

Soviets boost their OWN . . .

LAST week, the Soviet Union celebrated its new "Science Day" (the third Sunday in April). To mark the occasion, *Pravda* published an extensive article by Academician Anatolii P. Aleksandrov, President of the Academy of Sciences, which, while praising, naturally, the achievement of Soviet science, did so largely at the expense of the West.

The new Soviet "Science Day", of course, has considerable political overtones. The date was chosen to commemorate 12 April, 1918, when the Soviet of People's Commissars directed the Academy of Sciences to solve, as an "important and urgent" problem, the "correct distribution of industry in the country and the best rational use of its economic forces".

Accordingly while tracing the source of Soviet science from its early days to the present work-force of 1.3 million scientists ("the largest scientific team in the world—its potentials are enormous") Aleksandrov found it necessary to devote almost a sixth of the article to the Cold-War.

Partly, it is clear, he wanted to exculpate Soviet scientists involved in armaments production.

Then, after a brief paragraph on Brezhnev's peace initiatives, Aleksandrov moved the attack to the economic front. The Soviet Union "carrying out Lenin's directives has created a reliable fuel-energy basis of its own, a diverse basis of raw materials, and all forms of industry. . . . "There is no scientific-technical problem" he concludes triumphantly "that would not be within our power".

Imports of such technological goods as gas pipelines, he explains, are simply a way of receiving payment for exports of "excess production", and allow "advances in the necessary sectors" to be made; they are never, he averred, "vitaly necessary".

To ram his point home, he then described the US economy, on the brink of energy shortages and major economic crisis, following this by a review of the benefits of Soviet science, "not only for our country, but for mankind as a whole"—the first nuclear power station, the first nuclear ice-breaker, the start of space research. Other Soviet successes, he maintained, had "given the impetus for corresponding work to be done in the West"—lasers, Cerenkov radiation, "certain principles of thermonuclear synthesis", and "the production of relativistic electrons".

The final column is quieter in tone; an allusion is made to Mr Brezhnev's enthusiasm for basic research, the instrument-construction and computer sectors receive a slight censure, the RATAN-600 telescope and Baksansk neutrino observatory are particularly praised.

And that is all. The feast-day of Soviet science, as portrayed by Aleksandrov, is an entirely Soviet celebration. The outside world is cited only to make the Soviet picture shine more brightly by contrast.

Perhaps most significant, although the politicians regularly mention scientific and technical cooperation as one of the benefits of the Helsinki accords, Aleksandrov does not reciprocate the compliment. In what must, by its length and occasion, count as a major statement on Soviet science policy, the word "detente" is never mentioned.

. . . but bring the Bulgarians down with a bump

ABORTING the Soyuz-33 flight with the Soviet and Bulgarian cosmonauts must have proved particularly embarrassing to the Soviet space planners. Not only was it a premature return, but it took place on "Cosmonautics Day" (12 April, the anniversary of Gagarin's flight).

Bulgaria's space research programme has always been particularly closely linked to that of the Soviet Union. It was initiated in 1956 following a Soviet suggestion that the Bulgarians should explore the possibilities of carrying out ionospheric research and monitoring future Soviet satellites. The Bulgarian Council of Ministers established a Centre for Radio-Observation and Ionospheric Research, which was ready to go into operation when Sputnik-1 was launched in October 1957.

At the same time, other Comecon countries—Czechoslovakia, Poland, East Germany and Hungary, were making a firm commitment to space research. This, however, was a stepping

up of existing efforts, not, as in Bulgaria's case, an entirely new initiative.

By 1966, when the *Interkosmos* programme was initiated, Bulgaria had caught up considerably. From the beginning, there was a major Bulgarian participation in the *Interkosmos* working groups on space physics, satellite communications, space meteorology and space biology. On the hardware side, Bulgaria was still somewhat behind although *Interkosmos-2* included a joint Soviet-Bulgarian Langmuir probe experiment. By December, 1972, Bulgaria was able to provide a complete experiment, monitoring electronic and ionic concentrations and temperatures. Updated versions were later carried by the *Interkosmos-12* and -14 satellites, and the *Vertikal-4* and -5 geophysical rockets.

In addition, Bulgarian scientists have been involved in the equipping and processing of experiments carried by several Soviet *Kosmos* satellites. Throughout, Bulgaria's main interest has been directed towards particle and field distribution, including some interesting results on magnetosphere shock-waves. It is to such experiments that Bulgaria's own satellite, *Bulgaria-1300*, will largely be devoted.

This satellite is intended to celebrate the forthcoming 1300th anniversary of Bulgarian statehood, and will presumably engage the entire launch power of an *Interkosmos* blast-off, resembling the Polish *Copernicus-500* jubilee satellite of 1973, rather than the small Czechoslovak *Magion* satellite, which was put into orbit as part of *Interkosmos-18* last autumn.

Bulgaria would then become the second non-Soviet Comecon country to have a satellite of its own—which should compensate considerably for the loss of *amour-propre* over the *Soyuz-33* abort. Indeed, the Bulgarian media have already done an excellent PR job on *Soyuz-33*—backed up by the Soviet and Bulgarian governments which have awarded Ivanov and his Russian commander Rekvishnikov the usual orders and titles. The return to Earth, using the back-up engine for re-entry, and the reactions of the cosmonauts to this "short but difficult" flight were presented as valuable lessons in space dynamics and psychology.

As for the Bulgarian experiments designed for the mission—which were to include a unique spectroscopic survey of the Earth—these will almost certainly be carried out by a repeat mission in the near future. So, when the current programme of *Interkosmos* manned flights comes to an end, Bulgaria may well have two manned flights (and possibly two cosmonauts) to her credit, while the other fraternal allies have only one apiece.



Ivanov: awarded the usual medals

Vera Rich