

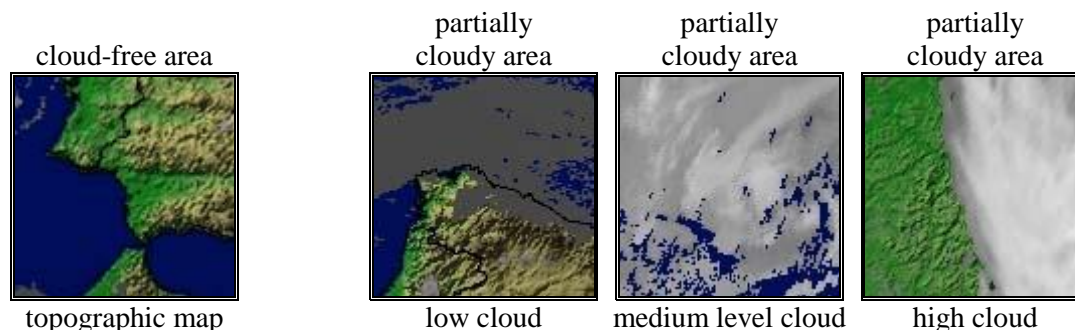
Information about the meteorological satellite images available on the homepage of the Hungarian Meteorological Service (OMSZ)

Two different types of meteorological satellite images can be found on the [homepage](#) of OMSZ published hourly **infrared cloud images** and **visible-infrared composite images**. At the menu item „Satellite” one can find an image about the weather fronts as well, which has the infrared image as background. All these images are derived from Meteosat satellite data.

The geostationary Meteosat meteorological satellite series are operated by [EUMETSAT](#) (European Organisation for the Exploitation of Meteorological Satellites). The new generation of these satellites make observations in 12 different spectral channels about the hemisphere containing Europe and Africa. Measurements are made in the visible and in the infrared spectral range. Spatial resolution of the images for the area of Hungary is about 4x6 km for 11 channels and 1.3x2 km in the 12th high resolution visible channel. Images taken at the **solar** spectral range show the reflectivity of the surface or clouds. Images scanned in the atmospheric windows of the **infrared** spectral range give information about the temperature of the surface and clouds. Images taken at the **water vapour** absorption band reflect the humidity of the upper troposphere.

Infrared cloud image

During the calibration procedure of the infrared images we calculate temperature values from the measured radiance then we put the temperature values of the cloudy pixels onto a topographic [map](#). (Separation of cloudy and cloud-free areas is done by a dedicated program.) During the visualisation we assign white or light gray colours to the colder values, and darker gray colours to warmer values. Therefore one can see fog and low clouds in dark colours while the high cold clouds appear in white. The spatial resolution of the image is 15 km.



Visible-infra composite image

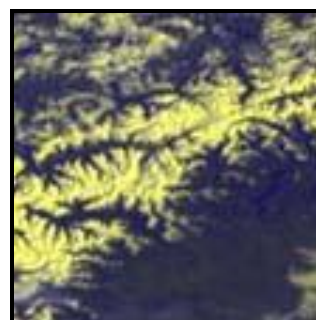
The composite satellite image is created by the combined visualisation of the high resolution visible image and one of the infrared images. To make a composite image we visualise more channels together in the way that images measured at different spectral range are attached to the different basic colours (red, green, blue). For the visible-infrared composite as it can be seen on our homepage we assign the high resolution visible image to the red and green scales while the infrared image to the blue scale. On the composite image high thick clouds appear in white, high thin cirrus clouds are light blue, medium level clouds are light yellow, while low clouds appear in darker yellow. Cloud-free sea surface has dark blue colour, cloud-free land surface is dark greenish-bluish gray and snow covered surface is yellow.

Between sunset and sunrise there are no solar radiation therefore we can only have infrared images, only blue colours can be seen. We do not calculate these composite images during night. At sunset the composite images become darker, while at sunrise they become brighter and more and more colourful according to the illumination. The spatial resolution of the image is 15 km.

Colour scale	
	thick, high cloud
	thin, semi-transparent cirrus cloud
	low and medium level cloud
	snow
	land
	sea



land and sea



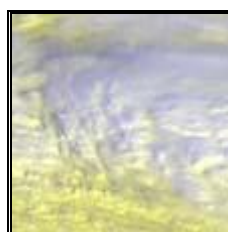
snow



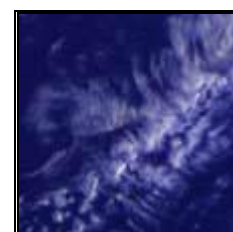
low cloud



medium level cloud



high thick cloud



high thin cloud

Weather fronts

The background of the images describing the weather fronts is the same as the infrared cloud image.

Comments

The publication of satellite images are regulated by the data policy of EUMETSAT. Presently only three-hourly Meteosat images can be used freely. Although with special conditions it is allowed to distribute hourly images. The infra cloud and visible-infra composite images meet this requirements.

Hourly Meteosat data can be seen at the homepage of EUMETSAT.

Updated: 1 August 2013