CV

Dr. Arthur (Art) I. Poland
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Experience:

1.(July 2003-present):
- a. Developed a graduate program in solar physics and space weather at George Mason University.
- b. Advising graduate students toward thesis work
- c. Teaching classes in solar physics and space weather
- i. Research on solar atmospheric modeling

2. (1999-June 2003):
- a. Assistant (part time) to the NASA Chief Scientist at NASA Headquarters (HQ):.
- b. Senior Project Scientist for the LWS program. I took over this position again when the person I had handed it off to left for a position at NASA HQ. I had left the position to spend more time on my research.
- c. Other:
  - i. Basic Research (at Goddard Space Flight Center)
  - ii. Theoretical modeling of energy balanced, radiative transfer, hydrodynamic models of magnetic loops in the solar corona
  - iii. Analysis of spectral data from the Solar and Heliospheric Observatory (SOHO) spacecraft
  - iv. Keynote speaker at the Maine State science and math. teachers association meeting.
  - v. Many presentations to high schools and middle schools on science.
  - vi. Presentations at various national and regional meetings of the National Science Teachers Association.
  - vii. Worked in various NASA sponsored science teacher workshops. My goals have been to help teachers by giving them a better understanding of physics and what teaching aids and material are available through NASA.

3. 1999-2001 Senior project scientist for the LWS program.

4. 1985-1998 NASA Project Scientist for Solar and Heliospheric Observatory (SOHO)

5. 1980-1985 Astrophysicist at GSFC and scientist on the Solar Maximum Mission (SMM).
Developed a research program to study solar flares and prominences .

6. 1969-1980 Scientist at the National Center For Atmospheric Research (NCAR), High Altitude Observatory (HAO) division.
- a. Did basic research in non-LTE radiative transfer, solar prominences, and the solar corona.
- b. Team scientist on the HAO White Light Coronagraph experiment on Skylab.
- c. Worked with another scientist on developing a new solar coronagraph for Mauna Loa Hawaii.

7. 1964-1969 Graduate student in Astrophysics at Indiana University. Received a PhD in 1969.

8. 1961-1964 Undergraduate student in Astronomy at the University of Massachusetts. Received a BS in 1964.

Positions held:

1969-1980 Research Scientist, National Center for Atmospheric Research
Skylab Coronal Research
Solar Structure Research
1980-2003 Astrophysicist, NASA, Goddard Space Flight Center
Research with Solar Maximum Mission Spacecraft
July 2003-present Research Professor, George Mason University

Awards: NCAR Technology Advancement Award, 1973
GSFC Exceptional Achievement Award, 1996
ESA SOHO Award, 1995
NASA Exceptional Achievement Medal, 1998

PUBLICATIONS
A. I. Poland

1. H. R. Johnson and A. I. Poland, "Neutral Helium Lines and Departures from LTE in Hot Stars," J. Quant Spectrosc. Radiat. Transfer, 9, pp. 1151-1165, 1969.

2. A. I. Poland, "Neutral Helium Lines and the Helium Anomaly in Hot Stars," Astrophys. J., 160, p. 609, 1970.

3. Charles F. Keller, Bernard V. Jackson, A. I. Poland, and Benjamin F.

Peery, Jr., "The Rotational Temperature of a Ti O in the Spectrum of R. Hydrac," Astronomy and Astrophys., 4, p. 415, 1970.

4. A. I. Poland, A. Skumanich, R. G. Athay, and E. Tandberg-Hanssen, "Hydrogen Ionization and n=2 Population for Model Spicules and Prominences," Solar Physics, 18, p. 391, 1971.

5. A. I. Poland and U. Anzer, "Energy Balance in Cool Quiescent Prominences," Solar Physics, 19, p. 401, 1971.

6. A. I. Poland, "Helium in Hot Stars," The Observatory, 92, No. 986, p. 17, 1972.

7. R. M. MacQueen, J. A. Eddy, J. T. Gosling, E. Hildner, R. H. Munro, G.A. Newkirk, Jr., A. I. Poland, and C. L. Rose, "The Outer Solar Coronal as Observed from Skylab," Astrophys. J., 187, p. L85, 1974.

8. R. M. MacQueen, J. T. Gosling, E. Hildner, R. H. Munro, A. I. Poland, and C. L. Ross, "The High Altitude Observatory While Light Coronagraph," Proceedings on Instrumentation in Astronomy, 44, p. 207, 1974.

9. J. T. Gosling, E. Hildner, R. M. MacQueen, R. H. Munro, A. I. Poland, and C. L. Ross, "Mass Ejections from the Sun: A View from Skylab," J. Geophy. Res., 79, p. 4581, 1974.

10. R. M. MacQueen, J. T. Gosling, E. Hildner, R. H. Munro, and A. I. Poland, "The High Altitude Observatory White Light Coronagraph Experiment," Coronal Disturbances, IAU ed., Gordon Newkirk, Jr., pp. 505-506, 1974.

11. R. H. Munro, J. T. Gosling, E. Hildner, R. M. MacQueen, A. I. Poland, and C. L. Ross, "Observations of Flare Associated Coronal Dynamics Above 2Ro," Manuscripts presented at the conference on Flare Related Magnetic Field Dynamics, Boulder, Colorado, 23-25, September 1974.

12. J. N. Heasley, Dimitri Mihalas, and A. I. Poland, "Theoretical Helium I Emission Line Intensities for Quiescent Prominences," Astrophys. J., 192, pp. 181, 1974.

13. A. I. Poland and J. T. Gosling, "Reticulation: Effects and Cure," AAS Photo Bulletin No. 2, 9, 1975.

14. J. T. Gosling, E. Hildner, R. M. MacQueen, R. H. Munro, A. I. Poland, and C. L. Ross, "Direct Observations of a Flare Related Coronal and Solar Wind Disturbance," Solar Physics, 40, p. 439, 1975.

15. E. Hildner, J. T. Gosling, R. M. MacQueen, R. H. Munro, A. I. Poland, and C. L. Ross, "The Large Coronal Transient of 10 June 1973: I. Observational Description," Solar Physics, 42, p. 163, 1975.

16. R. H. Munro, J. T. Gosling, E. Hildner, A. I. Poland, C. L. Ross, and Alison Hopfield, "A Search for Forward Scattering of Sunlight from Lunar Liberation Clouds," Planet. Space Sci., 23, p. 1313, 1975.

17. J. T. Gosling, E. Hildner, R. H. Munro, A. I. Poland, and C. L. Ross, "Initial Results from the High Altitude Observatory White Light Coronagraph on Skylab--A Progress Report," Proc. Royal Soc. of London, 281, pp. 405-414, 1975.

18. J. T. Gosling, E. Hildner, R. M. MacQueen, R. H. Munro, A. I. Poland, and C. L. Ross, "The Speeds of Coronal Mass Ejection Events," Solar Phys., 389, 1976.

19. A. I. Poland and R. H. Munro, "Interpretation of Broad-Band Polarimetry of Solar Coronal Transients: Importance of H Emission," Astrophys. J., 209, pp. 927-934, 1976.

20. J. T. Gosling, R. H. Munro, A. I. Poland, and C. L. Ross, "Frequency of Coronal Transients and Solar Activity," Solar Physics, 48, p. 127, 1976.

21. A. Csoeke-Poeckh, R. M. MacQueen, and A. I. Poland, "Measurement of Stray Radiance in the High Altitude Observatory's Skylab Coronagraph," Applied Opt., 16, p. 931, 1977.

22. A. I. Poland, J. T. Gosling, R. M. MacQueen, and R. H. Munro, "The Radiance Calibration of the High Altitude Observatory White Light Coronagraph on Skylab," Applied Opt, 16, p. 926, 1977.

23. R. M. MacQueen and A. I. Poland, "Temporal Evolution of the Equatorial K-Corona," Solar Physics, 55, p. 43, 1977.

24. Kuniji Saito, A. I. Poland, and Richard H. Munro, "A Study of the Background Corona Near Solar Minimum," Solar Physics, 55, p. 121, 1978.

25. A. I. Poland, "Motions and Mass Changes of a Persistent Coronal Streamer," Solar Physics, 57, p. 141, 1978.

26. T. Ch. Mouschovias and A. I. Poland, "Expansion and Broadening of Coronal Loop Transients: Theoretical Explanation," Ap. J., 220, p. 675, 1978.

27. T. E. Gergely, M. R. Kundu, R. H. Munro, and A. I. Poland, "Radio and White Light Observations of the 21 August 1973 Coronal Transient," Ap. J., 230, p. 575, 1979.

28. U. Anzer and A. I. Poland, "Mass Flow in Loop Type Coronal Transients," Solar Phys, 61, p. 95, 1979.

29. R. H. Munro, J. T. Gosling, E. Hildner, R. M. MacQueen, A. I. Poland, and C. L. Ross, "The Association of Coronal Transients with other Forms of Solar Activity," Solar Physics, 61, p. 2201, 1979.

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31. R. R. Fisher, R. Lee, R. M. MacQueen, and A. I. Poland, "The New Mauna Loa Coronagraph Systems," Applied Optics, Vol. 20, No. 6, p. 1094, 1981.

32. A. I. Poland and R. M. MacQueen, "The Evolution of a Coronal Streamer and the Photospheric Magnetic Field," Solar Physics, 71, pp. 361-379, 1981.

33. A. I. Poland, R. A. Howard, M. J. Kooman, D. J. Michels, and N. R. Sheeley, Jr., "Coronal Transients Near Sunspot Maximum," Solar Physics, 69, p. 69, 1981.

34. R. R. Fisher and A. I. Poland, "Coronal Activity Below 2 R February 15-17, 1980," Ap. J., 246, p. 1004, 1981.

35. A. I. Poland and A. Skumanich, "NonLTE Effects for He I in Early B. Type Stars," Mon Not. Royal Astron. Soc., 152, p. 18, 1981.

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43. J. T. Mariska and A. I. Poland, "The Relation Between Hard X-ray and Transition-Region Line Emission Solar Flares," Solar Physics, 96, p. 317, 1985.

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46. A. I. Poland and J. T. Mariska, "A Siphon Mechanism for Supplying Prominence Mass," Solar Physics, 104, p. 300, 1986.

47. G. Simon, B. Schmieder, P. Demouline, and A. I. Poland, "Dynamics of Solar Filaments VI. Center to Limb Study of H and CIV Velocities in a Quiescent Filament," Astronomy and Astrophysics, 166, p. 219, 1986.

48. B. Schmieder, A. I. Poland, B. Thompson, and P. Demoulin, "Some Dynamical Aspects of a Quiescent Filament," Astronomy and Astrophysics, 197, p. 81, 1988.

49. A. I. Poland, R. W. Milkey, and W. T. Thompson, "Hydrogen and Helium Excitation by EUV Radiation for the Production of White-Light Flares," Solar Physics, 115, p. 277, 1988.

50. "The SOHO Project: Helioseismology Investigations," V. Domingo and A.I. Poland, Adv. Space Res. 8 no. 11, p. 119, 1988.

51. "The SOHO Project: Coronal and Solar Wind Investigations," A. I. Poland and V. Domingo, Adv. Space Res. 8 no 11, p. 101, 1988.

52. J. M. Fontenla and A. I. Poland, "The Eruption of a Quiescent Prominence as Observed in UV Lines," Solar Physics, 123, p. 143, 1989.

53. Paul M. Kuin and A. I. Poland, "Opacity Effects on the Radiative Losses of Coronal Loops," Astrophysical Journal (370, 763, 1991).

54. A. I. Poland, "Coronal Fine Structure as Seen on the Skylab White Light Coronograph," Solar Dynamics Phenomena and Solar Wind Consequences, ESA SP-373, p. 227, 1994.

55. Effects of Non-LTE Radiative Loss and Partial Ionization on the Structure of the Transition Region, J.-C. Chae, H.S. Yun, and A. I. Poland, ApJ 480, 817-824, May 10 1997.

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69. Olmedo, O., Zhang, J., Wechsler, H., Poland, A., Borne, K., automatic Detection and Tracking of Coronal Mass Ejections in Coronagraph Time Series, Solar Physics, Solar Physics 248, 4850 , 2008

EDITED PROCEEDINGS:

Coronal and Prominence Plasmas, Edited by A. I. Poland, NASA CP 2442, 1986.

BOOKS

The SOHO Mission, Edited by Bernhard Fleck, Vicente Domingo, and Arthur I. Poland, Kluwer Academic Publishers, 1995

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The New Solar Corona, Markus J. Aschwanden, Arthur I. Poland, and Douglas M. Rabin, Annual Review of Astronomy and Astrophysics, V 39, p175, Annual Reviews, 2001