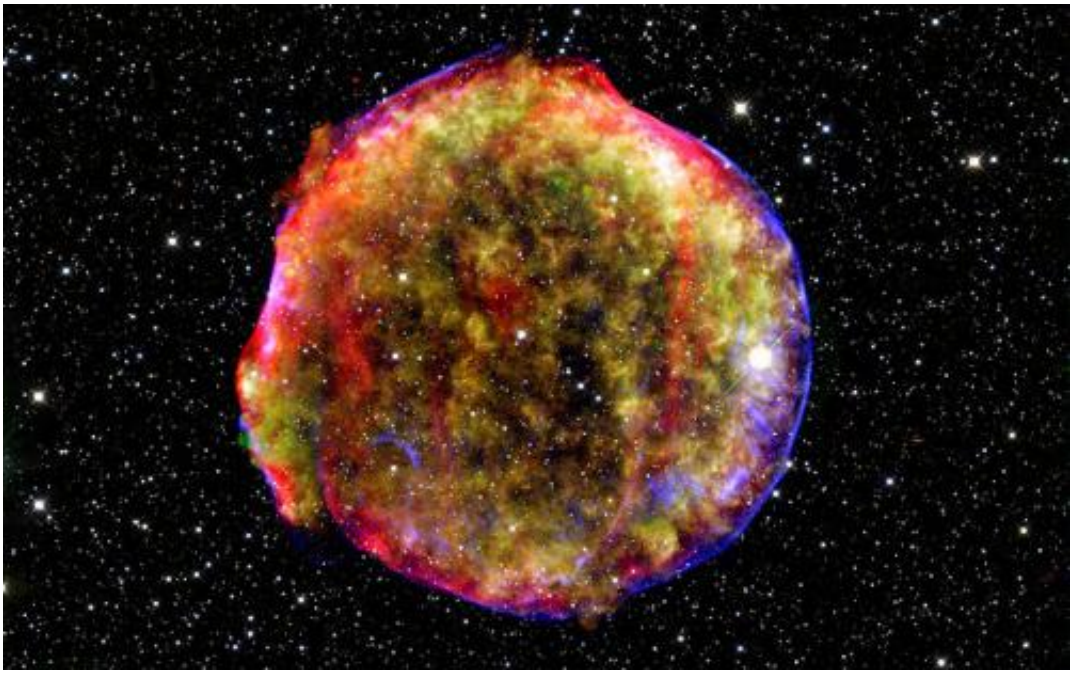
'Teapot' nova begins to wane

March 27 2015, by Chris Marr



Unlike a supernova where the explosion happens in the star's core and destroys it, a nova event takes place when arriving matter ignites on the hot surface of the white dwarf. Credit: Gray Lensman QX!

A star, or nova, has appeared in the constellation of Sagittarius and, even though it is now waning, it is still bright enough to be visible in the sky over Perth through binoculars or a telescope.

It was visible to the naked eye over the weekend.

A nova is characterised as a dim star that has suddenly brightened after

an explosive event.

Curtin University astrophysicist Dr John Morgan says that this nova has occurred in a binary star system containing a white dwarf star and a larger companion star.

A white dwarf is the dense core of a mid-sized star that has reached the end of its active life and has lost its outer atmosphere.

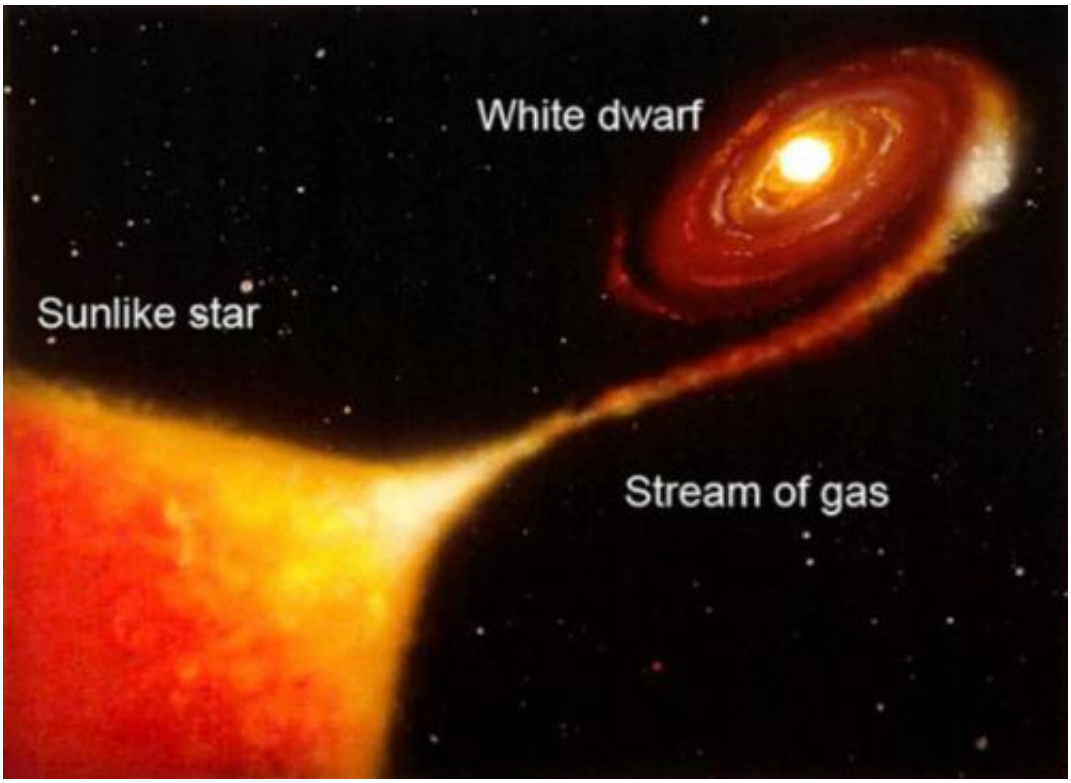
"If small amounts of matter are able to transfer from the other star to the white dwarf then that mass can actually fuse in an explosive way," Dr Morgan says.

Unlike a supernova where the explosion happens in the star's core and destroys it, a nova event takes place when arriving matter ignites on the hot surface of the white dwarf.

"There are many cases of what is called a recurrent nova where this donation of mass continues and it explodes again," Dr Morgan says.

"Some of these known recurrent novae blow up every hundred years or so, but some of them blow up much more regularly, maybe once a decade."

The current nova, which was discovered by Australian amateur astronomer John Seach on March 15, has not been recorded before so it is not known if it is recurrent.



A diagram of a nova. Credit: NASA

It appears yellowish but as the expanding shell of gas around the nova expands and cools it will gradually turn orange and then red.

Novae are not unusual events but those that become visible to the naked eye are rare and occur because the unpredictable explosion is particularly violent.

This event has been officially named Nova Sagittarii 2015 No.2 because there was another, much dimmer, nova in Sagittarius in February.

The nova is visible between the two corners of the lid of the "teapot", a grouping of stars in Sagittarius that suggests the outline of a teapot on its side.

Sagittarius is rising at around midnight, two hours behind Scorpius the scorpion, which is easy to spot at the moment because bright Saturn is right beside its three-star head.

Provided by Science Network WA