

*Dead Mars, Dying Earth:
Stories to Save a Planet*

A Book Proposal, © 1999

Proposal by Monica Rix Paxson

for a book authored by Dr. John E. Brandenburg and Monica Rix Paxson

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Overview

Mars once had an ocean larger than the Pacific.
Mars once had an atmosphere.
Mars once had life.
Now it is a dead, airless, desert.
What happened to Mars? Could it happen to us?

Dead Mars, Dying Earth: Stories to Save a Planet is a non-fiction scientific drama on a planetary scale. It describes the threat to Earth of an irrevocable worldwide climatic collapse driven by global warming. *Dead Mars, Dying Earth* makes the case that the desolate, frozen remains of Mars, once an abode of life, demonstrate Earth's fate if we do not rapidly change our ways and reverse the process of "Marsification" we have begun.

Dead Mars, Dying Earth takes the reader on an amazing journey, weaving a rich tapestry of themes from a diversity of sources including: history, planetary science, biography, cognitive theory, microbiology, popular culture, plasma physics, literature and modern scientific discovery.

Dead Mars, Dying Earth is co-authored by physicist Dr. John Brandenburg, a scientist of tremendous scope, who is a real-life rocket scientist, fusion researcher and Mars meteorite expert, and by Monica Rix Paxson, a writer and scientific editor. Both are convinced that this horrifying and potentially planet-saving story must be told to avert disaster. Together, John and Monica are the first heralds of an alarming drop in the Earth's atmospheric oxygen levels, which Dr. Brandenburg has termed OID—an acronym for Oxygen Inventory Depletion. They presented a refereed scientific prediction on OID on December 10, 1998 at the international American Geophysical Union conference to a fascinated and alarmed scientific community. This book will reveal the drop in oxygen levels to the general public. It will also disclose a new scientific theory of a dramatic new disaster scenario that could cause an overnight climate implosion, which the authors are calling, "Death by Soda Pop."

Although you might expect a work on such a serious subject to be very "mental," you'll be surprised at how often the authors use powerful story telling to give the reader a direct, visceral feel for the subject matter. Logic and passion align in equal measures as the book entices readers to step into its wondrous world of story and mystery— as well as to follow its precisely drawn scientific arguments.

Technical consultant to John and Monica is the noted scientist, Dr. David Webb. Dr. Webb, was a member of the former US National Commission on Space, and the chairman of the UN's Conference on

Peaceful Uses of Space, and is an eminent authority on space and planetary science, who has been one of the world's foremost developers of collegiate-level space science programs. In addition, the manuscript has been carefully reviewed by Dr. Horace Crater, a quantum physicist, from the University of Tennessee Space Science Institute, leading US imaging scientist Dr. Mark Carlotto of Pacific Sierra Research and Mars researcher/geochemist James Erjavec and a number of environmentalists, including wind energy pioneer, Don Mayer.

While *Dead Mars, Dying Earth* offers a heaping platter of remarkable and true stories of scientific discovery, it reads like page-turning fiction, with driven characters and building revelations. It tells of a NASA researcher's growing anguish as a series of stunning scientific disclosures about Mars make it all too apparent that Earth is gravely threatened by the same processes that ended life on Mars. The shocking reality of our peril comes into focus when Dr. Brandenburg discovers the deadly connection between the two planets. For many of the rest of us that realization will come through reading *Dead Mars, Dying Earth*—a millennial *Silent Spring* for a cynical and resigned world.

Appealing uniquely to both space science enthusiasts and environmentalists and speaking powerfully of Earth's darkest future, this book also illuminates the way out by making an overwhelming case for how we can transform our use of fossil fuels and end global warming. In doing so, *Dead Mars, Dying Earth* demands that we redirect our priorities to triage our environment and engage in a newly integrated system the authors call Garden Earth Enterprise.

Positioning

Dead Mars Dying Earth is carefully positioned to be a mainstream, nonfiction thriller. The science in *Dead Mars, Dying Earth* speaks directly to the most overwhelming and deepest of society's planetary concerns, namely, the ominous acceleration of global warming driven by ever-increasing carbon dioxide. The book examines the history of our relationship with this gas, from the discovery of its deadly effects in what was then called carbonic acid gas, to its benign use in producing the bubbles in soda pop, and back. Beyond this, ala *The Ascent of Man*, the book weaves together a vivid mosaic of images and stories to show how humanity came to threaten Earth's very survival and, surprisingly, how the discoveries of space science and bacteriology may show us both the way out of our peril and also Earth's ultimate desolation if we fail to follow the path to planetary redemption.

One of the book's many remarkable stories is that of Dr. Brandenburg himself—a political conservative who arrived at his environmental convictions through his scientific research of Mars. When, in shocked silence, he recognized Mars' cruel fate, this former, self-confessed “brownlasher” and anti-environmentalist was forced to come to terms with his earlier apologist stance, and make a one-hundred-eighty-degree transformation into a passionate environmentalist.

Finally, the book offers something no other environmental book has so far offered: a well-reasoned, and surprisingly painless way to stop the destruction of Earth's air, water and biosphere—which allows Western society to maintain much of its present lifestyle— while meeting the humanitarian needs of the world's exploding population.

Marketing

Dead Mars, Dying Earth: Stories to Save a Planet has enormous marketing potential because it offers a vehicle by which the traditionally antagonistic domains of science, economics and the environmental movement may be equally galvanized to actions to preserve life on this planet. This book may offer the first truly universal cause for humanity to rally around: the protection of our atmosphere, and, more essentially, our opportunity to continue breathing.

The book has strong appeal to several well-defined market segments of avid book readers:

- Those who love a thrilling read.

Initial reads of the manuscript resoundingly demonstrated virtually across the board appeal to every reader who previewed it. Initial comments (see enclosure) include:

“I couldn't put it down.” **Dr. Horace Crater**, physicist, U of Tennessee Space Institute

“This is surely the definitive analysis to date of our ecological crisis—a startling, fresh vision of our predicament, spelled out for us in clear, simple language, and driven by a gripping narrative form.” **Joseph Chilton Pearce**, author of *Magical Child* and *Evolution's End*.

“Not since the *Limits to Growth*, which I read nearly 30 years ago has a book so effectively made the case documenting the negative impact of man on the environment, while raising the specter of environmental catastrophe and yet holding out realistic solutions and hope. *Dead Mars, Dying Earth: Stories to Save a Planet* goes one step further with a writing style that is less a documentary and more drama, holding the reader's interest and effectively making the case that our Earth is exceptionally rare and exceptionally fragile.” **Don Mayer**, owner Small Dog Electronics and long-time wind energy developer.

“Brandenburg and Paxson make a powerful case for fully funding fusion energy development. I strongly agree, since fusion energy is potentially one of the strongest ways to reduce excess greenhouse gases and alleviate global warming.” **Dr. Mario Molina, Nobel Laureate**, 1995, for his discovery of the negative effects of chlorofluorocarbons and their damage to the ozone layer.

Readers of books on new consciousness. *Dead Mars, Dying Earth* is a book that conveys fundamental truth about human evolution and our current standing in the cosmos, and does so with the generous voice of a wise and compassionate storyteller. Although these include stories of science and technology, they are immediately recognized as a form of inspiration and new consciousness by the readers of the Neale Donald Walsch series, *Conversations with God*, Thom Hartmann's, *The Last Hours of Ancient Sunlight* and James Redfield's, *Celestine Prophecy*.

Readers of good scientific mysteries. *Dead Mars Dying Earth* is structured as a series of mystery like themes, each one woven throughout the book and building in intensity toward a series of stunning scenes and conclusions near the book's end. So the book is like a Disney ride: it scares you and gets you all wet, but, by its finale, leaves you thrilled and eager for more. Readers of Clifford Stoll's *The Cuckoo's Egg: Tracking a Spy Through the Maze of Computer Espionage* or Myron Arms' *Riddle of the Ice, A Scientific Adventure into the Arctic* will appreciate the ride.

Everyone who's scared about global warming and who wants to know that the future can have a happy ending. It's time for some good news, and, while it offers a stern dose of reality first, *Dead Mars Dying Earth* delivers the goods. It features a a nine-point plan by which we can predictably reverse our looming environmental crisis—followed by a lovely tale from a future where all is well on Earth and Mars is once again alive.

Members of environmental organizations and followers of environmental concerns, including: three generations of the readers of Rachel Carson's *Silent Spring*, Sierra Club members, Greenpeace and Green Party members and rainforest preservation groups. *This is the first space science book which can be marketed equally powerfully as an environmental book.*

Readers of space science such as Carl Sagan's, and Arthur C. Clarke's readers, and the same audience which has logged onto NASA's Mars Pathfinder web site over 600 million times.

Popular science aficionados such as readers of Asimov's non-fiction, readers of Lewis Thomas' *Lives of a Cell*, James Gleick's *Chaos*, those who read *Scientific American*, *Popular Science* or those who are interested in the relation between science and human thought such as readers of Fritjof Capra's *The Tao of Physics* .

Those interested in crisis or disaster stories such as the Ebola threat as told in *The Hot Zone* or global flooding as in *Worlds in Collision*. It will be of particular interest to readers who follow disasters related to space such as followers of the Challenger disaster or the Apollo 13 mission.

Members of the aerospace and fusion communities will love this book since it points out not only the value of their past work, and offers powerful justification for a future manned mission to Mars, for a fully developed and thriving fusion energy industry and for an ambitious program to protect Earth from comet impacts. Expect strong regional sales in Florida, Texas, California, Washington, Massachusetts, Wisconsin, Illinois, Ohio, New Mexico, Alabama, Colorado and Washington, DC.

Everyone who wants to maintain a modern lifestyle while still healing the planet will be relieved and excited to find out just how close we are, given the political support, to achieving a fusion- and alternative energy-based economy which can meet human and environmental needs and support a healthy world economy.

Teacher and public policy advocates will be able to use this book to rally their students and followers out of their apathy and into focused action for the good of the planet. The stories of discovery and do-it-yourself experiments make this book a likely candidate for classrooms worldwide. Monica Rix Paxson has already presented some of the ideas to one of the most advanced grade school-level environmental science programs in Chicago and received rave reviews.

Employees of corporations eager to reconcile their concerns for the health of the economy with those for the planet.. In fact, anyone interested in knowing what part they can play in the reconciliation but unwilling or unable to read dense scientific tracts will welcome the fresh approach to solutions recommended by this immensely readable book.

Social planners worldwide who need a compassionate blueprint which handles both social and environmental needs in the same coherent plan.

Organization of Contents

Dead Mars, Dying Earth uses a non-linear approach to story telling. Structured more like a symphony or a movie than most works of non-fiction, the “stories” or segments unfold like mini mysteries and the themes that are introduced are repeated in increasingly intense iterations. The book is arranged around a loose chronology of scientific and planetary events which have taken place over the last twenty-five years. The driving storyline is of Mars exploration and the unfolding environmental problems on Earth. But even more, there is a whole second level of development around a group of key ideas that interwoven with the historical stories. Rather than attempt to recreate the exact organization of the book in this proposal, here is a list of some of the major ideas that are presented and developed over the course of the entire book along with the “memetic” (thought virus) name we have given these ideas. So, this is not a table of contents, but rather a list of the underlying ideas.

1. Carbon Die-oxide

Dead Mars, Dying Earth traces the history of carbon dioxide from its isolation by Joseph Black and Joseph Priestly in the 1700s, to its current overabundance in the atmosphere.

Examined along the way are carbon dioxide’s relationship to:

- global warming--which is a very direct and frightening one
- impaired breathing (along with other pollutants) and a possible relationship to asthma,
- the death of coral and fish in the oceans,
- its major place in the thin atmosphere of dead Mars and
- changing cultural views about carbon dioxide’s harmfulness
- the possibly lethal side effects of oceanic “soda pop”

This “new view of CO₂” is so powerful it can produce an almost visceral reorganization of how we view this invisible, persistent and potentially life-threatening substance—which, of course, in proper concentrations, gives us the life we live.

2. Life in the Zone

The idea of the Solar system’s “zone of life” is introduced, along with a billion-year scenario that will ultimately compel humans to inhabit Mars. We also explore how we will prepare Mars to sustain Earth life by generating a greenhouse effect and, also, how we will need to learn to control our own planetary atmosphere in order to continue to survive on Earth. Whether it is to control temperatures from an increasingly bright Sun, or to reduce the effects of increased carbon dioxide, we will need to learn to modify our atmosphere and control planetary warmth to remain in the narrow zone of temperatures where humans can thrive. We need look no further than burning Venus or frozen Mars to understand just how narrow and fragile that zone of life really is.

3. We’re not Terraforming Mars, We’re Marsiforming Earth

A chilling look at how the processes of global warming, deforestation and fires are replacing our tropical rainforests with deserts, now predicted to girdle the Earth by as early as 2050. The book explores the eerie similarities between the Martian deserts and the newly denuded areas of Earth. It considers the death of Venus, the implications of the comet strike on Jupiter, the possibilities of a living Mars, the current thinking about the demise of life there. Closer to home we consider the social, political and economic consequences of global warming on our own planet and how understanding Mars’ fate may already have saved the Earth by showing us the horrors of nuclear winter.

4. The Life of a Parasite

The origins of life are explored from Arrenius’ support of the theory of panspermia to Robert Koch’s early work with the microbes of cholera and anthrax. We look at how Dr. Brandenburg determined that

microfossils aboard the Carbonaceous Chondrite meteorites are actually from Mars. We examine how life forms co-exist in symbiotic relationships. We inquire into the nature of human symbiosis. Are we parasites? Are we looking for a new host as we kill this Earthly one, as parasites inevitably do? We examine several causes of mass extinctions, including meteor strikes and carbon dioxide release with the suggestion that heading them off may be our greatest act of benefit to the biosphere.

5. Environmental Triage

Overwhelmed with the amount of damage we may have caused, numbed by the ongoing cries of need, trying to work within a scientific model that does not consider time a factor, and fighting an opposition blinded by short sighted economics, how do we begin to sort things out and take effective action? We explore the medical model of triage; the brilliant data research of Florence Nightingale; the value of saving human lives and economies (as well as the environment); the human impulse to rescue, and how we can begin to manage our environment rationally and parse the tasks ahead in a workable fashion.

6. Object Permanence and Ponzi Schemes

One of the challenges of dealing with our environmental problems is that they are, to a great extent, beneath the threshold of human perceptions. From Piaget to Charles Ponzi, we look at how humans perceive and look at the gaps in cognition, the psychology of denial and distancing and the powerful addiction of being fully invested in a scheme of stripping the environment for short term wealth that is beginning to collapse. From learning to deal with the invisible with respect, as we have with contagion, to looking at where we may consciously need to evolve in order to survive, we examine the human part in the environmental equation.

7. The Environment IS the Economy

With this idea we begin to reveal the underlying fallacy that is widely taken for truth: that the environment and the economy are separate, yet interrelated domains. We introduce the concept of the co-existence of dimensions and arrive at the conclusion that the environment and the economy describe the same domain in different ways. This concept alone can help to end a false dichotomy which pits the needs of people, the biosphere and economic interests against one another in an unnatural and ultimately deadly war to control Earth's resources.

8. OID (Oxygen Inventory Depletion), All Sinks Plus and Death by Soda Pop

This is a dynamically inter-related series of dramatic scientific scenarios that reveal risks that are not currently in the public's awareness. At the level of "hit by a meteor," these hypotheses point out that the real risks of global warming can arise from what you don't know that you don't know as well as what you are watching out for. We include a discussion of the possibility that everyone on Earth, like Schrödinger's cat, are currently in an alive but already dead state and just don't know it yet. The book advocates taking action to "save the cat" even if there are uncertainties about our current state.

9. The Future is Fusion and the Garden Earth Enterprise

With rescue stories that span from the crew aboard the ship Carpathia which made a dangerous dash to try and save the Titanic to Robert Koch's and Florence Nightingale's life-saving scientific work, we tell the inspirational tales of how humans are capable of acting successfully and compassionately, even in the face of what seem to be dangerously impossible odds. In addition to making a case for heroic action, we propose a nine-point rescue plan we are calling Garden Earth Enterprise, which recommends a simple, rational approach to resolving our most pressing needs.

Key Points of The Garden Earth Enterprise

1. Develop hot fusion electrical production. Only through developing fusion can we assure a relatively gentle transition to a healed atmosphere and a healthy human society that allows us to use our existing infrastructure. Fusion is relatively clean, produces no greenhouse gases and, when fully implemented, will provide the world with a virtually unlimited energy source. Included in the book is an extensive explanation by MIT fusion researcher, Dr. Bruno Coppi, of the ten-to-twelve-year timetable to bring the first commercial fusion plant online. From there the technology can spread world-wide to replace our coal, gas, oil and fission-fired electrical generation and can provide Third World as well as Western countries with the energy they need to feed and warm their people and to develop healthy, indigenous economies.
2. Develop practical electrical cars and reinvigorate a worldwide electrical rail transit system, along the lines of the EU system.
3. Pay rainforest and boreal nations for their oxygen production. Swap international debt for oxygen production.
4. Keep advancing solar energy.
5. Fund a vigorous manned and unmanned space program.
6. Ratify the Kyoto Protocol and quit complaining about it. This means everyone!
7. Move closer to nature, conserve and practice a lifestyle less dependent on fossil fuels or electricity.
8. Triage environmental problems. Put the money for environmental problems wherever on the globe it can best reduce the worst problems of the environment.
9. Create a Peace Corps comprised of members from every country and expand its mission to include a worldwide project to reverse global warming.

On-going Scientific Research:

Research for the *Dead Mars, Dying Earth* has already produced two major scientific papers and several more are in the works. Here is a list of the papers and authors that relate to issues covered in the book:

Atmospheric Oxygen Depletion. OID (Oxygen Inventory Depletion) as a Global Concern: Magnitude, Causes and Remedies, by Dr. Brandenburg and Monica Rix Paxson, a December 1998 poster session at the American Geophysical Union which revealed the ongoing loss of atmospheric oxygen (now about 150 parts per million) which is an ongoing and worsening problem.

Desktop Fusion. "Progress on the CMTX (Colliding Micro-Tori eXperiment)" a poster session at the American Physical Association Fall, 1998 about the successful results of Brandenburg's desktop fusion experiments which use microwaves to produce fusion.

Posters presented at the Spring 1999 AGU meeting include:

Extreme Danger to Earth's Air Glow Layer. Dr. Brandenburg's paper on the dangers to the air glow layer (the layer just outside the ozone layer) posed by a new Xenon propulsion rocket system which is scheduled to be used to launch all the communication satellites.

Recent Water on Mars. Jim Erjavec's powerful analysis of the many indications of recent water based erosion on the Martian surface and particularly in the Cydonia region. The implication is that Mars has water far more recently than research to this point has suggested. This argument was very strongly supported by the Mars Orbital Laser Altimeter team's elevation mapping of Mars, also presented at the AGU, which showed that the Northern Plains of Mars form a great basin in which a paleo-ocean, covering one-third of Mars' surface once probably resided.

Ice-Filled Craters on Mars. Harry Moore's discovery of ice-filled craters in the area of Cydonia, which suggest that water may be quite near the surface in the Cydonia region, therefore making it an ideal landing area for the first human mission to Mars.

Further Confirmations of the New Mars Synthesis and the Martian Origin of the CI Meteorites.

Major future papers scheduled for Fall release will delve further into the dramatic new issues around carbon raised by the research in this book.

Biographical Information

Co-authors Dr. John Brandenburg and Monica Rix Paxson met as author and editor on a project for a British astronomical magazine. Along with a number of other Mars scientists, they joined forces again on the book, *The Case for the Face*, released in March of 1998.

Despite the sobering nature of the subject of *Dead Mars, Dying Earth*, both John and Monica are joyous personalities and expert communicators—using both humor and warmth to convey their passionate concern for the issues of planetary well being. Both co-authors have extensive media experience (see biographies attached), actively pursue a remarkable range of studies, and love the limelight.

John is a Ph.D. Plasma Physicist and a real, live “rocket scientist,” whose diverse research explores the cutting edges of rocket propulsion, Mars science, nuclear fusion, plasma physics, ball lightning, gravity, and an unusual kind of meteorite, the CI Carbonaceous Chondrite, which may very well be from Mars. A pioneer in Mars anomaly research, Dr. Brandenburg has spoken widely on the subject of Mars, including on numerous radio programs and television specials. As a NASA contracted researcher, John has literally “been there” during many of the major scientific events of the last twenty years and his first-hand experience makes him a fascinating interview.

Monica is an inveterate explorer of human possibility and consciousness and is a writer committed to reaching readers as diverse as those who read scientific journals to those who read *Ladies Home Journal*. Among other credits, she is the creator of The Model for Cultural Impact (a non-traditional market research tool designed to reveal future trends), has packaged and/or edited nearly 100 books, including over 1800 pages of published scientific work, has been a national trainer for DMA’s advanced seminar series teaching individuals how to achieve enhanced creativity, and she has become a nationally known media personality as a result of her extensive book promotional efforts.

From the union of their extensive and diverse backgrounds, Paxson and Brandenburg have crafted an unusually broad-visioned work blending a hugely compassionate worldview with edge-of-the-seat scientific revelations.

More extensive biographies of Brandenburg and Paxson follow along with that of Dr. David C. Webb who has served as technical consultant for this book.

Biography
Dr. John E. Brandenburg
Principal Research Scientist

John Brandenburg was born on April 28th, 1953 at the Mayo Clinic in Rochester, Minnesota, where his father, a medical doctor, was doing his internship. He grew up in Medford, Oregon, a small industrial city where his favorite memory was of appearing in his high school's production of Camelot as Merlin—a role he has consistently refused to relinquish ever since.

Majoring in physics, John earned his bachelors degree in 1975 at what is now Southern Oregon State University. Dr. Brandenburg performed research on toroidal plasmas for his Masters (1977), and received a Ph.D. (1981) in Magnetic Fusion Energy and Theoretical Plasma Physics at Lawrence Livermore National Laboratory. He was hired by Sandia Laboratories in 1982 to continue his research and also performed extensive theoretical research into the stability of rotating electron beams propagating through air. He discovered a new form of the "firehose" instability peculiar to rotating electron beams. This discovery then confirmed in both simulations and experiments. In 1984, while still at Sandia, Dr. Brandenburg applied variation techniques to the problem of plasmoid formation and propagation in space.

While doing plasma research, Dr. Brandenburg became interested in Mars climate and biology and presented the results of his research at the Independent Mars Investigation Team at the Case for Mars II meeting in Boulder, Colorado in 1984. As one of the pioneers in Mars anomaly research, (which has been an ongoing area of public interest), Dr. Brandenburg has lectured and been interviewed widely.

At Mission Research Corporation from 1985 to 1990, Dr. Brandenburg performed research on pulsed power and space problems involved with the Red Team for the Strategic Defense Initiative (SDI). He was the principal investigator for the DIMEX experiment, which created a shell of magnetically confined plasma around an object in a vacuum chamber to simulate those conditions in space. In 1991, after working as a private consultant, he joined Scientific Research Instruments (SRI) where he worked on a successful follow-up the DIMEX experiment, DIMEX-II for the Phillips Laboratory.

In 1993, Dr. Brandenburg worked on the Clementine, a satellite project in which he was in charge of the planning and implementation of its lunar data collection operations. These operations included calibrating Clementine's cameras, developing extensive programs in Visual Basic to display spacecraft's orbits, status and groundtrack on the main mission display, and developing digital maps of the Moon. Dr. Brandenburg also wrote orbital command scripts for several of Clementine's lunar orbits.

Since 1994, Dr. Brandenburg has been the principal investigator on the Microwave Electro-Thermal (MET) thruster project for RSI in collaboration with the Center for Space Power at Texas A&M. This new type of plasma thruster promises compact, efficient, reliable propulsion for very small to large spacecraft and is being primed for use in future NASA Mars missions.

Additionally, Dr. Brandenburg is the principle investigator on a project to produce large concentrations of plasma in midair. His efforts have produced the first laboratory created ball lightning. He is also the principal investigator on a project to replicate a successful desktop fusion experiment previously conducted by NASA and has just released findings which indicate that a proposed thruster system which uses xenon may cause serious damage in the upper atmosphere to the lower thermosphere and the ozone layer.

Dr. Brandenburg is a member of the NASA Technical Advisory Committee of Technology and Commercialization (TACAC) and serves on its Space Transportation Subcommittee.

Dr. Brandenburg's long-term scientific interest in the planet Mars as the eventual goal of the American space program has led to two journal publications and numerous conference papers on this subject.

Recently his investigations have concentrated on Mars meteorites and their relationship to Mars' past climatic and biological history. His papers include the first publication of the Mars Paleo-Ocean Hypothesis in 1986, which received strong support with the results of NASA's Mars Orbital Laser Altimeter in June, 1999. More recently he has presented several papers about Mars including ones about: reinterpreting the projected the Martian cratering rate using SNC meteorite data; the role of the formation of the Lyot impact basin on Mars in the planet's climatic evolution, and about his discovery of strong evidence that the Carbonaceous Chondrite (CI) meteorites originated on Mars.

(A list of publications and reports for which J.E. Brandenburg is listed as author is available at the end of this document.)

Biography
Monica Rix Paxson
Writer/ Editor

Monica Rix Paxson was born on the campus of Kansas University on March 15th, 1951, the granddaughter of Wilton Rix, a pioneering aeronautics engineer and one of the lead developers of the Sikorsky helicopter. Monica spent her childhood in Overland Park, Kansas with her computer programmer father and her college professor mother, who studied and taught philosophy. She moved to Evanston, Illinois during high school where she worked as an apprentice to an Italian sculptor in a traditional studio foundry.

After studies at the School of the Art Institute of Chicago, Monica began a series of six historical restorations of Queen Anne period greystone buildings over the eight years between 1972 and 1980. During this time she also founded The Old Wicker Park Committee which continues to be one of Chicago's largest and most active community organizations. Her expertise in real estate rehabilitation and community development led to real estate consulting and eventually to a position as managing broker for a real estate firm.

In 1980 Monica's interest in human consciousness took the forefront. After studying a wide range of disciplines, Monica was asked to teach national seminars in creativity, including the Superconscious Seminar for DMA. Over an eight-year period, Monica's seminars were attended by thousands of people ranging from groups of medical professionals in hospitals to the high tech designers at Cray Computer, which was then manufacturing the world's fastest supercomputer.

What has clearly become a long-term love affair began for Monica in 1984 with the introduction of the Macintosh computer. Within weeks of the Mac's arrival on the market, before the term "desktop publishing" had even been coined, Monica launched a Mac based publishing business, The Professional Guide. Eventually Monica also founded The Personal Computer Center, a computer teaching facility, and The Print Group, an electronic publishing firm specializing in book publishing.

The Print Group assisted publishers in many aspects of the development, editing, design and production of books, catalogs and other publishing industry marketing materials. In addition to managing her own businesses and developing a top-notch list of clients, Monica designed electronic publishing curriculum for the professional publishing degree programs of both Chicago's Columbia College and the College of DuPage.

Since 1992, Monica's own projects either as a publisher, developer, writer or editor, have included publishing *Chicago Prop Finders Handbook*, (1992, The Print Group), authoring *The Fabulous Money Making Garage Sale Kit*, (1993, Sourcebooks), and *The Complete Garage Sale Kit*, (1994, Sourcebooks) and, most recently, editing the special edition of a British astronomical magazine (*Quest for Knowledge*) and editing and designing the book, *The Case for the Face*, (Adventures Unlimited) and consulting for Mark Victor Hansen's organization as developmental editor on *Chicken Soup* stories. Her present work, *Dead Mars Dying Earth* is scheduled for major release in both England and Germany this Fall. In Germany it will be the main hardcover Fall release for Germany's second biggest publisher.

Monica's garage sale books, written with co-author and her very own "Garage Sale Sister," Diana Rix, have been popular with the both the public and the media. Her appearances have included special segments designed around her book on both Good Morning America and CBS This Morning. Additionally, she has appeared on CNN, Maury Povich, The Mike and Maty Show, The 700 Club and Our Home as well as many regional programs. She has been interviewed on nearly 200 radio programs, and by an equivalent number of newspapers and periodicals, including the LA Times, The Chicago Tribune, McCall's Magazine (June, '97), the San Diego Reader and a recently released special edition of Better Homes and Gardens. Monica receives frequent calls back from satisfied producers as they move from production to production.

Ironically, at the same time she was regularly appearing as a “garage sale expert,” Monica was hired by the think tank of one of the world’s largest telecommunications companies as a futurist and creative consultant to help design the computer interface we will all someday use on our home television set’s Internet connection. This project represents the kind of culture shaping project Monica is committed to developing. Long fascinated by the immense possibilities of popular culture, and knowing the frustration creatives and business people alike experience in reaching markets, she developed and tested The Model for Cultural Impact, a non-traditional market research tool utilizing focus groups. She now leads highly specialized market research projects utilizing the approach she developed.

A particular ability of Monica's is the ability to cut through the many layers of confusion surrounding an issue. This allows her to derive a central tenet which is so clearly apparent that it seems like it always should have been known. This ability led to the recognition that no matter how much carbon sinks have increased, they've never been able to hold all the increased carbon dioxide we've created from burning fossil fuels. This recognition was then one of the central ideas that translated into the formula at the core of the Oxygen Inventory Depletion discovery that she and John Brandenburg presented at the AGU in November 1998.

Biography
Dr. David C. Webb
Technical Consultant

David Webb is a nationally known figure in the field of space policy, development and education. Prior to coming to the US in 1979, he was director of research for Canada's largest philanthropic foundation, having completed a Masters degree at McGill University and a Ph.D. in International and Development Education at the University of Pittsburgh. Believing that space offers a new key to global development, he came to the US to work in that area and followed an 18-month self-directed, post-doctoral study program at NASA, the Smithsonian Institution and the Library of Congress. Since then he has worked as an independent consultant to government agencies, corporations and non-profit organizations, as well as in government and academic positions.

In 1982, he was elected Chairman of the Non-Governmental Organizations attached to the United Nations Conference on the Peaceful Uses of Outer Space (Unispace '82). He organized and directed a twelve-day program on global space activities for the conferences held in Austria, August of 1982.

In March 1985 he was appointed by President Reagan as one of fifteen members of the National Commission on Space, mandated by Congress to prepare a fifty-year agenda for the United States in space. He hosted nine of the fifteen nation-wide public meetings of the Commission. The Commission's report was published by Bantam and received wide distribution.

From 1986-88 he founded and chaired, as full professor, the nation's first and only multidisciplinary Space Studies Department at the University of North Dakota. This new graduate program became the largest graduate program in the University in its first year. During this same period he was founding Chairman of the International Space University (ISU) which is now located on a permanent campus in Strasbourg, France and has 24 affiliate member universities around the world. He is a member of the Board of Governors.

In 1989, the University of Central Florida invited him to Florida as Visiting Research Scientist and Professor. There he set up a space studies program and helped establish the ten-member Florida Universities Space Grant Consortium.

In 1991, he was appointed one of ten members of the Science and Engineering Education Council of the University Space Research Association, the nation's preeminent space research body with eighty-four university institutional members.

In 1992, he was invited to become Director of Space Education, Research and Technology at Embry-Riddle Aeronautical University in Daytona Beach, Florida, with the mandate to establish and coordinate space education activities at the university's two campuses in the US, and its continuing education program in seven nations abroad and to develop new cooperative research programs and technology commercial ventures with corporate partners.

In May 1994, he retired from the University to resume writing and consulting. He believes that space remote sensing offers the world a new tool to facilitate the better management of our planet, particularly in the areas of sustainable development and in the planetary environment and recommends that the United States provide leadership in these areas now and in the next century. He speaks widely on these and other space-related topics. Interviewed on many television talk shows and radio newscasts, nationally and internationally, including CBS, ABC, NBC, CNN, McNeil-Lehrer on PBS, and local stations throughout the US; also CBC (Canada); BBC and ITV (England); Swedish State TV; ORF, Austria; Japanese TV, radio and newspapers, he is a seasoned presenter. He has received numerous awards for his activities on behalf of space and education. A full resume and list of speeches and writings are available.

Other major contributors:

James Erjavec is a geochemical geologist who works for Parsons Technology, one of the major environmental remediation corporations in the US. His pioneering work in analyzing anomalous geological features on Mars has been a major factor in the direction of Mars research over the past five years.

Stephen Corrick is a literary agent and long-time environmental activist, having worked on the country's first successful initiative to limit the growth of nuclear power in 1978. After several years in college spent working on reforestation projects, he also worked in the alternative energy business for several years in the fields of both solar and wind-energy power, and also developed an alternative energy tax credit which was adopted as law by the Montana Legislature.

Dr. John E. Brandenburg

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