

OBSERVATOIRE MÉTÉOROLOGIQUE DU MONT AIGOUAL

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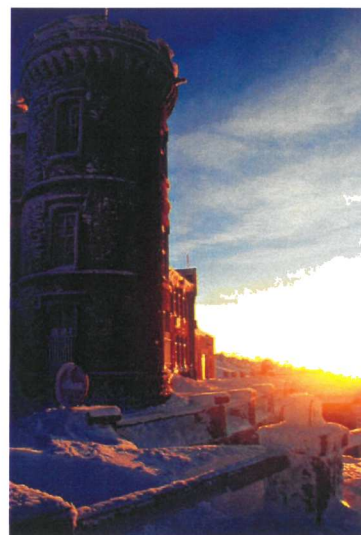
The Mount Aigoual meteorological observatory is located on the southeast slope of the Massif Central, at an altitude of 1567 m, in an area called les Cevennes. The distance to the Mediterranean Sea is about 60 kilometers, showing an influence on the climate with periods of heavy rain and strong wind. It is the last meteorological mountain observatory in active service in France.

The decision to built that observatory was highly influenced by a "water and forest" engineer named Georges FABRE and the following two reasons:

- The need at that time to understand weather changes in higher altitudes and their influences on the plains (a lot of mountain meteorological observatories were built at that time in France).
- The need of reforesting the entire Aigoual high plateau, completely bald at that time, to slow down the consequences of the very strong rains. Catastrophic overflows were very frequent at the end of the 19th century.

It took 6 years (between 1888 and 1894) to build up the observatory. At the beginning, forest guards and their family along with a telegraphist, a mechanic and a cook (about 20 people) were living permanently in the observatory. Their job was to reforest the Aigoual high plateau and to collect daily meteorological data every 3 hours (wind speed and direction, temperature, humidity, rain amount, air pressure, clouds types, actual weather etc). Therefore, we have a history of the Mount Aigoual climate and its evolution since 1894 with only short interrupts during the two world wars. During the 1970s, following the automation of a lot of mountain observatories, it was also decided to close the Mount Aigoual Observatory, but the people working in the observatory were very attached to the site and they fought to keep it opened.

In the years 1973/1974, a meteorologist, Christian PROUST worked alone during 18 consecutive months and succeeded in convincing the local authorities and the Meteo France head quarters to keep people working inside the observatory. He insisted on the fact that when heavy rains are forecasted, it is important to have somebody with a direct expertise and correcting erroneous data to help local authorities taking decisions. The manpower then grew from 1 to 2 by the end of 1974 to 3 in 1975 and finally to 4 in 1979. At the beginning of 1981 a new manager, Jean BOULET, replaced Christian PROUST. Closure threats were back and the team had the great idea of creating an exhibition and a meteorological museum inside the observatory to diversify the site activities. First of all, the building, which had been damaged by extreme meteorological conditions during 100 years had to be restored. With very few means, the tenacity of the team, Jean BOULET's dynamics and the professionalism of a so called "State worker" Alfred PUECH, the job was successfully done between 1982 and 1985. The first photo exhibition took place in 1985 in a small room inside the observatory. It was successful and that success was confirmed in 1988 at the observatory's 100th anniversary and with the publication of a book, intended to popularize meteorology, named "La météo de A à Z" (Meteorology from A to Z). The money coming from the sale of that book as well as the subventions coming from the Languedoc Roussillon region, the Gard department and the Météo France Headquarters allowed the enlargement of the exhibition and the improvement of the building.



The success of that allowed also the growing of manpower up to 8 in 1992 and to 9 in 1993. In 1992, taking the advantage of the extreme conditions (wind, rain, snow, hoarfrost,...), a test area for all kind of equipments (meteorological and others) was implemented. A worldwide test campaign for anemometers was performed during 1992-1993.



At present 5 meteorologists, 3 so called "State workers" and a communication secretary, taking care of both the exhibition and the museum, are working in the observatory. All people are not working at the same time, there are shifts of 2 to 3 people. Those shifts stay 4, 5 or 7 days in a row without going home during that shift. They work and live in the same area (it is called a "Base vie"). A working day starts at 5.45 AM and finishes at 6.45 PM and when the meteorological conditions are dangerous for the people living in the plain (heavy rains for example), the work goes on all night long. The meteorologists insure a meteorological watch (special data sending, alert messages), they also perform meteorological measurements every 3 hours, 7 days forecasts on the Aigoual high plateau and studies concerning the site climatology. They also welcome visitors in the museum between mid of March and end of November as well as pupils and student groups (There are about 120 to 180,000 visitors a year and about 200 schools). They create meteorological popularization media like

books, posters, post cards, videos and CDs and together with the "state workers" they manage the equipment installed on the test area. The "State workers" take care of the building maintenance and restoration, they also insure the maintenance of electrical equipments, computers and meteorological instruments. The secretary manages the stocks and participates to the museum and exhibition completion, the creation of the meteorological popularization media and the welcome of the visitors. There is no cook in the team, therefore cooking is shared by everybody. Each one cooks its own specialties (pasta, meat,...) which make each meal a new one. A good atmosphere and especially a high motivation are necessary to keep the activity on the site. Nobody takes care of the number of hours spent at work and everybody tries to find new opportunities to increase the site activities.

After the description of activities and life at the observatory we want to present a brief description of the climate around the observatory:

- Annual average:

2080 mm rain
366 cm new snow
270 days with a burst of wind > 60 km/h
90 days with a burst of wind > 100 km/h
Wind speed: 40 km/h
240 days with fog
135 days with more than 1 mm rain
116 days with snow cover
Temperature: 4.8 °C
144 days with frost

- Records:

Minimum Temperature: -28 °C in February 1956
Maximum Temperature: 28.2 °C in August 1947
Annual rainfall: 4015 mm in 1913
Monthly rainfall: 1254 mm in October 1913
Rainfall during 24 hours: 608 mm, 30/31 October, 1963
Depth of new snow during 24 hours: 1.86 m on February 19, 1976
Hoarfrost in 24 hours: 120 cm on December 4, 1966
Maximum hoarfrost thickness: 239 cm on December 5, 1966
Maximum wind speed: > 300 km/h in May 1963
Maximum wind speed averaged on 10 minutes: 198 km/h on November 7, 1982
Mean wind speed in 24 hours: 145.4 km/h on November 7, 1982
Maximum snow depth: 2.6 m on March 1972 and March 1996
Cumulated new snow in 1 year: 10.39 m during winter 1995-1996

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Photo source: Observatoire du Mont Aigoual

Eine Beschreibung dieses Observatoriums ist bereits im 19. Jahresbericht des Sonnblick-Vereines für das Jahr 1910 auf den Seiten 16-17 zu finden.

Auszug aus dem 19. Jahresbericht des Sonnblick-Vereines

Der Mont Aigoual in den Cevennen

Im Juni des Jahres 1908 besuchte der bekannte russische Meteorologe A. Woeikof dieses Bergobservatorium und veröffentlichte über das Klima desselben einen Bericht in der »Meteorologischen Zeitschrift«, 1910, S. 337, dem das Nachfolgende entnommen ist.

Der Mont Aigoual ist die höchste Spitze im Süden der Cevennen, etwa 50 km nördlich befindet sich eine etwas höhere, er liegt im Norden des Departement Gard, fast an der Grenze des Departement Lozère, unter 44° 5' n. B., 3° 44' E. v. G., in 1567 m Seehöhe. Er ist eigentlich ein Hügel auf dem breiten Kamme der Cevennen. 50 km im Umkreise ist keine meteorologische Station vorhanden. Das Observatorium ist nach einem Plane von Fabre von ihm selbst, auf Kosten von Privatleuten erbaut, und Fabre war durch 20 Jahre Direktor desselben. Es wird von der Forstverwaltung unterhalten.

Die Instrumente sind auf einem flachen Dache über dem dritten Stockwerke des Gebäudes aufgestellt. Die Thermometer und das Psychrometer sind in den Wintermonaten gegen den zu dieser Jahreszeit häufigen Rauhfrostansatz nicht hinreichend geschützt.

Wie an anderen Höhenstationen sind außer den Beobachtungsräumen und den Wohnungen für die zwei Familien der Forstleute, welche den meteorologischen Dienst versehen, viele Zimmer für Fremde vorhanden, welche an den Touring-Club de France vermietet sind. Es werden dortselbst Fremde, gegen einen Betrag von 7 Francs pro Tag, für volle Pension aufgenommen. In den Monaten Juli und September sind alle Fremdenzimmer vergeben. Woeikof empfiehlt die Monate Mai, Juni und Oktober, wenn der Berg, auf den ein ausgezeichnete Fahrweg führt, leicht zugänglich ist, den Meteorologen zur Anstellung von einschlägigen Beobachtungen.

Der Winter ist auf dem Mont Aigoual nicht kalt, aber oft sehr schneereich. Im Frühling 1905 war der Schnee an der südöstlichen Front des Hauses 8 m hoch, an der nordwestlichen Front 1·5 m. Die Familien der Beobachter versorgen sich und das Vieh, welches sie halten (Ziegen, Hühner, Enten), im Herbst für fünf Monate.

Die jährliche Amplitude des Temperaturganges ist klein. Dieselbe zeigt eine beträchtliche Verspätung, so daß der März nahezu dieselbe Temperatur hat wie der Dezember, der April wie der November, der Mai wie Oktober, der Juni wie September, der Juli wie August.

Die relative Feuchtigkeit ist geringer wie am Puy de Dôme. Ihr Gang ist charakteristisch für Berge. Im Winterhalbjahre geben über 50% der Beobachtungen volle Sättigung morgens und abends; von November bis Februar fast ebensoviel in der Mitte des Tages; im Juli und August 25% morgens und abends und etwa 12% um Mittag. Im Sommer ist somit der Berg beträchtlich unter der Höhe der Cumuli. Die Fälle von Feuchtigkeit unter 50% sind im Winterhalbjahr morgens und abends ebenso häufig wie in den wärmsten Tagesstunden. Solche Fälle kommen bei absteigenden Luftströmungen in Antizyklonen, unabhängig von der Tageszeit vor. Wie auf anderen Bergobservatorien sind warme Monate trocken, kalte feucht.

Der Niederschlag ist am geringsten in den zwei wärmsten Monaten, am größten im Herbst.

Der Mont Aigoual hat mehr Sonnenschein als insbesondere der Norden der Alpenkette.