RADIOACTIVE DECAY BACKWARD CALENDAR

If time were to reverse and we went back to the past instead of continuing towards the future, when would radioactive decay make our nuclear waste harmless? This is what this calendar shows, using Carl Sagan's cosmic calendar principle to visualize unimaginably long time spans at a glance.

CALENDRIER À REBOURS DE LA DÉSINTÉGRATION RADIOACTIVE

Si le temps s'inversait et que nous retournions vers le passé au lieu de continuer vers le futur, à quel moment la décroissance radioactive rendrait-elle nos déchets nucléaires inoffensifs ? C'est ce que montre ce calendrier, en utilisant le principe du calendrier cosmique de Carl Sagan pour visualiser en un coup d'œil des périodes de temps inimaginablement longues.

CLASSIFICATION OF RADIOACTIVE DECAY

0 to 1 half-life: High-Level Activity (HLA)			
1 to 3 half-lives: Intermediate-Level Activity (ILA)	24.10E+03	15.70E+06	704.00E+06
4 to 7 half-lives: Low-Level Activity (LLA)	367.00	366.58	348.38
7 to 10 half-lives: Very Low-Level Activity (VLLA)	1.00E+00	1.00E+00	1.00E+00
Beyond 10 half-lives: Below Regulatory Concern (BRC)	1.09E+03	1.67E+00	37.23E-03

ERA	DATE	Δ YEARS	PLUTONIUM 239 t1/2 = 24.1 ka	IODE 129 t1/2 = 15.7 Ma	URANIUM 235 t1/2 = 704 Ma	EVENT
Cosmology	1 janv. 00:00:00	13.80E+09	0.00000000	0.00000000	0.00000126	Big Bang, as seen through cosmic background radiation, which would have been last emitted 14 minutes after midnight
	19 janv. 00:00:00	13.10E+09	0.00000000	0.00000000	0.00000246	Oldest known Gamma Ray Burst
	26 janv. 00:00:00	12.85E+09	0.00000000	0.00000000	0.00000319	First galaxies form[4]
	16 mars 00:00:00	11.00E+09	0.00000000	0.00000000	0.00001975	Milky Way Galaxy formed
	13 mai 00:00:00	8.80E+09	0.00000000	0.00000000	0.00017106	Milky Way Galaxy disk formed
	2 sept. 00:00:00	4.57E+09	0.00000000	0.00000000	0.01106166	Formation of the Solar System
	6 sept. 00:00:00	4.40E+09	0.00000000	0.00000000	0.01283771	Oldest rocks known on Earth
Evolution of life on Earth	14 sept. 00:00:00	4.10E+09	0.00000000	0.00000000	0.01729107	First known remains of biotic life (discovered in 4.1 billion-year-old rocks in Western Australia).[5][6]
	21 sept. 00:00:00	3.80E+09	0.00000000	0.00000000	0.02243826	First Life (Prokaryotes)[7][8][9]
	30 sept. 00:00:00	3.40E+09	0.00000000	0.00000000	0.03136824	Photosynthesis
	29 oct. 00:00:00	2.40E+09	0.00000000	0.00000000	0.09232654	Oxygenation of atmosphere
	9 nov. 00:00:00	2.00E+09	0.00000000	0.00000000	0.13904681	Complex cells (Eukaryotes)
	5 déc. 00:00:00	800.00E+06	0.00000000	0.00000000	0.36601353	First multicellular life[10]
	7 déc. 00:00:00	670.00E+06	0.00000000	0.00000000	0.39430354	Simple animals
	14 déc. 00:00:00	550.00E+06	0.00000000	0.00000000	0.51167958	Arthropods (ancestors of insects, arachnids)
	17 déc. 00:00:00	500.00E+06	0.00000000	0.00000000	0.57213486	Fish and Proto-amphibians
	20 déc. 00:00:00	450.00E+06	0.00000000	0.00000000	0.63973296	Land plants; Ordovician–Silurian extinction events
	21 déc. 00:00:00	400.00E+06	0.00000000	0.00000001	0.66399606	Insects and seeds
	22 déc. 00:00:00	360.00E+06	0.00000000	0.00000006	0.68917938	Amphibians; Late Devonian extinction
	23 déc. 00:00:00	300.00E+06	0.00000000	0.00000030	0.71531782	Reptiles
	24 déc. 00:00:00	250.00E+06	0.00000000	0.00000159	0.74244762	Permian–Triassic extinction event; 57% of all biological families and 83% of all genera die
	25 déc. 00:00:00	230.00E+06	0.00000000	0.00000842	0.77060636	Dinosaurs
	26 déc. 00:00:00	200.00E+06	0.00000000	0.00004471	0.79983308	Mammals; Triassic–Jurassic extinction event
	27 déc. 00:00:00	150.00E+06	0.00000000	0.00023733	0.83016828	Birds (avian dinosaurs)
	28 déc. 00:00:00	130.00E+06	0.00000000	0.00125973	0.86165400	Flowers
Human evolution	30 déc. 00:00:00	65.00E+06	0.00000000	0.03549271	0.92825320	Primates
	30 déc. 06:24:00	65.00E+06	0.00000000	0.05539287	0.93751364	Cretaceous–Paleogene extinction event, non-avian dinosaurs die out[11]
	31 déc. 06:05:00	28.00E+06	0.00000000	0.28762013	0.97259281	Apes
	31 déc. 14:24:00	12.30E+06	0.00000000	0.51289424	0.98522016	Hominids
	31 déc. 22:24:00	2.50E+06	0.00000000	0.89468736	0.99752139	Primitive humans and stone tools
	31 déc. 23:44:00	400.00E+03	0.00000566	0.98162411	0.99958647	Domestication of fire
	31 déc. 23:52:00	200.00E+03	0.00237874	0.99076945	0.99979321	Anatomically modern humans
	31 déc. 23:55:00	110.00E+03	0.02292011	0.99422088	0.99987075	Beginning of most recent Glacial Period
	31 déc. 23:58:00	35.00E+03	0.22084454	0.99768433	0.99994830	Sculpture and painting
	31 déc. 23:59:32	12.00E+03	0.70299714	0.99945920	0.99998794	Agriculture
History begins	31 déc. 23:59:33	12.00E+03	0.71190083	0.99947851	0.99998837	End of the last Ice Age
	31 déc. 23:59:41	8.30E+03	0.78731234	0.99963299	0.99999181	Flooding of Doggerland
	31 déc. 23:59:46	6.00E+03	0.83844925	0.99972956	0.99999397	Chalcolithic
	31 déc. 23:59:47	5.50E+03	0.84906849	0.99974888	0.99999440	Early Bronze Age; Proto-writing; Building of Stonehenge Cursus
	31 déc. 23:59:48	5.00E+03	0.85982223	0.99976819	0.99999483	First Dynasty of Egypt, Early Dynastic period in Sumer, beginning of Indus Valley civilisation
	31 déc. 23:59:49	4.50E+03	0.87071216	0.99978751	0.99999526	Alphabet, Akkadian Empire, wheel
	31 déc. 23:59:51	4.00E+03	0.89290756	0.99982614	0.99999612	Code of Hammurabi, Middle Kingdom of Egypt
	31 déc. 23:59:52	3.50E+03	0.90421654	0.99984546	0.99999655	Late Bronze Age to early Iron Age; Minoan eruption
	31 déc. 23:59:53	3.00E+03	0.91566874	0.99986477	0.99999698	Iron Age; beginning of classical antiquity
	31 déc. 23:59:54	2.50E+03	0.92726600	0.99988409	0.99999741	Buddha, Mahavira, Zoroaster, Confucius, Achaemenid Empire, Qin dynasty, Classical Greece, Ashokan Empire, Vedas comp
	31 déc. 23:59:55	2.00E+03	0.93901013	0.99990341	0.99999785	Ptolemaic astronomy, Roman Empire, Christ, invention of numeral 0, Gupta Empire
	31 déc. 23:59:56	1.50E+03	0.95090301	0.99992272	0.99999828	Muhammad, Maya civilization, Song dynasty, rise of Byzantine Empire
	31 déc. 23:59:58	1.00E+03	0.97514256	0.99996136	0.99999914	Mongol Empire, Maratha Empire, Crusades, Christopher Columbus voyages to the Americas, Renaissance in Europe, Classi
	31 déc. 23:59:59	500.00E+00	0.98749307	0.99998068	0.99999957	Modern History; the last 437.5 years before present.
	1 janv. 00:00:00	0.00E+00	1.00000000	1.00000000	1.00000000	Today