27–28 and March 1, 1962. Despite the title of the symposium, only a minority of the papers are concerned with switching theory or space. Roughly, one-third of the papers are concerned with switching theory; another third are concerned with new switching elements, their physical attributes, fabrication and application (primarily as storage elements); and the remaining papers are concerned with systems and related subjects. The rather broad spectrum of topics should, as the editors intended, make the volume serve as something of a survey of the whole area and make it of interest to a quite broad class of reader. Unfortunately, a number of the papers suffer from inadequate introductions, heavy reliance on prior papers and prerequisite knowledge of rather specialized subjects, thus severely limiting (or, at least, taxing) their audience. As the well-rounded, self-contained presentation of some of the other papers in the volume indicates, such specialized presentation is unnecessary, and there is no doubt that it detracts from the value of the volume.

To supply a somewhat more detailed idea of the contents of the volume, we present the following list of authors and titles:

G. Polya, "Intuitive Outline of the Solution of a Basic Combinatorial Problem"; Günter Hotz, "On the Mathematical Theory of Linear Sequential Networks"; William H. Kautz, "Totally Sequential Switching Circuits"; Eiichi Goto, "Threshold, Majority, and Bilateral Switching Devices"; Franz E. Hohn, "Tyron's Delay Operator and the Design of Synchronous Switching Circuits"; David G. Willis, "Minimum Weights for Threshold Switches"; Heinz Zemanek, "Switching and Information"; V. Belevitch, "On the Realizability of Graphs with Prescribed Circuit Matrices"; J. Paul Roth, "The Theory of Algorithms"; G. W. Patterson, "Analysis and Design Confirmation of Controlled-Flow Nets"; Warren Semon, "General E-Algebras"; Frank F. Stuki, "New Techniques for the Machining and Shaping of Ferrites"; Robert C. Minnick, "Magnetic Comparators and Code Converters"; Jan A. Rajchman, "Computer Memories: Remarks on Possible Future Developments"; Jose Garcia Santesmases, "Nonlinear Resonance Switching Devices"; A. E. Slade, "Superconductive Switches and Storage Devices"; A P. Speiser, "Hydraulic Switching Devices"; J. I. Raffel, "Magnetic Films: New Possibilities, New Problems"; M. E. Browne, J. A. Cowen, and D. E. Kaplan, "Electron Spin-Echo Storage"; A. Van Wijngaarden, "Switching and Programming"; W. R. Abbot, "The Application of System Theory to Space Missions"; David E. Muller, "Asynchronous Logics and Application to Information Processing"; L. B. Heilprin, "Information Storage and Retrieval as a Switching System"; Daniel Hochman, "Space-Borne Digital System for Data Bandwidth Compression"; and Nicholas Szabo, "Recent Advances in Modular Arithmetic".

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84[Q, X].—Karl Friedrich Gauss, *Theory of the Motion of the Heavenly Bodies Moving about the Sun in Conic Sections*, Dover Publications Inc., New York, 1963, xvii + 376 p., 24 cm. Price $2.95 (paperbound).

This unaltered reprint of the 1857 English translation of Gauss's *Theoria Motus* is timely, and especially welcome since so little of Gauss is available in English. In it he gives the development of those computational techniques that he devised for the relocation of the planetoid Ceres. Because of the few existing observations, and the unusual elements of its orbit, existing methods did not suffice. But from Gauss's calculations, as he proudly announced, Ceres was rediscovered "the first clear night".

The appendix contains an account of other computational techniques by Encke and Peirce, and 39 pages of tables by Le Verrier, Bessel, and others to facilitate certain astronomical calculations.

D. S.

85[R].—I. Todhunter, *A History of the Mathematical Theories of Attraction and the Figure of the Earth*, Dover Publications Inc., New York, 1962, xxxvi + 984 p., 22 cm. Price $7.50.

This is a timely and most welcome reprint of Todhunter's history, which was originally published in 1873. In it he gives a detailed and critical account of all the work in this field from the time of Newton to that of Laplace. This includes that of Newton, Huygens, Maupertius, Clairaut, Maclaurin, D'Alembert, Boscovich, Laplace, Legendre, Poisson, Ivory, and others.

The volume is not only of current physical interest but also contains valuable historical accounts of the origins of potential theory and of many investigations in partial differential equations. The style is simple and pleasant, and is enlivened by classical descriptions and original observations of his own. Thus: "Maupertius . . . who flattened the poles and the Cassinis"; "Madame la Marquise du Chastellet . . . from the fluctuation of her opinions, it seems as if she had not yet entirely exchanged the caprice of fashion for the austerity of science"; and "Gauss's writings are distinguished for the combination of mathematical ability with power of expression: in his hands Latin and German rival French itself for clearness and precision."

For the hurried reader the long preface and table of contents give a good idea of the volume's scope.

D. S.

86[S, X].—S. L. Sobolev, *Applications of Functional Analysis in Mathematical Physics*, Volume Seven, *Translations of Mathematical Monographs*, American Mathematical Society, Providence, Rhode Island, 1963, viii + 239 p., 24 cm. Price $6.70.

The development of the theory of distributions and generalized functions has its roots in the works of many famous mathematicians, such as J. Hadamard, M. Riesz, S. Bochner, and J. Leray, to mention a few. In 1936, S. L. Sobolev introduced a concept of generalized functions and derivatives which is essentially equivalent to the one now used. However, it was only with the appearance of L. Schwartz's comprehensive books on distributions in 1950 and 1951 that the field began to receive the systematic and extensive treatment we now know.

In the same year, namely 1950, S. L. Sobolev published the original Russian edition of the present monograph. It was the outgrowth of courses given at Leningrad State University and presented a unifying treatment of a number of problems in partial differential equations, using Sobolev's own approach to the concepts of