

Our Night Sky for November 19th

Consider for a moment that you are crossing a road on a dark night. In the distance you see headlights but you decide they are a long way off and you carefully cross the road. You are doing almost exactly what astronomers have been doing for decades. Just as you made a judgement of distance based on your familiarity with the brightness of headlights, astronomers can measure the brightness or magnitude of stars very precisely and make estimates of the distance to a star. Of course, there is considerably more science involved but the basic process is as described. Many processes in science are at a basic level, pretty straight forward and easy to understand. Another example is that you and I can judge the distance to a nearby object without even giving it a thought. Our brain constantly calculates the relative distance to objects because our two eyes are a fixed distance apart and you effortlessly make these measurements. Well much the same way you could make a measurement of the distance of solar system objects. You could make a careful measurement of Saturn against a background star in June and then again in December, apply a bit of trigonometry, and you produce an accurate measurement of the precise distance to Saturn or other local objects. Measuring astronomical distances is a science of very big numbers but actually based on some fairly simple science.