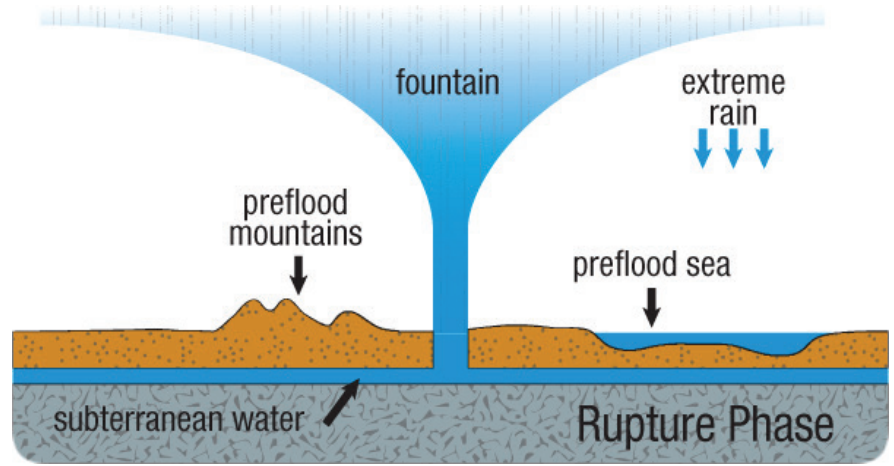


## Video 3C: The Rupture Phase

1) Remember from the initial conditions that the moon had been pulling and stretching the granite shell for hundreds of years. Elastic strain was being stored in the crust. Also, the SCW was creating immense pressure pushing upward.

2) We assume that the Earth was not created with a fatal flaw. It was perfect in its design, so we can't possibly know what caused the initial crack to form.



3) We must assume that for some reason a crack did start, and we have that day recorded in the book of Genesis: The 17th day of the 2nd month of the 600th year of Noah's life. On that day "all the fountains of the Great Deep broke forth. Did the people on the ark actually see the jetting fountains from a distance? Possibly, but we can't know that for sure.

- 4) How long would it have taken for a crack to go around the entire globe? \_\_\_\_\_
- 5) HPT proposes that some of the subterranean water came back down as \_\_\_\_\_ and some as \_\_\_\_\_
- 6) Where might the crack have started? \_\_\_\_\_
- 7) What happened at the "T" in what is now the Indian Ocean? \_\_\_\_\_
- 8) What small model leads us to believe a rupture would have been linear? \_\_\_\_\_
- 9) What was the pressure at the base of the crack? \_\_\_\_\_ At the top? \_\_\_\_\_ Depth of crack: \_\_\_\_\_  
 What happens to SCW if it is allowed to expand this quickly? \_\_\_\_\_  
 Was the water still dangerously hot by the time it reached the surface? \_\_\_\_\_
- 10) How much total energy could have been released by the SCW? \_\_\_\_\_  
 Why didn't this energy destroy the planet? \_\_\_\_\_
- 11) Name a safe place to dump extra heat energy: \_\_\_\_\_
- 12) Why didn't the fountains strip earth of its atmosphere? \_\_\_\_\_
- 13) Rocks that were carried up with the water from the Great Deep became \_\_\_\_\_
- 14) The total volume of all asteroids in the solar system is \_\_\_\_\_ % of Earth's volume.  
 Even if you add the volume of all the Trans-Neptunian Objects (Pluto's neighbors) it is still only \_\_\_\_\_ % of Earth.
- 15) Water and rocks coming up from the Great Deep were probably going faster than \_\_\_\_\_ (escape velocity).
- 16) Can fast-moving water erode granite very quickly? \_\_\_\_\_ EX: \_\_\_\_\_
- 17) What ocean features might be explained by the erosion caused by the escaping water? \_\_\_\_\_
- 18) Did ALL of the subterranean water escape? \_\_\_\_\_ Name a location that likely has salt water deep underneath: \_\_\_\_\_ A drilling site that found deep salt water: \_\_\_\_\_
- 19) As the water escaped, the crust would have flexed slightly creating a phenomenon called \_\_\_\_\_.
- 20) Flutter would have made many cracks in multiple directions, but most of these did not become major faults. Today we see these cracks as \_\_\_\_\_.
- 21) Fluttering quartz created massive amounts of \_\_\_\_\_ and is probably the origin of \_\_\_\_\_.