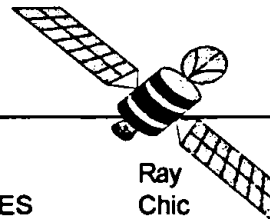


# W2MMD



## Gloucester County Amateur Radio Club

### 1997 Officers

President	Bob Krukowski	WA2UDO
Vice President	Jack Stauffer, Jr.	KA7LAX
Treasurer	Al Arison	KB2AYU
Recording Sec.	John Cronin, Sr.	KB2ETT
Corres. Sec.	Tony Scandurra	KA2FFS

### Directors

John Lloyd	KA2EZN
John Zaruba, Jr.	AA2BN
Walt Seitz, Jr.	KB2JCG
Chuck Colabrese	WA2TML
Goldie Rosenberg	N2YNB

### Trustees

Stu Cleveland	N2WUP
Barbara Bielecki	N2SBP
Chris Chamberlin	N2IVN
Charlie Olinda	N2SRQ

### GCARC Meetings

#### General Membership:

8 p.m., 1st Wednesday every month, Deptford Elks Lodge, Highland Ave., one block from Egg Harbor Road.

#### Board of Directors:

8 p.m., 3rd Wednesday every month, GCARC site, Harrison Twp. 4-H Grounds (approximately one mile south of Mullica Hill on Rt. 77).

### Club Repeaters

147.780/180 Mhz    223.06/224.66 Mhz  
447.100/442.100 Mhz (CTCSS 131.8)

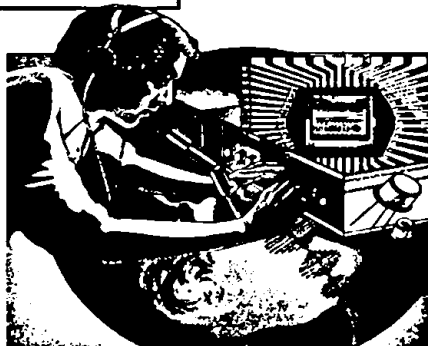
## 1997 Committee Chairpersons

Advertising	Ray	N2WHL
ARES/RACES	Chic	WA2USI
Awards	Jack	K2ZA
Banquet	Bob	WA2UDO
Budget *	Bob	WA2UDO
Callbook Info.	John	K2JF
Clubhouse Site *	Stu	N2WUP
Constitution *	Ken	KN2U
Crosstalk	Greg	WN2T
	Don	N2WFM
	Kyle	KB2RVY
	Charlie	K2PQD
Data Processing	Open	
DX	Open	
Field Day *	Art	KA2DOT
Hamfest *	Open	
Help	Ken	KN2U
Hospitality *	Donna	
Legislation	Open	
Membership *	Sonny	WB2DXB
Nets	Dave	N2TVR
Nominations	Bob	WA2UDO
Publicity *	Ray	N2WHL
Repeaters *	Chuck	WA2TML
Scholarships	Greg	WN2T
Special Services	Al	N2FJQ
Special Events	Walt	WB2OYQ
Sunshine	Miriam	KB2EUA
Technical	Open	
Training & Testing	Chic	WA2USI
TV	John	K2JF
4-H Parking	Open	

(\* Standing Committee)

### NETS

**ARES/RACES - Sundays, 2200 Hrs**  
(147.780/180 & 223.06/224.66 Repeaters)  
**10 Meter - Sundays following the**  
**ARES/RACES net (28.350 Mhz)**



# Happy New Year!



## CROSSTALK JAN. 1997



### **KA2EZN Reviews the Alinco DJ-S41 440 HT.**

This month, I recently purchased the Alinco DJ-S41 440 HT and thought I would put my opinions on paper for anyone considering buying one. This HT is extremely small, measuring about 4 inches by 2 1/4 inches by about an inch thick. Small, but built so it will fit nicely into the palm of your hand. The buttons are large enough that they are easily accessible, without needing a magnifying glass to see them. Frequency coverage is from 425 MHz to 449 MHz. Power output is 340 MW high power (!) and 50 MW low power.

Let's talk about the power output for a moment. The power out may seem like a joke, but if the HT is used in it's proper context, it is perfect. What do I use it for? I use it for cross band remote operation. What's that? I talk on 2 meter simplex when I am home. I talk in about a 70 mile range on a regular basis. (There is a station in Springfield, Mass. that I talk to on a semi regular basis. There's some range on FM simplex!) In any event, I have a dual band radio. I put the unit into the cross band repeat mode. This takes the received signal on 2 meters and rebroadcasts it on 440. It also takes anything that it hears on 440 and then rebroadcasts it on 2 meters. Therefore, the new Alinco HT becomes basically a remote microphone or transceiver.

This way I can talk to my friends on 2 meters and not have to be tied to the shack. I can mow the lawn, etc. The low power output of the HT makes it ideal for this usage. The HT would also be great for hamfests. Can it access repeaters? Yes! I was able to access a couple of repeaters, no problem. Another interesting feature of the radio is that it has no squelch control. This drove me crazy. It takes a little getting used to but works fine. The unit has a fold in and out antenna, which is attached to the radio. The HT is powered by 3 AA batteries. I put in some alkaline batteries, and after 3 weeks of usage, they are still holding up fine. The HT has all of the usual features that you would find such as memories, tone encode, call functions, etc.

Does it get the EZN seal of approval? Sure does! It is built very well and looks like it will stand more than a few bumps from being dropped, and also looks like it will survive being accidentally dropped to the bottom of the EZN pool next spring. Here's the best part. The thing sells for under \$140.00. Less than a hundred forty bucks! Alinco has a winner here!

73, John KA2EZN

#### **Stuff for Xtalk?**

Please send on packet to  
WN2T via "Pitman"  
(N2SRO) on 145.770  
or E-Mail to:

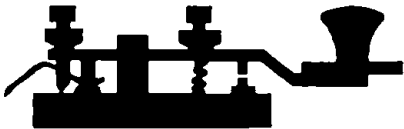
Pott@voicenet.com.

Deadline for Jan. 1997 issue:

January 26, 1997

## In Memorium

It is with great sadness that we report on the death of Milton Goldman, K3WIL. Both old timers and new timers alike know the great contributions, including the "Milton Goldman Award," that Milt gave to our Club in his long years of affiliation. The Gloucester County Amateur Radio Club extends its deepest sympathy to the Goldman family.



## QST de W1AW

ARRL Bulletin 100 ARLB100  
From ARRL Headquarters  
Newington CT December 20, 1996  
To all radio amateurs

SB QST ARL ARLB100 ARLB100  
WRC99 Committee Supports HF CW  
Requirement

The special committee created by the ARRL to study issues relating to the 1999 World Radiocommunication Conference (WRC-99) has recommended that the ARRL Board of Directors not support changing the treaty requirement for Morse code testing to operate below 30 MHz. The committee submitted its final report to the ARRL Board this week.

The committee report contains recommended ARRL positions regarding possible changes in Article S25 of the international radio regulations. Consistent with the results of a survey of ARRL members, the committee recommended no change in the existing treaty obligation that administrations test prospective amateur licensees on their

*Continued Next Page...*

## QST de W1AW

DX Bulletin 57 ARLD057  
From ARRL Headquarters  
Newington CT,  
December 26, 1996  
To all radio amateurs

SB DX ARL ARLD057  
ARLD057 DX news

This week's bulletin was made possible with info provided by Tedd, KB8NW, the OPDX Bulletin, Jerry, K9BG, Stephen, N2MAU, 425DX News, Karl, PS7KM and Contest Corral from QST. Thanks to all.

JAMAICA, 6Y. Gianni, I5JHW, will be active as 6Y5HW or 6Y0HW, starting on December 29. He will be on all bands, using CW, SSB and RTTY until January 12. QSL via I5JHW.

REUNION ISLAND, FR. F6AFJ will be active as FR5GM from December 25 to February 15. He will be on SSB on 20 and 15 meters from 1100z to 1200z and again from 1600z to 1800z. QSL direct.

HONDURAS, HR. Bob, KS9W, and Jerry, K9BG; will be active from January 8 through January 15, as HR3/ home calls. Jerry will operate primarily CW and Bob will also operate CW and RTTY on all bands. SSB activity will be minimal. Jerry will also try some satellite operation. QSL via home calls.

GUAM, KH2. Jim, KH2D, will be active on 160 meters for the next several months. His operations will be primarily on 1828 kHz from 0800z until 1500z. When possible, he will be on during his sunrise around 2030z looking for European stations. QSL via K8NA.

ST. PETER AND ST. PAUL ROCKS, PY0. Karl, PS7KM and Tino, PT7AA, plan to operate from here for 2 to 3 weeks as ZY0SK and ZY0SB, respectively, starting January 25. Look for CW and SSB activity on 80 through 10 meters. QSL via home calls.

SURINAME, PZ. Mako, JA1OEM, will be active on the low bands as PZ5HP,

starting December 24. He will be here until January 12. QSL direct.

INDONESIA, YB. Tjok, YB0RX, and others are planning an operation from Kepulauan Tukang Besi, starting from January 3. The callsign will be 8B8WI. They plan to operate for three days. QSL route to be announced.

MACEDONIA, Z3. Jan, OH3MIG, will be active for the next 6 to 8 months as Z38/OH3MIG. He will be active on CW and SSB on all bands. QSL via OH3GZ.

*(Tks Ken, N2CQ, and John, K2JF, for information.)*

## Try These for Fun

There appears to be some interesting contests this month that some of us will be able to participate in. Here is a chance for some of you who want to try out for the first time to take a crack at having some OLD HANDS give you a helping hand. Come on out -- you may enjoy it!

Jan 11-12 North American CW QSO Party.....  
Jan 18-19 North American SSB QSO Party.....  
Jan 18-20 ARRL VHF Sweepstakes (Here is where we go at it with Tony, KA2FFS, leading the gang from the Club House).....  
Jan 24-26 CQ WW 160 Meter CW Contest.....

Come on out give us a hand. We didn't do badly last time. We just needed a few more operators. (See Tony at the meeting to get filled-in on the details.)

OK, there is the lineup for a few of the contests this month. Don't forget to get the work-sheets and the Front Page for that particular contest. We can do with a contest chairperson to handle all the paper-work and take care of the inputs for the Club. Next month we have some real big ones again. So go get 'em, gang. C U L es 73, K2JF

Morse code ability before authorizing them to operate below 30 MHz. The committee did support changes to Article S25 that would:

Eliminate the so-called "banned countries" list

Establish that providing communications in the event of natural disasters is a normal and desirable part of the international service provided by radio amateurs

Reduce restrictions on international communications on behalf of third parties

Aid in the establishment of an "International Amateur Permit."

The committee report also responded to the Board's request that it study possible changes to the amateur licensing structure in the United States. The committee offered some proposals for change, but recommended that the Board take no action on this part of its report until the committee's proposals are shared with the membership and there is an opportunity for member comment.

The Board will consider the committee's report and recommendations at its next regular meeting, January 17-18, 1997. If the Board accepts the report, it will be available for public release. An article giving the results of the survey will appear in February 1997 QST. ♦♦♦♦♦♦♦♦♦♦♦♦♦♦♦♦♦♦♦♦

*Thank You,  
Charlie!*



As you may know, Charlie Sketchley, K2PQD, has maintained a data base of the club members for many years. It is thru this data base the mailing label on your newsletter is produced as well as the membership roster that is printed from time to time. What you may not know is Charlie fathered this data base more than 10 years ago on his personal computer, a TRS 80 ("Trash 80" as they were known on the bands).

Charlie with his advanced forward thinking put our club into the computer age long before many other clubs in our area. Charlie has found it necessary to relinquish the responsibilities of maintaining this club service. His shoes will be hard to fill. We, the members of the Gloucester County Amateur Radio Club, express our gratitude for many years of dedicated service.  
73, Bob, KB2COB

Doug Gehring, WA2NPD, is tentatively scheduled to give a presentation on HF Operating Procedures for the January meeting. Due to the holidays, this may not be possible, as preparation is lengthy. If preparation cannot be completed, an alternate program will be provided. Bob Krukowski, WA2UDO, our president, has several videos on various aspects of amateur radio, one of which will be selected for presentation. See you there! 73, Jack, KA7LAX



The data base is only as good as the data entered. It is important to keep it up-to-date and accurate. So, please check your information and send corrections to: Bob Layton KB2COB at the address in your club roster, or send E-MAIL to: KB2COB@juno.com, or call and leave a message on landline.

Sorry, the packet is temporarily out-of-service -- will advise when it is up and running again. 73 de Bob



**Happy Birthday  
for the month of  
January from all  
the members  
of GCARC!**

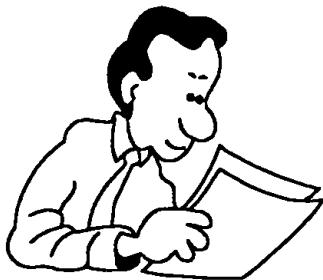


N2XQV	Ron Polizzi	Jan. 2
N2PKN	Tony Pitale	Jan. 3
WA2USI	Charles Naylor	Jan. 9
N2WSI	John Mullens Jr.	Jan. 9
KG2ER	Don Tanguary	Jan. 10
KB2COB	Bob Layton	Jan. 11
WA2GFK	Joe DiNovi	Jan. 13
KB2AYU	Al Arrison	Jan. 15
WB2YHX	Sid Bozarth	Jan. 16
N2WFA	Frank Steidle	Jan. 17
WB2ONY	John Fahey	Jan. 19
N2IMK	Francis Wallace Jr.	Jan. 21
KB2YJE	Bret Geiger	Jan. 22
KB2WSO	Sandy Deluca	Jan. 27
KB2YJB	Bill Hunsinger	Jan. 28

*Tks, Bob, KB2COB, Database*

## President's Message

By now the holidays have passed. I hope it was an enjoyable season for everyone. On behalf of the electorate, I would like to take the opportunity to thank everyone for their continued vote of confidence. Many positive changes have taken place over the past year, especially at the club site. At the January meeting we will be reviewing 1996 club happenings. We will also be soliciting suggestions in order to plan our direction for 1997. Therefore it is important for you to attend. We need your input to be successful.



Unfortunately, Chatterley's Restaurant is no longer available for our banquet. We are looking into other options. The February *Crosstalk* will contain all of the details, i.e., location, date, menu and price.

Finally, we have some very nice equipment at the club site. Thanks to Stu, N2WUP, and several volunteers, it is clean and orderly. Therefore you may want to "check out" the exceptionally low noise level and work some DX that you may otherwise not be able to hear at another location. If you want to know when conditions are good, look for John's (K2JF) car in the parking lot.

73, Bob (WA2UDO)



### 10-Meter Net

GCARC now has a 10-Meter net every Saturday 8:00 AM, 28.350 MHz. Over several months I searched for club members interested in restarting the 10 meter net. About two months ago Rob (N2WFD) and John (KA2EZN) were discussing the possibility of doing the same. We got together and in November the net was started on an informal basis.

To date check-ins have included the following stations: Rob (N2WFD), John (KA2EZN), Al (KB2AYU), Tom (KB2OWC), John (K2JF), Doug (WA2NPD), Tony (KA2FFS), Roger (WB3ITN), and Jose (WB2OZE). If I've missed anyone, please accept my apologies.

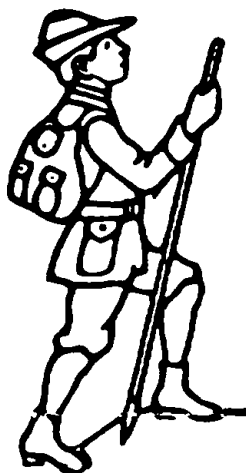
We meet every Saturday morning at 8:00 a.m. on 28.350 MHz. As I mentioned it is an informal net conducted in round-table format with no designated net control. The topic of conversation is open, and it generally becomes a open rag chew. The net lasts about an hour, but time has varied in both directions depending on check-ins and topics. When I am available, I monitor the frequency from 8:00 a.m. to 9:00 a.m. (most times longer) even if there is no apparent activity. To quote our 2-Meter Repeater, "All are welcome," so come join us on the net.

73 de Jack Stauffer (KA7LAX)

## BACKGROUND IN THE

### GCARC / 4-H JUNIOR AMATEUR RADIO CLUB

Over the last few years several of our GCARC club members have been working silently but diligently supporting a junior amateur radio club. This club was assembled and is being run as a joint effort between GCARC members and the GC 4-H. The function is supported by Walt Seitz, Jr. (KB2JCG), a member of Gloucester County 4-H Leaders Council, Bob Budd (KB2AH) and Sam Zeola (KB2ZKI). All are active members of GCARC. Walt Seitz, as you are no doubt aware, holds a position on the board of directors for GCARC. Wayne Welsh (WA2VOY) assists as a counselor. Sam Zeola is responsible for generating presentations for the group.



Meetings are currently held at Walt's house in the Clayton area, although the GCARC site has been made available to them. Due to demands on Walt's time, future meetings may be alternately held at the GCARC site, with adult supervision present. It is unlikely meetings will be held exclusively at the club site, because it is far more convenient to use Walt's house. Meetings are currently held the last Friday of every month.

The 4-H Amateur Radio Club currently consists of five (5) active members and three additional participants who are not yet as committed. One of the five active members is currently licensed as a Technician-Plus and is working toward his General class license. Another has passed the Novice theory test and is working toward his No-Code Technician class license. Two other members are working toward their No-Code Technician class licenses.

The group has conducted or participated in the following events: 1) A tour of "G1," the Gloucester County Emergency Management Communications Center in Woodbury; 2) They participated in the 4H Expo held at the Deptford Mall during the last three years. The group set up and operated an amateur station and recruited new members; 3) Set up and operated a Special Events Class Station at the last 4H Fair and recruited new members; 4) Participated in the Pitman Fourth of July parade during the last two years; 5) Set up and operated an amateur station during Field Day 1996 at Wayne Welsh's house; 6) Set up and operated a radio station at the 4H-affiliated ice cream social held at the Wenonah school; 7) During the last Deptford Mall Expo one member of the group, Eddie (KB2SVG), who is also club president gave a demonstration and verbal presentation of a packet radio station. He received a Blue Ribbon for his demonstration in the Senior Category; 8) The group has received honorable mention from a state official involved in 4H for the refinement and progress of their organization in the last year.

Continued next page...

4H; continued...

Their future plans include a visit to the amateur station at the Franklin Institute, attaining and upgrading licenses, increasing membership (they also need more counselors), and plans to procure tools and equipment for assembling of kits and projects.

The counselors and members are making a dedicated effort toward the furthering of their club. As always they can use additional support, counselors are needed, new members are always welcome and they are in need of additional equipment. Anyone wishing to donate tools, soldering irons or simple test equipment, or knows of a young person who desires to enter ham radio as a hobby may contact Walt Seitz (KB2JCG) or one of the other GCARC members who are involved.

The GCARC members who are involved in this function deserve a great deal of thanks from the GCARC membership, because the function and service they provide satisfies an agreement between GCARC and the 4-H for this function.

Jack Stauffer (KA7LAX)

## PART 7 IONOSPHERE PREDICTIONS

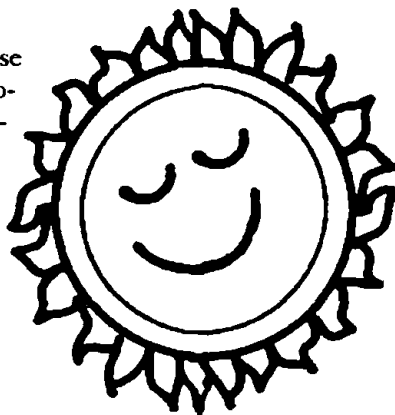
By SOUNDING the ionosphere it is possible to predict for several months in advance the various important characteristics of the ionosphere above any point on the surface of the earth. Such predictions are useful in the selection of optimum frequencies for radio communication over a definite path at particular times.

### SKY-WAVE PROPAGATION

GENERAL- Sky-Wave propagation refers to those types of radio transmission that make use of ionospheric reflections to provide signal paths between transmitters and receivers. A typical question in sky-wave propagation is whether the ionosphere will support (reflect) a radio wave of a particular frequency and whether the received signal will be strong enough at the receiver to be heard above the noise level present at the receiver.

### SKY-WAVE TRANSMISSION PATHS

The many possible paths of radio waves from a transmitter to a receiver as transmitted by reflection from an electrically conducting layer of the ionosphere. Note that some of the components of the entire wave front, which in this case are assumed to be too high a frequency for reflection by the ionized layer, pass on through and are lost in outside space, unless they happen to be reflected from some higher layer having a greater degree of ion density. Other components of wave, which are assumed to be the correct frequency for reflection from the ionosphere layer are returned to earth, and it is these components of the wave that provide communications. Note also that



the SKIP DISTANCE is that distance from the transmitter at which the ion density of the layer will just support reflection. Note the distinction between the terms SKIP DISTANCE and SKIP ZONE. For each frequency (greater than the critical frequency) at which reflection from an ionosphere layer takes place, there is a skip distance that depends only on the frequency and the state of ionization. The skip zone, on the other hand, depends on the extent of the ground-wave range and disappears entirely if the ground-wave range equals or exceeds the skip distance.

A. SKY-WAVE MODES. The distance at which the wave returns to the earth depends on the height of the ionized layer and the amount of bending of the path while traversing the layer. Upon return to the earth's surface, part of the energy that enters the earth is rapidly dissipated, but part is reflected back into the ionosphere again, where it may be reflected downward again at a still greater distance from the transmitter. This means of travel by hops, by alternate reflections from the ionosphere and from the surface of the earth, may continue, and enables transmission to be received at long distances from the transmitter.

B. GREAT-CIRCLE PATH. The paths which the radio wave NORMALLY traverse in traveling from the transmitter to the receiver lie in the plane passing through the center of the earth and the transmission and reception points. The intersection of this plane with the surface of the earth is the great-circle path between the transmission and reception points. Radio-wave transmission paths which lie in this plane generally are called, for brevity, great-circle paths.

Frequently, however, waves do not follow paths confined to this plane, and this deviation is called non-great-circle paths. The part of the ionosphere which controls sky-wave propagation is the portion directly above the great-circle path. Waves can follow either the major arc or the minor arc of the great-circle path. For instance, radio waves emanated at New York City might travel cross-country, or westward to reach San Francisco, which would be along the minor arc of the great-circle path between these cities, or these waves might travel eastward, almost around the world to

the same destination, which would be along the major arc. The two types of transmissions are called SHORT-PATH and LONG PATH transmission, respectively.

C. FREQUENCY As noted previously in the discussion of the ionosphere, the higher the frequency of a wave, the less it is refracted by a given ion density. Thus, if the angle of incidence of the wave with the ionosphere is fixed and the frequency increased, the minimum distance between the transmitter and the point of return of the wave to the earth increases slightly.

*Continued next page...*

## *Ionosphere, cont...*

**D. INCIDENT ANGLES.** For a radio wave of a particular frequency and for an ionized layer of a particular density of ionization, there is an angle of incidence of the wave, called the critical angle, at which the wave is reflected and returns to earth near its minimum or skip distance. It should be noted that the critical angle of a given wave sometimes is defined as the angle at which the wave is propagated horizontally within the ionospheric layer and, therefore, does not return to earth. Note that at angles of incidence larger than the critical angle, the wave is not sufficiently refracted in the ionosphere and escapes into space. As the angle of incidence decreases below the critical angle, the wave returns to earth at decreasing distances from the transmitter until a point of minimum distance, the skip distance, is reached. Note the critical angle for a given frequency is not to be confused with the critical frequency for a given layer of the ionosphere. The critical frequency, as explained before, is the highest frequency a given density of ionization will return directly to earth when propagated at a vertical angle (incident at 90 degrees to the ionosphere).

The next part 8 will be on: **MAXIMUM USABLE FREQUENCY (MUF); LOWEST USEFUL FREQUENCY (LUF);** other **OPTIMUM WORKING FREQUENCY (FOT).**

C U in the Pile-Ups, K2JF

### **QST de WIAW**

Propagation Forecast Bulletin 53 ARLF053

From Tad Cook, KT7H

Seattle, WA December 20, 1996

To all radio amateurs

Solar activity is up again with the return of region 7999. Average flux was up this week by 13 points, the sunspot numbers up over 17 points, and A index up 1 point.

Flux is expected to rise up to around 96 on December 23, then drop below 80 on December 31, then up to the mid-eighties again around January 5 and 6. Expect the A and K indices to be up again around January 6, 11 and 12.

Sometimes there are questions about the effect of a solar or lunar eclipse on propagation. I'll include here some notes from Dave Palmer which present some interesting thoughts about eclipses:

"Solar and Lunar eclipses do not represent anything special in terms of planetary positions. They're really just a matter of perspective.

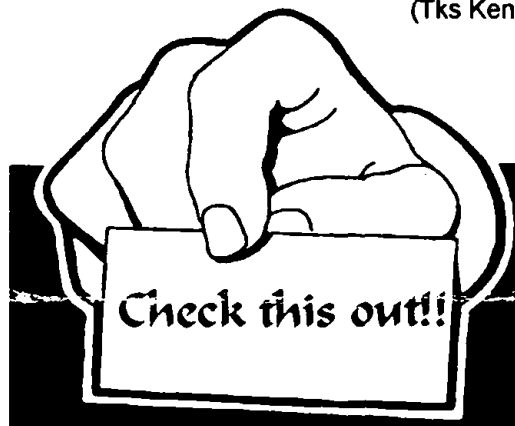
Solar eclipses occur only at the New Moon, when the Moon is between the Earth and Sun. Lunar eclipses happen only at Full Moon, when the Earth is between the Moon and Sun.

But Full/New Moon happens about every 28 days. The reason we don't get eclipses (on Earth, at least) twice a month is that the Moon's "orbit about the Earth" is tilted, and the coincidence of an exact line-up of the Sun-Moon-Earth (as seen from some spot on Earth) happens only a couple times per year.

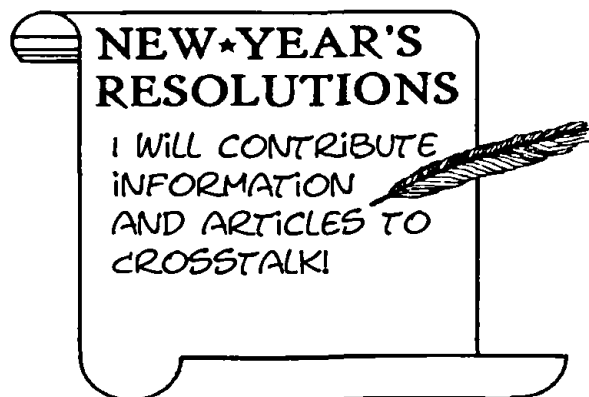
However, with every New Moon, there IS a solar eclipse out in space either north or south of the Earth, and with every Full Moon, there's a Lunar eclipse north or south of the Moon (OK, really, there's a solar eclipse SOMEWHERE in space for as long as the Moon is not obscured by the Earth, and a Lunar eclipse for as long as the Moon is totally obscured by the Earth). The point is that the eclipse's shadow usually just misses hitting the Earth (or the Moon).

Sunspot Numbers for December 12 through 18 were 32, 31, 30, 25, 27, 38 and 33, with a mean of 30.9. 10.7 cm flux was 81.1, 81.7, 82.5, 85, 86.2, 86.4 and 88.4, with a mean of 84.5. Planetary A indices for the same period were 8, 6, 5, 10, 10, 8, and 5, with a mean of 7.4.

(Tks Ken, N2CW)



The Atlantic Division's WWW home page URL is <http://www.resuba.com/arr/>. If you'll have a look there and choose the Club Spotlight menu option, you'll find something of interest!  
73 & happy new year - Kay WT3P



January 1 - 31, 1997

SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
			Jan. 1	Jan. 2	Jan. 3 ARRL RTTY Roundup	Jan. 4
Jan. 5 20:00 ARES/RACES 20:30 10 mtr Net - 28.350 Mhz	Jan. 6	Jan. 7	Jan. 8 GCARC General Membership Meeting 20:00	Jan. 9	Jan. 10	Jan. 11 Meet Novices & Technicians Day; Japan DX Test; Hunting Lions Test; QRP SSB Sprint; No. Am. QSO Party, CW
Jan. 12 20:00 ARES/RACES 20:30 10 mtr Net - 28.350 Mhz	Jan. 13	Jan. 14	Jan. 15 20:00 GCARC Board of Directors Mtg	Jan. 16 VE Exams Bellmawr @ 7 p.m (Doors open 6:15 p.m.)	Jan. 17	Jan. 18 ARRL VHF Sweepstakes; Mich. QRP CW Test; Hungarian DX Test
Jan. 19 20:00 ARES/RACES 20:30 10 mtr Net - 28.350 Mhz; Fest-Yonkers, NY	Jan. 20	Jan. 21	Jan. 22	Jan. 23	Jan. 24 CQ WW160 Mtr. Test, CW REF French Test, CW; UBA Test, Phone	Jan. 25
Jan. 26 20:00 ARES/RAC 20:30 10 mtr Net - 28.350 Mhz; Fest-Odenton, MD	Jan. 27	Jan. 28	Jan. 29	Jan. 30	Jan. 31 PARG Bug Key Nite	
<b>Deadline February Crosstalk!</b>				