METEORITE TIMES

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Meteorite Times Magazine

Contents
by Editor

Featured Monthly Articles

Accretion Desk by Martin Horejsi
Jim’s Fragments by Jim Tobin
Meteorite Market Trends by Michael Blood
Bob’s Findings by Robert Verish
IMCA Insights by The IMCA Team
Micro Visions by John Kashuba
Norm’s Tektite Teasers by Norm Lehrman
Meteorite Calendar by Anne Black
Meteorite of the Month by Editor
Tektite of the Month by Editor

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First, let me say that it’s really great to be here. Frankly, it was getting pretty nip-and-tuck as the fuse on 2012 burned short, but as we all discovered, 2013 arrived on schedule and in like-new condition.

So now we can all shift our attention to the next world-ending event. If you are like me and enjoy having constant reminders of the impending total destruction of our planet, just subscribe to the WebCal End of the World Events for your iPhone iCal app. With that app there’s no chance that you’ll miss out on a full-scale planetary destruction event!

The Explorer VII satellite prior to launch a mere ~12 hours before the Hamlet meteorite fell.

At 9:36 in the morning Central Time in 1959, the United States launched the Explorer 7 Satellite from Cape Canaveral, Florida. Explorer 7 carried a radiometer invented by Verner E. Suomi, as well as instruments allowing the first measurements from space of Earth’s radiation and the first climatological studies. But it also carried a
secondary instrument destined to measure the effects of micrometeorite impacts. By 9:05pm that same day, space threw back at us a meteorite that was studied for cosmogenic nuclides.

The Hamlet Meteorite

A hamlet, according to the Oxford English Dictionary, is a group of houses, or small village without a church. Hamlet is also a meteorite that I find interesting since the Hamlet meteorite happens to also be a “house hammer” meaning it struck a house on its way down. According to the Meteoritical Bulletin, the global repository of such things and citing a letter from Dr. E.P. Henderson to E.L. Krinov dated January 18, 1960.

Showing one facet of the LL4 structure, clearly defined chondrules cover the surface. Notice the huge structure hiding on the left. It is a portion of what is often called a megachondrule.

“The meteorite struck a house, breaking a piece off the gutter, and was found in the yard about 30 minutes after its fall. The stone has a conical shape; however, a piece broke off the apex before it was recovered and is still missing.”
Crust is a valuable asset to any meteorite, especially a witnessed fall that hit a house. Here, the blackish-grey crust guards the parameter of this slice.

As if the Hamlet’s arrival was not exciting enough, it also happened to be of mildly rare type of ordinary chondrite, an LL4. Additionally, the single specimen recovered from the fall weighed just a hair over 2k. Two thousand forty-five grams to be exact.

Indiana is no stranger to meteorites with five witnessed falls and eight finds. About half are chondrites, and with one exception, the other half are irons. But oh what an exception! The Lafayette meteorite was found in Indiana in the Purdue University mineral collection to be exact (labeled as a lowly “Glacial Pebble” to be specific), and identified as a meteorite in 1931. Later, it was discovered that Lafayette is a SNC, and like all SNCs it came from Mars. And if that weren’t enough, Lafayette is one of the most beautiful oriented stone meteorites of any flavor of classification.

Lafayette is a showpiece in the Smithsonian collection displaying what is arguably the finest radiating flowlines on an oriented stone meteorite.
A much fresher slide of Hamlet. Due to the cutting of this side of the slice long after its 1959 fall, the hostile earthly atmosphere has had less time to do its damage.

Hamlet has a plethora of desirable features, so its value to collectors is high. Luckily it is available to those who amass witnessed falls, but not too available. Still, since if you are reading this, you have safely transected the dangers of 2012, and can continue your collecting for another year. And if you happen not to have Hamlet in your collection and there is still room on your New Year’s Resolutions, I’d suggest adding “acquire Hamlet” to the list.

Until next time…. 
Going up the 17 freeway after leaving the opening of “They Came from Space” Geoff Notkin’s exhibition at the Challenger Center in Phoenix would take us to Flagstaff, Arizona. I had a rental 4×4 waiting at the Pilliam Municipal Airport. We would need it for the next leg of our trip.

We arrived only about 15 minutes early at the rental counter but were told that they did not have a car yet. They had some scheduled to be returned by my actual pick up time of 4:30. So I found a seat and cooled my heels for a few minutes. Only about five minutes past 4:30 I was called to the counter and my car was ready. It was not the Rav4 I had requested, it was a Ford Excape. That was alright we had used a Ford Escape the year before and it worked fine. So I followed Paul’s motorhome to Meteor Crater RV Park which was serving as our base of operation for the next phase of Vacation 2012.

We would be staying four nights at Meteor Crater but would not be able to actually visit the crater till the last day. We had bigger fish to fry before then. And it was too late to go up to the crater on Friday evening after coming in from Phoenix. The crater closes at 5 pm. They are open later until September 15 but we missed that by a couple weeks.

We were set to drive to Holbrook and hunt meteorites for the next two days. This time the crater would have to wait. Saturday morning found us up early and on the road by 7 AM. It is just about an hour drive from Meteor Crater RV Park to the strewnfield of the Holbrook meteorite fall. We had the highest confidence of finding meteorites that I think we have ever had. Yes, there had been a recent hunt by many individuals and they had found nearly a hundred meteorites. But it had rained and there had been wind storms in the area during the last couple months. We felt the time was perfect for us to do some good work there.
Our parking spot for most of the first day of hunting

It had been 10-12 years since we had hunted at the Holbrook strewnfield and we had found nothing that trip in the threefourths of a day we had searched. But, we were older, better prepared with research, and we were much more experienced meteorite hunters. We had made the decision to hunt the far western end of the strewnfield. Even hunt beyond the generally held end of the ellipse. I parked the car as far down the dirt road as we could go and the search began. In an hour I had found two small meteorites and Paul had found one also so we were already certain we were not going home skunked. But, we found more during the day and I was thinking outside the box pretty good for an old guy. I found a deeply washed out dirtroad that had been filled with mud. It was lined around the top with small rocks for a length of 25-30 feet. I spent about an hour racking loose the small rocks with my boots into piles and running my magnet cane through the piles. I did not find a meteorite every time, but in every second or third pile on average I found one or two small beautiful fusion crusted pieces of space treasure. By the end of the afternoon I had found three or four nice size stones and seven from my little rock piles that were smaller. I was collecting from the anthills too as I walked past them and putting all that material into a plastic bag.
We had beautiful weather and what a great location to hunt. This is from the middle of the of the strewnfield with the railroad tracks to my back.

We did not stop all day except for a brief lunch at the car. About 3 in the afternoon we decided to head back to the Crater and relax. We were thrilled and could hardly contain our joy over having each found more than the average for a single hunter in one day. We spent the evening enjoying our finds and talking about the successful day. But, we were far from done we had another day at Holrook and we had learned some tricks and we would learn more before the next day’s hunt was over. We wanted to hunt south of the railroad tracks the next day and planed to cross the tracks at Arntz and drive down the dirt road on the other side. Well, we quickly discovered that the road on the south side does not go very far. We drove as far as we could and there was a small pond of water and a rather treacherous looking washed out area where a road might once have continued. We parked there and went into the south part of the strewnfield. I had downloaded a research paper from the 1960s about Holbrook. At nice piece over a kilogram had been found just 500 feet southwest of the Arntz crossing. I headed out in that direction. Paul headed a little farther west. After about an hour out in the sandy dune like terrain we decided to return to the north side of the strewnfield. We just did not see any rocks on the south side meteorites or any other rocks.
We backed the car out of the short dirt road and crossed back over the tracks. We had not yet hunted any in the middle of the strewnfield so we drove down just a little west of Arntz and stopped. Paul headed out into the higher ground away from the railroad tracks, I hunted in the clay surface of the wash area nearer the tracks. It was not very long until I saw a piece and stuck my magnet down on it. It made that wonderful little clack sound. I took a look at it. It was the most weather and color changed of any Holbrook so far. Its fusion crust had turned really rust brown. Before I could bag it I saw another piece only about two feet away and it jumped to my magnet as well. I had some confidence that since both had a broken side that they were halves of the same original meteorite. I did not try to fit them there in the field for fear that I would chip one fumbling around with them. I bagged them seperately and took my gps waypoint and moved on after looking hard for the one or two additional pieces that were missing as small chips. A few minutes later I found a small brick shaped half gram stone just maybe twenty yards from the first two pieces of the day. So by 10:30 or so I had three more stones. Paul wanted to move down the road a little ways toward where we were the previous day to fully work that spot. We were about to leave but as we discussed driving down there I saw another meteorite sitting on the side of one of the uplifted shurb mounds that are everywhere. So we stayed a few more minutes and then moved down the road. I parked where we had parked the first day and Paul headed out to the area he had left the day before. He found a really nice stone soon after. I returned to the spot where I had found the first two the day before and hunted out from there a few more yards and found another also.
The day would go on with us just finding about one more larger stone each. I was doing very well with anthills though. I thought up a way to maximize the collections from them and after employing the method I was finding three to five nice stones of around 3-4 millimeter or larger at every anthill I passed. I was carrying a small glass bottle in my shirt pocket and the bottom was filling up fast with small Holbrook stones. I was wishing I had used my head the day before and collected by this method then. Oh well, live and learn I was doing well now. I shared the method with Paul and his success took a big jump too. I had a spare glass bottle and he was soon placing meteorites into it as well.

We hunted longer the second day. We left the strewnfield about an hour before sunset. We started on the south side about an hour earlier then we had started the day before. We had put in a long day. We had learned somethings about the strewnfield and had great luck finding meteorites. Not all were big but all were real Holbooks with nice fusion crust.

Like the one portion of Franconia strewnfield the one at Holbrook is crossed by the railroad tracks.

We drove back to Meteor Crater pretty happy guys. We found more Holbrooks then we thought we would and we had bags of fun material to go through that evening in the motorhome. We decided to celebrate with dinner at the Sonic in Winslow. We have no Sonic near us in California. There is one near Monrovia but way too far to visit from home. But I knew where this one was. Sara and I had eaten there a
decade ago when we visited the crater and took a day trip over to Winslow.

Back at the RV Park we had time to relax and look at our finds without worrying about dropping or breaking them. My two pieces from the morning did fit together making one nice individual. But the two pieces made the broken individual the largest of my finds. Eventually we finished weighing and looking at the ones we found so far and began working with the ones in the bottles and bags from the anthills.

Here are the two pieces that were found near the Arntz crossing fitted together.

We had loupes with us. We always have them in our hunting backpacks. I use my Coddington hand lens which was a gift from my brother when we were both in college studying geology. I think he did better that Christmas since I got him a Brunton Hand Transit. But, I treasure the lens as one of the only things I have from my brother. Its only 10 x but has a nice field of view and sharp image. I poured out some of the second day's anthill collections. I had already picked out the easiest to see and put them in the bottle out in the field. I would reexamine those as well. Paul was doing the same with his anthill material. We worked out of paper plates. Picking out the meteorites from the raw material using one paper plate and placing them into another plate. Gradually small piles of meteorites emerged. It was so much fun to look at the tiny bits of rock. All of a sudden you would see one as you scanned the plate that had fusion crust and resembled exactly the larger Holbrooks.
Gallery of Holbrook Finds
I did not get into the big bag of material collected on the first day. I examined that when I got home and found many more small meteorites. The official size break for meteorites and micrometeorites is at 2 mm. All of the ones I had sorted out in the field were way larger than 2 mm. And many of what I sorted out at the table of the motorhome were larger also. There were many that were very small but I was not equipped in the desert to measure them to see if they were smaller than 2 mm.

When I got home I went to the garage and got my Drill and Wire Sizing Guage and covered all the holes near the correct one and used it as a pass or no pass test on the smallest of the Holbrooks. Since my sizing guage is in thousandths of an inch I had to do a little math. But not algebra; I am still waiting to have to use that. They told me I would need it in life back in high school. I am still waiting for algebra to save my
life. But, a simple conversion was all I had to do. There are 25.4 millimeters in an inch. So 1 divided by 25.4 which equals .0393 inches per millimeter, multiply that by two and you have 0.0787 inches as the same size as 2 millimeters. That is very close to a number 47 drill at .078 I used for my pass no pass test the next one up which is a 46 drill at 0.081 inches. After sizing the very small meteorites I placed them as groups in capsules marked “small” and “micrometeorites” respectively. The small but much larger ones like those I collected at the washed out road I placed in individual capsules and bagged them by find location with their waypoint written on the bag. Later I worked through the small material two more times. I ended up setting aside four pieces I could not be 100% sure were micrometeorites. My final collection results for the two days were 93 fragments and meteorites from the Holbrook strewnfield. That is a lot better than the 0 that I had found on the previous trip over a decade ago. I have them all in gem jars and membrane boxes now as you can see in the next two photos.
As a last word for this second of three articles on our vacation I found two chondrules magnetically at Holbrook. As soon as I saw them I knew what they were. They looked just like the Saratov chondrules that fall out everytime I touch that piece in my collection. Of course the Holbrooks were a little discolored with age. The closing picture for this portion of the story is of the larger of the two chondrules.
This Month’s Meteorite Market Trends

by Michael Blood

Please Share and Enjoy:
Well, it's that time of year, where we take time to reflect on the events of 2012, and in the process we can make predictions, or at least, better resolutions for the coming year.

2012 January- Nevada meteorites

The year 2012 starts off on the right foot (on January 4th) with the recovery of a small chondrite from an un-named dry lake in Nevada. Although not a cold find, recovering this small stone was still gratifying because I found it in the exact corner of the dry lake where I had predicted meteorites would be stranded. I will defer announcing the location and classification of this meteorite, and instead, give that honor to the actual cold finder. Hopefully, that will occur in 2013.
On the way home, stopped at ASU for a meeting with Dr. Laurence Garvie, Jim Wooddell, and Rubin Garcia. The primary subject was “Franconia Area” meteorites and those peculiar, small “irons” that continue to be found in numbers in that strewn-field. Among those present, a collaboration was proposed in order to study these peculiar meteorites. To that end, I donated a “Franconia Area” specimen that exhibited a rectangular “bleb” of nickel-iron. Results from this “collaboration” are not expected until well after 2013.
Franconia Area H-chondrite, the parent body for all the H-metal meteorites from this area.

2012 February- Tucson Show & Whitmire Bolide

Before we knew it, another Tucson Show had come and gone. You can click on the image below in order to link to my article about the “The 2012 Tucson Gem & Mineral Show” with a compilation of links to other reports about the 2012 Show. Can't believe that the 2013 Show is almost here!
Bolide*Chaser packs his bags and is Whitmire, South Carolina bound... You can click on the image below in order to link to my article about, “The Whitmire (South Carolina) Bolide of February 13th 2012”, and how the search to recover the first meteorite from this bolide still continues.
The Whitmire fall is still waiting to be discovered!

2012 March- Lucerne Valley & Hartman Memorial

Moni walks her cat, “Rum-Tum”, at Lucerne Dry Lake. Cat lies down next to a Lucerne Valley meteorite! (“Click” on image below)
The Ron Hartman Memorial was held in the month of March. Ron passed away in August 2011. I am thankful to the staff at Mt. San Antonio College for hosting this memorial, so that all of Ron’s family and all of his friends could come together to meet each other and to share stories of Ron’s life and his achievements. You can click on the image below in order to link to my article about, “Ron Hartman’s Memorial".
2012 April- Pinto Mountains – then later, a trip to a Nevada Playa – and then on the way back home, a stop at Sutter’s Mill

After being invited to metal-detect at a friends gold claim (which is probably in the middle of a strewn-field, yet I still failed to find any gold or meteorites) I decided to go back home by way of Twentynine Palms. I only had a few hours of daylight, but before the end of the day (and within sight of my truck) I amazingly found a splatter zone of chondritic stone fragments. The more I look at these fragments, the more I think they are paired to Pinto Mountains, so I don’t think this should be considered a “cold find”. But I may have really opened-up this L-chondrite strewn-field! Confirmation of this possibility will probably be made this year.
Before we knew it, summer was starting-up and temperatures were rising, so another Nevada dry lake had to be revisited before it would get too hot. But what really got “hot” was Moni. She found 3 meteorites in 1 day! I couldn’t keep up with her. Later in this same month, Moni would make an even bigger score.
More about this locality later in 2013!

On our way home from this Nevada dry lake, we heard reports about a bolide event that flew over Nevada and into California and was witnessed from Reno, so we decided to take a side-trip to a small town called, “Lotus, California”. The rest is history – a very well-documented history. Actually, another historical event for Sutter’s Mill, and Moni was a part of that event. You can click on the image below in order to link to my article about how the “Sutter’s Mill #12 Meteorite” was found along with a compilation of in-situ and in-the-field images.
Our cruise ship tour of Alaska turned out to be just a vacation from meteorite-recovery when bad weather cancels our one-day side-trip to Tagish Lake.
We were invited by our good friend and fellow meteorite-hunter, Richard Garcia, to take a tour of the Palomar Observatory. Now that Richard is retired, he is a full-time docent at the Observatory. There can’t be a more knowledgeable tour-guide than Richard. He expertly recounted the history of the Hale Telescope and the Palomar Observatory with little-known facts, which made the story of this awesome technological wonder even more interesting.
2012 June- Blackhawk Landslide & Antelope Valley

We were invited to join a group-hunt on a paleo-landslide called the “Blackhawk Landslide” in the Lucerne Valley area of the Mojave Desert. The weather was pleasant, and so was the company. No finds have been made, yet, but it is a vast area and the recovery efforts are still on-going. This group is long-overdue for a cold-find, and 2013 could just be that lucky year.
Blackhawk Landslide

Speaking of “cold-finds” here is one that I made in the month of June. It was an unbelievably lucky recovery. Here is what meteorite-hunter, James LaBarbera, (who witnessed the recovery) had to say:

“Bob! I couldn't believe you drove us all the way out to Kern County and when we finally get out of the truck we're still in the suburbs of Lancaster, CA. Worse, there is all this vegetation, hardly any blow-outs, mostly small mudflats, and then finally when there is an open area, people have dumped trash all over the area. I didn’t say anything at first, because I didn’t think you were seriously going to hunt between all of those piles of dumped trash. But after an hour, I knew you were more than serious. It was even more unbelievable when you found that little stone and told me that you thought it was a meteorite. At first, it didn’t look like one, but then I saw the chondrules. We had actually found a meteorite! Right there, next to a trash dump. Unbelievable! Then, a month later you call me to tell me that it turns out to be a carbonaceous chondrite. Even more unbelievable!”

(I guess this only goes to show that meteorites fall wherever they may, and our odds of finding them are more related to the conditions of the surface we are searching. Still, I was lucky that someone hadn't dumped trash on top of this stone. This just goes to show that searchable surfaces are only diminishing. Meteorite-recovery on surfaces like this, which are experiencing suburban encroachment, feels more like “meteorite-remediation”! A lot of area that I once hunted has now been bull-dozed. I'm glad we got there before the next housing-development construction began.)
2012 July- Holbrook 100th

You can click on the image below in order to link to my article on “Holbrook – 100th Anniversary (2012) – Meteorite Hunt”, which was a compilation of images from the gathering of meteorite hunters celebrating the 100th Anniversary of the Holbrook Meteorite fall.
2012 August- Museums

Summer was very hot in the desert this past year. This is the time of year that I schedule visits from friends and family members from out-of-state. It’s also a good time of year to take the grandkids to the local aquariums, museums, and zoos. I get a kick when the kids see my meteorites on display. This summer I met another museum curator, and I volunteered for any help that he would need with his collection. I started by rearranging the labels in the proper order for the meteorites that he had on display.
2012 September- Battle Mountain, Nevada

Somewhat of a coincidence was that I was already packing-up for a return-trip to those northern Nevada dry lakes when word of a bolide sighting near Battle Mountain first reached me. So, it was actually still August when we first arrived at the projected “strewn-field”. It wasn’t until September 1st that I finally made my first find. It also happens that my find was the very first stone recovered from this bolide, which makes this meteorite a “witnessed fall”. Moni posted a YouTube video of me making this initial recovery.

You can click on the image below in order to link to my article on “The Hunt for Battle Mountain Meteorites”, which is a photo gallery of my first trip to Battle Mountain.
Within 12 days of my finding the first stone to this new fall, we had a classification for this meteorite!

Within 12 days of my submitting the forms to the NomComm, we had a formally-approved name for this fall!!

A “thanks” goes out to the NomComm, the UCLA classifier, and all the meteorite-hunters for this cooperative effort.

The cooperation shown between the amateur field-workers and the professional meteoriticists has set a new standard.

It took a second trip back to this strewn-field in order to recover my second find, which is depicted in the image below, which is also a link (if you click on the image) to my post on the Met-List where I announce the classification for the fall at Battle Mountain.
Looking for a museum with a meteorite display in Nevada where I can put this stone on display.

2012 October- Recon trip to several Nevada playas – and then on the way back home, a side-trip to Novato, California

Moni and I used the excuse of having to attend my nephew’s wedding in Colorado as an opportunity to “hit” some dry lakes along the way. Long-story-short, we stopped at a lot of new localities, but we didn’t make any “cold-finds”. But Moni and I did find a total of 6 small fragments at known chondrite localities.
One of the chondrites that Moni found while on our October “vacation”.

Moni was scheduled to work, so she had to fly back home. I drove the truck back home on a circuitous route that took many days and that included a stop at Battle Mountain for a revisit with my good friend, Marty Cunningham. On this return trip back home (without Moni) my luck made a turn for the worse. I traveled a lot of miles and made a lot of stops, but I came-up empty-handed. Marty and I were skunked at Battle Mountain for the month of October.

It was while I was at Battle Mountain that I first got word of ANOTHER NEW FALL in northern California. So, I decided to depart Battle Mountain for home, but to take a “short” side-trip to Marin County, California. (And, as was the case with our trip to Sutter’s Mill in April of this same year, “the rest of the story is history”.)

Sixteen DAYS later, I was still in Marin County – trying to find more of the elusive “Novato” meteorite (after having found Novato#4 on Oct. 27th).

I had made finds from 2 separate witnessed falls within 37 days of each other! (So much for my “turn of bad luck”;-)

My photo below, is also a link (if you click on the image) to my field-report about the fall in Marin County, California, titled: “The 2012 October 18, 02:44 UT (Oct. 17, 19:44 PDT) Fireball and Meteorite Fall in the Novato California Area” which is a compilation of news stories and reports about this meteorite fall.
2012 November - California bolide

This bolide must have dropped meteorites in Sonoma County, but all my searching this month has come-up empty-handed. Why? Where are all the other meteorites?

(But, where else did these meteorites land?)

2012 December - no new finds from the CA falls of 2012

Moni and I spent a lot of time this Holiday Season traveling to see family in San Francisco and Sacramento. Whenever there was a spare day, we would make a
dash to Novato or Sutter’s Mill to put in some time searching for more meteorites. Unfortunately, we have nothing to report. But what I can report on are the conditions of the surfaces that we searched on in these strewn-fields. It was obvious to me that the grass was coming up early from all of the early wet weather. It had already become too tall to effectively hunt off of the pavement in the Novato-Sonoma area. I had planned to return to Sutter’s Mill at the end of winter, but this was clearly looking like it would be a mistake. So, in mid-December I paid two more visits to Sutter’s Mill, and I was right, the grass was already coming up, but because of the elevation the growing season is shorter and the grass was shorter. While hiking under trees in the Clark Mountain area, I found the surface conditions to be the most optimal, yet still rapidly degrading as the grass continued to grow with ample rain and no snow to cover it. But I ran out of time and I hadn’t made any finds. I realized then, but too late, that I should have come to Sutter’s Mill earlier (in November), and that my plans to return here, after winter, may have to be postponed until long after summer 2013!

I hate to end this “year-end review” on a negative note, but the prospects of making additional finds from these Northern California falls is not promising.

So, all we can do is hope (unrealistically) that 2013 will become the “Year of Southern California Falls”, and hope they land in our barren desert, if we can’t get them to land on city pavements.

(Be very careful what you wish for!)

Fast growing grass at Sutter’s Mill.

Below image taken Friday, January 20, 2012, 4:37:48 PM PST- Sunset in the Mojave Desert
Happy Trails!

Wishing everyone many more bolides to chase – and hoping that they all lead to many more meteorite falls for the coming year 2013.

References:

None.

My previous articles can be found *HERE*

For more information, please contact me by email:

*Bolide*chaser
Every year I visit Mineralien Tage in Munich to meet meteorite friends and, above all, see many new meteorites. There are hundreds of tables with tons of minerals, jewelry, and fossils.

Among them on these tables are hidden meteorites. This year I am again seeing much less material than in previous years. Many people were missing and the usually well-represented “NWA area” was almost completely absent. That was sad, but there was still a lot to see.

Our Munich veterans were there as always. Mike Farmer with Achim and Moritz Carl showed a large variety of high-quality meteorites at a wide range of prices. One of the cool specimens was a few kilos of Springwater for a nice sum of euros.

A few meters away, Hans Koser sold his standard material. Between small and large Campo del Cielos were inconspicuous boxes with some fresh-looking chondrites. Only after a closer look could you see that it was not a chondrite, but the latest “Holy Grail” of meteorites, named Katol. A chondritic crust hid an unusual
achondritic matrix with many green crystals. There were many stones in different conditions, from fresh and complete to lightly weathered fragments—amazing material.
Mohamed Hmani was this time without his father Ali, but his assortment of meteorites was wide as always. There were many chondrites and achondrites to “taste.”
Also, my Russian friends were missing this year. Sergey Afanasjev was without Dima Sadilenko and the rest of his team. He had some nice-looking Sikhote-Alins and large slices of Dhofar 007 eucrite the size of a small plate. I had never seen specimens like this before.
Looking for some hidden treasures, I found monster sized slices ... hmmm ... rather like plates of Seymchan. The one that I am holding weighs about 7 kg and the other on the floor weighs around 40 kg or more.
As I wrote in the beginning, the Moroccans forgot their meteorites this year and there were only a few small boxes with unclassified ordinary chondrites. Only Ismaily Sidi Mohamed had something to show, but not too much. These were a few nice-looking complete specimens with nice crust, but that was all.
On some other tables could be found Muonionalusta in all sizes and nice specimens of Henbury.
But the Munich 2012 centerpieces were somewhere else. In the center of the A5 hall were seven large cabinets with the rarest Austria-Germany meteorites. There were:

Mauerkirchen, a 19kg L6 fall from 20.11.1768
Eichstädt, a 3kg of H5 fall from 19.02.1785
Krähenberg, a 16.5kg of LL5 from 05.05.1869
Neuschwanstein, a 1.6kg, 1.7kg, and 2.6kg of the EL6 fall from 06.04.2002
There were also small fragments of Unter-Mässing, Mässing and Schönemberg. These pieces were totally amazing and worth seeing. Especially beautiful was the Krähenberg because it is nearly identical to our Polish fall Baszkowka. Between rare and expensive minerals, I found a lonely 285kg Gibeon.
And that is all. Not as many stones as years ago, but it was nice to be there. I hope to see all of you next year and many more meteorites.
Axtell CV3

by John Kashuba

A 6.2 kg stone was found in 1943 by a man cultivating a cotton field three miles south of Axtell, Texas. The family kept it until 1993 when it was bought by Blaine Reed and distributed. Except for some coloration from terrestrial weathering, it appears very similar to Allende. Close study shows that they are not paired. Axtell belongs to the oxidized-Allende subgroup of CV meteorites (CVoxA).

Dark inclusion in Axtell CV3 thin section containing the altered remains of chondrules, chondrule fragments, CAI and matrix. Incident light. Field of view is 12 mm wide.
Detail of the dark inclusion. Matrix grains are aligned and conform to the contours of the space between chondrules and CAI. Axtell CV3 thin section. Incident light. Field of view is 3 mm wide.
Fragment of radial pyroxene chondrule. Axtell CV3 thin section. Cross-polarized light. Field of view is 3 mm.
Barred olivine chondrule 0.8 mm in diameter. Axtell CV3 thin section. Cross-polarized light.
Complex chondrule 2 mm in diameter. Axtell CV3 thin section. Cross-polarized light.
Granular chondrule 0.6 mm in diameter. Axtell CV3 thin section. Cross-polarized light.
An aggregate containing euhedral olivine grains. Axtell CV3 thin section. Cross-polarized light. Field of view is 0.8 mm
Axtell contains both fine-grained and coarse-grained calcium–aluminum-rich inclusions. These five photos are at the same scale with the fields of view 3 mm wide. Axtell CV3 thin section. Cross-polarized light.
Tektite Tori???

By Norm Lehrman, www.Tektitesource.com

I was recently forwarded a journal article dealing with tektite shapes (Stauffer & Butler, 2010) in which it is postulated that toroid-like (doughnut-like) forms are a logical end-point of radial flow and consequent central-thinning of a tektite disk spinning like a frisbie. A torus is to a revolving spheroid what teardrops are to rods and dumbbells. These authors do not picture a complete tektite torus, but do suggest flat-ended curved cylinders as possible torus fragments. I sorted through our collection looking for examples. Figure 1 shows the prime candidates.

I also located two good examples of what would be the logical previous stage in the evolution of a torus. These are very deeply-dished disk fragments. It is easy to imagine central concavities forming by radial flow in a spinning patty. Once this happens, frontal flight pressures would accentuate the dishing, like blowing soap-bubbles. (I have often wondered if this is how big oblate spheroids with large central bubbles form?). Figures 2 and 3 illustrate these intermediate stage specimens. From the form in figure 3 to the rupture of the centrally-thinned area forming a doughnut-shape is a short hop. I’ve never seen a complete unbroken Indochinite ring (if you’ve got one I’d love to hear from you---) but McColl (1997) describes a flanged Australite torus (which does not seem to be a detached button flange).

Figure 1: Possible Indochinite toroid ring fragments

Figure 2: Intermediate stage: deep dishes.

Figure 3: Deep dish side view.
References


**Meteorite Times Magazine**

**Meteorite Calendar – January 2013**

by Anne Black

Please click on the meteorite calendar to view a larger image.

**IMPACTIKA**

### Calendar of Falls: JANUARY  
as of November 15, 2011

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Zapaliname

by Editor

Our Meteorite of the Month is kindly provided by Tucson Meteorites who hosts The Meteorite Picture of the Day.

Contributed by Hanno Strufe, IMCA 4267 6.72 grams Iron, IAB-MG

Submit Pictures to Meteorite Pictures of the Day
Large Rizalite Dumbbell 430 Grams by Daniel Sutherland

by Editor
Please support Meteorite-Times by visiting our sponsors websites. Click the bottom of the banners to open their website in a new tab / window.
Once a few decades ago this opening was a framed window in the wall of H. H. Nininger's Home and Museum building. From this window he must have many times pondered the mysteries of Meteor Crater seen in the distance.

Photo by © 2010 James Tobin