THE CLOUD STATION

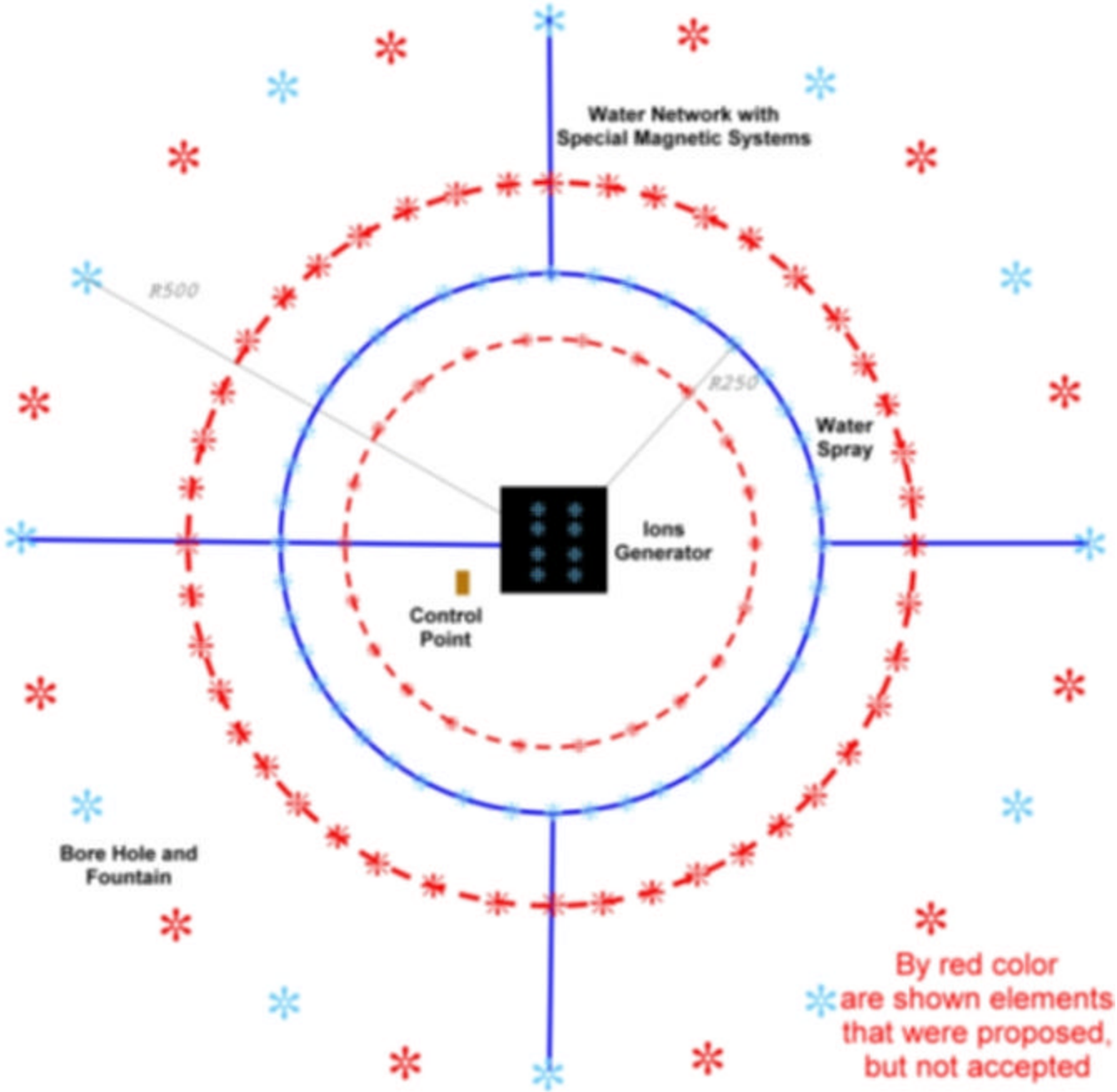
Magnetic Technologies LLC
UAE
2008

The purpose of the experiment - demonstration of the possibility for local clouds creation only and not for generation a rain at this stage.

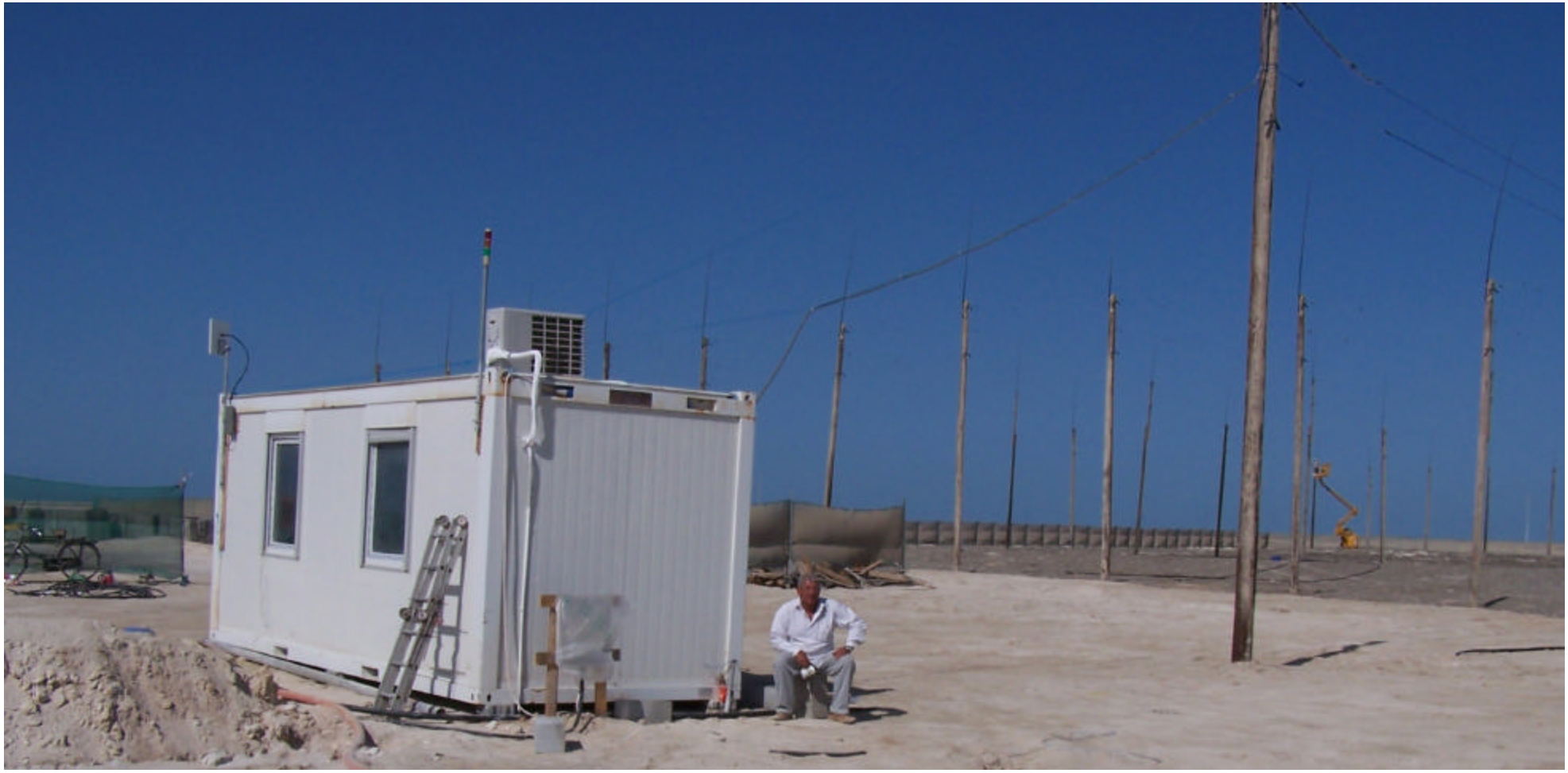
The Place of the experiment realization – was on the small island of Aryam, approximately in 30 kms western of Abu Dhabi.

The station for generation of local clouds (further referred to as "the station") was constructed during the period June 2007 to January 2008 and in its structure incorporated 12 fountains, 44 water sprays (on the basis of high pressure pumps), the ions generator, 8 water sprays for the ions generator, 12 bore holes, water network (incorporating special magnetic systems), electrical networks, and also a service road. The total area of the station being approximately 1 square kilometer. The demonstration station was purposely reduced in size to 10% of original station size for the reason of budget limitation. The specified structure of station essentially differed from that which was originally envisaged/required, which assumed: 24 fountains, 104 water sprays (on the basis of high pressure pumps), and 5 solar heaters of water (total productivity 1.5 cub m per hour with temperature 40-80 ºC). Besides, the original outline which as was requested the sites for the Ions generator should been covered with black asphalt.

On November 10, 2007 the ion generator began operating in a test mode. With the connection of this ion generator to an above ground electrical distribution network its regular work began. The actual starting date for the commencement of experiments is to be considered as **December 15, 2007**, when the fountains pumps were finally connected to the electrical network. The closing date of the experiment is **April 1, 2008.**


Water Network with
Special Magnetic Systems
R500
R250
Water
Spray
Ions
Generator
Control
Point
Bore Hole and
Fountain
By red color
are shown elements
that were proposed,
but not accepted


13/01/2008

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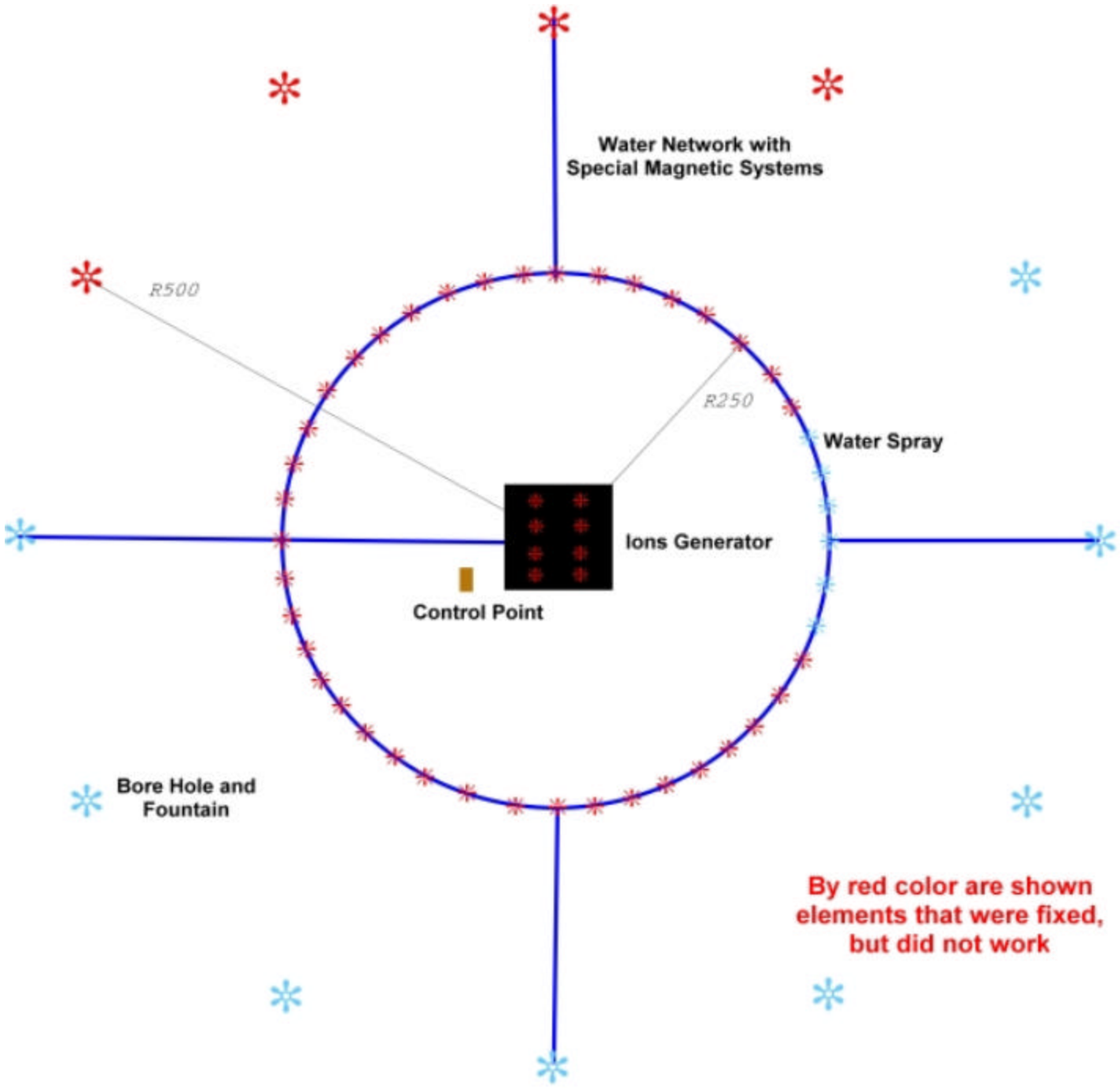
WORK OF THE STATION'S EQUIPMENT DURING THE EXPERIMENT

Because of discrepancy between the envisaged electrical equipment:

- from 12 fountains down to 6-8 (and without required nozzles);
- from 44 water sprays within several days worked 6;
- 8 water sprays for the ions generator did not work during all the experiments, as the pump were not connected to the electrical network.

Thus, during the initial experiments only a small proportion of the originally designed station's actual potential was utilized with its full capabilities much below that required by our team. It is very important factor for estimate the results of the experiment, particularly in adverse conditions of the atmosphere.


Water Network with
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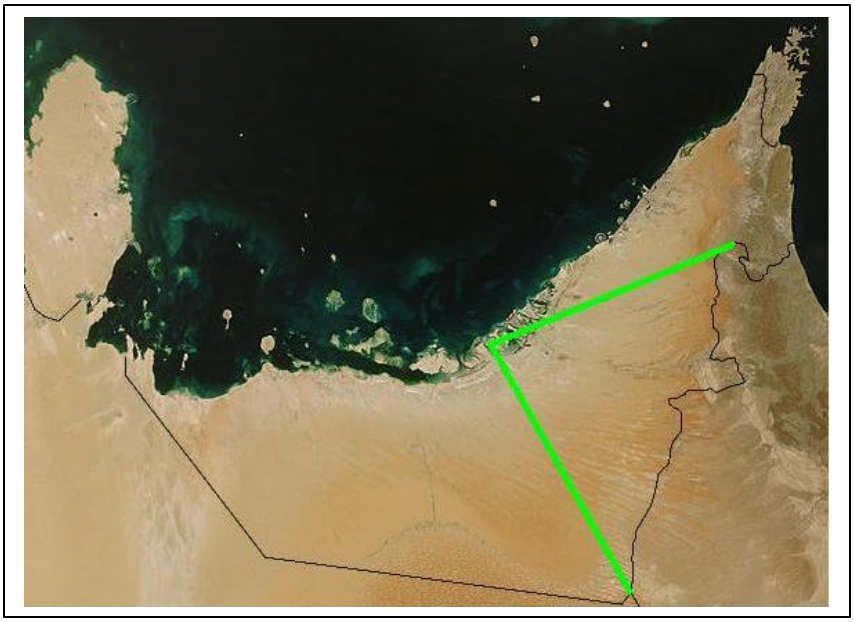
WAYS OF OBSERVATION



Observations in regard to the occurrence of clouds, which were generated, and their further movement, we carried out visually, following formation of clouds by the car. For documenting and observation a camera was used. Besides since January 12 the stationary camera constantly fixed records the actual condition of an atmosphere direct above station. The received photos were compared to the images from radars and space satellites and found to match.

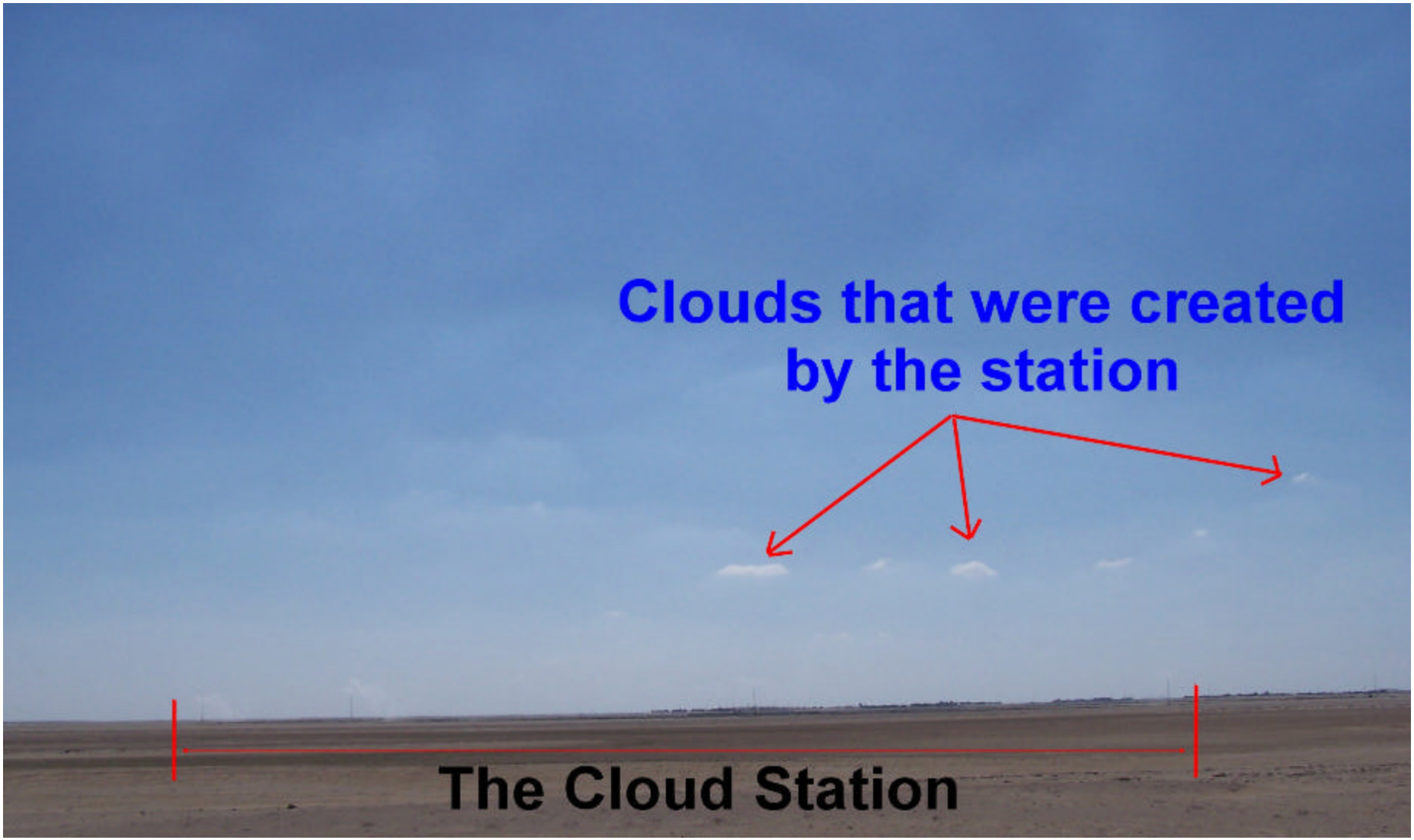
Depending on a condition of an atmosphere the first seen results of active station influence were observed at heights of 150-500 meters, at a distance of approximately 0.5-10 kilometers from the station following the direction of air movement. As a rule, it occurred in the sectors limited by directions from Aryam - Shweib and Aryam – Um Zumol.

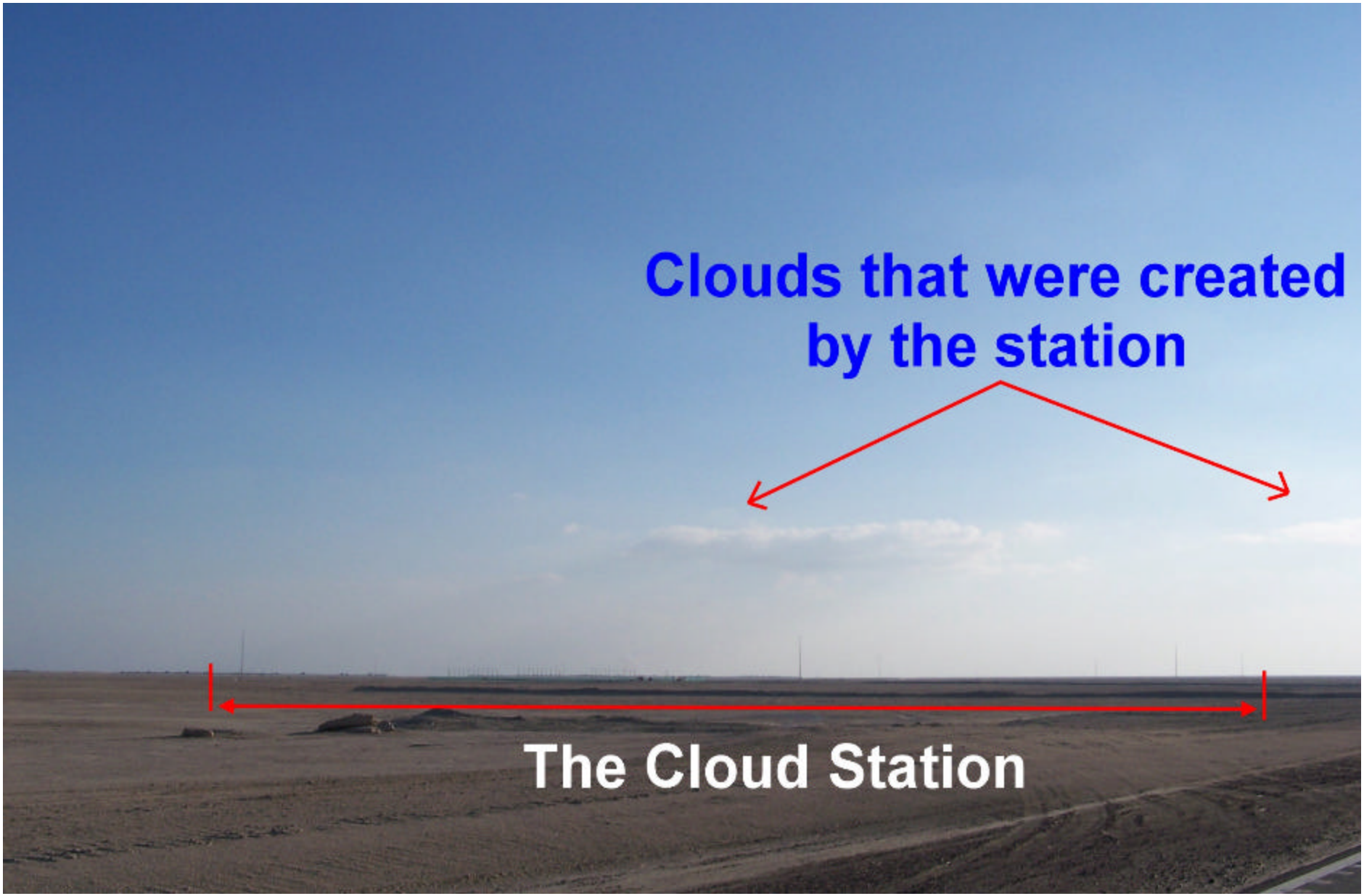
FORMATION OF LOCAL CLOUDS

In conditions of relative humidity more than 50 % at heights up to 500m first symptoms of occurrence of clouds was found out already on distance 0.5-5km from the station. On distance of 10-30 kilometers, the clouds were appreciably integrated and rose, getting the form of cumulous clouds.

The greatest development of clouds under favorable atmospheric conditions achieved on distance approximately 30-80 kilometers from a place of occurrence. In some cases these clouds gave some slight rain, but basically they disappeared or left the territory of Emirates without shedding their rain. But, non-the-less they demonstrated the ability of the equipment to create rain and valuable cloud cover over parched areas of desert – which in itself is a great achievement. At the moment of the greatest development the strip of local clouds reached from the north to the south for approximately 30-40 kilometers.

On days of low atmospheric moisture which accounted for 30% of the observation time, the local clouds did not arise. As a rule, it occurred those days, when dry southern, southeast or east wind prevailed. The relative humidity on these days, at near the ground layer of an atmosphere, and at heights of more than 3000m did not exceed 30-40 %.


Clouds that were created
by the station
The Cloud Station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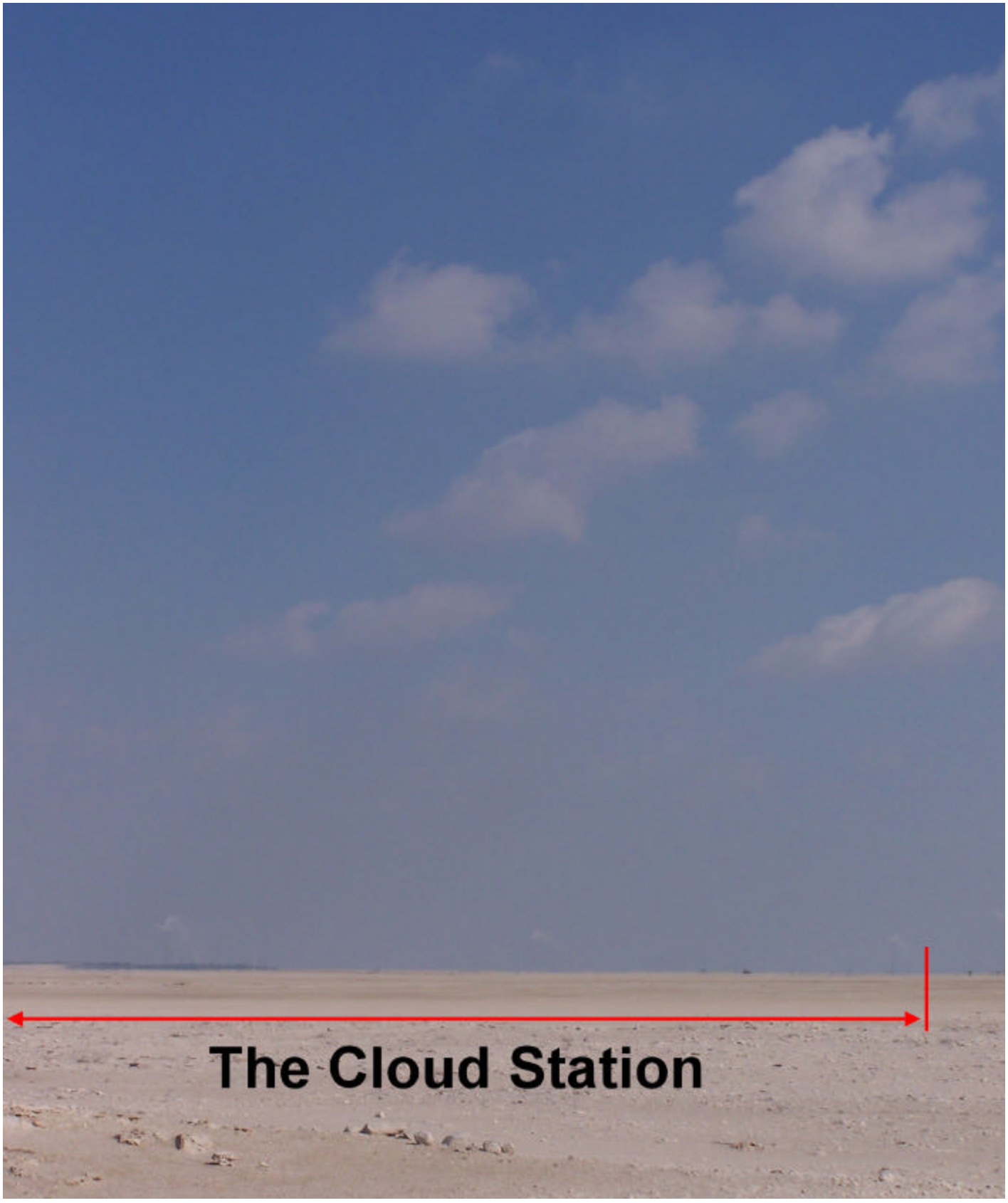
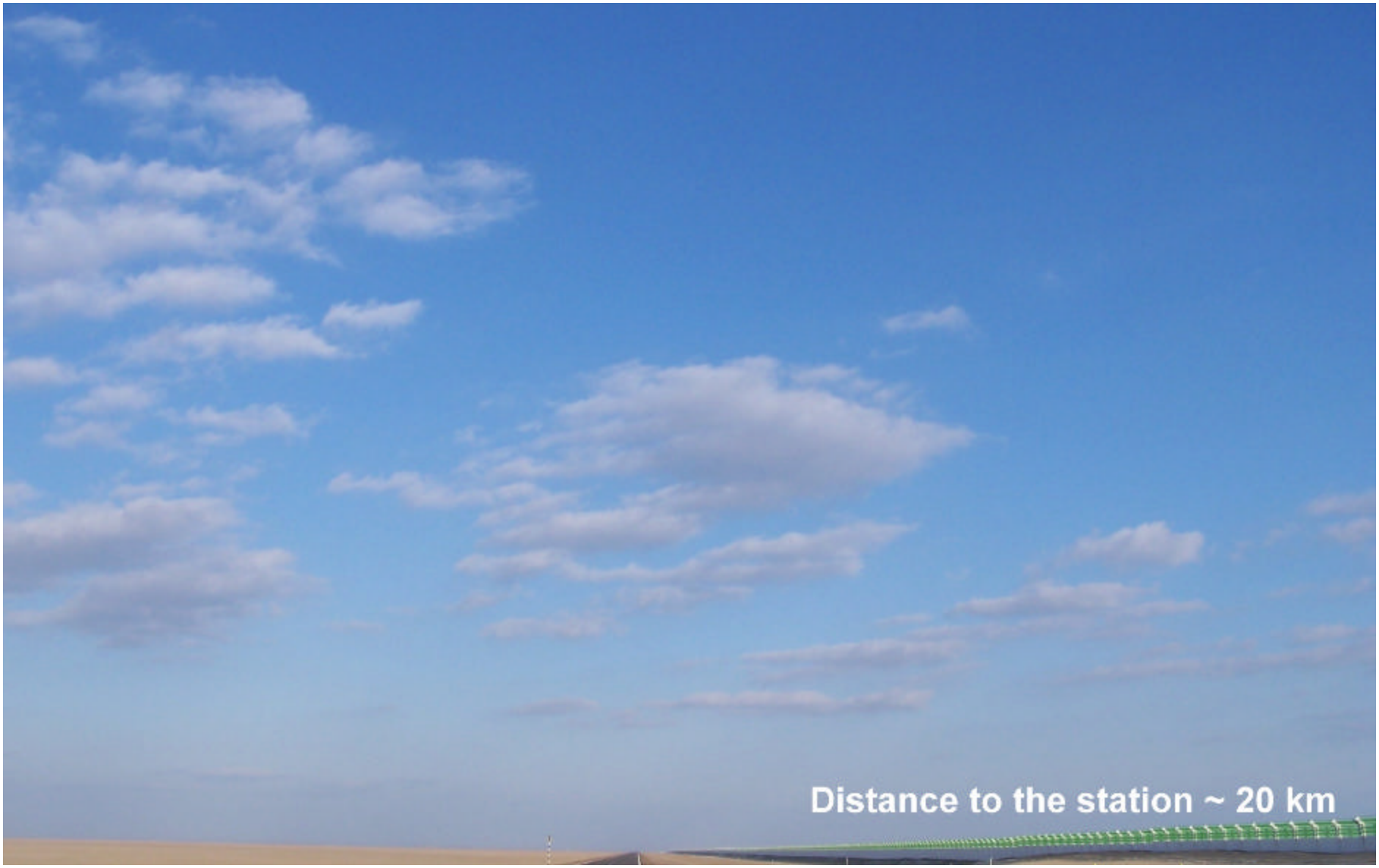

The Cloud Station

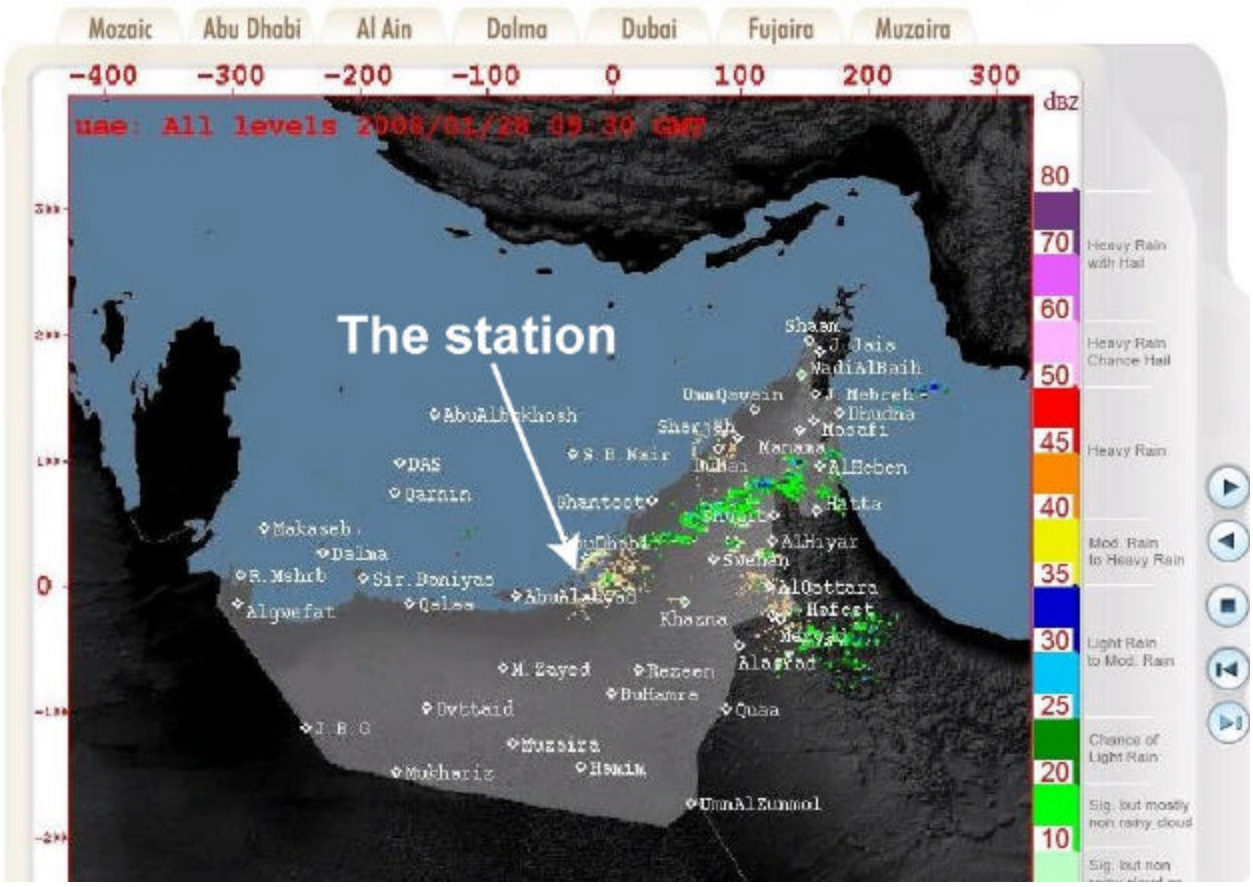

The Cloud Station


The Cloud Station


The station location
Distance to the station ~ 7 km


The station is located behind the hill.
Distance to the station ~ 7 km


Distance to the station ~ 20 km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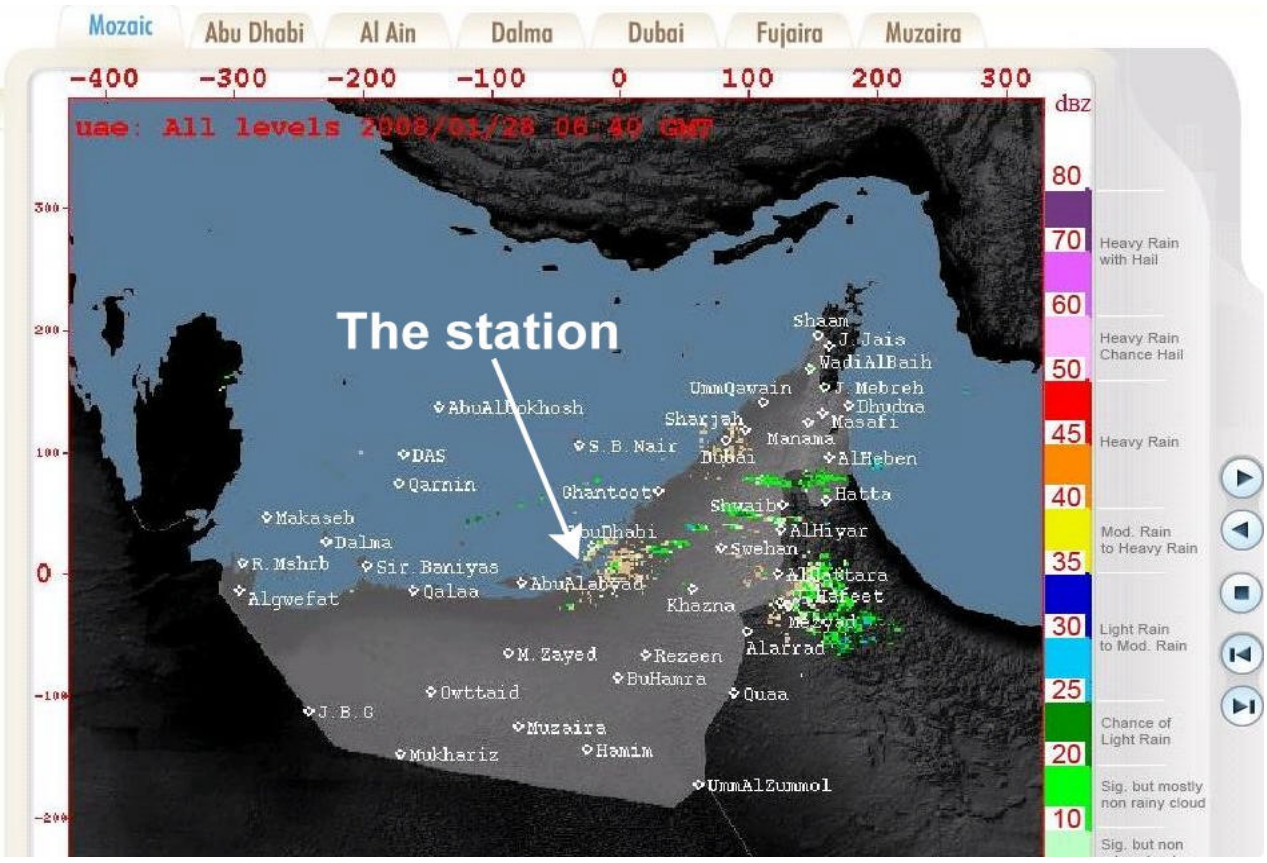
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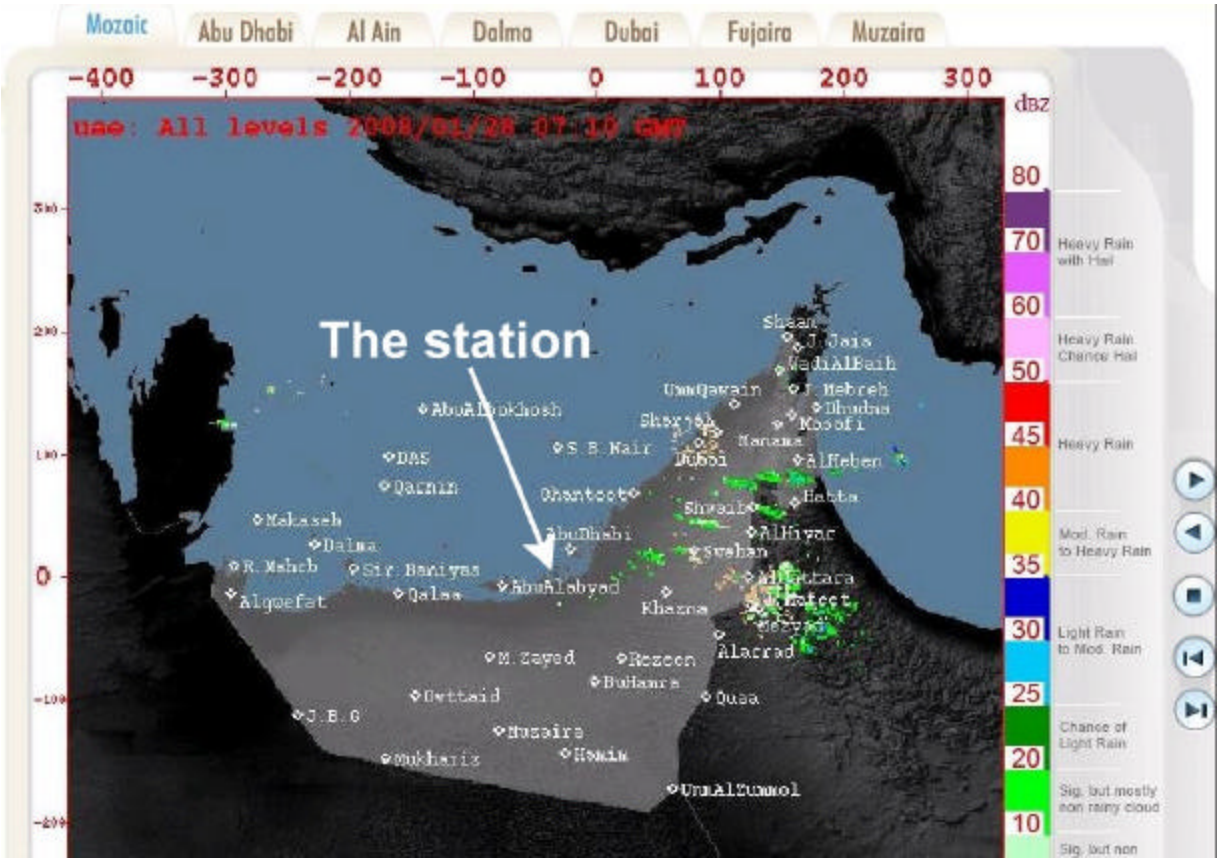
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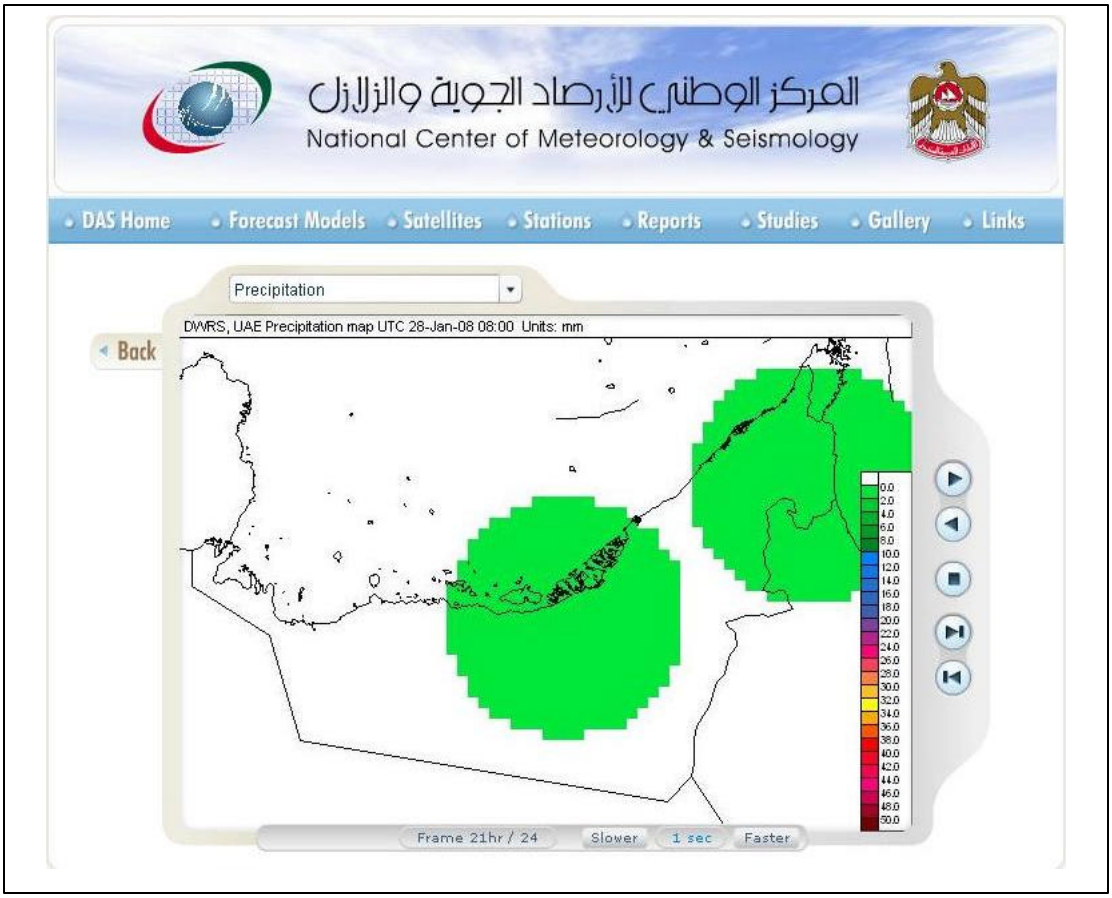
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National Center of Meteorology & Seismology
DAS Home
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Precipitation
Back
DWRS, UAE Precipitation map UTC 28-Jan-08 08:00 Units: mm
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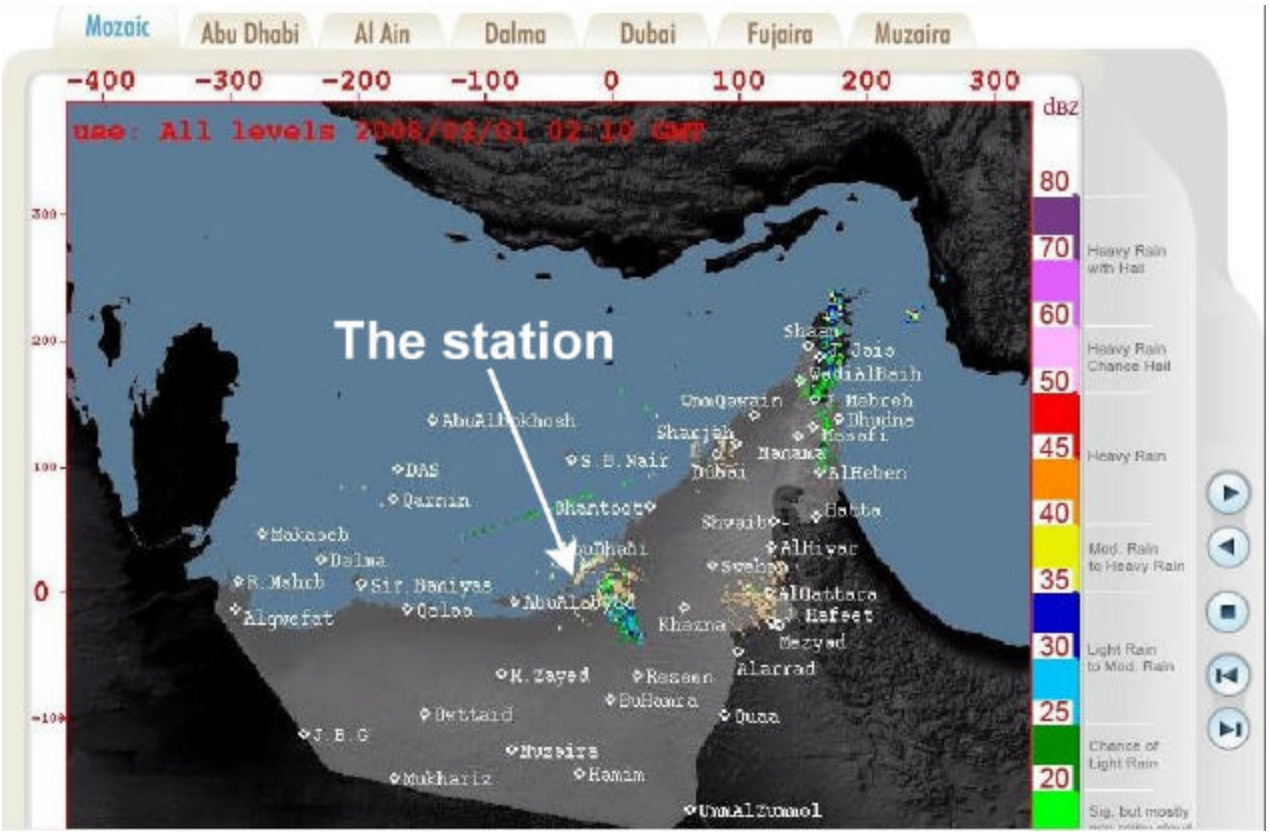
INFLUENCE UPON NATURAL CLOUDS

In January, often weak, low level clouds came in from Gulf side. After the passage of clouds above the station they were appreciably integrated, and developed into the form of cumulus clouds and further repeatedly released slight rain. The rain fell approximately at a distance of some 10-40 kilometers from the station.

In the period between the 13th to the 17th of January inclusive in the station area began to approach rain clouds. Within all these days we observed the brightly expressed growth of clouds in an operative range of the station. Thus in many cases the rain began to fall directly in the vicinity of the station, and the rains did not stop, and clouds were increased in the process of moving away from the rain station. It is necessary to notice, that the clouds, which did not come into operative range of the station, gave, as a rule, much smaller precipitation.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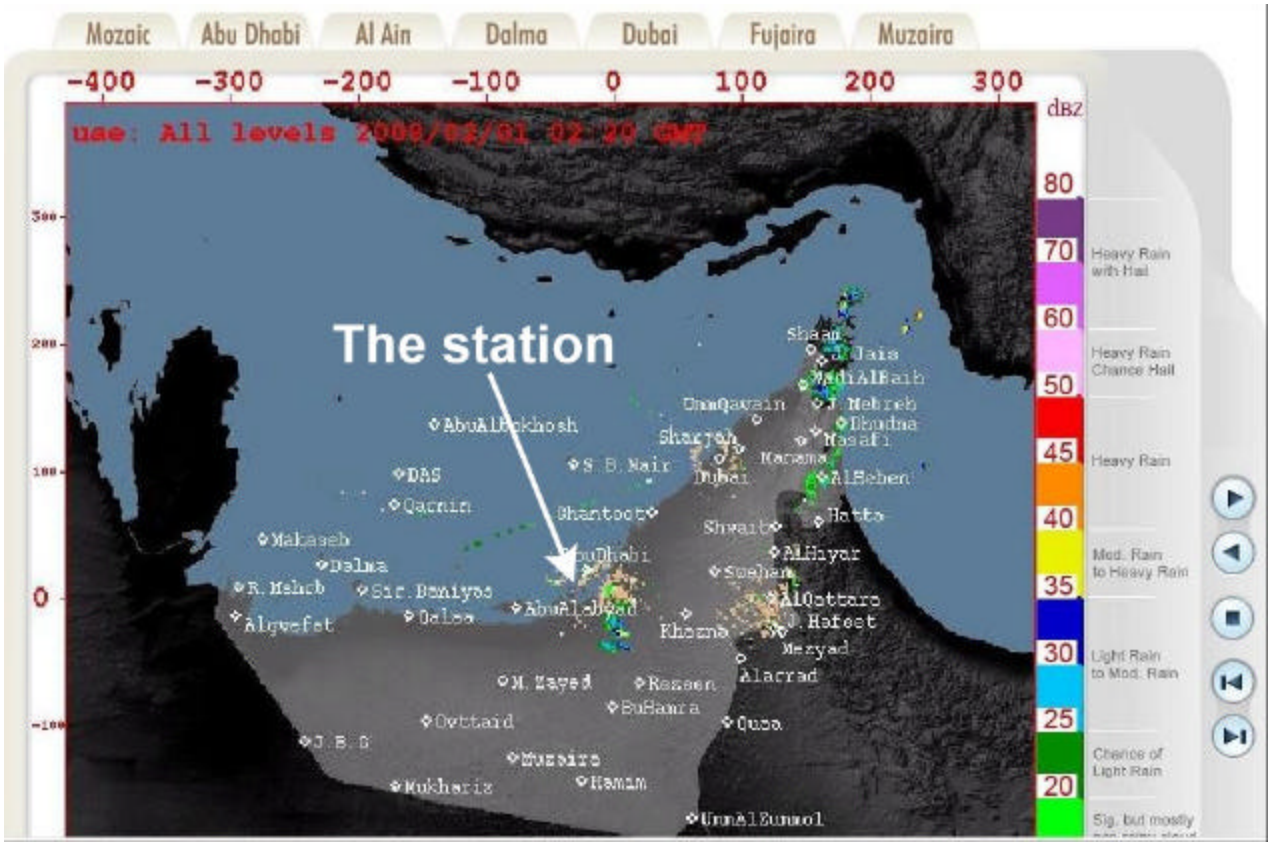
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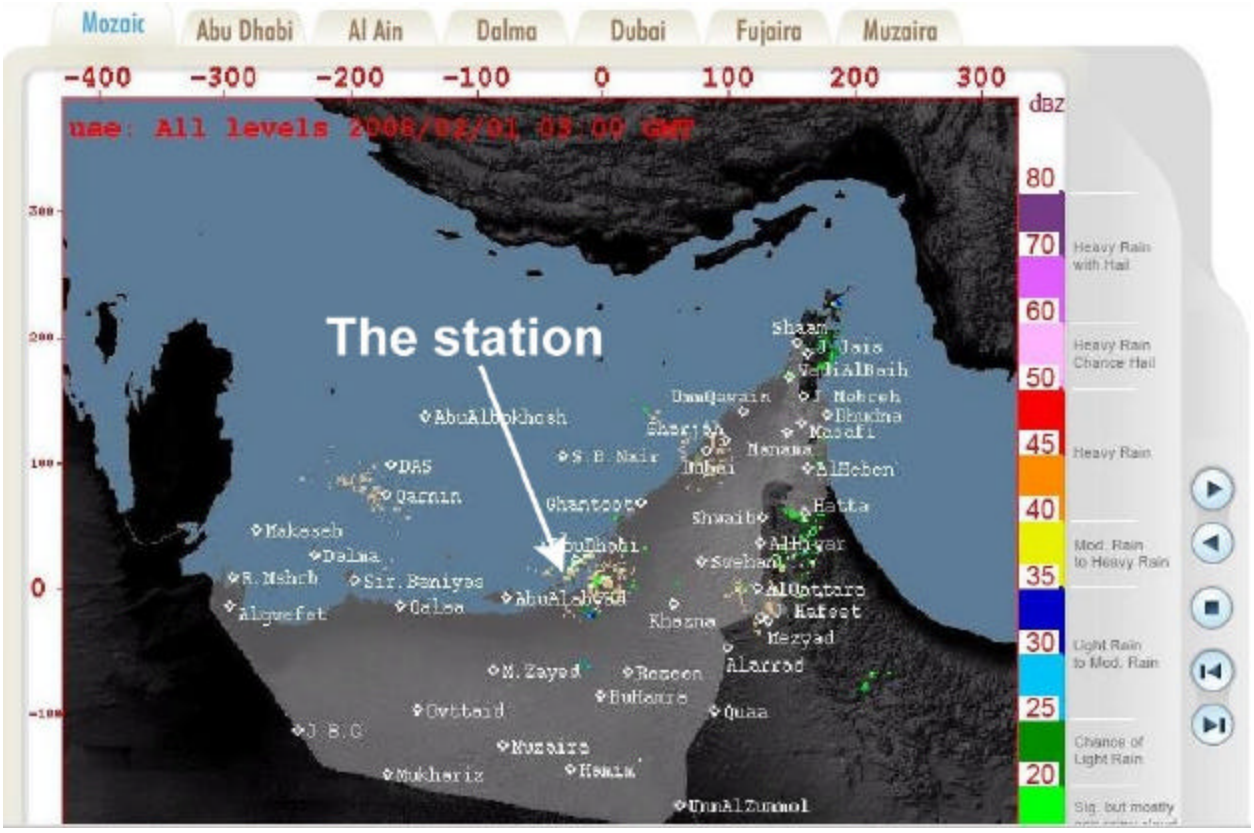
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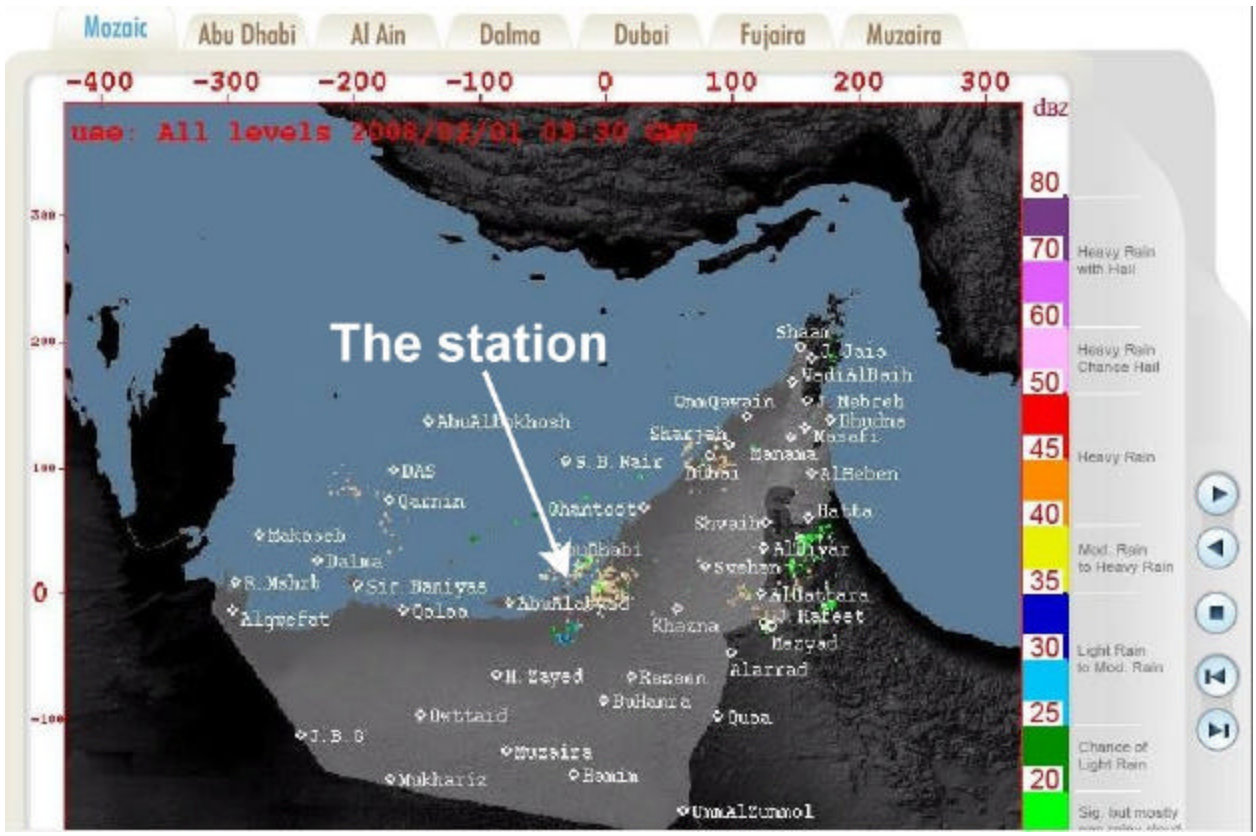
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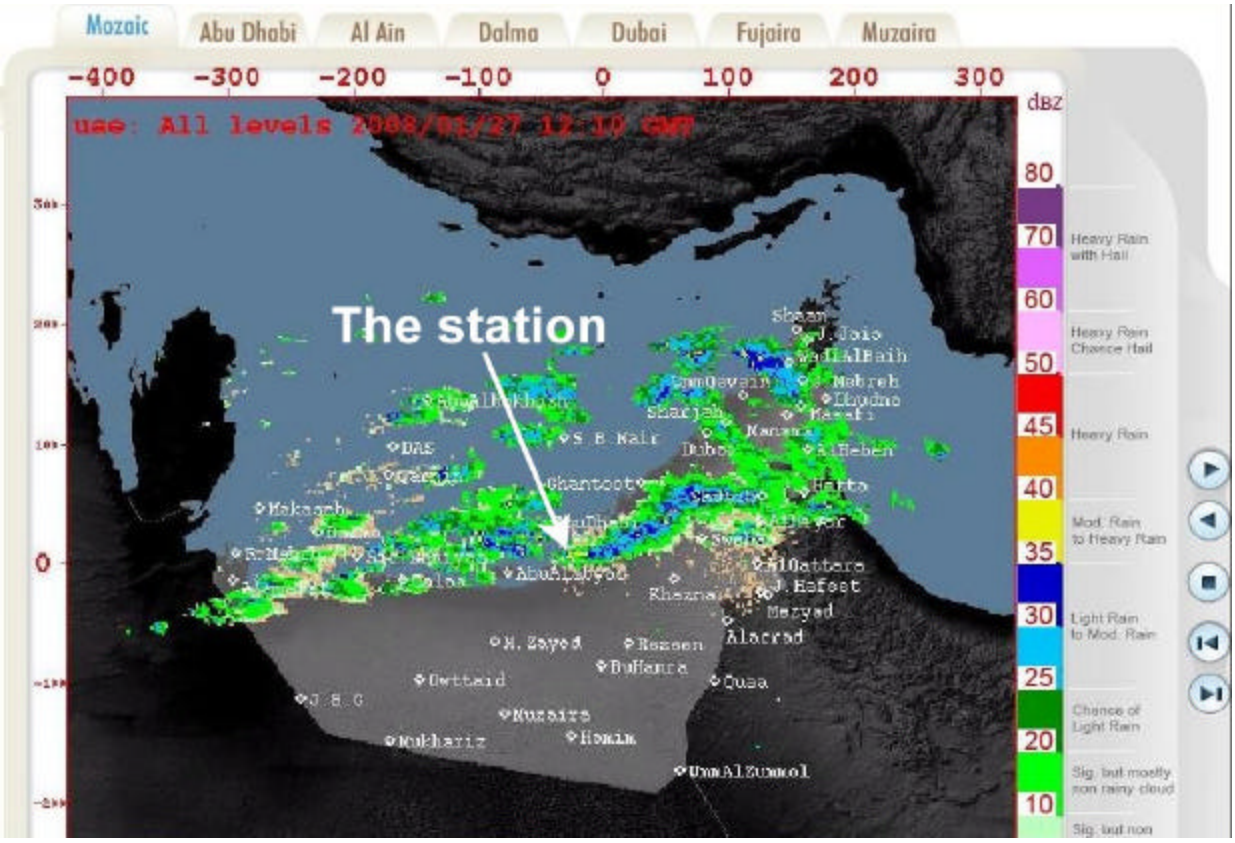
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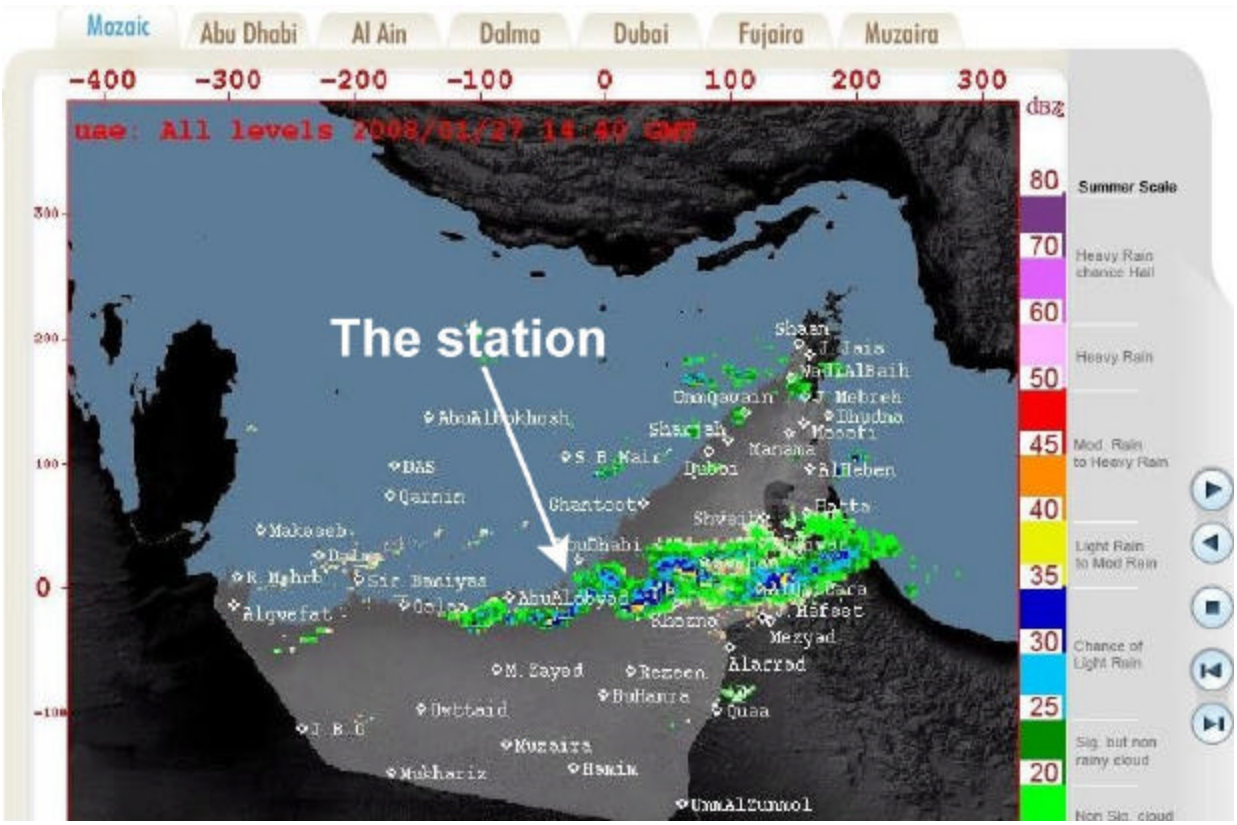
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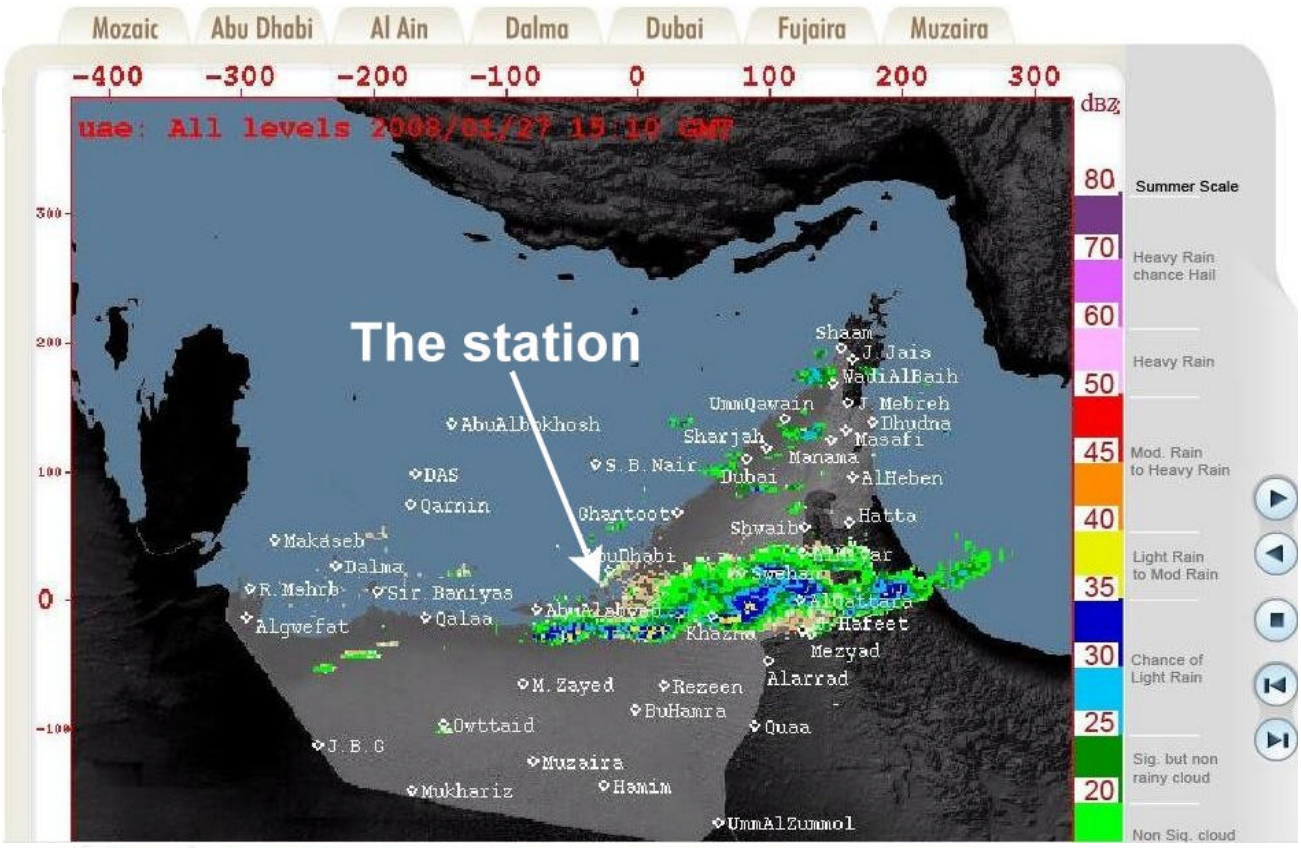
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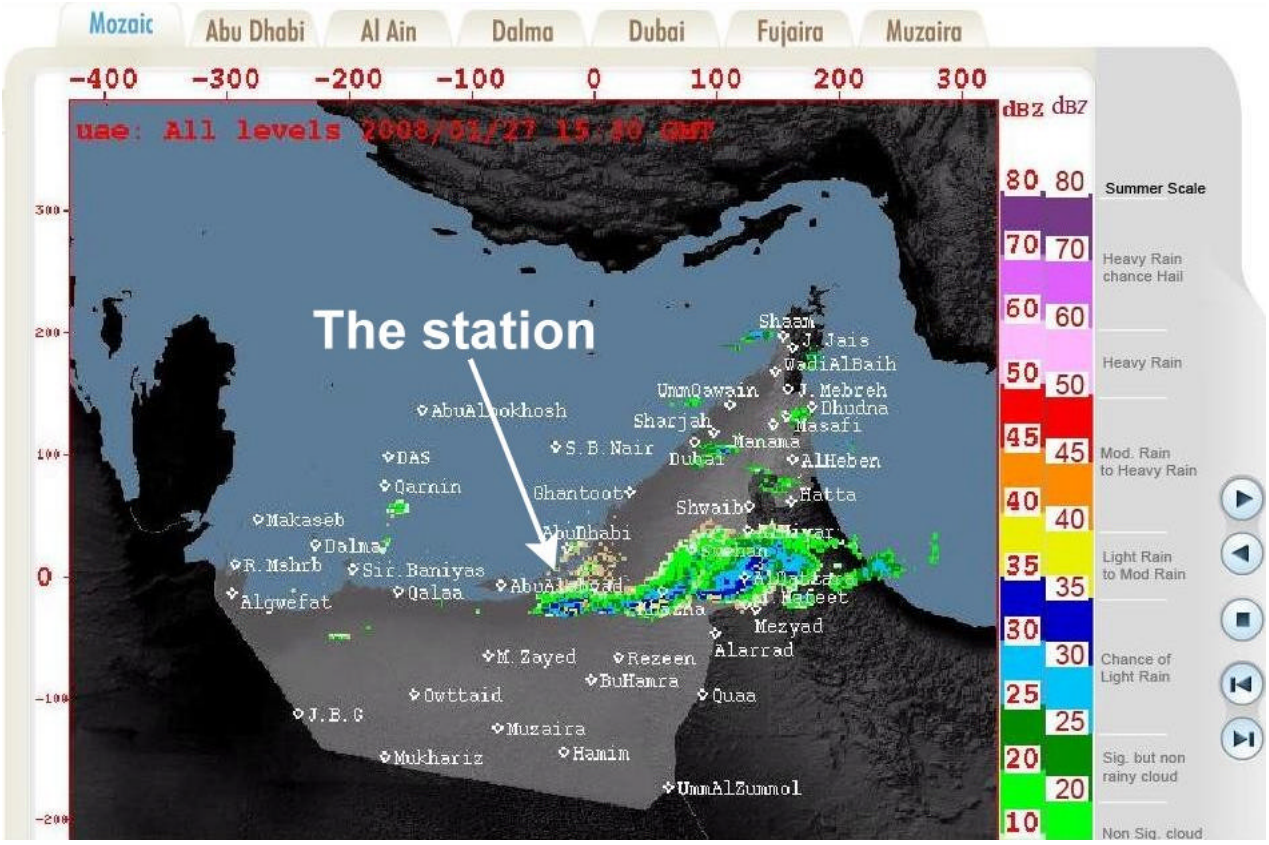
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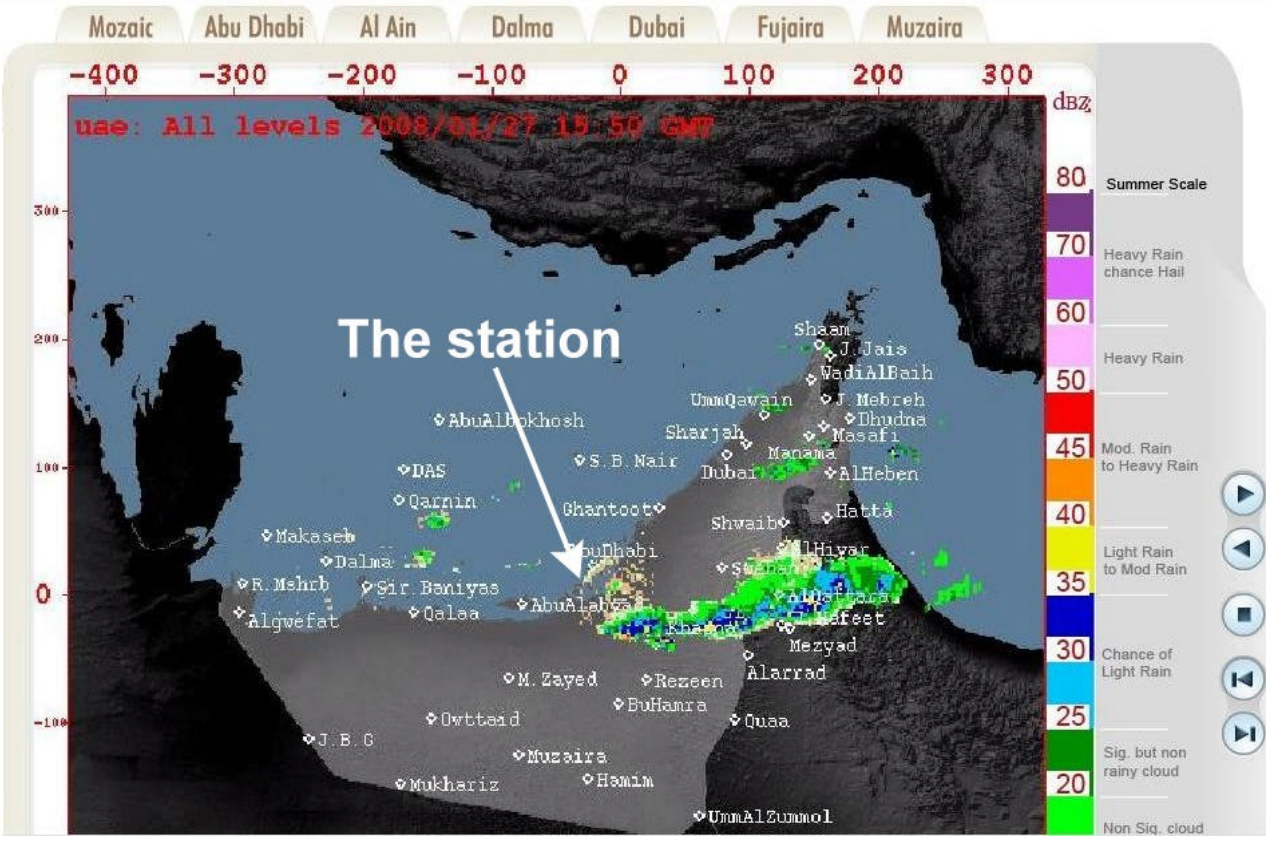
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Chance of Light Rain
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Sig. but non rainy cloud
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Non Sig. cloud
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J.Jais
WadiAlBaih
UmmQawain
J.Mebreh
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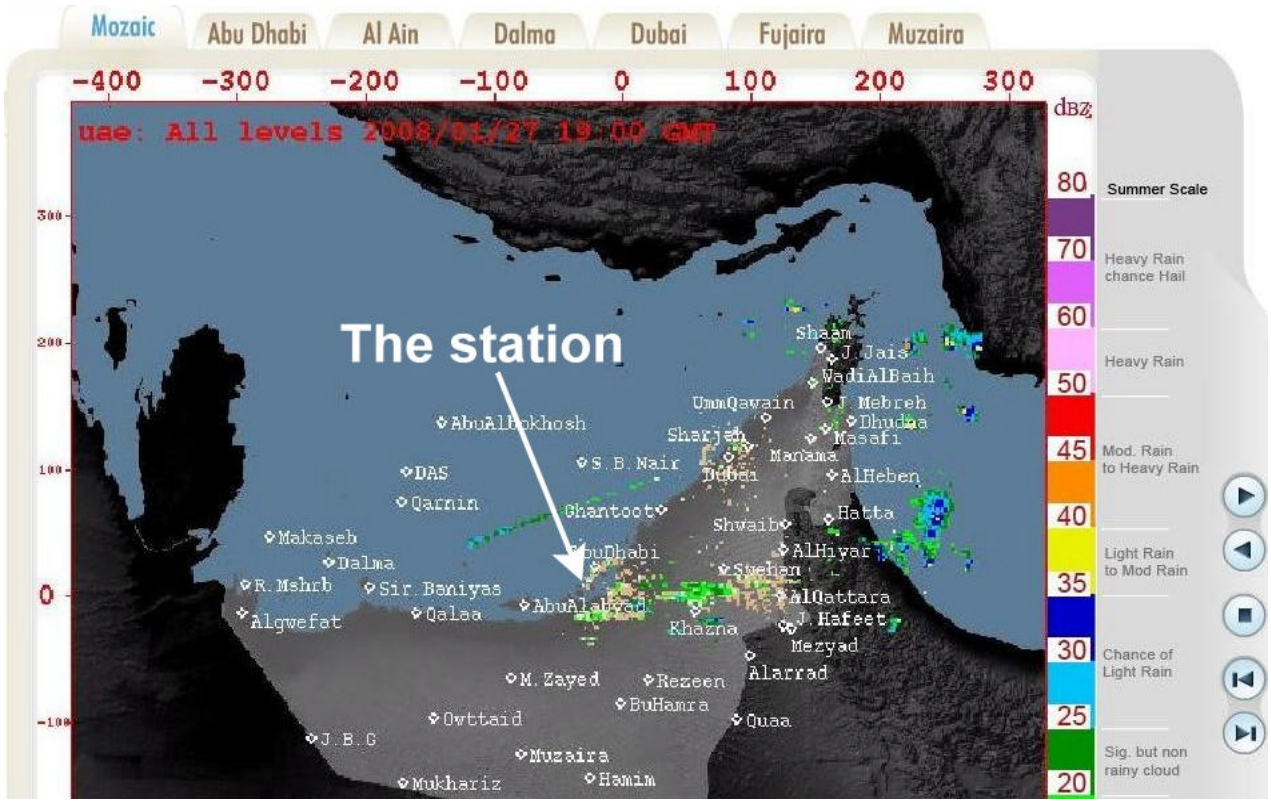
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INFLUENCE UPON FOG

During the trial period practical experiments proved that the station actively influences the process of fog formation, and this influence, depending on mode of operations of the equipment it can, both stimulate the formation of fog, and or prevent its formation and/or disperse patches of existing fog – valuable for airports and sections of motorway susceptible to fog.

The equipment in its mode of fog stimulation of fog amplification directly in the territory surrounding the station, and in significant territories beyond was marked. In some cases the radius of the foggy spot exceeded some 50 kms.

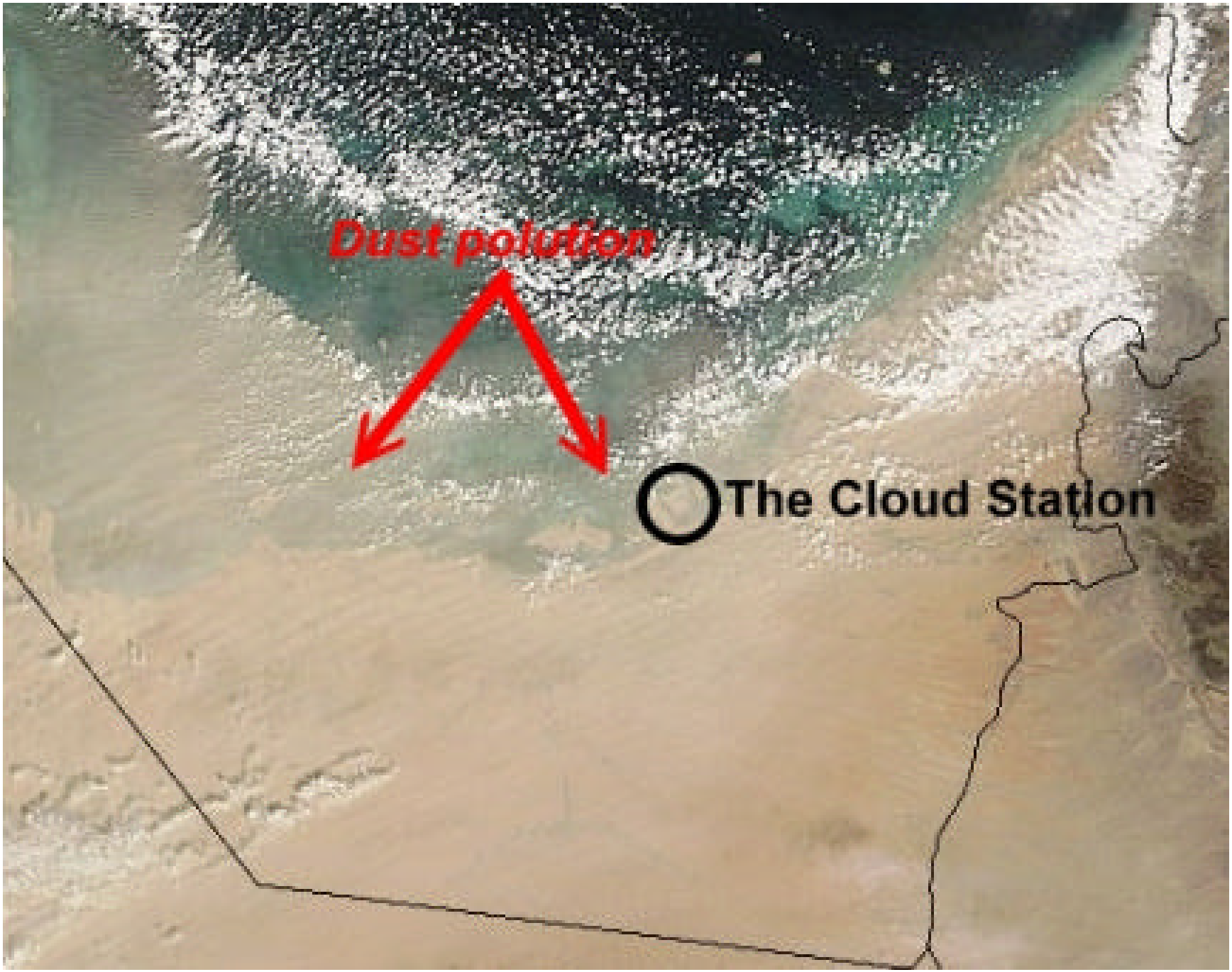
Following the switch on of the equipment into its fog dispersal mode the increase in visibility came within 30-40 minutes even in conditions of very dense, thick fog, when the visibility at the moment of switch on of the equipment was no more than 50 meters.

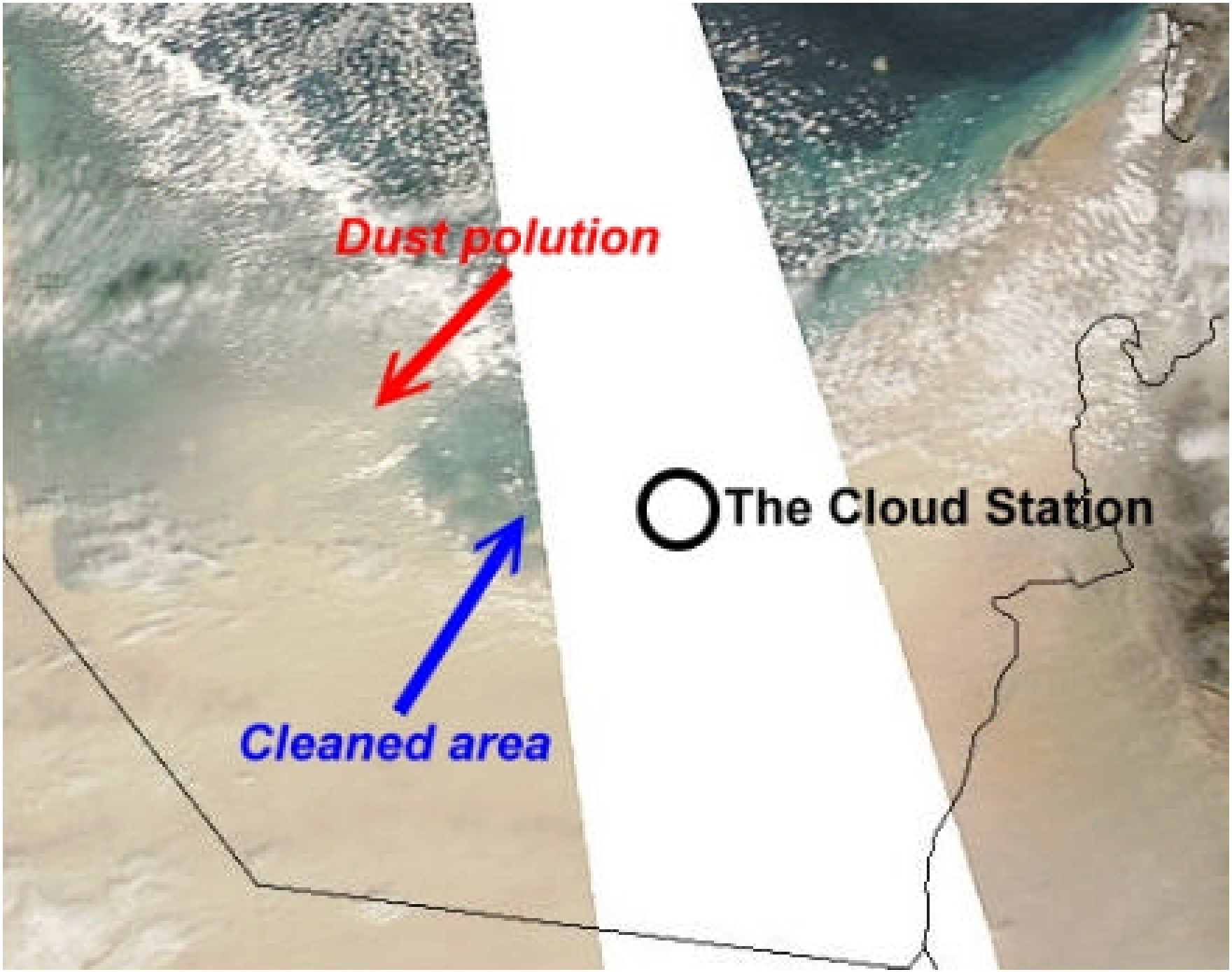
The preliminary start of the equipment in a mode of dispersion of fog in conditions of high probability of fog formation has allowed avoidance of fog formation in a radius of not less than 5 kms around of the station.

Note: mist or fog irrigation of Tea Plantations is of considerable interest in Tea Growing Regions of the world.

INFLUENCE UPON DUST POLLUTION OF THE ATMOSPHERE

In conditions of strong dust content in ground layers of the atmosphere at the presence of witnesses the possibility of removal or “grounding” of dust pollution was demonstrated. Within 30 minutes of starting the ions generator there was a definite increase in vertical visibility; within one hour the horizontal range of visibility also increased appreciably. The conditions of dust pollution in the atmosphere before commencing the demonstration and approximately with these three hours are well visible in the satellite photos which we have catalogued for verification (http://rapidfire.sci.gsfc.nasa.gov/subsets/?AERONET_Dhabi/2008007).


Dust polution
The Cloud Station


Dust polution
The Cloud Station
Cleaned area

THE CONCLUSION

In spite of the fact, that during this brief experiment the significant part of the station's potential was not used, the received results confirm expediency of works continuation. We propose during April by common efforts to provide work of the station's equipment as designed and to continue the experiment in May - December 2008. Also, we are deep convinced that construction of the second station (in area of lines Aryam - Shweib and Gahantoot - Shweihan crossing) will allow greatly to increase lifetime and scale of local clouds, and also to raise probability and volume of precipitation in the zone of the stations activity.

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Yuri Tkachenko

Director of Analytical Department
Oleksandr Sokolov