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THE LIVING CONTRIBUTION OF ISLAMIC SCIENCE TO SPACE EXPLORATION

Abstract

The achievements and advances of any civilization have their roots in past societies and cultures. For example, if it were not for the accomplishments of the Babylonian civilization, the Greek civilization would not have reached all of its achievements in philosophy, arts, and sciences. And if it were not for the Greeks, there would have been no scientific achievements in the Islamic civilization. Knowledge accumulates and gets transmitted from one society to the other. This historical flow is universal, and if it were not for the scientific achievements of the Islamic civilization, there would have been no Western renaissance. This transmission of knowledge is undeniable. It has no boundaries, and it passes the flow of time steadily and readily.

Space exploration is the product of our curiosity to know more about what lies beyond Earth. This curiosity of exploring the unknown has been the primary incentive for Muslim scientists for more than eleven centuries in sciences, technologies, engineering, and mathematics. When it comes to travel, the ancients used to navigate using stars as the main references, either on dry land or sailing through the vast oceans. To this end, several instruments were used: the astrolabe in its different configurations, the sextant, the sundial, the quadrant, etc. In today's modern space navigation, we refer to the Deep Space Network, orbiting satellites, reference stars, the trio Sun-Phobos-Deimos for Martian navigation, using an inertial navigation system, etc. In this paper, we compare the old and new ways of space exploration, emphasizing that the roots of modern space navigation have their origins in the old methods.