Curriculum Units by Fellows of the Yale-New Haven Teachers Institute
1998 Volume VI: Selected Topics in Contemporary Astronomy and Space Science

Introduction

The Fellows in this Seminar teach a variety of grades from elementary to high school. However, within this variety there is a similarity between them in that most of the Fellows teach students with special needs. In particular, most of these students have difficulty in grasping abstract concepts, and may not be able to follow complex instructions. As a consequence, most of the Curriculum Units address topics that can be related to everyday events and observations. This means that essentially all the Units cover topics related to the Solar System.

The most popular astronomical object studied in these Units is the Moon. This subject is addressed both in terms of space science, as the only extra-terrestrial body visited by Man, and also in terms of astronomy, having a rich set of readily observable phenomena (such as the phases of the Moon, or eclipses) which are simple to explain, and yet answer questions that each student may have posed to him/herself at on time or another. This is a perfect illustration of the objectives of the scientific method, namely rational and simple explanation of natural phenomena.

Another popular topic was the study of the Earth as an astronomical object, which allows us to understand the seasons, eclipses, night and day, the month, etc. The Earth was also studied as the paradigm of a life-bearing planet, critical in discussing the possibility of the existence of life elsewhere within our Galaxy, and in the Universe.

Throughout all the Units, the authors have been careful in discussing various laws of nature which both guide our understanding of phenomena, and reign in our propensity for straying into groundless speculation. For example, one Curriculum Unit examines popular science fiction books and movies to uncover line plots that are contrary to scientific knowledge. This approach allows the Fellows to teach fundamental scientific principles in a painless way, and it brings forth the relevance of these principles to our lives in ways not possible in the more traditional teaching techniques.

Sabatino Sofia