

Patricia LaCaze

Dr. Rodriguez

Chemistry in the STEM classroom

March 6, 2019

Nature of Science Paper: Astrology

Before the facts and progression of the truth of science and astronomy, there was astrology. In the ancient times, as far back as the 3rd millennium BC, astrology was the “science” of the day (Britannica, 2019). Believed by countless millions, and still a notable force today, astrology isn’t going anywhere. Science however, after the solidification of the heliocentric solar system in the late 1600’s, has dutifully labeled astrology a pseudoscience (NASA, 2009). Astrology and the geocentric model are derived from the same background; this being, the Earth centered in the center of the solar system, and all planets, stars and all things in the universe revolve around the Earth. Before the heliocentric model was accepted, the geocentric model of the solar system was believed and ruthously enforced for 1,500 years by the Inquisition despite growing evidence or theories by Nicholas Copernicus, Giordano Bruno, and Galileo Galilei (Universe Today, 2016). To this end, it can be deduced that science evidence and what society blindly believes have not been in agreement. As the nature of science evolves to the modern time, and even though the heliocentric model is accepted today, astrology and its predictions still holds firm with society.

So what is Astrology anyway? Astrology is a type of divination that involves the forecasting of earthly and human events through the observation and interpretation of the fixed stars, the Sun, the Moon, and the planets (Britannica, 2019). It is believed that the planets that

were rising in the sky at the moment of your birth would profoundly influence your fate. These stars would be in specific constellations, and this constellation is what determines your “sign”. These can be noted as the signs of the zodiac and thus give you a horoscope or what your personality is like, and guide you towards a fate based on your zodiac (2019). However, science can dispute this logic today as pseudoscience. If not a pseudoscience, then perhaps astrology could be a sort of observational or experimental error, or "a proliferation of compelling articulations, the willingness to try anything, the expression of explicit discontent, the recourse to philosophy and to debate over fundamentals" or such is the saying of Thomas Kuhn (The Guardian, 2012). In the end, the crisis is resolved by a revolutionary change in world-view in which the now-deficient paradigm is replaced by a newer one (2012). This would mean, astrology is thus a new science due to recent ongoing new evidence and facts and the slow progression of acceptance. Or perhaps scientists are holding on to the false theories, as Karl Popper would suggest, when there are no predictively superior rivals to turn to (Internet Encyclopedia of Philosophy). Popper holds that scientific practice is characterized by its continual effort to test theories against experience and make revisions based on the outcomes of these tests. So is astrology in the works of a new science as Popper and Kuhn may suggest? Despite the growth in society and science of progression, astrology isn't renewed or changed through the generations because of solid scientific fact; it is instilled and spread through social communication, the feeling of acceptance to an astrological significance, and a guide to accomplishing everyday life. This connection with the cosmos and to each other is enough to power the pseudoscience of astrology into everyday news articles, social media updates, and give people the need to wear astrological pendants or gear (The Guardian, 2012). This acceptance and governance by the cosmos is what drives society to believing astrology, and thus the passing of

astrology on to the next generation is solidified. Astrology may alter its reading and identity from generation to generation to meet the needs of the daily occurrences, but the backbone of astrology still presides today because of the need of society wanting it, not scientific fact.

The late astronomer Carl Sagan has denounced astrology as a pseudoscience and a sort of “fuzzy thinking” (Smithsonian, 2014). In his series *Cosmos*, he disproves astrology by using the example of twins. If a set of twins were born on the same day, and one of the twins was killed, and the same astrological constellation was rising for both of them at the moment of their birth, then how could they have such profoundly different fates? He then argues that horoscopes are so vague that they can include anyone, and that they even disagree with each other when using two different newspapers and reading the same sign (Cosmos, 1980). Indeed millions of us on Earth have different fates and different lives with different personalities. It feels connecting to be governed by a “set of traffic signals in the sky, so why try to change anything?” (Cosmos, 1980).

Society has come a long way from burning people at the stake for not believing the accepted theories at the time. However, one can argue using astrology as an example, is science fact actually believed by the masses today? It seems any celebrity can say pseudoscience or conspiracy theory and suddenly thousands, perhaps millions believe so. What if a celebrity had mentioned the world is flat; would society believe this without any evidence? The hard truth based on recent events is yes, they would. As the news of the basketball player Kyrie Irving saying he believes the world is flat, the news took social media by storm (NBA, 2018). Once a conspiracy hits social media, it produces a ripple effect, and everyone takes a side. Personally I have felt the effects in my own classroom. On this subject, students ask me if it the world being flat was true, and I even have arguments with a specific student today who irrefutably believes the world is flat, despite my teachings and evidence I present to him. This is a very dangerous

tool and torch the celebrities have, and awareness and knowledge of how to weld this torch would go a long way. Blind ignorance, is extremely dangerous for society.

Throughout Earth's history, many people have died or suffered greatly for the name of science and truth. Whether the scientific progression is through the straightforward scientific method, or as Popper and Kuhn would suggest, the slight alterations, chaos and then slow acceptance of a new science fact. In the end, one cannot argue that science has changed immensely over the past few hundred years. Society must be accepting of new evidence even if it goes against all they believe in. As astrology continues to govern several million daily lives, a care should be taken to think first of the science behind the horoscope, the facts that denounce it, and for society to respect science and the truths it gives.

Works Cited

Internet Encyclopedia of Philosophy, Internet Encyclopedia of Philosophy,

www.iep.utm.edu/pop-sci/.

Achenbach, Joel. "Why Carl Sagan Is Truly Irreplaceable." *Smithsonian.com*, Smithsonian

- Institution, 1 Mar. 2014,
www.smithsonianmag.com/science-nature/why-carl-sagan-truly-irreplaceable-180949818/.
- NBA.com. "Kyrie Irving on Flat-Earth Comments: 'I'm Sorry'." *Indiana Pacers*,
 NBA.com/Bulls, 2 Oct. 2018,
www.nba.com/article/2018/10/01/kyrie-irving-regrets-flat-earth-comments.
- Naughton, John. "Thomas Kuhn: the Man Who Changed the Way the World Looked at Science."
The Guardian, Guardian News and Media, 18 Aug. 2012,
www.theguardian.com/science/2012/aug/19/thomas-kuhn-structure-scientific-revolutions.
- Philosophy, Physics and. "Astrology as Explained by Carl Sagan." *YouTube*, YouTube, 2 June
 2016, www.youtube.com/watch?v=KbJJ7bg-en0&t=7s.
- Pingree, David E., and Robert Andrew Gilbert. "Astrology." *Encyclopædia Britannica*,
 Encyclopædia Britannica, Inc., 10 Jan. 2019, www.britannica.com/topic/astrology.
- "Planetary Motion: The History of an Idea That Launched the Scientific Revolution." NASA,
 NASA, earthobservatory.nasa.gov/features/OrbitsHistory/page1.php.
- Williams, Matt. "What Is The Geocentric Model Of The Universe?" *Universe Today*, Universe
 Today, 4 Feb. 2016, www.universetoday.com/32607/geocentric-model/.