

Vol. 24 No. 1

January 2008

## January Meeting to Be Held at Randell Research Center

***There will be NO SWFAS MEETING IN BONITA SPRINGS in January.***

Instead, on Wednesday, January 16, SWFAS will meet at the Randell Research Center in Pineland, Pine Island, where the Lee County Historic Preservation Board will be meeting at 4 p.m. regarding the designation of a Pineland Archaeological Preservation District.

There will be a brief business meeting -- for the election of the Board and officers -- at 3 p.m., prior to the Pineland hearing. Please meet at the pavilion.

At 3:30, RRC Director William Marquardt will talk to SWFAS members about the upcoming hearing. Please come to Pine Island and show your support for the preservation of Pineland's archaeologically significant resources.

## Pineland Archaeological Preservation District

The idea for the designation grew out of concerns Pineland residents and the Lee County Historic Preservation Board members expressed about the lack of a formal mechanism to preserve valuable archaeological resources in the Pineland area. This area was once the domain of the Calusa Indians who built huge shell mounds, engineered canals, and sustained thousands of people from the fish and shell fish found in the rich estuaries. The Pineland area is especially significant because the Calusa inhabited this site for over 1,500 years. This sustained settlement provides a unique opportunity to learn about the archaeology, history, and environment of Southwest Florida.

The area proposed for designation under the Lee County Historic Preservation Ordinance coincides with the boundaries of the National Register Pineland Archaeological District; this area is roughly bounded by Pineland Road, Waterfront Drive, Caloosa Drive and Roberts Road.

In general the purpose of the proposed Lee County Pineland Archaeological District designation is to provide an opportunity for review of the impact on the archaeological resources of ground disturbing activities requiring a building permit. If as a result of that review, preservation or mitigation activities are required, the county could work with the property owner to provide zoning relief from such items as setback requirements and lot coverage in order to accomplish both preserving the resources and accommodating new

construction. If the services of a professional archaeologist were required the county could help defray the costs through its preservation grant assistance program.

In addition the Randell Research Center archaeological staff is eager to work with property owners to help them preserve this internationally significant site. Lee County staff has invited archaeologists from the Randell Research Center to discuss the significance of the archaeological resources in Pineland.

As part of the designation process the Lee County Historic Preservation Board will hold a public hearing and vote on whether to designate this archaeological district under the ordinance. This meeting is scheduled for January 16, 2008, at 4 p.m. the Randell Research Center Classroom, located at 13810 Waterfront Drive, Pineland, Fl. 33945. The property owners will be notified by certified mail of time and place of this meeting.

For more information, please contact Millie Babic, Senior Planner, phone (239) 533-8684, email [mbabic@leegov.com](mailto:mbabic@leegov.com) or Gloria Sajgo, Principal Planner, phone (239) 533-8311; e-mail [sajgogm@leegov.com](mailto:sajgogm@leegov.com). Both are at Planning Division, 1500 Monroe St. Fort Myers Fl. 33901 or P.O. Box 398, Ft. Myers, Fl 33902-0398.

*- Information provided by the  
Lee County Historical Preservation Board*

# Archaeological Currents: Absent Friends

By John G. Berialt

Just recently, another pivotal member of SWFAS passed away. This was Arthur ("Art") Lee, who was instrumental in the creation of the Craighead Laboratory, an institution still flourishing at the Collier County Museum. Art also revised (overhauled) our bylaws at least once, kept a complete run of all past issues of the Newsletter, was the Newsletter editor himself a number of years, established numerous protocols for our operation, initiated the Craighead Award for outstanding service to local archaeology, and reluctantly accepted the Award once himself.

There was a trilogy of people, who are all now deceased, that helped SWFAS in profound ways. There's Art, and Joe Long, and Wayne ("Bud") House. All these gentlemen were strong individuals, part of the "Greatest Generation." All fought in World War II: Art and Joe in the Pacific, and Bud in the hedgerows of Normandy. All were successful in their chosen lines

of work, raised strong families, retired to Florida with still plenty of energy to take an interest in the things around them, and, most importantly, were motivated by a level of service, of "giving back," to involve themselves in things to help their communities – among which was their involvement with SWFAS (lucky for us).

I was lucky to know and be friends with all three men, and personally benefited from these associations. Art Lee taught me a lot about negotiation, museum science, writing, and looking ahead strategically. Art motivated me to finally get a computer (something which now helps me earn a living). Joe taught me how to use an alidade or plane table, to map sites, to notice the minor changes in topography. We shared a love of native plants and plants in general. Bud taught me a little about how to work hard and effectively, to show up and help. To me, he was an example of someone always ready to help, to put his time and effort into something of benefit to future generations – to make things better for having been there.

I can think of many times I worked with all three in excavating, recording data, creating maps, sorting, cleaning, etc. I traveled extensively with Joe and Bud in Central America, and with Art all around South Florida. I enjoyed listening to their experiences, in the War and subsequent years. All three lived interesting and fulfilling lives. Even at a time that many people retire and sort of "give up," these three continued to work harder than ever, and to good effect. All were physically active, and, in general, stayed in good shape for many, many years.

When someone dies, and for days after, people reflect on who they were and what they did. Later, the immediacy of their presence fades, and so does the constant dwelling on them. Sorrow is replaced by an occasional sadness that ebbs and flows when our thoughts turn to memories and incidents, and we periodically think of absent friends. They were friends that taught and led by example and contributed uniquely. They are and will be missed...

## The Marco Island Historical Society lectures continue:

Jan. 8, 2008: Robert Macomber, The Civil War Naval Battle of Caxambas Pass. 7 p.m. at Mackle Park

Feb. 8 - Dr. William Marquardt - Culture, Archaeology and the Modern History of Marco. 7 p.m. at Mackle Park.

For more information, contact SWFAS member Betsy Perdichizzi, [betsyperd@naples.net](mailto:betsyperd@naples.net) or 239/394-6917.

## FAS

SWFAS is a chapter of the Florida Anthropological Society. FAS is open to persons interested in anthropology, archaeology, preservation and cultural resources and community education.

FAS membership includes a very nice journal, the Florida Anthropologist, covering diverse archaeological and anthropological excavations and events in the state, and the FAS Newsletter. FAS members have the opportunity in May each year to attend the annual meeting, held at a different location through the state each year. Papers are presented on a wide range of topics, tours are available at local sites and workshops are offered each year. At the business meeting, members have the opportunity to express ideas and vote on issues.

Membership dues are as follows: \$35 (Regular and Institutional); \$35 (Family); \$40 (Sustaining); \$15 (Student with a valid student ID when applying); \$100 (Patron); \$500 (Life); \$2,500 or more (Benefactor).

## Nominees for SWFAS 2008 Officers & Trustees

SWFAS Board members have submitted a list of candidates for the 2008 Officers and Trustees. The SWFAS general membership will vote at January's monthly meeting, and nominations from the floor will be accepted until the vote.

### OFFICERS:

President: Theresa Schober

1st VP: Tom Franchino

2nd VP: James Oswald

Recording Secretary: JoAnn Grey

Treasurer: Charlie Strader

Membership Sec: Charlie Strader

### TRUSTEES:

First year of 3 year term:

- Rebecca Austin

- Alison Elgart

Second year of 3 year term:

- John Berialt

- Betsy McCarthy

- Jean Belknap

Last year of 3 year term:

- Jack Thompson

- Betsy Perdichizzi

- Liz Clement

Newsletter Editor (NON-BOARD):

Karen Nelson

# Geology Rules: Lucy Time

By Jack Harvey

There was wild celebration in camp on the evening of the day that Donald Johanson and his young field team found the famous skeleton. The Sgt. Pepper's Lonely Hearts Club Band song was playing over and over when the name of the girl with kaleidoscope eyes fell from tangerine trees and marmalade skies. The 3.2 million-year-old hominid skeleton was, roundabout, named for Lucy O'Donnell, a kindergarten classmate of Julian, son of Beatle John Lennon. Lennon wrote "Lucy in the Sky with Diamonds" after seeing Julian's classroom drawing of her. And you thought it was about LSD.

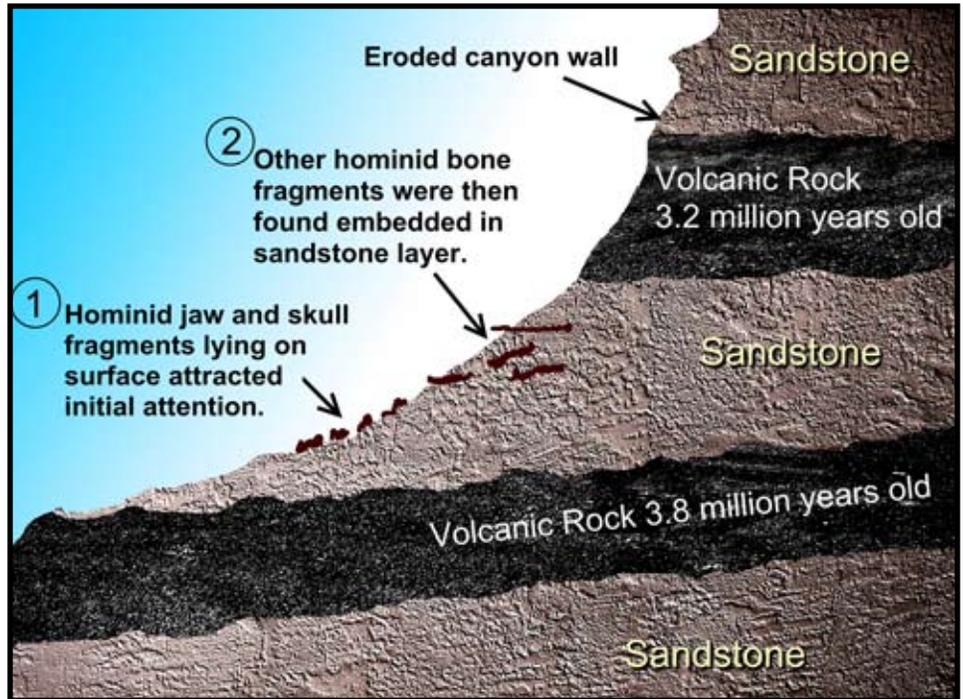
Johanson's team was celebrating because it already knew the hominid skeleton's great age. They didn't have to wait for radiocarbon dating results from a remote laboratory because Nicolas Steno postulated the Principle of Superposition in 1669.

Sending a Lucy bone to a radiocarbon lab was pointless anyway because every last atom of its carbon-14 had vanished long ago. They knew that the age of a layer of volcanic rock just above the sandstone layer containing Lucy's bones was 3.2 million years. And just below the sandstone was another volcanic layer 3.8 million



years old, assuring the layers hadn't flipped. (See illustration.) Steno's Superposition Principle then states that the Lucy sandstone is at least 3.2 million years old.

But what kind of a clock do geologists use to date rocks that



old? Clocks have to be appropriate to the time interval. For Galileo, timing a swinging chandelier, his pulse was appropriate. For a Calusa shell hammer, its ratio of radioactive carbon-14 to stable carbon-12 tells the age. But when we get to millions of years, we need to switch to the potassium-argon clock. This is like the radiocarbon clock but with important differences. For one, we don't get the date of a human bone or artifact directly. Instead we get the date of a volcanic deposit such as lava *above* the bone or artifact.

Recall that radiocarbon dating depends on a constant ratio of two isotopes in the atmosphere as living tissue grows. At organism death, new carbon stops entering the tissue. Then the predictable decrease in carbon-14 with time (halving every 5730 years) tells the time of death.

Radioactive potassium-40 (like carbon-14) also decreases at a predictable rate (far slower than C-14) but there isn't a convenient standard ratio as a starting point, such as we have with C-14/C-12. However the daughter product of potassium-40 fission is argon, a gas.

So when molten lava flows out

on the surface, all argon gas in it escapes. When the lava hardens, new argon created from potassium-40 is locked inside impervious rock and very slowly *increases* with age. Of course the amount of argon depends on the amount of potassium-40 so both have to be measured, and once again it is a ratio that establishes age. For example, if we find that argon has built up inside the solid rock equal to the amount of potassium-40 remaining, then we know that half of the K-40 (K is the chemical symbol for potassium) has fissioned, reaching its first half-life.

Half-life for K-40 is 1.25 billion (with a B) years and that's over 200,000 times longer than the half-life of Carbon-14. This means it can measure much farther into the past.

Cubic zirconium, an easily made mineral of zirconium dioxide, is often used for jewelry because it glitters much like diamond. (Diamonds again!) Zircons are naturally occurring crystals that are often found embedded in rocks. If a zircon is sliced open and examined with a microscope, tiny streaks can sometimes be seen inside the transparent crystal. Trace amounts of

## Geology, from page 3

radioactive uranium cause these when its atoms fission, firing off powerful alpha particles that rip the neat crystal structure. The older the zircon, the more fission tracks will be found. These start accumulating as soon as the zircon forms so that the fission track density tells the time since crystallization. This method has been used to date the oldest rocks on earth so far found - four billion years. They are from Great Slave, the deepest lake in North America. It's in Canada near the Arctic Circle.

Are you seeing a pattern here? Methods for dating very old things, from Lucy to the planet itself usually involve radioactive atoms in some way. And there is another pattern: the schemes all have something that starts the clock ticking. For radiocarbon dating, it's the death of the organism. For Lucy's age, lava cooling enough to trap argon gas is the event. For zircon dating, formation of

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the crystal starts the clock. In still another scheme, river sediments can sometimes be dated by the ratio of aluminum and beryllium isotopes found in them. These isotopes are created in a fixed ratio by cosmic rays when the sediment is exposed on the surface. But sediment burial protects it from cosmic rays and the ratio begins changing. In this case, sediment burial is the clock trigger.

We are no longer limited to the relative and named ages of the 19th century. The physicists have given us numerous ways to get absolute ages that can be compared to check their accuracy. The story is complex with serious issues like contamination. So I have touched just lightly on only a few of many techniques devised to exploit the astonishing revelations by Einstein and two generations of Curies. They lighted up the magnificent hidden panorama of the past, showing us tangerine trees and marmalade skies, and a girl with kaleidoscope eyes.

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### About SWFAS

*The Directorate:*  
President - Theresa Schober  
1st VP - Karen Nelson  
2nd VP - Tom Franchino  
Recording Secretary - Jo Ann Grey  
Treasurer - Charlie Strader  
Membership - Charlie Strader  
SWFAS Committees:  
Field - John Beriault  
Lab - Jack Thompson

*Hospitality - Jeanne Sanders*  
*Newsletter - Karen Nelson*

*If you would like to join SWFAS, please address your check to: The Southwest Florida Archaeological Society; P.O. Box 9965; Naples, FL 34101*

*Dues are: Individual - \$20; Sustaining - \$50; Family - \$35; Student \$15*

*Board meetings are usually held prior to the regular meeting on the third Wednesday of the month at the Bonita Springs Community Hall on Old 41 (by the banyan tree). All are welcome. Board meetings begin at 6:00; regular meetings begin at 7:30 (with coffee served at 7). **On Jan. 16, SWFAS will meet at Pineland at 3 p.m..***

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**The Southwest Florida Archaeological Society**  
**P.O. Box 9965**  
**Naples, FL 34101**