Student Chapter Stewart R. Wallace Funding Report UFMG SEG Student Chapter

09.30.2023

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Committee

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September 2023

Activities - UFMG SEG Student Chapter 2022 – 2023

Fieldtrips Guides

In 2023, our group received funds from the First Phase of Stewart R. Wallace Financing which were allocated differently than initially proposed in the report. With the aim of generating greater participation from members in field projects, we suggested postponing the activities planned for Chile and Goiás. This way, the chapter would have the opportunity to raise more resources for the previously proposed field, with the participation of a greater number of people and an even greater focus on quality.

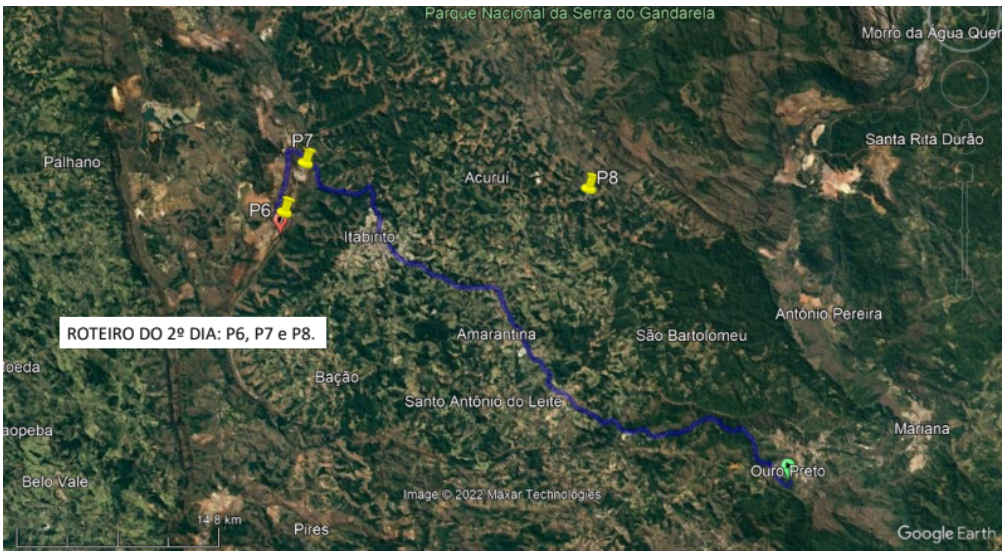
For this new field phase, it was decided to direct efforts close to the Quadrilátero Ferrífero (QF), focusing on visits to mines and prospecting for gold and diamonds.

- **First Field Trip: Serra da Moeda and Mina do Pico (Vale), Ouro Preto and Itabirito, Minas Gerais, Brazil, March 25th-26th**

  The Quadrilátero Ferrífero (QF) occupies the central-south region of the state of Minas Gerais and constitutes one of the classic areas of Precambrian geology in the world. Currently, it represents an important mineral province with significant deposits of world-class iron ores and has the country's largest gold production. Furthermore, the region is also known for containing the most numerous occurrences and rich gold deposits.

  Serra da Moeda is located in the western sector of the Iron Quadrangle, within a mega geological structure known as the Moeda Syncline. With an area of approximately 470 km^2, the Moeda Synclinal, formed by the Serra da Moeda and Itabirito, contains the cities of Brumadinho, Nova Lima, Rio Acima, Itabirito, Moeda, Belo Vale, Congonhas, and Ouro Preto. Two important river basins are associated with the Moeda Syncline: the Paraopeba river basin, located to the west, and the Velhas river basin, in the center and east.
  On the 25th and 26th of March, professor and doctor Issamu Endu established two field days at the QF. On the first day, we went on a technical visit to outcrops on the western edge of the Moeda Sinclinal (a component of the Nappe Curral). On the second day, the group went to the Mina of Cata Branca and the Rio das Velhas to study their unconformity - we did research on the geological profile of this area through foliation measurements, dips, and stereographic projections.

Field costs	Value (BRL)
Van + Driver	2,450.00
Field Snack	200.00
Total First Field Trip	**2,650.00**



- **<u>Second Field Trip: Pitangui and Pará de Minas, Minas Gerais, Brazil, March 25th-26th</u>**

  The Pitangui Greenstone Belt is a NW-trending synclinorium, limited to the southwest by the Divinópolis Complex and to the northeast by the Belo Horizonte Complex. The Pequi and Florestal intrusive complexes delimit the part northeast of the belt, while to the southeast of the belt, the Jaguara granite stock occurs (figure 2). In the northwest, the belt is covered by Neoproterozoic sedimentary rocks of the Bambuí Group, also, this Greenstone Belt is traditionally seen as a continuation of the Greenstone Belt Rio das

Velhas, based on stratigraphic and structural similarities isotopic ages (Brando Soares et al., 2017). These belts are separated by tectonics and/or the rise of domic complexes (Romano, 2007; Romano et al.,2013).

Romano (2007) carried out mapping of Folha Pará de Minas and recognized three major Precambrian lithological domains for the Pitangui Greenstone Belt: cratonic basement (gneiss and migmatite), greenstone belt sequence and granitoid intrusions. Geochronological data from this Greenstone Belt are restricted; Silva (2016) obtained an age of 2876 ± 7 Ma (U-Pb) in Metagranodiorite from the basement, corresponding to the Divinópolis Complex; Romano et al. (1989 and 2013) presented U-Pb ages in zircon between 2.59 Ga and 2.75 Ga (Batholith Florestal) for intrusive granitoids.; Brando Soares et al., 2017 estimated that 2.86 Ga is the maximum age of deposition for meta sandstone from the base of the greenstone belt.

On March 25th and 26th, Doctor Cassiano Castro accompanied the students in search of Gold and we spent two days in the field. On the first day, we went towards Pitangui, with a sampling of heavy minerals through battery concentration, we managed to identify magnetite, garnet, and minor elements of Gold. After that, we went for soil sampling making geological profiles and sampling the active sediments from water currents. Finally, we spent the night in Pitangui. On the second day, heading to Pará de Minas, we observed an outcrop of greenstone belts and rock marmites. We finished the field with water sampling for geochronological and geochemical purposes. For this, we used hydrogeological equipment, such as the Isotope and multiparameter method.

Field costs	Value (BRL)
Van + Driver	2,800.00
Hostel	564.00
Field Snack	200.00
Total First Field Trip	**3,564.00**


Pitangui
P1
P2
P3
P4
P5
Pitangui
Para de Minas
Ponto de Partida
Google
Google Landsat / Copernicus
10 km
Câmera: 98 km 19°59'43"S 44°12'45"W 802 m