

## Curriculum Vita

### Giles Novak

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#### Education:

Massachusetts Institute of Technology	B.S. (physics)	June 1981
University of Chicago	Ph.D. (physics)	Aug. 1988

#### Awards and Honors:

Gregor Wentzel Award "for excellence as a graduate student tutor"	Dept. of Physics, Univ. of Chicago	1982
William Rainey Harper Fellowship	University of Chicago	1986
Faculty Early Career Development (CAREER) Award	National Science Foundation	1997
Honored as "Outstanding Professor at Northwestern University"	Delta Zeta sorority, Northwestern Univ.	1997
Weinberg College Award for Excellence in Mentoring Undergraduate Research	Northwestern Univ.	2012
Faculty and Administrator Honor Roll	Assoc. Student Govt., Northwestern Univ.	2013, & 2015

#### Professional Affiliations and Service:

Member	American Astronomical Society	1988 – present
Member	American Physical Society	2015 – present
Member	Kuiper Airborne Observatory User's Subgroup	1991 – 1993
Chair	Scientific Organizing Committee for ASP Symposium on "Astrophysics from Antarctica"	1997
Member	SOFIA Science Steering Committee	1997 – 2001
Member	NASA-APRA (Astrophysics and Physics Research and Analysis) proposal review panels	2004, 2006, 2007
Lead author	SOFIA Design Reference Mission Science Case on "Magnetic Fields, Turbulence, and Star Formation" (see <a href="http://www.sofia.usra.edu/Science/science_cases">http://www.sofia.usra.edu/Science/science_cases</a> )	2005

Member	NSF astronomy division proposal review panel	2007
Member	National Science and Engineering Research Council Physics Evaluation Group (Canada)	2009 – 2012
Member	Scientific Organizing Committee for Special Session 4 of the 28 <sup>th</sup> Assembly of the IAU, “New Era for Study- ing Interstellar and Intergalactic Magnetic Fields”	2012
Member	ToI TEC Science Governance Board	2016 – present
Member	ALMA Science Advisory Committee	2017 – present
Member	ALMA North American Science Advisory Committee	2017 – present
Member	National Radio Astron. Observatory Users’ Committee	2017 – present
Member	Scientific Organizing Committee for the ALMA North America - Taiwan Joint Workshop on “Magnetic fields or turbulence – which is the critical factor for the formation of stars and planetary disks?”	2017 – 2018
Chair	ALMA North American Science Advisory Committee	2018 – present
Member	Scientific Organizing Committee for “ALMA 2019 Science Meeting: science results and cross-facility synergies”	2019

### Research Interests:

Formation of Stars and Planets; Galactic Center; Interstellar Medium; Instrumentation for Infrared and Submillimeter Astronomy

### Employment:

University of Massachusetts at Amherst, Dept. of Physics and Astronomy:		
	Postdoctoral Research Associate	Mar. 1988 - July 1991
Princeton University, Dept. of Physics:		
	Postdoctoral Research Associate	Aug. 1991 - Jan. 1992
	Instructor	Feb. 1992 - Aug. 1993
Northwestern University, Dept. of Physics and Astronomy:		
	Assistant, Associate, then Full Professor	Sept. 1993 - present

### Publications (refereed articles):

1. Detection of Submillimeter Polarization in the Orion Nebula, Hildebrand, R. H., Dragovan, M., and Novak, G., 1984, *Astrophys. J.*, **284**, L51.
2. The Polarization of the Far-Infrared Radiation from the Galactic Center, Werner, M. W., Davidson, J. A., Morris, M., Novak, G., Platt, S. R., and Hildebrand, R. H., 1988, *Astrophys. J.*, **333**, 729.
3. Polarization of Far-Infrared Radiation from Molecular Clouds, Novak, G., Gonatas, D. P., Hildebrand, R. H., Platt, S. R., and Dragovan, M., 1989, *Astrophys. J.*, **345**, 802.

4. A 100 Micron Polarimeter for the Kuiper Airborne Observatory, Novak, G., Gonatas, D. P., Hildebrand, R. H., and Platt, S. R., 1989, Pub. Astron. Soc. of the Pacific, **101**, 215.
5. Systematic Effects in the Measurement of Far-Infrared Linear Polarization, Gonatas, D. P., Wu, X. D., Novak, G., and Hildebrand, R. H., 1989, Applied Optics, **28**, 1000.
6. Far-Infrared Polarizing Grids for Use at Cryogenic Temperatures, Novak, G., Pernic, R. J., and Sundwall, J. L., 1989, Applied Optics, **28**, 3425.
7. Polarization of the  $\lambda = 1.3$  mm Radiation from the Kleinmann-Low Nebula, Novak, G., Predmore, C. R., and Goldsmith, P. F., 1990, Astrophys. J., **355**, 166.
8. Far-Infrared Polarization of the Orion Nebula, Gonatas, D. P., Engargiola, G. A., Hildebrand, R. H., Platt, S. R., Wu, X. D., Davidson, J. A., Novak, G., Aitken, D. K., and Smith, C., 1990, Astrophys. J., **357**, 132.
9. The Magnetic Field in the Dust Ring at the Center of the Galaxy, Hildebrand, R. H., Gonatas, D. P., Platt, S. R., Wu, X. D., Davidson, J. A., Werner, M. W., Novak, G., and Morris, M., 1990, Astrophys. J., **362**, 114.
10. 100 Micron Array Polarimetry from the Kuiper Airborne Observatory: Instrumentation, Techniques, and First Results, Platt, S. R., Hildebrand, R. H., Pernic, R. J., Davidson, J. A., and Novak, G., 1991, Pub. Astron. Soc. of the Pacific, **103**, 1193.
11. High Resolution Imaging of the Galactic Cloud Mon R2, Gonatas, C. P., Palmer, P., and Novak, G., 1992, Astrophys. J., **398**, 118.
12. Polarization of the Far-Infrared Emission from the Thermal Filaments of the Galactic Center Arc, Morris, M., Davidson, J. A., Werner, M. W., Dotson, J. L., Figer, D. F., Hildebrand, R. H., Novak, G., and Platt, S. R., 1992, Astrophys. J., **399**, L63.
13. A 15-Element Focal Plane Array for 100 GHz, Erickson, N. R., Goldsmith, P. F., Novak, G., Grosslein, R. M., Viscuso, P. J., Erickson, R. B., and Predmore, C. R., 1992, IEEE Transactions on Microwave Theory and Techniques, **40**, 1.
14. Large Off-Axis Epoxy Paraboloids for Millimetric Telescopes and Optical Light Collectors, Alvarez, D. L., Dragovan, M., and Novak, G., 1993, Review of Scientific Instruments, **64**, 261.
15. Polarization of the Thermal Emission from the Dust Ring at the Center of the Galaxy, Hildebrand, R. H., Davidson, J. A., Figer, D. F., Novak, G., Platt, S. R., and Tao, L., 1993, Astrophys. J., **417**, 565.
16. Anisotropy in the Microwave Sky at Intermediate Angular Scales, Dragovan, M., Ruhl, J. E., Novak, G., Platt, S. R., Crone, B., Peterson, J. B., and Pernic, R. J., 1994, Astrophys. J., **427**, L67.
17. Magnetic Field Structure in Monoceros R2, Jarrett, T., Novak, G., Xie, T., and Goldsmith, P. F., 1994, Astrophys. J., **430**, 743.

18. A Technique for Accurate Stellar Polarimetry using CCD Cameras, Novak, G., and Jarrett, T., 1995, *Applied Optics*, **34**, 1672.
19. A Search for Anisotropy in the Cosmic Microwave Background at 90 GHz, Ruhl, J. E., Dragovan, M., Novak, G., Platt, S. R., and Crone, B. K., 1995, *Astro. Lett. and Communications*, **32**, 249.
20. Anisotropy in the Microwave Sky at 90 GHz: Results from Python II, Ruhl, J. E., Dragovan, M., Platt, S. R., Kovac, J., and Novak, G., 1995, *Astrophys. J.*, **453**, L1
21. Polarized Far-Infrared Emission from the Core and Envelope of the Sagittarius B2 Molecular Cloud, Novak, G., Dotson, J. L., Dowell, C. D., Goldsmith, P. F., Hildebrand, R. H., Platt, S. R., and Schleuning, D. A., 1997, *Astrophys. J.*, **487**, 320.
22. Hertz, A Submillimeter Polarimeter, Schleuning, D. A., Dowell, C. D., Hildebrand, R. H., Platt, S. R., and Novak, G., 1997, *Pub. Astron. Soc. of the Pacific*, **109**, 307.
23. Submillimeter Array Polarimetry with Hertz, Dowell, C. D., Hildebrand, R. H., Schleuning, D. A., Vaillancourt, J. E., Dotson, J. L., Novak, G., Renbarger, T., and Houde, M., 1998, *Astrophys. J.*, **504**, 588
24. Measurements of Submillimeter Polarization Induced by Oblique Reflections from Aluminum Alloy, Renbarger, T., Dotson, J. L., and Novak, G., 1998, *Applied Optics*, **37**, 6643.
25. Anisotropy in the Cosmic Microwave Background at Degree Angular Scales: Python V Results, Coble, K., Dragovan, M., Kovac, J., Halverson, N. W., Holzappel, W. L., Knox, L., Dodelson, S., Ganga, K., Alvarez, D., Peterson, J. B., Griffin, G., Newcomb, M., Miller, K., Platt, S. R., and Novak, G., 1999, *Astrophys. J.*, **519**, L5
26. Submillimeter Polarimetric Observations of the Galactic Center, Novak, G., Dotson, J. L., Dowell, C. D., Hildebrand, R. H., Renbarger, T., and Schleuning, D. A., 2000, *Astrophys. J.*, **529**, 241.
27. Probing the Magnetic Field Structure in the W3 Molecular Cloud, Schleuning, D. A., Vaillancourt, J., Hildebrand, R. H., Dowell, C. D., Novak, G., Dotson, J. L., and Davidson, J. A., 2000, *Astrophys. J.*, **535**, 913.
28. A Primer on Far-infrared Polarimetry, Hildebrand, R. H., Davidson, J. A., Dotson, J. L., Dowell, C. D., Novak, G., and Vaillancourt, J. E., 2000, *Pub. Astron. Soc. of the Pacific*, **112**, 1215.
29. First Results from the Submillimeter Polarimeter for Antarctic Remote Observations: Evidence of Large-scale Toroidal Magnetic Fields in the Galactic Center, Novak, G., Chuss, D. T., Renbarger, T., Griffin, G. S., Newcomb, M. G., Peterson, J. B., Loewenstein, R. F., Pernic, D., and Dotson, J. L., 2003, *Astrophys. J.*, **583**, L83.
30. Magnetic Fields in Cool Clouds within the Central 50 Parsecs of the Galaxy, Chuss, D. T., Davidson, J. A., Dotson, J. L., Dowell, C. D., Hildebrand, R. H., Novak, G., and Vaillancourt, J. E., 2003, *Astrophys. J.*, **599**, 1116.

31. Early Results from SPARO: Instrument Characterization and Polarimetry of NGC 6334, Renbarger, T., Chuss, D. T., Dotson, J. L., Griffin, G. S., Hanna, J. L., Loewenstein, R. F., Malhotra, P., Marshall, J., Novak, G., and Pernic, R., 2004, Pub. Astron. Soc. of the Pacific, **116**, 415
32. Interferometric Polarization Control, Chuss, D. T., Wollack, E. J., Moseley, S. M., and Novak, G., 2006, Applied Optics, **45**, 5107.
33. Results of SPARO 2003: Mapping Magnetic Fields in Giant Molecular Clouds, Li, H., Griffin, G. S., Krejny, M., Novak, G., Loewenstein, R. F., Newcomb, M. G., Calisse, P. G., and Chuss, D. T., 2006, Astrophys. J., **648**, 340
34. Design and Initial Performance of SHARP, a Polarimeter for the SHARC-II Camera at the Caltech Submillimeter Observatory, Li, H., Dowell, C. D., Kirby, L., Novak, G., and Vaillancourt, J. E., 2008, Applied Optics, **47**, 422.
35. New Results on the Submillimeter Polarization Spectrum of the Orion Molecular Cloud, Vaillancourt, J. E., Dowell, C. D., Hildebrand, R. H., Kirby, L., Krejny, M. M., Li, H., Novak, G., Houde, M., Shinnaga, H., and Attard, M., 2008, Astrophys. J. Letters, **679**, L25.
36. The Hertz/VPM polarimeter: design and first light observations, Krejny, M., Chuss, D., Drouet D'Aubigny, C., Golish, D., Houde, M., Hui, H., Kulesa, C., Loewenstein, R. F., Moseley, S. H., Novak, G., Voellmer, G., Walker, C., and Wollack, E., 2008, Applied Optics, **47**, 4429.
37. The Removal of Artificially Generated Polarization in SHARP Maps, Attard, M., Houde, M., Novak, G., and Vaillancourt, J. E., 2008, Pub. Astron. Soc. of the Pacific, **120**, 805.
38. Dispersion of Observed Position Angles of Submillimeter Polarization in Giant Molecular Clouds, Novak, G., Dotson, J. L., and Li, H., 2009, Astrophys. J., **695**, 1362.
39. Magnetic Fields and Infall Motions in NGC 1333 IRAS 4, Attard, M., Houde, M., Novak, G., Li, H., Vaillancourt, J. E., Dowell, C. D., Davidson, J. A., and Shinnaga, H., 2009, Astrophys. J., **702**, 158.
40. Polarimetry of DG Tau at 350 Microns, Krejny, M., Matthews, T., Novak, G., Cho, J., Li, H., Shinnaga, H., and Vaillancourt, J. E., 2009, Astrophys. J., **705**, 71.
41. Anchoring Magnetic Field in Turbulent Molecular Clouds, Li, H., Dowell, C. D., Goodman, A., Hildebrand, R. and Novak, G., 2009, Astrophys. J., **704**, 891.
42. A Constraint on the Organization of the Galactic Center Magnetic Field Using Faraday Rotation, Law, C., Brentjens, M. A., and Novak, G., 2011, Astrophys. J., **731**, 36.
43. Magnetic Field Structure around Low-Mass Class 0 Protostars: B335, L1527 and IC348-SMM2, Davidson, J. A., Novak, G., Matthews, T. G., Matthews, B., Goldsmith, P. F., Chapman, N., Volgenau, N. H., Vaillancourt, J. E., and Attard, M., 2011, Astrophys. J., **732**, 97.

44. Properties of a Variable-delay Polarization Modulator, Chuss, D. T., Wollack, E. J., Henry, R., Hui, H., Juarez, A. J., Krejny, M., Moseley, S. H., and Novak, G., 2012, *Applied Optics*, **51**, 197.
45. Magnetic Field in the Isolated Massive Dense Clump IRAS 20126+4104, Shinnaga, H., Novak, G., Vaillancourt, J. E., Machida, M. N., Kataoka, A., Tomisaka, K., Davidson, J. A., Phillips, T. G., Dowell, C. D., Leeuw, L., and Houde, M., 2012, *Astrophys. J.*, **750**, L29.
46. The Submillimeter Polarization Spectrum of M17, Zeng, L., Bennett, C. L., Chapman, N. L., Chuss, D. T., Jimenez-Serra, I., Novak, G., and Vaillancourt, J. E., 2013, *Astrophys. J.*, **773**, 29.
47. Alignment between Flattened Protostellar Infall Envelopes and Ambient Magnetic Fields, Chapman, N. L., Davidson, J. A., Goldsmith, P. F., Houde, M., Kwon, W., Li, Z.-Y., Looney, L. W., Matthews, B., Matthews, T. G., Novak, G., Peng, R., Vaillancourt, J. E., and Volgenau, N. H., 2013, *Astrophys. J.*, **770**, 151.
48. The Magnetic Field Morphology of the Class 0 Protostar L1157-mm, Stephens, I. W., Looney, L. W., Kwon, W., Hull, C. L. H., Plambeck, R. L., Crutcher, R. M., Chapman, N. L., Novak, G., Davidson, J. A., Vaillancourt, J. E., Shinnaga, H., and Matthews, T. G., 2013, *Astrophys. J.*, **769**, L15.
49. The Link between Magnetic Fields and Cloud/Star Formation, Li, H.-B., Goodman, A., Sridharan, T. K., Houde, M., Li, Z.-Y., and Novak, G., 2014, book chapter in "Protostars and Planets VI", Henrik Beuther, Ralf S. Klessen, Cornelis P. Dullemond, and Thomas Henning (eds.), University of Arizona Press, Tucson, p.101
50. Tracing H2 Column Density with Atomic Carbon (CI) and CO Isotopologs, Lo, N., Cunningham, M. R., Jones, P. A., Bronfman, L., Cortes, P. C., Simon, R., Lowe, V., Fissel, L., and Novak, G., 2014, *Astrophysical Journal Letters*, Vol. 797, p. L17
51. Lupus I Observations from the 2010 Flight of the Balloon-borne Large Aperture Submillimeter Telescope for Polarimetry, Matthews, T. G., and 31 co-authors including G. Novak, N. L. Chapman, and L. Fissel, 2014, *Astrophysical Journal*, Vol. 784, p. 116
52. Comparison of Prestellar Core Elongations and Large-scale Molecular Cloud Structures in the Lupus I Region, Poidevin, F., and 30 co-authors including G. Novak, L. Fissel, and T. G. Matthews, 2014, *Astrophysical Journal*, Vol. 791, p. 43.
53. Testing Magnetic Field Models for the Class 0 Protostar L1527, Davidson, J. A., Li, Z.-Y., Hull, C. L. H., Plambeck, R. L., Kwon, W., Crutcher, R. M., Looney, L. W., Novak, G., Chapman, N. L., Matthews, B. C., Stephens, I. W., Tobin, J. J., and Jones, T. J., 2014, *Astrophysical Journal*, Vol. 797, p. 74
54. Empirical modelling of the BLASTPol achromatic half-wave plate for precision submillimetre polarimetry, Moncelsi, L., and 20 co-authors including G. Novak, L. Fissel, and T. G. Matthews, 2014, *Monthly Notices of the Royal Astronomical Society*, Vol. 437, p. 2772.

55. The Next Generation BLAST Experiment, Galitzki, N., and 40 co-authors including P. Ashton, L. Fissel, G. Novak, and F. P. Santos, 2014, *Journal of Astronomical Instrumentation*, Vol. 3, 1440001.
56. First Detection of 350 Micron Polarization from a Radio-Loud AGN, Lee, S.-S., Kang, S., Byun, D.-Y., Chapman, N. L., Novak, G., Trippe, S., Algaba, J. C., and Kino, M., 2015, *Astrophysical Journal Letters*, Vol. 808, p. L26
57. BFORE: The B-mode Foreground Experiment, Niemack, M. D., Ade, P., de Bernardis, F., Boulanger, F., Bryan, S., Devlin, M., Dunkley, J., Eales, S., Gomez, H., Groppi, C., Henderson, S., Hillbrand, S., Hubmayr, J., Mausekopf, P., McMahon, J., Miville-Deschenes, M.-A., Pascale, E., Pisano, G., Novak, G., Scott, D., Soler, J., and Tucker, C., 2016, *Journal of Low Temperature Physics*, Vol. 184, p. 746.
58. Balloon-Borne Submillimeter Polarimetry of the Vela C Molecular Cloud: Systematic Dependence of Polarization Fraction on Column Density and Local Polarization-Angle Dispersion, Fissel, L. M., and 29 co-authors including P. Ashton, T. G. Matthews, G. Novak, and F. P. Santos, 2016, *Astrophysical Journal*, Vol. 824, p. 134
59. Submillimeter Polarization Spectrum in the Vela C Molecular Cloud, Gandilo, N., and 29 co-authors including P. Ashton, L. M. Fissel, T. G. Matthews, G. Novak, and F. P. Santos, 2016, *Astrophysical Journal*, Vol. 824, p. 84.
60. Comparing Submillimeter Polarized Emission with Near-Infrared Polarization of Background Stars for the the Vela C Molecular Cloud, Santos, F. P., and 29 co-authors including P. Ashton, L. M. Fissel, T. G. Matthews, and G. Novak, 2017, *Astrophysical Journal*, Vol. 837, article 161.
61. The relation between the column density structures and the magnetic field orientation in the Vela C molecular complex, Soler, J. D., and 29 co-authors including P. Ashton, G. Novak, and F. P. Santos, 2017, *Astronomy and Astrophysics*, Vol. 603, article A64.
62. Removing visual bias in filament identification: A new goodness-of-fit measure, Green, C.-E., Cunningham, M. R., Dawson, J. R., Jones, P. A., Novak, G., and Fissel, L. M., 2017, *Astrophysical Journal Letters*, Vol. 840, article L17.
63. Measuring filament orientation: A new quantitative, local approach, Green, C.-E., Dawson, J. R., Cunningham, M. R., Jones, P. A., Novak, G., and Fissel, L. M., 2017, *Astrophysical Journal Supplement Series*, Vol. 232, article 6.
64. First observation of the submillimeter polarization spectrum in a translucent molecular cloud, Ashton, P. C., and 29 co-authors including F. P. Santos and G. Novak, 2018, *Astrophysical Journal*, 857:10.
65. HAWC+, the Far-Infrared Camera and Polarimeter for SOFIA, Harper, D. A., and 67 co-authors including N. L. Chapman, C. J. Hansen, G. Novak, and F. P. Santos, 2018, *Journal of Astronomical Instrumentation*, Vol. 7, No. 4, 1840008.
66. Measuring Reionization, Neutrino Mass, and Cosmic Inflation with BFORE, Bryan, S., and 23 co-authors including G. Novak, 2018, *Journal of Low Temperature Physics*, 193:1033.

67. SOFIA Far-infrared Imaging Polarimetry of M82 and NGC 253: Exploring the Supergalactic Wind, Jones, T. J., and 24 co-authors including G. Novak, 2019, *Astrophysical Journal Letters*, 870:L9.
68. HAWC+/SOFIA Multiwavelength Polarimetric Observations of OMC-1, Chuss, P. C., and 29 co-authors including E. G. Cox, G. Novak, and E. Van Camp, 2019, *Astrophysical Journal*, 872:187.
69. First observation of the submillimeter polarization spectrum in a translucent molecular cloud, Shariff, J. A., and 29 co-authors including T. G. Matthews and G. Novak, 2019, *Astrophysical Journal*, 872:197.
70. Relative Alignment Between the Magnetic Field and Molecular Gas Structure in the Vela C Giant Molecular Cloud using Low and High Density Tracers, Fissel, L. M., and 38 co-authors including P. Ashton, T. G. Matthews, G. Novak, and F. P. Santos, submitted to *Astrophysical Journal*.
71. Gravity, Magnetic Field, and Turbulence: Relative Importance and Impact on Fragmentation in the Infrared Dark Cloud G34.43, Tang, Y.-W., Koch, P. M., Peretto, N., Novak, G., Duarte-Cabral, A., Chapman, N. L., Hsieh, P.-Y., and Yen, H.-W., submitted to *Astrophysical Journal*.

#### **Publications (books edited):**

Astrophysics from Antarctica, edited by Giles Novak and Randall H. Landsberg, 1998, Vol. 141 of ASP Conference Series (San Francisco:Astron. Soc. of the Pacific), 388 pages.

#### **Oral Presentations (last five years):**

*“Testing Grain Alignment Theory with SHARP and BLAST-pol”*, invited talk given at the Midwest Magnetic Fields Workshop, Madison, Wisconsin, April 29, 2014.

*“1. Results from BLAST and Prospects for Grain Alignment Studies via Combining BLAST and HAWC+ Observations”, “2. Polarimetry of Protostellar Disks with HAWC+/SOFIA”, “3. Quantitative Analysis: Filaments”*, given at the HAWC+ Science Team meeting, California Institute of Technology, Pasadena, California, June 10-11, 2014.

*“Observing Star Formation with the Next Generation BLAST Experiment”*, invited talk given at the 14th meeting of the High Energy Astrophysics Division, Chicago, Illinois, August 18, 2014.

*“Relationship between Filamentary Morphology and B-field”*, invited review talk given at “Filaments 2014”, a workshop sponsored by the National Radio Astronomy Observatory on filamentary structure in molecular clouds, Charlottesville, Virginia, October 10, 2014.



- “The SHARP Survey of B-fields Near Low-mass Protostars”*, invited talk given at the Midwest Magnetic Fields Workshop, Madison, Wisconsin, May 21, 2015.
- “Balloon-borne Observations of Cosmic Magnetism”*, keynote talk for the “2015 Academic High Altitude Conference” held at DePaul University in Chicago, June 24, 2015.
- “Mapping B-fields in Star Forming Regions via Dust Emission Polarimetry – the Polarization Spectrum”*, invited talk given at the “High Frequency Science Workshop” sponsored by the National Radio Astronomy Observatory (NRAO) and held at the NRAO Green Bank Observatory in West Virginia, September 22, 2015.
- “The Galactic Magnetic Field and its Role in the Birth of Stars and Planets”*, departmental physics colloquium, DePaul University, Chicago, Illinois, November 9, 2016.
- “Linking Planck B-fields to ALMA B-fields: Dust-emission Polarimetry with Kilo-pixel Instruments”*, invited talk given at the workshop on “Cosmic Rays, Magnetic Reconnection, and Astrophysical Turbulence”, held in Natal, Brazil, December 9, 2016.
- “Polarization Spectrum of Interstellar Dust Emission - from BLAST-TNG, ToITeC, and HAWC+”*, invited talk given at the Midwest Magnetic Fields Workshop, Madison, Wisconsin, May 25, 2017.
- “Composition and Alignment of Interstellar Dust Grains”*, departmental physics colloquium, Chinese University of Hong Kong, Hong Kong, China, September 26, 2017.
- “Early results from HAWC+/SOFIA: far-IR polarization mapping of Rho Oph A at 89 and 155 microns”*, contributed talk given at the workshop on “Magnetic fields or turbulence – which is the critical factor for the formation of stars and planetary disks?” held in Hsinchu, Taiwan, February 7, 2018.
- “Probing Composition and Alignment of Interstellar Dust via Stratospheric Observations of Dust Emission Polarization Spectra”*, departmental astronomy colloquium, University of Wisconsin at Madison, March 8, 2018.
- “Balloon-borne Observations of the Birth of Stars and Planets in Magnetized Galactic Clouds”*, invited talk given at “Computational Research Day” held at Northwestern University, Evanston, Illinois, April 10, 2018.

*“HAWC+/SOFIA polarimetry of Rho Oph A: polarization spectrum at 89 - 155 Microns”*, invited talk given at the Midwest Magnetic Fields Workshop, Madison, Wisconsin, May 30, 2018.

*“ToI TEC Half-wave Plate Rotator and Polarization Measurements”*, talk given at National Science Foundation Site Visit for ToI TEC project, Amherst, Massachusetts, October 24, 2018.

*“Polarimetry with BLAST – results from BLASTPol and plans for BLAST-TNG”*, invited talk given at the 233rd meeting of the American Astronomical Society, held in Seattle, Washington, January 7, 2019.

*“Mapping magnetic fields in stellar nurseries - from the edge of space”*, invited talk given at the 233rd meeting of the American Astronomical Society, held in Seattle, Washington, January 9, 2019.

*“Observations of the Polarization Spectrum of Dust Emission”*, invited talk given at the Big Apple Magnetic Fields Conference, held at the Flatiron Institute, New York City, New York, January 24, 2019.

*“Probing Composition and Alignment of Interstellar Dust via Stratospheric Observations of Dust Emission Polarization Spectra”*, departmental astronomy colloquium, University of Illinois at Urbana-Champaign, March 12, 2019.

#### **Ph.D. students:**

Thomas Renbarger worked in Novak’s group during 1994 – 2002. He is now a Physics Instructor at Merritt College in Oakland, California.

David Chuss worked in Novak’s group during 1997 – 2002. He is now a Professor in the Department of Physics at Villanova University

Hua-bai Li worked in Novak’s group during 2001 – 2006. He is now an Assistant Professor in the Department of Physics at the Chinese University of Hong Kong.

Megan Krejny worked in Novak’s group during 2002 - 2008. Currently she is a Test Engineer at Cree, Inc.

Tristan Matthews worked in Novak’s group during 2007 - 2013. Currently he is an employee of Voltaic Systems, which is based in New York City. Tristan lives in Palo Alto.

Peter Ashton worked in Novak’s group during 2012 - 2017. He is currently a postdoc in experimental cosmology at U. C. Berkeley.

Paul Williams started working with Novak in 2015. He is contributing to the development of BLAST-TNG.

Dennis Lee started working with Novak in 2018. He is contributing to the development of the ToI TEC camera for the Large Millimeter Telescope.

### **Postdoctoral Research Associates:**

Jessie Dotson worked in Novak's group during 1994 - 1998. She is currently Chief of the Astrophysics Branch of NASA-Ames Research Center.

Nicholas Chapman worked in Novak's group during 2010-2015. He is currently a research analyst at CNA Corporation.

Laura Fissel worked in Novak's group during 2013 - 2016. She currently holds a Jansky Postdoctoral Fellowship and works at NRAO Charlottesville.

Fabio Santos worked in Novak's group during 2013 - 2018. He is currently a postdoc at the Max Planck Institute for Astronomy in Heidelberg.

Marc Berthoud was appointed Visiting Postdoctoral Associate at Northwestern in 2013. He serves as software lead for HAWC+/SOFIA.

Erin Cox joined Novak's group in 2018. She won the NRAO's "best Ph.D. dissertation" Award in 2019.

### **South Pole Winter-over Scientists:**

Greg Griffin (2000). Currently Greg is a postdoctoral fellow in working in the area of cosmology at NASA's Jet Propulsion Lab.

Paolo Calisse (2003). Currently Paolo is an ALMA Test Scientist with the European Southern Observatory.

### **Undergraduate Research Assistants:**

Tobias Keidl, Mark Wu, Winston Tse, Elizabeth Felton, Adam Roth, Prashant Malhotra, Jill Hanna, Jennifer Marshall, Shawn Stevens, Chris Greer, Janet Colucci, Philip Man, Maulin Shah, Mi Zou, Isabel Abbott, Mitchell Drew, Andrew Srisuwananukorn, Matthew Hroma, Christopher Hansen, Kyle Condron, Eric van Camp

### **Summer Student Researchers from Outside Northwestern Advised:**

David Chuss (Villanova), Daniel Hayes (Luther College), Soren Dayton (Univ. of Chicago), Erik Limpaecher (high school student at Phillips Academy, Andover, MA; then Princeton U), Samuel Moseley (high school student at Lab School of Washington, Wash. D.C.), Sharon Loverde (U. of Illinois at Urbana), Timothy O'Hara (Carnegie Mellon University), Sarah Williams (Bryn Mawr), Aaron Kime (high school at Evanston Township H.S., Evanston, IL), Aaron Juarez (U. Texas at Austin), Amanda Newmark (high school at New Trier H.S., Wilmette, IL; then Princeton U.), Hananiel Setiawan (Michigan State), Eric Scott (high school at Niles West H.S.; Skokie, IL)

### **Evanston Township High School Academic Year Interns:**

John Daskovsky, Margaret Kennedy, Corinne Sondak

### **Courses Taught:**

*General Physics* (phys 135-1), *General Physics for physics majors* (phys A90-1,2), *General Physics for students in the Integrated Sciences Program* (phys 125-3), *Physics Laboratory: Electronics* (phys 359-1), *Classical Mechanics* (phys 330-1), *Statistical Mechanics* (phys 332), *Highlights of Astronomy* (astro 120), *Astronomy and Politics in the 21<sup>st</sup> Century* (astro 110-6), *Instruments and Techniques for Astrophysics* (astro C60/D60), *Observational Astronomy Lab* (astro 359), *Observational Astrophysics* (astro 321/421), *Interstellar Matter* (astro 328/428, astro 448), *Advanced Topics in Astrophysics: Formation of Stars and Planets* (astro 441)

### **Physics and Astronomy Department Committees Chaired, and University Service:**

1997-1998	chair, Phys. & Astron. Dept. Committee for the General Physics Sequence
1999-2001	chair, Phys. & Astron. Dept. Student Shop Committee
2000-2004	chair, Phys. & Astron. Dept. Graduate Curriculum and Advising Committee
2000-2004	Director of Graduate Studies in Physics and Astronomy
2003-2004	member, program review subcommittee for Department of Radiology
2004-2005	Freshman Advisor, Weinberg College of Arts & Sciences
2004-2012	member, Faculty Advisory Committee for Northwestern University Instrument Shop
2007-2008	member, ad hoc committee for a tenure case at Northwestern
2010-2011	member, CIERA advisory board
2009-2012	chair, Physics & Astronomy Dept. Space Committee

2013-2014	member, Internal Review Committee for program review of Northwestern University Instrument Shop
2014-2015	member, Review Panel for the Office for Research Equipment Proposal competition
2015-2016	member, Shop Task Force
2014-2016	Faculty Director, Northwestern University Instrument Shop
2016-2019	member, Weinberg College of Arts & Sciences Committee on Promotion
2017-2018	chair, Astronomy Graduate Admissions Committee