THE MAKING OF ULURU AND KATA-TJUTA

Geology

The **Anangu people know how Uluru and Kata Tjuta were formed**. This knowledge comes from the Tjukurpa, the stories and lore that explain and govern Anangu life. But much of it, particularly about Kata Tjuta, is sacred and cannot be presented here.

Geologists have their own explanation. Below is a brief scientific description of how both Uluru and Kata Tjuta were formed.

Creating the fans

550 million years ago the Peterman Ranges to the west of Kata Tjuta were taller than they are now. Rainwater flowing down the mountains eroded sand and rock and dropped it in big fan shapes on the surrounding plain.

One fan had mainly water-smoothed rocks. The other fan was mainly sand. Both fans became kilometres thick.

Pressing the fans

Later, 500 millions years ago, the whole area became covered in sea. Sand and mud fell to the bottom of the sea and covered the seabed, including the fans. The weight of the new seabed turned both it and the fans beneath into rock.

The rocky fan became conglomerate rock. The sand fan turned into sandstone.

Folding and tilting

About 400 million years ago, the sea had disappeared and the whole of Central Australia began to be subjected to massive forces. Some rocks folded and tilted. The rocky fan tilted slightly. The sand fan tilted 90 degrees so the layers of sandstone almost stood on end.

Wearing away

Over the last 300 million years, the softer rocks have eroded away, leaving the parts of the old fans exposed. Kata Tjuta is a hard part of the old rocky fan. Uluru is part of the sand fan, with its beds of sandstone nearly vertical.

The area around Uluru and Kata Tjuta was covered in windblown sand plains and dunes 30,000 years ago.

Uluru, like Kata Tjuta, is the tip of a huge slab of rock that continues below the ground for possibly five to six kilometres.

The shaping of Uluru and Kata-Tjuta

From a distance, Uluru looks smooth and featureless. But up close its face is weather-beaten - pitted with holes and gashes, ribs, valleys and caves. To Anangu, these features are related to the journeys and actions of ancestral beings across the landscape. On your tours and at the Cultural Centre in the Park, you may hear about some of the Uluru creation stories. These stories, known as Tjukurpa, tell about the travels and actions of Kuniya (Woma python), Liru (poisonous snake), Mala (rufous hare-wallaby) and Lungkata (Centralian blue-tongue lizard). You may learn to see the evidence of their activities in the features of Uluru.

Geologists have different explanations about how these features formed.

The Ribs

Some layers of akrose, the rock that makes up Uluru, are softer than others, and wear away more quickly. This leaves Uluru's characteristic parallel ribs or ridges.

Flaky red skin

Close up, much of the surface of Uluru is flaky red with grey patches. The flakes are bits of rock that are left after water and oxygen in the air have decayed minerals in

the rest of the rock. The red is the rusting of the iron in the arkose. The grey is the original colour of the arkose. You can see the unrusted grey rock inside the caves.

The Caves

There are many types of caves at Uluru - those that look like honeycombs, high up on the walls, and wave-shaped caves at ground level. Perhaps they were formed by uneven flaky weathering. Small pits became bigger dimples, then hollows, then caves. Or they may have been chemically eaten away by water when the land's surface was higher; then exposed as the land was eroded away.

Carved out by water

Water has shaped the valleys, potholes and pools of Uluru. Rainstorm after rainstorm over millions of years has sent water plummeting down the hard rock, wearing it away to form grooves, and chains of potholes and plunge pools.

The Domes

When the huge slab of rock that is Kata Tjuta was being folded and faulted, vertical joints or fractures cracked through the rock. Water seeped down the cracks and over millions of years the rock eroded away - grain by grain, pebble by pebble, to form valleys and gorges that split the rock slab into blocks. Curved cracks called topographic joints formed on the surface of the blocks. Weathering and erosion wore away the rocks above the cracks to produce the rounded domes we see today. Kata Tjuta, the Anangu name for the collection of domes, means "many heads".