

## Abstract

### CHURCHES, SUN AND TIME IN GENOA AND LIGURIA

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A Christian church has to face its apse to the East, following the liturgy, but this rule is often broken. We are not sure about the meaning of this infringement. On the other side, we see that the astronomical orientation of the longitudinal axis of medieval churches is not random: in most cases the apse faces a point of the horizon from which the Sun rises from the winter solstice to the summer one.

Students proposed several explanations of this dispersion around the East.

Someone clarified the role of orography and of pre-existent buildings and roads. Others suggested the use of compass, in the late Middle Ages. Other students invoked a limited knowledge of calendar, celestial sphere and related events.

Several students suggested a precise chronological significance: the sunrise on the day of the Saint's anniversary, or another fixed feast (e.g. All Saints' Day), or the Easter in the year of foundation. It has also proposed an orientation to Jerusalem.

Others increased the number of directions: for example, the diagonals joining the center of the main portal on the facade to the corner stones of the apsidal hemicycle.

The history of architecture may give priority to the illuminating function of the sunshine in the church; the history of art may prefer its aesthetic value. Liturgical, astronomical and chronological meanings are often neglected: plans are published without orientation or with a rough one.

The question can be solved only with the systematic analysis of a large number of churches, selected by site, epoch and culture of the builders.

The Author is carrying out the atlas of medieval churches of Liguria: <http://uranieligustica.altervista.org/index-edifici.htm> (work in progress in Italian). It is the first atlas of churches from an archaeoastronomic point of view. Original photographs, historical synthesis and extensive bibliography make this instrument useful for curators, historians of art and architecture too.

A first set of records concerns fifty-five churches founded or rebuilt in Romanesque period by secular clergy and several monastic orders. The analysis covers both the orientation of the longitudinal axis of the church, from the portal to the apse (and vice versa), and the lighting produced by the windows in presbytery, nave and aisles: this study is rarely implemented because it requires measurements in plan and elevation, the study of changes since the original construction and astronomical simulations throughout the year.

A more detailed analysis multiplies liturgical and historical interpretations of the sunlight that enters the church. The number of churches, however, is already high enough to discriminate between different interpretations and suggest a grouping into classes of quite different orientation and lighting ways.

This typological classification should be validated by comparison with similar samples from other regions.