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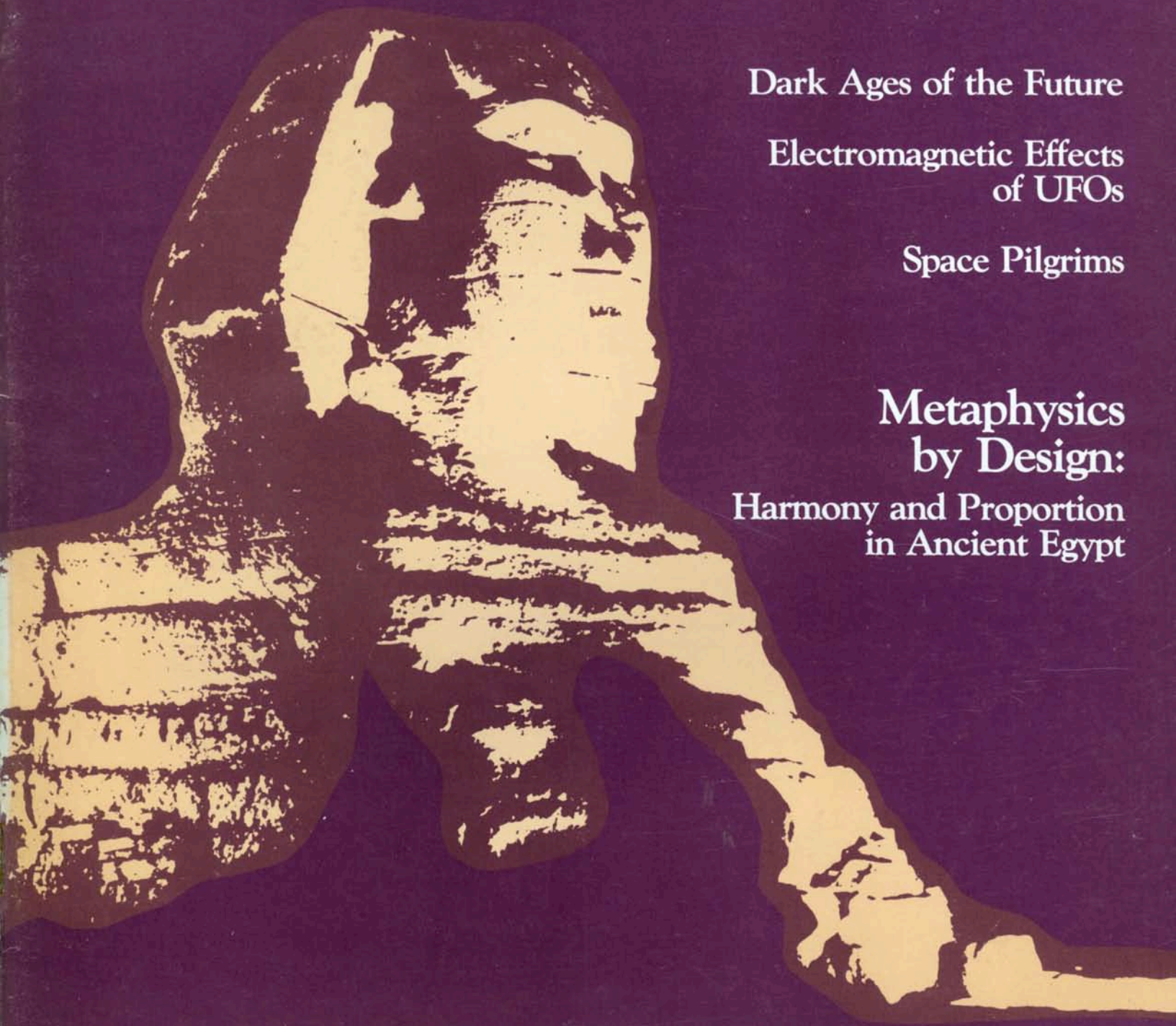

Dark Ages of the Future

Electromagnetic Effects of UFOs

Space Pilgrims

Metaphysics by Design:
Harmony and Proportion in Ancient Egypt

DARK AGES OF THE FUTURE

TEN FACES OF THE UNIVERSE
by Sir Fred Hoyle, F.R.S.
Heinemann, London, and W.H. Freeman, San Francisco, 1977.

by Robert K.G. Temple

This disturbing and provocative book is divided into ten chapters, which are the "ten faces,"—each discussing the Universe from a different angle. To start with the last chapter first, Hoyle suggests that civilization on our planet will collapse in 2025 A.D., give or take a decade. Although Hoyle is not one of the usual prophets of doom, he points out that "If the world population were to continue increasing at its present rate of about 2 percent a year, the number of people alive in 1,500 years would be so large that the whole of the Earth's atmosphere would only suffice for a single breath for each person. And in less than 5,000 years the mass of the human species would exceed the combined mass of all the galaxies visible in the largest telescopes."

This certainly provides empirical evidence of some kind regarding extraterrestrial civilizations. Since we do not have interstellar or intergalactic space filled with the floating bodies of creatures (unless they are the true constituents of some of the dust clouds), clearly there has not at any time in the Universe been a civilization with our current population, which expanded at 2 percent per year for 5,000 years! But if instead of a chunk of iron surviving from a meteorite you should come upon a piece of arm or leg, or a tentacle perhaps, we may have to revise our conclusions.

You may comfort yourself by noting that the population growth of the developed countries has stabilized, or even begun to decline. People often say that this is an encouraging sign. However, Hoyle is relentless in pointing out the dangers rather than the benefits of this trend. He says that a well known principle of biology says that if amongst several varieties of a species all but one restrict their growth, the one group which does not restrict its growth inevitably overwhelms the others: ". . . and eventually all surviving members of the species will belong to the expanding variety. . . . It is customary to regard these rapidly expanding groups with sympathy, since the people involved are for the most part very poor. . . . (but) unrestricted expansion by a particular group is really a profound form of aggression, more drastic than the aggression of an invading army. For a slowly expanding group (like ourselves in the developed states) to treat this biological aggression with sympathy is to make its own extinction all the more certain."

Hoyle insists that only by imposing restraints upon procreation (such as unbearably heavy taxation on parents who have a third child), and by doing this *before* we solve the energy problem by controlling fusion (which would unnaturally prolong an unstable state of affairs and bring a delayed catastrophic collapse from which humanity would never recover) can we save ourselves and limit the coming collapse of civilization to one which merely precipitates us into a new Dark Age.

FROM WILLIAM MORRIS' ILLUSTRATION OF *THE KELMSCOTT CHAUCER*

Hoyle is at pains to emphasize that actually living in a new Dark Age need not be so bad. We would have more individual freedom than we do now, a more peaceful situation altogether, in fact. Books and films from our present civilization would survive here and there, technology and invention would continue to progress at a much reduced scale. Hundreds of millions of people would, of course, die. But once we had retrenched and undergone a natural contraction of numbers, we could make a comeback within a few centuries. He compares this scenario with the fate of the Roman Empire in many particulars. "Our descendants would think of us as unfortunate creatures, ill-equipped to deal with formidably armoured animals, the bear, and the great cats."

One of the main causes of the surge in population growth is said by Hoyle to be the West's belief, which he believes to be dangerous, that it must share with the underdeveloped nations its own resources. He says: "The effect of a leveling up between the west and the underdeveloped nations will increase about fourfold the population load on western productivity, with the essentially certain result that the rising wave of western society will break . . . The rise and fall of the Roman Empire would have been repeated." He concludes "that the chance that the human species will survive is rather small, even in (an) attenuated and unsatisfactory form . . ."

Having spoiled your supper by telling you about Hoyle's last chapter first, I shall now retrace my tracks and give you some less disturbing facts. The level of his book is approximately that of the **Scientific American.** If you can read that easily, you will be all right. This book only contains two difficult chapters, — the sixth and the seventh. In these, Hoyle (who is never dull, and I should know, I've read 17 or 18 books by him) comes up with one of his customary surprises. Just when you are being lulled by his comfortable writing style into thinking that he is reciting well-known facts about the Universe in easily digestible form, as soothing as drinking some ovaltine on a cold night, *bang!* And I am not referring *at all* to the big one. This bang is quite the opposite of that. Hoyle will have none of this big bang nonsense. No Universe created out of nothing for him! He has been forced to abandon his "steady-state Universe" because of the annoying fact that there is a uniform cosmic background radiation which most astronomers say is "the left-over of the big bang." Hoyle says that is wrong.

In fact, Hoyle presents here what is probably the only example anywhere of a popular exposition of his technical theories (elaborated in the book he did with Narlikar, **Action at a Distance in Physics and Cosmology**) that the red-shift observed for all the galaxies in the Universe can be interpreted to mean not that the Universe is expanding at all, but that the sizes of all the atoms are shrinking and their masses increasing (which can cause the observed red-shift in the light coming from distant bodies). Hoyle is one of the most brilliant scientists of this century; no one would ever dream of attempting to deny that fact. But he is marked by something far more important than mere brilliance: he has real intellectual courage. He is as fearless with his brain as any Homeric warrior was before the walls of Troy. Hoyle has demonstrated time and again in his career that he is quite prepared to stand conventional notions on their head and shake them until the change drops out of their pockets. And I ask you this, — what would we do without Hoyle? The field of astrophysics would be unutterably impoverished. We take him too much for granted. Of course, there are vicious jealousies, he has many fierce and insatiable enemies. He left his Professorship at Cambridge, I believe, out of disgust at the pettiness and backbiting of the academics who were like flies on a horse's eye in the summer. Also, he wanted more time to write (this being one of the fruits of his leisure), and he must have wondered whether teaching was as efficient as writing popular books. Probably not.

Hoyle suggests that consciousness itself may arise from this interaction of our mental processes with the universe in the large . . .

I should mention Hoyle's notion from his seventh chapter, which is certainly one of the boldest. He proposes that "the influence of the universe is essential for understanding the normally experienced relation of cause and effect." In this he follows suggestions of the physicists John A. Wheeler and Richard Feynman. He points out that the laws of physics do not allow us to distinguish between time running forwards in the "usual" way and time running backwards. In order for us to have time run forwards we need the "response of the universe" in the equations. He says: ". . . not even statistical predictions can be made unless the response of the universe is included . . . From the local laws alone it is not possible, for example, to define the concept of the lifetime of an unstable nucleus (of an atom)." What this boils down to is that "a local system is subject to influences coming from the future . . . (which are) the 'response' of the universe." Apart from what this may mean for precognition, (foretelling the future), Hoyle suggests "that consciousness itself may arise from this interaction of our mental processes with the universe in the large . . . (an) interaction with the future. . ."□

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