

from lack of exercise resisting gravitational forces. Blood and other fluids do not circulate properly and pool. The heart, basically a muscle with valves, no longer pumping blood against gravity rapidly loses muscle mass and becomes both smaller and weaker.

In only 7 days, blood loses half its red oxygen carrying cells. The balance that are left are adequate for muscles no longer coping with the forces of gravity. Without gravity the inner ear loses its sense of balance causing nausea. Most insidious is unavoidable and accumulative radiation damage.

All the above combine to weaken astronauts so much they are unable to stand on returning to Earth after 9 months in orbit. Space station missions are now restricted to a 6 month maximum. All these effects on a trip to Mars would be so serious it is estimated only one in two astronauts would survive the journey. The survivor would be nearly helpless on arrival.

**Coffee Break:** The 50-50 draw was won by Felice DesMarais. Felice forego accepting the prize and donated it back to the club.

**Main Speaker, Dr. William Baylis:** Dr. Baylis took on an impressive task by looking at learnings in Physics and Cosmology over the past 100 years. Then he gave us an overview of the efforts to combine the latest knowledge and theories into a "Theory of Everything".

There are many complex theories on the structure of matter and the mysteries of our expanding universe with its apparent lack of mass. While some theories appear to make sense, others defy the comprehension of all but a few highly specialized theorists. Nevertheless, among the theories there may be a thread of truth.

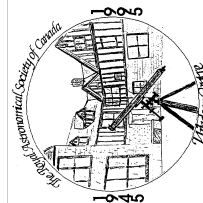
We admire the beauty and logic of our many discoveries, postulations and ideas but there is much more to be done before all is understood. Theoretical physics, applied mathematics, cosmology and related fields will be very exciting for a very long time. Solved mysteries will bring on new questions and new theories until the "Theory of Everything" is understood as well as is Newton's Classical Mechanics.

Thanks to both Robin and Dr. Baylis were given by Steve and the meeting was adjourned 10:23 p.m.

David J. Panton  
Recording Secretary



# AURORA



July 2004 The Royal Astronomical Society of Canada - Windsor Centre Volume 29, Number 11

## Flyer

### Next Meeting

Tuesday, September 21, 2004  
8:00 p.m.  
at  
Ojibway Park Nature Centre  
5200 Matchette Road

Speaker: Various

Topics: 3 Short Talks

### Upcoming Events

**General Assembly:** July 1 - 4, St. John's Newfoundland and Labrador.

**Gateway to the Universe Star Party:** July 16 - 18, Munro Family Campground, Powassan, Ontario (south of North Bay).

**Great Manitou Star Party:** August 11 - 15.

**Stellafane:** August 13 - 14, Springfield Vermont.

**Starfest:** August 19 - 21, The River Place Campground, Mount Forest, Ontario.

**Huronian Star Party:** September 8 - 12, Ivy, Ontario (south of Barrie).

**Astrofest:** September 16 - 18, Kankakee, Illinois.

## General Meeting Minutes

May 18, 2004

**President, Steve Mastellotto:** Steve asked members present to read the minutes from the last meeting. A motion to accept the minutes from the last regular meeting in March was made by Susan Sawyer-Beaulieu, seconded by Peter Bondy and carried.

### Reports

**Correspondence Secretary, Joady Ulrich:** Joady had nothing to report.

**Treasurer, Ken Garber:** In round numbers there is about \$5,000 in the Canadian dollar account and \$200 in the U.S. dollar account. The \$1,350 insurance bill for the observatory and equipment has been paid. Astronomy day at the University of Windsor netted \$650 from admissions.

**Librarian, Milica Rakic:** Milica noted we should be subscribing to some magazines for the library.

**Newsletter Editor, (position open):** Tom Sobocan will take a shot at learning to produce the Aurora newsletter this summer.

Steve sends e-mail notifications of meetings monthly. They also appear on our web site managed by Steve.

**Public Education, Randy Groundwater:** Randy was unable to attend the meeting.

**Public Relations, Robin Smallwood:** Earth Day at Ojibway Park was a success with a good turnout.

**Light Pollution, Susan Sawyer-Beaulieu:** Susan had nothing to report this month.

**National Council Representative, Susan Sawyer-Beaulieu:** The General Assembly will be held in St. John's Newfoundland this year. The cost is \$125 per member with an additional \$60 for spouse or significant other.

Susan asked members to complete the survey forms mailed to them by National. Save a stamp by bringing them to the June meeting along with signed proxies for the General Assembly. All will go together in a batch mailing.

**Observatory, Peter Bondy:** Peter reported the wheel chair accessible "portajohn" has been ordered.

More earth moving work at the site will involve moving dirt fill to widen the driveway and build up the area surrounding the observatory and warm room.

Rather than pouring concrete pads, crushed limestone screenings will be used to prepare 10 foot square observation pads. They are expected to be cooler at night. Some may have pipes inset for observers to easily set up their own portable light/wind shields.

Our website will soon show monthly open house dates. They have been set aside for all members to enjoy some assisted observing. The objective is to encourage members to apply for observatory access memberships to fully utilize the equipment.

**Director of Observing, Steve Pellarin:** Twelve members enjoyed a great day on a field trip to the Detroit Science Centre. The main feature was Mars exhibits all the way from a thin slice of a Mars rock, Mars terrain models, and a "hands on" Mars Rover with a "speed of light to Mars" time delay controller. The Sun show in the planetarium theatre was spectacular in sight and sound.

The transit of Venus, visible at sunrise on June 8th is the next big event. Weather permitting it will be locally visible at sunrise and end 90 minutes later when Venus exits the Sun's disk. It will be a special event at the observatory.

There are several comets this month. Comets Neat, Linear and Bradfield will all be visible. In addition there are good views of Jupiter and its moons with shadows crossing the face of the planet at certain times.

### Business

#### **Coming events:**

Council meeting June 8, 2004

Annual Picnic at the observatory June 12, 2004

Last meeting until September is on June 15, 2004 at the Ojibway Nature Centre.

**Short Talk, Robin Smallwood:** Robin's biological sciences education, medical background and astronomical interests were a perfect combination for his talk on Space Physiology.

Few of us are aware how well adapted we are to our Earthly environment. Robin quickly dispelled all notions we can venture into the entirely different space environment, function normally and return without consequences.

On Earth our gravity adapted body mechanisms function nearly perfectly. In space they function poorly and also deteriorate in many surprising ways. Barely needed bones soon thin and lose mass. Muscles shrink become weak