Australian Government
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MEDIA RELEASE

Ancient NT Rocks hold hopes for new discoveries

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The Northern Territory is renowned for its ancient landscapes and mineral wealth and now, thanks to geochronologists at Geoscience Australia working in partnership with the Northern Territory Geological Survey that reputation has received a boost.

With the aid of Geoscience Australia's new Sensitive High Resolution Ion Microprobe, or SHRIMP, the scientists have identified a rock from west Arnhem Land as being 2,671 million years old, the oldest exposed rock identified so far in the Northern Territory.

The sample, which is from the Neoarchaean era of geological time from 2,800 to 2,500 million years ago, was one of a number collected during geological mapping of western Arnhem Land by the Northern Territory Geological Survey, and was dated by Geoscience Australia as part of a geochronology collaboration between the two organisations.

Overall the five rock samples collected dated from 2,513 million to 2,671 million years old.

The Acting Chief of Geoscience Australia's Onshore Energy and Minerals Division, Dr Andrew Barnicoat said that the discovery of the Neoarchaean rocks is of great significance for uranium explorers in the area.

"Uranium deposits in this region are commonly associated with rocks of this age, including the Ranger and Jabiluka deposits and numerous other smaller occurrences," Dr Barnicoat said.

"Identification of extensive, previously unrecognised, areas of suitably aged rocks greatly enhances the future viability of and interest in this highly prospective uranium province," he said.

"Explorers should be encouraged that these recently identified rocks are similar to Neoarchaean rocks in the Darwin-Rum Jungle region about 250 kilometres to the west, a region also renowned for uranium mineralisation," Dr Barnicoat said.

Geoscience Australia and the Northern Territory Geological Survey plan to carry out further investigations in the future through a deep seismic survey to assess whether similar rock types are present at depth between the newly identified west Arnhem Land rocks and those previously identified in the Rum Jungle region.

The Director of the Northern Territory Geological Survey, Dr Ian Scrimgeour, said findings from a deep seismic survey could have important implications for uranium exploration strategies across the entire Pine Creek region.

"If the survey reveals that the West Arnhem Land rocks and those in the Rum Jungle area are part of a continuous subsurface structure, the potential for more extensive uranium resources across the Pine Creek region will be greatly enhanced," Dr Scrimgeour said.

The Australian designed and built SHRIMP instrument measures uranium and lead isotopes from tiny portions of zircon crystals extracted from rock samples to calculate the age of the crystal based on the natural decay rate of uranium to lead.

For more information or to arrange interviews, please contact:
Geoscience Australia 24 hour Media Hotline 1800 882 035