



**285 TechConnect Radio Club - NAØTC**

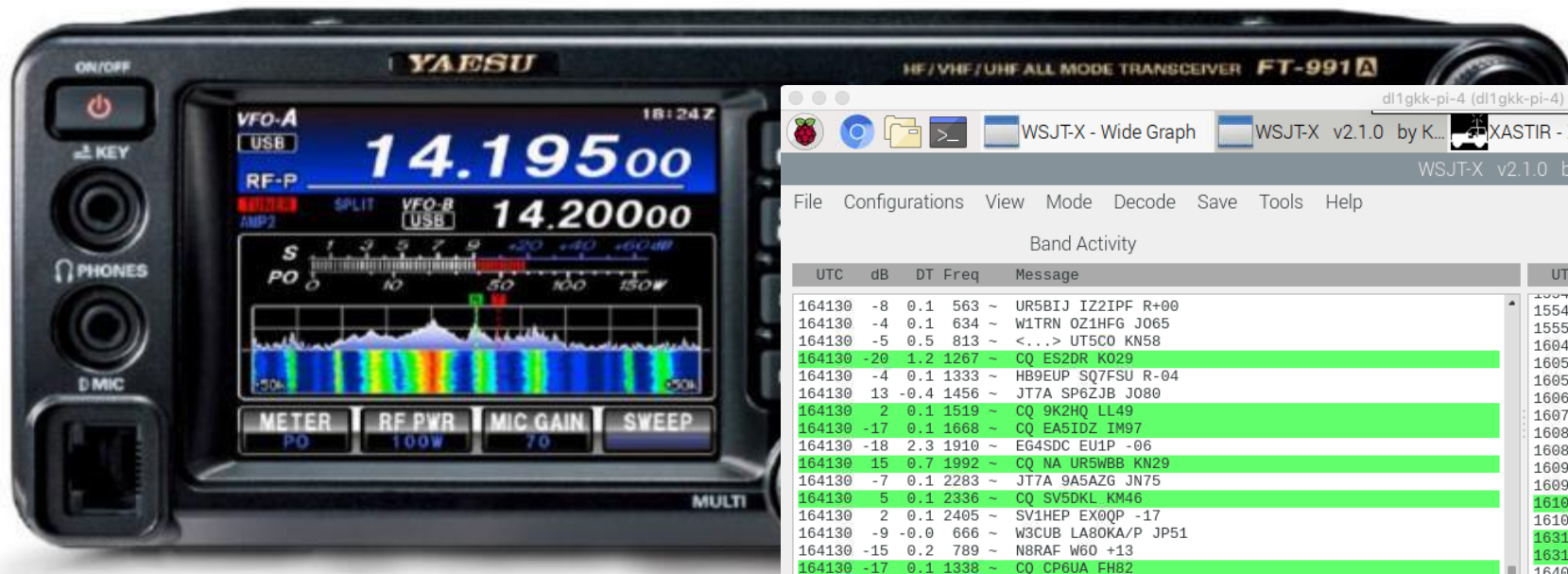
# **FT8 – Down the Rabbit Hole**

**February 3, 2024**

**Tony Montoya KØMCW**



# 285 TechConnect Radio Club - NAØTC



WSJT-X v2.1.0 by K1JT

File Configurations View Mode Decode Save Tools Help

Band Activity

UTC	dB	DT	Freq	Message
164130	-8	0.1	563	~ UR5BIJ IZ2IPF R+00
164130	-4	0.1	634	~ W1TRN OZ1HFG J065
164130	-5	0.5	813	~ <...> UT5CO KN58
164130	-20	1.2	1267	~ CQ ES2DR K029
164130	-4	0.1	1333	~ HB9EUP SQ7FSU R-04
164130	13	-0.4	1456	~ JT7A SP6ZJB J080
164130	2	0.1	1519	~ CQ 9K2HQ LL49
164130	-17	0.1	1668	~ CQ EA5IDZ IM97
164130	-18	2.3	1910	~ EG4SDC EU1P -06
164130	15	0.7	1992	~ CQ NA UR5WBB KN29
164130	-7	0.1	2283	~ JT7A 9A5AZG JN75
164130	5	0.1	2336	~ CQ SV5DKL KM46
164130	2	0.1	2405	~ SV1HEP EX0QP -17
164130	-9	-0.0	666	~ W3CUB LA80KA/P JP51
164130	-15	0.2	789	~ N8RAF W60 +13
164130	-17	0.1	1338	~ CQ CP6UA FH82
164130	1	-1.4	1424	~ SQ9KRC SP9AJM KN09
164130	-19	0.3	1900	~ JT7A UX1IW KN87

Rx Frequency

UTC	dB	DT	Freq	Message
155445	11	0.5	1844	~ ZS6NL SP9FV0 JN99
155515	7	0.5	1844	~ ZS6NL SP9FV0 JN99
160445	-8	1.0	1850	~ EA6ET SQ7RO K002
160515	-11	1.0	1850	~ EA6ET SQ7RO K002
160545	-14	1.0	1850	~ EA6ET SQ7RO K002
160615	-13	1.0	1850	~ EA6ET SQ7RO K002
160745	-6	0.1	1851	~ R3BV CT2JMA RR73
160815	-4	0.1	1851	~ R3BV CT2JMA RR73
160845	-10	0.1	1851	~ R3BV CT2JMA RR73
160915	-8	0.1	1851	~ R3BV CT2JMA RR73
160945	-9	0.1	1851	~ R3BV CT2JMA RR73
161015	-10	0.1	1851	~ CQ CT2JMA IM59
161030	0	0.3	1851	~ CT2JMA SP9BGL J090
163115	-10	0.1	1859	~ CQ UA9TK L091
163145	-10	0.1	1859	~ CQ UA9TK L091
164015	6	0.3	1844	~ EX0QP RA30X K090
164045	9	0.3	1844	~ EX0QP RA30X K090
164115	6	1.5	1844	~ EX0QP RA30X K090

CQ only  
  Log QSO  
   
   
   
   
   
   
   
 Menus

20m   **14,074 000**    Tx even/1st

 
 Hold Tx Freq

Rx 1849 Hz  

Auto Seq  
 Call 1st

 
 Tx 1

 
 Tx 2

 
 Tx 3

 
 Tx 4

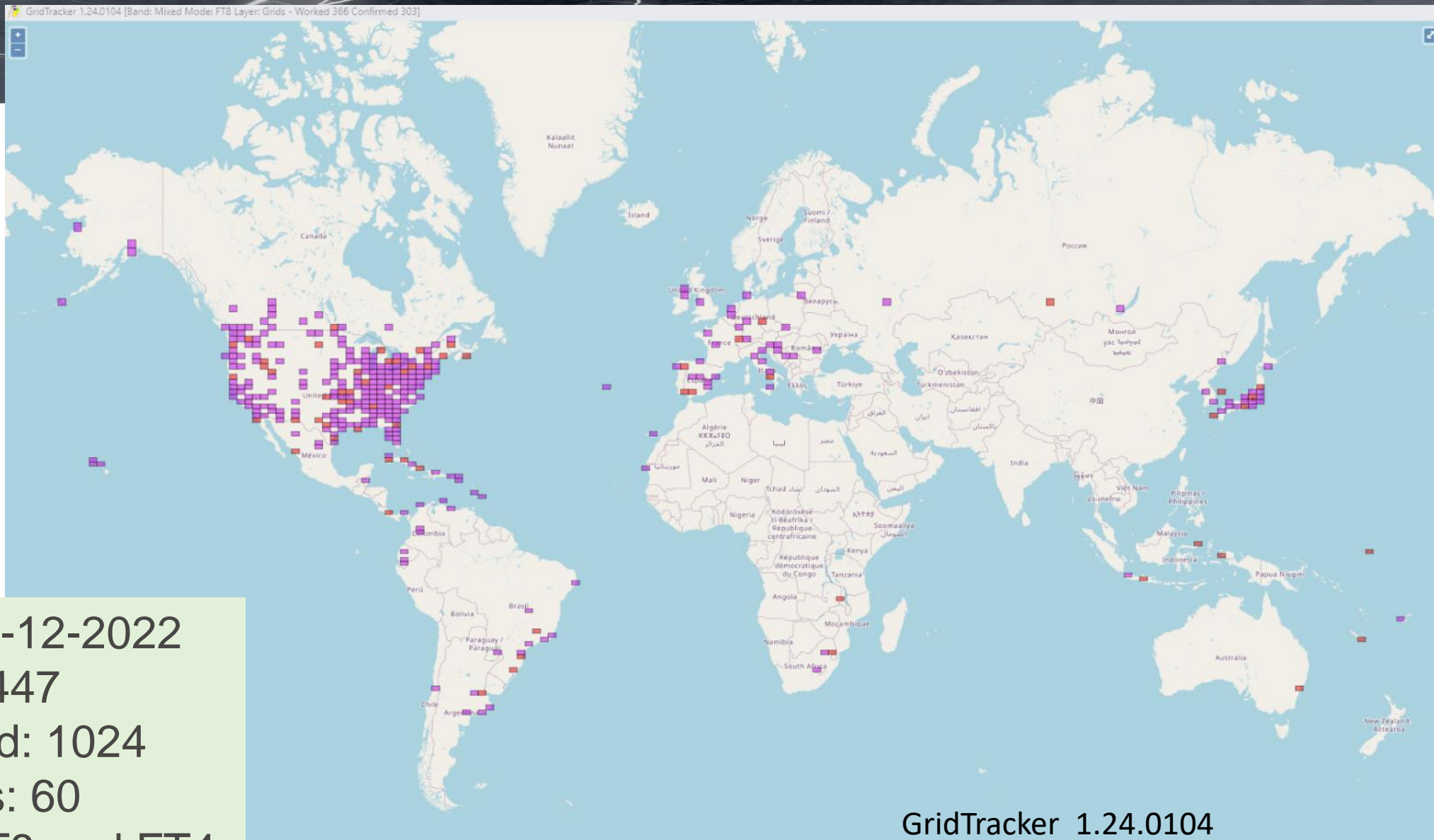
 
 Tx 5

 
 Tx 6

**2019 Sep. 07**  
**16:41:52**

Receiving   FT8   8/15   WD:0m

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- Since 02-12-2022
- QSOs: 1447
- Confirmed: 1024
- Countries: 60
- Mostly FT8 and FT4

GridTracker 1.24.0104



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Can an understanding of ionospheric radio wave propagation enhance FT8 operations?

- Yes?
- No?
- Maybe?

Its like falling down the rabbit hole.

Is there a better way???



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Today...

- A few factors that affect HF operations and FT8 in particular
- Tools and Tips to enhance FT8 operations
- Demo some tools

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# 285 TechConnect Radio Club - NAØTC

Going down the rabbit hole:

A few factors that affect HF operations and FT8 in particular

- Operator stuff
- Ionospheric Propagation
- Solar/Space Weather





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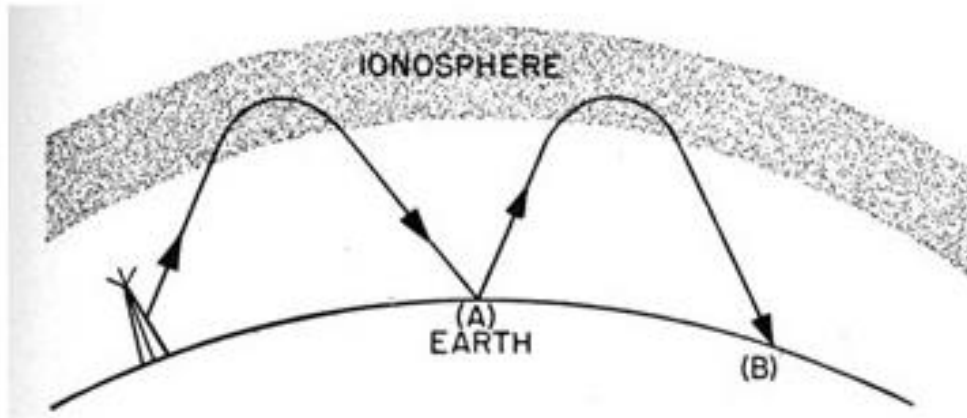
Going down the rabbit hole:

Operator stuff

- Location
- Times
- Bands and Modes
- Radio Systems
  - Antennas



## Operator stuff – Locations relative to skip zones

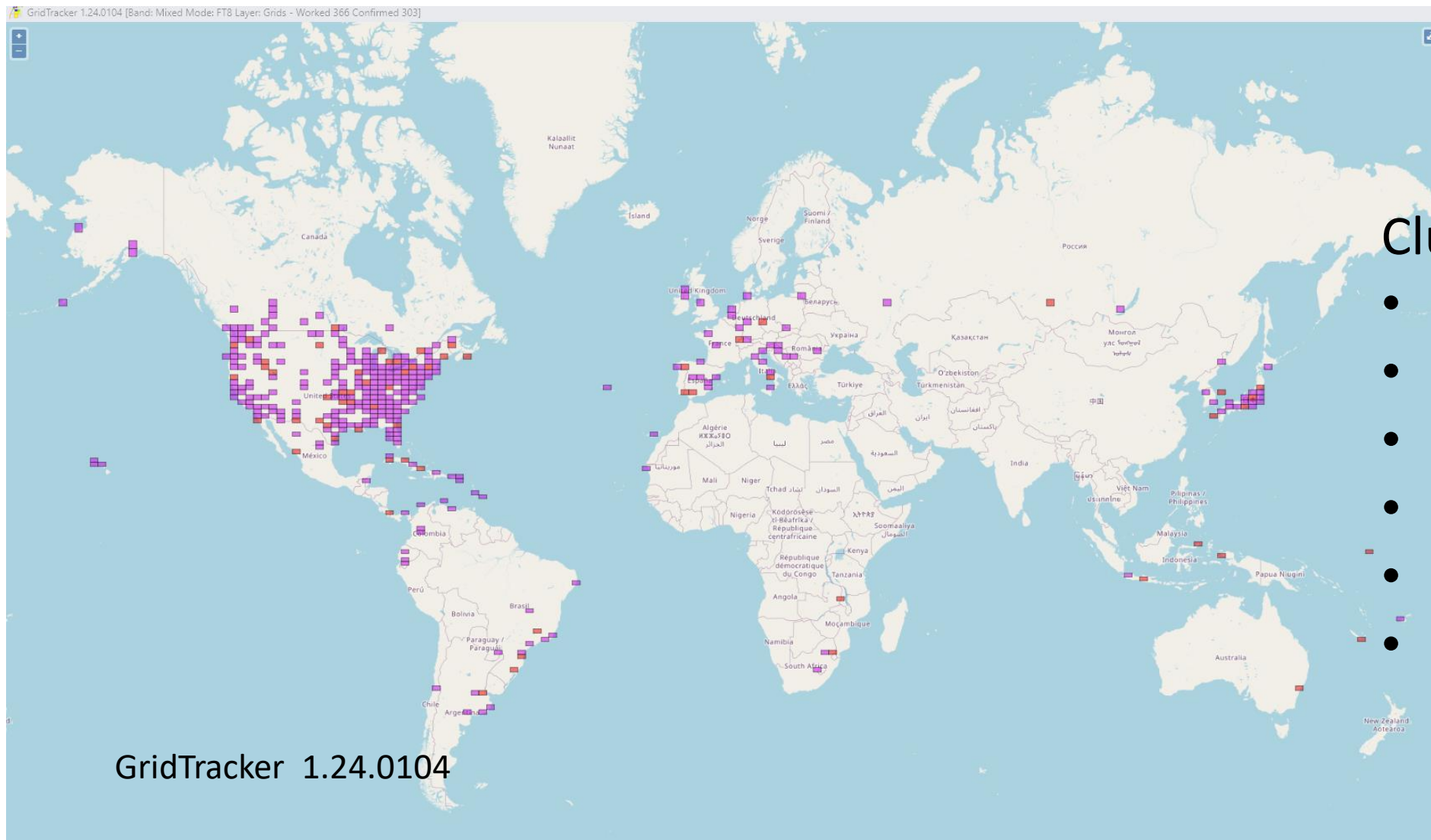


**Figure 154.-Multiple refraction and reflection of a sky wave.**

Source: US Bureau of Naval Personnel Training,  
Introduction to Radio Equipment, 1946



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- ### Cluster locations
- East coast
  - Europe
  - Japan
  - Central America
  - South America
  - South Africa

GridTracker 1.24.0104

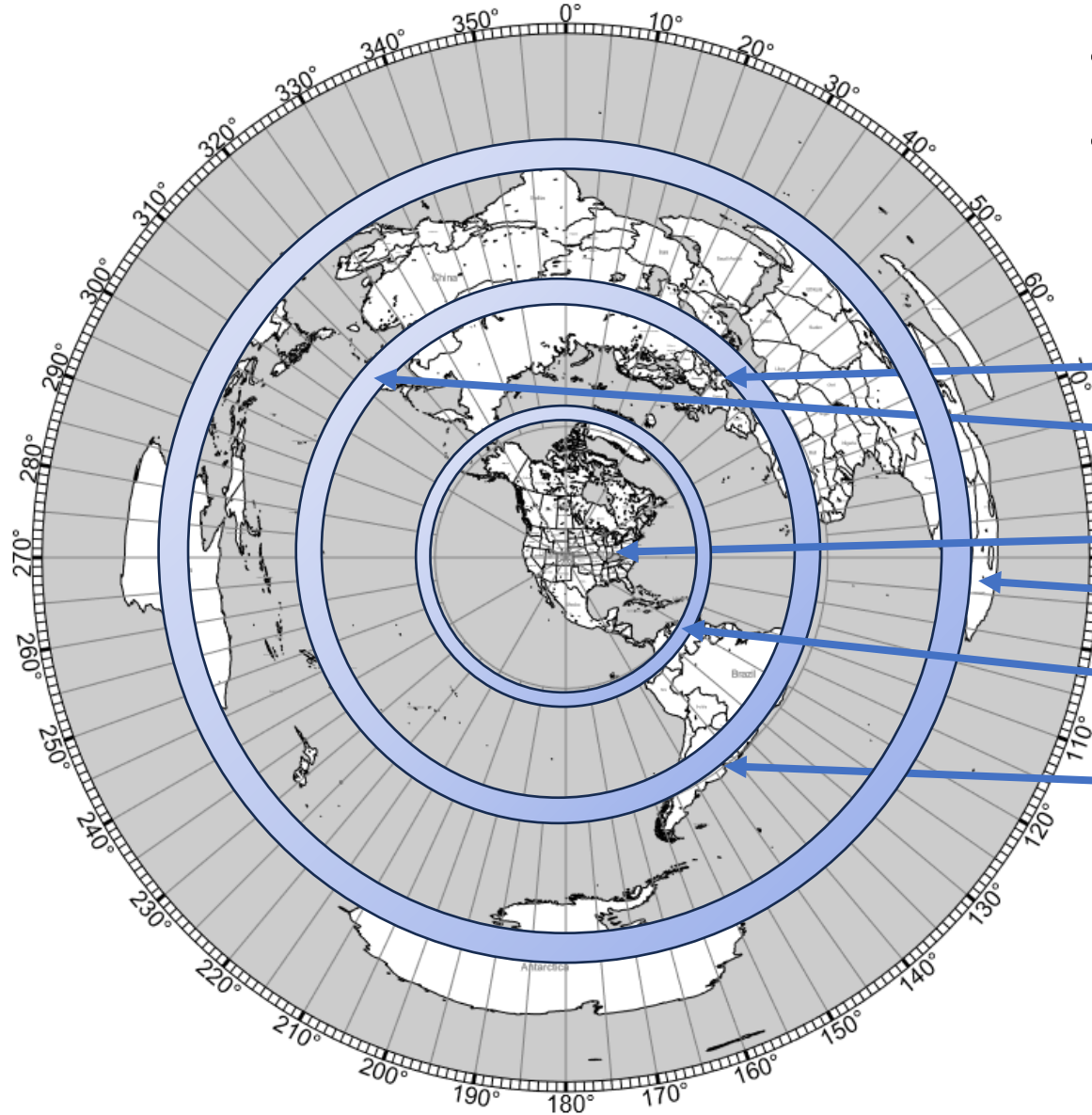


## Cluster locations:

- East coast, Atlanta – N4IP, EM73, 1217mi, 102 deg
- Central America, Curacao – PJ2MAN, FK52, 2913mi, 120 deg
- Europe, France – F5SG, JN37, 5130mi, 40 deg
- Japan – JA6BZI, PM53, 6266mi, 316.8 deg
- South America, Brazil -- PP5TG, GG53, 5843mi, 132 deg
- South Africa – ZS6HON, KG44, 9598mi, 84.9 deg

Center: 39°36'15"N 105°12'30"W Radius: 19300 km

Courtesy of Tom (NS6T)



- Likely skip zones from KOMCW
- 3000, 6000, 9000mi
- 5000, 10000, 15000km

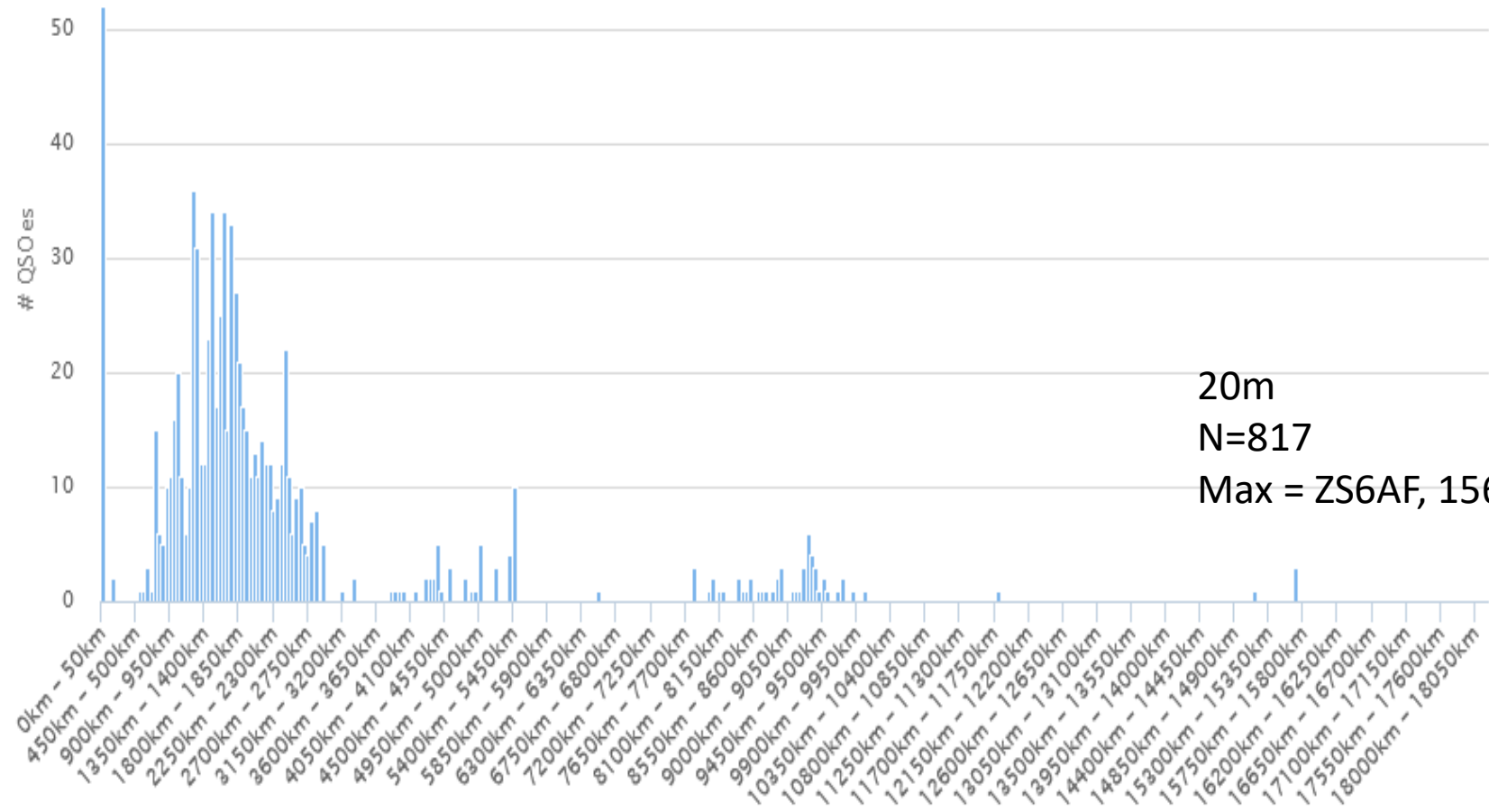
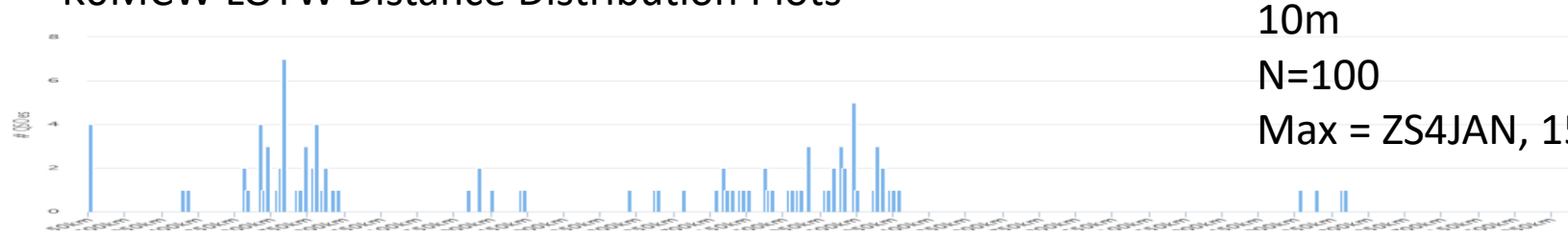
### Cluster locations

- Europe
- Japan
- East coast
- South Africa
- Central America
- South America





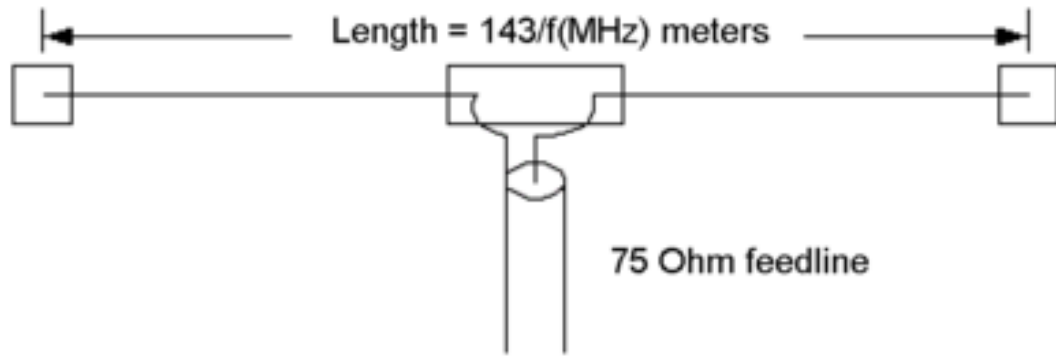
### K0MCW LOTW Distance Distribution Plots



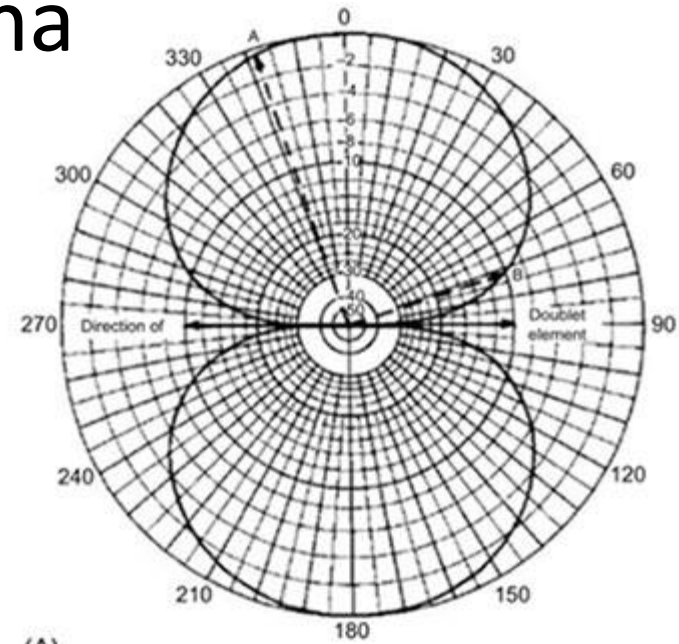
Courtesy of <https://la8aja.com/distplot/>



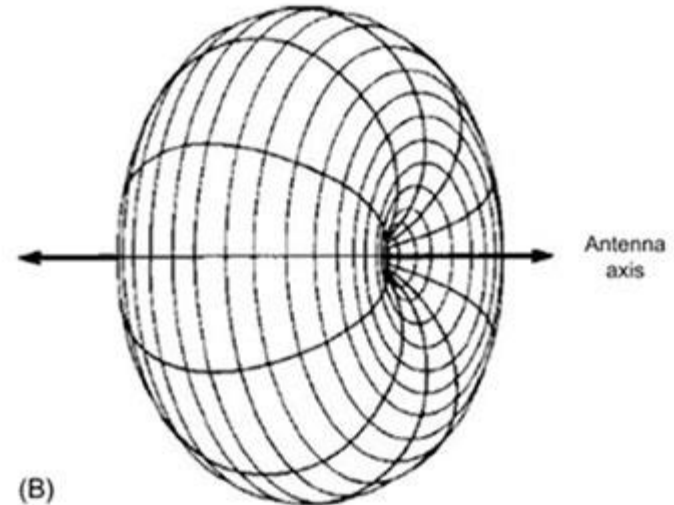
# Operator stuff – Antenna



<https://www.digikey.com/en/blog/use-traps-to-enable-multiband-operation-with-dipole-antennas>



(A)



(B)



K0MCMW

20m / 10m

$\frac{1}{2}$  wave dipole





20m

10m



KOMCW  
20m / 10m  
½ wave dipole

N



Antenna -20 deg



ZS6HON



Helgard R Honiball

155 Dormie street

Centurion 0157

South Africa

QSL: QRZ.com, eQSL.cc, LOTW, Clublog, Sorry no paper QSL

Email: [helgardh007@gmail.com](mailto:helgardh007@gmail.com)

Ham Member Lookups: 53074

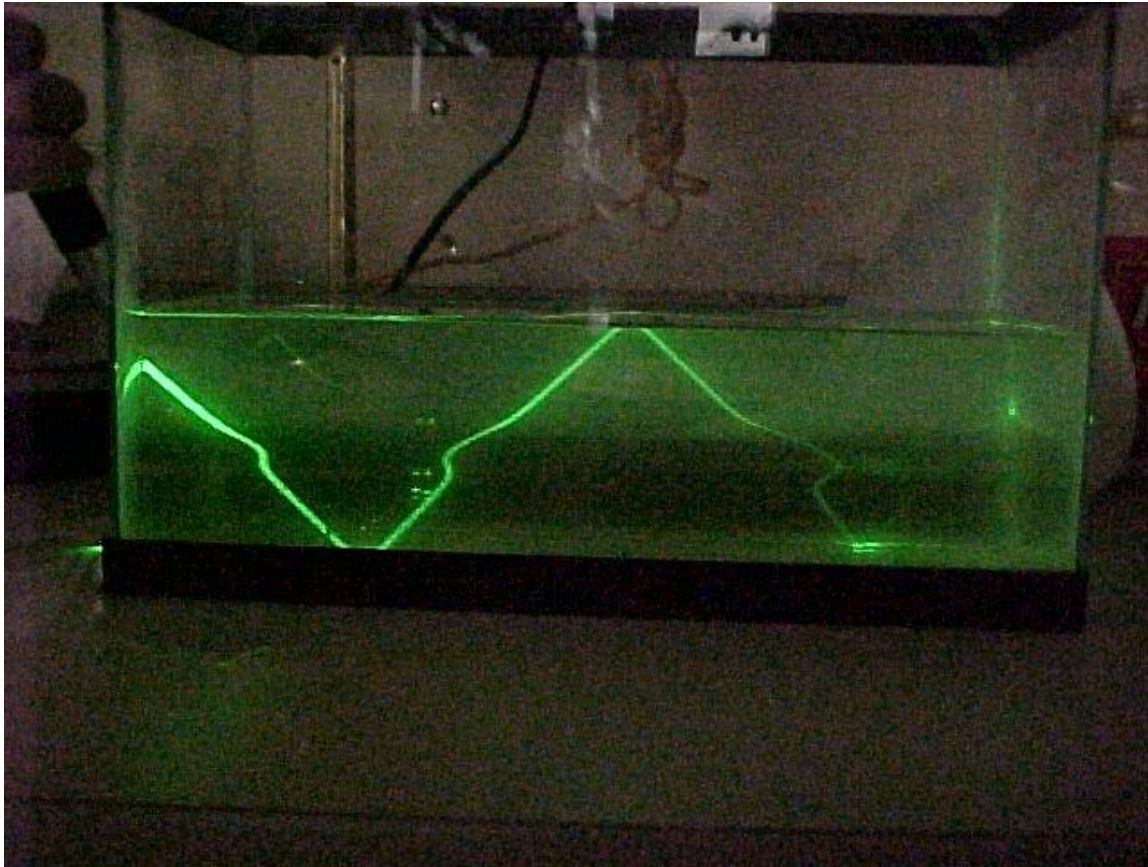
Biography	Detail	Logbook	Awards 15	Log a NEW contact with :
Lookups	53074	(140660)		
QRZ Record#	1991449			
QRZ Admin	ZS6HON			
Date Joined	2014-11-20	11:39:31		
Last Update	2020-02-04	13:03:11		
Latitude	-25.855000	(25° 51' 18" S)		
Longitude	28.123333	(28° 7' 23" E)		
Grid Square	KG44bd			
Geo Source	User supplied			
Bearing	84.9° E	(from K0MCW)		
Distance	9598.1 mi	(15446.7 km)		
Long Path	15258.7 mi	(24556.5 km)		

Note:  
Distance – 9598 mi  
Bearing – 84.9 deg  
(from K0MCW)

Source QRZ.COM

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So why are some of my longest QSOs at an azimuth where I would expect a null?

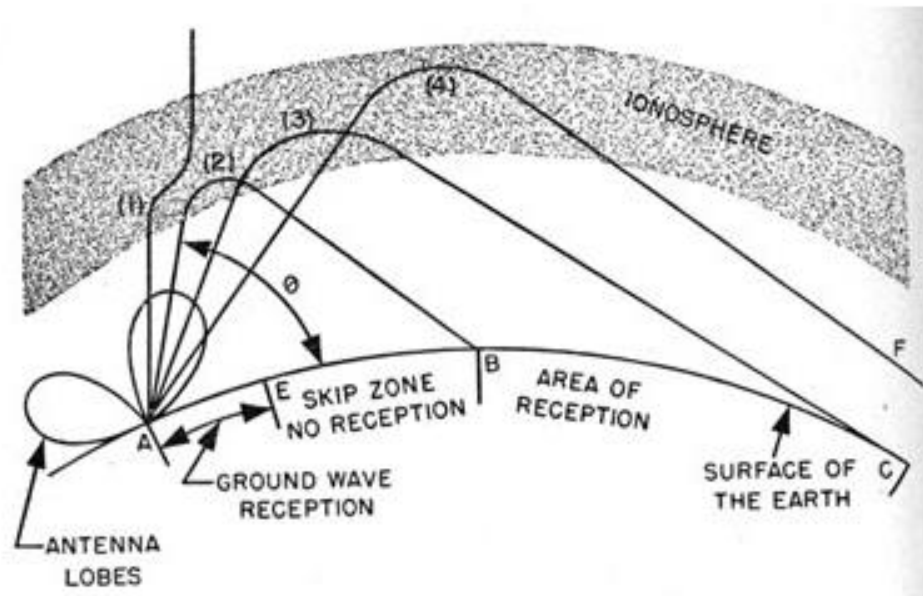
Because it ain't as simple as the models depict...

A radio wave is not the same as a laser beam refracting off materials with differing index of refractions.





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**Figure 151.-Effect of angle of refraction on sky wave.**

Source: US Bureau of Naval Personnel Training, Introduction to Radio Equipment, 1946

It ain't as simple as the models depict...

A radio wave is electro-magnetic and follows a radiation pattern that is absorbed, refracted, reflected, polarized, scattered and jostled by constantly changing, non-uniform free electrons and protons in an ionosphere that surrounds a spherical object with its own magnetic field.




# 285 TechConnect Radio Club - NAØTC

**Solar-Terrestrial Data**  
06 Jan 2024 1525 GMT  
SFI 153 SN 128  
A 5 K 0  
X-Ray C1.1  
304A 152.4 @ SEM  
Pf 1790 Ef 42800  
Aurora 1/n=1.99  
Bz 0.3 SW 334.6

**HF Conditions**

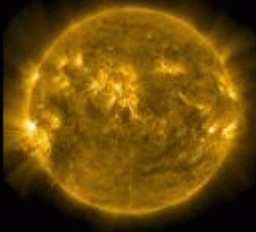
Band	Day	Night
80m-40m	Poor	Good
30m-20m	Fair	Good
17m-15m	Good	Good
12m-10m	Good	Poor

**VHF Conditions**  
Aur Lat 67.5°  
Aurora Band Closed  
6m EsEU Band Closed  
4m EsEU Band Closed  
2m EsEU High MUF  
2m EsNA Band Closed  
EME Deg Fair  
Solar Flare Prb 49%

MUF   
MS 0 MIN 6 12 18 Utc MAX

Geomag Field INACTIVE  
Sig Noise Lvl S0-S1  
MUF US Boulder 25.54

**Current Solar Image**




<http://www.n0nbh.com>  
Copyright Paul L Herrman 2023

**Solar-Terrestrial Data**  
06 Jan 2024 2235 GMT  
SFI 159 SN 149  
A 2 K 0  
X-Ray C1.4  
304A 151.6 @ SEM  
Pf NoRpt Ef NoRpt  
Aurora 2/n=1.99  
Bz -0.2 SW 335.3

**HF Conditions**


Band	Day	Night
80m-40m	Poor	Good
30m-20m	Fair	Good
17m-15m	Good	Good
12m-10m	Good	Poor

**VHF Conditions**  
Aur Lat 66.5°  
Aurora Band Closed  
6m EsEU Band Closed  
4m EsEU Band Closed  
2m EsEU High MUF  
2m EsNA Band Closed  
EME Deg Fair  
Solar Flare Prb 49%

MUF   
MS 0 MIN 6 12 18 Utc MAX

Geomag Field INACTIVE  
Sig Noise Lvl S0-S1  
MUF US Boulder 31.11

**Current Solar Image**




<http://www.n0nbh.com>  
Copyright Paul L Herrman 2023

**Solar-Terrestrial Data**  
06 Jan 2024 2309 GMT  
SFI 159 SN 149  
A 2 K 0  
X-Ray C1.1  
304A 152.9 @ SEM  
Pf NoRpt Ef NoRpt  
Aurora 4/n=1.99  
Bz -0.2 SW 335.3

**HF Conditions**

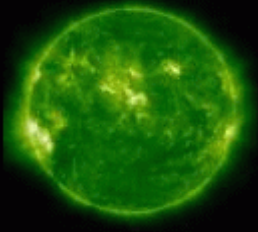
Band	Day	Night
80m-40m	Poor	Good
30m-20m	Fair	Good
17m-15m	Good	Good
12m-10m	Good	Poor

**VHF Conditions**  
Aur Lat 63.9°  
Aurora Band Closed  
6m EsEU Band Closed  
4m EsEU Band Closed  
2m EsEU High MUF  
2m EsNA Band Closed  
EME Deg Fair  
Solar Flare Prb 65%

MUF   
MS 0 MIN 6 12 18 Utc MAX

Geomag Field INACTIVE  
Sig Noise Lvl S0-S1  
MUF US Boulder 28.36

**Current Solar Image**



<http://www.n0nbh.com>  
Copyright Paul L Herrman 2023

Do these help?

Some useful interesting information:

- Time of day
- K factor – Geomagnetic storm intensity
  - Low is good
  - High is bad
- Solar Flare Intensity (SFI) and Solar Image
- Maximum Useable Frequency

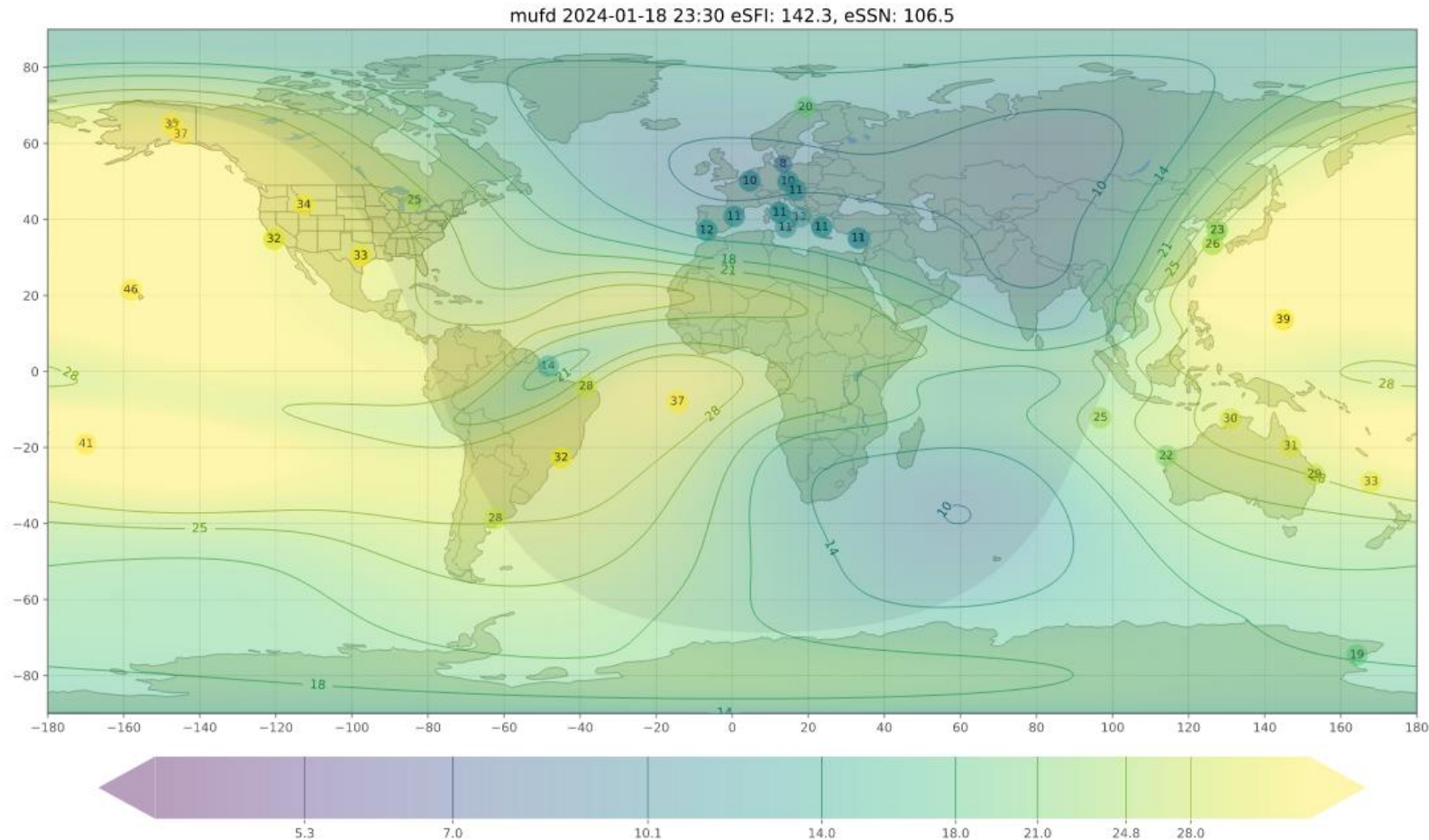
But is this information really useful?

Maybe, but it is way too simplistic.



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For instance: MUF is not a single value. As indicated by isosonde measurements, it varies considerably spatially and temporally





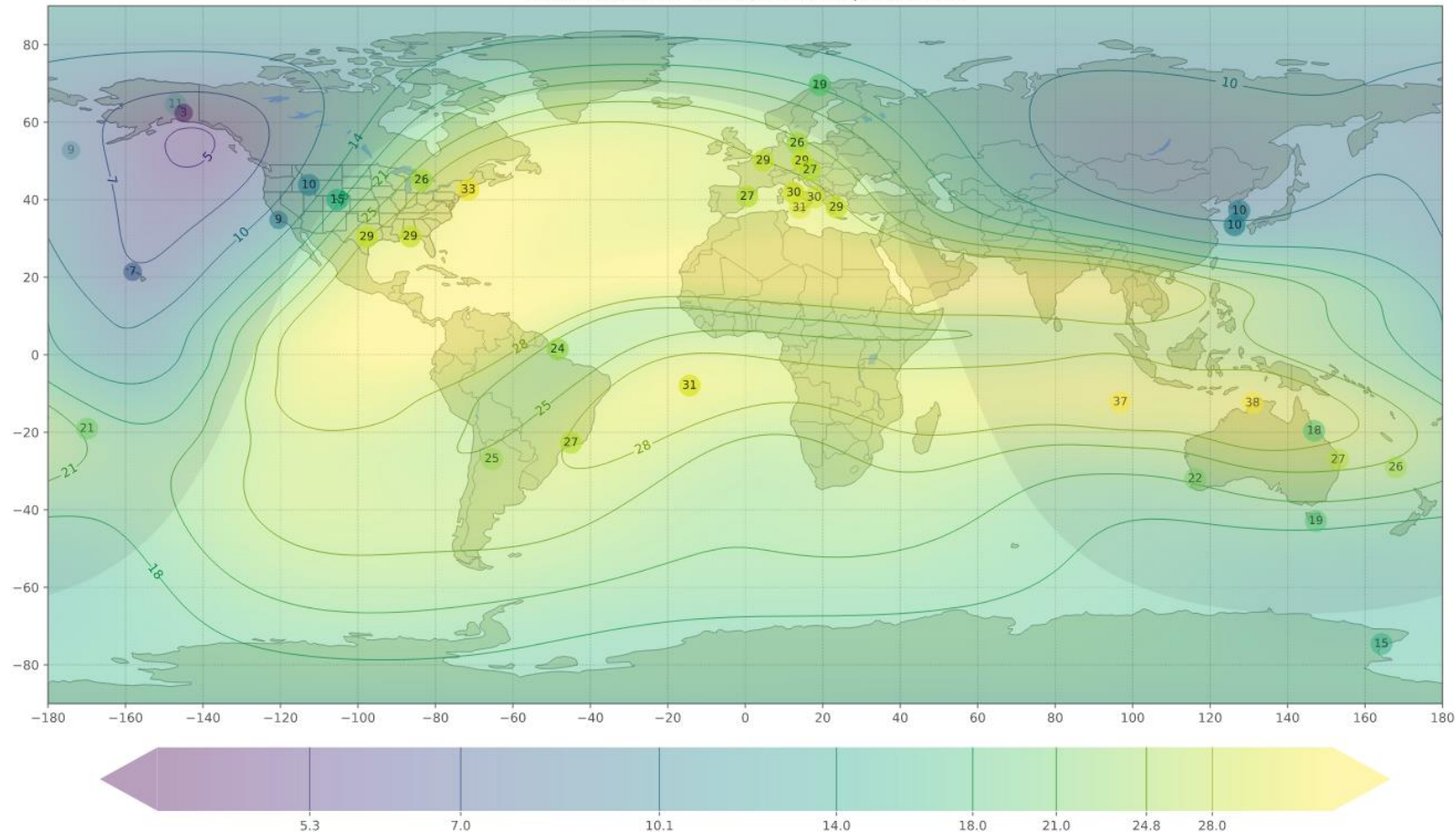


# 285 TechConnect Radio Club - NAØTC

Browser address bar: <https://prop.kc2g.com>

Navigation menu: MUF | foF2 | Data | eSSN | About | Acknowledgments

mufd 2024-01-07 14:30 eSfI: 117.6, eSSN: 73.3



Map of Maximum Usable Frequency

14:30 UTC  
01-07-2024  
Sun located over the Atlantic Ocean



# 285 TechConnect Radio Club - NAØTC

So what is the alternative to space weather and ionospheric propagation measures?

Take advantage of the high usage of digital modes and use “crowd source” information to find the action.

Sample tools:

Grid Tracker

PSK Reporter



015 [Band: 20m Mode: FT8 Layer: Grids]

**GridTracker**  
14.074.000 Hz (20m) FT8  
Sun 07 Jan 2024 14:27:18 UTC  
SM6UQL JO57 -4  
Sweden 4782mi 31°

**TRANSMIT**

Rx Calls **64** QSO **1464**  
Rx DXCC **36** QSL **993**  
Clear Live Clear Log

**Map View Filters**  
Band **Auto**  
Mode **Auto**  
Prop **Mixed**  
Data **Live**

**Legend**  
QSO QSL  
QSX CQ CQ DX  
QRZ QTH WSPR

# Grid Tracker

PC Based - Works with

- WSJT-X
- PSK Reporter
- QRZ.com
- Logging Software
  
- Map Based Interface
- Grey line
- Call Roster
- Alerts
- Live action
- Historical from logs
- USWS Weather overlays
- POTA



# Screenshot of my typical windows monitor when I am actively using FT-8

The screenshot displays a Windows desktop with several active windows related to amateur radio software:

- GridTracker**: Shows a world map with a pink arc indicating a signal path. It displays the current frequency as 14.074.000 Hz (20m) FT8, with a date of Sun 07 Jan 2024 14:29:45 UTC. It also shows statistics for received calls (52) and QSOs (1464).
- WSJT-X v2.5.4**: The main software interface for FT8. It shows a frequency of 14.073 500 and a date of 2024 Jan 07 14:29:47. It includes a 'Band Activity' table and an 'Rx Frequency' table.
- Band Activity Table**:
 

UTC	dB	DT	Freq	Message	Country
142830	-7	-0.0	1289	~ CQ N4YSA FM08	U.S.A.
142830	-12	-0.1	1321	~ CQ WUSE EM72	U.S.A.
142900	-1	-0.0	1498	~ CQ NOVTY EN40	U.S.A.
142900	-9	-0.0	1289	~ CQ N4YSA FM08	U.S.A.
142930	4	-0.0	1499	~ CQ NOVTY EN40	U.S.A.
142930	-6	-0.0	1418	~ CQ KD2SER FN12	U.S.A.
142930	-4	-0.1	1195	~ CQ XE2J DL96	Mexico
142930	-24	-0.0	2320	~ CQ VE2BBB FN25	Canada
- Rx Frequency Table**:
 

UTC	dB	DT	Freq	Message	Country
142700	-9	-0.0	466	~ IK7YZB SM6UQL 73	
142730	-4	-0.0	465	~ CQ SM6UQL JO57	CQ Zone 14
142745	Tx		1315	~ SM6UQL KOMCW DM79	CQ Zone 14
142800	-3	-0.0	466	~ CQ SM6UQL JO57	CQ Zone 14
142815	Tx		1315	~ SM6UQL KOMCW DM79	CQ Zone 14
142830	-5	-0.0	466	~ CQ SM6UQL JO57	CQ Zone 14
142845	Tx		1315	~ SM6UQL KOMCW DM79	
142915	Tx		1315	~ SM6UQL KOMCW DM79	
142930	-6	0.1	466	~ AB4LL SM6UQL -20	
142945	Tx		1315	~ SM6UQL KOMCW DM79	
- Map View Filters**: Shows settings for Band (Auto), Mode (Auto), Prop (Mixed), and Data (Live).
- Call Sign Details (SM6UQL)**:
 

Field	Value
DXCC	284 - Sweden
Source	QRZ.com
LoTW Member	✓ (03 Dec 2023)
eQSL Member	✓
Cached Record	Sun 07 Jan 2024 14:23:...
- Logbook**: Shows a list of received calls with columns for Callsign, dB, Grid, Dist (mi), Azim, DXCC, State, County, Wanted, POTA, DT, CQz, and UTC.
- Call Roster**: A table listing call signs and their details.
 

Callsign	dB	Grid	Dist (mi)	Azim	DXCC	State	County	Wanted	POTA	DT	CQz	UTC
N4NF	-12	EL96	1660	116	United States	FL	Palm Beach			0.10	05	14:28:30
VE2BBB	-24	FN25	1580	65	Canada			New Grid		0.00	05	14:29:30
KD2SER	-6	FN12	1476	73	United States	NY	Ontario	New Grid		0.00	05	14:29:30
N4YSA	-9	FM08	1403	85	United States	VA	Page +1			0.00	05	14:29:00
KD8UPV	-19	EM79	1074	84	United States	OH	Greene +1			0.00	04	14:28:30
XE2J	-4	DL96	937	164	Mexico					-0.10	06	14:29:30
NOVTY	4	EN40	753	81	United States	IA	Des Moines			0.00	04	14:29:30







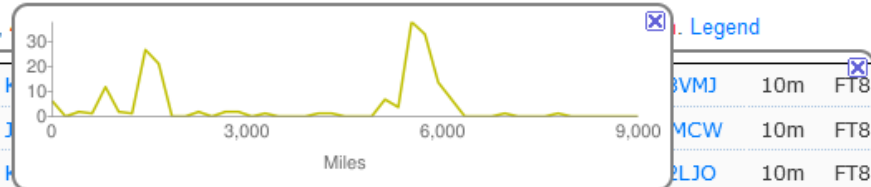




On  show  sent/rcvd by   using  over the last   [Display options](#) [Permalink](#)

Monitoring K0MCW (last heard 16 mins ago). Automatic refresh in 3 minutes. Small markers are the 179 transmitters ([show logbook](#)) heard ([distance chart](#)) at K0MCW (233 reports, 15 countries last 24 hours; 476 reports, 20 countries last week).

There are 1680 active monitors: 1641 on 10m, 206 on 15m, 177 on 20m, 163 on 12m, 153 on 17m, 134 on 30m, 124 on 40m, 66 on 80m, 44 on 160m.



Download (ADIF) [last 24 hours](#), [last week](#)

Txmtr	Rcvr	Band	Mode	Distance	Time (UTC)
K0MCW	8A0RARI	10m	FT8	9395 miles	23:00:12
K0MCW	VK5HW-2	10m	FT8	9006 miles	22:57:30
K0MCW	VK5HW-1	10m	FT8	9006 miles	22:57:30
K0MCW	VK3XCI	10m	FT8	8786 miles	23:10:44
K0MCW	VK3AWA	10m	FT8	8643 miles	23:10:15
K0MCW	VK2HJ	10m	FT8	8421 miles	23:00:14
K0MCW	VK4TUX	10m	FT8	8035 miles	23:03:18
YD9RRL	K0MCW	10m	FT8	12892 km	23:16:34
K0MCW	VK4FP	10m	FT8	8010 miles	23:03:15
K0MCW	YB9YBB	10m	FT8	7907 miles	22:54:59
FK8HA	K0MCW	10m	FT8	11440 km	23:21:12
JR6EZE	K0MCW	10m	FT8	10121 km	23:20:58
K0MCW	JA4MAC	10m	FT8	6269 miles	22:53:00
JA6BZI	K0MCW	10m	FT8	10083 km	23:26:28
JA6FIO	K0MCW	10m	FT8	10066 km	23:24:57
JA6NQT	K0MCW	10m	FT8	10065 km	23:19:12
K0MCW	JA6NQT	10m	FT8	6255 miles	23:03:11
K0MCW	JG6NGS	10m	FT8	6247 miles	23:11:12
K0MCW	JR6LDE	10m	FT8	6246 miles	22:53:29
JA6CDC	K0MCW	10m	FT8	10043 km	23:29:27

JA6RCH	K0MCW	10m	FT8	10043 km	23:15:03
JA6QHJ	K0MCW	10m	FT8	10035 km	23:03:34
K0MCW	JA6QHJ	10m	FT8	6237 miles	22:54:27
DS5USH	K0MCW	10m	FT8	9987 km	23:23:58
JN4FNZ	K0MCW	10m	FT8	9968 km	23:10:32
K0MCW	HL1HG	10m	FT8	6165 miles	23:00:41
K0MCW	JA4VPS	10m	FT8	6145 miles	23:04:14
JA4HXC	K0MCW	10m	FT8	9854 km	23:17:20
K0MCW	JA4HXC	10m	FT8	6124 miles	22:53:31
JH4GLG	K0MCW	10m	FT8	9793 km	23:23:17
JA4FSH	K0MCW	10m	FT8	9785 km	23:22:31
K0MCW	JH4DOV	10m	FT8	6075 miles	22:54:56
K0MCW	JA3EQC	10m	FT8	6050 miles	23:11:14
JR4OZR	K0MCW	10m	FT8	9723 km	23:25:28
K0MCW	JR4OZR	10m	FT8	6043 miles	22:53:29
JR5MJS	K0MCW	10m	FT8	9717 km	23:09:28
JH3KAI	K0MCW	10m	FT8	9717 km	22:58:12
JQ3IRK	K0MCW	10m	FT8	9716 km	23:19:46
K0MCW	JE3FOR	10m	FT8	6039 miles	22:52:59
CX2RA	K0MCW	10m	FT8	9714 km	23:11:33
HL5FUA	K0MCW	10m	FT8	9709 km	23:01:28
K0MCW	HL5FUA	10m	FT8	6034 miles	23:00:41

JH3FHQ	K0MCW	10m	FT8	9690 km	23:11:35
K0MCW	JR3ADB	10m	FT8	6020 miles	23:09:44
CX4ACH	K0MCW	10m	FT8	9690 km	23:11:35
K0MCW	JA3IKG	10m	FT8	6017 miles	22:53:00
K0MCW	JA4NUE	10m	FT8	6017 miles	23:03:13
K0MCW	JA3BVD	10m	FT8	9674 km	23:22:45
CX3DAC	K0MCW	10m	FT8	9674 km	23:22:45
JR3VXR	K0MCW	10m	FT8	9667 km	23:13:29
JF3UKJ	K0MCW	10m	FT8	9664 km	22:54:13
K0MCW	JF3UKJ	10m	FT8	6006 miles	22:52:59
JH3JRC	K0MCW	10m	FT8	9661 km	23:17:06
K0MCW	JH3JRC	10m	FT8	6004 miles	23:11:11
JR3NZC	K0MCW	10m	FT8	9657 km	23:18:57
K0MCW	JR3NZC	10m	FT8	6002 miles	23:00:14
JA3QJJ	K0MCW	10m	FT8	9645 km	22:55:43
K0MCW	JA3QJJ	10m	FT8	5994 miles	22:54:27
K0MCW	JA3NDS	10m	FT8	5992 miles	23:01:14
K0MCW	JR2ULJ	10m	FT8	5962 miles	22:53:00
K0MCW	JA3KWJ	10m	FT8	5962 miles	23:00:15
JA2INL	K0MCW	10m	FT8	9577 km	23:17:21
K0MCW	JA2INL	10m	FT8	5952 miles	23:00:14

8VMJ	K0MCW	10m	FT8	9690 km	23:11:35
K0MCW	JS2GFA	10m	FT8	6020 miles	23:09:44
DLJO	K0MCW	10m	FT8	9690 km	23:11:35
K0MCW	JF2KOZ	10m	FT8	6017 miles	22:53:00
K0MCW	JA2JKE	10m	FT8	6017 miles	23:03:13
K0MCW	JH2GSW	10m	FT8	9674 km	23:22:45
PU3MIP	K0MCW	10m	FT8	9667 km	23:13:29
JA2QVP	K0MCW	10m	FT8	9664 km	22:54:13
K0MCW	JA2QVP	10m	FT8	6006 miles	22:52:59
JH2KVP	K0MCW	10m	FT8	9661 km	23:17:06
JA2TSP	K0MCW	10m	FT8	6004 miles	23:11:11
JH2JRX	K0MCW	10m	FT8	9657 km	23:18:57
K0MCW	JH2JRX	10m	FT8	6002 miles	23:00:14
K0MCW	JJ2EEN	10m	FT8	9645 km	22:55:43
K0MCW	JH2QFW	10m	FT8	5994 miles	22:54:27
K0MCW	JA2QUQ	10m	FT8	5992 miles	23:01:14
K0MCW	JO2QWF	10m	FT8	5962 miles	22:53:00
K0MCW	JP2SYS	10m	FT8	5962 miles	23:00:15
K0MCW	JH2WHV	10m	FT8	9577 km	23:17:21
K0MCW	JG2HWR	10m	FT8	5952 miles	23:00:14



# 285 TechConnect Radio Club - NAØTC

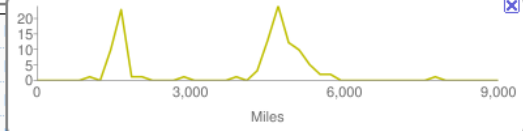
Display Reception Reports | Callsign Database - QRZ.com | HF Propagation and Solar-Terre | GIRO Station Data

https://pskreporter.info/pskmap.html#

On **10m**, show **signals**, sent/rcvd by **the callsign** **k0mcw** using **all modes** over the last **6 hours** Go! [Display options](#) [Permalink](#)

Monitoring K0MCW (last heard 6 mins ago). Automatic refresh in 4 minutes. Small markers are the 110 transmitters (show logbook) heard (distance chart) at K0MCW (909 reports, 54 countries last 24 hours; 3502 reports, 54 countries last week). There are 2806 active monitors: 2741 on 10m, 303 on 15m, 280 on 20m, 235 on 12m, 228 on 17m, 190 on 40m, 181 on 30m, 102 on 80m, 56 on 60m, 45 on 2m, 35 on 160m, 22 on 6m, 10 on 11m, 4 on 2.4Ghz, 1 on 10Ghz. Legend

Txmt	Rcvr	Band	Mode	Distance	Time (UTC)
D2UY	K0MCW	10m	FT8	12737 km	15:06:57
IW9EZO	K0MCW	10m	FT8	9486 km	15:00:14
I17WWA	K0MCW	10m	FT8	9376 km	14:58:57
K0MCW	I27QFN	10m	FT8	5742 miles	15:00:29
IU8ADS	K0MCW	10m	FT8	9174 km	15:02:13
IU8JCQ	K0MCW	10m	FT8	9165 km	15:02:43
K0MCW	IS0SLM	10m	FT8	5589 miles	15:00:00
IS0SLM	K0MCW	10m	FT8	8993 km	14:57:42
K0MCW	IK6DLK	10m	FT8	5569 miles	14:58:00
IU0ERZ	K0MCW	10m	FT8	8929 km	14:58:58
IK6JRI	K0MCW	10m	FT8	8900 km	15:01:15
K0MCW	IW4EGP	10m	FT8	5481 miles	14:59:59
K0MCW	IK4MGP	10m	FT8	5471 miles	14:58:00
IU5PTB	K0MCW	10m	FT8	8776 km	15:00:42
TK5IH	K0MCW	10m	FT8	8775 km	15:05:42
K0MCW	I25DKJ	10m	FT8	5421 miles	15:02:59
I22FDU	K0MCW	10m	FT8	8607 km	15:06:58
EA6SX	K0MCW	10m	FT8	8581 km	15:03:16
K0MCW	IK2RPE	10m	FT8	5298 miles	14:59:59
IK2RPE	K0MCW	10m	FT8	8525 km	14:58:12
I22AMW	K0MCW	10m	FT8	8523 km	14:57:41
F4TXU	K0MCW	10m	FT8	8342 km	14:58:27
EA7KGJ	K0MCW	10m	FT8	8321 km	15:07:58
K0MCW	EA7CL	10m	FT8	5154 miles	15:00:15
DF6NP	K0MCW	10m	FT8	8287 km	14:57:44
HB9VAA	K0MCW	10m	FT8	8287 km	14:58:30
DG2GG	K0MCW	10m	FT8	8276 km	15:04:27
HB9FMT	K0MCW	10m	FT8	8257 km	14:58:30
F5TMJ	K0MCW	10m	FT8	8215 km	15:03:30
F4JCU	K0MCW	10m	FT8	8151 km	14:58:30
DL9ZBD	K0MCW	10m	FT8	8123 km	15:04:27
F6EPY	K0MCW	10m	FT8	8110 km	14:58:30
EA4D	K0MCW	10m	FT8	8103 km	15:03:30
DL3YDX	K0MCW	10m	FT8	8015 km	14:58:30
F8ARK	K0MCW	10m	FT8	8006 km	15:06:30
K0MCW	F8ARK	10m	FT8	4976 miles	14:58:30
F4LHL	K0MCW	10m	FT8	7982 km	15:08:30
F4IVG	K0MCW	10m	FT8	7978 km	15:01:30
K0MCW	F4IVG	10m	FT8	4958 miles	15:01:30
DO9YU	K0MCW	10m	FT8	7975 km	14:58:30
DL1MTG	K0MCW	10m	FT8	7963 km	15:03:30
F5HJD	K0MCW	10m	FT8	7962 km	15:00:12
K0MCW	F4GBD	10m	FT8	4946 miles	14:58:00
F5MYH	K0MCW	10m	FT8	7940 km	15:04:27
F4GTR	K0MCW	10m	FT8	7931 km	15:05:27
M6JAY	K0MCW	10m	FT8	7534 km	15:00:16
G3UAS	K0MCW	10m	FT8	7515 km	14:58:28
G1PQR	K0MCW	10m	FT8	7473 km	14:57:42
Z0FGA	K0MCW	10m	FT8	7385 km	15:05:00
K0MCW	N1JFU	10m	FT8	1781 miles	14:57:59
K0MCW	N1LLW	10m	FT8	1778 miles	14:59:57
K0MCW	W1NT-6	10m	FT8	1777 miles	14:59:45
K0MCW	ΔK1P	10m	FT8	1777 miles	14:57:57



Example: Lots of activity on WSJT-X, but not making any QSOs for maybe 45 minutes.

Took a look at PSK Reporter logbook. Sorted by distance. Noticed a high number of transmit/receive activity to Italy.

Enabled TX for the next station that CQ'd from Italy.



# Fishing in a barrel

The screenshot displays a radio software interface with several windows and panels:

- Map Window:** Shows a world map with a pink dashed circle centered on Europe, indicating a listening range. A call sign **IK6JRI** is highlighted in the legend.
- GridTracker Panel:** Shows the current frequency **28.074.000 Hz (10m) FT8** and reception status **RECEIVE**. It includes statistics for Rx Calls (88 QSO, 1465) and Rx DXCC (57 QSL, 993).
- Band Activity Window:** Lists received signals with columns for UTC, dB, DT, Freq, and Message.
 

UTC	dB	DT	Freq	Message
150415	-7	0.1	930	~ CQ WW1WW FN43 U.S.A.
150415	-13	-0.1	2259	~ CQ DX DG2GG JN47 Germany
150415	-6	-1.0	1831	~ CQ PA2EW JO22 Netherlands
150415	-19	-0.1	2203	~ CQ 2E0EW JO01 England
150430	-9	-0.2	1291	~ CQ F4CTJ JN09 France
150430	-13	0.3	1150	~ CQ K5HIP FN32 U.S.A.
150430	-14	0.1	585	~ CQ DL9ZBD JO40 Germany
- Call Roster Window:** Shows a list of stations with columns for Callsign, dB, Grid, Dist (mi), Azim, DXCC, State, County, Wanted, POTA, DT, CQz, and UTC.
 

Callsign	dB	Grid	Dist (mi)	Azim	DXCC	State	County	Wanted	POTA	DT	CQz	UTC
IK6JRI	-7	JN63	5523	40	Italy			Caller - Worked Grid		-0.50	15	15:04:00
DG2GG	-13	JN47	5191	40	Germany					-0.10	14	15:04:15
EA4D	-9	IN80	5053	51	Spain			New Grid		0.00	14	15:03:30
F5PIO	-14	JN19	4894	41	France			New Grid		0.00	14	15:04:00
F5SJF	-14	JN08	4866	42	France			New Grid		0.00	14	15:03:00
PA2EW	-6	JO22	4829	37	Netherlands			New Grid		-1.00	14	15:04:15
				42	France			New Grid		-0.30	14	15:04:00
				40	England			Worked Grid		-0.10	14	15:04:15
				40	England			New Grid		0.00	14	15:03:30
				72	United States	MA	Middlesex			0.10	05	15:04:00
				70	United States	NH	Merrimack			0.10	05	15:04:15
				69	United States	MA	Androsconip			0.20	05	15:04:00
- Call Log Window:** Shows a table with columns for Type, Value, Notify, Repeat, Filename, Alerted, Last Message, and When.
 

Type	Value	Notify	Repeat	Filename	Alerted	Last Message	When
QRZ	KOMCW	PopUp	Inf	-	Yes	KOMCW IK6JRI 73	Sun 07 Jan 2024 15:04:42 UTC
- Call Sign Lookup Window:** Provides details for **IK6JRI**, including the operator **Stefano Sabbatini** (60035 JESI AN, It, Italy), DXCC (248 - Italy), Source (QRZ.com), and LoTW Member status (checked, 30 Dec 2023).
- Wide Graph Window:** Shows a waterfall plot of the frequency spectrum from 500 to 2500 kHz.
- Alerts Window:** Displays a notification for the QRZ call sign.



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A couple of side trips down the rabbit hole before demos.

Vacation Photos!

View from paddle boat down the Mississippi. Note the sun on the left.

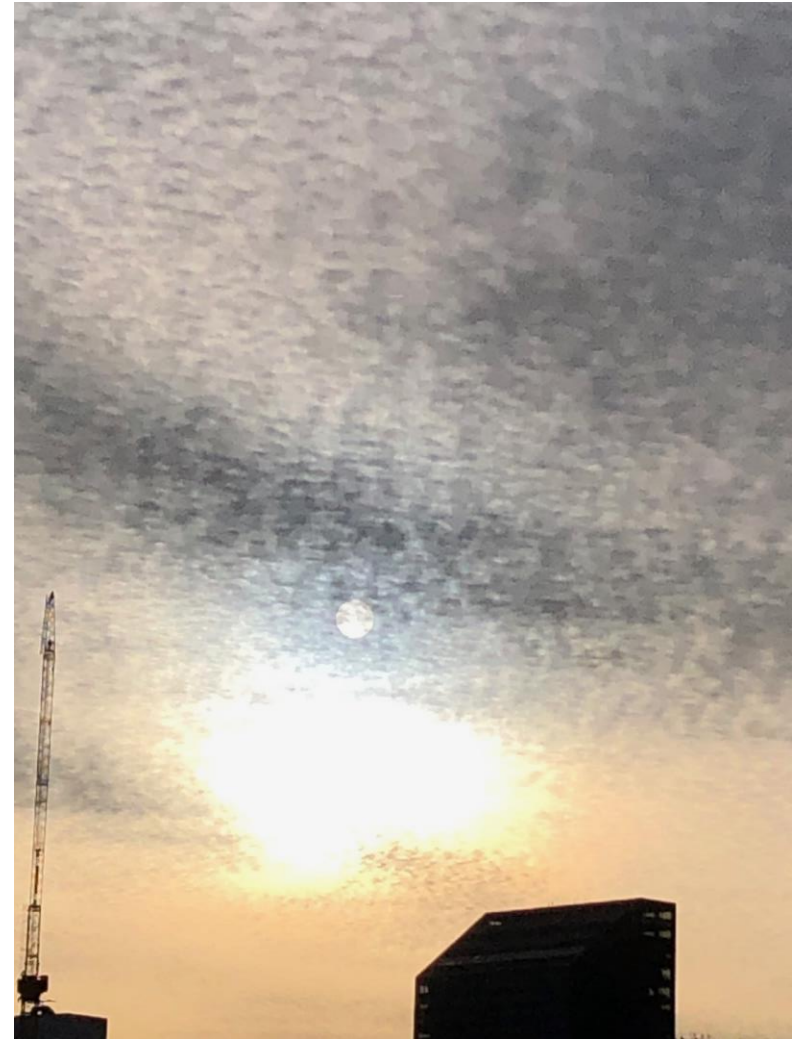


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A couple of minutes later: Parhelion or “Sun Dog” – rare phenomena caused by sunlight refraction off of ice crystal.



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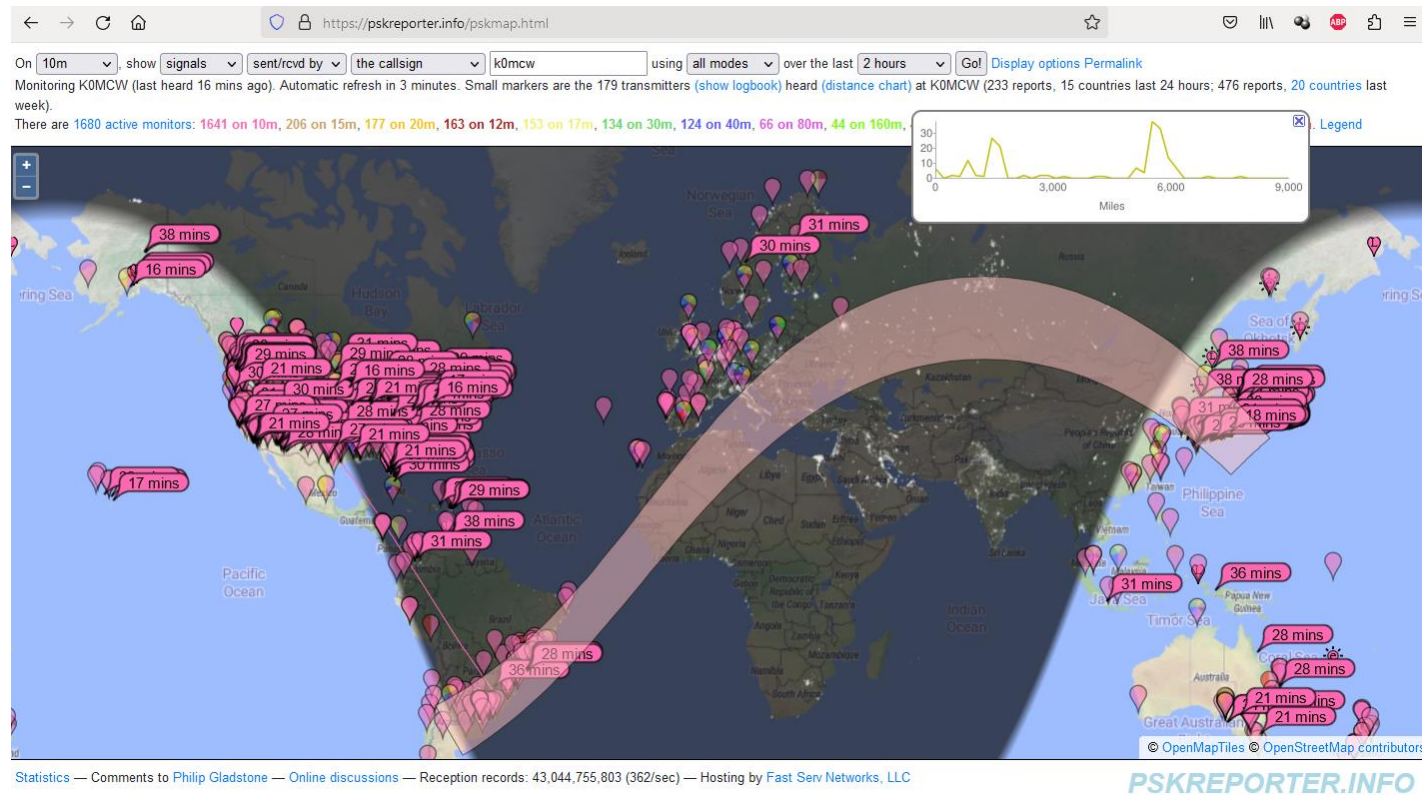
Total Eclipse of the Sun – April 8, 2024

<https://hamsci.org/eclipse>



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Fun with PSK Reporter...



<https://pskreporter.info/pskmap.html>