Official Publication of the
West Allis Radio Amateur Club

Hamtrix

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Volume 74, Issue 1 Janurary, 2025

JANUARY CLUB HAPPENINGS

NUT NET
3.985mhz
Monday-Saturday
8:15am CT

WARAC 4th Tuesday Breakfast
At the Forum
Layton & Hyw 100 at
8:30am

The Milwaukee-Florida Net time is:
7:15 – 8:00AM Central
8:15 – 9:00AM Eastern
Mon through Sat

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Board Meeting on Tuesday, Jan 28th @ 7:00 PM
https://meet.jit.si/WARACHamRadioClubVirtualMeeting

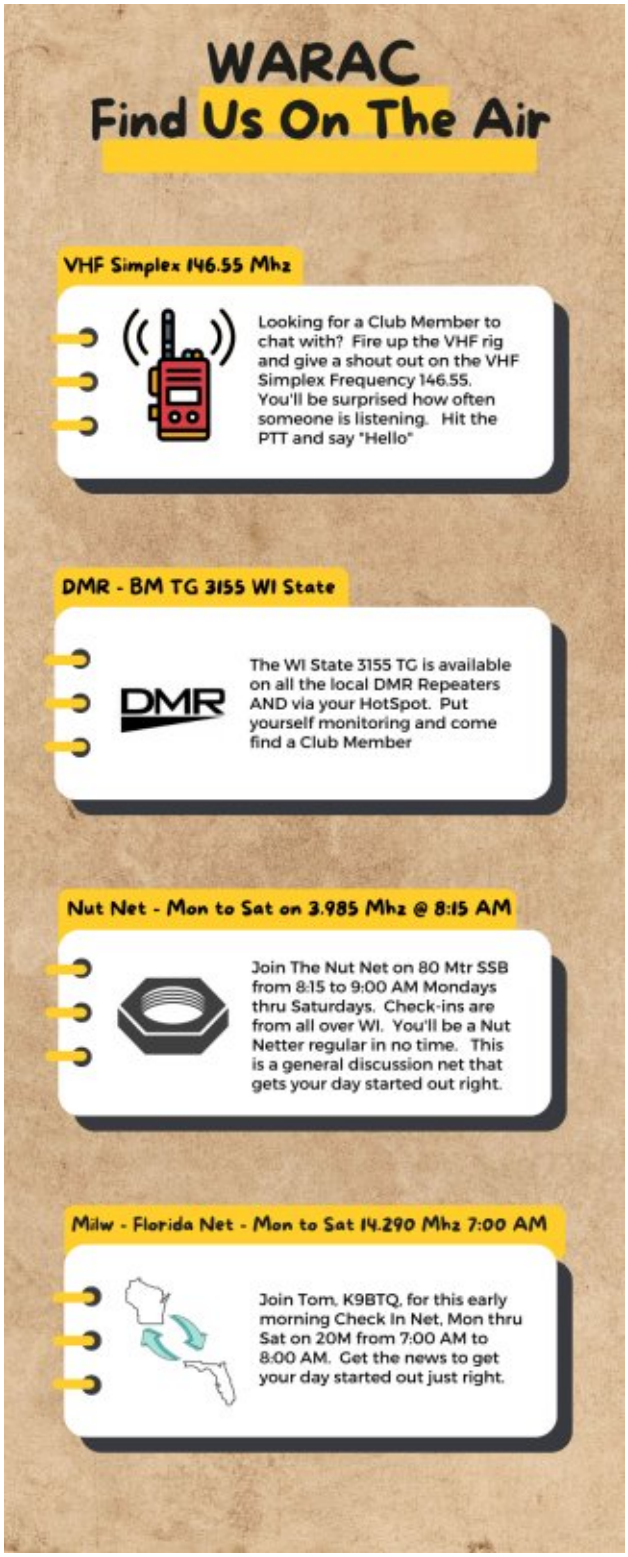
WARAC 4th Tuesday Breakfast

NOTE NEW LOCATION

Several years ago there was talk among Nut Net members that we should get to meet each other. A breakfast get together idea was started. It was open to all hams, XYL/partners and anyone who wanted to learn about amateur radio. Even visiting OM/ XYL couples joined us.

So, on the fourth Tuesday each month at 8:30 am we meet at **The Forum Restaurant, corner of HWY 100 and Layton, Greenfield, WI**. Looking forward to seeing you, mark your calendar.

Phil, W9NAW



2025 Begins !!

The club meeting this month is the wonderful After the Holiday's Dinner. Knock on wood that the Pizzaman Restaurant and the weather, all turn out as expected. Bring along your significant other to make the evening all that much better. So 6:30 PM at the Wawautosa Pizzaman Restaurant on Tuesday, Jan 14th. It is already circled on my calendar.

I hope your Christmas / New Year events were all successful, and perhaps not overly stressful. Can't complain about the weather. We were wandering around downtown Milwaukee on "Boxing Day" in balmy 50 Deg temps. How nice. Despite having the house full of the usual suspects, I managed to wrangle a few Canadian QSO's for the RAC Winter Canada Day contest. It wouldn't be Christmas without Canada Day.

Speaking of the spirit of giving, for those keeping track, the final tally for the member contributions to the WI QSO Party Tech Upgrade came to $550. That put us well past the goal and speaks so well for the club's support for this Wisconsin tradition. Checking with WIQP Chairman Chuck, he reports the new gear and software is in place and being put to work as we speak. He was a bit dodgy on the details of the software database work, so it looks to be a work in progress. Thank you to everyone that made this such a wonderful Christmas surprise.

For club business, note that Bill D will be publishing the 2025 WARAC Directory this month. If you have not renewed your membership, time is just about up to be included in what will be the WARAC publication of the year. Well, PDF publication of the year. Also we have a quarterly board meeting at the end of the month. All members are welcome to attend. Notification and Jitsi online meeting details are in Hamtrix.

Happy New Year to all. Looking forward to seeing everyone at Pizzaman.

WARAC General Meeting Minutes – December 10, 2024

Called to order by Mike Johnson WO9B @ 7pm.

Attendance: 28 – 25 Member's, 3 Visitor's.

Hamclock Drawing $5/ticket: 2 Hamclock's (1 on a Pi Zero W, the 2nd on o Pi Zero W-2), 1 Arrl Calendar.

Mike – Did intro's.

Remember Membership renewal. See Bill Reed N9KPH.

2025 Club Directory will be available in February.

Nov. 12th General Meeting Minutes: - Approved.
Dec. 3rd Board Meeting Minutes: - Approved.

Treasurers Report: Checking $6.4k, CD $5.3k, Scholarship CD $12.5k.

2 - Funding requests were brought to the Board.
The Board has a $250 Limit before having to bring to the Membership for a Vote.

1. WIQP Computer, software update. $700 was requested. We were able to reduce to $500.
Dues invoices were sent out with a note requesting donations for the WIQP upgrade. As of today the club members have given $440. The Board approved the remaining amount as of last week.

* Chuck already ordered the computer hardware, to take advantage of the Black Friday sales. A Win11 Mini computer. Feroz is helping out with our 501c3 status with getting the software update, additional ram.

2. 2025 Scholarship: The Arrl Fund normally earns $2k. The Board is asking for approval to use $1k of the clubs scholarship fund to make it a $3k scholarship for 2025. So the Board can work with the upcoming Arrl deadlines and framework. Motion "We are requesting the membership approve a disbursement not to exceed $1000 from the club's scholarship accounts for WARAC's portion of the 2025 scholarship." - Approved.

Mike plans to focus on the Website upgrade for the rest of December.
Feroz: Symposium, working on.
Bill D: 2025 Directory. Started on. Planed for February release.
New Berlin out reach – January.
Frank: Sendix's. January for picking dates.
Hamtrix: If you don't receive the email with the Hamtrix link on the Fri. before the meeting. Contact Frank.
Phil: No Dec. 4th Tuesday Breakfast meeting.
Holiday Party - Tuesday January 14th 6:30pm at Pizza Man Wauwatosa.
February: WIQO Party Meeting.
March: Pierre has arranged for Jim Burns of the New Berlin Emergency management to give a demonstration.

from /HamClock /https://www.clearskyinstitute.com/ham/HamClock/ From the desktop tab

Ham Clock is a custom-able tool you can setup the way you want. You can display multiple panels.

Space/ local weather, radio propagation modes, DX clusters, map functions/styles, clock-local/utc, vocap map, DE-DX, short path/long path, live spots, gray-line. You can connect to wspr Db, RBN, PSK reporter. Contests, clusters, events. POTA, SOTA, Sat tracking and more. The Pi has io options for external inputs. Chuck showed and explained the different panels he uses in his HamClock setup.

Meeting Adjourned at 8:30 pm.

Respectfully Submitted
Bill Dargis KD9BJZ
Secretary WARAC, December 10, 2024

Contest Corner and DX Report
Michael Falk, AA9RK

New year, new contests?

By the time you read this, it'll be time to warm your keyers up for the North American QSO Party (CW). It's a manageable 12 hours long on Saturday, January 11th, 2025. It's an easy exchange (first name and state) and you'll find lots and lots of activity on 10-80 meters CW. (I can't speak for 160 – I can't tune my little dipole up on that band – but the other ones will be hoppin', I can tell you from experience.) If CW is not your cup of tea, there is a digital contest run by the RSGB (Radio Society of Great Britain) on Sunday of the same weekend.

The NAQP happens 6 times per year – twice each on CW, SSB, and RTTY – and the SSB version takes place the following weekend, on Saturday, January 18th. (The RTTY event will be in February, and then RTTY will run again in July, with CW and SSB in August.) Again, expect activity levels to be high for the entire 12 hours. There are many other contests competing for bandwidth on the 18th and 19th, including the Hungarian DX Contest (CW and SSB), the Radio Society of Great Britain's SSB contest, the North American Collegiate Championship (also HF SSB), and the ARRL'S January VHF Contest. I participate in the VHF contests almost every time around. January can be a slog unless there is some sort of interesting propagation. (Sometimes you are lucky enough to get a little bit of January Sporadic-E, making 6 meter contacts in the 1000 mile range possible.) If there's no propagation enhancement, the VHF contests tend to take place mostly on the FT8 or Q65 digital modes; otherwise, anything goes.

On the weekend of January 25th and 26th, if you have that Top Band antenna that I don't have, you can take part in the CQ Worldwide 160-Meter Contest (CW). It is 48 hours, a single band, and lots of activity. If you're like me, though, give Winter Field Day a look. In recent years, WFD has grown up quite a bit, and it has become quite a different event. There is focus on making contacts, of course, but there is also a lot of focus on using different modes, using different bands, operating with emergency power, setting up someplace other than your home shack, setting up a different antenna, and more. They refer to these as objectives, and they count as multipliers. This year will be my 6th WFD and I'm looking forward to it. Check out winterfieldday.org for more information.

There is also a British RTTY Sprint contest happening that weekend, if Winter Field Day doesn't appeal to you. In this case, "Sprint" just means that the contest is a short 24 hours long!

As February comes around, the first weekend brings a ton of events. I've talked about Sprint events in this column before. The idea is that you answer a CQ and complete a QSO, then the frequency is yours to call CQ. Then after someone answers you, you give them the frequency and tune away. It is extremely well-regimented chaos. The CW Sprint is 4 hours on the evening of Saturday, February 2nd, and I plan to be on the air for it. That weekend also brings the 10-10 International Winter SSB Contest, two state QSO parties (Vermont and Minnesota) as well as British Columbia's provincial QSO party. The European Union DX Contest is on the air (CW and SSB) along with the Mexican RTTY contest.

Speaking of RTTY, I want you to know about the CQ WW RTTY WPX Contest, February 7th through 9th. Publication deadlines mean that you might not read the February Hamtrix before the contest. There is a lot of activity, stateside and DX, for that contest, and everyone can contact everyone else. Those of us with modest stations really like those rules. RTTY is a ton of fun, but it's not something to set up on the fly. Take the time before the event to try it out, and that gives you a better chance of success during the event.

Here are your January Dxpeditions:

Africa:

•**TY5C** Benin, in West Africa, is on most HF bands, CW and FT8, through April. The op is Gérard F5NVF.

•**5N9DTG** is being operated by the Rebel DX group from Nigeria, 160-6 meters, CW and FT8. They'll be on the air during the third week of January, in their words.

•**9X2AW** in Rwanda is a holiday-style DXpedition from January 27 to February 15 on satellites and HF, 160-10 meters, all modes.

Atlantic:

•**OX3LX** is a holiday-style DXpedition to Greenland from January 7th to the 21st. He has not committed to specific bands or modes.

•**ZD7DPX** in St. Helena in the South Atlantic will be QRV from January 21st to February 3rd. It is a holiday-style; 1 op, limited hours. He'll be on 160-6 meters, SSB and FT modes.
is on the air from Guadeloupe in the Caribbean from January 9-26, holiday style, all modes, at 100 W with a Buddipole.

Pacific:

•**TX7N** is a big DXpedition to the Marquesas islands in the Pacific. Follow their progress on tx7n.com. They are already setting up and unpacking, hoping to be on the air from January 12th through 27th. They'll use TX7WW as their call during the CQWW 160 meter contest, CW.

•**DP1POL** is QRV from Neumayer Station III on the Ekström Ice Shelf in Antarctica. Look it up if you get the chance; it is wild, the way they live on an ice shelf in the Antarctic summer. He is operating part time from January 12 to February 25, HF, mostly CW, with phone and digital as time permits.

See you next month,

-Michael AA9RK

The Livonia Amateur Radio Club

Swap-n-Shop

Saturday

February 22, 2025

Sale Hours: 8:00 AM to 12 Noon

Absolutely no buying or selling before 8:00 AM

Buy, Sell or Trade
Amateur Radio Gear
ARRL Sanctioned

* ***Electronics***
* ***Antennas***
* ***Test Equipment***
* ***Computers***
* ***Ham shack accessories & more!***

NEW LOCATION!

Ward Church, Knox Hall
40000 Six Mile Road
Northville, MI 48168
West of Haggerty Road

Talk-In: K8UNS LARC Repeater
145.35 PL 100 Hz

Door Prizes from **ARRL** and
ALPHA ANTENNA®

· $100 Cash Grand Prize! ·

ADMISSION: STILL ONLY $5! (cash @ door)

Admission ticket pre-sales are available only to vendors/sellers with advance table purchases; visit the website for reservation info.

https://livoniaarc.com/larc-annual-swap-and-shop/

swap@livoniaarc.com

Phone: 734-648-6453

Same-day tables are subject to availability.

DIGITAL DIGEST

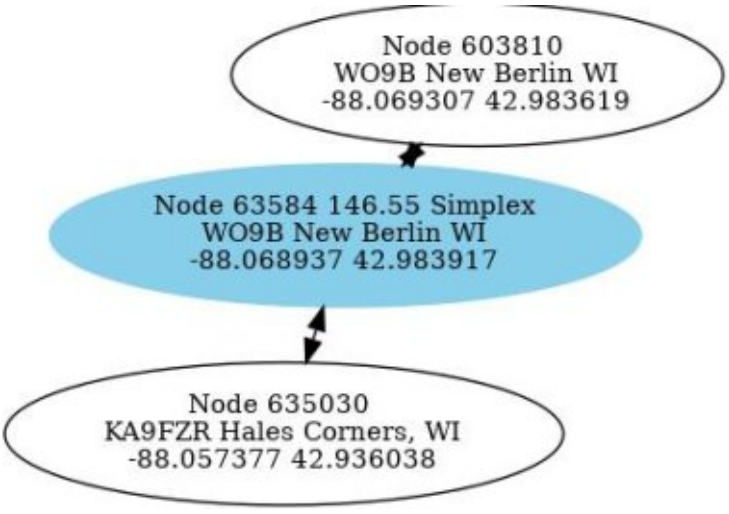
January 2025 * Hamtrix * By Michael Johnson, WO9B

AllstarLink Rally Point Node

December has been a busy month for my AllstarLink (ASL) adventures. My curiosity with that mode has blossomed into a full fledged obsession. Not the first time a shiny new bauble has caught my fancy. ASL is just slightly mysterious in that their documentation, at least to me as a full blown nubie, is not really geared to the uninitiated. Spending copious amounts of time with the mode does ease the problem, but like learning a foreign language, it takes time to pick up on the grammar. I'm getting better and having a lot of fun in the process.

I made the decision to abandon my WinLink node and repurpose the radio and modem gear into a full time ASL node that is parked on the VHF simplex frequency of 146.55. I'm calling this endeavor a Rally Point with the hope that maybe, just maybe, it might work out to be a nice little spot in the local radio spectrum that WARAC can call home. As a club, we don't have a repeater and I'm pretty safe in saying we don't want one. So unlike other club's, we don't have that RF spot for the WARAC faithful to gather and chit chat from time to time. Well maybe 146.55 can help that cause out just a bit.

Using VHF simplex frequencies is a challenge. You're not going to have great success with an HT from your living room, that's for sure. Using a base or mobile radio generally gives surprising results and a decent coverage area which is generally defined as the area most of our members reside in. If you have a 2 meter base station setup, give it a try. Hit the PTT and announce yourself as monitoring and you just might be surprised that you get a response. I certainly have a capable base station setup, but there is still just something about the convenience of not being tethered to the operating position that is attractive to me. That is where the ASL node comes into play.



Actually, I set up two nodes. Node #63584 consists of a Raspberry Pi 4 attached to a Yaesu FT-6000R mobile radio running 25W on 146.55 mhz to a dedicated 2m vertical. It has pretty good coverage but I do plan to raise the antenna height a bit in the spring. The second node #603810 is my tried and true Shari Pi Node which uses a Raspberry Pi Zero 2 W. This is the node I use with my HT from anywhere in my house/yard. By connecting the two nodes together, effectively ASL then connects my HT to the Yaesu mobile radio which is then, more or less, acting as a repeater on the 146.55 simplex frequency. Looking at the diagram, you'll notice that Frank, KA9FZR is also connected to the #63584 node. This allows Frank to use an HT at his QTH through his Shari Node to access the Yaesu mobile as well. Here's the thing, to anybody listening on 146.55 with their normal non-ASLlinked radio, they

would be able to QSO with Frank or myself as if we were all running a simplex radio. And there is no limit to how many connections can be made to any given node. The more the merrier. The user experience will be exactly the same as operating on the VHF/UHF FM bands.

I should also mention that as a bonus, for my always "on" Pi 4 node, I loaded up a copy of "Hamclock" as the Pi 4 is very very underutilized. I am enjoying the thrill of that amazing application throughout my wifi network. A really nice bonus.

If you are interested in pursuing an ASL node, don't be afraid of the learning curve. Like anything new, once you get past the initial introductory phase, the experience settles down quickly. Once up and running, it pretty much takes care of itself allowing you to just use it in a reliable and predictable fashion. There are a number of equipment avenues available, with most being Raspberry Pi based and having some kind of radio board attached. The node I set up for KA9FZR consisted of a Pi 4 matched with a Chinese Shari Board version having a total cost (Pi, Shari, SD Card, Cooling Case) of $90 or so. USA board options will add $30 or so and seem to be of better quality but not significantly such.

ASL issued a Version 3 release 6 months ago. It is proving to be very successful and I strongly recommend that you go that route. Though I am normally reluctant to use online forums for problem solving, I've had two interactions with ASL's forum and both were very positive. The responses were timely and helpful and non-judgemental.

ASL or not, stop on by 146.55. That is the real gold in this story.

AFTER THOUGHT: As an alternative way to access the "Rally Point", ASL works very well with EchoLink. I have not set that up at this point, but it is the next step on the To-Do list. EchoLink is easily set up on almost any computer, laptop, tablet, cell phone….you get the idea. I am also exploring other linking options such as DMR, System Fusion, D-Star. Of those options, Echolink is an easy, if almost native, option to pursue and does not require any additional hardware on my end. Just the time to do it. Stay tuned, I'll let you know when it is up and running.

From the Editor

It's January and a new year. No meeting this month, just a get together up at Pizza Man. For those that are new to the club this January meeting started a few years back. When we still had a January Swapfest. After working the fest most people had no problem with no meeting in January. So we started informally getting together for a meal. It has evolved over the years to what it is now. A good excuse to get together and have some fun!

Other Ham stuff; Playing with with HamClock and AllScan AllStar Still some bugs to work out on this end but I did use it enough to see real possibilities using it as another way to communicate around the world. Which is what Ham radio is all about.

Two ham radio projects are on hold waiting for better weather. The feed line to my roof mounted triband antenna needs to be replace. The second is to do some testing on my portable travel antenna with the so called Magic blanket. The Magic Blanket is a Faraday shield cloth with metal wires embedded in it. It will be interesting Maybe not interesting enough to dress for the weather but I'll have to see how it goes. When I worked I had the gear to go out in the winter and get work done so it's not out of the question !

Frank editor Hamtrix

ELMER **by Rich Regent, K9GDF**

2024 Challenge for our membership. Have someone you meet, Ham or Ham wannabe come to a meeting this year!

Swap Corner

FOR SALE

Yaesu FT 817Nd radio, LDG Z100 Autotuner (160-6 meters) in genuine Pelican case. Radio has WLB Lithium Polymer battery. Original manual. Rig hasn't been used much as the mode I bought it for was not enjoyable to me. $500.

Brad Smith KC9UQR
corlissbs@aol.com

The Winter Field Association Presents

Winter Field Day 2025

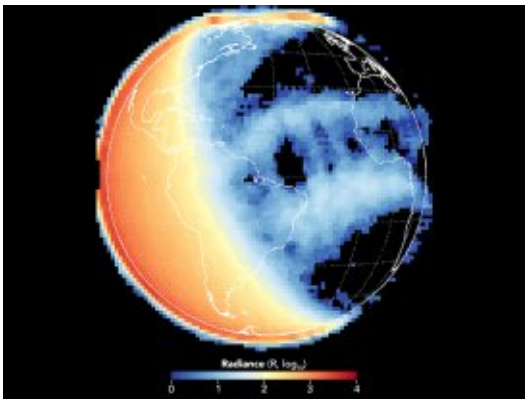
January 25th - 26th

Starts 1600 UTC Saturday January 25th
Ends 21:59 UTC Sunday January 26th

More Info

https://winterfieldday.org/downloads/2025-rules.pdf

Image from https://earthobservatory.nasa.gov/images/146043/a-golden-look-at-the-ionosphere



Space Part 2 – The Amazing Atmosphere
Tom Langer KD9FPC

Hello fellow WARAC members. Just back from outer space and back here in the shack. It was quite a trip.

This is a good time to differentiate two terms. They would be Ionosphere and Atmosphere. In our licensing studies we learned about the layers of the ionosphere. Each layer has significance in our propagation and antennas. Today we are looking at atmosphere. For reference here's the definition of ionosphere:

Ionosphere: the layer of the earth's atmosphere that contains a high concentration of ions and free electrons and is able to reflect radio waves. It lies above the mesosphere and extends from about 50 to 600 miles (80 to 1,000 km) above the earth's surface. Oxford Languages

For simplicity sake we will note where the ionosphere is in terms of our atmosphere. So, let's get going. Quoting a fellow ham…

"The Earth's atmosphere comprises five concentric spheres. Propagation in the lowest layer, the troposphere, is typically point to point. Propagation in the other four upper spheres (and onward to the Moon, around 384,000km away) involves some sort of reflection, refraction or scattering of the waves. There, signals from one point on the Earth's surface typically go up, get reflected, refracted or scattered and come back down somewhere else." (John Berry GM8JBJ 12/24)

For the next few minutes we'll look at each layer of the atmosphere and what is going on that impacts the earth and ourselves. This will be kind of an explanation that teeters between physics and astronomy, while impacting reflective radio waves. As usual we'll use a summary format to keep this on point and halfway organized.

Starting from the ground we stand on:

Layer 1 – Troposphere.

This is from the earth surface to about 10-12 miles at the equator and 5-7 miles at the poles.

Has 75% of the overall atmosphere mass density.

It is not constant and is moving around.

Average temperature at the ground globally is 62f, dropping to about -60f at the top (tropopause).

Contains nearly all of the water vapor.

Is within the D layer of the ionosphere.

Layer 2 – Stratosphere

From the troposphere to about 31 miles above earth.

Has about 19% of atmosphere's gases, very little moisture.

Temperature at the tropopause is -60f, rising to about 5f at the stratopause.

You will remember the discussion on lightning prior. The mention was made about anvil clouds in the troposphere. The top of the anvil is where the tropopause meets the stratosphere. The stratosphere stops the cloud from growing any higher.

Commercial jets often prefer this level for its lower density (drag) and smooth flying for turbulence reduction.

From the tropopause into the stratosphere is where you will also see the very rare "blue jet lightning".

For scale, the top of Mount Everest nearly reaches the tropopause so is near the stratosphere.

Is within the ionosphere D level.

Layer 3 – Mesosphere

This is from the stratopause to about 53 miles above earth.

The temperature begins at the 5f at the top of the stratosphere and drops to about -120f at the top.

While the gases are prevalent here, they are far thicker at the bottom than the top.

Please think back to the last Star Trek you saw, or other spaceship movie. When trouble approached they would put up the "force field". The mesosphere is the perfect force shield for earth. It is in this sphere that you will see meteorites and "shooting stars" come to burn up on their way towards earth. It is here where the space ships that return are dramatically shown glowing from the heat on re-entry. The mesosphere also works to protect all of us from massive doses of UV radiation, and acts as insulation. It really is amazing when you consider all of this is going on 24/365… always has and always will be unless God decides to change it.

In the ionosphere the D layer overlaps then the E layer begins at 50 miles.

Layer 4 – Thermosphere

This layer is from the mesosphere (53 miles) to 375 miles.

Gasses thin greatly in this sphere as you climb.

It is here high energy UV and x-ray radiation begins to be absorbed by the thin gasses and particles. As a result, while bottom temps are around the -184f level but increase to 3,600f to 4,500f.

One tremendous odd fact. Despite the measureable atmosphere you would be very cold here. It is because there are so few air molecules to transfer heat.

The density of any gas is so low that sound cannot transfer in this layer.

It is here that the Aurora "Northern Lights" are created.

This is the layer that the ISS and satellites travel in due to easier radio reflectivity and

thinner atmosphere resulting in less drag.

The name itself is from Greek where the word thermos means hot.

For you ionosphere users, this is where you find the overlap with the D, E, F1 and F2 layers.

Layer 5 – Exosphere

This layer starts at 375 miles above the earth reaching out to 6,200 miles.

This layer is what many refer to as the beginning of "space".

It is the earth's first line of protection from the sun, meteors, asteroids and cosmic rays.

Gasses are primarily helium and hydrogen, but have little density.

Highest level affected by very little of the earth's gravity.

Largest portion of the atmosphere.

You will find some satellites in this layer. There is very little friction due to lack of any density.

At the outside of the layer you will find atoms and molecules spinning off into space beyond.

So, our total atmosphere is 0 feet to 6,200 feet sea level. At Timmerman Field we are at 738 above sea level. To give some perspective we'll look at a few other major points in space.

Miles from earth:

Moon – 238,900 miles

Sun – 93 million miles

Neptune – 3 billion miles

Mars – 34 million miles

So, our earth really is pretty special, as are we as people. The more I study this universe, the more I am reminded of Psalm 19:1 - The heavens declare the glory of God; the skies proclaim the work of his hands.

Well that wraps up a brief trip into our atmosphere. Hopefully you share both an amazement and find the glory and look up tonight to the sky with a different appreciation. Our space trip is not yet over, we'll see more next month. In the meantime if you have a question about this or other articles in this series please email Frank and he'll pass it along.

I would like to take a moment to recognize and thank the following: John Berry, USCB Physics, NOAA, NASA, UCAR Center for Science, Vedau, National Geographic Foundation, American Meteorological Society, Quizlet and others.


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Image ID: 2M0F33R
www.alamy.com

CW Practice

One of the best and maybe the only way to get better at CW is practice. Having someone else who also wants to practice also helps. Just makes it more fun.

The West Allis Radio Club is going to try to help. We are running a CW practice net on Monday at 8pm The repeater is 147.045+ 127.3 the CW portion is on HF

Mike WO9B has been joining me and setting up some practice but we are open for suggestions on where to go with this. Come join us.

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Mike Johnson WO9B

Vice-President
Pierre Porter KD9SSY

Treasure:
Bill Reed N9KPH

Secretary:
Bill Dargis KD9BJZ

Committee member(2)
Jeff Pahl W9JSP
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