Grove K. Gilbert (1843-1918)

1879-1918: USGS

First Impact Experiments:
- dropped heavy bodies into a soft mixture of tobacco-pipe clay and water
- pot of boiling alabaster

The Moon's Face: A Study of the Origin of Its Features

Address as Retiring President

Delivered December 10, 1892

[Text from a page of the document]
"Lunar crater Clavius, showing grouping of craters. Diameter 149 miles; Depth about two miles."

Cryptovolcanic Structures: caused by gas explosions due to heat rising from magma that never reached the surface.
Coon Bute = Barringer Crater = Meteor Crater, Arizona
"Geoblemes"
Robert S. Dietz  
(1914-1995)

Appointed by Barringer Crater Company

Collisional explosion directly above the rocks

"Astroblemes"

- Ries and Steinheim craters, Germany
- Vredefort Crater, South Africa
Troy I. Pewe, during 1998 Penrose Medal: "It is not too bold to assert that Dietz's contribution to our understanding of the process of meteoric impact and to widespread occurrence of impact structures on Earth has contributed significantly to the awakening of the geologic community to the importance of catastrophic events in Earth's history, even their possible detrimental impact on certain life forms."
Daniel M. Barringer (1855 - 1929)

Enjoyed quoting his wife's description of him as "half gentleman and half savage"

Barringer Crater Company (1903-Present)

1925 - His estimate of its size had risen to 10 million tons, and he was envisioning an ultimate profit of $250,000,000 on a $500,000 investment.

Early 1929: Meteorite had probably vaporized as a result of the force of the impact.

September 11, 1929: Further operations suspend

November 23, 1929
Eugene Shoemaker (1928-1997)

Coesite

Contains parallel cleavage formed only at high P

National Medal Science (1992)
Shoemaker-Levy 9

Lunar Prospector

Ashes carried January 1998
174 Identified Impact Structures On Earth
Impact Cratering as a Geologic Mechanism
Meteor Crater, Arizona
Diameter: 1.2 km
Age: 49,000 +/- 3,000 years

Vredefort, South Africa
Diameter: ~300 km
Age: 2,023 +/- 4 million years
Luis Alvarez

Chicxulub Crater

Diameter: ~180 km
Projectile: ~20 km

Luis Alvarez, his geologist son Walter Alvarez, nuclear chemist Frank Asaro, and paleontologist Helen Michael (right to left)