

Thursday, July 27, 2017
IMPACT PROCESSES IN NATURE:
HOT AND GLASSY, HEAVY METAL, ROCK AND ROLL
1:30 p.m. Sweeney A

*This session highlights the diverse materials produced
as a result of impact processes, and the nature of the impactor.*

**Chairs: Lucy Forman
Pierre Rochette**

- 1:30 p.m. Harris R. S. * Schultz P. H.
[Field Evidence and Implications of Dynamic Entrainment and Survival of Asteroid Fragments in Sedimentary Target Impact Ejecta](#) [#6172]
Hypervelocity impacts into soft sedimentary targets can preserve grain-scale survivors of the asteroids that can be used to identify the bolides and investigate parent body petrogenesis.
- 1:45 p.m. Buchner E. * Hoelzel M. Schmieder M. Rasser M. Fietzke J. Frische M. Kutterolf S.
[A Meteorite Fragment Trapped Between Positive and Negative Shatter Cones in a Limestone Block Stored at the Meteorkrater-Museum Steinheim, Germany](#) [#6014]
A metallic fragment on a shatter cone surface of a shattered limestone block is composed of Fe, Ni, and Co. Kamacite, taenite, troilite, and schreibersite were identified. These findings suggest this fragment is a piece of the Steinheim projectile.
- 2:00 p.m. Nishiizumi K. * Caffee M. W. Lorenz C. A. Ivanova M. A. Koeberl C.
[Cosmogenic Radionuclides in Agoudal Iron Meteorite and Associated Breccia](#) [#6095]
Cosmogenic radionuclides in Agoudal IIAB iron meteorite and breccia were measured for investigation of the pre-atmospheric size, age of fall, and origin of breccia found at impact structure.
- 2:15 p.m. Rochette P. * Beck P. Debaille V. Devouard B. Jourdan F. King D. T. Jr. Moustard F. Nomade S. Cornec J.
[Connecting the Pantasma \(Nicaragua\) and Belize Impact Glasses: Toward a Fourth Couple Crater and Tektite Strewnfield?](#) [#6018]
We propose that the Belize glasses correspond to a new tektite strewnfield originating from the Pantasma Crater in Nicaragua, based on preliminary Ar/Ar dating of Pantasma impact glass, as well as geochemical and isotopic signatures.
- 2:30 p.m. Ferrière L. * Barrat J.-A. Giuli G. Koeberl C. Schulz T. Topa D. Wegner W.
[A New Tektite Strewn Field Discovered in Uruguay](#) [#6195]
A new tektite strewn field, the fifth one on Earth, located in Uruguay, is presented for the first time. Uruguaites are the oldest known tektites. The detection of a meteoritic component in uruguaites is also presented.
- 2:45 p.m. Bezaeva N. S. * Rochette P. Masaitis V. L. Badyukov D. D. Kosterov A.
[Magnetic Properties and Petrography of Urengoites and South-Ural Glass](#) [#6072]
We present here a comprehensive magnetic characterization of impact melt glasses from Western Siberia (Russia): the three known urengoite specimens and the only discovered specimen of South-Ural glass, as well as a revisit of their petrography based on thin sections.
- 3:00 p.m. Folco L. * Glass B. P. D'Orazio M. Rochette P.
[Projectile Identification in Australasian Microtektites Using Cr, Co and Ni Ratios](#) [#6036]
We identify a chondritic impactor signature, most likely of an LL chondrite, in Australasian microtektites based on Co/Ni vs Cr/Ni ratios.

- 3:15 p.m. Forman L. V. * Daly L. Bland P. A. Benedix G. K. Evans N. J. Merigot K. Ryan C. G. Saunders M. Timms N. E. Smit J.
[Identifying the Form and Carrier Phase of the Extraterrestrial Signature in Distal K-Pg Boundary Impact Materials](#) [#6077]
Samples from the distal K-Pg boundary site from New Zealand are examined to identify the form and carrier phase of Ir *in situ*. High resolution XRF, TIMA, LA-ICP-MS and TEM images imply amphiboles and FeO phases are the hosts of the signature.
- 3:30 p.m. Genest S. * Robert F.
[Discovery of Spherule Layers and Suevitic Breccias at the Base of the Mistassini Group, Paleoproterozoic, Northern Quebec, Canada](#) [#6049]
Report of impact ejecta layers recently discovered within the Mistassini Lake area, Quebec, Canada.
- 3:45 p.m. Robert F. * Genest S.
[Preliminary Characterization of a Phosphorus-Rich Spherule Layer Discovered Within the Mistassini Group, Northern Quebec, Canada](#) [#6046]
Description of a new spherule layer discovery located in Mistassini Lake, Quebec, Canada.
- 4:00 p.m. Bender Koch C. * Kasami T.
[Preservation of Impact Derived Metallic Spherules Within Impact Derived Vesicles](#) [#6357]
We have investigated the Wabar impactite and found Fe spherules to be preserved within some of the vesicles.
- 4:15 p.m. Kletetschka G. * Hrubá J. Nabelek L. West A. Vondrak D. Stuchlik E. Kadlec J. Prochazka V.
[Microspherules in the Sediment from the Onset of Younger Dryas: Airburst and/or Volcanic Explosion](#) [#6180]
While some of the microspherules were formed in the terrestrial magnetic field, there are several whose magnetic record indicates that they could be formed in airborne dust cloud due to electric discharge.
- 4:30 p.m. MacLagan E. A. * Walton E. L. Herd C. D. K. Dence M.
[Melting of Sedimentary Target Rocks from the Steen River Impact Structure: Evidence from the Bulk Composition of Impact Melt](#) [#6146]
Compositional analyses of impact melt from the buried complex Steen River impact structure are used to delineate the type and quantity of target material that was incorporated during impact and subsequent emplacement.
- 4:45 p.m. Vondrak D. * Kletetschka G. Hrubá J. Nabelek L. Prochazka V. Svitavská Svobodová H. Bobek P. Horická Z. Kadlec J. Takáč M. Stuchlik E.
[Sediment of a Central European Mountain Lake Implies an Extraterrestrial Impact at the Younger Dryas Onset](#) [#6230]
The Younger Dryas (12,9–11,7 ka BP) is a distinct cold climatic period. Recent discoveries reveal a possibility of a major cosmic impact event responsible for its onset. We analyzed a sediment core from a European site to find impact proxies.

- 5:00 p.m. Walton E. L. * MacLagan E. A. Herd C. D. K.
[*Evidence for Melting and Decomposition of Sedimentary Target Rocks from the Steen River Impact Structure: Mineralogy and Microtextures*](#) [#6264]
The mineralogy and microtexture of impactites from the Steen River Impact Structure are presented. Evidence in support of melting and decomposition of sedimentary target rocks (evaporites, carbonates and shales) has been documented.
- 5:15 p.m. Roperch P. Gattacceca J. Valenzuela M. Devouard B. Lorand J. P. Arriagada C.
Rochette P. * Latorre C. Beck P.
[*Glass Strewnfield Produced by Dry Vegetation Fires Rather than Airburst: A Case Study from Atacama*](#) [#6022]
An extended strewnfield of glass is described in Atacama (Pica). It strongly resembles previous strewnfield interpreted as due to airburst. We show that this Pica glass was produced by dry vegetation fires.