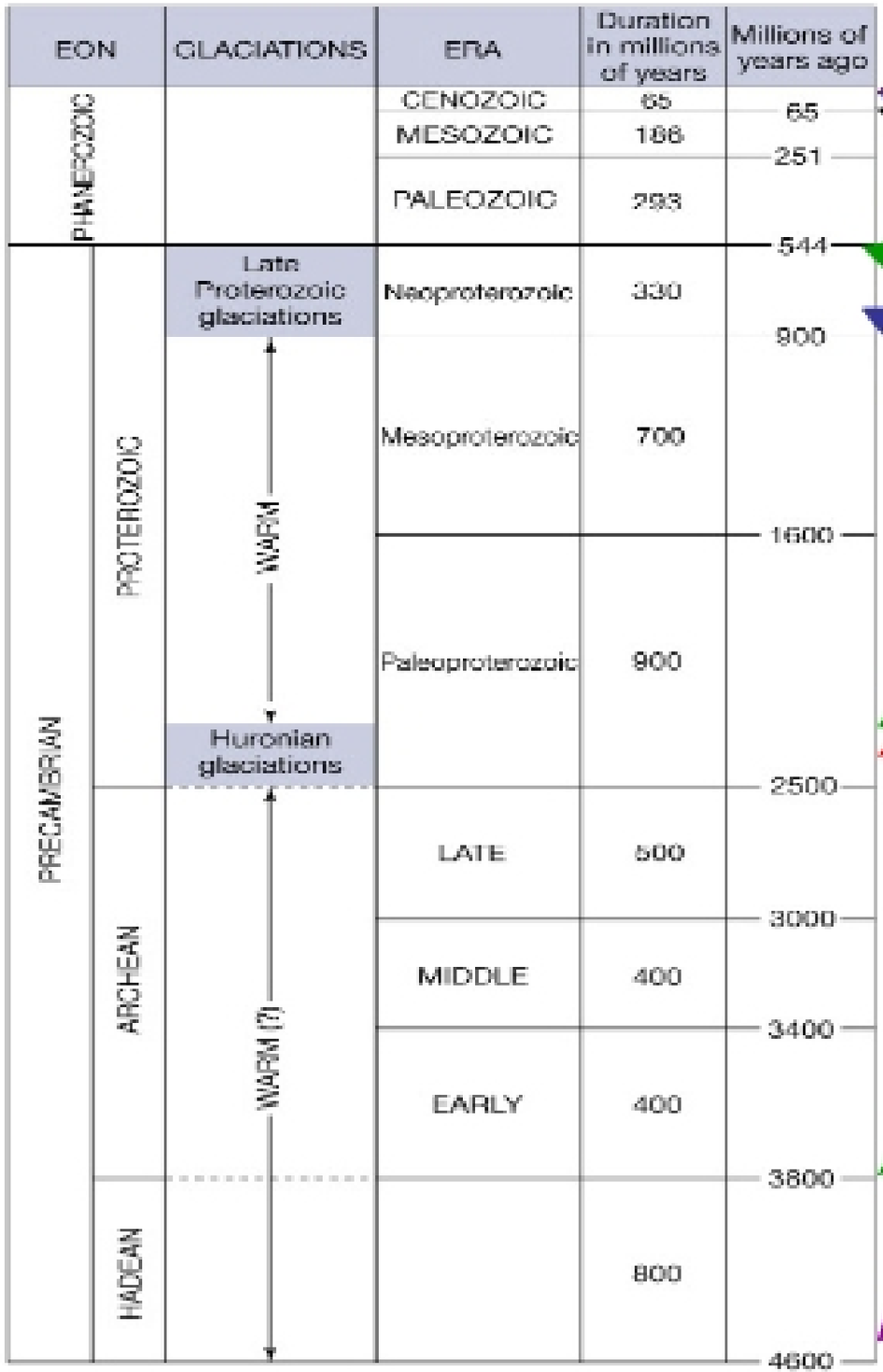
Lecture 20

Origin of the atmosphere (Chap. 10)

The carbon cycle and long-term climate
(Chap. 8 of the textbook: p.158-170)



end of last ice-age; begin civilization

beginning of modern era of ice-ages

asteroid impact; death of dinosaurs

"Cambrian explosion"
multicellular animal fossils

Snowball Earth episodes #2
life survives in pockets

oldest fossil visible to naked eye

rise of atmospheric oxygen
(greatest global pollution event;
deadly to nearly all existing life)

Snowball Earth episodes #1

life! (single-cell microbes)

formation of Earth-Moon system

Earth is unfathomably old
most of Earth history is very alien

Geological Time: Fig 8-11

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