

Review: John Morris, Steven A. Austin, *Footprints in the Ash*, Master Books, Green Forest, AZ, August 2003, (April 2009 edn.)

Pages: 123

Stunning Catastrophe

This is a beautiful book interspersed with lively details of the 1980 Mount St Helens eruption, as well as commentary on similar geological phenomenon like the Grand Canyon and Yellowstone. It undresses geology's uniformitarianism philosophy as myopic and untrustworthy.

Bible-believers now have a one-fortieth scale real-time experiment of the huge power of fast-moving solids, liquid, and gases, the same forces responsible for layering and cutting out the Grand Canyon after Noah's Flood.

As both a defence of good historical science and being a pleasure to read, this book is highly recommended.

Introduction (pp. 8-17)

Mount St. Helen's erupted on May 18, 1980.

A combination of direct observation, aerial photos, satellite images, seismography, laser-surveying, and radar readouts were available.

A surprising volume of water and gas accompany magma which is what drives the explosiveness of eruptions from the pressure.

The last Yellowstone eruption was 2,000 times greater than Mount St. Helens.

During the flood the earth may have passed through an asteroid belt or was otherwise bombarded by meteorites.

Underwater volcanoes are called 'black smokers' due to the colour of the super-heated brine.

Since water is incompressible it transfers energy laterally causing great waves.

Hypercanes are gigantic hurricanes.

Most of the eruption damage was water related.

A million trees were uprooted and dumped into Spirit Lake where they decayed for months and formed a thick layer of peat on the bottom.

I) Mount St. Helens Erupts (pp. 18-37)

Geologists are concerned about magma water pressure, which explodes at about 1,700°C.

The mountain lid slid away to enable the eruption. A cryptodome intrusion bulged out the mountain side about 450 feet.

The blast was equivalent to about 20M tons of TNT and the magma began surging from ten kilometres below the surface.

Out of the mountain corpse, between October 8, 1980 and October 26, 1986, the dome height recovered 1,150 feet.

Fifty-seven observers too close to the eruption died.

The initial earthquake measured 5.1 on the Richter scale.

The eruption caused a landslide travelling at 240mi/hr, however, the blast cloud reached up to 650mi/hr.

The sudden expansion of the trapped super-heated water to steam caused the explosive eruption.

Steam froths magma to produce pumice and accumulated surface volcanic ash is tephra.

II) Total Devastation (pp. 38-47)

The million dead trees form a remarkable ‘fingerprint’ pattern from a high vantage point.

Waters sloshed up and down the lakeside slopes gouging it out up to a height of 860f in under a minute.

Ash and grit was expelled nineteen kilometres up and wreaked havoc on surrounding towns clogging up machines.

III) Geologic Deposits (pp. 48-67)

The event produced three types of stratification: (i) horizontal lamination, (ii) cross-bedding, and (iii) graded massive beds:

Layers less than 5mm thick were created.

The million dead trees form a remarkable ‘fingerprint’ pattern from a high vantage point.

Denser and rounder tress settled first in the lake.

Quicksand is dangerous in geologic areas as the crust may suddenly break and transform into a scalding-hot liquid.

The new lava dome (six years old) has been 'dated' at 2.4my!

IV) Landforms (pp. 68-77)

Present processes do little geological work.

'Plucking' is the prying apart of rocks during large mudflows and cavitation is a bubble-bursting process characteristic to high-velocity flows which pulverise rock.

The event produced three types of stratification: (i) horizontal lamination, (ii) cross-bedding,

The area is now a one-fortieth scale representation of Arizona's Grand Canyon.

Subsequently, the U.S. Army pumped out water over 28 months from Spirit Lake to avoid a flood, which created 'Engineer's Canyon'.

V) Deposits in Spirit Lake (pp. 78-89)

Given the presence of montmorillonite or kaolinite from volcanic ash, coal can form in hours or days. Modern coals are often contaminated with volcanic ash or clay.

The Spirit Lake bottom peat layer is now three-feet thick and at least 20,000 logs have been sunk.

VI) Rapid Fossilization (pp. 90-103)

Most tree logs were buried oriented *away* from the volcano due to the blast wave.

Petrified wood is usually silica.

Logs from each species sink at *different* rates.

The Yellowstone petrified forests show twenty-seven layers and are thought to be tens of thousands of years old. However, this phenomenon can also be explained by the different sinkage rates of different tree types, also the fact that after saturation they will simply stack on top of each other.

Tree ring pattern similarities can be matched to determine which lived at similar times.

VII) Rapid Regeneration (pp. 105-109)

Some pocket gophers survived the blast in their underground burrows.

VIII) Evidence for Catastrophism at Mount St. Helens (pp. 110-117)

IX) A Greater Significance (pp. 118-123)