# WeatherCast™ 6.4.0

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**Contents**

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# 1. Installing WeatherCast

WeatherCast requires the following PC specifications
- Windows 95, 98 or NT4.0
- 32Mb RAM
- Pentium or similar processor
- A screen resolution upwards of 800x600
- Modem (56K minimum)

## 1.1 Installing WeatherCast on to the hard disk

1. Place the CD-ROM in the CD-ROM Drive.
2. The installation program should run automatically. At the Welcome page click on **Next**.
3. Click on **Next** to install WeatherCast in your chosen directory.
4. Click on **Next** to add WeatherCast to the **Programs** folder in the **Start** menu.
5. WeatherCast will then be installed. Once the installation has been completed, click on **Finish** to restart your computer.

1. If the installation procedure does not start automatically:
2. Double-click on My Computer on the Desktop.
3. Double-click on the CD-ROM drive.
4. Double-click on Setup.
5. Now, follow steps 2 to 5 of the above installation procedure.

## 1.2 Procedure before using WeatherCast

To launch WeatherCast click on **Start** (Windows Task Bar). Select **Programs** and click on WeatherCast.

Before you can start using WeatherCast, some user details need to be entered. These details were included when you received the WeatherCast CD-ROM. Without this information it will not be possible to gain access to the PA WeatherCentre computer system.

The user details will appear the first time WeatherCast is opened, after which you can locate your user details by selecting **User** in the **Settings** menu. After entering the user details, click the **Activate User** button to confirm your details.

You will then need to enter your communication details.

Under **Communication Type** you will need to select the method of connecting to PA WeatherCentre. Unless otherwise instructed by PA WeatherCentre, this will be via a **modem**. Click on the arrow to the right of the drop-down list to select the method of communication.
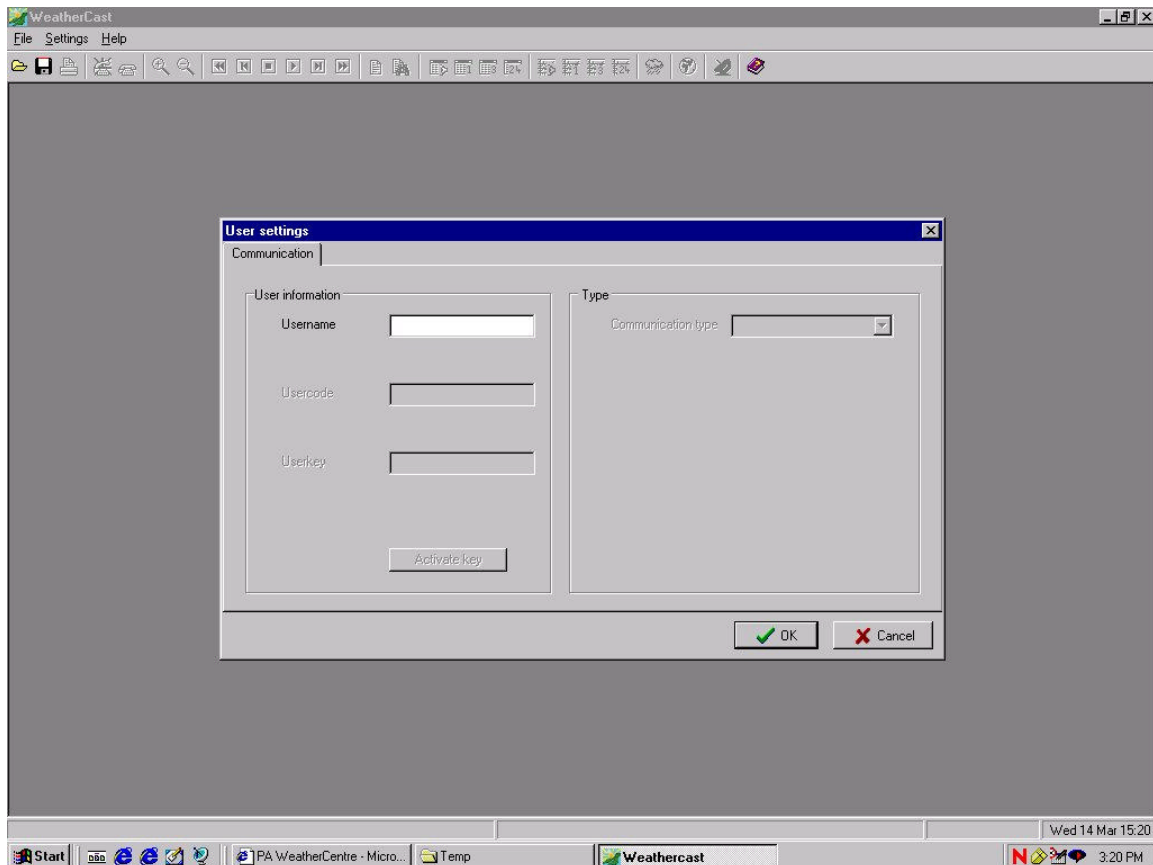


Under **Modem**, select the modem that your PC is to use for downloading the weather information from PA WeatherCentre. The modem should already be installed under Windows.

1. Select the **telephone number** from the list available. If you are dialing through a switchboard, remember to include the outside line digit (usually a "9"). Click on **OK** to close the window.

2. You will now need to choose the weather data you wish to download by selecting the **Data collection** option in the **Settings** Menu. More detailed descriptions of this are provided in **Section 3. Downloading Weather Information** which can be found later in this Manual.

3. Click on your chosen weather data requirements and select your desired region by clicking on the **Select Region** button in the bottom left of the screen.

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4.  Once your chosen region is displayed (represented as white dots on a map) close the window and select **OK** to save settings.

5.  Close the Data collection settings screen by pressing **OK**.


It is possible to instruct Windows to select or de-select audible signals from the modem. To do this, click on **Start** in the Windows tool bar for:

*   Settings
*   Control Panel
*   Modems
*   Properties
*   Connection Tab
*   Advanced …

Under **Extra Settings** you are able to enter modem settings. The following settings apply to modem noise:

| | | | |
|---|---|---|---|
| L0 | Low Volume | M0 | Speaker always off |
| L1 | Low Volume | M1 | Speaker on until connection is made |
| L2 | Normal Volume | M2 | Speaker always on |
| L3 | High Volume | M3 | As M1 but speaker off during dialling |

The setting "L1 M1" will set the modem speaker to a low volume and switches the speaker off as soon as a connection is made. Additional information on modem settings can be found in the instruction manual which came with the modem.
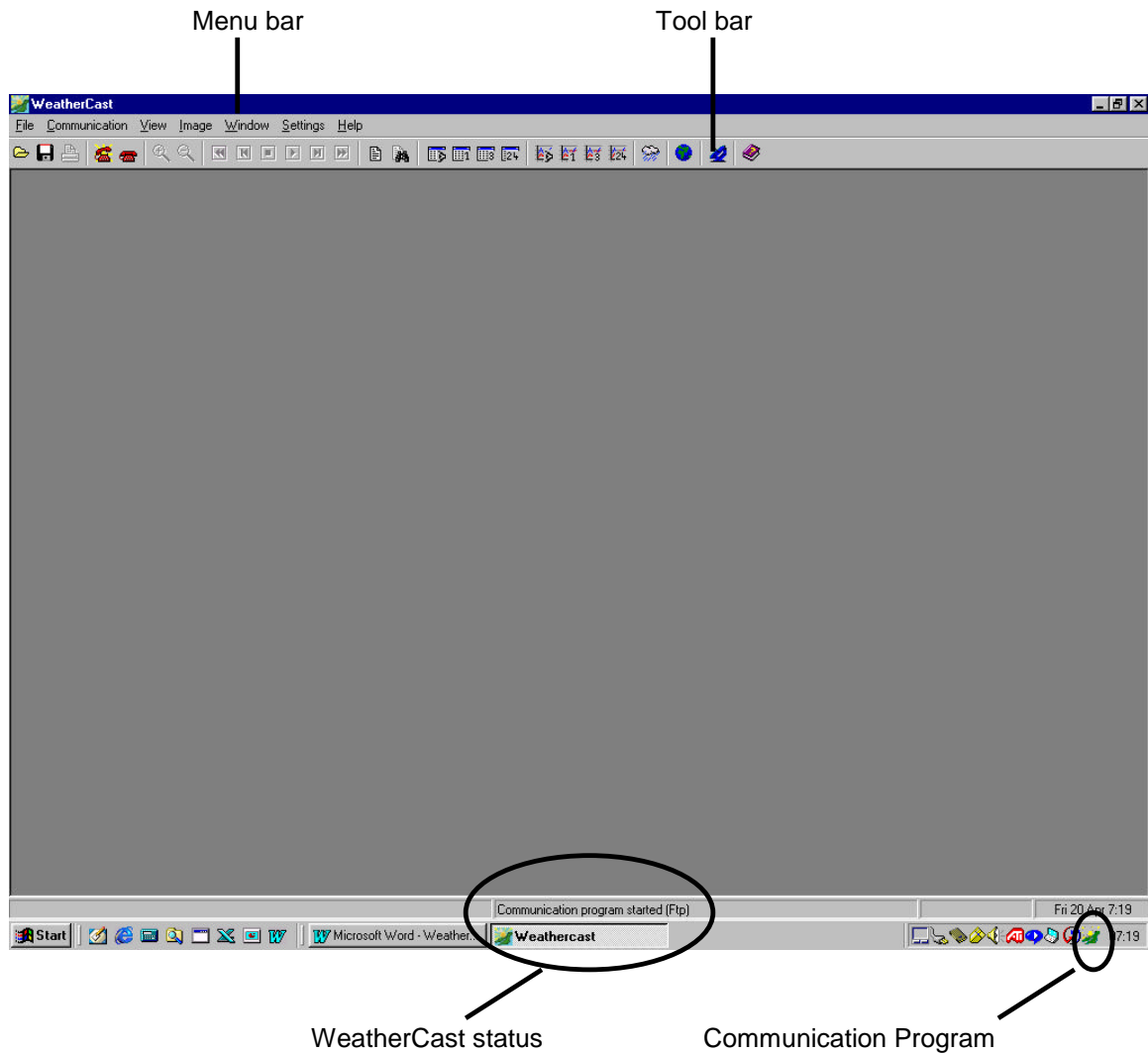

## 1.2.1 ISDN

WeatherCast downloads the files with weather information from a computer system of PA WeatherCentre. This computer system is called a Bulletin Board System (BBS). Files can be downloaded from this system when you have a modem or ISDN-adapter in your PC.

When you have an ISDN adapter it is necessary to use the X.75 or V.120 protocol. The use of the X.75 protocol is preferred. A 'protocol' is a language which is used by the computer to communicate with another computer. Computers can only communicate with each other when they use the same protocol. The X.75 and V.120 protocol are standard protocols for communicating with a BBS system. Please use the manual of your ISDN adapter for the installation procedure.

# 2. Getting started with WeatherCast

Start WeatherCast by clicking on its icon which can be found in the Programs section of the Start menu on the Windows task bar. When you open WeatherCast the screen will look like this:

Menu bar                                    Tool bar

WeatherCast status                        Communication Program

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**2.1 Menu bar**

The menu bar contains the names of the main menus. You can read the menus by activating the drop-down menu. Place the mouse cursor on the name of the main menu and then left-click once. Most of the options in the drop-down menu indicate clearly what they are for. For example, the Data collection option in the Communications menu is used to select the weather data to be downloaded by modem from PA WeatherCentre.

Some options are followed or preceded by a symbol:

- A 'tick' is the standard way of indicating that an option is selected. By selecting an option that is already ticked, you de-select that option.

- For example, when you click on the Automatic download option from the Communications menu, this option will be ticked. The Automatic download option is now selected. For as long as this option is selected the most recent weather data will be downloaded by modem from PA WeatherCentre automatically and at regular intervals. If the Automatic download option is selected, a progress bar will appear in the status bar. As soon as the progress bar is empty, the most recent data will have been collected.

- When an option is followed by three dots, it means that it leads to a dialogue box in which additional options and settings can be selected.

- If an option is followed by an arrow head, then the option consists of a number of further options. Clicking on the main option automatically generates a drop-down sub-menu.

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## 2.2 Tool bar

The tool bar is displayed above the display window and below the menu bar. The tool bar contains icons (small pictures) of options which are frequently used. The icons give fast access to the most frequently used options in WeatherCast. You start the option by left-clicking on the icon.
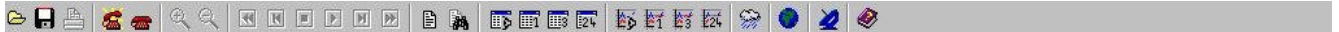


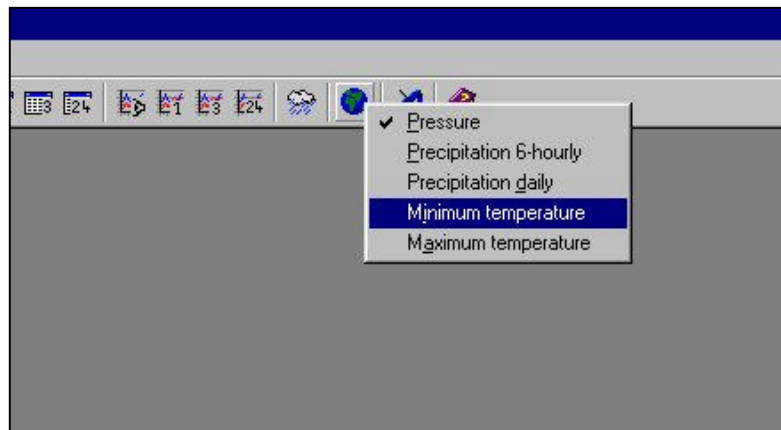Select or de-select Tool bar in the **Image** menu to display or hide the tool bar.

You can also tailor three icons on the tool bar to suit your needs. The following icons can be changed by right clicking on them to reveal a list of options, as shown in the example below.


Precipitation Radar images


European Forecast images


European Satellite images

| Tool Bar Icon | Action |
| --- | --- |
| | Opens a display which has been saved previously |
| | Saves all displays |
| | Prints the active view |
| | Downloads the selected data via the modem |
| | Disconnects the telephone connection |
| | Zooms in on image in active window |
| | Zooms out of image in active window |
| | Displays first image |
| | Displays previous image |
| | Stops running images as a movie |
| | Starts running images as a movie |
| | Displays next image |
| | Displays most recent image |
| | Opens WeatherCast Help |

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**Presentation of weather information**

| | |
|---|---|
| 📄 | Text view of short range weather forecast |
| 📖 | Text view of medium range weather forecast |

| | |
|---|---|
| ▦ | Table of observations |
| ▦1 | Table of hourly forecast information |
| ▦3 | Table of 3-hourly forecast information |
| ▦24 | Table of daily forecast information |

| | |
|---|---|
| 📈 | Graphical representation of observations |
| 📈1 | Graphical representation of hourly forecast information |
| 📈3 | Graphical representation of 3-hourly forecast information |
| 📈24 | Graphical representation of daily forecast information |

| | |
|---|---|
| ☁ | Precipitation Radar images |

| | |
|---|---|
| 🌐 | European Forecast images |

| | |
|---|---|
| 🛰 | European Satellite images |

## 2.3 Status bar

The status bar is situated below the WeatherCast window and has the following components:

| Collect weather data | Communication program started (Ftp) | ▮▮▮▮▮▮▮▮▮ Mon 30 Apr 11:11 |
|---|---|---|
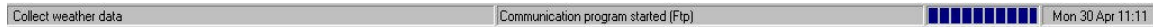
1. The leftmost field provides information about icons to which the mouse cursor is pointing in WeatherCast, e.g. "Collect Weather Data".

2. The next field to the right indicates the status of communications. It allows you to monitor which action is being performed when downloading information by modem from PA WeatherCentre. It can show, for example, "file collected" or "Downloading radar image". When you have finished downloading, the message "Data collection and processing completed" will appear.

3. The next field to the right of the communications status provides information regarding automatic downloading. Once the Automatic download option has been selected, it contains a filling progress bar which subsequently empties. As soon as the progress bar is empty, new data are downloaded via the modem and the progress bar is filled again.

4. The right-most field provides information on the actual day, date and time on your PC.

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## 2.4 Communication

Once WeatherCast has started you will notice a small WeatherCast logo on the far bottom right of your PC screen. If you double click on this another window will become available to you. From this Modemaccess window, you can follow the status of the communication program.

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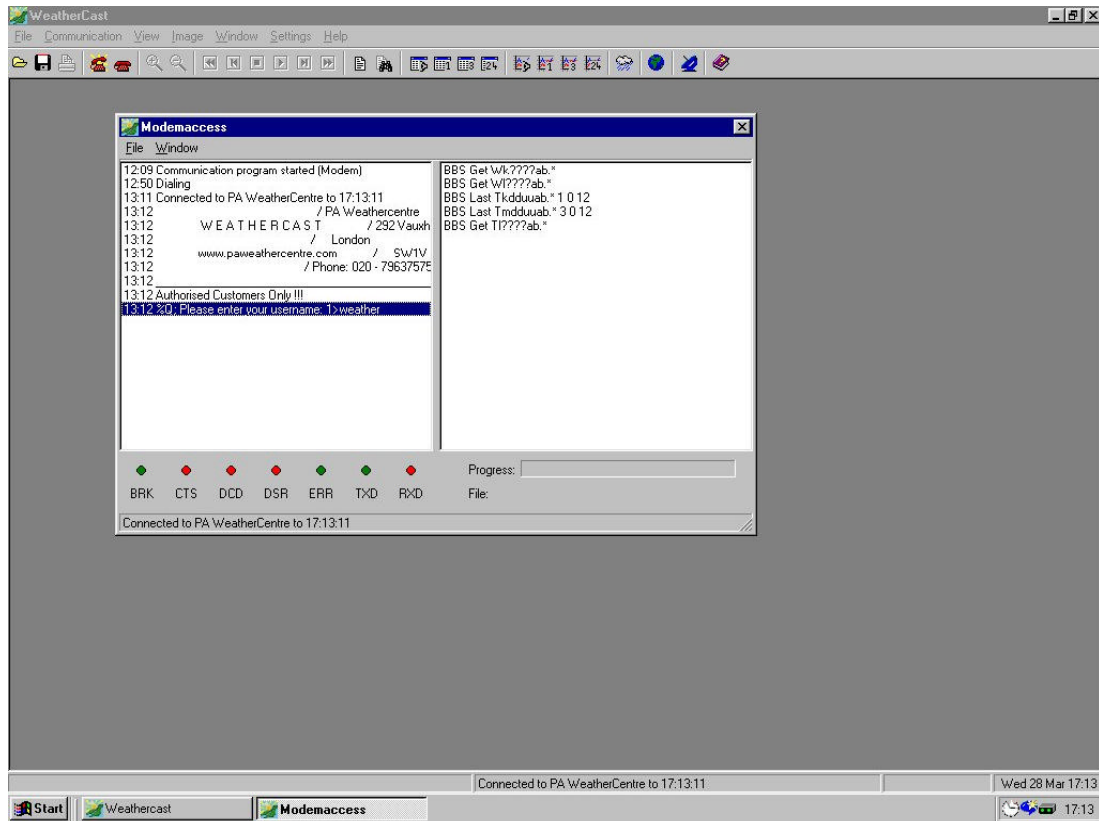
# 3. Downloading Weather Information

Using the WeatherCast program you can request and display up-to-date weather information from PA WeatherCentre via a modem connection. It is up to you which information to request. The more data you request, the longer it will take to download those data. Once you have selected the option **Data Collection** from the **Settings** Menu, a dialogue window will appear.
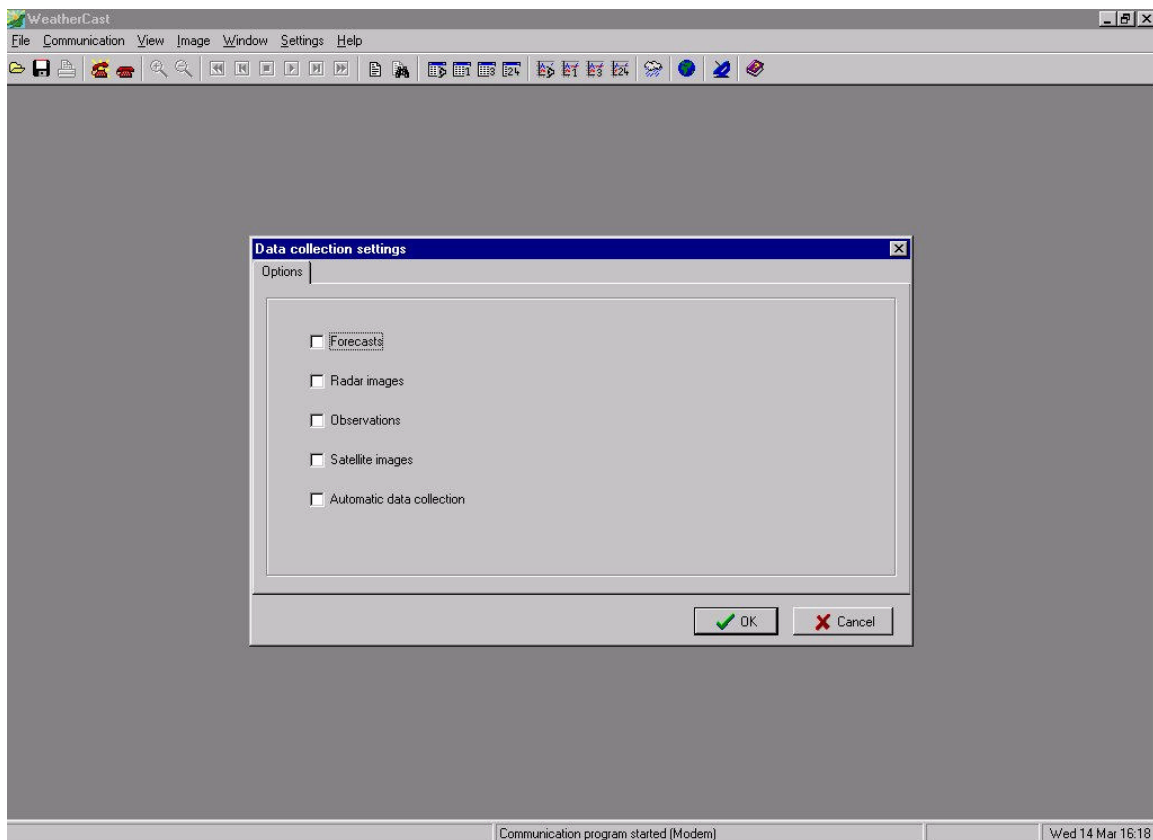


You can use the dialogue window to indicate which type of weather information you wish to request. Weather data are subdivided into four different groups:

- Forecasts
- Observations
- Radar Images
- Satellite Images

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These groups are again sub-divided into various categories. You can select or de-select particular groups or particular categories within a group. To select or de-select a group or category, you select or de-select the box in front of the group or category name. If a tick is shown, the group or category has been selected. A tab will then appear on the top of the dialogue box. Click on the tab to access the selection category as shown below:

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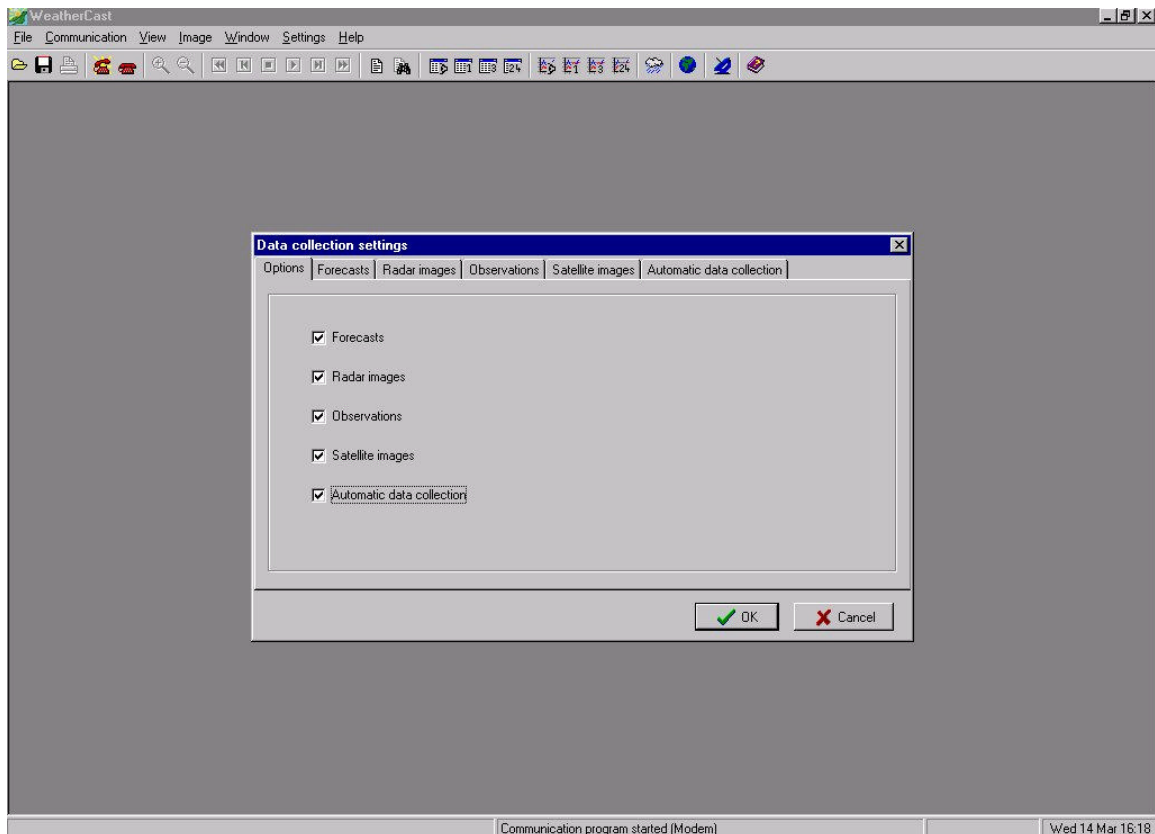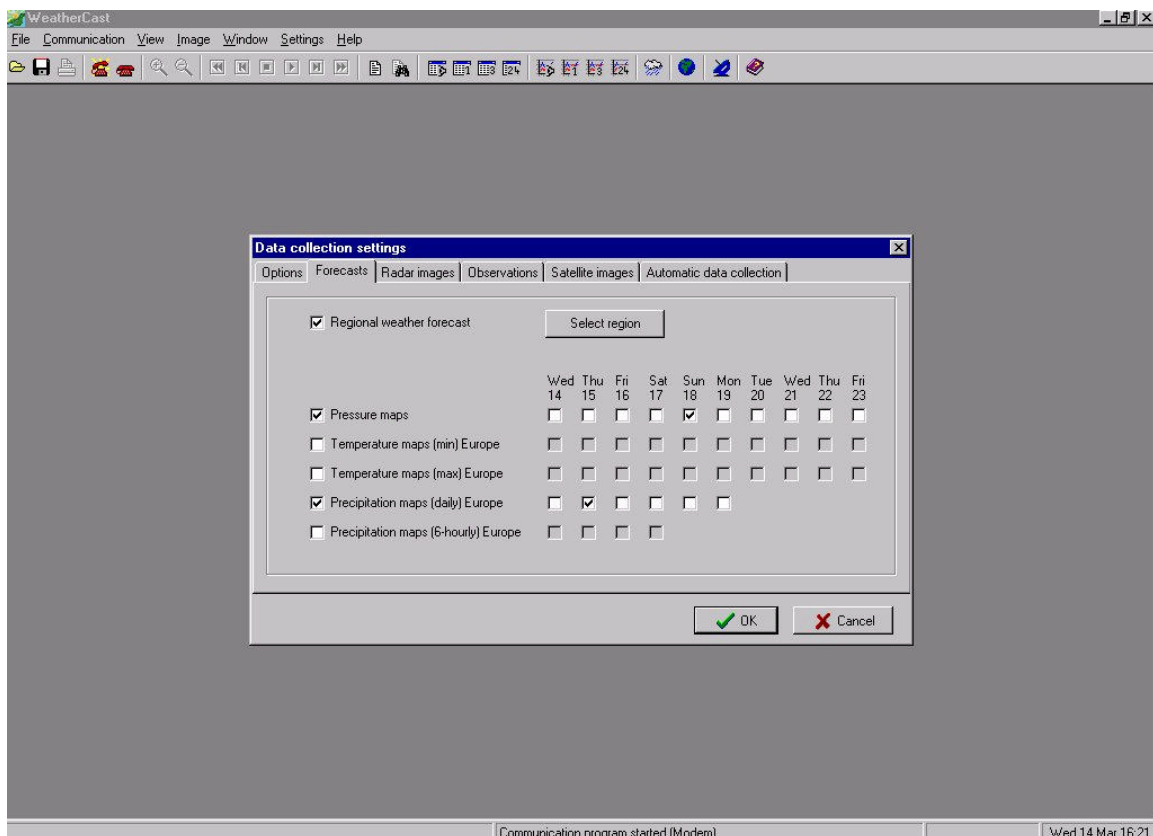
## 3.1 Forecasts

Within the Forecasts group, you can choose to download the regional weather forecast, atmospheric pressure charts, precipitation charts or temperature charts. If you are not subscribed to one or more fixed regional weather forecasts, you can select a specific region using the button **Select Region**. Once you have pressed Select Region, a map of the British Isles is displayed. By clicking on this geographical map, you bring up the selected town and activate the region in which this town is situated. All towns and villages within this region are highlighted in white. You can select more than one region by keeping the **Ctrl** key down and again clicking on the map.

You can find a particular town in the British Isles by right-clicking on the map and selecting **Search location**. Type the name of the place you are looking for, and click **OK**. The town will then be shown on the geographical map. Don't forget that you have not yet selected the region corresponding to this town! By using your mouse to left-click on the town on the map you select the region. Having selected one or more regions, you close the map and reply with **OK** to the question "Do you wish to save the selected regions?"

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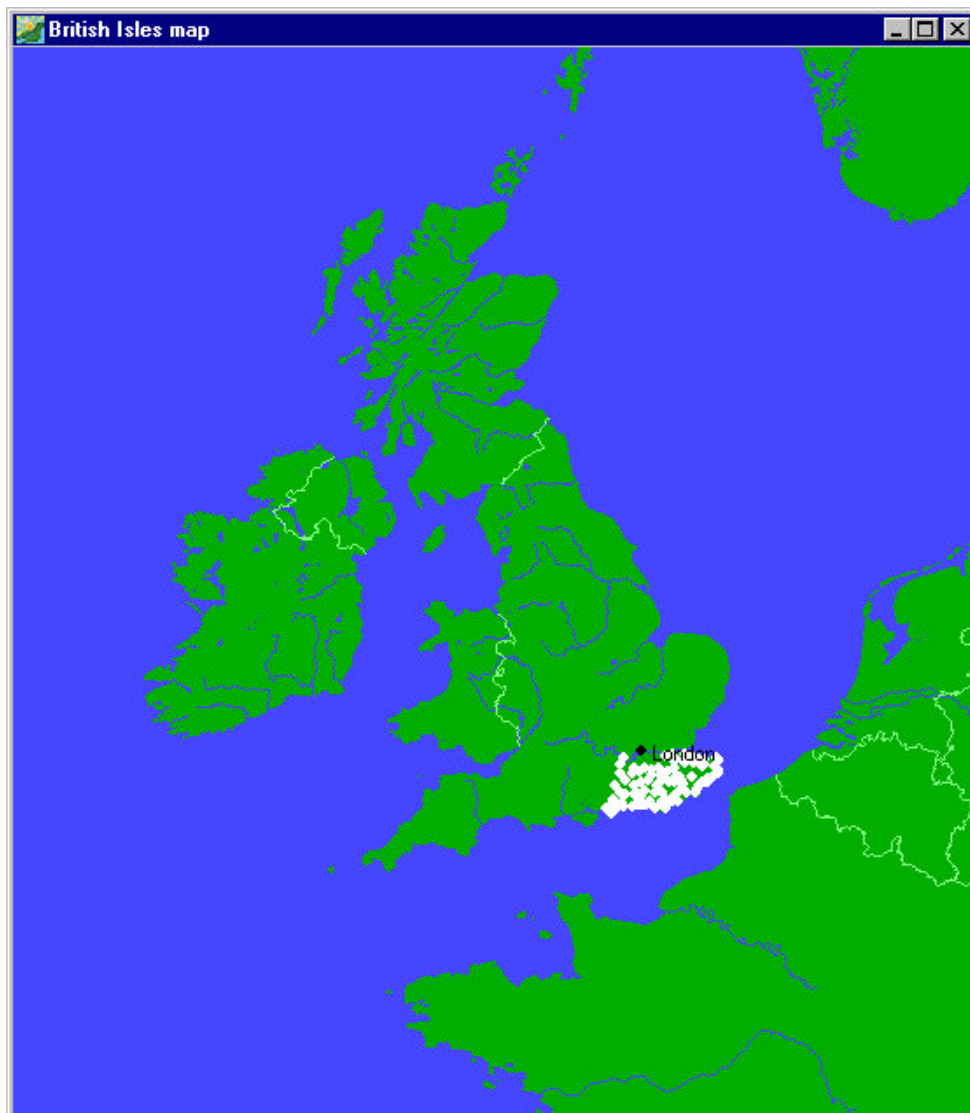
### 3.2 Radar Images

Within the Radar images group, you can set the number of images you wish to be downloaded. Radar images are produced every quarter of an hour. By default, always the most recent radar images are requested. It is possible, however, to request earlier images by selecting **Historic radar**. This allows you to select radar images by a **Start** and **End Time.**

### 3.3 Observations

Within the Observations group, you can choose to request the observations within the same time period as the radar images or customise the period. Should you wish to customise the start time and end time of the observations to be downloaded, you should select **Period and Frequency**. This allows you to choose the frequency of the observations as well as the start and end times.

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## 3.4 Satellite Images

Within the Satellite Images Group, you can indicate which type of satellite image you wish to request. For both types, you can also set the number of images to request. Only the most recent satellite images can be downloaded.

## 3.5 Automatic Data Collection

The last option in the Data Collection dialogue window is Automatic Data Collection. This allows you to set how often new data should be downloaded automatically.

There are various options available when downloading WeatherCast data automatically:

- Firstly, you need to specify how often you want WeatherCast to automatically collect data using the "**Get new data every**" option. The default setting for automatic downloads is every 15 minutes.
- **Period.** You can select a time period, throughout the day, during which WeatherCast will collect data. To do this, simply enter a **Start time** and an **End Time.**
- You can also use the **Automatic collection always enabled** function to ensure WeatherCast will always automatically collect data every time WeatherCast is started.

To activate the automatic download, select **Communication** then **Automatic Data Collection** (after the Data Collection dialogue window has been closed).

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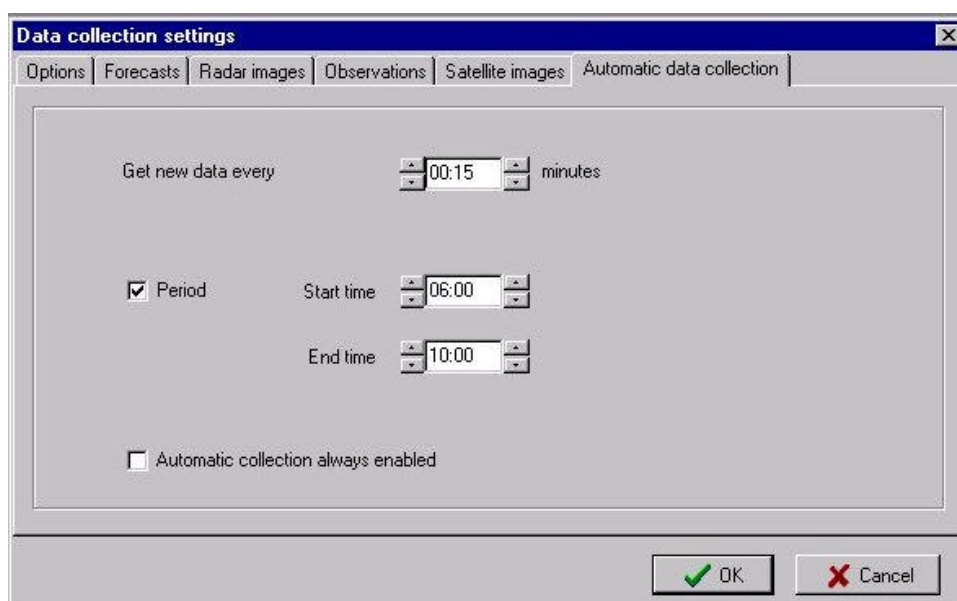
# 4. Displaying Weather Information

The data that have been downloaded via the modem are saved to the hard disk on your computer. After processing, you can view these data using options in the **View** Menu:

- Weather forecast
- Observations
- Radar images
- Weather maps
- Satellite images

The most commonly used data are represented by icons on the toolbar, as shown in 2.2.

You can customise the display by right-clicking on the displayed data. You will then be given a menu of options. You can select the options by left-clicking on them. After closing, the program returns to the original settings. It is also possible to customise the displays permanently by using the following options in the **Settings** Menu:

- Text Views
- Table Views
- Map Views

Once you have chosen a particular view, by default a new window is always opened. This means that view several displays at the same time. The **Window** menu allows you to see which displays are already open. The menu shows the names of these windows. By clicking on the name of a window, this window will come to the front. The Window Menu also contains a number of options which can be used to arrange the windows on your screen in a particular way. There are three arrangements:

- Cascade
- Tile vertically
- Tile horizontally

Section 4.1 shows the different ways that you can display weather information using WeatherCast. Following these instructions will allow the optimal use of WeatherCast.

## 4.1 Weather Forecasts

When you select Weather Forecast from the View menu you have a choice of:

- Short or medium range text forecast
- Tabular forecasts containing hourly, 3-hourly or daily data
- Graphical forecasts containing hourly, 3-hourly or daily data

## 4.1.1 Text

The text view describes the forecast weather for one or more regions. By default, the most recent forecast is displayed. If you have collected forecast information for more than one region, you can select a particular region by clicking on the tab containing the name of that region.

When starting a new text view, the most up-to-date forecast is displayed by default. If you have downloaded a new weather forecast while the text window was open, you can refresh the forecast text by clicking on the arrow to the right of "Forecast issued:" This will generate a list by date and time of all of the weather forecasts you have downloaded in the past week. The most recent forecast appears at the top. You can select a particular forecast by clicking on the appropriate date and time.

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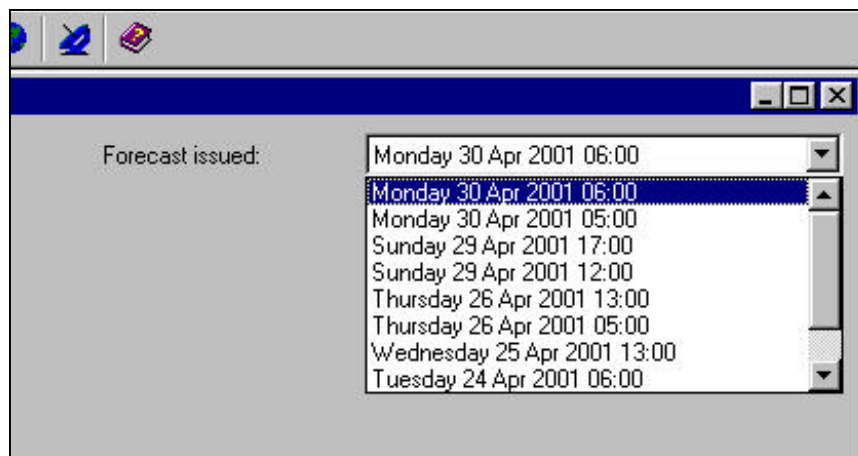
## 4.1.2 Table

The table displays the weather forecast for one or more regions and a diverse number of weather elements expressed as figures.



On right-clicking on the table, you have the choice of:

- Changing font
- Changing weather elements
- Saving table settings
- Printing the table
- Exporting the table into another application

**Weather elements**

You can decide which weather elements you wish to be included in the table display. Once you have selected the Elements option, two lists appear: one with all available elements and one with selected elements. The selected ones are those that are currently included in the table display. You can remove one or more elements from the table display by highlighting them in the list of selected elements and transferring them to the list of available elements. This transfer is accomplished using the four arrow buttons. The buttons with a double arrow transfer all elements. The buttons with a single arrow transfer only the elements

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selected for transfer. Once you have clicked OK, the table will be displayed with the new set of weather elements. The table layout can be saved using the option **Save Table Settings**.


## Save Table Settings

It is possible to customise the order in which the columns appear in a table. To do this, you left-click on the title of a column and hold down the left mouse button. Now drag the column to the required location. Once you release the mouse button, the column will appear in the new location. You can save the new table layout by right-clicking on the table. A pop-up menu will appear. You can now save the new table layout by left-clicking on the **Save Table Settings** option.


## 4.1.3 Graphs

To view the graphs of the various forecast data, select hourly, 3-hourly or daily in the Weather forecast area of the View menu.

You can also display the values on each graph by left-clicking on a line or bar within the graph.

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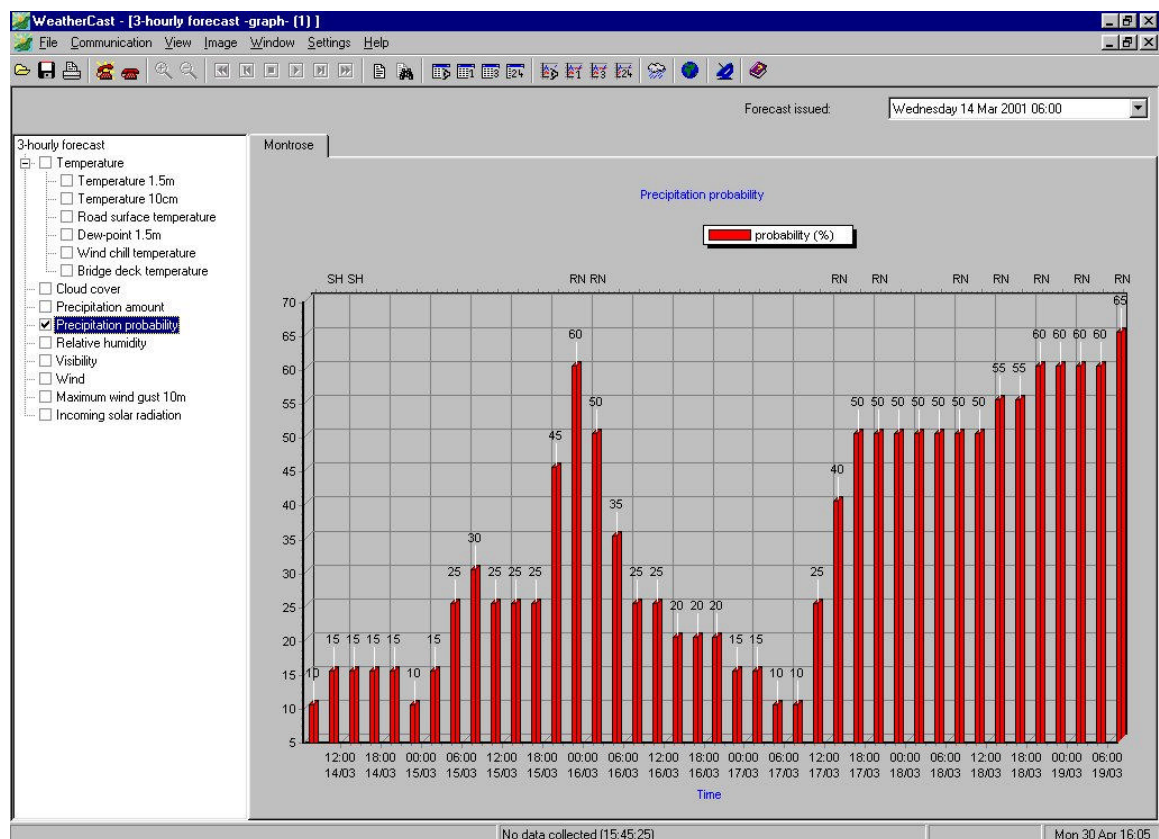
**4.2 Observations**

Information about the weather as it has occurred can be downloaded in the form of Observations. The weather as it occurs is recorded up to every hour, on the hour, with respect to most weather elements. The latest data are available at 30 minutes past the hour. However, some recording stations do not report all weather elements and some only report every three or even only every six hours.

Having selected **Observations** from the **View** Menu, you can now choose between three display options:

- Table
- Graph
- Map

**4.2.1 Observations Table**

The table will view the observations from one or several weather stations in the form of figures representing the various weather elements. With the table, it is easy to read the exact values. You can select a particular weather station by clicking on the tab with the name of that weather station. Using the scroll bars, you can move through the table in the horizontal and vertical directions. The description of the weather elements (top row) and the time indication (leftmost column) remain frozen and therefore always visible.

By right-clicking on the table, five tasks can be performed:

- Select period
- Change font
- Weather elements
- Save table settings
- Print
- Exporting the table into another application

**Period**

This allows you to specify the start and end time of a view as well as the frequency of the view, i.e. a view every hour, every three hours or every six hours.

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**Elements**

You can decide which weather elements you wish to be included in the table view. Once you have selected the Elements option, two lists appear: one with all available elements and one with selected elements. The selected ones are those that are currently included in the table display. You can remove one or more elements from the table display by highlighting them in the list of selected elements and transferring them to the list of available elements. This transfer is accomplished using the four arrow buttons. The buttons with a double arrow transfer all elements. The buttons with a single arrow only transfer the elements selected for transfer. Once you have clicked OK, the table will be displayed with the new set of weather elements. The table layout can be saved using the option Save table settings option.


**Save table settings**

It is possible to customise the order in which the columns appear in a table. To do this, left-click on the title of a column and hold down the left mouse button. Now drag the column to the required location. Once you release the mouse button, the column will appear in the new location. You can save the new table layout by right-clicking on the table. A pop-up menu will appear. You can now save the new table layout by left-clicking on the **Save table settings** option.

## 4.2.2 Observations graph

In the graph view, observations are expressed as lines or bars for one or several weather elements. You can select a particular weather station by clicking on the tab with the name of that weather station.  You can also display the values in a graph view by left-clicking on a line or bar within the graph.
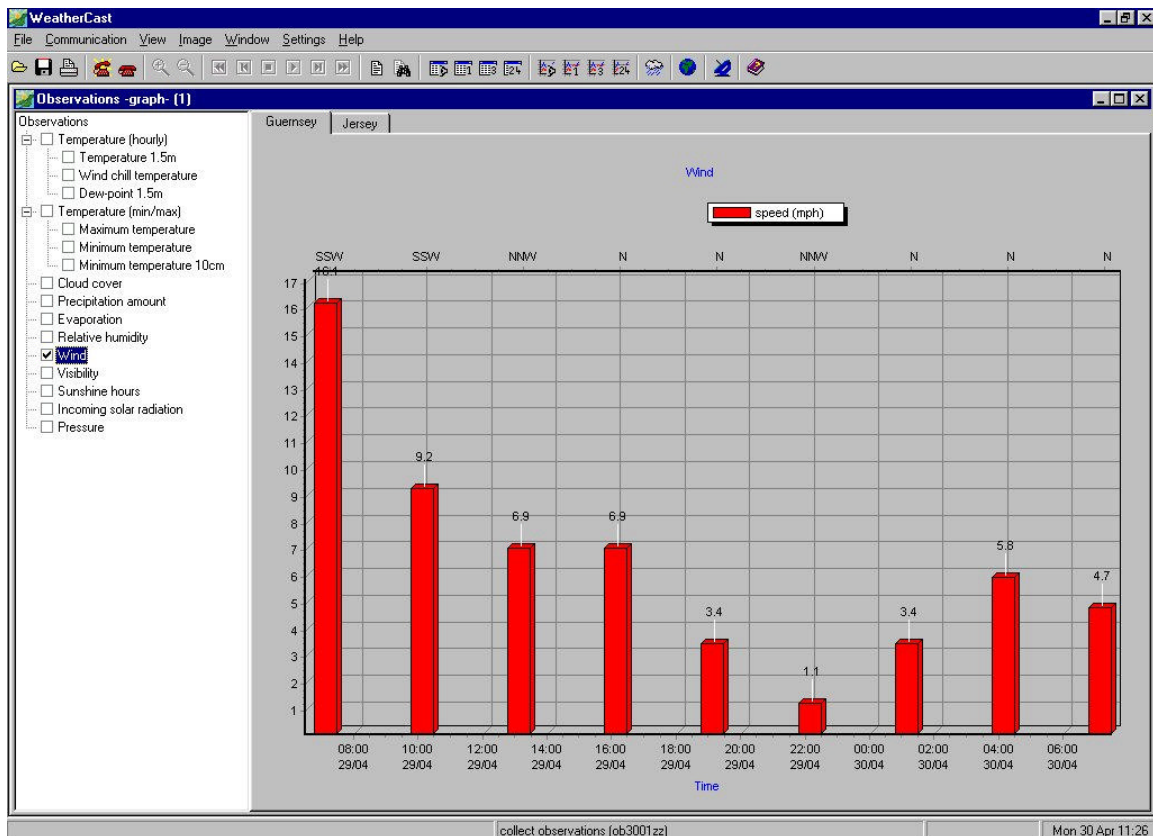


You can decide which weather elements you wish to have included in the graph view by using the observations 'tree' on the left hand side of the display.

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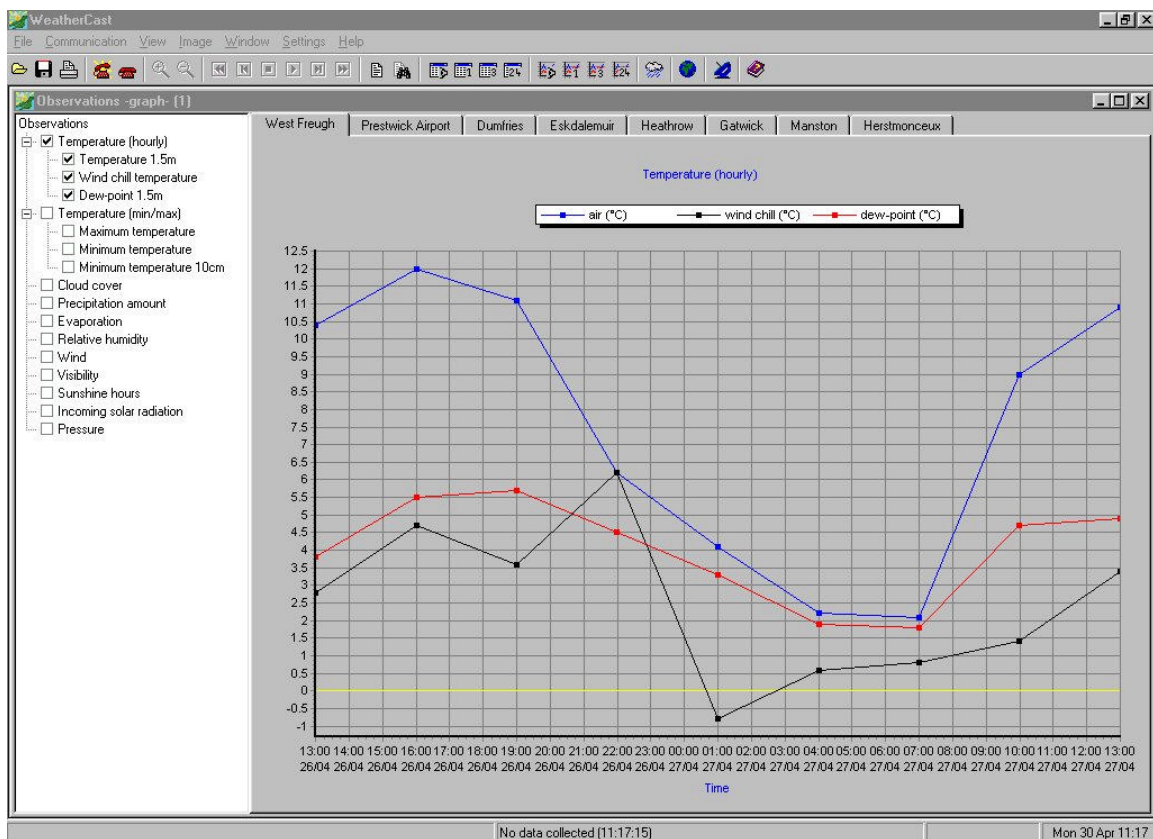
## 4.2.3 Changing measurement units

It is possible to change the measurement units for forecast and observational data presented in the tables and graphs. Select **Settings,** then **User** and click the **Units** tab. In this box you can change the measurement units for:

- Wind speed
- Wind gust speed
- Wind direction
- Cloud Cover

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## 4.2.4 Observations Map

By selecting the Map option, the observations are displayed on a map with respect to one or several weather stations. The observations are expressed as a figure or symbol on the map at the location of the weather station concerned. You can change the type of weather element being shown on the map using the elements 'tree' on the left-hand side of the display.

You can also change the weather element that is expressed on the geographical map by default. For this, you should select the **Map views** option from the **Settings** menu. From there, you select **Observations settings**. You are then presented with a window in which you can select which weather element you would like to be shown on the map by default.

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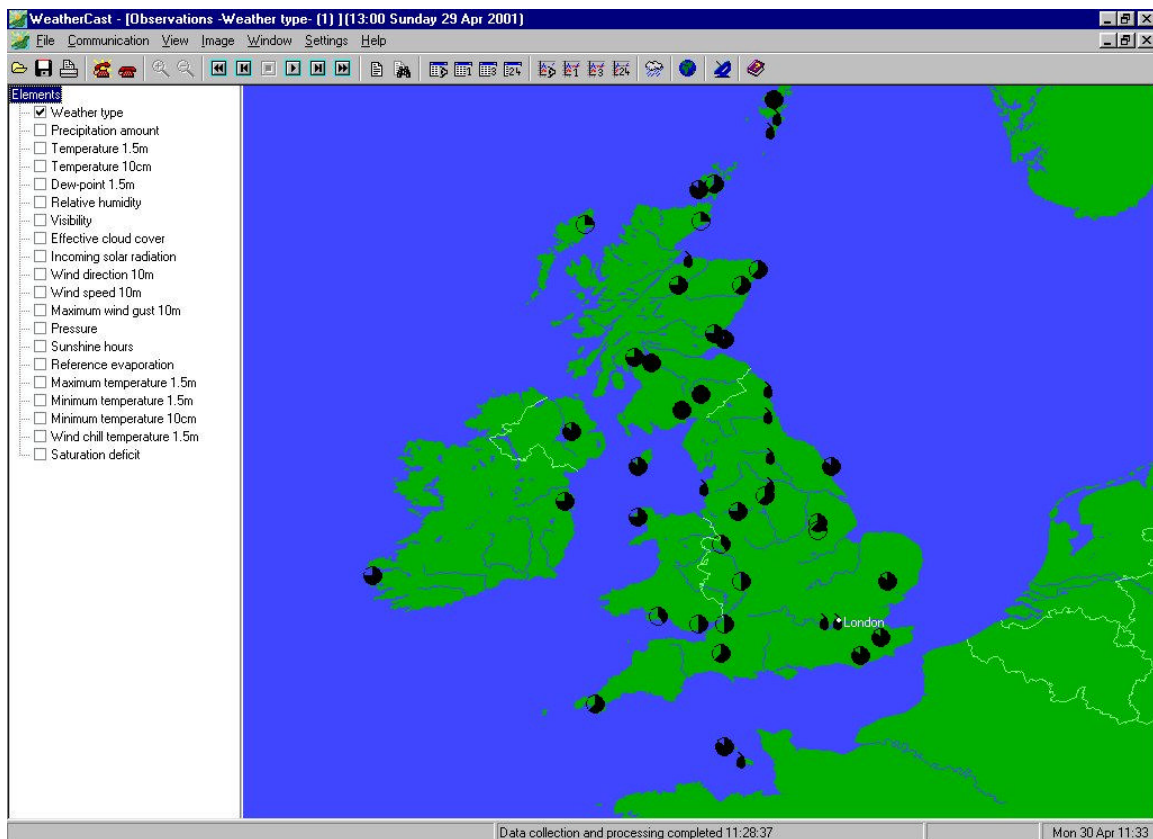
## 4.3 Radar images

The radar images provide information regarding the position and intensity of areas of precipitation present above the British Isles. The information is collected by 15 precipitation radar systems located across the British Isles. One such system is located at Clee Hill in Shropshire. Others include Wardon Hill in Dorset and Castor Bay in Northern Ireland. These systems emit radar waves which are reflected by the precipitation and are subsequently received back by the radar. From the reflected and returned waves, it is possible to deduce where precipitation is present and how intense it is.

The radar systems each have a range of 250-300 km. Any precipitation present further afield is considered to be 'below the horizon'. Combining information from each of the radar systems allows a coverage over the majority of the British Isles. This area is filled on screen by 270 x 300 pixels. Each pixel covers an area of 5.15 km x 5.15 km. A pixel can indicate one of six possible intensities. The program depicts these intensities through six different colours.

When using the radar images, you should take account of possible inaccuracies which can occur.

You can click on a radar image with the right button of your mouse. This will bring up a drop-down menu to make various changes to the display. You can also make changes to the radar display options by selecting Radar GB/IRL from the **Map view** option in the **Settings** menu.

## 4.3.1 What information do the radar images provide?

The radar images show you where rain, snow, freezing rain or hailstones are falling across the British Isles. The radar data are superimposed in colour onto a geographical map. The colours indicate the intensity of the precipitation. You can change the colours in the **Settings** menu by using the **Map views** option.

The radar images are very up-to-date. A new radar image is available every quarter of an hour. These new images can be downloaded from the computer system at PA WeatherCentre at 15 minute intervals.

By running a number of sequential radar images as a movie, you can observe the track of precipitation areas. In addition, it is possible to indicate on the images what type of precipitation is falling by using observations. If there is no precipitation, the amount of cloud coverage is displayed.

The date and time of the radar image is always indicated in the title bar of the window. You can see an example of this in the picture below.
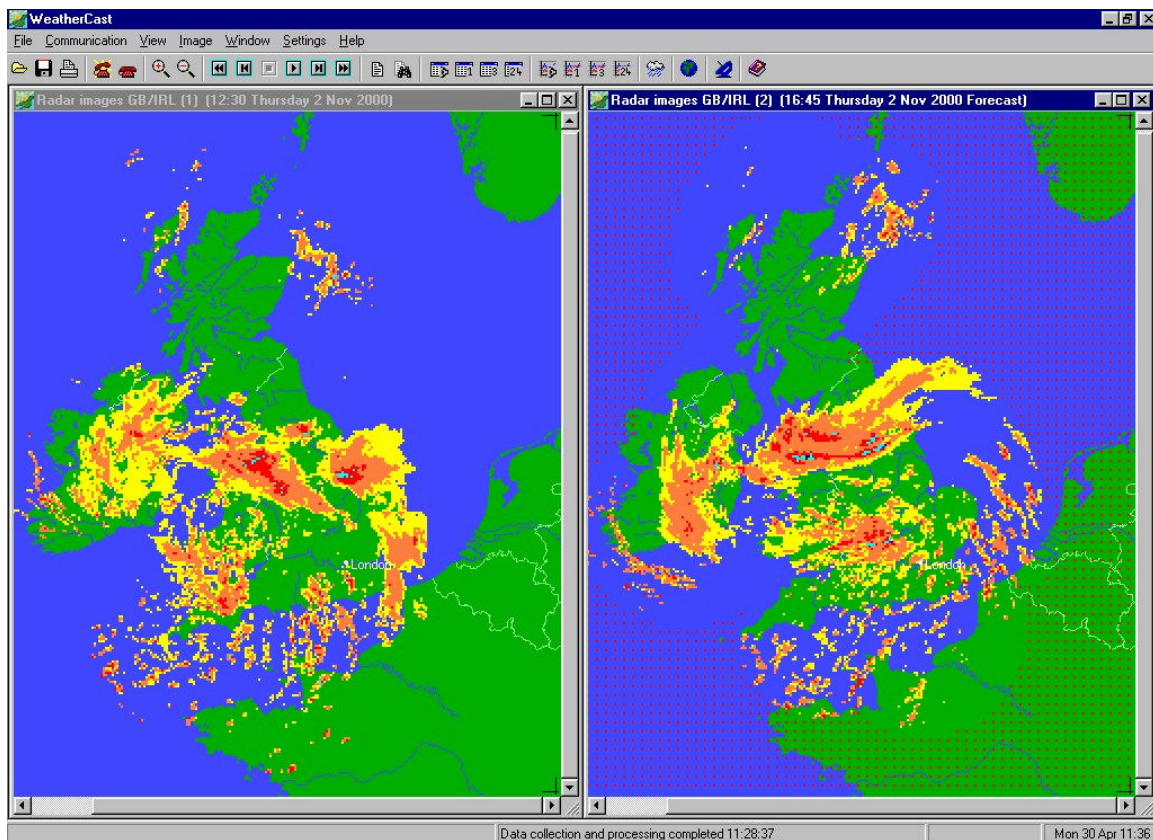
The radar images also allow for a precipitation forecast. Using the most recent precipitation map, the precipitation maps for the next two hours are calculated. This is done using a computer model. It uses the forecasted wind force and wind direction to shift the most recent precipitation map forward at quarter of an hour intervals. When using these forecast precipitation maps, you should be aware that changes in the shape and size of the areas of precipitation are not shown in the forecast maps. Forecast radar images are identified when red dots appear on the perimeter of the UK map (see example above).


## 4.3.2 Display of radar images

You can start the display of radar images by selecting the option **Radar images** in the **View** menu. The tool bar contains an icon which allows you to start the display of precipitation maps directly.

The radar images are superimposed onto a geographical map. The intensity of the precipitation is indicated by different colours and may vary from drizzle to heavy precipitation. You can find a key to the intensities represented by the colours by right-clicking on the radar image and selecting **Intensity legend**.

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In addition to precipitation intensities, the following data can be displayed on the map:

- Name of a Town
- Main Roads
- Grid
- Observations

There are three ways of choosing a town on the map:

1. After you have installed WeatherCast, the program will choose London by default. You can change the default by selecting the option **Map views** from the **Settings** menu and then clicking the tab **Map GB/IRL**. The place name selected here will become the default town shown on the radar images.

2. By left-clicking on a particular area of the map the nearest town will be shown automatically.

3. Finally, you can search for a place using its name. Right-click on the map. A pop-up menu will appear from which you should select the option **Search location**. You can now enter the name of the place you are looking for.

You can zoom in to see the radar image around the selected town in greater detail. Zooming out again allows you to see a larger are of the map.

**Zoom In** and **Zoom Out** can be selected by:

- Choosing either Zoom tool in the **Image** menu.
- Right-clicking on the map and choosing either tool from the menu.
- Clicking on the icons with the magnifying glass in the tool bar.

**Observations**

There are two ways of displaying the observations on a radar image:

- Select the option **Map views** in the **Settings** menu. Click on the **Map GB/IRL** tab and tick the selection box **Weather symbols**. This setting will be saved even after WeatherCast has been exited and restarted.
- Right-click on the map. Next, select **Weather Type** from the **Elements** option.

The observations are displayed every hour on the hour. The number of observations on the radar image may vary from hour to hour because not all stations report observations on an hourly basis. The following summary lists all the symbols and their meaning.

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| Symbol | Meaning | |
|---|---|---|
| | fog | |
| | thunder with rain or snow | |
| | thunder with hailstones | |
| | hailstones | |
| | black ice | |
| | snow | |
| | sleet | |
| | rain | |
| | 0/8 sky cover | (clear) |
| | 1/8 sky cover | (almost clear) |
| | 2/8 sky cover | |
| | 3/8 sky cover | |
| | 4/8 sky cover | (cloudy) |
| | 5/8 sky cover | |
| | 6/8 sky cover | |
| | 7/8 sky cover | (mostly cloudy) |
| | 8/8 sky cover | (overcast) |

If you right click on a radar image the following options become available on a menu:

**Period**

This allows you to tell WeatherCast how which radar images to display. You can display only the most recent images you have downloaded or a number of images up to a selected time. You can also turn the forecast images on and off.

**Search location**

This allows you to search for a particular town from a list of over 2000. When you select a particular name, that name will automatically be highlighted on the radar image.

**Intensity legend**

Clicking on this option displays the precipitation intensities with their corresponding colours in a separate window. These intensity colours can be changed. The window with intensity data is always presented as the active window.

**Overlays**

Further detail can be added to the map including 10km and 25km grids together with the road network.

**Element choice**

You can overlay observed weather elements onto the image.

**Print**

You can send the image to be printed on the printer attached to your PC.

**In and out zoom**

You may zoom into and out from the selected location on the image.

**Total zoom out**

This zooms back out completely in one go.

**Zoom factor**

This defines the amount of that you will zoom per click of the in or out zoom options.

**Play animation, Stop animation, Newest image, Next image, Previous image, Oldest image**

The animation will automatically start. After selecting Stop animation, you can control which image to display (Newest, Oldest etc) or begin the animation again.

### 4.3.3 Radar image settings

The **Map views** option in the **Settings** menu gives access to the **Radar GB/IRL** tab where you can enter how many radar images should be displayed. You can also set the speed at which the animation should run. Finally, you can also indicate whether forecast precipitation images should be displayed. Settings are saved, even after WeatherCast has been exited and restarted. You can also make changes to the settings of the map itself, including the colours, which overlays to display by default and which town should automatically be highlighted.

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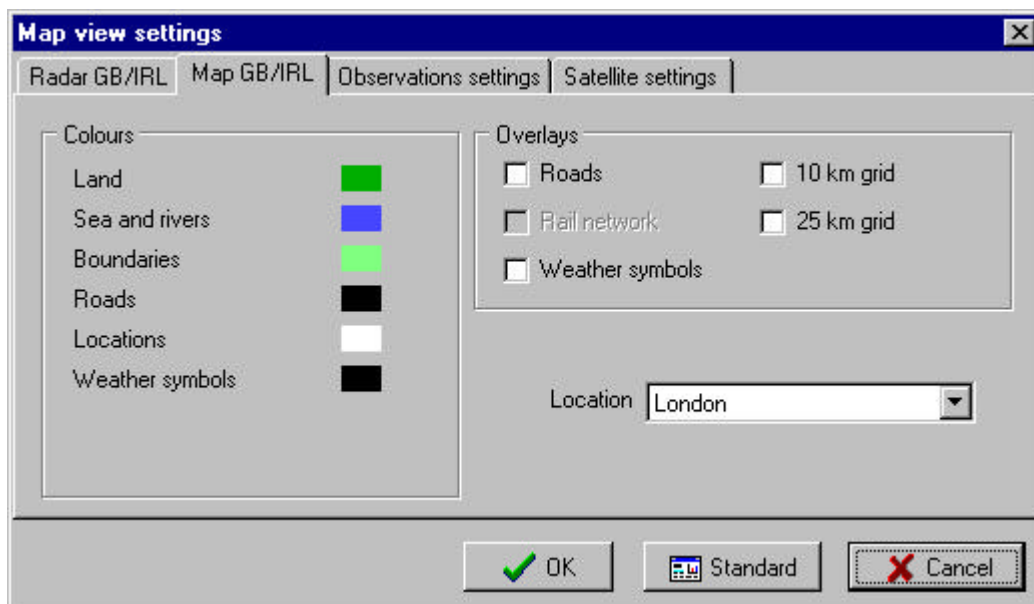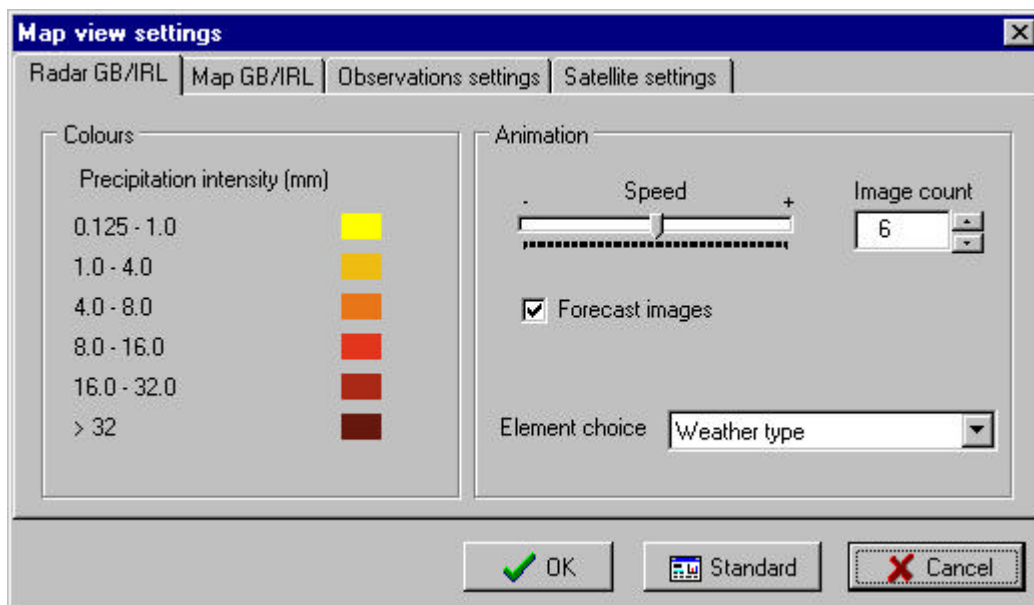
### 4.3.4 Faults and Inaccuracies in Radar Images

**False Reflections**

Sometimes precipitation is indicated on a radar image whereas in fact no precipitation is actually present. These occurrences are known as 'false reflections'. They can often be recognised by their patchy structure. In many cases, false reflections are caused by an 'inversion'. The general state of the atmosphere is such that the temperature just above ground is highest, with the temperature reducing as one moves higher into the atmosphere. In the case of an inversion, the temperature actually increases rather than reduces as one moves higher up through the atmosphere.

These inversions can reflect radar waves making the receiving radar system assume there is rain present in the atmosphere when actually it is dry.

The observations are a means of recognising false reflections. Observations are made from the ground of the type of precipitation which is falling. Updates of the type of precipitation can be re-displayed on the radar image once every hour. A false reflection is occurring if no precipitation is observed on the ground, while the radar image indicates precipitation to be falling.

**Absence of Reflections during Precipitation**

There may be times when you can see precipitation outside which does not show up on the radar image in WeatherCast. This will be for one of two reasons. The first is that the radar system that extends over your location is malfunctioning. It will therefore not have sent any information to PA WeatherCentre. This means that PA WeatherCentre unable to include data from that system in the radar image.

The second reason concerns very small precipitation elements, for example fine drizzly rain or small grains of snow. These reflect few or even no radar waves. As a result, the radar image displays no precipitation when in fact very light precipitation is actually occurring.

The Observations are a useful addition. Overlaying the observations onto the radar image will indicate whether or not such fine precipitation is occurring but not being picked up by the radar system.

**Precipitation at Great Distances**

Because of the curve in the earth's surface, the beam of the radar overshoots the highest showers towards the edges of the geographical map. Because of this, the reflections from areas of precipitation and from showers at the edges of the map area are often weak, while the intensity of the precipitation appears to increase as the area approaches the radar.

**4.4 Weather maps**

The weather maps are weather forecasts which have been generated automatically by a computer model. WeatherCast can display maps of the following:

- Atmospheric Pressure
- Precipitation
- Temperature

The weather maps are updated daily. The new weather maps for WeatherCast are available each day, in the morning. You can download the weather maps by selecting **Data collection** from the **Settings** menu. In the window, you need to select the weather maps that you wish to download in the **Forecast** box (putting a tick in the box). You can also select the specific day that you require forecast information for.

You can start viewing the downloaded weather maps by selecting **Weather maps** from the **View** menu and then the required type of map. For each type, four successive maps are always available. You can browse through the maps in the same way as with radar images.

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## 4.4.1 Atmospheric Pressure Maps

In the atmospheric pressure maps, lines known by meteorologists as isobars join up places with the same atmospheric pressure. Along these lines the forecast atmospheric pressure is indicated. The wind blows clockwise around a high pressure area and counter-clockwise around a low pressure area in the northern hemisphere. The positions of the high and low pressure areas thus determine from which direction air is feeding into the British Isles. The wind direction is roughly parallel to the lines on the pressure map. The smaller the spacing between two adjacent lines, the stronger the wind will be in that area. The title bar contains the date and time of the atmospheric pressure map being viewed. The pressure maps represent the forecast pressure pattern for 1200GMT today and nine days into the future.

PA WeatherCentre Ltd.
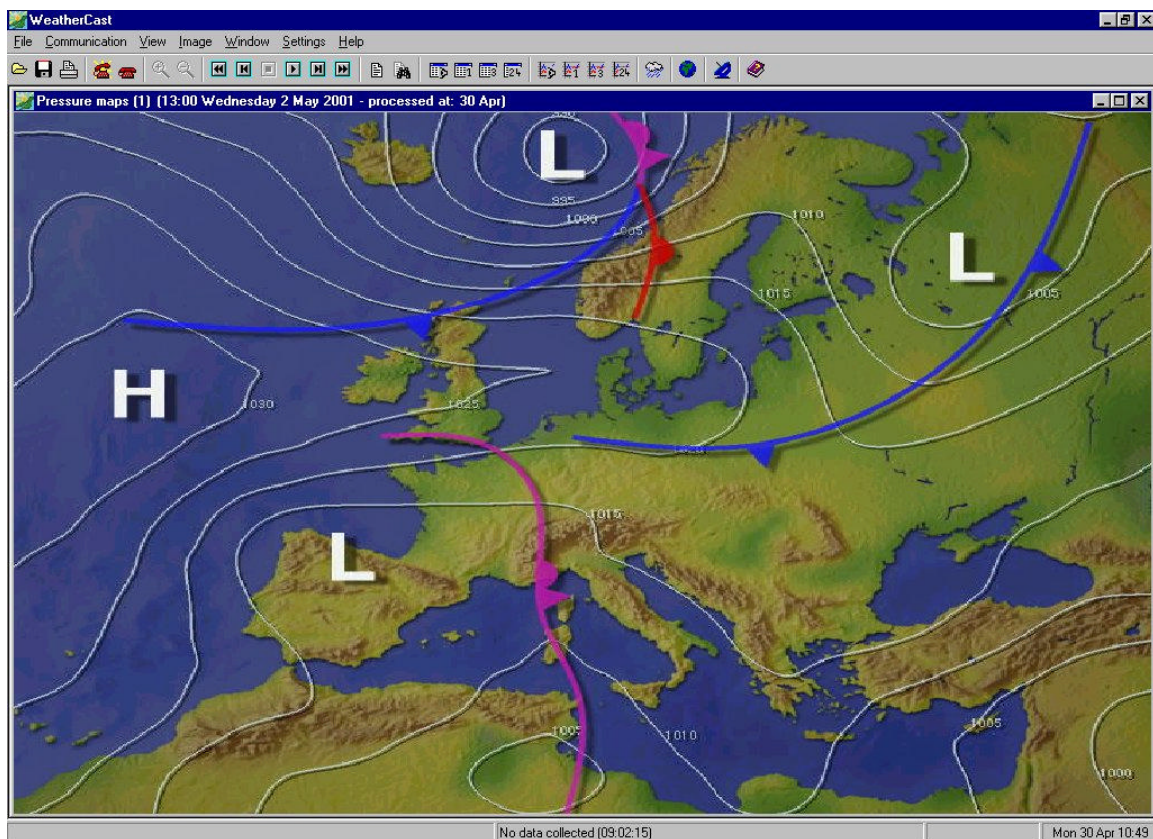
## 4.4.2 Precipitation Maps

A precipitation map displays the forecast amount of precipitation over Europe. The forecast amount of precipitation is expressed on the map in different colours. Along the edges of the precipitation areas, the precipitation is indicated in millimetres. A precipitation map displays the amount of precipitation forecast for either, a period of six hours or for by daily amount. The title bar indicates the date and time of the map. Daily precipitation maps are available for today plus the following five days, with 6-hourly precipitation forecast maps available for today plus three days.

PA WeatherCentre Ltd.
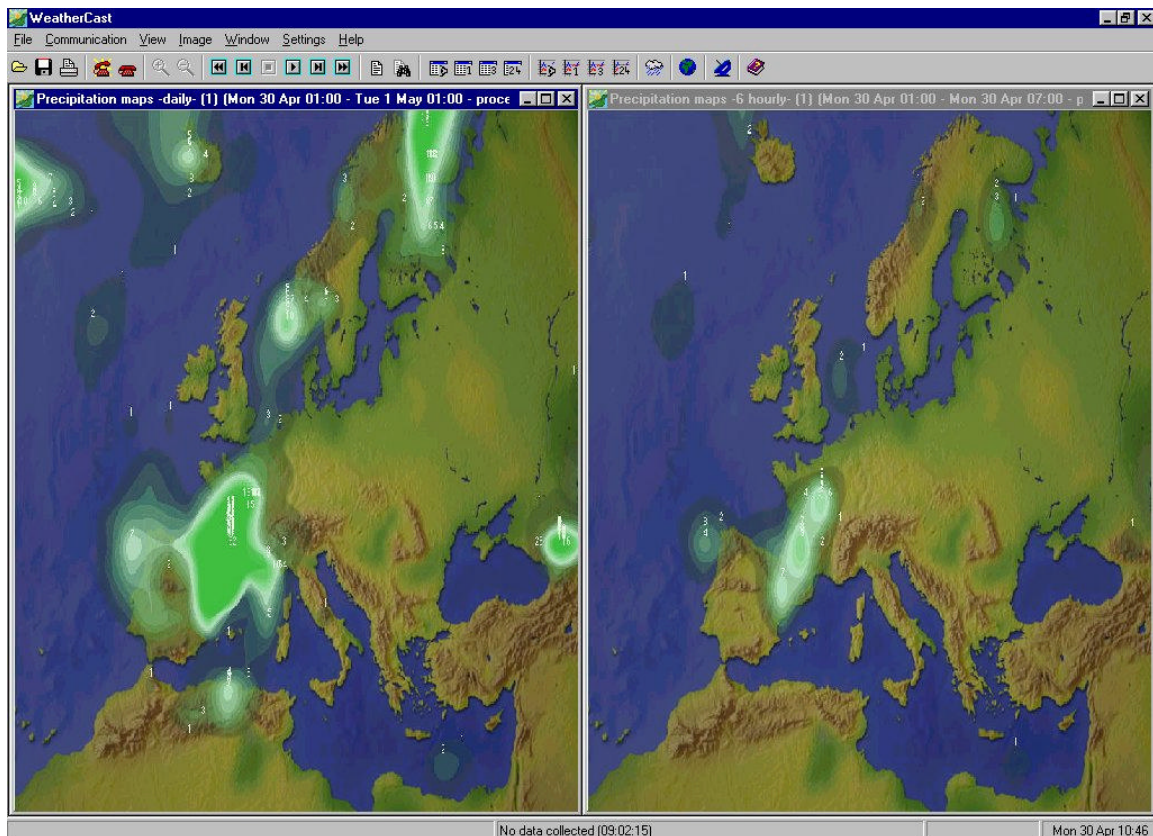
### 4.4.3 Temperature Maps

The temperature maps displays the forecast air temperature across Europe. The forecast air temperature is expressed in different colours and figures. A legend is included in the top-left corner of the temperature map. The dividing line between temperature above and below freezing point is shown as sharp line between the green and a blue areas.

There are temperature maps for both (night-time) minimum and (daytime) maximum temperatures, both of which provide forecast information for today plus the following nine days. As with all of WeatherCast's European weather maps, you can select the specific day you require forecast information for.

PA WeatherCentre Ltd.
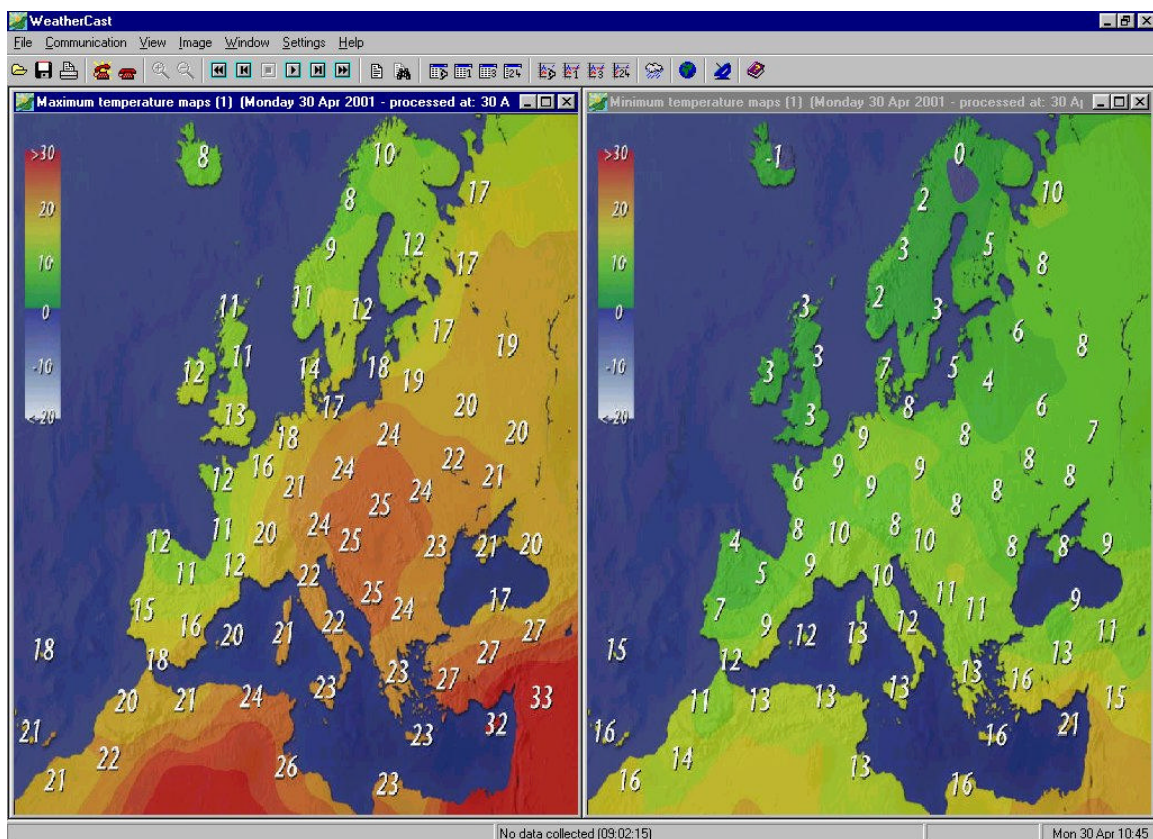
## 4.5 Satellite images

The satellite images provide information regarding the cloud coverage over Europe. The satellite photographs in WeatherCast are taken by the European meteorological satellite Meteosat. Two types of satellite photograph can be displayed:

- Visible light
- Infra-red

The big disadvantage of visible light satellite images is that cloud is not visible once the sun no longer illuminates the earth's surface. Infra-red satellite images are based on temperature-sensitive recordings. Because of the temperature differences between the clouds and the earth's surface, it is possible to obtain cloud coverage information 24 hours a day. Satellite images are available every hour. They are available to WeatherCast 50 minutes past the hour. You can display satellite images by selecting the **Satellite images** option in the **View** menu. The original satellite images consist of shades of grey. The satellite images for WeatherCast are processed so that the cloud coverage is superimposed on a colour map.

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