

Fr. Daniel J. McNamara, S.J., PH.D.

Manila Observatory
P.O. Box 122, UP Post Office
Diliman, Quezon City
Tel: +63-2-426-5921 to 23
Fax: +63-2-426-6141
E-mail: daniel@observatory.ph, dmcnamara@ateneo.edu



ACADEMIC EXPERIENCE

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| Chairman | Environmental Science, Ateneo de Davao University 2014-present |
| Professor | Natural Science Division, Ateneo de Davao University Physics Coordinator 2006-2014 |
| Professor | Department of Physics, Ateneo de Manila University, 1999 – 2006 |
| Chairman | Physics Department, Ateneo de Manila University, 1980-1992/June 2001 – March 2005 |
| Associate Professor | Department of Physics, Ateneo de Manila University, 1988 – present |
| Assistant Professor | Department of Physics, Ateneo de Manila University, 1978 - 1988 |
| Research Fellow | High Altitude Observatory, University of Colorado, 1971-1976 |
| Teaching Assistant | University of Colorado, 1970-1971 |
| Instructor | Ateneo de Manila High School 1964-1966 |

EXPERIENCE

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| Physics Coordinator | Ateneo de Davao, Davao City 2006-present |
| Executive Director | Manila Observatory, 1993 to 2006 |
| Chairman | Board of Trustees Partnership for Clean Air, Inc., 2006 |
| Board Member | Faculty on Member Rank and Appointment, Ateneo de Manila University, 2001 - present |
| Project Director | Integrated Environment Strategies (IES) – Philippines February – December 2003 |

EDUCATIONAL BACKGROUND

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|-----------------|---|
| Theology | Loyola School of Theology , Loyola House of Studies, Ateneo de Manila University, 1981 |
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Ph.D. in Astro-Geophysics University of Colorado, Department of Astro-Geophysics, 1977

M.S. Studies in Physics Ateneo de Manila University, 1965-1968\

Ph. L., College of Philosophy & Letters Fordham University, 1964 Magna Cum Laude

Bachelor of Arts, Mathematics Fordham University, 1963

PROFESSIONAL SOCIETIES

| | | |
|--------------|--|--------------|
| Board Member | Concerned Citizens Against Pollution (COCAP) | |
| Board Member | Better Air Quality (BAQ) | |
| President | Samahang Pisika ng Pilipinas | 1981-1983 |
| Councilor | Samahang Pisika ng Pilipinas | 1984-present |
| Member | Samahang Pisika ng Pilipinas | 1983-present |
| Member | University Research Council | 1987-1990 |

PUBLICATIONS

(JOURNALS/BOOKS/PROCEEDINGS)

International

Daniel J. McNamara, S.J. , "Reflections on Presence", in *Science and Religion...and Culture in the Jesuit Tradition: Perspectives from East Asia*, edited by Jose M. Francisco SJ and Roman M. de Jesus (ATF Press, Adelaide, 2006).

Q. M. Sugon, Jr. and D. J. McNamara, "A Geometric Algebra Reformulation of Geometric Optics," accepted for publication in *American Journal of Physics*, 27 August 2003.

_____ "A Hestenes Spacetime Algebra Formalism for Light Polarization," in *Applications of Geometric Algebra in Computer Science and Engineering*, edited by L. Dorst, C. Doran, and J. Lasenby (Birkhauser, Boston, 2002).

Alarcon, M., Dorado, S., McNamara, D., et al, "Mie Lidar Measurements in Metro Manila (14.64 N, 121.07 E). Paper presented at a Conference in Germany, August 1996.

McNamara, Fr. Daniel. A Non-Local Thermodynamics Equilibrium Formulation of the Transport Equation for Polarized Light in a Weak Magnetic Field." National Center of Atmospheric Research Cooperative Thesis 44, Boulder, Colorado 1977.

McNamara, Fr. Daniel, Y. Nakagawa, Mr. Raadu and D. Billings. "On the Topology of Filaments and Chromospheric Fibrils Near Sunspots." *Solar Physics*, Vol. 19, 1971, pp.72-85.

National

Reinabelle R. Reyes, Daniel J. McNamara and Quirino M. Sugon, Jr., "Successive Lorentz boosts: equivalent boost and rotation using geometric algebra" 22nd Samahang Pisika ng Pilipinas Conference Proceedings (SPP, Tagbilaran City, Bohol, Philippines, October 25-27, 2004)

Quirino M. Sugon, Jr. and Daniel J. McNamara, "Deriving Ptolemy's epicycles from Copernicus's circles: a geometric algebra approach." in the Loyola Schools Review 3, 144-154, 2004

Q. M. Sugon, Jr. and D. J. McNamara, "A Geometric Algebra Reformulation of Geometric Optics," in *20th SPP Philippine Physics Congress* (Samahang Pisika ng Pilipinas, Ateneo de Naga University, Bagumbayan Sur, Naga City, 23-25 October 2002), pp. 117-120.

_____ "Lorentz Transformations in a Revised Hestenes Spacetime Algebra Formalism," in *16th SPP Philippine Physics Congress* (Samahang Pisika ng Pilipinas, Ateneo de Manila University, Quezon City, 1998).

_____ "Photons: A Wave-Particle Solution to the Homogenous Classical Wave Equation in a Geometric Algebra Formalism," in *15th SPP Philippine Physics Congress* (Samahang Pisika ng Pilipinas, University of San Carlos, Talamban, Cebu City, 1997).

Holdsworth, J. and McNamara D., "Stardust, Galaxies and Planets", in *Readings in Science and Society*, Cuyegkeng, M.A., Ed., Quezon City, ORP, 2000

Holdsworth, J. and McNamara, D., "Time, Chaos and Order", *ibid.*

D. J. McNamara, S.J., "Science and Religion," in *Landas* **10**, 225-32 (1996).

D. J. McNamara, S.J., "Science Teaching," in *PANTAS*, **1**(1) (Phoenix Publishing House, Manila, 1987), pp.28;35-36.

D. J. McNamara, S.J., "Coherent States," *4th SPP Philippine Physics Congress* (Samahang Pisika ng Pilipinas, Univ. of the Philippines, Baguio City, March 31-April 3, 1985), pp. 43-47.

D. J. McNamara, S.J., "Manpower Policies for the Use of Science and Technology in Development," Samahang Pisika ng Pilipinas," in *1st SPP Philippine Physics Congress* (Samahang Pisika ng Pilipinas, Ateneo de Manila University, April 13-15, 1982), pp. 17-19.

D. J. McNamara, S.J., "Le Defi Mondial," *Philippine Studies* Ateneo de Manila University, Vol. 31, 2nd Quarter, 1983, pp. 274-277.

GRADUATE THESES/DISSERTATIONS SUPERVISED

J. T. Macquiling, "A Geometric Algebra Formulation to Explain the Milankovich Cycles," *Thesis*, M.S. in Physics (Ateneo de Manila University, Quezon City, 2001), 43 leaves, illustrated.

C. D. Bennett, "Hard-Core Scattering Applied to a Dodecahedral Water Cluster," *Thesis*, M.S. in Physics (Ateneo de Manila University, Quezon City, 2001), 69 leaves.

Q. M. Sugon, Jr., "A Group-Theoretic Introduction to Geometric Algebra with Applications to Light Polarization," *Thesis*, M.S. in Physics (Ateneo de Manila University, Quezon City, 1999), 71 leaves.

G. B. Tubal, "Laser Speckles Statistical Properties and Measurement of Average Size," *Thesis*, M.S. in Physics (Ateneo de Manila University, Quezon City, 1985), 130 leaves.

T. D. Taganahan, "Optical Correlation of Coherence," *Thesis*, M.S. in Physics (Ateneo de Manila University, Quezon City, 1985), 77 leaves.

R. C. Garcia, "Presentation of a Teacher or Student Reader with Simple Activities on the Index of Refraction of Light," *Thesis*, M.S. in Teaching Physics (Ateneo de Manila University, Quezon City, 1983), 66 leaves.

OTHER ACTIVITIES

- 2004 *Science Week 2004*, Keynote speaker - Opening Ceremonies, Medicine Cinematorium, University of Sto. Tomas
- Seminar Workshop in Mathematics for Elementary Teachers* (Keynote speaker, MTAP Department of Education, NCR, Rizal High School, Pasig City, 13 September 2004)
- "*Mathematics Teaching Reloaded*" (Keynote speaker -Seminar Workshop in Mathematics for Elementary Teachers, MTAP Department of Education, NCR, Stella Maris College-Quezon City, 20 September 2004)
- Pusong Kalikasan, Pusong Makabayan Award* (Keynote speaker, Earthwatch Philippine Foundation, Inc., Kalayaan Hall, Club Filipino, Greenhills, San Juan, MM., 12 November 2004)
- 2000 "*Science and Religion*" –*Course Award* by CTNS , team member.
- "*Issues on Ethics*" (Issues on Information and Communication Technology September 9, 2000, Tanghalang Teresita Quirino, University of Santo Tomas, Sponsored by PHILAAS, Research Center for Natural Science And Graduate School of University of Santo Tomas)
- "*Ethics and the World of Information Technology*" (Issues on Information and Communication Technology July 12, 2000, Philippine Association for the Advancement of Science)
- 1998 *19th Asian Conference on Remote Sensing* (Traders Hotel, Manila, 16-20 November)
- 1997 Official Representative of the Holy See to the *XIV United Nations Regional Cartographic Conference for Asia and the Pacific* (Bangkok, 3-7 February 1997).
- 1988 Participant, *Conference Meeting* on "Science, High Technology and Faith in Asia," from Dec 5-10, 1988, Sponsored by FABC.
- 1987 Lecturer, "Teaching the Sciences," *Summer Formation Institute*, Ateneo de Manila University, April.

- 1986 Lecturer, "State of Science and Technology And Technology in the Philippines", *Science Promotion Institute*, sponsored by NSTA-SPI, Sept. 3.
- 1985 Visited *University College of Swansea*, sponsored by the British Council, from April 1985 27 to June 1985
- 1984 Visited various *laboratories and universities in Japan*, sponsored by NSTA-JSPS from March 9-22
- 1983 Attended a Research Seminar in *International Center for Theoretical Physics*, Trieste, Italy, Sponsored by NSTA, from March 5-25.
Lecturer, Tertiary Level Colloquim on the Ministry of Teaching at the International Training Center, Laguindingan, Misamis Oriental from August 5-7.
Lecturer, "Science, God and Society," Ateneo sponsored series of talks given at the *Ateneo de Manila Law School*.
- 1982 Taught at the *University of the Philippines* for 1 semester under the Ateneo-UP-La-Salle Consortium.

TALKS DELIVERED

"The Origin Of Life," [download](#) (4.9 MB zip)

"In The Beginning," [download](#) (14.4 MB zip)

"Time," [download](#) (5.9 MB zip)

"Secrets of the Universe" in *Science Week 2004* (Medicine Cinematorium, University of Santo Tomas College of Science, 09 February 9, 2004)

"Climate Change-Real or Imaginary?" in *Science Seminar Series* (Ateneo de Manila University, 10 July 1998).

"Recent Developments and Trends in Ocean Thermal Energy Conversion Technology," in *COSWEN'97 Conference* (New World Hotel Ballroom, Makati City, 1 December 1997)

"Developments in Aerosol and Cloud Monitoring Using the MIE Scattering LIDAR and the DOAAS-type Spectrophotometer," at the *Manila Observatory International Symposium on Atmospheric Chemistry and Future Global Environment* (Nagoya Congress Center, Nagoya, Japan, 11-13 November 1997).

"Regulating Ozone Depleting Substances in the Philippines and the Role of the Manila Observatory in this Endeavor," *UNEP IETC International Conference on the Protection of the Ozone Layer* (Osaka, Japan, 15-16 September 1996).

"The Use of LIDAR as an Aid in Atmospheric Pollution Monitoring and Management," in *Philippines First International Environmental Pollution Management Technology Conference* (Philippine International Convention Center, 18-20 January 1995).

"Jesus The Teacher," *MTF General Assembly* (Ateneo de Manila University, 4 October 1997).

SEMINARS/CONFERENCES

Science and Religion Conference, April 22-26, 2002, East Asian Pastoral Institute Ateneo de Manila University, Loyola Heights, Quezon City

Invitation to SARscape and ENVISAT-The gateway to Earth Observation Information, Seminar for decision makers, 23 January 2002, Discovery Suites, ADB Ave., Ortigas Center, Pasig City

Strategies for Environmental Rehabilitation in Metro Manila, –Future Scenario and Policy Simulation, November 20-21, 2001, Makati Shangri-La Hotel, Makati City

Harnessing Science and Technology to Meet the Globalization Challenge
World Conference on Science and Technology, 50th Annual Convention of the Phil. Association for the Advancement of Science, 13-15 September 2001, Manila Hotel
Co-sponsored with the Department of Science and Technology, National Academy of Science and Technology

ASEAN Senior Officials on Energy Workshop on Climate Change, 27 October 2000
Cebu, Philippines

Climate Change in the New Millennium – A Philippine Scenario, 3 April 2000
EDSA Shangri-La Hotel, Mandaluyong City, Sponsored by WWF-Philippines and the Philippine Climate Change Information

Facing the Challenges of Climate Change, March 27, 2000, EDSA Shangri-La Hotel, Mandaluyong City, Sponsored by the Department of Energy and Department of Environment And Natural Resources

Combined Heat and Power: Energy Solutions for the 21st Century, First International Symposium, February 1-2, 2000 Marriott Wardman Park Hotel Washington, DC, U.S.A.