this century, strong and ductile aluminium alloys could be produced. Alloy development has reached a stage of maturity.

In aerospace applications aluminium alloys face a stiff challenge. In response to this, metallurgists have come up with a number of new possibilities. These include aluminium-lithium alloys, rapidly solidified alloys, aluminium-metal matrix composites and aramid-aluminium laminates. The conference has dealt with these themes in an interesting fashion and the proceedings contain many valuable papers.

India has an abundant resource in aluminium ores and is strongly committed to the development of aluminium technology. Educational, industrial and research establishments concerned with aluminium are advised to add this volume to their library.

S. RANGANATHAN

Department of Metallurgy,
Indian Institute of Science,
Bangalore 560 012.

NEWS

"SOYUZ TM–3" SOFTLANDS

Cosmonauts Yuri Romanenko, Alexander Alexandrov, and Anatoly Levchenko returned to Earth at 12.16, Moscow Time, on December 29, 1987 after successfully accomplishing a programme for scientific and technical research and experiments on board the orbital complex Mir.

The descent module of the Soyuz TM–3 spaceship landed 80 km away from the town of Arkalyk. The cosmonauts feel well.

Vladimir Titov and Musa Manarov continue work in orbit.

For the first time in history cosmonaut Yuri Romanenko made a 326-days-long space flight. Full change of the crew was effected during the uninterrupted functioning of the orbital research complex Mir.

The programme for work in orbit included astrophysical, geophysical and medico-biological research, engineering, technological and biotechnological experiments as well as assembly operations in the open space to install an experimental solarcell battery.

The crew was partially changed in the middle of the flight: Alexander Alexandrov took the place of flight engineer Alexander Laveikin and made a 160-day space flight.

A large amount of research was carried out under international cooperation programmes. The Soviet-Syrian crew worked on board the orbital complex for a week, performing experiments prepared by the scientists of the Soviet Union and Syria.

The addition of the scientific module Kvant to the orbital complex made it possible to implement an extensive programme of astro-physical research with the use of the "Roentgen" orbital observatory created by the scientists of the Soviet Union, Britain, the Netherlands, the Federal Republic of Germany, and the European Space Agency as well as the "Glazar" ultra-violet telescope designed in the Soviet Union with the participation of Swiss specialists.

The telescopes of the Kvant module were the first in the world to record the X-ray radiation of the supernova in the large magellanic cloud.

In all, there were more than 500 sessions of research into various astro-physical objects. Two hundred and seventy photographic pictures of starry sky areas were taken by means of the "Glazar" ultra-violet telescope.

The presence on board of several technological installations made it possible to perform a large number of experiments on space study of materials with due regard for the results obtained in the previous flights.

Visual observations, photography and spectrometry of land and the world ocean area were regularly carried out under the programme of research into the natural resources of the Earth and the study of the environment.

Equipment, apparatus and expendable materials necessary for the ensurance of the cosmonauts' work were uninterruptedly delivered to the orbital complex Mir by "Progress" automatic cargo craft.

The state of the cosmonauts' health was continuously monitored during the flight. A series of disease-prevention measures enabled the mission

commander to make the record-long space flight.

Soviet cosmonautics approaches the end of the year of the 70th anniversary of the Great October Socialist Revolution with outstanding successes.

An effective operation of the orbital multi-module complex Mir and modernized transport spaceship Zoyuz-TM — which were created on the basis of the latest achievements of the country's industry — has been started.

The results of the research and experiments carried out by the crews on board the orbital complex Mir are of great scientific value, and will be used in the development of fundamental sciences as well as in many branches of the national economy. (*Soviet Features*, Science and Technology; Vol. XXVI, No. 149, December 30, 1987; Published by the Information Department, USSR Embassy in India, P. B. 241, 25 Barakhamba Road, New Delhi 110 001).

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