

Abstract Submitted
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Palladius and Horizontal Sundials - How 36 numbers and astronomy help us understand the ancient world RAN SIVRON, JOHN RICHARDS, MASON BRUZA, Baker University — Palladius was a Roman aristocrat “gentleman farmer.” He wrote the only surviving farmer’s almanac from the Roman period. It includes advice on how to take care of grapes, olives, wheat, and manage a farm. Farming chores need to be done in season and in the right time of the day. For describing when things should be done, he used a sundial. That’s why Palladius left a table of the length of the shadow of a pole - a GNOMON - for 11 hours in the first day of every month for 12 months, hence 132 numbers. Palladius presumed symmetries that cut this to 36 useful numbers, the only useful such table from Roman times That is a treasure trove for both historians and astronomers! Unfortunately we know little else about Palladius, except that his farm was probably in Sardinia, and his family had property somewhere in Gaul, present day France. Its not clear when and where he wrote this, and that could be one question answered by those numbers. In trying to answer that specific question using spherical trigonometry and (as calibration) a recipes for building a sundial from the first century BC, we discovered discrepancies. Those could indicate great error in assembling this table, great progress by assuming that Ptolemy’s greatest “discoveries” were taken into account, or a combination of several minor factors.

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