

# I – a star among stars?

Musings of an astronomer about the human mind

Bruno Binggeli  
University of Basel

CORTONA WEEK 2014

## CORTONA WEEK

A residential week in Tuscany for the discovery of values, which are neglected in the natural sciences' academic education: arts, emotions and psyche, religiosity and body work, and to foster transdisciplinary thinking.

[www.cortona.ethz.ch](http://www.cortona.ethz.ch)

**ETH**

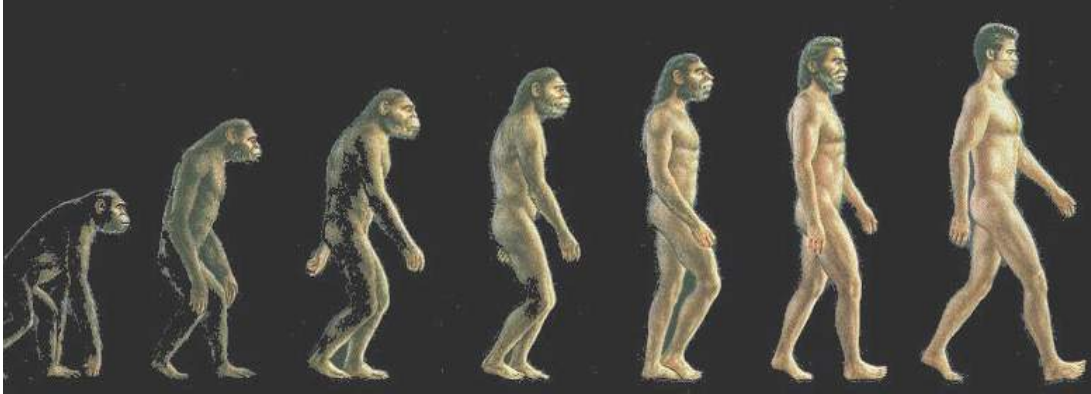
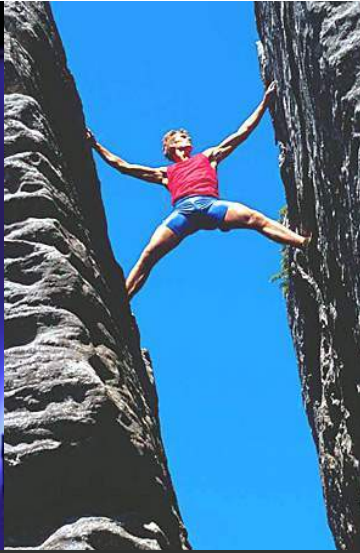
Hönggerische Technische Hochschule Zürich  
Swiss Federal Institute of Technology Zurich

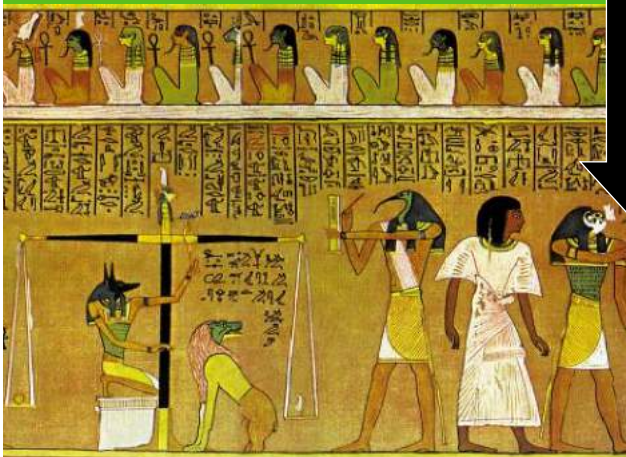
**Z**

**hdk**

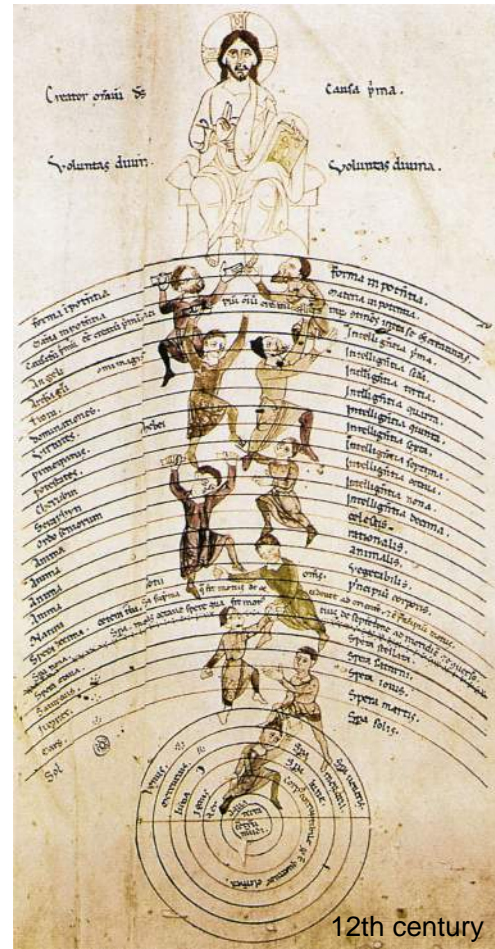
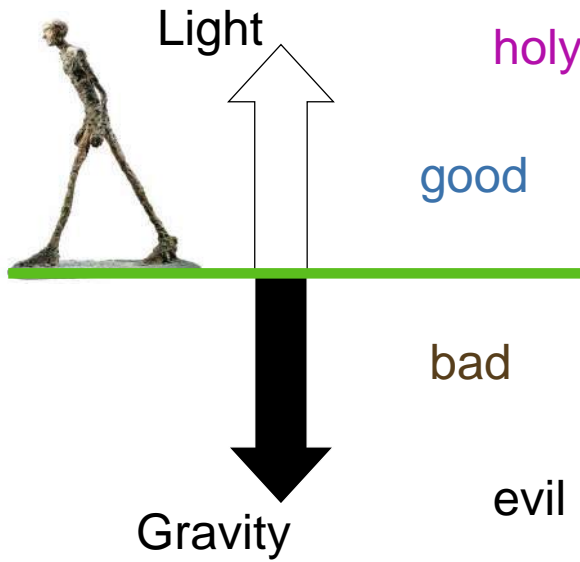
Zürcher Hochschule der Künste  
Zurich University of the Arts



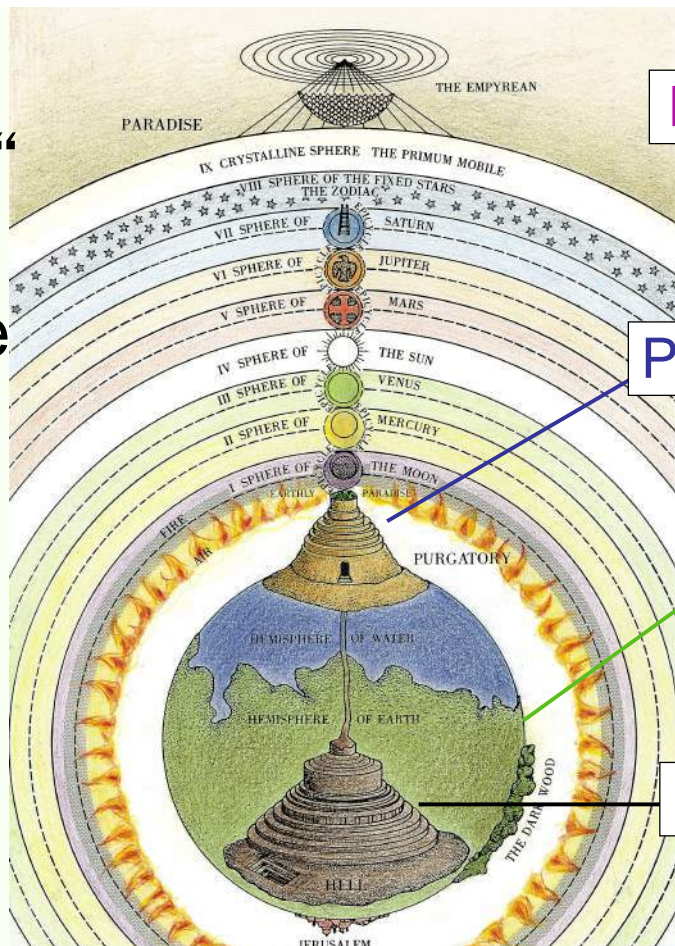




# „Embodied Mind“



# „Landscape“ of Psyche



Paradiso

Purgatorio

„Terra discoperta“

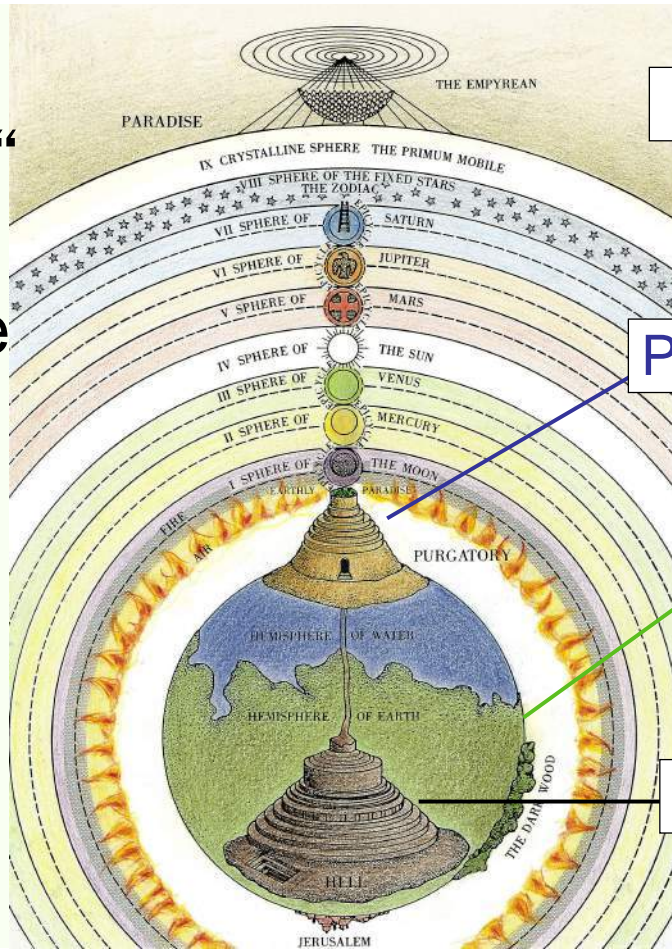
Inferno

Dante's Divine Comedy ca. 1300

„Land-  
scape“  
of  
Psyche

Freudian

Dante's  
Divine  
Comedy  
ca. 1300



Paradiso

Super-ego

Purgatorio

„Terra discoperta“

Ego („I“)

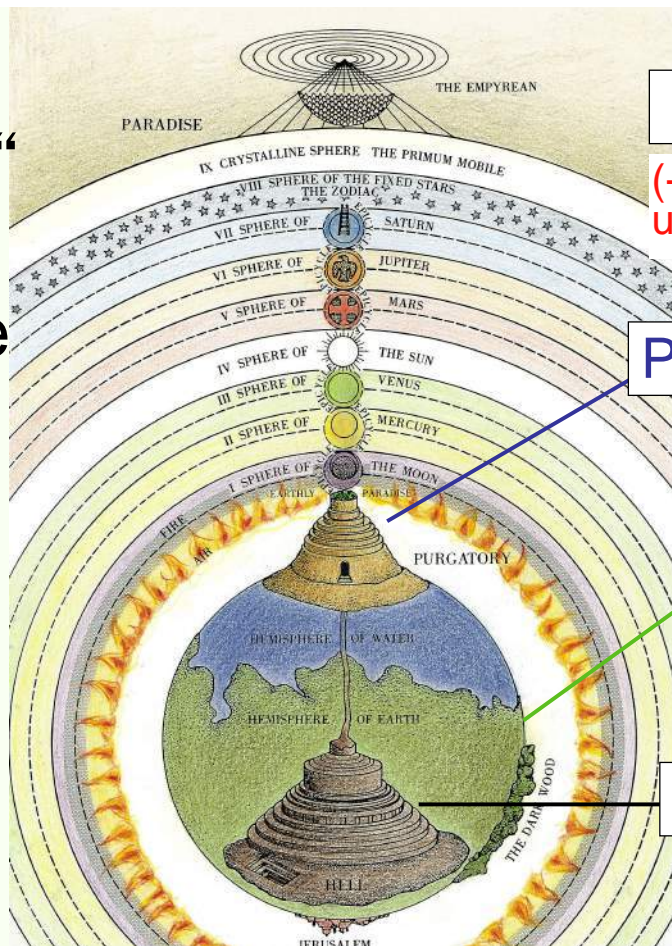
Inferno

Id

„Land-  
scape“  
of  
Psyche

Jungian

Dante's  
Divine  
Comedy  
ca. 1300



Paradiso

(+) Collective  
unconscious

Purgatorio

Personal  
unconscious

„Terra discoperta“

Ego („I“)

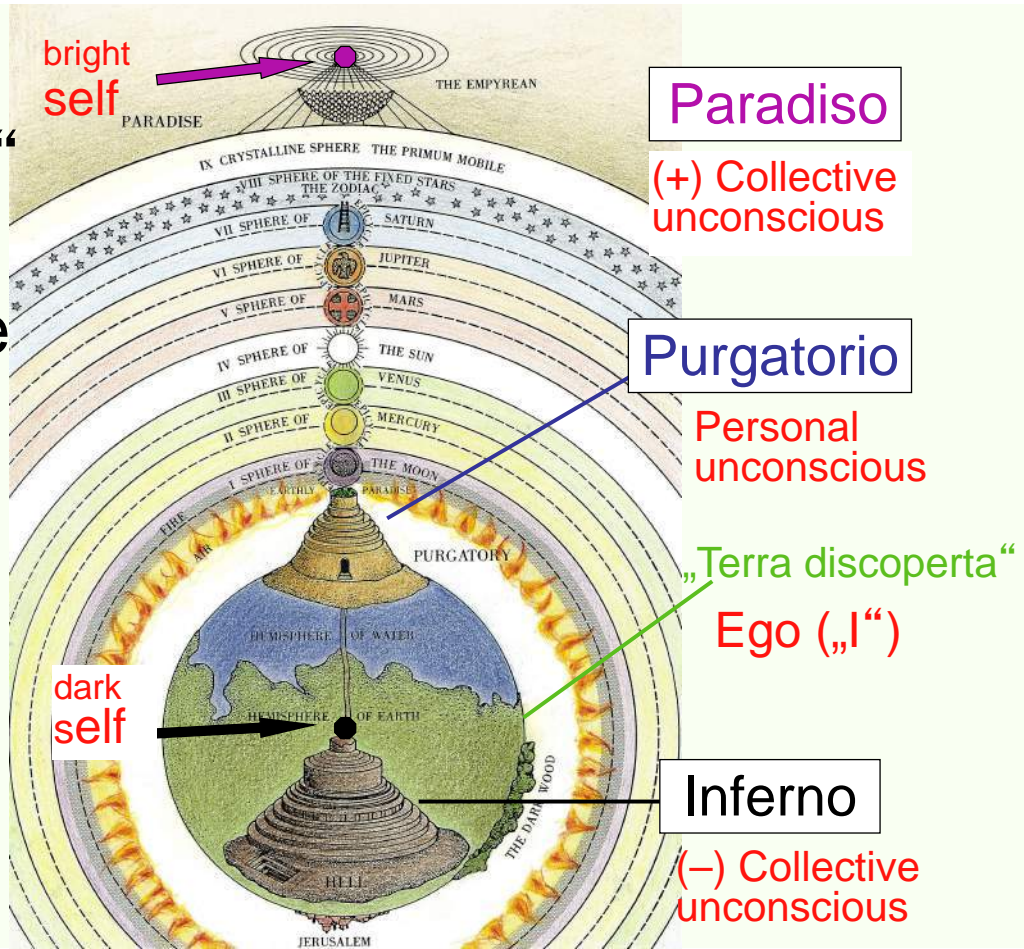
Inferno

(-) Collective  
unconscious

„Landscape“ of Psyche

Jungian

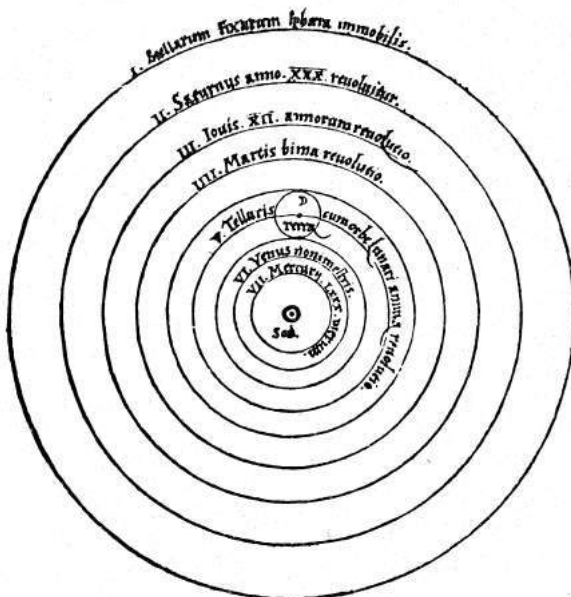
Dante's Divine Comedy ca. 1300



## Heliocentrism

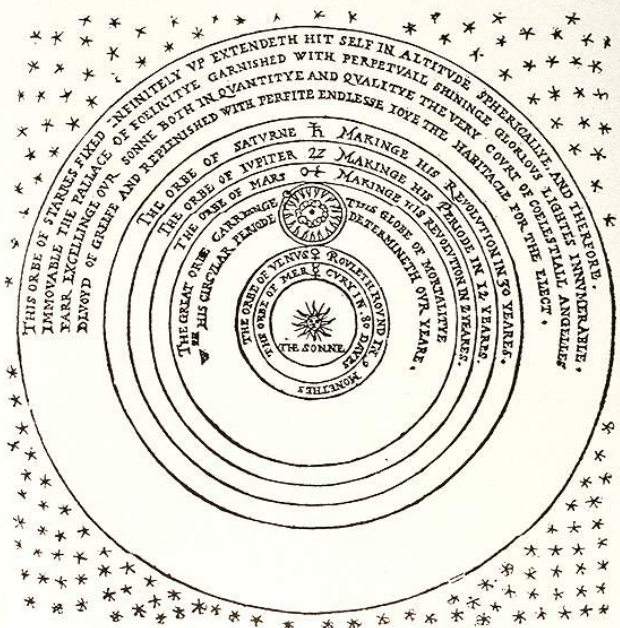
NICOLAI COPERNICI 1543

met, in quo terram cum orbe lunari tanquam epicyclo continetur diximus. Quinto loco Venus nono mense reducitur, Sextum denique locum Mercurius tenet, octuaginta dierum spacio circumcurrens, in medio uero omnium relictus Sol. Quis enim in ho-



Thomas Digges 1576

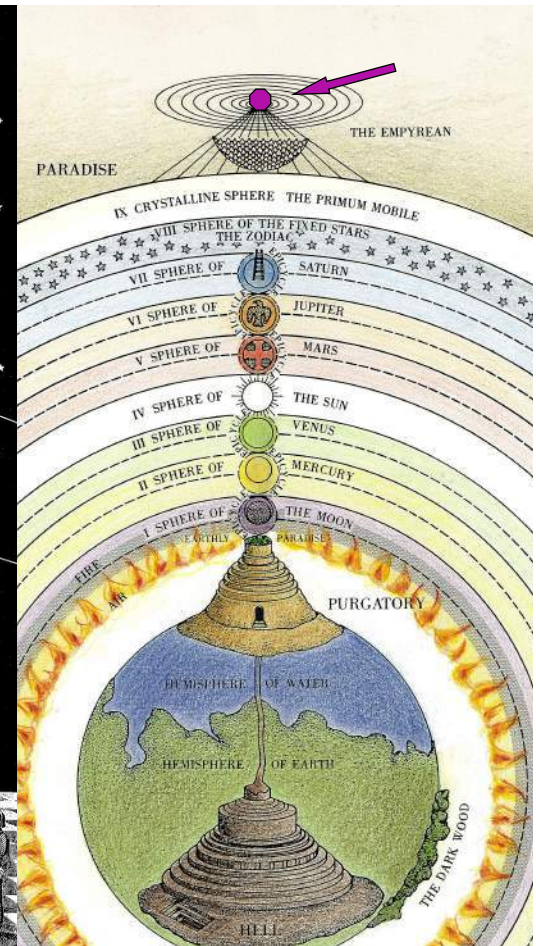
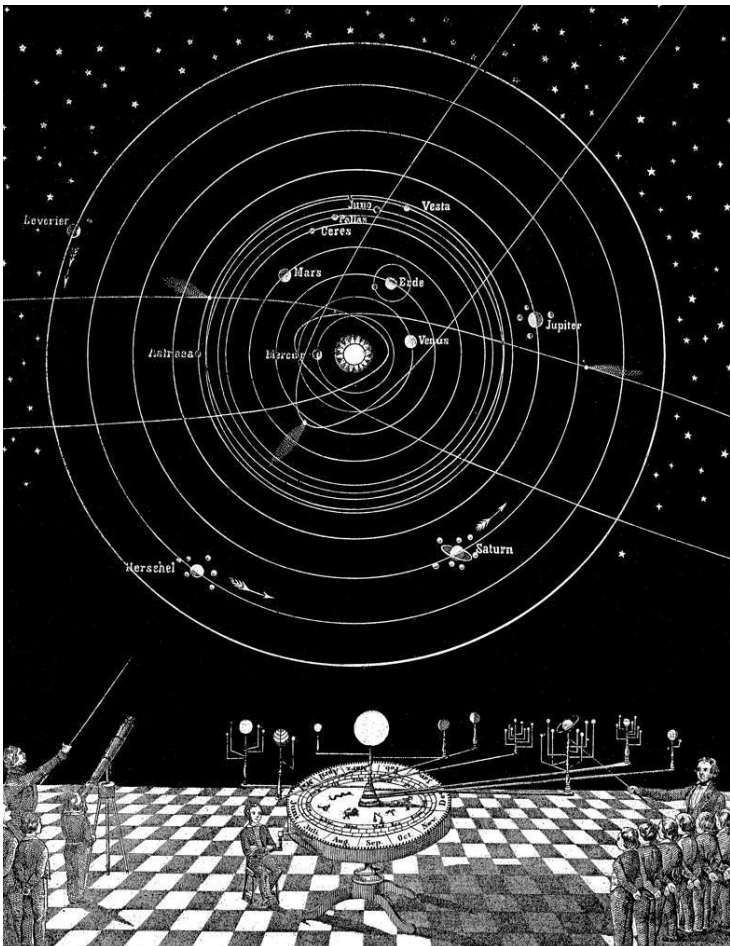
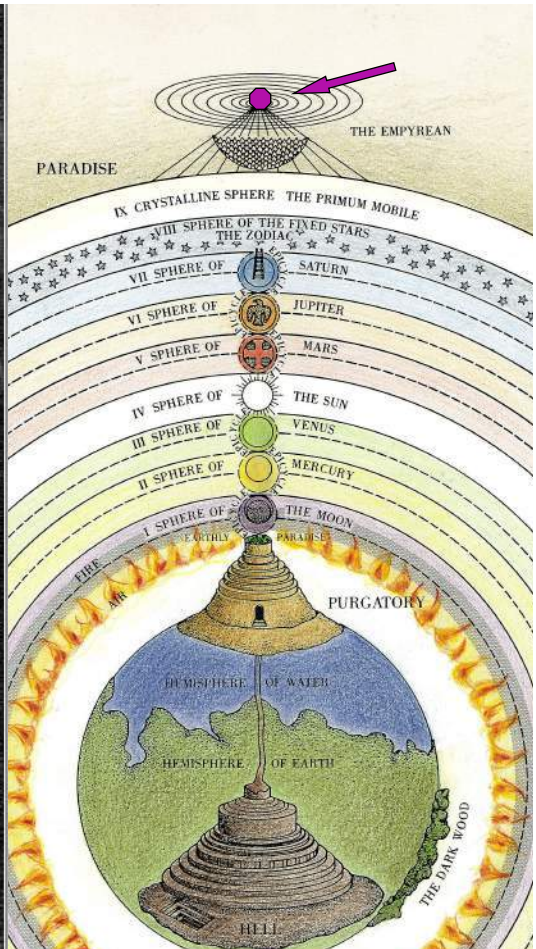
A perfit description of the Cœlestiall Orbes, according to the most auncient doctrine of the Pythagoreans, &c.



pulcherimo templo lampadem hanc in alio uel meliori loco poneret, quam unde totum simul possit illuminare: Siquidem non



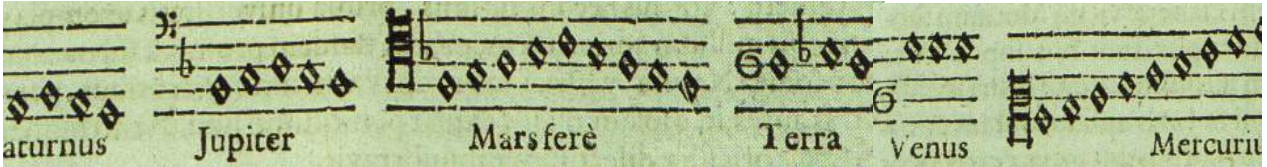
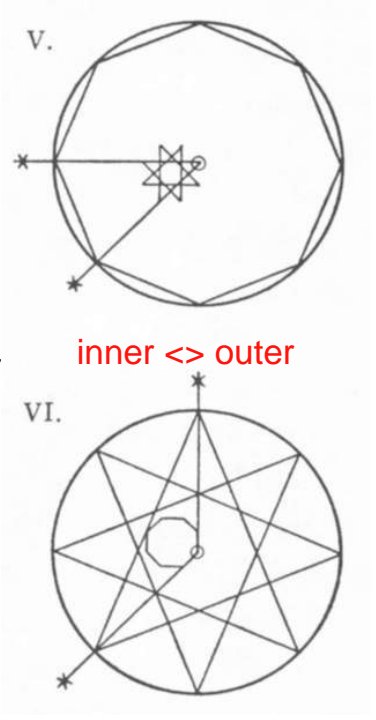
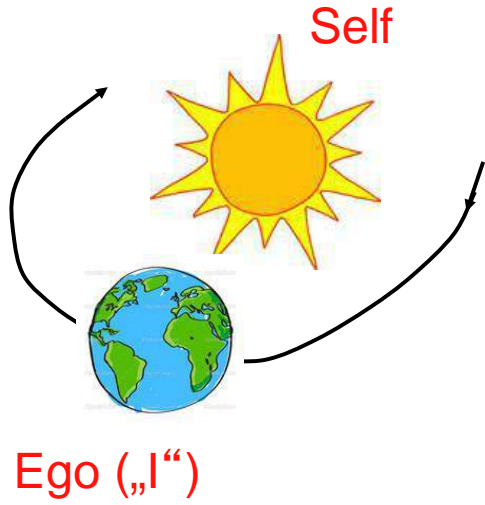
Illustration Gustave Doré



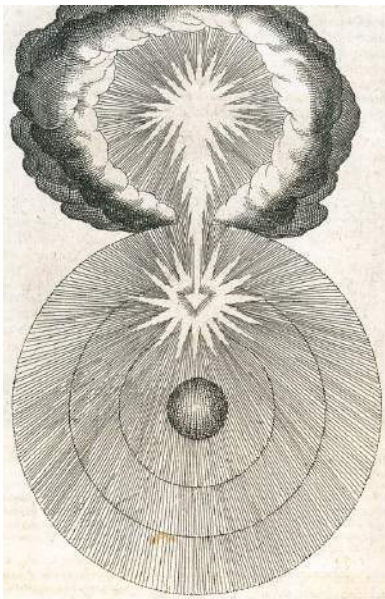
# Solar symbolism



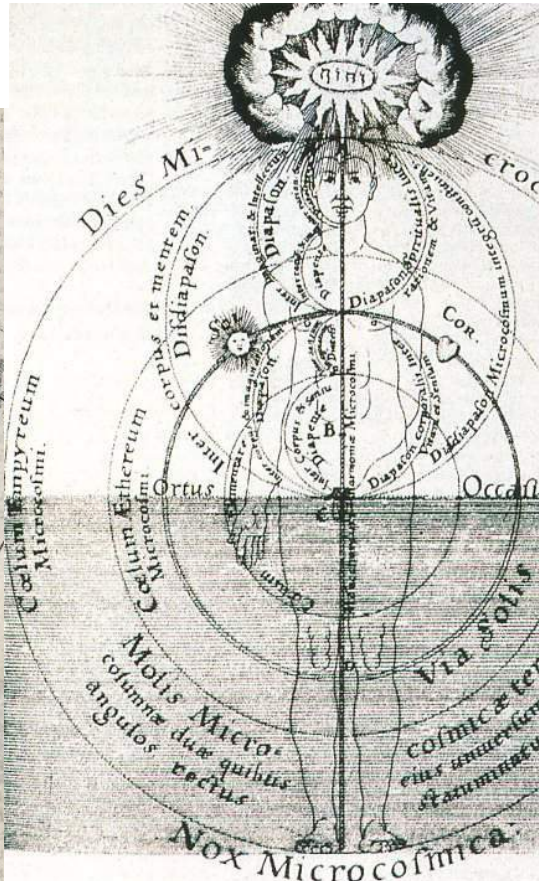
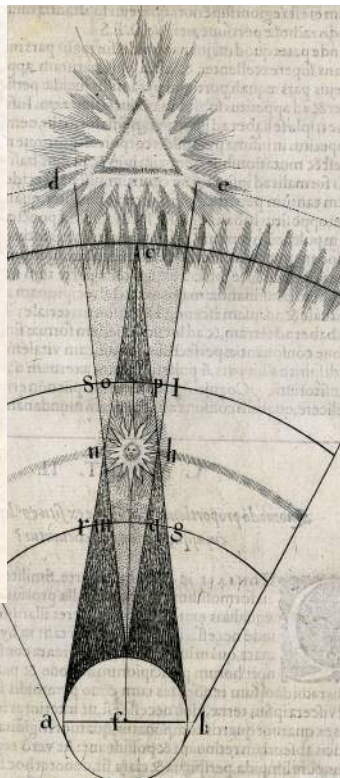
Johannes Kepler  
(1571–1630)



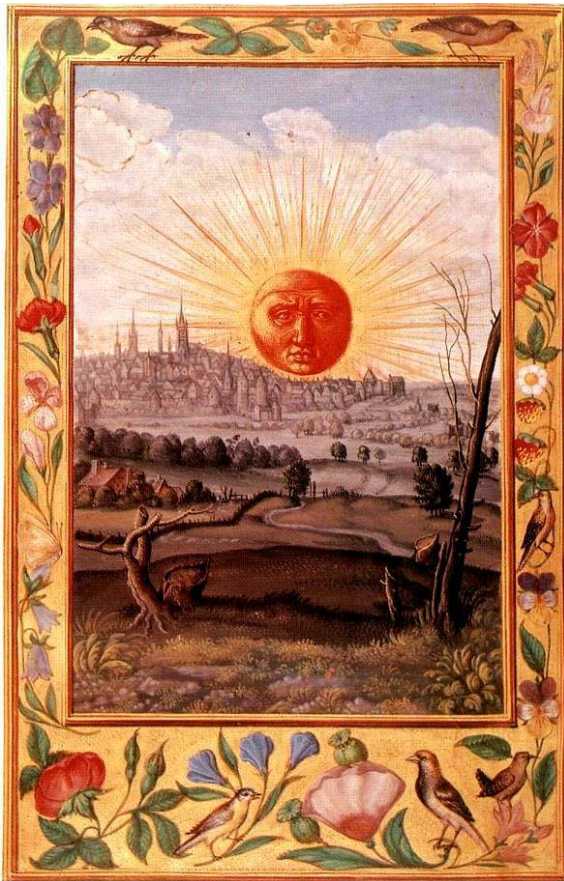
# Solar symbolism



Robert Fludd  
1617







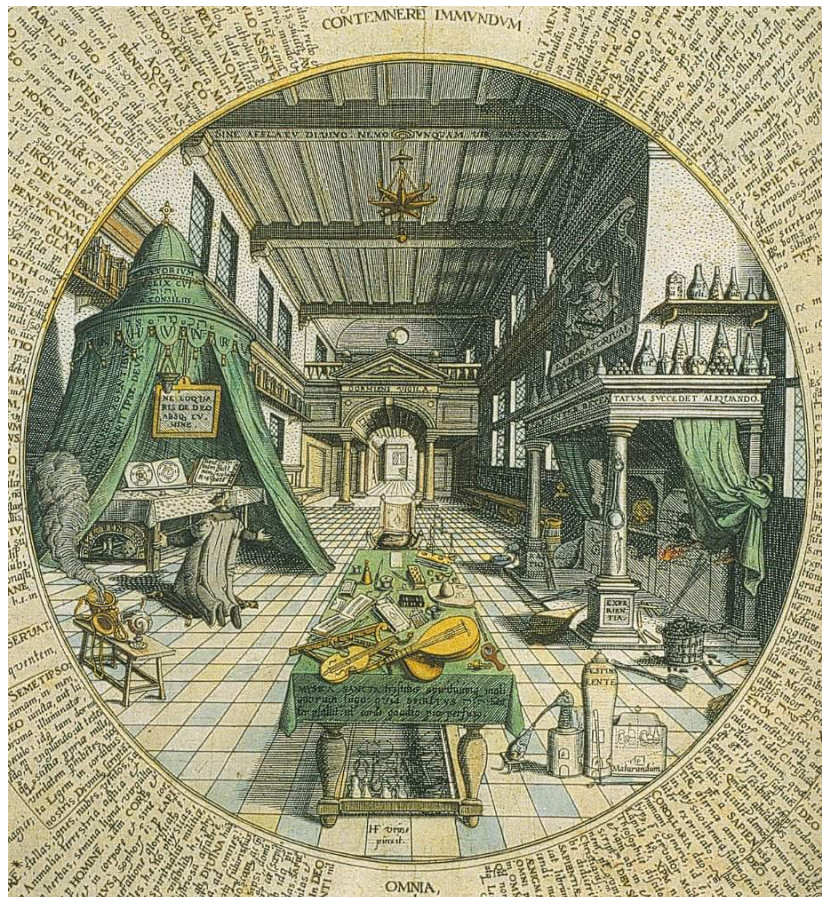
„Philosophical Gold“

„Inner Sun“

Sun = Gold



Splendor Solis  
(16th century)



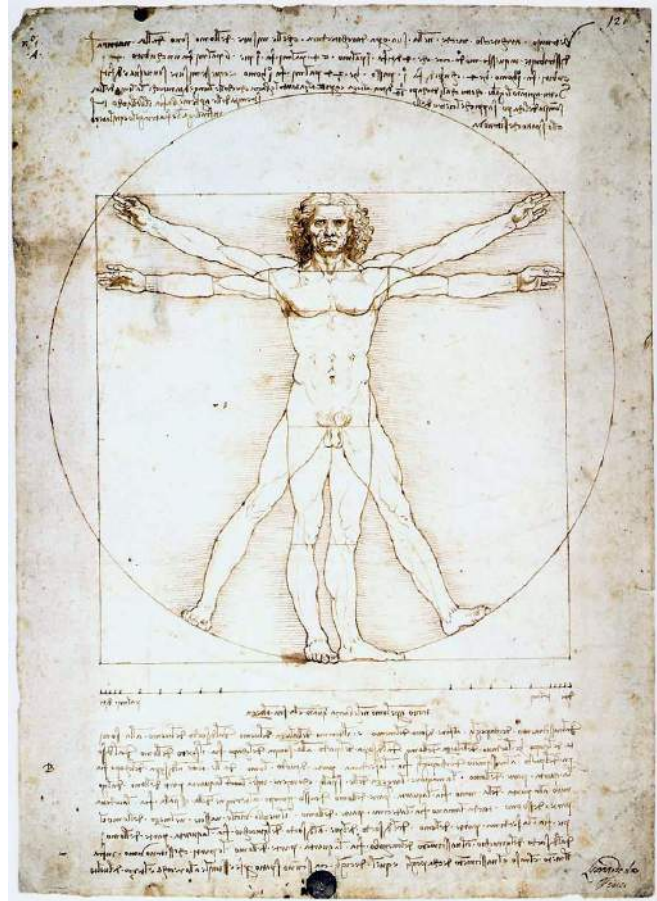
Heinrich  
Kunrath  
1595

# Renaissance humanism

Pico della Mirandola (1486):  
Oration on the  
dignity of man

Man is the greatest wonder  
because he can choose to  
transform himself...

Leonardo da Vinci  
(c. 1490)



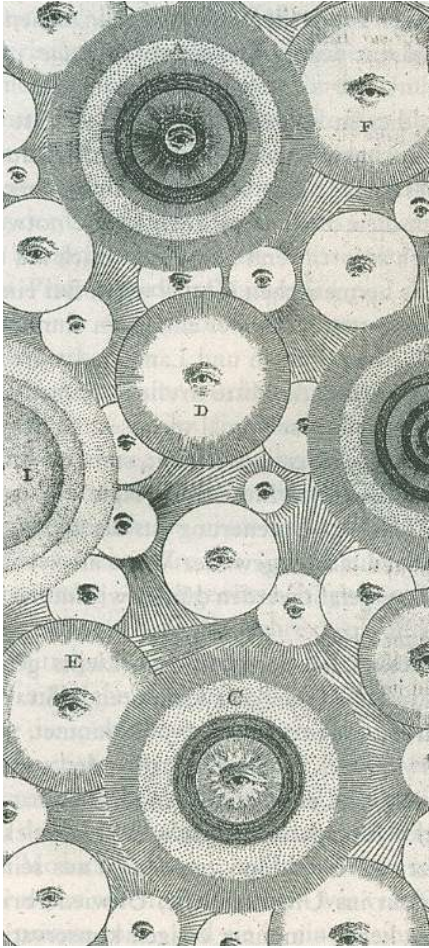
# Renaissance humanism

**New stars** appear  
in the sky!

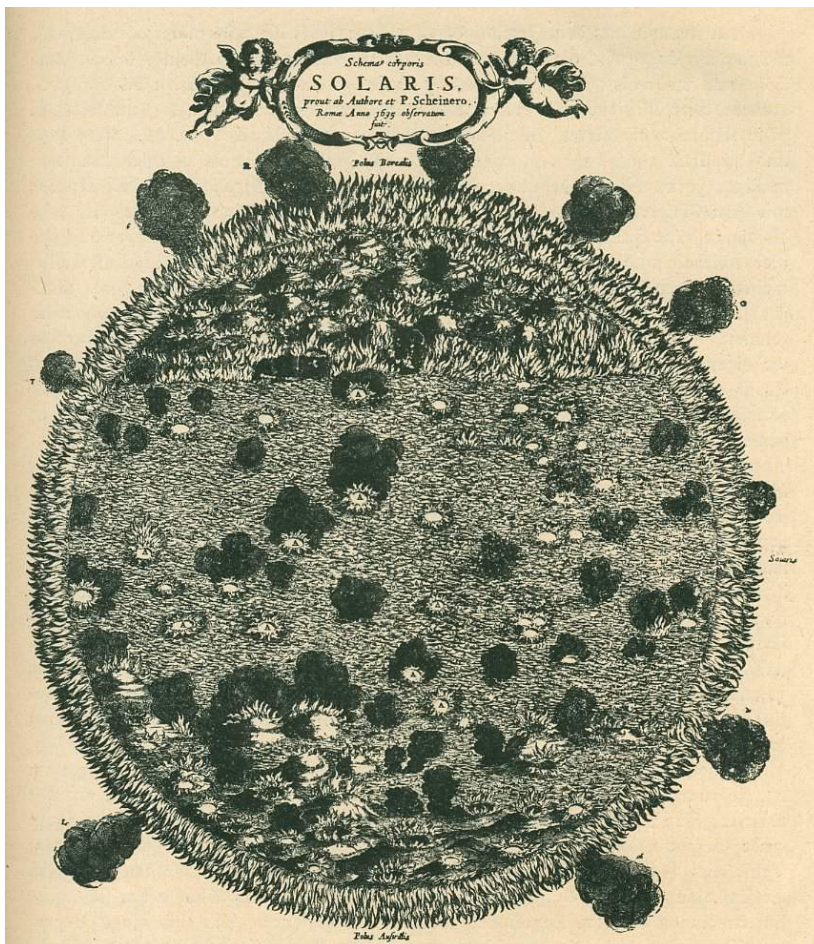
1572 Tycho's (Supernova)  
„De nova ... stella“ →

1604 Kepler's (Supernova)  
„De stella nova ...“



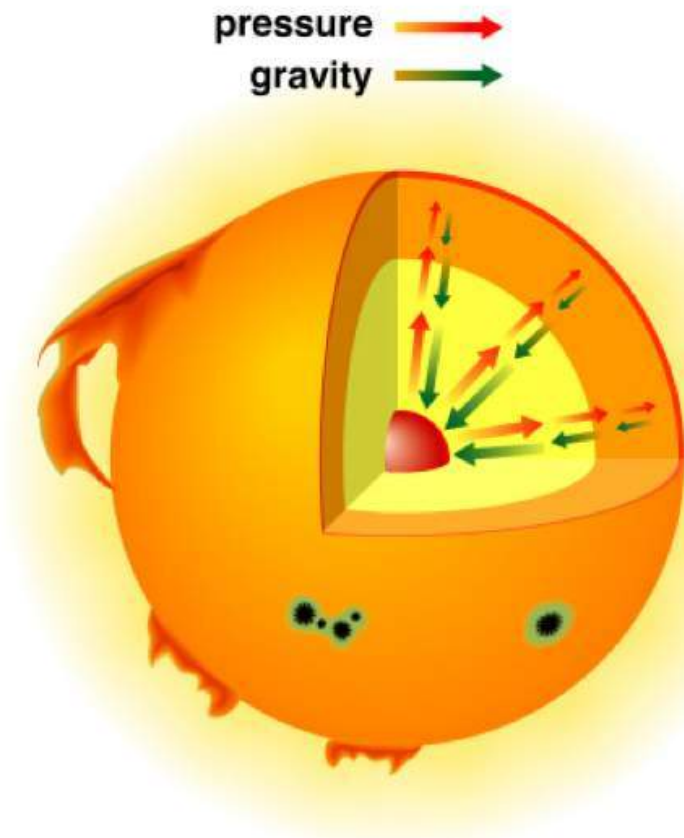
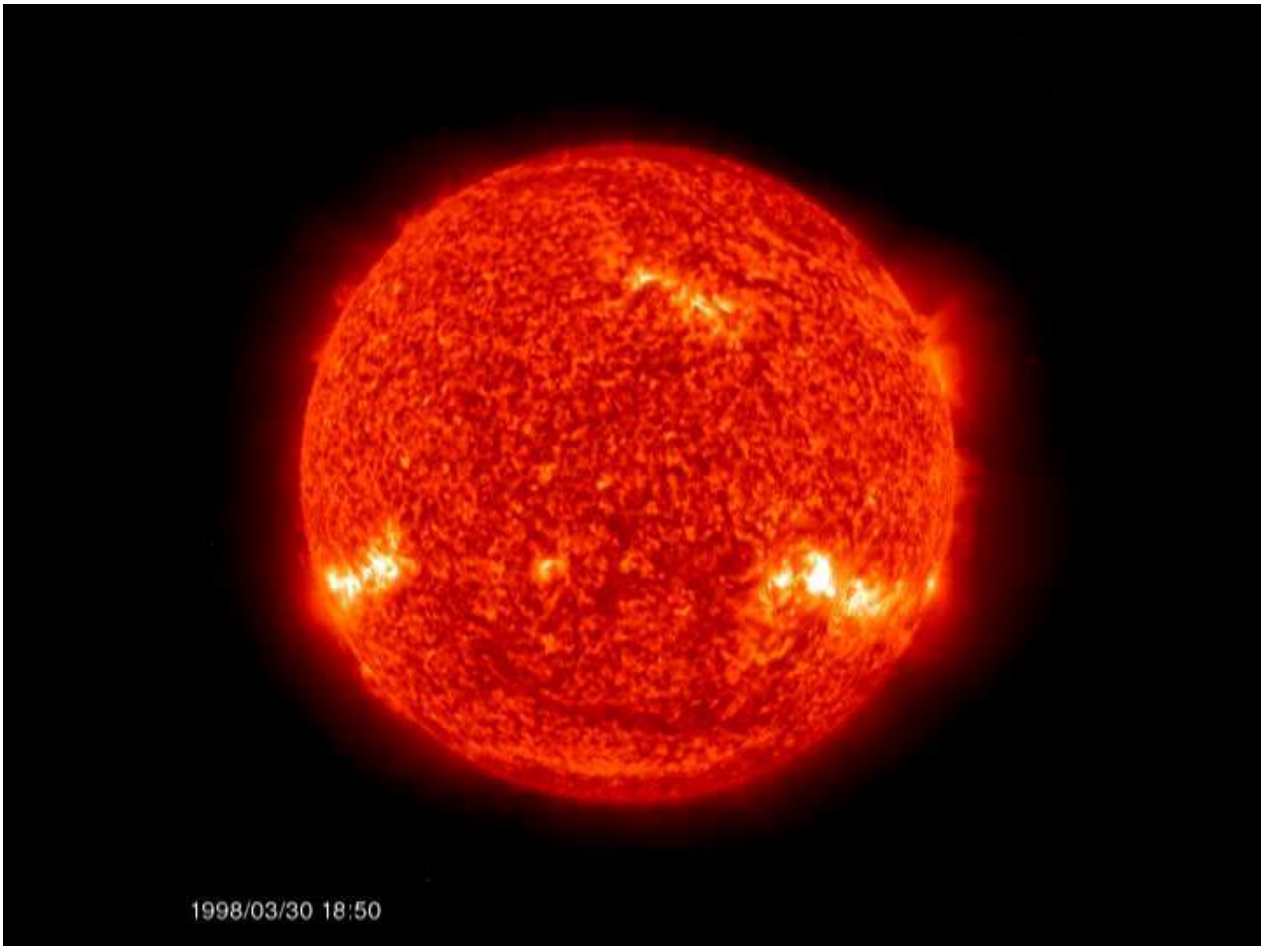


**Giordano Bruno**  
(1548–1600)



**Christoph Scheiner**

1635



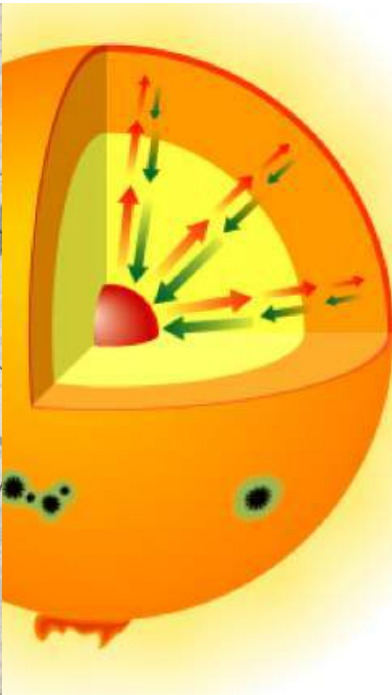
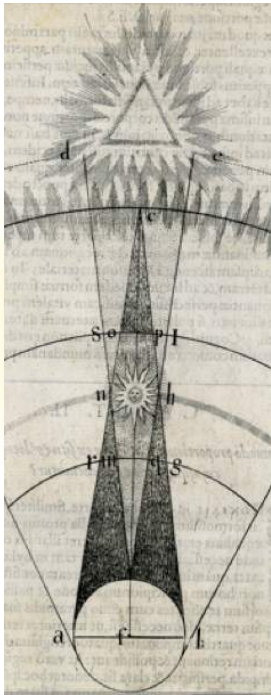
## Hydrostatic equilibrium

inward force:  
gravity from mass above

outward force:  
pressure from heat below

Analogies star <-> soul

Psycho static equilibrium

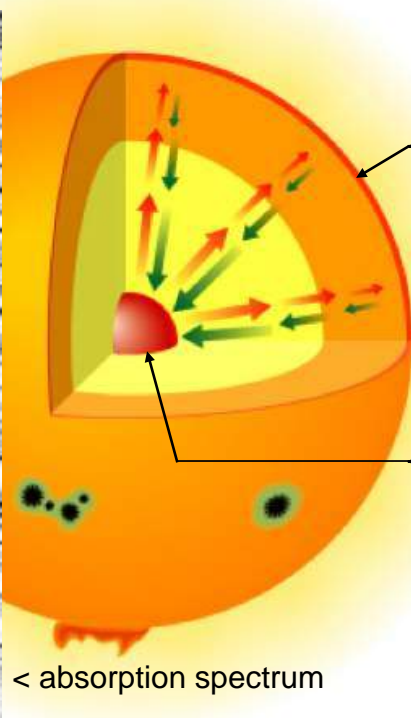


inward force:  
gravity from mass above  
egotism  
love drive

outward force:  
pressure from heat below  
altruism  
death drive

Analogies star <-> soul

(astrophysical)

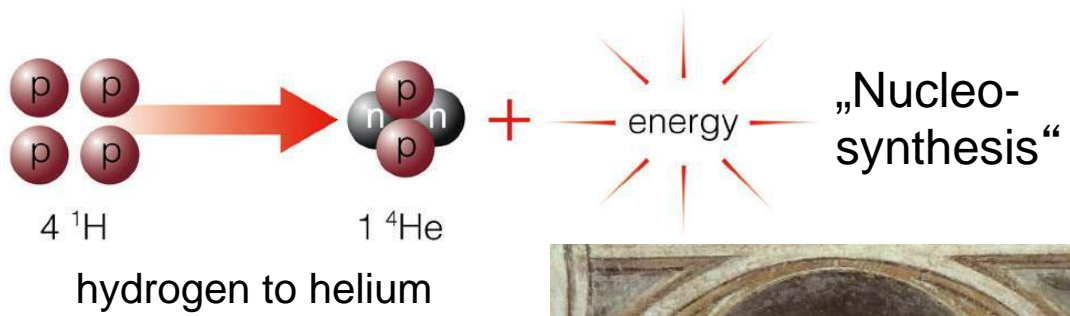


cool surface  
(atmosphere)  
absorption of radiation  
Ego („I“), persona

hot inner core  
center of gravity  
source of energy and  
radiation  
Self

< absorption spectrum

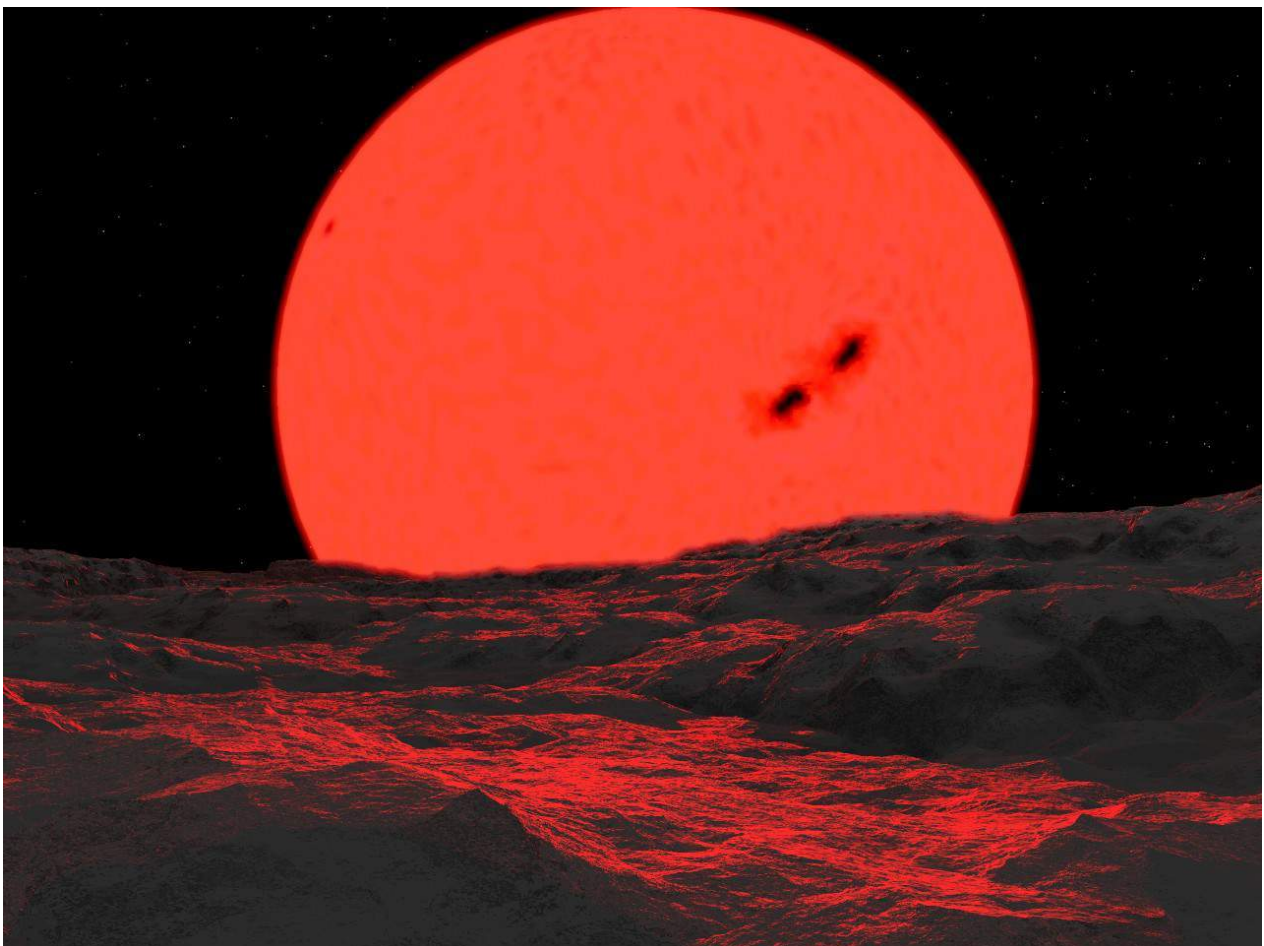
## Transformation of matter: energy source of stars:

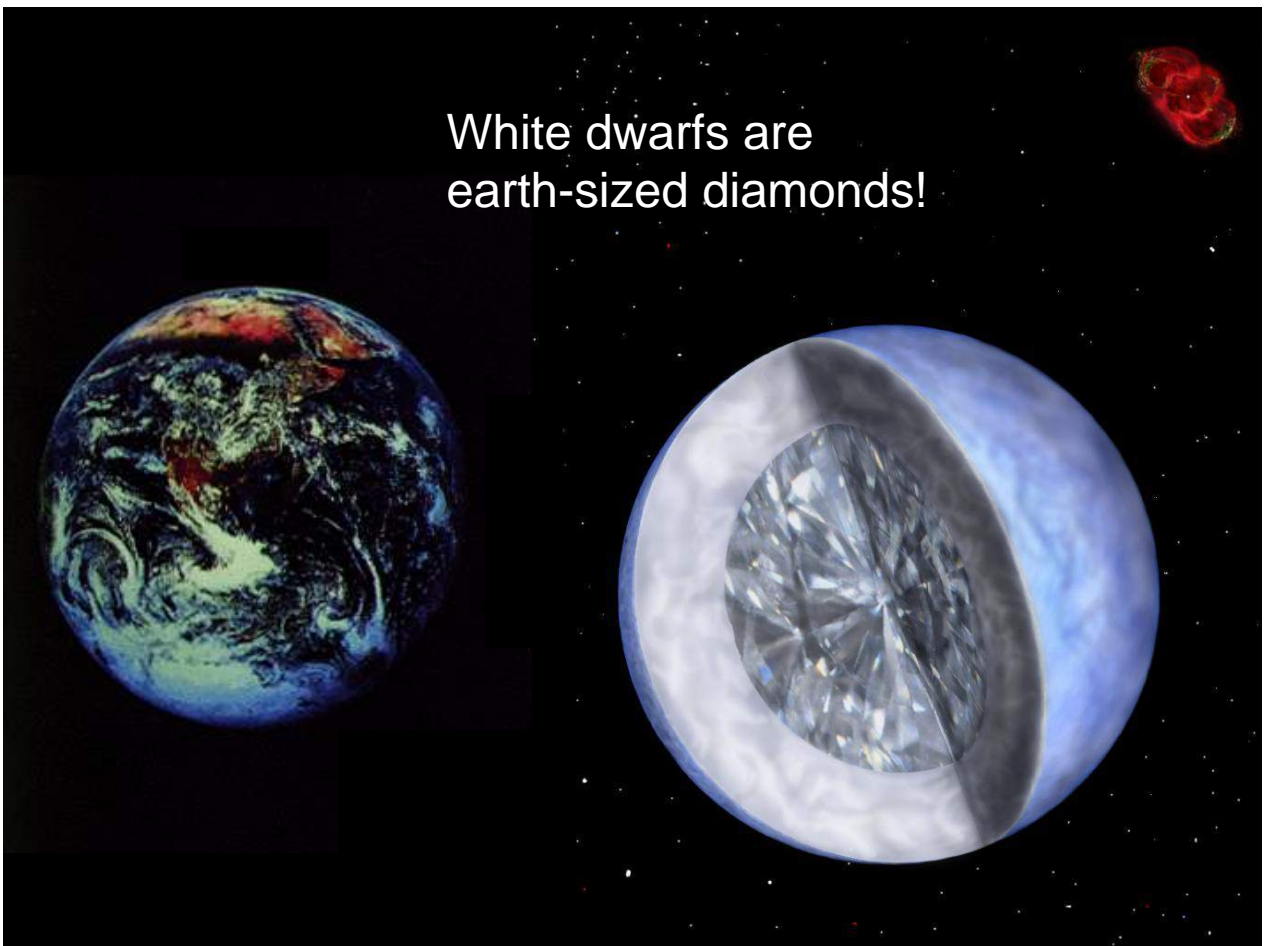
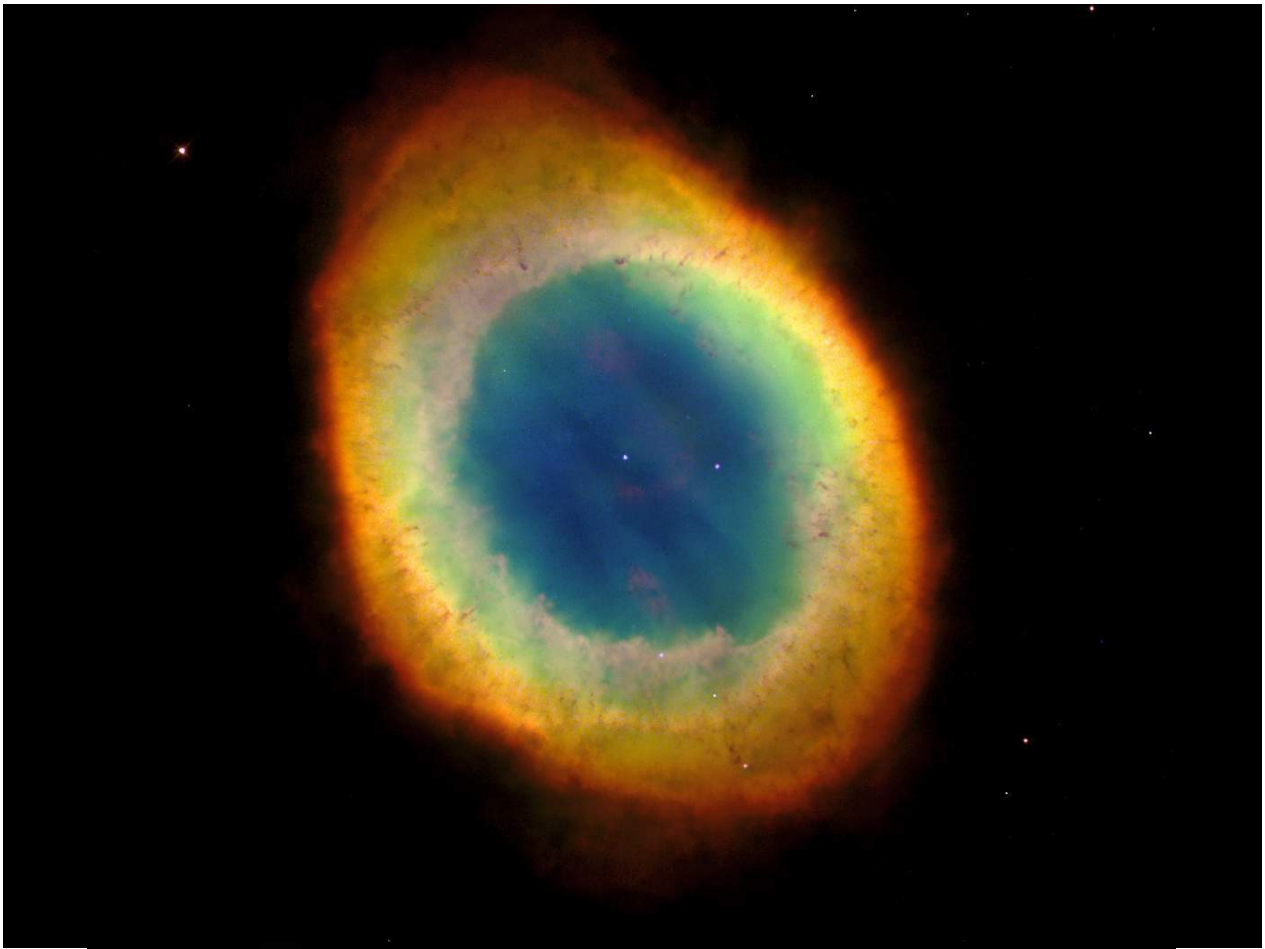


Alchemy:

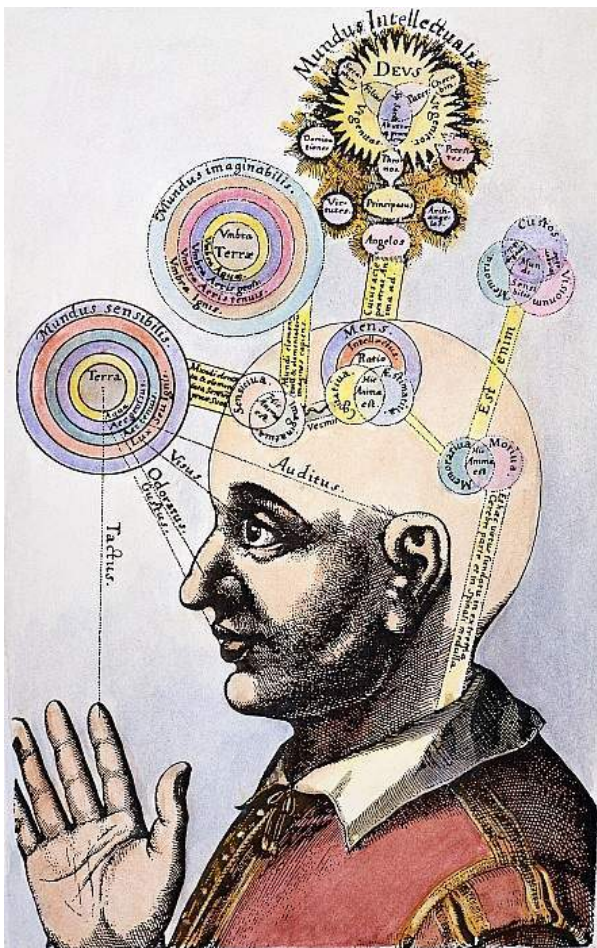
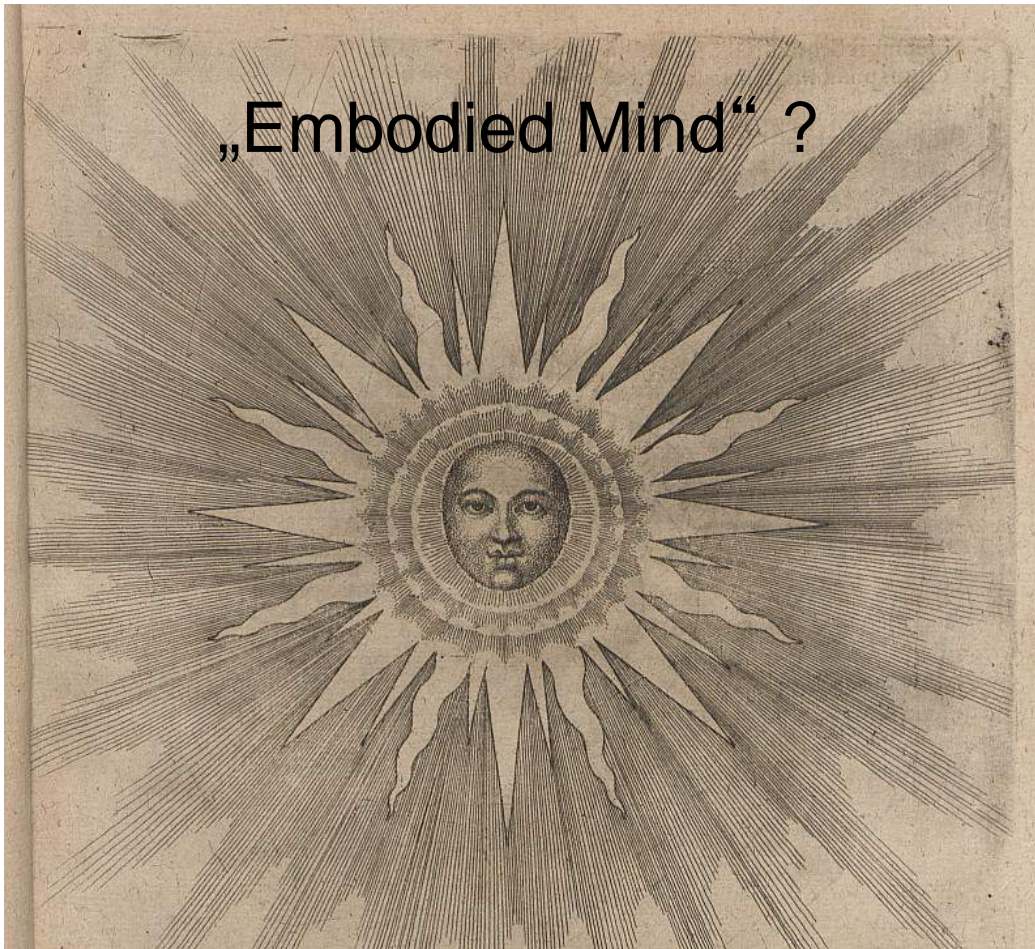
**Transmutation**  
of elements

common metals into gold  
(purification)



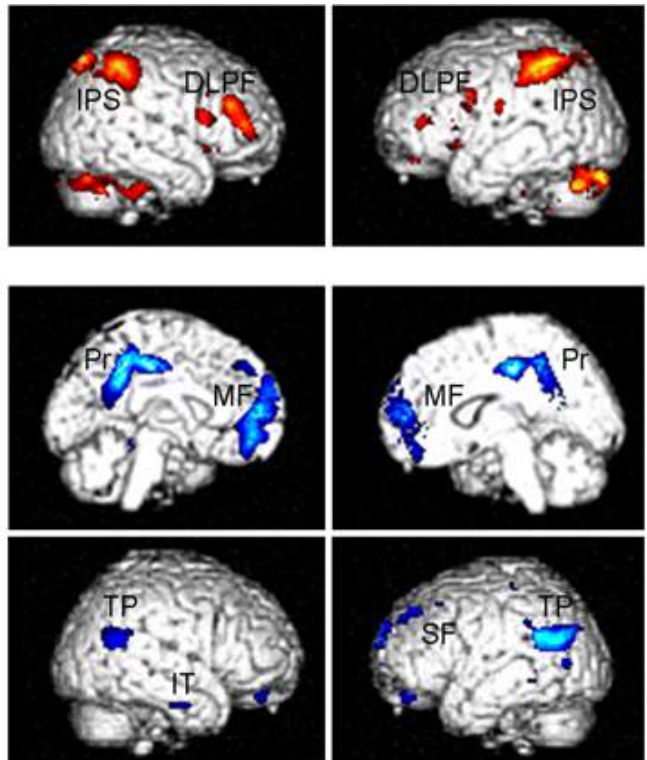


# „Embodied Mind“ ?

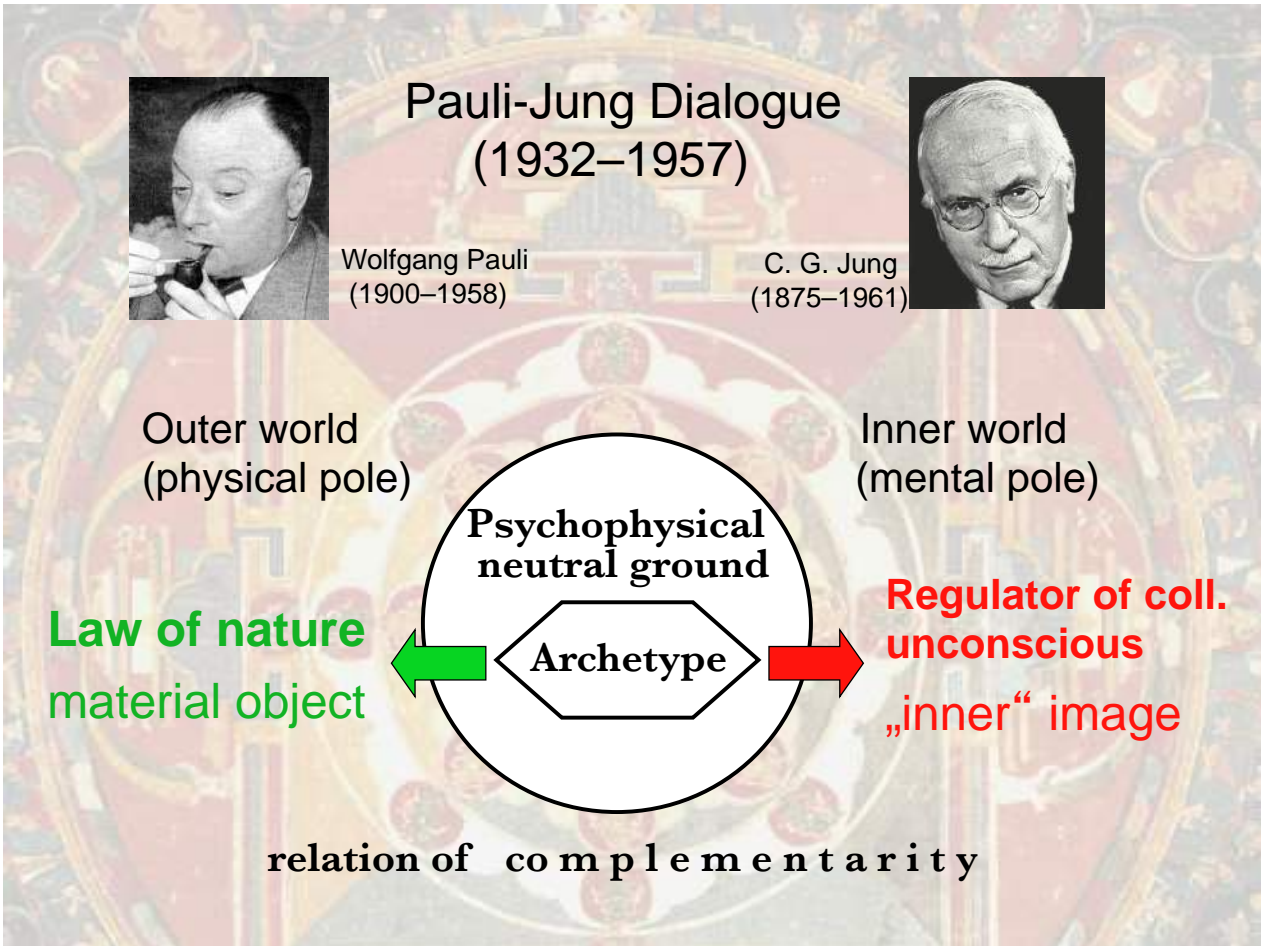


Robert Fludd  
ca. 1600

Neurology ca. 2000

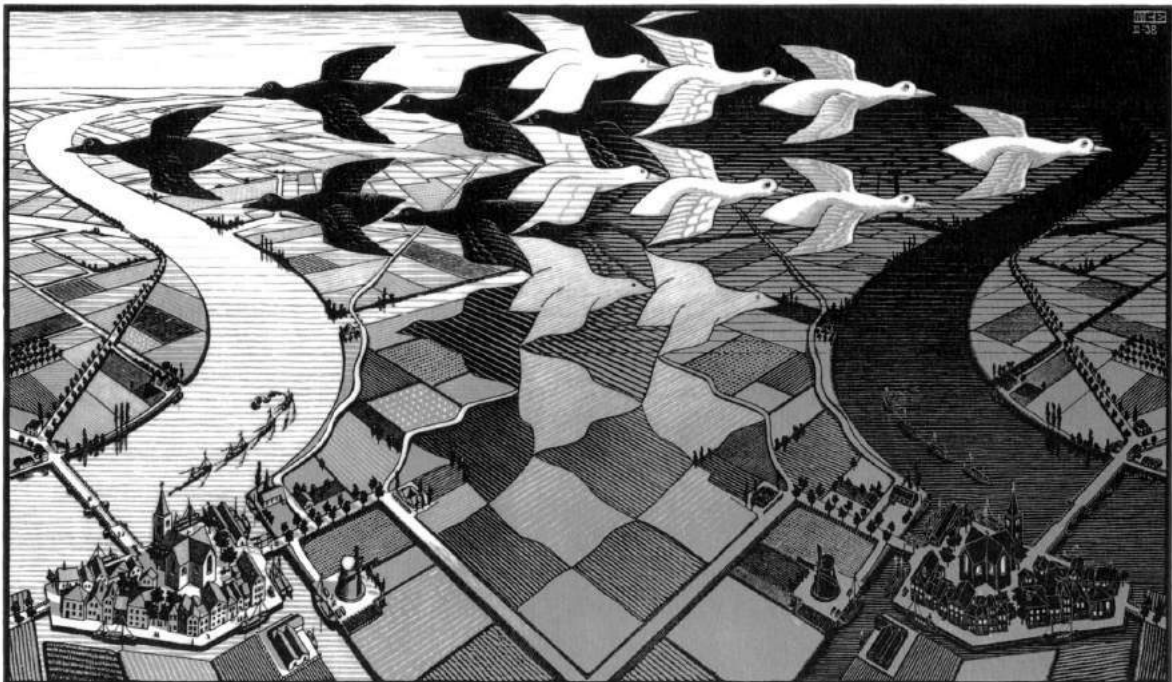






Outer world (kosmos)

Inner world (psyche)

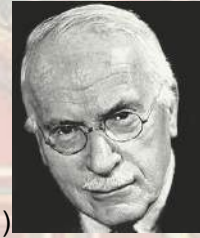


M. Escher: Day and night



## Pauli-Jung Dialogue (1932–1957)

Wolfgang Pauli  
(1900–1958)



C. G. Jung  
(1875–1961)



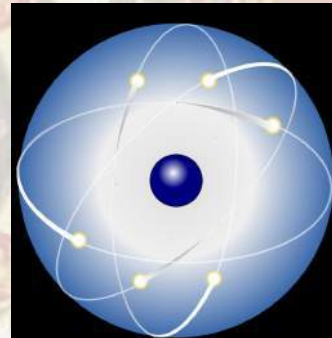
**S y m b o l**

matching of „inner“ image with outer object

Symbol of S e l f :

**Radioactive atomic nucleus**  
(electron shell symbolizing Ego)

- central position
- source of energy, radiation
- transformation
- acausality



≈ same structure as star => **S t e l l a r s y m b o l i s m**

## P a n p s y c h i s m

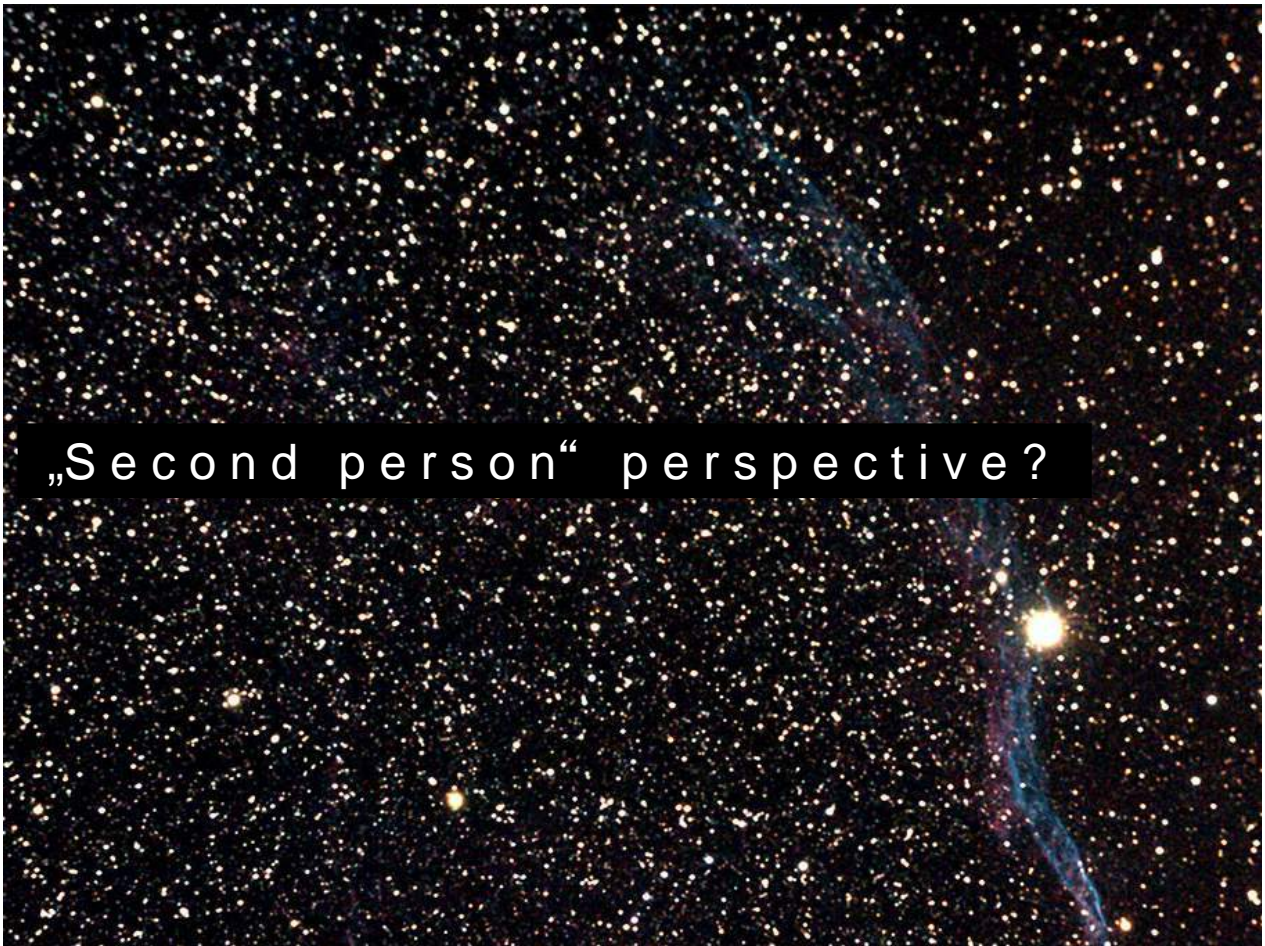
[www.geiststaub.de](http://www.geiststaub.de)



All things have mind (psyche) or mind-like properties.

Primitive mind is there from the beginning: avoids problem of emergence of mind.

**S t a r s h a v e m i n d . . .**



„Second person“ perspective?

## PLATON TIMAIOS

41d.. Thus he spoke, and once more into the cup in which he had previously mingled the soul of the kosmos he poured the remains of the elements, and mingled them in much the same manner; they were not, however, pure as before, but diluted to the second and third degree. And having made it he divided the whole mixture into

**souls equal in number to the stars, and assigned each soul to a star;**

and having there placed them as in a chariot, he showed them the nature of the kosmos, and declared to them the laws of destiny...

... He who lived well during his appointed time was to return and dwell in his native star, and there he would have a blessed and congenial existence.

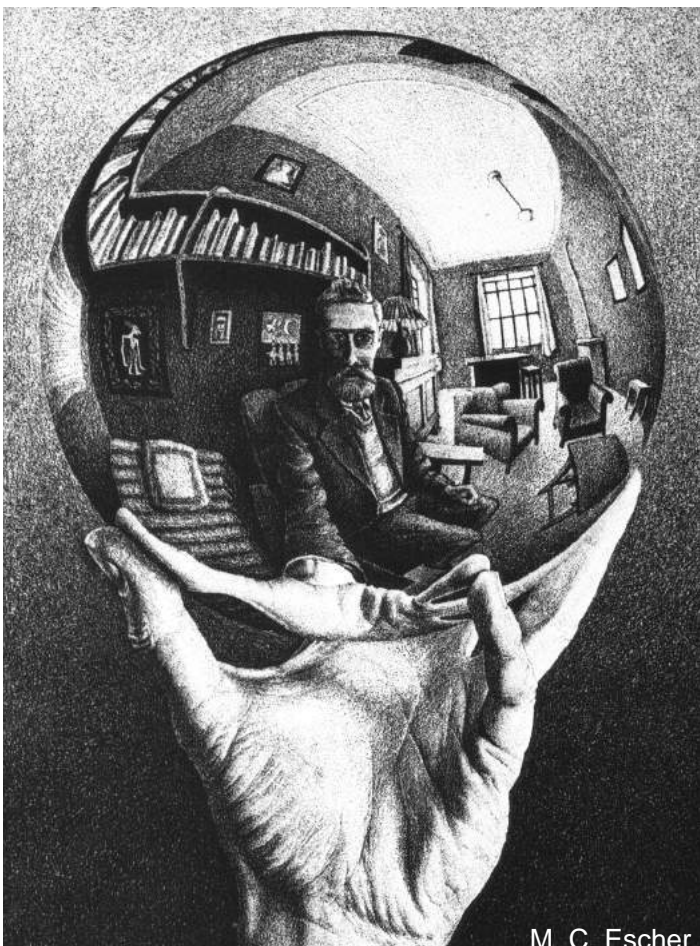
## PLATON TIMAIOS

41d.. Thus he spoke, and once more into the cup in which he had previously mingled the soul of the kosmos he poured the remains of the elements, and mingled them in much the same manner; they were not, however, pure as before, but diluted to the second and third degree. And having made it he divided the whole mixture into

**souls equal in number to the stars, and assigned each soul to a star;**

and having there placed them as in a chariot, he showed them the nature of the kosmos, and declared to them the laws of destiny...

... He who lived well during his appointed time was to return and dwell in his native star, and there he would have a blessed and congenial existence. **But if he failed in attaining this, at the second birth he would pass into a woman ...**

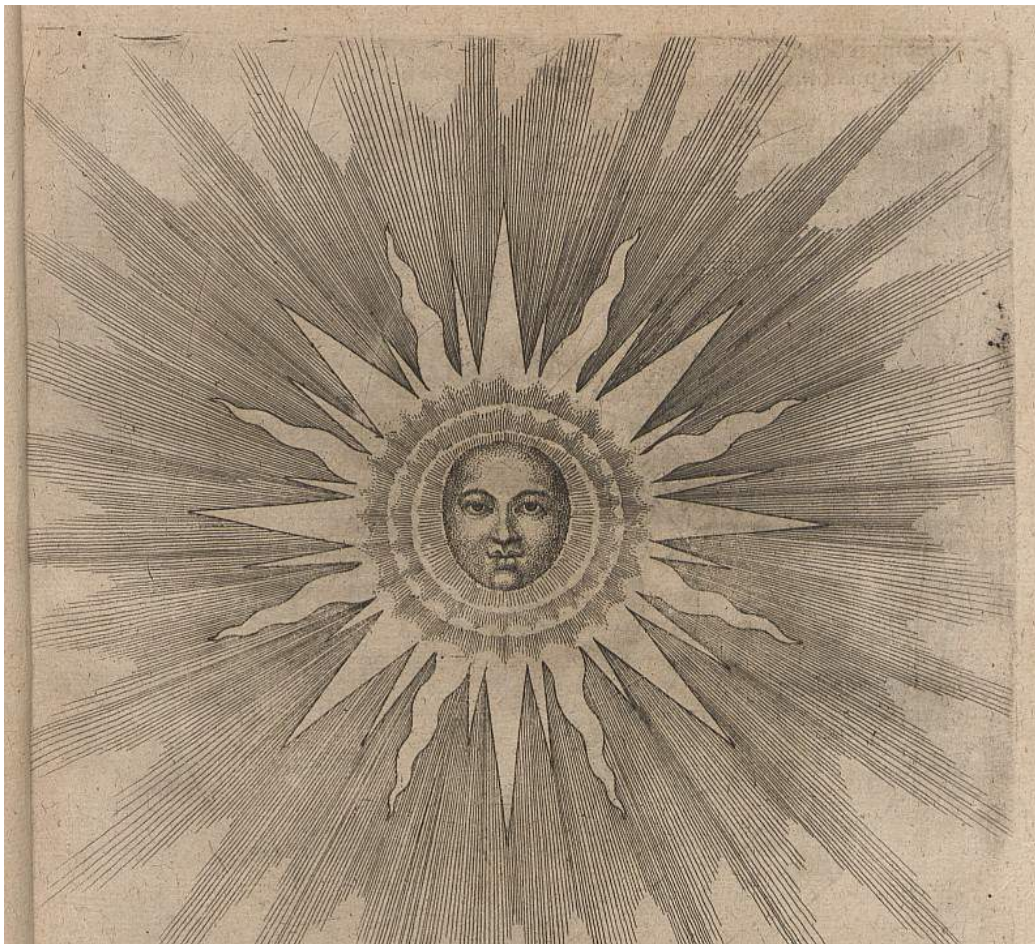
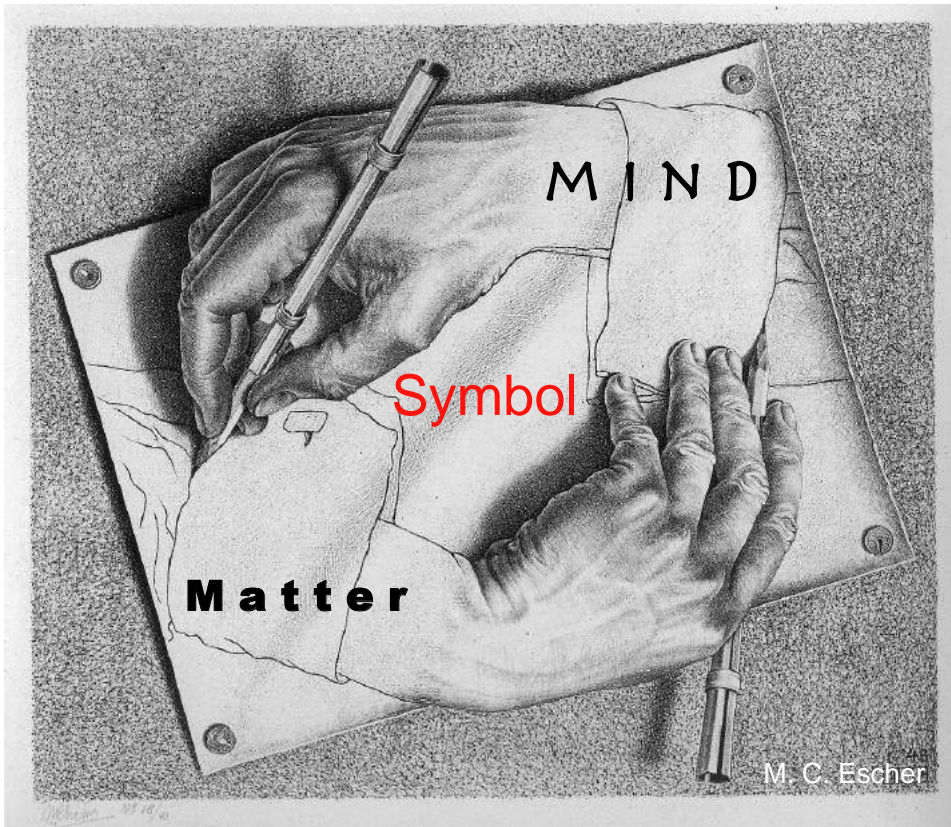


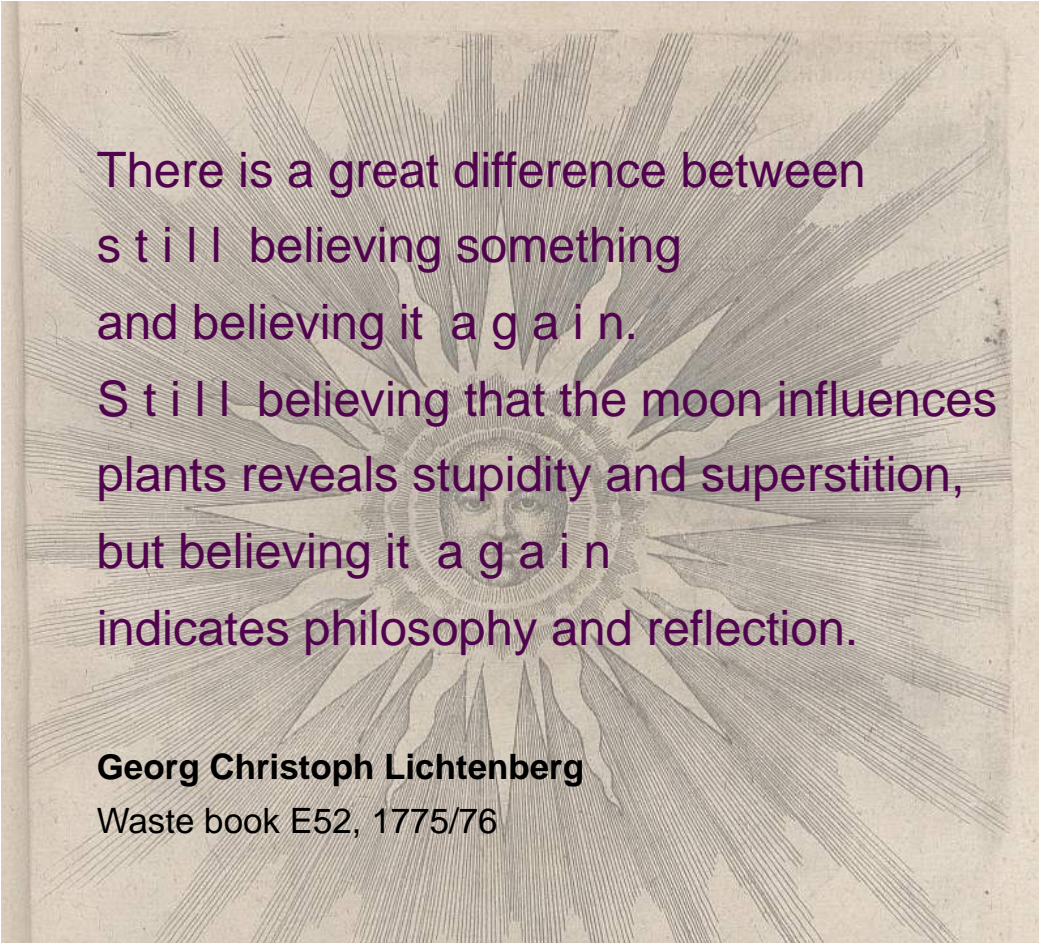
M. C. Escher

„What I have in mind concerning a new idea of reality, is (in provisional terms) the **idea of the reality of the symbol.**

On the one hand, a symbol is a product of human effort, on the other hand it indicates an objective order in the cosmos of which humans are only a part.“

Wolfgang Pauli 1948



The background of the page features a detailed engraving of a sun with a human face. The sun's face is centrally located, with its eyes looking forward. From the face, numerous fine lines radiate outwards, creating a starburst effect that fills the entire page. The overall style is that of an 18th-century engraving on aged paper.

There is a great difference between  
s t i l l believing something  
and believing it a g a i n.  
S t i l l believing that the moon influences  
plants reveals stupidity and superstition,  
but believing it a g a i n  
indicates philosophy and reflection.

**Georg Christoph Lichtenberg**

Waste book E52, 1775/76