

## **Curriculum Vitae** **Menas Kafatos, Endowed Professor**

**Address:** Center of Excellence in Earth Systems Modeling and Observations (CEESMO), Schmid College of Science & Technology, Chapman University, One University Drive, Orange, CA, 92866

**Office:** 452 N. Glassell St., Orange, CA 92866

**Telephone:** 714-289-2048

714-289-2047 (Assistant)

**Professional email:** [kafatos@chapman.edu](mailto:kafatos@chapman.edu)

**Education:** B.A., Physics, Cornell University, NY, U.S.A., 1967

Ph.D., Physics, Massachusetts Institute of Technology, MA, U.S.A., 1972

### **Professional Employment:**

Fletcher Jones Endowed Professor of Computational Physics, Chapman University (CU)

Director, Center of Excellence in Earth Systems Modeling and Observations, CU (1 September 2012)

Founding Dean of the Schmid College of Science & Technology, CU

Dean, Schmid College of Science & Technology, CU (1 June, 2009 – 31 August, 2012)

Vice Chancellor for Special Projects, CU (1 Oct. 2008 – 31 August, 2012)

Director, Center for Earth Observing and Space Research (CEOSR), George Mason University (GMU) (1995 – 2008)

Founding Dean, College of Science, George Mason University (GMU) (2006 – 2007)

Dean, School of Computational Sciences (SCS), GMU (2002 – 2006)

Associate Dean, SCS, GMU (2000 – 2002)

Professor of Astrophysics (Invited), Department of Physics, University of Athens, Greece (1990 – 1992)

Director for Academic Programs and Science, Institute for Computational Sciences and Informatics (CSI), GMU (1991-1994)

Founding Director, CSI

Acting Chair, Department of Physics, GMU (1989-1991)

Professor, Dept. of Physics, GMU (1984 – 2008)

Assistant/Associate Prof., Dept. of Physics, GMU (1975-1984)

Postdoctoral Research Associate, NASA/Goddard Space Flight Center, Greenbelt, MD (1973 – 1975)

Postdoctoral Research Associate, Joint Institute for Laboratory Astrophysics, University of Colorado, Boulder, CO (1972 - 1973)

Research Assistant, Department of Physics, M.I.T. (1967 – 1972).

**SPECIAL PROJECTS:** As Vice Chancellor and Dean, he launched several initiatives of collaboration in the university and with international institutions, federal laboratories and other U.S. universities, including Korea University, Ewha Womans University, National Observatory of Athens, etc.

He is considered a world's expert in computational sciences and leader in establishing new programs.

During his term as Dean of the Schmid College of Science and Technology, the University raised \$21M for the science building and \$5M for programmatic support in the sciences (from foundations, private donors, and industry).

**RESEARCH INTERESTS:** He has wide interests in several fields of science and information science:

- Earth System Science/Earth Observing/Remote Sensing: Interdisciplinary Earth system science; natural hazards and climate change; aerosols and pollution; vegetation and climate change coupling; effects of climate change on agriculture and natural ecosystems in the SW U.S. (primarily CA and AZ); wild fires and decision support systems (DSS) to mitigate risks; forecasting of earthquakes in CA, Greece, Italy, Japan, and China; tropical cyclones; Earth Observing System observations.
- Data Information Systems: Federated, distributed data information system architecture; content-based Earth science data browsing; user interfaces; distributed data systems and associated technologies.
- Astrophysics and Space Sciences: Black holes, active galaxies and quasars; accretion hydrodynamics in curved metrics; high-energy emission from cosmic sources; ultraviolet astronomy, symbiotic stars; atomic physics; cosmological redshifts.

- Energy, Environment and Economy: Industry – academia initiatives for green technologies; impacts of climate change and hazards on regional economies; risk mitigation approaches; technology approaches for risk mitigation.
- Cosmology: Cosmological observations and their limitations; Universal Diagrams; distant sources and Hubble Diagram; early universe, cosmology and superstring theories; variation of fundamental constants and particle physics.
- Biology and Physics: Unifying biology and physics; action principles; biological autonomy and biological aims.
- Foundations of Quantum Theory, and Consciousness: Foundations of quantum theory (QT); QT and brain dynamics; measurement problem in QT; consciousness in the cosmos; subjective and objective awareness; Foundational Principles for consciousness; complementarity in the universe; physics and metaphysics; perennial monistic philosophical systems; science, spirituality and dialogue between different fields.

**TEACHING:** 38 years experience in undergraduate and graduate teaching in a variety of fields at the university level at GMU and CU:

- Atomic physics and quantum calculations
- Astronomy and Astrophysics
- Mathematical physics
- High energy astrophysics
- Compact cosmic sources (quasars, black holes, neutron stars, white dwarfs)
- Relativity and cosmology
- Remote sensing and applications
- Earth system science
- Natural and anthropogenic hazards
- Climate change
- Computational sciences
- Computational physics and astrophysics
- Data information systems, data architectures
- Foundations of quantum theory
- The conscious universe
- Also taught a graduate astrophysics seminar, at the University of Maryland
- Taught for the Smithsonian Institution's "Resident Associate Program" (8 courses) on cosmology, history of science and foundations of quantum theory
- Taught a short course on Remote Sensing and Hazards, National Observatory of Greece (May 2007).
- *Distinguished International Scholar* lectures on Hazards and Climate Change, Korea University (November - December, 2007).

He has developed or led the development of several new degree programs in *Computational Sciences and Informatics*, *Astrophysics and Cosmology*, *Earth Observing and Global Change*, and *Quantum Information Science*. He himself has developed a host of new courses in applied physics, astrophysics, cosmology, Earth system science, remote sensing, climate change, foundations of quantum theory, philosophy and science.

**OBSERVING PROGRAMS/GRANTS/SERVICE:** Principal Investigator (PI), or Co-principal Investigator (Co-PI); and Co-Investigator (Co-I) on a total 55 astronomical observational programs.

- PI, Co-PI on 19 *International Ultraviolet Explorer (IUE)* observing programs
- Co-PI on *Hubble Space Telescope* observations
- Co-PI on 3 *Very Large Array* (radio) observing projects
- Co-PI on 2 radio and microwave astronomical observing projects
- Several observing projects as Co-I.

Present grants:

- PI for the Institute for Global Change (\$120,000. 2009 – present)
- Cooperative agreement with Science Systems and Applications, Inc., (\$120,000. 2009 – present)

- PI on the multi-year joint National Science Foundation/Department of Energy/US Department of Agriculture, Earth Science Modeling (EaSM) program, funded by the National Institute for Food and Agriculture (NIFA), on *Multi-Model Regional Simulation of Climate Change Impacts on Agriculture and Ecosystems in the Southwestern U.S.* (\$848,000 for three years. 2011 - 2014). This project is joint grant with UCLA, Princeton University, and University of Miami.

Past grants (several multi-year grants):

- PI on multi-year Cooperative Agreement grant with NASA's Goddard Space Flight Center, *Joint Interdisciplinary Earth Science Information Center (JIESIC)* (\$3,500,000 - \$5,000,000 per year. 1996 - 2008)
- PI on the EOSDIS Core System alternative architecture (\$600,000. 1994)
- PI on several prototype Earth Science Data Information System grants
- PI on NASA Earth Science Enterprise "Earth Science Information Partner" (ESIP) program, *Seasonal to Interannual ESIP(SI-ESIP)* (\$3,500,000. 1997-2000)
- PI on 4 NASA Science Applications grants, *VAccess-Mid-Atlantic Geospatial Information Consortium (MAGIC)* (\$1,000,000 per year for 4 years. 2004 - 2008)
- PI on Cooperative Agreement with the Naval Research Laboratory (NRL), *Computational Sciences, Space Sciences and Remote Sensing* (\$1,000,000 per year. 1992 - 2008)
- PI, NSF grant, *Space Weather* (\$350,000 per year. 2005 - 2008)
- PI, NASA grant, *Global Environmental Change-hazards and regional impacts (GEC-hri)* (\$2,000,000. 2006 - 2008); Dr. William Lau, Head of the NASA Laboratory for Atmosphere, was Co-I on GEC-hri.

Two of the above past grants (JIESIC and GEC-hri) were related to Earth Observing, and specifically GEC-hri concerns itself with aerosol science, pollution and climate. Previous grants, MAGIC and SI-ESIP concentrated on applied and fundamental science, related to climate and various applications areas such as atmospheric pollution and hazards. SI-ESIP, MAGIC, JIESIC, NRL, and GEC-hri, all involved large interdisciplinary science teams and all were directed by the PI.

Overall, he has received more than 70 grants and contracts from a variety of sources including Office of Naval Research (ONR), NASA, National Science Foundation (NSF), and NRL. Director of the largest GMU research center, Center for Earth Observing and Space Research (CEOSR) -- \$8,500,000 in expenditures in Fiscal Year (FY) 04, \$8,600,000 in FY05.

As P.I. he brought total funding in excess of \$40,000,000 to GMU just between 2000 – 2007.

He was the top funded PI in federal sponsor expenditures at Chapman University for 2010-2011.

## **PUBLICATIONS IN SCIENTIFIC JOURNALS (All publications since 1971)**

**Total refereed articles: 270+ Total Citations: 2,200+ Highest Citation of single article: 500.**

Partial lists include: 128 articles in astronomy and astrophysics (1973-2000); 10 articles in cosmology and redshifts of quasars (1998-2007); 11 articles in foundations of quantum theory and in consciousness and quantum theory (1998-2007); 93 articles in Earth system science, remote sensing and data systems (1996-2007). In the last several years, he has been publishing at the rate of 4 -7 papers per year (see below). CITATIONS – More than 2,200 citations in professional journals, proceedings and books (from Google Scholar and Web of Knowledge).

1. Kafatos, M., Morrison, P. (1971) Fossil Stromgren Spheres from Supernova Explosions, *The Astrophysical Journal*, 168: 195-201.
2. Kafatos, M. (1972) Sudden radiative Ionization of Interstellar Gas, Partial Fulfillment of the Requirements for the Degree of Doctor of Philosophy @ Massachusetts Institute of Technology
3. Kafatos, M., Tucker, W.H. (1972) Time-Dependent ionization equilibrium and Line Radiation Under Flarelike Conditions, *The Astrophysical Journal*, 175:827-841
4. Kafatos, M. (1973) Time-Dependent Radiative Cooling of a Hot Low-Density Cosmic Gas, *The Astrophysical Journal*, 182:433-447
5. Kafatos, M. (1973) The Early Evolution of Giant H II Regions Formed by Supernova Explosions, The Gum Nebula and related problems: pg. 103-117 -- Goddard Space Flight Center (book)

6. Kafatos, M., Morrison, P. (1973) Giant Loops as Fossil Stromgren Spheres: Their Radio and X-Ray Emission, *Astronomy and Astrophysics* Vol. 26: 71-77
7. Gerola, H., Kafatos, M., McCray, R. (1974) Statistical Time-Dependent Model for the Interstellar Gas, *The Astrophysical Journal*, 189: 55-66
8. Kafatos, M., Gerola, H., Hacthett, S., McCray, R. (1974) Ionization of Carbon and Nitrogen in The Intercloud Medium, *The Astrophysical Journal*, 187: L113-L116
9. Cowan, J.J., Kafatos, M., Rose, W.K. (1975) Sources of Excitation of the Interstellar Gas and Galactic Structure, *The Astrophysical Journal*, 195: 47-51
10. Kafatos, M. (1975) New Theory of the Excitation of Interstellar Gas, Galactic Structure and Interstellar Medium, pg. 85-89 -- Goddard Space Flight Center (book)
11. McCray, R., Stein, R.F., Kafatos, M. (1975) Thermal Instability in Supernova Shells, *The Astrophysical Journal*, 196: 565-570
12. Kafatos, M., Michalitsianos, A.G., Vardya, M.S. (1977) Mass Loss, Long Period Variables, and the Formation of Circumstellar Shells, *The Astrophysical Journal*, Vol 216: 526-530
13. Hobbs, R.W., Maran, S.P., Kafatos, M., Brown, L.W. (1978) Cygnus A at 99 GHz: Observations of the Three Principal Components and the Interpretation of the Central Source, *The Astrophysical Journal*, 220: L77- L80
14. Kafatos, M. (1978) The Central, Compact Source in the Cygnus A Galaxy, *The Astrophysical Journal*, 225: 756-767
15. Leiter, D., Kafatos, M. (1978) Penrose Pair Production in Massive, Extreme Kerr Black Holes, *The Astrophysical Journal*, Vol. 226:32-36
16. Michalitsianos, A.G., Kafatos, M. (1978) Mass Loss and OH Maser Emission from Mira Variables, *The Astrophysical Journal*, Vol. 226: 430-434
17. Kafatos, m., Leiter, D. (1979) Penrose Pair Production as a Power Source of Quasars and Active galactic Nuclei, *The Astrophysical Journal*, 229: 46-52
18. Kafatos, M., Michalitsianos, A.G. (1979) Sporadic mass ejection in red Supergiants, *The Astrophysical Journal*, 228:L115-L118
19. Bruhweiler, C., Gull, T.R., Kafatos, M., Sofia, S. (1980) Stellar Winds, Supernovae, and the Origin of the H I A supershells, *The Astrophysical Journal*, 238: L27-L30
20. Kafatos, M. (1980) Gamma Rays from Penrose Powered Black Holes in centaurus A, 3C 273, and NGC 4151, *The Astrophysical Journal*, 236: 99-111
21. Kafatos, M., Hobbs, R.W., Maran, S.P., Brown, L.W. (1980) 150 GHz Observations of Three Radio Galaxies, *The Astrophysical Journal*, 235:18-21
22. Kafatos, M., Lynch, J.P. (1980) Forbidden lines of  $np^q$  Ions. I. Detailed Balance and Line Intensity Ratios, *The Astrophysical Journal Supplement Series*, 42:611-643
23. Kafatos, M., Michalitsianos, A.G., Hobbs, R.W. (1980) IUE Observations of Two Late Type Stars: R Aql and W Hya, *Astronomy and Astrophysics*, Vol. 92:320-322
24. Kafatos, M., Michalitsianos, A.G., Hobbs, R.W. (1980) IUE Observations of RW Hydrae (gM2 + pec), *The Astrophysical Journal*, 240: 114-124
25. Kafatos, M., Sofia, S., Bruhweiler, F.C., Gull, T.R. (1980) The Evolution of Supernova Remnants in Different Galactic Environments, and its Effects on Supernova Statistics, *The Astrophysical Journal*, 242: 294-305
26. Michalitsianos, A.G., Kafatos, M., Hobbs, R.W. (1980) IUE Observations of Circumstellar Emission from the Late Type Variable R Aquarii (M7 + pec), *The Astrophysical Journal*, 237: 506-512
27. Michalitsianos, A.G., Kafatos, M., Hobbs, R.W. (1980) IUE Observations of a Luminous M Supergiant that Exhibits Emission Continuum in the Far Ultraviolet, *The Astrophysical Journal*, 241: 774-778
28. Michalitsianos, A.G., Kafatos, M., Hobbs, R.W., Maran, S.P. (1980) IUE Observations of the Hot Components of Two Symbiotic Stars, *Nature*, Vol. 284, No. 5752: 148-150
29. Brown, L.W., Hobbs, R.W., Michalitsianos, A.G., Kafatos, M. (1981) OH Emission in the Direction of TV Gem and BI Cyg, *The Astronomical Journal*, 86:1926-1929
30. Davidson, K., Gull, T.R., Maran, S.P., Stecher, T.P., Kafatos, M., Trimble, V.L. (1981) Preliminary report on IUE Spectra of Crab Nebula, *The Universe at Ultraviolet Wavelengths: The First Two Yrs. of Intern. Ultraviolet Explorer*; p 696-700.
31. Gull, T.R., Bruhweiler, F.C., Kafatos, M., Sofia, S. (1981) Superbubbles, *The Universe at Ultraviolet Wavelengths: The First Two Yrs. of Intern. Ultraviolet Explorer*, p 679-685

32. Hobbs, R.W., Michalitsianos, A.G., Kafatos, M. (1981) IUE Observations of Circumstellar Emission from the Late Type Variable R Aqr (M7 + pec), *The Universe at Ultraviolet Wavelengths: The First Two Yrs. of Intern. Ultraviolet Explorer*; p 355-365.
33. Kafatos, M., Bruhweiler, F., Sofia, S. (1981) Confinement and Acceleration of Cosmic rays in Galactic Superbubbles, *The Universe at Ultraviolet Wavelengths: The First Two Yrs. of Intern. Ultraviolet Explorer*; p 222-225.
34. Kafatos, M., Silberberg, R., Shapiro, M.M. (1981) Acceleration Processes Near Massive Black Holes, *The Universe at Ultraviolet Wavelengths: The First Two Yrs. of Intern. Ultraviolet Explorer*; p 348-351.
35. Kafatos, M., Michalitsianos, A.G. (1981) IUE Observations and Interpretation of the Symbiotic Star RW Hya, *The Universe at Ultraviolet Wavelengths: The First Two Yrs. of Intern. Ultraviolet Explorer*; p 349-354.
36. Kafatos, M., Michalitsianos, A.G., Feibelman, W.A., Hobbs, R.W. (1981) Ultraviolet Observations of T4 Serpentis (M5 Iib - IIIa), *Physical Processes in Red Giants*, 263-267
37. Kafatos, M., Shapiro, M.M., Silberberg, R. (1981) Extragalactic Variable Sources and Cosmic-Ray Acceleration near Massive Black Holes, *Comments on Astrophysics: Journal of Critical Discussion of the Current Literature* Vol. 9, No. 4: 179-198
38. Michalitsianos, A.G., Hobbs, R.W., Kafatos, M. (1981) IUE Observations of Two Late Type Stars BX Mon (M4 + pec) and TV Gem (M1 Iab), *The Universe at Ultraviolet Wavelengths: The First Two Yrs. of Intern. Ultraviolet Explorer*; p 367-375
39. Stence, R.E., Michalitsianos, A.G., Kafatos, M., Boyarchuk, A.A. (1981) Ingress Observations of the 1980 Eclipse of the Symbiotic Star CI Cygni, *The Universe at Ultraviolet Wavelengths: The First Two Yrs. of Intern. Ultraviolet Explorer*; p 459-460
40. Davidson, K., Gull, T., Maran, S.P., Stecher, T.P., Fesen, R.A., Parise, R.A., Harvel, C.A., Kafatos, M., Trimble, V.L. (1982) Ultraviolet Spectrum of the Crab Nebula, *The Astrophysical Journal*, 253: 696-706
41. Kafatos, M. (1982) Symbiotic Star UV Emission and Theoretical Models, M. Friedjung and R. Viotti (ed.) *The Nature of Symbiotic Stars*, 269-272. 1982 D. Reidel Publishing Company
42. Kafatos, M., Michalitsianos, A.G. (1982) Observations and Analysis of the Aquarii Jet, *Advan. in Ultraviolet Astron.*; p 452-455;
43. Kafatos, M., Michalitsianos, A.G. (1982) The Peculiar Variable Star R Aquarii and its Jet, *Nature*, Vol. 298, No. 5874, pp. 540-542
44. Kafatos, M., Michalitsianos, A.G. (1982) The Peculiar Star RX Puppis, M. Friedjung and R. Viotti (ed.) *The Nature of Symbiotic Stars*, 203-206. 1982 D. Reidel Publishing Company
45. Kafatos, M., Michalitsianos, A.G., Feibelman, W.A. (1982) IUE Observations of the Peculiar Star RX Puppis, *The Astrophysical Journal*, 257: 204-213
46. Kafatos, M., Shapiro, M.M., Silberberg, R. (1982) Active Galactic Nuclei and Particle Acceleration in Accretion Disks Around Massive Black Holes, E.G. Mariolopoulos et al. (eds.) *Compendium in Astronomy*, 323-345. 1982 D. Reidel Publishing Company
47. Michalitsianos, A.G., Kafatos, M. (1982) UV Emission from the M1 Supergiant TV Gem, *Advan. in Ultraviolet Astron.*; p 263-267
48. Michalitsianos, A.G., Kafatos, M. (1982) International Ultraviolet Explorer Observations of the Aquarii jet, *The Astrophysical Journal*, 262:L47-L51
49. Michalitsianos, A.G., Kafatos, M. (1982) UV Time- Dependent Emission in SY Muscae, *The Nature of Symbiotic Stars*, 191-194
50. Michalitsianos, A.G., Kafatos, M., Feibelman, W.A., Hobbs, R.W. (1982) Ultraviolet Observations of Four Symbiotic Stars, *The Astrophysical Journal*, 253: 735-744
51. Michalitsianos, A.G., Kafatos, M., Feibelman, W.A., Wallerstein, G. (1982) A Brightening of the Symbiotic Variable SY Muscae, *Astronomy and Astrophysics*, 109: 136-140
52. Michalitsianos, A.G., Kafatos, M., Stencel, R.E., Boyarchuk, A.A. (1982) UV Eclipse Observations of CI Cyg, *The Nature of Symbiotic Stars*, 141-144
53. Sopka, R.J., Herbig, G., Kafatos, M., Michalitsianos, A.G. (1982) Radio and Optical Observations of the R Aquarii Jet, *The Astrophysical Journal*, 258: L35-L39
54. Stencel, R.E., Michalitsianos, A.G. Kafatos, M. (1982) Ci Cygni Since the 1980 Eclipse, *Advan. in Ultraviolet Astron.*, p 509-512
55. Stencel, R.E., Michalitsianos, A.G. Kafatos, M., Boyarchuk, A.A. (1982) Ultraviolet Observations of the 1980 Eclipse of the Symbiotic Star CI Cygni, *The Astrophysical Journal*, 253: L77-L82

56. Bruhweiler, F.C., Kafatos, M., Brandt, J.C. (1983) The Origin of the Gum Nebula, *Comments on Astrophysics*, Vol 10, No. 1 pp. 1-14
57. Eilek, J.A., Kafatos, M. (1983) The High-Energy Spectrum of Hot Accretion Disks, *The Astrophysical Journal*, 271: 804-819
58. Kafatos, M. (1983) Hot Accretion Disks and the High Energy Background, G.O. Abell and G. Chincarini (eds.) *Early Evolution of the Universe and Its Present Structure*, 345-346. 1983 by IAU
59. Kafatos, M. (1983) UV Properties of Symbiotic Stars, *Highlights of Astronomy*, Vol 6. 641-642
60. Kafatos, M. (1983) Gamma-Rays from Active Galactic Nuclei, *Highlights of Astronomy*, Vol 6. 505-510
61. Kafatos, M., Eilek, J.A. (1983) Hot Accretion Disks and  $\gamma$ -Ray Cosmic Sources, Electron-Positron Pairs in Astrophysics, M.L. Burns, A.K. Harding, and R. Ramaty (eds.) *American Institute of Physics*
62. Kafatos, M., Hollis, J.M., Michalitsianos, A.G. (1983) High Spatial Resolution VLA Observations of the R Aquarii Jet, *The Astrophysical Journal*, 267: L103-L107
63. Kafatos, M., Michalitsianos, A.G. Allen, D.A., Stencel, R.E. (1983) Observations of two Peculiar Emission Objects in the Large Magellanic Cloud, *The Astrophysical Journal*, 275: 584-591
64. Kafatos, M., Michalitsianos, A.G., Brugioni, J. (1983) Temporal UV Emission from the Peculiar Star RX Puppis, *Future of Ultraviolet Astronomy Based on Six Years of IUE Res.*, p 326-329
65. Michalitsianos, A.G., Hollis, J.M., Kafatos, M. (1983) IUE Observations of the "Jet" Emission Feature in R Aquarii, *Future of Ultraviolet Astronomy Based on Six Years of IUE Res.*; p 163-166
66. Kafatos, M., Eilek, J.A. (1984) Hot Accretion Disks in the Centers of Quasars, Quasars and Gravitational Lenses; 24th Liege Astrophysical Colloquium: 468-472
67. Kafatos, M., Michalitsianos, A.G. (1984) Symbiotic Stars, *Scientific American*, vol. 251, No. 1:84-94
68. Kenyon, S.J., Michalitsianos, A.G., Lutz, J.H., Kafatos, M. (1984) The 1984 Eclipse of the Symbiotic Binary SY Muscae, *Center for Astrophysics: Astronomical Society of the Pacific* -- No. 2100
69. Michalitsianos, A.G., Kafatos, M. (1984) Variable Ultraviolet Emission in SY Muscae, *Monthly Notices of the Royal Astronomical Society*, 207: 575-583
70. Hollis, J.M., Kafatos, M., Michalitsianos, A.G., McAlister, H.A. (1985) The R Aquarii System at Optical and Radio Wavelengths, *The Astrophysical Journal*, 289: 765-773
71. Kafatos, M. (1985) Line Emission from Supernova Remnants and Charge Transfer Reactions, The Crab Nebula and related Supernova Remnants: 1-6
72. Kafatos, M. (1985) The Universal Diagrams and Life in the Universe, *The Search for Extraterrestrial Life: Recent Developments*, 245-249
73. Kafatos, M., Michalitsianos, A.G., Fahey, R.P. (1985) High Dispersion Ultraviolet Spectra of the Peculiar Star RX Puppis, *The Astrophysical Journal Supplement Series*, 59: 785-798
74. Bruhweiler, F.C., Kafatos, M., Sofia, U.J. (1986) The Unusual Ultraviolet Variability of the QSO 3C 232, *The Astrophysical Journal*, 303: L31-L35
75. Hollis, J.M., Michalitsianos, A.G., Kafatos, M., Wright, M.C.H., Welch, W.J. (1986) Sub-Arc Second 2 Centimeter Continuum and SiO Spectral Line Observations of R Aquarii, *The Astrophysical Journal*, 309: L53-L57
76. Hollis, J.M., Oliverson, R.J., Kafatos, M., Michalitsianos, A.G. (1986) Evidence for Extended radio Emission Surrounding RX Puppis, *The Astrophysical Journal*, 301: 877-880
77. Kafatos, M. (1986) The Position of Brown Dwarfs on the Universal Diagrams, *Universal Diagrams*: 198-205
78. Kafatos, M., Michalitsianos, A.G., Hollis, J.M. (1986) Ultraviolet Variability and Mass Expulsion from R Aquarii, *The Astrophysical Journal*, 62: 853-874
79. Michalitsianos, A.G., Hollis, J.M., Kafatos, M. (1986) Jet Activity in the Symbiotic variable R Aquarii, *Canadian Journal of Physics*, Vol. 64, No. 4, 523-526
80. Hollis, J.M., Kafatos, M., Michalitsianos, A.G., Oliverson, R.J., Yusef-Zadeh, F. (1987) The Large Scale Radio Structure of R Aquarii, *The Astrophysical Journal*, 321: L55-L59
81. McCray, R., Kafatos, M. (1987) Shells and Propagating Star Formation, *The Astrophysical Journal*, 317: 190-196
82. Kafatos, M. (1988) Alpha Disks, *Advanced Space Research* Vol. 8, No. 2-3: (2) 105-(2) 112
83. Michalitsianos, A.G., Kafatos, M. (1988) A Review of the R Aquarii System, *The Symbiotic Phenomenon*, Dordrecht, Kluwer Academic Publishers, 1988, p. 235-243
84. Michalitsianos, A.G., Kafatos, M., Fahey, R.P., Viotti, R., Cassatella, A., Altamore, A. (1988) The C IV Doublet Ratio Intensity Effect in Symbiotic Stars, *The Astrophysical Journal*, Vol. 331, No. 1:477-485

85. Michalitsianos, A.G., Oliverson, R.J., Hollis, J.M., Kafatos, M., Crull, H.E., Miller, R.J. (1988) R Aquarii: The Large-Scale Optical Nebula and the Mira Variable Position, *The Astronomical Journal*, Vol. 95, No. 5:1478-1483
86. Hollis, J.M., Yusef-Zadeh, F., Cornwell, T.J., Oliverson, R.J., Michalitsianos, A.G., Kafatos, M. (1989) RX Puppis: Detection of Asymmetrical Radio Structure, *The Astrophysical Journal*, 337:514-519
87. Kafatos, M. (1989) Horizons of Knowledge in Cosmology, M. Kafatos (ed.), Bell's Theorem, Quantum Theory and Conceptions of the Universe, 195-210: 1989 Kluwer Academic Publishers
88. Kafatos, M., Hollis, J.M., Yusef-Zadeh, F., Michalitsianos, A.G., Elitzur, M. (1989) R Aquarii: Evidence for a Two-Sided radio Jet and a Circumbinary SiO Maser, *The Astrophysical Journal*, 346:991-996
89. Kafatos, M. (1989) Complementary and Cosmology, M. Kafatos (ed.), Bell's Theorem, Quantum Theory and Conceptions of the Universe, 195-210: 1989 Kluwer Academic Publishers
90. Michalitsianos, A.G., Kafatos, M. Shore, S.N. (1989) Sanduleak's Star (LMC Anonymous): Its Similarity in the Far-Ultraviolet with the Luminous Object n Carinae and Sn 1987A, *The Astrophysical Journal*, 341: 367-371
91. Hintzen, P., Maran, S.P., Michalitsianos, A.G., Foltz, C.B., Chafee, F.H., Kafatos, M. (1990) Moderate-Resolution Spectroscopy of the Lensed Quasar 2237+0305: A search for Ca ii Absorption Due to the Interstellar Medium in the Foreground Lensing Galaxy, *The Astrophysical Journal*, 99:45-48
92. Hollis, J.M., Wright, M.C.H., Welch, W.J., Jewell, P.R., Crull, H.E., Kafatos, M., Michalitsianos, A.G. (1990) Comparisons of SiO Maser and Long-Period Variable Positions in the Aquarii and Omicron Ceti Binary Systems, *The Astrophysical Journal*, 361:663-666
93. Kafatos, M. (1990) Limitations of Observational Cosmology, Y. Kondo (ed.), *Observatories in Earth Orbit and Beyond*, 543-550: 1990 Kluwer Academic Publishers
94. Hollis, J.M., Oliverson, R.J., Kafatos, M., Michalitsianos, A.J., Wagner, R.M. (1991) Ultraviolet and Optical Spectroscopy of the R Aquarii Symmetrical Jet, *The Astrophysical Journal*, 377:227-234
95. Lynch, J.P., Kafatos, M. (1991) Forbidden Lines of  $np^q$  Ions. II. Line Intensities, *The Astrophysical Journal Supplement Series*, 76:1169-1191
96. Michalitsianos, A.G., Kafatos, M., Meier, S.R. (1992) Fe ii Fluorescence and Anomalous C iv Doublet Intensities in Symbiotic Novae, *The Astrophysical Journal*, 389:649-656
97. Kafatos, M., Meier, S.R. (1993) Extended Variability of the Symbiotic Star AG Draconis, *The Astrophysical Journal Supplement series*, 8:201-214
98. Becker, P.A., Kafatos, M., Maisack, M. (1994) Relativistic Particle Transport in Hot Accretion Disks, *The Astrophysical Journal Supplement Series*, 90:949-953
99. Kafatos, M., Yang, R. (1994) Transonic Inviscid Disc Flows in the Schwarzschild Metric – I, *Monthly Notices of the Royal Astronomical Society*, 268:925-937
100. Maisack, M., Becker, P.A., Kafatos, M. (1994) Multifrequency Emission from Hot Ion Disks, *The Astrophysical Journal Supplement Series*, 92:533-534
101. Meier, S.R., Kafatos, M., Fahey, R.P., Michalitsianos, A.G. (1994) A far-Ultraviolet Atlas of Symbiotic Stars Observed with IUE. I. the SWP Range, *The Astrophysical Journal Supplement Series*, 94: 183-220
102. Michalitsianos, A.G., Perez, M., Kafatos, M. (1994) Evidence Signalling the Start of Enhanced Counterjet Flow in the Symbiotic System R Aquarii, *The Astrophysical Journal*, Vol. 423, No 1, part 1. 441-445
103. Becker, P., Kafatos, M. (1995) Implications of Gamma-Ray Transparency Constraints in Blazars: Minimum Distances and Gamma-Ray Collimation, *The Astrophysical Journal*, 453:83-94
104. Kafatos, M. (1995) Jets and MHD Flows Associated with Symbiotic Stars, KC Tsinganos (ed.) *Solar and Astrophysical Magnetohydrodynamic Flows*, 585-605
105. Macomb, D.J., Akerlof, C.W., Aller, H.D., Aller, M.F., Bertsch, D.L., Kafatos, M., et al. (1995) Multiwavelength Observations of Markarian 421 During a TeV/X-Ray Flare, *The Astrophysical Journal*, 449:L99-L103
106. McNaron-Brown, K., Johnson, W.N., Jung, G.V., Kinzer, R.L., Kurfess, J.D., Strickman, M.S., Dermer, C.D., Grabelsky, D.A., Purcell, W.R., Ulmer, M.P., Kafatos, M. Becker, P.A., Straubert, R., Maisack, M. (1995) OSSE Observations in Blazars, *The Astrophysical Journal*, 451: 575-584
107. Meier, S.R., Kafatos, M. (1995) Ultraviolet Temporal Variability of the Peculiar Star R Aquarii, *The Astrophysical Journal*, 451: 359-371

108. Yang, R., Kafatos, M. (1995) Shock Study in Fully Relativistic Isothermal Flows. II, *Astronomy and Astrophysics*, 295:238-244
109. Beall, J., Becker, P., Ellsworth, R., Geldzahler, B., Guillory, J., Hertz, P., Kafatos, M., Nemiroff, R., Olson, K., Ozernoy, L., Titarchuk, L., Willin, J., Wood, Y., Yang, R. (1996) Center for Earth Observing and Space Research Report, George Mason University
110. Kafatos, Menas (1996) Knowledge Limits in Cosmology, Examining the Big Bang and Diffuse Background Radiations, 431-438
111. Subramanian, P., Becker, P.A., Kafatos, M. (1996) Ion Viscosity Mediated by Tangled Magnetic Fields: An Application to Black Hole Accretion Disks, *The Astrophysical Journal*, 469:784-793
112. Hollis, J.M., Pedelty, J.A., Kafatos, M. (1997) Lateral Shock of the R Aquarii Jet, *The Astrophysical Journal*, 490:302-310
113. Ramos, E., Kafatos, M., Fruscione, A., Bruhweiler, F.C., McHardy, I.M., Hartman, R.C., Titarchuk, L.G., von Montigny, C. (1997) Contemporaneous IUE, EUVE, and High-Energy Observations of 3C 273, *The Astrophysical Journal*, 482: 167-172
114. Kafatos, M. (1998) Non-locality, Complementarity and Cosmology, Causality and Locality in Modern Physics, 29-34
115. Kafatos, M. (1998) Research, Information Technology and the University of the 21st Century, White Paper
116. Kafatos, M. (1999) Book Review: Statistical Geometry and Applications to Microphysics and Cosmology -- Roy, S., *Foundations of Physics*, Vol. 29, No. 6, 1999
117. Roy, S., Kafatos, M. (1999) Complementary principle and Cognition Process, *Physics Essays*, Vol. 12, No. 4: 662-668
118. Kafatos, M. (1999) Non-Locality, Foundation Principles and Consciousness, *Noetic Journal* Vol. 2 pp. 21-26
119. Roy, S., Kafatos, M., Dutta, S. (1999) Broadening of Spectral Lines Due to Dynamic Multiple Scattering and the Tully- Fisher Relation, *The American Physical Society Physical Review A*. Vol. 60, No. 1, 273-279
120. Draganescu, M., Kafatos, M. (2000) Generalized Foundational principles in the Philosophy of Science, *The Noetic Press*, R. Amoroso et al (eds.): *Science and the Primacy of Consciousness*, pp 86-98
121. El-Askary, H., Kafatos, M., Hegazy, H.N. (2000) Environmental Monitoring of Dust Storms Over the Nile Delta, Egypt Using MODIS Satellite Data, *Egypt Journal of Remote Sensing and Space Science*, Vol. 3, pp. 113-124
122. Kafatos, M. (2000) Cosmological, Quantum and Underlying Principles: Clues to the Fundamental Role of Consciousness in the Universe, *Noesis* Vol. XXV, pp. 73-92
123. Kafatos, M. (2000) The Link from Physics to Consciousness, *Review of the Physics of Consciousness: the Quantum Mind and the Meaning of Life: Physics World*, Nov. 2000
124. Kafatos, M., Roy, S., Amoroso, R. (2000) Scaling in Cosmology and the Arrow of Time, *Studies on the Structure of Time: From Physics to Psycho(path)ology -- R Buccheri et al (eds.) Kluwer Publishers -- pp 191-200*
125. Li, Z., Kafatos, M. (2000) Interannual Variability of Vegetation in the United States and its Relation to El Nino/Southern Oscillation, *Remote Sensing of Environment*, 71: 239-247
126. Roy, M., Papadakis, I.E., Ramos-Colon, E., Sambruna, R., Tsinganos, K., Papamastorkis, J., Kafatos, M. (2000) The Recent High State of the BL Lacertae Object AO 0235 and Cross-Correlations Between Optical and Radio Bands, *The Astrophysical Journal*, 545: 758-771
127. Roy, S., Kafatos, M. (2000) Quantum Correlations, Large Scale Structure of the Universe and Temporal Non-Locality, *Studies on the Structure of Time: From Physics to Psycho(path)ology -- R Buccheri et al (eds.) Kluwer Publishers*
128. Roy, S., Kafatos, M., Datta, S. (2000) Shift of Spectral Lines Due to Dynamic Multiple Scattering and Screening Effect: Implications for Discordant Redshifts, *Astronomy and Astrophysics*, 353: 1134-1138
129. Kafatos, M., Draganescu, M. (2001) Toward an Integrative Science, *Noesis: Travaux du Comite Roumain d'Histoire et de Philosophie des Sciences*
130. Shin, D., Chiu, L.S., Kafatos, M. (2001) Comparison of the Monthly Precipitation Derived from the TRMM Satellite, *Geophysical Research Letters*, Vol. 28, No. 5, 795-798
131. Amoroso, R.L., Vigier, J-P., Kafatos, M., Hunter, G. (2002) Comparison of Near and Far Field Double-Slit Interferometry for Dispersion of the Photon Wavepacket, *Gravitation and Cosmology: From the Hubble Radius to the Planck Scale*, 147-156



132. Kafatos, M. (2002) The Problem of Observation in Cosmology and the Big Bang, *Gravitation and Cosmology: From the Hubble Radius to the Planck Scale*, 65-80
133. Lim, C., Kafatos, M. (2002) Frequency Analysis of Natural vegetation Distribution using NDVI/ AVHRR Data from 1981 to 2000 for North America: Correlations with SOI, *International Journal of Remote Sensing*, Vol. 23, No. 17, 3347-3383
134. Yang, R., Kafatos, M. (2002) Massive Data Sets Issues in earth Observing, J. Abello, P.M Paradolo, M.G.C. Resende (eds.) Kluwer Academic Publishers. *Handbook of Massive Data Sets*: pp1093-1140
135. Draganescu, M., Kafatos, M. (2003) Community and Social factors for the Integrative Science, *NOESIS 2003*
136. El-Askary, H., Sarkar, S., Chiu, L., Kafatos, M., El-Ghazawi, T. (2003) Rain Gauge derived Precipitation Variability over Virginia and its Relation with the El Nino Southern Oscillation, *Advances in Space Research (SOSPAR publication)*
137. El-Askary, H., Sarkar, S., Kafatos, M., El-Ghazawi, T. (2003) A Multisensor Approach to Dust Storm Monitoring Over the Nile Delta, *IEEE Transactions on geoscience and Remote Sensing*, Vol. 41, No. 10: 1-6
138. Kafatos, M., Roy, S., Draganescu, M. (2003) The Conscious Universe: Physical Processes, Consciousness and the Nature of Time, R. Buccheri, M. Saniga, and W.M. Stuckey (eds.) Kluwer Academic Publishers: *the Nature of Time: Geometry, Physics and Perception*, 115-127
139. Yang, R., Kafatos, M., Doty, b., Kitner, J., Pham, L. (2003) A Distributed Enhanced Server for Multidimensional Scientific Data, *Computing in Science and Engineering March/ April 2003* --- Copublished by IEEE CS and the AIP 2003 IEEE
140. Cervone, G., Kafatos, M., Napoletani, D., Singh, R.P. (2004) Wavelet Maxima Curves of Surface Latent Heat Flux Associated with Two Recent Greek Earthquakes, *Natural Hazards and Earth System Sciences*, Vol. 4:359-374
141. El-Askary, H., Gautam, R., Kafatos, M. (2004) Remote sensing of Dust Storms Over the Indo-Gangetic Basin, *Journal of Indian Society of remote Sensing*, Vol. 32. No.2:121-124
142. Gautam, R., Singh, R.P., Kafatos, M. (2004) Changes in Ocean properties Associated with Hurricane Isabel, *International Journal of remote Sensing*, Vol. 25, No. 00, 1-8
143. Lim, C., Kafatos, M., Megonigal, P. (2004) Correlation between Atmospheric CO2 Concentration and Vegetation Greenness in North America: CO2 Fertilization Effect, *Climate Research: Interactions of Climate with Organisms, Ecosystems and Human Societies* Vol. 28:11-22
144. Roy, S., Kafatos, M. (2004) Quantum Processes and Functional Geometry: New Perspectives in Brain Dynamics, *Forma*, Vol. 19: 69-84
145. Sarkar, S., Kafatos, M. (2004) Interannual Variability of Vegetation over the Indian Sub-Continent and its Relation with ENSO), *Remote Sensing of Environment* 90:268-280
146. Sarkar, S., Singh, R.P., Kafatos, M. (2004) Further Evidences for the Weakening Relationship of Indian Rainfall and ENSO over India, *Geophysical Research Letters*, Vol. 31, L13209
147. Singh, R.P., Dey, S., Sahoo, A.K., Kafatos, M. (2004) Retrieval of Water Vapor Using SSM/I and its Relation with the Onset of Monsoon, *Annales Geophysicae* 22:1-5
148. Sun, D., Kafatos, M., Singh, R., Hui, L., Lui, Z., Yang, R. (2004) Anomalous Cold Water Detected along Mid-Atlantic Coast, *Remote Sensing of Environment* 90:268-280
149. Cervone, G., Kafatos, M. (2005) Characteristics of Surface Latent Heat Flux over the Indian Sub-Continent, (Submitted to *Annales Geophysicae*)
150. Cervone, G., Kafatos, M., Napoletani, D., Singh, R.P. (2005) An Early Warning System for Coastal Earthquakes, (Reprint Submitted to *Advances in Space Research* April 2005) Vol 37, No.4, pp. 636-642
151. Cervone, G., Singh, R.P., Kafatos, M., Yu, C. (2005) Wavelet Maxima Curves of Surface Latent Heat Flux Anomalies Associated with Indian Earthquakes, *Natural Hazards and Earth System Sciences*, Vol. 5: 87-99
152. Gautam, R., Cervone, G., Singh, R.P., Kafatos, M. (2005) Characteristics of Meteorological Parameters Associated with Hurricane Isabel, *Geophysical Research Letters*, Vol. 32, L04801 2005
153. Gautam, R., Singh, R.P., Kafatos, M. (2005) Changes in Ocean Properties associated with Hurricane Isabel, *International Journal of Remote Sensing* Vol. 26, No. 3: 643-649
154. Liu, X., Kafatos, M. (2005) Land-cover missing and spectral vegetation indices, *International Journal of Remote Sensing: Remote Sensing Letters* Vol. 26, no. 15 pp. 3321-3327
155. Prasad, A.K., Singh, R.P. Kafatos, M. (2005) Influence of Coal based Thermal Power Plants on Aerosol Optical properties in the Indian Sub-Continent, *Geophysical Research Letters*, Vol. 33, L05805, 2006,doi: 10.1029/2003 GL023801

156. Qu, J., Hao, X., Yang, R., Sommers, W., Dasgupta, S., Bhoi, S., Kafatos, M., Liu, Y., Achtemeier, G., Riebau, A.R., Coronado, P. (2005) Bridging earth Observations: Remote Sensing Measurements, Fire Modeling and Air Quality decision Support System in the Eastern United States, EOM Vol. XIV, No. 6 August 2005
157. Sahoo, A., Sarkar, S., Singh, R.P., Kafatos, M., Summers, M.E. (2005) Declining trend of total ozone column over the northern parts of India, *International Journal of Remote Sensing* Vol 26, No 16, pp 3433-3440, 20 August 2005
158. Salem, F., Kafatos, M., El-Ghazawi, T., Gomez, R., Yang, R. (2005) Hyperspectral Image Assessment of Oil-Contaminated Wetland, *International Journal of Remote Sensing*, Vol, 26, No 4: 811-821
159. Sarkar, S., Chiu, L., Kafatos, M., Singh, R. (2005) Sensitivity of Rainfall on Land Cover Change over South East Asia: Some Observational Results, (Submitted to *Advances in Space Research* 2005)
160. Yang, C., Wong, D.W., Yang, R., Kafatos, M., Li, Q. (2005) Performance-improving Techniques in Web-based GIS, *International Journal of Geographical information Science*, Vol. 19, no. 3, March 2005, 319 – 342
161. Singh, R.P., Dey, S., Bhoi, S., Sun, D., Cervone, G., Kafatos, M. (2005) Anomalous Increase of Chlorophyll concentrations Associated with Earthquakes, *Advances in Space Research (COSPAR publication)* 16 August 2005
162. Prasad, A.K., Chai, L., Singh, R.P., Kafatos, M. (2005) Crop Yield Estimation Model for Iowa using Remote Sensing and Surface Parameters, *International Journal of Applied Earth Observation of Geoinformation*, vol. 8. No. 1 pp 26-33, Jan 2006
163. Kafatos, M., Roy, S., Roy, M. (2005) Variation of Physical Constants, redshift and the Arrow of Time, *ACTA PHYSICA POLONICA B* Vol. 36 (2005) No. 10
164. Cervone, G., Maekawa, S., Singh, R.P., Hayakawa, M., Kafatos, M., Shvets, A. (2006) Surface latent heat flux and nighttime LF anomalies prior to the M<sub>z</sub>=8.3 Tokachi-Oki Earthquake, *Natural Hazards and Earth System Sciences*, 6, 109-114, 2006
165. Sun, D., Pinker, R.T., Kafatos, M. (2006) Diurnal temperature range over the United States: A Satellite View, *Geophysical Research Letters*, Vol. 33, L05705, 2006
166. Prasad, A.K., Singh, R.P., Kafatos, M. (2006) Influence of Coal based thermal power plants on aerosol optical properties in the Indo-Gangetic basin, *Geophysical Research Letters*, Vol. 33, L05805, 2006
167. Sun, D., Gautam, R., Cervone, G., Boybeyi, Z., Kafatos, M. (2006) Comment on "Satellite Altimetry and the Intensification of Hurricane Katrina", *EOS, Transactions, American Geophysical Union*, Vol. 87, No. 8, 21 February 2006 pg 89.
168. Kafatos, M., Becker, P., Boybeyi, Z. (2006) Computational Sciences: At the Intersection of Science and Engineering - Case Study for Academic and Research Programs, *Turk, J Elec Engin*, Vol. 14 No. 1, 2006
169. Kafatos, M., Sun, D., Gautam, R., Boybeyi, Z., Yang, R., Cervone, G. (2006) Role of anomalous warm gulf waters in the intensification of Hurricane Katrina, *Geophysical Research letters*, Vol. 33, L17802, 2006
170. Sun, D., Kafatos, M., Pinker, R.T., Eastering, D.R. (2006) Seasonal Variations in Diurnal Temperature range from Satellites and Surface Observations, *IEEE Transactions on Geoscience and Remote Sensing*, vol. 44, No. 10, October 2006. pp. 2779 – 2785
171. Sarkar, S., Chokngamwong, R., Singh, R.P., Kafatos, M., Cervone, G. (2006) Variability of aerosol optical depth and aerosol forcing over India, *Advances in Space Research (a COSPAR publication)* Vol. 137, No. 12, pp 2153-2154. 2006
172. Papasimakis, N., Cervone, G., Pallikari, F., Kafatos, M. (2006) Multifactoral character of Surface latent heat flux, *Physica A* 371 (2006) 703-718
173. Gautam, R., Hsu, N.C., Kafatos, M., Tsay, S. (2007) Influences of Winter Haze on fog/ low cloud over the Indo - Gangetic plains, *Journal of Geophysical Research*, Vol. 112, D05205, 2007
174. Liu, X., Kafatos, M. (2007) MISR multi-angular spectral remote sensing for temperate forest mapping at 1.1-km resolution, *International Journal of Remote Sensing*, Vol. 28, Nos. 1-2, January 2007, 459-464
175. Yang, R., Tang, J., Kafatos, M. (2007) Improved Associated Conditions in Rapid Intensification of Tropical Cyclones, *Geophysical Research Letters* Vol. 34 L20807, doi: 10.1029/ 2007 G6031241
176. Bhattacharjee, P.S., Prasad, A.K., Kafatos, M., Singh, R.P (2007) Influence of a Dust Storm on Carbon Monoxide and Water Vapor over Indo-Gangetic Plains, *Journal of Geophysical Research*, Vol. 112, D19203, doi: 10.1029/207JD 008469

177. Singh, R.P., Prasad, A.K., Kayetha, V.K., Kafatos, M. (2008) Enhancement of oceanic parameters associated with dust storms using satellite data, *J. Geophys. Res.* 113, C11008
178. Sahoo, A.K., Houser, P.R., Ferguson, C., Wood, E.F., Dirmeyer, P.A., Kafatos, M. (2008) Evaluation of AMSR-E soil moisture results using the in-situ data over the Little River Experimental Watershed, Georgia, *Remote Sensing of Environment*, Vol. 112, no. 6, pp. 3142-3152, 16 June, 2008
179. Sun, D., Lau, K.M., Kafatos, M. (2008) Contrasting the 2007 and 2005 hurricane seasons: Evidence of Possible impacts of Saharan dry air and dust on tropical cyclone activity in the Atlantic basin, *Geophysical Research Letters*, Vol. 35 L15405, 2008
180. Sun, D., Lau, W.K.M., Kafatos, M., Boybeyi, Z., Leptoukh, G., Yang, C., Yang, R. (2009) Numerical Simulations of the Impacts of the Saharan Air Layer on Atlantic Tropical Cyclone Development, *Journal of Climate* Vol. 22. pg. 6230-6259. 2009
181. Prasad, A.K., Yang, K.H.S., El-Askary, H.M., Kafatos, M. (2009) Melting of Major Glaciers in the western Himalayas: evidence of climatic changes from long term MSU derived tropospheric temperature trend (1979-2008), *Annales Geophysicae*, 27, 4505-4519, 2009
182. Gautam, R., Hsu, N.C., Lau, K.M., Tsay, S.C., Kafatos, M. (2009) Enhanced pre-monsoon warming over the Himalayan- Gangetic region from 1979-2007, *Geophysical Research Letters*, vol. 36, L07705, doi: 10.1029/2009GL037641, 2009
183. Dasgupta, S., Singh, R.P., Kafatos, M. (2009) Comparison of Global Chlorophyll concentrations using MODIS data, *Advances in Space Research* 43 (2009) 1090-1100
184. El-Askary, H., Farouk, R., Ichoku, C., Kafatos, M. (2009) Transport of dust and anthropogenic aerosols across Alexandria, Egypt, *Annales Geophysicae*, 27, 2869-2879, 2009
185. Boybeyi, Z., Kafatos, M., Sun, D. (2009) Modeling of Tropical Cyclones and Intensity Forecasting, *Earth and Environmental Science Abstract. Hurricanes and Climate Change 2009*, 1021, doi: 10.1007/978-0-387-09410-6\_18
186. Amiridis, V., Kafatos, M., Perez, C., Kazadzis, S., Gerasopoulos, E., Mamouri, R.E., Papayannis, A., Kokkalis, P., Giannakaki, E., Basart, S., Daglis, I., Zerefos, C. (2009) The Potential of the Synergistic Use of Passive and Active Remote Sensing Measurements for the Validation of a Regional Dust Model, *Ann. Geophys.*, 27, 3155-3164, 2009.
187. Prasad, A.K., El-Askary, H., Kafatos, M. (2010) Implications of high altitude desert dust transport from Western Sahara to Nile delta during biomass burning season, *Environmental Pollution* 158 (2010) 3385-3391
188. Kwak, D.A., Lee, W.K., Cho, H.K., Lee, S.H., Son, Y., Kafatos, M., Kim, S.R. (2010) Estimating stem volume and biomass of *Pinus Koraiensis* using LiDAR data, *JPR Symposium, J Plant Res* doi: 10.1007/s 10265-010-0310-0, 25 February 2010
189. Kwak, D.A., Lee, W.K., Kafatos, M., Son, Y., Cho, H.K., Lee, S.H. (2010) Estimation of effective plant area index for South Korean forests using LiDAR system, *Science China, Life Sciences* July 210 Vol. 53, No. 7: 898-908, doi: 10.1007/s11427-010-4019-z
190. Kwak, D.A., Chung, J., Lee, W.K., Kafatos, M., Lee, S.Y., cho, H.K., Lee, S.H. (2010) Evaluation for Damaged Degree of Vegetation by Forest Fire using LiDAR and Digital Aerial Photograph, (PE&RS) *Photogrammetric Engineering and Remote Sensing* Vol. 76, No.3, march 2010, pp. 277-287
191. Singh, R.P., Kumar, J.S., Zlotnicki, J., Kafatos, M. (2010) Satellite Detection of carbon monoxide emission prior to the Gujarat earthquake of 26 January 2001, *Applied Geochemistry* 25 (2010) 580-585, 25 January, 2010
192. Kafatos, M., Tanzi, R.E., Chopra, D. (2011) How Consciousness Becomes the Physical Universe, *Journal of Cosmology*, 2011, Vol. 14. 1318-1328  
<http://journalofcosmology.com/Consciousness140.html>
193. Prasad, A.K., El-Askary, H.M., Asrar, G.R., Kafatos, M., Jaswal, A. (2011) Melting of Major Glaciers in Himalayas: Role of Desert Dust and Anthropogenic Aerosols, *Planet Earth 2011 - Global Warming Challenges and Opportunities for Policy and Practice*, Ed. Elias G. Carayannis, InTech publishing, October 2011 (ISBN: 978-953-307-733-8)
194. Kafatos, M., Nassikas, A.A. (2011) Retro-causation, Minimum Contradictions and Non-locality, *Quantum Retrocausation: Theory and Experiment*, 13-14 June 2011, San Diego, California AIP Conf. Proc. 1408 (ed. D. Sheehan), pp. 291-296; doi:<http://dx.doi.org/10.1063/1.3663730>
195. Kafatos, M. (2011) Climate Change, facts and Hype: Hazards and Impacts and What does the Future Hold?, in print
196. Kafatos, M. (2011) The Death of the Science-Philosophy Dichotomy?, *Washington Post*, March 29th, 2011

197. El-Askary, H., Prasad, A.K., Kallos, G., El-Raey, M., Kafatos, M. (2011) Analyzing Black Cloud Dynamics over Cairo, Nile Delta Region and Alexandria using Aerosols and Water Vapor Data, *Air Quality-Models and Applications*, Ed. Nicolas Mazzeo, InTech, July 2011 (ISBN: 978-953-307-307-1)
198. Ouzounov, D., Pulinets, S., Hattori, K., Kafatos, M., Taylor, P. (2011) Atmospheric Response to Fukushima Daiichi NPP (Japan) Accident Revealed by Satellite and Ground Observations, arXiv:1107.0930v1 [physics.geo-ph]
199. Ouzounov, D., Pulinets, S., Romanov, A., Romanov, A., Tsybulya, K., Davidenko, D., Kafatos, M., Taylor, P. (2011) Atmosphere-ionosphere response to the M9 Tohoku earthquake revealed by multi-instrument space-borne and ground observations: Preliminary results, *Earthquake Science*, Vol 24, No. 6, pp 557-564, doi: 10.1007/s11589-011-0817-z
200. Kaskaoutis, D.G., Prasad, A.K., Kosmopoulos, P.G., Sinha, P.R., Kharol, S.K., Gupta, P., El-Askary, H.M., and Kafatos, M. (2012) Synergistic use of remote sensing and modeling for tracing dust storms in the Mediterranean, *Adv. Met.* Volume 2012, doi: 10.1155/2012/861026
201. Ouzounov, D., Pulinets, S., Hattori, K., Kafatos, M., Taylor, P. (2012) Atmospheric Signals Associated with Major Earthquakes. A Multi-Sensor Approach, in "The Frontier of Earthquake Prediction Studies" Ed. M. Hayakawa, Nihon-senmontosho-Shuppan, Tokyo, 510-531, 2012
202. Prasad, A., Singh, R.P., Kafatos M. (2012) Influence of coal-based thermal power plants on the spatial-temporal variability of tropospheric NO<sub>2</sub> column over India, *Environ Monit Assess*, Vol 184:1891-1907, doi:10.1007/10661-011-2087-6
203. Ma, Y., Kafatos, M., and Davidson, N.E. (2012) Surface pressure profiles, vortex structure and initialization for hurricane prediction. Part I: analysis of observed and synthetic structures, *Meteorol Atmos Phys*, Vol 117:5-23, DOI 10.1007/s00703-012-0190-z.
204. El-Askary, H., Allali, M., Rakovski, C., Prasad, A., Kafatos, M., and Struppa, D. (2012) Computational Methods in Climate Data, *WIREs Comput Stat* 2012. Doi:10.1002/wics.1213
205. Chopra, D., Kafatos, M. (2012) In Physics, the Arrow of Time Gets Bent, *SF Chronicle*, April 28, 2012 and in *The Huffington Post*, April 30, 2012. <http://www.sfgate.com/opinion/chopra/article/In-Physics-the-Arrow-of-Time-Gets-Bent-3517808.php>
206. Chopra, D., Tanzi, R., Kafatos, M. (2012) Did God discover the God particle?, *San Francisco Chronicle*, Friday July 13, 2012 (<http://www.sfgate.com/columnists/chopra/article/Did-God-discover-the-God-particle-3705245.php#page-1>)
207. Grandpierre, A., Kafatos, M. Biological Autonomy, *Philosophy Study* (accepted).

#### SELECTED BOOKS and RESEARCH MONOGRAPHS

1. Kafatos, M. (ed) (1984) *Astronomy Laboratory Manual*, Kendall Hunt Pub Co, ISBN: 978-0840334053.
2. Kafatos, M., Harrington, R.S., Maran, S.P. (eds) (1986) *Astrophysics of Brown Dwarfs*, Cambridge University Press, ISBN: 978-0521323376
3. Kafatos, M., (ed) (1988) *Supermassive Black Holes*, Cambridge University Press, ISBN: 978-0521342469
4. Kafatos, M. (ed) (1989) *Bell's Theorem, Quantum Theory and Conceptions of the Universe (Fundamental Theories of Physics)*, Springer, ISBN: 978-9048140589
5. Kafatos, M., and Kafatou, T. (1991) *Looking In, Seeing Out: Consciousness and Cosmos*, Quest Books, ISBN: 978-0835606745
6. Nadeau, R. and M. Kafatos, *The Non-local Universe: The New Physics and Matters of the Mind*, Oxford, Oxford University Press (1999), ISBN: 978-0195144086. (47 citations)—translated in German, Dutch, etc.
7. Kafatos, M. and R. Nadeau, *The Conscious Universe: Parts and Wholes in Physical Reality*, New York, Springer-Verlag (2000), ISBN: 978-0387988658. (50 citations)—translated in German, Dutch. etc.
8. Kerschberg, L. and M. Kafatos (editors), *Thirteenth International Conference on Scientific and Statistical database Management*, Los Alamitos, CA, IEEE Computer Society (2001), ISBN: 0-7695-1218-6. (11 citations)
9. Yang, R., Kafatos, M. Massive Data Sets Issues in Earth Observing, Book Chapter, *Handbook of Massive Data Sets*, J. Abello, *etal.* (eds), pp. 1093-1140, Kluwer Academic, ISBN: 978-1402004896.
10. Kafatos, M., and Draganescu, M. (eds), *Principles of Integrative Science*, Bucharest, Technical Publishing House, (2003), ISBN: 973-31-2199-1. (1 citation)

11. Zhou, G., Baysal, O., Kafatos, M., and Yang, R. eds. *Real-time Information Technology for Future Intelligent Earth Observing Satellites*, Hierophantes: Pottstown, Pennsylvania, (2003), ISBN: 0-9727940-0-X. (13 citations)
12. Qu, J.J., Gao, W., Kafatos, M., Murphy, R.E., Salomonson, V.V., eds. *Earth Science Satellite Remote Sensing: Science and Instruments Vol. I, & Data, Computational Processing, and Tools, Vol. II*, Beijing, Tsinghua Univ. Press, Berlin, Springer-Verlag, (2006), ISBN: 3-540-35606-1, 3-540-35630-4 (Springer), 7-302-12844-8, 7-302-12855-3 (Tsinghua). (15 citations)—translated in Chinese
13. El-Askary, H. and Kafatos M. (2007) Natural and Anthropogenic Aerosol-Related Hazard Affecting Megacities, Book chapter in *Large-Scale Disasters: Prediction, Control and Mitigation*, M. Gad-el Hak (edit.) Cambridge University Press, ISBN: 0521872936. (N/A)
14. Boybeyi, Z., Kafatos, M. and Sun, D. (2007) Global Climate Change and Hurricane Activity, in *First International Summit on Hurricanes and Climate Change*, Crete, Greece, J. Elsner (edit.), Springer-Verlag. (N/A)
15. Prasad, A.K., El-Askary, H.M., Asrar, G.R., Kafatos, M., Jaswal, A. (2011) Melting of Major Glaciers in Himalayas: Role of Desert Dust and Anthropogenic Aerosols, in *Global Warming – Book I*, InTech, Croatia.
16. El-Askary, H., Prasad, A.K., Kallos, G., El-Raey, M., Kafatos, M. (2011) Analyzing Black Cloud Dynamics over Cairo, Nile Delta Region and Alexandria using Aerosols and Water Vapor Data, in *Air Quality-Models and Applications*, Mazzeo, N. (Ed), InTech, Croatia.
17. Ouzounov, D., Pulinet, S., Hattori, K., Kafatos, M., Taylor, P. (2011) Atmospheric Signals Associated with Major Earthquakes: A Multi-Sensor Approach, in the book *Frontier of Earthquake Short-term Prediction Study*, Hayakawa, M. (Ed), NSTSS, Japan.
18. Chopra, D., Penrose, R., Kragh, H., Kafatos, M., King, C., Joseph, R., Mensky, M., Clarke, C. (2011) *Cosmology of Consciousness: Quantum Physics & Neuroscience of the Mind*, Cosmology Science Publishers, ISBN: 978-0970073358.
19. Sarafoglou, N., Kafatos, M., Chapter 4.1. Energy production, conversion, transmission and distribution, policy, planning and mitigation process – general considerations: infrastructure and vulnerability due to climate (in press).

#### **ORGANIZATION OF INTERNATIONAL CONFERENCES (partial list)**

*Kafatos has developed programs at every level, working with industry and other stakeholders, linking practical applications with fundamental knowledge and scholarship; he has developed the Technology Group, working with industry and academia.*

1. Co-Chair, *The Great Tohoku Earthquake of 2011: Lessons Learned for California*, (Chapman University, 19 March, 2012)
2. Co-Chair, *The Power of Cloud: Driving Innovation for your Business*, (Chapman University, and Ingram Micro, 28 Nov., 2011)
3. Chair, *Energy, Economy & the Environment*, (Chapman University, April, 2011)
4. Chair, *Nature of Reality*, Deepak Chopra, Michael Shermer, Menas Kafatos, and other panelists (Chapman University, March, 2011)
5. Co-chair, *Beyond Copenhagen*, (Chapman University, April, 2010)
6. Chair, Science Steering Committee, *From Deserts to Monsoons* (Crete, June 2008).
7. Member of Science Steering Committee, *Sand and Dust Storm International Project* (WMO-sponsored, Beijing China, and Barcelona, Spain, 2005, and 2007).
8. *EastFIRE Conference*, Chair, Steering Committee, (Fairfax, VA, May 2005).
9. Chair of Steering Committee & General Chair, *Future Intelligent Earth Observing Satellites (FIEOS)*, Commission-I, ISPRS (Denver, November, 2002).
10. Conference Chair, *Scientific & Statistical Database Management* meeting, (George Mason University, 18-20 July, 2001).
11. Co-Chair, *Fundamental Principles of Cosmology: The Foundations for a Conscious Universe*, (GMU Symposium, Oct. 1999).
12. Co-Chair, SOC, *International Astronomical Union (IAU) Symposium 168 "Examining the Big Bang"*, (Hague, 1996).

## INVITED TALKS (partial list)

1. Yellow River Conservation Commission (YRCC) Zhengzhou (2005)
2. Chinese Forest Science Academy (2005, 2006)
3. National Satellite Meteorological Center/Chinese Meteorological Administration (NSMC) (2005)
4. Institute for Remote Sensing (2005, 2006)
5. Wuhan University (November 2006)
6. *The Gaia Theory*, Conference, Arlington, Virginia (14 October, 2006)
7. *Quantum Mechanical non-Locality*, Dept. of Commerce (18 October, 2006)
8. *Tropical Cyclones and Aerosols*, American Geophysical Union (AGU) (winter meeting, 2006)
9. *Non-parametric tests for quasar data and Hubble Diagram*, Erice, Italy (April 2007)
10. *Consciousness, Quantum Theory and Brain Dynamics*, Univ. of Salzburg (July 2007)
11. *Climate Change and Hazards*, Korea University (November 2007)
12. *Climate Change and Hazards*, Seoul National University (December, 2007)
13. *Dust Storms and Aerosols*, Korean Meteorological Administration (December 2007)
14. *Climate Change and Hazards*, Bowen Center for the Study of the Family (January 2008)
15. *Climate Change, Hazards, and Regional Effects in Greece*, Embassy of Greece (February 2008)
16. Panel member at Nature of Reality Roundtable, New York, NY, Philoctetes Center, (January 2011)
17. *The Physics of Consciousness - Sages and Scientists: The Merging of a New Future*, (February 2011)
18. *Consciousness and The Universe: Non-local, Entangled, Probabilistic and Complementary Reality at Toward A Science of Consciousness 2011* (May 2011)
19. *Climate Impacts at Regional Scales, Hazards and Adaptation Strategies* at the Institute for Space Applications & Remote Sensing (ISARS) of the National Observatory of Athens (NOA), Greece (July 2011).
20. Invited lecture at Science and Non-Duality (SAND) 2011, San Rafael, CA, October 19 – 24, 2011, organized by Neti Neti Media. Lecture was entitled “Underlying Principles in Quantum Theory and Metaphysics and the Role of Consciousness in the Universe”.
21. Sages and Scientists: The Merging of a New Future, March 3 – 5, 2012 – organized by the Chopra Foundation – Kafatos presented a lecture on “The Riddle of Consciousness”.
22. Invited participant in panel discussion; and Forum on Eastern Philosophy & Consciousness, at the Towards a Science of Consciousness conference, April 9 and 10, 2012, Tucson, AZ.
23. Seminar in the School of Engineering, Ewha Womans University, April 17, Seoul, Korea.
24. Seminar in the School of Biosciences, Korea University, April 18, Seoul, Korea.
25. Public lecture on urban agriculture, Korean Craft Design Foundation (KCDF), April 19, 2012, Seoul, Korea.
26. Invited lecture at Science and Non-Duality (SAND) Europe 2012, Doorn, The Netherlands, May 29 – June 3, 2012. Lecture was entitled “Consciousness, Self and Science”.
27. Seminar, National Observatory of Athens (NOA), June 6, 2012. Regional Climate Modeling and Observations with Applications to Agriculture.
28. Seminar, Department of Physics, University of Athens, June 8, 2012, *ibid*.
29. Public lecture organized by the Bank of Greece, series EMEKA, June 13, 2012, *ibid*.

## MEDIA

For his work on natural hazards, climate change and quantum theory and consciousness:

- He has been interviewed many times since 2005 on national and international TV, including ABC Night News (national news, Aug. 2005) and Korean TV KBS1 (national news, June 2007, aired Sept. 2007). These interviews were focused on hurricanes, earthquake monitoring and aerosol pollution.
- In 2010 and 2011, he was interviewed many times by Greek national newspapers on environmental hazards and climate change, earthquake prediction, quantum theory and the nature of time (*Patris, Ethnos, Eleutherotypia, Kathemerini*). Interviewed several times by radio and TV in Crete.
- Featured as one of the most influential Greeks abroad in a special edition of *The National Herald*.
- No Risk of Japan Radiation on West Coast, OC Register, March 15, 2011
- KCBS 5 o'clock news – Kafatos interviewed about Japanese Earthquake, March 15, 2011

- Trace Radiation could reach West Coast, OC Register, March 17, 2011
- KFMB 9 o'clock news – Kafatos interviewed about Japanese Earthquake, March 17, 2011
- KCAL 10 o'clock news – Kafatos interviewed about Japanese Earthquake/radiation, March 17, 2011
- KCAL 10 o'clock news – Kafatos interviewed about Japanese Earthquake and radiation transport, March 22, 2011
- KCAL 8 o'clock news – Kafatos interviewed about winds and radiation transport/Japanese earthquake, March 27, 2011
- “This is not the Greece I Knew”, in Eleutherotypia (Greek National newspaper), July 10, 2011
- KRITA TV (Cretan TV) Kafatos interviewed on earthquake forecasting, July 15, 2011
- TV CRETA (Cretan TV) Kafatos interviewed on earthquake forecasting, July 15, 2011
- NET (Greek National) TV, Kafatos interviewed on earthquake forecasting, quantum theory and science in general, July 17, 2011
- NET (Greek National) Radio, Kafatos interviewed on earthquake forecasting, July 23, 2011
- Recently, he received extensive media attention after the Japanese earthquake and tsunami in March of 2011 on KCBS, KCAL, KFMB and the OC Register Newspaper. In March 2012, he was interviewed by NBC in regards to tracking the paths across the Pacific Ocean of debris resulting from the Japanese tsunami of 2011. This interview was picked up by 21 NBC affiliated nationwide.
- “Will climate change alter state’s farming?” Article in OC Register, September 23, 2011
- Featured in the Wall Street Journal (2012)
- “Did God discover the God particle?” Article in SF Chronicle, July 13, 2012 and in The Huffington Post, July 17, 2012. <http://www.sfgate.com/columnists/chopra/article/Did-God-discover-the-God-particle-3705245.php#page-1>
- “In Physics, the Arrow of Time Gets Bent.” Article in SF Chronicle, April 28, 2012 and in The Huffington Post, April 30, 2012. <http://www.sfgate.com/opinion/chopra/article/In-Physics-the-Arrow-of-Time-Gets-Bent-3517808.php>
- In the past, he had also been interviewed numerous times by radio stations, local TV stations and newspapers (Atlanta Journal) on other work such as black holes, general relativity, etc.

#### **HONORS/MEMBERSHIPS/BRIDGING THE DISCIPLINES (partial list)**

*Kafatos is internationally known for bridging the disciplines, writing and lecturing extensively on the convergence between science and philosophy as the need for real dialogue between science, spirituality and religion.*

- Distinguished faculty Award, George Mason University, 1986
- Honorary Member, Romanian Academy of Sciences, 2000
- National Academy of Sciences' US National Committee on Data for Science and Technology (CODATA) – past, 2000-2003; International Astronomical Union (IAU), on-going
- Federation of Earth Science Information Partners (member of its Executive Committee); and Chair of its Partnership Committee (responsible for new ESIP members) , 1999-2001
- American Astronautical Society, Vice President for Education, 2001-2003
- American Association for the Advancement of Science (AAAS); American Astronomical Society (AAS); American Geophysical Union (AGU); American Physical Society (APS); Hellenic Astronomical Society; Royal Astronomical Society (RAS); IEEE Computer Society, on-going
- Science Steering Committee, Sand & Dust Storms-Warning and Assessment System, sponsored by the World Meteorological Organization, etc., 2005-present
- Member, Board of Trustees, Universities Space Research Association (USRA), 2006-2008.
- Member, OCTANe Board, 2010-present
- Recipient of the Spirit of Rustom Roy Award, Chopra Foundation, February 26, 2011: *honors individuals whose devotion and commitment to their passion for finding answers in their field is matched only by their commitment to humanity.*
- IEEE Orange County Chapter - Outstanding Leadership and Professional Service Award, October, 2011.