Squall line in Almansa (Albacete)

29/07/2004

Made by Almansa
e-mail: Vtalmansa@terra.es

Link to the related Topic in Meteored Forum:
http://www.meteored.com/foro/index.php?board=13;action=display;threadid=13912

Introduction:

Almansa is located in the most Eastern part in the province of Albacete at about 73 km to the E of the capital, 113 km to the SW of Valencia and 93 km to the NW of Alicante. It is situated in a high plateau of about 700m of altitude surrounded by mountains forming a corridor with direction E-W, the named Corridor of Almansa, one of the 17 natural pass of the peninsula and that communicates the South Plateau with the Valencian Community.

Figure 1

Its climate characterizes by the irregularity of its precipitations, being the storms and the East situations those that produce more rains, because the Atlantic fronts usually arrive to this zone

so dry. .

Its annual average pluviometry is hardly of 385 l/m2, and the rainiest months are May and June because of the storms at the end of the spring, and October due to the East storms.

Winters are cold and dry with frosts, the summers are warm with annual maximum temperature of about 37-38º C

Climatic data of Almansa extracted of the GIS of Agrarian Data (SIGA), in Internet (http://www.mapya.es/siga/index.htm), by the Ministry of Agriculture, Fishing and Feeding.

PLUVIOMETRÍA MEDIA MENSUAL

NOMBRE	CLAVE	ENE.	FEB.	MAR.	ABR.	MAY.	JUN.	JUL.	AGO.	SEP.	OCT.	NOV.	DIC.	ANUAL
ALMANSA	8200A	25	25	35	38	46	40	13	25	34	44	36	24	385

INDICADORES MEDIOS DE MUNICIPIOS

NOMBRE	CODIGO INE	ALT.	PEND. (%)	PREC. ANUAL (mm)	Tª MIN. (ºC)*	Tª MED. (ºC)	Tª MAX. (ºC)**	ETP ANUAL (mm)	PERIODO CALIDO***	FACTOR R
Almansa	2009	816	3	446	1.8	13.5	29.8	739	1	93

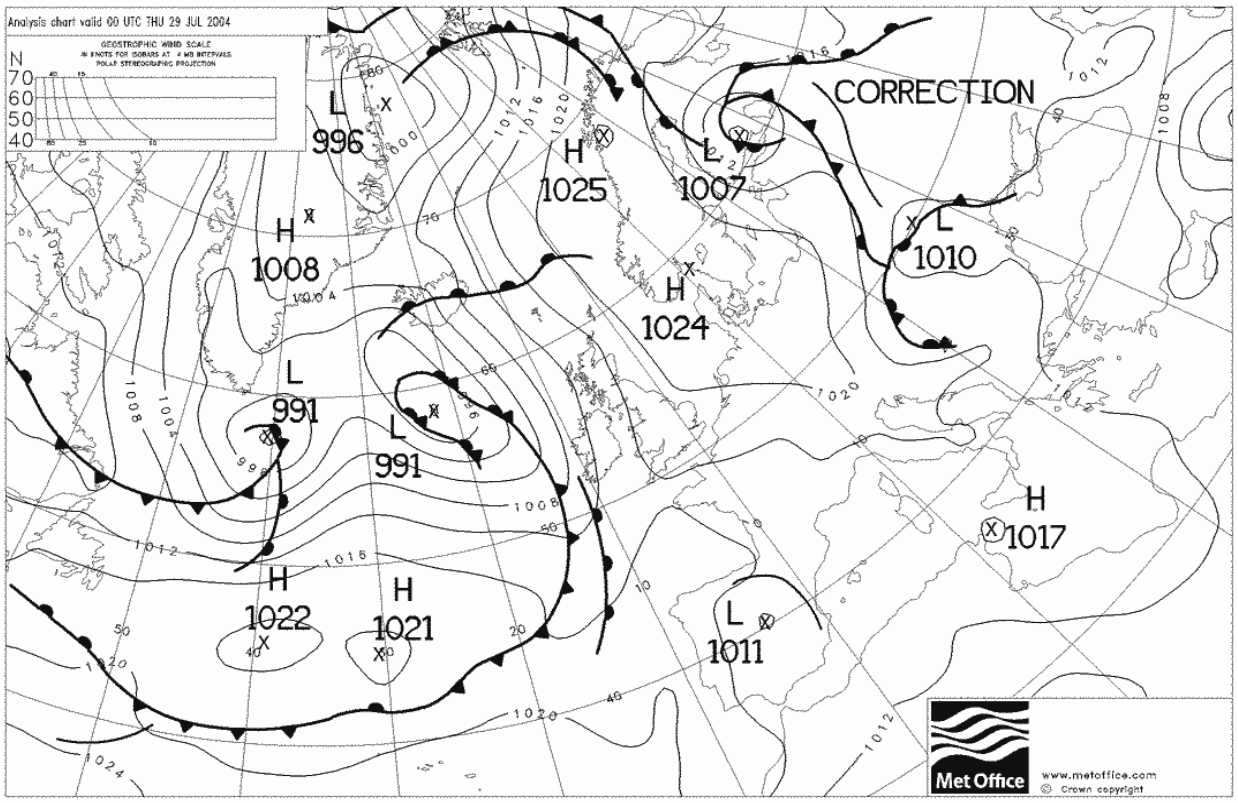
*** Average of minimum temperatures in the coldest month**
**** Average maximum temperatures in the warmest month**
***** Number of months**

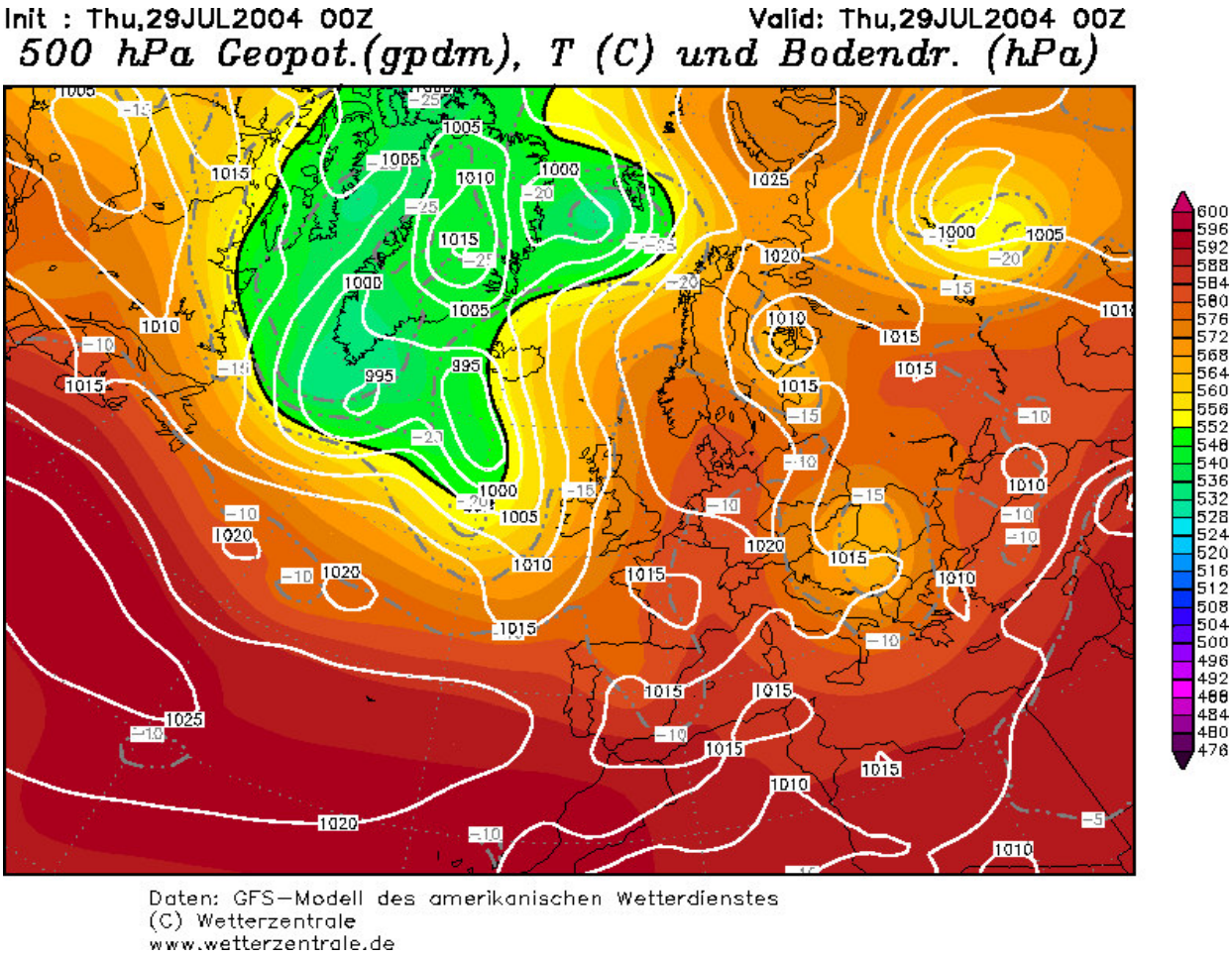
The fort storms, as which occupies this article, are not unknown in this zone and every 3 or 4 years we usually have daily precipitations of more than 50 l/m2 (June 14th, 2004, September 6th, 2001, September 30th 1997,...)

The relative proximity to the Mediterranean Sea with their humid and warm East winds re-feed these storms that form inside the East, unloading great amounts of precipitation in just a short time.

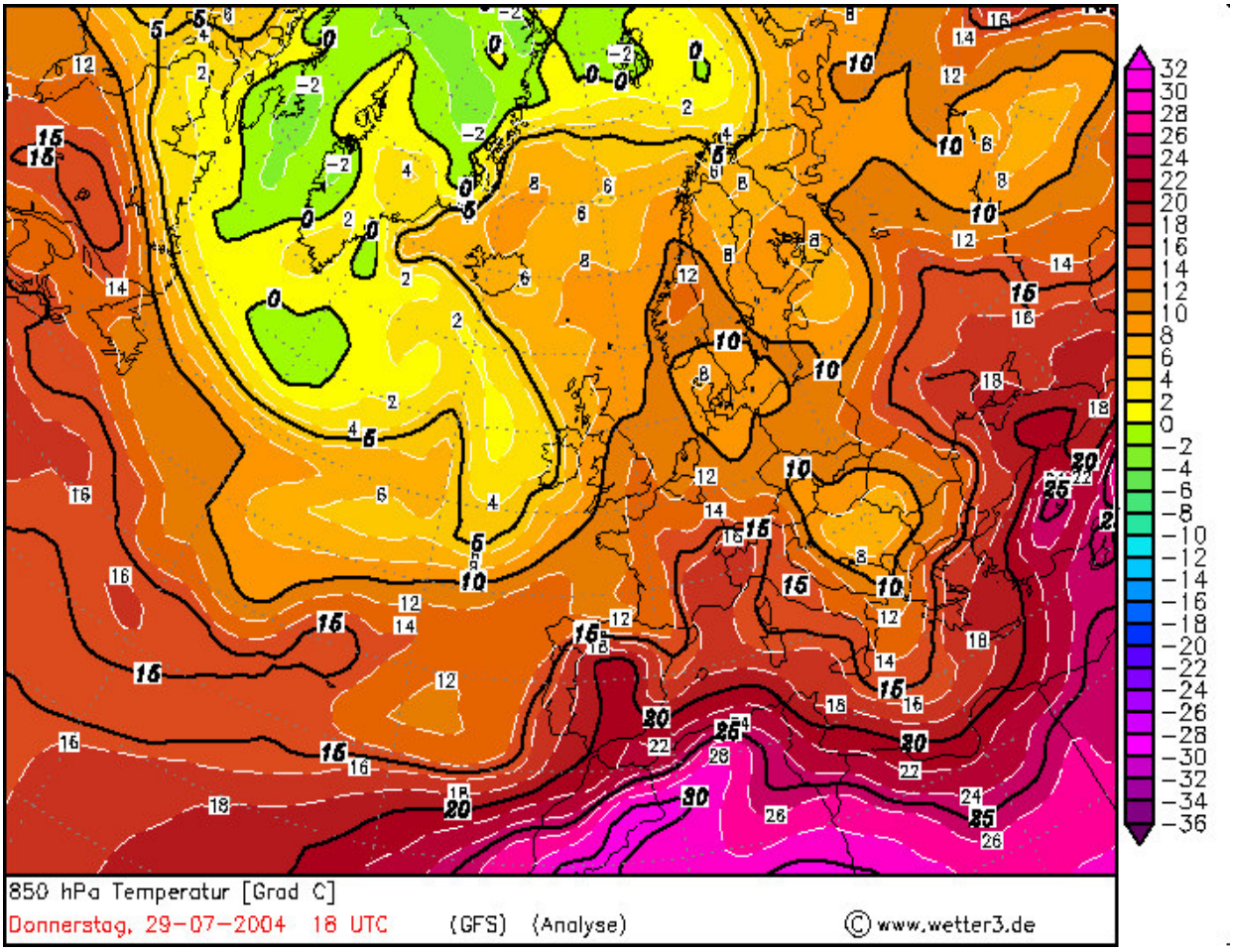
Synoptic situation

The situation in height showed a trough affecting the E of the Peninsula with a temperature of -10ºC at about 5700m, enough to cause storms as thus they happened later in the entire peninsular east.

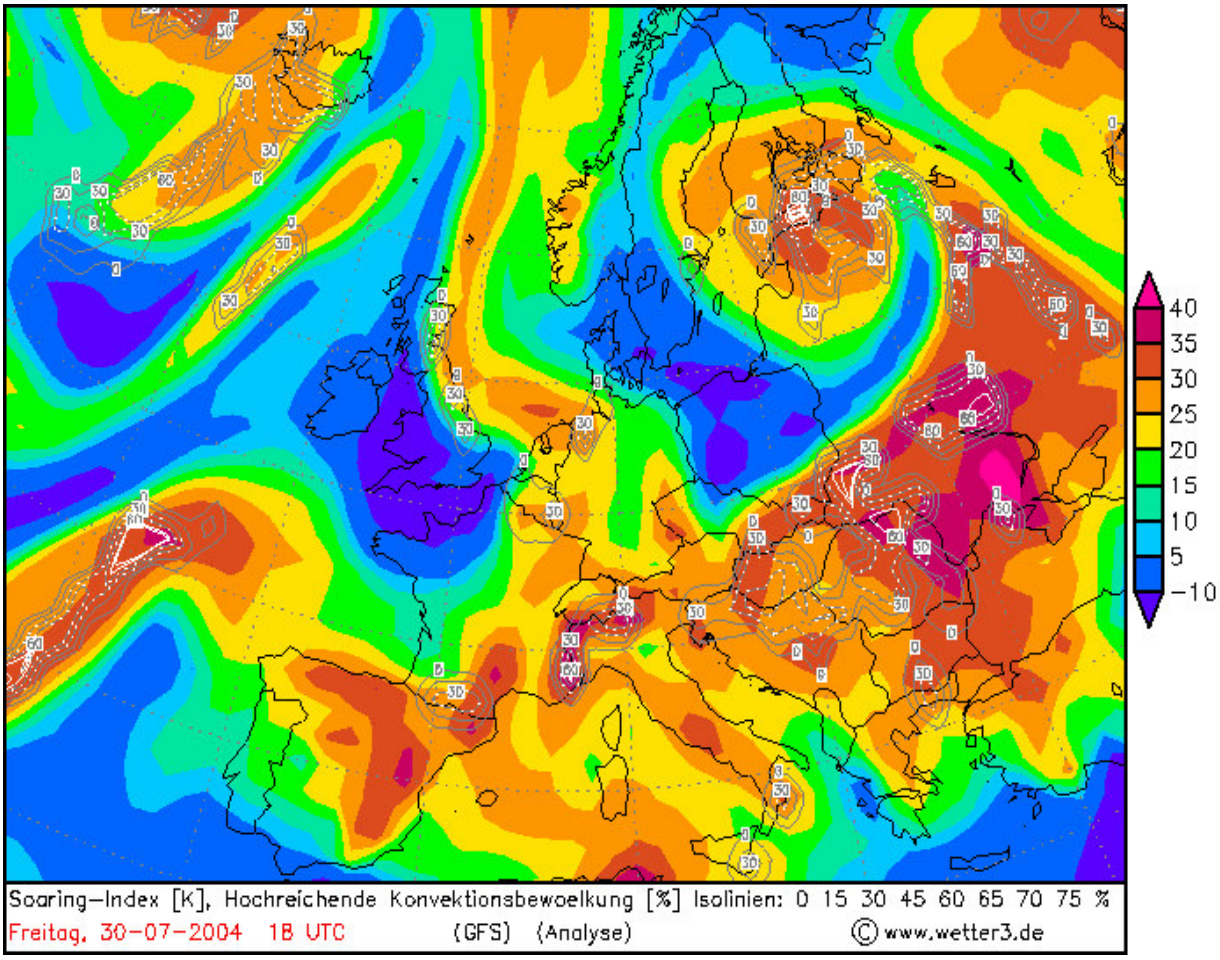




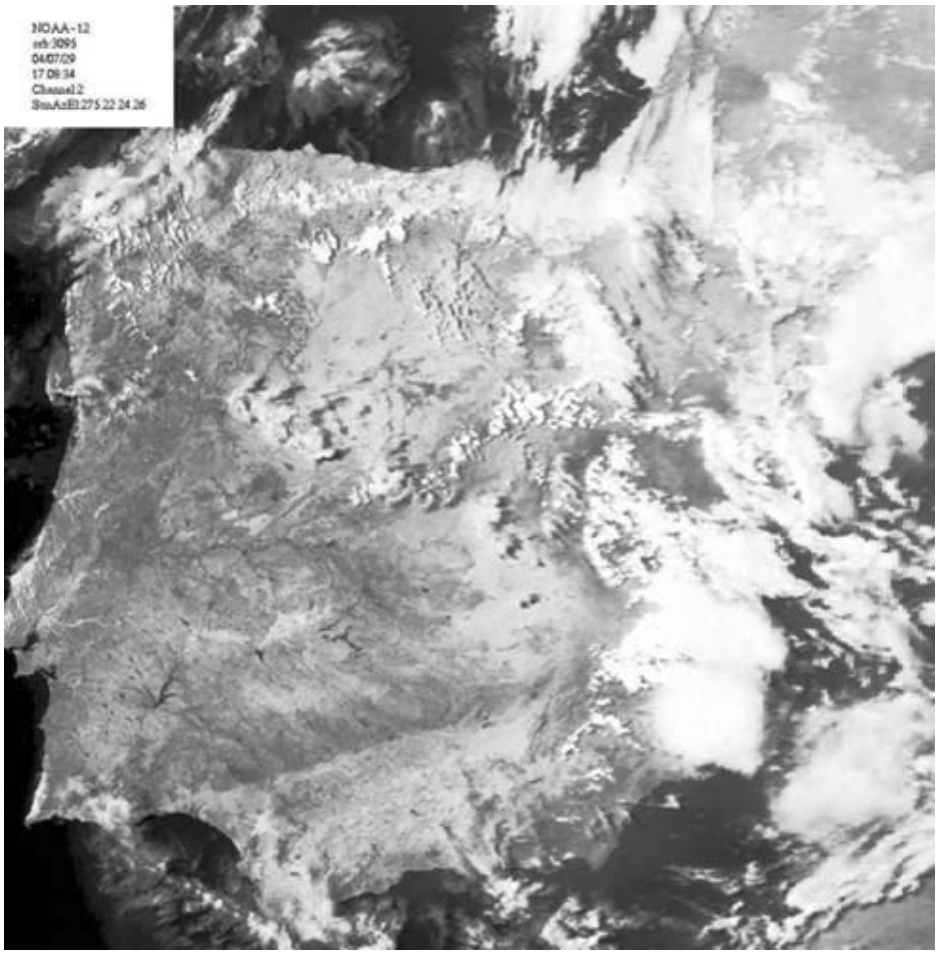
The 850Hpa map showed that the isotherm of +20ºC was located in the vertical of Almansa:



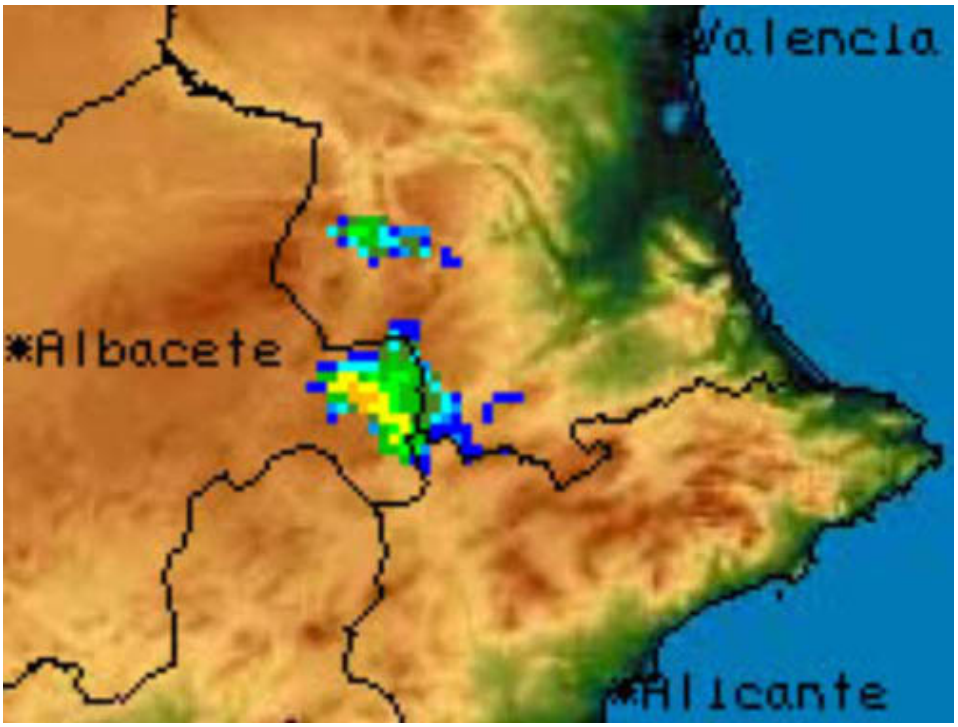
On the other hand we can appreciate in the following map of convection that the index was sufficiently high to produce hard storms in the greater part of the mountainous peninsular Eastern:



Satellite Image of the NOAA at 19:08 h, the storms was affecting to East points.



The radar image at 16:20h shows the squall line affecting Almansa in that moment, with reflectivities of 54dbz.



Description of the storm:

It was about 16:00h, July 29th, 2004 in Almansa (Eastern part of the province of Albacete) when I began to listen thunders in my house. I leaned out of the window and I saw good rays to the North.

With the intention to record them, I took the camera in my hand and I went to a place at the outskirts, to the West of the city, where I had good visibility.

To my great surprise, I looked towards the N-NW and found this:

video 1: General view of the squall line

VIDEO 1 ***(download)***

It is a squall line, a cloudy wall that hung of a CB forming an arc. Its N extreme (to the right of

the photo) was the point nearest of the ground and where a precipitation curtain was seen.

In this map I have indicated with an X the observation place, in gray the position of the squall line, parallel to the Sierra de Mugrón that probably helped to its formation and the red arrow the direction that it took.

Squall line minute by minute

16:00h. The front is approached to the city. It was forming tatters in the base of the very black clouds that are waved.

video 2: The siren of the factories that sounded next to the shabby clouds gave certain sensation of alert.

VIDEO 2 ***(download)***

16:03h The base of the squall line is very near and this is its aspect, the clouds waving itself.

video 3: base of the squall line

VIDEO 3 ***(download)***

16:05h The right part of the front is not very far of the ground. It begins to blow the wind and an abrupt reduction of the temperature is noticed. From 31ºC of maxima that we had had we had pass to 17ºC in few minutes.

Suddenly, strong gusts of wind appear and a great dust cloud rises and with the rays that fall makes me come home quickly.

The wind blows from the West, and while the low clouds take W-E direction, other a little higher seem to take the opposite direction.

Video 4: the storm done above

VIDEO 4 ***(download)***

16:10h It begins to rain strongly and very vigorous wind gusts are formed changing the direction to the East. The rain is almost horizontal

16:15h: It begins to hail.

video 5: moment of the storm

VIDEO 5 ***(download)***

16:25h: It begins to stop the rain. In hardly 15 minutes have fallen 19 l/m2. The streets take so much water and it forms small floods in the city.

In the following video of Tvalmansa you can see the force with which it rained and the consequences in the city.

VIDEO 6 ***(download)***

This situation made us to remember the storm of past June 14th in Almansa, but luckily not as intense as that that caused so much destructions.

Almansa
E-mail: Vtalmansa@terra.es
5 of October of 2004

Top