Proposal of Super Long Format for the Periodic Table*)

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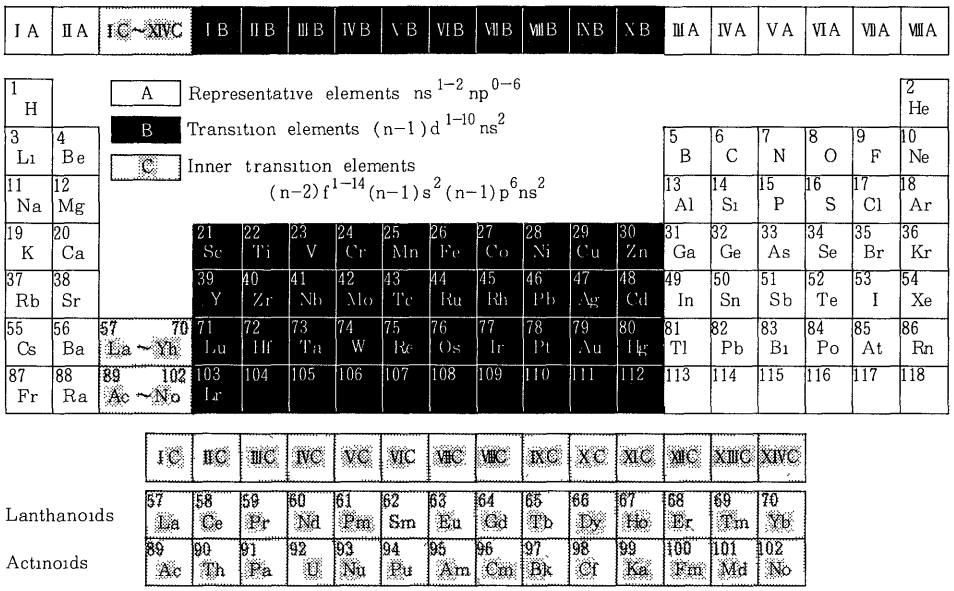
The report, "Confusion in the Periodic Table of the Elements" was published in the Journal of Chemical Education[1] and asked for comments and suggestions to solve the present confusion caused by the use of the type (a) and the type (b) of Table 1 in the subgroups of long form of the periodic table.

Table 1 Various Classifications of Subgroups in Long Format for Periodic Table

(a)	IA	IIA	IIIA	IVA	VA	VIA	VIIA		VIIIA		IB	IIB	IIIB	IVB	VB	VIB	VIIB	VIIIB
(b)	IA	IIA	IIIB	IVB	VB	VIB	VIIB		VIIIB		IB	IIB	IIIA	IVA	VA	VIA	VIIA	VIIIA
(c)	1	2	3d	4d	5d	6d	7d	8d	9d	10d	11d	12d	13	14	15	16	17	18
	H																	He
	Li	Be											B	C	N	O	F	Ne
	Na	Mg											Al	Si	P	S	Cl	Ar
	K	Ca	Sc	Ti	V	Cr	Mn	Fe	Co	Ni	Cu	Zn	Ga	Ge	As	Se	Br	Kr
	Rb	Sr	Y	Zr	Nb	Mo	Tc	Ru	Rh	Pd	Ag	Cd	In	Sn	Sb	Te	I	Xe
	Cs	Ba	La*	Hf	Ta	W	Re	Os	Ir	Pt	Au	Hg	Tl	Pb	Bi	Po	At	Rn
	Fr	Ra	Ac**															
	3f		*Ce	Pt	Nd	Pm	Sm	Eu	Gd	Tb	Dy	Ho	Er	Tm	Yb	Lu		
			**Th	Pa	U	Np	Pu	Am	Cm	Bk	Cf	Es	Fm	Md	No	Lr		

The Journal[2] also has reported that the comments and suggestions arising from the above and the other efforts to publicize the problem as widely as possible, produced a large number and variety of possible schemes for designating subgroups of elements in the periodic table, and finally the type (c) of Table 1 was selected for recommendation to the ACS Committee on Nomenclature as the official periodic table format of the American Chemical Society, at a meeting of the Nomenclature Committee of the ACS Division of Inorganic Chemistry in Washington, D. C., on August 29, 1983. However the present author should like to recommend the super long

Table 2 Super Long Format for Periodic Table of the Elements



format for the periodic table of the elements shown in Table 2.

This super long format distinguishes between the "sp-block" elements as A group, "d-block" elements as B group and "f-block" elements as C group. And the numbers I~VIII of A group elements (representative elements) mean the numbers of s and p electrons, the numbers I~X of B group elements (transition elements), those of d electrons and the number I~XIV of C group elements (inner transition elements), those of f electrons. This is very accurately reflecting electronic structure and resolves the above mentioned confusion, because of unequivocal designation for each subgroup.

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*) This super long format for the periodic table of elements is strongly supported by the chief and other editors of "Journal of Chemical Education" in Chemical Society of Japan and they recommend me to contribute to the "Journal of Chemical Education" in USA to publicize this type format as widely as possible, and the author has done it.

1) W. C. Fernelius and W. H. Powell, J. Chem. Educ., **59**, 504 (1982)

2) K. L. Loening, J. Chem. Educ., **61**, 136 (1984)