Program: Strange Universe
Speaker: Kurt Williams, Deputy Director/Chief Operating Officer, Link Observatory Space Science Institute
Attendance: 92
Guests: Billy Allen, PhD; B. Chabenne; Ted Danielson; Patricia Jacob; Dr. Benny Ko
Scribe: Dick Carter
Editor: Carl Warner

Editor's Note: The nuclear pharmacy program originally planned for today encountered a last minute scheduling conflict and will be presented at another time. Scientech Club is deeply thankful for Mr. Williams' last minute presentation of the Link program first shown at the Morresville Public Library on February 17, 2018.

Today's program, "**Strange Universe**", was presented by Kurt Williams, Deputy Director/Chief Operating Officer, Link Observatory Space Science Institute. Additional information can be obtained at www.LinkObservatory.org. This information is not science fiction; these are science facts.

Our known universe began its formation 13.8 billion years ago, in a dramatic conversion of energy into matter, and space-time. Some call that process the Big Bang. Our universe contains distributions of both the macro-sized matter accumulations as well as the quantum-sized bits of matter. We are still learning how these systems interact.

Neutron stars derive from the massive supernova explosion of a thermonuclear fusion star that was far larger than our Sun. The supernova explosion expels the outer layer of the star, that had depleted much of its nuclear fuel supply, and it simultaneously implodes and gravitationally condenses the core material of that system. The supernova outer remnant expands forever spreading multiple nuclear particles and stellar elements; the core neutron star decreases in size to about twelve miles in diameter from the original star's diameter of over a million miles. Axial rotation of a neutron star at over 40,000 rpm has been detected accompanied by a hyper-radiating magnetic beam line axis. A teaspoon full of this new dense matter would weigh over 10 million tons. It is estimated that there are around 100 million neutron stars in our Milky Way Galaxy. If Earth were compressed to a density of a neutron star, it would be 900 feet in diameter!

Recently, a 196,000 mph "Interstellar Visitor", an object of unknown composition, was sighted after it had rounded the Sun in a surprisingly close approach. It is "cigar shaped" with a length of about a one quarter of a mile, and a diameter about one tenth of that length. It appears this foreign object came from another star system as its approach and departure path was near perpendicular to the plane of the solar system. It is apparently not an accretion formation from our own solar system debris as nothing in the solar system has been seen with such a steep orbital inclination.

Another foreign object, STARMAN sitting in Elon Musk's Tesla Roadster, was recently launched from a Falcon Heavy, a new SPACEX rocket system that is said to be eight times more economical than earlier orbital heavy payload launching systems.

The coldest star discovered is 80°F. These stars are the coolest category of brown dwarf stars. The Y-dwarfs are not thermonuclear active, since they are less than the mass necessary to promote thermonuclear fusion activity. They are massive accumulations of gravitationally active matter. About 100 of these stars have been observed so far.

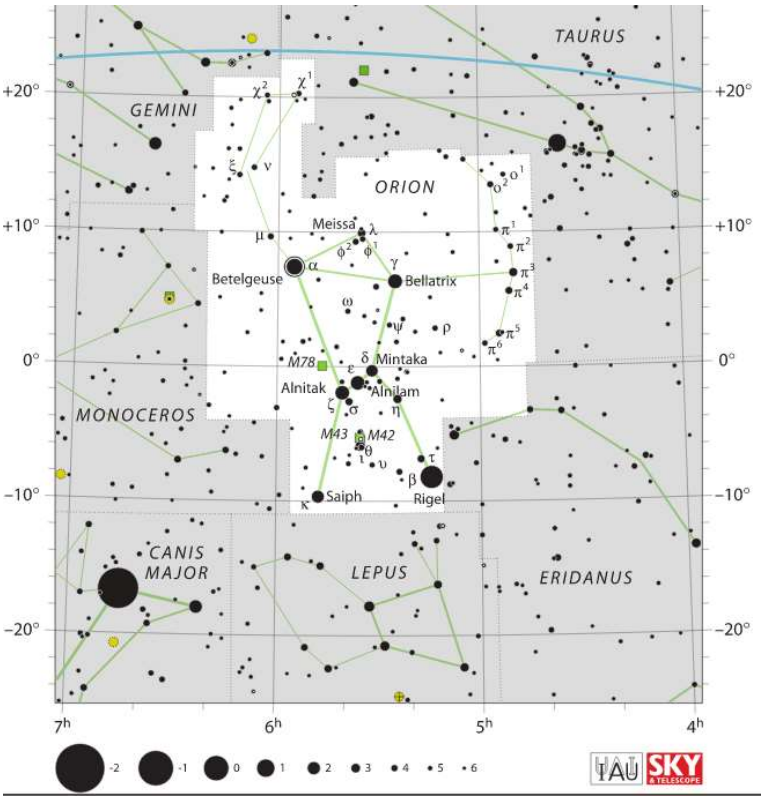
Rogue planets, in the range of diameters of our known solar orbiting planets, are ejected from other solar systems. They are traveling through interstellar space without a parent star or other companions. These planets may contain water, as found on earth and seven of our solar system moons, under their icy surfaces.

In the largest star category, Betelgeuse (see map below) can be located in the Orion constellation. It is 640 light years away and 825 million miles in diameter. If sitting where the Sun is, Betelgeuse

would extend beyond the orbit of Jupiter. VY Canis Majoris, the largest star found, is 3900 light years away, and 1.3 billion miles in diameter. We hope that system does not become a supernova. Our Sun is 895,000 miles in diameter.

Many other unique systems have been located: a 75% diamond planet orbiting a Pulsar object, PSR J1719-1438b; rock-raining planets and glass-fiber-raining planets are located in our universe. Still, much more is yet to be discovered! We look forward to receiving updates.

Kurt Williams



Orion is visible now. Look towards south after dark.