Joachim Krausse and Claude Lichtenstein, eds.
Your Private Sky. R. Buckminster Fuller
 Zurich: Lars Mueller Publishers, 1999

Reviewed by Kim Williams

Maverick visionary Buckminster Fuller is one of the architects whose name is most often connected with architecture and mathematics in the 20th century. His geodesic dome, at first a revolutionary symbol of the building of the future, is now a reassuringly familiar sight. Apart from its importance as an architectural structure, the geodesic dome is also famous for having inspired three chemists, recognizing in its inherently stable structural form, to look for its appearance in molecular structure. They found it indeed, discovering in 1985 the 60-atom molecule of pure carbon that now has the name Buckminsterfullerene. Fuller was no chemist, but an extraordinarily curious mind, an instinctive understanding of structure and a love of mathematics informed all of his work. The geodesic dome perfectly expresses what Fuller believed about architecture, that its design should mimic the structure of the universe, and illustrates also his intuitive grasp of that structure.

Your Private Sky presents an overview of all facets of Fuller's career, as an architect, a navigator, an inventor, an automobile designer, an editor, a cartographer, an formidable diarist. The editors have done an admirable job of selecting sections from Fuller's own writings and works and arranging them for the reader. One of the chief assets of this book is that it is overwhelmingly graphic. There is not a single page without a photo, a sketch, reproduction of a printed page. What this copious illustration allows the editors to do is to present a picture not only of Fuller himself but of his times as well, a way of inserting him into the larger cultural context as well as explaining his contribution to that context. For instance, the graphic style of the pages of Fuller's journal *Shelter* tell us almost as much about the design ideas in the early 1930's as the pages' content. The quality of some of these illustrations was sometimes disappointing to this reviewer; I question the use, intended to be suggestive more than informative I suppose, of two-page blurry photos taken from television broadcasts; others tantalize by reproducing print too small to read. But these may be a necessary evil that result from the decision to be all-inclusive. Any of the 20 sections in the book could easily

have been twice as long; the editors have done a fine job here of presenting a complete picture that will allow the reader less familiar with Fuller to come away with a knowledge of who he was and what he accomplished; the reader who is familiar with only one facet of Fuller's oeuvre will be able to round out his knowledge. It should be noted that this is an uncritical presentation of Fuller's work, whose social ideas have recently come under scrutiny. The reader who is seeking detailed information will have to look further, but this book will certainly help him find his course. One value of this book is that it explains the genesis and meaning of some of the particular terminology used by Fuller: 4D, Dymaxion, geodesic, tensegrity. Understanding how Fuller derived his names and terms for his designs provides a key his design philosophy and to the creations themselves.

For the reader particularly interested in architecture and mathematics, another important value of this book is that it allows us to see how Fuller's mathematical toolbox grew. He begins in 1927 with the use of the hexagon and self-similarity (or fractal symmetry) for his designs for "Lightful Houses", tapering towers "moored" to spaceship earth. He again uses the hexagon for his Dymaxion house of 1929. He uses principles of triangulation to stabilize the structure of the Dymaxion car in 1932. In 1943, in order to address the cartography problem of depicting a spherical world on a flat surface, he used the 14-faced cuboctahedron for his Dymaxion Globe. In 1948 he added sphere packing to his mathematical vocabulary, producing models of the Platonic solids. Studies of divisions of the sphere, Fuller's "great circles", in the late 1940's led to the first model of the geodesic dome.

This reviewer came away from *Your Private Sky* with not only a greater understanding of Buckminster Fuller, but with an even greater curiosity as well. I commend the editors for having produced such a thoughtful collection of images and words.

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