

To Model our Solar System

By Klaus Jericho and Gord Falconer.

Our Solar System consists of one star (our Sun), nine planets and their moons (about 157 in total), and many thousands of asteroids, comets and other odd bits of rock or dust. Our Sun is only one of about 200 billion stars in our galaxy (the Milky Way), which in turn is just one of billions of galaxies in our Universe. But our Solar System is special to us.

The mass of our Solar System:

Let 10,000 corn kernels represent our Solar System. In this model, 9987 kernels would be our Sun, and the remaining 13 kernels would represent all 9 planets. Jupiter alone would account for 8 kernels, and all the other planets, including Earth, would add up to the remaining 5. Our sun has a mass which is 333,000 times greater than Earth. It "burns" 600 million tonnes of hydrogen every second, and will do so for some 4 billion more years.

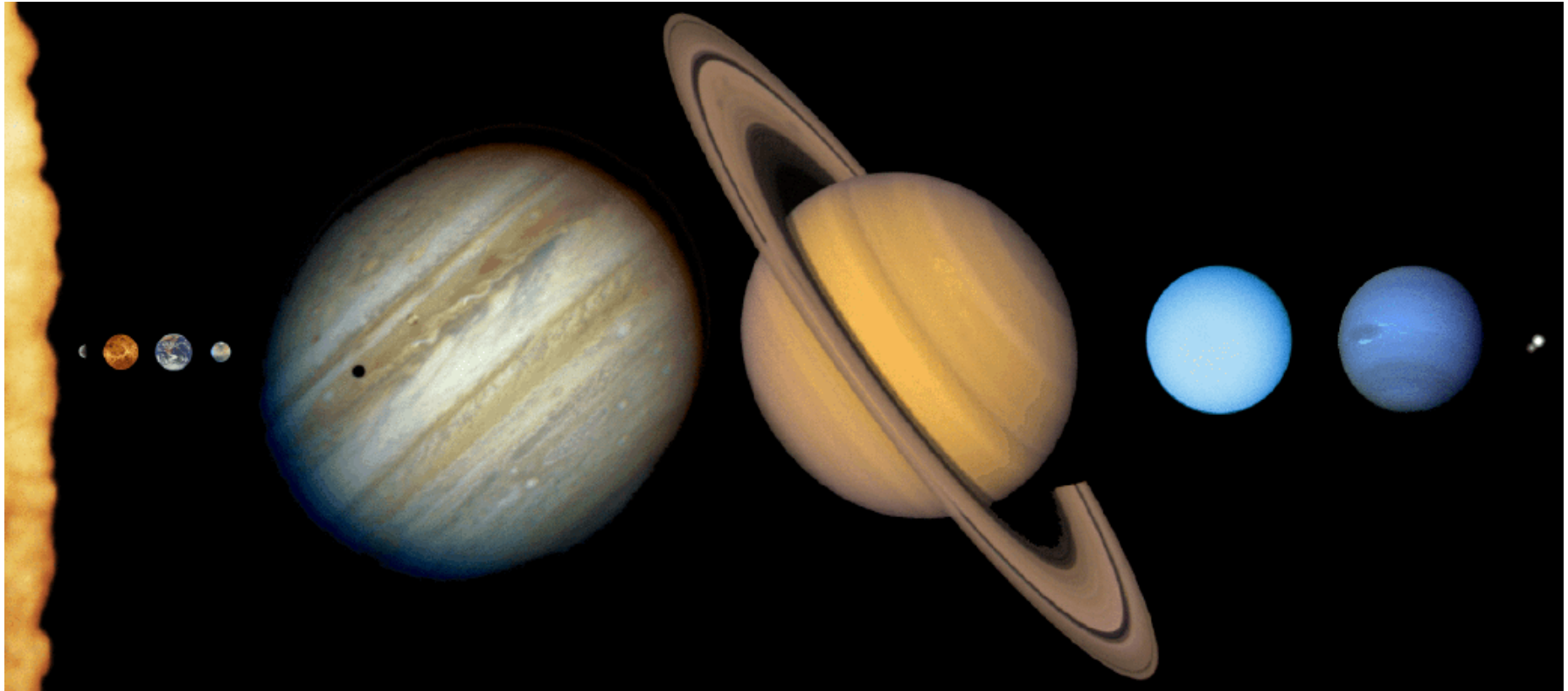
The size of our Solar System:

Let's model our Solar System by imagining that the copper dome on the downtown post office (doubled) represents our Sun. In this model the planet Mercury (2 cm in diameter), which is nearest to the sun, would have an orbit which on average would be at the Bank of Montreal; Venus (4 cm) at the Lethbridge Herald building; Earth (5 cm, tennis ball size) at Galt Gardens amphitheatre; Jupiter (56 cm) at Fort Whoop Up; Saturn (47 cm) at U of L library; Uranus (20 cm) at Popson Park; Neptune (19 cm) at the east end of Coaldale, and Pluto (1 cm) would have an orbit which on average would be at Monarch.

The size of our galaxy

Earth is 150 million km from our sun; and it takes 8 minutes for its light to reach us. The next nearest star is so far away that its light takes 4.2 years to reach us. Our Sun is about 26,000 light-years from the center of our galaxy. Almost everything we can see with our naked eye is in our own galaxy. But on a clear, dark and moonless sky, we can just see the Andromeda Galaxy, the nearest galaxy much like our own Milky Way. It is a bit over 2 million light-years away – its light we see now left Andromeda 2 million years ago!

Klaus Jericho and Gord Falconer are members of the Lethbridge Astronomy Society, which holds a public observing session on the last Saturday of every month from September to April. See <http://www.lethbridgeastronomysociety.ca> for more details.



This image shows the Sun and nine planets approximately to scale. The order of these bodies are: [Sun](#), [Mercury](#), [Venus](#), [Earth](#), [Mars](#), [Jupiter](#), [Saturn](#), [Uranus](#), [Neptune](#), and [Pluto](#). Planets are sized to scale but distances are not. Reprinted with permission (copyright Calvin J. Hamilton www.solarviews.com).