Planet Earth – The View From Space. D. James Baker. Universities Press (India) Ltd., 3-5-819 Hyderguda, Hyderabad, India. 1997. Price: Rs 150. 191 pp.

The ability of space technology for obtaining systematic, synoptic, rapid and repetitive coverage over large areas from its vantage point in space makes it unique and powerful for solving basic problems such as weather prediction and management of natural resources. James Baker's *Planet Earth – The View From Space* provides an introductory yet comprehensive treatment of this important topic. Basic concepts of remote sensing are brought out in a simple language in an user-friendly style. The book is well illustrated with diagrams and photographs to explain the concepts.

Chapter 1 discusses global environmental concerns and how space-based observations help in characterizing various phenomena such as weather forecasting. There is a good account of the interlinking of El Nino phenomenon and the drought of 1988. Using satellite data for decision making in regard to El Nino can be seen as a precursor to how similar types of data may be used to help forecast and mitigate impacts from global climate change. The chapter provides an introduction to global warming and lists out the environmental issues which are bound to become critical in the twentyfirst century. Satellites provide the eyes in the sky to monitor phenomena in a global scale. Through concurrent development of numerical models that run on high speed computers, the author shows that we will be able to achieve significant advances in our understanding of the earth – its changes, feedback and interaction – and enhance our ability to accurately predict global trends over long time scales. For the management of our environment as well as our limited resources, remote sensing is undoubtedly a vital tool.

Chapter 2 discusses how satellites orbit the earth and provide a platform for remote sensing. The various types of orbits used for different satellite applications are briefly explained. Principle of operation of both passive and active remote sensing instruments is explained. While passive instruments operate collecting the radiation emitted by the earth, active instruments transmit pulses of radiation and the reflected radiation is collected by the instruments onboard the satellites. Under passive sensors the working principles of images and sounders are explained. Scanning and push broom imaging are distinguished, with reference to Landsat and SPOT instruments. The importance of microwave remote sensing, which is transparent to the earth's atmosphere and clouds, is brought out. The working principles of satellite altimeters, synthetic aperture radars, laser ranging instruments and scatterometers are explained. The chapter concludes with a brief chronology of satellites all the way from 1957 till 1989 as relevant to remote sensing.

Chapter 3 provides details of operational satellites as on 1989. Detailed description is given of the satellite systems SPOT (France), MOS (Japan), NOAA (USA), METEOR (USSR), GMS (Japan), GOES (USA), METEOSAT (ESA) and INSAT (India). The applications in the areas of the sun and its interaction with the earth, the atmosphere, the ocean and the land surface are brought out. NIMBUS and TIROS satellite systems are explained in detail.

Chapter 4 indicates what the author perceives will be the scenario in the 1990s. It speaks of the foresight of the author that a majority of his predictions have come true. The author provides details of solar terrestrial energy program (STEP), upper atmospheric research satellite (UARS) and tropical rainfall measuring mission (TRMM). Limited information on Russian missions such as geostationary meteorological satellites is also given. Outline of ERS mission and TOPEX/POSEIDON programs are discussed in sufficient detail. The importance of Radarsat for cryospheric studies is elaborated. Another program which was looked forward to with great interest in those days was Japan's Advanced Earth Observing Satellite (ADEOS) and it is quite unfortunate and unexpected that this satellite was lost last June due to a solar array failure, after only months of operation.

Chapter 5 discusses the Mission to Planet Earth with the goal to understand the earth system on a global scale by describing how its component parts and their interactions have evolved, and how they are expected to change. The challenge is indeed to predict these changes. This requires global long-term measurements from satellites and ground-based systems to document physical, chemical and biological processes responsible for the evolution of earth in all time scales. Such data must be used in quantitative models and be available as an information base for effective decision making. Detailed description of EOS-A and EOS-B instruments is included in this chapter.

The sixth and final chapter takes us into the 21st century. The scheme for data sharing at an international level is expected to be evolved in this time frame with United Nations playing the key role. The development of technology is towards higher resolution imagery for civilian use.

The book contains a fairly exhaustive bibliography and references besides a comprehensive glossary of terms that the reader will find useful. The get up of the book is elegant and the book is priced reasonably. The presentation is cogent and makes easy reading. The book provides interesting titbits like how the Japanese satellites derived their names after flowers. This work should appeal to the specialist as well as the non-specialist alike.

The book has information up to the year 1989 but many significant events and developments have taken place after this time frame. Hence quite a lot of material, particularly in Chapters 3, 4 and 5, needs to be updated. For instance, as on date IRS system is one of the leading global systems and hardly any mention is made of it in this book. Today is the age in which remote sensing data is available through the Internet and obviously the author could not have anticipated such a revolution at the time of his writing this book. Despite this drawback the book is a good introductory one in this all-important field.

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