

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:**
- 2007 – Present
Adjunct Professor
Department of Atmospheric Science
Texas A&M University
 - 1993 - 2007
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)

**Editorial/Journal
Affiliations:**

1986 – approx. 2000
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.

Based on my Ph.D. Thesis. An experiment showing Landau was right and Tisza was wrong. It has started to be cited (finally).

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 me and Karplus (1960) 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.

W. B. Hanson built and used an instrument based on this idea.

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, as explained in 1960 paper by me and Karplus.

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

Prediction (discovery) 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.

This one agrees with ground-based data.

Refereed Journal Publications

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 theory of geomagnetic storms.

Dessler, A. J. and E. H. Vestine, 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. If they had been right, the ring current created would have been so strong that Carl Fredrick Gauss would have discovered that the Earth's magnetic field had an external component. Van Allen later told me that this paper impressed him, 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 Cape 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 saying that Van Allen Belt flux determinations that were still too high.

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

X-rays generated by electrons drifting into the South Atlantic Anomaly. Several balloon experiments verified these predictions. This paper was later rewritten by me and Tom and applied to Jupiter. I seemed to reapply the same ideas on different papers.

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 Carl McIlwain. Carl generously referenced this work.

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 asunder by Kelvin-Helmholtz waves. Also hn wave noise would be detected as the magnetopause was approached from inside the magnetosphere. Supersonic flow inhibits KH 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.

Refereed Journal Publications

Explained by shock-wave energization. Better explained as inward motion and trapping of plasma sheet particles

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 for aurora are not directly-injected solar material. Acceleration within the magnetosphere is needed. This was a new idea at the time.

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, corrected by Parker and Axford. so this paper got little credit.

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

Again, no Kelvin-Helmholtz instability.

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, as well as the idea of a CIR.

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. The Walters paper applies to the nose of the heliosphere, where the first published paper (by a French group) had it all 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.

Refereed Journal Publications

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

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

Ness used Fig 1 of this paper in his paper on the discovery of the magnetospheric tail. For "theory" he drew a dipole field. He cited my paper among a list of others interested in magnetospheres, but he gave no credit for my prediction. I had sent him a prepublication preprint. A modified version of this drawing is used on the Arcowski Medal (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.

Here we were shooting down a bad correlation connecting Kp to the phase of the Moon.

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

In this paper we have a plasma sheet in the magnetospheric tail. Also noted the plasma sheet, for the first time, is predicted to have a seasonal tilt. The rest of the paper is largely incorrect.

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.

This idea is probably wrong, but the phenomenon still is not explained,

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

Criticism of a measurement claiming high plasma number density in the geomagnetic tail. Their erroneous claim was later withdrawn by authors.

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

First demonstration that a smaller magnetosphere is 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 referenced some of my work, but not favorably.

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.

This paper settled the matter tht the correlation was spurious. Cameron was invited to join us in shooting down his own bad idea.

Refereed Journal Publications

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 Chapman neglected Birkeland's ideas (some he absorbed, but he gave Birkeland no credit). (b) The notion and the definition of "heliosphere" as where the solar-wind flows supersonically. This is where the word was coined. My heliosphere was surrounded by a "boundary layer". If this terminology had been adopted, life would be a bit easier for present-day researchers because now they have to say which part of their heliosphere they are talking about. (c) 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, Fig. 14, p. 32. The boundary shell is predicted to form an extended tail in the antapex direction. And, (d) The boundary layer is unstable to the Rayleigh-Taylor instability, as suggested to me by Shandrasekhar.

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

There is probably too much diffusion for this to be true

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. Previously the peak had been said to be at 1 Hz.

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 down the tail "near the Earth" (10 to 30 R_E). Before observations finally showed that the x-line formed near the Earth (as predicted), it was thought to occur far out at the end of the Dungey tail.

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.

Refereed Journal Publications

Successful application of ionospheric physics to condensed-matter physics. Leonard Schiff had published a paper explained the results of a bad experiment. This paper contradicted Schiff's and was subsequently accepted

Schild, 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". Another of Freeman's students published his paper using this name a bit earlier; he was following my suggestion. This paper set the stage for what is now the accepted dynamics of the aurora.

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, but claimed that we were the ones who were wrong.

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.

Tom, if this is as bad as I remember, you have my sincere apology.

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 why we get explosive substorm merging in the near-Earth tail, but at neither the magnetopause nor 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. Arthur 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.

Insightful early paper, e.g., introduced centrifugal equator.

Refereed Journal Publications

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 needed 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.

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

Confirmation of earlier paper (as corrected by Few) on generation of infrasonic thunder.

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.

A statistical data artifact explained as real physics – the ultimate embarrassment.

Refereed Journal Publications

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.

First explanation of gross behavior of magnetospheric plasma and associated effects. Application of the 1959 South-Atlantic anomaly paper to Jupiter. Main problem was that we did not explain correctly why the electrons drifted to larger longitudes. It was the plasma slipping, which carried both electrons and ions, but Tom had not yet invented the Hill effect.

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.

Again Tom, my fault, very sorry.

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.

Nice paper, but no experimental verification.

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.

This is the paper where the nominal value "1 ton/sec" was introduced. I presented this work at the Rice MOP meeting (Tom mentioned it in his EOS meeting report). Shortly after I submitted this to *Icarus*, Siscoe and Eviatar wrote a draft and invited me to be first author. At first I agreed, but when they accepted few of my modifications, I suggested we publish separately and cross-reference each other. By accident, one of my best sentences stayed in their paper.

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.

Introduced magnetic dip equator. We showed the Ly-alpha bulge was associated with the dip equator. But I now think the bulge is better explained as a D. F. Martyn Fountain.

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.
Pulsar discs are now popular, but I think we published too early. Ask Curt for some heart-wrenching stories.

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.

Predictions are difficult. Again, sorry Tom.

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

I'm not yet ready to concede.

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.

Here is yet another example that if the experimenters will not give you credit, you cannot push them to do it.

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

My only "perfect theory". It cannot be checked for another 100 – 200 years. But if either one reverses soon, we were right! If not, I don't care.

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.

Refereed Journal Publications

It was either this one or the next Broadfoot et al. paper where my contribution was the partial torus. It will be a long, long time before this idea is tested.

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.

Introduction of System IV.

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.

Again, Nature telling me I should stay out of the prediction business. But it is so much fun.

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.

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