

The **SUDBURY**  
**Meteorite Crater**  
**ANTHRAXOLITE**  
**Report**



\* An insightful **REPORT** featuring photos and color-commentary...  
by **Robert A. Szep**, field collector and exclusive direct-source of this unique mineral

## A Compelling Case for Cosmogenesis and Astrodeposition

# SUDBURY Meteorite Crater ANTHRAXOLITE

## An Enigmatic Highly-Carbonaceous Substance from a Rare-Acquisition Locality

**While *The Sudbury Astrobleme* is well-known for its prized shattercones, impact melt-glass, and fallback, footwall and other impact breccias, a scarcer potentially more scientifically important substance is also found there.** Inside the south-west quadrant of the enormous World-Famous 1.87 billion-year-old Sudbury Impact-Structure are two small deposits of Anthraxolite, a graphitic, conductive carbon-rich compound mineral. It is 3 to 4 on the Mohs Scale and similar to Shungite, complete with a mysterious uncertain genesis.

Individual specimens from the sampled locality range in appearance from jett-black with a pearly lustre to black with an orangish-color iron-residue, to grey. While most specimens exhibit a cubic crystalline structure, often with brilliant crystal faces that seem to glisten when tilting them back & forth, the grey samples tend to feature larger, more pronounced "crystals." In situ, it is found in contact with or in close proximity to Onwatin Slate. Collected field-samples range in weight from 12 grams to 9 pounds, with one glaring exception, a single, stunning, beautifully formed 30 pound Museum-Quality mass.

At this point in the report it is crucial to convey the fact that prior to the Sudbury Basin being officially recognized as an Astrobleme, from the Greek meaning "star-wound" – a large ancient heavily weathered impact crater – basically every type of impactite & shock metamorphic rock associated the structure were misinterpreted and misdiagnosed by some of the most well-respected geologists of their day.

As a case in point, shattercones have been observed in the Sudbury area, loose on the ground or in Huronian Quartzite rock faces for more than a century. However, it was not until the late 1960's that legendary geologists *Robert Dietz* and *Walter Peredery*, pioneers in the sciences of impact geophysics and geochemistry recognized them as such.

Before that time either no one seemed to know what those "cones" were, how they were formed, or even worse, everyone completely misunderstood them. Could it be that this "crater anthraxolite" had, in the past, also fallen victim to similar misinterpretation resultant of out-dated, old-school geologic thinking? Absolutely.

Anyway, shortly after shatterconing, indisputable impact-shock signatures, were correctly identified the rest of the dots were quickly connected and "the basin" has since been known to be amongst the largest & oldest impact-structures on earth. The presence of Anthraxolite in the crater at Sudbury has also been known-of for decades, yet up till now no definite explanation accounts for *how* it ended-up there, *why* it is where it is, or *what* it's composed-of. The intention of this report is to shed a much-needed insightful light on the most logical and obvious answers to those burning questions.

The reported-on material was selectively harvested several years ago from the specific remote Balfour Township location known to contain the highest carbon content - an amazing 90% or greater carbon component. Very little of this intriguing material remains at the occurrence site which is now off-limits to the public. In hindsight, obtaining field-samples while they were still attainable proved to be a strenuous yet rewarding, wise, worthy, and potentially scientifically important endeavor.

Theoretically, this material should contain ample amounts of C-60 to C-70 and higher order Bucky-Ball Fullerenes – named in tribute to Buckminster Fuller who theorized about their existence long before these things were a scientific reality. Astoundingly, Fuller also correctly speculated as-to what

they may look like under a microscope powerful enough to view them. That being much like the frame-work of a geodesic dome – something first conceptualized by Fuller, or the skeleton of a soccer-ball, just the stitching, sans the leather faces. Today we know that “Bucky Balls” are cage-like carbon molecules containing “caged” helium and argon atoms.

That’s right folks, we’re talkin’ noble gasses & carbons of extraterrestrial origin, just like those found in carbonaceous chondrite meteorites.

There are two basic principles upon which this theory is based. First and foremost, this material predates carbon sources such as wood, primitive ferns or other plant-life. Secondly, because it is deposited in a low-lying area near the interior footwall of the ancient crater's Black Onaping Fallback Breccia Ring, which was determined in 1999 by NASA researchers Becker *et al* to contain 2 to 3% extraterrestrial carbon in the form of Bucky-Ball Fullerenes.

The most-likely scenario is that the carbons of which this Anthraxolite is composed were leached-out of the near-by Onaping fallback by rainfall run-off and groundwater actions before it lithified and became what is now fallback breccia - also known as Suevite. The carbon-rich leachates, trapped by receding water-levels in a low-lying area in concentrated quantities as a saturated solution, also eventually solidified to form this unusual variety of Anthraxolite.

Carbons and Iridium of unearthy origin associated with the Dinosaur-Killer Impactor have been confirmed as present in 65 million year old K.T. Boundary sediments, so the existence of remnants of the massive object responsible for creating the Sudbury crater is not a far-fetched concept.

In summary, since this material quite probably contains surviving residual carbon, possibly Iridium as well, derived directly from the Sudbury Super-Impactor, it may be regarded at-least in-part as astrodepositional in nature. There is also a distinct possibility that some portion of the carbon in this intriguing substance are fullerenes spontaneously synthesized within the super-heated impact flume as it rose like a gigantic mushroom cloud to heights of 70 miles or more, from the ignition and combustion of hundreds of cubic kilometers of primordial “air” in a matter of seconds while the blazing flume expanded above ground-zero then well-beyond the freshly, instantly, blast-excavated crater.

It too should be noted that “smaller” Bucky Ball carbon molecules would also have been generated by the catastrophic hyper-velocity impact-event that occurred near present-day Sudbury. In zones of the mushroom cloud not quite intensely hot enough to synthesize fullerenes, regular or “common carbon” would have been generated. That nicely explains how it is possible that both fullerene-based and non-fullerene carbons are contained within a single hand-specimen. All of the impact-created carbon is regarded as cosmogenic because if not for being the by-product of an impact it would not exist. Carbons present within specimens derived from the super-impactor are regarded as astrodepositional because they are “direct deposits” from an unearthy parent body.

In closing, a compelling case can be made for the presence of both astrodepositional and cosmogenic components within this enigmatic substance. On the other hand, perhaps this mystery-shrouded material is not impact related at all. Maybe the carbon deposit, originating from who knows what, who knows how, just serendipitously “ended-up” inside a crater. But one must admit, that remote possibility now seems more and more far-fetched by the minute.

Whatever the case, in-depth research and testing, which though well-worthwhile is as-yet unperformed, is required in order to confirm the proposed theory advanced in this report. In the meantime, hopefully it will inspire discussion and debate amongst members of the scientific, meteorite, and geologic communities - and that’s a good thing.

# **SUDBURY Meteorite Crater ANTHRAXOLITE Specimens AVAILABLE**

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**\* Supply is limited - get some while you can \***

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