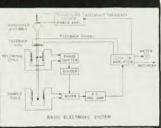
VIBRATING SAMPLE Magnetometer

FOR MEASURING

MAGNETIC MOMENTS

of Solids, Liquids & Gases

First commercially available Foner* type Vibrating Sample Magnetometer. This precision research instrument vibrates a sample in a relatively uniform magnetic field in a direction



perpendicular to the field. The AC signal produced by the moving sample is detected and analyzed by associated electronic systems. The Magnetometer is versatile and sensitive, and can be used with any conventional laboratory electromagnet.

A wide range of magnetic moments can be precisely measured over an extended range of temperature, field and crystallographic orientation. Errors are minimized. Calibration is simple. Stability is high. Permanent or induced magnetic moments can be measured and the orientation of the magnetic moment vector can be determined for any direction in space. Magnetic moment measurements of Superconductors, and Ferri-, Para-, Ferro-, Dia-, Antiferro-, and Meta-magnetic materials have been made with this system. Custom built to order. Several optional features such as dewars, ovens, recorders, and special-purpose coil assemblies are available. Your inquiries on specific magnetic measurement problems are invited.

*Manufactured exclusively by PAR under license in U.S. Patent No. 2,946,948.

Pertinent Specifications

DIFFERENTIAL SENSITIVITY: Change in magnetic moment of 5 x 10^{-4} to 5 x 10^{-5} emu corresponding to change in magnetic susceptibility of 5 x 10^{-8} to 5 x 10^{-9} cgs for 1 gram sample at 10^4 gauss.

STABILITY: Stability of output signal better than 1 part in 104/day for fixed coil geometry.

ABSOLUTE ACCURACY: Better than 2%.

PRICE: By quotation only. Approximately \$8,800 for basic system.

Write for Bulletin 106



PRINCETON APPLIED RESEARCH CORP. BOX 565, PRINCETON, N. J. one and several other of his books amply show how masterfully the subject could be handled by him.

La Poussière cosmique. Les Milieux interplanétaire, interstellaire et intergalactique. By A. Dauvillier. 207 pp. Masson et Cie, Paris, 1961. 25 NF. Reviewed by E. J. Öpik, University of Maryland.

THE author of the book has published some essays in cosmogony. Not having seen these works before, this reviewer decided to start with the book on cosmic dust, one of his own subjects. The disappointment was complete. After reading the first 40 pages, and a rapid perusal of another 50, the numberless misstatements convinced the reviewer that further reading was useless.

The most flagrant example is on pp. 47 (Fig. 5) and 48, where Phobos, the inner satellite of Mars, is represented as having retrograde motion, opposite to the sense of rotation of the planet and that of the other satellite, Deimos. This serves some of the author's cosmogonic speculations, but is pure invention.

Some other pearls; on p. 11, in the first introductory paragraph of the book, gas pressure depends on density only; on p. 12, Phobos (the retrograde!) is said to be a cloud of small particles (what about tidal disruption by Mars?); on pp. 12 and 88, comets are said to be strongly influenced by planetary perturbations, by virtue of their small masses ("de par leur faible mass", thus Newton amended); on p. 15, solar wind is rejected as the cause of repulsive forces in comet tails because it would blow away the planetary atmospheres; on p. 72, to avoid tidal breakup of a solid body inside Jupiter's Roche's limit, Sir Harold Jeffereys' theory is quoted as requiring the diameter to exceed 400 km, whereas it is just the opposite, only small bodies being able to maintain their integrity by cohesion; on p. 80, 1020 molecules per cm3 are said to yield a density of 10-13 gem-3. This may suffice.

Mathematics for the Physical Sciences. By Herbert S. Wilf. 284 pp. John Wiley & Sons, Inc., New York, 1962. \$7.95. Reviewed by Peter L. Balise, University of Washington.

A TEACHER of applied mathematics in science or engineering may choose from a rapidly increasing number of texts, all covering about the same topics, emphasizing applications and minimizing rigor, and differing mostly in writing style (which of course can be a vital difference). Although Professor Wilf's book also deals with the subjects common to these texts, it is refreshingly different in a way that will make it attractive for some teachers and unusable for others.

Physical applications are not mentioned, and the approach is rigorous, but the exposition is obviously aimed toward applications, giving the text a clarity for nonmathematicians reminiscent of Ralston and Wilf's Mathematical Methods for Digital Computers. There is some discussion of numerical methods, but more prominent is the author's attention to mathematically