

TORMENTA 2002



OXFORD UNIVERSITY CAVE CLUB

Culiembro
1 km
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Expedition Report

Oxford University Cave Club Tormenta 2002 Expedition

Picos De Europa Mountains, Spain

7th July - 31st August 2002

Seeking to further the exploration and understanding of the cave systems of the high Picos de Europa mountains of northern Spain.

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Graham Naylor
James Hooper for printing this report

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Introduction

Oxford University Cave Club came back triumphant after another year's hard pushing in the Picos De Europa mountains. With the advent of satellite technology, caving is one of the last forms of exploration left on earth. This year OUCC once again proved their world class standing in this truly unique endeavour.

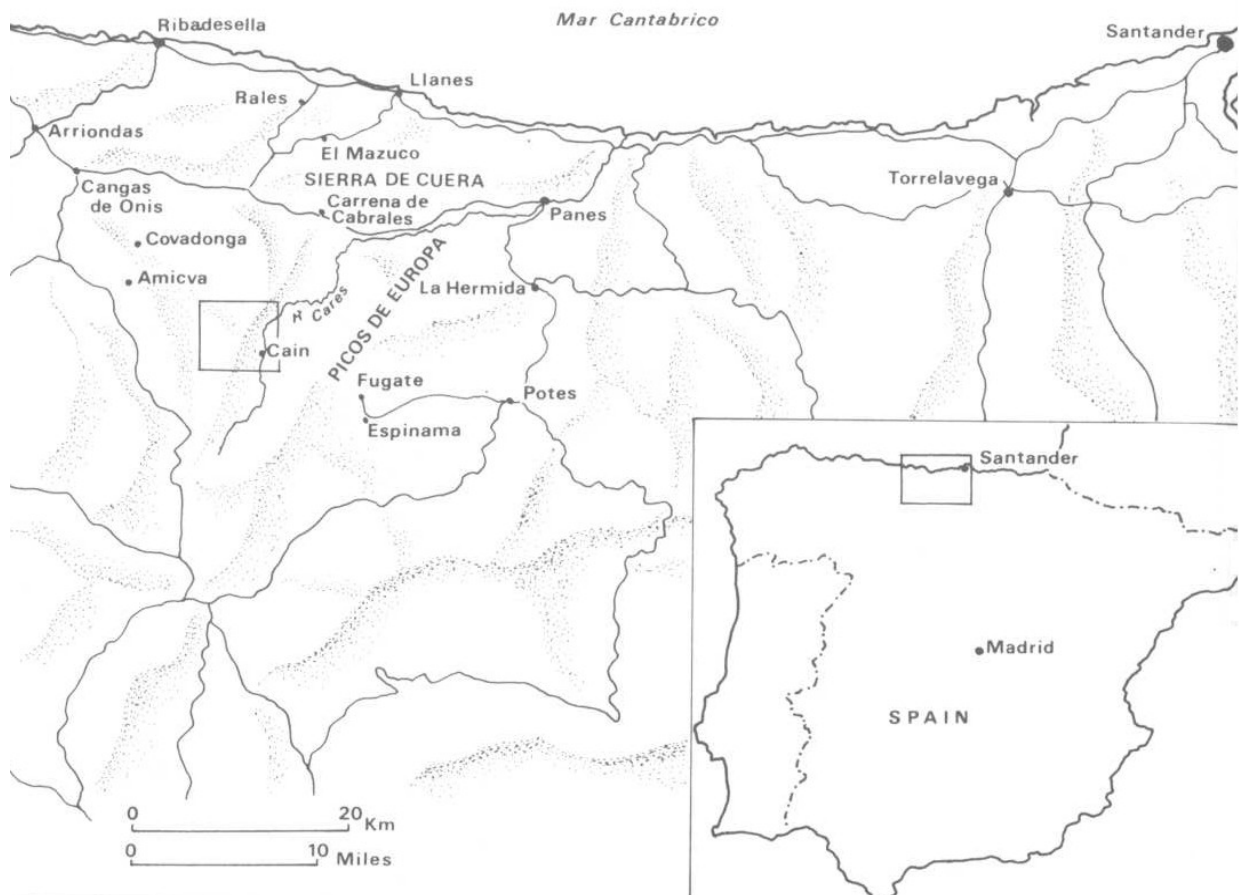
After extensive surface work done last year, we had a promising 80 metre deep shaft series with a good draught. After a shaky first few pushes the cave broke out into some big chambers. The booming shaft series we hoped for turned out to be a cascading streamway, down towards Culiembro.

One of the great strengths of Oxford University Expeditions is the number of new cavers we bring in. This year was no exception, and we had 4 team members with less than one year's caving experience. All of them got some really great pushing in, uncovering some major sections of cave.

At the end of the expedition, the cave was pushed to 721 metres in depth, and a total survey length of 3940 metres.

At the bottom, the cave seemed to be heading for Asploderu La Texa, We know that in this cave there is an inlet of similar size to the Tormenta streamway at an appropriate depth. If the caves connect, the system would be 1020 metres deep. The lead is a few large pools, which we hope to return to next year with buoyancy aids.

We also hosted a Polish attempt on the sump at the downstream end of another cave, C4. It has been surveyed to within 5 metres of the upstream sump in 2/7. Both sumps share similar characteristics and flow rate, and they are expected to connect. Unfortunately, the attempt was foiled at -600 metres by a fiendishly tight rift just above the streamway.



Pozo Tormenta - Description

The cave is described in sections. For clarity routes off the main line have been included in square [] brackets and names of sections of cave are italicised.

Location

Pozo Tormenta is located over the Julagua - Covu ridge from the Ario bowl. Follow the cairned path which runs from Ario and along a ridge to the East of Julagua. On the left is a large valley with a big startlingly orange boulder in the bottom. A little further along the path, and a 3 metre diameter goat shelter can be seen on the left hand side of the valley (looking down). *Pozo Tormenta* lies in the middle of the valley about 5 metres higher than the goat shelter. It is a strongly draughting vertical slot in the grass, about 50 x 20 cm.

UTM coordinates: (WGS 84): 0344532 4789727

Altitude: 1540 metres

Depth: 721 metres

Surveyed Length: 3939 metres

Warning!

The description given here is the result of two months of hard work and is as accurate as possible. However, it cannot be completely perfect so be careful. In particular:

The flood response of the cave is unknown.

The rope lengths given in this document are estimates .

In many places the rigging is insufficient and should be improved. This is especially true of the final sections of the cave.

There are still many unstable rocks/choss in the cave waiting to fall on people.

Entrance Series

The entrance squeeze (best attempted facing the goat shelter) drops into the tiny *Tornado chamber* - just big enough to put SRT kit on in. A gradually enlarging hole in the floor leads down the *Muddy Slope* to the top of *Camera Pitch*. [It is possible to travel along the rift below *Tornado Chamber* instead of down, leading to a parallel shaft that chokes after about 10m.] Half way down *Camera Pitch*, a large, pebble-strewn ledge offers the opportunity to kick choss on anyone below.

At the bottom of the pitch follow the rift, past the remains of Doyle's camera, to *Velcro Squeeze*, an awkward 2m section of tight rift. This pops out above *Velcro Pitch* (on the way in, feet first is definitely easier although everyone should try hanging upside down over the pitch at least once, just for the experience).

At the bottom of the pitch, a 5m traverse starting just over the top of the obvious pitch-head leads to *Thunder Pitch*. [A possible continuation of the rift at this level has not been explored.] *Thunder Pitch* lands about 2m away from *Subtle Knife Pitch*, a fine 30 metre drop that marks the end of the entrance series.

Pitch	Rope	Belays
Muddy Climb	45 m	Bolt backup, thread + chockstone y-hang, 2 bolt rebelays in roof (-3 m, -5 m)
Camera	"	Bolt y-hang, bolt deviation (-3m), bolt rebelay (-10 m)
Velcro	50 m	Bolt backup L, bolt y-hang, spike deviation (-2 m) spike deviation (-10 m)
Thunder	"	3 bolts on traverse RLL, bolt y-hang, dodgy spike deviation (-5 m)
Subtle Knife	50 m	Bolt y-hang, bolt deviation (-10 m), spike (-12 m), spike deviation (-13 m)

Base of Subtle Knife to South Wales

After landing on a rocky floor, follow the rift along into a bouldery chamber. [Climbing down through the boulders leads to upstream *Mornflake Creek* which enters through an immature 6m shaft parallel to *Subtle Knife*. There is no easy connection to downstream *Mornflake* unless you take a hammer...] As the walls begin to narrow in again at the far end of the chamber, the climb down through *Scrofulosity Rift* begins. [A window can be seen over the top of *Scrofulosity Rift* which has not been pushed.]

The way on is to go straight down and follow the rift at floor level, down over an awkwardly wide 2m climb, and back under the passage to climb down to *Mornflake Creek*. This small streamway meanders along the line of the rift for around 70m before falling into *South Wales*, a boulder chamber about 25m high and 25m across. The water falls down a 10 metre pitch before sinking into an impenetrable choke in the floor.

Pitch	Rope	Belays
Scrofulosity Rift I	15 m	Bolt belay, bolt rebelay (-3 m), chockstone deviation
Scrofulosity Rift II	20 m	Tape climbing aids, 2 spikes in floor belays, wire round pillar rebelay

South Wales to Mostly Mud Cafe

Instead of following the water, pendule across onto the boulders opposite the pitch. A hole in the wall reveals a sloping route through the rocks. At the bottom, a turn right followed by a 2m climb up leads to a junction (an alternative way through the boulder choke enters on the left). To the right, the passage opens out into the main *Area 4 Chamber*. Head this way and follow the left hand wall round.

Come away from the wall where a small waterfall drops through the roof and climb over a large boulder [*Rubby 9mm Pitch* leading to upstream *Upper Tormenta Streamway* is just below and to the left of the rock] before returning to follow the left hand wall through the chamber. [The right hand wall appears to be an enormous choke with lots of inlets coming from the roof. There may be ways on here that haven't been discovered despite a bit of work, but crawling through the unstable boulders is pretty scary...]

Climb up the gentle, muddy slope towards the sound of falling water. At the top of the slope, the *Mostly Mud Cafe* brew kit site marks the start of a complicated fossil level.

Pitch	Rope	Belays
South Wales	20 m	Chockstone backup, spike + bolt y-hang, tie off on big boulder at bottom to make a pendule

Mostly Mud Cafe to Balrog via Streamway

The first route to be discovered has become the trade route, although it is rather wet, and there may be better ways to *Balrog*. From *Mostly Mud Café*, climb down to a rather drippy window above a short pitch, *Singing in the Rain* (aka *SITR*). The base of this pitch is a large steep sided depression which forms one corner of the *Area 4 Chamber*. The depression is split in two by the *House Sized Boulder*.

To reach the streamway, head round to the far side of the boulder where it is possible to climb down through more boulders into a rift. A short traverse followed by a pitch leads into a fast flowing stream (flow rate estimated at about 50 litres per second, in fairly dry conditions).

[Upstream leads to a chamber, *The Head of the River*, where water comes down a chute from the roof. It is possible to free climb above the chamber and continue upstream. The passage gives the choice of an awkward duck or an extremely tight oxbow, *One Way Ticket*, before coming out underneath *Rubby 9 mm Pitch*. Continuing upstream leads into a chamber, where the main streamway is found to be choked. A muddy inlet still needs to be pushed, however.]

Heading downstream leads to occasionally awkward but constantly entertaining rift. After a short pitch the passage widens, and the *Turner Prize Series* enters on the left hand side. A pair of cascades mark the approach to *Balrog*, one of the larger pitches in the cave. The cascades probably become impassable in wet weather, so a short traverse and pitch is best rigged to pass them.

Pitch	Rope	Belays
SITR	15 m	Bolt + thread y-hang (or rereg somewhere dry!!)
Traverse to stream	10 m	3 spike traverse line, fairly optional
Pitch to stream	10 m	Spike backup, bolt (needs a second bolt)
Streamway I	10 m	Great big pillar (maybe rereg higher for wet weather)
Streamway II	15 m	Bolt, natural traverse, 2 bolt y-hang I think

[Mostly Mud Café to Troll Chamber

From the *Mostly Mud Café*, climb up the left side of the muddy slope. There is a rope in situ on the only scary section. From the end of the rope, cross the boulder bridge to the right side of the passage, then

clamber back to the left as soon as possible. A small, triangular, strongly draughting hole in the calcite leads into a passageway.

[Following the draught leads vertically up the rift to *Death Star Pitch* (drops in above brew kit), *Magic Tree Passage* and *Breeze Blocks Chamber* (probably above the *South Wales* boulder choke in *Area 4* - connection not yet confirmed)] Continuing along the floor of the rift, the passage widens out a little into a glorious, greyish fossil streamway which, after 100m or so, pops out into *Troll Chamber*.

Troll Chamber is similar in scale to *Area 4*, though with a lower roof. There are at least four known routes from *Troll Chamber*. Only two of them have been pushed.]

Pitch	Rope	Belays
Traverse	5 m	2 spike traverse (rope left rigged in situ 2002)

[Troll Chamber to the Upper Tormenta streamway via Turner Prize Series

From the entrance to *Troll Chamber*, turn sharply left and downwards. A short rift leads into *Lotto Grotto*. In the roof another passage can be reached which has not been explored. At the far end of *Lotto Grotto* is *Bovine Bingo Pitch*, followed by a wet awkward crawl, *St Martin's Lane*. This opens onto a wide pitch, *ATPSRHESW*, with an aven above. The base of this pitch leads into the *Upper Tormenta Streamway*.]

Pitch	Rope	Belays
Bovine Bingo	40 m	Dodgy boulder backup, bolt belay, bolt rebelay (-2m), thread rebelay (- 10m), bolt rebelay (-15 m), bolt rebelay (- 20 m)
ATPSRHESW	30 m	Natural backup, bolt backup, natural y-hang (!)

[Troll Chamber to Barcelona

Follow the right-hand wall from the entrance of *Troll Chamber*, until the wall takes a sharp left hand turn. A climb/crawl up leads to a strongly draughting but choked hole with a one way vocal connection to *Area 4*. Directly beneath this is an awkward climb down through boulders to the head of a more open 3 metre climb, which needs a rope. This is behind *Singing in the Rain Pitch*, at one end of the *Barcelona Rift*.]

[Troll Chamber Leads

These leads are both guessed to drop into *Barcelona / Billy Goats Gruff*. There are probably more leads as the chamber is quite sizeable.

(i) Following the left hand wall from the entrance of *Troll Chamber*, it is possible to climb down a very slimy slope. Here a pitch under some boulders leads down into a rift. Alternatively, follow the wall around to an open, echoey pitch head, where nasty choss and calcite make bolting difficult. It is possible to climb up above this pitch over attractive but loose flowstone, but the route appears to degenerate into an impassable squeeze.

(ii) Follow the left hand wall of the chamber, but pass over the top of the slimy slope. At the top of the chamber a flat out crawl into the wall is marked by two cairns. An enlargement is visible, with an obvious echo and perhaps a short drop.]

[Mostly Mud Café to Billy Goats Gruff

Climb down from *Mostly Mud Café* and drop down *Singing in the Rain*. Facing the wall at the bottom of the pitch turn to the right and climb up the rocks. It is possible to squeeze through a large crack in the wall into an L-shaped chamber. Being careful to avoid a hole which is thought to drop into the *Upper Tormenta Streamway*, follow the L to the right. At the far end of the chamber, a climb up can be seen which heads into *Troll Chamber*. Underneath this is the entrance to *Barcelona Rift*.

Following the rift leads to an inlet to the right, and just beyond is a pitch, *Rapunzel*, which drops into a large chamber, *Billy Goats Gruff*. Several ways off can be seen, all unexplored. Most seem to head down, but there is at least one rift leading off horizontally. These are the most interesting leads in this area.]

Pitch	Rope	Belays
Rapunzel	20 m	Spike backup to a dodgy 2 spike y-hang. Needs bolting.

Balrog to Saturday Night Fever

The top of *Balrog* is a short abseil followed by a wide traverse, until the pitch proper. The fine 70 metre hang is interrupted by frequent rebelay as the far wall drops away to reveal the largest chamber so far discovered in Tormenta. *Bare Space* is big. At the bottom it is easier to make a short pendule about four

metres up. Follow the left hand wall over, under and around boulders until a fairly big black space is reached, *Saturday Night Fever*.

Pitch	Rope	Belays
Balrog I	20 m	Bolt L, Bolt L, spike deviation (-0 m), ledge (!) rebelay
Traverse	15 m	Spike rebelay, 3 bolt traverse
Balrog II	85 m	Bolt y-hang LR, bolt y-hang LR (-8 m), bolt y-hang LL (-20 m), bolt y-hang LL (-30 m), bolt y-hang LL (-40 m), bolt rebelay (-55 m), bolt rebelay (-60 m), unused bolt, tie off 3 m above floor.

[Continuing along this wall and climbing up about thirty metres, leads to a large hole in the left hand wall. Heading through the hole leads to an abrupt drop, the top of *Grease Lightning*, a pitch with some water entering from above. At the bottom of *Grease Lightning* is *Summer Lovin'*, another pitch, which soon drops into tight rift, which can still be pushed.]

Pitch	Rope	Belays
Grease Lightning	70 m	Spike backup, chockstone belay, bolt rebelay (-2 m), bolt rebelay (-15 m), 3 natural rebelays
Summer Lovin'	50 m	2 bolt y-hang I think

[Pass the route to *Grease Lightning* to attain the very top of the chamber, which seems to be some sort of fracture feature. This interesting section, *Krystallnacht*, is filled with lots of straws, stalactites, helectities and some attractive crystals.]

Saturday Night Fever to Cannock Crawl

At present the *Saturday Night Fever* Pitch is approached by descending on rope through perched car sized boulders coated with mud, grit and smaller boulders. Water can be heard cascading down in the not so distant void. About 10m down this begins to take on the feel of a rift with bus sized boulders wedged in. These provide the belay points for the descent where great care is necessary to avoid dislodging anything more serious than a gloop of mud onto anyone below. As depth is gained the pitch edges out into a fine shaft with a small stream falling on the far side, about 10m distant. [From just above the final belay a pendule is possible which would access a decent sized hole that appears to head off above the misery of *Cannock Crawlway* below.]

The pitch lands in a small chamber from where the only way on is a short climb down into *Cannock Crawlway*. Ostensibly similar to *Mornflake Creek* in character this is an irritating catchy bit of scrofulous rift with a small trickle of water and the obligatory gritty mud coating the walls. Fortunately after about 30m it is all over as the passage forms a minor inlet into the main Tormenta streamway once again.

Pitch	Rope	Belays
Saturday Night Fever	120 m	Backup round boulder, bolt + flake y-hang, bolt rebelay (needs tape also) (7 m), bolt rebelay (-11 m), bolt (-20 m), bolt -40 m, boulder rebelay (-60 m), flake rebelay (-65 m), bolt rebelay (-85 m)

Lower Tormenta Streamway to La Frontera

[In the upstream direction the main streamway soon closes down at a boulder choke.] Downstream, however, continues in fine form as a series of sporting cascades with deep pools that may be easily traversed. Some of the cascades require handlines and the rock is generally dolomitised and brittle.

The largest of the cascades, *Grandmaster Faff*, lands in a small chamber from where an easy climb up leads to a short fossil oxbow that soon rejoins the main passage. It is around this point that the cave makes an important but barely perceptible swing to the left abandoning its old southeasterly bearing and instead heading north. The main route follows the water down yet more cascades in fine form until an unexpected sump, *La Frontera*, brings a premature end to the proceedings. This sump may potentially be freediveable.

For non diving cavers the way on is up a short pitch, originally a bolt climb, that has been left rigged 15m back from the sump. After 5m this enters a small muddy rift from where an even muddier ascent gains a window in a narrow flake of rock and matching pitch down the other side. A slimy chimney climb down gains a fine fossil passage some 2m wide with marches off above the sump. Dry progress is hampered by a thigh deep pool that blocks the passage although stepping stones on the left hand side combine with slightly submerged ledges and/or bridging techniques to reach the other side. From here a short pitch down regains the mercifully quiet streamway.

Pitch	Rope	Belays
Grandmaster Faff	25 m	Thread backup, 3 spike backups on climb, bolt belay (-6 m), bolt deviation (-11 m)
La Frontera up	10 m	Left rigged in 2002.
La Frontera down	10 m	Left rigged in 2002.

La Frontera to Mirador del Echo

A comparatively straightforward section of stream passage soon arrives at the top of an impressive cascade the first 10m of which is free climbable. A traverse is soon made on the left to evade the path of the water and this leads to the head of a superb 32m pitch, 'D', which marks the place where the cave passes 500m in depth.

The 10m diameter shaft stretches out into the distance but from its base the water has cut down in another short series of cascades until it flattens out for several hundred metres of peaceful stream passage. Progress here is still not trivial as the floor is often highly polished grey limestone with pools waiting to fill your welly should you slip. The walls also lean from time to time as the stream negotiates a succession of meanders requiring the use of arms as well as feet to make 'walking' progress.

The first phase of the horizontal streamway is brought to a close by the 15m *Elephant Pitch*, a slightly awkward takeoff rigged primarily from naturals which lands next to another splashy pool in a chamber typical of the streamway. By now the cave seems to have settled upon a resolute northeasterly course, albeit still with a few minor meanders.

Another long section of stream, with a few short cascades, follows much as before until it narrows slightly and descends to the head of a 5m pitch, *Croco-piggy*. The take-off here is necessarily awkward requiring a climb up on a curtain of rock and then an exposed climb down on the other side until the level of the belay can be reached. Although this manoeuvre is not difficult and is all conducted while clipped into the pitch head, the act of turning round while crossing over the rock curtain will almost inevitably lead to a rat's nest tangle of cow's tails and pitch rope, not to mention any other tackle you are carrying. From the base of *Croco-piggy* an area of collapse offers the opportunity to traverse briefly above the water although this is not necessary and feet can stay dry if care is taken.

Very quickly a more substantial pitch is met, *Dr. D's Proboscis*. At 20m this pitch is both longer and drippier than most of the streamway's preceding drops. A huge natural and bolt provide the main hang but then deviations are relied upon to avoid the worst of the water and tying the rope off at the bottom gives some added protection. From the base of this pitch a short section of streamway leads to the *Mirador del Echo*, a draughty viewpoint over a fine spacious shaft series, which marks the cave's latest change in character.

Pitch	Rope	Belays
D	70 m	Spike backup, climb/traverse on bolt y-hang, bolt y-hang at pitchhead
Elephant	25 m	Thread backup, bolt traverse, wire spike belay, tape deviation (-10 m)
Croco-Piggy	20 m	Natural Y hang
Dr D's Proboscis	30 m	Bolt + natural Y hang, 2 Deviations

'Til Hil Freezes Over to Los Lagos

The first pitch of the shaft series, *'Til Hil Freezes Over'*, plunges 35m to an extremely draughty chamber where a tight pendule swings you away from the collection pool at the bottom. With the roof out of sight and the walls maintaining the shaft width a clamber up onto boulders leads directly onto the second pitch, *Divine*, which lands 10m later in a slightly smaller but no less draughty chamber. At first it appears the passage is about to resume its horizontal character but a clamber down and around a corner reaches *Retribution*, another spacious 35m pitch, with a superb setting and roomy landing.

Edging around the plunge pool gives access to a less draughty dry oxbow from where a short traverse reaches yet another pitch head, *Atonement*. This lands 12m below in a circular chamber and a clamber down to where the next pitch, *Ferki's Folly*, may be observed nestling at the end of a short 1.5m diameter phreatic tube.

10m down, a very short section of Yorkshire style rift has been cut into the floor of the chamber and there is just room for three people to stand before the 10m pitch, *Patience*. This disappears around a left hand corner to land on a spray lashed boulder pile 8m below. Although the top of the boulder pile is comparatively dry a quick dash down is less so until the rift continuation is reached, and another 10 metre pitch, *Mona*.

The cave now changes character again to horizontal streamway, (*The Long Dark*) *Streamway of the Soul*. However, the narrower nature of the rift, typically 0.5m wide, together with its apparent straightness suggests that it is strongly fault controlled. Progress is mostly easy and rapid except for where a long thin boulder enforces a crawl followed by a short climb up and over a thin curtain of choss rock that almost blocks the lower section of the passage.

The rift briefly turns phreatic in character as the roof sweeps down and the walls consist of deep, washed out shale beds. [The phreatic tube rises enticingly and may well continue independently of the rift passage which has been carved out below - this may even account for some of the draft felt at this point...]

The rift passage continues as before to the final pitch so far explored, *Enlightenment*. This is only short and lands in another similar rift which continues much as before. The *Comedy Obstruction Barrier* provides a brief moment of absurdity as a pair of inch thick choss curtains reach out across the passage leaving a gap of between 2 and 4 inches width and about 10 foot high. The climb up and over is easy but care should be taken as it would take a long time to crawl out of here with a sprained ankle.

Not much further on the water slips silently into an abrupt pool where the floor just steps away. On the left fist sized colourless octahedral crystals occupy a ledge which may be climbed onto for a view across the pool. No traverse levels exist but it is only a few metres to the other side where the floor pinches in enough to offer a single stance before a second, slightly smaller pool.

From the ledge, the main passage appears to veer right beyond the pools although easy climbs up to windows also hold promise straight ahead. There is a slight draft into the cave and no evidence of backing up although a third pool in the distance did appear to be static with a build up of calcite rafts. Of course, the only way to find out is to go and push it!

Pitch	Rope	Belays
Til Hil Freezes Over	?	?
Divine	?	?
Retribution	?	2 naturals, 1 deviation
Atonement	?	2 naturals
Ferki's Folly	?	2 bolts
Mona	?	2 bolts

Pushing in Tormenta

One of the great thrills of cave exploration lies in the uncertainty of the project - not knowing what lies around the next corner. This can lead to great triumph and great disappointment. Here Chris Rogers describes the highs and lows of the expedition are described.

After a year of hard work it had all come down to the next pushing trip. For any expedition, particularly for a university expedition, there is months of work to get the thing going. Hours of grant applications, gear orders and bureaucracy take their toll.

Everyone on the committee had worked incredibly hard, but instead of the booming shaft series we had all dreamed of, the entrance series dropped into an awkward scruffy crawl in immature streamway. We were still only at -100 m; we had lost the draught and, it seemed, the cave. Our hope lay in a boulder choked chamber at the pushing limit, but it seemed a slim chance.

I made sure I was on the pushing trip. We dropped down to the bottom of the entrance series and went through the crawls. Paul Garver and Dave Legg, who were also on the trip, went ahead while I played with the rigging for a short pitch above the boulder choke. Meanwhile they disappeared off into the boulders, only stopping to describe a man sized passage on the far side.

After they hadn't come back for a while I decided to forget the pitch and headed off after them. I found the way through the boulders to the far side. The passage was a bit bigger than man sized, and I was excited. But as I kept on going one wall of the passage disappeared to reveal a big chamber. We had re-found the draught and we could see holes everywhere.

Bram and Christian on Mountain Survival:

"We dropped the water (and the sleeping bags and the 2 gram pencil) but kept the bread (and the razor)."

From then on the expedition had a real buzz to it. It suddenly felt like we were onto something big and the cave obliged. The next trip pushed down through the bottom

of the chamber, which we called Area 4, into gorgeous rift with a fast flowing streamway. At the far end the streamway dropped off above a big pitch.

We got hung up at the top of the pitch for several days. Numerous rebelay were required and bolting was tedious, while the pitch head was freezing with a massive, damp draught. We found out why there was such a strong draught when Hilary Greaves and Pete Jurd dropped the last rebelay to find themselves in a huge chamber, Bare Space.

It was getting towards the middle of expedition by now and most of our cavers were heading back to blighty. The news of big finds and a call for reinforcements went with them. No one needed to be asked twice, and OUCC started flooding into Spain by any means possible.

The expedition was back on track. The next teams found and started work on a 97 metre pitch, Saturday Night Fever. The water had sunk through boulders in Bare Space making work easier and SNF was quickly pushed. The payback came when we hit tight rift at the bottom, Cannock, before recovering the main streamway.

From then the Streamway was full of gorgeous OFD style running passage, mixed with cascades and pitches. Team after team went down into easy pushing. Despite finding a perched sump, the cave kept going. The next pitch took us below 500 metres and into more excellent streamway. By now we were starting to think about how much time we had left. The trips were getting pretty serious, and derigging would be significant. The pushing kept going however. After several hundred metres of almost completely flat streamway, the water began to drop again.

The last pushing trip had over 150 metres of rope with them and aimed to use all of it. Chris Densham on rigging tried to outrun Rob Garrett and Paul Garver on surveys as they dropped pitch after pitch. By the time they reached the 2002 limit they had only 30 metres of rope left.

C4 Sump

The Poles beat the Brits to Ario by two days, arriving on 6th July. The plan was to carry all of their gear up to Snow Pole camp, rig 600 metres of cave, porter diving gear to the bottom, dive the sump, derig the cave and derig the camp in the space of two weeks. Their progress was described in the Top Camp Logbook.

8th - 10th July

In three days we carried all the caving gear, diving gear and food for two weeks - about 450 kg. The way up is long and boring, on average 6 hours up and 3 hours down. However now we have everything needed at Top Camp. The weather conditions are hard mist, cold and windy.

11th July

GJ + KO started to rig the cave. They did up to monster (Huge shaft in two parts - total 130 m of descent). They are back at 23:00.

12th July

Second trip (WS, KB) starts at 9 am. After descending Monster and Grown Up, together with second group (AS, WB) carrying diving equipment, we got stuck in Cuevas del Mar because of flood. We spent 8 hours waiting for an improvement in the water conditions. Finally we have all the gear at the top of Cat O' Nine Tails. We left the cave after 22 hours, totally wet.

13th July

GJ + KO left the top camp to rig the cave to the bottom. Time 13:00. After 20 hours they are back. The bad news is we are short of ropes and still one shaft to go. (Marie Celeste - 14 m). Up to now the cave is not difficult. All gear has been left at the bottom of the last shaft before Marie Celeste.

14th July

WS + WB left top camp in the search of missing ropes. Finally we found it in OUCC's car near Maria Rosa Bar. Thanks to OUCC. At 21:00 AS + KB left top camp to rig cave to the bottom.

15th July

At 2 pm, WS and WB start another push attempt. Sure that the cave will be finally rigged, we moved down to dive in the sump.

At the bottom of Monster we met AS and KB. They inform us that we are still not at the bottom. They got stuck in a tight rift before the last shaft. They were very tired, returning to the surface after 22 hours. Carrying down diving equipment WS and WB passed rift and last shaft with tackle bags full of diving gear.

However a rift between Marie Celeste and the streamway was even tighter - going there with diving equipment was madness (several attempts were made). So we took the decision to start derigging the cave. So we did it up to Cuevas del Mar, where we met another group (GJ, KO), where we left them and went out from C4. They detackled the cave up to the middle of Monster.

La Frontera

Hilary Greaves describes how she discovered a sump at -500 metres, well above other known sumps in the area.

We climbed down a couple of cascades, and then 'It's un sifon.' Damn. DAMN. I know you get sumps at the bottom of caves but not at -450 metres, come on, not here.

So we went through the familiar routine; walk back upstream, feel for where the draught goes, look for windows and avens. Done it before, do it again, never works but you have to try, damn hard.

I sat shivering in a survival bag belaying Marc [Rubinat] while he climbed up in pursuit of the draught. Three or four bolts later and we had found a nice lead. Marc re-rigged the rope and threw it down. 'Does that touch the floor? Come up and bring all the things.'

We were in a (ridiculously) muddy rift with plenty of draught. A short climb up and a short pitch down took us to a small chamber. Marc was pessimistic. 'The air goes back round there to the stream.' We climbed back down to a T-junction one half of which clearly went back to the stream, one half to a passage with static water. Marc shouted into the passages 'Listen, is an echo, that means sifon. I think no good.' My legs were already soaking from the streamway. 'I will look anyway.'

The wet passage had strategically placed rocks so I didn't have to get any wetter. Very shortly I was at a T-junction. I was standing on a traverse ledge with the passage floor about five metres below. It looked almost free climbable but possibly unwise.

I went back to get Marc and slash the sixty six metre rope. Now it was Marc's turn to shiver in a bag while I bolted and rigged the drop. I descended and looked up and down the passage. Flowing water - damn. I don't get it - we were in a fossil level, isn't it reasonable to expect it to be dry up here? Oh well not to worry, we'll check out this gorgeous scalloped streamway anyway.

The passage went to a climb down to a pitch, so again we came back to cut the rope. As I did that Marc took a look upstream. Suddenly the jigsaw fit together - the downstream end of a sump.

While doing the desperately seeking sump bypass bolt climb, we'd been talking about how good it would be if we actually found a bypass - our plan for celebrations had been to time the trip so as to get back to the Refugio at 7 am (opening time) and have a beer each before passing out; and so 'Dos Cervezas' pitch was christened.

The Rules

- (1) No caving without surveying.
- (2) No vomiting in this room.
- (3) No rescues until the rescuers have been fed, watered and wined.
- (4) Beer is currency.
- (5) No drinking wine in bed.
- (6) Two open at all times.
- (7) Rub points - what rub points?
- (8) For legal reasons, whatever you are thinking of doing, El Jefe recommends you don't.
- (9) No badminton games in the kitchen.

New Talent

One of the great strengths of OUCC is the number of new people we bring into exploration caving. Below some of the newest talent in the club gives an account of the expedition from their point of view.

Between a rock and... another rock

Few new cavers make the same sort of impression as Chris 'Vlad the Impaler' Pedersen. Already well known for his axe wielding antics, he quickly took to the more liberal Spanish laws regarding knives...

"Wahay!"

THUD

I love expedition rope. By now, a little over three weeks into expedition, the ropes on the first few pitches had been compressed by so many descending cavers that the 10mm rope was more like 7mm, and slick with wet mud. Even when I was pulling the rope hard against the braking krab, sometimes even with an extra loop through the krab, I would still descend at almost freefalling speed. The stop would take a second or two to actually live up to its name, even when I'd just tap the lever to go down. That made for lots of fun rides down Camera Pitch... and lots of colourful bruises.

"Rope free!"

Just two or three months earlier at a drunken party, Chris Rogers had talked me into coming on a caving trip to Derbyshire. Hey, it sounded like a laugh. It most certainly was. From there, he somehow managed to talk me into joining the expedition. After the end of term, we all went on a training week to Yorkshire; I was taught SRT for the first time up a tree outside the hut at Bull Pot Farm on the first day, and then every day for the rest of the week I ended up underground practising with my shiny new SRT gear. Not shiny any more... a short time later, I'm here, in Spain, in unexplored territory, underground, several hours from anywhere, between a rock and a hard place (another rock, that is), a long way from rescue if anything should go wrong. And loving it. I must be insane. At least that's partly why the cavers call me Vlad.

John Pybus on surveying:
"However, the Central Limit Theorem is on our side."

Down through the short passage filled with loose rocks, on to Velcro Squeeze. Velcro Squeeze and I have a love-hate relationship. I love to hate it. Down the next couple of pitches... abseiling is fun. Rebelays get annoying at times, though.

The only problem with going down is that nagging thought that I know I have to prussik up later on, and the cavern will echo with Swedish cursing. Ah well, I'll worry about that later. Get to the rift, traverse, freeclimb down a bit, enter Mornflake Streamway. Slow going, the walls snag on my SRT kit. More cursing, plus some singing in various languages as I crawl along slowly.

"Hello Vlad!"

"Hi Pip!"

So much for being lazy. Pip had caught up with me already. I'd have to pick up the pace, despite the intention of a slow, comfortable trip; Pip's foot still hurt and slowed her down but she was tired of being stuck in the kitchen every day, while I was just feeling lazy and wasn't really up for a long, tiring trip to the pushing front that day. We were on a trip to look at a few unexplored leads along the way. The rift just below the entrance had fizzled out quickly (hence Soda Pitch), now we were going to look at a passage near Area 4 that Pip had seen but not followed.

OK, here's the end of Mornflake Streamway, there's the bolt I put in... on to Area 4. We stop at the brew kit and have lunch – something brown. Everything's brown... on to Magic Tree Passage! Stop and admire the calcite formations and weird mud... this cave is beautiful. There's nothing like it anywhere on the surface. Through the Arts Hole (me and Dead Dave were the only arts students on expedition right now, and we had gone through that hole several times each), up the rift, into the side passage. Unexplored territory! I grin as I wonder how many cavers get to discover new parts of the planet on their tenth caving trip... the passage soon ends.

Now I'm standing in the top of a chamber. It's circular, maybe 6-8 metres across, and opens up into blackness below. There's a pillar in the centre of the chamber. The pillar comes down from the roof and rejoins the wall at the bottom. The walls of the chamber slope inwards as you go down, making the shape of a sort of bottomless bowl with a roof. It's normal brown muddy rock, but this is one seriously strange formation. How could it have been formed?

This chamber is beautiful. Suddenly I realise what it looks like – it looks like a rock version of the room in that scene in Star Wars where Obi-Wan Kenobi has to shut down the tractor beam generators. Pip and I agree immediately to call it Death Star Chamber. She tells me to rig a rope and see what's under the chamber. I whistle the Imperial March as I tie the rope onto a rock that might not get dislodged and make me plummet to my death. I smile and think of the stories I've heard of Lev, OUCC legend, and the car-sized boulder that fell down a pitch with him still attached... Down I go...

"Hey, this just opened up into another massive chamber! It's as big as Area 4!"

I shine my light around, trying to get a look at the surroundings. I'm dangling in black space... below I see a floor of massive boulders. And the Area 4 brew kit. I'm coming down right above it.

"Oh. It IS Area 4. I'm right above the brew kit!"

An interesting discovery. A fantastic and somewhat bizarre view. I drop down, get off the rope, and quickly filch a can of tuna from the brew kit for a later surprise celebration of the new discovery. It will get eaten in another part of Area 4, before exploratory freeclimbing over loose rocks, boulders, and rubble...

Somehow I became a caver. In my free time, I get dressed up like a deranged miner so I can force my way underneath millions of tons of rock, go through tiny squeezes like a cursing contortionist, climb up and down sharp, wet, muddy, slippery and brittle rock, get cold, bruised and soaked while dangling under waterfalls, go up and down ropes in a claustrophobic's worst nightmare, and generally risk my life by attaching it to a mere SRT harness and a few ropes. And I love it.

Why do I do it? Because it's there. Because the caves are there, waiting to be explored by my friends and I. Because there are incredible previously undiscovered rock and mud formations that need to be seen. Because it's good sport. Because I've made lots of great friends doing it. Because it's FUN.

Exploration At The Limit

Another new caver, Rosa Clements describes her part in a wonderful exploration trip that went seriously wrong.

Our trip got off to a good start- we soon reached the brew kit site above Singing in the Rain Pitch and made custard with chocolate in it. Pip Crosby had her carbide light so I lit the stove off her head. Me and Dave Legg sang the Pink Song: "The mess tin's brown, the cup is brown, the spoon is brown, the custard's brown..." e.t.c. The Pink song describes Storm Cave perfectly.

We decided to have a quick explore, return to the brew kit for pasta'n'sauce, then do a survey. We found a small hole, "that looks like a Rosa hole" said Pip. I grinned and went down. There were 2 tiny chambers with pretty stalactites and stalagmites but they didn't go anywhere. Then we did a climb which didn't look too promising. On the way down Dave mentioned that he'd seen an unlikely looking hole in some calcite. Pip had a look and found it had a strong draught so we all crawled in. It opened up immediately. Pip climbed up the wall, followed by Dave, so I headed straight ahead.

I found myself in a large walking passage that went on and on. There were a few climbs down but in my excitement I managed them easily. I was in a beautiful fossil streamway, pristine, untouched by any human ever. I hardly wanted to step on the ancient mud floor. But what's the point of a place being beautiful if no one can see it?

Almost quaking with excitement I trod as carefully as I could, trying to cause as little damage as possible to this ancient place. I was the first person ever to set foot here, to cast a light on the flawless walls. I wondered how long had the passage been here, unseen and unknown? How long since a stream had flowed here, beneath the feet of the goats and pastors oblivious of its existence? I respected the passage as I stepped in it.

Eventually it opened out into a big chamber. I could hardly believe it. Of course, it didn't end there, the cavern was full of black spaces inviting me to go forth and explore them. But I had been gone for a while, now was the time to go back and tell my friends what I'd found. I carefully returned to where I'd left Pip and Dave and met them at the top of the wall climb. It turned out there'd been 2 ways on, Dave had taken the higher route to the left and Pip had taken the lower route to the right.

Dave had discovered a short loop full of beautiful formations while Pip had found another passage. We followed her. Small crystalline formations sprouted from the walls and glowed like magic trees under LED light. There were a few pretty white stalactites and an enormous calcite flowstone on the fragile floor. We stepped in each other's footsteps so as not to break the delicate calcite further. It too led to a chamber with leads, though not as big as the one I'd found. We were all enchanted with our finds so we went back to have pasta'n'sauce to calm us down before surveying it. Who could have thought a tiny scrofulous hole in the ground like the entrance to Storm Cave could lead to such a big amazing cave?

Me and Pip argued over whether we should have mild broccoli and cheese flavour or chicken flavour. Dave arbitrated and we had mild broccoli and cheese. Dave said that his passage was too short and damageable to be worth surveying, and we'd all seen Pip's passage, so we decided to survey mine.

When Pip and Dave saw the passage we all agreed that it would be best to go straight to the chamber and have a look at it then survey on the way back. Now we were all together we couldn't resist entering the chamber and having a look round. The far wall I'd seen turned out to be a false horizon- the chamber was massive! We had to explore.

I headed down a boulder slope towards a small dark hole at the edge of the chamber. I heard a scream behind me and turned round to see Pip clutching her foot in agony. Me and Dave vaguely attempted to be useful; I mentally ran through my 1st Aid training: DR ABC, recovery position, stretchers, neck braces, SAM splints... do I know anything that remotely applies to this situation? Er, no. but as the pain subsided Pip knew what to do.

She lifted her foot onto a high rock: rest and elevate. No need to worry about keeping it cold here. She asked for ibuprofen and me and Dave rushed to our new 1st Aid kits: candles, lighters, pencils, paper, wound dressings... but no ibuprofen. This was the first time we'd looked in our 1st Aid kits. Pip told me to look in her 1st Aid kit and I found some Voltarol so I passed her that and some chocolate. Pip said she had followed me down the boulder slope but stepped on a loose rock. This had dislodged other rocks, which came tumbling down over her foot.

Dave is a lot faster than me so he went to fetch Chris Rogers and Paul Garver while I entertained Pip by exploring side passages within earshot of the chamber (i.e. not very far). Before long the others arrived. Pip walked a little with Chris's support. Paul was the fastest person in the group so he was chosen to be the Rescue Runner and Chris wrote a message for him to give to Nobby and Fleur. I had to follow Paul as a backup while Chris and Dave would help Pip out of the cave.

By the time I reached the entrance Fleur and Nobby had already arrived. Although Paul's message began, "Don't worry about Pip" and he had been given instructions not to let Fleur and Nobby panic, they had mounted a full scale rescue operation in which Nobby was the Underground controller and Fleur was the Surface controller. Nobby rushed past me with the emergency 1st Aid kit and other useful rescue items. Pip had seemed alright last time I'd seen her - she could walk with a little help from Chris and with her special foot jammer, she could prussik fine.

I felt very tired and dehydrated but I had to get out of the cave fast. I didn't have the energy to go through the entrance fast. Not a good situation. On the surface, Fleur tried to calm me down and gave me a list of instructions. I had to rush back to camp, make food, and send Paul back to the cave with a long list of stuff. I didn't waste time changing, and feeling like I wanted to collapse, went back to camp as quickly as I could in my furry suit.

I woke Paul and gave him the list of stuff to take to the cave. He didn't seem too happy about it, but admitted a few of the things on the list might be useful. A drink of water restored my ability to think straight and I sat in the kitchen boiling pasta and mixing sosmix, trying to ignore the large pot of stew already on the petrol stove. Nobody felt like caving the next day.

The Learning Curve

Dave Legg was a real stalwart of the expedition. Already an experienced mountaineer, he took to caving like a fish to water and was soon playing a leading role on his trips. He will be following that tradition by taking up the mantle of Expedition Leader when OUCC returns to the Picos in 2003.

I set off for Spain on Tuesday the 9th July, having picked up the cheapest tickets possible on Lastminute.com. I arrived in Bilbao that evening with a large(ish) rucksack on my back and a small phrase-book in my hand, and promptly dashed to tourist information to ask the young Spanish lady where the bus stop was, how I asked to go to Bilbao, and where Bilbao coach station was. One hour later and I hit my first problem: the coach to Cangas de Onis was full. No worries, thought I, and promptly jumped on the next bus in the right general direction (Santander to be precise).

18 hours, several bus rides, some Spanish food, and some interesting social intercourse with a drunk tramp later I found myself on a bus winding its way up into the Spanish mountains, taking several tourists and one rather tired, smelly caver. At the top it took about 1 hour to trawl round all the car parks at Los Lagos before finding the right white Landrover, but thankfully Paul and Rosa were outside it unloading gear. A few beers and a 4 hour walk later I had reached Ario, expedition camp.

Dave Legg on toilet paper:

“You’d have to use stale bread, otherwise it would fall to pieces and a goat would have to lick you clean.”

At Arrio I learned that I had not missed much. A gear shortage and bad weather had prevented any serious caving, and the first trip had been made that day. I spent the next two days helping to carry gear up the hill so that the expedition had enough equipment to start pushing the cave and (hopefully) finding new passage. By now I couldn’t wait to go caving.

The entrance was tight, but not as tight and fearful as the scrotty little rabbit hole anecdote had prepared me for. Inside the cave was brown. A swift slide down a muddy slope (on a fixed rope of course) and a couple of pitches later I found myself at the first obstacle the cave presented on the way down; “Velcro Squeeze”. It wasn’t too challenging, but swinging out over a 20m drop made it a little more interesting. Down the 20m “Velcro Pitch”, and I reached the pushing front of the expedition for the first time.

At this point I had my first lesson in exploration caving. Whilst collecting a tackle sack from a ledge on a route which was being abandoned I placed the sack on a large and apparently secure boulder. I climbed back up towards the top, only for the oven sized chunk of rock on which the tackle sack rested to whiz past me and go crashing down Thunder Pitch.

Several expletives followed. The trip ended once Thunder Traverse had been rigged, and a rope dropped down Thunder Pitch. At the bottom I placed my first (and only) bolt of the expedition as part of the y-hang over Subtle-Knife Pitch. When I reached the entrance from the bottom, I suddenly realised why it had passed into legend as a bit nasty!

A break after my first trip meant that the next trip I undertook was done once Scrofulosity and Mornflake Creek had been pushed, and the boulder choke/chamber prior to Area 4 found. Having dropped into the boulder chamber this meant I got first crack at wriggling through the choke to whatever lay beyond. A loose climb and a bit of route finding later I emerged into what looked like a similar chamber, which appeared to bell out at the far end. I called back to Paul, wandered a little further, and promptly grinned like an idiot; my first find in Spain and it was bloody enormous compared to anything I’d seen outside of a show cave!

Area 4 was the basis for several good caving trips, including several pushes into previously unexplored phreatic passage which led to the discovery of Troll Chamber and Death Star. I also found one large chamber which has yet to be explored. The phreatic passage was also the site of perhaps the worst survey ever carried out in Spain, although I maintain that when the advice about using one of the instruments was “There are 2 scales, use the one which isn’t ridiculous” it can’t have been entirely my fault.

During the exploration of the phreatic passage the expedition’s most serious incident occurred when a large boulder rolled over Pippa’s foot. Although the bone was not broken there was sufficient distance between us and the surface to make a rescue necessary. I made a very fast trip from Troll Chamber to the pushing front at the head of Balrog Pitch to get some more experienced people on the scene, whilst Rosa kept Pip company and made sure she was okay. This earned me an interesting part in the fairytale write up of the trip! It took Pip 8 hours to get out, but given the potential seriousness of the problem we were all thankful that she had been able to get out at all.

My final trip in Pozo Tormenta was a survey trip. The previous day Balrog had been dropped and a huge chamber found, with a large cairn placed to mark the limit of the survey. I had wanted to descend Balrog before going, and this was my chance. As I stood at the top and looked down onto my first hanging rebelay I suddenly wondered if I was quite sane. 2 minutes spent swinging on a bit of rope in mid air did little to improve my opinion.

However, I did eventually get down Balrog, and was rewarded with a huge chamber which made Area 4 look small. We found the cairn, and decided to place a beacon on it, before pushing out and surveying back. The result was that I found a lead which turned into Saturday Night Fever. Not a bad result for my last trip in Tormenta. I left filled with regret as I wandered around a Spanish town in the rain, looking for a cheap place to stay and contemplating my overdraft for the first time in 3 weeks.

Small Caves Explored

Tormenta was such a good lead that we didn't manage to do as much surface work as was hoped. However, we did manage to have a look at some entrances.

28/7 - Paul Garver, Rob Garrett

There was no way to proceed after the 35 metre pitch described in the Shaftbashing Guide. There is a small draught but the lead would need extensive digging and widening. Dropping stones down suggests there may be a small widening below the visible section.

31/4 - Chris Rogers and Rosa Clements

Location: From Ario, head down into the Orange Rock depression and up out the other side, onto the top of the ridge with 1/4. Head straight down the ridge until you hit a path, which is thought to run from the Ario Refugio to Oston. Follow the path left, towards Julagua and Ario. Follow the path and on your left and behind you is a sizeable depression with a big obvious entrance - 34/4.

Description: This large ~ 8 metre diameter walk-in entrance has two possible ways on. To the left a quick glance reveals a very short section of passage which ends in mud and rubble. To the right a climb up over boulders leads into a large 8 metre high 2 metre wide fossil rift with a strong breeze flowing through it. However after 20 metres this promising lead ends in a mud floor with no way on.

Area 4 - Chris Rogers and Rosa Clements

Location: Go to 31/4 as described above. On the right hand side of the path, opposite 31/4, is a 5 metre free climbable shaft.

Description: No way on.

Area 4 - Chris Rogers and Al Wilson

Location: Again head to 31/4. Turn off the path to the right opposite 31/4 into a large bowl. On the far side of the depression is a wide 5 metre diameter/5 metre deep hole.

Description: After free climbing the short drop a man sized black cleft is visible with horizontal passage leading to the left and right. No draught.

Area 11 - Paul Garver and Al Wilson

Location: 30T 0344360 4790248 - WGS 84

Description: A big entrance.

Area 11 - Paul Garver and Al Wilson

Location: 30T 0343870 4789779 - WGS 84

Description: An undescended 15 m shaft with a rift leading off at the bottom.

Tormenta Songbook

I Will Survive

At first I was afraid, I was petrified,
Kept thinking going down Tormenta would be suicide.
But then I spent so many days practicing ropework in the Dales
And I built up caving courage with so many Yorkshire ales.

And so I went - to Northern Spain.
I thought it would be toasty warm and it did nothing but rain.
I should've never moved those rocks,
I should've begged El Jefe please,
If I'd known for just one second it would go beyond the squeeze.

Oh no now no! Oh please no more.
Just let me go now, coz I can't survey anymore,
Weren't you the one who tried to make me rerig D?
Did you think it'd crumble? Did you think I'd fall fatally?

Oh no not !! I will survive!
As long as I've read Hils's guide, I know I'll stay alive
Coz I've got all my kit to mend,
And six postcards to send
And I'll survive, I will survive, hey, hey...

The gear took so much glue not to fall apart.
Just trying hard to patch my TSA's cheap plastic arse.
And I spent oh so many nights pushing deep within the cave
I did survey! Along Tormenta's long streamway.

And you see me, somebody new!
I'm not that innocent young novice with so much work to do
And so you feel like potholing and just expect me to agree
But now I'm saving all my gear for a cave that's less scrotty.

Oh no not !! I will survive!
As long as I've read Hils's guide, I know I'll stay alive
Coz I've got all my kit to mend, And six postcards to send
And I'll survive, I will survive, hey, hey...

Three Maillons (Three Lions)

So many chokes, so many draughts,
But how the old lags laughed,
When we talked of
Massive shafts

And Oxford's gonna throw it away,
Gonna blow it away,
It's not like in my day,
But I remember

Three maillons on your chest,
Steve Roberts still beaming,
Forty years of depth,
Never stopped me dreaming.

Gavin Lowe seemed to know the score,
(He'd bashed it all before)
There's no depth in
Area 4

But I can see that pushing by Dave
In the big fossil cave
Rosa bolting the wall
And Nobby dancing

Three maillons on your chest,
Steve Roberts still beaming,
Forty years of depth,
Never stopped me dreaming.

Commentary

(There were beards back then ... and there will be again)

Team 1

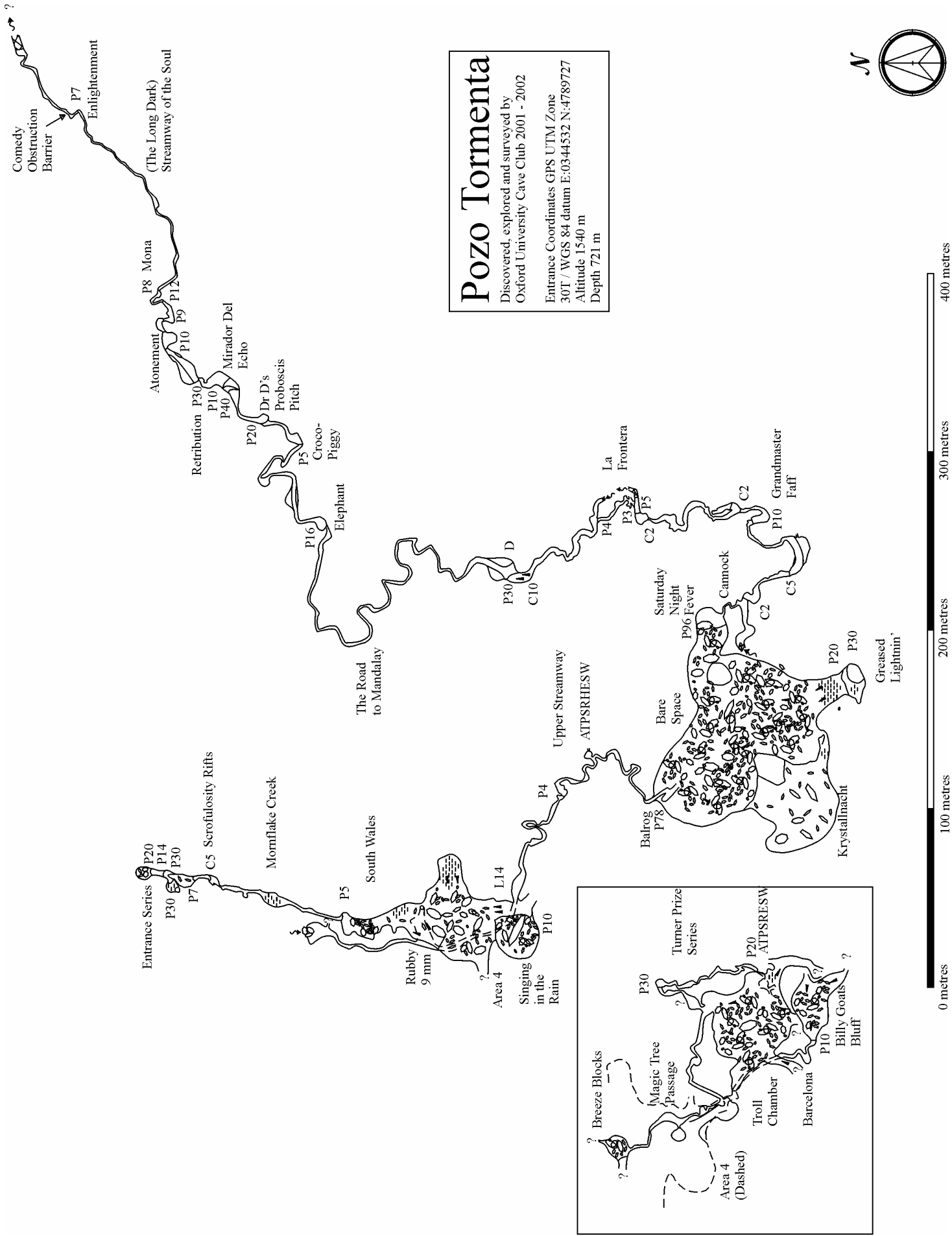
It's going down, it's going down, it's going, Storm Cave's going down.

It's going down, it's going etc...

Team 2 - Chorus

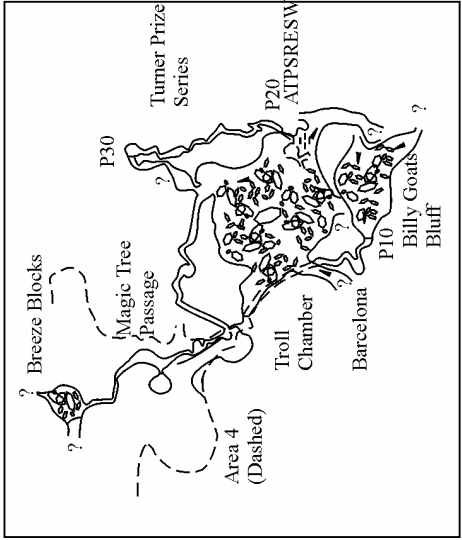
Expedition Diary

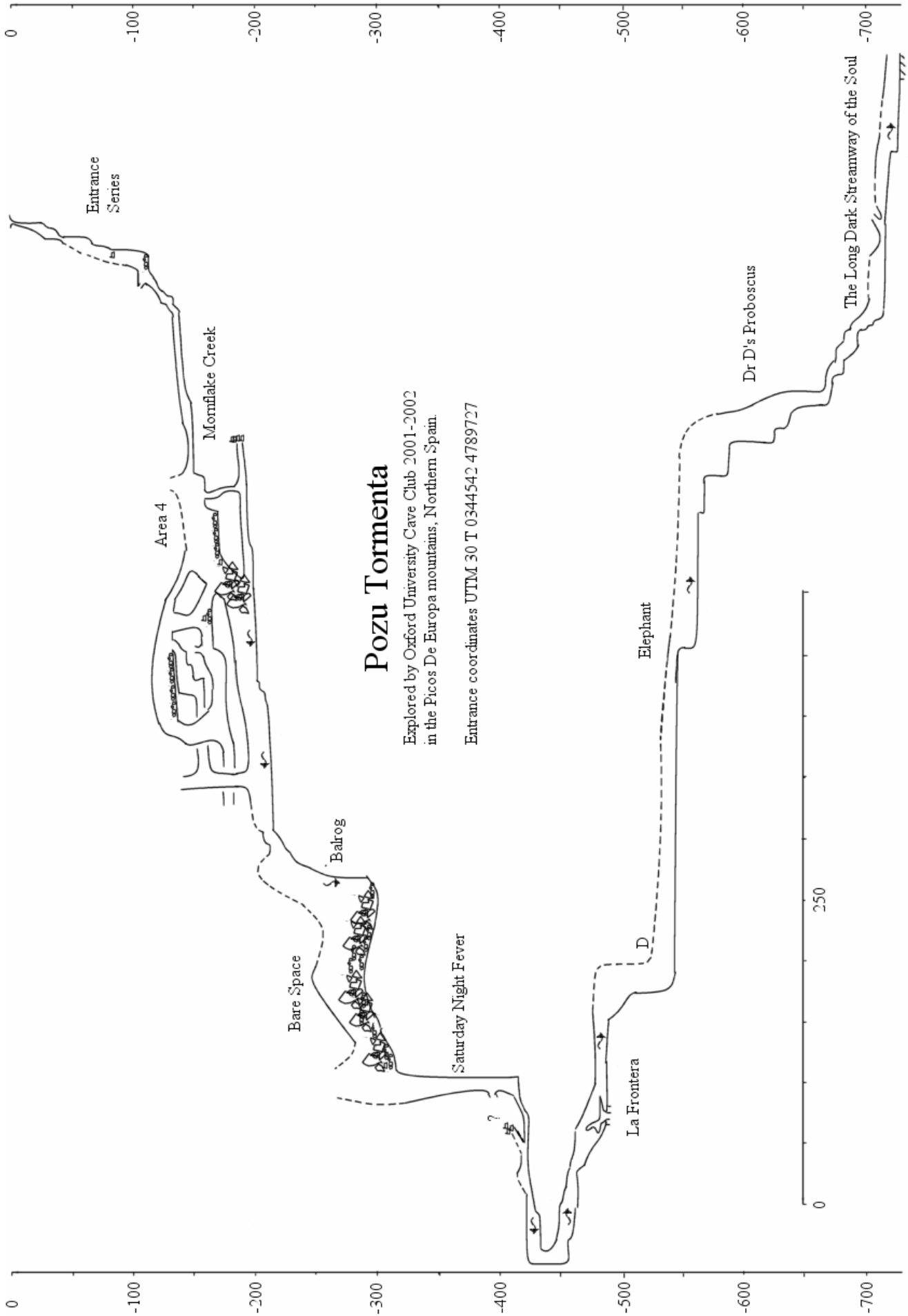
Who	Where	Date	Comments
PC, AW	Entrance series	11/7/02	Rigged Camera, Velcro
PG, CR, CP	Entrance series	12/7/02	Faffed, put in deviation
RC, PC	Entrance series	12/7/02	Welly retrieval
CR, PC, DL	Entrance series	13/7/02	Rigged Thunder
PG, AW, RC	Entrance series	14/7/02	First pushing trip
PC, AW, FL	Entrance series	16/7/02	Pushed to South Wales
NM, RC, CP	South Wales	16/7/02	Surveyed and dropped pitch
CP, PG, DL	Area 4 Underground	17/7/02	Pushed into Area 4
FL, NM, RC	Upper Streamway	18/7/02	Surveyed and found stream
CR, PC	Upper Streamway	18/7/02	Surveyed and paddled
NM	Camera Pitch	19/7/02	Put in bolt deviation
NM, FL	Balrog	20/7/02	Pushed to and rigged traverse
PG, CP, DL	Upper Streamway	20/7/02	70 legs surveyed
CR, PG	Balrog	21/7/02	Rigging cut short for callout
PC, RC, DL	Troll Chamber	21/7/02	Pushing and callout
FL, NM, CP	Callout	21/7/02	PC injured her foot
FL, RC, NM	Troll Chamber	23/7/02	Found Turner Prize Series
FL, NM	Turner Prize Series	24/7/02	Pushed down into aven
PJ, PG	Balrog	24/7/02	More bolting...
CP, RC, DL	Area 4 Underground	24/7/02	Surveyed to Death Star
HG	Entrance Series	24/7/02	Photo Trip
DL, JH	Balrog	25/7/02	Yet More Bolting...
CR, HG	Area 4 Underground	25/7/02	Surveyed round walls
HG, PJ	Bare Space	26/7/02	More bolting... to the bottom
DL, PG	Bare Space	27/7/02	Surveyed to SNF
PC, CP	Death Star	27/7/02	Surveyed and dropped pitch
JH, CR	Bare Space Leads	27/7/02	Rigging SNF, Krystallnacht
PJ, HG	Area 4 (surface)	27/7/02	Shaftbashing
PJ, HG	SNF	28/7/02	Bottomed and pushed
PG	SNF	28/7/02	Caught up with the other two
PC, JC	Troll Chamber	29/7/02	Surveyed around it
PJ, PG	Rubby 9 mm	29/7/02	No longer called Paul's Hole
JH, HG	Upper Streamway	29/7/02	Nice photos
HG, MR, FR	Bare Space	30/7/02	More nice photos
PJ, JC	Cannock	30/7/02	Pushing and surveying
HG, MR	La Frontera	31/7/02	Found sump... and bypassed
PG, JP	TPS and SNF	1/8/02	Surveyed TPS, faffed on SNF
CR, PC	Grease Lightning	1/8/02	Rigged down first bit
PJ, JH	La Frontera	2/8/02	Lots of surveying
HG, AH	Krystallnacht	2/8/02	Photos of pretties
AH, PJ	Rubby 9 mm	3/8/02	Pushed upstream
CR, HG	Area 4 (surface)	4/8/02	Surface survey
JH, PC	Grease Lightning	5/8/02	Rigging more pitch
PJ, AH	Rubby 9 mm	5/8/02	Conclusion to upstream
PG, JP	Trunk Route	5/8/02	Pushing at the bottom
HG, RG	Dr D's Proboscis	5/8/02	Daft name - pushing at the bottom
CR, PC	Area 4 (surface)	6/8/02	More shafts bashed
PC, JH	Grease Lightning	11/8/02	Pushed to tight rift
RG, PG	28/7 (surface)	11/8/02	Finished
CR, AH	Barcelona	11/8/02	More fossil levels
CD, RG, PG	The bottom	12/8/02	Last deep pushing trip
GOD, AW, RC	Entrance Series	12/8/02	Resurveyed
JH, AH	Below Cannock	13/8/02	Derigged to Bare Space
CR, RC, AW	Area 4 (surface)	13/8/02	Shaftbashing
PC, GOD	Area 4 Underground	13/8/02	Shaftbashing...
CD, AH, GOD	Bare Space	15/8/02	Derigged to Top of Balrog
PC, AW, RC	Billy Goat's Bluff	15/8/02	Last pushing trip this year
CR, PG	Top of Balrog	15/8/02	Portering gear
GOD, RC, PG	Area 4 Underground	18/8/02	Derigged to surface



Pozo Tormenta
 Discovered, explored and surveyed by
 Oxford University Cave Club 2001 - 2002

Entrance Coordinates GPS UTM Zone
 30T / WGS 84 datum E:0344532 N:4789727
 Altitude 1540 m
 Depth 721 m





Pozu Tormenta

Explored by Oxford University Cave Club 2001-2002
in the Picos De Europa mountains, Northern Spain.

Entrance coordinates UTM 30 T 0344542 4789727

