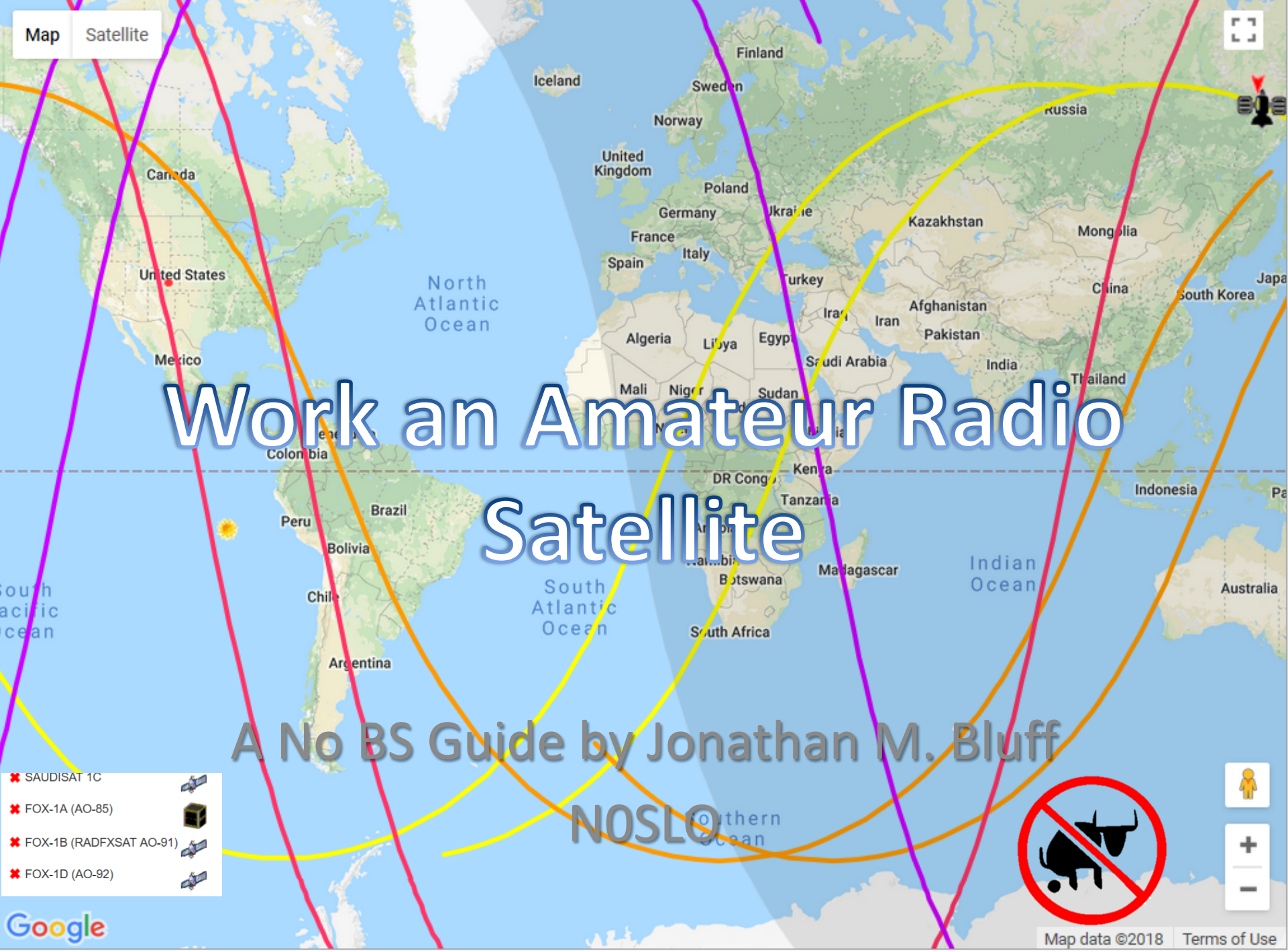


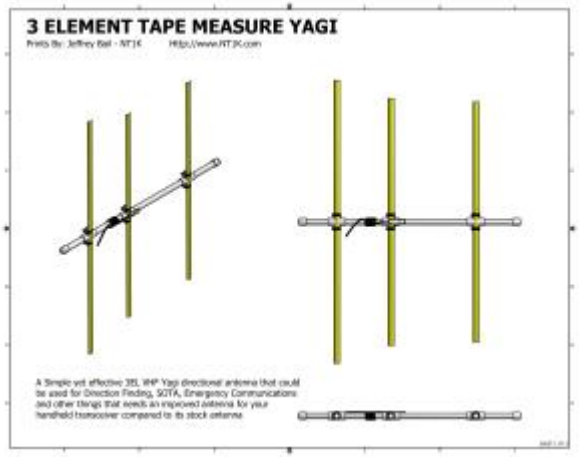
Work an Amateur Radio Satellite

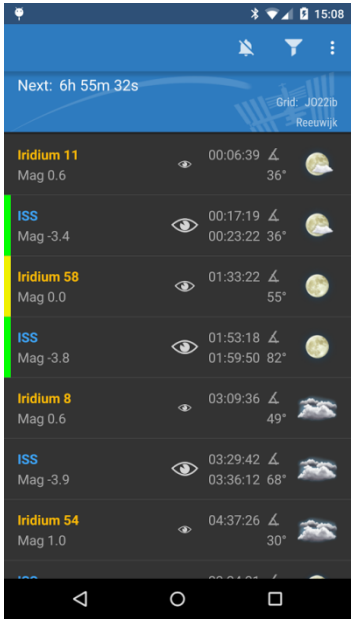
A No BS Guide by Jonathan M. Bluff

NOSLO

Stuff You’re Gunna Need

- 2m/70cm HT or two
- Directional Antenna
- A way to find a satellite (software)
- Compass
- Pencil and Paper





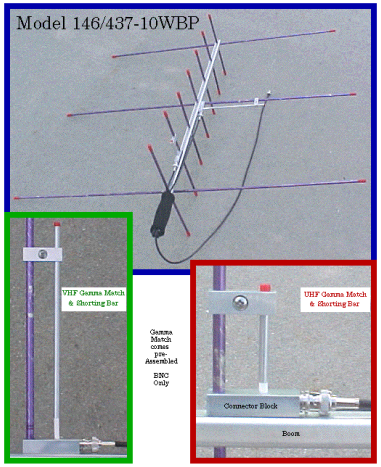
2m/70cm HT (or two)

- BEST: HT with true dual-band operation radio (VHF+VHF/VHF+UHF/UHF+UHF)
- BETTER: Two independent HTs so you can mimic VHF+VHF/VHF+UHF/UHF+UHF
- GOOD: One cheep HT that will allow you to program a split frequency. (UV-5R)

  -Easy to do this on SO-50!

Directional Antenna

- BEST: Arrow's 146/437-10WBP ($150)
- BETTER: Elk's Dual-Band 2M/440L5 ($125)
- MOST COOLEST: Build a dual band tape measure Yagi!! KM4GLM has the plans on his website. ($Chump Change)



How to Use an Analyzer

- https://www.youtube.com/watch?v=jOCG6bFGfuE

Pick A Satellite

- SO-50 is an easy “Mode J” (2 m uplink / 70 cm downlink) satellite to work. Start learning on this satellite. You can work this bird with only 1 radio! CHEEP!

Ch #	Name	TX Freq	CTCSS (TX)	RX Freq
101	SO50ON	145.850	74.4	436.810
102	SO50-1	145.850	67.0	436.810
103	SO50-2	145.850	67.0	436.805
104	SO50-3	145.850	67.0	436.800
105	SO50-4	145.850	67.0	436.795
106	SO50-5	145.850	67.0	436.790
107	SO50-6	145.850	67.0	436.785
108	SO50-7	145.850	67.0	436.780

Pick A Satellite

- AO-85 is a “Mode B” (70 cm uplink / 2 m downlink) satellite to work. Work only in full duplex.

Alpha	TX Freq*	TX Tone	RX Freq**	RX Tone
AOS-2	435.160	67.0	145.980	None
AOS-1	435.165	67.0	145.980	None
AO-85	**435.170**	**67.0**	**145.980**	**None**
LOS-1	435.175	67.0	145.980	None
LOS-2	435.180	67.0	145.980	None

Pick A Satellite

- AO-91 is a “Mode B” (70 cm uplink / 2 m downlink) satellite to work. Work only in full duplex.

Memory	Your Transmit Frequency(With 67 Hz Tone)	Your Receive Frequency
Acquisition of Signal (AOS)	435.240 MHz	145.960 MHz
Approaching	435.245 MHz	145.960 MHz
Time of Closest Approach (TCA)	435.250 MHz	145.960 MHz
Departing	435.255 MHz	145.960 MHz
Loss of Signal (LOS)	435.260 MHz	145.960 MHz

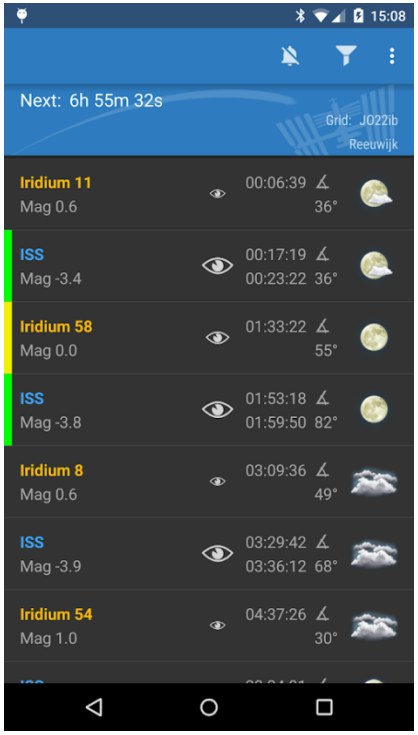
Pick A Satellite

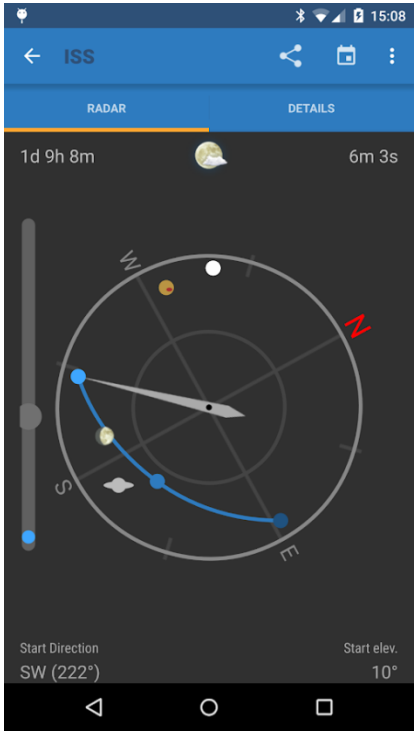
- AO-92 is a “Mode B” (70 cm uplink / 2 m downlink) satellite to work. Work only in full duplex.

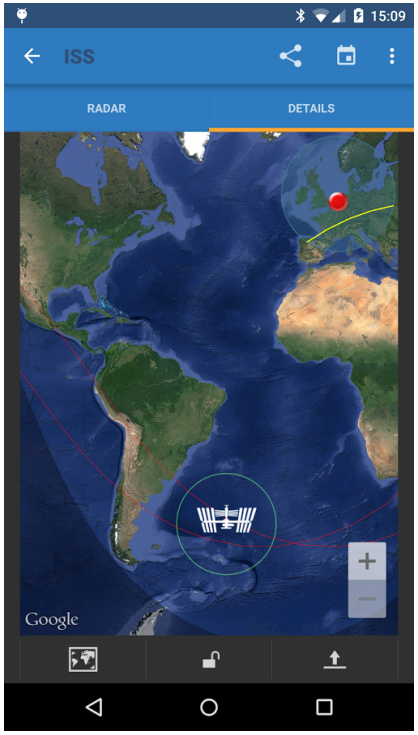
Memory	Your Transmit Frequency (With 67 Hz Tone)	Your Receive Frequency
Acquisition of Signal (AOS)	435.340 MHz	145.880 MHz
Approaching	435.345 MHz	145.880 MHz
Time of Closest Approach (TCA)	435.350 MHz	145.880 MHz
Departing	435.355 MHz	145.880 MHz
Loss of Signal (LOS)	435.360 MHz	145.880 MHz

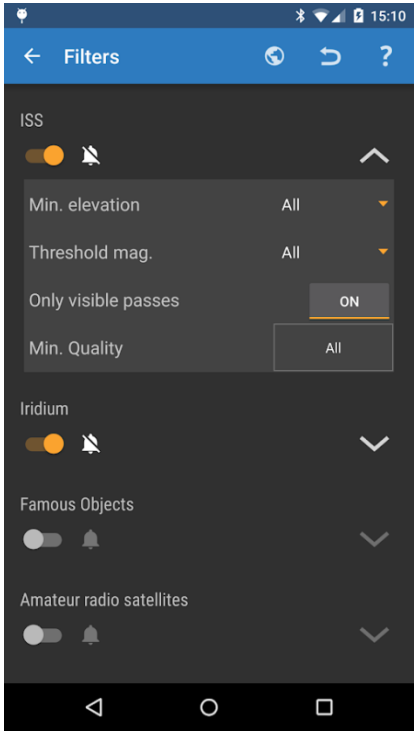
How to Find Your Satellite

ISS Detector Pro







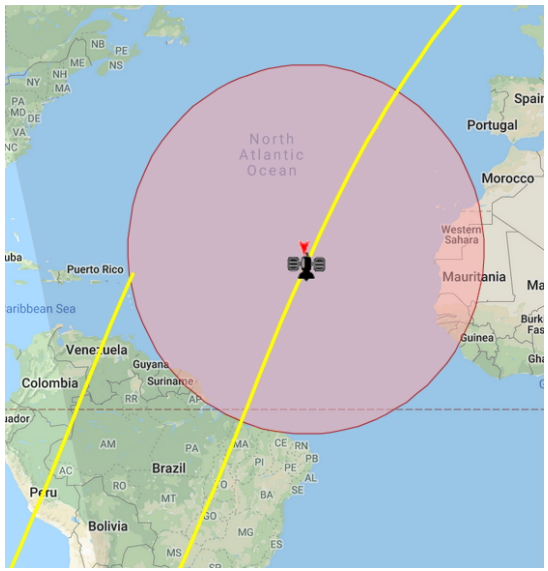


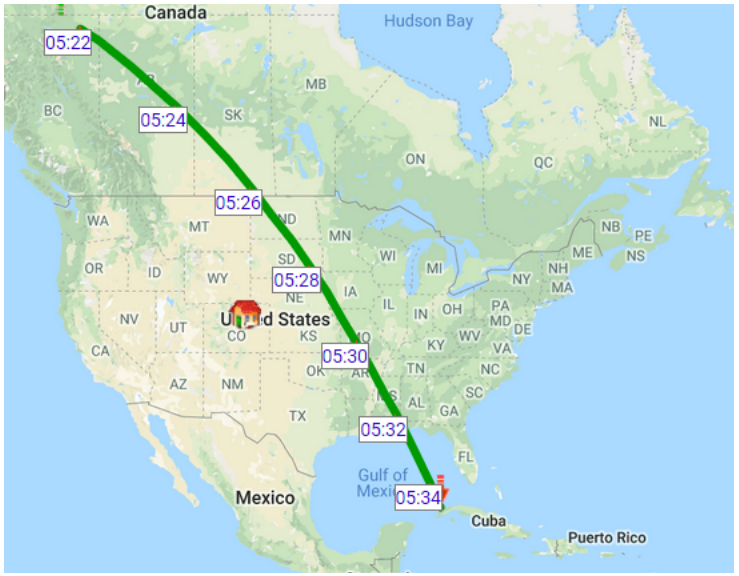
How to Find Your Satellite

- www.N2YO.com

Visible passes | AM/PM time | UTC | Print as PDF

Start		Max altitude			End		All passes	
Date, Local time	Az	Local time	Az	El	Local time	Az	Mag	Info
19-Feb 20:49	SSW 198°	**20:56**	**ESE 116°**	**53°**	21:02	NE 37°	-	Map and details
19-Feb 22:31	WSW 252°	**22:36**	**NW 314°**	**18°**	22:42	NNE 16°	-	Map and details
20-Feb 05:21	NNW 336°	**05:28**	**NE 53°**	**35°**	05:34	SE 126°	-	Map and details



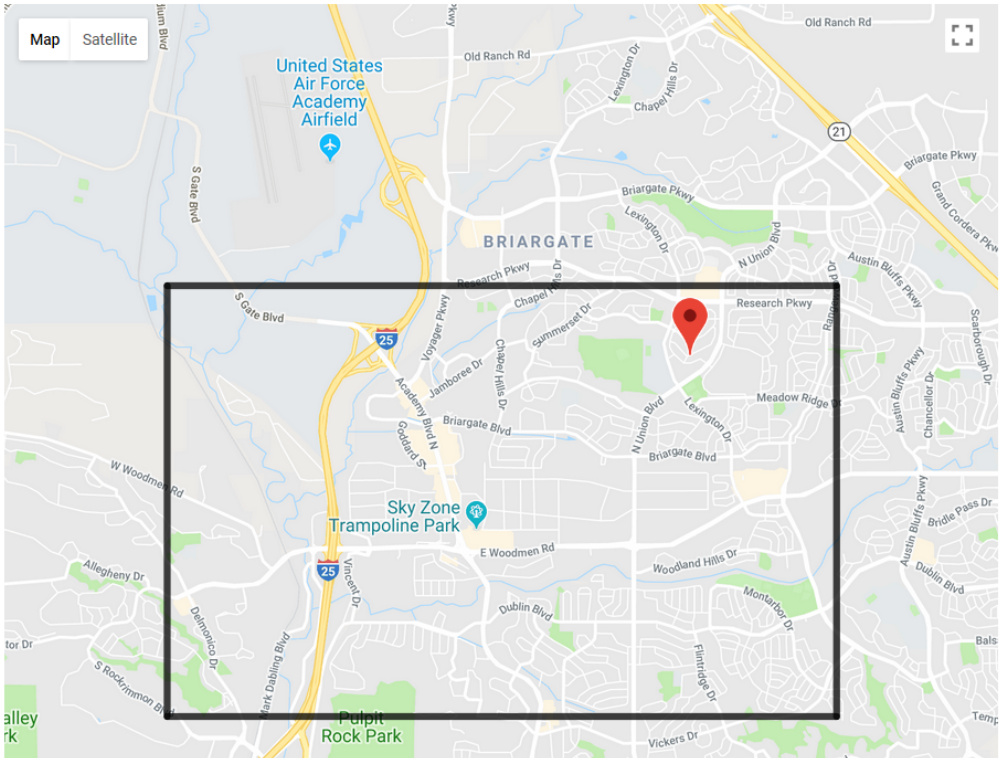


Go For It!

- Find Your Grid Square using Amateur Radio Ham Radio Maidenhead Grid Square Locator Map

Latitude: 38.9514782 / 38° 57' 5" N Longitude: -104.7681148 / 104° 46' 5" W

Grid: **DM78ow**



Go For It!

- Grab your compass and plan for the satellite pass. Avoid any obstructions like buildings.
- Drop your squelch to ZERO and listen.
- When you're familiar with the pattern, transmit!
- Example script:
  - The other person: "This is N0SLO DM78ow, QSL?"
  - You: "N0SLO this is [Call sign & Grid Locator]. Hello from [location] and signal report."
  - The other person: "Thank you [Call sign] and signal report."
  - The other person: "This is N0SLO DM78ow, QSL?"
- Note that SO-50 is quite busy in the evenings and on the weekend. The other satellites seem to not be nearly as busy.