

# Can RF-Receivers detect Earthquakes?

Evidence has been mounting that it might be possible to detect earthquakes by measuring the changes in the ionosphere.

The RF-Seismograph team has been collaborating with Earthquakes Canada to find a correlation between HF propagation and earthquakes. A distinct event that occurred on Nov 1st (M5.0 off the coast of Vancouver Island) that caught the eye of the RF-Seismograph team.

We are in the process to correlate earthquakes that a bigger than M6.0 into the 4 years of data we have accumulated. Attached you find a compilation of the year 2016 and all significant earthquake data that was given to us by Earthquakes Canada.

We also believe that tsunamis create RF-signatures and will further investigate on this.

The RF-Seismograph uses a HF radio, a LIF interface to decode the IF via a sound card and a 9-band vertical antenna to receive and record RF-background noise and log the data into files. For more info on LIF go to:

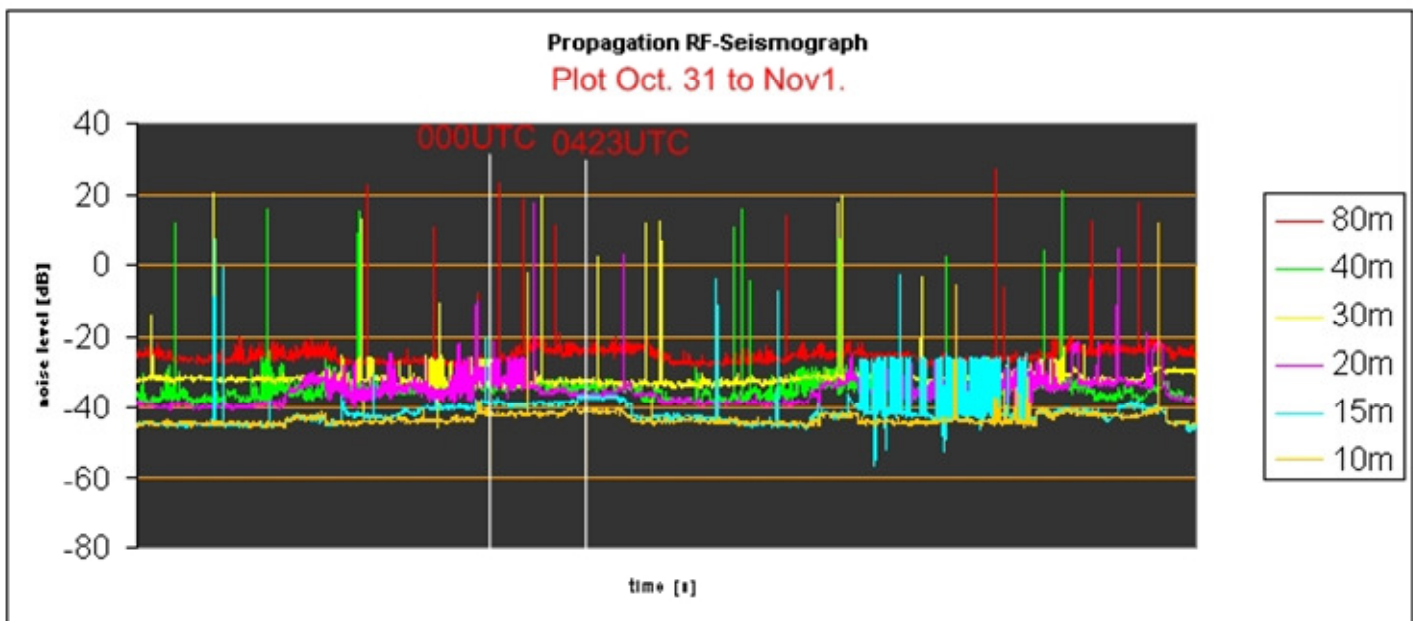
<http://users.skynet.be/myspace/mdsr/index.html>

## A quick introduction what we are seeing:

RF-Seismograph Plot displaying the time of the quake M5.0 event below  
The time is PST – 8h (4PM = 000UTC). The earthquake occurred on Oct 31 20:23PST (0423UT).

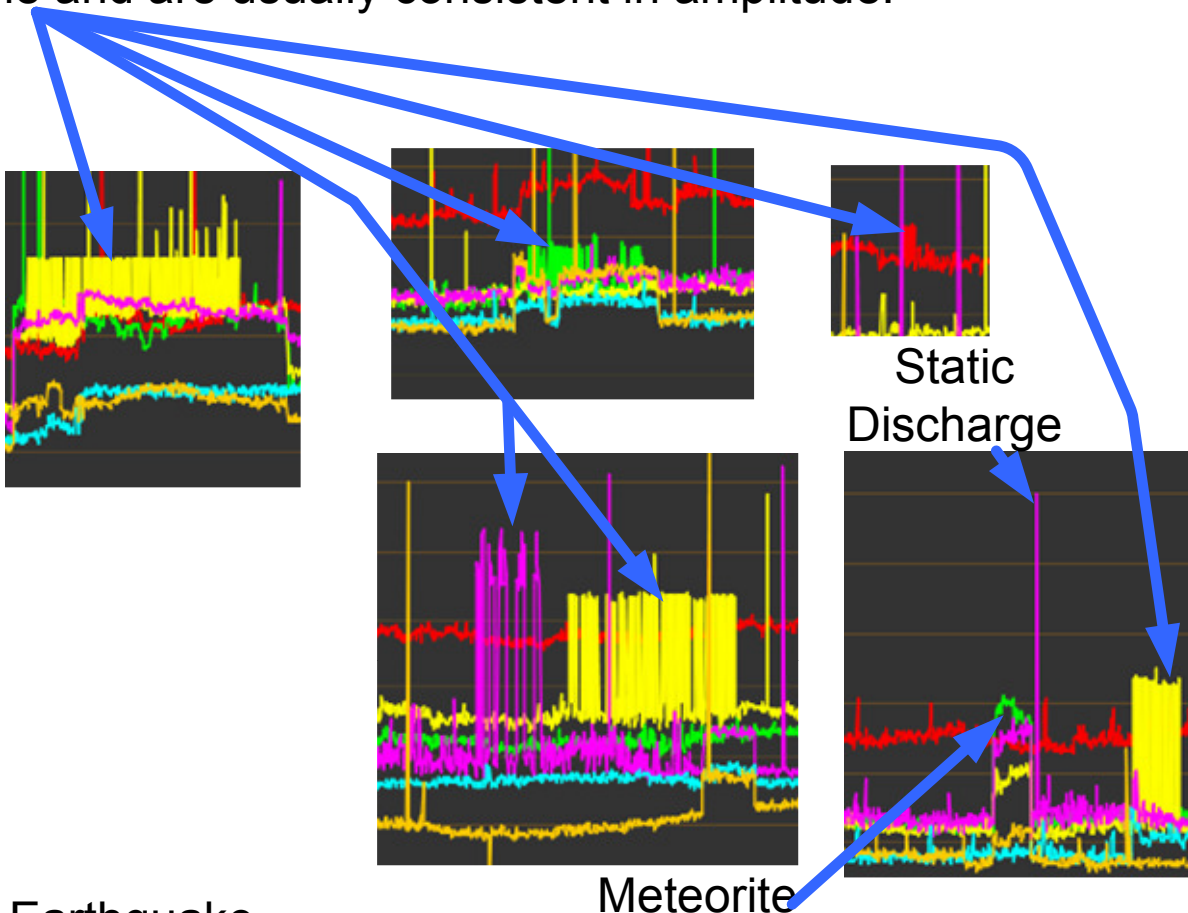
### Interesting are two things on this plot.

- The rise of the 80m noise level starting at about 0100UTC (red)
  - The dropout of communications at about the same time (20m - mag, 30m – yel, 40m – grn)
- The buildup of the energy and the change can be seen about 1 to 2h in advance on the red plot, which measures 80m. After the quake the 80m stays disturbed for another 2h. After that the band recovers.

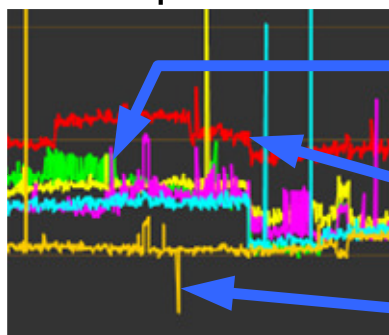


# Glossary of some Signals Displayed

Man-made Signals: these signals have a fast rise and fall time and are usually consistent in amplitude.



Earthquake



Signal drop because of the disruption of the ionic layer (green)

Noise increase on 80m, usually seen before quake releases and after quake

Indicator: time of quake (edited manually)

We believe we should investigate this further and will be posting updates as they come available. Comments are also welcome!

Send message to: [alexschwarz@telus.net](mailto:alexschwarz@telus.net)

**Please join us at:**

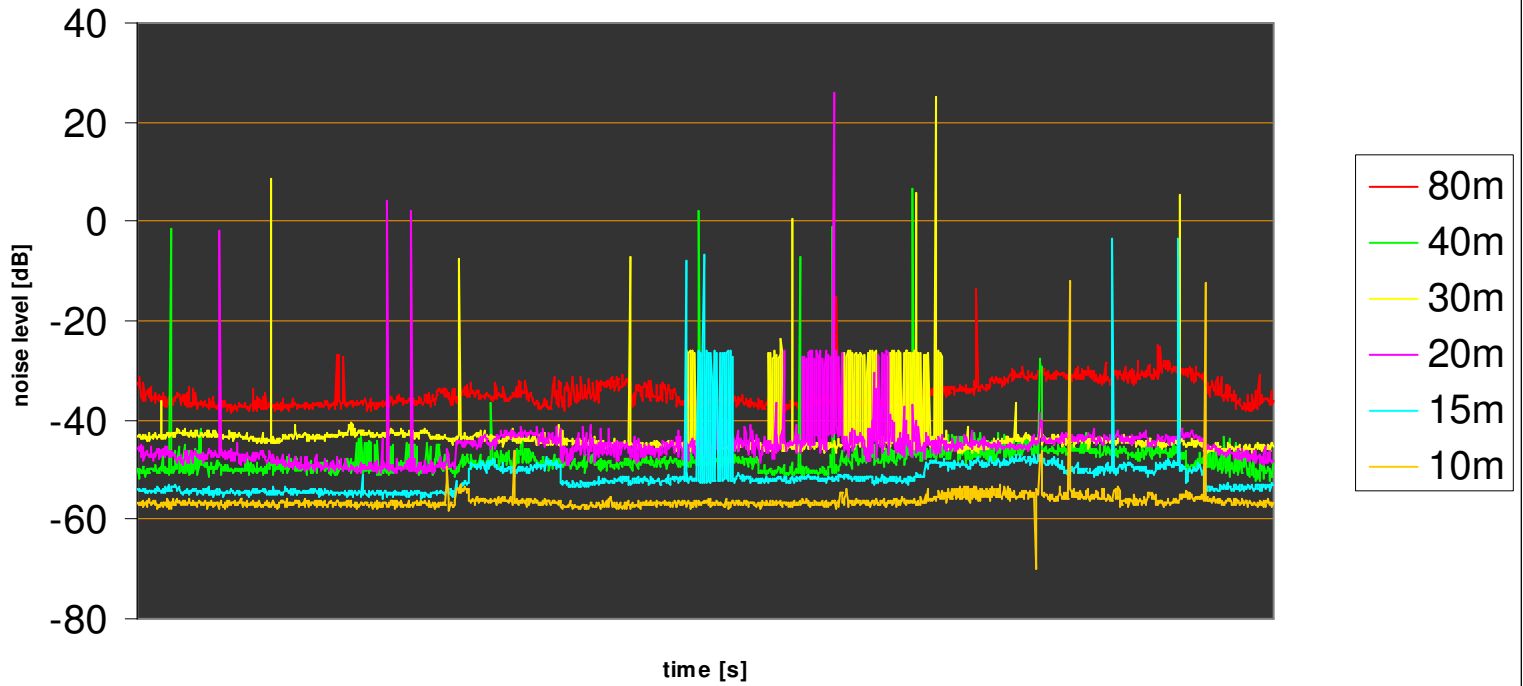
<https://scistarter.com/project/21138-RF-Seismograph>

and help explore the possibilities of the RF-Seismograph from your station!

Propagation RF-Seismograph

44km E of Great Swan Island  
Honduras, M7.5

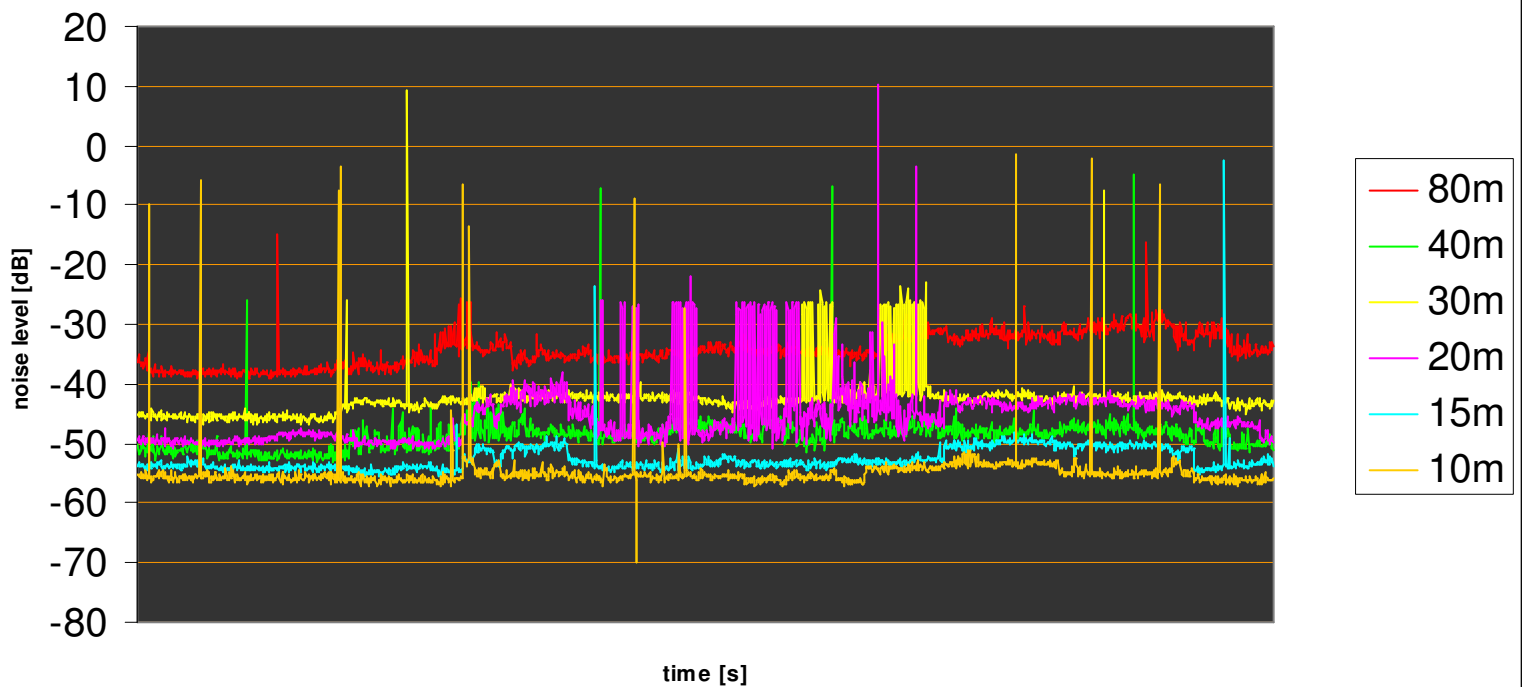
Plot Jan 9. 2018



Propagation RF-Seismograph

40km WSW of Pyu Burma, M6.0

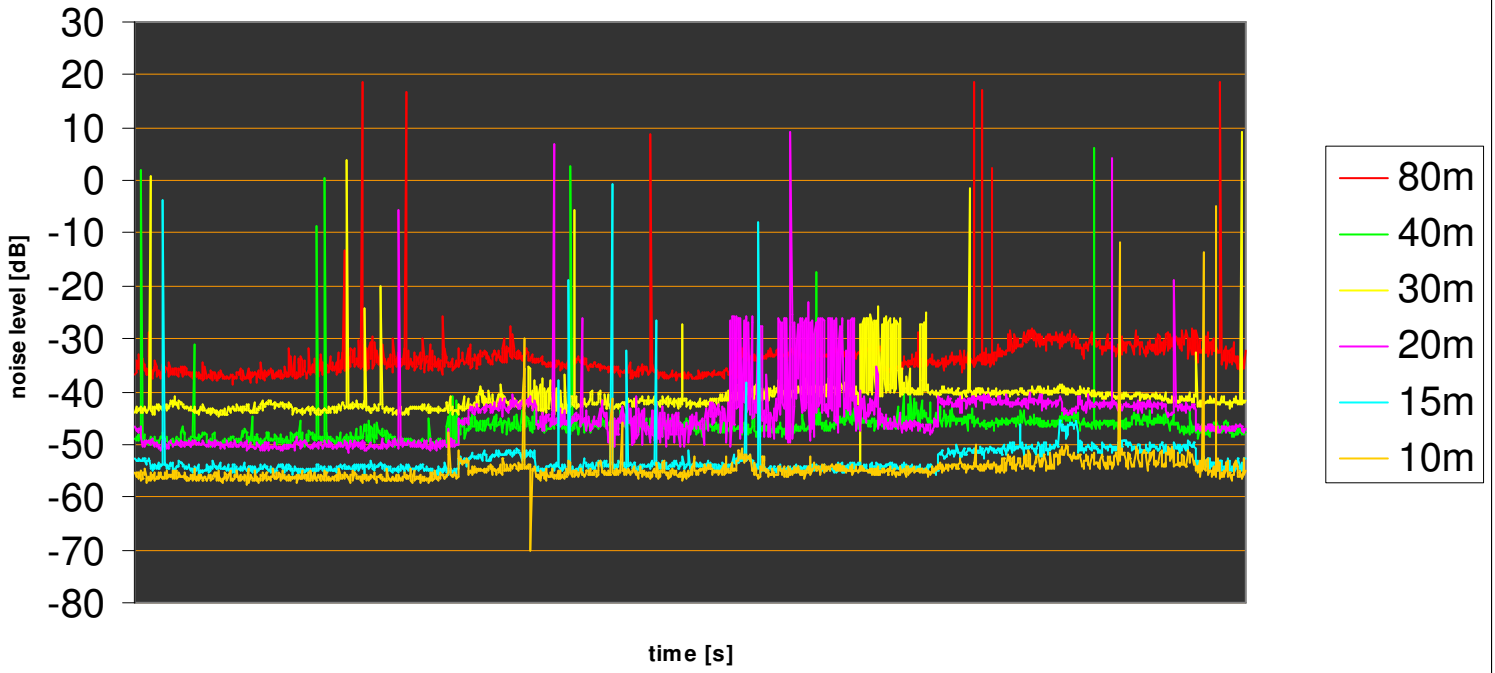
Plot Jan 11. 2018



Propagation RF-Seismograph

Plot Jan 19. 2016

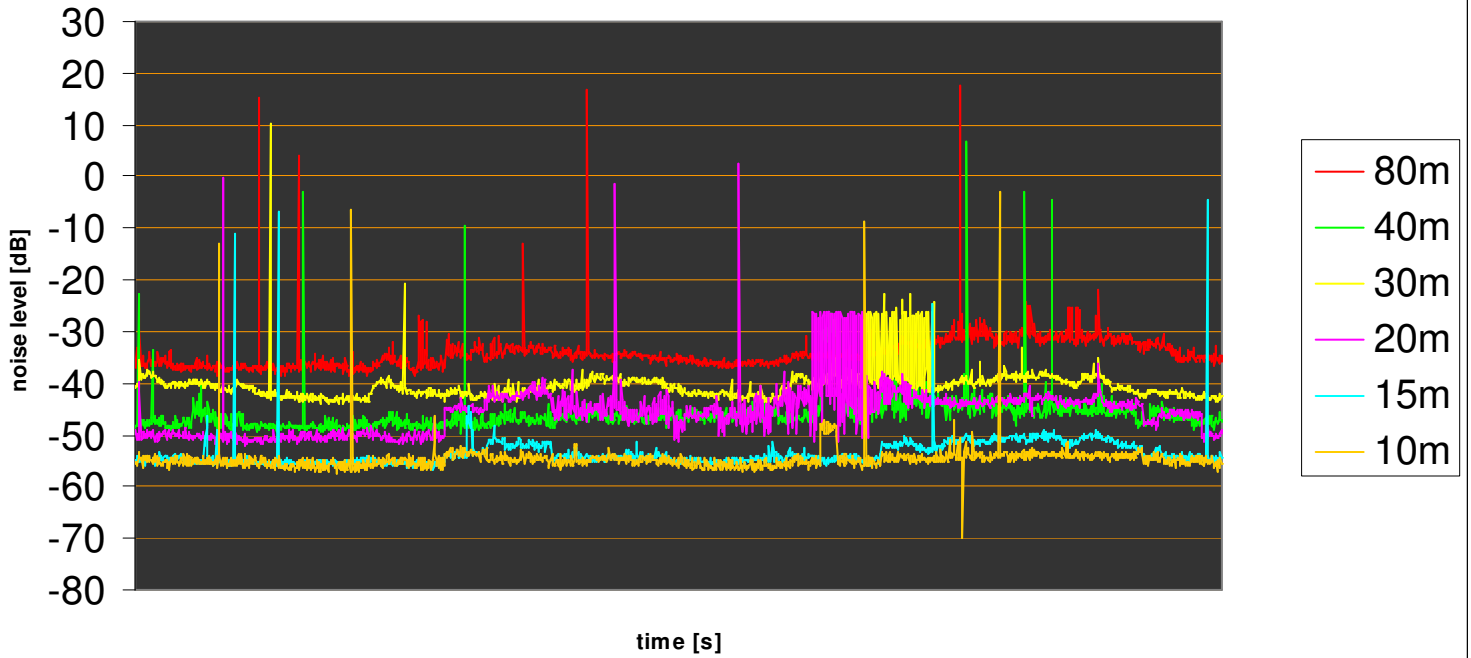
78km NNE of Loreto Mexico, M6.3



Propagation RF-Seismograph

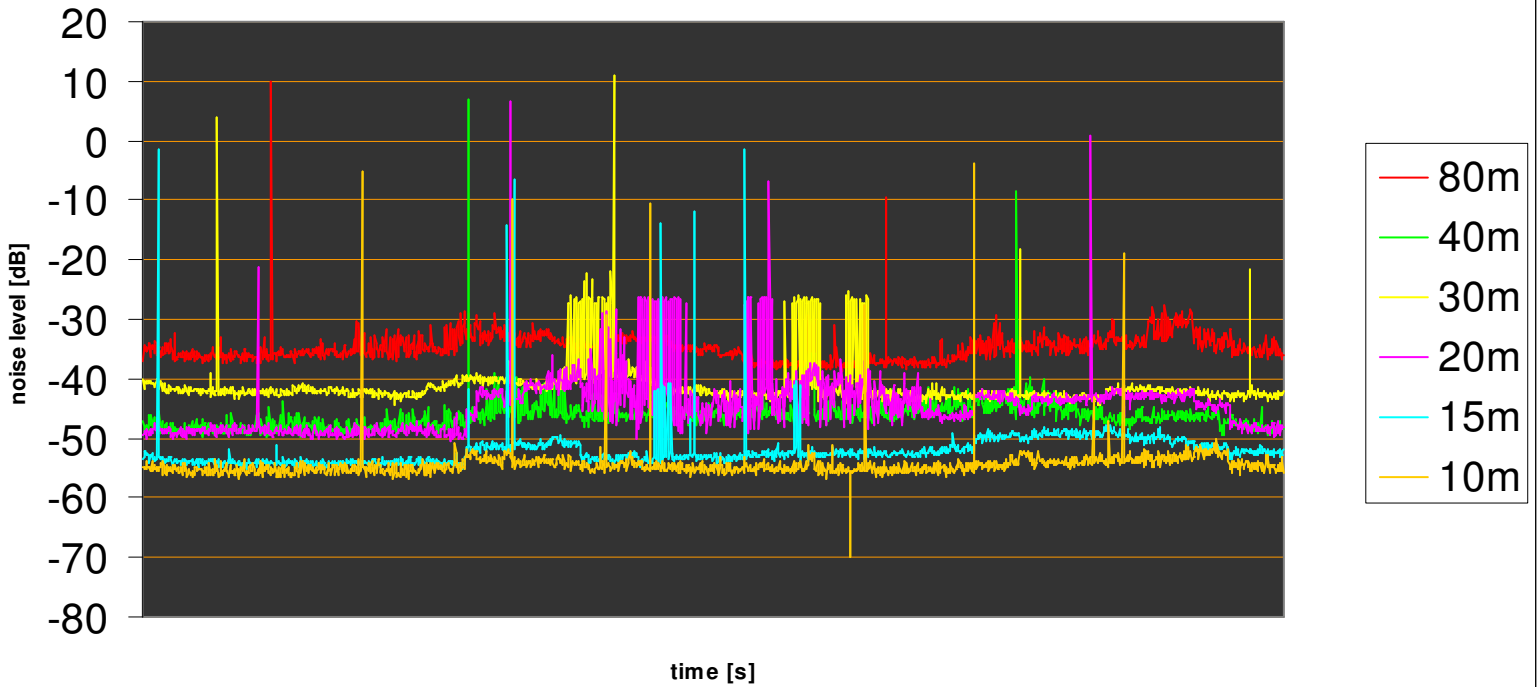
Plot Jan 24. 2018

48km NE of Nikol'skoye Russia, M6.2



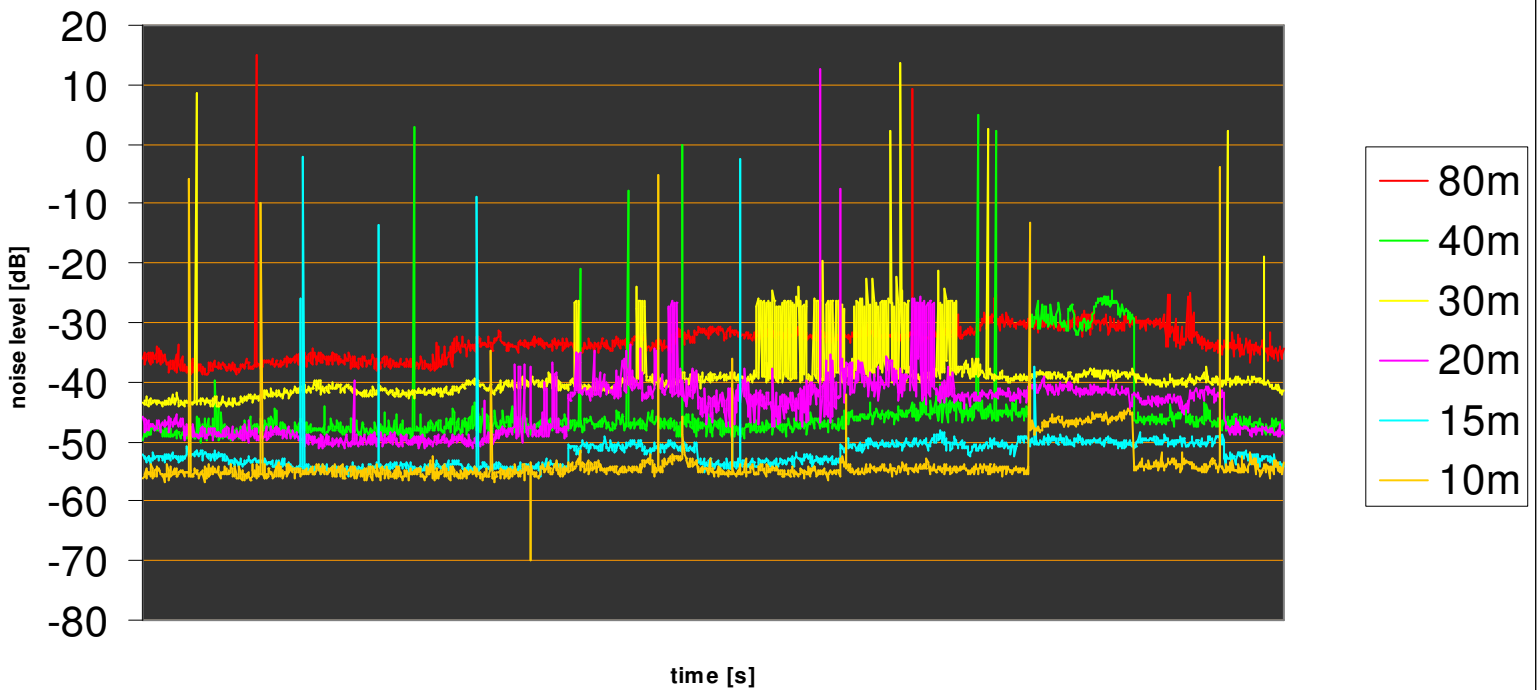
Propagation RF-Seismograph  
Plot Jan 26 2018

189km N of Madang Papua New  
Guinea, M6.3



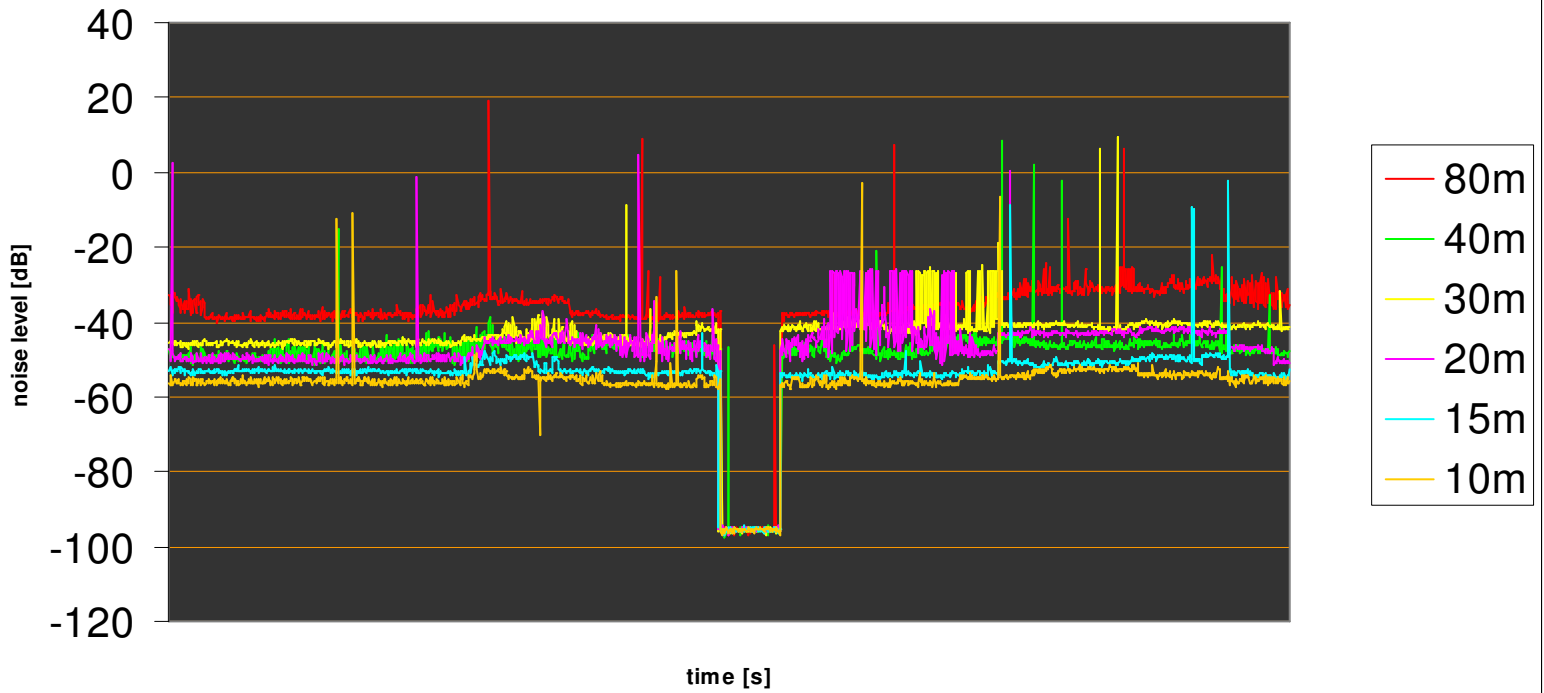
Propagation RF-Seismograph  
Plot Jan 28 2018

Southwest of Africa, M6.6



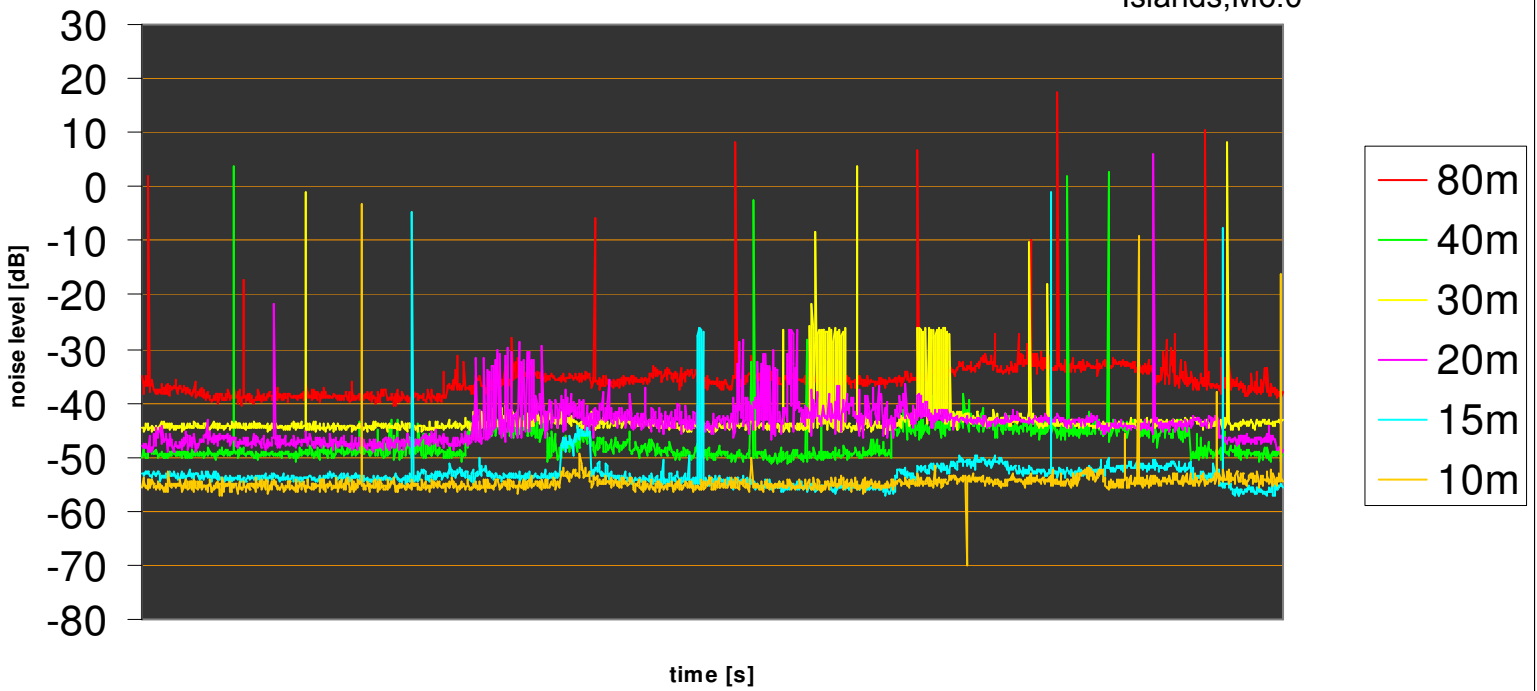
Propagation RF-Seismograph  
Plot Feb 6 2018

18km NNE of Hualian Taiwan, M6.4



Propagation RF-Seismograph  
Plot Feb 11 2018

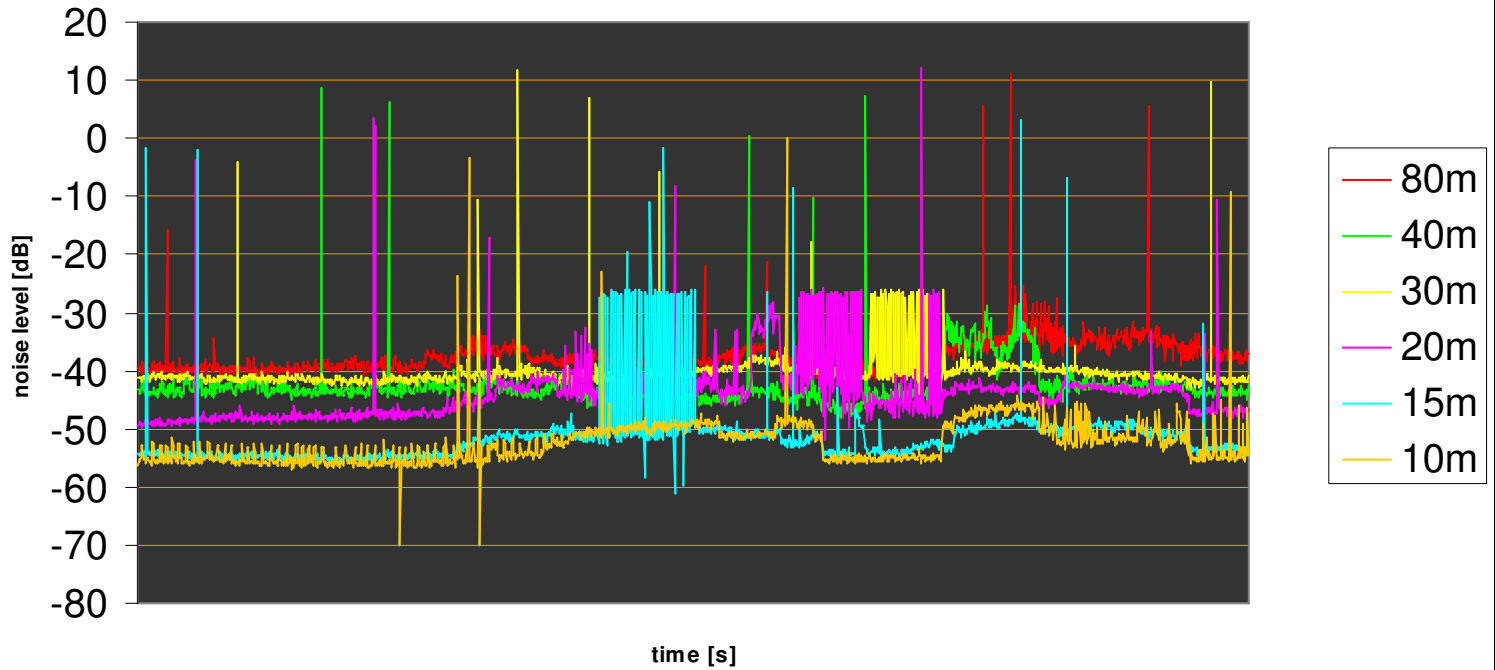
138km ESE of Rota Northern Mariana Islands, M6.0



Propagation RF-Seismograph

Plot Feb 26 2018

44km NE of Airbuaya Indonesia,M6.1

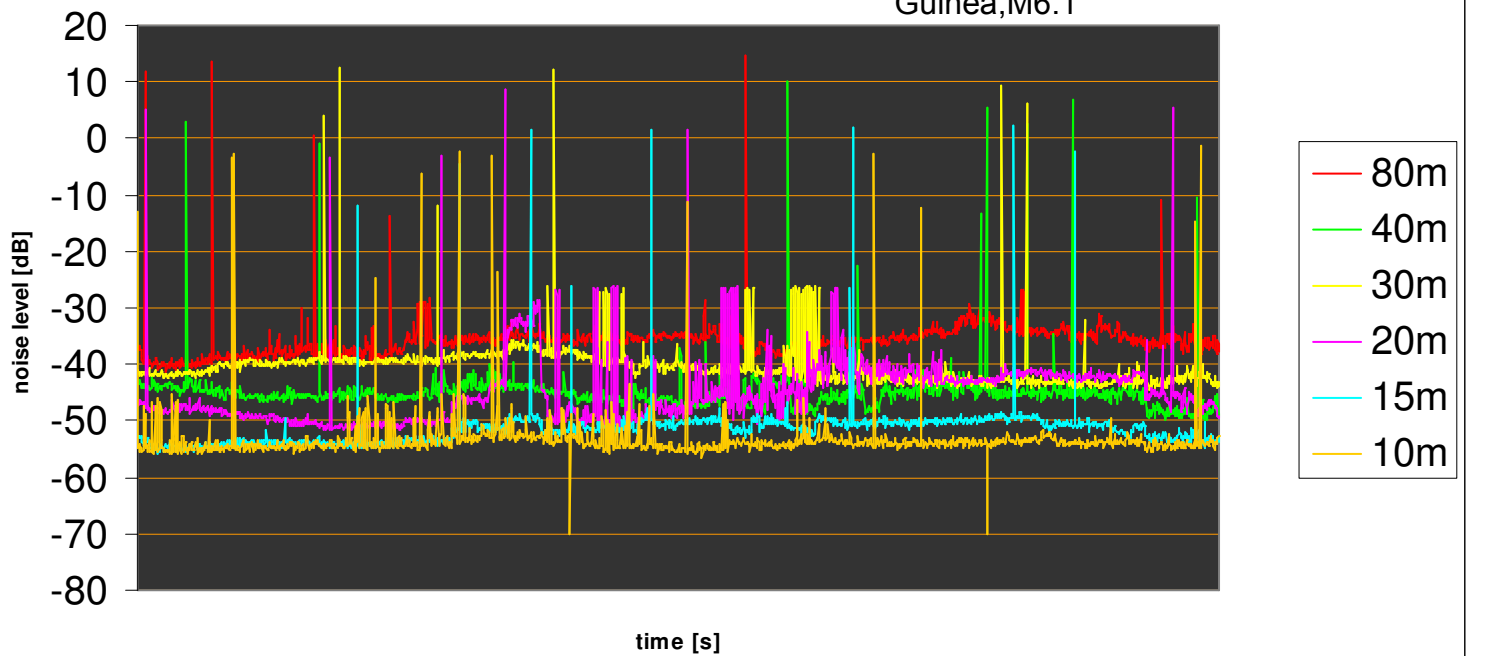


Propagation RF-Seismograph

Plot Feb 27 2018

West of Macquarie Island,M6.1

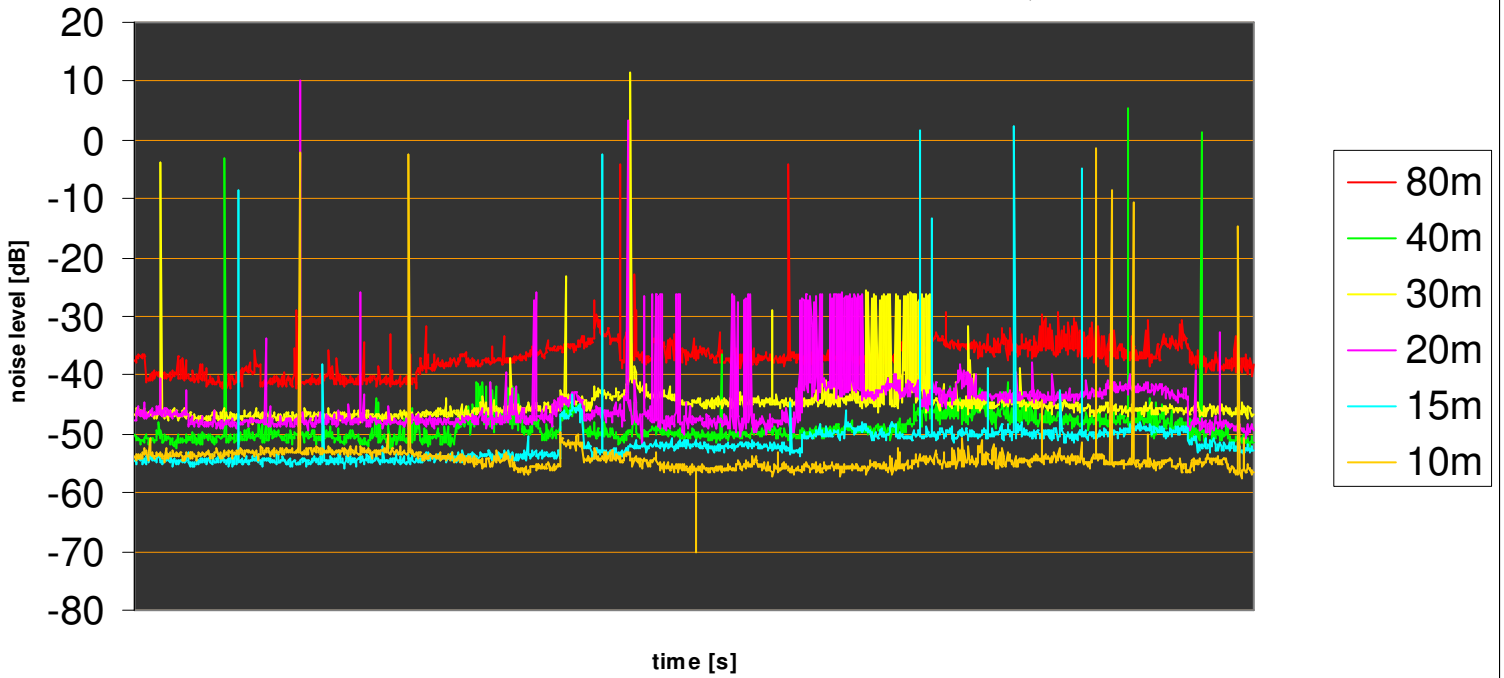
112km SW of Porgera Papua New Guinea,M6.1



Propagation RF-Seismograph

Plot Mar 04 2018

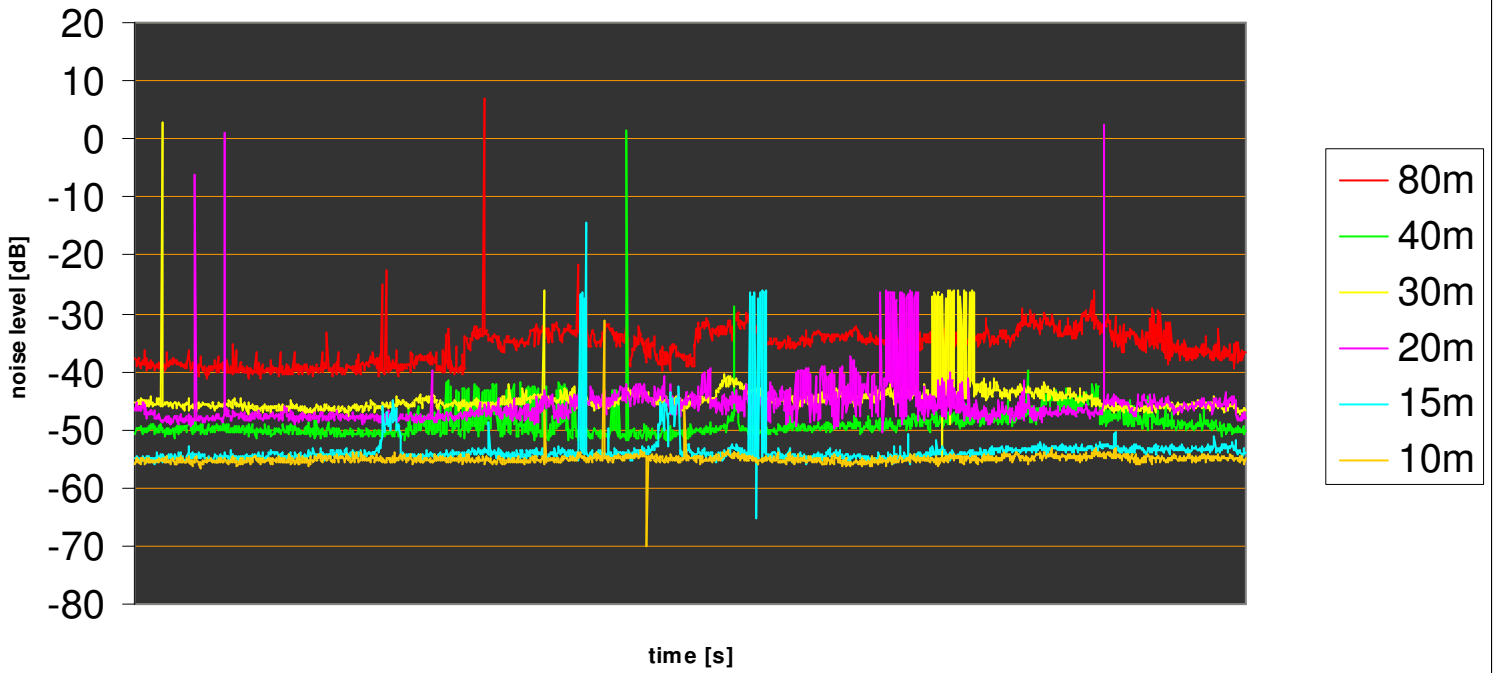
116km SW of Porgera Papua New Guinea, M6.0



Propagation RF-Seismograph

Plot Mar 24 2018

Southeast Indian Ridge, M6.0

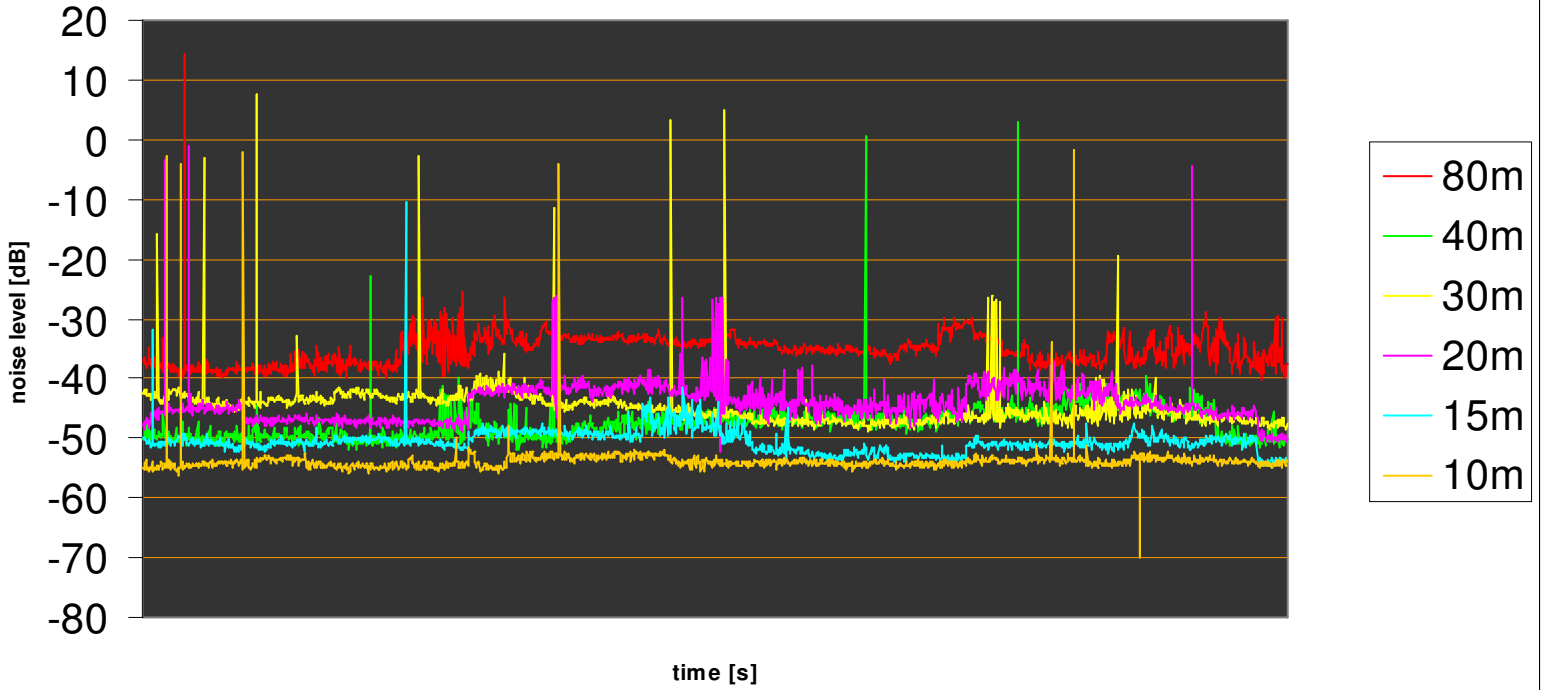




Propagation RF-Seismograph

Plot Apr 06 2018

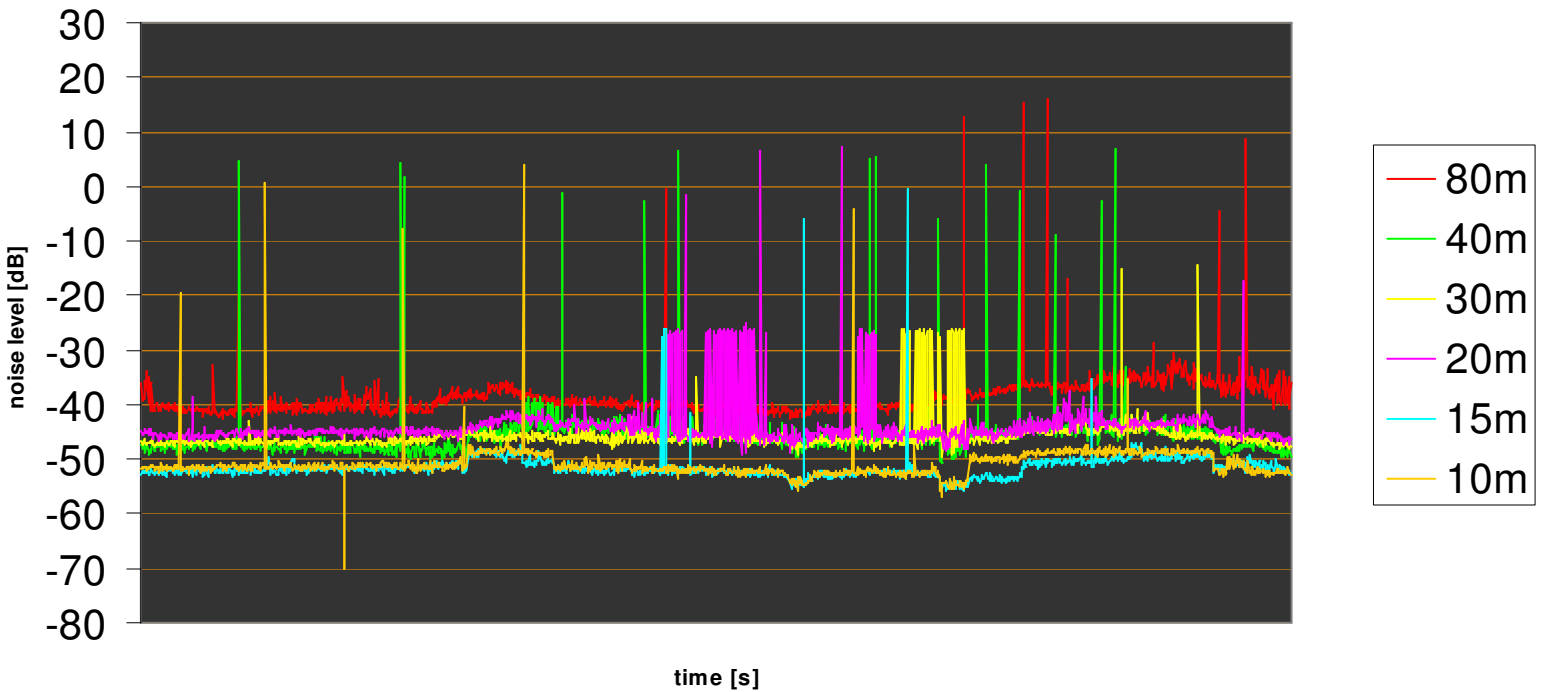
84km WSW of Porgera Papua New Guinea, M6.3



Propagation RF-Seismograph

Plot Apr 19 2018

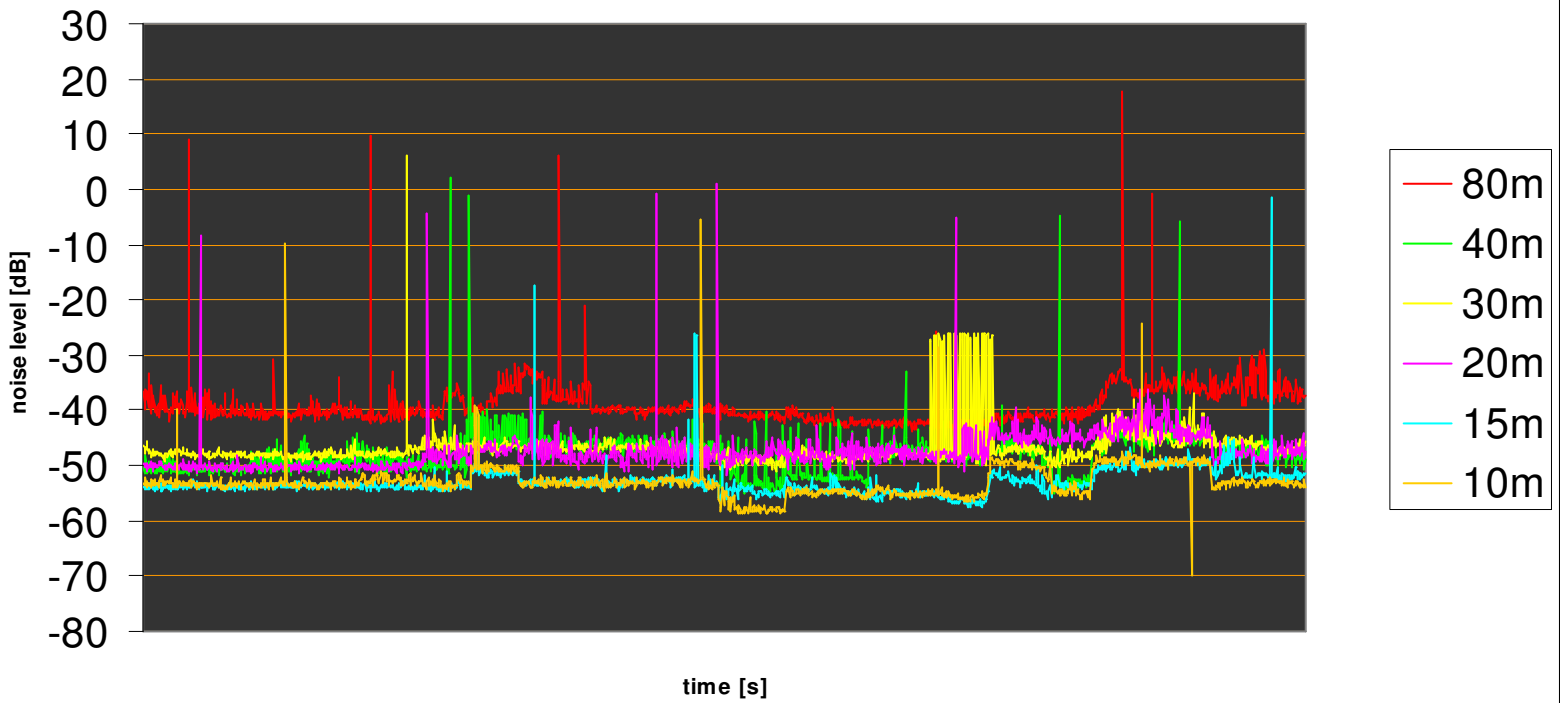
Prince Edward Islands region, M6.0



Propagation RF-Seismograph

Plot May 01 2018

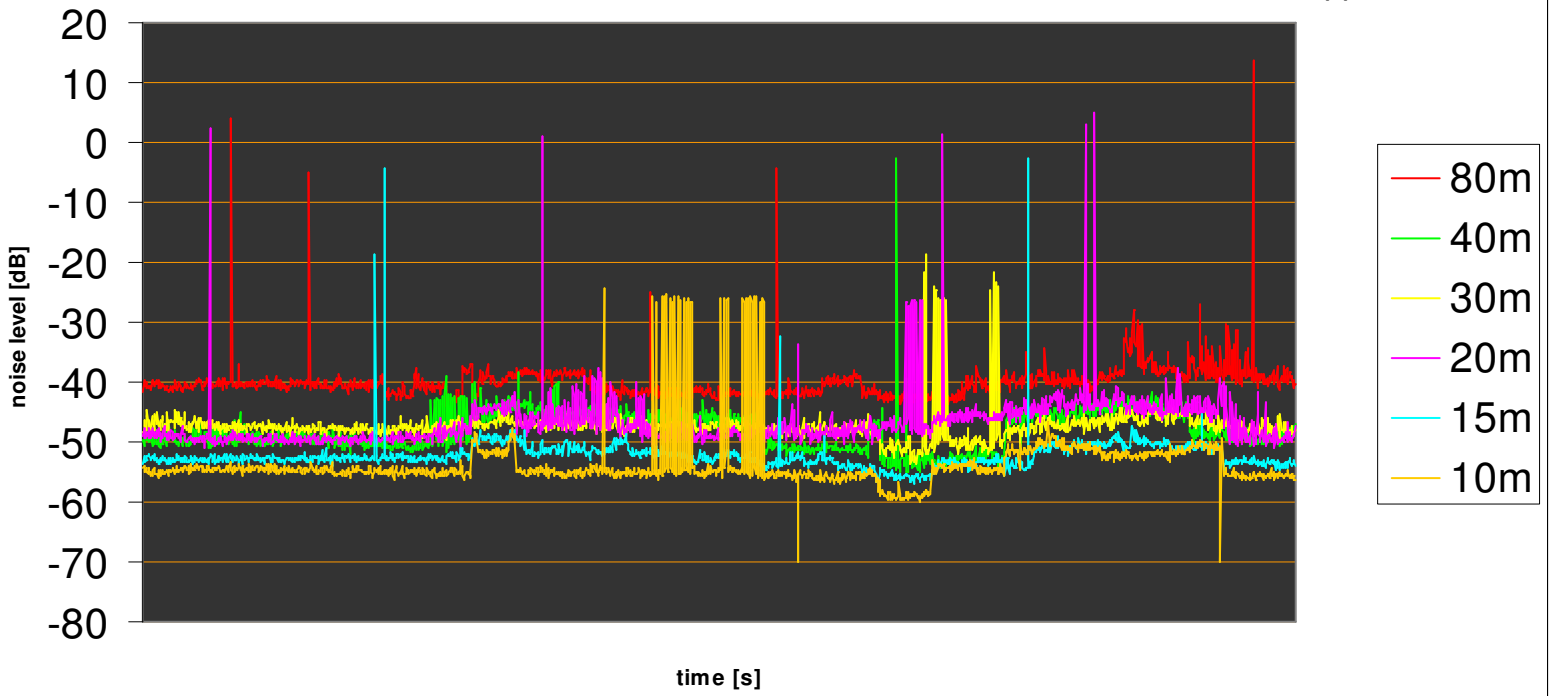
Easter Island region, M6.1



Propagation RF-Seismograph

Plot Apr 06 2018

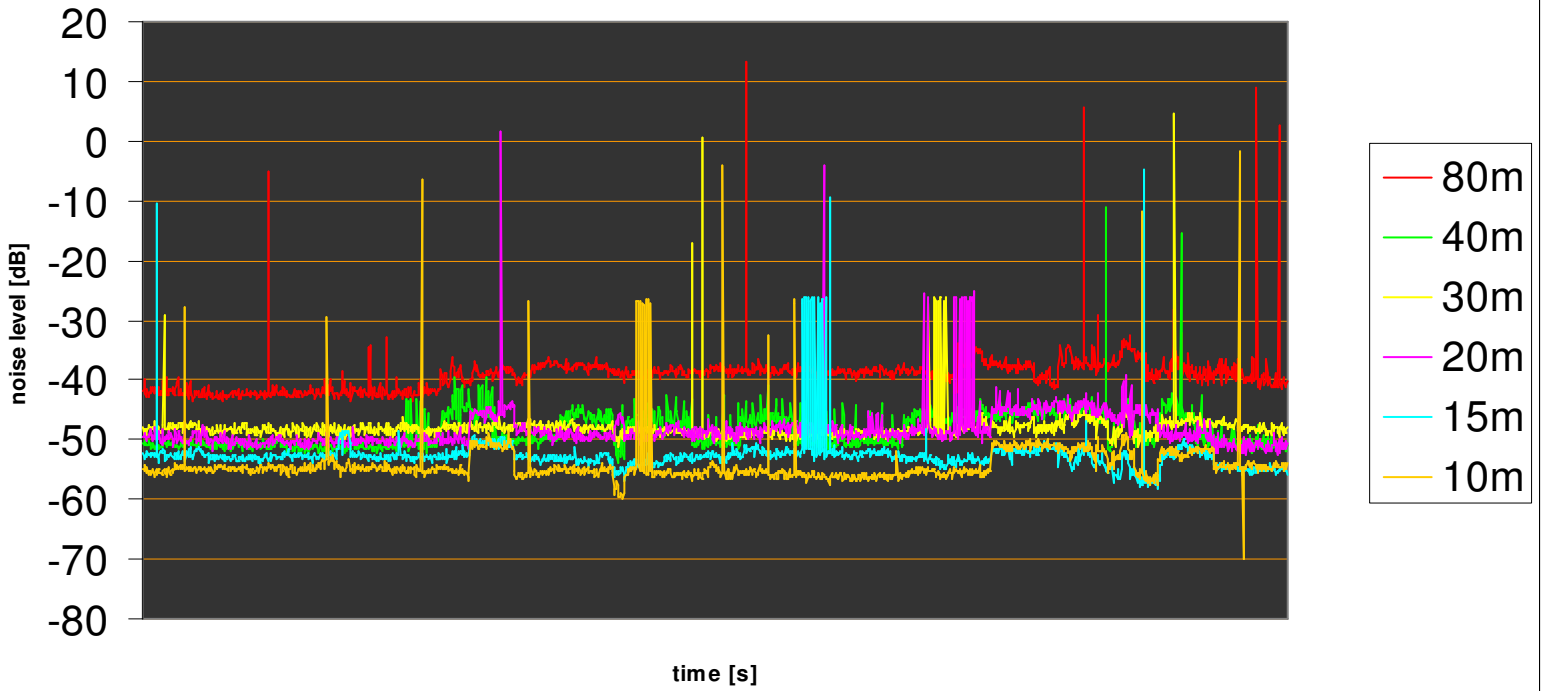
19km SSW of Leilani Estates Hawaii, M6.9  
64km NNW of Pandan, Philippines, M6.1



Propagation RF-Seismograph

Plot May 08 2018

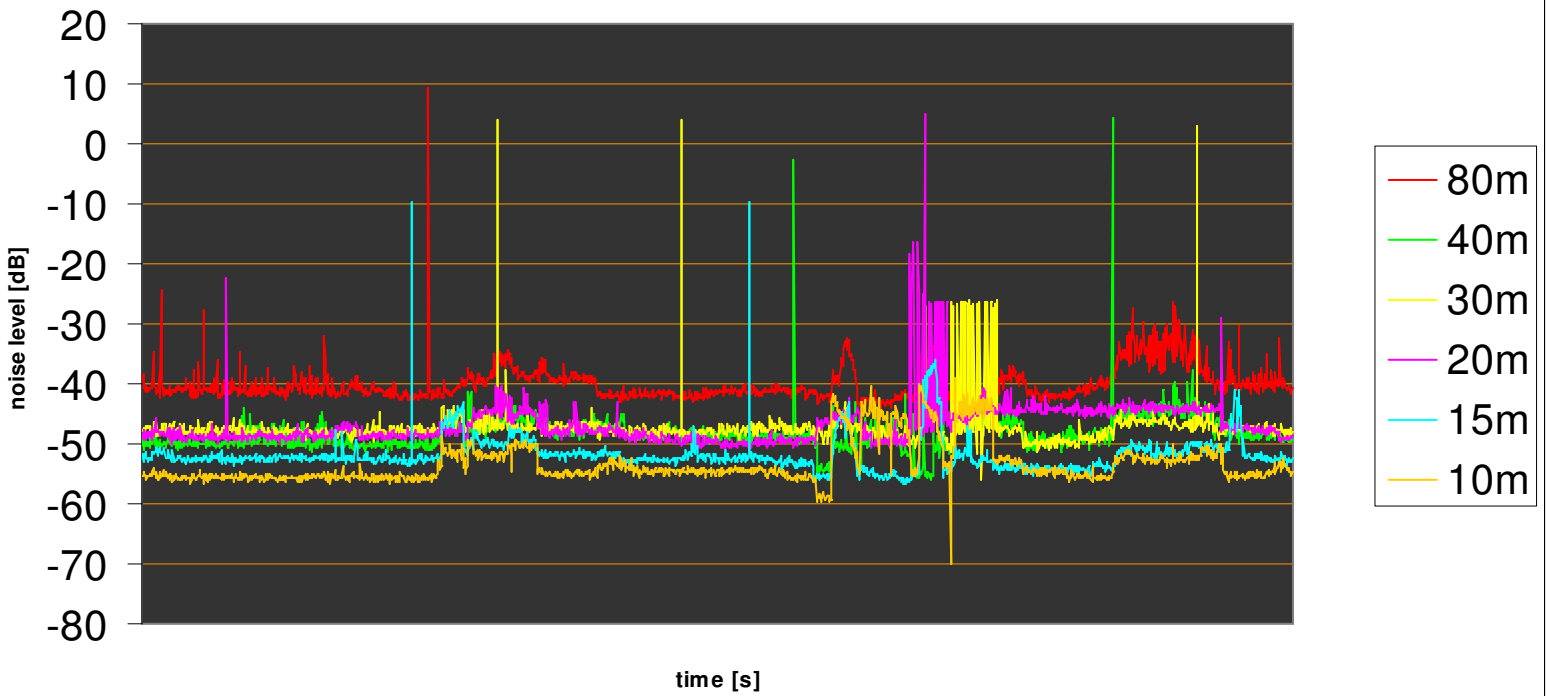
Easter Island region, M6.1



Propagation RF-Seismograph

Plot May 17 2018

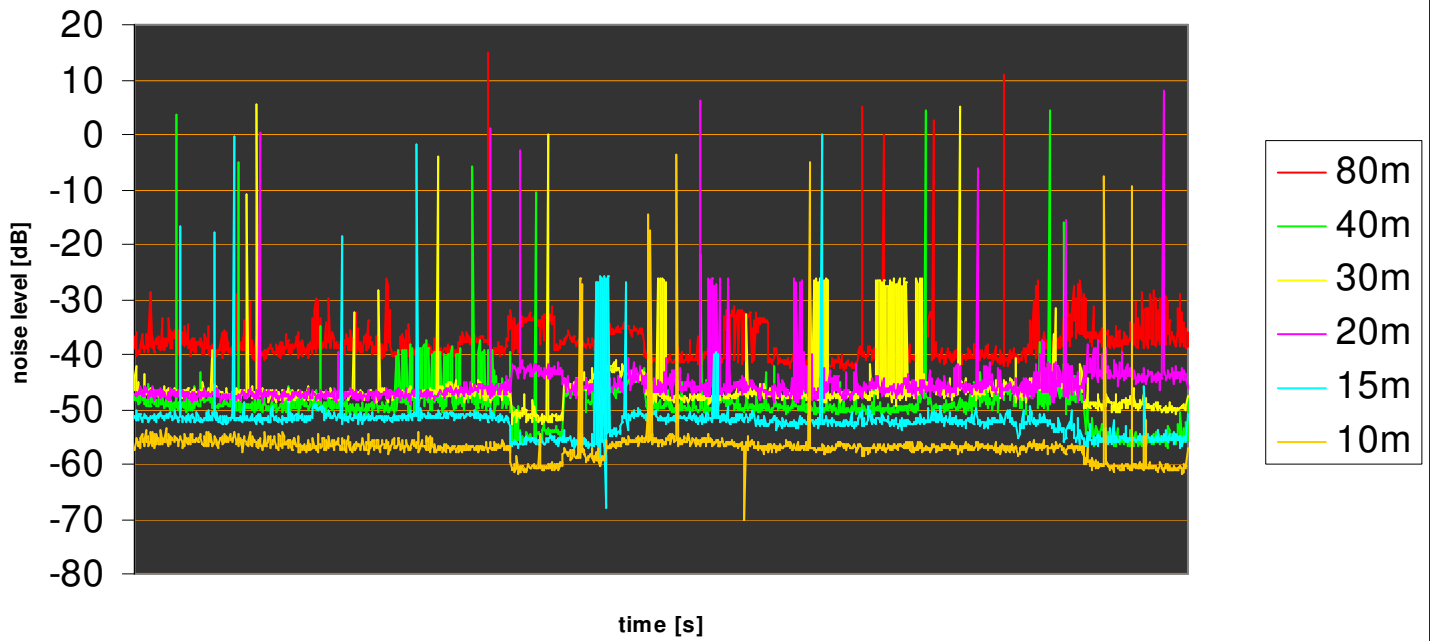
South of the Kermadec Islands, M6.1



Propagation RF-Seismograph

Plot Jul 28 2018

5km WNW of Obelobel Indonesia, M6.4

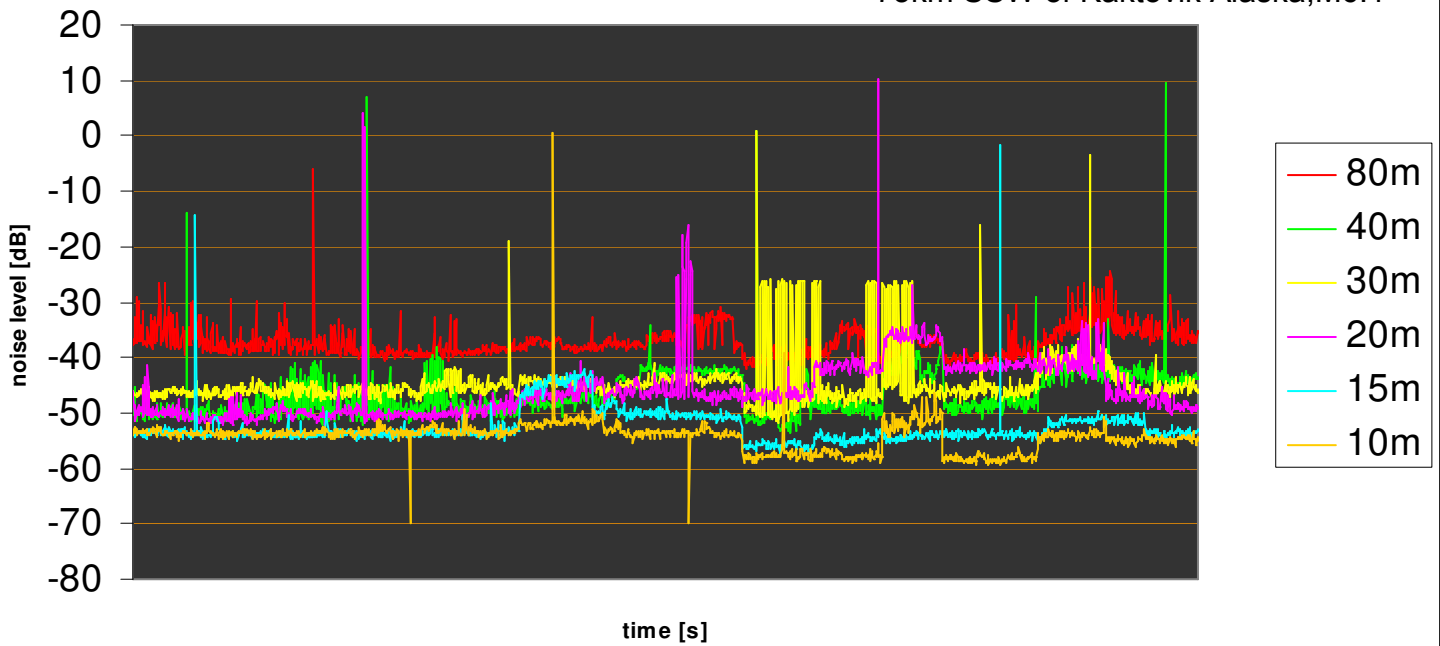


Propagation RF-Seismograph

Plot Aug 12 2018

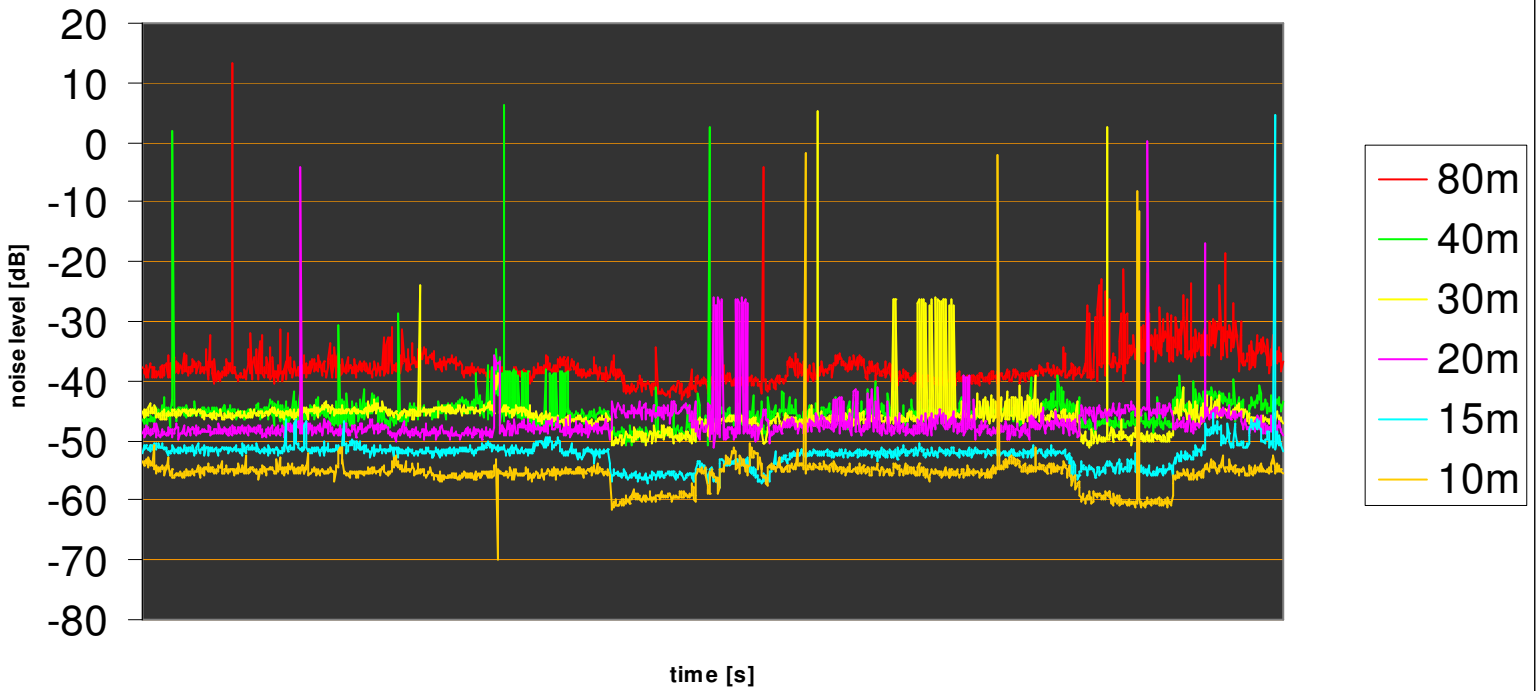
90km SW of Kaktovik Alaska, M6.3

73km SSW of Kaktovik Alaska, M6.1



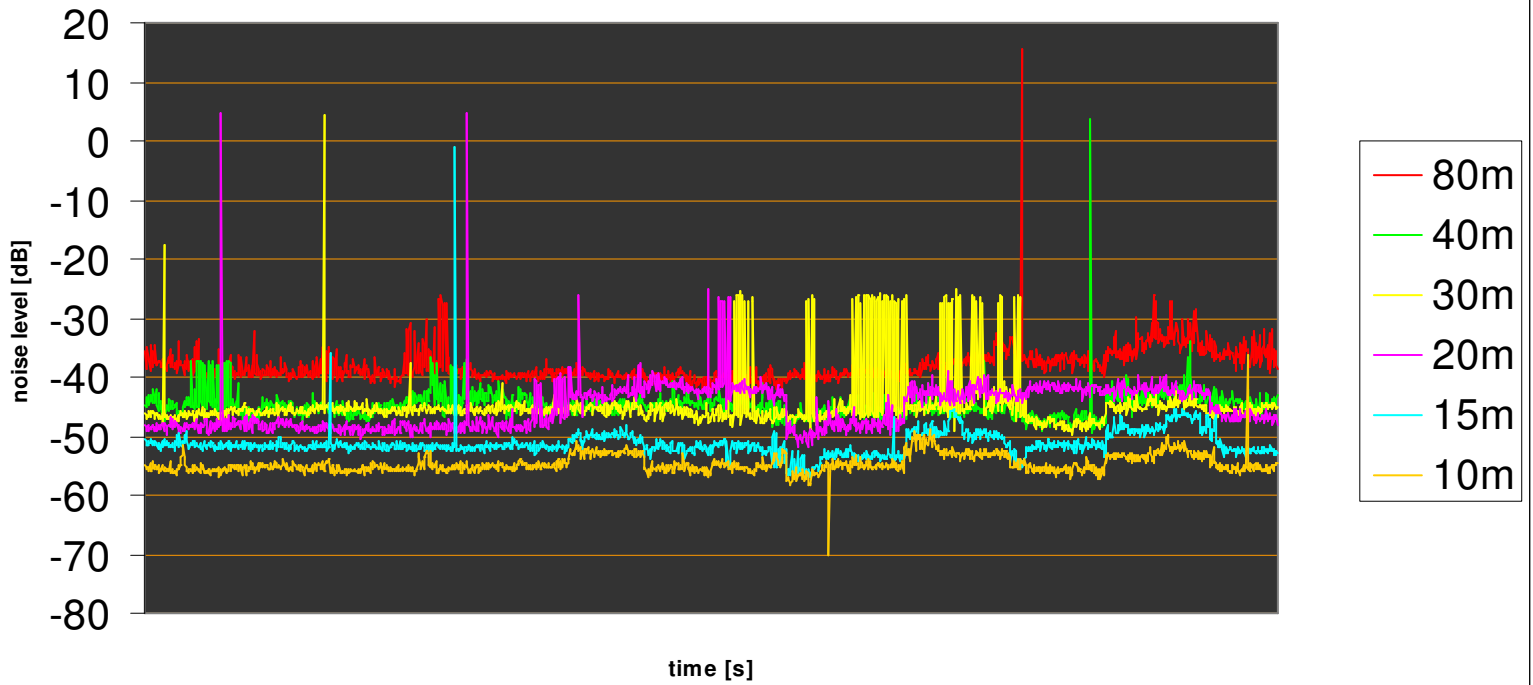
Propagation RF-Seismograph  
Plot Aug 16 2018

251km SE of Iwo Jima Japan,M6.3

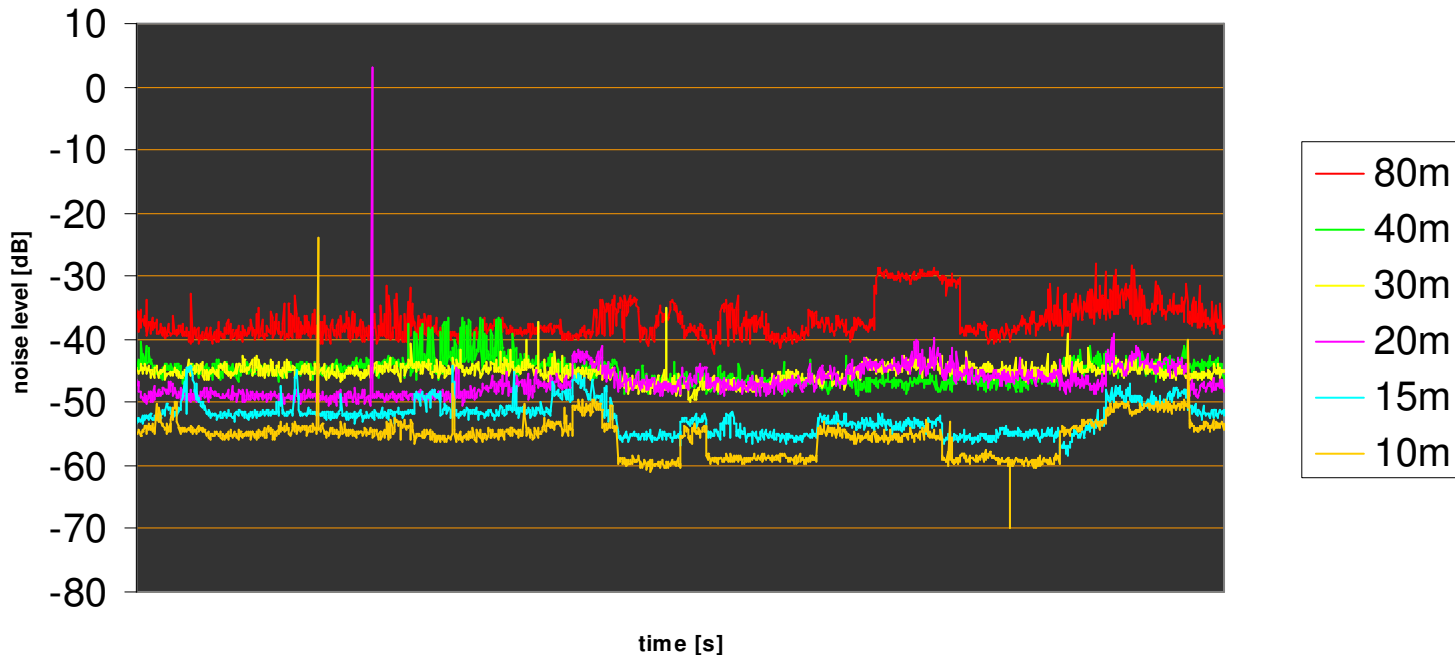


Propagation RF-Seismograph  
Plot Aug 17 2018

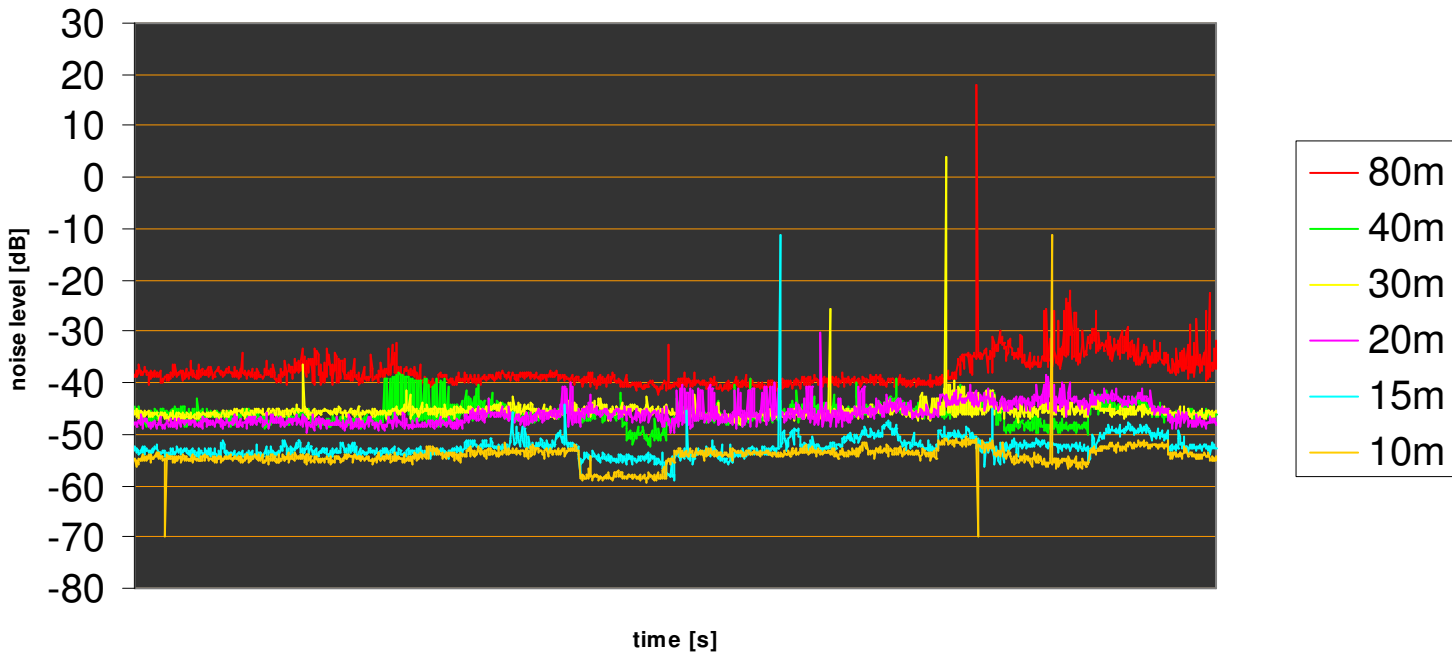
15km N of Golfito Costa Rica,M6.1



Propagation RF-Seismograph  
Plot Aug 18 2018 4km SW of Belanting Indonesia, M6.3



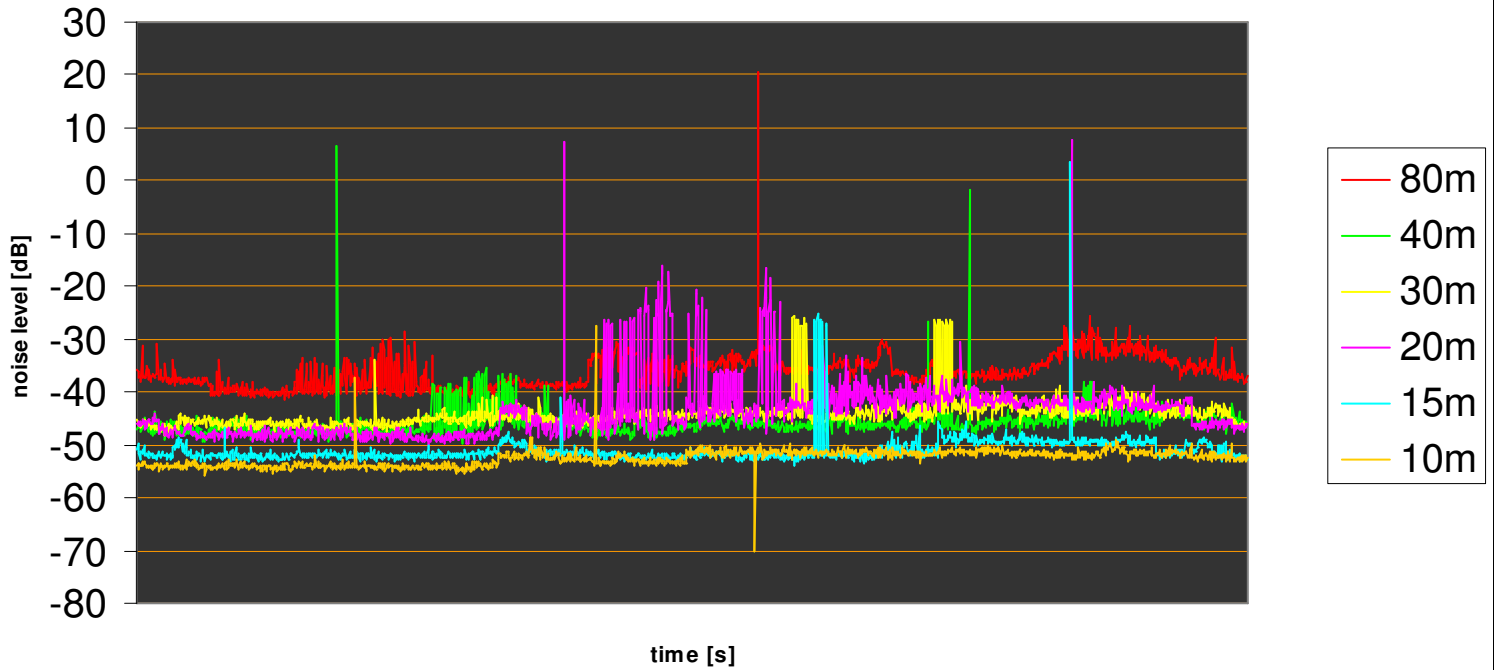
Propagation RF-Seismograph  
Plot Aug 17 2018 272km WNW of Bandon Oregon, M6.2  
64km SSE of Tanaga Volcano Alaska, M6.3



Propagation RF-Seismograph

Plot Aug 25 2018

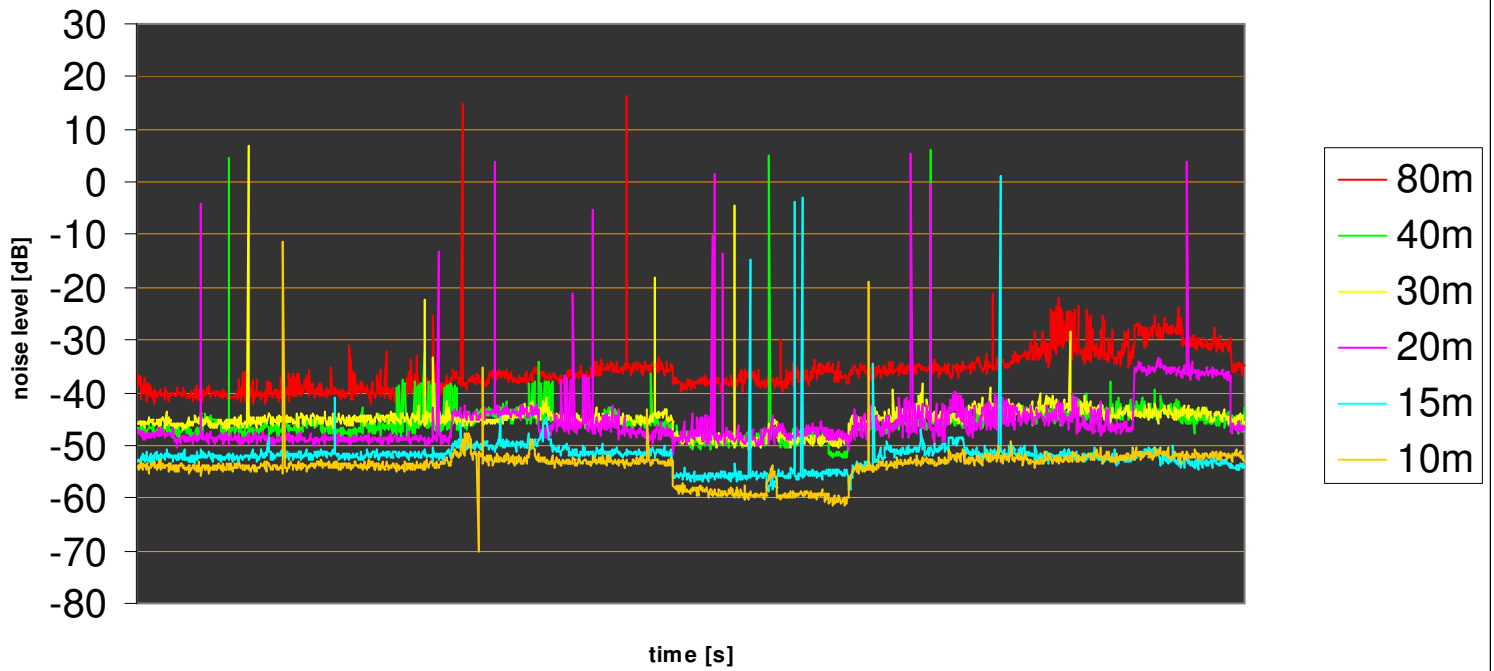
32km SW of Javanrud Iran, M6.0



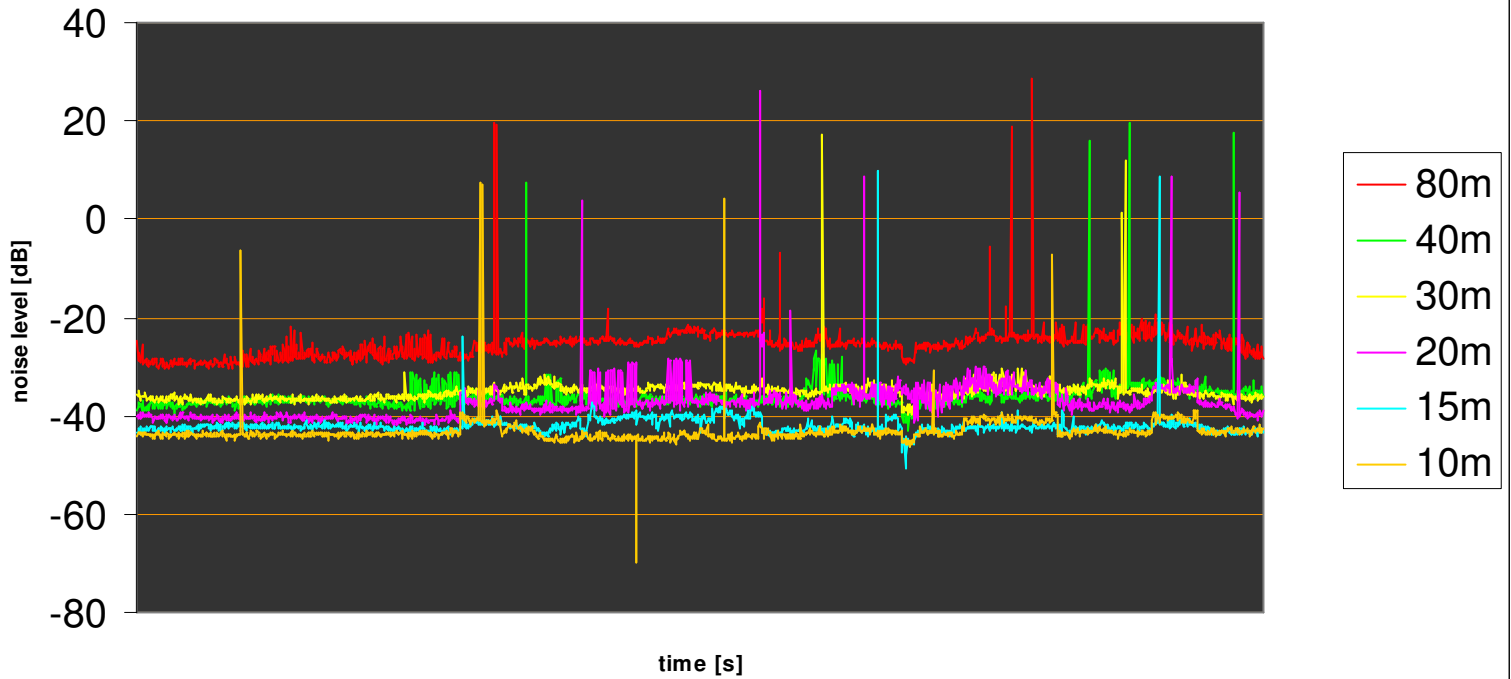
Propagation RF-Seismograph

Plot Sep 08 2018

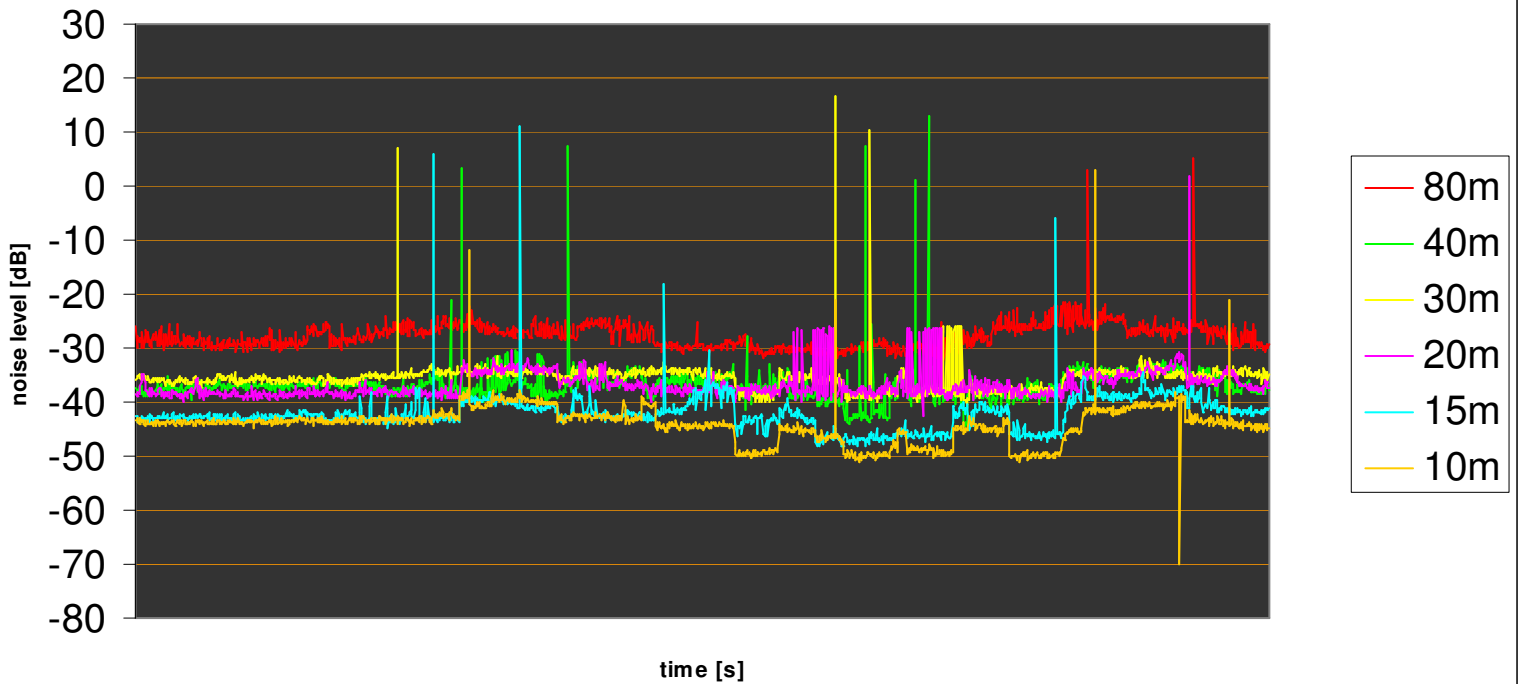
7km WNW of Manay Philippines, M6.2



Propagation RF-Seismograph 200km WNW of Ile Hunter New  
Caledonia, M6.3  
Plot Sep 10 2018

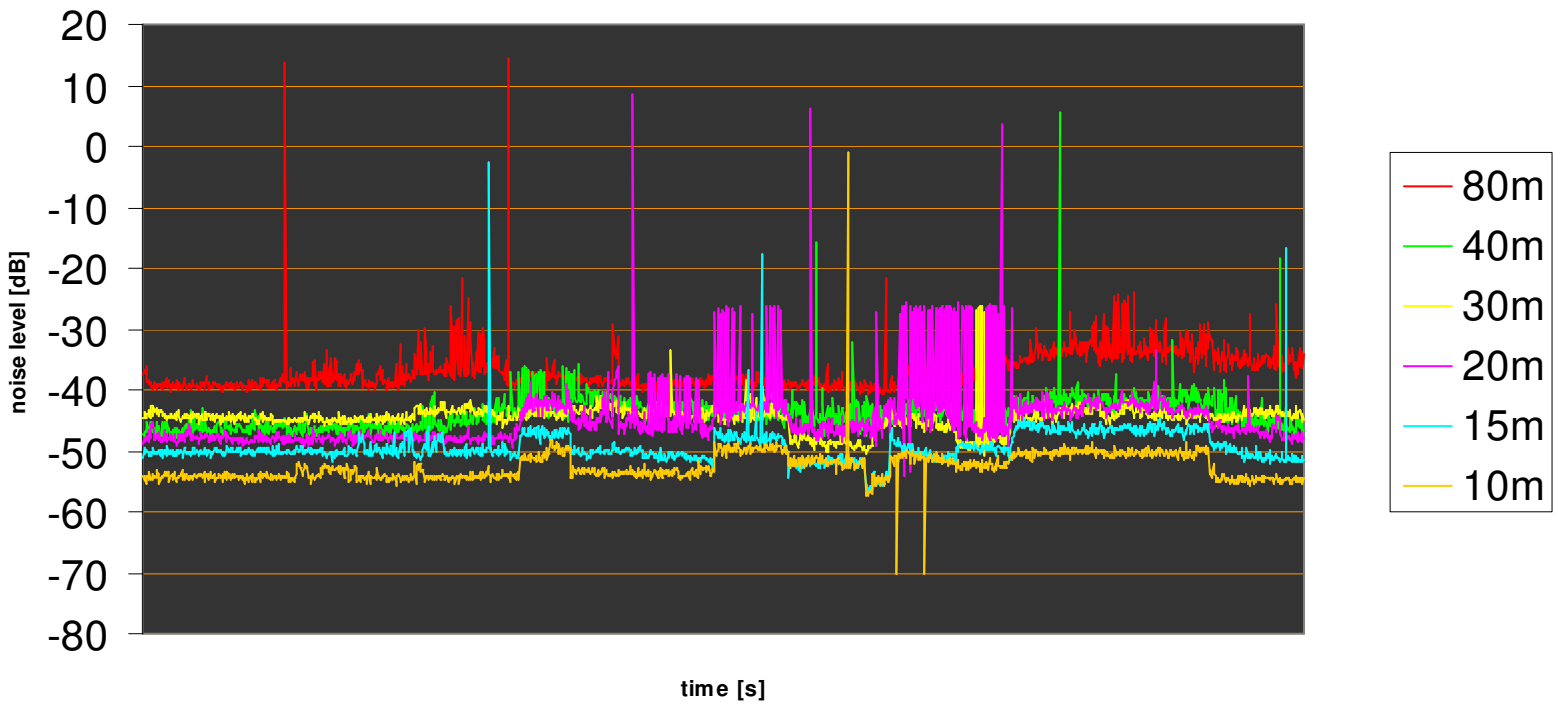


Propagation RF-Seismograph 55km NNW of Palu Indonesia, M7.5  
Plot Sep 08 2018

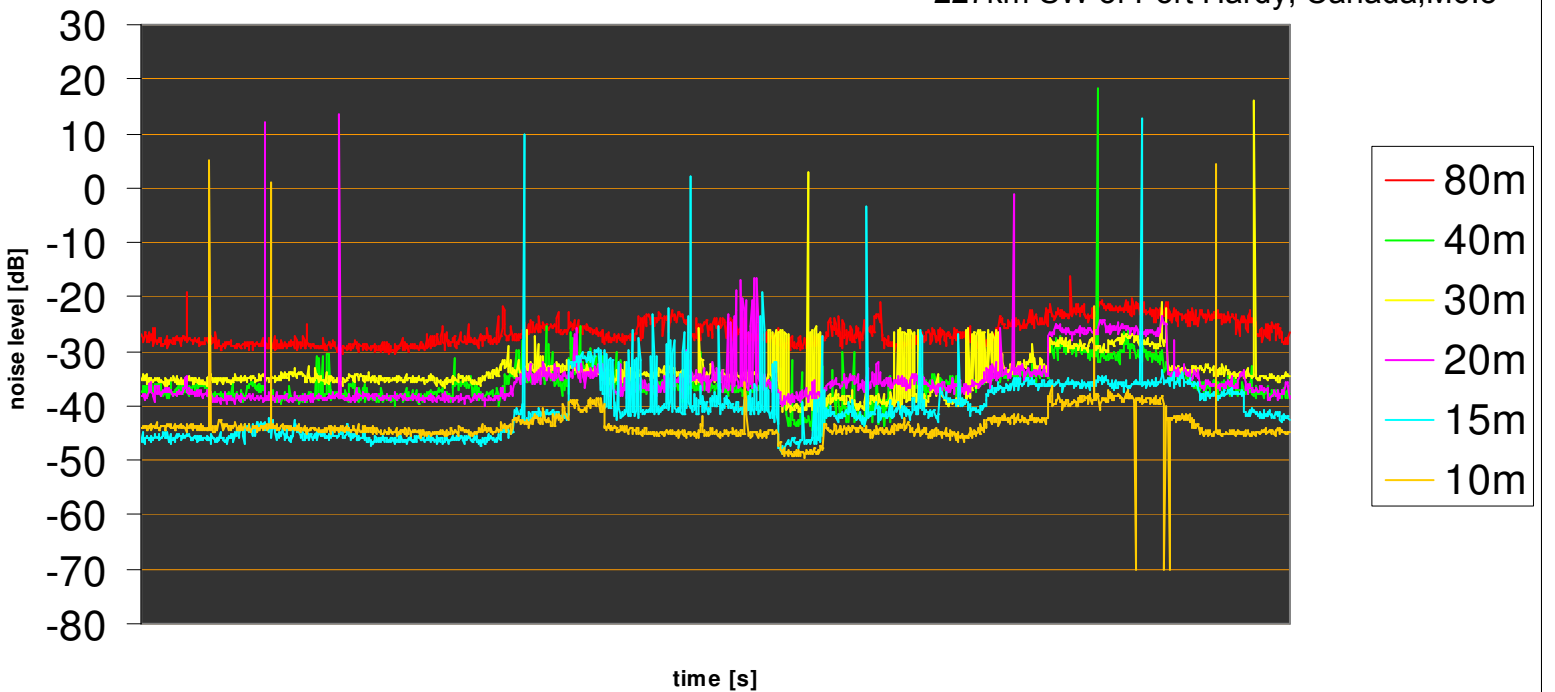




Propagation RF-Seismograph 170km ESE of Tadine New Caledonia,M6.3  
Plot Oct 15 2018 170km E of Tadine, New Caledonia,M6.5



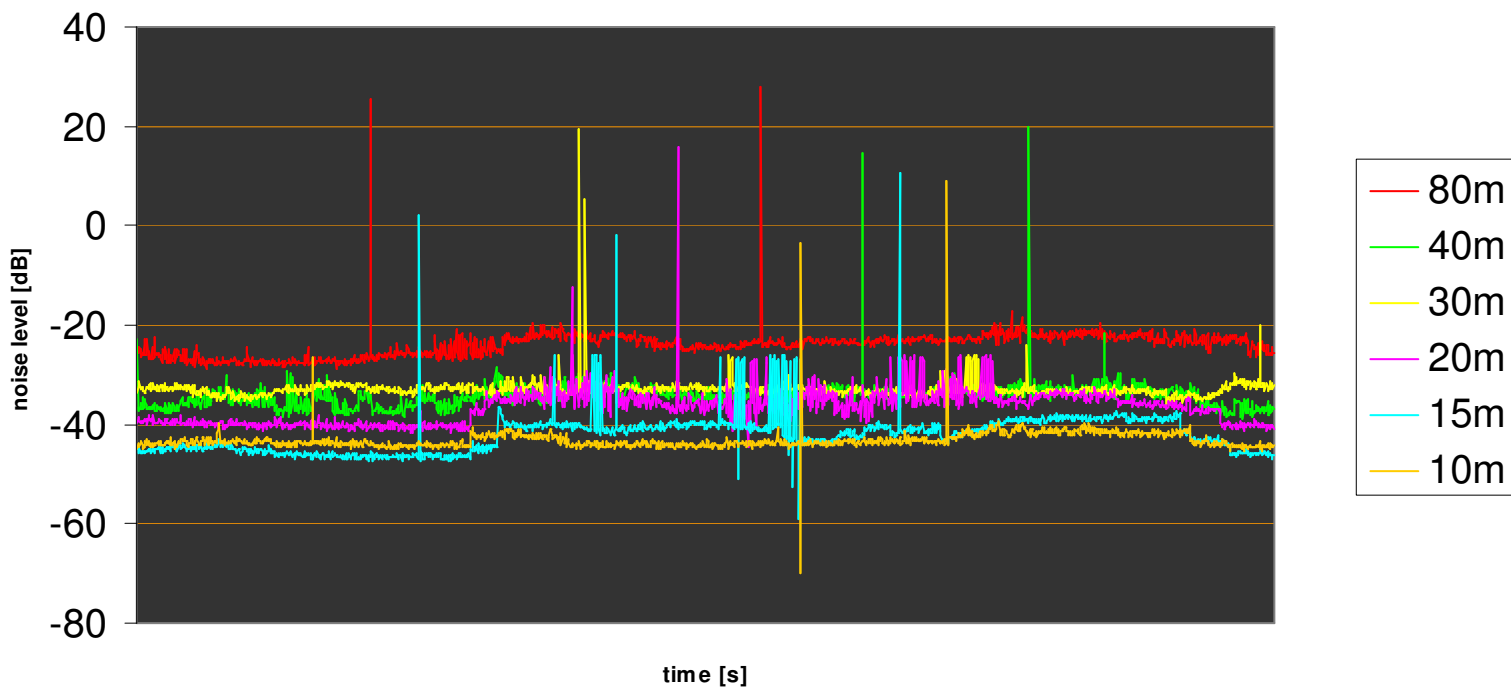
Propagation RF-Seismograph 214km SW of Port Hardy Canada,M6.5  
Plot Oct 21 2018 202km SW of Port Hardy Canada,M6.8  
227km SW of Port Hardy, Canada,M6.5



Propagation RF-Seismograph

Plot Oct 25 2018

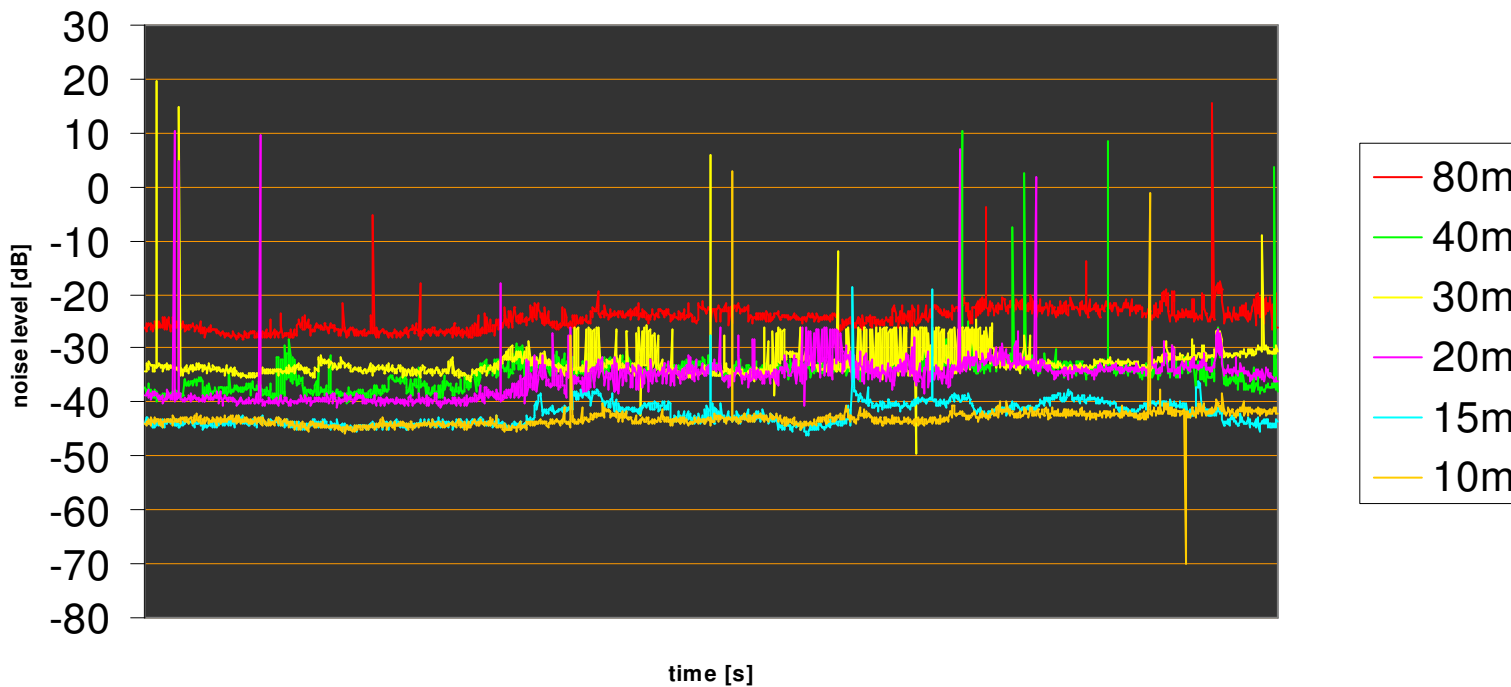
32km SW of Mouzaki Greece,M6.8



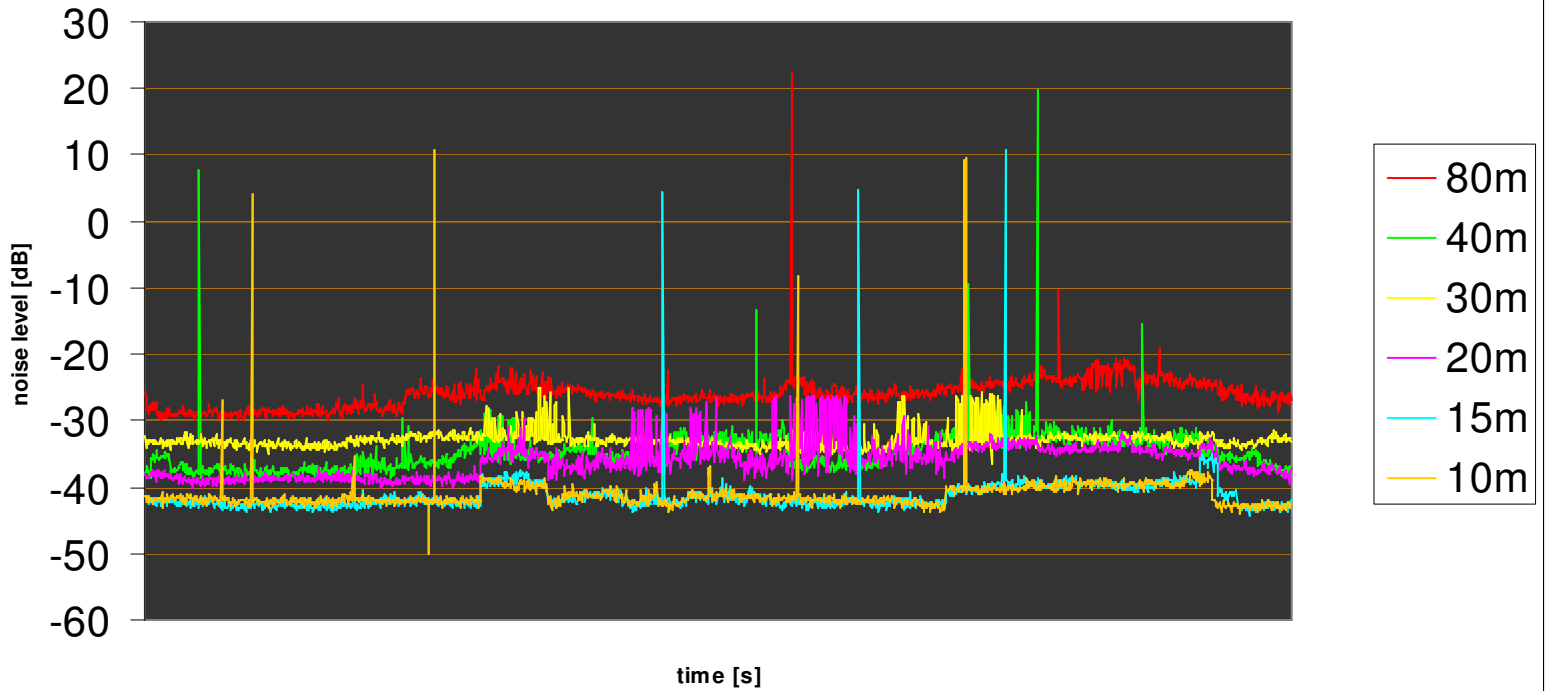
Propagation RF-Seismograph

Plot Oct 28 2018

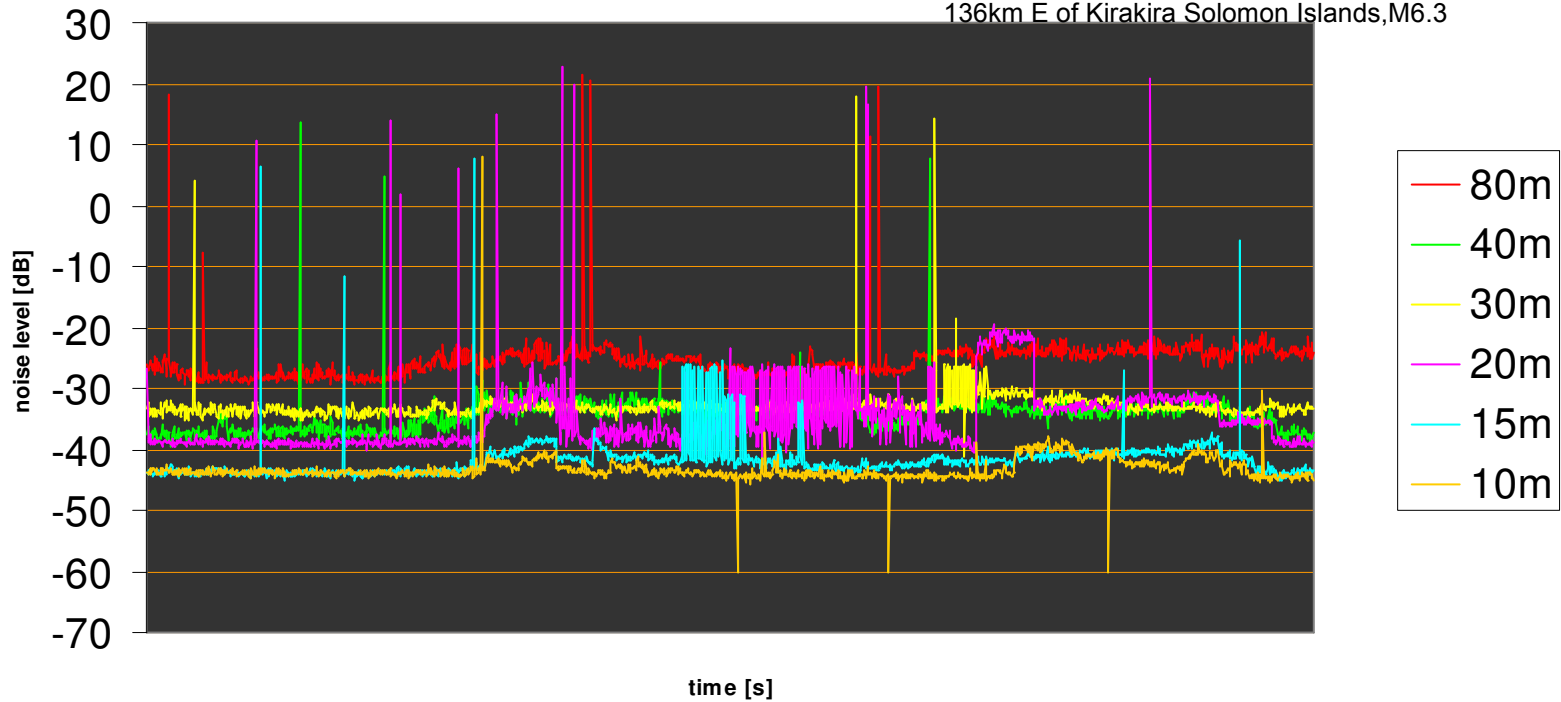
Drake Passage,M6.3



Propagation RF-Seismograph 120km NW of Olonkinbyen Svalbard  
Plot Nov 08 2018 and Jan Mayen, M6.7

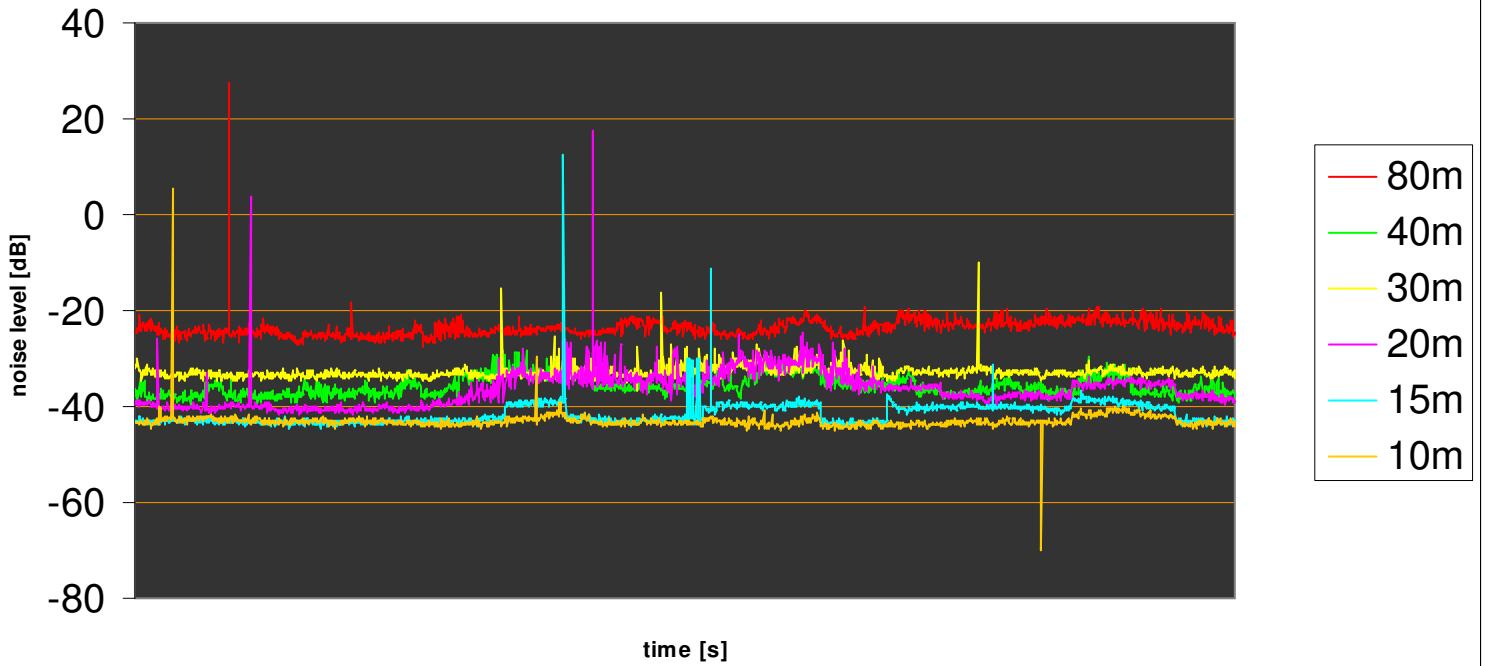


Propagation RF-Seismograph 101km E of Visokoi Island Sth. Georgia &  
Plot Nov 15 2018 Sth. Sandwich Isl., M6.4  
Southern East Pacific Rise, M6.3  
136km E of Kirakira Solomon Islands, M6.3



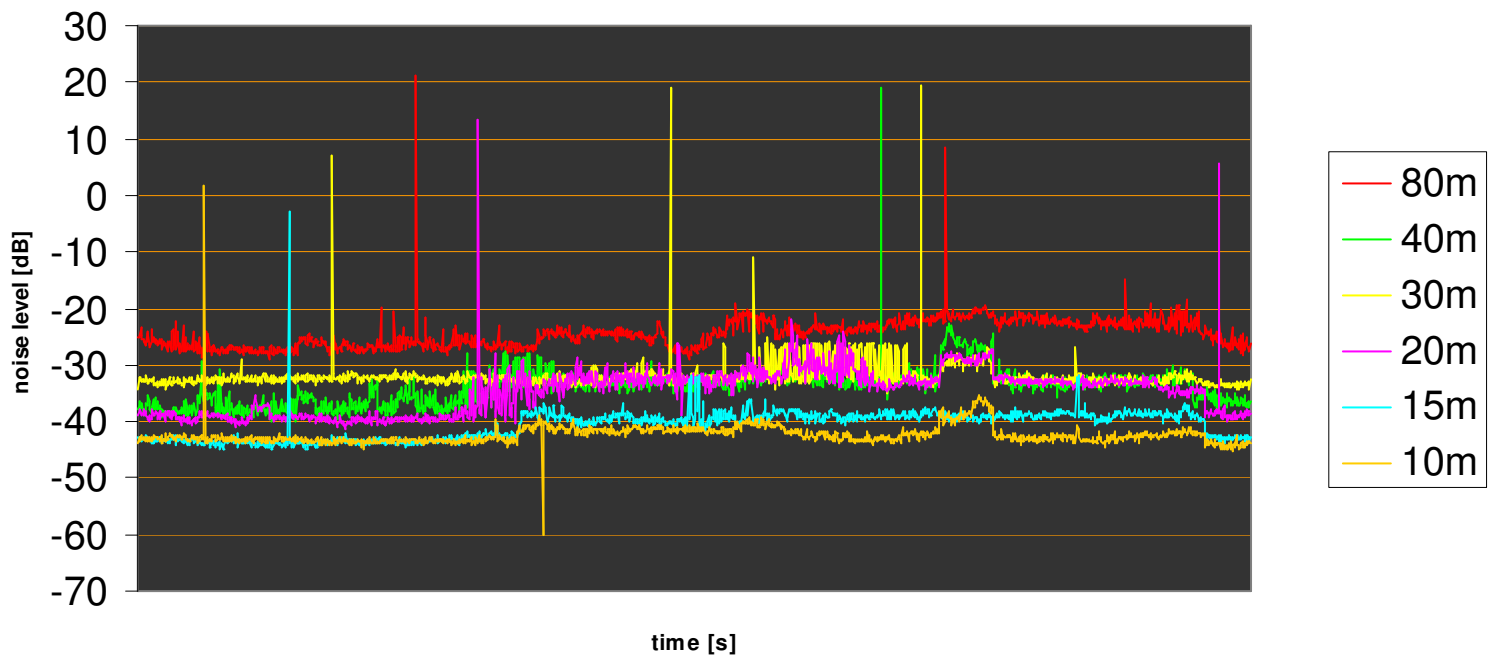
Propagation RF-Seismograph  
Plot Nov 24 2018

36km SE of Mountain Colombia,M6.0

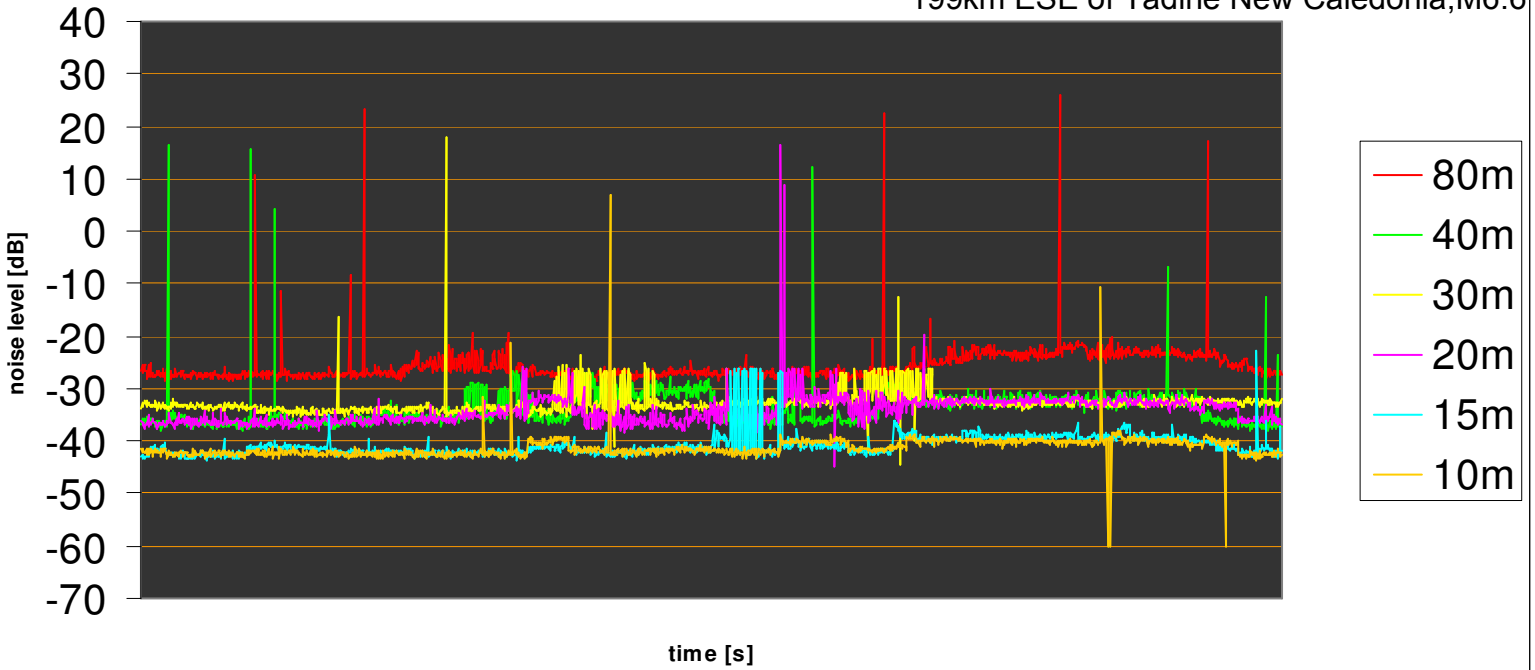


Propagation RF-Seismograph  
Plot Nov 25 2018

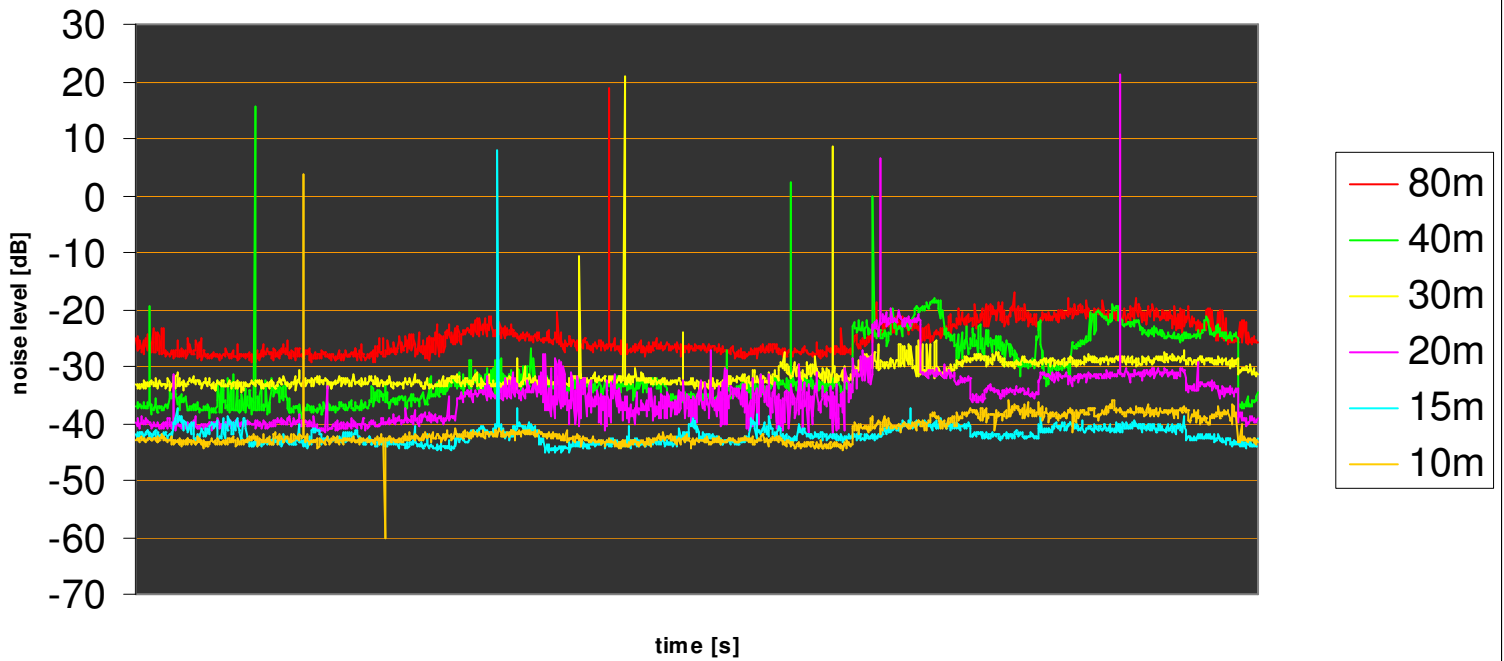
15km SW of Sarpol-e Zahab, Iran,M6.3



Propagation RF-Seismograph 160km ESE of Tadine New Caledonia, M6.3  
Plot Dec 04 2018 165km ESE of Tadine New Caledonia, M7.5  
199km ESE of Tadine New Caledonia, M6.6



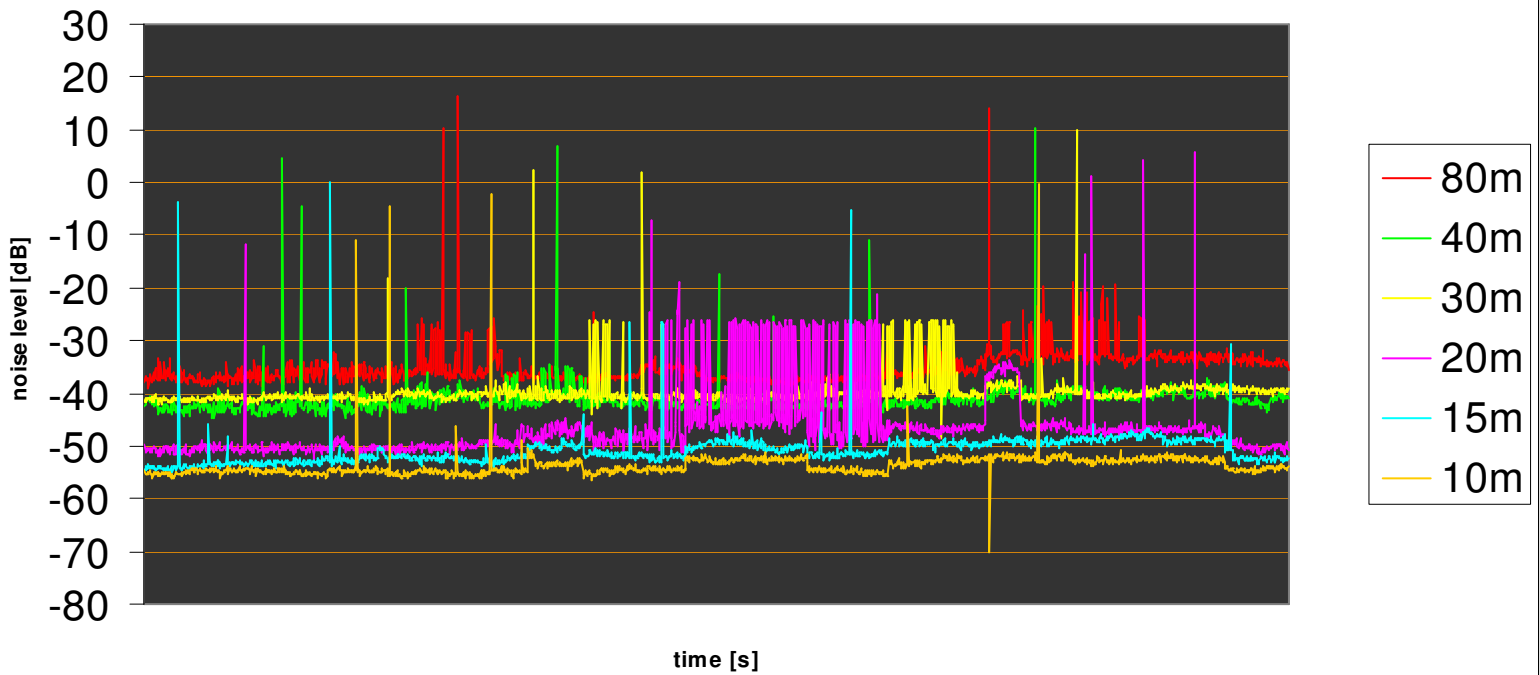
Propagation RF-Seismograph Pacific-Antarctic Ridge, M6.3  
Plot Dec 12 2018



Propagation RF-Seismograph

Plot Dec 18 2018

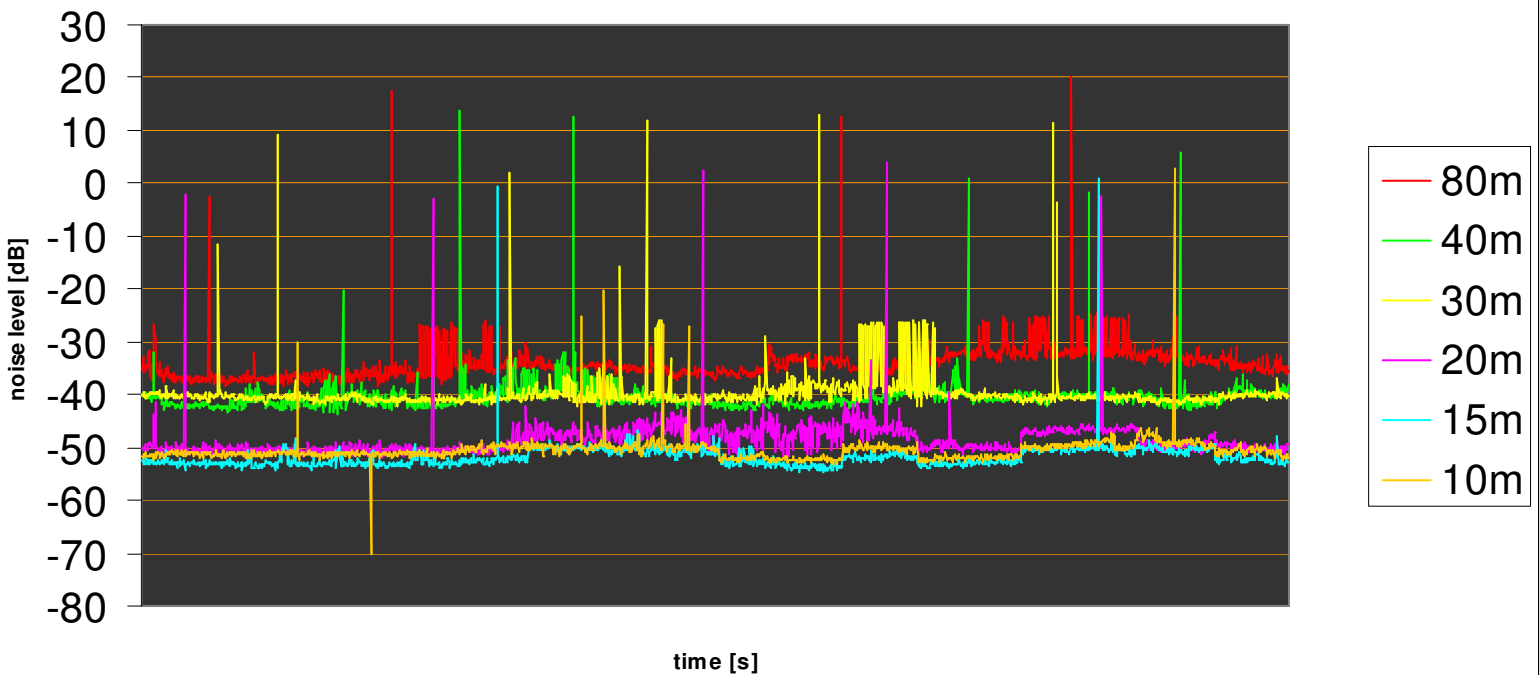
Southeast of Easter Island, M6.3



Propagation RF-Seismograph

Plot Dec 24 2018

97km WNW of Nikol'skoye Russia, M6.0



We believe we should investigate this further and will be posting updates as they come available.

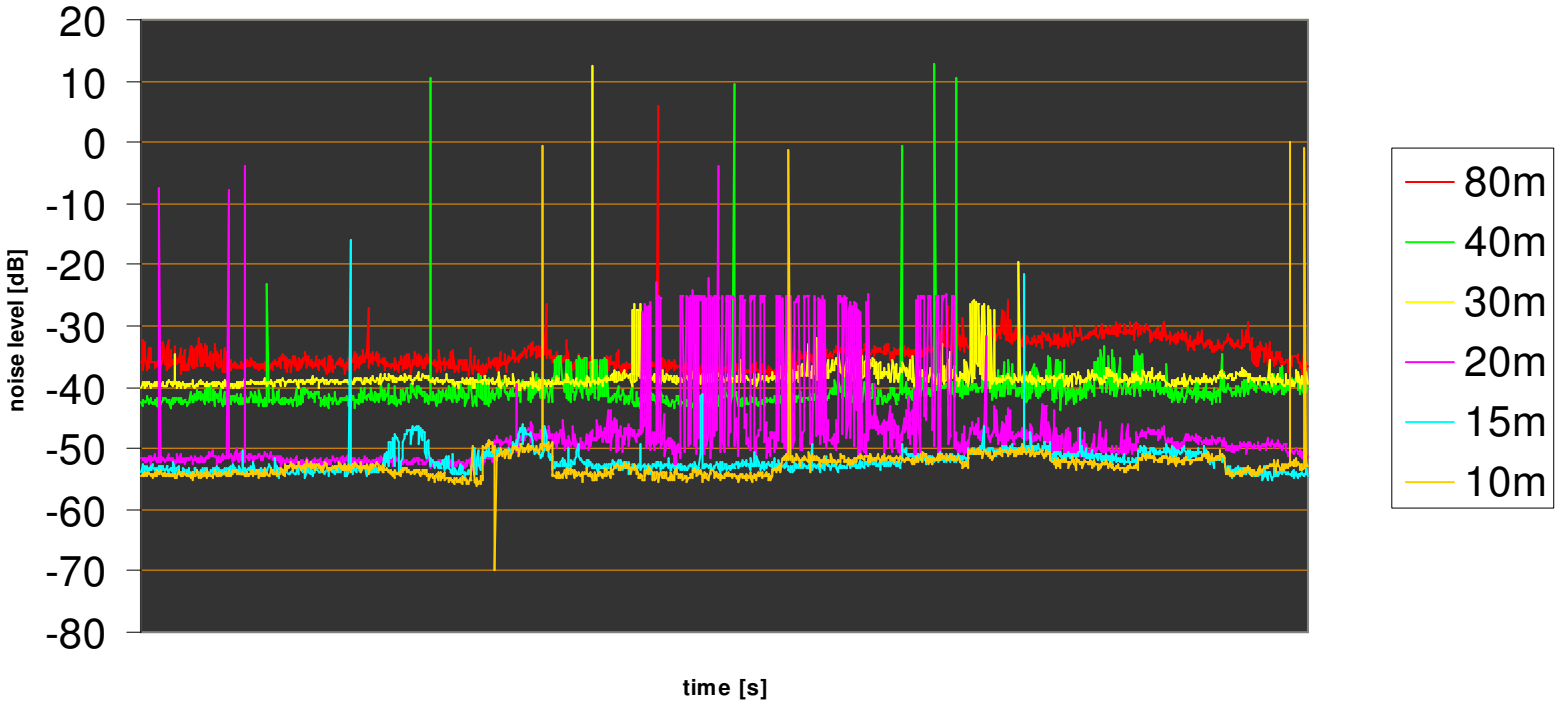
Comments are also welcome! Send message to: [alexschwarz@telus.net](mailto:alexschwarz@telus.net)

**Please join us at:**

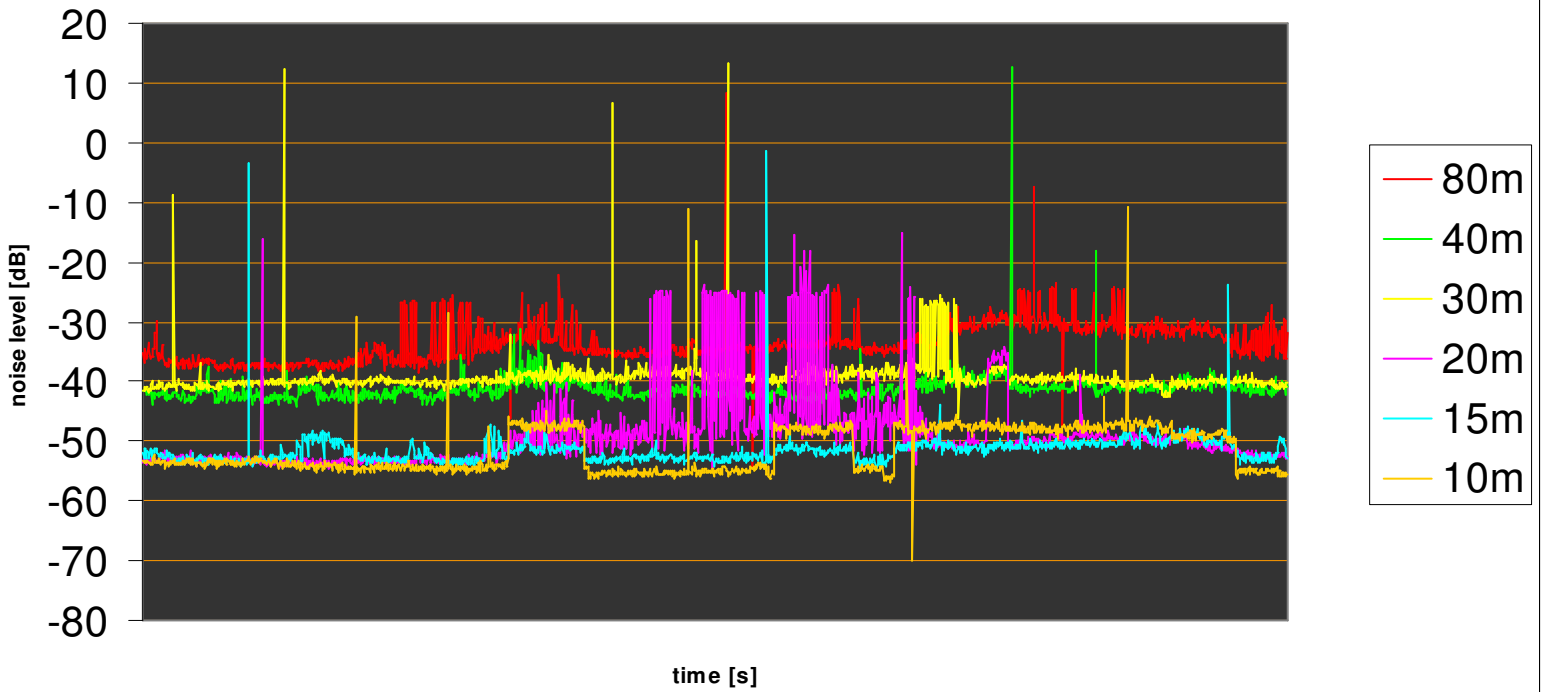
<https://scistarter.com/project/21138-RF-Seismograph>

and help explore the possibilities of the RF-Seismograph from your station!

Propagation RF-Seismograph 169km SW of Lorengau Papua New Guinea, M6.2  
Plot Jan 17 2019



Propagation RF-Seismograph 65km SSW of Bogorawatu Indonesia, M6.0  
Plot Jan 21 2019



Propagation RF-Seismograph 169km SW of Lorengau Papua New  
Guinea, M6.2  
Plot Jan 22 2019

