All aboard for Halley

The planned Soviet–French joint mission to Halley's comet in 1986 has been transferred, on the initiative of the Soviet Union, to the joint Comecon "Interkosmos" programme. At the same time, French participation will be largely reduced to the first stage of the mission, the fly-by of Venus.

The Halley probe is now to carry apparatus from Comecon countries, although their participation seems to be confined to the provision of equipment rather than the design of any individual experiments. Some countries may be assigned an individual responsibility for various sections of the mission — Hungary, for example, has been entrusted with developing the television system for monitoring the comet and transmitting the pictures to Earth.

The announcement of the Interkosmos trip to Halley's comet came at last month's meeting in Erevan of the Comecon permanent working group on space physics, only a few days after the successful landing of the Romanian cosmonaut, Dumitru Prunariu, brought to an end the programme of Comecon participation in missions to the Salyut space stations. Academician V.A. Kotel'nikov, chairman of Interkosmos, confirmed that no further joint manned flighs have been planned, although several unmanned joint missions are scheduled.

Vera Rich

tracking satellite would be able to cover the shuttle only in about half of its orbit and one third of Spacelab data could be lost. Extra recording equipment would be carried on board, but it is unlikely that the very high rate of data (100–150 megabits per second) from the microwave facility for Earth observations could be recorded. Spacelab users and ESA await NASA's final decision.

Meanwhile, NASA has been revising its schedule for shuttle flights up to 1985. Surprisingly, after the almost complete success of the first shuttle flight, delays are in store. Seven of the 44 flights scheduled before 1985 are to be postponed until the second half of the decade or even cancelled. Most other payloads are to be delayed. The reason for the delays, ranging from a few days to more than a year, are cuts in the Reagan budget, a more accurate estimate of the turn-round time and, most recently, delays in the manufacture of lightweight external fuel tanks. NASA says that delay in delivery of the tanks is largely responsible for the postponement of seven flights beyond 1985.

Three of the seven flights will effectively be cancelled. One will be saved by launching the two Galileo probes to Jupiter, more than 400 days later than originally planned, on a single shuttle flight. Another has been saved by the cancellation of the Venus-orbiting probe. And the third may be saved from the International Solar-Polar Mission if NASA fails to win approval for even a modified solar-polar spacecraft. (The ESA solar-polar spacecraft is included in the shuttle manifesto but with a launch date of May 1986, more than a year later than originally planned.)

Foreign and commercial users affected by the latest shuttle delays are being given until the end of this month to decide whether they would like to use Thor Delta launchers instead.

Judy Redfearn

European innovation

Brokers in demand

Luxembourg

The role of the European Commission in creating the right environment for innovation came up again at a symposium — sponsored by the Commission — in Luxembourg last week. The three-day conference was inspired by the resolution of EEC science ministers at the end of 1979 and follows on from a similar symposium on banking and innovation held last year.

Despite the ritual homage paid to the idea that small business will make good the job losses in large companies and industries, this year's symposium highlighted the gap between the researcher and the businessman. Participants repeatedly affirmed that basic and pure research in Europe too often fail to lead to commercial application.

The implication is that the dynamism of the small American business is not so easily copied in Europe. Not only is there a lack of venture capital but linguistic differences, the small size of national markets and technical barriers are further deterrents. In addition, the sheer mass and variety of the channels through which research results are made available bewilder rather than inspire industry. So this symposium edged round to the conclusion that what is required is a broker or intermediary who could select exploitable research and help to develop it commercially.

Some effective middlemen exist. In the United Kingdom, the National Research Development Corporation was set up in 1946. The Netherlands has the Eindhoven University of Technology, which has helped 200 small and medium-sized businesses in its first year of operation. In Austria the Innovationsgesellschaft is a venture bank specializing in helping inventors to launch new products. Belgium has several industrial research parks at the Catholic University of Louvain-La-Neuve and Vrije Universiteit Brussels.

The consensus of opinion at the symposium, however, was that these innovations are inadequate. One suggestion was for a European Technology Transfer Centre, another for a European Investment Bank specializing in research. Others proposed more bulletins on the lines of the French *Lettre des Sciences et Techniques* which selects and condenses reports of new discoveries. Many participants argued that the mentality of scientists in the field needs changing. They should publish information less for their peers than for the end user. Or they should themselves become entrepreneurs. The Commission will now consider how best to create the environment for the scientist/entrepreneur and for a European context for the scientific information broker.

Coincidentally, the European Commission's proposals for EEC programmes in the field of new technologies — microelectronics and telematics — are to be reexamined with greater interest, said Mr James Prior, the UK Secretary of State for Employment, after an unprecedented gathering of the EEC's finance and employment ministers in Luxembourg on 11 June with the aim of finding a solution to the growing unemployment problem. Sir Geoffrey Howe, the British Chancellor of the Exchequer, has also stated that the Commission is to bring forward new proposals to stimulate the expansion of small and medium-sized businesses.

If Mr Prior's words at the "Jumbo Council" are to be taken seriously, the Commission's work in the area of scientific communication is likely to be given a shot in the arm. The ministers agreed that there must be a greater coordination of the EEC's approach to new technologies.

Jasper Becker

Soviet scientists

Another trial

Dr Viktor Brailovskii, the Moscow cyberneticist faces trial this week on a charge of "disseminating fabrications . . . which defame the Soviet political and social system". Dr Brailovskii has refused a defence counsel, maintaining that nothing in his conduct over the past few years needs to be defended in court.

Dr Brailovskii was dismissed from his lectureship at the Moscow Radiotechnical Institute in 1972 when he applied, with his wife and son, to emigrate to Israel. In 1973, he and his wife Irina joined the "Sunday seminar on Collective Phenomena" organized by their friends, Dr Aleksandr Voronel', for "refusnik" scientists who wished to keep up some sort of intellectual life during the waiting period between applying for a visa (and subsequently losing their jobs) and actually being allowed to emigrate. From then on they were both frequently subjected to police harassment, which intensified when Dr Brailovskii became organizer of the seminar following the departure of Voronel' and his successor Dr Mark Azbel' to Israel.

In 1976, Dr Brailovskii was given permission to emigrate but his wife was refused on the grounds that she had access to secret information. (Her former

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immediate supervisor was prepared to deny this verbally, but not to commit himself in writing). On refusing to leave without his wife, Viktor Brailovskii had his permission to emigrate withdrawn in 1977.

In 1978, after a search of their apartment, his mathematical papers were confiscated and he was warned to stop lecturing on mathematics. In April 1980, the fourth in a series of conferences was to take place, basically an extension of the regular seminars to which foreign colleagues and sympathizers were invited. Before the 1980 conference Dr Brailovskii was arrested, questioned, and threatened with imprisonment if the meeting went ahead. Nevertheless it took place on schedule.

On 13 November 1980 Dr Brailovskii was arrested, and for several Sundays the police prevented anyone from going to his apartment. Dr Irina Brailovskaya, however, soon had the seminars going again, at first on Saturday evenings, and then, when the pressures lessened, at the original time on Sunday mornings. Dr Brailovskii, meanwhile, was held in Butyrki prison for more than 6 months (the official time for pre-trial detention is not more than three months, unless a special extension is sought).

Optical astronomy

Dutch sign on

Research councils in the Netherlands and the United Kingdom will sign an agreement today (18 June) which gives Netherlands astronomers 20 per cent of Britain's observing time at the Roque de los Muchachos Observatory (formerly called the Northern Hemisphere Observatory) in the Canary Islands.

In exchange for time on Britain's four planned telescopes — the 4.2-m William Herschel, 2.5-m Isaac Newton, a 1-m photometric telescope, and a 15-m millimetre-wave dish — the Dutch will provide 20 per cent of British costs and manpower in equipping and running the observatory.

The UK Science Research Council has estimated that the telescopes would cost £25 million in October 1979 prices, and that the running costs of the site will be of the order of £1 million a year.

The Netherlands has been hesitating over its contribution because of the sums involved, and also because it represents a certain shift of resources in favour of optical astronomy. The Dutch natural science research council (SWO) has previously done much of its optical astronomy through its membership of the European Southern Observatory, which has a fixed subscription; and Dutch radio-astronomers have voiced fears that the additional international commitment to the Roque will cut into their own budgets.

However, Dutch astronomers now agree that this level of commitment to Northern Hemisphere optical astronomy is necessary. The world-famous Westerbork radio telescope is, after all, in the Northern Hemisphere, and more direct links with optical observations would be useful.

The observatory they thus become part of was set up by international agreement between Spain, the United Kingdom, Sweden, and Denmark, and though the Dutch enter by "the back door" — the new agreement being between research councils and not nations — such deals were allowed for in the original treaty. **Robert Walgate**

Trademarks and patents

More authorities

Brussels

Members of the European Federation of Pharmaceutical Industries' Associations have expressed anger at the European Commission's proposals to create a Community trademark office. The drug industry, which accounts for 65 per cent of all trademarks registered, feels threatened by what it sees as an attempt to ride roughshod over its interests.

Last November the Commission brought out a directive aimed at harmonizing the member states' trademark laws, with proposals for the creation of a Community trademark and an EEC trademark office.

Trademarks are one way of ensuring protection against imitators of new medicines and guaranteeing that drugs are properly used. The pharmaceutical industry's federation, meeting in Brussels in May, concluded that placing the registration of trademarks in the hands of the Commission could lead only to confusion, as national authorities will operate concurrently with the Commission. The federation would prefer to wait until national rules are more in line with each other before setting up a European trademark office.

There is much confusion in Europe not only over trademarks but over patents and the protection of intellectual property in general. This is an economic as well as a legal problem, for representatives of industry continually stress that inadequate protection of new products puts the profitability of new research at risk.

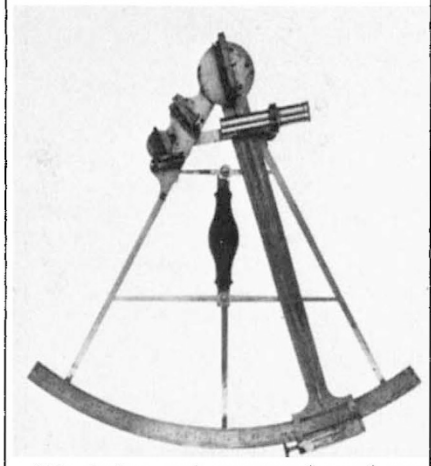
Although the European Convention on patents was signed eight years ago by ten European countries, three (Ireland, Denmark and Greece) have yet to ratify it. Italy has been particularly heavily criticized. Although it has ratified the convention, a new bill on drug patenting is being debated in the Italian parliament which appears to conflict with the convention. It is claimed that the Italian Senate has amended the bill to give protection to Italian firms manufacturing drugs which elsewhere would be protected by patent law. And in Yugoslavia manufacturers are said to be exporting low price drugs using patents provided by European countries solely for use in the domestic market. **Jasper Becker**

Cook's aid surfaces

A 15-inch radius brass sextant which is thought to have been taken on the last of Captain James Cook's historic voyages of exploration (1776–80), was sold at Sotheby's on 11 June for £11,000; it was made by Jesse Ramsden around 1775.

Ramsden was born in Halifax, Yorkshire, in 1735. His mathematical studies were interrupted by his father apprenticing him to a cloth-worker in Halifax; he then worked until about 1758 in a cloth-warehouse in London. It was here that he became apprenticed to a relatively unknown instrument maker named Barton (or Burton) in Denmark Court, Strand.

In 1763 Ramsden set up business on his own account in Haymarket and in 1775 he moved to Piccadilly, London, where he remained until his death in 1800. From the outset of his business life, his skill as an engraver and divider attracted the attention of leading London makers such as Nairne, Sisson, Adams and Dollond.



His design and construction of one machine revolutionized the dividing of the scales of sextants and other instruments. The Board of Longitude (set up by the Admiralty in 1714) awarded Ramsden £615 on the understanding that he would undertake to divide octant and sextant scales for other makers.

There is little doubt that it was directly due to the inventive genius and practical skills of Ramsden that the sextant was improved to the point that an accuracy of 10 or 20 seconds rather than 1 minute became the order of the day. In addition, the finely engraved scales made possible by the use of the dividing machine permitted sextants to be made smaller than previously without loss of accuracy.

Ramsden's improvements to the sextant eased life for the sailor, for latitude could now be determined with an unprecedented degree of accuracy. Even longitude, which had seemed to present insurmountable problems, was in the process of being solved, the solution being the provision of a suitable timekeeper, an accurate sextant and a nautical almanac. **Arthur Frank**

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