

FIELD TRIP 1: From the Mesoproterozoic ergs through the historical diamond mines to the present education in field geology - Diamantina and the Serra do Espinhaço (Minas Gerais State - SE Brazil)



Galho do Miguel Formation is a Mesoproterozoic erg characterised by draas of linear dunes alternate with continental sabkhas.

Schedule and general travel plan

Leaders. *Giorgio Basilici (UNICAMP, Brazil), Tapan Chakraborty (GSU-ISI, India), Cláudio Marinho (UFVJM, Brazil)*

Duration. 5 days (July 17th-21st).

Number of participants. min 15, max 30.

Cost. 500€ (double room) & 550€ (single room) including transportation, accommodation (4 nights), breakfast, field lunches (on 19th and 20th) and dinners (17th and 20th)

Departure. Geosciences Institute /University of Campinas (IG/UNICAMP), Érico Verissimo Avenue, Campus of UNICAMP, Barão Geraldo (CAMPINAS), parking area in front of the Geosciences Institute, Tuesday, July 17th, 7:00 a.m.

Return. Geosciences Institute /University of Campinas (IG/UNICAMP), Érico Verissimo Avenue, Campus of UNICAMP, Barão Geraldo (CAMPINAS), Saturday, July 21st, 22:00 a.m.

Transportation. Bus, travel time Campinas to Diamantina is around 13 h.

Description

Introduction. The aim of this field trip is make a tasty soup of sedimentology, historical and practical mining of diamond and gold and present teaching of geology. Diamantina and the Serra do Espinhaço is one of the few site on the world with magnificent exposures of Precambrian aeolian deposits. In XVIII century began the extraction of diamonds, found in Proterozoic or recent alluvial deposits. This

moment marked the economic and urban development of the city, exploiting enslaved people forcibly got away from the subequatorial Africa. The diamond exploration created heavy environmental troubles. Presently, the diamond extraction is punctual and strictly controlled by Brazilian environmental police (IBAMA). In 1969, Reinhard Pflug (geologist and academic of the Escola Nacional de Geologia do Rio de Janeiro, present Universidade Federal do Rio de Janeiro-UFRJ) convinced the German authority geologist created an institute of geological studies and education, named

Eschwege Geological Centre, located within the Casa da Glória. In 1979, the Universidade federal de Minas Gerais acquired the building. The centre from these years hosted almost all the generations of geology student of Brazil.

General travel plan

Program

First day (July, 17th). This is the day of trip from Campinas to Diamantina. The dinner will be at the same hotel where we will be hosted. Drinks are on own account.



Diamantina city is the destination of our trip. The architecture of the city persists in typical Portuguese style.

Second day (July, 18th). *Morning.* The Casa da Glória, and other main historical monuments and museums of Diamantina. The Casa da Glória, where the Eschwege Geological Centre is located, was built between from 1775 to 1800 and preserves its ancient structure. The building has a small museum of minerals and rocks. Presently, the structure is used to organize course of geological mapping for undergraduate students of Geology and it hosts academic congresses and meetings. *Lunch.* The lunch is on own account in the various restaurant of the city. *Afternoon.* The activity will continue with the visit of the Museum of the Diamonds, Churches and other public buildings of the city. *Dinner.* The dinner will be with typical *Mineira* gastronomy in a renowned restaurant of Diamantina. Wine or fantastic local beers are on own account.



Casa da Glória is the 18th century building where the Eschwege Geological Centre is located.

Third day (July, 19th). *All day.* A Mesoproterozoic erg desert. To reach the site of Mesoproterozoic exposures we need walk for c.60 min. The walk is soft and on flat surface, but adequate shoes and personal water reserves are necessary. Remember also sunscreen and insect repellent (ticks and mosquitoes). These spectacular exposures of the Galho do Miguel Formation show huge systems of an erg (sand sea) of probably complex draas of linear dunes. This activity will be exclusively geological. Recognition,

description, interpretation of the *seif draas* (complex huge linear dunes) will be done for international specialist in aeolian sedimentology in a didactic and practical way.



Complex dunes in Galho do Miguel Formation probably represent a Proterozoic erg with linear (seif) draas.

In the same area will be possible observe and describe in Holocene (?) sedimentary succession compound palaeosol profiles interlayered with unchannelised sandy deposits that cover the rest of in situ forest. Here, it will possible show and discuss on the relationships between sedimentation and pedogenesis processes.



Holocene palaeosols and deposits covering a small fossil forest.

Moreover, this area offers the vision of some rock walls with prehistoric cave paintings probably dating c.10,000 y BP. *Lunch.* The lunch will be on the field.



Prehistoric cave painting representing animals, people and abstract (!) figures.

Dinner. The dinner will be with typical *Mineira* gastronomy in a renowned restaurant of Diamantina. Wine or fantastic local beers are on own account.

Fourth day (July, 20th). *Morning.* Visit to historical artisanal mining area of diamonds. *Lunch.* The lunch will be on the field.



Demonstration of gold and diamonds search.

Afternoon. With the help of skilled old local *garimpeiros* (diamond miners), we will have a direct experience of the hard artisanal mining for diamond or gold. After the demonstration

you will be free to find diamond in recent alluvial deposit in a private property. Who will find the diamond, she/he will be the owner! *Boa sorte! Good luck!*



Looking for diamonds. Good luck!

Dinner. The dinner will be with typical *Mineira* gastronomy in a renowned restaurant of Diamantina. Wine or fantastic local beers are on own account.

No long walks are preview for this activity, but adequate shoes and own water reserves are necessary. Remember always sunscreen and insect repellent (ticks and mosquitoes).

Fifth day (July, 21st). Way back to Campinas,
at 7:00. Scheduled arrival around 20:00.

