

THE FORMATION OF THE MOON

Several recent discoveries about the moon support the creationist scenario for the formation of the sun, moon, and planets which scenario was presented at the 1992 Twin-Cities Creationist Conference. The video tape of Dr. Bouw's presentation is now available from the Biblical Astronomer. See "Introduction" (p. 3 of this issue) for a description of the tape and see the back cover of this issue for ordering details.

On March 16, 1999 NASA issued a press release (Release No. 99-43) entitled "Lunar Data Support Idea That Collision Split Earth, Moon." Written by David Morse of the Ames Research Center, Moffett Field, California, the release states (in part) that:

Analysis of data from NASA's Lunar Prospector spacecraft has confirmed that the Moon has a small core, supporting the theory that the bulk of the Moon was ripped away from the early Earth when an object the size of Mars collided with the Earth.

Scientists presented this result and other findings today in a series of papers at the 30th Lunar and Planetary Science Conference in Houston, TX. Their data show that the lunar core contains less than four percent of the Moon's total mass, with the probable value being two percent or slightly less. This is very small when compared with the Earth, whose iron core contains approximately 30 percent of the planet's mass.

The size of the core, based on orbital data of the Lunar Prospector satellite give a radius between 140 and 280 miles (220 and 450 kilometers). Magnetic data analyzed by Lon Hood of the University of Arizona, Tucson, suggest a core radius is 180 and 260 miles (300 and 425 kilometers). Compared to the earth's size and core, the moon's is small for its size.

The press release continues:

Similarities in the mineral composition of the Earth and the Moon indicate that they share a common origin. However, if they had simply formed from the same cloud of rocks and dust, the Moon would have a core similar in proportion to the Earth's. A third theory

[sic, only two are mentioned at all,] suggests that the moon was captured fully intact by the Earth's gravity.

Before the Apollo lunar landings there were three theories for the origin of the moon. These were 1) the earth and moon formed from the same cloud in the same orbit, 2) the moon formed elsewhere, was kicked out of its orbit by some unknown mechanism and was subsequently captured by the earth, and 3), the earth originally spun so fast that the moon was torn from it by centrifugal force, leaving the Pacific Ocean basin as a result. Although popular well through this century, the latter idea is totally impossible.

Apollo was designed to determine which of the remaining two was correct. Apollo found out that rocks are rocks, that is, earth rocks and moon rocks are basically alike. Since for the last 150-odd years the episteme of modern science (falsely so-called) is the de-Godifying of the universe, one is not allowed to conclude from that that the earth and moon had a common Creator. Atheistic science, never free-thinking, is forced to conclude that the earth and the moon formed from the same cloud. (The capture mechanism may be resurrected once it is found that Mars rocks are basically like earth and moon rocks. But it, too, offers no real solution to the origin of the moon.)

The press release continues by describing what happened after the Apollo program's rocks were examined:

Based on information first gathered during the Apollo era, scientists suggested that the Moon was formed when a Mars-sized body hit the Earth during its earliest history. "This impact occurred after the Earth's iron core had formed, ejecting rocky, iron-poor material from the outer shell into orbit," Binder explained. "It was this material that collected to form the Moon."

OK, I'll bite. So the moon is earth-like, and the earth is earth-like, but what happened to the material which made up the Mars-sized body which hit the earth and, presumably, was not earth-like? And whence the Mars-sized body? Apparently it was made of sterner stuff, for it left behind no trace of itself. NASA does admit that this is not a proof, and that further analysis of Lunar Prospector data is necessary to:

... refine the exact size of the lunar core and the amounts of elements like gold, platinum and iridium in lunar rocks -- all of which are concentrated with metallic iron ... [and] to pin down for good if the "giant impact" model of the formation of the Moon is correct, or if the Moon formed in a different manner.

Among the other results which came from the conference is the apparent association between large, localized magnetic fields and large lava-filled basins. For some time evidence has been surfacing linking strongly magnetized concentrations on one side of the moon with lava-filled basins on the opposite side. The new results find magnetic fields opposite Mare Crisium [sic], Mare Serenitatis, and Mare Imbrium, three of the seas (mare) which cover the northern area of the moon's near side. Although no evolutionary theory has been proposed to explain how this could come to be, the creation scenario proposed in *Biblical Astronomer* ("Creation of the Universe," No. 79, pg. 10, 1997) can readily account for it. In that scenario, as the sun, moon, and planets were created, their elements are formed *in situ* (in place) from the inside out, and the heat thus produced is immediately dissipated by thermalized radiation, and radiated away into space. The remnant of that dissipated thermalized (converted to heat) radiation is the famous 3K black-body radiation which is allegedly left over from the big bang.

If during the formation of the moon, asymmetric cooling happened, that is, the heat of the creation event found it easier to flow out to the basins, then the observed magnetic effect can be accounted for. By that method, the basins stayed hotter longer, and the molten rocks had time to form a smooth surface. The cooling itself would drive electromagnetic fields which would freeze into the newly-formed rapidly cooling material. The material which would cool fastest would be the highlands and richly cratered areas opposite the mare.

Another piece of evidence supporting the above creation scenario was presented at the 30th Lunar and Planetary Science Conference. The press release reported this as follows:

Results of efforts to map the composition of the lunar crust have surpassed the expectations of the spectrometer team, led by Dr. William Feldman of the Department of Energy's Los Alamos National Laboratory in New Mexico. Data obtained are so good that the distribution of thorium has been mapped with a resolution of 36 miles

(60 kilometers). At this amount of detail, scientists can detect individual deposits rich in thorium and related elements. Their current observations suggest that thorium was excavated by impacts of asteroids and comets, and then distributed around craters, rather than being deposited by volcanic activity.

Although the thorium distribution can be partially accounted for by splashing by of meteor impacts, it can also be accounted for by splashing of a boiling lunar surface at the time of creation. Furthermore, *in situ* element formation more readily explains the abundance of heavy elements in the crust or surface regions of the moon. In the slow-cooling evolutionary model these heavy elements should have sunk to the centers of the moon and earth, and so the crust should be depleted of them. Instead, the radioactive material in the crust of the earth is sufficient to account for all the heat reaching the surface, *without* any contribution from the radioactive materials which would have sank to the earth's core. The creationist scenario for the formation of the heavenly bodies can thus readily account for the three Lunar Prospector observations for which evolution has yet to find an explanation.