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Mr. Schmidt Science 8

Chromosphere corona fission fusion photosphere prominence

Solar flare solar wind sunspot absolute magnitude apparent magnitude

Binary star constellation Hertzsprung-Russell diagram luminosity main sequence

Parallax parsec black hole nebula neutron star protostar

Pulsar supernova

1. Solar wind – wind of charged particles (ions) that flows throughout the solar system and begins as gas flowing outward from the Sun’s corona at high speeds.
2. Prominence – arc of gas ejected from the chromosphere, or gas that condenses in the Sun’s inner corona and rains back to the surface, that can reach temperatures over 50,000K and is associated with sunspots.
3. Nebula – large cloud of interstellar gas and dust that collapses on itself, due to its own gravity, and forms a hot, condensed object that will become and new star.
4. Apparent magnitude – classification system based on how bright a star appears to be; does not take distance into account so cannot indicate how bright a star actually is.
5. Chromosphere – layer of the Sun’s atmosphere above the photosphere and below the corona that is about 2500km thick and has a temperature around 30,000K at its top.
6. Main sequence – in an H-R diagram, the broad, diagonal band that includes about 90 percent of all stars and runs from hot, luminous stars in the upper-left corner to cool, dim stars in the lower-right corner.
7. Solar flare – violent eruption of radiation and particles from the Sun’s surface that is associated with sunspots.
8. Fusion – the combining of lightweight nuclei into heavier nuclei; occurs in the core of the Sun where temperatures and pressure are extremely high.
9. Neutron star – collapsed, dense core of a star that forms quickly while its outer layers are falling inward, has a radius of about 10km, and mass 1.5 to 3 times that of the Sun, and contains mostly neutrons.
10. Protostar – hot, condensed object at the center of a nebula that will become a new star when nuclear fusion reactions begin.
11. Constellation – group of stars that form a pattern in the sky that resembles an animal mythological character or everyday object.
12. Fission – process in which heavy atomic nuclei split into smaller, lighter atomic nuclei.
13. Parsec – the distance equal to 3.26ly and 3.086 X 10¹³km.
14. Hertzsprung-Russell diagram – graph that relates stellar characteristics – class, mass, temperature, magnitude, diameter, and luminosity.
15. Binary star – describes two stars that are bound together by gravity and orbit a common center of mass.
16. Pulsar – a spinning neutron star that exhibits a pulsing pattern.
17. Absolute magnitude – brightness an object would have if it were placed at a distance of 10pc; classification system for stellar brightness that can be calculated only when the actual distance of the star is known.
18. Luminosity – energy output from the surface of a star per second; measured in watts.
19. Parallax – apparent positional shift of an object caused by the motion of the observer.
20. Corona – top layer of the Sun’s atmosphere that extends from the top of the chromosphere and ranges in temperature from 1 million to 2 million K.
21. Photosphere – lowest layer of the Sun’s atmosphere that is also its visible surface, has an average temperature of 5800K and is about 400 km thick.
22. Sunspot – dark spot on the surface of the photosphere that typically lasts two months, occurs in pairs, and has a penumbra and an umbra.
23. Black hole – small, extremely dense remnant of a star whose gravity is so immense that not even light can escape its gravity field.
24. Supernova – massive explosion that occurs when the outer layers of a star are blown off.