Since the invention of the telescope humans have always wondered if other planets can sustain life. Life must exist on other planets, space is infinite and there are billions of solar systems in the universe. There has to be a chance that life developed on a couple of planets in any of these solar systems. Would the life on these planets be basic single-celled organisms? or more advanced than humans? The ability for a planet to sustain life is tough, the conditions have to be perfect. We look at earth's history and see that liquid water and oxygen is essential for a planet to sustain life. We also see that at one point earths atmosphere was just carbon dioxide, but through the evolution of plants, earth obtained the oxygen needed in the atmosphere in order to sustain life. If there is life in other planets, is there a chance we will find them in our lifetime or ever? Life in space can be possible due to earth like planets found in other solar systems, liquid water running on mars and astronauts growing plants in space.

Earth has the perfect conditions needed in order to sustain life, and is the only planet that humans know of that can sustain life, but what if a planet like earth was found? Scientists at NASA have found a planet 1400 light years away from Earth in the cygnus constellation that is the first earth size planet found. This planet was named Kepler-425b and nicknamed “Earth’s bigger, older cousin” (Pearson). Kepler-425b not only similar in size to Earth but it is also located in the “habitable zone” just like Earth (Pearson). The habitable zone is the region where liquid water would be possible on the surface of the planet and liquid water is essential to sustaining life. Scientists at NASA currently are not sure whether this planet has oxygen or water or is rocky like earth but so far it is the closest match. The gravity on this planet is twice that of Earth’s which makes a rocky surface very possible. This planet gets about the same amount of energy from its star as Earth does from the sun. Scientists at NASA are almost certain that this planet has an atmosphere but they are unsure what it is made of. If their assumptions are correct, its atmosphere would be thicker than Earth’s but would also have active volcanoes. Much like Earth’s 365-day year, this planet takes 385 days to orbit its star making it have 385 days in a year. This planet has been around for 6 billion years, 1.5 billion years longer than earth. Meaning that there may be life on this planet comparable to earth’s life. With its similar living conditions and position in its solar system, it is a near replica of Earth making it a major possibility that it can sustain life. This is the most Earth-like planet found to date and scientists at NASA are continuing to research this planet to see if life there is possible. At this point, life on this planet seems reasonable and may be a reality.

In order for a planet to sustain life it must contain running water. Running water is essential to every life form observed on earth and scientists believe that in order for life to be present in space there must be running water. Recently scientists at NASA have found that mars has running water on its surface. For the past 24 years Mars has been explored and by scientists and recently they have found running water on its surface making it possible that life may exist on Mars. Scientists also “detected signatures of hydrated minerals” on the slopes of Mars (Anderson). One key element needed to sustain life in space is the availability of running water. Scientists are now planning a trip to mars in order to explore the areas surrounding the water in hope of finding life forms. Life on mars or space may now be a possibility after finding flowing water on the surface of Mars. For many years, scientists have seen frozen ice caps below the surface of Mars but without any real evidence of flowing water they were not sure if life would be capable of living on Mars. With the recent discovery of flowing water, there is a major possibility for life on Mars. Although it may not be any advanced life forms but there may be single-celled organisms surviving near the flowing water. It may not be the kind of life forms as Earth but even Earth started as single-celled organisms and evolved into the diversity of life we see today.

In order for life to grow, the conditions must be perfect. There must be enough light energy, the right amount water and the right amount of oxygen for humans and carbon dioxide for plants. It has always been thought that the environment in space is not capable for life to grow and thrive. For many years astronauts tried to “cultivate edible plants in microgravity” and continuously failed until this year (Taylor). Astronauts were able to grow Zinnia plants in the International Space Station(ISS) this year which allows the idea of life in space to become a reality. Zinnia plants are long lasting plants that are also edible. The growing and blossoming of these plants proves that space contains the right conditions for plants to grow and thrive. Not only are the conditions right, but these plants were grown “aeroponically” (Taylor). Plants that are grown aeroponically are grown in an air or mist environment without any soil. These plants also require less water and fertilizer and are much less prone to disease. They also grow three times faster than plants grown in soil. Plants being able to grow in space means that there are capabilities for life and one day some life form may be discovered in space.

Although humans have not discovered life in space yet within the past year there have been major breakthroughs. The earth-like planet Kepler-245b has great potential to be a host for life and may even be more advanced than earth as it has had 1.5 more billion years to develop. The recent discovery of running water on Mars, proves that it has the key component for life and there may be some life forms lurking around this water that have not been discovered. With the ability for plants to grow in space, there are conditions allowing for the growth of life in space and in the case plants more efficiently than on Earth’s soil. With all of this in consideration humans may not be alone in this world.

Works Cited

Anderson, Gina. "NASA Confirms Evidence That Liquid Water Flows on Today’s Mars." *NASA*. NASA, 28 Sept. 2015. Web. 24 Jan. 2016. <https://www.nasa.gov/press-release/nasa-confirms-evidence-that-liquid-water-flows-on-today-s-mars>.

Pearson, Michael. "NASA Finds 'Earth's Bigger, Older Cousin' - CNN.com." *CNN*. Cable News Network, 24 July 2015. Web. 24 Jan. 2016. <http://www.cnn.com/2015/07/23/us/feat-nasa-kepler-planet-discovery/>.

Taylor, Lin. "Astronauts Grow First Zinnia Flower in Space." *CNN*. Cable News Network, 18 Jan. 2016. Web. 24 Jan. 2016. <http://www.cnn.com/2016/01/18/world/first-space-flower-iss/>.