The faults in the stars

By:Sophia White

In our galaxy, there are many different and amazing things we have discovered, such as new planets, other galaxies, and even different type of stars. One important thing that scientists have discovered are the phases of a star. The phases are stellar nebula, then either an average star or a massive star, next is either a red giant or a red supergiant, and then it can turn into planetary nebula or a supernova, after a planetary nebula is gone it turns into a white dwarf. When a supernova dies, it can turn into a neutron star or a black hole. A supernova is the explosion of a super red giant, which is a type of star that is about 1700 times bigger than our sun in our solar system. The effect of a supernova can cause gamma rays which are known as gamma radiation. This consists of the shortest electromagnetic wave, which is shorter than x-rays. Recently, there has been an explosion that has been detected by multiple telescopes. On October 9, 2022, a powerful burst of gamma rays was detected in telescopes across the world, and these bursts of rays may have been caused by a supernova. Anna Gaser, who is a middle schoolscience teacher, said "I believe it. There is so much we don't know and it is important to keep an open mind when we explore the unknown, much like space. Anything is possible until proven wrong." This means that we should be ready in case of something like this happening again in the next few years because it takes a very long time for the explosion of a star to hit us, but it also depends on how close the star was to us. Scientists believe that the explosion came from a star in the Sagitta constellation, which is around 2.4 billion light years away from our solar system, and turned into a black hole after billions of years of traveling. We have just discovered the explosion, which set off the detectors on NASA's Fermi Gamma-ray space telescopes, the Neil Gehrels Swift

observatory, the Wind spacecraft, as well as the ground based telescopes such as the Gemini South telescope in Chile. Scientists haven't seen any gamma rays since March 9, 2008, which is a quite a bit of time since we have seen something like this, especially since this is the most powerful burst that NASA has seen. This discovery is very important to us because this will help scientists understand more about space. This will also help scientists understand what may happen to our star in the future, and how this may affect our solar systems around us; however, it is difficult to predict when it will happen. Barry Sneed, who is a middle school science teacher, said, "It's hard to predict, but if a star were to burn out and explode or become a supernova on our galaxy or a galaxy nearby it could hit us with debris or affect the air we breathe, like the oxygen levels which could potentially wipe out life as we know it." This can be very dangerous especally since our sun will one day explode and wipe out all life forms and most likely destory our solar system and even solar systems nearby. All that scientists know about our sun at the moment is that it won't be dying anytime soon and will be burning for around 5.5 billion more years. Right now, our sun is 4.5 billion years old, which is still pretty young. Once our sun starts to cool down, it will get larger and turn red. This will mean that our sun one day will become a red giant and then turn into a supernova. There is still so much we don't know about our universe, and still so much out there to explore and discover.