

Our Night Sky for May 13th ,2024

Last week I spoke briefly about the constellation Corona Borealis, a small group of five stars shaped like a crown or horns. It is currently rising and you will find it about halfway upward from due east. All of the planets are close to the sun and will become part of our morning sky later this year.

So, for now let's talk about the sun. All stars operate based on the same basic process, nuclear fusion and a follow-on process Nucleosynthesis which creates all the matter that the universe is made of. The wizards of the Middle Ages trying to make gold from lead would have been quite amazed to know that very process occurs naturally inside of stars. Nucleosynthesis is the process of adding protons and neutrons in an atomic nucleus to build heavier and heavier elements. The basic process that allows stars to shine is the fusion of two hydrogen nuclei to form helium and sometimes deuterium as well as a little bit of energy in the form of light and heat energy. There are several ways this process happens. One was the origin of our universe, the big bang. Another occurs at the core of a sun where the enormous temperature and pressure allows fusion to occur. It is so dense there that that tiny photon of light liberated by the process takes about ten thousand years to reach the solar surface. And then another eight minutes to reach your face as you watch the sun set so you can again enjoy Our Night Sky.