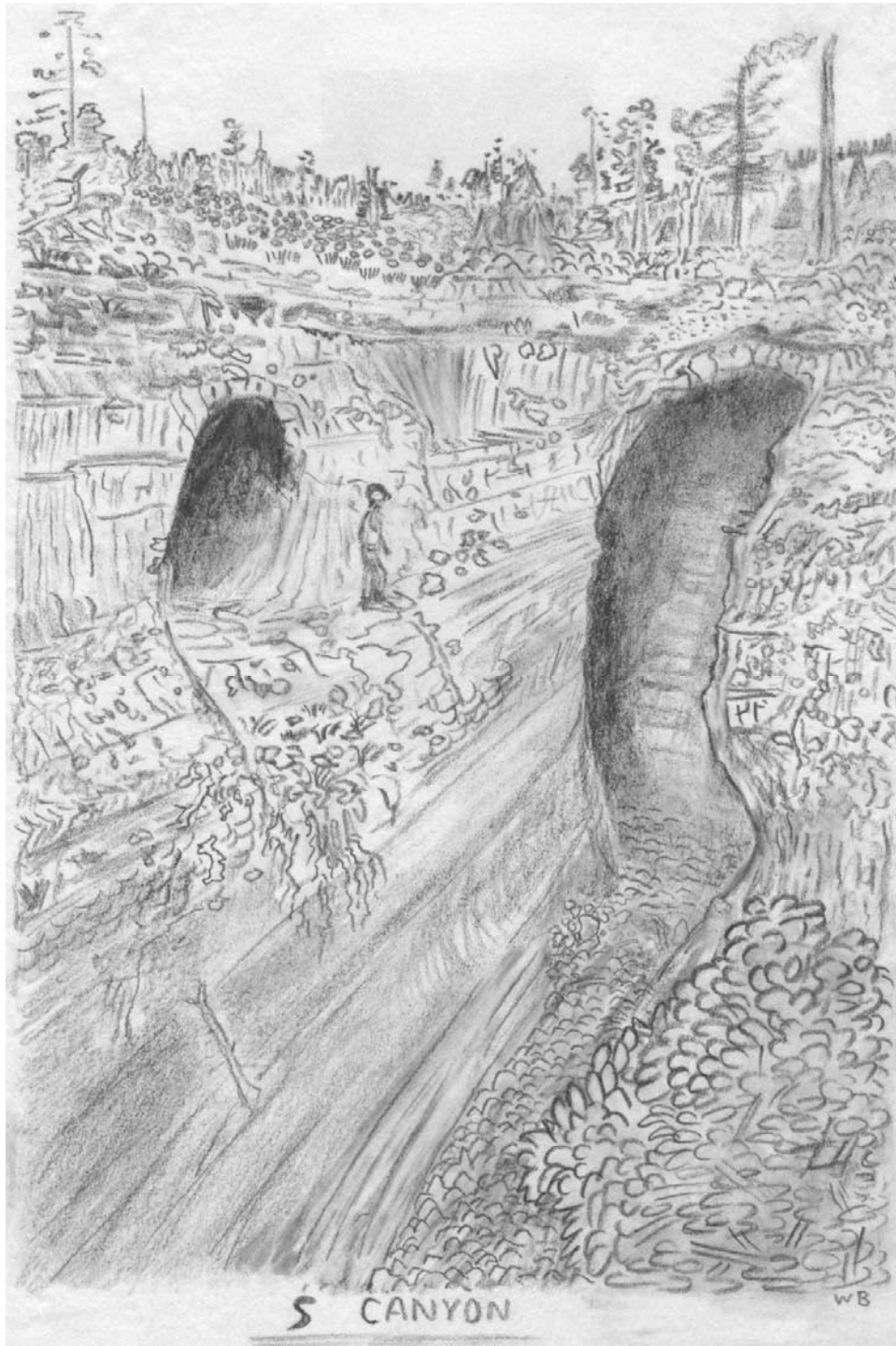


SAGRAG

NEWSLETTER OF THE SHASTA AREA GROTTTO

January-February 1996

VOLUME 15 NUMBER 1



The SAG RAG is published by the Shasta Area Grotto of the National Speleological Society, Grotto meetings are held at different locations the fourth Friday of each month at 7:30 p.m. Meeting locations are announced in the SAG RAG, Membership dues are \$6 dollars per year and include newsletter subscription. Original material not otherwise noted is copyright to the SAG RAG. Such material may be copied with credit given to the author and the SAG RAG. For use outside of the caving community, please seek the permission of the author or editor first. Send material for publication any time to Bighorn Broeckel, 2916 Deer Meadows Road, Yreka, CA 96097. Material intended for the next newsletter is due by the 10th of the even month.

EDITORIAL: A few cave conservation notes are in order. First, let's not forget to save and turn in all of our used up alkaline batteries to Jim Wolff. Bring them to the meetings. More old batteries to Wolff, and less old chemicals in the landfills.

Second, Shasta Area Grotto is calling for the cavers to abide by a voluntary closure of Bat Cave for the time being. The gating procedure is in process. Bat Cave is also called Half Mile Tube, and is found on the Medicine Lake Highlands.

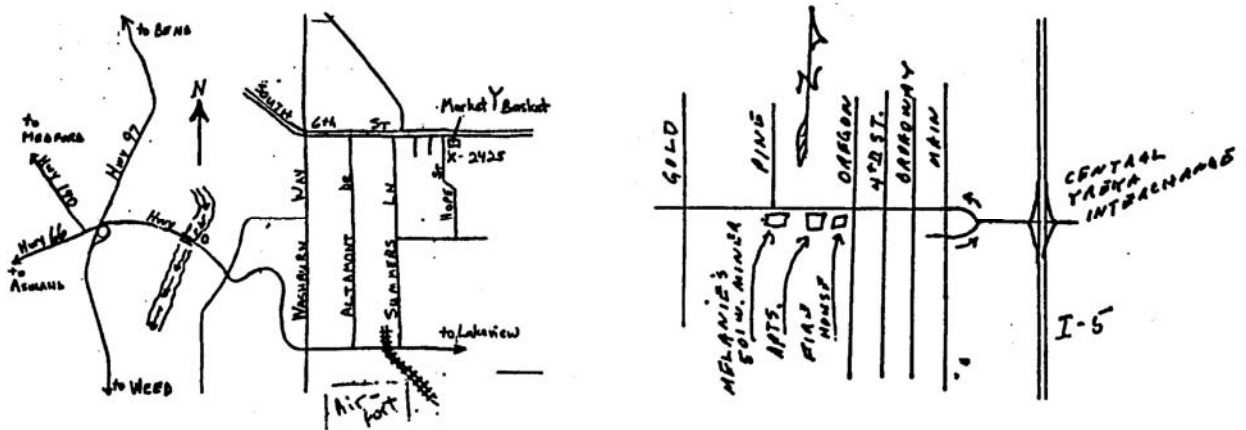
Thirdly, the Lava Beds National Monument Draft General Management Plan is now up for review, with comments due on March 1, 1996. My thoughts were that a Cave Management Specialist should be hired under the (desired) Alternative B. Also, the Monument should look into acquiring Bertha's Cupboard and Tichnor's Caves, as they have historical and geological connection to the Monument. Those were the two main thoughts I had about the Plan. If you agree, please send your influence in so many words to Superintendent, Lava Beds National Monument, POB 867, Tulelake, CA, 96134. March the first! One of those now or never items.

Now on to the fun stuff, including the long awaited S Caves.

BB

CALENDAR

- March 8, 1996 Grotto meeting at Kenney's house in Klamath Falls, 7:30 PM. The next day, plan for a fun caving trip through Catacombs at Lava Beds. Everybody welcome.
- April 12, 1996 Grotto meeting at Melanie Jackson's house in Yreka. That same day there is a Wilderness Medicine seminar in Medford. Cave trip decided at meeting.



COVER: Drawn from a photograph of Jim Wolff emerging from a perched meander high on the side of S Canyon Cave at the spectacular second skylight sinkhole.

The meeting was called to order at 7:54 P.M. at Ray Millers in Mt. Shasta.

Present were: Bill Broeckel, Don Gibson, Ray Miller, Bill Kenney, Jim & Liz Wolff, and Melanie Jackson.

Minutes: The December minutes were approved as amended.

Treasurer's Report: December Balance \$437.95. Income 111.30. Expenses 13.60. Jan. 12, 1996 Balance \$535.65.

Correspondence: Evelyn Bradshaw of the NSS requested our Annual Report and sent information on beefing up the NSS membership. Helpful Hints for News Editors was given to Bill Broeckel. Information on Karst Field Studies at Mammoth Cave for 1996 offered by the Center for Cave and Karst Studies, by Western Kentucky University and Mammoth Cave National Park was passed around. We received information about a 1/2 day session on Interactions of Karst Geology and Ecology offered Feb. 13, 1996, by the American Association for the Advancement of Science and the NSS.

Old Business: J. Wolff made out the order blank for the video library for the next three meetings. He requested video presentations on Papoose Cave, Big Foot Cave, and Castle Guard 1988 with Steve Knutson.

Jim Wolff hasn't heard from Jim Lakner yet about the lava Beds work trips. He will call him again.

Ray Miller heard from Chuck McDonald regarding Bat Cave. He has received all the responses with 5 or 6 being from biologists. The final EA will be out soon. The Bat Cave Gating Project is a first for our area.

New Business: We now have two new books available in our library. J. Wolff received them at Christmas. They are: a 1983 book Cave Exploring by Robert J. Traister. This book is a collector's item. Its descriptions are entertaining, but archaic. The other book is 1960's How to Go Caving by James Storey. The NSS Cave Conservation Policy that was on the back of the membership news was also passed around.

Trip Reports: The Non-Cave Cave Trip took place 1/6/1996 when Ray Miller and Liz Wolff went to Jack Jones Cave to replace the bat sensors. They got stuck in the mud within site of the cave, but spent their time getting unstuck. Ray had a come-along that had never been used before. It got them out of the mud even though it was a mere 20 years old. The moral of the story is you never know when you might need something you never seem to use.

B. Broeckel, B. Kenney, and Melanie Jackson mapped Blanchet's Cave and surface surveyed to Klaydo Cave. It was a very tight entrance for all.

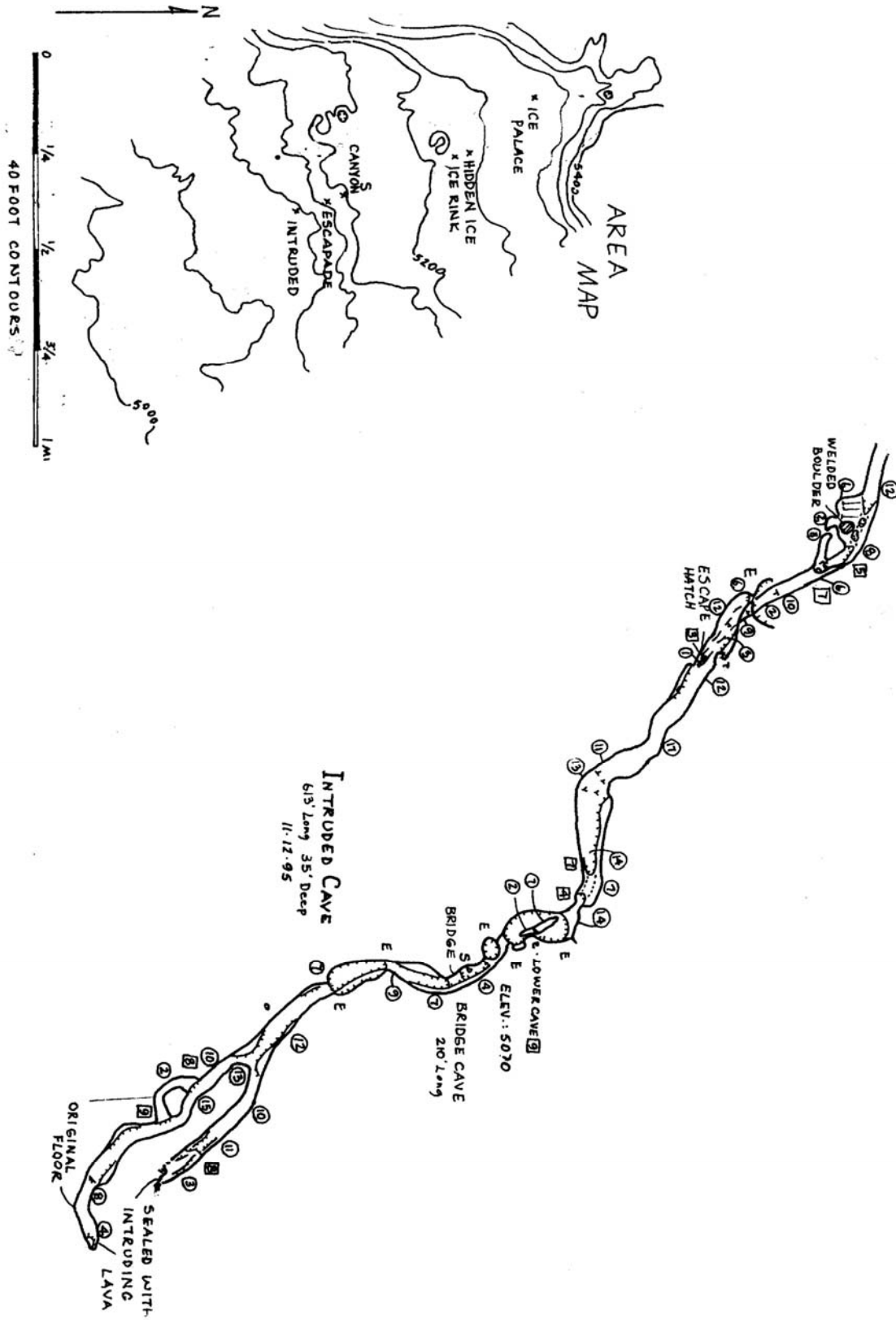
The New Officers for the Shasta Area Grotto for 1996 are:

Chairman: Neils Smith
Vice Chairman: Jim Wolff
Secretary: Melanie Jackson
Treasurer: Liz Wolff

The meeting was adjourned at 8:45 P.M.

Respectfully submitted, Melanie Jackson

(ED: Cave map continued from previous page, same azimuth, but offset to fit page.)



Map: Bridge Cave, Intruded Cave

S CAVES – DISCOVERY By Ben Sutton

(ED: First Ben describes a day of cave hunting on the lava, and then)

By now the sun is setting and it's time to high tail it back to civilization and food. Of course we need to explore going back (the good finds always happen this way) so we head back in a north easterly direction. I was getting in front of Bill, as he always has to poke in any small hole he sees, rabbit, gopher, or cave. Then I came to a ridge or fault line where the lava is very broken up. Just past this I found the beginning of S Canyon Cave. I'm soaring higher than the tree tops and then here comes Bill. With the sun having just set, I try to keep Bill from seeing the canyon, as I know we can't do any more caving today and seeing a sight such as this will only make the trip home and the coming days (well you all know the feeling of finding the lead of all leads and not being able to go in.) Anyway it was no use and Bill got to see it, after all I needed someone to share the euphoria I was feeling. (ED: Ben didn't try very hard to keep me from seeing the cave). After a few minutes of quick looking we head back to the car wondering when we will be able to come back.

S CAVES – DESCRIPTION By B. Broeckel

SAG proudly presents some new caves called the S Caves. This is a series of four lava tubes in linear arrangement. The location is relatively isolated in the Double Hole Lava Flow of the Medicine Lake Highlands. Upon discovery, Ben Sutton immediately named first cave (north entrance) "S Canyon" because the tall canyon-like passage makes a graceful S curve into the darkness. S Canyon measures 1001 feet. With 4 skylights, much of the cave is in twilight. Drops from the skylights are near 40 feet. A swimming pool size recess in the ceiling locates a near-miss skylight. A high side passage forms a western meander that re-enters the main canyon at two perched locations. To the south, the cave gets a little darker, and then, a double bridge!

The entire length of S Canyon Cave can be walked as a non-vertical through trip mostly over breakdown debris. In places the canyon cave walls are almost close enough to touch at the same time with your hands. What a showcase of lava flow geology. Also, owls fly through this cave.

A breakdown pile nearly reaches the surface level, and effectively divides S Canyon Cave from the next cave in line – Escapade Cave. A through trip down this 1566 foot lava tube makes for a dandy horizontal caving adventure. Walking passage extends over some holes leading down to short lower level segments. Then the cave suddenly meets a definitive upper and lower dividing point. On the first midnight survey trip, I recall Ben Sutton hooting loudly at this spot. The lower level dead-ends in a cold air sink that forms ice. The cave continues in the upper passage. Luckily, a delicate ledge on the right side is perfectly arranged to allow uncomplicated progress.

Next the cave widens into a modest room with a welded block pillar on one side. At the end of the room, a small passage continues from the bottom of a climbable hole. This passage has a breeze and very little breakdown. It becomes a crawlway, getting smaller, until just before it ends, an escape hatch appears in the ceiling. Out pop the cavers into another upper level walking passage! Exits are found both upflow and downflow from this point in the larger passage. Thus, Escapade Cave has three entrances, and the through trip involves five changes between the upper and lower levels.

Bridge Cave is a short interval cave segment notable for its bridge, a thin horizontal wafer of lava bisecting the cave for about 20 feet.

The last cave in line is called Intruded Cave (612 feet). Like S Canyon, this cave also has some interesting geology. The easy walking passage over original floors divides at a Y junction. Both arms of the Y exhibit thick chunks of wall-lining exfoliated into the passage. Both arms have the same ending as well. Great tongues of intruding lava block further exploration. This intrusive lava has a completely different color and texture than any other lava in the cave. A distinct flow event must have broken into the cave and blocked it up. Two Townsend's Big-eared bats were seen hibernating at the end of the west side passage.

There were four survey trips to S Caves. Some of the data was done over again due to some magnetic problems. Cartography was done by Liz Wolff.

NEWSLETTER REVIEW

November 1995 – February 1996

By Dick LaForge

Your dilatory newsletter reviewer was unable to get his act together for the November-December issue of the Rag. Just too much going on. All together he was home for only two weeks in December, and had company all that time, and also included a family ski trip to Bend. He started with a trip to Lechuguilla, the "Angela Morgan Expedition", which was to be the last one for at least a year. His role was mineral inventory, plus coordinating the other mineral inventory people. There was one mineral person on each exploring team, so that nobody would have to go back later.

Overall, it was a fairly typical expedition. Many small to medium finds were made and mapped, but there were no big breakthroughs. The most productive trip was to the Western Borehole, and got about 2500 ft., but not far in any direction. But some of it is outstandingly decorated. To quote from Donald Davis's report: "It was slow, strenuous caving because of the ups and downs and the constant abundance of delicate gypsum features. There were gypsum flowers, up to a foot long, at almost every station, some in aggregations of hundreds or even more, even denser than the displays in the nearby Magnolia Bayou; indeed, probably the most concentrated gypsum-flower displays in the cave (if not the world?) Several areas also had notable hair and needle clusters. There were also tapered, linear fossils projecting from the walls (possibly crinoids, if crinoids ever had tapered stems)." Another team, or pair of teams, did a climb called K2, leaving from The Deliverance Passage in the Southwest branch, and ending up quite close (within several hundred feet) of the Southern Climes area in the Western branch. It would be interesting if these two branches can be connected, and would make a great circular trip, but would not actually be useful. There is a lot of empty space on the map between these branches. It must contain something!

The trip I was on went to the Far East for seven days, with Kyle Fedderly, Mark Rosbrook, and Chuck Crandell. That is the furthest camp – it takes one day travel time each way, so left 5 days for exploring once there. I wanted to take my 3-D camera, as I did not do so on my first trip there two years ago. Taking the camera box is quite a bit of extra work and slowed me down. My regular pack was large and heavy enough, having 7 days worth of supplies, and having two items is much more awkward. The route there is long and almost constant in its climbs, stoops, squeezes, climbing squeezes, handlines past pit edges, and very careful moves past very delicate formations. The two major obstacles are Apricot Pit, which is a near-vertical fissure whose 300 feet require 5 (if I remember right) separate ropes with a nasty little handline traverse in the middle. In places it is only a few feet wide, which is strenuous with a heavy pack. Add to this a slippery layer of "Gorilla Shit" to make footing uncertain. The other is the Aragonitemare, a totally vertical tube going 300 feet back up. One does this in two rope pitches with a ledge in between. There are three rebelayes, which are, once again, extra fun with a heavy pack (plus camera box).

One gets into the "Cave Ballet" of moving through all this. You are all experienced in it; in Lech the variation is: heavy pack plus high temperatures, so little clothing. One is often using friction holds on bare skin on rock, and except for knee pads, elbow pads, and gloves, one has little protection. There is a specialized art to manipulating the camera box with the thighs to fit it through vertical squeezes, keep it from wedging one off ledges, and enable one to see one's feet while climbing.

The Far East camp is very congenial – spacious with pure white mites and tites against a rich red and grey corroded bedrock. The 5-minute route to the water hole (the lost Pecos River, which is the only moving water in the cave) takes one past walls covered with rhombohedral calcite popcorn inches deep, aragonite bushes up to 8 feet high, butterscotch translucent rimstone in now-dry pools, and finally the mostly-dry streambed deep in large calcite rafts. A narrow trail crunches right through these – there is no other way! From overhanging walls and translucent shelfstone hang dense mineralized organic "beards", a feature unique, as far as I know, to Lechuguilla.

From the camp we went out every day to explore and map, usually dropping down the Ruby Chamber to the Outback. A day in the Outback is such a dramatic caving experience that I will describe it in detail in a separate story. Out of camp about 10 AM and back by 9 PM+, dinner and chat, and to bed. This happens every day for an entire work week, and the food bags shrink while the burrito bags swell larger and larger. We are so used to being there that it seems strange to leave.

I had an adventure crossing the rebelay in the Aragonitemare. I rappelled down the rope, stopping where it loops back up at its lower end. I attached two Jumars to the adjacent rope which continues down. I hanged by them to relieve tension on the rack, undid the rack from the upper rope. attached it below the top Jumar, stood on the lower Jumar so that the top Jumar could be undone, hanged by the rack so that the lower Jumar could be undone, and proceeded to rappel on down. Simple, right? I thought so too, in my pre-flight mental run-through. But wait! The bottom Jumar was below the rack, so when I stood on it tension was going through the rack and I could not open it! It was locked onto the rope. I had to take it off and descend to the ledge still using the Jumars, which is slow though sure. Then I used some spare slings to lengthen the lower Jumar's sling so that it could be attached above the rack, though of course below the upper Jumar. It would be better to practice this at home, and Kyle has promised to help me make a modern set-up and teach me how to use it.

I must report that my 5 D cell light using the Willie Hunt voltage regulator to run the .5 Amp halogen bulb (quite bright) worked very well. I used only two of the packs plus a half day of a third. That's almost three full caving days on 5 D cells, and bright!

Sorry to get carried away with Lech descriptions again. There are other news items . . . Notes in several newsletters say that the Lilburn mapping project managed by Peter Bosted, has passed the 15 mile mark. (I have no idea what Bigfoot now is.) There is also a restoration project there under Bill Frantz. There are several science projects also, including the investigation of actively changing sinkholes above the cave. 9 new sinks have appeared in recent years! Lilburn is a very interesting cave, fun to cave in, and in a spectacular area. You should plan to go – contact Peter Bosted and/or the San Francisco Bay Chapter for trips in 1996.

Speaking of Great Caves of the Southern Sierras, the December 1995 Explorer has an update on the S Cal Grotto's Church Cave project. Church now has 3.01 mapped miles and a depth of 527 ft. Included are line maps in plan and profile. The article is too long for reprint; see it in the Grotto library at Wolff's. There is plenty more work to do in Church. The article concludes: "If you are interested in participating, please contact Eric Miles (San Francisco), David Engel (So Cal), or Ray Hardcastle." (Hint Hint)

For this month's plagiarism, I am offering Adventures South of the Border by Nancy Pistole, from the Nov. 1995 Explorer. It details travel to Systema Cheve from Texas and the ensuing 10+ day push into breakdown chokes at the bottom of the cave. As if this wasn't enough fun, they followed it with a river rafting trip down the Usumacinta River, along the Guatemalan border. This was great fun until they were attacked by banditos from the Guatemalan side. Three cavers were wounded by bullets; this led to a nighttime run down class III rapids and involvement with the Mexican Army!

Number one priority goes to Bill Papke's article, Fern Cave, Supernovas, etc. in Valley Caver, Winter 1995. Bill shows evidence that the 1054 supernova that produced the Crab Nebula is drawn on the wall of Fern Cave (Lava Beds NM), as it is in several caves in NM and AZ. Did you know that???

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Reprinted from VALLEY CAVER, Winter 1995, pp. 1-5.

FERN CAVE, SUPERNOVAS, AND THE CREATION OF ALL THINGS CAVE-LIKE

by Bill Papke

It was very early in the morning and Rope Weaver had awakened early. The day's business weighed heavy on his mind. He had to finish his rope made from twisted tule fibers and sage branches that day. Since it was summer, (the first days of July by our accounting), he had to start early otherwise the heat of the day would be oppressive and would hinder his work. So as he rose from his palette of reeds and stretched to face a new dawn he saw Sister Moon rising in her crescent form above the horizon. It was a beautiful sight and the faint but visible twinkle of the brightest stars could still be seen. It was indeed a wonderful morning, and the clear, fresh mountain air of the Modoc Plateau, still cool from the night, brought him quickly to full awareness. Then while he stood watching the moon and the lightening of the sky a wondrous sight appeared before his eyes. There! Where no star had shown before, grew a light so bright even the moon paled by comparison. This was indeed a good omen!

Little did Rope Weaver know that over a thousand miles to the south in Chaco Canyon and also in Navaho Canyon and in a cave on White Mesa, three of Rope Weaver's spiritual brothers also saw this apparition. Not only that, this very same sight was seen by blood brothers in the far away continent across the Great Western Sea. Little did he know that the event had happened some 6000 years in the past, since that is how long, the light he saw had been traveling. Little did he realize the magnitude of this star shattering event. All he knew was that for 23 days he could see a star shining in the daytime! And at night he could find it still shining even after two winters had passed. The year of this sighting was 1054 A.D. by our present reckoning. It may be that each of these observers then set

about to create a record for us to find and consider.

And this brings me back to a visit I made to Fern Cave in the Lava Beds National Monument on a Saturday early in October of 1995. It was the occasion of the Western Region's annual get-together. Over 100 cavers attended and caved the lava tubes of the monument. Meetings and workshops were held as well as evening slide shows and an auction; but for me the most important event was a too short visit to Fern Cave. I had been aware of Fern Cave and its significance since I had taught science for many years and have always read widely in the area of astronomy. It was here that I could spiritually cross the intervening centuries and wonder at the sight that must have amazed the observer who may have put his experiences into graphic form on the wall of this cave.

While not all of the pictographs found on the walls in the twilight area of this lava tube depict astronomical events, I would certainly agree with others that the crescent moon and star shapes are included among them. What follows is a brief summary of the discovery, exploration, and interpretation of the pictographs of Fern Cave. This is a cave of considerable importance and I know of no other reference to it in an NSS publication, so this small article will at least do that.

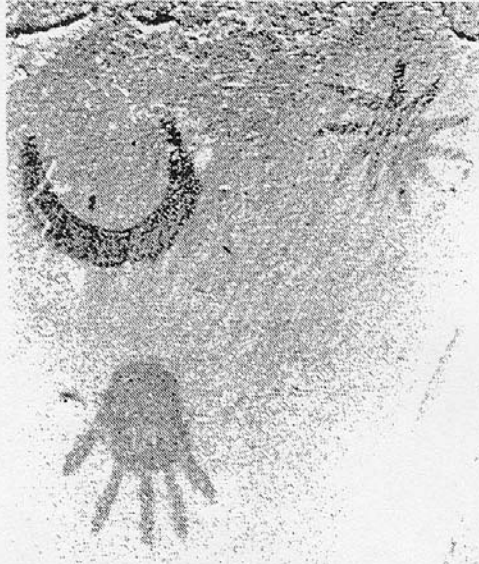
Discovery, exploration and mapping of Fern cave:

There seems to be no record of the discovery of Fern cave. It does not show up on the 1927 map of the Modoc National Forest. However, it does show on the 1936 map. And it was



The author prepares to photograph some pictographs on the west wall of Fern Cave. A sense of scale is provided by his presence. (Photo by Morley Hardaker)

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A painting in Chaco Canyon, New Mexico, that may represent the supernova of A. B. 1054. The view is looking up at the painting; which is on the underside of a rock ledge. On the morning of July 5, 1054, the supernova, brighter than Venus, rose with the waning moon. (Photo by M. Zeilik)

In 1952 the University of California contracted with the National Park Service to survey the Monument for archeological sites; Fern Cave was probably surveyed but not re-excavated. There seems to be a great deal of discussion in the literature concerning the pictographs found in the Modoc area, but this has been based largely on the reportage of others. For instance, Fern Cave is alleged to have pigments that include yellow and red. If they existed, they are certainly not present today in the most obvious places near the entrance where the pictographs dominate — at least these eyes did not see them.

Curiously in all of the literature I have scanned concerning rock

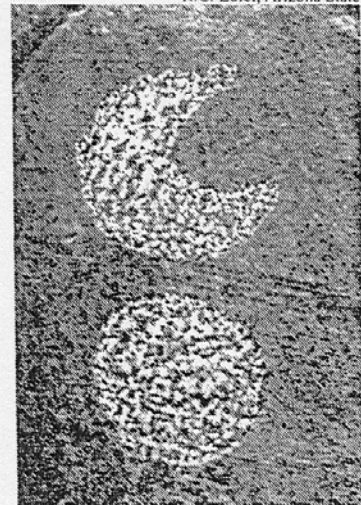
in 1936 that J. Carlisle Crouch supervised the archeological excavation of a 30-foot trench intersected by a shorter 16-foot trench in the floor near the entrance of the cave. The trenches were dug to a depth of 31 inches. Their profiles revealed layers of ash and charcoal, and inorganic soil. Artifacts left by the former occupants were also found.

Typical of such occupation there were a fire hearth, mortars and pestles, obsidian pieces, tool fragments, projectile points, bits of basketry, beads, bone fragments, etc. Unfortunately Crouch's skill was typical of the time and the position and numbers of artifacts were not recorded. The collection was sent the University of Oregon for further study — the results of which are not known to exist.

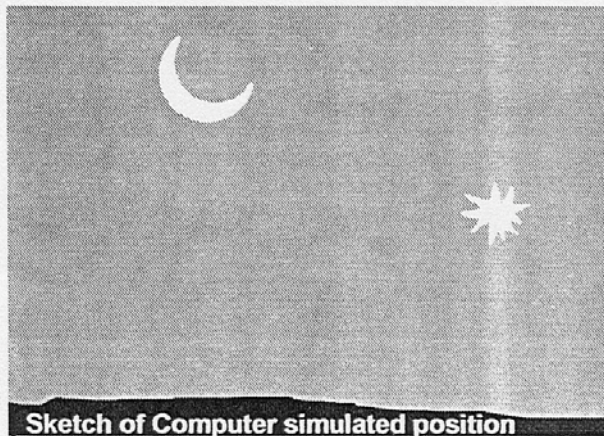


William C. Miller

R. C. Euler, Arizona State



Two images thought to represent the supernova of A.D. 1054 (Above) White Mesa, Arizona (Below) Navaho Canyon, Arizona



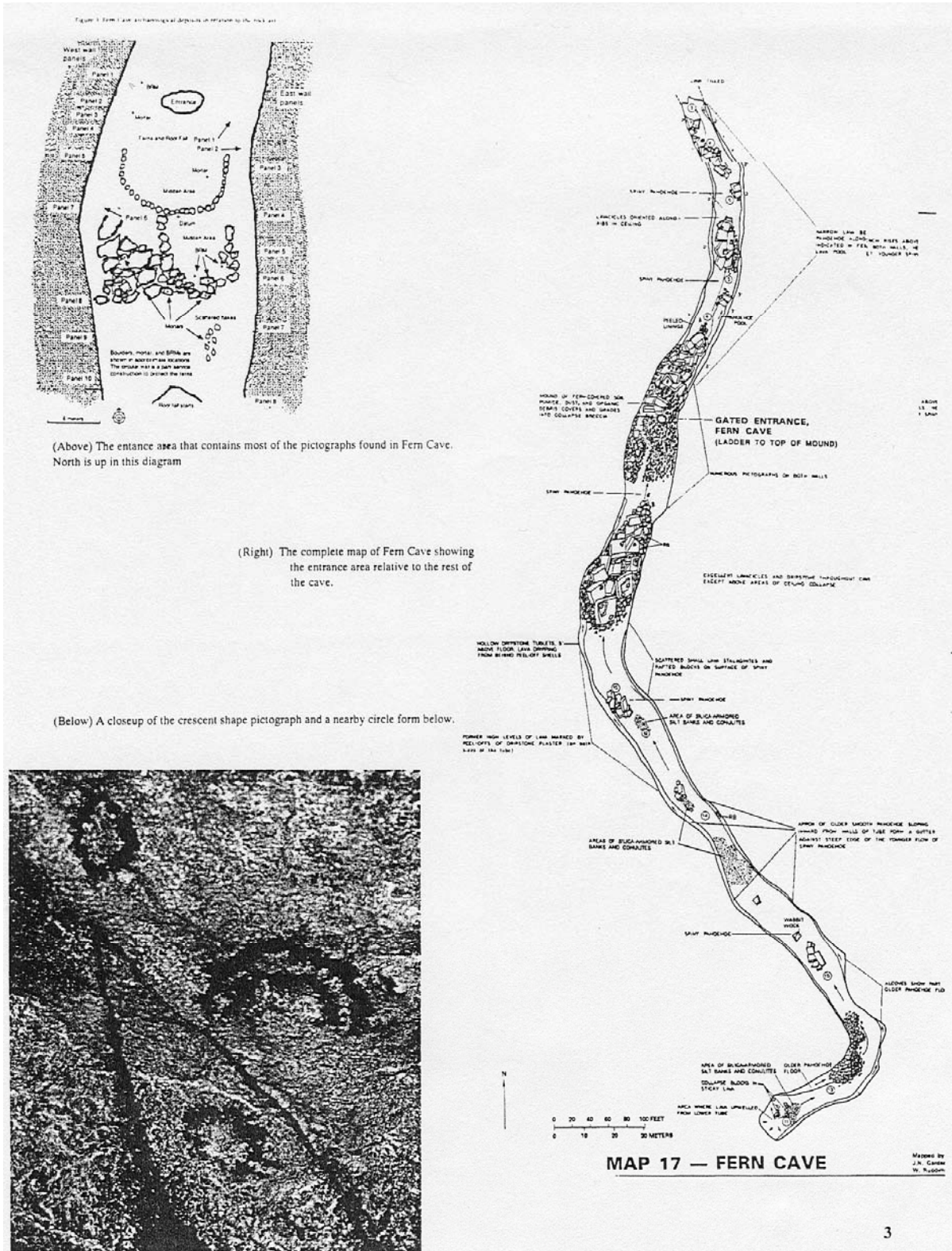
Sketch of Computer simulated position

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Map: Fern Cave

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A section of the west wall near panel 5 and 6 as designated in the previous map of the entrance area.

art and pictographs in the area, I have not read of one mention of a *crescent moon-like* drawing that is very obvious in Fern Cave. To my knowledge there is only one found in the cave. While many crescent moons occur in any given year, to have only one such shape in the cave indicates a drawing of special meaning. Or so it would seem. Perhaps the image is so obvious as to be ignored by those studying pictographic art.

I have included an image of this along with three other similar images found in the Southwest. The images while different are also strikingly similar. It is a tantalizing question to pose whether or not all of these images interpret the same physical phenomenon — that is the supernova of A.D. 1054. Certainly they bear striking resemblance to the computer generated figure that shows the position of the crescent moon and the position of the supernova (now Crab Nebula) in the early morning sky of July 5, 1054. Keep in mind that the surfaces onto which these images were placed did not necessarily face in the direction of the scene as it would have been seen from the surface of the earth. Reversal of relative positions can be easily understood since even modern man gets it wrong most of the time. Just pay attention to the crescent moon as it is shown in any comic strip. Most often they are not drawn from nature but

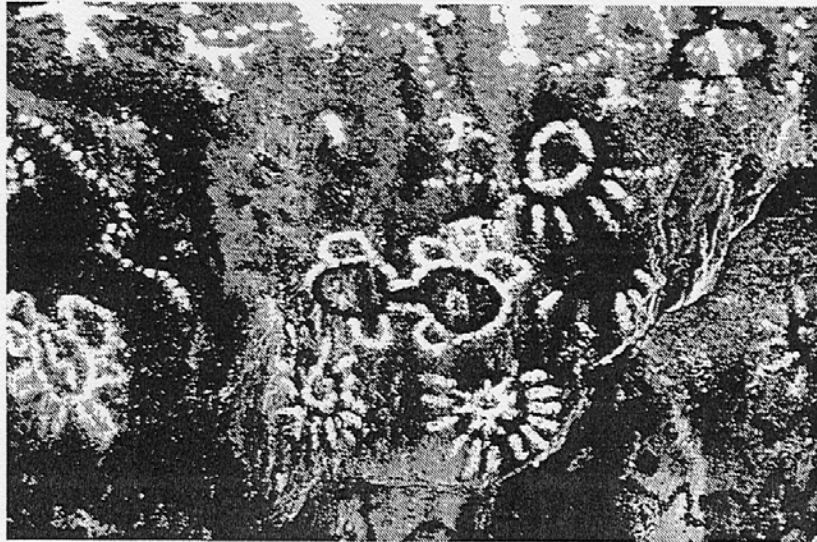
from memory and that is often wrong. The moon shape in Fern Cave is found on the *west wall*. The waning moon and supernova would have been seen low in the *eastern sky*. William C. Miller who is the photographer of the image found at White Mesa wrote of his findings in a leaflet published by the Astronomical Society of the Pacific. (#314, July, 1955). A decade later he reported of finding another drawing which showed "a series of circles below the crescent, indicating motion that would have occurred during the course of a day. Actually, it was the crescent moon that moved in relation to the nova of 1054 rather than vice-versa".

Astronomical connections made for Fern Cave:

Dale Ritter in 1970 delivered a paper to the The International Union of Prehistoric and Protohistoric Sciences, at Cape de Ponte, Italy. In that paper he conjectured that "*certain star elements in this cave may have direct association with particular astronomical events shown in rock art elsewhere*"

Now a final connection:

No supernovae, — it follows — no earth, no caves, no you . How can this be? Stars like our sun evolve as they convert their nuclear fuel of simple hydrogen and helium atoms into larger atoms such as oxygen, sulfur, carbon and silicon, etc.



Pictographs that are typical of those found on the east wall of Fern Cave near the entrance area. This is near panel 6 of the east wall.

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larger atoms such as oxygen, sulfur, carbon and silicon, etc. But, and this is a very important "but", stars like our sun die (cease to be energy sources) in a very undistinguished sort of way. Oh, they expand to become a red giant that envelopes the inner solar system (earth included), but then contract to become a white dwarf star the size of the earth. (Hot - but not putting out anywhere near the energy as before).

Supernovae, on the other hand, are the death throes of stars that are 10 - 20 times more massive than our sun. As the star ages, nuclear fusions at different depths, because of temperature and pressure, have created an "onion-layered" core. At the very center is iron. This is surrounded by layers of silicon, oxygen, carbon, helium, and the top layer, hydrogen. This structure is stable as long as energy is being produced in each layer, enough energy to support all the layers above.

The fusion process cannot create elements more massive than iron, and soon to little energy is produced to support the upper layers. As a result the iron core collapses upon itself through the ever present effects of gravitational attraction. This happens suddenly and the outer layers, no longer supported, plunge inward, raising their temperatures. So for a brief moment, fusion of the outer layers goes wild. Energy production exceeds the output of 100 trillion, trillion, trillion Megaton Hydrogen bombs. The core collapses to form a neutron star (or blackhole) and the shock wave and nuclear fragments that are created are driven outward through the upper layers converting the atoms there to new and more massive forms, thereby creating all the elements we now know. Elements created by a similar process were gathered together in this part of the Galaxy over five billion years ago to create a new solar system. Our sun is a second generation star that gathered these elements together along with new hydrogen to start the process over.

These are the same elements that make up the earth. These are the same elements that make up the rocks in which caves are found. These are the elements that make up your body. We live today, enjoy our caving, and our earth, because over five billion years ago, in our part of the Galaxy, a *star died*. So in this sense we are bound to Rope Weaver and his people. *We are made of the same elements and probably even some of the same atoms as he.*

My spiritual journey ends here. Fern cave still exists. And with proper protection and care will continue to exist with its messages from the past. Albeit the message are not clear and certainly not understood. But here one can take a trip back in time, literally over five billion years, to contemplate the meaning of it all and develop a sense of kinship with those people who also once walked this land.

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Reprinted from VALLEY CAVER, Winter 1995, pp. 1-5.

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TO:



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