Betelgeuse supernova could shine like a high-noon comet

Neel Roberts

The Sky's the Limit

Have you ever wondered what the sky would look like if a bright star went supernova – the explosion of a large star?

Our sun is too small to do this whereas the star that pre-dated the Crab Nebula was many times larger.

When a supernova occurs, most of the matter in the gas ball is exploded out at nearly the speed of light.

If you are close, you don't get to watch it very long before you are blown into eternity. If you're far away, it will look like a very bright star, once the light from the explosion has taken its time to reach you.

On July 3, 1054, Observers from around the world saw the formation of the Crab Nebula and reported a bright comet-like object six times the luminosity of Venus (which was at opposite then) at high noon for over 23 days.

The supernova was so strong that had it occurred within 50 light years of Earth, all living things on the planet might have been destroyed. Naturally many were just as horrified as they were in awe at the unique sight 6,500 light years away and 5.5 light years wide.

The Chinese and Japanese record the appearance of a very bright "guest star" around this time. The superstitious saw it as an omen like solar eclipses, and the ultra-religious signalled it as the end of the world. While obviously that's not true, we've learnt this is a natural occurrence when a star ends its life.

We might have this opportunity in our lifetime with Betelgeuse over 642 light years away. Also known as the Valentine star, it is the red pulsation armpit of the constellation of Orion and is about one-third of the brightness of Mars.

While some records exist of the 1054 explosion, such an occasion with today's instant communications methods would be the talk of the world for who knows how long. If it happens in our era, it would be the grand happening of our lifetime, passed on for generations.

Sky watch

On Friday, June 7 after twilight, look southwest-west, where a waxing crescent moon can be seen as the Beehive cluster sets into the night horizon.

On Saturday, June 8, look northeast-east in the predawn as Venus and the Seven Sisters, an open star cluster, rise together in the morning sky.

On Tuesday, June 18, look northwest-west at dusk to see a Mercury-Mars conjunction.

Friday, June 21 is officially the summer solstice at 9:54 a.m. MDT. We will have 16 hours and 33 minutes of actual daylight. The sun officially rises at 5:23 a.m. and sets at 9:42 p.m., with high noon at 1:33 p.m.

Public event

The NOVA barbecue at the Wilson Coulee Observatory, at De Winton, takes place Saturday, June 22, starting at 4 p.m. For further details, contact Jack Milliken at 1-888-924-7272 or jm1yh@telus.net.

Neel Roberts, a member of the Calgary chapter of the Royal Astronomical Society of Canada, welcomes your questions and comments at 403-560-6574 and Neel_Roberts@ptccanada.com.