

# ROYAL ASTRONOMICAL SOCIETY OF CANADA



2012  
General Assembly



<http://edmontonrasc.com/2012ga>

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The 2012 General Assembly Logo was created by Greg Scratchley.

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## President's Message

The RASC's Edmonton Centre extends a warm Alberta welcome to all the executives, delegates, and guests attending the 53rd General Assembly of the Royal Astronomical Society of Canada, at the University of Alberta. We know that your visit to Edmonton will bring you new fond memories of the general assembly program.

The General Assembly gives executives and members of the RASC the opportunity to address important business that will enhance the Society's structure and function. While this is the central purpose of the yearly meeting, it also offers its coast-to-coast membership a time to connect, to reinforce, and to form new friendships. The 2012 General Assembly is important for us, as this is the year that the Edmonton Centre celebrates its 80th anniversary later in the year.

Over the course of five days, you will have the opportunity to participate in the business portion of the General Assembly, to listen to your fellow RASCals talk about what their members are busy with, to learn from the professionals, and then discover the best of what this province has to offer.

Welcome to Alberta and to the Edmonton Centre!

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Le centre d'Edmonton souhaite une chaleureuse bienvenue à tous les exécutives ainsi que les délégués et invités pour la 53ème assemblée générale de la Société Royale d'Astronomie du Canada tenue à l'université de l'Alberta. Nous sommes confidents que le programme planifié pour l'assemblée générale produira lors de votre visite à Edmonton de nouveaux et profonds souvenirs.

L'assemblée générale donne aux exécutives et membres de la SRAC la possibilité d'adresser les importantes sujets pour améliorer la structure et les fonctions de la société. Bien que ce soit l'objectif central de l'assemblée annuelle, cette réunion permet aux membres de tous les centres de former de nouvelles amitiés. L'assemblée de 2012 est importante pour le centre d'Edmonton car plus tard cette année nous célébrons notre 80ème anniversaire.

Au cours des prochains cinq jours, vous aurez la possibilité de participer aux affaires de l'assemblée générale, écouter des discours sur l'activité de vos compatriotes RASCals, apprendre des invités professionnels et finalement découvrir le meilleur de notre province.

Bienvenue en Alberta et au centre d'Edmonton!

**Peter Hall**

President, RASC Edmonton Centre / président SRAC - Edmonton-Centre

## GA Committee Chair's Message

As Chair of Edmonton 2012 GA Committee, I would like to take this opportunity to both welcome all our delegates and guests to the conference, and to wish the Edmonton Centre a happy 80th anniversary.

We have a great conference planned for you, as we are fortunate to have Dame Jocelyn Bell Burnell of Oxford University delivering the Helen Sawyer Hogg Public Lecture, Dr. Martin Connors from Athabasca University giving our opening talk prior to the Wine and Cheese reception, and Dr. Chris Herd of the University of Alberta giving our closing talk during the Annual Banquet. In addition to this, Dr. Herd will be leading the tour to the Whitecourt Meteorite Impact Crater on Monday.

I would like to express my heartfelt appreciation to the Edmonton Centre members who served faithfully on the GA organizing committee: Cornelia Blunck, Richard Chatterley, Janet Couch, Douglas P. Hube PhD, Lorraine Kirby, Franklin Loehde, Sharon Morsink PhD, Geoff Robertson, Ross Sinclair, Krista Stefan and Luca Vanzella. Thanks also to the unnamed volunteers from the Edmonton Centre.

A fair number of people I've met during my thirty years with the RASC consider the job of GA Chair to be something that few would want to take on, and seeing as this is my second time around, they are becoming somewhat concerned about my sanity. What say we go for three? Maybe I'll see you here in 2032!

En tant que président du comité d'Edmonton pour l'Assemblée Générale 2012, je voudrais saisir cette occasion pour non seulement dire bienvenue à tous nos délégués et invités à la conférence mais aussi souhaiter le centre d'Edmonton un joyeux 80ième anniversaire.

Nous avons préparé une grande conférence pour vous. Nous sommes chanceux d'avoir Madame Jocelyn Bell Burnell de l'Université d'Oxford qui nous délivrera la Lecture Publique d'Helen Sawyer Hogg. Avant la réception au vin et fromage, les commentaires d'ouverture seront présentés par le Dr. Martin Connors de l'Université d'Athabasca. Le Dr. Chris Herd de l'Université de l'Alberta conclura l'Assemblée Générale avec des remarques finales lors du Banquet annuel. En plus de cela, le Dr. Herd sera en charge lundi pour la tournée du cratère d'impact de météorite à Whitecourt.

Je tiens à exprimer ma profonde gratitude aux membres du centre d'Edmonton qui ont servi fidèlement sur le comité d'organisation. Je veux remercier Cornelia Blunck, Richard Chatterley, Janet Couch, Douglas P. Hube PhD, Lorraine Kirby, Franklin Loehde, Sharon Morsink PhD, Geoff Robertson, Ross Sinclair, Krista Stefan et Luca Vanzella. pour leur service. Merci également aux bénévoles anonymes du centre d'Edmonton.

J'ai rencontrés au cours de mes trente années avec la SRAC un grand nombre de personne qui mon dit que peu de gens veule le travail de président de l'Assemblée Générale. En voyant que c'est ma deuxième fois, ils sont en quelque sorte préoccupée par mon santé mentale. Qu'en dites-vous si on va pour trois? Peut-être que je vais vous voir ici en 2032!

**Howard Gibbins**

Edmonton 2012 GA Committee Chair / Edmonton 2012 GA Président du Comité



## Message from the Dean of Science

I am pleased to be able to offer a warm welcome to the Royal Astronomical Society of Canada as you gather on the University of Alberta campus for your 2012 General Assembly. I trust your meetings will boost your enthusiasm and excitement as you ponder over the scientific stories of the past year, and celebrate your achievements and successes.

Perhaps not surprisingly, the mission of the RASC is similar to that of our university. We too are committed to improving the understanding of science through education, outreach, publication, enjoyment, partnership, and community. As you visit our campus, I hope you will take the time to learn about the work we do in the field of astronomy.

Your meetings will be held in our new *Centennial Centre for Interdisciplinary Science* (CCIS). It is a wonderful facility that provides a home for more than 100 principal investigators, 500 graduate students, and lecture hall and laboratory facilities for thousands of undergraduate students. The building is built upon a vision of transparency that seeks to profile the science that we do. There is more glass inside this building than on the exterior, providing building residents and visitors with an opportunity to view science in motion.

Astronomy features prominently in our new building. As you enter CCIS off the quadrangle, you will be welcomed by a beautiful terrazzo floor that features artistic images of the kinds of science you will find in the building. At the western entrance, you will walk across a brilliantly coloured star field, with our solar system suspended above. The planets are carefully positioned to mark the University's centennial. On the roof is the home of our new observatory, which provides a means to share science with the public. Like the RASC, we hope it will inspire curiosity in all people about the Universe, and provide a means to share our scientific knowledge.

There are many other gems to discover in CCIS, on campus, and in our city. I hope you will take some time to explore. I wish you all the best with your meetings. Welcome to Edmonton and the University of Alberta.

Gregory Taylor  
Dean of Science  
University of Alberta



# Message from the Mayor



## ***Message from His Worship Mayor Stephen Mandel***

On behalf of City Council and the people of Edmonton, Alberta's Capital City, I extend a warm welcome to members and guests of the Royal Astronomical Society of Canada (RASC).

For nearly 150 years, the RASC has been Canada's leading astronomy organization bringing together more than 4,200 enthusiastic amateurs, educators and professionals. This weekend's General Assembly will give everyone an opportunity to network, exchange astronomical accomplishments and celebrate the achievements of the RASC's members.

Thank you to the Royal Astronomical Society of Canada Edmonton Centre for organizing this exciting event. You have helped promote the advancement of astronomy and allied sciences and increased our awareness of astronomy as an enjoyable hobby and an important scientific endeavour right here in our city.

Best wishes for an enjoyable assembly and a pleasant stay in Edmonton!

Yours truly,

A handwritten signature in black ink that reads 'Stephen Mandel'. The signature is written in a cursive, flowing style.

Stephen Mandel  
Mayor

## Acknowledgements

The Edmonton Centre of the RASC gratefully acknowledges the following for their support of the 2012 General Assembly.

Denis Grey and the National RASC web team, for quickly and efficiently building the online registration system.

Jay Anderson and Jennifer West of the Winnipeg Centre, for letting us base this Program Booklet on the outstanding one they produced for the 2011 GA.

Denis Boucher, for the French translations.

The Dean of Science and the Physics Department at the University of Alberta, for facilities in the CCIS.

Doug & Joan Hube, for hosting the many meetings of the organizing committee. Joan Hube, for supplying cookies & beverages.

Murray Paulson and the Whitecourt Tourism Office, for the Whitecourt Meteorite Crater Tour arrangements.

Registration kit memorabilia.

- Honourable Heather Klimchuk, MLA for Edmonton-Glenora
- Members of Edmonton City Council

Door prizes.

- John Cliff
- Barton Satchwill
- Luca Vanzella

The 2012 GA Organizing Committee and the volunteers corps, for pulling this off!



## Updates

All information in this program booklet is believed to be correct at the time of printing. But changes can and do occur, so updates are posted as follows.

Registration Desk	A poster identifies updates.
Website	<a href="http://edmontonrasc.com/2012ga">http://edmontonrasc.com/2012ga</a>
Twitter	<a href="https://twitter.com/#!/RASC2012GA">https://twitter.com/#!/RASC2012GA</a>

## Registration Kit

We are pleased to provide the following items in your registration kit:

- Program Booklet
- Name Tag (see notes below)
- Pre-paid Breakfast Tickets
- Pre-paid GA Golf Shirts
- Ballot for Image Competition
- Full-sized Campus Map
- Edmonton Visitor's Guide
- GA Memorabilia
  - Red Light stick
  - Provincial pin
  - Edmonton City pin
  - Faculty of Science pen
  - Science Alumni magazine

### **Your Name Tag**

Your name tag is your ticket to many of the weekend's activities, so please carry it with you at all times to ensure your entry. Please check your name tag carefully to ensure all paid events are shown properly.

- Pre-paid Meals (other than breakfasts)
- Pre-paid Tours

## Registration Desk

Information about the program and events around the city can be obtained from the Registration Desk. The desk is located in the Lister Centre Foyer on Level 1 (see the [Lister Centre map](#) on Page 53).

The desk is open as follows:

Thursday, June 28	13:00 – 17:00
Friday, June 29	09:00 – 18:00
Saturday, June 30	09:00 – 13:00

You can email or call the Registration Desk whenever it is open, for assistance. The phone number can accept text messages but not voicemail.

Registration Desk desk2012ga @ edmontonrasc.com
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780-566-3451
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## Assistance

Should you require assistance outside of the hours of the Registration Desk, contact any of the following people. We will do our best to ensure that you have an enjoyable assembly this weekend.

These phone numbers can accept text messages but not voicemail.

Doug Hube	587-783-6278
Geoff Robertson	780-686-2762
Ross Sinclair	780-719-3339
Luca Vanzella	780-964-0406

## Principal Venues

The principal venues for the GA are the CCIS and Lister Centre. These venues are a 15 minute walk from each other (see the [U of A Campus map](#) on Page 52).

### Centennial Centre for Interdisciplinary Science (CCIS)



The newest building on campus at the north end of the Quad.

CCIS is the venue for:

- Friday: National Council Meeting 1
- Friday: Physics Colloquium
- Friday: Wine & Cheese Reception
- Saturday: Paper Sessions, Helen Sawyer Hogg Public Lecture

### Lister Centre

This complex houses the GA accommodations and is located immediately south of the intersection of 87 Avenue and 116 Street.



Lister Centre is the venue for:

- Thursday, Friday, Saturday: Registration Desk
- Sunday: General Assembly and National Council Meeting 2
- Sunday: Light Pollution Abatement Session
- Sunday: Closing Banquet

# Residence & Social Suite

## Residence Check-In

If you are staying on campus, it is at the Lister Centre, which is located immediately south of the intersection of 87 Avenue and 116 Street.

Check-in is after 16:00 and check-out is by 11:00. The Front Desk is open 24 hours and is located in Level 1 (see [Maps on Page 51](#)).

## Social Suite

Details for the GA Social Suite were not available at the time of printing. See the Registration Desk or ask one of the people listed on Page 8 for details.

**CanadianTelescopes.com**  
**Canada's Telescope Store**

**Free Shipping To Anywhere In Canada**

**f Facebook.com/CanadianTelescopes**

**TOLL FREE : 888 - 527 - 7207**

The advertisement features a large, detailed image of a white and black telescope mounted on a black tripod. The background is a light blue gradient with faint, repeating text of various telescope brands and models, such as 'CELESTRON', 'CORONADO', 'DIFFRACTION LIMITED', 'EXPLORE SCIENTIFIC', 'FARPOINT', 'FINDER', 'GALILEI', 'IMAGING SOURCE', 'OPTRON', 'LOSMANDY', 'LUNT', 'SOLAR SYSTEMS', 'MEADE', 'ORTEC', 'QSI', 'RASC', 'SBIG', 'SKY & TELESCOPE', 'TELES', 'SKY WATCHER', 'STARBOUND', 'STARARIZONA', 'STARLIGHT', 'INSTRUMENTS', 'TAKAHASHI', 'TELEGIZMOS', 'TELRAD', and 'THOUSAND OAKS'. A small logo for 'CanadianTelescopes.com' is visible in the bottom right corner of the ad area.

## Group Photo & East-West Game

### Group Photo

The traditional group photo is scheduled for Sunday July 1 at 18:00 and takes place outside near Lister Centre, weather permitting, or in the Lister Maple Leaf Room. Meet in the hall outside the Maple Leaf Room at 18:00 to find out where to go.

The image will be made available on the 2012 General Assembly website (<http://edmontonrasc.com/2012ga>). Anyone who wants a print can make their own. Delegates are also welcome to bring their own cameras. Here is the group photo from the 1996 GA in Edmonton.



An attempt to take a Pyramid photo will also be made, should there be sufficient delegates willing to risk life and limb.

### East vs West Game

The traditional East versus West sports event takes place on Sunday July 1 at 16:00 on a field near Lister Centre. Everyone must participate, no matter the weather.

## Meals

The following are the organized meals for the GA.

Fri, June 28 to Mon, July 2	07:30 to 09:00	Breakfast Buffet * Lister Centre, 2 <sup>nd</sup> Floor Dining Hall
Thu, June 28	19:00	National Council BBQ * Alumni House
Fri, June 29	12:00	Lunch for National Council Brought in to CCIS L1-047, pay by cash
Fri, June 29	19:30	Wine & Cheese Reception * CCIS West Atrium
Sat, June 30	12:00	Saturday Luncheon * Foyer outside CCIS L1-160
Sat, June 30	17:30	Dinner before Hogg Lecture * CCIS South Patio
Sat, June 30	21:00	Reception after Hogg Lecture Atrium outside CCIS 1-430, free
Sun, July 1	19:30	Closing Banquet * Lister Maple Leaf Room

\* Pre-paid meal ticket required (ticket for breakfast, name tag for others). See your registration kit.

### What if I didn't buy a meal ticket?

See campus food options on Page 34 and off-campus food options on Page 42.

### Sunday Lunch

There is no organized meal for Sunday lunch between the AGM/NC Meeting 2 and the Light Pollution Abatement Session. Options for lunch include the venues in Lister Centre (Page 34) and nearby restaurants (Page 42).



## National Council Meetings and AGM

### **National Council Meeting 1**

The first National Council Meeting (NC122) begins at 09:00 **sharp** on Friday June 29 in Room L1-047 of the Centennial Centre for Interdisciplinary Science (CCIS). This important meeting lasts until 15:00, at which time attendees can proceed to the Physics Colloquium given by Jocelyn Bell Burnell. This meeting is for National Council members and Centre representatives. Any RASC member can attend as an observer.

### **General Assembly (AGM)**

The General Assembly (AGM) takes place on Sunday July 1 in the Lister Maple Leaf Room, beginning at 09:00. All RASC members are encouraged to attend and vote on Society affairs. This meeting, which flows into the second National Council Meeting, lasts until 12:00.

### **National Council Meeting 2**

The second National Council Meeting (NC123) takes place immediately after the conclusion of the AGM in the Lister Maple Leaf Room. This meeting is for National Council members and Centre representatives, but any RASC member may attend as an observer.

### **Coffee Breaks**

For those attending the National Council meetings, the General Assembly (AGM) meeting and the Paper Sessions, there are coffee breaks accompanied by a generous supply of goodies.



## Invited Speakers

### **University of Alberta Physics Colloquium**

The Department of Physics invites all GA delegates and companions to attend a special physics colloquium, **on the topic of pulsars**, to be given by Dame Jocelyn Bell Burnell on Friday June 29 at 15:00 in Room L1-140 of the Centennial Centre for Interdisciplinary Science (CCIS).

### **Invited Talk**

The Wine & Cheese Reception on Friday June 29 is kicked off at 19:00 with an invited talk by Dr. Martin Connors from Athabasca University. His talk is entitled “*Earth’s Trojan Asteroid: A Space Odyssey to a Space Oddity*” The talk is in Room L1-160 of the CCIS. The Wine & Cheese Reception is right beside the lecture room in the CCIS West Atrium.

### **Helen Sawyer Hogg Public Lecture**

The Helen Sawyer Hogg Public Lecture takes place in Room 1-430 of the CCIS at 19:30, on Saturday June 30. This is a public lecture. Our invited speaker is Dame Jocelyn Bell Burnell from Oxford University. The title of her talk is “*Will the world end in 2012? The astronomical evidence.*”

### **Banquet Speaker**

Our banquet speaker is Dr. Christopher Herd from the University of Alberta. He is speaking after dinner on Sunday July 1. His talk is entitled “*When the Sky Falls: Meteorites as Probes of Other Planetary Bodies.*” The banquet takes place in the Maple Leaf Room at Lister Centre.

Biographies and abstracts are on the following pages.

## Invited Talk

### **Dr. Martin Connors**

Friday, June 29, 19:00

#### **Earth's Trojan Asteroid: A Space Odyssey to a Space Oddity**

Near-Earth asteroid 2010 TK<sub>7</sub> was discovered by the Widefield Infrared Survey Explorer (WISE) satellite on October 1, 2010. With followup observations from the Canada-France-Hawaii telescope, it was shown to be the first known Trojan companion of Earth, with an orbit that is very chaotic, jumping between the Lagrange points and temporarily staying at the “anti-Earth” point. Nevertheless, this appears to be “stable” chaos! Chaos limits the ability to determine the behavior of the real body over long periods of time, so “clones” are used to study it. A larger population of Earth Trojans may exist and could be favorable for space missions, possibly to meet the aim of sending astronauts to asteroids. 2010 TK<sub>7</sub> itself is not a suitable target, but its discovery may stimulate further searches for co-orbital objects, with Trojan searches likely to also detect “horseshoe” or “quasi-satellite” asteroids. Obtaining “primordial” material from such objects is of scientific and possibly economic interest.



#### **Biography**

Martin Connors is Professor and Canada Research Chair in Space Science, Instrumentation, and Networking at Athabasca University, and Visiting Professor in Earth and Space Sciences at UCLA. His main areas of research are asteroids and space physics (auroras and their causes). CFI-funded Athabasca University Geophysical Observatory II was opened to study auroras under exceptionally dark skies in February 2012, but is also a promising site for astronomy. B.Sc. UWO Applied Math.; M.Sc./Ph.D. (1998) UofA...President, London Centre, 1971-1973, a period when (see “Looking Up”)...“the Centre, under strong leadership, rebounded”. Formerly Associate Editor of the JRASC and with several articles published there.

## Helen Sawyer Hogg Public Lecture

### **Dame Jocelyn Bell Burnell**

Saturday, June 30, 19:30

#### **Will the world end in 2012? The astronomical evidence.**

#### **Biography**

Dr. Bell Burnell is Visiting Professor of Astrophysics, University of Oxford and Immediate-Past President of the Institute of Physics (London).



As a graduate student at Cambridge University in July 1967 she discovered the weak, pulsing radio signal of what proved to be the first of an entirely new class of astronomical objects, a *pulsar*. In short order, she found several more. Within a year of their discovery, pulsars were identified as rapidly rotating neutron stars. Dr. Bell Burnell's discovery has been described as one of the most significant astronomical discoveries of the 20<sup>th</sup> century: It opened a completely new field of scientific research. The theoretical and observational study of exotic, compact, high energy stellar objects has become one of the principal areas of research in astrophysics.

Dr. Bell Burnell has held academic positions at the University of Southampton, Royal Observatory Edinburgh and the Open University. She was the Dean of Science at the University of Bath, and Visiting Professor at Princeton. She has served as President of the Royal Astronomical Society.

In addition to her outstanding work in research and education, she has been active in seeking to improve the status, and the numbers, of women in academic and professional positions in the sciences.

Among many other awards, Dr. Bell Burnell has received the Michelson Medal of the Franklin Institute (Philadelphia), the Beatrice Tinsley Prize from the American Astronomical Society, and Honorary Doctorates from Williams College, Harvard University and the University of Durham.

In 1999 she was named Commander of the Order of the British Empire (CBE). In 2007 she was promoted to Dame Commander of the Order of the British Empire (DBE).

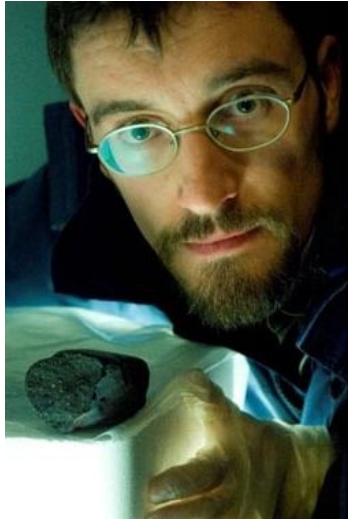
## Banquet Speaker

### **Dr. Christopher Herd**

Sunday, July 1, 19:30

#### **When the Sky Falls: Meteorites as Probes of Other Planetary Bodies**

Meteorite falls are significant and memorable events for anyone fortunate enough to witness them. For meteorite researchers, meteorites collected shortly after their fall can provide unique opportunities both to study samples that have been only briefly exposed to Earth matter (dust, organic molecules, etc.), and to study and trace the sources of such contamination. Several famous Canadian meteorite falls represent such opportunities, demonstrating that Canada's abundance of ice and snow has advantages for preservation of freshly fallen meteorites, and providing novel insights into the geology of their parent bodies. Results of these studies have implications for fireball tracking and the best methods for meteorite recovery in the field.



#### **Biography**

Dr. Chris Herd is a specialist in the study of meteorites from a wide range of parent bodies. He has a fascination with the origin and comparative geologic evolution of planetary bodies in the Solar System. His interest in working on Martian meteorites took him to the University of New Mexico for his Ph.D. Dr. Herd is a Professor in the Department of Earth and Atmospheric Sciences at the University of Alberta. He teaches Mineralogy and Planetary Geology and is the curator of the University of Alberta Meteorite Collection, the largest University-based meteorite collection in Canada. In 2006 he led the consortium purchase of the pristine specimens of the Tagish Lake meteorite, and currently oversees the installation of a new cold curation meteorite facility, the first of its kind. He has spent a sabbatical at the Smithsonian Institution's National Museum of Natural History in Washington, D.C. where he worked on Martian meteorites in the U.S. National Collection. During that time he served on an International Science Assessment Group studying the science of robotically returning samples from Mars.

## Oral Papers Speaker Schedule

**Saturday June 30, MORNING**  
**CCIS L1-160**

9:00 – 9:10	<i>Opening remarks</i>
9:10 – 9:30	<b>Charles O’Dale</b> Identification of a Cosmic Impact Site
9:30 – 9:50	<b>Denis Grey</b> Discovery of a Large Emission Nebula
9:50 – 10:10	<b>Bruce Rout</b> The Work of the Society of Amateur Radio Astronomers
10:10 – 10:30	<b>R. A. Rosenfeld</b> What to Do When the Mayan Astrologer Crashes Your Star Party: Strategies for Surviving Popular Fallacies
10:30 – 10:50	<i>Refreshments break</i>
10:50 – 11:10	<b>Robert Dick</b> Night Vision and LEDs
11:10 – 11:30	<b>Chris Gainor</b> Canada’s Space program: Still Lost?
11:30 – 11:50	<b>Sharon Morsink</b> The SkyScan Science Outreach Program
11:50 – 12:10	<b>Ray Khan</b> Thomas Johnson, Jr., Founder of Celestron Telescopes
12:10 – 13:10	<i>Lunch break</i>



# Oral Papers Speaker Schedule

**Saturday June 30, AFTERNOON**  
**CCIS L1-160**

13:10 – 13:30	<b>Richard Huziak</b> The Benefits of Dark-Sky Preserves
13:30 – 13:50	<b>Matt Nagy</b> Research Potential of a 0.5-m Telescope
13:50 – 14:10	<b>Greg Sivakoff</b> Snapshots of the Universe: A Multi-Lingual Astronomy Art Book
14:10 – 14:30	<b>Orla Aaquist</b> Cosmic Rays: Earth's Smallest Extraterrestrials
14:30 – 14:50	<i>Refreshments break</i>
14:50 – 15:10	<b>Rob Cardinal</b> The First Light Initiative – Invigorating Aboriginal Youth to Succeed in a New Age
15:10 – 15:30	<b>Mike Noble</b> Sky Quality Measurements Project Extended Photographically
15:30 – 15:50	<b>Krista Stefan</b> Astronomy in Pop Culture

# Program Abstracts

## ORAL PAPER PRESENTATIONS

### Identification of a Cosmic Impact Site

Charles O'Dale, RASC (Ottawa Centre)

As of May 2010, there are 174 confirmed impact craters found on our home planet. Of 57 discovered in North America, 29 are in Canada, 27 are in the United States and 1 is in Mexico (Spray 2010). I would venture that there are several more remaining to be discovered, just look at the moon! Finding a formerly undiscovered impact crater here on our planet would be good science and a heck of a lot of fun!!



As amateur crater hunters tromping through the bush hoping to find the results of a large meteorite impact, we should realize that: (1) most rocks on Earth have never been involved in a meteorite impact; (2) even in impact structures, most of the rocks will not look shocked; (3) no matter how "circular" a structure may look, definite and unquestionable impact-produced features will only be found in the rocks (French 2005).

In this talk I will describe the geology that IS firm evidence of a hypervelocity impact (or a very large man made explosion). Some of the craters discovered over the years were first identified only after finding this unique geology in the immediate area. So, as amateur impact crater hunters, to find these unique features we have to get down on the ground and root around.

**Discovery of a Large Emission Nebula**

Denis Grey, RASC (Toronto Centre)

This presentation will focus on a large emission nebula that I have discovered in the constellation of Orion just below the belt.

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**The Work of the Society of Amateur Radio Astronomers (SARA)**

Bruce Rout and other members of SARA

This is a brief talk on the work of the Society of Amateur Radio Astronomers. This is a way to enter into the world of radio astronomy for the novice as well as accessing some fairly sophisticated equipment and techniques for the more experienced. The talk will mention global educational programs in conjunction with such organizations as Stanford University, NASA and the NRAO. Some of the on-going and exciting projects of members of SARA will be shown and hands-on projects which can be used in schools and by individuals will be presented.

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**What to Do When the Mayan Astrologer Crashes Your Star Party: Strategies for Surviving Popular Fallacies**

R.A. Rosenfeld, RASC (unattached)

The latest wide-spread abuse of archaeoastronomy is the “Mayan Prophecy” (2012 Phenomena cluster). A passing acquaintance with the methods of modern science, ancient epigraphy, and palaeography ought to suggest that the expiry of an ancient chronometric system means nothing but the expiry of an ancient chronometric system, yet many astronomy educators find themselves having to reassure the public that their world will not end on 2012 December 21 from a dead calendar.

Popular fallacies such as this can pose a real threat to the effectiveness of astronomy EPO if there is a vigorous and vocal holder of such

beliefs in the audience, particularly one well-informed about the pre-19th-century affiliation between astronomy and astrology. This paper presents strategies to effectively handle proselytising astrologers in one's audience, and emerge with your science message unimpaired, or strengthened.

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### **Night Vision and LEDs**

Robert Dick, RASC (Ottawa Centre)

There has been a revolution in the LED technologies over the past 5-years. It was once a simple matter to get a red LED flashlight from your local astronomy store that would protect your night vision. But most consumer LED flashlights emit white light. Are there other options? What are the trade-offs if we use other colours? We won't review all the products in the marketplace but we will present some of the pertinent technology and discuss the spectroscopy and brightness data, and how they relate to your vision, so that you will be better informed.

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### **Canada's Space Program: Still Lost?**

Chris Gainor, RASC (Victoria Centre)

Canada's space program was rocked in 2008 when MacDonald Dettwiler and Associates (MDA), Canada's largest space contractor, was offered for sale to an American company, and the president of the Canadian Space Agency (CSA) suddenly resigned. Although the Canadian government blocked the MDA sale and installed new leadership in the CSA, four years later many questions remain over the future of Canada's space program. Some of these questions stem from the end of the Space Shuttle program and the political standoff in the United States over its replacement. This standoff is also affecting planetary exploration programs around the world. Canada's space program is also suffering from Canadian government's focus on fighting the deficit, and the traditional low priority afforded to space. Canadian astronomers have put forward ambitious plans for a

Canadian space telescope, which may get caught in the policy vacuum surrounding the Canadian space program.

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### **The Sky Scan Science Outreach Program**

Sharon Morsink, RASC (Edmonton Centre)

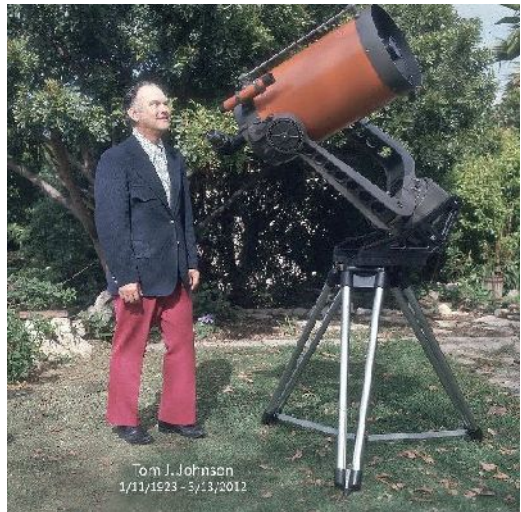
The Sky Scan Outreach Program is a partnership between the Edmonton Centre of the Royal Astronomical Society of Canada and the Department of Physics at the University of Alberta. The aim of this program is to excite kids about science. Our program is integrated with the Alberta Education curriculum units on Sky Science (Grade 6) and Space Exploration Science (Grade 9). The two main components of the program include visits by an astronomer to local classrooms and school field trips to the University of Alberta's observatory. In this presentation I will describe our program in more detail.

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### **Thomas Johnson, Jr., Founder of Celestron Telescopes**

Ray Khan, Khan Scope Centre and RASC (Toronto Centre)

I will give a brief biography of the founder of Celestron International, the late Tom Johnson, Jr., who passed away in March 2012. Celestron has been one of the major innovators in the development of the SCT telescope that has revolutionized Amateur Astronomy during the past 42 years.



## **The Benefits of Dark-Sky Preserves**

Richard Huziak, RASC (Saskatoon Centre)

The Cypress Hills (2004) and Grasslands (2009) Dark-sky Preserves in Saskatchewan have created many opportunities for the parks within which they reside, and for the tourism associations that promote these parks. Creation of a DSP is not a one-time event but a continuous process through the development and improvement of business practices year after year. These DSPs have now become a main focus for promotion of Saskatchewan's tourism industry within the province, within Canada and internationally. The parks understand the current and future benefits of DSPs and continue to reap the rewards of certification. The rewards are many: greater public awareness of wasted light energy, the creation of new interpretive programming, dedicated astronomy facilities, cooperation between the parks and even the reintroduction of endangered species.




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## **Research Potential of a 0.5-m Telescope**

Matt Nagy, Invited Presenter RASC (Edmonton Centre)

I will discuss the research potential of the 0.5 meter Devon Telescope and new CCD camera at the University of Alberta Observatory.





**Snapshots of the Universe: A Multi-Lingual Astronomy Art Book**

Greg Sivakoff and 7 others, RASC (Edmonton Centre)

The Albertan STEM (Science, Technology, Engineering, & Mathematics) Graft is a new initiative that will apply University expertise to develop science resources for our public education system. Our initial project, 'Snapshots of the Universe' is an astronomical artbook targeting third grade children. We hope to distribute this book, as well as supporting resources, to third grade classrooms across Alberta. 'Snapshots of the Universe' is the result of a partnership with Dark Skies, Bright Kids! (DSBK), a dynamic education and public outreach organization at the University of Virginia, which focuses on enhancing elementary level science education. Evolving out of difficulties connecting with English as a second language students, DSBK volunteers created art with short descriptions of astronomical objects in both Spanish and English to help communicate concepts across the language barrier. Building on this initial success, the simple art project has evolved into a full educational children's book. Though originally in Spanish and English, we have now produced a French translation of the text, broadening the outreach potential of the book. Here we present Snapshots of the Universe for distribution to multi-lingual classrooms as a tool for introducing astronomy concepts at the elementary school level.

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**Cosmic Rays: Earth's Smallest Extraterrestrials**

Orla Aaquist (Grant MacEwan University), Tristan Lebel (Grant MacEwan University), Jim Pinfold, Richard Soluk, Christopher Nixon, Roger Moore, Aksel Hallin (University of Alberta), Helio Takai (Brookhaven National Laboratory)

High-energy cosmic rays (HECRs) from deep space, made up of primarily protons and atomic nuclei, interact with Earth's upper atmosphere to create air showers of hadrons and leptons that rain down on us. Sometimes the energies of these cosmic visitors far

surpass those produced in the Large Hadron Collider (LHC) at CERN. A group of under-graduate physics students and researchers at University of Alberta and Grant MacEwan University are proposing to study the byproducts of these HECRs using the LHC's ATLAS muon system coupled with an array of surface scintillators (the ACME array). The prototype ACME detectors are being constructed and tested as part of undergraduate physics student research projects. In this talk we will highlight the student research aspects of the ACME initiative, its goals and progress to date.

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### **The First Light Initiative - Invigorating Aboriginal Youth to Succeed in a New Age**

Rob Cardinal, Invited Presenter RASC (Edmonton Centre)

The fundamental vision of the First Light Initiative is that Aboriginal youth of all ages are exposed to telescopes, astronomy, and the wonders that fill the sky, invigorating their desire to learn, and to engage and explore with science and technology, while also learning their cultural traditions and indigenous knowledge about the sky. The Initiative seeks to promote and enhance the education of thoughtful, inspired, and engaged youth who can create and innovate for the preservation, advancement, and health of their community. The First Light Initiative is a non-profit organization currently starting operations which will work with private, corporate, and government donors to raise operating revenue, and in-kind contributions. These will be used to directly advocate for and support the donation and installation of telescopes and related support to Indigenous, Aboriginal, and First Nations communities across the country, continent and globe to advance the education success rates of their youth. The Initiative will strive to build relationships with the communities it works in to encourage and enable the keepers of traditional knowledge to use these opportunities to also share this knowledge with the younger generations. Placing telescopes and the related support into their communities, and building a capacity and venue to share in modern and traditional knowledge will encourage

and invigorate young learners in many ways. Follow on activities and capacity building in the communities will grow the positive impact so that larger and more substantial installations will proceed. Eventually, significant installations may become catalysts in their own right supporting the education and pride of our Aboriginal communities in the form of scholarships, prizes, and bursaries to generations of our youth.

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### **Sky Quality Measurement Project Expanded Photographically**

Mike Noble, RASC (Edmonton Centre)

The ‘Sky Quality Measurement Project’ was started by the RASC as an ‘International Year of Astronomy’ project. It was a relatively easy project for the RASC to commit to in the IYA and to continue well-beyond IYA. Unfortunately, the project has limitations. My proposal is to expand the project by adding a photographic component, then integrating the results with a product that is readily available not only across Canada but around the world. That product is ‘Google Earth’. Proceeding with this photographic expansion will give Canadian amateur astronomers a better opportunity for monitoring the current and future effects of light pollution on their observing sites.

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### **Astronomy in Pop Culture**

Krista Stefan, RASC (Edmonton Centre)

Through being involved in Astronomy outreach, I've often been frustrated by the apparent ignorance and apathy of the general public towards Astronomy, and in fact any science or intellectual pursuit. This frustration stems, in part, from an assumption that the average person knows less about these topics than a person who lived decades or centuries ago. I have recently begun to question that assumption as well as examine the role that Astronomy has played in Popular Culture in the past and now. This talk will be a rather light-hearted (and hopefully occasionally humorous) look at the connections between Astronomy and Popular Culture.

## POSTER PRESENTATIONS

Posters are set up in the CCIS L1 Lobby, on:

Friday June 29, 13:00 – 17:00 and Saturday June 30, 09:00 – 16:00.

### **Discover the Universe /À la Découverte de l'Univers**

Julie Bolduc-Duval (IYA) Jan Cami, Dennis Crabtree, James Hesser, John Percy (CASCA), Remi Lacasse, Damien Lemay (FAAQ), Ron Macnaughton, and Mary Lou Whitehorne (RASC)

The Beyond the International Year of Astronomy (BIYA) collaboration between CASCA, the FAAQ and the RASC have developed a program to train educators to teach astronomy by providing interactive astronomy training workshops delivered live over the internet using webinar technology. These workshops, delivered in both English and French, will address educators' lack of familiarity with basic astronomy concepts and give them confidence to teach astronomy to their groups.

As the workshops are delivered over the Internet, participants can be anywhere in Canada, including remote areas with network connection. One set of workshops will be aimed at informal educators such as those that work in summer camps, park interpreters and leaders of other youth groups. The other set of workshops will target teachers.

The initial workshop for informal educators was given in May to over one hundred participants. Discover the Universe received seed funding from NSERC's PromoScience program and CASCA has generously supplemented this initial funding.

## **The Qilak Award for Astronomy Outreach and Communication**

J. Bolduc-Duval (BIYA), J. Cami, D. Crabtree, J. Hesser, M. Sawicki (CASCA), R. Lacasse, D. Lemay (FAAQ), R. Macnaughton and M.L. Whitehorne (RASC)

RASC (Toronto Centre)

After the very successful International Year of Astronomy 2009, the three Canadian partner organizations continue cooperating on diverse BIYA activities including the Discover the Universe Program (see separate poster).

A major new initiative this year was the inauguration of the Qilak (Inuit word for the entire sky) Award for Astronomy Outreach and Communication. The Qilak Award is intended to recognize individual Canadian residents, or teams of residents, who have made outstanding contribution during a particular time period, either for public understanding and appreciation of astronomy in Canada, or to informal education in Canada, and to promote such activities among the members of the sponsoring organizations. Each organization makes an award annually.

We describe various outreach activities involving astronomy, including cultural, carried out by the organizations or their members in the past year.

## **DISPLAY PRESENTATIONS**

Project Displays are set up in the CCIS L1 Lobby, on:  
Friday June 29, 13:00 – 17:00 and Saturday June 30, 09:00 – 16:00.

### **Black Holes**

Sharia Rizwan, (Grade 8, Aurora Charter School, Edmonton)

A black hole is a region of spacetime from which nothing can escape, not even light. It swallows millions and millions of stars, and that is how they form. They form when stars are crushed and shattered in space. Elements like hydrogen and helium fuse together to make heavier elements like calcium and silicon. When there is enough iron in the core of the star it collapses under its own weight which blows the star apart. Scientists believe that a star dies every single day, giving up its life as a black hole.

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### **SARA – The Society of Amateur Radio Astronomers**

Bruce Rout, Invited Presenter RASC (Edmonton Centre)

A presentation on the membership, projects, equipment and goals of SARA, the Society of Amateur Radio Astronomers.

## Oral Paper Speaker Notes

Speakers (except for invited speakers) have been allocated 20 minutes for their presentations. As a general rule, you should allow 15 minutes for speaking, and the balance for setup and questions. A good rule-of-thumb is to plan on one minute per slide including titles and ending – and fewer slides will probably make your presentation more comfortable for you.

Please test your presentation beforehand, especially if you plan to provide your own laptop. You are responsible for the compatible operation of your system with the equipment provided. Videos should be cued to the start of the section which you wish to show. Moderators will inform you when there are 10 minutes and 5 minutes remaining, and will end the questions when your allocated time has run out.

## Digital Printing and Photocopying

### On Campus

There is a Printing & Photocopying centre called SUBprint in the basement of the Student's Union Building.

Phone: 780-492-9113

Email: [subprint@su.ualberta.ca](mailto:subprint@su.ualberta.ca)

Web: <http://www.su.ualberta.ca/businesses/subprint/printing>

Hours: Monday to Friday, 9:00 AM – 4:30 PM.

### Off-Campus

The closest print shop off campus is The UPS Store, which is located at 8507 112 Street.

Phone: 780-757-6877

Email: [store457@theupsstore.ca](mailto:store457@theupsstore.ca)

Hours: Mon-Fri: 09:00 AM to 07:00 PM

Sat: 11:00 AM to 05:00 PM

Sun, Hol: Closed



## Light Pollution Abatement Session

**Sunday, July 1, 2012 (13:00 – 15:30)**

**Lister Maple Leaf Room**

All delegates to the GA are encouraged to participate in the discussions which include a wide range of topics related to light pollution abatement.

### **1. What is a Light Efficient Community?**

Speaker: **Dave Robinson**, PEng, FEC – Director of Building Engineering, Alberta Infrastructure, member of the Illuminating Engineering Society & RASC Edmonton Centre.

### **2. Community Involvement – Who Is *Really* Interested?**

Speakers:

**Sherrilyn Jahrig** – DSP Coordinator of RASC Edmonton Centre and member of the IDA International DSP Designation Committee.

**Donald L. Darnell**, MBA, PEng – Management Consultant and Past-Community League Officer.

### **3. City of Edmonton Street Lighting Initiatives**

Speaker: **Vlado Cicovski**, PEng – Senior Street Light Engineer, City of Edmonton.

### **4. Panel Discussion**

Moderator: **Bruce McCurdy** – Chairman of LPA Committee RASC Edmonton Centre, Past-President of RASC Edmonton Centre and Member of LECC.

## Commercial Vendor Displays

The following commercial vendors have displays at the GA.

**The Science Shop** (astronomy equipment).  
See their ad on the back cover of this booklet.

**Murray Paulson** (meteorites)

**Mark Zalcik** (meteorites)

See the [Schedule at a Glance](#) for times and locations.

## Posters and Project Displays

Posters and Project Displays are set up on in the CCIS L1 Lobby, on:

- Friday June 29, 13:00 – 17:00
- Saturday June 30, 09:00 – 16:00

## Image Competition

Images submitted for the Image Competition are displayed on Friday evening at the Wine & Cheese Reception and on Saturday, between the paper sessions. They are also available on the website at [http://edmontonrasc.com/2012ga/ga\\_images.html](http://edmontonrasc.com/2012ga/ga_images.html).

Judging is conducted by all GA delegates via anonymous ballot (see your registration kit). Artist & photographer names are not identified to avoid bias. You may complete the ballot any time prior to 12:00 noon on Sunday, July 1. Submit the ballot at the Registration Desk on Friday or Saturday, and in the Lister Maple Leaf Room on Sunday.

# University of Alberta Campus Services

## Food on Campus

Food options on campus, other than the organized meals for GA, are limited as the event is on the Canada Day long weekend.

### Lister Centre – The Marina & The Ship

From breakfast available daily to picking up those last minute personal care items, this mini convenience store offers a wide variety of products and services. The Marina has some dining outlets such as Tim Horton's (07:00 – 15:00), Booster Juice, and Pizza 73. The Ship is a gathering place and leisure seating area connected to The Marina. Phone 780-492-6056 for info.

### HUB Mall – Corner of 87 Avenue and 112 Street

The mall's minimum hours are: Mon–Fri 10 am – 6 pm. On Sat, Sun, Holidays: optional opening. On Sunday July 1, most shops are closed.

<a href="#">A &amp; W Restaurant</a>	780-439-7406
Academy Pizza	780-433-1302
<a href="#">Edo Japan</a>	780-431-1744
<a href="#">Java Jive Coffee</a>	780-433-5573
<a href="#">New York Fries</a>	780-432-6232
<a href="#">Subway</a>	780-432-7461

### Students' Union Building

SUB is open on Thursday, Friday and Saturday (June 28-30), but is closed on Sunday July 1. Some options are:

<a href="#">Edo Japan</a>	780-431-1744
<a href="#">Java Jive Coffee</a>	780-438-4883
Marcos Famous	780-437-8644
Room At The Top	780-492-2153
Taco Time	780-439-5567

## ATM

ATMs are located in the Students' Union Building (SUB). SUB is open on Thursday, Friday and Saturday (June 28-30), but is closed on Sunday July 1. HUB Mall and the U of A Hospital also have ATMs. See the [U of A Campus map](#).

## First Aid and Medical Emergencies

There is no campus medical centre available. The University of Alberta Hospital is located 1 block east, and 1 block south of Lister Centre.

## Internet Access

The Guest Rooms and Schäffer Hall rooms in the Lister Centre have wired internet access (requires an Ethernet cable). For those staying in the Traditional Residence rooms, internet access is complimentary in the internet café in The Ship, on a first come, first serve basis.

A free, wireless internet access service, called **Guest@UofA** is available across campus, including the public spaces in Lister Centre. Connect by selecting "Guest@UofA" from the list of available networks, agree to the Conditions of Use, and then browse.

<http://www.aict.ualberta.ca/units/uws/guest-uofa>



# Parking

Parking at the University of Alberta campus is NOT free.

## Parking at Lister Centre

If you are staying at Lister Centre, arrange your parking directly with Lister Centre. Otherwise, the cheapest parking areas closest to Lister Centre are Lots M and R.

M-F, 6:00am - 4:30pm \$14.00

M-F, 4:30pm - 6:00am \$5.00

Weekends & Holidays \$5.00

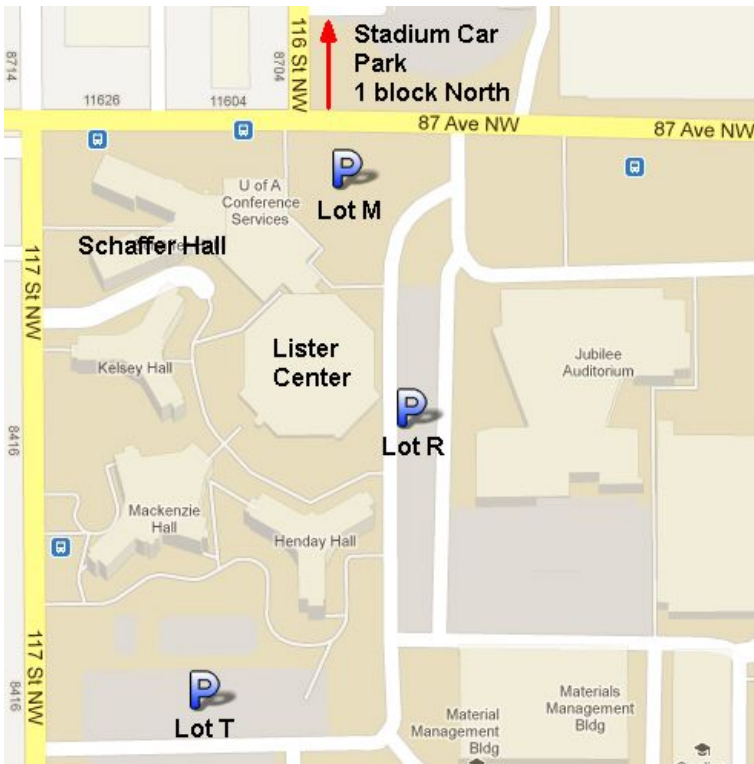
Also near Lister Centre is Lot T (purchase permit from Lot R).

M-S, 12:00am - 6:00am \$5.00

M-S, 4:30pm - 12:00am \$5.00

Weekends & Holidays \$5.00

One block North of Lister Centre is Stadium Car Park (same rates as Lot M and R).



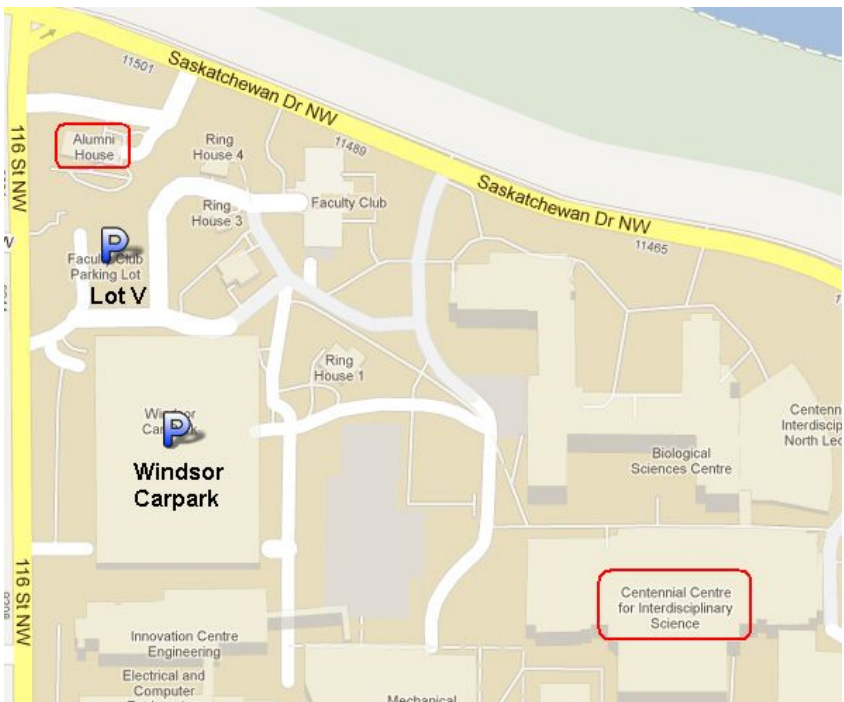
### Parking at CCIS

The cheapest parking areas closest to CCIS are:

Faculty Club Parking Lot (Lot V)  
M-F, 6:00am - 11:00am \$14.00  
M-F, 4:30pm - 6:00am \$2.00  
Weekends & Holidays \$2.00

Windsor Carpark  
M-F, 6:00am - 4:30pm \$14.00  
M-F, 4:30pm - 6:00am \$5.00  
Weekends & Holidays \$5.00

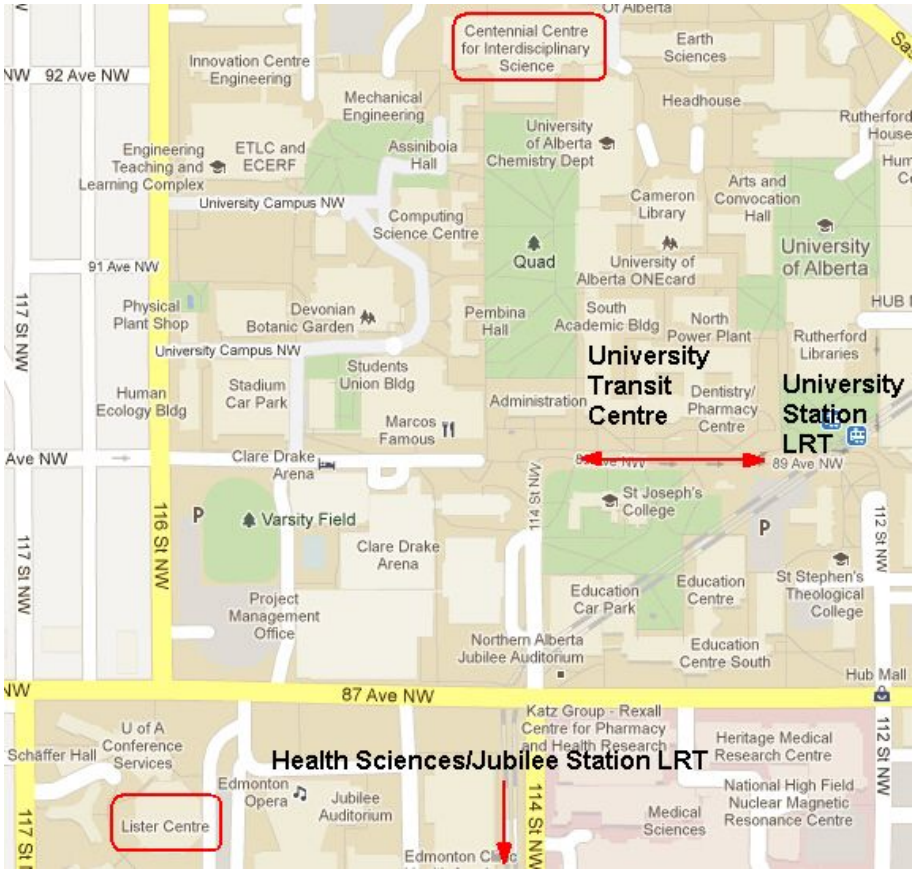
An interactive parking map and parking rate information is at:  
<http://www.asinfo.ualberta.ca/en/ParkingServices/ParkingInformation.aspx>



**Note:** Parking meters on Saskatchewan Drive are operate 24/7 and monitored on a regular basis.

# Transit Information

**Bus:** The University Transit Centre is located on 89 Avenue between 112 and 114 Streets (close to the University Station subway stop).



**Subway:** In Edmonton, the subway is known as the LRT (Light Rail Transit). There are 2 stops at the U of A North (Main) Campus:

- University Station (closest to CCIS)
- Health Sciences/Jubilee Station (closest to Lister Centre)

University of Alberta Service Page:

[http://www.edmonton.ca/transportation/ets/school\\_service/ets-service-to-university-of-a.aspx](http://www.edmonton.ca/transportation/ets/school_service/ets-service-to-university-of-a.aspx)



## Off-Campus Services

### Banks / ATM

BMO (Bank)	11630 87 Avenue Across the street from Lister Centre.	<a href="#">Map Zone 1</a>
CIBC ATM	11105 87 Avenue 8440 112 Street	<a href="#">Map Zone 2</a> <a href="#">Map Zone 14</a>
TD ATM	10864 82 (Whyte) Ave	<a href="#">Map Zone 21</a>

### Taxi Services

Barrel Taxi	780-489-7777
Capital Taxi	780-423-2425
Co-op Taxi	780-425-2525
Yellow Cab	780-462-3456

### Edmonton Police Service

In Case of Emergency	9 1 1
Non-Emergency Calls	780-423-4567 TELUS Mobility: #377 Rogers: *377

### Alcohol

The Liquor Depot 780-438-9463	8204 109 Street	<a href="#">Map Zone 21</a>
Stadium Liquor 780-428-2337	10930 84 Avenue	<a href="#">Map Zone 15</a>

**Map Zone references are on Page 55.**

## Hospital

The nearest hospital is The University of Alberta Hospital, located 1 block east, and 1 block south of Lister Centre (8440 112 Street).

[Map Zone 7](#)

## Pharmacy

Shoppers Drug Mart 10907 82 Avenue  <a href="#">Map Zone 21</a>	780-433-2424 Open 24 hours
Safeway Pharmacy 10930 82 Avenue  <a href="#">Map Zone 21</a>	780-439-9767 Mon-Fri 9:00 AM – 9:00 PM Sat 9:00 AM – 6:00 PM Sun 10:00 AM – 6:00 PM

## Malls

Southgate Centre 5015 - 111 Street  See Map on Page 56.	Accessible by LRT (subway) from Health Sciences/Jubilee Station. Take a southbound train and stop at Southgate.  <a href="http://www.edmonton.ca/transportation/ets/route-schedules-and-maps.aspx">http://www.edmonton.ca/transportation/ets/route-schedules-and-maps.aspx</a>
West Edmonton Mall 8882 170 Street  See Map on Page 56.	Accessible by bus from the University Transit Centre. Take Route 4 (displaying West Edmonton Mall) or Route 106 (displaying Lessard).  Route 4 Active Days: Mon - Sun Route 106 Active Days: Mon – Sat  <a href="http://etstrippanner.edmonton.ca/RouteSchedule.aspx">http://etstrippanner.edmonton.ca/RouteSchedule.aspx</a>

**Map Zone references are on Page 55.**

**Gas Stations**

The closest gas station to campus is the Esso at 10863 82 Avenue. Phone 780-433-3231. [Map Zone 21](#)

**Grocery Stores**

Safeway 10930 82 Avenue  <a href="#">Map Zone 21</a>	780-433-6930 Mon-Sun: 8:00 AM – Midnight
Sobeys 8215 112 Street  <a href="#">Map Zone 19</a>	780-438-5064 Mon-Fri: 8:00 AM – 9:30 PM Sat: 9:00 AM – 9:00 PM Sun: 10:00 AM – 8:00 PM

**Convenience Stores**

SUB has a convenience store, but it is closed Sunday, July 1. There is a Mac's across the street from Lister Centre (11630 87 Avenue). [Map Zone 1](#)

**Map Zone references are on Page 55.**

# Off-Campus Food

## Restaurants

## Map Zone

DaDeO New Orleans Diner 10548a 82 Avenue	23	780-433-0930 <a href="http://www.dadeo.ca">http://www.dadeo.ca</a>
Duke's Diner 11636 87 Avenue	1	780-431-0380 Half block west of Lister Centre
Earls Kitchen & Bar 8629 112 Street	7	780- 439-4848 <a href="http://www.earls.ca">http://www.earls.ca</a>
High Level Diner 10912 88 Avenue	3	780-433-0993 <a href="http://highleveldiner.com">http://highleveldiner.com</a>
Hudson's Canadian Tap House 11113 87 Avenue	8	780- 433-6364 <a href="http://www.hudsonstaphouse.com">http://www.hudsonstaphouse.com</a>
Kabuki Sushi & Grill 8724 109 Street	9	780-437-0077 <a href="http://yokozunarestaurant.ca">http://yokozunarestaurant.ca</a>
The Keg Steakhouse & Bar 8020 105 Street	29	780-432-7494 <a href="http://www.kegsteakhouse.com">http://www.kegsteakhouse.com</a>
The King & I Thai Cuisine 8208 107 Street	22	780-433-2222 <a href="http://thekingandi.ca">http://thekingandi.ca</a>
Kyoto Japanese Cuisine 8709 109 Street	9	780-414-6055
Mandarin Restaurant 11044 82 Avenue	20	780-433-8494 <a href="http://www.mandarin-restaurant.com">http://www.mandarin-restaurant.com</a>
Sugar Bowl 10922 88 Avenue	3	780-433-8369 <a href="http://thesugarbowl.org">http://thesugarbowl.org</a>
Urban Diner 8715 109 Street	9	780-437-7275 <a href="http://urbandiner.com">http://urbandiner.com</a>
Yiannis Taverna 10444 82 Avenue	23	780-433-6768 <a href="http://eatmorelamb.com">http://eatmorelamb.com</a>

**Map Zone references are on Page 55.**

**Fast Food****Map Zone**

Burrito Libre 8525 112 Street	7	780-436-4375
Dairy Queen 11136 82 Avenue	20	780-439-0088
The Greenhouse at the Good Earth Cafe 8623 112 Street	7	780-434-4892 <a href="http://www.goodearthcafes.com">http://www.goodearthcafes.com</a>
KFC 8517 109 Street	15	780-448-3870
McDonald's 8415 109 Street	15	780- 414-8374
Pita Pit 8215 112 Street	19	780-988-0930
La Poutine 8720 109 Street	9	780-757-7222
Quizno's Subs 10377 78 Avenue	36	780-432-4761
Rodeo Burger 8525 112 Street	7	780-435-6733
Subway 10652 82 Avenue	22	780-433-3500
Wendy's 8427 112 Street	13	780-434-6608

**Map Zone references are on Page 55.**

**Coffee Shops****Map Zone**

da capo Lifestyle Caffè 8738 109 Street	9	780-433-5382 <a href="http://dacapocaffe.com">http://dacapocaffe.com</a>
Good Earth Cafe 8623 112 Street	7	780-434-4892 <a href="http://www.goodearthcafes.com">http://www.goodearthcafes.com</a>
Leva Cafe Bar 11053 86 Avenue	8	780- 479-5382 <a href="http://www.levabar.com">http://www.levabar.com</a>
Remedy Cafe 8631 109 Street	9	780- 433-3096 <a href="http://remedycafe.ca">http://remedycafe.ca</a>
Steeps Tea Lounge 11116 82 Avenue	20	780-988-8105 <a href="http://www.steepstea.com">http://www.steepstea.com</a>
Tim Hortons 8427 112 Street	13	780-413-7528 <a href="http://www.timhortons.com">http://www.timhortons.com</a>
transcend 8708 109 Street	9	780-756-8882 <a href="http://transcendcoffee.com">http://transcendcoffee.com</a>

**Pizza****Map Zone**

Avenue Pizza 8519 112 Street	7	780-432-0536
Domino's Pizza 8707 109 Street	9	780-496-9924 <a href="http://www.dominos.ca">http://www.dominos.ca</a>
Plato's Pizza 8514 109 Street	9	780-433-6481
Royal Pizza (a classic) 10433 80 Avenue	29	780-432-7720 <a href="http://royalpizza.ca">http://royalpizza.ca</a>

**Map Zone references are on Page 55.**

## Tours

Below are the arranged tours. Your name tag lists the tours you have paid for.

- All tours are on Monday, July 2.
- All tours depart from Lister Centre.
- Please be on time for departure.

### Full Day Tours

<b>Tour</b>	<b>Depart</b>	<b>Return</b>	<b>Included</b>
<b>Whitecourt Meteorite Crater</b>	08:30	22:00	Transportation, guided tour, lunch and supper.
<b>Elk Island National Park</b>	09:00	18:00	Transportation and entrance.
<b>Fort Edmonton Park</b>	09:45	18:00	Transportation and entrance.

### Half Day Tours

<b>Tour</b>	<b>Depart</b>	<b>Return</b>	<b>Included</b>
<b>Jurassic Forest</b>	09:00	13:00	Transportation and entrance.
<b>TELUS World of Science</b>	13:30	18:00	Transportation and entrance.



# On Your Own Tour Suggestions

## **In Edmonton**

### **Alberta Aviation Museum**

11410 Kingsway Avenue  
Edmonton, AB, Canada T5G 0X4  
Phone: 780-451-1175  
<http://albertaaviationmuseum.com>

### **Alberta Legislature**

10820 - 98 Avenue (Pedway Mall north of the Legislature Building)  
Edmonton, Alberta T5K 2N6  
Phone: 780-427-7362  
Toll Free: 780-310-0000  
<http://www.assembly.ab.ca/visitor/index.html>

### **Art Gallery of Alberta**

2 Sir Winston Churchill Square  
Edmonton, Alberta T5J 2C1  
Phone: 780-422-6223  
<http://www.youraga.ca>

### **Devonian Botanic Garden**

Hwy 60, 5km north of Devon  
Phone: 780-987-3054  
<http://www.devonian.ualberta.ca>

### **Edmonton River Valley Trail System**

[http://www.edmonton.ca/attractions\\_recreation/parks\\_rivervalley/trail-system.aspx](http://www.edmonton.ca/attractions_recreation/parks_rivervalley/trail-system.aspx)

### **Edmonton Walking Tours**

[http://www.edmonton.ca/transportation/cycling\\_walking/where-to-walk.aspx](http://www.edmonton.ca/transportation/cycling_walking/where-to-walk.aspx)

**Edmonton Public Schools Archives & Museum**

10425 - 99 Avenue  
Edmonton, AB Canada T5K 0E5  
Phone: 780-422-1970  
<http://archives.epsb.net>

**Edmonton Queen Riverboat**

Rafter's Landing  
9734 - 98 Avenue  
Edmonton, Alberta, Canada T6C 4P6  
Phone: 780-424-2628  
<http://www.edmontonqueen.com>

**High Level Bridge Streetcar**

Phone: 780-437-7721  
<http://www.edmonton-radial-railway.ab.ca/highlevelbridge>

**Edmonton International Jazz Festival**

June 22 - July 1, 2012  
<http://www.edmontonjazz.com>

**John Jansen Nature Centre**

7000-143 Street  
Access is via Fox Drive, just east of the Whitemud.  
Phone: 780-442-5311 (In Edmonton: 311)  
[http://www.edmonton.ca/attractions\\_recreation/attractions/john-janzen-nature-centre.aspx](http://www.edmonton.ca/attractions_recreation/attractions/john-janzen-nature-centre.aspx)

**Old Strathcona**

**This is a great area for walking, shopping, eating and drinking.  
It's about a 30 minute walk from Lister Centre.**

Whyte Ave area  
<http://oldstrathcona.ca>

**Pub Crawls**

Phone: 780-702-7295  
<http://www.edmontonpubcrawls.com>

**Royal Alberta Museum**

12845-102nd Avenue, Edmonton, Alberta, T5N 0M6, Canada

Phone: 780-453-9100

<http://www.royalalbertamuseum.ca>

**Rutherford House**

11153 Saskatchewan Drive

Northeast corner of U of A Campus

Phone: 780-422-2697

<http://www.rutherfordhouse.ca>

**Segway Tour of River Valley**

Bldg B, 9735 - Grierson Hill Louise Mckinney Park

Phone: 780-995-7347

<http://www.segwayedmonton.com>

**Telephone Historical Centre**

Prince of Wales Armouries Heritage Centre

10440 108 Ave

Phone: 780-433-1010

<http://www.telephonehistoricalcentre.com>

**Valley Zoo**

13315 Buena Vista Road (87th Avenue)

Phone: 780-442-5311 (In Edmonton: 311)

[http://www.edmonton.ca/attractions\\_recreation/attractions/edmonton-valley-zoo.aspx](http://www.edmonton.ca/attractions_recreation/attractions/edmonton-valley-zoo.aspx)

**Public Art Walking Tour**

University of Alberta

<http://collections.museums.ualberta.ca/uaac/uaac/publicart.aspx>

**West Edmonton Mall**

<http://www.wem.ca>

**The Works Art & Design Festival**

Edmonton's annual art extravaganza is located at several venues in the downtown area between June 21 and July 3.

<http://www.theworks.ab.ca/festivalfolder/festival/festival.html>

## On Your Own Tour Suggestions

### **Near Edmonton**

#### **Bon Accord Summer Skies Festival – June 30**

45 minutes north of Edmonton

Phone: 780-921-3550

<http://www.bonaccord.ca/skies>

#### **Leduc #1 Energy Discovery Centre**

20 minutes southwest of Edmonton

<http://www.leducnumber1.com>

#### **Prairie Gardens & Adventure Farm**

56311 Lily Lake Road, Bon Accord

25 Km north of Edmonton

Phone: 780.921.2272

<http://www.prairiegardens.org>

#### **Reynolds-Alberta Museum / Canada's Aviation Hall of Fame**

6426 - 40 Avenue, Wetaskiwin

Phone: 780-361-1351

<http://history.alberta.ca/reynolds>

## Canada Day Events



### **Celebrate Canada Day at City Hall**

11:30 am – 4pm

Enjoy free live entertainment, crafts, face painting, petting zoo, City Hall tours and displays. A Canada Day ceremony will take place at noon in the City Room.

### **Canada Day at the Alberta Legislature**

7:00 am – 7:00 pm

Celebrate our nation's birthday at the [Alberta Legislature](#) with live entertainment and a variety of free family activities.

### **Canada Day Fireworks**

11:00 pm

Enjoy the spectacular fireworks display over Edmonton's river valley parks and the North Saskatchewan River. Good viewing locations:

- Alberta Legislature Grounds
- Victoria Park (River Valley Road)
- Ezio Faraone Park (west entrance to High Level Bridge on 109 St. north)
- Dantzer's Hill (below Queen Elizabeth Park)
- Government House Park (Groat Road & River Valley Road)

Expect traffic delays two hours before the fireworks and 90 minutes after the show.

# Maps

On subsequent pages are the following maps.

## [University of Alberta Campus Map](#)

This map shows the main GA locations.

An online, interactive map with driving/walking/cycling directions is at: <http://www.campusmap.ualberta.ca> (click on North Campus).

**Note:** In Edmonton, streets run north-south with numbers increasing to north; whereas avenues run east-west with numbers increasing toward the west.

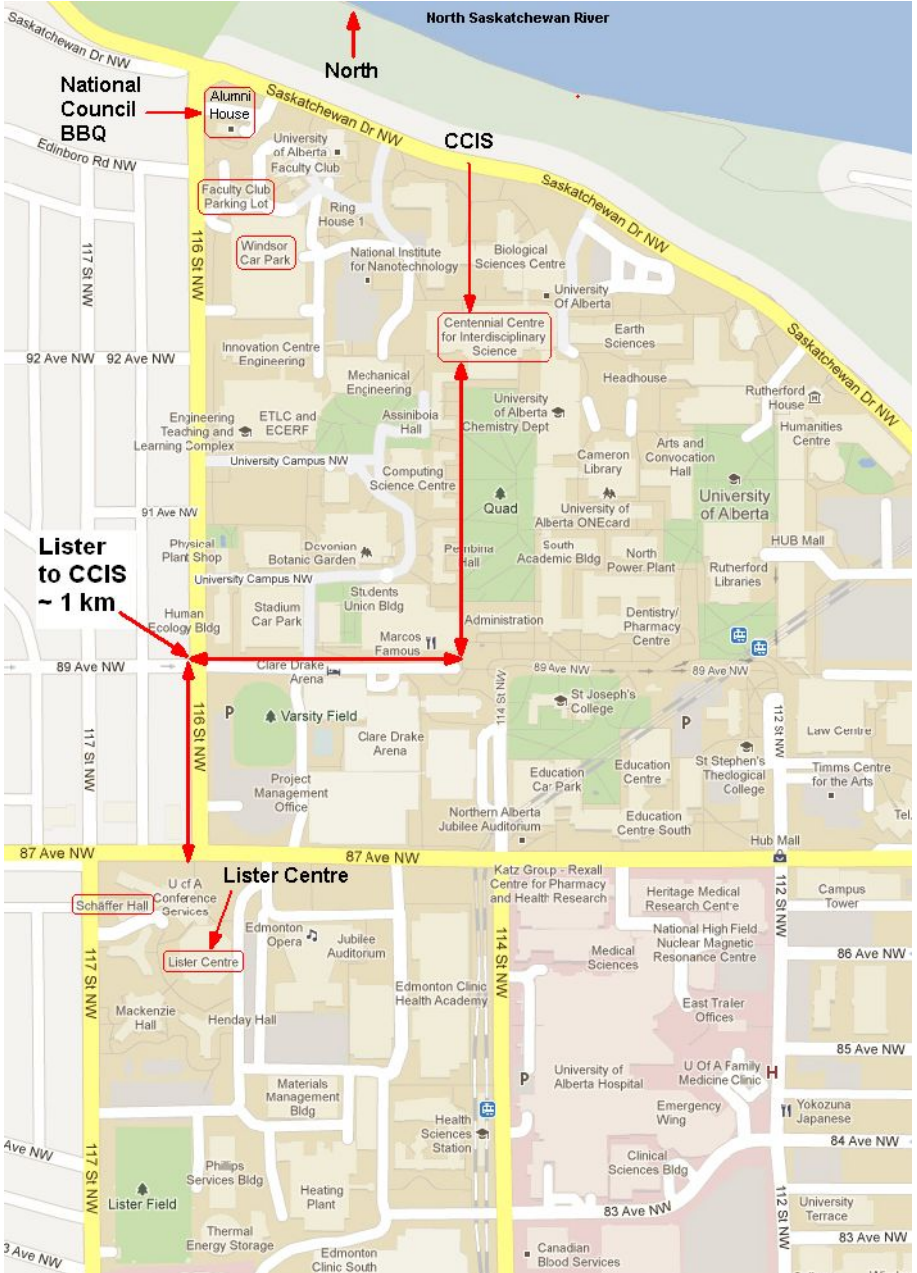
## [Lister Centre Map](#)

## [CCIS Map](#)

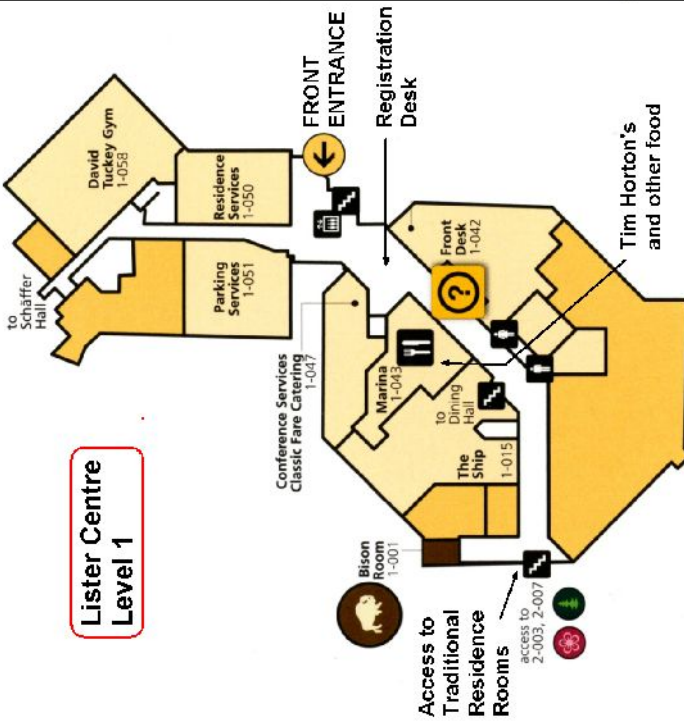
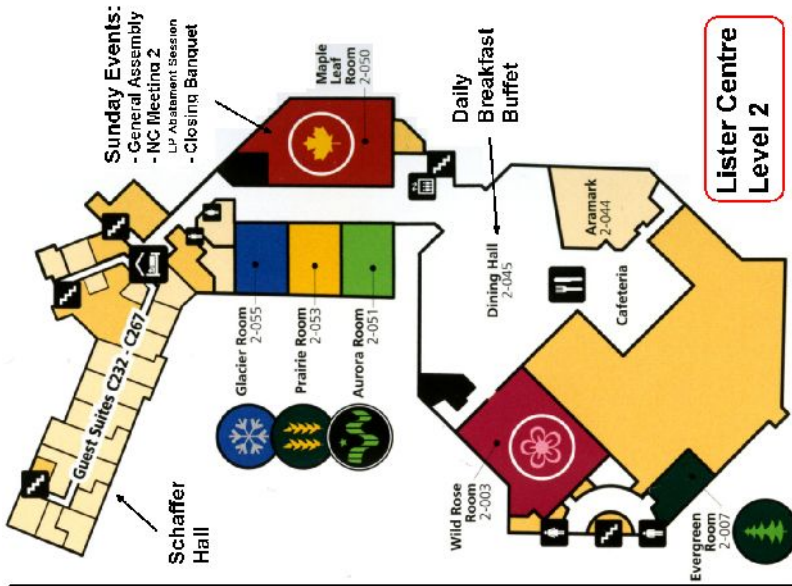
## [Area Map with off-campus services](#)

## [Edmonton Map showing U of A, Downtown, West Edmonton Mall, and Southgate Mall](#)

# University of Alberta Campus Map

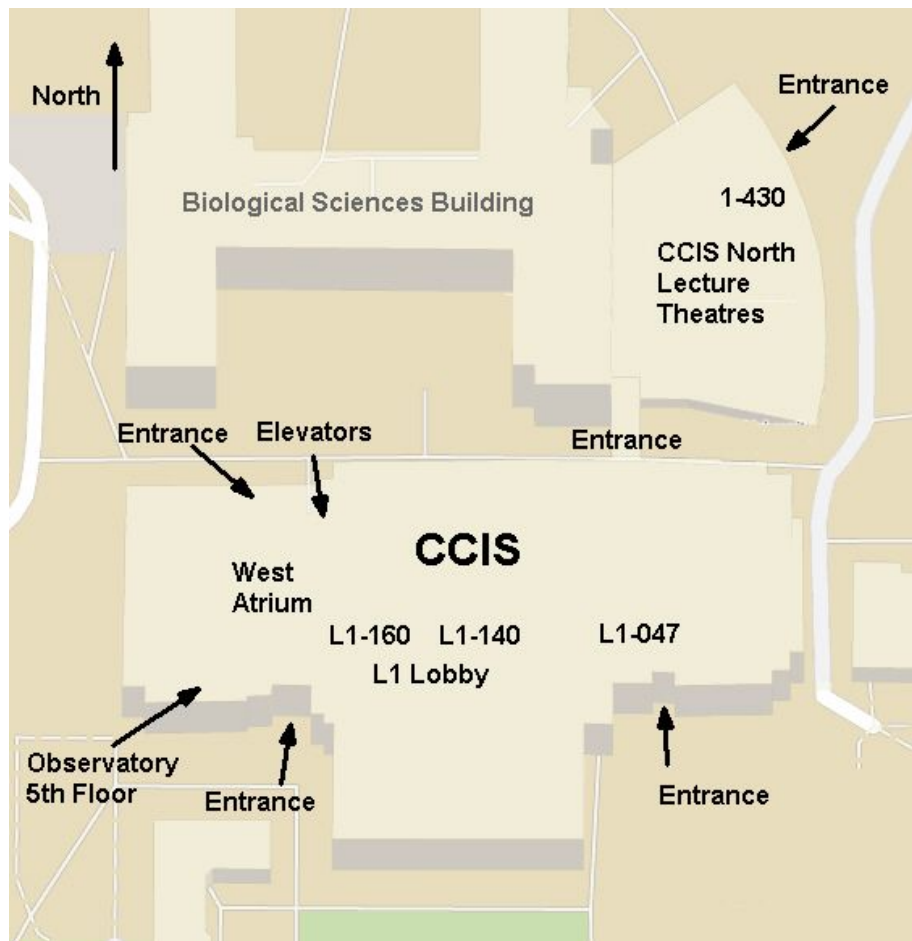


# Lister Centre Map

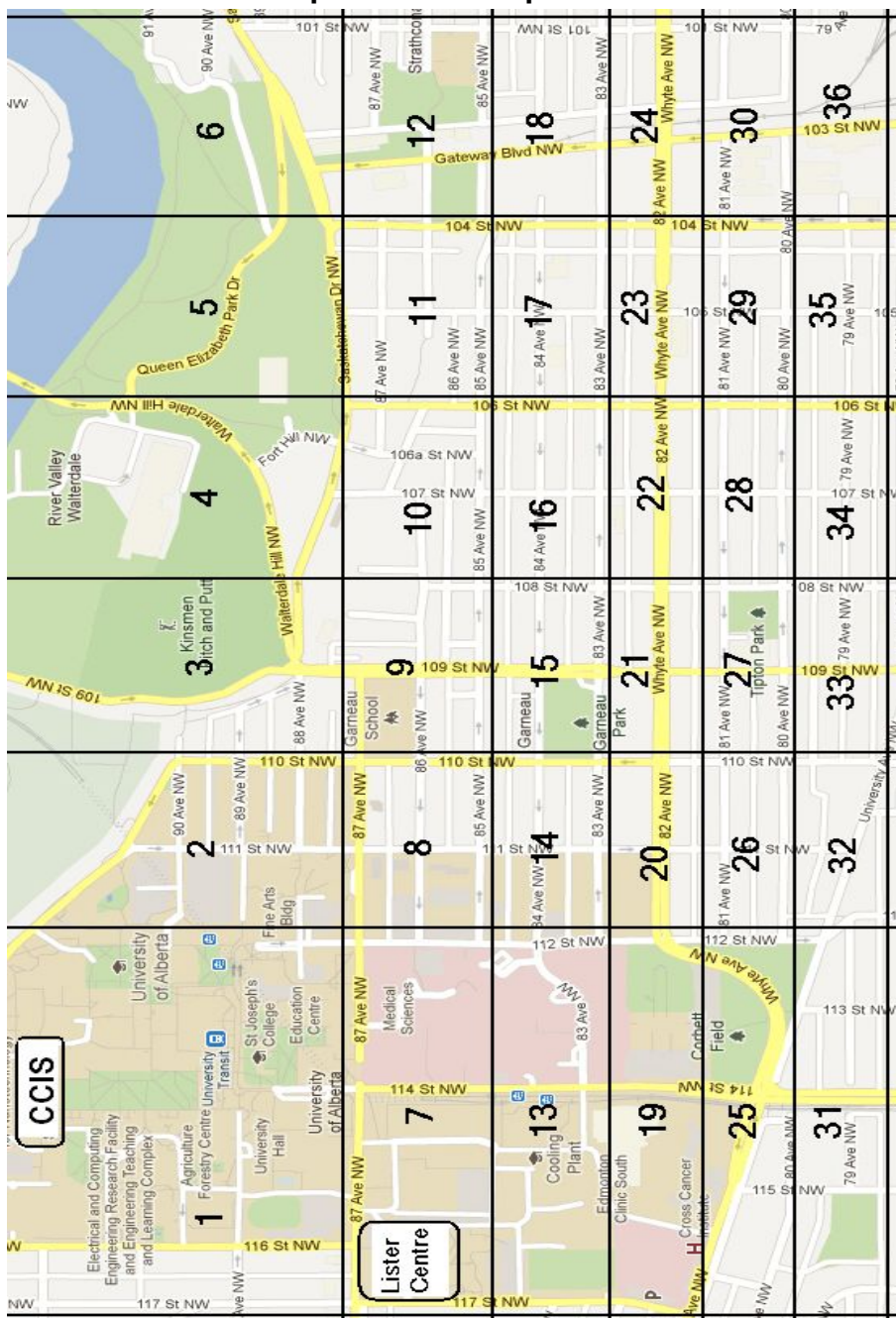




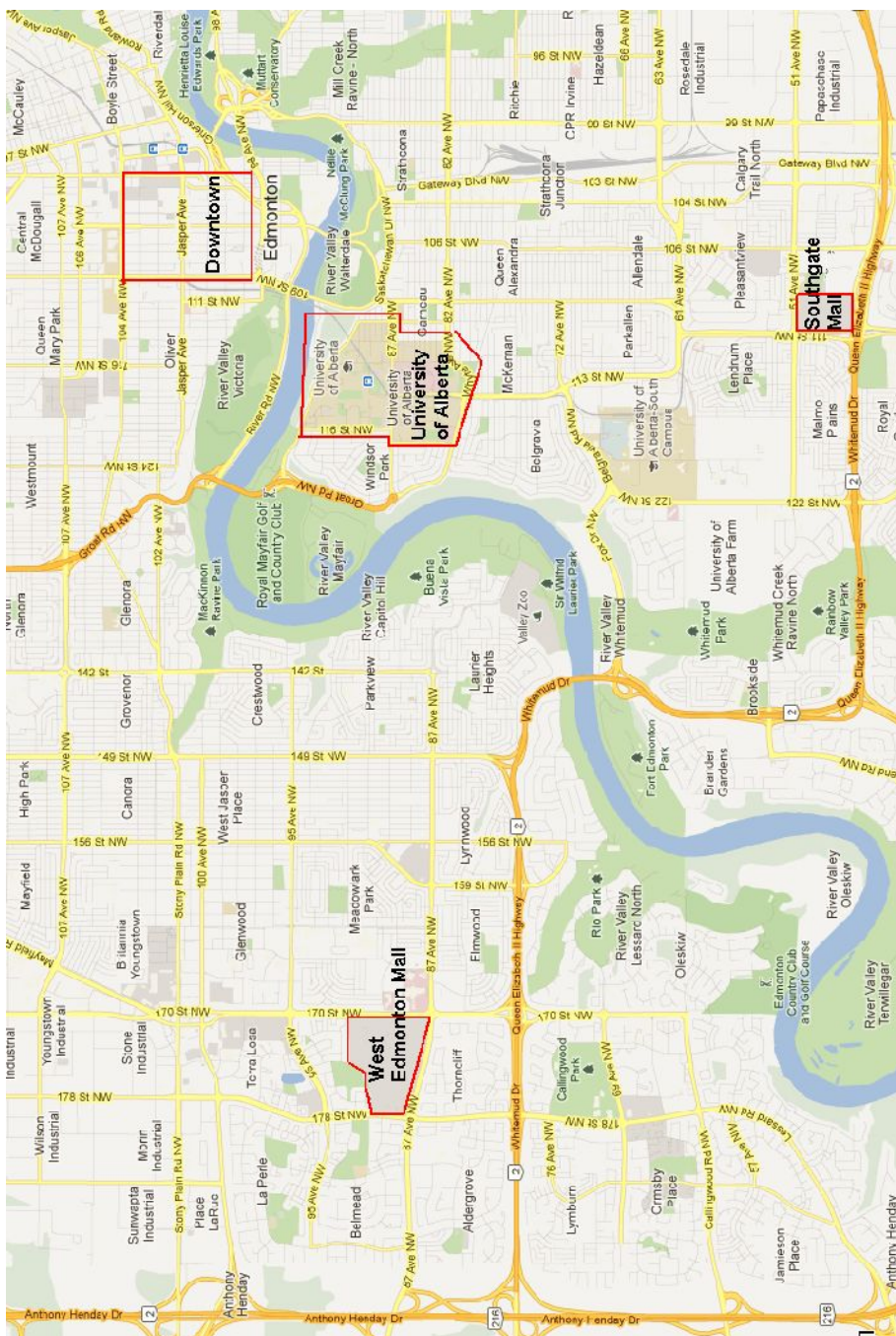
## CCIS Map



### Area Map with off-campus services



### Edmonton Map showing U of A, Downtown, WEM, Southgate



# Schedule at a Glance

## Thursday June 28, 2012

1300 - 1700	Registration Desk	Lister Foyer
1900 - 2130	National Council BBQ	Alumni House

## Friday June 29, 2012

0900 - 1800	Registration Desk	Lister Foyer
0900 - 1200	National Council Meeting 1	CCIS L1-047
1200 - 1230	Lunch for National Council	CCIS L1-047
1230 - 1500	National Council Meeting 1	CCIS L1-047
1300 - 1700	Commercial Vendor Displays	CCIS L1 Lobby
1300 - 1700	Poster and Project Displays	CCIS L1 Lobby
1500 - 1700	U of A Physics Colloquium	CCIS L1-140
1900 - 1930	<a href="#">Invited Talk: Dr. Martin Connors</a>	CCIS L1-160
1930 - 2130	Wine & Cheese Reception	CCIS West Atrium
2030 - 2130	Song Contest	CCIS West Atrium
2030 - 2300	Murphy Images	CCIS Observatory 5-240
2030 - 2300	Observatory Tours	CCIS Observatory 5-240

## Saturday June 30, 2012

0900 - 1300	Registration Desk	Lister Foyer
0900 - 1600	Commercial Vendor Displays	CCIS L1 Lobby
0900 - 1600	Poster and Project Displays	CCIS L1 Lobby
0900 - 1200	Paper Sessions 1	CCIS L1-160
1200 - 1300	Saturday Luncheon	outside CCIS L1-160
1300 - 1600	Paper Sessions 2	CCIS L1-160
1730 - 1900	Dinner before Hogg Lecture	CCIS South Patio
1930 - 2100	<a href="#">Helen Sawyer Hogg Lecture</a> <a href="#">Speaker: Dame Jocelyn Bell Burnell</a>	CCIS 1-430
2100 - 2200	Reception	outside CCIS 1-430

## Sunday July 1, 2012

0900 - 1600	Commercial Vendor Displays	Lister Centre
0900 - 1000	General Assembly (AGM)	Lister Maple Leaf Room
1000 - 1200	National Council Meeting 2	Lister Maple Leaf Room
1300 - 1530	Light Pollution Abatement Session	Lister Maple Leaf Room
1600 - 1700	East vs West Game	Field near Lister
1800 - 1830	Group Photo	Lister Maple Leaf Room
1830 - 1930	Cocktails (cash bar)	Lister Maple Leaf Room
1930 - 2230	<a href="#">Closing Banquet</a> <a href="#">Speaker: Dr. Christopher Herd</a>	Lister Maple Leaf Room





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