

Field Training Course and Workshop of the Sam-GeoQuat Int. Focus Group



14-18 October 2013

"From the Pampean Ranges to the North Pampa: Tectonic and Climatic Forcing on the Late Quaternary landscape evolution of Central Argentina"

Central Argentina



14-15/17-18th October: Field Course

Fieldworks will follow an intensive fieldtrip along a ca. 1,100 km geological transect that allow discuss in situ outcropping sequences and landforms. This will cross four Argentinean provinces, from the Eastern Pampean Ranges through the North Pampa Plain to the Parana Fluvial Belt.

16th October: Workshop of the Sam-GeoQuat IFG in Miramar city

It will consist of invited lectures, talks by participants and roundtable discussions.

INQUA Proj. 1311: "SAQint3- Interactions between climatic forcing, tectonics and volcanism during the Late Quaternary: a multidisciplinary approach applied on key regions of South America"

http://www.terpro.org.ar/quaternary_geology.htm

TERPRO
Commission on Terrestrial Processes,
Deposits and History

Sponsors:



Support:



Organizing Committee & Field Trip Leaders (Argentina):

Dr. Daniela KRÖHLING (CONICET & UNL, Santa Fe) –Coordinator–

Dr. Carlos COSTA (UNSL, San Luis) - Dr. Eduardo PIOVANO (CICTERRA, UNC & CONICET, Córdoba)

Dr. Ernesto BRUNETTO (CICyTTP-CONICET, Entre Ríos) - Dr. Claudio CARIGNANO (CICTERRA UNC & CONICET, Córdoba) - Dr. Francisco CÓRDOBA (CICTERRA, UNC & CONICET, Córdoba)

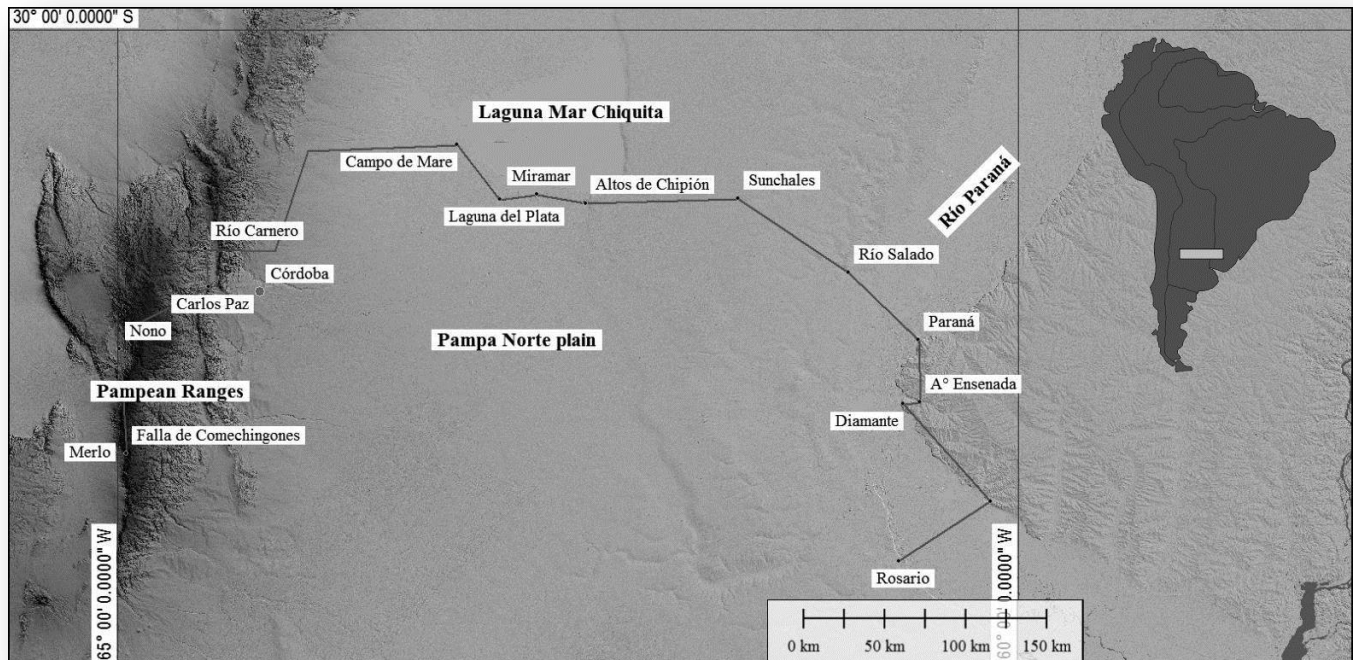
Second Circular

This **Field Course** will provide research training in field observation from different geological sub-disciplines, being an opportunity for field demonstrations and to stimulate multidisciplinary field discussions. The main task is to enhance and to extend the integrated analysis of the role of the tectonics and the climatic changes on the landscape evolution of the region, especially for the time spanning the last interglacial-glacial cycle.

The **Workshop** will be mainly a space for additional presentations and for discussions. The **outdoor setting** will be the coast of the Mar Chiquita at Miramar city. The **venue for indoor activities** will be the *Museo de Ciencias Naturales de la Región de Ansenusa "Aníbal Montes"* and the instalations of the *Reserva Laguna Mar Chiquita y Bañados del Río Dulce* (Miramar).

The meeting will allow young and senior researchers with different backgrounds to meet, to interact and to exchange data and interpretations and also discuss common and new methodological approaches for studying geological processes along a particular tectonic setting. Possibilities for common efforts to improve our knowledge on Late Quaternary processes will be analyzed.

The central point for discussions will be the possibility of adaptation of common criteria between the sub-group of neotectonics and those sub-groups dedicated to the research of climatically driven processes in different geologic settings for the use of all the information on the analyses of the landscape evolution in order to contribute to the elaboration of a methodological guide to reconstruct some specific terrestrial processes during the Quaternary.



CHARACTERISTICS OF THE FIELD COURSE:

Each stop will be presented by the leaders (describing the methodologies, presenting field and laboratory data, and making general interpretations). The surface information, also with that obtained by means the interpretation of data (limnogeological and sedimentological) from research boreholes, as well as geophysical and chronological data, and paleolimnological records, will be discussed in the field.

Morphotectonic characteristics and the application of new laboratory techniques will be discussed in particular sites.

Expressions of the landscape of the region (landforms) and pedosedimentary sequences will be analyzed in terms of tectonic and climatic forcings (dominant surficial processes).

Late Quaternary sedimentary archives will be considered in broader analysis of climate variability (geological proxy records). Fluvial, deltaic, lacustrine, colluvial, alluvial, aeolian and pedological records of the visited areas will be discussed and interlinked, because of their value in registering comparatively rapid response to tectonic and climate influences.

As the group is travelling, a series of presentations from invited specialists for selected stops will take place.

CHARACTERISTICS OF THE WORKSHOP:

Presentation of the Sam-GeoQuat IFG and specific data of the region will be presented by the coordinators of the Course. It will permit discuss in more detail neotectonic, sea level changes and climatic driven processes on the Late Quaternary environmental evolution of the region. The most recent environmental variability (i.e., Anthropocene) affecting central Argentina will be included in the discussion.

Short presentations by the participants of the Field Course related to their specific study regions are encouraged in order to enhance the exchange of information.

A follow-up activity would be to delineate a standard methodology to the reconstruction of the Late Quaternary history of the region considering both endogenous and exogenous processes.

SCHEDULE:

Beginning of the excursion: 14 October (8:00 hs), from Merlo city (San Luis province).

DAY 1, 14 October: Western front of the Sierras de Comechingones revealing extensive reverse faulting and planation surfaces (Pampean Ranges) -San Luis and Cordoba provinces-

Stop 1 (8:30-11:00 hs): Trench exposure of Holocene faulting at the El Molino fault (Comechingones Fault System) in Merlo. *Main coordinator: C. Costa.*

Western front of the Comechingones Ranges (between Merlo and Nono, 11:00-13:00 hs).

13:00-14:00 hs: Lunch at El Nono camping.

Stop 2 (14:00-15:00 hs): Mina Clavero River profiles. *Coordinators: C. Carignano and C. Costa.*

Altas Cumbres transect (Sierras Grandes de Cordoba), with intermediate stops (15:00-18:00 hs; M.Clavero-Carlos Paz): planation surfaces. *Coordinator: C. Carignano and C. Costa.*

Stop 3 (18:00-19:00 hs): Outcrops of the Villa Carlos Paz Section of the Sierra Chica Fault.

Coordinators: C. Costa and C. Carignano.

Overnight: Villa de Tanti or Cordoba city.

DAY 2, 15 October: Eastern Piedmont of the Pampean Ranges (Sierras de Cordoba) and tectonic depression of Mar Chiquita -Cordoba province-

Sierras Chicas de Córdoba and piedmont (between C. Paz and Jesús María, 8:00-10:00 hs). Main coordinator: *C. Carignano.*

Stop 4 (10:00-12:00 hs): Carnero River Profiles. *Coordinator: C. Carignano.*

Piedmont of the Pampean Ranges and Depresion of Mar Chiquita (between J. María and – Laguna del Plata, 12:00-14:00 hs).

14:00-14:45 hs: Lunch at the Laguna del Plata camping

Stop 5 (15:00-17:00 hs): Outcropping sequences of the Laguna del Plata (SW coast of the Mar Chiquita Lake). *Coordinators: D. Kröhling, E. Piovano, E. Brunetto, F. Cordoba, C. Carignano.*

SW coast of the Mar Chiquita lake (between Lag. Del Plata and Campo Mare; 17:00-17:30 hs).

Stop 6 (17:30-18:30 hs): Campo Mare Profile (Holocene field dune of the SW coast of the Mar Chiquita lake). *Coordinators: D. Kröhling, C. Carignano, E. Piovano, E. Brunetto, F. Cordoba.*

Stop 7 (optional, 19:00-19:30 hs): Plujunta River profiles (Segundo). *Coordinator: D. Kröhling*

Overnight: Miramar city.

DAY 3, 16 October: tectonic depression of Mar Chiquita -Cordoba province-

Stop 8 (8:00-11:00 hs): Mar Chiquita lake and profiles of the S coast of the lake in the Miramar area.

Coordinators: E. Piovano, F. Cordoba.

WORKSHOP OF THE TERPRO-INQUA Sam-GeoQuat GROUP: Outdoor activities (11:00-12:00 hs)

12:00-13:00: Lunch at Miramar camping.

WORKSHOP: Indoor activities (14:00-18:00 hs)

Visit to the Photographic Museum of Miramar (18:00-19:00 hs).

Overnight: Miramar city.

DAY 4, 17 October: North Pampa -Tostado Selva fault scarp, San Guillermo elevated block and Rio Salado del Norte valley –Cordoba and Santa Fe provinces-

SE coast of the Mar Chiquita lake (between Miramar and Altos de Chipion; 8:00-9:00 hs).

Stop 9 (9:00-10:00 hs): Segundo River profiles (sunken block of the Tostado Selva fault). *Coordinators: E. Brunetto, D. Kröhling*

Stop 10 (10:00-11:30 hs): Altos de Chipión – trench in the Tostado Selva fault scarp. *Coordinators: E. Brunetto, D. Kröhling*

Transect along the San Guillermo block (between Altos de Chipion and Sunchales, 11:30-12:30 hs).

Stop 11 (12:30-13:30 hs): profiles of the Cañada Sunchales (Sunchales). *Coordinator: E. Brunetto,*

Transect along the San Guillermo block, the San Cristobal block and the area of paleochannels of the Salado del Norte River (between Sunchales and Santo Domingo, 13:30-15:00 hs).

Lunch on the bus.

Stop 12 (15:00-16:30 hs): Profiles of the Salado del Norte Fluvial Valley in Santo Domingo-Llambi Campbell area. *Coordinators: E. Brunetto, D. Kröhling*

Stop 13 (17:00-18:00 hs): Río Salado del Norte profiles in Manucho area. *Coordinators: E. Brunetto, D. Kröhling.*

Transect along the lower valley of the Salado del Norte River (between Esperanza and Santa Fe, 18:00-19:00 hs).

Stop 14 (19:00-19:15 hs): Geomorphological view of the Colastine River (Floodplain of the Parana River between Santa Fe and Parana). *Coordinators: D. Kröhling, E. Brunetto.*

Overnight: Santa Fe or Paraná city.

DAY 5, 18 October: North Pampa – Left margin of the Parana River valley –Entre Rios province-

Stop 15 (8:00-9:00 hs): Geomorphological view of the large Parana fluvial valley. Parque Villa Urquiza (Paraná). *Coordinator: D. Kröhling, E. Brunetto.*

Stop 16 (9:30-11:00 hs): Parana River cliff in La Toma Vieja área. *Coordinators: E. Brunetto, D. Kröhling.*

Transect along the upper block of the Parana fault (left margin of the Parana River between Parana and Aldea Brasileira, 11:00-12:00 hs).

Stop 17 (12:00-13:00 hs): Parana River cliff in La Juanita area. *Coordinators: E. Brunetto, D. Kröhling.*

Transect along the upper block of the Parana fault (left margin of the Parana River between La Juanita and Diamante, 13:00-14:00 hs).

Lunch on the bus.

Stop 18 (14:00-15:00 hs): Profiles of the Ensenada River mouth, Diamante. *Coordinator: E. Brunetto.*

Stop 19 (15:30-17:00 hs): Profiles of the Ensenada River near the Ander Egg waterfall. *Coordinator: E. Brunetto*

Transect along the middle Holocene delta of the Parana River (Victoria-Rosario Bridge, 17:00-18:30 hs).

Stop 20 (18:00-18:30 hs): Geomorphological view of the landforms of the upper part of the middle Holocene Paraná Delta. *Coordinator: D. Kröhling.*

End of the excursion: Rosario city (Santa Fe province, 19:00 hs).

REGISTRATION FEE: \$ Arg. 3,000 (US\$ 550)

The registration fee includes accommodation during the field excursion (4 nights, room sharing), breakfast, lunch and dinner, and excursion material.

Transportation to Merlo (SL) and from Rosario (SF) and accommodation costs of the previous night and the night of the final day of excursion (Rosario) are not included.

PAYMENT CONDITIONS:

An advanced payment of \$ Arg. 1,000 should be transferred by the Argentinian participants **before October 5, 2013** in order to assure their participation. The rest of the registration fee will be covered on the first day of the excursion.

Foreign participants should pay registration fee in Merlo before the beginning of the field course.

The advanced payment of the registration is to be paid via bank transfer at:

Account Holder: Daniela Mariel Ines Krohling

CUIL: 27-17812019-6

Bank Name: Banco Credicoop Sucursal Santa Fe (filial 340)

Account No: 191-340-050955/7 - Caja de ahorros

CBU: 1910340655134005095571

Please, send the proof of payment to: dkrohli@gmail.com

AIRPORTS AND FLIGHTS INFORMATION:

AEROPUERTO INTERNACIONAL DE EZEIZA "Ministro Pistarini" (Buenos Aires):

<http://www.aa2000.com.ar/aeropuertos.aspx> - <http://www.aa2000.com.ar/>

AEROPARQUE INTERNACIONAL (for domestic flights and international connections) "Jorge Newbery" (Buenos Aires): <http://www.aa2000.com.ar/>

Note that the airport of Merlo is not operating.

The nearest airport to **Merlo** is in the **city of San Luis** ("Brigadier Mayor César R. Ojeda"), which is about 2 hours from Merlo by car:

<http://www.aa2000.com.ar/aeropuertos.aspx?qId=AA2000&qA=LUQ>.

CORDOBA INTERNATIONAL AIRPORT ("Ing. A. Taravella" Pajas Blancas) is at a distance of 5:30 hs by bus from Merlo (see details below): <http://www.aa2000.com.ar/aeropuertos.aspx?qId=AA2000&qA=LUQ>

There are flights from different countries of South America (from Venezuela and Colombia via Panamá). Between the airlines:

LAN: <http://www.lan.com>

TAM: <http://www.tam.com.br/>

COPA: <https://www.copaair.com>

GOL: <http://www.voegol.com.br/>

AEROLINEAS ARGENTINAS: <http://www.aerolineas.com.ar/>

ROSARIO INTERNATIONAL AIRPORT ("Islas Malvinas"): <http://www.aeropuertorosario.com/>

- *Note that from September 10 to November 24, the Rosario airport will interrupt entirely the operations due to remodeling.*

ROSARIO – BUENOS AIRES AIRPORTS TRANSFERS:

Transfers Rosario city to Ezeiza Airport or Rosario city to Aeroparque:

<http://www.tiendaleon.com.ar/home/home.asp> - <http://autotrasdale.com.ar/site/>

BUENOS AIRES BUS STATION (RETIRO) – EZEIZA OR AEROPARQUE AIRPORTS TRANSFERS:

Transfers from the Central Bus Station of Buenos Aires (Terminal de Omnibus de Retiro) to Ezeiza Airport or Aeroparque (Buenos Aires): <http://www.tiendaleon.com.ar/home/home.asp>

BUS STATION OF BUENOS AIRES:

Central Bus station of Buenos Aires (Terminal de omnibus de larga distancia Retiro):

<http://www.retiro.com.ar/>

BUS INFORMATION:

From Buenos Aires to Merlo (*duration of the trip: 11 to 13 hs*):

- Expreso del Oeste: <http://www.expresodeloeste.com/>
- Sierras Cordobesas: <http://www.sierrasdecordoba.com.ar/home.html>
- Expreso San Juan Mar del Plata: <http://www.sanjuanmardelplata.com/index.php>
- Nueva Chevallier: <http://www.nuevachevallier.com/>

From Santiago de Chile/Mendoza to Merlo:

- Andesmar: <http://www.andesmar.com/>
- El Rapido Int. S.R.L.: <http://www.elrapido.com.ar/>
- Expreso Uspallata: <http://www.turismospallata.tur.ar/>

From Cordoba to Merlo (duration of the trip: 5 hs 30 min):

- Chevallier: <http://www.nuevachevallier.com/>
- El Rapido Int. S.R.L.: <http://www.elrapido.com.ar/shop/default.asp>

From Rosario to Buenos Aires (duration of the trip: 4 hs):

- General Urquiza: <http://www.generalurquiza.com.ar/>
- El Pulqui: <http://www.elpulquisrl.com.ar/>
- Empresa Argentina: <http://www.empresaargentina.com.ar/>
- El Rosarino: <http://www.elrosarino.com.ar/>
- El Turista: <http://www.elturistaenruta.com.ar/>
- Chevallier: <http://www.nuevachevallier.com/>
- Balut: <http://www.balutsrl.com.ar/esp/home.php>
- Plaza: <http://www.grupoplaza.com.ar/larga-distancia.php>

From Rosario to Mendoza/Santiago de Chile (duration of the trip: 11 hs 30 min):

- Central Argentino: <http://central-argentino.com/pasajes-mendoza-rosario.php>
- Andesmar: <http://www.andesmar.com/>
- El Rapido Int. S.R.L.: <http://www.elrapido.com.ar/>

TURISTIC WEBSITES:

MERLO:

<http://www.villademerlo.gov.ar/turismo/>

<http://www.lavillademerlo.com.ar/>

ROSARIO:

<http://www.rosarioturismo.com/es/>

<http://turismo.rosario.com.ar/>

<http://www.rosarioturistica.com.ar/>

MIRAMAR (MAR CHIQUITA):

<http://www.miramarcordoba.com.ar/>

<http://www.turismomiramar.com/web/index.php>

WEATHER FORECAST:

Servicio Meteorológico Nacional: <http://www.smn.gov.ar/>

Infoclima: <http://infoclima.com/>

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