

## THE SCIENTIFIC METHOD OF KEPLER AND GAUSS

Sky Shields of the LaRouche Youth Movement introduces readers to the concept of sufficient harmony, which, Kepler notes, "is in no way outside the soul." In this animation, the seven divisions of the string, are shown to have the "harmonic" characteristic of self-similarity. The smaller divisions of whole and half steps are constructed by means of intersection of the larger harmonic ratios.



## ORDERING THE STABLE ISOTOPES: A NEW APPROACH

A new interpretation of the meaning of Planck's constant suggests a solution to the yet-unsolved question of the ordering of the stable isotopes. Laurence Hecht shares his idea of how the Moon model's space quantization explains observed radiation, and provides an organization of data for the isotopes.

1 H <sub>1/2</sub>	2 H <sub>1</sub>	3 He <sub>1/2</sub>	4 He <sub>0</sub>	5	6 Li <sub>1</sub>	7 Li <sub>3/2</sub>	8	9 Be <sub>3/2</sub>	10 B <sub>3</sub>	11 B <sub>3/2</sub>	12 C <sub>0</sub>	13 C <sub>1/2</sub>	14 N <sub>1</sub>	15 N <sub>1/2</sub>	16 O <sub>0</sub>	
17 O <sub>5/2</sub>	18 O <sub>0</sub>	19 F <sub>1/2</sub>	20 Ne <sub>0</sub>	21 Ne <sub>3/2</sub>	22 Ne <sub>0</sub>	23 Na <sub>3/2</sub>	24 Mg <sub>0</sub>	25 Mg <sub>5/2</sub>	26 Mg <sub>0</sub>	27 Al <sub>5/2</sub>	28 Si <sub>0</sub>	29 Si <sub>1/2</sub>	30 Si <sub>0</sub>	31 P <sub>1/2</sub>	32 S <sub>0</sub>	
33 S <sub>3/2</sub>	34 S <sub>0</sub>	35 Cl <sub>3/2</sub>	36 S <sub>0</sub> Ar <sub>0</sub>	37 Cl <sub>3/2</sub>	38 Ar <sub>0</sub>	39 K <sub>3/2</sub>	40 Ar <sub>0</sub> K <sub>-</sub> Ca <sub>2ec</sub>	41 K <sub>3/2</sub>	42 Ca <sub>0</sub>	43 Ca <sub>7/2</sub>	44 Ca <sub>0</sub>	45 Sc <sub>7/2</sub>	46 Ti <sub>0</sub> Ca <sub>2-</sub>	47 Ti <sub>5/2</sub>	48 Ti <sub>0</sub> Ca <sub>2-</sub>	
49 Ti <sub>7/2</sub>	50 Ti <sub>0</sub> V <sub>ec,-</sub> Cr <sub>2ec</sub>	51 V <sub>7/2</sub>	52 Cr <sub>0</sub>	53 Cr <sub>3/2</sub>	54 Cr <sub>0</sub> Fe <sub>0</sub>	56 Fe <sub>0</sub>	57 Fe <sub>1/2</sub>	58 Ni <sub>0</sub> Fe <sub>0</sub>	59 Co <sub>7/2</sub>	60 Ni <sub>0</sub>	61 Ni <sub>3/2</sub>	62 Ni <sub>0</sub>	63 Cu <sub>3/2</sub>	64 Zn <sub>2ec</sub> Ni <sub>0</sub>		
65 Cu <sub>3/2</sub>	66 Zn <sub>0</sub>	67 Zn <sub>5/2</sub>	68 Zn <sub>0</sub>	69 Ga <sub>3/2</sub>	70 Zn <sub>2-</sub> Ge <sub>0</sub>	71 Ga <sub>3/2</sub>	72 Ge <sub>0</sub>	73 Ge <sub>9/2</sub>	74 Ge <sub>0</sub> Se <sub>0</sub>	75 As <sub>3/2</sub>	76 Ge <sub>2-</sub> Se <sub>0</sub>	77 Se <sub>1/2</sub>	78 Se <sub>0</sub> Kr <sub>2ec</sub>	79 Br <sub>3/2</sub>	80 Se <sub>0</sub> Kr <sub>0</sub>	
<b>Legend:</b>																
58 Ni <sub>0</sub> Fe <sub>0</sub>	Most Abundant Isotope Other Stable Species		5	No Stable Species	No Other Stable Isotope	19 F <sub>1/2</sub>		226 Ra	Most Abundant Radio Isotope		Yellow bkgnd = odd (A) doublet	87 Rb <sub>2-</sub> Sr <sub>9/2</sub>	Long half-life Beta decay	64 Zn <sub>0</sub> Ni <sub>0</sub>	Long Half-life alpha decay	

## STABLE ISOTOPES BY MASS NUMBER

This reference graphic for discussion shows boxes numbered from 1 to 238, representing the mass number, and arranged for convenience in rows of 16. The stable isotopes are identified by chemical symbol; the most abundant are in bold face.