

FÉDÉRATION SPÉLÉOLOGIQUE EUROPÉENNE



EuroSpeleo Projects FSE

**International exploration camp at the Grotte des Chamois
(Castellet-lès-Sausses, Alpes-de-Haute-Provence, France)**



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International exploration camp at the Grotte des Chamois (Castellet-lès-Sausses, Alpes-de-Haute-Provence, France) Overview and results

The Grotte des Chamois, a porch used as sheepfold and shelter from ancient times was mainly known for its location close to the Coulomp spring, a scenic waterfall, where the Coulomp torrent has its source.



The waterfall pours out from the Coulomp spring, which is fed by the underground river [photo P. Biermayr]

It is one of the main karst springs in the Var river catchment, with a 1000 L/s discharge.

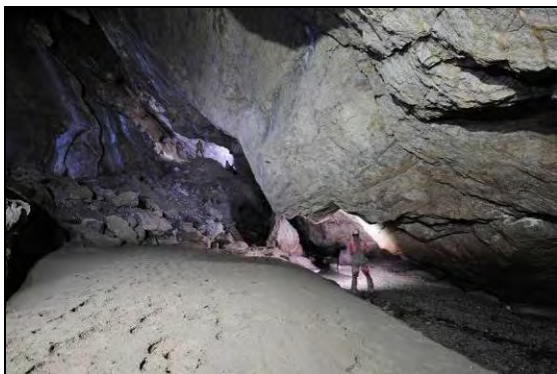
Due the remote location and the difficult access to the spring few cavers have attempted to shed light on its origin. Previous attempts were stopped in the Grotte des Chamois by three successive sumps which blocked the narrow entrance passage.



Soon after the entrance of the Grotte des Chamois, one may go through narrow sumps to reach the large passages [photo R. Da Luca]

The discovery of the galleries beyond the sumps

Two cavers of the French Riviera, Philippe Audra and Jean-Claude Nobécourt, decided to accept the challenge. A first reconnaissance trip at the beginning of summer 2007 is followed by numerous weekends where the two first sumps were pumped out. During fall 2007 the third sump was dived by Laurent Masselin and Alexandre Pougeoise who discovered the continuation leading through vast passages to a huge chamber. A helicopter transport allowed bringing up a generator, fuel, a repressing pump and 300 m of electric cable and pipes to set up a system for emptying the third sump. 2008 begins promising with the access to the “Hormones Gallery”, a huge 20 x 30 m passage that leads more than one kilometer into the Bausebérard Mountain toward the Grand Coyer located at the upstream side of the Coulomp catchment. The Grotte des Chamois then reaches 3 km of surveyed passages [*Spelunca*, n° 112, 2008].



During floods, a torrent flows in the large gallery, which penetrates below the Bausebérard Mountain [photo R. Da Luca]

More than thirty cavers of the region were involved in this hazardous exploration that demanded long approach walks, heavy load carrying, several days of bivouac on the spot, and most of all the inevitable step of the “Shadoks series”, a narrow and

partly flooded passage, being however the unavoidable key to the vast galleries.



The large gallery termination is plugged by sediments [photo R. Da Luca]



Impressive hand-line traverse above a deep shaft [photo R. Da Luca]

A team of expert cavers

These encouraging results made of the Grotte des Chamois one of the major caves of the area. However, a mystery remained: the underground river feeding the huge spring remained hidden. This led to the idea of opening the team to other European cavers in order to work on this challenge. Consequently, from 13th to 23th August 2009, 28 cavers originating from 7 countries (Germany, Austria, France, Hungary, Italy, Mauritius, Slovenia, and Sweden) gathered to form a team of experts: cave surveyors, geologists, hydrogeologists, explorers, scientists, biologist, medical assistant etc. All

gathered at the Aurent hamlet, transformed for the occasion into a base camp.

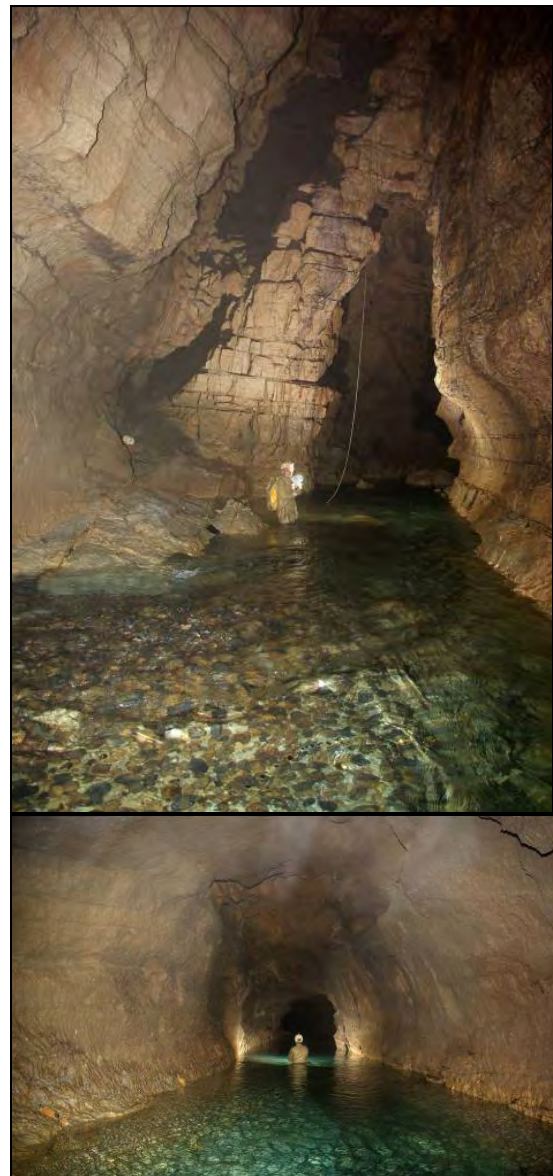


Part of the team rests at the bivouac. From background left: Philippe Audra (France – leader); Florence Rivaud (France – Medical assistance); Bernhard Koeppen (Germany – Geographer); Evelyne Prem (Austria – Teacher); Barbara Wielander (Austria – Biologist)
[photo J.-Y. Bigot]

The discovering to the « Underground Coulomp »

During ten days, twenty teams took turn to explore and survey the passages of the Grotte des Chamois. And no later than the 16th of August, an Austrian and two Hungarians (Christoph Lechner, Agnes Hajnal, and Peter Zentay) discovered a passage leading to the top of a 20 m deep shaft from where the characteristic roaring of the long desired river could be heard and a glimpse of water could be caught for the first time: the “Underground Coulomp” had just been discovered! The next days were dedicated to the exploration of the underground river: half a kilometer has been surveyed. Downstream the stream soon disappears into a large sump. A distance of several hundreds of meters between this sump and the Coulomp spring remains unknown up to now. The exploration upstream with the crossing of long deep pools in cold water (5 °C) requires thick wet suites. Crystal clear

pools with smooth bottom follow during several hundreds of meters; no loose gravel is present due to the velocity of the flow during floods. On the last day the exploration stopped at a deep pool where the distant roaring of a rapid showed that the cave goes on beyond our terminus. From now on we can proclaim that it is one of the most beautiful and largest underground rivers in France.



The « Underground Coulomp », down to the “k&k” shaft. To go upstream, one must cross deep pools, where transparent turquoise water is 5 °C only
[photo. M. Faverjon]

Results

This international caving camp achieved the discovery of the Underground Coulomp with 1 km of new passages, bringing the total length to more than 4 km. But these results should not put to the back what will, in addition to committing the exploration, remain in the participants mind: the grandiose wilderness of the mountain, the atmosphere of an international expedition characterized by a warm friendship, the serenity of Aurent hamlet and the warm welcome by its inhabitants. The explorations have been carried out with an attitude of global respect of the site, by organizers as well as by participants: all rubbish has been brought back to the valley, the sensitive zones in the cave where delicate formations and sediments occur have been marked and the impact onto the underground fauna has been minimized. Anyway, the access to the cave which requires the crossing of three sumps and of a complex system is only accessible to experienced cavers, who have a deep felt respect for the underground –and surficial– environment.

As this expedition finished, we already foresee the future toward the research of the origin of the Underground Coulomp, below the Grand Coyer Mountain, located at 6 km distance. Beyond the exploration, the scientific problematic sharpens: characterization of the water resource (flow gauging, water quality, precise delimitation of the watershed), study of the speleogenesis (geological frame, dating of the age of the cave and of its sediments), study of the fauna. It is a safe bet that the Coulomp Mountain will see us again for numerous years. Right now, a conference is booked for next fall: the local people for whom Coulomp is part of their mind, can then share with us the discovery of the new Underground Coulomp.

The partners of caving exploration

This camp benefited of the support of numerous partners, which help was crucial:

- the Municipality of Castellet-lès-Sausses and its mayor Cl. Camillieri,
- the caving organizations (EuroSpeleo Project of the European Caving Federation – FSE ; FAAL of the French caving Federation ; Caving Committee of the Provence-Côte d’Azur region ; caving Committee of the Alpes-Maritimes Department)
- the enterprises (Béal rope manufacturer; SCREG Cozzi; Saint-Cézaire Technique; Société monégasque des eaux; Sport-ev Nice).

Finally, the Aurent’s hamlet inhabitants, by their warm welcome and their practical help, widely contributed to this success.

Daily schedule

The Camp lasted **12 days**: 10 days of the scheduled camp, plus 2 additional pre-camp days for pumping the sumps. **28 cavers** from **8 nationalities** attended the camp. **27 teams** were involved (18 into the cave, 9 in field work), corresponding to **83 days of activity** (64 days of cave exploration, 19 days of field work). During the camp, as much work has been done than during the rest of the year. Consequently, it clearly shows the efficiency of such kind of organization, and the results also clearly show its success.

Name	M11	M12	J13	V14	S15	D16	L17	M18	M19	J20	V21	S22	D23	
AGRELL Erik		T	T	S1	S2	x	S8	x	T					
AUDRA Philippe			T	S1	x	T	S10	x	S14	x	S17	x	T	
BES Christophe						T	x	S12	x	x	F9			
BIERMAYR Peter			T	S1	F1	F2	F4	F5	F6	F8	T			
BIGOT Jean-Yves					T	F3	S11	x	S15	x	T			
CABRAS Salvatore			T	S1	S3	x	x	x	T					
DE LUCA Riccardo			T	S1	S3	x	x	x	T					
DE WAELE Jo			T	S1	S3	x	x	x	T					
DELAMETTE Michel			T	S1	F1	F2								
ECHEVIN Mathias			T	S1	x	S6	x	S12		S16	S17	T	T	
FURLAN Sylvain			T	S1	F1	x	S9							
GILLI Eric					T	F3	S10	x	F7					
GUYOT Vincent												T	S18	
CAVALIER Jean	SA	SB	T											
KOEPPEM Bernhard			T	S1	x	S6	x	S13	S14	x	x	T		
LE FALHER Benoit					T	F3	S11	x	F7	x				
LECHNER Christoph			T	S1	x	S7	S9	x	x	S16	x	x	T	
NOBECOURT Jean-Claude			T		S5	?						T	S18	
NOBECOURT Rose-Marie					?	?						T	x	
PINTAR Gregor			T	S1	S4	x	T							
PINTAR Marina			T	S1	S4	x	T							
PREM Evelyne			T	S1	F1	F2	F4?	F5	S15	x	T			
RIVAUD Florence	SA	SB	T			T	S9	x	S14	x	F9	T		
SCHIRA Francis (Chouca)					radio									
TORDJMAN Patrice									T	S16	T?			
WIELANDER Barbara			T	S1	S2	x	S8	x	S15	x	S17	x	T	
HAJNAL Agnes				T	S5	S7	x	S13	T					
ZENTAY Peter				T	S5	S7	x	S13	T					
Total CAVING DAYS :	2	2		15	10	5	9	5	6	3	3		2	62

S = Speleo / T = Travel / F = Field work / x = Rest

Visit : ECHEVIN Claude ; Françoise ; Mélanie ; SCHIRA Ester;

Visit to the cave by local friends : ROSIE Éliane and sister, CHEIX Jean-Claude, COZZI Michel, Denis, LECOURS André

Accommodation and food

Food

Part of the food supply was carried up to the cave in July by the helicopter provided by our partner Cozzi Enterprise. The rest was brought to Aurent refuge by quad at the beginning of the camp, thanks to the help of local people. Additionally, Éliane Rosie-Viglietti regularly provided some excellent cooked food that was highly appreciated by participants. For this reason, some participants concluded that caving in France was so nice, because it was the first camp they attended where menu offers wild pig goulash, fresh sheep grills, and so on!



Transport of the food to the cave in July by Helicopter (photo. E. Madelaine)



Transport of the food to the Aurent Hamlet by Quad (photo. J.-Cl. Nobécourt)

Accommodation

Due to the lack of room at the cave entrance, only people coming out of exploration were staying at the cave for the night. A 4-place tent with air beds were available, other people could sleep around on their air beds. The rest of the team slept at Aurent refuge. This refuge, offered by the Municipality of Castellet-lès-Sausses, displays comfortable possibilities: about 25 beds, tables for meal, toilets, drink water, and a grill place.



Bivouac at the entrance of the Grotte des Chamois (photo. Fr. Malaussena)

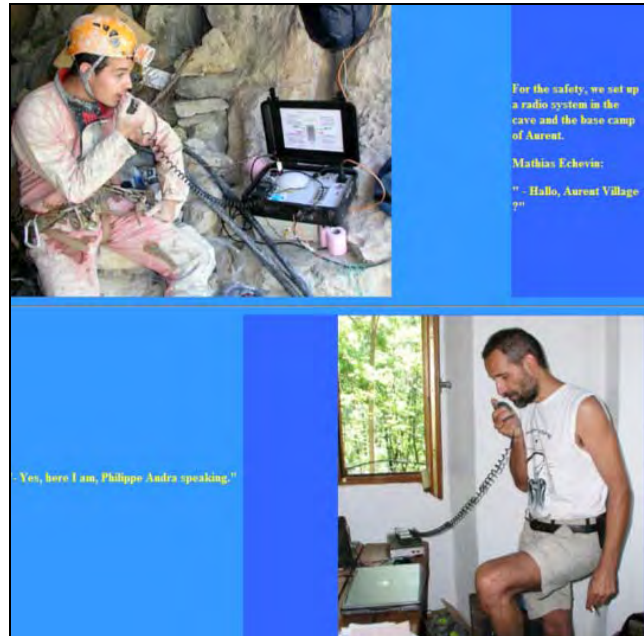


The Aurent refuge (photo. Ph. Audra)

Safety care and environmental preservation

Security

Since rescue in this cave is particularly difficult, due to the presence of temporary sumps and narrow passages in the entrance, we pay a peculiar attention to **meteorological conditions** (fortunately not critical in summer); **safe caving practice** in exploration has been required; a **rescue spot** (food, heating and tent) is always available beyond the sumps. Moreover, a **radio connection** was established between the cave and the refuge; it was particularly useful for management between staff and different teams.



Radio connection between cave and refuge
[\[http://catherinearnoux.perso.neuf.fr/photo/Chamois/cham.htm\]](http://catherinearnoux.perso.neuf.fr/photo/Chamois/cham.htm)

Cave and environment conservation

All in all, we manage to preserve the high quality of our environment, by limiting at the maximum the impact of our presence:

- rubbishes were brought back to the valley (carried back by foot then by quad);
- sensitive areas in the cave (delicate formation, sediments of scientific significance) were protected by marking;
- we took care of not endangering the water quality.



Protection of delicate flowstones with red tape (photo. J.-Y. Bigot)

Communication

The **web-site dedicated to the camp** was particularly useful, to provide information:

- before the camp (such as access, personal equipment required, caving insurance obligation)
- after the camp (participants list, picture gallery, results)



The **home page of the camp website** [<http://catherinearnoux.perso.neuf.fr/photo/Chamois/cham.htm>]



Examples of pages of the camp website [<http://catherinearnoux.perso.neuf.fr/photo/Chamois/cham.htm>]

The **communication language** for organization was English. During the camp, the following languages were used, according to the origin of the participants: 1/ English, 2/ French, 3/ German, 4/ Italian

For the Camp, a **T-Shirt** has been especially designed by Camille Audra. It

was highly appreciated by participants and by the inhabitants of Aurent hamlet.



The T-shirt of the FSE Camp in Chamois Cave, with logos of the partners, displayed by J.-Cl. Nobécourt and Ph. Audra [photo. J.-Y. Bigot]

Moreover, the results are and will be widespread through **publications**, like local newspapers, conferences, and papers

in caving magazines (see “references” chapter).

Cave survey

One important part of the work carried out during the camp was the survey.

Resurveying: 800 m

Some series were resurveyed, because of the lack of sketching (Galerie des Hormones). It required 3 days for 800 m measured.

Surveying of previously known galleries:

336 m, in the Galerie des 11 h aval

Survey of new passages: 640 m

Access to the river and river itself

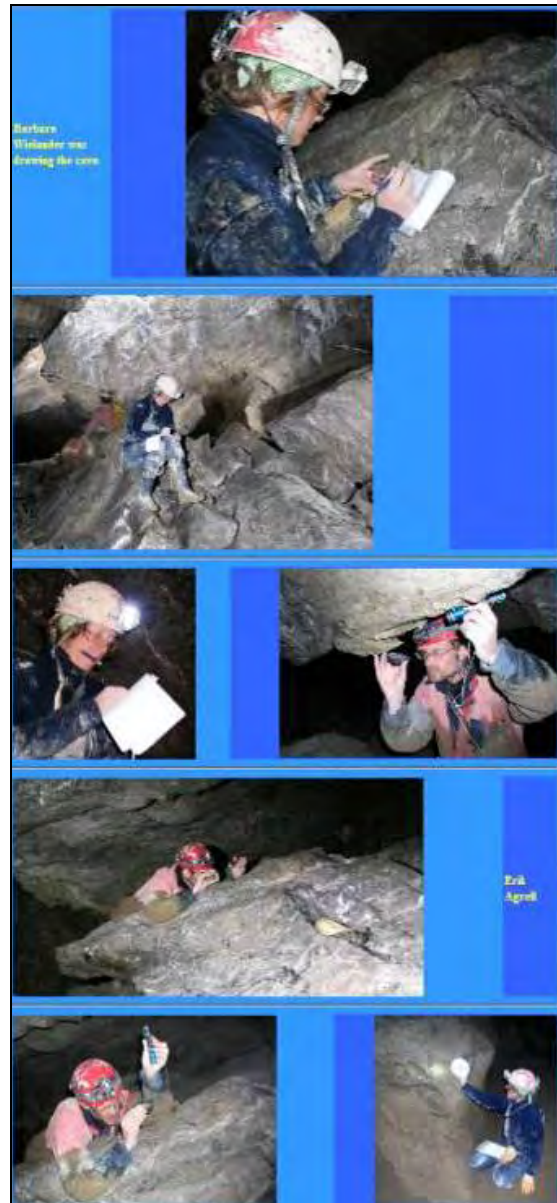
Altogether, **1.8 km has been surveyed.**

The current situation (nov. 2009) is:

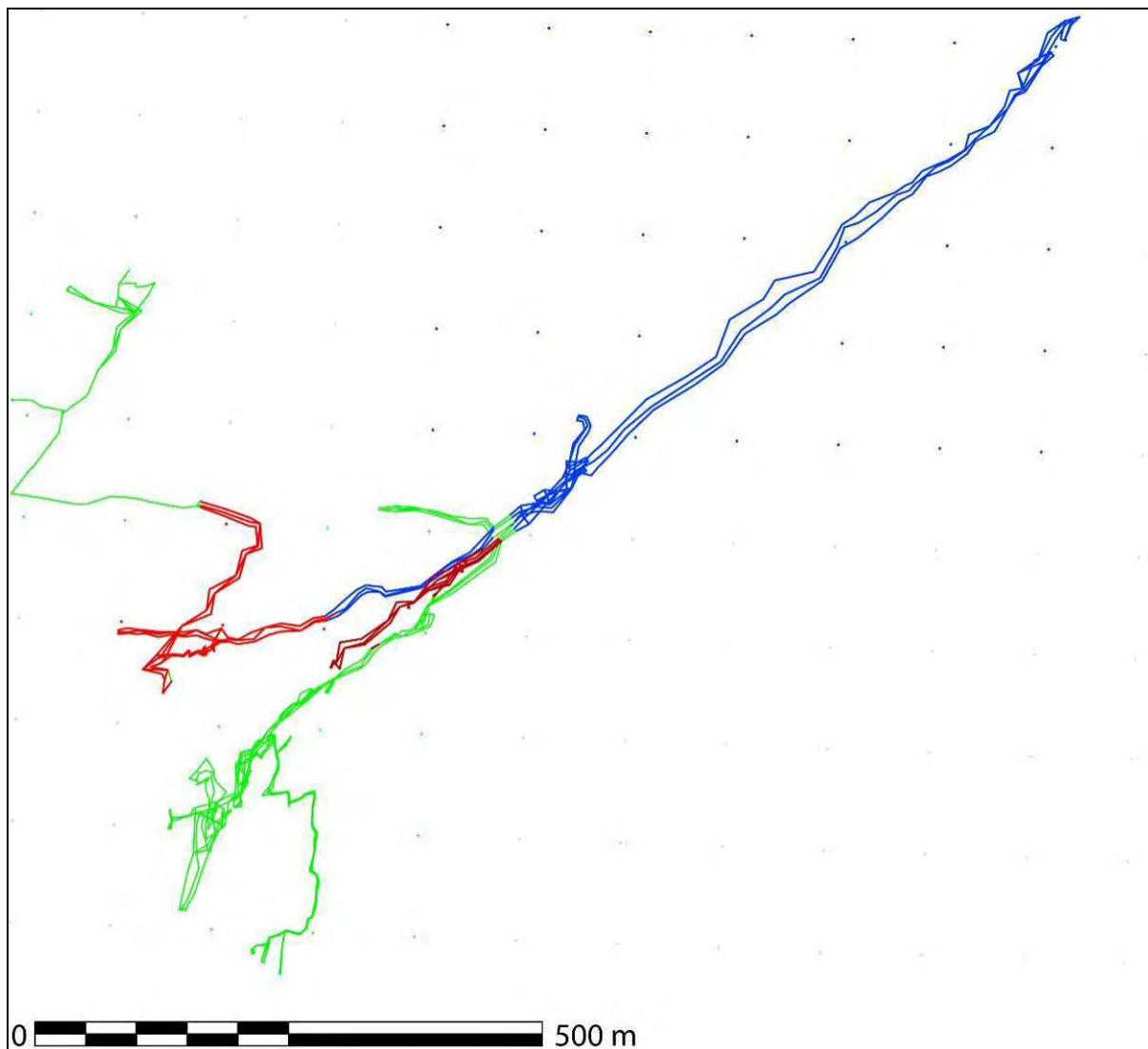
Length = 4.8 km

Depth = 133 m (+ 106 / - 27 m)

The sketching is still under progress; currently, only the first part of the river is updated.



Barbara Wielander and Erik Agrell on station, in the Hormones Gallery
<http://catherinearnoux.perso.neuf.fr/photo/Chamois/cham.htm>



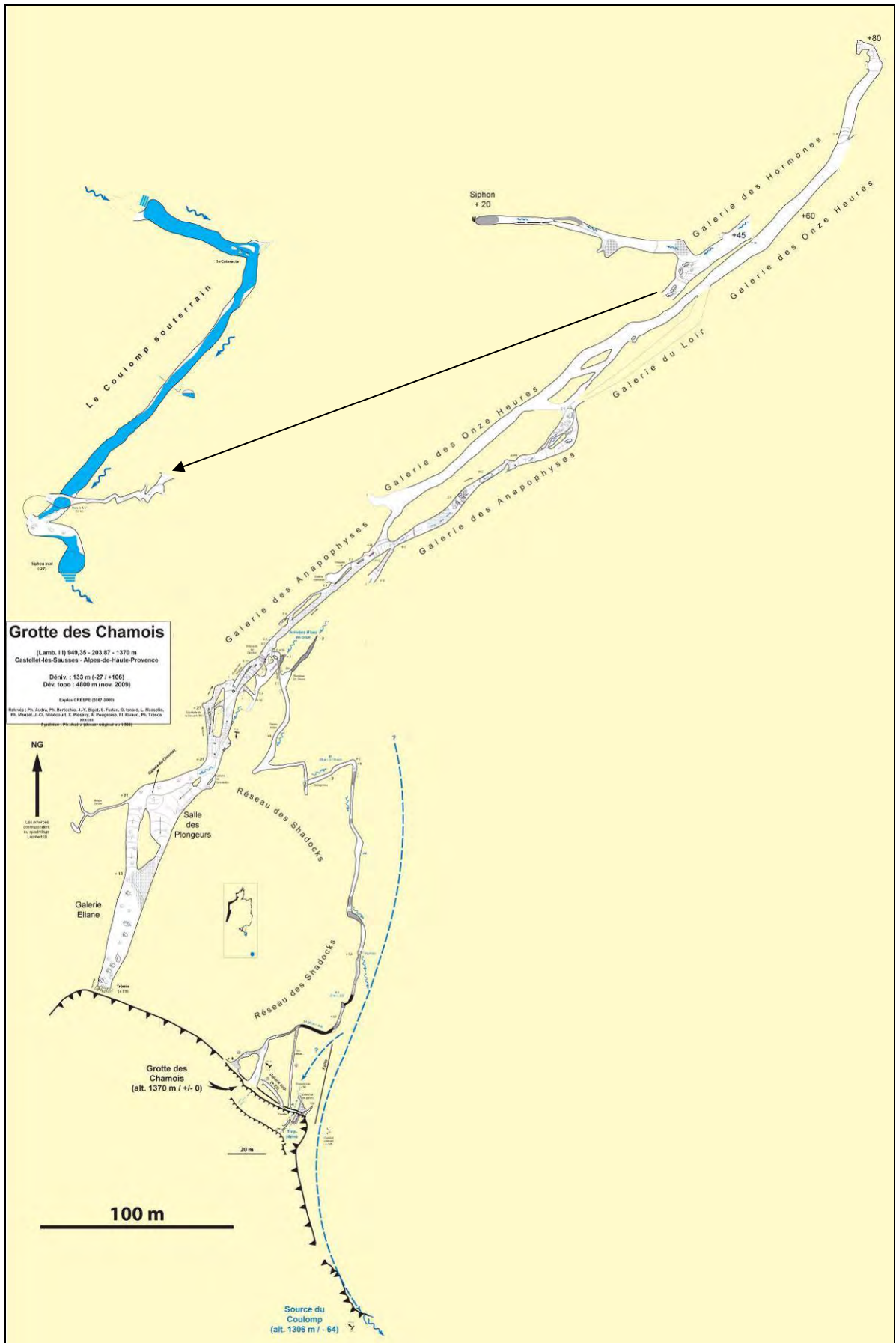
Plan view of the Chamois Cave (nov. 2009)

Green = previously surveyed

Blue = resurveyed

Brown = survey of previously known gallery

Red = survey of new passages (river)



Survey of the Chamois Cave (nov. 2009)

Financial budget

FINANCIAL BUDGET - INTERNATIONAL CAMP GROTTTE DES CHAMOIS 2009

	Receipts	Expenditures
Founding French Caving Federation	433,00	
Founding Departmental Caving Committee	466,00	
Founding Regional Caving Committee	600,00	
Founding Société Monégasque des Eaux	400,00	
Participant's registration (50 Euros / pers.)	1341,00	
Pump		350,00
Hitachi Driller		595,00
DistoX Leica		385,65
Pumping equipment		102,58
Cave equipment		217,32
Cave equipment (belaying)		40,60
Security after sump (rescue bivouac)		110,30
Food supply		580,54
Dry food, drink		831,00
Fresh fruit-vegetable supply		175,00
20 kg grilled meat + 20 kg cooked meat (from Viglietti Farm)		430,00
Bread		165,00
	3240,00	3982,99

Founding to be received

Founding FSE international camp 2009	500,00	
Founding Departmental Caving Committee	234,00	
	734,00	0,00

Enterprises / individual involvements

Staff fees (travel, personal equipment, providing of 100 L gas for generator)	800,00	800,00
Enterprise BTP Cozzi (make available helicopter)	700,00	700,00
SARL St-Cézaire technique (make available pump + generator)	450,00	450,00
Sport-Ev Nice Mountain Shop (caving gear)	300,00	300,00
Béal ropes (500 m)	500,00	500,00
SARL St-Cézaire technique (make available 2 VHF radio, 2 antennas, solar panels, batteries)	150,00	150,00
	2900,00	2900,00

	Receipts	Expenditures
FINAL RESULT	6874,00	6882,99

Distribution of contributions



Comments to the budget

Thanks to our previous involvement, the **funding demands** were successful. We obtained financial contribution from each level of caving institutions, from local to European level, and from 1 enterprise. Additionally, we obtained gear endowments (ropes from Béal through FSE, caving gear, helicopter and radio...)
According to the registration fees we fixed long ago before the camp, we could focus the expenditures toward 4 main fields:

- **Food** during the camp
- Specific **equipment** (pumping)
- **Security**
- **Caving gear** (driller, survey material...)

The financial part has been well managed, mainly due to the fact that the camp was organized long before the beginning, and that we could dispose of a large part of the money before or during the camp.

However, to reach an equilibrated balance, we need to obtain the promised grants, both from Departmental Caving Committee and from FSE.

Other partners

This camp benefited of the support of numerous partners, which help was crucial:

- the **Municipality of Castellet-lès-Sausses** and its mayor Cl. Camillieri



- the caving organizations :

- o **EuroSpeleo Project of the European Caving Federation – FSE**



- o FAAL of the **French caving Federation**



- o **Caving Committee of the Provence-Côte d'Azur region**



- o **Caving Committee of the Alpes-Maritimes Department.**



- the enterprises:

- o **Béal** rope manufacturer



- o **SCREG Cozzi**



- o **Saint-Cézaire Technique**

- o **Société monégasque des eaux**



- o **Sport-ev** Nice



Finally, the Aurent's hamlet inhabitants, by their warm welcome and their practical help, widely contributed to this success.

Published references about the International FSE Camp

Published papers

AUDRA PH. & NOBÉCOURT J.-CL. 2009 – Camp international à la grotte des Chamois. *Spéléo Magazine*, n° 67, p. 9 (**see annex**)

Papers to be published

Italy : AUDRA PH. & NOBÉCOURT J.-CL. 2009 - Campo esplorativo internazionale alla Grotte des Chamois (Castellet-lès-Sausses, Alpi dell'Alta Provenza, Francia). *Speleologia*

Austria : Die Höhle

France : AUDRA PH. & NOBÉCOURT J.-CL. 2009 – Alpes de Haute-Provence, News. *Spelunca*

La Provence, Nice-Matin

Conferences

NOBECOURT J.-CL. 2009 – Résultats du camp international FSE à la grotte des Chamois. *19^e Rencontre d'Octobre, Saint-Laurent-en-Royans, 10-11th Oct.*

NOBECOURT J.-CL. & AUDRA PH. 2009 – Camp international FSE à la grotte des Chamois. *Annual meeting of Comité départemental de spéléologie des Alpes-maritimes, Veolia Conference Hall, Nice, 7th December.*

NOBECOURT J.-CL. & AUDRA PH. 2009 – Découverte du Coulomp souterrain à la grotte des Chamois. *Entrevaux (conference especially dedicated to the information of local people)*

ZENTAY P. 2009 - Az első nemzetközi Grotte des Chamois kutatótábor (The first international Grotte des Chamois caving camp). *Barlangkutatók szakmai találkozója (Technical meeting of cave explorers)*, Miskolc University, Hungary, 6-8. November.

Web pages

The official web-site of the camp

<http://catherinearnoux.perso.neuf.fr/photo/Chamois/cham.htm>

AUDRA PH. & NOBÉCOURT J.-CL. 2009 - Grotte des Chamois, La rivière...

<http://www.explos.org/blog/2009/10/grotte-des-chamois-la-riviere.html>

BENCE PH. 2009 - Grotte des Chamois, une belle exploration en France !

<http://www.explos.org/blog/2009/01/grotte-du-chamois.html>

Participant addresses

Altogether, **28 cavers** participated to the camp, plus about 12 people coming to visit us (friends, relatives, local inhabitants of the Aurent hamlet...)

8 nations were represented: *Austria, France, Germany, Hungary, Italy, Mauritius, Slovenia, and Sweden*

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Conclusion

For sure, this International camp in the frame of the EuroSpeleo Projects FSE was a success for many reasons:

- This official support, together with other institutional supports, greatly helped us to promote our project;
- Due to earlier involvement of the staff, we could obtain significant contributions from institution or enterprises (financial, material)
- Consequently, we could prepare the camp on time (buying material, bringing up food by helicopter, pumping sumps...).

A number of participants greater than expected attended the camp. Moreover their satisfaction after the camp is the best proof for success, regarding:

- general organization (food, accommodation, management)
- the cave itself, which provided extraordinary sensation for most of us: one participant even came again by plane for an additional exploration during a week-end in September;
- the mountains and the charming Aurent hamlet, which clearly offered a wonderful frame for this project.

Regarding the caving results, we can resume:

- we discovered the river, which is one of the biggest in France,
- we surveyed more than 1.5 km and the cave almost reaches 5 km now, pushing it amongst the largest in Southeastern France
- several teams were involved in digging the main continuation of the cave in Hormones gallery, an investment for the future
- and the cave still continues in many places, especially upstream in the river.

Finally, and this is the most important for us:

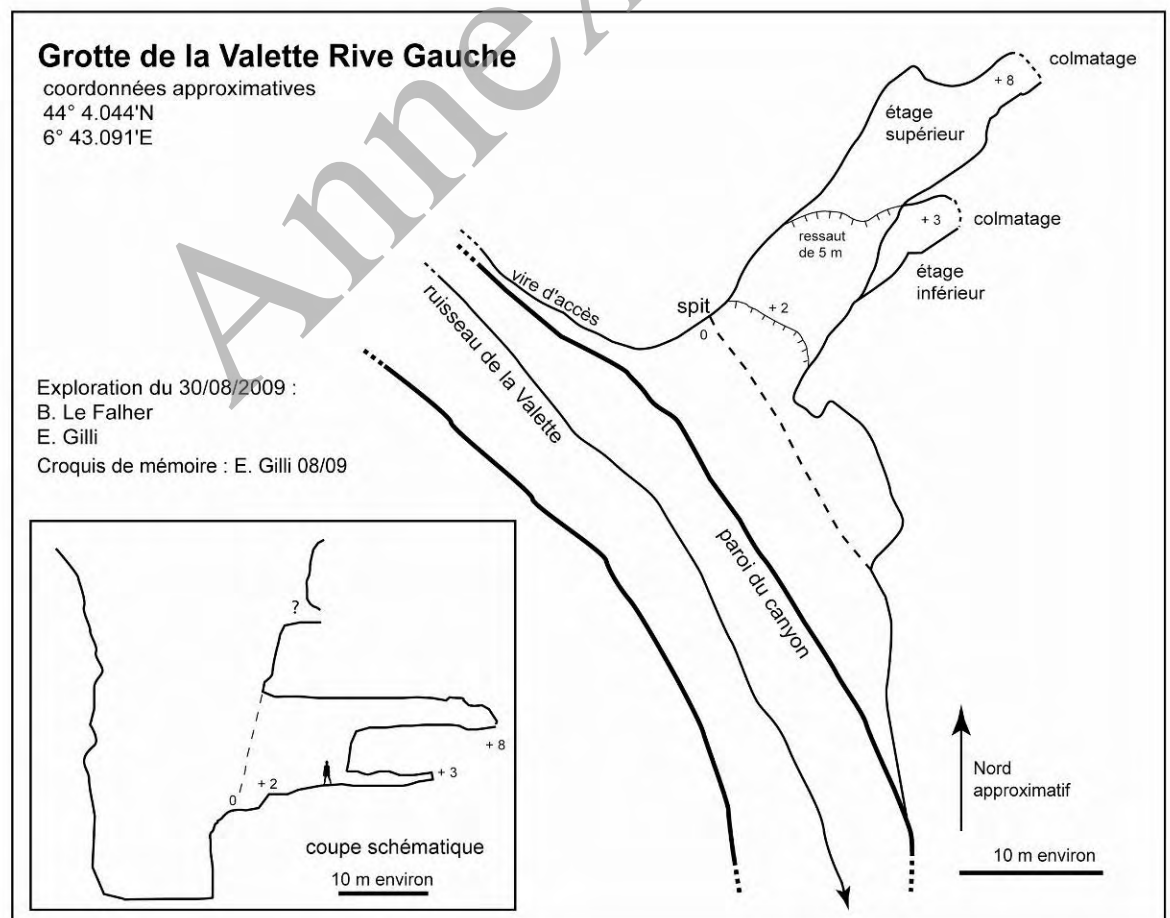
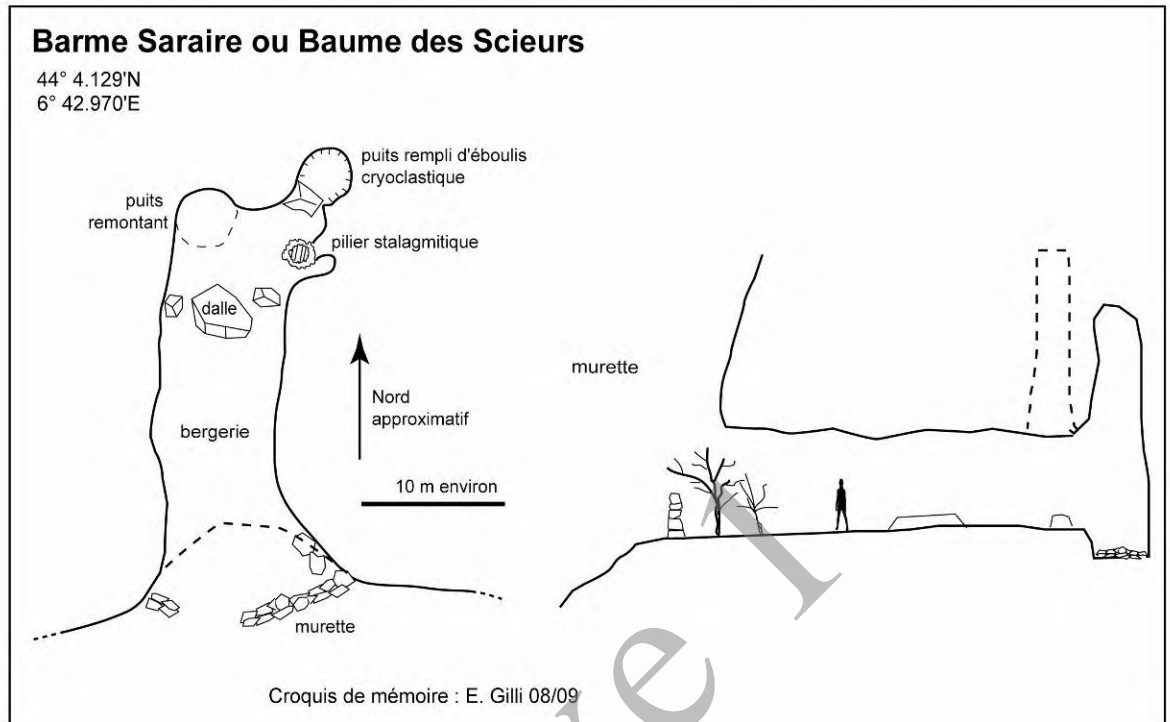
- we learnt a lot while organizing this International camp regarding managing,
- we spent wonderful days with old and new friends, sharing friendship and enjoying efficient caving.

Getting success in a challenging project is a proud that must be shared!

Annexes

- **Surveys of the cave in Valette gorge [J.-Y. Bigot, E. Gilli, B. Lefalher]**
- **Report of field investigations [by P. Biermayr]**
- **Camp international à la grotte des Chamois. *Spéleo Magazine*, n° 67**

Grottes du Ravin de la Valette



Exploration and Survey Report

International Exploration Camp

Grotte des Chamois

13.08.2009 – 21.08.2009

Evelyne Prem and Peter Biermayr¹

This report summarizes the findings of the authors during the stay on the international exploration camp “Grotte des Chamois” from 13.08.2009 to 21.08.2009.

13.08.2009: Arrival in Aurent.

14.08.2009: Guided tour into the Chamois Cave.

15.08.2009: Together with Michel Delamette and Sylvain. Cut a new hiking path connecting the lower path nearby the Coulomp River to the upper path called “winter path”. Now it is possible to reach the Coulomp source and the Chamois cave without river crossing.

16.08.2009: Together with Michel Delamette. Exploration of the “**Grottes du Chasseur**” which can be seen from the Chamois Cave in the north face of the Barres de Froust, see Figure 1 below.

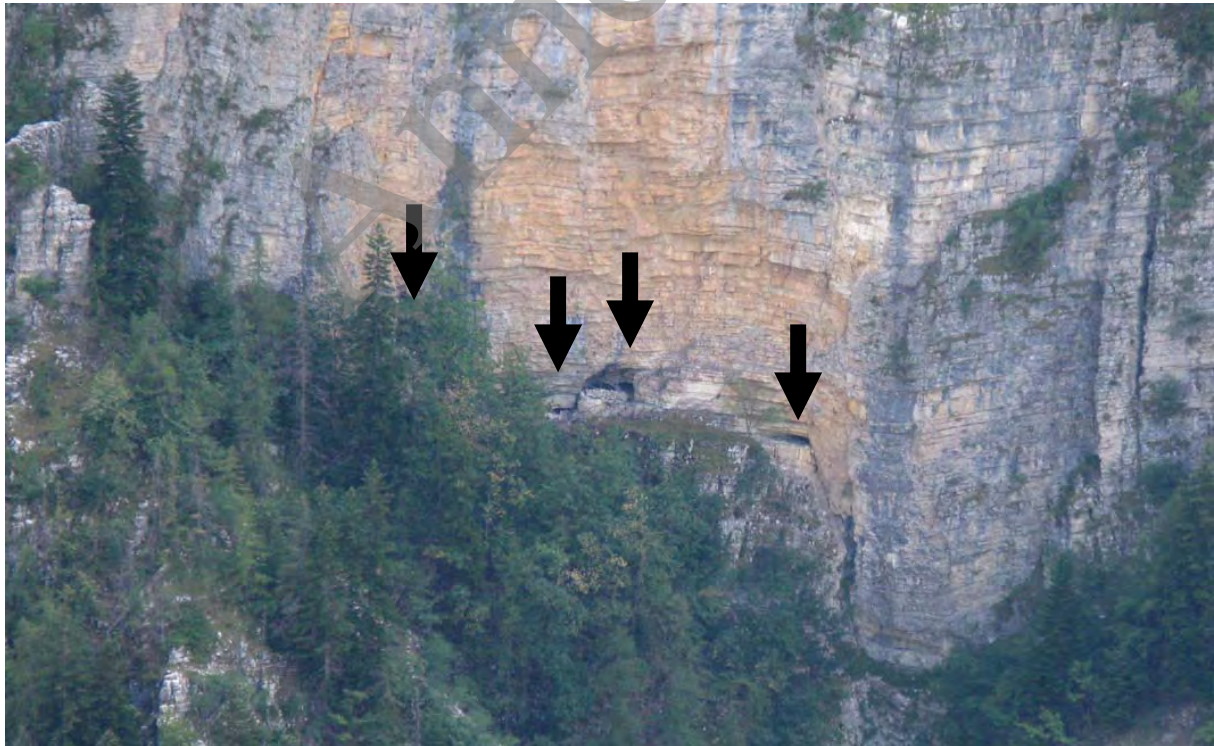


Figure 1: The 4 Grottes du Chasseur. © Peter Biermayr

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Path to the Grottes du Chasseur: Follow the path from Aurent beside the Coulomp River on the true left side up to the point GPS UTM WGS84 32T 0316650 / 4879638. There cross the river and follow the steep gravel filled valley up to a steep rock passage which would require climbing and leave this point to get to the ridge on your right hand side looking upwards. Follow this ridge till you reach the north face and follow the wall base west to the point GPS UTM WGS84 32T 0315870 / 4879550 where you find the 4 Grottes du Chasseur, see Figures 2 and 3 below.



Figure 2: Grottes du Chasseur. 📷 Peter Biermayr

Findings: 4 small caves (maximum depth approx. 7 meter). In the largest one (see the left cave on Figure 2) fragments of a wooden bed construction and some wooden sticks stuck in the wall. Through fireplaces blackened wall and ceiling. Human built stone walls.



Figure 3: Grottes du Chasseur. 📷 Peter Biermayr

17.08.2009: Caves in the canyon **Ravin de la Valette**. Exploration of one unknown cave with a small entrance in the true right of the canyon with the coordinates GPS UTM WGS84 32T 0317013 / 4882038, see Figure 4 below. The entrance is visible from the opposite footpath.



Figure 4: Cave entrance in the canyon Ravin de la Valette. 📷 Peter Biermayr

Findings: After a descent of 10 meters from a tree above exploration of a small cave of approx. 5 meters depth.

18.08.2009: Exploration of the cave “**Trou Noir**” in the south face of Montagne de Beaussebérard, see Figure 5.



Figure 5: Cave “**Trou Noir**” seen from the Grottes du Chasseur. 📷 Peter Biermayr

Path to the Cave “Trou Noir”: Follow a steep and hardly recognizable path up to the point GPS UTM WGS84 32T 0316986 / 4879958 and continue to the shepherd hut ruins on point GPS UTM WGS84 32T 0316822 / 4880355, see Figure 6 and the source on point GPS UTM WGS84 32T 0316673 / 4880451, see Figure 7. From now on follow the height of approx. 1700 m and cross the south face using narrow rock bands, see also Figure 5. The path can be continued to the Sources du Coulomp.



Figure 6: Shepherd hut ruins. 📷 Peter Biermayr



Figure 7: Source close to the shepherd hut ruins. 📷 Peter Biermayr

Findings: After the small entrance of the Trou Noir (see Figures 8 and 9) a small chamber with approx. 3 meters length and height with fossil sinter (see Figure 10) and chamois droppings was explored.



Figure 8: Entrance of the Trou Noir cave. 📷 Peter Biermayr



Figure 9: Entrance of the Trou Noir cave seen from the inside. 📷 Peter Biermayr



Figure 10: Fossil sinter in the small chamber of the Trou Noir cave. 📷 Peter Biermayr

19.08.2009: Exploration and survey of the cave “**Grotte des deux mouflons**” in the Ravin du Pasqueiret. Because of its hidden position in a side canyon of the Ravin du Pasqueiret the entrance of this unknown cave can only be seen from a small area from opposite of the cave. The visibility of the entrance is also dependent on the kind of daylight and the position of the sun. Position of the cave: GPS UTM WGS84 32T 0315275 / 4880450.

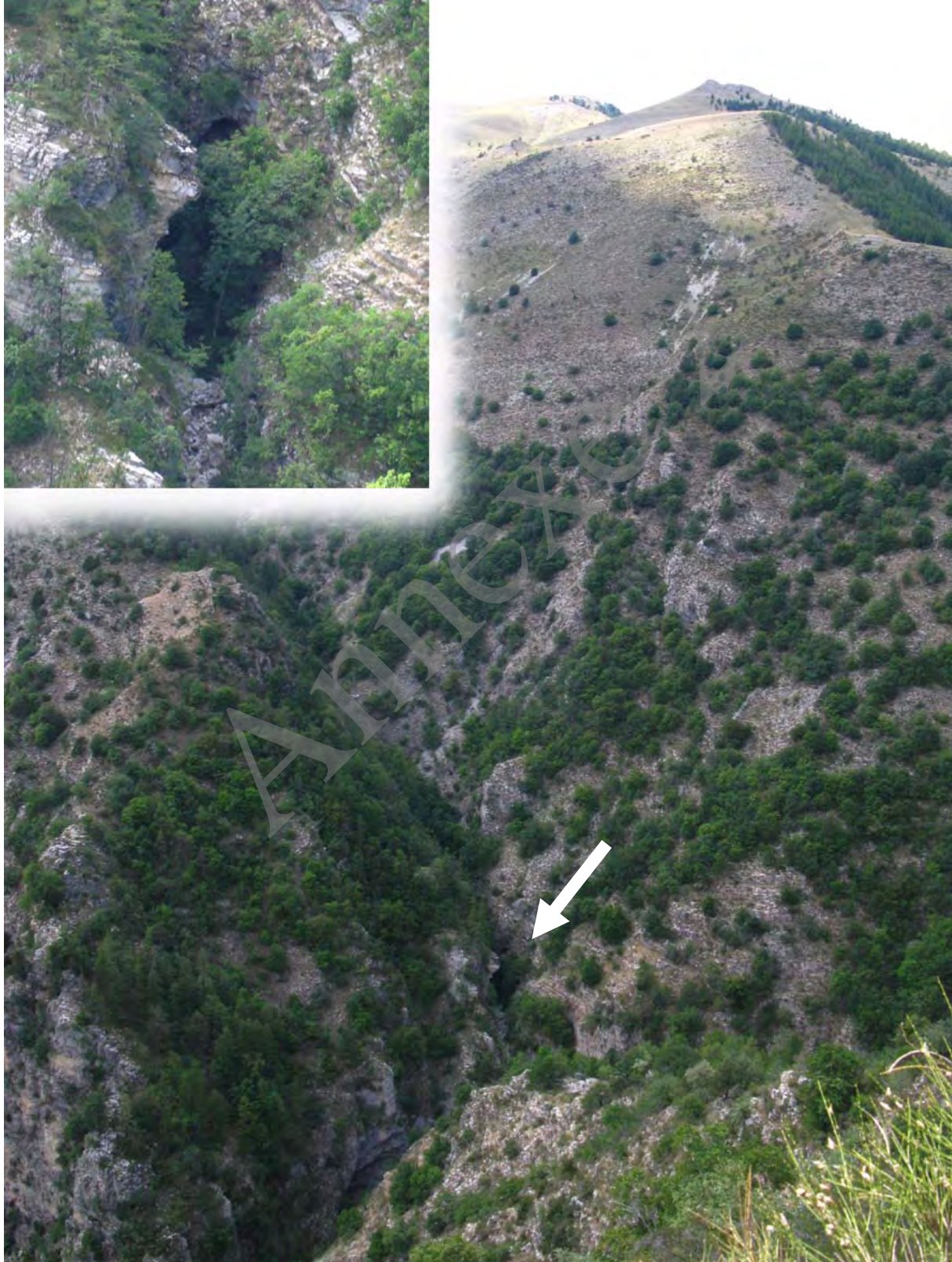
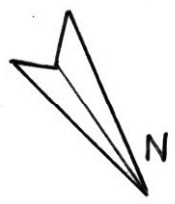


Figure 11: Position and entrance of the cave “Grotte des deux mouflons”. 📷 Peter Biermayr

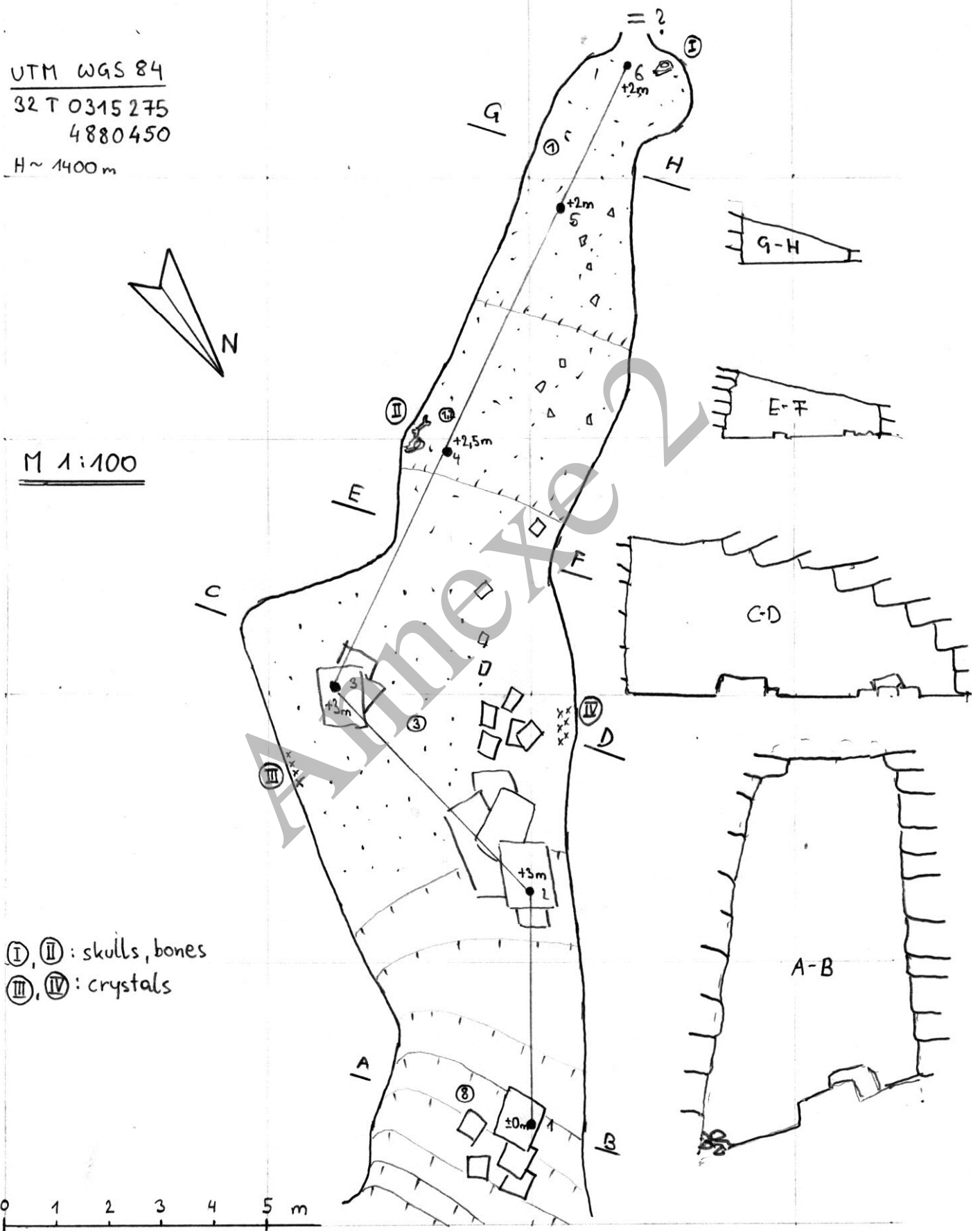
Grotte des deux mouflons

Exploration and survey : Peter Biermayr , 19.08.2009

UTM WGS 84
 32 T 0315 275
 4880450
 H ~ 1400 m



M 1:100



Ⓘ, Ⓜ : skulls, bones
 Ⓢ, Ⓥ : crystals

Figure 12: Top of the cave "Grotte des deux mouflons". Survey and plan: Peter Biermayr

Path to the Grotte des deux mouflons: Starting at the Sources du Coulomp follow an old path on the true left side of the canyon of the Ravin du Pasqueiret up to the point: GPS UTM WGS84 32T 0315350 / 4880838 where the canyon can be entered without climbing. Now follow the canyon downstream to the first deep step which would require equipment to continue. At this point an old path starts on the true right side of the canyon which can be followed close to the cave entrance. To reach the entrance, a short descent (10 meters) from a tree is required.

Findings: The Grotte des deux mouflons is an approx. 23 meters long horizontal cave, see Figure 12. After the big entrance (4 meters wide and 8 meters high) a horizontal passage with steadily decreasing height follows. At the beginning of the survey the cave seemed to be untouched (no human footprints in the soft sediments of the deeper part of the cave). The bottom sediments change from blocks in the entrance area to fine earthy sediments in the back area where some animal bones, 2 skulls (from mouflons?) and some pieces of coalificated wood (Lignite?) are located (see Figures 14 and 16). Furthermore crystals are located on the ceiling of the first chamber, see Figure 15. The sediments in the deeper part of the cave could be of paleontological interest.



Figure 13: Grotte des deux mouflons. 📷 Peter Biermayr



Figure 14: Skull at the end of Grotte des deux mouflons, see also Figure 12 position I.
Peter Biermayr



Figure 15: Crystals in the Grotte des deux mouflons, see also Figure 12 position IV. Picture
size: approx. 12 cm x 20 cm. Peter Biermayr



Figure 16: Pieces of coalificated wood (Lignite?) in the deeper part of the cave.
📷 Peter Biermayr



Figure 17: View from the main chamber of the Grotte des deux mouflons in the deeper part of the cave. 📷 Peter Biermayr

19.08.2009: Exploration of the source of a little waterfall on the true left side of Coulomp river close to the path beside the Coulomp river on point GPS UTM WGS84 32T 0315938 / 4879888, see Figure 18.

Findings: The source of the little waterfall (see Figure 18) could not be found. A small canyon above the waterfall leads to a block field where the water comes out. Furthermore a small source 30 meters east of the waterfall (see Figure 19) was explored. Close to this source Calc-tuff was found, see Figure 20.



Figure 18: Little waterfall close to the path beside the Coulomp river.

📷 Peter Biermayr



Figure 19: Spring 30 meters east of the waterfall.

📷 Peter Biermayr



Figure 20: Calc-tuff from the bottom of the spring. 📷 Peter Biermayr

20.08.2009: Journey home to Austria.

Castellet-lès-sausses, Alpes-de-Haute-Provence

Camp international à la grotte des Chamois



La grotte des Chamois, un porche qui servait de bergerie et d'abri depuis des temps immémoriaux, était surtout connue de par sa proximité avec la source du Coulomp, impressionnante cataracte donnant naissance au torrent du même nom. Son débit (1 000 litres par seconde en moyenne) en fait l'une des plus grosses sources du bassin du fleuve du Var.

En raison de son éloignement et des difficultés d'accès, peu de spéléologues avaient tenté de percer le mystère de l'origine de cette source, les assauts antérieurs s'étaient heurtés dans la grotte des Chamois à la présence de trois siphons barrant inexorablement le passage des étroites galeries d'en-trée.

La découverte des galeries au-delà des siphons

Il n'en fallut pas plus pour déterminer Philippe Audra et Jean-Claude Nobécourt, deux spéléologues azuréens, à relever le challenge. Une première reconnaissance au début de l'été 2007 est suivie de nombreuses séances de pompage des deux premiers siphons. À l'automne 2007, le troisième siphon est plongé par Laurent Masselin et Alexandre Pougeoise qui trouvent la suite de la cavité, parcourent de vastes galeries et découvrent une grande salle.

Puis l'hélicoptage d'un groupe électrogène, de carburant, d'une pompe refulante et de 300 mètres de câbles et de tuyaux permet de mettre en place un système de vidange du S3; L'année 2008 livre alors l'accès à la « galerie des Hormones », énorme conduit de 20 à 30 m de diamètre, s'enfonçant de plus de 1 km sous la montagne de Baussebéard en direction du Grand Coyer, extrémité amont du bassin d'alimentation de

la source du Coulomp.

La grotte atteint alors 3 km de développement [Spelunca, n° 112, 2008]. Plus d'une trentaine de spéléologues de la région s'étaient investis dans cette exploration difficile, exigeant de longues marches d'approches, de lourds portages de matériel, des bivouacs de plusieurs jours, et surtout le passage obligatoire par le « réseau des Shadocks », conduit étroit et partiellement inondé mais incontournable clef d'accès aux vastes galeries.

Une équipe spéléo d'experts

Ces résultats encourageants ont fait de la grotte des Chamois une de cavités majeures de la région. Néanmoins, un mystère demeurait: la rivière souterraine donnant naissance à l'impétueuse source restait inconnue. Germa alors l'idée d'élargir l'équipe aux spéléologues européens, afin de se donner les moyens de relever ce défi.

C'est ainsi que du 13 au 23 août 2009, 28 spéléologues émanant de 7 pays (Allemagne, Autriche, France, Hongrie, Italie, Maurice, Slovaquie, Suède) constituent une équipe des meilleurs spécialistes: topographes, photographes, géologues, hydrogéologues, explorateurs, scientifiques, assistance médicale, etc. Tous se sont retrouvés au hameau d'Aurent, transformé pour la circonstance en camp de base.

Découverte du Coulomp souterrain

Pendant 10 jours, 20 équipes se sont relayées pour explorer et topographier les galeries de la grotte des Chamois. Et dès le 16 août, deux Hongrois et un Autrichien découvraient une galerie menant au sommet d'un puits de 20 m, du haut duquel on entendait le grondement de la rivière convoi-

tée: le Coulomp souterrain venait d'être découvert! Les jours suivants furent consacrés à l'exploration de la rivière: un demi-kilomètre a été ainsi parcouru.

Vers l'aval, le torrent disparaît rapidement dans un siphon, laissant une zone inconnue de plusieurs centaines de mètres jusqu'à sa résurgence à la source du Coulomp. L'exploration vers l'amont nécessite de traverser de longs bassins profonds, et l'eau glacée à 5 °C impose de se vêtir d'épaisses combinaisons néoprène. Les bassins d'eau transparente, au fond parfaitement lisse, se succèdent pendant plusieurs centaines de mètres. Ils sont exempts de tout bloc rocheux en raison de la force du courant violent qui les balaye en période de crue.

Le dernier jour, l'exploration s'est arrêtée sur un bassin plus profond, tandis que le grondement lointain d'un rapide confirmait la continuation au-delà de ce terminus provisoire. On peut déjà déclarer qu'il s'agit d'une des plus puissantes et des plus belles rivières souterraines de France.

Des résultats d'envergure

Le Coulomp souterrain découvert, 1 km de galeries nouvelles topographiées portant le développement total de la grotte des Chamois à plus de 4 km, tel est le bilan de ce camp spéléo international. Ces résultats ne doivent pas faire oublier ce qui, outre les explorations engagées, restera dans les mémoires des participants: un cadre grandiose dans une montagne sauvage, une ambiance d'expédition internationale marquée par une chaleureuse amitié, la sérénité du hameau d'Aurent, et l'implication chaleureuse des Aurentais.

Plus prosaïquement, ces explorations ont été conduites dans un souci de respect global du site, incontournable dans l'esprit des organisateurs: l'ensemble des déchets ont été redescendus dans la vallée, les zones sensibles pour leurs concrétions et leurs formations sédimentaires fragiles ont été balisées, l'impact sur la faune souterraine a été minimisé.

L'accès, nécessitant le franchissement de trois siphons et le parcours d'un réseau complexe, n'est de toute façon accessible qu'à des spéléologues très expérimentés, qui, de par leur expérience, sont généralement extrêmement respectueux du milieu souterrain et de l'environnement.

À peine cette expédition terminée, nous préparons déjà le futur, vers la recherche de l'origine du Coulomp souterrain, sous les pentes du Grand Coyer, à plus de 6 km de distance. Par-delà l'exploration, les objectifs scientifiques s'affinent: caractérisation de la ressource en eau (quantification des débits, qualité des eaux, délimitation précise du bassin d'alimentation), étude de la genèse de la cavité (contexte géologique, datation de l'âge de la cavité et de ses sédiments), étude de la faune souterraine.

Gageons que les montagnes du Coulomp nous reverront encore pendant plusieurs années. Dans l'immédiat, une conférence est d'ores et déjà programmée à l'automne prochain: les habitants de la région pourront alors partager avec nous la découverte du Coulomp souterrain. 🐟

Philippe AUDRA
Jean-Claude NOBÉCOURT
(CRÉSPE)

« Le Coulomp souterrain écoule en moyenne 1 m³/s dans la grotte des Chamois.

Photo Marc Faverjon

Les soutiens aux explorateurs

Ce camp a bénéficié du soutien de nombreux partenaires, sans qui de tels résultats n'auraient pu voir le jour:

- les collectivités territoriales (municipalité de Castellet-lès-Sausses et son maire Cl. Camilleri),
- les organisations spéléologiques (EuroSpeleo Project de la Fédération de spéléologie européenne; FAAL de la Fédération française de spéléologie; Comité spéléologique régional Provence-Côte d'Azur; Comité départemental de spéléologie des Alpes-Maritimes)

- les entreprises (cordiste Béal; SCREG Cozzi; Saint-Cézaire Technique; Société monégasque des eaux; Sport-ev Nice).

Enfin, les habitants du hameau d'Aurent, par leur accueil chaleureux et leur aide matérielle, ont très largement contribué à ce succès.