*A. Boischot:* With what accuracy can you know the brightness of the "artificial Moon"?

*A. E. Salomonovich:* The emissivity of the absorbing disk material can be measured in the laboratory to an accuracy better than 1 percent. The physical temperature of the disk surface also can be measured with high accuracy with the aid of a thermocouple, or a system of thermocouples. The principal source of error in such measurements is the additional radiation due to diffraction of Earth radiation by the disk. These effects have been considered in the papers cited in the review paper of Prof. Troitsky.

*C. Sagan:* How does Prof. Troitsky determine the imaginary part of the dielectric constant? This value depends greatly on impurities in the material. A large number of substances could give the values you quoted.

*A. E. Salomonovich:* In radio-astronomy observations of the Moon (during eclipses and lunations), under certain assumptions one finally determines the value of tan $\Delta/\rho$, which does not depend on the porosity of the substance but does depend on the chemical and mineralogical composition. Of course, the impurities do affect this value. A comparison with terrestrial ores helps in selecting materials most similar in composition. It is possible that this choice is not quite unique.

(69D12–603)

# Polarization of Thermal Radiation of the Moon at 14.5 Gc/s

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A summary of this work has been given in Astronomical Journal **70,** 132 [1965]. Comparison of measured polarization with calculated results for smooth and rough spheres indicated the best agreement for the central lunar disk is obtained with $\epsilon = 1.8$, while the region near the limb corresponds to $\epsilon = 1.5$. It was concluded that dielectric constant decreases with increasing frequency.

Discussion Following Mezger's Paper

*G. H. Pettingill:* You do not include radar determinations of dielectric constant in the comparison.

*C. Sagan:* I believe that Prof. Troitsky explained the increase of dielectric constant with wavelength as being due to longer wavelengths penetrating to the deeper, more compacted layer of porous material.

It seems you neglect the influence of the temperature distribution on the polarization.

*A. Giraud:* These results agree with the work of N. S. Soboleva at 3.2 cm, with the large Pulkovo telescope [Astron. Zhur. **39,** 1124, 1962].

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