A New Upstream Camp and Passing 28 Miles in Omega.

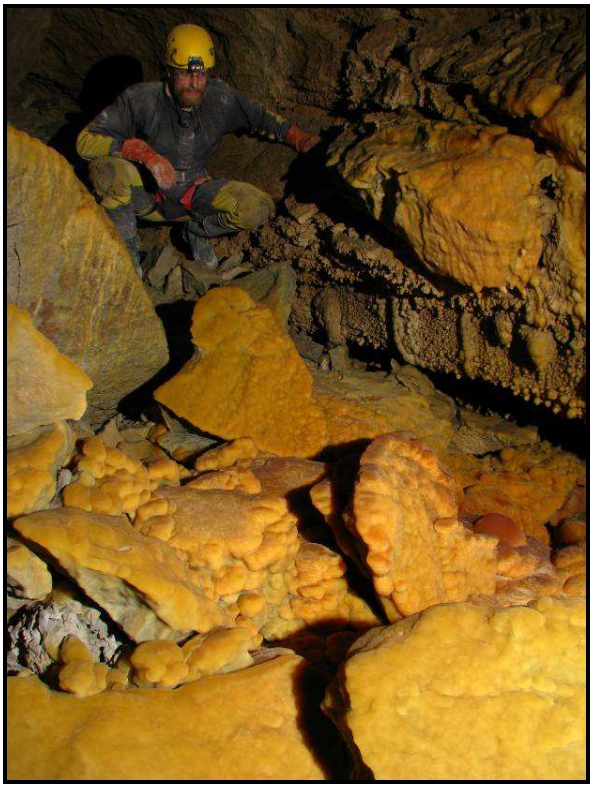
Report for the 2011 Omega Cave System Expedition – Camp #9.
Wise County, Virginia

July 14 to July 23, 2011

Report By: Benjamin Schwartz

Participants:

Camp trip: Brad Cooper, Benjamin Hutchins, Philip Schuchardt, Benjamin Schwartz.
Weekend trips: Sara Fleetwood, Jon Lillestolen, Tom Malabad, Scott Olson,



Philip Schuchardt admires an area of unusual yellow and orange 'butterscotch' flowstone at the base of Butterscotch Dome near the upstream end of the cave. The flowstone appears to be inactive and has the close-up appearance of velvet.

Report and all photos by Benjamin Schwartz.

Tuesday-Wednesday, July 12-13, 2011

After two long days and 1,250 miles of driving, Ben Hutchins and I arrived at the LCCC camping area after dark on Thursday evening. Compared to TX, the cool and lush green forest was a real treat for our eyes and senses. We quickly set up our tents, ate dinner, and crashed for the night

Thursday, July 14, 2011

A partly cloudy morning greeted us as we prepared for a day of surface surveying and a little caving. We headed down the mountain for a small cave known as Big Bertha's House of Horrors. It is higher than the LCCC entrance, but we did not know by how much, or where it is located with respect to the passages in Greater Heights. The entrance is in a relatively large sinkhole and has a tiny stream flowing into it, as well as very strong airflow in a bedrock fissure near the bottom. We surveyed 1666' of overland survey, tying Big Bertha and a few other small fissures or sinkholes into the LCCC entrance. With the overland survey done, we crawled into Big Bertha to assess the situation. During last year's expedition, the first two trips to find the cave were unsuccessful, and after it was finally located, the report came back that there was no airflow in the bedrock fissure. This was not surprising as rubble from a few years earlier had not been cleared out and essentially clogged the fissure. In addition, more recent debris had been washed into it.

In the late '90s, Dick Graham and Gregg Clemmer had spent a weekend digging here and dug into a small room with large sandstone boulders on one wall. The air disappeared into the cobble and gravel floor, making a low roar as it did so. Several years ago, during a return visit, I found a small bedrock fissure off to one side of the entrance crawl that also had strong airflow. This seemed to be a more stable and productive path for advancing.

Ben and I set about clearing the fissure. As it was too narrow to work in at the end farthest from the entrance, we moved back toward the entrance a few feet to where it is wider and began digging down through a choke of sandstone boulders, dirt, and other debris. After several hours, we had dug down to the original level and had opened the fissure for airflow. The airflow was very strong! By the end of the day, we were able to see down into a narrow fissure continuing down and ahead. The wider area where we were digging still continues down and may be the easiest way to access the lower part of the fissure without too much effort. At the end of the day, we left the dig site primed and ready for an advance.

While we dug, Ben Hutchins found two cave-adapted terrestrial isopods in fissures and voids between the sandstone and dirt rubble. We have not seen these in the system before, so at the very least, they are a new record of an already described species in the Omega system. The possibility also exists that they may be a new species. In addition, I found a millipede in leaf litter just inside the cave entrance. It also appeared to be cave adapted, but was quite different from the millipedes we usually find in the cave.

During the afternoon, the weather turned cloudy and it rained fairly hard for a couple hours. By the time we finished working that evening, it had stopped. Back at the campsite, we set up a tarp in anticipation of more showers, ate dinner, and called it a day. Before turning in for the night,

we drove out to the end of the road and picked up the LCCC gate key that the Forest Service dropped off for us. Thank you, Chuck and/or Lois!!!

Friday, July 15, 2011

The morning began with heavy rain. The rain continued until nearly noon. Shortly after noon, when it began to rain again, we decided to give up on caving/ridgewalking for the day. Instead, we opened a beer, lit a fire, and entered the overland survey data from Thursday. The only thing of note is that we now know that Big Bertha is 25' higher than the highest known point in the cave (the top of a dome in Greater Heights), is 600' beyond the end of Greater Heights, and is definitely not associated with any known cave.

By 9:00 in the evening, it was still raining and nobody else had arrived yet. I went to bed.

Saturday, July 16, 2011

When I woke up at 7:00, it was no longer raining, though it had rained hard through much of the night. At 7:30, just as I was about to get up and start breakfast, big surprise: it started pouring again. At around 10:00, it finally let up to a drizzle and dripping trees, and we all congregated under the tarp to eat breakfast and meet the folks that had arrived late at night (Jon Lillestolen, Tom Malabad, Philip Schuchardt, Sara Fleetwood, and Brad Cooper). After a quick breakfast, we packed our camp duffels and headed down the hill. Jon, Tom and Sara had graciously agreed to help the four of us who were camping (me, Ben, Brad, and Philip) move camp gear upstream from the Junction Room where we had stored everything after dismantling the old camp last year. At The Junction Room, we packed everything we needed into our duffels and the day packs and all headed upstream to Major, MAJOR! Borehole where we planned to establish a new camp. In just under 7 hours, we arrived at our destination, dumped all the gear, and said goodbye to the day-trip crew. They headed back downstream to survey a nice looking upper level lead just above Dick's Waterfall. Relative to the effort required to move supplies from the old camp to the Junction Room the year before, having extra hands made a huge difference and was greatly appreciated.

Our first order of business was to find a convenient water source and a downwind latrine site. Both were located in short order and we then focused on leveling out four sleeping areas on the sides of the huge passage. All the sites were tucked into corners or behind ledges to be out of the direct path of the airflow. Ben Hutchins took this seriously enough that his site wound up down in a small lower meander and under a ledge! Ben says that although cozy, that site is a bit cramped and on future camp trips, unless you are very short, it may be worthwhile leveling another spot. We also set up a nice kitchen rock away from the sleeping area. Once all the domestic work was finished, we decided it was time to get water, a good hot meal in our bellies, and a sound night of sleep before beginning to survey. There are two sites where we could collect water. The closer site (an obvious way down) takes a little bit more effort and climbing, while the farther site is easier but takes a bit more time.

I unpacked the stove, hooked it up and pumped the fuel bottle up. At the first turn of the fuel valve, a thin stream of fuel began spraying past the valve. This was NOT a good start to the trip! Well, at least I had brought a complete spare stove… Grabbing the spare pump assembly, I performed the same preparation routine and got exactly the same results – fuel spraying all over! At this point, I began to seriously wonder if we were going to be eating cold food all week. To

make a long story short, I took apart, cleaned, and oiled the valve assemblies on both pumps and reassembled them with similar results: twice. Finally, on the third try, one of the pumps allowed fuel to flow to the priming pan without leaking at the valve. I treated the stove like a ticking bomb, after our experience a few years earlier, and gently set it up to heat water. I sat next to the stove with gloved hands and watched the valve like a hawk – ready to shut it off and move back at a moments notice. Fortunately, nothing happened and we finally got to enjoy a hot dinner.

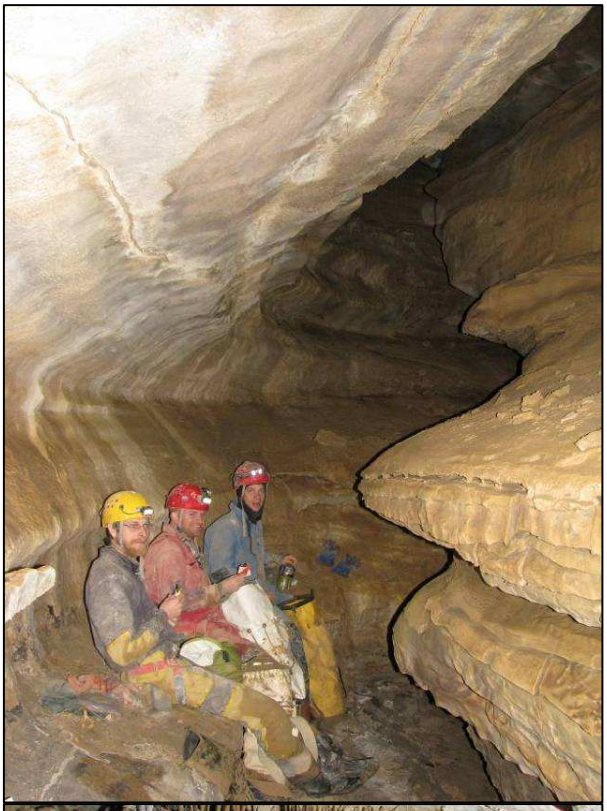
Sunday, July 17, 2011

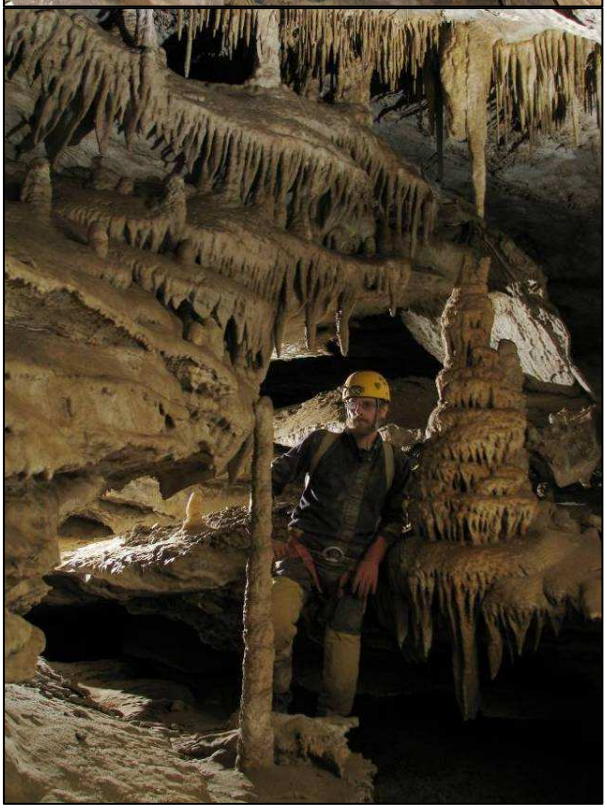
We all woke at 7:00 am after 8 hours of sleep and started into what would become a pleasant and efficient daily routine. I heated water and watched the stove each time we used it, expecting at any minute that the fuel leak would start again. Fortunately it did not, but that didn't make me any less paranoid.

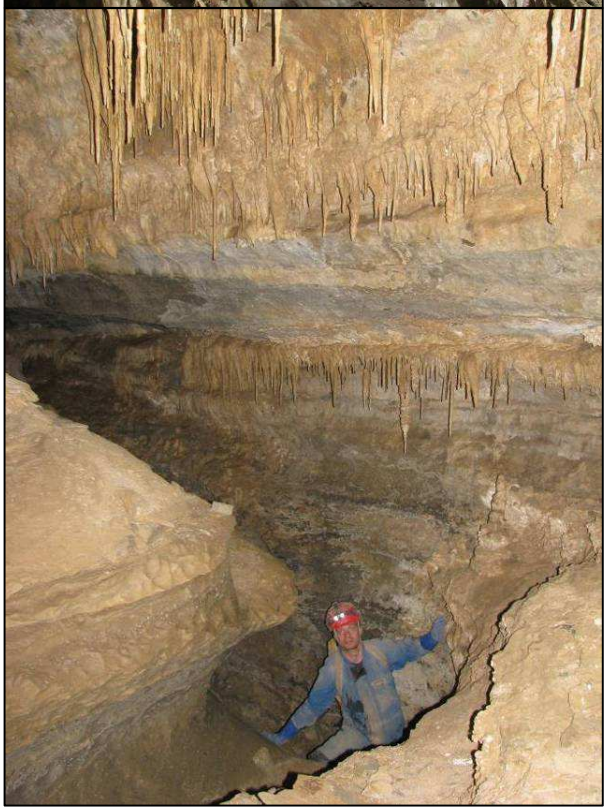
I can't speak for the others, but I slept very well. Sleeping in a cave is one of my favorite places to sleep. Moving the sleeping sites out of the main airflow was a good decision. At the old camp, I was always on the verge of being cold because of the steady breeze blowing through. At this new site, I was actually too warm without having my head out of the sleeping bag.

By 8:40 am we had eaten and were packed and ready to go. For our first day of survey, we decided to start at LF204: also the site of one of our new water holes. A large lead headed downstream at the active stream level, and we knew that there was no mapped passage at that level between there and LF143. We expected to find some meandering passage, but what we wound up surveying makes the rest of the cave seem simple by comparison. We essentially surveyed the stream level where we could follow it, and also surveyed up into a 3-D meandering and braided network of passages that fills in all levels between the original survey route and the stream below. Many of the stream meanders are quite beautiful with scallops and pools and one area has some nice potholes in a purple layer. Above all this is the 3-D mess of confusing passages with secret connections to upper and lower and sideways passages that we called Scoop Loops. Despite the brain torturing complexity of it all, our survey moved along quite efficiently with me sketching, Ben Hutchins doing instruments, Brad setting stations, and Philip scouting the route and checking leads. This arrangement was nearly essential in many areas because Philip could tell me where different passages went and connected, and I could attempt to figure out ahead of time how to best sketch it all.

The photos on next two pages are all in Scoop Loops and most are in the lower canyon-like meandering section rather than the braided levels above it. Upper left: Philip, Brad, and Ben at our stop for a lunch break. Much of the passage near stream level has similar sweeping meanders. Upper right: Philip in a nice section of scalloped meander. Lower right: Ben in one of the meander areas that has many ancient speleothems. Almost none of the speleothems in this part of the cave are active. Lower left: Philip inspects an area with larger formations that are, again, inactive. Lower set of four photos: Philip in some sections of the nice stream canyon we surveyed on the first day, including the area with small purple potholes.







Throughout the day we also took the time to take photos of the passages. Unlike the previous year, I was determined to take plenty of pictures. I brought three flashes with me and Brad and Ben usually flashed for me while Philip modeled. Because I don't have enough slave units, we did everything handheld with lights out and a one second exposure with flashes manually triggered 'on three'. It worked quite well and we got some nice photos of the streamway and a few formations.

By 10:30 pm, we had surveyed 2,911' with 106 new stations and several tie-in shots. Back in camp at 11:05, we efficiently made and ate dinner and were in bed by 12:15 am. All in all, a superb start to the trip!

Monday, July 18, 2011

We woke up at 8:15 am and again were packed up and out of camp in less than 2 hours, leaving at 12:05 pm. Because we had left so many leads in Scoop Loops the day before, and the cave was still fresh in our minds, we all agreed that the best thing to do was dive back into the complex maze of passages and start checking off leads. Our first lead was very close to camp, so within just a few minutes we were surveying again.

One of the first passages we surveyed turned out to be a nice shortcut on the main route out of the cave – one that avoids a section of crawling and awkward small passageway near some large flowstone. While it will not cut down travel time by more than a few minutes, it certainly makes the trip much easier and straightforward. The only downside to the new route is an area where we had to walk underneath several huge rocks that are stacked, cantilevered, and precariously hanging from the ceiling. We moved gently through this area and hung large strips of flagging on them as a warning.

Some of the mid-level meandering passages turned out to be quite wide but, as usual, quite low across much of the meander. In a couple places the passage is more than 80' wide, but the travel route is only a small portion of that width around the edge. The day was very similar to the previous day in terms of the type of passage and complexity, though by moving up in elevation we transitioned from mostly meandering canyon passage to meandering and braided low, wide passage. The 3-D braided passage in some of the areas is unlike anything we have seen in other parts of the cave, and has very high passage density in just a small volume. At one point, we took a short break so Philip could do some route finding. I pulled out my camera and took a quick video from where I was sitting that showed at least 5 different passage heading off at different levels, including one that connected via a tiny hole in the floor, just large enough for Philip to stick his hand up through.

We also surveyed a small section of upper level near LF158 that appeared to be an old waterfall area. Following a steeply climbing passage led us to a small passage at the top which has some very nice gypsum flowers in it. Oddly, what appeared to be the way on suddenly and absolutely ended in a small old waterfall room. As near as we can tell, the water must have flowed along the ceiling bedding plane and pouring into the passage. All the signs are that it was a waterfall, but there was absolutely no passage at the top. The bedding plane forming the ceiling of this oddity is just above a thin horizon with nodular black chert.

Around 11:00 pm, we decided to call it a day and headed back to camp with 94 new stations, a number of tie-in shots, and another 2,620' of new cave mapped. We had reached our goal of

mapping one mile in two days! Back in camp at 11:40, we made quick work of dinner and were in bed by 12:30 am.

Tuesday, July 19, 2011

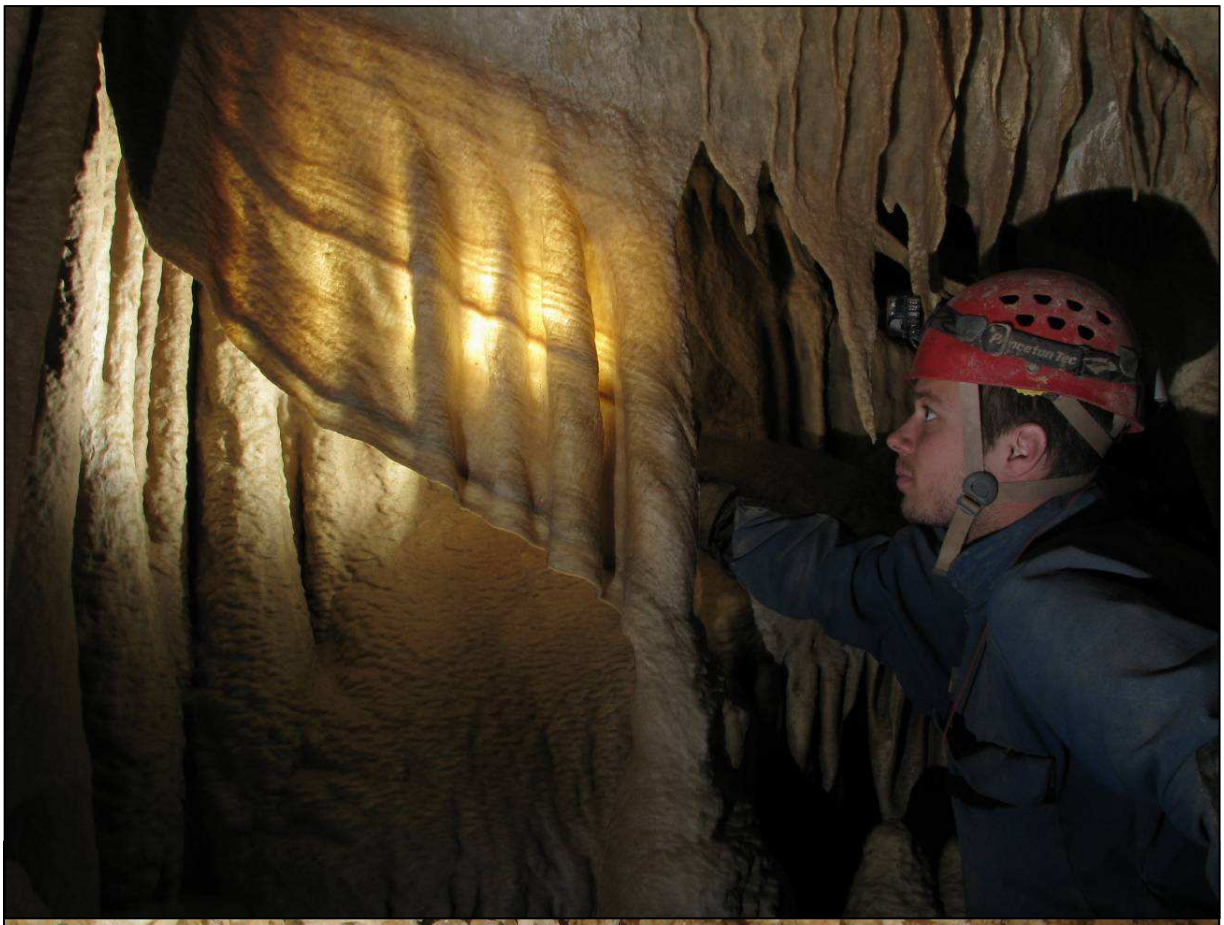
After getting up at 8:45 am, our main question for the morning dealt with where to survey for the day; should we head upstream or go back to Scoop Loops? We had already spent 2 days in Scoop Loops, and my brain was pretty well fried by the end of both days due to the complexity of this area. We decided on a compromise. Because the area was still fresh in our minds, we'd go do some mop-up on one edge of Scoop Loops and then look for a 'climb up to borehole' noted in the original survey notes along the main route at LF173. We left camp at 10:40 am and headed for LF180 to do the first bits of mop-up. We finished several hundred feet of the usual confusing passage in short order and wrapped up most of the leads in that area before heading toward LF173.

When we reached LF173, we searched long and hard for an upper level borehole. We never found anything at the top of climbs in that area other than an upper level canyon forming a meander loop and an upper level canyon heading downstream that eventually popped out above LF160. Neither passage came anywhere close to being borehole.

Just upstream from LF173, the floor drops away into a deep canyon and there are some climbs leading down to areas with lower level leads, but we never found anything fitting the description of 'borehole'. We need to talk with Tommy about what he did and saw in this area, as he is the one who reported the upper level lead to Mike Futrell, who was sketching. Perhaps there is a disconnect between what Tommy saw and what wound up written in the survey book.

In any event, we eventually left the area and finished up several other leads in Scoop Loops, bringing our total for the day to 1,927'. Back in camp by 12:51 am, we were in bed by 2:15 am with a belly full of hot freeze-dried and a night-cap, courtesy of Brad. Thanks Brad!

The photos on next two pages, from top to bottom, are: 1) Ben Hutchins in yet another part of Scoop Loops with abundant inactive speleothems. This area has some pretty draperies in it. 2) Philip in the upper level passage with really nice gypsum flowers near LZ193. This is also near the odd dome with black chert and no passage leading out from the top. 3) Brad inspecting some of the deep gypsum crystals piled up along the sides of a passage near LF173. One of the 'purple' layers at this elevation seems to have quite a bit of pyrite in it, and this is likely the source of the gypsum. 4) Ben and Brad in one of the well-decorated meander areas. This meander is about 60' wide from where the camera is.



Wednesday, July 20, 2011

After we woke at 10:15 am and ate breakfast, there was no doubt in anyone's minds that we were heading upstream for a change! By 12:00, we had eaten, packed for the day and headed out of camp with a spring in our step. I was looking forward to a day that did not involve the brain frying exercise of sketching in Scoop Loops!

Being optimistic, we decided not to take bolting and rigging gear, reasoning that if we found a pit that required it, we had two more days to return and rig it, or leave it if we chose. There were plenty of leads that did not require rigging. From the maps, it appeared that there was a decent looking lead near LF!395, which is in an upper level surveyed several years ago. We almost made it to that lead. At LF!394, we looked up and wondered: 'what is up there?' And off we went for an entire day of survey. Before the survey started, I collected water samples from the main stream at LF289, and from the tiny black infeeder that drips in at the same station.

The passage began as a narrow canyon with low, wide meanders at the top, but soon changed into a gently meandering narrow canyon 20-30' deep. We stayed in a slightly wider section at the top and surveyed several hundred feet. Just about the time we began wondering if it would change, it did. The canyon popped out into the end of a quite nice section of rather large passage with several leads heading off in different directions. We (obviously!) followed the largest of these passages! It continued nicely as a large receding dome room/passage that is 40-50' high and continues for a couple hundred feet to a point where it breaks up into several additional leads at different levels. We chose one that continued in a downstream direction and entered an area with large and complex breakdown mixed with large meanders. We eventually wound up making a number of loops in this area, and popped into the top of a couple pits dropping down to the main route upstream from the end of Major, MAJOR! Borehole. In a number of places, we could climb about half way down and see the main route below us, but then the passage would bell out 30-40' off the floor with no way to continue climbing.

Continuing our survey downstream in other passages near these pits, we encountered upper and lower levels that were a bit too reminiscent of Scoop Loops, so we left many leads in a large meander complex. Just as we finished up for the day, I decided to check out a low meander that leads to a small canyon. This canyon ducks under a ledge and almost immediately opens into the side of a deep, narrow canyon, but near the top of it. Hoping that this might be a place where we could climb down to the main route, I chimneyed down and along the canyon for quite a ways until I reached a point where I could reach the floor via a friction slide between the walls. I returned for the others and we headed for camp at around 1:30 am with another 1,806' of new survey in 99 new stations and several tie-in shots. When we reached the floor of the canyon on the main route, we had to check things out for a moment in order to determine which direction to go to reach camp! The meander area above is confusing enough that, without the sketch to guide us, we had lost our sense of direction and which way was downstream towards camp. By 1:45 am, we were back in camp, and by 2:45 am were in bed.

Thursday, July 21, 2011

Up at 10:45 am, we again moved through our morning routine like a well-oiled surveying machine. Our main objective for the day was to head upstream to the area where we might find a connection with Spiderweb Cave. Based on the overland survey, we knew approximately where

it should be, and I remembered the passages in Spiderweb well enough that I hoped I would be able to recognize similar passages from the Omega Cave side. But more on that later…

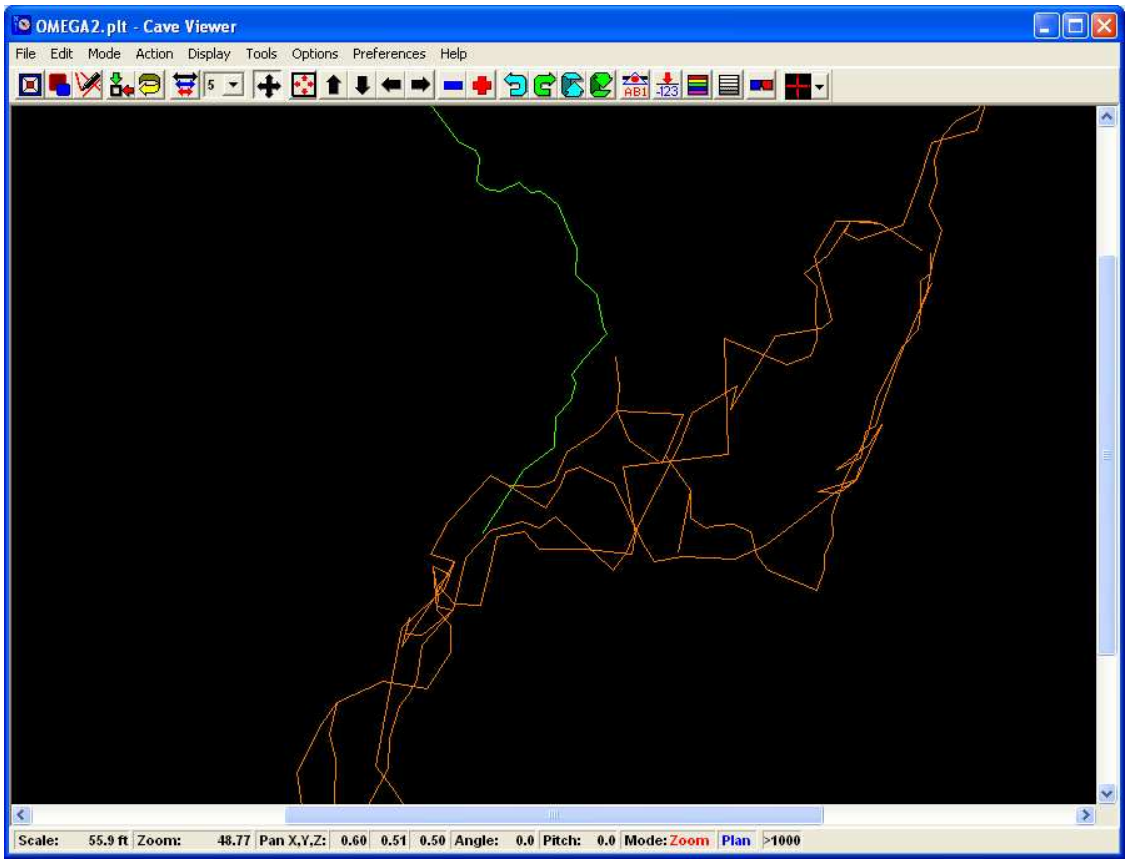
We left camp at 12:30 pm and headed upstream to begin checking leads noted in the upper level passages just downstream from where we hoped a connection might be found. An hour or so later, we arrived in the area and were amazed by the number of leads going off at many different levels. At one of the climbs just below LF436, I photographed some unusual dendritic gypsum that was being re-deposited as gypsum-saturated water seeped out of a fracture. Picking the first lead in the general area, we started surveying at LF436 and headed downstream in a nice phreatic tube with 12-inch scallops on the ceiling. Although it was only hands and knees crawling, it was a quite pleasant passage completely covered with a thick crust of fine, well-cemented orange gypsum crystals. After several shots, we came to an intersection with several leads and chose to head upstream, which eventually led us to a connection at LF462.

Near LF442, we also photographed some small gypsum chandeliers that have formed by another seep of water flowing down through thick crusts above, becoming gypsum-saturated, and then depositing gypsum in crystalline 'chandeliers' under a ledge below. These are the first of their kind that I know of in VA. While they are small relative to the ones formed in Lechuguilla Cave, they are formed in a similar manner, and not like the more typical gypsum 'flowers'. This area will be named either The Chandelier Bro-room, or The Chandelier Smallroom. My vote is for the latter. A short distance away and closer to where I had calculated a connection might be, we began surveying another pleasant passage leading upstream from LF466. While surveying, I had everyone checking out all leads that looked like a small canyon infeeder on the NW side, or a low gypsum crawl with sand and gravel floor.

The point where we turned around in Spiderweb Cave has two levels. An upper level chokes off in a small along-strike gypsum wedged tube going downstream with a sand and gravel floor. Good airflow simply vanished along the length of the passage (perhaps 100') and we assumed at the time that it must be infiltrating through the floor somewhere. A lower level canyon continued down-dip as a nearly-too-tight descending canyon, with smoothly scalloped walls in dense fine-grained bedrock, and with a slight film of mud. The point at which I decided to stop was not entirely too tight, but to continue would have meant sliding down into a very narrow slot with no way to get back up it – there were no footholds or handholds, just an even film of mud on small scallops ~1.5 inches in diameter. Air blew through this passage as well. The final 'lead' in the cave is a small breakdown choked mid-level above this narrow canyon. At the time, it did not seem to be a good way on as it required more digging to remove breakdown. And we had just spent an entire day digging…

We soon found a couple small ceiling slots on the left side that brought the excitement level up slightly, but they did not have any air, were in a different looking rock layer, and had the distinct appearance of being a small ceiling channel instead of a real infeeding passage. Surveying along the main passage for a few more shots, however, brought us to the edge of a small 25' tall dome room on the NW side. A definite breeze blew out of it, and as we surveyed into it and over to the far wall (station LZ407), I could look up ~20' and see a 6-8" wide fissure, perhaps 8' tall, that exactly matched the description of what I expected to find: smoothly scalloped rock that looked identical to the rock the Spiderweb canyon is formed in. Standing closer, we could feel that the airflow was definitely pouring down out of the fissure.

Although we were quite excited by the discovery of what is almost certainly 'the other side' of Spiderweb, we could see no obvious way to access this passage, and we still did not know where the gypsum wedged passage might be – even assuming that there was only a short distance between where I had stopped and the 'passage' we were looking up into. I have since adjusted the location of Spiderweb by about 70' to bring it in line with the passage we found. I made the assumption that the gypsum tube in Spiderweb is formed along one of the same joints as the upper levels we were surveying in Omega, and the down-dip canyon is aligned with the passage in the wall of the dome. So the bottom line is that we probably have fairly good elevational and NE-SW control between the caves, but the NW-SE direction is still somewhat uncertain. In the image below, the green survey lines are Spiderweb and the orange is Omega. The short spur to the north in Omega, near the bend to the SW in Spiderweb, is the far side of the dome with the high lead (LZ407). Armed with this new information, I think a return team has a good chance of connecting via either the upper level passage over the canyon, or perhaps the gypsum crawl. In either case, there will likely be some digging involved, but there should be some airflow helping to guide efforts.



Once we finished the Spiderweb Dome survey, we continued mapping in an upstream direction through some nice canyon, a bit of breakdown, and then into a gypsum fractured phreatic tube with plenty of ancient flowstone, including a number of places where flowstone ledges near ceiling level showed the remains of what was once a complete flowstone cap over sediments that nearly filled the passage. Both have since been eroded away, leaving traces of them stuck on the walls. Also in this area are some really interesting flowstone mounds that have been partly eroded (almost like ants or termites ate them away), exposing all the internal layering.

Continuing up this passage eventually led us to a breakdown choke, and then a connection through a hole in the floor to the lower level at LF493. At this point we decided to head upstream to Butterscotch Dome and map some of the leads in that area. Route finding was fairly easy and we soon arrived at what I think is one of the more spectacular domes in the cave. It is a dry dome with a 50' tall streak of bright orange flowstone down one wall. We stopped to take some photos of the dome and the incredibly beautiful flowstone at the bottom, which is orange-yellow, blobby, and has a beautiful velvety texture (See the photo on the first page).

Our first leads were also in or near the dome. Unfortunately, most of them wound up being short passages or a loop back to known passage. Beyond Butterscotch Dome, the main passage continues as a low crawl with breakdown on one side, and then pops out ~60' above the floor in another dry dome at LF513. In the breakdown were several small holes marked as leads. One turned out to not be a lead, while Philip reported that the other blew air. He began digging on it, heading up through some muddy breakdown, while the rest of us finished a couple short shots in a side passage and checked out the dome. We could see a couple leads high up in the dome, but they would require aid climbing to access. At about that time, Philip reported that he had broken through into a going upper level passage and that we should survey up to him. As a note, we didn't check or survey a lead off the right side of the ledge at the dome. Stan reported on the original survey notes that this heads north for at least 100' and continues. We also did not drop the pit into the bottom of the dome, and left the push rope at the edge for a return trip.

On the way up through the hole Philip had dug, Brad somehow managed to pull a pile of mud down onto his face. I believe it may even have been just after Philip thought 'I should tell him not to grab that pile of mud…' But he didn't tell him. In any event, we surveyed up into a nice sized upper level passage going two ways. Both ended quickly, but they ended in promising leads. Heading upstream, we reached another overlook into the same dry dome at LF513, and could look ~30' across and into a fairly large (maybe 6' tall x 8-10' wide) passage continuing out the other side. The best part is that reaching it will require only about 8 bolts on an easy traverse around the left side. A nice sloping wall ledge will make the bolting easy.

The pictures on the next two pages are, from top left on each page: 1) Two pictures of some nice passage near LZ313, 2) Dendritic gypsum on a ceiling near LF436, 3). Eroded flowstone with internal layering near LZ430, 4) Philip below the newly discovered gypsum chandeliers in The Chandelier Smallroom near LF442, 5) Layers of ancient flowstone on sediment near LZ430, and 6) a close-up view of the eroded flowstone at LZ430.

Heading in a downstream direction, the passage soon ended in another small dome at LZ450 that Brad named Dingleberry Dome because of some interesting small coralloid formations hanging under a small ledge. About 15' up in the ~25' dome is a canyon heading NE that has some air coming down out of it. At the top of the dome and across from this passage (in a downstream direction) is a continuation of the canyon. To reach the lead heading NE, a tricky free climb can probably be done and then a rope rigged from the top, but it may require a couple bolts to get up it the first time.

By this time, it was getting late and we decided to head back to camp. After we passed the point where we had connected to LF493, we spent a bit of time route-finding. Philip was the only person in our group who had been on the trip that surveyed this confusing multi-layered area, and his memory didn't help us much at all! Fortunately, between the working map and following survey stations, we made it back to LF460 without making any major wrong turns. There are still at least a dozen leads in this area! We made it back to camp by 3:16 am with 1,221' of new survey. By 4:15 am we had eaten and were in bed with warm and full bellies.

Friday, July 22, 2011

Up at 12:15 pm, our first order of business for the day was to take some photographs of camp. We spent perhaps 30 minutes doing this after eating and then headed upstream towards LF211 at 2:55 pm to rig a rope at the climb into the upper level we had come down out of on Wednesday.

I repeated the awkward climb back up the lower part of the canyon we had descended, and rigged a beautiful 30' Y-hang that gives easy access to an ascending series of small ledges that climb up to the small canyon on the side. As we surveyed up this climb and through the route high in the canyon, we realized that without prior knowledge of the passage, it would be nearly impossible to find this from below! The rope doesn't actually appear to go anywhere, either.

Once we reached the tie-in area, we tied in with LZ350 and continued surveying some of the incredibly confusing meanders in the area. The small canyon connector is actually completely covered by a 'hood' created by a meander loop and other passages leading off in different directions above it.

Right: Philip stands in the small canyon that connected upper levels passages near LZ350 and LZ450 with the lower level at LF211. The roof over his head is entirely solid and there is no connection between the passage he is in and the upper passage where the second flash was held.

Right: A stitch of three pictures in Major, MAJOR! Borehole that shows our camp and the cathedral-like nature of the passage in this part of the cave. The passage height here is ~80'. The stove and kitchen area is in the lower left corner. Thanks to Philip for doing the stitching.

After we mopped up a number of meander leads near the tie-in, we surveyed up an ascending series of meander ledges (passing by more meandering leads at each ledge) to reach a small dome room that Ben Hutchins had climbed into. Out of this room, a small canyon leads to a second small dome room, and then into a third. In the ceiling of the third we were surprised to see a window into a nice-sized upper level!

Climbing ~15' up through the window, we immediately realized that we were in a phreatic tube heading both upstream and downstream. Downstream went only a couple shots to a dig in breakdown, while upstream headed off in comfortable dimensions as a nice non-meandering passage. Finally!! a passage where I could leisurely wait for the readings between sketching rather than frantically trying to keep up with all the numbers being thrown at me!!!

This passage is quite different from everything else that we had surveyed during the week. It follows a single bedding plane and wanders about along that bedding plane. Each time the passage turned and went up dip for a ways, it then turned along strike and got fairly low before opening up again and turning down dip. At most of these low spots, we had to dig a bit in order to get through. In the down-dip 'loops', there are several different horizontal water-level notches in the walls. My guess is that there were static water-table pools of water in the passage as it was transitioning from phreatic to vadose conditions.

The passage continued in nearly the same fashion for shot after shot, with no side passages. For a while, I think none of us wanted to question how far it would continue, for fear the next shot would be the last! But continue it did. We named the passage Scoopy Longtime.

Finally, after a bit more than 1,000' of passage, Scoopy Longtime appeared to end in a slabby breakdown choke. As I finished up the sketch, I asked Philip what was behind one of the slabs. He squeezed down behind it and the sound of his scuffing and scraping faded away. He returned a few minutes later with news of a connection with known passage! Behind the breakdown, a very narrow fissure drops down in a couple steps and pops out of the ceiling on the edge of a low meander. Ironically, it was a meander 'lead' we had left near LZ284 during our Wednesday survey where Philip had reported that 'it didn't look like it goes'. ☺ Philip's description of the passage made it pretty clear that Brad was unlikely to fit through without some digging or hammering. A time-check told us that we had reached our turnaround time in order to reach camp in a reasonable hour and get some sleep before packing up to leave, so we decided to call it a day with 1,697' of new survey.

This brought our total for the trip up to 12,056' in 528 new stations. We had passed 2 miles for the trip! By 3:30 am on Saturday morning, we were back in camp, and by 4:30 we were in bed.

Saturday, July 23, 2011

After the usual 8 hours of sleep, we all got up at 12:30 pm on Saturday and began packing to leave. We did a complete inventory of the camp gear, which is essentially the same as last year's except for the fact that we decided to remove both of the white-gas MSR stoves in favor of a butane or similar canned fuel stove for next year. The risk of having another leaky valve is just too high after nearly having another failure this year. I'm not sure what MSR did to their 'new model' valve assemblies a few years back, but it was NOT an improvement over the old ones.

The other change from last year is that a portion of the rope and rigging hardware is still stashed at The Junction Room. Most of it should be moved up to (or toward) the new camp next time a trip goes upstream. The hardware is in a trash bag with carbide as a desiccant. We did this because condensation-related corrosion was starting to build up on the aluminum hangers.

By 3:15 pm, we had eaten, cleaned up the camp, closed the latrine, packed up all the sleeping gear, taken inventory of all the other gear, and were packed and ready to go. We took advantage of the new connections and short-cuts in Scoop Loops and avoided sections of cave that are somewhat difficult to negotiate with a camp duff, or simply take longer to traverse. I collected water samples at several places near camp and on the way out, as part of my survey of the chemistry and stable isotope compositions of waters found in streams and drip pools. Sample sites were: drip pool at LF205, main stream at LZ2, main stream at LF132, pool at LG2, and the LCCC stream at L104.

Ben Hutchins and I brought up the rear of the group and were the last to exit the cave at approximately 9:30 pm on Saturday night. We were happy that it was not raining! When we reached the campsite, Philip, Brad, Jon Lillestolen, Sara Fleetwood, and Scott Olson were waiting for us around a campfire. They had spent part of the day moving dirt in Big Bertha but did not break into new passage. We wasted no time in getting out of our gear and cracking open a warm beer! Ben and I even took bucket baths. Wow, did it feel good to clean off a week's worth of stink and dirt!

I think most everyone managed to sleep a little bit except for me. My internal clock was about 12 hours off and I did little more than lie quietly and listen to the night birds change into morning birds, and then watch the sun come up.

Sunday, July 24, 2011

After everyone got up and going in the morning, we packed up and headed out. Jon and Scott headed back to Blacksburg while the rest of us drove to Hardee's in Norton for a dose of grease. After that, we drove over to visit the impressive Natural Tunnel where we rode the lift and ate ice-cream. I know Brad and Ben had never seen it before, and I'm not sure about Sara. From there, Ben and I headed for the Tri-Cities airport and the others left for Blacksburg. I dropped Ben off at the airport so he could fly back to TX, and then continued on to Blacksburg where I washed Ben's and my gear at Mike and Andrea Futrell's place and enjoyed a visit with them.

Summary:

This 9th camp trip in Omega was a resounding success. After not camping in the cave since 2005, last year's camp was dedicated to mop-up and de-rigging, and moving the camp upstream so that we could push some of the more distant portions of Gale Force. This year's camp trip was a realization of that effort, and a new camp was established in Major, MAJOR! Borehole. Although I heard through the grapevine that there were rumors of Omega being 'tapped out' and 'nearly done', this couldn't be farther from the truth. Including 775' mapped by the weekend crew, we mapped nearly 2.5 miles of new cave passage (12,830') and left with the feeling that we had just scratched the surface of what lies upstream. Although it turned out that we didn't break out into any new sections of cave on this trip (a new branch or major infeeder), the passage density and complexity is so high in this area that it will likely take quite a while to figure out where everything goes. And, as we discovered during the downstream camp trips, one small upper level canyon can lead to miles of new passage and into a different section of the cave.

Scoop Loops turned out to be an area containing a surprising amount of mind-numbingly complex passage. While I think we did a very thorough job of surveying everything we found, I'm sure I'll find more leads that need to be surveyed when I draft the map. The area that Jon, Sara, and Tom surveyed has many large leads remaining, and they never even got to the infeeder lead they were hoping to access. I am certain that there is a large upper level in this area, as well. We see the upper level farther downstream, but the passage is filled with ancient flowstone in the upstream direction.

At this point, I think it is very safe to say that Omega will easily pass 30 miles in length, and 35 miles certainly seems to be a realistic number. Beyond that, who knows?

Many thanks to the Clinch District, U.S. Forest Service in Wise County (Chuck Lane and Lois Boggs, in particular) for working with us and providing access to the LCCC entrance during this expedition. Without their cooperation, the exploration and documentation of this cave would be severely restricted.

Many thanks, also, to the folks who participated in the weekend and camp trips for all their help in establishing the new camp in a safe and efficient manner, and for being such a well-oiled and extremely fun survey machine for days on end. The 'sketcher's cramp' in my hand took more than a week to go away! And finally, this was the most productive camp trip ever in terms of footage surveyed by a single crew, and nearly rivaled that of the 2002 camp when two teams surveyed 13,800'.

The cave is now 28.71 miles long. The depth has not changed.