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Club Memorial Call W8KSE

The **October Meeting** will be on Fri. 27th at 7:30 PM at the Perkins Restaurant at SR 73 and I-75.

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De N8ZM

Well, my exhortations last month about the need for a 10 GHz beacon got results! I wonder what I said, because I usually don't get such prompt action in response to my rantings. Anyway, the beacon is up on KA8EDE's tower, and operational, although Bruce says he can't see it on the wavemeter in his basement. Has anyone else heard it yet? Where do we go from here?

It has been proposed that we should consider having another of our aperiodic equipment test sessions to give folks a chance to see how well their gear is performing, and provide a comparison of different radios and concepts. I am willing to host the event, but would like to ask for a volunteer(s) to handle organizing it. You know, find out who wants to measure what, make sure we have that capability, and maybe even organize the schedule a bit so that you guys don't feel like you spend most of your time waiting for your turn in the barrel. Generally, test equipment isn't a problem, although business occasionally makes demands, but if I know in advance what is needed, accommodations can usually be made.

As we approach the end of the year, it is time, once again, to look at the calendar and agree on a schedule for our November and December activities. Based on casual perusal of same, I see that November has five Fridays, and our traditional fourth Friday is actually the week before Thanksgiving. So plan on the November meeting being on the 22nd. As for December and our traditional Holiday gathering, we are probably OK there as well. Our meeting night falls on the 27th, which is OK, I think. So there you have it. We have successfully navigated the treacherous holiday season calendar once more.

The meeting entertainment this month will be provided by John Ackerman, N8UR. John has a long-standing interest in precision frequency measurement, and with the announcement that the ARRL FMT is returning; this seems like a good opportunity for us to pick up on the latest techniques and tools. By the way, if anyone has a projection screen on a floor stand that we could use for John's slides show it would be appreciated. Gerd has one that hangs on the wall, but the restaurant is not exactly thrilled with that concept. Let me know if you can bring one.

Thanks, and see you on Friday, Tom. N8ZM.

AO-40 Down-converterHow far off can you be in frequency?

By Howard, G6LVB

If you know something about the innards of the down-converter, and you already have an receiver which can tune to the down-converter's crystal oscillator (or a harmonic) and is accurate enough, you may be able to confirm and/or tune the local oscillator to a certain accuracy. But, remember that not only is the crystal oscillator multiplied up potentially hundreds of times to the LO frequency, so are the inaccuracies.

For example, for a 144MHz IF, the LO will be $2400-144 = 2256\text{MHz}$. For a modified AIDC 3733 with 144MHz, this 2256MHz is derived from an 8.8125MHz crystal source (multiplied by 256). Tune your SSB HF receiver with a short receive antenna close to the down-converter and you'll be able to pick up the crystal oscillator. In this example, if the crystal oscillator is only 100Hz off frequency, this will be over 25kHz off at 2256MHz!

So don't be surprised about a +/-20kHz or even 30kHz inaccuracy especially if you have installed a new crystal as a modification. Also bear in mind also that drift will occur when switching the down-converter on, often 10kHz or so over the first ten or fifteen minutes of operation as the crystal oscillator warms up. 73, de N8ZM.

This and That 10-02

- **Fast Talk.** If they talk too fast, maybe they have nothing to say!
- **Skill.** "Skill without imagination is craftsmanship and gives us many useful objects such as wicker picnic baskets. Imagination without skill gives us modern art." [Tom Stoppard]
- **TV Fine Print.** No, not the minute writing some ads have on the bottom to hedge certain claims, but the quick change of pictures that most newscast have nowadays is troublesome. One station actually takes you "across the nation in 60 seconds." Each story is told with a few blurry pictures, often with billowing smoke etc. This is not long enough to get any bearing, like the infamous "fine print". [WB8IFM]
- **High Priced Lamps.** We all know, when you purchase a Linear the price of the tube(s) are a major chunk of the total. There is another item that is in that category. LCD projectors, which are listed in starting at \$1500 and all the way up to \$4,000, have replacement lamps that cost from \$300 to \$500. [WB8IFM]
- **Visual Processing.** The brain processes a visual input 400,000 faster than text. So claims a brochure as a selling point for an expensive new digital projector. Another saying goes: "A picture is worth a thousand words." In any case, there is certainly a lot of truth to these observations. It also explains why people don't like to read a manual with a lot of text and few and/or bad pictures! It's considered a "Waste of Time." [WB8IFM]
- **Help.** The other day while trying to change some settings on a brand-new newfangled multibutton HP (excuse me, Agilent) Spectrum analyzer I ran into a problem and couldn't even find the likely button to push. So, I broke down and pushed the "Help" button. What was the message I got: "Unimplemented Feature". I guess one could say: "We are from Agilent and we are here to help you!" [WB8IFM]
- **Rich in Vitamins and Good for the Nerves.** Beer is rich in important vitamins - most are delivered to you by the beer's yeast. Vitamins B1, B2, and B6 contained in beer are food for the nerves: They improve your ability to concentrate, support the production of red blood cells, have a positive effect on your blood circulation and stimulate your metabolism. [Spaten Brewery]
- **Atlantic Ocean.** "...The water was so cold that the fish had crawled onto shore and built little driftwood bonfires...." [Dave Barry]
- **wireless.** "The wireless telegraph is not hard to understand. The ordinary telegraph is like a very long cat. You pull the tail in New York, and it meows in Los Angeles. The wireless is the same, only without the cat." [Albert Einstein]
- **software Shopping.** Shopping for software is every bit as risky as picking a good movie to see on a Sunday afternoon. You can't rely on the reviews, and what you see on the package is often as accurate as the advertising blurbs for a movie. [Bill Husted]
- **Plug and Play.** "My PC wasn't Plug-n-Play, it was more Plug-n-Get-Mad" said Janie Porsche about the temperamental behavior of her PC. [Apple Ad]
- **Our Atmosphere.** Here an observation that is shared by all astronauts looking at Earth from space :-you know, you see an ocean and a gaseous layer, a little bit, just a tiny bit, of atmosphere around it..."

[Neil Armstrong]

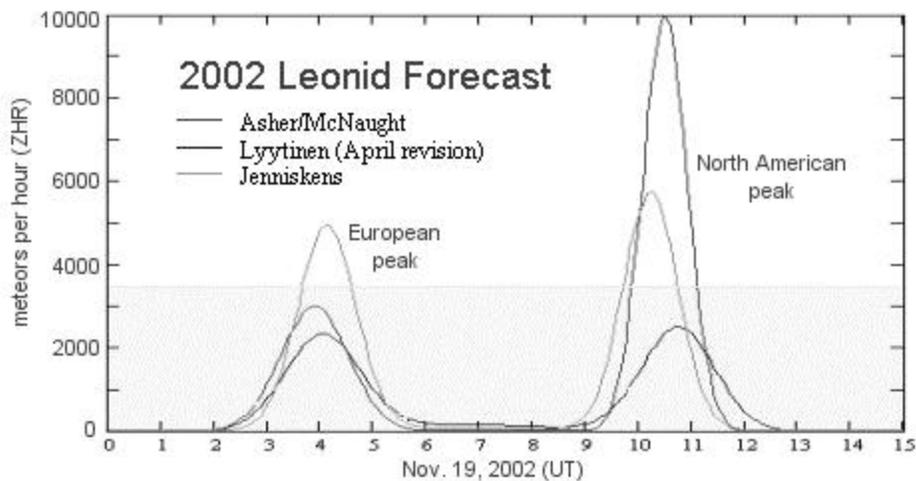
The 2002 Leonids (NASA)

Moonlight will indeed reduce the number of visible meteors by some factor between 2 and 5, but that's not enough to wipe out a storm of bright Leonids. If predictions are correct, peak rates this year would reach 5,000 to 10,000 meteors per hour under ideally dark skies. Even if the Moon's glare obliterates all but a thousand of those, it's still a marvelous show -- one of the best in decades.

Above: Bill Cooke of the NASA/MSFC Space Environments Group prepared this summary of Leonid prospects for 2002. The curves denote predictions by three teams who successfully forecast the 2001 storm. Curves that peak above the shaded zone exceed the maximum rate observed in 2001. "ZHR" is the zenithal hourly rate and "UT" is Universal Time.

There are steps you can take to minimize **lunar glare**. First, don't stare at the Moon. Face away from it; look toward the darkest part of the sky. If possible, choose an observing site where you can stand in the shadow of a building or some other Moon-baffle.

Second, travel if necessary to a place where the air is dry and clear. Even when you face away from the Moon the air glows because of moonlight scattered from air molecules and aerosols (*e.g.*, water droplets, dust and pollution). The glow will be less in places where the air is dry and pollution-free. Mountaintops are excellent because they rise above the humid lower atmosphere and most aerosols.



New Engineering Units ?

- Ratio of the circumference to the diameter of an igloo? = Eskimo Pi
- One million bicycles? = Two megacycles
- 2000 pounds of Chinese soup? = Won ton
- 1,000,000 aches? = One megahertz
- Shortest distance between two jokes? = A straight line
- 8 nickels? = Two paradigms
- Basic unit of laryngitis? = One hoarsepower
- 10 rations? = One decoration
- Time from slipping on a peel to smacking on the pavement? = One bananosecond