

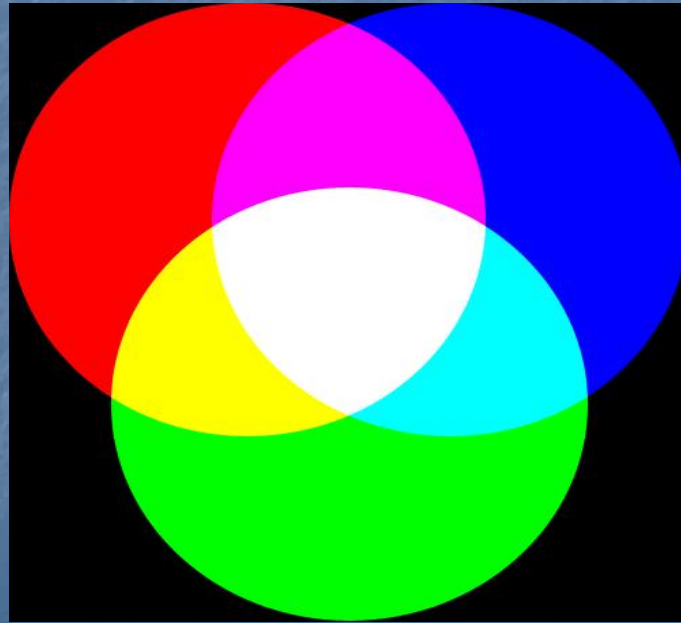
RGB image composites

We often analyze images by using each individual channel alone, and it is important to determine the kind of the cloud by animation. However, considerable skill is necessary for that.

RGB image composites can be determine easily by appearance, it is very effective for the neph-analysis.

RGB image composites

The three primary colors of the light



(Wikipedia <http://ja.wikipedia.org/wiki/>)

RGB: red, green, and blue

RGB means the three primary colors of the light, and it is composed of the color space representing an additive color system.

The scheme on this slide shows the system;

Primary colors: red, green, and blue

Secondary colors: yellow = red + green

cyan = green + blue

magenta = red + blue

All colors: white = red + green + blue

black = no light

RGB image composite is a technique to display the color imagery by using this property of the three primary colors of the light.

RGB image composites – additive colour scheme (Extraction from the materials of MSG , EUMETSAT)

Attribution of images of 2 or 3 channels (or channel differences/ratios) to the individual colour (RGB) beams of the display device;

- RGB display devices produce colours by adding the intensities of their colour beams → optical feature extraction through result of colour addition.

**→ FAST BUT QUITE EFFICIENT SURROGATE FOR
QUANTITATIVE FEATURE EXTRACTION**

The text on this slide is practically self-explaining.

RGB image composites – how to do

Optimum (and stable) colouring of RGB image composites depends on some manipulations:

- Proper enhancement of individual colour channels requires:
 - Some stretching of the intensity ranges;
 - Reflectivity enhancement at lower solar angles applying e.g. sun angle compensation or histogramme equalisation;
 - Selection of either inverting or not IR channels.
- Attribution of images to individual colour beams depends on:
 - Reproduction of RGB schemes inherited from other imagers;
 - Permutation among colour beams of individual images
→ more or less pleasant / high-contrast appearance of RGB image composite.

Extraction from the materials of MSG,EUMETSAT

(Extraction from the materials of MSG)

RGB image composites – pros and cons

■ **Drawbacks:**

- Much more subtle colour scheme compared to discrete LUT used in quantitative image products
→ interpretation more difficult;
- RGBs using solar channels loose colour near dawn/dusk (even with reflectivity enhancement).

■ **Advantages:**

- Processes “on the fly”;
- Preserves “natural look” of images by retaining original textures (in particular for clouds);
- Preserves spatial and temporal continuity allowing for smooth animation of RGB image sequences.

Extraction from the materials of MSG,EUMETSAT

(Extraction from the materials of MSG)