

ANTHROPOLOGY 202 September 24, 2014

An Introduction to World Prehistory

II. Archaeology

B. Dating and Divisions of Time

1. Discovering Geologic Time, the Antiquity of the Earth, and Human Prehistory



ANT 202 Wednesday September 24, 2014

STUDENTS WITH LAST NAMES **A-C
PLEASE
STAY FOR A DEMONSTRATION
AT THE END OF CLASS**

**ALL OTHER STUDENTS WILL BE DISMISSED
10-15 minutes Early**

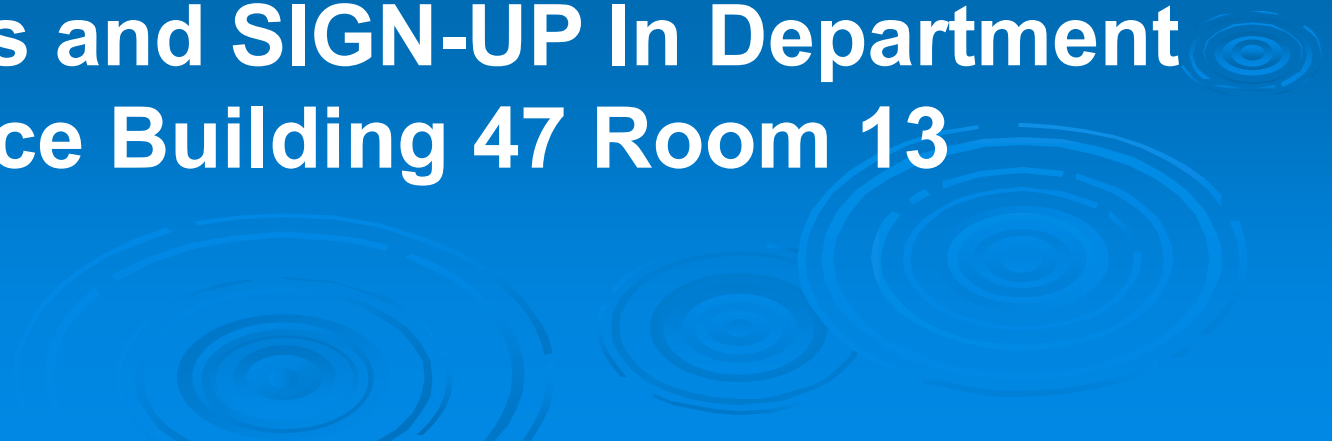


**WELCOME BACK BBQ/Potluck
SOCIAL SCIENCES STUDENTS**

FRIDAY OCTOBER 3 5:00-7:30 PM

**Dr. Keese's BEACH HOUSE, 234 Front
Street
Avila Beach**

**Directions and SIGN-UP In Department
Office Building 47 Room 13**



Archaeology





Artifacts



Artifacts



Features



Artifacts



Features



Ecofacts



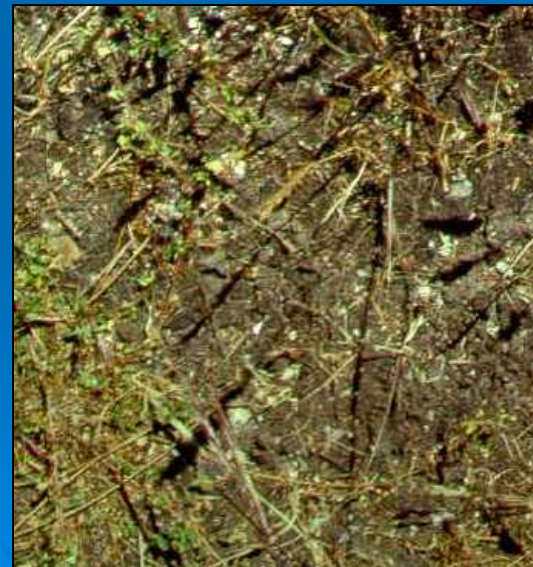
Artifacts



Features



Ecofacts



Sites (Midden)

II. Archaeology

B. Dating and Divisions of Time

1. Discovering Geologic Time and the Antiquity of the Earth



A black and white portrait of James Ussher, an elderly man with a full beard and mustache, wearing a large, ruffled collar. The portrait is set against a dark, textured background.

a. 1600s
James Ussher
Archbishop
Church of Ireland
Early 1600s

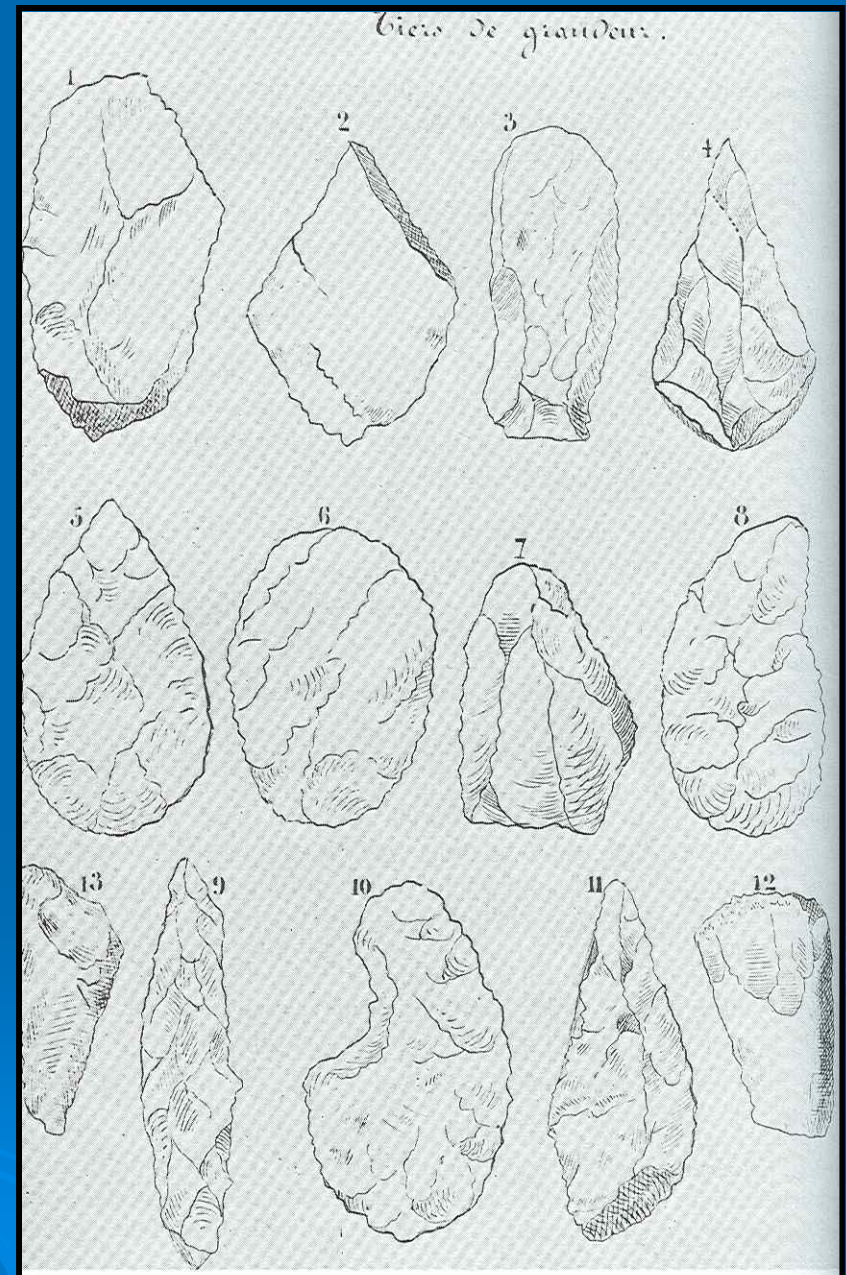
Earth created
6000 years ago

Medieval Concept
of Order

PROBLEM:

Acheulian Hand Axes:

Look like they were made
By human beings



c. Contributions from Geology

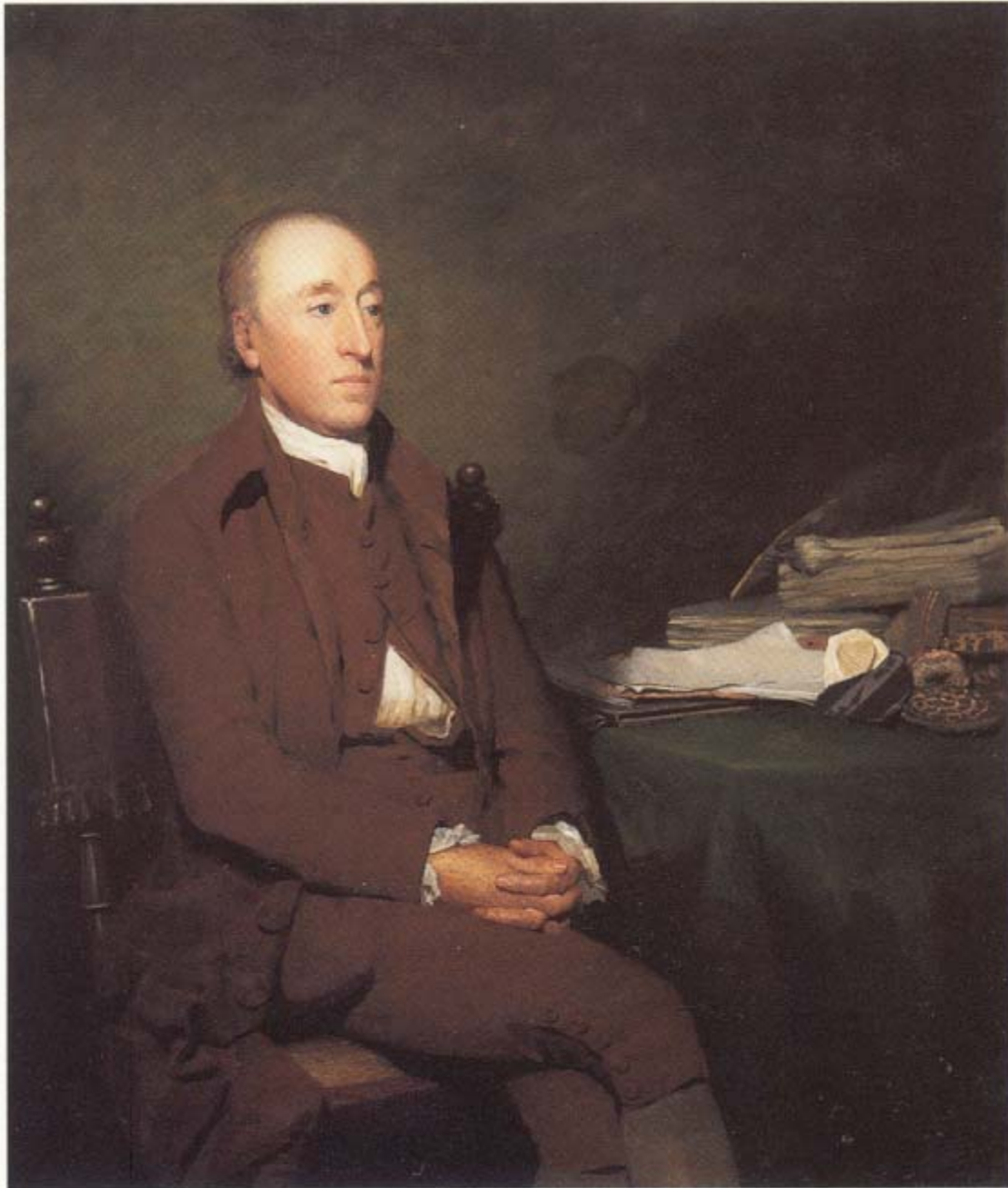
i. Uniformitarianism—James Hutton 1785

ii. Stratigraphy and the law of superposition



Empiricism: The importance of Physical Evidence





James Hutton and the principle of Uniformitarianism=

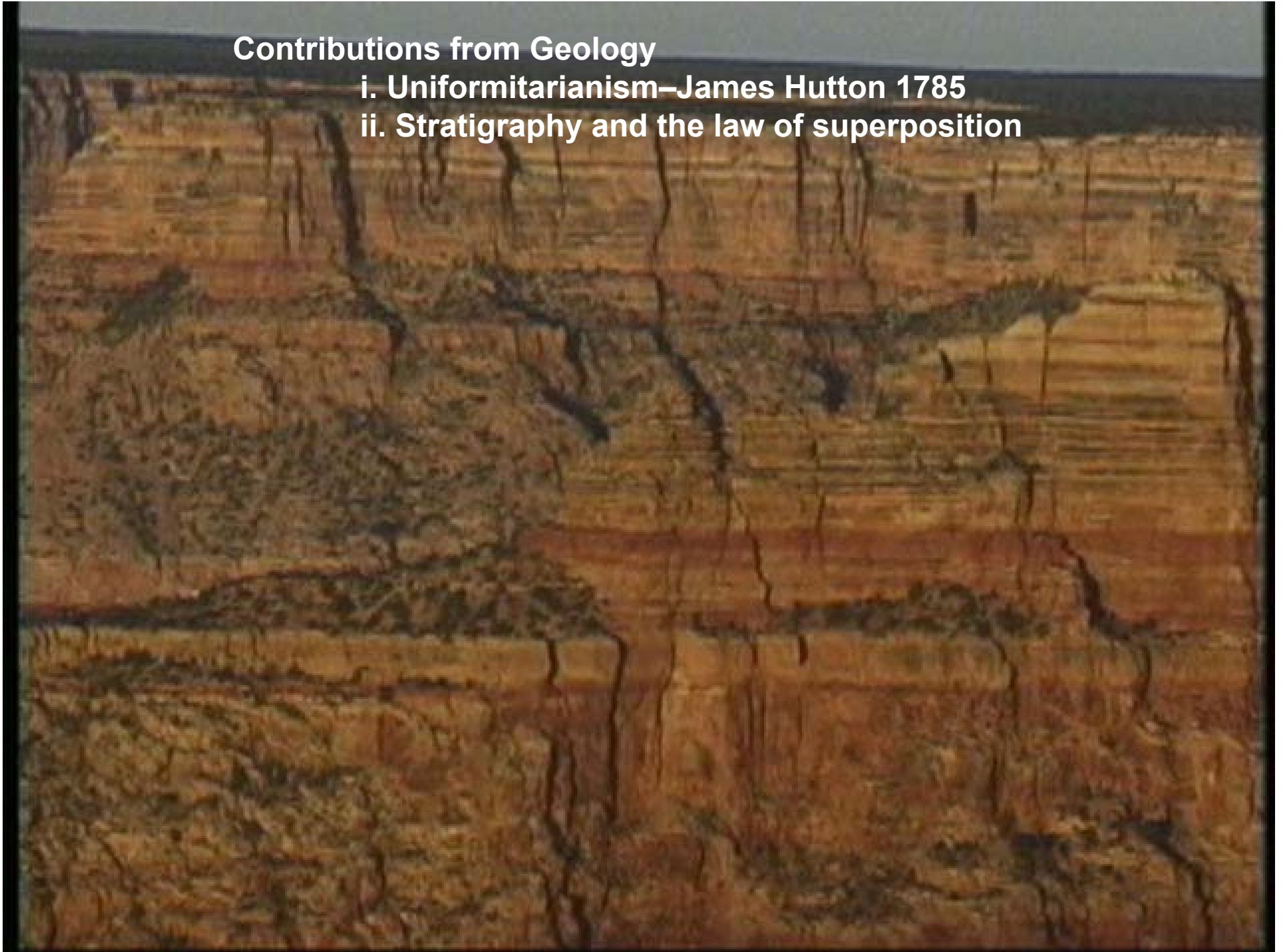
the processes that are
observable today
shaping the earth's
surface-

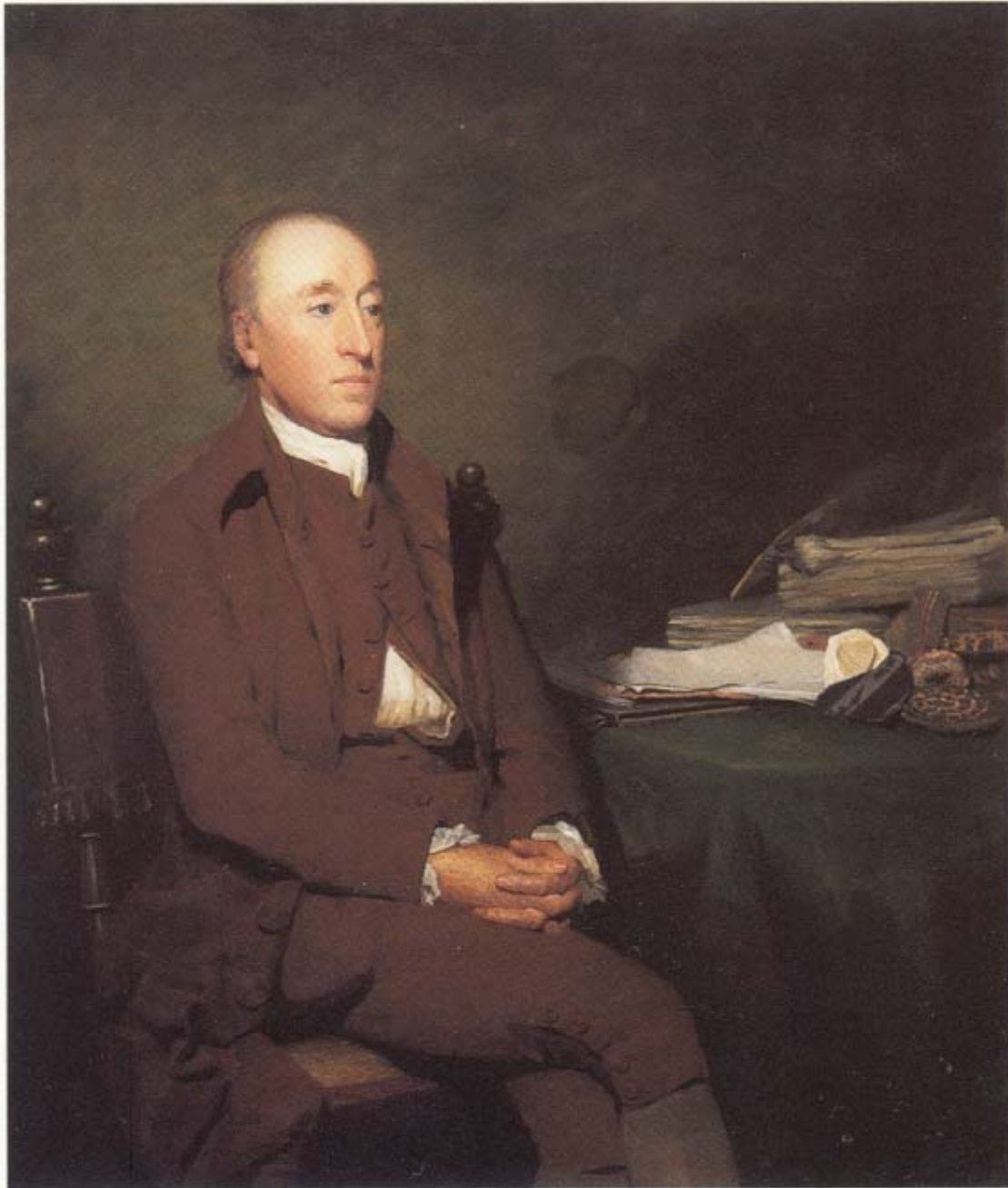
are the same ones
that have been in
effect throughout time

Contributions from Geology

i. Uniformitarianism—James Hutton 1785

ii. Stratigraphy and the law of superposition

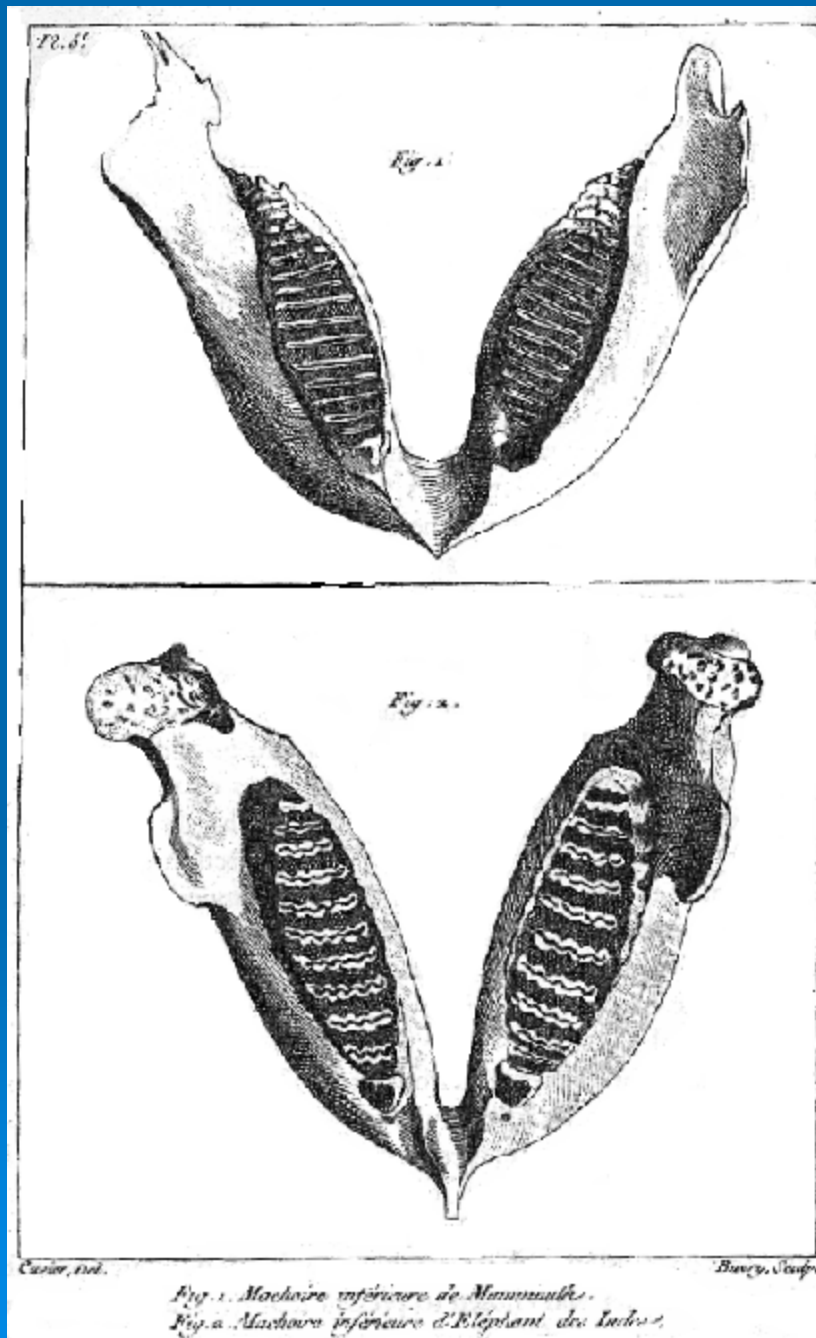




James Hutton
and the principle of
Uniformitarianism=

Therefore:
The earth is older
than
6000 years

2. The Discovery of Prehistory

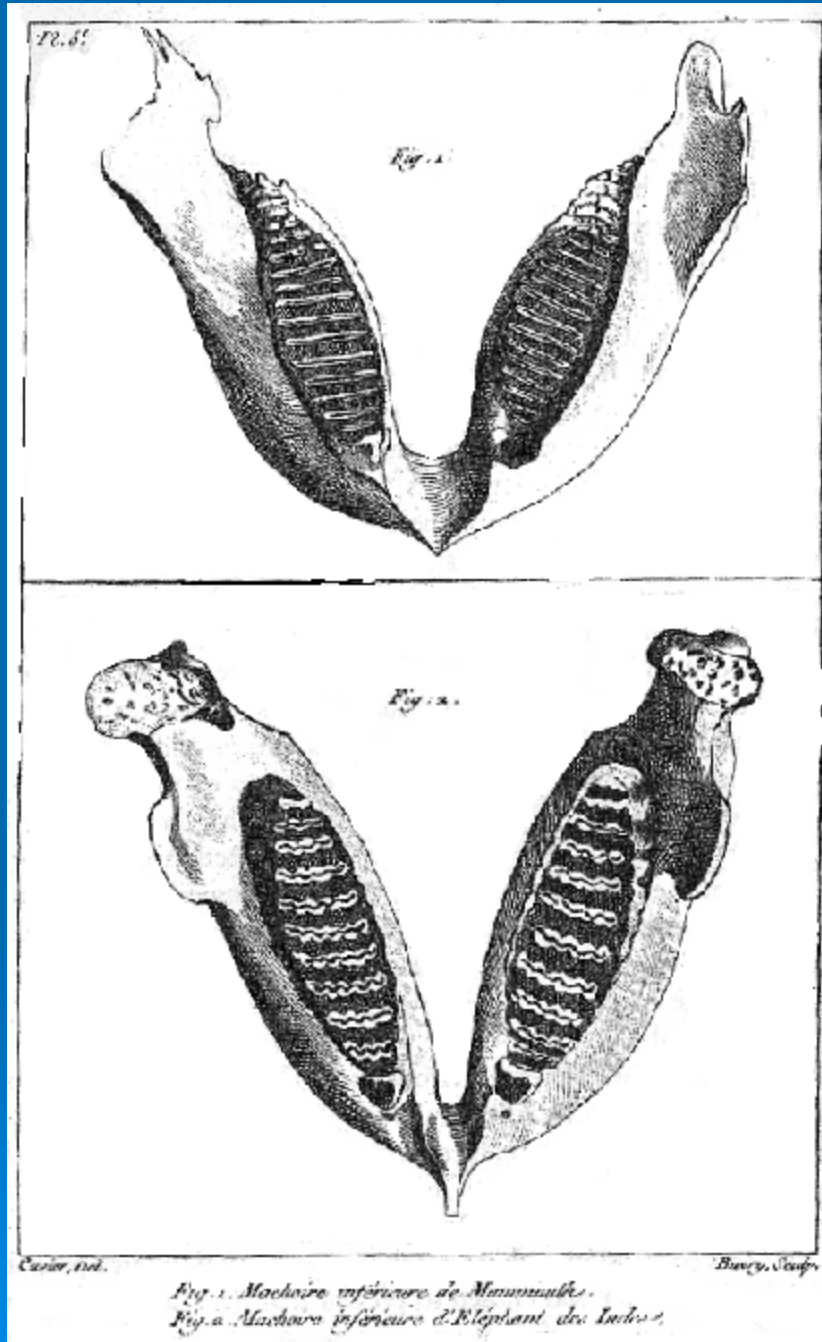


Comparison of
Mammoth dentition
versus elephant
Dentition
By Georges Cuvier

Comparison of Mammoth dentition versus elephant Dentition By Georges Cuvier

Extinctions
Caused by Catastrophic
Events
Marked by **Diluvium**

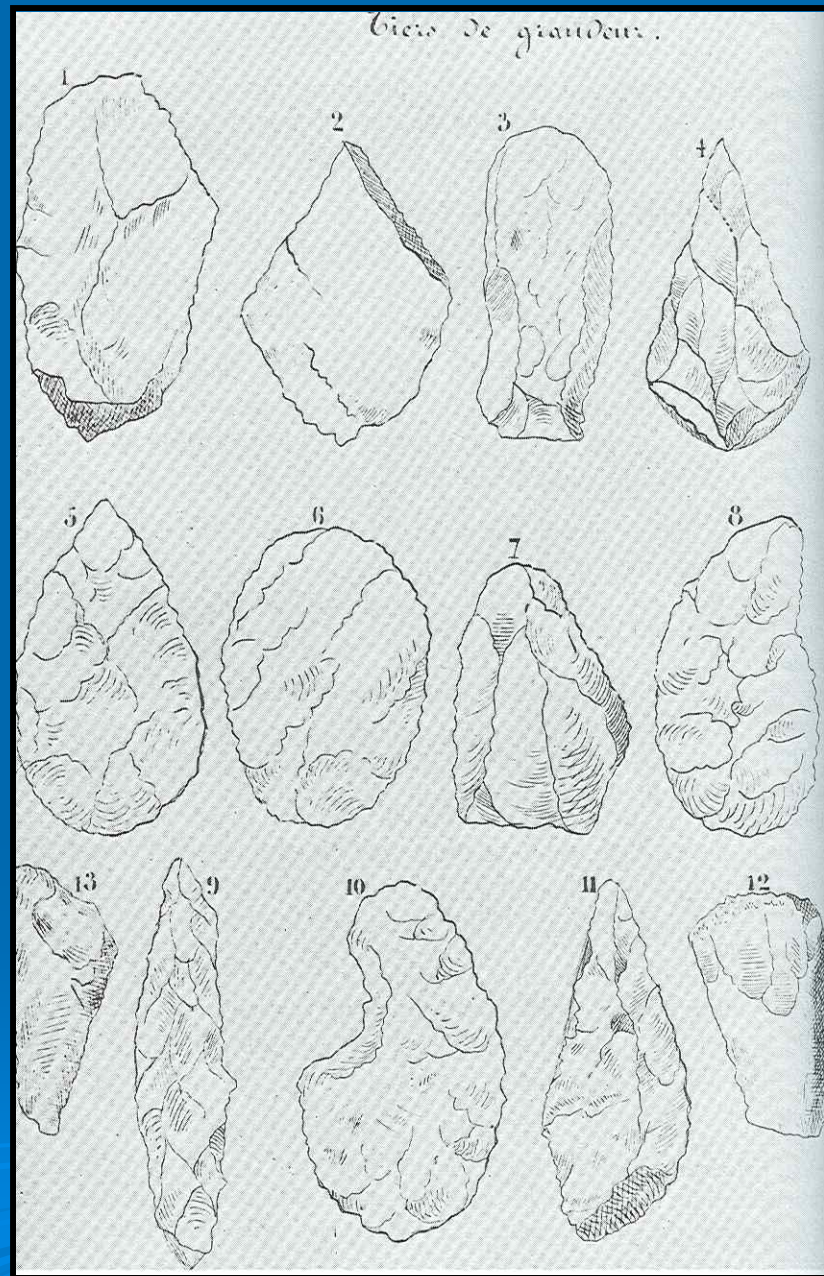
William Buckland:
Equated catastrophes with
the biblical flood



Drawings of Acheulian Hand Axes

By John Frere
1797

Below the Diluvium?



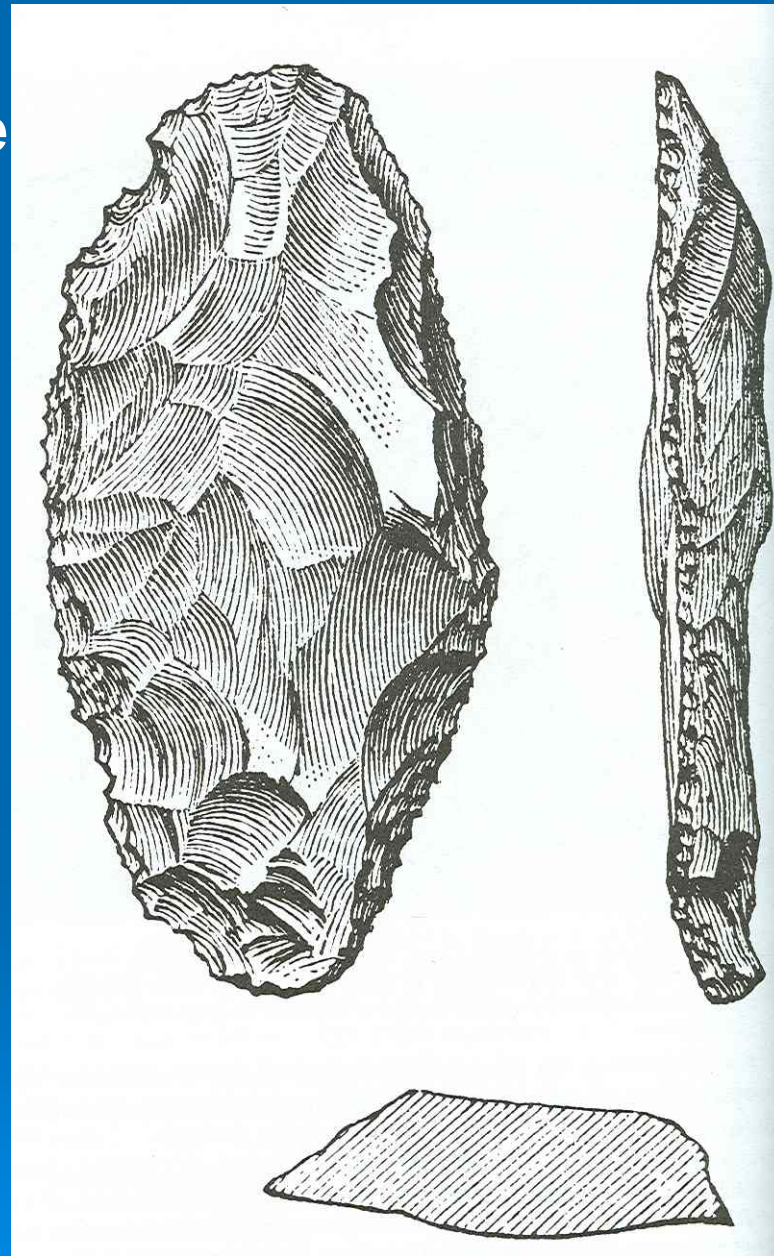
...weapons of war, fabricated by a people who had not the use of metals... The situation in which these weapons were found may tempt us to refer them to a very remote period indeed, even beyond that of the present world..



Brixham Cave



Brixham Cave “Flint”



1859 Pronouncement of the Royal Society of Britain:

“Man has been on Earth since a very ancient time ..



3. Divisions of Time (Relative and Absolute)

a. Geologic



Era: Cenozoic 65 Million Years Ago- Present

Period: Tertiary 65-2.0 Million Years Ago

Quaternary 2.0 Million Years Ago- Present

Epoch: Miocene 25-5.5 Million Years Ago

Pliocene 5.5-2.0 Million Years Ago

Pleistocene 2 million - 12,000 Years Ago

Holocene 12,000 Years Ago- Present



b. Cultural

i. Historical- Danish Three Age System (A relative dating scheme)

Based on CULTURAL TRAITS)



Relative Dating	Traits
Youngest	Iron Tools
Intermediate	Bronze Tools
Oldest	Stone tools

Relative Dating	Age
Youngest	Iron Age
Intermediate	Bronze Age
Oldest	Stone Age

Absolute Dating (TODAY-Europe)	Age
3200 BP-	Iron Age
5000-3200 BP	Bronze Age
2.5 Million- 5000 BP	Stone Age

*BP= Before Present

Modern Divisions of Time based on Cultural Criteria:

Paleolithic= Old Stone Age



Modern Divisions of Time based on Cultural Criteria:

Paleolithic= Old Stone Age

Neolithic=New Stone Age FARMING!!!!!!!



4. Absolute Dating Methods (Assigning, artifacts, features, skeletal remains, and fossils to Absolute Time)



4. Dating Methods (Assigning, artifacts, features, skeletal remains, and fossils to Absolute Time)

- Historic Records



4. Dating Methods (Assigning, artifacts, features, skeletal remains, and fossils to Absolute Time)

- Historic Records
- Dendrochronology



4. Dating Methods (Assigning, artifacts, features, skeletal remains, and fossils to Absolute Time)

- Historic Records
- Dendrochronology
- Radiocarbon Dating



4. Dating Methods (Assigning, artifacts, features, skeletal remains, and fossils to Absolute Time)

- Historic Records
- Dendrochronology
- Radiocarbon Dating
- Potassium Argon Dating



An Introduction to Fracture Mechanics and Lithic Technology

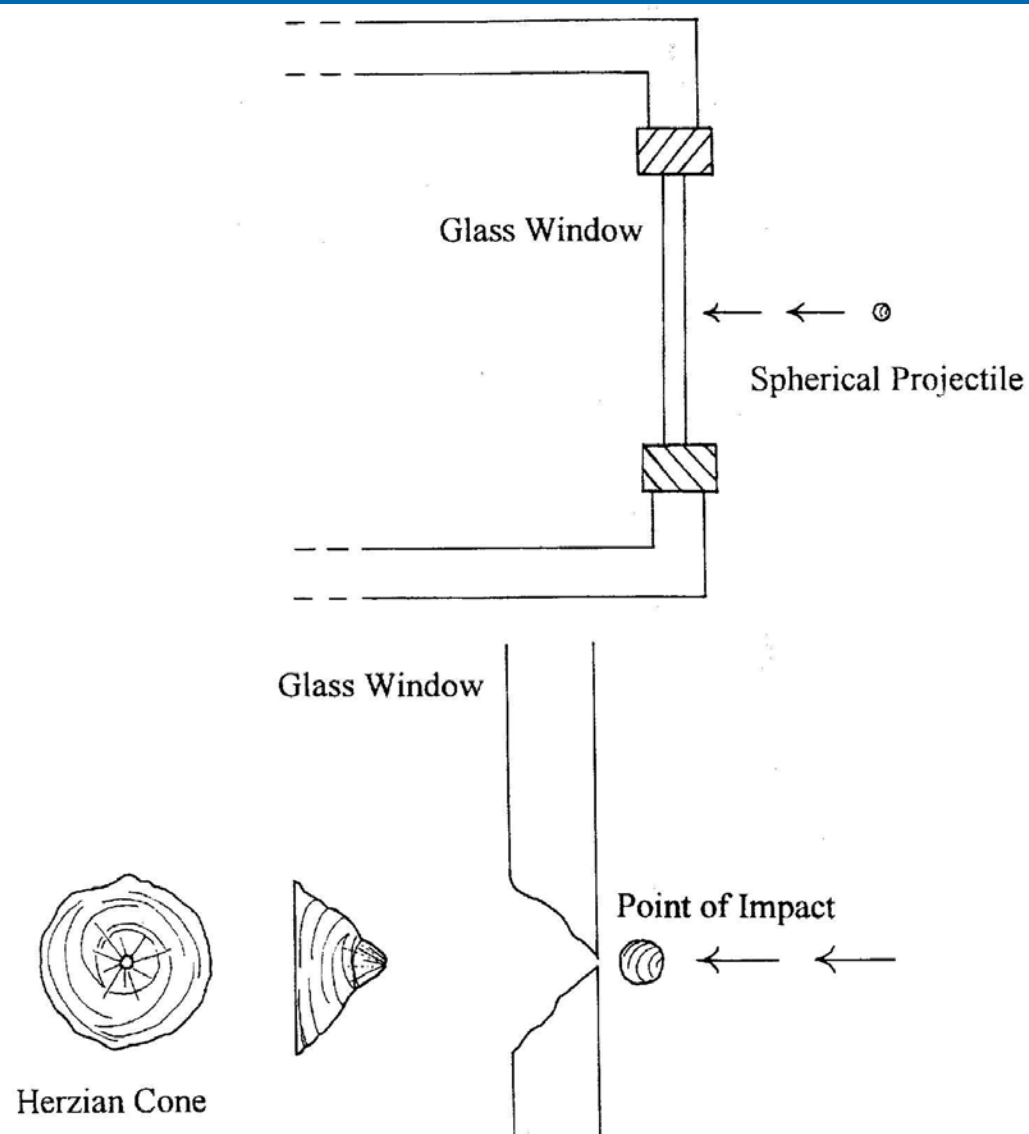


Figure 2.12 Schematic illustration of spherical projectile impacting a pane of glass at a 90° angle to produce a Hertzian cone.