SCALES OF MEASUREMENT VERSION 1.8

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3×10^{-6}	arcseconds	Angular size of a 10^8 $M_\odot$ Schwarzschild black hole in M31
0.0002	arcseconds	Typical VLBA resolution at 43 GHz
0.0005	arcseconds	Person on the Moon
0.001	arcseconds	Typical VLBI resolution
0.001	arcseconds	Typical gravitational microlensing image angular separation
0.0015	arcseconds	*Hipparcos* satellite astrometric positional accuracy
0.04	arcseconds	*Hubble Space Telescope* FOC optical angular resolution
0.1	arcseconds	VLA largest configuration resolution at 23 GHz
0.1	arcseconds	*Hubble Space Telescope* WFC optical angular resolution
0.15	arcseconds	1 meter optical reflector yellow light diffraction limit
0.5	arcseconds	WHT MARTINI guide star system resolution
0.6	arcseconds	Rough optical telescope atmospheric seeing limit
0.8	arcseconds	Angular diameter of Europa
1	arcseconds	AXAF X-ray satellite angular resolution goal
1.32	arcseconds	Yearly proper motion of Sirius
1.75	arcseconds	Gravitational deflection of a light ray which grazes the Sun
2.9	arcseconds	Angular diameter of a M31 sized galaxy at $z = 0.5$ in optical light
5	arcseconds	ROSAT X-ray satellite HRI angular resolution
8	arcseconds	Angular separation of the gravitationally lensed quasar 0957+561
25	arcseconds	ROSAT X-ray satellite PSPC angular resolution
36	arcseconds	Angular diameter of Jupiter
120	arcseconds	Human eye resolution
120	arcseconds	Typical optical telescope field of view
150	arcseconds	Rough Crab Nebula radius
210	arcseconds	Rough Cir X-1 radio nebula radius
400	arcseconds	Cluster imprint on the cosmic microwave background radiation
480	arcseconds	OVRO 5.5 meter 32 GHz telescope resolution
700	arcseconds	Jodrell bank 250 foot 1 420.4 MHz telescope resolution
1 200	arcseconds	ROSAT X-ray satellite HRI field of view radius
1 500	arcseconds	ASCA X-ray satellite GIS field of view radius
1 865	arcseconds	Angular diameter of the Moon at its mean distance
1 800	arcseconds	100 Mpc structure imprint on the cosmic microwave background radiation
1 922	arcseconds	Angular diameter of the Sun at its mean distance
2 700	arcseconds	Largest dimension of W50 (ARAA 22, 524)
3 100	arcseconds	Maximum angular scale of causal connection on the cosmic microwave background radiation
3 600	arcseconds	ROSAT X-ray satellite PSPC field of view radius
10 800	arcseconds	Angular diameter of the LMC
14 400	arcseconds	Angular diameter of M31 in optical light
19 800	arcseconds	Palomar Optical Sky Survey plate field of view
25 200	arcseconds	COBE DMR resolution limit

5×10^{-44}	seconds	Planck-Wheeler time $= \left(\frac{G\hbar}{c^5}\right)^{\frac{1}{2}}$
4×10^{-24}	seconds	Typical lifetime of strong interaction resonance $= \frac{h}{m_p c^2}$
8×10^{-21}	seconds	Electron light crossing time $= \frac{h}{m_e c^2}$
1×10^{-13}	seconds	Typical period of vibration of an atom in a solid
1×10^{-13}	seconds	Typical X-ray line electric dipole radiative transition time
1.6×10^{-9}	seconds	Typical hydrogen 2p→1s radiative transition time (electric dipole one photon process)
8×10^{-4}	seconds	Mass shedding minimum spin period for a neutron star
1.6×10^{-3}	seconds	Spin period of PSR 1957+20
0.12	seconds	Typical hydrogen 2s→1s radiative transition time (strictly forbidden two photon process)

10	seconds	Median duration of a classical γ-ray burst
887	seconds	Mean life of a neutron in free space
2 000	seconds	Sun dynamic time scale
8.6×10^{4}	seconds	Earth rotation time
3.2×10^{7}	seconds	Earth orbit time around the Sun
1.6×10^{9}	seconds	Typical time between Milky Way supernovae
1.9×10^{11}	seconds	Carbon-14 half-life
3×10^{12}	seconds	Rough lifetime of a supernova remnant
1.5×10^{13}	seconds	Typical HMXB evolution time
3×10^{13}	seconds	Rough time for evolution of a biological species
1.6×10^{14}	seconds	Main sequence lifetime for a 30 $M_\odot$ star
3×10^{14}	seconds	Hydrogen 21 cm spin flip time
3×10^{14}	seconds	Rough Lyapunov time of the solar system
6.3×10^{14}	seconds	Sun thermal time scale
1.3×10^{15}	seconds	E-folding time for a black hole accreting at the Eddington rate with an efficiency of 0.1
1.9×10^{15}	seconds	Main sequence lifetime for a 5 $M_\odot$ star
2×10^{15}	seconds	Timescale for Los Angeles to pass San Francisco via continental drift
2.4×10^{15}	seconds	Typical LMXB evolution time
7.3×10^{15}	seconds	Orbit time for sun around galaxy center
1.1×10^{16}	seconds	PSR 1913+16 orbital gravitational radiation coalescence timescale
2×10^{16}	seconds	Rough supernova biological extinction time
6×10^{16}	seconds	Minimum age of PSR J0437–4715 (ApJ 411, L85)
6×10^{16}	seconds	Time for galaxy to cross a cluster
7×10^{16}	seconds	Radial period of the orbit of the Magellanic Clouds (MNRAS 198, 718)
1.1×10^{17}	seconds	Primeval slime to man time
1.5×10^{17}	seconds	Age of Earth and Sun
1.5×10^{17}	seconds	Uranium-238 half-life
2.7×10^{17}	seconds	Look back time to $z = 1$
3×10^{17}	seconds	Main sequence lifetime for a 1 $M_\odot$ star
3.3×10^{17}	seconds	Look back time to $z = 2$
3.3×10^{17}	seconds	Sun nuclear time scale
3.7×10^{17}	seconds	Look back time to $z = 4$
3.8×10^{17}	seconds	Rough age of the Milky Way
3.8×10^{17}	seconds	Look back time to the $z = 4.897$ quasar PC 1247+3406
4×10^{17}	seconds	Rough age of 47 Tucanae (an old globular cluster)
4.1×10^{17}	seconds	Age of the universe $= \frac{2}{3H_0}$
2.5×10^{18}	seconds	Globular cluster evaporation time
3×10^{25}	seconds	Galaxy dynamical relaxation timescale
3×10^{27}	seconds	Earth/Sun orbital gravitational radiation coalescence timescale
1×10^{39}	seconds	Lower limit on the proton lifetime
4.7×10^{73}	seconds	1 $M_\odot$ black hole Hawking evaporation time

1.6×10^{-35}	meters	Planck-Wheeler length $= \left(\frac{G\hbar}{c^3}\right)^{\frac{1}{2}}$
2×10^{-35}	meters	Rough postulated superstring size
1×10^{-24}	meters	Effective 1 MeV neutrino radius
1.6×10^{-22}	meters	Radius of a 10 $M_\odot$ star squeezed down to the Planck-Wheeler density
1.5×10^{-18}	meters	Classical proton radius $= \frac{e^2}{4\pi\epsilon_0 m_p c^2}$
1.6×10^{-17}	meters	$W^{\pm}$ Compton wavelength $= \frac{h}{m_{W^\pm} c}$ = rough weak force length
4×10^{-17}	meters	LIGO 4 km gravity-wave detector needed sensitivity
1.3×10^{-15}	meters	Proton Compton wavelength $= \frac{h}{m_p c}$ = rough proton fuzziness length
$1.44 \times 10^{-15} A^{\frac{1}{3}}$	meters	Nuclear radius
2.8×10^{-15}	meters	Classical electron radius $= \frac{e^2}{4\pi\epsilon_0 m_e c^2}$

8.8×10^{-15}	meters	π-meson Compton wavelength = $\frac{h}{m_\pi c}$ = attractive strong force length
1.2×10^{-12}	meters	1 MeV γ-ray wavelength
2.4×10^{-12}	meters	Electron Compton wavelength = $\frac{h}{m_e c}$ = rough electron fuzziness length
5.3×10^{-11}	meters	Bohr radius = $\frac{h^2 \epsilon_0}{\pi m_e e^2}$
2.6×10^{-10}	meters	Copper atom spacing in solid copper
3.5×10^{-10}	meters	H_2O molecular diameter
4×10^{-10}	meters	ROSAT X-ray satellite mirror rms surface error
1.2×10^{-9}	meters	1 keV X-ray wavelength
3×10^{-9}	meters	Typical mean nucleon spacing during primordial nucleosynthesis
3.4×10^{-9}	meters	DNA double helix turn length
6×10^{-8}	meters	Typical rms surface error of a Keck telescope mirror
7.0×10^{-8}	meters	Molecular mean free path in the atmosphere
1×10^{-7}	meters	Typical size of a virus
3×10^{-7}	meters	Interstellar dust grain size
5×10^{-7}	meters	Optical photon wavelength
4×10^{-6}	meters	Typical size of a cell
2×10^{-4}	meters	Small dust particle size
0.03	meters	Lunar laser ranging accuracy (*Science* 265, 482)
0.068	meters	Unraveled human DNA strand length
1.8	meters	Man
30	meters	Blue Whale
3 700	meters	Mean ocean depth
4 000	meters	Error in our knowledge of the distance to Jupiter
5 500	meters	Rough radius of Halley's comet
8 847	meters	Height of Mount Everest
10 000	meters	Neutron star radius
10 000	meters	Typical asteroid radius
10 000	meters	Typical comet radius
11 032	meters	Depth of the Mariana Trench
12 000	meters	Height of troposphere
12 000	meters	Typical airliner cruising altitute
30 000	meters	Typical thickness of the Earth's crust
5.5×10^{5}	meters	Height of the ASCA X-ray satellite orbit
9×10^{5}	meters	Height of the COBE satellite orbit
3.2×10^{6}	meters	Length of the Great Wall of China
6.3×10^{6}	meters	Radius of the Earth
4.2×10^{7}	meters	Geostationary satellite orbit height
7.1×10^{7}	meters	Radius of Jupiter
9×10^{7}	meters	Distance to the Earth's solar wind bow shock
3.8×10^{8}	meters	Distance to the Moon
7.0×10^{8}	meters	Radius of the Sun
1×10^{9}	meters	Typical X-ray binary accretion disk circularization radius
1.7×10^{9}	meters	5 $M_\odot$ star main sequence radius
7×10^{9}	meters	Typical standoff radius of Jupiter's solar wind bow shock
1.47×10^{11}	meters	Event horizon radius for a 10^8 $M_\odot$ maximally rotating Kerr black hole
1.50×10^{11}	meters	Earth/Sun mean distance
1.5×10^{11}	meters	Radius of the red giant Mira at minimum light
3×10^{11}	meters	Radius of the red giant Mira at maximum light
5×10^{11}	meters	Radius of the 20 $M_\odot$ red supergiant Betelgeuse at maximum light
5.91×10^{12}	meters	Pluto/Sun mean distance
1.5×10^{13}	meters	Expected distance to the solar wind termination shock
2×10^{14}	meters	Rough stellar separation in the central parsec of the Milky Way
4×10^{14}	meters	Rough stellar separation in a globular cluster

4×10^{14}	meters	Seyfert galaxy characteristic broad line region radius
2×10^{15}	meters	Rough Oort Cloud/Sun distance
9.46×10^{15}	meters	1 light-year
3.08×10^{16}	meters	1 parsec
4×10^{16}	meters	Nearest nonsolar star to Earth
4.5×10^{16}	meters	Rough Crab Nebula radius
1.6×10^{17}	meters	Stromgren sphere radius for an O5 star
3×10^{17}	meters	Rough Cir X-1 radio nebula radius
3×10^{17}	meters	Rough supernova biological extinction distance (PASP 106, 689)
5×10^{17}	meters	Typical interstellar medium cloud size
1.4×10^{18}	meters	Hyades open cluster distance
1.5×10^{18}	meters	Trigonometric parallax distance determination limit
1.5×10^{18}	meters	Typical globular cluster radius
2×10^{18}	meters	Rough radius of the local interstellar hot gas bubble
2×10^{18}	meters	Largest dimension of W50 (ARAA 22, 524)
2.6×10^{18}	meters	Rough distance to PSR $J0108-1431$
5×10^{18}	meters	Scale height of the Milky Way interstellar medium
5×10^{18}	meters	Seyfert galaxy characteristic narrow line region radius
5.2×10^{18}	meters	Distance to the 20 $M_\odot$ red supergiant Betelgeuse (will go supernova within 10 000 years)
2×10^{19}	meters	Characteristic height of the Milky Way main disk
6×10^{19}	meters	Typical dwarf galaxy radius
6.6×10^{19}	meters	Distance to the Crab Nebula
2×10^{20}	meters	Estimated distance to Cir X-1
2.4×10^{20}	meters	Distance from Sun to galactic center
1.5×10^{21}	meters	Distance to the LMC
2×10^{21}	meters	Rough Milky Way dark matter halo radius
6×10^{21}	meters	Typical Ly-α galaxy neutral hydrogen radius
1×10^{22}	meters	Typical active galaxy jet length
1×10^{22}	meters	Length of the “superantennae” of IRAS 19254–7245
1.9×10^{22}	meters	Distance to M31
3×10^{22}	meters	Radius of the core of the Virgo cluster of galaxies
4×10^{22}	meters	Rough Local Group radius
9.2×10^{22}	meters	Cepheid variable distance determination limit (via ground observations)
1.2×10^{23}	meters	Distance to the Circinus galaxy
5×10^{23}	meters	Rough boundary between the nonlinear and linear gravitational collapse regimes
7×10^{23}	meters	Distance to the $z = 0.0036$ Seyfert 2 NGC 1068
7×10^{23}	meters	Distance to the center of the Virgo cluster of galaxies
9×10^{23}	meters	Characteristic maximum travel length of a yocto-eV cosmic ray due to pion production off the microwave background
2.3×10^{24}	meters	Shapley supercluster radius
3×10^{24}	meters	Typical length scale probed by the Harvard/Smithsonian CfA redshift survey
4.1×10^{24}	meters	Luminosity distance to the $z = 0.022$ Coma cluster of galaxies
1.5×10^{25}	meters	Typical length scale probed by the Lick survey
3.0×10^{25}	meters	Luminosity distance to the $z = 0.158$ quasar 3C273
3×10^{25}	meters	Typical length scale probed by the 4C radio galaxy survey
3×10^{25}	meters	Schwarzschild radius of a singularity with the mass of a critical density universe
5.5×10^{26}	meters	Luminosity distance to the $z = 2.286$ ultraluminous IRAS galaxy IRAS F10214+4724
1.3×10^{27}	meters	Luminosity distance to the $z = 4.897$ quasar PC 1247+3406

1×10^{-9}	m s^{-1}	Sea floor spreading rate
1.6×10^{-9}	m s^{-1}	Average slip rate of the San Andreas fault
1×10^{-8}	m s^{-1}	Typical rainfall rate in a semi-arid climate
2×10^{-8}	m s^{-1}	Grass growth rate
3×10^{-6}	m s^{-1}	Typical glacial advance rate

1×10^{-3}	m s^{-1}	Equivalent radial velocity resolution of pulsar pulse arrival time analysis
1.3	m s^{-1}	Human walking speed
3	m s^{-1}	Radial velocity accuracy of high precision Doppler spectroscopy
13	m s^{-1}	Speed of the reflex motion induced on the Sun by Jupiter
25	m s^{-1}	Car speed
60	m s^{-1}	Radial velocity semiamplitude of 51 Pegasi due to its planet
100	m s^{-1}	Typical speed of an electric pulse in the nervous system
330	m s^{-1}	Sound speed in air
480	m s^{-1}	Earth's atmosphere molecular rms velocity
600	m s^{-1}	Fighter jet speed
2 380	m s^{-1}	Escape velocity from Moon's surface
10 000	m s^{-1}	Typical longitudinal seismic wave velocity in the Earth's mantle
11 000	m s^{-1}	Escape velocity from the Earth's surface
20 000	m s^{-1}	Globular cluster stellar velocity dispersion
29 000	m s^{-1}	Earth's motion around the Sun
40 000	m s^{-1}	Globular cluster stellar escape velocity
1×10^{5}	m s^{-1}	Typical Galactic pulsar vertical velocity component
1×10^{5}	m s^{-1}	Average speed of the initial stroke of a lightning flash
2.2×10^{5}	m s^{-1}	Rotational velocity of the Sun around the Milky Way's center
3×10^{5}	m s^{-1}	Orbital speed of PSR 1913+16
3×10^{5}	m s^{-1}	Rough velocity of Geminga's proper motion
3.65×10^{5}	m s^{-1}	Motion of the solar system barycenter relative to the cosmic microwave background
4.1×10^{5}	m s^{-1}	Orbital speed of Cen X-3
6.2×10^{5}	m s^{-1}	Escape velocity from the Sun's surface
6.2×10^{5}	m s^{-1}	Escape velocity from the Milky Way for objects in the solar neighborhood (ARAA 29, 429)
6.22×10^{5}	m s^{-1}	Motion of the Local Group relative to the cosmic microwave background
8×10^{5}	m s^{-1}	Typical galaxy cluster galaxy velocity dispersion
2×10^{6}	m s^{-1}	Speed of $n = 1$ hydrogen electron $= Z\alpha c$
5×10^{6}	m s^{-1}	Young (months old) supernova ejecta
1.2×10^{7}	m s^{-1}	Velocity of the wind streaming out from H1413+117 "Cloverleaf" (*Nature* 371, 559)
7.8×10^{7}	m s^{-1}	SS433 jet speed
1.4×10^{8}	m s^{-1}	Keplerian orbital velocity at the surface of a neutron star
2×10^{8}	m s^{-1}	Escape velocity from neutron star surface
2.8×10^{8}	m s^{-1}	Ejecta from GRS 1915+105 (*Nature* 371, 46)
2.998×10^{8}	m s^{-1}	Light in a vacuum
3.7×10^{8}	m s^{-1}	Apparent superluminal motion of the ejecta from GRS 1915+105 (*Nature* 371, 46)
6×10^{9}	m s^{-1}	Apparent superluminal motion of the jet from the $z = 2.16$ quasar 0836+710
2.7×10^{10}	m s^{-1}	Apparent superluminal motion of the jet from the $z = 0.940$ BL Lac AO 0235+164 (may be lensed)

4.2×10^{-36}	kilograms	Mass equivalent of a green light photon
9.1×10^{-36}	kilograms	Electron antineutrino upper mass limit
4.8×10^{-31}	kilograms	Muon neutrino upper mass limit
9.11×10^{-31}	kilograms	Electron mass
5.5×10^{-29}	kilograms	Tau neutrino upper mass limit
1.67×10^{-27}	kilograms	Proton mass
9×10^{-27}	kilograms	Bottom quark mass
4.8×10^{-26}	kilograms	Mean mass of atmosphere molecule
1.4×10^{-25}	kilograms	$W^{\pm}$ mass (80.22 ± 0.22 GeV/c^2)
1.6×10^{-25}	kilograms	Z^0 mass (91.187 ± 0.007 GeV/c^2)
2×10^{-25}	kilograms	Favored Higgs boson mass
3.1×10^{-25}	kilograms	Top quark mass (176 ± 13 GeV/c^2)
4×10^{-25}	kilograms	DNA nucleotide
1×10^{-22}	kilograms	Typical protein molecule mass
5×10^{-21}	kilograms	*E. Coli* ribosome

1×10^{-16}	kilograms	Interstellar dust grain mass
8×10^{-15}	kilograms	Rough mass of a human DNA molecule
7×10^{-13}	kilograms	Typical mass of a cell
2.2×10^{-8}	kilograms	Planck-Wheeler mass = $\left(\frac{\hbar c}{G}\right)^{\frac{1}{2}}$
1×10^{-5}	kilograms	Typical mosquito mass
0.02	kilograms	Typical goldfish mass
70	kilograms	Typical human mass
70	kilograms	Lower limit to the allowed mass for a Sumo wrestler
100	kilograms	Meteorite mass before entry into Earth's atmosphere
420	kilograms	ASCA X-ray satellite mass
900	kilograms	Compton *Gamma-Ray Observatory* satellite mass
1 000	kilograms	Car
2 200	kilograms	ISO infrared satellite mass at launch
10 000	kilograms	Tyrannosaurus Rex
5×10^{11}	kilograms	Initial mass of a primordial black hole with evaporation time equal to the universe's age
1×10^{13}	kilograms	Typical comet mass
3×10^{14}	kilograms	Typical mountain mass
1.1×10^{16}	kilograms	Superterranean biomass of Earth (ocean organisms are included)
5.3×10^{18}	kilograms	Total mass of Earth's atmosphere
3×10^{19}	kilograms	Typical asteroid mass
1.4×10^{21}	kilograms	Total mass of Earth's oceans
4.8×10^{22}	kilograms	Mass of Europa
7.3×10^{22}	kilograms	Mass of the Moon
2×10^{24}	kilograms	Rough Oort cloud mass
5.98×10^{24}	kilograms	Mass of the Earth
1.9×10^{27}	kilograms	Mass of Jupiter
1.6×10^{29}	kilograms	Minimum mass to fusion burn hydrogen
4×10^{29}	kilograms	Rough mass of MACHO and EROS microlensing objects
1.99×10^{30}	kilograms	Mass of the Sun
2.8×10^{30}	kilograms	Chandrasekhar mass (maximum mass for a white dwarf)
6.0×10^{30}	kilograms	Oppenheimer-Volkoff mass (maximum mass for a neutron star)
1.2×10^{31}	kilograms	Minimum mass of the unseen object in GS2023+338/V404 Cygni
4×10^{31}	kilograms	Rough stellar mass above which the evolutionary endpoint is a black hole
1.0×10^{32}	kilograms	Mass of the most massive member of Plaskett's star
1.2×10^{32}	kilograms	Rough mass at which a star becomes unstable to pulsations
2×10^{33}	kilograms	Typical interstellar cloud mass
1×10^{36}	kilograms	Typical mass of a globular cluster
5×10^{36}	kilograms	Approximate mass of the Milky Way central black hole
1×10^{37}	kilograms	Rough baryonic Jeans mass immediately after decoupling
4×10^{39}	kilograms	Rough mass of the SMC
2×10^{40}	kilograms	Rough mass of the LMC
2.6×10^{42}	kilograms	Rough mass of the visible and dark matter in the Milky Way (ApJ 345, 759)
1.3×10^{44}	kilograms	Rough mass of the stars in the Coma galaxy cluster
6.4×10^{44}	kilograms	Rough mass of the X-ray gas in the Coma galaxy cluster
2.7×10^{45}	kilograms	Rough virial mass of the Coma galaxy cluster
6×10^{45}	kilograms	Rough virial mass of the Abell 2163 galaxy cluster
2×10^{48}	kilograms	Rough baryonic Jeans mass immediately before decoupling
1.4×10^{49}	kilograms	Rough total mass in spiral galaxies
2×10^{49}	kilograms	Rough total (baryonic and nonbaryonic) mass in galaxy clusters
3×10^{49}	kilograms	Rough total mass in elliptical and spheroidal galaxies
8×10^{49}	kilograms	Rough total mass of visible matter in the universe
1×10^{51}	kilograms	Rough total baryon mass predicted by primordial nucleosynthesis
2×10^{52}	kilograms	Rough total mass of a critical density universe

2×10^{-38}	kg m^{-3}	Effective density of the 100-300 MHz radio background
1×10^{-35}	kg m^{-3}	Effective density of the 1–10 MeV γ-ray background
8×10^{-35}	kg m^{-3}	Effective density of the 2–100 keV X-ray background
1.1×10^{-33}	kg m^{-3}	Upper limit to the effective density of the gravitational wave background
1×10^{-32}	kg m^{-3}	Effective density of the starlight released in a Hubble time
4.6×10^{-31}	kg m^{-3}	Effective density of the cosmic microwave background radiation
2×10^{-29}	kg m^{-3}	Smoothed density of visible galactic material throughout universe
2×10^{-28}	kg m^{-3}	Smoothed baryon density predicted by primordial nucleosynthesis
4.7×10^{-27}	kg m^{-3}	Critical density of the universe $= \frac{3H_0^2}{8\pi G}$
2×10^{-24}	kg m^{-3}	Typical gas in a cluster of galaxies
3×10^{-21}	kg m^{-3}	Typical gas in the interstellar medium of the Milky Way
7×10^{-21}	kg m^{-3}	Dynamically inferred Milky Way disk density
5×10^{-20}	kg m^{-3}	Typical density of the gas in the central kiloparsec of an interacting or starburst galaxy
1×10^{-9}	kg m^{-3}	Best room temperature vacuum achieved on Earth
1.7×10^{-4}	kg m^{-3}	Mean density of Antares (19 $M_\odot$)
1.3	kg m^{-3}	Density of air
700	kg m^{-3}	Mean density of Saturn
1 000	kg m^{-3}	Density of water
1 300	kg m^{-3}	Mean density of Jupiter
1 400	kg m^{-3}	Mean density of the Sun
3 300	kg m^{-3}	Mean density of the Moon
5 500	kg m^{-3}	Mean density of the Earth
7 860	kg m^{-3}	Density of iron
19 300	kg m^{-3}	Density of gold
5×10^{7}	kg m^{-3}	Typical white dwarf mean density
3×10^{10}	kg m^{-3}	Typical white dwarf central density
1.1×10^{12}	kg m^{-3}	Inverse β decay threshold
4.3×10^{14}	kg m^{-3}	Neutron drip density
6×10^{17}	kg m^{-3}	Nuclear density
1×10^{18}	kg m^{-3}	Typical neutron star central density
5×10^{96}	kg m^{-3}	Planck-Wheeler density, at which quantum gravitational effects become important $= \frac{c^5}{G^2\hbar}$

6×10^{-25}	joules	Lamb-Retherford shift
9.5×10^{-25}	joules	21.049 cm photon—hyperfine shift
4×10^{-22}	joules	Molecular rotation transition
4×10^{-21}	joules	kT_{room} = translational kinetic energy of atmosphere gas molecule
7×10^{-21}	joules	Donor level/conduction band gap in a doped semiconductor
3×10^{-20}	joules	Molecular vibration transition
1.6×10^{-19}	joules	Valence band/conduction band gap in a semiconductor
2.2×10^{-19}	joules	Bond energy of an organic substance with half-life 30 000 years
3.8×10^{-19}	joules	Green light photon
9×10^{-19}	joules	Valence band/conduction band gap in an insulator
1.1×10^{-18}	joules	Fermi energy in copper = depth of Fermi sea
1.1×10^{-18}	joules	Positronium ionization energy
2.2×10^{-18}	joules	Hydrogen $n = 1$ binding energy
1.6×10^{-16}	joules	1 keV X-ray
1.5×10^{-15}	joules	Hydrogenic iron $n = 1$ binding energy
8.18×10^{-14}	joules	Electron rest mass
1.6×10^{-13}	joules	1 MeV γ-ray
1.6×10^{-13} $(Z_1 \times Z_2)$	joules	Coulomb barrier height
1.3×10^{-12}	joules	Nucleon binding energy
4.3×10^{-12}	joules	Energy from $4 \times (^1\mathrm{H}) \rightarrow {}^4\mathrm{He}$
1.50×10^{-10}	joules	Proton rest mass

1.6×10^{-7}	joules	Particle kinetic energy in a 1 TeV accelerator
10	joules	Well hit tennis ball
51	joules	Fly's Eye most energetic cosmic ray event
2×10^{5}	joules	Energy from a light bulb burning for 1 hour
2×10^{7}	joules	Rough energy from a 1 kilogram meal
4.2×10^{9}	joules	Explosion energy of 1 ton of TNT
2×10^{10}	joules	Rough energy of a lightning flash
2×10^{11}	joules	Rough human total energy output in a lifetime
1.5×10^{14}	joules	Typical atomic bomb explosion energy
6×10^{16}	joules	Tunguska 50 m diameter meteorite impact energy
1×10^{17}	joules	Powerful H-bomb explosion energy
3×10^{17}	joules	Elastic wave energy release from a large ($M = 8.5$) earthquake
5×10^{17}	joules	Explosion energy of Krakatoa
3×10^{18}	joules	Superman flying at 70 per cent of light speed
9×10^{18}	joules	USA electricity usage in 1986
5×10^{19}	joules	Rough explosion energy of the Lake Toba eruption in Sumatra
2.5×10^{22}	joules	Energy from the comet Shoemaker-Levy 9 fragment G impact on Jupiter
4×10^{23}	joules	K-T 10 km diameter meteorite impact energy
1×10^{24}	joules	Power released by an evaporating black hole during the last second of its life
2.1×10^{29}	joules	The Earth's rotational energy
3×10^{31}	joules	The Earth's total heat content
7×10^{34}	joules	Total rotational energy of the planets
2.5×10^{35}	joules	Rotational energy of the Sun
3×10^{36}	joules	Gravitational internal binding energy of Jupiter
6×10^{37}	joules	Nova Persei outburst
3×10^{41}	joules	A 450 km s^{-1} neutron star kick
3×10^{43}	joules	Energy needed to make the local bubble
1.3×10^{44}	joules	Total radiant energy from the Sun — $(\frac{1}{10})(0.007)\mathrm{M}_\odot c^2$
3×10^{44}	joules	Energy in photons from a type II supernova explosion
1×10^{45}	joules	Rough total energy from a cosmological γ-ray burst
3×10^{46}	joules	Energy in neutrinos from a type II supernova explosion
2×10^{53}	joules	Typical gravitational binding energy of a galaxy
2×10^{54}	joules	Typical magnetic and kinetic energy in a large radio lobe (Shu 311)
5.2×10^{54}	joules	Rotational energy of a 10^8 $\mathrm{M}_\odot$ maximal Kerr black hole = $0.29\mathrm{M}_\bullet c^2$
5×10^{57}	joules	Typical gravitational binding energy of a cluster of galaxies

2×10^{7}	J kg^{-1}	Efficiency of the metabolism of food
1.3×10^{13}	J kg^{-1}	Efficiency of dropping matter onto a white dwarf
6.3×10^{14}	J kg^{-1}	Efficiency of fusion burning hydrogen
5.1×10^{15}	J kg^{-1}	Slowly spiraling accretion onto a Schwarzschild black hole
7.5×10^{15}	J kg^{-1}	Shakura-Sunyaev efficiency for accretion onto a Newtonian "black hole"
8×10^{15}	J kg^{-1}	Efficiency of dropping matter onto a neutron star
2.6×10^{16}	J kg^{-1}	Slowly spiraling prograde accretion onto a realistically maximally rotating Kerr black hole
3.8×10^{16}	J kg^{-1}	Slowly spiraling prograde accretion onto a theoretically maximally rotating Kerr black hole
8.99×10^{16}	J kg^{-1}	Efficiency of matter-antimatter annihilation

4×10^{-6}	watts	Average energy output from 1 kilogram of the Milky Way
1×10^{-3}	watts	Optical disc player laser
6	watts	Amateur short wave radio transmitter
60	watts	Light bulb
100	watts	Gravitational wave power from the Earth-Sun system
150	watts	Human being under normal conditions
750	watts	Maximum long duration horse output
1 500	watts	Typical fireplace fire

20 000	watts	Car
7×10^4	watts	Soft X-ray scattered lunar luminosity
1×10^5	watts	Running Tyrannosaurus Rex
3×10^8	watts	Nuclear power reactor
3×10^8	watts	Moderate thunderstorm electrical power generation rate
1.3×10^9	watts	Hoover dam
4×10^9	watts	Soft X-ray Jovian auroral luminosity
3×10^{11}	watts	USA average electricity usage rate in 1986
1×10^{13}	watts	Solar radio luminosity
8×10^{13}	watts	Powerful nanosecond pulse laser
1.7×10^{17}	watts	Insolation of Earth
1×10^{20}	watts	X-ray luminosity of the quiet Sun
1×10^{23}	watts	Typical white dwarf luminosity
8×10^{24}	watts	Gravitational wave radiation from PSR 1913+16
3.9×10^{26}	watts	Solar luminosity
5×10^{26}	watts	The 2–10 keV flux of the cataclysmic variable FO Aquarii
1×10^{28}	watts	Typical X-ray luminosity of an X-ray pulsar
1×10^{28}	watts	X-ray luminosity associated with Sgr A*
3.5×10^{28}	watts	Rotational energy loss rate from the Geminga pulsar
4.3×10^{28}	watts	Megamaser in NGC 4258
2.4×10^{29}	watts	5 $M_\odot$ star on main sequence
4×10^{30}	watts	Cygnus X-1 X-ray luminosity
5.5×10^{30}	watts	Luminosity of the 20 $M_\odot$ red supergiant Betelgeuse at maximum light
1×10^{31}	watts	Crab Nebula energy output
2×10^{31}	watts	Eddington limit for a 1.4 $M_\odot$ neutron star
3×10^{31}	watts	Typical luminosity of Cir X-1 in zero phase
3×10^{31}	watts	Typical luminosity of GRS 1915+105 in outburst (*Nature* 371, 46)
1×10^{33}	watts	Rough luminosity of Eta Carinae in April 1843
5×10^{35}	watts	Type II supernova peak photon luminosity
3×10^{36}	watts	Milky Way
1.5×10^{38}	watts	Coma cluster X-ray gas luminosity
1×10^{39}	watts	10^8 $M_\odot$ black hole accreting at $\frac{1}{10}$ of the Eddington limit
1×10^{39}	watts	Typical quasar luminosity
1×10^{40}	watts	Rough luminosity of the quasar 3C273
2×10^{41}	watts	Rough luminosity of the $z = 2.286$ ultraluminous IRAS galaxy IRAS F10214+4724
6×10^{43}	watts	Rough luminosity of a cosmological γ-ray burst
2×10^{46}	watts	Rough luminosity of all the stars in the universe
1×10^{48}	watts	Core collapse neutrino luminosity of a type II supernova (QJRAS 30, 423)

7×10^{-7}	kelvins	Laser cooling of cesium atoms
1.3×10^{-5}	kelvins	Cosmic microwave background quadrupole anisotropy
5×10^{-4}	kelvins	Typical Sunyaev-Zel'dovich cosmic microwave background decrement
3.3×10^{-3}	kelvins	Cosmic microwave background dipole anisotropy
0.01	kelvins	Typical limit of liquid helium dilution cooling
0.3	kelvins	Typical limit of liquid helium evaporation cooling
2.17	kelvins	Liquid ^{4}He superfluid transition temperature
2.726	kelvins	Cosmic microwave background temperature today
3.20	kelvins	Liquid ^{3}He boiling point
4	kelvins	Typical limit of Joule-Thomson effect cooling
4.18	kelvins	Liquid ^{4}He boiling point
6	kelvins	Typical noise temperature of a HEMT receiver at 30 GHz
12	kelvins	Lanthanum (under pressure) superconductivity critical temperature (highest for a pure element)
20	kelvins	Liquid H_2 boiling temperature
77	kelvins	Liquid N_2 boiling temperature

133	kelvins	Mercury-barium-calcium-copper oxide compound superconductivity critical temperature
273	kelvins	Water freezing temperature
311	kelvins	Human surface temperature
373	kelvins	Water boiling temperature
388	kelvins	Brimstone melting temperature—upper limit to the temperature of Hell
506	kelvins	Paper burning temperature
740	kelvins	Typical surface temperature of Venus
1811	kelvins	Melting temperature of iron
3000	kelvins	Cosmic microwave background temperature at decoupling
5770	kelvins	Solar effective temperature
5×10^5	kelvins	Surface temperature of the Geminga pulsar
3×10^6	kelvins	Polar cap temperature of the Geminga pulsar
3×10^6	kelvins	Typical fusion experiment
1.4×10^7	kelvins	Center of the Sun
1.5×10^7	kelvins	Changeover temperature from the proton-proton chain to the CNO cycle
2.7×10^7	kelvins	Center of a 5 $M_\odot$ star
5×10^7	kelvins	Typical gas temperature in a cluster of galaxies
1×10^8	kelvins	Typical cataclysmic variable accretion column shock temperature
4×10^8	kelvins	Characteristic temperature for electron-positron pair production
4×10^8	kelvins	Minimum primordial nucleosynthesis temperature
5×10^8	kelvins	Inner accretion disc temperature of Cyg X-1
7×10^8	kelvins	Thermal electrons become relativistic ($v_e = \frac{c}{2}$)
1×10^9	kelvins	Maximum primordial nucleosynthesis temperature
1×10^9	kelvins	Rough superconductivity critical temperature in a neutron star
1×10^{10}	kelvins	Rough plasma pair catastrophe temperature
3×10^{10}	kelvins	Core collapse temperature of a supernova (QJRAS 30, 424)
3×10^{15}	kelvins	Rough electroweak unification temperature

7×10^{-13}	N m^{-2}	Typical gas pressure in a cluster of galaxies
5×10^{-12}	N m^{-2}	Pressure in the best vacuum achieved on Earth
5×10^{-6}	N m^{-2}	Solar radiation pressure at the Earth
1×10^{-5}	N m^{-2}	Pressure of a sound wave at the human threshold of hearing
0.2	N m^{-2}	Solar radiation pressure at the surface of the Sun
30	N m^{-2}	Pressure of a sound wave at the human threshold of pain
1×10^4	N m^{-2}	Mean human arterial blood overpressure
1.5×10^4	N m^{-2}	Standing person
1×10^5	N m^{-2}	Typical atmospheric pressure
1.5×10^6	N m^{-2}	High pressure bicycle tire
2×10^7	N m^{-2}	Typical scuba tank pressure
9×10^7	N m^{-2}	Peak pressure of a fist on concrete during a karate strike
1.1×10^8	N m^{-2}	Pressure at the bottom of the Marianas trench
6×10^9	N m^{-2}	Pressure needed for the natural crystalization of diamonds
1×10^{10}	N m^{-2}	Conventional high pressure laboratory press
2×10^{11}	N m^{-2}	Peak pressure from a diamond anvil pressure cell
5×10^{11}	N m^{-2}	Central pressure of the Earth
4×10^{12}	N m^{-2}	Central pressure of Jupiter
2×10^{13}	N m^{-2}	Radiation pressure at the center of the Sun
2.7×10^{16}	N m^{-2}	Central pressure of the Sun
1×10^{23}	N m^{-2}	Typical central pressure of a white dwarf
1×10^{34}	N m^{-2}	Typical central pressure of a neutron star

1×10^{-12}	W m^{-2}	Threshold of hearing (0 dB)
1×10^{-11}	W m^{-2}	Rustle of leaves (10 dB)
1×10^{-10}	W m^{-2}	Quiet whisper (20 dB)

1×10^{-9}	W m^{-2}	Soft music (30 dB)
3×10^{-8}	W m^{-2}	Average residence (45 dB)
1×10^{-6}	W m^{-2}	Background music (60 dB)
3×10^{-6}	W m^{-2}	Ordinary conversation at 0.5 meters (65 dB)
1×10^{-5}	W m^{-2}	Busy street traffic (70 dB)
3×10^{-5}	W m^{-2}	Typical factory (75 dB)
1×10^{-3}	W m^{-2}	Rough boundary of unsafe sound levels (90 dB)
1×10^{-2}	W m^{-2}	Lawn mower (100 dB)
1	W m^{-2}	Loud rock music concert (120 dB)
10	W m^{-2}	Threshold of pain (130 dB)
100	W m^{-2}	Jet plane at 30 meters (140 dB)

9.128×10^{-35}	kg m^2 s^{-1}	Magnitude of the electron spin angular momentum $= \sqrt{\frac{3}{4}}\hbar$
1.054×10^{-34}	kg m^2 s^{-1}	Planck angular momentum $= \hbar$
3×10^{12}	kg m^2 s^{-1}	Rough angular momentum of an artificial satellite
5.9×10^{33}	kg m^2 s^{-1}	Earth rotational angular momentum
1.7×10^{41}	kg m^2 s^{-1}	Sun rotational angular momentum
3.1×10^{43}	kg m^2 s^{-1}	Total angular momentum of our solar system
2×10^{55}	kg m^2 s^{-1}	Angular momentum of the Sun around the center of the Milky Way
4×10^{66}	kg m^2 s^{-1}	Rough total angular momentum of the Milky Way

1×10^{-13}	teslas	Spontaneous human brain activity
1×10^{-12}	teslas	Evoked human brain activity
1×10^{-12}	teslas	Typical magnetic field needed for good radio reception
1×10^{-11}	teslas	Typical magnetic field from a human heart
1×10^{-10}	teslas	Typical 50/60 Hz magnetic field inside a building
5×10^{-10}	teslas	Typical magnetic field strength in the local interstellar medium
1×10^{-9}	teslas	Typical magnetic field strength in a radio lobe
1×10^{-8}	teslas	Typical magnetic field strength in the central 300 parsecs of the Milky Way
5×10^{-8}	teslas	Magnetic field in the Crab Nebula
1×10^{-7}	teslas	Magnetic field in The Arc at the Milky Way center
1×10^{-6}	teslas	Typical magnetic field from a hand held cordless phone
3×10^{-5}	teslas	Magnetic field at Earth's surface
1×10^{-4}	teslas	Magnetic field near Sun's pole
4×10^{-4}	teslas	Magnetic field at Jupiter's cloud tops
0.1	teslas	Ap star magnetic field
0.2	teslas	Sunspot magnetic field
1	teslas	Typical medical NMR magnetic field
2	teslas	Magnetic field felt by the electron in an $n = 1$ hydrogen atom
2	teslas	RS CVn star spot magnetic field
12	teslas	Typical magnetic field used in high resolution NMR spectroscopy
25	teslas	Powerful superconducting/normal hybrid magnet
1×10^{8}	teslas	Typical single pulsar dipole magnetic field strength
4.4×10^{9}	teslas	Magnetic field strength when the energy of the first electron Landau level is comparable to the electron rest mass (MNRAS 275, 257)

1×10^{4}	amperes	Peak lightning bolt current
5×10^{6}	amperes	Current along Io's flux tube (*Science* 262, 1035)

3×10^{8}	volts	Typical potential difference across a lightning bolt

3×10^{6}	V m^{-1}	Electrical discharge field in air with ions
1×10^{12}	V m^{-1}	Typical electric field at the surface of a pulsar
1×10^{19}	V m^{-1}	QED pair production electric field limit

240	bits	Eigen replicator genome — 120 nucleotides
440	bits	Spiegelman monster genome — 220 nucleotides
9 000	bits	Q_β virus genome — 4 500 nucleotides
32 000	bits	Single spaced typed page
6.6×10^5	bits	Uncompressed ASCII version of *Lysistrata*
4.36×10^6	bits	*C. elegans* nematode chromosome III — longest contiguous piece of DNA sequenced
6×10^6	bits	*E. Coli* genome — 3 million nucleotides
6.3×10^6	bits	Uncompressed ASCII version of *A Tale of Two Cities*
2.6×10^7	bits	Yeast genome — 13 million nucleotides
3.6×10^7	bits	Uncompressed ASCII version of *The Bible*
2×10^8	bits	Nematode genome — 100 million nucleotides
1×10^9	bits	Microcomputer hard drive
2.5×10^9	bits	Twenty volume edition of the Oxford English Dictionary on CD-ROM
7×10^9	bits	MACHO project data intake per night
9×10^9	bits	Human genome
8×10^{10}	bits	Sloan Digital Sky Survey spectral database
1.4×10^{11}	bits	Cambridge X-ray group total disk space
2×10^{11}	bits	International Halley watch database
5×10^{11}	bits	VCR tape
1×10^{12}	bits	Speed reading for 80 years with perfect memory
8.8×10^{12}	bits	HST archive size in mid-1994
9×10^{12}	bits	VLA *FIRST* Survey data set
2×10^{13}	bits	Digitized new Palomar sky survey
5×10^{13}	bits	Sloan Digital Sky Survey 0.4 arcsecond pixel map
8×10^{13}	bits	NSF backbone traffic in March 1994
3×10^{16}	bits	HDTV for 80 years with perfect memory

200	bits s^{-1}	Typical reading and talking rate
500	bits s^{-1}	Fast speed reading rate
24 000	bits s^{-1}	*Hipparcos* satellite data acquisition rate
56 000	bits s^{-1}	Typical Internet link
1×10^5	bits s^{-1}	High quality audio
1.4×10^5	bits s^{-1}	HST archive mean growth rate
1×10^7	bits s^{-1}	Xerox Ethernet
1×10^7	bits s^{-1}	HDTV bit rate after compression
4.5×10^7	bits s^{-1}	Internet backbone T3 link
6×10^7	bits s^{-1}	Sloan Digital Sky Survey data acquisition rate
3×10^{10}	bits s^{-1}	Soliton optical fiber information transmission rate
2×10^{15}	bits s^{-1}	Sexual reproduction genetic information transmission rate

2 100	1994 USA dollars	Average USA public school spending per pupil in 1960
6 200	1994 USA dollars	Average USA public school spending per pupil in 1993
2×10^5	1994 USA dollars	Vancouver liquid mercury mirror telescope
9×10^6	1994 USA dollars	Income of St. John's College, Cambridge during 1992–1993
1.5×10^7	1994 USA dollars	Development and construction cost of the Giant Meterwave Radio Telescope near Pune, India
2.9×10^7	1994 USA dollars	Total predicted cost of the Sloan Digital Sky Survey
3×10^7	1994 USA dollars	Rough United States ACLU yearly national operations budget
3×10^7	1994 USA dollars	Rough United States NRA lobbying budget
5.5×10^7	1994 USA dollars	Development, construction, and launch cost of the *Clementine I* spacecraft
8.5×10^7	1994 USA dollars	VLBA development and construction cost
9×10^7	1994 USA dollars	Development and construction cost of the Keck telescope
1×10^8	1994 USA dollars	Development and construction cost of the ASCA X-ray satellite
1.5×10^8	1994 USA dollars	Typical holdings of an old wealthy Oxbridge college

1.5×10^8	1994 USA dollars	Rough cost of a European Ariane rocket launch
2×10^8	1994 USA dollars	Development and construction cost of the VLA
2.1×10^8	1994 USA dollars	Total spending in the 1994 United States senate election campaigns
3.7×10^8	1994 USA dollars	Rough construction and operation cost (for 4 years) of LIGO
7.8×10^8	1994 USA dollars	Rough United States NEA revenues
9×10^8	1994 USA dollars	Development, construction, and launch cost of the *Magellan* probe
9.8×10^8	1994 USA dollars	Development, construction, and launch cost of the *Mars Observer* spacecraft
1.1×10^9	1994 USA dollars	Worldwide Visa and MasterCard fraud in 1993
1.5×10^9	1994 USA dollars	Planned total cost of the AXAF X-ray mission
1.6×10^9	1994 USA dollars	Estimated cost of the CERN Large Hadron Collider
1.7×10^9	1994 USA dollars	Barclays 1994 half-year profits
1.8×10^9	1994 USA dollars	Amount of food stamp fraud in the USA in 1993
3.5×10^9	1994 USA dollars	Planned total cost of the *Cassini* spacecraft
3.8×10^9	1994 USA dollars	Microsoft revenue in 1993
1×10^{10}	1994 USA dollars	Rough monetary losses associated with BCCI
1.3×10^{10}	1994 USA dollars	Lockheed revenue in 1993
1.4×10^{10}	1994 USA dollars	NASA planned 1995 budget
1.5×10^{10}	1994 USA dollars	Rough United Nations yearly budget
2.8×10^{10}	1994 USA dollars	Planned cost for the space station
4.4×10^{10}	1994 USA dollars	Total cost of the first 20 B-2 Stealth bombers
5×10^{10}	1994 USA dollars	Clinton administration 1995 loan guarantee to Mexico
1×10^{11}	1994 USA dollars	Rough annual gap between USA IRS estimates of federal taxes due and tax revenues actually collected
2.6×10^{11}	1994 USA dollars	United States 1994 military spending
2.6×10^{11}	1994 USA dollars	United States 1994 predicted defecit
8×10^{11}	1994 USA dollars	United States 1994 entitlement spending (e.g. social security, medicare, medicaid, food stamps, unemployment compensation, farm aid, federal pensions)
1×10^{12}	1994 USA dollars	Rough total United States health care spending in 1994
1.3×10^{12}	1994 USA dollars	United States 1994 tax receipts
1.5×10^{12}	1994 USA dollars	United States 1994 federal government spending
3.5×10^{12}	1994 USA dollars	United States antipoverty spending since 1965
4.4×10^{12}	1994 USA dollars	United States 1994 national debt
6.4×10^{12}	1994 USA dollars	United States 1994 gross domestic product
1.4×10^{13}	1994 USA dollars	United States 1994 unfunded liabilities for social security, medicare, federal civil-service retirement and military retirement
3.1×10^{14}	1994 USA dollars	World 1994 GDP

0.004	Black velvet optical light albedo
0.012	Black cloth optical light albedo
0.04	Halley's comet optical light albedo
0.068	Moon optical light albedo
0.14	Mars optical light albedo
0.40	Earth optical light albedo
0.80	White paper optical light albedo
0.85	Venus optical light albedo

1×10^{-10}	pc^{-3}	Space density of X-ray binaries in the Milky Way
5×10^{-7}	pc^{-3}	Space density of pulsars in the solar neighborhood
3×10^{-6}	pc^{-3}	Space density of cataclysmic variables in the solar neighborhood
0.1	pc^{-3}	Space density of main sequence stars in the solar neighborhood

1×10^{-9}	Mpc^{-3}	Ultraluminous IRAS galaxies
1×10^{-9}	Mpc^{-3}	Quasars
1×10^{-7}	Mpc^{-3}	QSOs

1×10^{-7}	Mpc^{-3}	FR II radio galaxies (edge-brightened)
5×10^{-6}	Mpc^{-3}	FR I radio galaxies (not edge-brightened)
1×10^{-4}	Mpc^{-3}	Seyfert galaxies
0.1	Mpc^{-3}	Field galaxies
0.6	Mpc^{-3}	Group galaxies

−26.8	V apparent magnitude of the Sun
−12.5	V apparent magnitude of the full Moon
−4.4	V apparent magnitude of Venus at its brightest
−1.5	V apparent magnitude of Sirius
0.1	V apparent magnitude of the LMC
0.5	V apparent magnitude of Betelgeuse
3.4	V apparent magnitude of M31
6.5	V apparent magnitude of naked eye limit at a dark site
9	V apparent magnitude of 50-mm binocular limit
10.5	V apparent magnitude of the $z = 0.00363$ Seyfert 2 NGC 1068
11.6	V apparent magnitude of the $z = 0.00170$ H II region galaxy NGC 5408
12.8	V apparent magnitude of the $z = 0.158$ quasar 3C273
13.6	V apparent magnitude of the $z = 0.0167$ Seyfert 1 NGC 7469
14.5	V apparent magnitude of 12-in telescope visual limit
15.3	V apparent magnitude of the $z = 0.239$ quasar PG 0953+414 (ApJ 435, L12)
19.55	V apparent magnitude of the $z = 3.67$ quasar DHM $0054 - 284$
23.5	V apparent magnitude of 200-in telescope photographic limit
25.5	V apparent magnitude of a typical Cepheid in M100 (ApJ 435, L33)
29.5	V apparent magnitude limit of an 18-hour exposure with HST

−27.5	M_{V} of the $z = 0.158$ quasar 3C273
−24.1	M_{V} of the $z = 0.239$ quasar PG 0953+414 (ApJ 435, L12)
−21.1	M_{V} of M31
−21.0	M_{V} of a typical Seyfert host galaxy
−19.5	M_{V} limit on the host galaxy of the $z = 0.239$ quasar PG 0953+414 (ApJ 435, L12)
−18.5	M_{V} of the LMC
−6.0	M_{V} of Betelgeuse
4.4	M_{V} of the most luminous star in Alpha Centauri
4.79	M_{V} of the Sun

Note: I assume an inflationary ($\Omega_0 = 1.0$) dust-filled Friedmann-Robertson-Walker universe with $H_0 = 50$ km s^{-1} Mpc$^{-1} = 1.62 \times 10^{-18}$ s^{-1} for all calculations. Space densities are given for "here and now."