

SKY LIGHTS

Things you can see in the sky

Look around!

The world is full of fascinating things - -

- - things that appear before our eyes
- - but most of us have never seen!





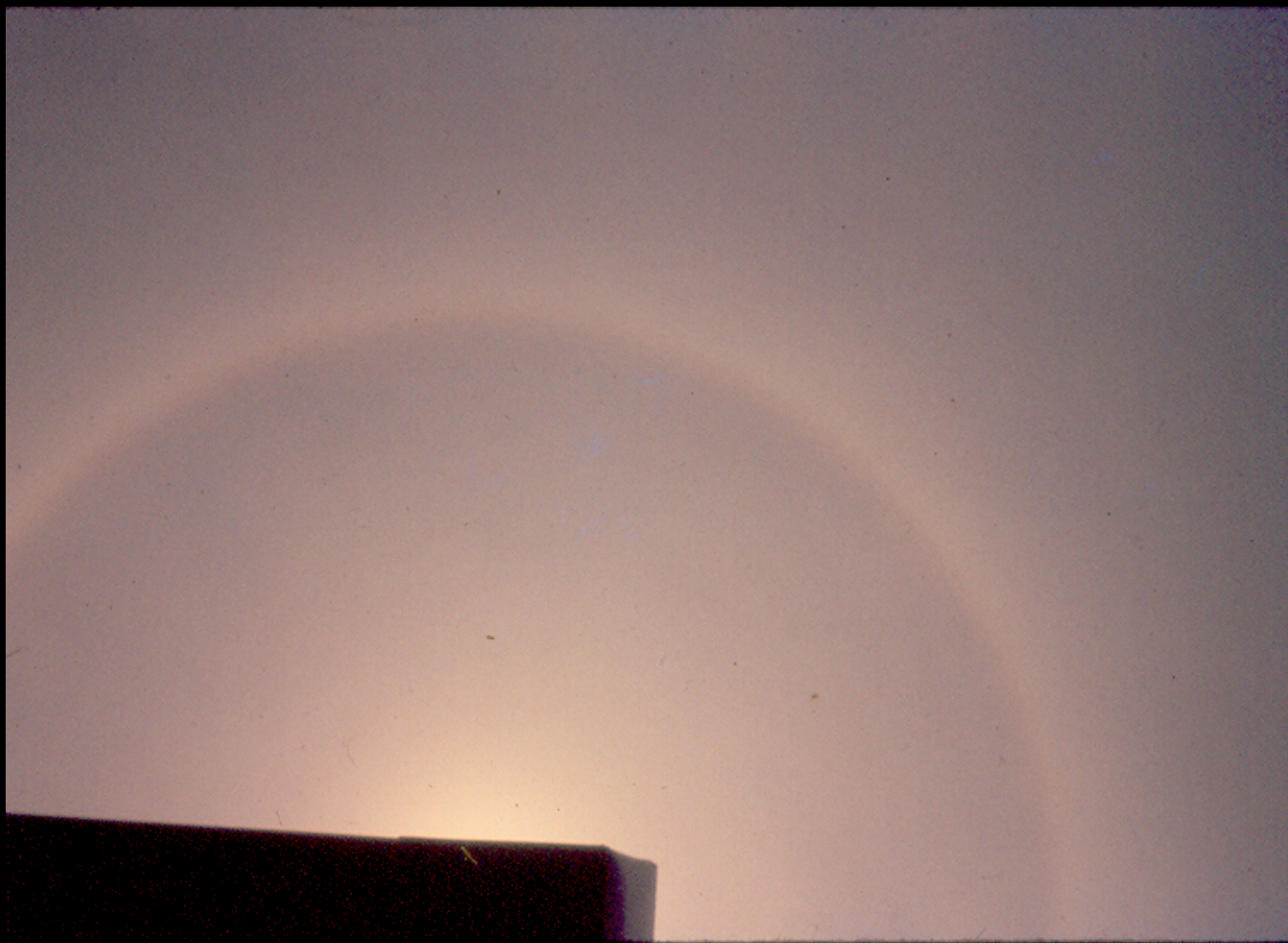
















Sunlight

The Solar Spectrum

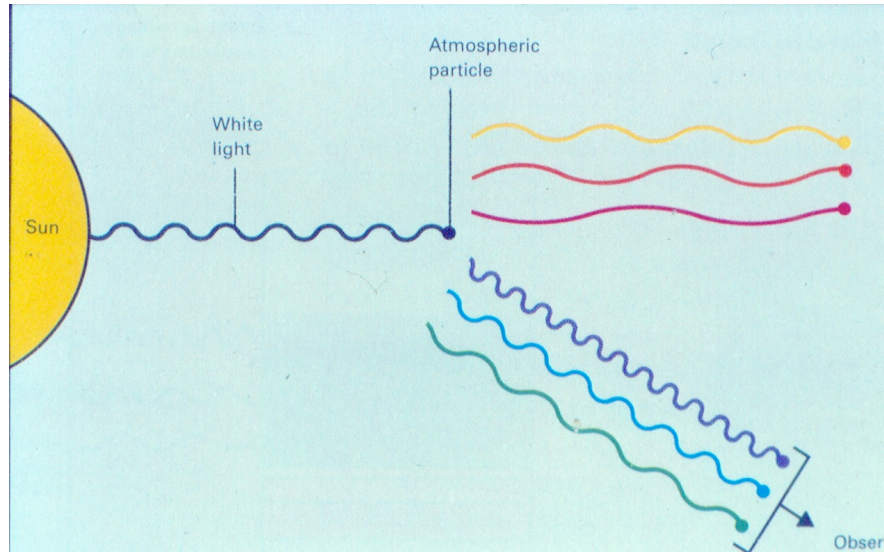


Prism Reflection Refraction Dispersion

The Atmosphere

- Molecules of nitrogen, oxygen
- Water vapor
- Dust, contaminants
- Water droplets
- Ice crystals

Light Scattering



Blue light is scattered more than red light for small particles in the air.

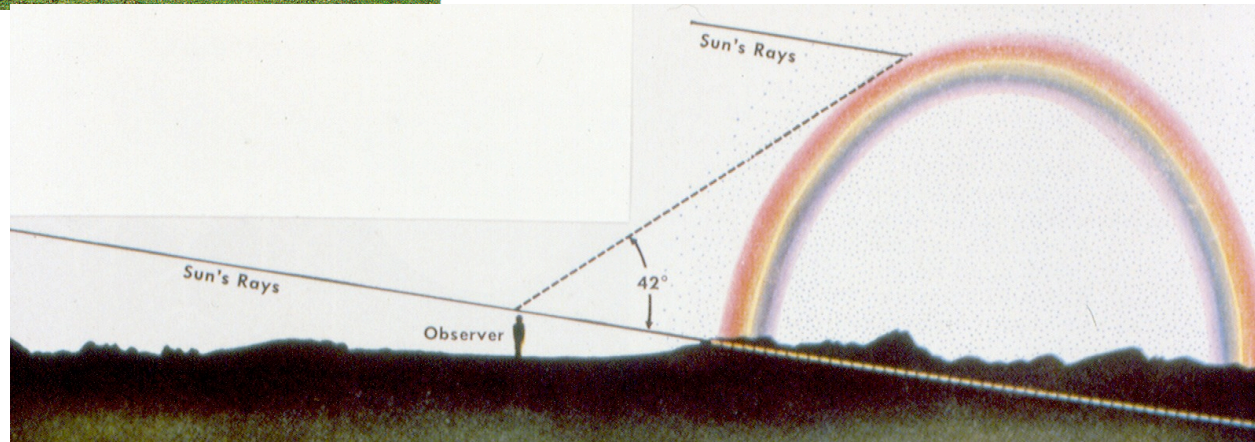
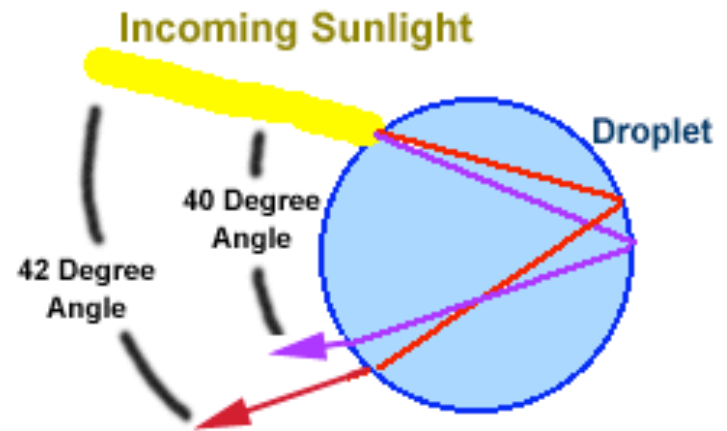
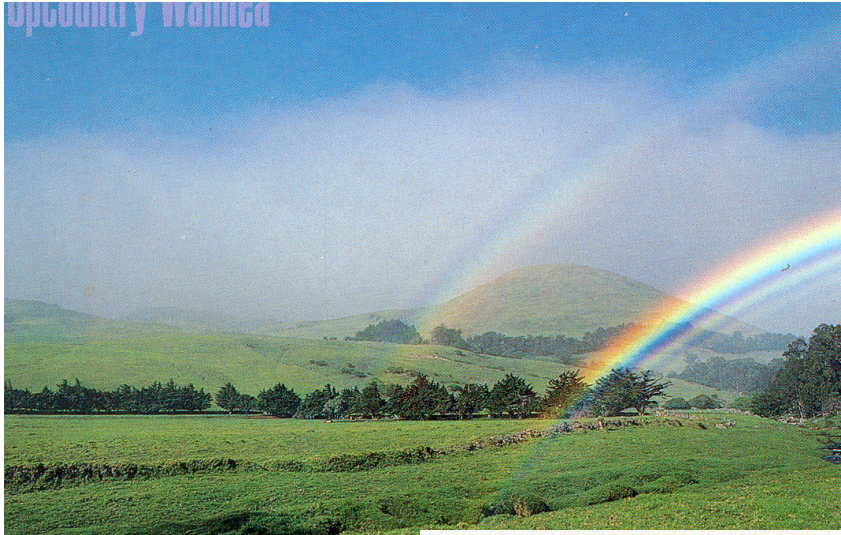


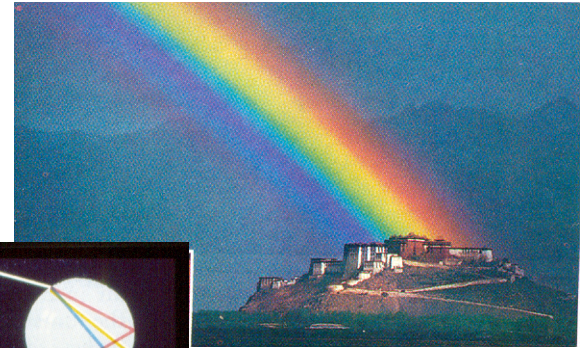
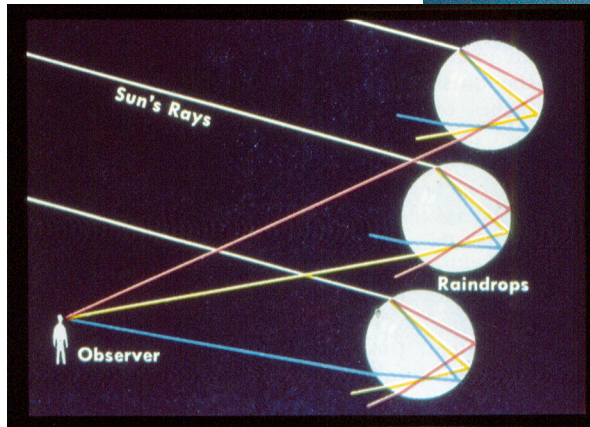
For large particles all colors are scattered, so clouds look white.



Sunrise -- Sunset

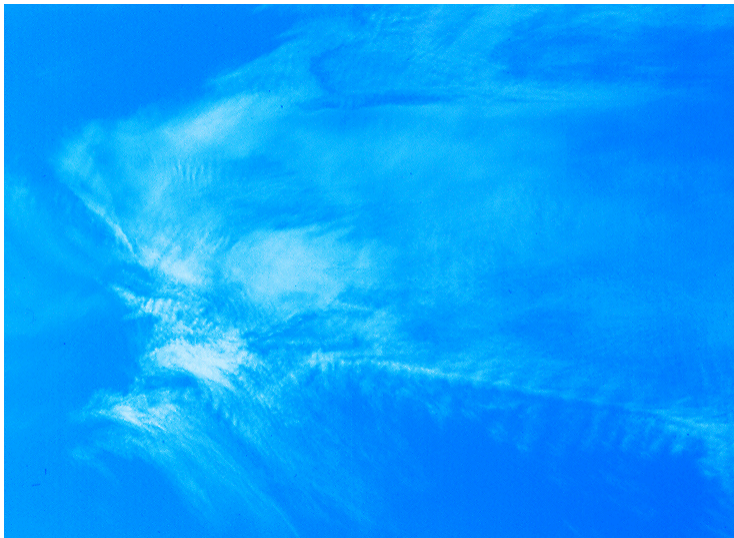
Rainbows!



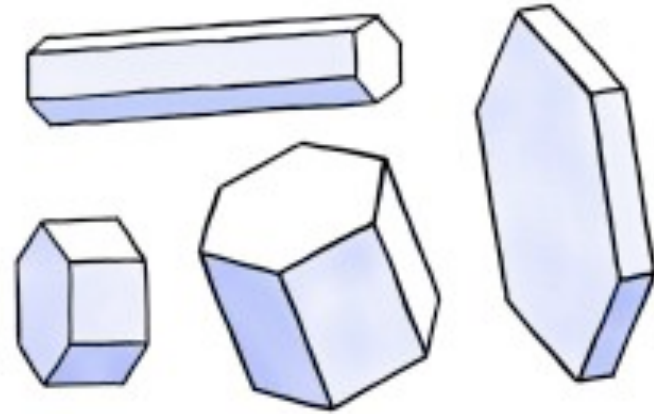


Halos!

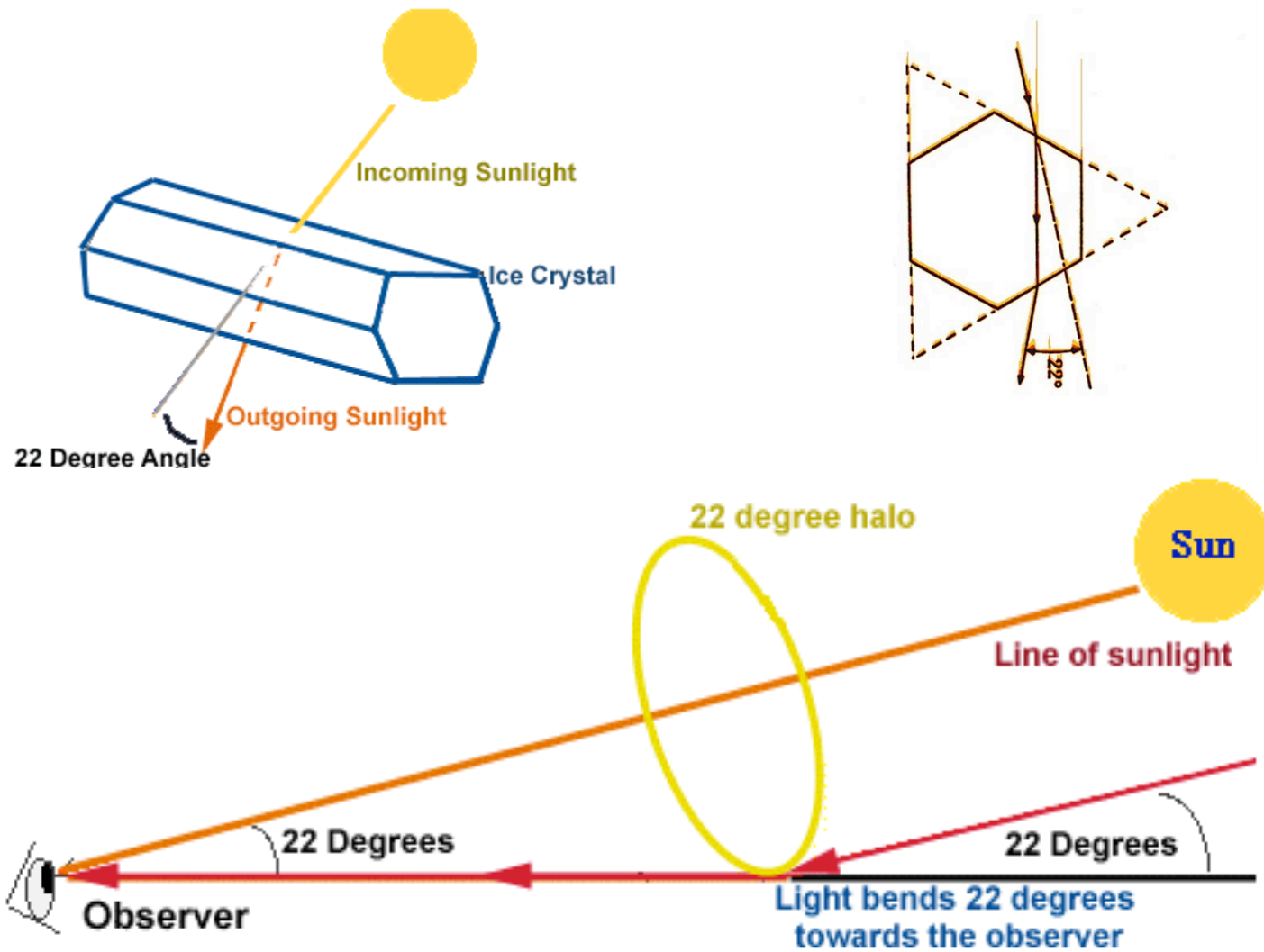
Caused by ice crystals!

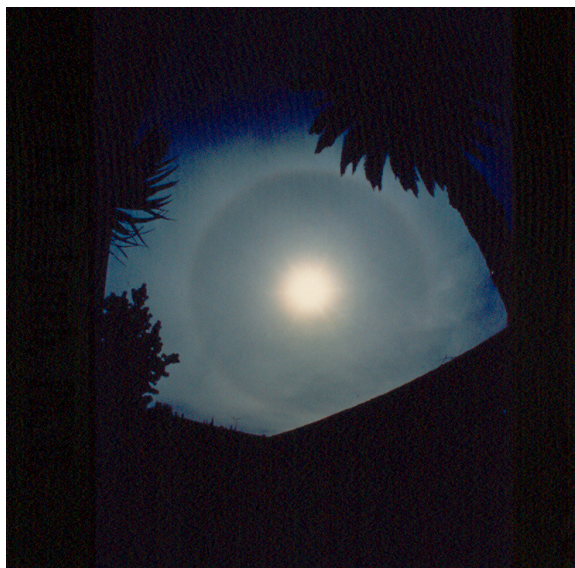
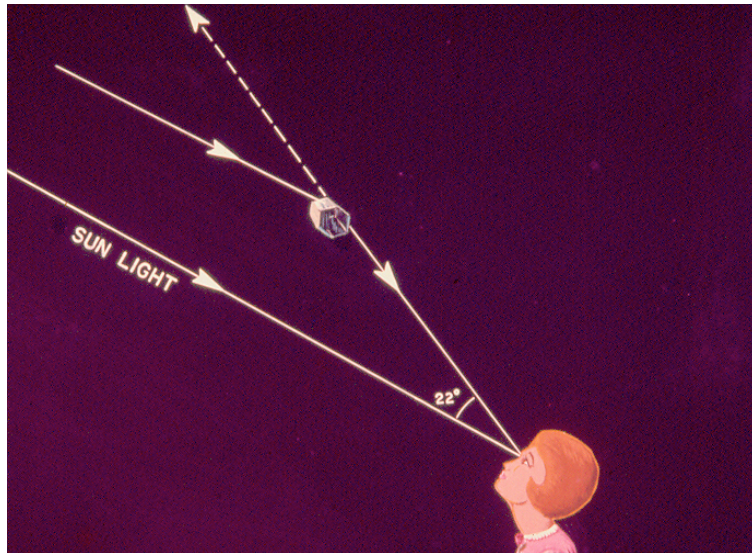


Cirrus clouds are ice crystals



The 22 degree HALO





References

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[http://www.phy.ntnu.edu.tw/java/Rainbow/
rainbow.html](http://www.phy.ntnu.edu.tw/java/Rainbow/rainbow.html)

<http://www.snowcrystals.com>

<http://www.eo.ucar.edu/rainbows/>

<http://www.atoptics.co.uk/>

- Greenler, R., Rainbows, Halos, and Glories (Cambridge U. Press, 1980)