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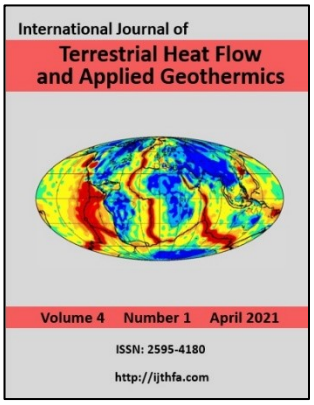

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Memories of Alan Edward Beck (1928–2020)

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Abstract

This is article providing a brief description of the life and scientific achievements of Alan Edward Beck, emeritus Professor of Western University. He was born in England on January 27, 1928 and passed away on December 1st, 2020 at his home in London (Ontario), Canada. He will be remembered not only for his significant contributions in Geophysics but also his active participation in activities of the International Heat Flow Commission-IHFC. In 1958 he was a founding faculty member of the Department of Geophysics of the University of Western Ontario, London, Canada. Shortly thereafter became Acting Head (1961), and then Head (1963) of the Department of Geophysics. He was a founding member of the International Heat Flow Commission, Vice Chairman for the period of 1979 to 1983 and then Chairman during 1983 to 1987. He retired in 1993 but continued to be active with participation in several international organizations. Beck was honored with the J. Tuzo Wilson Award of the Canadian Geophysical Union in 1993.

1. Introduction

Dr. Alan Edward Beck, Professor Emeritus of Geophysics at Western University, passed away peacefully on December 1st, 2020 at his home in London, Ontario. He was born January 27th, 1928 in London, England. Alan was predeceased by his brothers John and Ronald. He graduated with Honors from Battersea Polytechnic (University of London) in 1951. After graduation he got a scholarship to study towards a PhD in Geophysics at the Australian National University (ANU) in Canberra. He was advised to do PhD under the guidance of Professor John C. Jaeger. Alan accepted the dissertation topic suggested by Jaeger, in the field of measurement of terrestrial heat flow. The initial fieldwork started in the region of Great Lake in Tasmania. Within a year, in 1953, scientific paper was published in the Australian Journal of Physics, co-authored with Gordon N. Newstead.

He met Julia Langley at Australia National University where he did his doctoral thesis work. They married in Sydney, Australia in 1955, and raised three children. He is lovingly remembered by his children Helen, James and Graham, brother Harold and sister Mary.

2. Terrestrial Heat Flow Studies at ANU

Professor Jaeger, at ANU, was aware of the importance of heat flow measurements and planned the initial work for temperature measurements in Tasmania. Alan's thesis work was directed for measurements of terrestrial heat flow in boreholes. Later he returned for laboratory studies and further field measurements in the region od Snowy Mountain. He soon realized that the effective value the heat flux depends on local fluid flow as well as the geologic history of the area. This resulted in two co-authored publications.

After the conclusion of thesis work Alan found temporary jobs, teaching mathematics at the Westminster College of Commerce. After waiting for several weeks, he heard from Jaeger. that he had passed.

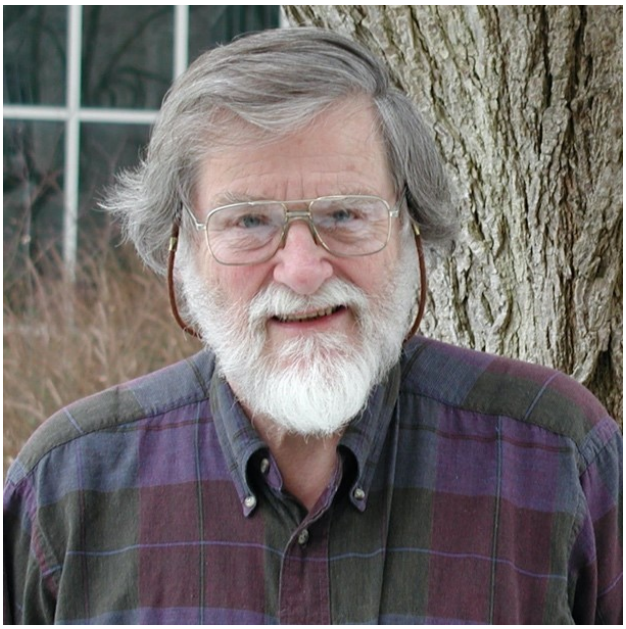

Figure 1 - Alan Edward Beck (Beck Family album, 2002).

3. Physics Department at UWO in the 1950s

In 1949 Meisner, was appointed Head of the Physics Department at the University of Western Ontario. Beck was awarded a Post-Doctoral Fellowship. Following this Beck awarded with a position in the Department of Physics. Within three years he went onto publish two papers bringing him to international scene.

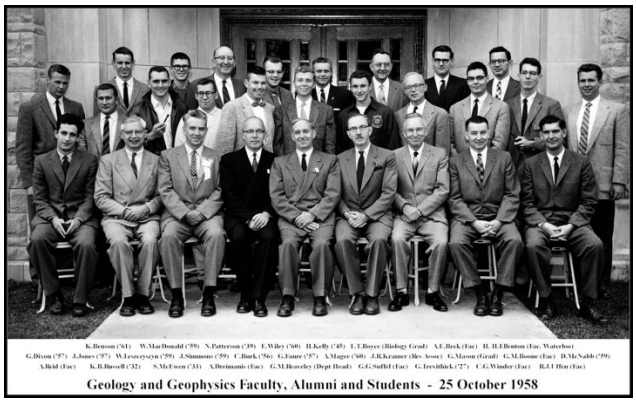

Figure 2 - From a group photo of the Dept. of Geology and Geophysics in 1958. Alan Beck is at upper left. Robert Uffen is at the lower right. Other persons in the photo may be identified at www.uwo.ca/earth/about_us/geophistory.html.

In 1961 Uffen was appointed Principal of University College (essentially Dean of Arts and Science). Beck became Associate Professor and Acting Head. At the 13th General Assembly of the International Union of Geodesy and Geophysics (IUGG) in Berkley, California Alan Beck was recognized a founding member of the new International Heat Flow Commission (IHFC).

4. The Department of Geophysics

During 1960s and 1970s Beck proactively solicited funding for faculty to cover new sub-disciplines: Geomagnetism (Charles Carmichael, Currie Palmer); Seismology (Robert Mereu); Theoretical Geophysics (Douglas Smylie); Geochronology (Tadeusz Ulrych, Akiro Hayatsu); High Pressure Geophysics (Helmut Schloessin, Richard Secco).

As the department became recognized many geophysicists of note visited, among them W. Domzalski, H. Takahashi, U, Aswathhanarayana, Sam Carey, John Jaeger, Ron Green, Frank Stacey, R.G. Park, Karsten Storetvedt, Jim Briden, Richard Facer, Henry Pollack, and Akito Ikami and Po-Yu Shen.

In 1969 the Department hosted a NATO Advanced Study Institute on Earthquakes and the Rotation of the Earth.

In 1981 the 21st General Assembly of the International Association of Seismology and Physics of the Earth's Interior (IASPEI) was held at UWO. Over 500 delegates and guests from 50 countries attended. Over 400 papers were given.

UWO came to be known as a center for research in terrestrial heat flow studies through the work of Beck and his students.

His students have gone on to shine with their own works: John Sass, John Conaway, Anne Stevens, Alan Judge, Trevor Lewis, Valiya Hamza, Soren Nielsen, Kelin Wang and many more.

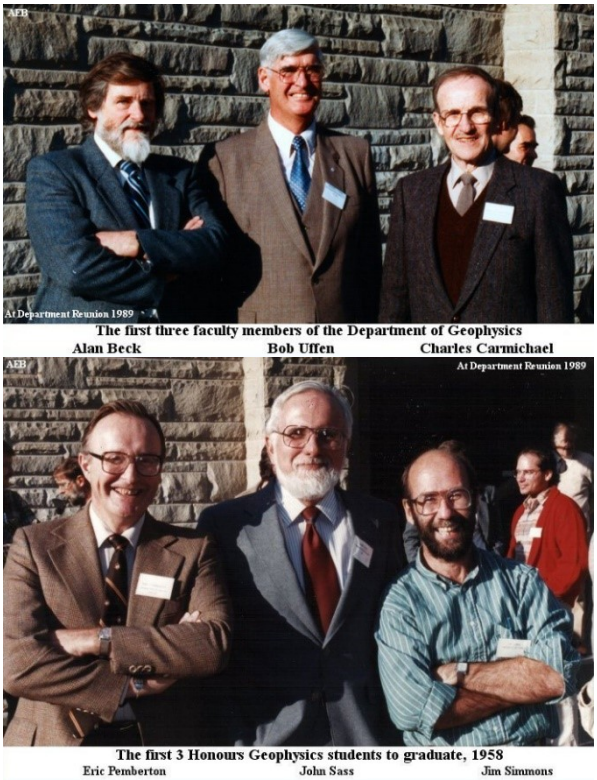

Figure 3 – Panels from "brief history of the Department of geophysics by Alan Beck'.

5. Head of Geophysics and Acting Chair of Geology

Beck had arrived just as UWO was beginning a phase of rapid expansion. Under President George Hall (1947 to 1967) the university was being run from above.

With a new president in 1967, and the expansion there were more students and new faculties and new departments. The administrative responsibilities evolved from the 'top down' system towards one of collegiality and increasing faculty empowerment in decisions.

New rules, regulations and committees were adopted university wide.

In 1986 he took part in the organization of the meeting International Heat Flow Commission (IHFC) in Brazil.

About 100 delegates and guests from 30 countries attended. Over 100 papers were given.

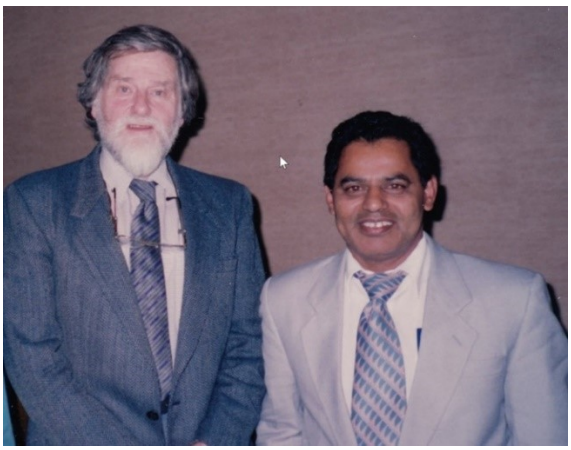

Figure 4 - Alan Beck and Valiya Hamza, IHFC meeting, Brazil, 1986.

6. Service in and out of Canada

Beck devoted significant time at the Faculty of Science, the university, the geophysics community in Canada, and internationally. Over 1971 to 1984 Beck acted as Sessional Lecturer at McMaster University. In 1971 Beck became the Chair of the Earth Physics Division, of the Canadian Association of Physicists. With the collaboration of Jack Jacobs and Mike Keen, and many others, Beck helped found the Canadian Geophysical Union in 1974.

7. Influence of Julia Beck

His wife Julia graduated in Geology and Mathematics from the University of Sydney. Later Julia got interested in the heritage buildings in around London, and in Ontario. She became an activist, for the preservation of so much that was part of history, and much that added to the character of neighborhoods. Julia was the featured speaker at the unveiling of a bronze plaque at the park on May 27, 2000.

Julia received many awards, including the Lieutenant Governor's Ontario Heritage Award for Lifetime Achievement (2007). The work in conservation was recognized by her election as President (1992-94) of the Architectural Conservancy of Ontario. Later she was awarded with master's degree in geography at Western. She was recognized for her significant contributions to the smooth functioning of the Department. Julia passed away in 2012.

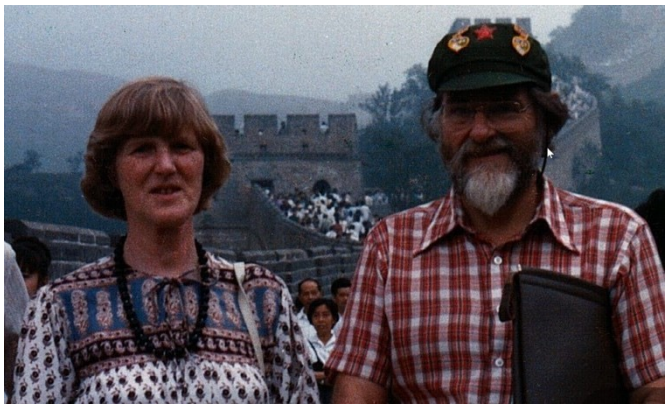

Figure 5 - Julia and Alan Beck at the Great Wall of China.

8. Retirement in 1993

Beck was honored with the J. Tuzo Wilson Award of the Canadian Geophysical Union in 1993. Also, a colloquium was organized on The Thermal State of the Earth, an event co-sponsored by International Heat Flow Commission – IHFC. After retirement Beck joined the Editorial Board of the Geophysical Journal International of the Royal Astronomical Society, during the period of1993 – 2005.

Later Alan and Julia moved into a heritage house at 39 Carfrae Street. He passed away on December 1, 2020.

9. Acknowledgements

Sometime in 2019 a proposal was made to recognize and honor the contributions by Alan Beck. I am indebted to my colleagues at Western for exchange of information on life and carrier of Alan Beck. The archived Calendars of the University of Western Ontario provided information on the history of geophysics at UWO. Thanks are due for academic collaboration of Lalu Mansinha.

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Memories and Tributes

Several members of the IHFC have written to Valiya Hamza expressing their memories of and tributes to Alan Beck. Here we present a select few:

Vladimir Cermak (Czech Acad. of Sci., Czechoslovakia)

It is more than 50 years since I first met Alan Edward Beck when I came to Canada to spend two years as the PDF in that time Dominion Observatory in Ottawa. Alan E. Beck served as the Professor in Geophysics at the University of Western Ontario, London, and we had good chances to meet each other. We quickly established a really firm friendly relation and I benefited very much from his practical advices how to organize my laboratory work.

For the Earth Sciences the early sixties brought an incredible progress in geothermics. In 1963 the International Heat Flow Committee (today known as Commission, IHFC) was established at the 13th IUGG General Assembly in Berkeley. Only two years later a comprehensive volume "Terrestrial Heat Flow" (edited by WHK Lee) appeared summarizing the results and basic principles of heat flow investigations. With no exaggeration this book can be still considered as certain "Heat Flow Bible". Alan Beck contributed by one of its chapter "Techniques of measuring heat flow on land". Here he introduced his "Divided-Bar apparatus", which become a useful tool for laboratory thermal conductivity measurements. I am sure that some laboratories even today are still using this instrument as an alternative method. In this sense Alan was a real pioneer of the thermal conductivity measurements.

Alan E. Beck was the 4th Chairman of the IHFC (1979-1983) and I had pleasure to work with him as the IHFC vice-secretary. Memorably days. One of the Alan´s merit was the fact that he proposed and elaborated the IHFC Bylaws, which with only some slight changes or additions are fully applicable today.

During these 50 years of our friendship and scientific cooperation we used meeting frequently attending and co-organizing various international conferences and symposia all over the world. Alan participated in the preparation of the 1987 Vancouver 19th IUGG General Assembly and was the Chairman of the Local Organizing Committee of the 1981 London 17th IASPEI Assembly. Alan also visited my country attended several of our six so called "Heat Flow Castle meetings" which I organized in Czechoslovakia/Check Republic between 1982 and 2006. I am extremely sorry that Alan due to his health problems could not attend the last 2019 IUGG General Assembly in Montreal. I was looking very much to meet him again.

Professor Alan E. Beck will be long remembered by us in the Geophysical Institute in Prague as well as by all IHFC members as one who devoted his life career to geophysics and to the service of the International Heat Flow Commission of the IASPEI. I shall always regard it as a great honor and privilege to have known him personally.

Henry Pollack (Univ. of Michigan, USA)

I recall with great fondness the special aspects of my long engagement with Alan Beck. A half century ago, in the late 1960s and early 1970s, Alan was a founding member of the IHFC, and already a 'senior statesman' of the geothermal scientific world. In particular he served as an organizational magnet for the young geophysicists of the time who were beginning to develop programs of geothermal research. Alan was well-established at the University of Western Ontario (UWO), only a few hundred kilometers from my location at the University of Michigan. In 1985 Alan, then Chair of the Department of Earth Sciences at UWO, invited me to spend a sabbatical year at UWO. That gave a valuable opportunity for me to become well acquainted with Po-Yu (Paul) Shen, Soren Nielsen, John Sass, and several others of Alan's students and colleagues who went on to illustrious careers in geophysics and geothermics.

Ladislaus Rybach (Inst. of Geophysics, Switzerland)

It is with great pleasure that I remember numerous, fruitful encounters with Alan. My closer interactions started in 1981, at the IASPEI General Assembly in London, Ontario, Canada. Alan held various official functions (banquets, celebrations) at this event. I noticed that he was keen to appear on stage wearing shorts and white socks (admiring his audacity as white socks are an absolute no-go in Switzerland…). Later, I learned that he was proud of his original dress code "Australian formal".

Between 1983 and 1987, I had the privilege of working closely with Alan as he served as IHFC President and I as IFHC Secretary. He was a demanding, but always correct and understanding, principal. I was proud to appear together with him on the IHFC letterhead in those years during which we produced numerous IHFC documents.

Later, Alan contributed (with Niels Balling) the excellent Chapter "Determination of Virgin Rock Temperatures" to the Handbook of Terrestrial Heat Flow Determination – with Guidelines and Recommendations of the IHFC, just one of the many outstanding publications with which Alan contributed to our field.

Alan, you will be dearly missed! The geothermal community will remember you fondly.

Valiya Hamza (National Observatory, Brazil)

I had the privilege of doing my doctoral thesis under the guidance of Alan Beck. He had a positive outlook on geophysics, keen interest in geothermal research and a wonderful wit and both kind and stubborn streaks which shone through to the end. I am thankful for his valuable support for the 1986 meeting of IHFC in Guarujá, Brazil.

I also have fond memories of attending social events at Alan and Julia's homes. His lifelong scientific interest in measurement of terrestrial heat flow and study of the thermal state of the Earth, led to invitations to speak around the world. More than professional, it flowed into his passion for recording internal temperatures of the Earth and measurement of thermophysical properties as part of his personal life. I join with ex-colleagues at Western in reminiscing inspiring memories.

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Patents of Alan Beck

"Apparatus for measuring resistance at the end of a long cable". Patent no.3,273,396 United States, September 20, 1966. A.E. Beck - rights assigned to CPDL through UWO-CPDL agreements. No commercial sales as far as I know (CPDL are good on patents but not so hot on marketing) but a number of laboratories build then-own systems.