SPACE awareness

SPACE SCOOP

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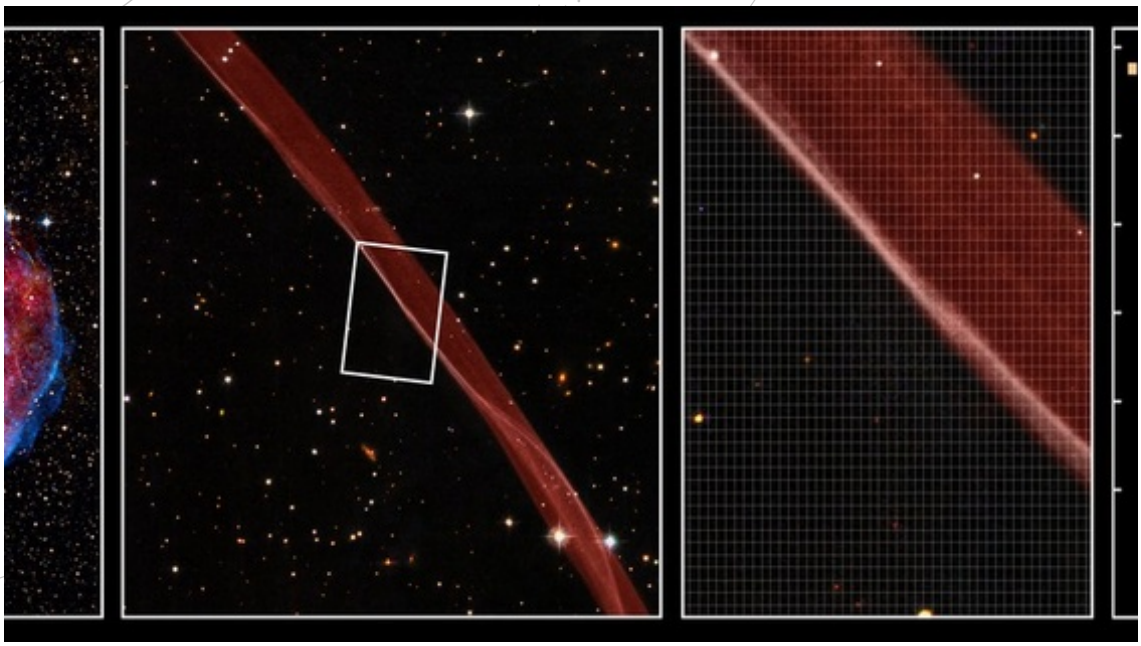

Tracing Cosmic Rays Back to Their Roots

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Cosmic rays are extremely high-energy particles from far beyond our Solar System. They provide us with important samples of material from outer space. But the magnetic fields in our Galaxy and Solar System scramble their paths so much that we can't trace them back to their source. But now, using the remains of a star that died a thousand years ago, astronomers have found clues as to where exactly cosmic rays form.

A long time ago, in the year 1006, a new dot of light appeared in the southern skies. It shone so brilliantly that it rivalled the brightness of the Moon and was even visible during the day! The source of this mysterious object was a huge star going through a dramatic end of life phase: it was exploding! Astronomers call the explosion of a star a ‘supernova’. Fast-forward about 1000 years and astronomers have finally located the strewn remains of this ancient star. A glowing, expanding ring of material is all that is left. You can see part of this ring in the second image.

By looking at this supernova remnant, astronomers have found what they call the 'seeds' of cosmic rays. These particles can be seen zooming around inside the star remnant. However, they just don't have enough energy to be cosmic rays...yet. Astronomers believe they could go on to grow into cosmic rays by colliding with the material of the ring. This way they could eventually gain enough energy to fly off into space as fully-grown cosmic rays!

COOL FACT!

Astronauts have seen some truly amazing sights: the Northern lights from above, the curve of the Earth and the dark side of the Moon. On top of this, astronauts aboard Skylab, the Shuttle, Mir, and the International Space Station have reported seeing strange flashes of light. These are caused by cosmic radiation zipping through their eyes like teeny tiny bullets. When one of these particles strikes the nerves in the eye it triggers a false signal that the brain interprets as a flash of light.