



The Antarctic Society

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“BY AND FOR ALL ANTARCTICANS”

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OF SHIPWRECKS AND WAR

Antarctica's most famous shipwreck — found! It's hard to believe, and a part of me even wishes it had not been. But *Endurance* has indeed been located at a depth of 3008 meters in the Weddell Sea, after it was crushed by ice and sank in 1915. Shackleton's ship was found precisely on the 100th anniversary of his funeral, within the search area defined by the expedition team before its departure from Cape Town, and approximately four miles south of the position recorded by Capt. Frank Worsley.

The expedition was organized by the Falklands Maritime Heritage Trust and permitted by the UK. The team worked from South African polar research vessel *Agulhas II* commanded by Capt. Knowledge Bengu, using Saab's Sabertooth hybrid underwater search vehicles. The wreck, happily, is protected as a Historic Site and Monument under the Antarctic Treaty, ensuring that while it may be surveyed and filmed, it will not be touched or disturbed in any way. For more information and great photos, visit the expedition's website: <https://endurance22.org/endurance-is-found>.

Many thought *Endurance* would not be found. Given our increasingly sophisticated technology, will we someday become modern Capt. Nemos, plucking treasure from shipwrecks throughout the oceans — bullion from the hulks of Spanish treasure fleets, masterpieces from other wrecks, pearls and corals from the seafloor? By some estimates, a couple million more shipwrecks await discovery. In some deep, anoxic environments, the levels of preservation can be astonishing, with even tool marks made by ancient shipwrights still visible on undecayed timbers. But it will take time to find and reach all of them.

One of the newest wrecks, of course, is that of Russia's guided-missile cruiser *Moskva*, sent to the bottom on April 14 by a pair of Ukrainian Neptune missiles. The sinking of the flagship of the Black Sea fleet was the biggest combat loss of a naval vessel since the Falklands war. Russia's evil invasion of Ukraine has killed tens of thousands of civilians and displaced millions. It also threatens to upend six decades of cooperation through the Antarctic Treaty. Even during the chilliest years of the Cold War, the Treaty provided a "back door" for opponents to discuss "non-Antarctic" issues. But whether and how to work with Russia under the brutish Putin regime remains an open question.

Jeff Rubin, Co-Editor

Update on 2022 Burlington Gathering

by Tom Henderson

70 people have registered so far. Momentum is building! Early registration of \$175.00 will continue until **June 1, 2022**, \$225.00 after that date. Guest registration will remain at \$90.00. To register or for more details go to:

<https://www.antarctican.org/2022-gathering>.



Dalrymple house at Port Clyde, ME

There are two big updates to report. First, the current owner of Paul Dalrymple's house at Port Clyde, ME, John Ackerson, has made a generous offer for a Gathering auction item: **a one-week stay for up to four persons in 2023 at the Dalrymple house!** The live auction will be August 13, 2022. You must be there to bid! Here is a partial list of other auction items:

- Antarctic print by environmental/ expedition artist Alan Campbell, created especially for our Gathering
- Bottle of Mackinlay Scotch whisky blended by the distiller to recreate the formula for the Mackinlay Scotch recently found under Shackleton's Cape Royds hut.
- A limited edition color print of the *Que Sera Sera*, the R4D aircraft that LCDR Conrad "Gus" Shinn landed at the Geographic South Pole for

the first time. It is signed by the artist, Ron Stephano.

- Limited edition book by Society member Ron Stephano recounting the history the R4Ds used in the early years of Operation Deep Freeze.
- A hand-crafted medallion and matching necklace commissioned by the Antarctic Society in 2011 to commemorate the centennial of the Amundsen and Scott parties reaching the Geographic South Pole in 1911-12.
- A watch produced to commemorate 100 years of exploration in Antarctica. It has actually been to the geographic South Pole!
- Complete 4-CD set of original Antarctic-themed music composed by AS member Valmar Kurok.
- Vintage Antarctic books.

Contact auction chair Kathy Covert at AuctionChair2022@gmail.com to donate items for the auction.

The other big news is that Society member George Russell is offering his family compound on Lake Champlain for rent during the Gathering. Three buildings sleep 10 comfortably. The rate could be as low as \$50.00 per person per night if 10 people reserve. The compound is a 30-minute drive south of Burlington. See details at <https://fancyroamervacations.com>. Contact me at webmaster@antarctican.org if you are interested.

Extensive information can be found in the Gathering Planning Guide. See the website (see above) to download the Guide.

Don't miss out on what promises to be a great time with old friends and new in a perfect summer setting. See you in August!

Next Society Virtual Lecture Apr 25: *Herbert Ponting: the Man, the Work, and the Legacy*

The Antarctic Society is hosting a Virtual Lecture via Zoom, April 25, 2022, at 5:00 pm ET.

In *Herbert Ponting: the Man, the Work, and the Legacy*, Anne Strathie will discuss the man who brought iconic images of the *Terra Nova* expedition to the world. While calling Cheltenham, England, home, Anne's historic research has led her all over Britain and to Antarctica, New Zealand, Australia,

America, Norway, and Japan. She has recently completed her third book on members of Captain Scott's *Terra Nova* expedition. Zoom link to join:

<https://us02web.zoom.us/j/88160185840?pwd=WTNkZmlJVTl0dUxiemRTMlFZZHFZQT09>

Upcoming ANTARCTIC EVENTS

May 7 - Water-Ice-Sky: Artist April Waters' Journey to Antarctica

SALEM, Ore.— The Hallie Ford Museum of Art at Willamette University is pleased to present the debut of "April Waters: Water-Ice-Sky, Antarctica" exhibition, opening **May 7** and continuing through **August 13** in the museum's Study Gallery and Print Study Center. The exhibition explores the beauty and the vulnerability of Antarctica's fragile and susceptible ecosystem in the face of climate change. April is an Antarctic Society member.

Learn more at the exhibition website:

<https://willamette.edu/arts/hfma/exhibitions/library/2021-22/april-waters.html>

May 8 – Old Antarctic Explorers Association 2022 Reunion in San Diego, CA

The next of OAEA's every-other-year gatherings to be held May 8-12 at the Handlery Hotel in San Diego. The reunion brochure is available at:

<https://www.oaea.net>

June 22 – SouthPole-sium v.5 in San Francisco, CA

The next of these popular events for those who collect, write, publish, buy, sell & love books relating to Antarctica and the South Polar Regions, 22-24 June. Sponsored by The Antarctic Circle, led by Antarctic Society member Rob Stephenson, and The California Contingent (Joan Boothe, Rick Dehmel, David Hirzel and Michael Rosove).

Everything you need to know is at:

<http://www.antarctic-circle.org/gathering5.htm>

Heat wave hits temperatures 70° F warmer than normal in eastern Antarctica

By Jason Samenow and Kasha Patel, condensed from *Washington Post*, March 18, 2022

Temperatures over the eastern Antarctic ice sheet soaring 50 to 90 degrees above normal. The warmth has smashed records and shocked scientists.

"This event is completely unprecedented and upended our expectations about the Antarctic climate system," said Jonathan Wille, a researcher studying polar meteorology at Université Grenoble Alpes in France, in an email.

"Antarctic climatology has been rewritten," tweeted Stefano Di Battista, a researcher who has published studies on Antarctic temperatures. He added that such temperature anomalies would have been considered "impossible" and "unthinkable" before they actually occurred.

Parts of eastern Antarctica have seen temperatures hover 70° F (40° C) above normal for three days and counting, Wille said. He likened the event to the June heat wave in the Pacific Northwest, which scientists concluded would have been "virtually impossible" without human-caused climate change.

What is considered "warm" over eastern Antarctica is, of course, relative. Instead of -50° or -60° F (-45 or -51°C), they've been closer to zero or +10° F (-18° or -12° C) — but that's a massive heat wave by Antarctic standards.

The average high temperature at Vostok at the center of the eastern ice sheet is around -63° F (-53° C) in March. But on Friday, the temperature leaped to 0° F (-17.7° C), the warmest it's been there during March since record keeping began 65 years ago. It broke the previous monthly record by a staggering 27° F (15° C).

Temperatures running at least 50° F (32° C) above normal have expanded over vast portions of eastern Antarctica from the Adélie Coast through much of the eastern ice sheet's interior. Some computer model simulations and observations suggest temperatures may have even climbed up to 90° F (50° C) above normal in a few areas.

University of Wisconsin Antarctic researchers Linda Keller and Matt Lazzara said in an email that such high temperatures are particularly noteworthy

since March marks the beginning of autumn in Antarctica, rather than January, when there is more sunlight. At this time of year, Antarctica is losing about 25 minutes of sunlight each day.

Wille said the warm conditions over Antarctica were spurred by an extreme atmospheric river, or a narrow corridor of water vapor in the sky, on its east coast. According to computer models, the atmospheric river made landfall on Tuesday between the Dumont d'Urville and Casey Stations and dropped an intense amount of rainfall, potentially causing a significant melt event in the area.

The moisture from the storm diffused and spread over the interior of the continent. However, a strong blocking high pressure system or "heat dome," moved in over east Antarctica, preventing the moisture from escaping. The heat dome was exceptionally intense, five standard deviations above normal.

The excessive moisture from the atmospheric river was able to retain large amounts of heat, while the liquid-rich clouds radiated the heat down to the surface — known as downward long-wave radiation.

Wille explained warm air is often transported over the Antarctic interior this way but not to this extent or intensity. "[T]his is not something we've seen before," he said. "This moisture is the reason why the temperatures have gotten just so high."

Models show the atmospheric river will exit the continent around Saturday, but the moisture will take longer to dissipate. Abnormally high temperatures in the region could last through the weekend.

The abnormally high temperatures have caused some melting in the region according to models, which is unusual as this part of Antarctica doesn't experience much melt often. This one melt event won't affect the stability of the glaciers in that area though.

"This event happened in a location that doesn't often have melt. Obviously, this doesn't mean that from now on we're worried that melting will happen," Wille said. "It's more of like, 'Oh, that is weird, that could happen more in the future and then this could be bad.'"

Wille said it's difficult to attribute this one event to climate change at the moment, but he does think rising temperatures helped prime conditions for such an event. Climate change is "loading the dice" for more situations like this, he said.

Wille and his colleagues are studying how climate change will affect the circulation patterns around Antarctica and whether atmospheric rivers will become more common or more intense.

"We do believe they will become more intense because it's just simple physics ... but the details, we're still trying to figure that out. It would be very difficult to say that there's not a climate change fingerprint on an event like this," he said.

Ice Shelf Collapse in East Antarctica

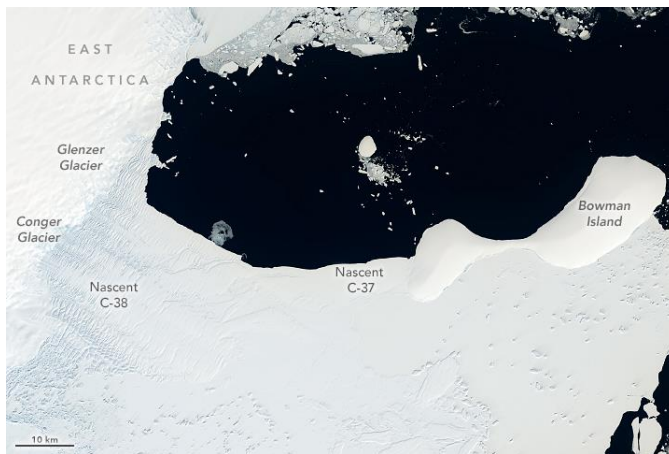
by Kathryn Hansen, NASA Earth Observatory

It is relatively common for ice shelves in Antarctica to spawn icebergs. It is less common for an ice shelf to completely disintegrate. In March 2022, an ice shelf in East Antarctica did both. The collapse has reshaped a part of the Antarctic landscape where coastal glacial ice was once thought to be stable.

The change happened fast. At the start of March 2022, the floating shelf fed by the Glenzer and Conger glaciers was still intact. By the middle of the month, it had fallen apart.

"The whole shelf collapsed in just around two weeks," said Christopher Shuman, a University of Maryland, Baltimore County, glaciologist based at NASA's Goddard Space Flight Center. The icy remnants of both glacial shelf ice and adjacent sea ice dispersed from the waters around Bowman Island within weeks. "All of this took less than a month," Shuman said. "It was quite the blowout."

Fast ice—a type of sea ice that becomes "fastened" to the edges of ice shelves, coastlines, and icebergs—is also part of the mix. For two years prior, the shelf was already in a state of decline. According to Catherine Walker of the Woods Hole Oceanographic Institution, the shelf was losing ice at an average rate of about 1 square kilometer per day through the natural process of iceberg calving.



January 9, 2022



March 23, 2022

But in early March 2022, the shelf in front of the Glenzer Glacier calved a substantial iceberg. Named C-37, the berg initially measured about 144 km² (56 sq miles). A few pieces broke off, such that C-37 measured about 81 km² on March 12. The substantial loss of ice meant the shelf disconnected from Bowman Island.

“Without being supported by a land anchor, the ice shelf was destabilized and primed to collapse,” said Jonathan Wille, a postdoctoral researcher at the Université Grenoble Alpes.

According to Wille, an atmospheric river on March 15 appears to have triggered the shelf’s final collapse. The weather system—which caused temperatures in eastern Antarctica to soar 40° C above normal—also enhanced ocean swells and amplified winds near the vulnerable shelf. This likely caused the ice in front of Conger Glacier to break apart and quickly disperse.

The loss of an ice shelf is problematic because it can indirectly contribute to sea level rise. “Ice shelves are essentially the ‘safety band’ holding up the rest of the Antarctic Ice Sheet,” Walker said. When they collapse, the ice behind them can more quickly flow into the ocean. “And that is what raises sea levels.”

By Antarctic standards, the ice shelf and glaciers that it held back are relatively small, so the impacts from the collapse are expected to be minimal. Scientists are more concerned about the location of the collapse.

“All of the previous collapses have taken place in West Antarctica, not East Antarctica, which until recently has been thought of as relatively stable,” Walker said. “This is something like a dress rehearsal for what we could expect from other, more massive ice shelves if they continue to melt and destabilize. Then we’ll really be past the turnaround point in terms of slowing sea level rise.”

Record low Antarctic sea ice extent could signal shift

by Marlowe Hood, Phys.org

Sea ice around Antarctica shrank to the smallest extent on record in February, five years after the previous record low, researchers said Tuesday, suggesting Earth's frozen continent may be less impervious to climate change than thought.

In late February, the ocean area covered by ice slipped below the symbolic barrier of two million km² (around 772,000 sq miles) for the first time since satellite records began in 1978, according to a study in the journal *Advances in Atmospheric Sciences*.

Researchers found that the key driver of ice loss was change in temperature, though shifts in ice mass also played a lesser role.

Both the North and South pole regions have warmed by roughly 3° C compared to late 19th-century levels, three times the global average.

Antarctica encountered its first recorded heatwave in 2020, with an unprecedented 9.2° C above the mean maximum, and in March a research center in eastern Antarctica saw temperatures soar 30° C above normal.

But extreme aberrations of this kind are recent. Unlike sea ice in the Arctic, which has diminished by 3% a year since the late 1970s, sea ice in Antarctica expanded over the same period by 1% per decade, albeit with large annual variations.

Ice cover during this year's austral summer shrank most around West Antarctica, which has been more vulnerable to global warming than the far larger East Antarctica.

Melting sea ice has no discernable impact on sea levels because the ice is already in ocean water.

But diminished ice cover is nonetheless a major concern because it helps accelerate global warming, explained co-author Qinghua Yang, a professor at Sun Yat-sen University in Guangzhou.

When white sea ice—which bounces the Sun's energy back into space—is replaced by dark, unfrozen sea, "there is less reflection of heat and more absorption," he said in a statement. "This in turn melts more sea ice, producing more absorption of heat, in a vicious circle."

Pristine snow and ice reflect more than 80% of the Sun's energy back into space, whereas open ocean absorbs the same percentage.

Startlingly, the record low 1.9 million km² on February 25 was 30% below the 1981-2010 average. The previous record low was just over two million km² in 2017.

Maximum sea ice extent in Antarctica has averaged about 18 million km² in recent years.

To analyze the causes of this year's record ice loss, researchers examined Antarctica's "sea-ice budget"—ice added and ice lost, year by year—as well as daily sea-ice drift, or movement.

"In summer, thermodynamic"—or temperature-related—"processes dominate the sea melting through poleward heat transport," the study concluded.

The record minimum sea ice extent in the Arctic — 3.4 million km² — occurred in 2012, with the 2nd and 3rd lowest ice-covered areas in 2020 and 2019, respectively. Maximum sea ice extent has averaged about 15 million km².

Ice sheets atop West Antarctica hold the equivalent of six meters of sea level rise, whereas East Antarctica's massive glaciers would raise global oceans by more than 50 meters.

Antarctica Welcomes the Millennium

by Dick Wolak



Graham Bell (British ornithologist) and Dick Wolak in Zodiac at Port Foster (Deception Island) at midnight, New Year's Eve 2000. *Ocean Explorer I* is in background.

Over the last 50 years, I've enjoyed brief encounters in Antarctica with persons of note, usually individuals well-known in political, military or polar circles. I spoke Russian on behalf of the Secretary of the US Air Force and the Director of NSF at Vostok Station. At South Pole, we hosted US Congressmen, National Science Board members, the Director of the Norwegian Polar Institute, Commander of the Pacific Fleet, US Ambassador to Australia, and Ruth Siple. On the Peninsula side, I met Sir Peter Scott, visited Elephant Island with the daughter of Shackleton's chief scientist on *Endurance* (Sir James Wordie), and wished Little America dog-driver, Norman Vaughan, well on his climbing venture to Mount Vaughan. But, just as memorable as any of those was the concentration of celebrities I encountered on New Year's Eve 2000 at Deception Island.

In December 1999, I set off to spend the holidays in Antarctica. I had a new job at the University of Connecticut but had been allowed a five-week leave-of-absence to fulfill a commitment to Marine Expeditions, Inc. (MEI) of Toronto. I was scheduled to work as expedition staff on three of their Antarctic trips starting in mid-December.

I joined the *M/V Lyubov Orlova* in Ushuaia, Argentina, delighted to find that my Expedition Leader was Laurie Dexter, one of thirteen Canadian and Soviet skiers who had completed the 1988 Polar

Bridge Expedition by skiing from Siberia to Canada via the North Pole (described in the book, *Polar Bridge: An Arctic Odyssey* by Richard Weber). We ventured south on December 22, following a typical schedule of lectures and landings. That changed dramatically when we entered the volcanic caldera of Deception Island and anchored in Port Foster. There, on December 30, we came upon the *Ocean Explorer I (OEI)*.

The *Ocean Explorer* was built in 1944 as an American troop ship (*USS General WP Richardson*) and had admirably served the U.S. military during World War II and the Korean Conflict. Steam-powered and 623 feet long, she was now a cruise ship (with her 8th name) configured for 680 passengers and in the midst of a 127-day world-wide cruise that had started in Athens in November. Her presence was part of a Marine Expeditions planned millennium celebration that included *OEI* and three of MEI's smaller ships (*Orlova*, *Shuleykin* and *Ioffe*) all in Port Foster for New Year's Eve.

A few days earlier, MEI had disembarked most of its round-the-world passengers from *OEI* in Ushuaia and flew them to an alternate millennium celebration in Santiago. A new group of passengers (who had paid for the Antarctic celebration) was boarded along with a host of "celebrities" for their extravaganza at Deception.

Prior to the evening's festivity, a lecture program aboard included former South African President, Willem de Klerk (Nobel Peace Prize winner with Nelson Mandela) and Robert F. Kennedy, Jr. For the younger set in the afternoon, there was The Moffatts, a pop-rock boy band made up of four 15 and 16-year-old brothers who had all been born within one year of each other.

The evening entertainment was anchored by The Chieftains, the traditional Irish folk band that had been officially honored as Ireland's Musical Ambassadors. The Chieftains were known for their very successful collaborations with popular musicians of many genres. This event would be no exception. Diana Krall, a popular jazz pianist and singer was aboard; Natalie MacMaster, a remarkably talented fiddler specializing in Cape Breton fiddle music was aboard as well. Dan

Aykroyd would be making a brief appearance, and Art Garfunkel was to be a vocal highlight. Of course, there had been seagoing challenges for the entertainers. Terry Heisler, a technician on *OEI* responsible for lighting, was amused by some of the preparations: "It was pretty humorous watching Art Garfunkel try and do sound check as his mic stand came flying at him. During most of this, his soundman was losing his lunch overboard. I couldn't get "Bridge Over Troubled Water" out of my head for weeks." In his 2017 book (*What is it All but Luminous*), Art Garfunkel reminisced, "I gripped the piano as I sang onstage. It was a rocky trip from the southern tip of Chile across the Drake Passage to the Antarctic Peninsula It was the last week of December 1999. The Garfunkels were little earth angels as we walked among the penguins at the close of the millennium."

The challenge for expedition staff on the smaller ships was the complete changeover of passengers with all their belongings to and from the *OEI*. *Orlova* was finished with the 80 tourists we'd embarked in Argentina and was taking on a new complement of 89 passengers from the *OEI*. With no dockage available, all of this had to be accomplished with gangway muscle and Zodiacs.



Expedition staff of M/V Orlova, 1999-2000. Laurie Dexter with life ring, and Dick Wolak, 3rd from right.

During a "Billboard" 40th anniversary interview in 2002, Chieftains founder, Paddy Moloney recounted the millennium party: "The band was invited to play on a cruise to the Antarctic, and Art Garfunkel, Diana Krall, Dan Aykroyd ... were on

that. My little job was to finish the night with an hour's music bringing it up to 60 seconds [to midnight]. ... Dan Aykroyd insisted on getting up and doing a funny dance and playing the harmonica."

As midnight approached, those of us who had been ferrying passengers and their luggage for much of the day were not inclined to remain with the tourists for the big moment. Certainly, being indoors for such an event in Antarctica made no sense. Several of us happily borrowed a bottle of the onboard champagne, fired up a Zodiac, and departed to get some distance between us and any of the ships. Our own little celebration was a delight.

The following morning, Paddy Moloney acted on a creative notion: "... I had this dream of going on top when the morning of the new millennium [dawned] and playing 'Morning Has Broken.' I just liked the feel of that. So I got up – it was freezing cold. but it was on the day [of the new millennium]." That "dream" resulted in a bonus track (new release) on The Chieftain's 40 Year Celebration album, *The Wide World Over*. The track's origin is described in the accompanying album notes:

"It was New Year's Day 2000, the dawning of a new day, a new year, a new millennium. We awoke setting sail from Deception Island, Antarctica Fellow shipmates, Diana Krall and Art Garfunkel, joined us in the ship's library (our make-shift studio) to brave the howling gales and churning seas to record this version of 'Morning Has Broken.'"

You can treat yourself to this lovely, haunting track framed with traditional Irish instrumentation on YouTube at:

<https://www.youtube.com/watch?v=FEhtHC1GOp4>

By the afternoon of January 1, we were satisfied that the digital world had survived Y2K and it was probably safe to return to civilization. We were back to business as usual with landings and lectures for our newly boarded passengers. Back in Ushuaia on January 8, we boarded our next group of 119 expeditioners, and were off for our scheduled Antarctic Circle crossing on January 14. There were

no more celebrities, but as always, Antarctica remained entrancing!

Machine Learning Pinpoints Meteorite-Rich Areas in Antarctica

by Katherine Kornei, Eos – Science News by AGU

While there's no better place to find space rocks than in Antarctica—nearly 2/3 of the meteorites collected so far have been found there—meteorite-hunting expeditions often rely largely on serendipity and the sleuthing skills of experienced participants.

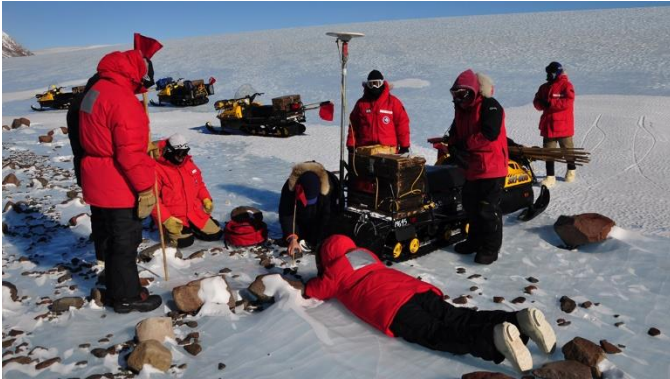
Now, researchers have developed a machine learning algorithm that they suggest reliably pinpoints meteorite-rich regions in Antarctica and could therefore streamline future searches. According to the new analyses, fewer than 13% of meteorites lying on the surface of the White Continent have been recovered to date.

Since the early 20th century, researchers have been collecting meteorites from Antarctica. Rocks from space tend to remain well preserved in the cold, dry environment, and their dark coloration stands in stark contrast to their white surroundings, said Veronica Tollenaar, a glaciologist at the Université Libre de Bruxelles in Belgium.

Meteorite-hunting expeditions accordingly tend to be time-consuming and labor-intensive—teams of volunteers regularly work for weeks at a time, crisscrossing the Antarctic landscape on snowmobiles "We hope to increase the chances of success for future missions," Harry Zekollari, a glaciologist at Delft University of Technology and a team member, wrote on Twitter. "To date, most meteorites on Earth were collected in Antarctica: about 50,000 in total...We think there are still 300,000 meteorites out there!"

To focus their search, the researchers considered only specific swaths of Antarctic terrain known as blue ice areas. These regions, which collectively encompass just 3% of the continent's surface, are prime spots for finding meteorites. That's because they aren't blanketed in snow—persistent winds and sublimation act in tandem to expose the ice underneath. Furthermore, the topography of blue ice areas often causes ice to flow upward in these

regions, effectively transporting to the surface any meteorites trapped within deeper layers.



Volunteers with the Antarctic Search for Meteorites program collect a meteorite in the Dominion Range of Antarctica. Credit: [NASA](#)

The team also folded three other data sets into their algorithm: surface temperature, ice velocity, and the slope of the terrain. Temperature matters because warmer conditions can cause meteorites to sink out of sight, said Tollenaar, and ice velocity is likewise important because rapidly flowing ice transports meteorites away. The effect of slope is less clear-cut, but it's a useful parameter to include nonetheless, the team found. "Through our analyses we learned that it interacts with the other properties, and thus including it helps in making good predictions," Tollenaar told Eos.

To train their algorithm, the researchers provided the precise locations of thousands of meteorites found in Antarctica. On the basis of that input, the algorithm flagged 106,687 grid cells—each measuring 450 meters on a side—as positively containing meteorites. By clustering positively flagged grid cells and retaining only regions larger than 4 km², the team defined more than 600 so-called meteorite stranding zones.

To evaluate their algorithm's output, the team compared the locations of predicted meteorite stranding zones with an independent data set containing both known meteorite stranding zones and nonmeteorite stranding zones (i.e., Antarctic regions known to have been searched by humans but that failed to yield a single meteorite). Tollenaar and her collaborators found that their algorithm accurately identified meteorite stranding zones and nonmeteorite stranding zones more than 80% of the

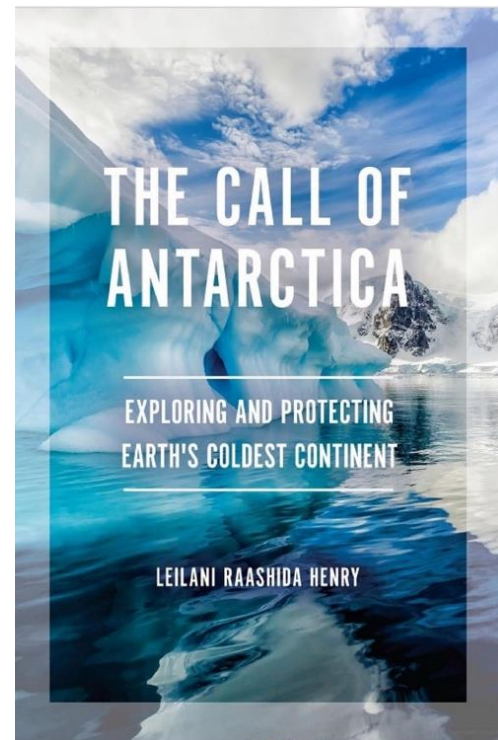
time. And because their algorithm flagged a significant number of meteorite stranding zones that are, as of yet, unexplored, only a small fraction of the meteorites sitting on the Antarctic surface have likely been collected to date, the team concluded—fewer than 13%, Tollenaar and her colleagues reported in January in *Science Advances*.

That's a small fraction, said Jim Karner, a planetary scientist at the University of Utah in Salt Lake City and co-principal investigator of ANSMET, the Antarctic Search for Meteorites program, who was not involved in the research. But it bodes well for finding more meteorites, he said. "As someone who gets a grant to go recover meteorites, [I think] it's encouraging that there [are] a lot more out there."

Book Review: *The Call of Antarctica*

by Joan Boothe

Antarctican Society member Leilani Raashida Henry's *The Call of Antarctica* is a short but beautifully produced, wide-ranging introduction to Antarctica — its human history, geography and geology, biology, environment, politics, and scientific work being done there today. Written in



simple text at a young adult level, it is very well done. What makes this book special, however, is that Henry tells us not only the story of Antarctica, but also that of a single member of the 1939-41 United States Antarctic Service expedition — her father, George W. Gibbs, Jr., a sailor on the *Bear* who was the first Black man known to have set foot on the Antarctic continent. His story, based on unpublished diaries, is the backbone of this book.

In her author's note at the end of her book, Henry writes that when she was young, she had little interest in Antarctica. When her father died, however, the writer he'd asked to help him complete his story backed out, so she decided it was time for her to learn about Antarctica and her father's adventures. She dug into written works about the continent, made her own trip south, talked with scientists, carefully read her father's Antarctic diaries, and connected with two surviving members of the USAS as well as expedition descendants. This book is the result. She concludes her author's note writing, "This book honors their efforts to connect us to the continent. It is an exploration of the link between all living things to Earth, through the intersection of history, science, politics, and art of our planet's most magical place: Antarctica."

Henry introduces each chapter with an extended quote from her father's Antarctic diary. Chapter One is a compressed summary of Antarctic history preceding the USAS expedition. Chapters Two and Three are about the USAS and Gibbs' experience as a man seeing Antarctica for the first time, but in particular, as a Black man on the expedition. This is a highly personal story wonderfully told. Several breaks from the main narrative go into greater detail about segregation at the time, Gibbs' life before and after the expedition, and related matters. Henry's account of the USAS, which one historian has described as "the most poorly reported major expedition in Antarctic History," is an important contribution to our understanding of the USAS voyages of the *Bear*.

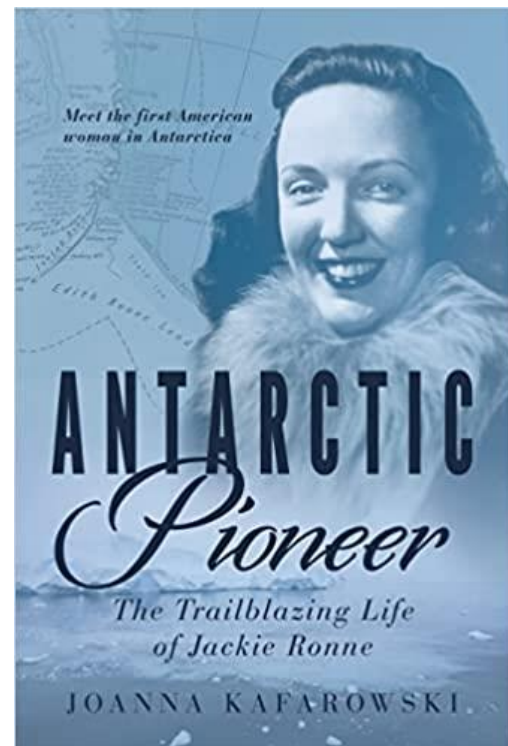
Chapter three concludes with a brief summary of Antarctic history following the USAS. Henry then turns to the story of Antarctica itself with chapters on Ice, Flora & Fauna, what she calls "Human-Made Trouble" (climate issues, sealing

and whaling, environmental issues, tourism), concluding with a chapter on Working & Living in Antarctica.

In sum, *The Call of Antarctica* is two intertwined stories. It is a good, well done, summary introduction to Antarctica. What makes it stand out from other good introductions, however, is the second element, the previously untold story of George Gibbs on the USAS.

Book Review: *Antarctic Pioneer: The Trailblazing Life of Jackie Ronne*

by Kristin Larson



Shadows have long cast unflattering light over the 1946 Ronne Antarctic Research Expedition (RARE). Rumors of interpersonal strife and loathing of the expedition leader, Finn Ronne, stole headlines and undermined this remarkable year of human endeavor and scientific investigation. As a result, the record of this last large-scale private expedition with its daring flights and epic dogsledding has been relegated to archives, where it has remained largely unappreciated, and even ridiculed. A new, meticulously researched and wonderfully written book by Antarctic Society

member Joanna Kafarowski changes all that, and brings this era back to us by profiling the life of RARE's key architect, Jackie Ronne.

Until her death in 2009, Jackie Ronne (nee Edith Ann Maslin) deflected credit for the RARE expedition and even down-played the fact that she and RARE teammate, Jennie Darlington made history as the first women to over-winter in Antarctica. Instead, Jackie wrapped herself in the the feminine trappings of the day, where men dominated, and women supported them in unobtrusive ways. Kafarowski expertly pulls back the apron in this book, uncovering the true Jackie as both a self-effacing force in a good suit and heels (and never without perfectly applied lipstick); and a fully-realized, highly-connected woman expertly navigating the gauntlet of male-dominated Antarctica and Cold War Washington DC. It is revealed that Jackie's talents as an intelligent writer, speaker, and organizer greased the skids of the Ronne's life, and are talents that Finn depended on heavily without giving much credit to Jackie.

Very few books have provided such engrossing details on this overlooked era in Antarctic history- the period between the Heroic Age of Polar Exploration populated by the likes of Amundsen, Scott, Peary and Shackleton, and the current period of government-dominated research programs stemming from the Antarctic Treaty. Moreover, I found it particularly compelling that Jackie managed to juggle her multi-faceted roles, all while retaining her vivacious, happy demeanor with little trace of ego. Knowing Jackie, as I had the pleasure of for many years, she would never have embraced the title of "feminist role model" but in truth she was. A stolid woman equally at ease in polar garb and in holding forth on the world stage, Jackie demonstrated a woman could be smart, beautiful and and extremely strong in life-threatening conditions. Kafarowski expertly weaves these strands together - historic Antarctica, mid-century diplomatic life, and the details of Mrs. Ronne's personal life - in an original way so we are left with a clear and new way of understanding the trajectory of this era.

Antarctic scholars will greatly appreciate this addition to their library with its well-documented,

annotated, referenced and indexed narrative. Kafarowski has given us a wonderful gift in allowing Jackie's story to see the light of day. The book is available for pre-order now; it will be released in mid-May.

JOHN J. KELLEY, 1933 - 2022

by Eleanor Kelley



John J. Kelley 1933-2022

Longtime Fairbanksan John Kelley passed away peacefully on 11 February 2022 at age 89 due to cardiovascular complications, in a local care home with his wife of 52 years, Eleanor, at his side.

After entering Pennsylvania State University to earn a B.S. degree in geophysics and geochemistry in 1958, he worked for several years (1959-1968) as graduate student and senior scientist in the Department of Atmospheric Chemistry at the University of Washington in Seattle, from where he was sent to Barrow in 1959 to gather data at the Arctic Research Lab (ARL) on UW Project Husky, a study investigating movement of carbon dioxide and trace gases through the Arctic tundra, sea surface and atmosphere.

John began working at the University of Alaska Fairbanks (UAF) as a doctoral graduate student and professional staff member in 1968 in response to recruitment by Professor Donald Hood, first director of the Institute of Marine Science. In 1974 he received his Ph.D. in chemical oceanography from the University of Nagoya (Japan) and became a tenured faculty member UAF, retiring from the College of Fisheries and Ocean Sciences as professor emeritus in 2010. During this period, he also served on professional leave as program manager for meteorology and oceanography at the National Science Foundation from 1974-1976, and

director of the Naval Arctic Research Laboratory (NARL) in Barrow from 1997-1980. Highlighting NSF Polar Ice Coring Program (PICO) 1989-1996 his 50 years' professional life, John regarded as most personally pleasing his interlude at NARL and years later his management experience with the that culminated in the world's deepest penetration at the time of the Greenland Ice Cap (with an eye to use of environmentally friendly drilling oils developed at UAF).

Condensed from *Daily News-Miner* Feb. 27, 2022



The Antarctic Society

www.antarctican.org

August 12-14, 2022 Burlington, VT Gathering Registration

Name (s) _____

Address _____

Email _____ Phone _____

Qty.

_____ Full Registration(s) - includes day programs, Reception on Friday evening, *Spirit of Ethan Allen* sunset dinner cruise on Lake Champlain on Saturday evening and the picnic on Sunday (\$175.00 per person **before** June 1, 2022, \$225.00 per person **after** May 31, 2022)

_____ Guest ticket(s) for Friday Reception, Saturday *Spirit of Ethan Allen* and picnic (\$90.00)

Guest(s): _____

Total amount enclosed: \$ _____

Refund policy: 100% prior to March 31, 2022; 50% April 1 – June 30, 2022.

Mail your check and registration form to:

The Antarctic Society
35 Cherry Street Unit 701
Burlington, VT 05401

Would you like to visit the Shelburne Museum at 1:00 p.m. on Thursday, Aug. 11? ___ Yes ___ No

Would you like to attend no-host dinner on Thursday evening in Burlington? ___ Yes ___ No

Do you or another of your registrants require handicapped access? ___ Yes ___ No

Do you or another of your registrants have a special dietary need? ___ Yes ___ No