HMO

Introducing Hermanus
HE13N (34.4°S, 19.2°E)
A new Southern Hemisphere Ionosonde Station in South Africa

The Hermanus Magnetic Observatory (HMO) in Hermanus, South Africa is pleased to introduce the fourth ionosonde in the South African network, located in Hermanus (34.4°S, 19.2°E). On the 3 July 2008 the first ionogram, shown in figure 1, was produced using the new sounder. The sounder is a new model Digisonde, a DPS-4D, purchased from the University of Massachusetts Lowell Center for Atmospheric Research (UMLCAR) and the Hermanus station is the first 4D to be operational in the field.

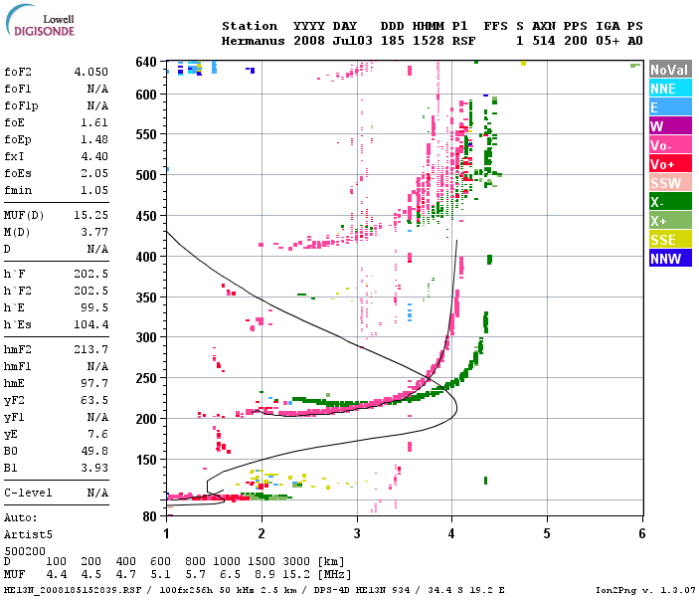

Figure 1: The first scaled ionogram obtained at 15h28 UT on the 3 July 2008 from the new DPS-4D operating at Hermanus, South Africa

This station joins the Grahamstown (33.3°S, 26.5°E), Louisvale (28.5°S, 21.2°E) and Madimbo (22.4°S, 30.9°E) stations in the South African network, and covers the Western Cape region as well as some of the Atlantic ocean area. Figure 2 shows a map depicting the location of the stations within the South African ionosonde network. All 3 of the older Digisondes are Lowell DPS-4 models, with Grahamstown operating since 1996, and Madimbo and Louisvale since 2000. At the Grahamstown station a Barry Research Chirpsounder operated prior to the installation of the DPS-4 and so there is a database of ionospheric data for Grahamstown going back to 1973.

An IPS-42 ionosonde used to operate in Hermanus in the late 80s and early 90s, however, it was completely dismantled when the funding to operate the station was removed in 1993. This new ionosonde has been installed on the same site as the previous ionosonde, although the installation was treated as a completely new installation due to the fact that nothing remained after the dismantling of the previous ionosonde. The older data from Hermanus is only available in printed format, however, the HMO is undertaking efforts to put this data into an electronic format.

The new Hermanus ionosonde was donated by the South African Department of Communications and will be operated and maintained by the HMO in Hermanus. It is currently running a 15 minute vertical incidence program with each ionogram immediately followed by a fixed frequency drift scan. All of the data is currently being archived together with the rest of the South African data, and is being sent in real time to the Digital Ionogram Database (DIDBase) in Lowell. Plans are underway to also send the data in real time to the World Data Center. At the moment the latest ionograms can be viewed on the HMO space weather website (http://spaceweather.hmo.ac.za) together with the ionograms from the rest of the network. Data is available from the 3 older ionosondes at the website, http://ionosond.ru.ac.za, and future plans include making the Hermanus data available there as well.

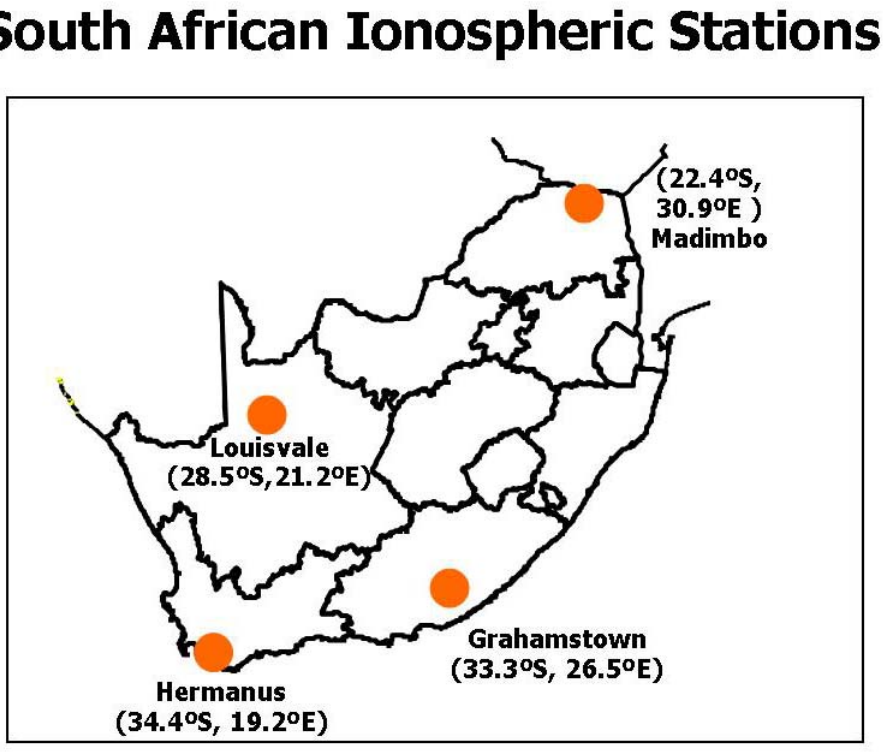

Figure 2: A map of South Africa depicting the location of the four ionosonde stations.

The ionosonde antenna layout consists of a 30m vertical transmit antenna and a separate receive array consisting of 4 cross loop antennas. Figure 3 shows some photographs of the newly installed station in Hermanus.

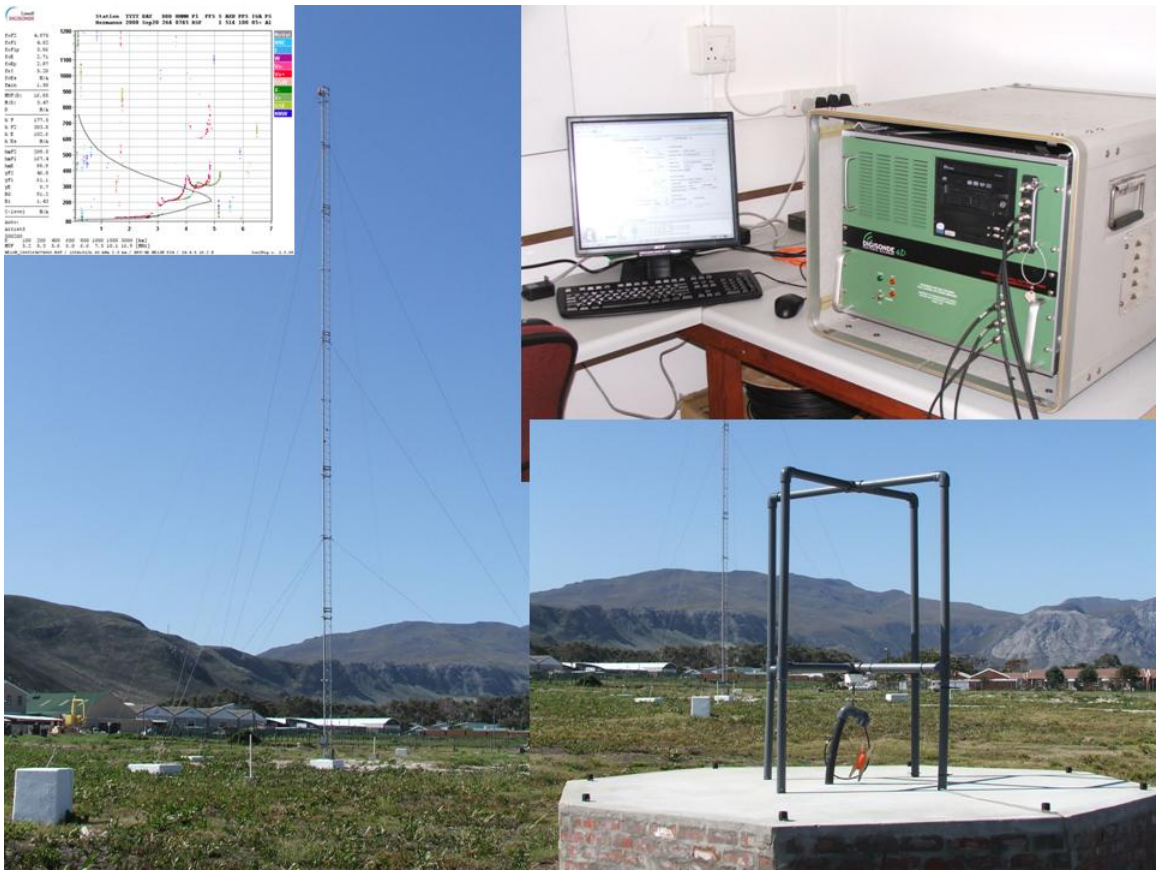

Figure 3: The newly installed Hermanus ionosonde consists of a transmit antenna (right), four cross loop receive antennas (bottom left) and the DPS-4D located inside a nearby building (top left). A recent ionogram is shown as an inset.

Anyone who is interested in the Hermanus data or has any queries regarding this ionosonde are welcome to contact:
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