Friday, July 3, 2020

Reading a sky sample.

The theme is a great opportunity for powerful reflection in complete synchronization with the whole of my research.

The expression light-pollution designates both the abnormal or annoying nocturnal and diurnal presence of light and phenomena including the consequences of activity on fauna, flora, the dark (the kingdom of fungi), ecosystems as well as suspected or proven effects on human health.

Even in areas known to be relatively isolated or desert.

At the same time ecological trap, immaterial barrier and endocrine disruptor for many species, this is distinguished in that it also affects ecosystems and humans.

The International Union for the Conservation of Nature (IUCN) recommends in 2014 to communities the inclusion among the indicators of pressure on biodiversity of light-pollution.

Often associated with the concept of wasted energy,and if it constitutes an avoidable expenditure of energy.

Space pollution.

Earth's artificial satellites form a halo of space debris.

The term Space pollution applies to the various degradations of the environments due to human activities linked to the exploration of space.

Space pollution can be divided into categories: pollution of space, that of planets, satellites or other objects, as well as pollution of planet Earth itself.

The risks that could result from space pollution by debris in orbit around the Earth are notably considered in the scenario of Kessler syndrome.

Astrobiology, formerly known as exobiology, is an interdisciplinary scientific field concerned with the origins, early evolution, distribution, and future of life in the universe.

Astrobiology considers the question of whether extraterrestrial life exists, and if it does, how humans can detect it.

Astrobiology makes use of molecular biology, biophysics, biochemistry, chemistry, astronomy, physical cosmology, exoplanetology and geology to investigate the possibility of life on other worlds and help recognize biospheres that might be different from that on Earth.

The origin and early evolution of life is an inseparable part of the discipline of astrobiology.

Astrobiology concerns itself with interpretation of existing scientific data, and although speculation is entertained to give context, astrobiology concerns itself primarily with hypotheses that fit firmly into existing scientific theories

This interdisciplinary field encompasses research on the origin of planetary systems, origins of organic compounds in space, rock-water-carbon interactions, abiogenesis on Earth, planetary habitability, research on biosignatures for life detection, and studies on the potential for life to adapt to challenges on Earth and in outer space

Biochemistry may have begun shortly after the Big Bang, 13.8 billion years ago, during a habitable epoch when the Universe was only 10–17 million years old.

According to the panspermia hypothesis, microscopic life—distributed by meteoroids, asteroids and other small Solar System bodies—may exist throughout the universe.

According to research published in August 2015, very large galaxies may be more favorable to the creation and development of habitable planets than such smaller galaxies as the Milky Way

Nonetheless, Earth is the only place in the universe humans know to harbor life.

Estimates of habitable zones around other stars,sometimes referred to as Goldilocks zones,along with the discovery of hundreds of extrasolar planets and new insights into extreme habitats here on Earth, suggest that there may be many more habitable places in the universe than considered possible until very recently.

Current studies on the planet Mars by the Curiosity and Opportunity rovers are searching for evidence of ancient life as well as plains related to ancient rivers or lakes that may have been habitable

The search for evidence of habitability, taphonomy (related to fossils), and organic molecules on the planet Mars is now a primary NASA and ESA objective.

Even if extraterrestrial life is never discovered, the interdisciplinary nature of astrobiology, and the cosmic and evolutionary perspectives engendered by it, may still result in a range of benefits here on Earth.

Astrobiology is etymologically derived from the Greek , astron, constellation, star..

When looking for life on other planets like Earth, some simplifying assumptions are useful to reduce the size of the task of the astrobiologist. One is the informed assumption that the vast majority of life forms in our galaxy are based on carbon chemistries, as are all life forms on Earth.

Carbon is well known for the unusually wide variety of molecules that can be formed around it. Carbon is the fourth most abundant element in the universe and the energy required to make or break a bond is at just the appropriate level for building molecules which are not only stable, but also reactive.

The fact that carbon atoms bond readily to other carbon atoms allows for the building of extremely long and complex molecules

The presence of liquid water is an assumed requirement, as it is a common molecule and provides an excellent environment for the formation of complicated carbon-based molecules that could eventually lead to the emergence of life

Some researchers posit environments of water-ammonia mixtures as possible solvents for hypothetical types of biochemistry

A third assumption is to focus on planets orbiting Sun-like stars for increased probabilities of planetary habitability

Very large stars have relatively short lifetimes, meaning that life might not have time to emerge on planets orbiting them. Very small stars provide so little heat and warmth that only planets in very close orbits around them would not be frozen solid, and in such close orbits these planets would be tidally "locked" to the star.

The long lifetimes of red dwarfs could allow the development of habitable environments on planets with thick atmospheres. This is significant, as red dwarfs are extremely common. (See Habitability of red dwarf systems)

Since Earth is the only planet known to harbor life, there is no evident way to know if any of these simplifying assumptions are correct.

Research on communication with extraterrestrial intelligence (CETI) focuses on composing and deciphering messages that could theoretically be understood by another technological civilization.

Communication attempts by humans have included broadcasting mathematical languages, pictorial systems such as the Arecibo message and computational approaches to detecting and deciphering 'natural' language communication.

The SETI program, for example, uses both radio telescopes and optical telescopes to search for deliberate signals from an extraterrestrial intelligence

While some high-profile scientists, such as Carl Sagan, have advocated the transmission of messages,scientist Stephen Hawking warned against it, suggesting that aliens might simply raid Earth for its resources and then move on.

Most astronomy-related astrobiology research falls into the category of extrasolar planet (exoplanet) detection, the hypothesis being that if life arose on Earth, then it could also arise on other planets with similar characteristics.

To that end, a number of instruments designed to detect Earth-sized exoplanets have been considered, most notably NASA's Terrestrial Planet Finder (TPF) and ESA's Darwin programs, both of which have been cancelled. NASA launched the Kepler mission in March 2009, and the French Space Agency launched the COROT space mission in 2006.

There are also several less ambitious ground-based efforts underway.

The goal of these missions is not only to detect Earth-sized planets but also to directly detect light from the planet so that it may be studied spectroscopically.

By examining planetary spectra, it would be possible to determine the basic composition of an extrasolar planet's atmosphere and/or surface.

Given this knowledge, it may be possible to assess the likelihood of life being found on that planet.

A NASA research group, the Virtual Planet Laboratory, is using computer modeling to generate a wide variety of virtual planets to see what they would look like if viewed by TPF or Darwin. It is hoped that once these missions come online, their spectra can be cross-checked with these virtual planetary spectra for features that might indicate the presence of life.

Radar Telecommunications Image Processing Speech Sound Video.

In 1908, the belinographer applied the technique of sampling with an electrical signal for the analysis and transmission of an image by telephone.

In this case, a length, that of the photographic document, is divided into regular intervals, that of the lines. A series of successive signals is measured and transmitted describing, analogically, the luminosities encountered on each line.

The same principle will be used for television thirty years later.

Telecommunications have developed the first application of sampling in the time domain. Before digital transmission became generalized for telephony, analog values of sampled signals were multiplexed, as was done previously for telegraph signals.

It is this application, for a large industry, which gave rise to theoretical works on the subject of Claude Shannon.

This work does not specifically relate to sampling, but rather to the quantity of information and its digital encoding. Digital signal processing will radically change signal processing.

Digital signal processing by computer requires that the signal be converted into a sequence of numbers (digitization)

This conversion breaks down, theoretically, into three operations:

1. the sampling takes, most often at regular intervals, the value of the signal.
2. quantization transforms any value into a value taken from a finite list of valid values for the system.
3. the coding corresponds to each valid value for the system a numerical code.

The theory of sampling applies to any system capturing values at defined intervals, including when there is coding without quantification, as in the case of the reading of values by a person, when there is neither quantification nor coding and that the sampled values remain analog, whether the quantities have a single dimension or more.

Most of the time, the interval between each sample is constant.

To determine the sampling method, you must have prior knowledge of the signal.

At least a maximum frequency likely to be present must be determined.

Cinema, invented at the end of the 19th century, samples time at 24 samples per second.

The aliasing problem manifests itself when a periodic movement is faster than 12 periods per second.

We see it in the famous example of wagon wheels which seem to turn slowly, right or wrong, in the first westerns.

We take advantage of the aliasing in the observation of periodic movements under stroboscopic lighting.

The pantelegraph inaugurated in the middle of the 19th century the division of one of the two dimensions of the image into lines.

This principle will be taken up by the belinograph, the fax machine and the television. CCD sensors in modern electronic (and video) photography sample in both directions, with a grid of regularly spaced sensors.

The aliasing problems in these technologies translate into moiré effects.

This artwork is an installation on an iPhone plus iPhone 3D viewer of a gif

A stereoscopic sky sample in a stereoscope and, a poster plus a bunch of Blue-red glasses.

Poster and glasses are coming plus Nasa material with the magazine.

Linked

Posted by Veronica IN DREAM at 8:09 PM