able information on elastic nucleon-deuteron scattering, on polarization effects in nucleon-deuteron scattering, and on effects of final-state interactions in the three-body system, make this volume particularly useful. The majority of the theoretical papers discuss mathematical methods for the solution of the three-body problem, with the Faddeev equations playing a central role. One can't help noticing, however, that there is little discussion of the dynamics of the three-body system. Three-body forces are not even mentioned except in an abstract near the end of the book. The conference often focused on the two-body interaction in the three-body system, but one important aspect of this interaction, namely its locality or nonlocality, is not given sufficient attention in spite of a forceful introduction of this subject by H. P. Noyes. Furthermore, in spite of the title of the volume, there is little in it that will interest elementary particle physicists. What there is, however, is stimulating—R. D. Amado's model for the study of final-state interaction effects in three-body decays, the article by J.-Y. Pasquier and R. Pasquier on three-meson resonances from Faddeev type equations, R. Blankenbecler's paper on relativistic aspects of the three-body system, and the extension of Faddeev's work to the *N*-particle case by Faddeev's student O. A. Yakubovsky.

The experimental papers deal primarily with the search for resonances and excited levels of the three-body system and the investigation of low-energy scattering parameters of the two-body interaction in the final state of the three-body system, as well as with three-body final states. The Watson-Migdal model is often made use of, sometimes successfully and sometimes not very.

As R. E. Peierls observes in his closing summary of the conference, one appealing aspect of both the theoretical and the experimental papers is that they keep details of techniques and numerical-computational methods to a minimum and focus primarily on results. There is a wealth of results in this volume, especially of an experimental nature, and it is this feature I would like to emphasize. Another appealing feature is that the discussion that followed the presentation of papers seems to have been reproduced in full. One finds that one can often extract an additional ounce of wisdom from any given paper in perusing the post-delivery discussion. Finally, the bibliography seems to be more than adequate.

The articles along with the abstracts of contributed papers present a fairly satisfactory picture of the activity in the field of three-body calculations. This volume can be useful to workers in the field, but is not recommended for novices in the three-body problem.

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Satellite Data Interpreted

Plasma Waves in Space and in the Laboratory. Proceedings of a NATO Advanced Study Institute, Røros, Norway, April 1968. J. O. THOMAS and B. J. LANDMARK, Eds. Elsevier, New York, 1969–70. 2 vols. Vol. 1, viii, 488 pp., illus. $23.50. Vol. 2, x, 564 pp., illus. $21.

Plasma in space and plasma in the laboratory are particular examples of the same medium, and, although the parameters are vastly different, one expects to encounter the same physical phenomena albeit on different temporal and spatial scales.

This was once more convincingly demonstrated at the NATO Advanced Study Institute of which these volumes are the proceedings. The central theme of the discussions was measurements by the Alouette 1 and 2 and the Explorer 20 satellites and their interpretation. The proceedings are therefore considerably more specialized than the general title would suggest.

The most exciting, because unexpected, new information was provided by the topside sounders that detected plasma resonances at certain frequencies. The resonances that occurred at harmonics of the electron cyclotron frequency were identified as Bernstein waves, and it is probably in the interpretation of these resonances that a close coupling with laboratory plasma physics becomes most apparent. Because of their interesting dispersion characteristics Bernstein waves have been investigated extensively in the laboratory, and they are used more and more for the study of novel plasma effects. It is also not surprising that the few laboratory experiments on plasma waves that are reported in the proceedings deal mostly with aspects of Bernstein waves.

A considerable fraction of the papers is devoted to the performance of antennas in an ambient plasma, a crucial experimental problem in space physics. The theoretical analysis of the coupling between antennas and plasma has reached a high degree of sophistication, and it is encouraging to see that good experimental data on this phenomenon are gradually becoming available.

The third main subject is very low frequency phenomena, which cover the audio and subaudio frequency range. Drift waves and drift instabilities are increasingly recognized as possible important sources of such phenomena. Since drift waves have been studied in great detail both theoretically and experimentally, this might be another area where space and laboratory plasma physics can greatly benefit from each other.

The proceedings contain surprisingly little work on nonlinear aspects of plasma waves. It is probably safe to predict, however, that there will be much more emphasis on nonlinear effects in space plasmas as time proceeds.

The format of the proceedings deviates from the usual pattern in that the papers are divided among two volumes. Volume 1 contains invited papers that are supposed to provide introductions and reviews, whereas volume 2 is reserved for contributed papers. This commendable scheme, however, was only partially successful. Apart from excellent review papers, notably those by Thomas and Andrews on resonances in space and by Crawford on laboratory plasma wave experiments, volume 1 also contains several short and specialized contributions which appear more appropriate for volume 2.

The proceedings are nevertheless an excellent collection of generally high quality, and the subjects it deals with are ones that researchers in space plasmas and laboratory plasmas alike should find extremely stimulating.

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Ion Solvation

Electron Transfer Reactions of Complex Ions in Solution. HENRY TAUBE. Academic Press, New York, 1970. viii, 104 pp., illus. $5.75. Current Chemical Concepts.

This book is an updated and expanded version of four lectures given at the Polytechnic Institute of Brooklyn in 1967. The material covered reflects to