

Antarctic Meteorite



Newsletter

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Curator Comments
Kevin Righter, NASA-JSC

On top of an already challenging year, this past Spring and Summer the Antarctic meteorite program lost three individuals who had a significant influence on the program: ANSMET founder Bill Cassidy, John Annexstad, and Wayne Gillespie. Bill and John lived long lives full of adventures, while Wayne left us all too early at the age of 52.

Wayne had designed and implemented the Antarctic meteorite database at JSC, much in need of updating from its 1980s predecessor. Daily use of the database made all of us grow closer to Wayne and his acumen and wit.

https://www.galvnews.com/obituaries/article_6fb19c02-3a3b-5741-b14c-7ef92125e0bb.html

Bill had a most significant influence on the ANSMET program as well as planetary science in general and we invite readers to learn more about his contributions through several memorials and tributes that have been published in the last few months:

<https://onlinelibrary.wiley.com/doi/full/10.1111/maps.13524>

http://www.psr.d.hawaii.edu/Archive/Archive-Remembrance/PSRDremembers_William.Cassidy.html

<https://www.geology.pitt.edu/dr-william-cassidy>

John left NASA in 1986 and went on to inspire students at Bemidji University, including current ANSMET science team co-leader Jim Karner. He also conducted a NASA Oral History office interview that can be found here:

https://historycollection.jsc.nasa.gov/JSCHistoryPortal/history/oral_histories/AnnexstadJO/AnnexstadJO_3-15-01.htm

<https://www.bemidjipioneer.com/obituaries/obits/6533042-Dr.-John-Annexstad>

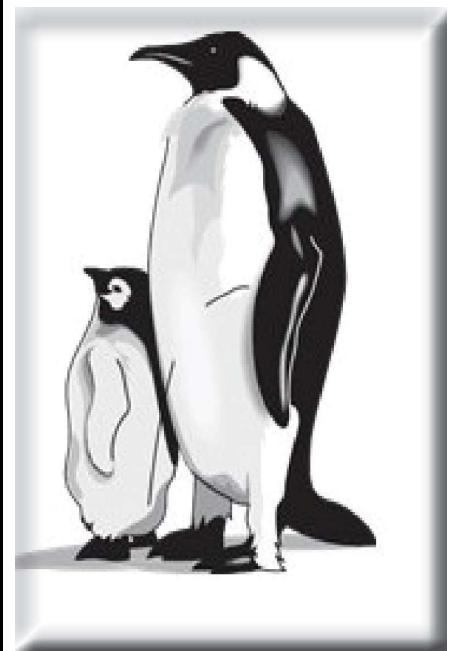
Because Bill's and John's influence on the program began so long ago (late 1970s) and they overlapped with so many people either on ANSMET field teams, curation staff, or Meteorite Working Group committees, the idea was floated to invite friends and colleagues to share their remembrances and photos of Bill and John. What a rich response we got! Below we share some stories, remembrances, and personal thoughts and photos of these two individuals, contributed by field party members, and colleagues in the program over several decades.

A periodical issued by the Meteorite Working Group to inform scientists of the basic characteristics of specimens recovered in the Antarctic.

Edited by Cecilia Satterwhite and Kevin Righter, NASA Johnson Space Center, Houston, Texas 77058

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Some of you may not know the early story that connects Bill to John, to me, and to NASA. So, I'll relate it. Bill heard about the Japanese meteorite finds in East Antarctica and thought about why that occurred. He reasoned that the interior Antarctica glaciation would trap and move outward meteorites that fell, and that the Transantarctic Mt. range might trap them in spots. He convinced the NSF to sponsor him in a meteorite hunt there, where he went in the 1976-77 season.

Not long after, Larry Haskin, my NASA Division Chief, knowing that I did research on both meteorites and lunar samples, came to me with a question. (Neither of us were then aware of Cassidy's finds). When the new lunar curation building was finished (which occurred in July 1979), the existing lunar processing facility in building 31 (constructed rapidly after the Apollo missions) would be available. Could I write a report suggesting possible ways this older facility might be utilized to process selected meteorites for scientific research in a way that would contribute to their scientific value. I did that; but at the time we saw no obvious way to implement it.

Later, John Annexstad (in my JSC division), knowing about my report, heard about Cassidy's meteorite finds. He came to me and asked if research on Cassidy's meteorites might accrue value if they were processed in the old JSC curation facility. We both liked the idea, and it was sold to JSC management and NASA Headquarters as worth supporting. During this time Annexstad contacted Cassidy about the idea. I think a major argument that sold Bill was that the justification for his NSF grant could be stronger with some NASA support of a type that might increase the value of his finds. Bill also realized that the NSF Antarctic Program (at that time) had little interest in hunting meteorites. With the potential for some NASA support, Bill, John, and others sold NSF on some sort of coordinated activity, with the proviso that the Smithsonian Institution would be the final repository of the meteorites.

With a broad Antarctic Meteorite program coming, Annexstad and I divided the JSC workload. I directed the preparation of the old lunar processing facility for processing meteorites, established meteorite-specific procedures, and initially oversaw selection of appropriate collection materials to be sent to Antarctica. John, being an old hand at polar field activities, became Cassidy's right-hand-man for Antarctic meteorite searches. He also continued to help establish details of what became a three-agency agreement (NSF-NASA-Smithsonian), an essentially unheard of arrangement at that time. Cassidy went on to lead many successful collections of Antarctic Meteorites

And all of you know how amazingly successful the three-agency Antarctic Meteorite Program has been ever since.

Don Bogard
JSC Antarctic meteorite curator, 1978-1984; MWG member, 2004-2007

Serving as Antarctic Meteorite Curator 1986-2000 was the highlight of my NASA career. I really enjoyed working with everyone in the program including the collection team under Bill Cassidy, and the NASA and Smithsonian curation teams. It goes without saying that Bill was essential in getting the program going and running collection for many years. He was easy to work with and had a gentle way of dealing with issues. Even in retirement he helped me, and Glenn navigate the thorny issue of transferring a portion of the collection to the Smithsonian, as required in the 3-agency agreement, but resisted by NASA. Bill also hand selected and trained Ralph as his able successor.

John Annexstad had retired from NASA before I arrived but was in the background and was a real support to me as I started in curation. He was a font of knowledge about both meteorites and Antarctica. I really appreciated his sage advice.

Marilyn Lindstrom
JSC Antarctic meteorite curator, 1986-2000

Two individuals of great importance in my life have passed away earlier this year. Bill Cassidy and John Annexstad played significant roles in influencing and directing a substantial portion of my life.

Bill was many things to me - first as an employer, but quickly he became a hero, mentor, friend, colleague, and tentmate. It was a privilege and joy to be in the field with him. His sense of humor meshed with mine and he could erupt with a funny story or joke at any time. He would listen to suggestions and alternative views and if they had merit, they would be used to conduct searches for meteorites, plan for future seasons, and act on any of the myriad details of running ANSMET.

I had my first opportunity to tent with Bill during the 1988-89 field season when we were working at Lewis Cliff. Over the previous few years of working with him, I had already seen first-hand how he had perfected the art of taking naps. Bill was a champion sleeper. I was always amazed at his capability to doze off at any time and in any position. But it wasn't until I shared a Scott tent with him that I could see the true depth of this skill. One day during a storm, which kept us tent bound, I was reading and tending the stove. Bill had nodded off, but finally succumbed to the inevitable and crawled into his sleeping bag for a real nap. About an hour later, above the roar of the stove, I heard this far away voice from the other side of the tent saying "Help. Help me". I glanced over to Bill and determined that he was okay and that he appeared to still be asleep. A short while later I heard the same plea. I thought Bill was having a heck of a nightmare, but still he seemed to be okay, so I returned to my reading. Sometime later Bill managed to rouse himself and exit his sleeping bag. I mentioned that I had heard him talking in his sleep and calling for help. He replied that he often gets into a deep, paralytic sleep that when he starts to come out of it, he can't move. He said that he had trained his kids to help him get up and moving when he reached that state. Well, that made quite an impression on me at the time. And now that I am descending into senescence, I find myself following Bill's example more and more and have found that I too have experienced (though not to the extent that Bill had) those deep and profound restorative slumbers from which the brain struggles to make the limbs follow instructions upon waking. I have Bill to thank for showing me the way.

I had the privilege of tenting with John my first ANSMET expedition in 1980-81. When John found out that Bill had offered me the position of mountaineer, he immediately and enthusiastically introduced me to the Antarctic during long phone conversations and sending me papers on the Antarctic meteorites. Once we met in Christchurch on our way south, he continued to "show me the ropes", introduce me to people he knew, and made every attempt to prepare me for my first season with ANSMET. In McMurdo we worked on Nansen sleds, tested gear and snowmobiles, and made memorable trips to around McMurdo in preparation for the fieldwork. We worked well in the field together and he was always willing to pass along his knowledge based upon his Antarctic experience. I learned much about Antarctic logistics and conducting long traverses over the polar plateau through my experience with John that formed a significant foundation that I was to use in all subsequent years with ANSMET. I am deeply indebted to John for his mentorship in my early Antarctic career.

John Schutt
ANSMET mountaineer, 1980-present



*Figure 1. 1980-81 Field Season -
John Annexstad at Allan Hills
(photo credit: John Schutt)*



Figure 2. 1988-89 Field Season - Bill Napping in Beardmore Camp Hut (photo credit: Ralph Harvey)



Figure 3. Bill Cassidy - 1980-1981 Field Season (photo credit: John Schutt)

Ahhh, Bill Cassidy and John Annexstad. Two guys who were larger than life and who had a big influence in my professional life decades ago. So sad to lose them this year.

There are so many stories about these two dudes, many are represented here by others. Working in the Antarctic Meteorite Lab and on the Meteorite Working Group with these two (and others of course) was an interesting time for sure. Bill and John had deep respect for each other, however, they didn't always agree on how things should go. In the end they both saw the wisdom their collaboration brought to the situation to make ANSMET a better run program.

Bill was a gem. Geez that man could tell a story! Sitting around the tent after a long day of meteorite searching, we laughed so hard our bellies hurt. Bill got particular joy out of fooling with the field team. When the team was all together looking at the ground, he came from behind and flapped his Bear Paw gloves in such a way that it sounded like a distant helicopter. The team looked up searching the skies getting into a tizzy about the possibility of visitors or food resupply. Bill just stood marveling at the scene.

John loved being the NASA dude in McMurdo. We were never on station at the same time, but I heard many stories from the station crew about Big John. John loved being in the field. Each season John returned to the lab with Antarctic "hero" shots of the ANSMET team members from that year. Remember yours Hap? Before my first Antarctic field season, John came by my office often to tell me stories and give recommendations on what personal gear I needed. He thought a specific Swiss army knife was absolutely imperative for success. I still use the one he gave me as a gift from 1984 with the same knotted parachute cord that I continue to cherish.

Going through old photos has brought a surge of memories from a time long ago. RIP Bill and John.

- Robbie Score

JSC Antarctic meteorite lab manager 1978-1996;
ANSMET team member 1984-1985 and 1988-1989;
MWG secretary 1990-1996



Figure 4. Bill Cassidy sitting on a Nansen sled in camp after a long day in the field, 1979-1980 field season (photo credit: NASA/JSC)



Figure 5. John Annexstad in a typical seasonal field "Hero" shot (photo credit: NASA/JSC)



Figure 6. Meteorites Arriving (photo credit: NASA/JSC)

It was always a thrill, and I am sure still is, to receive the load of meteorites from the season. John was always there to direct the staff. In this picture from left to right: Ed Miller, Bob White, John Annexstad, Don Bogard, Liege (Bill) Williams, Ed Cornitus



Figure 7. Bill Cassidy during crevasse training before heading to the field (photo credit: NASA/JSC)



Figure 8. Bill Cassidy and John Schutt 1988/98 field season (photo credit: Robbie Score)

I am deeply grateful to Bill for giving me twice the opportunity to be part of his team. Going to Antarctica probably meant more to me than most.

In the 1960s, I had measured the natural and artificial radioactivities of countless ice samples collected in many regions of Antarctica over more than 10 years by my PhD advisor at the University of Brussels, Edgard Picciotto.

But...all I could do was to pick them up in the "Glacières de Bruxelles" where the samples were stored frozen. My PhD research had been partially funded through a NSF grant to Ohio State University and thus, in 1969, as I was passing through Columbus on my way to WashU in St Louis where I had just been hired to study the Apollo samples, Colin Bull, the then director of the Institute of Polar Studies, asked me to join the first all women team to Antarctica that for many years he had fought for.

I knew a lot about ice, but the 4 women team would go to the Dry Valleys where there is none! And, foremost, the promises of scientific return from studying lunar samples far exceeded for me the appeal of a trip to

the White Continent. Thus, in 1969, I thought that the Antarctic part of my career was behind me.

BUT, when Bill Cassidy founded ANSMET AND started taking outside collaborators (an unusual practice for NSF grantees), I wrote him a letter and he invited me to two seasons, in 1981 and in 1990.

Bill was such a wonderful person: calm, steady, patient, and all with the most wonderful dry sense of humour.

I'll never forget the time when our skidoos collided on a very cloudy day. Bill slowly stepped down from his, walked towards me, and acted as if he was going to give me a ticket for what he considered as the first skidoo collision in Antarctica.

Also, he loved to tell me jokes because I am not good at remembering them and I laugh each time as loudly whether it is a new one or not.

So Bill, thanks for the bottom of my heart for the opportunities to experience both your friendship and Antarctica.

Ghislaine Crozaz

In 1981, at the Antarctic Orientation Meeting in Washington, I met John Annexstad for the first time. It was a memorable encounter...

The meteorite search crew that year included John Schutt, Bob Fudali, Ursula Marvin and myself (Bill would arrive later in the season).

Well, John cornered me and told me that we women were too weak to even steer the skidoos.

It did not impress me at all and certainly not Ursula who had extensive field experience on most continents and sometimes in very difficult situations.

Years later, Randy Korotev told me that the curatorial facility did not expect the return of many meteorites that year BUT, somehow, we managed to find more than in previous years.

Over the years though, I learned to appreciate John on field trips associated with the Met. Soc. meetings. After he moved to Bemidji, I realized how caring for his students he was when he sent me one of his best for graduate studies at WashU. And after my husband died, he wrote me a long and moving letter.

I have long since concluded that, like my father-in-law who volunteered to serve in WWII, John learned to protect country, family... and I guess the "weaker" sex.

So, RIP Big John.

Ghislaine Crozaz
ANSMET field team member 1981-1982 and 1990-1991; MWG member 1981-1985

I met and worked with John and Bill in the course of 16 intermittent years as a member of the Meteorite Working Group.

Bill and John put together a program that has brought out the best in the scientific enterprise. ANSMET was and is the equivalent of a space mission from which the return has been remarkable. It united the efforts of three(!) federal agencies. Thanks to Bill and John, ANSMET and MWG has been guided by a democratic, inclusive notion of how science should work. And ANSMET creates opportunities for participation and adventure that are rare and life changing. The achievements of the program reflect the values and rest on the pioneering efforts of Bill and John. It is a privilege to have known and worked with them.

An observation variously attributed to Maya Angelou and Carl Buehner tells us that, "At the end of the day people ... will remember how you made them feel." Bill and John made me feel welcome in and glad to be a part of a very special community.

Greg Herzog
MWG member, 1988-1991; MWG chair, 1999-2005

Dr. John Annexstad was perhaps my most important academic mentor, in the fact that he steered me into a career in planetary science. My first interaction with John was in my first quarter of my freshman year at Bemidji State University in 1990. I had taken Geology 100, and the last two weeks of class Dr. Annexstad introduced the class to planetary geology, the solar system, and... meteorites! I was hooked. I quickly declared Geology as a major and was encouraged by John to pursue a minor in Space Studies. John had come to BSU after his many years at NASA JSC, and he quickly developed the Space Studies minor, which explored planetary materials as well as space policy, law, ethics, etc., an interesting multi-disciplinary focus, and a popular minor. He also worked hard to facilitate and promote the NASA Space Grant program in Minnesota, which provides small scholarships to undergrads involved in space science studies. I was the recipient of some of those funds for a couple of years at BSU, so I really appreciated that! I guess I would say that John brought planetary science to Bemidji State- he hooked a lot of geology majors with his classes, which featured real thin sections of Apollo rocks, and meteorites! That was fascinating

for undergrads, as were his tales from the Apollo era at JSC and his exploration and meteorite hunting in Antarctica. I even recall John lobbying to hire a young Ralph Harvey just after he took over the ANSMET program, (truth be told, Bemidji would have probably been too cold for Ralph :).

In addition to bringing planetary science to northern Minnesota, John helped many of his students get into the planetary science community. He personally helped me land a summer science internship at the U of Tennessee with Larry Taylor, which resulted in an abstract to LPSC- a big deal for an undergrad! And most important to my career, John introduced me to Jim Papike, and helped me get into the Institute of Meteoritics for graduate study. Over the years John helped place many students into planetary science grad schools and facilitated many undergrads attending and presenting at LPSC. He was a beloved professor at BSU, and I, like many others, am grateful for the time I spent with him!

Jim Karner
ANSMET Co-PI



Figure 9. On the occasion of Bill's 60th birthday, Jan 3, 1989, "the girls", Robbie Score and Monica Grady, somehow made Bill a cheesecake birthday cake in a cast-iron fry pan. Bill probably didn't need such a big knife. Robbie's anticipating, (photo credit: Randy Korotev)

I first really got to know Bill Cassidy when I was fortunate enough to be asked to participate in the 1984-1985 ANSMET field season to the Allan Hills - pretty heady stuff for a then graduate student. I also got to share the 1988-1989 field season with him.

Bill's dedication to the field of meteoritics is apparent to anybody in the field, so rather than belabor his obvious contributions to our field, I thought I would share a few more personal stories about Bill that will be new to most people. I always enjoyed my time with Bill, whether it was in the field, at a scientific meeting, or just relaxing with a drink. I particularly enjoyed his quiet sense of humor, which often crept up on you unexpectedly.

My first field season on Antarctica was during 1984-1985 when we used helicopters to reach the Allan Hills and then convoyed by snowmobile to the Near, Middle, and Far Western ice fields (plus John Schutt and I made a several-day jaunt to Elephant Moraine). Because of other obligations, Bill didn't come out to the field immediately, but joined us halfway through the season. His arrival by helicopter was a much anticipated event, both because we were looking forward to him joining us, but also because he was going to bring us our first mail since we'd gone into the field.

On the day he was to come join us, he conscientiously went to the post office, collected all of our mail in a bag, and put it safely on the bunk of his room near the rest of his gear. Apparently, it wasn't clear for much of the day if the weather was going to let him fly as scheduled, and the final decision to go was made in something of a rush. Bill made a mad dash to his room to grab his gear and, in his haste, left the mail sitting on his bed. When he arrived at our Allan Hills camp, he was welcomed with much joy, which was followed by period of happy greetings and general conversation.



Figure 10. Bill is welcomed to the Allan Hills Camp

Figure 11. And then someone asked where the mail was...





Figure 12. Bill, moments after being asked about the mail he was to bring

Fortunately, Bill survived (any thoughts of stringing him up were quickly abandoned - we had the rope, but no tree, plus he obviously felt so bad about not having the mail that it was hard to be mad!).

At the end of this particular season I also had the good fortune to travel on several C-130 trips with Bill, one to the South Pole station to service the dust collector he had there, and one to do a transcontinental flight intended as a reconnaissance of a number of new ice fields, including the Anderson Hills. The original plan for the reconnaissance flight would have taken us most of the way across the continent, possibly making it the first transcontinental flight since IGY. However, when we got to the Anderson Hills, it looked like such an intriguing spot that the pilot decided we should do a 'ski drag' to test to see if a suitable landing site was available.

Unfortunately, the location we came down on had very hard packed snow and the ski drag ended up smashing the hydraulics in the landing gear. Hydraulic fluid streaming over the plane's back windows, the pilots decided we needed to leave the gear down; if the landing gear had been lifted there might not have been enough fluid to lower them again later. The extra air drag from the lowered landing gear limited our range severely and it was decided we had to head straight back to McMurdo or risk running out of fuel (at the time, it wasn't clear we would make it all the way back even then).

One of the things that always impressed me about Bill was that he was a pragmatist and quite unflappable. While Bill was clearly extremely disappointed that we weren't going to be able to visit all the ice fields he'd wanted to get a look at, he didn't waste any time bemoaning fate, but instead discussed the sites we had managed to see. The picture below shows him calmly reading a book while we headed back to McMurdo, unsure if we had enough fuel to make it back or if the plane's landing gear would work when we did make it back. In the end, we did make it back without running out of fuel, but the landing gear didn't work and we got to slide down the Williams Field runway on the plane's belly (to this day, the smoothest landing I have ever experienced in a plane).



Figure 13. Bill with his airplane-crash face on...

One of my favorite memories of Bill was when we were hanging out on the Beardmore Glacier waiting for planes to come pick us up at the end of the 1988-1989 field season to the Lewis Cliff Ice Tongue and the MacAlpine Hills. We spent a number of days at the abandoned Beardmore Camp waiting for pick up because the weather refused to be good at McMurdo and Beardmore at the same time. After a while, just sitting around got to be pretty boring and we started passing books back and forth to help pass the time reading. At one point I looked up from the book I was reading to see Bill wearing 3D glasses. He was reading a 3D Comic book called 'Vixens of Venus' (I think that was the title; Ralph Harvey will know the correct title (see * below) since I think it was his comic book). Not wanting to miss such a nice photo op, I managed to use my left hand to advance the film in my camera, guess at a focal distance and exposure, and take several un-aimed bracketing pictures while I continued to "read" the book in my right hand. After every picture, Bill would look up and around to see where the shutter sound was coming from, but he never spotted my camera, just me reading my book. The picture in which I got the exposure and focus more or less correct is below (sadly, it doesn't show the cover of the comic book).



Figure 14. Bill reading "Vixens of Venus" in 3D while waiting at Beardmore camp in the Transantarctic Mountains to be picked up from the field. Field season 1988/89 (one of my favorite pictures of him).

While I was putting these stories onto the page, I found I was continually interrupting myself as additional memories intruded on my attention. It proved to be a bit difficult to limit myself to just the stories above. Clearly, Bill made a big impression on my life, just as I know he did on the lives of so many others.

Scott Sandford
ANSMET team member, 1984-1985, 1988-1989 and 1998-1999

*from Ralph Harvey:

"- Pulleeez, Scott, it was MUCH more sophisticated reading than Vixens of Venus. The title in question was "Leather Goddesses of Phobos", a companion booklet to the legendary text-based, interactive-fiction-style computer game of the same name. And, believe it or not, the comic book was not just red-blue anaglyph 3D, it was also scratch-and-sniff! No wonder Bill was mesmerized. I am pretty sure John and I had put the game on the first-ever ANSMET computer and if I recall we played it occasionally for years afterward.

For you doubters, that game was so influential that the original 3-D comic book can still be found online. Search for "the Adventures of Lane Mastodon", #91. And thanks to the world of emulation, you can still play online

<https://www.myabandonware.com/game/leather-goddesses-of-phobos-1nw/play-1nw> "

Ralph Harvey,
ANSMET PI 1994-present



Figure 15. John Annexstad and Bill Cassidy (shown above at the 1985 Bordeaux MetSoc meeting).

John Annexstad and Bill Cassidy (shown above at the 1985 Bordeaux MetSoc meeting) were my good friends. They shared a background of dangerous and thrilling exploration ventures. John wintered over at Byrd Station during IGY, at the tail end the heroic age of Antarctic Exploration. Bill did amazing things like driving, alone, across the Andes from Chile to Argentina 60 years ago. He related that high in the Andes on that drive he saw in the distance a group of people sitting in a small circle and talking. Amazed to see anyone in that place he drove over to talk with them and discovered that they were actually centuries old Incan mummies sitting and swaying back and forth in the wind. If you haven't heard the story of his Campo del Cielo expedition Land Rover ask me some time. John always had in a prominent place in his office at JSC his ice ax and pair of crampons. He was clearly ready to return to Antarctica on a moment's notice. I add that I grabbed this office the moment he retired and have been happy there ever since. During the 1985/86 ANSMET season I accompanied Bill to the South Pole to change cosmic dust collectors that he and Bob Wittkowski has set up in the South Pole Clean Air Station (shown below). I stayed an extra day at the South Pole (because I could!), and when I returned to McMurdo, I went looking for Bill and found him in the cafeteria having breakfast with a similarly very large, muscular man. Bill introduced him to me as Lord Shackleton, Ernest Shackleton's son. Just another of Bill's acquaintances. Lord Shackleton related that the previous day NSF had tried to fly him, for the first time, to the South Pole, but that halfway there his plane had developed a problem and had to turn back. He said he had not even gotten as far south as his father had.



Figure 16. Bill approaching the South Pole Clean Air Station-site of the first Cosmic Dust collector in Antarctica.

In addition to exploring remote places, Bill and John enjoyed organizing special workshops on meteorite stranding surfaces and the recovery of meteorites in hot and cold deserts, largely as an excuse to bring together many good friends in interesting places. At a 1988 workshop at UPitt Ed Fireman (Harvard Smithsonian) was coming to the end of his presentation on U-Th series dating of ice surrounding a meteorite we had recovered during the 1985/86 ANSMET expedition in the process of emerging from the ice (a very rare discovery). As he described it, the last step in his analysis was moving the final gas into the mass spec for the age date. Unfortunately, Ed opened the wrong stopcock and directed the gas into the lab air by mistake. End of analysis and end of talk. Without missing a beat Bill said, "Well Ed, I hope that next time you can hold your gas!"

A 1994 workshop organized by John Annexstad, Ludolf Schultz and myself (below) was held in Nordlingen. For many of us that was our first visit to the famous town and famous surrounding crater.



Figure 17. A 1994 workshop organized by John Annexstad, Ludolf Schultz and myself in Nordlingen.

Although John doesn't receive much credit for it, this and similar workshops were instrumental in pointing people to likely new places to recover meteorites, especially Africa and Chile.

At the 1993 Vail MetSoc meeting there was a special dinner for Bill Cassidy celebrating many years of ANSMET leadership. In preparation for this dinner, and over the course of the previous year, I carted a satellite photo of Antarctica to every meeting I attended, gradually acquiring signatures of every individual who had accompanied Bill to Antarctica. The night before the dinner I was finally acquiring the final signature (from Jerry Wagstaff), and as he signed the end of the now very old silver pen fell off and the imaged was flooded with glossy silver ink. I spent hours carefully removing the ink with rubbing alcohol, but in the process one signature was largely erased. No-one, including Bill, could ever figure out whose signature that had been. The image below shows the dinner.

Mike Zolensky

ANSMET team member, 1985-1986, 1991-1992; Stardust, Hayabusa Curator.



Figure 18. Ludolf Schultz is giving an engaging talk, and in the audience, you can see Monica Grady, Robbie Score, Kuni Nishiizumi, Bill, Ghislaine Crozaz, Gary Huss, Ralph Harvey's arm and Sasha Krot.

When the news came that Bill Cassidy had passed away earlier this year, I had a few immediate thoughts. One was of immense gratitude that I had the chance to join Bill in the field at the ANSMET season 1986/87. The other was that I was enormously glad that I had managed to visit Bill (and Bev) at his home near Pittsburgh just about two years ago, and we had the chance to reminisce about all kinds of things. I have to go back to the mid-1980s. I was a young PhD graduate and I had seen the presentations that Bill gave about earlier field seasons in Antarctica, recovering lots of interesting meteorites. As somebody who liked to travel all around the globe, the chance of getting to Antarctica, with all its exploration history that I had devoured books about, was just too tempting. So, I just asked Bill, and to my great surprise he more or less told me to write a formal application and before I knew it I was accepted - I even had to delay the trip by a year because his acceptance came so fast and almost unexpected. The trip to Antarctica was a life-time experience for more than one reason. Aside from the travel itself, and the chance to visit Scott's hut, and see vast parts of Antarctica during exploration flights, it was the almost two months on the field, with just 5 other great people, that was so exciting. Mind you, this was before the time when e-mail was everywhere - we got a nice mail drop around Christmas with cards sent many weeks earlier. We reported back to McMurdo every morning, or at least tried to. We sat together and talked about meteorites and everything else. I have to thank Bill for all giving me the background to win a game of Trivial Pursuit several years later, being able to explain the importance of the English gentlemen called Justerini & Brooks. Insiders will know which drink they are associated with. Bill was also a font of wise information. For example, he explained, with a straight face, that it's easy to be a crevasse expert - it simply means "you go first". A few years later I was supposed to go on another ANSMET trip, and I had planned to spend a few days in Houston on the way to Los Angeles and New Zealand to visit my girlfriend (now wife) there, and the night before I was to leave Vienna an urgent message came from Bill that the trip might be cancelled. All was arranged; leave of

absence, flights, all. I called Bill and asked him what to do. He just simply said: "my message just did not reach you in time, go". So, I spent more time than expected in Houston, to good results. That's Bill... In the field and at other occasions we also talked a lot about impact craters, another topic where Bill had been a pioneer, in the 1950s. But Bill was also what one might just call a genuinely "nice person". Always gentle, always fun, and always positive.

I am privileged to have known him and to have been able to share part of the ride. Thanks for everything, Bill!

Christian Koeberl
ANSMET team member 1986-1987



Figure 19. Bill Cassidy walking from a Hercules plane that brought him - and just him - to the field at Beardmore South Cam, December 1986.



Figure 20. Our fancy Christmas tree with most of the 1986-87 expedition members: standing in the back, Louk Lindner. Sitting, left to right: John Schutt, Bill Cassidy, Austin Mardon, and Christian Koeberl. Missing: Keizo Yanai.

Other News

Reclassification of LAP 03639

LAP 03639 was announced as an R4 chondrite in the September 2006 newsletter (vol. 29, no. 2). Subsequent studies have shown that it is more likely an R5 (Schrader et al., 2016). Schrader et al. (2016) found that LAP 03639 is more equilibrated than LAP 031275, reclassified in Spring 2020 as an R3.6 (according to Lunning et al., 2020).

From Schrader et al. (2016), "...based on the unequilibrated nature of LAP 031275 (presence of FeO-poor chondrules) and relatively equilibrated nature of LAP 03639, we suggest that LAP 03639 is an R5..."
We therefore will change the classification of LAP 03639 to R5.

Schrader, D. L., Davidson, J., & McCoy, T. J. (2016) Widespread evidence for high-temperature formation of pentlandite in chondrites. *Geochimica et Cosmochimica Acta* 189, 359-376.