QRP
Contesting & DXing from the Pacific Northwest

NN7SS (K6UFO) – Mark Aaker

Our Agenda

Who is NN7SS (K6UFO)?
Why QRP?

Challenges of PNW **LOCATION**
Challenges of PNW **TIME** vs. DX
Challenges of PNW PROPAGATION - **Auroral Zone**
Challenges of PNW PROPAGATION - **MUF**

What has been Accomplished PNW QRP?
- **Records** and **Recent Reports**

Predicting the future.
JT65 Mode on HF

Who is NN7SS (K6UFO)?

NN7SS is a station on **Vashon Island, WA.**
Since 2006 operated primarily by K6UFO.

Formerly owned and "operated" by **NOAX**.

K6UFO licensed since 1971.
Has operated from KP4, FP, P4, W9, W4, W6 and **W7**.
DXCC Honor Roll, DXCC QRP
Still having fun …

WESTERN WASHINGTON DX CLUB
W7DX

Why QRP?

QRP = 5 watts or less

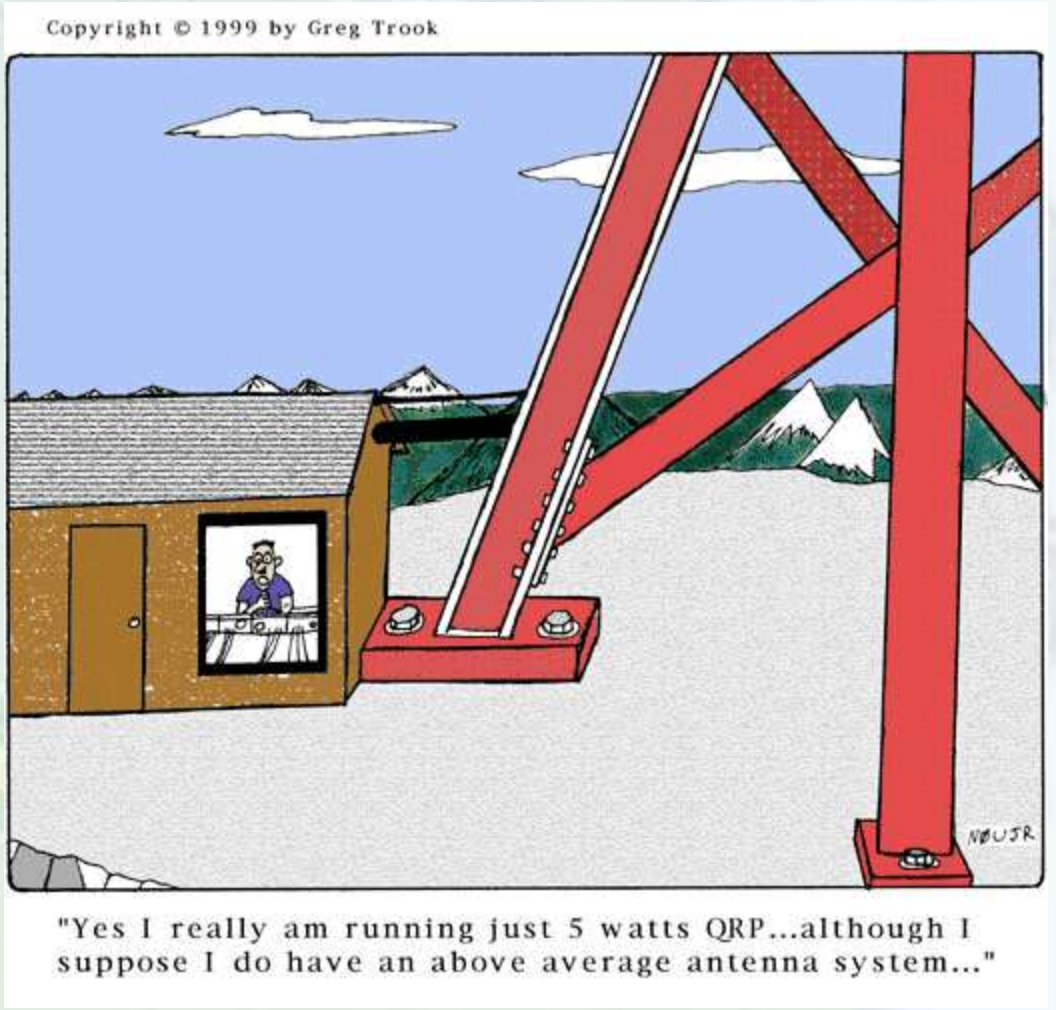
+ Greater satisfaction and sense of accomplishment per QSO.

+ If you can work them QRP, then you certainly could at LP or HP.

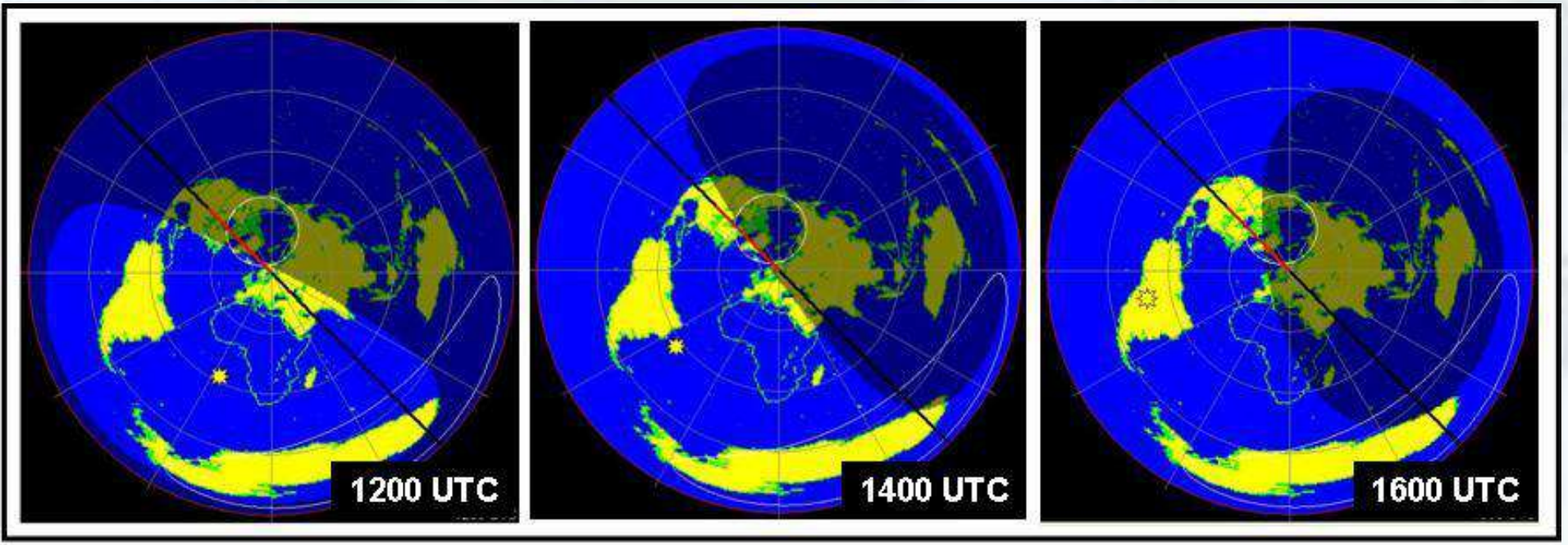
- Leaves no room for poor equipment, feedlines, antennas, band choices or operating skill.

- Highlights the challenges of:

PNW Location and PNW Propagation.



Challenges of PNW **Location**



OH to the US Midwest for CQWW CW

From Contest Club Finland

High Bands (20m, 15m, 10m) need mutual daylight.
1200 UTC – No daylight overlap, dark in W7.
1400 UTC – No daylight overlap, dark in W7.
1400 UTC – Brief daylight overlap, already sunset in OH.

More Bad News: Direct path is through the dreaded “Auroral zone.”

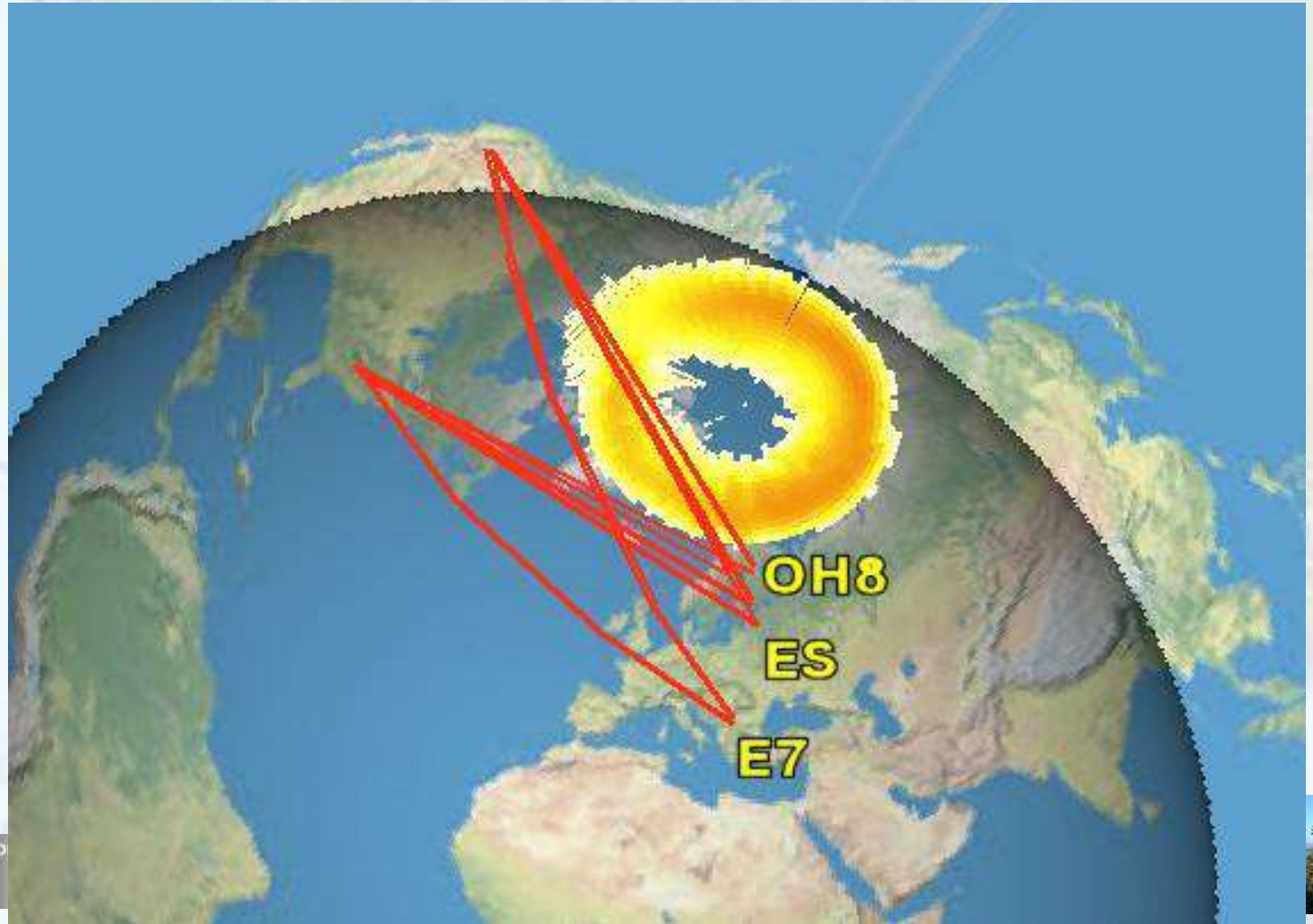
Challenges of PNW **TIME** vs. DX

Corresponding Times During	JAPAN TIME	SEATTLE TIME	EUROPE TIME	
CQ WW SSB 10/29/11	**JST**	**PDST**	**UTC**	
	9 AM SAT	5 PM FRI	00 MIDNIGHT	
	10 AM	6 PM	01 AM SAT	
	11 AM	7 PM	02	
	NOON SAT	8 PM	03	
	1 PM	9 PM	04	
	2 PM	10 PM	05	
	3 PM	11 PM	06	
	4 PM	MIDNIGHT	07	
	5 PM	1 AM SAT	08	
	6 PM	2 AM	09	
	7 PM	3 AM	10	
	8 PM	4 AM	11	
	9 PM	5 AM	12 NOON SAT	
	10 PM	6 AM	13	
	11 PM	7 AM	14	
	MIDNIGHT	8 AM	15	Daylight
	1 AM SUN	9 AM	16	Overlap
	2 AM	10 AM	17	with Europe
	3 AM	11 AM	18	
	4 AM	NOON SAT	19	
	5 AM	1 PM	20	
Daylight	6 AM	2 PM	21	
Overlap	7 AM	3 PM	22	
with Japan	8 AM	4 PM	23	

WESTERN WASHINGTON DX CLUB W7DX

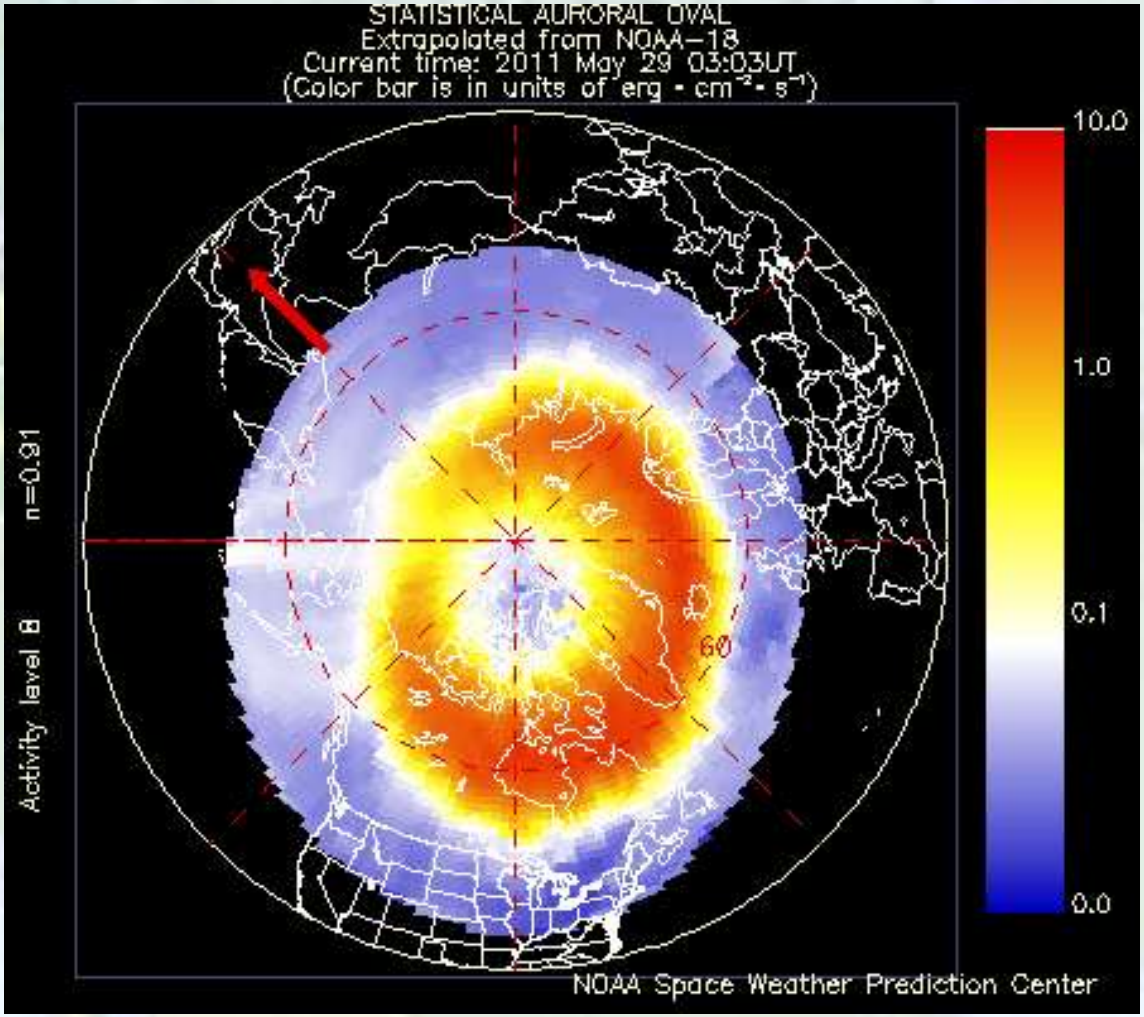
Challenges of PNW PROPAGATION - **Auroral Zone**

Going through the Auroral Zone makes your high band signals (20m) fluttery, your low band signals (40M) WEAK.

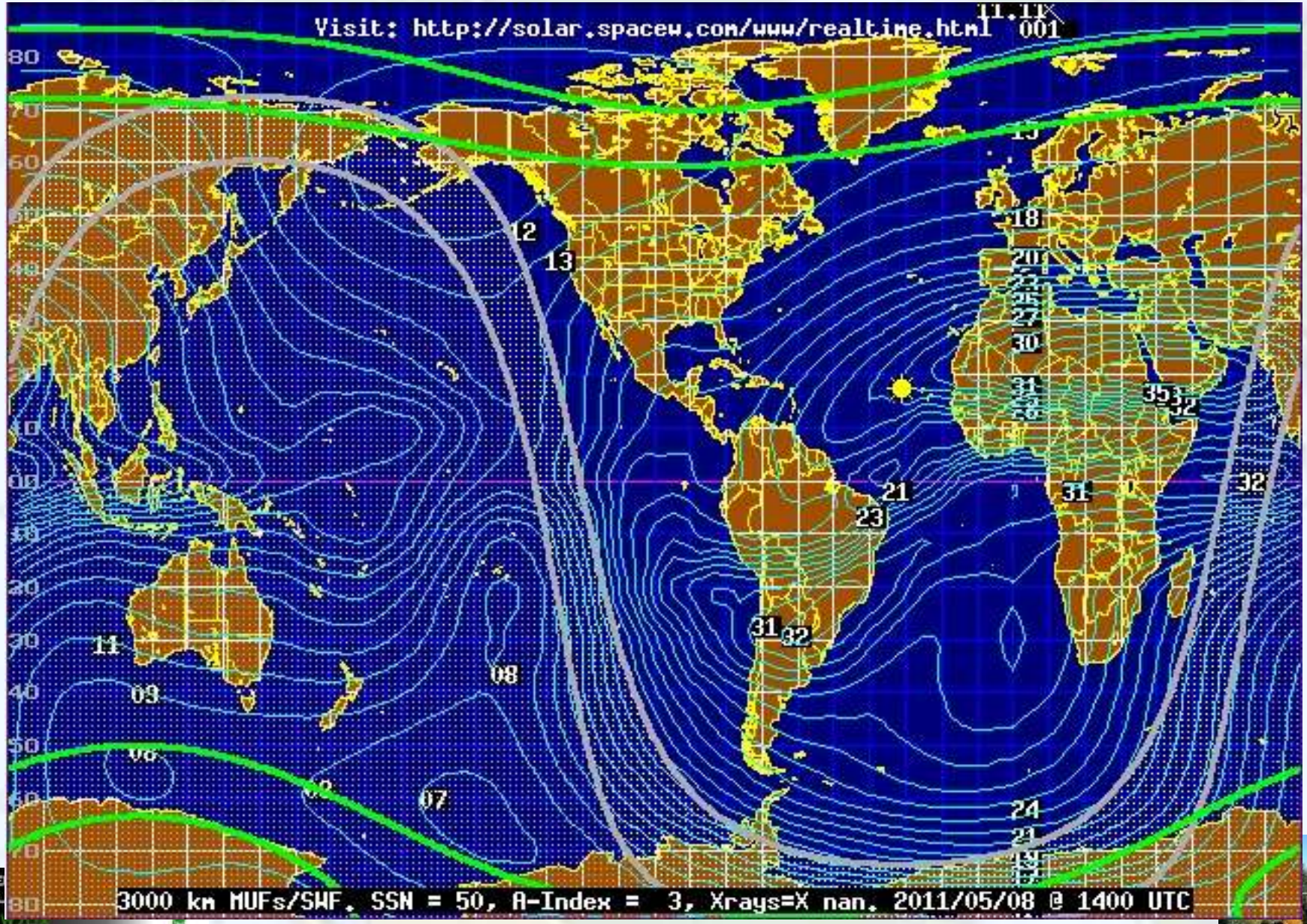


Challenges of PNW PROPAGATION - **Auroral Zone**

Going through the Auroral Zone makes your high band signals (20m) fluttery, your low band signals (40M) WEAK.



Challenges of PNW PROPAGATION - **MUF**



What has been Accomplished PNW QRP? – **Distance Records**

The long-distance low power record is held by KL7YU and W7BVV using one micro-watt over a distance of 1,650 mile on a 28 MHz path between Alaska and Oregon in 1970.

- According to Rich Arland, K7YHA (now K7SZ), in World Radio magazine (Feb. 1990, pp. 46-47.)

What has been Accomplished PNW QRP? – CQ World Wide Contest Records

QRP Power — CQ WW SSB — USA - K7

Band	Call	Score	QSO's	Zones	Countries	Year	
QA	K7RI	860,560	929	103	244	1992	- Seattle
Q28	K7GEX	217,296	529	36	108	1988	- Seattle
Q21	K7GEX	175,560	488	34	122	1992	- Seattle
Q14	N7IR	45,656	180	30	74	2001	- AZ
Q7	N7IR	4,290	48	15	24	2003	
Q3.7	KK7C	560	20	5	4	1984	- UT
Q1.8	K7SS	279	25	5	4	2009	- Seattle

What has been Accomplished PNW QRP? – CQ World Wide Contest Records

QRP Power CQ WW CW USA - K7

Band	Call	Score	QSO's	Zones	Countries	Year	
QA	NX7K	865,171	884	122	227	1988	- Seattle
Q28	K7ED (WA0RJY)	85,783	280	30	79	1999	- Seattle
Q21	N0AX/7	93,312	311	31	77	1992	- Seattle
Q14	K7ZD	71,338	275	31	75	2009	- AZ
Q7	N7IR	39,960	170	28	62	2004	- AZ
Q3.5	N7IR	7,200	68	16	29	2006	
Q1.8	N7IR	1,617	59	11	10	2007	

What has been Accomplished PNW QRP? – ARRL Sweepstakes Contest Records

ARRL November Sweepstakes
Northwestern Division (AK, ID, MT, OR, EWA, WWA)
Records through 2009

	Call	Score	Class	Section	Year
CW:	K7MM	141,440 (899 QSOs in 24 Hrs!)	Q	EWA	2001
SSB:	KL7Y (WA2GO,op)	189,920 (1,200 QSOs in 21 Hrs!)	Q	AK	2001

What has been Accomplished PNW QRP? – ARRL DX Contest Records

ARRL DX Contest SSB Contest
US/Canada Records Including 2010

AREA	CALL	SCORE	YEAR	CLASS	MODE
W7	K7MM	469,572	2002	QRP	PH

Claimed Score Summary:

Band	QSOs	Mults
160:	0	0
80:	2	2
40:	19	12
20:	115	55
15:	226	70
10:	373	80
Total:	735	219

← 80 Countries on 10m!

Total Score = 482,895

What has been Accomplished PNW QRP? – Some Recent Reports

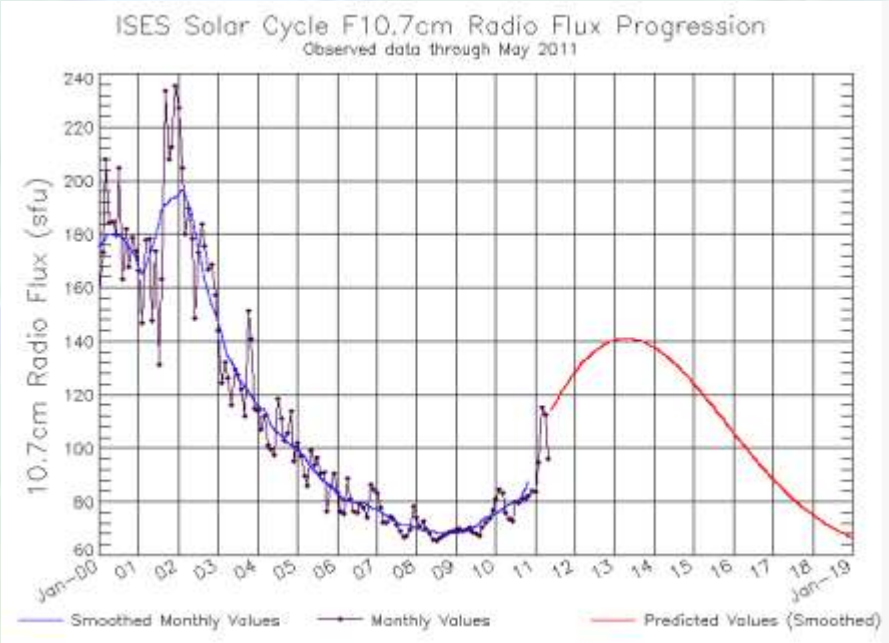
I'm up to 139 countries worked with 5 watts since 1/1/2010. - K7HBN March 28, 2011

In CQWW SSB (Oct 2010) I worked 77 countries QRP, In CQWW CW (Nov 2010) I worked 88 countries QRP, Combined, I worked 106 DXCC countries QRP in just two weekends. - NN7SS (K6UFO)

… Your report?

Predicting the future.

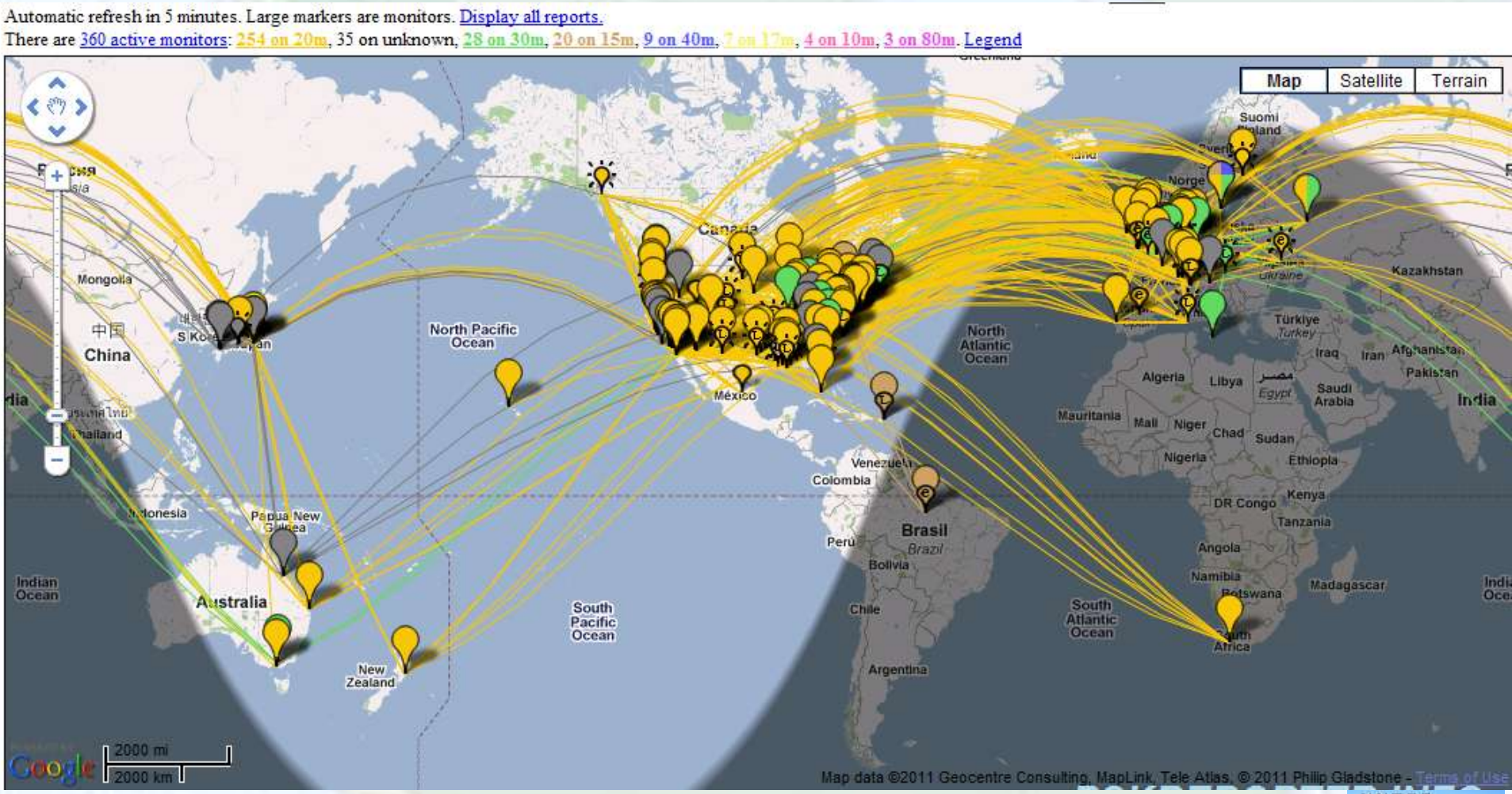
- This Solar Cycle will be a weak one.
- DXing from the PNW will remain challenging.
- The challenges will create better operators.



- CW will remain popular for QRP due to its advantages over SSB, but new modes like JT65 will provide additional DXing advantages. (JT65 mode has revolutionized EME, now being used on HF bands.)

Example of JT65 activity on HF

(A boring Wednesday Afternoon 6/15/11, SFI = 102)



WESTERN WASHINGTON DX CLUB
W7DX

NN7SS

Thank You!