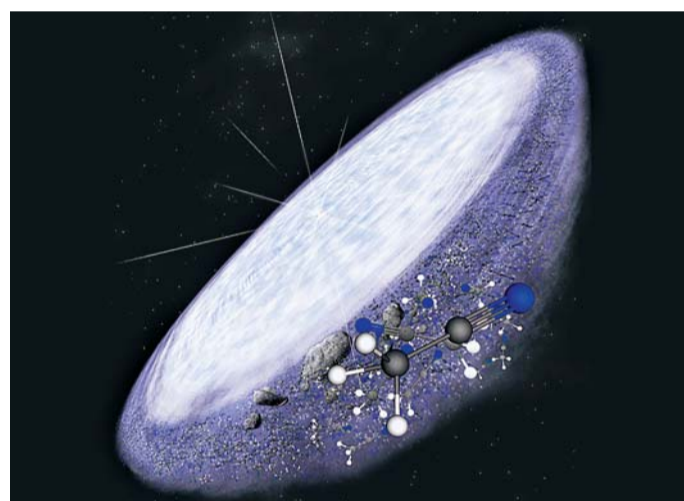


#SCIENCE

Oldest Known Complex Organic Molecules

Observing the galaxy as it was 1.5 billion years after the big bang



An international team of astronomers have used the James Webb Space Telescope to detect organic molecules in the most distant part of the universe to date. The kind of molecules discovered are abundant on Earth in the form of smoke, soot and smog.

The researchers used the Webb telescope to find organic molecules in a galaxy that is more than 12 billion light years away, according to the University of Texas A&M. Since the galaxy is that far, it means that the light took 12 billion years to reach the telescope. This means that astronomers are observing the galaxy as it was at the time, when the universe was less than 1.5 billion years old.

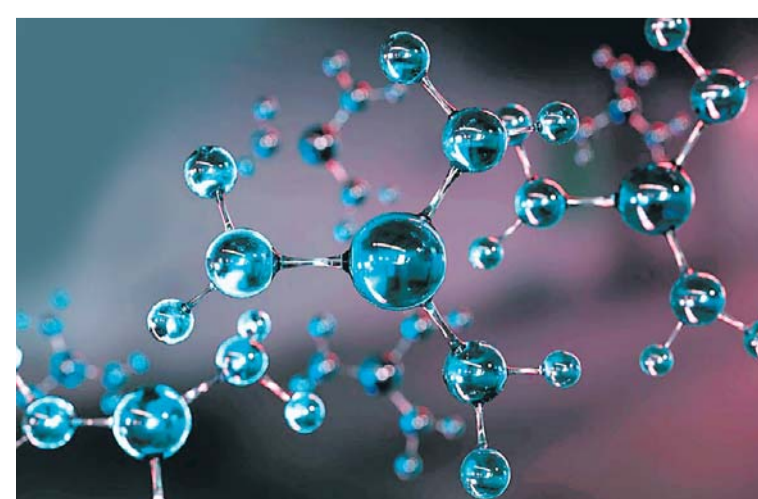
Apart from the impressive prowess of the Webb telescope, the researchers also got a little help from a phenomenon called *gravitational lensing*. When you are observing a distant cosmic object, if there is a massive galaxy in between that and you, the foreground galaxy will bend and distort the light from behind it, effectively creating a lens that will allow you to see the distant object better.

In this particular case, the light from the background galaxy is stretched and magnified into a round-ish shape known as an *Einstein ring*. Albert Einstein originally predicted the phenomenon of gravitational lensing in his theory of relativity.

In the data from Webb, researchers found the signature indicating the presence of large organic molecules like that found in smog and smoke.

"These big molecules are actually pretty common in space. Astronomers used to think they were a good sign that new stars were forming," said Justin Spilker, lead author of the article.

But the new research shows that this idea may not always be true, according to Spilker. In the high-definition images from Webb, the researchers saw a lot of regions with 'smoke', but no star formation and others with new stars forming, but no smoke.



The man who rewrote Chinese History

PART:2

While Xuanzang was away, the new Emperor Taizong had consolidated the power of the Tang dynasty with the aid of the Buddhist Shaolin fighter-monks. In recognition of this, at his inauguration, he invited Buddhist monks to the Imperial Palace to conduct a seven-day service, which included the ordination of 3000 monks. Now, he greeted Xuanzang like a returning hero, personally going out to meet him at the city limits of Chang'an amid great fanfare.



Chang'an, the capital of the Tang dynasty.

Tang Emperor, Taizong.



Seventh century Chinese pilgrim and scholar-monk Xuan Zang, also known as Hsuan-Tsang, is a traveller-historian, familiar to Indians. The Chinese Consul General in Kolkata has decided to use his work at a public event here to explain the depth of China's relationship with India over the last 1400 years, and focus on 'cooperation.'

The themed seminar on 'Xuan Zang and China-India Friendly Interactions' traces the philosopher's role 'in strengthening Indo-China relations.' It has been organised by the Consulate in association with Nalanda University. Ma Zhanwu, the Consul General said that India and China have a long history of 'shared interests' and the time is just right to discuss them. "We should not focus on differences and overlook shared interests and (should not) ignore the possibility of cooperation. We are having this seminar to send this message to the people in India."

"This Chinese pilgrim is the core reference to a lot of what we know of India, through his journals. His is a very interesting personal life, and little has been public, but here are some details. Xuanzang belonged to a class of elite public officials, who served the emperors. His grandfather had been the head of the Imperial University at Beijing, and the reigning Emperor had endowed the family with the revenues of a medium-sized town. But Xuanzang was born into a world

According to Xuanzang's biographer, "The streets were filled with bleached bones and the burned ruins of buildings. At this time, the books of Confucius and the sacred pages of Buddha were forgotten, everyone was occupied with the arts of war." Despairing of life in his homeland, Xuanzang became a Buddhist monk and in 629, set off on a pilgrimage to the Buddhist Holy Places in India.

that was descending into anarchy, as violent resistance brought about the collapse of the Sui Dynasty.

According to Xuanzang's biographer, "The streets were filled with bleached bones and the burned ruins of buildings. At this time, the books of Confucius and the sacred pages of Buddha were forgotten, everyone was occupied with the arts of war." Despairing of life in his homeland, Xuanzang became a Buddhist monk and in 629, set off on a pilgrimage to the Buddhist Holy Places in India, hoping to seek out the intellectual centre of his faith at Nalanda.

Xuanzang wanted to go west to India to learn more about Buddhism, but at the time, the emperor had forbidden travel outside China. Xuanzang respected authority and he struggled with a decision on whether or not to make the journey. Xuanzang, a brilliant and devout man, in the end believed that going to India was the only way to answer questions that troubled Chinese Buddhists. He started a seventeen-year journey that year, much of it spent as a fugitive and travelling under the cover of darkness.

Xuanzang travelled along what we now know as the Silk Road. He survived the dangerous Taklamakan Desert and continued through the high and harsh

#CONNECTIONS



Huen Tsang.



White Goose Pagoda.

mountains of Tian Shan (literally, mountains of the heavens or sky). The Silk Road took him through countries ruled by powerful leaders, who, sometimes, wanted to keep him in their kingdom rather than allow him to travel on. His intelligence and calm devotion to Buddhism convinced these leaders to help him in this quest to reach India. He was to have many adventures, as he worked his way

through India, on to Nepal, the home of the Buddha, and then to Nalanda, where he spent many years living with the greatest teachers and thinkers of this time. Before he returned home, Xuanzang had converted pirates, who meant to rob and kill him, survived deadly typhoons, and won a Great Debate in front of thousands of wise men in India.

Xuanzang reached the *mahavi-hara*, or Great Monastery, after two years of adventures and several near-fatal encounters with brigands and robbers. On arrival, he performed an emotional circumambulation of the sutra depository and library, a round, stupa-like structure at the centre of the university complex. He then visited the eight lecture halls, numerous stupas, five temples and three hundred individual apartments,



Statue Xuanzang, Big Wild Goose Pagoda, Xian.

World Rum Day

Rum has a history that dates back at least several centuries. Distilled from either the molasses or juice that comes from sugarcane, rum is a deliciously sweet liquor that is enjoyed the world over. With a reputation that is related to pirates and revolutions, rum brings with it a unique and fascinating background. *World Rum Day* celebrates the rum itself and its somewhat sordid past, as well as the community of makers, bartenders and drinkers, whose lives are made a little better by rum!



um has a history that dates back at least several centuries. Distilled from either the molasses or juice that comes from sugarcane, rum is a deliciously sweet liquor that is enjoyed the world over. With a reputation that is related to pirates and revolutions, rum brings with it a unique and fascinating background. *World Rum Day* celebrates the rum itself and its somewhat sordid past, as well as the community of makers, bartenders and drinkers, whose lives are made a little better by rum!

um has a history that dates back at least several centuries. Distilled from either the molasses or juice that comes from sugarcane, rum is a deliciously sweet liquor that is enjoyed the world over. With a reputation that is related to pirates and revolutions, rum brings with it a unique and fascinating background. *World Rum Day* celebrates the rum itself and its somewhat sordid past, as well as the community of makers, bartenders and drinkers, whose lives are made a little better by rum!

um has a history that dates back at least several centuries. Distilled from either the molasses or juice that comes from sugarcane, rum is a deliciously sweet liquor that is enjoyed the world over. With a reputation that is related to pirates and revolutions, rum brings with it a unique and fascinating background. *World Rum Day* celebrates the rum itself and its somewhat sordid past, as well as the community of makers, bartenders and drinkers, whose lives are made a little better by rum!

rajeshsharma1049@gmail.com

#ADDICTION

Digital Multi-tasking

There are several things we can do to improve our concentration and to process information more slowly



Whether working or relaxing, we are immersed in nearly constant screen time, be it on TVs, computers, mobiles or tablets. Phones are especially hard to avoid. We take them everywhere, and use them to access basic services like banks or food shopping as well as for videos, podcasts or games.

Technology is making it harder and harder for us to concentrate on long texts, and many of us give up after a few minutes. Instead, we find ourselves jumping from task to task, or from window to window on the computer, and struggle to find 'peace of mind' to concentrate on anything for more than a few minutes.

This is having an impact on our brains. We are becoming accustomed to what is known as 'bottom-up' attention, where emotions or interests are triggered by external stimuli that we cannot control. Instead of voluntarily directing our attention (known as 'top-down' attention), digital media catches it, whether we want it to or not. The problem with so much 'bottom-up' attention is that it makes it difficult for us to attend to less immediately attractive tasks, or ones that require slower processing such as reading, analysing information or studying.

Digital Multi-tasking

One characteristic of how we consume multimedia content is that it forces us to *multi-task*, we switch between different types of content and information without processing them slowly. This way of reading has a negative impact on school performance, and it creates dependency, it activates the same areas of our brains as an addiction. In other words, digital content 'hooks' us to the detriment of other tasks.

What's more, it is also affecting our quality of sleep, which is closely connected to our attention spans. Part of the problem is that we are used to being constantly

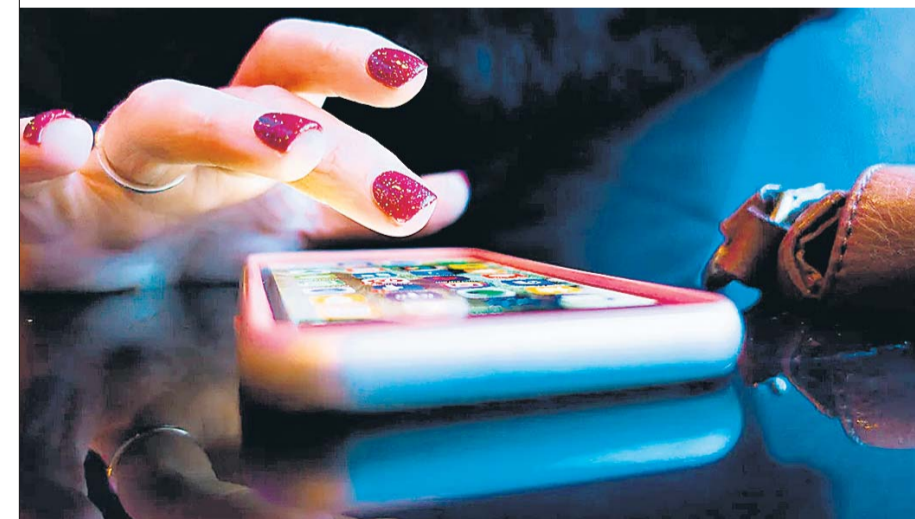
connected to our devices, even when we go to bed. It has been shown that light from screens confuses our brain, making it think that it is daytime, preventing us from generating melatonin, the hormone that helps us fall asleep. Sleep is essential to stabilise memory and to perform attentively the next day.

It is, therefore, no coincidence that attention deficit issues are on the rise. In order to stay focused, we need to not be constantly connected to the internet. Indeed, there is debate about banning or limiting the use of devices in workplaces and classrooms.

Fighting the Effects

There are several things we can do to improve our concentration and to process information more slowly.

- **Reduce screen time** and disconnect when you need to focus on other tasks. Minimise children's screen time, and limit them to educational content, when they do have access to these devices.
- **Spend time outdoors** and in nature. This has scientifically proven benefits for our attention spans, and even for our overall intellectual capacity.
- **Do exercise.** Physical activity is

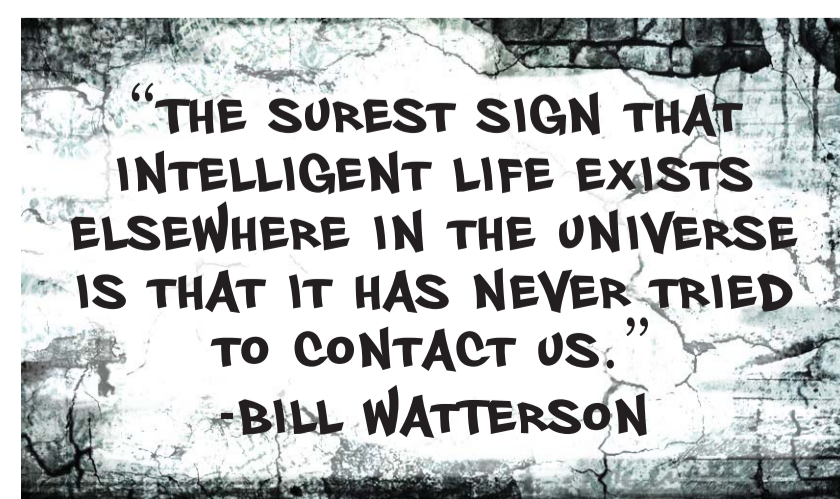


beneficial for both physical and mental health. It is especially good for our attention spans, memory, emotional regulation and mood.

- **Ensure that you have good sleep hygiene** by reducing stimulation before bedtime.
- **Follow a balanced diet**, paying attention to antioxidants and minerals, which are essential for proper brain function.
- **Build routines** that discourage you from being drawn in by digital distractions. This can include meditation, listening to music, or reading.

Adapt to your environment. If you work from home, for example, keep a separate space for work, and keep anything work-related out of sight unless it is being used. More generally, use timers to carry out longer tasks and take short breaks. You can then gradually, but consciously, increase the time you spend concentrating on a task. The order of tasks is also important. Do the activities that require more attention or efforts first, and then finish with easier ones as our attention tends to wane as we get tired.

THE WALL



BABY BLUES



By Rick Kirkman & Jerry Scott

ZITS



By Jerry Scott & Jim Borgman