

Chronostratigraphy

An elements of stratigraphy that deals with the relative time relations and ages of rock bodies.

Chronostratigraphic classification: The organization of rocks into units on the basis of their age or time of origin.

Inferential UNITS

Groups of strata recognized as being formed during a specific interval of geological time .These units are not self-evident nor directly observable;

Chronostratigraphic units: Are bodies of rocks(layered or unlayered), that were formed during a specified interval of a geologic time,they are bounded by synchronous horizons.

synchronous horizons(chronohorizon):A stratigraphic surface or interface that is chronous, everywhere of the same age.

position within chronostratigraphic unit is expressed by adjectives of position such as; basal, lower, middle, upper, etc.; position within a geochronologic unit is expressed by temporal adjectives such as: early, middle, late, etc.

e.g.: lower Cambrian strata/Early Cambrian age

middle Cambrian strata/ middle Cambrian strata

upper Cambrian strata / late Cambrian strata.

Ranks or types (Hierarchy) of inferential stratigraphic units

Chronostratigraphic (Time rock) units	Geochronologic (geologic time units)
Eon	Eonotheme
Era	Eratheme
Period	System
Epoch	Series
Age	Stage
Chron	Chronozone

Many scientists believe **systems & series** are units of strata bounded by time surfaces.

Stage & Age: all rocks that formed during an age.its a lowest rank of chronostratigraphic unit below series.Age: its' equivalent geochronologic unit, represents their times during rock' deposition .

Series & Epochs: Series is a chronostratigraphic unit ranking above a stage and below a system,subdivision of System,while Epoch its' equivalent geochronologic unit, represents their times during rock deposition .

Systems & periods: system is a major unit in the chronostratigraphic hierarchy(above series,below eratheme) while its equivalent geochronologic unit (**period**, represents their times of rock' deposition.

e.g: Triassic system (rocks are deposited) during Triassic period Eratheme& Eras : *An Eratheme consists of a group of systems ,the geochronologic equivalent of an eratheme is an Era.The names of earathemes were chosen to reflect major changes of the development of life on the earth.(Paleozoic the old life,Mesozoic intermediate life,Cenozoic recent life). Eras its larger*

equivalent time units , on the basis of catastrophic concept which closed to unusual cataclysmic orogenys

Eonotheme & Eon: Eonotheme is a chronostratigraphic unit greater than an **Eratheme**,) while Eon, its equivalent geochronologic unit represents their times of rock' deposition.

*Three eonothemes are generally recognized from older to younger: **the Archean, Proterozoic & PHANEROZOIC.**

*s e.g: Phanerozoic Eon

Geochronologic UNITS (geologic time UNITS)

It is a division of time , it is not a material units , but it corresponds to the **time span.**