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[Weather Page](#)**SA telescope 'worth its salt'**

17/08/2006 12:19 - (SA)

Cape Town - Astronomers at South Africa's premier telescope site made public on Wednesday their first serious scientific results - a study of a binary star system 400 light years away from Earth.

The Southern African Large Telescope (Salt) near to Sutherland in the Northern Cape was inaugurated in November 2005 and is the largest telescope in the southern hemisphere.

"Its the first serious science done with Salt... We have a real telescope here," said Dr Darragh O'Donoghue, principal investigator of the research which was submitted to the prestigious Royal Astronomical Society journals.

O'Donoghue, addressing the media, said the first scientific data from Salt demonstrated capabilities that other large telescopes did not have.

"And that's the ability to take high-speed images with ultra sensitive CCD detectors... Not many telescopes in the world, big or small, have this kind of capability and none of the large telescopes do, except for Salt."

O'Donoghue said the observations of a "polar" binary star system - containing a compact star called a white dwarf star, which has used its original store of nuclear energy before shrinking, and a relatively ordinary companion - were the best of its kind made so far.

"They are a text book demonstration that what we think we understand about these stars is true," he said of the observation with Salt's light-sensitive cameras able to take a rapid series of snapshots at every hundredth millisecond.

Intense gravity

The results clearly showed the gravitational magnetic field of the white dwarf star pulling in gas from its companion, a phenomenon seen across the universe, from black holes at the centres of galaxies to pulsars and planets in our solar system such as Jupiter.

"They are so close in fact that this star (white dwarf) is tugging gas from this point... the gravity of this star is so intense that its able to grab gas from there and pull it over to itself, more potently than this (ordinary) star to is able to hang onto itself. its like being mugged if you like," O'Donoghue said.

An indication of the strong pull was the fact that the white dwarf's magnetic field was some 30 million times as strong as the Earth's.

O'Donoghue said if sufficient matter was taken the white dwarf star would explode in a galactic event known as a supernova

He said the binary star which Salt studied, SDSS 015543+002807, was roughly 400 light years away from Earth and took on one and a half hours to complete an orbit, compared to a month for the Earth and Moon, and a year for the Earth and Sun.

Polars are the most readily accessible objects for studying gas accretion in strong magnetic fields and are among the closest orbiting pairs of stars known.

O'Donoghue said the research was tabled at Wednesday's opening plenary session of the 26th General Assembly of the International Astronomical Union in Prague, Czech Republic.

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