

"HF Propagation
Fact vs. Hype and Misinformation"
We're Not in Cycle 24 Anymore!
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https://www.dukecityhamfest.org/





The Hype





- The Hype
- The Misinformation





- The Hype
- The Misinformation
- Reality Sources





- The Hype
- The Misinformation
- Reality Sources
- •What do the Data Mean?





- The Hype
- The Misinformation
- Reality Sources
- •What do the Data Mean?
- Dispelling Hype & Misinformation





More Hype

New Propagation Mode via

Square Waves!







Propagation Hype

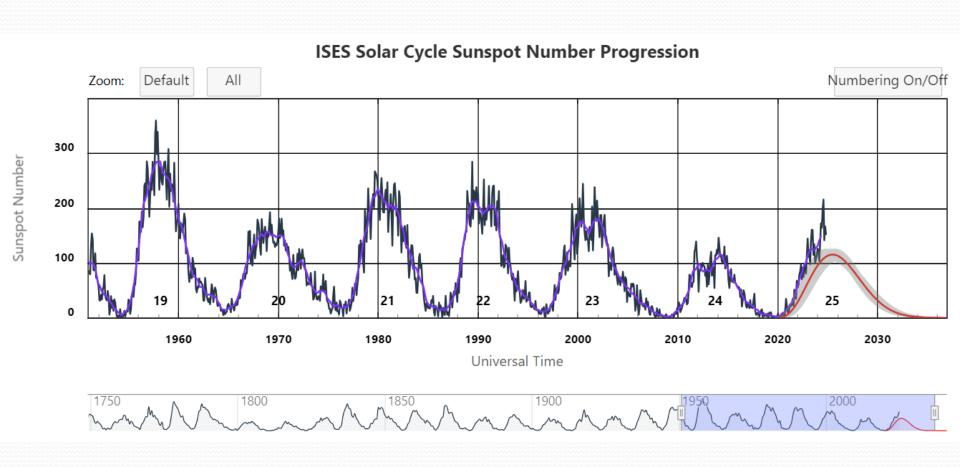
Cycle 25 Prediction

"the National Center for Atmospheric Research in Boulder, Colorado is predicting that the sunspot cycle that started this fall **could be one of the strongest since record-keeping began**"





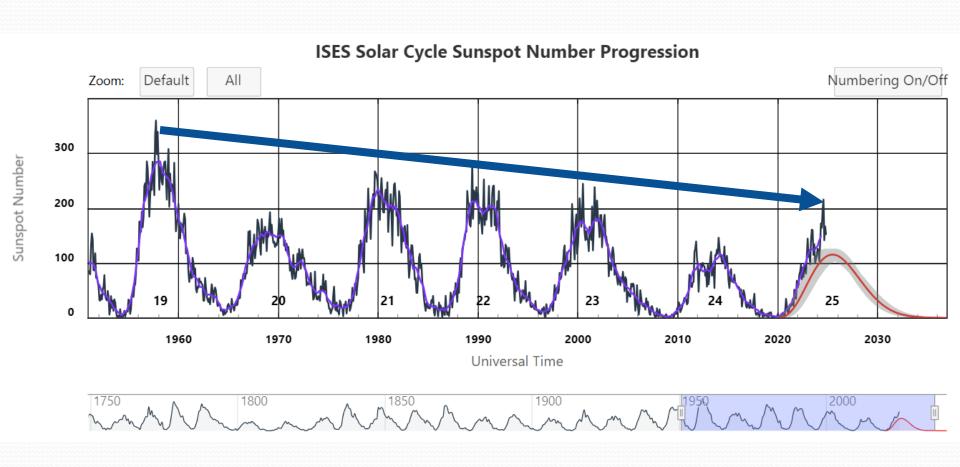
Propagation Reality







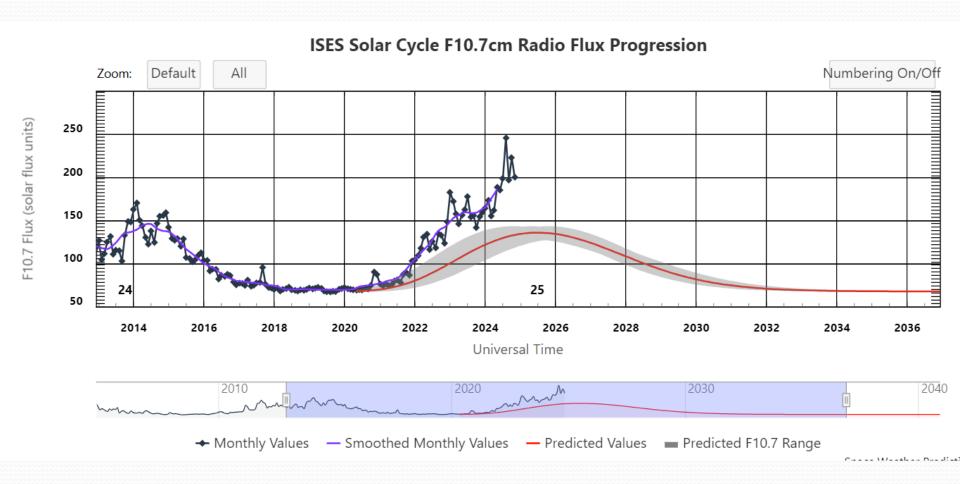
Propagation Reality







Propagation Reality



(6784 reports, 92 countries last 24 hours; 41089





Hype vs. Reality

- TV News "Vision" of Programming "If it Bleeds it Leads"
- NOVA's Dramatic Music & Narration
- New Cars Sales Commercials
- Over-the-Top Political...
 "Alternative Facts"





Define Hype

Noun:

Extravagant or Intensive Publicity or Promotion

Consider Who or What is Promoted





Propagation Misinformation

- Listen to HF/VHF/UHF
 "The Bands are Dead Today"
 "Nobody is on 20 meters CW"
 "Is 10 meters Open?"
- Subscribe to Any E-Mail List
 "R5 Blackout This Week" (Actually R1)
 "CME Changed Receive Frequencies"
 "15 meters Was Dead Yesterday"
 [I worked 7 DX Stations]

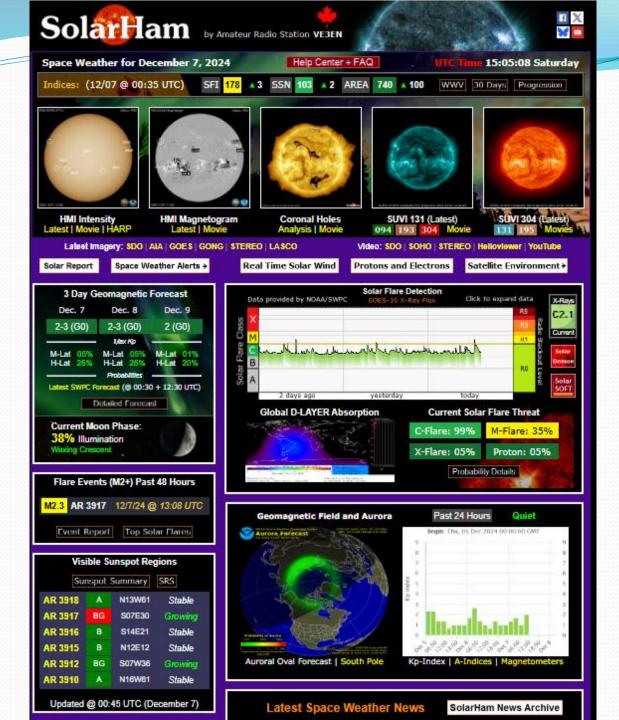




Dispelling Hype & Misinformation

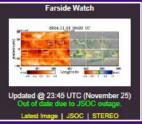
- Don't Pass On the "I heard..." Comments
- Check Reliable Sites/Sources
 It Takes Seconds to Get the Facts
- Do Your Experiences Match Reliable Sources?
- Compare Your Antennas Against Others'*
- Learn More Propagation Science

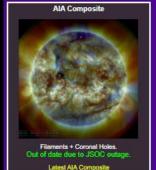












Space Weather Update

December 7, 2024 @ 12:30 UTC

Hello again folks. Below is an updated look at the visible solar disk on Saturday (Dec 7) courtesy of the Udaipur observatory located in India.

Numerous mid to upper level C-Flares are being detected with the majority being centered around AR 3912 in the southwest quadrant and AR 3917 in the southeast. AR 3917 appeared to show some growth over the past 24 hours and will be monitored. A number of potential regions in formation were also observed (circled).

Minor C-Flares will remain likely on Saturday with an ongoing chance for moderate M-Flares with AR 3912 and 3917 being the most likely source.

A coronal mass ejection (CME) was seen leaving west limb beginning around 03:30 UTC (Dec 7) and is directed away from our planet.

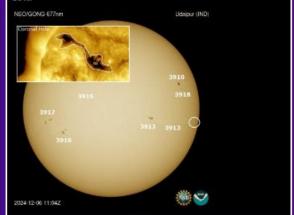


Space Weather Update December 6, 2024 @ 12:20 UTC

Below is an updated look at the visible solar disk on Friday courtesy of the Udaipur solar observatory located in India.

Solar activity continues at moderate levels with a number of minor C-Flares and occasional low level M-Flares detected. AR 3917 located in the southeast quadrant was the source of much of this activity. No Earth directed coronal mass ejections were observed in available coronagraph imagery.

Also pictured (inset) is coronal hole #98 which stretches from near the northeast limb towards center disk. A solar wind stream flowing from this zone should reach Earth by the beginning of next week. Photo by GOES-16 SUVI.







HamQSL.com

Solar Data/Propagation

Click to add to your website

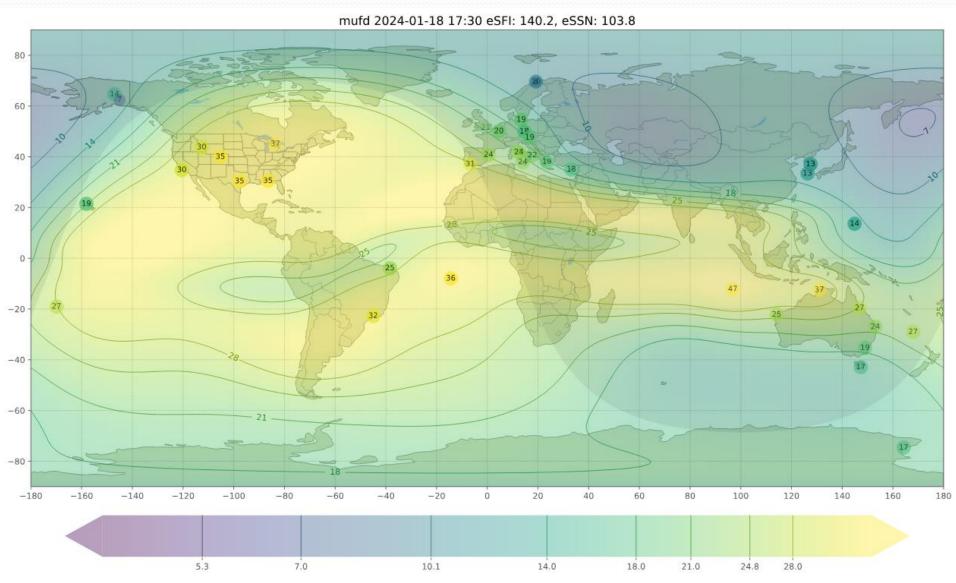








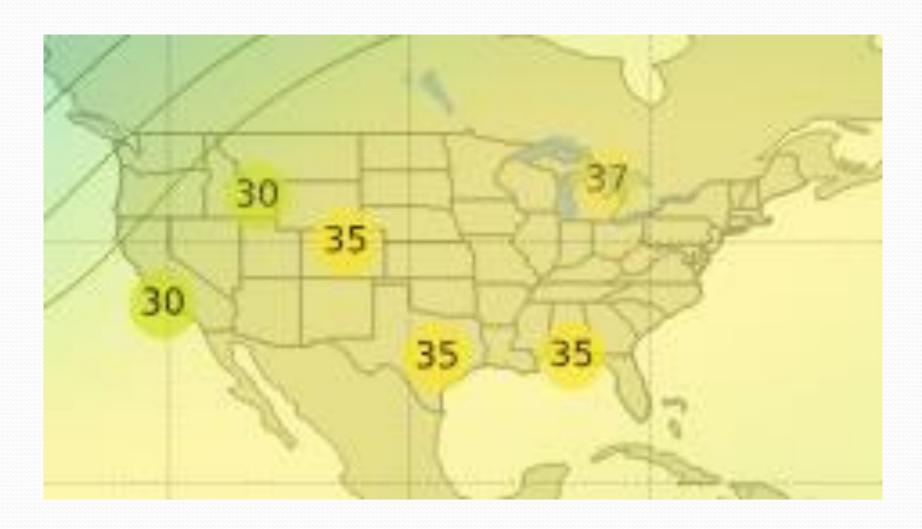
KC2G.com







KC2G.com





Reverse Beacon Network





• Spotter (de)							
callsign	llsign spotter-callsign						
• spotter	spotted	distance mi	freq	mode	type	snr	
■ DL0LA	■ EI80MB	861 mi	14027.0	CW	CQ	35 dB	
= HA1VHF	■ EI80MB	1080 mi	14027.0	CW	CQ	21 dB	
■ W1NT-6	■ EI80MB	2973 mi	14027.0	CW	CQ	28 dB	
RK3TD	■ EI80MB	1928 mi	14027.0	CW	CQ	31 dB	
CZ1AAB	■ EI80MB	752 mi	14027.0	CW	CQ	14 dB	



PSK Reporter



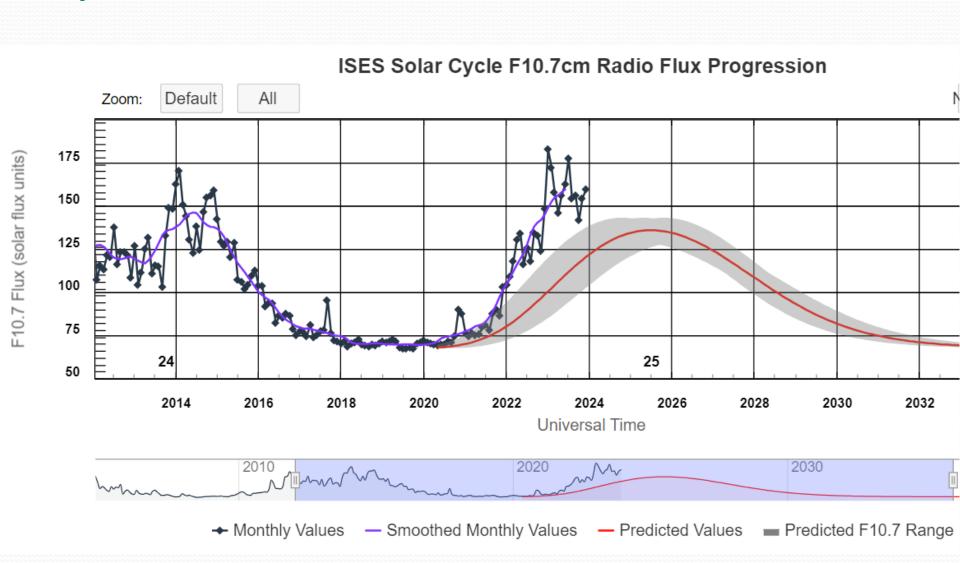
- Reception records: 52,146,986,663 (528/sec)







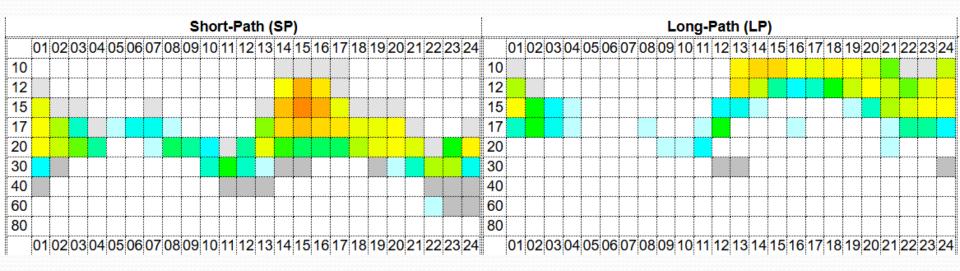
Space Weather Prediction Center

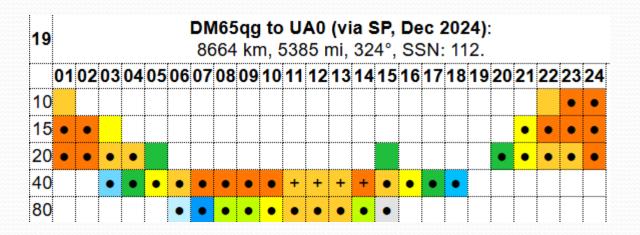






VOA Coverage Analysis Program

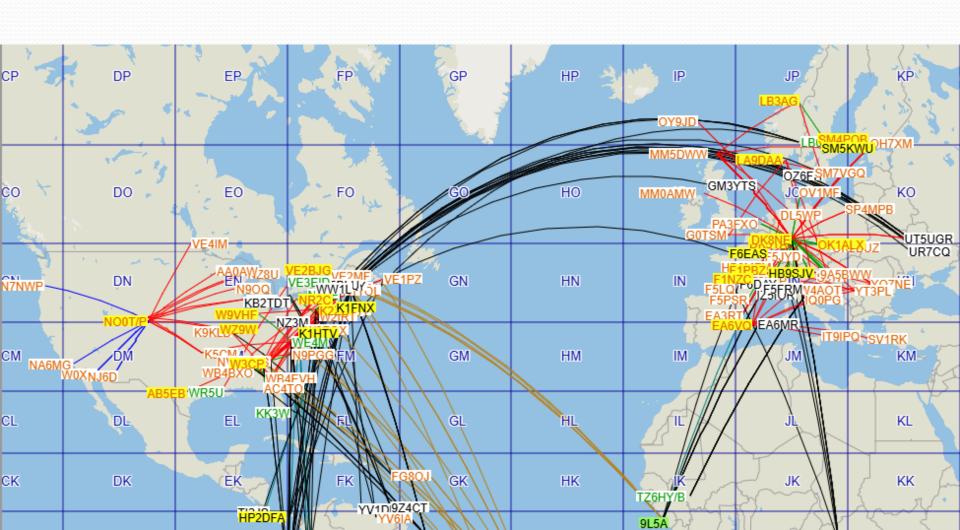








DX Maps 6m Spots 5 Dec 1445 UTC





ClubLog



Top 100 band/slots for members of ADXA - Albuquerque DX Association [First Past the Post]*

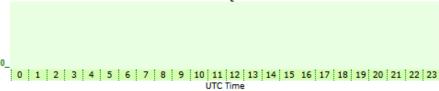
1	KR3DX	7
2	K8TE	4
3	W0ZW	3
4	KA7Y	2

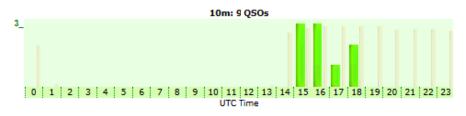


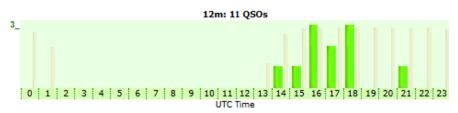
Propagation to 9L5A from USA state: NM (VOACAP: 87043)

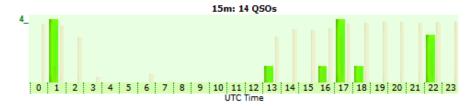


6m: 0 QSOs













10m Propagation

Worldwide Fun with 100 W and a Dipole

Make contacts domestically and around the world on 10, 12, and 15 meters with a modest station.



Carl Luetzelschwab, K9LA

We're around the solar maximum for Solar Cycle 25, which offers consistent day-to-day propagation on 10, 12, and 15 meters in the fall and winter months (except when we have a disturbance to propagation).

Frank Donovan's, W3LPL, October 2024 QST article
"What to Expect from the Solar Cycle 25 Surge"
provided detailed summaries of expected propagation
on 160 through 6 meters during this solar maximum
period. This article will discuss short path versus
long path and use of the Voice of America Coverage
Analysis Program (VOACAP) to predict propagation.
See the sidebar "A Deep Dive into 10 Meters" for more
information on the band and the upcoming ARRL
10-Meter Contest.

A Deep Dive into 10 Meters

Every class of US license has allocations on 10 meters, and the ARRL 10-Meter Contest is right around the corner on December 14 and 15. It's a 48-hour contest, but you can operate as much as you want — the main goal is to have fun. For the full list of rules, visit https://contests.arrl.org/ContestRules/10M-Rules.pdf.

Signals can be very strong on 10 meters. This is due to minimal ionospheric absorption and longer hops on the band, as well as bigger antenna arrays because 10-meter antennas are physically the smallest of our HF antennas. Additionally, these antennas can be very effective at relatively low heights. A simple dipole at 20 feet will do wonders at 100 W on SSB, CW, and FT8 (FT8 isn't allowed in the ARRL 10-Meter Contest).



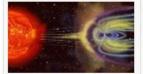
HamSCI

Active Projects

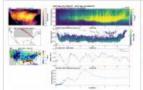


Project

2023 & 2024 Solar Eclipses



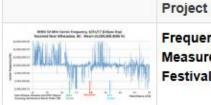
Personal Space Weather Station



Sources and Measurement of Traveling lonospheric Disturbances

Other Projects

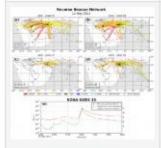




Frequency Measurement Festivals



2017 Total Solar **Eclipse**



Amateur Radio Response to Solar Flares and **Geomagnetic Storms**



Swarm-E / e-POP





SpaceWeather.com



Expand: labels | no labels | Carrington Sunspots 3916 and 3917 pose a slight threat for M-class solar flares. Photo credit: Ivo Demeulenaere of Temse, Belgium

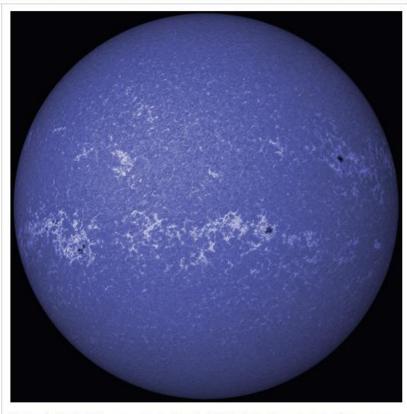
more images: from New Zealand;

Note: A flood at Stanford University has damaged a number of important SDO data servers. Repairs may not be completed until 2025. As a result, Daily Sun images will be coming from readers of Spaceweather.com for the foreseeable future. Thank you, citizen scientists!

Sunspot number: 103 What is the sunspot number? Updated 06 Dec 2024

Spotless Days

Current Stretch: 0 days 2024 total: 0 days (0%) 2023 total: 0 days (0%) 2022 total: 1 day (<1%) 2021 total: 64 days (18%) 2020 total: 208 days (57%) 2019 total: 281 days (77%) 2018 total: 221 days (61%) 2017 total: 104 days (28%) 2016 total: 32 days (9%) 2015 total: 0 days (0%) 2014 total: 1 day (<1%) 2013 total: 0 days (0%) 2013 total: 0 days (0%) 2014 total: 0 days (0%) 2011 total: 0 days (0%) 2011 total: 2 days (51%) 2011 total: 2 days (51%)



Magnetic froth. It is concentrated in a bright turbulent band stretching across the sun's southern hemisphere.

To take this picture on Dec. 5th, Herman used a Lunt solar telescope with a filter tuned to the blue glow of calcium ions in the sun's atmosphere. Calcium K filters are excellent detectors of magnetic froth--the bright and bubbly sea of magnetism that heralds the emergence of many sunspot groups. Clearly, the sun's southern hemisphere is seething with potential for sunspot genesis.

Meanwhile, the north has barely any froth at all. Catch up, North! Until it does, half of Solar Max is yet to come. Stay tuned.

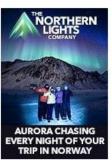
SEPTEMBER 2025 CHURCHILL, CANADA

T CrB NOVA WATCH

today: m=9.9 (Dec. 06.5) yesterday: m=9.9 more: AAVSO data

Explanation: When the nova explodes, the visual magnitude of the star (m) will jump from +10 (invisible to the naked eye) to +2 (about as bright as the North Star).









What Do the Data Mean?



- http://bandconditions.com/PROP.htm for more
- Solar Flux Index-10.7cm "Noise" Solar Activity Measure 50-Very Low 300-Very High Relates to F2 Layer Intensity; Low Intensity=Low Bands
- A & K Magnetometer Readings
 K Measured 8x Daily o=Inactive 9=Extreme Activity
 Quasi-Logarithmic Higher is Worse for Propagation
 A is Linear Average of 8 Previous K Values
 o=Quiet (Good) 400=Severe Storm (Bad)
- $K \le 3$ is Good $A \le 15$ is Good





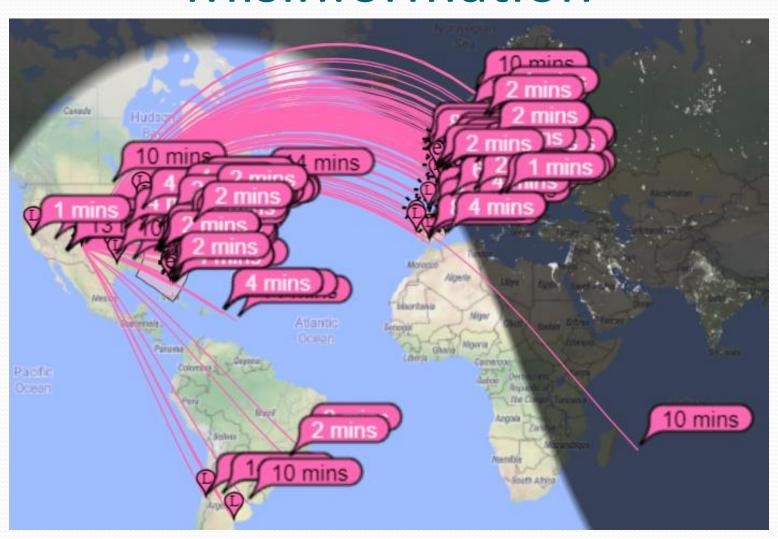
What Do the Data Mean?

- SOLAR FLUX
- 50 159 = **POOR**
- 160 200 = SO SO
- 201 300 = GREAT
- K INDEX TODAY (1X)
- 9 4 = **STORM**
- 3 0 = CALM
- A INDEX LAST 24 HOURS (8X)
- 400 16 = **STORM**
- 15 0 = CALM





Dispelling Hype & Misinformation





Dispelling Hype &



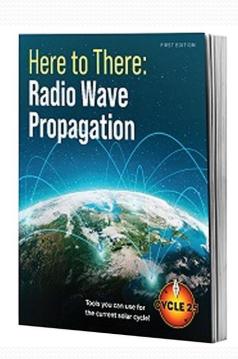
Misinformation

de dxcc: K - United States							
cancel filter selection / send a spot / search spot by callsign							
de	dx	freq	obs	time			
AB8DF	WI5D	14048	[LoTW] POTA 559 in MI wkd w/ qrp	1809z 18 Jan			
WW1L	WA5AMM	50313	[LoTW] FT8 8 dB 498Hz 1st	1808z 18 Jan			
W1PAA	W1PAA	28457	[LoTW] USB	1807z 18 Jan			
K4CUP	N1W	18074	[LoTW] WWA 2024	1807z 18 Jan			
AB8DF	K4NYM	21032.9	[LoTW] POTA 579 in MI wkd w/ qrp	1805z 18 Jan			
WB4LRA	■ 7Q6M	28074	[LoTW] EM74IC<>KH67	1805z 18 Jan			
KI1G	■ N1W	18074	[LoTW] WWA 2024	1804z 18 Jan			
W1UU	CT1ILT	28182.4	[LoTW]	1804z 18 Jan			
N1CLG	PA5BAS	24915	[LoTW]	1803z 18 Jan			
WA4Q	≭ GJ0KYZ	24917.5	[LoTW]	1803z 18 Jan			
NT9F	EA7BD	28180.5	[LoTW]	1802z 18 Jan			
KN6WEV	■ EI9HX	24939	[LoTW] Nice signal in N Cal 73's	1802z 18 Jan			
AB8DF	KL7NL	14036	POTA 559 in MI wkd w/ qrp	1801z 18 Jan			
NT9F	■ OP4K	28180.6	[LoTW]	1800z 18 Jan			
W3LPL	TZ4AM	14028.2	[LoTW] Heard in OH	1800z 18 Jan			
NR4D	K2LT	21287	[LoTW] POTA	1800z 18 Jan			

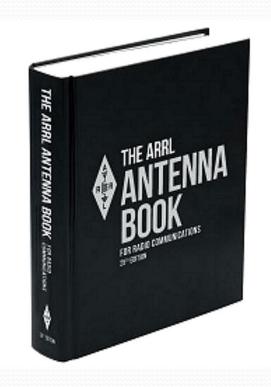




Dispelling Hype & Misinformation











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 Full Day Seminars
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- www.dukecityhamfest.org





Summary

- Hype
- Misinformation
- Reality Sources
- What do the Data Mean?
- Dispelling Hype & Misinformation
- •Questions?





Propagation Reality Sources

- https://www.solarham.net/index.htm
- https://www.hamqsl.com/solar.html#addwebsite
- https://prop.kc2g.com/
- https://www.reversebeacon.net/srch.php
- pskreporter.info
- https://www.contestuniversity.com/files/
- https://www.swpc.noaa.gov/
- https://www.voacap.com/
- https://www.dxmaps.com
- clublog.org
- hamsci.org
- http://arrl.org/wiaw-bulletins-archive-propagation
- https://www.arrl.org/files/file/QST/This%20Month%20in%20QST/2024/12%20December%202024/12-24%20Luetzelschwab.pdf
- http://kgla.us.