

The New York Times[®]
Reprints

This copy is for your personal, noncommercial use only. You can order presentation-ready copies for distribution to your colleagues, clients or customers [here](#) or use the "Reprints" tool that appears next to any article. Visit www.nytreprints.com for samples and additional information. [Order a reprint of this article now.](#)

PRINTER-FRIENDLY FORMAT
SPONSORED BY



May 27, 2010

The Earth's Secrets, Hidden in the Skies

By DANIEL N. BAKER

BOULDER, Colo.

ONE of the greatest advances in space technology has been the military's [Global Positioning System](#) satellites, which provide remarkably accurate navigation information for everything from smart phones and cars to pet collars.

But the navigational data is only one part of the program's mission. The Nuclear Detonation Detection System, an array of sensors also on board the satellites, watches the world for nuclear explosions. In the process, it collects mounds of environmental data which, in the hands of climate scientists, could add greatly to our understanding of global warming.

Unlike the G.P.S. information, however, much of the detection system data is hidden behind bureaucratic walls by national security agencies, which treat it as classified, even though it isn't, and even though there's no compelling national security reason to do so.

The history of the G.P.S. system shows the impact satellite data can have on commercial and scientific progress. Since it was first made publicly available in the 1980s, G.P.S. has revolutionized industries from telecommunications to agriculture. Estimates place its economic value in the tens to hundreds of billions of dollars each year. And that's not counting its impact on everyday activities like hiking, boating and golf.

Then there's the science: using the G.P.S. radio waves that travel through the earth's atmosphere, researchers can better understand its temperature, density, water content and other properties, data that is critical to work on climate change and pollution.

Meanwhile, in the process of watching for a nuclear detonation, the detection system's sensors — designed to observe visible light, high-frequency radio waves, X-rays, gamma rays and other data that might point to a nuclear explosion — stream an amazing array of data on powerful lightning strikes, space hazards like meteoroids and man-made debris and severe solar and space weather events.

It's a daily trove of scientifically useful data that is not duplicated by any other sensor systems, military or civilian. True, other agencies collect similar data; sadly, it's not nearly as comprehensive or global as the detection system's information.

Unless a nuclear explosion takes place, the data has no immediate relevance to national security. Yet bureaucratic inertia has kept in place the presumption that because some of the data might be sensitive, all of it has to be protected; as a result, a thicket of paperwork and procedures deters all but the most resourceful and patient scientists from gaining access to it.

Making the data more available would be remarkably simple. The Departments of Energy and Defense, which operate the satellites' detection functions, should apply the same standards used for G.P.S.: All but the most sensitive data is disseminated automatically, so that anyone in the world can tap into the flow of information beaming down from the satellites.

Opening this data would have many benefits. It could, for example, improve meteorologists' ability to monitor destructive weather like "super" thunderstorms, hurricanes and solar storms, which can disable the electric power grid.

It would also allow scientists and engineers at national laboratories like Los Alamos, Sandia and Lawrence Livermore to greatly expand their research on climate change and other critical topics. While some scientists can already get access to the data, current restrictions mean they can't easily share it. Making the data truly public would allow full peer review of their findings, leading to higher-quality research.

Much as America's scientific leadership and policy of open inquiry did wonders for its prestige during the cold war, making most of the detection system data available to the global public would show friends, allies and adversaries that the United States is willing to use even its most advanced defense assets for the betterment of humanity.

American taxpayers support a truly remarkable monitoring system whose information could significantly improve our health, security and well-being. We should use this hidden treasure to make the world a better and safer place.

Daniel N. Baker is a professor of astrophysical and planetary sciences and the director of the Laboratory for Atmospheric and Space Physics at the University of Colorado at Boulder.