



The Story Of The
CRYSTAL ICE CAVES

Within the Great Rift National Landmark

American Falls, Idaho

FOREWORD

The Crystal Ice Cave is open daily from 7:00 a.m. to sunset, May 1, to November 1. Since its opening to the public in 1965, it has been visited by thousands of persons who have come from every continent of the world. The Cave has wide trails and no steps. Many unique photographic opportunities are here — bring your camera.

Since the temperature of the Cave remains a consistent 32 degrees F. the year around, visitors should bring a sweater or jacket.

The area surrounding the Cave abounds with historic places — The Oregon Trail passes nearby; numerous Indian campgrounds and trails of long ago are searched diligently by those persons hoping to find arrowheads and artifacts; antelope, deer, coyote and game birds are some of the wildlife that inhabit the desert and are often seen by visitors to the Cave; Spelunkers (or cave explorers) are constantly probing into the volcanic terrain, hoping to find another marvel of nature hidden within the depths of the earth, or merely enjoying a journey into one of the more familiar, and often explored, lava tubes. The Crystal Ice Cave, within the Great Rift National Landmark, is a rare fissure cave, and is the only one in the world open to the public.

We hope you enjoy your visit to the area.

Peggy Papadakis

May, 1969

Photo Credits: Jim Papadakis
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THE SNAKE RIVER PLAIN

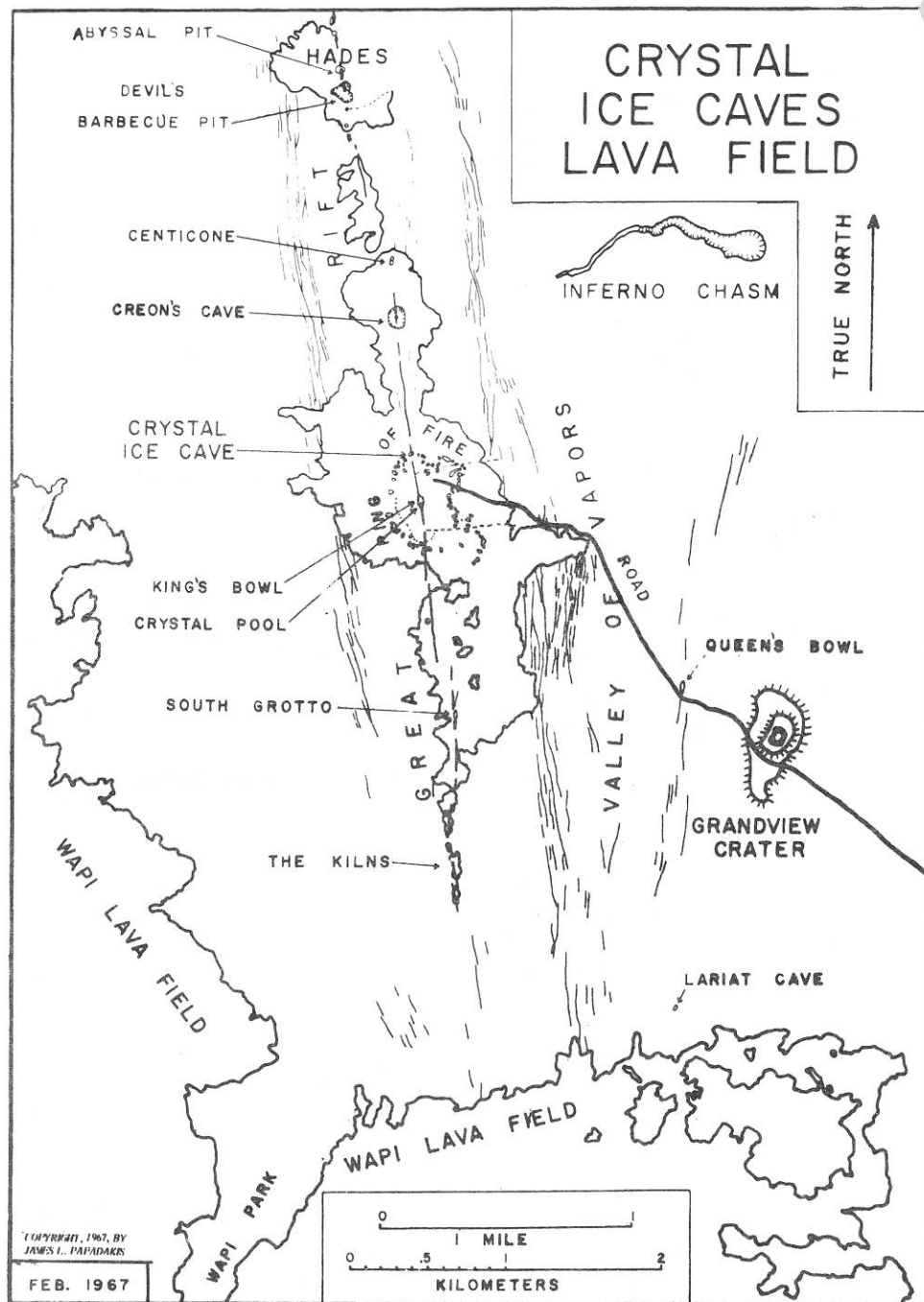
The Crystal Ice Cave is located in the central part of the Snake River Lava Plain which is 20,000 square miles in area and cuts across the mountain ranges of southern Idaho in a huge, sweeping arc. It runs from Island Park, Idaho to the Oregon border. The Snake River flows near the southern edge of the Plain in most places as it crosses Idaho from east to west.

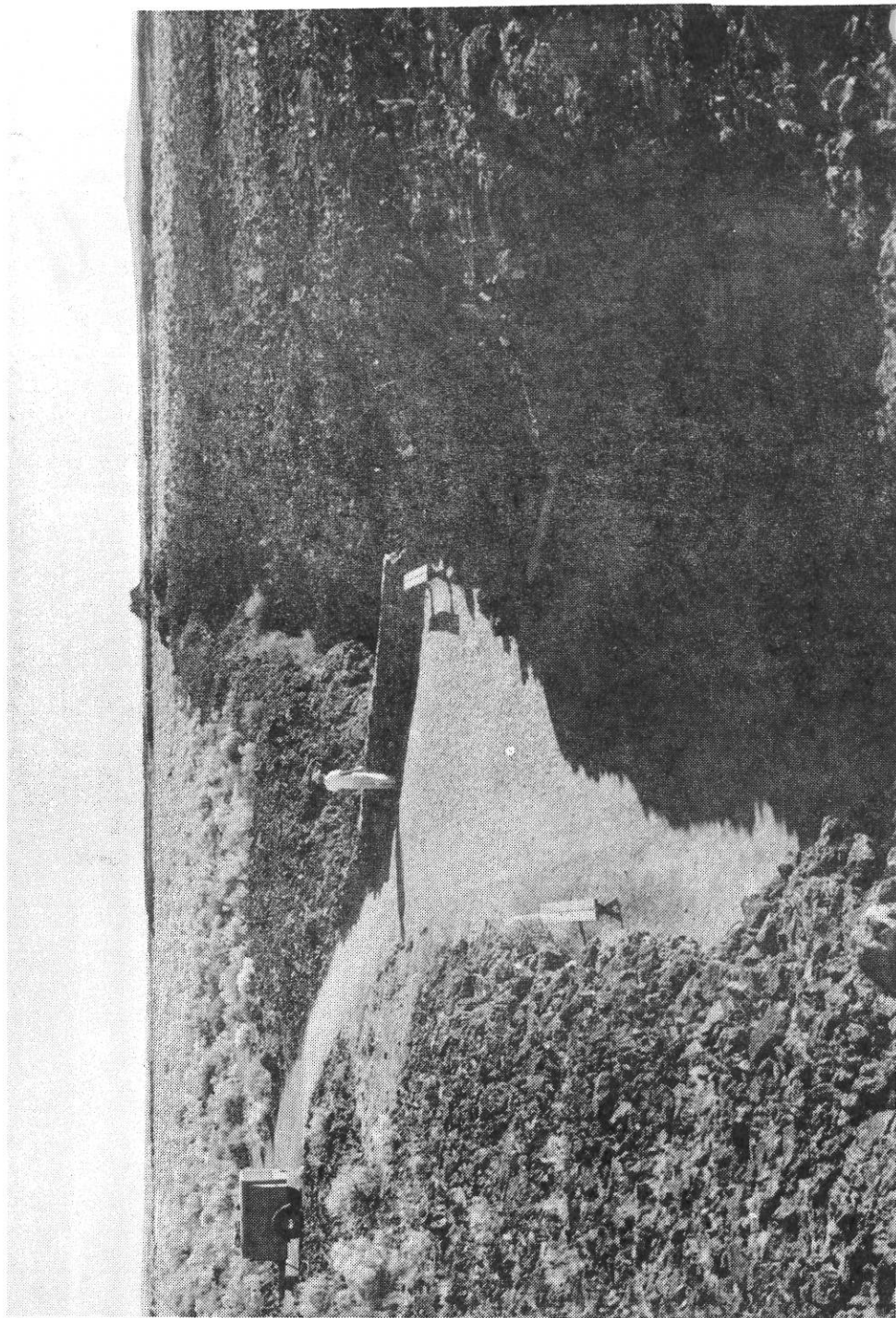
One of the great ground water flows of the earth moves slowly beneath this Plain. In the vicinity of Thousand Springs, which is west of Twin Falls, Idaho, two to three billion gallons of water pours daily from the lava rock into the Snake River.

The Plain is composed of flows of dark lava called basalt. Some of these basaltic lava flows are of recent origin (roughly 10,000 years old or less). These are especially interesting because it is possible to walk out on them and see how they looked just after the lava cooled, for weathering has changed them but little. A series of these lava flows is called a lava field, and usually covers many square miles.

The Crystal Ice Caves Lava Field is one of the smaller on the Plain and covers about one and one-half square miles. Southwest of this field is the large Wapi Lava Field which covers 160 square miles. To the north of it lies the Craters of the Moon National Monument which covers 83 square miles.

The Great Rift, which is a zone of huge cracks in the earth, cuts through the center of the Craters of the Moon and travels in a southerly direction for a distance of over 40 miles, where it seems to disappear under the lava flows of the Wapi Field. Only the tiny, but unique field of the Crystal Ice Caves was spawned in its entirety by the rift.





THE GREAT RIFT NATIONAL LANDMARK

The Great Rift is the longest volcanic rift in the conterminous United States and the deepest open volcanic rift known on earth. It has been explored to a depth of 800 feet, and is over 40 miles long.

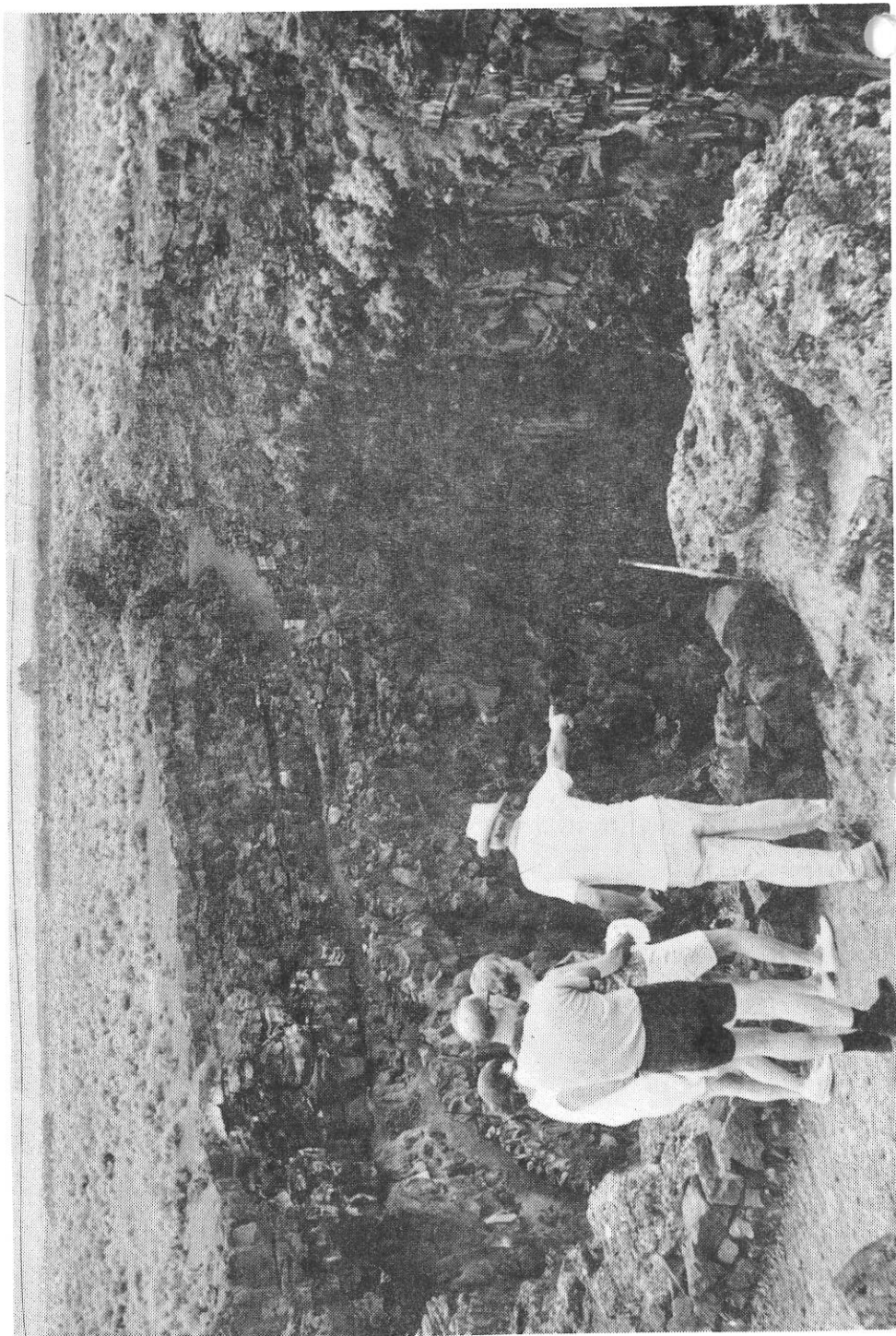
The rift came into existence when tremendous pressures from below caused the earth's crust to split. Molten lava then surged from the depths, spreading white-hot fingers across the land, burning and covering everything in its path. A small piece of sagebrush root was found beneath the flow which had not been completely consumed and was carbon dated, establishing the age of the rift as 2,100 years old.

Temperature of the molten lava that erupted from the rift was about 1,100 degrees C., or 2,000 degrees F.

The width of the Great Rift at the Crystal Ice Cave is six feet.

Registration of national landmarks began in 1964. These areas are recorded in a National Registry to recognize and encourage their preservation and protection. The Great Rift was designated a U.S. National Landmark in May, 1968 by the Secretary of the Interior because of its uniqueness. The amount of lava brought to the surface in fissure type eruptions greatly exceeds in quantity that produced by all other types of volcanic activity and is one phase of volcanic activity that is poorly understood.

Though the surrounding areas have long been settled, the Great Rift remains almost as much of a mystery as it was to those first sheepmen and adventuresome pioneers who viewed it with awe. Planned studies of the Rift and surrounding area are underway and may bring to light some of the secrets of the earth's crust men are continually searching for. Until then, those of us who view it remain awed by its stony facade and wonder if we will ever really penetrate its depths.



THE KING'S BOWL

The King's Bowl, located on the Great Rift, is one of the main focal points of a tremendous steam explosion which occurred when molten lava receded into the rift.

When the volcanic eruptions from the rift finally ceased, and the lava receded for the last time, the top crusted over. The molten lava beneath it subsided to the water table level, which in this area is 800 feet. Beneath this portion of the Snake River Plain, an area of 20,000 square miles which is virtually uninhabited, travels one of the great underground water flows of the world. This cool underground water began encroaching upon the 2,000 degree F. lava, and enormous quantities of steam were generated. Some spectacular geyser activity probably took place until finally, the pressure within the rift became too great to be contained and the result was a tremendous steam explosion.

Portions of the rift were blown open with such force massive chunks of lava weighing up to ten tons were hurled into space and fell back to earth, landing on top of the now cooled, or almost cooled lava flows. The most awesome proportions of this explosion created a gigantic pit, The King's Bowl, which is approximately 300 feet long, 80 feet wide, and 200 feet deep. From the air, it takes on the appearance of a gaping wound in the rift. From the ground, one can see a crystal clear pool of water at the bottom which has a constant ice floor. This pool is the only perennial accessible water supply for miles. Wildlife in the area can be frequently seen here, and hawks, falcons, and owls are among some of the birds that inhabit the Bowl, building their nests and raising their young in the sheer lava cliffs.

THE CRYSTAL ICE CAVE

The Crystal Ice Cave is a rare fissure cave occurring in the Great Volcanic Rift and is not the more common lava tube. Large fissure caves such as this are rare, and the Crystal Ice Cave is the only one in the world open to the public.

The route to the Cave goes through the Pleasant Valley farmland, which is all lava soil. The irrigated farms in the area use 200 horse-power pumps to supply water to the sprinkler systems. Crops raised include potatoes, sugar beets and wheat. Beyond the irrigated land, dry farms raise winter wheat. The last six and one-half miles is undisturbed sagebrush country — the vast Snake River Plain. Outcroppings of ancient flows of dark basaltic lava line the road.

History and Early Exploration

Long before white men set foot on Idaho soil, Indians roamed the Crystal Ice Caves area, hunting various game including the American Bison. Many bison skeletons have been found in the Great Rift, especially south of the King's Bowl. The Indians probably drove Bison into the shallower sections of the open rift for an easy kill. A few Indian artifacts have been found in the area, and some strange, very faint markings have been discovered on the walls, near the entrance of a large cave behind the pool at the bottom of the King's Bowl. The interior of the Crystal Ice Cave contained no evidence that Indians explored the dark depths of the Great Rift.

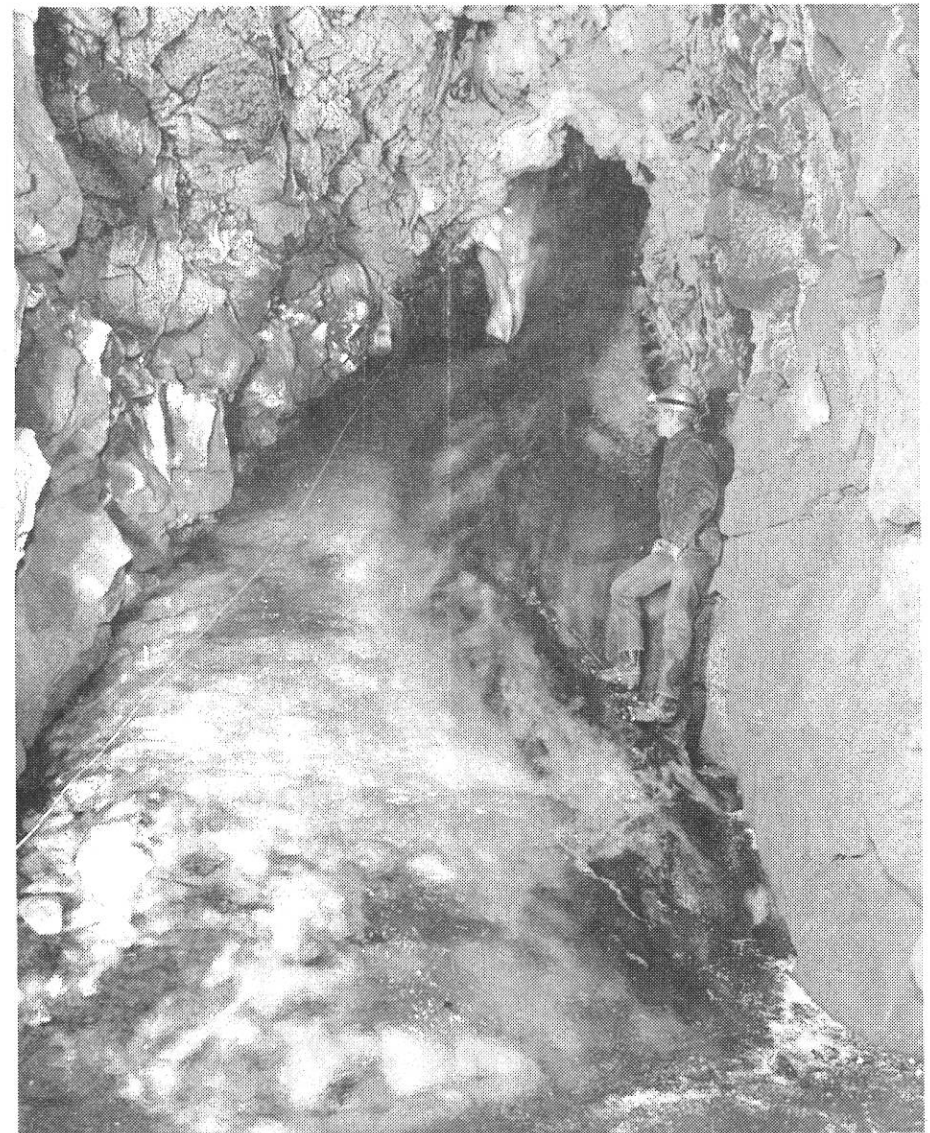
Many years after the early settlers came to Idaho, sheepherders began traversing the interior of the Snake River Plain, tending their flocks. They came across the King's Bowl and eventually the area became fairly well known to the more adventuresome local people. It was at this time that the King's Bowl got its name. A large cave (the one containing the strange markings) was discovered, leading southward from the bottom of the Bowl, and over the years it was explored by many people. Other caves were discovered and explored, but still the interior of the Great Rift had not been penetrated, and no one really knew what lay beneath the earth near the King's Bowl.

In 1956, two ardent spelunkers (or cave explorers) decided to find out. They began to systematically probe the rift, descending to the bottom of every hole they could find. In September of 1956, they descended to an ice floor in a particularly deep abyss about a thousand feet north of the King's Bowl. The tiny hole in the ice floor did not look promising, and thinking they had reached an apparent dead end, the two men turned back. As they started

toward the surface, one of the men dropped his flashlight — it slid toward the tiny ice hole, then disappeared. He decided to go after it.

Much to his surprise, the ice hole became spacious after he had gone about ten feet — the Crystal Ice Cave had been discovered!

These young spelunkers chose the name of Liar's Cave for their amazing discovery, for when they told others, no one seemed to believe their story of giant ice formations under the sun-baked lava desert.



Development of the Cave

For the next several years, only an adventuresome few dared to make the rigorous descent into the cave by rope. Then, in 1961 Jim Papadakis, a native of Ashland, Wisconsin, and the original developer of Texas' superb Caverns of Sonora, heard the story of the cave. He recruited two cave-happy boys from Aberdeen to show him the area.

The ride was a fairly rough one, over a typical back country road. The trio walked across the lavas to the spot they were seeking. Climbing to the top of the rough lava ridge, they hooked their ropes to the log that had been braced above the entrance by their predecessors. After making the initial descent by rope, a vertical drop of 90 feet, they spotted the tiny ice hole. Wriggling through it, they slid to the ice floor of the cave. As the beams of light were reflected by the gleaming ice formations and delicate ice crystals, Jim dreamed of opening its beauties to the public.

When he returned to town, he set out to make his dream come true. In the fall of 1963, after completing the voluminous paperwork and arrangements, he began the gigantic project of opening the Crystal Ice Cave for public viewing.

In the Spring of 1964, a trail was blasted out of solid rock down to the bottom of the King's Bowl. Stairs were constructed which lead to the bottom of a small cave just north of the Bowl, and a tunnel was blasted in the narrow partition which separated this cave from the entrance of a larger ice cave. After the completion of this trail, visitors could then proceed to the edge of a large underground pool in the cave.

People were anxious to see the glistening ice formations and because the work was so arduous, Jim abandoned his original idea of reaching the ice cave from the King's Bowl and entered it near the original entrance. After months of drilling, blasting and back-breaking work, a 1,200 foot tunnel had been created along side the Great Rift, and the Crystal Ice Cave was first opened to the public in 1965. Visitors follow this route, traveling 150 feet underground into what once was a seething volcano. Now it is a place of tranquility, covered with delicate ice crystals so fragile they will break away at the lightest touch . . . and giant, towering crystal clear ice pillars — so solid they have stood for centuries.

Development of this cave is unique as commercial caves go. The Crystal Ice Cave, within the Great Rift National Landmark, is a fissure cave and is not the more common lava tube. Large fissure caves such as this are rare, and the Crystal Ice Cave is the only one in the world open to the

public. The tunnel, which was excavated through solid lava, allows visitors a view into the illuminated interior of the Great Rift where they can see the centuries-old ice formations.



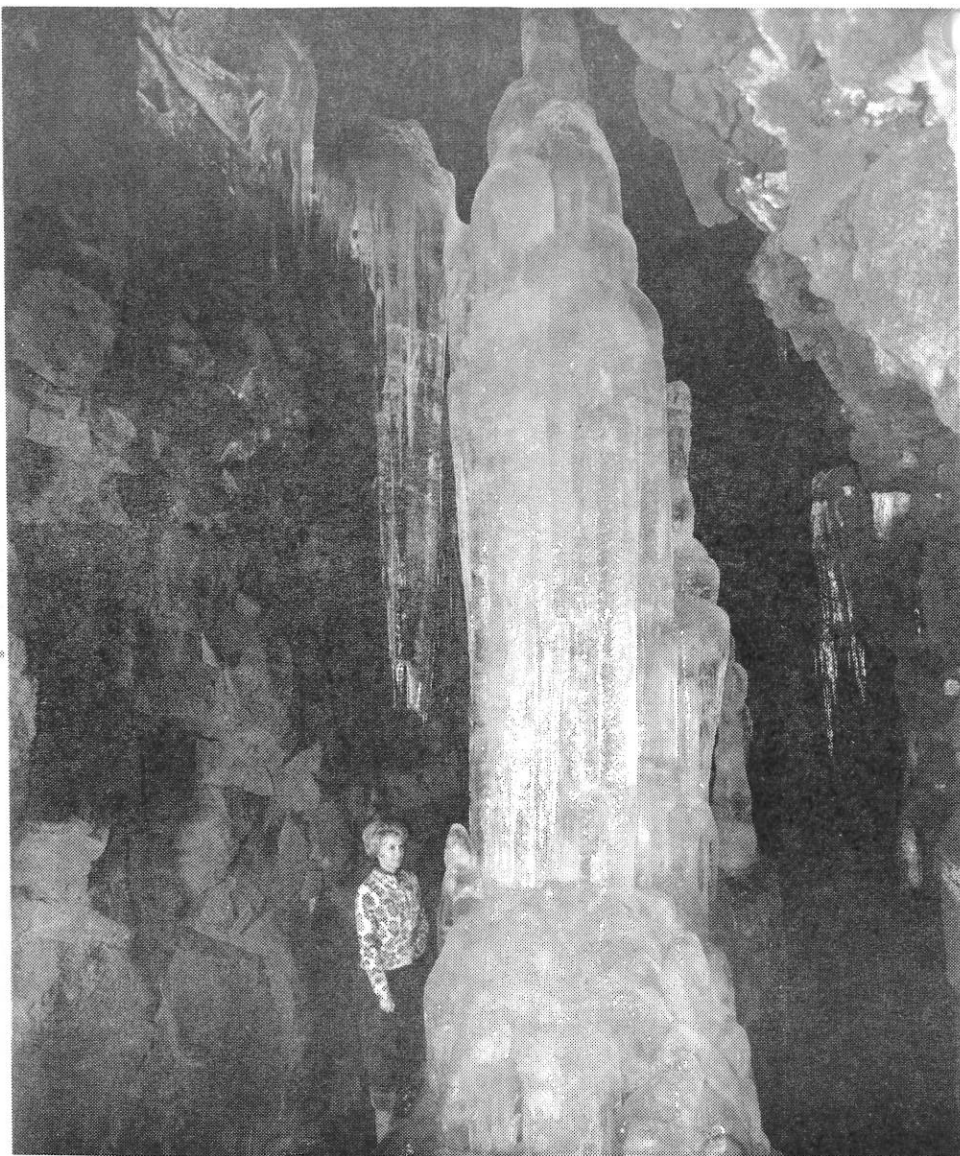
Why Ice?

Cold air entering the Crystal Ice Cave through a natural opening, or openings, in the winter chills the air and rock — even in the deepest chambers. Water entering these chambers freezes.

In the summer, the warm light air from outside tends to float on top of the colder, heavy air in the Cave. Mixing of the warmer air with the colder air is relatively slight. This is the reason ice caves are referred to as 'cold air traps.'

When slight warming does occur, some of the ice melts, and in so doing absorbs heat. This has the effect of keeping the cave at the freezing point all summer.

The ice and water in the Caves are a great stabilizing factor in keeping the temperature near 0 degrees C. (32 degrees F.) all year around. They absorb heat all summer and give off heat all winter.



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THE CRYSTAL TOWER

Photographer: Jim Papadakis

Model Sheryl Little

This magnificent piece of ice is over 25 feet tall and estimated age is from 300 to 500 years.



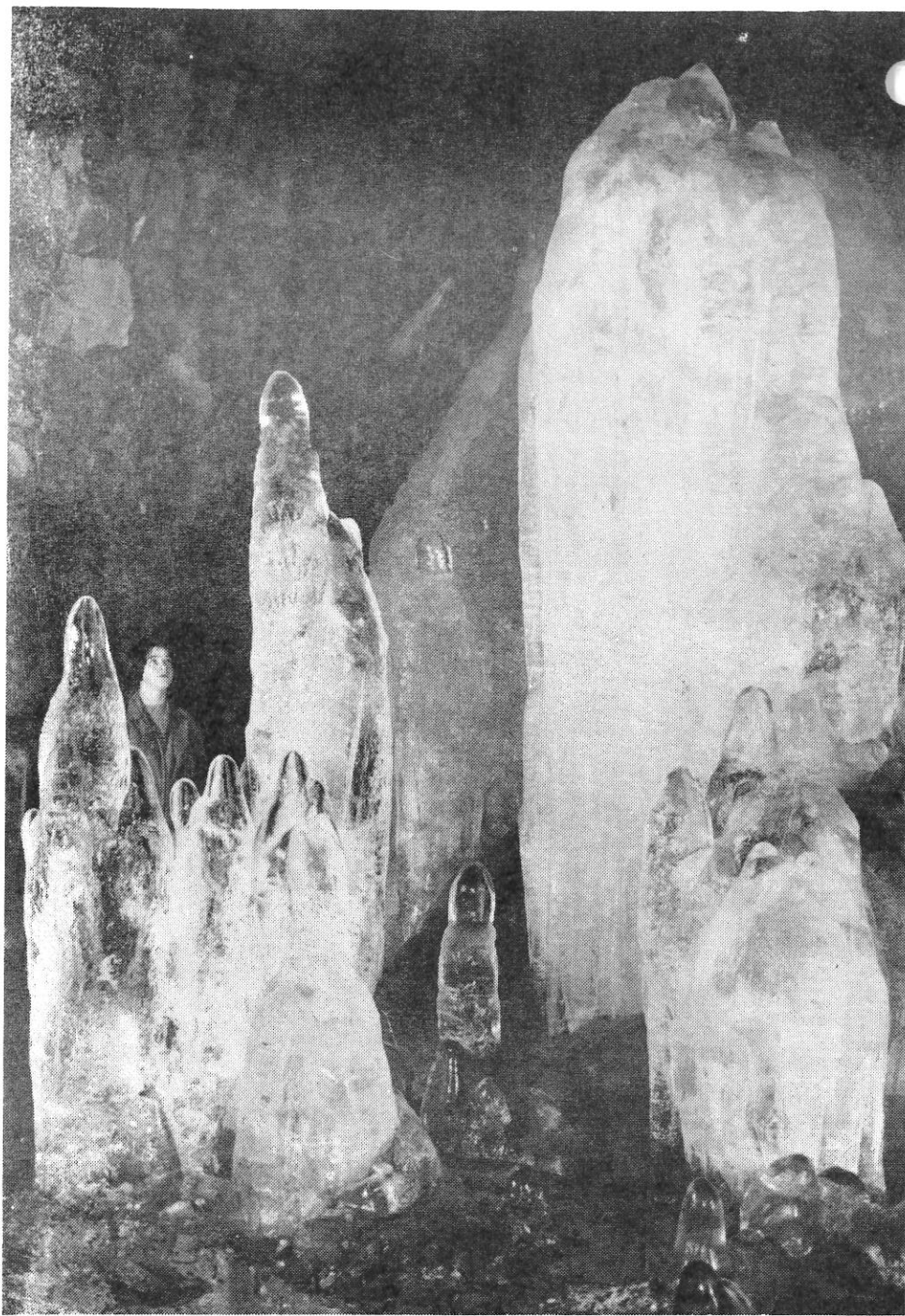
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GIANT ICE PENDANTS

Photographer: Jim Papadakis

Models: Pamela and Gary Mauch

Crystal clear ice formations, centuries-old, hang gracefully from 40 feet above the ice floor, dwarfing the young admirers.



THE NATIVITY
WITH THE HOT DESERT SURFACE AND BUSY WORLD
FAR ABOVE, A FEELING OF NEAR REVERENCE
SEEMS TO PERMEATE THE ATMOSPHERE SURROUND-
ING THE CENTURIES-OLD ICE FORMATIONS.

HOW WILL THE CENTURIES-OLD ICE FORMATIONS
LOOK IN THE FUTURE?

WE ONLY KNOW THAT THEY WILL CONTINUE TO
INCREASE IN SIZE, THUS THEIR CRYSTAL CLEAR
BEAUTY WILL BECOME MORE MAGNIFICENT AND
THEY WILL REMAIN ONE OF THE WONDERS OF NA-
TURE.