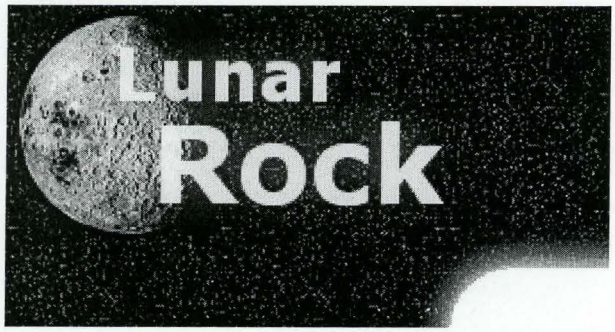

Northwest Africa 482 Terrestrial History

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Northwest Africa 482 was found somewhere in the Northwestern African desert by a Berber nomad in late 2000. The most likely place of the find is Algeria because the nomad who sold the meteorite to a fossil dealer in Morocco stated this is where he made most of his finds. NWA 482 was then purchased from the Moroccan dealer by two American meteorite dealers, Mike Farmer and Jim Strope, on January 9th 2001 (incredibly, during a complete lunar eclipse), on their fourth expedition to the area. Several kilograms of meteorites have been brought back from these trips, financed by private individuals, to be serialized, classified and then divided among the investors. Most of these meteorites turn out to be ordinary chondrites, worth very little on the open market. Sometimes a rare type will be discovered, making the entire process worthwhile.

Expedition Link

NWA 482 is one of those rare types that make these trips worth the effort. The fresh glassy fusion crust, the flow lines and the orientation of this particular piece caused excitement when it was brought to Dr. Alan Rubin of UCLA for study. A sample was sent to Dr. David Kring of the Lunar and Planetary Laboratory of the University of Arizona. After studying a thin section, Dr. Kring stated that it appeared lunar in origin. The electron microprobe analysis performed at UCLA showed that all the parameters fit a lunar origin as well. Another sample was sent to Dr. Robert Clayton at the University of Chicago for oxygen isotope analysis to confirm its lunar origin by comparison with Apollo lunar samples. On February 2nd 2001, Dr. Rubin stated that it classified as a lunar impact melt. On February 13th Dr. Kring confirmed Dr. Rubin's findings, calling it a lunar impact melt (polymict, crystalline) breccia.

The entire mass weight was 1015 grams, making it the second largest lunar meteorite ever found. After donating 42 grams for classification, the rest of NWA 482 was distributed among the 11 investors at the Tucson Gem and Mineral show. Approximately 20.5% of the mass, or 208 grams, was lost during cutting due to the great number of slices that had to be cut for the investors. This left 765 grams to be distributed among the shareholders. The largest shareholders, Adam and Greg Hupé, financed 40% of Expedition 4, bringing back the largest piece, the 312 gram main mass. The Hupé family then purchased another 63.25 grams from other shareholders, giving them a total of 375.25 grams. Approximately 100 grams has been traded to museums at this point, leaving only 290 grams of this material available for possible private purchase.

During the Tucson show, the Hupé brothers met with famous meteorite explorer Robert Haag, the first private individual to own a lunar meteorite (Calcalong Creek), with a scant 7 gram main mass. NWA 482 and Calcalong Creek were brought together in the same room on January

27th 2001, making history for two reasons. One, due to the extreme value of these exceedingly rare objects (nine in private hands), no private individuals have brought two together. Two, Calcalong Creek was the first privately found lunar and NWA 482 is the most recent.

Inventory Link

Upon returning to Seattle, the Hupé brothers arranged a private viewing session with scientists from the University of Washington. Dr. Anthony Irving, a former NASA scientist, and Dr. Donald Brownlee, lead scientist on NASA's Stardust Mission, examined the main mass and five slices. Both agreed it would be a shame not to thoroughly study the slices before they were broken up any more. Adam Hupé was told that once the pieces were broken or sliced, valuable scientific information would be lost forever. The Hupé brothers, having great respect for academics, allowed the University of Washington to map the pieces even though there was some material losses due to preparation.

After examining a small slice provided by Adam Hupé, Dr. Irving claimed it to be a lunar highland piece resembling a sample (sample number 60015) returned from the Apollo 16 mission in 1972.

The Hupé brothers then sent one complete and four part slices weighing a total of 62 grams to the University of Washington for polishing and preparation for large scale characterization mapping under a scanning electron microscope. Five grams more were sacrificed, in the name of science, for the preparation of three thin sections bringing the total of lab-prepared thin sections in the world to only five. The Hupé brothers announced the arrival of NWA 482 (the freshest lunar meteorite in existence) on April 14th, at the University of Washington. This occurred after a public lecture series sponsored by NASA Washington Space Grant, Penford Corporation and the University of Washington Dept. of Earth & Space Sciences titled "Pieces of Asteroids, The Moon and Mars: The Latest on Meteorites" with special guest Dr. Michael Zolensky from NASA Johnson Space Center in Houston Texas.