

SOTA (Summits on the Air)

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with material adapted from earlier
presentations by Ian Drummond (VE6IXD)

SASTAR zoom presentation
Calgary, AB February, 2021



What is SOTA?

- **An awards scheme to encourage amateur radio operation in hilly & mountainous areas**
 - Started in UK in 2002; in Alberta since 2012
 - Growing popularity, 150+ “Associations” in ~ 100 countries
 - Supported by global mgmt. team, excellent database & set of websites (see www.sota.org.uk)
 - Don't need to be a “member”, just get a logon ID and start logging qualified activities
 - Not inherently competitive and you don't need to be a mountaineer to participate!

Basic Concept of SOTA

Activators:

- Climb **designated** hills & mountains with portable gear
- Make QSO's (any amateur band or mode)
- 1 QSO = an "activation"; 4 or more gets points according to height band of summit (once per year per peak)
- Special points available for **summit-to-summit contacts**

Chasers:

- Make QSO's with activators (from home, mobile, portable)
- Get points for each peak reached (once per day per peak)

Why?



Why? (Generally)

- Play with radios, antennas, bands & modes
- Enjoy excellent propagation with low noise floor and height advantage
- For activators: an excuse to go hiking – scenery, fresh air, wildlife, exercise, companionship
- For chasers: hike vicariously, make interesting QSO's, “collect” peaks
- Qualify for awards
- **New for 2020/2021: inherent social isolation!**

Why Alberta?



Alberta: one of the best SOTA areas

- Large variety of foothills & mountains (~1300 in database for VE6) – range from family-friendly to ‘mountaineering’
- Many in day trip proximity to cities, some winter-accessible
- Gorgeous scenery, wildlife viewing, fresh air, etc.
- Generally uncrowded approach hikes & summits
- Relatively few issues with summit access restrictions
- Small email group of VE6 activators to share plans, trip reports, learnings
- Supportive local area chasers, especially on 2m
- However, we do have wx, wildlife, rockfall & avalanche hazards – usual protocols for outdoor adventures apply!

Options from "Family" to "Harder"

VE6 Region	Easy	Medium	Harder
Rae (RA) – North Portion	Square Butte (RA-032) Jumpingpound (RA-012)	Ranger Summit (RA-090) GE69 (Goat Hill) (RA-094) Powderface Rdg (RA-015)	Moose Mountain (RA-06) Prairie Mountain (RA-014) Cox Hill (RA-017)
Rae (RA) – South Portion	Porcupine Lookout (RA-089) Hailstone Butte (RA-076)	Windy Hill (RA-011) DG-35 (3 Cairns) (RA-087)	Windy Hill & Saddle (RA-009) as a 2-play CG93 Raspberry Ridge (RA-086)
Joffre (JF)	Deer Peak (JF-086)	Barrier Lake (JF-088)	Stony Peak (JF-084)
Hector (HC)	Tunnel Mountain (HC-035) Stoney Squaw (HC-034)	Mockingbird (HC-255) Tunnel/Stoney 2-play	Whitehorn (HC-206)
Blackiston (BK)	Poker Peak (BK-072)	Island Ridge (BK-020) Carbondale (BK-073) Willoughby (BK-069)	Table Mountain (BK-015)

Points System

- Each Association puts peaks in database that meet requirement of at least 150m vertical prominence
- Points assigned in altitude bands. In Alberta:

1 point	< 1500m ASL
2 points	$\geq 1500 - < 1800$ m ASL
4 points	$\geq 1800 - < 2550$ m ASL
6 points	$\geq 2550 - < 2800$ m ASL
8 points	$\geq 2800 - < 3050$ m ASL
10 points	≥ 3050 m ASL
- Winter bonus: 3 points for peaks > 1 pt, from Nov – March
- Not much standardization across associations

Mt. Minos in April – 4 pts & no winter bonus!



Awards System



Awards System

Activators:

- Certificates for 100, 250, 500 points & coveted “Mountain Goat” trophy at 1000 points. Special S2S award also exists.
- “SOTA Unique” – 100, 250, 500, or 1000 unique summits
- “Mountain Explorer” – activate in 5, 10, 15 or 20 different Associations than home, or 2, 3, 4, 5 different continents

Chasers:

- Certificates for 100, 250, 500 points; “Shack Sloth” trophy for 1000 points
- “Mountain Hunter” – chase 5, 10, 15 or 20 Associations

Some Rules

- Hills must be in approved database, have min. 150m vertical prominence from surrounding terrain
- **Summits can only be activated once/year for activator points, chased once per day for chaser points**
- Must operate within 25m vertical of true summit
- **No operating, shelter or support from vehicles**
- Contacts must be simplex (except satellite)
- **No trespassing, respect access / permit restrictions**
- Good hiking etiquette – no litter, env. damage, etc.
- **Follow all amateur radio regulations**

Where's the action? *(2018 data)*

Band	Global %	NA%
1–5 MHz	2.8	1.3
7 MHz	39.4	24.0
10 MHz	8.5	12.4
14 MHz	22.7	54.2
18 MHz	1.5	3.3
144 MHz	19.0	3.5
433 MHz	1.6	0.1
Others	4.5	1.2

Mode	Global %	NA%
CW	44.7	70.7
SSB	37.0	25.6
FM	18.1	3.6
Data	0.2	<.1
AM	<.1	<.1

Typical Gear - Activators

- FT817, KX2 / KX3 or similar small HF radios; HT for VHF/UHF – FM (some use tiny QRP rigs for CW)
- Small amplifier and/or tuner
- Battery (LiPo, LiFePo far better than SLAB)
- Lightweight antenna system (fiberglass extension pole with inverted V dipole, EFHW, collapsible Yagi, etc.)
- Light coax (RG174), connectors, etc.
- Guying system (bungees, tent pegs, guy lines)
- Logbook, pencil & cell phone for “self-spotting”
- Backpack, hiking pole, seasonal traction aids
- Navigation aids & the rest of the “10 Essentials”

The “10 Essentials” in your pack

1. **Navigation:** map, compass, GPS device, PLB, or sat messenger
2. **Headlamp:** plus extra batteries
3. **Sun protection:** sunglasses, sunscreen, covering
4. **First aid:** including foot care, insect repellent
5. **Knife:** plus para cord, small gear repair items
6. **Fire:** matches, lighter, tinder
7. **Shelter:** carried at all times (can be a light emergency bivy sack or tarp)
8. **Food:** beyond minimum expectation
9. **Water:** beyond minimum expectation
10. **Extra clothes:** beyond minimum expectation

Activator Gear



Linked Dipole Antenna Calculator

Create SOTA CSVLinked antenna designerOther option

Rectangular Snap

HF Linked Dipole Antenna Designer

No. of bands:2Set by band...

Highest frequency:18168kHz

Middle frequency #1:kHz

Middle frequency #2:kHz

Middle frequency #3:kHz

Lowest frequency:14112kHz

Length units:meters

Center support height:6.2m

End support height:0m

Rope extender:4.9m

My favourites...Clear allCalculate

Results for: wire, un-insulated (standard)

	Inner section	Middle sections			Outer section
		#1	#2	#3	
f (kHz)	18168	-	-	-	14112
Length	3.75m	-	-	-	1.08m

Length one side: 4.83mApex angle: 50.4°

Info...Settings...SaveExport...

Other Antennas –Yagi, EFHW, Moxon, etc.



Various modes possible too!



CW



FT8

Activator Considerations

Planning: navigation, weather, timing

- Great mapping & GPS tools available; always check Wx forecast
- Can use variants of Naismith's rule to estimate hike time
- Safety contingency plan (e.g. APRS, cell phone, check-in time)

Resources on the summit

- Exposure, antenna supports available
- Operator seating, work surface
- Shelter if needed

Operating Procedure

- Equipment gets rough treatment; check operation, SWR, etc.
- Select bands to deal with conditions & avoid QRM with fellow activators; QSY if necessary
- Operator hang-in time (hike difficulty, cold, wind, sun, etc.)
- Concise QSO style (similar to contesting)

Typical QSO Style

- Loiter time on hilltops is inherently limited!
- Concise style used – not quite as constrained as contesting but brief & with minimal ragchew.
 - Only need call sign and signal report to complete a QSO
 - Only need time, call sign & summit reference to log it
- Verbose chasers may need to be politely moved on, unless it's the very end of the pileup.
- Most NA activators do not bother with the “/P” and only give the summit reference code at beginning, if asked, or if it's a summit-to-summit contact.

[Demo – QSO role play]

Typical Operating Positions - Activators



Typical Operating Positions - Activators



Typical Operating Positions - Activators



Typical Operating Positions - Activators



Typical Operating Positions - Activators



Not-so-typical Operating Positions



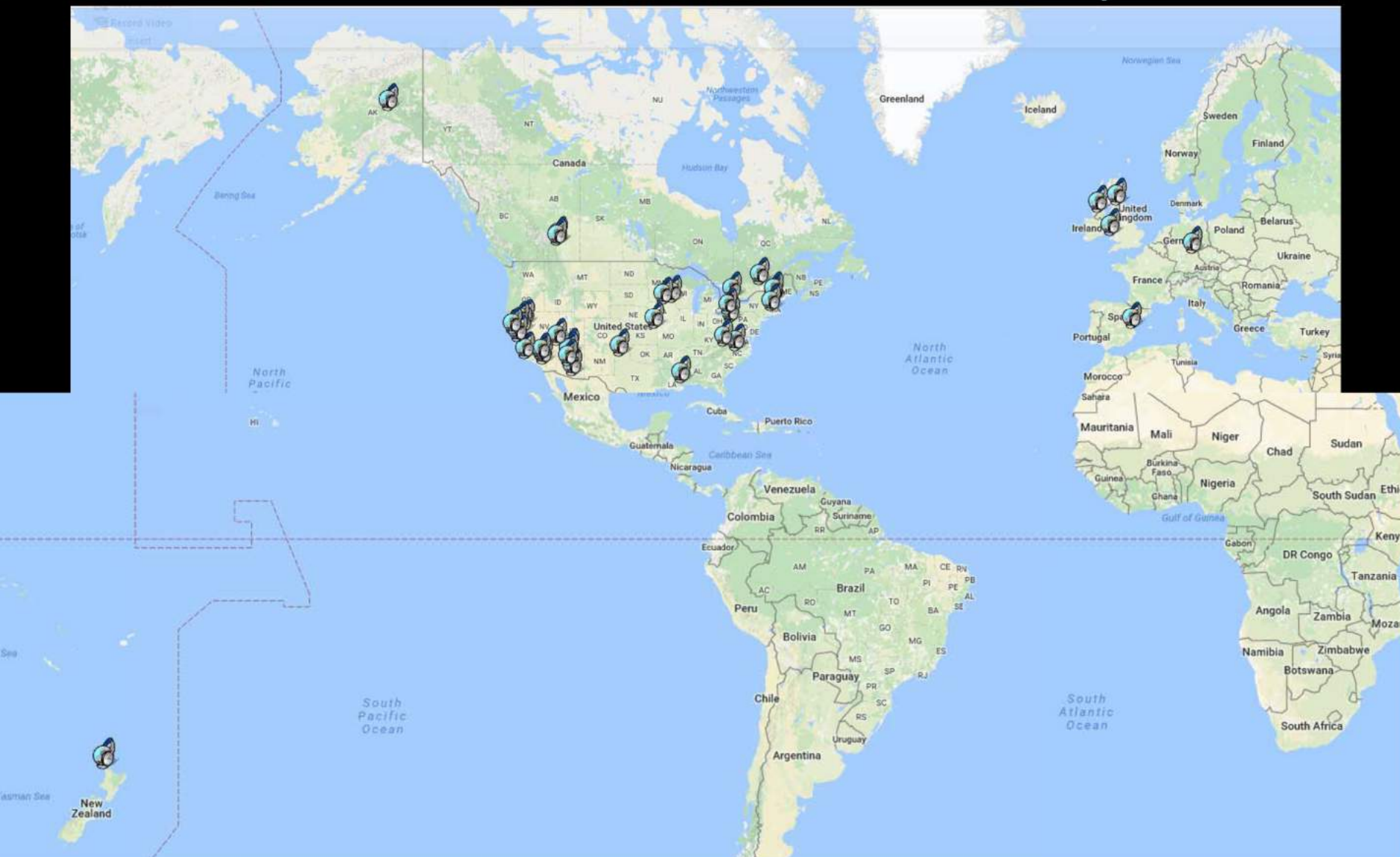
Not-so-typical Operating Positions



McLean Hill is close & not tough to get up



VE6IXD - 50 minutes on McLean Hill, 20m

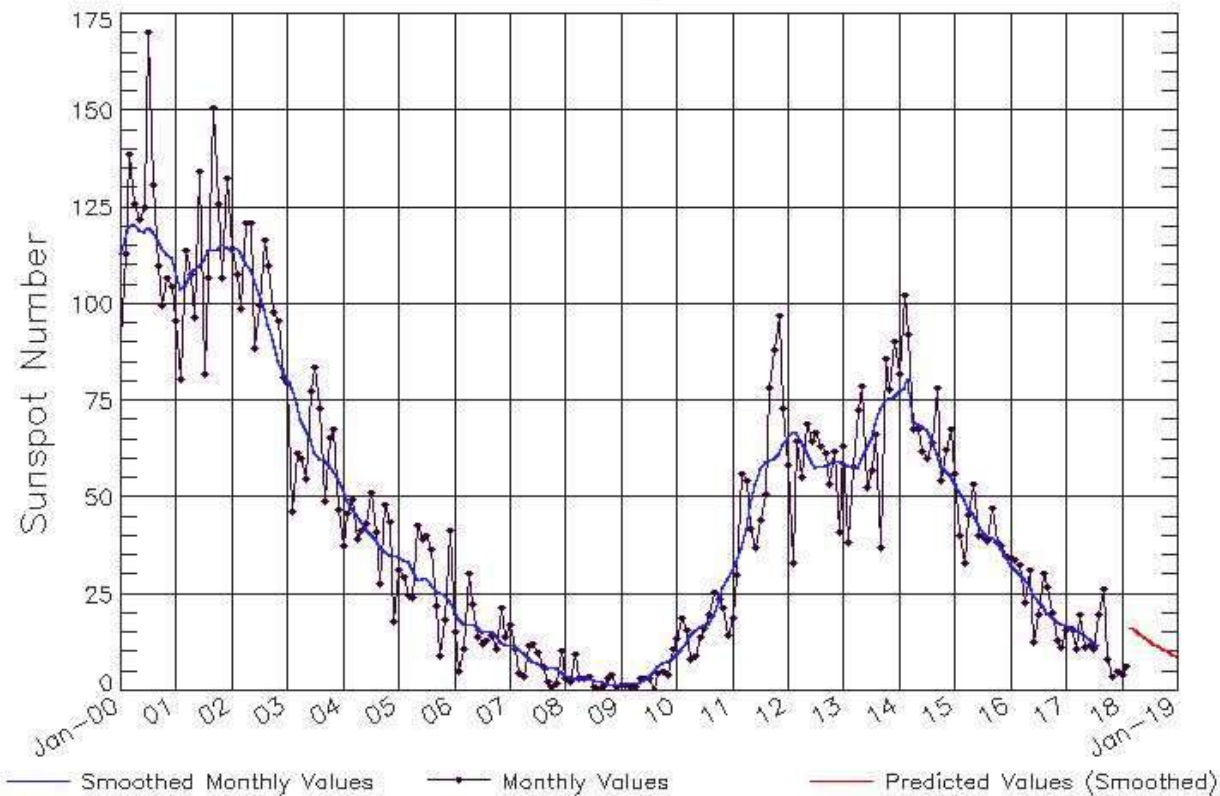


It can only get better ...

Sunspot Number Progression

ISES Solar Cycle Sunspot Number Progression

Observed data through Feb 2018



Updated 2018 Mar 5

NOAA/SWPC Boulder, CO USA

Excellent on-Line Resources

'Official' SOTA Sites (start with www.sota.org.uk)

Main entry / explanation site can link to subsites below

- SOTA Watch (alerts & spots)
- Association, region & peak listings
- Participation database – points in each category (filterable)
- Mapping – with several views + uploaded tracks
- 'Reflector' (forum)

Other Sites & Tools

- SOTLAS: <https://sotl.as/> - superior mapping/spotting site
- SOTAWatch Filter: www.on6zq.be/p/swf/#/spotfilter
- Several logging programs / converters available
- Track hikes on www.APRS.fi

Alerts & Spots

Alerts – posted by activators on www.sotawatch.org in advance, to notify chasers of callsign, summit, date, estimated arrival time, frequency, mode

Spots – posted by chasers or “self-spotted” when actually on the air – effective at generating QSO’s

Self-spotting options

- Directly on SOTAWatch with cell phone if internet connect
- SMS text message if cell coverage but no internet (must register call sign; can do direct or use apps like Droidspot)
- APRS text message if digipeater access but no cell

Alerts & Spots on SOTAWatch

 **SOTAwatch3** 20 Jan 2021 21:01 UT

[SPOTS](#) [ALERTS](#)

Showing 60 alerts. [Settings](#) [Add Alert](#)

Wednesday 20 January 2021

10:45	DL8MEK/P on DL/CG-062 + - 15 min, Track über LoRa APRS (Posted by DL8MEK)	145.fm
11:00	F6GLZ/P on FL/VO-167 + - time (Posted by F6GLZ)	7.035-cw, 14.062-cw
11:00	HB9BXQ/P on HB/SZ-025 aprs hb9bxq-12 (Posted by HB9BXQ)	fm 145.475 mhz
12:30	OE7SIT/P on OE/TI-657 [SOTA Spotter] (Posted by OE7SIT)	14 ssb & 7 ssb
13:00	LA8NHA on LA/BU-142 Op Trond (Posted by LA8NHA)	144.500-fm, 5.375-ssb
13:00	MM0EFI on GM/ES-034 FM only, 5w HT, Yagi. WX dependant (Posted by MM0EFI)	145.350fm

Other Sources of Spots

- SOTAWatch Filter (www.on6zq.be/p/swf/#/spotfilter)

The screenshot shows the SOTAwatch Filter web application. On the left is a sidebar with navigation links: Spot Filter (selected), Logger, Settings, and Help. The main area is titled 'Spots Filter' and shows a list of 7 spots out of 19. The spots are displayed in a table with columns: Time, Callsign, Summit, Frequency, Mode, and Log. The spots are filtered by time and frequency.

SOTAwatch Filter

Spot Filter

Logger

Settings

Help

Spots Filter

Last updated at 21:54:24 UTC

Showing 7 spots out of 19

Time	Callsign	Summit	Frequency	Mode	Log
Fri 21:52	K7JRO/P (John)	W7W/CW-066 (6)	14.3460	SSB	Log
Fri 21:46	K7JRO/P (John)	W7W/CW-066 (6)	146.5200	FM	Log
Fri 20:56	KB7CWV (Lin)	W7A/GI-024 (8)	7.2420	SSB	Log
Fri 20:46	KB7CWV (Lin)	W7A/GI-024 (8)	14.3420	SSB	Log
Fri 20:23	VA7NMD (Jonathan)	VE7/FV-027 (1)	14.3070	SSB	Log
Fri 20:14	VA7NMD (Jonathan)	VE7/FV-027 (1)	14.2400	SSB	Log
Fri 20:03	VA7NMD (Jonathan)	VE7/FV-027 (1)	14.2180	SSB	Log

- Reverse Beacon Network
- DX Cluster
- Phone apps like Hamalert

Associations, Regions & Peaks Info

The screenshot shows a web browser window with multiple tabs. The active tab is 'VE6/JF-088'. The address bar shows 'www.sota.org.uk/Summit/VE6/JF-088'. The page has a navigation bar with links: 'Summits on the Air', 'Joining In', 'Online Resources', 'Associations and Summits', 'Contact', 'About SOTA', and 'Login'. The main content area features a header for 'VE6/JF-088, Barrier Lake Fire Lookout - 1980m, 4 Points' with quick links to 'Back to VE6 Association' and 'Back to JF Region'. Below this, there is a section for 'Association: Canada (Alberta) Region: Joffre' with coordinates, QTH locator, and sunrise/sunset times. A 'Resources' section encourages adding external links. A 'Track and access info' section shows the summit was submitted by VE6IXD on 18 Sep 2016. A disclaimer is at the bottom left. On the right, a 'Summit Activity' section shows 'Total Activations: 3' with a 'View All' button, and a list of recent activations. At the bottom right, a table shows '49 QSOs on these bands'.

Summits on the Air Joining In Online Resources Associations and Summits Contact About SOTA Login

VE6/JF-088, Barrier Lake Fire Lookout - 1980m, 4 Points

Quick links: [Back to VE6 Association](#) | [Back to JF Region](#)

Association: Canada (Alberta) **Region:** Joffre
Latitude: 51.04776 , **Longitude:** -115.0799
QTH Locator: DO21lb
Today's Sunrise: 12:18 UTC , **Today's Sunset:** 02:57 UTC

[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.

[Track and access info](#) Submitted by VE6IXD on (18 Sep 2016)

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: 3

[View All](#)

Latest By:

- VE6AGR on 06 Apr 2017
- VE6IXD on 06 Apr 2017
- VE6IXD on 18 Sep 2016

First Activated by:

VE6IXD on 18 Sep 2016

49 QSOs on these bands:

20m	48	98%
17m	1	2%

Participation Database

Menu

SOTA Results and Summits Database

Welc

Activator Roll of Honour

SOTA is not inherently a competitive activity, it's about individual aspirations and working towards a goal at your own pace. However, it can be fun progress compares with that of others, hence we publish our Honour Roll on the internet.

Please help us to keep this page up-to-date by regularly submitting your SOTA logs.

Association

All VE

Year

▼ 2020

Band

▼ -All Bands-

Modes

▼ -All Modes-

Show

Position	Activator Callsign	Summits	Points	Bonus Points	Total Points	Average	View Log
1	VA2VL	341	1276	213	1489	4.37	View
2	VE2DDZ	283	1277	180	1457	5.15	View
3	VE6IXD	327	1079	288	1367	4.18	View
4	VE6VID	220	801	204	1005	4.57	View
5	VE6AGR	169	616	162	778	4.60	View
6	VA2IEI	137	665	90	755	5.51	View
7	VA2EO	89	471	99	570	6.40	View
8	VE6LCE	102	336	117	453	4.44	View
9	VA2SG	90	413	9	422	4.69	View
10	VA7JBE	72	340	57	397	5.51	View
11	VA2MO	89	351	21	372	4.18	View

Mapping Project – Main View

smp main mapping extras contact overview SOTA Links ▾

Choose Association: ☐ Multi Choose Region: ☐ Multi ☐ All Choose Summit: --- Please choose --- Sort Summits by: Code ▾

VE6 - Canada - Alberta VE6/RA - Rae (▾

Mapping Summit history Region summaries

Chosen Summits Listing

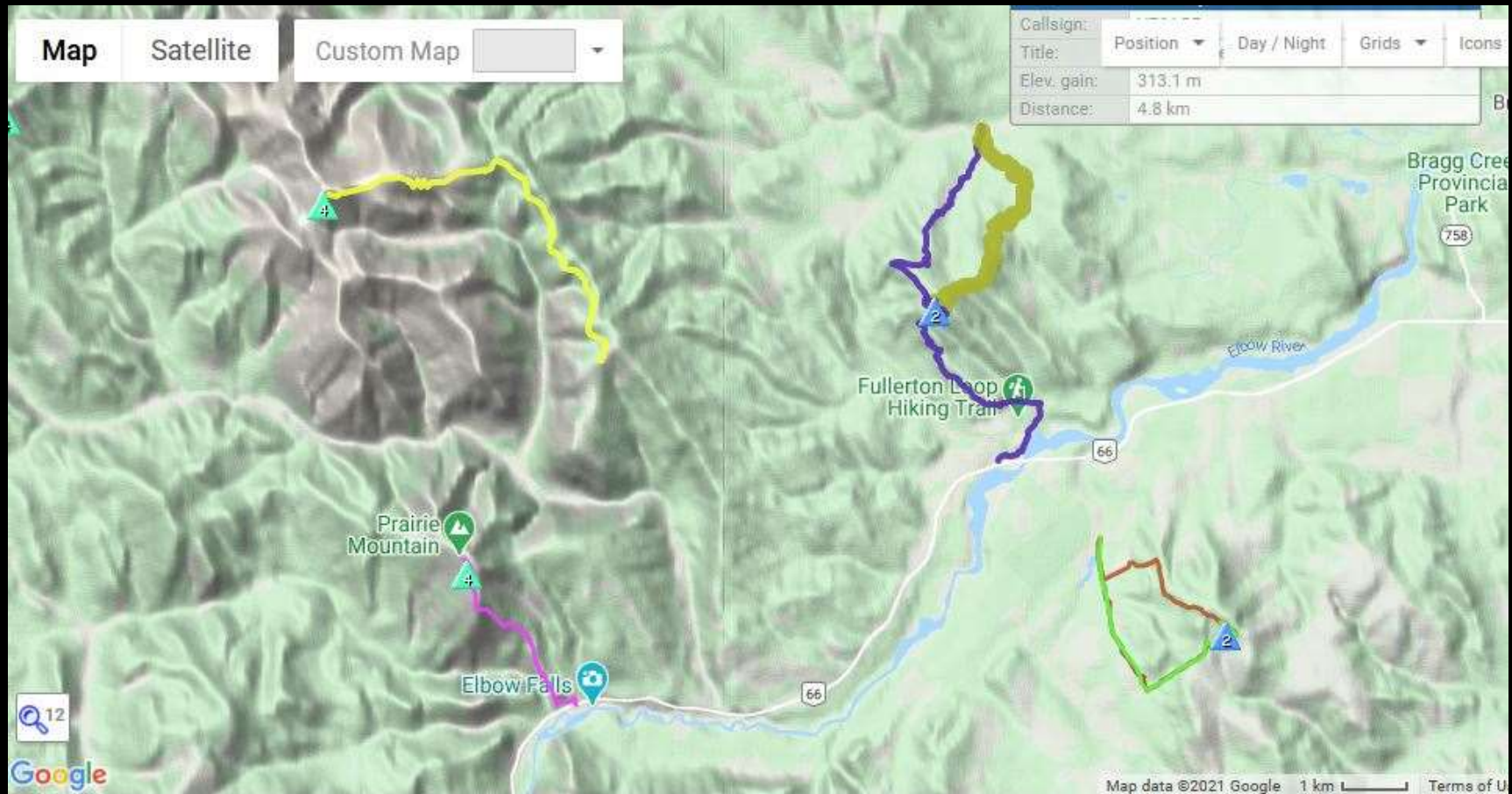
Display: All summits in chosen range ▾

Summit Code	Summit Name	All Act.	My Act.	Pts.
VE6/RA-001	Banded Peak	0	0	8
VE6/RA-002	Allison Peak	0	0	6
VE6/RA-003	Threepoint Mountain	0	0	6
VE6/RA-004	Pasque Mountain ★	1	0	4
VE6/RA-005	Plateau Mountain ★	11	1	4
VE6/RA-006	Moose Mountain ★	8	2	4
VE6/RA-008	East Wasootch Peak ★	2	0	4
VE6/RA-009	Saddle Mountain ★	2	1	4
VE6/RA-010	Cyclamen Ridge ★	1	0	4
VE6/RA-011	Windy Peak ★	11	3	4
VE6/RA-012	Jumpingpound Mountain ★	20	2	4
VE6/RA-013	Chaffen Peak	1	0	4
VE6/RA-014	Prairie Mountain ★	26	2	4
VE6/RA-015	Powderface Ridge ★	21	2	4
VE6/RA-016	Mount Baldy	4	0	4
VE6/RA-017	Cox Hill ★	18	3	4
VE6/RA-018	Horseshoe Peak ★	2	1	4
VE6/RA-019	Bluff Mountain	0	0	4
VE6/RA-020	Volcano Ridge ★	4	1	4
VE6/RA-021	Allsmoke Mountain ★	7	2	4

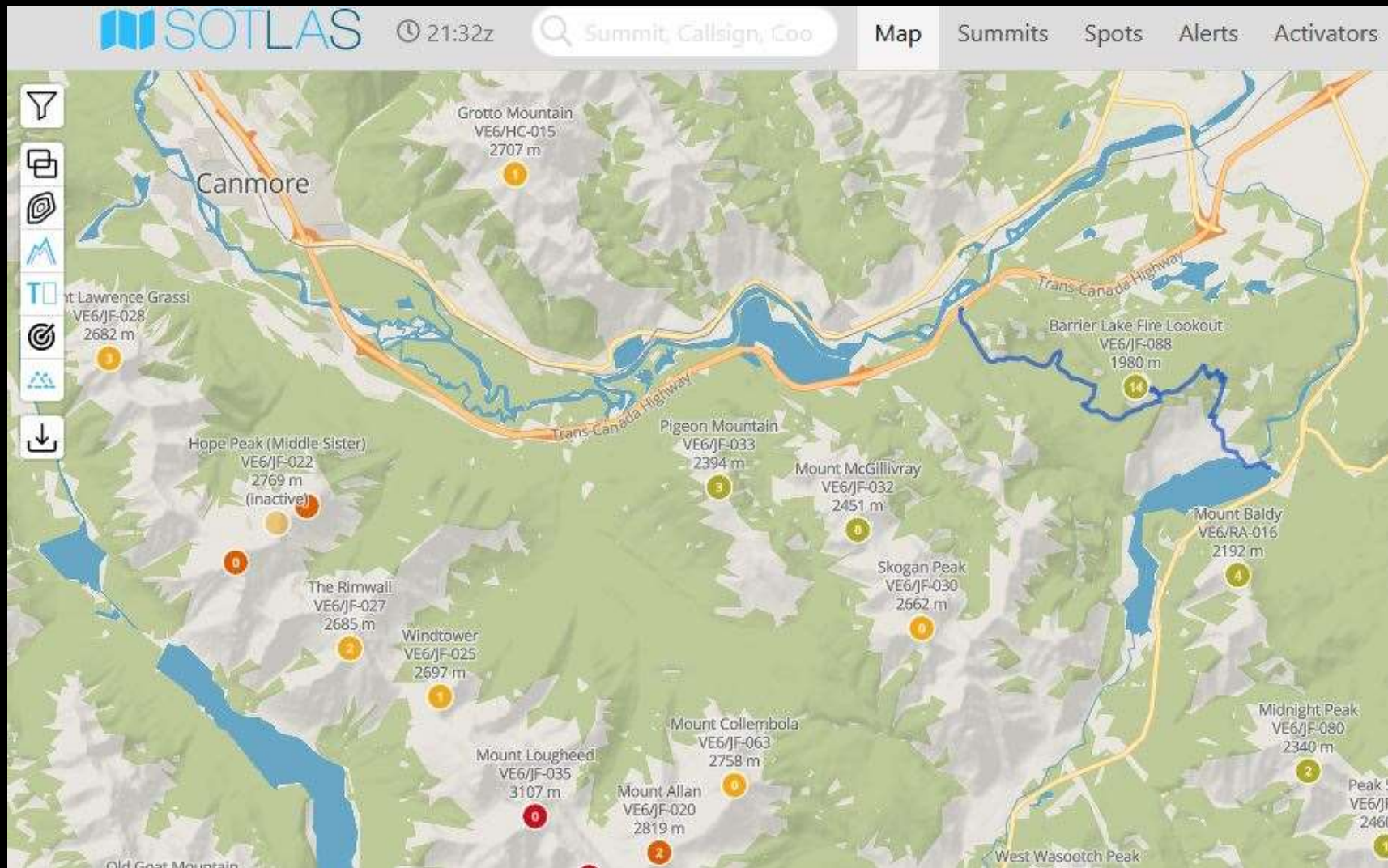
97 Summits ★ = Tracks available for summit

Map Satellite Custom M Position ▾ Day / Night Grids ▾ Icons ▾

Mapping Project – Tracks View



SOTLAS <https://sotl.as/>



Reflector

Other SOTA sites: [SOTAwatch](#) | [SOTA Home](#) | [Database](#) | [Summits](#) | [Video](#) | [Photos](#) | [Shop](#) | [Mapping](#) | [FAQs](#) | [Facebook](#) |



SOTA Reflector



all categories ▾

Latest

New (6)

Unread (96)

Top

Categories



Topic	Category	Users	Replies	Activity
W5GDW Super Sloth!! •	Milestones	W	11	13m
Is it me or ??	Operating Procedures	K	26	19m
A SOTA Centric End Fed Half Wave Antenna	Antennas		69	22m
Thank you MT	Online Resources		13	36m
Permit Required W2/GC-020 state park lands	Activation Reports	K	9	2h

Getting started

- Depends on what you want to do – activate or chase, remote or nearby, mode, bands, etc.
- Typically start using VHF from/to modest nearby foothills
 - 5 watt HT (2m FM), preferably with antenna upgrade
- Move to portable HF can be done at relatively modest investment (< \$2000 retail, much less with used gear)
- Local activator group will Sherpa newcomers; chasers just have to keep an eye on SOTAWatch
- Then try more summits, higher ones, different bands & modes, winter, qualify for various awards, contesting
- After pandemic, take gear on vacation & do SOTA side-trips
- Combine SOTA with contesting

Buffalo Hill, Milo Area (2 pts)



Square Butte, Millarville Area (5 pts in winter)



Windy Peak (4 Pts), Plateau Mtn Area



Winter Activations - Best Below Treeline



The Rimwall (6 pts) - Canmore



Mt. Allen (8 pts) - Kananaskis



SOTA Activator



What my friends think I do



What hikers think I do



What chasers think I do



What other hams think I do



What I think I do



What I really do

73, hope to 'see you' on the bands ...



Special Thanks To:

- The audience
- SOTA volunteer management team in the UK
- Walker McBryde VA6MCB – Association Manager, VE6
- Ian Drummond VE6IXD – pioneer VE6 activator, mentor & trip planner *par excellence* and Alberta's first "Goat!"
- Hard-core chasers, including W0MNA, W0ERI, W7RV, N4EX, KX0R, K3TCU, NG6R, K6EL, NE4TN, NQ7R, K6LDQ, K6HPX, AB4PP, WA2USA, WB0KIU, AC1Z ...
- Supportive southern Alberta 2m chasers
- The Gods of Propagation