

Longpath experiment receiving beacon OA4B (Lima – Perù)

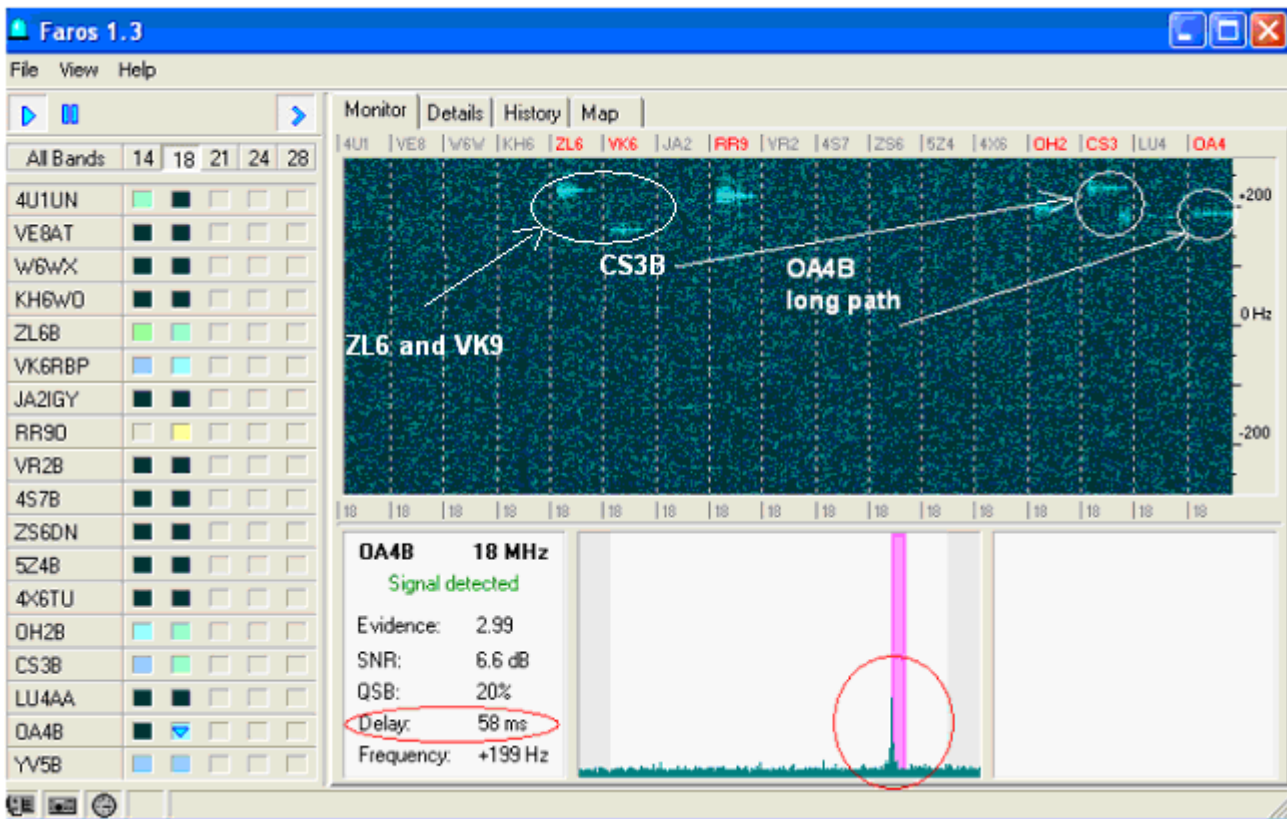
Using the system Faros with a very fast internet connection (14 MB) and very sharp checking time able to recognize the detection of short path, long path or abnormally path. I conducted some experiments to highlight possible hypotheses of ducting ionospheric propagation. The beacon signal of OA4B was received over the long path with a skip of about 30,000 km but at the same time the signal was detected weaker over short path. The path was open simultaneously on band 14 mhz and 18 Mhz. At the same time was detected the beacon ZL6B from New Zealand and VK6RPB from Perth - Australia. It highlights a possible wave guide in the ionosphere. As the three beacons are about over the same geodetic line. This mean a sort of wave circuit or guided propagation inside the ionosphere even possible during a minimum solar cycle.

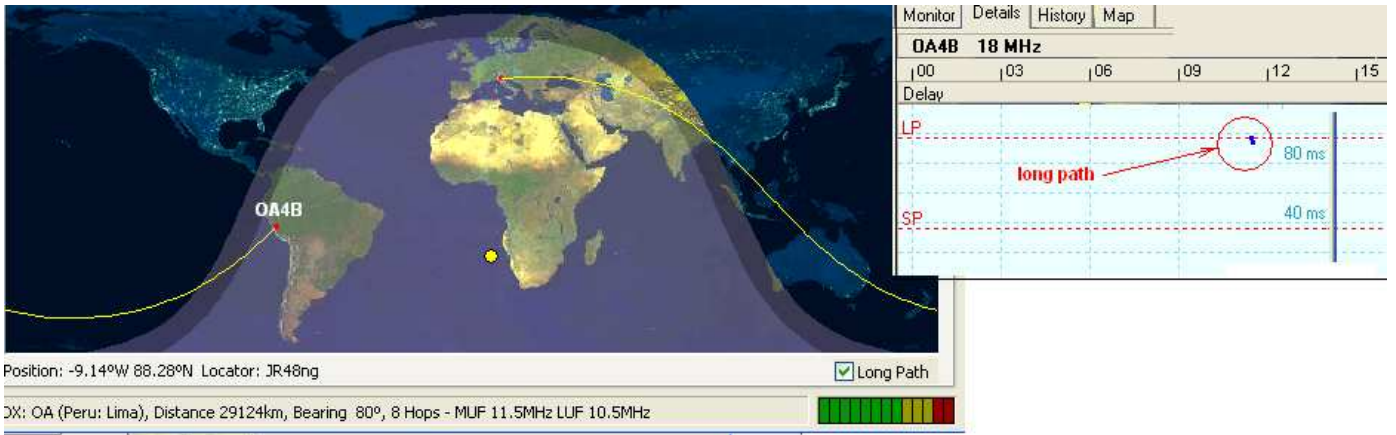
This propagation opening is very short because the conditions that support propagation changes rapidly. May be is possible an adding action of gray line enhancements.

Observation: suspected of multiple detection of beacon CS3B : propagation was open via short path and long path , infact CS3B is over the same geodetic line linking the four beacons detected. But first of all the outstanding reception of OA4B from both paths. This is also evidenced by spectral analysis of the signal received from beacon OA4B in the figure below.

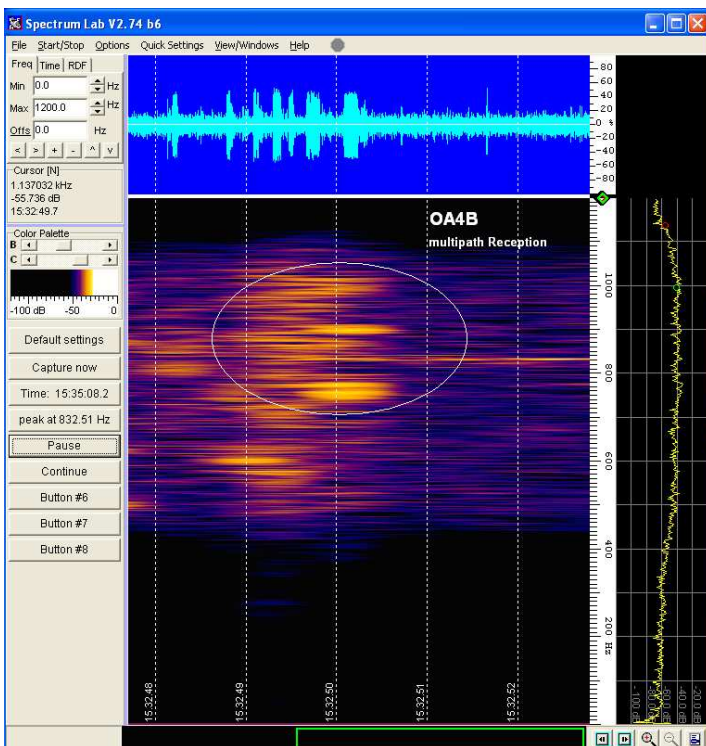
Ducting hypothesis: In certain situation propagation could be support by ionospheric duct, where the signal is trapped, with very low loss or even a possible gain. We need any more research to prove this idea of propagation and we go on with more studies.

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UTC 11.30





spectrographic analysis of the received signal made with the software spectrum lab in order to shows a trace of multi-path, the signal coming from both directions.



Technical equipment:

