



American Solar Energy Society



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Mission Statement

The American Solar Energy Society (ASES) is a nonprofit membership organization established to encourage the use of solar and other renewable energy technologies; to be a source of sound broad technical knowledge; and to provide a forum to address critical national, regional and state issues relating to clean energy solutions. ASES publishes SOLAR TODAY magazine; sponsors the annual National Solar Energy Conference, the annual National Solar Tour and supports regional and state chapters throughout the United States.



c 5 billion BC

The sun is born.

c 1.5 million BC

Prehistoric cave dwellers take advantage of passive solar technology as the stone absorbs the sun's heat for cooling during the day and warming at night.

c 5000 BC

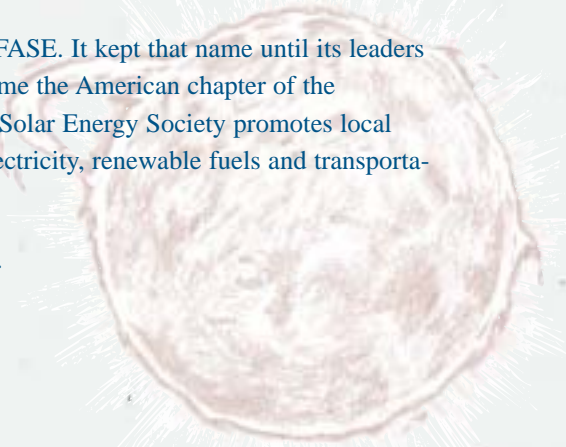
First 365 day solar calendar is developed in Egypt.



ASES History

ASES was founded in 1954 as the Association For Applied Solar Energy, AFASE. It kept that name until its leaders reorganized it as the Solar Energy Society in 1963. Shortly after that it became the American chapter of the International Solar Energy Society, what we now call ASES. The American Solar Energy Society promotes local and national involvement in issues such as sustainability, buildings, solar electricity, renewable fuels and transportation, solar thermal and resource assessment.

ASES is the United States Section of the International Solar Energy Society.



c 4000 BC

Oldest known sundial in ancient Egypt.

c 3300 BC

Egyptians begin to use wind energy to power their boats.

c 2500 BC

Egyptian Sphinx is created for Pharaoh Khafre as "the living image of the sun god."

384-322 BC

Aristotle is an early developer of the geocentric view of the solar system.

The International Solar Energy Society was formed in 1954 as a non-profit organization to provide a forum for scientific exchange in the field of renewable energy. Today, it is a non-governmental organization accredited by the United Nations and boasting more than 30,000 members in over 108 countries worldwide. ISES is widely regarded as the foremost global organization promoting the development and utilization of renewable energy.

Most recently, ISES set up the WIRE portal (<http://wire.ises.org>) for global information exchange among those active in the field of renewables. ISES members support the exchange of renewable energy technology among nations; they also receive discounts for the biennial ISES Solar World Congress, and two magazines published by Elsevier: *Refocus*, a monthly magazine for a broad audience; and the *Solar Energy Journal*, a monthly, refereed technical journal.

<http://www.ises.org>

325-255 BC

Aristarchos was the first astronomer to maintain that the Earth rotates.

284-212 BC

Archimedes makes mirrors that focus the sun's rays on attacking ships and set the ships on fire.

c 200 BC

Dositheius invents the first parabolic mirror.



SOLAR TODAY magazine

SOLAR TODAY, the official publication of the American Solar Energy Society, is an award-winning bi-monthly magazine that covers all solar technologies, including photovoltaics, solar thermal, concentrating solar power, renewable hydrogen, wind power, biomass and other clean energy sources. Articles regularly feature climate responsive buildings as case studies of deployed technology. The magazine is distributed free to all members of the Society as a membership benefit. It is also available by subscription for \$29 per year and is sold on newsstands around the U.S. Regular topics include building case studies, energy policy information, community-scale renewable energy installations, industry news and advice for consumers.

- SOLAR TODAY is the single best source for accurate and up-to-date news and information on clean energy technologies.
- SOLAR TODAY is a forum for ongoing discussion about the consequences of consumer, business and institutional energy purchasing decisions.

c 50 AD

Windmills are first used in China, Afghanistan and Persia.

c 1515 AD

Leonardo da Vinci suggests building a parabolic mirror to supply heat for boilers and swimming pools.

1473-1543

Copernicus posits a heliocentric solar system.

1610

Galileo & Johann Goldsmid discover sunspots.

In addition to theme articles, each issue of SOLAR TODAY contains at least one building case study and a “Back to the Future” article based on a historical clean energy project or theme.

Departments include:

ASES News

Energy Policy News

Industry News

Readers’ Forum

Wind Systems

Solar Industry Trends

View from Washington

Education News

Wind Energy News

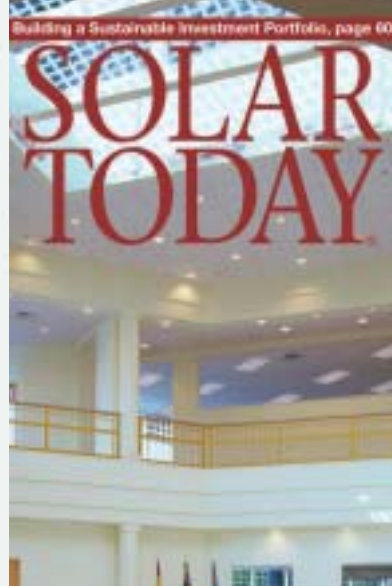
New Products

Resources

Calendar

Investing in Clean Energy

Chapter News



1767

Horace de Saussure builds a miniature greenhouse to study how much solar heat glass can trap.

1799

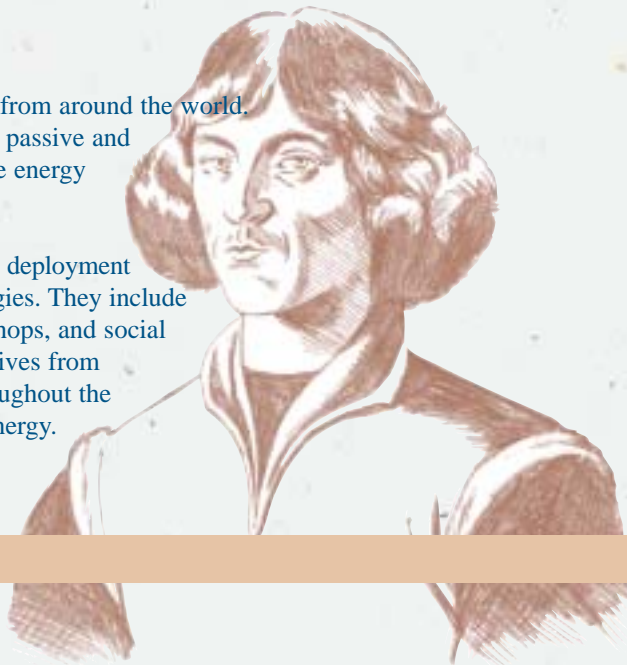
First patent granted for energy-producing “surface follower” using wave-induced ship motion to produce energy.



Solar Energy Conference

ASES' yearly National Solar Energy Conferences draw presenters and visitors from around the world. First held in 1971, the conferences promote the uses of clean energy, including passive and active solar, wind, geothermal, bio-mass and alternative fuels to build a reliable energy base for a sustainable economy.

The conferences feature timely forums for the latest research, policy discussions, deployment successes and opportunities and product displays of renewable energy technologies. They include exciting speakers, over 200 technical presentations, dozens of tours and workshops, and social events with renewable energy advocates, practitioners and friends. Representatives from companies, organizations, institutions, government and communities from throughout the U.S. and around the globe gather to exchange the latest ideas for sustainable energy.



1807

Isaac de Rivas patents the first hydrogen gas-powered vehicle.

1816

Photography is invented.

1839

Edmond Becquerel discovers electricity can be generated by the light of the sun.

Conference offerings typically include:

- **Forums** on subjects such as sustainable energy, certification programs, biofuels, industry updates and case studies.
- **Workshops** from daylighting & passive design to women-only sessions to hybrid technology and solar applications in remote and developing regions.
- **Technical Sessions** in which leaders in renewable energy technology research share their latest results and projects.
- **Tours and special events** highlighting local landmarks and activities.
- **Annual meetings** of organizations such as the Solar Energy Industries Association, the Interstate Renewable Energy Council and the Society of Building Science Educators.
- **Exhibits** highlighting the latest in clean energy technologies.



1831-1879

James Clerk Maxwell, who discovers that light is an electromagnetic wave.

1850

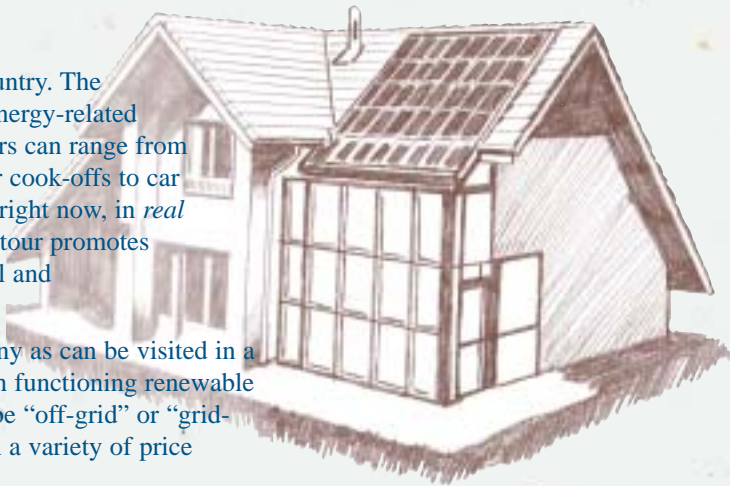
Windmills begin to be replaced by the steam engine.

With the dawn of the Industrial Revolution, a long-term warming trend begins, averaging 1°F per year.

National Solar Tour

The National Solar Tour is held annually in communities across the country. The tour takes place under the umbrella of local ASES chapters and other energy-related organizations, and is sponsored by the U.S. Department of Energy. Tours can range from a day-long event to month-long events, including everything from solar cook-offs to car and boat races. The tour highlights solar technologies that are working right now, in *real places, for real people*. By educating consumers and professionals, the tour promotes environmental awareness and the use of renewable energy in residential and commercial buildings.

Most tours have from three to eight homes or other buildings, or as many as can be visited in a day. Tour buildings include urban, suburban and rural structures, all with functioning renewable energy systems. Some buildings include passive solar design, and can be “off-grid” or “grid-connected.” The tour tries to showcase homes, schools, libraries, etc. in a variety of price ranges.



1865

Willoughby Smith first discovers the photoelectric properties of selenium.

1877

Jules Verne predicts the exhaustion of oil reserves in *Les Indes Noires*.

1878

Augustin Mouchot's solar reflector drives a steam engine at the Universal Exposition in Paris.

1882

Thomas Edison invents the electric light bulb.

The Tour lets people see for themselves how solar homes can be affordable, comfortable and practical in all kinds of climates.

- The Tour demonstrates what it's like to live and work in homes and businesses that are designed to use the sun to naturally heat, cool and light homes or to provide electricity for lighting, appliances, hot water and more.
- The Tour is the only event of its kind and scale dedicated to increasing public awareness of the advantages, availability and affordability of solar design and solar power.
- The Tour showcases real homes and public buildings, lived in and used by real people, that demonstrate a wide variety of applications of renewable energy resources. The tour educates the public on their choices as informed energy consumers.

1896

Swedish chemist Svante Arrhenius warns about the "greenhouse effect."

1905

Frank Shuman showcases his solar trough in Egypt.

1906

The famous Pierce Arrow automobile plant is designed with skylights to provide the most efficient natural light for the workers.



Publications

Advances in Solar Energy: A Review of Research and Development.

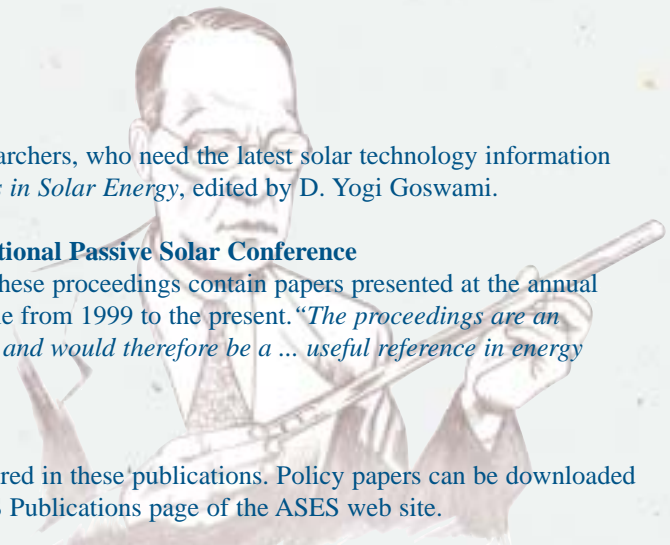
Solar energy experts, utilities and industry professionals, educators and researchers, who need the latest solar technology information depend on the in-depth reports provided in the biennial editions of *Advances in Solar Energy*, edited by D. Yogi Goswami.

Proceedings of the ASES Annual Conference and Proceedings of the National Passive Solar Conference

are published every year as part of the National Solar Energy Conference. These proceedings contain papers presented at the annual conference and can be obtained in book format. CD-ROM format is available from 1999 to the present. *“The proceedings are an important part of the development of an information system on solar energy and would therefore be a ... useful reference in energy related research institutions.”* –Reference Science Review

White Papers/Reports and Policy Papers

Expert opinion and analyses of renewable energy and policy issues are featured in these publications. Policy papers can be downloaded from the ASES web site. White paper/reports can be purchased on the ASES Publications page of the ASES web site.



1909

Frank Lloyd Wright builds the Robie House with deep overhangs sheltering windows that open to capture the best light and to allow natural ventilation.

“Day and Night” solar hot water heater company opens in Los Angeles.

1910

Albert Einstein discovers “light quanta” (photons).

1911

Roosevelt Dam is built in Salt River, Arizona.

Useful Links

www.aceee.org—the American Council for an Energy-Efficient Economy is a nonprofit organization dedicated to advancing energy efficiency as a means of promoting both economic prosperity and environmental protection.

www.dsireusa.org—a comprehensive source of information on state, local, utility, and selected federal incentives that promote renewable energy.

www.energystar.gov—ENERGY STAR is a government-backed program helping businesses and individuals protect the environment through superior energy efficiency.

www.eren.doe.gov—a gateway to hundreds of web sites and thousands of online documents on energy efficiency and renewable energy

www.homeenergysaver.lbl.gov—offers tips and suggestions on how to make your home more comfortable and energy-efficient.

www.nrel.gov—the U.S. Department of Energy's premier laboratory for renewable energy research & development and a lead lab for energy efficiency R&D.

1915

One third of all U.S. autos are electric.

1925

The Jacobs brothers begin producing battery-charging wind turbines in the U.S.

1927

Buckminster Fuller's Dymaxion House helps launch a movement for energy efficient, resource conscious precision building.



Policy

ASES actively engages in advancing renewable energy technologies by crafting formal Policy Statements on establishing drivers or the removal of barriers to the deployment of renewable energy technologies. Recent topics include: National Energy Security; Distributed Resources; Photovoltaic Interconnection Issues; Community Aggregation; Federal Government Purchases of Renewable Energy and Green Electricity; Federal Research, Development and Deployment: A Call for a National Mission Towards a Renewable Energy Future; Disclosing Information for Customer Choice In a Retail Electricity Market; and Electric Industry Restructuring and Renewable Energy Resources. These policy statements are written by the ASES Policy Committee.

The ASES Policy Committee also monitors state, regional and federal activities to provide input and perspectives to policymakers on issues affecting renewable energy technology. On special occasions a Solar Action Network Alert, or SAN Alert, will be sent via email to ASES members, SOLAR TODAY subscribers and interested others detailing specific policy issues and encouraging their active participation in the ongoing discussions.

1940

MIT Solar House #1 is the first building to be heated year-round by solar energy.

Rockefeller Center is the last major commercial building project where workers could open the windows.

1946

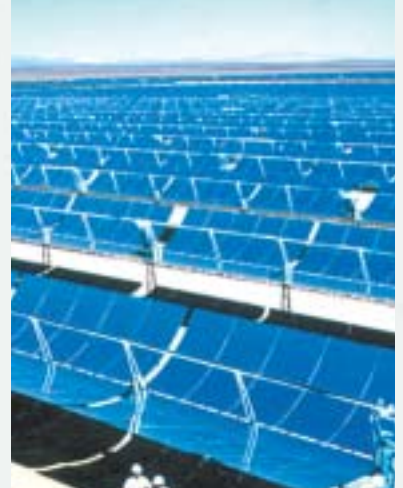
First observations of solar ultraviolet rays are recorded.

1954

Bell Laboratories introduces the "Bell Solar Battery."

White Papers

When an issue is of extraordinary importance or complicated in nature, ASES will convene a group of experts to discuss the issue and formulate recommendations and actions. ASES then compiles the discussions and subsequent recommendations into a formal White Paper that is distributed to interested audiences. The most recent white paper is on “Renewable Derived Hydrogen” and features testimony and recommendations from the best national and international thinkers on the subject.



1954

AFASE, Association For Applied Solar Energy is founded

1956

The Bridgers-Paxton office Building is the first solar office building in the world.

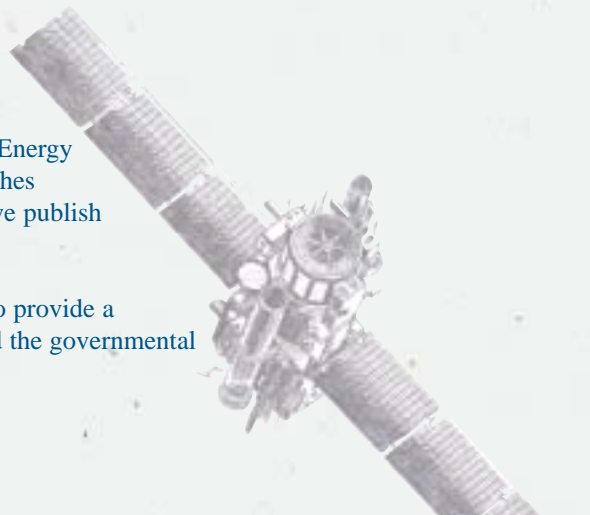
1958

First satellite with solar cells launched.

Education & Outreach

ASES actively engages in educating the public on energy related issues. These efforts take several forms. We actively utilize a set of news release activities to heighten the public's awareness of marquee events – such as the National Solar Energy Conference and the annual National Solar Tour. SOLAR TODAY magazine reaches thousands of interested readers who share the technically accurate information we publish with many, many others.

ASES also works in cooperation with a host of other renewable energy groups to provide a consistent message on the implications of our energy consumption decisions and the governmental policies and regulations that frame our energy economy.



1959

Soleri begins drawing up plans for compact urban centers designed to conserve resources, partly through reliance on solar energy.

1960

U.S. Army Signal Corps makes first transcontinental two-way radio broadcast generated solely by solar energy.

1963

Orbiting Solar Observatory I observes solar gamma rays.

1965

Electric power blackouts most of Northeast U.S.

Education & Outreach

ASES' outreach activities include many presentations at sustainability and energy fairs throughout the year. Working through the local ASES Chapters we provide written material and magazines for distribution to the public at these venues. Regularly we participate on panels or speak at these events to share the national perspective on renewable energy issues.

Finally, ASES engages in regular formal training workshops for effective advocacy on energy issues with local decision makers. These training sessions occur throughout the year and at the annual National Solar Energy Conference.



1971

— First ASES National Solar Conference.

1972

— Gas & oil platforms in the Gulf of Mexico begin using photovoltaic panels for power.

1973

— Arab oil embargo.

Volunteers

There are several opportunities to involve yourself in the promotion of renewable energy.

National Solar Tour

The first weekend of October is the official date for the National Solar Tour. The number of tours and attendees has been growing every year. The effort of our volunteers to host tours, open their homes, act as guides, distribute flyers and lawn signs has been instrumental in the nationwide success of the Tour. There are always numerous details to take care of at the local level, making our volunteers invaluable.

State Chapters

State chapters are crucial to educating businesses, city governments, and their communities about renewable energy and its application to their needs and climate. State chapters often have regular meetings, a newsletter, energy fairs or workshops. A state chapter is a central part of organizing our National Solar Conference every year. This is a great way to get involved, as much or as little as you have time for, at the local level.



1977

Japanese researchers begin testing ocean energy devices in the Sea of Japan.

1981

World's first "Power Tower," with sun-tracking heliostats, begins operation in Nio, Japan.

1984

SEGS I (Solar Electric Generating System), with 560 parabolic troughs, is completed.

North America's first tidal power plant begins producing energy.

Get Involved

Through local, regional and national chapters, committees and conferences, members get involved and network to support common goals, increase public awareness and take action. ASES activists, as members of the optional Solar Action Network, regularly mail action alerts to legislators and policymakers, making their voices heard in Washington, D.C. and locally.

- Volunteer to help on the local level with the National Solar Tour.
- Improve your home's energy performance.
- Buy green tags.
- Advocate for energy efficiency and renewable energy with your local school board.
- Become an activist in your community. Use SOLAR TODAY magazine, the information available at www.ases.org and the increasing number of available resources to educate yourself on clean-energy advances and accomplishments in other parts of the country and world. Then talk to your local leaders about initiating similar programs.

1985

World's first solar car race.

1987

First World Solar Challenge PV-powered car race.

1990

Completion of SEGS IX brings total solar thermal capacity at all SEGS plants to 354 megawatts.



ASES Chapters

ALABAMA

Alabama Solar Association
e-mail: UAT1@bellsouth.net

ARIZONA

Arizona Solar Energy Association
www.azsolarcenter.com/solarorg/asea1.html

CALIFORNIA

Northern California Solar Energy Association
www.norcalsolar.org

COLORADO

*Colorado Renewable Energy Society
www.cres-energy.org

CONNECTICUT / DELAWARE

*Northeast Sustainable Energy Association
www.nesea.org

FLORIDA

Florida Solar Energy Association
(321) 638-1007

GEORGIA

Georgia Solar Energy Association
e-mail: willkfree@aol.com

ILLINOIS

Illinois Solar Energy Association
www.iseanetwork.org
or

*Midwest Renewable Energy Association
www.the-mrea.org

INDIANA / IOWA

*Midwest Renewable Energy Association
www.the-mrea.org

KANSAS

Heartland Renewable Energy Society
www.Heartland-RES.org

MAINE / MASSACHUSETTS

*Northeast Sustainable Energy Association
www.nesea.org

MARYLAND

Potomac Region Solar Energy Association
www.prsea.org

MICHIGAN

*Midwest Renewable Energy Association
www.the-mrea.org

MINNESOTA

Minnesota Renewable Energy Society
www.mres-solar.org

MISSOURI

Heartland Renewable Energy Society
www.Heartland-RES.org

NEVADA

SUNRISE, Sustainable Resources Group
www.sunrisenevada.org

NEW HAMPSHIRE / NEW JERSEY

*Northeast Sustainable Energy Association
www.nesea.org

NEW MEXICO

New Mexico Solar Energy Association
www.nmsea.com or www.nmsolar.org

NEW YORK

*Northeast Sustainable Energy Association
www.nesea.org

NORTH CAROLINA

*North Carolina Sustainable Energy Association
www.ncsustainableenergy.org

OHIO

*Green Energy Ohio
www.GreenEnergyOhio.org

OREGON

*Solar Energy Association of Oregon
www.solaror.org

PENNSYLVANIA

*Northeast Sustainable Energy Association
www.nesea.org

RHODE ISLAND

*Northeast Sustainable Energy Association
www.nesea.org

TENNESSEE

Tennessee Solar Energy Association
(615) 273-2399 or (615) 423-5606

TEXAS

*Texas Solar Energy Society
www.txses.org

VERMONT

*Northeast Sustainable Energy Association
www.nesea.org

VIRGINIA / WASHINGTON, DC

Potomac Region Solar Energy Association
www.prsea.org

WASHINGTON STATE

Solar Washington
www.solarwashington.org

WISCONSIN

*Midwest Renewable Energy Association
www.the-mrea.org

STUDENT CHAPTERS

Appalachian State University
Department of Technology
www.asuses.org

Colorado State University
Solar Energy Lab
e-mail: ckurnik@lamar.colostate.edu

*NCSU Renewable Energy Society
e-mail: ccmaurer@unity.ncsu.edu

University of Florida—Gainesville
Department of Mechanical Engineering
e-mail: gunnar@ufl.edu

**Staffed offices*

The power of the sun makes life on earth possible. Without the sun, there would be no fossil fuels. There would be no wind, no rain and no tides. No plant life, no animals and no human beings. That same enormous power source could supply humanity's insatiable twenty-first century demands for energy with none of the adverse affects produced from extracting and burning fossil fuels or the production of nuclear energy.

The American Solar Energy Society is dedicated to advancing the research, development and deployment of the solar driven, practical and affordable, clean-energy technologies that will revolutionize the American energy industry. Your ASES membership or contribution will support our work as we strive to turn that solar energy vision into reality.

Benefits of an individual membership include:

- a subscription to SOLAR TODAY magazine
- optional membership in two ASES Topical Divisions
- discounts on ASES publications and conferences
- voting privileges in board elections

Contact ASES for information on other membership levels and associated benefits.

1992

"Greening of the White House" project updates & retrofits the White House to make it energy-efficient and environmentally sound.

1999

Innovations built into 4 Times Square help save more than half a million dollars in energy costs a year.

2002

White House redux



I'd like to support the American Solar Energy Society by becoming a member.

- Full Member** \$70.00/year
- Senior Member** \$35.00/year (You must be 65 years of age or older. Proof of age required.)
- Student Member** \$25.00/year (Proof of student status required.)
- Life Member** \$1200 (Payable in three annual installments [\$400/400/400] or one lump sum.)

Name _____ Company _____

Address _____

City _____ State _____ Zip _____ Country _____

Phone _____ Fax _____ e-mail _____

I wish to make a donation to ASES in the amount of \$ _____ *(All donations are tax deductible; ASES is a 501-C3 corporation.)*

Dues (from selection above) _____ International Postage _____ **Total Membership Amount** _____
Canada \$15/yr; all other countries \$25/yr

Donation _____

Total Amount Due _____

Check or money order enclosed Visa MasterCard

_____ Exp _____ Signature _____

Return to: ASES • 2400 Central Avenue, Suite G-1 • Boulder, Colorado 80301 • Phone (303) 443-3130 • Fax (303) 443-3212 • www.ases.org

Acknowledgments:

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Pg 13: Kramer Junction Company, Pg 15: Tom Hall-DOE, Pg 17: Bob Gibson, Pg 19: Aquatherm Industries.

Original artwork by Scorpio Steele

Solar history information gleaned from:

- *From Space to Earth*, by John Perlin, published by aatec publications, Anne Arbor, MI
- *THE SUN—Symbol of Power and Life*, compiled by Madanjeet Singh, published by Harry N. Abrams, Inc, NY
- *The Timeless Energy of THE SUN for Life and Peace with Nature*, by Madanjeet Singh, published by Sierra Club Books
- AllBritannica.com
- *Columbia Encyclopedia*, Sixth Edition, at bartleby.com
- U.S. Department of Energy, Office of Building Technology, State and Community Programs, Energy Efficiency and Renewable Energy

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