

Piippo, Mariah  
Ancient Roman Timepieces



Lateran Obelisk, Maus-Trauden, [https://en.wikipedia.org/wiki/Lateran\\_Obelisk#/media/File:Obelisk-Lateran.jpg](https://en.wikipedia.org/wiki/Lateran_Obelisk#/media/File:Obelisk-Lateran.jpg), Accessed 03.14.2019.



“Sculptural Spherical Sundial,” Institute for the Study of the Ancient World, [https://www.theepochtimes.com/time-to-contemplate-time-among-the-ancients\\_2194882.html](https://www.theepochtimes.com/time-to-contemplate-time-among-the-ancients_2194882.html), Accessed 03.14.2019.

The hour was their smallest unit of time, but their hour was different than today’s version of an hour. Ancient Romans adopted an Ancient Egyptian method of timekeeping by dividing the daylight and darkness into 12 increments each.<sup>1</sup> Hours would tell when meeting, dinners, or other activities would be, but being 15 minutes late would not be a cause for impatience or complaining.<sup>2</sup>

Three main types of timepieces used in ancient Roman times were the sundial, klepsydra, and obelisk.<sup>3</sup> Klepsydra were typically used in interiors, at night, and on cloudy days.<sup>4</sup> A bowl of water with a small hole in the bottom would pour out the water over a predetermined length of time.<sup>5</sup> Most obelisks come in pairs but have been separated from their neighbors over time.<sup>6</sup> Obelisks functioned like a sundial, so they acted as a gnomon casting onto the pavement or ground with a web of lines that indicated the time of day according to the season.<sup>7</sup> Obelisks in Rome were taken from Egypt, commissioned from Egypt, commissioned by wealthy Romans from Egypt in ancient Roman times, or built in Rome as copies of ancient Egyptian originals.<sup>8</sup> There are four main types of sundial in antiquity: spherical, conical, plane, and cylindrical.<sup>9</sup> Sundials, obelisks, and klepsydra were used by the elite and public to tell and keep track of time in their growing and organized society.

Portable dials offered more freedom to Roman travelers than a fixed stone ever could. The portable dials would only show half of the day, so the owner needed to know if the sun was rising or setting even during difficult times around midday.<sup>10</sup> Prelabeled latitude adjustment points were made to lessen the struggles of adjustment in commonly visited places, but the latitude label was not always perfect.<sup>11</sup> Northern latitudes were less accurate places for mediterranean dials in the height of summer and low of winter.<sup>12</sup> Adjustments were manual though, so they could be corrected if the owner knew how to correct the error. However, the owner could easily make mistakes in adjustment and reading, but the owner never needed to know which way was North.

Ancient Roman dials were often crudely constructed and set up, but the acceptance of approximation by the people made the simple and imprecise instruments acceptable.<sup>13</sup> However, sundials, even in antiquity, could be made exactly correct.<sup>14</sup> The performance of a

dial relies on the fineness of the engraved lines, the attention of the observer, and their understanding of the laws of optics. Stone dials had carved lines to indicate the month and equinox because these lines depend on latitude.<sup>15</sup> Fixed sundials of stone were installed where they were intended to be used, so the latitude would not change on these.<sup>16</sup> All the types of fixed sundial were able to be made exact, but the portable sundial needs a level of approximation.<sup>17</sup> Knowing the time based on the true motion of the stars, Earth, and Sun is something often glossed over when modern people ask for the time.

## Endnotes

1. Meghan Bartels, "Early Tech Adopters in Ancient Rome Had Portable Sundials," Smithsonian.com.
2. Ibid.
3. George Cupcea, "Timekeeping In The Roman Army," The Hour Glass, Published 07.07.2018.
4. Ibid.
5. Ibid.
6. "World of Obelisks: Rome," PBS, Public Broadcasting Service, Nov. 2000.
7. Carlos F. Noreña, "Locating the "Ustrinum" of Augustus," *Memoirs of the American Academy in Rome* 58.
8. "World of Obelisks: Rome."
9. Sharon L. Gibbs, *Greek and Roman Sundials*, Yale Studies in the History of Science and Medicine, New Haven, Yale University Press, 1976, Pages 12-58.
10. Bartels.
11. Ibid.
12. Ibid.
13. M. T. Wright, "Greek and Roman Portable Sundials: An Ancient Essay in Approximation," *Archive for History of Exact Sciences* 55, 2000, Pages 177-87.
14. Ibid.
15. Gibbs, Pages 12-58.
16. Bartels.
17. Wright, Pages 177-87.

## Pertinent Bibliography

Bartels, Meghan. "Early Tech Adopters in Ancient Rome Had Portable Sundials." Smithsonian.com. Published 02.20.2017. <https://www.smithsonianmag.com/innovation/early-tech-adopters-ancient-rome-had-portable-sundials-180962225/#pzM1LYjhXOuZmpYI.99>. Accessed 02.14.2019.

Cupcea, George. "Timekeeping In The Roman Army." The Hour Glass. Published 07.07.2018. <https://www.thehourglass.com/cultural-perspectives/timekeeping-in-the-roman-army/>. Accessed 02.14.2019.

Gibbs, Sharon L. *Greek and Roman Sundials*. Yale Studies in the History of Science and Medicine. New Haven. Yale University Press. 1976.

"World of Obelisks: Rome." PBS. Public Broadcasting Service. Nov. 2000. [www.pbs.org/wgbh/nova/egypt/raising/rome.html](http://www.pbs.org/wgbh/nova/egypt/raising/rome.html). Accessed 03.03.2019.

Wright, M. T. "Greek and Roman Portable Sundials: An Ancient Essay in Approximation." *Archive for History of Exact Sciences* 55. 2000. Pages 177-87. <http://www.jstor.org/stable/41134104>. Accessed 03.03.2019.