

The Nuclearization of Space. The Crash of Cassini

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Global Research, April 29, 2017

[CounterPunch](#) 27 April 2017

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Despite protests around the world, the Cassini space probe—containing more deadly plutonium than had ever been used on a space device—was launched 20 years ago. And this past weekend—on Earth Day—the probe and its plutonium were sent crashing into Saturn.

The \$3.27 billion mission constituted a huge risk. Cassini with its 72.3 pounds of Plutonium-238 fuel was launched on a Titan IV rocket on October 17, 1997 despite several Titan IV rockets having earlier blown up on launch.

At a demonstration two weeks before in front of the fence surrounding the pad at Cape Canaveral from which Cassini was to be launched, Dr. Michio Kaku, professor of theoretical physics at the City University of New York, warned of widespread regional damage if this Titan IV lofting Cassini exploded on launch. Winds could carry the plutonium

“into Disney World, University City, into the citrus industry and destroy the economy of central Florida,” he declared.


Four months before, at an earlier demonstration at the same site, Allan Kohn, a NASA career official from 1964 to 1994 who had been the emergency preparedness officer at the Kennedy Space Center, noted that

“we were told by NASA that the odds against the Cassini blowing up and releasing radiation [are] 1,500 to one. These are pretty poor odds. You bet the lottery and the odds against you are one in 14 million.”

As to NASA’s claim that the plutonium system was “indestructible,” he said it is

“indestructible just like the Titanic was unsinkable....It’s time to put a stop to their freedom to threaten the lives of people here on Earth.”

And, indeed, on an Earth “flyby” by Cassini , done on August 18, 1999, it wouldn’t have been a regional disaster but a global catastrophe if an accident happened.

Cassini didn’t have the propulsion power to get directly from Earth to its final destination of Saturn, so NASA figured  on having it hurtle back to Earth in a “sling shot maneuver” or “flyby”—to use Earth’s gravity to increase its velocity so it could reach Saturn. The plutonium was only used to generate electricity—745 watts—to run the probe’s instruments. It had nothing to do with propulsion.

So NASA had Cassini come hurtling back at Earth at 42,300 miles per hour and skim over the Earth's atmosphere at 727 miles high. If there were a rocket misfire or miscalculation and the probe made what NASA in its "Final Environmental Impact Statement for the Cassini Mission" called an "inadvertent reentry," it could have fallen into Earth's atmosphere, disintegrating, and releasing plutonium. Then, said NASA in its statement, "Approximately 7 to 8 billion world population at a time ... could receive 99 percent or more of the radiation exposure."

The worst accident involving space nuclear power occurred in 1964 when a satellite powered by a SNAP-9A plutonium system failed to achieve orbit and fell to Earth, breaking apart and releasing its 2.1 pounds of Plutonium-238 fuel, which dispersed all over the planet. According to the late Dr. John Gofman, professor of medical physics at the University of California at Berkeley, that accident contributed substantially to global lung cancer rates.

In her book, [*Nuclear Madness*](#), Dr. Helen Caldicott, president emeritus of Physicians for Social Responsibility, writes about plutonium:

"Named after the god of the underworld, it is so toxic that less than one-millionth of a gram, an invisible particle, is a carcinogenic dose. One pound, if uniformly distributed, could hypothetically induce lung cancer in every person on Earth."

Further, the Plutonium-238 used in space devices is 280 times more radioactive than the Plutonium-239 used in nuclear weapons.

Cassini finally reached Saturn and took excellent pictures and provided scientific information about Saturn, its rings, and moons including Enceladus and Titan.

NASA sent it crashing into Saturn on April 22, 2017

"to make sure Cassini is incinerated at the end of its journey to ensure that any of its earthborn microbes do not contaminate the biotic or prebiotic worlds out there," wrote Dennis Overbye in his front-page story in The New York Times on April 22. (The article didn't mention plutonium at all.)

"When I heard that NASA would be dive-bombing Cassini into Saturn with 72 pounds of deadly plutonium-238 on-board, I thought of the Army handing out smallpox laden blankets to Indians on the reservations," comments Bruce Gagnon, coordinator of the Global Network against Weapons & Nuclear Power in Space, which has been in the lead in protesting NASA nuclear space missions. "NASA readily admits that 'biotic or prebiotic' life very possibly exists on Saturn—are they trying to kill it?"

Said Gagnon:

"We are told that NASA is out searching for the origins of life in the universe but they seem to have forgotten the prime directive from Captain Kirk on Star Trek to 'do no harm.'"

Felton Davis, an activist with the Catholic Worker movement in New York City, who

participated in anti-Cassini protests through the years, said NASA

“should face the environmental reality that other celestial bodies are not garbage dumps.”

After the 1964 accident involving the SNAP-9A plutonium system, NASA moved to develop solar photovoltaic panels to energize satellites, and now all are powered by solar panels—as is the International Space Station.

But NASA has insisted that it needs nuclear power for missions into space—claiming for years that it could not use anything but atomic energy beyond the orbit of Mars. However, that has been proven incorrect by NASA itself. On July 4th, Independence Day, 2016, NASA’s solar-energized space probe Juno arrived at Jupiter. Launched from Cape Canaveral on August 5, 2011, it flew nearly two billion miles to reach Jupiter, and although sunlight at Jupiter is just four percent of what it is on Earth, Juno’s solar panels were able to harvest energy.



Juno spacecraft above the north pole of Jupiter
Photo from NASA

Nevertheless, the U.S. Department of Energy working with NASA has started up a new production facility at its Oak Ridge National Laboratory in Tennessee to produce Plutonium-238 for space use. Other DOE labs are also to participate.

Says Gagnon of the Maine-based Global Network (www.space4peace.org):

“Various DOE labs are rushing back into the plutonium processing business likely to make it possible for the nuclear industry to move their deadly product off-planet in order to ensure that the mining operations envisioned on asteroids, Mars, and the Moon will be fully nuclear-powered. Not only do the DOE labs have a long history of contaminating us on Earth but imagine a series of rocket launches with toxic plutonium on board that blow up from time to time at the Kennedy Space Center. They are playing with fire and the lives of us Earthlings. The space and the nuke guys are in bed together and that is a bad combination—surely terrible news for all of us.”

"The Global Network," said Gagnon, "remains adamantly opposed to the use of nuclear power in space."

Karl Grossman, professor of journalism at the State University of New York/College of New York, is the author of the book, [The Wrong Stuff: The Space's Program's Nuclear Threat to Our Planet](#). Grossman is an associate of the media watch group Fairness and Accuracy in Reporting (FAIR). He is a contributor to [Hopeless: Barack Obama and the Politics of Illusion](#).

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