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# POSSIBLE IMPACT ORIGIN FOR BRUSSELS HILL, NORTHEASTERN WISCONSIN

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Brussels Hill is a prominent and geologically-anomalous rock-controlled hill on the Door Peninsula, Wisconsin. With a circular outline about 2 miles in diameter, it rises as much as 200 feet above the surrounding landscape. Although other erosional rock hills occur in the region, they are composed of horizontally-bedded Silurian dolomitic marine strata. In contrast, Brussels Hill contains pervasively disturbed and deformed rocks of varied composition and exhibits many other features attributed to impactites. These features suggest that Brussels Hill is an impact structure.

The most definitive of the features indicating cosmic impact are probable shatter cones. In addition, brecciation is ubiquitous, occurs at many scales, and includes forms characteristic of impact structures. Megaclasts, as much as 25 feet long, dip steeply at various angles, including vertical, or may be overturned or plastically deformed. Smaller scale breccias are monomictic or polymictic. Breccia-within-breccia occurrences indicate impact structures exclusively. Breccia dikes, which may have been injected during crater excavation, are common. Peculiar vesicular carbonates may represent impact melt rocks, which indicate enhanced temperatures, as do reddened clasts and possible decarbonized clast halos. An unusual hummocky landscape composing the outer margin of Brussels Hill is typical of megabrecciation at impact sites.

Rocks on Brussels Hill comprise Early Paleozoic marine sediments. Among clasts present are Silurian strata typical of regional bedrock, including Mayville and Burnt Bluff Dolomites. The youngest rocks so far identified in this structure are Silurian Schoolcraft Dolomite, suggesting the impact may be no older than early Silurian age. Anomalous sandstone clasts up to 10 feet long, as well as clasts of lithographic limestone, are also present. These lithologies resemble Ordovician and/or Cambrian rocks known to occur hundreds of feet below bedrock surface in the area.
Evidence of igneous activity and tectonic faulting is absent at Brussels Hill, and the size and shape of the structure make solution collapse unlikely. Because it has topographic relief, Brussels Hill may be the erosional remnant of an impact crater, possibly representing fallback ejecta.