

1-1-2002

Obituary

GÜLSEN UÇARKUL

TUNCAY TAYMAZ

Follow this and additional works at: <https://journals.tubitak.gov.tr/earth>



Part of the [Earth Sciences Commons](#)

Recommended Citation

UÇARKUL, GÜLSEN and TAYMAZ, TUNCAY (2002) "Obituary," *Turkish Journal of Earth Sciences*: Vol. 11: No. 1, Article 6. Available at: <https://journals.tubitak.gov.tr/earth/vol11/iss1/6>

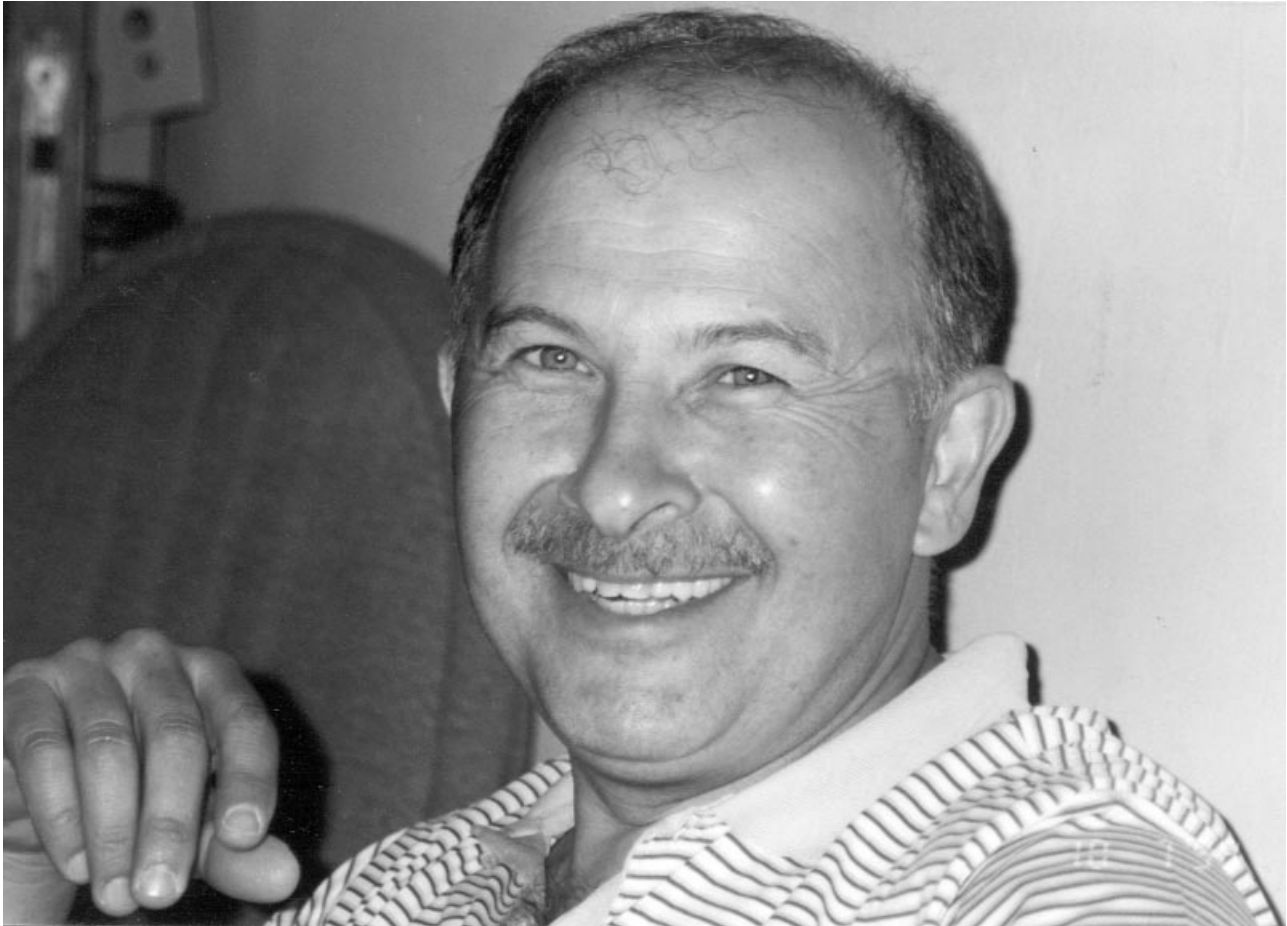
This Article is brought to you for free and open access by TÜBİTAK Academic Journals. It has been accepted for inclusion in Turkish Journal of Earth Sciences by an authorized editor of TÜBİTAK Academic Journals. For more information, please contact academic.publications@tubitak.gov.tr.

Obituary
Prof. Dr. Aykut Barka
by
GÜLSEN UÇARKUŞ & TUNCAY TAYMAZ

İstanbul Technical University, Faculty of Mining, TR-80626, Ayazağa, İstanbul - TURKEY

Aykut Barka was born in İstanbul on January 7, 1952. He completed his basic education in İstanbul where he also studied for his B.Sc. and M.Sc. degrees in the Geological Engineering Department of İstanbul University during the period 1970-1975. Following his graduation, he began working at the Mineral Research and Exploration Institute (MTA) in Ankara. One year later he was awarded a scholarship by the same institute and went to Bristol University in England, where he studied for his Ph.D. ("*Seismotectonic Aspects of the North Anatolian Fault Zone*") under the supervision of Dr. Paul L. Hancock. He

published the main findings of his Ph.D. thesis in several international periodicals, such as the *Journal of Structural Geology* and *Nature*. In 1981, Barka returned to Turkey and again joined MTA. Prof. Nafi Toksöz invited him to the Massachusetts Institute of Technology (MIT) where he focused on earthquake geology in 1986. Meanwhile, space geodesy and remote-sensing studies were developing rapidly. He thought that these disciplines would play an important role in the investigations of active faults. With enthusiasm he added new data to his Ph.D. work and published an extensive synthesis on the



North Anatolian Fault Zone together with Kadinsky-Cade in 1988. Barka began to become well known in American geological circles during this period, and he was invited to the California Institute of Technology in 1990. In California, he had the chance to study the San Andreas Fault, which surprisingly was found to have properties similar to those of the North Anatolian fault. His new experiences in earthquake geology motivated him to apply the things he had learned to the North Anatolian fault. He returned to Turkey in August 1990 and began work at the Kandilli Observatory and Earthquake Research Institute in İstanbul. In 1992, he joined the Geological Engineering Department of İstanbul Technical University as an associate professor. He was promoted to full professor in 1996. The same year he published his now well-known paper, “*Slip distribution along the North Anatolian fault associated with the large earthquakes during 1939–1967*”, in the Bulletin of the Seismological Society of America. This paper is one of the most important papers written about the North Anatolian fault in recent years. Later, *Barka* and *Stein* used these slip-rates to calculate stress triggering along the NAF by Coulomb modeling. The overall results of this study showed that the city of İzmit and surrounding areas were under a major earthquake risk. He tried to explain this risk in the scientific way. In 1997, he became a member of the *Eurasian Institute of Earth Sciences* at İTÜ. Two years later, the North Anatolian fault was ready for a big rupture, as expected, and it confirmed the predictions of *Aykut Barka* with a $M_w=7.4$ magnitude earthquake on August 17, 1999. He immediately went into field with his friends. They made the first observations and measurements. He got in touch with his foreign colleagues in the following days, and he challenged many respected earthquake geologists to rush to Turkey to be involved in various investigations.

A new period then began in Barka’s life. The next earthquake risk hung menacingly over the largest city of Turkey, *İstanbul*, which is near the segment expected to rupture along the western continuation of the NAF in the Marmara Sea. The Turkish media raced to learn from *Aykut Barka*. He was the co-director of *National Earthquake Council* of Turkey, which was established after the 1999 Gölçük–Düzce earthquakes by the *Turkish Government*. Besides these responsibilities, he continued collecting scientific data from the Marmara Sea region with his colleagues.

Aykut Barka died on February 1, 2002 following very risky brain surgery, after being kept in the intensive care unit for 22 days. He was a dedicated scientist and a devoted teacher. He was a special, winsome person because of his modest and tender nature. *Barka* produced many interesting scientific papers and abstracts, and his long-lasting contributions to the earth sciences community worldwide will always be remembered.

It is with great sadness, mixed with the joy of unforgettable memories that I write about my dear friend *Aykut*. Above all, *Aykut* was a dedicated scientist and a true patriot. He loved his work. He loved his country. For generations to come his work will live through the large body of research he left behind and the many students and colleagues he mentored over the years. I want to emphasize that all of us who cared for *Aykut* must now do our part to assure that his legacy lives on in the future. Most critical now is to provide the continued support and guidance to his postdoctoral scientists and students who face the daunting task of moving on with their lives and work. This would surely have been the first concern of *Aykut*, who was unique in his unselfish approach to scientific inquiry and his care and concern for the people around him. We will never forget you *Aykut*! It was an honour to know and work with you. May you rest in peace.

Rob Reilinger, MIT

A Eulogy for Aykut A. Barka: Aykut was an internationally honored scientist for so many reasons – the quality and depth of his work; his plain talk to the Turkish public; his tireless efforts to convince the government to confront the potential for an earthquake disaster; his unstinting integrity; and his humour, openness, and selflessness. He embodies the highest calling of science in service to the public. All of us who knew and worked with *Aykut* will miss him terribly. But the message of his lifetime work is clear: Strive to understand the mystery and hazard of the Earth on which we live, and communicate that insight – both the joy of discovery and the risk of disaster – to those most affected.

Ross S. Stein, U.S. Geological Survey

Aykut Barka is gone: We have lost one of the most experienced and brilliant scientists we have ever invited to work with us at IPG-Paris. Personally, I have lost my dearest friend *Aykut*, and it is hard to find consolation for my deep sorrow. We wish to say today that we share our sentiments of grief and loss with our Turkish friends.

Rolando Armijo, IPG-Paris

Selected publications of Aykut Barka

- HANCOCK, P.L. & BARKA, A.A. 1980. Plio-Pleistocene reversal of displacement in the North Anatolian fault zone. *Nature* **286**, 1183-1186.
- HANCOCK, P.L. & BARKA, A.A. 1981. Opposed shear senses inferred from neotectonic mesofracture system in the North Anatolian fault zone. *Journal of Structural Geology* **3**, 383-392.
- HANCOCK, P.L. & BARKA, A.A. 1983. Tectonic interpretation of enigmatic structures in the North Anatolian fault zone. *Journal of Structural Geology* **5**, 217-220.
- BARKA, A.A. & HANCOCK, P.L. 1984. Neotectonic deformation patterns in the convex-northwards arc of the North Anatolian fault zone. In: DIXON, J.E. & ROBERTSON, A.H.F. (eds) *The Geological Evolution of the Eastern Mediterranean Region*. Geological Society, London, Special Publications **17**, 763-773.
- HANCOCK, P.L. & BARKA, A.A. 1987. Kinematic indicators on active normal faults in western Turkey. *Journal of Structural Geology* **9**, 415-430.
- BARKA, A.A. & KADINSKY-CADE, K. 1988. Strike-slip fault geometry in Turkey and its influence on earthquake activity. *Tectonics* **7**, 663-684.
- BARKA, A.A. & GÜLEN, L. 1989. Complex evolution of the Erzincan basin (eastern Turkey) and its pull-apart and continental escape origin. *Journal of Structural Geology* **11**, 275-283.
- BARKA, A.A. 1992. The North Anatolian fault zone. *Annales Tectonicae* **6**, 164-195.
- BARKA, A.A. 1996. Slip distribution along the North Anatolian fault associated with the large earthquakes of the period 1939-1967. *Bulletin of the Seismological Society of America* **86**, 1238-1254.
- STEIN, R.S., BARKA, A.A. & DIETRICH, J.H. 1997. Progressive failure on the North Anatolian fault since 1939 by earthquake stress triggering. *Geophysical Journal International* **128**, 594-604.
- STEIN, R.S., DIETRICH, J.H. & BARKA, A.A. 1997. Role of stress triggering in earthquake migration on the North Anatolian fault. *Physics and Chemistry of the Earth* **44**, 78-91.
- REILINGER, R., MCCLUSKY, S., ORAL, B., KING, R., TOKSÖZ, BARKA, A.A., KINIK, I., LENK, O. & ŞANLI, I. 1997. Global positioning system measurements of present-day crustal movements in the Arabia-Africa-Eurasia plate collision zone. *Journal of Geophysical Research* **102**, 9983-9999.
- BARKA, A.A. 1999. The 17 August 1999 İzmit earthquake. *Science* **285**, 1858-1859.
- BARKA, A.A., COHEN, H., AKYÜZ, S. & Watchorn, F. 2000. Tectonic evolution of the Niksar and Tasova-Erbaa pull-apart basins, North Anatolian fault zone: their significance for the motion of the Anatolian block. *Tectonophysics* **322**, 243-264.
- PARSONS T., TODA S., STEIN R.S., BARKA A.A. & DIETRICH, J.H. 2000. Heightened odds of large earthquakes near İstanbul: an interaction-based probability calculation. *Science* **288**, 661-665.