

# THE NEW WANDERINGS

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<http://citizenscientistsleague.com/>

*Merry Christmas  
and  
Happy New Year  
to  
All*

## **Feature:**

This year the [Winter Solstice](#) will occur on 22 December @ 05:30 [UTC](#) and is generally regarded as the first day of winter. But, actually, the ancient peoples, such as those who inhabited Ireland and the British Isles, celebrated the Winter Solstice as Mid Winter and they rejoiced in the fact that the days were becoming longer. The [Solstices](#) and [Equinoxes](#) were regarded as mid seasons and not the start of the [seasons](#), as we do today.

It is thought that many of these peoples built structures in order to display the Sun's path thus indicate the changing seasons.

### **Newgrange Ireland**

Newgrange was built during the Neolithic or New Stone Age and is older than Stonehenge in England and the Great Pyramid of Giza

### **The Winter Solstice at Newgrange**

During the Winter Solstice sunrise, the sun light reaches back into the main chamber.

### **YouTube: Stonehenge at Mid-Summer and Mid-Winter**

This video is a simulation of the sun rise at the Summer and Winter Solstices at a re-constructed monument.

### **Megaliths and Sheep**

It seems that sheep like to hang around of megalithic sites

### **YouTube: Loughcrew - Spring Equinox 2005**

In this video clip we can see the rising sun, on the spring equinox, can be seen illuminating the passage and chamber at the 5000 year old Loughcrew megalithic cairn T in Ireland,

### **The Gungywamp Chambers,**

The Gungywamp Complex, located in Groton, Connecticut appears to have, also, been constructed to indicate the equinox. But who built it?

### **The Forgotten Technology?**

W.T. Wallington presents a theory depicting how the ancient engineers may have moved heavy stone.

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## **Wanderings:**

### **The Society for Amateur Scientists**

Have you wondered what happened to *The Society for Amateur Scientists'* Web Site --- [www.sas.org](http://www.sas.org)? For some reason it was changed to [www.soamsoci.org](http://www.soamsoci.org) .Unfortunately, many of the site's links are broken because they refer back to the old sas.org domain.

### **An Automated System for Detecting Meteors**

Rick Boozer takes us through the trial and errors that he encountered in developing this project. You should check out the other items on his [Astronomy Blog](#).

### **Amateur Magnetometer**

Tom Field built this torsion magnetometer following the directions that may be found on [Scientific American's "The Amateur Scientist". \[CD-ROM\]](#) --- (January 1999 & March 2000).

Tom also developed a Windows program, [LaserTrack.exe](#) that will capture and plot a webcam's video of the laser spot's movement. This program may find use in other applications.

### **Build High Resolution Spectrograph**

[Science Toys](#) shows you how to build a fairly simple high resolution recording spectrograph. Be sure to browse through the rest of the Web site.

### **Techlib**

Charles Wenzel's Techlib site is an excellent source of DIY projects for the advanced amateur.

### **Amateur Experimental Rocketry**

Aerospace Engineer (aka Rocket Scientist) by day --- dedicated amateur rocketeer by night, Richard Nakka may be thought of as one of the gurus in the exciting and challenging field of Amateur Experimental Rocketry which, unlike, Model Rocketry or High Power Rocketry is an activity whereby the rockets are designed and constructed entirely from "scratch".

### **QU8K**

On 30 September 2011, Derek Deville's *Qu8k* soared to an altitude of 121,000 ft from the launchpad at Black Rock Desert, Nevada.

### **Air Command: Water Rockets**

The *Air Command* has a pretty good site covering the construction of water rockets and their components.

### [Water Rocket Simulation](#)

This program performs a numerical simulation of your rocket's entire flight.

### [Yahoo Groups: Water Rockets](#)

This group provides a one-stop forum on homemade rockets that are powered by compressed air and water.

### [A LEGO Based ROV](#)

Amos G. Winter built a LEGO Remote Operated vehicle (ROV) using the LEGO MindStorms Robotics Kit

### [The Sea Perch Program](#)

The Sea Perch, designed by the MIT Sea Grant College Program, is a simple, remotely operated underwater vehicle, or ROV, made from PVC pipe and other inexpensive, easily available materials.

### [Sea Perch Construction Manual](#)

Interested? Then, here is *The Sea Perch Construction Manual*.

### [Homebuilt Remote Operated Vehicles](#)

This is an excellent resource for anyone who is thinking of building a ROV.

### [Build Your Own Underwater Robot and Other Wet Projects](#)

This book, by Harry Bohm and Vickie Jensen, is a good starting place.

### [Yahoo Groups: Robotrov --- Robotics and ROV's](#)

This Group is a place for builders of remotely operated vehicles or ROV's. It is a great resource for those who may be interested in underwater vehicles.

### [How to Stain PVC](#)

You can use this procedure to stain the PVC components of your ROV a nice yellow so that the ROV will have a greater visibility.

### [Citizen of Science](#)

The author hopes that with the use of recycled and second-hand items, individuals and teachers will use this blog to bring back the joys of doing science.

### [PopSci 5-Minute Project: Disc Doctor](#)

Megan, at Popsci 5 Minute Projects shows us how to repair a scratched CD or DVD. I have used tooth paste, myself, and it works. Also, did you notice the rainbow of colours reflecting off of the CD? Mike Haney makes use of this feature in the next item.

### [PopSci.com 5-Minute Project Video: Cereal Box Spectrometer](#)

Mike, a Popsci 5 Minute Projects editor, uses an old cereal box and a CD to build a simple spectrometer.

### [PopSci 5-Minute Project: Archive](#)

Check out their other clips. You might find some interesting items.

### [Notes on Workshop Techniques](#)

[The Model Engineers Support Page](#) has a series of articles describing machining techniques and tricks to get the best out of your workshop machinery.

### [Cochlear Implant](#)

My sister-in-law is deaf and several years ago she opted for a 16-channel cochlear implant.

### [Cochlear Implant Samples](#)

I have always wondered what my sister-in-law's implant sounds like. Alan Alda and PBS' *Scientific American Frontiers* provide us with some cochlear implant sound samples. You will notice that the quality improves with the number of channels

### [Mystery of the Super Flood](#)

On Sunday, 6 Nov. 2011, I watched *The Passionate Eye* on CBC TV. The program was about how an enormous catastrophic flood created the Scablands, in eastern Washington State. [Harlen Bretz](#), the geologist who originated this flood hypothesis was black listed by his peers.

### [USGS: The Channelled Scablands of Eastern Washington](#)

This e-book, by the USGS, tells the geologic story of the Spokane Flood.

### [Discover the Ice Age Floods](#)

The catastrophic floods from Glacial Lake Missoula and Lake Bonneville are among the largest known floods in geologic history.

The theory of the formation of the Scablands is used as fodder in the ongoing Creationist / Evolutionist Debates.

### [The CPU Shack Museum](#)

"In my daily hunt for new processors, and other chips for the museum, as well as information about new chips, I constantly come across interesting chips, in strange locations. Here you will get a chance to learn where many of the chips in the museum come from and what they are."

### [The Royal Society](#)

Brittan's Royal Society is a fellowship of the world's most eminent scientists and is the oldest scientific academy in continuous existence.

### [Royal Society's Journal Archive](#)

The Royal Society's Journal Archive has been opened up for free online search and access. Here are a few examples of the items that can be found on the site:

- [A Letter from Benjamin Franklin Regarding His Electrical Kite](#)
- [A Letter of Isaac Newton Containing His Theory of Light](#)
- [A Geological Paper by Charles Darwin](#)

### [Dyslexie: A New Font That May Help Dyslexics Read More Easily](#)

The Dyslexie font was created by Christian Boer, a dyslexic Dutch graphic designer.

### [Synthetic Lint Ends Up In Oceans](#)

*Science News* reports that researchers are finding that lint, from washing polyester garments, is contributing to ocean pollution.

### [Laundry Lint Pollutes the World's Oceans](#)

Here is *Science Magazine's* version of the "lint" story.

### [Columbus' Arrival in the New World may Have Caused a Mini-Ice Age](#)

Did Columbus and the subsequent explorers set off a chain of events that cooled Europe's climate by causing a carbon dioxide drop? Be sure to read the "comments".

### [A Skeptic's Own Study Finds Climate Change Real](#)

Seth Borenstein, of The Associated Press, reports that [Richard Muller](#), a prominent skeptic of global warming has determined that temperatures are actually rising.

### [Climate Experts: More Weather Disasters Ahead](#)

Here is another item from Seth Borenstein, of The Associated Press --- "The final draft of the report from a panel of the world's top climate scientists paints a wild future for a world already weary of weather catastrophes costing billions of dollars."

### [Solar Light for Africa](#)

*Solar Light for Africa* is a non-government organization (NGO) whose mission is to transform the lives of the people of Africa by providing them with light and energy using solar power.

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## **From Instructables, YouTube and Make:**

### **YouTube: How to make a PVC Membrane Pipe**

A Membrane Pipe is an easily made musical instrument.

### **YouTube: Claricano**

The Claricano or membrane pipe can be tuned and used to play music.

### **YouTube: Claricano Drone**

Kick up the Claricano a notch by adding a [drone](#) or two or three ☺

### **YouTube: How to make a Straw Kazoo**

A number of years ago, a co-worker asked me if I knew of a simple musical instrument that his child could make for a school science project. I suggested a simple reed instrument similar to the one that is shown in this clip.

### **YouTube: US Govt. Clears Scientists of Charges That They Manipulated Data**

“U.S. officials have cleared scientists of charges that they manipulated data about climate change in e-mails that were stolen from a British university in 2009, triggering a climate scandal. The US government has now officially concluded that the so-called controversy was anything but.”

### **YouTube: Continental Drift --- The Evolution of the Earth**

This YouTube simulation shows how the Earth may have evolved into our present day continental distribution.

### **YouTube: Silver Soldering For Beginners**

Silver Soldering produces a much stronger joint than ordinary tin/lead solder. Here is a short video that shows how to get started with silver solder.

### **YouTube: Water Rocket Variable Nozzle**

This is a simple way to vary the thrust from a water rocket.

### **Exploring Radioactivity with a Homemade Cloud Chamber**

Samuel Fonteneau documents his observations resulting from his experiments with a Cloud Chamber.

### **YouTube: A Simple DIY Cloud Chamber**

A Cloud Chamber allows you to view decay of radioactive materials. This is a fairly simple chamber to build, as long as you have a source of dry ice.

### **YouTube: Expansion Cloud Chamber**

Expansion type Cloud Chambers do not need dry ice for their operation.

### [YouTube: Turn Almost Anything into a Theremin](#)

Make music with a [Drawdio](#).

### [Instructable: Projects for Science Classes](#)

Author, Kiteman, has a number of projects that may be useful as science lessons, either as activities for students, or as demonstrations by teachers or parents.

### [Instructable: Cloud Chamber Using Peltier Coolers](#)

Rich Olson, of [Nothing Labs](#), shows how he built his [Peltier](#) cooled Cloud Chamber. [See Peltier Coolers on eBay](#).

### [Instructable: Mad Science Fair](#)

“Bring out all of your devious scientific experiments for your chance to win a complete pet jellyfish kit from Jellyfish Art or a Celestron USB microscope. We are looking for all home-made, fringe, or just plain weird science projects, regardless of scientific field.” Note --- The contest closes 26 December 2011.

### [Instructable: EMG Biofeedback](#)

This [Electromyography \(EMG\)](#) will give you an indication of muscle activity.

### [Instructable: Pocket Lathe](#)

The author built this lathe to make a miniature chess set.

### [Instructable: Mini Metal Lathe](#)

Here is another small DIY lathe from the same author. It needs a bit more work before it can become a useful metal lathe.

### [Instructable: A DIY ROV Thruster](#)

A ROV thruster can be constructed from a modified Rule bilge pump.

### [Instructable: Make a DIY Piezoelectric Crystal](#)

This Instructable shows you how to grow Rochelle Salt crystals.

### [Instructable: How to Build a Rubber Band Heat Engine](#)

I recall seeing a similar heat engine in *Scientific American's - Amateur Scientist* a number of years ago.

### [Instructable: Grow Your Own Bioluminescent Algae](#)

These algae will only flash when disturbed during their night cycle. If you're looking for something which will constantly glow, you should check out bioluminescent bacteria instead.



**[Grow Your Own Bioluminescent Bacteria](#)**

This article will help get you started in cultivating bioluminescent bacteria such as [vibrio fischeri](#).



**The Kids Room:**

**[Science Toys](#)**

Make toys with common household materials that demonstrate fascinating scientific principles.

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

This is a teacher-created site for people who like to roll up their sleeves and make science toys and projects.

**[Science Buddies](#)**

Are you looking for inspiration for a science fair project or are you in need of fun, at-home science experiments? Then Science Buddies is for you! They have over 1,000 project ideas in all areas of science.”

**[Guidebook to Constructing Inexpensive Science Teaching Equipment](#)**

This guidebook provides instructions for building a wide selection of science teaching equipment. Note this is a large, 54 MB, pdf file that will take a while to download and open.

**[Astronomy 161: The Solar System](#)**

Astronomy 161 is an on-line semester covering, primarily, the Solar System.

**[Astronomy 162 Stars, Galaxies, and Cosmology](#)**

In this on-line semester, our perspective widens to look at the entire Universe.

**[The Gateway](#)**

The Gateway hopes to be the world's leading digital library and metadata cooperative, helping educators serve students by providing access to educational knowledge through cutting edge innovation and collaboration.



## **Random Samples:**

### **[Playing for Change](#)**

Music has the universal power to transcend and unite us as one human race. With this firmly fixed in their minds, the crew, with their audio/video equipment, set out to share it with the world.

### **[“Sittin on the Dock of the Bay”](#)**

Here is an example of *Playing for Change’s* achievement of compiling the works of musicians from around the world into one performance.

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## **Suppliers and Stuff:**

### **[Scientific American's "The Amateur Scientist" \[CD-ROM\]](#)**

This CD contains the complete The Amateur Scientist columns from Ingalls to Carlson.

### **[Starry Night](#)**

*Simulation Curriculum Corp* offers a full range of Astronomy simulation programs.

### **[Create a Customized Map](#)**

*Map Sherpa* guides you through the steps to create and download your custom map.

### **[Makershed: A \\$99 Geiger Counter Kit](#)**

This Geiger Counter kit is able to detect beta and gamma radiation.

### **[Makershed: A DIY Hologram Kit](#)**

This \$99 Hologram Kit contains everything that you will need to produce holograms.

### **[Makershed: Microcontroller Kits](#)**

The Makershed has two Arduino based microcontroller kits.

- **[Ultimate Microcontroller Pack](#)**
- **[Getting Started with Arduino Kit v3.0](#)**

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## On The Lighter Side:

### Need a Paper?

SCIgen, from MIT, is an automatic CS paper generator.

### Need to Complain?

Scott Pakin's automatic complaint-letter generator will fill your needs.

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## From The Far Side:

### Brown's Gas

Is Brown's Gas simply *oxyhydrogen*, a mixture of hydrogen and oxygen ( $2\text{H}_2 + \text{O}_2$ )? Or is it some [wonderful discovery](#) (HHO) that could allow us to run our cars on water or neutralize the radiation from radioactive waste among other things? Read more about Brown's gas at [The Planetary Association for Clean Energy, Inc.](#)

### Brown's Gas: Plasma Orbital Expansion of the Electrons in Water

This is a paper by Chris Eckman, an undergraduate student at Idaho State University. *"Brown's Gas boasts a plethora of unusual characteristics that defy current chemistry. It has a cool flame of about 130 degrees, yet melts steel, brick and many other materials." !?*

### Brown's Gas - The Reality

"Jon's" opinion of Brown's gas.

### The Keely Motor Company

In 1872 John Keely, a carpenter and mechanic, announced that he had discovered a new principle for power production --- etheric energy.

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