

What do you know
about our Sun?

The Sun



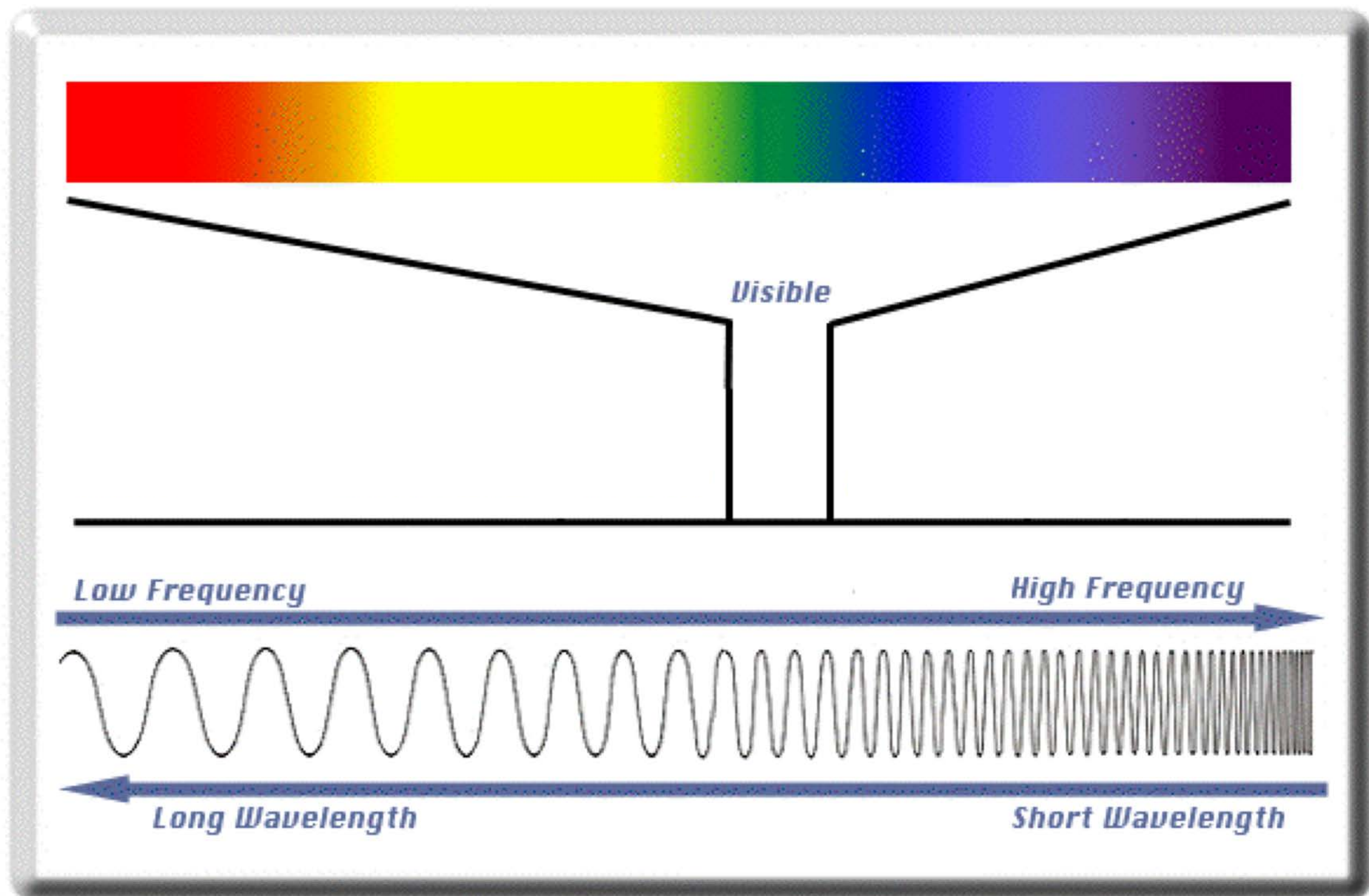
The Sun



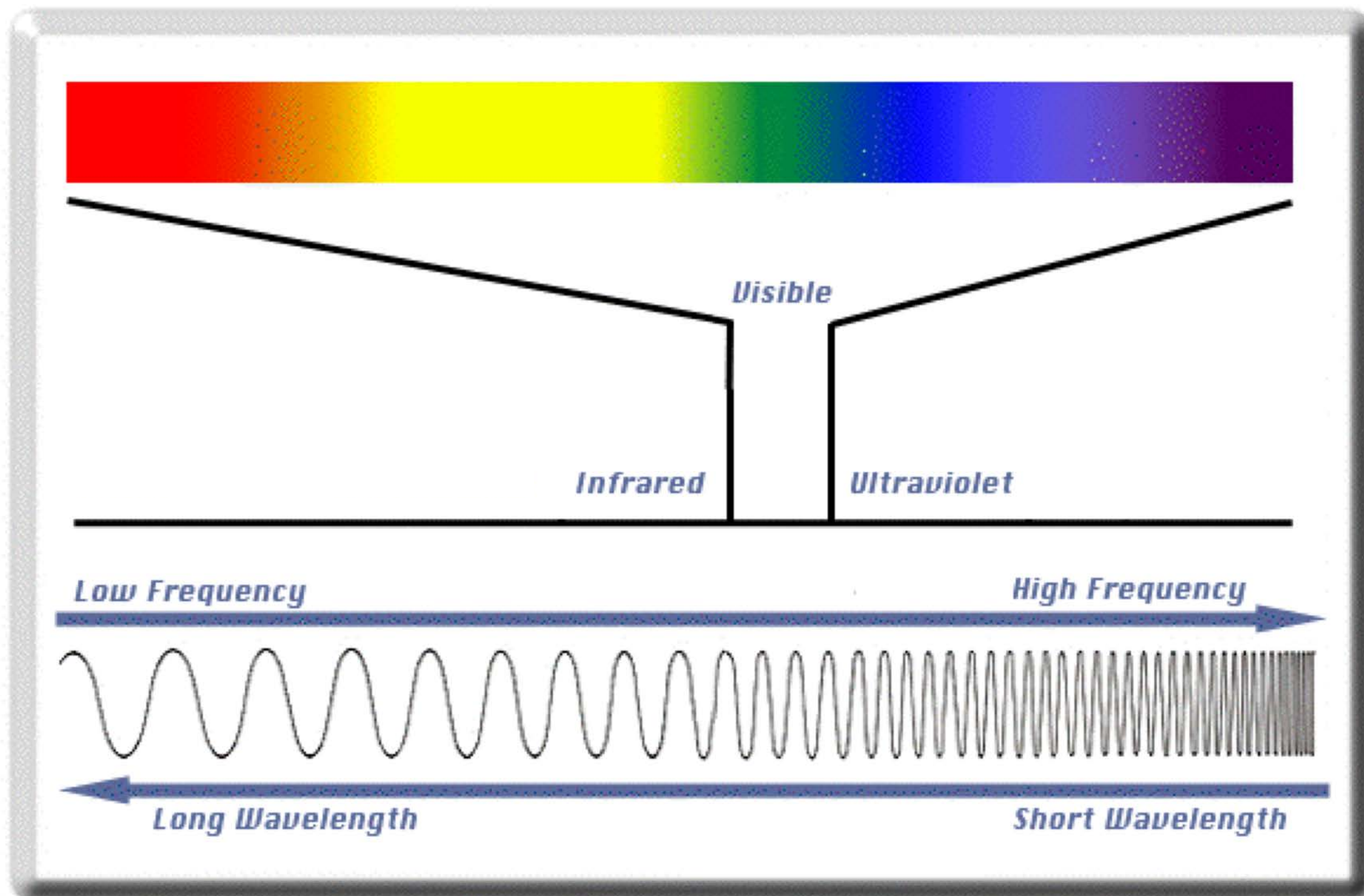
The Sun



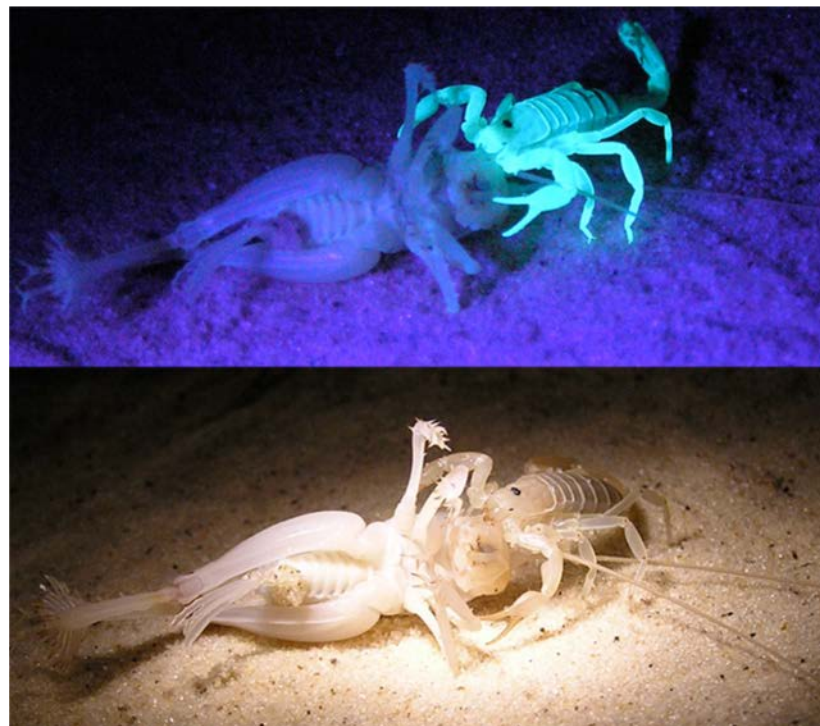
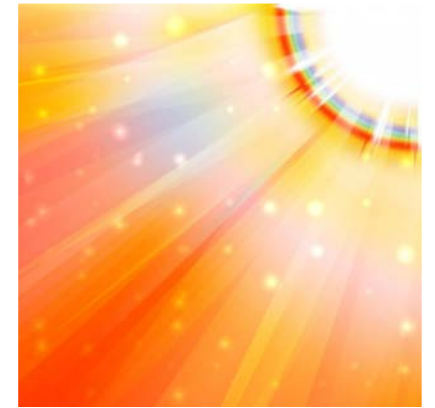
The Sun



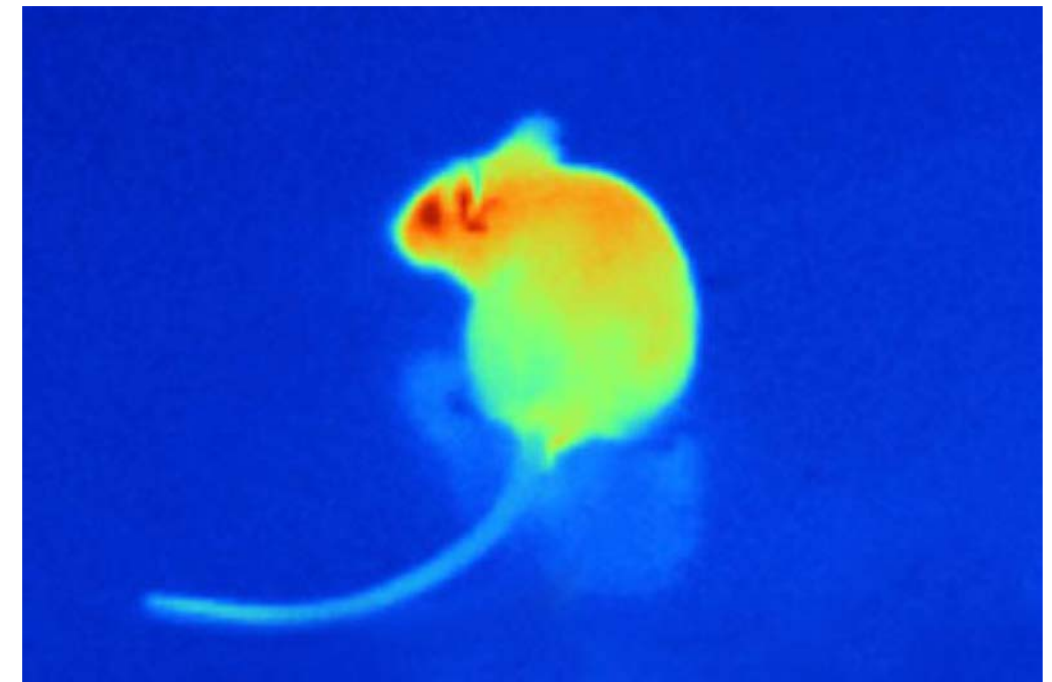
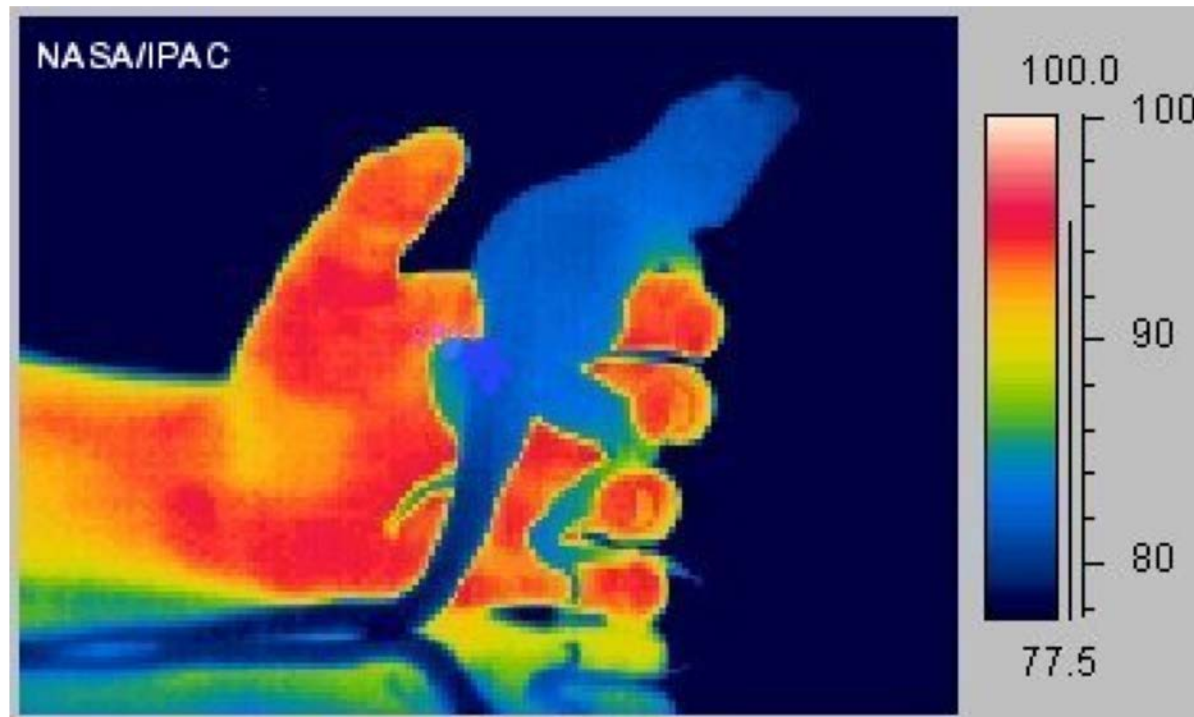
The Sun



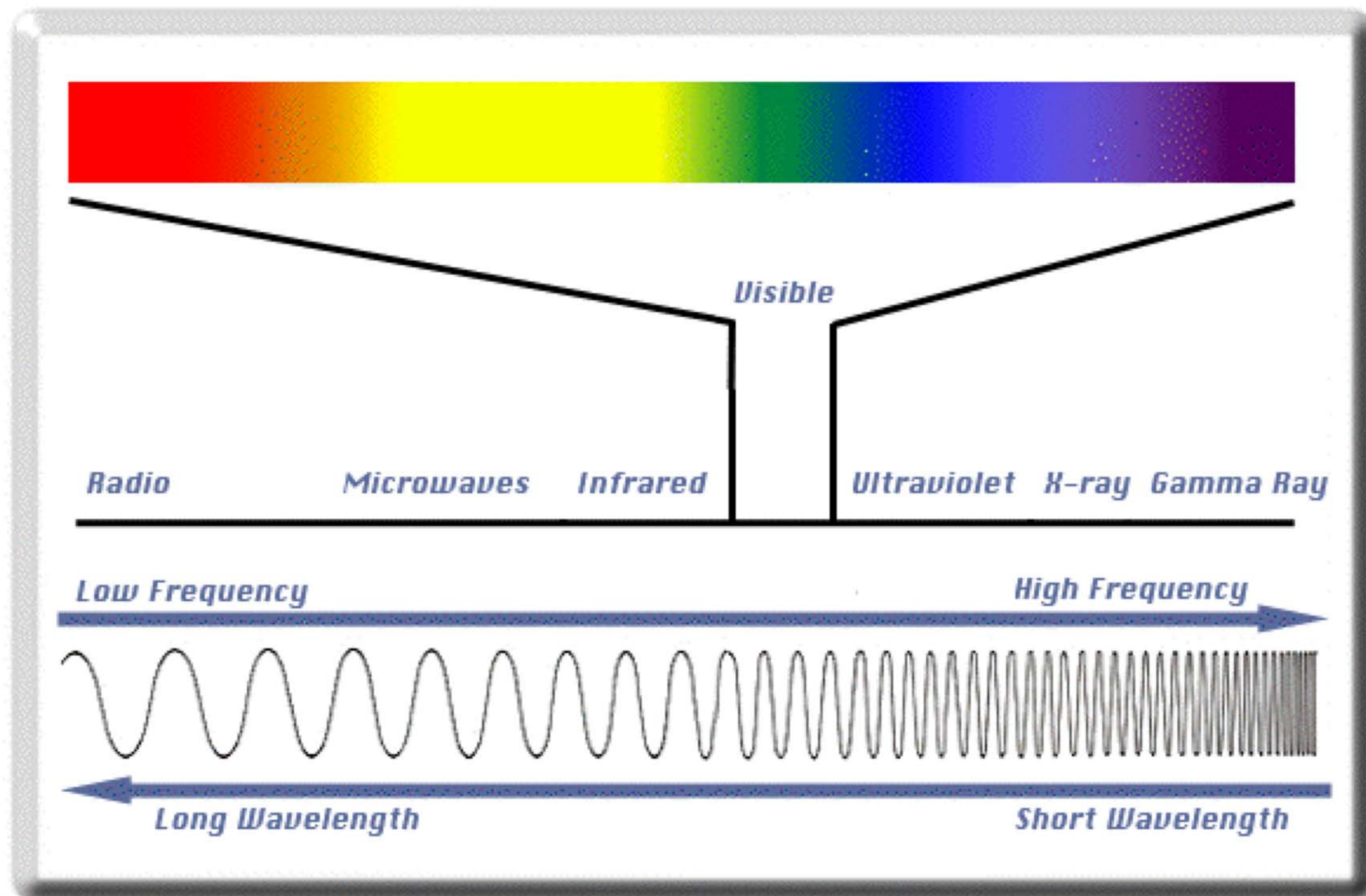
Ultraviolet



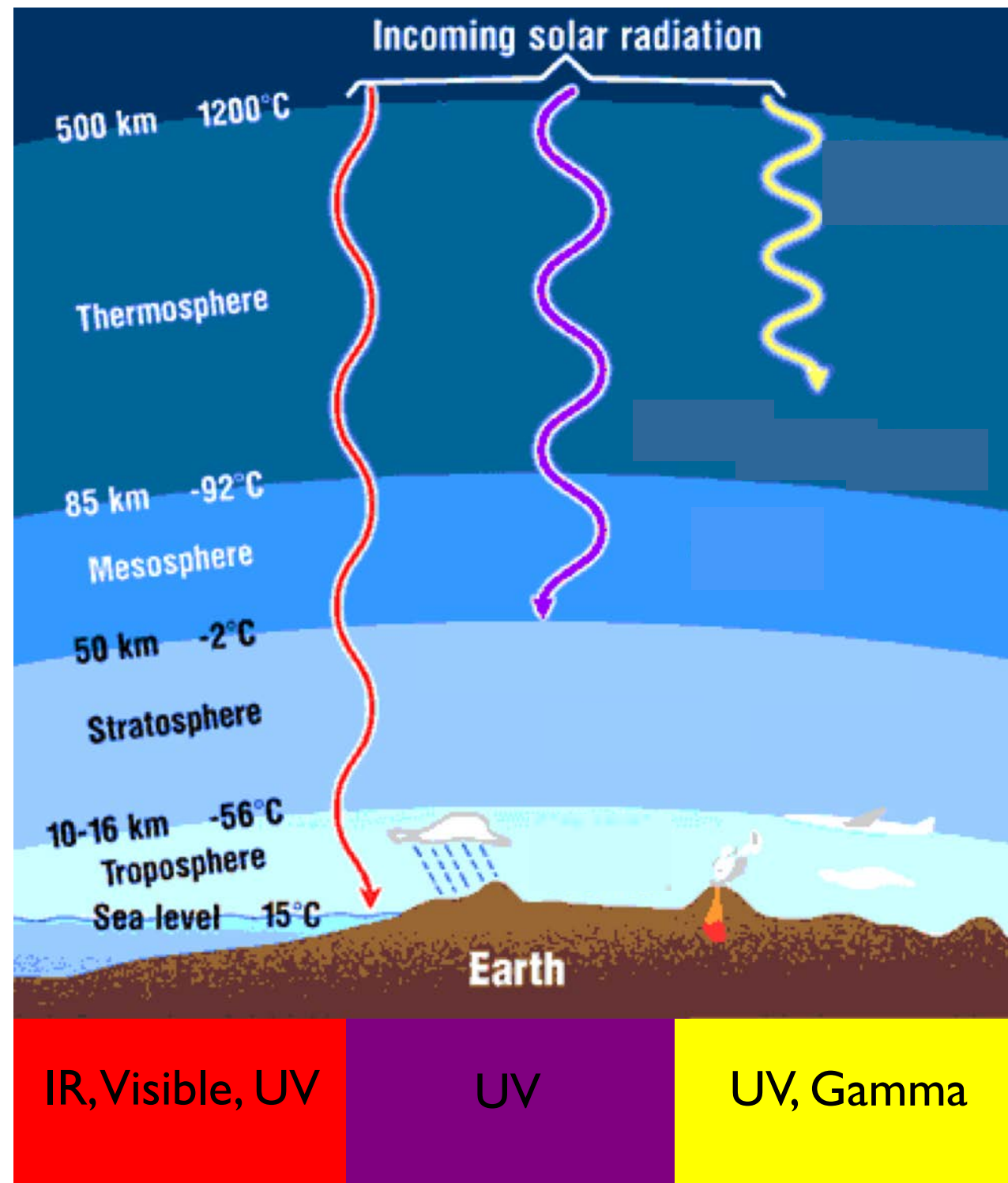
Infra-red

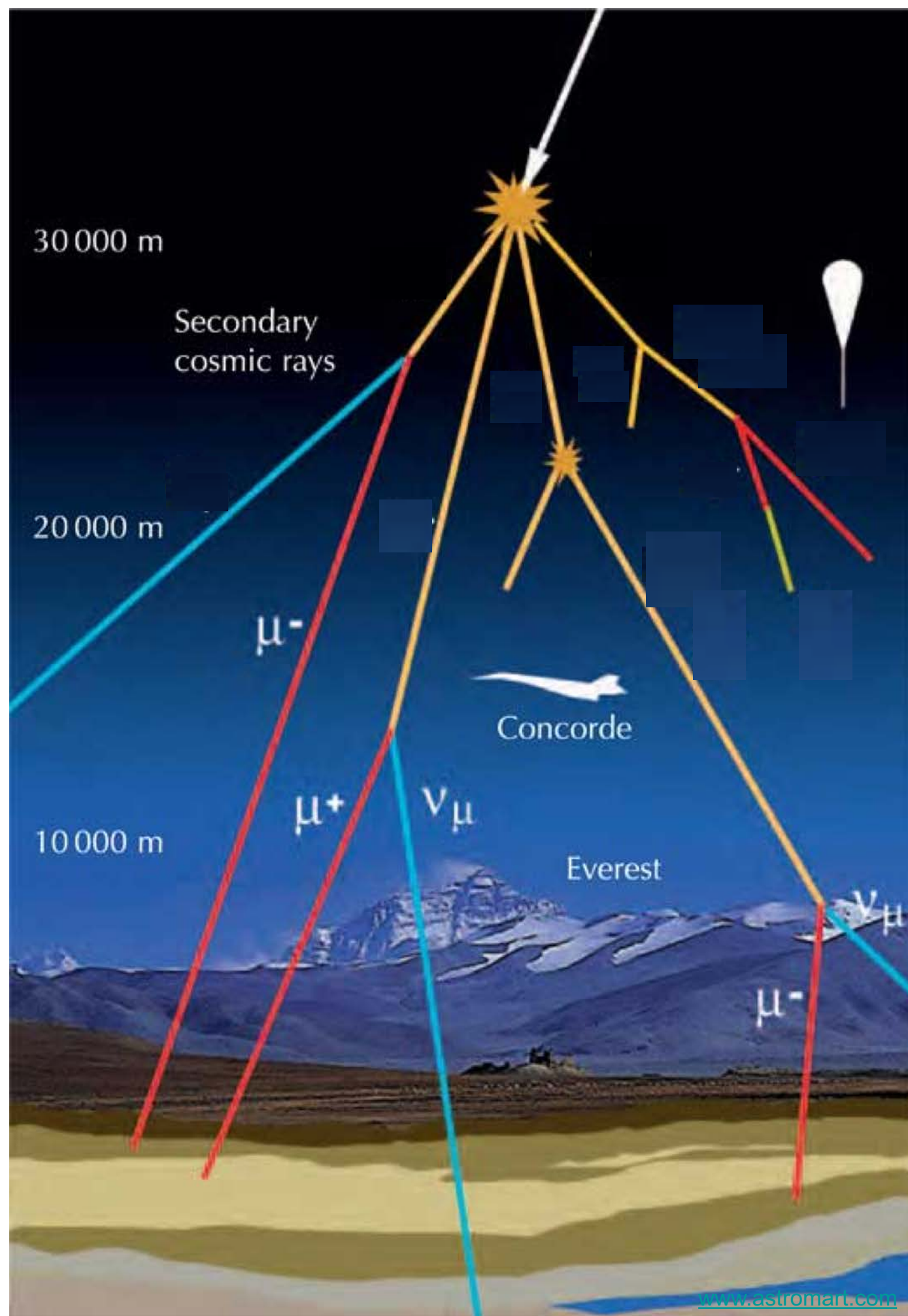


The Sun



Earth's Atmosphere

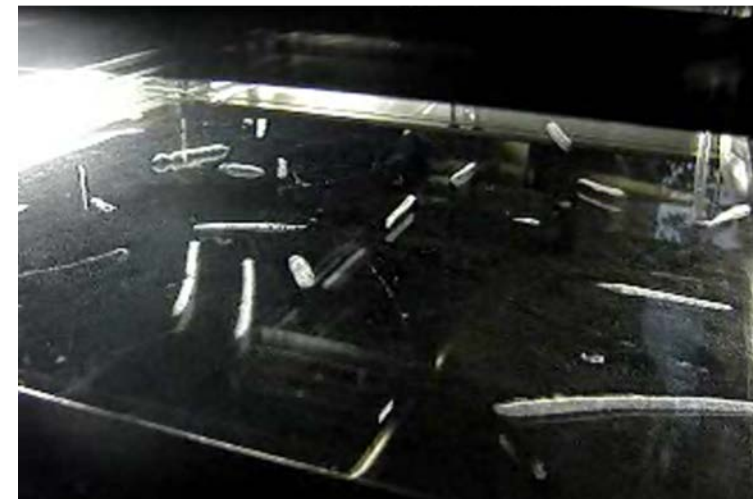
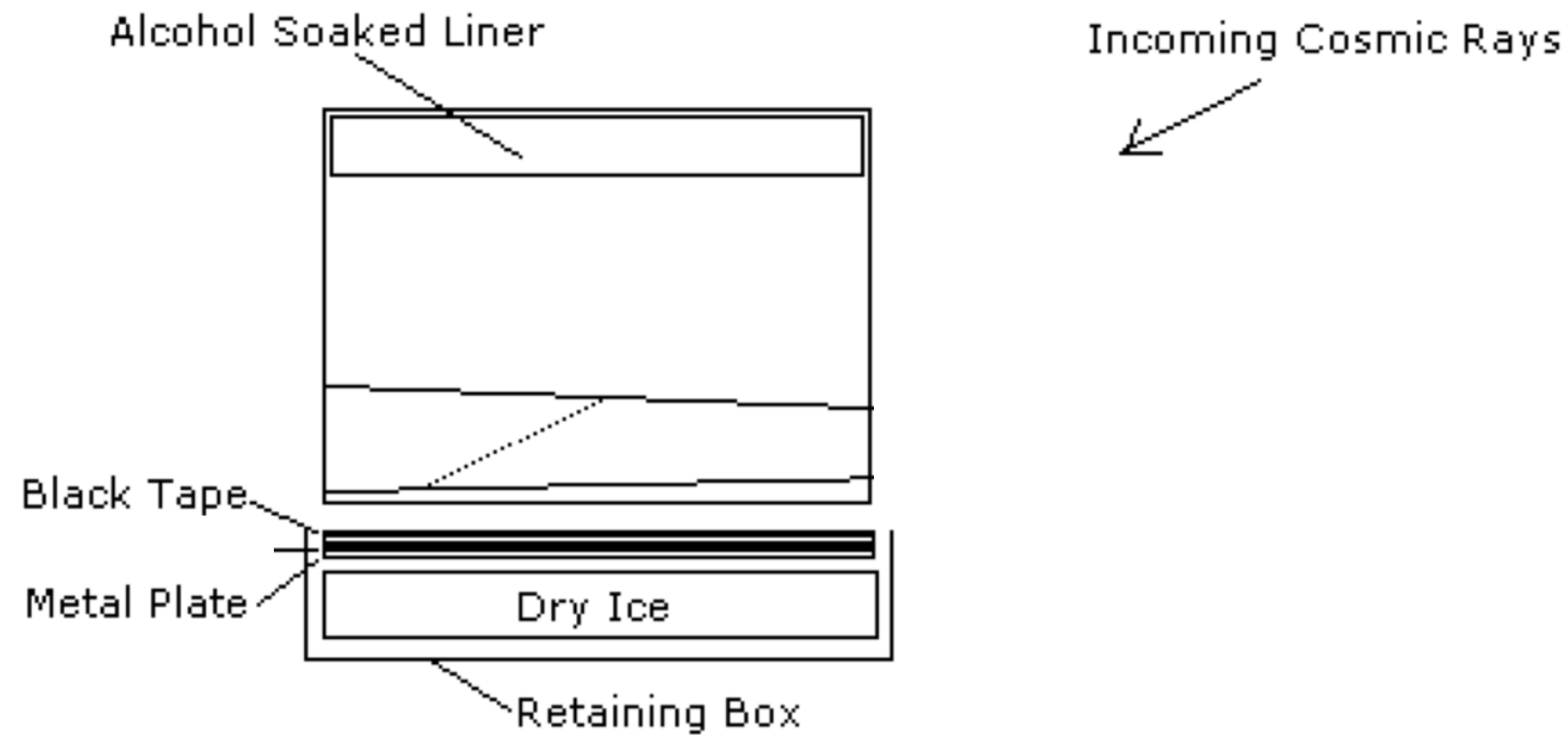


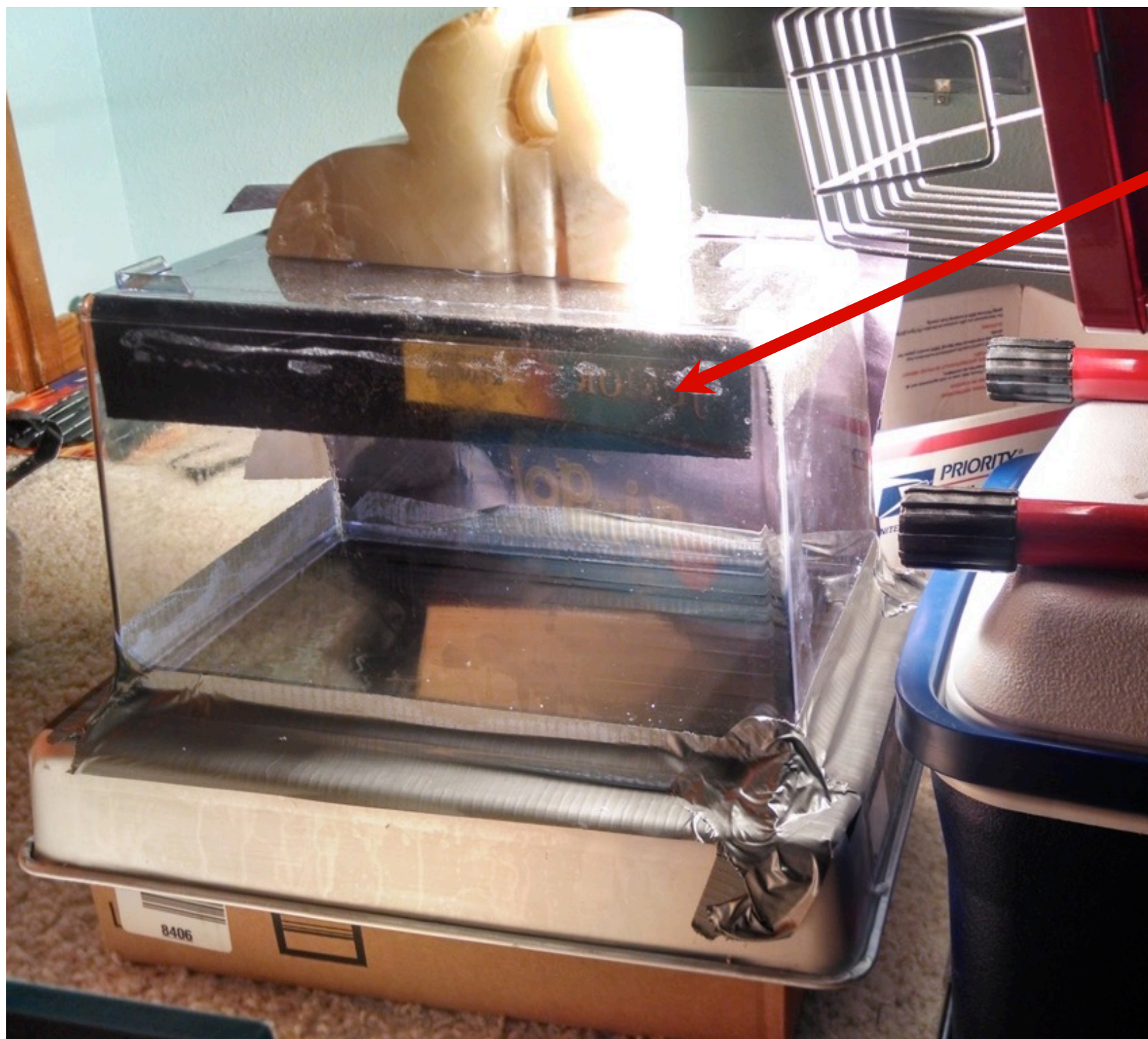


Muons (μ)
can reach the
Earth's
surface

Would you like to
see a Muon?

Cloud Chamber





2 gallon tank with
black felt glued to
the bottom, soaked in
99% isopropyl alcohol



Aluminum tray
covered with black
electric tape



The tray is in direct contact with a dry ice block placed on styrofoam inside a cardboard box



Lots of duct tape to
seal the tank to the
tray



Work lamp to
create a
temperature
gradient



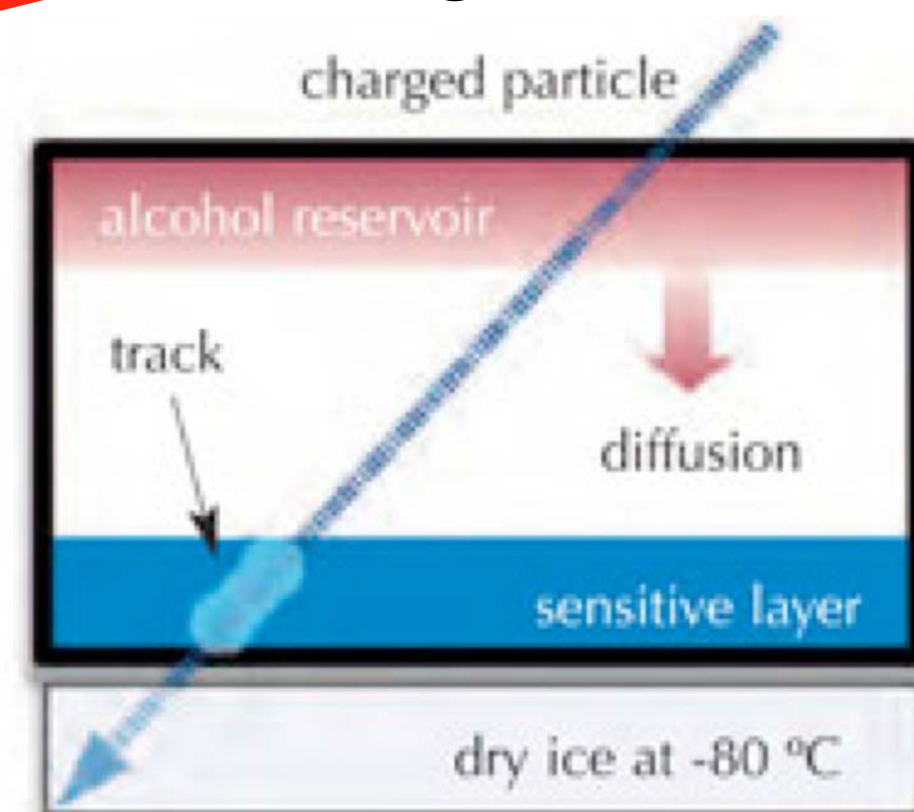
Evaporated alcohol
will form
a mist in the
'sensitive layer'
near the bottom of
the chamber



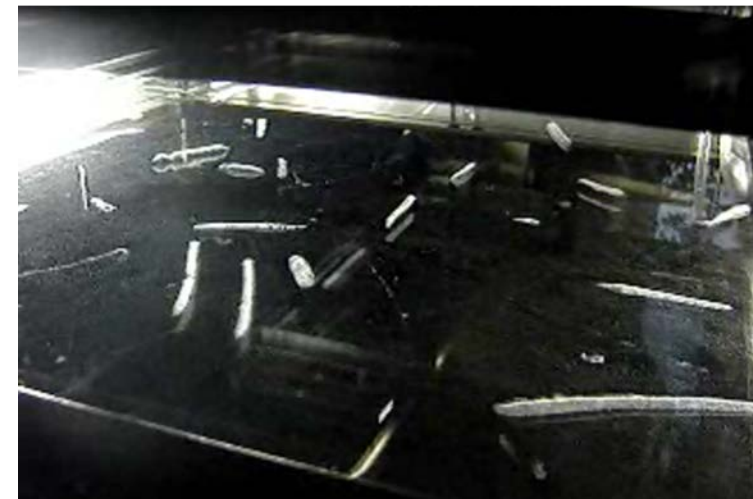
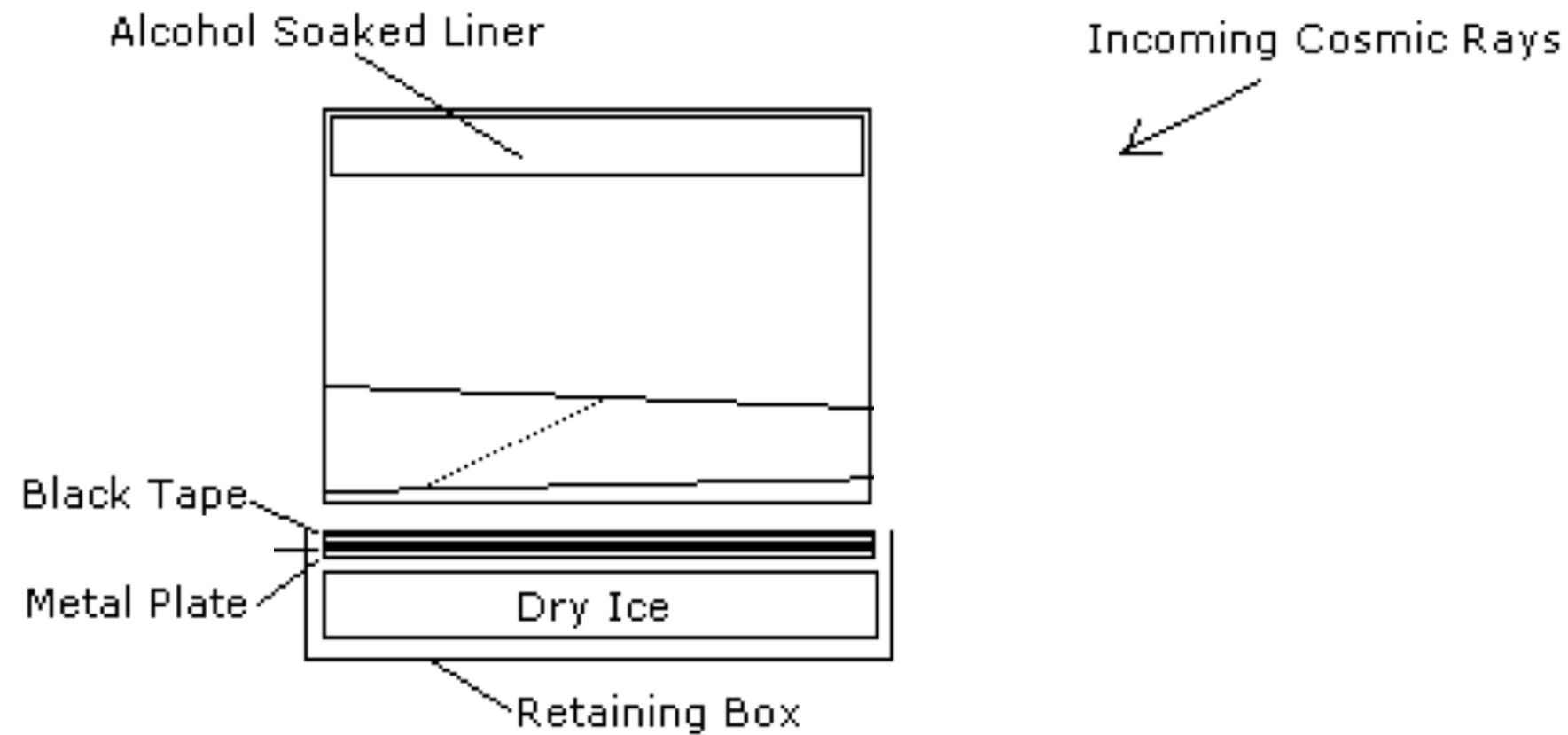
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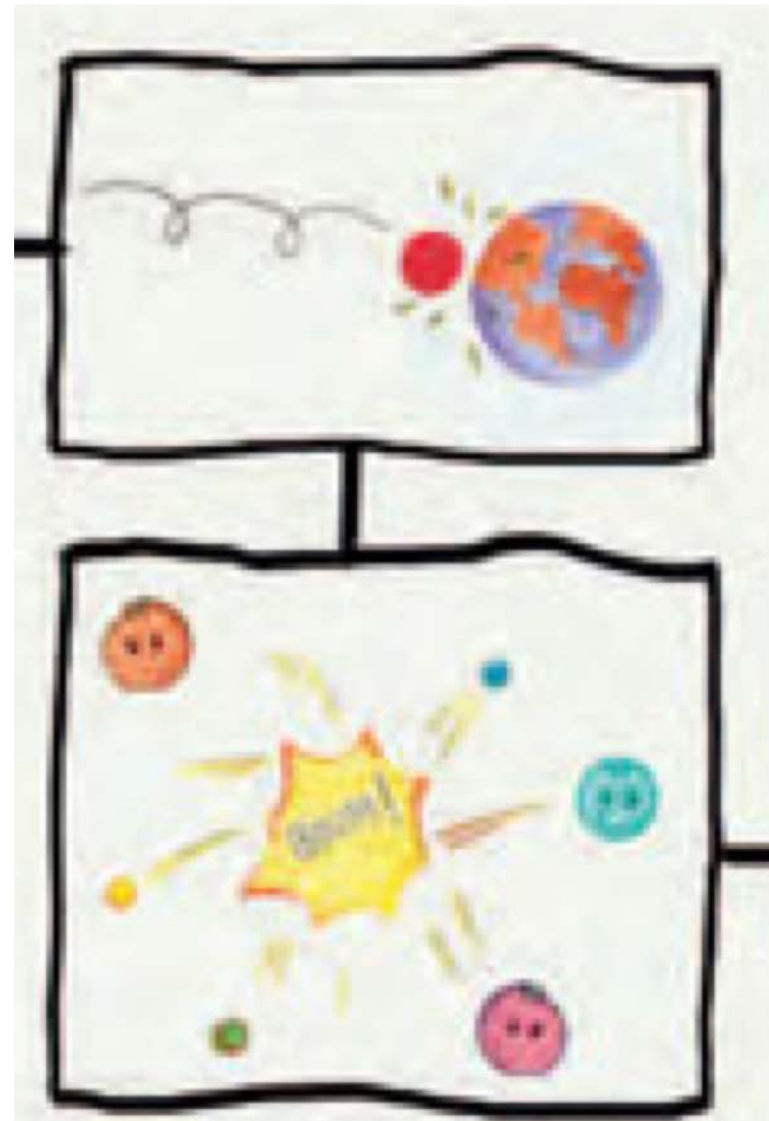


Cloud Chamber



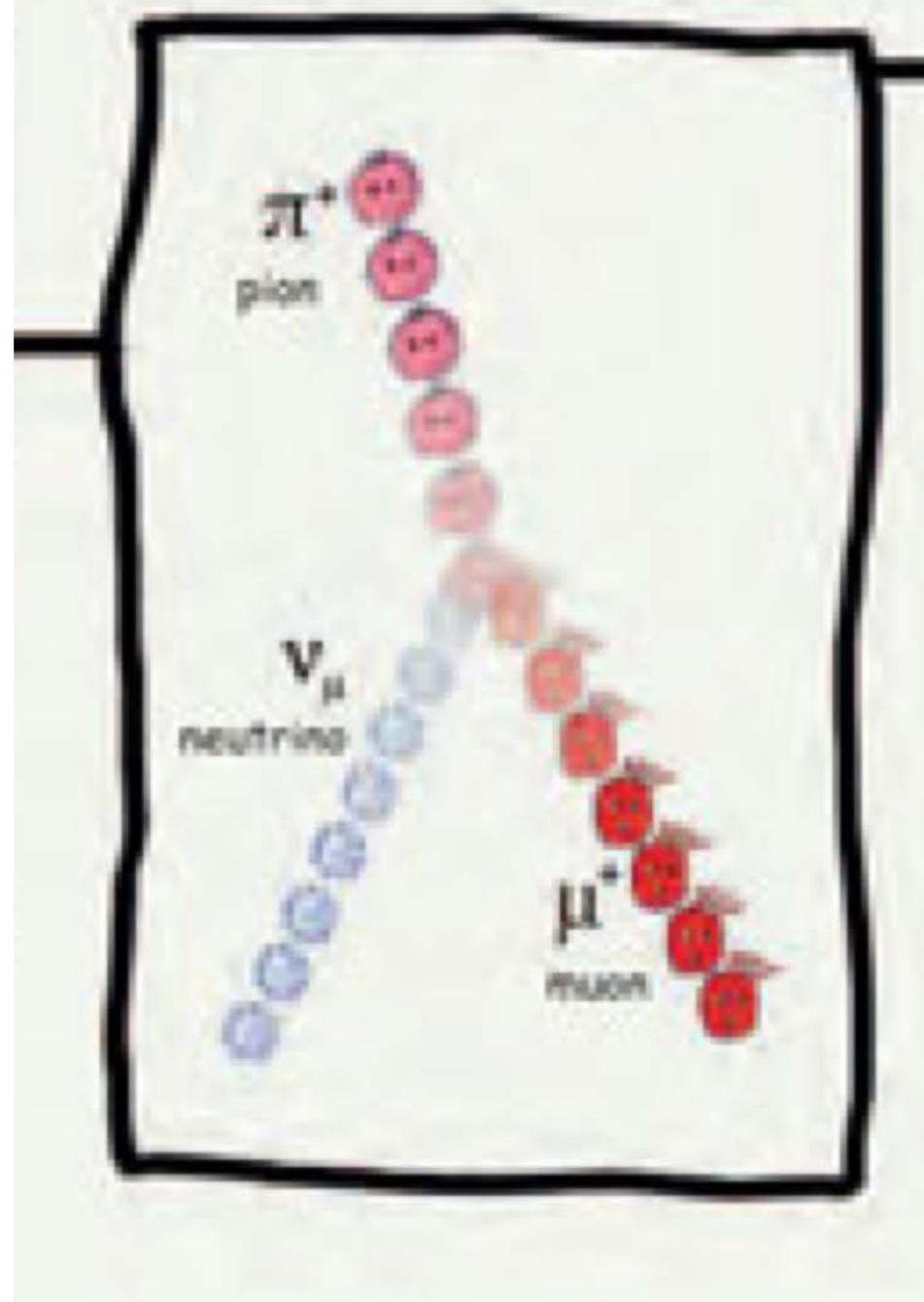
A LONG TIME AGO
IN A STAR FAR, FAR
AWAY, A PROTON
WAS ACCELERATED
IN A SUPERNOVA
EXPLOSION...



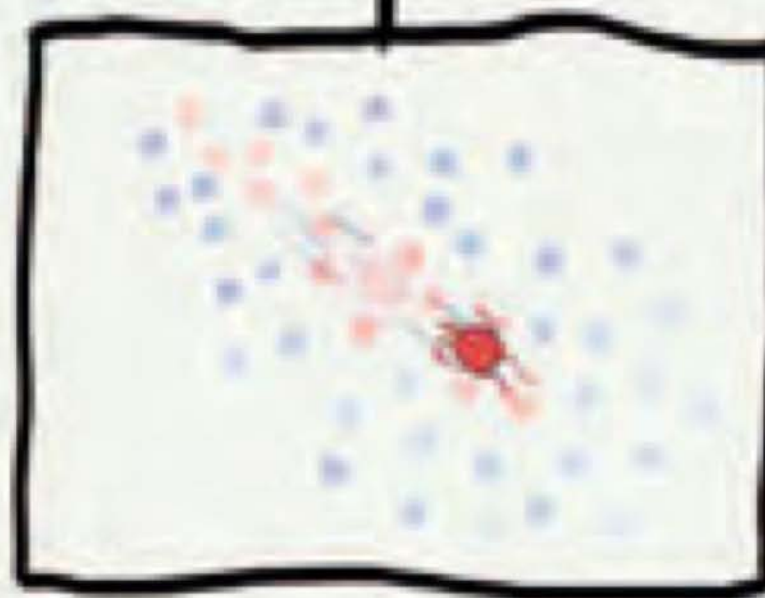
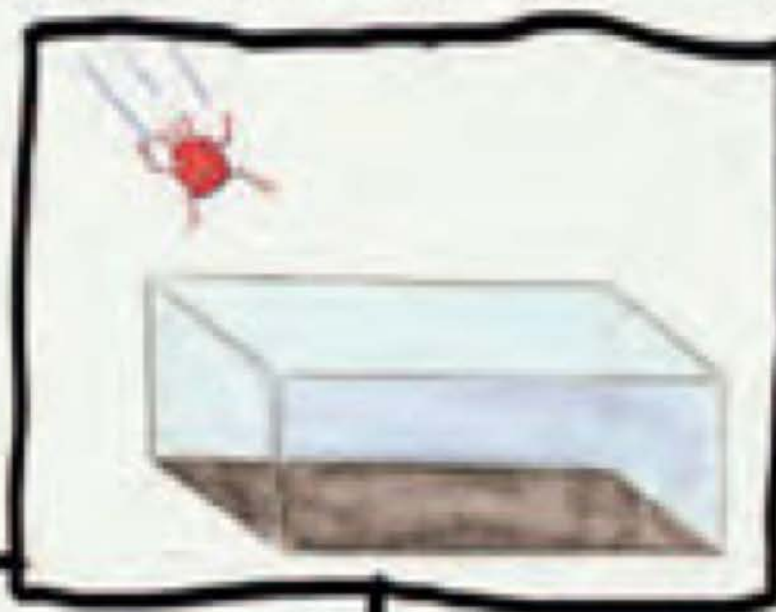


The proton enters Earth's atmosphere and hits an atom, giving rise to new particles, including a pion

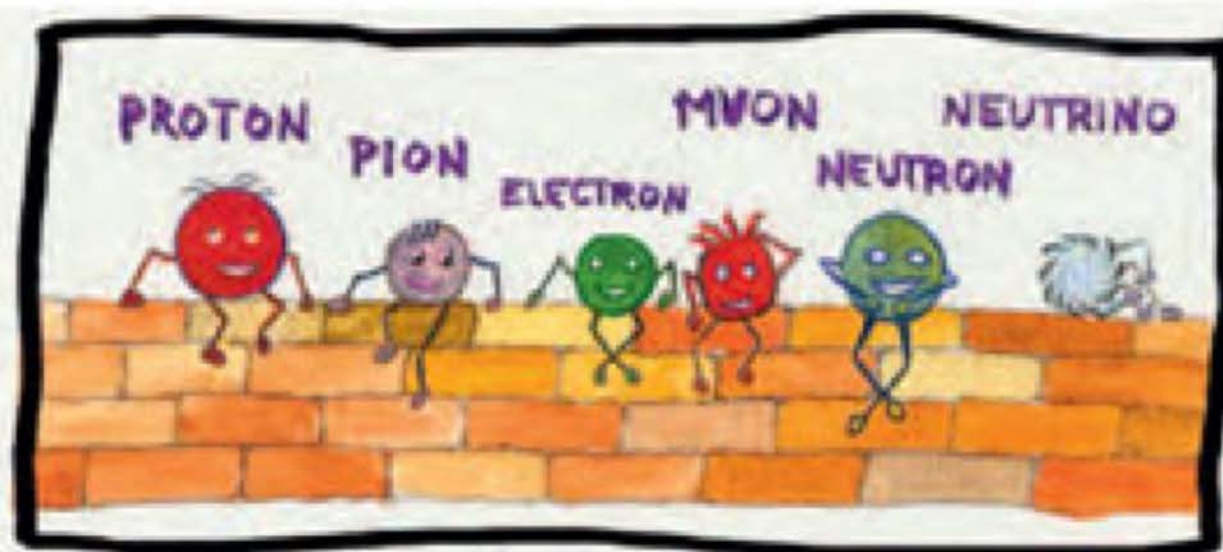
The pion keeps on flying and, after a very short time, decays into a muon and a neutrino



The muon is about to enter the chamber!

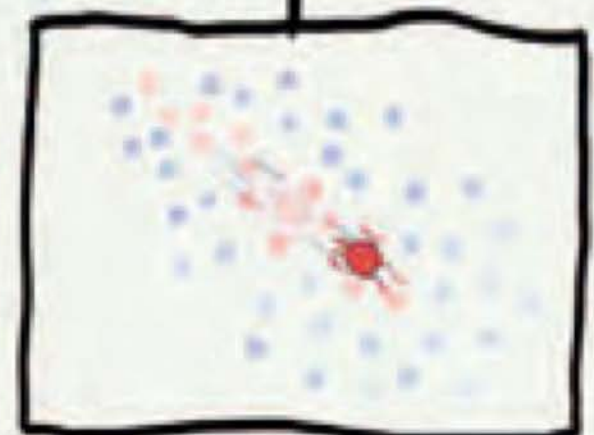
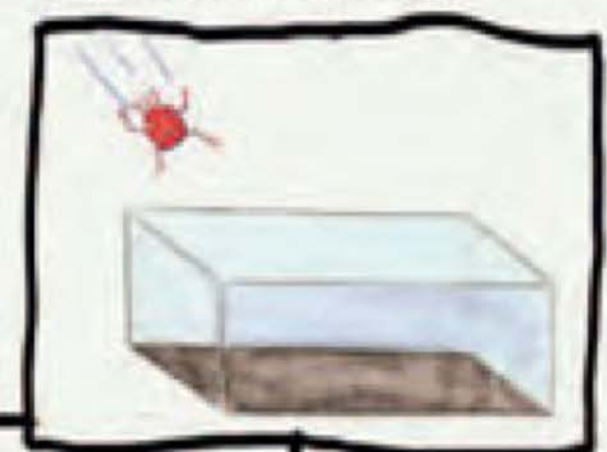


The muon passes through the chamber, leaving - like a jet - a trail of droplets



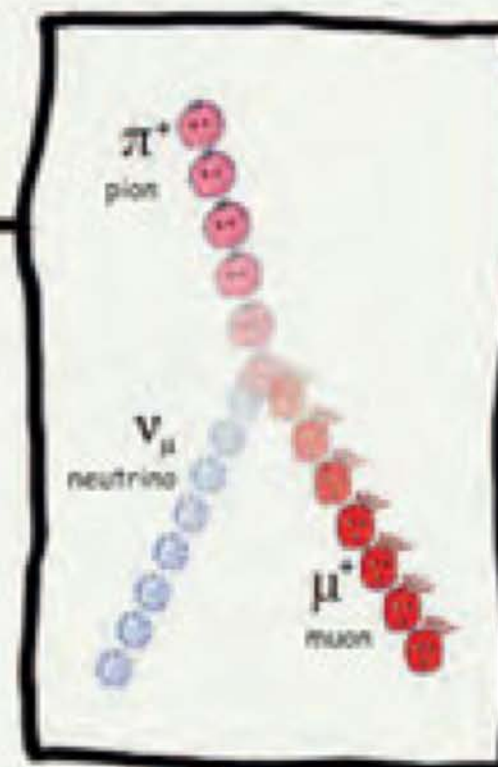
The characters in this story: elementary and subatomic particles

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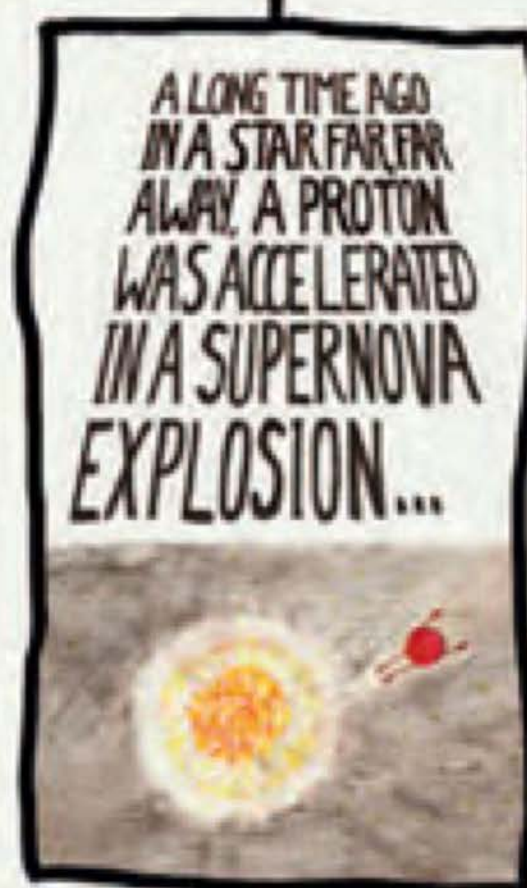


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To begin at the beginning: once upon a time there was a proton...

A LONG TIME AGO
IN A STAR FAR, FAR
AWAY, A PROTON
WAS ACCELERATED
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EXPLOSION...

More and more

