

## The Periodic Table of the Elements and the Ionization Potentials

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Le Cornec (2002) presents an original display of the ionization potentials of the atoms, as they can be found in the literature (e.g. Moore, 1982). The display makes explicit that the atomic layers concerned by the successive ionizations of neutral atoms do not appear in the same order as the atomic layers are filled when passing from one atom to the next in the "periodic" table. Therefore, two different periodic tables can be build, one following the order of the filling of the atomic layers, this giving the conventional table (see Tarantola [2000] for the Janet form of the periodic table), and one following the order at which the atomic layers appear in the ionization process (see below). The extraordinary claims made by Le Cornec (that ionization data are not consistent with the standard atomic model, and that the standard periodic table should be modified) are not supported by any reasonable argumentation, and should probably be dismissed. It remains that the paper highlights the possibility of buiding a "periodic" table based on ionization data, a possibility that seems to have been ignored so far. The table below is just a more elaborated version of that proposed by Le Cornec. Elements 87, 88... should be placed where additional ionization data (or a realistic ionization model) will suggest.

Le Cornec, H., 2002, <http://preprint.chemweb.com/physchem/0201007>.

Moore, C.E., 1982, Analyses of Optical Spectra, in: CRC Handbook of Chemistry and Physics, 1982.

Tarantola, A., 2000, <http://preprint.chemweb.com/chemistry/0009002>. See also <http://www.periodic-table.net>.

### PERIODIC TABLE OF THE ELEMENTS, based on Ionization Potentials

																		1 H	2 He																		
																		3 Li	4 Be	5 B	6 C	7 N	8 O	9 F	10 Ne												
																		11 Na	12 Mg	13 Al	14 Si	15 P	16 S	17 Cl	18 Ar												
																		19 K	20 Ca	21 Sc	22 Ti	23 V	24 Cr	25 Mn	26 Fe	27 Co	28 Ni	29 Cu	30 Zn	31 Ga	32 Ge	33 As	34 Se	35 Br	36 Kr		
																		37 Rb	38 Sr	39 Y	40 Zr	41 Nb	42 Mo	43 Tc	44 Ru	45 Rh	46 Pd	47 Ag	48 Cd	49 In	50 Sn	51 Sb	52 Te	53 I	54 Xe		
55 Cs	56 Ba	57 La	58 Ce	59 Pr	60 Nd	61 Pm	62 Sm	63 Eu	64 Gd	65 Tb	66 Dy	67 Ho	68 Er	69 Tm	70 Yb	71 Lu	72 Hf	73 Ta	74 W	75 Re	76 Os	77 Ir	78 Pt	79 Au	80 Hg	81 Tl	82 Pb	83 Bi	84 Po	85 At	86 Rn						

																		1s			
																		2s		2p	
																		3s		3p	
												3d		4s		4p					
												4d		5s		5p					
4f														5d		6s		6p			