

CHAPTER IV

“72 pounds of environmental, ethical, and moral, problems”

Bruce Gagnon, Director, Florida Coalition for Peace and Justice

The Protest

This chapter provides a brief outline of the Florida Coalition for Peace and Justice (FCPJ) and the campaign to stop the Cassini mission. The the roots of the STOP CASSINI! campaign can be traced to the fall of 1989, when protesters gathered at Kennedy Space Center to stop the launch of the Galileo mission to Jupiter.¹ Residents of the area near Cape Canaveral, Florida, allied with disarmament and environmental movements from around the nation to protest the environmental and health risks posed by NASA's launch of 36 pounds of Plutonium-238 into orbit on the space shuttle. Thus, the Florida Coalition for Peace and Justice (FCPJ) became a vehicle for local residents, national activists, and a nation-wide array of small environmental and disarmament groups to voice their opposition to the Galileo launch. Galileo was launched safely in October 1989, much to the relief of the Cape Canaveral community and the Brevard County Emergency Action planners. However, after the Galileo launch, NASA announced the forthcoming Cassini mission, this time carrying a nuclear 'payload' of 72 pounds of plutonium.

¹ The following information was obtained first through the Florida Coalition for Peace and Justice (FCPJ) Homepage at www.afn.org/~fcpj/, and the Global Network Against Weapons and Nuclear Power in Space, <http://www.globenet.free-online.co.uk/> and secondly through a telephone interview with Bruce Gagnon, the FCPJ director, on December 1, 1997.

The Florida Coalition for Peace and Justice

The FCPJ is a non-profit, tax-exempt organization characterized by an active membership. In the summer of 1997, there were two full-time staffers, the Director, Bruce Gagnon, and an assistant. The organization publishes a quarterly newsletter, *Just Peace*, that is distributed nationally to subscribers. Membership in the FCPJ is open to individuals and organizations. Members include more than 40 local peace and justice, church, and environmental groups, as well as some national groups. Please see Table 5 for a list of affiliated members. There are no figures available for the number of individual members.

I spoke with Bruce Gagnon, Director of the FCPJ on December 1, 1997, who answered questions about the management, membership, and activities of the FCPJ. The Coalition's webpage also gave quite a bit of information about the activities of the group: www.afn.org/~fcpj/. During our conversation, the FCPJ's director noted that the membership is generally made up of individuals with a middle-to-high economic and educational status. Gagnon claimed that members comprise a broad cross section of interests, racial, ethnic, and religious backgrounds; though the majority are white, Christian, college-educated, and environmentally conscious. The coalition's primary financial support comes from organizations rather than individual donations, Gagnon believes that the FCPJ has a very broad base for its activities based on the number and kinds of people who attend its rallies and organizational meetings. For example, 27 people were willing to be arrested at a peaceful protest at Cape Canaveral on October 4, 1997, where over 1500 people attended that rally. Gagnon took the level of participation in the rally as an indication of the high level of support for the goals of the organization even though members did not expect to stop the launch. The FCPJ director believes that

its members have chosen the FCPJ as a “successful vehicle of expression, because when people feel powerless, participation in an organization that gives their voice more power becomes important” (Gagnon, personal communication, 1997).

Primary Arguments by the Florida Coalition for Peace and Justice

Even though it is the home of an established anti-nuclear, green, disarmament organization—the Florida Coalition for Peace and Justice, the Orlando/Brevard County region is powered by a nuclear power utility, and has a large military weapons manufacturing presence, as well as several air stations and naval yards. See Box 3 for an explanation of local support.

Why We Oppose U.S. Military Policy in Space

It is undemocratic and violates the freedom of conscience.

The shroud of secrecy (\$30 billion secret budget) under which so much of this activity is carried out prevents individual citizens and their elected representatives from having a say in what is being done in their name. Spying on the unsuspecting citizens of foreign countries and in some cases on our own citizens opens the door to gross abuse of the right to privacy. On the individual level, thousands in our community sign secret oaths which isolate them from their families, friends, church members, and citizens. Everyone agrees that excessive secrecy impedes personal friendships, free and open societies, and healthy church communities.

Box 3, FCPJ statement on U.S. Military policies in space. From the FCPJ webpage, January 1, 1998.

Action Network for Social Justice (Tampa)	Affirmation Lutheran Church (Boca Raton)
Alliance for Survival (Costa Mesa, CA)	Bangladesh Astronomical Society (Dhaka)
Brevardians for Peace and Justice	Broward Citizens for Peace and Justice
Catholic Diocese of Jacksonville, Office of Peace and Justice	Center for Advancement of Human Cooperation (Gainesville)
Cassini Redirection Society (British Columbia)	Citizen Soldier (New York, NY)
Community Action Network (Seattle, WA)	Cuba Vive
Crow Indian Landowners Assoc. (Montana)	Darmstadter Friedensforum (Darmstadt, Germany)
Delray Citizens for Social Responsibility	East Bay Peace Action (Berkeley, CA)
Environmental & Peace Education Center	Florida Council of Churches
Florida Southwest Peace Education Coalition	Freedom Coalition (Gainesville)
Global Peace Foundation (Mill Valley, CA)	Global Resource Action Center for the Environment
Glynn Environmental Coalition (Brunswick, GA)	Grandmothers for Peace (Elk Grove, CA)
Grandparents for Peace (St. Augustine)	Jacksonville Coalition for Peace and Justice
Iowans for Nuclear Safety (Cherokee, Iowa)	Jonah House (Baltimore, MD)
Kalamazoo Area Coalition for Peace and Justice	Mama Terra Romania (Bucharest)
Leicester Campaign for Nuclear Disarmament	Maryland Safe Energy Coalition (Baltimore)
Metanoia (Jacksonville)	Orlando Friends Meeting
No Nukes Action Project (Los Angeles, CA)	North Country Coalition for Justice and Peace
Patriots for Peace (Ft. Walton Beach)	Pax Christi (Florida)
Peace Links (New York, NY)	Peace Action (Washington, DC)
Peace Resource Center of San Diego	People's Action for Clean Energy (Canton, CT)
Phillip Berrigan (Baltimore, MD)	Plutonium Action, Hiroshima (Japan)
Presbytery of Tampa Bay	Peace of Highlands County
Central Florida Presbytery	Polk County Citizens for Peace and Justice
Radiant Medicine Project (Kingman, KS)	Sisters of Mercy Social Justice Team (Brooklyn)
Solar Design Associates (Harvard, MA)	The Nuclear Resister (Tucson, AZ)
St. Margaret Mary Catholic Church (Winter Park)	South Florida Peace Network
Tallahassee Society of Friends	Tampa Bay Peace Education Program
Unitarian Friends Fellowship of Pineda	Unitarians at Large (Del Ray Beach)
N. Palm Beach Unitarians	Deland Unitarian Social Concerns Committee
Gainesville Unitarians	Jacksonville Unitarians
Miami Unitarians	Unitarian Fellowship Vero Beach
Unitarian Universalist Church of Sarasota	Unitarian Universalist Church of Tampa
Ursulines of Tildonk for Justice and Peace	US-Vietnam Friendship Assoc. (San Francisco)
Vets for Peace (Gainesville)	Vets for Peace (Tallahassee)
Westminster Presbyterian Church (Lakeland)	Women's International League for Peace and Freedom (WILPF) (Palm Beach County)
WILPF - Tampa	WILPF - Treasure Coast
WILPF - West Palm Beach	Winter Park Friends Meeting
Volunteers for Peace (Belmont, VT)	War & Peace Foundation (New York)
War Resisters League (Asheville, NC)	Women Strike for Peace (Washington, DC)

Table 5. The Member Groups of the Florida Coalition for Peace and Justice/STOP CASSINI! Campaign.

Source: From the Internet at www.afn.org on 8/6/99

Anti-nuclear power, environmental, and nuclear disarmament groups in Florida, and across the United States, united through the FCPJ to publicly protest the Cassini launch. Their claims pointed out the environmental risks first, and the health risk to the public second. Initially, the STOP CASSINI! Campaign centered on three elements of technological risk: launch risk, an Earth gravity swing-by risk, and NASA's reliance on nuclear technologies. Initially, the FCPJ protested the Cassini mission because of the risk of an early launch phase accident that could cause release of the PU-238. The dangers from this risk are expressed in environmental terms and in terms of consent. They are always related to comparisons with the *Challenger* launch. NASA was perceived as not trustworthy enough to safely manage the technology, as stated by the FCPJ on its webpage:

“As we launch more and more radioactive materials on spacecraft there will be even more opportunities for accidents: Three Mile Island, Apollo 13, Chernobyl, etc., demonstrated that low probability events do in fact occur.”

Another focus of concern was the planned Earth gravity swing-by in August 1999.² The Cassini spacecraft will come very close to Earth, at very high speeds, and presents the final element of risk to Earth and people. An Orlando Sentinel article showed that 71% of respondents of a phone survey agreed that the potential for catastrophic release of plutonium through the accidental re-entry of the spacecraft would threaten global health (Borenstein 1997). The risk from the fly-by generated significant concern on the part of individuals who were not inclined to worry about the launch risk. As quoted on the Real News webpage:

² A swing-by provides a gravity-assisted boost in speed to a spacecraft. The Cassini spacecraft has completed two orbits around Venus to boost its speed. It will gain significantly more speed when it “slingshots” around Earth—gaining enough velocity to get to Jupiter, where it will perform another gravity swing-by to get enough speed to finish the trip to Saturn.

“Considering the consequences of massive plutonium contamination of populated areas (whatever the risks), a loyal opposition to watch for the blind spots is necessary. The Stop Cassini! campaign—as I see it—is a ‘stop and think’ campaign” (Prettyman 1997).

The third focus of the protest was on NASA’s reliance on nuclear technologies. The FCPJ, with its focus on nuclear disarmament issues, made an explicit link between SNP and nuclear missiles—a link that NASA does not make or accept. While NASA worked extensively to reduce international concerns that it operated as an arm of the U.S. military by supporting various United Nations legislation, the anti-SNP groups were quick to make the link, stating that the development of launchable nuclear technologies were a precursor to war (from a leaflet warning about the August 17, 1999, Cassini flyby, distributed at Lockheed Martin headquarters, London; on June 12, 1999, given to me by a member of the U.S. Lockheed Martin staff):

“From the Blitz to the Moon. Space and military technology have always gone hand in hand. In the Second World War, thousands of people were killed in London and in other cities by the Nazis V2 rocket. After the war, the scientists responsible for the V2 were given new jobs by the U.S. government. The V2 technology was refined and served as the basis for both intercontinental ballistic missiles (nuclear weapons) and the Apollo space programme that sent people to the moon.”

The FCPJ states that what is required is widespread public debate about the choice of technologies and NASA’s management: “Most people are tuned out – and discussion is needed” (Gagnon 1997).

History of the STOP CASSINI! Campaign

The FCPJ was founded in 1982 to protest the deployment of the Army’s nuclear-armed Pershing missile, and its first protests centered around the Pershing missile factory in Orlando, Florida. In 1985, the group opposed the flight test of nuclear armed cruise missiles over Florida and protested the training of Contras at Eglin Air Force Base. Their first large protest came in 1987 when 5000 people protested

the launch of a Trident II nuclear missile off Cape Canaveral. The group extended its disarmament protests in 1988 when it decried the cause of nuclear war in space and organized the “Make Space for Peace” Conference to protest the Space Defense Initiative (“Star Wars”). Then, in a shift of perspective in 1989, the FCPJ organized a concerted campaign to protest the Galileo launch on the space shuttle, claiming that the 1985 *Challenger* accident proved that shuttle was not safe enough to use to launch plutonium-powered spacecraft.

The FCPJ’s protest activities directed at the Cassini mission continued from 1992 through 1997 with one short hiatus. The protest was tabled for nine months while the Cassini mission underwent a redesign in 1992, when the European Space Agency (ESA) announced that it had plans for a solar battery that might provide adequate power for the mission (Grossman 1997). However, the STOP CASSINI! campaign was revived in late 1992 when the ESA admitted that the new solar battery cells could not meet NASA’s weight and power requirements and a new timetable for the redesigned Cassini mission was announced. The FCPJ at first claimed that NASA had misrepresented the supposed inefficiency of solar power cells and that NASA was cooperating with the Department of Energy in keeping the nuclear power supply on the mission (Prettyman 1997).

The FCPJ STOP CASSINI! campaign formally began with an informational meeting in December of 1992, just after NASA made public the plans for the restructured Cassini mission. At first attendance at meetings was low, and then, as the word was broadcast, anti-nuclear protest and peace groups began to show a long-term interest in the question of nuclear power for space exploration. The FCPJ gained strength with the addition of support from the Grandparents for Peace and the Women’s International

League for Peace and Freedom, and with additional attention from the Physicians for Social Responsibility, the Federation of American Scientists, and the Bulletin of Atomic Scientists (From the FCPJ webpage, September 20, 1997). The addition of these organizations to the FCPJ roster enabled access to extensive international disarmament organizations and a broader local interest base.

The Grandparents for Peace is a non-profit organization originating in 1988 in St. Augustine, Florida.

The Grandparents have chapters throughout the United States and primarily focus on environmental and disarmament issues. The internet webpage link between the Grandparents and the FCPJ shows:

“Grandparents around the globe share our concerns and have become peace activists. At this point in history, the greatest expression of love a grandparent can make is active participation in efforts to:

- eliminate nuclear weapons
- convert military bases, munitions factories, and research sites to peacetime productive purposes
- promote and assist development of peace curricula in our schools
- help children realize a greater awareness of and responsibility for our beautiful, but fragile, planet Earth” (From the FCPJ webpage on January 9, 1998).

Peg McIntyre, president of the St. Augustine chapter in 1997, was arrested at the age of 87 during the Cassini protest on October 7, 1997.

The FCPJ tried to schedule a meeting with staff at the White House Office of Science and Technology Policy but were rebuffed (Gagnon, personal communication). However, as more interest developed both nationally and internationally, the media, and thus some space policy organizations, began to pay more attention to the Campaign. The FCPJ’s strategy was to “create an awareness in the people of the world of the seed that is to be carried off the planet. To educate people, to develop an alternative

consciousness, to plant a different seed.” The FCPJ also declared that it was important to develop a committed constituency dedicated to the exploration of alternative energy ideas for space exploration.

In 1992, the FCPJ went ‘online’ to protest the use of nuclear power in space with the organization’s first use of the internet. The FCPJ claims that the STOP CASSINI! campaign received steady and increasing global attention through the course of the protest (Gagnon 1997b). The FCPJ maintains an extensive internet webpage, donated to the organization by a local environmental protection business, with sets of internet links to green and disarmament groups worldwide (See the website at www.afn.org/~fcpj). During the STOP CASSINI! campaign the webpage was updated almost daily in order to keep its members informed of the latest events. The campaign participated in producing a documentary video, with State University of New York at Westerbury, called “Nukes in Space” in 1995 (Grossman 1997b).

The FCPJ organized a rally at Cape Canaveral Air Station in May 1997. Several prominent disarmament leaders spoke to a group of about 1500 people. Organizations such as Greenpeace and the Sierra Club sent senior representatives to the meeting, and CNN and the NBC local affiliate attended along with other local TV and radio stations. Consent issues were the main issue as the protestors demanded a role in choosing technologies in mission design. Closely relating environmental and consent issues to nuclear disarmament, the FCPJ maintained that a widespread public debate was required to sensitize the public to the dangers of nuclear power for space exploration, and addressed not only environmental risks but also the motives behind the technology choice (FCPJ, 1997, from *Just Peace* as reported by Karl Grossman).

“The military has made an unholy alliance with NASA in its quest for space domination. Now people-power and a commitment to compassion and conscience must be brought into an area where it is not wanted and where it is lacking. There must be resistance to the U.S. push to weaponize and nuclearize space... a renegade government spending massive amounts of money to weaponize and nuclearize space, and at the same time saying that no money is available for schools and other social needs. This issue is not about losing our democracy—we have lost it.”

See Figure 5: The Plutonium Shuttle for an example of the graphic imagery accompanying the language.

Statements published by the FCPJ assert that discussion is needed; a discussion that will counteract ‘the massive public education campaign instrumented by NASA’. “By the time the kids are taxpayers they will be indoctrinated in space.” Gagnon maintains that there is “a really ambitious plan to bring up the issues subtly, to grow ‘pro-nuke’ taxpayers” (Gagnon, personal interview, 1997). The FCPJ maintains that society will be adversely affected by all uses of nuclear technologies and that none of them should be blindly accepted without intense public information campaigns.

Michio Kaku, a physicist at the City College of New York, was one of the most visible of the early protesters of the use of nuclear power in space. He began his relationship with the FCPJ in 1987 during the protest of the first Trident II launch. Kaku spoke at that rally, and also worked and spoke for the FCPJ before the launch of the Galileo mission. Gagnon freely admits that Kaku’s primary value to the FCPJ is his standing in the scientific community. Because Kaku is a well-respected theoretician, his comments were received by a more sophisticated audience and had a greater media impact.

“We are the makers of history with the power to make space a nuclear-free zone” (as quoted in Grossman 1997b).

“I find that the NASA bureaucrats in some sense are living in a fantasyland. Pure guesswork has replaced rigorous physics. Many of the numbers are simply made up” (as quoted in Young 1997).

When Kaku released a letter analyzing the NASA-Cassini Risk Analysis Report (Kaku 1997), he received newspaper and TV coverage, as well as an appearance on *60 Minutes* (October 5, 1997), all geared through the FCPJ.

Michio Kaku's letter was a rejection of NASA's risk assessment methodology and of the conclusions drawn from the methodology. He wrote that the Cassini Final Environmental Impact Statement (FEIS) "consistently underestimated the possible risks of an accident with the Cassini space mission." (Kaku 1997, page 2) Kaku's rebuttal countered NASA's assumptions regarding complete risk assessment, failure testing, and health effects risk. Noting that a disaster is only a matter of time, Kaku used his reputation to create a platform for reassessment of NASA's risk management policies claiming that (Kaku 1997, page 3):

"It is inevitable that there will be spectacular accidents with the space program, some involving casualties, and the American people have a democratic right to know what the true risks are. Thus it is a matter of scientific interest to go over line-by-line the calculations of the FEIS."

Kaku's criticisms range from the lack of error bars or estimates of uncertainty in NASA's explanations (this is true, there are no error bars) to the assumption that not all of the plutonium will ever be released in any of the accident scenarios. The lack of calculation based on a complete release of plutonium ignores the estimate of a maximum credible accident and would result in low casualty figures. Kaku made a detailed argument against NASA's and DOE's testing assumptions that did not consider combination of the three main factors that could cause a plutonium release: high temperature, shrapnel, and explosive over-pressure. While the RTGs were tested to extremes of each of these factors, the factors were not combined to estimate interactive risk. For example (Kaku 1997, page 4-5):

“The laws of thermodynamics show that there is a statistical distribution of molecules at kinetic energies beyond the average one... indicating that structurally the iridium casing will begin to soften and weaken even as it approaches its melting point. In other words, the structural integrity of the iridium casing will degrade as it approaches its melting point and make it possible for shrapnel and explosive over-pressure to burst open the casing... The point is that a full-scale test involving the simultaneous conditions of high temperature, shrapnel, and over-pressure has never been done. It is likely that the combination of all three will cause severe rupturing of the RTGs.”

Kaku pointed out deficiencies with NASA’s estimation of a release from a land-strike, indicating that NASA’s estimates did not take wind patterns into effect. He also claimed that NASA had been negligent in its predictions of population impact. As Kaku noted: “...what is in dispute is that the FEIS assumes a rather average density of people per square mile. This is therefore not a maximum credible accident, which would assume that the winds blow the plutonium into a major city.” (Kaku 1997, page 7)

Kaku also criticizes NASA’s risk assessment by noting three past disasters which were man-made and were caused by simple human error: Three Mile Island (human error in reading a valve light on a control panel), Chernobyl (human error while manually disengaging control rods), and the Hubble Space Telescope (a human error whereby a worker inserted a ruler in backwards while the mirrors were being machined). He concludes his discussion with the claim that NASA’s assumptions are faulty, so that the conclusions must also be untrustworthy.

An important element of Kaku’s letter is its placement of NASA’s decisionmaking within organizational reliability theory. Kaku consistently harks back to organizational hierarchies and decisionmaking culture in his assessment (Kaku 1997, page 13)

“But the difference with the Cassini mission is that we voluntarily put ourselves at risk when traveling. However, no one asked the American people if they wanted to put themselves in danger. NASA bureaucrats, not the American people, are making this decision. Second, if we are in a car accident, only a handful at most will die. But no one told the American people that thousands may die if a plutonium accident takes place. Similarly, the FEIS justifies the figure of 2,300 cancer deaths by stating that the figure is lost in the background cancer levels found world-wide. This is a strange argument. The same argument can be used to justify mass murder. Since thousands die violent deaths in the U.S., it makes no difference if a few hundred more die by a serial killer. They will be lost in the background noise.”

Kaku was seconded by a position statement from Helen Caldicott of the Physicians for Social Responsibility (PSR). Dr. Caldicott, as representative of the PSR, won the Nobel Peace Prize in 1985 for her work on educating the public and decisionmakers on the long-term global health risks related to the use of nuclear arms (FCPJ website, taken from the internet on October 20, 1997). Her letter, from the perspective of a private citizen, generated additional media coverage.

“It [Plutonium-238] 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” (From the FCPJ website under the header “Plutonium (pu 238), taken from the internet on October 27, 1997).

The FCPJ plans to continue to protest the use of nuclear power in space because it is concerned that NASA’s plans for a human Mars mission place too high a priority on nuclear technologies. NASA’s reliance on nuclear technologies is viewed by some as a result of unexamined assumptions and ‘long-established positions’ (Federation of American Scientists 1997). The Mars Reference Mission as discussed earlier thus reflects, not a tough well-considered position, but reliance on assumption. The organization’s ultimate goal became an effort to “change the long-range vision for space.” The FCPJ’s resources were large enough to allow Gagnon to devote full time to organizing the protest 6 months before the anticipated launch, and to hire an additional staff member.

The FCPJ also protested the DOE's role in the use of nuclear power for space. The FCPJ stated that the role of the DOE is to promote nuclear power, and to keep the infrastructure for creating nuclear weapons intact. "There is a nuclear addiction within the fabric of DOE. This conjunction of interests guarantees the use of nuclear power in space" (Gagnon, personal interview).

The STOP CASSINI! protest received coverage from all the major U.S. news networks, and in most national newspapers. It received extensive internet news coverage. The FCPJ claimed a significant victory on account of the media coverage it received. The FCPJ also claimed success from letters on behalf of the FCPJ which were signed by members of Congress.

On an international level, the anti-space nuclear power work of the FCPJ will be carried on by the Global Network Against Nuclear Power in Space. This organization has held five annual international meetings, but heretofore has had no formal staff or funding. At its conference which took place in Colorado Springs in April 1998, Gagnon took over as director. While the Global Network at this time consists of a "skeleton" of allied networks," Gagnon believes that with a full time director, the movement will take off. Gagnon plans to make use of extensive Internet mailings to disseminate news and information, and solicit funds.

Cassini launched, safely, in the predawn hours of October 14, 1997. The press reported that two members of the STOP CASSINI! campaign held a vigil outside of the Kennedy Space Center main gate though most of the protesters took themselves outside of the launch range. Brevard County school officials made plans to delay the beginning of school that day in case the launch should experience a weather delay from 4:37 a.m. to later in the morning. After the launch, emergency crews stood down,

the Brevard county volunteer fire department went home to breakfast, and NASA quietly removed its radiation dosimeters from the Cape Canaveral community park. The swing by of the planet Earth occurred without incident on August 16, 1999.