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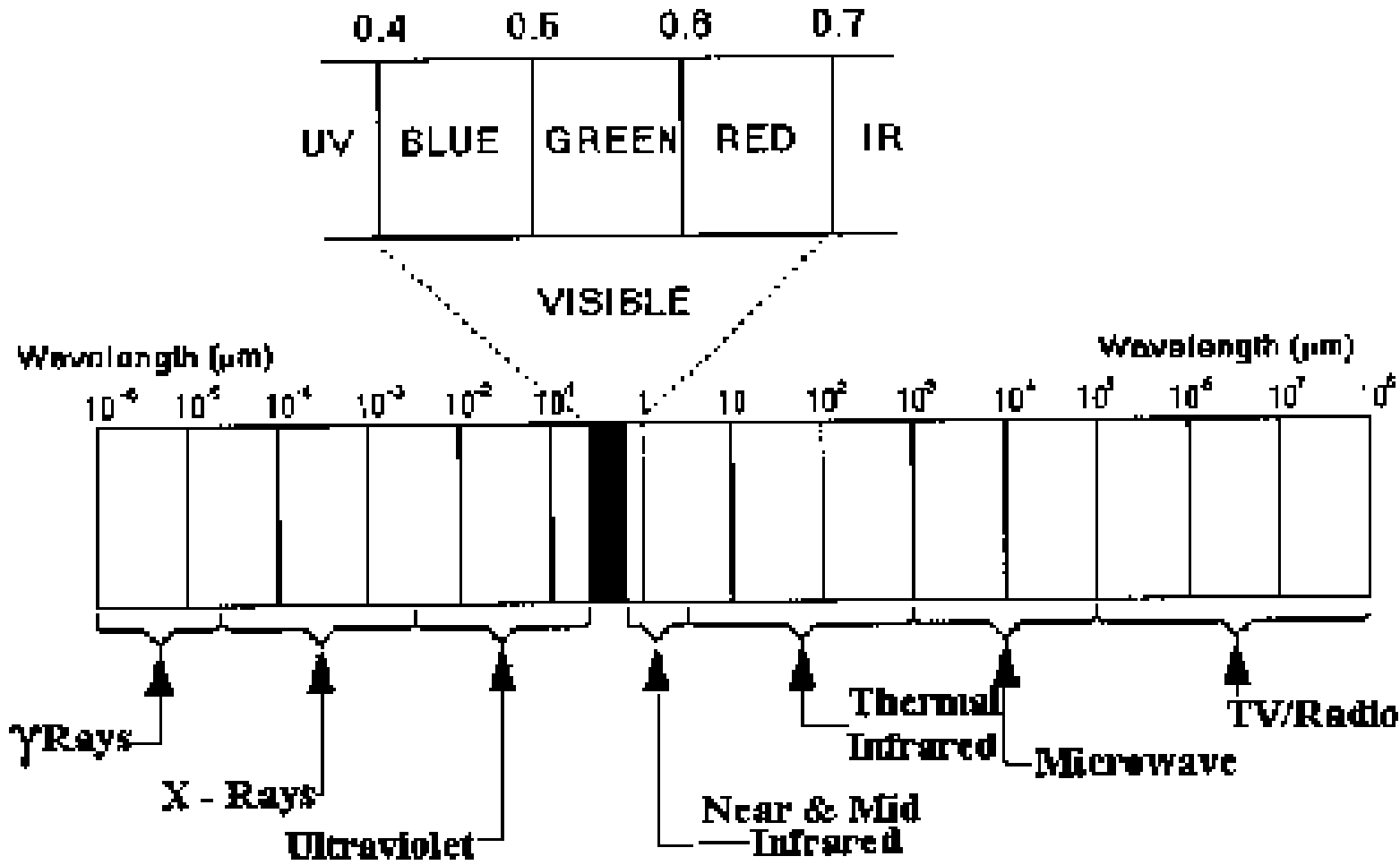
Normalized Difference Vegetation Index

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The EM Spectrum



NDVI

- NDVI is a measure using to identify the ground vegetation.
- Vegetation absorbs the red radiations, and it reflects the near-infrared radiations.
- To measure NDVI, you have to choose bands that represent red radiations and near-infrared radiations.

$$\bullet \text{NDVI} = (\text{NIR} - \text{R}) / (\text{NIR} + \text{R})$$

- The NDVI Value should be in the range between 1 and -1
- The NDVI Value of Vegetation is near to 1.

Land Sat 8 Bands

Landsat 8	Bands	Wavelength	Resolution
		(micrometers)	(meters)
Operational Land Imager (OLI) and Thermal Infrared Sensor (TIRS)	Band 1 - Ultra Blue (coastal/aerosol)	0.43 - 0.45	30
	Band 2 - Blue	0.45 - 0.51	30
	Band 3 - Green	0.53 - 0.59	30
	Band 4 - Red	0.64 - 0.67	30
	Band 5 - Near Infrared (NIR)	0.85 - 0.88	30
	Band 6 - Shortwave Infrared (SWIR) 1	1.57 - 1.65	30
	Band 7 - Shortwave Infrared (SWIR) 2	2.11 - 2.29	30
	Band 8 - Panchromatic	0.50 - 0.68	15
	Band 9 - Cirrus	1.36 - 1.38	30
	Band 10 - Thermal Infrared (TIRS) 1	10.60 - 11.19	100 * (30)
	Band 11 - Thermal Infrared (TIRS) 2	11.50 - 12.51	100 * (30)

Source: www.USGS.gov

Land Sat 7 Bands

Enhanced Thematic Mapper Plus (ETM+)	Landsat 7	Wavelength (micrometers)	Resolution (meters)
	Band 1	0.45-0.52	30
	Band 2	0.52-0.60	30
	Band 3	0.63-0.69	30
	Band 4	0.77-0.90	30
	Band 5	1.55-1.75	30
	Band 6	10.40-12.50	60 * (30)
	Band 7	2.09-2.35	30
	Band 8	.52-.90	15

Source: www.USGS.gov

Land Sat 4 & 5 Bands

Thematic Mapper (TM)	Landsat 4-5	Wavelength (micrometers)	Resolution (meters)
	Band 1	0.45-0.52	30
	Band 2	0.52-0.60	30
	Band 3	0.63-0.69	30
	Band 4	0.76-0.90	30
	Band 5	1.55-1.75	30
	Band 6	10.40-12.50	120* (30)
	Band 7	2.08-2.35	30

Source: WWW.USGS.Org

Sentinel 2 Bands

Sentinel-2A MSI			
Band	Spectral region	Wavelength range (nm)	Resolution (m)
B1			
B2	Blue	458–523	10
B3	Green peak	543–578	10
B4	Red	650–680	10
B5	Red edge	698–713	20
B6	Red edge	733–748	20
B7	Red edge	773–793	20
B8	NIR	785–899	10
B8A	NIR narrow	855–875	20
B11	SWIR	1565–1655	20
B12	SWIR	2100–2280	20

Source: www.ESA.int