

October Mtg Fri 6:30 Oct. 27 at the
MCL Cafeteria in Kettering

Oct. 2017

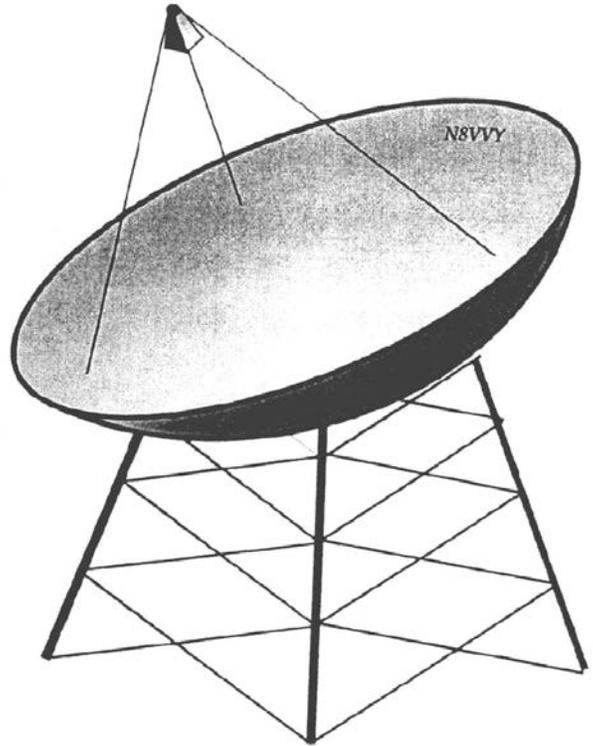
ANOMALOUS PROPAGATION

Newsletter: *The Midwest VHF/UHF
Society*

Editors:

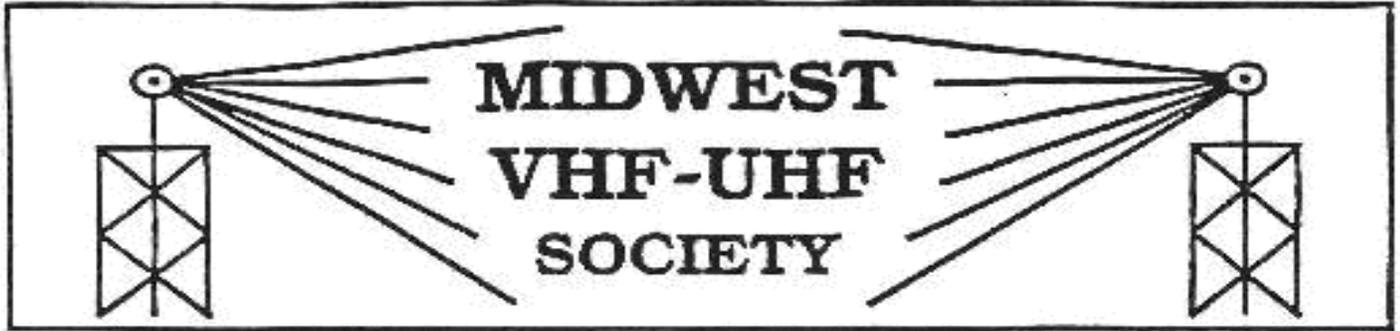
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Beacons: 1296.079 **W8KSE** EM79ur Dayton, OH---- 2W to Big Wheel at 800' AGL.

Listen for the **K9AYA Beacons** at EM79qk, 2W @ 10,368.000 MHz
both are copied by K4TO daily. 1W @ 5,760.000 MHz

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**2017 AMSAT Space Symposium Fri-Sun, Oct 27, 28, 29,
in Reno, Nevada. Silver Legacy Resort**

**Microwave Update 2017Conference. Oct 26-29, 2017
in Santa Clara, California, Biltmore Hotel**

De N8ZM: The on-going saga of disasters hasn't quite ended (this column's perpetual disaster area designation notwithstanding), but maybe there is a light at the end of the tunnel that isn't a freight train after all. Hurricane season is not over yet and the fires are still burning in CA as I write this, but it appears that we might have caught a break so that we can get more into recovery mode. Let's hope. And also I hope that none of you suffered any damage or worse.

The Hurricane in Puerto Rico and the fires in Santa Rosa have been of particular interest to Daun, N8ASB, Dana, W8YUM, and myself. Dana worked at Arecibo for many years, Daun has worked a couple of temporary jobs there, and I, well, at least got to visit there one morning a few years ago. Also, Daun and I both worked at one time for the test equipment company in Santa Rosa now known as Keysight, but which was originally a part of HP. That facility just missed a direct hit and serious damage by the fires, although we do have several friends in that area who we have heard lost their homes. Our interconnected world, much of it by radio schemes, has made it very likely nowadays that we will know someone directly affected by these monster events. While it is interesting to see pictures of the tremendous damage done to things in these areas, it can be difficult to really grasp the damage to peoples' lives, and not just of those who died. The survivors will have much to do to try to recover and rebuild what was taken away from them so quickly. I hope for the best for all of those folks, and that if you or any friends or family were affected that the recovery will be rapid and as painless as possible. End of Debby Downer mode.

The 2017 Microwave Update Conference (MUD) will be held the same weekend as our October MVUS meeting, and Mike, W8RKO, is planning to be there to scope out how they do it on the left coast so that we will have some good ideas for our hosting of the event next Fall. We have the venue lined up but pretty much everything else has not yet been kicked off. However, now is the time for the rest of the tasks to be assigned and get moving. I suppose by virtue of having pushed things along thus far, that I am the de facto chair of the event. Don't let that stop any of you who wish to stage a rebellion, however. At our meeting this month I plan to start serious arm twisting for 'volunteers' to take on the various tasks required. If you are smart, you'll sign up to solicit talks/papers, create the web pages, handle registration, plan the banquet, put out publicity, obtain prizes, or organize the flea market BEFORE I come looking for you. You all know quite well that the more pieces we can break this pie into the less work for all of us, so please raise your hand now. October 2018 will be on us much too soon! Thanks.

Coming up on November 2nd is the ARRL Frequency Measurement Test. As you probably know, Mike, W8RKO, is often one of the transmitting stations for this event, although this time around the format is such that Mike won't need to be involved. SO, he is planning to be on the receiving end this time. Good luck, Mike! Of course, the rest of you can participate as well. See the latest QST for details. Or the ARRL web site. And now that John, N8UR, is back in the Dayton area, I'm sure he will not only attempt to participate but will also have some interesting approach(es) to making his measurements. While his lab is not yet fully back up and running due to his recent move, I'd be very surprised if he doesn't try to do something.

I have had a decent response to my request to move MVUS members from paper to electronic receipt of Anom Prop, and I want to thank you for your cooperation. It was also nice to learn that at least a few of you actually read my column! Thanks!

Tom, N8ZM

Re Roster.

In last months printed version of the newsletter some page numbers need to be reversed: page 9 should be page 10, and page 10 should be pg. 9

The PDF, sent to the e-mail list has the correct page numbers. The listing goes by suffix of the calls like in my call: WB8 IFM, the prefix is WB8 and the suffix is IFM.

Also there is one error: in the Zip code for W9SZ (5th entry from the end of the list), omit the zero to make it 61821.

This & That 10-17

Decision making. The man who makes no mistakes does not usually make anything.
[Edward John Phelps]

Book Review. The book by Paul Hoch: Rip Off the Big Game, totally rejects all my beliefs about sports. Always infuriating, sometimes unfair, grotesquely anti-capitalist, it is nevertheless a good book to read if you want the cobwebs blasted from your eyes.
[James Mitchener]

Devil's Brew. 450 nuclear plants are near their end of service. Only 17 have been properly "decommissioned" which process can cost as much as \$1.5 billion.
[W.S.J.]

The Secret. A good sermon is to have a good beginning and a good ending and to have those as close together as possible.
[George Burns]

Be Carefull about reading health books. You may die of a misprint.
[Mark Twain]

By all means, marry. If you get a good wife, you'll become happy; if you get a bad one, you'll become a philosopher.
[Socrates]

I have never hated a man enough to give his diamonds back.
[Zsa Zsa Gabor]

11-inch cigarettes, called Head Play, were sold in the 1930s. A client says they were a taxdodge. They came five in a pack. You only paid tax on the five, but were advised to cut each into four to get 20.
[L.M. Boyd]

Riding a Horse in Buryat: "I was five years old, the first time I rode a horse... my father just lifted me up and put me on, then gave the horse a slap, and off I went...
[Tsyren Dulma]

First Duty of the Citizen. It is the first responsibility of every citizen to question authority.
[Ben Franklin]

Martin Luther decided, his marriage would please his father, rile the pope, cause the angels to laugh and the devils to weep!
[excerpt from Garrison Keillor]

Manipulate History. Who controls the past controls the future. Who controls the present controls the past.
[George Orwell "1984"]

Political Language is designed to make lies sound truthful and murder respectable, and to give an appearance of solidity to pure wind.
[George Orwell]

Communication. "Here I am, there you are. We are not alone."
[John Cord Lagemann]

TV-Ads. "More than \$70 billion per year is spent on traditional television advertisements."
[Business News]

Space Station (9-25-2017)

By Gerd, WB8IFM

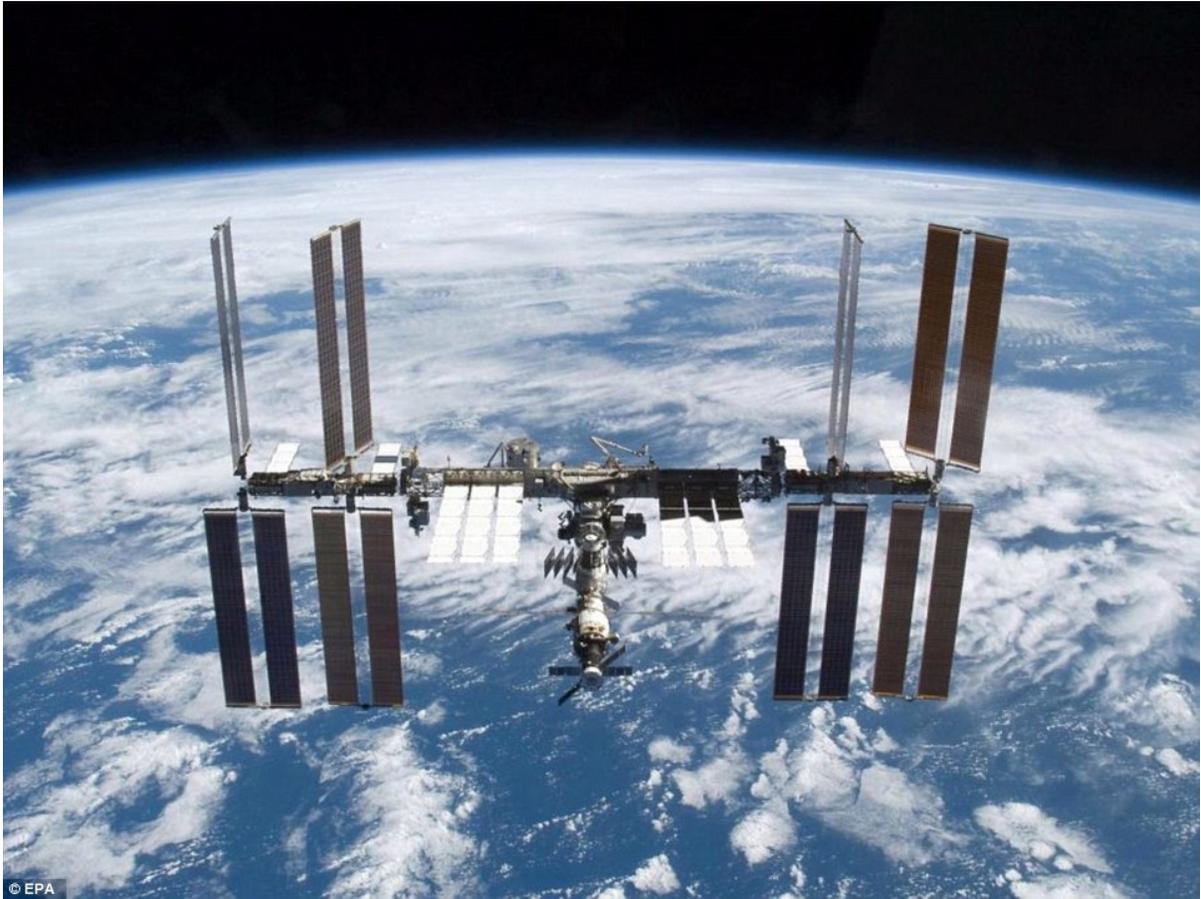
We have a weatherman in Dayton who does more than look at the sky. He often mentions not only the clouds, but what else is up there. There are, of course, the planets and the stars. Then you have comets, asteroids and not to forget, satellites. So, although most giving a summary of the present weather situation in a short paragraph, he sometimes mentions meteor showers auroras or the space stations, these are subjects well known to hams and the other day when he listed three days with visibility times of the space station for the Dayton area, I took notes and decided to give it another try. The space station, of course is a huge target and though about 250 miles high, quite visible when in the clear with the sun shining on it. Thus the best observation times are the hour after sunset, which is right now around 7:30 PM, very convenient to watch, you've just had supper, watched the evening news and were about to check what else was there on TV before going to read a book or study magazines.

In the past, I've had not too much luck, even with exact times published in our paper by the weatherman Eric Ellwell. The last time I had seen the Space station was many years ago, at a time when it was real news and all you had to do wait for sunset and keep looking up in the sky. So one evening I did see it from our back yard. Soon the Space Station was included in the Orbiting Satellite Programs and Data are readily available making prediction easy. A number of Hams got deeper into it and there is even now a Hamstation on board. Visually, with binoculars, you can actually make out some details.

Even at the 250 miles height an object 360 feet by 240 feet, slightly larger than a football field, is a big target and hit by the sun makes a very bright object. But at recent attempts I had no success in spotting the Space Station. Many times there were clouds, And then you only have a window of a few minutes. In appearance it is similar to watching an airplane w/o the blinking lights. Of course in brightness, it usually is like a close planet, as is Venus.

This time Eric had given the dates for 3 days: Sunday, Monday & Tuesday. Sunday we went to a concert, Monday there were high clouds, but with a few less denser spots, so we still watched, but no success. Successively the observation times had gone from 3 to 4 to five minutes on Tuesday. So Tuesday I didn't want to miss. The direction to look was also given: coming from the SW and heading to the North East. Our lot has nice open area in front of the house, but all around are mostly fairly tall trees. I went outside at the advertised time, the XYL stayed behind. Standing approximately in the center of our front lawn I looked in the South Westerly direction. And low and behold: there it was. It was very bright, absolutely moving, you expected it to make a noise and present a blinking light.... I ran to the front door, called the xyl. The shuttle came right at us and passed almost exactly overhead towards the NE, as predicted. Then, after another minute or so it went right between two trees down towards the horizon. .

If I had been more confident I would have brought my binoculars out, but there was no way to do that after it came into view, considering the few minutes we had for viewing It was another experience you never forget, like it was for the eclipse just a few weeks earlier, in August.



The International Space Station (launched on 29 Sept. 1998)

Future of NASA

“Should the United States lead the people of this planet forward on the most technically challenging endeavor of exploration ever undertaken?

Or should we sit back and watch as the world passes us by,

as we wallow in our past glory as the first real space-faring nation?

[Pete Bythrow]

CERN

On this day (Sept 29) in 1954, the European Organization for Nuclear Research, better known as CERN, came into being. At the end of World War II, the United Nations began to investigate the possibility of a joint research laboratory, with the goal of understanding the inner workings of the atom. European scientists hoped CERN would help put them back on the map, after the delays of war. Nuclear research came with a high price, and a collaborative center promised to benefit multiple nations. The convention establishing CERN was signed by Sweden, Belgium, France, Germany, Greece, Denmark, Italy, Norway, the Netherlands, Switzerland, the U.K., and Yugoslavia. Officials looked on as workers broke ground near Geneva, where CERN still operates today.

CERN's fundamental goal was to better understand natural law using particle accelerators, which smash particles together at close to the speed of light. CERN's first accelerator was built in 1957. In the decades that followed, scientists who worked with CERN made progress in understanding antimatter, biology, nuclear medicine, and radiation. These days, CERN still uses particle accelerators to investigate the origins and materials of the universe.

In 1990, the first World Wide Web server was launched from CERN's lab. In 1993, CERN made the technology available for free, ushering the Internet into public life.

CERN's advancements have not always been received with open arms. CERN's Large Hydrogen Collider, or LHC, the largest machine in existence, began to operate in 2008 amid plenty of controversy. The LHC represented the most important experiment in particle physics to date, and CERN employed half of all the world's particle physicists. But CERN faced a legal battle waged by those worried that the machine could create a black hole capable of devouring the Earth. While still controversial, LHC remains in operation, and the Earth has yet to vanish.

*From The Writer's Almanac by Garrison Keillor***Max**

Planck 1858-1947

We have no right to assume that any physical law exists, or if they have existed up to now, that they will continue to exist in a similar manor in the future.

[in *The Universe in the Light of Modern Physics*. 1931]

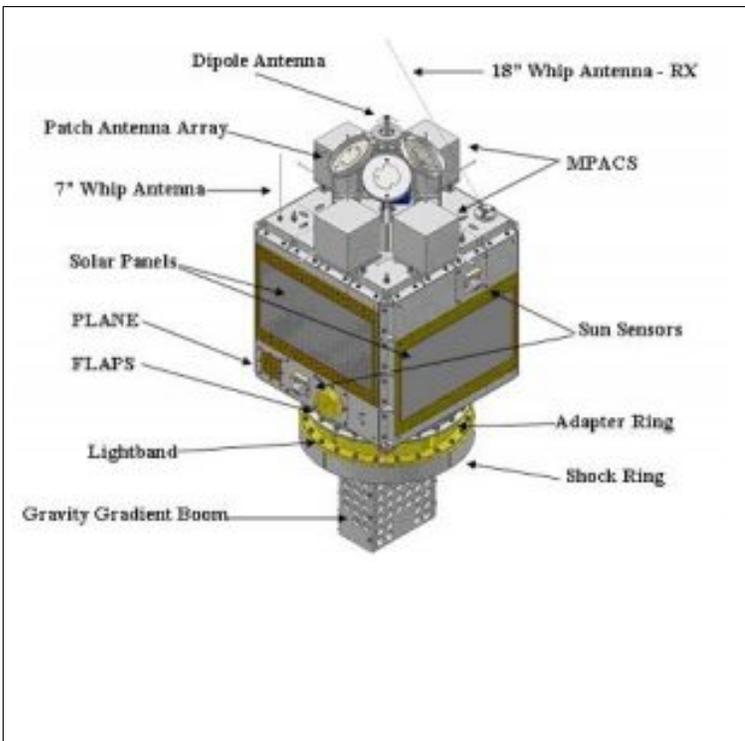
Anybody who has been seriously engaged to scientific work of any kind realizes that over the entrance to the gates of the temple of science are written the words: Ye must have faith. It is a quality which the scientist cannot dispense with.

[in *Where is Science Going?* 1932]

An important scientific innovation rarely makes its way by gradually winning over and converting its opponents: it rarely happens that Saul becomes Paul. What does happen is that its opponents gradually die out and that the growing generation is familiarized with the idea from the beginning.

[in *The Philosophy of Physics* 1936]

FalconSAT-3



FalconSAT-3 was built in 2005 and 2006 by cadets and faculty in the Space Systems Research Center at the US Air Force Academy in Colorado Springs, CO. It is the fourth in a series of small satellites designed, built and operated there as part of a capstone course and which brings together about 30 cadets each year from several different academic departments.

Since its launch on an Atlas V from Cape Canaveral in March, 2007, it has been through two mission phases and is now entering its third. The first mission phase was operation of the science payloads. In the second it was used as a tool for training cadets in the space operations squadron and students in both undergraduate space training in California and graduate students at the Air Force Institute of Technology. Finally, it's third planned mission phase is an on-orbit resource in the Amateur Radio Service (ARS). The first two phases are complete and the ARS payload has now been activated. Operation as an ARS satellite is being managed by AMSAT-NA.

New Cube Sat

ARLS011 RadFxSat (Fox-1B) FM Satellite Set to Launch in November

Space Bulletin 011 ARLS011 >From ARRL Headquarters Newington, CT October 20, 2017

The next AMSAT Fox-1 satellite, RadFxSat (Fox-1B), is scheduled to launch on November 10 at 0947 UTC. RadFxSat (Fox-1B), which will carry a 435/145 MHz FM transponder, is one of four CubeSats making up the NASA ELaNa XIV mission, riding as secondary payloads aboard the Joint Polar Satellite System-1 (JPSS-1) mission. JPSS-1 will launch on a Delta II vehicle from Vandenberg Air Force Base, California.

Information on ELaNa can be found at, <https://www.nasa.gov/content/about-elana> .

RadFxSat is a partnership with Vanderbilt University Institute for Space and Defense Electronics (ISDE) and hosts four payloads for the study of radiation effects on commercial off-the-shelf components. It will carry a Fox-1 style FM U/V repeater with an uplink on 435.250 MHz (67.0 Hz CTCSS) and a downlink on 145.960 MHz. Satellite and experiment telemetry will be downlinked via the DUV subaudible telemetry stream, which can be decoded using FoxTelem software. The FoxTelem software can be downloaded from, <https://www.amsat.org/foxtelem-software-for-windows-mac-linux/> .

Transistor radio

10-18-2017... It was on this day in 1954 that the first transistor radio appeared on the market.

Transistors were a big breakthrough in electronics — a new way to amplify signals. They replaced vacuum tubes, which were fragile, slow to warm up, and unreliable. During World War II, there was a big funding push to try to update vacuum tubes, since they were used in radio-controlled bombs but didn't work very well. A team of scientists at Bell Laboratories invented the first transistor technology in 1947. But the announcement didn't make much of an impact because transistors had limited use for everyday consumers — they were used mainly in military technology, telephone switching equipment, and hearing aids.

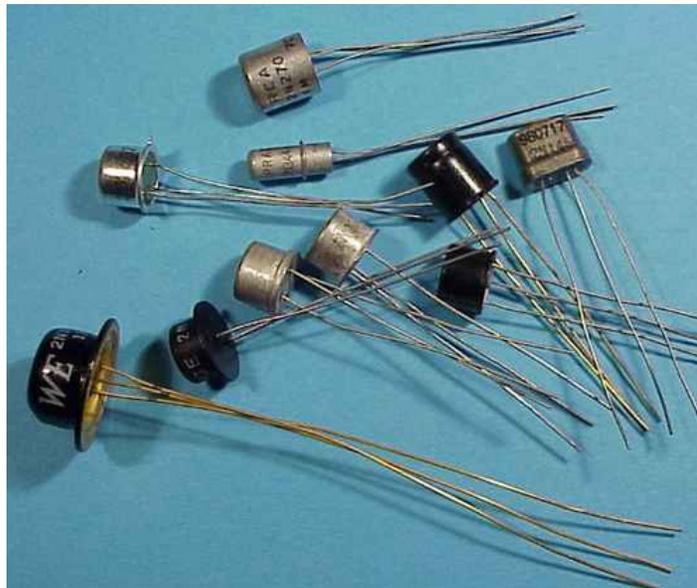
Several companies bought licenses from Bell, including Texas Instruments, who was bent on being the first to market with a transistor radio. Radios were mostly big, bulky devices that stayed in one place — usually in the living room — while the whole family gathered around to listen to programming. There were some portable radios made with vacuum tubes, but they were about the size of lunch boxes, they used heavy nonrechargeable batteries, they took a long time to start working while the tubes warmed up, and they were fragile. Texas Instruments was determined to create a radio that was small and portable, and to get it out for the Christmas shopping season. They produced the transistors, and they partnered with the Regency Division of Industrial Development Engineering Associates, who manufactured the actual radios. Their new radio, the Regency TR-1, turned on immediately, weighed half a pound, and could fit in your pocket. It cost \$49.95, and more than 100,000 were sold.

Texas Instruments went on to pursue other projects, but a Japanese company called Tokyo Tsushin Kogyo decided to make transistor radios their main enterprise. They were concerned that their name was too difficult for an American audience to pronounce, so they decided to rebrand themselves with something simpler. They looked up the Latin word for sound, which was *sonus*. And they liked the term *sonny boys* — English slang that was used in Japan for exceptionally bright, promising boys. And so the company Sony was born. Soon transistor radios were cheap and prevalent.

With transistor radios, teenagers were able to listen to music out of their parents' earshot. This made possible the explosion of a new genre of American music: rock and roll.

From the Writer's Almanac by Garrison Keillor

Early Transistors



News from Puerto Rico as of 29 Sept.2017 per e-mail

I got the following from **Jim (WA3FET)**, who summarizes what he learned from **Angel (WP3R)**, who is chief telescope operator at the Arecibo Observatory:

Hello All, I was able to make contact with Angel Vazquez, WP3R, tonight on Ham Radio. He was on generator power from his home. He and his relatives staying in his home are safe. He lost every tree around his house and his neighbors. His Ham Radio antenna looks messed up but still was working. He lost all his wire antennas. He has not been able to get any contact with Arecibo observatory even though he tried.

He cannot go out to the left or right on his road right out from his driveway. To the left all the power poles are broken and down on the road with all the wires, etc. There is no way to go up that way. To the right, he said one wooden house blew off its foundation and on top of a cement house. He said another house was blown right into the middle of the street. He cannot go left or right. He only has fuel for about 10 hours of the generator so he has to conserve the power.

He has no way to get to my farm there and check my Ham Radio antennas. I am prepared to hear that they are all damaged and down. I just hope the Arecibo Observatory did not get too damaged. The eye went right over Arecibo. Angel said he heard that the winds peaked at 155 mph as it went by Arecibo.

That is about all for now and if you have Ham Radio, he will try to be on 14.260 MHz tomorrow sometime to report more. He said that he cannot check some of his and his wife's relatives there since there is no communication and he cannot get anywhere with the road blocked left and right.

It is really bad he said. I will try to report more when I get it. If you know anyone that I forgot to include in this email, please pass on this info. Thanks, Jim, Dana.

Google Balloons for Puerto Rico?

Some relief could be on the way from above, however, in the form of massive, translucent plastic balloons. Launched by Alphabet—Google's parent company—the balloons could create a network to restore wireless communications for most of the island's 3.4 million residents.

The floating orbs—which look and move like jellyfish drifting in Earth's stratosphere—are part of [Project Loon](#), Alphabet's experimental effort to deliver wireless services to unserved or underserved areas around the world. Puerto Rico will be Project Loon's biggest challenge since Alphabet's X (previously known as Google X) officially launched the effort in 2013. X's plan is to float the solar-powered, helium-filled balloons about 19 kilometers above [Puerto Rico and the U.S. Virgin Islands for up to six months](#), creating a wireless network on the ground covering nearly 7,800 square kilometers. (The island itself is just over 9,100 square kilometers.) The balloons can stay aloft in the stratosphere for 100 days or more at a time, according to the company. They change position by [navigating the stratosphere's well-charted wind currents](#).