

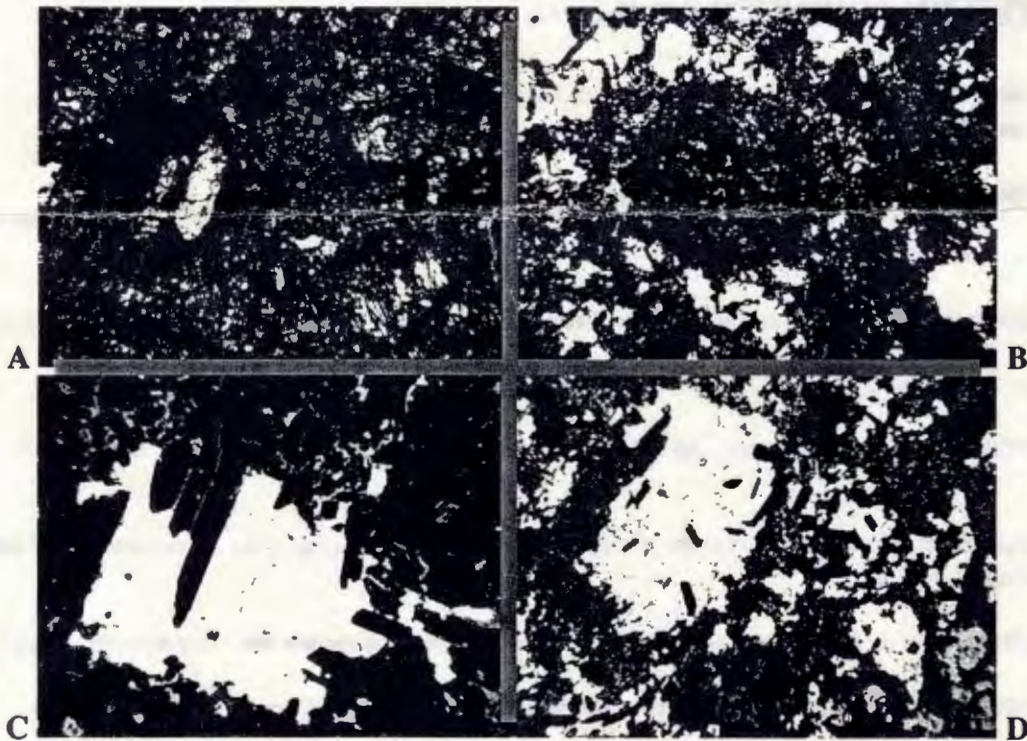
A GLIMPSE OF THE ABEE METEORITE

History

Abee is a large, ovoid cannonball of a meteorite, 107 kg in mass, a single stone which fell at 23:05 hrs MST on 9th June 1952, and was recovered from a hole 30-60 cm wide, 1.8 m deep, inclined at 25° to the vertical. The community of Abee is located roughly 70 km north of Edmonton, Alberta, circa 54°13'N, 113°00'W. Meteorites are rare enough, and in many ways Abee is unique. It is a member of the family of enstatite chondrites, which comprise somewhat less than 1% of all classified meteorites.

Snapshot

The digital photomicrographs illustrate features in samples A-1192, 1193 and 1194 (which together offer a 10 cm² area of polished thin section for study), from the Canadian National Meteorite Collection, curated at the Geological Survey of Canada in Ottawa, home to the main mass of Abee, and the largest such collection in Canada.



Photos A and C (sample 1192) show enstatite (an orthopyroxene) crystals in a matrix darkened by metal and sulphide (A, viewed in transmitted light) and a coarse mass of nickel-iron metal (kamacite) engulfing pyroxene (below, viewed in reflected light, like B and D). **Photos B and D** (sample 1194) display metal kamacite rimming an enstatite-rich chondrule (above) and engulfing individual silicate crystals (below). Horizontal fields of view for A-D: 0.8, 1.6, 0.4 and 1.6 mm respectively.

IMPORTANCE OF THE ABEE METEORITE

Abee is still probably the most-studied meteorite recovered from Canadian soil, even though a fresh contender for this title has appeared: the unusual Tagish Lake fall in northwest B.C. on 18th January 2000. An incomplete sampling of the literature on Abee totals 108 items in books, articles, reports and abstracts (MINLIB database, December 2005). Rockhounds may be interested to note that the main minerals of Abee are kamacite (nickel-iron alloy), orthopyroxene (enstatite) and the iron sulphide troilite. Two rare cubic sulphides were first described in Abee samples: niningerite and keilite. Abee also contains another rare, water-reactive sulphide (oldhamite, with silica inclusions), as well as albite, the amphibole richterite, the nickel-iron phosphide schreibersite, plus graphite and even microscopic diamond. A veritable periodic table's-worth of elemental and isotopic analyses, including radionuclides, have been made on this strange, round visitor from space. The mineralogy and chemistry can be summarized as reduced and anhydrous, consistent with an origin in the solar nebula relatively close to the young Sun.

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Post it note

removed -> This is one amazing meteorite, David!

Happy New Year!
Graham

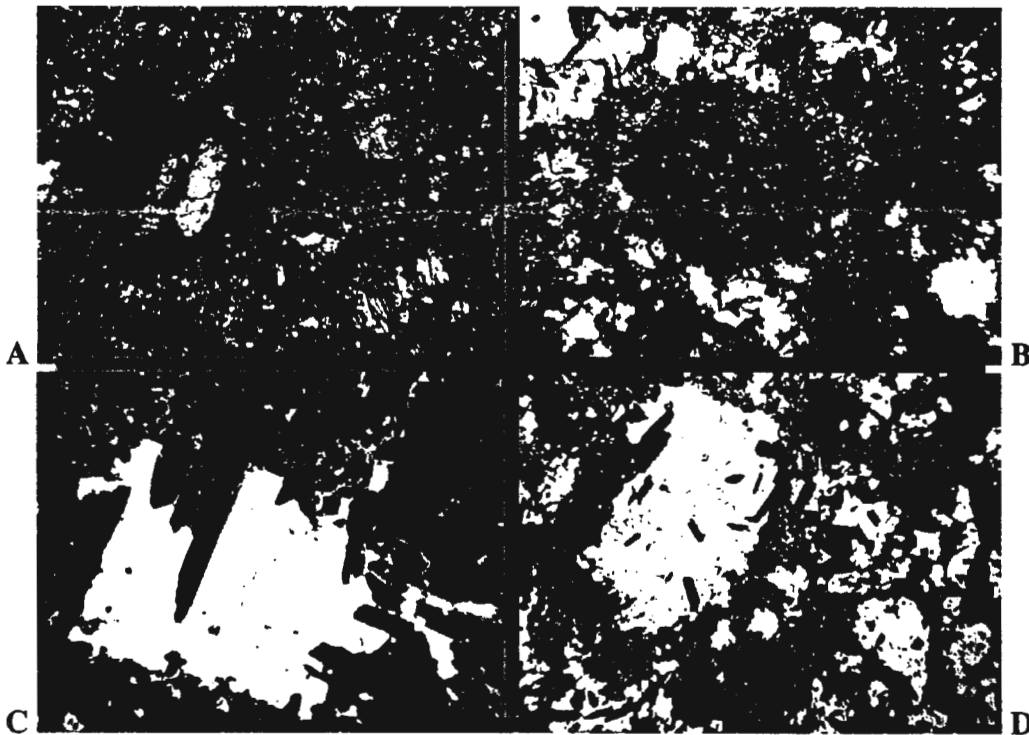
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