So, it appears seeds were the first known life-form sent to space on a V-2 rocket in 1946, although history books do not explicitly state this fact!

References:

“Soviets in Space”, Peter Smolders, Taplinger Publishing Co, 1971

“Above and Beyond – The Encyclopedia of Aviation and Space Sciences”, New Horizons Publishers, Volumes 1-13, 1968.

“German Secret Weapons: Blueprint for Mars”, Brian Ford, Ballantine Books, 1969.

“Animals and Man in Space – A Chronology and Annotated

Bibliography Through the Year 1960”, Dietrich E. Beischer and Alfred R. Fregly, Office of Naval Research / Department of the Navy, 1962?

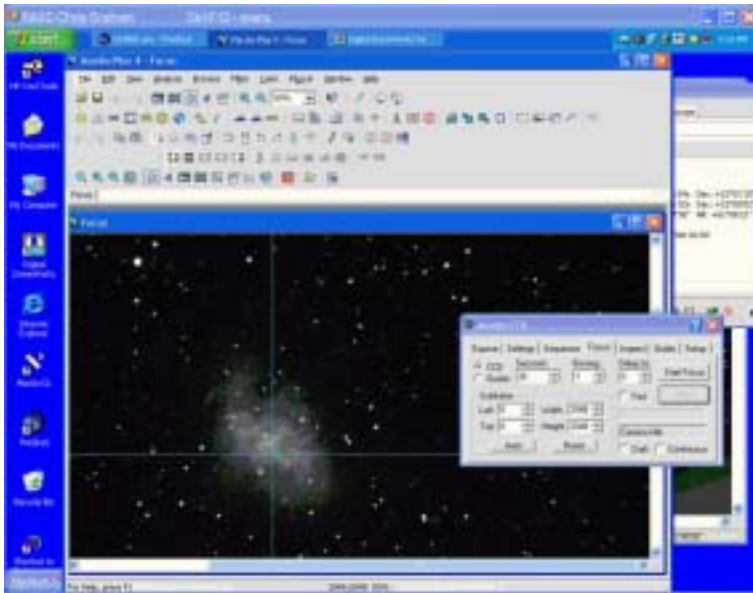
“V-2 Firing Tables”, <http://www.wsmr.army.mil/pao/FactSheets/V2/v-2tab.htm>

“White Sands Proving Ground A4/V-2 Photos and Rocket Summary”, <http://www.postwarv2.com/usa/ws/ws.html>

“US Biomedical Space Research Timeline”, <http://neurolab.jsc.nasa.gov/ustime.htm> (don’t believe the balloon height claim of 170km in 1946/47, I’m trying to have them correct this)

“History of Research in Space Biology and Biodynamics”, <http://www.hq.nasa.gov/office/pao/History/afspbio/contents.htm> *

CGRT Gallery

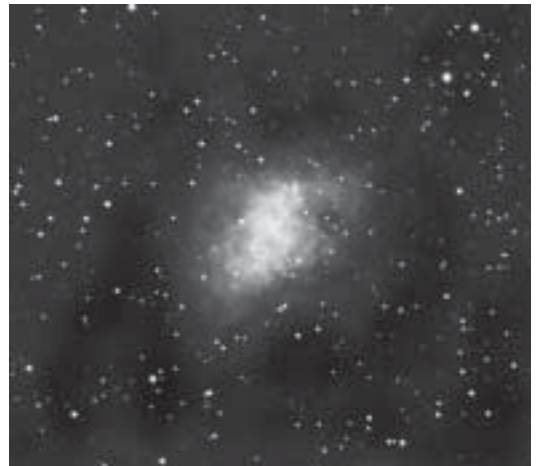


First Light

The view of M1 via Radmin (remote connection to the computer controlling the scope at New Mexico Skies)

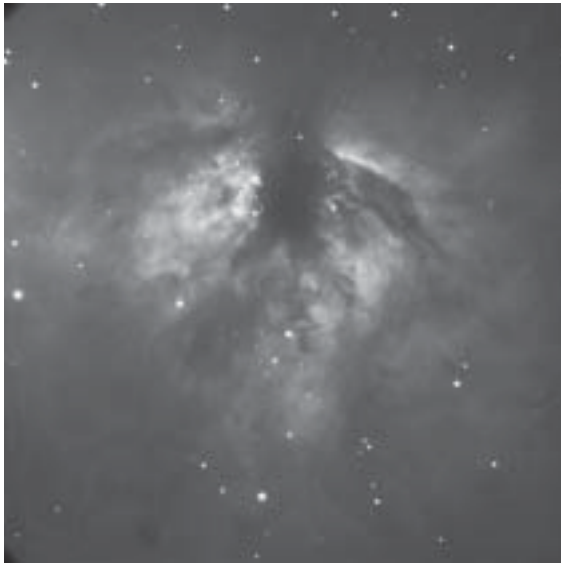
Crab Nebula (M1)

30-second exposure processed in Photoshop



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- ECU (Earth Centered Universe): <http://www.nova-astro.com/>
 - Mega Star: <http://home.flash.net/~megastar/>
 - Redshift 5: http://www.redshift.de/gb/_main/index.htm
 - Starry Night: <http://www.starrynight.com/>
 - The Sky: <http://www.bisque.com/>
 - Voyager III: <http://www.net-eng.it/eng/products/voyager3/fvoyager.html>
- Review of Planetarium programs:
- LUXORION: <http://www.astrosurf.org/lombry/software.htm>
 - Sky & Telescope - Archives: <http://skyandtelescope.com/> - the articles may be available in our RASC Library. ★



Flame Nebula (NGC2024)



The Whirlpool Galaxy (M51)



The Pinwheel Galaxy (M101)



The Sombrero Galaxy (M104)

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