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# Space shuttle Columbia to look at Korat's past



Boonman Boonyathiro

**W**hen Boonman Boonyathiro walks into his shop on Bangkok's busy Charoen Krung Road, he looks at his collection of black extra-terrestrial rocks and wonders what caused comets to crash into Northeast Thailand 600,000 years ago.

Along with the precious gems and rare oddities like fossilised dinosaur droppings are hundreds of space-rocks distinctively shaped black glasses called textites, believed to have been formed as the liquid from a comet spun through the earth's atmosphere.

On the opposite side of the Pacific, Prof John T Wasson ponders the same question in his laboratory at the University of California's Los Angeles Institute of Geophysics and Planetary Physics. He believes the Northeast is one of the most likely places in the world to find the craters where comets hit the earth so long ago.

Both men are hoping that the launch of the US space shuttle Columbia in October will give them fresh clues to follow as they try to throw new light on what is an ancient mystery. What caused the comets to hit Earth? What effect did the impact have on the surrounding environment? If the geologists can find the craters, will they also find a way to forecast comet strikes in the future?

Prof Wasson, working with a team of Thai geologists, convinced the shuttle program to point the space radar SIR-C at the Korat plateau in the hope that its images will reveal the impact craters, hidden from everyday view by rice paddies and other signs of human habitation.

The discoveries made in the Northeast by Mr. Boonman and Thai geologists have already forced scientists studying the phenomenon to revise their theories.

It is part of the Australasian strewn field, one of only four places in the world where textite rocks have been discovered. Along with thousands of small textites, some only a few centimetres long, the largest specimens discovered to date were found there.

In 1971, it was a 12.8 kg textite now exhibited in the Geological Museum in Bangkok, which challenged the existing scientific theories about the rocks. Its sheer size forced sceptics to conclude that it must have originated in space. It was simply too heavy to fit the theory that textites were formed by volcanic eruptions on earth spewing debris into the atmosphere.





*Dinosaurs are extinct but their droppings remain*

"We are forced to accept the conclusion, which at first seems incredible, that textites, despite their remarkable resemblance to terrestrial rocks, do not originate on earth," a Nasa specialist said.

The current research project using the space shuttle's radar images was sparked by a discovery made by Mr Boonman three years ago, when he found two 24.1kg textites near the Laos border. When Prof Wasson heard about the "Thailand Twins" he travelled to Bangkok to inspect the huge textites on display in Mr Boonman's tiny House of Gems shop. With the backing of a team of Thai geologists, he returned to the United States determined to get the radar image project off the ground.

"We have documented the presence in Northeast Thailand of textites near Buntharik, Sisaket and west of That Phanom and there's numerous reports of layered textites near Khemarat. It implies that craters should be present in all these areas," Prof Wasson argued. "It's a large flat-lying region that is eroding at a low rate, allowing the preservation of crater outlines and possible rims."

Mr Boonman believes the project may once again see Thailand's discoveries force scientists to revise their thinking on the subject. "There are three main theories on the origin of the textite," he said. "Nasa believes they may have been caused by a lunar volcanic eruption, but that's because the Americans have only been to the moon. The Russians think they may have come from some other planet, but we are sure they were caused by the comets."

He points to his samples of the mysterious rocks on display in his shop. No matter what their size, all have the distinctive shapes of a teardrop, dumbbell or disc, formed as the comet "melt"

slowed down as it spun through the earth's atmosphere.

Now supported by the National Research Council of Thailand, the space radar images will form the first stage of a three-year research project to find the craters and positively identify them. The Thai geologists are optimistic that the images will give them new clues to work on.

"We looked from the air three years ago, but because it rains so much in Thailand, there was too much vegetation and we couldn't see the craters. Now we will look from space," said team member Kaset Pitakpaivan, retired director of the Geological Survey Division, Department of Mineral Resources.

Mr Kaset, Thailand's acknowledged textite expert, has been investigating the space-rocks discovered in the Northeast for forty years. He has found no shortage of samples to work on.

"The density of textites is very high, indeed we can say that the Northeast is very rich. The textites have been found in so many places there, and more are found in certain areas, although we don't know why," he said. "It depends on the human factor to a large degree. For example many are found near trails





These meteor rocks tell about the past.



where people walk all the time. After the wet season, when the rain washes away the ground soil, a few more are revealed."

Thailand also has a secret weapon in its hunt for the rare rocks.

"America has cowboys, Thailand has buffalo boys. They look at the grass like a tall man, with a better view than people who walk on the ground. They find the textites and sell them to provincial shops. Eventually they end up in Mr Boonman's shop and from there go to museums all over the world," Mr Kaset said.

The geologists hope to have their first look at the radar images before the end of this year and if, as expected, they show the outline of craters, it will mark just the beginning of an intense period of field work. The sites will be mapped and the geologists plan to drill down as deep as 300 metres to collect core samples.

Mr Kaset hopes that the ground now covered with rice paddies may reveal secrets that scientists all over the world are looking for.

"We know that comets were responsible for some of the big changes to the planet, such as the extinction of the dinosaurs," he said. "If we can find impact craters, it will contribute to the study of the comet and tell us more about what changes happened to the environment when the collision occurred."

It may also reveal clues about the future. "We learn from history, as we have learned about earthquakes and can now forecast them, warn people and prepare," Mr Kaset said. "If we can find impact craters, they may hold information that can help us forecast the movement of comets in future centuries."

Whatever the outcome of the research project, one factor is certain. When the space shuttle takes off from the launch pad on its October mission, the hopes of both the Thai geological team and its American colleague will be launched into space with it. *By Jude Smith*