

## Neal Brown - My Professional Resume

**NAME:** Neal Boyd Brown

**DATE OF BIRTH:** December 13, 1938

**PLACE OF BIRTH:** Moscow, Idaho

### EDUCATION:

B.S. Physics, Washington State University, Pullman, Washington, 1961

M.S. Geophysics, University of Alaska, College, Alaska, 1966

### HONORS:

Doctor of Laws, University of Alaska Fairbanks, 1997

Legislative Citation, 1995 Alaska State Legislature, for 25 years of service to the citizens of Alaska

### POSITIONS HELD AND EXPERIENCE:

From my first work in 1961 on ballistic re-entry heating simulation to the present I have been involved in various research programs involving the earth's upper atmosphere. I have assumed scientific and/or logistic responsibility for several remote field site operations since 1962 ranging from Thule, Greenland to interior Alaska, which has been supplemented by experience in airborne operations aboard the NASA Convair 990 and U.S. Air Force KC-135 research aircraft. Through the various research projects with which I have been associated, I have gained experience in design, construction and operation of several electro-optical-mechanical systems used in optical studies of aurora and airglow and other upper atmospheric phenomena; i.e., rocket-borne chemical releases, noctilucent clouds, etc. In 1971, I became the first supervisor of the Poker Flat Rocket Facility, a position that was created to consolidate responsibility for this rapidly growing scientific sounding rocket launch facility under one office within the Geophysical Institute.

As Director of the Poker Flat facility from 1971 through 1989 I managed the operation of the Range and its scientific support programs, and coordinated these efforts to the needs of the Range users. Throughout most of this period, the operating budget of Poker Flat exceeded one million dollars per year.

In this position, I directly supervised seven full-time and several part-time personnel. After 21 years of professional service to the University of Alaska Fairbanks without a break, I left my position as Director of Poker Flat in June of 1989 to undertake a special sabbatical at the Laboratory of Atmospheric and Space Physics at the University of Colorado in Boulder. During and since that time I have pursued my long-standing scientific interests in the aurora, noctilucent clouds, and my interests in science education outreach.

I retired from the University of Alaska Fairbanks in 1995 and became, officially, a consultant to the Geophysical Institute. In this position I have led rocket day for the Science, Math, and Education outreach program and have been the teacher of record for K-12 teacher's participation in the "for credit" portion of the Science For Alaska lecture series.

I have been the keynote speaker at State and National meetings held in Alaska with my popular lecture on aurora.

Research Engineer, NASA Ames Research Center, Moffett Field, California, 1961-1962.

Research Scientist, Geopole, Thule, Greenland, American Geographical Society, 1962-1963.

Teaching Assistant, University of Alaska, College, Alaska, 1963-1964.

Research Assistant, Geophysical Institute, University of Alaska, 1964-1966.  
Senior Research Assistant, Geophysical Institute, University of Alaska, 1966-1968.  
Assistant Engineer, Geophysical Institute, University of Alaska, 1968-1969.  
Assistant Professor of Geophysics, Geophysical Institute, University of Alaska, 1969-1995.  
Supervisor, Poker Flat Rocket Facility, Geophysical Institute, University of Alaska, 1971-1983.  
Director, Poker Flat Research Range, Geophysical Institute, University of Alaska, 1983-1989.  
Chair, Arctic Science Conference 1988, theme: Science Education  
Chair, Arctic Science Conference 1991, theme: Mesoscale Modeling  
Director, Educational Outreach, Alaska Space Grant Program, 1991-1995  
CO-Principal Investigator with Emma Walton of Anchorage School District on Scope, Sequence and Coordination program for Alaska, funded by the National Department of Education for three years, from 1991-1994.  
Assistant Professor of Physics, Geophysical Institute, University of Alaska Fairbanks, 1989-1995.  
Director, Educational Outreach, Alaska Space Grant Program, University of Alaska Fairbanks, 1991 present.  
Assistant Professor of Geophysics, Geophysical Institute, University of Alaska Fairbanks, 1992-1995, Science Education Outreach.  
Board of Directors, Alaska Space Grant Consortium, 1993 – 2003  
Senior Consultant, Geophysical Institute, University of Alaska Fairbanks, 1995 -- present  
Education liaison, Geophysical Institute, University of Alaska Fairbanks, 1998 – present  
Chief Scientist, Alaska Science Explained, 1996 – present  
Museum Education Affiliate, University of Alaska Museum, Fairbanks, Alaska, 1996 – present  
Lecturer, Elderhostel program, University of Alaska Fairbanks, 1980 – present  
Invited lecture, National Youth Science Camp 2000, 2001, 2002  
Acting Director Alaska Space Grant Program, 2002-2003  
Director, Alaska Space Grant Program, 2003 -- present

#### **PROFESSIONAL ORGANIZATIONS:**

Alaska Science Teachers Association  
Alaska Space Grant Consortium, Board of Directors  
American Geophysical Union  
Pacific Planetarium Association

#### **PROFESSIONAL LISTINGS:**

Who's Who in Frontier Science and Technology, 1st ed. 1984-1985 (Marquis Who's Who).  
Who's Who in Aviation and Aerospace, 1st ed. 1983 (National Aeronautical Institute).

#### **PRESENT INTERESTS:**

Maintaining an active role in communicating the role scientific research plays in our society to the public in general and school age children in particular.

Establishing the Alaska Space Academy for teacher training and student learning.

Communicating my science enthusiasm with the general public, K-12 and Elderhostel students.

Interacting with the general public and K-12 through my education-oriented web site  
[www.alaskascience.com](http://www.alaskascience.com)

#### **PUBLIC SERVICE EDUCATION:**

Aurora Lecturer, University of Alaska Workshop on Alaska (three-day intensive course); 1983,

1984, 1985.

Planet Earth telecourse instructor for Statewide Rural Education Department of the University of Alaska; 1985, 1986.

Chair, Arctic Science Conference 1988, theme: Science Education.

Vision track leader for topic: Science & Humanities, the Balance, at the statewide educational conference, MOVING IN CONCERT, held in Anchorage, AK, March 1989.

Chair, Arctic Science Conference, 1991, theme: Circumpolar Modeling of Global Climate Change.

Guest Curator, Toys at Work and Play, University of Alaska Fairbanks Museum, 1992.

Director, Alaska Space Academy, 1993 & 1994

Guest lecturer, University of Alaska Elderhostel aurora program, 1980 to present

Guest lecturer, Camp Denali special emphasis session on aurora, 1985 to present

## **PUBLICATIONS:**

### Published Articles

- Brown, N. B., Heat leakage detection in a building using an infrared radiometer camera system, Proceedings of the Symposium on Cold Regions Engineering, Vol. 2, p. 460, August 1970.
- Degen, V., N.B. Brown and G.J. Romick, Rotational and vibrational temperatures of BaO from a barium release at 170 km, and the synthetic spectrum of BaO in the region 4700A to 15,500A, Planet. Space Sci., 19, December 1971
- Wentink, Jr., T. and N.B. Brown, Search for MgO in the atmosphere, J. Geophys. Res., 76 (28), October 1971.
- Romick, G. J. and N.B. Brown, Midday auroral observations in the oval, cusp region and polar cap, J. Geoph. Res., 76(34), December 1971.
- Boyd, J. S., T.N. Davis, N.B. Brown, T.J. Hallinan and D.D. Wallis, Observations of fast auroral waves, Planet. Space Sci., 20(3), March 1972.
- Brown, N. B., T.N. Davis, T.J. Hallinan and H.C. Stenbaek-Nielsen, Altitude of pulsating aurora determined by a new instrumental technique, Geophys. Res. Letters, 3, 403, July 1976.
- Brown, N. B., T. Hallinan, D. Osborne, AURORA COLOR TELEVISION PROJECT - 85 & 86, 24-minute video of aurora with music, Geophysical Institute, University of Alaska, June 1985 and June 1986.
- Brown, N.B., Aurora, Encyclopedia of Earth Sciences, E. Julius Dasch, editor in chief, Macmillan Library Reference USA 1996

### Reports

- Belon, A. E., G.R. Cresswell, C.S. Deehr, G.J. Romick, H. Tryon and N.B. Brown, Spectrophotometry of atmospheric phenomena at high latitudes - VELA, Final Report, Geophysical Institute, University of Alaska, UAG R-186, September 1966.
- Deehr, C. S. and N.B. Brown, Spectrophotometry of atmospheric phenomena at high latitude - Vela, Final Report, Geophysical Institute, University of Alaska, June 1969.
- Romick, G. J., C.S. Deehr, N.B. Brown and T.N. Davis, Preliminary report on the Secede III series of barium releases, part of SRI Technical Report 2, SRI Project 6851, Stanford

Research Institute, Menlo Park, California, 1969.

- Romick, G. J., V. Degen, N.B. Brown, D. Wallis and J. Hook, Analysis of barium release data from Secede III, Final Report, DASA Contract No. 01-69-0158, 1970.

#### Papers

- Brown, N. B., Near-infrared auroral studies, Proceedings of the 16th Alaskan Science Conference, 16, 178, 1965.
- Brown, N. B., Invited comments of auroral infrared excitation processes (panel discussion), Trans. Am. Geophys. Union, December 1969.
- Brown, N. B. and A.E. Belon, Hydroxyl emission enhancement associated with active aurora, Trans. Am. Geophys. Union, 50, 258, April 1969.
- Brown, N. B., High latitude airborne observations of some airglow and auroral emission features, Trans. Am. Geophys. Union, 51, 370, April 1970 (Abstract).
- Brown, N. B., Teaching students about the northern lights, Proceedings of the 36th Alaska Science Conference, 1985.
- Brown, N. B. and C. Slaughter, Proceedings of the 38th Alaska Science Conference, 1987.
- Brown, N. B., C.S. Deehr, T. Hallinan, R.A. Viereck, E. Hoch and V. Degen, Spectra of Type B Auroras, Trans. Am. Geophys. Union, December 1987.

#### Computer Programs

- Brown, N. B., N.S. Brown and M.S. Sweet, Aurora for Apple II+, Copyright 1984.
- Brown, N. B., N.S. Brown and M.S. Sweet, Permafrost for Apple II+, Copyright 1985.

#### Video Production

- Brown, N.B., T.J. Hallinan and D.L. Osborne, Aurora Color Television Project, 27 minute video of Auroras, Copyright 1985, 1986.
- Osborne, D.L., N.B. Brown and T.J. Hallinan, The Aurora Explained, 30 minute video production, copyright 1992.

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