



SAN BERNARDINO MICROWAVE SOCIETY, Incorporated

FOUNDED IN 1988

A NON-PROFIT AMATEUR TECHNICAL ORGANIZATION DEDICATED
TO THE ADVANCEMENT OF COMMUNICATIONS ABOVE 1000 MC.

SBMS Newsletter

Activities of the October SBMS Meeting

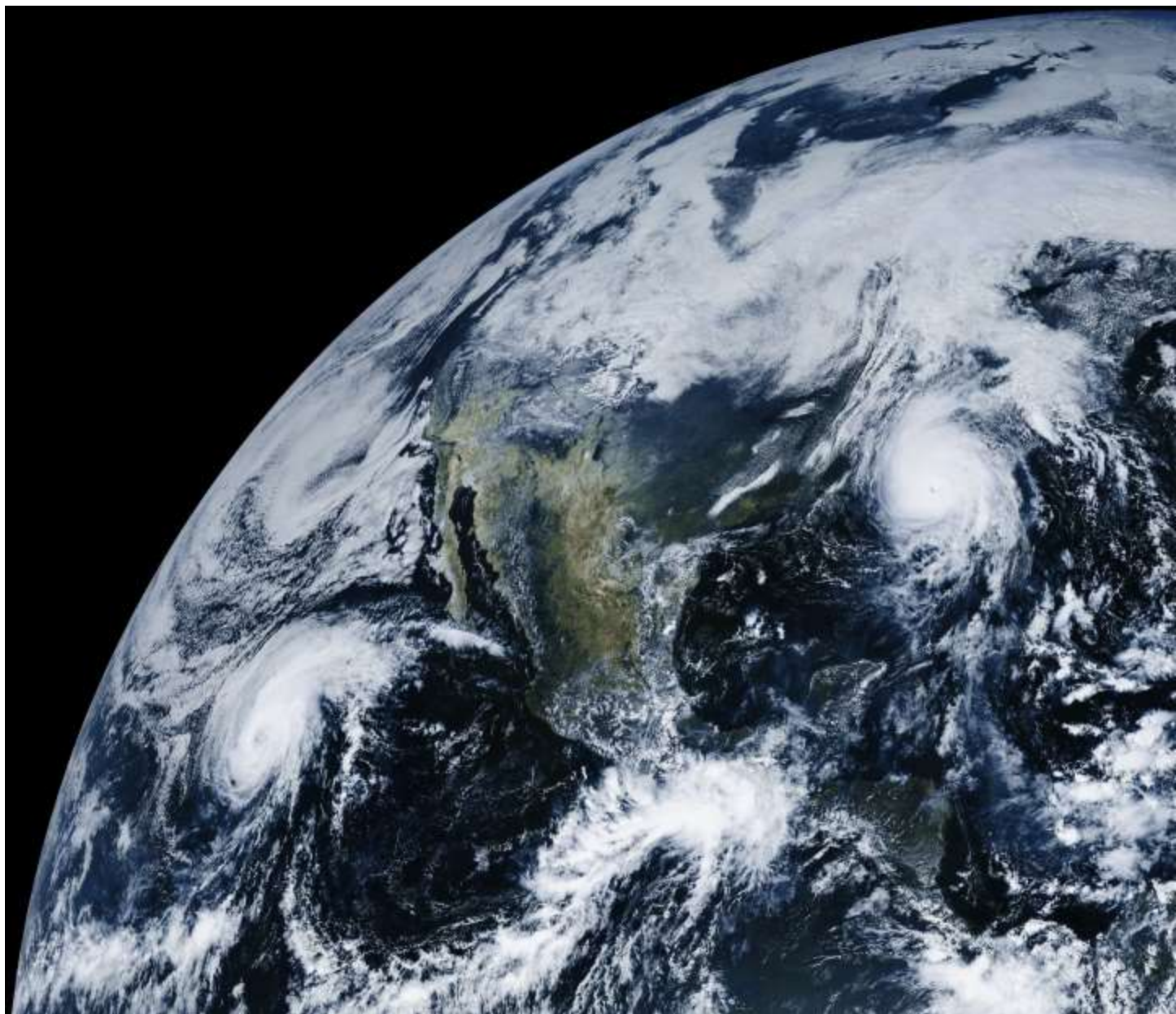
(... which would be of interest to the General Ham Radio Community)

Before the next Meeting: Sizzler's . . . however . . .

(Six of us --those who prefer a real restaurant are going to Marie Callender's --see map for both below)

Tech Talk for the November 1st Meeting

Ed Murashie will demo and talk on receiving HRIT from GOES weather satellites. He gave a similar talk a few years ago but that was the previous generation of a commercial modem. Today you can do it with a simple 2.4GHz WiFi grid antenna, LNA, SDR dongle and Raspberry Pi. Here's an image of Hurricane Michael captured from space a few weeks ago to give you a preview.



(The original is 5424 by 5424)

Jason Sogolow W6IEE, President

Guests (or Not-Seen-In-A-Long-Time)

- Bob Houghton AD6QF, President of the Fullerton Amateur Radio Club.

Pre-Meeting Note:

Gary Heston W6KVC announced that the new ATV van was in the shop tonight with a broken harmonic balancer and they were transmitting the meeting using the backup (old) system.

What Our Members Are Working On (Activity Reports)

Jason Sogolow WB6IEE (Norco)

has a radio that is big and hard to set up, so decided to operate from home for the September weekend, but never got around to firing it up during the day.

Courtney Duncan N5BF (Eagle Rock)

worked Rein W6SZ for credit in the August weekend and had a 12 V power supply failure on Frazier during the September weekend. Was able to cobble together a temporary fix for the rest of the day and about 50 contacts using a pair of #24 alligator clip cables from the 900 MHz rig auto supply. Other rare ones worked in the total of 49 unique callsigns included K6JEY, KI6LQV, and AD6IW, the one QSO that 900 MHz coordination (the subject of last month's difficulties) enabled. Final score (after finding one more instance of working N6RMJ in a final log check) was 31059 points. On EME missed the 4U1ITU dx-pedition due to a conflict on this end one night and high winds on that end on the other.

Rein Smit W6SZ (Alta Loma)

Fixed his 270-meter loop that had broken. Had been intending to work Larry in Hawaii.

Mel Swanberg WA6JBD (Upland)

was on call for work during contest weekend so didn't go anywhere but operated from home using a horn at the end of 30 feet of waveguide. Took several hours to complete with KF6C on Mt. Pinos due to difficulties. Recommends putting up a permanent antenna at home as a good idea for all of us. This would make it possible to do things, like home to home, which we could start doing weekly instead of monthly. From Upland has worked Guadalupe with an omni on the roof of his car. Waveguide hardware is typically Allen screws. A guy on E-Bay is selling a nice set of about 1000 pieces of these Cap Allen head screws for about \$100.

Larry K6HLH (Lake Los Angeles)

went to Hawaii and took his KX2, laptop and magloop antenna that he built. From a patio, talked to 92 different stations in 45 grid squares on 5 watts including Russia, China, Korea, Cook Islands, etc. Fins FT8 operation very impressive. You sit on the couch with computer on a nearby table; the computer scrolls along until you see a purple one which is a new country; then you click on it to call. Highlight changes to red when he responds. Then go back to TV watching while waiting for the next one to appear.

Bill Locke N6WL (Baker)

Was on vacation in the north west for much of September.

Brian Thorson AF6NA (Corona)

Was in San Diego for the September weekend making lots of long distance contacts. Worked Pinos and thought Brian KF6C was local. Wore his Navy Veteran's shirt on Mt. Soledad and was made very welcome by the San Diego locals. Had trouble establishing coordination with the NorCal guys. He thinks they don't think they can work him. Mel wants to talk about this later in the meeting.

Robert Carter KM6RXN (Riverside)

roved on his own for September for 44 contacts with 34 unique callsigns. Averaged 562 miles. Second day from another location was not as good: Made one contact with Dave W6DL on a bounce and could not even hear Frazier.

Pat N6RMJ (Lake Los Angeles)

improved his 10 GHz station with Mel's help and has it here today to demo. Stayed at home on the August weekend and did only a little local roving. In September roved San Joachin Valley and completed 610 km from CM97kh to Brian AF6NA on Soledad. On the Saturday before the contest blew a cap off of a DC-DC converter, that sounded like a 22 firing. Was able to bypass and get it working again. Tried and tried to work Rein W6SZ last night on home to home. Didn't make it but will eventually. They think they found the reflection spot on Baldy. Mel wants to try it too.

George Kashmar KM6UKI (Irvine)

Passed around a report on getting CubicSDR to play KRTH-101 on a new \$160 SDR transceiver he bought. (His old one was a \$25 receive-only version.) Has found it more difficult to make it work as a network analyzer. Icons on screen work like SDR# or SDRspy and it can listen to anything. In addition it also works like LabView, as described in his handout.

Dan Slater AG6HF (Hacienda Heights)

said that Mel WA6JBD was helpful doing propagation studies for his house. This was so interesting that he spent an hour looking at maps. He showed a little phased array antenna that he made defective on purpose by taping over one slot, then using a scanner he made and software he wrote, did near field measurements and made (and showed) charts where he backed out the defect in the antenna. The antenna resonates near 13.31 GHz which is not an aircraft frequency so don't know what this antenna's original purpose was.

Bob Houghton AD6QF (Fullerton)

is a first-time visitor tonight as he usually hikes Thursday nights but since he injured his knee is here learning microwaves instead. The Fullerton Radio Club (of which he is President) has an event every May in Hillcrest Park called "Antennas in the Park" where the featured event is a transmitter hunt organized by the guy that wrote the book on the subject. The location is high enough for microwave work and we are all welcome to join them for free hamburgers next May.

Walter Clark 337Ω (Fullerton)

brought his receive only rig that uses Dave Laag's LNA. This is a high performance LNA for receiving European satellite for the home. It is different in that the L.O. is exactly 10 GHz which puts the signal on the computer screen exactly on frequency wise. He's still not very good at using the SDR-sharp software. His SDR is the \$160 AirSpy.

Mike WA6SVT (Crestline)

works for CBS on Mount Wilson and is putting together a MegaWatt antenna for a 1060 foot tower which is involved in a channel move from 43 to 31. Being very busy with that, there was no 10 GHz activity this year.

(Notes above were recorded by Courtney Duncan N5BF.)

Discussion

Contest Coordination NorCal to SoCal

(discussion led by Mel WA6JBD; notes recorded by Courtney N5BF)

People are intimidated when we get on a roll and Cactus Intertie gets busy. Some of them don't even operate repeaters and so are even less comfortable with the contest chaos. Some of them migrate to 900 MHz systems which are quieter (and therefore less useful). Some don't think they have a good enough coordination radio. Some suggest moving off Cactus then never come back. (In any case, moving off Cactus doesn't work on five link hops.) Some just park on 10.368.100 and see what happens without coordination.

Our position is that everyone needs to be on Cactus as this universal coordination support is our main advantage over contest operations in other parts of the country. Use of Cactus Intertie is absolutely necessary to enable us to push the performance of our microwave radios. For example, Mel's best DX has been 1300 km using a 2-foot dish and 2 watts. (By comparison, operators on the east coast use 2 meter direct as liaison which is not even as good as a 'good' 10 GHz radio.)

Brian AF6NA pointed out that there is a lot of training (ARRL, etc.) available on proper operating and that hams are usually gentlemanly except in pileups and contests. Robin WA6CDR submits that Cactus is *full duplex* allowing multiple simultaneous snippet coordinations system wide. The experienced are able to recognize voices and QSO stages and get the message through with minimal bandwidth. Courtney N5BF commented that this is part of what it means to be a "trained radio operator."

Mel, as President of Cactus Intertie stated that Cactus is a big audio mixer able to support the 30-50 users who will be operating during peak contest activity. This is one of its main reasons for existence. The best thing operators can do to help out is to learn to use the system and operate in this environment and, to provide further support, join Cactus.

To a query about using cellphone party line service, it was pointed out that many of our microwave operating sites do not have cell coverage whereas most do have Cactus access. (Also, Cactus audio is better.) It was mentioned that 440 MHz is limited near Beale Air Force Base in the Sacramento area due to the PavePaws radars operating there, so this is a regional limitation to the Cactus Intertie model.

Brian wondered how we could get the northern and southern California clubs together. There is already some interchange, people attending each other's meetings, and get together at conferences like Microwave Update. We could offer to speak at each other's meetings. We could have a joint BBQ.

Future Tech Talks

Vice President Mel Swanberg WA6JBD said there were no future tech talks scheduled. Tonight's show and tell of rigs and other equipment is a last-minute thought, and was very successful. Please offer Tech Talks for future meetings. The substitute for this evening is short technical presentations given by six of our members describing their rigs. (Notes recorded by Courtney N5BF.)

This Evenings Tech Talk Substitute

Larry K6HLH showed and described a collection of transverters that he has built.

Robert KM6RXN showed his 10 GHz system that he has been building.

Brian AF6NA showed his new 10 GHz system.

Pat N6RMJ set up his rig outside the door to do on-the-air demonstrations including a QSO (USB and FM) across the mountains with Frank WB6CWN in Orange County and 59+40 dB copy of the Santiago Beacon. Pat and Mel had gone through and fixed every bad waveguide.

Courtney N5BF showed his original 1296 MHz system.

Mel WA6JBD then showed his transverter project on which he had given a talk on some years ago. Power output is one watt. Noise figure is 1 dB. He also has a 30-watt travelling wave tube that he uses, and 5-watt solid state amplifier. Suggestions for feeding surplus dishes: They are already measured for geometry if you get the feed with it. Don't take surplus dishes that don't have feeds.

Here's **Dan Slater AG6HF** describing his antenna evaluation scanner and software.



Here's **Pat Coker N6RMJ** describing and ***demonstrating*** his rig.



Below is **Larry's K6HLH** collection of transverters that he has built.



Mei WA6JBD here is describing the circuit in his 1 watt transverter project



Bob Carter KM6RXN and his first 10 GHz rig. Note very light, yet very rigid method of elevation adjustment.



Events of Interest to the Microwave Ham Community

November 24-25 ARRL EME Contest – 1.2 GHz & Down
 – 2nd weekend

December 6 SBMS Meeting

January 3 SBMS Meeting

**If you have other events or more information on the ones listed
--information that would help people decide whether to go or not--
please send it to the editor at the email address below.**

Microwave Beacons for Southern California

Los Angeles

San Antonio Heights 2304.320 MHz W6IFE/B 27dBm

Transmitting grid for Johnstone PK

DM14ed -117 39 06.0 34 09 14.0 6436'

Frazier Mtn. 10368.310MHz N6CA/B 1.3W

DM04ms -118.96948 34.7751 8027'

Santiago Peak 10368.330MHz AF6HP 2W

DM13fr -117.53401 33.71098 5681'

Palos Verdes 10368.300MHz N6CA/B 1.6W Out of Service

DM03ts -118.37642 33.76761 1200'

Phoenix

White Tanks 10368.375MHz W7ATN/B 2W

1296.270MHz W7ATN/B 10W

DM33rn -112.56000 33.56861 3992'

San Diego

Mt. San Miguel 10368.360MHz K6QPV/B 1W

5760.300MHz K6QPV/B 2W

3456.300MHz K6QPV/B 10W

1296.300MHz K6QPV/B 12W

DM12mq -116.93516 32.69793 2500'

(All beacons are horizontally polarized.)

To update this list, contact Mel Swanberg (email: wa6jbd (at-symbol) Verizon dot net)

Home to Home This Wednesday Evening

Rein Smit, W6SZ (Alta Loma), Past President SBMS is encouraging all Southern California microwave hams to try contacting each other from their QTH the night before the SBMS meeting.

The intent is to learn home to home capabilities and to discover tricks to use them.



**Wednesday before the meeting:
10,368.100 MHz, SSB, CW and
Digital available.**

WA6JDB, N6RMJ and W6SZ will be looking/listening for your signals. For liaison, we will use the LARA/Cactus repeater located on Heaps Peak, so desert dwellers can check in.

[We'll be listening to cactus starting at around 20:00 PDT and going until the last person gives up.](#)

The frequency is 448.86- PL 100.0 It will be configured in a standalone mode so it doesn't bother anyone.

Mel - WA6JB

"Provided a time sufficiently before or after the QSO party's time, W6SZ can position his radio before his home and can then utilize Keller Pk as a bouncing point for working points to the north.
Rein W6SZ

Gary Heston's ATV Mobile Studio W6KVC

Not only can you watch our meetings live (well delayed by 240 milliseconds). You can chat with other viewers about what you are watching (or anything else).

This is how to watch SBMS meetings from home:

<https://batc.org.uk/live/w6atn> That should take you directly to the camera at the SBMS meeting. (batc.tv is British website, W6ATN is the local callsign.)

← What you will see is this

You do not need to log in to be able to watch the video and participate in the chat. In case you are not automatically put into the right video channel. It is W6ATN. The “W6” for California of course and the ATN is for Amateur Television Network. W6ATN is the club call sign for eight ATV repeaters that are a part of the Amateur Television Network in Southern California. (ATN-CA)



Gary Heston’s mobile studio beams a 2.4415 GHz FM video (analog) signal to the ATN repeater on Santiago Peak maintained by Mike Collis WA6SVT. (Gary monitors the signal from the repeater on 5 GHz.) From Santiago Peak on 5 GHz Roland Hoffman KC6JPG puts it on the internet by way of the website BATC.TV described above.

The ATN network linking is all done using FM microwave links on 2.4 GHz and 5 GHz bands. All ATN repeaters in Arizona, California and Nevada now have DVB-T (Digital Video Broadcast-Terrestrial) on 434 MHz input. Analog on 434 still works as well as the FM standard on 2,441.5 MHz. The DVB-T is the European standard for over the air TV. The T part, “terrestrial” is a format that is better with multipath. The only difference (which the US based) ATN has done to that standard is use 2 MHz B/W to fit within the 433-435 space between the weak signal and satellite sub bands.

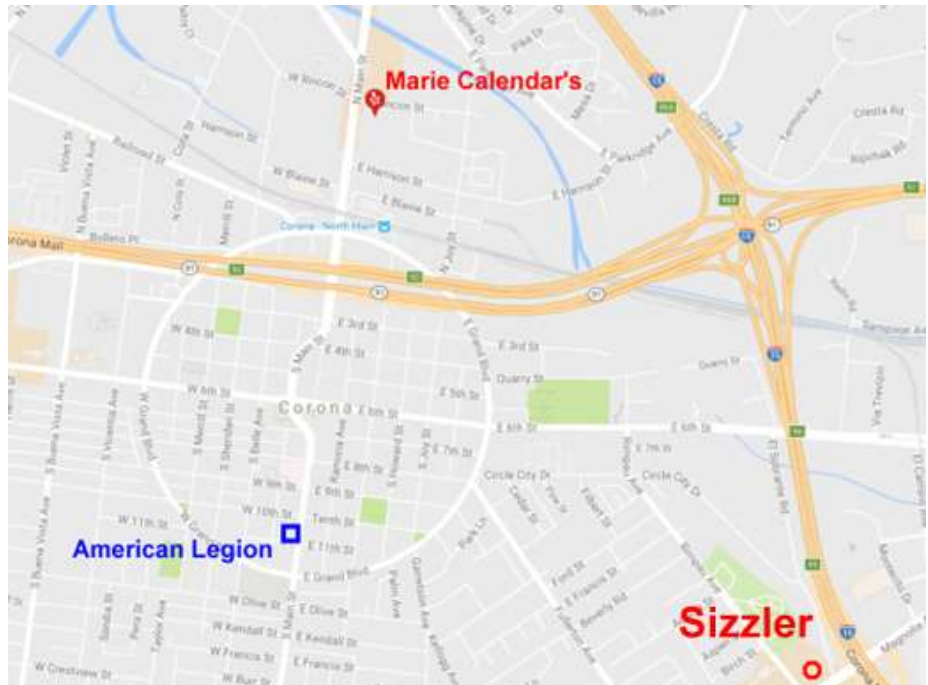
- Gary transmits analog first.
- Snow Peak is the first digital station.
- There is a 2-3 second delay to digital users.
- There are also nodes on Mt. Potosi and Mt. Lemmon.
- Note: some meetings are recorded for archive.

When Roland Hoffman is substituting for Gary Heston, he streams to the internet directly by way of a mobile hotspot to a cell phone tower, thereby eliminating two lower bandwidth RF paths (SBMS to Santiago and Santiago to Roland's QTH).

Dinner before each meeting **Sizzler**:

“Dinner-Before” is like a people capacitor in that it is a gathering place for those who are trying to beat the traffic and have a variety of distances to come from. Some arrive as early as 4:00. Magnolia exit then two right turns. (I’m Sooo tired of that place. ed)

For those who prefer attractive waitresses and fine dining, Marie Calendar’s is available.



Needs, Wants and For Sale

Introducing the **OpenSynth** line of frequency synthesizer kits. Available in standard frequencies of 2556, 2952, 2160, 1152, 3312, 3006 MHz, also available from 400 MHz to 3500 MHz.

- ⤴ Low phase noise, Buffered output
- ⤴ Ultra low noise voltage regulators
- ⤴ Open Source code and design, made to be modified
- ⤴ 2" x 1.5", 12V @ 140 mA typical



Available at <http://reactancelabs.com>

REACTANCE LABS
+m+

If you are a member you can have a picture ad here yourself.
For the time being this service is free.
eMail the editor at: WalterClark at roadrunner.com

About SBMS

The San Bernardino Microwave Society is a technical amateur radio club affiliated with the ARRL having a membership of over 90 amateurs. The focus of the club is microwave activities in the Southern California. ***Our sister club is San Diego Microwave Group (SDMG).***

Official Address

San Bernardino Microwave Society

417 South Associated Road #146

SBMS dues are \$15 per year, which includes a badge and that's about it. The dues are more in the way of a donation to pay for outreach things such as video portals, a bank account, and rent for the building. When to pay is not a matter of remembering. The Corresponding Secretary will contact you by email and will then hound you like your own personal PBS telethon. Dues can be handed to the treasurer at the meeting, or mailed to the address of the treasurer listed in the banner below.

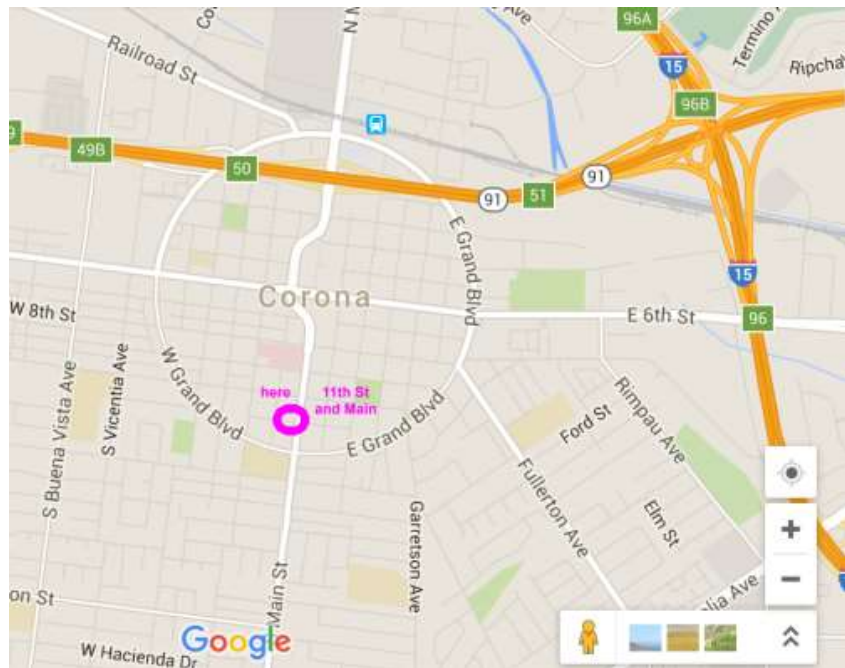
**Meetings are first
Thursday of the
month, 7:00 PM**

**Google Map: Keywords:
American Legion Hall,
Corona**

For carpooling from North
Orange County call Dick
Bremer at: 714-529-2800

If you can't make it:

watch online through Gary Heston's mobile video facility W6KVC by way of the internet out of England: <http://atn-tv.org/live> (More details on that above.)



Services Sponsored by SBMS

The Reflector (Group Email) The most active method of information exchange is our group email called the SBMS Reflector. You don't need to be an SBMS member to participate. To subscribe fill out the form at the website: <http://lists.altadena.net/mailman/listinfo/sbms> After that, Send your email message to: sbms at-symbol ham-radio.com. (If you are getting email on the SBMS Reflector now, and you want to write your own message, pull up a recently received message, click on "Reply to List." Don't forget to change the subject line and delete all previous text as appropriate.)

Responsible person for this: Dave Glawson WA6CGR wa6cgr at-symbol ham-radio.com

Website: Rein Smit W6SZ: rein0zn at-symbol ix.netcom.com

The URL is: <http://www.ham-radio.com/sbms/> But you don't have to memorize that or write it down, just enter SBMS into any internet search engine.

The newsletter is distributed by way of a reminder on the reflector to visit a particular URL within the SBMS

Website: www.ham-radio.com/sbms

- The purpose of the SBMS Newsletter is to keep hams everywhere in the world informed on current activities of the "active" members of the San Bernardino Microwave Society. Active Members include those who:
 - come to the meetings and share their progress
 - use ATV to report in and describe their projects
 - send by email words and pictures of progress to: walterclark at-symbol roadrunner.com
- Time sensitive questions, reports or just plain bragging is for the SBMS Reflector. Send your email message to: sbms at-symbol ham-radio.com. To sign up go to:

Newsletter editor: Walter Clark: walterClark at-symbol roadrunner.com

Contact San Bernardino Microwave Society (SBMS)

President: Jason Sogolow WB6IEE

w6iee.73(at-symbol)gmail(dot)com

Past President Rein Smit W6SZ

8333 Pumalo, Alta Loma, CA 91701

email: rein0zn at-symbol ix.netcom.com

Vice President: Mel Swanberg WA6JBD

12223 Highland Ave STE 262

Rancho Cucamonga, CA 91739

email: wa6jbd (at-symbol) Verizon dot net

Phone: (951) 212-8245

Recording Secretary Courtney Duncan N5BF

4402 Rockmere Way

La Canada, CA 91011 phone: 818.957.8455

email: courtney.duncan.n5bf at-symbol gmail.com

Corresponding Sec Jeff Fort, KN6VR

10245 White Road Phelan CA 92371 phone: 909-994-2232

email: [jnfort at-symbol Verizon.net](mailto:jnfort@verizon.net)

Treasurer Dick Bremer, WB6DNX

1664 Holly St. Brea CA 92821-5948 phone: 714-529-2800

email: [rabremer at-symbol sbcglobal.net](mailto:rabremer@sbglobal.net)

Newsletter Editor Walter Clark

824 Valley View Fullerton CA 92835 phone: 714-882-9647

email: walterclark at-symbol roadrunner.com

ARRL Interface Frank Kelly, WB6CWN

PO Box 1246, Thousand Oaks, CA 91358 phone: 805 558-6199

mailto:wb6cwn at-symbol gmail

W6IFE License Trustee is Dave Laag W6DL (call sign for club beacons)

David E. Laag, P.E, W6DL 11614 Indian Street, Moreno Valley, CA 92557

email: Dave Laag <dlaag at-symbol clubnet.net>

Lab manager Dave Glawson, WA6CGR

1644 N. Wilmington Blvd Wilmington, CA 90744 310-977-0916

email: wa6cgr at-symbol ham-radio.com

SBMS Website Editor and Past President; Rein Smit W6SZ

8333 Pumalo Alta Loma, CA 91701

email: rein0zn at-symbol ix.netcom.com

Webmaster Dave Glawson, WA6CGR

1644 N. Wilmington Blvd Wilmington, CA 90744 310-977-0916

email: wa6cgr at-symbol ham-radio.com