

DID BIELA'S COMET CAUSE THE CHICAGO AND MIDWEST FIRES?

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ABSTRACT

On October 8, 1871, a fire started that burned much of Chicago, killing 300, and destroying \$200,000,000 worth of property. Most people are unaware that within a few minutes, major fires started in upstate Wisconsin and Michigan, killing more than 2000 people in the farming country. Because of the poor communications with the upstate areas, the magnitude of the upstate horror was not known for weeks.

Biela's Comet, with a solar orbital period of 6 years 9 months, had been disturbed by Jupiter on a previous passage and broke into two large comets. It has been hypothesized that one of them struck Earth and broke into several smaller pieces. These pieces, consisting of frozen comet gases would have likely included combustibles like methane CH₄ and acetylene C₂H₂ that melted, vaporized and explosively ignited, causing impressive incendiary results upstate, consistent with surviving witness reports.

Witness reports from Chicago included statements that entire basements exploded with a blue flame and that red-hot sand came raining down. In upstate Wisconsin near Green Bay, there were reports of "fire balloons" about one meter in size falling from the sky that exploded with great heat when ignited, incinerating objects struck. If fire balloons consisted of methane, one ton of methane would be the energy equivalent of 12 tons of TNT if stoichiometrically burned. There were also reports that the fire came directly from the sky, with a trembling of the earth – perhaps a symptom of a shock wave. The loss of life was the greatest of

any fire in U.S. history, and the area burned of all trees and secondary growth approximated the size of Connecticut.

A two dimensional evaluation by the author of the orbit of Biela's Comet's two parts shows that it is reasonable to hypothesize that Jupiter may have disturbed either the primary or the secondary comet sufficiently to have speeded up its arrival at earth by about a year earlier than expected. In the plane of the ecliptic, it has been determined that one post-Jupiter encounter comet solution is period of 3229 days and eccentricity of 0.801, thus resulting in earth orbit arrival at the right time. It is suspected that a precision 3-D calculation will show that the orbit parameters are within expected comet uncertainties.

The credibility of this scenario has been evaluated to respond to skeptical concerns about: the lack of advance warning; feasibility of orbits; large fire routinely-reported phenomena; inaccurate reporting of observations; and the presence of some fires already burning upstate.

Although the Chicago Fire included Mrs. O'Leary's barn, the suggestion that her cow started it is a traditional story no better than speculation that a careless smoker might have been in the barn. More generally, this example suggests that witness testimony, even when inconsistent with the theories of the day or the favored media explanations, may be reevaluated later and support new theoretical interpretations, such as the idea that Earth has recently been struck by a comet, causing the widespread and ferocious destruction of October 8, 1871.

INTRODUCTION

On October 8, 1871, it is well-known that a significant portion of downtown Chicago burned with an intense fire, apparently aided by strong winds, costing about 300 lives, burning over 17,000 buildings in over three square miles, leaving

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