

Dating the rocks of the grand canyon (old-earth vs. young-earth)

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Dating the rocks of the Grand Canyon (the old vs the young earth) Insert of Introduction Various geologists have made several attempts to ascertain the age of the earth using various methods among them the radiometric dating methods among others. Geologists and other earth scientists have carried out certain geological surveys and studies on various earth materials such as rocks which have given a bit of clarification in estimating the age of the earth. Among these are the studies carried out on the Grand Canyon rock mass. Chronic notes that studies on the Grand Canyon can be used to give some hint about the earth structure and composition which could be used to give a close to the exact age of the earth as some geologists have argued (Chronic, 1983). Other scientists have also come up with other methods of estimating the age of the earth which gives rather rudimentarily arranged historical accounts about the age of the earth. Such arguments include the biblical and other religious accounts which tell of the origin of the earth from a religious point of view. Religious or rather biblical accounts have given rough estimations which date the earth to just a few million years beginning from the creation of man to the present times often using the biblical foundations as the sole sources of arguments. These people analyze the biblical accounts literally as they appear to have been stipulated in the bible based on a 24 hour day as their historical time line. The geological societies have as well studied the various rocks compartments and compositions to come up with estimates about the earth formation and age. These estimations have been derived from archeological findings and fossils dating. The two viewpoints are however in opposition with each other, each side opposing the other on the validity of the methodologies used to arrive to the

answer (Sloss, 1963). This paper will examine the formation of the earth based on the analysis of the grand canyon rocks. This will be done in line with the argument of the old and the young earth view points in trying to explain the age of the earth. Before we begin analyzing the Grand Canyon rocks to explain and estimate the age of the earth, we will begin by looking at the various types of rocks forming the earth's surface and which are the major types of rocks forming the Grand Canyon. Earth rocks can be divided into three main types based on their mode of formation. These include: Igneous rocks, sedimentary rocks metamorphic rocks. Depending on the way and processes involved in the formation of these three types of rocks we can use their characteristics and sedimentation features to give a rough estimate of the earth as some geologists have done. Igneous rocks are formed from cooling of magnetic ejections either on the surface of the earth or under the earth's surface. Sedimentary rocks on the other hand are formed as a result of the accumulation, compaction and cementation of various sediments either on the surface of the earth or under the waters of the sea. The last category here is the metamorphic rocks which are formed after the pre-existing rocks have been subjected to extreme heat and pressure. The three types are formed in a cyclic manner with close overlaps. On most occasions, sedimentary rocks have been used in archeological studies since they are fossilized. Hamblin asserts that dating methods can be employed on these rocks to come up with results which date the earth back to millions of years contrary to the religious dating which go back to just a few million years ago (Hamblin, 1989). These two lines of argument have led to the establishment of the two opinion sides of the old and the young earth respectively. The

Grand Canyon and the dating of the earth The Grand Canyon rocks present an array of evidences which can be used to date the earth based on the geologic timelines. As Sloss notes, the dating system has however been subject to errors of non- conformities, disconformities as well as unconformities which interfere with the rock dating process on the Grand Canyon rock mass (Sloss, 1963). The oldest rocks in the Grand Canyon are the Proterozoic Vishnu schist which was dated to about 2 billion years ago. This forms the base of the Grand Canyon rocks, about 25, 000 feet high and composed of both sedimentary and metamorphic rocks. These rocks are believed to have been metamorphosed at about 1. 7 billion years ago and were later on folded, uplifted and intruded by granites (the Zoroaster granites) forming the mountains which became eroded to the roots from around 1. 7 to 1, 2 billion years ago (Hamblin, 1989). A large rock mass such as the Grand Canyon is believed to have formed over a long period of time. 12 major lava dams have been identified on the Grand Canyon which are believed to have formed during the past 1. 2 million years. Crude age approximations and erosion cycles indicate that each of these dams was formed after a period of about 20, 000 years after which they were destroyed (Chronic, 1983). The Miocene muddy creek formed between 5 to 6 million years ago, represents a period of interior drainage on the canyon, the Bouse of western Arizona formed during the late Miocene period and the volcanic formations on the western side of the grand canyon formed at around 1. 2 million years ago are some three spectacular occurrences which can be used to roughly give the estimates of the age of the canyon.

Conclusion In conclusion, it is evident here that two main viewpoints have

been emerging here as people try to explain the age of the earth. These are the old earth point of view as argued by the geologists and the young earth viewpoint held by the biblical analysts. A study of rock composition on the Grand Canyon can however hint at the dating process of the earth by using various dating methods to date these rocks. This actually takes us back to several years as opposed to the young earth argument which dates the earth to a few million years ago. References Chronic, H. (1983). Roadside Geology of Arizona . Missoula MT: Mountain Press. Hamblin, W. K. (1989). Pleistocene volcanic rocks of the Western Grand Canyon Arizona, Northern Arizona. Geology of Grand Canyon . Sloss, L. L. (1963). Sequences in the cratonic interior of North America. Geological Society of America Bulletin , 74, 93- 114. .