

Human existence in the perspective of time

The Cosmic Calendar

Imagine the lifetime of the universe (as far as we know to-day) compressed into the span of a single year. Then:

Real time	Cosmic Calendar time
$15 * 10^9$ years	1 year
$1.25 * 10^9$ years	1 month
$41 * 10^6$ years	1 day
$1.7 * 10^6$ years	1 hour
29,000 years	1 minute
480 years	1 second
5 years	1/100 of a second

Complete the Cosmic Calendar column in the following scheme:

Event	Real time, years ago	Cosmic Calendar, date
Big Bang	$15 * 10^9$	1 January
Origin of Milky Way Galaxy	$10 * 10^9$	
Origin of the Solar system	$5 * 10^9$	
Origin of life on Earth	$4 * 10^9$	
Invention of sex (micros)	$2.5 * 10^9$	
First cells with nuclei	$2 * 10^9$	
Oxygen atmosphere begins to form	$1.25 * 10^9$	
First invertebrates	$600 * 10^6$	
First fish	$500 * 10^6$	
First insects	$400 * 10^6$	
First dinosaurs	$300 * 10^6$	
First mammals	$200 * 10^6$	
First flowers, dinosaurs extinct	$125 * 10^6$	
First primates	$100 * 10^6$	

Event	Real time, years ago	Cosmic Calender, time of 31 dec
Origin of Proconsul	$20 * 10^6$	12:15
First humans	$2.5 * 10^6$	
Use of stone tools	$2 * 10^6$	
Domestication of fire	$0.5 * 10^6$	
Start of most recent glacial period	100,000	
Invention of agriculture	30,000	
First dynasty in Egypt	5,000	
Buddha, Greek culture	2,500	
Christ, Roman culture	2,000	
Mohammed, end of Roman empire	1,500	
Harald Blåtand, Mayan civilization	1,000	
Renaissance, Copernican revolution	500	
The industrial revolution	280	
Einstein theory of relativity	88	
Start of Second World War	54	
First humans in space	32	
A Blueprint of Survival	21	
The fall of the Berlin-wall	3	
Your start in 2. IB, Nørre G	2.5 months	

How is it being af May fly? Do human culture, civilization, creativity, destruction, thoughts, love, hate, your life, have any meaning in this perspective? Describe your feelings. Do you think that realizing and remembering this perspective, could influence our way of living together?

Idea from Carl Sagan: "The Dragons of Eden".

Human existence in the perspective of space

The Cosmic Room and Landscape

Imagine the size of the universe compressed a factor $1/10^{12}$. Then the Sun will be the size of a pellet and the orbit of the Earth will be along the circumference of a LP. And ...

$1 \text{ ly} = 1 \text{ light-year} = 9.46 * 10^{12} \text{ km} \approx 10 * 10^{12} \text{ km}$.

Object	Real universe, distance or size	Cosmic Landscape, distance or size
Diameter of Sun	$14 * 10^5 \text{ km}$	1.4 mm
Diameter of Earth	12,800 km	
Distance Earth - Moon	384,000 km	
Distance Earth - Sun	$150 * 10^6 \text{ km}$	
Distance Mars - Sun	$228 * 10^6 \text{ km}$	
Distance Pluto - Sun	$5.9 * 10^9 \text{ km}$	
Distance to Proxima Centauri (nearest star)	4.3 ly	
Diameter of Milky Way (our galaxi)	85,000 ly	

Now even compressed the Universe becomes too big to imagine. Let's compress it more, by a factor $1/10^{18}$!

Object	Real universe, distance or size	Cosmic Landscape, distance or size
Diameter of Solar System	$5.9 * 10^9 \text{ km}$	5.9 μm
Diameter of Milky Way (our galaxi)	85,000 ly	
Dist. to Andromeda Galaxi (nearest galaxi)	$2.1 * 10^6 \text{ ly}$	
Diameter of local group of galaxies	$5 * 10^6 \text{ ly}$	
Dist. to Virgo (nearest group of galaxies)	$50 * 10^6 \text{ ly}$	
Dist. to quasar PKS 2000 330	$12 * 10^9 \text{ ly}$	
Diameter of known universe	$12 * 10^9 \text{ ly}$	

We are living on a tiny spherical rock in a hudge empty space, which we neither can imagine as limited nor unlimited, finite nor infinite. What is the meaning of life? Is that a relevant question?

Idea from Paul Bergs e: "Verdensrummet og vi".