

Is it correct that on February 11 1665 where GMT would later show 12.15pm, Huygens clock showed 12pm, sundial showed 12pm

Yes, your statement is historically and scientifically correct based on Christiaan Huygens' pioneering 1665 tables for the [equation of time](#).

The Time Breakdown

On **11 February 1665**, when the sun reached its highest point in the sky at a given location, the instruments would align exactly as you described:

- **Sundial (12:00 pm):** A sundial measures local apparent solar time. By definition, when the sun is directly overhead (solar noon), a sundial reads exactly **12:00 pm**.
- **Huygens' Clock (12:00 pm):** In his 1665 tract *Kort Onderwys* (Instructions for the Use of Pendulum-Watches), Huygens designed his tables so that **11 February** served as the "zero point" of his calendar. Because he synchronized his mechanical clock directly to the solar noon on this specific day, a clock following his system would also read exactly **12:00 pm**.
- **Modern Mean Time / Later GMT (12:15 pm):** The actual length of a solar day fluctuates throughout the year due to the Earth's tilted axis and elliptical orbit. On 11 February, true solar time runs at its furthest modern deficit—roughly **14 minutes and 15 seconds behind** the true annual average (mean time). Therefore, standard uniform time scales like Greenwich Mean Time (GMT) would register this moment at approximately **12:14:45 pm** (or rounded to **12:15 pm**).

Why Huygens Built It This Way

To make calculations simpler for 17th-century mariners trying to calculate longitude at sea, Huygens wanted to **avoid using negative numbers** in his shift tables.

- He shifted the mathematical curve of the equation of time upward so that every correction value throughout the year remained positive.
- By anchoring the absolute lowest point of the solar year (11 February) as 0, he ensured that sailors only ever had to *add* minutes to their sundial readings to match a clock, rather than adding and subtracting.
- As a result, clocks tracking "Huygens mean time" ran consistently **14 to 15 minutes slower** than the modern standard definition of mean time we use today.

**** End of notes**