

# CURRICULUM VITAE

## Steven R. Spangler

**Business Address:** Department of Physics and Astronomy,  
University of Iowa, Iowa City, IA 52242

**Phone:** 319-335-1948

**Email:** steven-spangler@uiowa.edu

### Education and Professional History

- B.A. 1972, Physics, University of Iowa
- M.S. 1972, Astronomy, University of Iowa
- Ph.D. 1975, Physics, University of Iowa

### Professional and Academic Positions

- Professor, University of Iowa, 1988 - 2021
- Lecturer, Abdus Salam International Center for Theoretical Physics, Autumn College on Plasma Physics, Trieste, Italy, Oct. 8-12, 2001
- Visiting Scientist, Istituto di Radioastronomia, Bologna, Italy, Summer 1986, Fall 1990, Fall 1998
- Associate Professor, University of Iowa, 1984 - 1988
- Assistant Professor, University of Iowa, 1982 - 1984
- Associate Scientist, National Radio Astronomy Observatory, 1980 - 1982
- Visiting Assistant Professor, University of Iowa, 1980 - 1981
- Assistant Scientist, National Radio Astronomy Observatory, 1978 - 1980
- Postdoctoral Research Associate, National Radio Astronomy Observatory, 1976 - 1978
- Postdoctoral Research Associate, University of Iowa, 1975 - 1976
- Visiting Research Assistant, Arecibo Observatory, 1973 - 1975
- Research Assistant, University of Iowa, 1971 - 1975

### Honors and Awards

- Fellow of the American Physical Society
- American Geophysical Union, Editor's Citation for Excellence in Refereeing, Outstanding Service to the Authors and Readers of *Geophysical Research Letters*, 10 May 1999

### Memberships

- American Astronomical Society
- American Physical Society
- APS Division of Plasma Physics
- Cedar Amateur Astronomers

## Professional Referee or Consultant

- The Astrophysical Journal
- Geophysical Research Letters
- Journal of Geophysical Research
- Journal of Plasma Physics
- Physics of Plasmas
- Physics of Fluids
- Physical Review Letters
- Physical Review
- Astronomy and Astrophysics
- The Astronomical Journal
- Monthly Notices of the Royal Astronomical Society
- Proposal Reviewer, U.S. VLBI Network
- Proposal Reviewer and Review Panel Member, National Science Foundation, National Aeronautics and Space Administration, Smithsonian Institution, Scholarly Studies Program
- Proposal Referee, National Radio Astronomy Observatory
- Review Panel Member, “Gutachter”, Deutsche Forschungsgemeinschaft (2006, 2012)

## Students Supervised

JEAN JOSEPHINE POGGE, M.S., May 1984

“Magnetic Field Structure in Extended Extragalactic Radio Sources”

ALAN LEE FEY, M.S., December 1984

“22.2 GHz VLBI Observations of the Radio Source 0552+398 (DA 193)”

JAMES A. LECKBAND, M.S., May 1988

“On Evidence for Quasi-Parallel and Quasi-Perpendicular Acceleration in Supernova Remnants”

TAKAYUKI SAKURAI, M.S., August 1988

“Physical Characteristics of Lobes of Luminous Radio Galaxies”

ALAN LEE FEY, Ph.D., August 1989

“VLA and VLBI Angular Broadening Measurements: The Distribution of Interstellar Scattering at Low Galactic Latitudes”

JAMES A. LECKBAND, Ph.D., May 1992

“Magnetohydrodynamic Wave-Associated Plasma Density Fluctuations in the Earth's Foreshock Region”

TAKAYUKI SAKURAI, Ph.D., December 1993

“Radioastronomical Measurements of Plasma Characteristics of the Solar Corona and the Solar Wind”

ANTHONY H. MINTER, Ph.D., August 1995

“Studying Interstellar Plasma Turbulence through Precision Faraday Rotation Measurements of Extragalactic Radio Sources”

JENNIFER EMILIE WURSTER, M.S., May 1997

“Improvement of a 5 GHz Radio Telescope Receiver by Installation of a Dicke Switch”

SALVATORE MANCUSO, Ph.D., December 1999

“Faraday Rotation as a Probe of Coronal and Astrophysical Plasmas”

PETER S. KORTENKAMP, Ph.D., July 2005

“Near-Sun Solar Wind Turbulence Investigations Using Very Long Baseline Interferometry”

SARAH E. IVERSON, M.S., December 2005

“The Distribution of Absolute Magnitudes of Solar Type Stars”

CATHERINE A. WHITING, M.S., May 2010

“Considerations for Expanded Very Large Array Coronal Faraday Rotation Measurements”

ALLISON H. SAVAGE, M.S., May 2013

“Probing the Rosette Nebula Stellar Bubble with Faraday Rotation”

JASON E. KOOI, Ph.D., Ph.D., August 2016

“Very Large Array Faraday Rotation Studies of the Coronal Plasma”

ALLISON H. SAVAGE, Ph.D., May 2018

“A Study of Magnetic Fields in HII Regions Using Faraday Rotation”

## Scholarship

### Publications

1. S.R. SPANGLER  
The Effect of Photometric Errors on the Measured Width of the Main Sequence in Star Clusters  
*Research Notes of the American Astronomical Society* (non-refereed) **9**, 158 (3pp), 2025  
**Expanded Version:** arXiv:2506.14585
2. S.R. SPANGLER  
Broadening of the Main Sequence of a Star Cluster by Undetected Binaries  
*Research Notes of the American Astronomical Society* (non-refereed) **9**, 34 (3pp), 2025  
**Expanded Version:** arXiv:2501.17306
3. S.R. SPANGLER  
On the Measurement of Vorticity in Astrophysical Fluids  
*Research Notes of the American Astronomical Society* (non-refereed) **6**, 205 (3pp), 2022  
**Expanded Version:** arXiv:2209.06707
4. S.K. OCKER, J.M. CORDES, S. CHATTERJEE, D.A. GURNETT, W.S. KURTH, and S.R. SPANGLER  
Persistent Plasma Waves in Interstellar Space Detected by Voyager 1  
*Nature Astronomy* **5**, 761, 2021

5. S.R. SPANGLER  
A Method for a Pseudo-Local Measurement of the Galactic Magnetic Field  
*Research Notes of the American Astronomical Society* (non-refereed) **5**, 12 (3pp), 2021  
**Expanded Version:** arXiv:2101.01118
6. S.R. SPANGLER  
Comparison of Radioastronomical Estimates of the Coronal and Solar Wind Magnetic Field with Measurements from Parker Solar Probe  
*Research Notes of the American Astronomical Society* (non-refereed) **4**, 147 (4pp), 2020
7. S.R. SPANGLER  
Radio Propagation Studies of the Solar Wind in the Era of Parker Solar Probe  
*Research Notes of the American Astronomical Society* (non-refereed) **4**, 102 (4 pp), 2020
8. B.M. BERGERUD, S.R. SPANGLER, and K.M. BEAUCHAMP  
Realistic Models for Filling and Abundance Discrepancy Factors in Photoionized Nebulae  
*Monthly Notices of the Royal Astronomical Society* **492**, 1142-1153, 2020
9. A.H. COSTA and S.R. SPANGLER  
A Faraday Rotation Study of the Stellar Bubble and HII Region Associated with the W4 Complex  
*Astrophysical Journal* **865**, 65 (22pp), 2018
10. J.E. KOOL, P.D. FISCHER, J.J. BUFFO, and S.R. SPANGLER  
VLA Measurements of Faraday Rotation through Coronal Mass Ejections  
*Solar Physics* **292**, 56 (45pp), 2017
11. A. H. COSTA, S. R. SPANGLER, J. R. SINK, S. BROWN, and S. A. MAO  
Denser Sampling of the Rosette Nebula with Faraday Rotation Measurements: Improved Estimates of Magnetic Fields in HII Regions  
*Astrophysical Journal* **821**, 92 (17pp), 2016
12. G. LE CHAT, O. COHEN, J.C. KASPER, and S.R. SPANGLER  
Diagnostics of the Solar Corona from Comparison between Faraday Rotation Measurements and MHD Simulations  
*Astrophysical Journal* **789**, 163 (7pp), 2014
13. J.E. KOOL, P.D. FISCHER, J.J. BUFFO, and S.R. SPANGLER  
Measurements of Coronal Faraday Rotation and 4.6 Solar Radii  
*Astrophysical Journal* **784**, 68 (17pp), 2014
14. M. HAVERKORN and S.R. SPANGLER  
Plasma Diagnostics of the Interstellar Medium with Radio Astronomy  
*Space Science Reviews* **178**, 483-511, 2013
15. A.H. SAVAGE, S.R. SPANGLER, and P.D. FISCHER  
Probing the Rosette Nebula Stellar Bubble with Faraday Rotation  
*Astrophysical Journal* **765**, 42 (14pp), 2013

16. S. R. SPANGLER, A.H. SAVAGE, and S. REDFIELD  
Properties of Turbulence in the Very Local Interstellar Clouds  
*Astrophysical Journal* **742**, 30 (14pp), 2011
17. S. R. SPANGLER, A.H. SAVAGE, and S. REDFIELD  
Observational Tests of the Properties of Turbulence in the Very Local Interstellar Medium  
*Nonlinear Processes in Geophysics* **17**, 785-793, 2010
18. S. R. SPANGLER  
Joule Heating and Anomalous Resistivity in the Solar Corona  
*Nonlinear Processes in Geophysics* **16**, 443-452, 2009
19. S. R. SPANGLER  
Plasma Turbulence in the Local Bubble  
*Space Science Reviews* **143**, 277-290, 2009
20. C. A. WHITING, S. R. SPANGLER, L. D. INGLEBY, and L. M. HAFFNER  
Confirmation of a Faraday Rotation Measure Anomaly in Cygnus  
*Astrophys. J.* **694**, 1452-1463, 2009
21. S. R. SPANGLER  
A Technique for Measuring Electrical Currents in the Solar Corona  
*Astrophys. J.* **670**, 841-848, 2007
22. L. D. INGLEBY, S. R. SPANGLER, and C. A. WHITING  
Probing the Large Scale Plasma Structure of the Solar Corona with Faraday Rotation Measurements, *Astrophys. J* **668**, 520-532, 2007
23. S. R. SPANGLER  
The Strength and Structure of the Coronal Magnetic Field  
*Space Science Reviews* **121**, 189-200, 2005
24. L. G. SPITLER and S. R. SPANGLER  
Limits on Enhanced Radio Wave Scattering by Supernova Remnants  
*Astrophys. J.* **632**, 932, 2005
25. S. R. SPANGLER and L. G. SPITLER  
An Empirical Investigation of Compressibility in Magnetohydrodynamic Turbulence  
*Phys. Plasmas*, **11**, 1969, 2004
26. S. R. SPANGLER  
The Magnitude of Heating of the Diffuse Ionized Gas of the Interstellar Medium by Landau Damping of Turbulence  
*Astronomy & Astrophysics*, **407**, 563, 2003
27. S. R. SPANGLER  
Blending of Plasma and Neutral Gas in the Sun, the Heliosphere, and the Interstellar Medium  
*Phys. Plasmas*, **10**, 2169, 2003

28. S. R. SPANGLER  
The Fourth Workshop on Nonlinear Processes in Space Physics: Epilogue and Telesis  
*Nonlinear Processes in Geophysics*, **10**, 179, 2003
29. S. R. SPANGLER  
The Small Amplitude of Density Turbulence in the Inner Solar Wind  
*Nonlinear Processes in Geophysics*, **10**, 113, 2003
30. S. R. SPANGLER  
The Amplitude of Magnetohydrodynamic Turbulence in the Inner Solar Wind  
*Astrophys. J.* **576**, 997, 2002
31. S. R. SPANGLER, D. W. KAVARS, P. S. KORTENKAMP, M. BONDI, F. MANTOVANI  
AND W. ALEF  
Very Long Baseline Interferometer Measurements of Turbulence in the Inner Solar Wind,  
*Astronomy and Astrophysics*, **384**, 654-665, 2002
32. L. O'C. DRURY ... S. R. SPANGLER *et al.*  
Test of Galactic Cosmic Ray Source Models - Working Group Report  
*Space Science Reviews*, **99**, 329, 2001
33. S. R. SPANGLER  
Multi-Scale Plasma Turbulence in the Diffuse Interstellar Medium  
*Space Science Reviews*, **99**, 261, 2001
34. S. MANCUSO and S. R. SPANGLER  
Faraday Rotation and Models for the Plasma Structure of the Solar Corona  
*Astrophys. J.* **539**, 480, 2000
35. S. R. SPANGLER and S. MANCUSO  
Radioastronomical Constraints on Coronal Heating by High Frequency Alfvén Waves  
*Astrophys. J.* **530**, 491, 2000
36. S. MANCUSO and S. R. SPANGLER  
Coronal Faraday Rotation Observations: Measurements and Limits on Plasma  
Inhomogeneities  
*Astrophys. J.* **525**, 195, 1999
37. S. R. SPANGLER  
Two-Dimensional Magnetohydrodynamics and Interstellar Plasma Turbulence  
*Astrophys. J.* **522**, 879, 1999
38. S. R. SPANGLER and J. M. CORDES  
VLBI Measurements of Plasma Turbulence Associated with the Cygnus OB1 Association  
*Astrophys. J.* **505**, 766, 1998
39. S. R. SPANGLER  
Magnetohydrodynamic Turbulence and Enhanced Atomic Processes in Astrophysical  
Plasmas  
*Phys. Plasmas* **5**, 3006, 1998

40. A. BHATTACHARJEE, C. S. NG, and S. R. SPANGLER  
Weakly Compressible Magnetohydrodynamic Turbulence in the Solar Wind and the Interstellar Medium  
*Astrophys. J.* **494**, 409, 1998
41. A. H. MINTER and S. R. SPANGLER  
Heating of the Interstellar Diffuse Ionized Gas via the Dissipation of Turbulence  
*Astrophys. J.* **485**, 182--194, 1997
42. S. R. SPANGLER, J. A. LECKBAND, and I. H. CAIRNS  
Observations of the Parametric Decay Instability of Nonlinear Magnetohydrodynamic Waves  
*Phys. Plasmas* **4**, 846--855, 1997
43. R. R. GRALL, W. A. COLES, S. R. SPANGLER, T. SAKURAI, and J. K. HARMON  
Observations of Field-Aligned Density Microstructure Near the Sun  
*J. Geophys. Res.* **102**, 263--273, 1997
44. S. R. SPANGLER  
VLBI Observations of Turbulence in the Inner Solar Wind  
*Astrophys. Space Sci.* **243**, 65--75, 1996
45. A. H. MINTER and S. R. SPANGLER  
Observations of Turbulent Fluctuations in the Interstellar Plasma Density and Magnetic Field on Spatial Scales of 0.01 to 100 Parsecs  
*Astrophys. J.* **458**, 194--214, 1996
46. S. R. SPANGLER and T. SAKURAI  
Radio Interferometer Observations of Solar Wind Turbulence from the Orbit of Helios to the Solar Corona  
*Astrophys. J.* **445**, 999--1016, 1995
47. J. W. ARMSTRONG, B. J. RICKETT, and S. R. SPANGLER  
Electron Density Power Spectrum in the Local Interstellar Medium  
*Astrophys. J.* **443**, 209--221, 1995
48. G. GIOVANNINI, L. FERETTI, T. VENTURI, L. LARA, J. MARCAIDE, M. RIOJA, S. R. SPANGLER, and A. E. WEHRLE  
VLBI Observations of a Complete Sample of Radio Galaxies  
IV. The Radio Galaxies NGC2484, 3C109 and 3C382  
*Astrophys. J.* **435**, 116--127, 1994
49. T. SAKURAI and S. R. SPANGLER  
The Study of Coronal Plasma Structures and Fluctuations with Faraday Rotation Measurements  
*Astrophys. J.* **434**, 773-785, 1994
50. M. BONDI, L. PADRIELLI, L. GREGORINI, F. MANTOVANI, N. SHAPIROVSKAYA, and S. R. SPANGLER  
One-Year Modulation in the Flux Density Time Series of Low Frequency Variables  
*Astron. Astrophys.* **287**, 390--402, 1994

51. T. SAKURAI and S. R. SPANGLER  
Use of the Very Large Array for Measurement of Time Variable Faraday Rotation  
*Radio Sci.* **29**, 635--662, 1994
52. S. R. SPANGLER, W. A. EASTMAN, L. GREGORINI, F. MANTOVANI, and L. PADRIELLI  
Refractive Interstellar Scintillations and Low Frequency Variability: A Detailed Analysis Using Measured Source Structures  
*Astron. Astrophys.* **267**, 213--228, 1993 [Erratum: **286**, 349--350, 1994]
53. S. R. SPANGLER and B. B. PLAPP  
Characteristics of Obliquely Propagating Nonlinear Alfvén Waves  
*Phys. Fluids B* **4**, 3356, 1992
54. T. SAKURAI, S. R. SPANGLER, and J. W. ARMSTRONG  
VLBI Measurements of Plasma Turbulence in the Solar Wind  
*J. Geophys. Res.* **97**, 17,141, 1992
55. L. PADRIELLI, W. EASTMAN, L. GREGORINI, F. MANTOVANI, and S. SPANGLER  
VLBI Structures of Low Frequency Variable Sources at 608 MHz  
*Astron. Astrophys.* **249**, 351, 1991
56. J. M. CORDES, J. M. WEISBERG, D. A. FRAIL, S. R. SPANGLER, and M. RYAN  
The Galactic Distribution of Free Electrons  
*Nature* **354**, 121, 1991
57. S. R. SPANGLER  
The Dissipation of MHD Turbulence Responsible for Interstellar Scintillation and the Heating of the Interstellar Medium  
*Astrophys. J.* **376**, 540, 1991
58. A. L. FEY, S. R. SPANGLER, and J. M. CORDES  
VLA and VLBI Angular Broadening Measurements: The Distribution of Interstellar Scattering at Low Galactic Latitudes  
*Astrophys. J.* **372**, 132, 1991
59. S. R. SPANGLER and R. J. REYNOLDS  
A Comparison of H Alpha Intensity and Radio Wave Scattering on Eight Low-Latitude Lines of Sight  
*Astrophys. J.* **361**, 116, 1990
60. F. MANTOVANI, R. FANTI, L. GREGORINI, L. PADRIELLI, and S. SPANGLER  
Interstellar Medium Parameters Derived from Low Frequency Variability  
*Astron. Astrophys.* **223**, 535, 1990
61. T. J. LAZIO, S. R. SPANGLER, and J. M. CORDES  
Faraday Rotation Measure Variations in the Cygnus Region and the Spectrum of Interstellar Plasma Turbulence  
*Astrophys. J.* **363**, 515, 1990



62. S. R. SPANGLER and C. R. GWINN  
Evidence for an Inner Scale to the Density Turbulence in the Interstellar Medium  
*Astrophys. J. Lett.* **353**, L29, 1990
63. S. R. SPANGLER  
Kinetic Effects on Alfvén Wave Nonlinearity II: The Modified Nonlinear Wave Equation  
*Phys. Fluids B* **2**, 407--418, 1990
64. S. R. SPANGLER  
Kinetic Effects on Alfvén Wave Nonlinearity I: Ponderomotive Density Fluctuations  
*Phys. Fluids B* **1**, 1738--1746, 1989
65. J. A. LECKBAND, S. R. SPANGLER, and I. H. CAIRNS  
On Evidence for Quasi-Parallel and Quasi-Perpendicular Acceleration in Supernova Remnants  
*Astrophys. J.* **338**, 963--971, 1989
66. A. L. FEY, S. R. SPANGLER, and R. L. MUTEL  
VLBI Angular Broadening Measurements in the Cygnus Region  
*Astrophys. J.* **337**, 730--738, 1989
67. S. SPANGLER, R. FANTI, L. GREGORINI, and L. PADRIELLI  
The Role of Refractive Interstellar Scintillation in the Low Frequency Variability of Extragalactic Radio Sources  
*Astron. Astrophys.* **209**, 315--326, 1989
68. S. R. SPANGLER and J. M. CORDES  
Interstellar Scattering of the Radio Source 2013+370  
*Astrophys. J.* **332**, 346--353, 1988
69. STEVEN SPANGLER, STEPHEN FUSELIER, ALAN FEY, and GREGORY ANDERSON  
An Observational Study of MHD Wave-Induced Density Fluctuations Upstream of the Earth's Bow Shock  
*J. Geophys. Res.* **93**, 845--857, 1988
70. STEVEN R. SPANGLER, ALAN L. FEY, and JAMES M. CORDES  
VLA and Low-Frequency VLBI Observations of the Radio Source 0503+467: Austere Constraints on Interstellar Scattering in Two Media  
*Astrophys. J.* **322**, 909--916, 1987
71. S. MACHIDA, S. R. SPANGLER, and C. K. GOERTZ  
Simulation of the Amplitude-Modulated Circularly Polarized Alfvén Waves for Beta Less Than One  
*J. Geophys. Res.* **92**, 7413--7422, 1987
72. STEVEN R. SPANGLER  
Density Fluctuations Induced by Nonlinear Alfvén Waves  
*Phys. Fluids* **30**, 1104--1109, 1987

73. STEVEN R. SPANGLER  
Constraints on Extragalactic-Jet Characteristics from Lobe Observations  
*Can. J. Phys.* **64**, 378--380, 1986
74. STEVEN R. SPANGLER  
The Evolution of Nonlinear Alfvén Waves Subject to Growth and Damping  
*Phys. Fluids* **29**, 2535--2547, 1986
75. ALAN L. FEY, STEVEN R. SPANGLER, and STEVEN T. MYERS  
15 GHz VLA Observations of the Radio Galaxies 3C 166 and 3C 411  
*Astron. J.* **91**, 1279--1285, 1986
76. STEVEN R. SPANGLER, ROBERT L. MUTEL, JOHN M. BENSON,  
and JAMES M. CORDES  
Interstellar Scattering of Compact Radio Sources near Supernova Remnants  
*Astrophys. J.* **301**, 312--319, 1986
77. STEVEN R. SPANGLER  
Nonlinear Astrophysical Alfvén Waves: Onset and Outcome of the Modulational Instability  
*Astrophys. J.* **299**, 122--137, 1985
78. STEVEN R. SPANGLER and TAKAYUKI SAKURAI  
Limits on Thermal Plasma in the Lobes of the Radio Galaxies 3C 79 and 3C 379.1  
*Astrophys. J.* **297**, 84--89, 1985
79. ALAN L. FEY, STEVEN R. SPANGLER, ROBERT L. MUTEL, and JOHN M. BENSON  
VLBI Observations at 22.2 Gigahertz of the Radio Source 0552+398 (DA 193)  
*Astrophys. J.* **295**, 134--138, 1985
80. STEVEN T. MYERS and STEVEN R. SPANGLER  
Synchrotron Aging in the Lobes of Luminous Radio Galaxies  
*Astrophys. J.* **291**, 52--62, 1985
81. STEVEN R. SPANGLER, JAMES P. SHEERIN, and GERALD L. PAYNE  
A Numerical Study of Nonlinear Alfvén Waves and Solitons  
*Phys. Fluids* **28**, 104--109, 1985
82. STEVEN R. SPANGLER, STEVEN T. MYERS, and JEAN J. POGGE  
VLA Observations of Radio Galaxies with Extended Lobe Emission: 3C 79 and 3C 430  
*Astron. J.* **89**, 1478--1486, 1984
83. J. H. SIMONETTI, J. M. CORDES, and S. R. SPANGLER  
Small-Scale Variations in the Galactic Magnetic Field: The Rotation  
Measure Structure Function and Birefringence in Interstellar Scintillations  
*Astrophys. J.* **284**, 126--134, 1984
84. STEVEN R. SPANGLER and JEAN J. POGGE  
VLA Observations of the Distant Radio Galaxy 3C 411  
*Astron. J.* **89**, 342--349, 1984

85. STEVEN R. SPANGLER and JAMES P. SHEERIN  
Alfvén Wave Collapse and the Stability of a Relativistic Electron  
Beam in a Magnetized Astrophysical Plasma  
*Astrophys. J.* **272**, 273--278, 1983
86. STEVEN R. SPANGLER  
Determination of the Properties of Magnetic Turbulence in Radio Sources  
*Astrophys. J. Lett.* **271**, L49--L53, 1983
87. STEVEN R. SPANGLER, ROBERT L. MUTEL, and JOHN M. BENSON  
VLBI Observations of the Radio Sources 0552 + 398 and 1848 + 283:  
Measurements of the Departure from Equipartition  
*Astrophys. J.* **271**, 44--50, 1983
88. STEVEN R. SPANGLER  
The Transport of Polarized Synchrotron Radiation in a Turbulent Medium  
*Astrophys. J.* **261**, 310--320, 1982
89. L. J. RICKARD, DEBORAH A. CROCKER, P. F. BOWERS, and S. R. SPANGLER  
An Accurate Position for the 6-cm OH Masers in W3  
*Astron. J.* **87**, 1806--1809, 1982
90. STEVEN R. SPANGLER and ALAN H. BRIDLE  
Dual-Frequency VLA Observations of the Extended Radio Galaxy 3C 166  
*Astron. J.* **87**, 1270--1278, 1982
91. STEVEN R. SPANGLER and JAMES P. SHEERIN  
A Soliton Gas Model for Astrophysical Magnetized Plasma Turbulence  
*Astrophys. J.* **257**, 855--861, 1982
92. STEVEN R. SPANGLER and JAMES P. SHEERIN  
Properties of Alfvén Solitons in a Finite-Beta Plasma  
*J. Plasma Phys.* **27**, 193--198, 1982  
[Corrigendum: **32**, 347, 1985]
93. L. A. HIGGS, R. S. ROGER, T. L. LANDECKER, S. R. SPANGLER,  
J. M. CORDES, and J. M. DICKEY  
The Point Radio Source in the Supernova Remnant G 78.2+2.1  
*Astron. Astrophys.* **103**, 370--373, 1981
94. FRAZER N. OWEN, DAVID J. HELFAND, and STEVEN R. SPANGLER  
The Correlation of X-Ray Emission with Strong Millimeter Activity in Extragalactic Sources  
*Astrophys. J. Lett.* **250**, L55--L58, 1981
95. STEVEN R. SPANGLER, J. M. BENSON, JAMES M. CORDES,  
RODNEY B. HALL, THOMAS W. JONES, and KENNETH J. JOHNSTON  
Dual-Frequency VLBI Observations of Extragalactic Sources with Distinctive Radio Spectra  
*Astron. J.* **86**, 1155--1164, 1981

96. S. R. SPANGLER and C. K. GOERTZ  
The Effect of Turbulence on the  $K \parallel B$  Relativistic Beam Instability  
*Astrophys. J.* **247**, 1078--1088, 1981
97. STEVEN R. SPANGLER and WILLIAM D. COTTON  
Broadband Radio Observations of Low-Frequency Variable Sources  
*Astron. J.* **86**, 730--746, 1981
98. STEVEN R. SPANGLER and JOHN P. BASART  
A Model for Energetic Electron Transport in Extragalactic Radio Sources  
*Astrophys. J.* **243**, 1103--1114, 1981
99. DAVID B. COOK and S. R. SPANGLER  
The Production of Flat Radio Spectra by Superposition of Source Subcomponents  
*Astrophys. J.* **240**, 751--758, 1980
100. W. D. COTTON, J. J. WITTELS, I. I. SHAPIRO, J. MARCAIDE, F. N. OWEN,  
S. R. SPANGLER, A. RIUS, C. ANGULO, T. A. CLARK, and C. A. KNIGHT  
The Very Flat Radio Spectrum of 0735+178: A Cosmic Conspiracy?  
*Astrophys. J. Lett.* **238**, L123--L128, 1980
101. STEVEN R. SPANGLER and DAVID B. COOK  
VLA Observations of Steep-Spectrum, Variable Radio Sources  
*Astron. J.* **85**, 659--667, 1980
102. FRAZER N. OWEN, STEVEN R. SPANGLER, and WILLIAM D. COTTON  
Simultaneous Radio Spectra of Sources with Strong Millimeter Components  
*Astron. J.* **85**, 351--362, 1980
103. STEVEN R. SPANGLER  
Interpretation of Radio Spectra of Compact Extragalactic Sources  
*Astrophys. Lett.* **20**, 123--129, 1980
104. J. R. DICKEL and S. R. SPANGLER  
Measurements of the Radio Flux Density of Tycho's SNR Separated by a 15-Year Interval  
*Astron. Astrophys.* **79**, 243--244, 1979
105. STEVEN R. SPANGLER  
The Collimation of Double Radio Sources  
*Astron. J.* **84**, 1470--1477, 1979
106. STEVEN R. SPANGLER, JAMES M. CORDES, and KARIE A. MYERS  
Scintillating Confusion: Evaluation of a Technique for Measuring Compact  
Structure in Weak Radio Sources  
*Astron. J.* **84**, 1129--1137, 1979
107. STEVEN R. SPANGLER  
An Alternative to In Situ Acceleration Processes in Extragalactic Radio Sources  
*Astrophys. J. Lett.* **232**, L7--L10, 1979

108. WILLIAM D. COTTON and STEVEN R. SPANGLER  
Broad-Band Flux Density Variations of the Extragalactic Radio Source 1611+343  
*Astrophys. J. Lett.* **228**, L63--L66, 1978
109. STEVEN R. SPANGLER and KARIE A. MYERS  
Frequency Dependence of Compact Structure in Extended Extragalactic Radio Sources  
*Astron. J.* **83**, 547--559, 1978
110. STEVEN R. SPANGLER and KARIE A. MYERS  
Investigation of 410-MHz Fine Structure in Candidate Low-Frequency Variable Sources  
*Astron. J.* **83**, 147--152, 1978
111. STEVEN R. SPANGLER, FRAZER N. OWEN, and RUSSELL A. HULSE  
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*Astron. J.* **82**, 989--997, 1977
112. J. W. ARMSTRONG, STEVEN R. SPANGLER, and PHILIP E. HARDEE  
Search for Microarcsecond Structure in Low-Frequency Variable Radio Sources  
*Astron. J.* **82**, 785--790, 1977
113. F. N. OWEN and S. R. SPANGLER  
Observations with the VLA of the Radio Binary Star AR Lacertae  
*Astrophys. J. Lett.* **217**, L41--L43, 1977
114. J. T. KARPEN, C. J. CRANNELL, R. W. HOBBS, S. P. MARAN, T. J. MOFFETT, D. BARDAS, G. W. CLARK, D. R. HEARN, F. K. LI, T. H. MARKERT, J. E. McCLINTOCK, F. A. PRIMINI, J. A. RICHARDSON, S. CRISTALDI, M. RODONO, D. A. GALASSO, A. MAGUN, G. J. NELSON, O. B. SLEE, P. F. CHUGAINOV, YU. S. EFIMOV, N. M. SHAKHOVSKOY, M. R. VINER, V. R. VENUGOPAL, S. R. SPANGLER, M. R. KUNDU, and D. S. EVANS  
Coordinated X-Ray, Optical, and Radio Observations of YZ Canis Minoris  
*Astrophys. J.* **216**, 479--490, 1977
115. STANLEY D. SHAWHAN, MARK W. HODGES, and STEVEN R. SPANGLER  
The 1975.9 Jovian Decimetric Spectrum  
*J. Geophys. Res.* **82**, 1901--1905, 1977
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*Astron. J.* **82**, 169--175, 1977
117. JOHN D. FIX and STEVEN R. SPANGLER  
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*Astrophys. J.* **209**, 503--504, 1976
118. JOHN D. FIX and STEVEN R. SPANGLER  
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*Astrophys. J. Lett.* **205**, L163--L164, 1976

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*Astrophys. J.* **205**, 472--474, 1976
121. STEVEN R. SPANGLER and THOMAS J. MOFFETT  
Simultaneous Radio and Optical Observations of UV Ceti-Type Flare Stars  
*Astrophys. J.* **203**, 497--508, 1976
122. S. R. SPANGLER, J. M. RANKIN, and S. D. SHAWHAN  
Four-Stokes-Parameter Radio Frequency Polarimetry of a Flare from AD Leonis  
*Astrophys. J. Lett.* **194**, L43--L46, 1974
123. S. R. SPANGLER, S. D. SHAWHAN, and J. M. RANKIN  
Short Duration Radio Flares of UV Ceti Stars  
*Astrophys. J. Lett.* **190**, L129--L131, 1974
124. S. R. SPANGLER and S. D. SHAWHAN  
Short Duration Solar Microwave Bursts and Associated Soft X-Ray Emission  
*Sol. Phys.* **37**, 189--203, 1974
125. J. S. NEFF and S. R. SPANGLER  
A Lecture Demonstration Apparatus for Simulation of Eclipses and  
Light Variations of Eclipsing Binary Stars  
*Mercury* **1**, 10--12, 1972

### Invited Talks at Scientific Meetings

1. "Measurement of Vorticity in Interstellar Turbulence", presented at Meeting-in-a-Meeting *Astrophysical Turbulence*, during 244<sup>th</sup> meeting of the American Astronomical Society, Madison, Wisconsin, June 9-13, 2024.
2. "Stellar Bubbles: Scaled-Up Versions of the Heliosphere", presented at 13<sup>th</sup> Annual International Astrophysics Conference, *Voyager, IBEX, and the Interstellar Medium*, Myrtle Beach, South Carolina, March 10- 14, 2014.
3. "Faraday Rotation as a Probe of the Coronal Magnetic Field", presented at *Workshop on Coronal Magnetism – Connecting Models to Data and the Corona to the Earth*, Boulder, Colorado, May 21- 23, 2012.
4. "What Can We Know About Microscales in Interstellar Turbulence", presented at workshop of the International Space Science Institute (ISSI), *Microscales of Cosmic Plasmas*, Bern, Switzerland, April 16-20, 2012.

5. "Interstellar Turbulence", presented at international workshop, *Three Years of Observations with IBEX – What Did We Learn About the Outer Heliosphere*, Bad Honnef, Germany, March 28-31, 2012.
6. "Radio Remote Sensing of the Solar Corona and Solar Wind: Results and Future Prospects", presented at Tenth International Astrophysics Conference, "Physics of the Heliosphere: A 10 Year Retrospective", Maui, Hawaii, March 13-18, 2011.
7. "Ion-Neutral Collisions in the Interstellar Medium: Wave Damping and Elimination of Collisionless Processes", presented at conference "Partially Ionized Plasmas Throughout the Universe", Nashville, Tennessee, October 3-8, 2010.
8. "Observational Tests of the Properties of Turbulence in the Very Local Interstellar Medium" presented at the 8<sup>th</sup> International Workshop on Nonlinear Waves and Turbulence in Space Plasmas, La Jolla, California, March 1-5, 2010.
9. "Radio Remote Sensing of the Corona and the Solar Wind," presented at IAU Symposium 257, "Universal Heliophysical Processes," Ioannina, Greece, September 15 – 19, 2008
10. "Joule Heating and Anomalous Resistivity in the Solar Corona," presented at the 7<sup>th</sup> International Workshop on Nonlinear Waves and Turbulence in Space Plasmas, Beaulieu, France, April 21 – 25, 2008.
11. "Turbulence in the Local ISM and Local Bubble," at workshop "From the Heliosphere to the Local Bubble," International Space Science Institute, Bern, Switzerland, 15-19 October 2007
12. "The Big Power Law in the Sky: Existence and Significance of Large-Inertial Subrange Turbulence in the Ionized Interstellar Medium," in Topical Session on Turbulence in Diffuse Astrophysical Environments, 210<sup>th</sup> Meeting of the American Astronomical Society, Honolulu, Hawaii, May 27 - 31, 2007
13. "Radio Scattering Observations of Turbulence in the Solar Corona and Interstellar Medium," at the 6th Annual International Astrophysics Conference (organized by Institute of Geophysics and Planetary Physics), Honolulu, Hawaii, March 16 - 22, 2007
14. "Radioastronomical Remote Sensing of Turbulence and Current Sheets in the Solar Corona," Presented at Sixth International Workshop on Nonlinear Waves and Turbulence in Space Plasmas, Fukuoka, Japan, October 9 - 13, 2006.
15. "Observations of Density Fluctuations Near the Sun Using Radio Scintillations," SHINE (Solar, Heliospheric, and Interplanetary Environment) Workshop, Zermatt, Utah, July 31- August 4, 2006.
16. "Coronal Faraday Rotation: Diagnostics of Current Sheets and MHD Waves," presented at International Colloquium on Scintillation and Scattering in Radio Astronomy, Pushchino, Russia, June 19-23, 2006
17. "The Propagation Distances and Sources of Interstellar Turbulence," presented at a workshop on Small Scale Ionized and Neutral Structures in the Diffuse Ionized Medium, held at Socorro, New Mexico, May 21- 24, 2006

18. "Estimates of the Strength and Structure of the Coronal Magnetic Field," presented at the WISER Workshop on Computing in Space and Astrophysical Plasmas, Leuven Belgium, April 18-22, 2005
19. "Radio Astronomy and the Structure of the Interplanetary Medium," presented at the Fall Meeting of the AGU, San Francisco, Dec. 11, 2003
20. "Plasma Turbulence and Transport in the Galaxy," presented at 2002 U.S. Transport Task Force Meeting, Annapolis, Maryland, 3 - 6 April, 2002
21. "The Dissipation of Interstellar MHD Turbulence," presented at 43rd Annual Meeting of the Division of Plasma Physics of the American Physical Society, Long Beach, California, 29 October - 2 November, 2001
22. "The Small Amplitude of Density Turbulence in the Inner Solar Wind," presented at the 4<sup>th</sup> International Workshop on Nonlinear Waves and Chaos in Space Plasmas, Tromso, Norway, 17-22 June, 2001
23. "Observational Guidance on Wave-Driven Models for Solar Wind Acceleration and Heating," presented at UVCS Science Meeting, Bar Harbor, Maine, 25--28 September, 2000
24. "Observational Evidence for Supernova Remnant Foreshocks," presented at International Space Science Institute, Bern, Switzerland, 15-19 May, 2000
25. "VLBI Phase Scintillations Due to the Solar Wind," presented at National Radio Science Meeting, Boulder, Colorado, 4--8 January, 2000
26. "Turbulence in the Solar Wind and Interstellar Medium: Similarities and Dissimilarities," presented at the minisymposium on plasma turbulence, 41st annual meeting of APS Division of Plasma Physics, Seattle Washington, 15--19 October, 1999
27. "Turbulence in the Diffuse Interstellar Medium," presented at the conference on *The Astrophysics of Galactic Cosmic Rays*, Bern, Switzerland, 18--22 October, 1999
28. "What Radio Astronomers Can Tell Plasma Theorists," presented at *Plasma Turbulence and Energetic Particles in Astrophysics*, Cracow, Poland, September 5--11, 1999
29. "Radio Propagation Studies of Plasma Turbulence in the Interstellar Medium," presented at *International Workshop on Radio Methods for Studying Turbulence*, Urbana, Illinois, August 9--12, 1999
30. "Radio Wave Scintillations and Models of Interstellar Turbulence," 192<sup>nd</sup> meeting of the American Astronomical Society, San Diego, California, June 7--11, 1998
31. "Small-Scale Structure and Turbulence in the Interstellar Medium," presented at the Second Guillermo Haro Conference on Interstellar Turbulence, Puebla, Mexico, January 12--16, 1998
32. "The Parametric Decay Instability: A Detection and Several Nondetections," presented at International Workshop on Nonlinear Waves and Turbulence in Space Plasmas, Koln, Germany, February 12--15, 1997



33. Three invited lectures at workshop “Vortex and Flux Tubes: Observations, Stability, and Topology,” Nice, France, May 19--25, 1996
34. “VLBI Observations of Turbulence in the Inner Solar Wind,” presented at IAU Colloquium 154, *Solar and Interplanetary Transients*, Pune, India, January 23--27 1995
35. “Nonlinear Evolution of Solar Wind MHD Waves: Opinions on the Confrontation Between Theory, Simulations, and Measurements,” presented at the *International Workshop on Nonlinear Waves and Chaos in Space Plasmas*, Kyoto, Japan, June 13--16 1994
36. “Magnetohydrodynamic Waves from the Orbit of Helios to the Solar Corona,” presented at *Research Trends in Plasma Astrophysics*, LaJolla, California, 8--10 November 1993
37. “Plasma Turbulence in Galactic Halos,” presented at Workshop on *The Interstellar Medium in Galactic Halos: Current Views*, Space Telescope Institute, Baltimore, Maryland, 11--13 August 1993
38. “The Detection of Coronal Alfvén Waves Via Rotation Measure Fluctuations,” presented at URSI national meeting, Boulder, Colorado, 7--11 January 1992
39. “Radio Propagation Experiments and Remote Measurement of Inter-planetary Plasma Turbulence,” presented at the First SOLTIP Symposium, Castle Liblice, Czechoslovakia, 30 September - 5 October 1991
40. “The Evolution of Large-Amplitude MHD Waves Near Quasi-Parallel Shocks in the Solar Wind,” presented at meeting on *Solar Wind*, Goslar, Germany, 16--20 September 1991
41. “Interstellar Plasma Turbulence: Observations and Theory,” presented at the General Assembly of the International Astronomical Union, 26 July - 1 August 1991
42. “VLBI and the Detection of Interstellar Magnetohydrodynamic Waves,” presented at meeting on *Propagation Effects in Space VLBI*, Leningrad, U.S.S.R., 28--30 May 1990
43. “Low Frequency Angular Broadening and Diffuse Interstellar Plasma Turbulence,” presented at Workshop on *Low Frequency Astrophysics from Space*, Crystal City, Virginia 8--9 January 1990
44. “Observations of Diffractive Interstellar Scintillation Phenomena,” presented at meeting on *Radio Wave Scattering in the Interstellar Medium*, San Diego, California, 18--19 January 1988
45. “Nonlinear Wave Development and the Wave-Packet Interaction,” presented at Los Alamos Space/Astrophysics Workshop, Taos, New Mexico, 28 July - 1 August, 1985
46. “Constraints on Galactic Jet Characteristics from Lobe Observations,” presented at meeting on *Jets from Stars and Galaxies*, Toronto, Canada, 24--27 June, 1985

### **Contributions to Proceedings of Scientific Meetings and Similar Documents**

1. S. R. SPANGLER, A. H. SAVAGE, and S. REDFIELD  
Ion-Neutral Collisions in the Interstellar Medium: Wave Damping and Elimination of

- Collisionless Processes, in “Partially Ionized Plasmas Throughout the Cosmos”, American Institute of Physics Conference Proceedings Volume 1366, V. Florinski, J. Heerikhuisen, G. Zank, D. Gallagher, ed., pp 97-106, 2011
2. S. SPANGLER, M. HAVERKORN, T. INTRATOR, R. KULSRUD, A. LAZARIAN, S. REDFIELD, and E. ZWEIBEL, “ Plasma Physics Processes of the Interstellar Medium”, white paper submitted to the ASTRO2010 Decadal Survey (astro-ph:0902.4181), 2009
  3. S. R. SPANGLER and CATHERINE A. WHITING  
Radio Remote Sensing of the Corona and the Solar Wind  
in *Proceedings of IAU 257, Universal Heliophysical Processes*,  
N. Gopalswamy and D. Webb, ed., Cambridge University Press, pp 529-541, 2009
  4. S. R. SPANGLER  
Radiowave Scattering Observations of Turbulence in the Solar Wind and the Interstellar Medium,  
in *AIP Conference Proceedings*, Vol. 932, proceedings of 6th International Astrophysics Conference, D. Shaik and G. P. Zank, ed., p. 85, 2007
  5. S. R. SPANGLER and E. VAZQUEZ-SEMADINI  
Small Ionized and Neutral Structures: A Theoretical Review, in “SINS - Small Ionized and Neutral Structures in the Diffuse Interstellar Medium,” *Astronomical Society of the Pacific Conference Proceedings*, Vol. 365, M. Haverkorn and W. M. Goss, ed., p. 347, 2007
  6. S. R. SPANGLER  
The Propagation Distance and Sources of Interstellar Turbulence, in “SINS - Small Ionized and Neutral Structures in the Diffuse Interstellar Medium,” *Astronomical Society of the Pacific Conference Proceedings*, Vol. 365, M. Haverkorn and W. M. Goss, ed., p. 307, 2007
  7. P. S. KORTENKAMP, S. R. SPANGLER and R. L. MUTEL  
Probing the Solar Corona Using the VLBA  
in *Future Directions in High Resolution Astronomy: the 10th Anniversary of the VLBA*,  
Astronomical Society of the Pacific Conference Series, Vol. 340, edited by J. D. Romney and M. S. Reid, p. 440, 2005
  8. S. R. SPANGLER  
Conference Summary: Theoretical Issues  
in *Plasma Turbulence and Energetic Particles in Astrophysics*,  
edited by R. Schlickeiser and M. Ostrowski  
[Jagellonian University Press, Cracow], pp. 388-390, 1999
  9. S. R. SPANGLER  
Interstellar Turbulence: What Radio Astronomers Can Tell Plasma Theorists,  
in *Plasma Turbulence and Energetic Particles in Astrophysics*,  
edited by R. Schlickeiser and M. Ostrowski  
[Jagellonian University Press, Cracow], pp. 1—4, 1999
  10. S. R. SPANGLER  
Small-Scale Structure and Turbulence in the Interstellar Medium  
in *Interstellar Turbulence*, edited by J. Franco and A. Carraminana  
[Oxford: Cambridge University Press], p. 41, 1998

11. S. R. SPANGLER  
Nonlinear Evolution of MHD Waves at the Earth's Bow Shock: Opinions on the Confrontation Between Theory, Simulations, and Measurements  
in *Nonlinear Waves and Chaos in Space Plasmas*, edited by T. Hada and K. Matsumoto  
Tokyo: Terra Scientific Publ. Co., 1997, pp. 171--224
12. S. R. SPANGLER, T. SAKURAI, W. A. COLES, R. R. GRALL, and J. K. HARMON  
Radio Observations of Turbulence in the Inner Solar Wind  
*Solar Wind Eight*, Conference Proceedings 382  
[New York: American Institute of Physics, 1996, p. 265]
13. S. R. SPANGLER and J. M. CORDES  
The Turbulence Environment of Stellar Superbubbles and the Implications for Fermi Acceleration  
Proceedings of *XXIV Cosmic Ray Conference*, 1995
14. S. R. SPANGLER and T. SAKURAI  
A Radioastronomical Technique for Measuring Spatial and Temporal Variations of Coronal Alfvén Waves  
*Spatio-Temporal Analysis for Resolving Plasma Turbulence (START)*  
ESA Conference, ESA WPP-047, 1993, p. 153
15. S. R. SPANGLER  
VLBI and the Detection of Interstellar Magnetohydrodynamic Waves  
in *Propagation Effects in Space VLBI*, edited by Leonid Gurvits,  
Distributed by National Astronomy and Ionosphere Center, 1993, p. 57
16. J. A. LECKBAND and S. R. SPANGLER  
Plasma Density Fluctuations as Indicators of Wave Processes in Solar Wind MHD Waves  
*Solar Wind 7*, edited by E. Marsch and R. Schwenn, [Oxford: Pergamon, 1992], p. 473
17. S. R. SPANGLER  
The Evolution of Large-Amplitude MHD Waves near Quasi-Parallel Shocks in the Solar Wind  
*Solar Wind 7*, edited by E. Marsch and R. Schwenn, [Oxford: Pergamon, 1992], p. 539
18. S. R. SPANGLER  
Radio Propagation Experiments and Remote Measurement of Interplanetary Plasma Turbulence  
*Proceedings of the First SOLTIP Symposium*, Vol. 1, edited by S. Fischer and M. Vandas  
[Prague: Czechoslovakia Academy of Sciences, 1992], p. 228
19. S. R. SPANGLER and J. W. ARMSTRONG  
Low Frequency Angular Broadening and Diffuse Interstellar Plasma Turbulence  
in *Low Frequency Astrophysics from Space*, edited by W. E. Kassim and K. W. Weiler,  
Lecture Notes in Physics, Vol. 362 [Berlin: Springer-Verlag, 1990]
20. S. R. SPANGLER, J. A. LECKBAND, and I. H. CAIRNS  
Are Supernova Remnants Quasi-Parallel and Quasi-Perpendicular Accelerators?  
*Proceedings of the Joint Varenna-Abastumani International School & Workshop on Plasma Astrophysics*, Varenna, Italy, 24 Aug. - 3 Sept. 1988  
[ESA SP-285, Vol. I, Dec. 1988], pp. 251—254

21. S. R. SPANGLER  
Shock-Associated Plasma Density Fluctuations in the Interstellar Medium,  
*Proceedings of the Joint Varenna-Abastumani International School & Workshop on Plasma Astrophysics*, Varenna, Italy, 24 Aug. - 3 Sept. 1988  
[ESA SP-285, Vol. I, Dec. 1988], pp. 153—155
22. A. L. FEY, S. R. SPANGLER, and R. L. MUTEL  
VLBI Angular Broadening Measurements in the Cygnus Region  
in *Radio Wave Scattering in the Interstellar Medium*,  
edited by J. M. Cordes, B. J. Rickett, and D. C. Backer  
[New York: American Institute of Physics, 1988], p. 190
23. J. M. CORDES, S. R. SPANGLER, J. M. WEISBERG, and T. R. CLIFTON  
Galactic Distribution of Electron Density Turbulence  
in *Radio Wave Scattering in the Interstellar Medium*,  
edited by J. M. Cordes, B. J. Rickett, and D. C. Backer  
[New York: American Institute of Physics, 1988], p. 180
24. S. R. SPANGLER and J. M. CORDES  
Angular Broadening Measurements of the Sources 1849+005 and 2013+370  
in *Radio Wave Scattering in the Interstellar Medium*,  
edited by J. M. Cordes, B. J. Rickett, and D. C. Backer  
[New York: American Institute of Physics, 1988], p. 117
25. S. R. SPANGLER  
Shock-Associated MHD Waves: A Model for Interstellar Density Fluctuations  
in *Radio Wave Scattering in the Interstellar Medium*,  
edited by J. M. Cordes, B. J. Rickett, and D. C. Backer  
[New York: American Institute of Physics, 1988], p. 66
26. S. R. SPANGLER  
Observations of Diffractive Interstellar Scintillation Phenomena  
in *Radio Wave Scattering in the Interstellar Medium*,  
edited by J. M. Cordes, B. J. Rickett, and D. C. Backer  
[New York: American Institute of Physics, 1988], p. 32
27. S. SPANGLER, A. FEY, and R. MUTEL  
Measurements of Interstellar Scattering in the Cygnus Region  
*The Impact of VLBI on Astrophysics and Geophysics*  
Proceedings of IAU Symposium No. 129, edited by J. Moran and  
M. Reid [Dordrecht: D. Reidel Publishing Company, 1988], p. 303
28. L. PADRIELLI, R. FANTI, A. FICARRA, L. GREGORINI, F. MANTOVAI,  
and S. SPANGLER  
The Low Frequency Variability of Extragalactic Radio Sources:  
A Relativistic Effect or Galactic Scintillation?  
*The Impact of VLBI on Astrophysics and Geophysics*  
Proceedings of IAU Symposium No. 129, edited by J. Moran and  
M. Reid [Dordrecht: D. Reidel Publishing Company, 1988], p. 297

29. S. R. SPANGLER  
A Radioastronomical Probe of Upstream Turbulence near Supernova Remnants  
*Collisionless Shocks* [Central Research Institute for Physics,  
Hungarian Academy of Physics, 1987], p. 221
30. S. R. SPANGLER  
Nonlinear Properties of MHD Waves in the Earth's Foreshock  
*Collisionless Shocks* [Central Research Institute for Physics,  
Hungarian Academy of Physics, 1987], p. 206
31. R. FANTI, L. GREGORINI, L. PADRIELLI, and S. SPANGLER  
The Low Frequency Variability of Extragalactic Radio Sources:  
A Relativistic Effect or Galactic Scintillation?  
*Superluminal Radio Sources*, edited by J. Anton Zensus and T. Pearson  
[Cambridge University Press, 1987], p. 200
32. STEVEN R. SPANGLER and JAMES P. SHEERIN  
Nonlinear Effects and the Limitation of Electron Streaming Instabilities in Astrophysics  
*Unstable Current Systems and Plasma Instabilities in Astrophysics*,  
IAU Symposium No. 107, edited by Mukul R. Kundu and Gordon D.  
Holman [Dordrecht: D. Reidel Publishing Company, 1985], pp. 355--359
33. S. R. SPANGLER  
Nonlinear Evolution of Astrophysical Alfvén Waves  
*Proceedings of a Course & Workshop on Plasma Astrophysics*  
Varenna, Italy, 28 August - 7 September 1984  
[European Space Agency SP-207, 1984], pp. 197--200
34. STEVEN R. SPANGLER  
Spectral Shapes of Compact Extragalactic Radio Sources  
*Extragalactic Radio Sources*, edited by D. S. Heeschen  
and C. M. Wade [Dordrecht: D. Reidel, 1982]

#### **Published Technical Reports**

1. S.R. SPANGLER, B.M. BERGERUD, and K.M. BEAUCHAMP  
Analytic Estimates of the Effect of Plasma Density Fluctuations on HII Density Diagnostics  
arXiv: 1910.08466, 2019
2. C.A. WHITING and S.R. SPANGLER  
EVLA Measurements Close to the Sun: Elevated System Temperatures  
EVLA Memorandum No. 136, 2009
3. S. R. SPANGLER  
Correction of VLA K-Band Amplitudes for Atmospheric Attenuation  
VLA Scientific Memorandum No. 143, 1982
4. S. R. SPANGLER  
Design Considerations for the 327 MHz Feed: The Effect of  
Beam Ellipticity on Dynamic Range  
VLA Scientific Memorandum No. 142, 1982

5. S. R. SPANGLER and K. P. SOWINSKI  
An Improved Version of the On-Line Data Checking Algorithm CHKDEF  
VLA Computer Memorandum No. 155, 1980
6. J. M. RANKIN, D. B. CAMPBELL, and S. R. SPANGLER  
430 MHz Radio Astronomical Polarimetry at Arecibo Observatory  
National Astronomy and Ionosphere Report 46, 1975

## **Service Record for Steven R. Spangler**

### ***Departmental Service***

- Member, Departmental Colloquium Committee, 2016-2017
- Department Colloquium Chair, 2014
- Member, Departmental Student Recruitment Committee, 2012-2014
- Chair, Promotion and Tenure Committee for Assistant Professor Gregory Howes, 2012
- Member, Departmental Executive Committee, 2007-2009
- Chair, Departmental Student Recruitment Committee, 2005-2007
- Chair, Promotion and Tenure Committee for Assistant Professor Benjamin Chandran
- Member, Space Astronomy faculty search committee, 2003-2004, 2006-2007, 2007-2008
- Member of EO committee, 2002-2004
- Astronomy Coordinator, 1999-2021
- Departmental representative, Hawkeye Visiting Days, inception-present
- Departmental representative, Freshman summer orientation, circa 1993-2009
- Member, astronomy faculty member search committee, 1990, 1997, 1999, 2002, (Chair, 1997)
- Astronomy Coordinator, 1992-1998
- Member, plasma physics faculty search committee, 1993, 2008, 2012
- Chair, EO committee, circa 1989
- Colloquium chair, 1986-87, fall 2009

### ***Collegiate Service***

- Organizer and speaker, University of Iowa program to observe the *International Year of Astronomy* with a series of public lectures, 2009
- Member of P&T and graduate student committees, Department of Geosciences, 2003-present
- Member of CLAS scholarship committee, 2000-2003 (Chair, AY 2002-3)
- Member of GER accreditation committee, Historical Perspectives, circa 1993.
- Member, Liberal Arts Faculty Assembly, circa 1995-97.
- Member and Chair, internal review committee for Department of Statistics and Actuarial Science, 1989

### ***University Service***

- Speaker at “Sonia Kovalesky Day” (program to interest high school girls in science, engineering, and mathematics), April 5, 2014
- Participated in Departmental and University exhibit at Iowa State Fair, August 2005
- Member, Regents’ Task Force on Scholarly Communication, 2000-2002
- Member, search committee for University head librarian, 1999-2000

### *Professional Service*

- Member of Fellowship Committee, Division of Plasma Physics of American Physical Society, 2014.
- Member of Scientific Organizing Committee, International Astronomical Union Focus Meeting “Scale Free Processes in Astrophysics”. Meeting held in 2015.
- Lecturer in “Distinguished Lecturer Program”, Division of Plasma Physics of American Physical Society, 2012-2014
- Member of Program Committee, 53<sup>rd</sup> Annual Meeting of Division of Plasma Physics, American Physical Society
- Member of advisory council for Basic and Applied Plasma Science Facility, University of California at Los Angeles, 2008 – present
- Member of Program Committee, 2009 April Meeting of the American Physical Society
- Panel Member, National Science Foundation, Division of Atmospheric Sciences, proposal review committee, Fall 2008
- Member of Program Committee, 8<sup>th</sup> International Workshop on Nonlinear Waves and Turbulence, 2010
- Member of Program Committee, 2008 April Meeting of American Physical Society
- Chair, Topical Group on Plasma Astrophysics of the American Physical Society, 2007-2008
- Member of Program Committee, 6<sup>th</sup> International Workshop on Nonlinear Waves and Turbulence, Fukuoka, Japan, October 10-13, 2006
- Co-convenor and organizer, Topical Session on Plasma Astrophysics, May 2004 meeting of the American Astronomical Society, Denver, Colorado
- Secretary-Treasurer, Topical Group on Plasma Astrophysics of the American Physical Society, 1999-2005
- Observing proposal referee, National Radio Astronomy Observatory, 2000-2003
- Referee for numerous scientific journals in physics and astronomy, such as The Astrophysical Journal, Astronomy and Astrophysics, The Physics of Plasmas, Journal of Geophysical Research, Physical Review, etc, 1974-present.
- Proposal evaluation committee member, NASA and the National Science Foundation, 1986-2000.

- American Geophysical Union, Editor's Citation for Excellence in Refereeing, 1999
- Convenor and organizer, minisymposium on the interaction of ionized and neutral gases in astrophysics, Division of Plasma Physics Meeting, Orlando Florida, November 2002.
- Member, astrophysics organizing committee, International Conference on Plasma Physics, Sydney, Australia, July 2002.
- Member, organizing committee, session on the Local Interstellar Medium, COSPAR meeting, Houston, Texas, October 2002.
- Member of evaluation committee, Smithsonian Institution Scholarly Studies Program, 1989-1996.

### *Community Service*

- Guest Speaker at Iowa Star Party, Coon Rapids, Iowa, August, 2023
- Guest Speaker at Iowa Star Party, Coon Rapids, Iowa, August 25-29, 2022: "New Views of the Interstellar Medium"
- Speaker at Noon Lion's Club of Cedar Rapids, November 6, 2014: "Our Sun: A Star in the Solar System"
- Speaker at Iowa Academy of Sciences 7<sup>th</sup> Annual Speaker Series at Saylorville Lake Visitor Center, July 19, 2014: "Our Sun: A Star in the Solar System"
- Organized and led public viewing event for Transit of Venus, Van Allen Hall, June 2012
- Member of Board of Directors, "The Eastern Iowa Observatory and Learning Center" project, organized by Cedar Amateur Astronomers
- Speaker at Popular Astronomy Club, Quad Cities, November 2003, November 2004
- Speaker at Cedar Amateur Astronomers, 1990-present