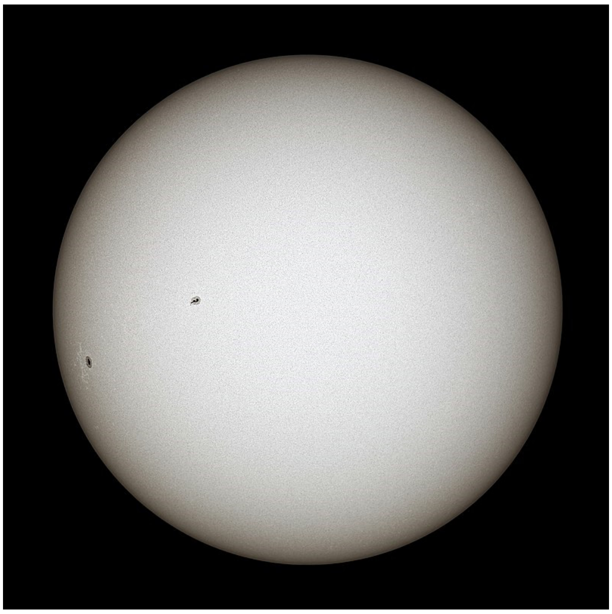
You can find an overview about the location of the planets and the sun here:
https://astrowis.de/wp-content/uploads/Planetenweg_englisch.pdf
Showing the neighbour planet on the map:
Merkur:
https://www.openstreetmap.org/?mlat=52.244591&mlon=14.413368#map=17/52.24459/14.41337

Central Star Sun



Picture (Sonne):
Author: Matúš Motlo
https://en.wikipedia.org/wiki/Sun#/media/File:The_Sun_in_white_light.jpg

The sun is the dominant object in the solar system. It has more than 700 times the total mass of all eight planets in the solar system and more than 330,000 times that of Earth. Its diameter is about 109 times the diameter of the Earth. The sun generates about 20,000 times the energy produced on Earth per second since the beginning of industrialization. Another comparison: it releases more energy per second than all the nuclear power plants on Earth in existence in 2011 did in 750,000 years. It is a relatively small, but long-lived star of visual brightness V. The average annual radiant power per square meter on Earth is 1.367 kilowatts.
The sun shines with a colour temperature of about 5,800Kelvin. Thus, it is a star of the spectral class G2V. It lies in the middle of the so-called main sequence in the Hertzsprung-Russell diagram. Since it contains relatively many heavier elements (over 1.4%), it belongs to population I. The luminosity and diameter of the Sun are slowly increasing. In about six billion years, the sun will mutate to a red giant. The sun radiates mainly in visible light and is perceived by humans as white. Colour effects are created by light refraction in the Earth's atmosphere.

The core of the sun makes up about half of the mass and is limited to 25% of the diameter. Due to the own weight of the sun, a pressure arises, which experiences an equivalent by the compression of the particles as counter pressure (150 g/cm³). The pressure inside the sun is about 200 billion bar (1 bar equals 100 hectopascals). In the core about 99% of the fusion power is produced. The energy release in the sun occurs through the proton-proton chain. First, two protons fuse to a deuterium nucleus. This reaction has an extremely low probability of occurrence (more than 1,000 years is required for one proton to unite with another). This statistic explains the longevity of the sun. The expansion of the gas prevents an uncontrolled temperature increase and thus an explosion of the sun.

The core is followed by the radiation and convection zone. While the generated neutrinos (2% of the fusion power) reach the solar surface within seconds because of their weak interaction, the photons need tens of thousands of years for this. The light that reaches us is therefore already very old.

At the surface, the degree of ionization of hydrogen drops steeply. Encounters of electrons with ions thus become extremely rare. Transparency is prevented by the possibility of another electron binding to the hydrogen. Transparency is then achieved in the photosphere, giving light a free path to spread. The solar corona, which surrounds the sun, is visible only during solar eclipses. In the corona the solar wind is generated, which carries photons and particles to us. The solar wind is supplied from the prominences (matter eruptions of the sun over hundreds of thousands to millions of km). Sunspots are created by magnetic fields in the sun. Sunspots are also used to determine the solar rotation period. The amount of sunspots is subject to a rhythm of 11 years, in which maxima and minima of sunspot activity alternate. The sun itself has a strong magnetic field.

The sun and with it all other celestial bodies in the solar system were formed by the compression of a gas cloud. Currently the sun is a star on the main sequence (yellow dwarf). It will constantly increase its luminosity. This state lasts for more than 10 billion years, about six billion years more. When the hydrogen is completely consumed, the sun will evolve into a red giant in which helium will fuse to form more elements. In the process, the sun will inflate to 150 times its radius and is expected to swallow the earth. If all fusion activity ceases, the Sun will collapse to less than one-tenth its original size and become a white dwarf. After an initial rapid cooling, the surface temperature slowly decreases, allowing the white dwarf to continue emitting radiation for several dozen billion years. If the radiation is extinguished, the former sun becomes a black dwarf (not a black hole!).

Important data of the Sun:

Mean distance to earth:	1 AU (149.6 mio. km)
Smallest and biggest distance to earth:	147.1 mio. km – 152.1 mio. km
Äquatordurchmesser:	1,392,684 km
Mass:	about 333,000 Earth masses ($1.99*10^{30}$ kg)
Average density:	1.41 g/cm³
Main components of the photosphere:	Hydrogen: 92.1 % Helium: 7.8 % Oxygen: 500 ppm (particle per millions of particle) Carbon: 230 ppm Neon: 100 ppm

	Nitrogen: 70 ppm
Surface gravity:	274 m/s²
Escape velocity:	617.3 km/s
Sideral rotation period:	25.38 days
Inclination of the rotation axis:	7.25°
Luminosity:	$3.85*10^{26}$ W
Absolute magnitude (V):	+4.83 mag
Effective surface temperature:	5,778 K
Spectral classification:	G2V
Edge:	4.57 bill. a

Link: https://en.wikipedia.org/wiki/Sun

Dwarf Planets:

- **Dwarf_Planet_Ceres:**
  https://astrowis.de/wp-content/uploads/Zwergplanet_Ceres_englisch.pdf
- **Dwarf_Planet_Pluto:**
  https://astrowis.de/wp-content/uploads/Zwergplanet_Pluto_englisch.pdf
  - **Moon_Charon:**
    https://astrowis.de/wp-content/uploads/Mond_Charon_englisch.pdf
- **Dwarf_Planet_Haumea:**
  https://astrowis.de/wp-content/uploads/Zwergplanet_Haumea_englisch.pdf
- **Dwarf_Planet_Makemake:**
  https://astrowis.de/wp-content/uploads/Zwergplanet_Makemake_englisch.pdf
- **Dwarf Planet Eris:**
  https://astrowis.de/wp-content/uploads/Zwergplanet_Eris_englisch.pdf

Dwarf Planet Candidates:

- **Candidate_Orcus:**
  https://astrowis.de/wp-content/uploads/Zwergplanet_Kandidat_Orcus_englisch.pdf
- **Candidate_2002MS4:**
  https://astrowis.de/wp-content/uploads/Zwergplanet_Kandidat_2002MS4_englisch.pdf
- **Candidate_Quaoar:**
  https://astrowis.de/wp-content/uploads/Zwergplanet_Kandidat_Quaoar_englisch.pdf
- **Candidate_Gonggong:**
  https://astrowis.de/wp-content/uploads/Zwergplanet_Kandidat_Gonggong_englisch.pdf
- **Candidate_Sedna:**
  https://astrowis.de/wp-content/uploads/Zwergplanet_Kandidat_Sedna_englisch.pdf

Information boards:

- **Asteroidy:** https://astrowis.de/wp-content/uploads/Info_Asteroiden_englisch.pdf
- **Trojans:** https://astrowis.de/wp-content/uploads/Info_Trojaner_englisch.pdf
- **Moons_Quasi_Satellite:** https://astrowis.de/wp-content/uploads/Info_Monde_Quasisatelliten_englisch.pdf
- **Transneptunian_Objects:** https://astrowis.de/wp-content/uploads/Info_Transneptunische_Objekte_englisch.pdf
- **Interplanetary_Medium:** https://astrowis.de/wp-content/uploads/Info_Interplanetares_Medium_englisch.pdf
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- **Oort_Cloud:** https://astrowis.de/wp-content/uploads/Info_Oortsche_Wolke_englisch.pdf