



# AARC OVER

Bulletin of Austin Amateur Radio Clubs

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Happy Halloween

Issue 10-2008

## Richard Garriott W5KWQ ISS Operations Will Include SSTV

September 18, 2008  
Silver Spring, Maryland

Through multiple agreements with NASA, the Russian Space Agency, RSC Energia, Space Adventures Ltd, and ARISS (Amateur Radio on the International Space Station), Richard Garriott will fly to ISS and will communicate with students, ham radio operators, friends, and family world-wide using the ARISS amateur radio station on-board the ISS.

Richard Garriott, with the amateur radio callsign, W5KWQ is the sixth private citizen to be flown by the Russian space agency to the ISS. A legendary video game programmer and designer, Garriott will be traveling to orbit this October and will speak with hundreds of students while thousands more listen in during a series of ten-minute ham radio contacts. His on-orbit stay on Soyuz and ISS is planned for October 12 through 22, 2008.

The locales for the worldwide student contacts include eight Challenger Learning Centers in the U.S., the Austin Liberal Arts and Sciences Academy in Austin, Texas, the Pinehurst School in Ashland, Oregon, the Budbrooke School in the U.K., and the National Space Challenge in Kuala Lumpur, Malaysia. Garriott also plans to have random chats with scouts world-wide as part of the amateur radio "Jamboree on the Air" which is planned for October 18 and 19.

"An important aspect of Richard Garriott's mission is to encourage students' interest in science and technology through the amateur radio contacts," said Rosalie White, ARISS International Secretary-Treasurer and ARISS Program Manager for ARRL (American Radio Relay League). "ARRL team members from all over the world volunteer their time every day so that students receive opportunities that we hope will cause them to study harder and learn more about any educational subject."

### Periodic Events

Sun	7:30 p.m.	Travis ARES net	147.36 MHz + (131.8)
Sun	8:00 p.m.	Travis ARES Packet	145.73 MHz -
Sun	8:00 p.m.	Williamson ARES net	146.64 MHz - (162.2)
Sun	9:00 p.m.	ARO Swapnet	146.94 MHz -
Sun	(After Swapnet)	Newsline	146.94 MHz -
Tues.	7:30 p.m.	Hays ARES net	444.150 + (114.8)
Tues.	8:00 p.m.	Bastrop ARES Net	443.750 + (114.8)
Wed	11:30 a.m.	Ham Social Luncheon, Jim's	146.94 MHz -
Thu	9:00 p.m.	2m SSB Net	144.250 (USB)
Thu	11:30 a.m.	Lunch, Waterloo Ice House	444.1 MHz+
Fri	8:00 p.m.	6m SSB Net	50.230(texasvhf.org/)
Sat	7:00 - 8:30a.m.	Breakfast @ Waterloo Ice House	444.1 MHz +
Sat	9:00 a.m.	Chapter 67 QCWA QSO Net.	3.920 MHz LSB
Daily	6:30 p.m.	Central Texas Traffic Net	147.14MHz+

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## Ham Radio Exams Results

The following are the results of the ARRL VE Test Session held on September 6th, 2008 in **The Quarries Sports Complex: Technician Class Licenses Processed**

Kyle J. Kinter, KE5WHB                      Jody L. Oliver, KE5WHA

### General Class Licenses Processed

Duane F. Harvey, KE5VYF                      James A. Kinter, Jr., K5KTF                      Edward A. Rupp, KE5PXO

### Extra Class Licenses Processed

William H. Aldredge, W5THC                      David W. Wright, KE5RMN

### Examiners Participating in this Test Session

Milt Cram, W8NUE                      Curt Goodson, W4QBU                      Jerry Jackson, N5UJ  
Joe Makeever, W5HS                      Tom Nevue, W2MN                      Larry Runyon, W5SBE  
Joe Thiel, N5SMN

### Next Two ARRL VE Test Sessions

October 11th - **The Quarries Sports Complex**  
November 1st - **The Quarries Sports Complex**

TNX ES 73 DE W5HS  
Joe

### 9-20-2008

The South Austin W5YI VE team heartily congratulates all of the following people who earned new or upgraded amateur radio licenses at our September 20<sup>th</sup> session:

#### Extra Class –

Anthony P. Lanni, KE5VUX                      Gary M. Popp, –new-

#### General Class – none

#### Technician Class (all new) –

Troy M. Brown                      Michael E. Killebrew, Jr.

Our administering volunteer examiners were:

Hugh Brown, NT5O                      Jim Greenwood, AB5EK                      Lloyd Goehring, Jr., N5TO                      Tony Lyon, KJ5XF  
Jimmy Mercer, N5WDH

Our next two amateur radio exam sessions will start at 2 PM on October 18<sup>th</sup> and November 15<sup>th</sup> in room 106 of Fleck Hall on the campus of St. Edward's University.

For additional information regarding our amateur radio examination sessions, please contact Jim, AB5EK at (512) 327-6184 or by e-mail to [hamradioexams@hotmail.com](mailto:hamradioexams@hotmail.com) or visit our web page at <http://texashams.org/w5yi-austin/>

## Solar Dyes Give a Guiding Light

By Matt McGrath  
BBC science correspondent

A new way of capturing the energy from the Sun could increase the power generated by solar panels tenfold, a team of American scientists has shown.

The new technique involves coating glass with a specific mixture of transparent dyes which redirect light to photovoltaic cells in the frame. The technology, outlined in the journal *Science*, could be used to convert glass buildings into vast energy plants. The technology could be in production within three years, the team said.

See how new solar panel technology works "It makes sense to coat the side of [very tall] buildings with these new panes," Professor Marc Baldo, one of the researchers on the team, told BBC News. "It's not far fetched at all."

*(Continued on page 4)*

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Please contact a club officer, attend a meeting, mail us to join the organization, you can also join or renew online.

**The Austin Amateur Radio Club, Inc. (AARC)** has annual membership dues of \$20.00 per person or \$30.00 per family. AARC maintains the following repeaters:

FREQUENCY	AUTOPATCH	USE
146.780	Yes	General
146.880	Yes	General
146.940	No	Most popular, WX, Swapnet & Newslite
224.800	No	
444.100	No	
146.480/+1.0	No	2m D-Star Repeater (Cedar Park Area)

Persons using the repeaters are asked to join the club to help support these valuable resources. To use the autopatch, announce your call sign, press \* and dial the phone number then release the PTT. When finished, press # to hang up the phone. Dial 911 (no \* needed) for emergency services.

#### AARCOVER Information

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Viewpoints expressed in the AARCOVER do not necessarily reflect those of any club, or of its members, directors, or officers.

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Members and other readers are encouraged to submit material for publication. Call Mitch London, if mailed submissions are required. Electronic files are encouraged! Submissions may be edited for publication. **Deadline is the 20th of the month.**

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**For Changes in your ADDRESS, PHONE NUMBER or CALL SIGN:  
See Jay Hoffman, KA5OST (512) 388-4404 ka5ost@arrl.net  
Jay handles all changes for membership information .**



## **Colour Trick**

The most advanced attempts to generate large amounts of electricity via the Sun require the use of a solar concentrator.

These are often bulky mobile mirrors that work by tracking the progress of the Sun and concentrating its beams on the cell at its heart.

But there are downsides to this technology: the cells at the centre have to be constantly cooled, and each concentrator requires a large amount of space to avoid shadowing its neighbour.

The new technology does away with the need for mirrors and mobility.

The Massachusetts Institute of Technology (MIT) team has found a way to coat panes of glass or plastic with a mixture of several dyes that essentially do the same job.

"What we have is a piece of glass, with a very thin layer of paint or dye on top," explained Professor Baldo.

"The light comes in and hits the dye and which absorbs it and re-emits the light, but now it's inside the glass so it bounces along there until it gets to the edge. So you only need to mount the solar cells around the edge."

The idea was first developed in the 1970s but was abandoned because much of the light energy was lost en route to the cell.

But using its expertise in optical techniques and a specific mixture of dyes, the MIT team has found a way to make the light travel much farther without losing as much energy along the way.

## **Window Future**

"When you do this there is a little bit of energy loss with the dye," said Professor Baldo.

"The main benefit is with the cost. You use a far smaller amount of solar cells. For the same area of solar cells, you get much more electricity."

Existing solar installations could also benefit from the new concentrator, he said.

"You could take this new kind of glass and put it on top of an existing solar cell so the cell still generates electricity but this glass pane with the dye on top captures a certain part of the spectrum and converts it more efficiently than the solar cell would do on its own."

The MIT team believes it could improve existing panels by 50%.

In addition, the system is simple to manufacture, requiring little more than to coat glass or plastic with the combination of dyes. It could be in production within three years, the researchers believe.

If that becomes a reality, one obvious application, they said, was converting windows into energy plants.

"The coated glass would let through about 10% of the Sun to light up the room, and the remainder would be captured and funnelled to the edges to solar cells to generate electricity," said Professor Baldo.

"It would look like smoked glass because of the dyes."

The connection from the ISS to individual student locations will be established through an amateur radio station set up directly at the school or through the ARISS network of worldwide amateur radio ground stations utilized to link Garriott directly with students. The amateur radio system works similar to the way mission control centers in the United States and Russia talk to their space explorers.

To date, the ARISS international working group volunteer team has conducted over 360 school contacts with crew members using ham radio on the ISS. The team has also set up radio contacts for family members of space explorers via ham radio. And have enabled countless contacts between the ISS crew members and hams on the ground. All Previous Space Adventures private citizens who have flown to ISS have used the ARISS equipment to talk to school students, ham radio operators and friends and family.

As part of Richard Garriott's science investigations, he will be taking highdefinition photographs of many parts of the Earth and comparing them to photos taken on previous space missions. In conjunction with his Earth science investigation, Mr. Garriott is flying special amateur radio electronics that will enable him to send and receive low resolution images from space, comparable to cell phone images. Through this ham radio system, called Slow-Scan Television (SSTV), Garriott will beam down images of the Earth to schools and ham radio operators on the ground so that they can actively participate in his mission.

Frank Bauer, KA3HDO, ARISS International Chairman and AMSAT Vice President for Human Spaceflight Programs, states: "The ARISS team is quite excited about Richard's flight. He is very interested in bringing the wonders of space to those of us on Earth and he sees amateur radio as a great mechanism to make that happen. Through his school and scout voice contacts, his SSTV image downlinks and his communications with the world-wide amateur radio community, we see his mission as being "action packed" from an amateur radio perspective."

Bauer continues, "What is extra special is that Richard Garriott's flight coincides almost 25 years from when his father, Owen Garriott, made history as the first ham radio operator to communicate with radio amateurs from space on the STS-9 Space Shuttle mission." Owen Garriott's call sign is W5LFL. Richard also hopes to link up with his father via amateur radio during his flight.

Currently, Mr. Garriott is finishing his final spaceflight preparations at the Gagarin Cosmonaut Training Centre (GTC) located in Star City, Russia. His launch date is scheduled for October 12, 2008, with ISS docking planned for October 14 and undocking planned for October 22. Mr. Garriott was trained thoroughly to be a member of the Soyuz TMA-13/17S crew.

Since its first flight with Owen Garriott, in November 1983, Ham Radio has flown on more than two-dozen space shuttle missions, on the Mir Space Station and on the ISS. ARISS is the first and longest continuous operating educational outreach program to fly on the ISS. ARISS is an internationally-based working group, sponsored by the national amateur radio organizations and the international AMSAT (Radio Amateur Satellite Corporation) organizations from each country as well as the ISS space agency partners. In the United States, ARISS is sponsored by the American Radio Relay League (ARRL), the Radio Amateur Satellite Corporation-North America (AMSAT-NA) and the National Aeronautics and Space Administration (NASA). NASA's education office provides support to ARISS and guidance in the development of ARISS educational objectives.

The primary purpose of ARISS is to allow students engaged in a science and technology curriculum to speak with an astronaut orbiting the Earth on the International Space Station. Using amateur radio, students ask questions about life in space or other space-related topics. Students fully participate in the ARISS contact by helping set up an amateur radio ground station at the school and then using that station to talk directly with the on-board crew member. Preparation for the experience motivates the children to learn about radio waves, space technology, science, geography and the space environment. In many cases, the students help write press releases and give presentations on the contact to their fellow students and to the local community. Through this hands-on experience, students are engaged and educated in the Science, Technology, Engineering and Mathematics (STEM) fields, and are inspired to pursue STEM-related careers.

*For more information about amateur radio on the ISS and Richard Garriott's flight, go to:*

<http://www.ariss.org>

<http://richardinspace.com>

<http://spaceadventures.com>

<http://www.arrl.org>

<http://www.amsat.org>

<http://www.spaceflight.nasa.gov/station/reference/radio/index.html>

<http://dln.nasa.gov/dln/content/catalog/details/?cid=634>

[http://www.nasa.gov/mission\\_pages/station/science/experiments/ARISS.html](http://www.nasa.gov/mission_pages/station/science/experiments/ARISS.html)

*Scout Jamboree on the Air:* <http://www.scout.org/jota>

Frank H. Bauer, KA3HDO AMSAT-NA V.P. for Human Spaceflight Programs ARISS International Chairman

## Upgrade Your APRS

Sent by Jeff Scmidt, N5MNV

Those of you who are APRS-savvy undoubtedly know this but I feel there are some who may benefit from Lori and my recent APRS (in)experience.

We had loaned some of our APRS gear to WD5DAR (MNV's Mom) which put us both out of the APRS tracker loop for a while. Mom & Dad's coverage from TX-Illinois-TX seemed spotty at best and I thought DAR had RF problems. Turns out not to be the case, read on ;-)

When we reinstalled the hardware back in our (MQ/MNV) vehicles, we noticed we were not getting digi'd and no FindU coverage at all.

We had not yet updated (DAR/MQ/MNV's) digi path to the preferred WIDEn-N format.

The local APRS digi owners are tuning the APRS network to optimise it for heavy usage. This involved not recognizing the outdated RELAY,WIDE path, which we set and forgot several years ago...

I did a brief search and discovered a few sites with this info:

"N5MNV-2>S0QS6T via RELAY,WIDE,q.....

Suboptimal path

It would be advisable to replace RELAY with WIDE1-1. WIDE1-1,WIDE2-1 is generally a good path."

Lori and I have changed our APRS digi path to WIDE1-1,WIDE2-1 and encourage all APRS users to update your digi path to the WIDEn-N format. Please consult your local APRS guru ((BTW, that's not MNV ;-)) for specifics.

<http://aprs.org/>

<http://eng.usna.navy.mil/~bruninga/aprs/fix14439.html>

<http://www.mshepp.com/aprs.htm>

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## Over the WWWaves...

A Collection of Various Websites sent in your friendly neighborhood hams...

This month, a collection of sites from Rick Herndon, K5FNI

Description at:

[http://blog.makezine.com/archive/2008/01/surface\\_mount\\_soldering\\_g.html?CMP=OTC-0D6B48984890](http://blog.makezine.com/archive/2008/01/surface_mount_soldering_g.html?CMP=OTC-0D6B48984890)

and the actual article at

[http://www.curiousinventor.com/guides/Surface\\_Mount\\_Soldering](http://www.curiousinventor.com/guides/Surface_Mount_Soldering)

<http://www.ominous-valve.com/wlw.html>

<http://www.npr.org/templates/story/story.php?storyId=89705610>

<http://tangentsoft.net/audio/pancomp.html>

## **AARC Meeting Minutes: September 2, 2008**

**Meeting called to order:** 7:04pm by Vice-President Lee Cooper, W5LHC.

Lee explained that President Don Dudley, AC5YK, was accepted to work on his Masters Degree in Education, but his Tuesday night class conflicts with the club meeting; so Lee will run the meetings from now on. The meeting's agenda was then discussed.

**Visitors:** Larry Keiser, KA5RCR.

**Minutes:** last meetings minutes approved as written in the AARCOVER.

No Officer Reports or Old Business this month.

**New Business:** We have cancelled the Radio Roundup due to decline in interest and the fact that numerous other similar events are available throughout the year around this area. We are looking to do impromptu tailgate swapfests around town a time or two each year for a more relaxed alternative to the Radio Roundup. We are also exploring the option of the Christmas Party this year being just a dinner held at a restaurant. The Officers Election is coming up in October and November. Please consider running or start thinking about who you want to nominate. ARES was not called out for Hurricane Gustav, but CERTs was; and most volunteers there were club and ARES members.

**Announcements:** Some discussion took place concerning the number of evacuees from Hurricane Gustav and where they were sheltered here in Austin. President George W. Bush made a visit to the State or Austin EOC (unsure which).

Slides and discussion of upcoming events: all listed in the AARC Swapnet newsletter, at [www.austinhams.org](http://www.austinhams.org), or at the Yahoo user group. Special mention about two event coming up on Oct. 18<sup>th</sup>. We have an opportunity for another ISS contact as the LBJ High School Ham Club will attempt to talk to Richard Garriot while he is in space. Also, a Boys Scout and Ham Radio event called "Jamboree on the Air" (JOTA) needs your help.

**Ham of the Month:** Roy Walker, WA5YZD.

**Meeting Adjourned:** 7:25pm

**Presentation:** "Fun with Metal Detectors" by Art Tiemann.



## AARC Meeting Info.

### **Waterloo Icehouse**

8600 Burnet Rd. South of 183

#### Officers Meeting

**October 21st 6pm Waterloo Icehouse**

**(unless otherwise mentioned)**

#### Regular Business Meeting

**Come Eat at 6:00 pm Meeting at 7:00pm**

**October 7th - TxDOT State HF Network**

### **2008 Upcoming Amateur Exams**

ARRL VEC- **October 11th & November 1st** 9a.m. at The Quarries. Contact Joe Makeever, W5HS (345-0800) or Joe Thiel, N5SMN (832-0450) for info. \$14 fee.

W5YI VEC- **October 18th & November 15th** 2p.m. in room 106, Fleck Hall, St. Edwards University. Contact Jim Greenwood, AB5EK@arrl.net, (327-6184)

<http://texasparadise.com/w5yi-austin> for more info.

#### **\*\*\*\*\*2009 DUES ARE DUE!!!\*\*\*\*\***

Dues must be paid by April 15, to be included in the annual Roster. Contact Jay Hoffman, KA5OST (512) 388-4404 or ka5ost @ arrl.net or you can pay dues online at... **[www.austinhams.org/join](http://www.austinhams.org/join)**

## **2008 Calendar of Events**

Oct 4 **Belton Ham Expo** Mike WA5EQQ

mlefan@vvm.com 254-773-3590

[www.beltonhamexpo.org](http://www.beltonhamexpo.org) [www.tarc.org](http://www.tarc.org)

Oct 11 **Paris Texas Radio Group Hamfest** Red River Valley Fairgrounds, 570 East Center Street, Paris, TX. [www.paristexasradio.com](http://www.paristexasradio.com)

Oct 18 **Jamboree on the Air** (JOTA) [www.kx5bsa.org](http://www.kx5bsa.org)  
Alamo Area Council, Canyon Lake- Michael AB5ED  
[ab5ebdxer@gmail.com](mailto:ab5ebdxer@gmail.com)

Oct 24-25 **Texoma Hamarama** The Ardmore Convention Center Henry, K5BUG [k5bugla@gmail.com](mailto:k5bugla@gmail.com)

[www.texasbugcatcher.com](http://www.texasbugcatcher.com)

[www.angelfire.com/tx5/TexomaHamarama/](http://www.angelfire.com/tx5/TexomaHamarama/)

Oct.	Nov.	Austin Meetings/Happenings
7	4	AARC Meeting Waterloo Ice House** 7:00 p.m.
11	8	Austin QRP, Alvin's Sandwich Shop 11:00 a.m.
14	11	ARES Training -CTECC 6:30 p.m.
8	12	High Speed Multimedia SIG Red Cross 7:00 p.m.
21	18	ATV Club Mtg. Mangia Pizza 6:30 p.m.
18	15	QCWA IHOP 183 Near Duval 1:00 p.m.
27	24	Travis Co. REACT Denny's on Burnet 7:00 p.m.
28	25	Travis County A.R.E.S., ARL Aud. 7:00 p.m.
22	26	Packet Set-up Lab @ Red Cross* 7:00 p.m.

*\*\*AARC Business Meeting is at Waterloo Ice House 8600 Burnet  
Come early and grab dinner before the meeting.*

*Return Service Requested*  
**October 2008**  
Austin, TX 78765-4739  
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Austin Amateur Radio Club  
AARCOVER