

INTRODUCTION

India has entered the space age with the launching of the first satellite Aryabhata on 19th April, 1975, to carry out experiments in X-ray astronomy, solar physics and aeronomy with the help of a Soviet Intercosmos rocket. It has no imaging facilities. In view of utilising space technology for national development, India's first experimental earth observation satellite, Bhaskara - I, with a total weight of 444 kgs was launched into a 50.7° inclined circular orbit at an altitude of approximately 500 kms on 7th June, 1979 from a Soviet Cosmodrome and one of its T.V. cameras has operated between May, 1980 and March, 1981.

Bhaskara - II satellite:

Later, Bhaskara - II, the second Indian satellite for earth observation studies with a total weight of 436 kgs. was launched on November, 20th, 1981 from a Soviet Cosmodrome with a near circular non - sun synchronous orbit with an inclination of 50.7° having a perigee of 521.5 Kms. and an apogee of 538 kms. and the period of rotation being 95.15 minutes. Bhaskara - II repeated its ground trace approximately on every eleventh day. Bhaskara - II satellite provided the T.V. data in both bands upto

January, 30, 1982 and since then only band-2 images are available.

Bhaskara - II T.V. camera:

The T.V. camera instrument consists of two independent units one operating in the visible wavelength range of 0.54 to 0.66 micrometers and the other in the near infrared band of 0.75 to 0.85 micrometers. Accurate reseau marks are placed on the imaging tube face plate and the cameras are mounted with their optical axis at right angles to the spin axis and the imaging is done once during the spin when the cameras look along the local vertical.

The optical system focussed the ground scene on the active area of the face plate and this is displayed on photo-sensitive surface of the face plate.

It is read out within 14.30 seconds and the residual image is erased by applying higher beam current for about 45 times within 2 seconds. With this procedure, the cameras are made ready for taking the next scene. These data are received at the tracking stations located at Space Application Centre, Ahmedabad and at Satellite Launching Station, Sriharikota, Andhra Pradesh. From this primary data set, the browse products and the Computer Compatible Tapes are being generated at Space Application Centre, Ahmedabad.