

# SEITS

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## SEPTEMBER MEETING

The next meeting is Saturday, September 11, 1999, in Burlington. We will be having lunch at noon with the meeting starting around 1 pm. The meeting is at our usual Burlington haunt, Godfather's Pizza.



Topics of discussion include: Latest status of the Fairfield and Keokuk machines, a request from the Coast Guard for communications help connected with Y2K, and a round table discussion on packet, BBSs, and APRS.

We look forward to seeing you then!!

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## DIGITAL CONFERENCE SET FOR SEPTEMBER

The 18th Annual ARRL and TAPR Digital Communications Conference gets under way in just a few weeks, but Conference Manager Steve Stroh, N8GNJ, is already champing at the bit.

"It is the most fun conference that I go to—bar none," Stroh says. The "DCC" as it's called is being held Friday through Sunday, September 24-26, 999, in Phoenix, Arizona. Tucson Amateur Packet Radio's Greg Jones, WD5IVD, will chair this year's event. For the second year, the Tokyo Packet Radio Users Group will serve as international co-host for the conference.

The DCC offers an international forum for beginners and veterans in digital communications, networking, and related technologies to meet, publish their work, and present new ideas and techniques for discussion. Presenters and attendees have the opportunity to exchange ideas and learn about recent hardware and software advances, theories, experimental results, and practical applications. For most who attend, the DCC is where they learn about the cutting-edge technological topics facing communications in general and Amateur Radio in particular. "It is what I term the research and development conference for Amateur Radio digital communications," Stroh says. "There's an awful lot of discussion on the leading-edge topics of Amateur Radio," Stroh says, pointing out that the DCC is where he got his baptism in spread spectrum technology. Other topics that often come up include the Automatic Position Reporting System—APRS—as well as digital networking and HF digital communication.

For full information on the conference and accommodations, contact Tucson Amateur Packet Radio, 987-309 E Tanque Verde Rd #337, Tucson, AZ 85749-9399; tel 940-383-0000, fax 940-566-2544; tapr@tapr.org; <http://www.tapr.org/dcc>. Registration before September 1 is \$42. Late registration or at the door is \$47. Conference registration includes Conference Proceedings, Saturday sessions/meetings, and lunch. The Saturday banquet is \$22.

### Club Officers:

President - Michael G. Muldoon, KE0BX  
[muldoon@lisco.net](mailto:muldoon@lisco.net)  
Vice President - Dennis Hoffman, KA0UKA  
[KA0UKA@seits.org](mailto:KA0UKA@seits.org)  
Sec/Treasurer - Mary Beth Penn, N01JP  
[marybeth@seits.org](mailto:marybeth@seits.org)



## ARISS Antennas Headed For Pre-Flight Processing

Antenna hardware key to the Amateur Radio on the International Space Station program is on its way to the ARISS flight processing facility at NASA Goddard Space Flight Center in Maryland. NASA's SAREX Principal Investigator Matt Bordelon, KC5BTL, says that once all the equipment is in hand, the various antenna system components will be integrated, then undergo flight qualification testing.

The ARISS Italian team has built and shipped L/S-band antennas, diplexers, and radomes which comprise part of the four antenna system packages to be deployed on the ISS later this year. Each antenna system consists of either a VHF/UHF or HF tape antenna, L/S-band antenna, diplexer, mounting plate, mounting clamp, and antenna cable.

While Amateur Radio from space in the past has been confined to VHF and UHF, Bordelon says the ARISS program calls for eventually providing HF capability from the ISS—although that won't happen for at least two or three years from now, when a permanent amateur station is installed aboard the ISS.

"We haven't done HF before from the shuttle or Mir," he said. "A lot of hams have really wanted us to go in that direction." Running HF gear from the space shuttle was deemed impractical because the SAREX program depended on a window antenna. Things will be different with the four, externally mounted antennas on the ISS Service Module, however. Bordelon says that one of the four antenna systems will utilize an HF "carpenter's tape" antenna in place of the VHF/UHF "tape" to provide access to 10, 15 and 20 meters from the ISS.

"We wanted to address some of the interest from the Astronaut Office and from amateurs in the US and Russia concerning HF by providing capabilities on 10, 15, and 20 meters," he said. "It's always been of great interest how those bands would perform from a manned spacecraft."

Bordelon said the ARISS HF antenna will look very similar to the VHF/UHF antenna. "It looks like a carpenter's measuring tape," he said. The HF antenna, still in the design stages, likely will be about 2.5 meters long. HF gear is not scheduled to go aboard the ISS for several more years.

The ARISS flat-spiral, dual-use microwave antennas will provide access to the 1.2 GHz and 2.4 GHz amateur bands, as well as, reception of GPS and to receive video signals for space walks.

The antenna systems, scheduled for delivery aboard shuttle mission STS-101 this December, will make use of four Russian-provided bulkhead feedthroughs on the Service Module, set for launch in November. Astronauts aboard the ISS will connect the initial ARISS radio transceivers and associated hardware to the new antenna systems. The initial ham gear—primarily Ericsson commercial-grade handheld transceivers—will support amateur operation from the ISS on voice and AFSK packet on 2 meters and 70 cm.

For more information on ARISS, visit <http://garc.gsfc.nasa.gov/~ariss/ariss.html>.

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## Phase 3D Satellite Completes Vibration Testing

The Phase 3D team apparently got the "Good Vibrations" it was hoping for when the next-generation Amateur Radio satellite underwent vibration testing earlier this month at NASA's Goddard Space Flight Center. "P3D performed very well in the vibration testing," said AMSAT Phase 3D Lab and Integration Manager Lou McFadin, W5DID. "This is another milestone on P3D's journey to flight."

Now back at the Integration Lab in Orlando, Florida, P3D was to be carefully examined to verify that all systems were still functional and ready for flight, McFadin said.

The Phase 3D satellite arrived at Goddard earlier this month but had to cool its heels while NASA was preoccupied with higher-priority projects including the Hubble Space Telescope repairs and the Earth Orbiter-1 satellite.

The spacecraft was subjected to a preselected vibration scenario in each of the three axes. The testing was intended to simulate the vibrations the satellite will encounter during launch. Last fall, the satellite successfully completed thermal-vacuum testing, enduring nearly a week in a vacuum and alternately warming and freezing in a test chamber at the Orbital Sciences Corporation test facility in Germantown, Maryland.

Once it's checked out at Orlando, P3D will be shipped to the as-yet unnamed launch site. Work continues on preparing the space frame and ground support equipment for shipment once the launch is announced.

For more information and photos, visit <http://www.clark.net/pub/tac/p3d.htm> and <http://www.amsat.org/amsat/sats/phase3d.html>