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Professor Sun received his BSc Degree from Peking University, China, in 1982 and MSc and PhD degrees from the University of British Columbia, Canada, in 1985 and 1991, respectively. Since joining the University in 1994, when Earth Science was first established in Hong Kong, Professor Sun has been teaching courses related to Mineralogy, Petrology, Geochemistry, and Physical Geology, and worked as the Department Head from 2009-2013. His expertise is to work on sophisticated geochemical instrument and to utilize geochemical and isotope data to solve outstanding scientific problems in earth sciences. He has been working on a large number of research projects on the early history of the earth, the geological evolution of North and South China cratons, the accretionary history of Central Asia, and paleoclimate study using coral Sr, Ca and Mg chemistry.

He was awarded the Outstanding Young Researchers from the National Natural Science Foundation of China in 1999, the Outstanding Young Researcher Award from HKU in 2001, the State Natural Science Award (Second Prize) of China in 2014, the Natural Science Award (First Prize) from Education Ministry of China in 2019. He worked as the University of Hong Kong director of the Joint Chemical Geodynamics Laboratory with the Chinese Academy of Science, and a member of the Earth Science Steering Committee of the National Natural Science Foundation of China.

He started his research on the North China Craton, one of the oldest continents in the world, for his PhD study. Before his work, it was accepted that the history of this craton evolved from the "Fuping Group". However, based on his isotopic data, he first pointed out that these rocks are actually highly metamorphosed igneous rocks with arc-like geochemical affinity formed 2.7 billion years ago, so they cannot represent the oldest continental nuclei (about 3.8 billion years old) on this craton. After Professor Guochun Zhao joined HKU, they established a research group on early earth evolution and made significant contributions, e.g. the division of the North China Craton into the Eastern and Western Blocks, separated by the 1.8 billion years old Central Orogenic Bet and reconstruction of the 1.8 billion years old global supercontinent, Columbia. This work received high international recognition and placed HKU in a leading position in supercontinent research in the world.

In recent years, Professor Sun developed a research area to study the Central Asian Orogenic Belt (CAOB), which is the largest accretionary orogen in the world. Their work started in the Chinese Altai, right after a tectonic model was proposed by a leading research team, which envisaged that the Altai orogen as one of the old continental blocks in the CAOB based on the Nd model ages and imprecise U-Pb isotopic data. This model was considered as an important scientific breakthrough in the late 1990s to early 2000s in the CAOB study. Professor Sun established in situ zircon U-Pb and Lu-Hf isotopic analytical technology using LA-MC-ICP-MS at HKU. Their results indicate that the Altai orogen actually represents a Paleozoic active continental margin instead of an old continental block. This work has important significance in the tectonic configuration and the estimation of juvenile crustal growth.

孫教授於 1982 年獲得北京大學學士學位，並分別於 1985 年和 1990 年獲得加拿大不列顛哥倫比亞大學碩士和博士學位。孫教授於 1994 年加入港大，正值為港大地球科學創建之初。孫教授的教學範圍包括礦物、岩石、地球化學和物理地質學等，並於 2009 至 2013 期間擔任系主任。他的特長是運用現代儀器獲得地球化學和同位素數據，以解決重要的地球科學問題。孫教授一直參與多項研究項目，當中包括地球早期歷史、華北和華南克拉通地質演化、中亞增生歷史、以及利用珊瑚鍶、鈣、鎂化學恢復古氣候。

孫教授在 1999 年獲得中國自然科學基金委傑出青年合作基金，2001 年獲得香港大學優秀青年研究獎，2014 年獲得國家自然科學二等獎， 並於 2019 年獲得教育部自然科學一等獎。他曾創建並擔任港大和中國科學院化學地球動力學聯合實驗室的港方主任和國家自然科學基金委員會地球科學專家諮詢委員會的委員。

孫教授自其博士論文開始研究世界最古老的古陸之一 - 華北克拉通。在此之前，該古陸被認為是從「阜平群」開始形成並演化的。基於他所獲得的同位素數據，孫教授提出阜平岩石是具有島弧地球化學特徵的變質火成岩石，形成於 27 億年前，不能代表該古陸最老的基底（約 38 億年）。孫教授與後來加入港大的趙國春教授建立了早期地球演化的研究團隊，並作出了重要的貢獻，當中包括華北古陸的雙陸塊和 18 億年中央造山帶的劃分，進而對 18 億年哥倫比亞超級大陸在全球的重建。這些工作得到了國際學術界的認可，使港大在超級大陸研究方面居領先地位。

近年來，孫教授致力開展全球最大的造山帶-中亞造山帶的研究。主流學派曾提出了中國阿爾泰是該造山帶最古老的陸塊之一的構造模式，被認為是該領域九十年代末至二千年初重要的理論突破。孫教授在港大建立了利用 LA-MC-ICP-MS 原位鈾-鉛和鐿-鉿同位素的分析技術，得出的數據顯示阿爾泰實為古生代的一個活動大陸邊緣，而非古老陸塊。這一工作對於中亞大地構造重建和全球地殼增長的估算具有重要意義。