

The Shoreline Observer



*Newsletter for the
Shoreline Amateur Astronomical Association*

President- Peter Burkey

Vice President- Steve Tuls

Secretary/Treasurer- Mark Logsdon

Robert Wade, Editor

September 1992

September Meeting

The September meeting of the Shoreline Amateur Astronomical Association will be held on September 17th, beginning promptly at 7:00 PM in the West Ottawa Middle School Planetarium in Holland, Michigan. The agenda will be as follows:

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| 7:00-7:15 | Refreshments and socializing. |
| 7:15-7:30 | General Business Meeting. |
| 7:30-8:15 | A slide show entitled <i>The Story of Our Universe</i> will be presented. This is a set of slides obtained from Adler Planetarium and includes a narrative tape. |
| 8:15-8:45 | Sandy Plakke will tour the September night sky followed by a detailed tour of the constellations Lyra and Cygnus by Pete Burkey. |

Board Meeting

With Arlin, Bob, and Mark present, Pete called the meeting to order on August 27th at 7:00 PM.

Treasure's Report: \$ 208.23

Refreshments for the September meeting: Arlin Ten Kley.

3882 62nd Street
Holland, Michigan 49423



Business to be conducted at the September meeting:

1. A constitutional amendment to membership types will be proposed to allow greater choice in astronomical publications to be made available to members (at group savings).
2. Nominations will be taken for the 1992-1993 offices of President, Vice-President, and Secretary Treasurer. Note that Pete Burkey is ineligible for a third term as president as per our constitution. Nominations are welcome! Elections will be held first thing at our October meeting.

Amateur Radio Retransmission of Shuttle Audio/Video

From NASA SPACELINK

Provided by the NASA Educational Affairs Division. Operated by the Marshall Space Flight Center

The Goddard Space Flight Center Amateur Radio Club (GARC) has transmitted, by Amateur Radio, NASA Select audio on the following frequencies:

75 Meters: 3.860 MHz U.S. and Canada coverage*

40 Meters: 7.185 MHz World wide coverage*

20 Meters: 14.295 MHz World wide coverage*

15 Meters: 21.395 MHz World wide coverage*

10 Meters: 28.650 MHz World wide coverage*

AO-13 (AMSAT OSCAR-13) Satellite; 145.945 MHz. Primary; 145.955 MHz. Alternate. This Mode B requires a satellite-high gain antenna

*Coverage is dependent on Solar Activity and Ionosphere conditions. With a good short-wave receiver and outside antenna, reception should be possible. Due to ionospheric conditions and time of day/night, certain bands have better reception. A search of each band is recommended.

The GARC plans to re-transmit Shuttle video on Amateur TV for hams and ham TV watchers in the Washington, DC area. Contacts at GSFC: Russ Jones, N3EGO, or Frank Bauer, KA3HDO.

The Marshall Center Amateur Radio Club will re-transmit NASA Select audio at 147.100 and 145.100 MHz. These transmissions can be heard only in the local Huntsville, Alabama area.

People in the greater San Francisco Bay area and Sacramento can view the mission via the W6NKF Amateur Television repeater on MT.Diablo which operates on 427.250 MHz with vertical polarization. Those with cable ready TVs and VCRs or cable TV converters can tune this equipment to channel 58 in the CATV format and by hooking up an outside TV antenna should be able to receive the telecast. This makes the service available to the general public, including schools, colleges, etc.

Shuttle audio is re-transmitted in the Minneapolis/St. Paul, Minnesota area on 145.150 MHz during Shuttle flights. Additionally, during some flights, the audio is also re-transmitted by the

3M ARC repeater (WB0BQG/R) on 147.120 MHz FM.

In the Los Angeles area, Shuttle air-to-ground audio may sometimes be heard on VHF at 145.460 MHz.

The WB4LA repeater located in Dayton, Ohio on 145.110 MHz, re-transmits Shuttle Select audio.

Shuttle audio is available in the Phoenix, Arizona area on 449.000 MHz FM.

The Coastal Plains Amateur Radio Club provides Shuttle Audio on the WD4EVD Repeater in Ashburn, Georgia on 147.285 MHz FM.

During STS missions, NASA Select audio is available on Amateur Radio repeater WD6BNO/R, transmitting on 52.220 MHz, with coverage in the central San Joaquin Valley, California. Coverage includes Bakersfield to Stockton.

The Ames Amateur Radio Club re-broadcasts NASA Select Audio on 145.580 MHz. The signal originates from the NASA-AMES Research Center in the heart of the Silicon Valley, Mountain View, Ca.

NASA Select video is available for those who have a line-of-sight path to Black Mountain via Amateur TV. For ATV details, write: AMES Amateur Radio Club, P.O. Box 73, Moffett Field, Ca., 94035-0073.

The Johnson Space Center supplies NASA Select Audio on 146.640 MHz FM, via the W5RRR repeater.

From WB4CXD: Shuttle audio can be heard in Birmingham, Alabama, on 145.380 MHz direct, and via the N4AHN repeater on 145.150 MHz.

If visiting the "MILA" (Meritt Island Launch Area) at Cape Canaveral, Fla., you can hear launch and air-to-ground audio on the K4GCC repeater on 146.940 MHz.

NASA Select is on 444.300 (NN0V) and 146.400 MHz in the Cedar Rapids, Iowa area.

From Ron Parise, ASTRO-1 Shuttle Astronaut:
Hi Folks!

This is in response to the question about shuttle frequencies. I tried to reply the other day but

apparently it didn't work. The space shuttle transmits on three frequency bands, UHF, S-Band, and Ku-Band. The UHF frequencies are simple AM voice and very easy to copy. These frequencies are used for launch and landing operations, EVA communications, (i.e. from the spacesuits back and forth to the shuttle), and as an additional voice downlink when other channels are in use or the current ground station has no S-Band capability. The frequencies in use are:

296.8 MHz - air to ground, or orbiter to suit
259.7 MHz - air to ground, or suit to orbiter
279.0 MHz - suit to orbiter or suit to suit
243.0 MHz - standard Mil aircraft emergency freq.

The S-Band system is one of the primary orbiter downlink bands. The voice channels are digital slope delta modulation and are mixed in with the rest of the orbiter telemetry, very difficult to copy. Much of the downlink TV is on S-Band also but it is wideband FM and should be easily copyable. The frequencies are:

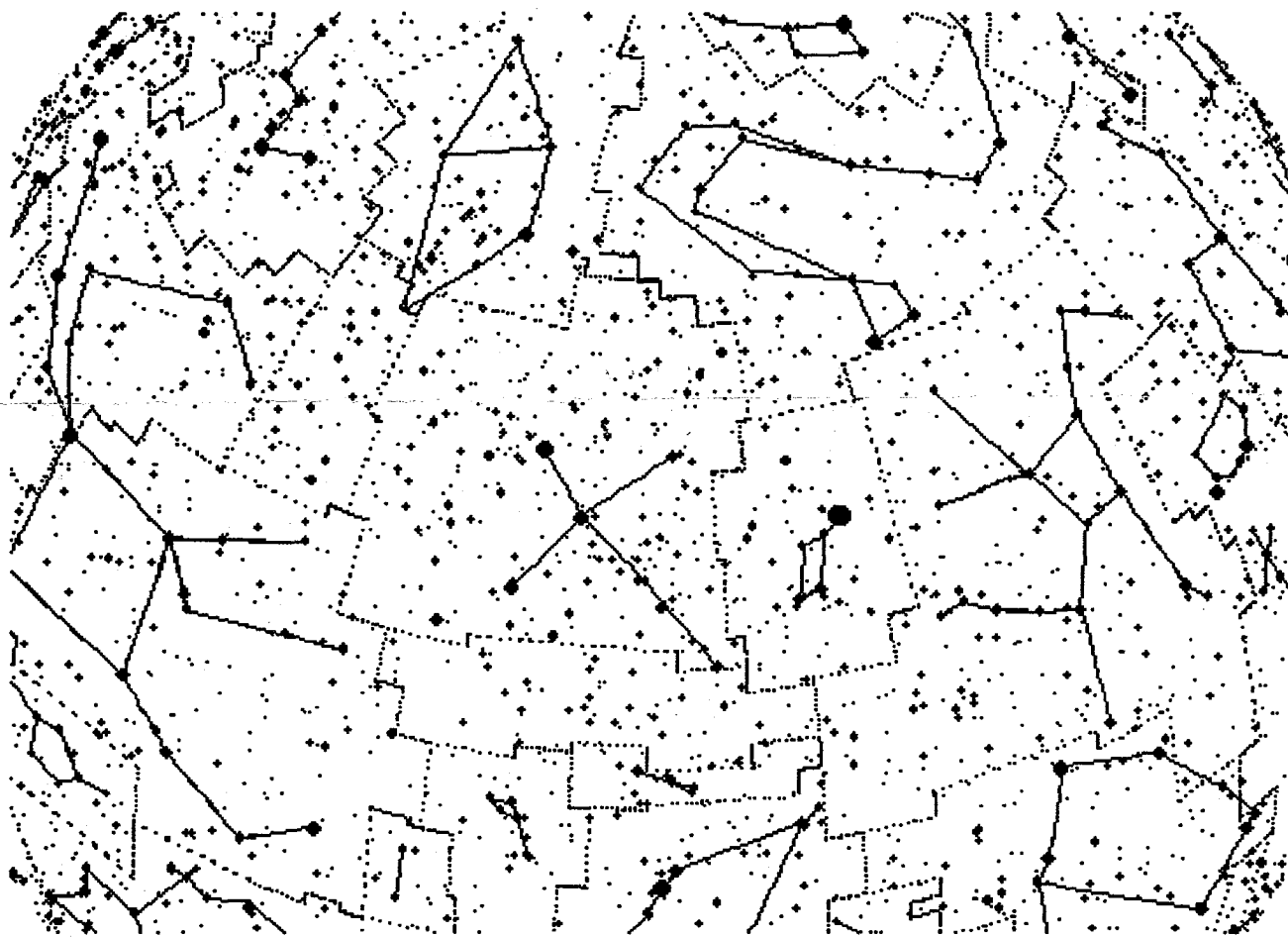
2287.5 MHz - primary digital downlink

2250.0 MHz - wideband FM with either main engine analog telemetry during launch, or TV during orbit operations.

The Ku-Band system is used in conjunction with the tracking and data relay satellites and is used much more heavily in Spacelab flights than in others. The data is **very** high rate digital (50 Mbits/sec range) and therefore essentially impossible for you to demodulate and decommutate in your basement. Nevertheless the shuttle transmits on 15.003GHz. You should also note however that these transmissions are directed toward the TDRS satellite with a high gain antenna and would therefore not be copyable on the ground.

The UHF frequencies are fun to listen to but are not heavily used except during EVA's. You will almost always hear some activity on them however sometime during a mission but you just have to be patient.

Happy Listening!
Ron WA4SIR



The Sky: showing relative positions of Cygnus and Lyra

