

Cover Story ...

Space Explorations: Benefits and challenges ahead

CHEMCOS News Bureau

Some of the most frequently asked questions about the space programs are "Why should we go into space when there are so many problems here on Earth?" and "What does the space program do for me?" These questions are neither spurious nor false but unfortunately not many are aware of the benefits that space program can provide to improve the quality of our lifestyle. It can have immense impact on areas related to construction, medical and household products, transportation, sports equipment, and increased satellite efficiency.

Space explorations have contributed significantly in the field of health and medicine. For example, in order to detect breast cancer, a solar cell sensor is positioned directly beneath x-ray film. It monitors the duration, extent and optimum density of radiation received by the film. The associated electronic equipment accordingly sends a signal to cut off the x-ray source. Reduction of mammography x-ray exposure reduces radiation hazard and doubles the number of patient exams per machine. Other contributions in this area include arteriosclerosis detection, ultrasound scanners, automatic insulin pump, portable x-ray device, invisible braces, dental arch wire, palate surgery technology, clean room apparel, implantable heart aid, MRI, bone analyzer, and cataract surgery tools.

In terms of safety and survival, use of space exploration can help to combat the danger of foreign objects that can collide with earth. During its evolution, earth has been hit by various asteroids that caused its global destruction and mass change. Space exploration, with the help of satellite technology and construction of better space crafts in future, can not only plot asteroids that may strike the earth, but also prevent them from colliding with the planet. One object unseen can devastate the entire world and cause mass casualties beyond any man-made weapon can ever cause.

Today, a major concern is food shortage and starvation in third world countries which is often plagued by natural disasters and poor farming techniques. According to Dr. Ernst Stuhlinger (Director of NASA Marshall Space Flight Center in Huntsville) "large areas of land could be utilized far better if efficient methods of watershed control, fertilizer use, weather forecasting, fertility assessment, plantation programming, field selection, planting habits, timing of cultivation, crop survey and harvest planning are applied. The best tool for the improvement of all these functions, undoubtedly, is the artificial earth satellite. Circling the globe at a high altitude, it can observe and measure a large variety of factors indicating the status and conditions of crops, soil, droughts, rainfall, snow cover, etc. and it can radio this information to ground stations for appropriate use."

Nevertheless, apart from exploring new worlds and establishing human-friendly settlements to stretch out the borders of the earth, space exploration faces a big challenge: to provide more room for the world's population to grow along with economic and social benefits.