



# THE ANTARCTIC AN SOCIETY

## NEWSLETTER

*"BY AND FOR ALL ANTARCTICANS"*

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**BRASH ICE.** We are becoming more of a team effort, with most welcomed contributions from many of you. John Spletstoesser has been our right hand man for many years, and Margaret Lanyon has blessed us with innumerable contributions from Christchurch over the past decade.. We have also been ably supported by Polly Penhale and Jerry Marty of NSF in keeping us aware of many activities on the ice. We have been using three avid Antarctic bibliophiles for book reviewers; Charles Lagerbom, Steve Dibbem, and Gracie Machemer. It's a toss up between Charles and Steve as to who has the largest not-for-sale personal Antarctic library. We are trying to make Grade into our modern-day Ruth Siple, an almost impossible task as Ruth did everything. And an ex-husband-wife Polie team of Drew and Diana Logan have introduced us to so many of the younger crowd, particularly Polies, that they are invaluable to us in trying to keep us up with the times. The most wonderful thing about these connections is that we are finding out that not only do they love Antarctica as much as us old has-beens, they are equally, if not more so, nicer than we are! Hard to believe, isn't it?

Another most important team member of our team is Jo Lindsay, a spritely lass who shines at adult tennis and has been known to be a flash on the local ice hockey arenas. She puts these words into a computer, and makes enough sense out of them so that they can be printed. She is probably the most fun member of our team, although John Spletts has a great sense of humor. We liked the way that Katy Jensen, an occasional contributor to these pages, writes, and we approached her as to her interests in putting out these Newsletters, as twenty-eight odd years is more than enough. But Katy gave us a polite, "Thanks, but no thanks." We want young blood to fill this chair, as they are our future. But there is one person who shares with us the deepest interest in Antarcticans, and that is Lynn Arnold, currently a school teacher in the international school in Singapore. She has appeared in our pages before, and she is a contributor to this issue. We are hopeful that perhaps Lynn might want to assume a larger role in our Society. Right now she has two votes, those of Charles Swithinbank and myself, representing a total of some 160 years of living, hopefully some of those with sound minds and good judgments about Antarcticans.

The headline story since the past issue has been global warming, although we find that most of the articles are about as exciting as eating last night's warmed over remains of a macaroni and cheese dinner. Once upon a time I was even involved in climate change, as for three years in the mid-seventies I was a member of an interdepartmental government team at the National Defense University at Ft. McNair in Washington where we were trying to ascertain what things were going to be like by the year 2000, particularly food crops around the world. After three years we actually did publish a report, CLIMATE CHANGE TO THE YEAR 2000. It

had a beautiful cover and many nice wood cuts, which were sneaked by the approval Board when they all were on Christmas holiday! One of the experts helping us make valid assumptions and decisions is one of our Society's current members, the motorcycling Will Kellogg, then of the National Center for Atmospheric Research in Boulder. Will happens to be the father of an Antarctic scientist. Why Will is a member of our Society is beyond us, but he claims that he truly does like to read our Newsletters. It just goes to show that there isn't much interesting reading material in his home.

Another expert involved in that study was the late J. Murray Mitchell Jr., who presented our then-annual Memorial Lecture in 1978. It was probably our Society's first ever Memorial Lecture on climate change in the Antarctic. But if you go back to the first Byrd Antarctic expedition in the late 1920s, you will find that one of the stated reasons for the expedition was to find out if Antarctica was shrinking or expanding. Going back to Murray, he was one of the nicest guys who ever walked on this earth. He was taken to the South Pole as a distinguished VIP by NSF, and he thoroughly enjoyed every minute on the ice. It was my honor and privilege to have known Murray since his undergraduate days at MIT. Although an avid outdoor enthusiast, this strong environmentalist just could not lick the Big C.

Another climatologist who visited the South Pole was Bill Spriggs, then of the National Climate Program Office. Many of you folks will remember Ron LaCount, formerly in the head shed at NSF. He once gave an extensive interview to the press where he disclaimed that there was anything such as global warming. Another Pat Michaels!

There have been several publications of late devoted to global warming, and we asked John Splettstoesser to summarize what appeared in *SCIENCE* for March 24, 2006. This appears as a separate input to this Newsletter. Many of you have probably seen the issue of *TIME* magazine (April 3, 2006) which had a special report on global warming. Its cover had in big, bold print, **BE WORRIED, BE VERY WORRIED**. It was directed towards guys like me who are shoreline property owners. Right now it is rather exciting in winter when a good northeaster brings surf right up to my front doorsteps.

Herein you will find an article by one of Antarctica's best known husband and wife teams, the Frasers of the Antarctic Peninsula. Bill has been studying seabirds in the Palmer station area for more than two decades. Originally he worked under the late Dr. David Parmalee. His research on both Adelie and chinstrap penguins is classic in determining that natural causes such as sea-ice extent and

orographic features play a major role in population dynamics of the species. His wife Donna has been studying the foraging habits of giant petrels in the last few decades by using instrumented birds to track their ranges. (JFS).

The elevated station at the South Pole is completed, with all eight wings occupied, and the transition of all related functions from the Dome to the elevated station. Application of the exterior metal siding has begun and is scheduled to be completed by the station dedication. The station is now preparing for formal dedication sometime in the coming austral summer, month and date to be determined, supposedly coinciding with the 50th anniversary of the completed construction of the original Amundsen-Scott South Pole station in 1957.

There are some interesting books coming out in the near future, some over the horizon, and even more are in their embryonic stage. Historian Dian Olson Belanger reports that her book, **DEEP FREEZE, THE UNITED STATES, THE INTERNATIONAL GEOPHYSICAL YEAR, AND THE ORIGINS OF THE ANTARCTIC AGE OF SCIENCE**, written under a NSF grant, is being published by the University Press of Colorado in mid-September of this year. Her book is based on oral history interviews, diaries, memoirs, and official records. Dian offers a U.S. viewpoint and emphasis, but within the context of contemporary international politics and the aims and activities of the other eleven IGY stations on the ice. She explores why this story mattered then, and matters still. (DOB)

Another book which has been completed and is awaiting childbirth as soon as a contract can be drawn up with a publisher is **EAGLE ON THE ICE** by Pat Wilson and Roger Leslie. Pat has been nurturing within her bosom for at least two decades a child's book on Paul Siple, as she felt that he was the ultimate role model for youngsters. She never knew Paul, but was a very good friend of Ruth, who suggested the name for the book. We have been privy to an advanced copy of the book, and it is very interesting, dealing almost exclusively with Paul as an Eagle Scout of the Byrd Antarctic Expedition, 1928-30.

Mildred Crary tells us that she is going to make every effort to get Bert's book on his exploits in the Arctic and Antarctic into print for the 4th International Polar Year. Mildred, herself a very active author, has completed her editing of Bert's book, which has long been awaited by his multitude of friends. With much justification, we feel that Bert was the premier polar field scientist for the whole 20th Century. Now we can't wait for this to hit the book stalls.

Tim (BEFORE THE HEROES CAME) Baughman is currently researching material for a book which will be in many ways a continuation of Ken Bertrand's excellent AMERICANS IN ANTARCTICA. Ken's book ended with Operation High Jump, and Tim's book will take off from there and go forward through the IGY and into the early years of the Antarctic Treaty – maybe beyond.

**MEMBERSHIP.** On the whole, most of you have done a good job of renewing, but there are close to fifty who are still delinquents. Unlike another polar society in our country, we are not very lenient with delinquents. We don't mind if you want to drop out, as the fewer members, the less work for us. So those who are delinquent will get a last notice with this Newsletter. If you renew, please renew for several years as it helps us a lot. Membership cards are enclosed for those with paid up memberships. Over two-thirds of the people who renewed this year did so for multiple years. We thank you.

#### **ANOTHER FORMER ANTARCTIC**

**ADVENTURER DIES.** TOM ABERCROMBIE, a swashbuckling adventurer, whose life got jump started at the South Pole, died April 3, 2006 at Johns Hopkins Hospital of complications from open- heart surgery at the age of 75. While at McMurdo in the summer of 1957, he won a lottery to be the first photographer at the Pole. He arrived at the Pole on October 22nd, 1957, along with a photographer from the OREGON JOURNAL and a Navy photographer. When their P2V Neptune developed an oil leak while starting up to depart, the plane and crew were destined to stay at the Pole until a gasket could be obtained and flown in. The Men who Came to Dinner, eh what?

Upon arriving at the South Pole, he begged Paul Siple to let him stay at the station, promising to work in the snow mine twelve hours a day. It was too good an offer for Paul to turn down, but a most reliable source told us that Tom never came through on his promise! In fact, in Tom's first pilgrimage into the snow mine, according to Siple's 90 SOUTH, Tom had to check out from exhaustion after twenty minutes. So much for his promised twelve hours!

Tom took a multiple exposure of the Sun over a three-hour interval showing its horizontal motion above the South Pole Station. It appeared in Paul Siple's article in the April 1958 issue of The National Geographic Magazine. There was one frosted picture of Abercrombie's face which was often published without a photo credit. It was also used in Tom's obituary in the 7

April 2006 issue of The Washington Post – Bob Benson took the picture. It seems Bob and Tom were down in the snow mine for some time, and when they came up, Bob took that great picture of Tom.

Before the IGY, Tom loaned George Toney, the station leader, a camera and twenty odd rolls of film, instructing him to take as many pictures as he could during the winter. George was a polar veteran before he went to the Antarctic, having served in the Arctic once upon a time. George diligently took pictures for Tom, and sent them off at the end of winter to the National Geographic, probably with visions of himself becoming famous for the pictures. But he got a short thank you letter back from the National Geographic informing him that none of his pictures came up to their standards!

It was said that Tom picked up languages as easily as most people pick up souvenirs. He was fluent in German, English, French, Spanish, and Arabic, and could fake it in Italian. With hands like catcher mitts, a photographer friend said that he could destroy the inside of a rental car before he got it out of the parking lot.. Over the years he became the magazine's expert on the Arab world, and he was so impressed by Islam that he read the Koran in Arabic, and became a Muslim. He made four pilgrimages to Mecca, where he took the first photographs of the city for the Western world.

He was like a cat, escaping death many, many times. He slipped off his yak in Afghanistan, and nearly plunged into a 1,000 ft chasm. He nearly died from typhoid in the Himalayas. An angry mob in a napalmed Cambodian village nearly killed him, stopping only when he managed to convince them that he was a Frenchman. He got knocked off the top of a mountain cable car in Venezuela and was saved by a stout Swiss guide who yanked him back into the car by his belt. One obituary read he was like Indiana Jones with a camera and pen. His great photography may have been exceeded by his wrings which also became legendary, writing articles on all seven continents. And it all started with a snow shovel in his hands at the South Pole. Well, not quite right, as he received the 1954 Newspaper Photographer of the Year award.

**“ICECUBE TURNS UP THE HEAT”** Condensed from the Antarctic Sun, January 29, 2006 (By Steven Profaizer Sun staff) (edited by Katy Jensen) Sixty billion neutrinos fly through your thumb every second. The weirdest part is that no one is sure where some of them are coming from.

Neutrinos are subatomic particles that fit into the same

general category as protons and electrons. Neutrinos, however, have special characteristics: they have no electrical charge and are almost without mass. This means they are not affected by magnetic fields and are rarely absorbed by matter. With nothing to interfere with them, neutrinos are born, and just keep going in whatever direction their source pushes them. For the most part, they slip straight through anything that gets in their way, shooting across the universe in a straight line from their origin. But every once in a while, they crash straight into an atom, destroying themselves in the process. These collisions give scientists a rare opportunity to learn about these abundant yet mysterious particles, which are notoriously difficult to detect because of their benign nature.

Enter IceCube — the monstrous, cubic-kilometer neutrino telescope currently under construction one-and-a-half to two-and-a-half kilometers below the surface of the South Pole. It is designed to observe the result of neutrinos careening across the galaxy, traveling through the earth, and slamming into an atom of ice. The rarity of these occurrences is the reason for IceCube's immensity — the bigger the area of the detector, the better the chance of observing the interaction.

The collision destroys the neutrino but creates a negatively charged particle called a muon, which gives off a blue cone of light as it continues along the path of the neutrino.

This blue luminescence is called Cherenkov radiation. It occurs when a charged particle, like a muon, travels through matter faster than light would through that same substance. And the very large, dark and transparent ice region under the South Pole's surface provides a perfect place for scientists to observe the effect.

IceCube is a sensor array made of digital optical modules, or DOMs. Eighty strands, each with sixty basketball-sized DOMs, will be placed into shafts drilled in the ice. The science team hangs the strands straight down into the holes, and within a month, the ice closes up completely around them.

The ice's grip on the DOMs is hardly a gentle embrace, so their electronic innards are encased in a ball made from glass designed for deep water diving. Inside the glass is a minicomputer attached to several instruments, including a photomultiplier. This device works like an inverse light bulb, said Mark Krasberg, an IceCube scientist from the University of Wisconsin.

Instead of producing light, it traps light and logs the exact time it registers it — down to five billionths of a second.

The precision is needed so the scientists can tell the neutrinos apart. Software deduces the exact moment each DOM gets hit and uses that to judge the neutrino's direction and speed. "It's like putting a bunch of microphones in the street to figure out the direction of a car," Krasberg said. "If you looked at when each microphone recorded the car passing, you could tell its direction." There is an inherent oddity to the IceCube project: the blue-light-producing muons it studies are so rare that the array has to cover a cubic kilometer to produce useful data, yet IceCube will detect far more of these interactions than it wants. What makes this possible? The muons' origin. Muons can come from many sources, only one of which is the collision of a neutrino with an atom of ice. So just because IceCube registers a muon's blue cone of light shooting across the array, does not necessarily mean it is providing the scientists data on what they are trying to study.

Scientists have come up with a way, however, to use all that extra information — IceTop. IceTop is considered part of IceCube, but it uses a separate set of the same digital optical modules. These sensors are frozen into 2,300-liter tanks of water and placed in pairs above each string of the IceCube array. IceTop serves two major functions. The first is to help calibrate and enhance IceCube. The second is to make use of the valuable data that is not directly related to IceCube's goals.

By studying the particles IceCube is not interested in, scientists can get better at eliminating the excess information the particles create in the IceCube array, said Tom Gaisser, principal investigator for IceTop. If scientists didn't eliminate that interference, it would be like trying to decipher one voice in a stadium filled with screaming fans.

"For every muon generated by a neutrino, there are about a million generated by cosmic rays," Gaisser said.

Scientists can tell muons' sources apart by their trajectory. There are two general directions for muons to move through the array: up and down. The majority of downward-moving neutrinos are from cosmic rays creating showers of subatomic particles as they meet the Earth's atmosphere. But IceCube is designed to look at the muons created by particles moving up through the Earth. Neutrinos are the only muon source that can travel through the entire planet.

"We're looking down through the Earth and using it as a shield," said Mark Krasberg, an IceCube scientist from the University of Wisconsin. While IceCube is looking through the Earth at the northern sky, IceTop will be looking straight up at the sky over the South Pole. "We're

taking advantage of extra physics that can be done with the background that would otherwise be discarded,” Gassier said.

The IceTop team installed eight tanks last summer and completed 24 more this season. Those tanks are still in the process of freezing, but they will be operational in February.

**IS THERE REALLY GLOBAL WARMING?** (John Spletstoesser, with excerpts from *Science* and input by T.J. Hughes) Yes, according to many authorities who study the issue, and by authors of numerous articles in the 24 March 2006 issue of *Science*. The cover photo, of icebergs in a fjord in Greenland, is a hint of what is in the issue, which includes four articles, perspectives, and an editorial. Is there cause for alarm? Is the re-building of levees in New Orleans a waste of time? Are Holland, Miami, and Venice, Italy, doomed to be places that tourists used to visit, but won't be able to anymore? Model simulations are basic in this kind of study, as well as measurements taken over long periods of time. Satellite imagery is the newcomer in the analysis. Model predictions of warming during the next 130 years imply that surface temperatures will be as high by the end of this century as they were 130,000 years ago, thus melting enough of the Greenland ice sheet to raise sea level by several meters. Losses of the Antarctic ice sheet, as shown by satellites designed for the purpose, indicate a decrease in the ice sheet by  $152 \pm 80$  cubic km per year from 2002 to 2005, mostly from losses in the West Antarctic ice sheet. Ice loss around the margins is proceeding faster than the center of the ice sheet is growing. Glacial earthquakes, triggered by the sudden sliding of glaciers, have been more common in Greenland in summer, producing an acceleration of ice to the sea. Destruction of features like the Larsen Ice Shelf in the Antarctic Peninsula produces no increase in global sea level because the shelf is already afloat, but when the shelf barrier is removed, the land-based glaciers that nourished the ice shelf accelerate and their melted ice does raise sea level.

Bindschadler's article raises the issue of Pine Island Glacier that drains into the Amundsen Sea off West Antarctica, and its acceleration, thinning and retreat in the mid-1990s. The coastal geometry is such that warm, salty water overrides the moraine, or sill, in front of the glacier and reaches the base of the ice sheet, increasing melting. Compounding the problem of retreat is that of grounding lines of Pine Island Glacier and Jakobshavn Isbrae in Greenland. Each has the earliest recorded acceleration, making them more vulnerable to grounding line retreat because of the deep basins they have

developed at more than 1000 m below sea level. Concurrently, sea ice growth and thickness in the Arctic Ocean has diminished, pointing to a potential open-water ocean in the future. If you recall significant articles in the 1970s by the late Dr. John Mercer on the two topics discussed above – disintegration of the West Antarctic Ice Sheet, and an open Arctic Ocean – you will see appropriate background information as a bellwether of what the planet is experiencing. An ice-free Arctic Ocean was the subject of technical articles going back to the 1950's by Ewing and Donn. More recently (2004), Dr. Terry Hughes authored a paper showing how surface melt water reaching the bed in the Greenland ablation zone caused ice-stream 'surges' that released enough ice into the sea to raise sea level by 3 meters and cool the North Atlantic Current sufficiently to create another Little Ice Age, all in only 300 years.

Journalists are having a circus as these potential doomsdays are developing, with sensational headlines designed to sell newspapers. Stay tuned, however, to the results of researchers the likes of which contribute to articles in the 24 March issue of *Science*. It is worth some useful reading at your leisure, and creates thinking about disposal of your coastal property.

**SATELLITE TRACKING SOUTHERN GIANT PETRELS AT PALMER STATION, ANTARCTICA** (Donna L. Patterson-Fraser & William R. Fraser, Polar Oceans Research Group, Sheridan, Montana, USA) Southern giant petrels (*Macronectes giganteus*) are large, surface feeding predator-scavengers with a circumpolar distribution in the Southern Ocean. Like many other Procellariids, Southern giant petrel breeding populations are decreasing throughout much of their range. Giant petrels are highly susceptible to some types of human disturbance near their breeding sites; however, some studies suggest that the observed population decreases are due primarily to entanglement mortality induced by commercial long line fishing operations. These fishing operations are rapidly expanding in the Southern Ocean, thus posing an increasing hazard to giant petrels because they are attracted to baited hooks. Indeed, current estimates are that as many as 100,000 seabirds are being killed annually by these fishing operations in the Southern Ocean, the southern giant petrel is now listed as vulnerable by the International Union for the Conservation of Nature (IUCN).

A notable exception to this decreasing population trend, however, occurs in the vicinity of Palmer Station, Antarctica (64° 46' S, 64° 04' W), where the breeding population has more than doubled to nearly 500 pairs over the past 30 years. Despite an increase in

entanglement events in the vicinity of Palmer Station, we have long-hypothesized that the area's increasing population may be due in part to minimal overlap between foraging ranges and commercial fishing operations.

To examine foraging patterns and potential fisheries interactions, small satellite transmitters were deployed on adult Southern giant petrels during their breeding season. Because the study population was habituated, we have deployed all transmitters without restraining or stressing the giant petrels. Over the past 8 austral summers, we have logged over 3500 "transmitter days" on 161 giant petrels, with most of the tracking coming during both incubation and the critical chick-rearing phase.

Preliminary analyses of our data suggest two broad patterns in giant petrel foraging strategies. The first is that during all seasons, individuals made repeated trips to the same areas, some of which are more than 1200 km away. This finding is important because most legal commercial fishing activities take place to the north of this population, suggesting a limited overlap between local breeding giant petrel foraging ranges and fishing activities. The second pattern relates to foraging changes within the breeding season. Foraging trips tended to decrease substantially in distance and duration during the brood/guard phases. The guard phase in giant petrels is coincident with fledging in Adélie penguins (*Pygoscelis adeliae*), which are highly vulnerable to giant petrel predation both on land and at sea. This geographically limited foraging strategy, while providing relatively easy access to prey, also serves to minimize giant petrels' potential exposure to fishing vessels.

Our results to date highlight the need to continue monitoring and telemetry studies on the Southern giant petrels near Palmer Station. We know very little about young giant petrels, who spend nearly all of their pre-breeding existence at sea, and are thus exposed to fisheries activities north of Palmer Station. We hope to gain a better understanding of these non-breeding Southern giant petrels, as they truly are the future of the Palmer Station breeding population. [Project funded by NSF/OPP.]

**EXTREME PLANNING** (Lynn Arnold) Today's world is into extremes more than ever. Extreme sports are the rage. Extreme sizes are available at convenient stores. Extreme adventure vacations are growing in participants. And, as I would shockingly learn after returning from a year in the Antarctic, extreme reality TV shows receive hordes of viewers. But let's face it. None of this holds a candle to the extremes you find in the Antarctic. Just

think of the science alone. How more extreme can one get? Do many people know there are eighty story balloons carrying 3,000 pounds of telescopes above the Antarctic in the summer season? How many people today have ever pondered a career as a cryogenics technician? Who is really aware of the prehistoric looking Antarctic cod whose blood contains antifreeze properties? Who has considered that scientists do absurd things like attach video cameras to unsuspecting *seals* and *penguins*? Who would guess that resourceful individuals would create a plexiglass tube that allowed us to go underneath the ice without donning a wetsuit? Does the general population realize that those ice divers cannot even dress themselves in their spacesuit-like gear? Who would imagine finding astronauts or meteorites near the South Pole? WOW!! Now that's EXTREME SCIENCE!

*"If I have seen further it is by standing on the shoulders of Giants."* –Isaac Newton

The cutting edge science currently going on at the poles has only been possible due to those who went early on, back in the days long before there were such luxuries as telephones and computers, snowmobiles, and saunas. Many of our friends and colleagues in the Antarctic Society for example, were there during THE incredibly exciting times: before and during the International Geophysical Year (IGY) and subsequent years. Ice veterans still glow with lingering enthusiasm when recounting experiences, some who were going where *no one else had ever been*. The International Geophysical Year was a time of change in the scientific world. The third of its kind, the idea to have a 3<sup>rd</sup> polar year became the geophysical year due to the heightened sunspot activity and it involved scientists all over the planet (30,000 people from 66 nations). The Antarctic portion of the endeavor involved 12 countries that sent 5,000 people to the ice, constructed 50 stations, and changed the face of science forever. IGY led to such exciting developments as the launch of Sputnik, the discovery of the Van Allen belts and the initiation of the term "tons of information" because that is literally what was generated. *17 tons* of data were collected in the US Antarctic Program alone. In order to house this explosion of new knowledge, three World Data Centers were created. The US National Committee announced IGY as, "*the single most significant peaceful activity of mankind since the Renaissance and Copernican Revolution.*"

As a result of IGY, the Antarctic Treaty was created, in which new standards of international cooperation were reached. These became a continued part of the legacy that continues today, along with the generations of

students who were inspired to pursue careers in science due to the role models they were exposed to during that time from July 1, 1957 to December 31, 1958. The spirit of the individual was to be replaced with the international cooperative effort, a remarkable feat for the world, especially considering it happened during the Cold War. It's tough to follow an act like that, even fifty years later.

The upcoming International Polar Year (IPY) will take place March 2007 to 2009, a half a century after what many consider to be the most successful collaborative scientific effort ever. While the novelty of a first time undertaking such as IGY will not be present in IPY, there are some definite other advantages of the foundation that was built during that time. During IGY, the scientists were young and inexperienced and the Navy ran things. The heart and soul of our society, Paul Dalrymple, was considered OLD at the age of 33 years. (Ouchy, that hurts!) Now many of the researchers are experienced leaders in their fields and the National Science Foundation is really the governing body for the US stations. Thankfully, the demographics have certainly changed, as now *both men and women* work there, ranging from 18-60+ years. More convenient methods of communication and transportation have made polar life much easier. And, due to advances in technology that change our everyday world, the thrill of the poles may be viewed immediately.

All over the world, people are in a frenzy of meetings gearing up for the IPY, collaborating on new ways in which to conduct science and work together more extensively. In March, there was a meeting in Brussels, while the USA sponsored a virtual planning workshop online. In April, scientists and teachers convened in Vienna. In May, the talks will leap across the ocean and take place in Ushuaia. And in July, Hobart will host thousands while we hold our own special Antarctic Society shindig in Port Clyde, Maine! To coordinate the plethora of activity to take place, there is now an official International Polar Year Program Office ([www.ipy.org](http://www.ipy.org)), which has been instrumental in matchmaking scientists with similar projects in similar institutions all over the world, thus further enhancing international collaboration.

In addition, there is a strong education and outreach component that is being emphasized in how to communicate these scientific feats to schools and the general public alike. But as this portion of IGY was developed largely *after* the actual time in the field, we now have the luxury to access much of that information right *during* IPY thanks to the computer age. A golden opportunity exists to both educate and motivate new generations of potential researchers and citizens through

digital data tools, media programs, web cams, video clips, podcasts, blogs, and a host of other ways in our progressive technological state. IPY hopes to be a focused "burst of activity" that will be more public. Quite frankly, this could not come at a more opportune time. Scientists the world over are concerned with the data being confirmed in a variety of different fields. The news from the poles lately is not good. Accelerated rates of temperature change and ice trends in the polar regions are alarming. Older and older ice cores consistently indicate rises in greenhouse gases that contribute to global warming and yet emissions are only growing. The ice holds keys to our future and we must pay attention.

And yet, we must remember (as some of us may have heard once or twice☺) *science never sleeps*. Antarctica still draws those who donate a portion of their lives to the cause. By the time this newsletter reaches you, the last hint of sun will have disappeared and the Antarctic winterovers have no doubt settled into the rhythm of the polar night, isolated from the rest of the world. The stars should now be out in full glory, the moon will make its monthly appearance to wake up those who venture outside, and, hopefully, the auroras will visit often.

While the various crews trudge through the dark, many will be quite unaware that a substantial population spread throughout "the north" is fixated on the poles in anticipation. The ice holds many keys to our future of working together to make our world better. The good news is that for those of us who are passionate about the pole(s), we will soon have a once in a lifetime opportunity to celebrate with the rest of the globe. Fellow Antarcticans, 2007 could be our year!

**ICE The Nature, The History, And The Uses Of An Astonishing Substance** BY MARIANA GOSNELL Knopf 501 pp. 2005 (Book Review By Grace Machemer) In 501 pages, the author thoroughly discusses every aspect imaginable of the frozen (solid), state of that compound we call water, so absolutely necessary for life everywhere in this universe.

If you thought you knew something about ice, think again. This encyclopedic book should convince you that there is more, much more all the way up from the chemical and physical attributes of ice to the various locations of it on earth: that is, in lakes, in rivers, in the Great Lakes, in glaciers in the Alps, the Arctic, the North and South American continents, to the Antarctic. All of it contributes its bergs and melt water to the oceans and the atmosphere of the world. And then there is extra-terrestrial ice to consider.

But what is the history of ice? We know by reading newspapers and journals something about ice ages. Ms. Gosnell details the facts of ice sheets and ice caps through research by way of drilling and coring and the examination of these cores of ice to tell us what happened in the past and how to predict the future climate.

Hardly a chapter (there are thirty-six), misses some facts supporting the hypothesis of global warming, the common buzz words of today's media, politics, and economics. She writes with ease, and interjects bits of wit and humor and poetry now and then. She copiously quotes experts in the field from CRREL and elsewhere such as Tony Gow, also Lonnie Thompson, and George Denton, so that we feel at home reading it. This is one COOL book for everyone to read, learn and enjoy.

**PERSONALS.** The Ray Arnaudos have packed up and moved to Moscow, at least for the next two years. It won't seem the same around Foggy Bottom where Ray has been connected to the Antarctic desk at the State Department for many years. His calling was to the Energy Department office in Moscow where he will be their senior advisor for non-proliferation and S and T (?) matters. Rose, his wife, evidently is proficient in the Russian language, and she has taken a position in the Carnegie Moscow Center. When Ray retires, he is interested in writing a children's book about the stuffed husky which Norman Vaughan carried to the top of Mt. Vaughan.

The SCAR (Scientific Committee on Antarctic Research) Medal for Outstanding Achievement in Antarctic Science will be awarded to Dr. Paul Mayewski of the University of Maine at the opening ceremony of the SCAR's Open Science Conference in Hobart, Tasmania on July 12, 2006. The presentation will be by the President of SCAR, Professor Jörn Thiede.

Another celebration in the long and distinguished career

of Dr. Susan Solomon. She was one of ten members inducted into the Colorado Women's Hall of Fame in March. This could not have been as big a surprise as much as a bewilderment as to why it took so long. After all she is the youngest woman elected to the very prestigious National Academy of Sciences, is a Foreign Associate of the French Academy of Sciences and the European Academy of Sciences. She was also awarded the Presidential Medal of Science in this country. And she mothered a glacier, no small feat.

Three of Stuart Klipper's Antarctic photographs from the permanent collection of the Museum of Modern Art (N.Y.C.) will be on display in photography gallery of the museum from March until November. Stuart Klipper has worked as a photographer in Antarctica in 1987, 1989, 1992, 1994, 1999, and 2000; five of those times he was a participant in the Antarctic Artists and Writers Program.

Sam Feola has been named as the new Raytheon Polar Services Company's Program Manager for the U.S. Antarctic Program. Feola replaces Tom Yelvington who retired from the program. Sam Feola came from SNC-Lavalin PAE, Inc., where he was the president and general manager of an American-Canadian joint venture company that supported Canadian forces employed overseas. From 1990 to 2000, he was director of logistics of Antarctic Support Associates, the previous Antarctic contractor where he directed contractor planning, management and operational support requirement of the U.S. Antarctic Program.

Jim Mastro is working on an Antarctic novel. Jim says he is sick and tired of reading novels by fiction writers who go to Antarctica for a couple of weeks and then fill their work with all kinds of inaccuracies. He promises "there will be no inaccuracies in my novel." Go for it, Jim.