

IIB flew 17 May 1968 and continues to send back data on solar radiation and cosmic rays.

Under the agreement signed in 1964, the European organization was to supply both ESRO satellites and NASA was to launch them. ESRO and NASA will exchange all scientific information resulting from the cooperative project and make it available to the world scientific community.

Potentials in Spinning Rotor Follow Dessler Predictions

Jesse W. Beams (University of Virginia) has measured the electrical strains in a fast rotor.¹ His results show that the periphery becomes slightly positive with respect to the axis and appear to agree with the theories of Alexander J. Dessler and colleagues² and Conyers Herring³ rather than those of Leonard I. Schiff and M. V. Barnhill.⁴ The subject has become controversial in an effort to calculate the fields experienced by freely falling electrons in a vertical shielding cylinder.⁵

Beams has spun a four-armed rotor up to 650 rotations per second in an evacuated metal case and measured the contact potential that rotation induces with capacitive plates facing the top and end surfaces of the arms; he measures these differences by a null method based on amplification of the signals from charges induced on the plates.

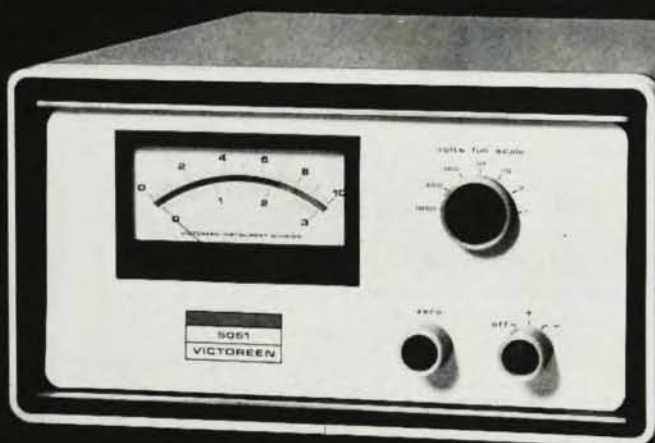
Of course the experiment is delicate and has difficulties: potential differences generated in the liquid-mercury contact to the shaft, compensation of the earth's magnetic field, plastic flow in the rotor, contamination of the rotor surfaces, differential heating between center and periphery by molecular bombardment at 10^{-6} torr. Now Beams is at work on a better version (magnetically suspended rotor, materials that can be outgassed, 10^{-10} torr) and hopes to get results subject to a clear-cut theoretical interpretation.

References

1. J. W. Beams, *Phys. Rev. Letters* **21**, 1093 (1968).
2. A. J. Dessler, F. C. Michel, H. E. Rorschach Jr, G. T. Trammell, *Phys. Rev.* **168**, 737 (1968).
3. C. Herring, *Bull. Am. Phys. Soc.* **13**, 240 (1968).
4. L. I. Schiff, M. V. Barnhill III, *Phys. Rev.* **151**, 1067 (1966).
5. *PHYSICS TODAY* **21**, no. 7, 71 (1968). □



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