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Below you will find the answers to questions frequently asked about Dundee Satellite Receiving Station.

The questions:

1. Which **regions** do you cover?
2. Why is **registration** necessary? Will you start charging for images?
3. How can I access **high resolution** images? Can I zoom in?
4. What do the different **channels** mean?
5. So what is the Normalised Difference Vegetation Index (**NDVI**) ?
6. What is the **Pseudo Colour** image, and why are the colours wrong?
7. When are passes received and how long is it before they become available?
8. Why does the image contain stripes?
9. Can you forecast the **weather**?
10. Where can I find other weather information?
11. What is NEODAAS?

The answers:

#### 1. Which regions do you cover?

We can receive images from a large circle centred on Dundee, as shown in the map at the bottom of this page. At the extremes we can reach as far as Newfoundland, Morocco and the Canary Islands, the Black Sea, Novaya Zemlya and Greenland. For more information please see the [coverage](#) document.

Don't forget that we also receive images from geostationary satellites which cover the whole world.

#### 2. Why is registration necessary? Will you start charging for images?

The funding for our service is provided by [NERC](#) who require that we justify our provision of free images by recording details of their use. They will continue to be available free of charge. Your account also provides other benefits such as future upgrades to allow access to high resolution data and personalised quicklook size, search results, and shopping basket, etc.

#### 3. How can I access high resolution images?

Full high resolution data as images or HRPT is only available to users who formally register by letter or fax as we charge for such data. For more information please see our [high resolution data](#) documentation.

You may wish to check our [Related Web Sites](#) page for links to high resolution satellites and aerial photographs.

Currently we receive passes from [NOAA](#), [SeaStar](#) and [EOS](#) satellites carrying the [AVHRR](#), [SeaWiFS](#) and [MODIS](#) scanners respectively. Please read the scanner documents for details of resolution and spectral response.

#### 4. What do the different channels mean?

Satellites scan the earth using a number of sensors which respond to different ranges of wavelengths. For example, channel 1 responds to visible light and channel 5 responds to infra red radiation (heat). The other channels respond to varying ranges in between. The information from a single channel may be useful by itself, for example seeing clouds in channel 1. In general the best channels to view are channel 2 (visible) and channel 4 (thermal).

A great deal of information can be gleaned from combining different channels together. The high resolution images can be used for meteorology, oceanography and the detection of features on land. For more technical information please read about the [AVHRR scanner](#).

Visual images are similar to those produced by an ordinary camera. The scanner in the satellite responds to sunlight reflected by clouds and the earth's surface, as would a camera. This means that channels 1 and 2 will be dark (or you will just see speckled noise) at night time. It is not possible to see city lights from AVHRR as it is not sensitive enough. It is rare but sometimes the visible channel shows land lit by moonlight as on [2-Feb-07 21:22](#).

Infra-red images are formed by the response of the scanner to heat radiated by the objects and surfaces viewed. The higher the temperature of the object scanned, the darker the image produced. The result is that the picture is composed of varying shades from white to dark grey. Thus high cirrus clouds which are composed of ice crystals appear almost white in IR images, whereas warm portions of the earth's surface are shown as darker areas. This characteristic of the images enables the relative heights of different cloud layers to be detected since clouds at lower levels will show up darker than those at upper levels where the temperature is lower. Variations in sea surface temperature can also be revealed.

See also: [ZAMG](#).

#### 5. So what is the Normalised Difference Vegetation Index?

The NDVI *channel* is in fact a combination of channels 1 and 2 using a formula to indicate vegetation. It is only a coarse index but can be used to indicate which areas in other channels should be investigated.

#### 6. What is the Pseudo Colour image, and why are the colours wrong?

The Pseudo Colour *channel* is in fact a combination of 3 channels, one each to make up the red, green and blue components of the resulting image. For AVHRR we use channels 1, 2 and 4 respectively to produce a pseudo-colour image rather than a true colour image, since none of the received channels actually cover the colour part of the visible spectrum. Although the image does not represent true colours it is however useful for distinguishing between land, sea and clouds [Ref: ZAMG, see Basics | Artificial Channels]:

- White or bluish white: Thick and cold clouds
- Light blue: Thin and cold clouds
- White or yellowish white: Mid-level clouds
- Yellow to sand brown: Low level clouds
- Yellowish white: Ice and snow
- Dark green: Land surface
- Dark blue: Ocean surface

For SeaWiFS we use channels 6, 5 and 3 as red, green and blue respectively since they cover the appropriate parts of the visible spectrum. The image thus looks more true colour.

Much better images are available from MODIS, using channels 1, 4 and 3. See our [interesting images](#) for examples.

For more details on the parts of the spectrum covered by each channel please see the [MODIS](#) document.

#### 7. When are passes received and how long is it before they become available?

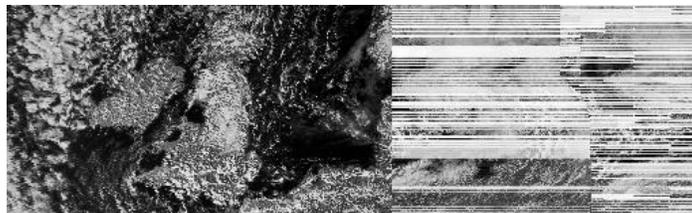
Passes are currently received 12 times per day, although the satellites make many more passes near Dundee. We hope to increase the number of passes received as disc space allows but currently the passes chosen are those that are most useful to our customers. Customers are of course free to request other passes from which they wish to order data. The quicklooks for each pass are available within minutes of reception. The pass database and reprojected images will be available within the following few minutes.

A quick note about times: The time shown for a pass, for example 14:32, is the time that the satellite passes nearest to Dundee and is always shown in GMT (Greenwich Mean Time). The satellite will first come into view about 7 minutes before and disappear about 7 minutes after (average duration of visibility is 15 minutes). Therefore, in this example, the quicklooks will be available soon after 14:39. During the summer our local time is 1 hour ahead of GMT.

If you are trying to view the latest pass but seeing an older one then first please try to Reload or Refresh the web page in your web browser. If that does not work then please try again but this time hold down the CTRL (Control) key whilst doing so. If that does not work you can also try with the Shift key. This will force any proxy or cache servers to fetch the latest page. If you still see old images then there may be a problem with the satellite or with our web site so please use our comment form to contact us.

#### 8. Why does the image contain stripes?

There are two main reasons for the stripes on the image. If you are viewing an image from the NOAA-16 or NOAA-17 satellites then they are known to have a problem with their AVHRR scan motors. This causes the image to look like this:



SeaWiFS images from 2005 onwards are now encrypted; see our [SeaWiFS document](#) for details. The images will look like this:



#### 9. Can you forecast the weather?

It is certainly possible to forecast weather from the images received in Dundee. However our service is provided *for* meteorologists, not *by* meteorologists so we are unable to provide weather forecasts.

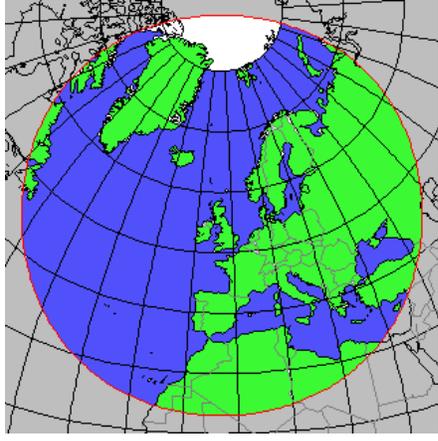
#### 10. Where can I find other weather information?

Weather forecasts can be found in many places. A starting point is the [UK Meteorological Office](#), who provide forecasts for the [Electronic Telegraph](#) (registration is necessary before forecasts can be accessed). The [Press Association](#) provide forecasts as do [Impact Weather Services](#). Forecast images constructed from Meteosat can be found at [Meteo France](#). Rainfall radar images can be seen on the [BBC Weather](#) page or [AvBrief](#). Other pages of weather-related links can be found in our [Related Web Pages](#) document.

#### 11. What is NEODAAS?

NEODAAS is the NERC Earth Observation Data Acquisition and Analysis Service. The acquisition of satellite data is done in Dundee, Scotland, at the Satellite Receiving Station. The analysis is done in Plymouth, England, at the Plymouth Marine Laboratory. For more information please see the [NEODAAS home page](#).

#### 12. Extent of coverage visible from Dundee



[Dundee Satellite Receiving Station Home Page](#)

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