

# Recent Impacts on the Moon?

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Young-Moon/Earth creationists (YECs), including Don B. DeYoung, believe that the Moon is only a few thousand years old and was literally created by God from "nothing" as supposedly described in *Genesis* 1:16 of the Bible. Because YECs believe that the Moon and its craters are only a few thousand years old, they have no problem accepting the possibility that asteroids and huge meteorites could form large lunar craters in historical times. Considering that asteroids, comets and meteoroids still cross the orbits of the Earth-Moon system, scientists also recognize that the Earth or Moon could be struck at any time. In particular, the 1908 Tunguska impact in Siberia and the 1994 impact of the Shoemaker-Levy comet on Jupiter demonstrate that significant impacts can still occur in any place in the Solar System.

DeYoung (2000) argues that the lunar crater Giordano Bruno formed from an impact in 1178 AD. (The crater was named after a Dominican priest and amateur astronomer who was burned at the stake by religious fanatics in 1600.) DeYoung's "evidence" for the recent formation of the Giordano Bruno crater includes a report by an English monk, Gervase of Canterbury. According to his account, some of his fellow monks witnessed an unusual light show on the Moon in 1178. DeYoung (2000, p. 185) quotes an English translation of the account. DeYoung (2000, p. 186) also notes that the Moon has an "unexplained" oscillation, which he says is consistent with a large recent impact. Nevertheless, DeYoung (2000, p. 186) correctly admits that this oscillation *does not prove* that Bruno crater formed in 1178 AD. Certainly, the oscillation may be related to a large recent impact elsewhere on the Moon or some other cause.

Giordano Bruno crater is about twenty two kilometers in diameter. The bright rays radiating from the crater suggests that it is relatively young. In my opinion, it's possible that the crater is only a few hundred years old. Nevertheless, [Dr. Paul Withers](#) of the University of Arizona Lunar and Planetary Laboratory and many other physicists and astronomers, are very skeptical that the Canterbury monks witnessed the formation of Bruno crater.

**They** argue that the Bruno impact would have showered the Earth with 10 million tons of debris within a week after the impact. Although critics of the 1178 AD formation of Bruno crater claim that no meteor showers were recorded within a week after the Canterbury account, DeYoung (2000, p. 187) quotes a likely outdated reference, Mims and James (1982), and states that the Koreans did record a large meteor shower 3.5 months after the supposed sightings in Canterbury. Whether the Korean and Canterbury accounts are related is uncertain.

DeYoung (2000, p. 188) further endorses an elaborate and unjustified piece of speculation, where the Tunguska impact, at least some of the annual beta-Taurid meteor shower and a number of other celestial events resulted from material being ejected from the Moon because of the supposed 1178 Bruno impact. In contrast, many scientists and YECs **Mark W. Brazo and Steven A. Austin** recognize that a comet was the most likely explanation for the Tunguska impact.

Critics of the 1178 AD formation of Bruno crater suggest that the English monks probably saw a large meteor that entered the Earth's atmosphere in a line of sight between them and the Moon. In response, DeYoung (2000, p. 187) logically argues that this line of sight explanation is highly improbable. Because eyewitness accounts are very subjective and unreliable (even now with photographs and video cameras), we may never know exactly what the monks saw.

DeYoung (2000, p. 187) cites two other "reasons" supposedly given by scientists that oppose an 800 year old age for Bruno crater. Firstly, considering that the Moon's craters represent a 4.5 billion year old record, the probability that a large meteorite or asteroid could produce a large crater on the Moon within historical times is considered highly improbable (perhaps about one chance in a 1000 every 1000 years). On the other hand, probabilities are often derived from incomplete information. Even if the probability of a large lunar impact is remote, people encounter events with much less than 1:1000 probabilities all the time, including experiencing airline crashes, golfing a hole in one, being struck by lightning and winning the lottery. Low probabilities or not, the 1908 Tunguska impact demonstrates that the Earth and probably the Moon are still active targets for natural space debris.

DeYoung's (2000, p. 187) second reason for scientists discounting an 800 year old age for Bruno crater involves a photographic study by the U.S. Clementine spacecraft. Photographs indicate that the floor of the crater has accumulated "considerable" debris, which consist of down-slope movements and slumps

from the crater walls. DeYoung (2000, p. 187) argues that "evolutionary" scientists would not expect such a "large" accumulation of debris within only 800 years. However, because there is no reason why lunar slumps and landslides should occur at regular time intervals, their accumulation or lack of accumulation would not provide a precise age for the crater. Clearly, both of DeYoung's (2000, p. 187) arguments are largely based on strawperson fallacies and do not indicate whether Bruno crater is 800 or 80,000,000 years old.

DeYoung (2000, p. 188) further argues that there are several lunar craters (e.g., Linne and Lalande A) that do not appear on early hand-drawn maps, perhaps because they formed only recently. However, early drawings of the Moon and planets are often notoriously inaccurate and lacking in sufficient detail (e.g. Lowell's sketches of the Martian "canals" or Huygens' distortions of Saturn's rings). Settling the age controversies of these craters will probably require expeditions and sampling missions to these sites. Any evidence of several large impacts on the Moon within the past 1,000 years would be surprising and alarming to scientists. IF several extremely young and large craters exist on the Moon, our estimations of impact risks to the Earth and Moon would definitely increase. While recognizing the differences in the gravities of the Moon and Earth and the importance of the Earth's atmosphere in destroying most meteors, scientists would still ask: "IF the Moon has experienced multiple large impacts in the past 1,000 years, why not the Earth?" Just like fallacious YEC attempts to date the Solar System with the Poynting-Robertson Effect or comets, discovering evidence of more debris in the inner Solar System or higher impact rates on the Moon during the past 1,000 years need not contradict the 4.5 billion year old age of the Solar System. In contrast to the appropriate flexibility of actualistic science to incorporate "young" catastrophic events into natural history, the rigid religious dogma of YECs would NEVER allow them to accept any dates that exceed 10,000 years old, no matter how definitive they are.

Over the years, YECs have devised a number of far-fetched stories to explain why a supposedly "young" and "well-created" Moon has craters and other messy imperfections. These speculations range from battle scars left by warring angels and demons (Morris, 1978, p. 66-67) to God venting his wrath on creation during "Noah's Flood" (Froede and DeYoung, 1996). These myths are very imaginative and, like most YEC proposals, they are entirely untestable, childish and unsupported by any scientific evidence.

## **CONCLUSIONS**

Although most scientists expect large impacts on the Moon to be rare (perhaps 1:1000 chance every 1000 years), the probabilities may be underestimated. Furthermore, rare events do occur every day. For example, the chances of anyone in the United States being hit by space debris, struck by lightning or winning the lottery is highly improbable. However, these events happen.

It's possible that the Giordano Bruno crater is only 800 years old. On the other hand, it may be many millions of years old. Actualism (modern uniformitarianism) recognizes that impacts and other NATURAL catastrophes can occur at any time. Until the Bruno crater can be sampled and investigated, its age will remain uncertain. Nevertheless, the arguments in DeYoung (2000) are just too weak and speculative to justify young-Earth creationism or undermine a 4.5 billion year old age for the Moon.

## **REFERENCES**

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