approximately equal opportunity for social contact—the ratio of free time spent alone to that spent with family members is highest in the United States, although the ratio is of similar magnitude in a few other sites.

These examples can only suggest the book's potential for filling our hours and days instructively. It is a rich data bank for us to rob in our free time.

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High Energy Astrophysics

Gamma-Ray Astrophysics. Proceedings of a symposium, Greenbelt, Md., Apr. 1973. FLOYD W. STECKER and JACOB I. TROMBKA, Eds. National Aeronautics and Space Administration, Washington, D.C., 1973 (available from the Superintendent of Documents, Washington, D.C.). xvi, 413 pp., illus. Paper, $2.90. NASA SP-339.

Three years ago I participated in an international symposium on interstellar dust. When the proceedings finally were published, after more than two years, the price was $40 for the paperback edition and more than $50 for the hard-cover version. I was dismayed that the International Astronomical Union would tolerate such a price structure. It makes such volumes inaccessible to individual researchers; but, worse, I imagine that many libraries in developing countries will simply not be able to afford such prices. What was billed as an international symposium will turn out to be a symposium whose proceedings are available only to affluent individuals and affluent countries.

In view of all this, I am pleased not only that the editors of the symposium on gamma-ray astrophysics have been able to bring out the proceedings within a year of the meetings but also that the price is only $2.90.

The symposium deals with both theoretical and observational investigations. Clear attention is paid to the relationship between gamma-ray and x-ray astronomical results. Some of the findings obtained in the series of Apollo missions, between 0.3 and 27 Mev, are presented by L. E. Peterson and J. I. Trombka; and preliminary results on SAS-2 observations at energies above 30 Mev are given by D. A. Kniffen, C. E. Fichtel, and R. C. Hartman.

Shortly after the end of the symposium, the existence of occasional gamma-ray bursts was discovered by a group of Los Alamos scientists. The editors therefore have added two papers on this topic. Unfortunately, however, this opportunity was afforded only to contributors from the editors' own institution—the Goddard Space Flight Center—and only papers that had already appeared in *Astrophysical Journal Letters* and in *Nature* are included.

Rather more interesting from a historical point of view are comments in D. D. Clayton's article on prospects for gamma-ray astronomy and comments by E. Schatzman and C. Fichtel during a final session entitled Future Directions in Gamma-Ray Astronomy. Schatzman and Fichtel both worry about the detection of very short gamma-ray flashes expected from supernovas, and Clayton worries about the spectrum of gamma rays emitted in supernovas. While the subsequently discovered gamma-ray bursts may have no relation to supernovas, it is nevertheless pleasing that some theorists may have come so tantalizingly close to predicting the bursts.

This book is a great buy for anyone with even a small interest in high energy astrophysics.

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Current Algebra

Currents in Hadron Physics. V. DE ALFARO, S. FUBINI, G. FURLAN, and C. ROSSETTI. North-Holland, Amsterdam, and Elsevier, New York, 1973. xxvi, 874 pp., illus. $97.50.

There is essentially only one thing seriously wrong with this book: its price. In this it is a milestone of sorts in the history of physics; the next most expensive physics textbook that I know of sells for less than half as much. One should not necessarily criticize the publisher; North-Holland has been of exemplary service to the physics community and the book is superbly produced in a time of rapidly rising costs. But when a book is as expensive as this one an explanation is called for.

The book is wonderful for anybody wanting to learn about what happened in high energy physics between late 1965 and late 1970. The authors are members of the team who wrote many of the pioneering papers that brought about current algebra in the first place. It is always a treat to have a text written by people who helped in creating the material; it may be likened to an encore by a prima donna.

The book is primarily about current algebra in the loose sense of the term. After a reasonably thorough review of the roles of hadronic currents in the nonstrong interactions, it goes on to discuss low energy theorems, chiral symmetry, sum rules, and superconvergence relations. This is followed by three chapters dealing in agonizing detail with the method of obtaining sum rules by saturating commutators. It is certainly valuable to have all this methodology assembled in one place and presented clearly, but I think the discussion is so technical that it will be of interest only to people on the verge of going out themselves and doing a bit of saturating. What I really like about this book are two chapters supposedly peripheral to the main subject. These are an introductory chapter reviewing strong interactions and a chapter near the end discussing the dual resonance model. They contain probably the best presentation anywhere of two subjects often notoriously ill-explained. The discussion here is concise, touched with a certain elegance and always maintaining the proper emphasis, and may be read with delight and profit by anyone wanting an overview before plunging into the literature. Also, the book is graced by a comprehensive bibliography.

The book suffers because it was unable to make up its mind on what it wanted to be. It started out as a textbook and ended up like a summer school volume. The latter part consists of a hodgepodge of developments, only some of which have subsequently become important. The authors originally planned their manuscript to cover events up to the end of 1970. They mounted a valiant effort to make the book more up to date by including some material from 1971. Alas, the effort is in vain; it's now 1974. We are older and a bit wiser, and know that while certain subjects call for a more detailed treatment other material may be better off enshrined in the journals. The book could have maintained its style by leaving out this last part altogether and thereby cutting down on its bulk, which is considerable. Incidentally, a book of this size might be more conveniently published in two volumes, much in the manner of a well-known field theory text. In any