



We Report. You Decide.

Search FOXNews.com GO

Sign Up Now! Get e-mail alerts when news breaks

ON FNC: HANNITY & COLMES 9:00pm EST Exclusive: Retired General Tommy Franks SCHEDULE

- HOME U.S. WORLD POLITICS BUSINESS HEALTH SCIENCE TECH ENTERTAINMENT VIDEO OPINION MYNEWS SPORTS WEATHER RADIO MOBILE FOX & Friends Studio B Your World Big Story Special Report FOX Report O'Reilly Factor Hannity & Colmes On the Record FNC iMag FOX Fan

Hot Searches See What's Hot From Sept. 11, 2007 1 Kevin Everett 2 Britney Spears VMA 3 'The Biggest Loser' 4 Lindsay Lohan 5 Kathy Griffin Fast, relevant results. The new AOL Search.

Breaking News >> Another Massive Quake Rocks Indonesia

SCIENCE

SCIENCE HOME

NATURAL DISASTERS

SPACE

NATURAL SCIENCE

THE HUMAN BODY

ARCHAEOLOGY

ENERGY

EVOLUTION & PALEONTOLOGY

NEWS ARCHIVE

HOT TOPICS

- VIDEO: FOX NEWS FLASH FOX NEWS ELECTION COVERAGE CELEBRITY GOSSIP

SECTION MAP

SEE MORE

Send news tip to FOXNews.com

Text input field for news tip

SUBMIT

FOXNEWS.COM HOME > SCIENCE

DNA Ingredients May Have Come From Space

Tuesday, September 11, 2007

By Dave Mosher



E-MAIL STORY | PRINTER FRIENDLY VERSION

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.

Click here to visit FOXNews.com's Evolution & Paleontology Center.

Click here to visit FOXNews.com's Space Center.

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.

RELATED

STORIES

- Study: Ancient Space Collision Killed Off Dinosaurs DNA Pioneer's Genome Shows Unexpected Variation Scientist: Life Almost Certainly Began in Comet Scientists Believe Artificial Life Will Be Possible in 3 to 10 Years Dying Star Leaves Trail as It Speeds Through Space

ADVERTISEMENTS

Get MoreVisibility Now!

Leaders in Search Engine Optimization. Get Free White Paper. Get MoreVisibility Now!

Buy a link here

"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, the 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.

FOX NEWS VIDEO

TOP VIDEO



Debunking 9/11 Myths: Part 1 Science reveals truth behind 9/11 conspiracy theories

Latest Fox News Headlines

SCIENCE

- Science vs. 9/11 conspiracy theories Environmental problems from ethanol? Daryl Hannah on using biodiesel as fuel Raising an eco-friendly pet

ADVERTISEMENT

Hot Searches See What's Hot From Sept. 11, 2007 1 Kevin Everett 2 Britney Spears VMA 3 'The Biggest Loser' 4 Lindsay Lohan 5 Kathy Griffin Fast, relevant results. The new AOL Search.

MOST READ TOP EMAILED TOP VIDEOS

- Portuguese Prosecutor Asks to Seize 'Mystery Object' in Madeleine McCann Probe Texas Football Fan Nearly Castrated in Bar Fight in Oklahoma Bar Putin Dissolves Government, Nominates Viktor Zubkov as New Prime Minister Pop Tarts: Britney Spears' Management: 'American Idol' Judges? U.S. Officials Begin Crafting Iran Bombing Plan Strong Earthquake Spawns Small Tsunami in Indonesia Russia Tests 'World's Most Powerful Non-Nuclear Bomb' Rosie O'Donnell: Shocking Revelations in New Book Tropical Storm Humberto Gains Strength, Takes Aim at Galveston, Texas Ex-Hooker Reveals Details of Alleged Affair With Sen. David Vitter Husband, Estranged Wife Found Dead, Child Injured After Dispute Report: \$40 Million Borrowed by Dirty Democratic Fundraiser Norman Hsu is Missing Officials Consider Hate Crime Charges in Week-Long Kidnap, Torture of West Virginia Woman Kanye West Blames MTV for Britney Spears' VMA Performance Doctor: Buffalo Bills Tight End May Walk Again Kathy Griffin's Emmy Remarks About Jesus to Be Censored

ADVERTISEMENT

Dial #FOXN for FOX News on your FOXN at&t wireless mobile phone (#3696) for FOX News

"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."

ADVERTISEMENTS

Get MoreVisibility Now!

Leaders in Search Engine Optimization. Get Free White Paper. Get MoreVisibility Now!

Virtual PBX Phone Service

Advanced virtual PBX answers, routes and screens your incoming calls. Freedom800.com

Business IT Consultants

Microsoft Small Business Certified. Full IT Department, 20-100 Users www.AllCovered.com/IT_Conultants

ITT Technical Institute

Over 85 Locations & Online Programs Available. Request A Free Brochure www.itt-tech.edu

Buy a link here

See Next Story in Science >

E-MAIL STORY | PRINTER FRIENDLY VERSION

- U.S.
- WORLD
- POLITICS
- BUSINESS
- HEALTH
- SCIENCE
- TECH
- ENTERTAINMENT

AP WIRES

Science Section

Top News Story



Gorillas Lead Long List of Endangered Species
Ebola virus devastating Western Gorilla to brink of extinction, World Conservation Union says; 16,305 other species named as threatened.

Featured Content

- Natural Disasters
 - Space
 - Natural Science
 - The Human Body
- [See More](#)

- Ebola Said Depleting Gorilla Populations
- Eating Less Meat May Slow Climate Change
- Officials Delay Manatee Downlisting Vote
- NASA Sought to Stop Astronaut Meltdowns
- Shrinking Kilogram Bewilders Physicists
- Study: Lead Bullets Poison Birds in Wyo.
- Ancient Greek Jar Found on Albania Coast
- Cassini in Safe Mode After Saturn Flight
- Experts: Climate Change Puts Sea at Risk
- 'Killer Bees' Descend on New Orleans

[News Archive](#)

MARKETPLACE

- TRAVEL
- JOB
- AUTOS
- REAL ESTATE
- MORTGAGES
- PERSONALS

Which doodle is most like yours?

GO

RELATIONSHIPS

Symbols Abstract Shapes Repetitive

Find a Flight	Find a Job	Foreclosures	Find a Date	Find a Mortgage
Find a Car	Find Love	Free Credit Score	Fox News Shop	

AARP Auto Insurance
Save \$303 On No Hassle Auto Ins w/ The Hartford. Get A Free Quote Now!
AARP.TheHartford.com

SEARCH

- News Alerts
- RSS Feeds
- Podcasts
- Make FOXNews.com Your Home Page

- Home
- U.S.
- World
- Politics
- FOX News Polls
- Business
- Health
- Science
- Tech
- Entertainment
- Video
- Opinion
- MyNews
- Sports
- Weather
- Radio
- Mobile
- FOX & Friends
- Studio B
- Your World
- Big Story
- Special Report
- FOX Report
- O'Reilly Factor
- Hannity & Colmes
- On the Record
- RedEye
- FNC iMag
- uReport/ uAsk
- FOX Fan
- News Archive
- FOX Around The World
- FOX Sports
- Contact US
- Upgrade Central
- FAQs

Advertise on Fox News Channel, FOXNews.com and FOX News Radio, Advertising Specifications (PDF), Jobs at FOX News Channel, Internships At Fox News
Terms of use, Privacy Statement, For FOXNews.com comments write to foxnews@foxnews.com; For FOX News Channel comments write to yourcomments@foxnews.com
This material may not be published, broadcast, rewritten, or redistributed. © 2007 FOX News Network, LLC. All rights reserved. All market data delayed 20 minutes.