

# Carl Sagan: A Planetary Perspective

## Summary

A quarter century of planetary exploration has revealed dozens of enormously varied objects-- and life on none of them. Life on earth is rare and precious. No social convention, no political system, no economic hypothesis, no religious dogma is more important than preserving and enhancing life on earth for the very simple reason that if we destroy ourselves there will be no more social conventions, political systems, economic hypotheses or religious dogmas.

The kinds of malefactions we are perfecting today go back 10,000 years or more. In our stewardship of the earth, we have emphasized the local and the short-term. Fossil fuels have been the energy source of the technological revolution. The clear climatic signature has appeared that the earth is warming as a result of the carbon dioxide injected into the atmosphere by the burning of fossil fuels. For the disasters this can cause-- turning granaries into scrub desert, the inundation of coastal cities-- there is no local solution. the carbon dioxide put up by one country does not respect national sovereignty.

There are other issues of this sort-- acid rain, topsoil erosion, tropical deforestation. The United States and the Soviet Union have booby-trapped the planet with 60,000 nuclear weapons-- certainly from high-minded, patriotic motives. If you add the immediate and long-term fatalities that would follow from a nuclear exchange, you come to several billion people. But there are only five billion people on the planet. The nuclear arsenals in a very real sense challenge the continuing survival of the human species.

What astonishes is that nuclear arsenals have not accomplished their purported goals. Both superpowers-- and all the rest of us-- are exquisitely vulnerable to nearly instantaneous annihilation. The search for security has failed. It is clearly essential to redefine the concept of national security. Fortunately, there have been some hints of recent progress.

Nuclear weapons are cheap. Military expenditures on conventional weapons have been enormous. Since 1945, the United States alone has spent \$10 trillion dollars in military expenditures. What could you buy for this enormous sum? The answer is-- everything in the United States except the land. Every skyscraper, house, ship, train, baby diaper and pencil. On what could we spend that money today? On making the planet agriculturally self-sufficient. On prodigies of art, architecture, invention. But of course we cannot spend it now. It has already been squandered.

The traditional arena of interaction of nations has been competitive, with brief interludes of amity. The United States and the Soviet Union have been in that situation for many decades. If we must compete, let us find other areas to compete in. Let us compete in eliminating corruption in our countries. Let us have an honesty race. Let us compete in devising the means of agricultural self-sufficiency for the poorest billion people on the planet. Let us compete in science. Let us compete in inspiring the rest of the world to emulate what we do.

We are undeniably one species. The differences that sometimes divide us are absolutely trivial from any extraterrestrial perspective. We live on the one planet, one lovely world which, as far as we know, is the only possible home for humans, the only world graced by life. This world clearly needs to be cherished and preserved. We must make the future worthy of our children and grandchildren so our species may not only survive-- as the title of this conference suggests-- but to flourish.