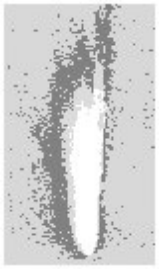
# Shock Waves Encode 'Lifecloud' Computer

By Peter Fotis Kapnistos (copyright 2008)

**When large comets hit the Earth, boulders with organic debris splash back into space. For that reason, an expanding "biodisc" of dormant microbes preserved inside tiny rock fragments, 30 or more light years across, could encircle our solar system. A previous paper, "*Living Proto-Cells Made in Space,*" (2008), reviews the panspermia BioDisc premises of Cardiff University scientists and notes how bacteria can physically store and transmit "bits of data" within a biologically self-organizing network. A gravitationally microlensed projection on a sheet of dormant microbes could reconstruct electromagnetic aspects of a wavefront. Irradiating simple ice grains with ultraviolet radiation can emanate membranous-layered structures or proto-cell "amphiphiles" in space. Living bacterial particle code computing is faster and more secure than conventional computing. A fertile BioDisc surrounding our solar system could be a natural supercomputer and the active storage disc of life's genetic database.** [1]



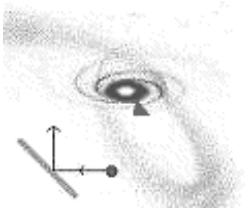
Observations of the 1997 Hale-Bopp comet indicated that comet collisions into the Earth brought water, nitrogen and carbon dioxide to produce our atmosphere. A few weeks after the passing of Hale-Bopp, NASA researchers Chris McKay and Bill Borucki showed that an "impact" itself could have been a key event in the origin of life. They mimicked a collision of a comet and Earth by aiming a laser blast at a vial of gas simulating the composition of the early atmosphere. They found that "powerful shock waves" from the microblast created temperature and pressure changes that altered the molecules of the atmosphere.

**"Those new molecules, when mixed in with water, form amino acids," Borucki said. "They're the start, the first step toward life."** [2]

In 2001, scientists at the University of California, Berkeley did similar comet impact "shock wave" tests to polymerize amino acids into peptide chains, the first step of making proteins. It was soon acknowledged by numerous researchers that Earthly life probably began with a bang – not a whimper – from a shower of comet-type bombardments. However, the typical crowd lagged behind and was still inadequately clued-up. By 2008, it was recognized that raw ingredients for planets could be created by "supersonic shock waves" around young stars, according to a study published in the *Astrophysical Journal:*

**NASA's Spitzer Space Telescope recently examined five baby solar systems with planets just beginning to form. The observations revealed the presence of tiny quartz crystals that can only form after flash heating followed by rapid cooling, conditions that scientists think could be the result of shock waves of pressure, akin to those from jets that cause sonic booms.** [3]

Shock waves might arise when clouds of gas swirling around planet-forming discs collide at high speeds. And this, scientists say, could start the process of birthing planets. "By studying these other star systems, we can learn about the very beginnings of our own planets," said astronomer William Forrest of the University of Rochester who led the research.



Forceful shock wave events within our solar system happen along the heliosphere's tidal truncation radius (the magnetic bubble's outer edge). Due to the strong galactic gravitational field that can truncate or bend light there, some of the rays escaping from the solar system are deflected at the shock front. At that juncture, "gravitational lensing" can act as a strong multiple image projector capable of casting "Einstein rings" or loops of information over extended chemical surfaces along the BioDisc's focal line — while illuminating interstellar ice grains to build up amino acids.

The solar system's tidal truncation radius directly sends fast atomic particles back in their tracks by exchanging their ion charges, reminiscent of a mirror that deflects a beam of light. Accordingly, the terminal shock front of the heliosheath, where warm solar winds crash into the cold interstellar medium, could be similar to an "output coupler" or image splitter that reflects some of the light incident and

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[1] Peter Fotis Kapnistos, "Living Proto-Cells Made in Space," *RRRGroup*, November 14, 2008.

[2] Don Knapp, "NASA researchers: Comet shower triggered life on Earth." *CNN*. April 17, 1997.

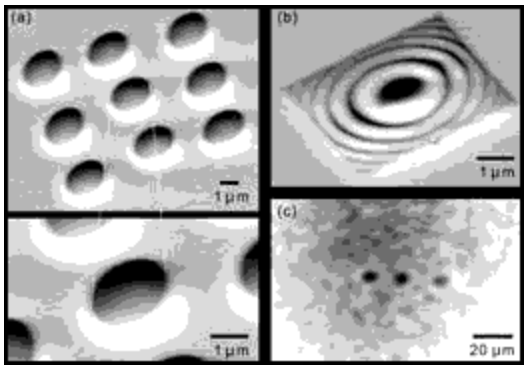
[3] Clara Moskowitz, "Shock Waves Could Create Ingredients for Planets," *WIRED*, November 12, 2008.

transmits the other. The BioDisc's ideal method of committing "raw data" to dormant microbes may be analogous to *interferometry* or the procedure of using an interference pattern from the coupling of two or more waves to record their properties. As a result, light rays escaping from the solar system in a straight line might abruptly change direction and form interference patterns with cosmic rays along the agitated terminal shock front. [4]

Some of the radiation is transmitted away. However, the rest behaves like a "wave pattern of information" that is reflected or gravitationally deflected along a focal line to the microbial surface of the BioDisc. In other words, *information from the heliosphere is being stored* — to the outlying BioDisc.

When exposed to certain wave patterns at the locality of a focal line, dormant micro-organisms in the BioDisc are *mutated* by a spot-on gravitational mirage or "Einstein rings" of the Sun's heliosphere. Traces of the *solar cycle* are directly stamped into the atomic level of organic matter (i.e., "in its own image"). A deliberate dose of ionising radiation is flashed into the microbes, reformatting their cell structures. Current measurements of cosmic rays indicate just such a likely "solar cycle-radioactive mutation" starting point:

**Cosmic rays come and go with the solar cycle, and they also cause atmospheric carbon atoms to be converted into their radioactive form called carbon-14. This is ingested into trees and other elements of the biosphere, so that traces of the rise and fall of the solar cycle are literally imprinted into the biosphere at the atomic level. Each of us bares a signature in our bodies of the solar cycle, encoded in the levels of carbon-14 we have ingested over our lifetimes. When very old trees are studied, we can actually use the carbon-14 in tree rings to reconstruct the sunspot cycle, thousands of years before the advent of the telescope.** [5]




The average duration of a "sunspot" solar cycle is about 11 years. Planetary and solar cycle disturbances within the heliosphere recurrently "fine-tune" the terminal shock front's interference patterns. The reorganized wave information is gravitationally lensed and "up-streamed" to the BioDisc's dormant micro-organisms. The resulting customized bacteria cells disperse into radiation-shielded layers of comets to physically "seed" new DNA into the planetary systems, which give back some of their old material by ejecting impact debris to the BioDisc.

Such a *mutagenesis* is not generally random because the natural storage of life's genetic database is analogous to a self-repairing convective heat and mass transfer assembly. A self-organizing macro-metabolic "shock wave" (or larger-scale motion of currents) energetically recycles (or reproduces) its precursor material by way of a microbial "splash-back" transmigration route. The strong panspermia sequence is put forward in our day as "*Cosmic Ancestry*," an expansion of Sir Fred Hoyle's original "Lifecloud" paradigm developed by Brig Klyce.[6] Researchers of Cosmic Ancestry maintain that — like mass and energy — life has no primary origin. Since biosynthesis is conserved, the total sum of life cannot be created or destroyed. It can only be altered from one form to another.

In addition, the heliosheath's shock front effects on ice crystals might chain together amino acids, which, when irradiated with ultraviolet radiation, could emit new pliable structures or BioDisc membranes that can encapsulate as well as "incubate" isolated peptides and precursor molecules hitch-hiking in space.

**The natural storage disc of life's genetic database expands as it acquires more data and increases in complexity. In that way, every solar cycle occurring within the heliosphere has its sunspot maps and associated DNA signatures gravitationally lensed to the surrounding BioDisc's microbial layers.**

If corresponding waves or interference patterns from the Sun's heliosheath are projected into dormant microbes, it could cause the resulting mutations to share some meaningful "property expression" of the original state of the heliosphere's solar cycle. As the sunspot and heliosphere values change, so do the corresponding mutations, to make sure that microbes from space can eventually flourish in the most up to date ecosystems. This is a high-speed mutation builder, because the terminal shock front deflects atomic

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[4] In 2006, The Naval Research Laboratory Associate Counsel submitted patent application 20060224527, described as a "*Method and apparatus for genetic, fuzzy design*." The invention, by Sverre Straatveit, includes a "mutation generator" that makes use of "interferometry principles."

[5] Dr. Sten Odenwald, "Space Weather." *solarstorms.org.* 2005.

[6] "Cosmic Ancestry" is the modern version of *panspermia*. It deals with all of evolution, not just the origin of life on Earth.

particles reaching it at supersonic speeds. On the other hand, the download or transfer of fresh diagnostics to planetary systems is akin to an asynchronous clock signal (without the use of matching time intervals) because it takes a great deal longer for comets to return new organic material to the inner solar system.

**Recent experiments have provided wide-ranging evidence that cosmic rays can transmute and induce design changes in isolated DNA by controlled doses of ionizing radiation.** [7]

The first astrophysical "panspermia" hypothesis was mentioned in the writings of the 5th century B.C. Greek philosopher Anaxagoras. Various scientists including Baron Kelvin and Svante Arrhenius revitalized it in modern times. When Fred Hoyle and Chandra Wickramasinghe proposed in the 1970s that life arrived on Earth by being showered as living cells from comet-type bodies, their opponents fiercely argued that micro-organisms in space would immediately die because they have no resistance to excessive doses of cosmic rays.

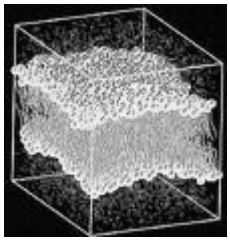
However, a whole range of radiation-resistant microbes has lately been recognized. According to *Scientific American* magazine, the bacterium *Deinococcus radiodurans* withstands gamma-ray doses that are 1,000 times as great as what would be lethal for humans. Microbes can even live in a nuclear reactor:

**One of the surprising discoveries in recent years is the ability of known life to endure extraordinarily harsh conditions. Microbes have been found inhabiting extreme environments ranging from scalding volcanic vents to the dry valleys of Antarctica. Other so-called extremophiles can survive in salt-saturated lakes, highly acidic mine tailings contaminated with metals, and the waste pools of nuclear reactors.** [8]

Microbes were also recently established to be nature's chief "biological nucleators," condensing around their cells protective snowflakes, raindrops, and slushy vapor shields at lofty altitudes.[9] The possibility of serving as an "ice grain nucleus" would offer a microbe in space extra resistance to deadly doses of cosmic rays. According to a 2007 study by the Cardiff University scientists, complex probes inside comets point out that life almost certainly began in outer space. In a *BBC Horizon* documentary, Chandra Wickramasinghe and his UK team said their calculations confirmed that it is one trillion trillion times more likely that life started inside a sheltered comet than on Earth.

**"The comets and the warm watery clay pools in comets are settings in which the organic molecules are transformed into living structures in comets," Wickramasinghe said. "That transformation is more likely in some comet somewhere in the Galaxy than in any small pond on the Earth."** [10]

The mathematical chances of any small pond keeping warm and watery for thousands of years are somewhat slim, geologically speaking. In the course of the passing centuries an average liquid pool would odds-on become filled up with fresh sedimentary layers or lithologic stratification. For that aim, the prospect of any pond remaining suitably robust for the required interval of "millions of years" to incubate the first living structures seems barely feasible.



Some biologists have recently revamped the 19th century Darwin "small pond" model to encompass a large ocean on our planet's surface or even a comet's impact vent or cleft below the seafloor, where muddy steams of minerals ejected from hot springs may have generated terrestrial life's precursor molecules.

A study reported in *Nature Geoscience* in 2008 showed that heat, pressure, and carbon from meteorite impacts could create biological precursors. As in previous tests, the main interest was in "shock waves" by simulating the ocean impact of comet-type bodies bearing carbon compounds. "If the body is too large," astronomer Donald Brownlee of the University of Washington said, "generated materials are probably destroyed by impact processes."

**The team did this by subjecting chemical constituents of chondrites (iron, nickel and carbon), as well as water and nitrogen, believed to be plentiful in the early atmosphere, to shock compression. The resulting pressures and temperatures, which likely exceeded 5,000 degrees Fahrenheit (2,760 degrees Celsius), yielded a variety of organic (carbon-based) compounds, such as fatty acids and amines. And when ammonia, which a previous study showed impacts could produce, was added to the starting mix, the experiment also yielded glycine (a simple amino acid).**

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[7] For more on cosmic-ray source DNA mutations see:
Reedy, R. C., J. R. Arnold, and D. Lal (1983), "Cosmic-ray record in solar system matter," *Science*, 219, 127--135.
von Sonntag , C. (1987), *The Chemical Basis of Radiation Biology*, Taylor & Francis, NY.
Fielden, E. M., and P. O'Neill (1991), *The Early Effects of Radiation on DNA*, Springer, Berlin.

[8] Paul Davies, "Are Aliens Among Us?" *Scientific American*, November 19, 2007.

[9] "Snowflakes carry a core of bacteria," *Los Angeles Times*, March 1, 2008.

[10] Ker Than, "Scientist: Calculations Prove Life Began in Comet," *SPACE.com.* August 16, 2007.

Study co-author Toshimori Sekine, a researcher at the National Institute for Materials Science in Japan, said he was surprised by the output from the experiment, adding, "There are many additional molecules we found but didn't analyze yet." Lead author Yoshihiro Furukawa, of Tohoku University in Japan, said that in light of the results, "we can say those ocean impact events [were] very effective processes for the production of various biomolecules on the early Earth."

**The study by Sekine, Furukawa and their colleagues is a kind of oceanic, kinetic-impact analogue to the Miller–Urey experiment, a legendary 1953 demonstration by the late chemist, Stanley Miller of the University of Chicago, who, along with colleague Harold Urey, showed that an electric discharge applied to suspected components of the early atmosphere yielded a bounty of amino acids. In 2008, marine chemist Jeffrey Bada of the Scripps Institution of Oceanography in La Jolla, Calif., and his colleagues published a reanalysis of some of Miller's samples from a different experimental setup. Bada and his collaborators found even more organic material than Miller himself had announced—22 amino acids and five amines.** [11]

"It's neat to show that you could harness the energy of impacts to create organic bonds," said Jennifer Blank, an astrobiologist at the SETI Institute. However, the shock waves needed to actually ooze life from matter may require more than just kinetic impact to the Miller–Urey experiment. "Different conditions may have led to the accumulation of a wide array of organic compounds," said Antonio Lazcano, a National Autonomous University of Mexico biologist and one of the world's foremost experts on Earth chemistry. His colleagues are currently trying to find a means to form longer-chain fatty acids than those seen in the current experiments.[12] Other than a major shock wave, the tidal truncation radius around the Sun's magnetic bubble may cause gravitational lensing along the turbulent focal line of impact, which could also radically change the spectra of affected interstellar grains. That's a reason why pioneering researchers are looking at an extraterrestrial starting place for life-giving molecules.

One theory for the origins of life proposes that clay particles acted as a catalyst, converting simple organic molecules into more complex structures. The 2005 *Deep Impact* mission to *Comet Tempel 1* discovered a mixture of organic and clay particles inside the comet. The 2004 *Stardust* Mission to *Comet Wild 2* found a range of complex hydrocarbon molecules — emergent building blocks for life.

The Cardiff team suggested that radioactive elements could keep water in liquid form in comet interiors for millions of years, making them potentially ideal "incubators" for early life. They also pointed out that the billions of comets in our solar system and across the galaxy contain far more clay than the early Earth did. The researchers calculated the odds of life starting on Earth rather than inside a comet at one trillion trillion (10 to the power of 24) to one against.

**Professor Wickramasinghe said: "The findings of the comet missions, which surprised many, strengthen the argument for panspermia. We now have a mechanism for how it could have happened. All the necessary elements — clay, organic molecules and water — are there. The longer time scale and the greater mass of comets make it overwhelmingly more likely that life began in space than on earth."**

In 2008, the Cardiff scientists built a computer model of our solar system's movement and found that it "bounces" up and down through the plane of the Galaxy. When we pass through the densest part of the plane, gravitational forces from the surrounding giant gas and dust clouds dislodge comets from their paths. The comets plunge into the solar system, some of them colliding with the Earth.

**The Cardiff team found that we pass through the galactic plane every 35 to 40 million years, increasing the chances of a comet collision tenfold. Evidence from craters on Earth also suggests we suffer more collisions approximately every 36 million years. The periods of comet bombardment also coincide with mass extinctions, such as that of the dinosaurs 65 million years ago. Our present position in the galaxy suggests we are now very close to another such period.** [13]

As we bounce through the densest part of the galactic disc, the gravitational pull of the surrounding gas and dust clouds dislodges comets in the Oort Cloud of the outer solar system, causing the icy comets to

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[11] John Matson, "Rock and Roil: Meteorites Hitting Early Earth's Oceans May Have Helped Spawn Life," *Scientific American*, December 7, 2008.

[12] Brandon Keim, "Proof That Meteors Could Have Sparked Life on Earth," *WIRED*, December 8, 2008.

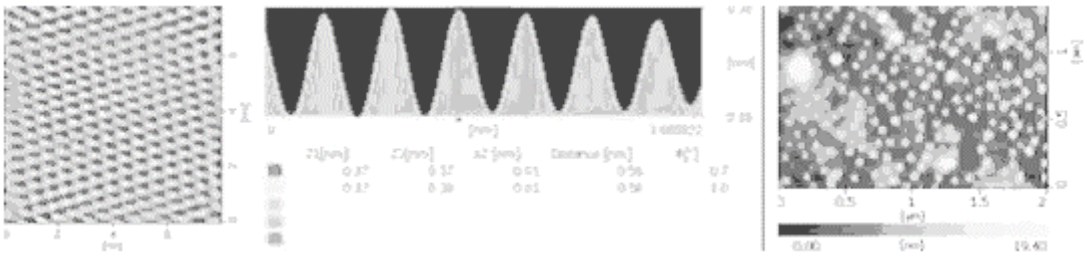
[13] "Solar System 'Bounce' Could Have Caused Extinctions." *RedOrbit*. May 2, 2008.

plunge toward the Sun. "It's a beautiful match between what we see on the ground and what is expected from the galactic record," Professor William Napier said. Perhaps the Sun's BioDisc writes its microbial mutations at supersonic speed, based on 11-year solar cycle interludes. But it seems the solar system performs a diagnostic maintenance check and refreshes its planetary genetic material "asynchronously," every 36 million years or so. When comet-type aggregates episodically collide with the Earth, living species bound for loss are replenished with new strands of DNA. At the same time, surplus micro-organisms trapped in tiny rock fragments are ejected back to the outlying BioDisc.

**"Micro-organisms thrown into space from this barrage can pass straight into star- and planet-forming regions within the nebula, without being sterilized en route by cosmic rays," Napier told *SPACE.com*. "This opens the door to the exciting idea that life may spread not just within the solar system, but may be pan-galactic."**

In principle, a sudden bump is not required to dislodge comets from their paths. Minor gravitational disturbances and mild deviations can alter the orbits of comets in the Oort Cloud — every 36 million years. We are ostensibly on the brink of another cycle. Not only is the solar system set to bounce toward the galactic equator, but before long it will evidently also drift near the center of the Galaxy.

The year "2012" was claimed by some to represent a great time of historic transformation. Many common sources interpreted the completion of the cycle of the Maya calendar to signify a major change in world order. The approach towards alignment with the galactic equator is quite gradual and in effect has already commenced. This alignment is similarly associated with the "precession of the equinoxes," or changing times at which the Sun crosses the celestial equator.



**Research teams have found evidence that the Sun shines brighter today than in the 8,000 years before.[14] Scientists are trying to determine what, if any, correlation this might have to global warming.**

Conceivably, the extraordinary comet crash into the southern hemisphere of Jupiter in 1994 marked the start of a new solar bounce cycle. Ten years after the fragments of Comet *Shoemaker-Levy 9* collided with Jupiter, scientists monitoring the *Cassini* spacecraft as it swung by Jupiter were puzzled by how two substances had spread into different locations of Jupiter's cloud. They also discovered two previously undetected chemicals in Jupiter's air.

The *Great Red Spot*, a massive, hurricane-like storm that is three times the diameter of Earth, has been raging in Jupiter's cloud for at least 340 years. A second spot, *Red Spot Junior*, unexpectedly appeared when it turned red in 2006. A third spot appeared in May of 2008, when a white storm turned pink, but was torn up in July of the same year after it squeezed between the Great Red Spot and Red Spot Jr.

**According to NASA, Jupiter's recent outbreak of red spots is likely related to large-scale "climate change" as the huge gas planet is getting warmer near the equator. [15]**

The best-selling novel *2010: Odyssey Two*, by Arthur C. Clarke, was turned into a film in 1984. It depicted a pile-up of strange monoliths that increased Jupiter's density until the giant planet achieved nuclear fusion, becoming a "second Sun." There is a critical mass, called *Jean's mass*, that a body must have before it will collapse under its own gravity and begin fusing. Named after the British physicist Sir James Jeans, who considered the process of gravitational collapse, the Jeans mass is about 20 to 80 times that of Jupiter.

The Sun's passage through the galactic plane is expected to increase the chances of cometary collisions tenfold. Most incoming comets that drift from solar orbits will probably be captured by Jupiter's strong gravity. Exactly how arbitrary comet nose-dives might affect Jupiter's total mass remains a vague question

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[14] "The Sun is More Active Now than Over the Last 8000 Years." *Max Planck Society*. October 28, 2004.
[15] "Jupiter's Three Red Spots." *NASA*. May 23, 2008.

mark today. But maybe it's worth mentioning that most known star systems are average *binary stars*, consisting of "two Suns" orbiting around their center of mass. Perhaps our solar system will somehow also evolve that way eventually and conform to the usual standard.

**The 1994 Shoemaker-Levy 9 impacts made it clear that a sudden fall of stray cometary fragments could presumably strike without much warning and pile up on Jupiter as we bounce through the galactic plane.**

The panspermia shock wave analysis was given a helping hand in 2004, when the *Stardust* spacecraft flew past the 5 km- wide icy "mud-ball" known as *Comet 81P/Wild-2*. The probe swept up particles fizzing off the object's surface as it passed some 240 km (149 miles) from the comet's core, or nucleus. These tiny grains, just a few thousandths of a millimetre in size, were then returned to Earth in a sealed capsule. The compounds found in the comet's dust probably pre-date the existence of our solar system.[16]

"It's quite possible that what we're seeing is an organic population of molecules that were made when ices in the dense cloud from which our solar system formed were irradiated by ultraviolet photons and cosmic rays," Dr Scott Sandford, from NASA's Ames Research Center, told the BBC News.

**"That's of interest because we know that in laboratory simulations where we irradiate ice analogues of types we know are out there, these same experiments produce a lot of organic compounds, including amino acids and a class of compounds called amphiphiles which if you put them in water will spontaneously form a membrane so that they make little cellular-like structures."**

A transmigration highway of organic molecules may furnish justification to adjust models used to describe how materials were moved and mixed up in the early solar system. A splash-back (and convective shock wave) mechanism to circulate organic material throughout the BioDisc could prove to be momentous because "the Stardust mineral grains generally show a huge diversity, and, very surprisingly, there are materials incorporated into the samples that must have formed close in to the proto-Sun." [17]

**"They form in the hottest possible place in the solar system, so it's quite stunning to find something like them in a body that came together in the coldest place in the solar system," said Dr Don Brownlee from the University of Washington and who was the principal investigator, or lead scientist, on Stardust.**

"There must have been some way of getting them from the new Sun to the outer fringes of the proto-planetary disc," said Professor Monica Grady from the UK's Open University. "There must have been major turbulence and currents and disc-wide mixing, which hadn't really been predicted."

**The Science Computer**


*Today's typical computer is a modern business or science computer. It is an electronic piece of equipment for storing and processing data, making calculations, and controlling machinery.*

*A science computer generally consists of a visual display monitor that looks like a standard television screen, and a central processing unit that performs calculations and stores electronic data by means of a local disc drive or network server.*

*The displayed image is made up of tiny bright dots or pixels that can exhibit high definition motion pictures with millions of colors. Everything that can be seen on the TV screen is bitmapped and controlled by the central processing unit and its digital storage and retrieval devices.*

*The modern science computer is a recent development of technology. It gave birth to the study and theoretical foundations of information and computation. The computer led to achievements in research subjects that include algorithms, artificial intelligence, computer graphics, and databases.*

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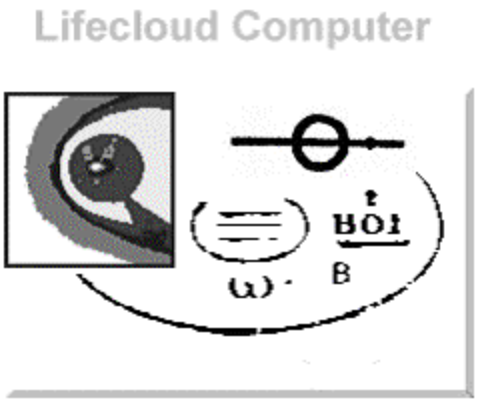
[16] Jonathan Amos, "Comets hold life chemistry clues." *BBC News*. Dec. 15, 2006.

[17] *These materials include calcium-aluminium and magnesium-olivine fragments.*

**The Lifecloud Computer**



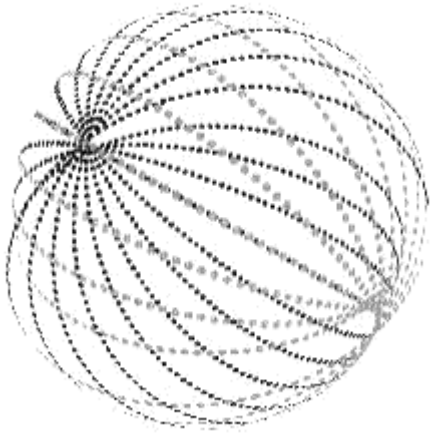

*The Lifecloud computer is a natural supercomputer that encircles an entire solar system. It is a masterwork organic structure for storing and processing genetic data, manufacturing living cells, and conserving biosynthesis within its branch systems.*

*A Lifecloud computer normally consists of a heliosphere or magnetic bubble that contains the physical environment of a typical star and its planets. Surrounding the heliosphere is a 'biodisc' 30 or more light years across that amasses genetic data and plasma code instructions in deposits of microscopic organisms dormant in outer space.*

*The Sun's magnetic bubble is made of infinitesimal atomic particles that can build up complex shapes of matter and release outflows of radiant energy. Each ongoing occurrence in the Sun's magnetic bubble is categorically distinguished by its solar cycle and chronicled by means of the surrounding biodisc and its microbial storage mechanisms. An interstellar magnetic field bends light and indents the southern part of the Sun's heliosphere. That dent or notch is a turbulent focal line of impact where gravitational lensing of interference patterns can mutate and pull together microbes at supersonic speeds. The Lifecloud computer is a mega-organism or macro-metabolic convective transfer process. It produces splash-back shock waves and strong microlensing effects with the purpose of encoding carbonaceous bacteria and distributing that life with comet-type bodies to inner solar system environments.*

**The medical community did not officially acknowledge the reality of any widespread "micro-organism" until more than 100 years after the invention of the microscope. Today, several leading terrestrial biologists have still not properly accepted the nature of a "Lifecloud" or mega-organism.**

In 1960, the physicist Freeman Dyson proposed a way to directly search for clues of alien civilizations. Dyson thought that population growth and energy requirements would eventually oblige advanced civilizations to "dismantle" some planets and use their "fragments" to surround a star, creating a massive solar collector. A number of "Dyson sphere" structures have been proposed that might be used as remote solar power collectors. A Dyson sphere or ring would be heated by the star's energy and would radiate infrared light that could be detected from Earth.



Richard Carrigan, a retired physicist from the Fermi National Laboratory, recently combed through data to identify any possible Dyson spheres which seem promising. "Unfortunately, all the objects have features that could just as easily be explained by clouds of hydrogen gas, dust engulfing ancient stars, or even asteroids in our own solar system," Carrigan said.[18] Indeed, our solar system's expanding BioDisc shoulders some distinct features of a Dyson structure. Formed by collision and splash-back effects, it also calls for brainpower to "dismantle" sections of planets and use their "fragments" to surround a star. But our BioDisc appears to be more than just a fixed solar power

[18] Rachel Courtland, "Search for alien engineering comes up dry – so far," *New Scientist*, December 2008.

collector. It could also gather dormant microbes in space that "talk" to each other by way of far-reaching diffusible signalling networks. Nature, it seems, by now has done a little of the hard work for us. According to scientists from Cardiff University, a type of copycat Dyson ring may be at hand in the frozen space around our solar system. The precursor Dyson "hardware" is perhaps already present — but who designed it? How much data can be stored in an expanding BioDisc of dormant microbes many light years across?

Uri Geller, the Israeli who became well known for various unexplained phenomena, recently offered from his website to send people's messages and images into space via radio telescope.[19] A professor of astrophysics and radio astronomy apparently monitored the technical end as heaps of e-mails made their way into the Universe. If our natural BioDisc is in effect a living supercomputer, sending personal messages into space may be interpreted as a communal venture to upload our world's records to a higher intelligence. But the real issue may be: How can we *download* or get back data from the Lifecloud computer — how can we "hack" into it?

**Enrico Fermi's paradox is the apparent contradiction between high estimates of the probability of the existence of extraterrestrial civilizations and the lack of evidence for contact with such civilizations.**

The limited awareness of humanity is maybe the most plausible explanation for the Fermi paradox. Perhaps alien intelligence operates on a totally different level from our own because we're far too primitive to even contact or we're not smart enough to understand their messages. [20] How advanced could they possibly be? Using a scale proposed in 1964 by the Soviet astronomer Nikolai Kardashev, the American theoretical physicist Michio Kaku conjectured that we could soon become a "Type I civilization" by mastering most forms of planetary energy:

**We derive our energy not from harnessing global forces, but by burning dead plants (e.g. oil and coal). But already, we can see the seeds of a Type I civilization. We see the beginning of a planetary language (English), a planetary communication system (the Internet), a planetary economy (the forging of the European Union), and even the beginnings of a planetary culture (via mass media, TV, rock music, and Hollywood films).**

Kaku also considered the mathematically most efficient way of exploring the hundreds of billions of stars in the galaxy. According to one search method, even a galaxy 100,000 light years across may be completely scrutinized within a half million years:

**A Von Neumann probe is a robot designed to reach distant star systems and create factories, which will reproduce copies of themselves by the thousands. A dead moon rather than a planet makes the ideal destination for Von Neumann probes, since they can easily land and take off from these moons, and also because these moons have no erosion. These probes would live off the land, using naturally occurring deposits of iron, nickel, etc. to create the raw ingredients to build a robot factory. They would create thousands of copies of themselves, which would then scatter and search for other star systems.[21]**

In this framework, a "robot factory" almost certainly connotes that nanotechnology will facilitate the future development of Von Neumann probes. As the physicist Richard Feynman first envisaged them, such "minicell robots" could be similar to a virus colonizing a body many times its size.

**Shrinking robots allows them to carry out ever more delicate tasks. But even the smallest built so far are too big to be able to, say, imprint microscopic, or even nanoscale, patterns onto microchips. Now Jan Liphardt, a physicist at the University of California, Berkeley, and colleagues, say it may be possible to create new species of slave bacteria to do the job instead. The idea is to create stripped-down versions of bacteria, with only enough of a genome to perform certain tasks - for example, swimming along a chemical trail using their flagella, secreting another chemical as they go. [22]**

Thousands of such "biobots" - or minicells - could carve out the kind of microscopic features needed on microprocessors, or gene chips used to test for millions of specific DNA sequences at once. Von Neumann probes will probably be microscopic slave bacteria. "These probes may act as life-forms, reproducing their genetic information, mutating and evolving at each stage of reproduction to enhance their capabilities, and may have artificial intelligence to accelerate their search."

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19 "Let's get an Alien friend!" *uri-geller.com*, December 2008.

20 Nivair H. Gabriel, "Why Aren't Aliens Talking to Us?" *io9.com*, July 23 2008.

21 Michio Kaku, "The Physics of Extraterrestrial Civilizations," MKaku.org 1996-2008.

22 Justin Mullins, "Invention: Microscopic bio-robot slaves," *New Scientist*, November 24, 2008.

**Is Love the Universal Language?**

Microbes are everywhere and really do talk to each other with chemical signals called "pheromones." The ancestors of humans may have communicated by a sixth sense, using such semiochemical signals:

**Located just behind the nostrils in the nose's dividing septum are two tiny pits referred to as the vomeronasal organ (VNO), the seat of the sixth sense. Named for the vomer bone, where the septum meets the top of the mouth, the VNO contains nerve cells that sense chemicals called pheromones, secreted by many animals, including, perhaps, humans.** [23]

The University of Chicago established proof of human pheromones in 1998. They stimulate courtship behavior and give rise to the language of love. "It's all subliminal," said bio-psychologist Martha K. McClintock.[24] All of life communicates via these molecules and maybe we are entering a technological singularity or "phase of ideal communication."[25] If bacteria cells are God's microchips, perhaps hacking into the Lifecloud computer will be possible before long with a pheromone "chem-card" in a science computer using bio-molecular plasma particle codes instead of copper wires to send signals through space.


For how else could we talk with a Von Neumann probe's biobots? Indeed, would an advanced alien civilization *really* want to communicate with a "savage" world that has not yet mastered the universal language of love? A leading science editor wrote: "Never mind whether there is life on Mars." Water and carbon dioxide were recently found on a planet 63 light years away:

**On December 10, 2008, astronomer said they had detected water and carbon dioxide – key signs of life – in the atmosphere of HD 189733b, which orbits a star 63 light years away from Earth in the constellation Vulpecula. The planet is one of about 300 "exoplanets" that have now been detected beyond our own solar system since the first was identified in 1995.** [26]

In 1977 Fred Hoyle and his colleagues definitely agreed that the essential building blocks of life exist on an astronomical scale in very great quantity:

**"It is now clear that a long heritage of pre-Darwinian molecular evolution occurred in a cosmic rather than a purely terrestrial context, predating by many billions of years the formation of the first organisms on Earth."** [27]

Microbes may form vast signalling networks when they drift to the outer fringes of the solar system and could assemble the active storage of life's entire genetic database. In a 2007 report for *Scientific American*, theoretical physicist Paul Davies considered the academic prospect of alien life on other planets:

**Thirty years ago the prevailing view among biologists was that life resulted from a chemical fluke so improbable it would be unlikely to have happened twice in the observable universe. That conservative position was exemplified by Nobel Prize-winning French biologist Jacques Monod, who wrote in 1970: "Man at last knows that he is alone in the unfeeling immensity of the universe, out of which he emerged only by chance." In recent years, however, the mood has shifted dramatically. In 1995 renowned Belgian biochemist Christian de Duve called life "a cosmic imperative" and declared "it is almost bound to arise" on any Earth-like planet. De Duve's statement reinforced the belief among astrobiologists that the universe is teeming with life. Dubbed biological determinism by Robert Shapiro of New York University, this theory is sometimes expressed by saying that "life is written into the laws of nature."**

Is God the untold encoder or mind of a living supercomputer? Darwinian evolution once imagined life as a familiar spirit that materialized arbitrarily in a warm little pond. But cooperative astrobiology missions are currently revitalizing fresh curiosity in the celestial creator of biological determinism.

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[23] William J. Cromie, "Scientists Find Evidence for A Sixth Sense in Humans," HARVARD *GAZETTE ARCHIVES*, 1999.
[24] Ambrose Diaz, "Pheromones: The Science of Attraction", *Click Magazine (MSN)*, 10/11/2008.
[25] Drago Plecko (translation Joseph Stedul), "Can Humans `Talk` To God?" *janvo.com*, December 3, 2008.
[26] Steve Connor, "Is there life on planet HD 189733b?" *The Independent*, December 11, 2008.
[27] Hoyle, F. & Wickramashinghe, C. *Lifecloud* (1977).

***Addendum:***

Chris McKay and Bill Borucki (1997)
Jennifer Blank (2001)
NASA's Spitzer Space Telescope (2008)
Yoshihiro Furukawa (2008)

They all proved that complex bio-molecules are created instantly by shock waves at supersonic speeds. Darwinists say it takes millions of years to create bio-molecules. This is not a falling-out of evolution vs. creationism. It is really between terrestrial biologists vs. astrobiologists. How will our valuable research funds be spent?

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