

## CSE-101 Class 6 Notes

### CSE 101 - Class 6

Comets - Snow + ice - iron - nickel

Solar winds blow tails

Short period comet - comes around every few years

Long period comet - fly's by once

Short life comets have < 10,000 year life span

Earth goes around sun 66,000 MPH

Atmosphere acts as cushion - slows down comets debris

Friction burns the fragments up

5 per day make it to the surface

Barringer Meteor Crater, Arizona - Barringer bought it looking for nickel

Jan Ort - proposed ort cloud - shell of comets at remote frontiers of solar system - 50,000 AU away from sun

No one has ever seen Ort cloud

Inverse square law - how much pull at 50,000 AU

Pluto 39AU

Based on mathematical errors

Comets can not loose material forever

Psalms 19:1

"The heavens declare the glory of God; and the firmament sheweth his handywork."

Pslams 8:3-4

[3] When I consider thy heavens, the work of thy fingers, the moon and the stars, which thou hast ordained;

[4] What is man, that thou art mindful of him? and the son of man, that thou visitest him?

Psalms 39:3

"while I was musing the fire burned"

Muse = to think

Theist - Atheist

Amuse = to not think

Earth's magnetic field getting weaker

In 150 years it has decreased by 6%

Can not be older than 25000 years

Thomas G Barnes - magnetic reversals

Dragged equipment along bottom of ocean floor - drew line through stronger + weaker sine wave

Strong magnetic field = less carbon 14

Earth Slowing Down

1990 Added 1 second to year

Astronomy magazine 1992 - June 1st will be 1 sec longer

1953 till today add 1 second every 1 - 1.5 years

## CSE-101 Class 6 Notes

Days grow longer by 1/1000 of a second each day

Causes slow down:

1. Inside of earth liquid - not smooth inside

Mohorovicic discontinuity (The Moho)

Where magma turns to solid

Know earth has liquid core due to 2 different types of waves produced by earthquake

S + P waves - one speed through solid - one through liquid

Core may be another solid mass or hollow

2. Liquid surface

Water pushes against land - tidal breaking

3. Wind currents - Coriolis Effect

Wind blowing against mountains - sun heating air rising + falling

Billions of years ago earth moved to fast to live

Jupiter spins every 10 hours

Venus spins 224.7 days

Faster sphere spins it flattens out

4.3 BYA if earth was cooling it would have flattened pancake

Sahara desert

Prevailing winds

Hot air blows and kills trees next to it

Desertification

Minerals leave ground at next rain and nothing will ever grow again

1300mi N to S

Grows 4 mi / year

Desert is approx 4000 years old

Why is largest desert not older than 4000 years?

Oil pressure - 20,000 psi

Drill 12- hole down 1000 ft - insert blow out prevention ring - drill 6- hole rest of way

Oil pressure will erode the surface if blow out prevention not in place

Rocks on top of oil could not hold oil pressure for more than 10,000 years

Why is oil still there - Where did it come from?

Oil is living organisms - pressure + heat

Garbage squeezed to oil 20 min

Hitler tried using Jews to make oil - too expensive

3800 ft under TX

Sinclair - dinosaur as symbol

Mellowed in the earth for millions of years

World full of people - animals - plants

Flood - volcanoes - mud flows - ash - rocks - lava

1 cu ft water = 62 - 64lbs

10 ft high 620 lbs / sq ft

Rocks weigh more than water - 100 lbs / sq ft

3000 ft of rocks = 300,000 psf

Oil between 3000 - 10,000 ft

Ice cores - Greenland - South Pole

## **CSE-101 Class 6 Notes**

10,000 ft deepest hole

Layers = summer - winter

Lost squadron - Knoxville - Middlesbrough KT

WWII planes ran out of gas - landed in Greenland

Rich guy from KT decided to go get them

Used ground penetrating radar - under 263ft of ice in 48 years

Melted down Ice to get to planes

$5 \frac{1}{2} \text{ ft / year} - 10000\text{ft} / 5 \frac{1}{2} \text{ ft / year} = 8000 \text{ years}$

Warm day cold day rings

Varves - Ice layers