



IGGCAS SEG Student Chapter
**Qongjiagang large spodumene Li pegmatite
deposit Field Trip 2023**

Field Trip Report



10 July -19 July 2023

Introduction

In July 2023, we spent ten days visiting Qongjiagang large spodumene Li pegmatite deposit, with a group of 7 students from IGGCAS SEG Student Chapter. The Qongjiagang pegmatite lithium deposit is situated in the Higher Himalayan leucogranite belt, approximately 100 km northwest of Mount Qomolangma. The SEG student chapter was awarded \$1250 USD through the Stewart-Wallace fund, further financial support was supported by the Second Tibetan Plateau Scientific Expedition and Research Program (2019QZKK0801).

Participants

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Field trip group in the The main ore body of Qiongjiagang. Photo by ShuoWang.

Qiongjiagang large spodumene Li pegmatite deposit, Xigaze, China

Recently, a large spodumene pegmatite deposit was discovered in the Higher Himalayan orogenic zone near Qiongjiagang. The granites exposed on about 1500 vertical meters of the outcrop (with elevation varying from 4077 m to 5533 m) show an evolution from two-mica granite to tourmaline muscovite granite and tourmaline albite granite. Various types of pegmatites are dispersed throughout the granite, creating an opportunity to examine the evolutionary relationship between these rock types and their potential as ore deposits rich in lithium. Leucogranites are mainly distributed between the Tethys and the Higher Himalayas (Figure. 1), along the STDS. Higher Himalayan leucogranite (30 ~ 10 Ma) is mostly present as bedrock and usually comprises accessory minerals with peraluminous S-type magmatic features, including tourmaline and garnet. Thus, it can be further divided into garnet leucogranite and tourmaline leucogranite.

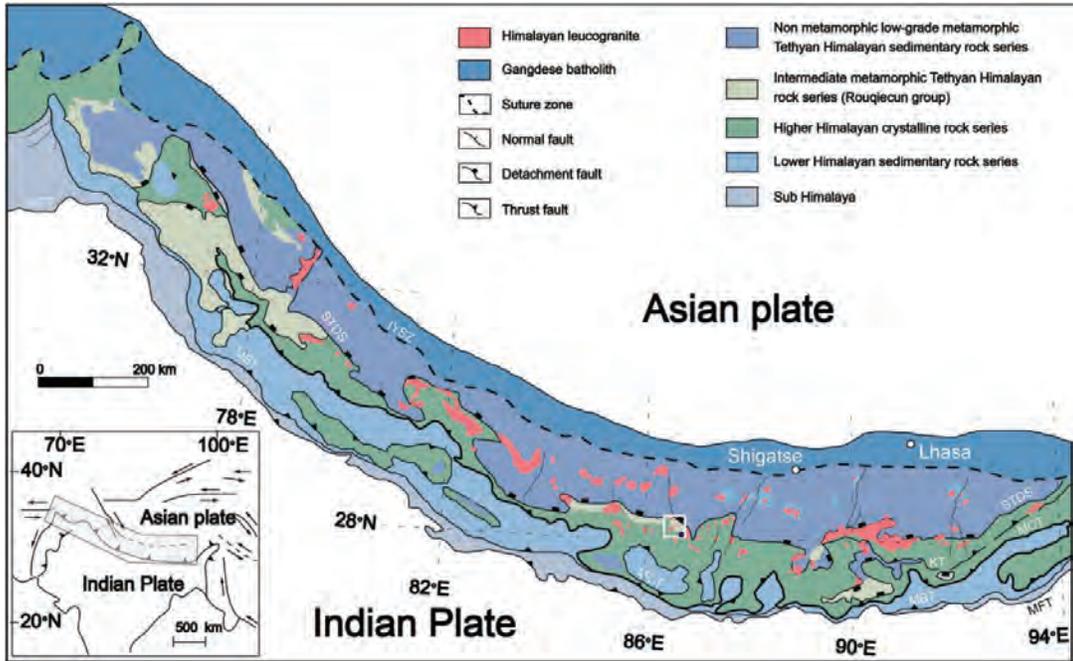


Figure.1. Distribution of Himalayan leucogranite

The Qongjiagang pegmatite lithium deposit is situated in the Higher Himalayan leucogranite belt, approximately 100 km northwest of Mount Qomolangma.

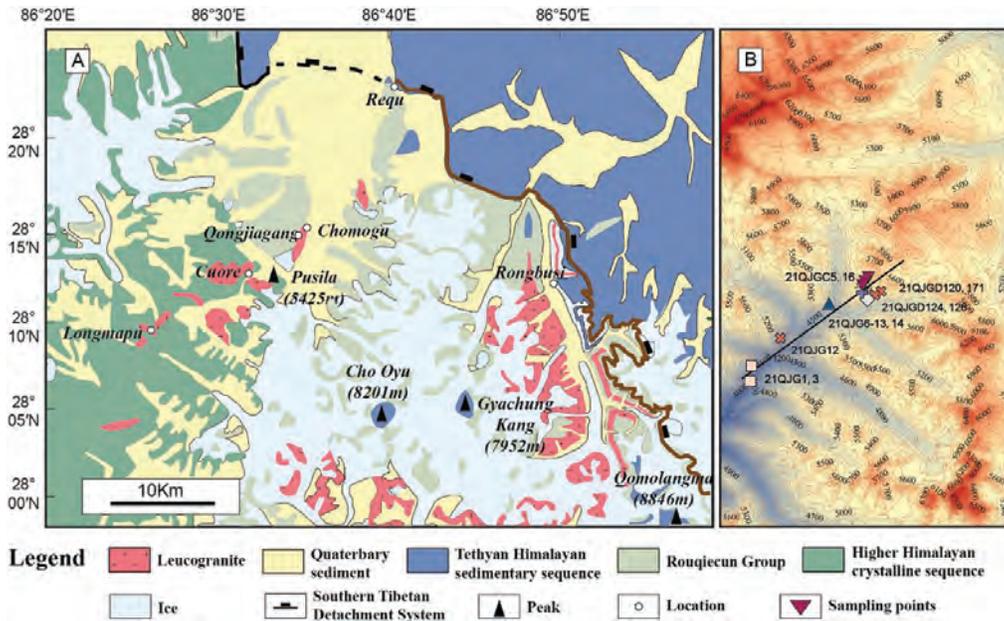


Figure.2. (A) Schematic geological map of Qongjiagang and adjacent areas. (B) The regional contour map.

From the east side of Qongjiagang tourmaline muscovite granite body steep (about 5110m above sea level) up the mountain to 5320m downhill, 5110m-5223m is tourmaline muscovite granite rock mass, granite is relatively uniform, the orientation

is weak, containing a small amount of garnet, tourmaline fine-grained rock and garnet fine-grained are locally visible (see Figure 3A). The area from 5223 to 5292 m is calcareous phyllite, which is mostly deformed and folded, and locally interbedded with oreless pegmatite lenses and spodumene pegmatite lenses (see Figure. 3B). 5302m-5320m is a tourmaline-muscovite granite rock mass, but it differs from tourmaline-muscovite granite at lower altitudes in that this granite body is not homogeneous, and pegmatite facies can be seen locally (see Figure 3C).

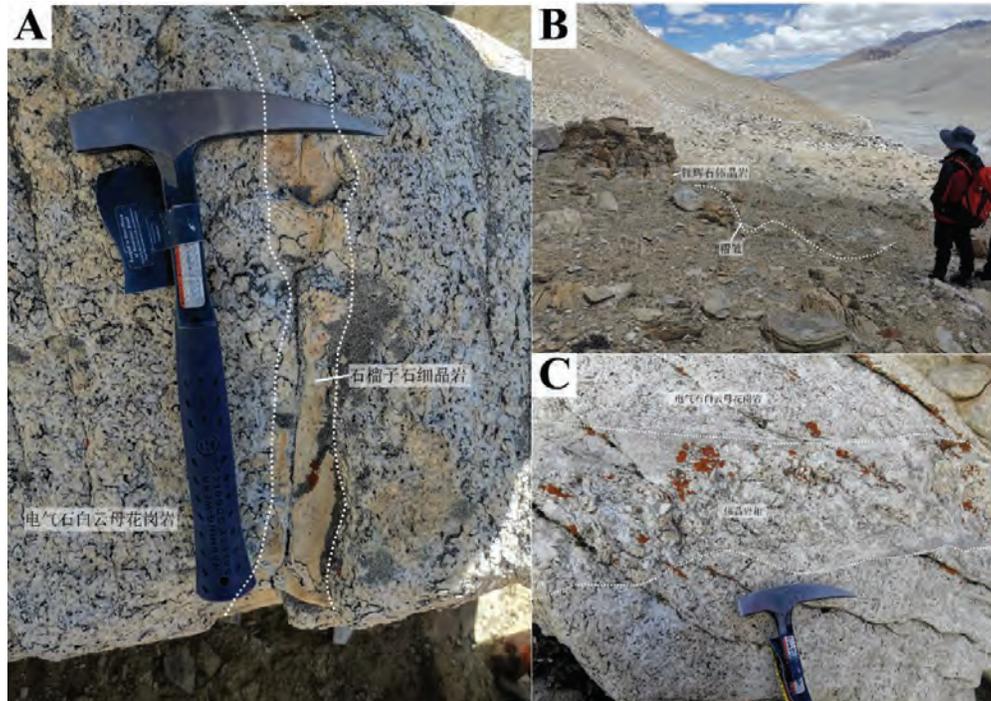


Figure. 3 Granite bodies and pegmatites on the east side of Qongjiagang

A. garnet, fine-grained rock, throughout tourmaline-muscovite granite; B. spodumene pegmatites intruded into calcareous phyllite strata; C. Pegmatite facies in tourmaline-muscovite granite

At about 100-200m away from the main ore body of Qongjiagang, it is found that tourmaline veins and pegmatites are located in calcareous phyllite strata, with a high mica content at the edge of the tourmaline vein, a large overall specific gravity, a tourmaline vein width of about 10cm, a strike of 130°, and a length of about 10m along strike (see Figure. 4A). Tourmaline fine-grained rocks are found in the main ore body of Qiongjiagang that may permeate spodumene pegmatites and tourmaline fine-grained rocks that also contain spodumene locally (see Figure 4C). The spodumene pegmatites of the main ore body of Qiongjiagang are directional in spodumene (see Figure. 4B), and optolite garnet occurs locally (Figure. 4D).

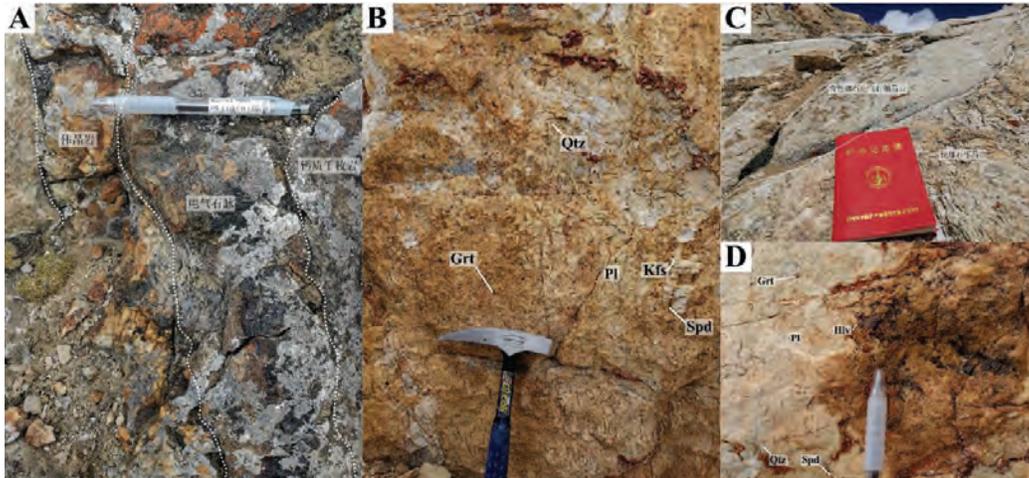


Figure. 4 Pegmatite bodies and tourmaline veins on the west side of the main ore body of Qongjiagang

In the ditch between the west side of Qongjiagang and the east side of the Cuore, it is mainly slope deposits, which can be divided into leucogranite slope deposits and stratigraphic slope deposits according to different colors, as shown in Figure 5A, the boundary line between leucogranite slope deposits and stratigraphic slope deposits, there are few outcrops in the ditch, and an outcrop located in the stratigraphic slope deposits can be seen, and the outcrop lithology is breccia. A calcareous phyllite can be seen from the outcrop to the north, and an unmineral pegmatite outcrop can be seen next to the river, and the unmineral pegmatite zoning is more complex, the main body is tourmaline-quartz-feldspar pegmatite, containing a small amount of garnet, and tourmaline muscovite granite and tourmaline fine-grained rock can be seen on the edge.

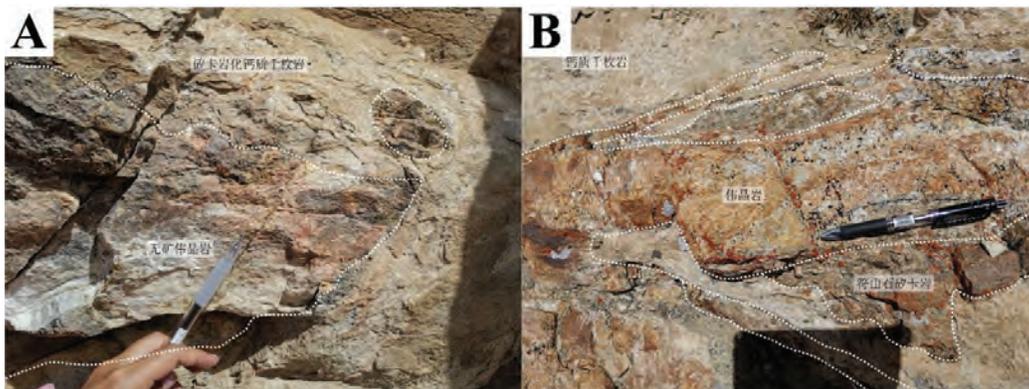


Figure. 5 There are no mineral-free pegmatites on the northeast side of Qongjiagang
 A. Mineral-free pegmatite intrusion in calcareous phyllite; B. The mineral-free pegmatites are intrusively located in calcareous phyllites, and skarn lithification occurs at the contact site.

Itinerary:

Date	Site	Action
2023.07.10	Lhasa	Beijing to Lhasa
2023.07.12	Xigaze	Lhasa drives to Xigaze
2023.07.13	Gangga	Lhasa drives to Gangga
2023.07.14-2023.07.16	Gangga	Go to Qiongjiagang Lithium Deposit for investigation
2023.07.17	Xigaze	Go back to Lhasa through Shigatse from Gangga town.
2023.07.18	Lhasa	Go back to Beijing through Lhasa
2023.07.19		Lhasa to Beijing