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Biographical Sketch

Alexander J. Dessler

Date & Place of Birth: October 21, 1928
San Francisco, California

Education: B.S., Physics, 1952, California Institute of Technology

Ph.D., Physics, 1956, Duke University

Positions Held:

July 1993 - Present
Senior Research Scientist
Lunar and Planetary Laboratory
University of Arizona

July 1986 - June 1993
and 1963 - 1982
Professor of Space Physics and Astronomy
Rice University

1987 - 1992
1979 - 1982
and 1963 - 1969
Chairman, Department of Space Physics & Astronomy
Rice University

1982 - 1986
Director, Space Science Laboratory
NASA Marshall Space Flight Center

1979 - 1983
Vice President, International Association of
Geomagnetism and Aeronomy

1975 - 1981
President, Universities Space Research Association

1974 - 1976
Manager, Campus Business Affairs
Rice University

1973 - 1974
Chairman, Rice University Self-Study

1969 - 1970
Science Advisor, National Aeronautics & Space Council, Washington, D.C.

1962 - 1963
Professor, Division of Atmospheric and Space Sciences, Southwest Center for Advances Studies (now University of Texas at Dallas)

1956 - 1962
Senior Scientist, Section Head, Lockheed Missiles and Space Company, Palo Alto, Calif.

1955 - 1956
Research Associate, Duke University

Memberships:

American Association for the Advancement of Science (Fellow)

American Geophysical Union (Fellow)

International Association of Geomagnetism and Aeronomy - Executive Committee, 1971 - 1983; Vice President, 1979 - 1983

American Astronomical Society, Division of Planetary Sciences

Foreign Member, Royal Swedish Academy of Sciences (1996 - present)

Honors and Awards:

American Geophysical Union
James B. Macelwane Award (1963)

Air Force Association, Texas Wing, Award for Outstanding Contribution to Aerospace Science during 1963 (1964)

Soviet Geophysical Committee, Medal for Contributions to International Geophysics (1984)

Rotary National, Stellar Award for Academic Development (1988).

John Adam Fleming Medal, American Geophysical Union (1993)

Foreign Member, Royal Swedish Academy of Sciences (1996)

American Geophysical Union
William Kaula Award (2003)

National Academy of Sciences
Arctowski Medal (2015)

Editorial/Journal Affiliations:

1986 - present
Series Editor, *Atmospheric and Space Science Series*
Cambridge University Press

1986 - 1989
Editor-in-Chief, *Geophysical Research Letters*

1980 - 1985
Associate Editor, *Space Solar Power Review*

1969 - 1974
Editor, *Reviews of Geophysics and Space Physics*

1965 - 1969
Editor, *Journal of Geophysical Research*
1963 - 1968
Associate Editor, *Reviews of Geophysics*

1966 - 1976
Editor, *Space, Earth, and Atmospheric Sciences Textbook Series* (formerly *Space Science Textbook Series*)
John Wiley Publishers

1963 - 1992
Editorial Advisory Board, *Planetary and Space Science*

Refereed Journal Publications

Dessler, A. J. and H. G. Robinson, Dynamic characteristics of triode-connected pentodes, *Electronics*, **28**, 208, 1955.

My very first publication, based on what I had learned in 1 year of US Navy electronics school.

Dessler, A. J. and W. M. Fairbank, Amplitude dependence of the velocity of second sound, *Phys. Rev.*, **104**, 6-10, 1956.

My Ph.D. Thesis. An experiment showing Landau was right.

Dessler, A. J., The propagation velocity of world-wide sudden commencements of magnetic storms, *J. Geophys. Res.,* **63**, 405-408, 1958.

I believe this paper is the first serious attempt to use hm-theory in magnetospheric physics. Paper is, however flawed because it ignored Fermat's principle of least time – see below, 1959 paper on the same subject.

Dessler, A. J., Large amplitude hydromagnetic waves above the ionosphere, *J. Geophys.Res.*, **63**, 507-511, 1958; also *Phys. Rev. Lett.*, **1**, 68, 1958.

Another first use of hm-theory also wrong. There was a subsequent paper by Francis and Karplus (JGR 1060) doing it right and showing that there is, in general, little absorption of hm-wave energy in passing through the ionosphere.

Dessler, A. J., W. B. Hanson, M. Hertzberg, D. D. McKibbin, and R. C. Wrigley, A new instrument for measuring atmospheric density and temperature at satellite altitudes, *Jet Propul.*, **28**, 837, 1958.

Hanson built and used this instrument.

Dessler, A. J., Interactions between first and second sound in liquid helium, *Phys. Fluids*, **2**, 5-7, 1959.

Dessler, A. J., Ionospheric heating by hydromagnetic waves, *J. Geophys. Res.*, **64**, 397-401, 1959.

Gives too much heating.. Corrected by Francis & Karplus, JGR 1960.

Dessler, A. J., Effect of magnetic anomaly on particle radiation trapped in geomagnetic field, *J. Geophys. Rev.*, **64**, 713-715, 1959.

Prediction of what is now called the South Atlantic Anomaly.

Dessler, A. J., Upper atmosphere density variations due to hydromagnetic heating, *Nature*, **184**, 261-262, 1959.

Francis, W. E., M. I. Green, and A. J. Dessler, Hydromagnetic propagation of sudden commencements of magnetic storms, *J. Geophys. Res.*, **64**, 1643-1645, 1959.

Dessler, A. J. and E. N. Parker, Hydromagnetic theory of geomagnetic storms, *J. Geophys. Res.*, **64**, 2239-2252, 1959; Correction, *J. Geophys. Res.*, **73**, 3091, 1968.

First, largely correct description of main phase of geomagnetic storms and removal of ring current by charge exchange..

Dessler, A. J. and E. H., Maximum total energy of the Van Allen radiation belt, *J. Geophys. Res.*, **65**, 1069-1071, 1960.

Showed that flux estimates by Van Allen and Winckler were too high by orders of magnitude. Van Allen later told me that he was impressed by this paper, although he studiously avoided mentioning it.

Dessler, A. J. and R. Karplus, Some properties of the Van Allen radiation, *Phys. Rev. Lett.*, **4**, 271-274, 1960.

Among other points, refines idea of Cap Town (South Atlantic) anomaly.

Dessler, A. J., W. E. Francis and E. N. Parker, Geomagnetic storm sudden-commencement rise times, *J. Geophys. Res.*, **65**, 2715-2719, 1960.

Dessler, A. J., Discussion of paper by R. L. Arnoldy., R. A. Hoffman, and J. R. Winckler, 'Observations of the Van Allen radiation regions during August and September, 1959, Part I'., *J. Geophys. Res.*, **65**, 3487-3490, 1960.

A second criticism of Van Allen Belt flux determinations that were way too high.

Cladis, J. B. and A. J. Dessler, X-rays from Van Allen belt electrons, *J. Geophys. Res.*, **66**, 343-350, 1961.

Several balloon experiments verified these predictions.

Dessler, A. J. and R. Karplus, Some effects of diamagnetic ring currents on Van Allen radiation, *J. Geophys. Res.*, **66**, 2289-2295, 1961.

Prediction of betatron acceleration and deceleration by a ring current. Later verified by McIlwain.

Dessler, A. J., The stability of the interface between the solar wind and the geomagnetic field, *J. Geophys. Res.*, **66**, 3587-3590, 1961.

I still believe these and subsequent arguments are correct. The magnetopause is not being torn up by Kelvin-Helmholtz waves.

Dessler, A. J., W. B. Hanson, and E. N. Parker, Formation of the geomagnetic storm main-phase ring current, *J. Geophys. Res.*, **66**, 3631-3637, 1961.

Dessler, A. J. and W. B. Hanson, Possible energy source for the aurora, *Astrophys. J.*, **134**, 1024-1025, 1961.

This and previous paper (DHP) argue that particles are not directly-injected solar material. Acceleration within the magnetosphere is needed.

Ahluwalia, H. S. and A. J. Dessler, Diurnal variation of cosmic radiation intensity produced by a solar wind, *Planet. Space Sci.*, **9**, 195-210, 1962.

First explanation of CR diurnal variation that was on the right track. Contained two careless errors, one by me and one by Ahluwalia, that caused Parker and Axford, who corrected the errors, to give this paper little credit.

Dessler, A. J., Further comments on stability of interface between solar wind and geomagnetic field, *J. Geophys. Res.*, **67**, 4892-4894, 1962.

Axford, W. I., A. J. Dessler, and B. Gottlieb, Termination of solar wind and solar magnetic field, *Astrophys. J.*, **137**, 1268-1278, 1963.

This paper, among other things (such as an evaluation of a terminal shock – it had been predicted by Clauser in 1960, but we were unaware of his paper), caused Chamberlain to give up on his "Solar Breeze" theory. It showed that the solar wind must have a speed greater than 100 km/sec, or there cannot be a steady outflow.

Dessler, A. J. and J. A. Fejer, Interpretation of Kp index and M-region geomagnetic storms, *Planet. Space Sci.*, **11**, 505-511, 1963.

Prediction of forward and reverse shocks in the solar wind and the CIR (Corotating Interaction Region). The word, "magnetosheath" was introduced here.

Dessler, A. J. and G. K. Walters, Hydromagnetic coupling between solar wind and magnetosphere, *Planet. Space Sci.*, **12**, 227-234, 1964.

The prediction of asymmetry in flow around the magnetosphere has been verified, but the idea of the tail wagging is wrong.

Maer, K., Jr. and A. J. Dessler, Comment on paper by C. W. Snyder et al., 'The solar-wind velocity and its correlation with cosmic-ray variations and with solar and geomagnetic activity,' *J. Geophys. Res.*, **69**, 2846, 1964.

Parker, E. N. and A. J. Dessler, Discussion of paper by E. J. Stegelmann and C. H. von Kenschitzki, 'On the interpretation of the sudden commencement of geomagnetic storms', *J. Geophys. Res.*, **69**, 3745-3748, 1964.

Dessler, A. J., Length of magnetospheric tail, *J. Geophys. Res.*, **69**, 3913-3918, 1964.

Argued that the Johnson teardrop model was unstable and that either hm radiation pressure or solar wind leaking in would cause the tail to be torn open. I did not appreciate magnetic merging without collisions, however, so the tail is much too long.

Ness used Fig 1 of this paper in his paper on the discovery of the magnetospheric tail. For "theory" he drew in a dipole field. My paper was cited among a list of other interested in magnetospheres, but I got no credit for the prediction. I had sent him a prepublication preprint. (See also Fig. 4 of Dessler and Juday, 1965).

Michel, F. C., A. J. Dessler, and G. K. Walters, A search for correlation between Kp and the lunar phase, *J. Geophys. Res.*, **69**, 4177-4181, 1964.

Dessler, A. J. and R. D. Juday, Configuration of auroral radiation in space, *Planet. Space Sci.*, **13**, 63-72, 1965.

Here we have a plasma sheet in the magnetospheric tail. Also noted the plasma sheet would have a seasonal tilt.

Michel, F. C. and A. J. Dessler, Physical significance of inhomogeneities in polar cap absorption events, *J. Geophys. Res.*, **70**, 4305-4311, 1965; Correction, *J. Geophys. Res.*, **71**, 2979, 1966.

Dessler, A. J. and F. C. Michel, Plasma in the geomagnetic tail, *J. Geophys. Res.*, **71**, 1421-1426, 1966.

Criticism of an erroneous measurement of plasma in the geomagnetic tail. Measurement later withdrawn.

Patel, V. L. and A. J. Dessler, Geomagnetic activity and magnetospheric cavity, *J. Geophys. Res.*, **71**, 1940-1942, 1966.

Showed that a smaller magnetosphere correlated with increase in geomagnetic activity. See also Maer and Dessler, 1964

Dessler, A. J., Discussion of letter by J. A. Van Allen, 'Further remarks on the absence of a very extended magnetospheric tail,' *J. Geophys. Res.*, **71**, 2408-2410, 1966.

Historical note: Van Allen finally references some of my work.

Rassbach, M. E., A. J. Dessler, and A. G. W. Cameron, The lunar period, the solar period, and Kp, *J. Geophys. Res.*, **71**, 4141-4146, 1966.

Patel, V. L., L. J. Cahill, Jr., and A. J. Dessler, Magnetosheath field, geomagnetic index a_p, and stability of magnetopause, *J. Geophys. Res.*, **72**, 426-430, 1967.

Cummings, W. D. and A. J. Dessler, Ionospheric heating associated with the main-phase ring current, *J. Geophys. Res.*, **72**, 257-263, 1967.

Cummings, W. D. and A. J. Dessler, Field-aligned currents in the magnetosphere, *J. Geophys. Res.*, **72**, 1007-1013, 1967.

First correct interpretation of satellite data showing that magnetically field-aligned currents (the currents predicted by Birkeland) really existed.

Dessler, A. J., Solar wind and interplanetary magnetic field, *Rev. Geophys.*, **5**, 1-41, 1967.

Several firsts: (a) a thorough history, including noting the remarks of Kelvin that closed off research on a solar cause of geomagnetic storms until Chapman resurrected it, although he neglected Birkeland's ideas (some he absorbed, but he gave Birkeland no credit).. (b) The notion and the definition of "heliosphere" where the solar wind flows supersonically. This is where the word was coined. My heliosphere was surrounded by a "boundary layer". If it had been adopted, this terminology would make life easier for present day researchers because now they have to say which part of their heliosphere they are talking about. (c) cf., Fig. 14, p. 32. The idea that

the Sun is moving through the local interstellar medium toward an "apex", and this motion distorts the heliosphere so it is pushed in on the apex side and extends further out on the antapex side. The boundary shell is predicted to form an extended tail in the antapex direction. (d) the boundary shell is unstable to the Raleigh-Taylor instability.

Kovar, R. P. and A. J. Dessler, On the anisotropy of galactic cosmic rays, *Astrophys. Lett.*, **1**, 15-16, 1967.

Few, A. A., A. J. Dessler, D. J. Latham, and M. Brook, A dominant 200-hertz peak in the acoustic spectrum of thunder, *J. Geophys. Res.*, **72**, 6149-6154, 1967.

First correct measurement and interpretation of the acoustic spectrum of thunder.

Dessler, A. J. Magnetic merging in the magnetospheric tail, *J. Geophys. Res.*, **73**, 209-214, 1968; Correction, *J. Geophys. Res.*, **73**, 1861, 1968.

Correctly predicted that substorm magnetic merging would occur "near the Earth (10 to 30 R_E). Before observations finally showed that the x-line formed near the Earth, it was thought to occur far out at the end of the Dungey tail. Also, Fig 4 of this paper is used on the back of the NAS Arctowski Medal.

Dessler, A. J., F. C. Michel, H. E. Rorschach, and G. T. Trammell, Gravitationally induced electric fields in conductors, *Phys. Rev.*, **168**, 737-743, 1968.

Successful application of ionospheric physics to condensed matter physics.

Schield, M. A., J. W. Freeman, and A. J. Dessler, A source for field-aligned currents at auroral latitudes, *J. Geophys. Res.*, **74**, 247-256, 1969.

Introduced the word "Birkeland Current", although another of Freeman's students published his paper using this terminology a bit earlier, he was following my suggestion.

Dessler, A. J., General applicability of solar-wind and solar-breeze theories, *Comments on Astrophys. and Space Phys.*, **1**, 31-34, 1969.

Dessler, A. J. and P. A. Cloutier, Discussion of letter by Peter M. Banks and Thomas E. Holzer, 'The polar wind,' *J. Geophys. Res.*, **74**, 3730-3733, 1969.

This paper got Banks and Holzer on the right track, i.e., they adopted these ideas.

Wolf, R.A. and A. J. Dessler, Field-aligned currents in the magnetosphere, *Comments on Astrophys. and Space Phys.*, **1**, 117-121, 1969.

Michel, F. C. and A. J. Dessler, Diffusive entry of solar-flare particles into geomagnetic tail, *J. Geophys. Res.*, **75**, 6061-6072, 1970.

Dessler, A. J. and T. W. Hill, Location of neutral line in magnetotail, *J. Geophys. Res.*, **75**, 7323-7325, 1970.

Dessler, A. J., Vacuum merging: A possible source of the magnetospheric cross-tail electric field, *J. Geophys. Res.*, **76**, 3174-3176, 1971.

This paper explains whey we get explosive substorm merging in the near-Earth tail, but seldom at either the magnetopause or solar-wind sector boundaries.

Hill, T. W. and A. J. Dessler, Plasma-sheet structure and the onset of magnetospheric substorms, *Planet. Space Sci.*, **19**, 1275-1288, 1971.

This is an embarrassingly bad paper. Poor Tom – it was all my fault.

Dessler, A. J., Infrasonic thunder, *J. Geophys. Res.*, **78**, 1889-1896, 1973.

A sort of good paper, except I left out the term that accounted for heating from the lightning flash. Aurther Few (my student) later did it right.

Hill, T. W., A. J. Dessler and F. C. Michel, Configuration of the Jovian magnetosphere, *Geophys. Res. Lett.*, **1**, 3-6, 1974.

Introduced centrifugal equator.

Garrett, H. B., A. J. Dessler, and T. W. Hill, Influence of solar wind variability on geomagnetic activity, *J. Geophys. Res.*, **79**, 4603-4610, 1974.

Hill, T. W., J. F. Carbary and A. J. Dessler, Periodic escape of relativistic electrons from the Jovian magnetosphere, *Geophys. Res. Lett.*, **1**, 333-336, 1974.

We need a magnetic anomaly model to explain this proposed “diurnal particle escape”.

Michel, F. C. and A. J. Dessler, On the interpretation of low-energy particle access to the polar caps, *J. Geophys. Res.*, **80**, 2309-2310, 1975.

Dessler, A. J. and T. W. Hill, High-order magnetic multipoles as a source of gross asymmetry in the distant Jovian magnetosphere, *Geophys. Res. Lett.*, **2**, 567-570, 1975.

The birth of the magnetic anomaly model.

Michel, F. C. and A. J. Dessler, Reply, *J. Geophys. Res.*, **81**, 2446, 1976.

Hill, T. W. and A. J. Dessler, Longitudinal asymmetry of the Jovian magnetosphere and the periodic escape of energetic particles, *J. Geophys. Res.*, **81**, 3383-3386, 1976.

Hill, T. W. and A. J. Dessler, Reply, *J. Geophys. Res.*, **81**, 5602, 1976.

Hill, T. W., A. J. Dessler and R. A. Wolf, Mercury and Mars: The role of ionospheric conductivity in the acceleration of magnetospheric particles, *Geophys. Res. Lett.*, **3**, 429-432, 1976.

Carbary, J. F., T. W. Hill and A. J. Dessler, Planetary spin period acceleration of particles in the Jovian magnetosphere, *J. Geophys. Res.*, **81**, 5189-5195, 1976.

Refereed Journal Publications

Bohannon, J. L., A. A. Few and A. J. Dessler, Detection of infrasonic pulses from thunderclouds, *Geophys. Res. Lett.*, **4**, 49-52, 1977.

Dessler, A. J., Comment on 'Geomagnetic activity at the passage of high-speed streams in the solar wind,' by C. Sawyer and M. Haurwitz, *J. Geophys. Res.*, **82**, 740, 1977.

Hunten, D. M. and A. J. Dessler, Soft electrons as possible heat source for Jupiter's thermosphere, *Planet. Space Sci.*, **25**, 817-821, 1977.

Dessler, A. J. and T. W. Hill, Comment on 'On the high correlation between long-term averages of solar-wind speed and geomagnetic activity,' by N. U. Crooker, J. Feynman, and J. T. Gosling, *Geophys. Res.*, **82**, 5644, 1977.

Dessler, A. J., Longitudinal control of Jovian magnetopause motion, *Geophys. Res. Lett.*, **5**, 65-68, 1978.

Cloutier, P. A., R. E. Daniell, Jr., A. J. Dessler, and T. W. Hill, A cometary ionosphere model for Io, *Astrophys. Space Sci.*, **55**, 93-112, 1978.

Dessler, A. J. and V. M. Vasyliunas, The magnetic anomaly model of the Jovian magnetosphere: Predictions for Voyager, *Geophys. Res. Lett.*, **6**, 37-40, 1979.

Dessler, A. J. and T. W. Hill, Jovian longitudinal control of Io-related radio emissions, *Astrophys. J.*, **227**, 664-675, 1979.

Hill, T. W., A. J. Dessler, and F. P. Fanale, Localized deposition and sputtering of Jovian ionospheric sodium on Io, *Planet. Space Sci.*, **27**, 419-424, 1979.

Dessler, A. J. and J. W. Chamberlain, Jovian longitudinal asymmetry in Io-related and Europa-related auroral hot spots, *Astrophys. J.*, **230**, 974-981, 1979.

Cummings, W. D., A. J. Dessler, and T. W. Hill, Latitudinal oscillations of plasma within the Io torus, *J. Geophys. Res.*, **85**, 2108-2114, 1980.

Dessler, A. J., Corotating Birkeland currents in Jupiter's magnetosphere: An Io plasma-torus source, *Planet. Space Sci.*, **28**, 781-788, 1980.

Dessler, A. J., Mass-injection rate from Io into the Io plasma torus, *Icarus*, **44**, 291-295, 1980.

Dessler, A. J., B. R. Sandel, and S. K. Atreya, The Jovian hydrogen bulge: Evidence for corotating magnetospheric convection, *Planet. Space Sci.*, **29**, 215-224, 1981.

Vasyliunas, V. M. and A. J. Dessler, The magnetic-anomaly model of the Jovian magnetosphere: A post-Voyager assessment, *J. Geophys. Res.*, **86**, 8435-8446, 1981.

Refereed Journal Publications

Hill, T. W., A. J. Dessler, and L. J. Maher, Corotating magnetospheric convection, *J. Geophys. Res.*, **86**, 9020-9028, 1981.

Michel, F. C. and A. J. Dessler, Pulsar disk systems, *Astrophys. J.*, **251**, 654-664, 1981.
An application of Jovian magnetospheric physics to pulsars -- introduced pulsar discs.

Voigt, G.-H., T. W. Hill, and A. J. Dessler, The magnetosphere of Uranus: Plasma sources, convection, and field configuration, *Astrophys. J.*, **266**, 390-401, 1983.

Michel, F. C. and A. J. Dessler, Fast pulsars with disks, *Nature*, **303**, 48, 1983.

Hill, T. W., A. J. Dessler, and M. E. Rassbach, Aurora on Uranus: A Faraday-disc dynamo mechanism, *Planet. Space Sci.*, **31**, 1187-1198, 1983.

Isbell, J., A. J. Dessler, and J. H. Waite, Jr., Magnetospheric energization by interaction between planetary spin and the solar wind, *J. Geophys. Res.*, **89**, 10,716-10,722, 1984.

Hill, T. W. and A. J. Dessler, Remote sensing of the magnetic moment of Uranus: Predictions for Voyager, *Science*, **227**, 1466-1469, 1985.

Dessler, A. J., Differential rotation of the magnetic fields of gaseous planets, *Geophys. Res. Lett.*, **12**, 299-302, 1985.

Michel, F. C. and A. J. Dessler, Durability of the accretion disk of millisecond pulsars, *Science*, **228**, 1015-1016, 1985.

Suess, S. T. and A. J. Dessler, Probing the local interstellar medium, *Nature*, **317**, 702-703, 1985.

Hill, T. W. and A. J. Dessler, Comment on 'Magnetic field properties of Jupiter's tail at distances from 80 to 7500 Jovian radii,' M. L. Goldstein, R. P. Lepping, and E. C. Siltter, Jr., *J. Geophys. Res.*, **91**, 7131-7132, 1986.

Hathaway, D. H. and A. J. Dessler, Magnetic reversals of Jupiter and Saturn, *Icarus*, **67**, 88-95, 1986.

Broadfoot, A. L., F. Herbert, J. B. Holberg, B. R. Sandel, D. E. Shemansky, R. V. Yelle, D. F. Strobel, H. W. Moos, T. M. Donahue, S. Atreya, J. L. Bertaux, J. E. Blamont, J. C. McConnell, A. J. Dessler, S. Linick, and R. Springer, Ultraviolet spectrometer observations of Uranus, *Science*, **233**, 74-79, 1986.

Suess, S. T., D. H. Hathaway, and A. J. Dessler, Asymmetry of the heliosphere, *Geophys. Res. Lett.*, **14**, 977-980, 1987.

Sandel, B. R. and A. J. Dessler, Dual periodicity of the Jovian magnetosphere, *J. Geophys. Res.*, **93**, 5487-5504, 1988.

Refereed Journal Publications

Peratt. A. L., and A. J. Dessler, Filamentation of volcanic plumes on the Jovian satellite Io, *Astrophys. and Space Sci.*, **144**, pp. 451-461, 1988.

Dessler A. J., and B. R. Sandel, Reply, *J. Geophys. Res.,* **94**, 7013, 1989.

Broadfoot, A. L, S. K. Atreya, J. L. Bertaux, J. E. Blamont, A. J. Dessler, T. M. Donahue, W. T. Forrester, D. T. Hall, F. Herbert, J. B. Holberg, D. M. Hunten, V. A. Krasnopolsky, S. Linick, J. I. Lunine, J. C. McConnell, H. W. Moos, B. R. Sandel, N. M. Schneider, D. E. Shemansky, G. R. Smith, D. F. Strobel, and R. V. Yelle, Ultraviolet spectrometer observations of Neptune and Triton, *Science*, **246**, 1459-1466, 1989.

Dessler, A. J., and B. R. Sandel, A quiescent magnetosphere for Neptune, *Geophys. Res. Lett.,* **16**, 957-960, 1989.

Hill, T. W., and A. J. Dessler, Comment on 'Plasma bulk glow in Jupiter's dayside middle magnetosphere,' by M. R. Sands and R. L. McNutt, Jr., *Geophys. Res. Lett.*, **95**, 8281-8283, 1990.

Sandel, B. R., F. Herbert, A. J. Dessler, and T. W. Hill, Aurora and airglow on the night side of Neptune, *Geophys. Res. Lett.,* **17**, 1693-1696, 1990.

Hill, T. W., and A. J. Dessler, Convection in Neptune's magnetosphere, *Geophys. Res. Lett.*, **17**, 1677-1680, 1990.

Dessler, A. J., B. R. Sandel, and V. M. Vasyliunas, Terrestrial cometary tail and lunar corona induced by small comets: Predictions for Galileo, *Geophys. Res. Lett.,* **17**, 2257-2260, 1990.

Dessler, A. J., The Small-Comet Hypothesis, *Rev. of Geophys.*, **29**, pp. 355-382, 1991.

Yang, Y. S., R. A. Wolf, R. W. Spiro, and A. J. Dessler, Numerical simulation of plasma transport driven by the Io torus, *Geophys. Res. Lett.,* **19**, 957-960, 1992.

Dessler, A. J. and B. R. Sandel, System III variations in apparent distance of Io plasma torus from Jupiter, *Geophys. Res. Lett.*, **19**, 2099-2103, 1992.

Dessler, A. J., and B. R. Sandel, Reply to Comment by D. D. Barbosa, *Geophys. Res. Lett., 20,* 2489-2490, 1993.

Dessler, A.J., and T.W. Hill, Some interactions between dust from comet Shoemaker-Levy 9 and Jupiter, *Geophys. Res. Lett.*, **21**, 1043-1046, 1994.

Yang, Y.S., R.A. Wolf, R.W. Spiro, T.W. Hill, and A.J. Dessler, Numerical simulation of torus-driven plasma transport in the Jovian magnetosphere, *J. Geophys. Res.*, **99**, 8755-8770, 1994.

Hill, T. W. and A. J. Dessler, Mid-latitude Jovian aurora produced by the impact of Comet Shoemaker-Levy-9, *Geophys. Res. Lett.,* **22**, 1817-1820, 1995.

Refereed Journal Publications

Volwerk, M., M. E. Brown, A. J. Dessler, and B. R. Sandel, Evidence for short cooling time in the Io plasma torus, *Geophys. Res. Lett.*, **14**, 1147-1150, 1997.

Rizk, B., and A. J. Dessler, Small comets: Naked-eye visibility, *Geophys. Res. Lett.* **24**, 3121-3124, 1997.

Geissler, P. E., W. H. Smyth, A. S. McEwen, W. Ip, M. J. S. Belton, T. V. Johnson, A. P. Ingersoll, K. Rages, W. Hubbard, and A. J. Dessler, Morphology and time variability of Io's visible aurora, *J. Geophys. Res., 106,* 26,137-26-146, 2001.

Hill, T. W. and A. J. Dessler, Longitudinal variation of ion temperature in the Io plasma torus, *J. Geophys. Res., 109*, 2004, A04206, doi:10.1029-2003JA010218.

Dessler, A. J., Hydromagnetic picture of Earth storms, *Journal of Physical Society of Japan*, **17**, Part II, 13-15, 1962 (proceedings International Conference on Cosmic Rays and the Earth storm).

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