Record: 1

Title: Periodic Table Turned.

Source: Current Science; 10/7/2005, Vol. 91 Issue 3, p12-12, 1p, 1 color

Document Type: Article

Subject Terms: CHEMICAL elements
ASTRONOMY

Abstract: Focuses on Chemical Galaxy that improves on some of the design flaws of the old periodic table.

Lexile: 970

Full Text Word Count: 444

ISSN: 00113905

Accession Number: 18387477

Database: Middle Search Plus

Section: DISCOVERIES
Physical

Periodic Table Turned

News Briefs From Current Science
Dateline: OXFORD, England —

A British scientist has put a new spin on the periodic table. He has rearranged the elements so that they radiate from a central point against the backdrop of a spiral galaxy much like our own, the Milky Way.

The periodic table is, of course, the chart in which the elements are positioned in rows and columns according to their similarities and differences. In 1869, a Russian chemist, Dmitry Mendeleyev, assembled the chart from the 63 elements that were known to exist then. It grew in size as new elements were discovered in the years that followed.

The new Chemical Galaxy, designed by Philip Stewart, an ecologist at the University of Oxford, improves on some of the design flaws of the old periodic table. One flaw: The old table lacks flow. It reads left to right from top to bottom as the elements increase in atomic number. Atomic number is the number of protons (positively charged particles) of each atom of an element. Successive elements, such as neon (10) and sodium (11) or argon (18) and potassium (19), appear on opposite sides of the table. By contrast, the Chemical Galaxy spirals outward from the center in a continuous progression of elements from lowest to highest atomic number.

The galactic table is unconventional in more than design; it includes neutronium at its center. Neutronium is a term used more often in science fiction than science. It is defined as an element that has an atomic number of zero. Neutronium is said to have no protons, just neutrons. It is also said to exist in neutron store — extremely small, dense stars that consist mostly of neutrons.

Still, the Chemical Galaxy preserves the basic features of the original design. The columns in the old table correspond to the spokes in the new table. For example, the elements in the far right column of the old table, the noble gases, appear in the same spoke of the

new table. The noble gases (helium, neon, argon, krypton, xenon, and radon) form very few compounds with other elements.

The Chemical Galaxy was inspired by a science exhibition that Stewart attended when he was 12 years old. The exhibition featured a design of a spiral periodic table. Stewart's innovation was to put the spiral table on a starry background.

PHOTO (COLOR): The Chemical Galaxy is a new type of periodic table that spirals outward like the Milky Way. Its inventor. Philip Stewart, hopes that it will make students appreciate the elements and the larger context in which they exist.
