



SAN BERNARDINO MICROWAVE SOCIETY, Incorporated

FOUNDED IN 1955

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

San Bernardino Microwave Society Newsletter

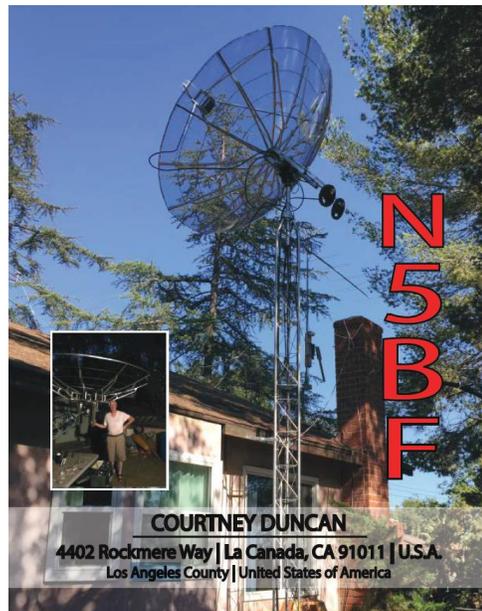
Dinner before the July Meeting Marie Calendar's (see below)

Tech Talk for the October 5th Meeting . . .

Courtney's Subject: "Working Out the 23 cm EME Band"

Abstract

N5BF has been active on 23 cm EME for a little over a year and has learned much in the process of getting there and being there. This paper and presentation is an overview of the N5BF 23 cm EME station and what participation in the worldwide 23 cm EME community is like. A discussion of the motions of the moon itself is given with the goal of encouraging EME operators to be in touch with the moon itself rather than just tables of numbers from a computer, lunar movements having guided and defined humanity itself from pre-history. Finally there is a collection of heuristics and rules of thumb, again, intended to give a broader understanding of what is going on as radio signals are reflected from the moon itself. Every station capable of being worked on 23 cm EME is a celebrity regardless of location or other status and the hope here is to entice additional radio amateurs into the EME communities.



Come and join SBMS at the American Legion Hall, Corona: 11th and Main (See map below.)

Or watch the meeting "live" on the internet: <http://atn-tv.org/live> (see below for more)

Get to Know Courtney Duncan

Courtney Duncan N5BF was first licensed in 1972 as WN5GRZ then WB5GRZ upon upgrading then N5BF when the callsign assignment rules changed in 1978. He holds a BM from Baylor University, a BSEE with Honors from University of Houston and an MSEE in Communications Systems from the University of Southern California. He was Vice President for Operations of AMSAT-NA from 1988-1991. He has worked at NASA's Jet Propulsion Laboratory for thirty years where he is currently supervisor of the Reprogrammable Signal Processing Group in the Flight Radios Section. He lives nearby in DM04vf from which he operates 23 cm EME, ventures out for 3 cm contesting, and occasionally tunes around on HF. He is a member of the San Bernardino Microwave Society, the Jet Propulsion Laboratory Amateur Radio Club, Cactus Intertie, IEEE, and Pasadena Covenant Church. Courtney has been married for 39 years to Viann Owens Duncan WD5EHM, a psychiatric nursing professor at Azusa Pacific University and has three adult children, Viannah Duncan KG6GXW, Katherine L. D. Wallin KG6HUI, and John Duncan KG6HCO.



Activities of the August SBMS Meeting

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

Presiding: Jason Sogolow WB6IEE (Norco)

Visitor and those not seen in while:

- Steve Barden WA6OXN, guest of Mel Swanberg WA6JBD.

Old Business

- Dave Laag W6DL reported that the newsletter and website still show Ed Munn W6OYJ as trustee for the SBMS club license and that these should be updated to read W6DL.

New Business

- Walter Clark found a house fan broken when we came into the American Legion Hall tonight. Dave Laag W6DL moved and Walter Clark seconded moved that we buy the American Legion Hall a new fan. The motion passed. Dave Laag will buy fan(s) on sale at Home Depot and leave them here.

What Our Members Are Working On

(Remember you can watch these reports live on <http://atn-tv.org/live>)

Jason Sogolow WB6IEE (Norco)

participated in the first weekend of the 10 GHz contest and made some contacts. His station featured a tripod from Brian AF6NA and waveguide from Mel WA6JBD. Also, he is now the owner of a house in nearby Norco.

Dave Laag W6DL (Marino Valley)

Was out for the first weekend of the 10 GHz contest and worked a lot of people including WA6JBD who was near Boron. The signal was so strong back into the LA Basin that they reduced antenna gain until they were at open waveguide where they still had 59+20 dB signals at 181 km distance. As the solar eclipse had drawn a lot of people off, he expects the population on the air to roughly double in the September contest weekend.

Mel Swanberg WA6JBD (Upland)

was in the first weekend of the contest with best DX of 641 km to Mt. Vaca. Activity was down.

Larry Johnston K6HLH (Lake Los Angeles)

was in Roberts, Idaho for the eclipse. The trip was quick going up but coming back traffic was terrible: The first three hours were at 15 mph. Was on home-to-home last night with a dish that now rotates 360 degrees. (There had been bars sticking out of the top of the tower arresting motion in certain directions.) Also has full elevation now, -10 to +20 at least. He showed his new 10



meter to 2 meter transverter that was \$55 and puts out 6 watts. Models for 6 m. and 70 cm. are also available, fully tested. (See picture.)

Pat Coker N6RMJ (Lake Los Angeles)

plans to operate the September contest weekend from home and is still working on the home station. Is adding some elevation control since he had not been able to work WA6JBD after K6HLH (nearby) did. (KK6MXP thought that the WA6JBD to K6HLH QSO might have been on airplane scatter.) Tuesday Chris W6NOB came over and put a tripod and mount on L1 so it's now an official loaner.

Bill Locke N6WL (Baker)

was at Turquoise in the contest for the first weekend. Did not work many people but did make more points in one day than in both days last year. Looking forward to the September weekend.

Courtney Duncan N5BF (La Canada)

was in the Tetons in Wyoming with family for the eclipse. It was an excellent trip and viewing was superb. The April 8, 2024 total solar eclipse will pass directly over Hubbard, Texas where he went to high school. Plans to go to Secret Site 51 if it's open for the September contest weekend. Currently writing up his first year of 23 cm EME experience for the Microwave Update conference in Santa Clara next month. (There will be a paper and a presentation which will also be given at next month's SBMS meeting.) Worked South Africa on 23 cm EME: John ZS6JON.

Brian Thorson AF6NA (Corona)

was on home-to-home last night working WA6JBD, KK6MXP, and W6SZ. Did not work WA6CGR as he got there too late. Note: Liaison for home-to-home is Cactus Heaps Peak - LARA 448.860- with 100 Hz PL.

Robert Carter KA6MQQ (Riverside)

had a guest from Nigeria with him at tonight's meeting. The guest is not a ham yet but is working on getting equipment for his part of Africa.

Rein Smit W6SZ (Alta Loma)

was in Idaho Falls for the eclipse. Experienced lots of QSB last night on home-to-home test. Was on the air from 10:30 - 11:00 p.m. Did finally see signals from N6RMJ.

Walter Clark (Fullerton)

made a shroud for viewing laptop screens outdoors because all SDRs need laptops and they're hard to see in full daylight. (See picture.) Has found it fun to explore around Fullerton finding good spots for microwave reception. Has found one really good spot, with 360 degree unobstructed. But it's on Chevron property. He copies huge signals on CW but can't tell what they are saying on SSB. He says he needs to be spending more time with the SDR sharp software.



Jim Blum KK6MXP (Ontario)

worked many stations in last night's home-to-home event from his usual spot in the Kaiser parking lot, including AF6NA, WA6CGR, W6SZ, WA6JBD, N6RMJ, and K6HLH, that is, everyone but W6DL. During operations he observed airplane scatter, QSB, and was concerned about the big X9.3 solar flare in progress. Does not yet have September contest plans.

Jeff Fort KN6VR (Phelan)

was in Idaho for the eclipse. They had a good trip and clear skies. The views were interesting; the colors of sunlight seemed wrong.

Chris Williams W6NOB (Wrightwood)

was in Idaho for the eclipse. Will be on 10 GHz for the September weekend.

Dave Glawson WA6CGR (Wilmington)

missed the first contest weekend due to family commitments. Was on for the home-to-home test last night with the antenna down, Rein W6SZ was weak but heard. HamCon conflicts with the second contest weekend this year. It is being held at the Torrance Marriott.

Dan Slater AG5JF (Hacienda Heights)

Viewed the August 21, 2017 eclipse from near Idaho Falls and enjoyed it. He is giving a talk on antenna measurements at HamCon next week.

Events of Interest to the Microwave Ham Community

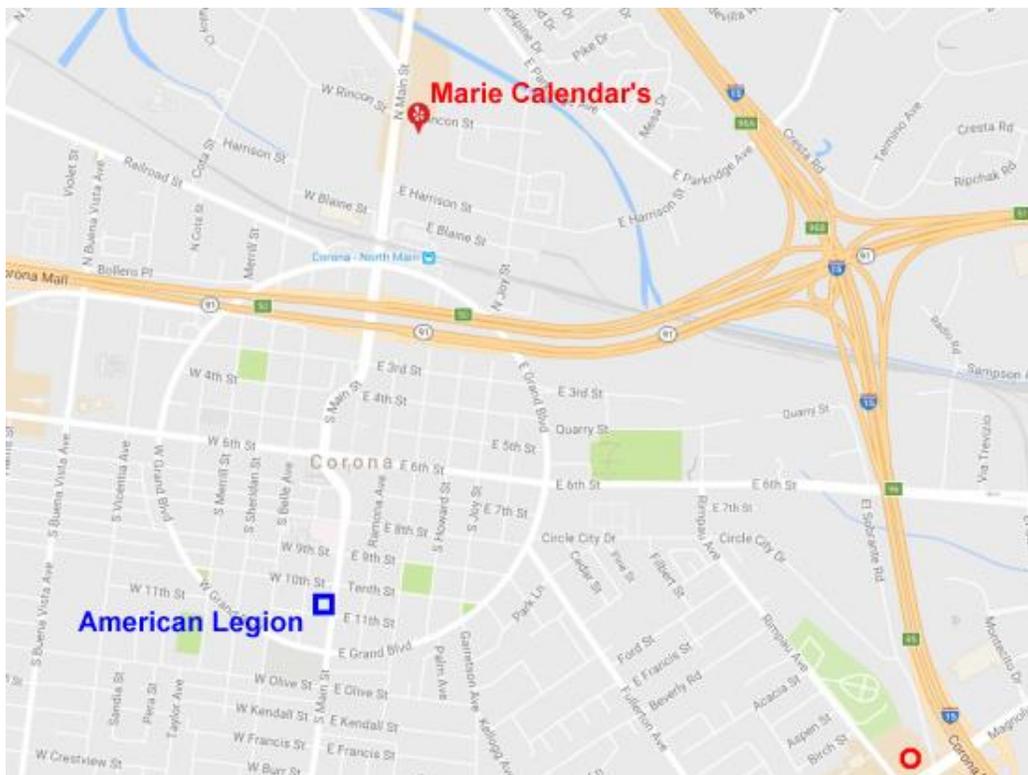
October 7 – 8 ARRL EME Contest, 50 – 1296 MHz, 1st weekend
October 27 – 29 Microwave Update 2017, Santa Clara, CA
November 4 – 5 ARRL EME Contest, 50 – 1296 MHz, 2nd weekend

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.

Dinner before the upcoming meeting Marie Calendar's:

“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.

Marie Calendar's is on the north side of the 91 and as you can see on the map, both easy to get to from the freeway and easy to get to our meeting place from there; north on Main, over the train tracks and right on Rincon about 80 feet.



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 Pk 10368.330MHz KE6JUV/B 2W Out of Service

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 or if you don't have his email,
- use the Reflector. Mel or the Newsletter Editor will see it there.

Home to Home

This Wednesday Evening; (don't forget)

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.**

The Wednesday before the meeting: 10,368.100 MHz, CW or SSB.
WA6JDB, N6RMJ and W6SZ will be looking/listening for your signals.



We'll be listening on 10368.100 starting at 21:00 PDT. We have been using the LARA Santiago repeater for liaison. Since that doesn't cover the high desert, we will use the LARA/Cactus repeater located on Heaps Peak, so the desert dwellers can check in,

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

Mel - WA6JB

Pat Coker's Prodelin on
his tower. 9 watts at 75'

"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

Microwave Mystery Gizmo of the Month

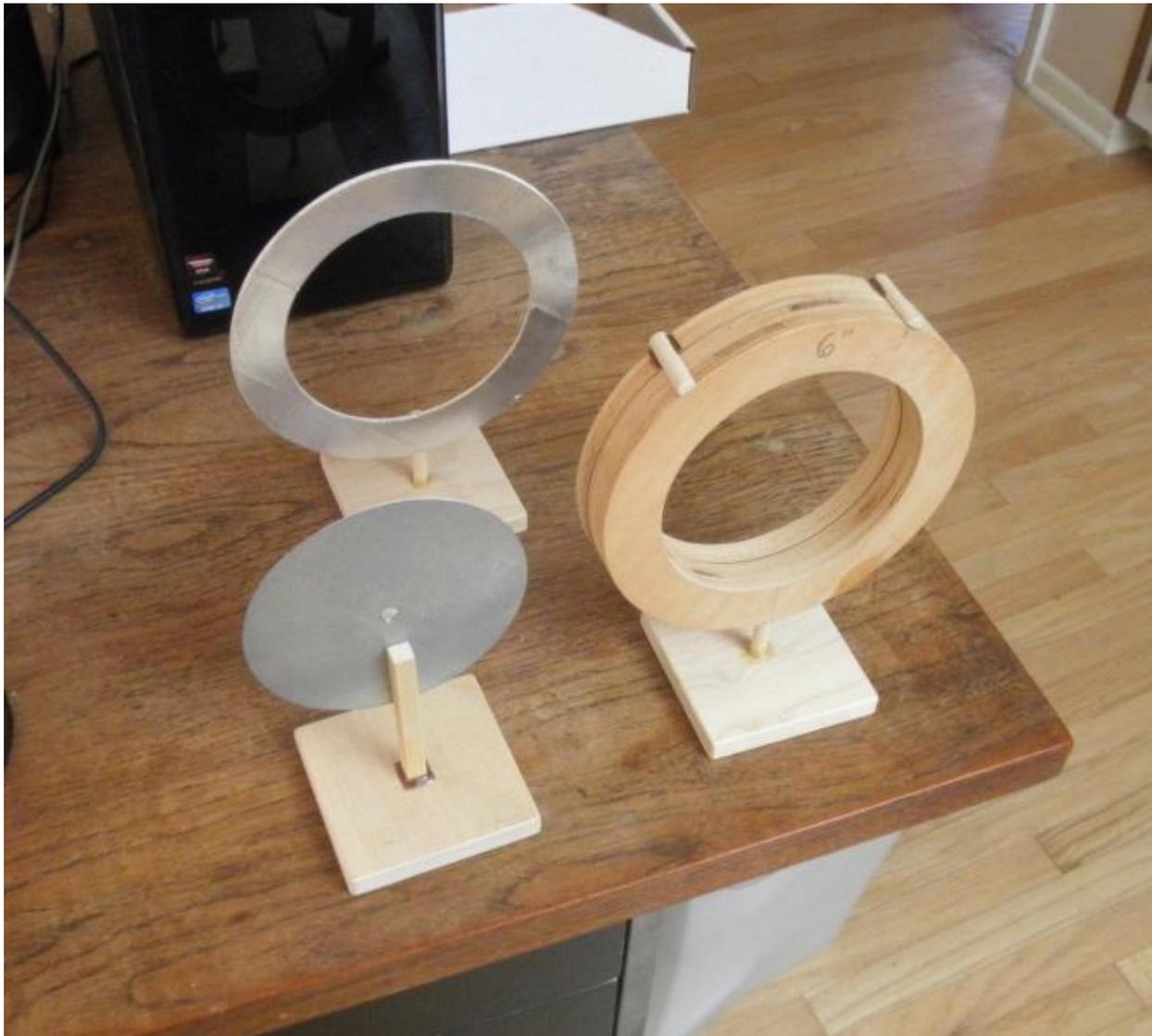
When X-band strikes these, what happens?

If you would like to discuss this, use the SBMS Reflector by sending an e-mail letter to . . .

SBMS at-symbol lists.altadena.net

If you don't have an account sign up at this website:

sbms at-symbol ham-radio.com



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:

<http://atn-tv.org/live>

What you will see is this →

It's a British website (that's the B in batc.tv) You do not need to log in to be able to watch the video and participate in the chat. You will be 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).

The September Meeting Tech Talk was about the Great Eclipse. It was facilitated by Brian Thorson AF6NA

It consisted of people reporting on their August 2017 10 GHz weekend activities and/or August 21, 2017 eclipse viewing trips that members had made. These included reports from W6IEE, KK6MXP, WA6JBD, WA6CDR (Potosi) on 10 GHz, and N5BF (eclipse viewing in Wyoming). Walter was in Oregon for the eclipse but had nothing to say. He was burned out on eclipse talks (member of Orange County Astronomers).

Mel WA6JBD had discovered an interesting technique for initial finding and peaking. First transmit from an omni-directional antenna so that all possible paths are illuminated then, when the other station finds the best peak, reverse transmissions, switch to a directional antenna, and peak the opposite way. This can possibly enable more successful contacts and save setup time.

Brian AF6NA also showed pictures from the July 2017 tune-up in Costa Mesa including Stuart K6YAZ, Gordon WB6NOA, Bill N6WL, Jason W6IEE, Brian AF6NA, and Dick WB6DNX.

The remainder of the meeting was devoted to planning and coordination for the upcoming 10 GHz contest second weekend, September 16-17, 2017.

Needs, Wants and For Sale (updated 1 June 2017)

For Sale from Bill Burns: Bill will only rarely come to the meetings, so if you want any of this, please contact him by phone or email.

phone: 760-375-8566 email: bburns_at_symbol_mediacombb.net

His address is: 247 Rebel Road Ridgecrest CA 93555

- Three IC-22S two meter FM rigs **free**
- 1 meter offset feed dish and 10 GHz feed \$20.
- Steel TV push-up masts **free**
- aluminum tubing, ½ inch to 3 inch diameters, 1/16th wall **free**
- Stainless steel powder cans 15 inches in diameter by 23 inches high with lids **free**
- Power pole 14.5 ft tall by 1 ft diameter **free**
- Many round meters, ma, volt, frequency, misc. **free**

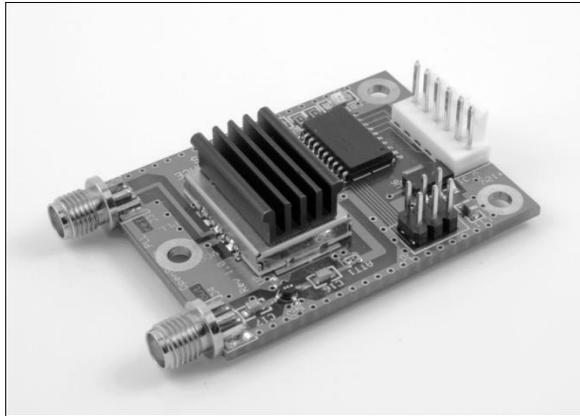
REACTANCE LABS



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>



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

Brea, CA 92821

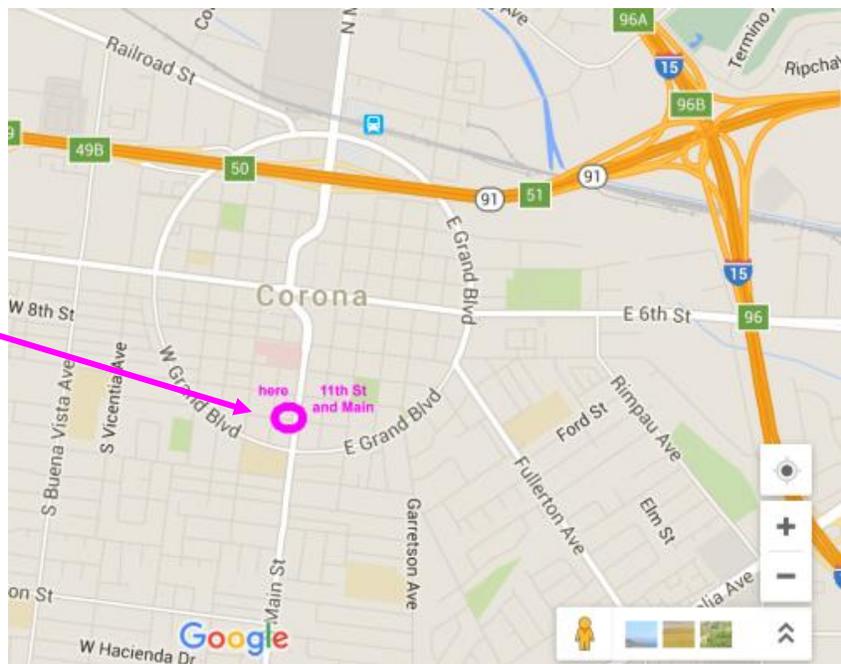
SBMS dues are \$15 per year, which includes a badge and that's about it. The dues are more in the way of a donation to pay for outreach things such as video portals, a bank account, and rent for the building. When to pay is not a matter of remembering. The Corresponding Secretary will contact you by 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>



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.

Newsletter: Walter Clark: walterClark@symbol.roadrunner.com

The newsletter is distributed by way of 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 the above

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 - 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:
<http://lists.altadena.net/mailman/listinfo/sbms>

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