



# The Rock Record - January 2017

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The SGS Newsletter is produced by the SGS executive. Letters, announcements, notices, comments, photos, news and information about SGS members, etc. are always welcome. Call an executive member or write to us at:

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## In This Issue

- Details of upcoming talks p. 2-3
- President's Message p. 4
- Other News and Events p. 5-6
- Corporate Members and Sponsors p. 7

## Saskatchewan Geological Society Luncheon Talk

**Tuesday, January 17<sup>th</sup>, 2017**

*"Mega Fallback Breccia and Impact Melt Bodies Discovered at the Deeply Eroded Carswell Impact Structure, Northwestern Saskatchewan, Canada"*

Charlie Harper  
Harper Geological Consulting & Exploration

### VENUE:

Artful Dodger, 1631 11<sup>th</sup> Ave

**Lunch: 11:45 a.m.**

**Talk: 12:00-1:00 p.m.**

### For lunch the cost is:

No Lunch (Talk only): \$5.00

Members: \$15.00

Student Members: \$10.00

Non-Members: \$20.00

Please RSVP to Jason Cosford at [cosford@jdmollard.com](mailto:cosford@jdmollard.com)  
by noon on Monday, Jan. 16<sup>th</sup>, if you are going to have lunch.

**DETAILS OF Jan. 17<sup>th</sup> TALK – Charlie Harper (Harper Geological Consulting & Exploration),  
R. Sierd Eriks and Michael Gunning (Alpha Exploration Inc.\*)**

**ABSTRACT – “Mega Fallback Breccia and Impact Melt Bodies Discovered at the Deeply Eroded Carswell Impact Structure, Northwestern Saskatchewan, Canada”**

Voluminous impact melt rocks, mega fallback breccia, and extensive impact-induced melting of host granitoid gneisses were discovered during recent uranium exploration diamond drilling by Alpha Exploration Inc. on its Middle Lake property within the central gneissic basement uplift of the Carswell Impact Structure, located in the western part of the Proterozoic Athabasca Basin in NW Saskatchewan, Canada. The impact structure's age is Ordovician, based on previous studies in the 1970s and 80s and more recently in 2010. The mega fallback breccia occupies a wedge-shaped mass 160 m wide, at least 200 m long, and up to 100 m thick along the downthrown side of a major impact-related fault that crosses the basement uplift. The breccia comprises a heterolithic suite of intensely fractured clasts up to 10 m across within a clast-rich, glassy impact breccia matrix accompanied by impact melt veins and dykes. Irregular curvilinear contacts with embayments indicate a semi-plastic state of the boulder-size clasts. In addition to drill core intersections, pink, olive brown and green, vesicular, amygdaloidal, clast-bearing, volcanic-like impact melt bodies were previously mapped on surface, and are spatially associated with the mega fallback breccia. Impact melt bodies occur in dyke to sill-like intrusions up to 30 m wide and several hundred metres long, most commonly along faults. They have a microcrystalline texture with vesicles and amygdules typically lined with chlorite and or quartz. Many amygdules have a white clay core. Quartz is the primary clast type and shows various stages of assimilation into the melt and recrystallization to very fine quartz. Flow banding is common in the impact melt rocks. The intense heat generated by the impact produced in situ melting of granitoid gneisses in this part of the structure, and resulted in the progressive destruction (melting) of the mafic mineral component and metamorphic textures, which in turn produced darker colored rocks. Quartz and feldspars also underwent progressive melting/assimilation, and are commonly present as ragged, relict grains in the black melt, with quartz showing various stages of recrystallization. Some black melt material has recrystallized to very fine, randomly oriented biotite and finer opaque grains. Decorated planar deformation features in quartz occur in all these impact-related rocks.

\*Several months after this abstract was submitted to GSA Alpha Exploration merged with Lakeland Resources to become ALX Uranium Corp.

**Bio -**

With over 40 years geological experience, Charlie has extensive experience in designing, implementing, conducting, documenting and presenting geological and mineral exploration projects in various parts of Canada and Slovakia. As a project geologist with the Saskatchewan Geological Survey (1974-2007), he managed and executed geoscience projects ranging from detailed mineral deposit studies including various iron ore types, VMS, gold, uranium, rare earth elements and sediment-hosted Pb-Zn deposits to regional scale mapping projects. He also managed and oversaw all stages of report and map production through to printing



of all geoscience publications for the Survey for a period of eight years. While with the Survey Charlie completed his PhD research on the geology and uranium deposits located within the central basement uplift of the multi-ring Carswell meteorite impact structure, including detailed mapping, lithogeochemical and petrologic studies of several of the uranium deposits and impact related features found throughout the central uplift. Upon leaving the Survey, Charlie, as Chief Geologist with Triex Minerals, organized and managed a satellite office in Regina and managed a number of uranium exploration projects including soil and biogeochemical sampling, geological mapping, diamond drilling, core sampling and report preparation in the Athabasca Basin of northern Saskatchewan and in the Hornby Basin in Nunavut. He was also instrumental in recognizing a large, previously unknown meteorite impact structure at Pasfield Lake in northeastern Saskatchewan. As a geological consultant Charlie has provided consulting services on gold, uranium and rare earth element exploration programs in Canada and Slovakia; supervised several successful gold diamond drill programs; completed deposit and regional compilations, notably a compilation of rare earth elements occurrences within the Athabasca Basin of Saskatchewan. Charlie has authored and was co-author of over 100 papers and abstracts published in provincial, national, and international journals along with numerous published geology maps, co-editing two Saskatchewan Geological Society symposium volumes, and other published materials. He has been a registered Professional Engineer and Geoscientist since 1977 and belongs to a number of professional organizations. In January 2011 Charlie was inducted into the Saskatchewan Geological Society's Geologist Honour Roll. In 2015 he was awarded the APEGS Outstanding Achievement Award and in 2016 was granted Life Membership status with APEGS.

## DETAILS OF Feb. 1<sup>st</sup> TALK – Patricia Sandberg (Author of “Sundogs and Yellowcake”)

### EXTRACT –

*Canada's uranium helped end the second world war and armed the next, the Cold War. An exploration frenzy swept the western world and mining magnate Gilbert LaBine's new discovery at Gunnar Mines attracted attention across North America and beyond. Gunnar's 800 residents—immigrants fleeing post-war Europe, job-seeking southerners, and the area's First Nations and Métis—found adventure, romance, tragedy, and a freedom never again to be equaled. It was an exuberant and innocent time.*

***Sun Dogs and Yellowcake** is a thoughtful and often humorous account of a recent but largely forgotten era in Canadian history. It is above all a great mining story.*

### BIO

Patricia Sandberg, a former securities and mining lawyer and partner at DuMoulin Black, a Vancouver law firm, acted for mining companies listed on Canadian and international stock exchanges. Her grandfather spent thirty years working at mines run by Gilbert LaBine, Canada's "Father of Uranium." Three generations of her family, including Patricia as a child, lived at Gunnar Mines, a uranium mining town on Lake Athabasca during the Cold War.



## President's Message

Happy New Year! I hope all of you had a wonderful Christmas break and are reenergized for 2017. This is my final newsletter as President of the Society and I will keep this message short and sweet. Though very busy, I found it to be a rewarding, enjoyable and productive year. I want to take this opportunity to say a big thank you to everyone who contributed to the Society throughout the year. I especially want to extend a big thanks to my fellow Executive members and to the various committee chairs for their hard work and dedication to the Society this year. It's been a terrific team to work with and I truly appreciate all of your efforts!

Heading into the New Year I just want to reiterate that the health of the Society truly depends on the willingness of members to participate. Please continue to get involved, come to the lunch lectures, and keep the Society strong and vibrant. We have a terrific Executive lined up for 2017 and I know it will be a great year.

The Annual General Meeting and Awards Dinner is coming up on Saturday, February 4<sup>th</sup> (see below for information). I look forward to seeing you all there!

- Ryan Morelli



## OTHER NEWS AND EVENTS

### Annual General Meeting

The 2016 SGS Annual General Meeting and Awards Dinner will take place at the Travelodge Hotel on the evening of Saturday, Feb. 4<sup>th</sup>, 2017. Tickets are available for purchase from one of several ticket agents or by contacting

[Sask.Geol.Soc@hotmail.com](mailto:Sask.Geol.Soc@hotmail.com).



# 2016 AWARDS DINNER & AGM

Saturday, February 4th, 2017 @ the Travelodge Hotel  
4177 Albert St.

Cocktails	5:30 p.m.
Buffet Dinner	6:30 p.m.
Awards & Honour Roll	8:00 p.m.
Presidential Address	9:00 p.m.
Business Meeting	9:30 p.m.

**Tickets: \$35**  
**Student Tickets: \$15**

Monica Cliveti  
John Kelley  
Dan Kohlruss  
Kate MacLachlan  
Ralf Maxeiner  
TICKET AGENTS

Please purchase your tickets  
before January 31, 2017



Presidential Address | **Roman Holiday: Some Thoughts  
on the Link Between Geology and Art**



## Membership Renewal Time

SGS membership is on a calendar year basis---Please renew your membership for 2017

Mail the form (with a cheque), bring it to the next luncheon meeting/AGM, or use the online form on the website at [www.sgshome.ca](http://www.sgshome.ca).

## Geoscientists Canada – GIT Photos Wanted

Geoscientists Canada is preparing a booklet that details the requirements necessary to become a Geoscientist in Training (GIT) and the steps necessary to become a Professional Geoscientist. They are asking for photos of GIT's from across Canada carrying out work-related tasks for inclusion in the booklet. Please send any photos that you deem appropriate to John Pearson at [john.pearson@sasktel.net](mailto:john.pearson@sasktel.net) or to the CEO of Geoscientist Canada, Oliver Bonham at [obonham@ccpg.ca](mailto:obonham@ccpg.ca).

## Upcoming Talks

The following is a list of some upcoming speakers, submitted by Jason Cosford and Mike Thomas:

List of some upcoming speakers:

- Steve Grasby (Feb 15<sup>th</sup>) – Geothermal Energy
- Stephen Bend (Mar. 15<sup>th</sup>) – History of Microscopy
- Tim Collett, AAPG speaker (April 21<sup>st</sup>) - Gas Hydrate Petroleum System Analysis in Marine and Arctic Permafrost Environments
- Megan Binner – (TBD) Garner River Gold Exploration Project

Suggestions for other potential speakers are always welcome. Please contact either Jason Cosford or Mike Thomas with your ideas.

## Information Item: Rocky Mountain Section AAPG – Call for Papers

The AAPG Rocky Mountain Section Annual Meeting is taking place from June 25<sup>th</sup>-28<sup>th</sup>, 2017. Please visit the meeting website at <http://rmsaapg2017.com/> for more information, including technical sessions and abstract submission information. This abstract submission site will remain open until 12:00 midnight on February 28, 2017.

## News from the D.M. Kent Club

The Kent club would like to wish everyone a Happy New Year. Thank you for all your support this year, and we look forward to a great 2017.



OUR 2016 CORPORATE MEMBERS:



D M KENT CONSULTING  
GEOLOGIST LTD

