SCCARA-GRAM

Santa Clara County
Amateur Radio Association

Volume 32, Number 1 January 2016

January Speaker

Our speaker for the January 11 meeting will be Suresh P. Ojha, W6KTM, who will give a presentation on Nepal HAM radio. Suresh is involved in setting up ham stations and repeaters in Nepal and will be sharing his insight into the use of HAM radio after the 2015 earthquake in Nepal.

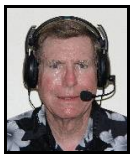
Gregg Lane, KF6FNA, Secretary

Prez Sez

I want to thank those that attended our annual Christmas banquet. The food was wonderful. In particular I want to thank Don Village that annually makes all the arrangements. I hope everyone liked their exchange gift.

I also want to welcome our two new board members, Praveen Akunuru, KK6VGB as Secretary and William Staehle, AG6EM as Director. Gentlemen, welcome!

Finally December has brought great sadness to us all. We lost Past Pacific Division Director and SCCARA past president, Bradley W. "Brad" Wyatt, K6WR; Ham Radio Outlet Founder Robert G. Ferrero, W6RJ; HRO former manager, Howard Califf, W6HOC; and Wonder Woman, Christina Sand, WO1NDR, (SCCARA/SJRACES). We'll miss you all.



73, Fred, AE6QL, ae6ql@arrl.net

ARRL News

From *The ARRL Letter*, Dec. 3, 2015

WRC-15 Concludes in Geneva

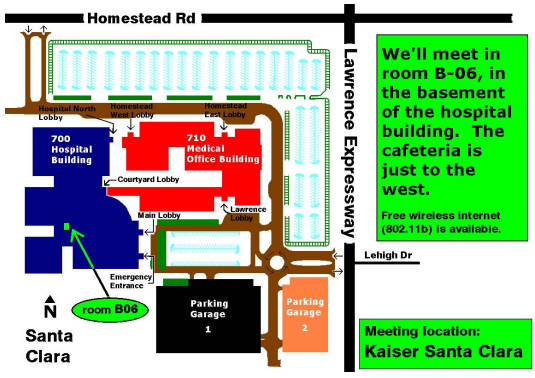
World Radiocommunication Conference 2015 (WRC-15) concluded its deliberations on November 27 in Geneva, as heads of delegations signed the Final Acts revising the Radio Regulations -- the international treaty governing the use of radio frequency spectrum and satellite orbits. Some 3300 participants, representing

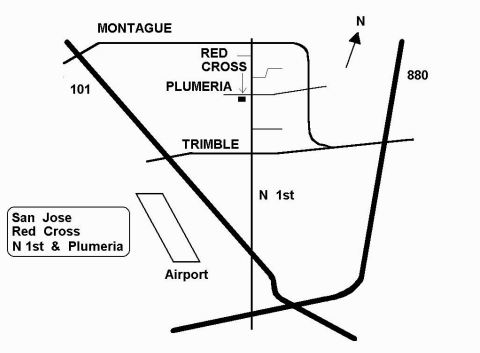
Calendar

1/11 **SCCARA General Meeting**
1/18 **SCCARA Board Meeting**--(San Jose Red Cross, 7:30p, all are welcome)

General Meeting

Day:	Monday, January 11, 2016
Time:	7:30 PM
Place:	Kaiser Santa Clara, Hospital B-06
Featuring:	SureshW6KTM on HAM radio in Nepal after the 2015 earthquake.





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The deadline for articles is the last Monday of the month.

SCCARA was formed in 1921 and became a non-profit corporation in 1947. SCCARA is an affiliate of the American Radio Relay League (ARRL). The club station is W6UW.

Web page: http://www.qsl.net/sccara. (Webmaster: Wally Britten, KA6YMD, 408-293-3847, ka6ymd@arrl.net)

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(all officers are also directors)

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SCCARA REPEATERS

SCCARA owns and operates two repeaters under the call W6UU:

2 meter:	146.985 - PL 114.8
70 cm:	442.425 + PL 107.2

Phone auto-dial and auto-patch is available. The two meter repeater is located at Eagle Rock near Alum Rock Park in the foothills of east San Jose. The 70 cm repeater is located at the Regional Medical Center (formerly Alexian), east of downtown San Jose, north of 280 and 101.

SCCARA NETS

On our two meter repeater: Mondays at 7:30 PM, (not the second Monday--our meeting night). Coordinator: Don Village, K6PBQ. On ten meters, 28.385 MHz USB, Thursdays at 8:00 PM. Net control: Wally Britten, KA6YMD. Visitors welcome.

N0ARY PACKET BBS

SCCARA hosts the packet BBS N0ARY (connect to n0ary-1). User ports: 145.09 MHz at 1200 baud, 433.37 MHz at 9600 baud, and telnet sun.n0ary.org (login "bbs"). Sysop: Gary Mitchell, WB6YRU For general packet info, see the NCPA web site ncpa.n0ary.org.

TELEPHONE NUMBERS

SCCARA contact Clark KE6KXO:	408-262-9334
Amateur license testing, ARRL/VEC Silicon Valley VE group, Morris Jones, AD6ZH:	408-507-4698

162 out of the International Telecommunication Union's (ITU) 193 member states, attended the 4-week conference. Another 500 or so participants, representing 130 other entities, including industry, also attended as observers. Festus Daudu of Nigeria chaired WRC-15.

"A great deal has been achieved in the last 4 weeks, and the results will have a major impact on the future of the telecommunication sector in general and radiocommunications in particular," ITU Radiocommunication Bureau (ITU-R) Director François Rancy said in a closing news release. WRC-15 addressed more than 40 topics related to frequency allocation and sharing.

The conference reached consensus on a new worldwide secondary Amateur Radio allocation at 5351.5-5366.5 kHz, with a power limit of 15 W effective isotropic radiated power (EIRP). Some Region 2 countries, but not the US, will be permitted up to 25 W EIRP. With this action -- and despite conditions that are more restrictive than had been hoped at the start of the Conference -- the Amateur Service has obtained its first new global HF allocation since 1979.

The 15 kHz wide band at 60 meters "will maintain stable communications over various distances, especially for use when providing communications in disaster situations and for relief operations," an ITU news release said. The new band will not become available for use until the FCC addresses the WRC-15 Final Acts in a rule making proceeding and establishes operating parameters.

Threats by the mobile telephone/broadband industry in the vicinity of 10 GHz and 24 GHz have been averted for the time being, but are expected to be raised again at WRC-19 and/or WRC-23. The 144 and 420 MHz bands were excluded from the WRC-19 agenda item addressing short-duration (3 years) small satellites.

Agenda Item 1.12, addressing the Earth Exploration Satellite Service (10 GHz EESS), was approved at plenary with footnotes relevant to certain Middle East countries. The EESS allocation was tailored to avoid the Amateur-Satellite segment and poses no threat to terrestrial ham radio use of the band.

The International Amateur Radio Union (IARU) team at WRC-15 also focused its efforts on tweaking the agenda for WRC-19. Agenda Item 1.1 will consider 50-54 MHz harmonization in Region 1. A proposed agenda item to align the 160 meter allocation in Region 1 with the rest of the world did not make the cut.

From *The ARRL Letter*, Dec. 17, 2015

SAQ to Carry on Tradition of Christmas Eve VLF Transmissions

Alexanderson alternator transmitter station SAQ (http://alexander.n.se/?lang=en) at the World Heritage Grimeton site in Sweden will continue a holiday tradition begun 10 years ago when it takes to the airwaves on Christmas Eve, December 24. There will be a CW transmission from the Alexanderson alternator on 17.2 kHz from Grimeton Radio/SAQ at 0800 UTC on December 24, with transmitter tune-up starting at 0730 UTC. Amateur Radio station SK6SAQ will not be active this year, because the radio room is being refurbished. The Alexanderson Association website has information on how to receive the VLF signal.

The vintage SAQ Alexanderson alternator, dating from the 1920s, is essentially an ac alternator run at extremely high speed. It can

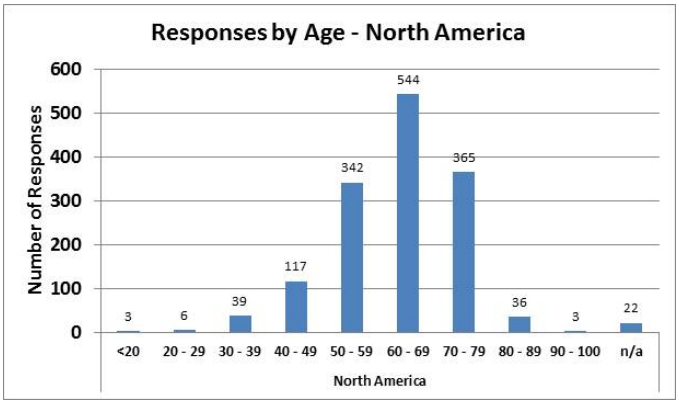
put out 200 kW, but typically is operated at less than half that power . Once providing reliable transatlantic communication, it is now a museum piece and only put on the air for special occasions. The transmitter was developed by Swedish engineer and radio pioneer Ernst Alexanderson.

Six 400 foot towers with 150 foot crossarms support a multi-wire antenna for SAQ. The actual signal radiates from a vertical wire, one from each tower.

From *The ARRL Letter*, Dec. 24, 2015

Preliminary CQ World Wide Survey Results Suggest Contesters Trending Older

The CQ World Wide Contest Committee has posted the preliminary results of its September survey of participants, (http://cqww.com/blog/2015-cq-ww-survey-results-part-1/). The committee received 5117 responses from contesters around the world, the greatest number -- nearly 2600 -- from Europe. An analysis of the results showed that most survey participants were in the older age brackets and that there were not many youth participants.



The distribution by age among North American CQ WW survey respondents. [CQ graphic by Doug Zwiebel, KR2Q]

"This is especially true when we look at the age distribution in North America," said the analysis, prepared by Doug Zwiebel, KR2Q. "There is very little survey participation in North America from those under 40 years of age." More than 900 of the nearly 1500 respondents from North America were at least 60 years old, according to the survey.

CQ said the situation in Europe was "a little more optimistic," where the age curve trended about 10 years younger overall.

"While the missing young people could be a symptom of the survey methodology, any look around a ham radio club meeting [or] convention reveals similar findings," the survey commentary said. "Should we be concerned about the future of radiosport (and Amateur Radio)? What can we do to encourage more young people to participate?" it went on to ask.

The CQ WW Contest Committee analysis concluded that older-skewing operators may lead to lower operating times, increased multioperator entries, or eventual less overall activity.

CW was far and away the most popular operating mode, at least among participants age 40 or older. Nearly 62 percent of those participating in the CQ WW survey indicated they were either serious contesters or part-timers trying for the best score.

"It was very gratifying to receive so many survey responses in such a short time," the CQ WW Contest Committee said in summary. "The CQ WW community is passionate and engaged -- both on the air and in considering the future of the event." Other summary highlights:

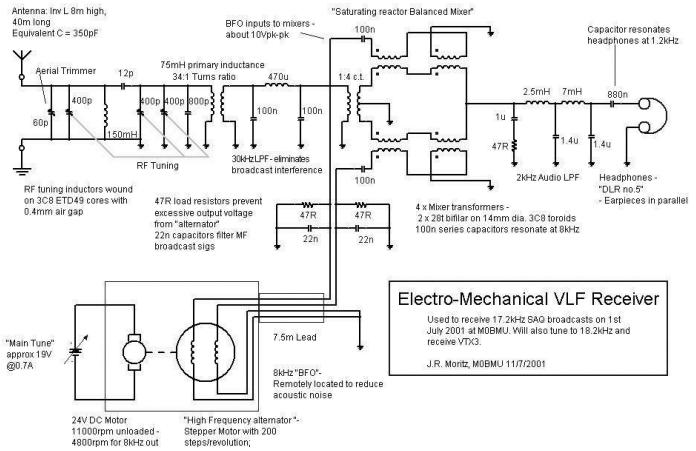
- Europe is the leader for contest activity.
- Contesters are getting older.
- There is a wide range of interest levels.
- CW is the favorite operating mode.

The CQ WW Contest Committee said that a future blog post would discuss the results of questions related to possible rule changes.

Electro-mechanical VLF receiver for SAQ

Regarding the above article on the SAQ VLF transmitter, the web site has a link to another site on an electro-mechanical receiver. It has no active elements! Here is an excerpt. (The direct link is http://www.wireless.org.uk/mechrx.htm*.) -- Editor*

I was able to successfully receive SAQ with a homebrew electro-mechanical receiver. As far as I know, the Alexanderson alternator at SAQ is the only radio station with an electro-mechanical transmitter that does not have tubes or semiconductors. For some time I thought it would be fun to make a VLF receiver based on similar principles.

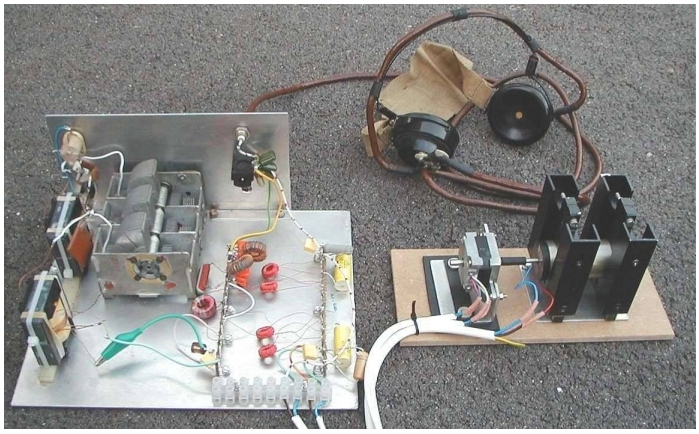


It is basically a direct conversion receiver. It has a 2 pole passive preselector with a RF bandwidth of about 800 Hz, which also impedance matches the antenna to the mixer. The mixer uses saturating ferrite cores, in a way not unlike the SAQ keying circuit. The BFO signal saturates the cores at both the positive and negative peaks of it's waveform, and so the core windings present an inductance that varies at twice the BFO frequency, in series with the signal path.

The BFO signal is produced by a small high frequency alternator. This is actually a 200 step/revolution stepper motor salvaged from a scrap hard disk drive. When driven as a generator, it produces a reasonable sine wave - each winding produces a signal in phase quadrature with the other - with 100 cycles for each revolution. So

it produces quite high frequencies when rotating at moderate speed. Driven at 4800 rpm by a DC servo motor, it generates a couple of watts at 8 kHz, which effectively gives a 16 kHz BFO signal, due to the frequency doubling action of the mixer.

The resulting audio beat frequency at 1.2 kHz is low pass filtered, and applied to a pair of 1944 vintage 'DLR no.5' headphones. With the two earpieces in parallel and a series capacitor of 880 nF, these are resonant at 1.2 kHz and close to 50 ohms impedance. They are surprisingly sensitive, 100 dBm (2.2 μV into 50 ohms) is just about audible in a quiet room. So although the RX has no amplification, in fact considerable loss, a 30 μV signal at 17.2 kHz from a signal generator can be detected at the mixer input.



The SAQ broadcasts were received using this RX with my 8 m high, 40 m long inverted L antenna, which produced a comfortably audible signal in the headphones. The limit on sensitivity was the QRN, which was quite strong.

Jim Moritz M0BMU.

When Green Turns Brown

I was fortunate to graduate from one of the few universities in the country that offers an electrical power major. However, realizing that electronics and computers would eventually control the power industry I took some of the power electives for additional credits while graduating with a degree in electronics.

New Year's Eve of the Millennium I sat in a warm house in Denver watching a shivering young female reporter in Eskimo garb stationed in front of a local power station. I flipped the channel and there was a similar shivering reporter at another power station. I flipped again and yet a third shivering reporter. It got down to minus 20 that night but at least the harsh TV lights warmed things up a bit for those silly reporters.

They were all camped out at various power stations because someone had predicted all the power stations would fail at the stroke of midnight. The experts said there was a problem in the software running the power stations. The defect in the software calendar rolling over to 2000 would bring darkness to the world. Thinking of the Northeast blackout of 1965 each reporter wanted to be the first to report the Great Plains blackout of 2000.

I laughed knowing I was sure to win two bets on the subject. There were so many reasons why this was wrong. First, who would be watching in the darkness if the power to their TV sets failed? I suppose the station would roll tape.

I was in the catbird seat on this one. You see, my former company had sold the power utilities the hardware and software to run their stations. There was nothing exotic about the systems. They ran on simple 8 bit microprocessors. The real time controllers had very simple clocks that hour by hour kept time from nanoseconds to seconds. That's where the timing stopped. No calendars in these systems so they didn't know what day of the week or what year had dawned. They just keep running from second to second, as any power system does.

There was no operating system or hard disk in these primitive computers. The processors ran on instructions stored in PROMs so neither the operators nor hostile hackers could change the operating code. The simplicity guaranteed the systems would almost never break down or need to reboot.

Your home computer uses operating systems such as WINDOWS or UNIX which reside on a hard disk or SSD. The applications they run are written in high level languages such as C, Pascal, Basic, Fortran, or Cobol. The calendar bug quoted by the computer soothsayers appeared only in the Cobol language. Cobol is a language designed for business applications and is not deterministic meaning it is not precise in time of execution and therefore can not be used in real time applications. So much for that bug affecting the power stations.

The more you thought about the Millennium Bug the more ridiculous it seemed. So why did so many of the so called computer experts contribute to the perceived gloom and doom of the Millennium Bug?

NCIS's Gibs says there is no such thing as a coincidence. I think Gibs must have read from the book, Up the Organization… by Robert Townsend (catchy name?). The book, first published in 1970, suggests strange occurrences within companies are not accidents. He says solving such mysteries will reveal secrets within a company.

It was really simple when you think about it. The sales records of 1999 showed a banner year for both computer hardware and software. It seemed that every IT manager had a conversation with his boss suggesting their company might be vulnerable to the Millennium Bug. No boss wanted to be the fall guy for an IT meltdown so they allowed themselves to be blackmailed into authorizing all the latest bells and whistles the IT department thought they needed.

Today I see history repeating itself. I see a political system that is drunk with the idea of free power that is spending trillions of dollars to attain unachievable goals that would kill us all if totally achieved. Simply, free power is the most expensive electrical power known to man and to what end? The total of solar and wind power combined has not caused the decommissioning of one fossil fueled steam power plant nor will it ever until we can figure out how to store enough electrical power to run things for even a day. Simply, when the sun goes down the solar power stops and the windmills slow. What do you do during the night for a green power source? To solve this question requires a means of storing electrical power overnight. Today's total means of storing represent only a minuscule amount of the total power needed. A much better way is needed if wind and solar are to become anything more than an eyesore on the landscape.

What about CO_2 you ask? CO_2 is as necessary to life as is oxygen. Take any biology text and look up the Carbon Cycle. All plants, save a few like the Venus Fly Trap, take in carbon in the form of CO_2 from the air. All species of animals including man either eat

the plants or the animals that eat the plants and extract the carbon. The carbon is returned from the animals when they exhale the CO_2. That is called the carbon cycle.

If somehow we were able to scrub all of the CO_2 from our atmosphere then within a year the only thing living would be the maggots living off all of animals that had starved to death. CO_2 is essential to plant growth and life as we now know it today.

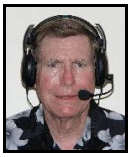
Similar arguments can be made about Anthropogenic Global Warming. Some say the debate is over and the consensus is in. Do you debate global warming as you go about experiencing these frosty mornings? You will be warmed to know science welcomes debate. So why would anyone say the argument is over?

As Gibs says follow the money. Al Gore has made millions on carbon credit trading software. The State of California plans to raise 1.5 billion in the next decade with revenue gained from carbon trading. The high speed train to nowhere has so far spent all of its money on studies and lawyers so now as the project plans to build a tunnel paralleling and finally crossing the San Andreas and Garlock faults into Southern California the legislature has authorized 25% of the carbon trading revenue to go to high speed rail. This will help fight the law suits and fund the building the tunnel some estimate at 200 billion.

Are you seeing the picture here? Predications made ten years ago about the coastlines flooding have not come true. In fact the predictions made about global warming have become so embarrassing that global warming has been renamed climate change. Never mind that before global warming it was called global cooling. Two thirds of Americans don't believe in global warming so now our president has proclaimed climate change to be more important than ISIS. One presidential candidate has said the reason the Muslims are so mad is because their deserts are so hot. You can't make this up!

Your power bills are estimated to double in the next 15 years in order for the power company to pay the carbon credits it will need. Let's see here. Do I want to buy more radios or pay more for my power running my existing radio so we can have a high speed rail that very few will use?

Think carefully the next time you vote?



73, Fred, AE6QL, ae6ql@arrl.net

Meeting Minutes

General Meeting, Dec. 14, 2015

{No minutes from the General Meeting were received. The December 21 board meeting was canceled by the board. - Ed.}

Need Help?

Amateurs have a long history of helping each other. An experienced amateur who helps another is traditionally called an "Elmer." If you have a question or problem, you are encouraged to ask one of SCCARA's Elmers. Below is a list of topics and who to contact for each. If your topic isn't listed, ask one of the Elmers under the topic that comes closest and we'll ask around.

If you consider yourself to be reasonably competent in at least one area of amateur radio and would be willing help others, please fill out an Elmer form from the club secretary.

Topics:
Antennas, feed-lines, tuners: NV6W, W6JPP, K6PBQ
Lightning protection, grounding: WB6YRU
Station set-up, equipment: K6PBQ, W6JPP
TVI/RFI: WB6YRU
Homebrew projects, construction: WB6YRU
Packet Network (BBS, forwarding): WB6YRU
Code operating and installations: NV6W, K6PBQ
DX (long distance/propagation): NV6W
Emergency operating/preparedness: WA6QYS
HF operating techniques (SSB, CW): NV6W, K6PBQ
Legal/FCC rules: WB6YRU
SCCARA (club inner workings): K6PBQ, WB6YRU, WA6QYS
EchoLink: KK6MX
License testing, new amateurs: W6JPP

Contacts:
NV6W, James D. Armstrong, Jr.,
evening & msg: 408-670-1680

KK6MX, Don Apte, 408-629-0725
e-mail: kk6mx@aol.com

W6JPP, John Parks, 408-309-8709
e-mail: w6jpp@arrl.net

K6PBQ, Don Village, 408-263-2789
e-mail: donvillage7@yahoo.com

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e-mail: wa6qys@arrl.net

WB6YRU, Gary Mitchell, 408-269-2924
packet: home BBS N0ARY
e-mail: wb6yru@ix.netcom.com

Newsletter Notes

The member form now can be filled in and printed from your pdf reader!

When the time comes to renew (or join), members have always had to fill in the membership form by hand or use a typewriter... remember those? ☺

Almost everyone gets the newsletter electronically now. Due to a software upgrade here, the member form now has pdf form control fields. This allows you to enter your info in the form while using the pdf reader, then you can print that page with all the fields filled in. In effect, the pdf reader becomes a typewriter.

Most of the fields are fill-in, some are check boxes, and the License Class field is a pull-down menu where you can simply select a class.

This should work regardless of which pdf reader you have. Some of you may be able to save the last page with the form filled-in (for your records or printing later), but that depends on your pdf reader, some versions don't have that ability.

73, Gary WB6YRU, editor

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SAN JOSE CA 95103-0106

FIRST CLASS

ADDRESS SERVICE REQUESTED

SCCARA Membership Form for 2016

If renewing and none of your info has changed, we only need your name and call

Name: _____ Call: _____ Class: _____

Address: _____ Licensed since (yr): _____

City: _____ State: ____ Zip: _____ Licence Expiration Date: (mm/dd/year): _____

Telephone: _____ ☐ New Member ☐ Renewal ☐ I'm also an ARRL member

E-mail: _____

(only for club communications and the SCCARA-GRAM (pdf) newsletter)

Memberships start January 1 and expire December 31. Annual dues are: **$20 Individual $25 Family $10 Student** (under 18)
For family memberships (members at the same address), please include the above info for each member, (use separate forms).

New members:
If joining in January: normal dues
If joining in February through October: dues x (11 - month) x 10% (e.g. for July, that's: $20 x 4 x 0.1, which is $8)
If joining in November or December: normal dues. That's for next year, and the rest of this year is included free

☐ **I want the newsletter on paper delivered by U.S. Mail** for an additional $30 per year, prorated ($2.50 per month).
So that's $27.50 if starting in February, $25 if starting in March, $22.50 if starting in April, $20 starting in May, etc.

$ _____ Total membership payment for: ☐ **individual** ☐ **family** ☐ **student**

Give this completed form and payment to the Secretary or Treasurer at any meeting or mail to the club address.

Rev. 1/16/2016