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## **ANALYSIS AND CONSEQUENCES OF THE SECOND GREATEST SNOWFALL OF THE TWENTY-FIRST CENTURY IN BURGOS**

**26/12/2004**

**Realized by Meteoburgos**  
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Links to the topics related in Meteored's forum

<http://www.meteored.com/foro/index.php?board=13;action=display;threadid=18638>

<http://www.meteored.com/foro/index.php?board=13;action=display;threadid=18900>

<http://www.meteored.com/foro/index.php?board=13;action=display;threadid=18765>

<http://www.meteored.com/foro/index.php?board=13;action=display;threadid=18595>

<http://www.meteored.com/foro/index.php?board=13;action=display;threadid=18667>

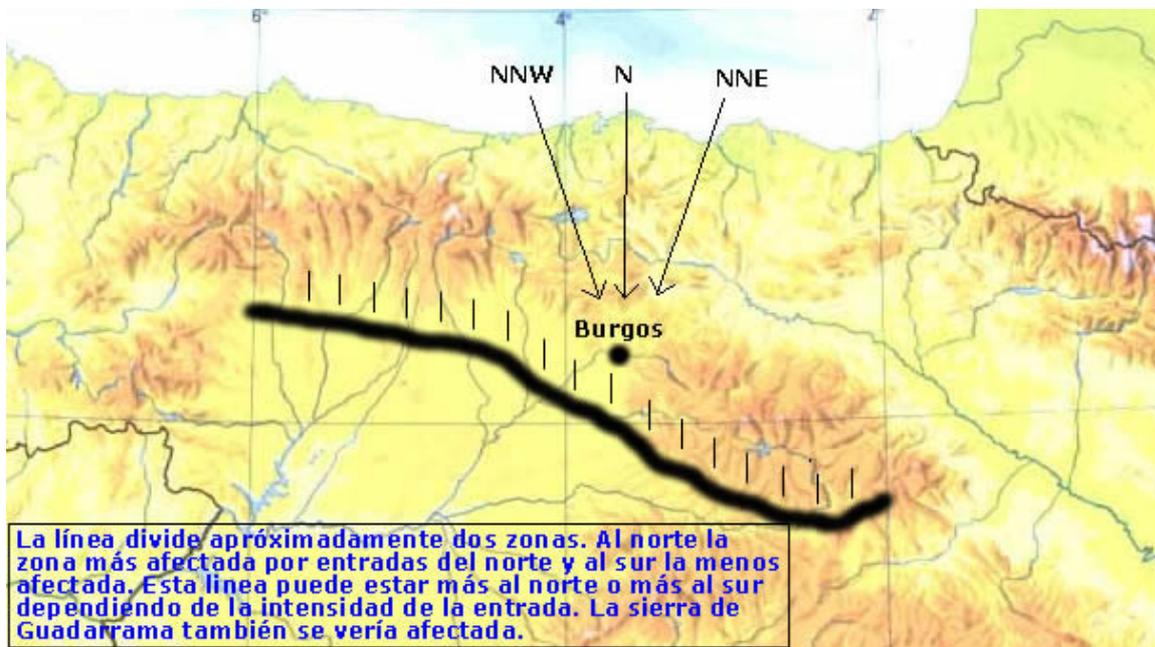
<http://www.meteored.com/foro/index.php?board=13;action=display;threadid=18677>

### **Introduction**

On December 26th 2004, there was one of the greatest snowfalls that people have ever known of in Burgos. The snow's thickness accumulated, in the gardens, it was about 55 and 60 cm, with amounts of 70 cm. on snowdrifts zones. The highway was closed and thousands of people were being trapped on the road. The amount of rain registered al Villafría's Observatory, the 26th day, was about 70 mm., taking into account that the highest precipitation ever registered on a single day at Villafría is only 52.4 mm.

### **Geographical Features**

On the geographical maps, we can see perfectly how the northern part of Burgos is less high than the north provinces of Palencia or León, where the Cantabrian mountain chain shows the highest altitude. That allows the entrance of precipitation when it comes from the north.



- There is an altitude between 845 and 955 meters at Burgos' capital.

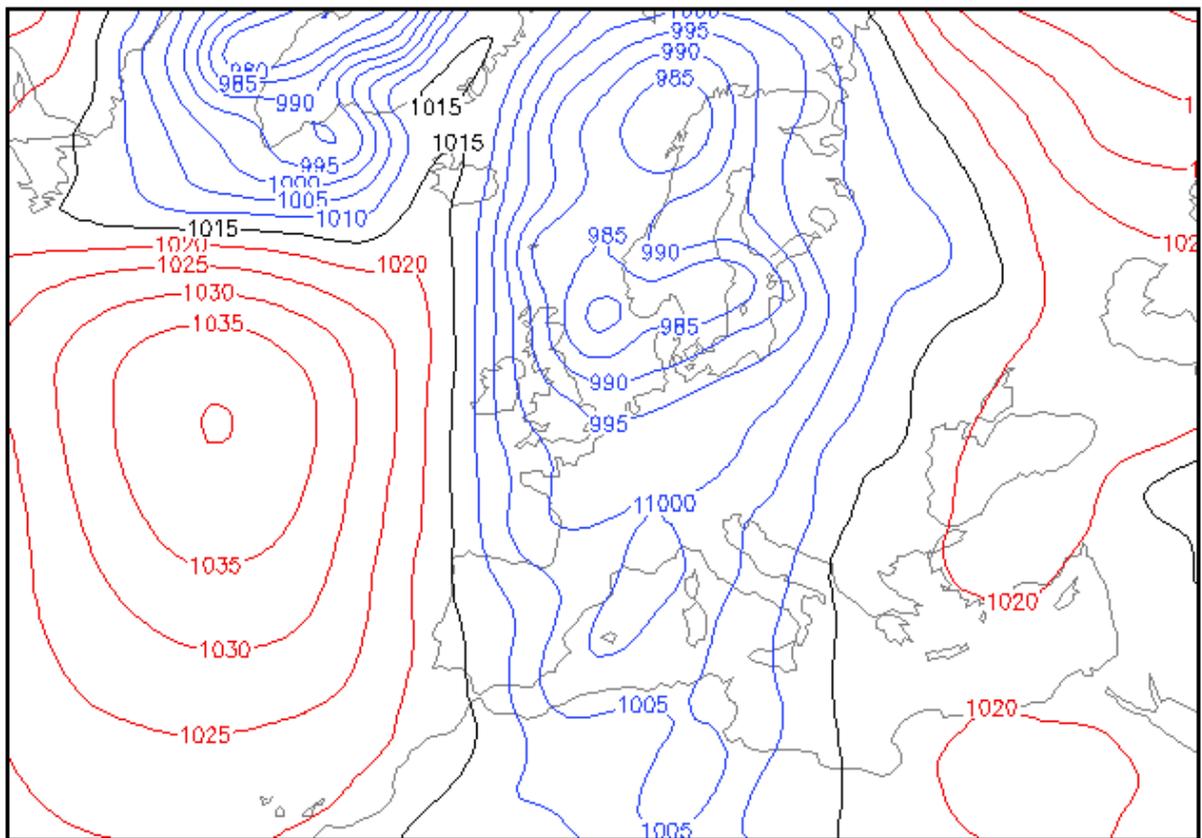
- The Cantabrian sea, at 130 Km., is a source of moisture.

For these reasons, Burgos is one of the cities in Spain with more snowfall days a year

## Synoptic Situation

On the 500 Hpa and 850 Hpa charts, you can see an intense inflow of cold air ( $-35^{\circ}\text{C}$  on 500 Hpa) from the north which has a lot of moisture due to the air mass that traveled over the sea. This situation is also shown by the satellite images, where you can see, the cold center which fell on us.

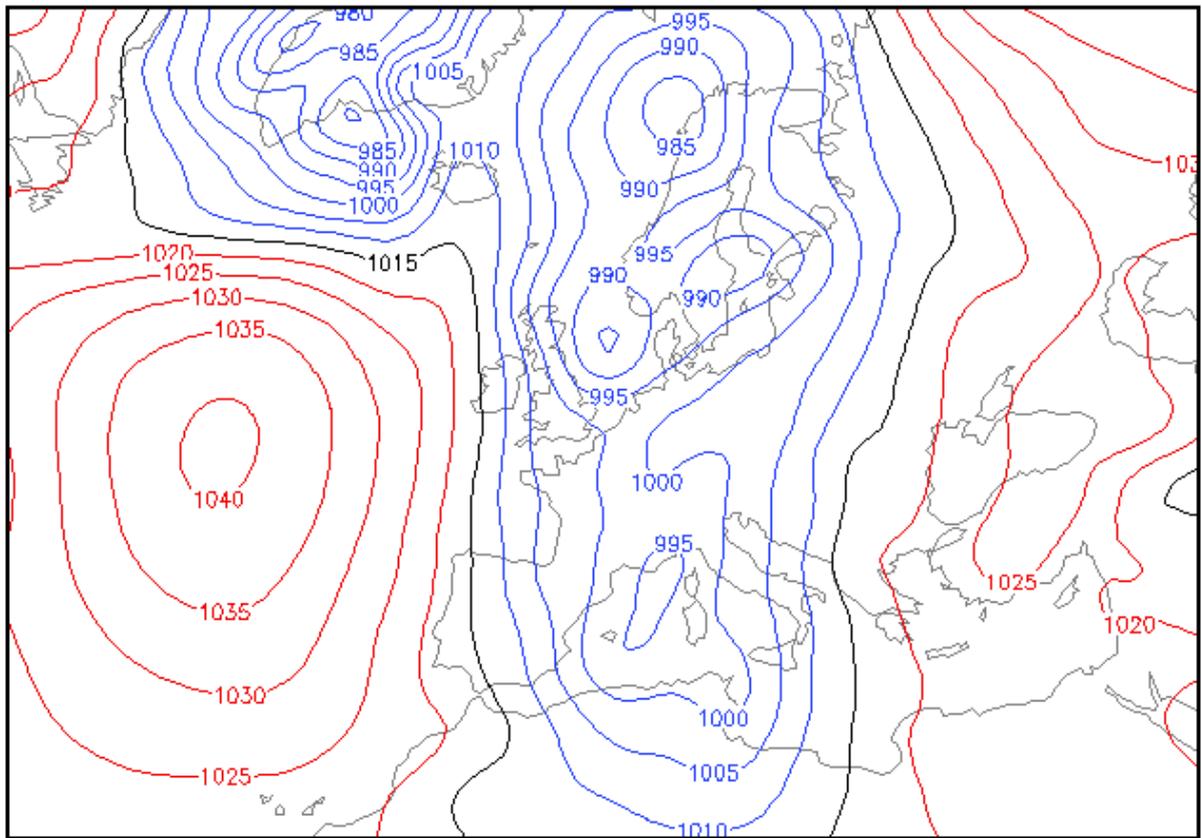
- **Surface Analysis ( 850 Hpa charts)**



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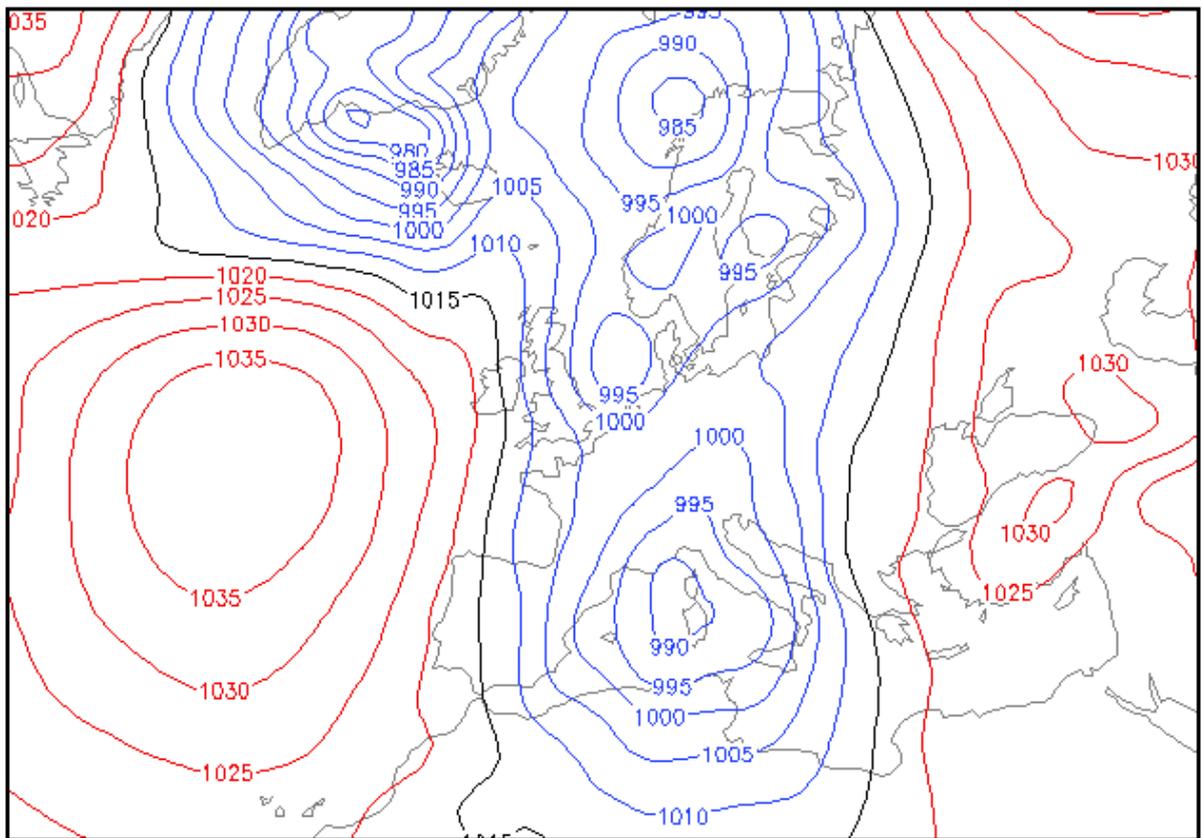
WeatherOnline



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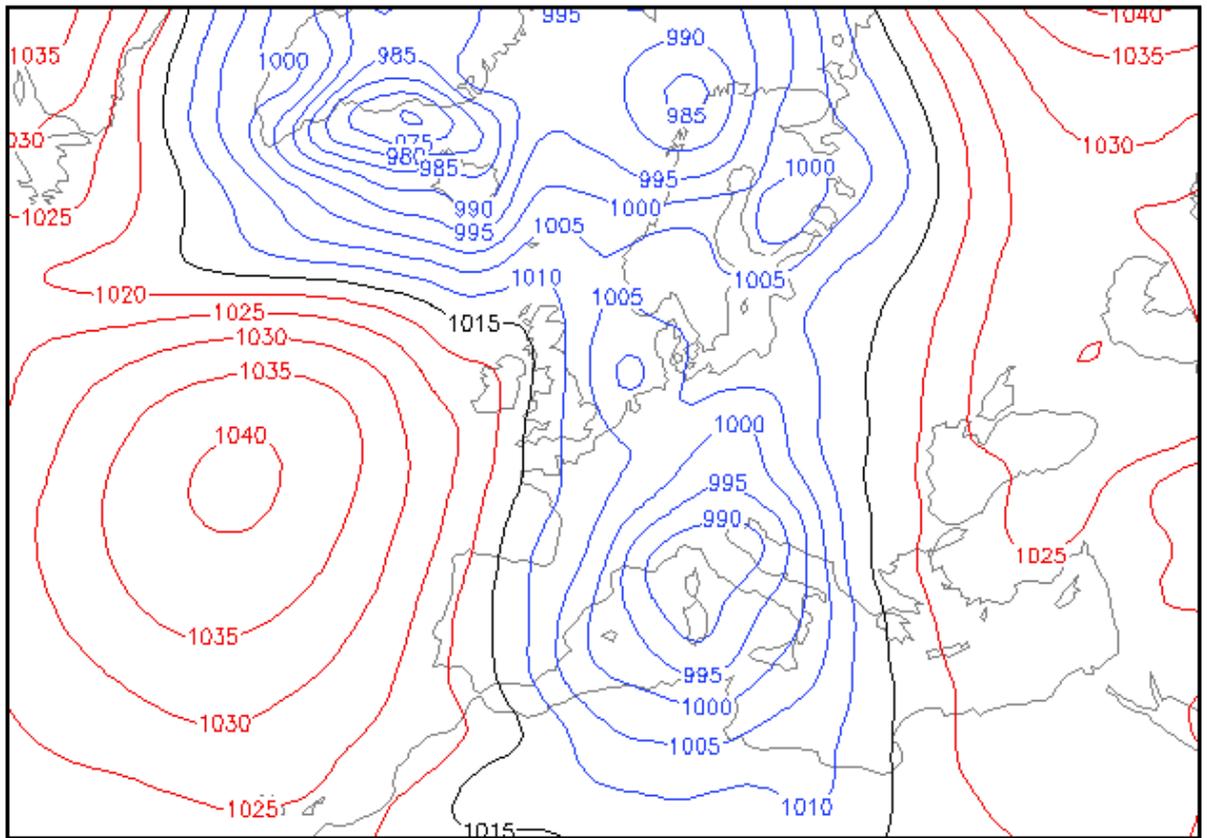
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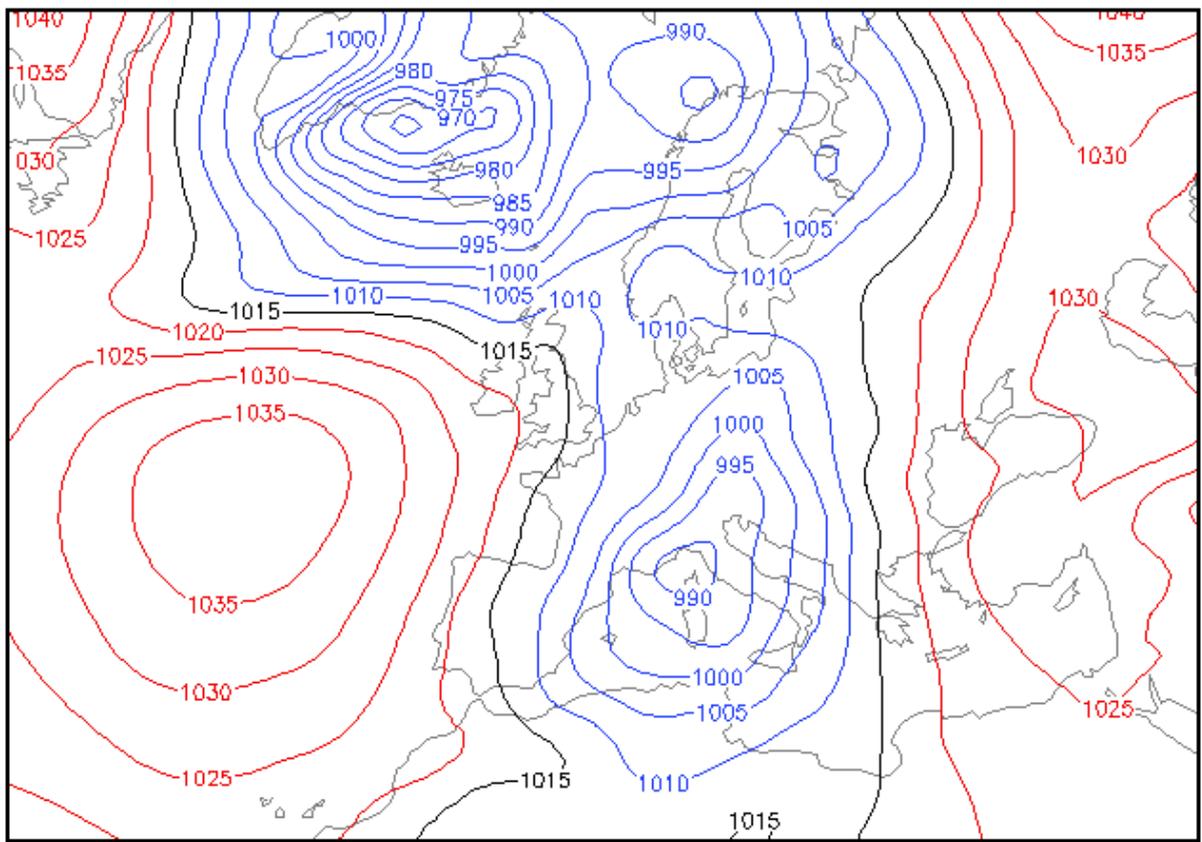
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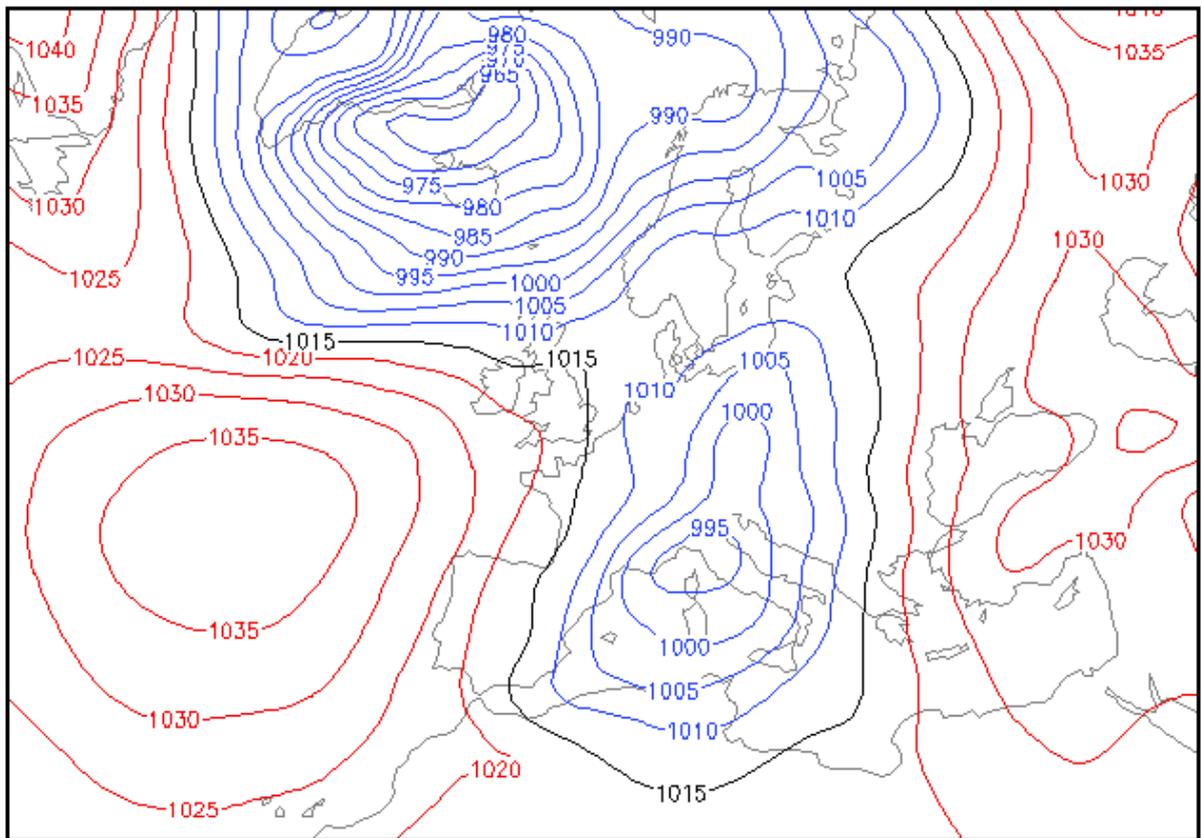
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SL Pressure GFS (hPa)

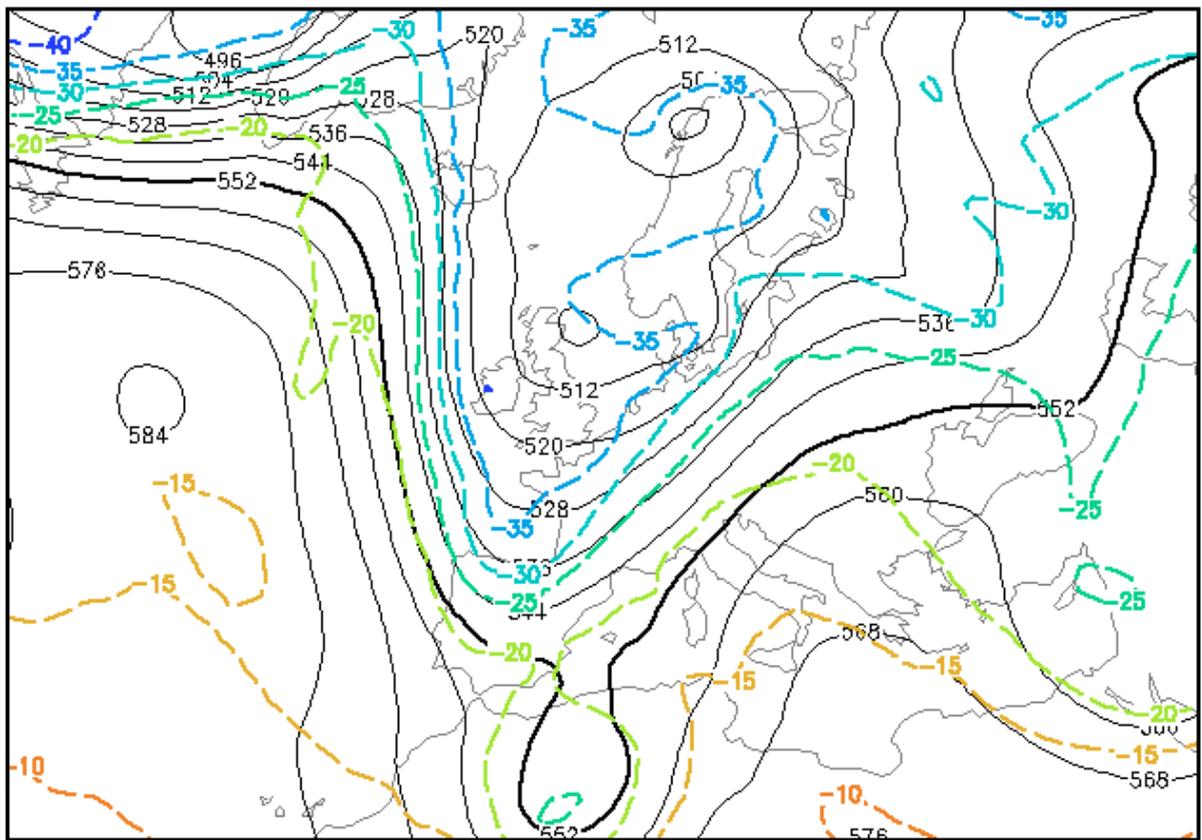
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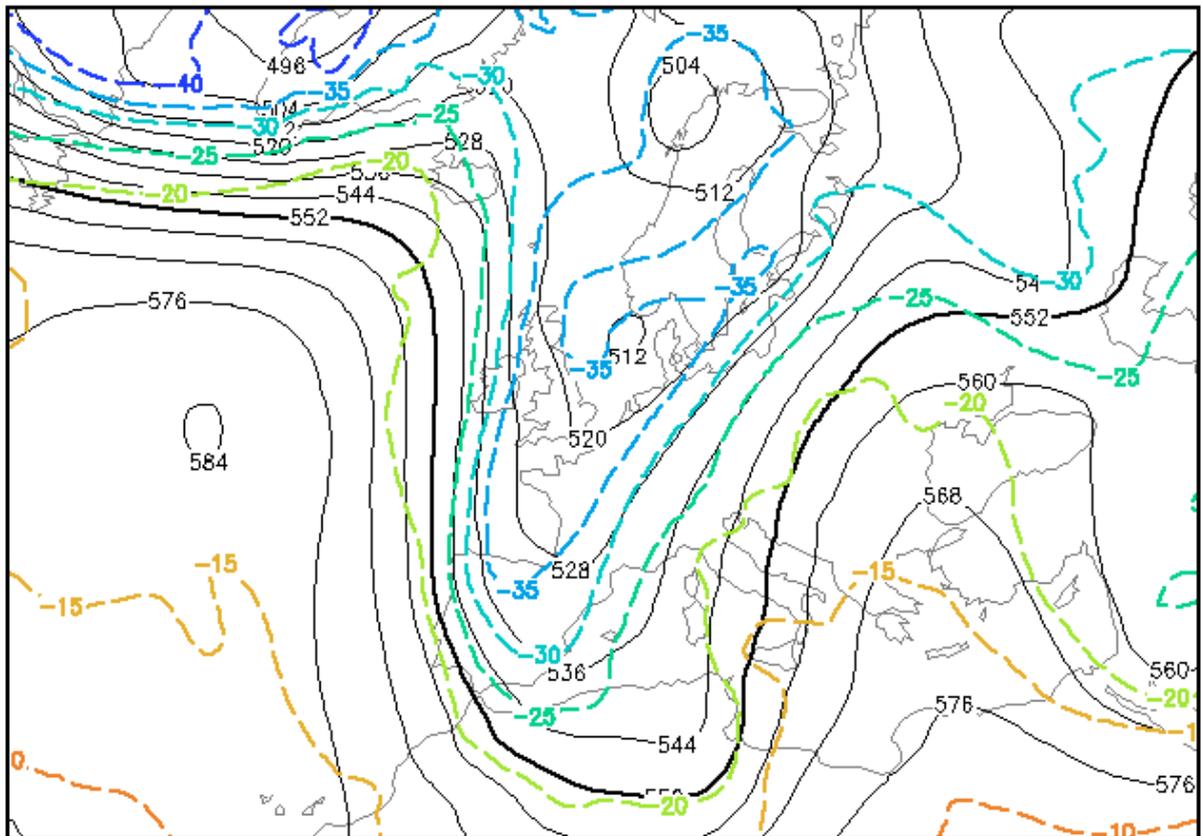
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WeatherOnline

- Height Analysis (500 Hpa chats)



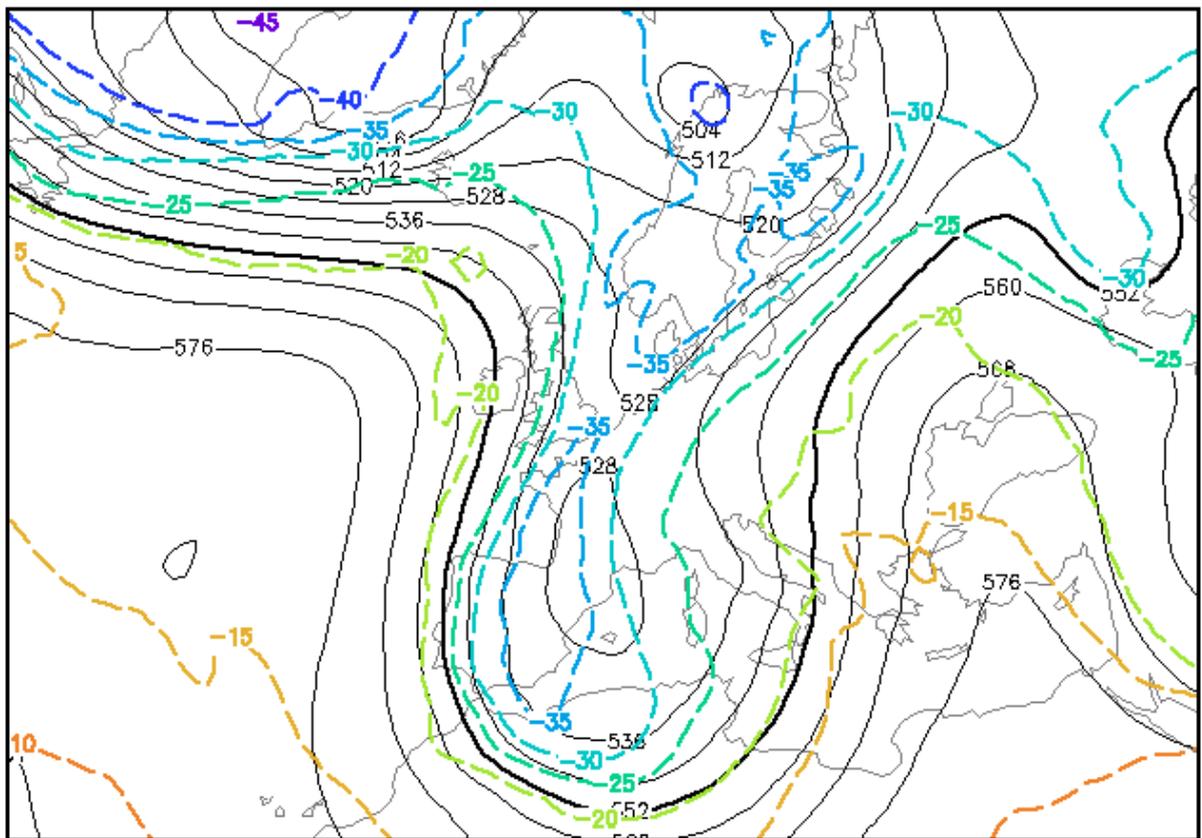
Height 500 hPa GFS (gpdm)  
 Temperature 500 hPa GFS (degree C)

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 WeatherOnline

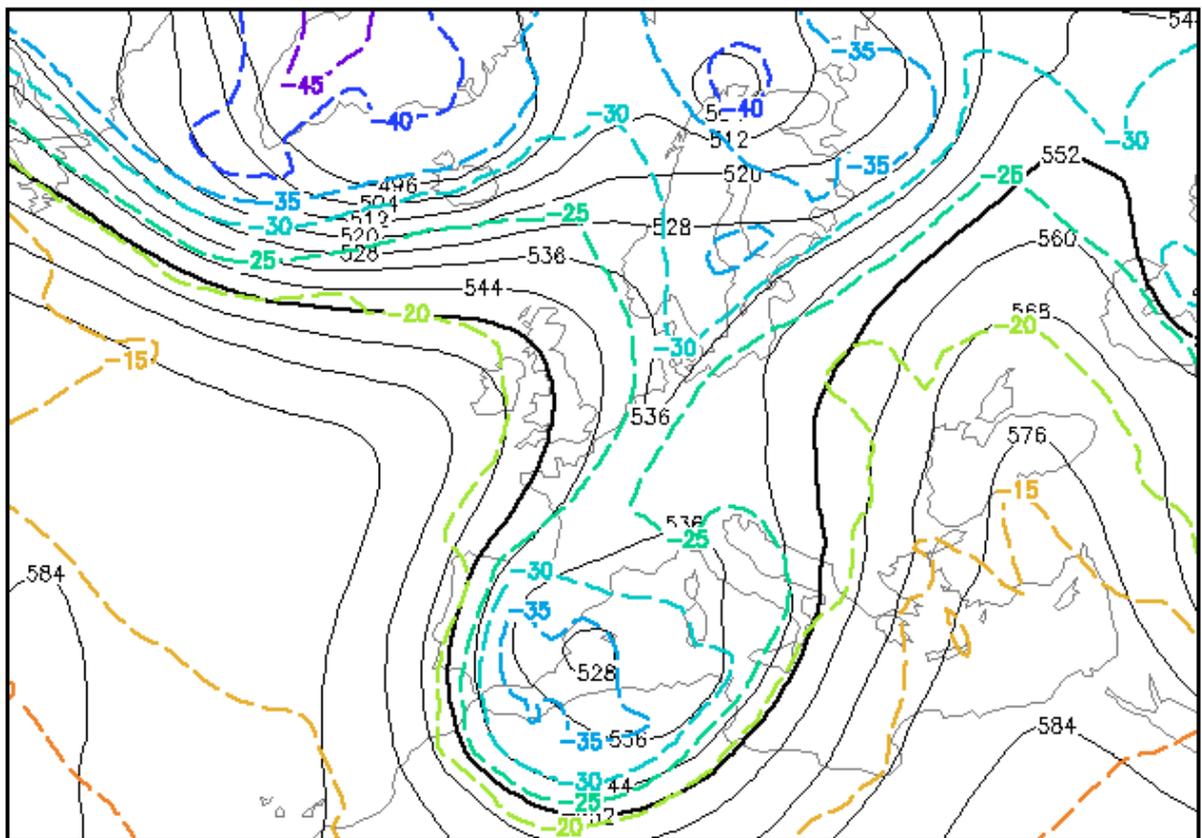


Height 500 hPa GFS (gpdm)  
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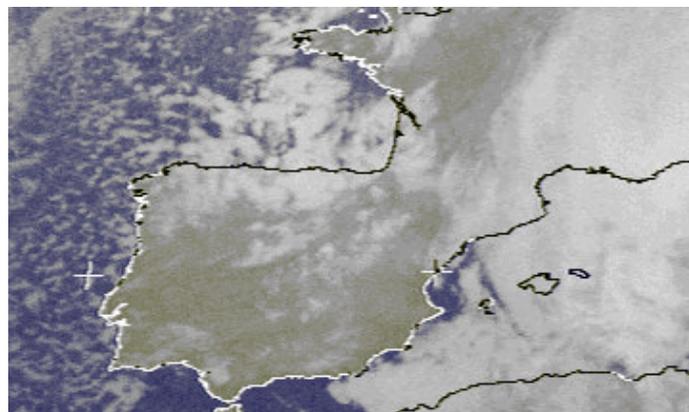


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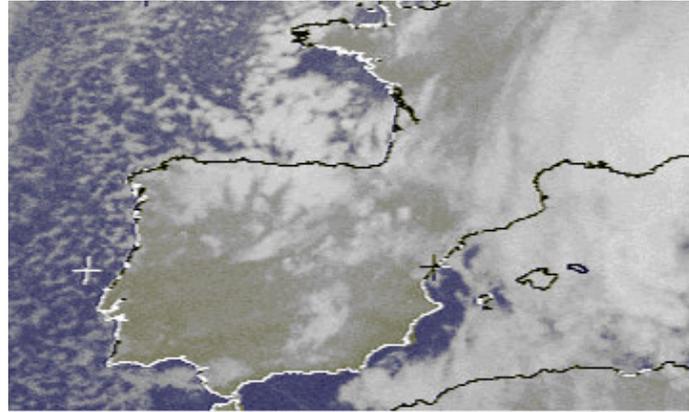


Height 500 hPa GFS (gpdm) VT: Mon 27.12.04 00 GMT (Sat 00 + 48)  
 Temperature 500 hPa GFS (degree C) WeatherOnline

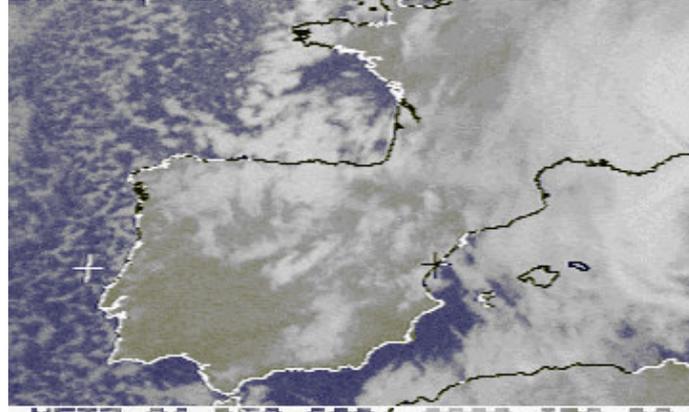
- Hourly Satellite Images (great persistence of cloudiness)



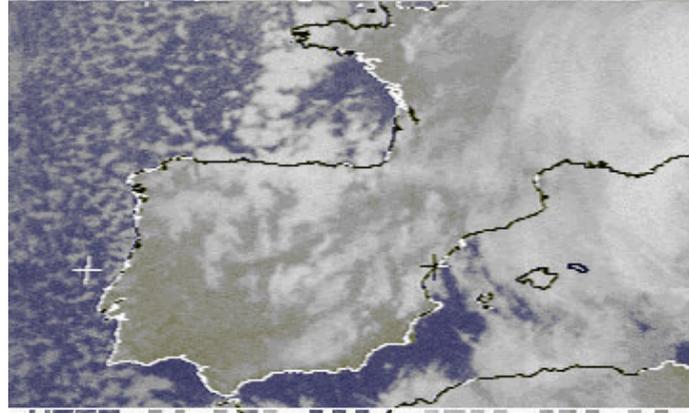
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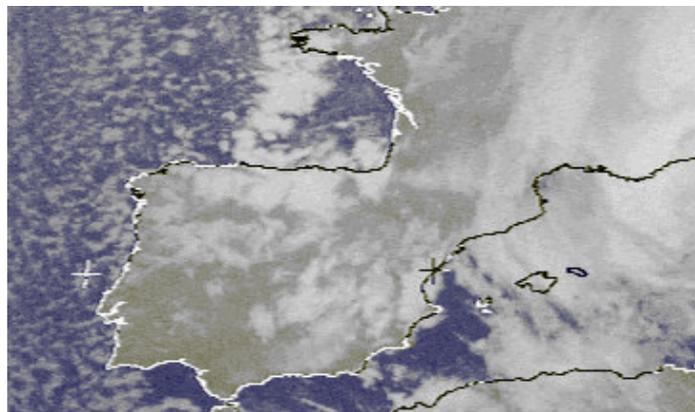
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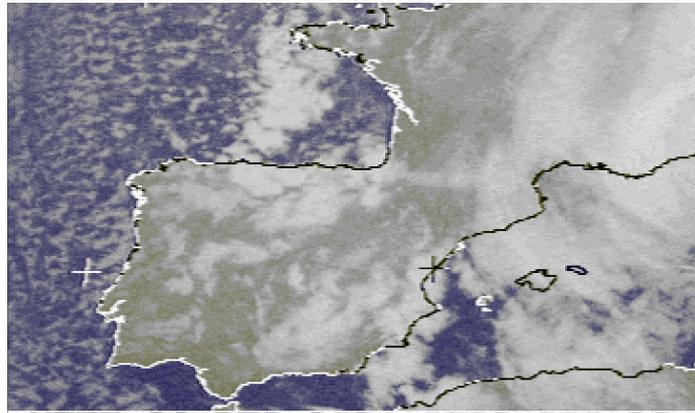
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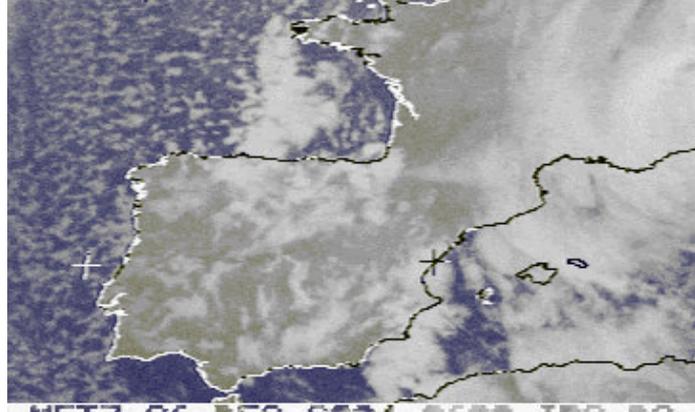
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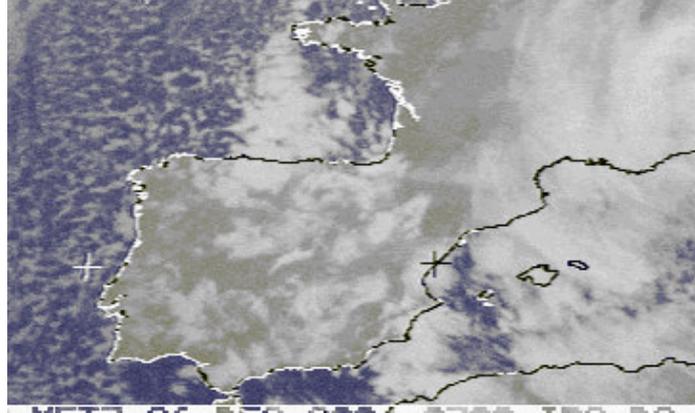
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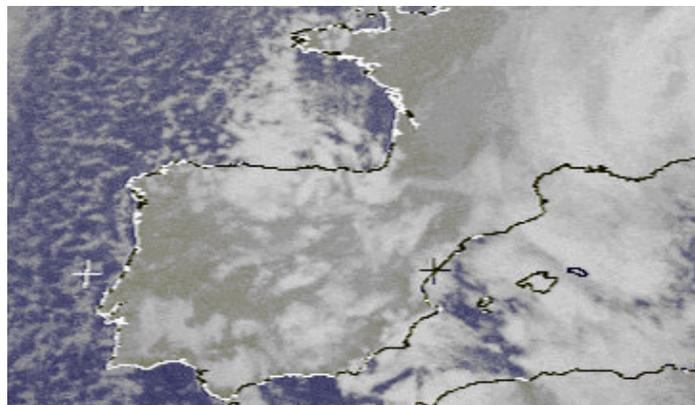
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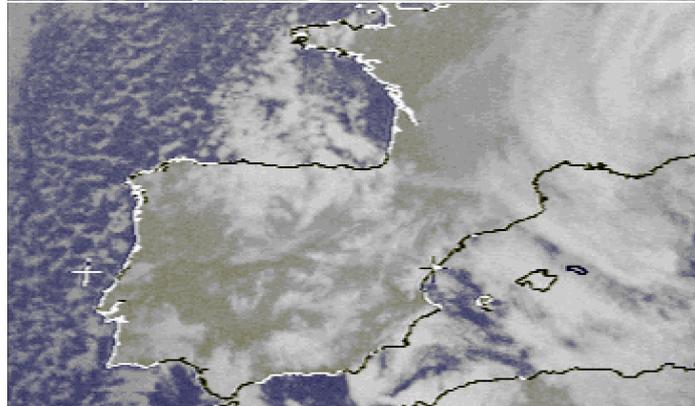
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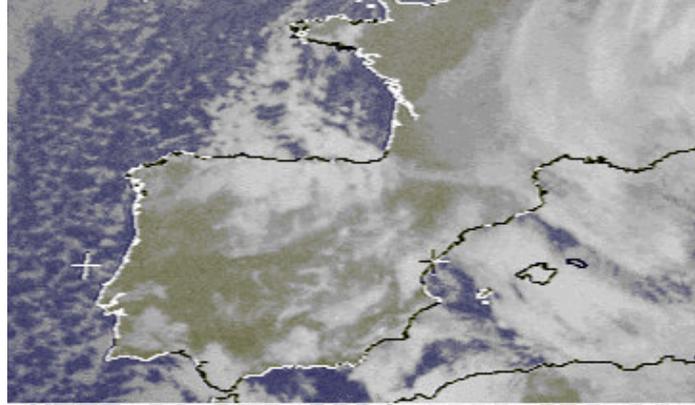
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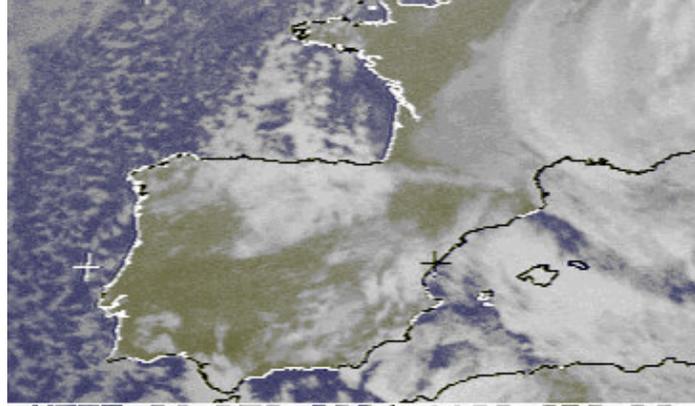
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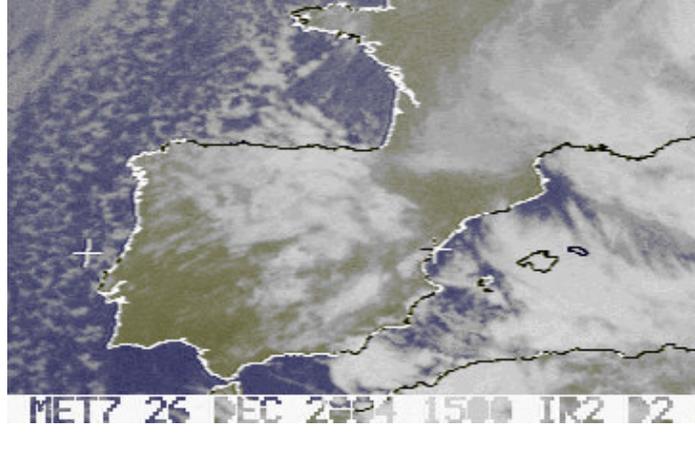
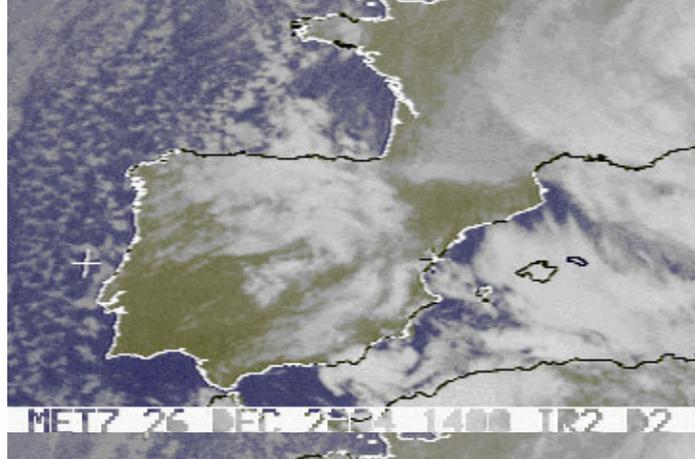
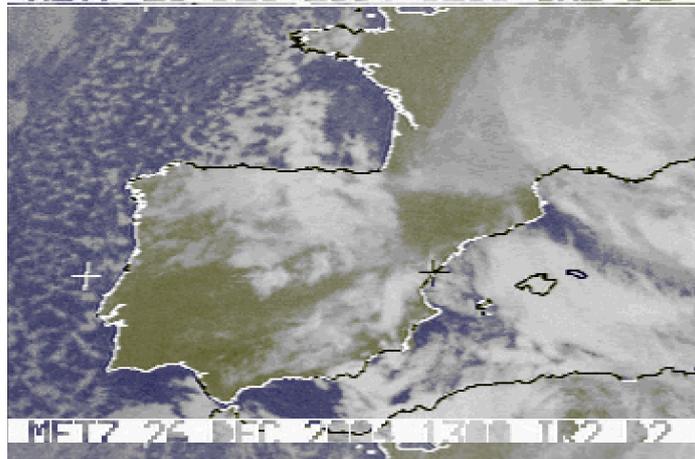
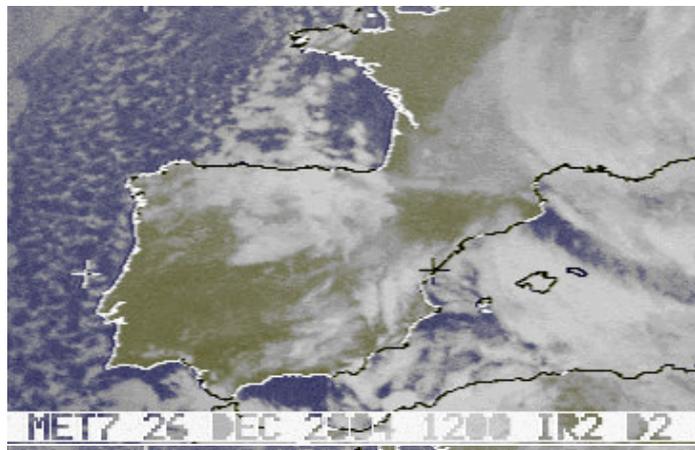
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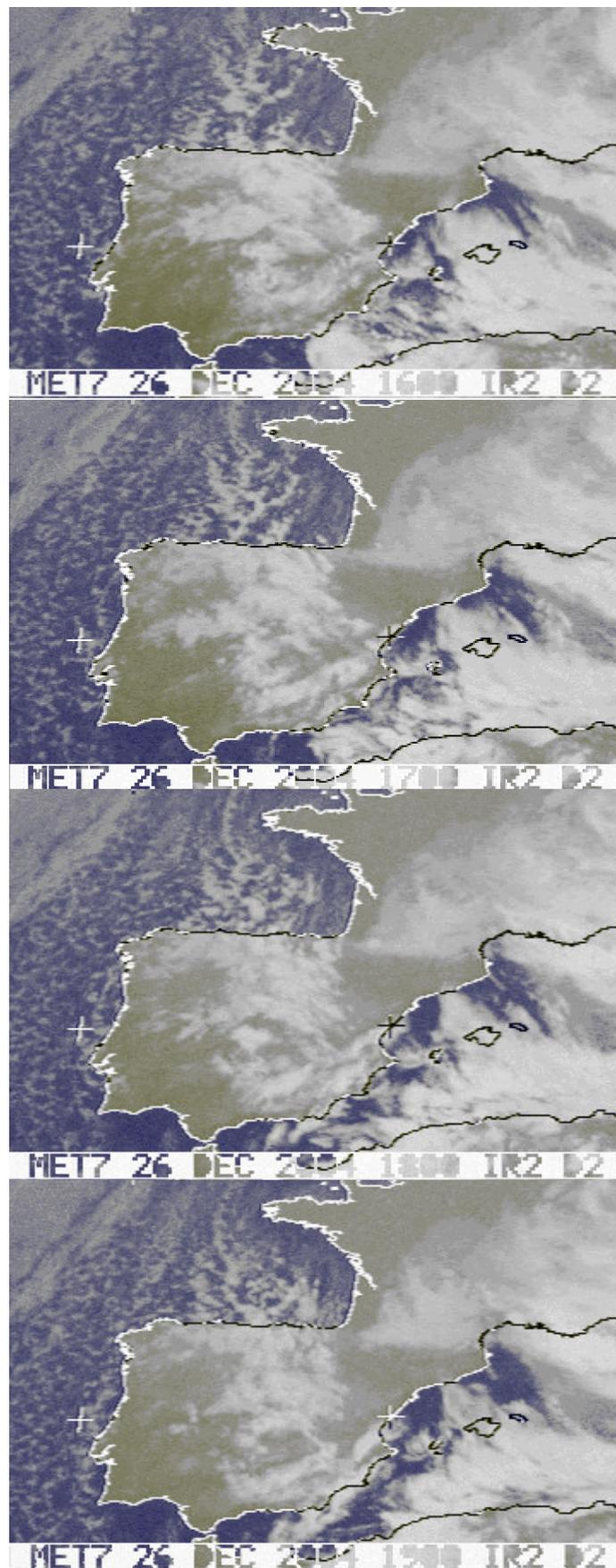


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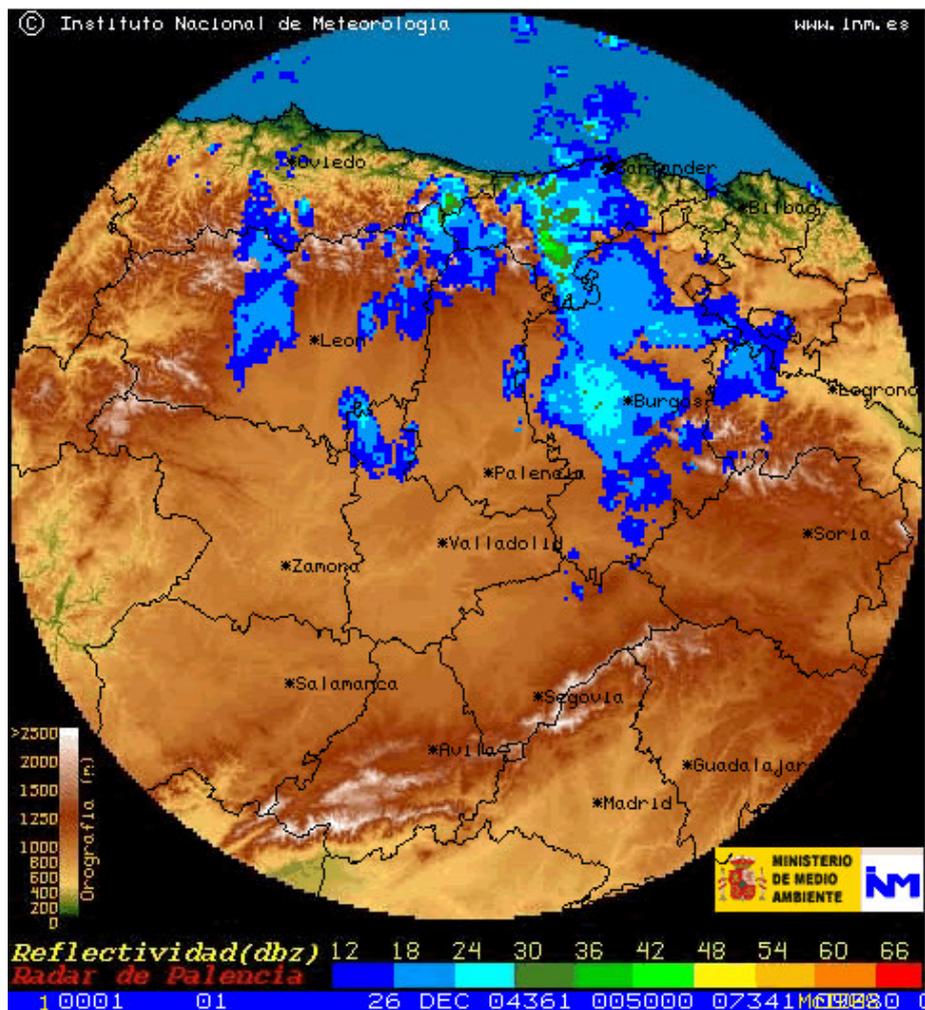
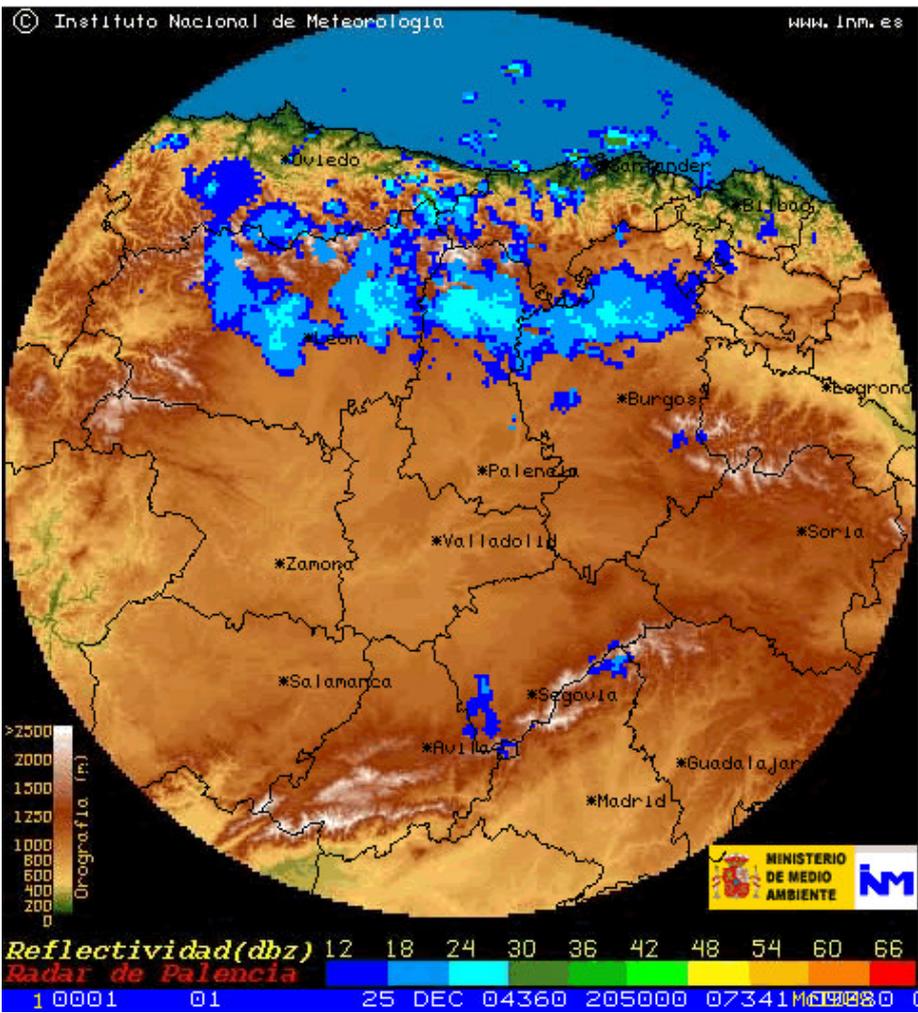
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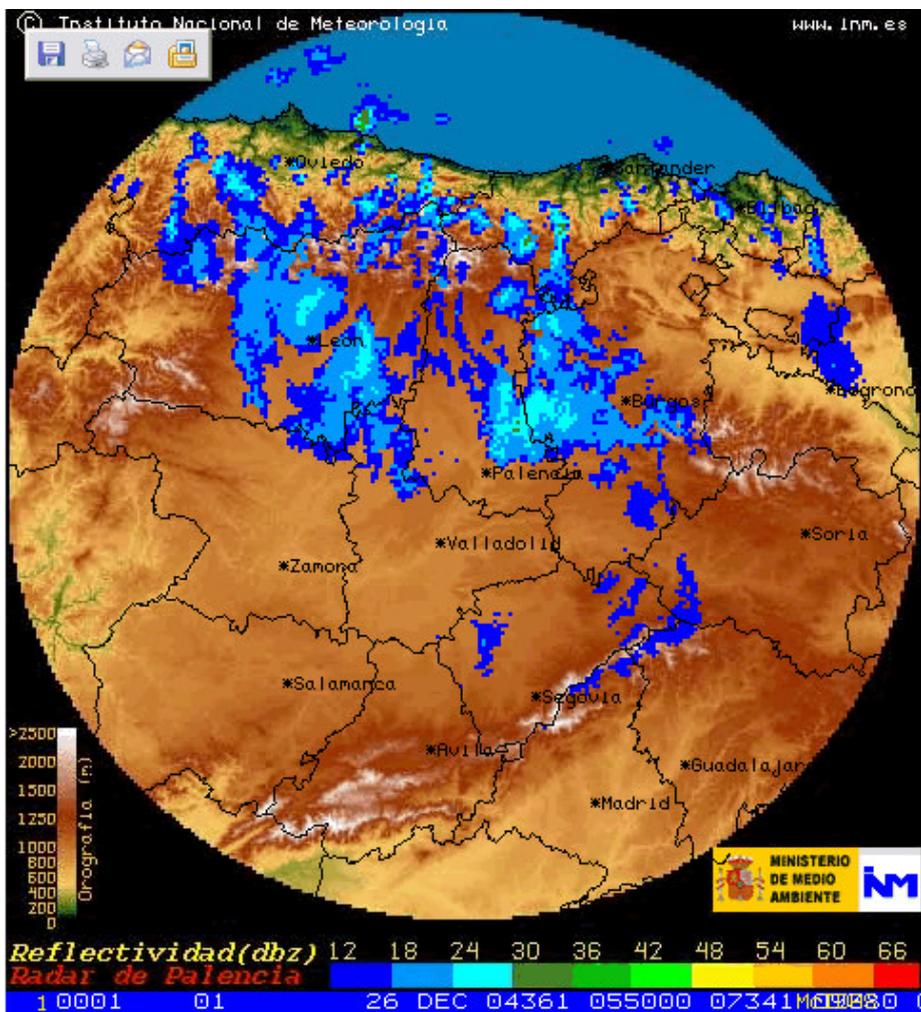
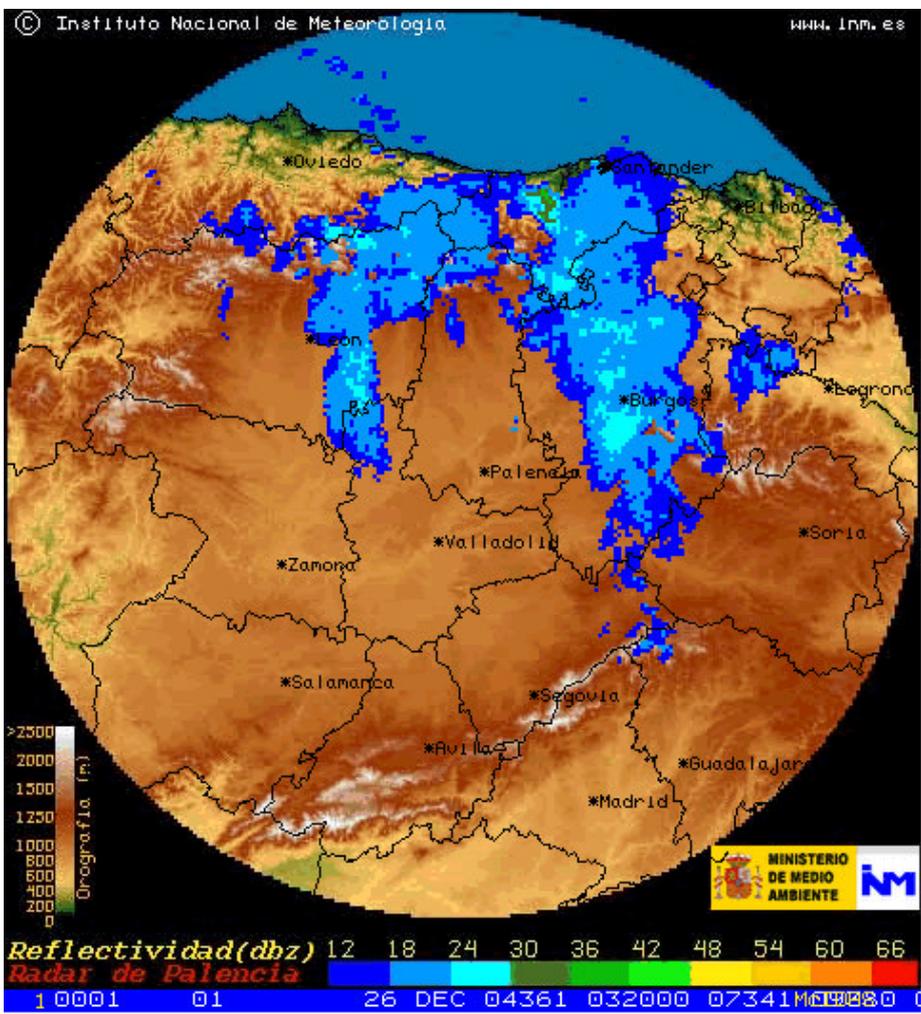


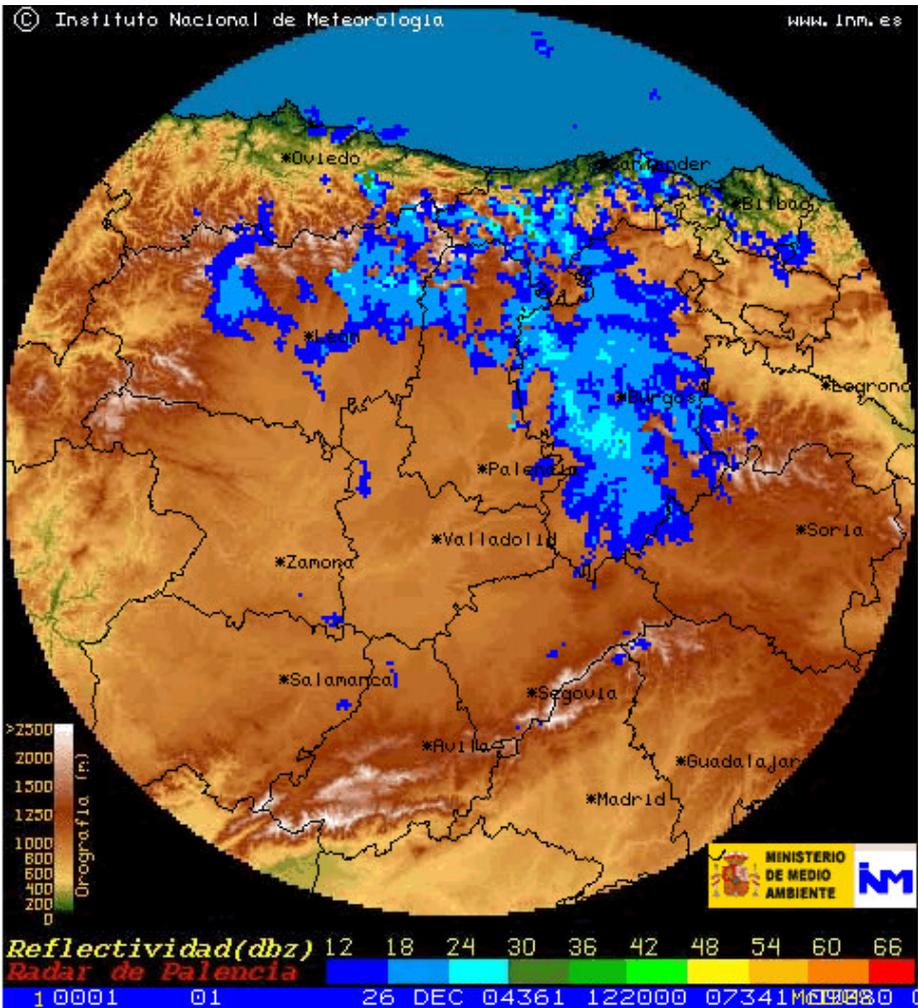
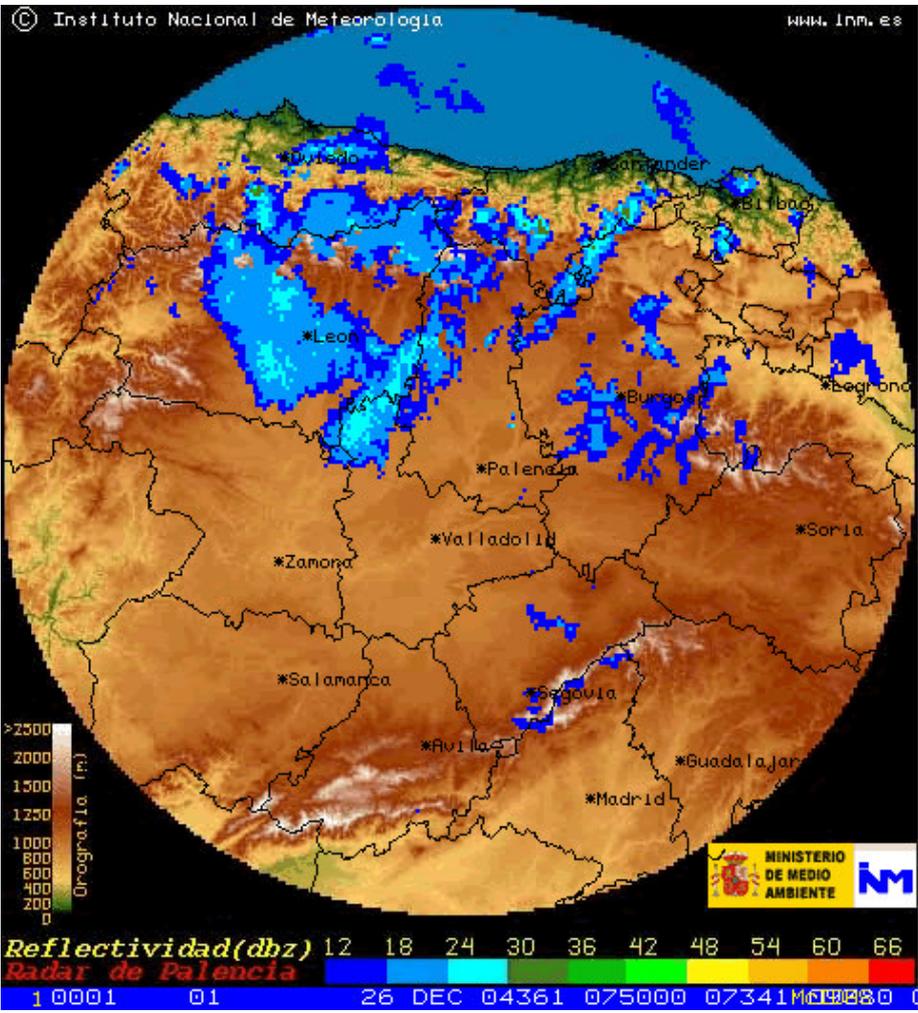


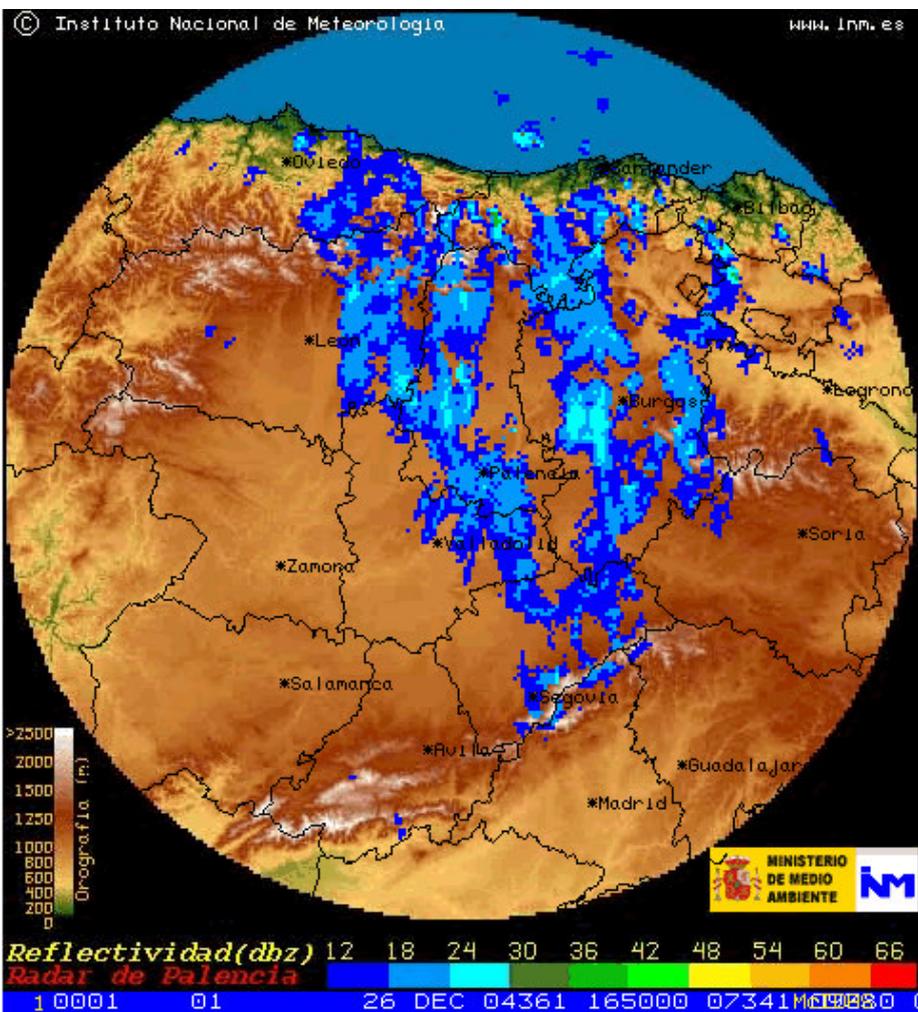
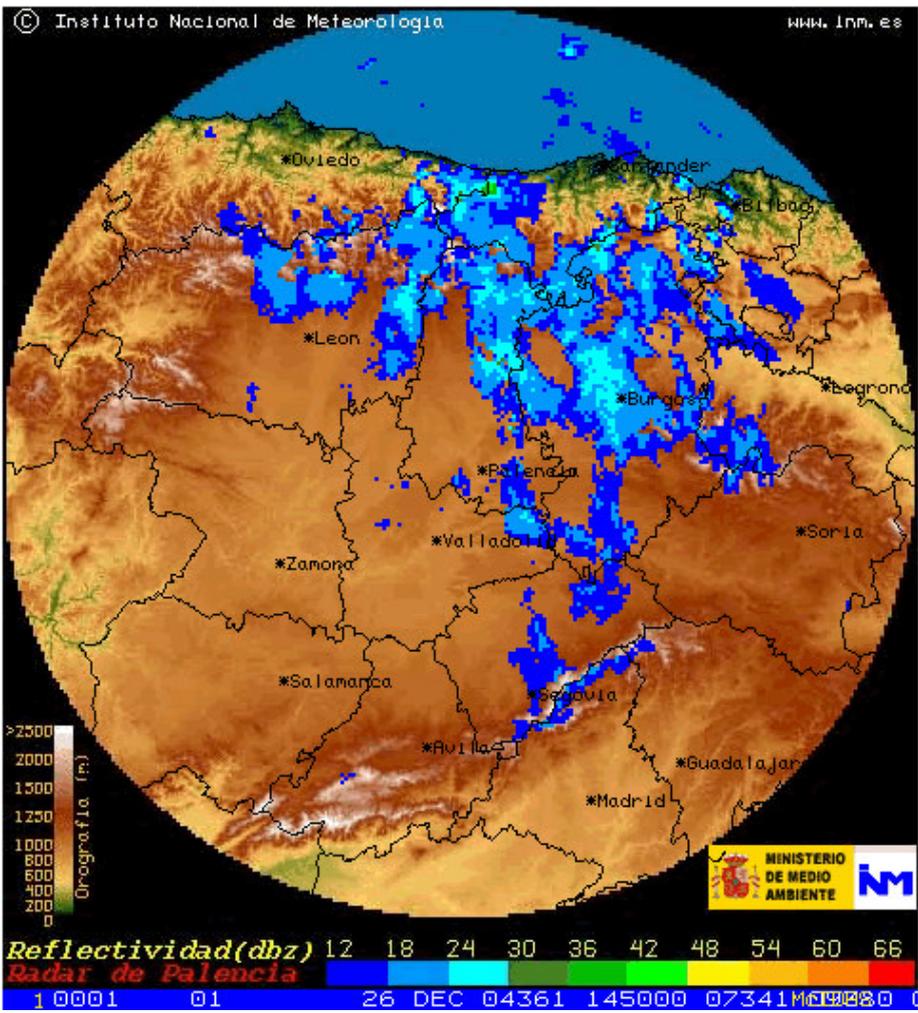
### - Radar Images

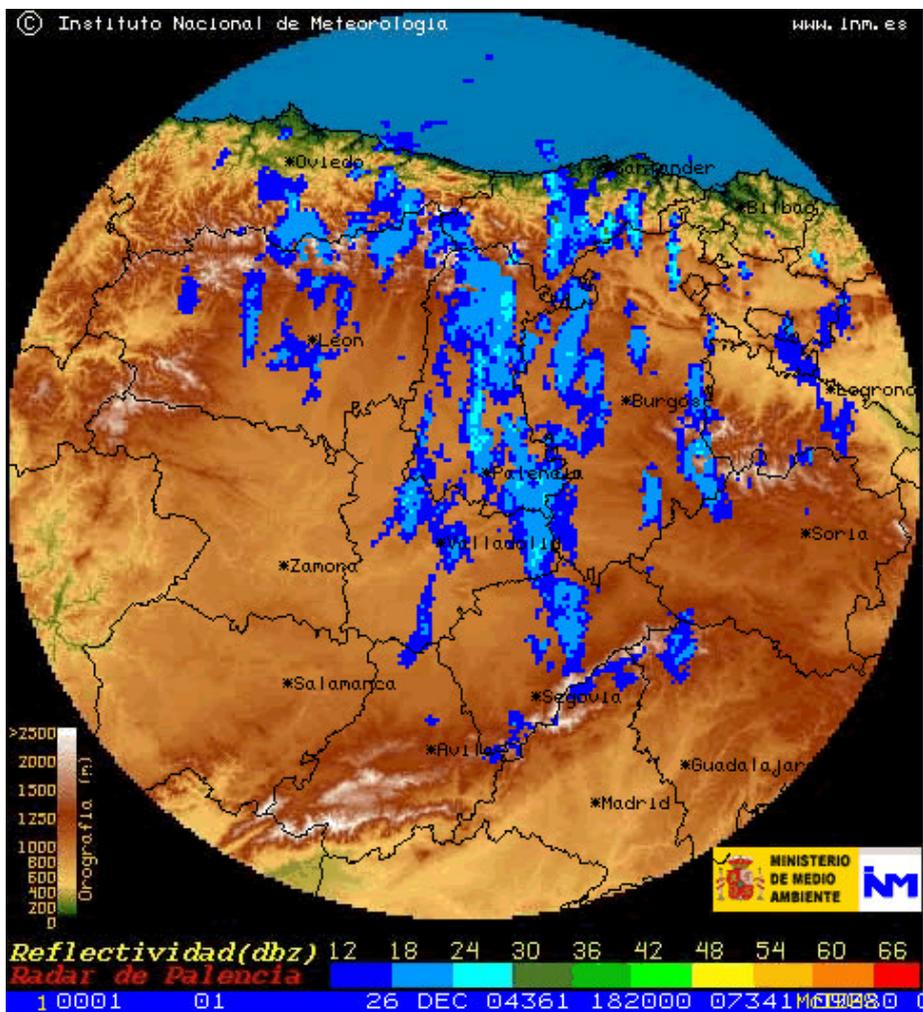
The images tell us everything. The storm is intense to the north of Castilla y León and the entire Burgos' province. The snowfall is moderate and constant for several hours.





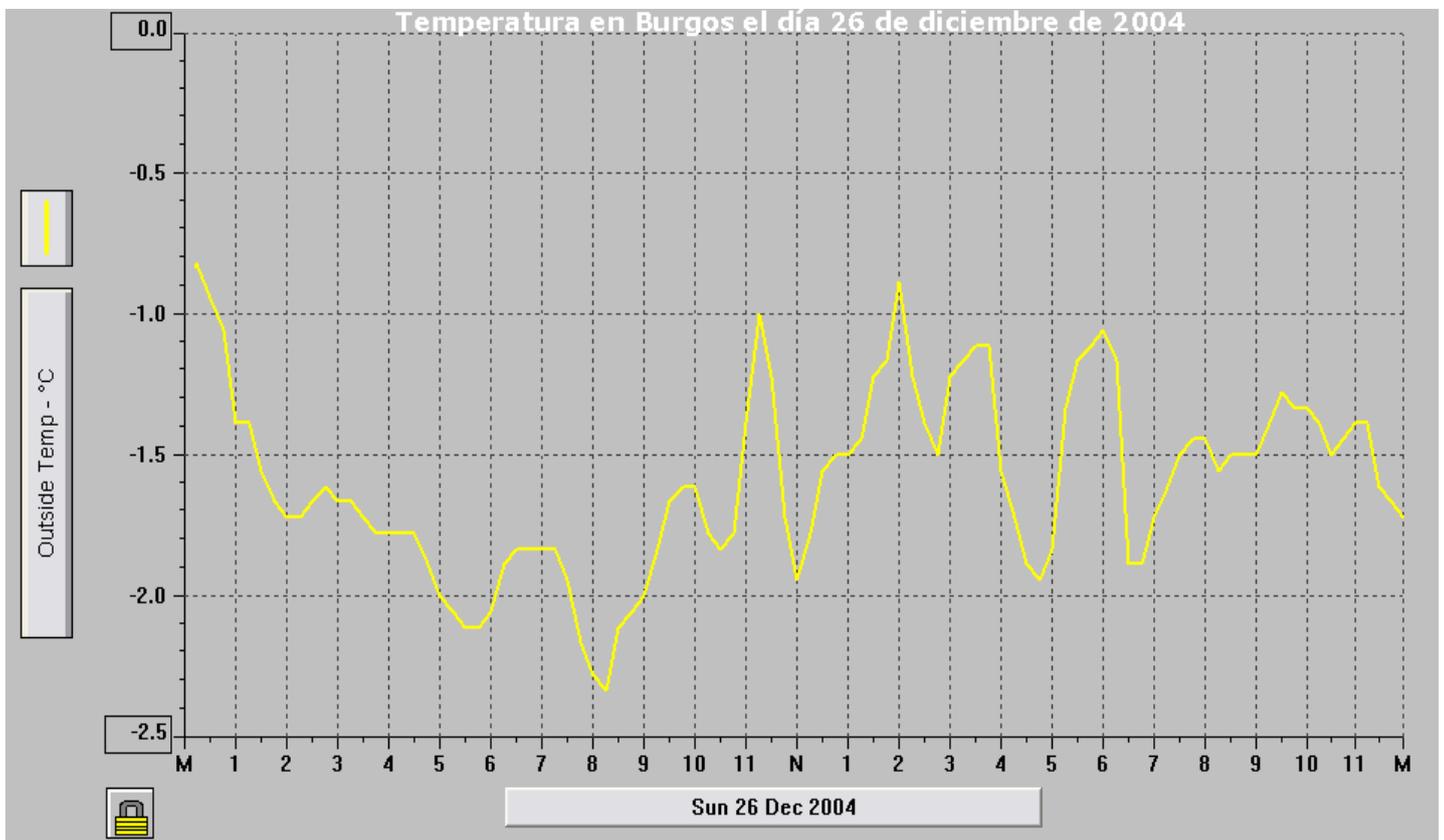




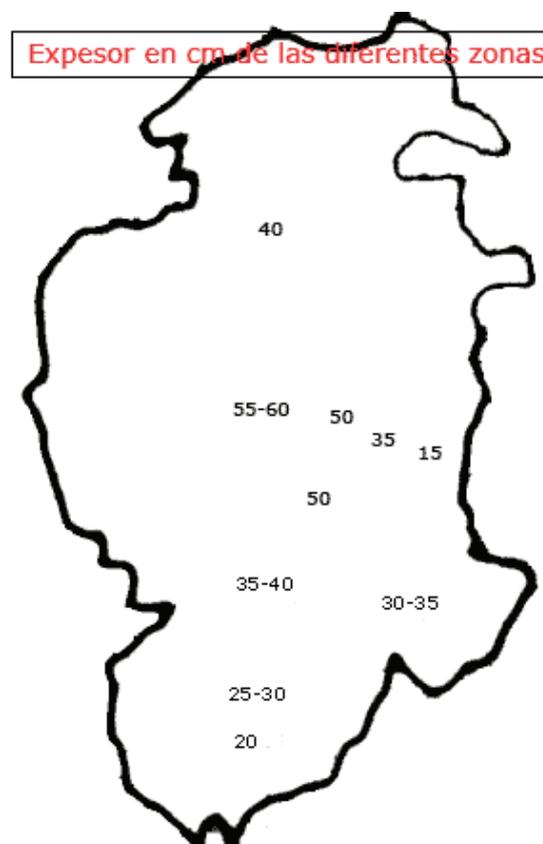


## Weather Conditions

Temperature graphic on December 26th. Temperature remained under zero during all the day with few oscillations throughout the day. Under zero temperatures didn't allow the meltdown of the snow that piled up..



The following maps represent the highest snow thickness that was registered in the province. It's remarkable, that in Aranda del Duero area were registered 10 cm of snow were without forget that it's located 80 Km. to the south of Burgos capital. As you can see, the entire province was affected but mainly at the center. Surprisingly, the more to the east, the less it snowed, and at 500 meters on Triaza Peak, only 15 cm were registered. On the center it snowed much more than the northern of the province, an unusual behavior in these situations. The map is an estimate.



The consequences of this extraordinary amount of snow, felt in a short time, were the followings (Here you

can see several news articles):

# TEMPORAL DE NIEVE

Lunes, 27 de diciembre de 2004

Precio: 1 euro



**BURGOS COLAPSADA**

PAGINA 4

Siete equipos quitanieves intentaron, en balde, retirar la nieve de las calles de la ciudad

SUPLEMENTO ESPECIAL DE

 **Diario de Burgos**



El temporal obligó al Ejército a acudir con tanquetas al rescate de miles de conductores que quedaron atrapados en las principales vías de comunicación burgalesas. FOTO: RODRIGO MACHO

## LA PROVINCIA, AISLADA

«NO SALGAN A LA CARRETERA»

PAGINA 3

Por primera vez, la Subdelegación del Gobierno prohíbe circular por toda la red viaria de la provincia



**MILES DE ATRAPADOS**

Cerca de 10.000 personas han pasado la noche en varios polideportivos y albergues de la provincia.

PAGINA 2



- - Picture and videos taken by Meteoburgos.





























VIDEO 1 (*To guard destiny as...*)

VIDEO 2 (*To guard destiny as...*)

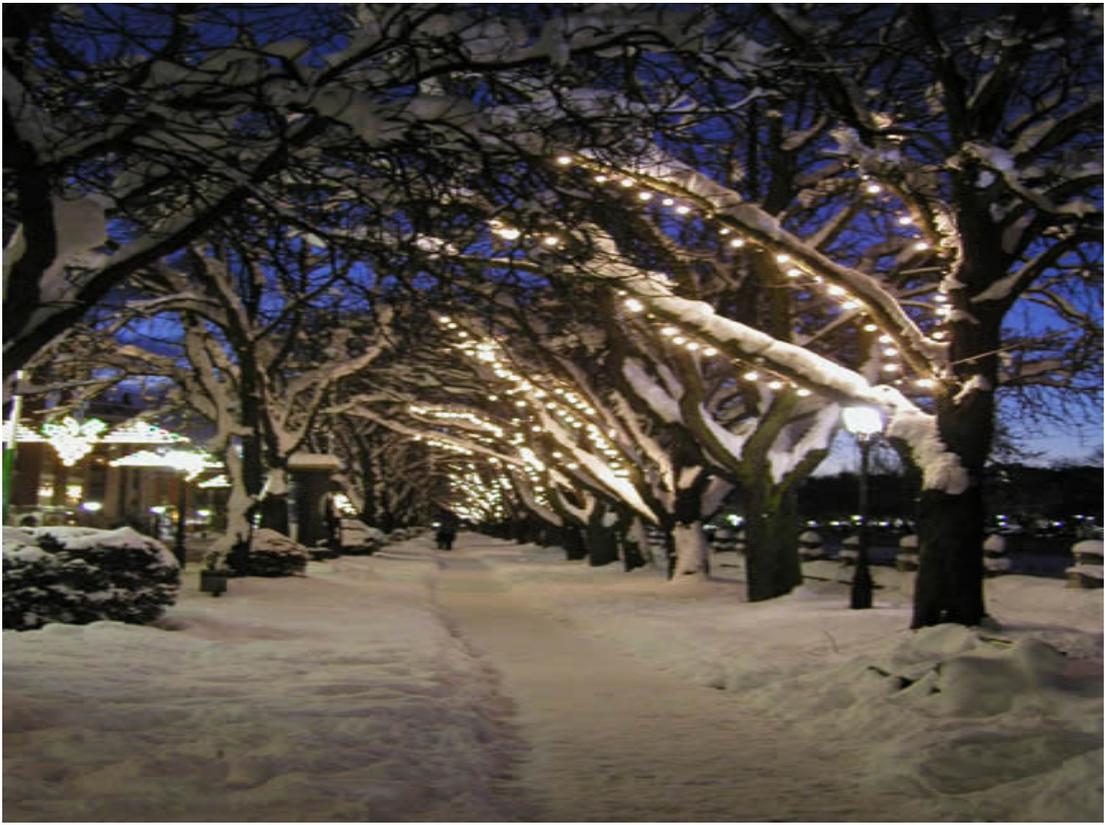
- - **BUGGL's pictures** (Gustavo García). Article available totally at [www.renuncio.com](http://www.renuncio.com).











- - Pictures taken by Don Gentile forumer.













## Conclusion and Acknowledgements

We can conclude that to great snowfalls take place in Burgos is necessary that::

- The inflow from NNW or N makes the air mass wet due to its journey over the sea..
- Cold air at high levels: about  $-35^{\circ}$  C to 500 Hpa
- Cold air at surface: below  $-2^{\circ}$  C to 850 Hpa.

## References:

- National Institute of Meteorology
- Pictures from forums mentioned on the article
- Weather- online maps.
- Thickness data were provided by people who were at those places.
- Burgos newspaper, El Correo de Burgos.
- Ulm University's satellite images

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10th March 2005

*Volver al Principio*

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