

# NOVA – Origins – Earth is Born

- 1) During Earth's infancy, was the Moon closer or farther from the Earth ?
- 2) How many years comprise Earth's history ?
- 3) What events “cooked up” all of the elements we know today ?
- 4) What do we call the enormous rotating disk formed from a cloud of stardust by gravity ?
- 5) What gradually drew dust and rocks together into planetesimals ?
- 6) What was the condition of the Earth at its beginnings ?

7) What do we call asteroids when they strike the Earth's atmosphere ?

8) Why were the fragments of the asteroid that struck the Earth in Canada so important to scientists ?

9) What do scientists use to calculate a meteorite's age, and through that the age of the planets ?

10) What conditions combined to create the first of several major “disasters” that struck the early Earth ?

11) What was the eventual effect of the migration of elements called the “iron catastrophe” on the structure of the Earth ?

12) What was the approximate location of the magnetic north pole at the time of the last survey to find it, and what has been discovered about its movement ?

13) Why is Earth's magnetic field important for life on this planet, and where can we see the effects on a planet of losing the field ?

14) What elements dominated Earth's early atmosphere ?

15) What did scientists studying Moon rocks brought back by the Apollo missions deduce about the age of the Moon ?

16) How long did it take for the “giant impact” theory of the Moon's formation to begin to be accepted ?

17) How long were Earth's days shortly after the formation of the Moon ?

18) What devices are used to very precisely analyze the distance to and motion of the Moon ?

19) How would Earth's motion around its axis be different if the Moon were not present ?

20) What is the revised age of the Earth's crust as determined by dating zircon crystals ?

21) Based upon zircon analysis, how long after the formation of the Earth does it seem that liquid water could be found on the surface ?

22) What pumped huge amounts of steam into the infant Earth's atmosphere ?

23) What other source might have supplied additional water to the early Earth ?

24) How does the composition of water analyzed in comets thus far differ from that in Earth's oceans ?

25) What method is used to analyze the chemical composition of a comet from the Earth ?

26) How long ago was the “template” that could allow life to develop present on the early Earth ?