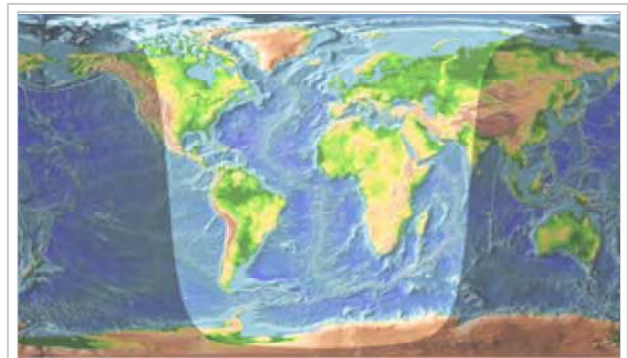


Daylight

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Daylight, or **the light of day**, is the combination of all direct and indirect sunlight during the daytime. This includes direct sunlight, diffuse sky radiation, and (often) both of these reflected from the Earth and terrestrial objects. Sunlight scattered or reflected from objects in outer space (that is, beyond the Earth's atmosphere) is not generally considered daylight. Thus, moonlight is never considered daylight, despite being "indirect sunlight". *Daytime* is the period of time each day when daylight occurs. Daylight happens because the Earth rotates and either side the sun shines on is considered daylight.



World map showing the areas of the Earth receiving daylight around 13:00 UTC, April 2nd.

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Definition

Daylight is present at a particular location, to some degree, whenever the sun is above the horizon at that location. (This is true for slightly more than 50% of the Earth at any given time. For an explanation of why it is not exactly half, see here). However, the outdoor illuminance can vary from 120,000 lux for direct sunlight at noon, which may cause eye pain, to less than 5 lux for thick storm clouds with the sun at the horizon (even <1 lux for the most extreme case), which may make shadows from distant street lights visible. It may be darker under unusual circumstances such as a solar eclipse or very high levels of atmospheric smoke (See New England's Dark Day), dust,^[1] or volcanic ash.^[2]

Daylight intensity in different conditions

Illuminance	Example
120,000 lux	Brightest sunlight
111,000 lux	Bright sunlight
20,000 lux	Shade illuminated by entire clear blue sky, midday
1,000 - 2,000 lux	Typical overcast day, midday
<200 lux	Extreme of darkest storm clouds, midday
400 lux	Sunrise or sunset on a clear day (ambient illumination).
40 lux	Fully overcast, sunset/sunrise
<1 lux	Extreme of darkest storm clouds, sunset/rise

For comparison, nighttime illuminance levels are:

Illuminance	Example
<1 lux	Moonlight ^[3]
0.25 lux	Full Moon on a clear night ^{[4][5]}
0.01 lux	Quarter Moon
0.002 lux	Starlight clear moonless night sky including airglow ^[4]
0.0002 lux	Starlight clear moonless night sky excluding airglow ^[4]
0.00014 lux	Venus at brightest ^[4]
0.0001 lux	Starlight overcast moonless night sky ^[4]

For a table of approximate daylight intensity in the Solar System, see sunlight.

Effects

Daylighting is lighting an indoor space with openings such as windows and skylights that allow daylight into the building. This type of lighting is chosen to save energy, to avoid hypothesized adverse health effects of over-illumination by artificial light, and also for aesthetics. The amount of daylight received into an indoor space or room is defined as a daylight factor, being the ratio between the measured internal and external light levels. Artificial lighting energy use can be reduced by simply installing fewer electric lights because daylight is present, or by dimming/switching electric lights automatically in response to the presence of daylight, a process known as daylight harvesting.

In recent years, work has taken place to recreate the effects of daylight artificially. This is however expensive in terms of both equipment and energy consumption and is applied almost exclusively in specialist areas such as filmmaking, where light of such intensity is required anyway. In some filmmaking locations, such as Sweden, there is too much light due to long summer days. As a result, in location films like *Marianne*, night scenes have to be shot during the daylight hours and digitally altered later.

See also

- Twilight
- Moonlight
- Daylight saving time
- Daylighting
- Daytime (astronomy)
- Right to light
- Day length
- Color temperature

Notes

1. <http://www.perryton.com/black.htm>
2. <http://volcanoes.usgs.gov/ash/>
3. Bunning, Erwin; Moser, Ilse (April 1969). "Interference of moonlight with the photoperiodic measurement of time by plants, and their adaptive reaction" (– Scholar search). *Proceedings of the National Academy of Sciences of the United States of America*. **62** (4): 1018–1022. Bibcode:1969PNAS...62.1018B. doi:10.1073/pnas.62.4.1018. PMC 223607 . PMID 16591742. Retrieved 2006-11-10.
4. Paul Schlyter, Radiometry and photometry in astronomy FAQ (<http://stjarnhimlen.se/comp/radfaq.html#10>) (2006)
5. "Petzl reference system for lighting performance". Archived from the original on 2008-06-20. Retrieved 2007-04-24.

External links

- Royal Institution of Chartered Surveyors - Rights to Light Determination Homepage (<http://www.rics.org/Property/Propertymanagement/Easements/Rightstolightdetermination>)

- Daylight Chart (<http://daylightchart.sourceforge.net/>) shows sunrise and sunset times in a chart, for any location in the world.
- http://www.gandraxa.com/length_of_day.xml Deriving the formulas to calculate the length of day.

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