「地球科學暑期學生專題研究計畫」(ESSSP 2022)

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題目一

越南中部的昆嵩地塊（Kontum Massif）多重礦物氬氬定年分析之研究

Multi-mineral Argon geochronology analysis of the Kontum Massif, Vietnam

根據過去文獻的認知，越南中部的昆嵩地塊（Kontum Massif）一直被認為是一太古宙的岩體，且為印支地塊中古老陸核的代表。但此區域之岩石為高度變質之混雜岩相與高度角閃岩相所組成，且經歷過泛非期造山事件與印支期造山事件的岩漿入侵與後續的構造變形疊加演化，具有複雜的歷史。目前最新鈾鉛鋯石定年與氬氬定年的結果顯示昆嵩地塊的年代數據主要可以分為 4 期：中元古代、晚奧陶世—晚志留世、晚二疊世—早三疊世和白堊紀。昆嵩地塊中部的所謂"太古代"變質雜岩區中所找到最老的鈾鉛鋯石年代為 1780±5 Ma。使得主要已發表的文獻無法確實提出支持昆嵩地塊為一太古宙岩體的證據。然而此區域的地質相關研究相對的要缺乏，本研究將運用氬氬定年方式針對多種礦物進行定年。找出年代資料與其年代之地質意義為何。

A major and perhaps the most outstanding problem for the high-grade rocks in the Kumtum Massif is their age and origin. Amphibolite and granulite facies metamorphic rocks of Kan Nack and Ngoc Linh complexes have been traditionally regarded and widely mapped and published in Vietnamese literature as an exposed “Archean” core complex. Previous research results showed Kan Nack Complex yielded an age of 1400 Ma, whereas the zircon relicts in orthogneiss intruding the Ngoc Linh Complex range in age from 2540 and 860 Ma. The lacking of good age constrain on complex metamorphic and structural deformed rocks is the main drawback to decipher if the Kumtum Massif is truly an Archean core complex. In order to understand the complex magmatic and metamorphic history that acted upon these rocks. This project utilize argon geochronology from multiple minerals to delineate the ages and their geological meaning.