

## OFFICIAL RECEPTION

### Alternatives



Professor E. van Spiegel (left) from The Netherlands' Ministry of Science and Education and Academician A.F. Andreev (right) of the USSR Academy of Sciences see physics in different contexts at the opening of the Official Reception (photos: W. van Zanten - FOM).



The opening session of the official reception in the Aula of the Rijksmuseum to an invited audience of people interested in all aspects of physics was seen by W.F. Druijvesteijn, the President of the Netherlands' Physical Society, in his introduction as an opportunity to contrast science policies in the east and west. It turned out that the speakers' concerns were more deep-rooted.

Professor E. van Spiegel, Director General for Science Policy at The Netherlands' Ministry of Science and Education took a pragmatic view of science. He described how improved educational opportunities had "emancipated the middle classes" in Holland in the early 1900's, producing a flowering in physics. The Government now held out the hope for a similar renaissance with the extension of educational opportunities to minorities and women.

Recalling the recent discoveries of high temperature superconductivity and scanning tunneling microscopy, and developments at the interface between astrophysics and particle physics, Professor van Spiegel was confident physics would remain exciting. He then called for a the development of a "strategic" or pragmatic future for physics involving an orientation towards collective problems outside the private sector, where training and manpower needs were paramount and where physics would primarily have a responsibility for basic research.

Academician A.F. Andreev, Director of the Institute for Physical Problems, USSR Academy of Science, Moscow remarked how quickly the situation was changing in his country. In fact it was sometimes difficult to say how many countries there may eventually be. There was also a "new situation for science" and the presence of 300 from the east at EPS-8 "could not have been imagined a year ago". Times were difficult and there was much discussion about science policy, especially within the Academy of Sciences which is seen as a principal element.

A system of research grants has been introduced and scientists seeking additional funds for research now submit applications to the Academy. In a sense nothing has changed since the funding of science remains part of an ideology and as such is assured. Instead, the issue at hand concerned the type of science that should be financed, its relevance and importance to the economy. The Academy was expected to provide the answer and the answer surely lay in viewing science, whether fundamental or applied, as "a part of human culture". Meetings such as EPS-8 were therefore important because they emphasize the "cultural impact of physics".

H. de Waard, Chairman of the International Programme Committee for EPS-8, felt his perspective was closer to cultural rôle of physics described by Academician Andreev. Physics is definitely bound up with culture. We see this as we move from physics to chemistry, through to biology, medicine, psychiatry and philosophy — the mother of mathematics where "the circle is closed". So if one learns physics one must learn everything, and conversely cutting something out as has been done recently in The Netherlands jeopardizes the entire circle of knowledge. Physics therefore has a duty to be a "guardian of physics education", a difficult task given the wide diversity of curricula and the very real risk that trimming syllabi can have grave consequences. This lesson was beautifully demonstrated by K. Knop's plenary talk on diffractive optics where the correct application of a good theory had produced unexpected and valuable results in a field that is no longer taught in some universities.

Another lesson emerges for H.B.G. Casimir's concept of the "science-technology spiral". New technologies start out in basic science and take a long time to develop. A good example is the development of the megachip which has been going on much longer than even the large nuclear and high energy physics experiments. There is thus an inevitable tendency to draw resources into applied fields and attention is detracted from understanding phenomena as completely as possible.

The West, unlike the East, devotes too much attention to applied topics whereas there should be a "complementarity in curricula". Increased contacts ensure this, especially in the context of the European community and east-west relations. The EC Science programme in which Professor de Waard plays a prominent role as Chairman of CODEST, the committee that decides upon proposal submitted to SCIENCE Plan (see *Europhysics News* 21 (1990) 152) is therefore planning a huge increase in the number of research grants in the follow-on human resources programme that starts in 1992. Professor de Waard warned that while this measure will help improve contacts, it will take a few years to marry the east's cultural approach and its yearning for deep insight with the west's overly pragmatic philosophy. The effort was nonetheless worthwhile because this is where the future lay for young physicists.

Admiring Rembrandts at the Official Reception in the Rijksmuseum.

