

Caves of New Mexico

(United States of America)

by Association française de karstologie (AFK)



*Philippe Audra
Jean-Yves Bigot
Laurent Bruxelles
Jean-Claude d'Antoni-Nobécourt
& Nathalie Vanara*

*2009 July 8 to 25
(15th ICS of Kerrville)*

2 – Departure from Nice (France)



Mandelieu - La Napoule Bay on the Côte d'Azur (2009-7-8).

3 – Paris-Newark

The savage coasts of Labrador, and then...



... the arrival to Newark airport (New-York) after the flying over oil refineries.

4 – El Paso (Texas)



Montana Avenue in El Paso (2009-7-9).

5 – New Mexico State



Salt Flat, on the back the Guadalupe Mountains.



El Capitan,
really
figurehead
of
Guadalupe
Mountains.

6 – Carlsbad Caverns

We enjoyed Carlsbad Caverns
Accommodations belong to
National Park.



These little huts are more fifty
years old, and are built in a pure
mexican style. These constructions
are listed as historical buildings...

7 – The rules in effect



Paul Burger presented the rules in effect in the National Park Caves.

The best lunch of our journey:
pasta prepared by Marco Menichetti.
On the back, Art and Peggy Palmer,
great organizers of our trip in
Lechuguilla Cave.



8 – Guadalupe Mountains



The Guadalupe Mountains display plane surface on the top of permian limestone, these long mountains chain have been accentuated and eroded. The arid climate favours the grow up of acacias, prickly trees, little palms, cactus and of course Lechuguillas.

9 – Ready to go to Lechuguilla

Terminus vans.



Climbing to the
cave (2009-7-10).

10 – Guads Landscapes



Desert landscapes on the footpath leading to the Lechuguilla Cave.

11 – Inside



On the top of the
Boulder Falls (P 45).

It's cooler...



12 – The events



The events are typical shapes of thermal stratification caves as well as thermal caves in the arid areas.

13 – The Rift



The Rift is karstified fracture on the great high. The sulfidic upwellings go through the Rift to the surface.

We can fall down in the fracture, it's the reason why the traverses are been settled.

Profile of gallery on the top of the Rift.



14 – Lebarge Lake



15 – Chandelier Ballroom



The gypsum speleothems which grow up below the roof are really huge.

16 – Huge speleothems



Bottom of
Chandelier
Ballroom.

17 – Prickly Ice cubes



Limestone pillar reduced by expansion of voids of cave.

Gypsum and selenite formations.

18 – Aragonite breccias



The rock mass shows a very nice breccia.

19 – Prickly Ice Cubes



Hollow stalagmite.

Cross section of gallery covered of gypsum.



20 – Prickly Ice cubes

The floor is covered by the gypsum.



21 – Mouse Delight



Gypsum crusts recovered all the walls.

22 – Washington Ranch



Moved in Washington Ranch (2009-7-11), located below Carlsbad Caverns.



Washington Ranch:
An oasis in the desert...

23 – Rattlesnake Springs

Rattlesnake Springs supply the pools of Washington Ranch located close by.



24 – Indian Rock Shelter

Indian Rock Shelter



Mickael Queen at Indian Rock Shelter (2009-7-13).

25 – Carlsbad Springs



Carlsbad Springs along the Pecos River.

26 – Carlsbad Caverns



Ramp entrance of Carlsbad Caverns.

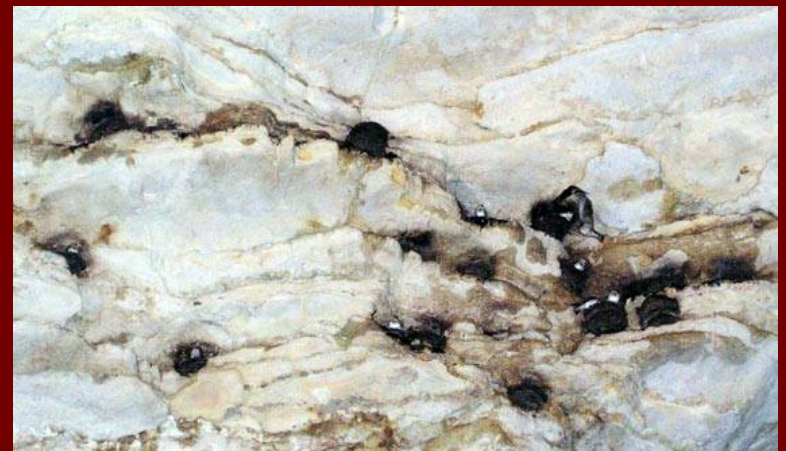


27 – Big entrance of Carlsbad



Low angle view of porch and ramps of Carlsbad Caverns.

28 – The cave swallows



29 – Arachnids of desert



A few arachnids :
mygale spider,
uropyge, black widow
spider, scorpion, etc...

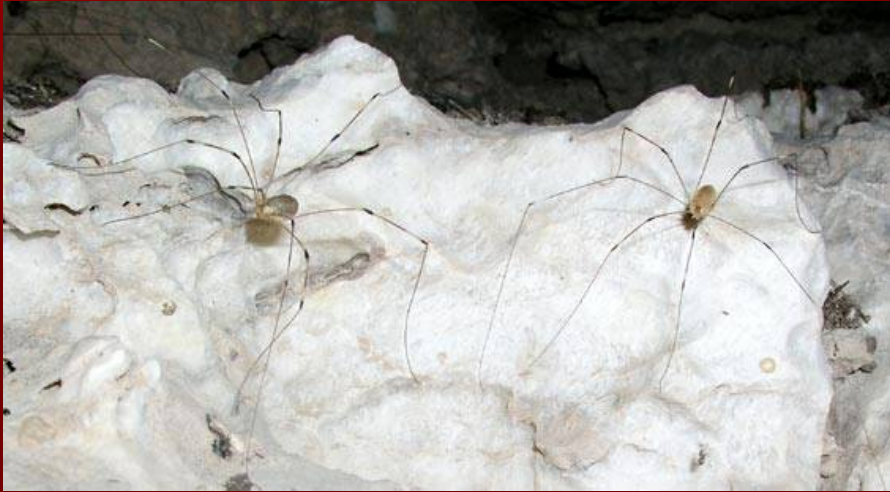


30 – The desert plants

The desert plants achieve to flower in the desert, notably after the rains.



31 – The animals of caves



Cricket, spiders and bats of Park's Ranch Cave formed in gypsum mass rock.

32 – The hunter and the game



The hunter : an coleoptera.



The game : The Cave Crickets feeding
generally food chain of guano.

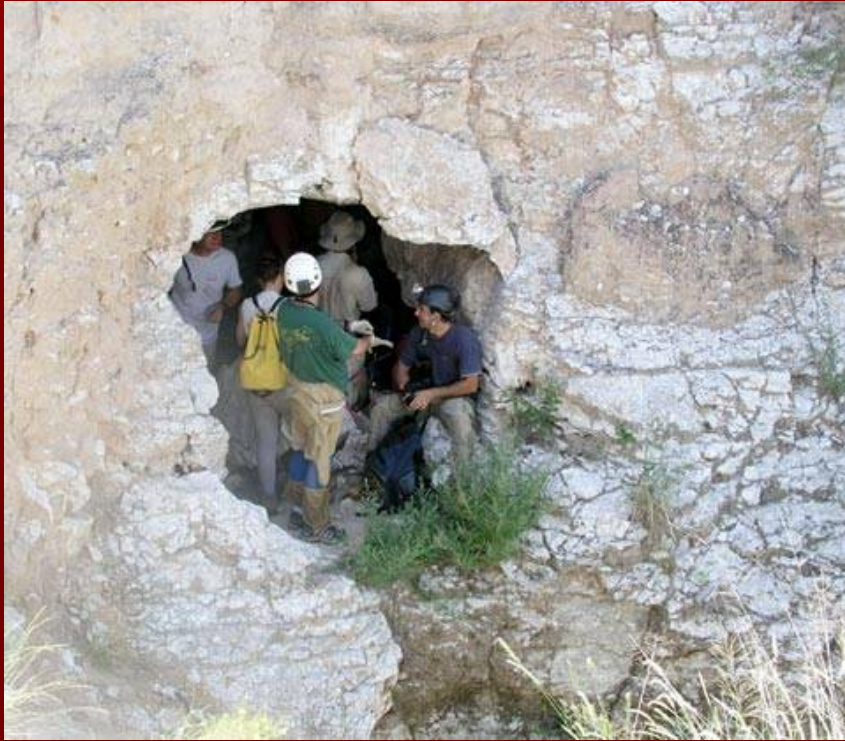


33 – The Delaware Basin

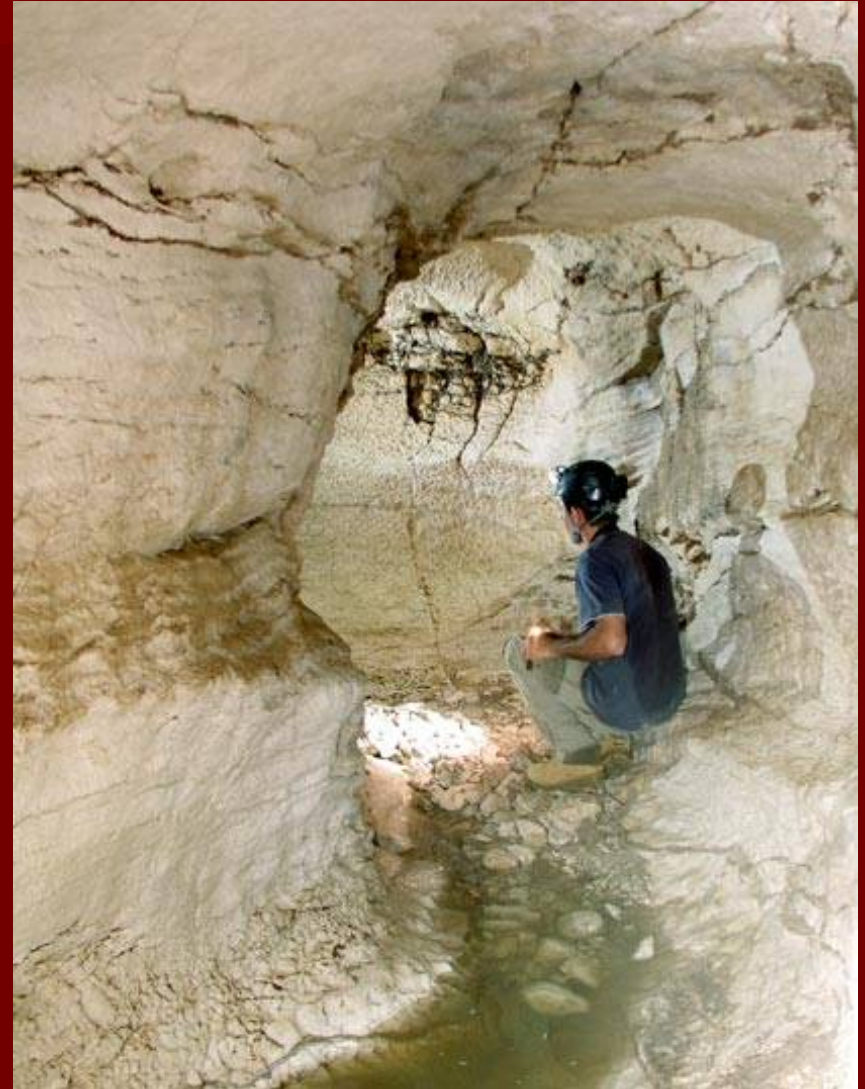


The Delaware Basin spread at foothills of Guadalupe Mountains (in back), it's composed of gypsum (Castile Formation) on which grow up rare vegetation.

34 – The Park's Ranch Cave



Visit into Park's Ranch Cave (2009-7-14).
It's a sinkhole dug in gypsum mass on
fractures or joints.



35 – The Park's Ranch Cave



Cross sections of galleries in Park's Ranch Cave.

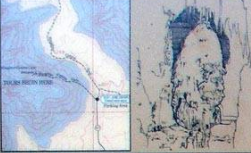
36 – Slaughter Canyon



Slaughter Canyon 2009-7-14.

37 – Slaughter Canyon Cave

Slaughter Canyon Cave



This trail leads up to the west wall of Slaughter Canyon to the entrance of Slaughter Canyon Cave, an undeveloped cave within Carlsbad Caverns National Park. Park rangers lead scheduled tours starting at the cave entrance. Advance reservation is required.

La cueva de cañón Slaughter
Esta cueva conduce por la pared occidental del cañón Slaughter a la entrada de la cueva de cañón Slaughter, una cueva en desarrollo del parque nacional de las cavernas de Carlsbad. Los guardaparques dirigen paseos programados que se empiezan en la entrada a la cueva. Se requieren reservaciones de antelación.

Hike to Cave Entrance		Tour through Cave	
Distance	Time Required	Distance	Time Required
.5 mile	30-45 minutes	1.25 miles	2 hours

Caminata a la entrada de la cueva		Paseo por la cueva	
Distancia	Tiempo necesario	Distancia	Tiempo necesario
800 m	30 a 45 minutos	2 km	2 horas



The Slaughter Canyon go out in the vast Delaware Basin.



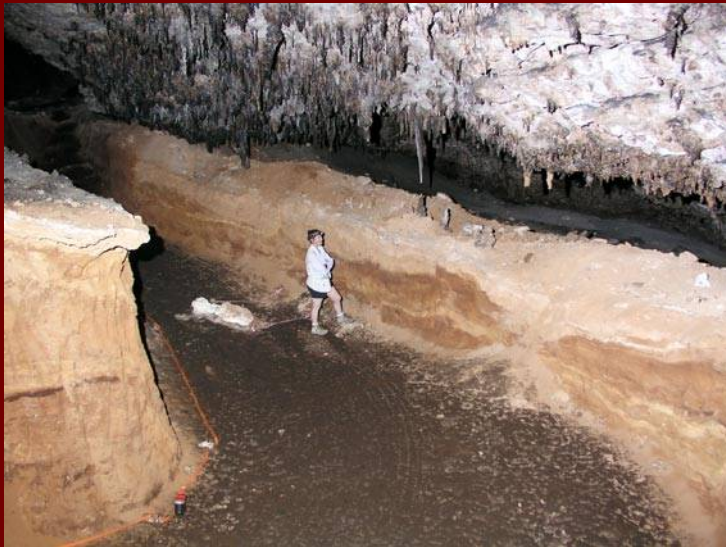
Inside of Slaughter Canyon Cave.

38 – The fossil guano



Filling fossil guano extracted in XIXth century.
Multitude of bat bones displays on the cuts of the mine. These bones are more 500 000 years old and belong to species of 500 000 years and to day disappeared.

39 – The phosphate



The cuttings opened for phosphate exploitation allow to see different layers of fossil guano.

40 – Massive speleothems



The Clansman, evokes a man of Ku Kux Klan...



41 – The archeology... XIXth



The remains of light and tracks of ropes or pipes are preserved on the ground. From now on, these tracks belong to american local history.



The cave and its fillings of fossil guano exploited by the miners.

42 – The condensation-corrosion



Stalagmite carved by processes of condensation-corrosion typical of entrance areas. You can see the entrance on the left and top of the picture.

43 – The WIPP...



The WIPP is a center of storage radioactiv waste in salt mine located about 650 m deep under the surface.



44 – Salt and oil



In the desert near the WIPP,
the oil is extracting in a large salted area.



45 – The folia of Carlsbad



Folia : pool speleothems very typical of hypogenic caves.

Mickael Queen, Donald Davis and Philippe Audra looking for inspiration in the folia of Carlsbad Caverns.



46 – The mazes



Impressive karrens on the rock.

The area of folias is located in the end of Left Hand Tunnel, in the maze typical of sulfidic caves.



47 – Big Room



Big Room is a very large room of Carlsbad Caverns.

48 – Huge Volumes



The visit of Big Room (to go round this room) take a few hours (2009-7-16).



49 – Gypsum accumulations



The gypsum deposits show an amazing height. We can see below the walls. The gypsum falls from walls and formed white massive deposits which are dismembered as the pack ice.



50 – Indian rains



The july 16th, the indians rains are rare...
The drips are evaporated before to reach the floor... Very hard country...

51 – White Giant



A new place (Hall of the White Giant) of Carlsbad Caverns where a huge white stalagmite was built (2009-7-17).

The walls of galleries are yellow and wine-red color. These colors match to sandstone well-known level (Yates Formation) in the limestone series.



52 – Left Hand Tunnel



Left Hand Tunnel is a branch of Carlsbad Caverns Maze where the cross-sections display very interesting features and shapes.

Trilobite in the permian limestone rocks shot on the artificial wall of Carlsbad Caverns.

53 – Left Hand Tunnel



Little lake of which yellow water caused by organic origin.

Cross-section conduit in Carlsbad Caverns.



54 – High Guads



The visit to Cottonwood Cave (2009-7-18) led us in the High Guads. These mountains are less arid and more wooded, and the fire can devastate whole area.

55 – Cottonwood Cave



Cottonwood
Cave
Entrance

56 – Bacterian filaments



The speleothems droop under the ceiling of fossil pool in Cottonwood Cave. These shapes originate in bacterian activity. Bacterian filaments have been fossilize in the calcite of pool.

The old level of pool is emphasized by the border clearly visible on the wall.



57 – Gypsum replacement

In sulfidic atmosphere, the limestone walls of Cottonwood Cave had been changed into a thick crust of gypsum.

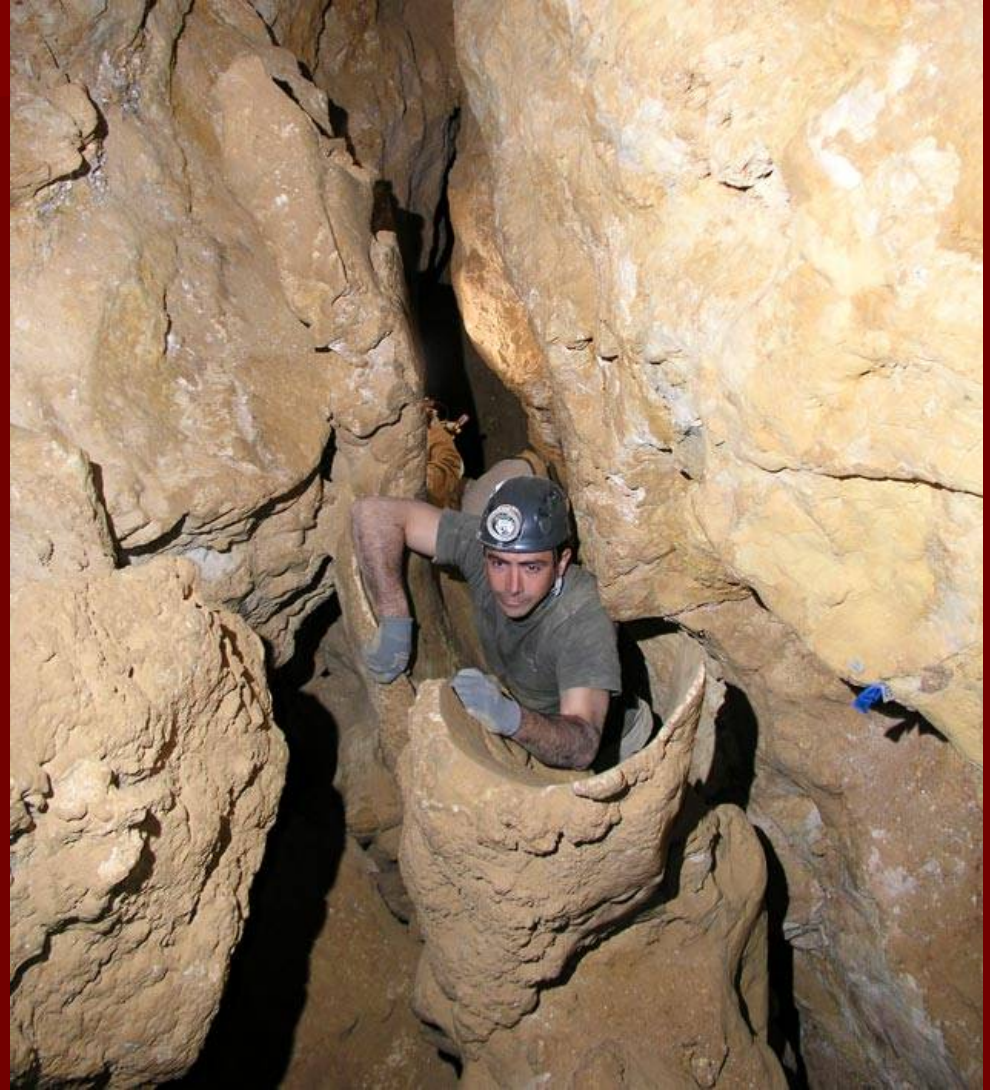


Frontline of corrosion between gypsum (on the right) and bedrock (on the left).

58 – the events

The events and the gypsum rims are very impressive in this cave.

A crawl is opened in the through out very spectacular event.



59 – Sitting Bull Falls



The natural site of Sitting Bull Falls is an oasis in the Chihuahua Desert,
in the Lincoln National Forest.

The Gilson Canyon has entrenched sedimentary series which had isolated a butte as well-
known Monument Valley.

60 – The travertine formation



The fall of Sitting Bull has deposited a huge massif of travertine where caves occur.



61 – Primary cave

Inside the Sitting Bull Falls Cave opened in the tufa formation deposited by the fall.

This cave results of march of travertin massif. This type of caves is called primary cave, because travertine envelop the voids. It's a very different process of normal caves formed by erosion.



62 – The cactus

Different species of cactus grow up in the New Mexico deserts.



63 – The texan motorways



Ride in van (2009-7-19)
from Carlsbad to Kerrville
transit by Pecos, Fort
Stockton, Ozona and Sonora.

Motorways in the west of
Texas near Ozona city.

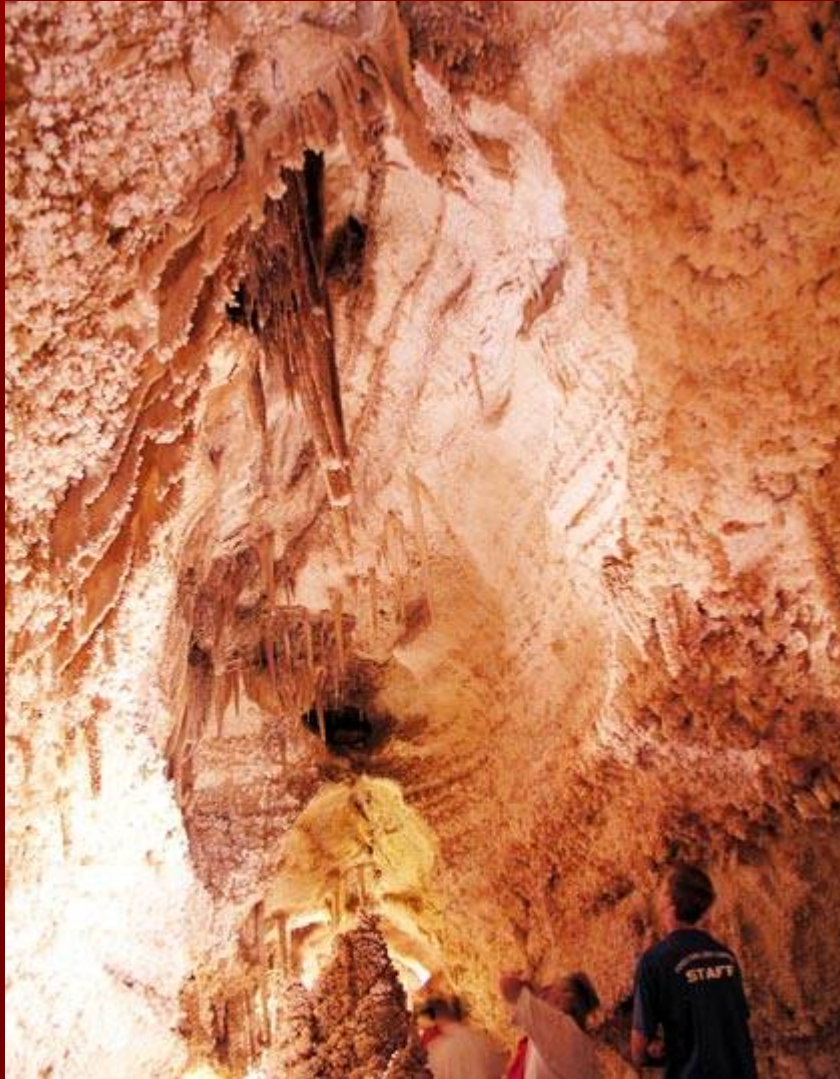


64 – Stop at Sonora

Stop for a short visit in Sonora Caves.



65 – Sonora Caves



The hypogenic caves of Sonora occur features very characteristic and amazing speleothems. It's probably one of the nicest caves of Texas.

66 – Kerrville University



Arrival in the evening to Kerrville University (Texas), after a ride of about 800 km.

The student bedrooms are very comfortable.



67 – 15th ICS



15th International congress
of speleology.

Results of competition
photo and video
(Awards) in the theater
of Kerrville.



68 – San Antonio City



Interchange in the San Antonio suburban (Texas).

The Wednesday trip (2009-7-22), dedicated to the famous Edwards Aquifer, led in the suburban area of San Antonio. We visited the cave entrances, as Cub Cave.



69 – Comal Spring



The Comal Spring area is a large zone of spot emergences in the Edwards Aquifer.
This aquifer supply the biggest towns of West Texas area.

70 – The AFK team



Laurent Bruxelles, Jean-Claude d'Antoni-Nobécourt,
Nathalie Vanara and Philippe Audra.



Jean-Yves Bigot.

The End