

E = mc²
Relativity of God and People
Fall 2008

As many of you may know, one of my favorite quotations from the Scriptures is from Zachariah the prophet (4:7) "Not by might nor by power, but by My Spirit," says the LORD of hosts." (NASB) While I was watching a movie about the history and development of Einstein's Theory of Relativity, I saw and heard several things that brought this verse to mind. In this film, Einstein was heard to say that he was seeking the mind of God in the beginning of our Universe. Like many today, he was trying to discover how it all happened and came about.

While we still do not have all the answers, we have grown much in this pursuit. Many will say that it is just a theory in order to dismiss the findings of modern Physics and related sciences, but that does not solve much either. It may be important here to explain what is meant by a theory among the scientific community. "In common usage, the word theory is often used to signify a conjecture, an opinion, a speculation, or a hypothesis. In this usage, a theory is not necessarily based on facts; in other words, it is not required to be consistent with the true descriptions of reality." (*Wikipedia*) "In science a theory is a testable model of the manner of interaction of a set of natural phenomena, capable of predicting future occurrences or observations of the same kind, and capable of being tested through experiment or otherwise verified through empirical observation." (*Wikipedia*) Another definition for scientific theory is "an assumption or system of assumptions, accepted principles, and rules of procedure based on limited information or knowledge, devised to analyze, predict, or otherwise explain the nature or behavior of a specified set of phenomena; abstract reasoning" (*MSN Encarta*)

As we said, Einstein was, like many today, trying to discover how our universe came about and continues. He used the formal language of mathematical logic to express what he had come to know from the understanding of Physics from his peers and those who preceded him. Because these theories continue to grow and expand as our knowledge and experiences enables, they are what we might call growing truth. Truth, like everything else, grows and expands as we make progress in our knowledge and understanding. While we are certain that $E = mc^2$, we are also sure that we have a lot more to learn about this formula as we move forward in time. When we realize how far we have come in the understanding of our universe it is very exciting to think of what our future knowledge may open to us.

What got me so excited as I watched and thought of this verse in Zachariah? It spelled out for me how I believe that everything happens in our universe. This is what came to me: The M = Mass; the E = Energy; the c = the speed of light in a vacuum (celeritas – Latin for "swiftness"). In the verse of Scripture that came to my mind I noticed a unique relationship: Not by might (Mass or Matter) nor by power (Energy or Force) but by my spirit (the swift light of God's presence). It happens not by any one of these facets of our universe alone, but by the relationship of all of them together. From the beginning of what we call time it is this magnificent relationship of $E = mc^2$ that makes it all happen.

Our growing knowledge of the beginning of the universe is called the "big bang". Does this necessarily eliminate the presence of God or does it possibly explain the active presence of the "c" in this equation? From the beginning of the creation story in the book of Genesis we hear about light! Without this light, mentioned in the 3rd verse of chapter one, would anything have happened? According to this story the light was then separated from darkness and things began to move along. This all happened before the 1st day ended according to the time frame in the story. It was not until the 4th day that the larger light we call Sun appeared, so this light is prior to sunlight as a progenitor of all that followed. While the word light is used profusely in all of Scripture, let me move to another concept to which we may need to give more thought. In the Psalms we read: [*Psalm 139:12*] "Indeed, the darkness shall not hide from You, But the night shines as the day; The darkness and the light *are* both alike *to You*." From the beginning of our universe there always was light and darkness, like two sides to a coin and even many issues of thought. Why do we

sense an antagonism here instead of wholeness? Why is one good and the other bad? Are Black Holes evil along with the dark of “empty” space? Could it be that good and evil are essential and complementary to life as we are coming to know it? Could our recent discovery and study of Black Holes give us clues to greater understanding of exactly what wholeness and relativity is?

While light so often refers to God it eventually is applied to those who are followers as well. God’s people are constantly urged to walk in the light of God and share their gifts carefully with everyone and every thing. We are asked to be a light to the world and not hide our light under a bushel but make it readily seen as on a hill or light stand. [Mt. 5:14-16] It is a clarion call to be in relativity to all of which we may be a part. We need to live $E = mc^2$ to be at one with our universe and life itself. Could even the “darkness” we bring with us have a part in the recreation of our work and ourselves? I often use the acronym of GRACE to refer to God’s Re-creative Activity Causing Excellence to express this wonderful mystery of our relativity. Are we not coming to realize the essence and value of recreation in health and wellness? As we discover the wonders of the universe can we not learn to celebrate the wonder of relativity to all that is and thus become all that we can be?

Further observation of the universe brings awareness that it is rather chaotic and sometimes frightful. Yet out of its tremendous diversity comes order and beauty. While Einstein’s mathematical expression of this theory seems so simple, the ramification of what it all means and includes will take many more years of research to understand, if we ever do. The Scripture tells us that God’s ways are past finding out, but we have so many clues and abilities that are ours to enable us to try and expand our knowledge. We live with good and evil, light and darkness, the magnitude of space and the smallness of atoms and the like and while both are alike to God they do not yet appear so alike to us. We have a lot to learn but we have the pleasure of growing and becoming in the magic and mystery of learning.

At this point I would like to point out the unique relationship between the Genesis accounts of creation to the Theory of Evolution (keep in mind what I said earlier about the scientific use of the word theory). What Charles Darwin discovered has only grown and been reinforced over the years to our present time. This is another demonstration of how theory works in science. It continues to be a testable model of the manner of interaction of a set of natural phenomena that continues to enhance our understanding of natural selection. When seen with the same open mindedness, the stories of creation in Genesis share with us the same wonder of the inspiration of Scripture. Even in a great Bible Handbook by Henry H. Halley, a rather conservative scholar, he says, “Whether they were days of 24 hours, or long successive periods, or interludes between periods, we do not know. And in Psalm 90:4 and II Peter 3:8 “one day is with the Lord as a thousand years, and a thousand years as one day.” So perhaps it would be better not to be too dogmatic as to the duration of the Six Days of Creation.” Here is a chart that may suggest the harmony of Genesis and Geology:

Events in Scripture	Geological Development	Geological Timetable
<u>First Day:</u> Gen. 1:1-5 heavens & earth, Light, succession of day and night	Matter: the universe, Earth & other planets. Mists surrounding earth all ocean in atmosphere	Cosmic Era
<u>Second Day:</u> Gen. 1:6-8 Firmament	Waters begin to collect – Clouds and oceans	Azoic Era
<u>Third Day:</u> Gen. 1:9-13, Separate water from sky – land & sea appear Earth brings forth plant life	Continental shields & beginning of graduation Algae and other plants	Archaeozoic Era
<u>Fourth Day:</u> Gen. 1:14-19 Luminaries “made to appear”	By condensation the cloud envelope breaks so that the sources of light become visible on earth	Proterozoic Era
<u>Fifth Day:</u> Gen. 1:20-23 Sea & sky bring forth: Moving & Flying creatures, Sea monsters & animals of all kinds.	Invertebrate life of all kinds, fish and various types of amphibia and insects, reptiles of land, sea and air	Paleozoic Era
<u>Sixth Day:</u> Gen. 1:24-31 Cattle, Creepers, Beasts of the earth and Man	Mammals of the land, sea and air; true birds	Cenozoic Era

Relatively speaking, there is not much difference in the Genesis story and the observations made in the progression of time in the Geological Table. When we move away from our common understanding of the meaning of a day in Genesis and look more broadly at the sequence of the Geological Timetable we sense a genuine continuum. For me, Faith is Finding Authenticity In Today's Happenings. That, as it were, is the Noun of our knowledge. When we place what we know into action it becomes a verb like understanding. When we act out of our belief we must keep two aspects in mind - Balance Emotional Level In Educational Formation. We need our emotions to drive us forward into action but we should not become active without an educational formation.

It wasn't too long after Einstein's Theory of Relativity was developed that we, as human beings, developed and used an "evil" side to all of this knowledge – the Atomic Bomb. We so soon forgot that the Designer of our universe used this formula to bring about the wonder and possibility of life. After the first use of this magnificent $E = mc^2$ the heavens, the sun and moon, the stars, and planets like our earth formed to support and enable life to flourish. Indeed the heavens declare the glory of God even though there are and will continue to be circumstances and happenings that seem to bring destruction. In the violent acts of nature we almost always come to understand that most, if not all, actually bring forth new life and new possibilities. Earthquakes can move Earth's plates around so as to form new continents. Volcanoes build islands and form mountains. Lightning causes fires that seem to destroy forests and yet actually bring about a renewal of them by cleaning the debris and nourishing new growth. The chaos of nature is not really as destructive as we first imagine. The Atomic Bomb had only the purpose of destruction with no promise of renewal or new life. These acts of human violence are un-natural because they do not bring forth life and creativity. They are not acts of Creation!

Sadly, the violence among the religions over the centuries is appalling. Whenever we dogmatically speak and act with a presumption that we are superior and not in relativity to our universe and others, our demeanor is often destructive in thought, word, and deed. Unfortunately this is not only so with religion but also with our political and community interactions. We are a people with a Tribal mentality that live in a Global World. There is hardly anything that we can think or do today that does not intrinsically and actually involve, affect, and effect others. To act alone and in isolation is hardly appropriate in this 21st Century. Relativity is not only the essence of our Universe but it is the key to life and health among Nations and Peoples.

With all of these wonderful things that we are learning, isn't it about time that we begin to apply them and put them into practice? Relativity speaking, **interdependence** is our only hope.

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