

ERUPTION OF KRAKATOA IN 1883

Here is a brief summary of the events that took place and the consequences. Will there be another eruption soon?

In 1883, the island chain of Krakatoa blew itself out of existence, leaving only one section of the volcano and two other tiny surrounding islands. The eruption was of cataclysmic proportions.

A series of huge eruptions took place, however it wasn't the volcano that caused damage but the resulting tsunamis. There was a huge scale of devastation and no one could have imagined the consequences over the following years.

Where was Krakatoa?

Krakatoa was located in Indonesia between southern Sumatra and western Java, about 83 miles west of Batavia (now known as Jakarta), in Sunda Strait, about 23 miles out to sea.

Indonesia contains 17% of the world's active volcanoes. It is the most active region on Earth.

Krakatoa is located 3,000 mile south of a major fault line, where 2 tectonic plates, the Burmese and the Indo-Australian plates collide.

At the point where the two plates collide, the heavier ocean floor is pushed under the lighter continental block. This known as subduction.

How did it explode?

In 1883, Krakatoa finally awoke from its slumber. The volcano was fueled by magma caused by the rubbing of subduction plate. The rocks below melt and are forced to the surface to form a volcano.

Krakatoa also has the unique position of a large bending of the subduction zone which causes further faults that allow magma to the surface.

History of Krakatoa

In 416 AD there was a massive explosion of Krakatoa. Over the following 1200 years minor eruptions caused Krakatoa to rise again, however this time all vents were blocked allowing a build up of pressure over time. By 1883 Krakatoa was a time bomb waiting to explode.

Sequence of events leading to the eruption of Krakatoa

Tremors were felt in May 1883, months before the main eruption. This was due to the magma heading towards the surface which was blocked. Much like a boiler without an emergency release valve.

Three months to 6 weeks before the main eruption the strength of the tremors increased.

At 10.30 am 20th May 1883 there was an initial eruption, the island burst into life. Intense pressure was released. Shock waves were felt immediately. The blast was felt 83 miles away in Batavia (Jakarta).

At 10 am Sunday 26th August 1883, the great eruption occurred

By 1.06pm 26th August 1883, all three craters on Krakatoa erupted suddenly. It was the most devastating volcanic event in recorded history. Ash was blown 25 kilometres into the atmosphere. A lot of ash fell back to earth.

By late afternoon 26th August 1883, it was pitch black in the surrounding area. Earthquakes were also felt. Pyro-plastic magma (lava) flowed into the sea.

11 cubic miles of rock was blasted into the sky as ash and dust. This is enough to cover the whole of Manhattan island in New York to a height of 200 feet.

By 4.25 pm 26th August 1883, hot sticky volcanic ash fell.

By evening 26th August 1883, explosions were heard 83 miles east in Batavia.

23 miles north of Krakatoa, in the town of Ketimbang, heavy ash fell.

By 5.00 am 27th August 1883, Grey ash fell on Batavia giving a wintery hue for the tropical city.

At 5.30 am 27th August 1883, the first of four cataclysmic eruptions occurred.

Giant shock waves in the water formed huge crests in the water, which were twice the size of the Boxing Day 2004 tsunami.

When they reached the coast, the crests slowed to form huge tsunamis, almost 40 metres high. There was a wall of water from 100m to several kilometers out to sea. The waves just kept coming, washing away everything in its path.

The waves were much bigger than the 2004 tsunami, but lost energy rapidly.

On 6.44 am 27th August Krakatoa erupted again. It had the force of 1,000 atomic bombs.

10.02am 27th August another eruption occurred causing another huge tsunami. It was heard over 1/12 of the earth's surface. The sound of the explosion was carried 2,000 miles south and was heard in Perth WA. The sound was carried 3,000 miles west to Rodreguez Island. It was the longest distance by any airborne sound.

By 4pm 27th August 1883 the eruption of Krakatoa ceased. Ash fell for three days.

Death toll

This was the largest death toll of any volcano in modern recorded history. Altogether 36,417 people died, (including 37 Europeans). 165 towns and villages destroyed. 19,600 Javanese died on the coast alone.

In the town of Ketimbang, 8,330 people died because of the resultant tsunami. It travelled farther north to Lampong Bay. A wall of water 24 metres high hit Lampong Bay. In the town of Telokbetong in Lampong Bay, 2,263 people were killed by the tsunami. A Dutch steamer was found 2 miles up the river at an altitude of 30 ft above sea level.

After Effects

The eruption not only changed Indonesia, but its effects were felt worldwide. No atomic bomb blast can rival the sound. Shock waves were felt for five days around the world and went around the world seven times.

There was evidence that the signs continued around the world for five years. There were recorded changes in the night sky, from Australia to Buenos Aires to England. It turned the skies blood red at sunset all the way in England.

This was caused by volcanic particles carried through the air by high level winds called "jet streams". The ash fell back to earth, but tiny particles mixed with sulphur dioxide (SO₂) called aerosols. They rose into the atmosphere carried by these jet streams forming sulphuric acid (H₂SO₄), which veiled 70% of the world within days, cooling the earth's temperature by ½ deg c.

Anak Krakatoa

120 years later there is a new volcano emerging, in the area of Krakatoa. Known as Anak Krakatoa, "Son of Krakatoa", it first revealed itself in December 1927, rising out of the sea. It is on the same fault line as Krakatoa.

Anak Krakatoa is twice as big as it was 25 years ago, and is about the same size as Krakatoa was. It is growing at an annual rate of 15 feet every year. Currently it is 2,600 feet high, 1 ¼ sq miles in size. Its crater is 200 metre across. Anak is carefully monitored by scientists.

Anak has occasionally exploded, already killing a number of tourists and has already released 50,000,000 tonnes of material.

Anak continues to grow just a matter of time before it explodes again.

[Source: ABC TV- April 10, 2005]