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Features



The Milky Way on a dark night (our galaxy seen edge-on) reveals vast dark clouds of dust particles that we have argued are bacteria and viruses containing the all-pervasive cosmic legacy of life. Inset is the galaxy Andromeda, very similar to our own home galaxy located 2.5 million light years away.

THE CASE FOR **OUR COSMIC ANCESTRY**

New data signals a major paradigm shift in science

BY CHANDRA
WICKRAMASINGHE
(Vidya Jyothi Professor Chandra
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Honorary Professor at the
University of Buckingham, UK Honorary Professor at Ruhi University, Sri Lanka and Adjunct Professor at the National Institute of Fundamental Science, Sri Lanka)

Mow did life arise? Not just on the Earth, but anywhere in the Universe? Does life emerge on every Earth-like planet that have oceans and an atmosphere by spontaneous processes involving well understood laws of physics and chamistry? Or did it jumple. and chemistry? Or did it involve an extraordinary, even

an extraordinary, even miraculous intervention?
How old is the universe itself?
How did it originate, if it indeed did ever originate? Is there evidence of life outside the Earth? In comets, the space between steep its way. Earth? In comets, the space between stars in our Milky Way galaxy, on other planets, in other galaxies? Science must necessarily exclude miraculous options of course, but the questions continue to be asked and demand answers. Many of these questions have an antiquity tness questions have an antiquit, that predates Western traditions that go back to classical Greece in the first century BCE. The answers may have a genesis that goes outside the realm of Western culture. The concepts of zero, infinity (Ananta) all have an Indian origin and are. Indian origin and are inextricably linked with Hinduism and Buddhism. It could well be for this reason the idea of an infinite unive has been so forcefully resisted in

In the past six months many strongly-held opinions in science have been challenged by the arrival of new data. We may be now ever closer to finding answers to the age-old questions to our cosmic ancestry and the

to our cosmic ancesury am origin of the universe. The James Webb Space Telescope (Webb) launche 2021 is the most powerful astronomical observatory surpassing the range and capabilities of the earlier Hubble Space Telescope. It was designed to see deeper and further into our origins: from the formation of stars and planets, to the birth or possible birth of the Universe itself. Webb is an international partnership between NASA, ESA and CSA.

and CSA.
Discoveries using the new
James Webb Telescope have
shown the existence of galaxies
that are much older than the age
of the currently fashionable Big Bang model of the universe itself

Bang model of the universe itself—a universe which is just 13.8 billion years old, barely three times the age of the Earth.

This unimpressive smudge of light called CEERS-93316 (Fig.1) was observed by the James Webb was observed by the James web. Telescope and is presumed to be the most distant galaxy at a

third century BCE) is that life emerged and emerges easily and "naturally" on a planet like Earth (or on K2-186, for that matter) as soon as the "right conditions" prevail. The modern version of this concept that has been defended from the dawn of the 20th century is the so-called "theory of spontaneous generation". Without any substantive proof for it and a substantive proof for it and a great deal of contrary evidence this concept remains part of the holy grail of biology According to this theory of

molecules in the Earth's oceans molecules in the Earth's oceans are supposed to assemble themselves naturally into primitive living systems that subsequently evolve over billions of years to produce the magnificent panorama of life of which we form the most trivial part. Needless to say, there was never any substantive evidence for never any substantive evidence to support this point of view, but nevertheless it was one that has been accepted by the entire establishment of science, more or less like an act of faith

Experiments to "prove" the process if spontaneous generation and to synthesize life from non-life have continued to be conducted in the most advanced biotechnology laboratories across the world for laboratories across the world for well over half a century. Every attempt that has been made to replicate the process of spontaneous generation in the laboratory under the widest possible range of conditions has ended in dismal failure. The pages in eightly the populity. ended in dismal failure. The reason is simple: the probability hurdle needed to go from non-living organics to the simplest evolvable living system is of a scale that is super-astronomical. The origin of life requires a system that transcends the scale of the Earth, our solar system, our Milky Way Galaxy and perhaps involves the entire universe, that is now appearing to be possibly infinite in scale.

The alternative to spontaneous generation of life is the concept

ration of life is the concept of life being a cosmic of life being a cosmic phenomenon or panspermia as it has come to be called. This basic idea has an antiquity in Western tradition that predates Aristotle and is attributed to the pre-Socratic philosopher Anaxoragas Socratic philosopher Anaxoragas. Anaxoragas suggested that the seeds of life are all pervasive in the cosmos and they take root and develop into living entities whenever the right conditions prevail. This is the theory of Panspermia (from Greek roots: Spermata – seed; Pans – everywhere). Similar ideas are implied in Buddhist. Hindu and



Another equally important paradigm shift that is happening now relates to the question of the origin of life, and the connection between life on Earth and the wider universe. The Kepler Orbiting Telescope in launched in 2009 was dedicated to discovering habitable Earth-like planets in abitable Earth-like planets in our galaxy outside the solar system. A large number of such habitable planets have been discovered so far, and a few weeks ago the James Web Telescope was deployed to study one of these exoplanets in some detail. This "Earth-twin" known by the name K2-186 is located some 120 light years from the Earth. The surprising discovery was a molecule called dimethyl sulphide, along with carbon dioxide and methane, in the atmosphere of K2-186 that has been hailed as definite evidence of extraterrestrial life. The argument hinges on the fact that the molecule dimethyl sulphide the molecule dimethyl sulphide appears to be *only* produced by biology on the Earth – by marine plankton in particular. So rather belatedly scientists have accepted that a second living planet exists 120 light years away from the Earth. So, the outstanding Earth. So, the outstanding question now is how and by what processes did life originate on this planet? Or indeed on any other planet? The long-held view (going all the way back to Aristotle in the

The Galaxy CEERS 93316 at a distance of 35 billion light years from Earth.

distance of about 35 billion light years. This latest discovery, amongst others, lend support to ideas of a steady-state universe

with an infinite age, or models of the cosmos involving alternating phases of creation and destruction. These emerging models of the cosmos are

Vedic cosmologies and of course these predate the ancient Greeks by many centuries. From the 1970's onward the late Sir Fred Hoyle and the

late Sir Fred Hoyle and the present writer became torch bearers for the theory of cosmic life which was a revived form of the ancient theory of panspermia. The starting point in our investigations involved the identification of cosmic dust, the trillione two trillione of trillions upon trillions of micrometre-sized "dust" that makes up a few percent of the mass of the entire Galaxy, and shows up as conspicuous dark clouds and striation against the background of stars in the Milky Way. By 1984 we had accumulated way. By 1864 we had accumulated enough astronomical evidence to conclude that a very large fraction of this cosmic dust in fact linked to life – bacteria and viruses in various stages of decay and degradation, but still largely preserving the information required to initiate life on any habitable Earth-like planet.

Case against spontaneous generation of life
The most powerful single argument for life being a cosmic rather than a purely terrestrial phenomenon was articulated by the late Sir Fred Hoyle way back in 1980, summarizing the position that we had reached at the time:

Continued on page 17

THE DUTCH GOVERNOR AND THE BURGHER ARTIST

BY HUGH KARUNANAYAKE

in a catalogue entitled
Bibliotheca Neerlando
Indica, issued sometime in

1883 by Martinus Neyhoff a well by Martinus Neyhoff a well known bookseller at the Hague. Item: 2299-Fauna of the Indian Archipelago and of the island of Ceylon – a collection of drawings in colour Indian Archipelago and of the island of Ceylon – a collection of drawings in colour representing birds, mammifers, GIDEON LOTEN elsewhere is the subject of many



bold to state, is unmatched by any other country in the world, we are duty bound to acknowledge the ploneering role of Governor Loten in bringing out to the world his fascinating discoveries in Ceylon.

Governor Loten was easily the most cerebral colonial Governor of Ceylon and his Governor of Ceylon, and his



WATER COLOUR BY DE BEVERE FROM THE LOTEN COLLECTION AT THE NATURAL insects etc of the zindian Archipelago

and Ceylon. 144 folio sheets in two part folios – f300

he collection was bought at the auction by PJ van Houten, Chairman of the Council and Committee of the Colonial Museum at Haarlem. In 1905 Van Houten published a memoir on John Gideon Loten and his Ceylonese artist. Pieter Cornelis de Bevere. Van Houten having bought the De Bevere collection in. 1883 described several water colours by the artist and also added biographical information on the artist based on written notes by Loten himself.

John Gideon Loten was the 36 th Dutch Governor of Ceylon, popularly

Dutch Governor of Ceylon, popularly referred to as the "Naturalist Governor

Loten a virtuso in his own right, was fascinated by the diversity and natural beauty of Ceylon and he made it his duty to reveal his observations through the myriad contacts he had in the academic and artistic worlds of the eighteenth century. He held office for five years between 1752 and 1757 Although one may say that it took 36 successive Dutch administrations to discover the natural beauty of Ceylon, a country whose biodiversity, I make

LEUTEN COLLECTION AT THE NATURAL EVIM LONDON

a published work, the latest of which is a 829 page tome entitled "The Life of Governor Joan Gideon Loten (1710 __1789)- a personal history of a Dutch virtuoso." By Alexander JP Raaf, Hilversum, Verlorem 2010.

The front cover of the book features an illustration by artist Pieter Cornelis de Bevere from his work "Collection of birds from Ceylorn" circa 1974. Much of the information presented here is from the book under reference.

The world is indebted to the artist De Bevere for so skillfully reproducing images of Ceylon including not only the diverse flora and fauna of the island, but also of the country's scenery featuring 18 th Century scenery featuring 18 th Century buildings and constructions which featured in. its landscape. The value of De Bevere's work would be more appreciated when we realise that the art of photography was yet to be invented, and contemporary 18 th century imagery would otherwise be totally unavailable to today's

afficionado's of our heritage. Who was De Bevere then,and what was his connection with the Dutch virtuoso Governor Loten?



COLOMBO HARBOUR IN 1768 BY DE BEVERE

November 5, 2023 Sunday Island

SARATH SAMARASINGHE

Viriend of over 70 years, Sarath Somarnsinghe, passed away last week.
Sarath was not only a classmate from Royal Primary through Royal College in our teenage years, but we kept in touch with each other for more than seven decades. The different paths taken by our lives and careers may have resulted in losting touch in titurousla during our abilit lives, but our friendship endured withour passes.

"The very small probabilities, which one calculates for the assembly of these substances (e.g. eurymes), demonstrates as near to certainty as one would wish that life did not originate here on the Earth. Indeed, the infinitesimal probabilities demonstrate that life is even too complex for its origin to be confined within our galaxy alone. The

If there was a deep principle of nature that drove inorganic systems towards the emergence of primitive life. the evidence for this would have long since been discovered in the aboratory, which as we noted, has not. Moreover, with calculations showing crossquely low a prior probabilities for the transition from non-life to life. (1) The origin of life was an extremely improbable even that must be about the control of the was an extremely improbable even that must consequently not be reproduced elsewhere. In that case we would indeed be hopelessly alone as a life system in the Universe.

THE CASE...



inces and careers may have resulted in losing touch in therovals during our adult
lives, but our friendship endured without
pouse.

I hand't met Sarath for many years
aince I emigrated to the US in the 1900.
One due I got a call from Sarath, that he
was in Izo Anguels for a few days, it has a
calling from the home of Dr. Larred Introcent of the Introduction of the Visit in La with
the Testro La Scala in Milan because the
Creylon in the 1906. I was horrified that
Sarath was not used game on to represent
Creylon in the 1906. I was horrified that
Sarath was not with me. Larred I lived
Sarath was not with me. Larred I lived
Sarath was not with me. Larred I lived
Landau, under an hour's drive from my
tome in the San Fernando Malley I drove
there immediately, and insisted that he
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selection of Sri Lankan business circles are
unparalleled, but an event of the condent oracing an and sentiment over the cynident oracing and some demonstrated that
he will be the control of the conmanual reunions of members of our Royal
College class of Sist. Eventings life with
boote, laughter and memories of those
good old formattive days of our live, when
we helped and misled each other on a variviy of activities.

Evenings which would never be forget
each oracing and singe expressions, the complete rejection of vocal virtuboote, laughter and memor Sarath Samaraninghe (senied conter) with the Royal College cricket team he led.

the Testro La Scala in Milan because the discretic senior of the College Prick M From 186 has because the discretic senior of the College Prick M From 186 has because the senior of the College Prick M From 186 has because the senior of the College Prick M From 186 has been senior and the College Prick M From 186 has been senior and the College Prick M From 186 has been senior personal enginetees. I had recent personal enginetees which compactified has a constant personal enginetees. I had recent personal enginetees which enginetees had been dealed and been dealed to the constant as charge privilege of a later vintage. Eardley Leversz waxed elopent about the "quintessential characteristics of his Royal heroes", He describes Saraha schript, Bumorous, competitive, courageous and affable". Saraha was also kind, compactions and a continue privilege of playing with sarah during our early sens. Apart from the routine cricket practices at shoot, we organized imprompting matches during the weekend, on bare land opposite our house on Fifth Lane, and Sarath's at Reid Avenue. I read milly work for Sarath's competitiveness, which coupled with his bottom their privilege of playing with Sarah during our early sens. Apart from the routine privilege of playing with sarah during our early sens. Apart from the routine cricket practices at the capture of the present of the present

derived from biology are coming in fast and thick. The Rosetta Space Mission to a comet - Come 67P/C G-launched in 2013 has yielded a formidable body of evidence, all showing consistency with the existence of microbial material in comets.

existence of microsial materias in comets.

Another comet, Comet Lovejoy, has more recently been observed and found to be emitting large amounts of ethyl alcohol as well as a type of sugar into space—equivalent to 500 bottles of wine per second. These are the natural products of fermentation, which is locar evidence for subsurface microbial activity in a comet.

FROM PAGE 14

which is clear evidence for subsurface microbial activity in a come.

Are cosmic bacteria continually
falling to Earth?
One crucial test of the theory of
cosmic life is to probe the stratosphero
bacteria and viruses. To urge
international space authorities with
the capability of doing this was far
from easy. The first dedicated effort to
est the idea of bacteria in Fall from
comess was carried out in
contest was carried out in
combo and on the strategy of the composition
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balloon launch to this end is being planned within the next six months. The team at NIPS will be assisted by my grandson, Reuben Chank, Reuben Chank at Visiting Wickramasinghe, who has a visiting appointment at the Mathematics Department of the University of Colombo.

Department of the University of Colombo.

Concluding remarks

I believe that in 2023 we have reached a crucial turning point in the history of human ervilization. When it is finally accepted that life on Earth is a finally accepted that life on Earth is a because the property of the property of the Earth is the property of the Earth is the Earth in the Earth is the Earth in Earth is the Earth in Earth in

Further reading
Wickramashiphe, N.C. and
Wickramashiphe, R.C. 2023. Life and
the Universe a final sunthesis, Journal
of Cosmology, Vol. 30, No. 10, pp. 99169-30174.
Wickramashiphe, K. Tokoro, G. 2018.
Our Cosmic Ancestry in the Stars
(Inner Traditions, NY)

Struggling of gold and drugs will intensify.
Will India permit our fishermen to fish in their waters with permits? The people of this country did not give a free hand to this government or president to sell and mortgage our sold hand to sell and mortgage our hand to the self and mortgage our hand to the permitting the Chinese, Indian and Japanese navies to make frequent staspicious port calls here for conducting "onearch" Are the view researching for our benefit or theirs? Has the government not consulted our scientists who will know better Tennekoon are certainly a great le Let's hope we will have many like them with courage and fortitude, ensuring the best.

Only divine help can save this

his country lacks good leaders who are gentinely interested in the development of the country, welfare of the people and govern with integrity and principles.

(1)Qualities Required. A good communicator and who will be a good communicator and who will be a good communicator and who will be gentinely result focused. Our present leaders are not capable of commanding respect of the people but they are using the Police and armed forces to "demand" respect, which will only create chaos.

(2)Present status, mistakes and Ill-Mottwes of researchers.

Corresent states, instances and in-Motitives of researchers. In desperation without a proper in desperation without seek of the ports, our land, a part of the see that is ours by permitting Indian fisher-men to fish in our waters when our poor fishermen will have to starvel if permits are given to Indian fisher-men, what will happen to our sea-bed coral with their desructive bottom trawling? That will be the beginning of the destruction of our coast. Smuggling of gold and drugs will intensity.

JAYANTHA DE SILVA

AN APPRECIATION

By Lt Col (Retd) Udena Gunawardena SLLI

ol Jayantha de Silva, who recently passed away in Melbourne following a brief iliness, was undoubtedly a born lasder, which was evident from his production of the second days and later in his production of the privale of the provide of the production of the production of the privale of the

He was an ideal mentor, leading by example and practice. On taking over, maintaining the momentum he had set was no small task. In addition to continuing the training based on the PMA lines that he had established, I also incorporat-

ting legacy of rare imagery t existed in the eighteenth hy and mass media was yet rld. De Bever[s work if ntly of greater impact than tron the Governor. Th has been described ge of reason" or the "age of iose terms seem etting where a child who f an illegal Liaison is uilty party lacking in ther than the parents as by Governor Loten. Time,

view the circumstances of the artist's entry into the world, with jaundiced eyes.

On another note, It must also be said that the late Mr Donald Ferguson, and the late Mr RG Anthonisz had made efforts through the Royal Asiatic Socociety (Ceylon Branch) to procure some of the invaluable work of De Bevere but had not met with success during British colonial days. The time may now be opportune for a Sri Lanka Government to pursue the re acquisition of art and artifacts taken away from the country during the days of colonial rule and it is also time the bastard De Bevere returned to his true home!.

THE LATE COLONEL

Obituary/Letters/Continuations

than the Navy about these matters.
How safe are our minerals? Indian fishermen have caused enough dumage to our fishing industry by bottom rawling, its his president having any sinister moves to remain in power by suppressing public opinion along with the Navy Police armed forces and the foreign naval support?

(3) Solution
The time is ripe for all opposition parties to conduct a proper study of these developments and counter them, None of the opposition parties have a shadow cabinet or a proper manifesto spelling the solutions they propose to implement. The areas that must be covered include the constitution, Judiciary and the executive.

Nihal De Alwis

DOES THIS GOVERNMENT

KNOW WHERE IT'S HEADING?

ed additional aspects of training based on my experience at Royal Military Academy Sandhurst, UK. The foundation laid by Jayantha at the outset made it possible to main tain a very high standard in subse-quent cader training. Although both commissioned in

Arthkorale

We were posted as Grade 2 and
Grade 3 Staif officers, Le Col H v
Arthkorale

We were posted as Grade 2 and
Grade 3 Staif officers, respectively,
to Central Command HQ in Kandy,
in the mid-seventies. The work,
although not exclusively military,
demanded significant adaptability, a
challenge Jayantha met with ease,
much to everyone's surprise and to
the Commander's satisfaction.
woltniarily took on the responsibility of coaching and assembling a baskerball team for Trinity College.
In the early eighties (the exact
dates elude me), I had the opportunity to work together with him at
Army HQ, where he was GSO 1