# BOUVET Island DXpedition

***The Most Isolated Island on Earth***

**#2 DXCC Most-wanted**

**Nodir Tursun-Zade, EY8MM**

**Top Band Dinner. Dayton 2017**

Mountains cover more than 93% of the country.

Area of 143,100 km$^2$ (55,300 sq mi) SV-EY-9N #95

More than 50% of the country is over 3,000 m (9,800 ft) above sea level.

Low 300 m (900 ft) and high is 7495 m (25,590 ft)

Climate is continental, subtropical, and semiarid, with some desert areas. The climate changes drastically according to elevation.

Low -63 C (-81.4 F) and High 49 C (120 F)

Tajikistan has a population of 8 million.

Tajik ethnic group speak Tajik (a dialect of Persian).

34 Licensed HAMs

Tajikistan

Tajikistan

Tajikistan

# Tajikistan

Tajikistan

Tajikistan

Tajikistan

Tajikistan
EY8MM

Tajikistan
Amateur Radio Peak 5879 m (19288 ft)

Tajikistan
EY1ARP

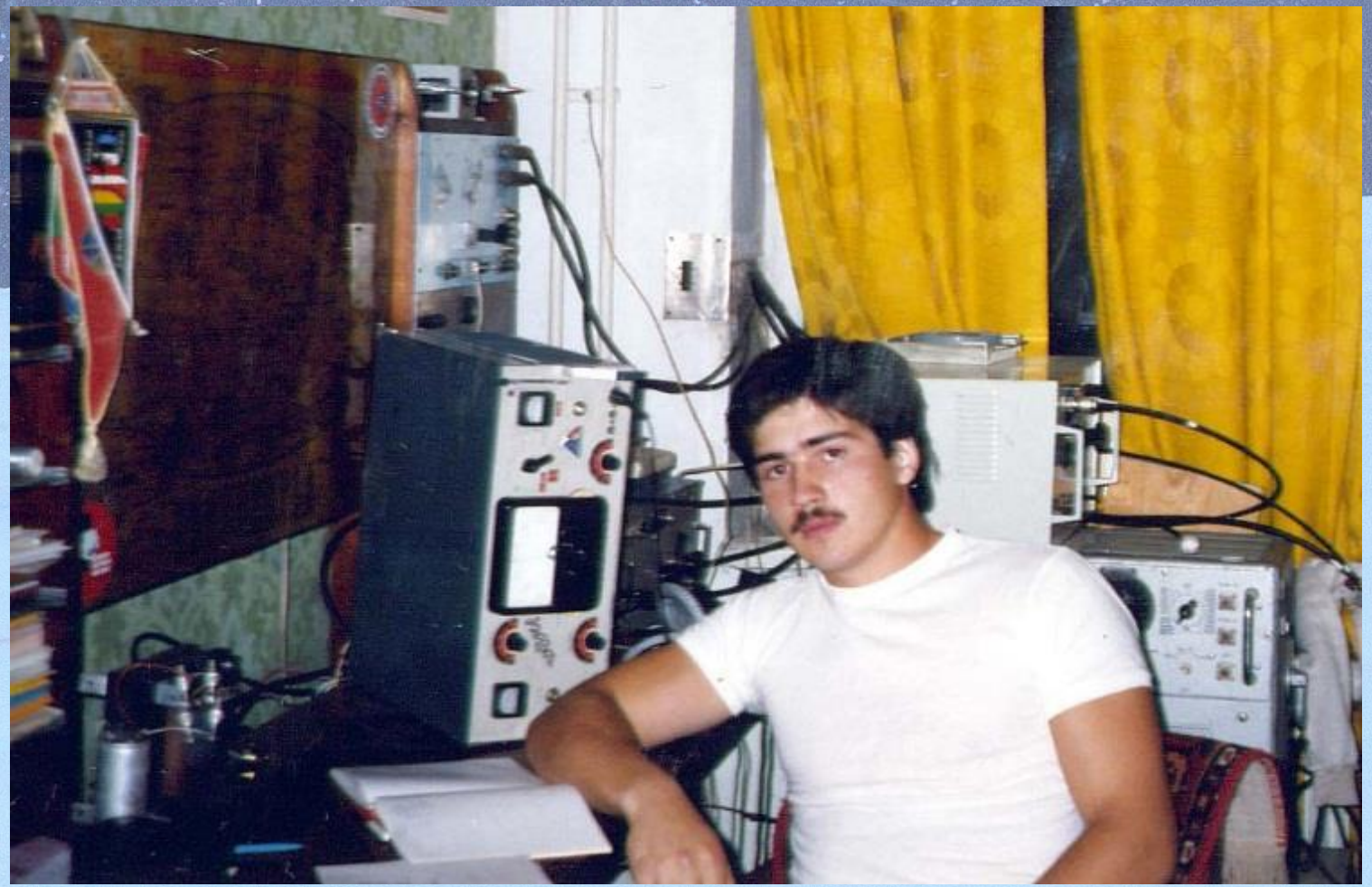
EY8MM

# Family

EY8BB EY8CC EY8AA EY8DD EY8WW EY8MM

EY8AJ and EY8BJ were travelling that day

# EY8MM



UJ8JMM. 1989

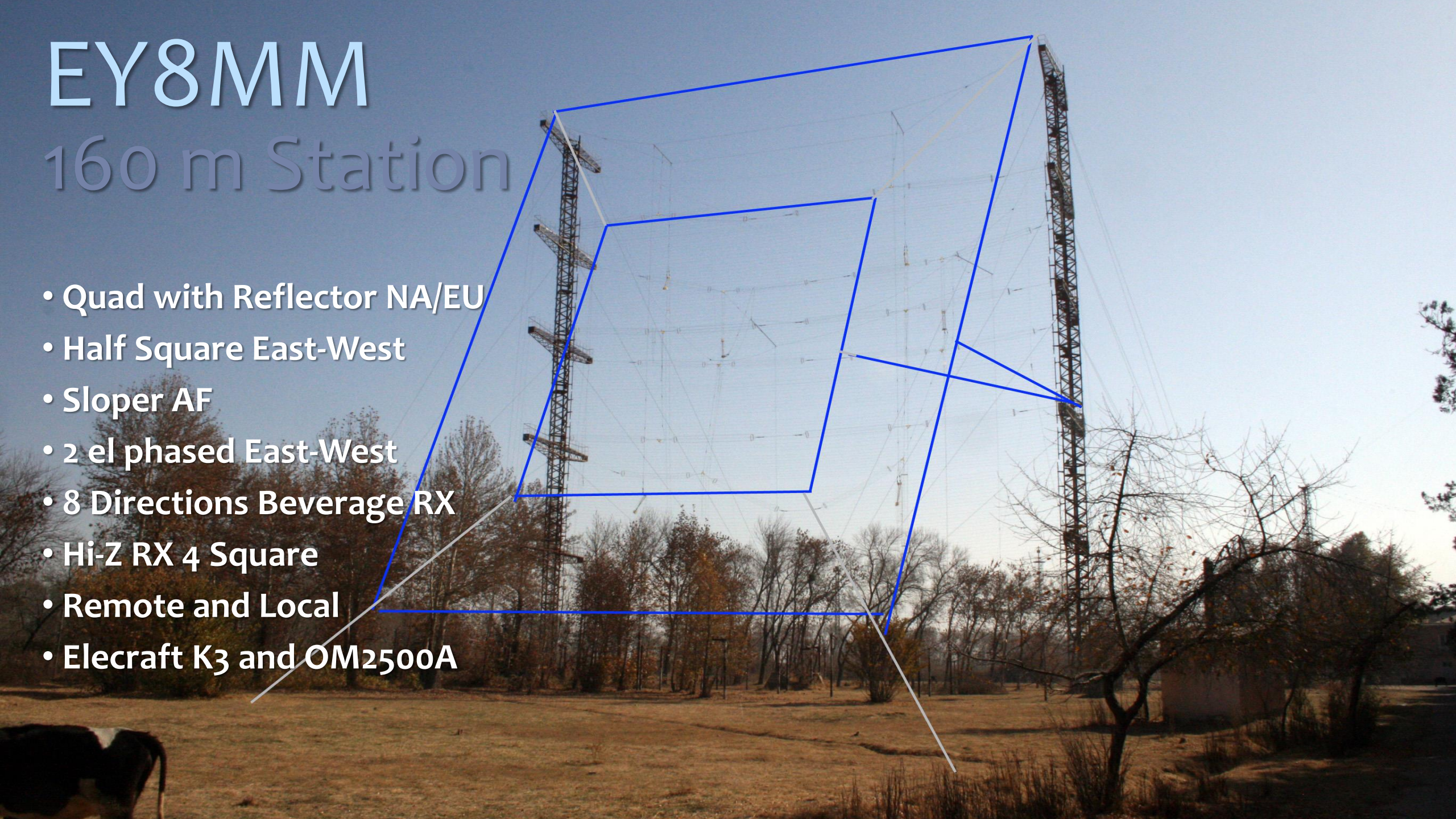
- Since 1984 UJ8JMM
- Since 1994 EY8MM
- 1984-2000: 1,300 TB QSO
- 2001-2017:  16,000 TB QSO
- DXCC 160 – 301 countries
- WAS and WAZ 160
- YA5MM
- D4B, D44TT
- VP8ORK
- FT5ZM

# EY8MM

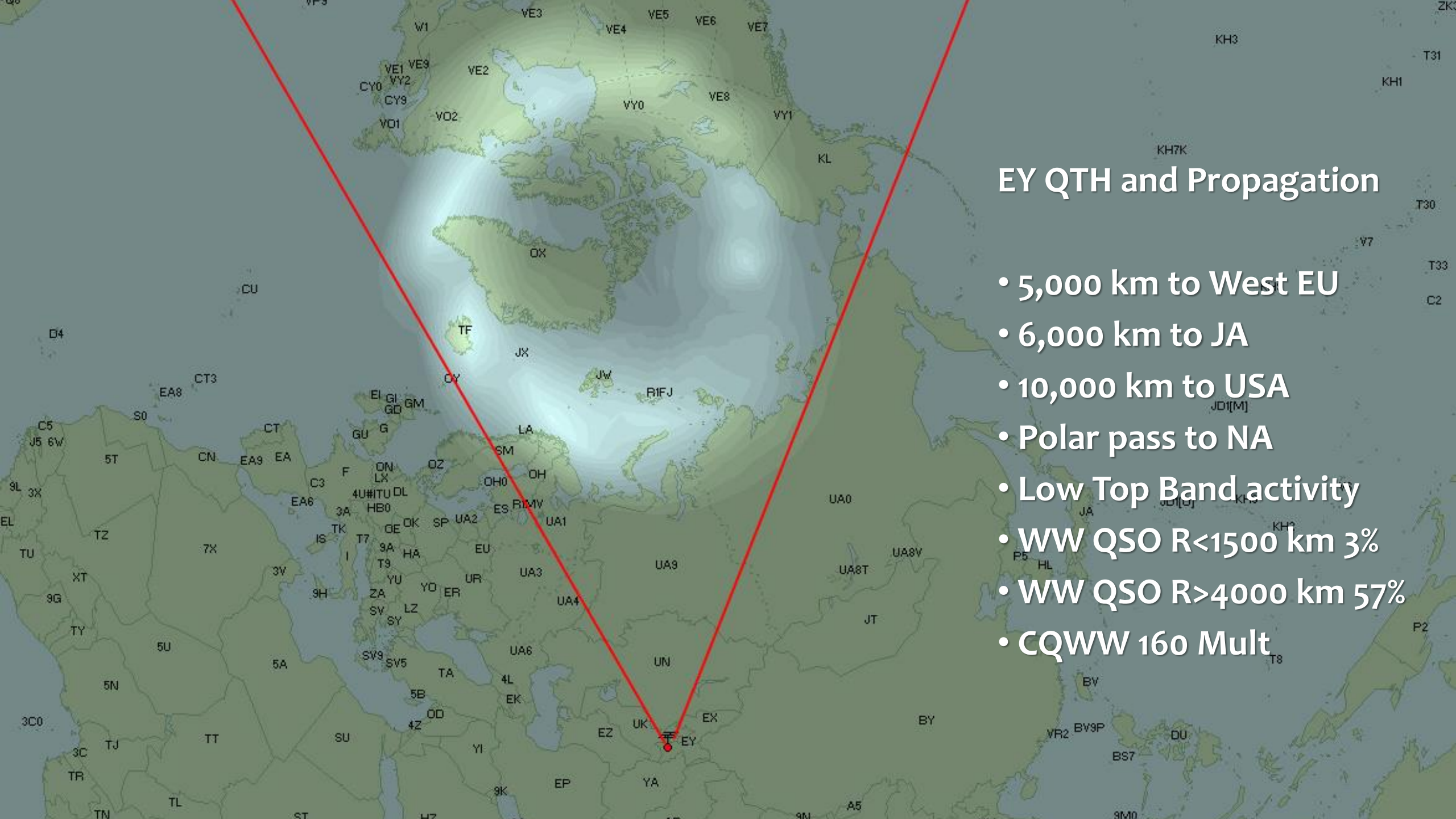
## 160 m Station

# EY8MM

## 160 m Station



- Quad with Reflector NA/EU
- Half Square East-West
- Sloper AF
- 2 el phased East-West
- 8 Directions Beverage RX
- Hi-Z RX 4 Square
- Remote and Local
- Elecraft K3 and OM2500A




# EY QTH and Propagation

- 5,000 km to West EU
- 6,000 km to JA
- 10,000 km to USA
- Polar pass to NA
- Low Top Band activity
- WW QSO R<1500 km 3%
- WW QSO R>4000 km 57%
- CQWW 160 Mult

VP8ORK
DXpedition
Top Band Experience

# VP8ORK PLANNED SETUP

Elecraft K3

Acom 1000 PA

Battle Creek Special

500 ft Beverage

DX Engineering RX 4 Sqr

# VP8ORK Top Band Experience

BCS
Trusted design
3 Band 160-80-40
Compact

# VP8ORK Top Band Experience

# VP8ORK Top Band Experience

VP8ORK Top Band Experience

VP8ORK Top Band Experience

# VP8ORK Top Band Experience

# CONCLUSIONS and Lessons Learned

- Need for full legal power
- Right time for operator shift change
- RX antenna options
- Maintenance free TX antenna
- Dedicated antenna for each band.

FT5ZM
DXpedition
Top Band Experience

# FT5ZM PLANNED SETUP

Elecraft K3

OM 2000 PA

18 m Top Loaded Vertical

1000 ft Beverages

DX Engineering RX 4 Sqr

# FT5ZM Top Band Experience

# FT5ZM Top Band Experience

# FT5ZM Top Band Experience

First night on 160
Only
About 100 QSO

# New 160 Antenna Project
# “FT5ZM Special”

FT5ZM Top Band Experience

FT5ZM Top Band Experience

# New 160 Antenna Project

18 meters tower sections

# New 160 Antenna Project

10 meters plastic
Spiderpole mast

# New 160 Antenna Project

FT5ZM Top Band Experience

FT5ZM Top Band Experience

# New 160 Antenna Project

Total vertical height
about 28 meters (92 ft)

FT5ZM Top Band Experience

# New 160 Antenna Project

Four top loading wires

FT5ZM Top Band Experience

# New 160 Antenna Project

Quality Control?

FT5ZM Top Band Experience

# New 160 Antenna Project

PASSED!

New 160 Antenna Project
FT5ZM Top Band Experience

FT5ZM Top Band Experience
New 160 Antenna Project
Over 500 QSO next night

# FT5ZM Top Band Experience

## RX Antenna Switch

# FT5ZM Top Band Experience

## 1000 ft. reversible BV antenna

# DX Engineering RX 4 SQR

FT5ZM Top Band Experience

# FT5ZM Top Band Experience

## Operator RX antenna Switch

# Great Low Band Operators

FT5ZM Top Band Experience

# CONCLUSIONS and Lessons Learned

- Need for more efficient TX antenna.
- RX antenna options
- Dedicated shift slot for 160
- Learn your Magnetic Declination (38° FT5Z)

# 3Y0Z DXpedition

## *Top Band Planning*

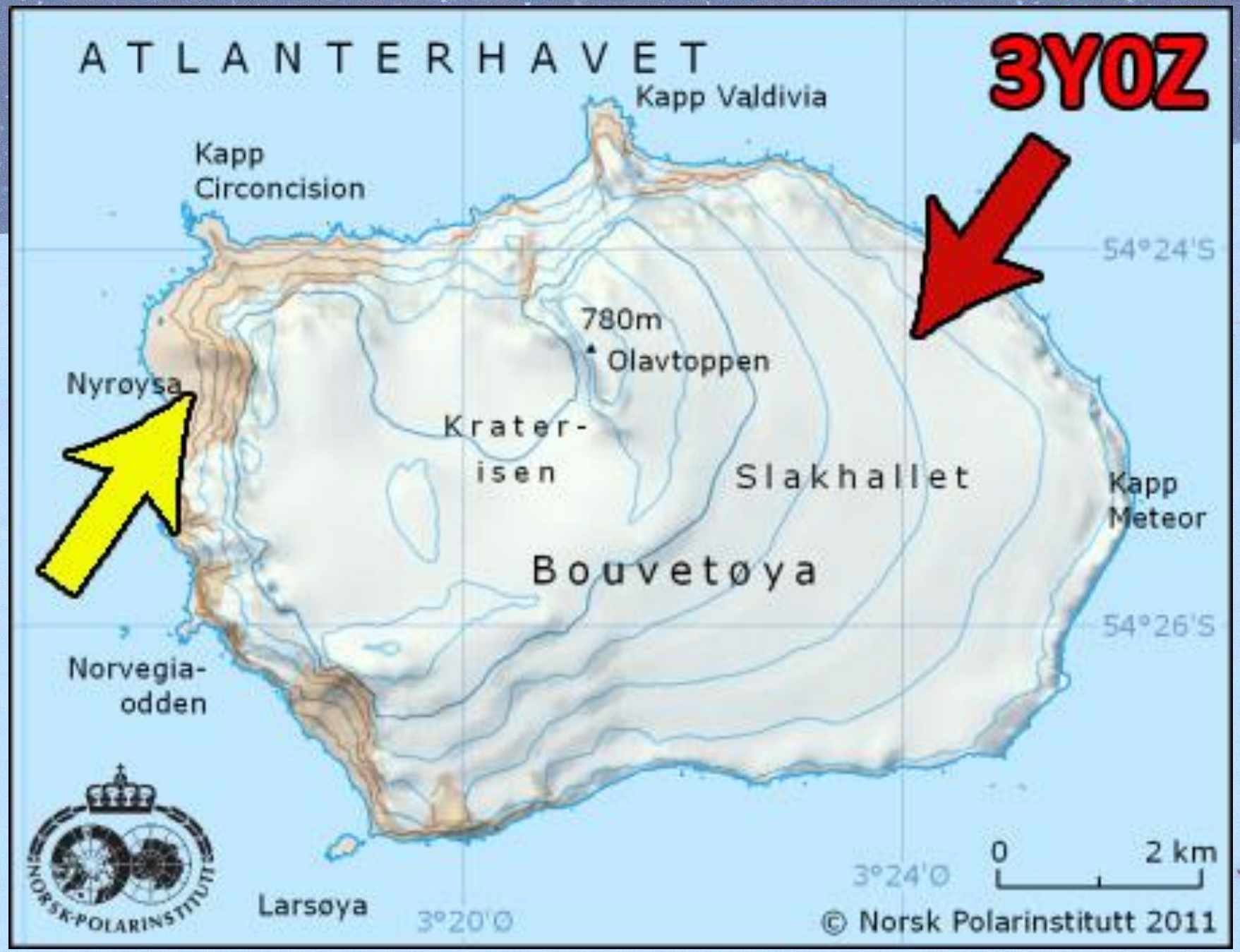
# Bouvet Island

- 2700 mile sail from Chile
- 15 days in the Ocean… one way
- 7 weeks away from home
- 21 days on the island
- 300 storms a year
- 309 known QSO on 160 m

# Bouvet Island

Bouvet Island

Bouvet Island



# Bouvet Island

http://spi-ace-expedition.ch

http://spi-ace-expedition.ch

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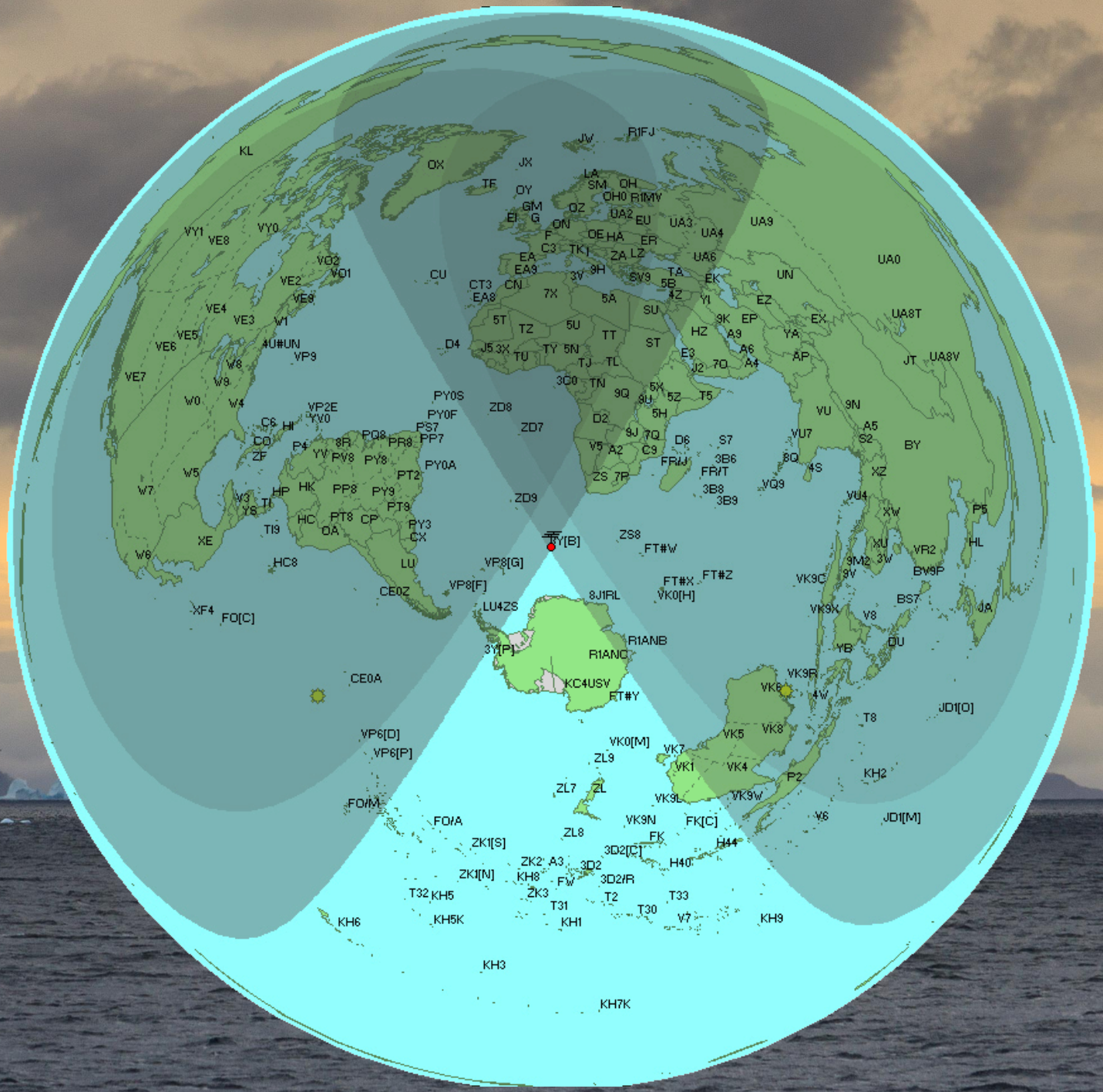
http://spi-ace-expedition.ch

# Available time of common darkness

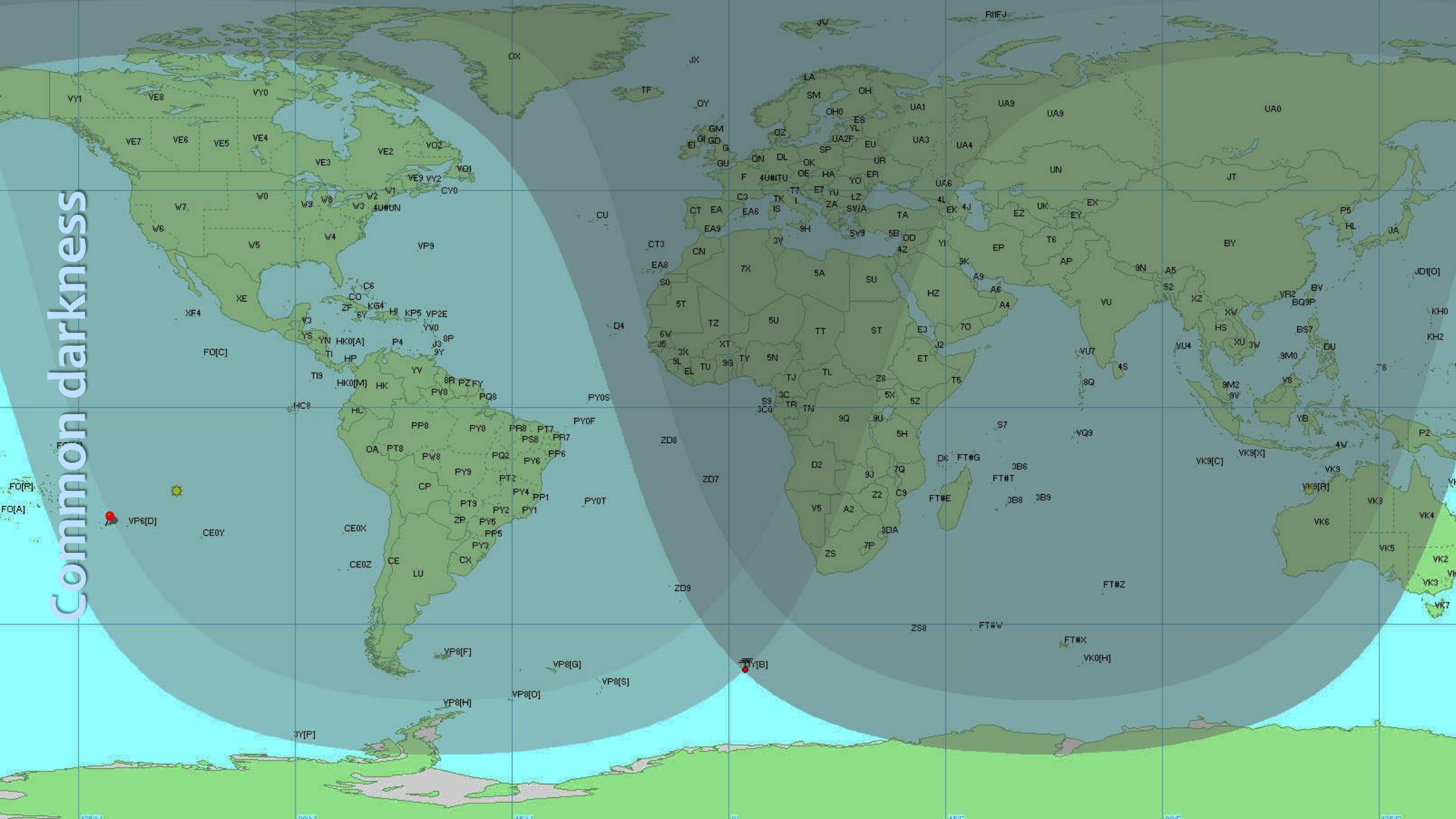
- Japan - 2.5 hours
- Europe - 8 hours
- East Coast NA - 5 hours
- West Coast NA - 2 hours
- East Australia - 0 hours
- New Zealand - 0 hours

Feb 1, 2018

# Common darkness



# Common darkness



# Polar Zones

KL
OX
JX
JW
R1FJ
TF
OY
LA
VY1
VE8
VY0
8J1RL
R1ANB
R1ANC
KC4USV
FT#Y
VK6
VK5
VK8
VK0[M]
VK7
ZL9
VK1
VK4
P2
KH2
ZL7
ZL
VK9L
VK9W
V6
JD1[M]
FO/A
VK9N
FK[C]
ZL8
FK
ZK1[S]
H44
3D2[C]
YJ
ZK2
A3
3D2
H40
ZK1[N]
KH8
FW
3D2/R
T32
KH5
ZK3
T2
T33
T31
T30
KH5K
KH1
V7
KH9
KH3
KH7K

# Top 20+ 160 m Expeditions

| Rank | Call | Year | QSOs | Distance Europe | Distance North America | Distance Japan/AS |
|---|---|---|---|---|---|---|
| 1 | 5A7A | 2006 | 7,653 | 2,500 | 9,600 | 10,000 |
| 2 | K5D | 2009 | 7,196 | 8,300 | 3,700 | 13,500 |
| 3 | VP6DX | 2008 | 6,671 | 17,000 | 7,500 | 12,000 |
| 4 | K1N | 2015 | 5,441 | 9,000 | 3,500 | 11,500 |
| 5 | R1MVW, R1MVC | 2005 | 5,082 | EU | | |
| 6 | T32C | 2011 | 4,985 | 14,000 | 10,200 | 5,400 |
| 7 | HK0NA | 2012 | 4,594 | 10,300 | 4,500 | 14,000 |
| 8 | TS7C | 2009 | 4,311 | 2,300 | 9,100 | 10,600 |
| 9 | ZL8X | 2010 | 4,206 | 18,000 | 11,300 | 8,700 |
| 10 | TX5K | 2013 | 4,085 | 11,900 | 3,400 | 11,700 |
| 11 | FT5ZM | 2014 | 3,571 | 11,500 | 19,000 | 10,200 |
| 12 | TX3A | 2009 | 3,435 | 15,700 | 13,000 | 6,700 |
| 13 | FP/VE7SV | 2004 | 3,419 | 5,600 | 3,100 | 10,800 |
| 14 | 4O3T | 2006 | 3,375 | EU | | |
| 15 | J5C | 2007 | 3,368 | 5,100 | 8,700 | 14,000 |
| 16 | VK0EK | 2016 | 3,246 | 12,500 | 19,000 | 12,000 |
| 17 | XF4DL | 2006 | 3,041 | 11,400 | 3,000 | 10,300 |
| 18 | PT0S | 2012 | 3,027 | 7,000 | 8,300 | 16,000 |
| 19 | 3B7C | 2007 | 2,750 | 7,700 | 15,600 | 10,000 |
| 20 | K5P | 2016 | 2,663 | 15,000 | 8,000 | 7,600 |
| | VP8ORK | 2011 | 1,900 | 13,500 | 12,000 | 17,400 |
| | 3Y0Z | 2018 | ? | 12,000 | 14,500 | 16,000 |

http://gdxf.de/megadxpeditions/

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| 17 | XF4DL | 2006 | 3,041 | 11,400 | 3,000 | 10,300 |
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| | 3Y0Z | 2018 | ? | 12,000 | 14,500 | 16,000 |

# Top 20+ 160 m Expeditions

| Rank | Call | Year | QSOs | ANT | QSO Europe | QSO North America | QSO Japan/AS |
|---|---|---|---|---|---|---|---|
| 1 | VP6DX | 2008 | 6,671 | Vert 26 m | 862 | 4,751 | 792 |
| 2 | T32C | 2011 | 4,985 | Vert 18 m | 126 | 4,036 | 677 |
| 3 | ZL8X | 2010 | 4,206 | Vert 26 m | 1,045 | 1,944 | 1,022 |
| 4 | FT5ZM | 2014 | 3,571 | Vert 28 m | 2,130 | 789 | 584 |
| 5 | TX3A | 2009 | 3,435 | Vert 19 m | | | |
| 6 | VK0EK | 2016 | 3,246 | Vert 24 m | 2,378 | 294 | 481 |
| 7 | 3B7C | 2007 | 2,750 | Vert 27 m | 1,874 | 432 | 519 |
| 8 | K5P | 2016 | 2,663 | Vert 18 m | 21 | 1,756 | 807 |
| | VP8ORK | 2011 | 1,900 | Vert 18 m | 820 | 988 | 20 |
| | 3Y5X | 1990 | 309 | Vert 18 m | 41 | 261 | 1 |
| | 3Y0X | 2006 | 1,314 | Vert 18 m | 486 | 767 | 2 |
| | 3Y0Z | 2018 | 4,000 | Vert 28 m | 2,000 | 1,800 | 200 |

# 3Y0Z Challenges

- Weather
- Distance
- Propagation
- Lot’s of tasks for team
- Top Band antenna sizes

# 3Y0Z Strong Points

- Experienced team
- Advance planning
- Trusted equipment suppliers
- Efficient TX antenna
- RX antenna options/design
- Full legal power
- Good location on 3Y

# 3Y0Z Top Band Strategy

3Y0Z Top Band Planning

4000 QSO's
on Top Band possible
(Perfect Conditions)

- Stay on the band all hours of darkness
- Dedicated operator shift position
- Use RX antennas
- Understanding of peak time openings
- Working with Pilots

# 3Y0Z Planed Setup

3Y0Z Top Band Planning

Flex 6500 radio with
Maestro Interface,
1500 W Power Amplifier

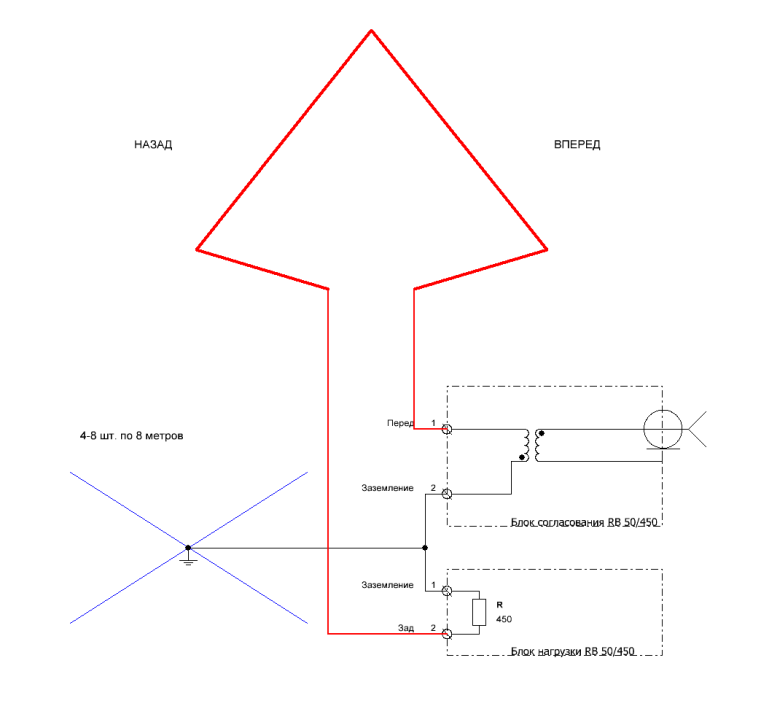
# 3Y0Z Planed Setup

- Efficient TX antenna specially designed by DX Engineering 90 ft. +
- LBS Low band Systems Matching Unit

DX ENGINEERING®

LBS LOW BAND SYSTEMS

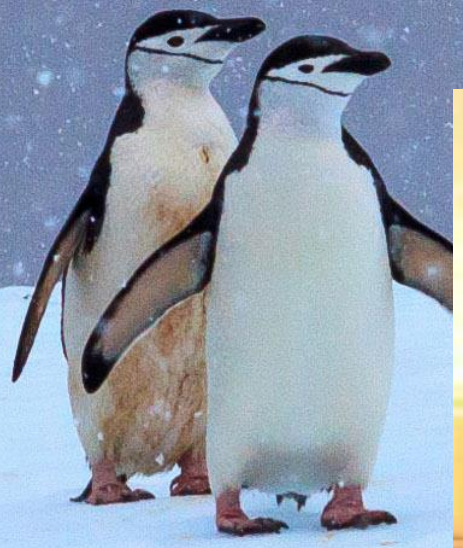
# 3Y0Z Planed Setup

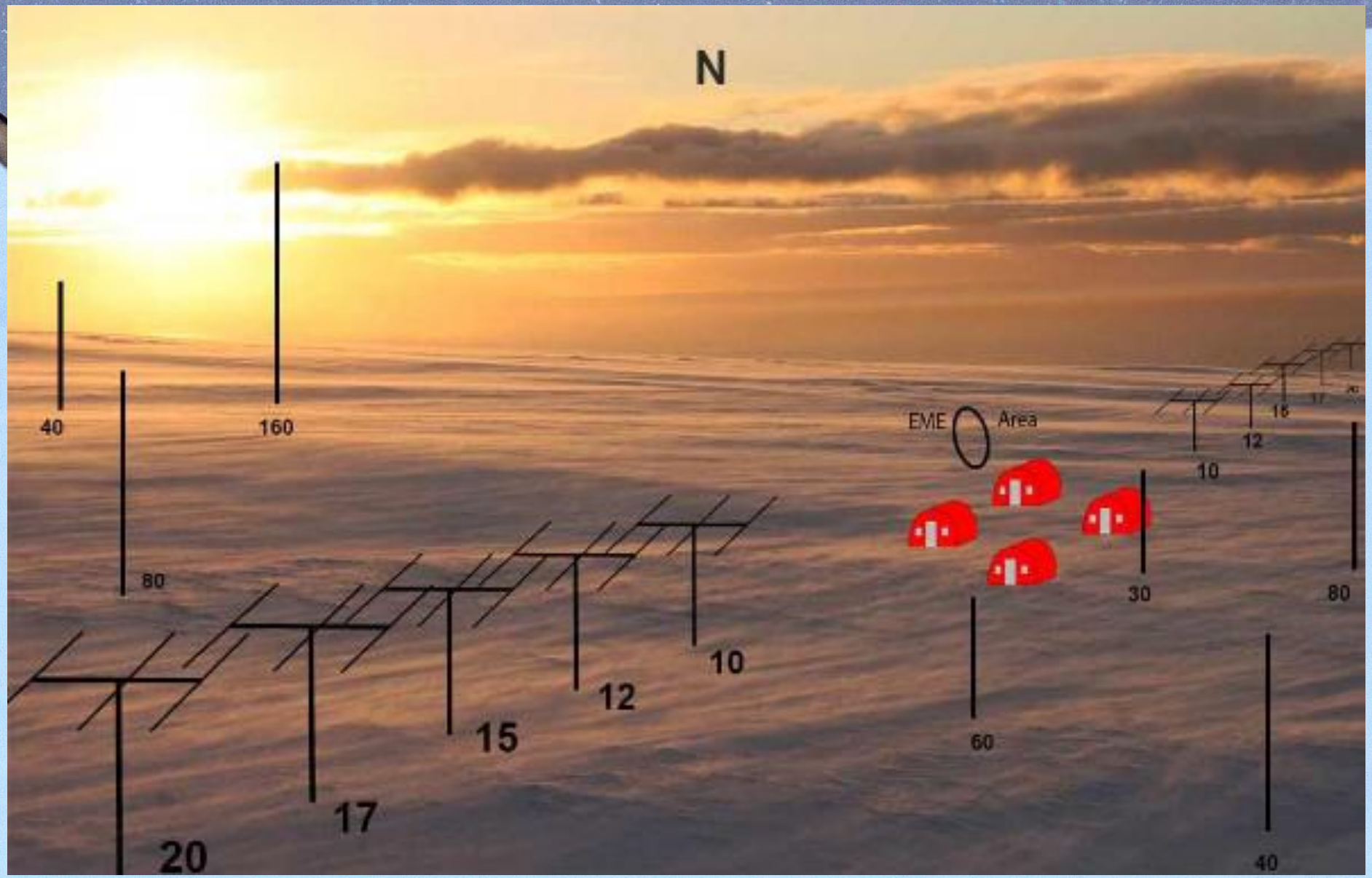



- Flexible RX antenna system for 160 and 80
- Different RX antenna designs (Beverage, K9AY loop, etc.)

# 3Y0Z Planned Setup

3Y0Z Top Band Planning





# 160 m Wire Yagi

3Y0X experience

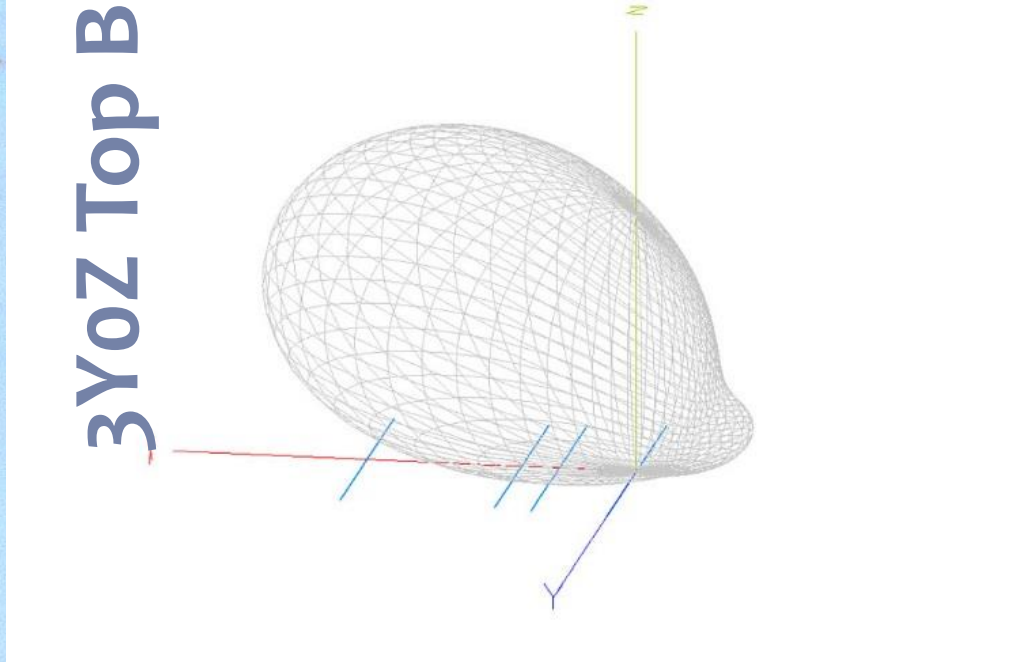
March 2009. QST

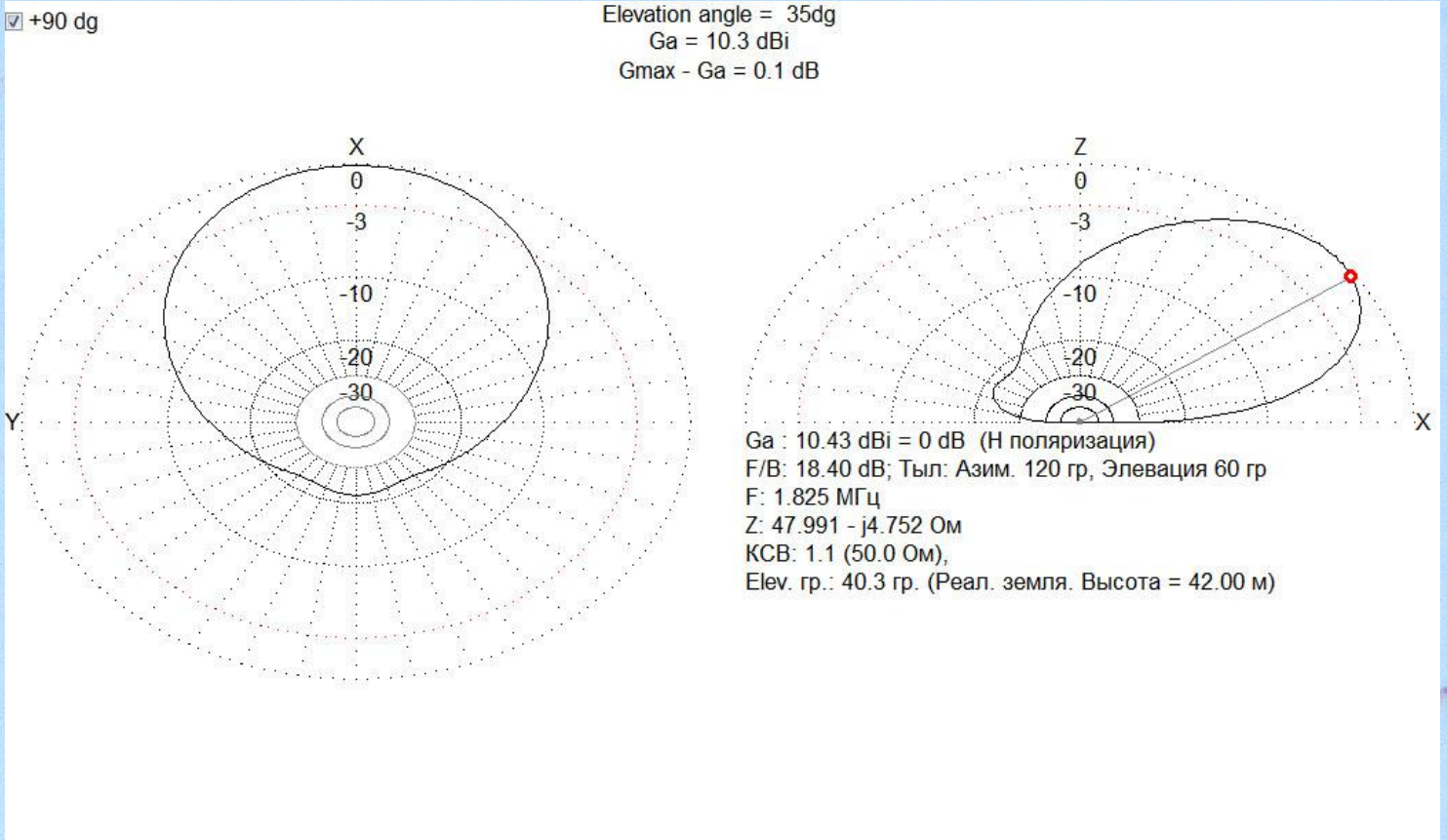
3Y0Z Top Band Planning

# 160 m Wire Yagi

## 213 ft boom……

3Y0Z Top Band Planning



# 3YoZ Team

3YoZ Top Band Planning

# 3Y0Z Budget

3Y0Z Top Band Planning

Expenses $741,000 +  (most expensive yet!)

Operating team has committed $400,000

$625,000  for vessel, helicopter, pilot, crew

Most $$$ due upfront

# Major sponsors

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International DX Association

WORLD RADIO AMATEURS GOODWILL DX FELLOWSHIP

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SOUTHEASTERN DX CLUB

GMDX GROUP

DXers
The Carolina DX Association
35 yrs
WORKING THE WORLD

109° 13' W
CLIPPERTON DX CLUB
10° 18' N

West Virginia DX Association
WVDXA
W8AR

RSGB

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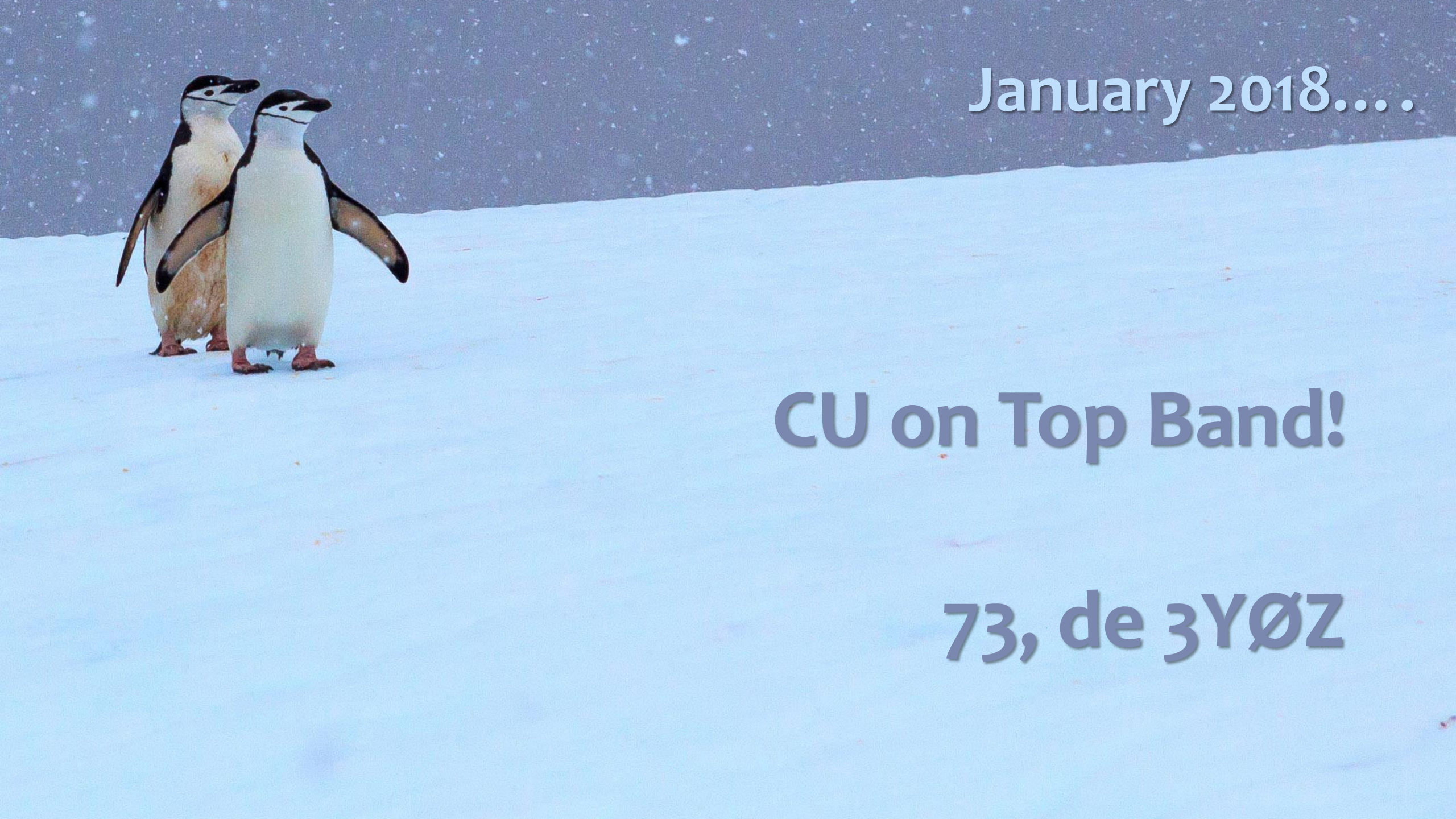
http://www.bouvetdx.org/foundations-and-clubs/


January 2018….
CU on Top Band!
73, de 3YØZ