

Mountaintop VHF: Summits On The Air (SOTA)

Bob Witte, KØNR

CSVHFS Conference
Denver, CO
July 2015



Agenda

- Summits On The Air (SOTA) program
- Portable VHF/UHF Equipment
- Operating Events
 - Colorado 14er Event
 - VHF Contests
- What's Next?



MOUNTAINTOP VHF

- Summits On The Air (SOTA) Using VHF
- Colorado 14er Event (includes SOTA)
- VHF Contests



Note: when I say “VHF” I mean any frequency above 50 MHz



Safety First

Hiking/Climbing In the Mountains has risk:

- Lightning
- Getting Lost
- Gravity
- Temperature
- others



Warning: Climbing mountains is inherently a dangerous activity. Do not attempt this without proper training, equipment and preparation.



Summits On The Air (SOTA)



- Two ways to participate
 - Activator
 - Chaser
- Over 1700 SOTA summits in Colorado
- A wide variety of difficulty and elevation
 - From 5398 feet to 14,443 feet
- SOTA activation requirements:
 - non-motorized ascent (no minimum vertical or horizontal distance specified)
 - not connected to motor vehicle
 - portable power (no fossil-fuel generators)



SOTA Scoring



Based on ASL elevation of a qualified peak

May include a “seasonal bonus” for activators

Scoring for WØC – Colorado:

Under 8000'	1 point	(225 peaks)
8000' to <9000'	2 points	(245 peaks)
9000' to <10500'	4 points	(360 peaks)
10500' to <12500'	6 points	(440 peaks)
12500' to <13500'	8 points	(345 peaks)
13500' +	10 points	(181 peaks)

May vary by association based on terrain





This page refreshes every 1 minute. Last updated **03:33:38** UTC.

Latest Spots

>> [more spots](#) | [new spot](#)

- Sun 21:25 **K4HYJ** on [W4G/NG-035](#) **14.000** other
QRT - leaving summit. (Posted by KD9KC)
- Sun 21:19 **K4HYJ** on [W4G/NG-035](#) **14.305** ssb
Nice sig 57 near Montreal 73\'s de ve2jfm (Posted by VA2VL)
- Sun 21:14 **K4HYJ** on [W4G/NG-035](#) **14.304.7** ssb
56 in Oklahoma (Posted by KA5WRG)
- Sun 21:13 **K4HYJ** on [W4G/NG-035](#) **14.3047** ssb
33 in OR (Posted by NS7P)
- Sun 21:11 **K4HYJ** on [W4G/NG-035](#) **14.304** ssb
NO COPY IN KANSAS (Posted by AA0LV)

Upcoming Activations

>> [more alerts](#) | [new alert](#)

- Mon 13:00 **DF2GN/P** on [DM/BW-376](#) **28-cw,21-cw,18-cw,14-cw,10-cw,7-cw**
first cw act. of this summit...also SSB on 14.280 / 7.118 (Posted by DF2GN)
- Mon 16:30 **WO6M** on [W6/CT-009](#) **10.110-14.061-21.062-cw**
ETA approx (Posted by WO6M)
- Mon 17:00 **NM5S** on [W5N/PW-038](#) **7.031-cw,14.061-cw**
start on 40m (Posted by NM5S)
- Mon 19:30 **NM5S** on [W5N/PW-037](#) **7.031-cw,14.061-cw**
Possible access issues. If OK will start on 40m. (Posted by NM5S)
- Mon 20:00 **WO6M** on [W6/CT-054](#) **10.110-14.061-21.062-cw**
ETA approx (Posted by WO6M)

Reflector Latest

[SOTA NEWS MARCH 2013](#)

by G4SSH, #10 by G4SSH, 15days ago

[Dealing With Disruptive Opera](#)

by G8ADD, #43 by VA2SG, 70days ago

[The Shropshire 2-pointers...](#)

by M1EYP, 2hrs ago

[Frenni Fawr today](#)

by GW4VPX, #20 by M1EYP, 3hrs ago

[Not in log for HB/AR-008?](#)

by HB9DST, 5hrs ago

[BW-159 delta loop](#)

by DF2GN, 5hrs ago

[G4YSS:G/NP-006; NP-015; NP-C](#)

by G4YSS, #4 by M0CGH, 6hrs ago

[VIDEO SOTA EC2AG/P EA2/BIO](#)

by EC2AG, #4 by M6RGF, 6hrs ago

[Lake Peak, NM Pictures](#)

by KE5AKL, #3 by G6ODU, 9hrs ago

[SOTA Summit Paddles](#)

by WG0AT, #11 by G8TMV, 12hrs ago

[Q . When is a spot not a spot?](#)

by G4ISJ, #44 by G4ISJ, 18hrs ago

[Mt Sterling Activation report a](#)

by KK4NQQ, #4 by N2XJS, 25hrs ago



Summit Information for W0C/FR-003

Mount Evans - 4339m, 10 points

Association: Colorado **Region:** CO-Front Range

Latitude: 39 35 18 N, **Longitude:** 105 38 36 W

Today's Sunrise: 12:18 UTC, **Today's Sunset:** 01:44 UTC

Relative to home QTH: 111.5 km, 301 degrees

[Google Map](#) | [Google Earth](#) | [OpenStreetMap](#)

[SOTA Map](#)

Resources

Feel free to add external links [🔗](#) and articles relating to this summit that activators and chasers may find useful or interesting. Please read the disclaimer notice at the bottom of the page.

[Trip Report](#) [🔗](#) (Submitted by KOMOS on 13 Dec 2013)

[Mount Evans Antenna Restrictions?](#) [🔗](#) (Submitted by KOMOS on 26 Aug 2012)

[Add new external link](#) | [Add new article](#)

DISCLAIMER: The SOTA programme and its Management Team is not responsible for the content of external internet sites or for information added by third parties to this website. Please contact the SOTA Management Team if you have concerns about submitted content. The existence of information relating to a particular location does not confer or imply any right of access. Participation in the SOTA Programme is at the risk of the participant.

Summit Activity

Total Activations: 23

Latest By:

WA6MM on 31 Aug 2014

K0JQZ on 25 Aug 2014

KC0YQF on 25 Aug 2014

W0CCA on 10 Aug 2014

KX0R on 03 Aug 2014

First Activated by:

KD0BIK on 03 Jul 2012

Chased by You on:

05 Aug 2012 - 144MHz, FM

01 Sep 2012 - 144MHz, FM

01 Sep 2012 - 28MHz, SSB

07 Aug 2011 - 144MHz, FM

307 QSOs on these bands:

40m	16	5%
30m	4	1%
20m	206	67%
17m	4	1%
15m	3	1%
10m	3	1%
2m	67	22%
70cm	4	1%



Summits On The Air

THIS CERTIFICATE IS AWARDED TO

Bob Witte

K0NR

In recognition of his achievement

100 points in the Chaser Section

Barry Horning GM4TOE

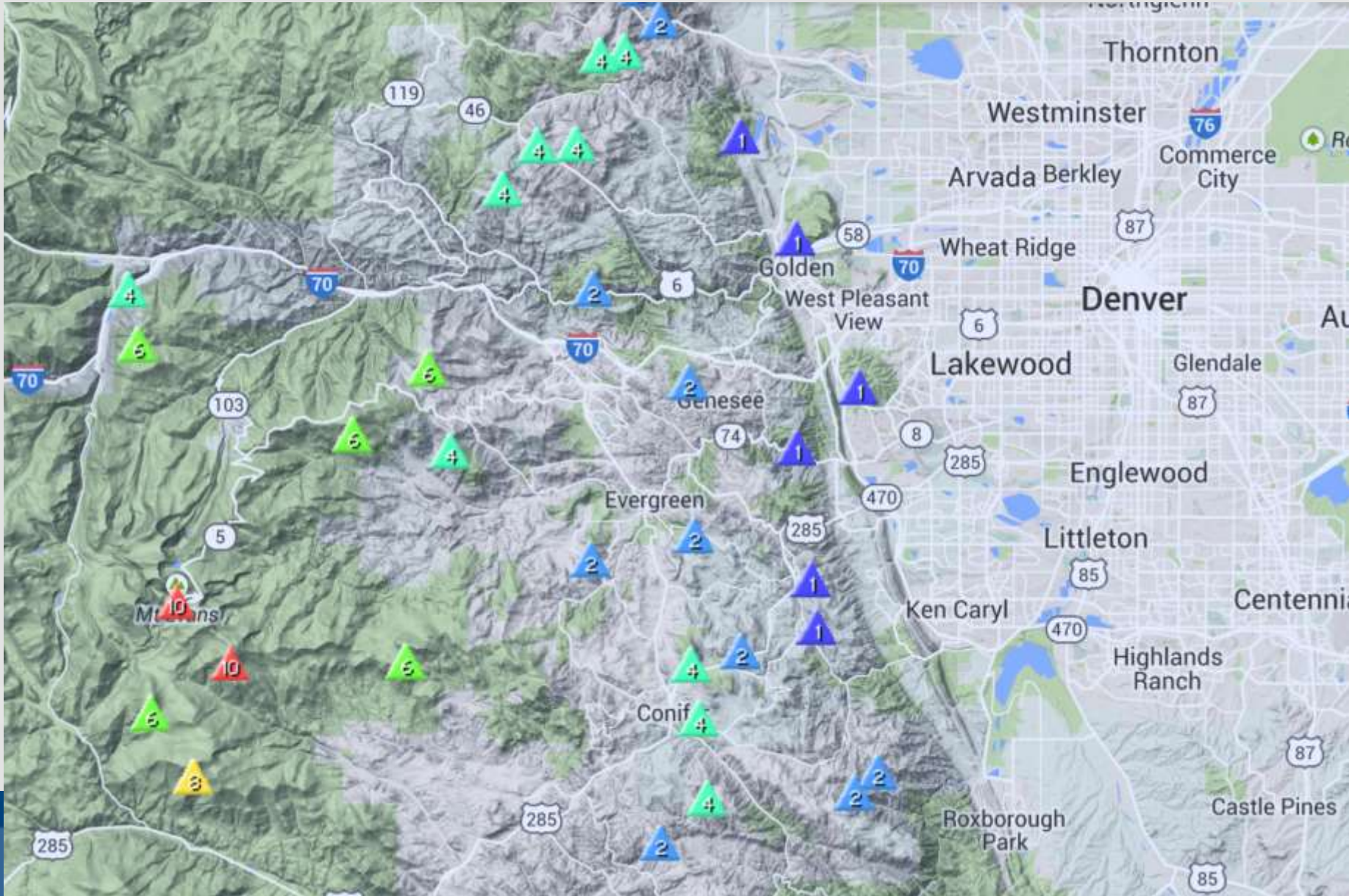
Barry Horning Awards Manager

All VHF

Qualifying date: 12 Aug 2012

Certificate number: SC-100-240

SOTA Summits Near Denver



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Easy VHF SOTA Activation

Also known as “take along a 2m handheld on a hike”



Kaufman Ridge HP
(WØ/SP-081)

10,765 feet elevation



No Rubber Duck Antennas

A rubber duck antenna is the worlds most convenient crappy antenna.

Bad bad bad bad bad bad bad bad bad
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BAD



The 1/2-wave Vertical Antenna



MFJ-1714 – SMA or BNC connector



Improved VHF SOTA Activation

Also known as “bring along a small 2-meter Yagi antenna”



Aspen Ridge
(WØC/SP-084)

10,740 feet elevation



All Mode VHF SOTA Activation

Also known as “use an FT-817 transceiver and a small Yagi antenna”



Handies Peak
(WØC/SJ-001)

14,048 feet elevation

Steve WGØAT



Portable VHF Transceivers



Yaesu FT-817ND
HF, 6m, 2m, 70cm



Elecraft KX3
HF through 6m
Optional 2m Module



Any old
FM
handheld



Portable VHF Transceivers

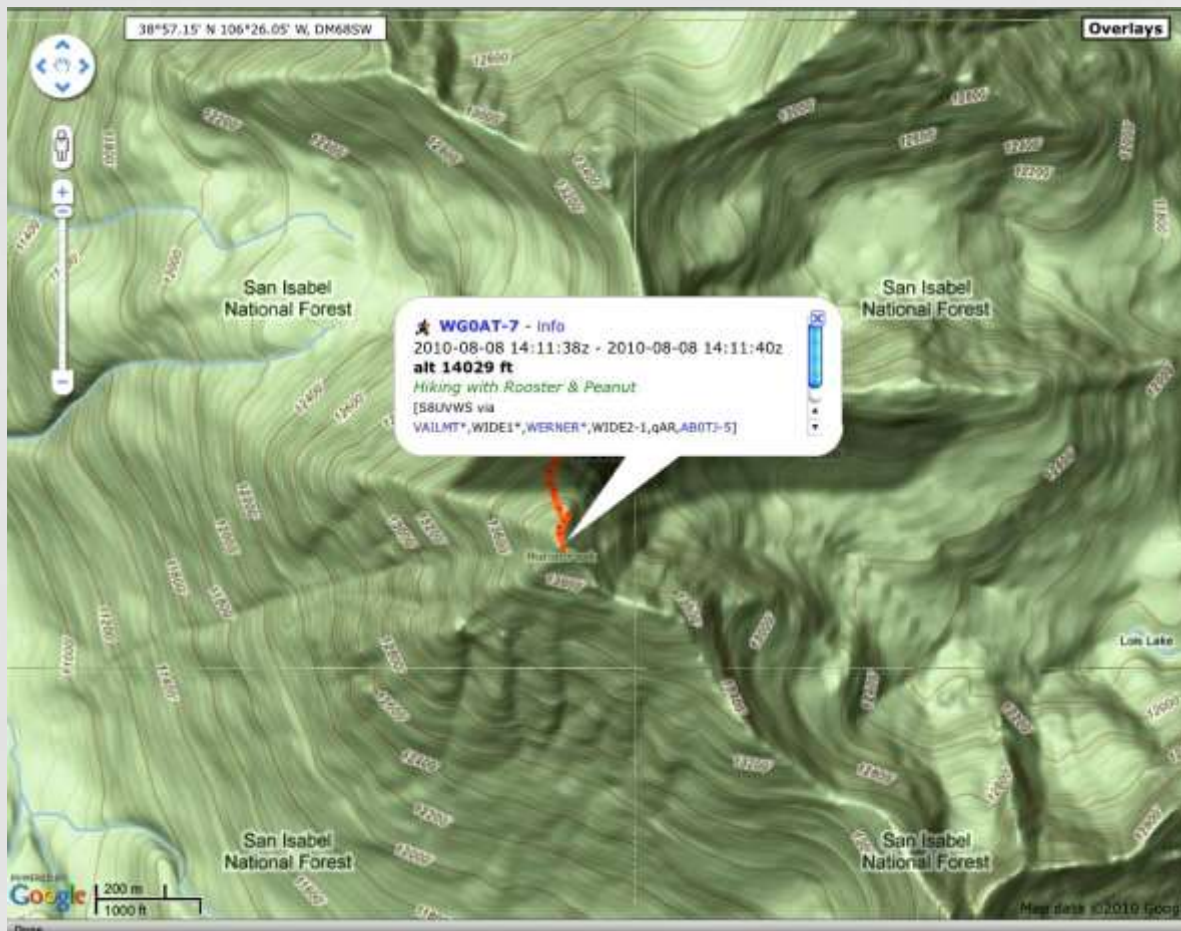
	FT-817ND	KX3 with 2m Module
Bands	HF + 6m, 2m, 70cm	HF + 6m, 2m
6m Power Out	5W	8W
2m Power Out	5W	2.5 -3W
Standby rx current (2m)	450mA	300 to 350 mA
Transmit current (2m)	2A	1.7A
Weight	2.5 lbs, 1.2 kg	1.5 lbs, 0.7 kg
Price	\$690	KX3 assembled \$900 Hand mic \$60 2m module \$260 Total: \$1220



APRS For Position Reporting



Yaesu VX-8GR
APRS handheld
w/GPS



Arrow II 146/437 Yagi Antenna



Bob KØNR
Mt Sneffels

Crossed Yagi Design

Two antenna connections, or use duplexer

\$83 to 89

2m gain= 5.9 dBd
70cm gain= 8.2 dBd
(2009 CSVHFS)



Elk Log Periodic Antenna 2M/440L5



Scott ACØFQ
San Luis Peak

One feedline
connection for
2m & 70 cm

Same
polarization on
both bands

\$125 to 150

2m gain= 6.6 dBd
70cm gain= 7.0 dBd
(Mfg datasheet)



Chasing is Fun, Too



- Challenge
- Fun
- Awards
- Geography

Fred AB1OC

<http://stationproject.wordpress.com/>



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2015 VHF SOTA Operating Events

- Jan 24-26: ARRL Jan VHF Contest + NA SOTA Winter Activity Weekend
- Apr 18-19: North America SOTA Spring Activity Weekend
- Jun 13-15: ARRL June VHF Contest + North America SOTA Summer Activity Weekend
- Jul 18-19: CQ WW VHF Contest + optional for SOTA
- Aug 1-2: Colorado 14er Event + NA SOTA Rocky Mtn Rendezvous + W7 SOTA Activity Weekend + ARRL UHF Contest
- Sept 12-14: ARRL Sept VHF Contest + NA SOTA Fall Activity Weekend



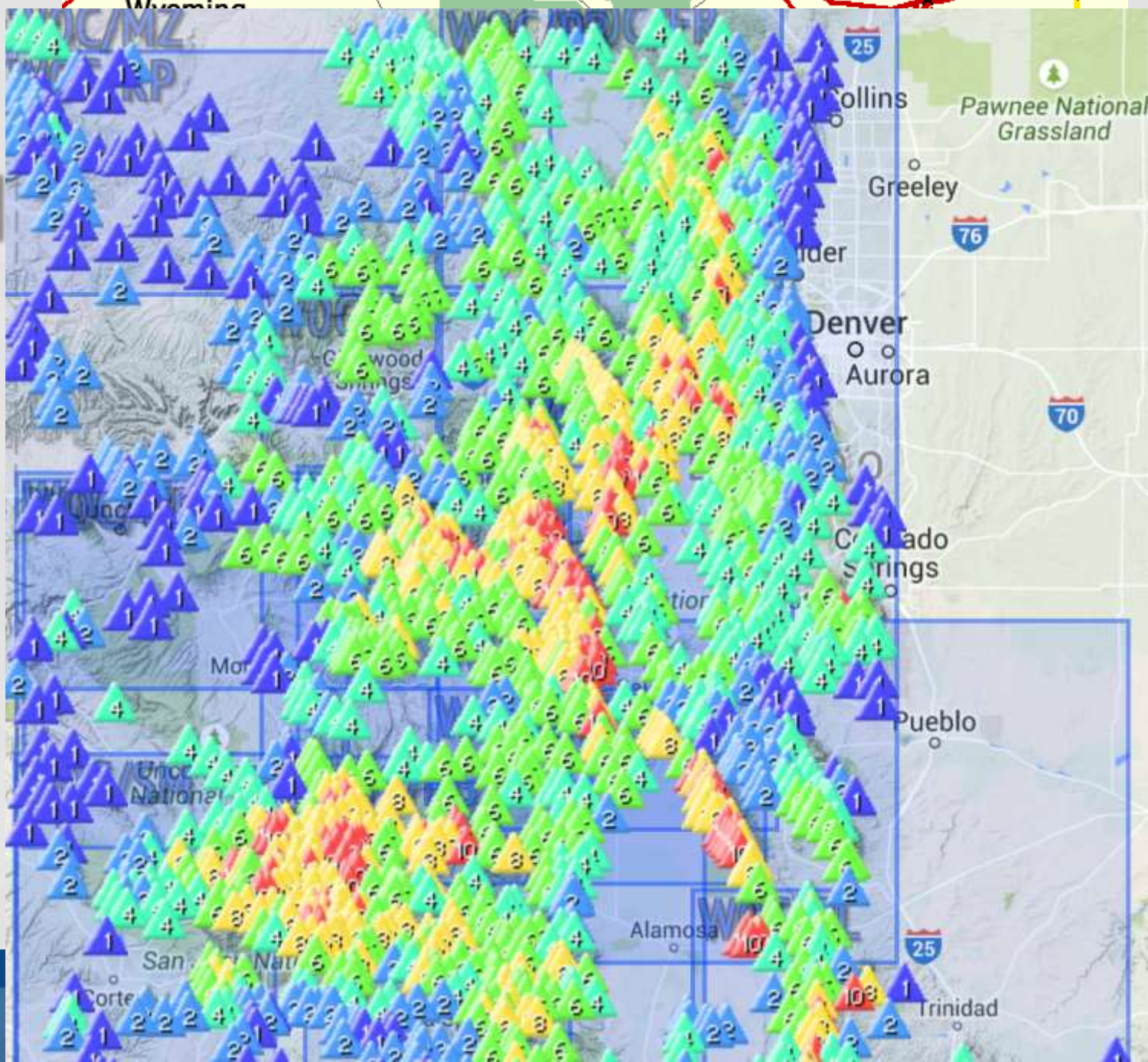
The Colorado 14er Event is:

- Held the Sunday of the First Full Weekend in August (August 2, 2015)
- Primary operating time is 0900 to 1200 local, but activity can occur at any time during the weekend
- Primarily focused on the 54 official 14,000 foot summits in Colorado
- Includes the 1748 SOTA peaks in Colorado
- Includes VHF, HF, all modes
- Lots of fun !!!!



The 54 Colorado 14ers

>1700
SOTA
Summits



Bob KØNR on Mt Sneffels



Colorado 14er
Amateur Radio Event



Joyce KØJJW

Humboldt Peak



David KI6YMZ and Ben KDØPNS on Mt Shavano



Steve WGØAT at 14,000 Feet



Steve WGØAT



Steve WGØAT and Guy N7UN



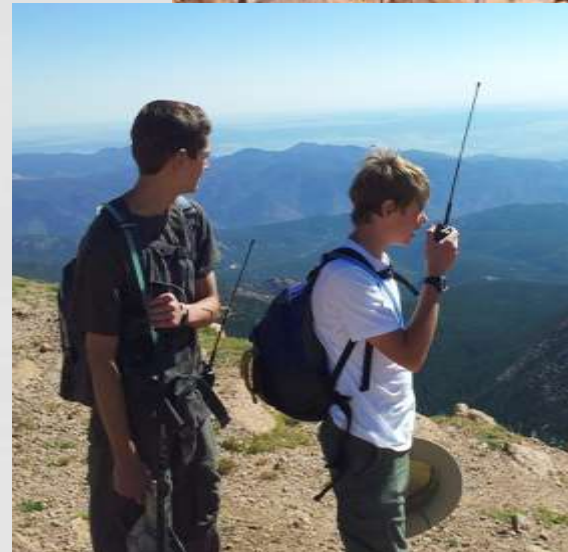
It's Not Always
Warm and Sunny



Chris KØCAO with small yagi



Boy Scouts On Pikes Peak



Peter K3OG on Grays Peak



Note:

Yagi for 2m and 70 cm

Maxon for 6m



VHF Contests !!!



David KB5WIA – Sept VHF Contest



Brokeoff Mountain

(Lassen Volcanic
National Park)

Elk Log Periodic
Antenna

Camera tripod

Yaesu FT-817ND



Combine SOTA and VHF Contests

- Competition
- Challenge
- Concentrates activity
- Have Fun!



	SOTA Activation	ARRL VHF Contests	CQ WW VHF Contest
Frequency Bands	All amateur bands (HF/VHF/UHF and higher)	50 MHz and higher	50 MHz and 144 MHz
Contest entry categories of interest to SOTA operators	Not applicable	Single Operator Portable Single Operator, FM Only	Single Operator QRP Hilltopper
Contact Exchange	Signal Report	Grid Locator (4 char)	Grid Locator (4 char)
Use of 146.52 MHz	Commonly used	Prohibited	Prohibited
Power Source	Portable power source, no fossil fuel generators	Single Operator Portable: Portable power source Single Operator, FM Only: No restriction	No restriction
Transportation to operating site	Operating from a vehicle is not permitted. Equipment must be carried to the operating site	No restriction	No restriction



A Few Operating Categories

- Single Operator Portable (“QRP”)
 - 10W max, portable power source and equipment
- Hilltopper (CQ WW VHF Contest only)
 - QRP portable with 6 hour time limit
- Single Operator, FM Only
 - 50, 144, 222 and 440 MHz (FM Only)

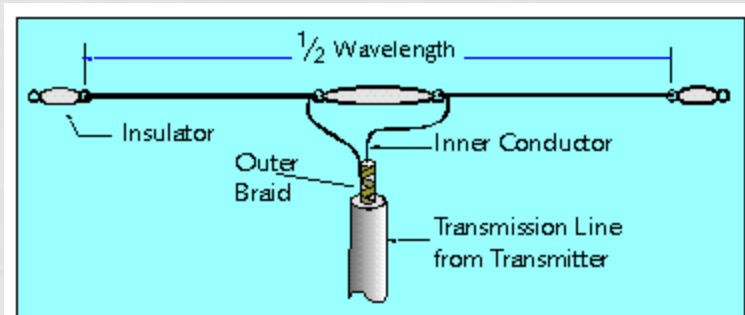


VHF Contest: More Bands

Good combination: 6m, 2m and 70 cm

Antennas

- Already covered small 2m and 70 cm antennas
- 6m antenna: dipole, end-fed-half-wave (EFHW)
- Small Yagi?



dipole antenna



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How To Participate

- Summits On The Air

- Check out the WØC SOTA web site:
w0c-sota.org/

- Choose a summit to activate

- Or chase the summit activators

- Join us for the Colorado 14er Event
Web site: www.ham14er.org

- Ham14er Yahoo group:

- groups.yahoo.com/group/ham14er/



What's Next?

- VHF SOTA operators will continue to favor 2m fm
- Next evolutionary step is 2m ssb (and maybe cw or digital)
- Next step after that can be the higher frequency bands (432 MHz, 1296 MHz, microwave)

Weak-signal VHF enthusiasts can help drive this change by “chasing” SOTA activators



Q&A

Great combination:

Hiking, VHF and Colorado mountains

- Summits On The Air
- Colorado 14er Event
- VHF Contests

Be safe and have fun!!!

