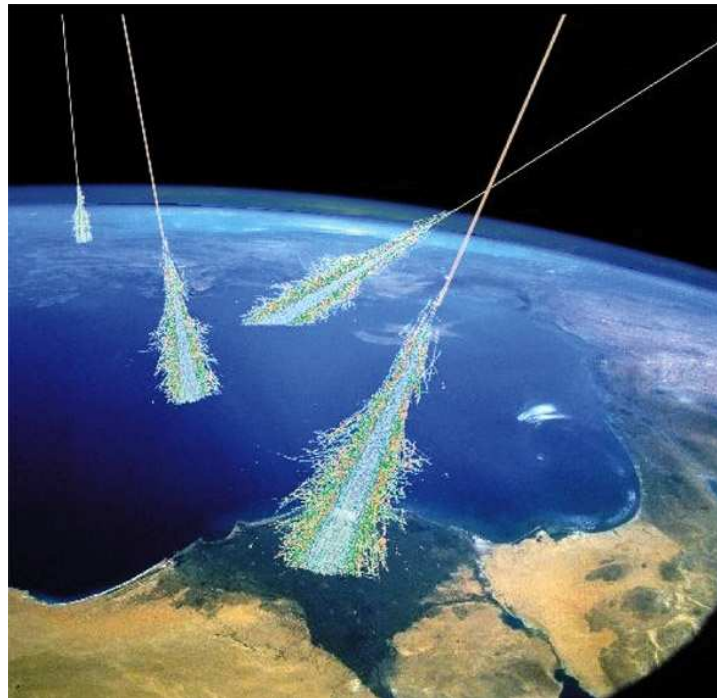
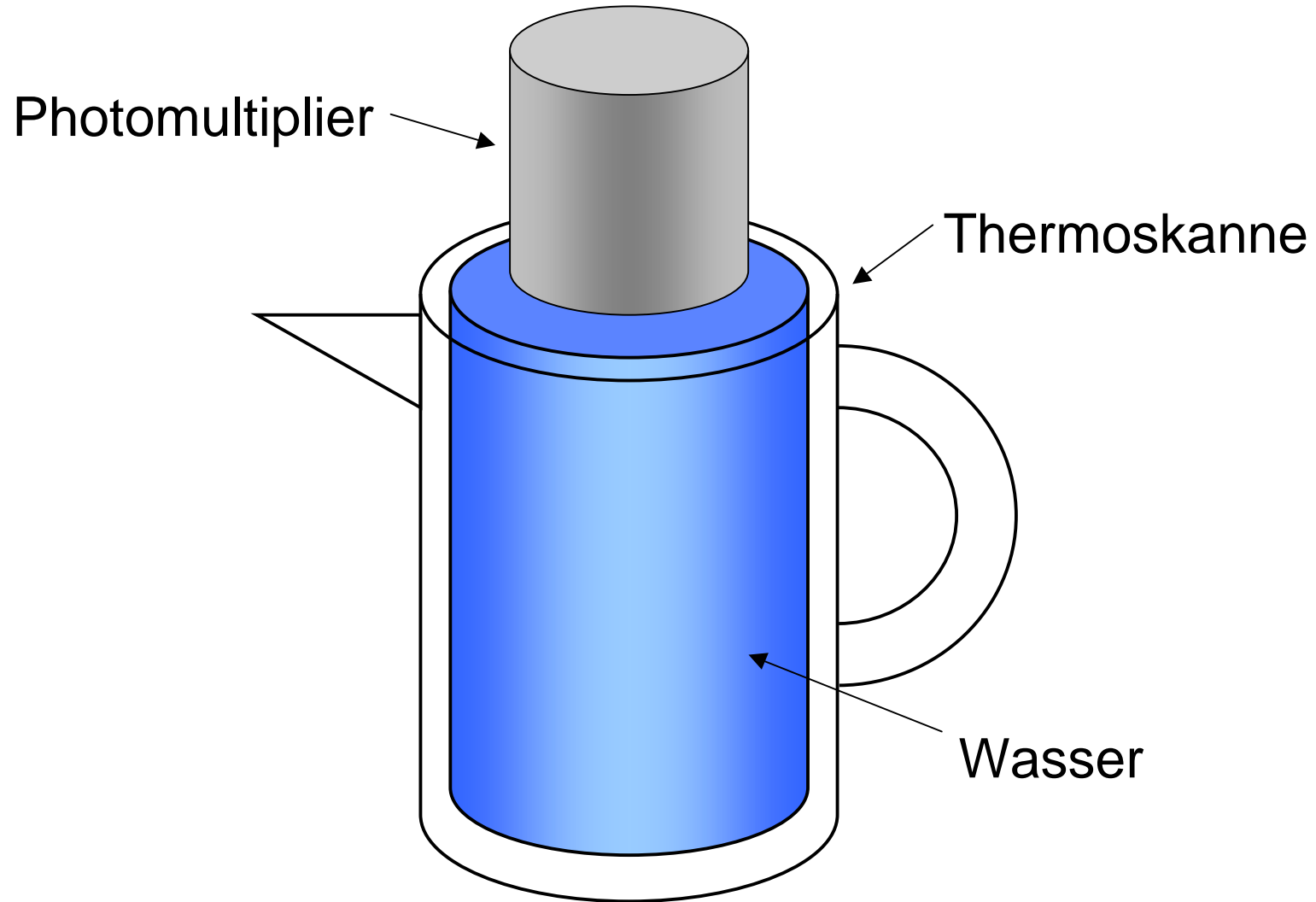


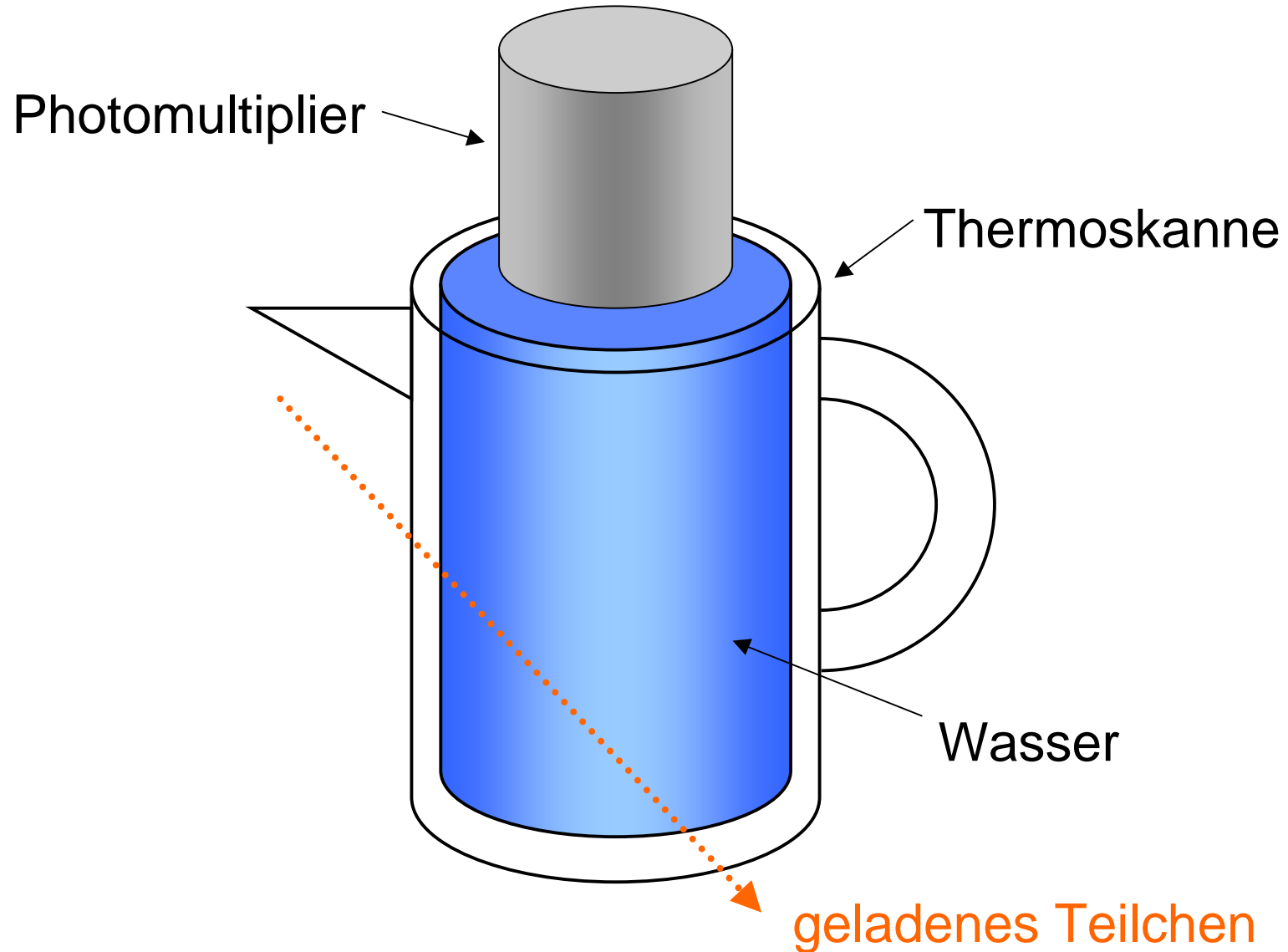
Teil 3: Kosmische Strahlung



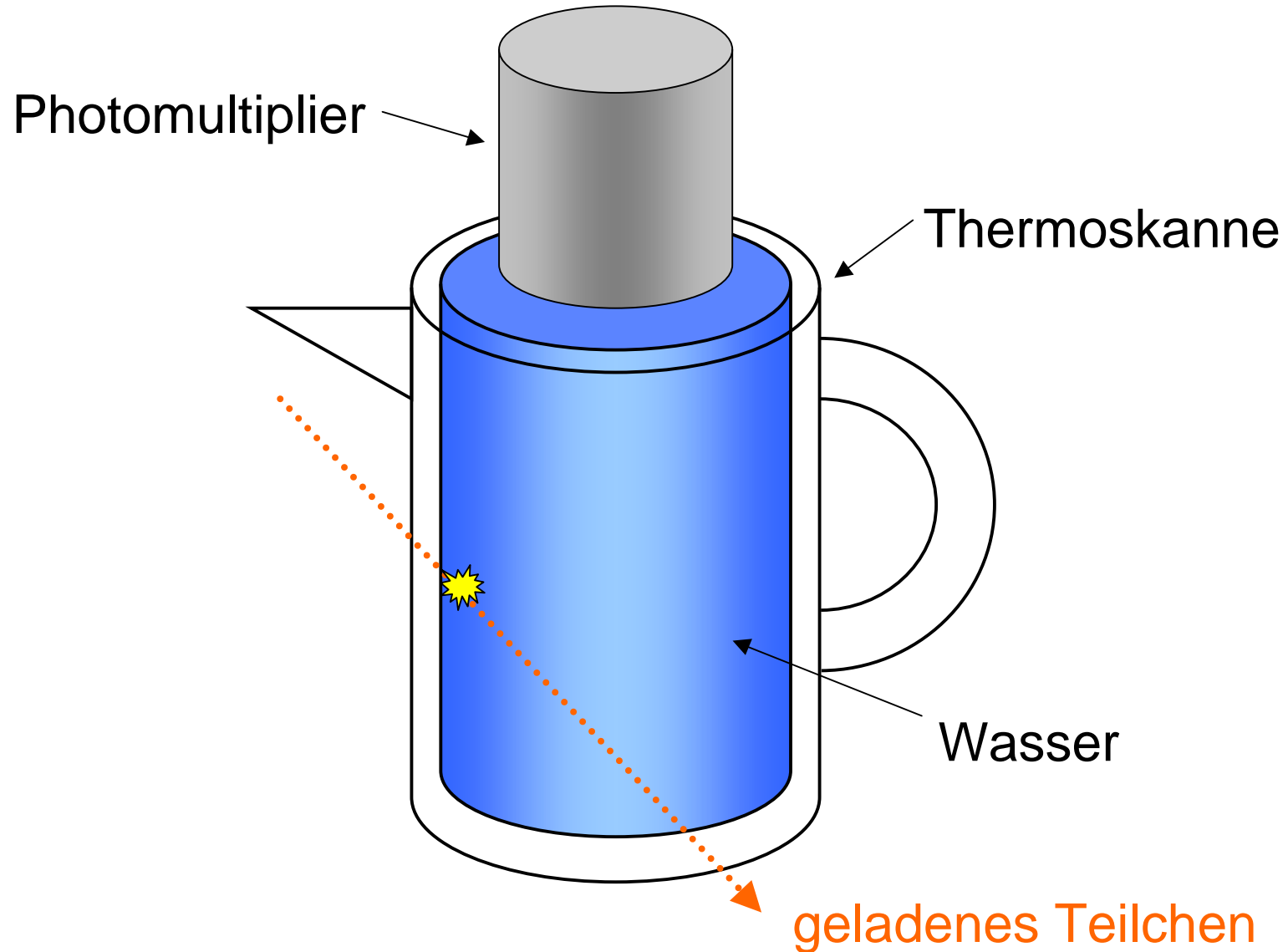
Thermoskannen-Versuch



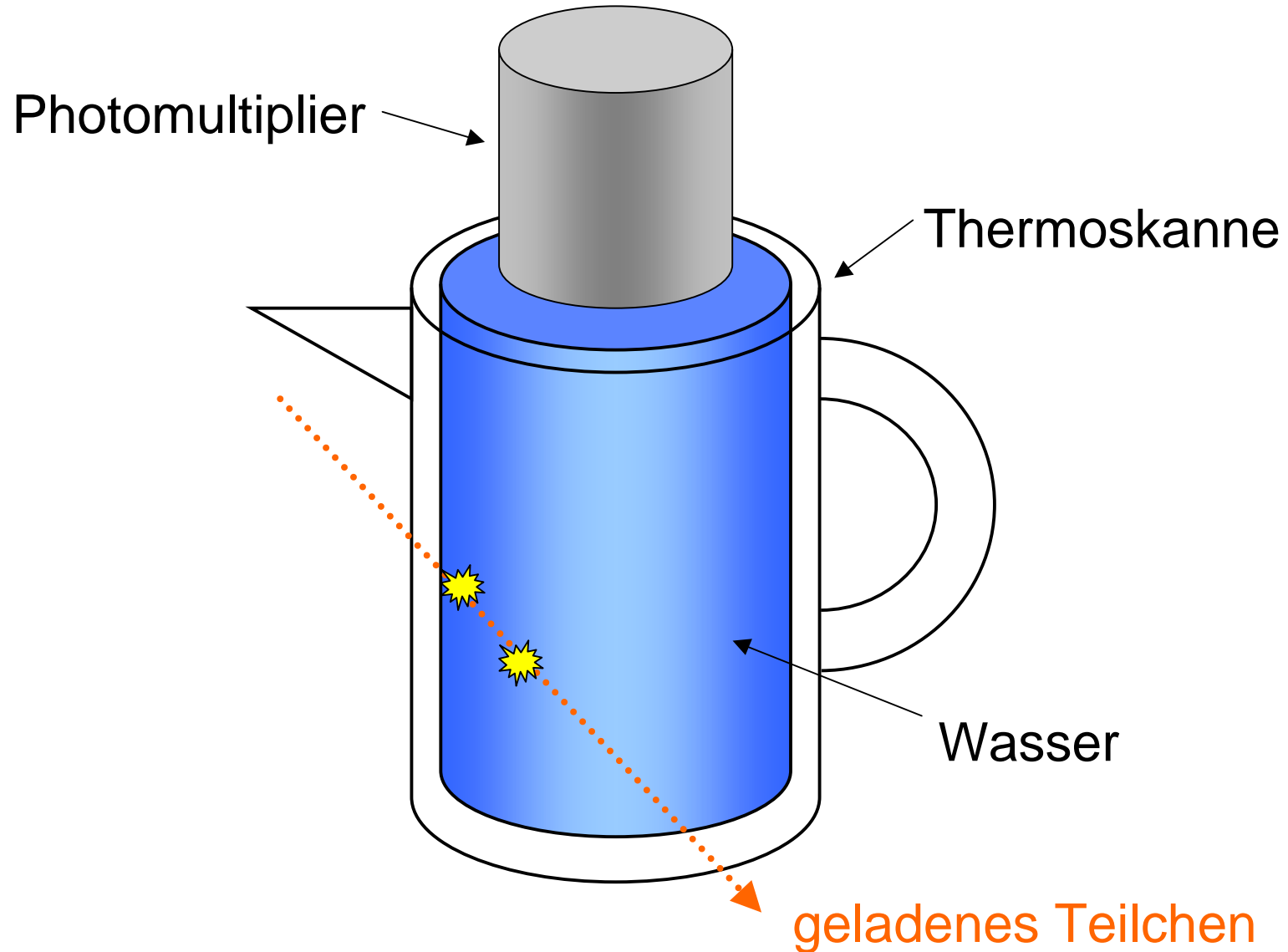
Thermoskannen-Versuch



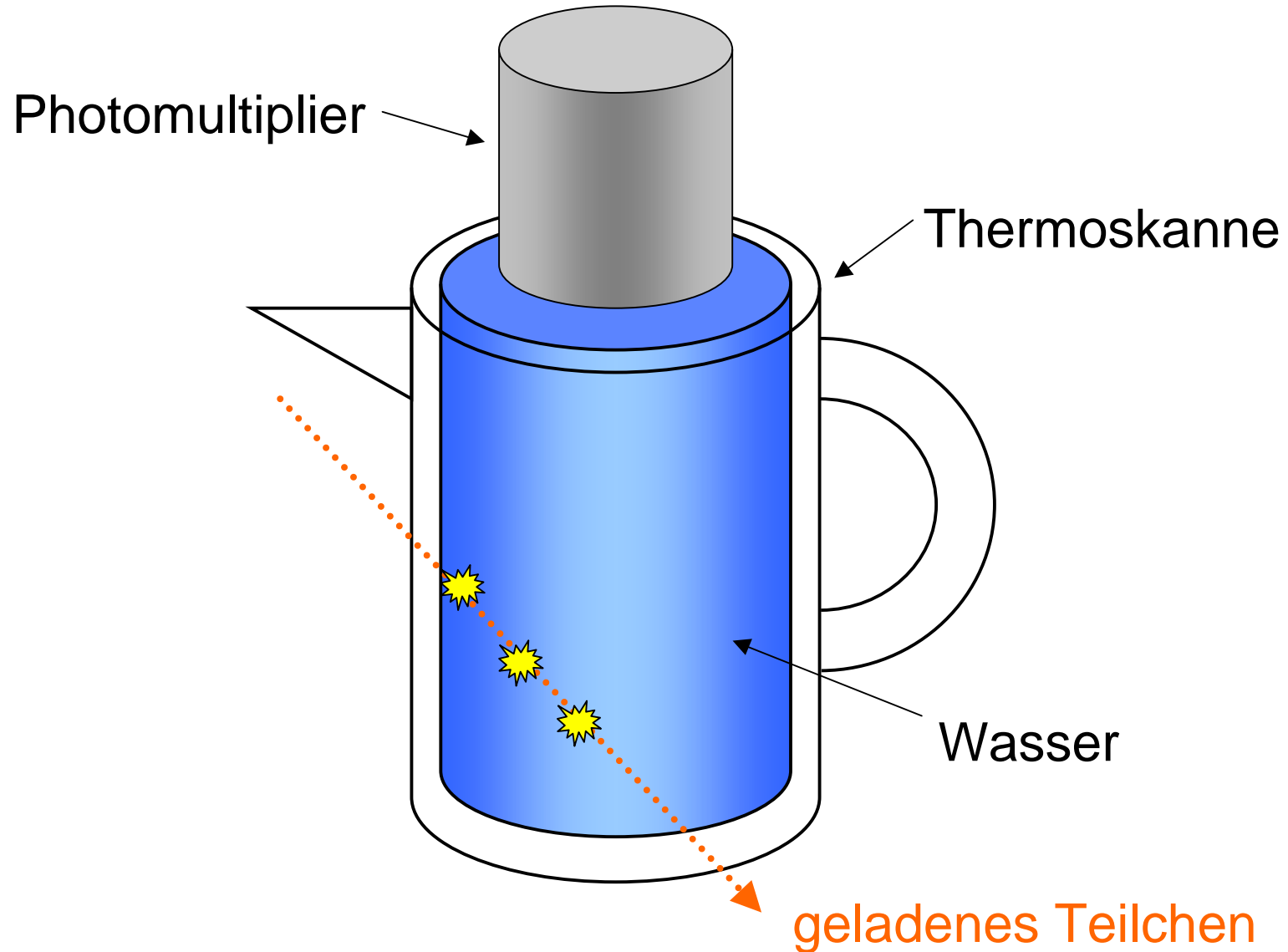
Thermoskannen-Versuch



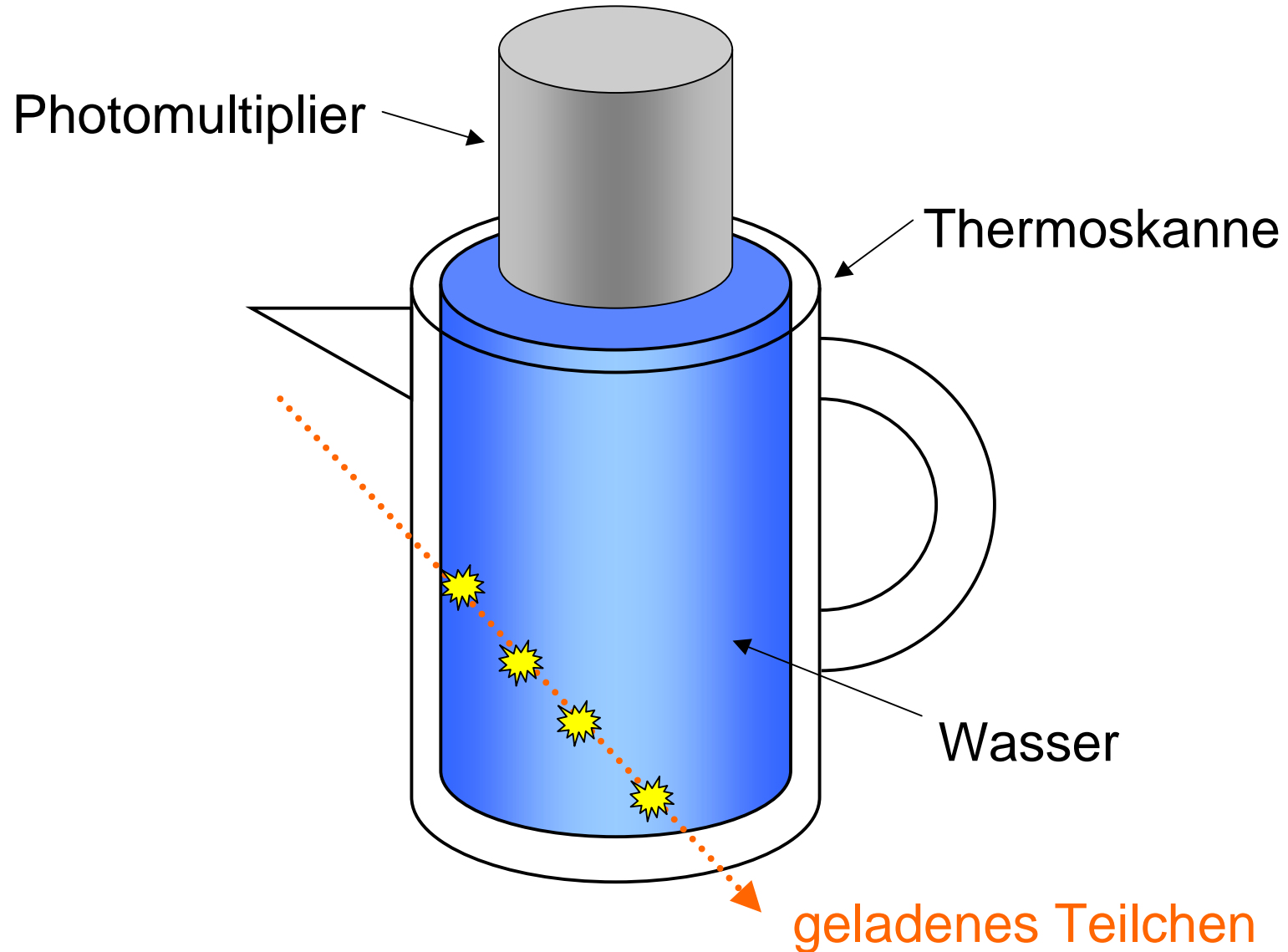
Thermoskannen-Versuch



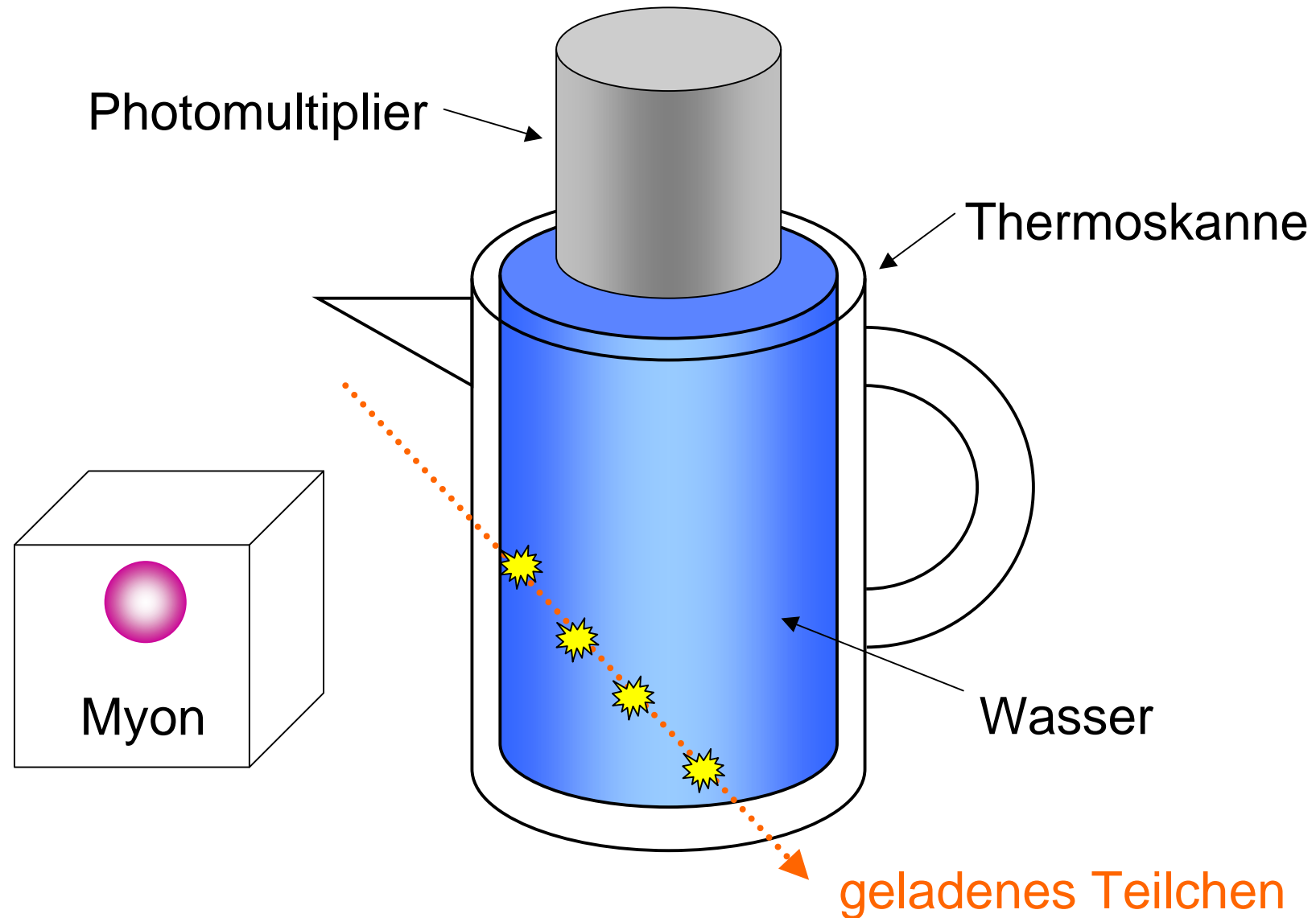
Thermoskannen-Versuch



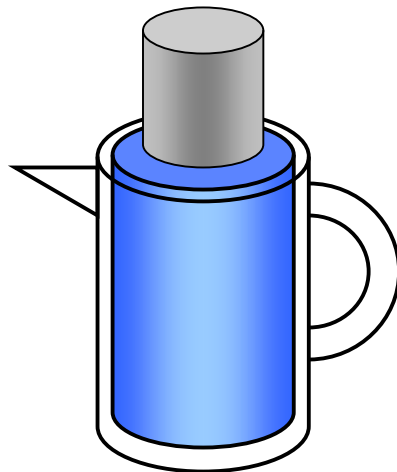
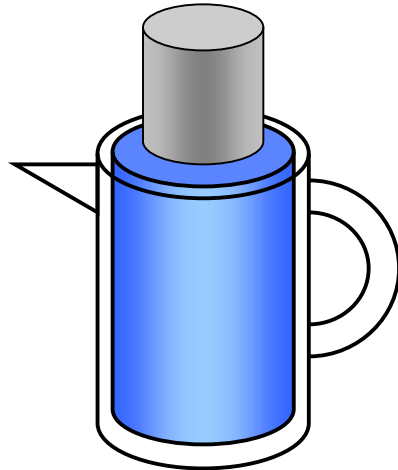
Thermoskannen-Versuch



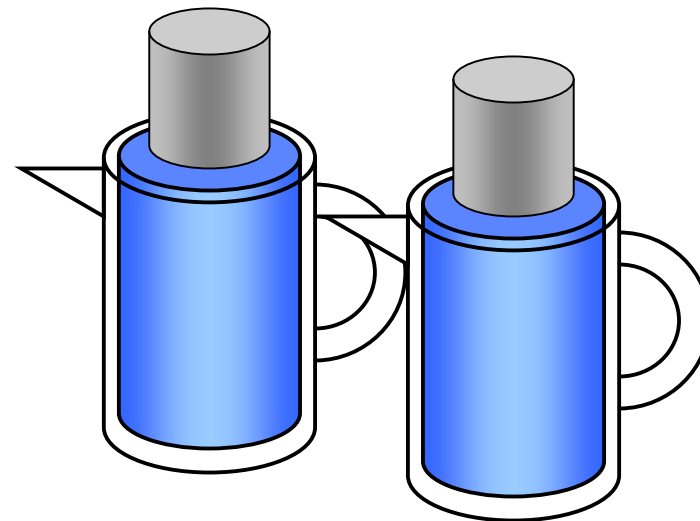
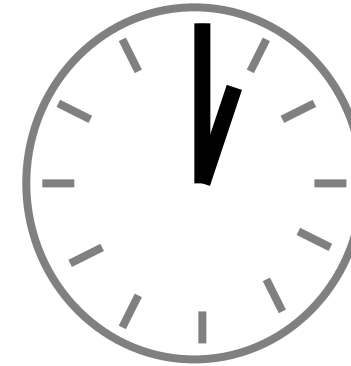
Thermoskannen-Versuch



Koinzidenz-Messung

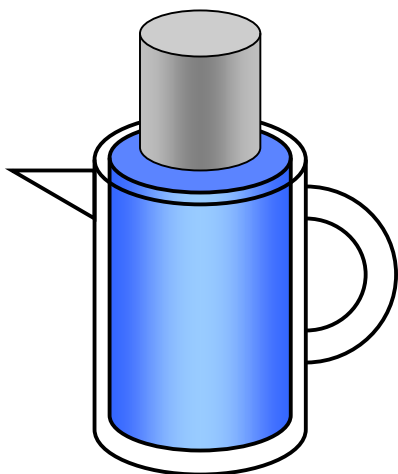
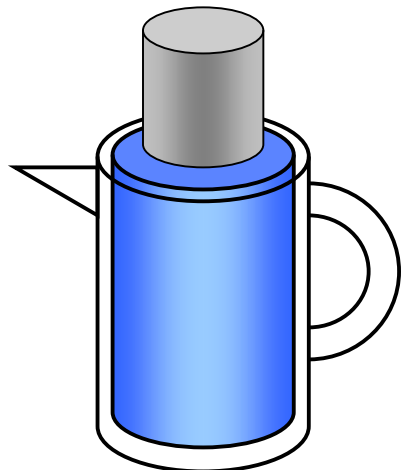


0

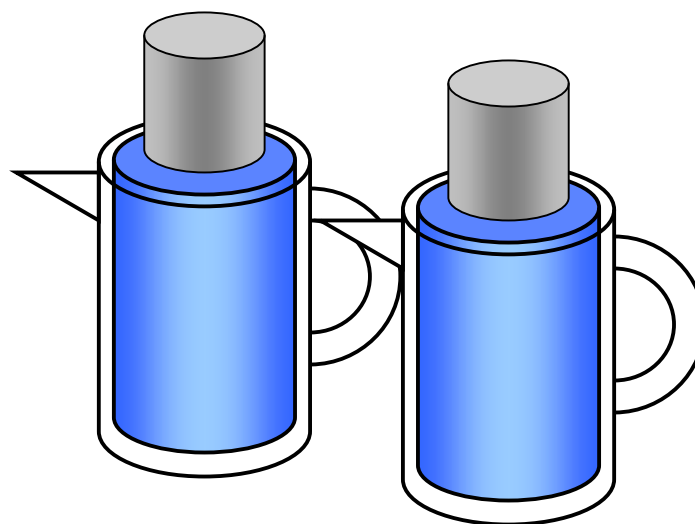
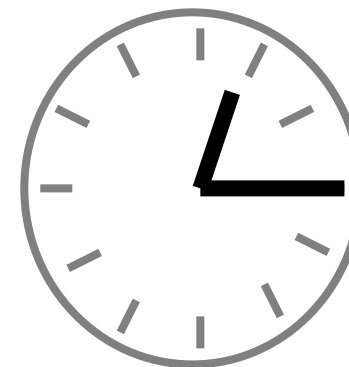


0

Koinzidenz-Messung

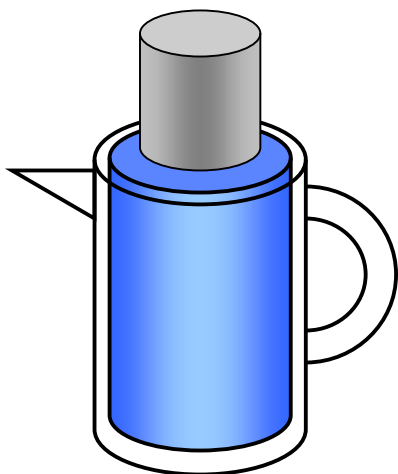
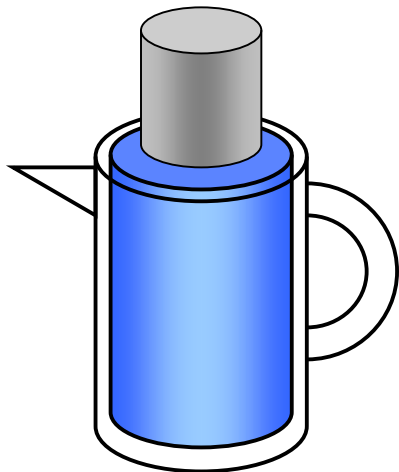


23

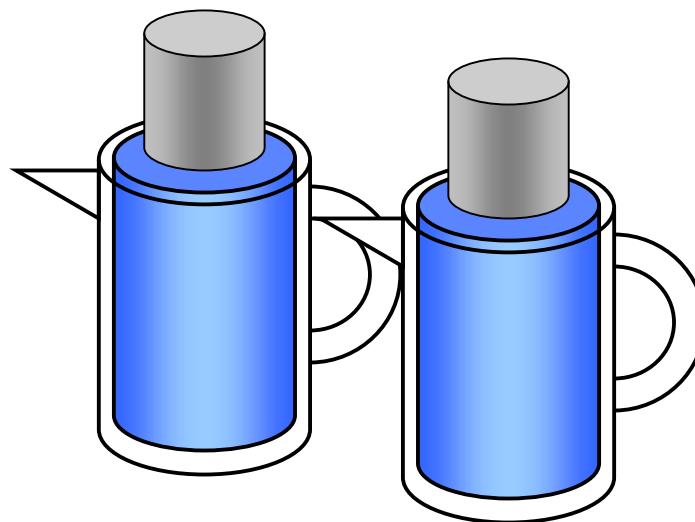
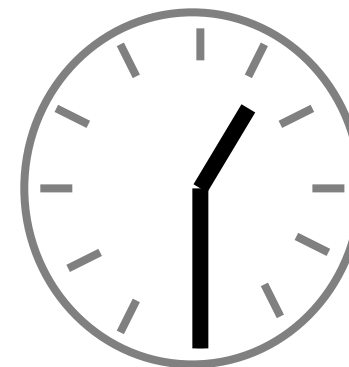


4

Koinzidenz-Messung

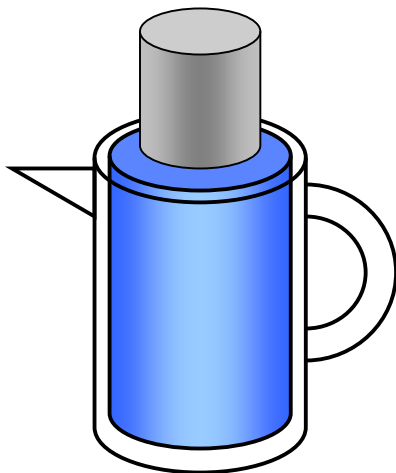
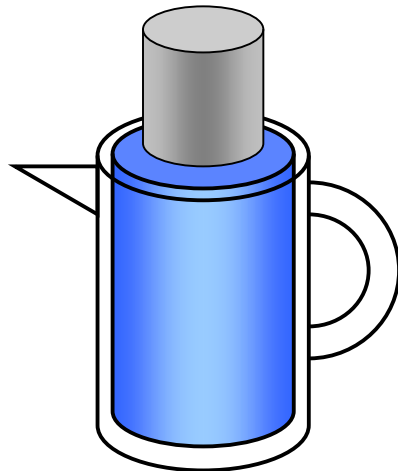


48

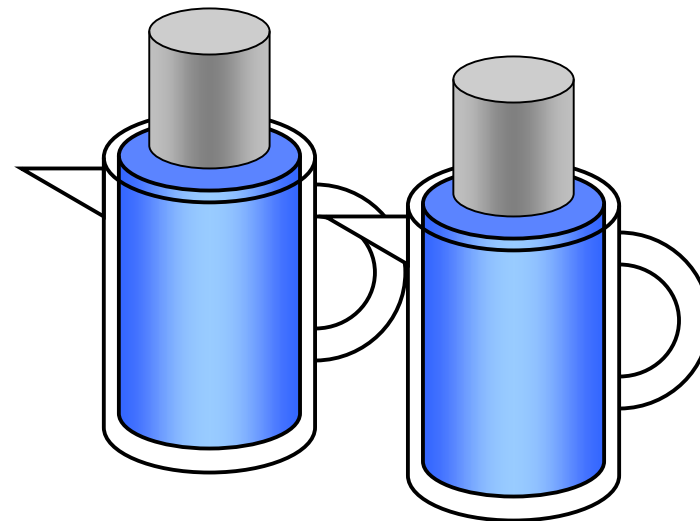
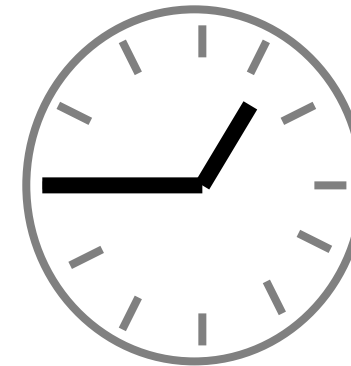


12

Koinzidenz-Messung

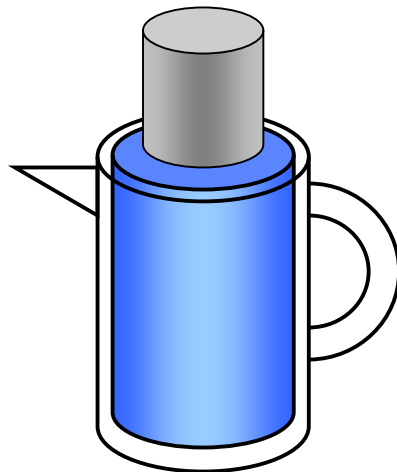
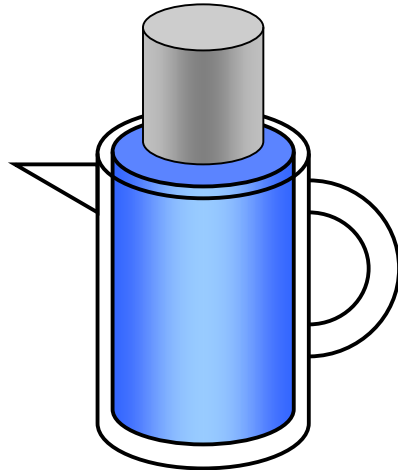


61

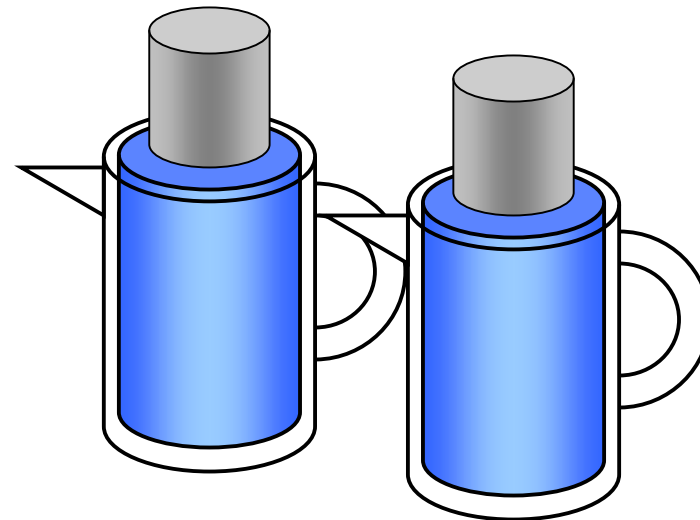
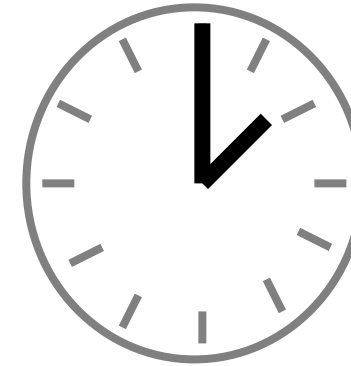


27

Koinzidenz-Messung

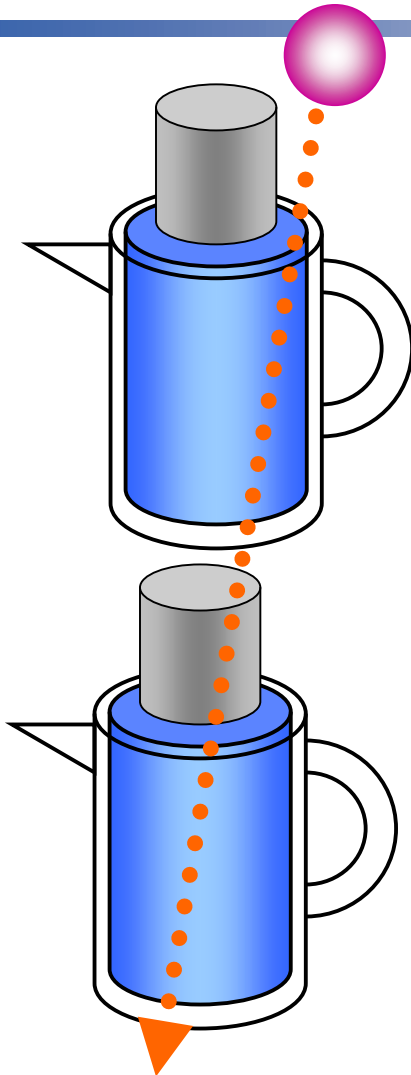


104

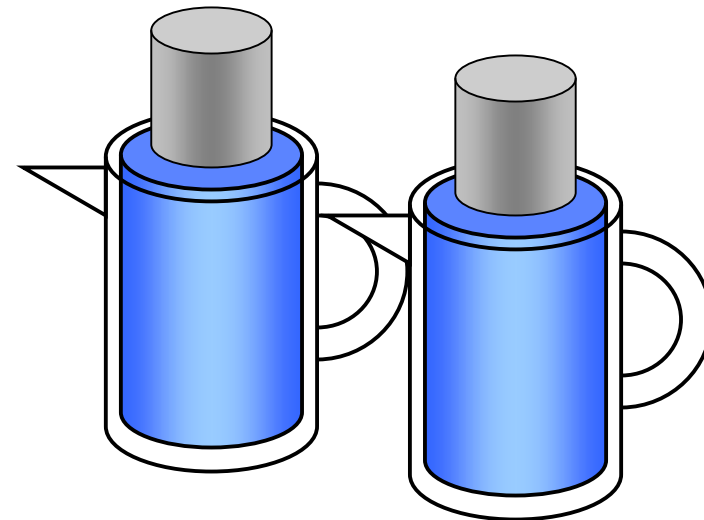
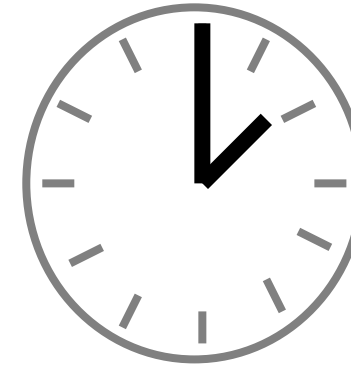


38

Koinzidenz-Messung

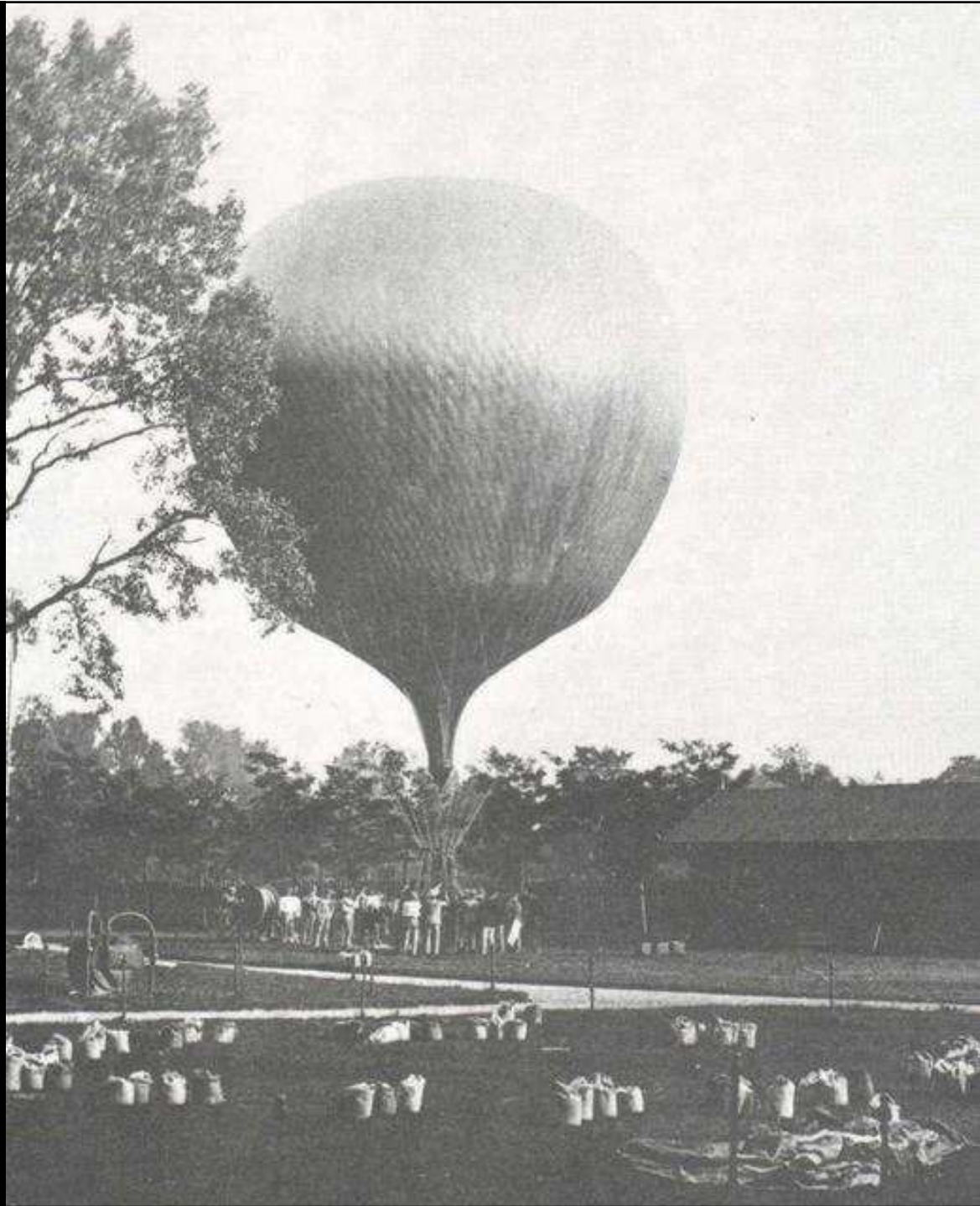


104

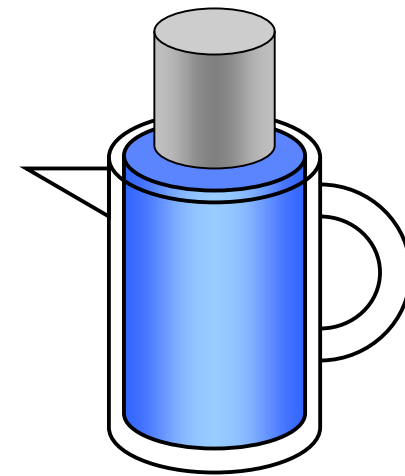
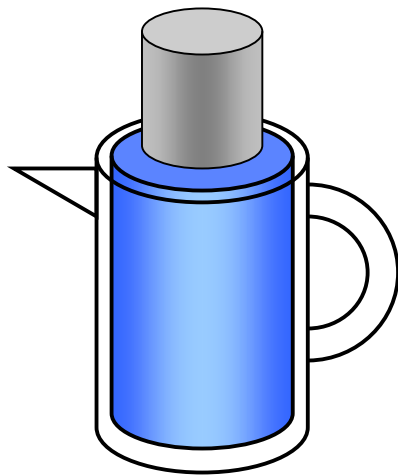
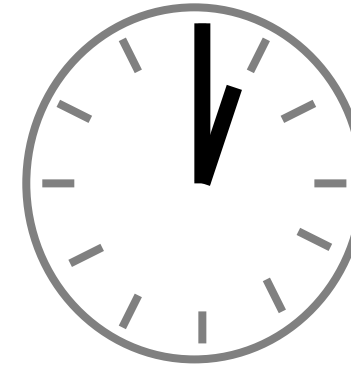


38

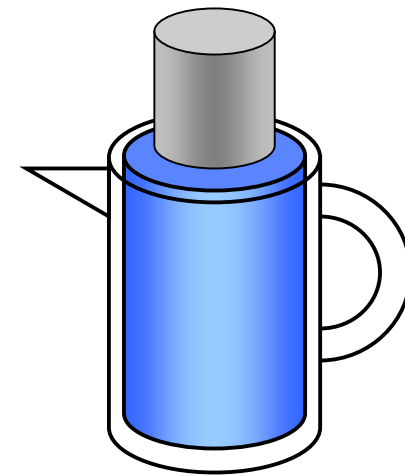
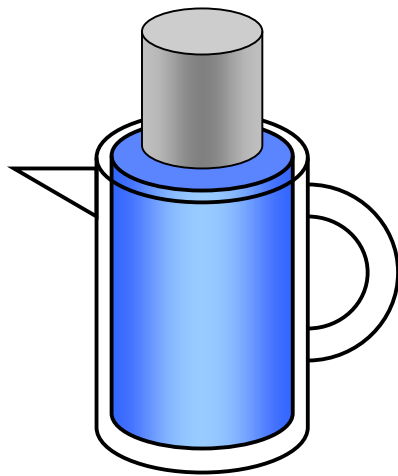
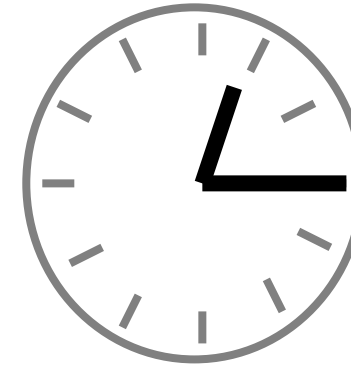




Koinzidenz-Messung II

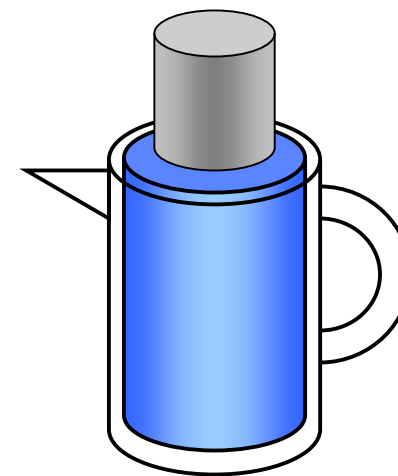
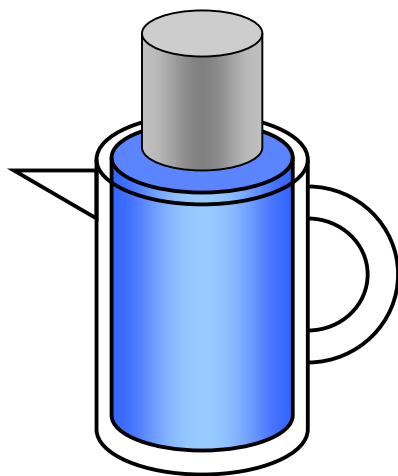
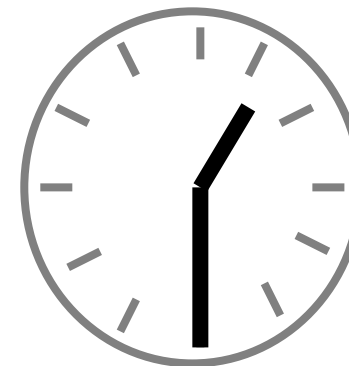


Koinzidenz-Messung II

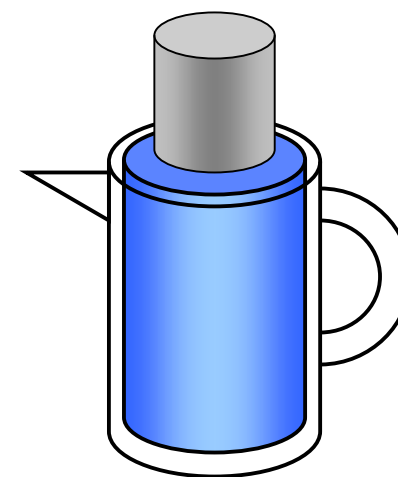
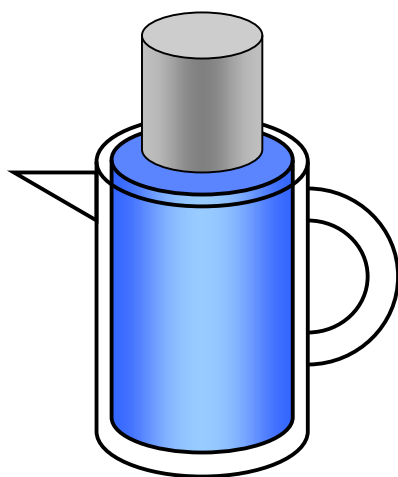
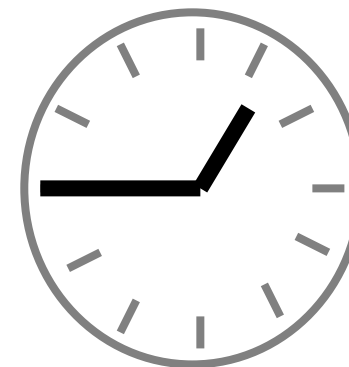


4

Koinzidenz-Messung II

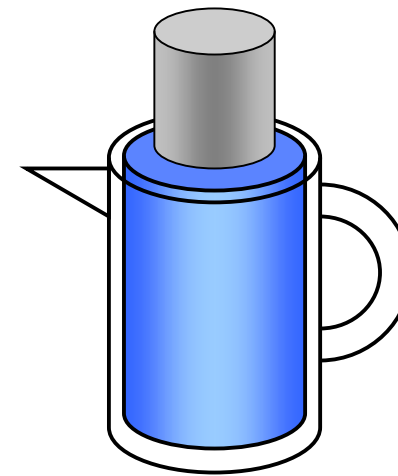
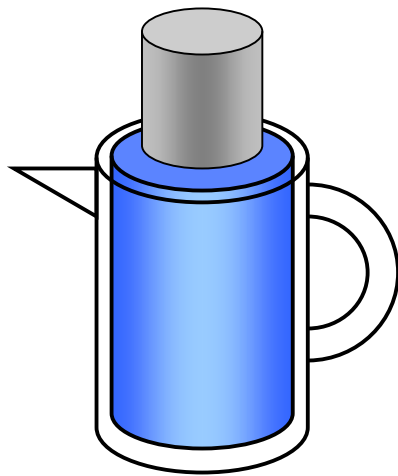
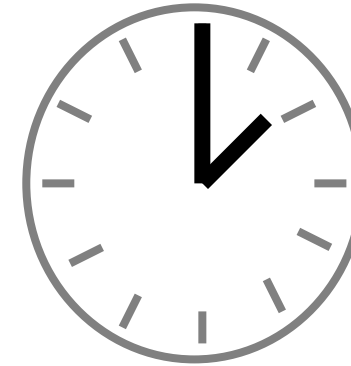


Koinzidenz-Messung II



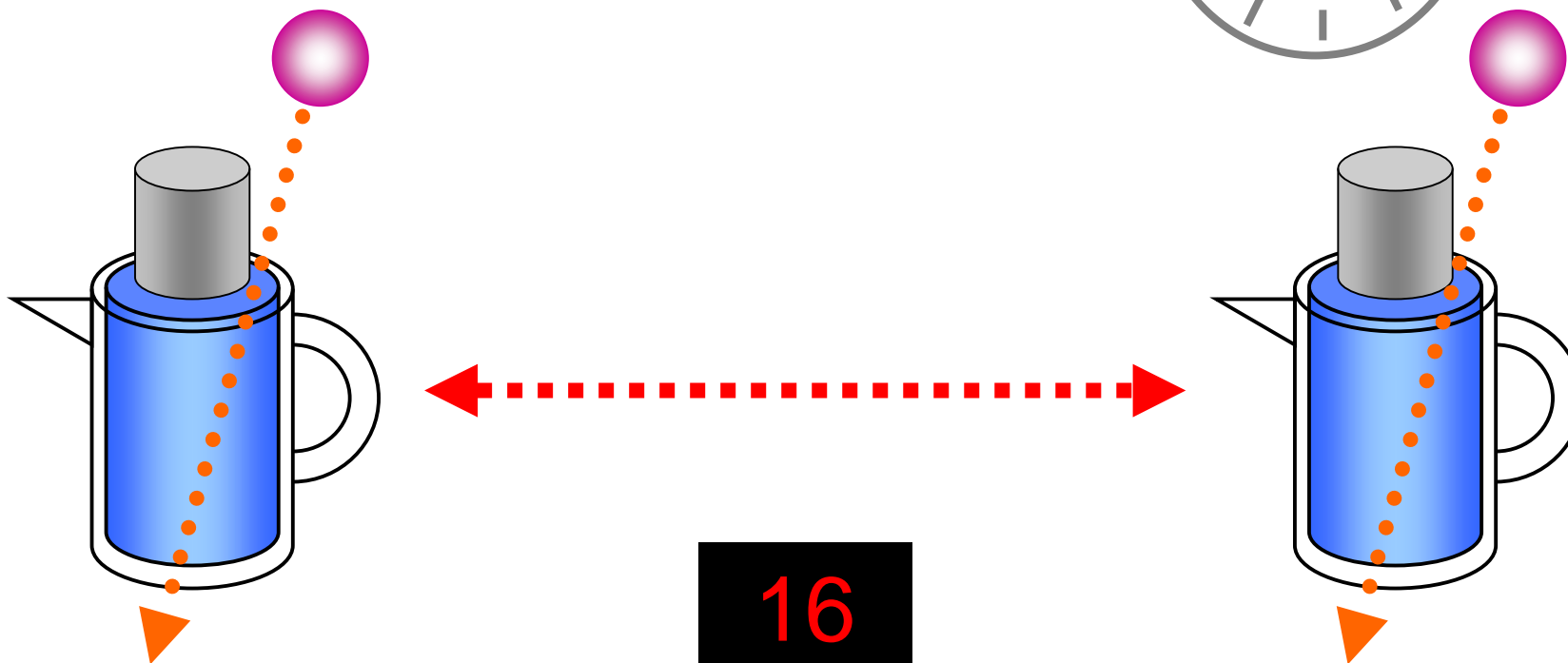
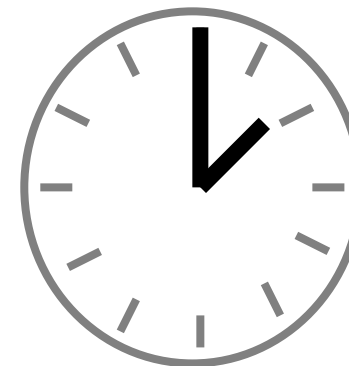
12

Koinzidenz-Messung II



16

Koinzidenz-Messung II





einfallendes Teilchen
der Primärstrahlung



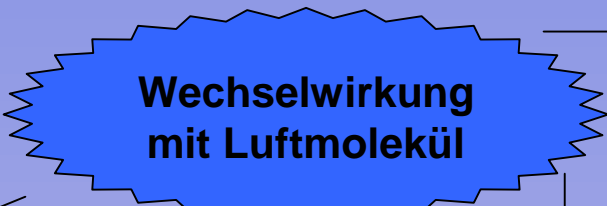
einfallendes Teilchen
der Primärstrahlung



**Wechselwirkung
mit Luftmolekül**



einfallendes Teilchen
der Primärstrahlung



K^+, K^-, K^0

π^+, π^-

Kaskade hadronischer
Zerfälle

K^\pm, K^0

π^0

π^\pm

μ^\pm

γ

γ

μ^\pm

μ^+

ν_μ

$\bar{\nu}_\mu$

μ^-

p

n

π^\pm

K^\pm

e^+

γ

e^-

γ

γ

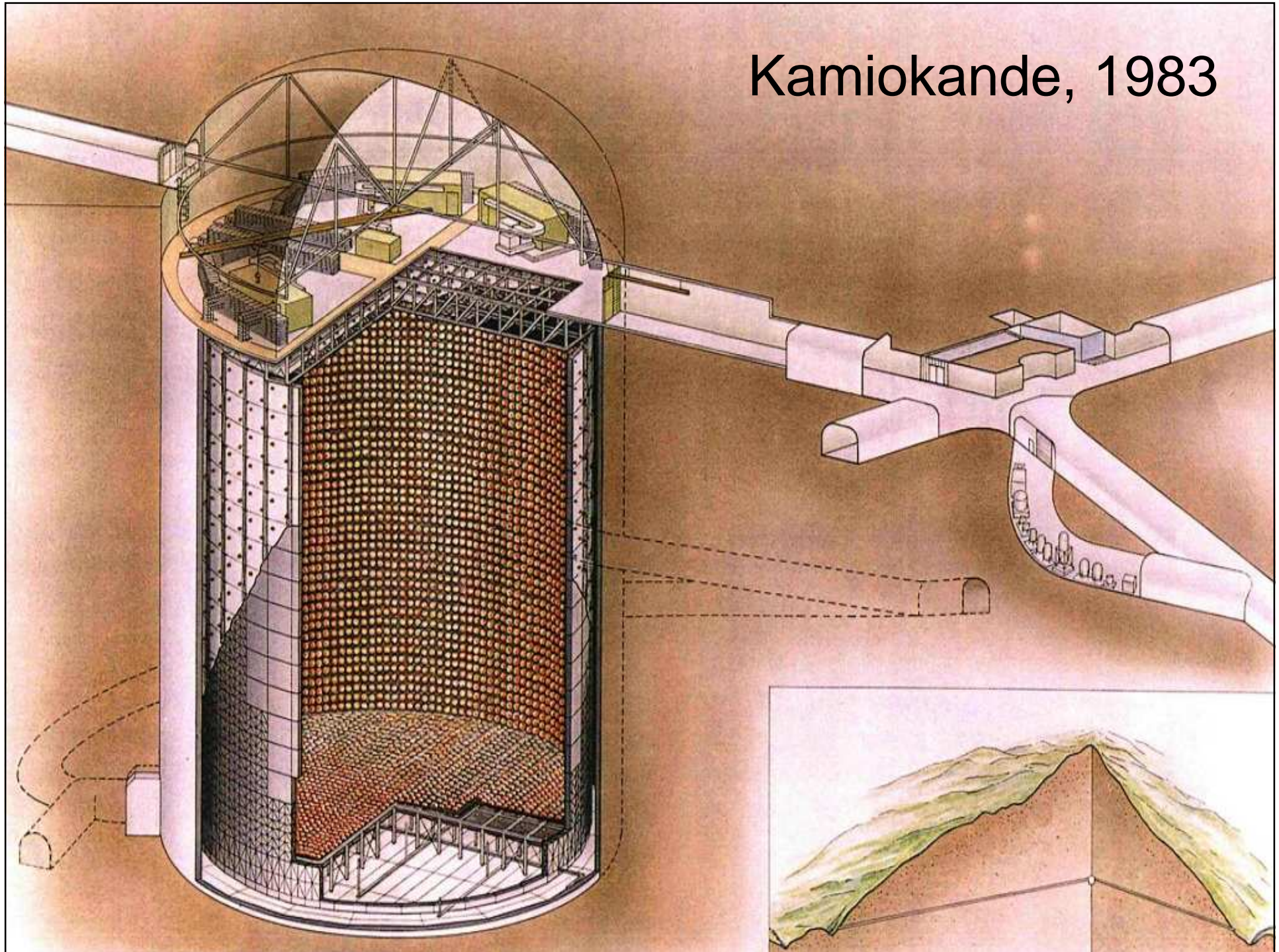
e^+

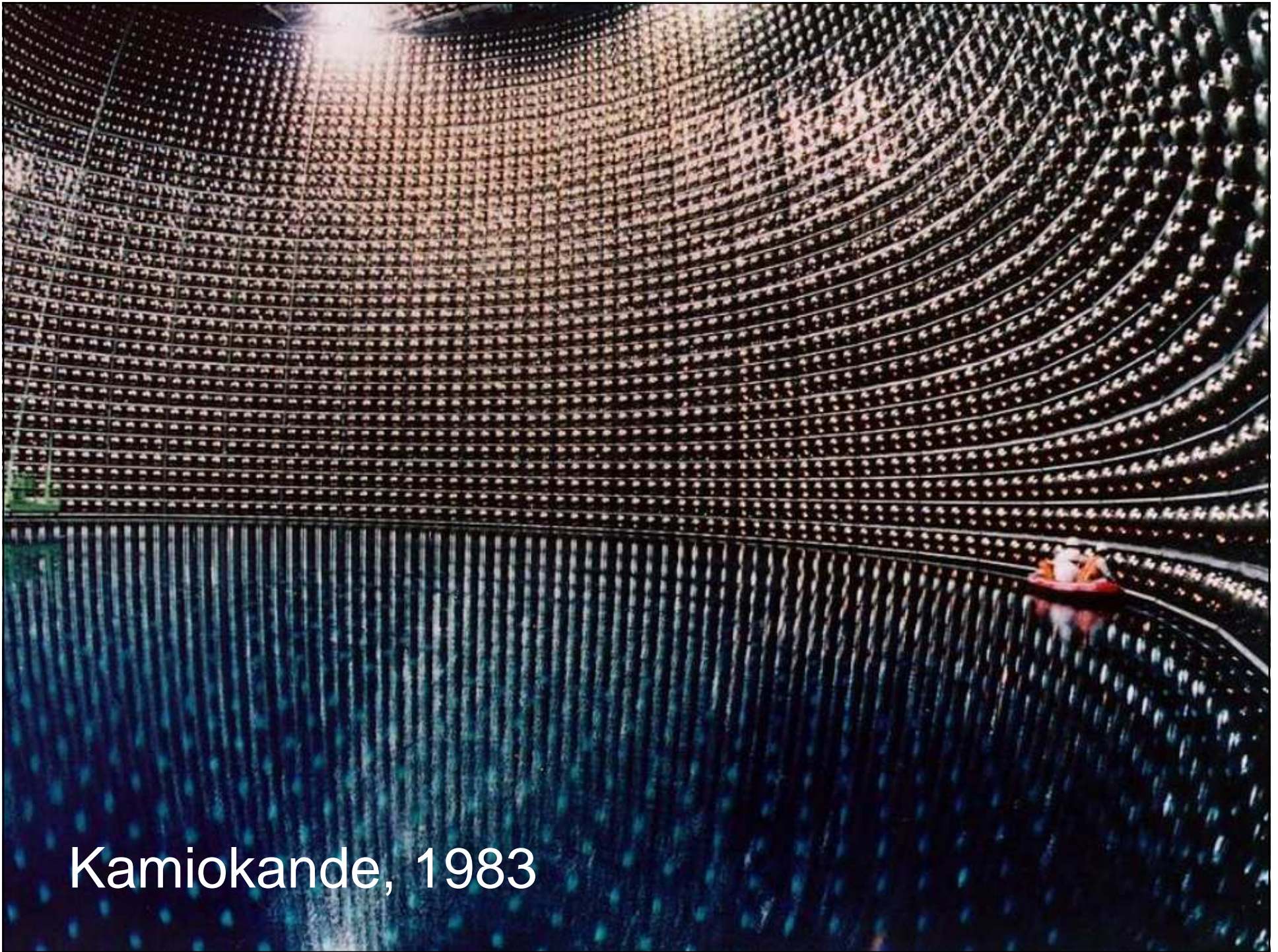
γ

e^-

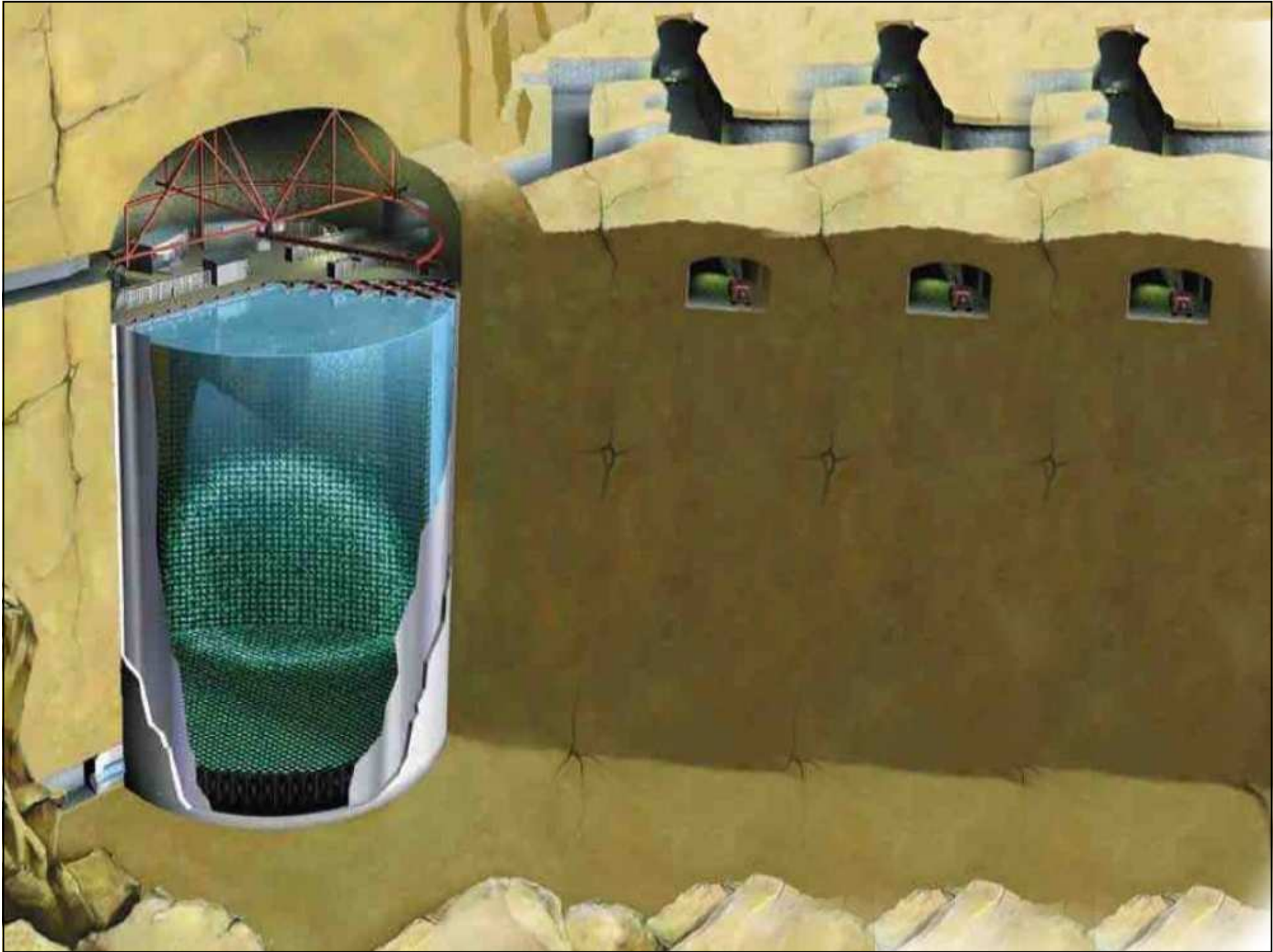


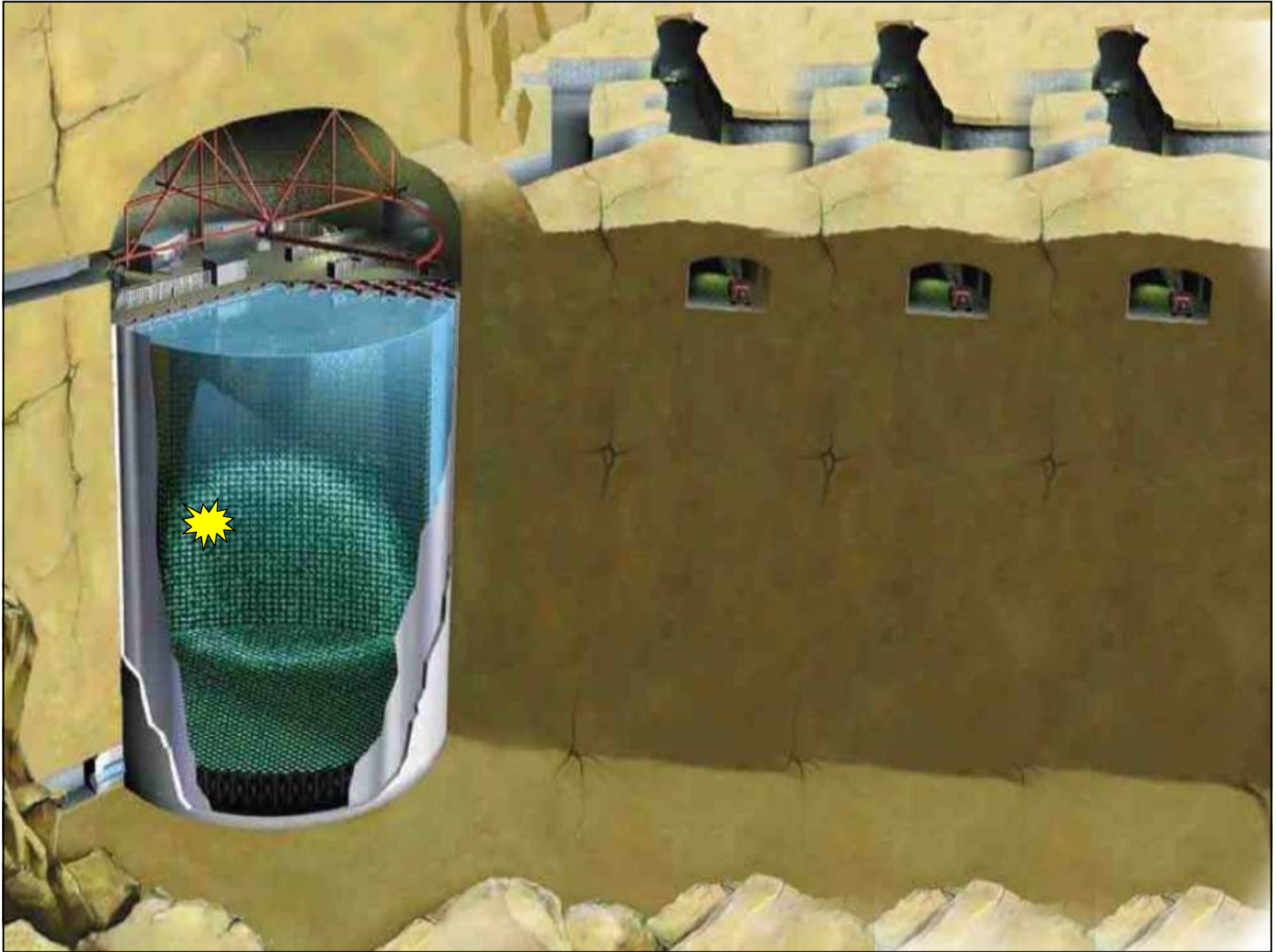
Kamiokande, 1983

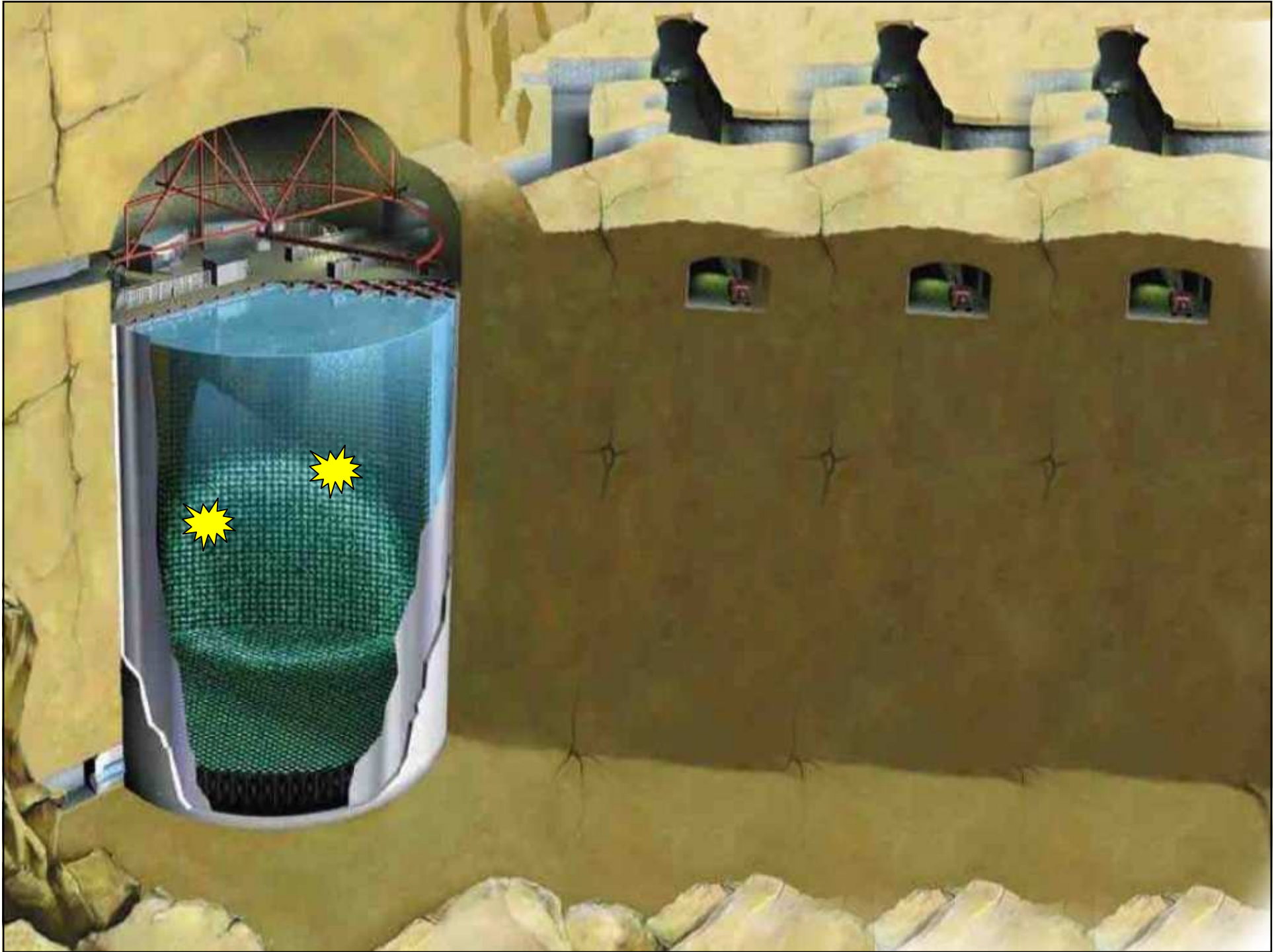


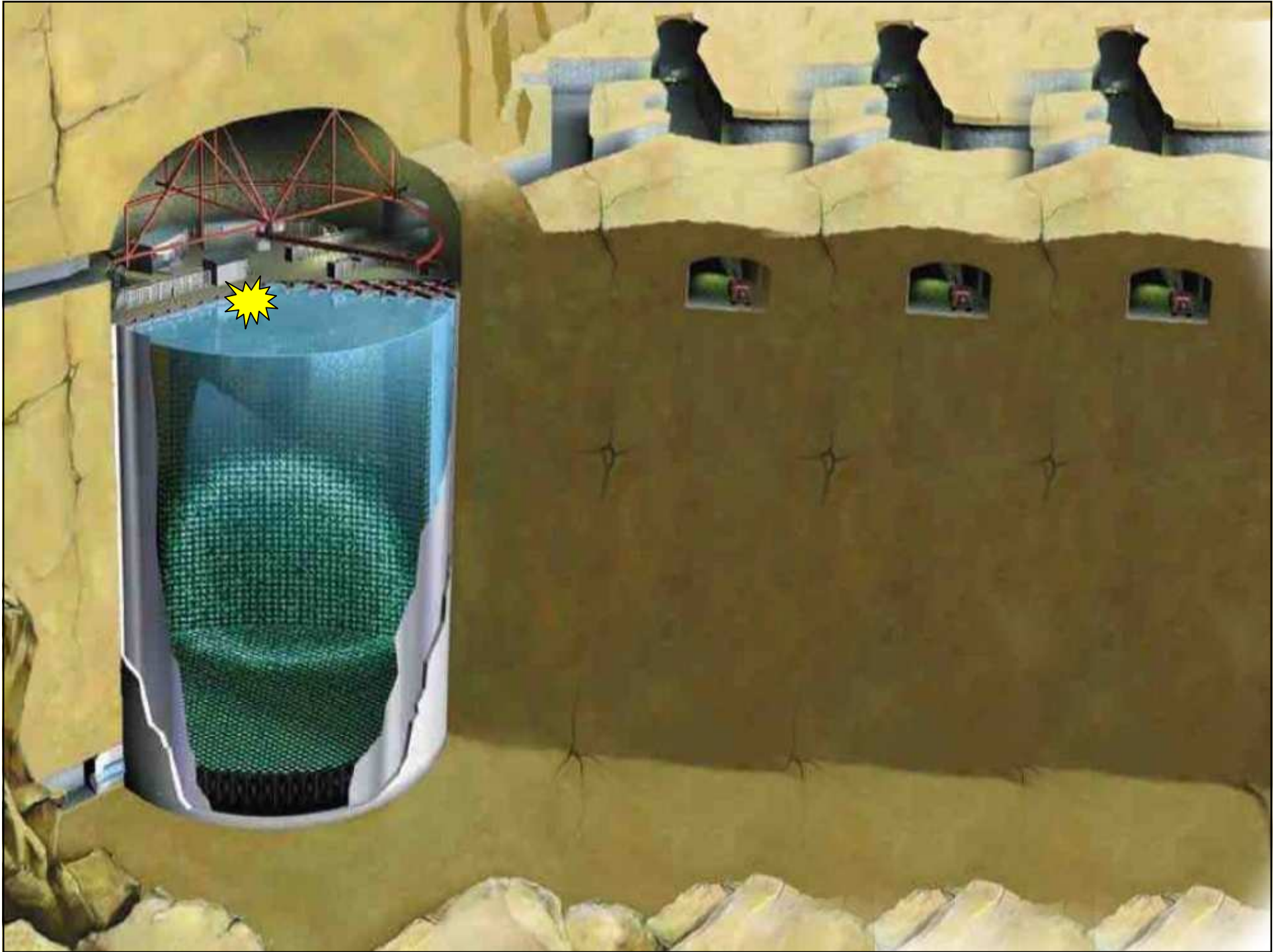


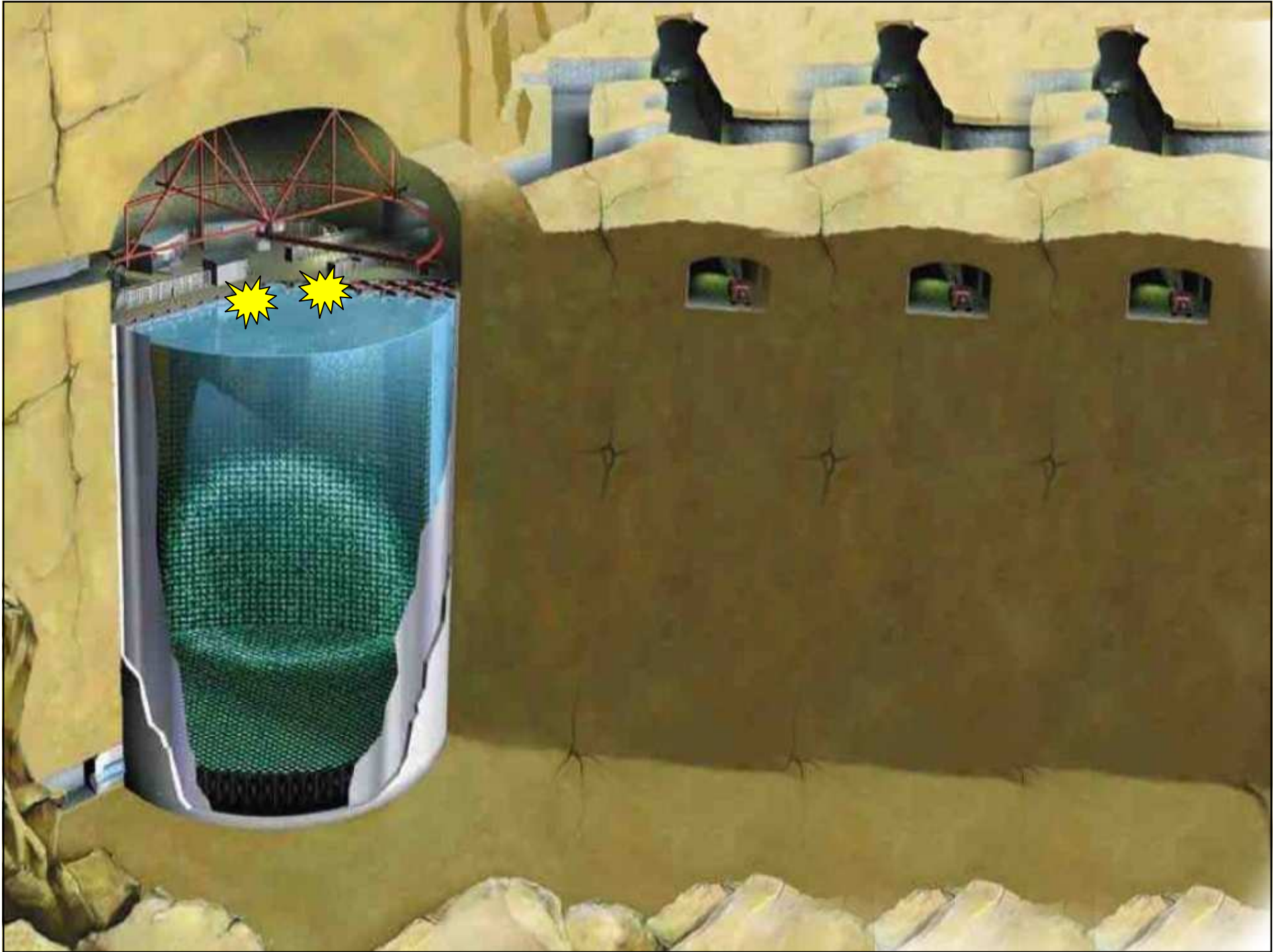
Kamiokande, 1983

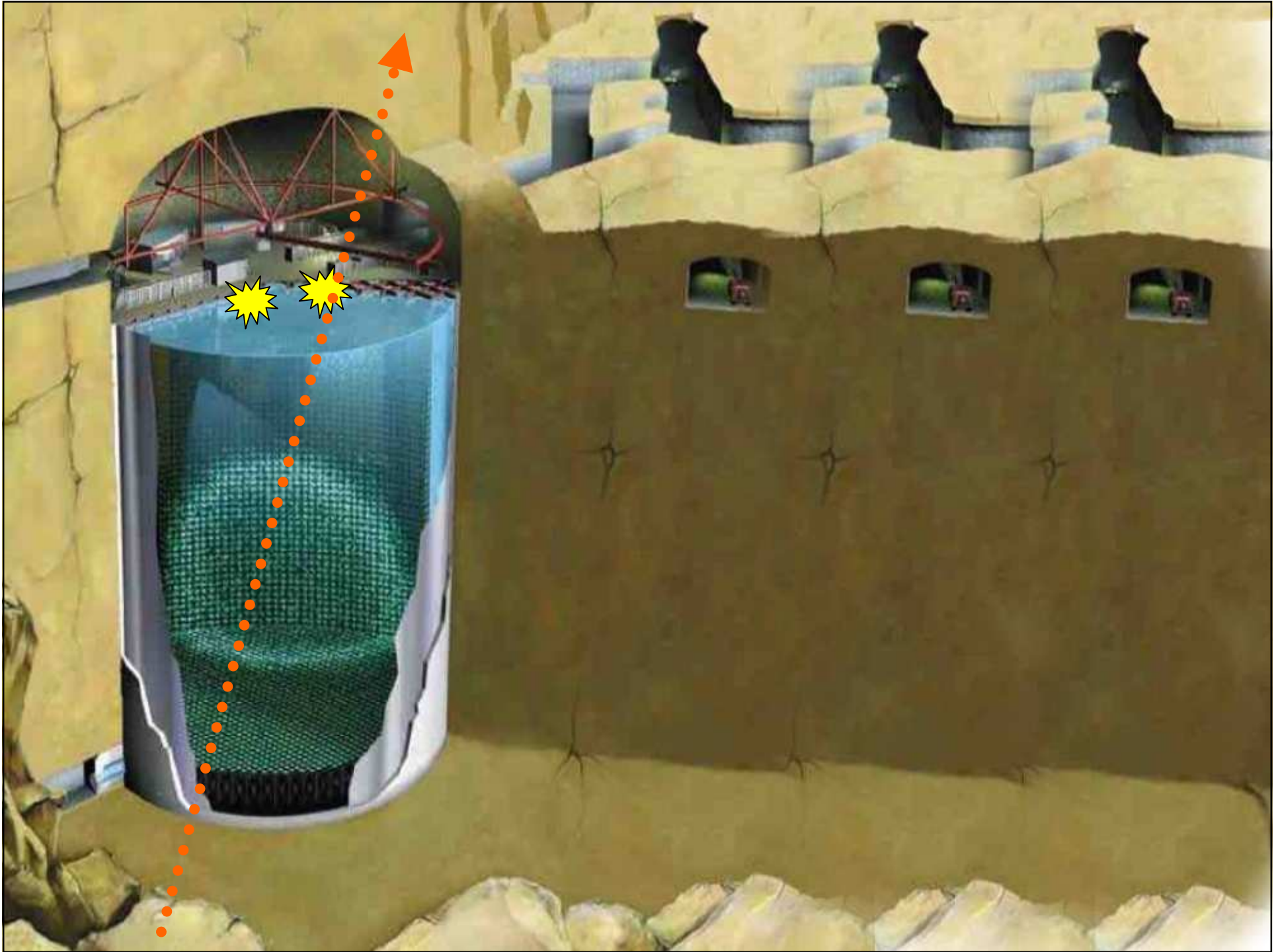


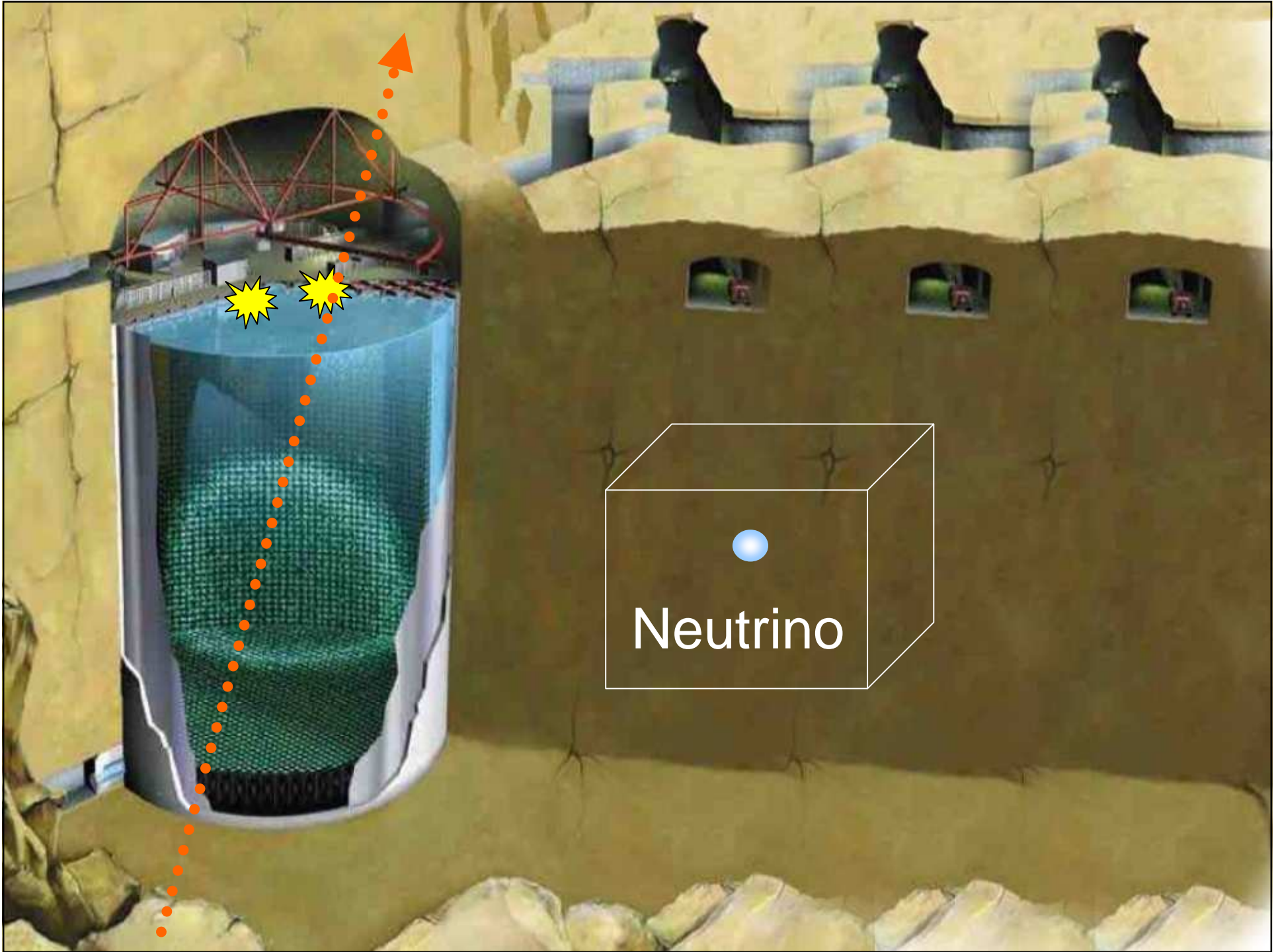


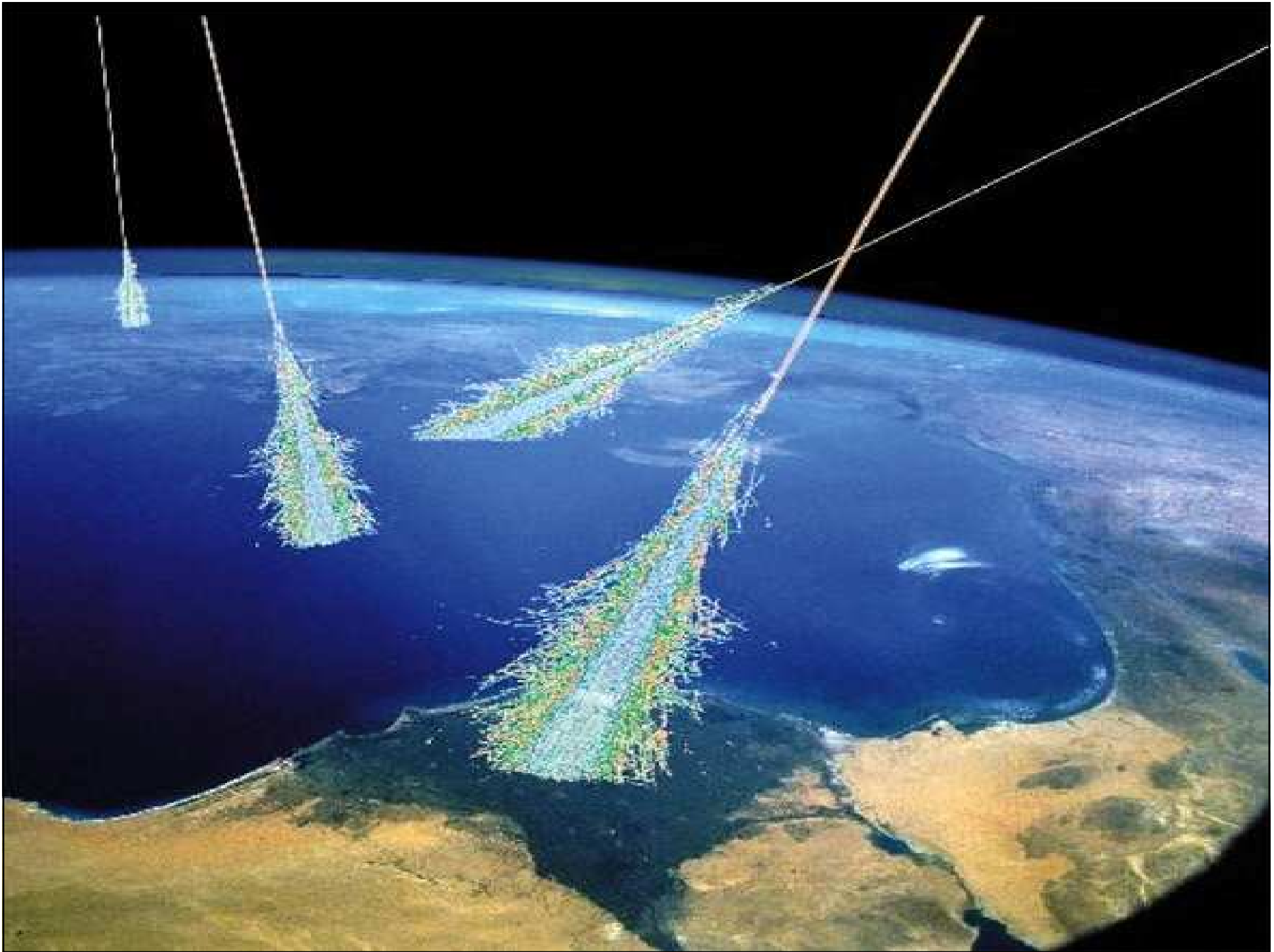










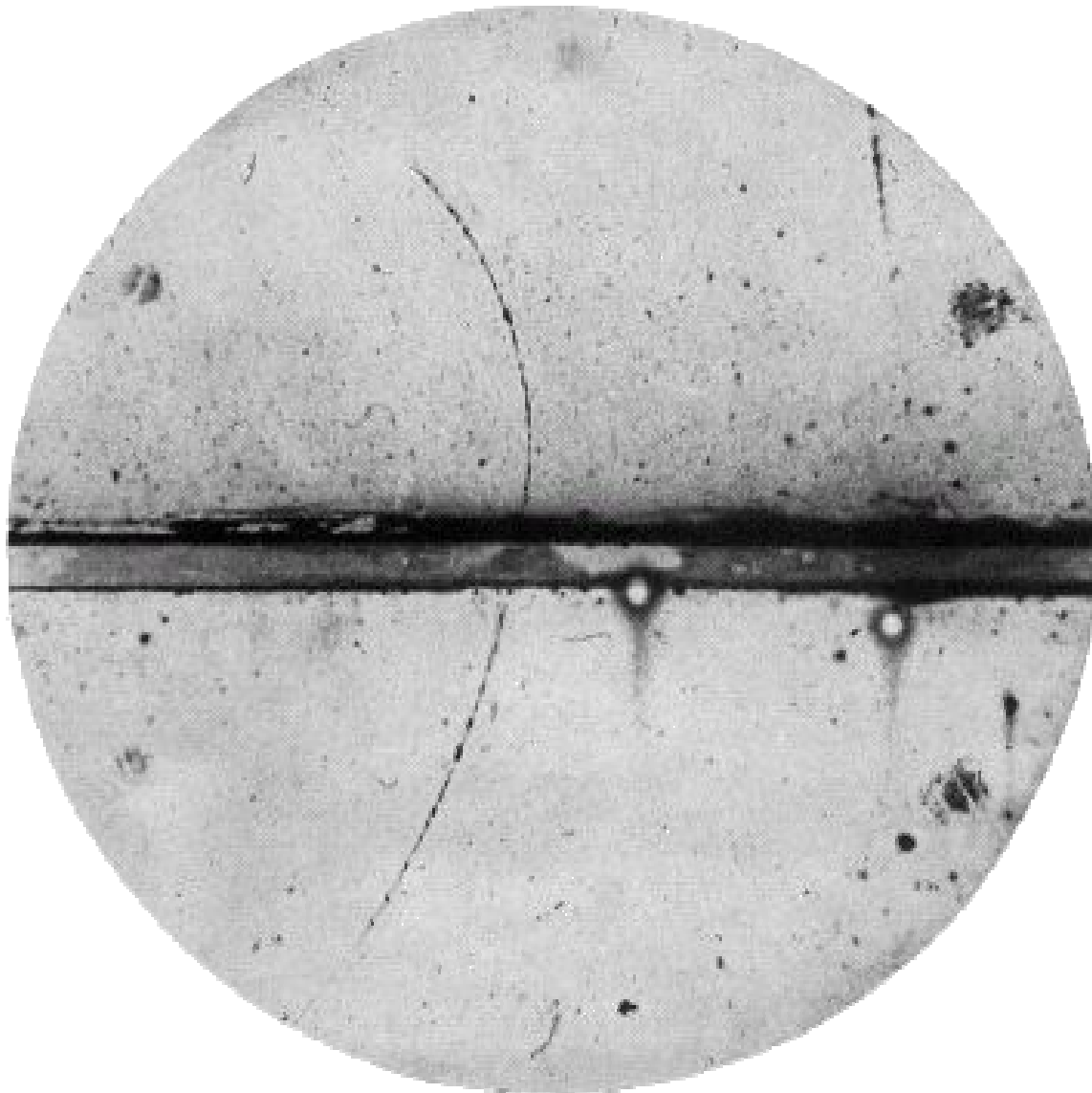


Pike's Peak (4300 m)



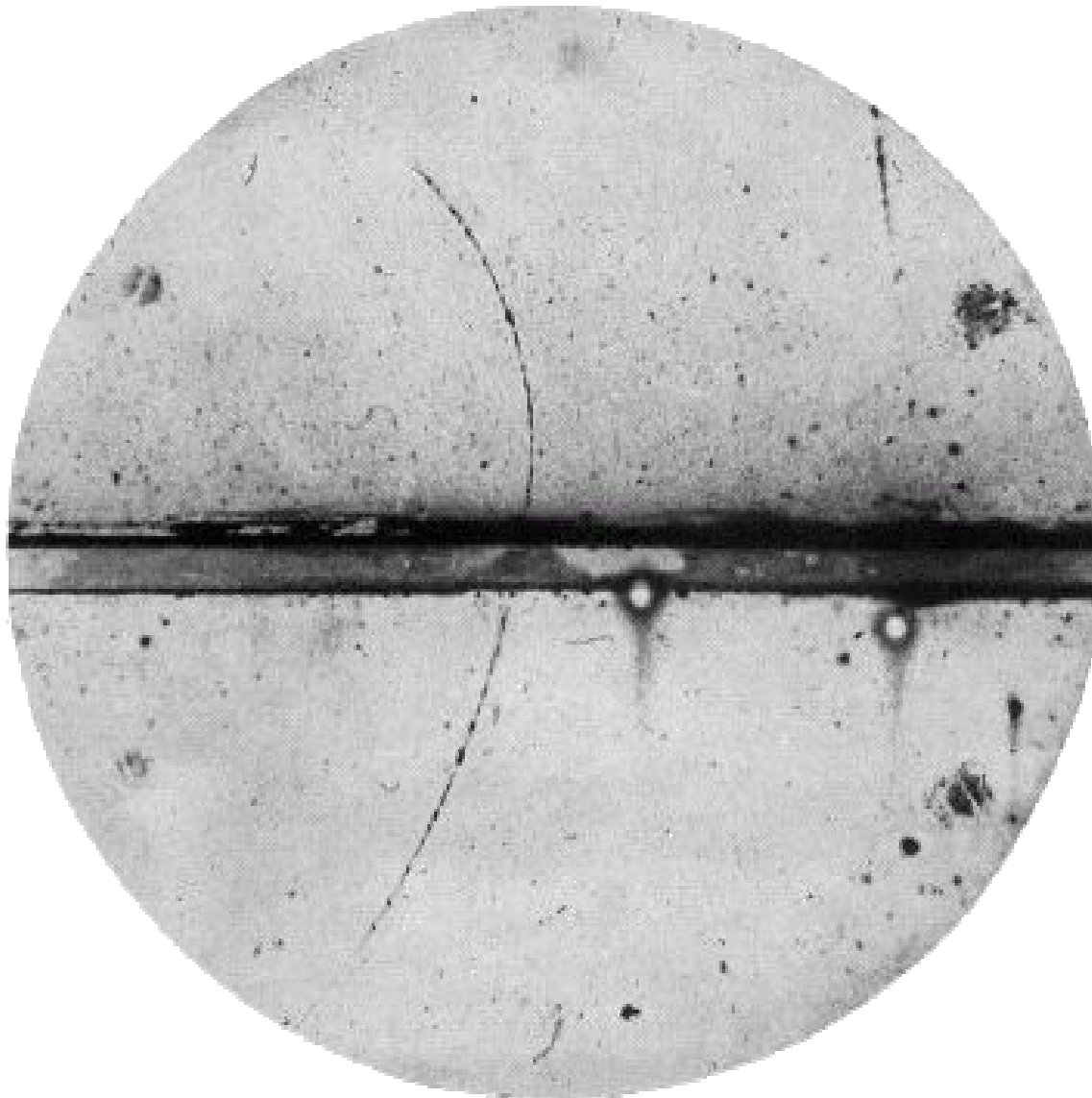
Carl Anderson, 1932

Antimaterie



Elektron

Antimaterie



Elektron



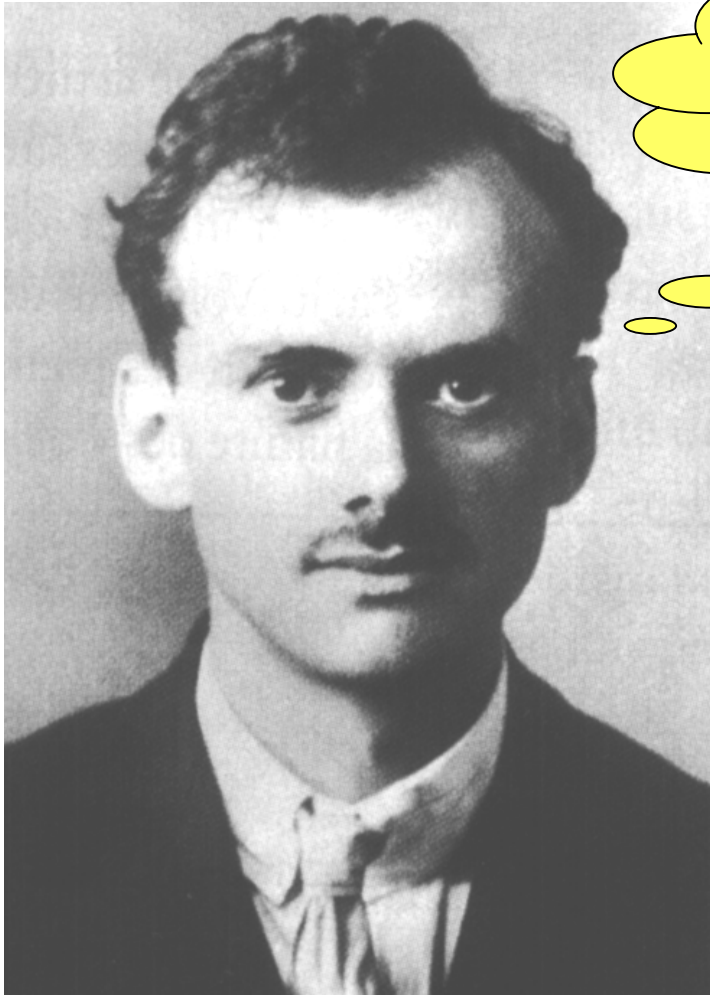
Positron

Antimaterie



Paul Dirac

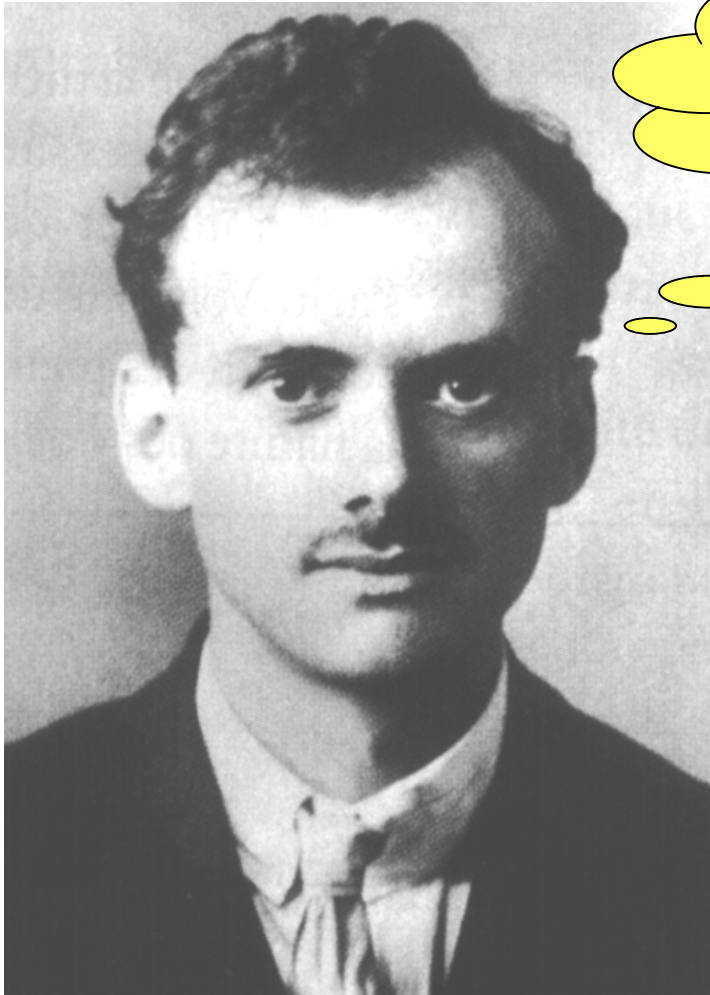
Antimaterie



Jedes Teilchen hat
ein Antiteilchen!

Paul Dirac

Antimaterie

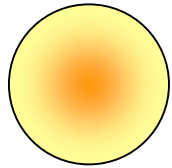


Jedes Teilchen hat
ein Antiteilchen!



Paul Dirac

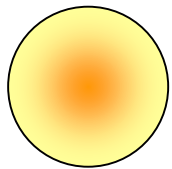
Standardmodell 1948



Neutron

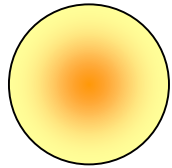


Elektron



Proton

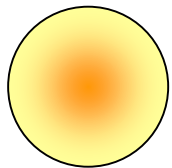
Standardmodell 1948



Neutron



Elektron

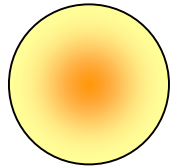


Proton



Myon

Standardmodell 1948



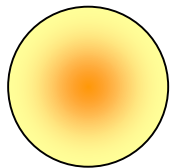
Neutron



Elektron



Neutrino

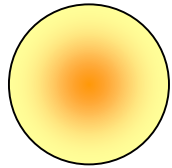


Proton



Myon

Standardmodell 1948



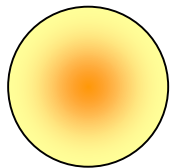
Neutron



Elektron



Neutrino



Proton



Myon

+ Antiteilchen