Life on Earth -- and Other Planets -- May Have Originated in Space Dust

By Kristen Philipkoski August 22, 2007 | 6:00:14 PM Categories: Space

A scientist at the University of Missouri-Columbia believes life on earth may have originated in space dust. The theory centers on adenine, a key ingredient in life on earth. You've probably heard that DNA is made up of base pairs represented by the letters A, C, T and G? Adenine is the A.

Rainer Glaser, a chemistry professor in MU's College of Arts and Science, used a model to come up with his theory that adenine exists in space dust. He suggests that space dust adenine could have been the genesis for life on other planets as well -- follow the adenine and we might find extraterrestrial life.

In an MU press release, he seems to anticipate some resistence to his theory:

> "The idea that certain molecules came from space is not outrageous," said Glaser, professor of chemistry in MU's College of Arts and Science. "You can find large molecules in meteorites, including adenine. We know that adenine can be made elsewhere in the solar system, so why should one consider it impossible to make the building blocks somewhere in interstellar dust? "

He published his research in the peer-reviewed journal *Astrobiology,* and the paper is discussed in the Aug. 6 issue of *Chemical & Engineering News*.

Read Brandon's earlier post on space dust and its gambling shenanigans here.

I couldn't find the press release online, so here's the whole thing for ya:

MU Researcher Presents Origin-Of-Life Theory for Young Earth

Presence of Essential Molecule in Space Could Support Life on Other Planets

COLUMBIA, Mo. - Some of the elements necessary to support life on Earth are widely known - oxygen, carbon and water, to name a few. Just as important in the existence of life as any other component is the presence of adenine, an essential organic molecule. Without it, the basic building blocks of life would not come together. Scientists have been trying to find the origin of Earth's adenine and where else it

SEND US A TIP!

TEAM

EDITOR: Adam Rogers | email
EDITOR: Kristen Philipkoski | email
CONTRIBUTOR: Brandon Keim
CONTRIBUTOR: Steven Edwards
CONTRIBUTOR: Fraser Cain
CONTRIBUTOR: Aaron Rowe
CONTRIBUTOR: Nicholas Thompson

MOST RECENT ENTRIES

August 2007

Sun	Mon	Tue	Wed	Thu	Fri	Sat
			1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30	31	

Yeast With the "Right Stuff" Brew First Space Beer

Image Gallery: The Best Space Shuttle Endeavour Pics

might exist in the solar system. University of Missouri-Columbia researcher Rainer Glaser may have the answer.

Life exists on Earth because of a delicate combination of chemical ingredients. Using a theoretical model, Glaser is hypothesizing the existence of adenine in interstellar dust clouds. Those same clouds may have showered young Earth with adenine as it began cooling billions of years ago, and could potentially hold the key for initiating a similar process on another planet.

"The idea that certain molecules came from space is not outrageous," said Glaser, professor of chemistry in MU's College of Arts and Science. "You can find large molecules in meteorites, including adenine. We know that adenine can be made elsewhere in the solar system, so why should one consider it impossible to make the building blocks somewhere in interstellar dust?"

This theory describing the fusion of early life-forming chemicals is presented in the latest issue of the peer-reviewed journal "Astrobiology" and is co-authored by Brian Hodgen (Creighton University), Dean Farrelly (University of Manchester) and Elliot McKee (St. Louis University). The paper, "Adenine Synthesis in Interstellar Space: Mechanisms of Prebiotic Pyrimidine-Ring Formation of Monocyclic HCN-Pentamers," describes the absence of a sizeable barrier that would prevent formation of the skeleton needed for adenine synthesis. The article is also featured in the Aug. 6 issue of "Chemical & Engineering News."

Glaser believes astronomers should look for interstellar dust clouds that have highly-concentrated hydrogen cyanide (HCN), which can indicate the presence of adenine. Finding such pockets would narrow the spectrum of where life could exist within the Milky Way galaxy.

"There is a lot of sky with a few areas that have dust clouds. In those dust clouds, a few of them have HCN. A few of those have enough HCN to support the synthesis of the molecules of life. Now, we have to look for the HCN concentrations, and that's where you want to look for adenine," Glaser said. "Chemistry in space and 'normal chemistry' can be very different because the concentrations and energy-exchange processes are different. These features make the study of chemistry in space very exciting and academically challenging; one really must think without prejudice."

The Horizontal Windmill: Smaller, Slower, Better

Judge to Bush: Cough Up the Climate Change Reports

Life on Earth -- and Other Planets -- May Have Originated in Space Dust

The Fine Line Between Alarmism and Oversight

Learning About Disease From the World of Warcraft

Moral Relativism and Pseudoscience

Less Spraypaint, More Seeds: The Age of Guerilla Gardening

Google Looks to the Stars

CATEGORIES

2007 Senate Stem Cell Debate (17)

2008 Presidential Election (6)

Agriculture (14)

AIDS/HIV (4)

American Astronomical Society Meeting 2007 (5)

Andy Grove Liveblogging (2)

Animals (84)

Archaeology (7)

Architecture (3)

Art (14)

Artificial Intelligence (3)

Behavior (50)

BIO 2007 (15)

Biodefense (3)

Bioethics (38)

Biology (45)

Biotechnology (60)

Books (1)

Brain (61)

Chemistry (19)

Climate (74)

Conference (21)

Crime (9)

Culture (45)

Current Affairs (42)

Disease (67)

Drugs & Alcohol (23)

Education (5)

Energy (42)

Engineering (17)

Environment (51)

Evolution (44)

Film (1)

Food and Drink (37)

Funny Inventions (4)

Games (1)

Geeky Science Humor (1)

Nothing new under the sun! Professor Fred Hoyle of the UK presented this theory approximately 25 years ago.

Posted by: David | Aug 22, 2007 5:17:16 PM

Nothing new under the sun! Professor Fred Hoyle of the UK presented this theory approximately 25 years ago.

Posted by: David | Aug 22, 2007 5:18:03 PM

I guess the key word here is "may". "life on earth may have originated in space dust". "may" is not absolute fact that life came from space. I wonder how long this untestable conjecture (life evolved in space) will stick around before a new untestable conjecture arises.

The existence of water and chemicals containing carbon in other areas of the universe does not prove that complex life forms exist in other parts of the universe. All it shows is that these chemicals exist in other areas of the universe!

Life from life...or not?
http://www.answersingenesis.org/creation/v23/i1/life.asp

Posted by: | Aug 23, 2007 6:59:14 AM

I guess the key word here is "may". "life on earth may have originated in space dust". "may" is not absolute fact that life came from space. I wonder how long this untestable conjecture (life evolved in space) will stick around before a new untestable conjecture arises.

The existence of water and chemicals containing carbon in other areas of the universe does not prove that complex life forms exist in other parts of the universe. All it shows is that these chemicals exist in other areas of the universe!

Life from life...or not?
http://www.answersingenesis.org/creation/v23/i1/life.asp

Posted by: | Aug 23, 2007 6:59:27 AM

POST A COMMENT

Name:

Email Address:

Comments:

Post

See more Wired Science

Systems Biology (5)

Television (6)

The TV Show (6)

Travel (2)

Very Obvious (4)

Web/Tech (24)

Weblogs (1)

Wired Science Wonders (3)

Wired News on the Go Sync up, head out, read Wired News on your handheld at your leisure.