

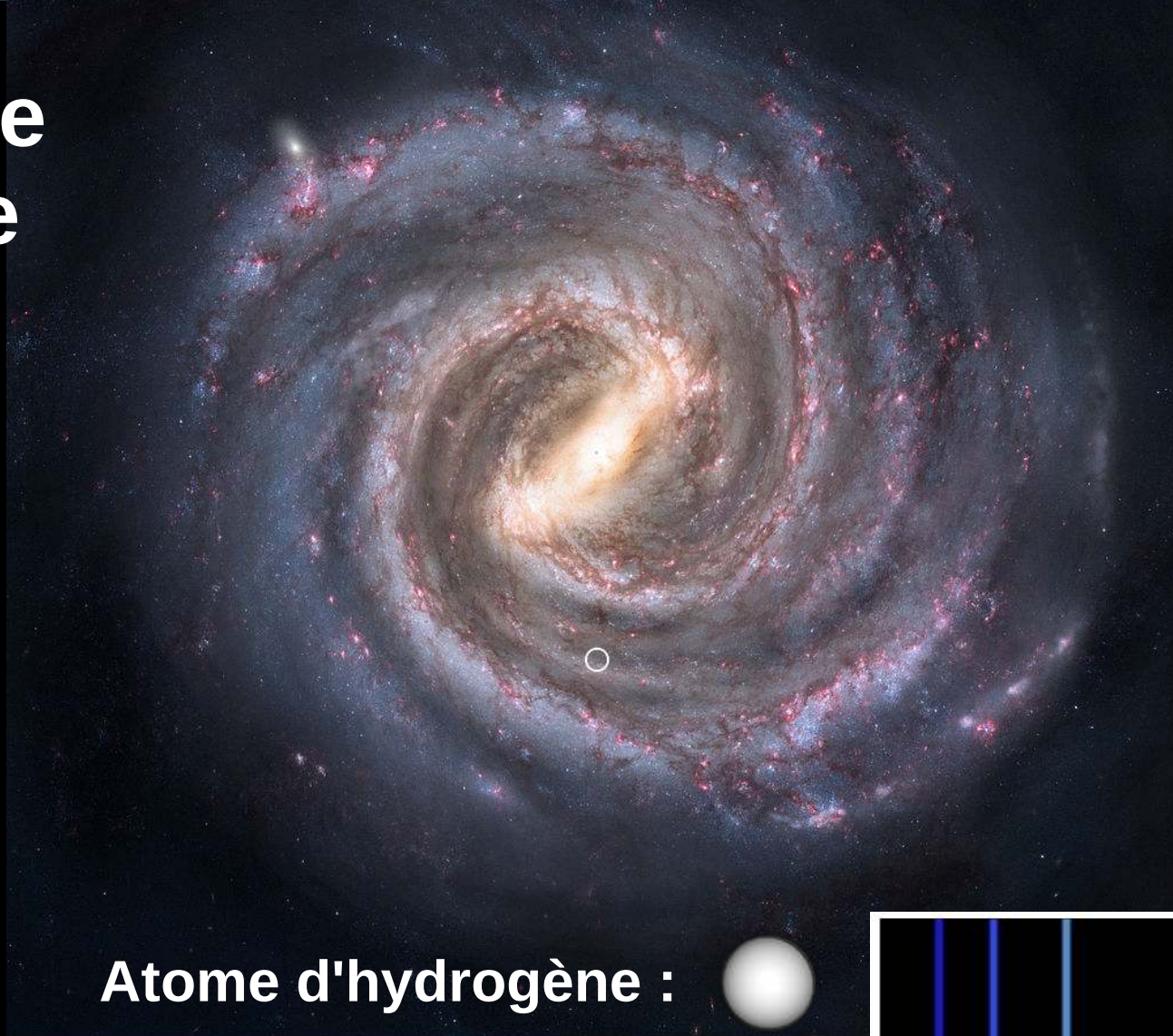
Atomes, éléments chimiques, et radioactivité

Première Enseignement Scientifique

Systeme solaire



La voie lactée



Atome d'hydrogène :

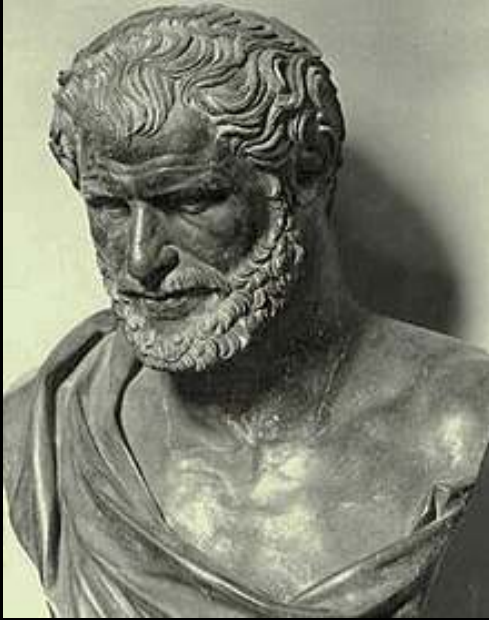


L'Univers



Démocrite

- 400 JC



Fondateur de l'atomisme



Mendeleïev

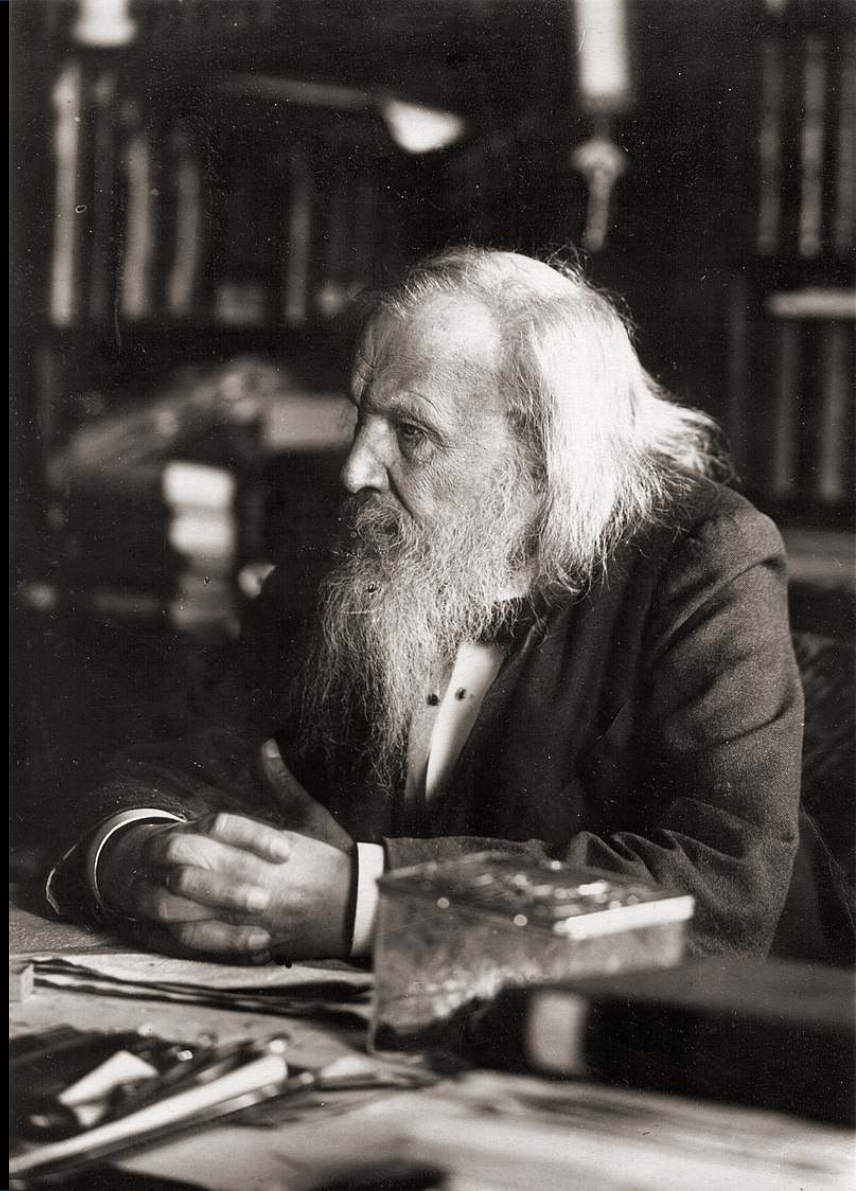
1869

ОПЫТЪ СИСТЕМЫ ЭЛЕМЕНТОВЪ.

ОСНОВАННОЙ НА ИХЪ АТОМНОМЪ ВѢСѢ И ХИМИЧЕСКОМЪ СХОДСТВѢ.

		Ti = 50	Zr = 90	? = 180.
		V = 51	Nb = 94	Ta = 182.
		Cr = 52	Mo = 96	W = 186.
		Mn = 55	Rh = 104,4	Pt = 197,1.
		Fe = 56	Rn = 104,4	Ir = 198.
		Ni = Co = 59	Pl = 106,6	Os = 199.
		Cu = 63,4	Ag = 108	Hg = 200.
H = 1		Be = 9,4	Mg = 24	Zn = 65,2
		B = 11	Al = 27,1	? = 68
		C = 12	Si = 28	? = 70
		N = 14	P = 31	As = 75
		O = 16	S = 32	Se = 79,4
		F = 19	Cl = 35,5	Br = 80
Li = 7	Na = 23		K = 39	Rb = 85,4
			Ca = 40	Sr = 87,6
			? = 45	Ce = 92
			?Er = 56	La = 94
			?Yl = 60	Di = 95
			?In = 75,6	Th = 118?
				Cd = 112
				Ur = 116
				Sn = 118
				Sb = 122
				Te = 128?
				Bl = 210?
				Cs = 133
				Tl = 204.
				Ba = 137
				Pb = 207.

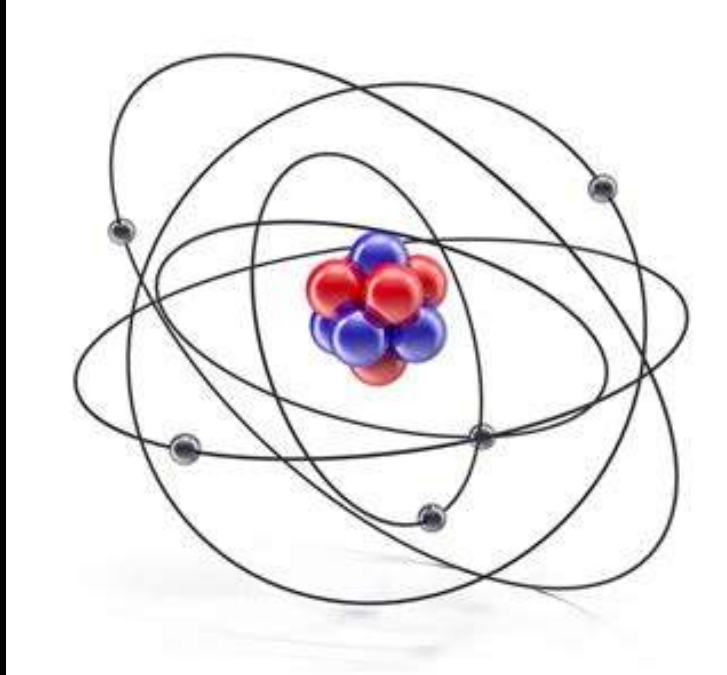
Д. Менделѣевъ



Éléments chimiques

Elements chimiques																		Hydrogène 1 H 1,007975		Hélium 2 He 4,002602															
Lithium 3 Li 6,9395		Béryllium 4 Be 9,0121831																Bore 5 B 10,8135		Carbone 6 C 12,0106		Azote 7 N 14,006855		Oxygène 8 O 15,99940		Fluor 9 F 18,99840316		Néon 10 Ne 20,1797 (6)							
Sodium 11 Na 22,98976928		Magnésium 12 Mg 24,3055																Aluminium 13 Al 26,9815385		Silicium 14 Si 28,085 (1)		Phosphore 15 P 30,97376200		Soufre 16 S 32,0675		Chlore 17 Cl 35,4515		Argon 18 Ar 39,948 (1)							
Potassium 19 K 39,0983 (1)		Calcium 20 Ca 40,078 (4)		Scandium 21 Sc 44,955908 (5)		Titane 22 Ti 47,867 (1)		Vanadium 23 V 50,9415 (1)		Chrome 24 Cr 51,9961 (5)		Manganèse 25 Mn 54,938044		Fer 26 Fe 55,845 (2)		Cobalt 27 Co 58,933194		Nickel 28 Ni 58,6934 (4)		Cuivre 29 Cu 63,546 (3)		Zinc 30 Zn 65,38 (2)		Gallium 31 Ga 69,723 (1)		Germanium 32 Ge 72,630 (9)		Arsenic 33 As 74,921595		Sélénium 34 Se 78,971 (5)		Brome 35 Br 79,904		Krypton 36 Kr 83,798 (2)	
Rubidium 37 Rb 85,4678 (3)		Strontium 38 Sr 87,62 (1)		Yttrium 39 Y 88,90584		Zirconium 40 Zr 91,224 (2)		Niobium 41 Nb 92,90637		Molybdène 42 Mo 95,95 (1)		Technétium 43 Tc [98]		Ruthénium 44 Ru 101,07 (2)		Rhodium 45 Rh 102,90550		Palladium 46 Pd 106,42 (1)		Argent 47 Ag 107,8682 (3)		Cadmium 48 Cd 112,414 (4)		Indium 49 In 114,818 (1)		Étain 50 Sn 118,710 (2)		Antimoine 51 Sb 121,760 (1)		Tellure 52 Te 127,60 (3)		Iode 53 I 126,90447		Xénon 54 Xe 131,293 (6)	
Césium 55 Cs 132,905452		Baryum 56 Ba 137,327 (2)		Lanthanides 57–71		Hafnium 72 Hf 178,49 (2)		Tantale 73 Ta 180,94788		Tungstène 74 W 183,84 (1)		Rhénium 75 Re 186,207 (1)		Osmium 76 Os 190,23 (3)		Iridium 77 Ir 192,217 (3)		Platine 78 Pt 195,084 (1)		Or 79 Au 196,966569		Mercur 80 Hg 200,592 (3)		Thallium 81 Tl 204,3835		Plomb 82 Pb 207,2 (1)		Bismuth 83 Bi 208,98040		Polonium 84 Po [209]		Astate 85 At [210]		Radon 86 Rn [222]	
Francium 87 Fr [223]		Radium 88 Ra [226]		Actinides 89–103		Rutherfordium 104 Rf [267]		Dubnium 105 Db [268]		Seaborgium 106 Sg [269]		Bohrium 107 Bh [270]		Hassium 108 Hs [277]		Meitnérium 109 Mt [278]		Darmstadtium 110 Ds [281]		Roentgenium 111 Rg [282]		Copernicium 112 Cn [285]		Nihonium 113 Nh [286]		Flerovium 114 Fl [289]		Moscovium 115 Mc [289]		Livermorium 116 Lv [293]		Tennessee 117 Ts [294]		Oganesson 118 Og [294]	
						Lanthane 57 La 138,90547		Cérium 58 Ce 140,116 (1)		Praséodyme 59 Pr 140,90766		Neodyme 60 Nd 144,242 (3)		Prométhium 61 Pm [145]		Samarium 62 Sm 150,36 (2)		Europium 63 Eu 151,964 (1)		Gadolinium 64 Gd 157,25 (3)		Terbium 65 Tb 158,92535		Dysprosium 66 Dy 162,500 (1)		Holmium 67 Ho 164,93033		Erbium 68 Er 167,259 (3)		Thulium 69 Tm 168,93422		Ytterbium 70 Yb 173,045		Lutécium 71 Lu 174,9668	
						Actinium 89 Ac [227]		Thorium 90 Th 232,0377		Protactinium 91 Pa 231,03588		Uranium 92 U 238,02891		Neptunium 93 Np [237]		Plutonium 94 Pu [244]		Américium 95 Am [243]		Curium 96 Cm [247]		Berkélium 97 Bk [247]		Californium 98 Cf [251]		Einsteinium 99 Es [252]		Fermium 100 Fm [257]		Mendélévium 101 Md [258]		Nobélium 102 No [259]		Lawrencium 103 Lr [266]	

Atome = noyau + nuage électronique

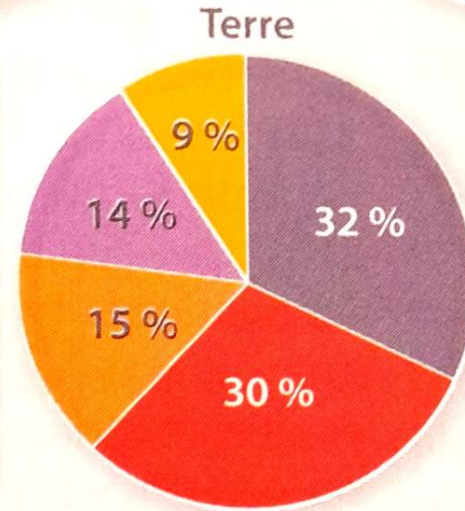
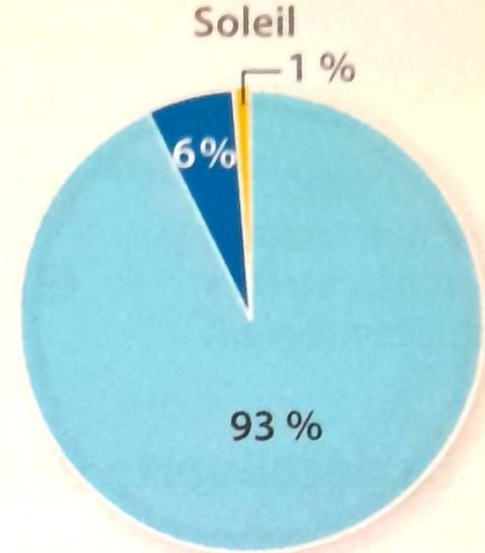
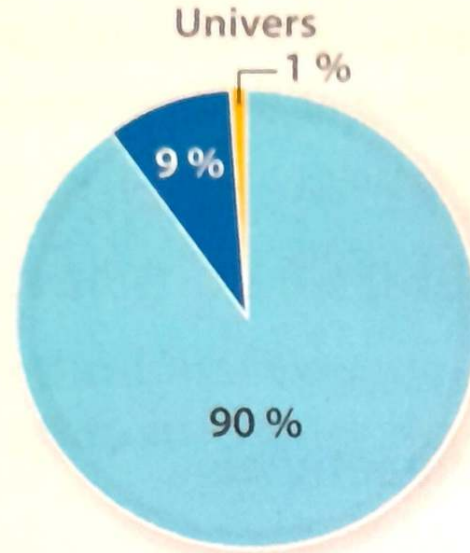


Noyau :



Élément chimique : atome, ions et isotopes.

Abondance des éléments chimiques :



(% en masse)

Prochaine épisode :

Les étoiles : machines à fabriquer des atomes.