METEORITIC EVIDENCE FOR A YOUNG EARTH

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It is shown that meteorites, or things connected with them, provide three distinct kinds of evidence for a young Earth. First, no great amount of meteoritic dust, or nickel, is found in the Earth's crust. Secondly, meteorites are not found buried in the rocks which are alleged to be old by the uniformitarian theorists. Moreover, all the meteoritic craters, found here and there on the Earth, seem to be quite young.

Introduction

Most persons have had their view of the night sky momentarily interrupted by the brief flare-up of a meteor as it passed through the earth's atmosphere. Others have been able to examine in a more leisurely manner a meteorite which has survived passage through the atmosphere, and has impacted on the earth. Whatever the case, these phenomena are a part of what constitutes an important bit of evidence in the determination of the age of the earth.

Because of their extra-terrestrial origin, meteors and meteorites were long associated with mythology and paganism. They have been called "passages of souls to heaven; leprechauns on their way from one bit of mischief to the next; or angels on errands of mercy."[1] In Biblical times, the base of the image of Diana, located in the temple at Ephesus, is thought to have been a meteorite (cf. Acts 19:35). Only in comparatively recent times have meteors and meteorites been accepted for what they are.

Based on the evidence, meteors are different from meteorites, both in nature and, probably, in origin. A typical meteor flares up only briefly. The limited number of meteor spectra which are available show the presence of oxygen and nitrogen (due to the heating of earth's atmosphere), along with the presence of hydrogen, sodium, magnesium, silicon, aluminum, iron, nickel, calcium, manganese, chromium, and silicon.[2] Astronomers generally agree that these spectra suggest that most meteors are comet-like in nature, i.e., ices mixed with dust of a rock-like composition.[3]

Meteorites, on the other hand, are higher-density chunks of rocks and iron of still debated origin. Most of the stony meteorites and the iron meteorites show ablation from the intense heating produced while passing through the atmosphere. Most meteors are associated in some way with the paths of a comet, but no meteorite has ever been so connected.[4]

There have been two major falls of meteorites in this century. On June 30, 1908, a large meteorite fell in an uninhabited section of Siberia, in Russia. It was witnessed by passengers on the Trans-Siberian Railroad and detected by several seismographs around the world. An area about the size of the state of Delaware was affected. Trees were blown down in a pattern which radiated outward from the point of impact.[5] This fall is known as the Tunguska Crater, so named from a near-by river.

The second fall occurred in the Sichote-Alin mountains of eastern Siberia on February 13, 1947. More than 100 craters have been found in this region, scattered over an area of three square miles. Again, trees have been blown down and scorched from the heat.[6] The total mass of the meteorites has been estimated to exceed 100 tons.[7]

The largest meteorite known is located in Grootfontein, Southwest Africa. It is about nine feet by nine feet by three feet high. It is 16 percent nickel and is estimated to weigh about 60 tons. The second largest meteorite was found by Admiral Robert Peary in Greenland. It was moved to the Hayden Planetarium, in New York, where it was found to weigh over 36 tons. In 1902 the largest meteorite ever found in the United States was identified near Williamette, Oregon. Original weight was estimated at 25 tons, but this has been reduced by erosion to a little over 15 tons. It also is now located at the Hayden Planetarium.[8]

Meteoritic Dust

In several ways, meteorites may be used to argue strongly for a young age of the earth and the solar system. In the first place, estimates of the frequency of meteor impact upon the earth's atmosphere indicate that from 2-15 million tons of meteoritic dust settle out upon the surface of the earth each year. Taking the minimum of two million tons/year, an average density of 3.5 g/cc, and assuming a uniform rate of settling over five billion years estimated by evolutionists, a meteoritic dust layer almost 16 feet in thickness should have accumulated over all the surface of the earth, and at the bottom of the seas.

The fact that this layer does not exist cannot be accounted for by assuming that the meteoric dust has mixed with the existing crust of the earth. Meteoritic dust contains about 2.5% nickel while the earth's crust contains only about 0.008% nickel. In other words, meteoritic dust contains about 312 times as much nickel per unit volume as does the earth's crust.

In order to disperse this amount of meteoritic nickel, it would need to mix with at least (312)(16′) = almost 5,000 feet of the earth's crust to give the present composition of nickel in the earth's crust. This computation involves the assumption, of course, that the earth's crust contained no nickel at one time. Similar computations could be made for cobalt and for other metals present in meteoritic dust.[9]

The facts are that no such layer of meteoritic dust exists on the earth. And, if it does not exist, then a five billion year age of the earth may be questioned.

Absence from "Old Rock Strata"

A second consideration which meteorites suggest is based on the question, "Why haven't meteorites been found in so-called 'old' layers of the earth?" This question is admitted widely by astronomers writing

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on meteorites.[10, 11, 12] Heide points out that though "Some fifty to fifty-five billion tons of coal have been mined, all of which have passed through the hands of people with a professional familiarity with stones, it is certainly remarkable that ancient meteoritic material has never been found or described up to now."[13] This fact has led some astronomers to postulate that meteorites did not fall in the early days of the earth's existence.

Most astronomers, however, have tried to explain this absence by appealing to one of several reasons. Nininger cited the lack of experience of geologists in identifying "meteorites, particularly the *weathered* variety." He also mentioned the lack of "persistent searches for evidence of the existence of meteorites in older geologic formations,"[14] and asserted that the weathering of meteorites over thousands of years makes it unlikely that they would still be recognizable.[15] Heide sought refuge in the fact that "only about one-hundredth of the earth's surface is under observation, while the accessible portion of the former surface exposed during past geologic periods is several orders of magnitude smaller still."[16]

Some astronomers have attempted to give examples of meteorites which have been found in "old" rock formations. The examples, however, are not always clear; many seem somewhat confused. Mason has cited a report of an iron meteorite recovered from a depth of 1525 feet during an oil well drilling in Texas, in 1930. He commented,

> . . . the evidence for the identification as an iron meteorite (iron content, Widmanstatten structure) is good, but unfortunately no material from it has been preserved.[17]

To further complicate the matter, Heide mentioned the same meteorite except that he locates its source at 165 meters.[18]

On the basis of authenticated meteorites, none have been found in "older" rock strata. This can be used to argue strongly that the earth is young and that meteorites are found near or on the surface of the earth because the time since Creation is on the order of a few thousand years.

It should be noted that the author does not insist that meteorites will never be found in "older" strata. The points raised by Nininger, etc., are valid to a degree. Recognizing that a time period of around 2,000 years elapsed between Creation and the Flood, meteorites may yet be found which fell during that time period, and which were buried by cataclysmic actions of the Flood. However, since the major portion of earth's history has transpired since the Flood, it is reasonable to expect that the greater number of meteorites will be found on or near the upper levels of the earth.

Crater Ages

Thirdly, identified meteorite craters are all of a relatively young age. Krinov listed 14 craters which have been proved to be meteoritic in origin by the "discovery of iron meteorite fragments in the locale of these craters."[19] Not all of these craters have been studied thoroughly and age estimates are not available for all. However, those estimates that are available are all "young" by comparison with that which normally is connected with uniformitarian geology.

The well known Canyon Diablo (Meteor Crater, Arizona), for instance, is dated c 3000 B.C. from the degree of weathering on the canyon walls. Also, Indians living in the area have legends concerning the creation of the canyon, and it is thought likely that the fall of the meteorite may have been observed by Indians living in the area at that time.[20] The Kaalijarv craters, in Russia, were dated about 4,000-5,000 years old by the study of mollusks in the small craters.[21] The Odessa, Texas crater has been dated, on the basis of Ar-39 and C-14 content of meteorite fragments, at 1400-2900 years old.[22]

Three craters in Australia have been dated. Carbon-14 tests indicate that the Henbury Craters are only a few thousand years old. As with the Canyon Diablo crater, natives in the area avoid this vicinity. Their name for the crater is "chindu chinna waru chingi yabu" which may be translated roughly as "sun-trail-fire-devil-stone." This would seem to indicate that the meteorite fell within the history of these aborigines.[23]

The Wolf Creek crater is the second largest of those meteoritic craters which have been definitely identified. From the fact that the weathering of the crater is only minimal, it is estimated to be of recent age, perhaps only a thousand years old.[24] A small crater located on the Dalgaranga sheep station in Western Australia is estimated, from the degree of weathering, to be 20-25 thousand years old.[25]

In addition to the craters listed by Krinov, other scientists have listed a large number of possible craters. Many of these, e.g., the craters of the Sall Estate on Oesel Island in the Gulf of Riga (estimated to be 5,000 years old[26]), are certainly meteoritic in nature. Others, e.g., the circular structures located near Brent and Holleford in Canada ("no meteoritic material has been found associated with any of these craters so far."[27]) are of debatable origin.

The important point to note, however, is that dating of these craters is measured only in a few thousands of years. Anders, for instance, listed the dates of fall for 25 iron fragments and nine chondrites, as calculated from the Ar-39 and C-14 content of meteoritic fragments in the craters. Twenty-four of the iron fragments and six of the chondrites are dated at less than 7,000 years old. The greatest age given is for the Potter chondrite, 20,000 years.[28] Once again, then, meteoritic evidence may be used to support the idea of a young earth.

Conclusion

These three areas seem to be an excellent base for arguing strongly for a young age, on the order of a few thousand years, for both the earth and the solar system. Because of the absence of a significant layer of meteoritic dust, the absence of meteorites in the "old" strata of the earth, and the dating of existing meteorite craters at only a few thousand years in age, the creationist model of origins is superior to the evolutionary model.

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[23]Heide, *Op. cit.*, p. 38.
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ON THE INTERPRETATION OF POTHOLES

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Since potholes are generally considered to have been formed by erosion over long ages of time, the rocks in which they occur would also seem to be of great age. Some geologic interpretations account for these topmost rocks as deposits formed during the Biblical flood. The presence of potholes poses a problem for these interpretations. The details of the uniformitarian theory of the formation of potholes are examined, and contrasted with the well-known characteristics of potholes. It is evident that the uniformitarian theory of pothole erosion falls short of accounting for the phenomenon of potholes in many ways. Potholes therefore cannot be regarded as evidence for a great age of the rocks in which they occur.

Introduction

A factor that strongly influences any interpretation of the age of a rock formation is the degree of erosion detected. Potholes are usually regarded as one of the erosional features that may influence age estimates of rocks in which they occur. The traditional interpretation is in terms of the process of abrasion of the bedrock by rotary currents inside the potholes, and vibration of pebbles and stones by the water, that gradually wore the holes deeper and deeper into the bedrock.

The immense size of some examples, upwards of 40 feet and 50 feet in depth, and similar diameters,[1] might be supposed to be indicative of long ages of abrasion by powerful currents. This would lead one to conclude that the topmost rocks of the earth's surface, in which such large potholes occur, are really very old; and must antedate the flood of Noah's time, that cannot have been more than a few thousand years ago.

Potholes pose an important question for flood geologists. Do they indicate the rocks in which they occur are really of great age? Certainly, if they have been formed by gradual abrasion of their walls by currents, they would. This would have to be a very slow process, considering the hardness of some of the rocks in which they occur. They are common in sandstone, dolomite, and granite.[2]

In the sandstones of Wisconsin Dells, Wisconsin, potholes abound. Along the top of the Niagara Escarpment, in Southern Ontario, many examples of potholes in hard dolomite and limestone may be found. Potholes also occur along the North Shore of Lake Superior. At Interstate Park, Taylor's Falls, Minnesota, a group of potholes occur in basalt.[3] Most potholes occur in sedimentary rocks, that cover most of the continents.

Usual Uniformitarian Interpretation

In the usual interpretation presented by uniformitarian theorists, potholes are considered to be the effects of erosion by streams and rivers over very long periods of time. The actual work of abrasion is considered to have been done either by hard grains of sand held in suspension by the rapidly flowing water; or by large boulders, called "grinders," in the bottom of the pothole, that were agitated constantly by the currents swirling around inside. The tiny grains in the rapid currents are thought to have gradually worn down the rock into a depression, that was deepened by the motion of the grinders.

Considering the remarkable depths of potholes, this process would seem to require great ages of time. Alexander[4] noted one example of 12 feet in diameter and 60 feet deep at Taylor Falls. Uniformitarian

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