RELIGION & PHILOSOPHY

dox revival. And none too soon, say the new Orthodox. Harvard's Center for Population Studies estimates that at today's level of intermarriage, assimilation, and fertility there could be as few as 10,000 "identifiable" U.S. Jews remaining by the year 2076. The Orthodox, with their far higher birthrate, hope to prevent that.

But above all, Gittelson concludes, the return of some Jews to "old-time religion" is a personal quest for spiritual meaning. And the new Orthodox, in their strict practices and deep faith, "seem to feel constantly exhilarated that they are carrying out God's plan."

SCIENCE & TECHNOLOGY

Missing: Most Of the Universe

"The Invisible Universe" by John D. Barrow and Joseph Silk, in *New Scientist* (Aug. 30, 1984), Commonwealth House, 1-19 New Oxford St., London WC1 A1NG, England.

There is bad news for stargazers fond of contemplating the infinite: About 90 percent of the universe may be invisible. According to astronomers Barrow and Silk, of the Universities of Sussex and California, Berkeley, respectively, weak telescopes are not the problem. The "missing" part of the universe may be right in front of our noses. We just cannot see it.

The notion that there is more to the universe than meets the eye is a deduction from modern "cosmological" theory. During the 1920s, American astronomer Edwin Hubble laid the cornerstone for contemporary cosmology with his discovery that our own Milky Way is not the only galaxy in the universe. Later, the Big Bang theory postulated, among other things, that the universe is expanding and that the other galaxies have been moving away from ours since the Big Bang some 15 billion years ago.

During the last five years, physicists have added a theory of "inflation" that elaborates on what happened during the first instants of the Big Bang. This new understanding led scientists to conclude that the universe is expanding much more slowly than was originally thought.

Knowing the rate of the universe's expansion (assuming inflation theory is correct) allows physicists to calculate its theoretical density. According to these computations, there should be roughly 10 atoms per cubic meter of universe—far more atoms than scientists thus far have been able to find.

That means that there is probably some kind of "nonluminous" matter in the universe that has so far gone undetected—and that there is a lot of it. Attention, the authors say, has focused on a group of "exotic creatures": neutrinos, gravitons, photinos, axions, and gluons. For the present, these particles are only creatures of theory. Nobody has yet seen a single one of them.