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## Recipe for a Moon

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sion were also described: 1) television is basically an entertainment medium, but it is highly persuasive; 2) "modeling" of life styles in programs ought to be positive rather than negative; and 3) manipulation of "jump shots" (e.g., a brief picture of audience reaction to a speaker) by biased editors—presenting events as they would like them to be seen—should be barred as unethical.

Advertising, although not inherently unethical, also raises many questions. Ozinga suggested two criteria for the ethics of advertising: 1) Is the advertisement honest and accurate? 2) Does it present enough information so that the consumer can make a rational choice? Major problems of advertising include giving entertainment rather than information, "puffery" (implying that a product is "bigger," but not indicating "bigger than what"), getting us to *want* more rather than to *be* more, and preying on the fears of society in order to sell products. These problems are further complicated by the assumption of most people that nothing can be done by individuals to correct these problems, which view is known as the "syndrome of well-informed futility."

The final lecture, "Christian Witness via Mass Media: Noble Work or Mere Hucksterism," contained an interesting de-

scription of what Ozinga called "the curse of the religious hucksters"; he noted how these individuals have given Christian witness a bad name by their emotional appeals for money while building financial empires. He said that many Christian radio stations are not doing the best that they can, but, rather, that they demonstrate a world-flight mentality, they use too many paid programs, and they beg for money. In contrast, he lauded KDCR and the Back-to-God Hour for a more realistic approach.

Several answers were posited by Ozinga. For Christian stations, he suggested the following: 1) accept fewer paid programs, 2) use more good music, and 3) encourage Christian drama. For individuals, he urged that they get involved in Christian mass media, that they work in secular media (bringing a positive influence to bear in our culture), and that they use innovative techniques, become discerning consumers, and give money to God-honoring media.

To develop, and particularly to practice, a Christian approach to communication is an extremely difficult matter. Dr. Ozinga's lectures served to make us more aware of the problems and to encourage us to implement solutions.

Charles Veenstra

## Recipe for a Moon

On Saturday, February 18, Dordt College was host to the monthly meeting of the Sioux Valley Section of the American Chemical Society. Chemistry professors and students from area colleges and universities attended. The guest lecturer was Dr. Larry Haskin who is Professor of Chemistry and of Earth and Planetary Sciences and a fellow of the McDonnell Center for the Space Sciences at Washington University, St. Louis. Dr. Haskin was formerly a member of the Chemistry Department of the University of Wisconsin and then was chief of the Planetary and

Earth Sciences Division of NASA's Johnson Space Center for three years. He has analyzed lunar samples from all six Apollo and three Luna missions and has used trace-element distributions to study the origins of terrestrial and lunar rocks and minerals and the processes that produced them. The following is a summary of Dr. Haskin's presentation.

He began by explaining that there are three prevalent theories about how Moon came into existence. One theory holds that Moon was once part of Earth, but separated from the mother planet early

in its development. It is thought that Moon came from that region which is now the Pacific Ocean. Another idea is that Moon was formed separately at the same time that Earth and other planets were being formed. A third way of explaining the existence of Moon is that it was formed at some distance from Earth and later captured by Earth. Haskin said that although examination of Moon rocks has revealed much about the structure and formation of Moon, such analysis has not conclusively eliminated any of these theories.

Yet, examination of the more than 2,000 samples of lunar material has revealed a great deal about the composition of Moon, professor Haskin explained. First, the density of Moon is found to be much less than that of Earth. Although Earth has a radius which is only four times that of Moon, its mass is 80 times as great. Haskin pointed out that craters scattered over the face of Moon were found to be of two types. The first, a smaller number, were lava craters that were found mainly on the side of Moon facing Earth. These were covered with black material which was found to be basalt similar to lava from earth craters.

The outer crust of Moon is thicker on the back side, and the head of lava did not have sufficient pressure to break through here as it did on the front side of Moon where the crust is thinner in many places. Also observed in the lava craters were rills or empty meandering beds through which the molten lava had once flowed, and wrinkle ridges caused by extreme pressure from beneath the crust. A second type of crater on the Moon is of impact origin. According to Haskin, these arose

even prior to the lava craters and are more numerous.

Although the density of Moon is close to that of chondritic meteorites, analysis of Moon rocks reveals a composition differing greatly from that of the chondrites. The barium concentration is ten-to-one-hundred times greater than that found in chondrites. Also, much less gold, iridium, nickel, and cobalt are found in Moon rocks than in Earth rocks and chondrites, and no sulfides are found to any extent on the surface of the Moon.

Dr. Haskin feels that the large difference in element composition seems to indicate a great amount of differentiation early in Moon's development, during which many elements became enriched in Moon's crust, and others became depleted by moving into regions below the crust. Because the amount of sulfides present is only one fifth that of Earth, Haskin believes that the average material on Moon must have condensed at a much higher temperature than on Earth, allowing the rather volatile sulfides to escape.

The time scale in Moon's development has been estimated by radio-isotope dating of the various rock samples collected from many places on the surface of Moon. Accretion and separation of the crust is estimated at 4.6 billion years, according to Haskin. He stated that the last major impacts to cause craters were about 4 billion years ago. He also said that vulcanism had begun by 3.9 billion and ended by 3.2 billion years ago, whereas bright crater Copernicus and bright crater Tycho were formed 800 million and 100 million years ago, respectively.

Edwin J. Geels

## Lawrence Dorr Provides Thaw

Christian fiction writer Lawrence Dorr gave us a touch of warmth during our long, cold winter. He flew up from Florida to spend two days in February with us, and obviously relished the crunching of snow

under his feet and the freezing of his breath on his beard.

He appeared in various classes to discuss some of the stories contained in his book *A Slow, Soft River*. The stories are