CHAPTER 1 The Earth in Context (p 8 – 34)

- the use of parallax to figure distances to stars
- Ptolemy’s belief in an Earth-centered Universe
- the opposing belief in a Sun-centered Universe
- the recognition of Earth as a planet in a solar system
- the discovery of galaxies, including our own Milky Way
- Doppler’s explanation of wavelengths and frequencies altered by moving sources
- the correlation between the Doppler effect and the red shift of the expanding Universe
- the big bang theory of the beginning of the Universe
- the realization that stars have beginnings, lifetimes, and deaths
- the process of element formation in stars
- the development of our round Earth and our planetary system; origin of moon

Key Terms

- atmosphere
- big bang theory
- blue shift
- comets
- convection
- cosmology
- density
- dipole
- Doppler effect
- earthquakes
- ecliptic
- expanding Universe theory
- fault
- galaxy
- geocentric Universe concept
- geothermal gradient
- groundwater
- heliocentric Universe concept
- hydrosphere
- hypsometric curve
- Jovian planets
- magnetic field
- magnetic field lines
- magnetosphere
- meteorite
- nebula
- nuclear fusion
- planetesimals
- pressure
- protoplanets
- protostar
- red shift
- seismic velocity
- seismic velocity discontinuity
- solar wind
- supernova
- terrestrial planets
- topography
- troposphere
- vacuum
- Van Allen radiation belts
- viscosity
- wavelength
CHAPTER 2 – PLATE TECTONICS (P. 35-77)

Key Terms

abyssal plains  
accretionary prism  
active continental margins  
asthenosphere  
axial troughs  
basalt  
bathymetric profile  
bathymetry  
collision  
continental drift hypothesis  
continental rifting  
continental shelves  
convergent plate boundary  
dipole  
dipole field  
divergent plate boundary  
electromagnet  
fossils  
fracture zones  
geographic poles  
glaciers  
global positioning system (GPS)  
hot spots  
ice ages  
lithosphere  
magnetic declination  
magnetic field lines  
magnetic inclination  
magnetic reversal chronology  
magnetometer  
mantle plumes  
Mesozoic  
mid-ocean ridges  
negative magnetic anomaly  
normal polarity  
paleomagnetism  
Paleozoic  
Pangaea  
passive continental margins  
plate boundaries  
plates  
polarity chrons  
polarity subchrons  
polar field  
positive magnetic anomaly  
Precambrian  
reversed polarity  
ridge axis  
sea-floor spreading  
seamounts  
sediment  
slab-pull force  
subduction  
till  
transform fault  
transform plate boundary  
triple junction  
volcanic arc  
volcanic arcs  
Wadati-Benioff zone
CHAPTER 3 MINERALS (P. 78-94)

Key Terms

- anhedral grains
- cleavage
- cleavage planes
- conchoidal fracture
- crystal
- crystal form
- crystal habit
- crystal lattice
- crystalline
- diffraction
- euhedral crystal
- gem
- gemstone
- geode
- hardness
- industrial minerals
- luster
- melting temperature
- mineral
- Mohs hardness scale
- ore minerals
- pegmatites
- polymorphs
- precious stones
- precipitation
- semi-precious stones
- solid-state diffusion
- specific gravity
- streak
- symmetry

INTERLUDE A – ROCK GROUPS (P. 95-101)

What is rock? Rock classification

CHAPTER 4 IGNEOUS ROCKS (P. 102 – 120)

Key Terms

- air-fall tuff
- aphanitic
- ash fall
- ash flow
- assimilation
- batholiths
- country rock (or wall rock)
- crystalline igneous rock
- decompression melting
- dikes
- extrusive igneous rock
- fine-grained
- fractional crystallization
- geotherm
- magma contamination
- matrix
- melt
- melting curve
- obsidian
- partial melting
- pegmatite
- phaneritic
- phenocrysts
- pluton
- porphyritic
- pumice
- pyroclastic rocks
- scoria
CHAPTER 5 – SURFACE SEDIMENTS, SOILS, SEDIMENTARY ROCKS (P. 121 – 152)

Key Terms

- alluvial fan
- argillaceous rocks
- arkose
- bed (or stratum)
- bed surface markings
- biochemical sedimentary rock
- breccia
- caliche
- carbonate rocks
- cementation
- chalk
- chemical sedimentary rock
- chemical weathering
- chert
- clastic (or detrital) sedimentary rock
- coal
- compaction
- conglomerate
- cross beds
- delta
- deposition
- diagenesis

- intracontinental basins
- joints
- lacustrine sediments
- laterite soil
- limestone
- lithification
- matrix
- organic sedimentary rock
- oxidation reaction
- passive-margin basins
- pedalfer soil
- physical weathering (or mechanical weathering)
- recrystallization
- regression
- rift basins
- salt wedging
- sandstone
- sedimentary basin
- sedimentary facies
- shale
- siltstone
- soil
differential weathering  soil erosion
dissolution  soil profile
exfoliation  sorting
floodplains  spall
foreland basins  submarine fan
formation  subsidence
fossiliferous limestone  talus
fossils  transgression
fresh rock  travertine
frost wedging  turbidites
glacial till  turbidity current
graded beds  weathered rock
hydration  zone of accumulation
hydrolysis  zone of leaching

INTERLUDE B – THE ROCK CYCLE (P. 174-179)

CHAPTER 10 – DEEP TIME (HOW OLD IS OLD?) (P. 283-305)

Key Terms

atomic number  geologic time
atomic weight  geologic time scale
blocking temperature  half-life
contact  inclusions
correlation  isotopes
daughter isotope  lithologic correlation
diversification  parent isotope
eon  periods
epochs  principle of fossil succession
eras  principle of uniformitarianism
formation (or stratigraphic formation)  radioactive isotopes
fossil assemblage  radiometric dating (or geochronology)
fossil correlation  relative age
geologic column  stratigraphic column
gologic history  unconformity
geologic map  xenoliths

INTERLUDE E – INTRO TO LANDFORMS AND HYDROLOGIC CYCLE (P. 364-372)
### CHAPTER 13 – MASS WASTING (P. 373-390)

#### Key Terms

<table>
<thead>
<tr>
<th>Term</th>
<th>Term</th>
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<tbody>
<tr>
<td>angle of repose</td>
<td>quick clay</td>
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<tr>
<td>avalanche chutes</td>
<td>regolith</td>
</tr>
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<td>avalanches</td>
<td>relief</td>
</tr>
<tr>
<td>creep</td>
<td>riprap</td>
</tr>
<tr>
<td>debris flow</td>
<td>rockslide; landslide; debris slide</td>
</tr>
<tr>
<td>depositional landforms</td>
<td>shotcrete</td>
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<tr>
<td>downslope force; resistance force</td>
<td>slope failure</td>
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<tr>
<td>erosional landforms</td>
<td>slumping/slump</td>
</tr>
<tr>
<td>glide horizon</td>
<td>snow avalanche or debris avalanche</td>
</tr>
<tr>
<td>head scarp</td>
<td>solifluction</td>
</tr>
<tr>
<td>lahars</td>
<td>stable slopes; unstable slopes</td>
</tr>
<tr>
<td>landslide-potential maps</td>
<td>substrate</td>
</tr>
<tr>
<td>mass movement (or mass wasting)</td>
<td>surface tension</td>
</tr>
<tr>
<td>mudflow</td>
<td>talus</td>
</tr>
<tr>
<td>natural hazard</td>
<td>undercutting</td>
</tr>
<tr>
<td>permafrost</td>
<td>unstable ground</td>
</tr>
<tr>
<td>pressure ridge</td>
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</tr>
</tbody>
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### CHAPTER 14 – RIVERS AND RUNNING WATER (P. 391-417)

#### Key Terms

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<thead>
<tr>
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<tbody>
<tr>
<td>abandoned meander</td>
<td>longitudinal profile</td>
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<tr>
<td>abrasion</td>
<td>meander neck</td>
</tr>
<tr>
<td>alluvial fan</td>
<td>meanders</td>
</tr>
<tr>
<td>alluvium</td>
<td>natural levees</td>
</tr>
<tr>
<td>antecedent streams</td>
<td>oxbow lake</td>
</tr>
<tr>
<td>avulsion</td>
<td>peneplains</td>
</tr>
<tr>
<td>backswamp</td>
<td>permanent stream</td>
</tr>
<tr>
<td>bar</td>
<td>plunge pool</td>
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<tr>
<td>base level; local base level; ultimate base level</td>
<td>point bar</td>
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<td>bird’s-foot delta</td>
<td>pothole</td>
</tr>
<tr>
<td>bluff</td>
<td>precipitation</td>
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<tr>
<td>braided stream</td>
<td>radial network</td>
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<tr>
<td>canyon</td>
<td>rapids</td>
</tr>
<tr>
<td>capacity</td>
<td>rectangular network</td>
</tr>
<tr>
<td>channels</td>
<td>residence time</td>
</tr>
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</table>
competence  
continental divide  
cut bank  
cutoff  
delta  
dendritic network  
discharge  
distributaries  
downcutting  
<no_transcription>  
drainage basin (or catchment or watershed)  
drainage divide  
drainage network  
dry wash (wadi)  
ephemeral stream  
flash floods  
flood  
flood stage  
fluvial deposits  
headward erosion  
hydrosphere  
incised meanders  
jet stream  
saltation  
scouring  
seasonal floods  
sediment load  
sediment sorting  
sheetwash  
stream piracy (or stream capture)  
stream rejuvenation  
streams  
sediment load  
sediment sorting  
sheetwash  
stream piracy (or stream capture)  
stream rejuvenation  
streams  
supervised streams  
trellis network  
tributaries  
trunk stream  
turbulence (or turbulent flow)  
valey  
water gap  
water table  
waterfalls  
wetted perimeter  
wind gap  
yazoo streams

CHAPTER 16 – GROUNDWATER (P. 450-472)

Key Terms

aquicludes  
aquifers  
aquitards  
artesian springs  
artesian well  
bioremediation  
capillary fringe  
cone of depression  
confined aquifers  
contaminant plume  
Darcy’s law  
disappearing streams  

injection wells  
karst landscape  
limestone column  
mud pot  
ordinary well  
perched water table  
permeable  
pore  
porosity  
potentiometric surface  
principal aquifer  
recharge area
discharge area  saturated zone (or zone of saturation)
drawdown  seasonal wells
dripstone  sinkhole
dry well  soda straw
flowstone  soil moisture
geothermal regions  speleothems
geyser  springs
groundwater  stalactite
hard water  stalagmite
tower karst
head of the water table  unconfined aquifers
hot springs  unsaturated zone (or zone of aeration)
hydraulic conductivity  water table
hydraulic gradient  wells
hydrologic cycle
infiltrate

CHAPTER 17 DESERTS (P. 473-492)

Key Terms

alluvial fan  insolation
bajada  interior basin lakes
barchan dunes  intermittent (or ephemeral) streams
bed load  lag deposit
blowout  leach
bornhardts  loess
buttes  longitudinal dunes (or seif dunes)
caliche  mesas
chimneys  parabolic dunes
continental-interior deserts  pediment
convergence zone  petroglyphs
coriolis effect  playa
cestas  polar cells
deflation  prevailing winds
desert  rain shadow deserts
desert pavement  reg
desert varnish  saltation
desertification  scarp retreat
dip slope  slip face
<table>
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<th>Term</th>
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<tbody>
<tr>
<td>divergence zone</td>
<td>star-shaped dunes</td>
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<tr>
<td>dust storm</td>
<td>suspended load</td>
</tr>
<tr>
<td>erg</td>
<td>talus apron</td>
</tr>
<tr>
<td>Ferrel cells</td>
<td>transverse dunes</td>
</tr>
<tr>
<td>Hadley cells</td>
<td>ventifacts (faceted rocks)</td>
</tr>
<tr>
<td>hamada</td>
<td>wadis</td>
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<tr>
<td>hoodoos</td>
<td>wind abrasion</td>
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<td>inselberg</td>
<td>yardangs</td>
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**CHAPTER 18 – GLACIERS (P.493-524)**

**Key Terms**

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<td>kame</td>
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<td>arête</td>
<td>kettle hole</td>
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<td>catabatic winds</td>
<td>knob-and-kettle topography</td>
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<tr>
<td>channeled scablands</td>
<td>lateral moraines</td>
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<tr>
<td>chatter marks</td>
<td>Laurentide ice sheet</td>
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<tr>
<td>cirque glaciers</td>
<td>little ice age</td>
</tr>
<tr>
<td>cirques</td>
<td>lodgment till</td>
</tr>
<tr>
<td>continental glaciers (ice sheets)</td>
<td>loess</td>
</tr>
<tr>
<td>coulees</td>
<td>medial moraine</td>
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<tr>
<td>drumlins</td>
<td>meltwater lakes</td>
</tr>
<tr>
<td>eccentricity cycle</td>
<td>Milankovitch cycles</td>
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<tr>
<td>end moraine</td>
<td>mountain (or alpine) glaciers</td>
</tr>
<tr>
<td>erratics</td>
<td>mountain ice caps</td>
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<tr>
<td>eskers</td>
<td>outwash plain</td>
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<tr>
<td>fjords</td>
<td>paleosol</td>
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<tr>
<td>glacial abrasion</td>
<td>patterned ground</td>
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<tr>
<td>glacial drift</td>
<td>periglacial environments</td>
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<tr>
<td>glacial incorporation</td>
<td>permafrost</td>
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<tr>
<td>glacial marine sediment</td>
<td>Pleistocene Ice Age</td>
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<tr>
<td>glacial outwash</td>
<td>pluvial lakes</td>
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<tr>
<td>glacial plowing</td>
<td>precession</td>
</tr>
<tr>
<td>glacial plucking (or glacial quarrying)</td>
<td>recessional moraines</td>
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<tr>
<td>glacial rebound</td>
<td>roche moutonnée</td>
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<tr>
<td>glacial subsidence</td>
<td>rock glacier</td>
</tr>
<tr>
<td>glacial till (or unstratified drift)</td>
<td>rock flour</td>
</tr>
<tr>
<td>glacially polished surfaces</td>
<td>stone rings</td>
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<tr>
<td>glaciations</td>
<td>stratified drift</td>
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<tr>
<td>glaciers</td>
<td>tarn</td>
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<tr>
<td>ground moraine</td>
<td>terminal moraine</td>
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<tr>
<td>hanging valleys</td>
<td>terminus (or toe)</td>
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<tr>
<td>head</td>
<td>tillites</td>
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<td>Holocene</td>
<td>truncated spurs</td>
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<tr>
<td>horn</td>
<td>tundra</td>
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<tr>
<td>ice age</td>
<td>U-shaped valley profile</td>
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<tr>
<td>ice shelves</td>
<td>valley glaciers</td>
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<tr>
<td>ice-margin lake</td>
<td>varve</td>
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<td>insolation</td>
<td>V-shaped valley profile</td>
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<td>interglacials</td>
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CHAPTER 19 – GLOBAL CLIMATE CHANGE (P. 525-545)

Key Terms

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<tr>
<th>acid rain</th>
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<td>albedo</td>
<td>ice-house periods</td>
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<td>anthropogenic</td>
<td>K-T boundary event</td>
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<td>biodiversity</td>
<td>mass-extinction events</td>
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<td>biogeochemical cycle</td>
<td>ozone hole</td>
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<td>biosphere</td>
<td>paleoclimate</td>
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<td>bolide</td>
<td>photochemical smog</td>
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<td>catastrophic change</td>
<td>pollen</td>
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<td>Earth system</td>
<td>red giant</td>
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<td>ecosystem</td>
<td>rock cycle</td>
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<td>eustatic sea-level change</td>
<td>sedimentary sequence</td>
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<tr>
<td>global change</td>
<td>sunspot cycle</td>
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<tr>
<td>global climate change</td>
<td>supercontinent cycle</td>
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<tr>
<td>global warming</td>
<td>superplume</td>
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