ARRL 10 GHz and Up Contest 2023 Results

By Rus Healy, K2UA (k2ua@arrl.net)

Herbert, AF4JF, set up his gear overlooking the Mississippi River in EM49hq and operated alongside AD7OI, KO7Z, and KI7GVT. (AF4JF photo)

The 2023 contest is the first year with new scoring rules for the microwave bands above 10 GHz, with additional points per QSO for 24 GHz and up. The goal for the scoring rule change is to encourage people to bring out their gear for the higher bands and spend the extra time making QSOs there–we know it takes more time and effort as you go higher in frequency. We saw mixed results of this initiative, as the analysis shows. It's hard to tell whether this is a reflection of conditions and activity for this year's contest or that people weren't motivated by the extra points, but we do hope that it will drive more activity over time on the higher bands–we need to show more activity there, and these bands are fun!

Tropo conditions at the beginning of the first weekend of the 2023 contest were more reminiscent of wintertime than mid-August, with little rain anywhere in the Eastern states and provinces, and none of the usual good summer inversion to be had. The middle of the continent was absolutely the place to be to make the best DX on 10 GHz, but both coasts got in on the action over the course of the two weekends. The Great Lakes enjoyed some super tropo conditions on both weekends, but not quite enough to support 47 GHz across Lake Michigan this year, according to 10 GHz and Up winner K9PW. Top DX numbers were down on 47 and 78 GHz this year compared to 2022 as well. Some of that just had to do with where the operators were (or weren't) at the right times, and some of it had to do with conditions.

The second weekend, Hurricane Lee raked the eastern states and left areas within 200 km of the Northeast shorelines with strong winds and dangerous conditions, especially on mountaintops, but created amazing tropo conditions just to the west of it by trapping high pressure–as hurricanes often do. Sweet 10 GHz DX was the result for stations like KB8VAO and VE3FN. California stations got to experience some rare rain scatter and some great DX as a result.

In other words–it was good to be out and about, as usual! But it was also good to be home. For the first time, four of the top ten stations in the 10 GHz category were home stations, and three of the four–VE3KH, N2WK, and N2JMH–made up the top three in unique call signs worked!

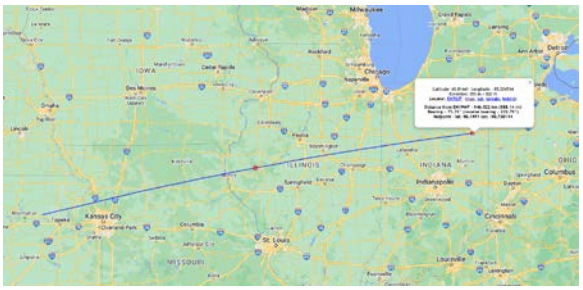
Log entries were down by 13 from 154 to 141 in 2023, falling to a few logs more than the 2021 total. The breakdown was interesting, with 93 entries in the 10 GHz category and 48 entries in the 10 GHz and Up category, a 66%/34% split. Both categories were down slightly from 2022, and the split was slightly different than 2022's 64%/36% split. The 2023 contest saw the second-most entries ever in the 10 GHz and Up category, after last year's record number of 56.

Distances and Activity

10 GHz Highlights

During the August weekend, Gedas, W8BYA, and Greg, WQØP, completed a stellar 945 km QSO between Gedas's home QTH in EN70jt and Greg's home station in EM19wf. The QSO crossed most of Indiana, all of Illinois and Missouri, and part of Kansas. A good number of QSOs of this distance take place annually, but they rarely take place during contest weekends. Gedas and Greg made this QSO late at night, at

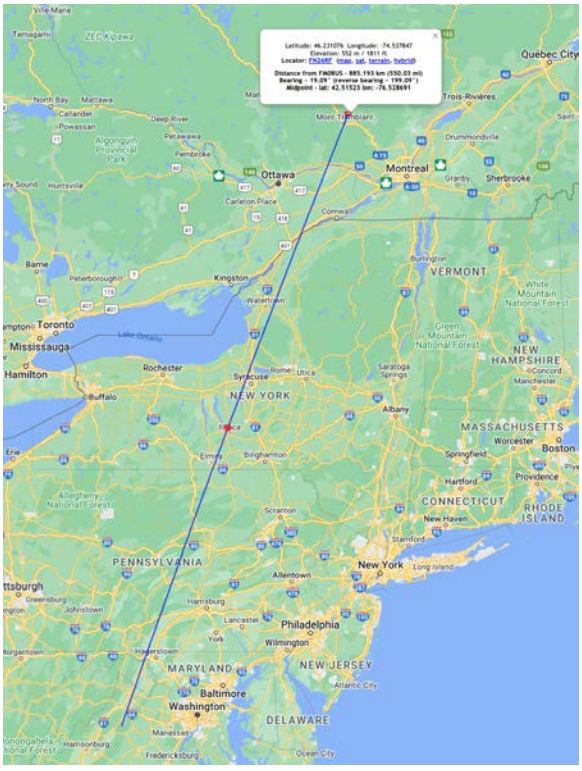
0615Z, when Gedas has often observed that tropo enhancement is at its best (but there's often nobody to work!). A fantastic QSO–one I'm sure they'll remember for a long time! Gedas runs a modest station at home, with a 2-foot dish at 50 ft and just 2 watts on 10 GHz.



The top DX in the 2023 contest was a QSO between WQØP in Kansas and W8BYA in Indiana. [Image courtesy of https://k7fry.com/grid]

W8BYA's home station antenna setup for 10 GHz, with a tower-mounted 2-W transverter just behind the dish. (W8BYA photo)

In September, another remarkable QSO with many contrasts from the previous one took place on 10 GHz: Steve, KB8VAO, operating portable on the famous Skyline Drive in FM08us, and Ray, VE3FN, atop the Mont Tremblant ski area in FN26rf, completed an 884 km QSO in the middle of the day. Signals were very strong–at least 20 dB over S9. A large storm system was moving off the East Coast, setting up conditions behind it for great tropo between Virginia and Quebec. The Hepburn map (https://dxinfocentre.com) for 15Z on that day showed the path between KB8VAO and VE3FN following a purple and blue region from Northern Virginia to Southern Quebec. At the same time, the New England states were in the grip of high winds from the receding coastal storm, with no tropo enhancement at all, while the Great Lakes and adjoining regions enjoyed nice enhancement.



The path between VE3FN in FN26rf and KB8VAO in FM08us yielded S9+20 dB signals along a tropo-enhanced line on the September weekend. [Image courtesy of https://k7fry.com/grid]

Ara, N6ARA, and Gary, K6MG, made the sole West Coast appearances in the top-ten DX box for 10 GHz, with a solid 783 km QSO between DM13co in Southern California and CM89pk in Northern California. For scale, California is a big state at 1223 km long–so this QSO spanned 64% of the state, a full 40% of the distance from Vancouver to Tijuana. That is a *really impressive* distance, especially when you consider that tropospheric enhancement and rain scatter like the eastern half of the US and Canada often experience in the summer months are rare in California.

Gary shared about his operation:

> CM89pk is St John Mountain in the Mendocino National Forest, a 6700-foot peak. I camped out on the mountain for three evenings with weather varying from sunny to rain to pea-sized hail. It has a clear 616-km shot down the San Joaquin Valley to Frazier Mountain at the grapevine north of Los Angeles. The propagation on 10 GHz was excellent, allowing me to hear the 10 GHz beacon on Frazier Mountain all weekend with signal strengths varying from S4 to S9+30 dB.
>
> It was a thrill to be able to work the group on Signal Peak in LA on rain scatter at 783 km going over the top of Frazier. All of these paths are well beyond line-of-sight but experience shows that, on 10 GHz, that is not a problem; we are able to consistently use 400+ km paths from rovers in the San Joaquin Valley to the surrounding 6700-8000 foot mountains.

Gary runs a 4-foot offset dish with a dual-band feed, with 10 watts on 10 GHz and 3.5 watts on 24 GHz.

In the 2023 contest, it took a QSO of at least 713 km to make the top-ten DX box on 10 GHz. That's just a little less than 2022, but that said, six out of the top ten contacts were longer than 800 km.

24 GHz Highlights

As he did in the 10 GHz top-ten DX box, K6MG made an appearance in the top ten DX on 24 GHz–this time right at the top–along with Mike, K6ML. Gary and Mike completed a 238 km QSO. Gary continues:

> On 24 GHz, without any unusual propagation from the same peaks [as described above], the best that can be done is typically 250 km or less to a rover in the valley. The 238 km 24 GHz contact is fairly typical of a maximum LOS path from mountaintop to valley rover.

Just behind Gary and Mike were two groups of ops on the other side of the country, who worked each other over a 235-km path. W2FU, WA2TMC, and K2TER were on a small hill near Conesus Lake, the westernmost of the Finger Lakes, in FN12 south of Rochester, NY. K2DH, K2UA, and N2MG were on an 1800-foot hilltop in FN23 in the Southern Adirondack mountains on the eastern end. Rain cells set up just right for this path, making these QSOs relatively easy on Sunday of the September weekend.

47 GHz Highlights

Across Lake Erie in August, Dave, K2DH, completed 140-km QSOs with Hugh, VA3TO, and Peter, VA3ELE, for the top DX of the contest. Jeff, W2FU, in his first year on 47 GHz, completed a 121-km QSO with VA3ELE. About half the path was over land

in Western New York and the other half across Lake Ontario, for the second-best DX in the contest. Others topping the 100-km barrier were KB8VAO and VE2UG with a 114-km QSO and K9PW with a 101-km QSO.

78 GHz Highlights

Steve, KB8VAO, and Tony, K8ZR, topped the field with a 58-km QSO along the south shore of Lake Erie in the August weekend. DX contacts were hard to come by this year, with even 30 km QSOs that are usually trivial being impossible to make in the August weekend due to high humidity in the Eastern states. In the September weekend, longer QSOs often take place between mountaintops, but high winds due to Hurricane Lee made operating from those sites very difficult this year, limiting those opportunities.

Entry and QSO Analysis

Every operator in the contest logged at least one QSO on 10 GHz. The QSO total of more than 9,200 on 10 GHz, an average of 65 QSOs per log, is impressive but not surprising given the popularity and widespread activity of this major microwave band. Still, the total and average are down slightly from last year's contest. The 2022 contest saw 154 logs and 10,830 QSOs on 10 GHz, for an average of 70 QSOs per log. The difference in average QSOs per log is not large, but it's still worth watching the trend.

Entries Submitted and QSOs Logged By Band		
Band (GHz)	***Log Entries***	***Total QSOs***
10	141	9,237
24	44	664
47	28	149
76	8	14
122	14	22
134	0	0
241	0	0
300+	4	10
Total	**239**	**10,096**

On 24 GHz, the number of logs is down from 51 to 44, but the number of QSOs is way up (from 606 to 664) from 2022. In 2023, 25 of those 44 stations made more than 10 QSOs. By comparison, in 2022, just 20 of those 51 stations made more than 10 QSOs. One might reasonably conclude that a lot of ops left their 24 GHz gear at home in 2023–but those who brought their gear out spent more time making Qs on 24, possibly due to the 2x points advantage compared to 10 GHz QSOs that was introduced for this year's contest. Thanks to KM5PO and eBay, quite a number of 2-W surplus Wavelab units and interface boards hit the streets in mid-2023, and I know that a lot of them have been built and put on the air since then. A new run of dual-band feeds for 10 and 24 GHz have hit the streets as well, with more than 60 shipped since April of 2023. Hopefully we'll see the impact of that increase in equipment in the form of more log entries in the 2024 contest!

On 47 GHz, log entries were down by one from 2022, but QSOs were *way* up–from 123 in 2022 to 149 in 2023. This is particularly interesting since it's a good bit more challenging to get on 47 GHz than it is to get on 24 GHz–transverters, power amplifiers, and waveguide switches are all a good bit more difficult to find. It also may be an indication of better tropo conditions in the more populous areas of the country, though I know from experience that New England was not the place to be for 47 GHz DX on the September weekend because of the high winds–QSOs were definitely more challenging and operators avoided some mountaintop sites because of the winds.

On the 76/78 GHz band, entries and QSOs were both down significantly in 2023. Entries were down from 11 to 8, and QSOs were down from 26 to 14. Only three stations, K2DH, K8ZR, and KB8VAO, made more than one QSO each. Once again, tropo and operator locations are major factors on this band–so with these small numbers it's hard to conclude anything, but clearly we were hoping to see participation increase on the higher bands with the increased points structure for the higher bands. We'll keep an eye on that in the 2024 contest. Please bring out your gear!

122 GHz activity was up slightly in 2023, from 12 entries in 2022 to 14. However, reported QSO totals fell from 28 to 22. Best reported DX was about half this year from last year, 5 versus 8 km. There's hope for more activity on 122 GHz and 134 GHz on the horizon, as the group that brought the 122 GHz vehicular radar-based systems to the Amateur Radio market a few years ago is producing a dual-band version now based on newer hardware. This should provide an uptick in activity and a much-needed injection in 134 GHz entries. We need something similar for 241 GHz to follow–who's up for that challenge?

One group brought out the light bands this time and worked each other over an 8.3-km path, as they did in 2022. We know more is possible–it's been done–so it's likely that activity there will grow as well.

Distance Averages from Top Ten Distances by Band

Band	***2023 Average from Top Ten***	***2022 Average from Top Ten***
10 GHz	805 km	783 km
24 GHz	227 km	261 km
47 GHz	105 km	123 km
76 GHz	27 km (top 5 entries)	61 km
122 GHz	4.6 km (top 2 entries)	
300+ GHz	8.3 km (top 4 entries)	

Top Ten Analysis

Top Ten by Category

10 GHz	***Score***	***QSOs***	***10 GHz and Up***	***Score***	***QSOs***
NØUK	42,862	177	K9PW	73,896	335
VE3KH*	41,602	170	VA3ELE	66,446	272
WØZQ	39,559	164	K6ML	64,038	237
N2WK*	39,533	167	VA3TO	61,607	256
KØHAC	39,495	166	W2FU	59,684	238
WBØLJC	37,210	156	K6MG	55,876	186
KB8U	34,313	134	K8ZR	51,665	249
N2JMH*	33,364	143	AF1T	51,155	163
W8BYA*	31,908	64	VE3SST	50,244	216
N1DPM	26,360	100	W1MKY	49,545	159

*Home station/fixed location

NØUK took the 10 GHz category by storm and led the field with a solid 42k score and 177 QSOs, unseating WB0LJC after his three-year streak at the top. Kevin, VE3KH, operating from his home station on the western shore of Lake Ontario, completed a major antenna rebuild and finished just a few QSOs behind N0UK with 170 Qs and a 41k score. Kevin continues to show what's possible from a fixed location in the center of a high-activity region. As the following tables show, Kevin also led the field in all 10 GHz entrants with 57 unique calls, a remarkable feat with the constraint of a fixed location. By contrast, all of the stations in the top ten most call signs worked in the 10 GHz and Up category were portable stations, giving them exposure to many more stations as they moved from location to location over the course of the two weekends.

Jon, WØZQ, landed the third-place spot with 39k, just 26 points ahead of another home station operator, Wayne N2WK. Wayne finished second in 10 GHz call signs worked with 51. The 10 GHz category was strongly dominated by stations in the East and Midwest. You have to look all the way down to 19th place to find a station outside those regions, where Pat, N6RMJ, in Arizona, scored nearly 20k. This gap is an indication of activity patterns and fortunate propagation rather than station or operator capabilities.

Kevin, VE3KH, rebuilt his antenna system in 2023 with a rotating tower and dish-mounted gear for all bands from 10-78 GHz. His lakeshore location in FN03cg is centrally located for activity and his signal is always strong, earning him the nickname "Mr Reliable." *(At least that's what I call him.--K2UA) (VE3KH photo)*

Pete, K9PW, once again muscled his way to the top of the 10 GHz and Up category, finishing with 335 QSOs and 73k through a well-executed set of operations on Lake Erie the first weekend and Lake Michigan on the second weekend. Pete has upgraded his gear since the previous year as well, making setup and operating more efficient.

Peter, VA3ELE, finished with 272 Qs and a very respectable 66k to take the second-place spot again this year. K6ML, a regular in the top ten list, is the standout West Coast entrant in the top three, with 237 QSOs and a very strong 64k score. K6ML and K6MG, both operating from the San Joaquin Valley in California, showed that higher-frequency microwave contacts

continue to make possible top-ten appearances in the Eastern and Midwest-dominated box scores.

Top Ten Scores, QSO Totals and Unique Calls

10 GHz	*Score*	*QSOs*	*Unique Calls*
NØUK	42,862	177	27
VE3KH*	41,602	170	57
WØZQ	39,559	164	24
N2WK*	39,533	167	51
KØHAC	39,495	166	25
WBØLJC	37,210	156	24
KB8U	34,313	134	33
N2JMH*	33,364	143	48
W8BYA*	31,908	64	35
N1DPM	26,360	100	45

*Home station/fixed location

10 GHz and Up	*Score*	*QSOs*	*Unique Calls*
K9PW	73,896	335	80
VA3ELE	66,446	272	79
K6ML	64,038	237	50
VA3TO	61,607	256	77
W2FU	59,684	238	82
K6MG	55,876	186	26
K8ZR	51,665	249	91
AF1T	51,155	163	81
VE3SST	50,244	216	60
W1MKY	49,545	159	81

The correlation between top score and top QSOs generally is strong, with a few exceptions. One that stands out is Gedas, W8BYA, in the 10 GHz category. Gedas, in Northern Indiana, doesn't have a lot of nearby stations to work, so he works hard to make long QSOs to rack up distance points.

There's a bit more variation in the 10 GHz and Up category once you get past the top two, where differences in operating patterns create some deviation from the correlation of box order to unique calls order. A clearly visible trend is that West Coast station K6MG and island operators Dale, AF1T, and Mickie, W1MKY, made fewer, but longer, QSOs to earn their spots in the box. A couple of ops like Hugh, VA3TO, and Neil, VE3SST, showed the opposite trend, where they made more, but shorter, QSOs, which hints at their operating pattern of making more, and more frequent, stops in their portable operations, leading to high QSO totals but lower average distances. The point is, there's more than one recipe for making the top ten boxes!

Top Ten Calls Worked, 10 GHz

Operator	*Unique Calls*
VE3KH*	57
N2WK*	51
N2JMH*	48
N1DPM	45
AA1I	39
K2AXX	39
VE3EG	38
NR2C*	38
W1FKF	37
N2ZN	36

*Home station/fixed location

The top three stations with the most call signs worked in the 10 GHz category were home stations in the Western New York and Greater Toronto region, which speaks to the amount of activity in the region and the DX

workable from that area. Chuck, NR2C, also operates from his home station, just 35-55 km from N2WK and N2JMH, so the four home stations on the list are geographically close together. The other ops who made big 10 GHz call sign totals are all Northeast-based (K2AXX and N2ZN are also Rochester-area ops, VE3EG is another Toronto-area op). N1DPM and AA1I are part of a group that travels together (along with K1CA and K1OR), and W1FKF is a perennial New England mountaintop operator. It would be really interesting to look at all the locations where these operators were located when they made their QSOs to get an idea of the "best place to be" in the 2023 contest to work a lot of unique stations on 10 GHz.

Top Ten Calls Worked, 10 GHz and Up

Operator	***Unique Calls***
K8ZR	91
K2DH	90
W2FU	82
AF1T	81
W1MKY	81
K9PW	80
VA3ELE	79
VA3TO	77
KB8VAO	77
WA2TMC	74

Tony, K8ZR, set a new bar–91–for most-calls-worked in the 2023 contest, besting last year's total of 89 set by K2UA. K2DH was right behind Tony with 90, as Dave has been either first or second in this category since we started keeping track–he knows how to plan a route that provides opportunities to work a lot of different stations on as many bands as possible, and keeps his gear in tiptop shape to make those QSOs. Great job to Tony and Dave!

Jeff, W2FU, followed in third place with 82 unique calls, which is impressive since Jeff just added 47 GHz this year, so most of his QSOs were on 10 and 24 GHz. It took an impressive 74 unique calls just to get into the top ten this year, which is a big number if you think about it. Only one station operating outside the Ohio-New York-Ontario-New England corridor, K9PW, made the list. Dale and Mickie, AF1T and W1MKY, deserve special mention here since they operate from two island locations for the contest and thus have fairly long distances to most of the stations they work. This is good for distance points but makes it difficult to work a large number of unique calls, especially on the higher bands, which is how most of the other stations on the list made their big totals.

Mike, N2MG, drove a long way from Central New York to Northeast Ohio with his gear to this very popular microwave spot, Perry Park on Lake Erie, EN91kt. On Saturday of the August weekend, Mike set up at this spot along with K2DH, KB8VAO, K8ZR, and several other operators and took advantage of the opportunity to make some great QSOs. From here, Dave, K2DH, made the longest QSOs of the contest on 47 GHz (140 km, across the lake to VA3TO and VA3ELE). (KB8VAO photo)

Regional Highlights

For a breakdown of top scores, see the Call Area Leaders table at the end of the article.

In the 2023 contest, the W6 call area unseated the multi-year leading W1 area for the top spot with 26 logs, pushing W1 into second with 21 logs. The W2 area came in third with 18 logs, followed by W0 with 17 and VE with 16. A lot of the W2 and VE activity is geographically concentrated together, giving rise to some of the high scores and unique call totals described earlier in the results for stations in the Toronto and Western New York areas. Every call area submitted at least five logs this year, and the average was almost 13 logs per call area.

Regionally, the West is represented in the 10 GHz and Up top ten box, with repeat entries from K6ML and K6MG. W6QIW, N9JIM, and W6BY rounded out the top five in this category. In the 10 GHz category, N6RMJ led the pack with 19k from Arizona, finishing 19th overall. N6VHF took the top W6 spot with 14k, followed by N6VI and N7DA, all of whom broke 10k.

Northeast region scores were down a bit in 2023, but AF1T and W1MKY continued to lead in the 10 GHz and Up category with 51k and 49k scores, respectively, followed by a 2k improved 43k entry from Paul, W1GHZ. N1JEZ and K1RZ rounded out the top five in New England with 28-29k scores, raising the bar significantly for what it takes to make the New England top five for 2023. In the 10 GHz category, N1DPM topped the group with 26k, followed by AA1I, with 20k and then W1AIM and W1FKF, all over 15k.

The second call area produced 18 logs, and a repeat battle for the top two spots in the 10 GHz box between Wayne, N2WK, and Jim, N2JMH. Wayne took a solid lead with

39k over Jim's 33k, but both earned spots in the top ten. And they're the #2 and #3 leaders in the contest for most calls worked on 10 GHz. Strong work! Mark, K2AXX, dropped in a solid 23k third-place score, followed by Chuck, NR2C, with 21k from his home station and N2ZN with 12k in his one-weekend portable operation. On 10 GHz and Up, Jeff, W2FU, ran away with the top score in the second call area with a whopping 59k, followed by Bruce, WA2TMC (49k), K2DH (47k), N2MG (35.5k), and Andy, KØSM (35.4k). Andy operated from his home station, along with family members Maggie, KE2AIZ, Rebekah, KE2AMI, Alanna, KE2AIY, and Dora, KE2AJA.

In the Central region, four operators from 0-land made the top ten box in the 10 GHz category, including contest winner Chris, NØUK, with 42k, followed by Jon, WØZQ, and Holly, KØHAC, in a virtual tie, less than 100 points apart, with 39k each, and last year's winner Gary, WBØLJC, with 37k. Finally, Gedas, W8BYA, made the top ten from Indiana with his 31k home-station operation. Pete, K9PW, won the contest in the 10 GHz and Up category with 73k operating from the 8th and 9th call areas across the two weekends, making a substantial part of his score from the shore of Lake Michigan on the second weekend. Zack, W9SZ, also put in a respectable 20k score.

The W8 call area specifically produced 13 logs and a number of leading scores and notable DX highlights, as mentioned earlier in the writeup. K9PW led the area and won the contest in the 10 GHz and Up category, followed by fellow top-ten entrant Tony, K8ZR (51k), and then by DX machine Steve, KB8VAO (37k). In the 10 GHz category, Russ, KB8U, repeated his area win with a solid 34k (number 7 overall). A really cool story unfolded right behind him in the W8 10 GHz box, where Doug, K8DP (14k), Grace, KE8RJU (9k and Golden Log), and John, K8YSE (5k) finished in the #2-4 spots. Doug, Grace, and John, are father, daughter, and grandfather, respectively! We have a number of married couples who regularly enter this contest, and several two-generation families, but this is the only three-generation family I recall making the region box sequentially–congrats to all!

Canadian entries dropped from 22 to 16 in the 2023 contest, but those entries included many impressive efforts, including once again securing four spots in the top-ten boxes. Kevin, VE3KH, took second place overall in the 10 GHz category, and secured the largest number of call signs in the contest on 10 GHz with 57–an outstanding effort from his home station! Other solid 10 GHz-only Canadian efforts included Keith, VE3EG (21k), Colin, VE3MSC (18k), and Ray, VE3FN (16k). Paul, VE3HPC, joined the fun on 10 GHz this year for the first time with 6.5k and quickly came up to speed–I'm sure we'll see bigger scores from him in the future! In the 10 GHz and Up category, three Canadians secured top-ten spots, including Peter, VA3ELE, with a great 66k score, followed by Hugh, VA3TO (61k), and Neil, VE3SST (50k). All three efforts are noteworthy. René, VE2UG (36k) and Steve, VE3SMA (30k) rounded out the top five in the category for Canadian scores. It's encouraging to see so many Canadian entrants making such big scores!

In the Southwest region, Al, W5LUA, led the entries in the 10 GHz and Up category with a solid 13k score, followed by regulars KM5PO, AA5C, and AA5AM. In the 10 GHz

category, W5VY led another group of regulars including AD5JK, WQ5S, and WA5TKU.

Mike, W3IP, once again led the Southeast region with an 18k 10 GHz score, and John, N9ZL, also repeated his leading 10 GHz and Up top log with 1.6k.

In the Mid Atlantic states, Phil, K3TUF, led the closely grouped field on 10 GHz with a 15k score, followed by Chris, NG3W (14.6k), and Paul, WA3GFZ (14.2k).

Chris, NG3W, captured this dramatic image of his portable setup. Licensed since 1976, he regularly operates from FN10 and surrounding grids. (NG3W photo)

Log Checking

In the 2023 contest, 63.8% of logs (90 out of the 141 submitted) had score reductions of less than 3% due to logging errors--that's just a little better than last year's 63%. Of those, 53 logs (37%) had no score reduction at all–significantly better than last year's 31%. Congratulations to the latter group, listed below, on your Golden Logs! Score reduction breakdowns due to logging errors are shown below.

Score Reductions Due to Logging Errors

Score Reduction	***Number of Logs (% of Total)***
10-30%	12 (8%)
5-10%	20 (14%)
3-5%	20 (14%)
0.2-3%	37 (26%)
0% (Golden Log)	53 (37%)

Annual reminder: In this contest, nearly all logging errors are avoidable.

During the contest, take these two steps:

1) Carefully copy what the other operator sends over the air. It's just their call and grid, and chances are very good that you know both already. Be careful to log it correctly–we often see these errors propagated across many QSOs when there's more than one operator at a portable location.
2) Be 100% sure to log *every QSO*. *This is a bigger problem than you might think.* I had one operator give me a NIL (not-in-log) two years in a row on 24 GHz. I now make it a point to slow down when I move from band to band with him, and even ask him whether he has logged me on each band before we move on to the next band. It never hurts to slow things down a notch.

Then, follow these three steps before you submit your log:

1) Check to be sure your log reflects the correct sent location for each of your operating locations.
2) Double check that you've transcribed your paper log to your computer correctly (calls and grids!).
3) Avoid propagating errors down your log (busted calls, for example, or bad grids).

Log-checking reports (LCRs) are available from ARRL at https://contests.arrl.org/logcheckreports.php

Golden Logs

Listed in descending score order. ***Bold*** *indicates top-ten entrants*.

10 GHz

NØUK, **W8BYA**, KA9VVQ, W9FZ, W3IP, K2CS, N7DA, KE8RJU*, WZ1V, N6LL, AF5T, K4QF, K1TR, KØAWU, W5VY, K5XSA, WQ5S, WA5TKU, KC7OOY, VA7SC, KD7UO, N8KH, K9JK, KØKFC, NØKP, K1CA, WØAUS, N6ARA, K1ZZ, KA1ZD, AA9IL, WA8VPD, WB8TGY, N2YTF, AD5JK, N5BF, VA3ECO, VE4TV, K7MDL

10 GHz and Up

VE3SMA, W9SZ, W5LUA, KOØZ, KE2AIZ*, AF4JF, N9ZL, W7GLF, K1GX, WA9TT, KM5PO, VE4MA, VE4SA

*Golden Log Shout-Outs

A couple of special shout-outs are in order. The first goes to Maggie, KE2AIZ, who was 8 years old during the 2023 contest. Maggie is the youngest of Andy (KØSM) and Rebekah (KE2AMI)'s three licensed daughters. She's also the only one in the family who submitted a Golden Log for the 2023 contest! Maggie made 30 QSOs on 10 GHz, 4 QSOs on 24 GHz, worked 24 unique call signs, and her best DX on 10 GHz was 462 km. Our second shout-out goes to another high-achieving young operator, teenage Extra Class licensee Grace, KE8RJU (who has recently changed her call to K8LG). Grace also turned in a Golden Log. Grace's dad is Doug, K8DP, and her grandfather is John, K8YSE, *both of whom were also active in the contest!* Like Maggie, Grace was the only one in her family to submit a Golden Log! Grace made 48 QSOs on 10 GHz with 11 different stations, and her best DX was a whopping 626 km! *Congrats, Maggie and Grace, on your great scores and excellent logging accuracy!*

Roving along Lake Erie and Lake Ontario

– Hugh Duff, VA3TO

I had a great time again in 2023 participating in the annual 10 GHz and Up Contest with Peter, VA3ELE, René, VE2UG, and Neil, VE3SST. We followed the same general plan as previous years except that we didn't go as far east into Quebec in September.

This year I brought along equipment for 10, 24, 47, 78, and 122 GHz. I had my old problematic 24 GHz rig with me in August and made a few contacts with it, but the receive performance was very compromised, so I could only work stations with very strong signals. By midday Sunday I wasn't hearing the more distant stations that the other guys were, so I didn't bother setting it up and lost out on a number of QSOs.

I acquired a new 24 GHz transverter a couple of weeks later and integrated it into my system in time for the September weekend. Unfortunately, it also wasn't performing well (I subsequently discovered a problem with the SMA transition) so I missed out on more 24 GHz contacts because of it. I made several 47 GHz contacts in August but only one in September, and just one each on 78 GHz and 122 GHz throughout the entire contest.

August Saturday: We roved the west half of Lake Erie, working our way east starting in grid EN82oa. There was no rain scatter or great DX opportunities, but we did well by working repeat customers K8ZR, K9PW, and other rovers across the lake. We also made quite a few ~300 km contacts and our best DX of the day with W3IP in FM19bb at 492 km. It turned out to be a pretty busy day so we only got as far as the third of five planned sites.

Peter, VA3ELE (foreground), with René, VE2UG, and Neil, VE3SST, on the pier in the background at EN82oa. *(VA3TO photo)*

August Sunday: We roved the west half of Lake Ontario beginning in grid FN03lt, continuing on our way east. We started off by working a handful of stations back in Toronto and across the lake in the Rochester, NY, area. By mid-morning the map on VHFdxview.org was showing some intense tropo enhancement ("red blobs") to the south, so we took advantage of that and got a few good DX contacts in the log.

At one point, VE3SMA advised us that he was hearing the WA4PGI beacon in FM07bw 660 km away. We swung our dishes that way and sure enough it was booming in at 20 dB over S9! Peter phoned the beacon owner to ask if he could get on the air and we all worked him on SSB with relative ease. We also worked N3FL in FM19ua (580 km), W3IP in FM19bb (537 km) and others under the enhanced conditions.

Our next site was quite productive as well. We worked plenty of stations including W1GHZ, W1AIM, and N1JEZ in FN34om (484 km), and W3IP again (538 km). As a nice surprise to end the weekend, we worked KØSM, again but this time he had three of his daughters (KE2AIY, KE2AIZ, KE2AJA) and his wife, KE2AMI, with him. It was another busy day that only got us to three out of five planned sites.

September Saturday: We roved the west end of the St. Lawrence River into the eastern part of Lake Ontario beginning in grid FN25tj. This was a new location in a farm region west of Montreal that we had never been to. It turned out that most of the fields in the area were filled with tall corn, so we spent time driving around until we found a bean field with a half-decent view of the horizon to the south and west. We set up on the edge of a farmer's field and only managed to get two QSOs in before a young French-speaking man pulled up on a bicycle and told us to leave.

We packed up and headed to our second spot at FN25wf. Conditions were abysmal. It seemed the turbulence from Hurricane Lee disturbed any possibility of tropo scattering or ducting. Conditions were so flat that we couldn't even make some of our usual reliable long-haul contacts like VE3KH in FN03cg, and those we did make were way down in signal strength. We really had to work hard and only ended up with about 30-odd contacts after visiting five sites throughout the day. I honestly thought this was going to sink us after a pretty good run in August.

September Sunday: We continued roving the eastern part of Lake Ontario starting at a lakeside park in grid FN24cl. Conditions at our first stop seemed to indicate a bit of an improvement over Saturday. We operated from there for a few hours, then a park attendant came by to let us know that some of the other visitors were intrigued by our dishes and asked how much longer we would be, a polite way of telling us to finish up and get on our way. We got through our last sked then packed up and drove for over 90 minutes to our second stop at a busy lakefront town. It was a nice day out around noon, so the parking lot was jam packed. We waited around for a while but nobody was leaving so we decided to carry on to the third location, FN14ca, which was another 90+ minute drive . . . the better part of 4 hours lost.

Fortunately, this spot turned out to be very productive for us, a bit of redemption for the poor conditions on Saturday and the time lost driving earlier in the day. We spent quite a few hours at this site banging off Qs, adding K1OR, N1DPM, and AA1I in FN42ad, and several other new calls to the log. We moved on to our second-to-last stop, made a few more contacts, then drove another hour west to our final location at FN03vw. This one turned out to be quite lucrative as well, yielding plenty of contacts of the contest just as stations were going QRT, including a few good DX contacts. It was great to get W1GHZ on Block Island for the fourth time of the weekend at 622 km, and our best DX of the contest with AF1T and W1MKY in Martha's Vineyard at 667 km, in the log before we packed it in.

We ended up doing relatively well despite the poor conditions and other adversities in September. I had fun roving with the group and I'm happy with my results. Thanks to everyone we worked! This contest is by far my favorite activity in the hobby.

SOTA Activation in the 10 GHz and Up Contest

– Tom Tumino, N2YTF, SOTA W1 Area Manager

Although I have worked microwaves from summits before and I have been a Summits on the Air (SOTA) Activator for about 15 years, there were many firsts for me in this contest. First 10 GHz QSO, first time running the IC-905 in the field, and first time qualifying for the 10 GHz 250 km SOTA Microwave Award.

I set up a dish for 10 GHz and a Yagi on 2 m near the edge of the 540 foot cliffs at State Line Lookout (FN30bx) in the activation zone of SOTA W2/NJ-009 (see https://www.sotadata.org.uk/en/summit/W2/NJ-009), the Palisades Highpoint on Saturday in round 2 of the contest. For a map of the SOTA summits check out https://www.sotamaps.org.

SOTA summits are selected by topographic prominence, which is different from simple elevation. See https://en.wikipedia.org/wiki/Topographic_prominence. They are then graded by elevation, and as a result SOTA summits have already effectively been screened for good DX potential. The SOTA maps of qualifying summits are a good source of operating locations for microwavers and the SOTA database and flickr resources can have information about access and operating conditions at the summits (https://www.sotadata.org.uk/en/summits) that is quite useful for advance planning.

I picked W2/NJ-009 for my first 10 GHz outing even though it was not as great a spot as nearby Hook Mtn. (W2/GC-055). At the Palisades Highpoint operating position, it was easy to carry gear to and from the car. As I had no idea really what to expect I brought a lot of extra gear that wouldn't have been convenient to bring along on a strenuous hike. Paths at my operating location at W2/NJ-009 were fantastic to the East from 0 to 180 degrees with a 90% over water path to W1GHZ on Block Island and AF1T and W1MKY on Martha's Vineyard, more than 250 km away over the Long Island Sound (netting me my 250 km+ 10 GHz SOTA Microwave award), not to mention I had K1TEO nearby for testing to get everything going.

To the west there were trees and I was not set up to get my dish above them---so I perhaps foolishly wrote off points west.

What could go wrong? Well, I got nothing–nothing–from W1GHZ and K1TEO was incredibly weak, but he gave me my first 10 GHz contact. I couldn't figure out what was wrong, and neither could they, but boy did we try (thanks guys!)

Fast forward 2 hours of troubleshooting and I found that the factory weatherproofed accessory plug into the CX-10G 10 GHz transverter from the IC-905 RF unit was not fully inserted. Its weatherproofed coupling concealing the horrible truth of its half insertion for about 2 hours! Once that plug was fully inserted, my sensitivity on 10 GHz went way up and all was right with the world. I worked K2UA summit to summit on SOTA W1/MB-001 Mt Greylock (useful both towards a SOTA microwave award and a summit-to-summit award) as well as a bunch of others, wildly exceeding my initial hopes to make at least one 10 GHz contact. I couldn't stop and came back for more on Sunday!

My next microwave contest outing will be an attempt at activating W2/GC-055 on 10 GHz with lighter gear to enjoy its nearly 360 degrees of tree free DX potential.

SOTA Microwave Awards

So, what are the SOTA Microwave Awards and how do I achieve one? Do I have to hike up a mountain to get one? NO. If:

1) You are on a SOTA summit's peak or within the summit's activation zone (within the contour line 25 meters below peak's height)
2) You are not inside, or in the close vicinity of, a motor vehicle and no part of the station is connected in any way to the motor vehicle
3) You carried your gear to the operating site

Congratulations, you are a SOTA activator! See SOTA General Rules 3.7.1 for a full discussion https://sotastore.blob.core.windows.net/docs/SOTA-General-Rules-June-2022.pdf.

Even one contact from a SOTA activation zone makes you a qualified SOTA activator. A SOTA chaser is someone not on the same peak who works a SOTA activator and exchanges at a minimum call signs and reports (see SOTA General Rules 3.8 for details). Exchange of summit identifiers is encouraged but not mandatory. Contrary to almost all other SOTA awards, the height of the summit worked is not important for the Microwave Awards, as these are distance based awards. Microwave awards are for contacts (with the exception of terrestrial based repeaters) on the bands 1.2 GHz and up, are awarded in 50 km units, are band and mode specific, can carry a summit to summit annotation, and can be earned by Activators and Chasers.

The SOTA Microwave awards, with their raised seals, are broken down into several different seal colors based on distances, red for distances of 50-200 km; bronze for 250 to 450 km; silver for 500 to 700 km; gold for 750 to 950 km; platinum for 1000 km and above.

For details on the Microwave Awards and how to apply, see https://sota-shop.co.uk/wp/microwave-awards/.

Joining the SOTA database to upload your logs is free, just register an account at https://sso.sota.org.uk/auth/realms/SOTA/login-actions/registration?client_id=sotadata&tab_id=ncjMhXvLiBM and upload your Activator or Chaser log in CSV, ADIF, or FLE format at https://www.sotadata.org.uk/en/upload.

Manual entry of a log is also possible. To be considered for a Microwave Award, in the comments section of the contact a passage formatted as follows:

%QRA%fn41ni%

should be entered with fn41ni being the grid square distant from your own. Alternatively, degrees can be used, ie.

%QTH%37.3765,-121.8012%

Then you can go to https://sota-shop.co.uk/proddetail.php?prod=microwave to order your award either printed or as a PDF. There are 1099 summits in the W1 area alone and they are pre-selected for you based on topographic prominence. What are you waiting for?

For a more generalized overview of the SOTA program including aspects not specific to microwavers, consider reading G4YSS's introduction to Activating, Chasing, and Awards.

2023 ARRL 10 GHz and Up Contest - Call Area Leaders

Call Area 0			
10 GHz Only		**10 GHz and Up**	
NØUK	42,862	KOØZ	9,235
WØZQ	39,559	AF4JF	4,730
KØHAC	39,495		
WBØLJC	37,210		
KCØP	24,999		

Call Area 1			
10 GHz Only		**10 GHz and Up**	
N1DPM	26,360	AF1T	51,155
AA1I	20,176	W1MKY	49,545
W1AIM	18,973	W1GHZ	43,020
KA1KND	15,796	N1JEZ	29,467
W1FKF	15,733	K1RZ	28,359

Call Area 2			
10 GHz Only		**10 GHz and Up**	
N2WK	39,533	W2FU	59,684
N2JMH	33,364	WA2TMC	49,212
K2AXX	23,377	K2DH	47,320
NR2C	21,145	N2MG	35,559
N2ZN	12,298	KØSM	35,420

Call Area 3			
10 GHz Only		**10 GHz and Up**	
K3TUF	15,801		
NG3W	14,681		
WA3GFZ	14,285		
W3IPA	1,204		
W3HMS	492		

Call Area 4			
10 GHz Only		**10 GHz and Up**	
W3IP	18,184	N9ZL	1,659
WA4PGI	3,752		
K4QF	2,900		
W4YN	732		
N8KH	101		

Call Area 5			
10 GHz Only		**10 GHz and Up**	
W5VY	2,506	W5LUA	13,388
AD5JK	2,398	KM5PO	9,575
WQ5S	1,390	AA5C	8,684
WA5TKU	904	AA5AM	6,415

Call Area 6			
10 GHz Only		**10 GHz and Up**	
N6VHF	14,165	K6ML	64,038
N6VI	12,358	K6MG	55,876
N7DA	10,734	W6QIW	33,773
N9RIN	9,323	N9JIM	23,853
AG6KG	8,545	W6BY	15,855

Call Area 7			
10 GHz Only		**10 GHz and Up**	
N6RMJ	19,883	W7GLF	702
KC7OOY	568		
K7MDL	539		
KD7UO	349		

Call Area 8			
10 GHz Only		**10 GHz and Up**	
KB8U	34,313	K9PW	73,896
K8DP	14,836	K8ZR	51,665
KE8RJU	9,443	KB8VAO	37,815
K8YSE	5,493	W8ISS	14,607
W8RU	4,085	K2YAZ	11,506

Call Area 9			
10 GHz Only		**10 GHz and Up**	
W8BYA	31,908	W9SZ	20,789
K9JK	25,184	WA9TT	16,123
KØKFC	17,600	K9TMS	11,073
AA9IL	5,131		

Canada			
10 GHz Only		**10 GHz and Up**	
VE3KH	41,602	VA3ELE	66,446
VE3EG	21,528	VA3TO	61,607
VE3MSC	18,109	VE3SST	50,244
VE3FN	16,580	VE2UG	36,009
VE3HPC	6,555	VE3SMA	30,505