



[Focus Website](#)
on Earth

[Forum Home Page](#)

[Forum Home Page](#)

[Q&A](#)

Life's Ingredients May Have 'Sprinkled'

Moderators: [M Paul Lloyd](#), [Pandora](#), [Shadowwolf](#)

Go New Find Notify Tools Reply

Rate It!

[Login/Join](#)

nemisis39

Posted Tue September 11 2007 21:17

Got this from here

http://www.space.com/scienceastronomy/070911_st_adenine_dust.html

Some crucial ingredients for life on Earth may have formed in interstellar space, rather than on the planet's surface.

A new computer model indicates clouds of adenine molecules, a basic component of DNA, can form and survive the harsh conditions of space, and possibly sprinkle onto planets as the stars they orbit travel through a galaxy.

"There may be only a few molecules of adenine per square foot of space, but over millions of years, enough could have accumulated to help make way for life," said study co-author Rainer Glaser, a molecular chemist at the University of Missouri-Columbia.

Glaser and his team's findings are detailed in a recent issue of the journal *Astrobiology*.

Spacey chemistry

Adenine is one of four "letters" of DNA's alphabet used to store an organism's genetic code. Glaser said the idea that large, two-ringed organic molecules like adenine formed in space may seem outrageous, but current evidence leaves the possibility wide open.

"You can find large molecules in meteorites, including adenine," Glaser said. "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?"

Using computer simulations of the cold vacuum of space, Glaser and his colleagues found that hydrogen cyanide (HCN) gas can build adenine. Like pieces in a set of tinker toys, hydrogen cyanide serves as adenine's building blocks; the small molecules bond together into chains and, with a little wiggling, eventually assemble into rings.

Although adenine's first ring needs a tiny energy boost from starlight to form, Glaser said the second ring of the molecule self-assembles without any outside help.

"When you want to have a reaction, you usually need to heat it up," Glaser said. "It's remarkable to find a reaction that doesn't require activation energy. If you do this reaction in space, this is a huge advantage because it takes a long time for a molecule to be hit by a piece of light."

Seasoned for life?

Glaser said adenine's ringed shape helps it absorb and release any excess energy without breaking apart, making it stable enough to form concentrated clouds that planets can drift through.

While getting adenine safely onto a rocky planet's surface is a less developed idea, Glaser said many chemists have barely toyed with the notion that life's basic ingredients formed off of the planet's surface.

"We're at a very early stage of anybody even thinking about these things," he said. "The discussion of life's origin has been highly focused on the idea of a warm pool of liquid on the planet's surface." But Glaser said recent discoveries of planets around distant stars is changing that focus.

"Chemistry in space isn't the chemistry most of us are trained for," Glaser said. "We should take a much bigger approach: Where are all the chemicals in the galaxy and its solar systems, and what can you do with them?"

Antonio Lazcano, an evolutionary biologist at the National Autonomous University of Mexico who has studied life origins for the past 30 years, said Glaser and his colleagues' work is compelling.

"We already know hydrogen cyanide is abundant in interstellar clouds, and it's been suggested that comets can bring some of that material onto planets," Lazcano said. For Glaser and his team's idea to be widely supported, however, adenine needs to be detected in the deep space clouds, Lazcano said.

"The likelihood of detection is very small, but it's still possible," he said. "If astronomers can better eliminate background noise, I think we'll have equipment sensitive enough to detect adenine dust clouds."

Could this be the beginnings of a new theory on life as we know it, plus if this is the case doesn't it throw the book out the window regarding the possibility of alien life on other worlds.

Guess what i found on my MSN E Mail a SPELL CHECKER all i need now is a grammar checker 😊

Posts: 493 | Registered: Sun May 20 2007

Midas

Posted Tue September 11 2007 21:28

[Hide Post](#)

Ah, the old Panspermia theory is raising its head again is it! I wonder what's brought that into focus this time, the article didn't really have anything particularly new to say about it.

Posts: 2225 | Registered: Tue August 22 2006

nemesis39

Posted Wed September 12 2007 00:00

[Hide Post](#)

quote:

Panspermia theory

Had to look it up as i wasn't familiar with it

<http://en.wikipedia.org/wiki/Panspermia>

It is an intriguing theory, ill have to read up on it and see what i think.

Guess what i found on my MSN E Mail a SPELL CHECKER all i need now is a grammar checker 😊

Posts: **493** | Registered: **Sun May 20 2007**

M Paul Lloyd
Moderator

Posted Wed September 12 2007 07:17

[Hide Post](#)

I rather like this as a theory and at the risk of going ever-so slightly off topic the thing that intrigues me in all this is that people right across the globe seem to suffer colds and flu like symptoms every time the Earth passes through a meteor cloud!
I know, it sounds utterly absurd, but some do hold the belief that these mass outbreaks may be caused by 'organic' material falling from space, and it has to be said that they do, strangely, seem to coincide for some reason. 😊

You know, I could be wrong. 😊

If you want more, go here.

<http://groups.msn.com/FOCUSFORUMMEMBERSCOMMUNITY/messageboard>

Posts: **12784** | Registered: **Thu September 18 2003**

Midas

Posted Wed September 12 2007 09:35

[Hide Post](#)

I've never heard of that connection before! If there is a connection, rather than a coincidence, could it also possibly be caused by an increase in microscopic dust particles from the comet's tail coming into the atmosphere, which just might also give rise to runny noses etc? Just a random thought.

Posts: **2225** | Registered: **Tue August 22 2006**

JoDuncan

Posted Wed September 12 2007 14:08

[Hide Post](#)

I posted something in the news section a while back about a study involving organic matter re-entry to see if it survived.

I'd never heard of that connection either but the flu comes from a word meaning ""influenced" by the stars'....

Seems to suggest that in our region of space, that if this is the case, most animals would be genetically simlilar.

Quick.....to the blackboard!

Posts: **915** | Registered: **Thu March 02 2006**

M Paul Lloyd
Moderator

Posted Wed September 12 2007 21:59

[Hide Post](#)

Well it's more a personal observation than a scientific theory although it has been echoed by greater minds than mine but actual evidence aside, it's worth noting that after each successive meteor shower people as far away as the antipodes suffer colds etc at the same time as we do in the UK.... so, it's not unreasonable to wonder.

I'm not suggesting an actual link but [this](#) might point in the right direction? 😊

You know, I could be wrong. 😊

If you want more, go here.

<http://groups.msn.com/FOCUSFORUMMEMBERSCOMMUNITY/messageboard>

Posts: **12784** | Registered: **Thu September 18 2003**

[Previous Topic](#) | [Next Topic](#)

powered by eve community

[Reply](#)

[Focus Website](#)
on Earth

[Forum Home Page](#)

[Forum Home Page](#)

[Q&A](#)

Life's Ingredients May Have 'Sprinkled'

[Contact Us](#) | [Focus Website](#) | [Terms of Service](#)

© Focus Magazine 2004