



Special Edition – 2023 DXCC Year End Review – by Joe Reisert, W1JR – January 8, 2023

2023 DXCC Year End Review by Joe Reisert, W1JR

Radio propagation with the rise of Solar Cycle (SC) 25 greatly improved DX. Conditions on the upper HF bands and even some F2 6 Meter openings occurred. Many DXpeditions were activated especially near the end of the year. Most of them experienced better propagation but increased costs. The rise in use of WSJT-X by many DXers was obvious. Overall, it was a great year for DXers with many things happening so let's get started.

2023 in Review: 287 DXCC entities were activated during 2023, at least 20 more than in 2022. Three on the Club Log "DXCC Most Wanted List" top 20 were activated: 3Y0J (Bouvet), FT8WW and PR0T. Unfortunately, the 3Y0J operation from Bouvet experienced landing and extreme severe weather difficulties and made just over 18,000 QSOs, a big disappointment for many. For three months FT8WW made over 51,000 QSOs as a single operator. The PR0T team operated over a long weekend making over 18,000 QSOs.



The 3Y0J team on Bouvet Island in February 2023.

Those active in the top 50 list included: 1S, 7O, H40, JD/M, KH8/S, T31, XZ and ZD9. Other semi-rare stations such as 3B9FR, 3D2AG (42KQ), 5W1SA, 9N7AA (65K), S01WS and VK9DX (45K) were active most of the year. FT8 DX activity except during major DX contests averaged 50-75% of the stations active on the bands during the year.

Many DX gatherings and conferences have now resumed although Covid is still out there. [HamVention](#) in Xenia, OH is ready to go joined with the ARRL National Convention. The [International DX Convention](#) in Visalia in April is still a go. Congratulations to K3VN and KO8SCA as the latest members to the [CQ Magazine DX Hall of Fame](#).

I dedicate the 2023 DXCC Year End Review to the memory of a great friend and DXer, [Fred Laun, K3ZO \(LU5HFI and HS0ZAR\)](#) for over 70 years in Ham Radio. He was a member of the Maxim Society, Director of the Yasme Foundation, FOC, [CQ Contest Hall of Fame](#), and W3 QSL Bureau manager to name a few. A great helper, friend too many and generous anonymous donor too many Ham Radio projects worldwide. Fred will be sorely missed.

Ham Radio and the Internet: There is no doubt that the internet has had a profound influence on DXing. The DX Spotting Networks on the internet consist of multiple DX Cluster nodes worldwide. Many DX Cluster related sites such as [DX Summit](#), [DXHeat](#), VE7CC, [RBN \(Reverse Beacon Network\)](#), [PSK Reporter](#) etc. are great resources for timely DX spotting activity and DX info.

When spotting DX on a DX Spotting Network, **make sure to show the exact frequency and mode of operation such as CW, SSB, FT8, FT8/FH** especially when the frequency spotted is not in the expected spectrum. **Please don't spot stations that you either aren't hearing or not sure of the call sign.** Also don't

ask for skeds or brag about your QSO etc. Most expeditions aren't watching a DX Spotting Network and many users don't appreciate these interruptions.

Radio Propagation: A recent report from NOAA Space Weather Prediction Center (SWPC) dated October 25, 2023 predicted that Solar Cycle 25 may reach solar maximum by October 2024, about a year earlier than their previous predictions. Recent evidence such as an increasingly strong solar flares and CMEs and the impending reversal of the solar polar magnetic fields lend support to SWPCs recent prediction.

A recent QST article by Frank, W3LPL (ref. 1) and a talk by Carl, K9LA (ref. 2) are also of interest. Remember that Frank, W3LPL is still reporting up to date HF propagation information daily on The Daily DX mailing list based on the latest NOAA/SWPC web pages.

Also check SWPCs Cycle Prediction. Watch for long path propagation to improve. We'll just have to wait and see. It remains to be seen if a link can be proven between the four Jovial planets Jupiter, Saturn, Neptune and Uranus and the long term solar cycle as theorized by some scientists. Also check out [OSO Today](#) which has been interviewing many prominent and interesting people in ham radio who talk about the hobby, radio propagation, DXpeditions etc.

2023 started with a bang when monthly average solar flux reached 182 and daily flux exceeded 200 for 12 days in a row in mid-January, the highest recorded values so far during Solar Cycle 25. Monthly average solar flux declined to 172 in February and to between 145 and 162 through June until it reached its second highest value of 178 in July when solar flux has much less effect on HF propagation in the northern hemisphere. Monthly average solar flux declined to between 154 and 159 through December except that it reached its lowest 2023 value of 142 in October, normally the best month for HF propagation. Daily solar flux remained below 155 during most of December except for eight days in a row from December 18-25 when daily flux was between 164 and 195. Daily and monthly solar flux values are updated every day at: <https://spaceweather.gc.ca/forecast-prevision/value-solaire/solarflux/sx-5-em.php>.

Here are some useful propagation guidelines. Propagation is usually best on the upper HF bands when the A index is <15, the K index is <4, the solar wind is < 400 km/sec and the hourly solar flux is above 125. Solar flux persisting above 200 for at least eight days is usually required before 6-meter F2 which occurs reliably from October through February.

Band by Band DX Activity in 2023 (Frequencies in MHz):

160 Meters: DX activity has been low to moderate especially on CW except when DXpeditions are present or during contests when activity fills the band. The cancellation of many planned DXpeditions really hurt 160 DX. However, the recent 4W8X operation gave many of the top band leaders a new one. FT8 activity has increased between 1.836 and 1.840. Try to avoid using frequencies on 160 meters that are divisible by 5 (e.g., 1.820, 1.825, 1.830 etc.) since broadcast birdies in the USA are often present.

75/80 Meters: DX activity has been low to moderate on these bands except during contests and DXpeditions. CW is usually on the low end of the band and SSB DX near 3.795. FT8 activity has really increased around 3.573.

60 Meters: Many new entities have received permission to operate on this band albeit they may be limited to 15 watts and a dipole antenna. Over the years well over 250 DXCC entities have been active on 60 meters. FT8 activity is now concentrated around channel 3 at 5.357. The FCC has released a Notice of Proposed Rule Making (NPRM) for non-channelized operation near channel 3 for USA stations. The ARRL Awards program does not recognize 60 meter contacts. **USA operation on 60 Meters is limited to 100 watts output power and a dipole antenna. Use of gain antennas requires reducing transmitter power.**

40 Meters: 40 meters is still the workhorse band during local night time September through May. CW and SSB DX activity is especially high during contests. Otherwise most activity has shifted to the FT8 mode around 7.074. **USA stations cannot operate SSB below 7.125 so it is best to stay above 7.128 for safety.**

30 Meters: 30 meters is still very popular for DXing especially for low power stations. This band usually opens a few hours before sunset until well after sunrise but during winter it can remain open all day except within a few hours of local noon. There is lots of FT8 activity between 10.136 and 10140. **The USA power limit is still 200 watts transmitter output power.**

20 Meters: It is still the go-to DX band especially during local daylight hours except during midday in the summer. Lately much of the DX activity on CW has decreased except for expeditions but SSB activity remains fairly high. FT8 near 14.073 and 14.080 and the nearby F/H (Fox and Hound) modes are very active. As radio propagation is expected to improve as we approach solar maximum some of this activity may move to the higher HF bands.

17 Meters: The 17 meter band often opens shortly after 20 meters. All modes seem to be doing well on this band. There is lots of FT8 activity around 18.100.

15 meters: With increasing sunspots 15 meter DX is open longer hours. FT8 activity near 21.074 is high as are the nearby F/H modes.

10 and 12 Meters: Both bands are now doing well. FT8 activity is high near 28.074 and 24915. Vigilant DXers are also taking advantage of the improved radio propagation especially during local mornings and evenings. There is DX activity mostly during June and July when F2 propagation maximum useable frequencies are lower but this is usually sporadic E propagation.

6 Meters and above: In recent years most of the DX activity has gone digital. MSK144 is popular all year around 50.260 while FT8 activity is most common at 50.313 and 50.323 during band openings. There is no doubt that the increased sensitivity of FT8 over CW (typically about 10 dB) opens the band earlier than expected. The [ON4KST chat page](#) shows recent activity.

F2 propagation has returned with increased sunspots in SC 25. TEP (Trans-Equatorial Propagation) and other related F2 propagation associated with the equatorial ionization anomaly are also increasing. K6MIO's report on TEP explains its mechanisms (ref. 3).

EME (Earth Moon Earth) DX using digital modes such as Q65 is becoming very popular on 6 Meters especially during local moon rise and set and during expeditions. About 75 stations contacted 3B9GJ on a recent W7GJ 6 Meter EME expedition. The top 6-meter DXer has confirmed 283 entities but so far officially only about five North American stations have achieved the very difficult 200 level.

2023 Month by Month DX Activity Sample: Here are just some of the rare to medium-rare DX stations that were active during the designated months.

January: January was very productive for DX with over 210 entities active as the solar flux increased. Notably rare to semi-rare stations included FT8WW (until March 50 K), TN8K (165K), 3C3CA (Most of the year-190K), ZC4GR, 9N7AA (>65K), ET3AA (11.5K) and J5JUA to name a few.

February: This month was also very active with 3Y0J (Bouvet 18K), 5V22FF, 9U5R and 9U4WX (28K), HD8M, 3B7M, XZ2B, YJ0A, J52EC and HV0A. As usual, there was lots of activity during DX contests.

March: Conditions were still great with VU4T (3K), 9X5RU (167K) and CY0S (84K).

April: VU7W, T30UN, ZD9BV and V63WJR.

May: DX0NE (Spratly Islands), HK0/PY8WW, 5UA99WS (7K), 9X2AW and CE0Y/EA5KA.

June: T31TT (83K), VU7W, FH4VVK, VP6D (62K) and FP/KV1J.

July: FJ/K3TRM, 3D2BJ (Rotuma), 9Q1ZZ and 9Q1AA, K7K (NA070) and 1A0C (80K).

August: C21TS, OJ0JR, 9Q2WX, E51D (57K) and T88RR.

September: ZL7IO, T2T (102K), VK9LAA (24K), ZD9W (70K) and 5X3K.



W7Yaq (L) and K7AR (R) at VK9LAA on Lord Howe Island.



The W8S Swains Island Team in October 2023.

October: W8S (Swain’s I. 92K), T2C, E6AM, XT2AW, E51JAN (N. Cook), A52AA, 3G0Y and PY0FR (FN).

November: At the start of this month 4W8X (163K), 7O8AD/AE (57K), 7O73T (43K), A25R (146K), TJ9MD and TX7L (FO/M 55K) medium-rare expeditions were all active at the same time with minimum QRM between them. They were followed by FW2CW, H40RH (7K), H44WA (60.5K), PR0T (Trinidad 18.7K), 9L5M (20K), VK9CY (25K), VK9QO (CC-7.4K), ZL7A and VK9XY (35K),

December: This is YOTA (Youth-On-The-Air) month with many special YOTA call signs everywhere from dozens of countries. Also active were VU7A (52K), TO9W (FS-28K), T32TT (>190K),

VP2VMM, V6EU, XT2AW, VU4N (25K), KL7RRC (NA-028-5.7K), C21TS (36K), OF9X (20K) and A31DJ.

Unauthorized Operations: As usual many unlicensed or pirate stations were active during the year. Many expeditions were pirated and spotted before, during and even after the operation. This explains why many expeditions don’t release their call signs before commencing operation. Check your QSO using on-line logs if available.

Some call signs reported on the DX Spotting Network were possibly incorrectly copied or listed. These bogus spots affect many DXers. When spotting a station on the DX Spotting Network accuracy is extremely important. **If you are not sure of a call sign, don’t spot it** until you are sure it is correct since it can cause bells to ring worldwide and increase anxiety.

The [CQ Marathon website](#) maintains a list of incorrectly spotted or invalid call signs. Mark, WC3W is now maintaining this website and states that the DX Marathon Program will remain viable with or without CQ Magazine.

DXpeditions: Expeditions are increasing now that Covid is mostly contained and are the lifeblood to working rare or semi-rare DX entities. They usually face many obstacles since they often go to remote locations making travel difficult. Permission to operate from these locations can sometime be difficult to obtain and travel can be very costly.

This past year was no exception with many delays, interruptions and cancellations. High winds sometimes damaged antennas. Temperatures above 35C (95F), high humidity as well as critters were sometimes a big problem. Medical issues also occurred. Power outages and local RFI often made it difficult to copy weak signals in some locations.

Despite these difficulties several expeditions TN8K, 9X5RU, 4W8X, A25R, T32TT and maybe others exceeded 100 K QSOs. Many single-operator expeditions (e.g. FT8WW, 3C3CA, 9N7AA, 7O etc.) exceeded 50K. EME expeditions also took place from semi-rare location this past year.

Support for DXpeditions has never been more important as costs are skyrocketing. While you are operating from your comfortable shack, they are not always as lucky. Please support their efforts so they can continue to activate rare entities. [NCDXF](#) (Northern California DX Foundation), [INDEXA](#) (International DX Association), [GDXF](#) (German DX Foundation) and [CDXC](#) (Chiltern DX Club) are just a few that are significant supporters of many DXpeditions. These foundations do a great job at funding and vetting upcoming requests.



F6CUK operating FT8WW on Crozet Island from December 2022 until March 2023.

Operating techniques: Needless to say the RST report 599 on CW and 59 on SSB are now almost universal! The [DX Code of Conduct](#) is a great operating guide. **Deliberate QRM is always disliked.** The old adage still applies, viz. always **Listen, Listen and Listen** before you start to transmit!

Don't call stations unless you are copying them and don't tune up your transmitter on the common DX frequencies. Keep tuning time to a minimum and frequently change frequency. **DXpeditions and rare to semi-rare stations almost always operate split frequency.** Unfortunately many stations still call right top of the DX station or tune up on same which causes panic.

Finally, don't spot rare DX on the DX Spotting Network unless you are sure it's legit, know the proper call sign and surely **don't spot rare DX call signs for test purposes.** It causes lots of bells to ring worldwide and unnecessary anguish. Also don't post rare call signs to thank someone for a QSO or for receiving a QSL etc. Those watching the DX Spotting Network do not appreciate this type of boasting.

Digital Operations: Nowadays WSJT-X digital modes such as FT8 are often the dominant DX mode. WSJT-X is managed by K1JT and his development team. It can often decode signals that are barely audible. FT8 sensitivity is up to 10 dB better than CW. The developers of WSJT-X recently released software version 2.7 and more updates are expected soon.

FT8 can be a band opener especially during times of poor propagation. It also allows smaller stations to participate in DXing. The use of a panadapter is highly recommended and assists in observing where the activity is concentrated and where to call. The Q65 mode is highly recommended for EME, ionospheric scatter, and other weak signal work on VHF, UHF and the microwave bands.

Expeditions use the F/H (Fox and Hound) or MSHV (Multi Stream software by LZ2HV) modes. Both require special operating procedures. These stations operate above or below the normal FT8 channels. Always call at least 1 KHz above the DX station. Make sure to call in the proper time sequence. Never call if you are not copying the station since if the station should reply it slows down the operation.

Using the F/H or MSHV modes has a learning curve. Operating or calling CQ on these F/H frequencies is not recommended since it causes QRM. According to Club Log (outside of contests) 50-80% of all DX activity now takes place using FT8. It's estimated that about 300 DX entities have been active on FT8. It's fun to see many well-known DXers now operating FT8. RTTY hasn't gone away but activity on this mode is now primarily during RTTY Contests. Finally the FCC has now removed symbol rate and replaced it with bandwidth limits.

DX Contesting: DX contests as usual were everywhere this year and lit up the sometimes quiet bands using CW, SSB and digital modes. There was a noticeable increase of activity on 10 Meters. The [WA7BNM Contest Calendar](#) is a great source of contest activity. Also, the [ARRL Contest Update](#) bi-weekly newsletter that often has interesting tidbits on upcoming contests and operating etc. Remember that contesters should stay healthy so you can operate long continuous hours during contests. The next [Contest University \(CTU\)](#) is scheduled during the Hamvention in May 2024.

ARRL and DXCC Matters: The ARRL has many bulletins that are of interest to DXers. Some new books were published in addition to updates on existing books including major updates to the ARRL Handbook and the ARRL Antenna Book. The [ARRL Outgoing QSL Service](#) is another service for league members, the [ARRL incoming bureau](#) is a free service to all radio amateurs. An important service is the [LOTW](#) (Logbook of the World) which is great for DXCC updates. It has over 1.8 billion QSOs on file.

About 1800 DXers have qualified for the top of the **ARRL DXCC Honor Roll**. Over 260 persons reached the **ARRL DXCC Challenge** 3,000 level and for the first time the 3300 level was reached by EA8AK. Check out the latest [ARRL DXCC Standings](#).

ARRL may soon be changing QST distribution. Many members no longer require QST in printed form but prefer it on-line. Participants in ARRL contests using the low power category will now be limited to 100 Watts (instead of 150 Watts).

Finally, reports in the news media tell us that Bougainville, an autonomous region in Papua New Guinea (P29), has voted to become an independent nation in 2027. If this happens, it could be added to the active DXCC list. The VP8 prefix for the Falkland Islands still stands but the VP0 prefix is being used for the remaining South Atlantic Islands.

QSLing: The use and need for paper QSLs is rapidly decreasing and becoming a lost art form. Postage costs and shipping costs have gone through the roof and will increase in the USA in mid-January. Many expeditions are now requesting up to \$5.00 for a paper QSL confirmation. A few countries are still not accepting mail.

If desired, QSLs can often be ordered either direct or via OQRS (Online QSL Requests Service). LOTW is available for many of those operators who don't require a paper QSL. The ARRL out-going QSL service estimates it will handle less than 250,000 QSLs this year versus almost one million a few years ago.

QRZ.com: This is still a great place for information and is very up to date. Distance, bearings and email addresses are readily available. Sometimes there are some interesting biographies, stories and photos.

Club Log: This is an important source of information for DXers. Many DXers and expeditions often post their logs in a timely manner on Club Log so it is a good place to verify QSOs. It is also a source for OQRS.

The new [Club Log DX Report](#) is now published daily on the internet. It daily lists solar activity, active expeditions, most active modes etc. This gives you a good overall view of daily activity.

Technology: As usual rig improvements are increasing such as better filtering, noise elimination, signal-handling and software updates etc. Solid state high power amplifiers are increasing. Likewise antennas, especially smaller ones, are being developed for people with limited space.

Accessories are a necessary part of operating. Nowadays building is often being replaced by buying. Many commercial sources are available. Remote operation is now becoming common practice especially where antenna structures are limited. End fed antennas are also becoming popular. Used gear is readily available at electronic flea markets and ham fests and websites such as qth.com and ebay.com which are a great source of inexpensive equipment and accessories. Of course software is constantly being updated especially for logging, contesting etc.

A recent technology innovation is **RIB** (Rig in a Box). It is now being tested and upgraded by AA7JV (C6AGU) at rare DX locations. This is a small remote station that can be left on land when there are environmental restrictions. It can be operated remotely from a boat or via the internet. The most recent RIB operations were at VP6A (Ducie I.) and E51D (Penrhyn Atoll, North Cooks). Recently a talk about RIB was conducted by K3LR (ref. 4).



KN4EEI, Mike, with the E51D RIB on Penrhyn Atoll in the North Cook Islands in September 2023.

RFI is still a huge problem especially from power lines and switching power supplies used on **solar power arrays**. Some manufacturers are addressing this problem, but others are not yet on board. ScienceNews reports that a powerful laser can redirect lightning strikes.

IOTA World (Islands on the Air): This year improved radio propagation and the decrease of Covid increased operations from rare and semi-rare IOTA groups such as K7K (NA-070), MM0UKI (Rockall I. EU-189) and KL7RRC (NA-028). VE3LYC activated OC155 (2.6K) and OC299 (new 6.4K) but experienced many travel delays, difficult living conditions and medical difficulties. VU4W was active from AS-105.

The IREF which helped fund IOTA operations has now been disbanded. The [IOTA](#) program now has some accreditation restrictions especially when working remote operations.

YOTA (Youngsters on the Air): December is designated YOTA month and many stations from around the world were sporting special call signs, some with YOTA as the suffix. Several scholarships are now available for youth under 25 years of age such as [WWROF](#), NCDXF, [ARRL Foundation Scholarship Program](#) and W2PV. Many YOTA operators are newly licensed or not yet licensed but supervised by licensed operators. These operators are very important for the future of our hobby. Some licensed operators are allowing youth to operate from their own station especially during the SSB contests, on the digital modes such as FT8 and some even on cw. Please give these stations a call to incentivize the operators. YOTA camp is scheduled for July 7-12, 2024 in Halifax, Nova Scotia, Canada.

Several groups are conducting CW training such as [CWops](#) with [CW Academy](#), the [Long Island CW Club](#) and the [K1USN Radio Club](#) that regularly transmit slow speed CW for practice.

Safety: This can never be stressed enough. During the past year there were at least two fatal DXer accidents. K5NA was electrocuted when a power line struck an antenna he was helping a friend remove. DL6RAI died in Aruba when a tower collapsed while he was in the air. We can never be safe enough when working with towers and antennas. Proper safety belts are required. Even some certified professional climbers occasionally have problems but are still the best choice for many of us.

Silent Keys (SK): This was a dreadful year for DXers and those supporting Amateur Radio. The number of persons on the QST SK list, The Daily DX and elsewhere have increased dramatically during this year.

The following is a partial list of SK DXers and others that contributed to our hobby. They are generally listed in the order as they have departed us during this past year: K3ZO, CO2KK, VK6LC, WA6O, WZ8D, AC8G, K5CVS, 8P6CC, EA3OT, K6EVR, VK5NC, W3HVY, K5NA, GW3YDX, C31LU, W5SG, DL6RAI, K5OVC, K7LA, K2EK, WB2D (ex KB1N), K5GA, UY5XE, K5RJ, VE3OSZ, K9FD, K9QVB, G3RWL, XE2AA, KX7YT, 6Y5IC, W5QLF, EY8AA, K8EJ, ZS1HF, YN4SU, K4WMS, K7MB, G3SVK, N7RD, 7X5AV, VO1MP, K2JMY, G3KOJ, 3B8CF, WB9EEE, ZS1AU, CE1EW, W8UVZ, W9VA, KE7EQ (ex WA6SBO), VE1BC plus over 50 Ukraine ops during their war.



The CY0S team on Sable Island in March 2023.

And now the Drum Roll: DX activity increased over 2022. There were approximately 54 entities that were NOT believed to have been active during 2023*.

Africa (13): 3C0, 5T, E3, FT/G, FT/J, FT/T, FT/X, FT/Z, S9, VK0/H, VQ9, ZD8 and ZS8.

Antarctica (1): 3Y0/P.

Asia (7): BS7H, BV9P, E4, EZ, P5, T6, and YK.

Europe (3): JX, R1F and SV/A.

North America (7): CY9, FO/C, KP1, KP5, TI9, XF4 and YV0.

Oceania (15): 3D2C, FK/C, FO/A, KH1, KH3, KH4, KH5, KH7K, KH9, T33, VK0M, VK9M, ZK3, ZL8 and ZL9.

South America (7): CE0/X, CE0Z, HK0/M, PY0/S, VP0 (S. Ga.), VP0 (S. Ork.), and VP0 (S. Sand.).

*Please note that some rare entities may not be on this list for 2023 because operations were short, set up schedules or only on VHF, EME (Earth-Moon-Earth) etc.

Those DXCC entities that are not believed to have been activated in ten (10) or more years have increased and now include: 3Y/P, BQ9P, BS7H, CE0X, EZ, FT/G, HK0M, KH3, KH7K, KP5, YK, YV0 and ZL8. This means that an avid DXer working hard at DXCC may take well over 13 years to make it to the DXCC Honor Roll. This list also serves as a guide to those planning expeditions to rare entities. As for me, the top of my need list for the DX Challenge has not changed in many years and not surprisingly goes to P5, BS7H and BQ9P in that order.

Looking ahead to 2024 and Beyond: Solar Cycle 25 is forecast to achieve solar maximum in 2024. HF radio conditions on the higher HF bands are improving. DX has really changed in the last few years with FT8.

Some DXers chase the ARRL DXCC Honor Roll, the ARRL DXCC Challenge, and/or the DX Marathon. Then there are the never ending DX Contests and IOTA chasing. There are lots of things to do. Don't let the airways slow down for lack of activity.

Some rare to semi-rare expeditions such as TX5S (Clipperton) and CB0ZA (Juan Fernandez) are scheduled for early in 2024 followed by CY0 (Sable I.) in the summer. There is a chance the Rebel DX Group will activate 3Y0I, Bouvet Island with the dates yet to be announced. 3Y0K from Bouvet by a Norwegian group headed by LA7GAI is scheduled for January 2025 followed by 3Y0L (Peter 1) in February 2026. Many other operations are also promised during 2024 so it should be another exciting year for DX. Remember to stay tuned and check [The Daily DX](#) for future operations.

Try to stay active and join the fun. It's time to improve or repair if necessary your 6 and 10 thru 15 meter antennas as well as keeping your 80 and 160 meter antennas working. Don't forget to support the various DX Foundations around the world that help make expeditions possible.

Finally: We hope this review has been informative especially for historical purposes. With all the activity this past year, I hope I haven't missed anything important. Any suggestions are appreciated. Most prior year editions can be viewed on the "[K8CX Ham Gallery](#)."

Once again, I am honored to be asked by Bernie, W3UR, to write this review for the 19th consecutive year and for his valuable assistance and help. Thanks especially to Frank, W3LPL, for his many helpful comments and input. Also thanks to my son Jim, AD1C, for his computer help and many others who helped put together this year's review.

Happy New Year and best of DX in 2024.

73, Joe Reisert, W1JR

NOTE: Obviously all the opinions etc. expressed are solely mine as are any errors that I have made. This End of Year Review is copyrighted. Therefore, copies or use of this review MUST first be approved by Bernie, W3UR and then a courtesy copy of the reprint sent to Joe@Reisert.org.

References:

1. “Experience the Wonders of Solar Cycle 25 Solar Maximum” by W3LPL in QST, May 2023, pg.59 is a SC25 update.
2. Carl, K9LA has an interesting presentation at the Madison DX Club entitled “[Solar Cycle 25.](#)”
3. “F-Region Propagation and the Equatorial Ionospheric Anomaly” by K6MIO (on the [Internet](#)).
4. Watch K3LR [interview about RIB](#) on the internet.

Revised January 9, 2023