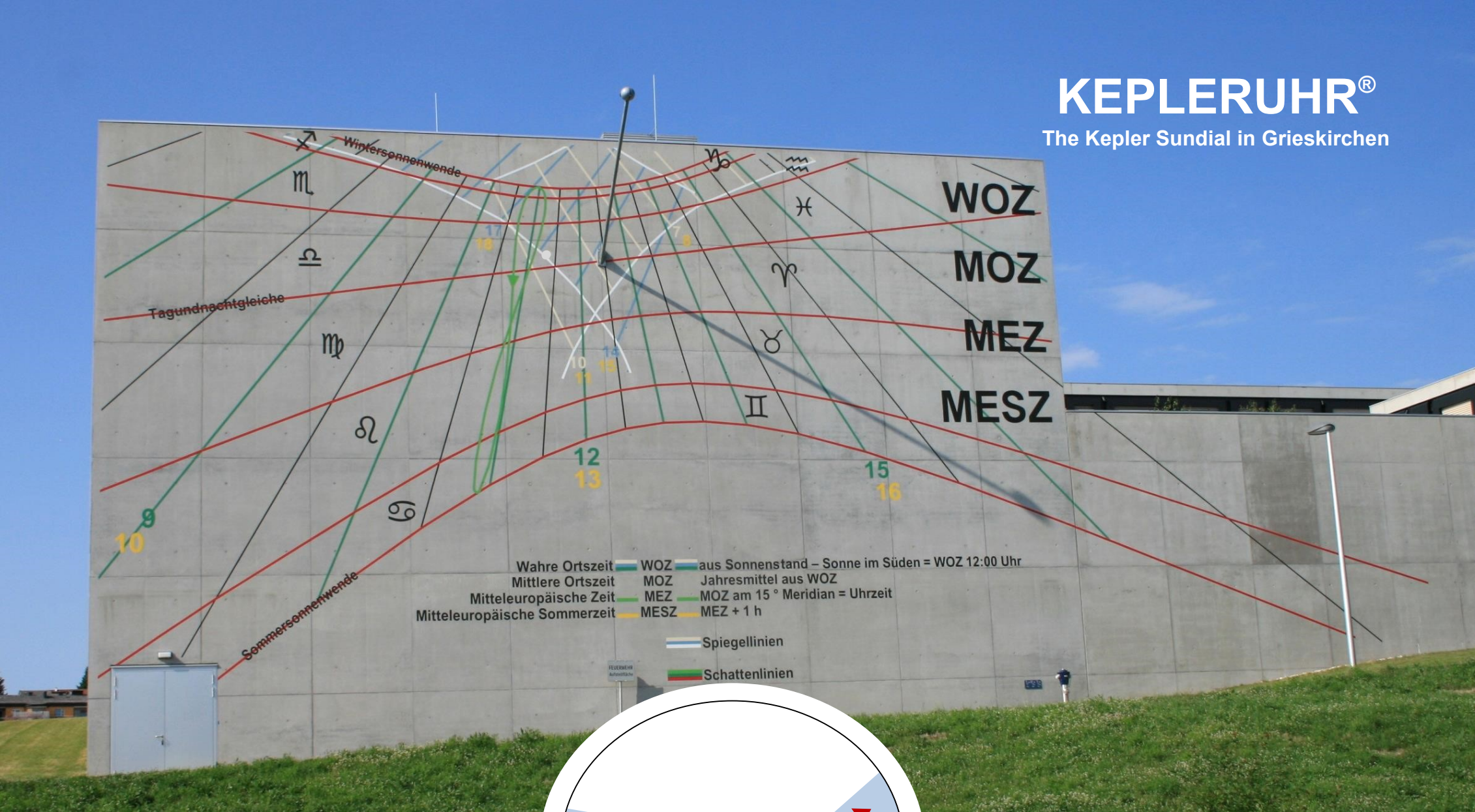
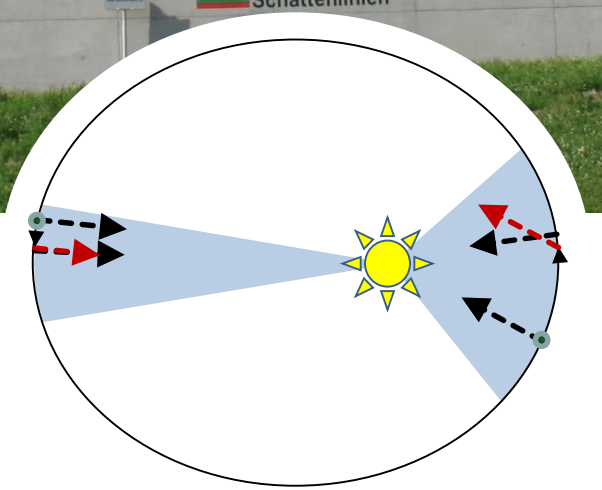
KEPLERUHR®

The Kepler Sundial in Grieskirchen





Earth orbit = ellipse → length of solar days varies

Neues Schulzentrum Grieskirchen
South wall west
Parzer Schulstraße 1
4710 Grieskirchen, AUSTRIA

N 48° 14' 06,7" - O 13° 50' 01,3"

GRIESKIRCHEN - die Stadt zum Leben

http://kepleruhr.eu

WOZ = LAT Local Apparent Time
- The solar time based on the local position.
- When the sun lies due south it is LAT 12:00 hours.
- LAT 12:00 hours in Grieskirchen is 1 min 27 sec later than in Linz.

MOZ = LMT Local Mean Time
- The solar days (LAT 12:00 hours until the next 12:00) vary in length over a year.
- The mean solar time across one year.

MEZ = CET Central European Time
- The local mean time at the 15 ° meridian (e.g. Gmünd/NÖ).

MESZ = CEST Central European Summer Time
- In the summer months 1 h is added to the CET.

GNOMON / NODUS – Shadow-casting object
- Beam with sphere.

ANALEMMA – „Figure eight“
- Shows deviation LAT to CET (and LMT).

IDEA – Why KEPLERUHR

GRIESKIRCHEN
- Agricultural character
- Nature / growth / observe weather conditions, seasons
- School building / education / dissemination of knowledge / observation practice/training

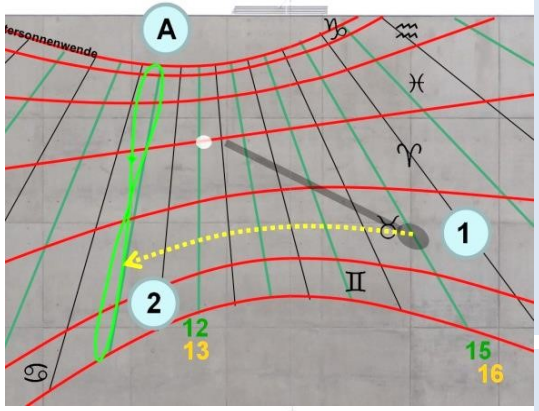
SUNDIAL
- Measurement of time for synchronizing comprehensive tasks

JOHANNES KEPLER
- Mathematician, astronomer, astrologer, optometrist, theologian
- Realized and formulated principles of movement of orbits of planets (ellipsoidal orbit of earth around the sun)
- Lived as a provincial mathematician in Linz at the time Grieskirchen received grant privileges of a town (9th February 1613) / married in October 1613 a woman of Eferding
- Probably celebrated the grant privileges as a member of the provincial government with the first mayor of Grieskirchen, Christoph Manglburger, in his inn (now Stadtplatz 4, “Gasthof Zweimüller”)
- Beginning of the age of natural science: awareness by observation / modelling / fitting/falsification of the model of reality.

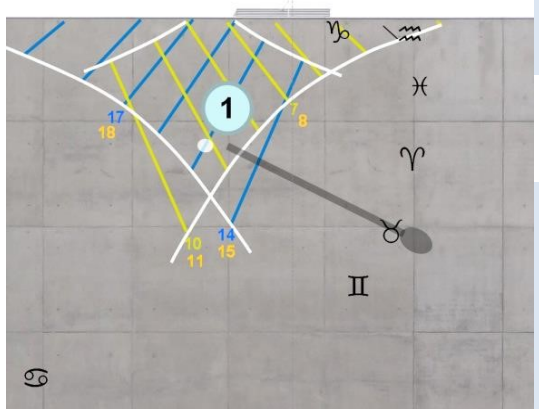
The largest vertical flat all-day sundial in Austria (at least)
240 m² / side mirrors at Nodus (movement of reflection while wall is within shadow) / slot within Nodus (accurate reading of LAT 12:00 hours) / web camera life-view
supporting *Earth L.A.T. 12:00 – Watch the Rotating Earth* – https://EarthLAT1200.org

For one day the shadow of the Nodus moves on a day-line (red) from left to right across the wall – according to the season at low sun altitudes in winter at the top and at high sun altitudes in summer at the bottom → reading of the signs of the zodiac. At full (half) hours the green (black) hour-lines are crossed → reading of the time. The deviation of the clock time (CET, CEST) from the solar time (LAT) is visible for each day at the hour-line 11:00 hours: most of the year the shadow reaches the bright green Analemma (CET, CEST) earlier than the straight hour-line (LAT) – in February the clock time is up to 19 min earlier than the solar time, in November up to 11 min later.

Movement of shadow – dark colors



Movement of reflection – bright colors



Reading of the time – movement of shadow
① At which hour-line (green or black for ½ h) is the shadow of the sphere positioned? → current **LAT**
- here: **LAT is 15:00 hours** (but: because of summer time (about 10th May) CEST is about 16:00 hours)

② What is the deviation regarding Analemma **A** for the current date: **CET** = LAT – Analemma?
- here: **CET is 15:01** hours, because deviation = -1 min (and **CEST is 16:01 hours**)
- Analemma left beside the 11 hour-line → negative deviation; **CET** is ahead **LAT**.

Reading of signs of the zodiac – movement of shadow
Within which region of the day-line (red) is the shadow: sign of zodiac?
- here: **Taurus** (first half year) or **Leo** (second half year).

During one day the reflection moves in between the white day-lines from right to left and crosses at full hours in the morning (evening) the yellow (blue) hour-lines.

Reading of time – movement of reflection
① At which hour-line (yellow for morning or blue for evening) is the reflection? → actual **LAT**
- here : **LAT is 15:00 hours** (but: because of summer time (about 10th May) CEST is about 16:00 hours).

For reading of deviation accordingly Analemma see **movement of shadow.**

Zodiac sign	*Period*	*Symbol*
Aries	20./21.3. – 20./21.4.	♈
Taurus	20./21.4. – 20./21.5.	♉
Gemini	20./21.5. – 21./22.6.	♊
Cancer	21./22.6. – 22./23.7.	♋
Leo	22./23.7. – 22./23.8.	♌
Virgo	22./23.8. – 22./23.9.	♍
Libra	23./24.9. – 23./24.10.	♎
Scorpio	23./24.10. – 22./23.11.	♏
Sagittarius	22./23.11. – 21./22.12.	♐
Capricorn	21./22.12. – 20./21.1.	♑
Aquarius	20./21.1. – 18./19./20.2.	♒
Pisces	18./19./20.2. – 20./21.3.	♓

Exact dates vary from year to year depending on exact time of spring equinox.

Responsible for the content:
Kurt Niel, Grieskirchen, AUSTRIA
Contact: kontakt@kepleruhr.at

Municipality Grieskirchen
Project KEPLERUHR
Stadtplatz 9
4710 Grieskirchen, AUSTRIA

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