

VALLALIE METEORITE IMPACT CRATER

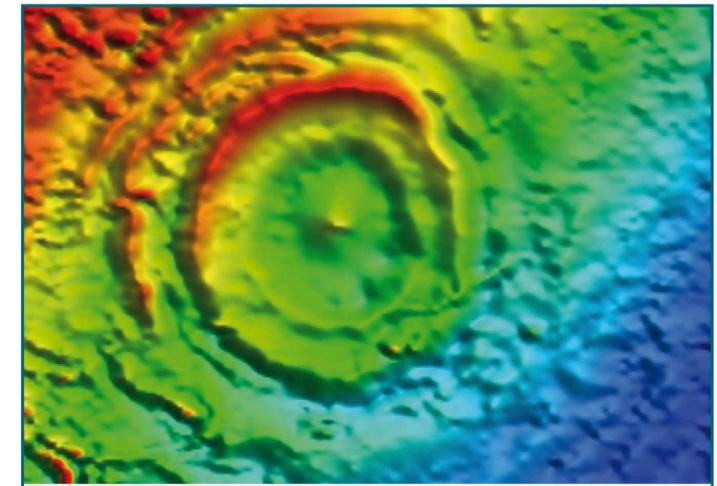


Panorama of actual impact site.

The Yallalie meteorite impact crater is located in Mesozoic sedimentary rocks in the Perth Basin, between the towns of Moora and Badgingarra, Western Australia. It was discovered in 1990 by Ampol Exploration. The basin-like Yallalie structure is circular in shape, about 12km in diameter and approximately 2km deep.

A small asteroid, approximately 500m across, struck the area more than 70 million years ago. At this time, the area might have been covered by water.

The crater is now very eroded, buried under later sediments and difficult to distinguish.



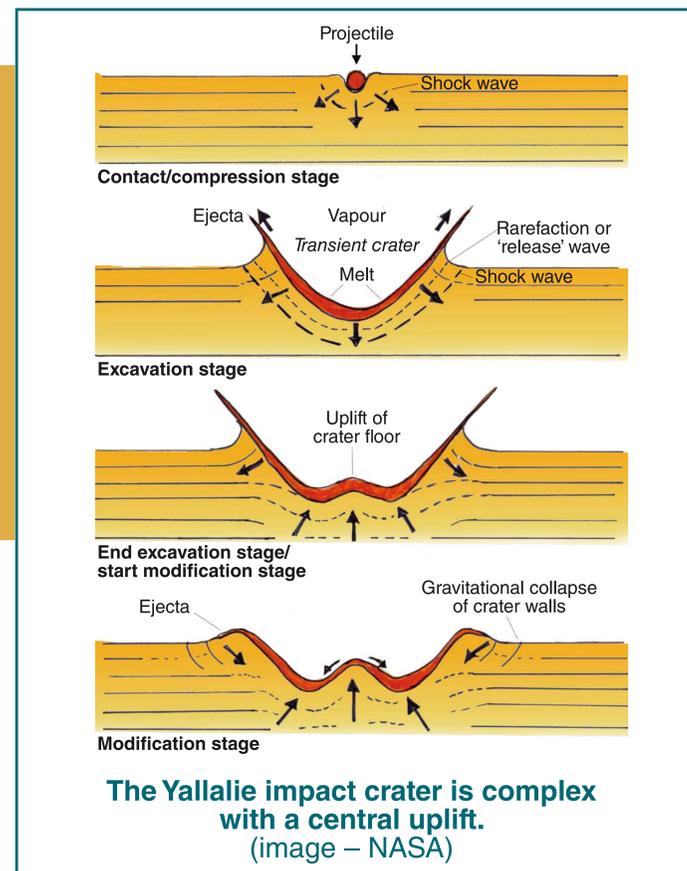
Magnetic aerial image of crater.



Location of impact craters on the Earth.

Stages of impact crater formation

- Large meteorite strikes Earth's surface. Enormous amounts of energy are released almost instantaneously.
- A crater begins to form. Its energy is transferred as shock waves to the rocks in the crater.
- The shock waves compress the rocks in the Earth's surface and the material in the meteorite.
- Extremely high temperatures and pressure melts or vaporises much of the rock and meteorite material in that area.



Meteoroids

Solid pieces of extraterrestrial debris that stray from their orbits in outer space and are captured by Earth's gravity. Most come from the asteroid belt which lies between the orbits of Mars and Jupiter. When meteoroids strike the Earth, they become known as meteorites.

Meteorites

Micrometeorites bombard the Earth continuously. Much larger objects known as asteroids hit Earth less frequently. They can travel at very high speeds, typically from about 15km–70km per second. Meteorites range in size from pea-sized pieces up to large masses many tonnes in weight. Asteroids measuring roughly 50m across strike the Earth every 1,000–2,000 years, while more than 100,000 years typically elapse between strikes from asteroids larger than 1,000m across.

Meteorite Craters

There are more than 160 known meteorite craters on the surface of Earth. One of the largest is the Chicxulub Basin centered in Mexico's Yucatan Peninsula. The diameter of the basin is about 170km. Rock samples indicate that an asteroid struck the Earth there about 65 million years ago. This was about the time the last dinosaurs became extinct. The impact hurled debris into the sky and many scientists believe this debris caused climate changes that the dinosaurs could not survive.

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As you take your next step, remember the Yuat Aboriginal people who walked this land before you.