imporant volumes for the library of the physicist; the mathematician who is interested in the application of mathematics to physical problems would also be well advised to include them among his reading.

T.M. Luke, University of Western Ontario

A Course in Algol Programming, by G.F. Schaefler. MacMillan, Toronto, 1966. ix + 201 pages.

The primary purpose of the book is to introduce the reader to programming concepts using the language, ALGOL 60. The major portion of the book is devoted to the description of basic ALGOL but at the same time, by means of examples, the techniques for describing a computational process are explained. The "Revised Report on the Algorithmic Language ALGOL 60" by J.W. Backers et al. is included in the appendix, thus allowing the reader who has mastered the basic ideas to extend his knowledge to the full generality of ALGOL.

Like any language, ALGOL is concerned primarily with the communication of ideas and is not particularly concerned with computers. However the implementation of the language for communication with a computer introduces certain machine bound effects. Throughout the book those features which would require modification in most implementations are stressed; in particular, input and output requirements are shown schematically, and the Elliot-803 Algol is used to illustrate any machine dependent aspects.

ALGOL is a language designed for the accurate description of a computational process. It was interesting to note that occasionally, in order to describe the language and the process, the author reverted to describing the action of a computer. For example, in discussing the assignment statement he mentions that "... an identifier refers to a unique 'storage location' which contains the current value of this particular variable for immediate access and use." This is followed by a comment on erasing stored values and the efficient use of variables. It is the belief of this reviewer that programming cannot be taught solely at a language level, that some knowledge of a computer is required. Certainly, a brief comment on numbers and their representation would have clarified the difference between type real and type integer. By implication, integers are described as being exact whereas real numbers are not. This immediately raises the unanswered question why real variables which assume integral values cannot be exact.

According to the preface, no previous knowledge of computers or programming is assumed. Ideas are introduced at an elementary level and extended by numerous exercises at the end of each chapter. Answers and hints to selected exercises are given in the appendix. It is difficult to know how well the author has succeeded in this objective though it seems unlikely that someone with no knowledge of compilers would understand what is meant by dynamic store allocations without explana-

629

tion. The presentation is simple and clear though somewhat brief.
Certainly, the reader with some knowledge of computers would find
this text an excellent preparation for the appreciation of the contents of
the Revised Report on ALGOL.

C. Froese, University of British Columbia

Principles of Astrometry (With Special Emphasis on Long-Focus
Photographic Astrometry), by Peter van de Kamp. W.H. Freeman
and Company, 1967. $6.50.

This textbook is an introduction to the branch of Astronomy which
is concerned with the measurement of stellar positions and motions.
The first part of the book contains a survey of spherical trigonometry
and celestial coordinate systems, and then discusses the effects of
refraction, precession, stellar parallax, aberration, solar motion and
galactic rotation. The second part deals with the techniques involved
in photography with a long-focus refractor, measurement of the plates
and reduction of the measurements. Special attention is given to the
observations of binary stars and the determination of their orbits from
which valuable information on stellar masses can be derived. Of interest
also is the discussion of the determination of orbits for unseen compan-
ions of low mass, such as possible planets.

Amelia Wehlau, Department of Astronomy
University of Western Ontario