

Astronomy: The Evolving Universe 9/e

Chapter 1 Key Terms

angular diameter

angular distance

angular speed

celestial pole

circumpolar stars

conjunction

constellation

eclipse (lunar/solar)

ecliptic

equinox (spring/fall)

geocentric

horizon

maximum elongation

noon

opposition

phases (moon)

planets

precession of the equinoxes

retrograde motion

solar day

solstice (summer/winter)

zodiac

Chapter 2 Key Terms

cosmos

force

forced motion

geocentric

heliocentric

heliocentric stellar parallax

natural motion

scientific model

stellar parallax (heliocentric)

Chapter 3 Key Terms

aphelion

astronomical unit (AU)

eccentricity

ellipse

focus

Kepler's laws of planetary motion

major axis

perihelion

semimajor axis

sidereal period

synodic period

Chapter 4 Key Terms

acceleration

center of mass

central force

centripetal acceleration

centripetal force

escape speed

free-fall

gravitation

inertia

inverse-square law

mass

mechanics

Newton's laws of motion

speed

velocity

Chapter 5 Key Terms

absorption line

absorption-line spectrum

atom

Balmer series

Bohr model of the atom

conservation of energy

continuous spectrum

electromagnetic spectrum

electron

element

emission line

emission-line spectrum

energy

energy level

excitation

flux

frequency

ground state

heat

ionization

kinetic energy

Kirchhoff's rules

neutron

nucleus

photon

potential energy

proton

radiative energy

spectral line

spectroscope

spectroscopy

spectrum

temperature

transition

wavelength

Chapter 6 Key Terms

atmospheric absorption

detector

eyepiece

f-ratio

focal length

image

image processing

lens

light-gathering power

magnifying power

objective

optics

radio interferometer

radio telescope

refracting telescope

refraction

reflecting telescope

reflection

resolution

seeing

theoretical resolution

Chapter 7 Key Terms

closed geometry

curvature of spacetime

expansion of the universe

flat (open) geometry

general theory of relativity

hyperbolic (open) geometry

open geometry

principle of equivalence

spacetime

special theory of relativity

spherical geometry

Chapter 8 Key Terms

accretion

convection

core

crust

density

dynamo model

energy

evolutionary lifetime

greenhouse effect

heat

magnetic field lines

magnetosphere

mantle

plate tectonics

pressure

radioactive dating

terrestrial planets

thermal energy

volcanism

Chapter 9 Key Terms

anorthosites

arroyos

atmospheric escape

basins

breccias

craters

highlands

impact cratering

lowlands

lunar soil

mare (pl. maria)

mare basalts

outgassing

polar caps

retrograde rotation

shield volcano

synchronous rotation

tidal forces

volatiles

Chapter 10 Key Terms

belts

differential rotation

Galilean moons

Jovian planets

metallic hydrogen

ring systems

ringlets

shepherd satellites

zones

Chapter 11 Key Terms

accretion
asteroid
asteroid belt
carbonaceous chondrites
chondrites
chondrules
coma
condensation
condensation sequence
dirty snowball comet model
dust tail
giant impact model
gravitational contraction
ion tail
irons
meteorites
meteoroids
meteors
nebular models
nucleus (of a comet)
Oort Cloud
parent bodies
periodic comets
planetesimals
protoplanets
S-, C-, and M-type asteroids
solar nebula
stones
stony-irons
volatiles
Widmanstätten figures

Chapter 12 Key Terms

active region

blackbody (radiator)

carbon - nitrogen - oxygen (CNO) cycle

chromosphere

conduction

convection

core (of the sun)

corona

coronal holes

differential rotation

dynamo model (solar)

flux

luminosity

neutrino

nuclear fusion

opacity

photosphere

Planck curve

proton - proton (PP) chain

radiation

solar flares

solar wind

Stefan - Boltzmann law

sunspots

surface temperature

Wien's law

Chapter 13 Key Terms

binary star system

giant

heliocentric parallax

Hertzsprung - Russell diagram

inverse-square law for light

luminosity class

main sequence

mass - luminosity relation

spectroscopic binary

spectroscopic distances

stellar lifetimes

stellar spectral sequence

stellar surface temperatures

supergiant

white dwarf

Chapter 14 Key Terms

bipolar outflows

bright nebula

core-mantle grains

coronal interstellar gas

dark clouds

emission nebula

extinction

giant molecular clouds

H I region

H II region

interstellar dust

interstellar gas

interstellar medium

nebula

pre-main-sequence star

protostar

reddening

reflection nebula

T-Tauri stars

young stellar objects

Chap 15 Key Terms

black dwarf
cepheid variables
degenerate electron gas
degenerate gas pressure
evolutionary track
globular clusters
helium flash
horizontal branch
instability strip
main-sequence lifetime
nucleosynthesis
open clusters
periodic (regular) variables
planetary nebula
Population I stars
Population II stars
RR Lyrae stars
star model
thermal pulses
triple-alpha reaction
turnoff point
variable stars
zero-age main sequence (ZAMS)

Chapter 16 Key Terms

accretion disk

beta decay

black hole

Chandrasekhar limit

Crab Nebula

gamma-ray burster

hypernova

inverse beta decay

lighthouse model

millisecond pulsar

neutron star

polarization

pulsar

rapid process

Roche lobe

Schwarzschild radius

singularity

Sirius B

slow process

supernova remnant

synchrotron radiation

Type I supernova

Type II supernova

white dwarf

x-ray bursters

Chapter 17 Key Terms

dark matter

density-wave model

disk (of a galaxy)

galactic rotation curve

halo (of a galaxy)

nuclear bulge

nucleus (of a galaxy)

period - luminosity relationship

spiral arm

spiral tracers

Chapter 18 Key Terms

binary galaxies

clusters of galaxies

Coma cluster

elliptical galaxy

galactic cannibalism

intergalactic medium

irregular galaxy

Local Group

Local Supercluster

Magellanic clouds

mass - luminosity ratio

rotation curve

spiral galaxy (normal and barred)

starburst galaxies

superclusters

supergiant elliptical galaxies

uniformity of nature

voids

zone of avoidance

Chapter 19 Key Terms

active galactic nuclei (AGNs)

active galaxies

BL Lacertae (BL Lac) objects

compact galaxies

double quasar

extended galaxies

gravitational-lens effect

head - tail galaxies

quasar

radio galaxies

radio jets

relativistic Doppler shift

Seyfert galaxies

supermassive black hole

Chapter 20 Key Terms

antimatter

Big Bang model

cosmic blackbody microwave radiation

cosmological principle

cosmology

flatness problem

grand unification theory (GUT)

heavy-particle era

homogeneous

horizon problem

inflationary universe model

isotropic

lepton

light-particle era

matter era

observable universe

physical universe

primeval fireball

quark

radiation era

recombination

strong force

supergravity

universality of physical laws

weak force