December 24, 2006

The Antarctic Sun

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How McMurdo Got Its Groove On

Local music scene heats up

By Peter Rejcek
Sun staff

It's possibly the coolest music scene on the planet.

McMurdo Station is certainly the hub of operations for the U.S. Antarctic Program (USAP) with an austral summer population of a thousand people or more. But in the last 10 or 15 years, it's become a crossroads for musicians playing in just about every genre imaginable in their leisure time, from reggae to rock and from blues to bluegrass. It's a scene where a punk rocker can share the night's billing with a folk singer and a blues guitarist – and the audience is there to see them all.

"We have been really lucky down here," said Jay Fox, the retail supervisor for the USAP's three stations on the continent. "Musicianwise, this is a real hotbed of potential."

Fox is a pretty good judge of what makes a music scene pulse. He came of age during punk rock's angry genesis in the late 1970s and early 1980s, playing bass for the band United Mutation in the Washington, D.C., area. (See the Dec. 18, 2005, issue of *The Antarctic Sun* at antarcticsun.usap.gov for a related story.)

A conversation with Fox is itself like listening to a punk rock set – briefly intense outbursts, each riff a variation on his central tenet about the

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OTHER RIFFS

Even Shackleton got the blues, page 10

Pole, Palmer also jam, page 11

Peter Rejcek / *The Antarctic Sun*

Barb Propst plays guitar at the McMurdo Station Coffee House. She's seen lots of changes in the local music scene since she first came here in 1982.

BLAST off: Balloon-borne instrument to probe far-off galaxies

By Peter Rejcek
Sun staff

There's no starship to take scientists to the mind-boggling edges of the universe to watch and study cosmic childbirth firsthand. But a balloon-borne telescope should help cosmologists squint into the submillimeter wavelength so they can finally get a better picture of star formation in distant galaxies as well as those in our own backyard.

The project is called BLAST, which stands for Balloon-borne Large-Aperture Sub-millimeter Telescope. A multi-university team launched its instrument payload from the Long Duration Balloon facility on the Ross Ice Shelf on Dec. 21 at 2:50 p.m. The polar vortex, a sort of atmospheric cyclone, will carry the BLAST payload around the continent, eventually depositing it about two weeks later near its original launch location.

Its mission: to image the formation of galax-

See BLAST on page 13

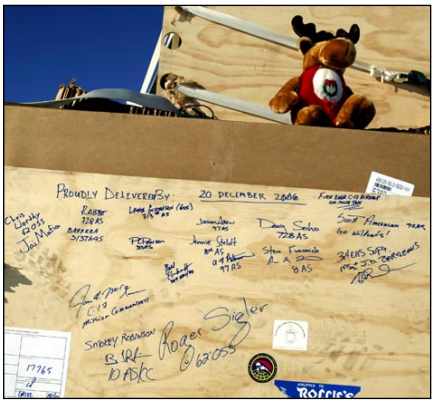
Quote of the Week

"Great God, this really is an awful place."

— Visitor to Pole complaining about the lack of oxygen.

Inside

C-17 drops by the South Pole



Photos by Forest Banks / Special to *The Antarctic Sun*

Above, a C-17 aircraft flies over the South Pole to air drop cargo to the station Dec. 20.

Left, a message written on the cargo contains the words, "Proudly delivered by" and the signatures of Air Force personnel involved in the operation.

Cold, hard facts

Intramural sports at McMurdo Station

Sport leagues available: **Volleyball, soccer, darts, bowling, dodgeball**

Total number of team members: **360**

The **Ligers** soccer team and the **Roger Doger** dodgeball team, both captained by Bryan Fanning, went **undefeated.**

Work center with the most dedicated league teams: **Firehouse** (Both of their dodgeball teams won once in their 12-game seasons.)

Highest current team bowling average (four people on each team): **512**

Lowest current team bowling average (four people on each team): **336**

Source: Richard Lamanna, McMurdo recreation department

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Level 1 Comix **Matt Davidson**

Team reveals juvenile plesiosaur fossil

By Steve Martaindale
Sun staff

A research team from the United States and Argentina has recovered what it says is the most complete fossil skeleton ever to come out of Antarctica.

The juvenile long-necked (elasmosaurid) plesiosaur, which was discovered in early 2005, got researchers "very, very excited very, very quickly," according to James E. Martin, one of the leaders of the project.

"As we excavated, we realized that nearly the entire body was intact, making this particular specimen exceedingly unique," he said. "Baby plesiosaurs are very, very rare, and this probably was one of the best, if not the best, baby plesiosaurs ever found in the world."

The find occurred on Vega Island, which lies near the northern tip of the Antarctic Peninsula. It went on display Dec. 13 at the South Dakota School of Mines and Technology's Museum of Geology.

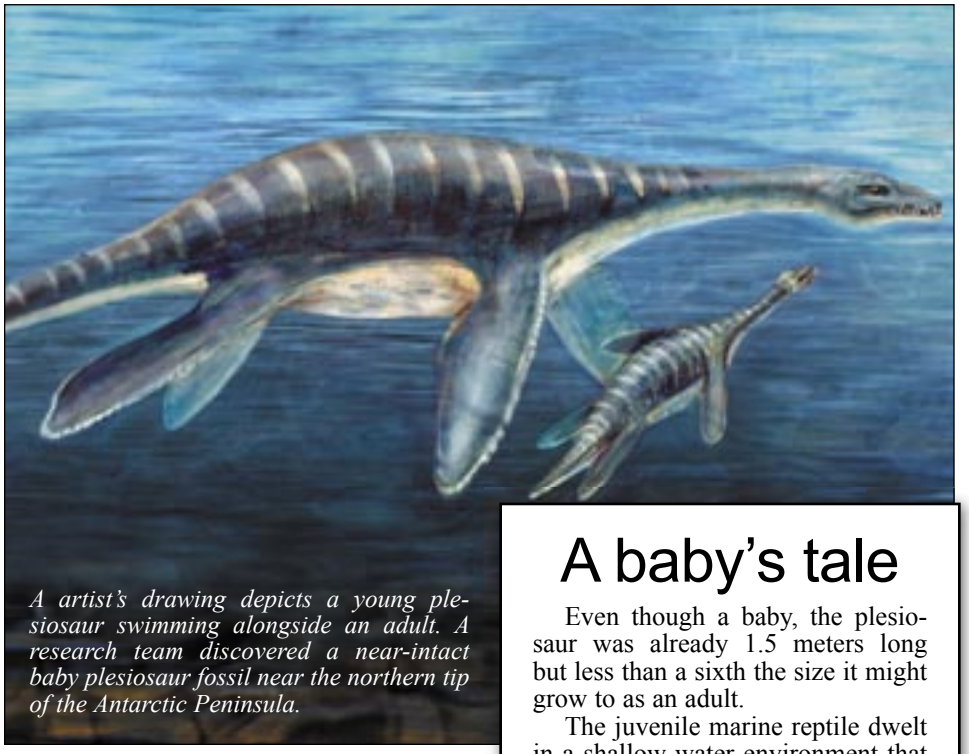
Plesiosaurs, while not dinosaurs themselves, thrived during the dinosaur era some 210 to 65 million years ago. The marine reptiles were carnivores and swam with the assistance of four large paddles, like those of modern sea turtles. A plesiosaur had a stubby tail that acted as a rudder.

The researchers say the cause of the excellent preservation of their find might also have been the reason for the young reptile's demise. Volcanic ash beds were found at the site and Martin said they found chunks of ash with plant material inside. That indicates a major leveling of trees such as was observed during the 1980 eruption of Mount St. Helens in Washington. Silica released from the ash contributed to the preservation of the skeleton.

Co-leaders of the research team were Martin, South Dakota School of Mines and Technology; Judd Case, Eastern Washington University; and Marcelo Reguero, Museo de la Plata of Argentina. Their expedition was jointly funded by the National Science Foundation (NSF) and the Instituto Antártico Argentino. The Argentine air force provided helicopter support.

J. Foster Sawyer, of the South Dakota Geological Survey and the School of Mines, found the skeleton on Vega Island while working with Martin. Wind had exposed part of the vertebrae and one of the arm bones. They found the rest of the skeleton embedded in rocks. Researchers also collected two other partial plesiosaurs and some shore birds.

Martin referred to them as "some of the most advanced birds in the world from that time, so we think that we have the cradle of bird evolution in Antarctica, as well." However, he said, more will be known about those finds later.



A artist's drawing depicts a young plesiosaur swimming alongside an adult. A research team discovered a near-intact baby plesiosaur fossil near the northern tip of the Antarctic Peninsula.

Finding the skeleton may have been the easy part, as the Antarctic weather hampered the collection process. Winds that exceeded 110 kph, temperatures that turned water to slush before plaster could be mixed, occasional snow that covered the site and frozen ground all slowed the process.

Once the fossils were enclosed in protective plaster jackets, a helicopter was used to carry the finds from the excavation site at an elevation of 200 meters to the tent camp on the shores of Herbert Sound. The specimen was picked up by the *Laurence M. Gould,* an NSF research vessel.

It was prepared in the United States and determined to be 1.5 meters long. Adults are known to reach more than 10 meters in length. Martin said that the stomach area was very well preserved.

Stomach ribs, which span the abdomen, were not long, straight bones like most plesiosaurs but were forked, sometimes into three prongs. The stomach cavity contained numerous small, rounded stones. It is not known whether the animals swallowed stones to aid in digesting their food or in maintaining buoyancy in the water.

NSF-funded research in this story: James Martin, South Dakota School of Mines and Technology; Judd Case, Eastern Washington University.

A baby's tale

Even though a baby, the plesiosaur was already 1.5 meters long but less than a sixth the size it might grow to as an adult.

The juvenile marine reptile dwelt in a shallow-water environment that helped protect it until it was large enough to function safely in open waters. Of course, it already had the long neck and diamond-shaped fins that were the plesiosaur's trademarks, but its bones were still forming. Though young, it had already ingested many small, rounded stomach stones, like its parents, to help maintain buoyancy or to aid digestion.

The waters of its Southern Ocean home were warm then, just as Earth was much warmer than it is now. Its four paddle-like fins helped it glide through the water in a motion similar to penguins and its long neck helped it capture fish.

Life was short for this plesiosaur. It may have been the ash fallout from a volcanic eruption that did it in, filling its shallow nursery and entombing the reptile in future rock.

Some 70 million years later, the animal's former home was part of a small island just north of the Antarctic Circle. It had been pushed 200 meters above waters much colder than they were when plesiosaurs lived there. Wind erosion had gradually exposed part of the plesiosaur's skeleton, leading to its discovery by scientists who have since extracted one of the most complete plesiosaur skeletons ever found.

Perspectives

A world inside

Art Quinn / Special to *The Antarctic Sun*

Glass sculptor David Ruth spent a month at Palmer Station studying ice to hone his skills.

By David Ruth
Special to the Sun

For the past five weeks, I have been in residence at Palmer Station taking molds off bits of iceberg with the idea to turn the textures into glass sculpture.

My idea was to learn about how nature solves some of the problems I have encountered in making sculpture out of glass, particularly the relationship between the interior space of the ice and the textures that we find on the ice.

I have a studio in Oakland, Calif., where I have been casting glass for about 15 years. I make large-scale pieces, sometimes up to ten feet long, other pieces to a foot thick. I like to work the internal space of the glass with color and bubbles to generate a small world inside the glass, like a paperweight, only much larger. I think the internal world of the glass works as a metaphor for the internal life of mankind.

While my proposal with the National Science Foundation for the Antarctic Artists and Writers Program was to make the silicone molds of the ice textures, the most significant part of the project at Palmer Station seems to involve just observing. Even on the smallest scale, the ice yields astonishing views. We took some of the ice fragments into a makeshift photo studio we have created in a freezer container. We set up a black background with photo lights to take some of the pictures. We also used the same container to keep and mold the ice.

Blog

I arrived at Palmer Station on Nov. 16 on the *Laurence M. Gould*. It's hard to believe how fast the time has gone by, but when I look back on the past five weeks, I have accomplished almost everything I hoped to do and more.

Probably the most surprising thing is the blog I have been keeping on davidruth.blogspot.com. It was very popular in November, listed on Blog of Note and Blog of the Day on Thanksgiving. I have received hundreds of comments and Singapore International Radio interviewed me.

With my multi-talented assistant, Art Quinn, we have taken many photographs, with some of the best on the blog.

Molds

I used a catalyzing silicone mold material to get my textures. I had hoped to thicken it and butter it on the pieces of ice. But the material proved not to go on smoothly, leaving voids and bubbles, so we have used the silicone as a liquid and made aluminum foil wraps to keep the silicone around the forms. As you might imagine, the scale of these molds is small. The largest used five gallons of mold material and weighed about 40 pounds. I think when they are home, they will become study modules, rather than anything I will use directly.

Melting Glass

Just for fun, we have melted a little piece of glass using the ice molds.

I found some paraffin in the arts and crafts supply and poured it into the silicone molds. The wax worked into a small blob and we poured plaster around it. The wax was melted out and a small lab furnace was used to melt the glass into the void. It proved my original concept that the textures could be used to make glass sculpture. The station had a little art show, and I put the glass in along with two pieces of ice that I trimmed and put on pedestals. I also put in the latest mold representing the void, the absence of ice, form sculpture.

Making Ice

On the *Gould*, coming over here, I had a conversation with Evan Bloom, the chief Antarctic Treaty Inspector from the U.S. State Department. I discussed making ice sculpture and the issues surrounding global warming, ice and making glass. There is food for thought for many years to come. Though I have ten or more kilns in the studio, I've been joking that my next kiln may be a freezer!

The People

Palmer Station has proven to be the most supportive environment where I have ever made art. So many people here have made this possible with special kudos to Bob Farrell, Tracy Baldwin and Zenobia Evans. This place has functioned for me like magic. I have been able to do anything I wanted, and needed supplies have arrived in a flash. I couldn't have done so much without them. This experience will be a life changing one for me. I have so much work to do processing my new information when I get home.

Every day has led to new adventures and discoveries. Every time I look at a piece of ice I am amazed at the power of nature, whether it is a huge glacier face or an ice cube fished out of Arthur Harbor. It's so beautiful here; you can be busy doing nothing but observation.

For more information about David Ruth and his glasswork, see his Web site at www.davidruth.com.

around the continent

SHIPS

Oden steaming to McMurdo

From staff reports

The Swedish icebreaker *Oden* is scheduled to arrive in the McMurdo Station vicinity around Christmas after a two-week research cruise that began in Punta Arenas, Chile, which took the vessel along the coastline of the Antarctic Peninsula and on through the Ross Sea.

An international team of scientists and teachers are on board the National Science Foundation-sponsored research cruise, which marks one of the first collaborative activities of the International Polar Year, a global campaign of research in the Arctic and Antarctic that officially begins March 2007.

Scientists from the United States, Sweden and Chile will conduct a variety of observations, while two classroom educators selected by the U.S. National Science Foundation (NSF) and a Swedish teacher chosen by the Swedish Polar Research Secretariat, will work alongside a Chilean colleague and the scientists. The teachers will interact with students at home using shipboard telecommunications to file journals and conduct teleconferences to bring the excitement of polar research to life for the next generation.

The research will include various projects undertaken by the international science team. The scientists will obtain data on the biological and chemical oceanography of these relatively unstudied regions, including such variables as nutrients, chlorophyll and carbon dioxide, and will also test for the presence of manmade contaminants.

In addition, the researchers will take physical measurements that provide clues to water mass movement and sea ice formation, as well as make observations that document the presence and behavior of marine mammals and seabirds. The scientists will work closely with educators and media to inform the public about ocean research in Antarctic waters and to develop educational materials for use in classrooms worldwide.

"With International Polar Year set to begin in the spring of 2007, this expedition demonstrates the spirit of cooperation among Antarctic national programs and a sign of greater collaborations to come," said Karl Erb, director of Polar Programs at the NSF.

Once the ship arrives at the sea ice edge near McMurdo, the scientists and teachers will disembark via helicopter. The ship will then assist the U.S. Coast Guard icebreaker *Polar Sea* to break and maintain a channel through the sea ice of McMurdo Sound to allow the annual supply and fuel ships to reach the station.

Courtesy of Dave Bresnahan / Special to *The Antarctic Sun*

The Swedish icebreaker Oden *departed Punta Arenas, Chile, earlier this month en route to McMurdo Station. It will conduct various research along the way, carrying scientists from the United States, Sweden and Chile. The cruise marks one of the early collaborations for the upcoming International Polar Year.*

SOUTH POLE

Half done but full speed ahead

By Cathy Morrell
South Pole correspondent

As the season bears down on the halfway point at South Pole Station, temperatures continue to rise and the sun shines higher and brighter. This week, the station at 90 degrees south experienced an average balmy temperature of negative 20 degrees Fahrenheit. Amongst the warmer temperatures, and unusually light winds (averaging less than 20 kph), South Pole station was bustling with activity.

The warm conditions have been highlighted by an unusually long stretch of uninterrupted good weather. This virtually stormless spell has allowed for a higher number of LC-130 flights to the Pole, putting us 21 flights ahead of the scheduled flight plan for the season. With these flights come both fuel to stock the station for the ever-approaching winter as well as an endless array of pallets that overflow the cargo lines, bringing much needed supplies to the enduring force of construction professionals and grantees.

Recently, the FEMC (facilities, engineering, maintenance and construction) department received a great deal of accolades both from Raytheon Polar Service Co. and the National Science Foundation as it successfully met the demands for achieving conditional occupancy of a new lab created for the IceCube project. The newly inaugurated space will function as a lab for interpreting data collected by the IceCube sensor array, which searches for neutrino interactions under the ice at the South Pole. The first data collection cable

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the week in weather

McMurdo Station
High: 37 F / 3 C
Low: 14 F / -10 C
Max. sustained wind: 25 mph / 41 kph
Min. wind chill: -4 F / -20 C

Palmer Station
High temperature: 42 F / 6 C
Low temperature: 29 F / -2 C
Max. sustained wind: 24 mph / 39 kph
Melted precipitation: 6 mm

South Pole Station
High: -14 F / -26 C
Low: -27 F / -33 C
Peak wind: 19 mph / 31 kph
Max. physio-altitude: 3,268 m

Steel construction for the South Pole Telescope is approximately 75 percent complete. Next month, the Sun *will carry a full report on the construction and science behind this massive project.*

Photos by Cathy Morrell / Special to *The Antarctic Sun*

British Antarctic Survey pilot David Leatherdale checks the engines on his Twin Otter before a flight at the South Pole.

Continent

From page 5

was pulled to the lab this week as well.

In news a little closer to the hearts of all South Pole residents, one more advance in infrastructure was made as a hole was drilled for a new Rod well – the South Pole version of a water well. An electric hot point will be placed in this new hole, reaching 350 feet into the ice, forming a pocket of water. As more heat is added to melt the ice, a large pool will form, creating a future water source for all. The process in its entirety takes approximately 12 months to complete before the new Rod well will be ready for use, adding another four to five years of usable water source to the South Pole.

Spurred by the steady influx of cargo, both the South Pole Telescope (SPT) and IceCube projects made major strides this week. The SPT made the most noticeable gains in the eyes of residents who watched the upper and lower booms being constructed. With approximately 75 percent of the steel construction completed on this huge project, the SPT has become a formidable presence on the horizon. While less noticeable to the naked eye, IceCube hit some major milestones this week as well. The team started drilling this year's 14 proposed holes for sensor strands. Two have now been completed, and the neutrino sensors have been deployed in both.

Scientists at the South Pole have also had a field day over the past few weeks studying a solar event with direct effects here at the station. According to Paul Sullivan, manager of science support, high frequency communications at the South Pole were rendered inoperative for several days due to an X-9 solar flare, which is one of the strongest in recent history. Sullivan said that such a flare has created a tsunami-like shock wave rolling across the face of the sun, producing one of the most watched solar events of the season.

Polies were also visited this week by a team of four scientists led by Sridhar Anandakrishnan, as it passed through Pole on its way to a field camp to study the existence of a sub-glacial lake, located 15 kilometers from the station.

Along with the busy activities on the ground, the skies around South Pole station have been virtually buzzing with the activities of science. We were visited by several crews in charge of Twin Otter flights and by members of the British Antarctic Survey (BAS). Pilot David Leatherdale and engineer Neal Farnell traveled all the way from Cambridge, England, to further the BAS studies and survey changes in the magnetic fields surrounding the continent. By periodically flying to each survey site to collect the data from magnetometers, BAS is able to study storms and other anomalies affecting the magnetic fields.

As science, construction and the many other essential tasks of the station continue at the frenzied pace of a short season, the minds at South Pole station also turn to the lighter side of the approaching holidays. The warm and sunny weather has brought out sledders and skiers to the outside playground of the glacial plateau, including several weekends of happy campers building camp at the edge of "town."

Preparations for the holidays are in high gear with pie baking, potato peeling and a multitude of holiday decorations adorning the hallways. As the holidays draw near, we are all gearing up for a festive time, and wish the best of the holiday season to everyone across the continent!

PALMER

Sculptor puts new art on ice

By Kerry Kells
Palmer correspondent

This past week Palmer Station continued to welcome the arrival of the Adélie penguin chicks, which are now hatching in the local study areas around the station. The lone king penguin also remains on Torgersen Island and seems in no hurry to depart.

Sculptor David Ruth presented the weekly station lecture. Ruth spent the past month at Palmer under a grant from the National Science Foundation's Antarctic Artists and Writers Program. He is a glass sculptor based in Oakland, Calif.

Ruth's career began by making sheets of stained glass. Continued experiments led to casting sculpture using kilns and hot glass casting techniques. After he graduated from the California College of Arts and Crafts, Ruth worked in France for three years and began making large-scale glass sculptures. He returned to California and began using ceramic fiber molds and the polishing tech-

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Music IN McMurdo

inseparability of music and life.

One can have a similar conversation – albeit at a far less frenzied pace – with guitarist and singer Sarah Krall. A communications operator with McMurdo Operations, Krall has spent 22 different seasons on the Ice. She makes occasional appearances at the Coffee House, a converted Quonset hut, which generally hosts smaller acts with less thunder than some of the hard rock 'n' roll bands.

Most days Krall is content to sit in her room and "noodle" on the keyboard or her guitar or mandolin. But once in a while, she'll surrender her privacy for an evening of intimacy under the wood-paneled ceiling of the Coffee House.

"Music is magic," she said. "It's the magic that's in my life."

Behind the scene

When Fox arrived at McMurdo in 1995, the veteran musician said there were several groups and solo artists like Krall but most only came together for Icestock, the annual outdoor music show typically held around New Year's Day. There was great music, he said, but no real rhythm among the players during most of the season.

"You have to make a scene," Fox said, explaining that at its simplest, scene building is just saying, "Hey, you bring your band, and I'll bring my band, and let's do a show."

And that's exactly what's happening more and more each season at McMurdo.

Last austral summer, the recreation (rec) department supported 16 live shows, which works out to about one a week for the season, according to Sean Corkery. Corkery works in rec as the materialsperson, though he is also the department's go-to guy for setting up and running the shows for the station's bustling music scene.

Courtesy of Jay Fox / Special to *The Antarctic Sun*

Jay Fox on stage at last year's Icestock. He was active for many years in the punk rock scene in Washington, D.C. He now focuses his musical energy at McMurdo and his home in Denver, Colo.

"You have to MAKE a scene." –Jay Fox

"I put my focus on doing more live shows last year," he said.

An accomplished musician in his own right, Corkery performs original blues and folk music when he goes solo here, his voice a confident wail that commands silence in the venues where he plays. The 30-year-old can pretty much pick at anything with strings – from the guitar to the tenor banjo – and will hit the ivories on occasion as well.

The environment here, he said, fosters and encourages people to take artistic risks, especially for someone who never imagined taking the stage as a musician.

"It lets people turn into musicians that hadn't thought of doing that before," he said. "You're really far from your home and your friends, so you can stretch out a little bit. I've noticed that with people here musically as well."

Liz Muck insists she never really performed publicly or even played much before coming to the Ice in the summer of 1998 for a 14-month stint. She ended up borrowing a guitar for the winter from a neighbor in her dorm. The singer and songwriter eventually convinced three of her friends to join her for what some believe became the first all-woman rock band on the continent, Hot Lava.

"We got quite a bit of encouragement from the boys to put together a band," recalled Muck, a painter at McMurdo.

Continued on next page

Courtesy of Scott Taube / Special to *The Antarctic Sun*

Scott Taube also plays on stage at last year's Icestock. He cites New Zealand music as one of his biggest influences these days. He and his partner Liz Muck are both guitar junkies, with a large collection at their Denver home.

Music IN McMurdo

Peter Rejcek / *The Antarctic Sun*

At left, Steve Kish and Zondra Skertich work on some new songs in the McMurdo Station practice room for their band Level Five, a group that combines punk and ska sounds.

Courtesy of Sean Corkery / Special to *The Antarctic Sun*

Above, Craige Mazur, left, and Sean Corkery tear up the stage at last year's Icestock festival.

Dressed in flamboyant outfits made out of tinfoil, Hot Lava performed Muck's original compositions as well as a few obscure cover songs. She was the only one in the group who had any real experience playing an instrument.

"We were more show than anything else," she said.

Not true, according to Scott Taube, Muck's partner and sometime band mate here and back home in Colorado.

"That was one of the most crowd-pleasing bands that I ever saw down here," said Taube, a guitarist who first played on the Ice in 1997. He jammed with one of the station's most popular cover bands at the time, You Bet Your Life, anchored by another guitarist, Mark Hitchcock.

Fox also played with You Bet Your Life in a slightly different incarnation with Taube and Hitchcock. That group leaned toward the Grateful Dead spectrum of rock. Yet another cover band at the time was Fuzzy Logic, which favored music for fans of groups like Blues Traveler.

These days, cover bands that offer dance music are the exception. "The original music has come onto the scene and altered how events go over," Fox said.

Building the scene

The history of the McMurdo music scene is largely an oral story and the tales and dates vary depending on who is telling the tale. One can find bits and pieces on the Internet, though many links lead to dead ends or make reference to Icestock, which premiered in 1990.

Icestock was the brainchild of a longhaired musician named Dane Terry. Singer and guitarist Barb Propst remembers that Terry and his band were pretty much the only live music around back when the Navy's Operation Deep Freeze was still running the show for the USAP. She did a couple of seasons back in the early 1980s before making regular trips south starting in 1992.

"Back [in the '80s] the music scene was real bare bones," Propst said. Terry would bring his personal equipment to the Ice, "old screeching stuff," and put on an occasional show for the station, she said.

"Those were the musical events, the ones that Dane's rock 'n' roll band would play at," she said. During those days, the dining hall (referred to as the galley, a name that still unofficially sticks to this day) was partitioned into officer and enlisted sides. Naturally, the jam sessions took place on the "e" side, Propst said.

Propst said when she returned to the Ice in 1992, there were four or five bands regularly doing gigs. That same season, the Officer's Club was turned into the present-day Coffee House, which includes a wine bar.

"You could hear a pin drop when that Coffee House first started," Propst recalled. "People were listening to the music, just like at a college coffee house."

It's certainly the preferred venue of an artist like Krall, whose style is folk and blues when she plays guitar. Her Irish Celtic side flares when she pulls out her mandolin, which Krall may do every other season.

"The first time I came down there wasn't a coffee house; there wasn't any way to express and get together and play music that way," Krall said. Instead, musicians hosted "play parties," low-key events as simple as a couple of people strumming away in a dorm room or perhaps something a little more robust such as jam-

Continued on next page

"I was BLOWN AWAY by the thriving music scene McMurdo does have." – Steve Kish

Music IN McMurdo

Liz Muck performs at the Larimer Lounge in Denver, Colo., this past summer. Muck formed what may have been the first all-woman rock band on the continent, Hot Lava.

Courtesy of Scott Taube / Special to *The Antarctic Sun*

"It's all ABOUT the moment."

–Liz Muck

"I just NEED to play."

–Sarah Krall

ming on the second floor space of the Berg Field Center.

"There's so much innocent fun to be had playing music. I just wish there were more places to play," Krall said. "I'd bring my fiddle down if I had a place to tear away at it."

A musician such as Fox or Taube tends to gravitate to one of the station's other two primary music venues, Southern Exposure and Gallagher's Bar. Shows there tend to be bigger and louder. Still, many artists seem to cycle through the Coffee House at some point in their ice careers.

"The Coffee House is a great environment to experiment and play things on your own," Fox said.

Today's cardiovascular gym, like many buildings here, was used for different purposes since it was built in 1960. It's been called the Acey Deucey and the Gerbil Gym. It underwent a complete renovation when it was converted from a bar to a gym. Propst remembers practicing in the empty space before the workout equipment arrived.

"That's one of the few places where the sound was just beautiful," she said.

A separate room on the end of the refurbished building served as the practice space and band equipment room for a while. "It was very crowded and we had to shut the door because there was the noise of all those workout machines and the stereo going," Propst said.

A building known as The Playhouse, which used to sit where the Joint Spacecraft Operations Center now stands, was a good indoor venue, according to Propst. Bands like Fuzzy Logic, You Bet Your Life, JP5, Irascibles, Southern Cross Blues Band and Shaved Cookie came together there in 1998 to play Band Aid, a fund-raiser to get cash for new band equipment.

On the scene

The modern-day practice space is located in a single room with a loft in the station's electrical warehouse. A recent Tuesday night found some of the members of Steve Kish's band, Level 5, going over two new songs to add to its punk rock and ska sound.

Last year was the first season for Kish, a barrel-chested singer and songwriter with the vocal chords to match. He had brought down his acoustic guitar, never expecting to find much in the way of equipment or fellow musicians. He was quickly disabused of that notion, he said.

"I was blown away by the thriving music scene that McMurdo does have," he said. "I wouldn't have expected it."

Level 5 and many other bands and performers today play their original compositions. In some ways, Fox said, he thinks audiences would like to hear familiar rock tunes people could dance and groove to. Those are certainly the songs he and band mate Taube played when they first arrived in the mid- to late-1990s. Now they prefer to return to punk rock roots or perform experimental pieces they've thrown together in bands like Anesthesia and Goiter.

Fox said he shied away from punk in those early years, unsure of what the community would accept and want to hear.

"The punk rock thing is definitely more acceptable now," he said. Playing in Goiter, whose music is almost as ugly in some ways as the band's name, has allowed him to cut loose. In punk, there's no desire for acceptance. If someone says to him, "Your band was really bad last night," Fox cheerily replies, "Oh, you got it."

Taube shares in Fox's insouciant attitude. And like Fox, he's played in a multitude of bands over the seasons – at least 10 by his count. It's a scene that reminds him of his college years in Michigan when he would play with varying incarnations of the same band with a rotating cast of talent.

"It was very similar to what we have now where I had a community of people … we were always playing in some form, fashion or another," he said. When he moved to the West Coast to work in the U.S. Forest Service, Taube dropped out of that scene.

"Coming down here, it was like, 'Ah, man, I really missed that,'" he said.

So, what's the coolest thing about playing Antarctica? All the musicians pretty much sing the same song in reply: the audience.

"They're so forgiving," said Krall, who admits to a case of nerves the moment she agrees to perform. There is a little less pressure because the musicians receive no compensation to

Continued on next page

Music IN McMurdo

put on a show, she added.

The only expectations come from within for Krall. "They will have heard what I have to offer them in my heart," she said.

For someone like Corkery, who has earned his living as a street musician and as a solo act playing in clubs, where the crowd can be as cold and indifferent as an Antarctic winter, the McMurdo fans are a great "captive" audience. It's also a good place for rookie musicians to cut their teeth, he added.

"If it's confidence building you need, this is the perfect place to step out," Corkery said.

Beyond the scene

McMurdo's music scene is also stepping out beyond Ross Island. Taube, Fox, Muck, Matt Hurley and other Ice musicians from the Denver area, where a number of USAP participants live and work during the other half of the year, often jam together. One such project was the Jane Wymans, a band that plays in local Denver venues like the Mercury Café and Larimer Lounge.

A number of Ice musicians also appear on a CD called White Cold Days produced by Living Nightengale Records, a label owned by Fox's brother John.

It's tough to keep bands together on the Ice or up north, Taube said, because so many people come and go in a place ruled by contract jobs. That's one reason why bands seem to be like carousels, with musicians jumping on and off the ride as time allows.

"It's always been … whoever is available at any given time, whether it's down here or in Denver, we're always just throwing stuff together," Taube said. "For us it's about doing it."

Added Muck, "It's all about the moment."

New Zealand is another place Ice musicians have found welcome audiences as well as inspiration.

The last two seasons Corkery has headed to the extreme north end of the South Island to Golden Bay, where a funky little club called the Mussel Inn has become a reunion point for the USAP crowds. He said the Zim brothers (Ed and Rob Zimmerman) first turned him on to the venue.

"We turned out a huge crowd last year," said Corkery, who hopes to head across the Atlantic next year for gigs in the United Kingdom.

Taube and Muck would love to jam somewhere in Christchurch, perhaps at the Dux de Lux, a pub that's a popular gathering place for USAP participants before and after deployment. The problem is getting everyone in the same place at the same time, said Taube, a big fan of the New Zealand music scene.

"Music is like the total escape," he said. "You can forget about work for a few hours, get together with friends and have a few beers and just get rid of all the [headaches] from the day and with no expectations other than to forget about the day."

At the other extreme, an introvert like Krall hesitates to try performing anywhere but in McMurdo, though she has toyed with the idea of a spontaneous open mike night at a local venue in her home of Lander, Wyo.

"I love the crowd appreciation, but I don't need to perform," she said. "I just need to play."

Music 'vital mental medicine' on seventh continent

By Peter Rejcek
Sun staff

Even the early explorers knew that a soul filled with music was just as important as a belly full of food.

Most people with a passing familiarity of Antarctic history probably know a thing or two about Ernest Shackleton's epic survival and heroic actions that saved his crew. But even when facing an uncertain fate as he watched the sea ice grind his ship, the *Endurance,* into splinters, Shackleton never abandoned hope – or music.

Jim Waldron / Special to *The Antarctic Sun*

Shackleton did not corner the market on music: U.S. Navy personnel entertained their fellows at research station Little America V with a country western band during the winter of 1957.

One of the men on the expedition, Leonard Hussey, played the banjo and his homemade one-string violin to entertain the crew. Hussey was not an expert musician, like many who play today in Antarctica, but he had taken the instrument with him on other expeditions, including to Africa where he had reportedly played for an audience of cannibals.

About Oct. 28, 1915, Shackleton finally made the call to abandon their ice-locked vessel. He ordered each man to take no more than two pounds of personal equipment. There were only two exceptions to the rule: Frank Hurley's photographic glass plates and Hussey's banjo.

In his book "South," Shackleton reflected on the decision to lug the instrument along while describing one of the usual Saturday parties held by the men left behind on Elephant Island awaiting rescue:

"After supper they had a concert, accompanied by Hussey on his 'indispensable banjo,'" wrote Shackleton, who relied on logs and memoirs to retell this part of the adventure. "This banjo was the last thing to be saved off the ship before she sank … It was carried all the way through with us and landed on Elephant Island practically unharmed and did much to keep the men cheerful."

Shackleton was reportedly not the least bit musically inclined, but he appreciated the effect that Hussey's banjo playing had on his men. Hussey wrote in his own memoirs, "Sir Ernest saved the banjo just before the ship sank saying that, we must have that banjo if we lose all our food: it's vital mental medicine."

Rockin' Around the Continent: Music scenes at Pole, Palmer remain mainly low-key affairs

By Peter Rejcek
Sun staff

Science at Palmer Station focuses on the marine environment. South Pole Station is one of the best places in the world for observing the cosmos. Both science stations are far different from the flagship of the U.S. Antarctic Program, McMurdo Station, where biology and geology dominate.

It only makes sense that the music scene at the two smaller stations would march to different beats as well.

With a population of no more than 45, Palmer Station mainly relies on solo performers to feed its live music fix. Bob DeValentino, a cargo materialsperson, has provided much of the musical entertainment this season.

"It's been pretty mellow so far," DeValentino said of the music scene at Palmer, where most shows take place in the station's café-style barroom. The self-taught guitarist said he played a two-hour gig earlier in the season and heard about a couple of impromptu bluegrass sessions as well.

Steve Martaindale / *The Antarctic Sun*

From left, South Pole musicians Tim Hughes, Peter Huntley and Mark Eisinger practice in the band room in the new Elevated Station.

DeValentino first came to the continent in 1999 and has done summers and winters at both McMurdo and Pole. Originally a drummer, he picked up the guitar about three years ago during his winter at McMurdo, where he also played the drums for a couple of different blues and rock bands.

"There were some real great musicians down there that winter," he said.

There's no dearth of talent at the South Pole either. A few bands will typically jam during the short summer season, and one or two groups will take up the mantle as the world's most southern music ensemble during the winter.

Meteorologist Kris Perry blew the tenor sax for both his winters at the Pole in 2002 and 2004. Before then, he hadn't really played the instrument much since the ninth grade. Perry will stay for yet another winter, this time in the waste department, with plans to jam with whatever group coalesces over the dark months.

So far, working nights, he's been a bit out of the loop.

"I know that some of the folks I have played with in the past have been jamming a little," he said. "I need to just go to the band room, pick up the tenor and blow a few tunes one evening and then I think I will be back in the mode and want to get in on some of the New Year's action."

Mark Eisinger is a name most Antarctic musicians will recognize. The Pole crane operator has seven summers and six winters under his belt at the larger station. He plays guitar, bass, mandolin and also sings and writes original compositions.

The scene at Pole has been pretty small compared to his

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Peter Rejcek / *The Antarctic Sun*

Kris Perry plays Auld Lang Syne outdoors on New Year's Day 2004 at the South Pole. Perry will do his third winter at the Pole next year and hopes to find a band to play with during the dark months.

Musicians note audience support always strong

Courtesy of Bob DeValentino / Special to *The Antarctic Sun*

Jen Blum, left, and Bob DeValentino rock out at the Palmer Station bar earlier this season.

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other summer there, according to Eisinger. The blistering work pace, different shift hours and the somewhat small population of 250 may be partly to blame.

"I feel there are fewer … musicians than the last time I was here, and the other issue is some folks lean toward a certain style of music and might not be interested in the style that a band is leaning towards," Eisinger wrote via e-mail. "And then you have the musicians with similar tastes but working different shifts so that limits the practice time.

"For the most part, people want music to dance to, so the bands do accommodate with their selection of songs," he added. "I love Christmas tunes and will find some folks to join me singing for the appetizers for the Christmas dinner seatings."

The musicians agree that the scene thrives or suffers more at Palmer and Pole from one season to the next because there are fewer core artists to keep the thread going. To look at it another way: There are more musicians signed up to play in McMurdo this summer than live at Palmer Station at the height of the season there.

In fact, Palmer does not have a dedicated practice space like the other two stations. DeValentino will retreat into his office to rehearse. Others will head to the dining room or the barroom to get a little privacy or to ensure they don't disturb the rest of the community.

The amount of equipment is also minimal, just a few acoustic guitars. The karaoke machine serves as the primary sound system, though DeValentino said new gear is reportedly on the way.

The Palmer audience doesn't seem to mind the stripped down shows. "If you do really well, they love it. If you do mediocre, they love it," DeValentino said. "Most of them want to get out and dance and have a good time."

South Pole musicians enjoy a little more luxury than their counterparts on the Antarctic Peninsula. There's now an official band room in the new Elevated Station. Last year, the band equipment and players squeezed into the arts and crafts room.

Of course, luxury comes at the expense of nostalgia. For many years, the lounge in Skylab, the main science building for the old Dome station, was the heart and soul of music at the Pole.

> **"If you do really WELL, they love it. If you do MEDIOCRE, they love it."**
>
> **–Bob DeValentino**

It was shut down last year as most of the other buildings under the dome were dismantled.

Perry said it was pretty sad to see Skylab, an orange tower being swallowed by snowdrifts, completely abandoned.

"Granted, Skylab lounge was a little tight at times, but I have fond memories of practicing in there," he observed. "It was nice having 270 degrees of windows to look out of, watching sunset and sunrise during practices.

"Plus, we had the couches in there, and it was just a nice atmosphere," he added. "I also liked going out into the stairwell to practice while the band was working on something else. Something cool about playing your horn in a stairwell. I think the new practice room has potential, but it doesn't have the windows."

The new band room is also conveniently located to the recently completed gym, the most likely space now to stage shows in the Elevated Station. Musicians sometimes play gigs in the dining hall, especially in winter. The lounge at Summer Camp, a collection of Jamesway tent buildings that serve as dorms, is also a popular venue.

"I preferred the Summer Camp Jamesway lounge the best," Eisinger said. "More intimate and good acoustics. Some folks talked about playing in the new gym. I have no idea how the acoustics will be, but as it's right next to the band room, moving the equipment will be easiest of all venues here."

Both DeValentino and Eisinger write original music. But both men say it's difficult to work in bands back in the States because they deploy so often – no opportunities for continuity. On the flip side, Eisinger said, he has the opportunity to click with some of the musicians down here and has recorded a number of Antarctic-themed tunes such as "The Emperor of the South," "We're All Here, Cause We're Not All There" and "Mary Ann" (an ode to Mary Ann the D8 bulldozer on her 50th birthday).

"I really find the winter a great time to focus on my music," Eisinger said.

A balloon is inflated to carry the BLAST payload about 35 kilometers into the atmosphere on Dec. 21 near the Long Duration Balloon facility on the Ross Ice Shelf.

Mark Halpern / Special to *The Antarctic Sun*

BLAST to peer into submillimeter spectrum

From page 1

ies at the early frontier of the universe where starburst (star formation) is occurring more rapidly. These submillimeter "pictures" will help scientists fill gaps in their knowledge about the universe's structure and its evolution.

"We've built the most sensitive instrument that we can build to look at distant galaxies and look at star formation there," said Mark Devlin, BLAST principal investigator from the University of Pennsylvania.

Scientists use the submillimeter waveband for these types of observations for a couple of reasons. First, the gas clouds required for star formation obscure regular optical observations like those performed by the Hubble Space Telescope. Also, there is a lot of energy in the submillimeter band emanating from these cataclysmic events.

In a better light

BLAST sails into its orbit through the stratosphere with the help of a special balloon constructed out of ultra-thin polyethylene film, the same sort of material used for plastic bags at the grocery store but a little more resilient.

The mirror for the two-meter-diameter telescope is made out of aluminum, which offers near-optical glass quality but at a fraction of the cost, according to Devlin. Photons enter through the front of the telescope and reflect off the primary mirror to a secondary mirror, which directs the light into the receiver.

A cryogenics system keeps the detectors in the receiver extremely cold. Liquid nitrogen first chills the instruments to 77 degrees Kelvin. (Absolute zero, 0 degrees K, is the lowest possible temperature where nothing could be colder and no heat energy remains in a substance.) Liquid helium then drops the temperature even further, to 4 degrees K. Eventually, the temperature cools to just three-tenths of a degree above absolute zero as additional liquid helium is pumped into the system.

"There's a whole refrigeration system self-contained in there which we've developed over the past couple of years that works really well now," Devlin said.

The receiver divides the photons into three "colors" or wavelengths as they pass through filters onto a detector array made of bolometers, heat sensors that can pick up even the weakest signals. The photons are only perhaps 30 degrees K or a little warmer, hence the need for extreme cold to detect the low-energy light. It's sort of like sweeping your hand across a day-old campfire and trying to find a warm ember.

In the end, the reconstructed picture will be an image not unlike what one would see in the optical wavelength, though at a lower resolution than what something like the Hubble telescope takes, according to Barth Netterfield, the project's co-principal investigator.

To capture those fleeting embers from the distant bonfires of starbursts, the BLAST gondola will need to point away from sun and through clear patches in our own galaxy. The sun is both friend and foe to the scientists. A direct hit on the mirror will fry the instruments. Sun shields protect the sensitive equipment, for despite the frigid temperatures of the stratosphere, inside the payload it's about room temperature, Devlin said.

The Antarctic summer sun is also benevolent. The 24-hour-a-day sunlight provides power to the gondola through the solar panels on the back, which open like wings. The sun's constant position doesn't cause fluctuations in the balloon's altitude because it doesn't cool off or heat up the helium between night and day.

To keep BLAST fixed on a single spot in the sky requires more technological innovation than assistance from Mother Nature. To maintain a lock on a distance speck for very long, the instrument must know where it is. In this case, BLAST identifies its position relative to a nearby known star. It can immediately learn this by using one of two star cameras that can take optical pictures. Software can recognize the star pattern and basically tell the gyroscope where to adjust if needed.

The big picture

The BLAST scientists hope that where they point the telescope will reveal a violent sea of starbursts.

The universe started off with matter distributed very smoothly.

See COSMOLOGISTS on page 14

Cosmologists studying galactic structure of the early universe

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We know this from observations of the Cosmic Microwave Background, which formed about 400,000 years after the Big Bang, Devlin explained. BLAST will look at galaxies in their mid-to-late formation stages when the universe was between 3 and 7 billion years old.

"If we see hundreds of thousands of these starburst galaxies, we're going to be able to say a lot about star formation history of the universe," said Netterfield, from the University of Toronto.

He said cosmologists also hope to spy colliding galaxies, which can give birth to massive stars. These events will help answer questions like: how many stars are forming, and how hot are they?

"It's thought that a large fraction of stars are made from these collisions," Netterfield noted.

BLAST launched out of Sweden last year for a spin around the Arctic, but a busted mirror shortly after the launch stymied most of its extra-galactic objectives. The researchers still collected data on luminous objects closer to home. This time around, the team hopes to discover if the system it has painstakingly developed will do everything the models and equations say it will.

"It's a huge challenge," Netterfield said.

The data from the experiment are obviously an important investment in time and money but also represent the future careers of the graduate students who will write their theses on various aspects of the project. Devlin and Netterfield both say that programs like BLAST are important proving grounds for young scientists, who must not only understand the cosmogenic complexities of their fields but how to manage projects from the ground up.

"Everybody has a specialty, but they know about all the instruments," Devlin said. "These people go off and do phenomenal things."

Enzo Pascale, an Italian graduate student at the University of Toronto, got a dose of project management last year in the absence of Netterfield.

"I basically try to keep an eye on everything," he said while replacing a faulty component of hardware in preparation of BLAST's upcoming launch. The team works in the bay of one of the two main Long Duration Balloon (LDB) buildings constructed in 2005. The gondola dominates the floor area.

Devlin noted that the National Science Foundation is particularly responsible for the success of scientists in the sub-orbital work supported by NASA that he and colleagues do from LDB.

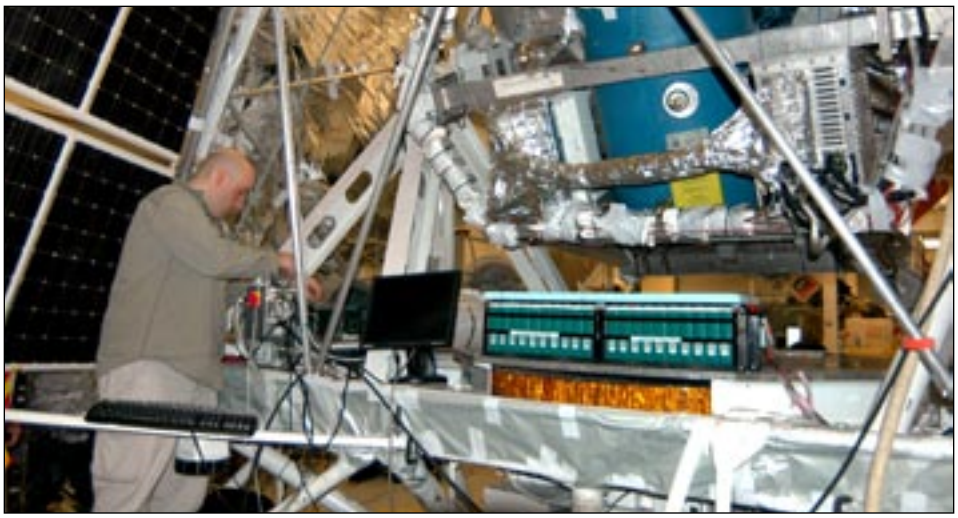
"We really appreciate that we're here," he said.

There is still much scientists don't know about the 14 billion-year-old universe. For Netterfield, the universe is too fun a place not to poke around, not to ask the next big question.

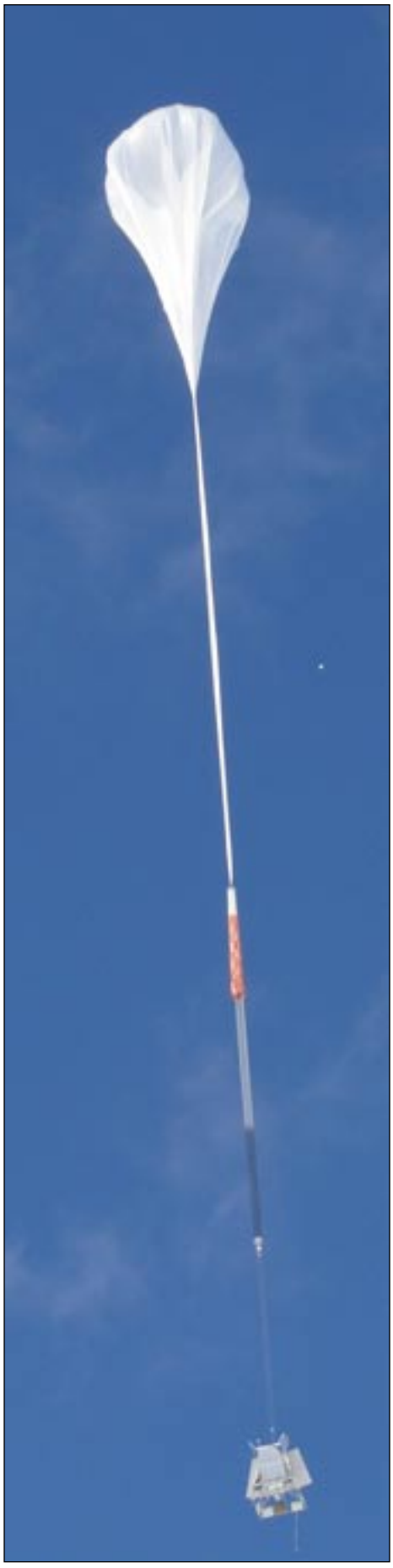
"It's fun. That's it. It's art. It's interesting," he said of the urge to explore for exploration's sake. "We should spend some fraction of our resources just on things that are interesting … not just because it has any immediate, intrinsic value.

"It may have someday."

NSF-funded research in this story: Mark Devlin, University of Pennsylvania; Barth Netterfield, University of Toronto; http://chile1.physics.upenn.edu/blastpublic/.



Peter Rejcek / *The Antarctic Sun*



Mark Halpern / Special to *The Antarctic Sun*

Above, Enzo Pascale readies the BLAST payload earlier this month inside one of the LDB hangars. At right, the BLAST gondola sails away from the Ross Ice Shelf.

ANDRILL reaches record depth

Core exceeds 1,000 meters with team hoping to reach final target by Christmas

From staff reports

The ANtarctic Geological DRILLing program known as ANDRILL hit a record depth this past week during coring operations on the Ross Ice Shelf.

ANDRILL passed 1,000 meters below the seafloor on Dec. 17 on its way to a target depth of 1,200 meters. This broke the previous record of 999.1 meters set in 2000 by the Ocean Drilling program's drill ship *Joides Resolution*.

Scientists for the multi-national project will use the sediment core to learn about Antarctic ice sheet and ice shelf behavior over the last 7 million years. They hope to be able to predict how Antarctica's ice mass will respond to future climate change when temperatures begin to match those in the past warm periods.

ANDRILL project manager Jim Cowie said the operations team of 25 drillers, engineers and support staff was extremely pleased with the results of the operation, where a drill rig sits on an 85-meter-thick ice shelf.

Alex Pyne, who has overseen the design and fabrication of the drilling system, is a veteran of 30 years of scientific drilling in the McMurdo Sound region. He acknowledged that much of the present success is due to lessons learned from previous drilling projects, as well as a dedicated and experienced team.

Pyne was also the technical expert behind the Cape Roberts Project in Antarctica that drilled to a depth of 939.4 meters below the seafloor.

"The key to scientific drilling is delivering high-quality core to the scientists, and we have consistently had better than 98 percent core recovery," Pyne said.

"This is a very satisfying milestone for the drilling team, who take a lot of pride in their work," he added, "but our eyes are still firmly focused on the target depth of 1,200 meters."

The drill team will have until the day after Christmas to reach that goal, when operations are expected to shut down.

ANDRILL staff scientist Rich Levy, from the University of Nebraska, said the science that will come from the drill cores would be extremely revealing.

"However, without this world-class technical team producing high-quality core we wouldn't have half the story," said Ross Powell, one of ANDRILL's co-chief scientists from Northern Illinois University.

So far, the drill cores tell a story of a dynamic Antarctic ice sheet advancing and retreating more than 50 times during the last 5 million years. ANDRILL co-chief scientist Tim Naish, from Victoria University in Wellington, New Zealand, said some of the disappearances of the ice shelf were probably during past times when the planet was 2 to 3 degrees Celsius warmer than it is today.

"Much like it will be in the next 50 to 100 years," he said.

Palmer Station hosts art show, cruise ship visitors

From page 6

niques he learned in France.

From his experience, Ruth created Nebula, a 44-inch-tall, 400-pound sculpture incorporating swirled colors and recycled glasses lenses. Ruth said he is interested in creating a space inside the glass that intrigues the audience.

Ruth returned to the idea of making glass panels and was commissioned to make a series of 22 panels for a restaurant at a theme park in Tokyo. The panels are seven feet high and almost two inches thick. The mural is over 100 feet long with an undersea theme.

After this commission, Ruth had a series of individual shows in Oakland, Portland and Seattle that displayed both his panels and shaped pieces. Designing fountains and outside sculptures prompted him to try Pyrex glass, a material that works well in the outdoors. To learn about what Ruth has been up to at Palmer Station, see his first-person account on page 4.

The 71 passengers and crew of the M/S *Andrea*, a former Norwegian coastal passenger vessel that operated year-round in remote regions of the Norwegian fjords and along the coastline, visited this week. The vessel is well adapted to freezing temperatures, sea ice and other challenging weather conditions.

Palmer residents rounded out the week with the local art show, featuring photographs, watercolors, knitted scarves and Ruth's glass sculpture and silicone ice casting. Also featured were a slide show of photographs and a six-minute time-lapse video of the *Laurence M. Gould's* port call. Soon, Palmer residents will look forward to another port call and the holiday weekend.

Continental Drift — What part of your job is harder because you are in Antarctica?

"Volcanic rocks and dust get into everything."

Jenny Hilts
McMurdo Station
janitor
Lander, Wyo.
first season

"Diving in the frigid ocean temps definitely makes sampling more difficult. It usually takes longer than a measly 10 minutes to lose all feeling in my fingers back home."

Kelly Moore
Palmer Station
lab assistant
Catalina Island, Calif.
second season

"The low temperatures make all outside work much harder, and you have to be more careful since it is very easy to get frostbite."

Sven Lidstrom
South Pole Station
IceCube winterover
Stockholm, Sweden
seventh season

Profile

Pole for the holidays

Father and daughter go to the end of the Earth to be together for the holiday season

By Steve Martaindale
Sun staff

Ask Jim Boaz how he feels about his work and he's liable to say, "I'm living the dream."

The week running up to Christmas became even dreamier since the McMurdo Station antenna rigger has been able to ply his craft at the South Pole to spend the holiday with his daughter.

"I was excited," says Sara Boaz, a carpenter's helper at Amundsen-Scott South Pole Station, about the visit from her dad. "I went to bed at 6 [a.m.] and woke up at like 9:30. ... The plane didn't come until 11, but I was just lying there in bed, and I kept thinking that I might miss it."

Each is on a second tour in Antarctica, though this season is the first they have been on the continent at the same time. This, Jim's first trip to the South Pole, is the first time they have been together except during Sara's passing through McMurdo en route to her job.

Sara, 24, hints that the party could get larger in the future. Her only sibling, 22-year-old Holly, graduates college next semester and is interested in coming.

"She told me the other day, 'Well, Sara, I guess if I'm ever going to see you again, I'm going to have to come down to Antarctica.'"

Jim, 51, is the one who started the southbound parade after hearing about Antarctic experiences from friends.

"I just applied online for a job," he says. "I actually wanted an antenna rigger's job, and I applied for that, but I also applied for a sheet metal job because I just really wanted to get down here. ... I was kind of surprised when they called and said they needed a sheet metal person, and I took the contract for a winter."

Sara picks up the story there.

"Yeah, he called me in Arkansas and told me he was going to Antarctica, and I was like, 'What? People go to Antarctica? I want to go.' He told me about the job fair [with Raytheon Polar Services Co. in Denver], and I went in there, and I went to a couple of booths, and I realized that I'm not qualified for anything."

She was not intimidated by that little fact. As she retells the story sitting in the arts and crafts room, she begins acting out her job-winning performance.

"So, I was like, 'Hmm, man, this is where I was supposed to go. The Lord wanted me to go," she says. "So I was like, 'Who's going to give me a job here?' And I just stood back and looked over and, 'That guy right there.' And it was Dog [Doug Forsythe], my foreman, and I went up to him, and I put my hands on the table, and I was like, 'Sign me up to shovel snow.'"

After visiting with Forsythe, someone helped her design a resumé and she applied online before leaving the job fair. She soon received a contract offer and began making plans to head south while her dad was working the winter shift at McMurdo.

Jim spent a couple of weeks in New Zealand after finishing his sheet metal contract. He was able to pick up Sara at the Christchurch airport and spend a day with her before she headed to the South Pole to work the austral summer as a general assistant (GA).

"I was really fortunate because I was on Dog's crew," she says. "I was on swing shift, and there were just two of us GAs, and I got to do a lot of cool things. I didn't shovel as much."

While father and daughter say they were glad to get their first jobs on the Ice, they also had something else in mind. The dreams came true for both this season as Jim landed his antenna rigger job and Sara her carpenter's helper job.

But this Christmas season, they are particularly enjoying spending time together, as much as they can with Jim working days and Sara working the swing shift. And she has not been negligent as hostess, making sure he sees the sights and meets everybody.

"I'm known as Sara's Dad," Jim quips.

"That's the way I was last year," Sara replies.

"Everybody was like, 'You're Jim Boaz's daughter? I didn't know you were Jim Boaz's daughter.'"

Steve Martaindale / *The Antarctic Sun*

Jim and Sara Boaz stand at the ceremonial marker in front of the South Pole station. Jim normally works at McMurdo but has been able to spend the holiday season working at the South Pole and visiting with his daughter, who is a carpenter's helper there.