

# THE NEW WANDERINGS

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Ralph J. Coppola

[r\\_j\\_coppola@hotmail.com](mailto:r_j_coppola@hotmail.com)

## **Feature:**

In this month's Feature we will be looking at some of the sites dealing with Amateur [Radio Astronomy](#), a branch of science that was started, largely, by the work of [Grote Reber](#), an amateur astronomer. Then to round things off, I'm including a few links to general / optical astronomy.

### **[The Society of Amateur Radio Astronomers](#)**

SARA is an international society of dedicated enthusiasts involved in amateur radio astronomy.

### **[Amateur Radio Astronomy](#)**

Amateur Radio Astronomy from the Hardware Hacker

### **[Project Bambi](#)**

Project Bambi is made up of a group of people who are interested in amateur [SETI](#).

### **[Radio-Sky Publishing](#)**

Radio Sky makes the fascinating world of radio astronomy accessible to a wide audience of students, teachers and amateur scientists

### [Stanford Space Weather Monitor Program](#)

Take part in the Stanford Space Weather Monitor program and monitor real-time effects of space weather on Earth's ionosphere using inexpensive equipment developed by the [Stanford Solar Center](#).

### [The Radio JOVE Project](#)

Here is a hands-on inquiry-based educational project that allows the general public to learn about radio astronomy by building their own inexpensive radio telescope.

### [The INSPIRE Project](#)

This program uses DIY receivers to measure and record [VLF](#) emissions such as tweeks, whistlers, sferics, and chorus along with man-made emissions.

### [Strange Extraterrestrial Radio Noises](#)

Listen to some examples of extraterrestrial radio sounds.

### [SID-GRB@home](#)

David Saum shows us how to build a simple VLF radio receiver that can detect *Sudden Ionospheric Disturbances* (SID) caused by x-rays from solar flares or *Gamma Ray Bursts* (GRB).

### [How to Build a Parabolic Reflector](#)

Using the supplied template you can turn a flat sheet of anything flexible into a parabolic reflector.

### [Constructing a Cardboard S-band Antenna](#)

Anthony Monteiro shows us how to build a 2.4 GHz horn antenna using two cardboard cartons, aluminum foil, and packing tape.

### [The W1GHZ Online Microwave Antenna Book](#)

Paul Wade's e-book is a source for designs of DIY antennas that are useful for radio astronomy.

### [Horn Antenna Designer](#)

This utility will assist the user in designing horn antennas.

### [SkyView --- The Internet's Virtual Telescope](#)

SkyView is a Virtual Observatory generating images of any part of the sky at wavelengths in all regimes from Radio to Gamma-Ray.

### [Microsoft's WorldWide Telescope](#)

"WorldWide Telescope enables your computer to function as a virtual telescope, bringing together imagery from the best ground and space-based telescopes in the world."

### [Modeling the Heavens](#)

With David Colarusso's free online program you can create your own solar system simulation plus see how to solve [Kepler's Equation](#) and calculate the planets' positions.

### [Center for Backyard Astrophysics](#)

CBA is a global network of small telescopes dedicated to photometry of cataclysmic variables.

### [Amateur-Professional Collaborations](#)

Jeff Robertson shows how you can get involved in astronomical research.

### [Astronomy: Amateurs Making Discoveries](#)

"Amateurs still make significant contributions to the fields of astronomy and space science. Comets, for example, are often discovered first by non-professional astronomers."

### [Mike Boschat's Astronomy Page](#)

Michael has compiled a huge collection of links to astronomical groups and associated web sites.

### [Heavens-Above](#)

Chris Peat's site is dedicated to satellites and astronomy.

### [Royal Astronomical Society of Canada](#)

*The Royal Astronomical Society of Canada* is Canada's leading astronomy organization bringing together over 4,200 enthusiastic amateurs, educators and professionals.

### [Paint Net](#)

Justin Quinnell points us to a freeware program, Paint Net, in his article [How to Make Your Own Six-Month Duration Images of the Sun's Path Across the Sky](#) in TCS's 07 May 2010 issue. Paint.NET is a MS Windows image and photo editing software package that has been compared to other digital photo editing software packages such as Photoshop or Paint Shop Pro etc.

### [The Atmosphere and Green Lasers](#)

What are the dangers of using a Green laser Pointer by "stupid" people?

### [Abbey Ridge Observatory](#)

The Abbey Ridge Observatory is the backyard astronomical observatory of Dave and Michelle Lane of Stillwater Lake, Nova Scotia.

### [The Sun Gun](#)

Safely view the sun with Bruce Hegerberg's DIY Solar Telescope, the Sun Gun.

### [Amateur Magnetometer](#)

Tom Field has upgraded Scientific American's DIY torsion magnetometer by including a webcam and a MSWindows logging program.

### [Real-time Spectroscopy](#)

Tom Field has also developed a program that allows the astronomer to easily analyse the spectrum from stars or planets.

### [Deep Astronomy](#)

This website is Tony Darnell's labour of love. He created it for no other reason than he wanted to write and bring his experiences to others.

### [ICSTARS](#)

Vic and Jen Winter have compiled a gigantic list of Astronomy resources that can be found on the Web.

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## **Wanderings:**

### [Mosquito Repellent Myths](#)

Mosquito season is once again upon us. We have all heard of the many myths and home remedies that are supposed to prevent mosquito bites but what really works?

### [Can a Mosquito Death Ray Solve the Malaria Problem?](#)

This TED presentation that shows what happens when people "Think Outside of the Box" and let their creativity run wild.

### [Can We Eat To Starve Cancer?](#)

Here is another TED presentation where William Li presents a new way to think about treating cancer and other diseases.

### [Dynamic Patterns Research](#)

*Dynamic Patterns Research Citizen Science* is a guide for the citizen scientist to learn about science by doing real science.

### [The Citizen Science Quarterly](#)

The CSQ is a Blog and “print” magazine that covers topics of interest to the amateur / citizen scientist.

### [Another “Citizen Scientist”](#)

Raymund John Ang’s *Citizen Scientist* blog is a place to read about citizen science and contributions of amateur scientists in the advancement of science and society.

### [Scientific American and Citizen Science](#)

Has [Scientific American](#) finally decided to get back into [Amateur / Citizen Science](#)?

### [How to Build an Inexpensive Microbarograph](#)

This microprocessor based microbarograph design can detect infrasound (sound less than 20 Hz).

### [Science Projects](#)

Leslie Wright has many scientific interests similar to those shown on his [Lasers Page](#).

### [Webcam Based DIY Laser Rangefinder](#)

This site contains a collection of [Todd Danko](#)’s recent projects.

### [DOFMaster](#)

You can customize and construct a copy of Don Fleming’s Depth of Field Calculator to assist you in your photography.

### [A DIY Mechanical Iris](#)

This [Instructable](#) will show you how to build an adjustable mechanical iris.

### [Mechanical Iris Images](#)

Here is a collection of irises from Google Images.

### [The Fun Science Gallery](#)

Giorgio Carboni’s Fun Science Gallery contains fun, simple, and low cost science equipment and experiments for amateur scientists. Be sure to check out his [Other Sites](#) collection.

### [Green Power Science](#)

Green Power Science is dedicated to the backyard scientist. They believe that some of the smartest people in the world discover the best things through trial and error in their own backyards.

### [Neodymium Magnet Levitation](#)

On the *Green Power Science* [YouTube Channel](#) we will see how a couple of neodymium magnets can be used as bearings that can support a heavy weight.

### [e-Zee DIY Steam Engines](#)

This is a curriculum support site, developed by Nial McCabe that provides free lab-project plans for technical students, their teachers and others interested in applied mechanical engineering

### [The Little Engine Pages](#)

The Little Engine Pages and [StirlingSouth.com](#) are now companion sites. Both sites will be concerned primarily with Stirling Engines, but all types of model engines are fair game!

### [Soldering-Is-Easy --- The Comic Book](#)

Here is a "How to Solder" tutorial presented in a comic book format.

### [A Simple DIY Spectrophotometer](#)

This [Instructable](#) shows how to build a simple DIY spectrophotometer.

### [Educyclopedia – Science](#)

This educational encyclopaedia has sections for:

- [Chemistry Experiments](#)
- [Energy Experiments](#)
- [Physics Experiments](#)

### [WebElements](#)

WebElements is an excellent example of an interactive on-line periodic table.

### [Periodic Table](#)

Here is another useful periodic table which together with WebElements should give you almost everything that you wish to know about the various elements.

### [The Birth of the Computer Mouse](#)

The mouse was invented in 1964 by Doug Engelbart and his team at the [Stanford Research Institute](#).

### [Biology Letters](#)

*Biology Letters* publishes short, highly-innovative, cutting-edge research articles and opinion pieces accessible to scientists from across the biological sciences.

### [Water Propelled Rocket](#)

This page looks into the derivation of the basic rocket equations.

### [Magic-1: a Custom Computer](#)

Do you want something different from the normal run of the mill PC's and Apples? Then try "rolling your own" like Bill Buzbee, Aidil Jazmi and other adventurous soles.

### [Unidata](#)

Unidata is a diverse community of over 160 institutions vested in the common goal of sharing data, and the tools to access and visualize that data.

### [The Lemelson-MIT Program](#)

The Lemelson-MIT Program is dedicated to honouring the acclaimed and unsung heroes who have helped improve our lives through invention.

### [ScienceForums.Net!](#)

ScienceForums.Net! welcomes discussion at all levels of science — from beginners to researchers, covering topics from "A" to "Z"

### [Flour and Semolina](#)

*"The Visual Dictionary* is more than a reliable resource of meticulously labelled images—it innovates by combining dictionary-scale definitions with exceptional illustrations, making it the most complete dictionary."

### [Sustainable Innovations](#)

Sustainable Innovations' goal is to promote sustainable harvests and innovations in science, engineering, technology and business. Their immediate focus is in building enterprises for delivering clean water and health care in developing countries.

### [Be an Archaeologist for a Day](#)

Team up with professional archaeologists excavating a buried 13th century Dominican Friary in Trim located in the Boyne Valley, Republic of Ireland.

### [Solvers Wanted](#)

InnoCentive has thousands of Challenges that need your brainpower and companies that are willing to pay you to think.

### [Scilab](#)

[Scilab](#) is a free open source scientific software package, similar to [Matlab](#), for numerical computations providing a powerful open computing environment for engineering and scientific applications.

### [GNU Octave](#)

This is another , free downloadable high-level numerical processing language that is mostly compatible with Matlab.

### [Albert Einstein's Scientific Publications](#)

This Wikipedia article lists Albert Einstein's publications.

### [There's Plenty of Room at the Bottom](#)

This is a talk given by, Nobel-winning physicist, Richard Feynman in 1959. In it, he hypothesizes about microscopic machines or nano-technology.

### [Nano-medicine](#)

Robert A. Freitas Jr. expands nano-technology into the field of medicine.

### [GridRepublic](#)

GridRepublic members run a special screensaver that allows their computers to become part of a global super computer work on public-interest research projects in science and medicine when the machines are not otherwise in use.

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## **The Kids Room:**

### [The Google Science Fair](#)

Google has announced an on line Science fair for junior and senior high school students. The 2011 semi-finalists have been announced. Why not get ready and enter the 2012 competition?

### [The Wizard's Laboratory](#)

Chris Young will take you through some exciting chemistry experiments and introduce you to the art & science of crystal growing.

### [The Science Toy Maker](#)

This site shows us how to build mysterious, kinetic, noisy, DIY science projects that entice scientific investigation.

### [The Science Explorer](#)

Here is a collection of activities from San Francisco's [Exploratorium](#).

### [Motion Mountain: The Adventure of Physics](#)

*Motion Mountain* is a free down loadable physics that among the most widely read physics texts in the world.



## [The Khan Academy](#)

The Khan Academy is an organization on a mission. We're a not-for-profit with the goal of changing education for the better by providing a free world-class education to anyone anywhere.

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## **Women In Science:**

### [Scientific Inquiry in a “Web” Laboratory](#)

“Hanny van Arkel had been using the [Galaxy Zoo](#) Web site less than a week when she noticed something odd about the photograph of IC 2497, a minor galaxy in the Leo Minor constellation”

### [Hanny and the Mystery of the Voorwerp](#)

Read about Hanny’s discovery in “comic book format”.

### [The Woman Astronomer](#)

*The Woman Astronomer* on line.

### [Women in Astronomy](#)

This is a listing of some of the famous Women in Astronomy, down through the ages.

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## **Suppliers And Stuff:**

Being listed here does not constitute an endorsement by SAS or me of any information, product or service.

### [Biopunk: DIY Hacks Into the Software of Life](#)

In this book, Marcus Wohlsen defines Biopunks as a loosely knit, multifaceted movement to find ways to permit people to engage in DNA research without the restrictions and costs imposed by the scientific and medical establishment.

### [The Visible Body](#)

Emily Smithson gave me a “heads up” on this site which describes their revolutionary 3D human anatomy visualization and learning tool.

### [Radio Astronomy Supplies](#)

Jeffrey M. Lichtman's Radio Astronomy Supplies is a source of all things related to radio astronomy

### [The NeoCube](#)

What do you get when you lump together 216 individual high-energy rare-earth magnetic spheres? It's a NeoCube!

### [Mini Camcorder](#)

Are you looking for a Mini Camcorder for a rocket or balloon project?

### [The GPS Travelogue](#)

This device uses GPS to track and record everywhere you travel, allowing you to later upload your journey to online mapping applications such as Google Earth.

### [The Trackstick](#)

The Trackstick is a small USB GPS tracking device.

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### **Random Samples:**

From time to time, I will be listing some links here that may not be directly related to science but are still interesting (IMO).

### [The Ancient Musical Instruments of Ireland](#)

I think that the instrument that is playing at the opening of this clip sounds very similar to Australia's [Didgeridoo](#).

Here is some [further information](#) on the prehistoric Celtic music and instruments from Ireland.

### [The Chapman Stick](#)

I recently stumbled across this unusual musical instrument that evolved from the guitar.

### [Bach's Toccata and Fugue](#)

Bob Culbertson plays Bach on the Chapman Stick.

### [Bach's Fur Elise](#)

Here is another example of Bob playing his "stick".

**[Knock on Wood!](#)**

This Japanese **[Rube Goldberg machine](#)** plays Bach's "Jesu, Joy of Man's Desiring" the hard way! This was reportedly used in a cell phone commercial.

**[Bach's "Jesu, Joy of Man's Desiring"](#)**

This YouTube shows humans, The Celtic Woman, singing "Jesu Joy of Man's Desiring".

**[The Third Wave](#)**

A number of years ago I saw a movie, on TV, about an experiment, *The Third Wave*, which was conducted by high school teacher Ron Jones. The goal of the experiment was to demonstrate that even democratic societies are not immune to the appeal of fascism.

**[The Euro Simulator](#)**

The Euro Simulator is a fairly good target shooting simulator.

**[Poor Folks Bows](#)**

This is Sam Harper's site "Bow building for poor people and apartment dwellers".

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**[From The Far Side:](#)**

**[The EVGRAY Electric Motor](#)**

If you like conspiracy theories then you might be interested in Ed Gray and his mysterious motor.

**[The Galactic Compass](#)**

This is **[J. Emerson Webb's](#)** device that he claims can prove that the **[luminiferous aether](#)** exists. I wonder if this device is similar to the **[Velador](#)**. Also see the **[Velador Blog Site](#)**.

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**Ralph J. Coppola**

**[r\\_j\\_coppola@hotmail.com](mailto:r_j_coppola@hotmail.com)**