

NISTory of the Periodic Table

Cesium:

The frequency of microwave radiation from this atom in atomic clocks such as the NIST-F2 (2014), is used to define the second.

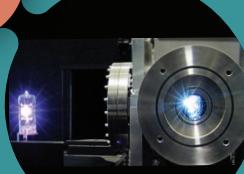
Image Credit: NIST

Krypton:

Wavelengths of light from this atom, measured by NIST researchers, defined the official meter until 1983.

Image Credit: Neil Tucker/Wikimedia

1931

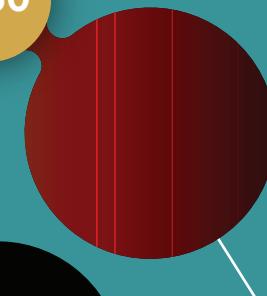


Deuterium:

This rare heavy isotope of hydrogen was concentrated at NIST and then identified by Columbia University's Harold Urey (Nobel Prize 1934). On the left is a deuterium lamp; the light on the right comes from the NIST SURF III Synchrotron Ultraviolet Radiation Facility.

Image Credit: Uwe Arp/NIST

1960



Cesium:

The frequency of microwave radiation from this atom in atomic clocks such as the NIST-F2 (2014), is used to define the second.

Image Credit: NIST

Sodium:

NIST scientists used lasers to cool a gas of these atoms to more than theoretically expected to temperatures even closer to absolute zero.

(Nobel Prize 1997)

Image Credit: H. Mark Helfer/NIST

1988

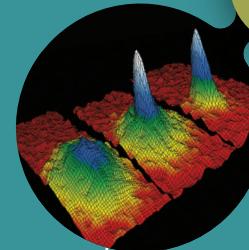


Rubidium:

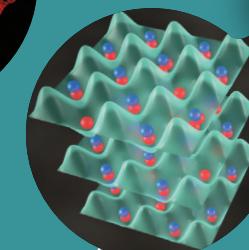
These atoms were used by researchers at JILA (NIST-CU Boulder) to create the first Bose-Einstein condensate (Nobel Prize 2001).

Image Credit: NIST/JILA/CU-Boulder

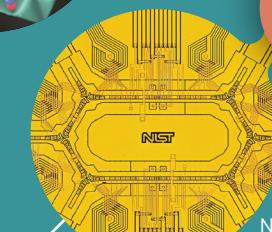
1995



2008



2010 /2011



Beryllium and Aluminum:

Individual ions of these atoms were probed in a NIST trap to create "quantum logic" clocks that measured the second more precisely than before and tested Einstein's general theory of relativity. Such quantum manipulations were recognized in the 2012 Nobel Prize.

Image Credit: J. Amini/NIST