

	DISTANCE		TIME		MASS		VELOCITY	
Planck Dist (Quantum Gravity)	1.62 · 10 ⁻³⁵ m	Planck Time (Qu. Grav. Timescale)	5 · 10 ⁻⁴⁴ s	Electron Rest Mass	9 · 10 ⁻³¹ kg	Continental drift	2 · 10 ⁻⁹ m/s	
Diam, Proton	2.00 · 10 ⁻¹⁵ m	Electron Light Crossing Time	8 · 10 ⁻²¹ s	Proton Rest Mass	2 · 10 ⁻²⁷ kg	Hair growth	3 · 10 ⁻⁹ m/s	
Radius of electron (Classical)	2.82 · 10 ⁻¹⁵ m	Period, Atomic Vibration in Solid	100 · 10 ⁻¹⁵ s	Hydrogen Atom	2 · 10 ⁻²⁷ kg	Glacier creep	1 · 10 ⁻⁶ m/s	
Diam, Iron Nucleus	8 · 10 ⁻¹⁵ m	Chem reactn time (ICN dissasoc)	200 · 10 ⁻¹⁵ s	Iron Atom	95 · 10 ⁻²⁷ kg	Amoeba crawls at	5 · 10 ⁻⁶ m/s	
Electron Compton λ, h/mec	2.40 · 10 ⁻¹² m	Period, AM radio wave	1 · 10 ⁻⁵ s	DNA Nucleotide	400 · 10 ⁻²⁷ kg	Snail crawls at	1 · 10 ⁻³ m/s	
Bohr radius of hydrogen atom	5.29 · 10 ⁻¹¹ m	Period, middle C	3.8 · 10 ⁻³ s	Typical protein molecule	1 · 10 ⁻²² kg	Brisk walk	1 m/s	
Atom spacing in solid (Copper)	3 · 10 ⁻¹⁰ m	Duration, typical eye saccade	80 · 10 ⁻³ s	E. Coli ribosome	5 · 10 ⁻²¹ kg	Marathon runner, 2 hr	6 m/s	
λ, X ray (1 keV)	1.24 · 10 ⁻⁹ m	Duration, blink of the eye	150 · 10 ⁻³ s	Small virus	10 · 10 ⁻²¹ kg	Gentle Breeze (Beaufort 3)	5 m/s	
DNA Diameter	2 · 10 ⁻⁹ m	Time between saccades	400 · 10 ⁻³ s	Human DNA Molecule	8 · 10 ⁻¹⁵ kg	Elevator in skyscraper	9 m/s	
SEM Electron Microscope limit	5 · 10 ⁻⁹ m	Period, Avg heartbeat	1 s	Red blood cell	9 · 10 ⁻¹⁴ kg	Raindrop terminal vel	10 m/s	
λ, Blue light (H2 line)	434 · 10 ⁻⁹ m	Period, Avg Walking Pace	1.0 s	Typical cell	7 · 10 ⁻¹³ kg	200 m Dash World Rec.	10 m/s	
λ, Red light (H2 line)	657 · 10 ⁻⁹ m	Light reaches Earth from Moon	1.3 s	Mosquito	1 · 10 ⁻⁶ kg	Karate Chop!	12 m/s	
Diam, Small virus	2 · 10 ⁻⁸ m	Period, Avg Breathing Rhythm	5 s	Snowflake	3 · 10 ⁻⁶ kg	Strong Wind (Beaufort 6)	14 m/s	
Atmosphere mean free path	7 · 10 ⁻⁸ m	Minute	60 s	Rain drop	20 · 10 ⁻⁶ kg	60 MPH	25 m/s	
Optical Microscope limit	2 · 10 ⁻⁷ m	Light reaches Earth from Sun	500 s	One Ounce	31 · 10 ⁻³ kg	Cheetah	28 m/s	
Diam, typical bacterium	1 · 10 ⁻⁶ m	Hour	3.6 · 10 ³ s	Baseball	145 · 10 ⁻³ kg	Nolan Ryan Fastball	45 m/s	
Diam, human red blood cell	8 · 10 ⁻⁶ m	Day	8.64 · 10 ⁴ s	One Pound	454 · 10 ⁻³ kg	Nerve signal	49 m/s	
Diam, human hair	1 · 10 ⁻⁴ m	Week	7 d	6.05 · 10 ⁵ s	Brick	10 kg	Hurricane Winds	50 m/s
Diam, Grain of Sand	3 · 10 ⁻⁴ m	Month (Period of Moon Phases)	30 d	2.55 · 10 ⁶ s	Average woman	58 kg	Skydiver Terminal Vel	55 m/s
Diam, a Period (2 pts):	7 · 10 ⁻⁴ m	Tropical Year (365.2422 d)	365 d	3.16 · 10 ⁷ s	Average man	70 kg	Land Speed Rec. (766 mph)	343 m/s
Diam, 12 gauge wire	2 · 10 ⁻³ m	Light Travel Time from Nearby Star	4 yr	1 · 10 ⁸ s	African Elephant	1.5 · 10 ³ kg	Speed Sound 20 C, 1 atm	343 m/s
1 inch	3 · 10 ⁻² m	Period of Halley's Comet	76 yr	2 · 10 ⁹ s	Porsche 911 Turbo	1.5 · 10 ³ kg	Air molecules at Room Temp	450 m/s
Light travels in a nanosecond	0.30 m	Century	100 yr	3 · 10 ⁹ s	Tyrannosaurus Rex	10 · 10 ³ kg	Earth's rot vel, equator	465 m/s
1 foot	0.30 m	Decl'n of Independence (1776)	232 yr	7 · 10 ⁹ s	Blue whale	150 · 10 ³ kg	SR-71A Blackbird	980 m/s
Height, Average Male	1.8 m	Galileo proves Copernicus (1610)	398 yr	10 · 10 ⁹ s	747-400 Plane	380 · 10 ³ kg	Rifle bullet	1000 m/s
λ, 100.0 MHz FM radio wave	3 m	Millenium	1000 yr	3 · 10 ¹⁰ s	NYC Trash, per day	1.2 · 10 ⁷ kg	Sound in Water	1500 m/s
Height, One Storey	4 m	Goldfish domesticated, ago	1000 yr	3 · 10 ¹⁰ s	HMS Queen Elizabeth	8 · 10 ⁷ kg	Escape vel, Moon Surf	2 · 10 ³ m/s
Length, Bowling Alley	19 m	Fall of Rome (476 AD)	1532 yr	5 · 10 ¹⁰ s	US Junk mail, per year	1 · 10 ⁹ kg	Earth around Sun	3 · 10 ³ m/s
Length, Blue whale	30 m	Cats and camels domesticated	5 kyr	1.6 · 10 ¹¹ s	CO2 prod./year, USA	7 · 10 ⁹ kg	Sound through Earth	7 · 10 ³ m/s
NYC uptown block (1/20 mi)	80 m	Oldest Written records (Sumer)	5 kyr	1.6 · 10 ¹¹ s	CO2 prod./year, World	27 · 10 ⁹ kg	Escape vel, Earth Surface	11 · 10 ³ m/s
Really Tall Tree	112 m	Horse domesticated	6 kyr	1.9 · 10 ¹¹ s	Comet	1 · 10 ¹³ kg	Universe Expansion (Quasar redshift)	3 · 10 ⁸ m/s
Light travels in a microsecond	300 m	Carbon-14 Half-Life	6 kyr	1.9 · 10 ¹¹ s	Mountain	3 · 10 ¹⁴ kg	Light in vacuum, c	3 · 10 ⁸ m/s
λ, 1000 kHz AM radio wave	300 m	cattle domesticated	8 kyr	3 · 10 ¹¹ s	Earth's Biomass	2 · 10 ¹⁵ kg	TEMPERATURE	
Length, HMS Queen Elizabeth	310 m	Holocene epoch begins	10 kyr	3 · 10 ¹¹ s	Earth's Atmosphere	5 · 10 ¹⁸ kg	Lowest achieved in lab	6 · 10 ⁻⁴ K
Height, Empire State Bldg	444 m	Last Ice Age	18 kyr	6 · 10 ¹¹ s	Typical Asteroid	3 · 10 ¹⁹ kg	Outer space	-270 °C 3 K
1 mile	1.61 · 10 ³ m	Earliest Homo sapiens sapiens	90 kyr	3 · 10 ¹² s	Earth's Oceans	1.4 · 10 ²¹ kg	Boiling pt, Helium	-269 °C 4 K
Depth of oceans (mean)	4 · 10 ³ m	Typ. time, Species to diverg. Evolve	1 MYr	3 · 10 ¹³ s	Moon	7 · 10 ²² kg	Boiling pt, Nitrogen	-196 °C 77 K
Height Mt. Everest (Sea Lvl)	9 · 10 ³ m	Homo erectus lives	2 MYr	5 · 10 ¹³ s	Earth	6 · 10 ²⁴ kg	Moon Nighttime	-170 °C 103 K
Diam, Dinosaur Asteroid	10 · 10 ³ m	Homo habilis (Earliest spcs Homo)	2 MYr	6 · 10 ¹³ s	Jupiter	2 · 10 ²⁷ kg	Record Lo Outside Temp	-89 °C 184 K
Depth of the Marianas Trench	11 · 10 ³ m	Age of oldest stone tool	3 MYr	8 · 10 ¹³ s	Sun	2 · 10 ³⁰ kg	Freezing pt, Water	0 °C 273 K
Height, Ozone Layer	20 · 10 ³ m	Lucy (Australopithecus afarensis)	3 MYr	1 · 10 ¹⁴ s	Globular Cluster	1 · 10 ³⁶ kg	Room Temperature	22 °C 293 K
Thick, Earth's continental crust	40 · 10 ³ m	Earliest Primates	50 MYr	1.6 · 10 ¹⁵ s	Mass of Milky Way	4 · 10 ⁴¹ kg	Human Body Temp	37 °C 310 K
λ of a tsunami	200 · 10 ³ m	Earliest Rodents	57 MYr	1.8 · 10 ¹⁵ s	Milky Way (visible & dark mass)	3 · 10 ⁴² kg	Record Hi Outside Temp	57 °C 330 K
Light travels in a millisecond	300 · 10 ³ m	Main Seq. Lifetime, 5 sol mass	60 MYr	1.9 · 10 ¹⁵ s	Universe Visible matter	8 · 10 ⁴⁹ kg	Boiling pt, Water	100 °C 373 K
Height, Shuttle orbit	300 · 10 ³ m	LA will pass SF by continental drift	63 MYr	2.0 · 10 ¹⁵ s	Universe	1 · 10 ⁵³ kg	Moon Daytime	134 °C 407 K
Radius, Moon	2 · 10 ⁶ m	Mass Extinction; Go Mammals!	65 MYr	2.1 · 10 ¹⁵ s	ENERGY			
Miami - Boston (1506 mi)	2 · 10 ⁶ m	Start, Cenozoic era (til now)	70 MYr	2.2 · 10 ¹⁵ s	KE molecule@Rm Temp	4 · 10 ⁻²¹ J	Candle Flame	1527 °C 1800 K
Thickness, Earth's Mantle	3 · 10 ⁶ m	Tm btwn coll w/ Asteroids > 4km	95 MYr	3 · 10 ¹⁵ s	electron Volt (1 eV)	2 · 10 ⁻¹⁹ J	Acetylene torch	2627 °C 2900 K
Length, Great Wall of China	3 · 10 ⁶ m	Flowering Plants Originate	125 MYr	4 · 10 ¹⁵ s	Fission 1 U-235 nucleus	3 · 10 ⁻¹¹ J	Melting Pt of tungsten	3407 °C 3680 K
Wash DC - San Fran (2822mi)	5 · 10 ⁶ m	Apatosaurus (AKA Brontosaurus)	163 MYr	5 · 10 ¹⁵ s	KE Falling rain drop	4 · 10 ⁻³ J	Center of Earth	3727 °C 4000 K
Radius, Earth Equator	6 · 10 ⁶ m	Start, Mesozoic era (Cenozoic next)	225 MYr	7 · 10 ¹⁵ s	KE hi-energy Cosmic ray	50 J	Surface of Sun	4227 °C 4500 K
Allitude, Geosynchronous Orbit	4 · 10 ⁷ m	Orbit time, Sun - Galactic Center	231 MYr	7 · 10 ¹⁵ s	Kinetic Energy (KE), Walking	60 J	Center of Sum	2 · 10 ⁷ K
Circum, Earth Equator	4 · 10 ⁷ m	Permian extinction	250 MYr	8 · 10 ¹⁵ s	One push up	300 J	Center of H bomb	1 · 10 ⁸ K
Diam, Jupiter	1 · 10 ⁸ m	Earliest Reptiles	340 MYr	1.1 · 10 ¹⁶ s	KE Man Running	4 · 10 ³ J	NUMBER AND POPULATION	
Light travels in a second	3 · 10 ⁸ m	Plants Invade land	420 MYr	1.3 · 10 ¹⁶ s	One food calorie (1 kcal)	4 · 10 ³ J	Households, USA (2000)	105 · 10 ³
Orbital radius of Moon	4 · 10 ⁸ m	Oldest Vertebrate Fossils	469 MYr	1.5 · 10 ¹⁶ s	Typical flashlight battery	7 · 10 ³ J	Cars in USA (1.77/hh)	185 · 10 ³
Radius, Sun	7 · 10 ⁸ m	Camarian explosion	545 MYr	1.7 · 10 ¹⁶ s	KE Rifle Bullet	40 · 10 ³ J	Words, English Language	617 · 10 ³
Light travels in a minute	2 · 10 ¹⁰ m	Start, Paleozoic era (Mesz'c next)	571 MYr	1.8 · 10 ¹⁶ s	KE Large Locomotive	500 · 10 ³ J	Base Prs, Human Chromosome	2 · 10 ⁶
Orbital radius of Mercury	6 · 10 ¹⁰ m	Vertebrates, Invertbts diverge	600 MYr	1.9 · 10 ¹⁶ s	Metabolize 1 kg Beer	2 · 10 ⁶ J	US Population (1650)	2 · 10 ⁶
Dist, Avg Earth-Sun (A.U.)	1.5 · 10 ¹¹ m	Eukaryotes begin to dominate	1 BYr	4 · 10 ¹⁶ s	Explosion of 1 kg TNT	5 · 10 ⁶ J	US Population (1850)	76 · 10 ⁶
Orbital radius of Pluto	6 · 10 ¹² m	Atmos. O2 at present level	2 BYr	5 · 10 ¹⁶ s	Daily Food Intake, Man	8 · 10 ⁶ J	US Population (1950)	152 · 10 ⁶
Light travels in a year	9.5 · 10 ¹⁵ m	Age of Most ancient fossils	3 BYr	8 · 10 ¹⁶ s	Combust 1 gal gasoline	130 · 10 ⁶ J	US Population (2000)	285 · 10 ⁶
Dist, Nearest Star (Alpha Cent.)	4 · 10 ¹⁶ m	Age of Most ancient rocks	3 BYr	1 · 10 ¹⁷ s	Lightning Flash	2 · 10 ⁹ J	World Population (1650)	1 · 10 ⁹
Thickness, Milky Way	3 · 10 ¹⁸ m	Earliest Photosynthetic Activity	4 BYr	1 · 10 ¹⁷ s	Hiroshima size A bomb	63 · 10 ¹² J	World Population (1850)	1 · 10 ⁹
Dist, Sun-Milky Way Center	3 · 10 ²⁰ m	Earth formed	5 BYr	2 · 10 ¹⁷ s	Earthquake, 7.0 (1979, CA)	2 · 10 ¹⁵ J	World Population (1950)	3 · 10 ⁹
Diam, Milky Way galaxy	8 · 10 ²⁰ m	Lifetime Sun (Main Seq. @ 1 Sol M)	10 BYr	3 · 10 ¹⁷ s	1 kg Mass Energy equiv	90 · 10 ¹⁵ J	World Population (2000)	6 · 10 ⁹
Nearest Galaxy (Lg Mag Cloud)	2 · 10 ²¹ m	Age of Universe	10 BYr	3 · 10 ¹⁷ s	World Electricity Use/Yr	6 · 10 ¹⁹ J	Galaxies in universe	5 · 10 ¹⁰
Radius, Local Group	7 · 10 ²² m	Age of the Milky Way	12 BYr	4 · 10 ¹⁷ s	All fossil fuels on Earth	4 · 10 ²³ J	Stars in Milky Way	1 · 10 ¹¹
Visible Universe (c x age)	2 · 10 ²⁶ m	Hubble age of the universe	13 BYr	4 · 10 ¹⁷ s	Supernova Explosion	1 · 10 ⁴⁴ J	Photons/s, 100 W light bulb	1 · 10 ²⁰
Radius of Universe	1 · 10 ²⁸ m	Lower limit on proton lifetime	1 · 10 ³⁹ s	Nuclear fuel in Sun	1 · 10 ⁴⁵ J	One mole (Avogadro's #)	6 · 10 ²³	
							Nucleons in Universe	1 · 10 ⁸⁰