

The cosmic calendar compresses the local history of the universe into a single year. If the universe began on the January 1st, it was not until May that the **Milky Way**¹ formed. Other planetary systems may have appeared in June, July and August, but our Sun and Earth not until mid September. Life arose soon after.

Everything that humans have ever done occurred in a bright **speck**² at the lower right of the cosmic calendar. The Big-Bang is in the upper left, the first second of January 1st. Fifteen billion years later is our present time, the last second of December 31st.

Every month is one and a quarter billion years long; each day represents forty million years; each second **stands for**³ some five hundred years of our history, **the blinking of an eye**⁴ in the drama of cosmic time.

At this scale the cosmic calendar is the size of a **football field**⁵, but all human history would occupy an area the size of my hand. We're just beginning to trace the long and tortuous **path**⁶, which began with the **primeval**⁷ fireball and **led to**⁸ the condensation of **matter**⁹: gas, dust, stars, galaxies and, at least in our little **nook**¹⁰ of the universe, planets and life, intelligence and inquisitive men and women. We've emerged so recently that the familiar events of our recorded history occupy only the last seconds of the last minute of December 31st. Some critical events for the human species, however, began much earlier: minutes earlier.

So we change our scale from months to minutes. Down here, the first humans made their **debut**¹¹, around 10:30pm on December 31st. And, with the passing of every cosmic minute, each minute 30 thousand years long, we began the arduous journey towards understanding "where we live and who we are".

11:46, only 14 minutes ago, humans have **tamed**¹² fire.

11:59:20, the evening of the last day of the cosmic year, the 11th hour, the 59th minute, the 20th second: the domestication of plants and animals begins; an application of the human talent for making tools.

11:59:35, **settled agriculture communities evolved**¹³ into the first cities.

We humans appear on the cosmic calendar so recently that our recorded history occupies only the last few seconds of the last minute of December 31st. In the vast ocean of time which this calendar represents, all our memories are confined to this small square.

Every person we've ever heard of lived somewhere in there. All those kings and battles, migrations and inventions, wars and love, everything in the History books, happens here: in the last 10 seconds of the cosmic calendar.

We, on Earth, have just **awakened**¹⁴ to the great oceans of space and time, from which we have emerged. We are the **legacy**¹⁵ of fifteen billion years of cosmic evolution. We have a choice: we can **enhance**¹⁶ life and come to know the universe that made us or we can **squander**¹⁷ our fifteen-billion-year **heritage**¹⁸ in meaningless self-destruction. What happens in the first second of the next cosmic year depends on what we do here and now, with our intelligence and our knowledge of the cosmos.

VOCABULARY:

1 Milky Way: the spiral galaxy containing our solar system.

2 speck: a small spot.

3 to stand for: to represent; symbolize.

4 The blinking of an eye: piscar de olhos

5 Football field: the playing field on which football is played

6 Path: a way

7 Primeval: of an earliest time of the world

8 led to: (past of lead to): guide; influence into an action, opinion or statement; result in something.

9 Matter: the substance or substances of which any physical object consists or is composed.

10 Nook: a small quiet place which is sheltered by a rock, a big tree etc.

11 Debut: the first appearance of something.

12 Tamed: changed from the wild or savage state; domesticated: *a tame bear.*

13 Settled agriculture communities: agricultural, no longer nomad communities.

14 to awaken: to wake up or to make someone wake up.

15 Legacy: anything handed down from the past, as from an ancestor or predecessor: *the legacy of ancient Rome.*

16 to enhance: to raise to a higher degree; intensify; magnify, improve: *The candlelight enhanced her beauty.*

17 to squander: to carelessly waste money, time, opportunities etc, usually in an irresponsible way.

18 heritage: something that comes or belongs to one by reason of birth; an inherited lot or portion: *a heritage of poverty and suffering; a national heritage of honor, pride, and courage.*