

QRZ NEWS

A MONTHLY PUBLICATION OF
SOUTHERN PENNSYLVANIA AMATEUR RADIO CLUB, INC
PO BOX 1033 - LANCASTER, PA 17608-1033

(Founded June 1960)

AN AFFILIATED SPECIAL SERVICE CLUB OF THE ARRL, INC.

"Public Service through Communication"

Website: www.K3IR.org

Email address: k3ir@arrl.net

Repeaters: 145.230 - 449.975 - Packet 145.030 - ATV 923.250, FN10se

October 2009

October SPARC Meeting

The SPARC business meeting will be Wednesday, 21 October 2009 at the Rapho Township Municipal Building, 971 N. Colebrook Rd, in Rapho Twp. Meeting time is 7:00PM. Members and others interested in Amateur Radio are invited to attend.

President's Message

The old 20-80 Rule

There is a long-standing axiom that in any organization 20 percent of the people do 80 percent of the work. Actually, SPARC does a little better than that. By my count we currently have 30 members. Of those thirty approximately 8 do the lions share of the administrative and physical labors required in maintaining the club. That is nearly 27 percent – not bad, but in today's economy we need to do better. I'm sure most of you are aware that the world economy is in terrible shape. The worldwide recession has hit SPARC. For years we, like the Boy Scouts, have been relying on paper recycling to support our habit. The current price for paper is \$15 per ton, down from \$65. We can't afford to buy the gas to haul paper to the recycler at that price. Since 2002 we have paid a nearly \$80,000 loan down to under \$15,000. This is a significant feat, but we still have a little way to go. The board of

directors has cut expenses in every way possible. We have sold some unneeded assets and postponed some projects. We have been working with the bank in an effort to lower our loan payments to see us through these trying times.

So, how can you help? Some members have been making monthly donations to the club, some have been working part time at Dutch Wonderland and donating their earnings to SPARC. You can save aluminum scrap and cans and bring them to Club meetings. Your donations will be sold and the proceeds used for club expenses. There is a quantity of hard line coax at the site. It contains a significant amount of copper. If the copper is separated from the dielectric it can be sold for as much as

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\$2.00 per pound. Check with Dave Payne or

your president for instructions. I'm sure there are other ways to earn money that we haven't thought of. If you have any ideas let us know. Please limit your suggestions to plans that will not result in jail time for the BOD.

You may also be asking, "what's in this for me?" Well, that loan I referred to purchased a little less than an acre of property in Rapho Township on which is erected a block and concrete building with a 100 foot heavy duty tower. On this property we have installed several additional poles and antennas. At present there is a 3 element beam for 40, 20, 15 and 10 meters plus a 75 meter dipole. There is a cozy operating building and a path to a club owned porta potty, which is on site year round. Contact Dave Sarraf to obtain your very own key and you can operate from the site whenever you want. There is a venerable Kenwood TS 830 in the operating building or you can bring your own radio. And of course, there are the repeaters. The 145.23 machine is used very little and the 449.975 repeater is used even less. The PL tones are 118.8 and 114.8 respectively. There is also a packet mailbox on 145.03. Connect to K3IR-1.

Harry, WA3FFK

**MINUTES OF THE SEPTEMBER
2009 MEETING OF THE
SOUTHERN PENNSYLVANIA
AMATEUR RADIO CLUB (SPARC)**

Held Wednesday September 16, 2009 at the
Rapho Township Municipal Building

The following members, visitors, and guests were present:

Dave Sarraf, N3NDJ
Mike Warner, N3XPD
Mike Zelinski, WB3CVC
George Gadbois, W3FEY

Ross Kauffman, W3ZKU
Jim Silvius, K3WE
Ted Freedman, K3KSA
Dave Payne, N3LOM
Rick Watson, N3SWJ
Gerry Wagner, KB3SSZ
Dan Milligan, KA3KHR
Jon Rudy, K3QF
Steve Hass, KB3SJU
Paul Herr, KD8WY
Woody Sbei, W3TTW (guest)

The meeting was called to order by Rick Watson at 19:02 hours, with a round robin introduction by name and call.

Dave Sarraf read the minutes of the August BOD meeting. They were approved as read on a motion by George Gadbois and a second by Ross Kauffman.

The treasurer's report was given by Ted Freedman. On a motion by Dave Payne and a second by Jon Rudy they were approved as read pending review by the audit committee. Highlights were discussed regarding an earlier meeting held with the bank to discuss options to reduce the mortgage payment. Attendees included Harry Bauder, Ted Freedman, and Dave Payne. One option includes foregoing the principal and paying interest only.

The note about the mortgage prompted a review of the club's history and how it became a mortgage holder. There was some discussion on how to expand the club and what niche it could fill. RACES and ARES were mentioned – a good post-meeting technical talk would be "What is RACES and what does it do?"

Old Business

The PA State corporate filing was held up due to sending the wrong form to Revenue.

The secretary sent the for-profit form; Revenue deleted the officers but did not update them. Based on a conversation from State, we need to send the non-profit version. Dave will fax the form in.

Radio support for the SuperHike was a success. It was supported primarily by Red Rose Repeater Association with help from SPARC. The terrain precluded cell or FRS coverage. Hams and the 145.310 repeater worked well. This was reported to be a great exposure for the value of ham radio. This is expected to be an annual event.

New Members

A new member application was accepted from a visitor, Dan Milligan KA3KHR.

New Business

The port-a-pot has been delivered. It has a cracked seat which needs to be replaced. It is unclear if this is a special or standard seat.

The SPARC constitution was discussed. Two copies exist. One is typed (typewriter), the other is computer typeset. While they both have the same date they are not identical. A proposed amendment was read and discussed. The amendment deals with the disposition of SPARC equipment and property. It is necessary because the current designee, Ironville Fire Company, has been absorbed into another fire company and no longer exists as a separate entity. Moreover, SPARC no longer has the same close tie with them as there had been in the past, so it makes little sense to limit ourselves in this manner.

Jim Silvius noted that the recent repair to the roof was sound. Despite the recent deluges of rain, the inside of the building was dry.

Events

SPARC is supporting JOTA, or Jamboree on the Air, on October 17-18th. Dave Sarraf plans to bring some members of Troop 51 from Elizabethtown, PA.

The Columbia Halloween parade is scheduled for Monday October 22, with a rain date of October 26th. Meet at the Manor St Fire Company at 5:30.

The next RACES meeting is Thursday October 27th. (*Note date change to Nov 12 below*)

The next HEARS meeting will be held next Wednesday at 6:30 pm at the County training center.

On a motion by Ross Kauffman and a second by Dave Payne the business portion of the meeting was adjourned at 7:55 PM. The remainder of the meeting was an excellent talk by Dave Payne about a recent visit to a working US Navy submarine.

Respectfully submitted,
Dave Sarraf, N3NDJ
SPARC Secretary

Coming Events

October 17-18 is the JOTA weekend. The SPARC club site will host scouts for an overnight stay.

October 22 rain date the 26th. Columbia Halloween Parade. Volunteers needed for communications. Contact Rick Watson, N3SWJ.

The next Lancaster County RACES meeting will be Thursday, November 12th, 2009 at 7:00pm

(The October meeting has been rescheduled to this date)

Editor's Notes

You may have heard or read statements offered by FCC Amateur Enforcement Officer, Ms. Laura Smith regarding enforcement of 97.113 as it relates to amateur radio volunteers who are also employees of served agencies.

The essence of the debate was related to whether or not, for example, hospital employees with Amateur licenses could participate in hospital related emergency radio communications drills. There was general agreement that those same Amateurs could legally provide communications assistance to their employers during an emergency.

The FCC's Office of General Council has now released an opinion to the effect that no enforcement action will be taken in currently planned drills even if a third party files a complaint. The Office of General Council has also asked for a rule making petition to clarify 97.113 in this area.

There is precedent for exempting paid employees for the operation of Amateur stations for their employer under special circumstances. For example, paid employees of ARRL may operate W1AW for the purpose of transmitting code practice and Amateur related bulletins.

Cycle 24 sunspots continue to be few and fleeting in their appearances. Deep space satellites that can see more of the Sun than is visible from Earth show a few in the past two weeks. We are still working toward a record low year for sunspots for this century and more. The moon is reliably present and EME requires no sunspots. EME is also very demanding of time and resources.

In this issue, there is more information on CFLs. With electric rates climbing rapidly, we all need to convert to more efficient lighting devices. See article below.

I would like to find someone knowledgeable on LEDs to write an article. They are expensive, efficient, and long lived. I just ordered a couple of 1.7 W LED lamps for testing. These will replace 25W tungsten lamps. Claimed life is 35K hours. I'll report when I have some data.

As always, please send in technical articles about ham radio and related topics of interest to hams. We need someone to write on LF and HF radio topics.

As I write this on Sunday, 11 October 2009, there is a weak Es opening on 6m to the SW and W. The strongest signal heard was from NOIRS in Kansas City, MO. The band was open to some degree from late afternoon until well into the evening. Monday is another spotty Es opening on 6m.

73,
George, W3FEY

ARES/RACES



Lancaster County Races Meeting

The next meeting will be Thursday, November 12th, 2009 at 7:00pm

(The October meeting has been rescheduled to this date)

This will be a very important meeting, , we will be having several presentations...

-Rick Watson, Chairman of the Planning Committee will be presenting the upcoming drill slated for 2010.

-There will also be a presentation on the new state-level ACS (Auxiliary Communication System) and how it affects RACES.

I attended a PEMA amateur radio pre-conference in Harrisburg this past weekend, which had a lot of good content I would like to share with the group at the next meeting. I will be condensing the material and presenting it also.

Also at the conference, Roy W3TKR was presented with an award from PEMA Director, Robert French, for his service in running the state RACES nets. Roy was not able to make the conference, I will be presenting it to him in the near future.

Thank You,
Chris Bunting
LEMA RACES
717-459-4322 (c)
717-459-4321 (h)

As part of the SPARC commitment to emergency communications, the SPARC repeater system is maintained as available for linking with other area repeaters.

Lancaster County RACES VHF Net is held on the first Tuesday of the month at 2030 hours local time. Presently being held on the 145.310 MHz repeater.

The Lancaster County primary ARES/RACES repeater is on 145.310 MHz with minus offset and 118.8 PL.

Combined York County Amateur and ARES/RACES NET convenes at 8:30 PM (2030) Mondays on 146.97.

Pennsylvania RACES HF Nets are held at 3993.5 kHz LSB on all Sundays except holidays.

The statewide net is on the first Sunday of the month at 0800 hours local time.

The Central Area (including Lancaster County) net is at 08:30 local time.

SPARC Nets

SPARC holds nets on the 2nd, 3rd, 4th, and 5th Tuesday (every Tuesday except the first) at 2030 local time on 145.230 MHz minus offset and a PL of 118.8.

Club Officers

President Harry Bauder – [WA3FFK](#)
Vice-President: Rick Watson - [N3SWJ](#)
Secretary - Dave Sarraf. - [N3NDJ](#)
Treasurer - Ted Freedman - [K3KSA](#)
Repeater Trustee - Dave Payne - [N3LOM](#)
Past President - Mike Warner – [N3XPD](#)
Board of Directors - Jim Silvius – [KW3E](#)

Nearby Nets of Local Interest

Delaware Co. Mobile Sixers Net Schedule
Sunday 2000 50.550 MHz USB

Cumberland Co.
Monday 2130 144.160 MHz USB

Packrats 1296.100 MHz USB net Mondays at 2130 local time Bob, W2SJ, Pennsauken, NJ, FM291w, is net control. Bob has a good signal into Lancaster County. He looks west ~ 2135-40.

Combined York County Amateur and ARES/RACES NET convenes at 8:30 PM (2030) Monday on 146.97.

Technical/Elmer NET -- following Monday Combined York NET

For discussion or questions in reference to Amateur radio, the club, equipment, operating procedures, etc, have them ready to ask. If you just want to talk about something particular to Amateur radio, we can do that too. The net will start at 9 PM on the York 146.97 repeater. If the regular net runs longer than

this, it will start when the normal Monday night net ends.

If you would like to volunteer to discuss a topic, for 5 to 10 minutes, please send your name and topic to the NET Manager, Richard Reese at "kr3ee@frontiernet.net". Rich will schedule you.

Sandy Goodman, N3ECF

QRZ News Publication

QRZ News is published monthly on the second Wednesday of each month, one week before the monthly meeting. Deadline for article submission is the second Tuesday of each month.

We operate on an exchange basis with other non-commercial publications. Articles printed in QRZ News may be reprinted in a not for profit publication provided proper credit is given. Reprinted articles require permission from the original source.

QRZ News is archived at http://www.k3ir.org/QRZ_News.html. Documents are in PDF format.

Thanks to Jim Silvius, KW3E and Dave Sarraf, N3NDJ for providing many missing issues for the archive. Jim Silvius is the SPARC historian.

More Info on CFLs

Last month I started a discussion about CFLs and how they will affect our home lighting requirements. As part of that discussion I presented a CIE (Commission Internationale de L'Eclairage) color chart. Max Peters called my attention to my inadequate explanation of what the chart represents. See the article 'What the CIE Color Chart Means' below for a more detailed explanation on the use of the CIE chart.

In this column I will describe my experiences with CFLs. About a year ago I started replacing tungsten light bulbs as they burned out with CFLs purchased from several sources. I did not write down any data so this review is from memory. The first three CFLs purchased from Home

Depot turned out to have one DOA which I returned for credit. I don't remember the brands for any of the CFLs installed so far.

I quickly learned that the typical cool white lamps sold in local stores are far too harsh for use in a vanity where you pretty much look into the lamps. The CFLs came out and were replaced with tungsten bulbs. I used several lamps in applications in lamps with shades where you don't directly see the lamps. These are mostly in poorly lit areas where the lamps are rarely turned off. These lamps are still going fine.

I tried a CFL in my attic last Winter, but as the weather cooled the lamp started but never rose to a satisfactory level. Replaced with a tungsten bulb.

I purchased a special GE -10°F start CFL from Yale Electric for my porch. The lamp was outdoors, but fully protected from the weather. The lamp started fine in cold weather, but failed after about six months. Not close to the manufacturers claims.

The next failure was in a kitchen ceiling light after about 8 months of use. The phosphor coating on the inside of the bulb had turned from the as purchased white (unlit) color to a tan color.

From my TV picture tube experience, this looks like ion burn. Something degraded the phosphor before the ultimate failure. The lamp used to replace this was a two day infant failure.

To sum up, in about a year's total experience I have had one DOA and three short term failures. This is not consistent with the manufacturers claims for multiple years of life. Total CFLs installed at this time is 22.

Gerry Wagner, KB3SSZ, is very interested in energy conservation and uses CFLs throughout his house. He also maintains contact with others interested in energy conservation. Some of his friends have recently supplied comments on their experiences with CFLs. The range of success runs from completely satisfied to I'll never use them again.

Freebie lamps given out by power companies may be the cheapest of the cheap from one reporter. Many early failures.

One of Gerry's contacts reported catastrophic failures on two CFLs where the lamp failed by melting a hole in the glass during operation. This is really bad! Liquid mercury can be cleaned up fairly easily, but mercury vapor in your house is really bad. As I recall, the half life of mercury in the body is about 80 days. This may be specific to methylmercury. Does someone have info on this? Fortunately, there isn't much mercury in a CFL.

So how can these diverse results be explained? Getting back to my own experience, I can explain some problems by the fact that voltage supplied to my house by PPL is within specification but near the upper limit.

The PA PUC specifies residential service at 240 volts +/- 5%. Keeping the 120 volt circuits in your house balanced is your problem. This usually is not much of a problem. My typical voltage is 124 to 125 volts which explains poor life for tungsten lamps and possibly for CFLs.

It has long been known that frequently turning a fluorescent lamp on and off shortens the life. I don't have any such installations. My long term experience with standard fluorescents is normal. The

problem must be in the switching ballasts used for the CFLs. Two of my three failures showed signs of being intermittent before they quit completely. This suggests an internal connection opening up. This is probably just poor quality control.

Let's get back to the lamp color temperature problem. If you find the white too harsh for your taste, use CFLs with a color temperature of 2700°K. This is more or less equivalent to an incandescent lamp. See <http://www.1000bulbs.com/pg/Color-Measurement/> for an explanation of the various color temperature lamps available.

See the explanatory article on the CIE chart below which covers omissions from the September article on the same subject. A CIE chart that shows the black body color range is included.

See the September issue of QRZ News for info on where to find a full selection of CFLs.
http://www.k3ir.org/QRZ_News.html

I have done some research on when the new manufacturing standards for residential service bulbs go into effect. The answer is rather complicated, but manufacture of incandescent lamps for residential lighting will be phased out starting in 2012. Here is the official source for the information:

“It depends on the type of lamp, not just whether it's incandescent, for example, but what the lumen range and maximum rate wattages are. Generally the dates range from 1/1/2012 to 1/1/2014. If you want to read the act yourself, you can find it at

http://frwebgate.access.gpo.gov/cgi-bin/getdoc.cgi?dbname=110_cong_bills&docid=f:h6enr.txt.pdf

-- the dates for incandescents are set

forth on page 86 of the file. But there are lots of other dates for other types of lamps sprinkled through Title III, Subtitle B of the act.

Christine Dibble
Senior Editor, epa.gov
Office of Web Communications, Office of Public Affairs, U.S. EPA”

The Act does not ban incandescent lamps as such. The minimum efficiency requirement of 45 lumens/watt effectively bans incandescent lamps. Special purpose lamps such as appliance bulbs, rough service lamps, and colored bulbs are exempted.

With a new energy bill forming in Congress, I would not be surprised to see the implementation dates move closer and the requirements become more difficult to meet.

Flashlight bulbs and dial lighting are rapidly going to LEDs for their high efficiency and long life. The LED taillights on trucks don't seem to stand the rough service too well, but that should be a soluble problem.

I plan to start keeping records on the manufacturers of the lamps I install. See the Consumer Reports web site for more info <http://www.consumerreports.org/cro/index.htm>.

I subscribe to the web version of Consumer Reports. You can get some basic information without subscribing.

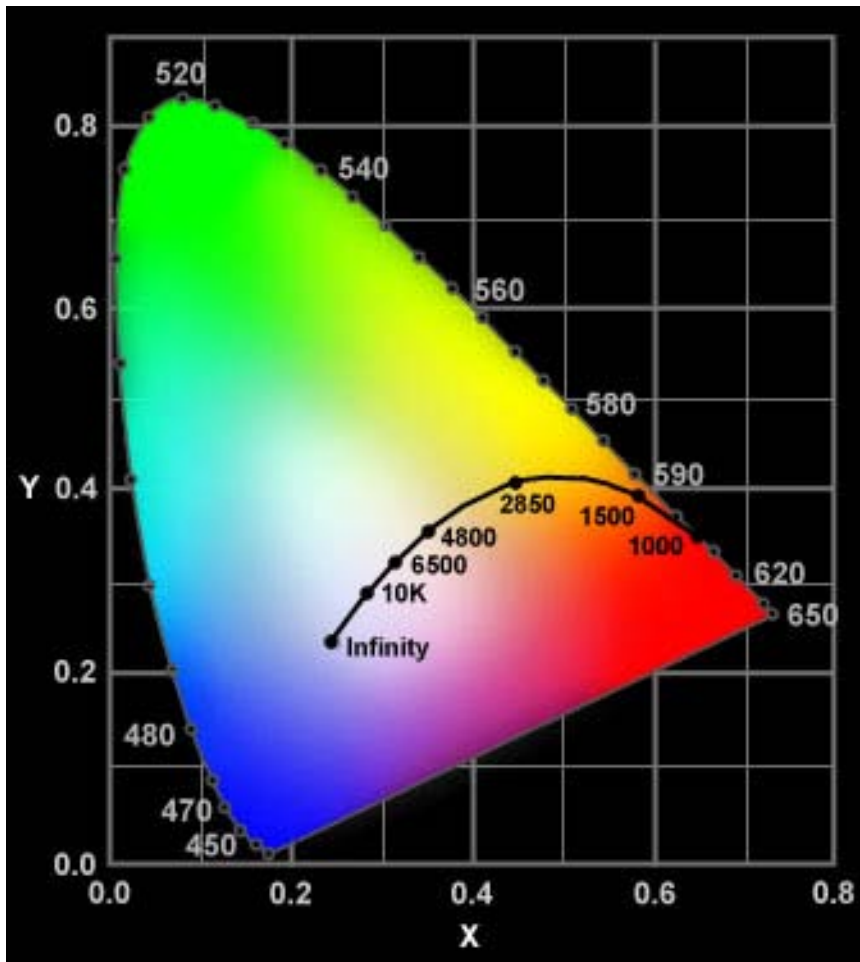
73,
George, W3FEY

What the CIE Color Chart Means

The CIE chart shows the perception of color for various wavelengths of visible light for a 'Standard Observer'. Basically, this is an average human who isn't color blind. Note this chart is for the perception of radiation received by the eye. Mixing pigments for color printing or paint is another subject.

The chart is arranged so that the mixtures of colors can be expressed as x and y coordinates which absolutely describe the color as perceived by the previously defined Standard Observer.

So why do we care? In a television display device the colors we see are determined by the mixture of three primary colors red, green, and blue. Remember, we are mixing photons not pigments. A straight line on the CIE chart describes all possible colors produced by mixing two primary colors and the enclosed area of a triangle describes the possible colors displayed by mixing three primary colors. See chart page 10.



A CIE chart showing the color of a black body heated to the temperature marked on the curve is shown to the left. See <http://photo.net/learn/optics/edscott/vis00020> for more detail.

Because our primary subject is a CFL, the black body curve is what we are looking for in this discussion. CFLs are made for a range of color temperatures depending on the usage of the lamps.

For those interested in TV displays, a CIE chart for a typical cathode ray picture tube is on page 10. Note the limitations of pigment and dye mixtures as displayed on the chart.

When you look at this report on your color monitor or print to your color printer, what you see is limited to the ranges shown in the chart below. The only way to see the true spectral (monochromatic) colors is with a spectrograph that can separate light by wavelength.

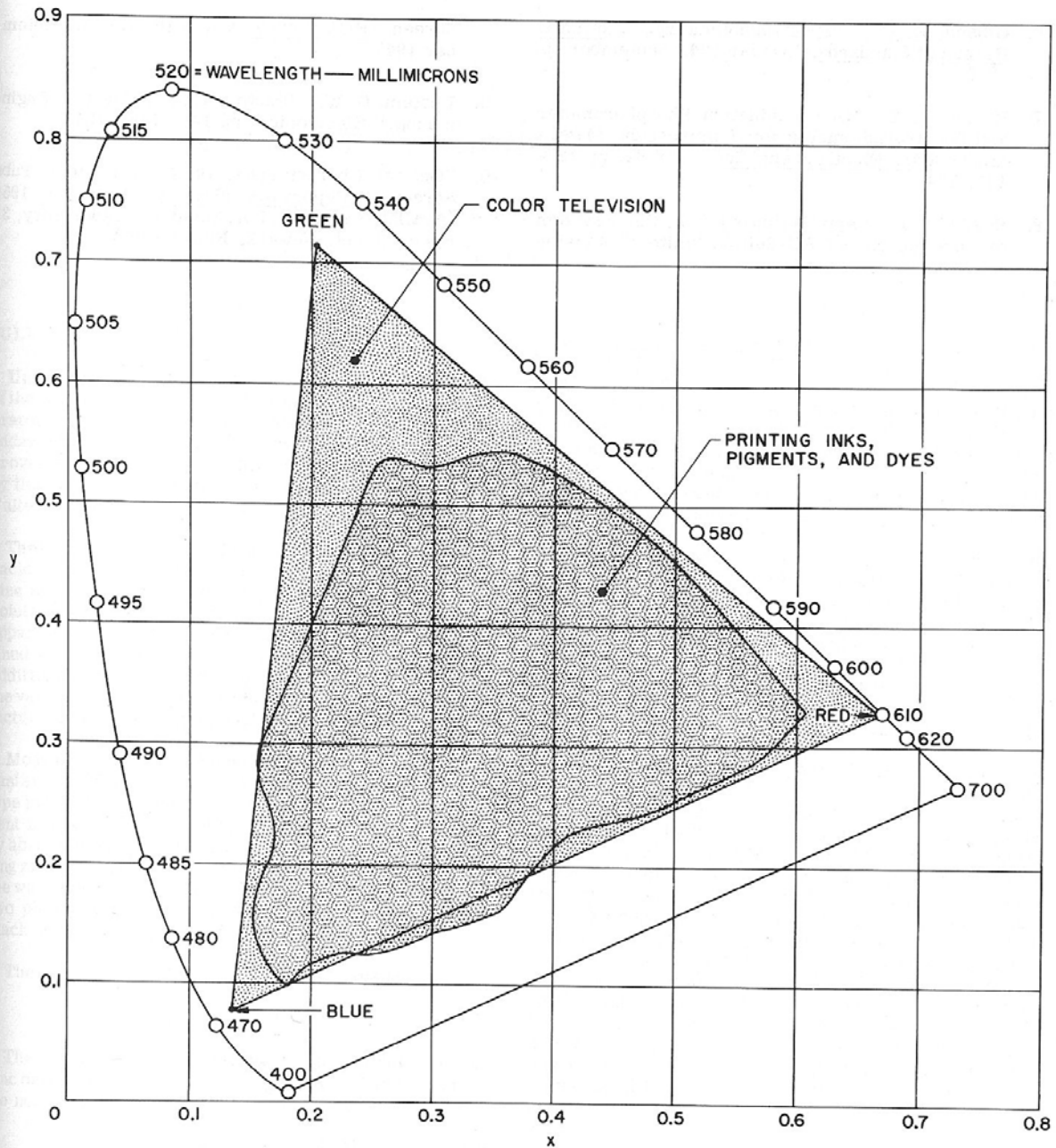


Figure 18. Color Gamut of Color-Television Phosphors Compared with Pigments, Dyes, and Inks
A. E. Hardy

The next chart illustrates several possible combinations of blue and yellow phosphors that will result in the same white color.

White phosphors, such as those used in CFLs, are typically mixtures of blue and yellow phosphors. If one wanted to produce a full spectrum CFL, mixing red, green, and blue phosphors would expand the range of colors that can be reproduced. When a light source is used

to illuminate an object, the color perception is limited by the wavelengths of light in the illuminating source. Note that we just crossed the boundary from mixing photons to mixing pigments.

Application and Colorimetry of Phosphor Screens

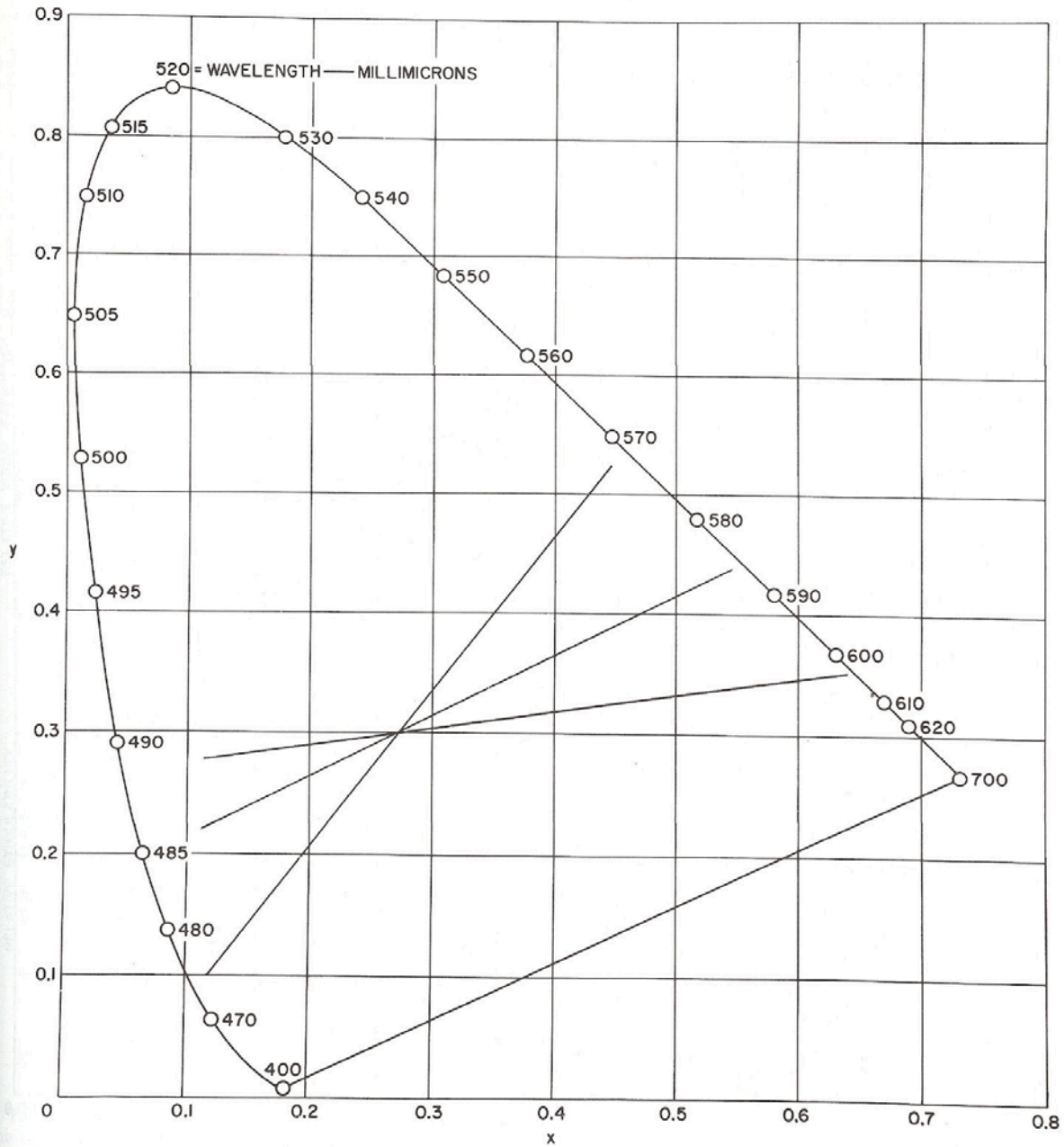


Figure 13. Three Complementary Phosphor Pairs which will Produce White

A. E. Hardy

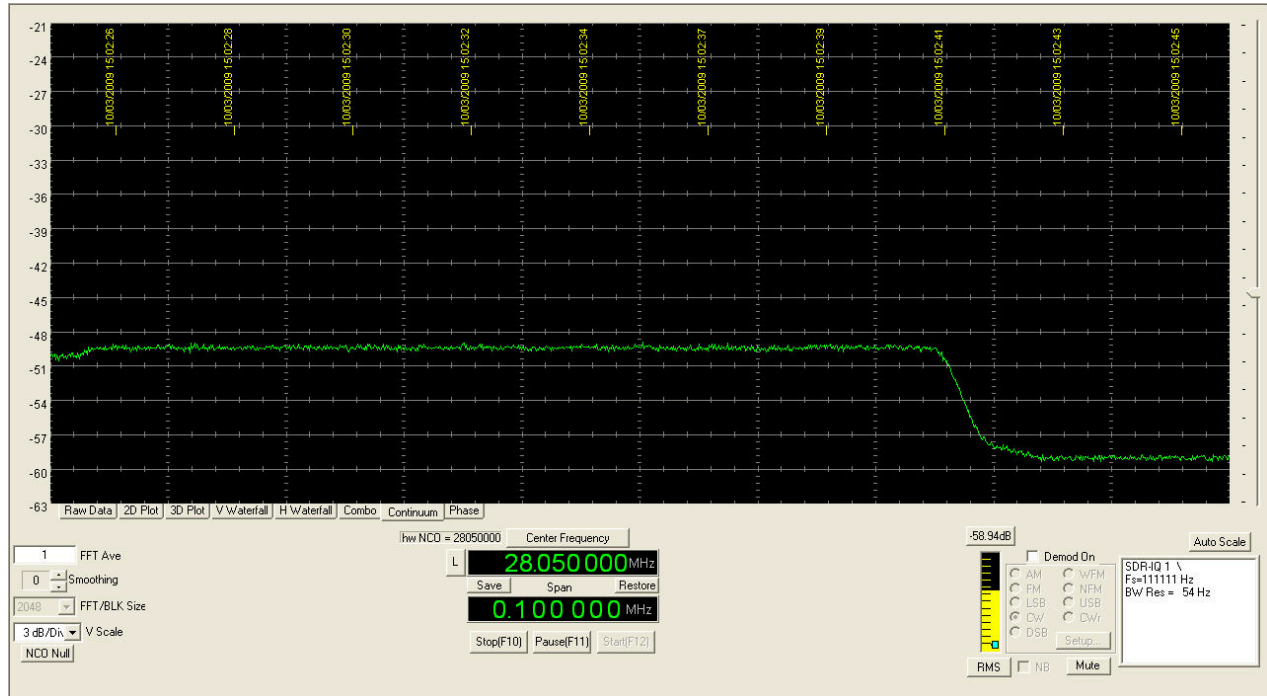
White LEDs are constructed from a deep blue LED and yellow phosphor. Note that this will result in very little red or green light in the output so red or green objects will appear dull or black. The eye is easily misled by colors when there is no reference color in the field of view.

George W3FEY

Addendum

Sun Noise Measurements for EMERs and Microwavers

By John Jaminet, W3HMS



The signal plot shows the dish moving away from the sun towards cold sky. The difference is 9.5 db in sun noise, good but I still have some room for improvement, about 2.5-3.0 db.

73, John, W3HMS, 3 Oct 09

Ed Note: Cold sky is about 4°K.

See the August issue of QRZ News for the complete article:
http://www.k3ir.org/QRZ_News/QRZ_News_August_2009.pdf