

is reported but the best melts showed various degrees of striae.

This report provides strong evidence that the platinum particles do not derive from attack by the molten glass on the platinum crucibles but from decomposition of PtO_2 vapour in the atmosphere above the surface. And this PtO_2 vapour almost certainly will originate through the reaction of oxygen with the hot outside surface of the crucible and

with the even hotter platinum heating elements. Hence the question arises as to whether it might be possible to protect the glass melt from contact with PtO_2 vapour simply by provision of a reasonably close-fitting cover or lid. It would seem well worth a trial.

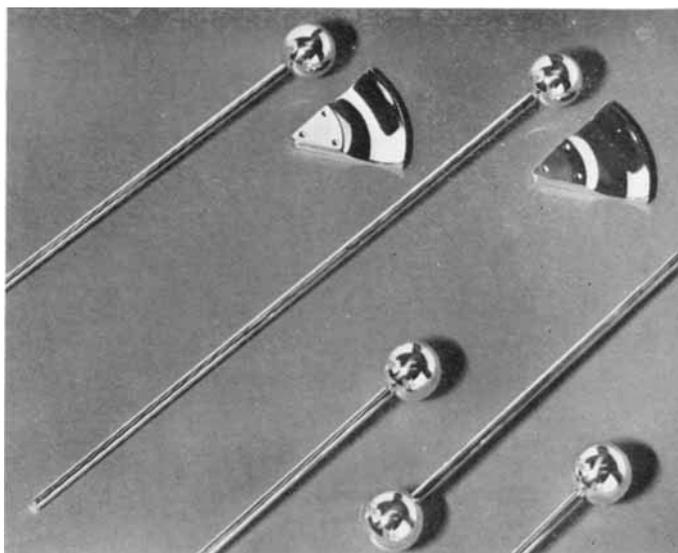
J.C.C.

Reference

1 Preparation of Platinum-free Laser Glass, *U.S. Rept. AD692,504*, 1969, (Aug.), 48 pp.

Rhodium Plated Langmuir Probes for Sounding Rockets

Rhodium-plated spherical Langmuir probes for the measurement of electron densities at high altitudes. The sector plates are used for calibration purposes



At the Radio and Space Research Station, Slough, rocket payloads are built for investigation of the production and density of ionisation in the D-region of the ionosphere at altitudes between 65 and 100 kilometres. Several different experiments are combined in each rocket flight, and one of these is a spherical Langmuir probe for measurement of electron density.

The probe consists simply of a conducting sphere, to which a programmed voltage is applied. The current to the probe, due to collection of electrons from the ionosphere, is measured and used to find the electron density as a function of height. It is essential

that these probes have a very uniform surface contact potential; also spurious signals, due to photoemission of electrons from the surface by the sun's radiation, must be made insignificant. For these reasons it is necessary for the probes to be rhodium plated and to be kept uncontaminated until they are exposed to the upper atmosphere.

Radio and Space Research Station Langmuir probes plated by Johnson Matthey Chemicals Limited have already been flown successfully on twelve flights of British "Petrel" research rockets and a similar number are to be flown in 1970-71. The plating work is again by Johnson Matthey.