

Research in Brazil at the initiative of the Subcommittee on Small Satellites for Developing Nations of the International Academy of Astronautics. Representatives from Argentina, Brazil, Chile, and Mexico attended, as well as from Canada, France, Germany, Ireland, the United Kingdom, and the United States.

One of the workshop topics was the use of systems providing mobile communications between any two points in the country using multiple low-Earth orbiting satellites. Telemedicine is one of the most promising applications of this technology. Such a system would allow the transmission of information obtained by simple sensors on a patient directly to complex medical processing units in large medical centers, where it can be properly interpreted by physicians. In the same vein, a fax of an electrocardiogram could be sent to a hospital in the case of a medical emergency in a remote area.

Small Earth observation systems with portable ground stations could provide local regions with direct downlink data, without having to wait for the information to be processed by central facilities. This real-time access to data could be important in monitoring forest and brush fires, fish, tropical storms, volcanic activity, earthquakes, and other potential disasters.

Presenting a concrete example of how satellite remote sensing can keep an inventory of water resources, Dr. N. Ben Yosef from the Hebrew University in Jerusalem described the use of remote sensing images from the SPOT satellite, which can monitor the 200 open water reservoirs used in Israel, mainly for agriculture.

Dr. Yosef explained that these reservoirs can become polluted with algae and bacteria. They deteriorate both chemically and biologically, he explained, and in order to protect crops, scientists must be able to discriminate clean water from polluted reservoirs.

Using 99 of the reservoirs as a sample, they compared satellite images of them over time. The discrimination is based on what is called the volume of reflectance, or the measure of the light-scattering properties of various constituents in the water. In this way, the scientists can determine both what is causing the pollution and to what extent the water has become polluted. This method has been very successful, and will obviate the need to physically sample the reservoirs, which is expensive and time-consuming.

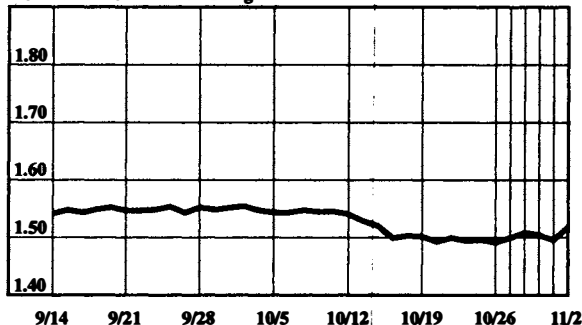
Most representatives of developing nations presented ideas for turning the fabulous technology developed through space exploration toward solving the problems they face today. A few chose to blame the current state of their underdeveloped nation on overpopulation and environmental degradation, supposedly caused by too much development.

For the majority, there was an expressed understanding that the space frontier not only has created the possibility to accelerate their rate of development, but also that space exploration engages the interest of young people, in particular, to strive to excel in science.

Currency Rates

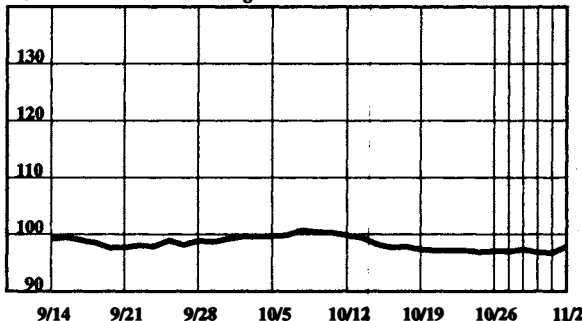
The dollar in deutschemarks

New York late afternoon fixing



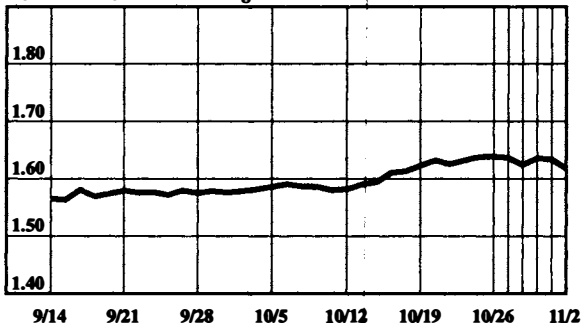
The dollar in yen

New York late afternoon fixing



The British pound in dollars

New York late afternoon fixing



The dollar in Swiss francs

New York late afternoon fixing

