The Compass: Earth Science Journal of Sigma Gamma Epsilon

Volume 84 | Issue 2 Article 1

4-17-2012

Letter to the Members of SGE

Erika Elswick
Indiana University, eelswick@indiana.edu

Members of SGE,

Well, talk about milestones! From the first issues of *The Compass* in 1920 to today, a lot has changed. In 1920 following the end of WWI during the preceding year, some of the news included the nation's first commercial broadcast from station KDKA in Pittsburgh, Prohibition began, and women were given the right to vote. During this time, the Earth Sciences have made significant discoveries that have changed our understanding of the world around, under and, above us. Since the first issue of *The Compass* was published a mere smattering of the scientific advances that have influenced our research, some of which I have listed in the following paragraphs.

In 1927 Georges LeMaitre introduced the Big Bang theory which was followed in 1929 by Edwin Hubble who proved that the universe was indeed expanding. These findings changed the way we viewed ourselves in the universe and opened up a whole new set of questions. In 1947, Willard Libby introduced radiocarbon dating, a discovery that introduced absolute dating to our understanding of Earth events. Following World War II and the declassification of seismic data, 1953 saw the discovery of the mid-Atlantic Ridge by Maurice Ewing which was followed by Harry Hess' theory of sea floor spreading and in 1960, Vine and Matthews' discovery of the magnetic bands around the Earth which pointed to a very dynamic planet. In 1969, we accomplished our first extraterrestrial field trip to the moon with the Apollo missions which paved the way for the 2004 landing on Mars.

Our understanding of human history also received new insights during this time with the 1953 discovery of the DNA helix by James Watson and Francis Crick. In 1959, the Leaky family discovered our ancestors in Olduvai Gorge in Tanzania. In 1974, Donald Johanson found the partial skeleton of 3.2-million-year-old hominid in Ethiopia which was dubbed "Lucy". Our human history was pushed back even further with the discovery in 1994, by Tim White, Berhane Asfaw, and Gen Suwa of 4.4 million-year-old human ancestor, again in Ethiopia. Recently, the combination of DNA research as applied to our ancestors has lead to some reorganization of the human branches of the tree of life especially where Neanderthals are concerned.

These advances have not been without cautionary discoveries. Rachael Carson's "Silent Spring" was published in 1962 and warned of the environmental dangers of the use of DDT and began a movement toward environmental awareness and study. The first microprocessors were introduced in 1971 by Texas Instruments, and we have had to develop means of disposal of the

mine tailings and manufacturing castoffs of the new electronic technologies, to protect the environment. Not all of our cautionary finds are manmade however, as in 1980 Lewis and Walter Alvarez discovered what was to be determined to be a world-wide iridium layer associated with an extra terrestrial impact and alerted us to the possible debris from space.

Today in 2012, radio broadcasts have gone to satellite and we can listen to our music collections and news on our smart phones, prohibition is gone, SGE has a female president, and *The Compass* goes digital. As you study toward your careers in the Earth Sciences, and prepare to tackle today's issues such as energy supply, environmental hazards like the 2010 Deepwater Horizon spill in the Gulf of Mexico, climate change, or you delve into the understandings of how the deep earth works, the mechanisms of earthquakes, or the changes of life forms through time, we hope you will consider sharing your findings with us through **your journal**, ***The Compass***.

President, SGE