principle which utilizes a baseball game played in a rotating astrodome. There is a chapter which marvels at the Mariner and Pioneer space missions and visits the tenuous atmosphere of Mars and the sweltering greenhouse of Venus. And there is an entire chapter devoted to entropy and the irreversibility of time.

Other scientific topics covered include Olbers' Paradox (first discovered in 1744 by Löys de Cheseaux rather than Olbers), radioactive dating, Hubble's law and the cosmological principle, the solar neutrino problem, and paragraph summaries of all articles in the November 15, 1972 issue of *The Astrophysical Journal*. In general the scientific discussion is too complex for the layman and too simplified for the astronomer or physicist—probably about right for the physical scientist in another discipline. Cosmology, one of the author's special interests, is more or less a common thread throughout the book.

Clayton reminisces from the days when he was an eager young graduate student under Willy Fowler to present-day vacations with Fred Hoyle in the Lake District of Scotland. Hoyle is an overpowering presence throughout the book and is perhaps heaped with too much adoration. Yet we learn something of the way science is done by listening to him distinguish between an excess of faint radio sources and a deficiency of strong sources during one of his hikes with Clayton.

Biographical and humanistic comments are randomly dispersed with scientific perception. A local entropy-decreasing air conditioner on a hot summer Texas day leads directly to the thermodynamics of planetary life support. The Earth receives high-temperature directed sunlight and reradiates it diffusively as low-temperature infrared into the coldness of space. It is the large increase of entropy in the overall process which allows a local small decrease of entropy, necessary to maintain order and structure in living systems.

A highlight of the book is a penetrating discussion of professional territoriality, which Clayton sees in all scientists, including himself. Each scientist seems to regard his own work as being of the top rank in importance. Clayton has "known colleagues to exhaust themselves, damage their home life, and neglect their university duties in the compulsion to attend every important conference on a given subject."

Scientists in the field will find that this book strikes close to home, other scientists will find it an infectious adventure into cosmology, and the non-scientist may be brought a step closer to joining the two cultures.

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Glossary of Astronomy and Astrophysics. Jeanne Hopkins. University of Chicago Press, Chicago, 1976. 169 pp., $10.95.

In an elementary astronomy course given some years ago one of the examination questions was "Define Cassini's division." The answer of one bright but not highly dedicated student: "An Italian fighting force, routed in Abyssinia in 1935, commanded by Major General Michelangelo Cassini." Professional astronomers can avoid comparable gaffes and improve their general astronomical literacy by keeping a copy of this book on their desks.

Jeanne Hopkins, the copy editor of the *Astrophysical Journal*, prepared this glossary for her own education and self-defense, from felicitous definitions in papers submitted to that journal and from help by astronomers—chief among them, S. Chandrasekhar. The definitions are strongly oriented toward stellar and galactic astrophysics and are generally succinct, illuminating, and packed with information. For example, under *methylamine*, not only do we find its generic formula but also the date of its discovery in Sgr B2, the absorption frequency, and the fact that it reacts with formic acid to produce the simplest amino acid, glycine. The barometric law is given analytically; the Chandrasekhar and Chandrasekhar-Schönberg limits are carefully distinguished; "glitch" is defined and revealed to be of Yiddish origin; and a succinct definition is presented for Zerilli's equation ("a Schrödinger-type equation for even-parity perturbations on the Schwarzschild metric").

There is some reflection of recent interest in solar system studies (for example, Bamberga is identified and described). The descriptions of Jupiter and the Sun are comprehensive, up to date, and extremely information-rich. Perhaps Jupiter is described so well because it is the most star-like of the planets. But planetary science is, by and large, represented inadequately, both by the omission of many important words and phrases and by the inaccuracy or obsolescence of the definitions of others. For example, there are no entries for Jeans' escape, Richardson's number, goethite, goniometer, greenhouse effect, or Metonic cycle. The surface pressure of Mars is given as 3.5 millibars; the atmosphere of Venus is said to comprise several percent of molecular nitrogen; the Great Red Spot is interpreted as a Taylor column; Io is tentatively given "an albedo" of 0.91; S band is defined as "a radiofrequency band at a wavelength of 11.1 cm" (which lets out the Goldstone facility of JPL); and Themis is generously described as

"a satellite of Saturn, discovered by Pickering in 1900, but since lost."

But these omissions and errors should not, I think, be laid at the feet of Ms. Hopkins; rather, they simply express the nonplanetary orientation of the *Astrophysical Journal*. Particularly for workers in stellar and galactic physics this glossary is highly recommended. And there is a grade A definition of Cassini's division.

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