NAME: Dr. Reuven Ramaty

DATE OF BIRTH: February 25, 1937

PRESENT POSITION:

Senior Scientist, Laboratory For High Energy Astrophysics, Goddard Space Flight Center

RESEARCH AREAS:

High Energy Astrophysics, Gamma Ray Astronomy, Solar Physics,
Nuclear Astrophysics, Cosmic Rays

EDUCATION:

1961 - B.Sc. - Tel Aviv University
1966 - Ph.D. - University of California Los Angeles

PREVIOUS POSITIONS:

1958-1963 - Physics Teacher, Holtz Technical High School, Tel-Aviv, Israel
1964-1966 - Research Asst., University of California Los Angeles
1966-1967 - Asst. Res. Geophysicist, University of California Los Angeles
1967-1969 - NAS/NRC Post-Doctoral Res. Assoc., Goddard Space Flight Center
1969-1980 - Astrophysicist, Laboratory for High Energy Astrophysics, Goddard Space Flight Center
1980-1993 - Head, Theory Office, Laboratory for High Energy Astrophysics, Goddard Space Flight Center

OTHER POSITIONS:

Visiting Scientist, Stanford University 1972
Associate Editor, Physical Review Letters l974-l977
Lecturer in Astronomy, University of Pennsylvania l975
Vice Chair-Chair, Division of Cosmic Physics, American Physical Society, l976 - l978
Team Leader, Second Skylab Solar Flare Workshop, 1976-1978
Distinguished McDonnell Professor of Physics, Washington University, St. Louis, l978
Fairchild Distinguished Scientist, California Institute of Technology, 1979
Chair, Nominating Committee, Division of Cosmic Physics, American Physical Society, 1979-1980
Adjunct Professor of Physics, University of Maryland, 1983 -
Vice Chair-Chair, High Energy Astrophysics Division, American Astronomical Society, 1983-1985
Divisional Councilor (Astrophysics), American Physical Society, 1986-1989
University of Paris, PhD Dissertation Committee (P. Wallyn), 1992
Nagoya University, Japan, Visiting Professor (3 months), 1993
Chair, Nominating Committee, High Energy Astrophysics Division, American Astronomical Society, 1997

Pierre & Marie Curie University, Paris, PhD Dissertation Committee (E. Parizot), 1997

Space Science Laboratory, University of California Berkeley, Visiting Scientist, 1999

AWARDS:

Senior U.S. Scientist Award, Alexander von Humboldt Foundation, 1975
Lindsay Award, Goddard Space Flight Center, 1980
Exceptional Scientific Achievement Medal, NASA, 1981

MEMBERSHIP IN PROFESSIONAL SOCIETIES:

American Physical Society (Fellow)
American Astronomical Society
American Geophysical Union
International Astronomical Union

BOOKS EDITED:

High Energy Phenomena on the Sun, NASA SP-342, 1972
Gamma Ray Spectroscopy in Astrophysics, NASA TM-796l9, 1978
Tenth Texas Symposium on Relativistic Astrophysics, Ann. N. Y. Acad. Sci. Vol. 375, 1980
Positron-Electron Pairs in Astrophysics, AIP Conference Proceedings No. 101, 1983
Essays in Space Science, NASA CP 2464, 1987
High Energy Solar Physics, AIP Conference Proceedings 374, 1996
LiBeB, Cosmic Rays and Related X- and Gamma-Rays, Astron. Soc. Pacific, Conf. Ser. Vol. 171, 1999
High Energy Solar Physics – Anticipating HESSI, Astron. Soc. Pacific, Conf. Ser. Vol. 206, 2000

SCIENTIFIC ADVISORY:

NAS/NRC Post-Doctoral Research Associate Program. Research Associates and Senior Research Associates: Drs. D. Borner, J. Cohen, B. Kozlovsky, C. Ryter, B. Smith, A. Marscher, R. Weaver, D. Leiter, J. Weatherall, C. Dermer, M. Elitzur, J. Blondin, N. Guessoum, A. Dar, K. W. Chan, L. Ozernoy, J. P. Meyer, N. Mandzhavidze, X.-M. Hua, V. Tatischeff, S. Scully, G. Lenters

University of Maryland, Physics Department, PhD Dissertations:

H. T. Wang, Ph.D. l975, "Neutron Propagation and 2.2 MeV Gamma Ray Line Formation in the Solar Atmosphere"

T. Bai, Ph.D. 1977, "Studies on Solar Hard X-Rays and Gamma Rays: Compton Backscatter Anisotropy, Polarization and Evidence for Two Phases of Acceleration."

R. Bussard, Ph.D. 1978, "Topics in X-Ray and Gamma Ray Spectroscopy."

R. J. Murphy, Ph.D. 1985, "Gamma Rays and Neutrons from Solar Flares"

J. A. Miller, Ph. D. 1990, "Ion and Electron Acceleration and Transport, and Gamma Ray Production, in Solar Flares"

J. G. Skibo, PhD 1993, "Diffuse Galactic Positron Annihilation Radiation and the Underlying Continuum"

PROPOSALS:

Principal Investigator: Energetic Particle Acceleration, NASA's Solar Terrestrial Theory Program, 1980 - 1986

Principal Investigator: Theoretical High Energy Solar Physics, NASA, 1982 -

Principal Investigator: Particle Acceleration in Impulsive Flares, NASA, 1991 - 1994

Co-Principal Investigator: Acceleration of Positrons in Supernova Shocks and Other Primary Sources of Positrons, NASA, 1988 - 1991

Guest Investigator: Solar Maximum Mission 1978

Guest Investigator: Solar Maximum Mission 1988-1989

Guest Investigator: COMPTON Gamma Ray Observatory 1992-1998

Co-Investigator: Nuclear Astrophysics Explorer 1988-1989

Co-Investigator: Positron Electron Magnet Spectrometer, Earth Observing System, 1989 - 1991

Co-Investigator: Theoretical Gamma Ray Astrophysics, NASA, 1988-1994

Co-Investigator: Astrophysics Theory Program, NASA, 1994-

Co-Investigator: High Energy Solar Spectroscopic Imager, HESSI, NASA, 1997 -

Co-Guest Investigator: Rossi X-ray Timing Explorer, NASA, 1997

CONFERENCES ORGANIZED

High Energy Phenomena on the Sun, Goddard Space Flight Center, 1972

Gamma Ray Spectroscopy in Astrophysics, Goddard Space Flight Center, 1978

Tenth Texas Symposium On Relativistic Astrophysics, Baltimore, MD, l980

Positron-Electron Pairs in Astrophysics, Goddard Space Flight Center, 1983

F. B. McDonald 60th Birthday Symposium, Goddard Space Flight Center, 1985

High Energy Solar Physics, Goddard Space Flight Center, 1995

High Energy Solar Physics – Anticipating HESSI, College Park, MD, 1999

INVITED TALKS (since 1991)

"Solar Gamma Ray Astrophysics" AAS/Solar Physics Division, Huntsville, April 1991

"Particle Acceleration in Solar Flares" Gordon Conference, Plymouth, New Hampshire, August 1991

"Positron Annihilation in the Molecular Cloud Associated with 1E1740.7-2872" Aspen Astrophysics Winter Workshop, January 1992

"Diffuse Galactic Annihilation Radiation" Recent Advances in High Energy Astronomy, Toulouse, France, March 1992

"Galactic Annihilation Radiation" Ginzburg Symposium, National Institute of Standards and Technology, Gaithersburg, MD, May 1992

"High Energy Particles in Solar Flares" ESLAB Symposium Study of the Solar Terrestrial System, Killarney, Ireland, June 1992

"Mechanisms for Flare Particle Acceleration" COSPAR, Fundamental Problems in Solar Activity, Washington, DC, September 1992

"Implications of Diffuse < 1MeV Gamma Rays" 3rd Annual October Astrophysics Conference, Back to the Galaxy, College Park, October 1992

"Gamma Rays from Solar Flares" COMPTON/GRO Workshop, St Louis, October 1992

"Theoretical Models of High Energy Solar Emissions", IAU Colloquium 142, University of Maryland, January 1993

"511 keV Line in the Galaxy", INTEGRAL WORKSHOP, Les Diablerets, Switzerland, February 1993

"Theoretical Models of High Energy Solar Emissions", High Energy Physics of Solar Flares Workshop, Waterville Valley, NH, March 1993

"Particle Acceleration in Solar Flares", Second Gordon Research Conference on Solar MHD and Plasma Processes, August 1993

"Particle Acceleration in Solar Flares, Japanese Physical Society Meeting, Kochi, Shikoku, Japan, October 1993

"Gamma Rays from Accelerated Particle Interactions", NATO School on The Gamma Ray Sky after SIGMA and CGRO, Les Houches, France, January 1994

"Gamma Ray Line Astronomy" NATO School on the Gamma Ray Sky after SIGMA and CGRO, Les Houches, France, January 1994

"Gamma Ray Spectroscopy", Emission Lines in Astrophysics, Symposium in Honor of Seaton and Osterbrok, Space Telescope Science Institute, Baltimore, MD, May 1994

"High Energy Processes in Solar Flares", Symposium on Solar Physics, Nagoya University, Japan, June 1993

"Gamma Ray Line Astronomy", Symposium on Ultra High Energy Gamma Ray Astronomy, Waseda University, Japan, June 1994

"On the Origin of the 0.4 and 0.2 MeV Lines from Galactic Black Hole Candidates", CGRO-SIGMA Symposium, Marcel Grossman Relativity Conference, Stanford University, July, 1994

"Deexcitation Gamma Ray Line and Isotope Production", Workshop on the Evolution of Star-Forming Regions, Center for Astrophysics, October 1994

"Gamma Ray Line Emission from the Orion Complex", Gamma Ray Line Astrophysics Mini Symposium, 17th Texas Symposium on Relativistic Astrophysics, Munich, December 1994

"Gamma Ray Lines from the Orion Complex and the Interstellar Medium", Center for Astrophysics, January 1995

"Gamma Ray Lines from the Orion Complex and the Interstellar Medium", Saclay, France, April 1995

"Gamma Ray Lines from Interstellar Accelerated Particle Interactions", COMPTON Symposium, Munich, June 1995

"Low Energy Cosmic Ray Interactions in Astrophysics", The Sun and Beyond Conference, Ho Chi Minh City, Vietnam, October 1995

"Low Energy Cosmic Ray Interactions in Astrophysics", Caltech, December 1995

"Positron Astrophysics", University of Bonn, May 1996

"Gamma Ray Lines from Orion and the Origin of the Light Isotopes", Max Planck Institute fuer Radioastronomie, Bonn, May 1996

"High-Energy Solar Gamma Rays", Workshop on the Next Generation High Energy Gamma Ray Telescope, Goddard Space Flight Center, September 1996

"The Light Isotopes: Nucleosynthesis by Cosmic Rays", W. R. Webber Symposium on Cosmic Rays in the Heliosphere and Galaxy, University of New Hampshire, October 1996

"Light Elements and Cosmic Rays in the Early Galaxy", Astrophysics Seminar, UCSD, February 1997

"Light Elements and Cosmic Rays in the Early Galaxy", American Physical Society Spring Meeting, Washington DC, April 1997

"Galactic Nuclear Line Emission: Orion", Fourth Compton Symposium, Williamsburg, Virginia, April 1997

"Gamma Ray Lines from Solar Flares and the Orion Star Formation Region", Bartol Research Institute, May 1997

"What Can We Learn about Particle Acceleration by Observing Gamma Rays from Solar Flares", AGU, Baltimore, May 1997

"Low Energy Cosmic Ray Interactions in Astrophysics", Orsay, France, June 1997

"Cosmic Rays, Nuclear Gamma Rays and the Origin of Li, Be and B", Michigan State University, East Lansing, MI, October 1997

"Cosmic Rays, Nuclear Gamma Rays and the Origin of Li, Be and B", KFKI, Budapest, Hungary, May 1998

"Gamma Rays from Solar Flares", Space Science Lab, Berkeley, June 1998

"Evolution of Be and B and the Origin of Cosmic Rays", Nuclei in the Cosmos V, Volos, Greece, July 1998

"Nuclear Processes in Solar Flares", Energetic Processes on the Sun and in the Heliosphere, WE-Hereaus Seminar, Bad Honnef, Germany, October 1998

"LiBeB and the Origin of the Cosmic Rays", Workshop on LiBeB, Cosmic Rays and Gamma Rays, Paris, December, 1998

"Nucleosynthesis and Accelerated Particles", Mini-Symposium on Nucleosynthesis, Texas Symposium on Relativistic Astrophysics, Paris, December 1998

"LiBeB and the Origin of the Cosmic Rays", Stanford University, February 1999

"Gamma Rays from Solar Flares", IAU Symp. 195, Highly Energetic Physical Processes and Mechanisms for Emission from Astrophysical Plasmas, Bozeman, Montana, July 1999

"Nucleosynthesis by Accelerated Particles", Workshop on Astronomy with Radioactivities, Schloss Rindberg, Germany, September 1999

"High Energy Processes in Solar Flares", Cosmic Explosions, College Park, MD, October 1999

"Light Elements and the Origin of the Cosmic Rays", The Light Elements and their Evolution, IAU Symp 198, Natal, Brazil, November 1999

"Galactic LiBeB Origin and Evolution", Laboratory for Astrophysics and Solar Physics, Goddard Space Flight Center, April 2000

“Diffuse Galactic Gamma Ray Lines”, Advanced Compton Telescope Workshop”, NRL, May 2000

“Spallogenic Light Elements and Cosmic Ray Origin”, ISSI Bern, Switzerland, May 2000

PUBLICATIONS IN REFEREED JOURNALS AND BOOKS

1. 1966 ”Galactic Cosmic Ray Electrons”, R. Ramaty and R. E. Lingenfelter, JGR 71, 3687.
2. 1966 ”Cosmic Ray Electron Lifetimes in the Galactic Disk and Halo”, R. Ramaty and R. E. Lingenfelter, Phys., Rev. Letters 17, 522
3. 1967 ”The Influence of the Ionized Medium on Synchrotron Emission Spectra in the Solar Corona”, R. Ramaty and R. E. Lingenfelter, JGR 72, 879.
4. 1967 ”On the Origin of Solar Flare Microwave Bursts”, R. E. Lingenfelter and R. Ramaty, Planet. and Space Science 15, 1303.
5. 1968 ”Cosmic Ray Deuterium and Helium-3 Nuclei”, R. Ramaty and R. E. Lingenfelter, Can. J. Phys. 46, s627.
6. 1968 ”The Influence of the Ionized Medium on Synchrotron Emission on Intermediate Energy Electrons”, R. Ramaty, JGR 73, 3573.
7. 1968 ”Solar Modulation and the Galactic Intensity of Cosmic-Ray Positrons and Negatrons”, R. Ramaty and R. Lingenfelter, Phy. Rev. Letters 20, 120.
8. 1968 ”Determination of the Coronal Magnetic Field and the Radio Emitting Electron Energy from a Type IV Solar Radio Burst”, R. Ramaty and R. E. Lingenfelter, Solar Physics 5, 531.
9. 1969 ”Cosmic Ray Deuterium and Helium 3 of Secondary Origin and the Residual Modulation of Cosmic Rays”, R. Ramaty and R. E. Lingenfelter, Ap. J. 155, 587.
10. 1969 ”Microwave and Hard X Ray Bursts from Solar Flares”, S. Holt and R. Ramaty, Solar Physics 8, 119.
11. 1969 ”Physical Properties of the Radio Emitting Region in Sco X-1”, G. Riegler and R. Ramaty, Ap. Letters 4, 27.
12. 1969 ”Gyrosynchrotron Emission and Absorption in a Magnetoactive Plasma”, R. Ramaty, Ap. J. 158, 753.
13. 1969 ”On the Nature of the High Frequency Cutoffs of Type IV Solar Radio Bursts”, R. Ramaty, Astrophys. Lett., 4, 43.
14. 1969 ”Anomalous Temporal Behavior of NP 0532”, R. Ramaty and S. S. Holt, Nature 224, l003.
15. 1970 ”Low Energy Cosmic Ray Positrons and 0.51 MeV Gamma Rays from the Galaxy”, R. Ramaty, F. Stecker, and D. Misra, J. Geophys. Res. 75, 1141.
16. 1970 ”Pulsars and X-Ray Emitting Supernova Remnants”, S. Holt and R. Ramaty, Ap. Letters 5, 89.
17. 1970 ”Polarization Reversal of Solar Microwave Bursts”, R. Ramaty and S. S. Holt, Nature 226, 68.
18. 1970 ”Statistical Discrete Source Model of Local Cosmic Rays”, R. Ramaty, D. V. Reames and R. E. Lingenfelter, Phys. Rev. Letters 24, 9l3.

19. 1970 "Interstellar Cosmic Ray Spectra from the Nonthermal Radio Background from 0.4 to 400 MHz", M. L. Goldstein, R. Ramaty, and L. A. Fisk, Phys. Rev. Letters 24, 1193.
20. 1970 "Energy Loss of Cosmic Rays in the Interplanetary Medium" M. L. Goldstein, L. A. Fisk, and R. Ramaty, Phys. Rev. Letters 25, 832.
21. 1970 "Pulsar Distributions without Magnetic Decay", S. S. Holt and R. Ramaty, Nature 228, 351.
22. 1971 "X-Rays from Centaurus A and the Far Infrared Background Radiation", R. Ramaty, Science 171, 500.
23. 1971 "Compound Diffusion of Cosmic Rays", R. E. Lingenfelter, R. Ramaty, and L. A. Fisk, Ap. Letters 8, 93.
24. 1971 "Ionization and Heating of the Gum Nebula by Energetic Particles from the Vela X Supernova", R. Ramaty, E. A. Boldt, S. A. Colgate, and J. Silk, Ap. J. 169, 87.
25. 1971 "Origin of Cosmic Electrons from About 10^2 to 10^6 GeV", R. Ramaty and R. E. Lingenfelter, Phys. Rev. Letters 27, 1309.
26. 1972 "The Influence of the Ionized Medium on Synchrotron Emission in Interstellar Space", R. Ramaty, Ap. J. 179, 157.
27. 1972 "On Transition Radiation as a Source of Cosmic X Rays", R. Ramaty and R. D. Bleach, Astrophys. Letters 11, 35.
28. 1972 "On the Origin of 200 keV Interplanetary Electrons", R. Ramaty, T. L. Cline, and L. A. Fisk, Phys. Rev. (Letters) 29, l039.
29. 1973 "Transition Radiation in Astrophysics", G. B. Yodh, X. Artru, and R. Ramaty, Ap. J. 181, 725.
30. 1972 "Inner Bremmsstrahlung as a Source of X-Rays in the Steady State Universe", V. Petrosian and R. Ramaty, Ap. J. (Letters) 173, L83.
31. 1972 "Free Free Absorption of Gyrosynchrotron Radiation in Solar Microwave Bursts", R. Ramaty and V. Petrosian, Ap. J. 178, 241.
32. 1973 "Positron Annihilation Radiation from Neutron Stars", R. Ramaty, G. Borner, and J. M. Cohen, Ap. J. 181, 891.
33. 1973 "Cas A X-Ray Spectrum: Evidence for Iron Line Emission", P. J. Serlemitsos, E. A. Boldt, S. S. Holt, R. Ramaty, and A. F. Brisken, Ap. J. (Letters) 184, L1.
34. 1973 "Cosmic Electrons: Influence of Energy Dependent Escape from the Galaxy", R. F. Silverberg and R. Ramaty, Nature 243, 134.
35. 1973 "Consistency of Cosmic Ray Source Composition with Explosive Nucleosynthesis", B. Kozlovsky and R. Ramaty, Nature Phys. Sci. 243, 135.
36. 1973 "Cosmic Ray Sources: Evidence for Two Acceleration Mechanisms" R. Ramaty, V. K. Balasubrahmanyan, J. F. Ormes, Science 180, 731.
37. 1974 "Scorpius X-1: Origin of the Radio and Hard X-Ray Emissions", R. Ramaty, C. C. Cheng, and S. Tsuruta, Ap. J. 187, 61.
38. 1974 "Neutron Propagation and 2.2 MeV Gamma Ray Line Production in the Solar Atmosphere", H. T. Wang and R. Ramaty, Solar Physics 36, 129.

39. 1974 "An Interpretation of the Observed Oxygen and Nitrogen Enhancements in Low Energy Cosmic Rays", L. A. Fisk, B. Kozlovsky, and R. Ramaty, Ap. J. (Letters) 190, L35.
40. 1974 "^{2}H, ^{3}H, and ^{3}He Production in Solar Flares", R. Ramaty and B. Kozlovsky, Ap. J. 193, 729.
41. 1974 "478 keV and 431 keV Line Emissions from $\alpha - \alpha$ Reactions", B. Kozlovsky and R. Ramaty, Ap. J. (Letters) 191, L43.
42. 1974 "Cosmic Rays: Astronomy with Energetic Particles", P. Meyer, R. Ramaty, W. R. Webber, Physics Today 27, 23.
43. 1974 "Li Production in $\alpha - \alpha$ Reactions", B. Kozlovsky and R. Ramaty, Astronomy and Astrophysics, 34, 477.
44. 1974 "A Comment on Gamma Ray Lines from ^{4}He", B. Kozlovsky and R. Ramaty, Astronomy and Astrophysics 36, 307.
45. 1975 "Solar Gamma Rays", R. Ramaty, B. Kozlovsky and R. E. Lingenfelter, Space Science Reviews 18, 341.
46. 1975 "Time dependent 2.2 MeV and 0.5 MeV Lines from Solar Flares", H. T. Wang and R. Ramaty, Ap. J. 202, 532.
47. 1976 "Formation of the 0.511 MeV Line in Solar Flares" C. J. Crannell, G. Joyce, R.Ramaty and C. Werntz, Ap. J. 210, 582.
48. 1976 "Solar Gamma Ray Lines as Probes of Charged Particle Directionalities in Solar Flares", R. Ramaty and C. J. Crannell, Ap. J. 203, 766.
49. 1976 "Electrons in a Closed Galaxy Model for Cosmic Rays", R. Ramaty and N. J. Westergaard, Astrophysics and Space Science 46, 143.
50. 1976 "Gamma Ray and Microwave Evidence for Two Phases of Acceleration in Solar Flares" T. Bai and R. Ramaty, Solar Physics 49, 343.
51. 1977 "Gamma Ray Lines from Interstellar Grains", R. E. Lingenfelter and R. Ramaty, Ap. J. (Letters) 211, L19.
52. 1977 "Narrow Lines from Alpha-Alpha Reactions", B. Kozlovsky and R. Ramaty, Astrophys. Letters 19, 19.
53. 1977 "The Solar Gamma Ray Spectrum between 4 and 8 MeV", R. Ramaty, B. Kozlovsky and A. Suri, Ap. J. 214, 6l7.
54. 1977 "^{26}Al: A Galactic Source of Gamma Ray Line Emission", R. Ramaty and R. E. Lingenfelter, Ap. J. (Letters) 213, L5.
55. 1978 "Backscatter, Anisotropy and Polarization of Solar Hard X Rays", T. Bai and R. Ramaty, Ap. J. 219, 705.
56. 1978 "X-Ray and Gamma Ray Line Production of Nonthermal Ions", R. W. Bussard, K. Omidvar and R. Ramaty, Ap. J. 220, 353.
57. 1978 "Gamma Ray Lines: A New Window to the Universe", R. E. Lingenfelter and R. Ramaty, Physics Today 31, 40.
58. 1979 "The Annihilation of Galactic Positrons", R. W. Bussard, R. Ramaty and R. J. Drachman, Ap. J. 228, 928.
59. 1979 "Nuclear Gamma Rays from Energetic Particle Interactions", R. Ramaty, B. Kozlovsky, R. E. Lingenfelter, Ap. J. (Suppl.), 40, 487.

60. 1979 "Solar Gamma Rays above 8 MeV", C. J. Crannell, H. Crannell, R. Ramaty, Ap. J., 229, 762.
61. 1979 "Hard X-Ray Time Profiles and Acceleration Processes in Large Solar Flares", T. Bai and R. Ramaty, Ap. J., 227, l072.
62. 1979 "Gamma Ray Line Astronomy", R. Ramaty and R. E. Lingenfelter, Nature, 278, l27.
63. 1979 "Astrophysical Gamma Ray Spectroscopy", R. Ramaty, R. E. Lingenfelter and B. Kozlovsky, Comments on Astrophysics, 8, 99.
64. 1980 "Energetic Particles in Solar Flares", R. Ramaty, S. A. Colgate, G. A. Dulk, P. Hoyng, J. W. Knight, R. P. Lin, D. B. Melrose, C. Paizis, F. Orrall, P. R. Shapiro, D. F. Smith, M. Van Hollebeke, Chapter 4 in Solar Flares, ed. P. A. Sturrock, p. ll7.
65. 1980 "On the Origin of the March 5, l979 Gamma Ray Transient: A Vibrating Neutron Star in the Large Magellanic Cloud", R. Ramaty et al., Nature, 287, l22.
66. 1981 "Synchrotron Cooling and Annihilation of an e^+-e^- Plasma: The Radiation Mechanism for the March 5, 1979 Transient", R. Ramaty, R. E. Lingenfelter and R. W. Bussard, Astrophys. and Space Science, 75, l93.
67. 1981 "Interpretations and Implications of Gamma Ray Lines from Solar Flares, The Galactic Center and Gamma Ray Transients", R. Ramaty and R. E. Lingenfelter, Philosophysical Transactions of the Royal Society London A 301, 671.
68. 1981 "Annihilation Radiation from a Hot e^+-e^- Plasma", R. Ramaty and P. Meszaros, Astrophysical Journal, 250, 384.
69. 1982 "On the Theory of Gamma Ray Amplification Through Stimulated Annihilation Radiation (GRASAR)", R. Ramaty, J. M. McKinley, F. C. Jones, Astrophysical Journal, 256, 238.
70. 1982 "Gamma-Ray Astronomy" R. Ramaty and R. E. Lingenfelter, Ann. Rev. Nuclear and Particle Science, 32, 235.
71. 1983 "Advances in Gamma Ray Line Astronomy" R. Ramaty and R. E. Lingenfelter, Advances in Space Research, 3, 123.
72. 1983 "Gamma Ray Lines and Neutrons from Solar Flares" R. Ramaty, R. J. Murphy, B. Kozlovsky and R. E. Lingenfelter, Solar Physics 86, 395.
73. 1983 "Implications of High Energy Neutron Observations from Solar Flares" R. Ramaty, R. J. Murphy, B. Kozlovsky and R. E. Lingenfelter, Ap. J. (Letters), 273 L41.
74. 1983 "Gamma Ray Line Astronomy", R. Ramaty and R. E. Lingenfelter, Space Science Reviews, 36, 305.
75. 1984 "Nuclear Processes in the Jets of SS433", R. Ramaty, B. Kozlovsky, R. E. Lingenfelter, Ap. J. (Letters) 283, L13.
76. 1984 "Solar Flare Neutrons and Gamma Rays", R. J. Murphy and R. Ramaty, Advances in Space Research, 4, No. 7, 127.
77. 1985 "More of the Unseen" (book review), R. Ramaty, Nature, 315, 780.
78. 1985 "Shock Acceleration of Electrons and Ions in Solar Flares", D. C. Ellison and R. Ramaty, Astrophys. J. 298, 400.

79. 1986 "The Acceleration and Propagation of Solar Flare Energetic Particles" M. A. Forman, R. Ramaty and E. G. Zweibel, The Physics of the Sun, P. A. Sturrock (ed.), D.Reidel, p. 251.
80. 1986 "Particle Acceleration", L. Vlahos, M. E. Machado, R. Ramaty et al., Energetic Phenomena on the Sun, M. Kundu and B. Woodgate (eds.), NASA CP 2439, p. 24.
81. 1986 "Nuclear Processes in Solar Flares", R. Ramaty, The Physics of the Sun, P. A. Sturrock (ed.), D. Reidel, p. 293.
82. 1986 "Directionality of Bremsstrahlung from Relativistic Electrons in Solar Flares", C. D. Dermer and R. Ramaty, Astrophys. J. 301, 962
83. 1986 "Secondary Antiproton Production in Relativistic Plasmas", C. D. Dermer and R. Ramaty, Nature, 319, 205.
84. 1986 "Pion Decay Radiation and Two-Phase Acceleration in the June 3, 1982 Solar Flare", R. Ramaty, R. J. Murphy and C. D. Dermer, Advances in Space Research, 6, No. 6., 119.
85. 1986 "Cosmic Gamma Ray Lines", R. Ramaty and R. E. Lingenfelter, Adv. Space Res. 6, No. 4, 121.
86. 1987 "High Energy Processes in Solar Flares", R. J. Murphy, C. D. Dermer and R. Ramaty, Ap. J. (Suppl.) 63, 721.
87. 1987 "Positrons from Accelerated Particle Interactions", B. Kozlovsky, R. E. Lingenfelter and R. Ramaty, Ap. J. 316, 801, 1987.
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89. 1987 "Nuclear Process and Accelerated Particles in Solar Flares", R. Ramaty and R. J. Murphy, Space Science Reviews, 45, 213.
90. 1987 "Nuclear Processes and Accelerated Particles in Solar Flares", R. Ramaty, Solar Physics, 113, 203.
91. 1987 "Ion and Relativistic Electron Acceleration by Alfven and Whistler Turbulence in Solar Flares", J. A. Miller and R. Ramaty, Solar Physics, 113, 195.
92. 1988 "Gamma Ray, Neutron and Hard X-Ray Studies and Requirements for a High Energy Solar Physics Facility", R. Ramaty, B. R. Dennis and A. G. Emslie, Solar Physics, 118, 17.
93. 1988 "Gamma Ray Spectroscopic Tests for the Anisotropy of Accelerated Particles in Solar Flares", R. J. Murphy, B. Kozlovsky and R. Ramaty, Ap. J., 331, 1029.
94. 1988 "Solar Neon Abundances from Gamma-Ray Spectroscopy and ^{3}He-Rich Particle Events", D. V. Reames, R. Ramaty and T. T. von Rosenvinge, Ap. J. (Letters), 332, L87.
95. 1989 "Deexcitation Gamma Ray Line Emission from Solar Flare Magnetic Loops", X. M. Hua, R. Ramaty, and R. E. Lingenfelter, Ap. J., 341, 516.
96. 1989 "Relativistic Electron Transport and Bremsstrahlung Production in Solar Flares", J. A. Miller and R. Ramaty, Ap. J., 344, 973.
97. 1989 "The Nature of the Annihilation Radiation and Gamma Ray Continuum from the Galactic Center Region", R. E. Lingenfelter and R. Ramaty, Ap. J., 343, 686.

98. 1989 "Origin of the Annihilation Radiation from the Galactic Center Region", R. E. Lingenfelter and R. Ramaty (Invited Paper), Nuclear Physics B, (Proc. Suppl.), 10B, 67.
99. 1990 "Ion and Relativistic Electron Transport in Solar Flares" R. Ramaty, J. A. Miller, X. M. Hua, and R. E. Lingenfelter (Invited Paper) Ap. J. Suppl., 73, 199.
100. 1990 "^{7}Li and ^{7}Be Deexcitation Lines: Probes for Accelerated Particle Transport Models in Solar Flares" R. J. Murphy, X. M. Hua, B. Kozlovsky and R. Ramaty, Ap. J., 351, 299.
101. 1990 "Stochastic Fermi Acceleration in Solar Flares" J. A. Miller, N. Guessoum and R. Ramaty, Ap. J., 361, 701.
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