



Pantheon: the dome with the *oculus* seen from the entrance portal (photo Author).

5. Archaeoastronomy in the Pantheon

The Dome as a Celestial Vault

The Pantheon was mentioned a few times by ancient authors, starting with Pliny the Elder, who actually described the first Pantheon of Agrippa.⁴⁰ In the third century AD Dio Cassius was the first to connect the dome to the Cosmos:⁴¹ «The Pantheon because of its vaulted roof recalls the celestial vault». (Fig. 19)

In 1966, Kjeld De Fine Licht,⁴² who authored one of the most accurate studies on the subject, recalled that «The dome in ancient times was interpreted as an imitation of the celestial vault, and therefore the geometric shape of the Pantheon was created as an allusion to the Cosmos».

In 1976 Passuello and Dissegna⁴³ were the first to link the Pantheon to Archaeoastronomy: they defined it as a «celestial uranic symbol ... oriented at 175° towards the rising of the Sun on April 1st (feast of Venus), and on September 16th, date of the *Roman Ludi*». The dome represented the sky or the celestial vault, since «it seems to rotate infinitely around the central point, that is, around the man who is standing in this space».



Fig. 19 - The dome was a representation of the celestial vault (photo Francesco Lerteri).



Fig. 20 - The circle of light illuminates the cornice in the days of the Equinox, as discovered by Aldo Tavoraro (photo Author).



Fig. 21 - In winter the circle of light illuminates the upper part of the dome, near the *oculus* (photo Author).

The turning point was in 1991, when the Italian astronomer Aldo Tavolaro⁴⁴ was the first to give a new interpretation of the dome linked to Archaeoastronomy. He discovered that in the days of the Equinox (March 21st and September 23rd) at the local noon⁴⁵ the circle of light created by the *oculus* illuminated the lintel or cornice:⁴⁶ «The image of the Sun is placed on the lintel for a few moments, just as the Sun around that date crosses the celestial equator». (Fig. 20)

He also discovered that the Pantheon functioned as a sort of seasonal sundial: «It is possible to determine the dates of the year by observing the position of the spot of light at astronomical noon [...] If it is winter, the oval of light never falls below the lintel (Fig. 21); if it is summer it descends until it illuminates the floor of the temple».⁴⁷



Fig. 22 - Ancient Roman Sundial in the Archaeological Museum of Patras (Greece) (photo Author).