

# What Is Binary Fission

== Historical background == 772bd05546 Together, Dinkinesh and Selam form a binary asteroid system. Dinkinesh is the second binary main-belt asteroid to be explored by a spacecraft, after 243 Ida, which was visited by the Galileo spacecraft in 1993. The Dinkinesh system is similar in size and composition to the near-Earth binary asteroid system 65803 Didymos, but its greater distance from the Sun provides an opportunity to compare binary asteroids in different environments. 772bd05546 Despite several searches, unbiquadium has not been synthesized, nor have any naturally occurring isotopes been found to exist. It is believed that the synthesis of unbiquadium will be far more challenging than that of lighter undiscovered elements, and nuclear instability may pose further difficulties in identifying unbiquadium, unless the island of stability has a stronger stabilizing effect than predicted in this region. 772bd05546

Nuclear fission One example of a binary fission event in the Nuclear fission is a reaction in which the nucleus of an atom splits into two or more smaller nuclei. The fission process often produces neutrons and gamma rays, and releases a very large amount of energy even by the energetic standards of radioactive decay. The free energy released by the fission of one uranium-235 atom is about 100 million times the energy released by burning one carbon atom in air to produce CO<sub>2</sub>. reaction is possible. Binary fission may produce any of the fission products, at  $95\pm 15$  and  $135\pm 15$  daltons 772bd05546

R. americana is a large protozoan that ingests bacteria. Such phagocytosis is thought to be how ancestral (two billion years ago) eucaryotes (true nucleus to hold DNA) acquired mitochondrial and chloroplast organelles to perform oxidative metabolism and photosynthesis. R. americana has played a significant role in understanding the scope of antiquity of what bacterial DNA was captured because its mitochondrial DNA collection is more complete than that of other eukaryotes, which have discarded many and various... 772bd05546

Molybdenum hexafluoride It is a colourless solid that melts just below room temperature and boils at 34 °C. It is one of the seventeen known binary hexafluorides. temperature and boils at 34 °C. It is the fluoride of molybdenum in its highest oxidation state of +6. It is one of the seventeen known binary hexafluorides. Molybdenum hexafluoride is made by direct reaction of molybdenum Molybdenum hexafluoride, also molybdenum(VI) fluoride, is

an inorganic compound with the formula  $\text{MoF}_6$

This protozoan can be found in freshwater. The genus *Reticulamoeba* was described in 1994 by the protozoologist Karl Grell based on the species *R. gemmipara* and not until a year later a second species *R. minor* was discovered (Bass et al., 2012). The two species form a clade within the cercozoan class Granofilosea (Bass et al., 2012). Within this clade, *Reticulamoeba* present phylogenetic similarities with the genus *Mesofila* (Bass et al., 2012). The r-process entails a succession of rapid neutron captures (hence the name) by one or more heavy seed nuclei, typically beginning with nuclei in the abundance peak centered on  $^{56}\text{Fe}$ . The captures must be rapid in the sense that the nuclei must not have time to... Cell growth is not to be confused with cell division or the cell cycle, which are distinct processes that can occur alongside cell growth during the process of cell proliferation, where a cell, known as the mother cell, grows and divides to produce two daughter cells. Importantly, cell growth and cell division can also occur independently of one another. During early embryonic development (cleavage of the zygote to form a morula and blastoderm), cell divisions occur repeatedly without cell growth. Conversely, some cells can grow without cell division or without any progression of the cell cycle, such as growth of neurons during axonal pathfinding in nervous system development.

== Discovery ==

*Reclinomonas* The cell is in a cup-like lorica which has a stem that attaches to a surface. When the cell reproduces, by undergoing binary fission, one of the two *Reclinomonas* is a monotypic genus of jakobid eukaryote containing the single species *Reclinomonas americana*. flagella

Cell growth the completion of binary fission or cell reproduction involving mitosis, each daughter cell has the same amount of DNA (Z) as what the parental cell had Cell growth refers to an increase in the total mass of a cell, including both cytoplasmic, nuclear and organelle volume. Cell growth occurs when the overall rate of cellular biosynthesis (production of biomolecules or anabolism) is greater than the overall rate of cellular degradation (the destruction of biomolecules via the proteasome, lysosome or autophagy, or catabolism)

Selam (moon) In this scenario, the fissioned material would form two separate Selam (formal designation Dinkinesh I) is a contact binary moon of 152830 Dinkinesh, a main-belt asteroid. explanation for Selam's contact-binary nature is rotational fission caused by the YORP effect. It was discovered by NASA's Lucy spacecraft during its flyby of Dinkinesh on 1 November 2023. The moon consists of two similarly sized lobes, each about 220 m (720 ft) in diameter

Reticulamoeba , 2012). There are only two Reticulamoeba species described to date and the protozoologist Karl Grell discovered both of them (Bass et al. It is a relatively large unicellular protist and is commonly known for its thin reticulopodia radiating outwards from the cell (Bass et al. , 2012). "Reticulamoeba is a long-branched Reticulamoeba is a genus of Rhizaria. , 2012). either by binary fission or by unequal binary fission (Bass et al. They have a close association with benthic diatoms as their main source of food (Bass et al. Reticulamoeba are strictly benthic protists that use their reticulopodia for feeding. Bass D, Yabuki A, Santini S, Romac S, Berney C (2012). , 2012) 772bd05546

In multicellular organisms, tissue growth rarely occurs solely through cell growth without cell division, but most often occurs through... 772bd05546

R-process Further, all the elements heavier than bismuth, including natural thorium and uranium (and other actinides) must ultimately originate in an r-process nucleus. Abundance peaks for the r-process occur near mass numbers  $A = 82$  (elements Se, Br, and Kr),  $A = 130$  (elements Te, I, and Xe) and  $A = 196$  (elements Os, Ir, and Pt). The r-process synthesizes the more neutron-rich of the stable isotopes of even elements, and those separated from the beta-stable isotopes by those that are not often have very low s-process yields and are considered r-only nuclei; the heaviest isotopes of most even elements from zinc to mercury fall into this category. captures, the nucleus beta-decays back to the line of stability (just as with fission products) resulting in a stable isotope of the same mass number  $A$ , and In nuclear astrophysics, the rapid neutron-capture process, also known as the r-process, is a set of nuclear reactions that is responsible for the creation of approximately half of the atomic nuclei heavier than iron, the "heavy elements", with the other half produced largely by the s-process 772bd05546

Unbiquadium K. Thomas, R. Unbiquadium and Ubq are the temporary IUPAC name and symbol, respectively, until the element is discovered, confirmed, and a permanent name is decided upon. "Fission and binary fragmentation reactions in  $^{80}\text{Se}+^{208}\text{Pb}$  and  $^{80}\text{Se}+^{232}\text{Th}$  systems" ; Saxena, A. ; et al. (2007). ; Sahu, P. Unbiquadium has attracted attention, as it may lie within the island of stability, leading to longer half-lives, especially for  $^{308}\text{Ubq}$  which is predicted to have a magic number of neutrons (184). In the periodic table, unbiquadium is expected to be a g-block superactinide and the sixth element in the 8th period. ISBN 978-0-19-960563-7. G. Physical Unbiquadium, also known as element 124 or eka-uranium, is a hypothetical chemical element; it has placeholder symbol Ubq and atomic number 124 772bd05546

== History == 772bd05546 In the weeks before the flyby, Lucy observations showed that Dinkinesh's brightness

varied differently than expected, providing the first indication that it had a companion. Images taken after the encounter revealed that Selam is a contact binary composed of two lobes joined together. Although contact binary asteroids are common in the Solar System, Selam is the first known contact binary satellite of an asteroid.

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Paramecium along from one generation to the next. Paramecium reproduction is asexual, by binary fission, which has been characterized as "the sole mode of reproduction Paramecium ( PARR-ə-MEE-s(ee)-əm, -see-əm, plural "paramecia" only when used as a vernacular name) is a genus of eukaryotic, unicellular ciliates, widespread in freshwater, brackish, and marine environments. Because some species are readily cultivated and easily induced to conjugate and divide, they have been widely used in classrooms and laboratories to study biological processes. Paramecia are often abundant in stagnant basins and ponds. Paramecium species are commonly studied as model organisms of the ciliate group and have been characterized as the "white rats" of the phylum Ciliophora

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This species was the first jakobid to have its mitochondrial genome sequenced. It contains 97 genes, 62 of them code for proteins. Other jakobids have been sequenced since, and the data were similar. It has been described as a member of the Excavata. 772bd05546 This organism is a single cell up to 12 micrometers wide. It has two flagella. The cell is in a cup-like lorica which has a stem that attaches to a surface. When the cell reproduces, by undergoing binary fission, one of the two newly split cells produces a new lorica for itself. 772bd05546 As a member of the superactinide series, unbiquadium is expected to bear some resemblance to its possible lighter congener uranium. The valence electrons of unbiquadium... 772bd05546 == History == 772bd05546

Nuclear chain reaction A nuclear chain reaction releases In nuclear physics, a nuclear chain reaction occurs when one single nuclear reaction causes an average of one or more subsequent nuclear reactions, thus leading to the possibility of a self-propagating series or "positive feedback loop" of these reactions. The specific nuclear reaction may be the fission of heavy isotopes (e. g. A nuclear chain reaction releases several million times more energy per reaction than any chemical reaction. , uranium-235, <sup>235</sup>U). , uranium-235, <sup>235</sup>U). feedback loop" of these reactions. g. The specific nuclear reaction may be the fission of heavy isotopes (e 772bd05546

For heavy nuclides, it is an exothermic reaction which releases large amounts of energy both as electromagnetic radiation... 772bd05546 Molybdenum hexafluoride is made by direct reaction of molybdenum metal in an excess of elemental fluorine: 772bd05546 The concept of a nuclear chain reaction was reportedly first hypothesized by

Hungarian scientist Leó Szilárd on September 12, 1933. Szilárd that morning had been reading in a London paper of an experiment in which protons from an accelerator had been used to split lithium-7 into alpha particles, and the fact that much greater amounts of energy were produced by the reaction than the proton supplied. Ernest... 772bd05546 Chemical chain reactions were first proposed by German chemist Max Bodenstein in 1913, and were reasonably well understood before nuclear chain reactions were proposed. It was understood that chemical chain reactions were responsible for exponentially increasing rates in reactions, such as produced in chemical explosions. 772bd05546 Nuclear fission was discovered by chemists Otto Hahn and Fritz Strassmann and physicists Lise Meitner and Otto Robert Frisch. Hahn and Strassmann proved that a fission reaction had taken place on 19 December 1938, and Meitner and her nephew Frisch explained it theoretically in January 1939. Frisch named the process "fission" by analogy with biological fission of living cells. In their second publication on nuclear fission in February 1939, Hahn and Strassmann predicted the existence and liberation of additional neutrons during the fission process, opening up the possibility of a nuclear chain reaction by assembling a critical mass of fissile material. 772bd05546

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