

# skynews



*this month*

**Dr. Julio Navarro,**

**The Hierarchical Formation of the Milky Way**

**April 11th, 7:30 PM, Elliott Lecture Theatre, Rm 060, UVic**

The Cold Dark Matter paradigm of structure formation has proved remarkably successful at accounting for the large-scale properties of the Universe, as measured by the clustering and motions of galaxies, as well as by the detailed structure of the temperature fluctuations in the Cosmic Microwave Background. Some of its “natural” predictions regarding the hierarchical assembly of galaxy systems, however, appear at odds with observational data on the dynamics of individual galaxies

I will re-evaluate the constraints that stellar dynamical data in the solar neighbourhood place on the Milky Way’s formation history, and I will argue that, contrary to standard wisdom, the accretion and tidal disruption events that characterize hierarchical galaxy formation have played an important role in the formation of the Milky Way. Particularly interesting relicts of these events are the most massive globular cluster in the Galaxy, Omega Centauri, and by the third-brightest star of the northern night-sky, Arcturus

Julio Navarro is a professor in the Department of Physics and Astronomy at the University of Victoria. He obtained his B.Sc. from Universidad Nacional de Córdoba, Argentina 1986 and received his Ph.D in 1990 from Universidad Nacional de Córdoba, Argentina.



His many awards include:

- ISI Thomson Highly-Cited Researcher 2004
- Fellow of the Canadian Institute for Advanced Research 2002/2007
- U.K. Leverhulme Foundation Visiting Professor 2004/2005
- Fellow of the J.S. Guggenheim Memorial Foundation 2003/2005
- F.W. Bessel Prize (Alexander von Humboldt Foundation) 2003/2005
- Biography included in Who’s Who in the World 2004
- University of Victoria Faculty of Science Research Award 2003
- Fellow of the IAS, Hebrew University of Jerusalem 2003
- Scholar of the Canadian Institute for Advanced Research 1998/2002
- Fellow of the Alfred P. Sloan Foundation 1999/2001

*on the cover*

## Les Disher

### M83 Southern Pinwheel Galaxy

Les took this image on Saturday, March 17 from latitude 37 degrees 48 minutes, longitude 119 degrees 04 minutes near June Lake, California, in the eastern Sierras, so he had the advantage of about 12 extra degrees of latitude.

Exposures were RGB 15 minutes each using a 155mm AP at F5.25  
Final processing was one in Photoshop elements.

*coming up*

## Russ Robb, UVic, Department of Astronomy

### Subject: TBA

May 9, 7:30 PM, Elliott Lecture Theatre, Rm 060, UVic

Extrasolar planets, high precision photometry, variable stars and robotic telescopes are Russ's primary research interests.

*address change? information incorrect*

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*President's Report*

## President's Message April, 2007

If you have a look at the web page for Astronomy Day, you will see that our coordinator Scott Mair has been hard at work. Now comes the time for our wonderful volunteers to step forward to actually make it happen! Please contact Sandy Barta to volunteer your time for this important outreach event: (250) 642-0205.



This year's Astronomy Day will have some events you will recognize, and some new events too! This year, our Astronomy Wizard will put away his cape and hat, and will instead serenade us with astronomical themed live music. Ask an Astronomer booth will be staffed by experts from the Herzberg Institute and University of Victoria Astronomy Faculty. Viewing the Sun through solar telescopes will be setup outside, and of course Victoria Centre's Solarmax Ha scope will be available to all. Kids activities will be offered again this year. The solar system model will be setup outside, ready for those of us who walk through the model, imagining we are in a spaceship on an interplanetary journey (in our mind anyway). Our astrophotographers will be explaining how those wonderful photographs are made, and how you can get started in this exciting field by using fairly simple equipment.

Speaking of astrophotographers, I'm pleased to report that some of our members are overcoming the dreadful weather we have experienced lately, and have actually done some observing and acquired some wonderful photographs. Browse the Observing Highlights to be found on our website for the photographs, and subscribe to our local email list RASCVic (Members Only) to hear firsthand about what our members are up to in the field.

Don't forget our regular meeting will be held April 11th, 7:30pm at UVic. Dr. Julio Navarro from UVic will be talking about how cold dark matter can't explain all the astronomical phenomena, especially the formation of our own Milky Way galaxy.

## *April Journal Now On-line*

The new April Journal is now available at the site

<http://www.rasc.ca/journal/currentissue.shtml>

Username and password are given in the Announcement email.

## *job jar*

Victoria Centre Council has established a **Job Jar**, where we will have clearly-defined volunteer jobs that need to be done for Victoria Centre. If you are a member and wish to volunteer for one of these jobs, please contact the Council member indicated below.

**RASCALS Star Party Coordinator** Coordination of the 2007 RASCALS Star Party being held Aug 24-26. Time commitment; 3-5 hrs/month and 3 days during event. Contact Sid Sidhu or Joe Carr for more details.

**Monthly Meeting Coffee Maker** Set-up the Centre's coffee maker in the 4th floor lounge (UVic Physics and Astronomy) and make coffee. Time commitment: 1 hour/month. For more information contact Sid Sidhu.

**Astronomy Day Volunteers** Saturday, April 21 the Victoria Centre hosts International Astronomy Day at the Royal BC Museum. It's a fun day for everyone, especially the volunteers. If you'd like to help out with the event please contact Sandy Barta (250) 642-0205.

## *observers group*

RASC Victoria Centre and the NRC have signed a License to Use Land Agreement which gives members of Victoria Centre expanded access to NRC property on Observatory Hill.

If you are a member in good standing of Victoria Centre RASC, consider yourself an "active observer", and wish to take advantage of this opportunity, please send an email to the 1st or 2nd Vice President. More information on this program see: <http://victoria.rasc.ca>

## *centre of the universe*

### **Radio Astronomy with the Centre of the Universe?**

For those of you who thought that the observatory in Victoria didn't do radio astronomy, try tuning into CFX 1070 in Victoria and you might just hear one of our staff providing all kinds of astronomy advice and even answering some questions on the air approximately once a month. The next broadcast will be on Thursday, April 19th so be sure not to miss it.

### **Star Parties**

We will be opening our doors in the evening again starting on International Astronomy Day, which is Saturday, April 21st. We will then be open every Saturday from 3 PM until 11 PM until the May long weekend at which time we will be open every evening, from Tuesday until Saturday during the summer months. Our evening programs will be packed with tours, planetariums, talks and shows, special guest lecturers, and some observing (weather permitting). For more details keep an eye on the website or feel free to contact us.

### **The Sky This Month**

April 02 – Full Moon (10:15 PDT)

April 11 – Venus passes Pleiades

April 10 – Last Quarter (11:04 PDT)

April 17 – New Moon (04:36 PDT)

April 19 – Moon passes Pleiades

April 22 – Lyrid Meteor Shower (best after midnight)

April 23 – First Quarter (23:36 PDT)

Go outside around 9:30 pm once the sun has completely set for stargazing. In the west, the constellations we have been enjoying all winter are just above the horizon. Look for the v-shaped head of Taurus the bull next to Orion, the large hourglass grouping of stars. Mixed in with these winter constellations are some planets including Venus. Venus is the brightest "star" you will see in the west and will be fairly close to the horizon.

Look to the south, high in the sky, to find Leo the lion. A large, prominent, backwards "question mark" is the head of the lion. You can use Leo to help you find Saturn which is nestled just to the right of Leo. Just to the left of Leo, you will find the Big Dipper standing on its handle high in the northeast. Use the curve of the handle to "arc to Arcturus" a beautiful orange star in the east. Arcturus sits in the constellation Boötes,

# Astronomy Day



SATURDAY, APRIL 21ST

10 AM - 4 PM

ROYAL BC MUSEUM

7 PM - 11 PM

STARGAZING

CENTRE OF THE UNIVERSE

ASK AN ASTRONOMER BOOTH  
TELESCOPE VIEWING  
SOLAR OBSERVING  
TELESCOPES MAKING  
ASTRO KID ACTIVITIES  
TOUR THE SOLAR SYSTEM  
WALK AMONG THE PLANETS  
MUSIC INSPIRED BY THE STARS WITH  
"JUNE BUGG AND THE UGLY BROTHERS"

Presented by

Royal Astronomical Society of Canada - Victoria Centre, Royal BC Museum & CRD Parks

## Astrophotography



### John McDonald - Leo Triplet, M65, M66 and NGC 3628

Last evening the usual clouds were missing and I took the opportunity to do some imaging from my backyard. The transparency was not great and there was some wind but it was better than most of the recent nights.

Location: Backyard in Fairfield, Victoria, BC

Date and time March 20/21 2007 between 11:59PM and 12:56AM.

Equipment: Williams 105mm scope and 0.8x focal reducer with Canon 30D on Skywatcher HEQ5 mount.

Exposures: 50 light frames and 25 dark at ISO 800 for 58s each with an additional 10 Bias and 10 Flat frames for calibration.

Processing: ImagesPlus and Photoshop



### Michel Michaud Werner "X" feature on the Moon

Mar 26, 2007 approx 1am PDT  
Michel took his first image using a Meade LPI webcam and his 114 Celestron scope. This phenomena was predicted by Dave Chapman, a Halifax RASC member. Dave's prediction was for 10:30pm PDT, however Michel assures us he took this image around 1am - so the "X" feature was obviously visible much later than predicted.

### Les Disher IC443 in Gemini

Two sets of images taken  
March 17 & 18  
RGB 15 minutes each using  
an AP 155mm at F5.25  
Images combined using Reg-  
iStar, with final processing in  
Photoshop Elements



### Charles Banville - ASTEROID 2006 VV2

Thanks to a 200mm camera lens, John McDonald's go-to capabilities, and a bit of luck I was successful in imaging 2006 VV2. Here is the result of 24 stacked (and cropped) images showing asteroid 2006 VV2.

Taken: 31 March 2006 from the DAO. 1 April 2007 05:07 UT to 1 April 2007 05:28 UT

Optics: Canon 200mm f/2.8 Lens on Kenko SkyMemo Mount.

Camera: Canon 20Da

Exposures: 24 light frames of 45 sec @ ISO 100. Lens stopped down to f/4.0.

Processing: ImagesPlus and Neat Image.



### Les Disher - M51

A composite of images collected  
between March 18, 2006 and March  
17, 2007 over five imaging sessions at  
Courtenay Lat 49° 44' N, Long 124° 59'  
W, and two imaging sessions at June  
Lake, California Lat 37°48' N, Long  
119°04' W  
RGB 250 minutes each, for a total  
imaging time of 750 minutes 155mm  
AP refractor working at F14. Images  
stacked in RegiStar and processed in  
Photoshop Elements

the herdsman. From Arcturus, you can “spike down to Spica”, a brilliant blue star in the constellation Virgo. Also, look for the “E” of Cassiopeia just off the horizon in the northwest.

Throughout the year we are treated to many meteor showers when the Earth passes through different trails of comet dust. Most people are familiar with the Perseid meteor showers in August and the Leonid meteor showers in November, but April has its own light show. Although not as prolific as some of the showers throughout the year, the Lyrids offer a nice show in which we may see 10 to 20 “shooting stars” per hour. To view the Lyrids, head outside late on the 22nd (or early on the 23rd) to a dark, open site. Lie on the ground with your feet pointed towards the East. Most of the meteors will be radiating from Lyra, a constellation that contains the bright star Vega. For more information, please visit [http://skyandtelescope.com/observing/objects/meteors/article\\_558\\_1.asp](http://skyandtelescope.com/observing/objects/meteors/article_558_1.asp)

Clear skies and happy stargazing!

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*RASC victoria council*

*this month*

*monday nights*

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[newmembers@victoria.rasc.ca](mailto:newmembers@victoria.rasc.ca)

**Astronomy Cafe**

Fairfield Community Centre,  
1330 Fairfield, Victoria  
7:30-11pm  
Call John at 250.480.0928 for directions and information. New comers are especially welcome. Come and enjoy!

**ASTRONOMY CAFE**



*second wednesday of the month*

**Monthly Meeting**

7:30 PM, Elliott Lecture Theatre, Rm 060, UVic.

*as sky and interest dictate*

**New Observers Group**

Hosted by Sid Sidhu.  
1642 Davies Road, Highlands.  
Call 391-0540 for information and directions.

*by email*

**Observer/CU Volunteers/ Members email lists**

Contact Joe Carr to subscribe to these email lists for important, timely, member-related news.